FOR CONTRACT NO.: 04-4A3304

INFORMATION HANDOUT
WATER QUALITY

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY SECTION

CIWQS PLACE NO. 744300 (BT)
401 DATABASE SITE NO. 02-43-C0647

PERMITS

STATE OF CALIFORNIA
DEPARTMENT OF FISH AND GAME

NOTIFICATION NO. 1600-2010-0373-R3

UNITED STATES ARMY CORPS OF ENGINEERS
NON-REPORTING NATIONWIDE 404 PERMIT

ENCROACHMENT PERMITS

CITY OF PALO ALTO ENCROACHMENT PERMIT

CITY OF MOUNTAIN VIEW EXCAVATION PERMIT

MATERIALS INFORMATION

SITE INVESTIGATION REPORT

FOUNDATION REPORTS:
MATADERO CREEK BRIDGE No 37-0040
ADOBE CREEK BRIDGE No 37-0714
RETAINING WALL No 37-0058

GEOTECHNICAL DESIGN & MATERIALS REPORT

OTHER INFORMATION

LOCATION HYDRAULIC STUDY
TRANSPORTATION MANAGEMENT PLAN

LANE CLOSURE REPORT

ROUTE: 101-SCl-04/PM 48.7/52.0

04-SCL-101-PM48.7/51.9

EA#04-4A3301
NOVEMBER 5, 2010

GEOTECHNICAL DESIGN AND MATERIALS REPORT

U.S.101 AUXILIARY LANES FROM EMBARCADERO TO SR 85

PALO ALTO, MOUNTAIN VIEW, SANTA CLARA COUNTY, CALIFORNIA

Prepared for
Santa Clara Valley Transportation Authority
3331 North First Street
San Jose, CA 95134

URS

100 West San Fernando Street, Suite 200
San Jose, California 95113

`

November 5, 2010
Project 28649951

File No.04-SCL-101-PM 48.7/51.9
EA 4A3301 CU 04

Mr. Paul Mai
Project Coordinator
California Department of Transportation (Caltrans)
Office of Design South, Santa Clara B
111 Grand Avenue
Oakland, CA 94623-0660

Subject: **Geotechnical Design and Materials Report (GDMR)**
U.S. 101 Auxiliary Lane
Palo Alto and Mountain View, California

Dear Mr. Mai:

URS has completed the accompanying GDMR for the Santa Clara Valley Transportation Authority (VTA) for the proposed modifications to U.S. 101 in Palo Alto and Mountain View, California. The accompanying report has been prepared in accordance with Caltrans Guidelines for preparing Geotechnical Design Reports, dated December 2006.

The report presents our engineering opinions and recommendations regarding the geotechnical factors influencing the design and construction of the proposed roadways and overhead sign structures. The opinions and recommendations have been based upon the results of our field investigation, laboratory testing, engineering judgment and local experience. Mr. Madhu Thummaluru, P.E. Staff Engineer, performed engineering calculations and assisted in preparation of this report. Mr. Mark Schmoll, Certified Engineering Geologist, contributed to the seismic source characterization and the evaluation of geologic conditions along the project alignment. Mr. Michael Larson, G.E. provided consultation and technical guidance to the URS project team over the course of this investigation. Mr. Jose Landazuri provided independent technical review of this report in accordance with URS Corporation Quality Management System. Mr. Christopher Lillie, URS Deputy Project Manager, supervised the incorporation of geotechnical and pavement materials recommendations in various design aspects of the project.

The discussion and analysis used in preparation of this report are based on June 2010 Submittal Plans and subsequent updated plans. Since our report dated February 1, 2010 was issued, we received review comments from Caltrans dated February 26, March 1, June 16, October 20, and November 2, 2010. These comments have been incorporated into this report.

If any questions should arise, or if we can be of further service, please contact the undersigned at (408) 297-9585.

Sincerely,

S. Stephen Huang
Geotechnical Task Leader, G.E. 2150

REGISTERED PROFESSIONAL ENGINEER
S. STEPHEN HUANG
No. GE 002150
Exp 3/31/12
GEOTECHNICAL
STATE OF CALIFORNIA

URS Corporation
100 W. San Fernando Street, Suite 200
San Jose, CA 95113
Tel: 408.297.9585
Fax: 408.297.6962
www.urscorp.com

TABLE OF CONTENTS

SECTION 1 INTRODUCTION 1-1

1.1 Description of Project 1-1
1.1.1 General 1-1
1.1.2 Other Features 1-1
1.1.3 Retaining Walls 1-2
1.1.4 Soundwalls 1-2
1.2 Existing Structures 1-2
1.3 Physical Setting 1-2
1.3.1 Climate 1-2
1.3.2 Terrain 1-3
1.3.3 Surface Drainage 1-3
1.3.4 Regional Geology 1-4
1.4 Previous Investigations Near Site 1-5
1.5 Review Comments 1-5

SECTION 2 EXISTING STRUCTURAL PAVEMENT SECTIONS 2-1

2.1 Original Construction 2-1
2.2 U.S. 101 2-1
2.3 Structural Pavement Section 2-3

SECTION 3 EXPLORATION, GEOTECHNICAL TESTING AND SUBSURFACE CONDITIONS 3-1

3.1 Field Exploration 3-1
3.2 Subsurface Conditions 3-2
3.2.1 General 3-2
3.2.2 Subsurface Conditions 3-2
3.2.3 Groundwater 3-2

SECTION 4 SEISMIC AND GEOLOGIC HAZARDS 4-1

4.1 Regional Tectonic Setting and Seismicity 4-1
4.1.1 Foothills Thrust Belt (Monte Vista-Shannon and Cascade Faults) 4-1
4.1.2 Silver Creek Fault Zone 4-2
4.1.3 San Andreas Fault Zone 4-3
4.1.4 Hayward Fault 4-3
4.2 Peak Bedrock Acceleration 4-4
4.3 Potential Geologic Hazards 4-4
4.3.1 Surface Fault Displacement and Ground Shaking 4-4
4.3.2 Landslides 4-4
4.3.3 Liquefaction 4-5
4.3.4 Subsidence and Settlement 4-6
4.3.5 Flooding 4-6
4.4 Scour 4-6

TABLE OF CONTENTS

SECTION 5 STRUCTURAL PAVEMENT 5-1

5.1 Structural Section Design Parameters 5-1
5.1.1 Traffic Data 5-1
5.2 Subgrade Conditions 5-1
5.2.1 Untreated Subgrade 5-1
5.2.2 Lime Treated Subgrade 5-4
5.3 New Structural Pavement Sections 5-6
5.3.1 Background 5-6
5.3.2 RHMA Considerations 5-6
5.3.3 Recommended Northbound Mainline and Shoulder Sections from "C" Line Station 51+62 to 129+00 (SPCS 1) 5-7
5.3.4 Recommended Northbound Mainline and Shoulder Sections from "C" Line Station 129+00 to 214+00 (SPCS 2) 5-8
5.3.5 Recommended Southbound Mainline and Shoulder Sections from "C" Line Station 47+29 to 53+00 (SPCS 3) 5-8
5.3.6 Recommended Southbound Mainline and Shoulder Sections from "C" Line Station 53+00 to 215+00 (SPCS 4) 5-8
5.3.7 Recommended Ramp Sections (SPCS 5 - Excluding SB U.S. 101 On-/Off-Ramps at Rengstorff) 5-9
5.3.8 Recommended Ramp Section for SB On-/Off-Ramps at Rengstorff (SPCS 6 – Down Gradient of Existing Ramp Section) 5-9
5.3.9 Recommended Ramp Sections for SB On-/Off-Ramps at Rengstorff (SPCS 7 –Up Gradient of Existing Ramp Section) 5-10
5.3.10 Full Depth HMA Option for Sliver Widening Sections for Mainline and Shoulder 5-10
5.4 Pavement Overlay 5-10
5.5 Pavement Condition survey 5-11

SECTION 6 GEOTECHNICAL ANALYSIS AND DESIGN 6-1

6.1 Subgrade Treatment 6-1
6.1.1 Clearing and Grubbing 6-1
6.1.2 Subgrade Preparation 6-1
6.1.3 Fill Material 6-1
6.1.4 Fill Placement 6-1
6.1.5 Soil Reuse and Disposal 6-1
6.2 Estimated Settlement 6-2
6.2.1 Surcharge and Monitoring 6-3
6.3 Drainage System 6-3
6.4 Utility Crossings 6-3
6.4.1 General 6-3
6.5 Roadway Excavations 6-3
6.6 Box Culvert at Permanente Creek 6-4

6.7 Earthwork Factors 6-6
6.8 Retaining Wall 6-6
6.9 Soundwalls 6-6
6.10 New Overhead Signs 6-6
6.10.1 Subsurface Conditions 6-7
6.10.2 Liquefaction Potential 6-10
6.10.3 Geotechnical Design Parameters 6-12
6.10.4 Construction Considerations 6-13
6.11 Geotechnical Calculations 6-13

SECTION 7 CORROSION INVESTIGATION 7-1

7.1 Summary 7-1
7.2 Conclusions 7-2
7.3 Recommendations 7-2
7.3.1 Buried Reinforced Concrete Structures and Cast in Place Piles 7-2
7.3.2 Prestressed Concrete Piles 7-2
7.3.3 Cast-in-Drilled-Hole (CIDH) Piles 7-3
7.3.4 Culvert, Mechanically Stabilized Embankment and Metallic Soil Reinforcement Backfill 7-3
7.3.5 Alternative Pipe Material Selection 7-4

SECTION 8 MATERIALS AVAILABLE 8-1

SECTION 9 RECOMMENDATIONS AND SPECIFICATIONS 9-1

9.1 Recommendations 9-1
9.2 Specifications 9-1
9.2.1 Earthwork 9-1
9.2.2 Structural Pavement Materials 9-1
9.2.3 Standard Special Provisions 9-2
9.2.4 Special Provisions 9-4

SECTION 10 LIMITATIONS 10-1

SECTION 11 REFERENCES 11-1

TABLE OF CONTENTS

LIST OF TABLES

Table 1-1	Existing Structures
Table 1-2	Previous Investigations
Table 2-1a	Existing Typical Structural Section in SB direction
Table 2-1b	Existing Typical Structural Section in NB direction
Table 2-1c	Existing Typical Structural Section in Ramps
Table 2-2	Borings on Shoulders
Table 3-1	Summary of Laboratory Test Results
Table 3-2	Groundwater Measurements
Table 4-1	Seismic Source Parameters
Table 4-2	Post Liquefaction Settlement Estimated from Exploratory Borings
Table 4-3	Post Liquefaction Settlement Estimated from CPTs
Table 5-1	R-Value Test Results
Table 5-2	Subgrade Design R-values
Table 5-3	Lime Treated Bulk Samples Summary
Table 5-4	Bulk Sample Test Results/California Test 373 Results
Table 5-5	Hot Mix Asphalt Placement Temperatures
Table 6-1	Soil Reuse/Disposal Requirements
Table 6-2	Overhead Signs Summary
Table 6-3	Liquefaction Settlement at Overhead Sign Structures
Table 6-4	Preliminary Range of Structural Load Magnitudes
Table 6-5	Pile Data at Overhead Sign Structures
Table 8-1	Materials Available

LIST OF FIGURES

Figure 1-1	Site Location Map
Figures 1-2, 1-3, 1-4	Adobe Creek Bridge (Widen)
Figures 1-5, 1-6, 1-7	Matadero Creek Bridge (Widen)
Figures 3-1 to 3-17	Field Exploration Location Plan
Figure 3-18	Groundwater Level Measurements
Figure 4-1	Active Faults in the Site Region
Figure 5-1	R-value Numerical Distribution
Figure 5-2	R-value Distribution along Alignment
Figure 5-3	Daily Temperature Records for Palo Alto, California
Figure 6-1a	Log of Test Borings, Legend
Figure 6-1b	Log of Test Borings, Legend
Figure 6-1c to 6-1o	Log of Test Borings, Overhead Sign Structures

LIST OF APPENDICES

Appendix A	Key Map K-1
Appendix B	Typical Cross Section Drawings X-1 through X-32
Appendix C	Boring Records

TABLE OF CONTENTS

Appendix D	Laboratory Tests
Appendix E	Liquefaction Work Sheets
Appendix F	R-value Test Results
Appendix G	Drainage Plan Drawings D-1 through D-17
Appendix H	Utility Plan Drawings U-1 through U-20
Appendix I	Sign Plans S-1 through S-17
Appendix J	Geotechnical Calculations
Appendix K	Corrosion Investigation
Appendix L	Review Comments

1.1 DESCRIPTION OF PROJECT

1.1.1 General

The proposed project is located on U.S. 101 in the cities of Mountain View and Palo Alto, Santa Clara County, California. The project limits extend from State Route (SR) 85 on the south to Embarcadero Road on the north (PM 48.7/51.9), a distance of approximately 3.2 miles (Figure 1-1). Within project limits, the U.S. 101 has three mixed-flow lanes and one high occupancy vehicle (HOV) lane in each traffic direction. Full-access interchanges are located at SR 85, Shoreline Boulevard, Rengstorff Avenue/Amphitheatre Parkway, Oregon Expressway, and Embarcadero Road. Partial access interchanges are located at Old Middlefield Way, Charleston Road, and San Antonio Road. There is also a direct HOV connector ramp to and from northbound US 101 and SR 85.

The purpose of the overall project is to relieve existing and future traffic congestion on weaving sections and at ramp termini, and provide for improved local access over this segment of the U.S. 101 corridor.

The project will construct an auxiliary lane on U.S.101 in each direction between SR 85 and Embarcadero Road. The exception will be between San Antonio Road and Rengstorff Avenue in the southbound direction, where no auxiliary lane is proposed because it would create weaving conflicts with traffic entering the freeway from Charleston Road. The new auxiliary lanes will be constructed adjacent to the existing outside lanes. On-ramps at a few interchanges will be widened for the purpose of increasing storage capacity. At most locations, there is sufficient room within the existing Caltrans right-of-way to accommodate the construction of the auxiliary lanes. There are areas where minor amounts of additional right-of-way would be required.

The auxiliary lanes will require the widening (1) of the existing U.S.101 bridges over Adobe Creek and Matadero Creek and (2) of the existing U.S.101 box culvert at Permanente Creek. The existing 12 feet by 12 feet box culvert at Permanente Creek will be extended approximately 2 feet on the upstream end and 20 feet on the downstream end. The proposed improvement of Adobe Creek Bridge and Matadero Creek on U.S. 101 will include widening both sides of the structure in both directions, closing the gaps between the U.S. 101 bridges and the adjacent frontage road bridges. The station locations are shown in Key Map K-1 in Appendix A.

1.1.2 Other Features

In accordance with regulations that require projects to include feasible measures to treat storm water runoff prior to discharge into creeks, the project will include construction of biofiltration swales within the freeway right-of-way. Based on preliminary design information, the treatment areas will total approximately 22 acres in size.

Construction of the project is scheduled to begin in mid 2011 and be completed by the end of 2013.

1.1.3 Retaining Walls

A retaining wall is planned along the south side of U.S. 101 at Old Middlefield Way overcrossing between stations 198+00 and 198+44. This wall is 44 feet long and the maximum design height would be about 12 feet. For more details, including recommendations, please refer to Section 6.8 "Retaining Wall".

1.1.4 Soundwalls

Soundwalls currently are not planned for this project.

1.2 EXISTING STRUCTURES

Figures 1-2 through 1-7 present the layout of the existing bridge structures. Based on as-built plans, the pile and spread footing foundation loadings are summarized as follows:

Table 1-1 Existing Structures

Bridge Number	Name	Abutment / Bent / Foundation Type	Pile (1) Loading (tons)
37-149	Oregon Expressway Overcrossing	Abutments (piles)	45
		Bents (piles)	45
37-0174	Adobe Creek Bridge (Widen)	Abutments (piles)	45
37-0040	Matadero Creek Bridge (Widen)	Abutments (piles)	45
		Bent (piles)	45
37-0416	San Antonio Road Overcrossing	Abutments (piles)	45
		Bents (piles)	45
37-449	Rengstorff Avenue Overcrossing	Abutments (piles)	70
		Bents (piles)	70
37-154	Old Middlefield Road Overcrossing	Abutments (piles)	45
		Bent (piles)	45
37-153	Shoreline Boulevard Overcrossing	Abutments (piles)	70
		Bents (piles)	70

(1) All loads including wind and seismic

Permanente Creek crosses U.S.101 at approximate Station 187+50. A 216 feet long and 12 feet by 12 feet box culvert is located at this crossing.

1.3 PHYSICAL SETTING

1.3.1 Climate

Climatologically, the area is classified as Mediterranean with dry summers and mild winters. The following discussion includes records at the Palo Alto weather station (Western Regional

Climate Center). The mean annual temperature is 59.2° F. Extremes of temperatures expected range from an average daily maximum of 78.8° F in July to average daily lows of 33.0° F in December. The highest and lowest temperatures on record in Palo Alto are 107° F and 15° F. Freezing temperatures should only be expected to occur an average of 16 days per year, so freeze-thaw conditions should not be a factor.

Precipitation in Palo Alto averages 15.24 inches per year, primarily confined to the months of October through May. November through March usually have the most precipitation accumulation, averaging 1.78, 2.73, 3.25, 2.87, and 2.23 inches per month, respectively. Thunderstorms are rare.

1.3.2 Terrain

U. S. 101 follows the southwestern margins of San Francisco Bay and the topography along the existing roadway is relatively flat, ranging in elevation from approximately 20 feet at the southeast end near Permanente Creek to a low of about 5 feet near the Oregon Expressway overcrossing at the northwest end (USGS Mountain View Quadrangle). The channelized Matadero Creek and Adobe Creek are at or near sea level and are subject to tidal inundation.

Development along the project area is extensive, consisting of residential housing, mostly on the southwest side, commercial retail and office business buildings, and tidal wetlands fronting the northeast section of the freeway between about Oregon Expressway and Adobe Creek.

1.3.3 Surface Drainage

Watershed

Major streams within or in the vicinity of the project include, from north to south (Wreco, 2006):

- Matadero Creek (crossed by project)
- Adobe Creek/Barron Creek (crossed by project)
- Permanente Creek (crossed by project)

Matadero Creek crosses U.S. 101 approximately 3,200 feet southeast of the Oregon Expressway Interchange. The creek originates near the town of Los Altos Hills and Palo Alto Hills, flowing northeast through unincorporated areas of Santa Clara County and the City of Palo Alto. The watershed area of Matadero Creek is approximately 13.6 square miles. Eleven square miles are within mountainous areas, and three square miles are in gently sloping terrain. Within the City of Palo Alto, the watershed is almost fully urbanized for residential, commercial, industrial, and institutional use. There is open space in the foothills, which covers approximately 24 percent of the watershed area. Forty to sixty percent of the fully urbanized area near the project site is impervious.

Adobe Creek crosses U.S.101 between the Matadero Creek crossing and the San Antonio Road Interchange. Adobe Creek confluences with Barron Creek at the upstream face of the U.S.101 crossing. Adobe Creek originates in the highlands of the unincorporated areas of Santa Clara County and Palo Alto Hills. The watershed area of Adobe Creek is approximately 13.5 square miles; 10.4 square miles from Adobe Creek and 3.1 square miles from Barron Creek (FEMA,

1999a). Land use within the City of Palo Alto and City of Los Altos is fully urbanized. Open space is limited to the area in the foothills of the upstream watershed. Approximately 70 percent of the watershed area is urbanized and 30 percent is open space. Currently, the area surrounding the project site is 40 to 60 percent impervious.

Permanente Creek crosses U.S.101 between Rengstorff Avenue (approximately 2,200 feet northwest of the creek crossing) and Old Middlefield Way (approximately 900 feet southeast of the creek crossing). The creek originates in the Santa Cruz mountains, travels 19 miles north to the San Francisco Bay, and passes through unincorporated areas of Santa Clara county as well as the City of Cupertino, Town of Los Altos Hills, City of Los Altos, and City of Mountain View. At the downstream end of the project site, Permanente Creek passes through a twin Reinforced Concrete Box Culvert at Charleston Road, and a bridge at Amphitheatre Parkway, to discharge to Mountain View Slough; the creek eventually outfalls to the San Francisco Bay. The watershed area of Permanente Creek is approximately 15.8 square miles at the U.S.101 crossing. The Cities of Mountain View and Los Altos is fully developed and covers approximately 55 percent of the watershed area. In addition to the urbanized area, approximately 8 percent of the area is used as non-urbanized development, such as golf course and a mine. The remaining 37 percent is open space, predominantly located in the ridge foothills.

Floodplain Information/Historic flooding

The FEMA Floodplain Insurance Rate Maps (FIRMs) for the City of Palo Alto and the City of Mountain View illustrate the 100-year floodplain at the project site. The FIRMs indicate large floodplains cover U.S.101 and the surrounding area within the project limits.

Historically, U.S.101 have been flooded in this area due to capacity issues of San Francisquito Creek. The historic flooding event was recorded in February 1998, which was reported to closely resemble the floodplain areas delineated in the FEMA FIRM. The overtopping flow from San Francisquito Creek flooded the U.S.101 travel way and ponded at the low point near the Oregon Expressway/U.S.101 Interchange. Pursuant to Caltrans' record, the southbound lanes were closed during the flood event. Matadero and Adobe/Barron Creeks did not experience overtopping during this flood event. This project does not modify San Francisquito Creek, which is outside of the project limits. However, the San Francisquito Creek U.S.101 bridge will be replaced as part of the San Mateo County auxiliary lane project to eliminate the flow restrictions at the existing San Francisquito Bridge.

1.3.4 Regional Geology

The project site is located about 1¼ to 2 miles southwest of the edge of San Francisco Bay within the northern portion of Santa Clara Valley, an alluvial basin located between the Santa Cruz Mountains to the southwest and the Diablo Range to the northeast. The Santa Clara Valley is within the central portion of the Coast Ranges geomorphic province of California. Northwest-southeast-trending valleys and ridges characterize the regional morphology of the Coast Ranges province. These topographic features are controlled by folds and faults that resulted from the collision of the Farallon and North American plates and subsequent predominantly strike-slip faulting along the San Andreas fault system between the Pacific and North American plates.

Regional geologic mapping shows the project alignment to be underlain by Holocene fine-grained alluvium deposits extending from the southern end at Permanente Creek northward to about the San Antonio Road overcrossing (Helley and LaJoie, 1979). North of this point to the end of the project at Oregon Expressway the roadway is mapped as being underlain by Holocene bay mud. This section of the project extends northeast of the original 1850 shoreline of the bay (Helley and LaJoie, 1979). The fine-grained alluvium deposits are described as plastic, poorly sorted organic silt and clay that interfingers with the bay mud. The bay mud is described as water-saturated estuarine organic clay and silty clay with a few lenses of well-sorted sand, and shelly and peaty layers. More recent mapping by Witter and others (2006) show similar conditions, however the fine-grained alluvium deposits are referred to as Holocene alluvial fan deposits – fine grained facies. Witter also shows the bay mud as being overlain by artificial fill along the roadway alignment north of about the San Antonio Road overcrossing. The nearest bedrock consists of Tertiary sedimentarty rocks and volcanic basalt mapped about three miles southwest of the site in the Los Altos Hills.

1.4 PREVIOUS INVESTIGATIONS NEAR SITE

The existing Foundation and Geotechnical Design Investigation references provided by Caltrans include the following:

Table 1-2 Previous Investigations

Bridge Number	Name	Report Description	Date
37-0547K	S101 On-ramp/S101-S85 Separation	Foundation Recommendations (by Kleinfelder)	August 12, 2002
37-0573K	N101 Off-ramp/Route 101 Separation (Old Middlefield Road overcrossing)	Foundation Recommendations (by Kleinfelder)	August 12, 2002
-	Mechanically Stabilized Embankment Walls (Route 85/101 Interchange Project)	Foundation Recommendations (by Kleinfelder)	April 8, 2002
-	Route 85/101 Interchange Project	Geotechnical Design Report (by Kleinfelder)	May 8, 2002
-	Permanente Creek Pedestrian Bridge	Preliminary Foundation Recommendations (by Parikh Consultants)	December 8,2005

1.5 REVIEW COMMENTS

URS initially submitted a Geotechnical Design and Materials Report (GDR/MR) dated August 10, 2009 for the proposed U.S. 101/Auxiliary Lanes Project. Subsequently, Caltrans reviewed

our report and later reports and provided their comments in correspondence dated September 16, 2009, March 1, 2010, February 26, 2010 and June 16, 2010. The most recent GDR/MR submitted was dated June 11, 2010. Copies of Caltrans' review comments are attached in Appendix L. We have incorporated these review comments in this report.

2.1 ORIGINAL CONSTRUCTION

Existing structural pavement sections are shown on As-built (exist) Typical Cross Section Drawings in Appendix B. The pavement thicknesses are summarized in Tables 2-1a, 2-1b, and 2-1c.

Consistent with Caltrans terminology, for the remainder of this report, the following definitions, abbreviations, and acronyms are used:

- Asphalt concrete is AC
- Asphalt concrete, Type A is AC(A)
- Asphalt treated permeable base is ATPB
- Aggregate base is AB
- Aggregate subbase is AS
- Cement treated subbase is CTS
- Class 3 aggregate base is Cl. 3 AB
- Class 4 aggregate subbase is Cl. 4 AS
- Lean concrete base is LCB
- Portland cement concrete is PCC
- Rubberized hot mix asphalt, gap graded is RHMA-G
- Hot mix asphalt is HMA
- Impermeable subbase is IS
- Untreated base is UTB

2.2 U.S. 101

According to Typical Cross Sections drawings X-1 through X-32 presented in Appendix B and in Table 2-1a, 2-1b, and 2-1c, the existing pavement sections for U.S. 101 mainline, shoulders, and ramps consist of the following structural elements:

Table 2-1a Existing Typical Structural Sections in SB direction

Station	Distance from "C" line			Shoulder Section (feet)
	0 to 22 feet*	22 to 34 feet	34 to 58 feet	
	Traveled Way Section (feet)			
47+28.66 to 215+00.00	AC (A) 0.90 Cl. 4 AS 0.89	PCC 0.67 CTB 0.33 IS 1.08	PCC 0.75 CTB 0.33 IS 1.00	AC 0.25 UTB 0.50 IS 1.00 to 1.33

* includes inside (left) shoulder

Table 2-1b Existing Typical Structural Sections in NB direction

Station	Distance from "C" line			Shoulder Section (feet)
	0 to 18 feet*	18 to 38 feet	38 to 58 feet	
	Traveled Way Section (feet)			
47+28.66 to 66+40.00 72+50.25 to 77+63.19 78+00.00 to 102+90.00 117+00.00 to 186+55.02	AC (A) 0.90 Cl.4 AS 0.50	AC 0.32 to 0.90 PCC 0.67 to 0.92	AC 0.32 PCC 0.67 to 0.92	AC 0.25 UTB 0.50 IS 1.33
66+40.00 to 71+69.25 77+63.19 to 78+00.00 102+90.00 to 117+00.00 198+77.27 to 214+00.00	AC (A) 0.90 Cl.4 AS 0.50	AC 0.32 to 0.90 PCC 0.67 to 0.92	AC 0.50 CTB (A) 0.42 CTB (B) 0.42 IS 0.83	AC 0.25 to 0.50 UTB 0.50 IS 0.92 to 1.17
186+55.02 to 198+77.27	AC (A) 0.90 Cl.4 AS 0.50	AC 0.32 to 0.90 PCC 0.67 to 0.92	AC 0,32 PCC 0.67 to 0.92	AC (A) 0.75 CTB (A) 0.90 Cl.4 AS 2.07

* includes inside (left) shoulder

Table 2-1c Existing Typical Structural Sections in Ramps

Ramp Name	Traveled Way Section (feet)	Shoulder Section (feet)
SB Oregon Expy On-Ramp	AC (A) 0.40 AB 0.67 AS 0.67	AC (A) 2.05
NB Oregon Expy Off-Ramp	AC (A) 0.25 CTB (A) 0.67 Cl. 1 AS 0.67	Not Available
NB San Antonio Road On-Ramp	AC 0.25 UTB 0.67 IS 0.67	Not Available
NB Amphitheatre Parkway On-Ramp	AC 0.25 AB 0.67 AS 0.67	AC 0.17 – 0.25 AB 0.50 AS varies
NB Amphitheatre Parkway Off-Ramp	AC 0.35 ATPB 0.25 LCB 0.45 AS 0.90	AC 0.35 AB 1.60
SB Rengstorff Avenue On-Ramp (Widen) SB Rengstorff Avenue Off-Ramp (Widen)	AC 0.35 ATPB 0.25 LCB 0.45 AS 1.20	AC 0.35 ATPB 0.25 LCB 0.45 AS 1.20
SB Rengstorff Avenue On-Ramp (Overlay) SB Rengstorff Avenue Off-Ramp (Overlay)	AC (A) 0.37 Cl. 2 AB 0.67 Cl. 2 AS 0.67	AC (A) 0.50 Cl. 3 AB 0.80 Cl. 4 AS 1.00

Table 2-1c Existing Typical Structural Sections in Ramps

Ramp Name	Traveled Way Section (feet)	Shoulder Section (feet)
NB Shoreline Blvd On-Ramp	AC 0.50 AB 0.90 AS 1.25	AC 0.50 AB 0.90 AS 1.25
SB Shoreline Blvd Off-Ramp	AC 0.40 to 1.35 Cl. 2 AB 0.67 Cl.2 AS 0.67	AC 0.50 Cl. 3 AB 0.85 Cl. 4 AS 1.25

2.3 STRUCTURAL PAVEMENT SECTION

The existing pavement structural sections were measured where our boring locations encountered existing pavement. Approximate measurements of the existing section were made in exploratory boreholes at the time of drilling and are summarized in the following table.

Table 2-2 Borings on Shoulders

Boring Number	AC Thickness		AB/LCB/AS Thickness	
	(inches)	(feet)	(inches)	(feet)
A-09-103	7	0.58	6 (AB) 12 (AS)	0.50
A-09-104	8	0.67	34	2.83
A-09-109	11	0.92	Not Encountered	Not Encountered
A-09-111	10	0.83	Not Encountered	Not Encountered
A-09-183	10	0.83	Not Encountered	Not Encountered
A-09-119	10	0.83	Not Encountered	Not Encountered
A-09-121	10	0.83	Not Encountered	Not Encountered
A-09-123	9	0.75	Not Encountered	Not Encountered
A-09-130	8	0.67	Not Encountered	Not Encountered
A-09-132	9	0.75	15	1.25
A-09-134	6	0.50	12	1.00
A-09-136	10	0.83	Boring Terminated	Boring Terminated
A-09-137	8	0.67	32 (AB) 2(LCB)	2.67 (AB) 0.17 (LCB)
A-09-138	7.5	0.63	22.5	1.88
A-09-139	8	0.67	10	0.83
A-09-142	10	0.83	Not Encountered	Not Encountered
A-09-143	4	0.33	20	1.67
A-09-146	11	0.92	8	0.67
A-09-149	Not Encountered	Not Encountered	36	3.00
A-09-154	6	0.50	12	1.00
A-09-156	7	0.58	4	0.33
A-09-157	4	0.33	15	1.25
A-09-158	8	0.67	10	0.83
A-09-159	Not Encountered	Not Encountered	18	1.50
A-09-160	6	0.50	12	1.00

Table 2-2 Borings on Shoulders

Boring Number	AC Thickness		AB/LCB/AS Thickness	
A-09-162	Not Encountered	Not Encountered	24	2.00
A-09-164	Not Encountered	Not Encountered	30	2.50
A-09-166	Not Encountered	Not Encountered	18	1.50
R-09-005	2	0.17	Not Encountered	Not Encountered
A-09-167	8	0.67	46	3.83
A-09-170	10	0.83	26	2.17
A-09-172	10	0.83	12	1.00
A-09-174	10	0.83	12	1.00
A-09-175	4	0.33	38	3.17

3.1 FIELD EXPLORATION

The locations of all borings for the entire U.S.101 project are presented in Figures 3-1 through 3-17. The locations of selected borings used for this report are presented on Boring Records, in Appendix C.

The selected borings for this GDMR include A-09-101 through A-09-105, A-09-107 through A-09-148, A-09-150, A-09-155 through A-09-160, A-09-162, A-09-163, A-09-165, A-09-166, A-09-168, A-09-170, and A-09-172 through A-09-174. These borings were drilled primarily for determination of the roadway subgrade; depths were generally in the range of 9 to 11.5 feet, and typically about 10 feet; except borings A-09-136 and A-09-156 which were terminated due to refusal at depths of 0.8 foot and 2 feet, respectively. These borings were drilled with a hollow stem auger. Furthermore, the selected borings also include other multipurpose borings drilled for retaining wall, overhead sign structures as well as determination of roadway subgrade. These borings and CPTs include A-09-149, A-09-152 through 154, A-09-161, A-09-164, A-09-167, A-09-169, A-09-171, A-09-175, A-09-177 through A-09-185, CPT-09-106, CPT-09-151, and CPT-09-176. Depths of these borings and CPTs ranged from 35 to 45 feet. A is an abbreviation for auger boring, CPT is an abbreviation for Cone Penetration Test and 09 represents that the borings are drilled in the year 2009.

Furthermore, deep borings were drilled for the bridge/box culvert widening along the project alignment. These deeper borings include R-09-001, R-09-004, R-09-005, CPT-09-002, CPT-09-003, and CPT-09-006. Depths of these borings ranged from 51½ to 101½ feet. These borings were drilled by either the rotary wash method or by the cone penetration test. R is an abbreviation for rotary wash method.

The field investigation was conducted during the period of March 22 through 27, 29 through 31, 2009, April 1, 2, and 12 through 14, 2009.

During drilling, visual classifications of the soils encountered were made from cuttings and soil samples. Typically, drive samples were collected just below the ground surface or under the pavement structural section to a depth of approximately 6 feet and at intervals thereafter of about 2 to 5 feet. Bulk samples of the subgrade materials were also collected for R-value testing. After the borings were completed, the approximate locations were measured from known landmarks. The approximate ground surface elevation at boring locations was determined by interpolation from available topographic maps.

A representative of URS supervised the drilling operations and soil sampling. The soil samples collected were labeled and sealed immediately to preserve their natural moisture content. At completion of the exploration, samples were delivered to the laboratory for further examination and testing. Descriptions of individual laboratory tests and results are presented in Appendix D, “Laboratory Tests,” and on the Boring Records in Appendix C. A summary of laboratory test results is presented in Table 3-1.

Comprehensive descriptions of the soils encountered at each boring, together with field and laboratory test data are presented on the Boring Records.

3.2 SUBSURFACE CONDITIONS

3.2.1 General

All explorations (auger, rotary wash borings, and CPT's) were located in the paved shoulder, in the future traveled way, within bridge areas (existing or replace), or near future retaining walls. The pavement sections encountered in these explorations are presented previously in Section 2 "Existing Structural Pavement Sections".

3.2.2 Subsurface Conditions

Alluvium was encountered in all of the borings either beginning at the ground surface or underlying the road base and fill materials. An existing pavement section typically consisting of asphalt concrete overlying aggregate base material was encountered in a number of borings; this information is summarized in Section 2.3 "Structural Pavement Section". Borings at creek crossings (R-09-001, R-09-004, and R-09-005) encountered fill that ranges from about 3 feet thick to as much as 9½ feet in thickness. Eight feet of fill was encountered in Boring R-09-001 on the southern bridge abutment at Matadero Creek, 9.5 feet of fill was encountered in Boring R-09-004 on the northern bridge abutment at Adobe Creek, and 3 feet of fill was encountered in Boring R-09-005 on the southern end of box culvert at Permenente Creek. The fill consisted of locally derived clay and sand with gravel.

The alluvium consists of complexly interbedded lean and fat clay, clayey, silty sand, and well-graded sand with silt. In general, the clay alluvium is soft to very stiff and the sand interbeds are medium dense to dense. Fine grained soils encountered at shallow depths (less than 10 feet) from southern end of Permanente Creek northward to about San Antonio Road Overcrossing are generally classified as lean clay. Fine grained soils encountered north of San Antonio Road overcrossing to the end of project at Oregon Expressway at shallow depths are mainly classified as fat clay. North of San Antonio Road overcrossing fine grained soils encountered at shallow depths are generally soft to stiff in consistency. Fine grained soils south of San Antonio Road overcrossing are generally medium to very stiff in consistency. Fine grained soils encountered between depths of 10 to 50 feet are generally classified as medium stiff to stiff lean clay and soils below depths of 50 feet are alternating layers of medium stiff to very stiff lean and fat clay.

3.2.3 Groundwater

Groundwater was encountered in 28 out of 91 explorations (borings and CPTs) performed. The groundwater depths encountered in 28 explorations are summarized in the following table.

Table 3-2 Groundwater Measurements

Boring Number	Water Depth (feet)	Total Boring Depth (feet)	Drilling Method	Comments
A-09-103	9	10.0	Hollow Stem Auger	
CPT-09-106	13.2	45	Cone Penetration Test	Groundwater depth calculated from dissipation test results
A-09-185	11	35.0	Hollow Stem Auger	
A-09-184	12	35.0	Hollow Stem Auger	
R-09-001	Not Measured	101.5	Rotary Wash	Dry to 7.5 feet
A-09-183	13.5	36.5	Hollow Stem Auger	
A-09-182	8	35.0	Hollow Stem Auger	
A-09-121	3	10.0	Hollow Stem Auger	
A-09-181	28	36.5	Hollow Stem Auger	
A-09-180	10.5	36.5	Hollow Stem Auger	
A-09-125	3	10.0	Hollow Stem Auger	
A-09-179	9.0	36.5	Hollow Stem Auger	
R-09-004	Not Measured	101.5	Rotary Wash	Dry to 9.0 feet
CPT-09-003	21.8	100	Cone Penetration Test	Groundwater depth calculated from dissipation test results
A-09-178	12	35.0	Hollow Stem Auger	
A-09-138	7.5	10.0	Hollow Stem Auger	
A-09-152	12	35.0	Hollow Stem Auger	
A-09-153	8	35.0	Hollow Stem Auger	
A-09-154	15	36.5	Hollow Stem Auger	
A-09-177	15	36.5	Hollow Stem Auger	
A-09-159	8	10.0	Hollow Stem Auger	
A-09-160	8	10.0	Hollow Stem Auger	
A-09-161	10	36.5	Hollow Stem Auger	
A-09-162	8	10.0	Hollow Stem Auger	
A-09-164	8	36.5	Hollow Stem Auger	
R-09-005	Not Measured	51.5	Rotary Wash	Dry to 8.5 feet
A-09-169	10	35.0	Hollow Stem Auger	
A-09-170	7.5	10	Hollow Stem Auger	
A-09-171	10.5	40	Hollow Stem Auger	
A-09-174	10	11.5	Hollow Stem Auger	
A-09-175	8	36.5	Hollow Stem Auger	

All of the deeper exploratory borings completed at the creek crossings were drilled with rotary wash drilling methods and immediately backfilled with a mixture of cement and bentonite grout at completion of drilling; therefore, reliable groundwater depths could not be measured in these borings.

A profile of groundwater depth (of the above listed A, R, and CPT series borings) versus stationing is shown in Figure 3-18; it should be understood that water depths at many locations were not available due to the shallow depth of the borings (10 to 11.5 feet).

Several of the exploratory borings completed by Klienfelder (2000) were drilled using hollow-stem auger drilling methods, which allowed for the groundwater level to be measured at time of drilling. The depth to groundwater ranged from about 10 to 25 feet below ground surface (bgs), or about Elevation 10 to 20 feet. Several of these borings were completed in clayey soils and the groundwater level measurements at time of drilling were likely not stabilized. Groundwater levels encountered in the Klienfelder borings are also shown in Figure 3-18.

From Figure 3-18, we can infer that in the northern section of the project where ground surface elevations are lower, the groundwater level is expected to be around Elevation 2 to 4 feet, similar to the surface water level in Matadero and Adobe Creeks. Furthermore, on the upgrade south of Station 150+00 depth of groundwater varies considerably from about Elevation 4 to 15 feet. The groundwater level is probably subject to some influence of tidal fluctuation. No groundwater springs or seeps were observed on or near the project alignment. Groundwater levels may vary considerably in the area with seasonal rainfall or with tidal cycles.

4.1 REGIONAL TECTONIC SETTING AND SEISMICITY

The Santa Clara Valley is located between the active San Andreas fault to the west, and the Hayward and Calaveras faults to the east as shown in Figure 4-1 of this report. Each of these faults has produced damaging earthquakes during historic time. The valley margins are marked by belts of active thrust faults; the Foothills fault system to the southwest and the East Valley thrusts to the northeast (Fenton and Hitchcock, 2002).

The Foothills fault system is a series of southwest-dipping thrust faults located along the range front of the Santa Cruz Mountains (Bürgmann et al., 1994). The Monte Vista-Shannon, Cascade and Sargent faults are the main active faults in the Foothills thrust system. The Monte Vista-Shannon fault zone is approximately 27 miles long and dips at a moderate angle to the southwest, merging with the San Andreas fault at depth. The Cascade fault is approximately 22 miles long. The Sargent fault is approximately 35 miles long and merges with the San Andreas fault near Loma Prieta.

The East Valley thrusts are a series of northeast-dipping thrust faults that mark the junction between the southern end of the Hayward fault and the southern and central segments of the Calaveras fault. These faults, which include the Quimby, Piercy, Evergreen, Silver Creek, Coyote Creek, Berryessa, Crosley, and Warm Springs faults, are relatively short, less than 19 miles long, and appear to merge with the Calaveras faults at relatively shallow depths (Jones et al., 1994). Recent geologic and geomorphic investigations along both the Foothills and East Valley thrust systems indicate that they are active and may be capable of generating damaging earthquakes (Hitchcock and Kelson, 1999; Fenton and Hitchcock, 2002).

The closest active faults to the project alignment are the Cascade, Monte Vista-Shannon, Silver Creek, San Andreas and Hayward faults (Caltrans Deterministic PGA Map, 2007). The Caltrans Seismic Map (Mualchin, 1996) divides the Monte Vista fault into west and east branches. In the 2007 Caltrans Deterministic PGA Map the Monte Vista East fault has been renamed as Cascade fault. The California Geological Survey (2000) has produced maps showing Alquist-Priolo Earthquake Fault Zones along faults with known Holocene activity that pose a potential surface faulting hazard. The San Andreas and Hayward faults are included as Alquist-Priolo (A-P) zoned faults, however the Monte Vista-Shannon and Cascade faults are not.

The closest fault to the site is the Cascade fault, located about 2.7 miles southwest of the southern end of the project site. The Monte Vista-Shannon fault is located about 4 miles at its closest point at the southern end of the project. Silver Creek fault generally parallels U.S.101 in the project areas and is located about 6 miles northeast of the site. The San Andreas fault generally parallels U.S. 101 and is located about 7.5 miles southwest of the site. The Hayward fault also generally parallels the road alignment and is located about 10.8 miles northeast of the site. Figure 4-1 shows active faults within the site region relative to the project.

The following paragraphs are brief descriptions of the nearby active faults.

4.1.1 Foothills Thrust Belt (Monte Vista-Shannon and Cascade Faults)

The southwestern margin of the Santa Clara Valley is bounded by the rugged, young southern Santa Cruz Mountains. Late Cenozoic uplift of the mountains has occurred, in part, along a series of northwest-striking reverse faults, known as either the Loma Prieta domain (Aydin and

Page, 1984) or Foothills thrust belt (Bürgmann *et al.*, 1994), bordering the northeastern margin of the range front. Bounded by the main trace of the San Andreas fault to the west, this sequence of southwest-dipping thrusts, associated with a restraining left bend in the San Andreas fault, has been responsible for the uplift of the Santa Cruz Mountains (Bürgmann *et al.*, 1994). These faults offset the Pliocene and Pleistocene Santa Clara Formation, and locally offset and deform overlying Quaternary sediments and geomorphic surfaces within the range-front communities of Palo Alto, Los Altos Hills, Cupertino, Saratoga, and Los Gatos, located along the southwestern margin of the Santa Clara Valley (Hitchcock and Kelson 1999; Hitchcock *et al.* 1994). The up-dip projection of the blind Loma Prieta fault, which is interpreted to have been the source of the 1989 **M** 6.9 Loma Prieta earthquake (Bürgmann *et al.*, 1994), coincides with the Foothills thrust belt.

The Monte Vista-Shannon fault is one of the primary range-front faults and probably the most extensively studied fault in the Foothills thrust belt. The exposed fault strikes northwest and places Franciscan, Miocene, Santa Clara Formation, and Pleistocene alluvium over Pleistocene and older strata. To the south, the fault merges with the Shannon fault, while at its northern end it intersects the San Andreas, via the Hermit fault, between Woodside and Redwood City. Limited exploratory trenching indicates that the Monte Vista-Shannon fault has had late Quaternary and possibly Holocene displacement. Recent geomorphic mapping by Hitchcock *et al.* (1994) shows that late Pleistocene fluvial terraces flanking Stevens Creek are deformed. The style of late Quaternary deformation affecting these terrace surfaces is consistent with reverse faulting on the Monte Vista faults. Hitchcock and Kelson (1999) estimated an average late Pleistocene slip rate of 0.0067 ± 0.0035 in/yr for the Monte Vista-Shannon fault.

The Cascade fault traverses the coalescent alluvial-fan complex underlying the Santa Clara Valley approximately 1 to 4 miles northeast of the Santa Cruz Mountains range front. Hitchcock et al. (1994) show a strong correlation between the mapped trace of the Cascade fault and fault-related geomorphic features, including vegetation lineaments, closed depressions, linear drainages, stream profile convexities, and high-sinuosity stream reaches. These features are developed in late Pleistocene (and possibly Holocene) displacement along the Cascade fault. Between Los Altos Hills and Los Gatos, most of the major streams show longitudinal profile convexities where they cross mapped trace of the Cascade fault. In general, the crests of the convexities coincide with the zone of lineaments. These relations indicate late Pleistocene uplift along this section of the Cascade fault (Hitchcock et al., 1994). Although this provides little or no information on the sense of slip and the amount and direction of the fault dip, it is likely that the Cascade fault is a southwest dipping, northeast vergent reverse fault similar to, but perhaps having a shallower dip in the near surface than the Monte Vista-Shannon fault (Fenton and Hitchcock, 2001).

4.1.2 Silver Creek Fault Zone

The Silver Creek fault is mapped as steep, east dipping oblique reverse fault with an exposed well documented southern fault section and an inferred northern section buried beneath late Quatenary sediments of Santa Clara Valley. The southern section extends approximately 19 miles from the Anderson Reservoir, northeast of Morgan Hill, where it splays from the Coyote Creek fault to the mouth of the Silver Creek Valley, southwest of the town of Evergreen. Northern section is approximately 25 miles long beneath Santa Clara Valley, extending from Silver Creek Valley to Alameda Creek in Fremont (Fenton and Hitchcock, 2001).

4.1.3 San Andreas Fault Zone

The dominant active fault structure in this region is the San Andreas fault. The fault extends from the Gulf of California, Mexico, to Point Delgada on the Mendocino Coast in northern California, a total distance of 746 miles. The San Andreas fault accommodates the majority of the motion between the Pacific and North American plates. This fault is the largest active fault in California and is responsible for the largest known earthquake in Northern California, the 1906 **M** 7.9 San Francisco earthquake (Wallace, 1990). Movement on the San Andreas fault is right-lateral strike-slip, with a total offset of some 348 miles (Irwin, 1990). In northern California, the San Andreas fault is clearly delineated, striking northwest, approximately parallel to the vector of plate motion between the Pacific and North American plates. Over most of its length, the San Andreas fault is a relatively simple, linear fault trace. Immediately south of the Bay, however, the fault splits into a number of branch faults or splays, including the Calaveras and Hayward faults. In the Bay Area, the main trace of the San Andreas fault forms a linear depression along the Peninsula, occupied by the Crystal Springs and San Andreas Lake reservoirs. Geomorphic evidence for Holocene faulting includes fault scarps in Holocene deposits, right-laterally offset streams, shutter ridges, and closed linear depressions (Wallace, 1990). The 1906 earthquake resulted from rupture of the fault from San Juan Bautista north to Point Delgada, a distance of approximately 295 miles. The average amount of slip on the fault during this earthquake was 16.7 feet in the area to the north of the Golden Gate and 8.2 feet in the Santa Cruz Mountains (WGNCEP, 1996).

Based on differences in geomorphic expression, fault geometry, paleoseismic chronology, slip rate, seismicity, and historic fault ruptures, the San Andreas fault is divided into a number of fault segments. Each of these segments is capable of rupturing either independently or in conjunction with adjacent segments. In the Bay Area, these segments include the Santa Cruz Mountains, the Peninsula, and the North Coast segments. These fault segments have calculated maximum earthquakes of **M** 7.2, 7.3, and 7.7, respectively. The North Coast segment may also be subdivided into two shorter segments with a boundary at Point Arena. These northern and southern North Coast segments are capable of generating earthquakes of **M** 7.5 and 7.7, respectively.

South of the Golden Gate, the fault slip rate is 0.67 ± 0.27 in/yr (Hall *et al.*, 1999). North of the Golden Gate, the slip rate increases to 0.94 ± 0.20 in/yr (Niemi and Hall, 1992). WGCEP (1999) assigns a recurrence interval of 361 years to a **M** 8.0 1906-type event on the San Andreas fault, with a 21 percent probability of a **M** 6.7 or larger earthquake on the San Andreas in northern California in the time period 2000 to 2030. Recent investigations indicate that the repeat time for large earthquakes on the North Coast segment may be less than 250 years.

4.1.4 Hayward Fault

The Hayward fault extends for 62 miles from the area of Mount Misery, east of San Jose, to Point Pinole on San Pablo Bay. At Point Pinole, the Hayward fault runs into San Pablo Bay. The northern continuation of this fault system is the Rodgers Creek fault. The two faults are separated by a 3.1 mile wide right step beneath San Pablo Bay. Systematic right-lateral geomorphic offsets and creep offset of cultural features have been well documented along the entire length of the fault (Lienkaemper, 1992). The last major earthquake on the Hayward fault, in October 1868, occurred along the southern segment of the fault. This **M** 6.8 event caused

toppling of buildings in Hayward and other localities within about 3.1 miles of the fault. The surface rupture associated with this earthquake is thought to have extended for approximately 18.6 miles, from Warm Springs to San Leandro, with a maximum reported displacement of 3.3 feet. The Hayward fault is considered the most likely source of the next major earthquake in the Bay Area (WGCEP, 1999). As well as undergoing displacement earthquake ruptures, the Hayward fault also moves by a seismic creep. Measurements along the fault over the last two decades show that the creep rate is 0.2 to 0.35 in/yr (Lienkaemper and Galehouse, 1997).

4.2 PEAK BEDROCK ACCELERATION

The active faults close to the U.S.101 Materdero Creek Bridge are the Hayward, Cascade, and San Andreas faults. The Hayward, Cascade, and San Andreas faults are designated with Maximum Credible Earthquake (MCE) magnitudes of 7.5, 6.9, and 8.0, respectively, on the 2007 Caltrans fault database. The Cascade and San Andreas faults are expected to contribute the same level of ground shaking at the site (0.5g) while the Hayward fault should produce lower shaking (0.4g). The MCE, therefore, is the earthquake on the San Andreas Fault since it potentially releases the highest energy (**M**=8.0) and result in the strongest shaking at the site. The distance from the project site to the San Andreas fault is approximately 7.5 miles.

Table 4-1 Seismic Source Parameters

Fault	Type	MCE	Distance (miles)	Near Field Effects ?
Cascade	Reverse	6.9	2.7	N
San Andreas	strike-slip	8.0	7.5	Y
Hayward	strike-slip	7.5	10.7	Y

4.3 POTENTIAL GEOLOGIC HAZARDS

4.3.1 Surface Fault Displacement and Ground Shaking

The project alignment does not cross any known active faults or mapped Alquist-Priolo (A-P) zoned faults. The Santa Clara County geologic hazard maps (2002) do not show the road alignment crossing any fault hazard rupture zones. Surface rupture due to faulting along the alignment, therefore, is not expected to occur. However, the short distance to the Cascade, San Andreas and Hayward faults does create a high risk for ground shaking from fault movement. The intensity of the ground shaking is dependent upon the size of the earthquake, the distance of the epicenter from the site, the direction that the earthquake propagates along the fault, and the site geologic conditions. Section 4.2 “Peak Bedrock Acceleration” discusses the anticipated seismic shaking from these faults.

4.3.2 Landslides

U.S 101 is on relatively flat ground along the project alignment and is not subject to landsliding. The project site is not within a landslide hazard zone on hazard maps published by Santa Clara

County (2002), or on the CGS Earthquake-Induced Landslide hazard zone map (2001). Landsliding is not a potential hazard.

4.3.3 Liquefaction

Liquefaction is a phenomenon whereby sediments temporarily lose shear strength and collapse. This condition is caused by cyclic loading during earthquake shaking that generates high pore water pressures within the sediments. The soil type most susceptible to liquefaction is loose, cohesionless, granular soil below the water table and within about 50 feet of the ground surface. Liquefaction can result in loss of foundation support and settlement of overlying structures, ground subsidence and translation due to lateral spreading, lurch cracking, and differential settlement of affected deposits. Lateral spreading occurs when a layer liquefies at depth and causes horizontal movement or displacement of the overburden mass toward a free face such as a stream bank or excavation, or toward an open body of water.

Several liquefaction hazard maps have been prepared for the project area including: Santa Clara County Liquefaction Hazard Zone maps (2002), the California Geological Survey Liquefaction hazard zone map for Mountain View Quadrangle (CGS, 2001), and the liquefaction hazard map for Palo Alto/Stanford, Scenario:1906 San Francisco Earthquake (ABAG, 2001). All of these maps show the U.S. 101 alignment to be within a liquefaction hazard zone ranging from "moderate" to "very high" susceptibility. In a regional study of the nine-county San Francisco Bay region for the U.S. Geological Survey, Witter et al. (2006) mapped the liquefaction susceptibility of the site soils along the project alignment related primarily to the mapped geologic units. The alluvial fan deposits – fine grained facies, mapped from the south end of the project at Permanente Creek to about Adobe Creek, are shown as having "moderate" liquefaction susceptibility. The artificial fill over the Bay Mud soils between about Adobe Creek and the north end of the project are shown as having "very high" liquefaction susceptibility. Several historic ground failures from both the Loma Prieta earthquake and the 1906 San Francisco earthquake have been recorded in the Bay Mud tidal flats between the freeway and the San Francisco Bay margin including disturbed water wells, ground settlement and miscellaneous effects (Knudsen, et al, 2000).

For design, we estimated the potential post-liquefaction settlement at a number of borings and CPTs using the computer program LIQUEFY PRO[1] for peak ground acceleration of 0.5g and design earthquake moment magnitude, **M**, of 8.0. The results of these studies are presented in Appendix E. A summary of our findings is presented in Tables 4-2 and 4-3, including factors of safety (FOS). FOS is defined as the ratio of cyclic resistance ratio (CRR)[the cyclic stress ratio required to induce liquefaction for a cohesionless soil stratum at a given depth] to the earthquake-induced cyclic stress ratio (CSR) at that depth from a specified design earthquake

[1] LIQUEFY PRO is a software program that evaluates liquefaction potential and calculates settlement of a soil deposit due to seismic loads. The program is based on methods recommended in the 2001 NCEER Workshop and 2008 Edition of SP117 Implementation. The seismic load is estimated with Seed's simplified method (Seed, 1971), which gives a Cyclic Stress Ratio (CSR) that is compared with the Cyclic Resistance Ratio (CRR) of the soil. The CRR calculation is based upon input data from common in-situ tests such as SPT and CPT. Because the BPT-test is more appropriate for gravel type soils the user can also use BPT data as input for the liquefaction analysis. The program finally makes an estimate of the earthquake-induced settlements using the results from the liquefaction evaluation. The software was developed by CivilTech Software, located in the Seattle-Bellevue area.

(defined by a peak ground surface acceleration and an associated earthquake moment magnitude).

Based on results of exploratory borings, the FOS for each granular layer is summarized in Table 4-2. As shown, the FOS for liquefaction prone layers (LPL) ranges from about 0.3 to 0.7 (rounded off to the nearest 0.1).

For CPTs, readings are taken at smaller vertical intervals (than for exploratory borings) of 0.164 feet (0.05 m); FOS for CPTs are tabulated in Table 4-3. As shown, the FOS for LPL ranges from about 0.2 to 0.9.

Based on our analyses, we estimate that post-liquefaction settlement in these borings and CPTs could be on the order of less than ¼ to 2¾ inches.

4.3.4 Subsidence and Settlement

Subsidence typically occurs as a result of subsurface fluid extraction (e.g. groundwater, petroleum) or compression of soft, geologically young sediments such as the bay mud soils. Settlement can occur quickly when soil is loaded by a structure or by the placement of fill on top of soil, or it can also occur gradually when soil pore pressures, increased by vertical loading, gradually dissipate over time. This second type is termed consolidation settlement. The soft, young Bay Mud soils underlying the northern portion of the project are susceptible to subsidence and consolidation settlement.

Compaction settlement, or seismic densification, occurs when loose granular soils above the water table increase in density as a result of earthquake shaking. The soil densification can result in differential settlement because of variations in soil composition, thickness, and initial density. As discussed in Section 3.2 “Subsurface Conditions”, occasional layers of medium dense granular soils were encountered at few locations along the project alignment. These granular layers may be subject to cyclic densification during strong ground shaking.

For design, we estimated the potential post-earthquake settlement at all CPT locations ranging in depth from 45 to 100 feet and using the computer program LIQUEFY PRO. In our analyses we used a peak ground acceleration of 0.5g and design earthquake moment magnitude of 8.0. The results of these studies are presented in Appendix E. Based on our analyses, we estimate compaction settlement of less than ¼ inch.

4.3.5 Flooding

The project alignment south of the North Rengstorff Avenue overcrossing is located outside of the 100-year flood zone as shown on the FEMA Flood Insurance Rate Maps (FEMA, 2009). The alignment north of the North Rengstorff Avenue overcrossing is within the 100-year flood zone.

4.4 SCOUR

The closest creek is located approximately 1,000 feet from the retaining wall structure beginning at Station 198+09; therefore scour is not an issue for retaining wall foundation design. Scour issues at Adobe Creek Bridge, Matadero Creek Bridge, and Permanante Creek box culvert are discussed in the following paragraphs.

Caltrans February 2006 Bridge Inspection Report describes the Adobe Creek Channel as trapezoidal with concrete lined side slopes and an earth bottom. The report also states that no scour problems are suspected. Based on the project hydraulic analysis (WRECO, 2009), we understand that a total scour depth of 2.5 feet is expected at the Adobe Creek bottom.

Caltrans February 2006 Bridge Inspection Report describes the Matadero Creek Channel as trapezoidal with concrete lined side slopes and an earth bottom. However, an as-built plan for a fish channel construction by the Santa Clara Valley Water District, dated April 1990, indicates that concrete lining was constructed along the channel bottom. Since the channel is concrete-lined, the potential of scour related issues at the foundations are unlikely.

Based on a review of Permanente Creek as-built drawings and a field visit, it is our understanding that the channel bed and side slopes are lined with concrete to a distance of approximately 100 feet on both upstream and downstream ends of the channel. No scour issues are anticipated at the Permanente Creek crossing.

5.1 STRUCTURAL SECTION DESIGN PARAMETERS

Structural section designs described in the following paragraphs follow in general the Caltrans Highway Design Manual dated July 24, 2009, Chapters 600-670 "Pavement Engineering", and in particular Chapter 630 "Flexible Pavement".

Acronyms used in this section are defined in Section 2.1 "Original Construction".

We also followed these guidelines in developing the new structural pavement sections:

- Total overlay thickness is 0.15 foot, as discussed in Section 5.4 "Pavement Overlay". Overlay includes RHMA-G (0.15 foot thick) on top of existing structural section.
- For Northbound lanes, the improvement will include grinding and overlay, whereas for the Southbound lanes, it will be overlay only.

5.1.1 Traffic Data

The projected traffic loading for the U.S.101 Auxiliary Lane design is given in terms of traffic indices (TI). The TI for a 40-year design life for the mainline segment and 20-year design life for the ramps was determined by URS in agreement with Caltrans. Accordingly, a TI of 14.5 applies for all mainline lanes and TI of 10 applies for all ramps.

5.2 SUBGRADE CONDITIONS

5.2.1 Untreated Subgrade

The subgrade conditions beneath the areas of the proposed roadway and ramp modifications were revealed by the exploratory borings listed previously in Section 3.1 entitled "Field Exploration." Sixteen bulk samples were retrieved from the borings along U.S. 101, and all were submitted to R-value testing; the test results are summarized in the table below and in Appendix F.

Table 5-1 R-Value Test Results

Boring	R-Value	Plasticity Index	Soil Description	Depth Interval (feet)	Control Line/ Stationing (feet)	Offset (feet) (1)	Traffic Direction (2)
A-09-101	12		CL	2-5	"C" 39+82	Rt 298	Ramp
A-09-103	12		CL	2-5	"C" 44+81	Lt 218	Ramp
A-09-104	10		CL	2-5	"C" 46+83	Lt 93	NB
A-09-107	4	56	CH	2-5	"C" 52+65	Rt 60	SB
A-09-111	12		CL	2-5	"C" 63+02	Lt 67	NB
A-09-116	16		CL	2-5	"C" 77+47	Rt 51	SB
A-09-125	15		CL	2-5	"C" 95+09	Lt 70	NB

Table 5-1 R-Value Test Results

Boring	R-Value	Plasticity Index	Soil Description	Depth Interval (feet)	Control Line/ Stationing (feet)	Offset (feet) (1)	Traffic Direction (2)
A-09-131	12		CL	2-5	"C" 107+62	Rt 74	SB
A-09-134	10		CL	2-5	"C" 117+01	Lt 62	NB
A-09-138	13	49	CH	2-5	"C" 125+00	Lt 65	NB
A-09-137	6		CH	3.5-5	"C" 125+22	Lt 238	Ramp
O-09-186	41		CL	2-5	"C" 128+69	Lt 206	Ramp
O-09-188	41		CL	1-3	"C" 125+50	Rt 120	Ramp
A-09-143	10		CH	2-5	"C" 126+66	Rt 67	SB
A-09-140	5, 11	28	SM/CH	2-5	"C" 129+00	Lt 67	NB
O-09-189	58		CL	1-3	"C" 131+50	Rt 90	Ramp
O-09-190	59		CL	1-3	"C" 135+00	Lt 150	Ramp
A-09-145	10	39	CH	2-5	"C" 135+15	Rt 66	SB
A-09-153	11		CH	2-5	"C" 153+41	Rt 66	SB
O-09-192	43		CL	1-3	"C" 159+75	Lt 112	Ramp
A-09-157	30		CL/CH	2-5	"C" 166+08	Lt 185	Ramp
O-09-193	27		CL/CH	1-3	"C" 166+10	Lt 185	Ramp
O-09-194	10		CH	1-3	"C" 168+20	Rt 200	Ramp
A-09-161	6		CH	2-5	"C" 172+63	Lt 87	NB
A-09-166	11		CL	2-5	"C" 183+18	Rt 60	SB
A-09-170	60		CL	2-5	"C" 198+30	Lt 120	Ramp
A-09-172	63		SM/CH	2-5	"C" 200+95	Lt 67	NB
A-09-177	13		CH	2-5	"C" 166+45	Lt 86	NB/Ramp
O-09-196	40		SM	1-3	"C" 202+00	Rt 130	Ramp
A-09-175	41		CH	2-5	"C" 210+05	Rt 85	SB
O-09-197	61		SM	1-3	"C" 216+00	Rt 250	Ramp

1. Lt = Left, Rt = Right
2. NB = Northbound, SB = Southbound

Caltrans defines an "expansive subgrade" as soil with a plasticity index (PI) greater than 12 and California R-value less than 10. On this basis the samples from A-09-107, A-09-140 and A-09-161 fall in this category or are close to this category. According to Caltrans Highway Design Manual (HDM) Section 614.4 "Expansive Soils" require special engineering or

construction considerations. One of the common options is to remove the expansive soils to a depth where seasonal moisture content is relatively constant. Shallow (less than 10 feet bgs) fat clay was encountered throughout the project alignment; in most cases the top of fat clay was observed at depths ranging from 3 to 8 feet. Based on our engineering experience, depth of seasonal moisture change in soils occurs within the upper 3 feet. Therefore, the majority of borings reveal that the soils should not experience seasonal fluctuation of moisture content in fat clays and no remedial treatment of fat clays below 3 feet is anticipated. As presented in subsequent Section 5.3 "New Structural Pavement Sections" for mainline travelway, the total structural pavement thickness ranges from 2.85 to 3.10 feet and will consist of non-expansive import material which extends to a depth of about 3 feet bgs. No borings drilled in the ramp locations encountered potentially expansive soils (CH) except a hand-auger sample, O-09-194, located near the U.S. 101 SB off ramp at Rengstorff Avenue. Consequently, swelling and shrinkage is not anticipated within and below the new pavement section, except that at U.S. 101 Southbound (SB) on and off ramps at Rengstorff Avenue. For the SB Rengstorff Avenue on-ramp and off-ramp, the planned AS layer of the structural section should be thickened to achieve a total pavement thickness of at least 3 feet in order to minimize expansive potential of the subgrade.

R-value tests were performed on bulk samples obtained from the subgrade directly under the existing asphalt concrete and aggregate base structural pavement (shoulder) or on fill or native soil in the unpaved shoulder area at depths in the upper 2 to 5 feet. As shown in the above table, the results of the tests range from an R-value of 4 to 63 for the sixteen soil samples. However, in order to assign design R-values we plotted the numerical distribution of R-values in Figure 5-1 and the distribution of R-values along the alignment in Figure 5-2. As shown on Figure 5-1, R-values fall in a wide range of 4 to 63. The geographical distribution of R-values is shown in Figure 5-2.

Twelve R-value tests were performed by Kleinfelder as part of the Route 85/U.S.101 Interchange project, that ranged from less than 5 to 38. R-value tests performed as part of the above mentioned project by Kleinfelder that are within the current project limits are also shown on Figure 5-2. We reviewed the Profile Grade sheets, which show minimal cut or fill below present grade (generally 0 to 4 feet). On this basis, the selected R-values of the anticipated subgrade soils are summarized in the following table.

Table 5-2 Subgrade Design R-values

Northbound/ Southbound	Approximate "A-1" Line Station Limits (feet)		Segment Length (feet)	Design R-value	Boring Number
	From	To			
NB	51+62	129+00	7,738	10	A-09-104, A-09-111, A-09-125, A-09-134, A-09-138
NB	129+00	214+00	8,500	5	A-09-140, A-09-161, A-09-172
SB	47+29	53+00	571	5	A-09-107
SB	53+00	215+00	16,200	10	A-09-116, A-09-131, A-09-143, A-09-145, A-09-153, A-09-166, A-09-175

As shown in Table 5-2, the selected design R-values range from 5 to 10. According to HDM Section 614.5, Subgrade Enhancement Geotextile (SEG), locations that may require placement of SEG include areas with "low undrained shear strength (equivalent to California R-value < 20). Although individual R-value tests indicate certain portions of the project alignment could be higher than 20, it will be prudent to include SEG for all new pavement sections to facilitate ease of construction and to minimize questions from the Contractor during construction.

5.2.2 Lime Treated Subgrade

Soil (subgrade) stabilization (or treatment) implies improvement of subgrade soil so that it can be used as subbase for flexible pavement. In addition, the R-value of the subgrade can be increased with a stabilizing agent such as lime. According to Caltrans Highway Design Manual Section 614.4 "Expansive Soils" require special engineering or construction considerations. Based on these criteria, review of Table 5-2 and subsurface data, we conducted a laboratory subgrade stabilization testing program on soil samples where the design R-value is 5. Based on a review of available subsurface data, expansive soils were encountered at shallow depths in northbound between Stations 125+00 to 137+00, 169+00 to 182+00 and southbound between Stations 49+00 and 53+00. The purpose of the laboratory testing program is to evaluate whether subgrade improvements can be achieved. Quicklime (or lime) is often used with lean clays or fat clays to reduce plasticity and swelling potential, as well as increase the workability and R-value.

Based on the distribution of R-values (without additives) shown on Figure 5-2, we undertook a stabilization program using Quicklime as summarized in Table 5-3.

Table 5-3 Lime Treated Bulk Samples Summary

Batch No.	Combine Bulk Samples from Borings	Station Limits of Bulk Samples		Trial Additive Contents (%) Quicklime
		From	To	
1	A-09-139, A-09-140, and A-09-146	128+69	137+16	3, 5, 7
2	A-09-161, A-09-163, and A-09-165	172+63	182+06	3, 5, 7

These tests were performed in accordance with California Test 373, "Unconfined Compressive Strength of Lime Treated Soils and Aggregates", to determine the optimum percentage of the additive. For each batch, laboratory tests were performed on bulk samples (before Quicklime was added) to include gradation, plasticity index and R-value. The details of the laboratory tests are presented in Appendix D. The laboratory test results are summarized in the following table.

Table 5-4 Bulk Sample Test Results/California Test 373 Results

Batch No.	Without Agent				% Agent where Qu ≥ 300 psi
	Soil Type	LL	PI	R-value	
1	CH	64	46	14	3 (447 psi) 5 (492 psi) 7 (459 psi)
2	SC	38	20	19	3 (332 psi) 5 (349 psi)
3*	SC	38	24	17	N/A

* Batch 3 consists of bulk samples from borings A-09-102, A-09-105 and A-09-107

The laboratory tests performed on soil samples and lime were consistent with Caltrans approved testing guidelines. Two bulk samples of subgrade one each between northbound Stations 172+63 and 182+06 (Batch 2) and southbound Stations 47+29 and 53+00 (Batch 3) were each classified as clayey sand (SC). California Test 373 was not performed on Batch 3 as the mixture was classified as clayey sand (SC). However, lime treatment is mainly applicable to clay subgrade soils. Although the bulk samples between the above mentioned stations were classified as clayey sand (SC), based on a review of subsurface data, we believe a majority of the subgrade in northbound between Stations 169+00 to 182+00 and southbound between Stations 49+00 to 53+00 is expansive material. Furthermore, the subgrade bulk sample between northbound Stations 129+00 to 137+00 (Batch 1) was classified as fat clay (CH).

Based on exploratory data and the batch testing results, we believe the following segments of the proposed widening could benefit from lime treatment of subgrade:

- Southbound, "C" Station 49+00 to 53+00
- Northbound. "C" Station 125+00 to 137+00

- Northbound, "C" Station 169+00 to 182+00

Based on the above test results, for cost estimating purposes we preliminarily recommend that 5 percent Quicklime be used throughout the alignment where subgrade treatment is proposed. If lime treated subgrade was substituted for aggregate subbase in flexible (HMA) pavement design, the actual thickness should be obtained by dividing the gravel equivalent (GE) by the appropriate gravel factor (G_f) determined as follows, based on the unconfined compressive strength (UCS) in units of psi.

$$G_f = 0.9 + \frac{UCS}{1000}$$

Since the proposed design UCS is 400 psi (Batch1),

$$G_f = 0.9 + \frac{400}{1000} = 0.9 + 0.4 = 1.30$$

The above mentioned lime treatment tests and recommendations are intended to provide a basis for evaluating the feasibility of lime treatment of subgrade soils, in the event if the Contractor proposes a CRIP for lime treatment of subgrade in lieu of aggregate subbase. It is recommended that more tests be performed on the fat clays by the Contractor if he proposes a CRIP for lime treated subbase. No lime treated subbase layers are proposed for the PS&E package at this time.

5.3 NEW STRUCTURAL PAVEMENT SECTIONS

5.3.1 Background

Where Portland Cement Concrete (PCC) is part of the existing mainline pavement section, along southbound U.S.101, the PCC section will be overlayed with RHMA. Where new pavement is required adjacent to existing PCC, the new pavement will consist of a AC/LCB/AS structural section. We have analyzed structural pavement design, numbered Structural Pavement Cross Sections (SPCS) 1 through 4 for mainline and shoulders. Based on our analysis for the design considerations discussed above, we recommend the following minimum structural sections.

5.3.2 RHMA Considerations

Consideration was given to Rubberized Hot Mix Asphalt Concrete (RHMA) as a structural course. RHMA is formulated by mixing granulated (crumb) rubber with hot asphalt to form an elastic binder with less susceptibility to temperature changes. The rubberized asphalt is substituted for the regular asphalt as the binder for the flexible pavement. RHMA is generally specified to retard reflection cracking, resist thermal stresses created by wide temperature variations and add flexibility to a structural overlay. Caltrans uses gap-graded (RHMA-G) and open-graded (RHMA-O) rubberized asphalt. The difference between the two is in the gradation of the aggregate. RHMA-O is used only as a non-structural wearing course. RHMA-G can be used as either a surface course or a non-structural wearing course. The minimum thickness for RHMA (any type) should be 0.10 foot for new construction and rehabilitation. For pavement preservation, RHMA may be placed as thin as 0.08 foot provided compaction requirements can be met. The maximum thickness for RHMA-G is 0.20 foot. The maximum thickness for

RHMA-O is 0.15 foot. It is undesirable to place RHMA-G or RHMA-O in areas that will not allow surface water to drain. As an example, a surface that is milled only on the traveled way and not on the shoulder forms a "bathtub" section that can trap water beneath the surface of the traveled way. To prevent this effect, RHMA-G should be placed over the whole cross section of the road (traveled way and shoulders). For this project RHMA-G is selected.

According to Section 39 of the 2006 Caltrans Standard Specifications, Hot Mix Asphalt (HMA) shall be placed only when the atmospheric temperature is above the following values:

Table 5-5 Hot Mix Asphalt Placement Temperatures

Type of Hot Mixed Asphalt	Specified Atmospheric Temperature ^{o}F
Type A	45 – 55
RHMA-G	55

We compared the specified placement temperatures to the recorded atmospheric temperatures at the Palo Alto weather station. The latter graph is presented in Figure 5-3 and shows the (1) average of all daily maximum temperatures recorded between 1971 and 2000, (2) average of all daily minimum (MINADT) temperatures recorded between 1971 and 2000, and (3) average of all daily average temperatures recorded between 1971 and 2000. We then superimposed the specific atmospheric temperatures for Type A (45°F) and RHMA (55°F) on Figure 5-3. Assuming the average of all daily average temperatures is the appropriate temperature criteria, we conclude, based on Figure 5-3, that RHMA should be placed no lower than atmospheric temperature of 55°F. In Palo Alto, the expected placement period is between about March 1 and November 1, which is a relatively large window of time.

In summary, the seasonal window of time for placement of Type A as well as RHMA is relatively large.

5.3.3 Recommended Northbound Mainline and Shoulder Sections from "C" Line Station 51+62 to 129+00 (SPCS 1)

Design Factors are TI = 14.5, R-value = 10, GE (required) = 4.18

Section Component	Thickness (feet)	Gravel Equivalent (feet)
RHMA-G	0.15	1.34
HMA (Type A)	0.65	
LCB*	0.90	1.71
Class 4 AS	1.15	1.15
SEG	--	--
Total		4.20

*It is understood that Caltrans recommends using lean concrete base for TI > 12.

5.3.4 Recommended Northbound Mainline and Shoulder Sections from "C" Line Station 129+00 to 214+00 (SPCS 2)

Design Factors are TI = 14.5, R-value = 5, GE (required) = 4.41

Section Component	Thickness (feet)	Gravel Equivalent (feet)
RHMA-G	0.15	1.34
HMA (Type A)	0.65	
LCB*	0.90	1.71
Class 4 AS	1.40	1.40
SEG	--	--
Total		4.45

*It is understood that Caltrans recommends using lean concrete base for TI > 12.

5.3.5 Recommended Southbound Mainline and Shoulder Sections from "C" Line Station 47+29 to 53+00 (SPCS 3)

Design Factors are TI = 14.5, R-value = 5, GE (required) = 4.41

Section Component	Thickness (feet)	Gravel Equivalent (feet)
RHMA-G	0.15	1.34
HMA (Type A)	0.65	
LCB*	0.90	1.71
Class 4 AS	1.40	1.40
SEG	--	--
Total		4.45

*It is understood that Caltrans recommends using lean concrete base for TI > 12.

5.3.6 Recommended Southbound Mainline and Shoulder Sections from "C" Line Station 53+00 to 215+00 (SPCS 4)

Design Factors are TI = 14.5, R-value = 10, GE (required) = 4.18

Section Component	Thickness (feet)	Gravel Equivalent (feet)
RHMA-G	0.15	1.34
HMA (Type A)	0.65	
LCB*	0.90	1.71
Class 4 AS	1.15	1.15
SEG	--	--
Total		4.20

*It is understood that Caltrans recommends using lean concrete base for TI > 12.

5.3.7 Recommended Ramp Sections (SPCS 5 - Excluding SB U.S. 101 On-/Off-Ramps at Rengstorff)

Design Factors are TI = 10, R-value = 5, GE (required) = 3.04

Section Component	Thickness (feet)	Gravel Equivalent (feet)
HMA (Type A)	0.50	0.90
Class 3 AB	1.15	1.26
Class 4 AS*	0.90	0.90
SEG	--	--
Total		3.06

*As discussed in Section 5.2.1 potentially expansive soils (CH) were not encountered in the upper 3 feet of borings drilled along on and off ramps, excluding SB U.S. 101 ramps at Rengstorff Avenue. Therefore, for SPCS 5 the AS layer is not thickened to achieve a total pavement section thickness of 3 feet.

Although, the existing structural section at NB U.S. 101 off-ramp at Amphitheatre Parkway consists of an ATPB component, the planned improvement of this off-ramp will be on the up-gradient of the super-elevated ramp. Therefore, an ATPB component is not required in the new structural section.

5.3.8 Recommended Ramp Section for SB On-/Off-Ramps at Rengstorff (SPCS 6 – Down Gradient of Existing Ramp Section)

Design Factors are TI = 10, R-value = 5, GE (required) = 3.04

Section Component	Thickness (feet)	Gravel Equivalent (feet)
HMA (Type A)	0.50	0.90
ATPB	0.25	0.35
Class 3 AB	0.50	0.55
Class 4 AS*	1.75	1.75
SEG	--	--
Total		3.55

*AS is thickened to 1.75 feet to achieve a minimum total pavement section thickness of 3 feet.

5.3.9 Recommended Ramp Sections for SB On-/Off-Ramps at Rengstorff (SPCS 7 –Up Gradient of Existing Ramp Section)

Design Factors are TI = 10, R-value = 5, GE (required) = 3.04

Section Component	Thickness (feet)	Gravel Equivalent (feet)
HMA (Type A)	0.50	0.90
Class 3 AB	1.15	1.26
Class 4 AS*	1.35	0.90
SEG	--	--
Total		3.06

*AS is thickened to 1.35 feet to achieve a minimum total pavement section thickness of 3 feet.

5.3.10 Full Depth HMA Option for Sliver Widening Sections for Mainline and Shoulder

Design Factors are TI = 14.5, R-value = 5, GE (required) = 4.41

Section Component	Thickness (feet)	Gravel Equivalent (feet)
RHMA-G	0.15	5.10
HMA (Type A)	2.00	
Class 3 AB*	0.50	0.55
SEG	--	--
Total		5.65

*At locations where this full depth HMA option are proposed, potentially expansive soils are not anticipated at the subgrade based on nearby borings. Therefore, the AB layer is not thickened to achieve a total pavement section thickness of 3 feet.

This full depth HMA option is recommended only for sliver widening or for relatively small, non-regular shaped areas of roadway improvements. The estimates of gravel equivalent for the RHMA-G and HMA layers are based on the procedure for full depth HMA outlined in HDM Chapter 630. In addition to the full depth HMA, we recommend an additional 0.5 foot of AB to provide a working table for ease of placement of the HMA section. Furthermore, the SEG layer below the AB should facilitate subgrade preparation in relatively tight or narrow working areas. We understand that Caltrans recommends using lean concrete base (LCB) where TI is greater than 12. Because of the built-in safety factor of the full depth HMA, it is our opinion that using 0.5 foot of LCB in lieu of the proposed AB for a full depth HMA option is not necessary.

5.4 PAVEMENT OVERLAY

As shown on typical cross section sheets X-1 through X-32 in Appendix B, 0.15 foot of RHMA-G overlay is planned on the southbound, whereas cold plane (0.1 foot) and RHMA-G overlay (0.15 foot) are planned on the northbound mainline segment. Also variable depth (0.10 to 0.35 foot) HMA (Type A) underlying the 0.15 foot of RHMA-G is planned on both northbound and southbound mainline segments for cross slope correction. In this manner, the finished cross slope grade of 2 percent can be achieved.

5.5 PAVEMENT CONDITION SURVEY

A pavement condition survey was conducted by URS on June 22 through 25, June 28, June 29 and July 6, 2010 in accordance with Caltrans Slab Replacement Guidelines, January 2004 with the intent of determining the need for rigid slab replacements. This survey was only limited to southbound lanes 2, 3 and 4 with Portland cement concrete (PCC) pavements. The findings of this survey are presented in a technical memorandum entitled "Pavement Condition Survey" dated July 15, 2010.

Based on results of the Pavement Condition Survey, the repair of existing PCC pavements falls into 2 main categories. These are referred to as "isolated partial depth concrete repair" (IPDR) and "full depth concrete repair" (FDR) in accordance with the Maintenance Technical Advisory Guide, Volume II, Rigid Pavement Preservation, Second Edition, dated March 7, 2008, The quantity of repair is estimated to be approximately 4,560 square feet of IPDR and about 430 cubic yards of FDR; this represents less than 1 percent of the existing roadway surface for the IPDR and less than 3 percent of the existing roadway surface for the FDR. Caltrans most often uses Rapid Strength Concrete (RSC) for IPDR. For FDR, Caltrans uses 3 types of RSC mixes as outlined in Caltrans Slab Replacement Guidelines, dated January 2004. The type of RSC selected for the FDR should be in conformance with Caltrans SSP No. 40-020.

6.1 SUBGRADE TREATMENT

6.1.1 Clearing and Grubbing

Before any grading begins, all locations to be filled should be cleared of existing improvements (rails, posts, curbs, pavements, etc.), all debris, vegetation, and any soils containing roots or other vegetative matter in accordance with Section 16 of Caltrans Standard Specifications. A stripping depth of 4 to 6 inches is estimated. The entire root ball of large shrubs should be removed, including all roots greater than 1 inch in diameter.

6.1.2 Subgrade Preparation

Immediately after existing guardrail posts have been removed, the resulting voids should be backfilled with slurry cement up to present ground surface in accordance with Caltrans Standard Specifications Section 19-3.062 "Slurry Cement Backfill".

All subgrade should be prepared in accordance with Caltrans Standard Specifications Section 25-1.03 "Subgrade". After the areas to receive fill have been cleared and stripped, the exposed subgrade soil should be scarified, moisture conditioned to near the optimum moisture content, and compacted to the requirements of fill to a minimum depth of 6 inches. When the subgrade has been compacted and approved by the Engineer, fill can be placed to provide the desired finished grades.

6.1.3 Fill Material

In general, materials intended for use as fill materials should be a soil or soil/rock mixture that is free of organic matter and other deleterious substances in accordance with Section 19 of Caltrans Standard Specifications. In addition, these materials should have an R-value greater than 10 to be consistent with the design R-value used in pavement structural design. All import material and onsite material reused as fill should meet these requirements and should be approved by the Engineer prior to construction. Asphalt concrete and aggregate base that are pulverized to meet the size requirements for fill material detailed above, could be reused as fill.

6.1.4 Fill Placement

All fill should be constructed in accordance with Caltrans Standard Specifications Section 19, entitled "Earthwork." Relative compaction of not less than 90 percent should be achieved in all fill materials, except where 95 percent is required.

6.1.5 Soil Reuse and Disposal

URS has prepared under separate cover a Site Investigation Report, dated May 19, 2010. The following statement is quoted from the Executive Summary, "Soil Reuse/Disposal" of that report.

With the exception of aerially-deposited lead (ADL), no constituent was detected at a concentration limiting soil reuse or requiring disposal of soil as a hazardous waste. However, the

detected concentrations of aerially-deposited lead have resulted in restrictions on the reuse and/or disposal of soil within the project limits. The following table summarizes the reuse restrictions and disposal requirements of the project soil.

Table 6-1 - Soil Reuse/Disposal Requirements

Group	Northern Limit Station	Southern Limit Station	Depth*	Reuse Restriction	Disposal Requirement
Southbound					
1A	Northern end of project	113+00	0-1 ft	Below pavement, > 5' above the groundwater table	Cal-Hazardous, or out-of-state
1B	Northern end of project	113+00	1-3 ft	None	Non-Hazardous
2A	113+00	Southern project limit	0-0.5 ft	Below pavement, > 5' above the groundwater table	Cal-Hazardous, or out-of-state
2B	113+00	Southern project limit	0.5-3 ft	None	Non-Hazardous
Northbound					
3A	Northern end of project	105+00	0-1.5 ft	Below pavement, > 5' above the groundwater table	Cal-Hazardous, or out-of-state
3B	Northern end of project	105+00	1.5-3 ft	None	Cal-Hazardous, or out-of-state
4A	105+00	159+00	0-1.5 ft	Below pavement, > 5' above the groundwater table	Cal-Hazardous, or out-of-state
4B	105+00	159+00	1.5-3 ft	None	Non-Hazardous
5A	159+00	Southern project limit	0-1 ft	Below pavement, > 5' above the groundwater table	Cal-Hazardous, or out-of-state
5B	159+00	Southern project limit	1-3 ft	None	Non-Hazardous

*Samples typically collected at 0.5, 1.0, 1.5, 2.0, and 3.0 feet below ground surface

Significant project costs may result due to the volume of soil with reuse restrictions or requiring disposal as a hazardous waste, and the presence of a shallow groundwater table. Steps to reduce these costs by minimizing disposal of soil as a hazardous waste, or finding locations to properly reuse the restricted soil, may be necessary. Additionally, the lead-impacted soil may be reused as a component of lime-treated subbase, if any. For more details, refer to the Site Investigation Report.

6.2 ESTIMATED SETTLEMENT

Most new fill depths along the shoulders range from about 1 to 3 feet. Some sliver fill depths are 3 feet or less. The long term consolidation settlement due to the new fill loads is estimated to be less than ½ inch.

6.2.1 Surcharge and Monitoring

The immediate settlement estimated above is expected to occur during placement of fill, as a result of elastic compression of granular and cohesive soils. Long term consolidation settlement of clay soils is anticipated to be completed within a month upon completion of construction. Considering that the minor amounts of fill are placed and estimated settlements are relatively small, we see no need for (1) surcharging the fills and (2) monitoring the settlement of fills with settlement monitoring devices.

6.3 DRAINAGE SYSTEM

New and realigned storm drains are planned as shown in Drainage Plan drawings D-1 through D-17 in Appendix G. The new alignment will be beyond the edge of pavement. No underdrain systems are required since lowering of profile grade is not planned, i.e. no cuts.

As shown on the as-built drawings dated January 28, 1986, edge drain consisting of a 2-inch perforated plastic pipe (edge drain) was installed next to the existing southbound travel lane and underneath the paved shoulder. The edge drain was constructed by excavating a 6-inch wide trench with the perforated plastic pipe at the bottom and filter fabric placed along the sides. This edge drain will be removed during construction and the new pavement will not include any edge drains.

For the NB off-ramp at Amphitheatre Parkway and the SB on-ramp and off-ramp at Rengstorff Avenue, the existing ATPB layer will be extended in the planned widening of the ramps. In this case, the existing edge drain will be removed, and new edge drains will be installed to drain the ATPB layer.

6.4 UTILITY CROSSINGS

6.4.1 General

As shown on Utility Plan Sheets U-1 through U-20 (Appendix H) there are several existing and planned buried utilities that cross the roadway. In general, we estimate that buried utilities subject to loading from new fill will have negligible long term consolidation settlement, except in fill areas described in Section 6.2 “Estimated Settlement” where we estimate settlement of less than ½ inch.

6.5 ROADWAY EXCAVATIONS

In most ramp and median areas, relatively shallow excavations (less than 4 feet) are currently planned for placement of new pavement sections, retaining wall foundations and bridge footings.

Shallow excavations will be completed entirely in the existing pavement structural sections and into the embankment fill or native materials underlying the existing pavements. No cobbles were encountered at boring locations within the anticipated excavation depths.

In our opinion, materials excavated from the existing pavement structural sections can be reused as fill materials in the new or raised embankments provided the asphalt concrete is pulverized to

meet the size requirements for fill. However, the existing fill materials underlying the pavement structure should be reviewed and tested by the Geotechnical Engineer at the time of construction to verify they meet the requirements for fill.

Based on the Boring Records, potentially expansive fat clay (CH) was primarily encountered throughout the project alignment at shallow depths ranging from about 0 to 10 feet bgs (with typical depths on the order of 5 feet).

In our opinion these soils, if excavated, should not be reused as engineered fill due to their expansive nature, i.e. potential to shrink and swell with moisture changes. If used in embankments, CH soils will slough with seasonal moisture changes. Furthermore, the moisture content of these soils generally ranges from about 30 to 40 percent and is wet of optimum moisture content. Therefore, these CH soils would have to be dried out, i.e. aerated or treated with lime, before reuse. In our opinion this would require considerable effort by the Contractor.

The explorations were completed during the months of March and April 2009, both of which were relatively dry. No perched water was encountered in the semi-permeable aggregate base component of the pavements. However, it is conceivable that some free water could potentially be encountered in the aggregate base and subbase components of the existing pavements if construction occurs in the winter and spring months.

As stated above, cuts ranging from about 1 to 3 feet are anticipated along the shoulders. Based on the most recent water depths measured in the closest borings, it appears the 2009 groundwater levels are at or slightly below the bottom of most shallow excavations. Some localized groundwater is anticipated in a few excavations, particularly for bridge foundations. If excavations extend below the groundwater level, the Contractor should be prepared to provide standard sumping during construction to remove accumulated seepage at the bottom of excavations.

6.6 BOX CULVERT AT PERMANENTE CREEK

Existing Permanente Creek undercrossing (12 feet x 12 feet box culvert) will be extended approximately 20 feet on the downstream end to accommodate new fill for roadway widening. Two retaining walls (RW#2 and #3) will be constructed on the downstream end of the box culvert. However, the bottom of the extended box culvert will be placed on native soil. For that reason Boring R-09-005 and CPT-09-006 were extended beyond the existing toe of the embankment native soils. Boring R-09-005 and CPT-09-006 were drilled to terminal depths of 51.5 feet and 100 feet, respectively. Two inches of asphalt concrete pavement section was encountered in boring R-09-005. Underlying the pavement section, clayey sand with gravel fill was encountered to a depth of 3 feet bgs. Underlying the fill are alluvial soils which predominantly consists of cohesive deposits of hard fat clay, medium stiff to stiff lean clay, and medium stiff sandy silt to silty clay with granular interbeds below a depth of 8 feet. Granular deposits consist of medium dense to dense silty sand, poorly graded sand with silt, and well graded sand with silt and gravel with thickness of layers ranging from 2 to 6 feet. Boring R-09-005 was advanced to a depth of 8.5 feet using a solid flight auger. No free groundwater was observed at that time. The drilling method then was switched to rotary wash, thereby precluding a reliable groundwater measurement. Groundwater was encountered at depths ranging from 8 to 10 feet bgs (Elevation 11 feet to 11.5 feet) in borings performed approximately 700 feet in either

direction of the creek. However, free groundwater was reportedly encountered at depths ranging from 9 to 13 feet (Elevation 6.5 feet to 10.5 feet) in explorations performed for the Permanente Creek bicycle/pedestrian bridge study performed in June 2005.

In Section 4 entitled "Liquefaction" and Tables 4-2 and 4-3, the post-liquefaction ground surface settlement is estimated to be less than 1.5 inches (CPT-09-006 and R-09-005). This estimate includes the settlement of soils encountered above the invert elevation of box culvert to the ground surface. Post-liquefaction settlement of the box culvert is estimated to be slightly less than 1 inch.

Medium stiff silty clay (Elevation 8 feet to 6 feet) was encountered at the invert elevation in Boring R-09-005 drilled next to paved shoulder. Due to prolonged saturation of soils at channel bottom, we anticipate soils at the channel bottom will be soft and wet. To bridge the soft subgrade, a layer of geotextile bridging fabric such as Mirafi 600X covered with a 2 foot section of ¾ -inch to 6-inch bridging material. Bridging material conforming to the following grading requirements has been successfully used on a number of projects in the South Bay:

Sieve Size (U.S. Standard)	Percentage Passing
6 inches	100
2 inches	0-50
¾ inch	0-10

Durability Index = 40 minimum

Based on our calculations and field observation, we estimate a total settlement of ½ inch for the new box culvert extension. Therefore, we estimate differential settlement of about ½ inch at the connection between the existing and new box culvert. These estimates are based on the assumption that the 2 foot of subgrade will be replaced with fabric and rock as discussed above.

The base of the excavation (about Elevation 8 feet) is expected to be soft and unable to support construction traffic. Disturbances of the subgrade during construction could lead to substantially larger mat settlements than those recommended for design. To minimize disturbance, it is recommended that the last 2 feet of excavation be made by equipment supported above this level. This might be accomplished with a backhoe excavating from locations at least 2 feet above final subgrade or with a dragline from outside the excavation. All dewatering should be installed before the final 2 feet are excavated.

The Geotechnical Engineer should be retained to observe the excavation and mat construction, regardless of the method of stabilization selected. If any undesirable conditions are encountered, additional recommendations could be provided.

This culvert should be designed for the load factors recommended in Caltrans Standard Plans D82. The load factors include earth pressures for 2 conditions: (1) 140 lb/ft^3 vertical with 42 lb/ft^3 horizontal; and (2) 140 lb/ft^3 vertical with 140 lb/ft^3 horizontal. The structure should be designed to resist each earth loading condition, as well as HS 20-44 truck including impact. These load values were developed by Caltrans based on extensive studies including strain gauge measurements on culvert walls and load cells on the soil outside of the culverts. The two conditions represent the range of horizontal pressures, long term as well as immediately after construction.

6.7 EARTHWORK FACTORS

Minor cuts and fills are anticipated. Some cut materials will be generated by removing the existing shoulder and median to allow for placement of the new traveled way pavement structural section.

In general, no apparent distress was observed in median shoulder pavements. Assuming that the existing pavement structural sections were constructed in accordance with Caltrans Standard Specifications, it is likely that the pavement structural sections were well compacted at the time they were constructed. Based on density tests performed in our laboratory on samples recovered from our borings, the subgrade materials appear to exhibit moderate in place density. Based on our field observations, laboratory testing, and our engineering judgment and experience, the following earthwork factors are recommended for the purpose of estimating the volume changes during construction.

1. For existing asphalt concrete and aggregate base materials used for fill material compacted to a relative compaction of 95 percent, use 1.0 for an earthwork factor.
2. For native subgrade materials underlying the existing pavements, used for fill material compacted to a relative compaction of 95 percent, use 0.94 for an earthwork factor (i.e., 6 percent volume decrease).
3. For existing fill materials used for new fill compacted to a relative compaction of 95 percent, use 1.0 for an earthwork factor.

6.8 RETAINING WALL

As discussed previously in Section 1.1.3 “Retaining Wall”, one (1) retaining wall is planned. Foundation design aspects and geotechnical recommendations for this non-standard wall, Retaining Wall No. 1, are summarized in a separate Foundation Investigation Report titled “Foundation Report, Mountain View, California,” dated November 11, 2009.

6.9 SOUNDWALLS

Soundwalls currently are not planned for this project.

6.10 NEW OVERHEAD SIGNS

Thirteen new overhead signs and one changeable message sign (CMS) are planned; the locations and other details are summarized in the following table.

Table 6-2 Overhead Signs Summary

Sign Number	Approximate “C” Station Location	Closest Boring (s)		Post Type
		Number	C Station Location	
SS3-B	58+00 Lt. FNBT*	CPT-09-106	55+05	IX
SS3-C	70+50 Rt FSBT**	A-09-184 R-09-001	70+50	24 NPS

Sign Number	Approximate "C" Station Location	Closest Boring (s)		Post Type
		Number	C Station Location	
SS5-F	87+00 Rt. FSBT	A-09-120 A-09-182	86+23 85+07	IX
SS5-H	95+00 Lt. FNBT	A-09-125 A-09-179	95+09 95+40	VII
SS7-J	120+00 Rt. FSBT	A-09-135 A-09-178	119+69 120+02	IX
SS10-M	142+00 Lt. FNBT	A-09-149	142+04	IX
SS11-N	150+00 Lt. FNBT	CPT-09-151 A-09-152	149+49 150+01	VIII
SS12-Q	165+50 Lt. FNBT	A-09-177	166+45	IX
SS14-V	173+00 Lt. FNBT	A-09-161	172+63	IX
SS14-S	178+50 Rt. FSBT	A-09-164	179+16	VII
SS15-X	187+50 Rt. FSBT	R-09-005	188+53	VII
SS15-AA	188+00 Lt. FNBT	CPT-09-006 A-09-167	186+04 189+97	VII
SS15-BB	198+20 (Median) FSBT	A-09-171	197+99	IX
SS17-CC	210+19.81 Rt. FSBT	A-09-175	210+05	IX

* FNBT: Facing Northbound Traffic
**FSBT: Facing Southbound Traffic

An overhead sign/CMS with a drilled pier type foundation is planned at each of the above locations (see Appendix I). These plans currently indicate that these signs are to be supported on a single CIDH pile having a diameter of 5 feet. Based on Caltrans Standard Plan S7 (May 2006), foundation design is based on an internal friction angle of 30 degrees and unit weight of 120 pcf.

6.10.1 Subsurface Conditions

At Station 58+00 NB, the subsurface conditions were investigated by advancing a cone penetrometer CPT-09-106 drilled next to the shoulder. This CPT revealed primarily layers of medium stiff clay to silty clay to the terminal depth; loose to medium dense sand to silty sand was encountered between depths of 18 to 21 feet. During the Cone Penetration Test of CPT-09-106, a pore pressure dissipation test was conducted to estimate the groundwater level at the site. The dissipation test result suggests groundwater is at approximately 13 feet bgs (Elevation -4.5 ft).

At Station 70+50 SB, the subsurface conditions were reviewed in nearby borings A-09-184 and R-09-001. Medium stiff to stiff lean to fat clay was encountered to the terminal depth of 35 feet in boring A-09-184 with a 4 foot thick sand interbed at a depth of 29 feet bgs. Boring R-09-001

primarily encountered medium stiff to hard lean to fat clay with thin interbedded layers of clayey sand to a depth of 45 feet bgs. Below this depth is a deposit of dense to very dense sand with silt and gravel to 55 feet bgs. Underlying this deposit are layers of medium stiff to very stiff lean to fat clay. Boring R-09-001 was dry to a depth of 7.5 feet, where the drilling method was changed to rotary wash. Groundwater was encountered at a depth of 12 feet bgs (Elevation -1.5 feet) at time of drilling in boring A-09-184.

At Station 87+00, the subsurface conditions were reviewed in nearby borings A-09-120 and A-09-182. Medium dense clayey to silty sand was found to a depth of 4.5 feet bgs. Below this depth is a deposit of soft to very stiff lean to fat clay to the terminal depth of boring with a 1-foot thick silty sand deposit at 13 feet bgs. Boring A-09-120 was dry at the time of drilling. Groundwater was encountered at a depth 8 feet (Elevation -1 feet) during drilling in Boring A-09-182.

At Station 95+00, the subsurface conditions were reviewed in nearby borings A-09-125 and A-09-179. Soft to medium stiff lean to fat clay was encountered to the terminal depth of the borings; two 5-foot thick sand layers, one each at depths of 20 and 30 feet bgs. Groundwater was encountered at depths of 3 to 9 feet (Elevation 4 feet to -2 feet) bgs at time of drilling.

At Station 120+00, the subsurface conditions were reviewed in nearby borings A-09-135 and A-09-178. Stiff to very stiff lean clay was encountered to a depth of 24 feet bgs. Below this depth is a deposit of silty sand that extends to the terminal depth of boring A-09-178. Boring A-09-135 was dry at the time of drilling. Groundwater was encountered at a depth of 12 feet (Elevation -7 feet) at the time of drilling in Boring A-09-178.

At Station 142+00, the subsurface conditions were reviewed in nearby boring A-09-149. Underlying the 36 inches of aggregate base, stiff to very stiff lean clay, sandy lean clay and fat clay were encountered to a depth of 16 feet bgs. A medium dense sand layer was encountered between depths of 16 to 23.5 feet. Directly below this granular deposit is a deposit of stiff to very stiff lean clay and lean clay with sand to the terminal depth of the boring. No groundwater measurements were taking during drilling of this boring.

At Station 150+00, the nearest explorations are CPT-09-151 and A-09-152. At A-09-152 a 2.5 foot thick surficial layer of clayey sand was underlain by stiff fat and lean clay to a depth of 13.5 feet bgs. Below this depth is a deposit of silty sand with gravel that extends to a depth of 17 feet bgs. This was underlain by stiff to very stiff lean clay to the terminal depth of boring. A 2 foot clayey sand deposit was encountered at a depth of 25 feet bgs. A hand auger was used to penetrate the first 5 feet at CPT-09-151 location to avoid buried utilities. Below 5 feet a medium dense sand layer was encountered to a depth of 12 feet bgs underlain by clay, silty clay, and sandy silt to the terminal depth of CPT with granular interbeds at depths of 14 feet and 23 feet. Groundwater was encountered at a depth of 12 feet (Elevation -2.5 feet) at the time of drilling in Boring A-09-152. No pore pressure dissipation test was performed when advancing CPT-09-151.

At Station 165+50 NB, the nearest boring was A-09-177. Stiff fat clay was found to a depth of 3.5 feet underlain by predominantly medium stiff to very stiff lean clay to the terminal boring depth. Silty sand deposits, 1 to 1.5 feet thick were observed at depths of 15, 21, and 26 feet. Groundwater was encountered at a depth of 15 feet (Elevation -4.5 feet) at the time of drilling.

At Station 173+00 NB, the nearest boring was A-09-161. This boring revealed primarily layers of soft to very stiff lean and fat clay to a depth of approximately 36 feet, underlain by 2.5 inches of clayey sand which extended to terminal depth of boring. Very stiff fat clay was encountered between depths of 1.5 to 4 feet. Groundwater was encountered at a depth of 10 feet (Elevation 3 feet) at the time of drilling.

At Station 178+50 SB, the nearest boring was A-09-164. This boring encountered 30 inches of aggregate base underlain by stiff to very stiff lean clay and fat clay to a depth of 8 feet. Below this depth a deposit of silty and clayey sand was encountered to a depth of approximately 20 feet. This granular deposit was underlain by medium stiff lean clay which extended to the terminal depth of the boring. Groundwater was encountered at a depth of 8 feet (Elevation 9 feet) at the time of drilling.

At Station 187+50 SB, the nearest boring was R-09-005. Underlying the pavement section is a clayey sand fill to a depth of 3 feet bgs. Below this fill native soils consisted of hard fat clay, medium stiff to stiff sandy silt and sandy lean clay to a depth of 28 feet with interbedded granular layers; granular layers were 1.5 to 3 feet in thickness and are classified as silty sand and sand with silt. More granular deposits were encountered between depths of 28 to 34 feet and 35.5 to 39.5 feet and were classified as sand with silt and gravel and silty sand, respectively. Underlying these granular deposits was hard fat clay which extended to a depth of 51.5 feet. Boring R-09-005 was dry to a depth of 8.5 feet, where the drilling method was changed to rotary wash.

At Station 188+00 NB, the nearest explorations are CPT-09-006 and A-09-167. Underlying the pavement section in A-09-167 are mostly layers of medium stiff to hard lean clay, sandy lean, and fat clay to a depth of 36 feet. Underlying the fine grained deposits, a dense clayey sand deposit was encountered to the terminal depth of 36.5 feet in A-09-167. A hand auger was used to penetrate the first 5 feet at CPT-09-006 location to avoid buried utilities. Below 5 feet the CPT revealed primarily layers of clay and silty clay to a depth of 46 feet bgs; sandy silt and clayey silt interbeds were encountered at regular intervals. Granular deposits were encountered at depths of 9 feet and 20 feet. Below 46 feet the CPT revealed primarily layers of sandy silt and clayey silt with interbeds of clay and silty clay which extended to the terminal depth of 100 feet at CPT-09-006. Groundwater was not measured during or upon completion of drilling of A-09-167. No pore pressure dissipation was performed when advancing CPT-09-006.

At Station 198+20 SB, the nearest boring was A-09-171. Poorly graded sand with silt and gravel was encountered to a depth of 2 feet, underlain by predominantly layers of soft to very stiff lean and fat clay to the terminal depth of 40 feet. Medium stiff to very stiff fat clay was encountered between depths of 2 to 7 feet, 17 to 22 feet, and 33.5 to 35 feet. Groundwater was measured at a depth of 10.5 feet (Elevation 13.0 ft) at the completion of drilling and prior to backfilling with grout.

At Station 210+19.81 SB, the nearest boring was A-09-175. Underlying the pavement section are mostly layers of medium stiff to very stiff lean clay, sandy lean clay, and fat clay to the terminal depth of 36.5 feet; a medium dense silty sand deposit was encountered between depths of 31 to 35.5 feet. Groundwater was measured at a depth of 8 feet (Elevation 20.5 feet) at the completion of drilling and prior to backfilling with grout.

The Unified Soil Classification System and the guidelines summarizing soil consistency and relative density are presented on the Log of Test Borings (LOTB) legend, Figure 6-1a and 6-1b. Descriptions of the soils encountered in the borings at each sign structure are presented in a LOTB presented on Figure 6-1c through 6-1o. The logging method used in preparing the LOTB is consistent with Caltrans Soil and Rock Logging, Classification and Presentation Manual, dated June 2007. The logs also illustrate the notation used for the size of the samplers and the methods of advancing them.

6.10.2 Liquefaction Potential

Liquefaction potential was previously discussed in Section 4.3.3 "Liquefaction" for the borings and CPTs along the entire project alignment; a summary of potential post-liquefaction settlement is presented in Tables 4-2 and 4-3 also for the entire project alignment. More specifically at the new overhead signs, we estimate the liquefaction induced settlement to be as summarized in the following table:

Table 6-3 Liquefaction Settlement at Overhead Sign Structures

Sign Number	Approximate "C" Station Location	Closest Borings	Estimated Settlement (inches)
SS3-B	58+00 Lt. FNBT	CPT-09-106	1.0
SS3-C	70+50 Rt. FSBT	A-09-184 R-09-001	Nil 0.4
SS5-H	95+00 Rt. FSBT	A-09-179	1.0
SS10-M	142+00 Lt. FNBT	A-09-149	1.0
SS11-N	150+00 Lt. FNBT	CPT-09-151 A-09-152	1.0 nil
SS12-Q	165+50 Lt. FNBT	A-09-177	0.5
SS14-S	178+50 Rt. FSBT	A-09-164	1.0
SS15-X	187+50 Rt. FSBT	R-09-005	1.5
SS15-AA	188+00 Lt. FNBT	CPT-09-006 A-09-167	1.5 nil

Based on our analysis of subsurface information, at or near the proposed overhead signs, we estimate that post-liquefaction settlement to be: nil at signs SS5-F, SS7-J, SS14-V, SS15-BB, and SS17-CC; less than or equal to 0.5 inch at signs SS3-C and SS12-Q; and greater than 0.5 inch at signs SS3-B, SS5-H, SS10-M, SS11-N, SS14-S, SS15-X, and SS15-AA. Although the CPT performed close to sign location SS11-N indicates post-liquefaction settlement of 1.0 inches, analyses of three other nearby borings (A-09-152, A-09-153, and A-09-154) located within a few hundred feet of the proposed sign location SS11-N reveals settlement less than 0.5 inch. In summary therefore the estimated magnitude of post-liquefaction settlement at overhead sign locations SS3-C, SS5-F, SS7-J, SS11-N, SS12-Q, SS14-V, SS15-BB, and SS17-CC will not

result in downdrag on the proposed CIDH piles. Downdrag (where relative settlement exceeds ½ inch) is anticipated at signs SS3-B, SS5-H, SS10-M, SS14-S, SS15-X, and SS15-AA. Caltrans Standard Plan S8 specifies CIDH piles with a diameter of 5 feet and depth of 25 feet are required for post types VIII and IX and 23 feet for post type VII. Caltrans Standard Plan S116 and Reference Sheets (overhead and roadside signs) specifies CIDH piles with a diameter of 5 feet and minimum depth of 22 feet and 21 feet, respectively are required for CMS signs (Model 500). Structural loads anticipated at each sigh structure are summarized in the following Table 6-4:

Table 6-4 Preliminary Structural Load Magnitudes

Sign Number	Approximate "C" Station Location	Axial Compression (kips)	Shear at Base of Sign Post (kips)	Moment at Base of Sign Post (kip-ft)	Estimated Liquefaction Settlement Induced Downdrag (kips)
SS3-B	58+00 Lt. FNBT	23.5	31.0	606	110
SS3-C	70+50 Rt FSBT	18.7	12.2	372	None
SS5-F	87+00 Rt. FSBT	23.5	31.1	603	None
SS5-H	95+00 Lt. FNBT	19.6	21.6	414	None
SS7-J	120+00 Rt. FSBT	23.6	30.8	619	None
SS10-M	142+00 Lt. FNBT	23.5	31.0	610	160
SS11-N	150+00 Lt. FNBT	20.2	21.6	417	None
SS12-Q	165+50 Lt. FNBT	23.2	31.8	569	None
SS14-V	173+00 Lt. FNBT	23.5	31.0	608	None
SS14-S	178+50 Rt. FSBT	19.5	19.3	380	60
SS15-X	187+50 Rt. FSBT	19.4	19.3	365	180
SS15-AA	188+00 Lt. FNBT	19.6	21.4	452	320
SS15-BB	198+20 (Median) FSBT	23.5	31.0	610	None

Sign Number	Approximate "C" Station Location	Axial Compression (kips)	Shear at Base of Sign Post (kips)	Moment at Base of Sign Post (kip-ft)	Estimated Liquefaction Settlement Induced Downdrag (kips)
SS17-CC	210+19.81 Rt. FSBT	23.4	31.3	595	None

Based on these preliminary loading conditions, we estimate that the design tip of the CIDH piles due to downdrag potential at signs SS3-B, SS10-M, SS15-X, and SS15-AA should be extended to depths greater than those mentioned in Caltrans Standard Plan S8.

6.10.3 Geotechnical Design Parameters

It is our opinion that the design lateral soil pressure estimated for an angle of internal friction of 30 degrees and unit weight of soils of 120 pcf is appropriate for these signs, assuming the ground surface is no steeper than 2:1 (horizontal to vertical). However, due to the shallow groundwater encountered at all sign locations the unit weight is reduced considerably to the submerged unit weight below the groundwater level. Based on our analysis of lateral pile capacities assuming the loading conditions presented in Table 6-4, we estimate that the standard depth for the CIDH piles should be capable to resist the shear and moment at all sign locations except SS3-B, SS5-F, and SS14-S. Based on consideration of lateral demand and liquefaction induced settlement, the recommended pile data of the sign structure foundations are summarized in the Table 6-5.

Table 6-5 Pile Data at Overhead Sign Structures

Sign Number	Pile Data		Remarks	Extend Pile Depth Due to	
	Diameter (ft)	Depth (ft)		Liquefaction Induced Settlement	Lateral Load
SS3-B	5	38	Non-standard length	√	√
SS3-C	5	22			
SS5-F	5	30	Non-standard length		√
SS5-H	5	23			
SS7-J	5	25			
SS10-M	5	36.5	Non-standard length	√	
SS11-N	5	25			
SS12-Q	5	25			
SS14-V	5	25			
SS14-S	5	30	Non-standard length	√	√
SS15-X	5	39	Non-standard length	√	
SS15-AA	5	45	Non-standard length	√	
SS15-BB	5	25			
SS17-CC	5	25			

6.10.4 Construction Considerations

The subsurface conditions encountered in the overhead sign borings consists primarily of layers of fat clay and lean clay with granular seams. Groundwater was encountered or anticipated in all the borings at a depth of about 5 to below feet 10 feet below the ground. In cohesive soils as generally encountered a fairly long time would be required for the groundwater to seep into the bore hole and attain an equilibrium position with long-term hydrostatic groundwater table. Thus, the immediate readings obtained may or may not be representative of the actual groundwater table level. Furthermore, seasonal fluctuations in groundwater levels should be anticipated throughout the year. While the cohesive deposits will help keep the holes open during construction, some sloughing and caving can be expected in the cohesionless deposits. Cohesionless deposits that could cause some sloughing and caving during CIDH installation were encountered at borings near overhead sign locations SS3-B, SS5-H, SS7-J, SS10-M, SS11-N, SS12-Q, SS14-S, SS15-X, and SS15-AA. Therefore, it is recommended that the Contractor use temporary casing during installation of CIDH piles at the above mentioned 9 sign locations to minimize the risk of caving. It is also recommended to have casing onsite for sign locations SS3-C, SS5-F, SS14-V, SS15-BB, and SS17-CC, should it be needed to minimize the risk of caving. If casing is used, the casing should be withdrawn from the hole slowly as the concrete is being placed; a minimum head of concrete of 3 feet should be maintained in the casing at all times. All CIDH piles should be installed under the direct observation of the Geotechnical Engineer. Temporary casing should have a diameter at least 8 inches larger than the specified diameter of the CIDH piles; for example, a 68-inch diameter temporary casing should be used for a standard plan (Sheet S7) 60-inch diameter CIDH pile.

6.11 GEOTECHNICAL CALCULATIONS

Calculations of liquefaction potential are presented in Appendix E. In addition, a copy of our geotechnical engineering calculations are presented in Appendix J. These calculations include estimated settlement and bearing capacity, as well as pile lateral load analysis for the CIDH piles.

An assessment of the potential for corrosion of various buried foundation and pipe structures was performed by V&A Consulting Engineers (V&A). The results of their investigation are presented in Appendix K. The following paragraphs include their summary, conclusions, and recommendations.

7.1 SUMMARY

V&A Consulting Engineers was retained by URS Corporation to perform a soil corrosivity Investigation for the proposed U.S. 101 Auxiliary Lanes Project. This project runs from Oregon Expressway in Palo Alto to Shoreline Boulevard (SR 85) in Mountain View, CA. The objective of this investigation is to measure various soil parameters and evaluate the results in order to determine the corrosivity of the soil to the proposed structures associated with the U.S. 101 Auxiliary Lanes Project. Corrosivity was determined for the proposed project structures' materials to depths ranging from 0 to 80 feet below grade.

This report provides recommendations for corrosion control for the Concrete Box Culvert at Station 187+50.

The California Department of Transportation, Division of Engineering Services, Materials Engineering and Testing Services, Corrosion Technology Branch has published Corrosion Guidelines (Guidelines) to define corrosive soil. The Guidelines consider soil to be corrosive to structural elements (steel reinforced concrete) if one or more of the following conditions exist for water or soil samples:

> ***"Chloride concentration is 500 ppm (mg/kg) or greater, sulfate concentration is 2,000 mg/kg or greater or the pH is 5.5 or less."***

A wide variety of soluble salts is typically found in soils. Two soils having the same resistivity may have significantly different corrosion characteristics, depending on the specific ions available. The major constituents that accelerate corrosion are chlorides, sulfates and the acidity (pH) of the soil. Chloride ions tend to break down otherwise protective surface deposits and can result in corrosion of reinforcing steel in concrete structures. Sulfates in soil can be highly aggressive to Portland cement concrete by combining chemically with certain constituents of the concrete, principally tricalcium aluminate. This reaction is accompanied by expansion and the eventual disruption of the concrete matrix. High concentrations of bicarbonates tend to decrease soil resistivities. Although bicarbonates are not aggressive to concrete, lower resistivity environments can promote corrosion activity.

Acidity, as indicated by the pH value, is another important factor of soil. The lower the pH (the more acidic the environment), the higher the corrosivity will be with respect to buried metallic and concrete structures. As pH increases above 7 (the neutral value), conditions become increasingly more alkaline and passive to buried structures.

Evaluation of the in-situ soil environment was made in terms of potential damage due to corrosion. Soil resistivity measurements were conducted in the field during the initial stages of the project. In addition, soil samples, collected by URS during the geotechnical investigation, and water samples, collected by V&A from Matadero Creek and Adobe Creek, were forwarded to Cooper Testing Laboratory in Palo Alto, CA, for chemical analysis. The soil borings were analyzed for minimum resistivity, pH, water soluble chloride ion concentration and water soluble sulfate ion concentration, in accordance with the Guidelines.

The pH of the soil samples analyzed ranged from 8.6 to 10.3, while the pH of the water samples analyzed ranged from 7.6 to 7.7. The water soluble chloride ion concentration of the soil borings analyzed ranged from below the minimum detection level of 2 milligrams per kilogram (mg/kg) to 256 mg/kg, while the water soluble chloride ion concentration of the water samples analyzed ranged from 174 to 187 mg/L.

The water soluble sulfate ion concentration of the soil borings analyzed ranged from below the minimum detection level of 5 mg/kg to 203 mg/kg, while water soluble sulfate ion concentration of the water samples analyzed ranged from 12 to 21 mg/L.

Based on the results of the corrosion analyses, the site is considered *non-corrosiv*e.

7.2 CONCLUSIONS

- The chloride ion concentration of the soil borings analyzed is less than 500 mg/kg.
- The sulfate ion concentration of the soil borings is less than 2,000 mg/kg.
- The soil pH of the soil borings analyzed is greater than 5.5.
- The site is considered *non-corrosive* in accordance with CALTRANS Guidelines.
- The project site is not located within 1,000 feet of a salt or brackish water source.

7.3 RECOMMENDATIONS

Based on the test data and review of the project requirements, specific recommendations for each material alternative are listed below:

7.3.1 Buried Reinforced Concrete Structures and Cast in Place Piles

Buried concrete structures should be constructed of durable concrete as described in ACI Standards 201.2R and 222R. These recommendations include, but are not limited to, the following:

- The water/cement ratio should not exceed 0.50.
- A concrete cover of a minimum of 2 inches should be applied over all steel reinforcement.
- Sand and water used in concrete mixtures should contain a maximum of 100 ppm of water-soluble chloride ions and water-soluble sulfate ions. They should also have a pH in the range of 6.5 to 8.0. Potable water should be used in concrete mixtures.
- Type I-P (MS) modified or Type II modified cement should be used.

7.3.2 Prestressed Concrete Piles

Prestressed concrete piles should be constructed of durable concrete as described in ACI Standards 201.2R and 222R. These recommendations include, but are not limited to, the following:

- The water/cement ratio should not exceed 0.50.
- A minimum concrete cover of 2 inches should be applied over all steel reinforcement.
- Sand and water used in concrete mixtures should contain a maximum of 100 ppm of water-soluble chloride ions and water-soluble sulfate ions. They should also have a pH in the range of 6.5 to 8.0. Potable water should be used in concrete mixtures.

- Type I-P (MS) modified or Type II modified cement should be used.
- Standard reinforced concrete pipe design should be suitable for this user defined level of chlorides.
- Concrete and RCP mitigation measures for pH Type IP (MS) modified cement or Type II modified cement is the minimum required by Caltrans Standard Specifications 90-1.01.
- For sulfate resistant concrete and RCP type IP (MS) modified cement or Type II modified cement is the minimum required by Caltrans Standard Specifications 90-1.01.

7.3.3 Cast-in-Drilled-Hole (CIDH) Piles

Cast-in-drilled-hole (CIDH) concrete piling shall conform to the provisions in Section 49-4, "Cast-In-Place Concrete Piles," of the Standard Specifications and these special provisions[2].

The concrete used in CIDH piles should be dense and homogeneous throughout the length and cross section of the pile per California Test 233[3].

Concrete deposited under slurry shall have a nominal slump equal to or greater than 7 inches, contain not less than 675 pounds of cementitious material per cubic yard, and be proportioned to prevent excessive bleed water and segregation. The nominal and maximum slump and penetration requirements in Section 90-6.06, "Amount of Water and Penetration," of the Standard Specifications shall not apply.

Concrete shall conform to the requirements in "Corrosion Control for Portland Cement Concrete" of these special provisions[2].

Concrete for portions of CIDH concrete piling to be formed shall contain not less than 675 pounds of cementitious material per cubic yard and shall contain 6.0±1.5 percent air entrainment in the freshly mixed concrete.

Concrete shall conform to the requirements in "Mass Concrete for Cast-in-Place Concrete Piles" of these special provisions[2].

7.3.4 Culvert, Mechanically Stabilized Embankment and Metallic Soil Reinforcement Backfill

Fast setting concrete backfill may need to be used when placing culverts in existing roadways. When using an admixture to decrease concrete curing times, only non-chloride admixtures should be considered.

Culvert materials were selected using the Department of Transportation CULVERT4 Software that calculates Maintenance-Free Service Design Estimates using California Department of Transportation (Caltrans) criteria (See Appendix K).

Non-corrosive backfill for metallic soil reinforcement, such as tie-back anchors or soil nails and reinforced concrete structures, shall meet the following requirements, in accordance with the Guidelines:

- Minimum resistivity greater than 1,500 ohm-cm.

[2] CALTRANS, Specifications, Updates 3-13-2009, CIDH Piles

[3] CALTRANS, California Test 233, November 2005

- Water soluble chloride ion concentration less than 500 mg/kg.
- Water soluble sulfate ion concentration less than 2,000 mg/kg.
- A pH between 5.5 and 10.0.

7.3.5 Alternative Pipe Material Selection

Alternative pipe materials were selected using the Department of Transportation CULVERT4 Software that calculates Maintenance-Free Service Design Estimates using California Department of Transportation (Caltrans) criteria.

Using the harshest soil conditions from the sampled soil borings (R-09-001 with a pH of 10.2 and a minimum resistivity of 421 ohm-cm, Chloride 256 mg/kg and Sulfate 181 mg/kg), the following material recommendations can be made:

- 10 gage galvanized (57g) corrugated steel culverts
- 12 gage galvanized steel culverts with a water-side bitumastic coating
- 14 gage galvanized steel culverts with a bitumastic coating and a paved invert
- 16 gage galvanized steel culverts with a soil-side bitumastic coating
- 18 gage galvanized steel culverts with a polymer sealed 90º invert.
- Plastic pipe is approved for 50 years of service life for corrosive conditions. Abrasion should be evaluated.
- A corrugated aluminum pipe (CAP) should not be used due to corrosive conditions.
- A corrugated aluminized steel pipe (CASP) should not be used due to corrosive conditions.

Materials available for the project construction are summarized below in Table 8-1.

Table 8-1 Materials Available

Source:		Stevens Creek Quarry Cupertino	Harbor Sand and Gravel Inc Redwood City	Granite Rock Redwood City	Cemex Santa Clara	Granite Santa Clara	Maccon Masonry Materials San Francisco
		408-253-2512	650-369-9189	650-482-3850	408-969-4933	408-210-9862 408-988-4551	415- 285-5025
Haul Distance (one way) Miles:		12	10	9	9	10	29
Product:	Unit						
Portland Cement	Cubic Yard			$117-$138	$100		$145
Lean Concrete	Cubic Yard				$93		
Asphalt Concrete: Type A Open Graded	Ton			S90		$70	
Rubberized Hot Mix Asphalt Concrete (RHMA-G)	Ton			$100		$100	
Aggregate Base Rock, Class 3	Ton	$9.25	$7.50	$14	$7.50	$5.50	
Aggregate Sub-Base rock Class 4	Ton	$9.25		$14			
Structural Backfill	Ton		$15.50				
Permeable Material Class 1, Type A	Ton						
Permeable Material Class 2	Ton						
Import Borrow	Ton						
Gabion Rock	Ton						

9.1 RECOMMENDATIONS

The specifications for this project shall be Caltrans Standard Specifications dated 2006 and corresponding amendments, or later, as applicable.

9.2 SPECIFICATIONS

9.2.1 Earthwork

Earthwork shall conform to the applicable portions of Section 19 of the Standard Specifications and to current Special Provisions.

Structure Backfill

Structure backfill shall conform to the provisions in Section 19-3 of the Standard Specifications.

Embankment Construction

Embankment material for at least 4 feet below the grading plane shall conform to the requirements noted in the Special Provisions. All imported borrow shall conform to the provisions of Section 19-7.02 of the Standard Specifications and to current Special Provisions.

9.2.2 Structural Pavement Materials

Hot Mix Asphalt (HMA)

Hot mix asphalt shall be Type A, ¾-inch maximum coarse graded and shall conform to the provisions in Section 39 of the Standard Specifications and to the requirements noted in the Standard Special Provisions.

Lean Concrete Base (LCB)

Lean concrete base shall conform to the provisions in Section 28 of the Standard Specifications and to the requirements in the Standard Special Provisions.

Aggregate Base (AB)

Aggregate base shall be Class 3, 1½-inch or ¾-inch maximum grading and shall conform to the provisions in Section 26 of the Standard Specifications and to the requirements noted in the Standard Special Provisions.

Aggregate Subbase (AS)

Aggregate subbase shall be Class 4 and shall conform to the provisions in Section 25 of the Standard Specifications and to the requirements noted in the Standard Special Provisions.

Subgrade Enhancement Geotextile (SEG)

Subgrade enhancement geotextile shall be Class B2 and shall conform to the provisions in Section 88 of the Standard Specifications and to the requirements noted in the Standard Special Provisions.

9.2.3 Standard Special Provisions

Aggregate Base (AB)

Aggregate base shall be Class 3, 1½-inch or ¾-inch maximum grading and shall conform to the provisions in Section 26 of the Standard Specifications and to the following Special Provisions.

The aggregate grading for Class 3 Aggregate Base is revised from the Class 2 Aggregate Base by changing "Percentage Passing" the No. 200 screen to:

Sieve	1½-inch Maximum		¾-inch Maximum	
No. 200	Operating Range	Contract Compliance	Operating Range	Contract Compliance
	2-11	0-14	2-11	0-14

The quality requirements shall conform to the quality requirements shown on the following table.

Tests	California Test Method Number	Requirements	
		Operating Range	Contract Compliance
Sand Equivalent	217	25 Min.	22 Min.
Resistance (R-value)	301	-	78 Min.
Durability Index	229	-	35 Min.

Aggregate Subbase (AS)

Aggregate subbase shall be Class 4 and shall conform to the provisions in Section 25 of the Caltrans Standard Specifications and to the following Special Provisions.

Class 4 aggregate subbase shall be clean and free from vegetable matter and other deleterious substances.

The percentage composition by weight of Class 4 aggregate subbase shall conform to the following grading as determined by California Test Method No. 202.

Sieve Size	Percentage Passing	
	Moving Range	Individual Test Results
2½-inches	100	100
No. 4	30-65	25-70
No. 200	0-15	0-18

Class 4 Aggregate Subbase shall also conform to the quality requirements shown on the following table.

Tests	California Test Method Number	Requirements	
		Moving Average	Individual Test Results
Sand Equivalent	217	21 Min.	18 Min.
Resistance (R-value)	301	--	50 Min.

Cast-in-Drilled-Hole Concrete Piles

Cast-in-drilled-hole (CIDH) concrete piling shall conform to the provisions in Section 49-4, "Cast-In-Place Concrete Piles," of the Standard Specifications and the special provisions presented in Standard Special Provisions 49-310.

Rubberized Hot Mix Asphalt (Gap Graded)

This work includes producing and placing rubberized hot mix asphalt (gap graded) (RHMA-G) using Quality Control/Quality Assurance process, complying with Section 39, “Hot Mix Asphalt,” of the Standard Specifications and the special provisions presented in Standard Special Provisions 39-150 (Amended SSP 39-150 dated September 10, 2010, District 4 blanket nSSP approval till June 30, 2011).

Asphalt Treated Permeable Base

Treated permeable base shall be asphalt treated and shall conform to the provisions in Section 29, “Treated Permeable Base,” of the Standard Specifications and the special provisions presented in Standard Special Provisions 29-010. The type of asphalt binder to be mixed with aggregate for treated permeable base shall be Grade PG 64-10 conforming to the provisions in Section 92, “Asphalt,” of the Standard Specifications.

Subgrade Enhancement Geotextile (SEG)

Subgrade enhancement geotextile shall conform to the provisions in Section 88-1.08, “Separation and Stabilization,” of the Standard Specifications and the special provisions presented in Standard Special Provisions 19-760. SEG shall be Class B2.

9.2.4 Special Provisions

Embankment Construction

The upper 4 feet of embankment fill below the grading plane shall have a minimum R-value of 10.

The opinions, conclusions and recommendations contained in this Geotechnical Design Report and Materials Report are based upon the information obtained from explorations made at widely separated locations, geologic reconnaissance, review of available geologic and topographic information and historic data, and upon local experience and engineering judgment.

The recommendations presented in this report are based on the assumption that the soil and geologic conditions do not deviate substantially from those encountered in the exploratory borings. If any variations are encountered during construction, URS should be consulted so that supplementary recommendations can be made.

If the planned construction is changed from that presently conceived, URS should be retained to review the changes and make modifications to the original recommendations presented in this report in order to meet the project needs.

Geotechnical issues may arise during construction which are not apparent at this time. We should be retained during construction to review the soil conditions encountered and the construction procedures. All testing should be done under the direct observation of a representative of our firm.

The elevations shown on the logs of new borings are based on interpolation from spot and contour elevations shown on available topographic maps.

A specific review related to environmental and hazardous waste issues and an investigation for subsurface environmental contamination is presented in a separate URS document entitled “Draft Hazardous Materials Investigation Report”.

As-built drawings pertinent only to the geotechnical investigation are included.

The recommendations presented in this Geotechnical Design Report and Materials Report were developed with the standard of care commonly used as state of the practice in the profession. No other warranties are included, either express or implied, as to the professional advice presented in this report.

ABAG, 2006, Liquefaction Maps, gis.abag.ca.gov/

Aydin, A. and Page, B.M., 1984, Diverse Pliocene-Quaternary tectonics in a transform environment, San Francisco Bay region, California: Geological Society of America Bulletin, v. 95, p. 1,303-1,317.

Bortugno, E.J., McJunkin, R.D. and Wagner, D.L., 1991, Map showing recency of faulting, San Francisco-San Jose Quadrangle, California, California Division of Mines ad Geology, Geologic Map of the San Francisco-San Jose Quadrangle, 1:250,000.

Brabb, E.E. and Dibblee, T.W., 1974, Geologic map Santa Clara County, California, U.S. Geological Survey Special Report 107, scale 1:62,500

Bürgmann, R., Arrowsmith, R. and Dumitru, T., 1994, Rise and fall of the southern Santa Cruz Mountains, California, from fission tracks, geomorphology, and geodesy, Journal of Geophysical Research, v. 99B, p. 20,181-20,202.

California Geological Survey, 2000, Digital images of official maps of the Alquist-Priolo earthquake fault zones of California, central coast region: California Geologic Survey, CD-2000-004.

California Geological Survey, 2001, Seismic hazard zones, Mountain View quadrangle, gmw.consrv.ca.gov/shmp/index.htm

Fenton, C.H., and Hitchcock, C.S. 2001, Recent Geomorphic and Paleoseismic Investigations of Thrust Faults in Santa Clara Valley, California in Engineering Geology Practive in Northern California, Association of Engineering Geologists Special Publication 12, Edited by H. Ferriz and R. Anderson, pp 239 – 257.

Federal Emergency Management Agency, 1999. Flood Insurance Study, City of Palo Alto.

Federal Emergency Management Agency, 1997. Flood Insurance Study, City of Mountain View.

Federal Emergency Management Agency, 2009. Flood Insurance Study, Santa Clara County, California. Community Number 06085C, May18.

Hall, N.T., Wright, R.H., and Clahan, K.B., 1999, Paleoseismic studies of the San Francisco Peninsula sSegment of the San Andreas Fault zZone near Woodside, California: Jour. Geophys. Res., vol. 104, no. B10, pp. 23,215-23,236.

Helley, E.J. and LaJoie, K.R., 1979, Flatland deposits of the San Francisco Bay region, California – their geology and engineering properties, and importance to comprehensive planning. U.S. Geological Survey Professional Paper 943,p. 27-34, plate 3, scale 1:125,000.

Hitchcock, C.S., Kelson, K.I. and Thompson, S.C., 1994, Geomorphic investigations of deformation along the northeastern margin of the Santa Cruz Mountains, William Lettis & Associates, Inc., Final Technical Report, U.S. Geological Survey National Earthquake Hazards Reduction Program Award No. 1434-92-G-2220, 33 p.

Hitchcock, C.S. and Kelson, K.I., 1999, Growth of late Quaternary folds in southwest Santa Clara Valley, San Francisco Bay Area, California: Implications of triggered slip for seismic hazard and earthquake recurrence, Geology, v. 27, p. 387-390.

Irwin, W.P., 1990, Geology and plate tectonic development, in The San Andreas Fault System, California, Wallace, R.E. (ed.), U.S. Geological Survey Professional Paper 1515, p. 61-80.

Jennings, C.W., 1994, Fault activity map of California and adjacent areas, California Division of Mines and Geology, California Geologic Data Map Series, Map No. 6, scale1:750,000.

Jones, D.L., Graymer, R., Wang, C., McEvilly, T.V. and Lomax, A., 1994, Neogene transpressive evolution of the California Coast Ranges, Tectonics, v. 13, p. 561-574.

Kleinfelder (2000), Log of Test Borings for Route 85/101 Interchange, July and August.

Knudsen, K.L., Sowers, J.M., Witter, R.M., Wentworth, C.M., and Helley, E.J., 2000, Preliminary maps of Quaternary deposits and liquefaction susceptibility, nine county San Francisco Bay region, California, U.S. Geological Survey Open-File Report 00-444, 60 p + 2 maps.

Lienkaemper, J.J. 1992, Map of recently active traces of the Hayward fault, Alameda and Contra Costa Counties, California, U.S. Geological Survey Miscellaneous Field Studies Map MF-2196, 13 p.

Lienkaemper, J.J. and Galehouse, J.S., 1997, Revised long-term creep rates on the Hayward fault, Alameda and Contra Costa Counties, California, U.S. Geological Survey Open-File Report 97-690, 18 p.

Mualchin, L., 1996, California Seismic Hazard Map 1996, California Department of Transportation, Office of Earthquake Engineering.

Niemi, T. M. and Hall, N.T., 1992, Late Holocene slip rate and recurrence of great earthquakes on the San Andreas fault in northern California: Geology, v. 20, p. 195-198.

Santa Clara County, 2002 and 2003 (rev.), Geologic Hazards Zones [Fault Rupture Hazard Zones; Liquefaction Hazard Zones; Combined Landslide, Compressible Soils, and Dike Failure Flooding Hazard Zones] map sheets 1, 2 and 10; revised August 14, 2003 and subsequent web updates at www.sccplanning.org

Santa Clara Valley Water District, 2008. FEMA flood hazard maps, www.valleywater.org/Water/Watersheds

Wallace, R.E., 1990, The San Andreas Fault System, California: U.S. Geological Survey Professional Paper 1515, 283 p.

Western Regional Climate Center, 2008, wrcc.dri.edu

Witter, R.C., Knudsen, K.L., Sowers, J.M., Wentworth, C.M., Koehler, R.D., and Randolph, C.E., 2006, Maps of Quaternary deposits and liquefaction susceptibility in the central San Francisco Bay region, California, in cooperation with the California Geological Survey: A digital database, U.S. Geological Survey, Open-File Report 2006-1037.

Working Group on California Earthquake Probabilities, 1996, Database of potential sources for earthquakes larger than magnitude 6 in northern California: U.S. Geological Survey Open-File Report 96-705.

Working Group on California Earthquake Probabilities, [Michael, A.J., and others], 1999, Understanding earthquakes in the San Francisco Bay Region, major quake likely to strike between 2000 and 2030: U.S. Geological Survey Fact Sheet 152-99.

Working Group for California Earthquake Probabilities, 2003, Earthquake probabilities in the San Francisco Bay region: 2003-2031, US Geological Survey Open-File Report 03-214, 234 p.

Witter, R.C., Knudsen, K.L., Sowers, J.M., Wentworth, C.M., Koehler, R.D., and Randolph, C.E., 2006, Maps of Quaternary deposits and liquefaction susceptibility in the central San Francisco Bay region, California, in cooperation with the California Geological Survey: A digital database, U.S. Geological Survey, Open-File Report 2006-1037.

Wreco, May 2009, Draft Drainage Report, U.S. 101 Auxiliary Lanes Project, Santa Clara County, California.

TABLE 3-1
SUMMARY OF LABORATORY TEST RESULTS

Boring or Sample No.	Date Sampled	Station	Line	Distance from Line (feet)	Depth (feet)	Sieve Analysis Results (Percent Passing)												R-value	Atterberg Limits			Unconfined Compressive Strength (psf)	In-Place Conditions	
						%<1.5-in	%<1-in	%<3/4-in	%<1/2-in	%<3/8-in	%<#4	%<#8	%<#16	%<#30	%<#50	%<#100	%<#200		Liquid Limit	Plastic Limit	Plasticity Index		Water Content (%)	Dry Unit Weight (pcf)
A-09-101	25-Mar-09	39+82.1	"C"	Rt. 297.7	1																		13.9	108
A-09-101	25-Mar-09	39+82.1	"C"	Rt. 297.7	2.5													12						
A-09-102	25-Mar-09	41+94.4	"C"	Rt. 107.2	3.5																	1,900	33.1	86
A-09-102	25-Mar-09	41+94.4	"C"	Rt. 107.2	8.5																	1,620	35.8	84
A-09-103	14-Apr-09	44+80.9	"C"	Lt. 218.4	1																		10.3	123
A-09-103	14-Apr-09	44+80.9	"C"	Lt. 218.4	2.5													12						
A-09-104	14-Apr-09	46+82.7	"C"	Lt. 92.6	2.5													10						
A-09-104	14-Apr-09	46+82.7	"C"	Lt. 92.6	8.5																	670	33.8	85
A-09-107	25-Mar-09	52+64.5	"C"	Rt. 59.5	1													4	82	26		2,510	38.2	80
A-09-107	25-Mar-09	52+64.5	"C"	Rt. 59.5	8.5																	2,980	38.5	81
A-09-109	24-Mar-09	59+09.6	"C"	Lt. 71.2	1																		0.9	127
A-09-109	24-Mar-09	59+09.6	"C"	Lt. 71.2	3.5																		11.6	112
A-09-109	24-Mar-09	59+09.6	"C"	Lt. 71.2	8.5																	2,810	34.6	86
A-09-110	26-Mar-09	61+11.4	"C"	Rt. 58.6	3.5																		10.8	118
A-09-110	26-Mar-09	61+11.4	"C"	Rt. 58.6	8.5																	2,520	26.8	95
A-09-111	24-Mar-09	63+01.6	"C"	Lt. 67.4	2													12						
A-09-112	24-Mar-09	64+59.3	"C"	Rt. 53.8	1																		11.3	114
A-09-113	23-Mar-09	67+05.1	"C"	Lt. 62.3	3.5																		15.9	111
A-09-113	23-Mar-09	67+05.1	"C"	Lt. 62.3	8.5																	1,670	30.9	92
A-09-114	24-Mar-09	68+47.6	"C"	Rt. 64.1	3.5																		10.2	123
A-09-114	24-Mar-09	68+47.6	"C"	Rt. 64.1	8.5																	2,480	24.6	101
A-09-115	24-Mar-09	75+02.7	"C"	Lt. 76.4	3.5																	640	11.6	121
A-09-115	24-Mar-09	75+02.7	"C"	Lt. 76.4	8.5																	3,480	36.3	83
A-09-116	24-Mar-09	77+46.8	"C"	Rt. 51.2	1													16					9.8	119
A-09-117	24-Mar-09	78+89.9	"C"	Lt. 67.7	3.5																	1,820	21.9	99
A-09-117	24-Mar-09	78+89.9	"C"	Lt. 67.7	8.5																	4,030	25.6	98
A-09-118	24-Mar-09	81+49.1	"C"	Rt. 68.9	8.5																	3,940	23.5	102
A-09-119	23-Mar-09	82+96.2	"C"	Lt. 69.3	1																		4.8	101
A-09-119	23-Mar-09	82+96.2	"C"	Lt. 69.3	3.5																	5,030	19.7	106
A-09-120	24-Mar-09	86+23.3	"C"	Rt. 66.6	3.5																	3,020	12.2	125
A-09-120	24-Mar-09	86+23.3	"C"	Rt. 66.6	8.5																	2,000	26.3	97
A-09-121	23-Mar-09	87+26.1	"C"	Lt. 69.5	1																		11.6	114
A-09-121	23-Mar-09	87+26.1	"C"	Lt. 69.5	3.5																	1,990	22.3	97
A-09-121	23-Mar-09	87+26.1	"C"	Lt. 69.5	8.5																	1,940	38.6	83
A-09-123	23-Mar-09	91+08.9	"C"	Lt. 69.3	1																		6.8	113
A-09-123	23-Mar-09	91+08.9	"C"	Lt. 69.3	3.5																	1,490	51.5	67
A-09-123	23-Mar-09	91+08.9	"C"	Lt. 69.3	8.5														72	26	46		11.6	117
A-09-124	24-Mar-09	94+18.9	"C"	Rt. 63.9	8.5																	1,650	39.7	82
A-09-125	23-Mar-09	95+09.2	"C"	Lt. 69.7	3.5													15					16.5	102
A-09-125	23-Mar-09	95+09.2	"C"	Lt. 69.7	8.5																	1,640	35.3	86
A-09-126	24-Mar-09	97+63.6	"C"	Rt. 68.9	1																		17.8	109
A-09-126	24-Mar-09	97+63.6	"C"	Rt. 68.9	3.5																		27.4	95

TABLE 3-1
SUMMARY OF LABORATORY TEST RESULTS

Boring or Sample No.	Date Sampled	Station	Line	Distance from Line (feet)	Depth (feet)	Sieve Analysis Results (Percent Passing)												R-value	Atterberg Limits			Unconfined Compressive Strength (psf)	In-Place Conditions	
						%<1.5-in	%<1-in	%<3/4-in	%<1/2-in	%<3/8-in	%<#4	%<#8	%<#16	%<#30	%<#50	%<#100	%<#200		Liquid Limit	Plastic Limit	Plasticity Index		Water Content (%)	Dry Unit Weight (pcf)
A-09-127	23-Mar-09	99+06.2	"C"	Lt. 74.1	8.5																	2,290	40.9	79
A-09-129	23-Mar-09	103+01.2	"C"	Lt. 63.4	3.5																	500	23.5	96
A-09-129	23-Mar-09	103+01.2	"C"	Lt. 63.4	8.5																	2,090	42.2	77
A-09-130	23-Mar-09	107+08.5	"C"	Lt. 66.6	1																	880	7.7	130
A-09-130	23-Mar-09	107+08.5	"C"	Lt. 66.6	3.5																		8.7	132
A-09-130	23-Mar-09	107+08.5	"C"	Lt. 66.6	8.5																	2,120	25.9	94
A-09-131	25-Mar-09	107+61.6	"C"	Rt. 73.8	1													12				2,120	16.1	112
A-09-131	25-Mar-09	107+61.6	"C"	Rt. 73.8	8.5														75	29		4,010	32.6	89
A-09-132	23-Mar-09	113+18.0	"C"	Lt. 72.4	3.5																		8.2	128
A-09-134	23-Mar-09	117+01.1	"C"	Lt. 62.3	2													10						
A-09-135	25-Mar-09	119+69.5	"C"	Rt. 67.9	1																		9.9	117
A-09-135	25-Mar-09	119+69.5	"C"	Rt. 67.9	8.5																	2,050	25.4	99
A-09-137	14-Apr-09	125+22.5	"C"	Lt. 238.2	8.5																	2,170	37.8	84
A-09-137	14-Apr-09	125+22.5	"C"	Lt. 238.2	4													6						
A-09-138	14-Apr-09	125+00.5	"C"	Lt. 65.4	2.5													13	71	22	49			
O-09-188	10-Dec-09	125+50.0	"C"	Rt. 120.0	1.5													41						
A-09-139	14-Apr-09	128+69.0	"C"	Lt. 205.6	1.5																	6,330	32.4	88
A-09-139	14-Apr-09	128+69.0	"C"	Lt. 205.6	5																	2,440	36.3	86
A-09-139	14-Apr-09	128+69.0	"C"	Lt. 205.6	8.5																	2,220	24.3	100
O-09-186	10-Dec-09	128+69.0	"C"	Lt. 206.0	2.5													41						
A-09-140	27-Mar-09	128+99.6	"C"	Lt. 66.8	3.5													5					33.9	88
A-09-140	27-Mar-09	128+99.6	"C"	Lt. 66.8	2.5													11	55	27				
A-09-141	27-Mar-09	132+93.4	"C"	Lt. 65.3	1																		6.0	125
A-09-142	25-Mar-09	123+24.4	"C"	Rt. 65.8	3.5																	3,410	36.6	82
A-09-142	25-Mar-09	123+24.4	"C"	Rt. 65.8	8.5																	3,380	22.2	102
A-09-143	25-Mar-09	126+65.5	"C"	Rt. 66.6	2													10						
A-09-144	26-Mar-09	131+04.6	"C"	Rt. 62.8	3.5																	7,280	32.7	86
O-09-189	10-Dec-09	131+50.0	"C"	Rt. 90.0	1.5													58						
O-09-190	10-Dec-09	135+00.0	"C"	Lt. 150.0	1.5													59						
A-09-145	20-Mar-09	135+15.1	"C"	Rt. 66.4	1													10	72	33	39			
A-09-146	27-Mar-09	137+15.6	"C"	Lt. 65.3	8.5																	4,200	24.3	101
A-09-149	14-Apr-09	142+04.4	"C"	Lt. 75.3	5																	7,510	27.4	96
A-09-149	14-Apr-09	142+04.4	"C"	Lt. 75.3	10																	2,220	27.3	96
A-09-149	14-Apr-09	142+04.4	"C"	Lt. 75.3	15																	1,200	17.2	118
A-09-149	14-Apr-09	142+04.4	"C"	Lt. 75.3	20	100	100	100	100	100	99	96	81	51	21	10	7						21.8	107
A-09-149	14-Apr-09	142+04.4	"C"	Lt. 75.3	25																	2,320	24.3	102
A-09-149	14-Apr-09	142+04.4	"C"	Lt. 75.3	30																	5,230	17.8	112
A-09-150	26-Mar-09	146+96.6	"C"	Lt. 63.1	3.5																		24.5	
A-09-152	30-Mar-09	150+00.8	"C"	Rt. 69.2	1																		12.9	119
A-09-152	30-Mar-09	150+00.8	"C"	Rt. 69.2	4.5																	3,510	32.0	88
A-09-152	30-Mar-09	150+00.8	"C"	Rt. 69.2	8.5																	2,070	19.1	106
A-09-152	30-Mar-09	150+00.8	"C"	Rt. 69.2	13.5																		9.0	143

TABLE 3-1
SUMMARY OF LABORATORY TEST RESULTS

Boring or Sample No.	Date Sampled	Station	Line	Distance from Line (feet)	Depth (feet)	Sieve Analysis Results (Percent Passing)												R-value	Atterberg Limits			Unconfined Compressive Strength (psf)	In-Place Conditions	
						%<1.5-in	%<1-in	%<3/4-in	%<1/2-in	%<3/8-in	%<#4	%<#8	%<#16	%<#30	%<#50	%<#100	%<#200		Liquid Limit	Plastic Limit	Plasticity Index		Water Content (%)	Dry Unit Weight (pcf)
A-09-152	30-Mar-09	150+00.8	"C"	Rt. 69.2	18.5																	3,540	24.5	101
A-09-152	30-Mar-09	150+00.8	"C"	Rt. 69.2	23.5																	1,880	20.3	110
A-09-152	30-Mar-09	150+00.8	"C"	Rt. 69.2	28.5																	6,540	23.8	102
A-09-152	30-Mar-09	150+00.8	"C"	Rt. 69.2	33.5																	3,260	24.8	99
A-09-153	31-Mar-09	153+41.3	"C"	Rt. 66.5	1																	6,620	21.5	101
A-09-153	31-Mar-09	153+41.3	"C"	Rt. 66.5	3.5													11				8,270	17.4	107
A-09-153	31-Mar-09	153+41.3	"C"	Rt. 66.5	8.5	100	93	93	87	79	63	50	38	30	23	16	11						8.9	138
A-09-153	31-Mar-09	153+41.3	"C"	Rt. 66.5	13.5																	4,220	22.5	104
A-09-153	31-Mar-09	153+41.3	"C"	Rt. 66.5	18.5																	3,740	23.0	104
A-09-153	31-Mar-09	153+41.3	"C"	Rt. 66.5	23.5																	1,090	28.0	95
A-09-153	31-Mar-09	153+41.3	"C"	Rt. 66.5	28.5																	6,880	15.5	110
A-09-153	31-Mar-09	153+41.3	"C"	Rt. 66.5	33.5																	2,500	28.7	101
A-09-154	13-Apr-09	153+78.4	"C"	Lt. 69.8	5																	4,220	27.6	93
A-09-154	13-Apr-09	153+78.4	"C"	Lt. 69.8	10																	1,770	25.7	99
A-09-154	13-Apr-09	153+78.4	"C"	Lt. 69.8	20																	3,880	21.8	107
A-09-154	13-Apr-09	153+78.4	"C"	Lt. 69.8	25																	2,640	25.3	99
A-09-154	13-Apr-09	153+78.4	"C"	Lt. 69.8	30																	6,970	25.2	101
A-09-154	13-Apr-09	153+78.4	"C"	Lt. 69.8	35																	1,020	26.6	96
O-09-192	10-Dec-09	159+75.0	"C"	Lt. 112.0	1.5													43						
A-09-157	14-Apr-09	166+08	"C"	Lt. 185.0	2.5													30						
A-09-157	14-Apr-09	166+08.3	"C"	Lt. 185.0	5																	6,190	29.9	92
A-09-157	14-Apr-09	166+08.3	"C"	Lt. 185.0	8.5																	1,520	24.8	100
O-09-193	10-Dec-09	166+10.0	"C"	Lt. 185.0	1.5													27						
O-09-194	10-Dec-09	168+20.0	"C"	Rt. 200.0	1.5													10						
A-09-158	26-Mar-09	168+95.2	"C"	Lt. 84.4	4																	4,680	26.1	96
A-09-159	12-Apr-09	168+08.3	"C"	Rt. 62.7	1																	4,390	27.1	96
A-09-160	12-Apr-09	171+24.8	"C"	Rt. 64.6	8.5																	1,580	22.7	104
A-09-161	1-Apr-09	172+62.8	"C"	Lt. 86.7	1													6				5,110	26.2	97
A-09-161	1-Apr-09	172+62.8	"C"	Lt. 86.7	5																	3,280	16.9	115
A-09-161	1-Apr-09	172+62.8	"C"	Lt. 86.7	10																	1,980	23.2	103
A-09-161	1-Apr-09	172+62.8	"C"	Lt. 86.7	15																	1,360	22.4	104
A-09-161	1-Apr-09	172+62.8	"C"	Lt. 86.7	20																	5,450	22.4	106
A-09-161	1-Apr-09	172+62.8	"C"	Lt. 86.7	25																	5,650	21.5	106
A-09-161	1-Apr-09	172+62.8	"C"	Lt. 86.7	30																	2,410	20.7	110
A-09-161	1-Apr-09	172+62.8	"C"	Lt. 86.7	35																	850	17.6	113
A-09-162	12-Apr-09	175+65.4	"C"	Rt. 63.0	5																		20.3	105
A-09-163	26-Mar-09	178+43.5	"C"	Lt. 66.6	3.5																	4,280	24.3	95
A-09-164	12-Apr-09	179+15.6	"C"	Rt. 62.6	2.5																	4,140	21.4	104
A-09-164	12-Apr-09	179+15.6	"C"	Rt. 62.6	5																	3,560	14.5	116
A-09-164	12-Apr-09	179+15.6	"C"	Rt. 62.6	10	100	100	100	100	100	99.2	93	81	72	59	38	27						16.9	115
A-09-164	12-Apr-09	179+15.6	"C"	Rt. 62.6	30																	1,530	22.4	104
A-09-164	12-Apr-09	179+15.6	"C"	Rt. 62.6	35																	1,440	26.8	97

TABLE 3-1
SUMMARY OF LABORATORY TEST RESULTS

Boring or Sample No.	Date Sampled	Station	Line	Distance from Line (feet)	Depth (feet)	Sieve Analysis Results (Percent Passing)												R-value	Atterberg Limits			Unconfined Compressive Strength (psf)	In-Place Conditions	
						%<1.5-in	%<1-in	%<3/4-in	%<1/2-in	%<3/8-in	%<#4	%<#8	%<#16	%<#30	%<#50	%<#100	%<#200		Liquid Limit	Plastic Limit	Plasticity Index		Water Content (%)	Dry Unit Weight (pcf)
A-09-165	26-Mar-09	182+06.1	"C"	Lt. 73.0	1																		18.7	101
A-09-165	26-Mar-09	182+06.1	"C"	Lt. 73.0	8.5																	1,350	23.6	100
A-09-166	12-Apr-09	183+18.1	"C"	Rt. 59.8	2													11						
A-09-166	12-Apr-09	183+18.1	"C"	Rt. 59.8	5																	7,270	16.8	109
A-09-167	13-Apr-09	189+96.7	"C"	Lt. 72.2	4.5																	8,870	24.9	97
A-09-167	13-Apr-09	189+96.7	"C"	Lt. 72.2	10																		15.0	120
A-09-167	13-Apr-09	189+96.7	"C"	Lt. 72.2	15																	2,420	27.7	95
A-09-167	13-Apr-09	189+96.7	"C"	Lt. 72.2	20														32	23		960	32.0	89
A-09-167	13-Apr-09	189+96.7	"C"	Lt. 72.2	25																	6,110	23.3	104
A-09-167	13-Apr-09	189+96.7	"C"	Lt. 72.2	30																	3,040	26.2	99
A-09-169	31-Mar-09	193+94.5	"C"	Rt. 60.4	1																	9,590	29.9	89
A-09-169	31-Mar-09	193+94.5	"C"	Rt. 60.4	3.5																	6,950	27.0	94
A-09-169	31-Mar-09	193+94.5	"C"	Rt. 60.4	8.5																	3,030	24.0	100
A-09-169	31-Mar-09	193+94.5	"C"	Rt. 60.4	13.5																	1,460	27.4	96
A-09-169	31-Mar-09	193+94.5	"C"	Rt. 60.4	18.5	100	100	100	98	97	87	77	68	60	42	25	18						17.1	117
A-09-169	31-Mar-09	193+94.5	"C"	Rt. 60.4	28.5																	4,640	25.7	99
A-09-169	31-Mar-09	193+94.5	"C"	Rt. 60.4	33.5																	2,460	25.9	99
A-09-170	10-Dec-09	198+30.4	"C"	Lt. 119.8	2.5													60						
A-09-170	13-Apr-09	198+30.4	"C"	Lt. 119.8	3																		14.4	120
A-09-170	13-Apr-09	198+30.4	"C"	Lt. 119.8	5																		17.1	116
A-09-170	13-Apr-09	198+30.4	"C"	Lt. 119.8	8.5																		10.0	127
A-09-171	1-Apr-09	197+99.3	"C"	Rt. 75.9	1																	1,870	37.1	77
A-09-171	1-Apr-09	197+99.3	"C"	Rt. 75.9	3.5																	4,140	34.8	85
A-09-171	1-Apr-09	197+99.3	"C"	Rt. 75.9	8.5																	1,270	25.4	98
A-09-171	1-Apr-09	197+99.3	"C"	Rt. 75.9	13.5																	990	20.4	104
A-09-171	1-Apr-09	197+99.3	"C"	Rt. 75.9	18.5																	1,660	32.4	89
A-09-171	1-Apr-09	197+99.3	"C"	Rt. 75.9	23.5																	870	18.7	113
A-09-171	1-Apr-09	197+99.3	"C"	Rt. 75.9	28.5																	1,400	26.4	98
A-09-171	1-Apr-09	197+99.3	"C"	Rt. 75.9	33.5																	2,250	31.2	92
A-09-171	1-Apr-09	197+99.3	"C"	Rt. 75.9	38.5																	1,040	20.5	110
A-09-172	26-Mar-09	200+95.3	"C"	Lt. 67.2	2													63					6.6	133
O-09-196	10-Dec-09	202+00.0	"C"	Rt. 130.0	1.5													40						
A-09-174	26-Mar-09	204+75.2	"C"	Lt. 73.9	5																	6,620	22.4	103
A-09-175	1-Apr-09	210+04.7	"C"	Rt. 85.2	2													41						
A-09-175	1-Apr-09	210+04.7	"C"	Rt. 85.2	5																	4,200	28.4	94
A-09-175	1-Apr-09	210+04.7	"C"	Rt. 85.2	10																	1,000	21.5	105
A-09-175	1-Apr-09	210+04.7	"C"	Rt. 85.2	15																	1,730	23.8	102
A-09-175	1-Apr-09	210+04.7	"C"	Rt. 85.2	20																	1,710	24.0	103
A-09-175	1-Apr-09	210+04.7	"C"	Rt. 85.2	25																	1,560	31.1	93
A-09-175	1-Apr-09	210+04.7	"C"	Rt. 85.2	30	100	100	100	99	93	82	69	57	46	33	21	15						15.0	123
O-09-197	10-Dec-09	216+00.0	"C"	Rt. 250.0	1.5													61						
A-09-177	2-Apr-09	166+45.1	"C"	Lt. 86.3	1																	3,210	28.7	89

TABLE 3-1
SUMMARY OF LABORATORY TEST RESULTS

Boring or Sample No.	Date Sampled	Station	Line	Distance from Line (feet)	Depth (feet)	Sieve Analysis Results (Percent Passing)												R-value	Atterberg Limits			Unconfined Compressive Strength (psf)	In-Place Conditions	
						%<1.5-in	%<1-in	%<3/4-in	%<1/2-in	%<3/8-in	%<#4	%<#8	%<#16	%<#30	%<#50	%<#100	%<#200		Liquid Limit	Plastic Limit	Plasticity Index		Water Content (%)	Dry Unit Weight (pcf)
A-09-177	2-Apr-09	166+45.1	"C"	Lt. 86.3	3													14						
A-09-177	2-Apr-09	166+45.1	"C"	Lt. 86.3	5																	7,450	22.5	104
A-09-177	2-Apr-09	166+45.1	"C"	Lt. 86.3	10																	1,150	28.3	94
A-09-177	2-Apr-09	166+45.1	"C"	Lt. 86.3	15																		20.3	101
A-09-177	2-Apr-09	166+45.1	"C"	Lt. 86.3	20																		21.0	111
A-09-177	2-Apr-09	166+45.1	"C"	Lt. 86.3	25	100	100	100	100	99	95	91	88	83	69	42	28						17.8	116
A-09-177	2-Apr-09	166+45.1	"C"	Lt. 86.3	30																	3,830	18.4	115
A-09-177	2-Apr-09	166+45.1	"C"	Lt. 86.3	35																	7,790	21.6	107
A-09-178	30-Mar-09	120+02.2	"C"	Rt. 75.6	14																	6,130	22.2	106
A-09-178	30-Mar-09	120+02.2	"C"	Rt. 75.6	14.5																		21.0	107
A-09-178	30-Mar-09	120+02.2	"C"	Rt. 75.6	18.5																	5,430	28.9	93
A-09-178	30-Mar-09	120+02.2	"C"	Rt. 75.6	23.5																		16.3	113
A-09-178	30-Mar-09	120+02.2	"C"	Rt. 75.6	24.5																		13.9	118
A-09-178	30-Mar-09	120+02.2	"C"	Rt. 75.6	28.5																		8.3	132
A-09-178	30-Mar-09	120+02.2	"C"	Rt. 75.6	33.5	100	100	100	100	99.5	97	86	65	44	25	16	12						12.7	
A-09-179	6-Apr-09	95+40.3	"C"	Lt. 62.6	10																	1,200	24.4	101
A-09-179	6-Apr-09	95+40.3	"C"	Lt. 62.6	15																	2,010	20.8	107
A-09-179	6-Apr-09	95+40.3	"C"	Lt. 62.6	20	100	100	91	81	76	58	41	28	20	13	9	7						16.8	115
A-09-179	6-Apr-09	95+40.3	"C"	Lt. 62.6	20.5																		13.1	116
A-09-179	6-Apr-09	95+40.3	"C"	Lt. 62.6	25																	720	32.2	88
A-09-179	6-Apr-09	95+40.3	"C"	Lt. 62.6	30																		15.5	121
A-09-179	6-Apr-09	95+40.3	"C"	Lt. 62.6	35																	1,220	29.6	93
A-09-180	6-Apr-09	91+35.4	"C"	Lt. 69.9	1																	1,000	23.4	89
A-09-180	6-Apr-09	91+35.4	"C"	Lt. 69.9	10																	1,460	32.7	89
A-09-180	6-Apr-09	91+35.4	"C"	Lt. 69.9	15																	1,990	19.5	110
A-09-180	6-Apr-09	91+35.4	"C"	Lt. 69.9	25																	5,090	22.6	103
A-09-180	6-Apr-09	91+35.4	"C"	Lt. 69.9	30																	2,120	30.9	91
A-09-180	6-Apr-09	91+35.4	"C"	Lt. 69.9	35																	2,520	23.8	100
A-09-181	2-Apr-09	86+93.7	"C"	Lt. 69.8	10																	1,740	25.5	98
A-09-181	2-Apr-09	86+93.7	"C"	Lt. 69.8	15																	2,800	31.1	90
A-09-181	2-Apr-09	86+93.7	"C"	Lt. 69.8	20																	2,600	20.7	106
A-09-181	2-Apr-09	86+93.7	"C"	Lt. 69.8	25																	5,330	20.2	108
A-09-181	2-Apr-09	86+93.7	"C"	Lt. 69.8	30																	1,510	27.7	95
A-09-182	30-Mar-09	85+06.9	"C"	Rt. 69.3	1																		11.3	114
A-09-182	30-Mar-09	85+06.9	"C"	Rt. 69.3	8.5																	1,120	25.5	99
A-09-182	30-Mar-09	85+06.9	"C"	Rt. 69.3	13.5																	2,630	27.1	96
A-09-182	30-Mar-09	85+06.9	"C"	Rt. 69.3	18.5														37	18	19	1,320	26.0	99
A-09-182	30-Mar-09	85+06.9	"C"	Rt. 69.3	23.5																	5,440	18.6	110
A-09-182	30-Mar-09	85+06.9	"C"	Rt. 69.3	28.5																	1,800	28.2	94
A-09-182	30-Mar-09	85+06.9	"C"	Rt. 69.3	33.5																	800	19.3	108
A-09-183	2-Apr-09	74+70.1	"C"	Lt. 71.5	1																		8.8	125
A-09-183	2-Apr-09	74+70.1	"C"	Lt. 71.5	5																	2,560	23.5	97

TABLE 3-1
SUMMARY OF LABORATORY TEST RESULTS

Boring or Sample No.	Date Sampled	Station	Line	Distance from Line (feet)	Depth (feet)	Sieve Analysis Results (Percent Passing)												R-value	Atterberg Limits			Unconfined Compressive Strength (psf)	In-Place Conditions	
						%<1.5-in	%<1-in	%<3/4-in	%<1/2-in	%<3/8-in	%<#4	%<#8	%<#16	%<#30	%<#50	%<#100	%<#200		Liquid Limit	Plastic Limit	Plasticity Index		Water Content (%)	Dry Unit Weight (pcf)
A-09-183	2-Apr-09	74+70.1	"C"	Lt. 71.5	10																	2,540	29.5	91
A-09-183	2-Apr-09	74+70.1	"C"	Lt. 71.5	15																		11.6	132
A-09-183	2-Apr-09	74+70.1	"C"	Lt. 71.5	25																	880	29.6	91
A-09-183	2-Apr-09	74+70.1	"C"	Lt. 71.5	30																		21.7	103
A-09-184	30-Mar-09	70+02.4	"C"	Rt. 63.7	1																	2,880	11.2	121
A-09-184	30-Mar-09	70+02.4	"C"	Rt. 63.7	3.5																	1,100	14.2	120
A-09-184	30-Mar-09	70+02.4	"C"	Rt. 63.7	8.5																	3,010	28.4	94
A-09-184	30-Mar-09	70+02.4	"C"	Rt. 63.7	13.5																	5,750	22.5	103
A-09-184	30-Mar-09	70+02.4	"C"	Rt. 63.7	18.5																	1,250	25.6	98
A-09-184	30-Mar-09	70+02.4	"C"	Rt. 63.7	23.5																	1,070	28.3	94
A-09-184	30-Mar-09	70+02.4	"C"	Rt. 63.7	28.5	100	100	100	94	86	67	52	39	29	19	13	10						13.0	119
A-09-184	30-Mar-09	70+02.4	"C"	Rt. 63.7	33.5																	1,830	24.5	101
A-09-185	6-Apr-09	65+01.9	"C"	Rt. 72.4	13.5																	1,180	27.6	96
A-09-185	6-Apr-09	65+01.9	"C"	Rt. 72.4	18.5																	1,500	23.2	102
A-09-185	6-Apr-09	65+01.9	"C"	Rt. 72.4	23.5																	7,190	23.8	102
A-09-185	6-Apr-09	65+01.9	"C"	Rt. 72.4	28.5																	1,720	30.0	91
A-09-185	6-Apr-09	65+01.9	"C"	Rt. 72.4	33.5																	2,950	25.2	99
R-09-001	24-Mar-09	72+60.3	"C"	Rt. 96.8	5																	1,230	12.3	106
R-09-001	24-Mar-09	72+60.3	"C"	Rt. 96.8	9																		16.6	106
R-09-001	24-Mar-09	72+60.3	"C"	Rt. 96.8	12.5																	1,780	20.5	109
R-09-001	24-Mar-09	72+60.3	"C"	Rt. 96.8	20																	2,040	20.8	106
R-09-001	24-Mar-09	72+60.3	"C"	Rt. 96.8	25														37	16	21	1,070	24.4	100
R-09-001	24-Mar-09	72+60.3	"C"	Rt. 96.8	30																	2,240	26.2	97
R-09-001	24-Mar-09	72+60.3	"C"	Rt. 96.8	35																	1,140	29.7	92
R-09-001	24-Mar-09	72+60.3	"C"	Rt. 96.8	40														33	12	21			
R-09-001	24-Mar-09	72+60.3	"C"	Rt. 96.8	45																		13.0	122
R-09-001	24-Mar-09	72+60.3	"C"	Rt. 96.8	55																	1,700	34.0	87
R-09-001	24-Mar-09	72+60.3	"C"	Rt. 96.8	60														45	20	25		35.7	
R-09-001	24-Mar-09	72+60.3	"C"	Rt. 96.8	65																	2,180	24.8	100
R-09-001	24-Mar-09	72+60.3	"C"	Rt. 96.8	70														49	24	25	2,960	27.4	96
R-09-001	24-Mar-09	72+60.3	"C"	Rt. 96.8	75																	4,190	29.4	93
R-09-001	24-Mar-09	72+60.3	"C"	Rt. 96.8	85																	2,420	28.3	94
R-09-001	24-Mar-09	72+60.3	"C"	Rt. 96.8	90																	3,250	28.2	94
R-09-001	24-Mar-09	72+60.3	"C"	Rt. 96.8	100																	3,150	25.9	96
R-09-004	23-Mar-09	109+32.5	"C"	Lt. 91.5	5																	1,740	9.1	120
R-09-004	23-Mar-09	109+32.5	"C"	Lt. 91.5	15																	3,390	33.8	87
R-09-004	23-Mar-09	109+32.5	"C"	Lt. 91.5	20	100	100	100	97	92	75	57	38	26	18	13	10						12.2	126
R-09-004	23-Mar-09	109+32.5	"C"	Lt. 91.5	30	100	100	100	100	100	98	87	64	44	24	12	9						16.7	116
R-09-004	23-Mar-09	109+32.5	"C"	Lt. 91.5	35																	2,510	26.1	97
R-09-004	23-Mar-09	109+32.5	"C"	Lt. 91.5	40																	1,450	36.8	89
R-09-004	23-Mar-09	109+32.5	"C"	Lt. 91.5	50																	2,460	31.1	91
R-09-004	23-Mar-09	109+32.5	"C"	Lt. 91.5	51																	1,860	31.0	90

TABLE 3-1
SUMMARY OF LABORATORY TEST RESULTS

Boring or Sample No.	Date Sampled	Station	Line	Distance from Line (feet)	Depth (feet)	Sieve Analysis Results (Percent Passing)												R-value	Atterberg Limits			Unconfined Compressive Strength (psf)	In-Place Conditions	
						%<1.5-in	%<1-in	%<3/4-in	%<1/2-in	%<3/8-in	%<#4	%<#8	%<#16	%<#30	%<#50	%<#100	%<#200		Liquid Limit	Plastic Limit	Plasticity Index		Water Content (%)	Dry Unit Weight (pcf)
R-09-004	23-Mar-09	109+32.5	"C"	Lt. 91.5	55														54	23	31	2,820	30.6	91
R-09-004	23-Mar-09	109+32.5	"C"	Lt. 91.5	60																	4,680	26.1	99
R-09-004	23-Mar-09	109+32.5	"C"	Lt. 91.5	65																	2,360	22.2	102
R-09-004	23-Mar-09	109+32.5	"C"	Lt. 91.5	70																	3,690	22.3	103
R-09-004	23-Mar-09	109+32.5	"C"	Lt. 91.5	75														55	24	31	3,280	28.9	94
R-09-004	23-Mar-09	109+32.5	"C"	Lt. 91.5	80																	1,500	30.8	91
R-09-004	23-Mar-09	109+32.5	"C"	Lt. 91.5	85																	2,490	29.2	92
R-09-004	23-Mar-09	109+32.5	"C"	Lt. 91.5	90																	2,830	27.2	94
R-09-004	23-Mar-09	109+32.5	"C"	Lt. 91.5	95	100	100	100	100	100	100	100	99.96	99.71	98.19	95.11	93.25					4,360	31.5	109
R-09-005	25-Mar-09	188+53.6	"C"	Rt. 72.8	5																	10,320	26.3	95
R-09-005	25-Mar-09	188+53.6	"C"	Rt. 72.8	9																	1,920	22.6	104
R-09-005	25-Mar-09	188+53.6	"C"	Rt. 72.8	12																	1,540	24.8	100
R-09-005	25-Mar-09	188+53.6	"C"	Rt. 72.8	15														NP	NP	NP	1,002	22.0	104
R-09-005	25-Mar-09	188+53.6	"C"	Rt. 72.8	17.5	100	100	100	99	98	88	71	53	39	17	6	5						16.3	
R-09-005	25-Mar-09	188+53.6	"C"	Rt. 72.8	20																	3,150	20.8	110
R-09-005	25-Mar-09	188+53.6	"C"	Rt. 72.8	25																	1,470	23.4	103
R-09-005	25-Mar-09	188+53.6	"C"	Rt. 72.8	30	100	100	100	95	91	73	55	39	24	13	8	5						12.9	
R-09-005	25-Mar-09	188+53.6	"C"	Rt. 72.8	35	100	100	100	100	100	99.85	97.86	96	92	76	43	25						19.5	107
R-09-005	25-Mar-09	188+53.6	"C"	Rt. 72.8	40																	9,410	21.3	109
R-09-005	25-Mar-09	188+53.6	"C"	Rt. 72.8	45														51	20	31	8,220	24.9	100
R-09-005	25-Mar-09	188+53.6	"C"	Rt. 72.8	50																	6,000	24.0	101

Table 4-2
Post Liquefaction Settlement Estimated from Exploratory Borings

Nearby Structure	Boring Number	Depth to Top of Layer (ft)	Layer Thickness (ft)	Estimated Settlement (inches)*	Estimated Factor of Safety of Liquified Layer(s)*
Overhead Sign	A-09-154	15, 25	1.5, 1.0	0.5	0.7, 0.6
Overhead Sign	A-09-164	8	5.0	1.0	0.5
Overhead Sign	A-09-169	18	5.0	1.0	0.3
Overhead Sign	A-09-177	15, 26	1.0, 1.0	0.5	0.6, 0.5
Overhead Sign	A-09-179	20	5	1.0	0.4
Matadero Creek Bridge	R-09-001	9	1.5	0.5	0.5
Adobe Creek Bridge	R-09-004	17.5, 45.5	8.5, 1.0	2.5	0.4, 0.3
Permanente Creek Box-Culvert	R-09-005	8, 17, 35.5	1.5, 3.0, 4.0	1.5	0.6, 0.4, 0.4

*Rounded off to nearest 0.5.

Table 4-3
Post Liquefaction Settlement Estimated From CPTs

Nearby Structure	CPT Number	Estimated Settlement (inches)*	Estimated** Factor of Safety of Liquefied Layer(s)
Matadero Creek Bridge	CPT-09-002	1.5	0.2-0.6
Adobe Creek Bridge	CPT-09-003	2.0	0.2-0.5
Permanente Creek Box-Culvert	CPT-09-006	1.5	0.2-0.9
Overhead Sign	CPT-09-106	1.0	0.3-0.8
Overhead Sign	CPT-09-151	1.0	0.3-0.9
Overhead Sign	CPT-09-176	1.0	0.2-0.9

*Rounded off to nearest 0.5.
** At each CPT, the lowest (i.e., lower bound) FOS for each LPL was calculated (see Appendix E); the minimum and maximum of the lower bounds were then listed in this column

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI	101	48.7/51.9		

INDEX OF PLANS

STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON

STATE HIGHWAY

IN SANTA CLARA COUNTY
IN MOUNTAIN VIEW AND PALO ALTO
FROM 0.1 MILE NORTH OF SHORELINE BOULEVARD OVERCROSSING
TO 0.1 MILE SOUTH OF OREGON EXPRESSWAY OVERCROSSING

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006

LOCATION MAP

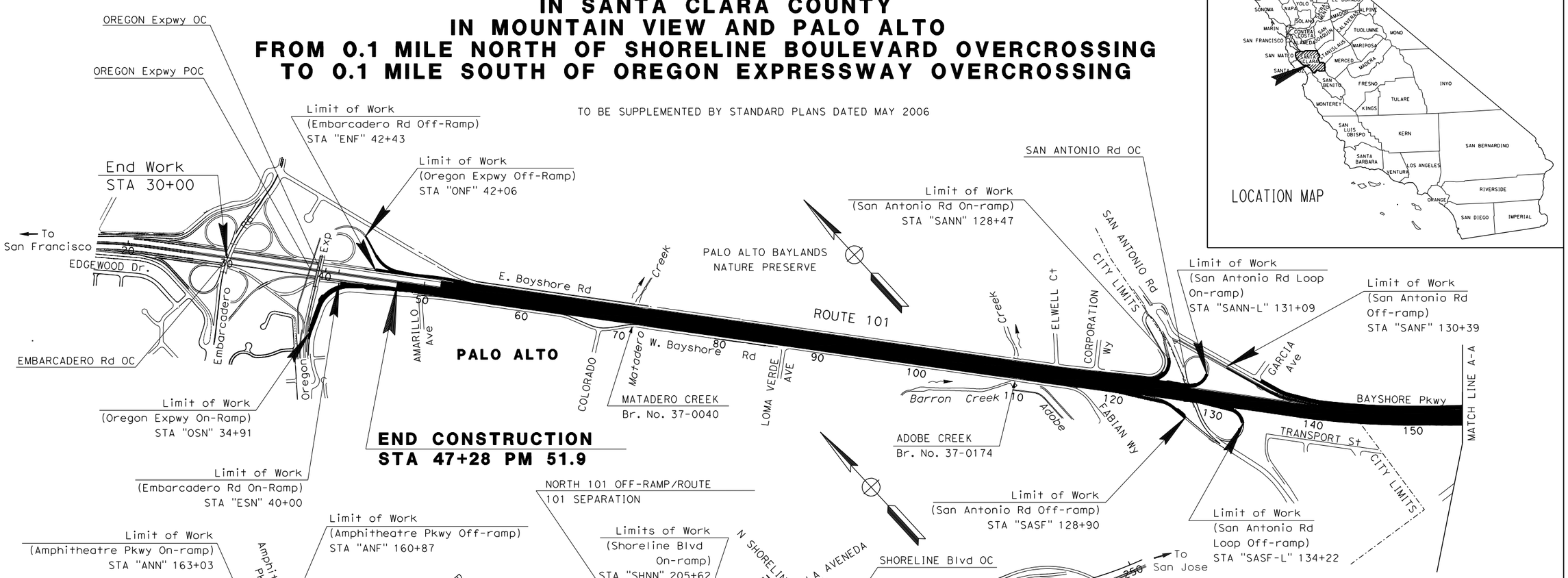


FIGURE 1-1

PROJECT ENGINEER DATE
REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

URS Corporation
55 S. MARKET STREET, SUITE 1500
SAN JOSE, CA 95113

SANTA CLARA VALLEY
TRANSPORTATION AUTHORITY
3331 N. FIRST STREET
SAN JOSE, CA 95134

CONTRACT No. 04-4A3304

LAST REVISION 00-00-00

DATE PLOTTED => 1/15/2010
TIME PLOTTED => 8:57:55 AM

APPROVED AS TO IMPACT ON STATE FACILITIES AND CONFORMANCE WITH APPLICABLE STATE STANDARDS AND PRACTICES AND THAT TECHNICAL OVERSIGHT WAS PERFORMED.

CONSULTANT DESIGN ENGINEER | CALTRANS DESIGN OVERSIGHT APPROVAL | REGISTRATION No. | LICENSE Exp DATE | DATE SIGNED

THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO CONTRACTORS."

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	48.97/52.17		

REGISTERED CIVIL ENGINEER DATE

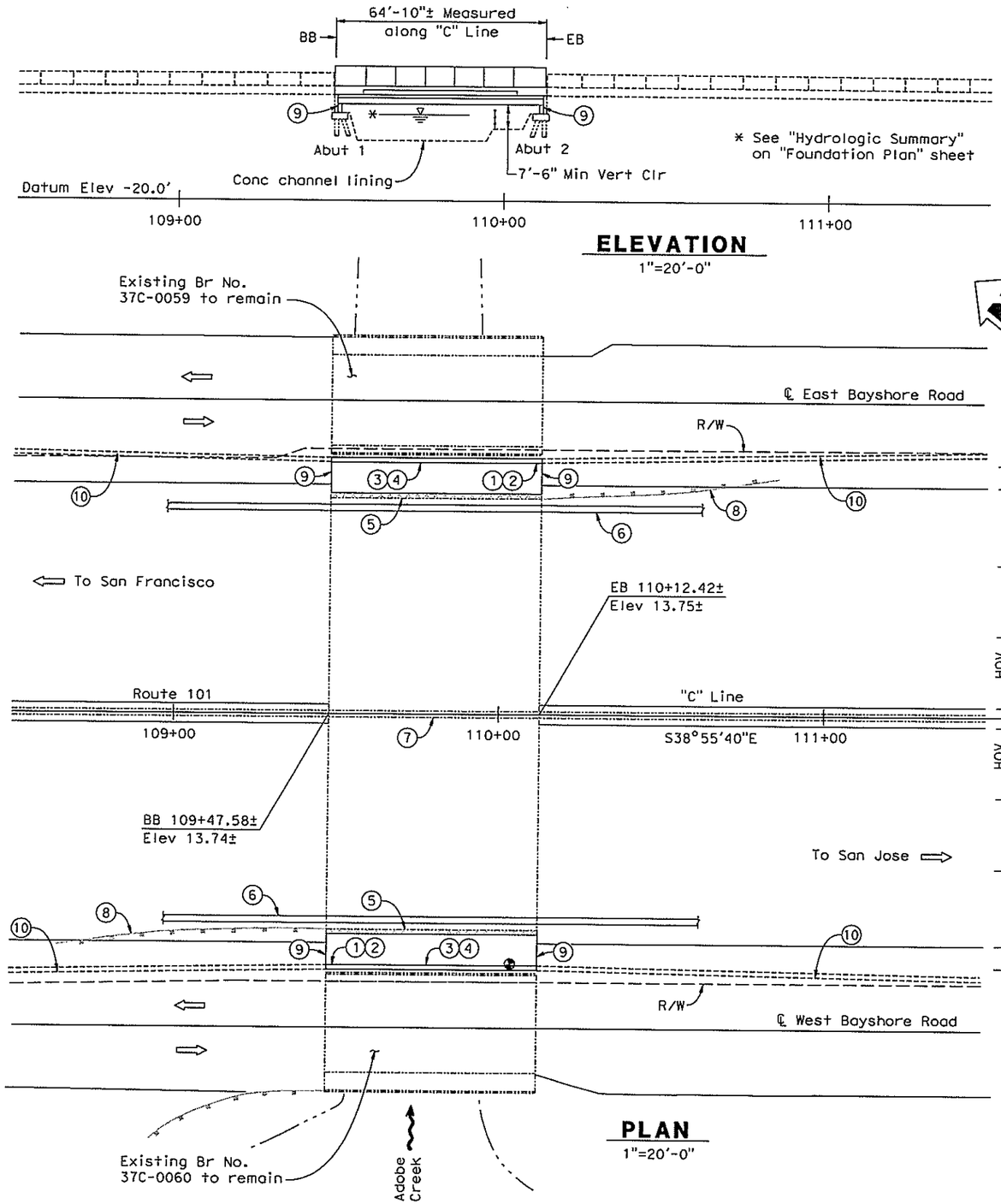
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Anthony Dubovik II No. C36372 Exp. 06/30/10 CIVIL STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

VALLEY TRANSPORTATION AUTHORITY
3331 N FIRST STREET
SAN JOSE, CA 95134

URS CORPORATION
1380 LEAD HILL BLVD, SUITE 100
ROSEVILLE, CA 95661-2997



NOTES:

1. Paint Bridge Number 37-0174
2. Paint Bridge Name and Year Completed
3. Concrete Barrier (Type 736)
4. Chain Link Railing (Type 7)
5. Remove existing Concrete Barrier (Type 27R)
6. Temporary Railing (Type K), see "Road Plans"
7. Existing Concrete Barrier (Type 50A Modified)
8. Remove existing MBGR, see "Road Plans"
9. Modify existing abutment wall
10. Concrete Barrier (Type 60C) with Chain Link Fence, see "Road Plans"

LEGEND:

- Indicates existing structure
- Indicates bridge removal (portion)
- Indicates direction of traffic
- Point of minimum vertical clearance
- Indicates direction of flow

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

Note: For "Index To Plans" and "General Notes" see "Index To Plans" sheet.

FIGURE 1-2

DESIGN OVERSIGHT	DESIGN	BY S. Landis	CHECKED	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE
	DETAILS	BY L. Davis	CHECKED	LAYOUT	BY A. Dubovik II
SIGN OFF DATE	QUANTITIES	BY	CHECKED	SPECIFICATIONS	BY

CHECKED

PLANS AND SPECS COMPARED

DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

CU 04
EA 4A3301

FILE => u:\adobe\37-0174-a-gp01.dgn

BRIDGE NO. 37-0174
POST MILES 50.66

ADOBE CREEK (WIDEN)
GENERAL PLAN No. 1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY) 6-18-09 11-20-09

SHEET 1 OF 14

USERNAME => Lynette_Dobbie PLOTTED => 11/20/2009 TIME PLOTTED => 10:35:22 AM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	48.97/52.17		

REGISTERED CIVIL ENGINEER DATE

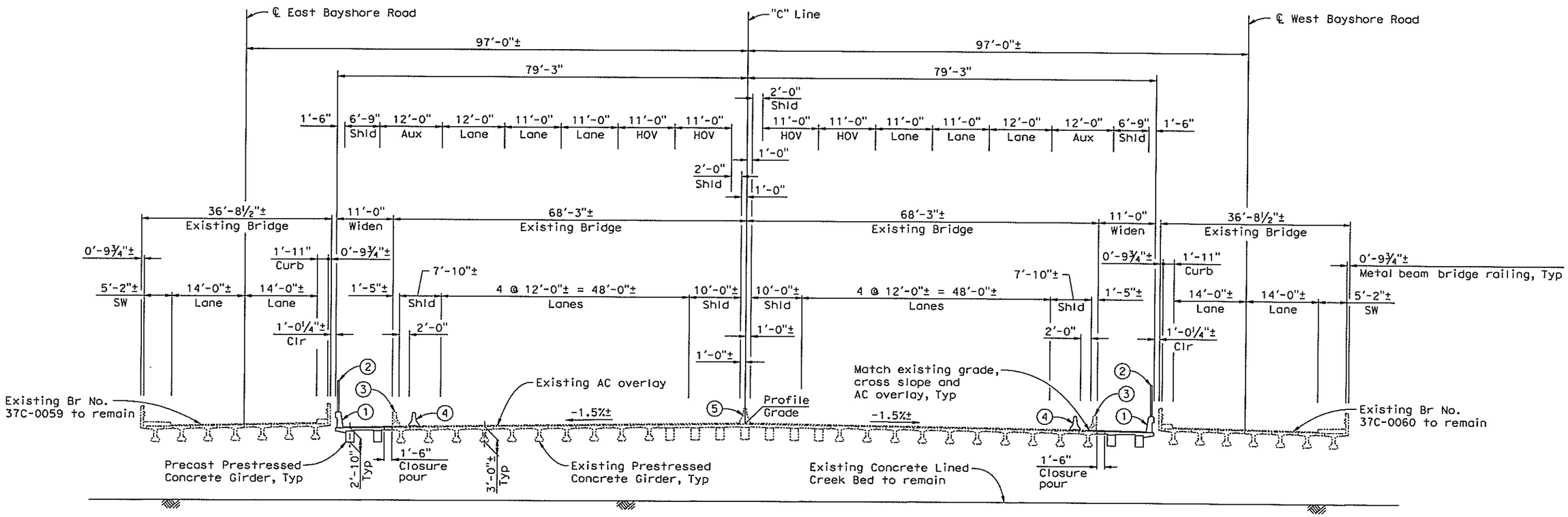
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Anthony Dubovik II No. C36372 Exp. 06/30/10 CIVIL STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

VALLEY TRANSPORTATION AUTHORITY
3331 N FIRST STREET
SAN JOSE, CA 95134

URS CORPORATION
1380 LEAD HILL BLVD, SUITE 100
ROSEVILLE, CA 95661-2997



TYPICAL SECTION

1"=10'-0"

NOTES:

1. Concrete Barrier (Type 736)
2. Chain Link Railing (Type 7)
3. Remove existing Concrete Barrier (Type 27R)
4. Temporary Railing (Type K), see "Road Plans"
5. Existing Concrete Barrier (Type 50A Modified)

LEGEND:

Indicates existing structure

Indicates bridge removal (portion)

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

FIGURE 1-3

DESIGN OVERSIGHT	DESIGN	BY S. Landis	CHECKED
	DETAILS	BY L. Davis	CHECKED
SIGN OFF DATE	QUANTITIES	BY	CHECKED

DESIGN DETAIL SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

CU 04
EA 4A3301

BRIDGE NO. 37-0174
POST MILE 50.66

ADOBE CREEK (WIDEN)
GENERAL PLAN No. 2

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY) 6-16-09 10-29-09

SHEET 2 OF 14

FILE => u:\adobe\37-0174-a-gp02.dgn

USERNAME => Lynette_D&ATE PLOTTED => 11/20/2009 TIME PLOTTED => 10:35:23 AM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	48.97/52.17		

REGISTERED CIVIL ENGINEER DATE

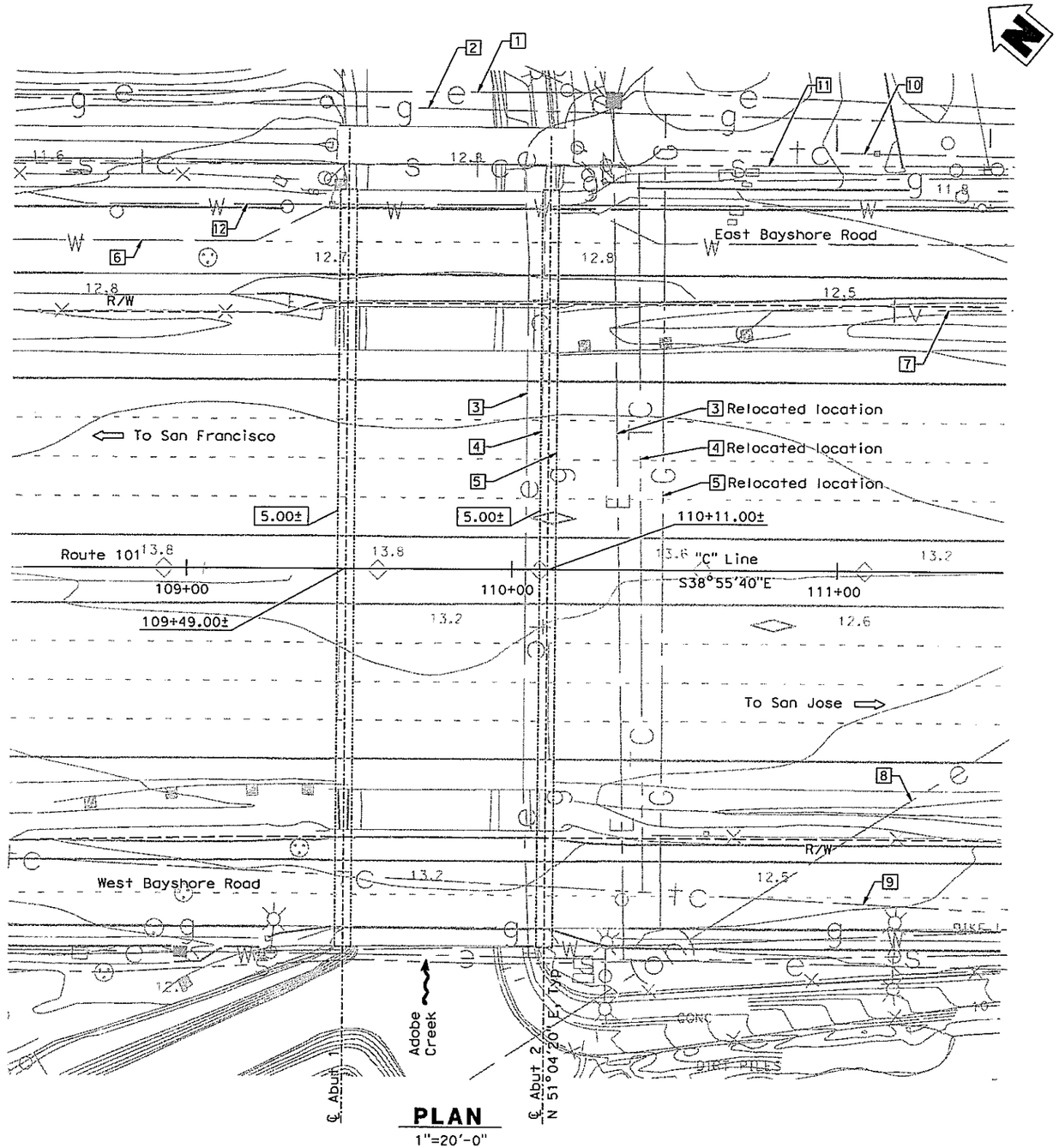
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Anthony Dubovik II No. C36372 Exp. 06/30/10 CIVIL STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

VALLEY TRANSPORTATION AUTHORITY
3331 N FIRST STREET
SAN JOSE, CA 95134

URS CORPORATION
1380 LEAD HILL BLVD, SUITE 100
ROSEVILLE, CA 95661-2997



PLAN

1"=20'-0"

LEGEND:

- Indicates existing structure
- Indicates direction of traffic
- Indicates direction of flow
- Indicates bottom of existing footing elevation

HYDROLOGIC SUMMARY

Drainage Area: 13.50 Square Miles

	Design Flood	Base Flood
Frequency (years)	50	100
Discharge (cubic feet/second)	1780	1780
Water Surface (elevation at bridge)	11.20	11.30

BENCH MARK

BENCH MARK	N	E	ELEV	DESCRIPTION
44	1985636.542	6094153.352	7.541	Mag nail & shiner - NB shoulder of US101 Approximately 0.5 miles south east from Embarcadero Road Overcrossing

SURVEY CONTROL
Horizontal control for this survey is based on the California Coordinate System, Zone II, US Survey feet, North American Datum of 1983 (NAD83), Epach 2007.00.
Vertical control is the National American Vertical Datum of 1988 (NAVD88).

EXISTING UTILITIES

UTILITY	OWNER	DISPOSITION
1 15 kV Underground Electrical Conduit	City of Palo Alto	Protect in place
2 34" Steel Transmission Gas Line	PG&E	Protect in place
3 2-5" Underground 15 kV Electrical conduit	City of Palo Alto	To be relocated by CPA
4 3" Communication Line	City of Palo Alto	To be relocated by CPA
5 4" BMP Gas Line	City of Palo Alto	To be relocated by CPA
6 CMV Reclaimed Water Line	City of Palo Alto	Protect in place
7 Aerial Cable TV Line	Comcast	To be relocated by CPA & Comcast
8 60 kV Overhead Electrical Transmission Line	PG&E	Protect in place
9 2-4" HDPE Communication Line	Netlink	Protect in place
10 Underground Telecommunication	MCI	Protect in place
11 14" Asbestos Conduit Pipe Sanitary Sewer	City of Palo Alto	Protect in place
12 10" Asbestos Concrete Pipe Water Line	City of Palo Alto	Protect in place

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

GEOTECHNICAL PROFESSIONAL APPROVAL DATE

FIGURE 1-4

DESIGN OVERSIGHT	SCALE:	VERT.DATUM	HORZ.DATUM	DESIGN BY S. Landis	CHECKED
	PHOTOGRAMMETRY AS OF:	ALIGNMENT TIES		DETAILS BY L. Davis	CHECKED
SIGN OFF DATE	SURVEYED BY	DRAFTED BY		QUANTITIES BY	CHECKED
	FIELD CHECKED BY	CHECKED BY			

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

CU 04
EA 4A3301

BRIDGE NO. 37-0174
POST MILE 50.66

ADOBE CREEK (WIDEN)
FOUNDATION PLAN

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY) 5-14-09 11-20-09

SHEET 4 OF 14

FOUNDATION PLAN SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

FILE => u:\adobe\37-0174-e-fp101.dgn

USERNAME => Lynette_D@ATE PLOTTED => 11/20/2009 TIME PLOTTED => 10:35:26 AM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	48.97/52.17		

REGISTERED CIVIL ENGINEER DATE

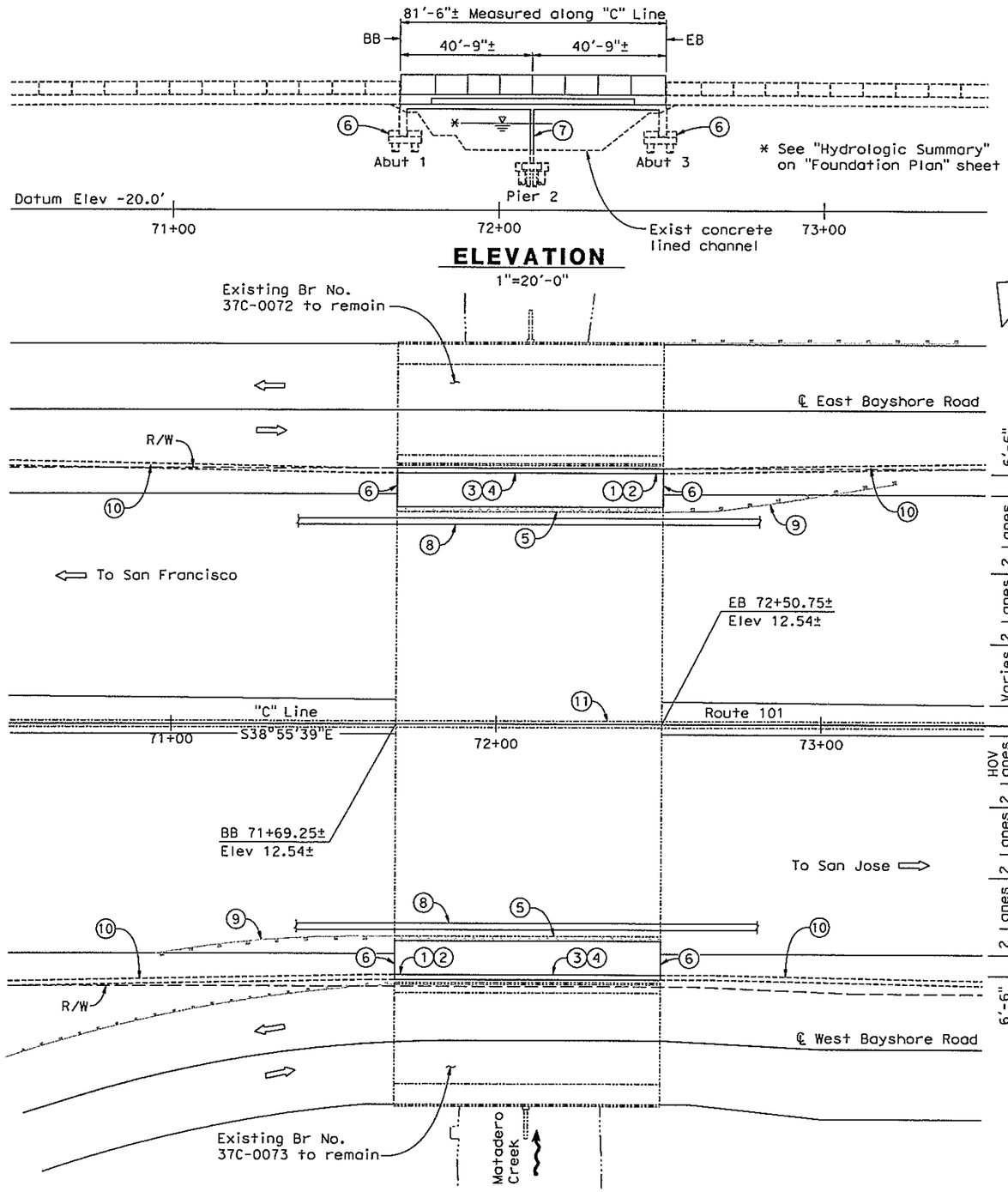
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Anthony Dubovik II No. C36372 Exp. 06/30/10 CIVIL STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

VALLEY TRANSPORTATION AUTHORITY
3331 N FIRST STREET
SAN JOSE, CA 95134

URS CORPORATION
1380 LEAD HILL BLVD, SUITE 100
ROSEVILLE, CA 95661-2997



NOTES:

1. Paint Bridge Number 37-0040
2. Paint Bridge Name and Year Completed
3. Concrete Barrier (Type 736)
4. Chain Link Railing (Type 7)
5. Remove existing Concrete Barrier (Type 27R)
6. Replace existing Abutment
7. Replace existing Pier Wall
8. Temporary Railing (Type K), See "Road Plans"
9. Remove existing MBGR, see "Road Plans"
10. Concrete Barrier (Type 60C) with Chain Link Fence, see "Road Plans"
11. Existing Concrete Barrier (Type 50A Modified)

LEGEND:

- Indicates existing structure
- Indicates bridge removal (portion)
- Indicates direction of traffic
- Indicates direction of flow

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

Note: For "Index To Plans" and "General Notes" see "Index To Plans" sheet.

FIGURE 1-5

DESIGN OVERSIGHT	DESIGN	BY A. Dubovik II	CHECKED	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE
	DETAILS	BY R. Lim	CHECKED	LAYOUT	BY A. Dubovik II — CHECKED
SIGN OFF DATE	QUANTITIES	BY	CHECKED	SPECIFICATIONS	BY — PLANS AND SPECS COMPARED

DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

CU 04
EA 4A3301

BRIDGE NO. 37-0040
POST MILES 51.37

MATADERO CREEK (WIDEN)

GENERAL PLAN No. 1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY) 6-18-09 11-20-09

SHEET 1 OF 17

FILE => U:\Matadero\37-0040-a-gp01.dgn

USERNAME => Lynette_D@ATE PLOTTED => 11/20/2009 TIME PLOTTED => 9:40:52 AM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	48.97/52.17		

REGISTERED CIVIL ENGINEER DATE

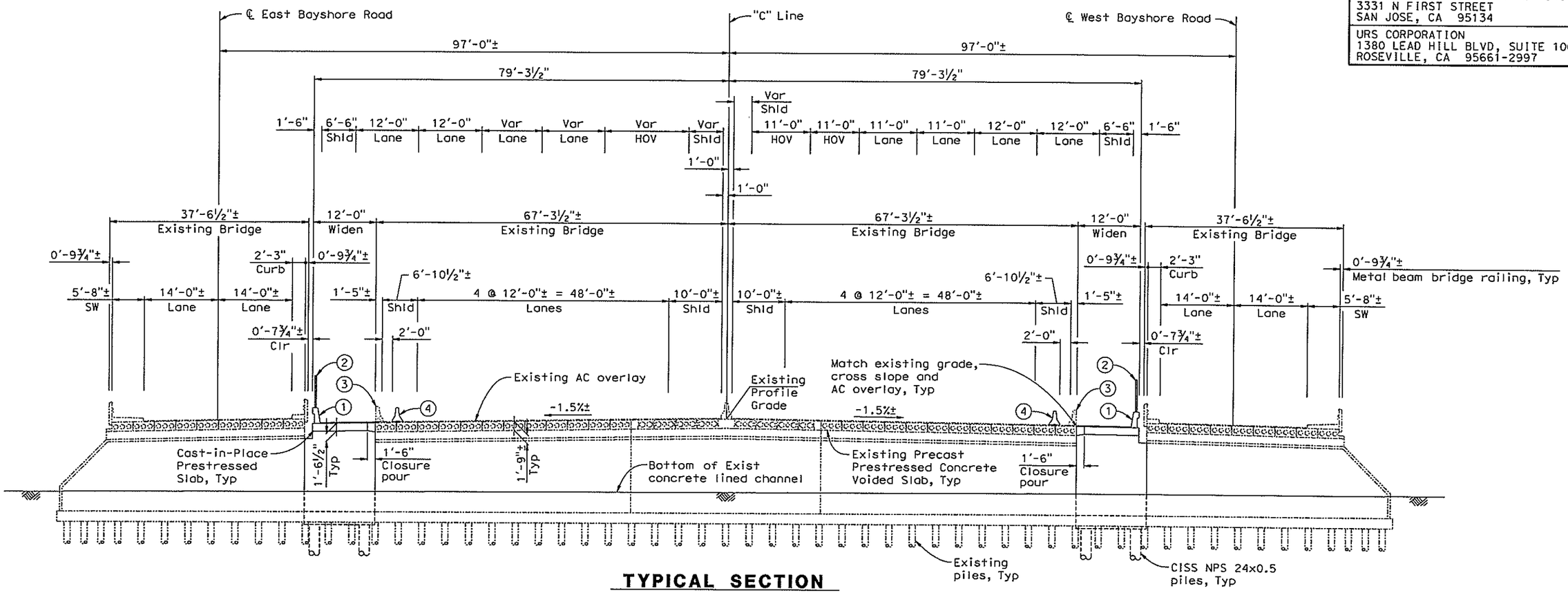
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Anthony Dubovik II No. C36372 Exp. 06/30/10 CIVIL STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

VALLEY TRANSPORTATION AUTHORITY
3331 N FIRST STREET
SAN JOSE, CA 95134

URS CORPORATION
1380 LEAD HILL BLVD, SUITE 100
ROSEVILLE, CA 95661-2997



TYPICAL SECTION

1"=10'-0"

NOTES:

1. Concrete Barrier (Type 736)
2. Chain Link railing (Type 7)
3. Remove existing Concrete Barrier (Type 27R)
4. Temporary Railing (Type K), see "Road Plans"

LEGEND:

- Indicates existing structure
- Indicates bridge removal (portion)

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

FIGURE 1-6

DESIGN OVERSIGHT	DESIGN	BY A. Dubovik II	CHECKED	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	Walt LaFranchi PROJECT ENGINEER
SIGN OFF DATE	DETAILS	BY L. Davis	CHECKED		
	QUANTITIES	BY	CHECKED		

BRIDGE NO. 37-0040
POST MILE 51.37

MATADERO CREEK (WIDEN)
GENERAL PLAN No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04
EA 4A3301

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY) 6-14-09 11-20-09

SHEET 2 OF 17

FILE => U:\Matadero\37-0040-a-aa02.dgn

USERNAME => Lynette_DONNE PLOTTED => 11/20/2009 TIME PLOTTED => 9:42:46 AM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	48.97/52.17		

REGISTERED CIVIL ENGINEER DATE

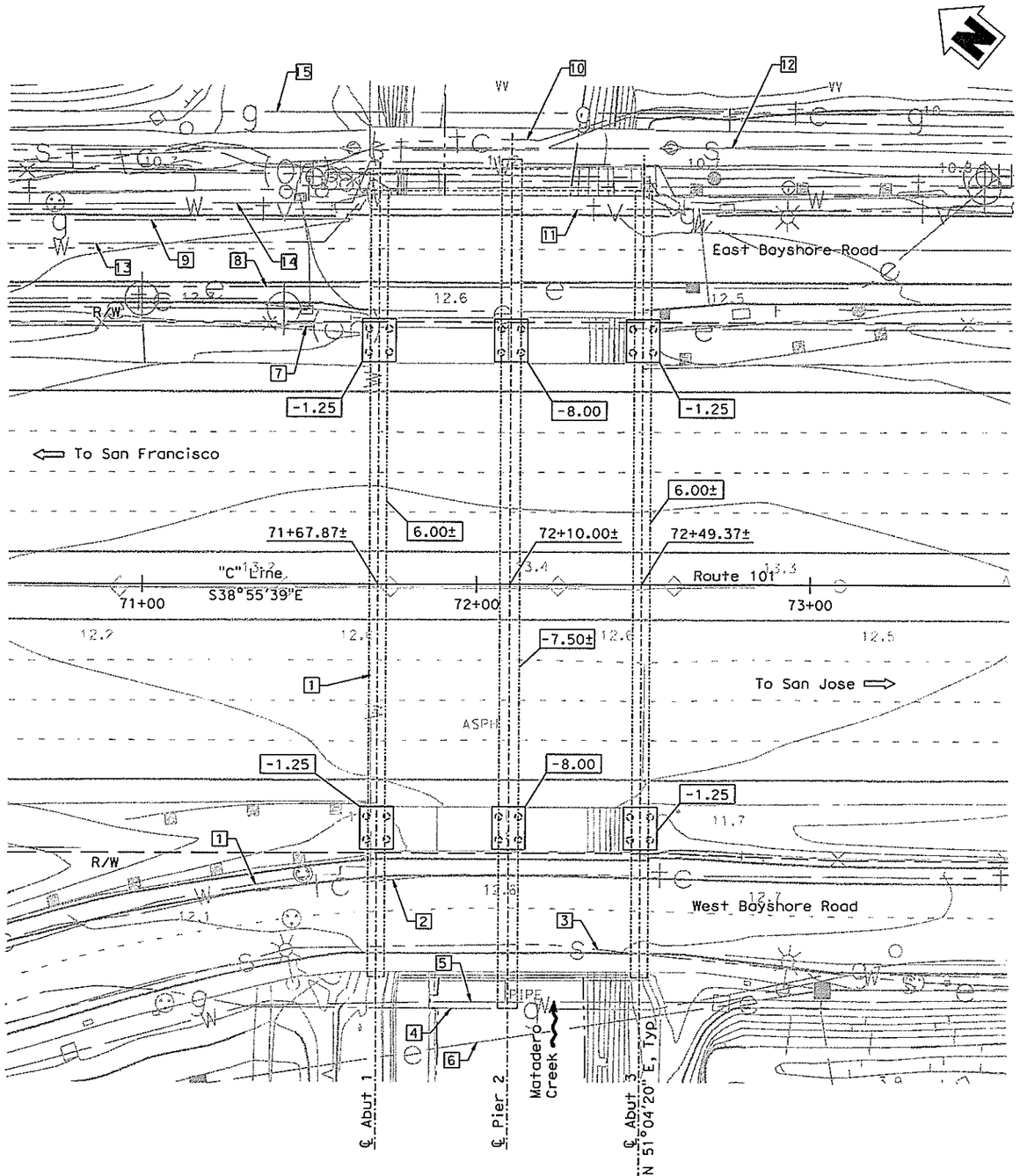
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Anthony Dubovik II No. C36372 Exp. 06/30/10 CIVIL STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

VALLEY TRANSPORTATION AUTHORITY
3331 N FIRST STREET
SAN JOSE, CA 95134

URS CORPORATION
1380 LEAD HILL BLVD, SUITE 100
ROSEVILLE, CA 95661-2997



PLAN

1"=20'-0"

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

LEGEND:

- Indicates existing structure
- Indicates direction of traffic
- Indicates direction of flow
- Indicates bottom of footing elevation

HYDROLOGIC SUMMARY

Drainage Area: 13.60 Square Miles

	Design Flood	Base Flood
Frequency (years)	50	100
Discharge (cubic feet/second)	1775	1775
Water Surface (elevation at bridge)	11.00	11.30

BENCH MARK

BENCH MARK	N	E	ELEV	DESCRIPTION
CT22	1986818.326	6093027.893	10.871	Rebar w/Red Cap - dirt shoulder of southbound US101 approximately 0.55 mi southeast of the Oregon Expressway overcrossing

SURVEY CONTROL
Horizontal control for this survey is based on the California Coordinate System, Zone II, US Survey feet, North American Datum of 1983 (NAD83), Epoch 2007.00.
Vertical control is the National American Vertical Datum of 1988 (NAVD88).

PILE DATA TABLE

Location	Pile Type	Nominal Resistance (kips)		Design Tip Elevation (ft)	Specified Tip Elevation (ft)	Nominal Driving Resistance (kips)
		Compression	Tension			
Abut 1	CISS NPS 24x0.5	340	3	-79(A) -3(B) -21(C)	-79	340
Pier 2	CISS NPS 24x0.5	160	17	-54(A) -12(B) -32(C)	-54	160
Abut 3	CISS NPS 24x0.5	340	3	-79(A) -3(B) -21(C)	-79	340

Notes: Design tip elevation are controlled by: (A) Compression, (B) Tension, (C) Lateral Loads.

EXISTING UTILITIES

UTILITY	OWNER	DISPOSITION
1 8" PVC Reclaimed Water Line	City of Palo Alto	Protect in place
2 2-4" HDPE Communication Line	Netlink	Protect in place
3 8" Vitrified Concrete Pipe Sanitary Sewer	City of Palo Alto	Protect in place
4 4" PE Gas Line	City of Palo Alto	Protect in place
5 8" Asbestos Concrete Pipe Water Line	City of Palo Alto	Protect in place
6 15 kV Underground Electrical Line	City of Palo Alto	Protect in place
7 115 kV Overhead Electrical Transmission Line	PG&E	To be relocated by PG&E
8 115 kV Underground Electrical Line	City of Palo Alto	Protect in place
9 4" ABS Gas Line	City of Palo Alto	Protect in place
10 Underground Telephone Line	AT&T	Protect in place
11 Underground TV Line	Comcast	Protect in place
12 18" Vitrified Concrete Pipe Sanitary Sewer	City of Palo Alto	Protect in place
13 Reclaimed Water Line	City of Palo Alto	Protect in place
14 10" Asbestos Concrete Pipe Water Line	City of Palo Alto	Protect in place
15 34" Transmission Gas Line	PG&E	Protect in place

FIGURE 1-7

GEOTECHNICAL PROFESSIONAL APPROVAL DATE

DESIGN OVERSIGHT

SIGN OFF DATE

SCALE: VERT.DATUM HORZ.DATUM
PHOTOGRAMMETRY AS OF: ALIGNMENT TIES
SURVEYED BY DRAFTED BY
FIELD CHECKED BY CHECKED BY

DESIGN BY A. Dubovik II CHECKED
DETAILS BY R. Lim CHECKED
QUANTITIES BY CHECKED

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 37-0040
POST MILE 51.37

MATADERO CREEK (WIDEN)
FOUNDATION PLAN

FOUNDATION PLAN SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04
EA 4A3301

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY) 6-24-09 11-20-09

SHEET 4 OF 17

FILE => u:\Matadero\37-0040-e-fo101.dgn

USERNAME => Lynette_D DATE PLOTTED => 11/20/2009 TIME PLOTTED => 8:21:08 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	49.0/52.2		

REGISTERED CIVIL ENGINEER DATE

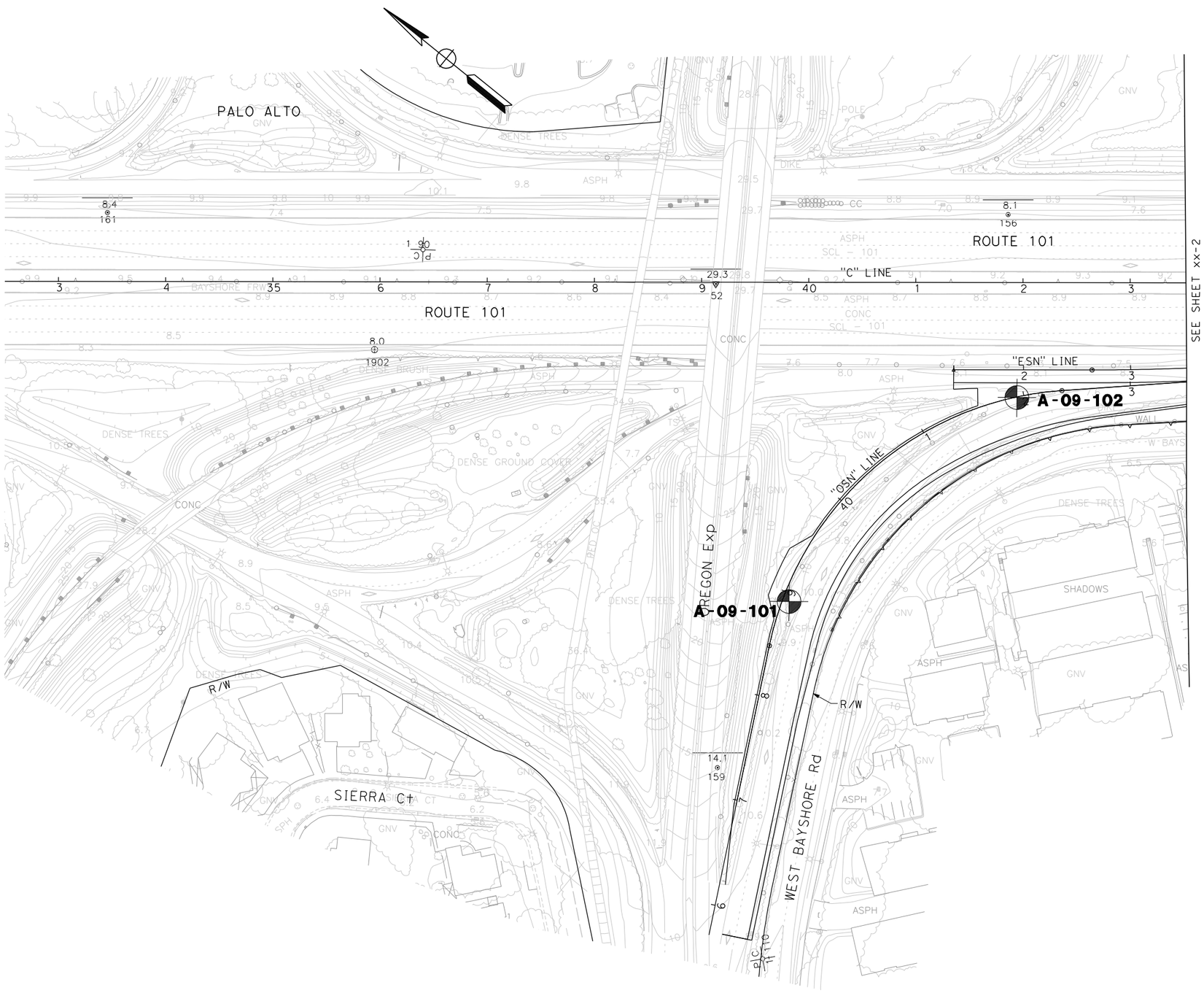
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

Valley Transportation Authority
3331 N First Street
San Jose, CA 95134

URS Corporation
55 S Market Street
Suite 1500
San Jose, CA, 95113



SCALE 1"=50'

FIELD EXPLORATION LOCATION PLAN 3-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 7/10/2009
TIME PLOTTED => 10:13:15 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => madhu_thummaluru
DGN FILE => ...\BorPlans\44a331gp001.dgn

CU 04235

EA 4A3301

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	49.0/52.2		

REGISTERED CIVIL ENGINEER DATE

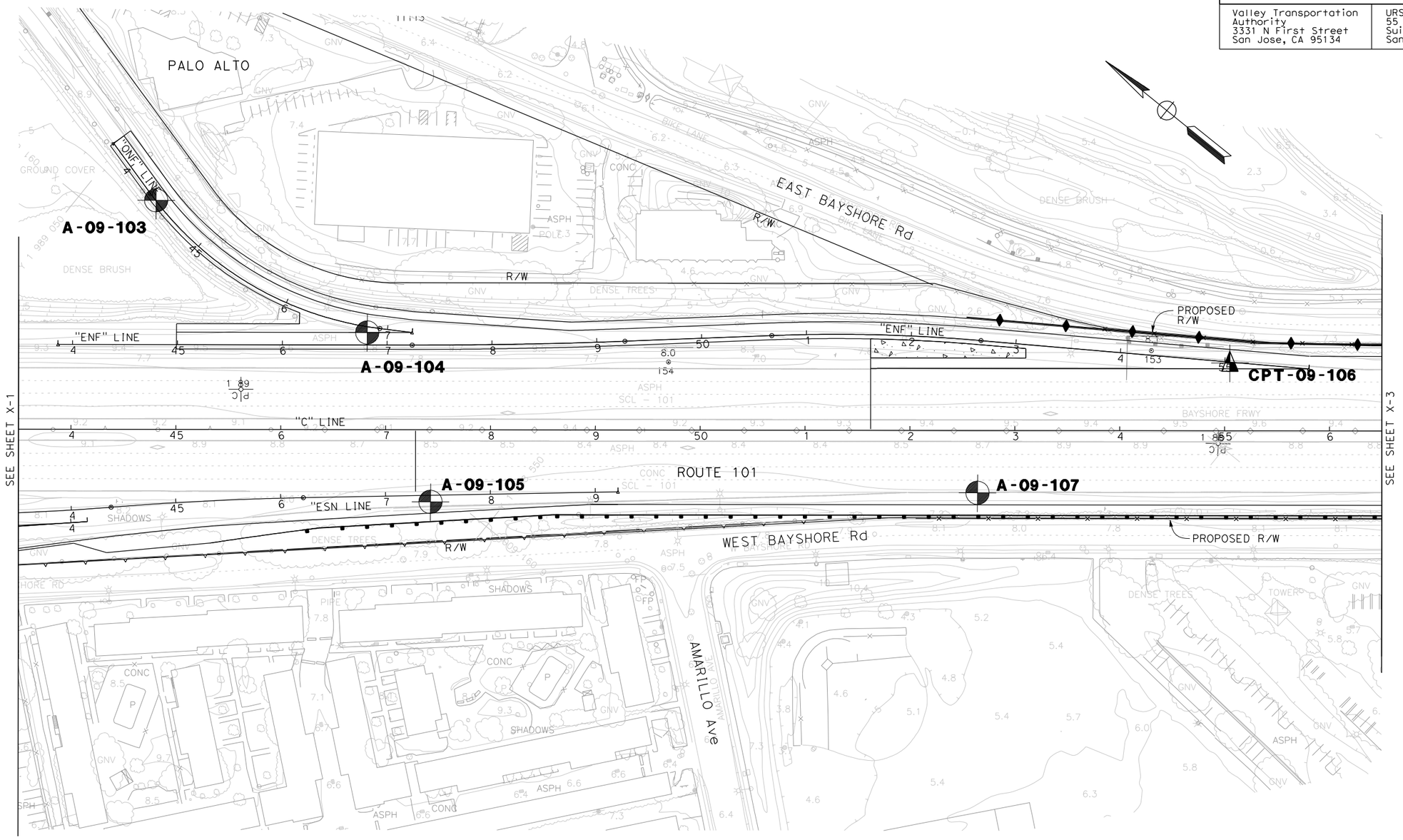
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

Valley Transportation Authority
3331 N First Street
San Jose, CA 95134

URS Corporation
55 S Market Street
Suite 1500
San Jose, CA, 95113



SCALE 1"=50'

FIELD EXPLORATION LOCATION PLAN 3-2

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY .
CHECKED BY .

CONSULTANT FUNCTIONAL SUPERVISOR .

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00

DATE PLOTTED => 7/10/2009
TIME PLOTTED => 10:13:26 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	49.0/52.2		

REGISTERED CIVIL ENGINEER DATE

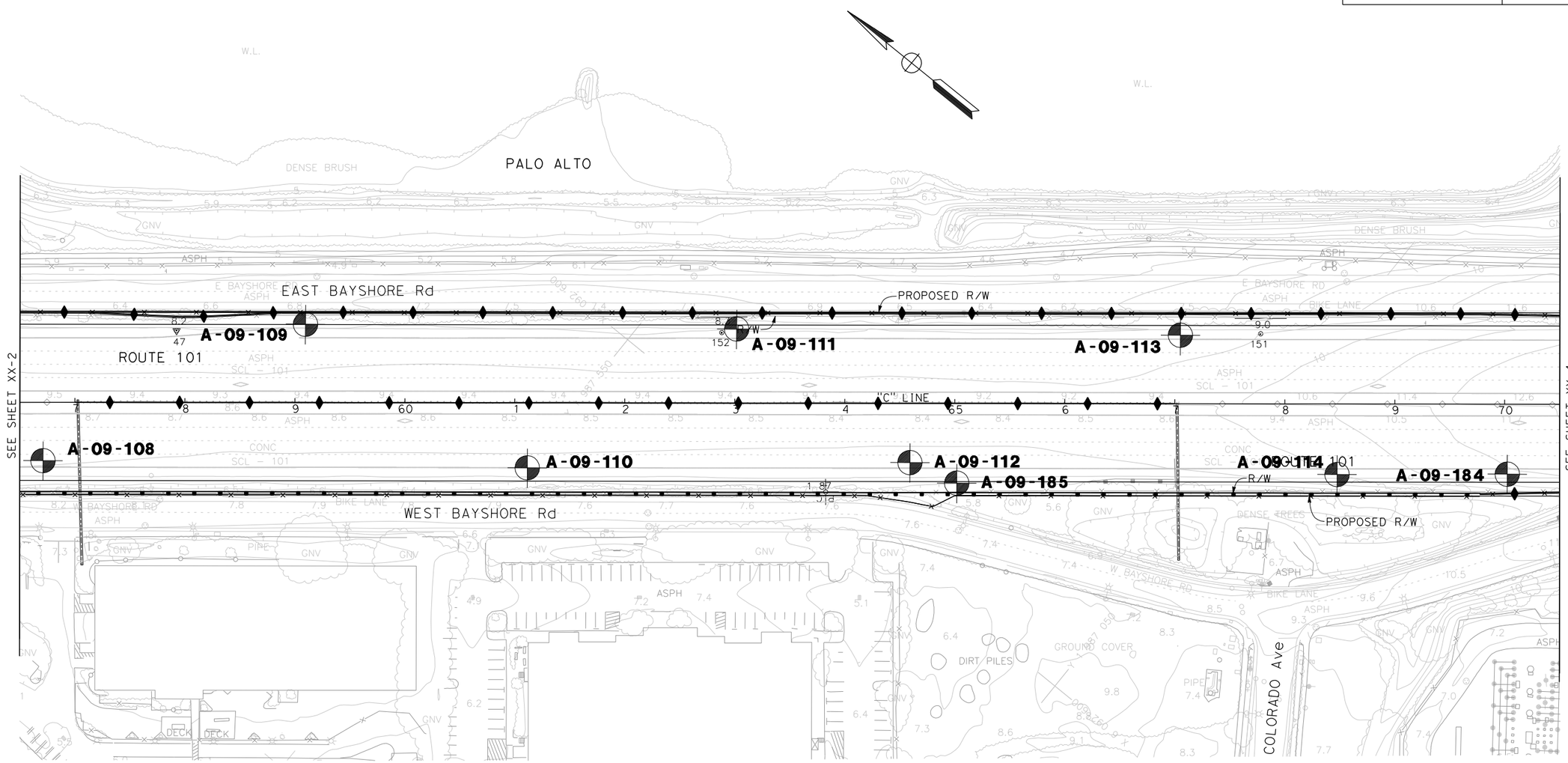
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

Valley Transportation Authority
3331 N First Street
San Jose, CA 95134

URS Corporation
55 S Market Street
Suite 1500
San Jose, CA, 95113



SCALE 1"=50'

FIELD EXPLORATION LOCATION PLAN 3-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 7/10/2009
TIME PLOTTED => 10:13:38 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => madhu_thummaluru
DGN FILE => ...\borplans\44a331ap003.dgn

CU 04235

EA 4A3301

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	49.0/52.2		

REGISTERED CIVIL ENGINEER DATE

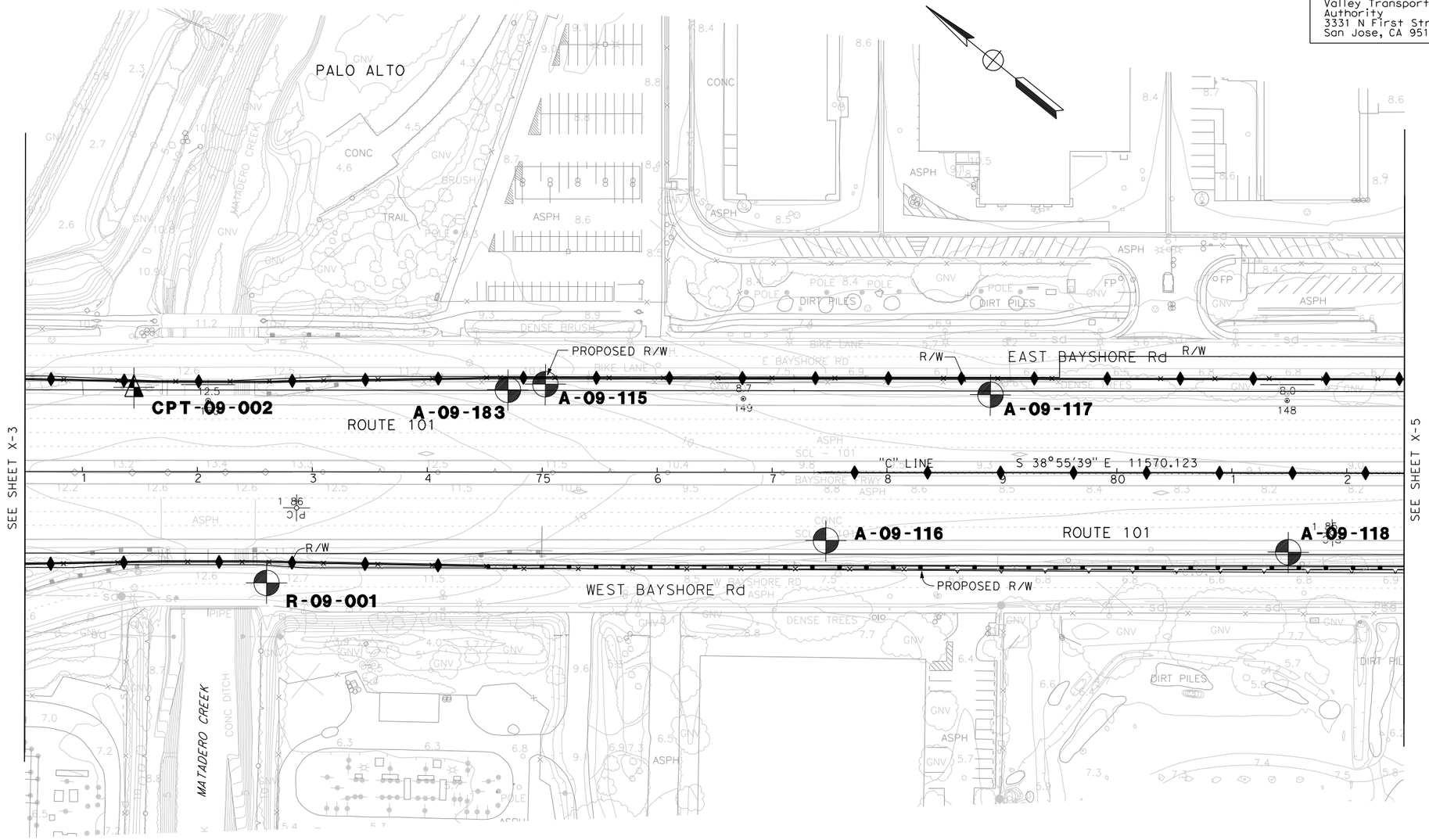
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

Valley Transportation Authority
3331 N First Street
San Jose, CA 95134

URS Corporation
55 S Market Street
Suite 1500
San Jose, CA, 95113



SCALE 1"=50'

FIELD EXPLORATION LOCATION PLAN 3-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 7/10/2009
TIME PLOTTED => 10:13:50 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => madhu_thummaluru
DGN FILE => ...\borplans\44a331qp004.dgn

CU 04235

EA 4A3301

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	49.0/52.2		

REGISTERED CIVIL ENGINEER DATE

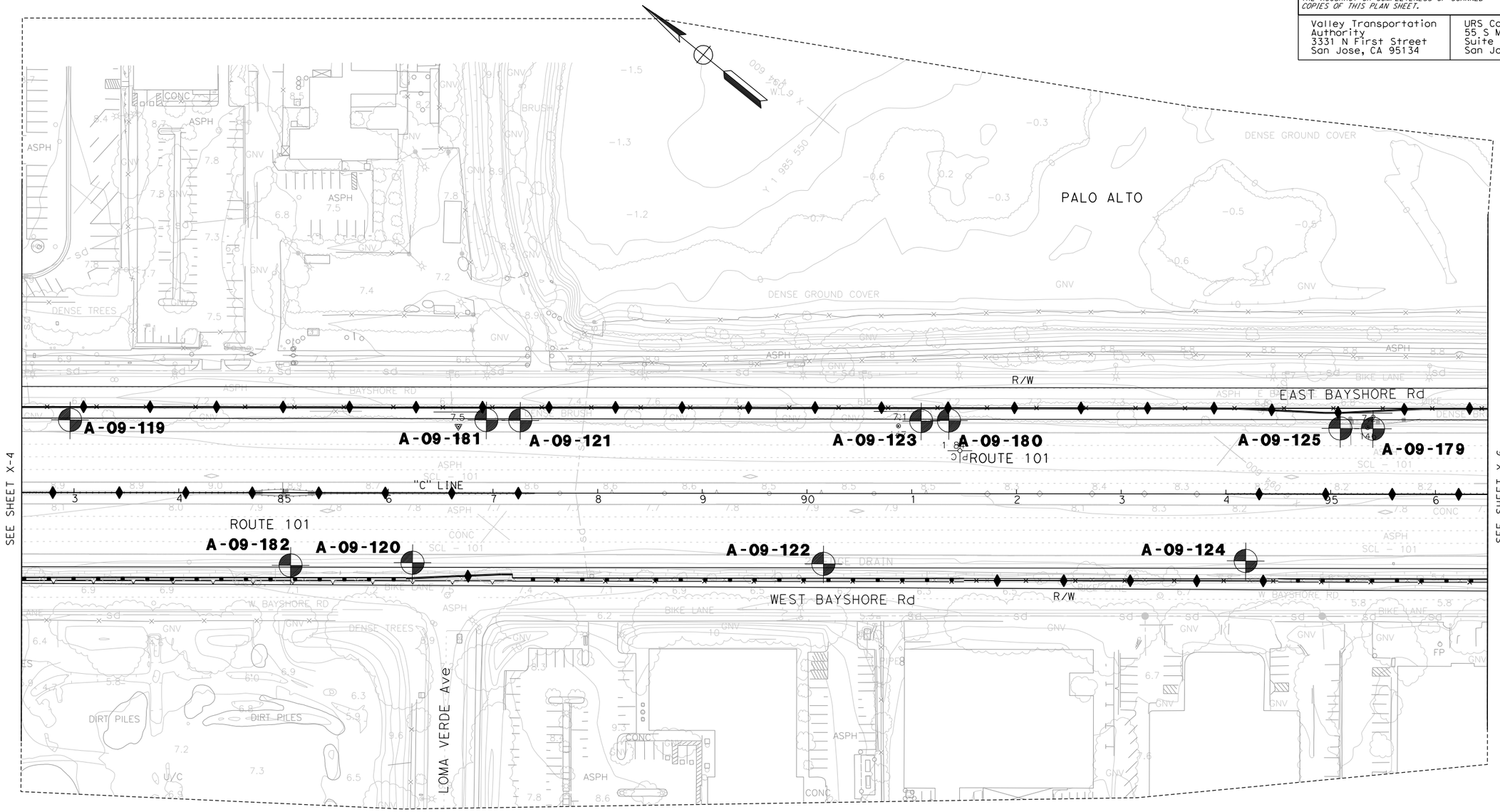
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

Valley Transportation Authority
3331 N First Street
San Jose, CA 95134

URS Corporation
55 S Market Street
Suite 1500
San Jose, CA, 95113



SCALE 1"=50'

FIELD EXPLORATION LOCATION PLAN 3-5

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY . CHECKED BY .

CONSULTANT FUNCTIONAL SUPERVISOR .

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00 DATE PLOTTED => 7/10/2009 TIME PLOTTED => 10:14:01 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => madhu_thummaluru
DGN FILE => ...\borplans\44a3331qp005.dgn

CU 04235

EA 4A3301

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	49.0/52.2		

REGISTERED CIVIL ENGINEER DATE

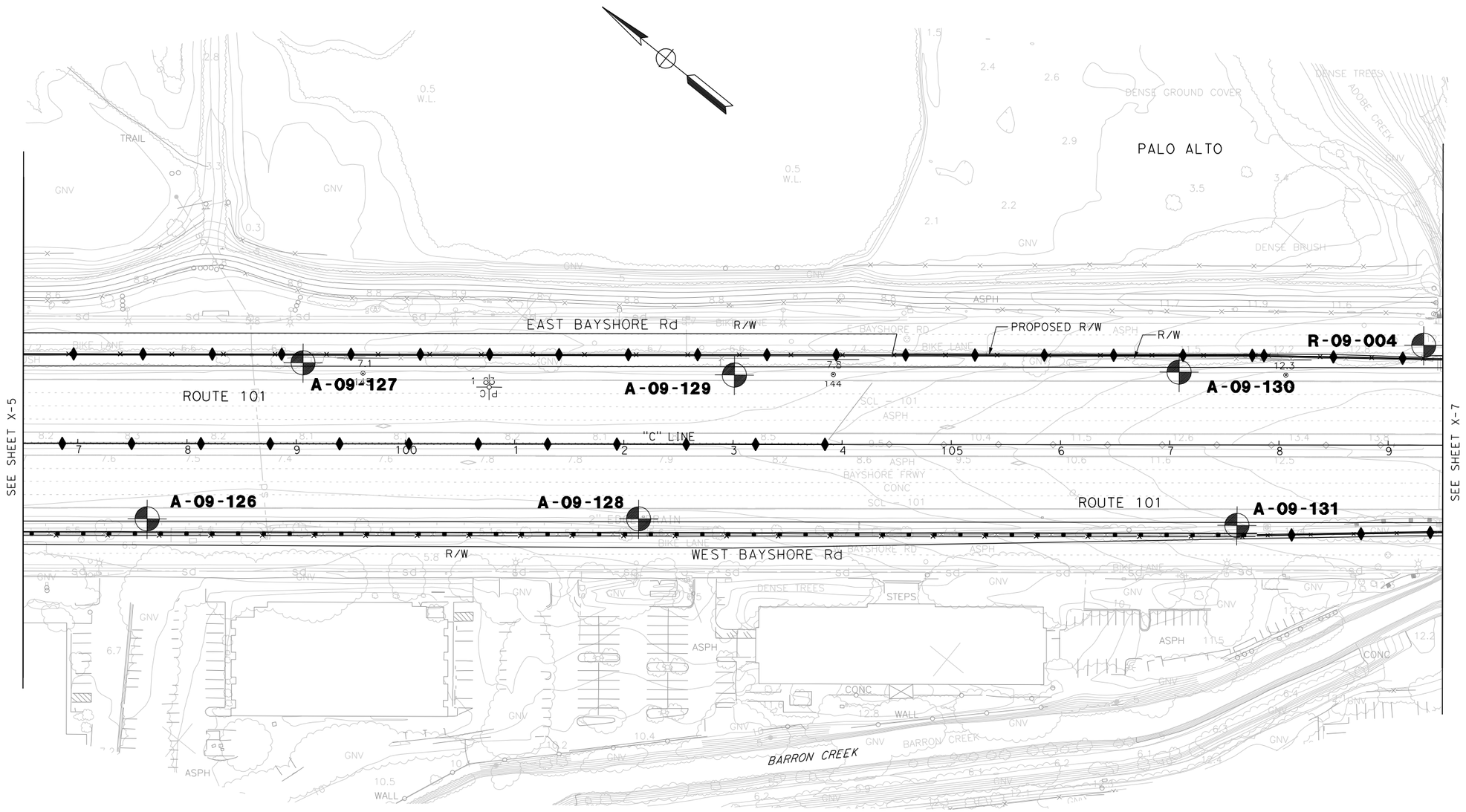
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

Valley Transportation Authority
3331 N First Street
San Jose, CA 95134

URS Corporation
55 S Market Street
Suite 1500
San Jose, CA, 95113



SCALE 1"=50'

FIELD EXPLORATION LOCATION PLAN 3-6

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY .
CHECKED BY .
CONSULTANT FUNCTIONAL SUPERVISOR .

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 00-00-00
DATE PLOTTED => 7/10/2009
TIME PLOTTED => 10:14:14 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => madhu_thummaluru
DGN FILE => ...\borplans\44a331qp006.dgn

CU 04235

EA 4A3301

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	49.0/52.2		

REGISTERED CIVIL ENGINEER DATE

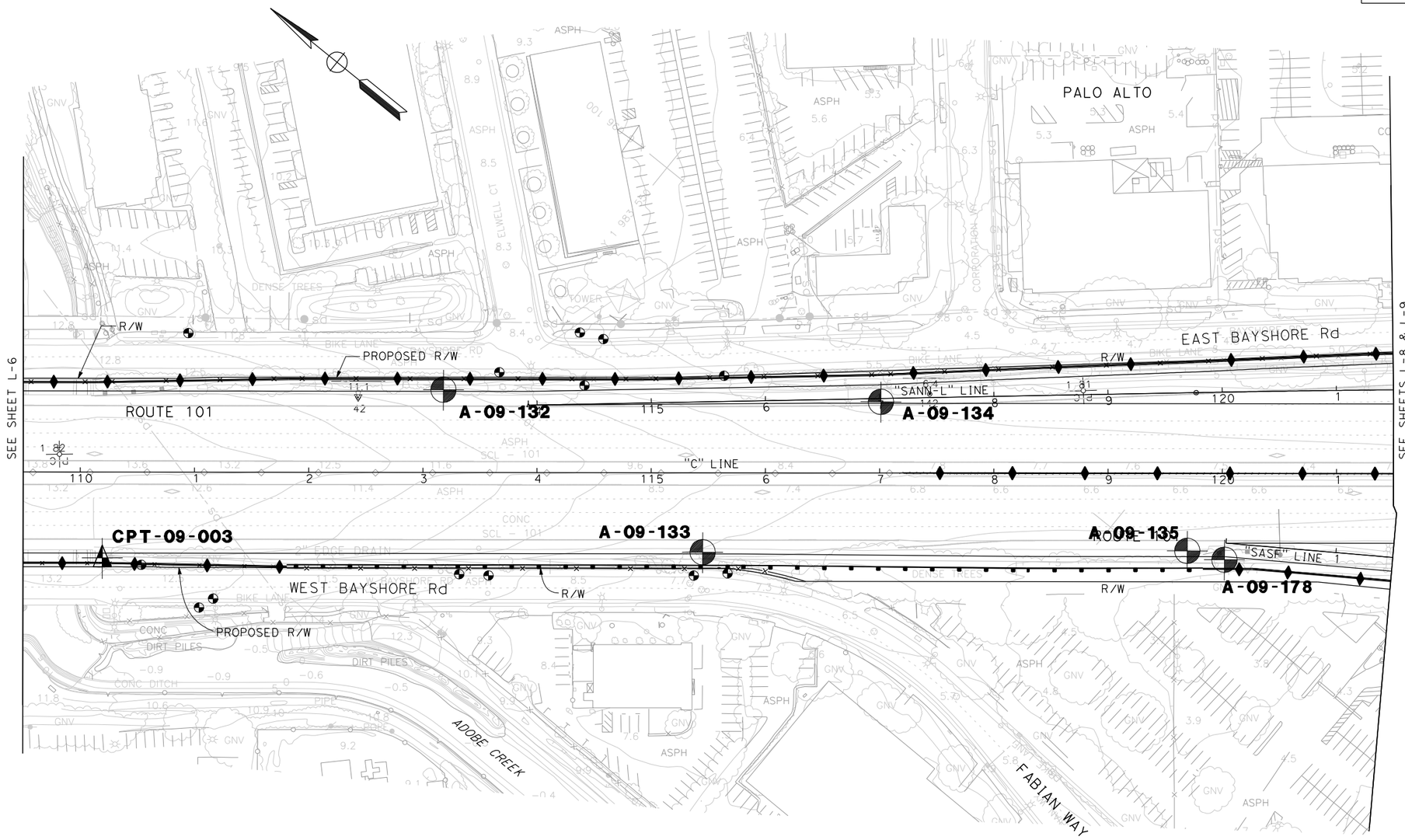
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

Valley Transportation Authority
3331 N First Street
San Jose, CA 95134

URS Corporation
55 S Market Street
Suite 1500
San Jose, CA, 95113



SCALE 1"=50'

FIELD EXPLORATION LOCATION PLAN 3-7

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY .

CHECKED BY .

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 7/10/2009
TIME PLOTTED => 10:14:25 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => madhu_thummaluru
DGN FILE => ...\borplans\44a331gp007.dgn

CU 04235

EA 4A3301

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	49.0/52.2		

REGISTERED CIVIL ENGINEER DATE

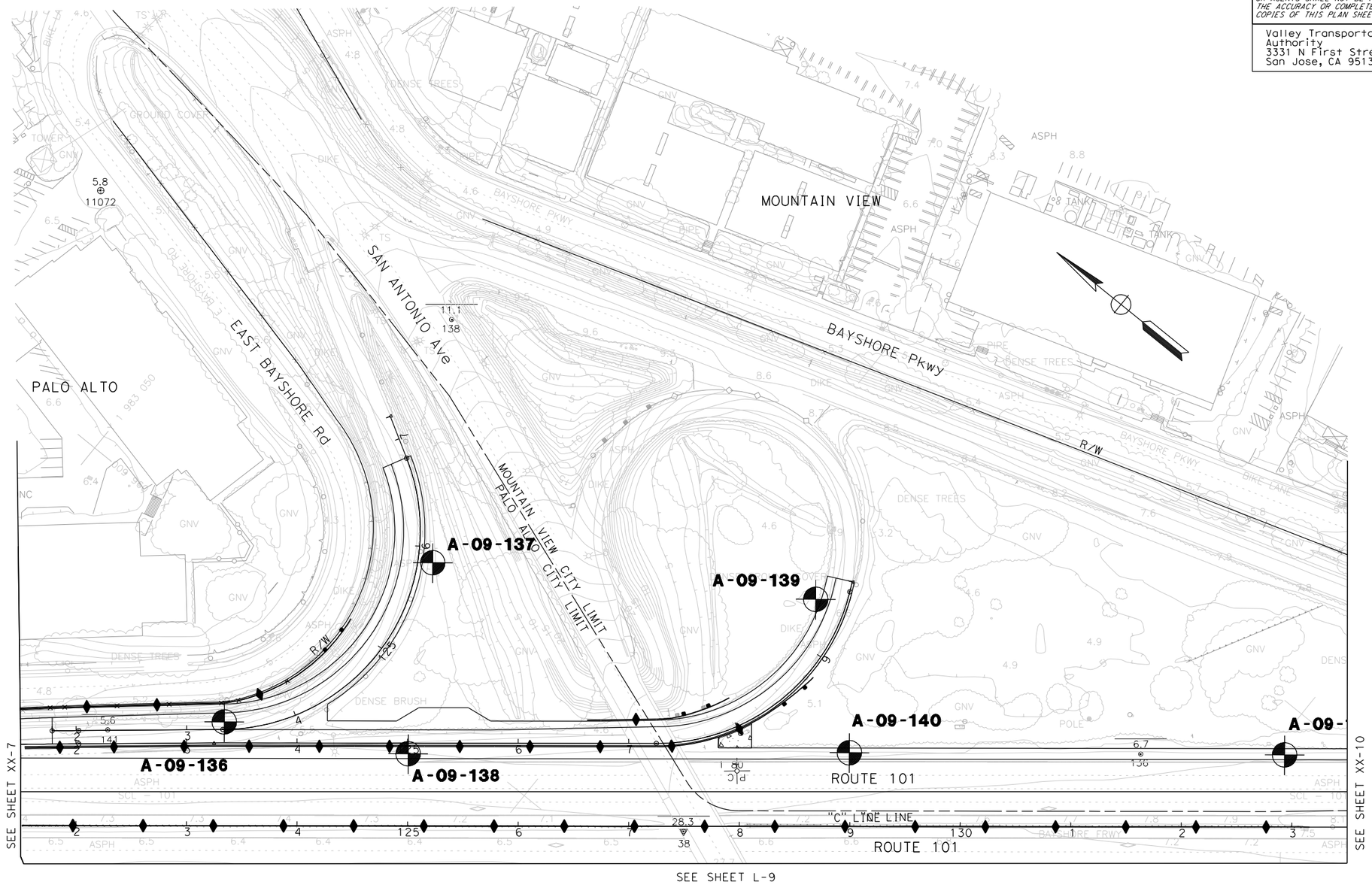
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

Valley Transportation Authority
3331 N First Street
San Jose, CA 95134

URS Corporation
55 S Market Street
Suite 1500
San Jose, CA, 95113



SCALE 1"=50'

FIELD EXPLORATION LOCATION PLAN 3-8

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY . CHECKED BY .

CONSULTANT FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00 DATE PLOTTED => 7/10/2009 TIME PLOTTED => 10:14:37 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => madhu_thummaluru
DGN FILE => ...\borplans\44a331qp008.dgn

CU 04235

EA 4A3301

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCl	101	49.0/52.2		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

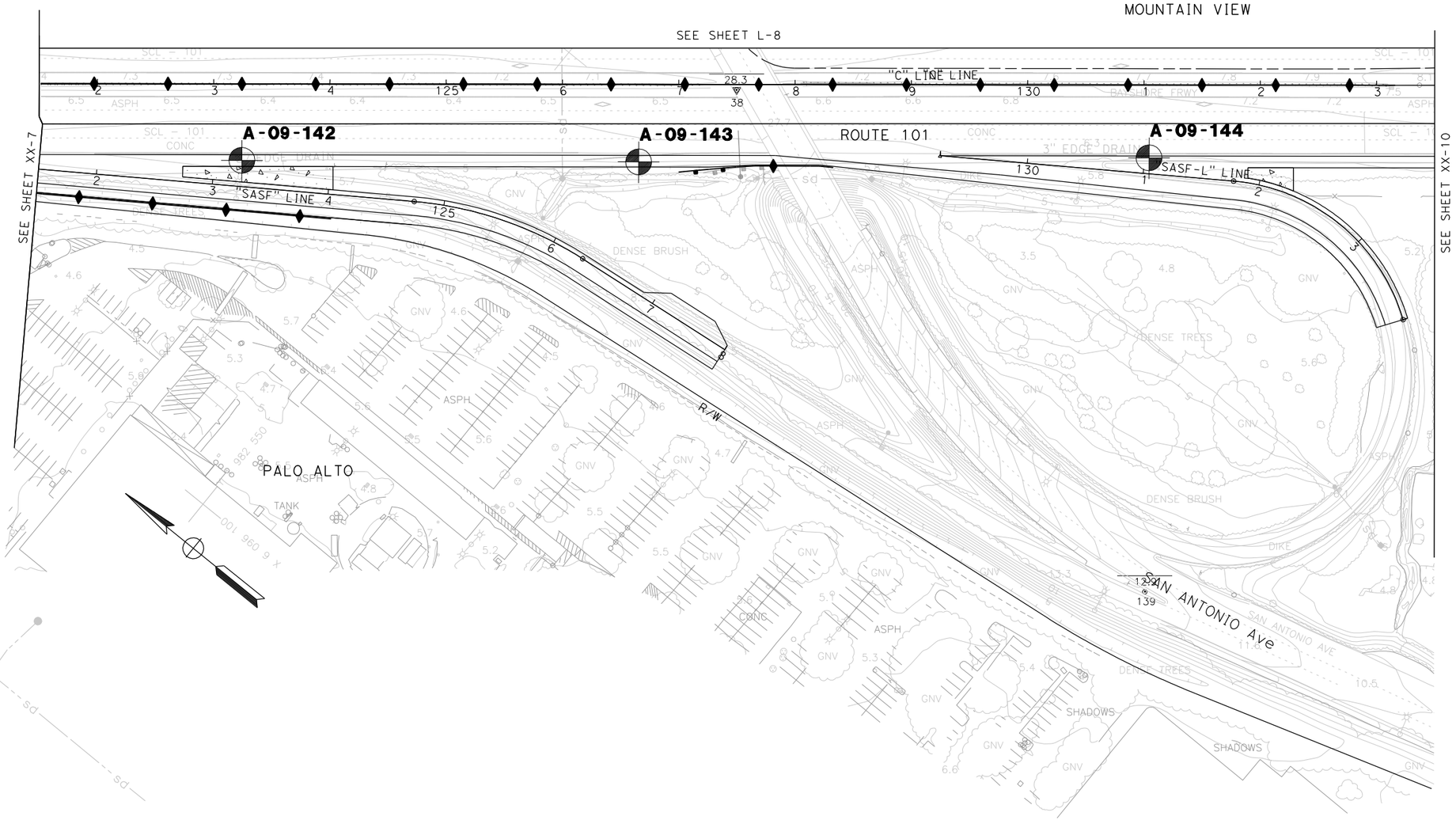
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

Valley Transportation Authority
3331 N First Street
San Jose, CA 95134

URS Corporation
55 S Market Street
Suite 1500
San Jose, CA, 95113

MOUNTAIN VIEW



SCALE 1"=50'

FIELD EXPLORATION LOCATION PLAN 3-9

REVISED BY | DATE REVISED

CALCULATED-DESIGNED BY | CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00 | DATE PLOTTED => 7/10/2009 | TIME PLOTTED => 10:14:50 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => madhu_thummaluru
DGN FILE => ...\borplans\44a3331gp009.dgn

CU 04235

EA 4A3301

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	49.0/52.2		

REGISTERED CIVIL ENGINEER DATE

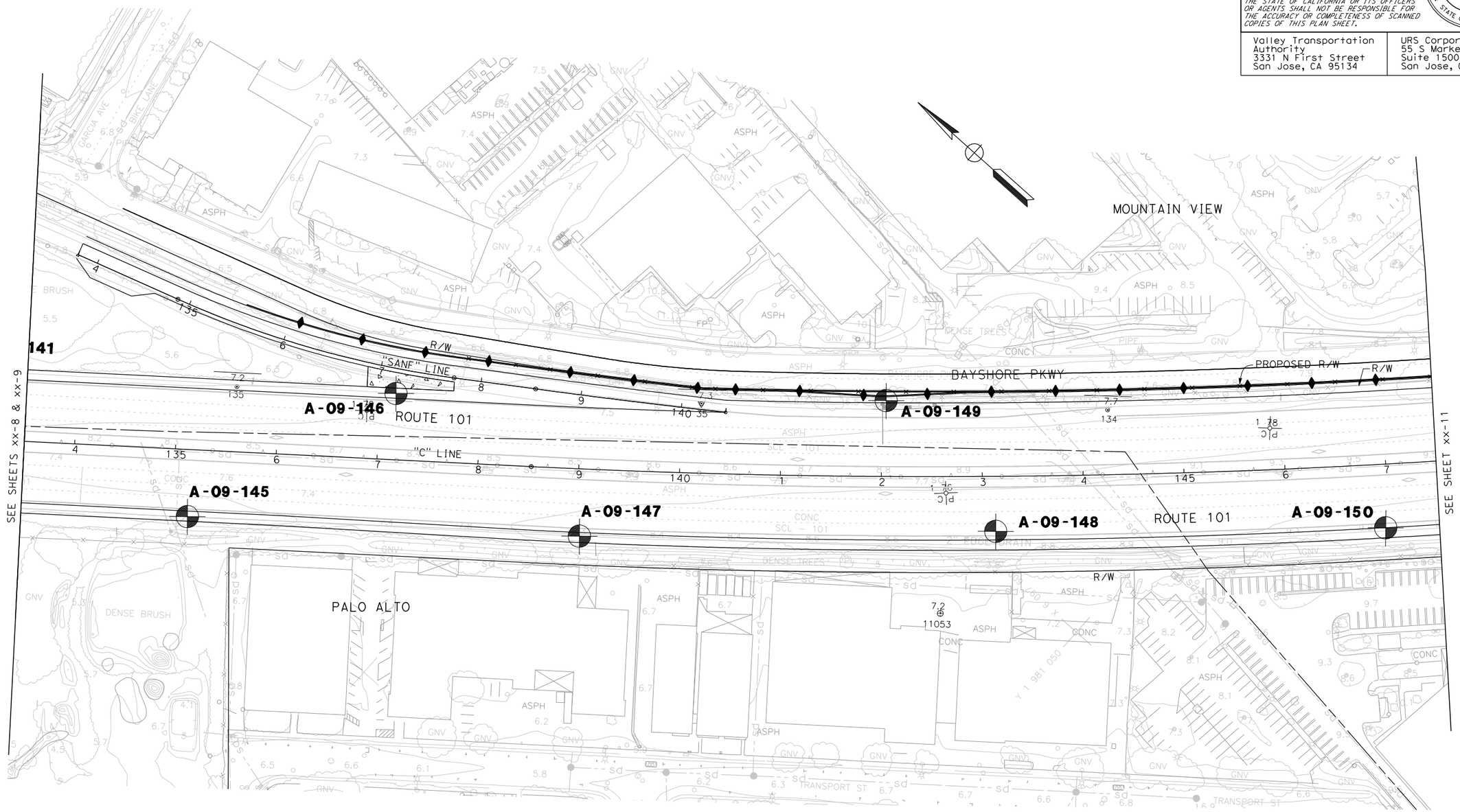
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

Valley Transportation Authority
3331 N First Street
San Jose, CA 95134

URS Corporation
55 S Market Street
Suite 1500
San Jose, CA, 95113



SCALE 1"=50'

FIELD EXPLORATION LOCATION PLAN 3-10

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY .
CHECKED BY .

CONSULTANT FUNCTIONAL SUPERVISOR .

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00

DATE PLOTTED => 7/10/2009
TIME PLOTTED => 10:15:13 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	49.0/52.2		

REGISTERED CIVIL ENGINEER DATE

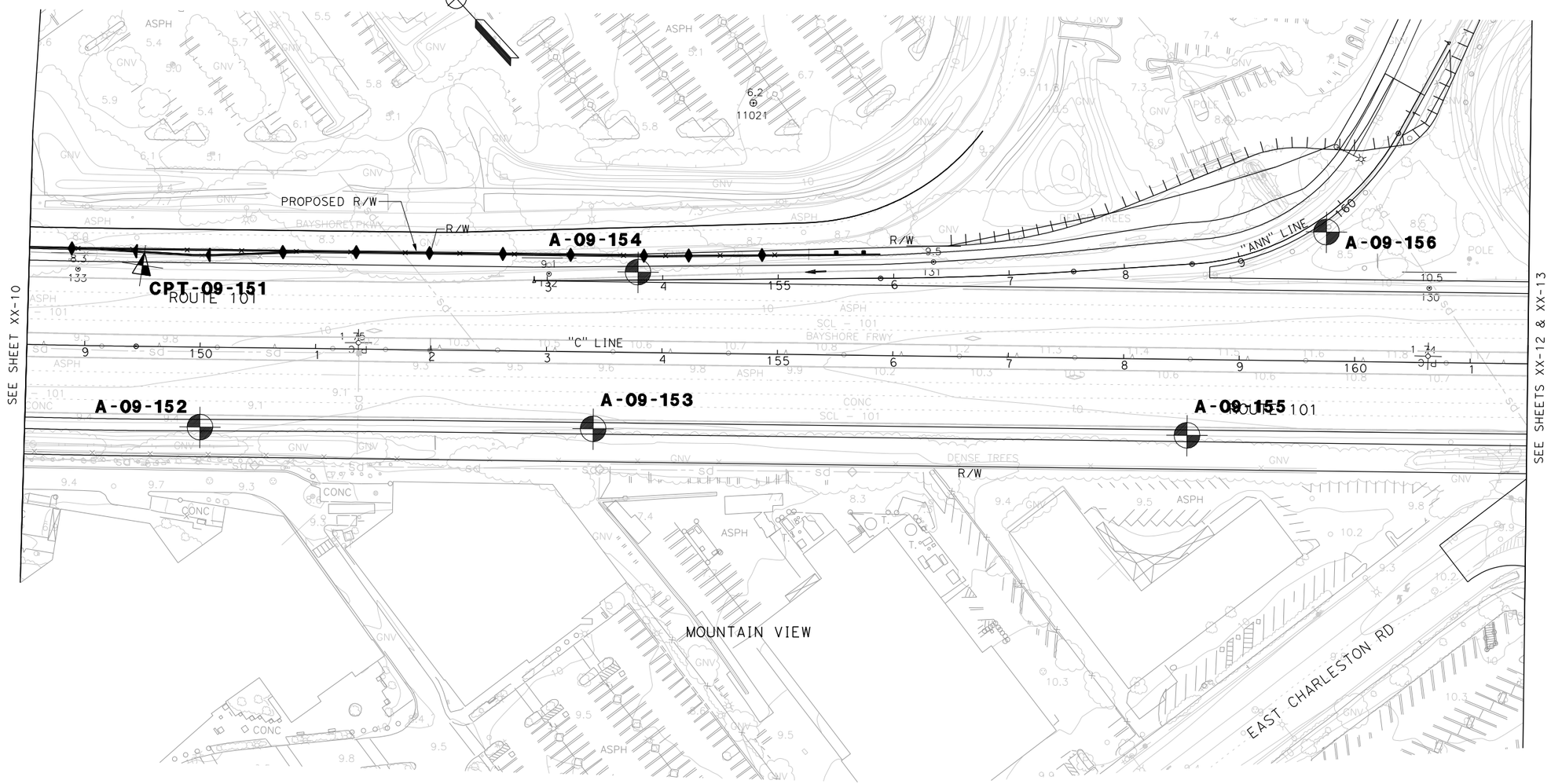
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

Valley Transportation Authority
3331 N First Street
San Jose, CA 95134

URS Corporation
55 S Market Street
Suite 1500
San Jose, CA, 95113



SCALE 1"=50'

FIELD EXPLORATION LOCATION PLAN 3-11

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY .
CHECKED BY .
CONSULTANT FUNCTIONAL SUPERVISOR .

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 00-00-00
DATE PLOTTED => 7/10/2009
TIME PLOTTED => 10:15:27 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => madhu_thummaluru
DGN FILE => ...\borplans\44a331qp011.dgn

CU 04235

EA 4A3301

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	49.0/52.2		

REGISTERED CIVIL ENGINEER DATE

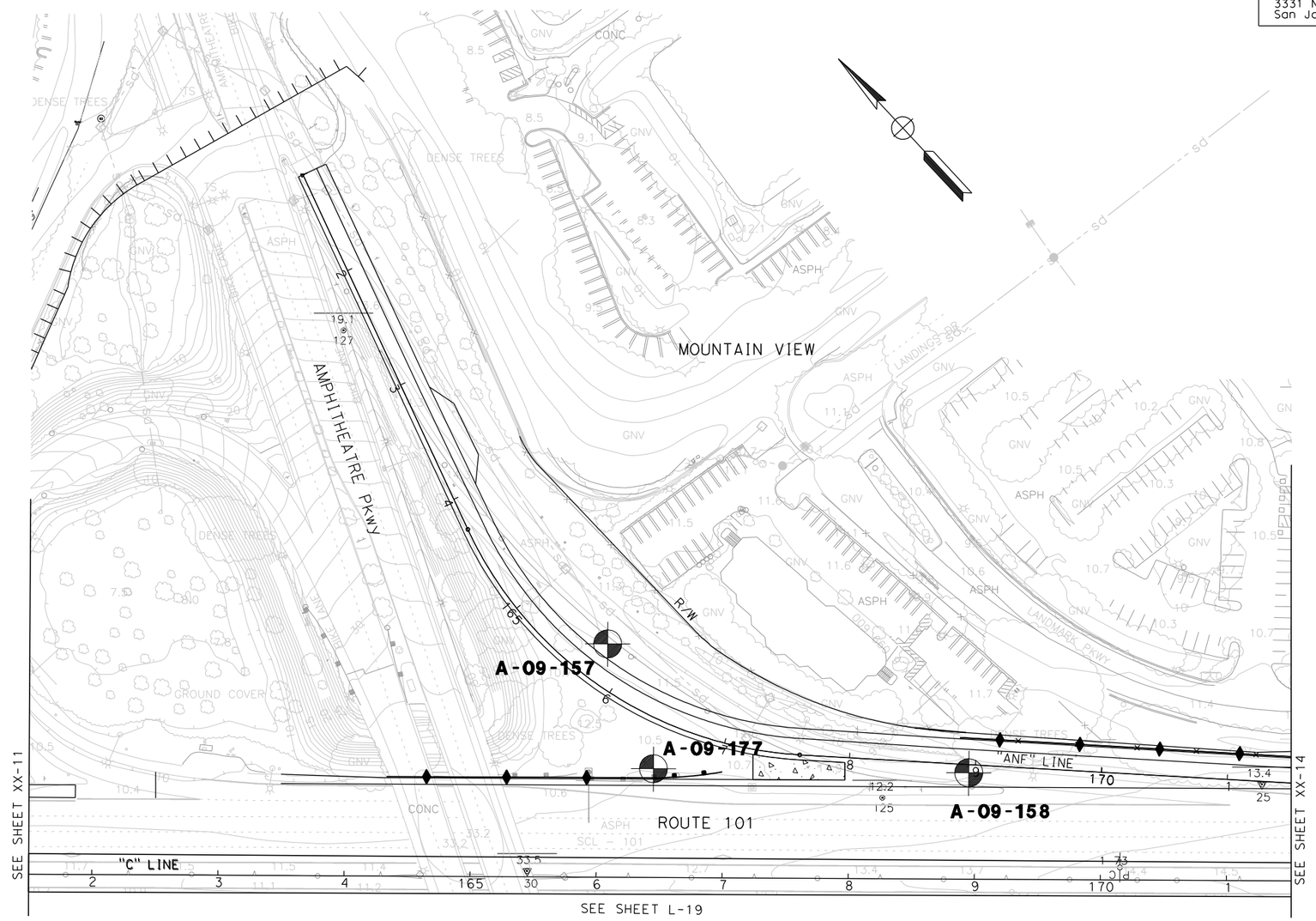
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

Valley Transportation Authority
3331 N First Street
San Jose, CA 95134

URS Corporation
55 S Market Street
Suite 1500
San Jose, CA, 95113



SCALE 1"=50'

FIELD EXPLORATION LOCATION PLAN 3-12

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY .
CHECKED BY .

CONSULTANT FUNCTIONAL SUPERVISOR .

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00

DATE PLOTTED => 7/10/2009
TIME PLOTTED => 10:15:45 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => madhu_thummaluru
DGN FILE => ...\borplans\44a3331gp012.dgn

CU 04235

EA 4A3301

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCl	101	49.0/52.2		

REGISTERED CIVIL ENGINEER DATE

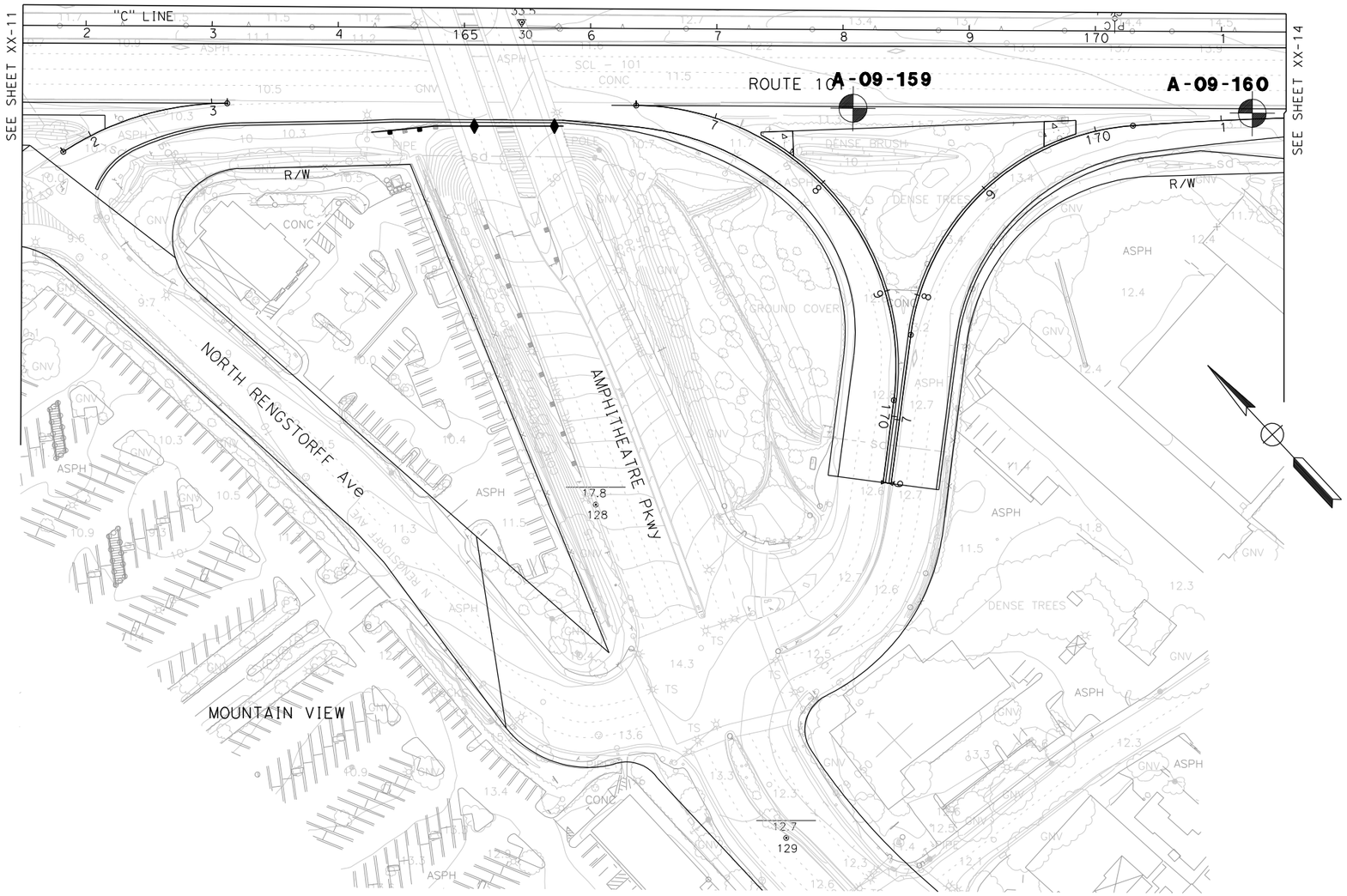
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

Valley Transportation Authority
3331 N First Street
San Jose, CA 95134

URS Corporation
55 S Market Street
Suite 1500
San Jose, CA, 95113



SCALE 1"=50'

FIELD EXPLORATION LOCATION PLAN 3-13

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY .
CHECKED BY .
CONSULTANT FUNCTIONAL SUPERVISOR .

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 00-00-00
DATE PLOTTED => 7/10/2009
TIME PLOTTED => 10:16:02 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => madhu_thummaluru
DGN FILE => ...\borplans\44a331qp013.dgn

CU 04235

EA 4A3301

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	49.0/52.2		

REGISTERED CIVIL ENGINEER DATE

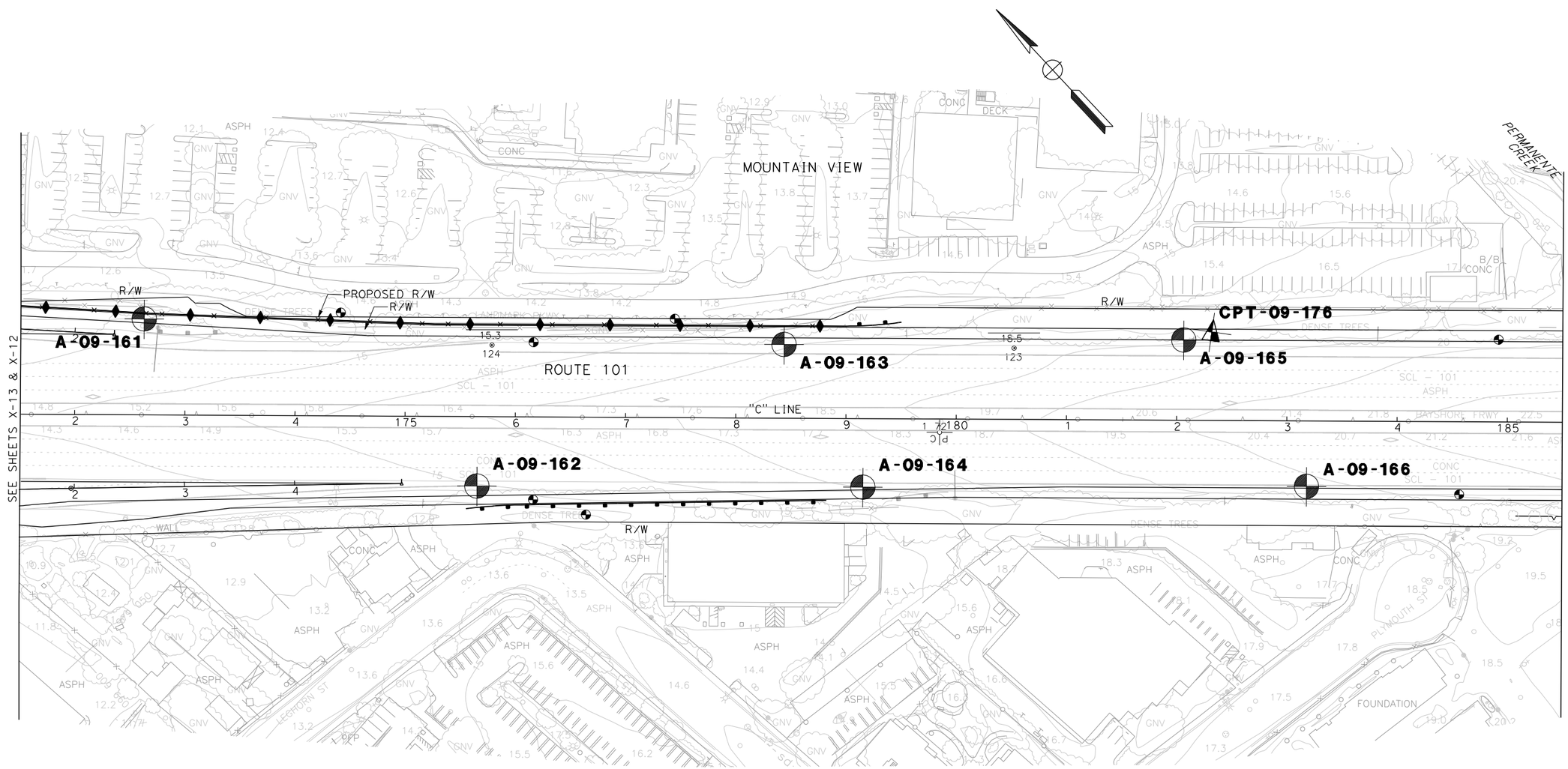
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

Valley Transportation Authority
3331 N First Street
San Jose, CA 95134

URS Corporation
55 S Market Street
Suite 1500
San Jose, CA, 95113



SCALE 1"=50'

FIELD EXPLORATION LOCATION PLAN 3-14

REVISED BY | DATE REVISED

CALCULATED-DESIGNED BY | CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00 | DATE PLOTTED => 7/10/2009 TIME PLOTTED => 10:16:22 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => madhu_thummaluru
DGN FILE => ...\borplans\44a3331gp014.dgn

CU 04235

EA 4A3301

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	49.0/52.2		

REGISTERED CIVIL ENGINEER DATE

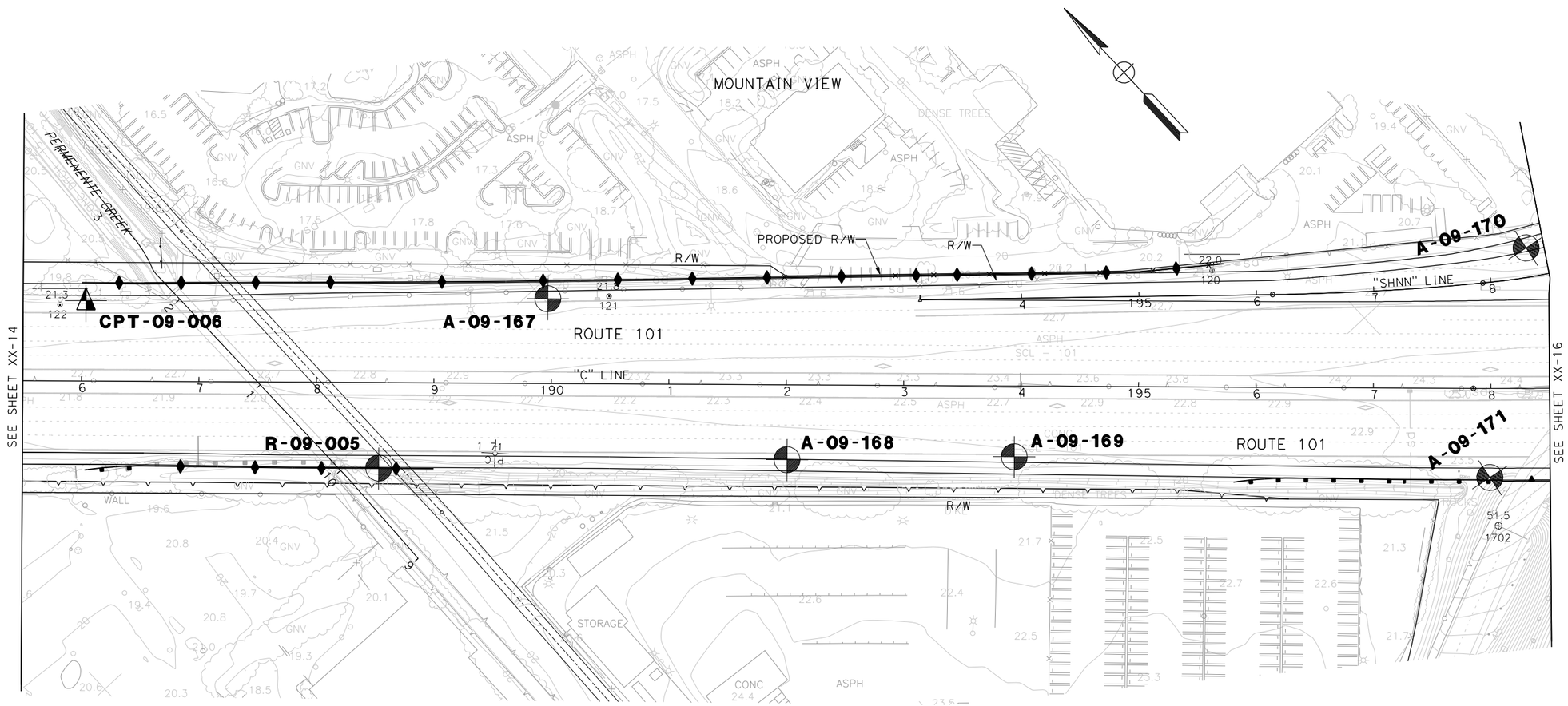
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

Valley Transportation Authority
3331 N First Street
San Jose, CA 95134

URS Corporation
55 S Market Street
Suite 1500
San Jose, CA, 95113



SCALE 1"=50'

FIELD EXPLORATION LOCATION PLAN 3-15

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 7/10/2009
TIME PLOTTED => 10:16:38 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => madhu_thummaluru
DGN FILE => ...\borplans\44a331gp015.dgn

CU 04235

EA 4A3301

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	49.0/52.2		

REGISTERED CIVIL ENGINEER DATE

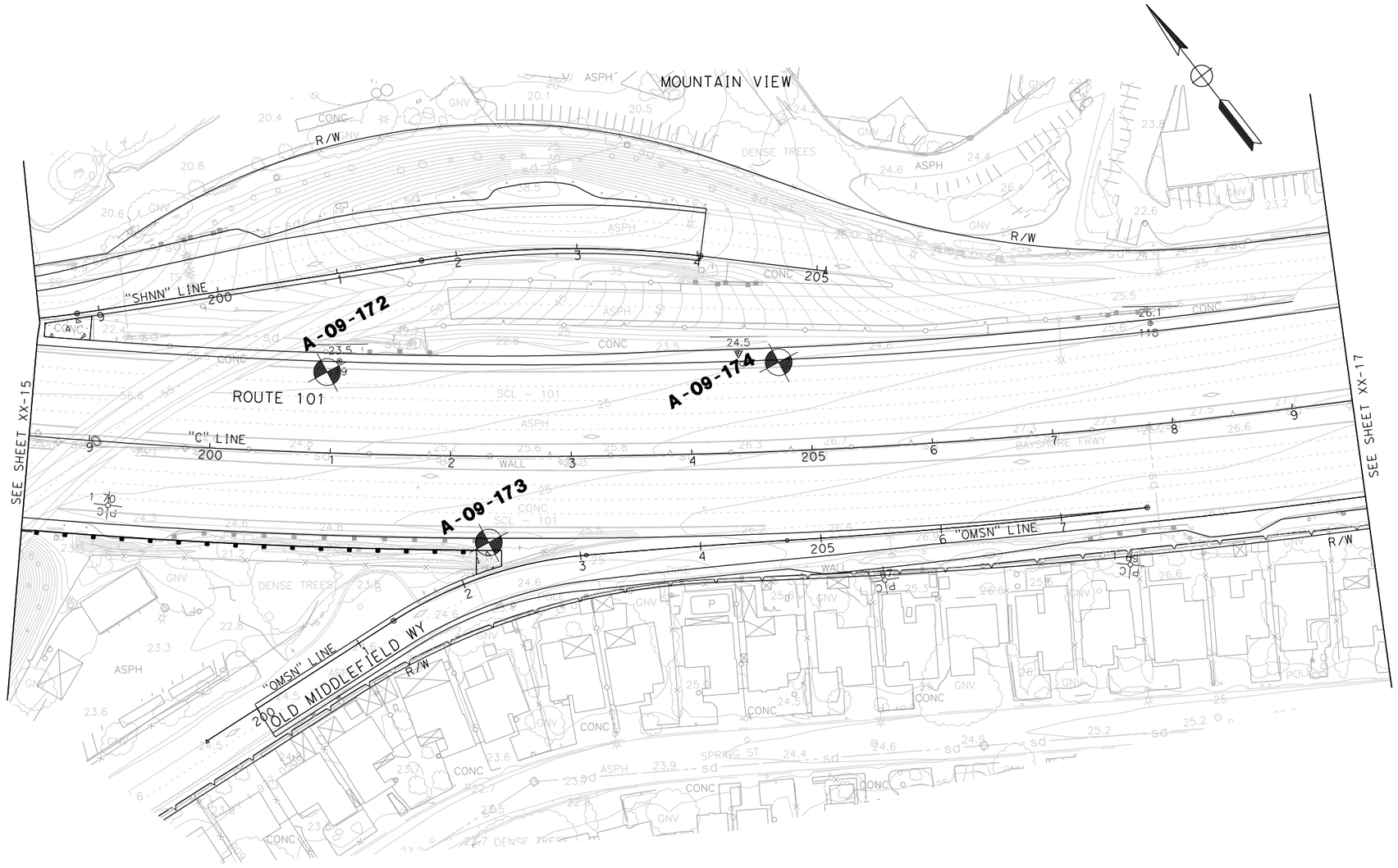
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

Valley Transportation Authority
3331 N First Street
San Jose, CA 95134

URS Corporation
55 S Market Street
Suite 1500
San Jose, CA, 95113



SCALE 1"=50'

FIELD EXPLORATION LOCATION PLAN 3-16

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 7/10/2009
TIME PLOTTED => 10:16:54 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => madhu_thummaluru
DGN FILE => ...\borplans\44a331qp016.dgn

CU 04235

EA 4A3301

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	49.0/52.2		

REGISTERED CIVIL ENGINEER DATE

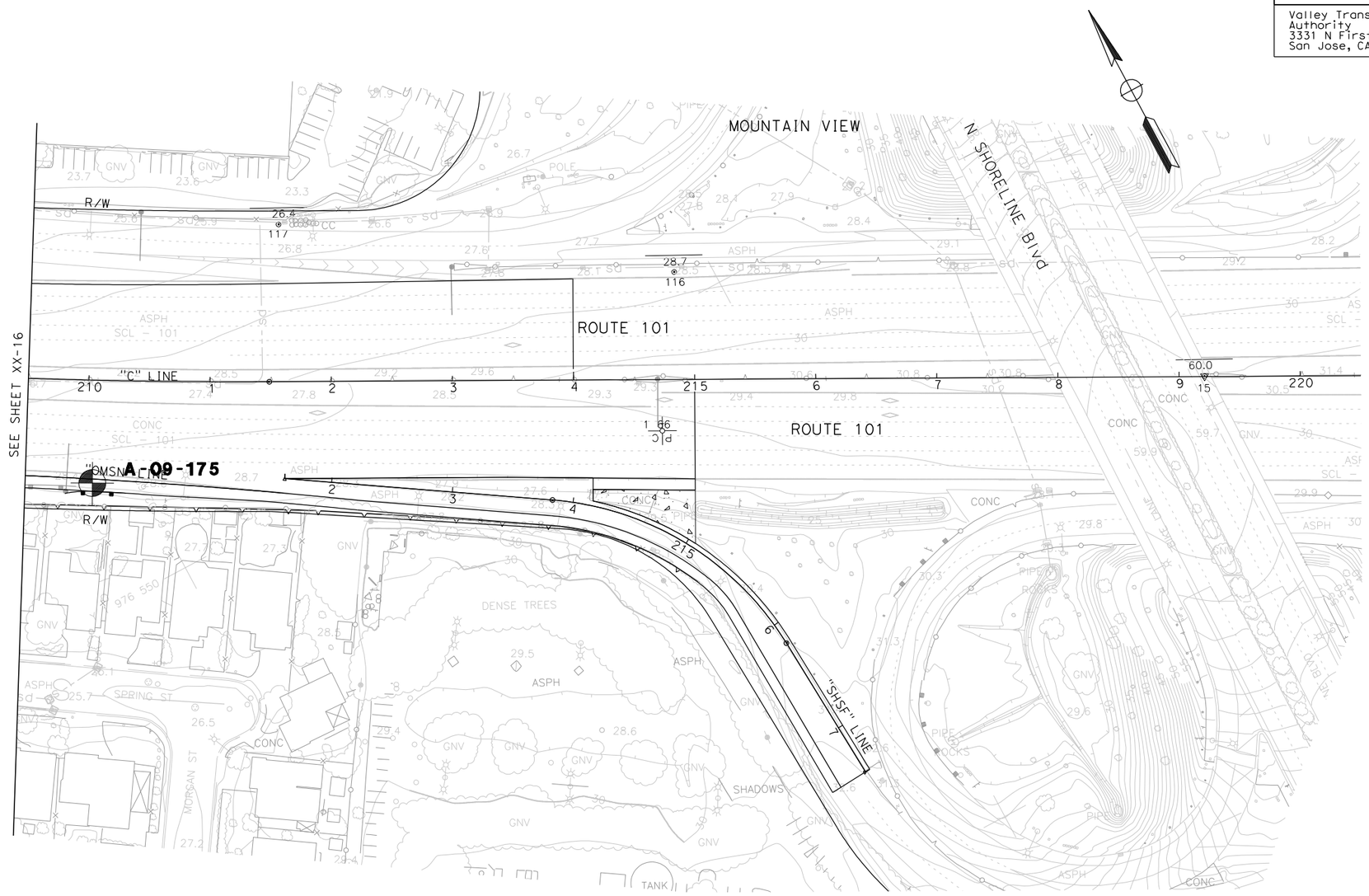
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

Valley Transportation Authority
3331 N First Street
San Jose, CA 95134

URS Corporation
55 S Market Street
Suite 1500
San Jose, CA, 95113



SCALE 1"=50'

FIELD EXPLORATION LOCATION PLAN 3-17

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY .
CHECKED BY .
CONSULTANT FUNCTIONAL SUPERVISOR .

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 00-00-00
DATE PLOTTED => 7/10/2009
TIME PLOTTED => 10:17:14 AM

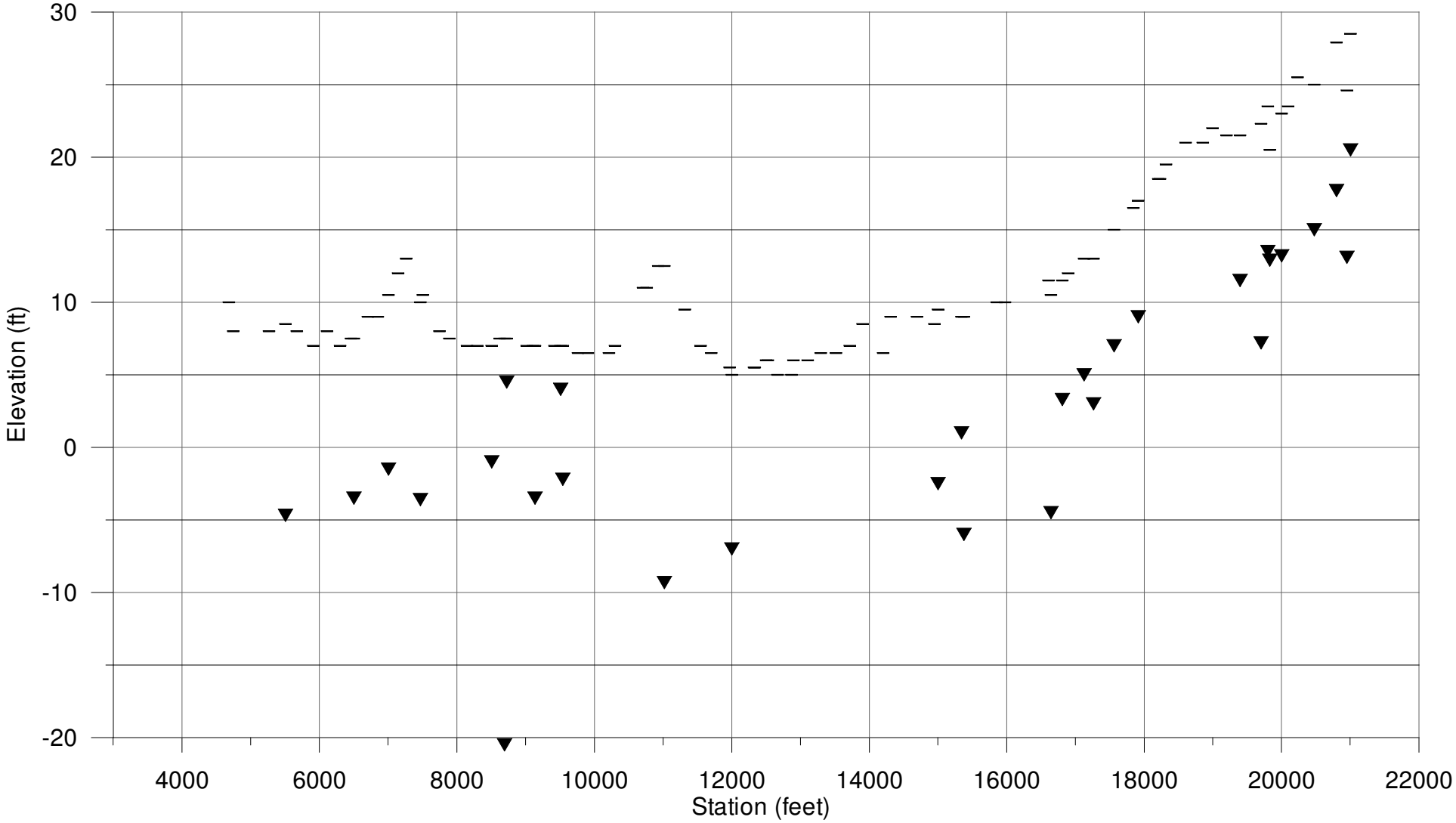
BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => madhu_thummaluru
DGN FILE => ...\borplans\44a3331gp017.dgn

CU 04235

EA 4A3301

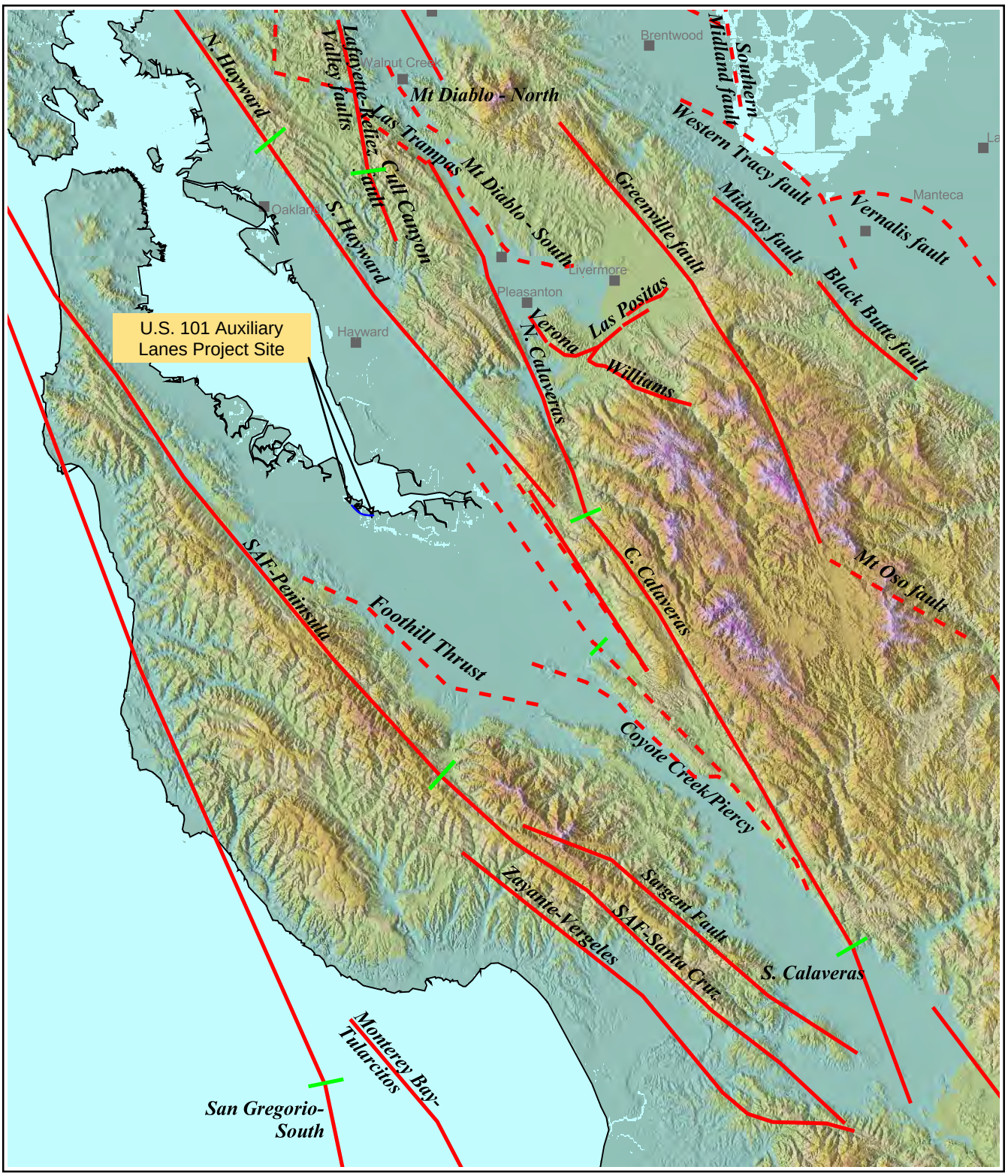


LEGEND

▼ Groundwater Level

– Ground Surface

PROJECT NO. 28649951	101 Auxillary Lane Project Embarcadero Road to SR 85 Santa Clara County, California	GROUNDWATER LEVEL MEASUREMENTS	FIGURE 3-18
	URS		



0 20 40 Kilometers

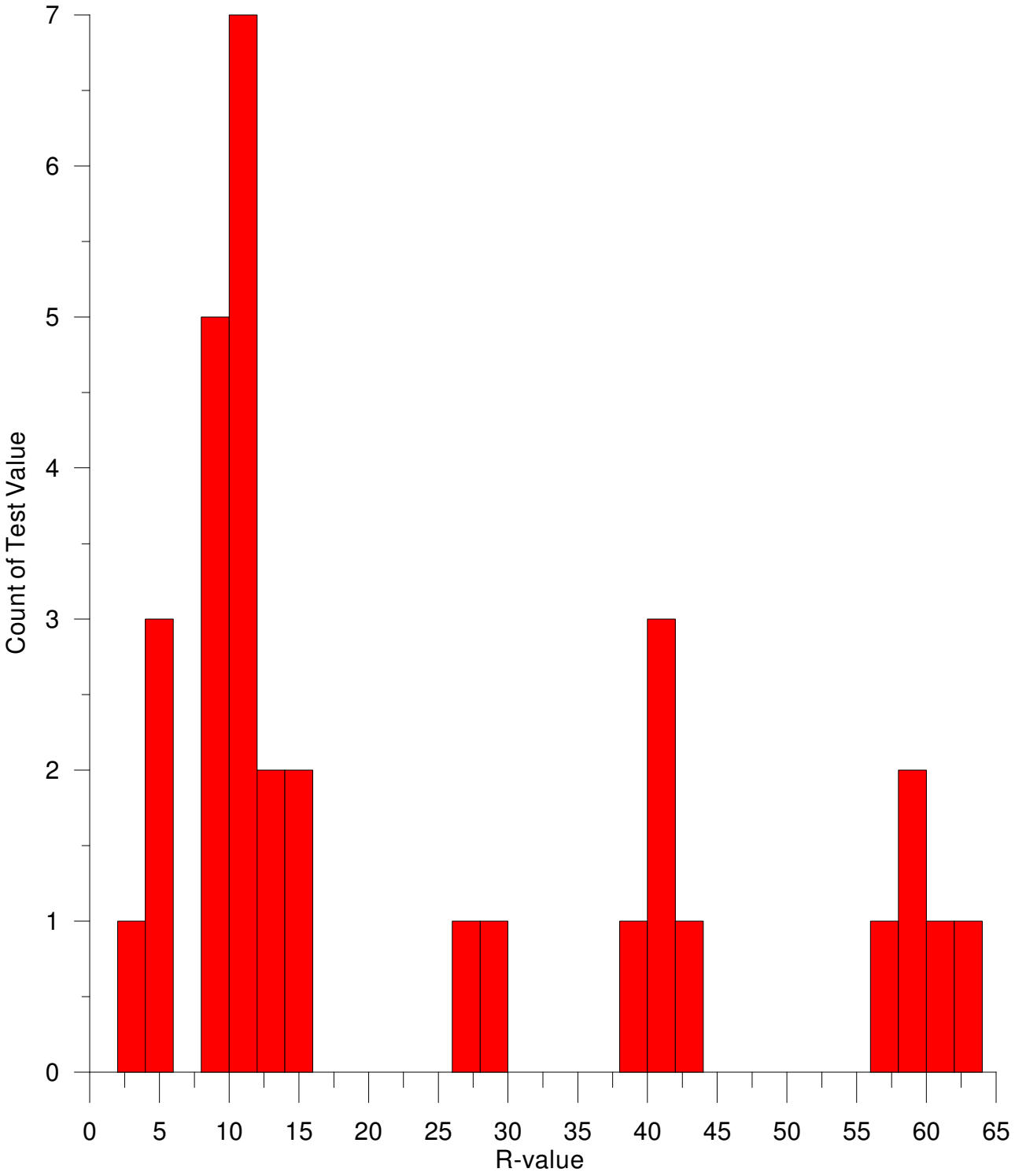
0 10 20 30 Miles

Surficial faults

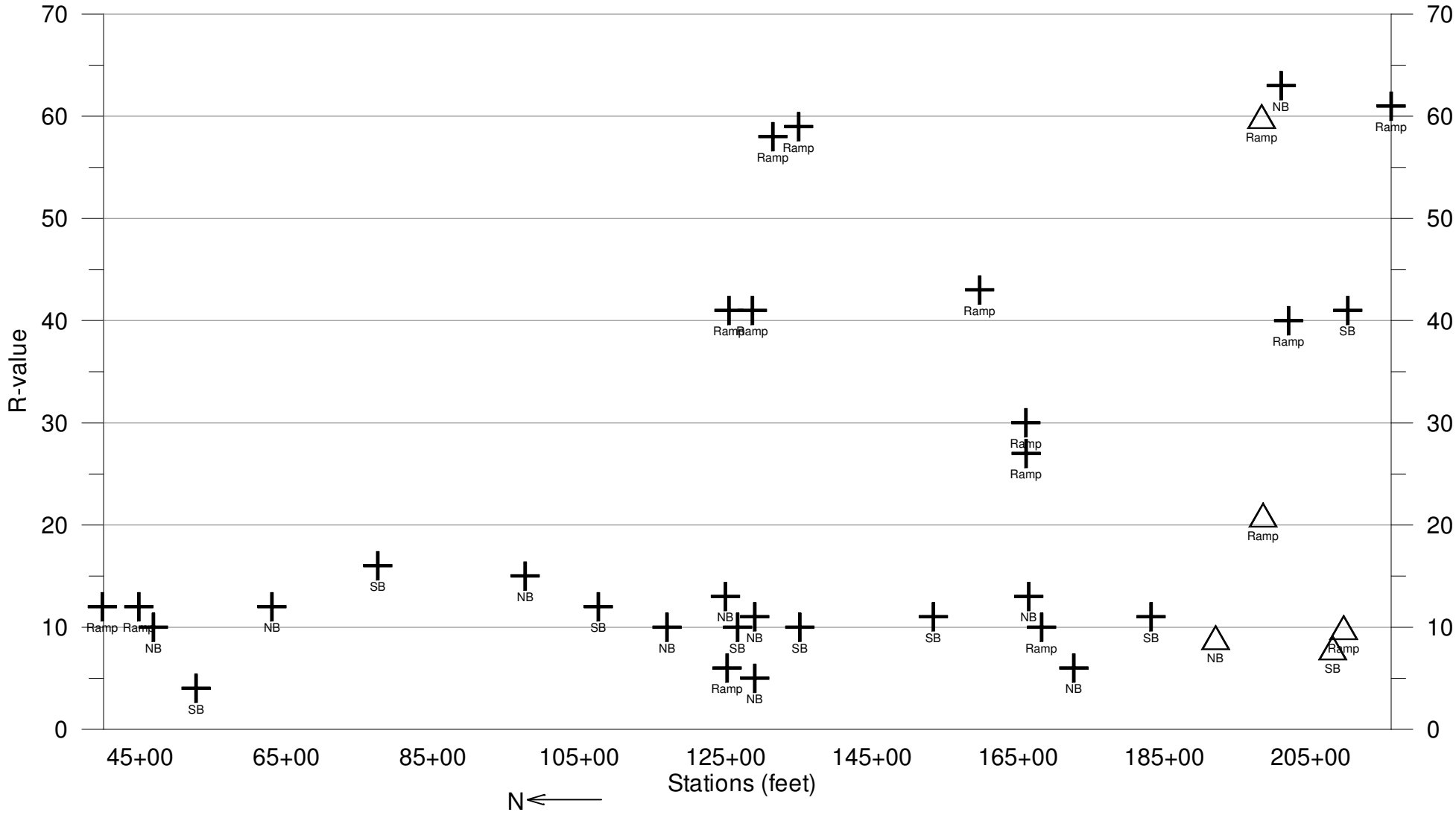
Blind faults

Fault Sources: URS Seismic Hazard Model

URS	28649951 U.S. 101 Auxiliary Lanes Palo Alto & Mountain View, CA	ACTIVE FAULTS IN THE SITE REGION	Figure 4-1



PROJECT NO. 28649951	101 Auxillary Lane Project Embarcadero Road to SR 85 Santa Clara County, California	R-VALUE NUMERICAL DISTRIBUTION	FIGURE 5-1
	URS		



LEGEND

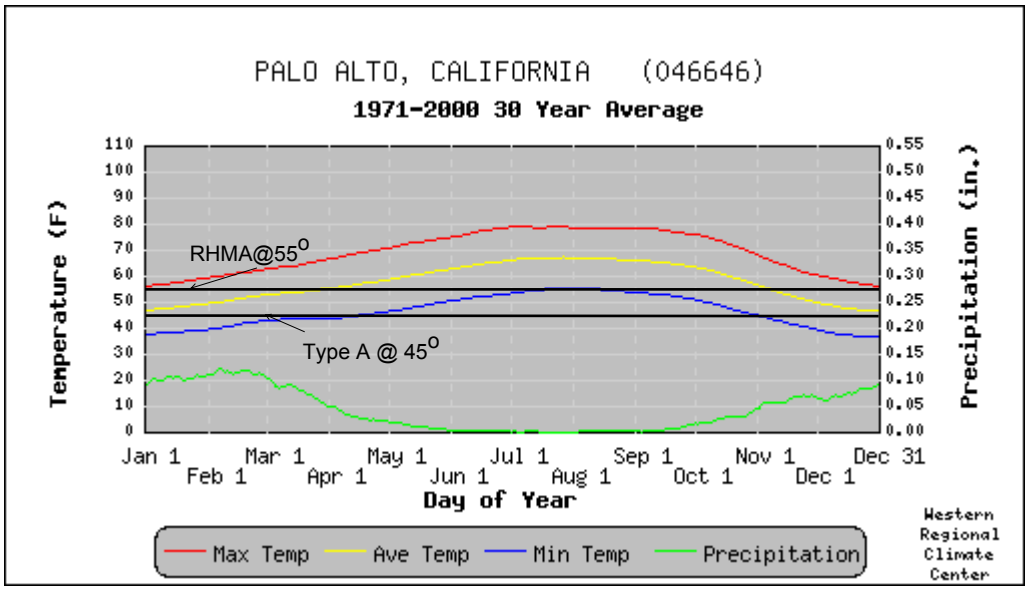
+ R-value (URS)

△ R-value (Kleinfelder)

PROJECT NO. 28649739	Highway 101 HOV Lane Project Petaluma to Rohnert Park Sonoma County, California	R-VALUE DISTRIBUTION ALONG ALIGNMENT	FIGURE 5-2
	URS		

PALO ALTO, CALIFORNIA

1971 - 2000 Temperature and Precipitation



Data is smoothed using a 29 day running average.

- Max. Temp. is the average of all daily maximum temperatures recorded for the day of the year between the years 1971 and 2000.
- Ave. Temp. is the average of all daily average temperatures recorded for the day of the year between the years 1971 and 2000.
- Min. Temp. is the average of all daily minimum temperatures recorded for the day of the year between the years 1971 and 2000.
- Precipitation is the average of all daily total precipitation recorded for the day of the year between the years 1971 and 2000.

FIGURE 5-3

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	48.97/57.17		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Stephen Huang No. C 42289 Exp. 03/31/10 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

VALLEY TRANSPORTATION AUTHORITY
3331 N FIRST STREET,
SAN JOSE, CA 95134

URS CORPORATION
55 S MARKET STREET,
Suite 1500
SAN JOSE, CA 95113

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (JUNE 2007)

CEMENTATION

Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

CONSISTENCY OF COHESIVE SOILS

Description	Unconfined Compressive Strength (tsf)	Pocket Penetrometer Measurement (tsf)	Torvane Measurement (tsf)	Field Approximation
Very Soft	< 0.25	< 0.25	< 0.12	Easily penetrated several inches by fist
Soft	0.25 to 0.50	0.25 to 0.50	0.12 to 0.25	Easily penetrated several inches by thumb
Medium Stiff	0.50 to 1.0	0.50 to 1.0	0.25 to 0.50	Penetrated several inches by thumb with moderate effort
Stiff	1 to 2	1 to 2	0.50 to 1.0	Readily indented by thumb but penetrated only with great effort
Very Stiff	2 to 4	2 to 4	1.0 to 2.0	Readily indented by thumbnail
Hard	> 4.0	> 4.0	> 2.0	Indented by thumbnail with difficulty

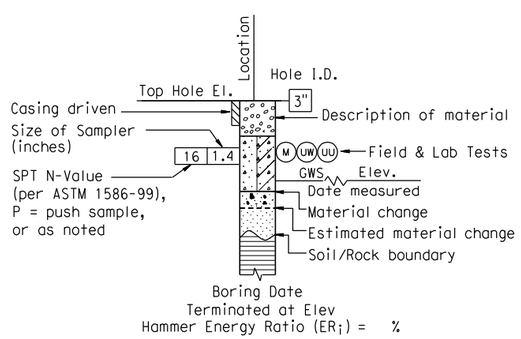
BOREHOLE IDENTIFICATION

Symbol	Hole Type	Description
Size	A	Auger Boring
Size	R P	Rotary drilled boring Rotary percussion boring (air)
Size	R	Rotary drilled diamond core
Size	HD HA	Hand driven (1-inch soil tube) Hand Auger
●	D	Dynamic Cone Penetration Boring
▲	CPT	Cone Penetration Test (ASTM D 5778-95)
⬚	O	Other

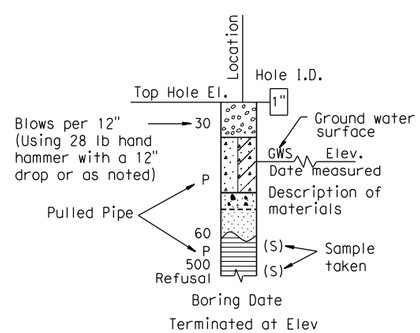
Note: Size in inches.

PLASTICITY OF FINE-GRAINED SOILS

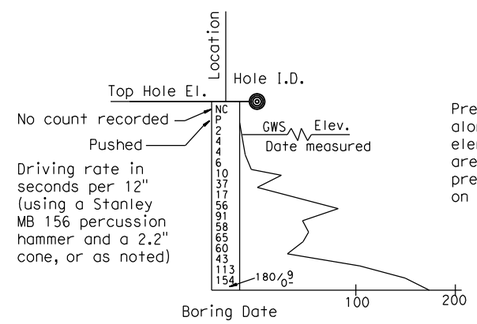
Description	Criteria
Nonplastic	A 1/8-inch thread cannot be rolled at any water content.
Low	The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.



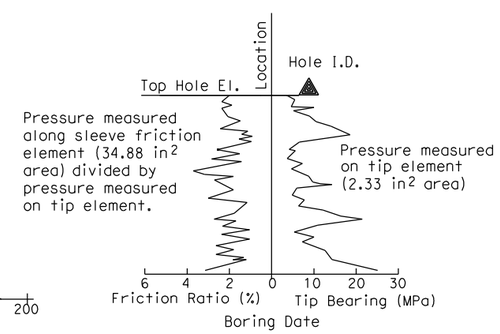
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) SOUNDING

FIGURE 6-1a

ENGINEERING SERVICES	GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH	BRIDGE NO. / POST MILES	OVERHEAD SIGN STRUCTURE LOG OF TEST BORINGS
FUNCTIONAL SUPERVISOR	DRAWN BY: A. CHEUNG	FIELD INVESTIGATION BY:			
NAME: STEPHEN HUANG	CHECKED BY: S. MANOHARAN				

OGS CIVIL LOG OF TEST BORINGS SHEET

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04235
EA 4A3301

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES SHEET OF

FILE => ...\LOTBs\legend-soi.dgn

USERNAME => madhu_thummaiur DATE PLOTTED => 1/15/2010 TIME PLOTTED => 3:32:50 PM

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (JUNE 2007)

GROUP SYMBOLS AND NAMES

Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
GW	Well-graded GRAVEL Well-graded GRAVEL with SAND	CL	Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
GP	Poorly graded GRAVEL Poorly graded GRAVEL with SAND		
GW-GM	Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND	CL-ML	SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
GW-GC	Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GP-GM	Poorly graded GRAVEL with SILT Poorly graded GRAVEL with SILT and SAND	ML	SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
GP-GC	Poorly graded GRAVEL with CLAY (or SILTY CLAY) Poorly graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GM	SILTY GRAVEL SILTY GRAVEL with SAND	OL	ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
GC	CLAYEY GRAVEL CLAYEY GRAVEL with SAND		
GC-GM	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND	OL	ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
SW	Well-graded SAND Well-graded SAND with GRAVEL		
SP	Poorly graded SAND Poorly graded SAND with GRAVEL	CH	Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
SW-SM	Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL		
SW-SC	Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	MH	Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
SP-SM	Poorly graded SAND with SILT Poorly graded SAND with SILT and GRAVEL		
SP-SC	Poorly graded SAND with CLAY (or SILTY CLAY) Poorly graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	OH	ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
SM	SILTY SAND SILTY SAND with GRAVEL		
SC	CLAYEY SAND CLAYEY SAND with GRAVEL	OH	ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY ORGANIC elastic SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
SC-SM	SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL		
PT	PEAT	OL/OH	ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND
	COBBLES COBBLES and BOULDERS BOULDERS		

FIELD AND LABORATORY TESTING

- (C) Consolidation (ASTM D 2435)
- (CL) Collapse Potential (ASTM D 5333)
- (CP) Compaction Curve (CTM 216)
- (CR) Corrosivity Testing (CTM 643, CTM 422, CTM 417)
- (CU) Consolidated Undrained Triaxial (ASTM D 4767)
- (DS) Direct Shear (ASTM D 3080)
- (EI) Expansion Index (ASTM D 4829)
- (M) Moisture Content (ASTM D 2216)
- (OC) Organic Content-% (ASTM D 2974)
- (P) Permeability (CTM 220)
- (PA) Particle Size Analysis (ASTM D 422)
- (PI) Plasticity Index (AASHTO T 90) Liquid Limit (AASHTO T 89)
- (PL) Point Load Index (ASTM D 5731)
- (PM) Pressure Meter
- (PP) Pocket Penetrometer
- (R) R-Value (CTM 301)
- (SE) Sand Equivalent (CTM 217)
- (SG) Specific Gravity (AASHTO T 100)
- (SL) Shrinkage Limit (ASTM D 427)
- (SW) Swell Potential (ASTM D 4546)
- (TV) Pocket Torvane
- (UC) Unconfined Compression-Soil (ASTM D 2166) Unconfined Compression-Rock (ASTM D 2938)
- (UU) Unconsolidated Undrained Triaxial (ASTM D 2850)
- (UW) Unit Weight (ASTM D 4767)
- (VS) Vane Shear (AASHTO T 223)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	48.97/57.17		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Stephen Huang No. C 42289 Exp. 03/31/10 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

VALLEY TRANSPORTATION AUTHORITY
3331 N FIRST STREET,
SAN JOSE, CA 95134

URS CORPORATION
55 S MARKET STREET,
Suite 1500
SAN JOSE, CA 95113

APPARENT DENSITY OF COHESIONLESS SOILS

Description	SPT N_{60} (Blows / 12 inches)
Very loose	0 - 4
Loose	5 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	> 50

MOISTURE

Description	Criteria
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

PERCENT OR PROPORTION OF SOILS

Description	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

PARTICLE SIZE

Description		Size
Boulder		> 12"
Cobble		3" to 12"
Gravel	Coarse	3/4" to 3"
	Fine	No. 4 to 3/4"
Sand	Coarse	No. 10 to No. 4
	Medium	No. 40 to No. 10
	Fine	No. 200 to No. 40

FIGURE 6-1b

ENGINEERING SERVICES

FUNCTIONAL SUPERVISOR

NAME: STEPHEN HUANG

GEOTECHNICAL SERVICES

DRAWN BY: A. CHEUNG

CHECKED BY: S. MANOHARAN

FIELD INVESTIGATION BY:

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH

BRIDGE NO.

POST MILES

OVERHEAD SIGN STRUCTURE
LOG OF TEST BORINGS

OGS CIVIL LOG OF TEST BORINGS SHEET

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04235
EA 4A3301

FILE => ...\LOTBs\legend-soil2.dgn

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES

SHEET OF

USERNAME => madhu_thummalur DATE PLOTTED => 1/15/2010 TIME PLOTTED => 3:33:36 PM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	48.97/57.17		

REGISTERED CIVIL ENGINEER DATE

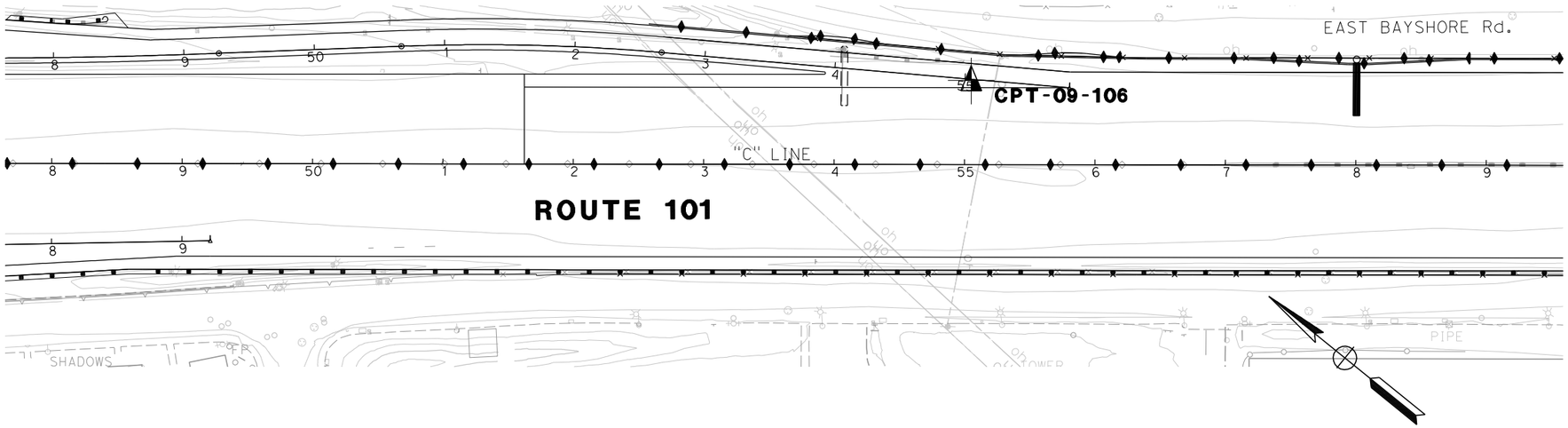
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Stephen Huang No. C 42289 Exp. 03/31/10 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

VALLEY TRANSPORTATION AUTHORITY
3331 N FIRST STREET,
SAN JOSE, CA 95134

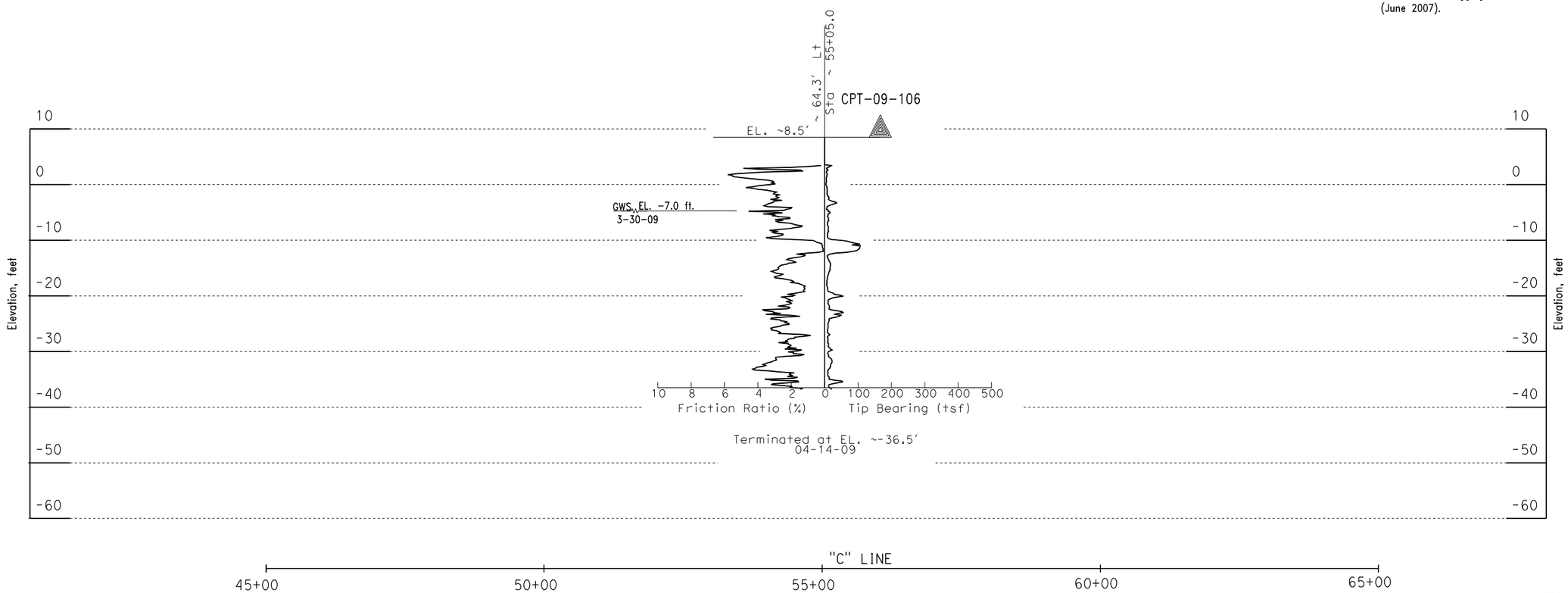
URS CORPORATION
55 S MARKET STREET,
Suite 1500
SAN JOSE, CA 95113



BENCH MARK:

B. M Elev.: 10.871 US Survey Feet
Northing: 1986818.326
Easting: 6093027.893
Vertical Datum: NAVD88
Horizontal Datum: CCS83/Zone 3
Rebar w/Red Cap – Dirt shoulder of southbound US101 approximately 0.55 mile southeast of the Oregon Expressway overcrossing

NOTE:
This LOTB sheet was prepared in accordance with the caltrans soil and Rock logging, Classification, and Presentation Manual (June 2007).



PROFILE
HOR. 1"=100'
VER. 1"=10'

FIGURE 6-1c

ENGINEERING SERVICES	GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH	BRIDGE NO. / POST MILES	OVERHEAD SIGN STRUCTURE LOG OF TEST BORINGS
FUNCTIONAL SUPERVISOR NAME: STEPHEN HUANG	DRAWN BY: A. CHEUNG; CHECKED BY: S. MANOHARAN; FIELD INVESTIGATION BY: CHUCK RAMBO				
OGS CIVIL LOG OF TEST BORINGS SHEET	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3		CU 04235 EA 4A3301	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES / SHEET / OF

FILE => ...\ohstructure\STA_58+00_OH.dgn

USERNAME => madhu_thummaiur DATE PLOTTED => 1/15/2010 TIME PLOTTED => 3:22:42 PM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	48.97/57.17		

REGISTERED CIVIL ENGINEER DATE

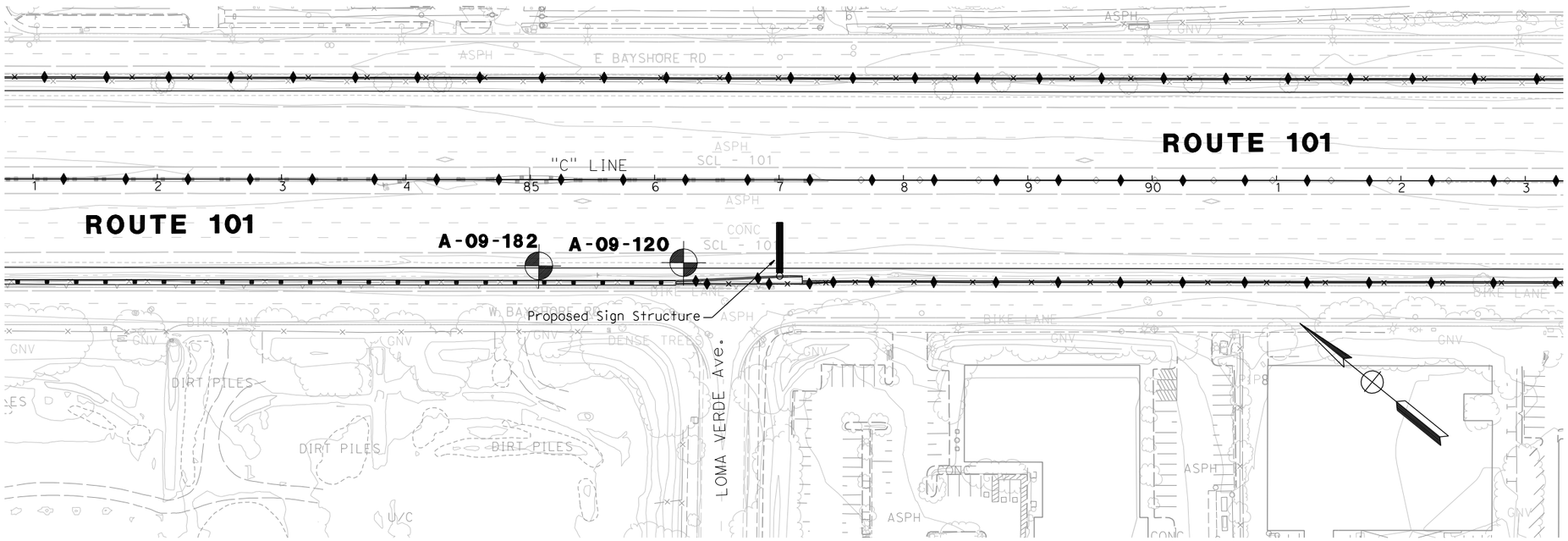
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Stephen Huang No. C 42289 Exp. 03/31/10 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

VALLEY TRANSPORTATION AUTHORITY
3331 N FIRST STREET,
SAN JOSE, CA 95134

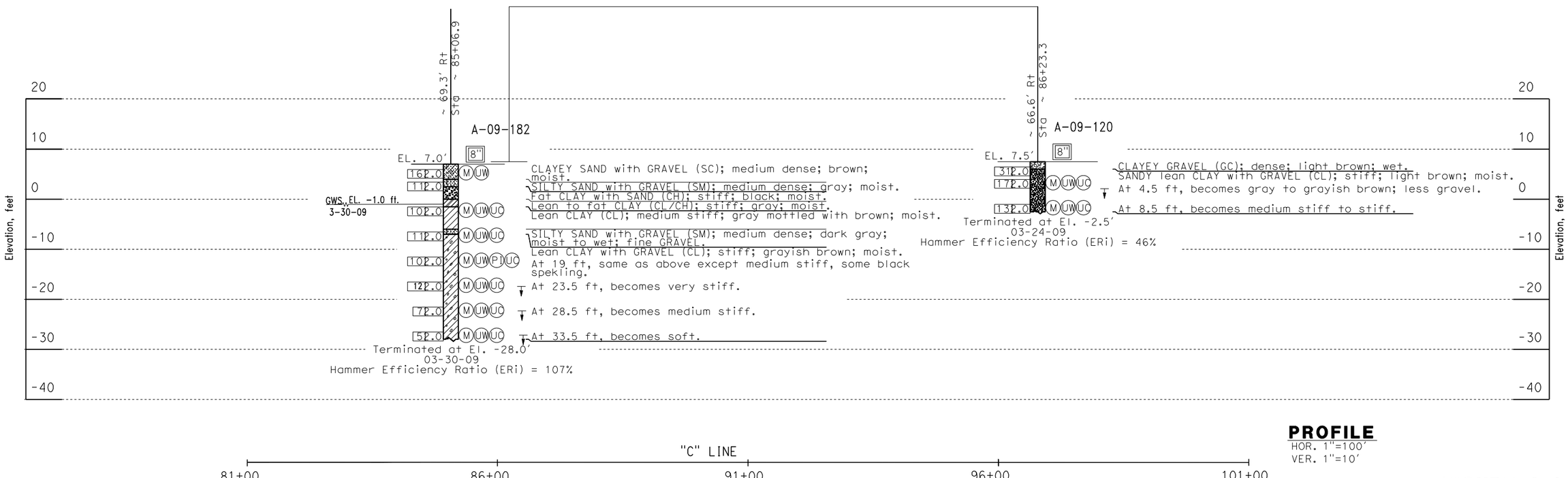
URS CORPORATION
55 S MARKET STREET,
Suite 1500
SAN JOSE, CA 95113



BENCH MARK:

B. M Elev.: 10.871 US Survey Feet
Northing: 1986818.326
Easting: 6093027.893
Vertical Datum: NAVD88
Horizontal Datum: CCS83/Zone 3
Rebar w/Red Cap – Dirt shoulder of southbound US101 approximately 0.55 mile southeast of the Oregon Expressway overcrossing

NOTE:
This LOTB sheet was prepared in accordance with the caltrans soil and Rock logging, Classification, and Presentation Manual (June 2007).



PROFILE
HOR. 1"=100'
VER. 1"=10'

FIGURE 6-1d

ENGINEERING SERVICES		GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN	BRIDGE NO.	OVERHEAD SIGN STRUCTURE
FUNCTIONAL SUPERVISOR NAME: STEPHEN HUANG	DRAWN BY: A. CHEUNG CHECKED BY: S. MANOHARAN	FIELD INVESTIGATION BY: CHUCK RAMBO		DESIGN BRANCH	POST MILES	LOG OF TEST BORINGS
OGS CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3		CU 04235 EA 4A3301	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES / SHEET / OF

FILE => ...\ohstructure\STA_87+00_OH.dgn

USERNAME => madhu_thummalur DATE PLOTTED => 1/15/2010 TIME PLOTTED => 3:22:50 PM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	48.97/57.17		

REGISTERED CIVIL ENGINEER DATE

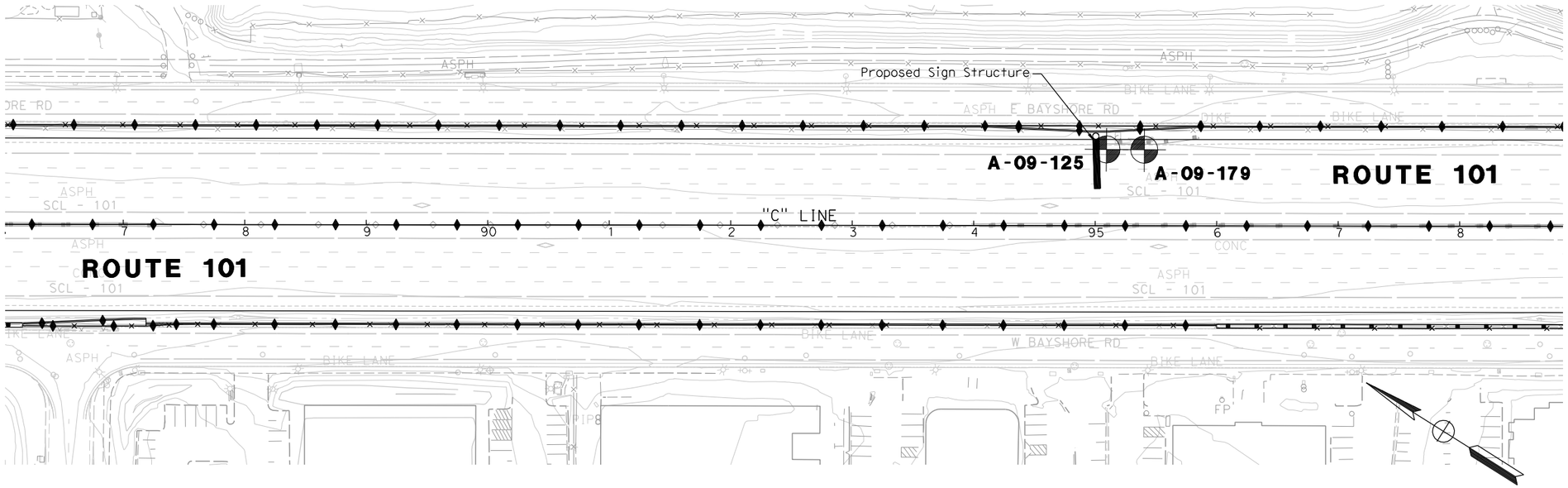
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Stephen Huang No. C 42289 Exp. 03/31/10 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

VALLEY TRANSPORTATION AUTHORITY
3331 N FIRST STREET,
SAN JOSE, CA 95134

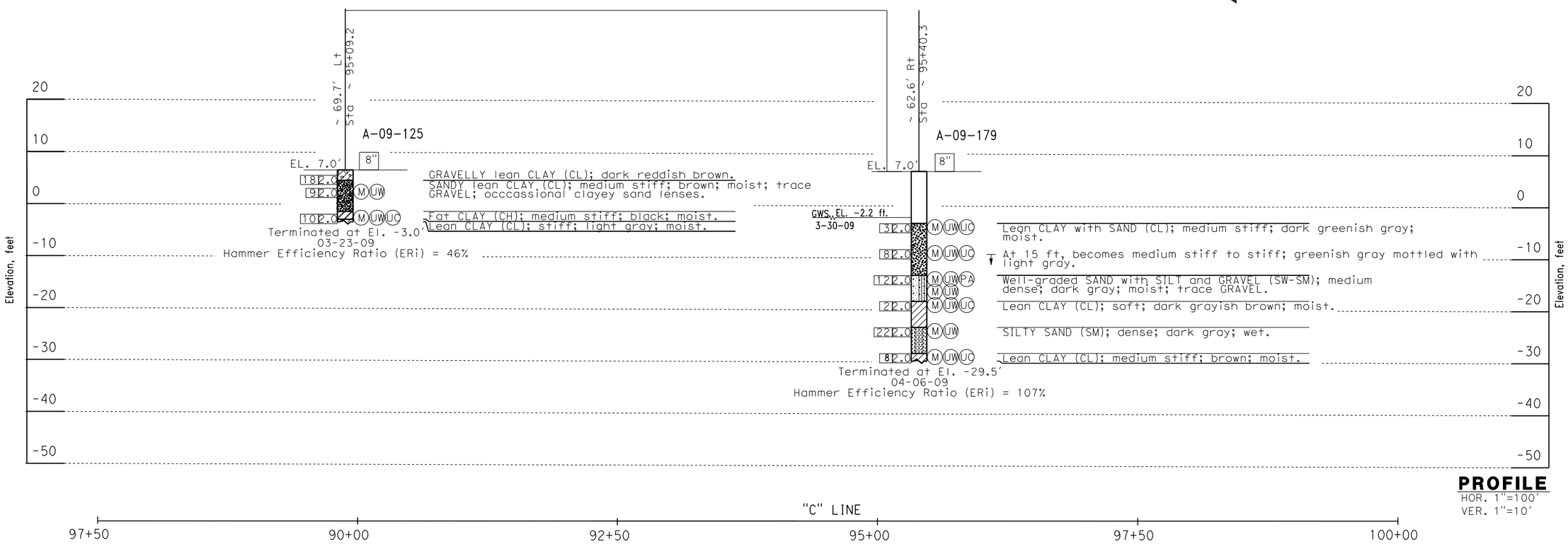
URS CORPORATION
55 S MARKET STREET,
Suite 1500
SAN JOSE, CA 95113



BENCH MARK:

B. M Elev.: 7.541 US Survey Feet
Northing: 1985636.542
Easting: 6094153.352
Vertical Datum: NAVD88
Horizontal Datum: CCS83/Zone 3
Mag nail & Shiner – Northbound shoulder of US101 approximately 0.5 mile southeast from Embacardo Road overcrossing

NOTE:
This LOTB sheet was prepared in accordance with the caltrans soil and Rock logging, Classification, and Presentation Manual (June 2007).



PROFILE
HOR. 1"=100'
VER. 1"=10'

FIGURE 6-1e

ENGINEERING SERVICES		GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH	BRIDGE NO. / POST MILES	OVERHEAD SIGN STRUCTURE LOG OF TEST BORINGS
FUNCTIONAL SUPERVISOR NAME: STEPHEN HUANG	DRAWN BY: A. CHEUNG CHECKED BY: S. MANOHARAN	FIELD INVESTIGATION BY: CHUCK RAMBO				

OGS CIVIL LOG OF TEST BORINGS SHEET

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04235
EA 4A3301

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES | SHEET | OF

FILE => ...\ohstructure\STA_95+00_OH.dgn

USERNAME => madhu_thummalur DATE PLOTTED => 1/15/2010 TIME PLOTTED => 3:23:00 PM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	48.97/57.17		

REGISTERED CIVIL ENGINEER DATE

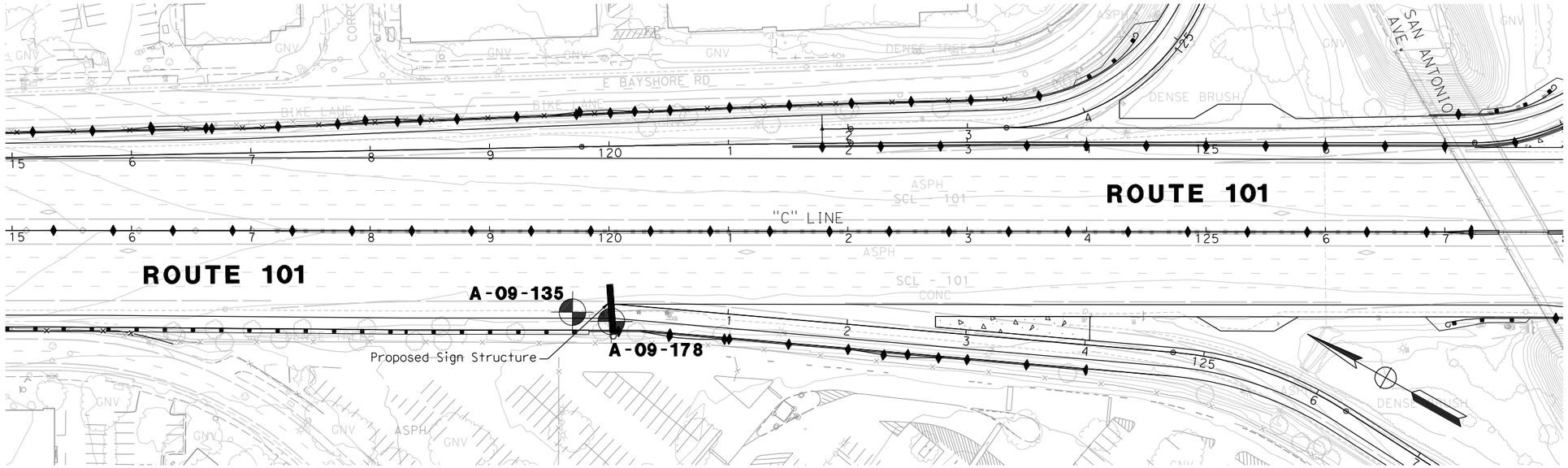
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Stephen Huang No. C 42289 Exp. 03/31/10 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

VALLEY TRANSPORTATION AUTHORITY
3331 N FIRST STREET,
SAN JOSE, CA 95134

URS CORPORATION
55 S MARKET STREET,
Suite 1500
SAN JOSE, CA 95113

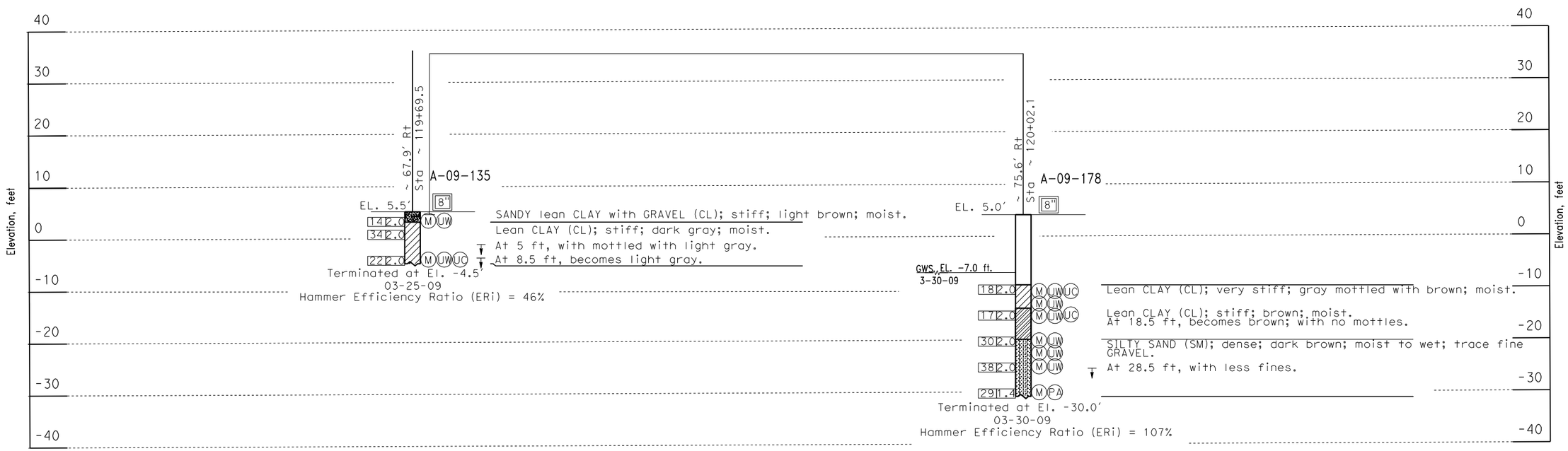


BENCH MARK:

B. M Elev.: 7.541 US Survey Feet
Northing: 1985636.542
Easting: 6094153.352
Vertical Datum: NAVD88
Horizontal Datum: CCS83/Zone 3
Mag nail & Shiner – Northbound shoulder of US101 approximately 0.5 mile southeast from Embacardo Road overcrossing

NOTE:

This LOTB sheet was prepared in accordance with the caltrans soil and Rock logging, Classification, and Presentation Manual (June 2007)



PROFILE
HOR. 1"=100'
VER. 1"=10'

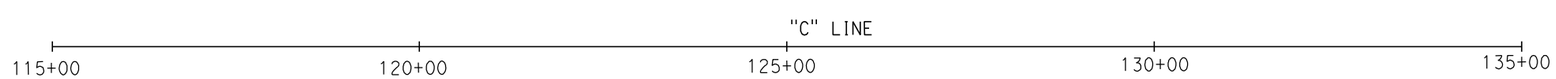


FIGURE 6-1f

ENGINEERING SERVICES	GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH	BRIDGE NO. / POST MILES	OVERHEAD SIGN STRUCTURE LOG OF TEST BORINGS
FUNCTIONAL SUPERVISOR NAME: STEPHEN HUANG	DRAWN BY: A. CHEUNG CHECKED BY: S. MANOHARAN	FIELD INVESTIGATION BY: CHUCK RAMBO			

OGS CIVIL LOG OF TEST BORINGS SHEET

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04235
EA 4A3301

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES SHEET OF

FILE => ...\ohstructure\STA_120+00_OH.dgn

USERNAME => madhu_thummalur DATE PLOTTED => 1/15/2010 TIME PLOTTED => 3:21:13 PM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	48.97/57.17		

REGISTERED CIVIL ENGINEER DATE

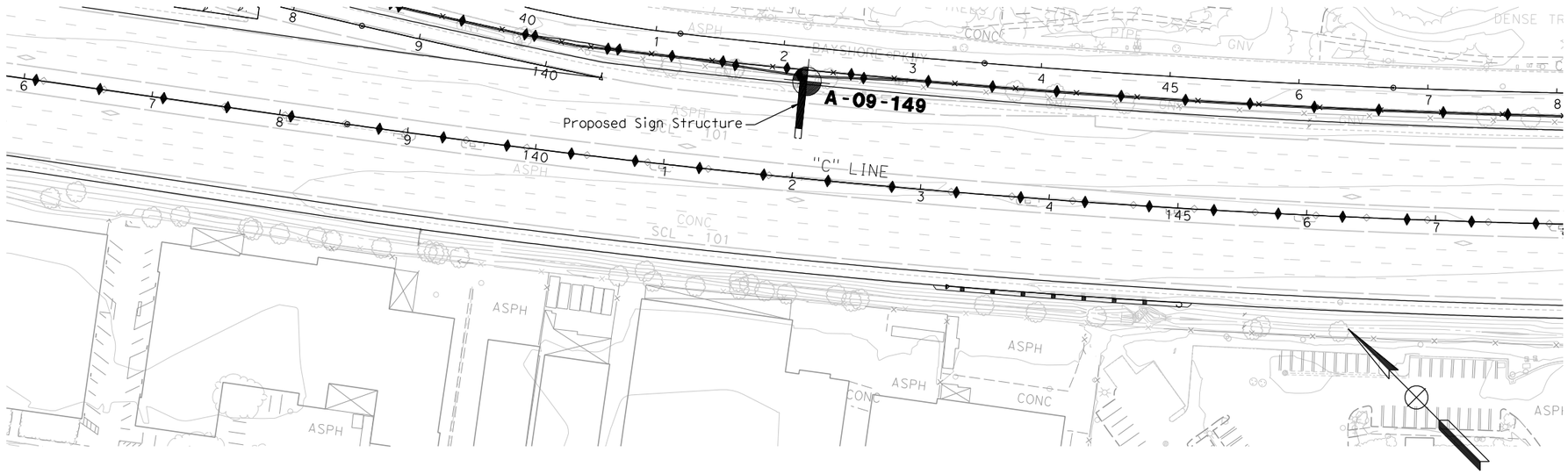
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Stephen Huang No. C 42289 Exp. 03/31/10 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

VALLEY TRANSPORTATION AUTHORITY
3331 N FIRST STREET,
SAN JOSE, CA 95134

URS CORPORATION
55 S MARKET STREET,
Suite 1500
SAN JOSE, CA 95113

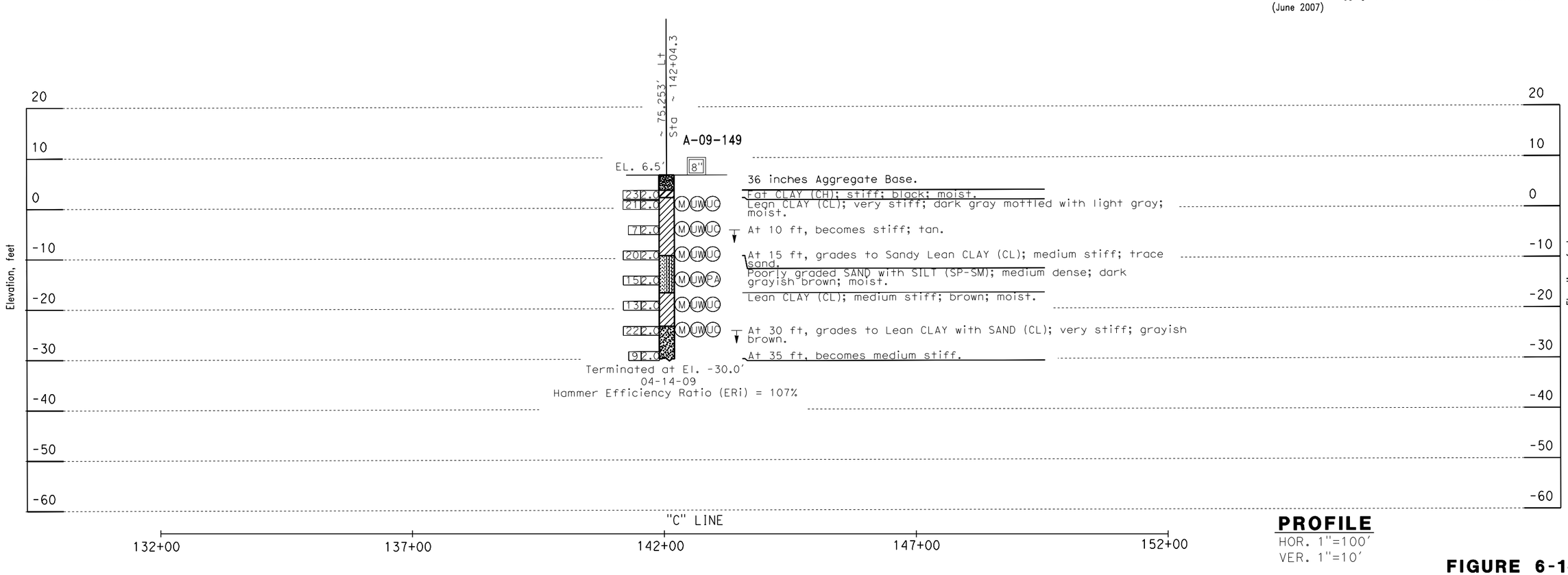


BENCH MARK:

B. M Elev.: 7.541 US Survey Feet
Northing: 1985636.542
Easting: 6094153.352
Vertical Datum: NAVD88
Horizontal Datum: CCS83/Zone 3
Mag nail & Shiner – Northbound shoulder of US101 approximately 0.5 mile southeast from Embacardo Road overcrossing

NOTE:

This LOTB sheet was prepared in accordance with the caltrans soil and Rock logging, Classification, and Presentation Manual (June 2007)



PROFILE
HOR. 1"=100'
VER. 1"=10'

FIGURE 6-1g

ENGINEERING SERVICES	GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH	BRIDGE NO. / POST MILES	OVERHEAD SIGN STRUCTURE LOG OF TEST BORINGS
FUNCTIONAL SUPERVISOR NAME: STEPHEN HUANG	DRAWN BY: A. CHEUNG / CHECKED BY: S. MANOHARAN	FIELD INVESTIGATION BY: CHUCK RAMBO	CU 04235 EA 4A3301	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES / SHEET / OF

OGS CIVIL LOG OF TEST BORINGS SHEET

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

FILE => ...\ohstructure\STA_142+00_OH.dgn

USERNAME => madhu_thummaiu DATE PLOTTED => 1/15/2010 TIME PLOTTED => 3:21:23 PM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	48.97/57.17		

REGISTERED CIVIL ENGINEER DATE

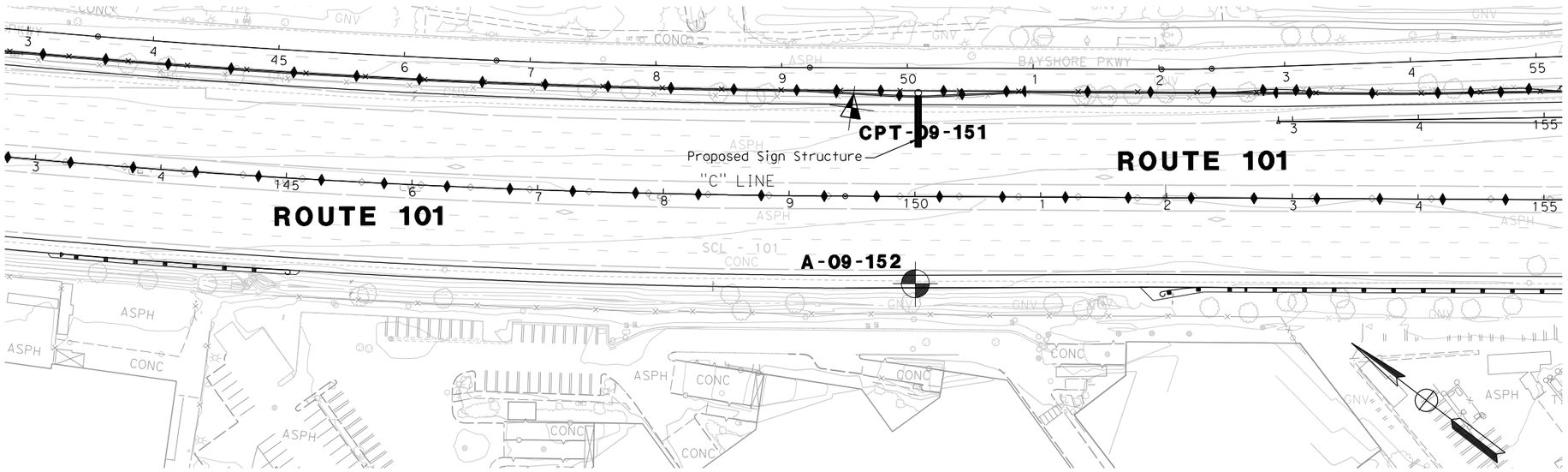
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Stephen Huang No. C 42289 Exp. 03/31/10 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

VALLEY TRANSPORTATION AUTHORITY
3331 N FIRST STREET,
SAN JOSE, CA 95134

URS CORPORATION
55 S MARKET STREET,
Suite 1500
SAN JOSE, CA 95113

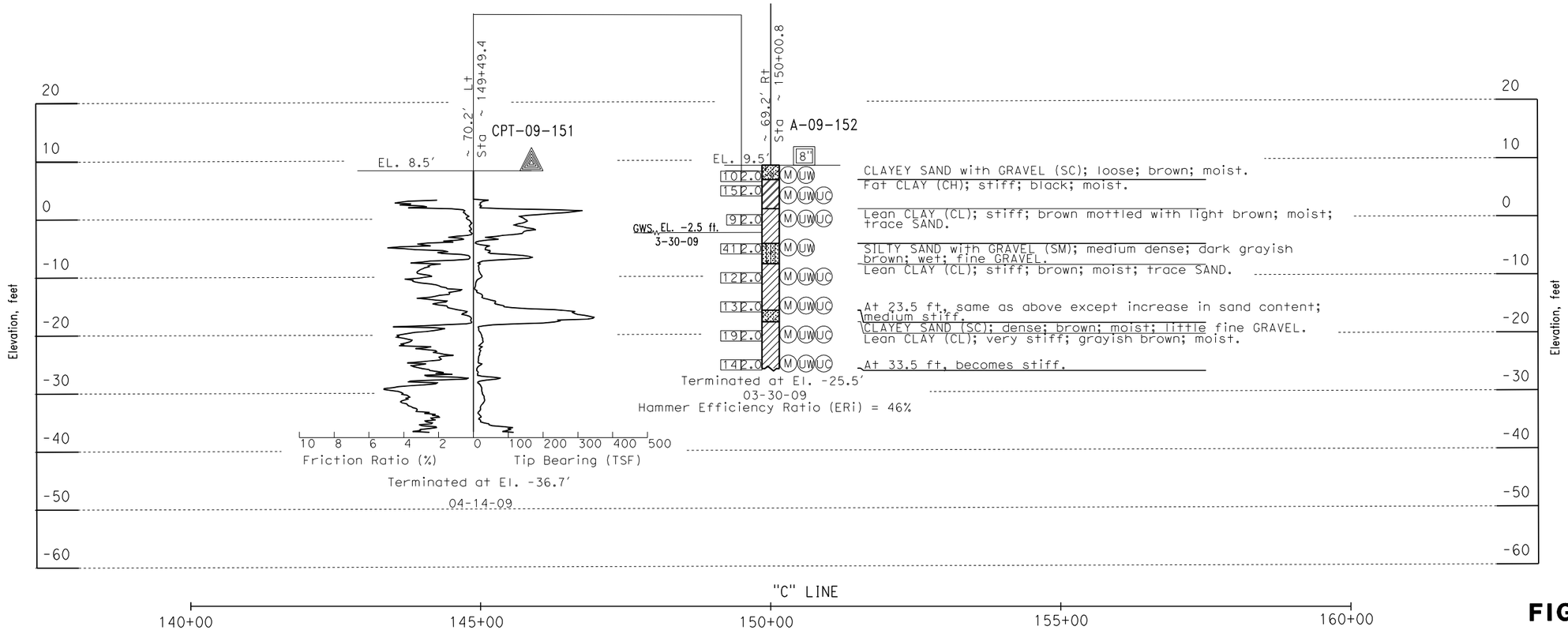


BENCH MARK:

B. M Elev.: 7.541 US Survey Feet
Northing: 1985636.542
Easting: 6094153.352
Vertical Datum: NAVD88
Horizontal Datum: CCS83/Zone 3
Mag nail & Shiner – Northbound shoulder of US101 approximately 0.5 mile southeast from Embacardo Road overcrossing

NOTE:

This LOTB sheet was prepared in accordance with the caltrans soil and Rock logging, Classification, and Presentation Manual (June 2007)



PROFILE
HOR. 1"=100'
VER. 1"=10'

FIGURE 6-1h

ENGINEERING SERVICES		GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH	BRIDGE NO. / POST MILES	OVERHEAD SIGN STRUCTURE LOG OF TEST BORINGS
FUNCTIONAL SUPERVISOR NAME: STEPHEN HUANG	DRAWN BY: A. CHEUNG CHECKED BY: S. MANOHARAN	FIELD INVESTIGATION BY: CHUCK RAMBO		CU 04235 EA 4A3301		

OGS CIVIL LOG OF TEST BORINGS SHEET

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES SHEET OF

FILE => ...\ohstructure\STA_150+00_OH.dgn

USERNAME => madhu_thummalur DATE PLOTTED => 1/15/2010 TIME PLOTTED => 3:21:32 PM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	48.97/57.17		

REGISTERED CIVIL ENGINEER DATE

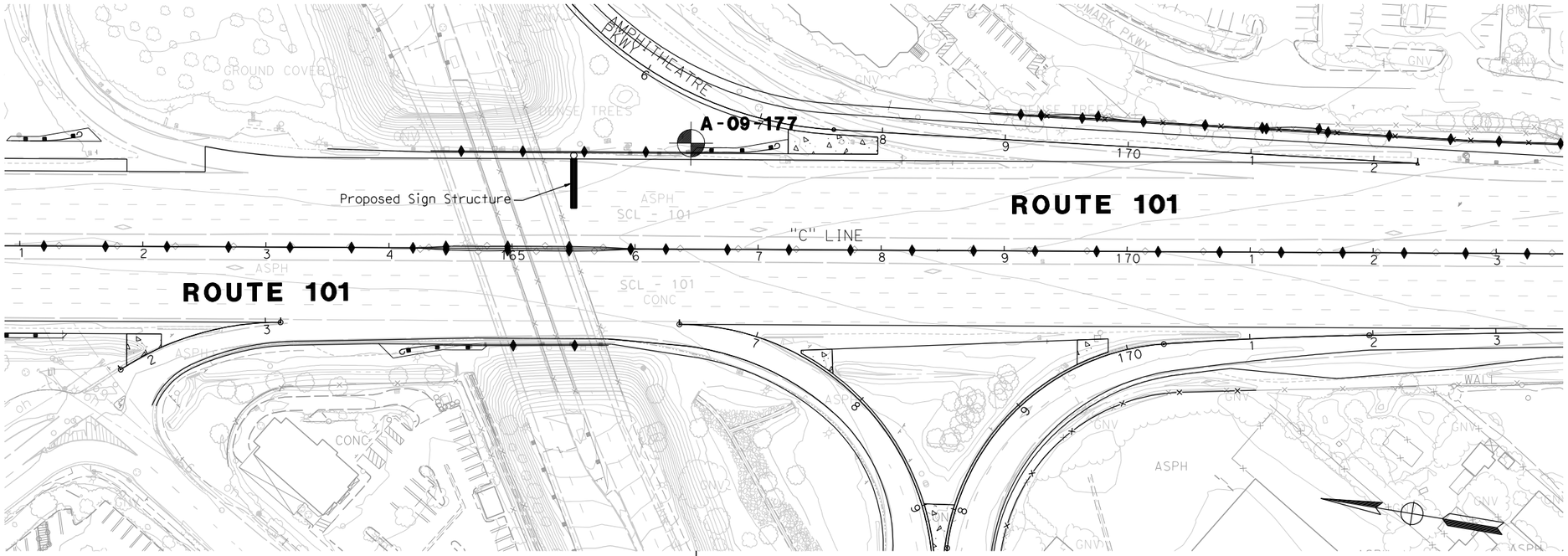
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Stephen Huang No. C 42289 Exp. 03/31/10 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

VALLEY TRANSPORTATION AUTHORITY
3331 N FIRST STREET,
SAN JOSE, CA 95134

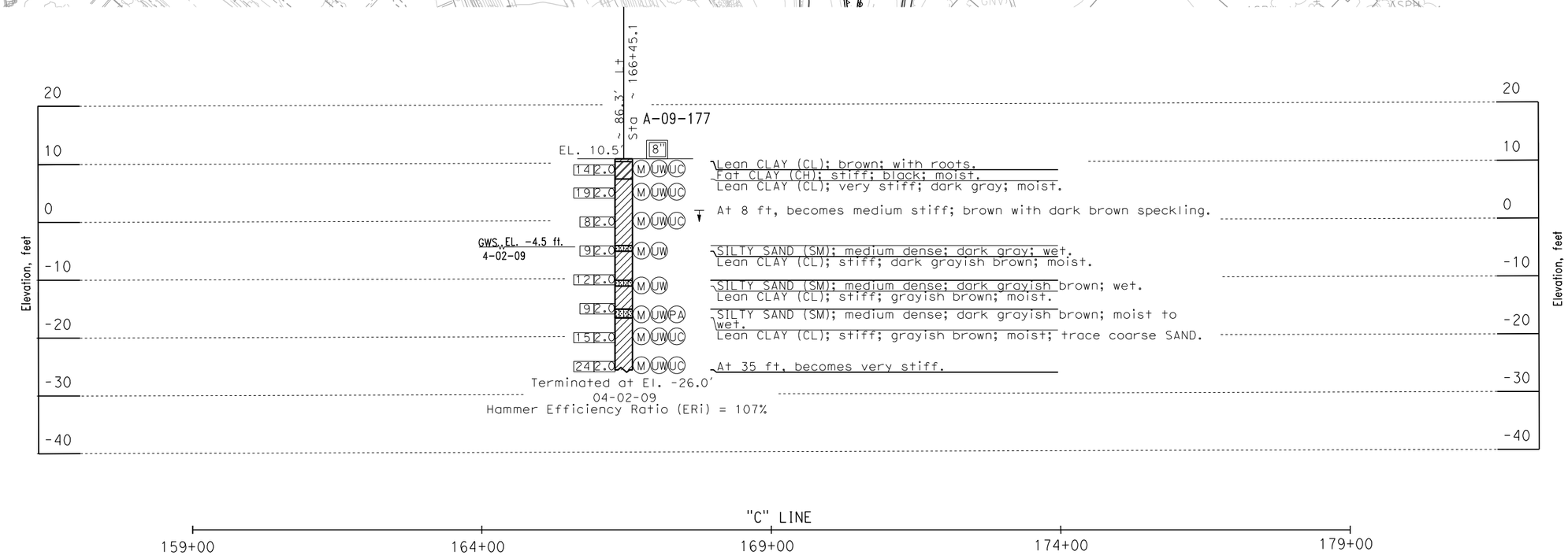
URS CORPORATION
55 S MARKET STREET,
Suite 1500
SAN JOSE, CA 95113



BENCH MARK:

B. M Elev.: 7.541 US Survey Feet
Northing: 1985636.542
Easting: 6094153.352
Vertical Datum: NAVD88
Horizontal Datum: CCS83/Zone 3
Mag nail & Shiner – Northbound shoulder of US101 approximately 0.5 mile southeast from Embacardo Road overcrossing

NOTE:
This LOTB sheet was prepared in accordance with the caltrans soil and Rock logging, Classification, and Presentation Manual (June 2007).



PROFILE
HOR. 1"=100'
VER. 1"=10'

FIGURE 6-1i

ENGINEERING SERVICES		GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN	BRIDGE NO.	OVERHEAD SIGN STRUCTURE
FUNCTIONAL SUPERVISOR NAME: STEPHEN HUANG	DRAWN BY: A. CHEUNG CHECKED BY: S. MANOHARAN	FIELD INVESTIGATION BY: CHUCK RAMBO		DESIGN BRANCH	POST MILES	LOG OF TEST BORINGS

OGS CIVIL LOG OF TEST BORINGS SHEET

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04235
EA 4A3301

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES | SHEET | OF

FILE => ...\ohstructure\STA_165+50_OH.dgn

USERNAME => madhu_thummuru DATE PLOTTED => 1/15/2010 TIME PLOTTED => 3:21:42 PM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	48.97/57.17		

REGISTERED CIVIL ENGINEER DATE

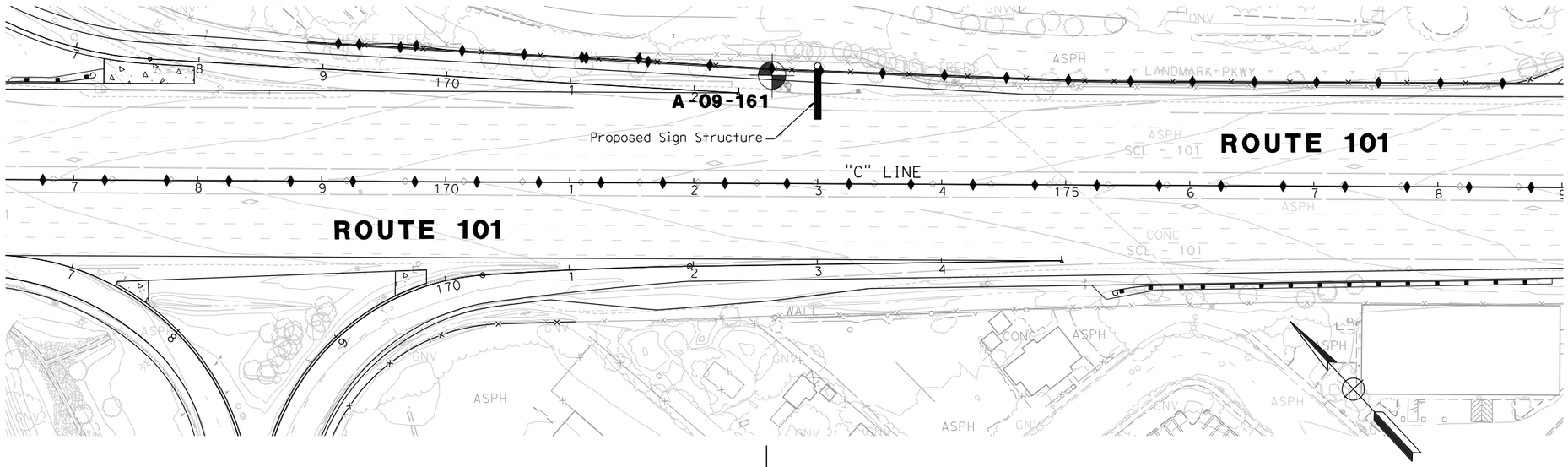
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Stephen Huang No. C 42289 Exp. 03/31/10 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

VALLEY TRANSPORTATION AUTHORITY
3331 N FIRST STREET,
SAN JOSE, CA 95134

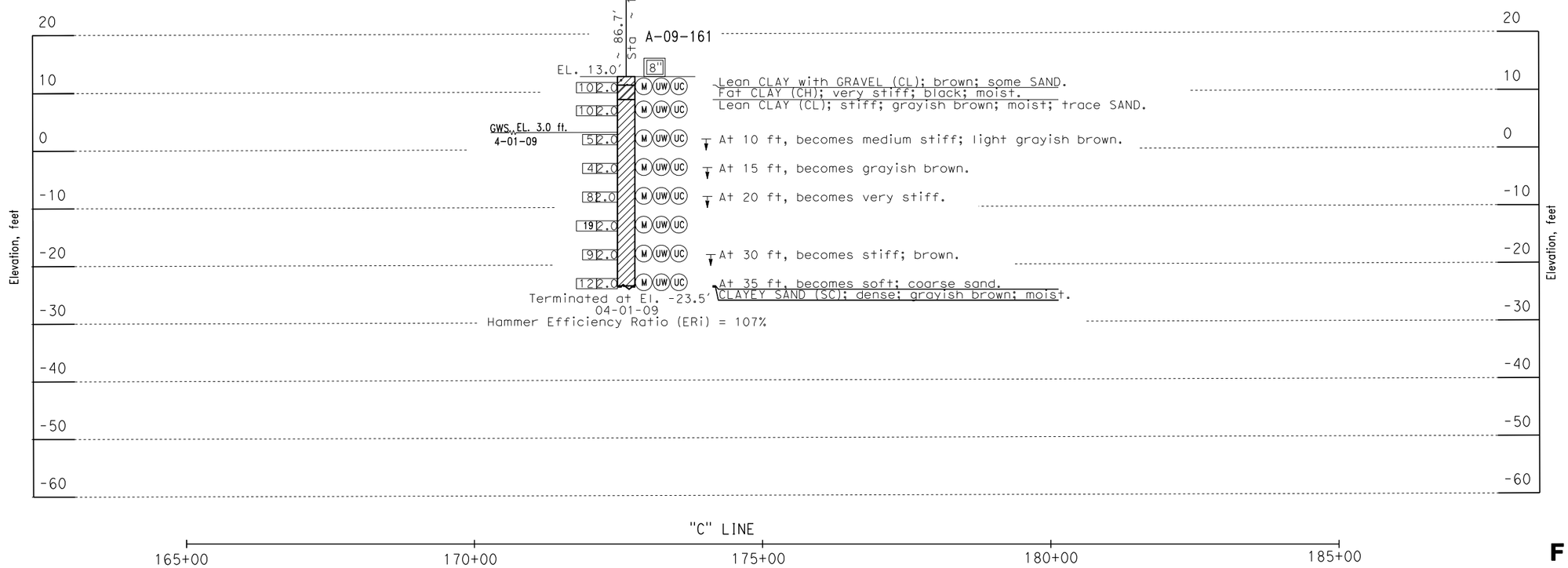
URS CORPORATION
55 S MARKET STREET,
Suite 1500
SAN JOSE, CA 95113



BENCH MARK:

B. M Elev.: 7.541 US Survey Feet
Northing: 1985636.542
Easting: 6094153.352
Vertical Datum: NAVD88
Horizontal Datum: CCS83/Zone 3
Mag nail & Shiner – Northbound shoulder of US101 approximately 0.5 mile southeast from Embacardo Road overcrossing

NOTE:
This LOTB sheet was prepared in accordance with the caltrans soil and Rock logging, Classification, and Presentation Manual (June 2007)



PROFILE
HOR. 1"=100'
VER. 1"=10'

FIGURE 6-1j

ENGINEERING SERVICES	GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH	BRIDGE NO. / POST MILES	OVERHEAD SIGN STRUCTURE LOG OF TEST BORINGS
FUNCTIONAL SUPERVISOR NAME: STEPHEN HUANG	DRAWN BY: A. CHEUNG; CHECKED BY: S. MANOHARAN; FIELD INVESTIGATION BY: CHUCK RAMBO				

OGS CIVIL LOG OF TEST BORINGS SHEET

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04235
EA 4A3301

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES SHEET OF

FILE => ...\ohstructure\STA_173+00_OH.dgn

USERNAME => madhu_thummalur DATE PLOTTED => 1/15/2010 TIME PLOTTED => 3:21:54 PM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	48.97/57.17		

REGISTERED CIVIL ENGINEER DATE

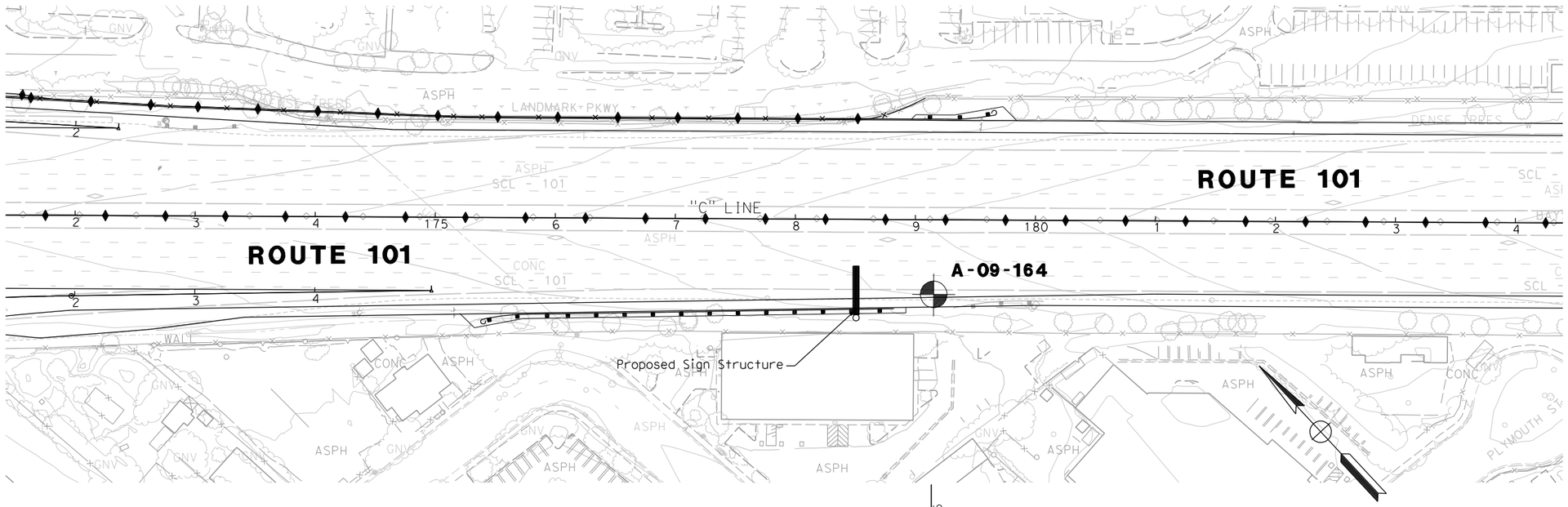
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Stephen Huang No. C 42289 Exp. 03/31/10 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

VALLEY TRANSPORTATION AUTHORITY
3331 N FIRST STREET,
SAN JOSE, CA 95134

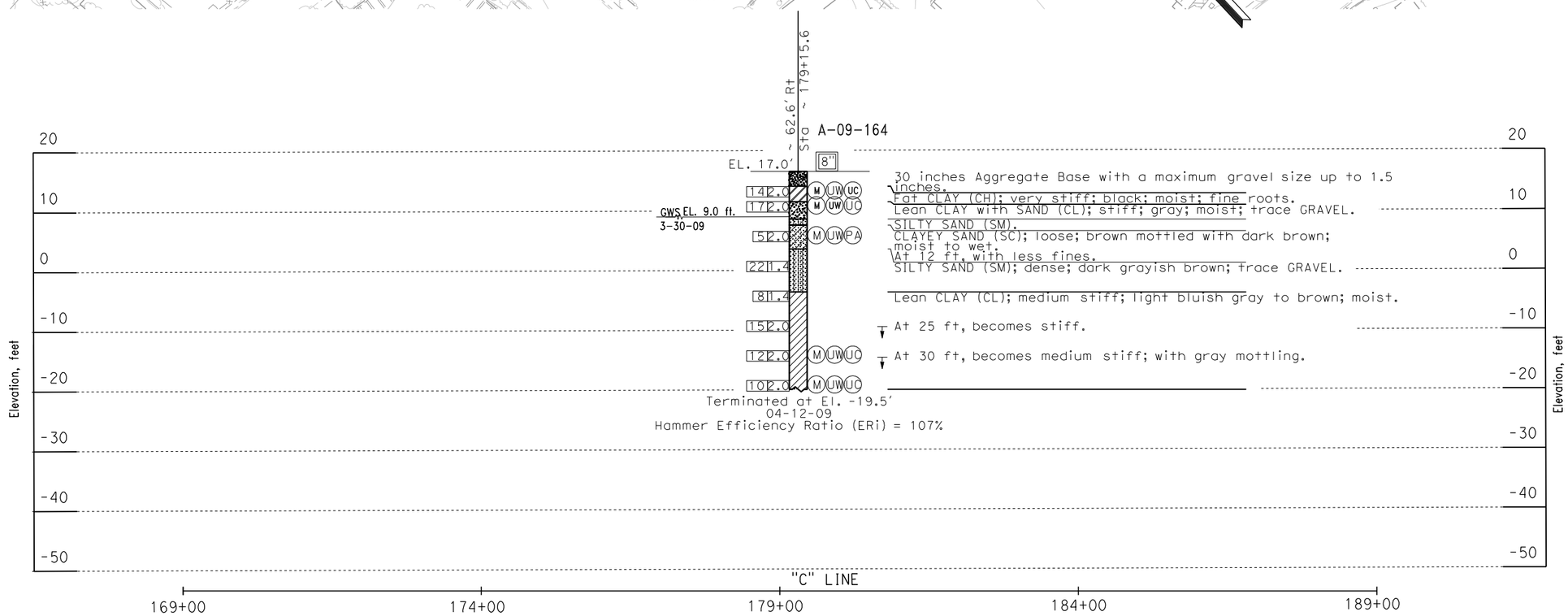
URS CORPORATION
55 S MARKET STREET,
Suite 1500
SAN JOSE, CA 95113



BENCH MARK:

B. M Elev.: 7.541 US Survey Feet
Northing: 1985636.542
Easting: 6094153.352
Vertical Datum: NAVD88
Horizontal Datum: CCS83/Zone 3
Mag nail & Shiner - Northbound shoulder of US101 approximately 0.5 mile southeast from Embacardo Road overcrossing

NOTE:
This LOTB sheet was prepared in accordance with the caltrans soil and Rock logging, Classification, and Presentation Manual (June 2007).



PROFILE
HOR. 1"=100'
VER. 1"=10'

FIGURE 6-1k

ENGINEERING SERVICES	GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH	BRIDGE NO. / POST MILES	OVERHEAD SIGN STRUCTURE LOG OF TEST BORINGS
FUNCTIONAL SUPERVISOR NAME: STEPHEN HUANG	DRAWN BY: A. CHEUNG; CHECKED BY: S. MANOHARAN; FIELD INVESTIGATION BY: CHUCK RAMBO				
OGS CIVIL LOG OF TEST BORINGS SHEET	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3	CU 04235 EA 4A3301	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET OF

FILE => ...\ohstructure\STA_178+50_OH.dgn

USERNAME => madhu_thummalur DATE PLOTTED => 1/15/2010 TIME PLOTTED => 3:22:04 PM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	48.97/57.17		

REGISTERED CIVIL ENGINEER DATE

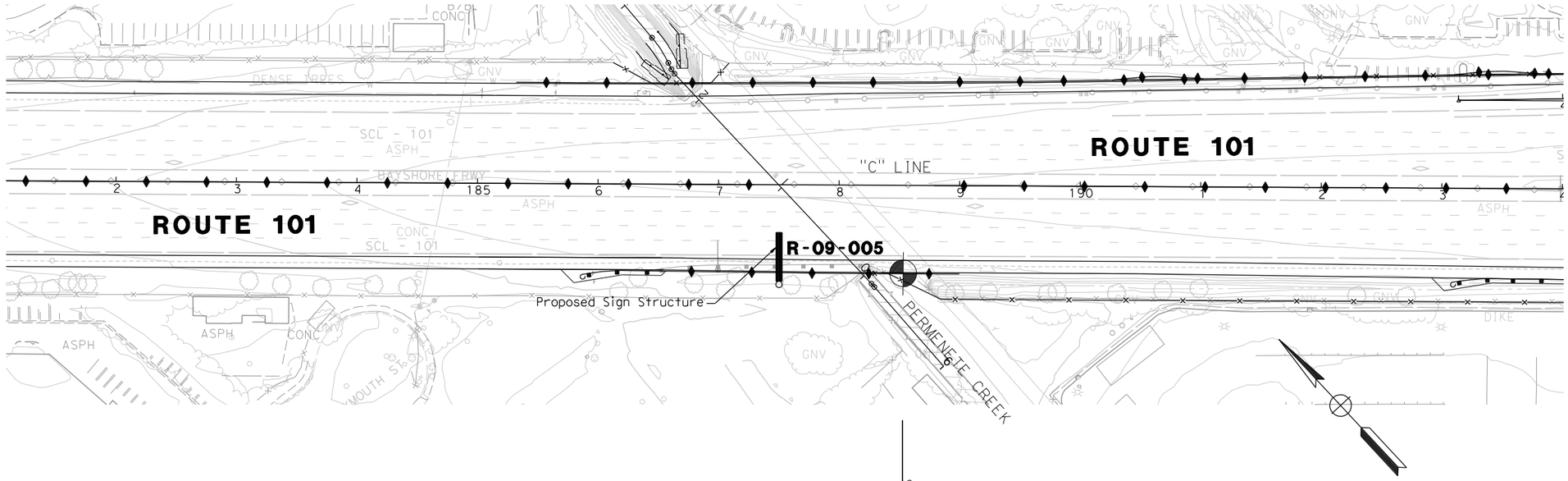
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Stephen Huang No. C 42289 Exp. 03/31/10 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

VALLEY TRANSPORTATION AUTHORITY
3331 N FIRST STREET,
SAN JOSE, CA 95134

URS CORPORATION
55 S MARKET STREET,
Suite 1500
SAN JOSE, CA 95113

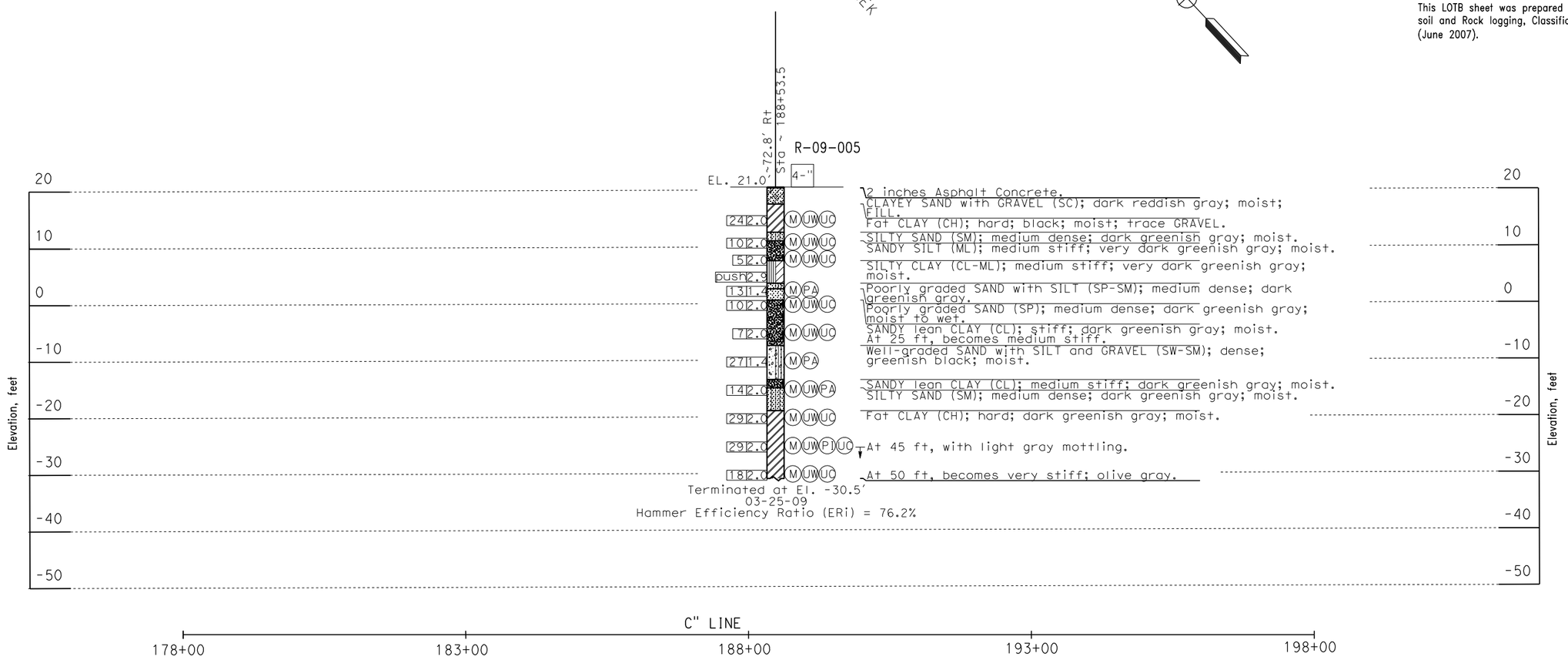


BENCH MARK:

B. M Elev.: 7.541 US Survey Feet
Northing: 1985636.542
Easting: 6094153.352
Vertical Datum: NAVD88
Horizontal Datum: CCS83/Zone 3
Mag nail & Shiner – Northbound shoulder of US101 approximately 0.5 mile southeast from Embacardo Road overcrossing

NOTE:

This LOTB sheet was prepared in accordance with the caltrans soil and Rock logging, Classification, and Presentation Manual (June 2007).



PROFILE
HOR. 1"=100'
VER. 1"=10'

FIGURE 6-1I

ENGINEERING SERVICES	GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH	BRIDGE NO. / POST MILES	OVERHEAD SIGN STRUCTURE LOG OF TEST BORINGS
FUNCTIONAL SUPERVISOR NAME: STEPHEN HUANG	DRAWN BY: A. CHEUNG CHECKED BY: S. MANOHARAN FIELD INVESTIGATION BY: CHUCK RAMBO		CU 04235 EA 4A3301		

OGS CIVIL LOG OF TEST BORINGS SHEET

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES SHEET OF

FILE => ...\ohstructure\STA_187+50_OH.dgn

USERNAME => madhu_thummalur DATE PLOTTED => 1/15/2010 TIME PLOTTED => 3:22:13 PM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	48.97/57.17		

REGISTERED CIVIL ENGINEER DATE

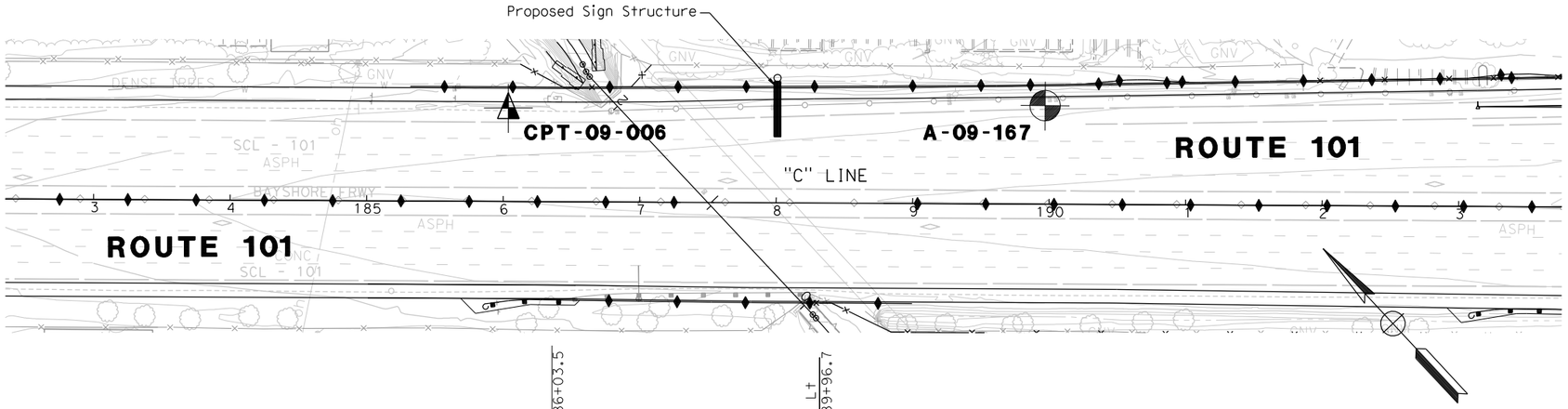
PLANS APPROVAL DATE

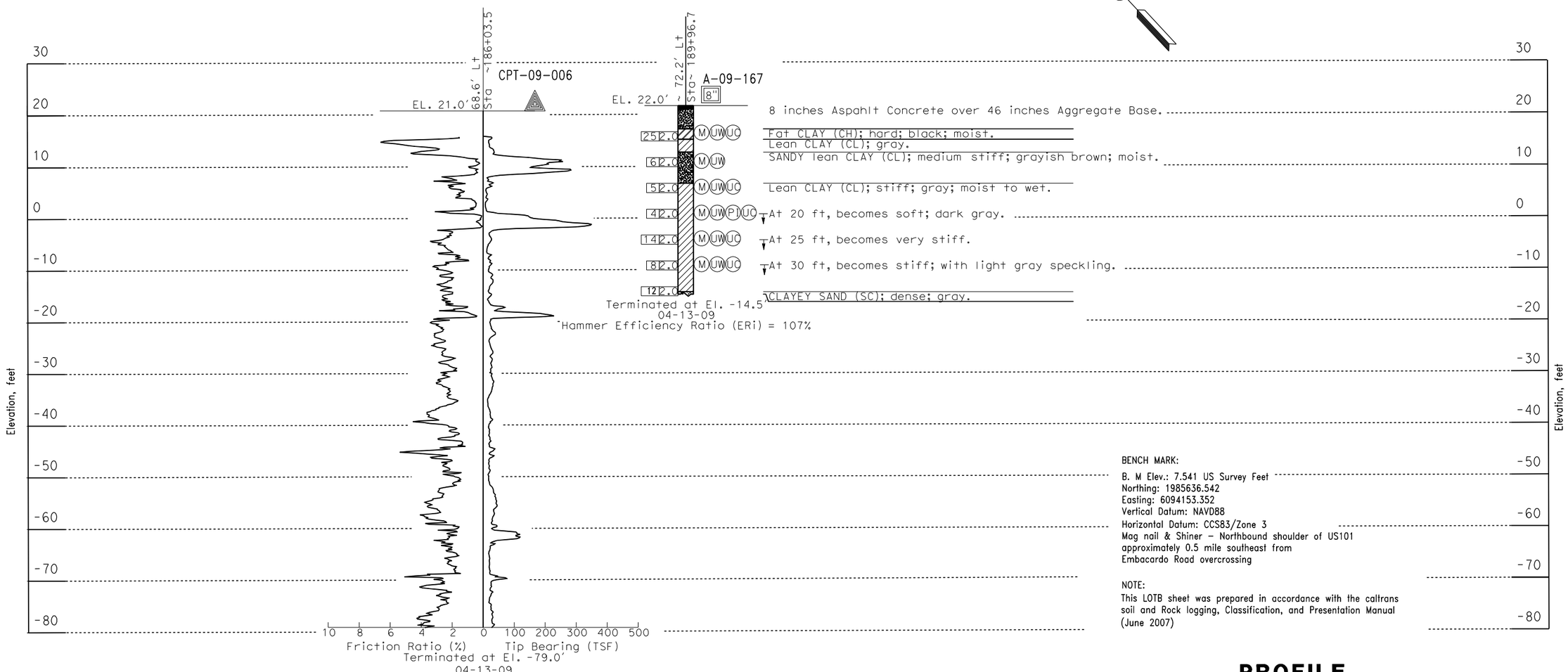
REGISTERED PROFESSIONAL ENGINEER Stephen Huang No. C 42289 Exp. 03/31/10 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

VALLEY TRANSPORTATION AUTHORITY
3331 N FIRST STREET,
SAN JOSE, CA 95134

URS CORPORATION
55 S MARKET STREET,
Suite 1500
SAN JOSE, CA 95113





BENCH MARK:

B. M Elev.: 7.541 US Survey Feet
Northing: 1985636.542
Easting: 6094153.352
Vertical Datum: NAVD88
Horizontal Datum: CCS83/Zone 3
Mag nail & Shiner – Northbound shoulder of US101 approximately 0.5 mile southeast from Embacardo Road overcrossing

NOTE:
This LOTB sheet was prepared in accordance with the caltrans soil and Rock logging, Classification, and Presentation Manual (June 2007)

PROFILE
HOR. 1"=100'
VER. 1"=10'

FIGURE 6-1m

ENGINEERING SERVICES	GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH	BRIDGE NO. / POST MILES	OVERHEAD SIGN STRUCTURE LOG OF TEST BORINGS
FUNCTIONAL SUPERVISOR NAME: STEPHEN HUANG	DRAWN BY: A. CHEUNG; CHECKED BY: S. MANOHARAN	FIELD INVESTIGATION BY: CHUCK RAMBO	CU 04235 EA 4A3301		

OGS CIVIL LOG OF TEST BORINGS SHEET

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES | SHEET | OF

FILE => ...\ohstructure\STA_188+00_OH.dgn

USERNAME => madhu_thummalur DATE PLOTTED => 1/15/2010 TIME PLOTTED => 3:22:23 PM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	48.97/57.17		

REGISTERED CIVIL ENGINEER DATE

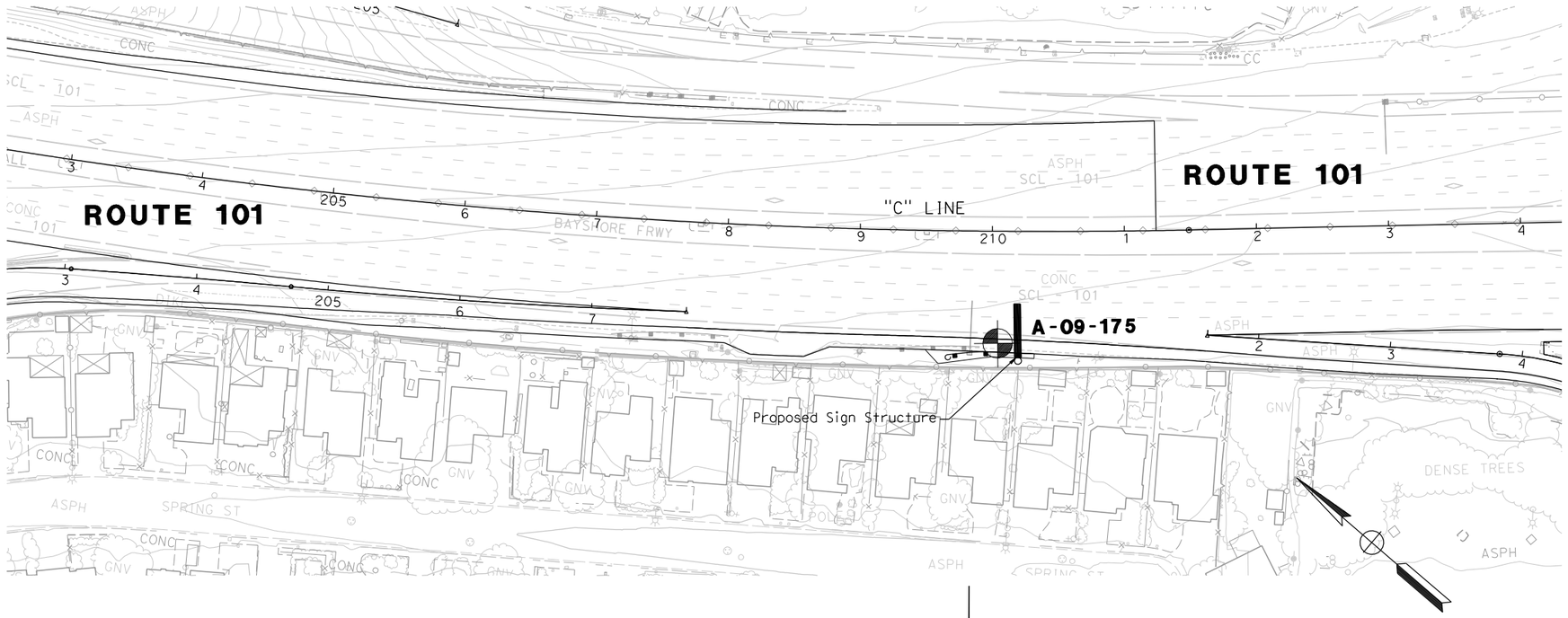
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Stephen Huang No. C 42289 Exp. 03/31/10 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

VALLEY TRANSPORTATION AUTHORITY
3331 N FIRST STREET,
SAN JOSE, CA 95134

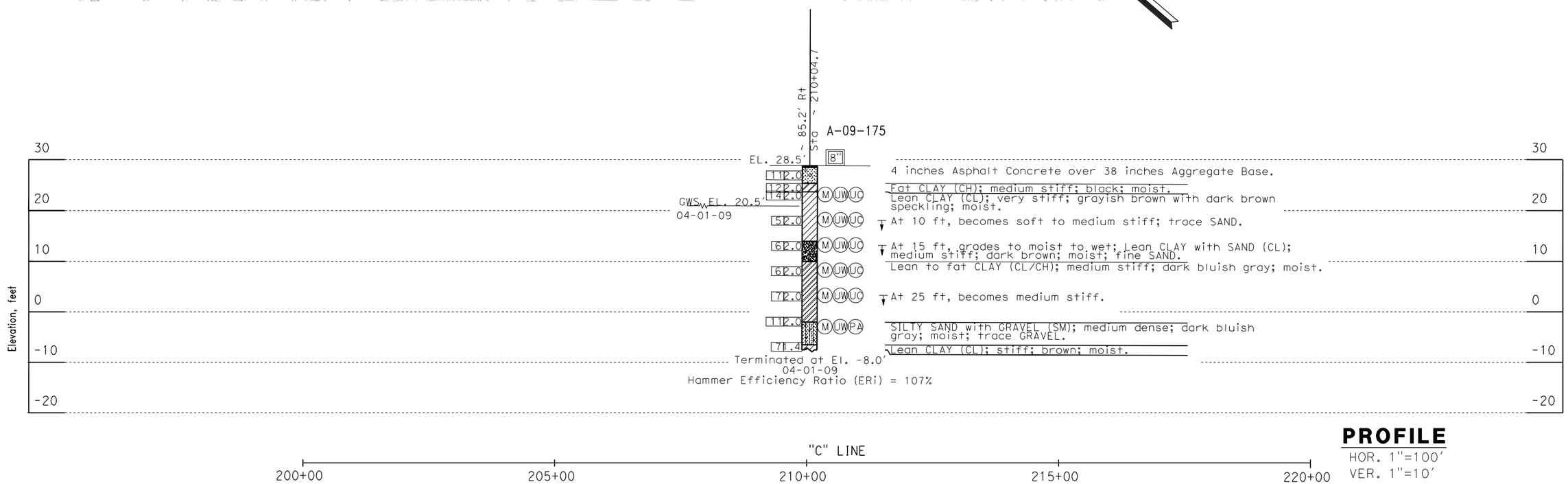
URS CORPORATION
55 S MARKET STREET,
Suite 1500
SAN JOSE, CA 95113



BENCH MARK:

B. M Elev.: 7.541 US Survey Feet
Northing: 1985636.542
Easting: 6094153.352
Vertical Datum: NAVD88
Horizontal Datum: CCS83/Zone 3
Mag nail & Shiner – Northbound shoulder of US101 approximately 0.5 mile southeast from Embacardo Road overcrossing

NOTE:
This LOTB sheet was prepared in accordance with the caltrans soil and Rock logging, Classification, and Presentation Manual (June 2007)



PROFILE
HOR. 1"=100'
VER. 1"=10'

FIGURE 6-1n

ENGINEERING SERVICES	GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH	BRIDGE NO. / POST MILES	OVERHEAD SIGN STRUCTURE LOG OF TEST BORINGS
FUNCTIONAL SUPERVISOR NAME: STEPHEN HUANG	DRAWN BY: A. CHEUNG CHECKED BY: S. MANOHARAN	FIELD INVESTIGATION BY: CHUCK RAMBO			

OGS CIVIL LOG OF TEST BORINGS SHEET

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04235
EA 4A3301

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES | SHEET | OF

FILE => ...\ohstructure\STA_209+50_OH.dgn

USERNAME => madhu_thummalur DATE PLOTTED => 1/15/2010 TIME PLOTTED => 3:22:32 PM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	48.97/57.17		

REGISTERED CIVIL ENGINEER DATE

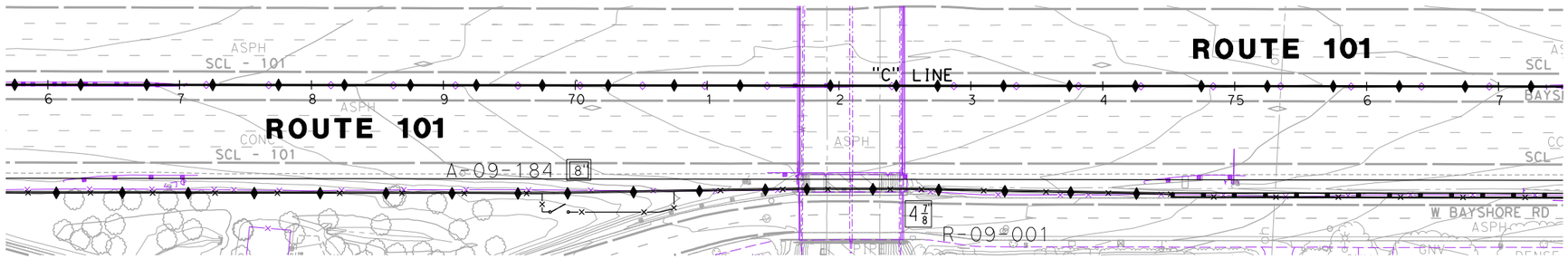
PLANS APPROVAL DATE

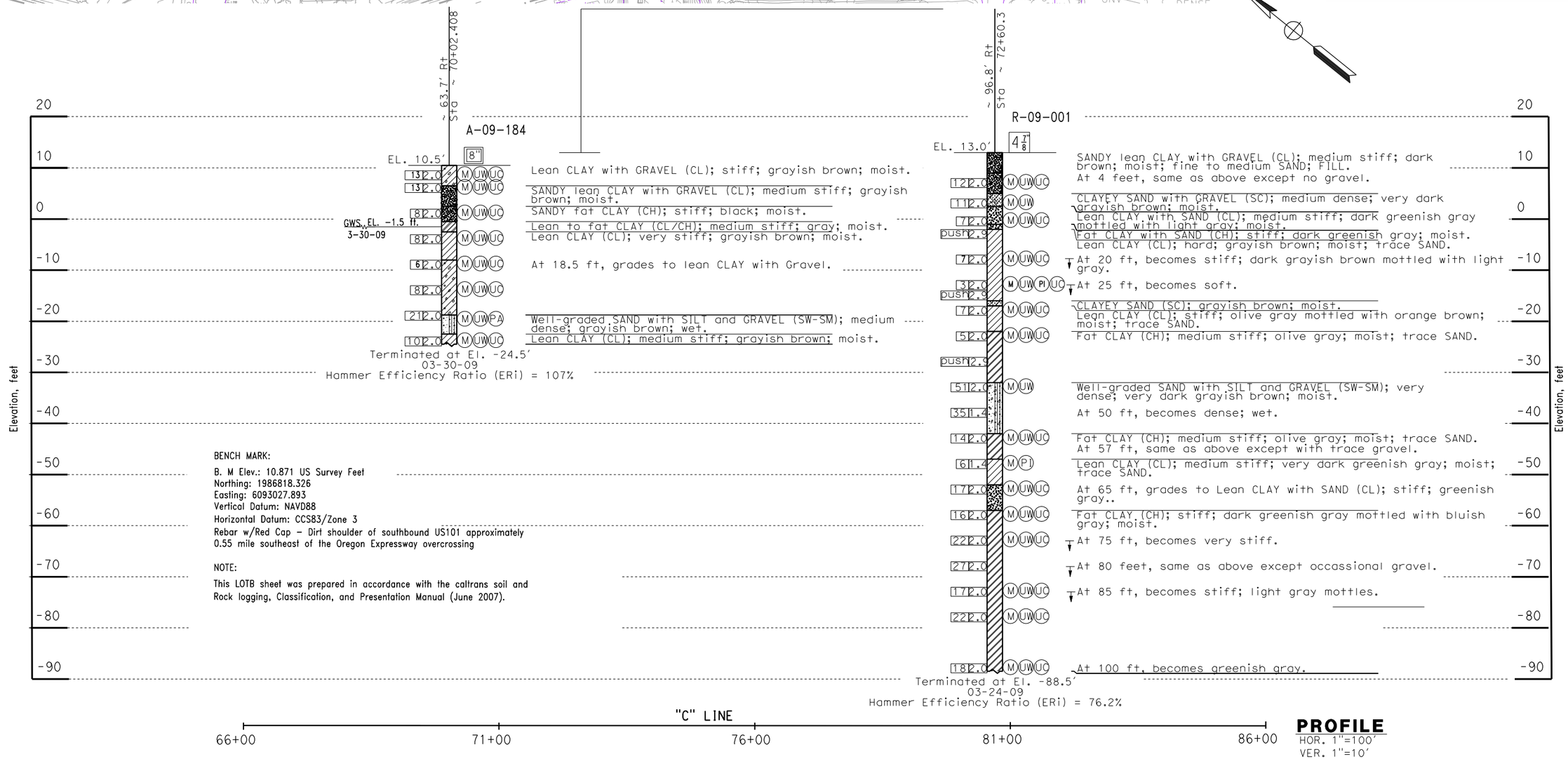
REGISTERED PROFESSIONAL ENGINEER Stephen Huang No. C 42289 Exp. 03/31/10 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

VALLEY TRANSPORTATION AUTHORITY
3331 N FIRST STREET,
SAN JOSE, CA 95134

URS CORPORATION
55 S MARKET STREET,
Suite 1500
SAN JOSE, CA 95113





BENCH MARK:

B. M Elev.: 10.871 US Survey Feet
Northing: 1986818.326
Easting: 6093027.893
Vertical Datum: NAVD88
Horizontal Datum: CCS83/Zone 3
Rebar w/Red Cap – Dirt shoulder of southbound US101 approximately 0.55 mile southeast of the Oregon Expressway overcrossing

NOTE:

This LOTB sheet was prepared in accordance with the caltrans soil and Rock logging, Classification, and Presentation Manual (June 2007).

PROFILE
HOR. 1"=100'
VER. 1"=10'

FIGURE 6-1o

ENGINEERING SERVICES	GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH	BRIDGE NO. / POST MILES	OVERHEAD SIGN STRUCTURE LOG OF TEST BORINGS
FUNCTIONAL SUPERVISOR NAME: STEPHEN HUANG	DRAWN BY: A. CHEUNG; CHECKED BY: S. MANOHARAN; FIELD INVESTIGATION BY: CHUCK RAMBO				

OGS CIVIL LOG OF TEST BORINGS SHEET

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04235
EA 4A3301

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES | SHEET | OF

FILE => ...\OHstructure\STA_70+50_OH.dgn

USERNAME => madhu_thummalur DATE PLOTTED => 9/30/2010 TIME PLOTTED => 9:44:09 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

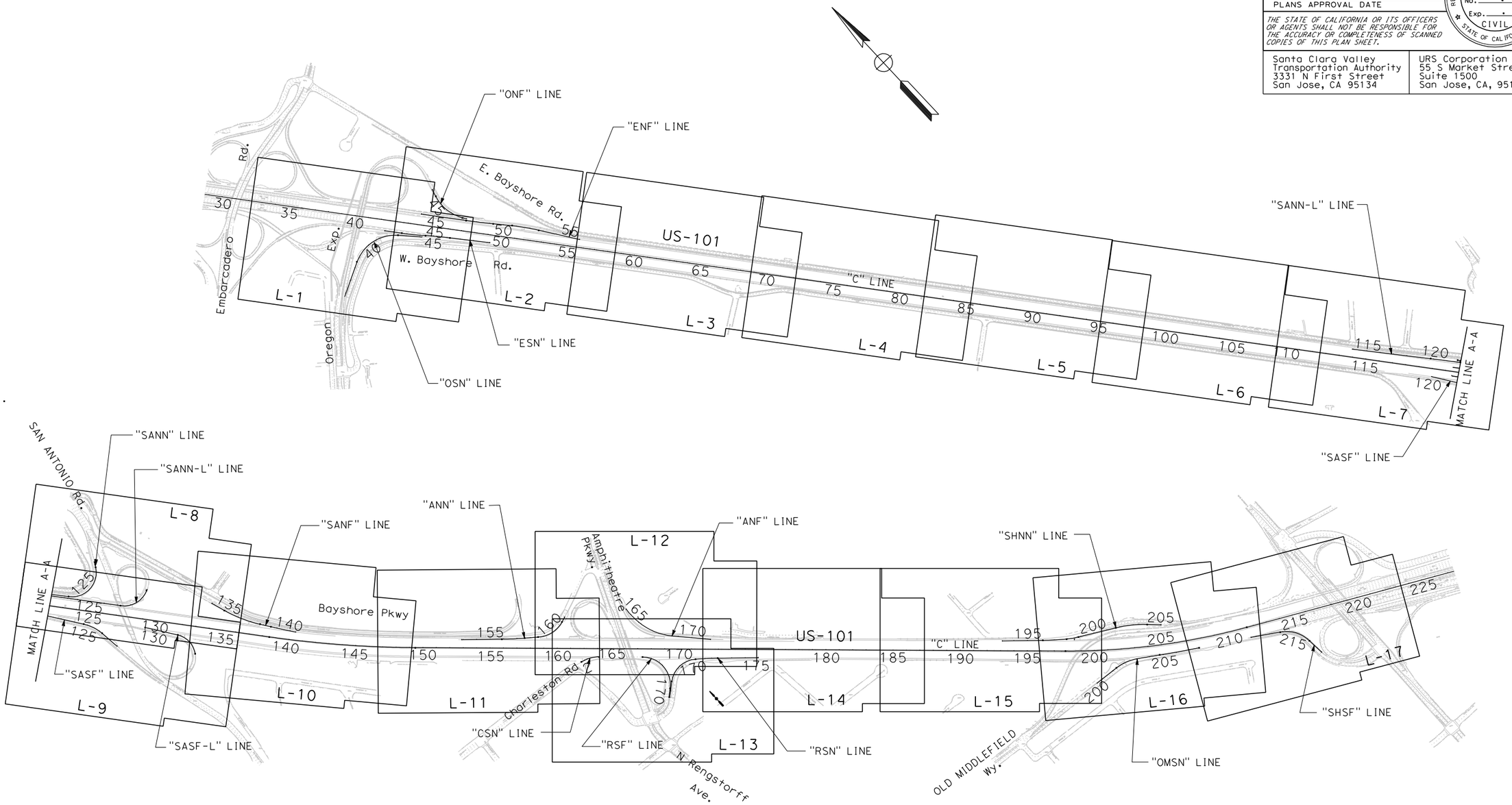
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

Santa Clara Valley Transportation Authority
3331 N First Street
San Jose, CA 95134

URS Corporation
55 S Market Street
Suite 1500
San Jose, CA, 95113



KEY MAP AND LINE INDEX

NO SCALE

K-1

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY
CHECKED BY
CONSULTANT FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00

DATE PLOTTED => 1/6/2010
TIME PLOTTED => 10:48:56 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => Sarah_Christensen
DGN FILE => ...\DA-Keymap\44a331da001.dgn

CU 04235

EA 4A3301

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/52.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Christopher Lillie No. C61288 Exp. 06/30/11 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 W San Fernando St
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

NOTES:

1. DIMENSIONS OF PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN STANDARD SPECIFICATIONS.
2. SUPERELEVATION AS SHOWN OR AS DIRECTED BY THE ENGINEER.
3. FOR CURB & DIKE TRANSITIONS SEE SHEET C-XX.
4. FOR LOCATIONS, TYPES, AND LIMITS OF HMA DIKES, CURBS, FENCES, MBGR, AND BARRIERS, SEE LAYOUT AND SUMMARY OF QUANTITY SHEETS.
5. FOR LIMITS OF REMOVAL OF HMA DIKES, CURBS, FENCES, MBGR AND BARRIERS, SEE LAYOUT AND SUMMARY OF QUANTITY SHEETS.
6. FOR HMA SURFACING CONFORM DETAILS, REFER TO SHEET C-54.
7. FOR MAINTENANCE VEHICLE PULLOUT INFORMATION AND LOCATIONS, SEE SHEET C-67.
8. FOR LIMITS OF CONTRASTING SURFACE TREATMENT, SEE LAYOUT SHEETS.
9. VEGETATION CONTROL IS USED AT ALL MBGR AND THRIE BEAM BARRIER LOCATIONS.
10. SEE SUMMARY OF QUANTITIES FOR LOCATIONS OF PCC SLAB REPLACEMENT & SPALL REPAIR.

ABBREVIATIONS:

RHMA-G	RUBBERIZED HOT MIX ASPHALT (GAP GRADED)
HMA-A	HOT MIX ASPHALT (TYPE A)
Veg Ctrl	VEGETATION CONTROL
Imp	IMPERVIOUS
Unt	UNTREATED
SEG	SUBGRADE ENHANCEMENT GEOTEXTILE

ROUTE 101 DESIGN DESIGNATION

ADT (2015)	257,700	D	50%
ADT (2035)	334,700	T	4.5%
ESAL	62,370,760	V	70 mph
		TI_{40}	14.5

EXISTING STRUCTURAL SECTIONS:

A
- 0.90' AC (TYPE A)
- 0.50' CI 4 AS

B
- 0.67' PCC
- 0.33' CTB
- 1.08' Imp SUBBASE

C
- 0.75' PCC
- 0.33' CTB
- 1.00' Imp SUBBASE

D
- 0.25' AC
- 0.50' Unt BASE
- 1.00 TO 1.33' Imp SUBBASE

E
- 0.10' OGAC
- 0.10' RAC-G
- 0.90' AC (TYPE A)
- 0.50' CI 4 AS

F
- 0.10' OGAC
- 0.10' RAC-G
- 0.32' TO 0.90' AC
- 0.67' TO 0.92' PCC

G
- 0.10' OGAC
- 0.10' RAC-G
- 0.32' AC
- 0.67' TO 0.92' PCC

H
- 0.10' OGAC
- 0.10' RAC-G
- 0.25' AC
- 0.50' Unt BASE
- 1.33' Imp SUBBASE

I
- 0.10' OGAC
- 0.10' RAC-G
- 0.50' AC
- 0.42' CTB-A
- 0.42' CTB-B
- 0.83' Imp SUBBASE

J
- 0.10' OGAC
- 0.10' RAC-G
- 0.25' TO 0.50' AC
- 0.50' Unt BASE
- 0.92' TO 1.17' Imp SUBBASE

PROPOSED STRUCTURAL SECTIONS:

1
- 0.15' RHMA-G
- 0.65' HMA-A
- 0.90' LCB
- 1.15' CI 4 AS
- SEG

2
- 0.15' RHMA-G
- Var 0.10' TO 0.35' HMA-A

3
- 0.10' COLD PLANE
- 0.15' RHMA-G
- Var 0.10' TO 0.35' HMA-A

4
- 0.50' HMA-A
- 1.15' CI 3 AB
- 0.90' CI 4 AS
- SEG

5
- Var 0.10' TO 1.75' HMA-A

6
- Var 0.10' TO 0.15' COLD PLANE
- Var 0.10' TO 0.15' RHMA-G

7
- 0.15' RHMA-G
- 0.65' HMA-A
- 0.90' LCB
- 1.40' CI 4 AS
- SEG

8
- 0.33' PCC

10
- 0.50' HMA-A
- 0.25' ATPB
- 0.50' CI 3 AB
- 1.75' CI 4 AS
- SEG

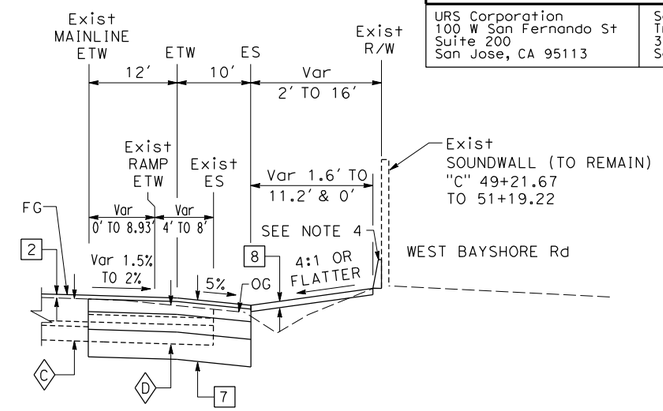
11
- Var COLD PLANE
- 0.20' HMA-A

12
- 0.15' RHMA-G
- 2.00' HMA-A
- 0.50' CI 3 AB
- SEG

13
- 0.15' COLD PLANE
- 0.15' RHMA-G

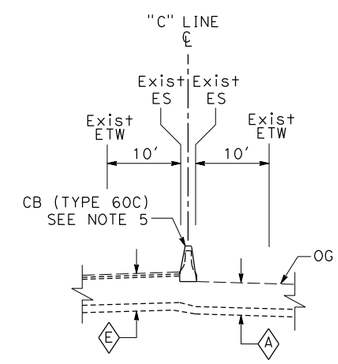
14
- 0.15' RHMA-G
- Var 0.50' TO 2.00' HMA-A

15
- 0.50' HMA-A
- 1.15' CI 3 AB
- 1.35' CI 4 AB
- SEG



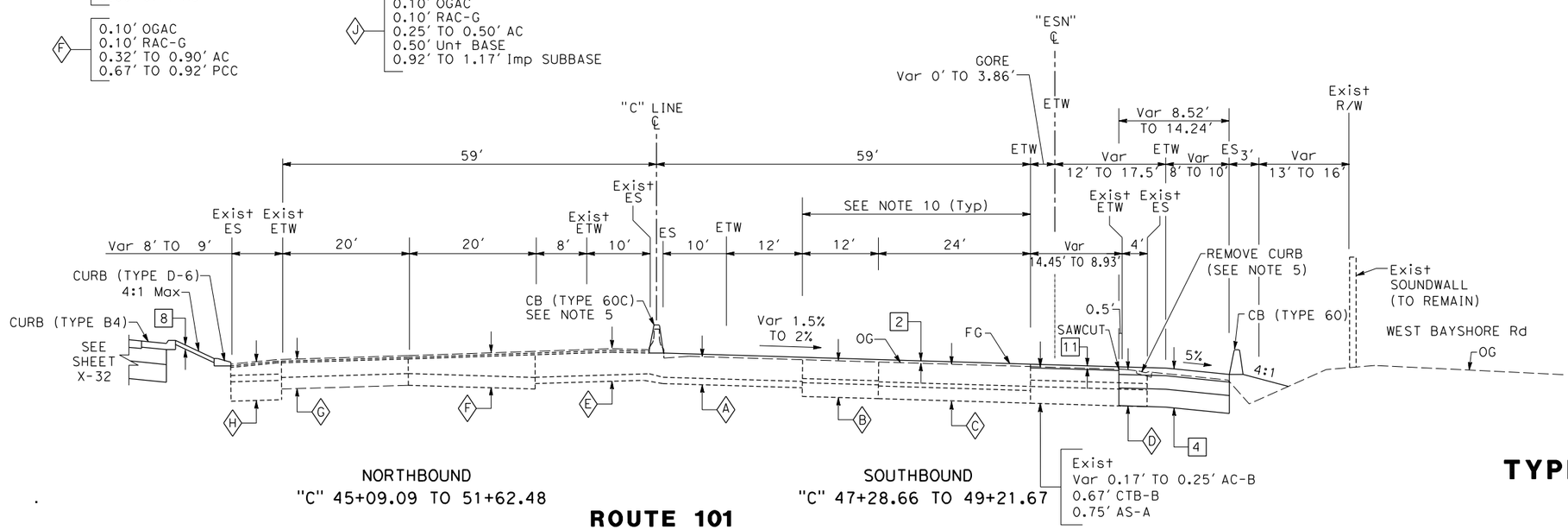
SOUTHBOUND
"C" 49+21.67 TO 51+62.48

ROUTE 101



"C" 39+90.86 TO 45+09.09

ROUTE 101



NORTHBOUND
"C" 45+09.09 TO 51+62.48

ROUTE 101

SOUTHBOUND
"C" 47+28.66 TO 49+21.67

TYPICAL CROSS SECTIONS

NO SCALE

X-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

CONSULTANT FUNCTIONAL SUPERVISOR: CHRISTOPHER LILLIE
CALCULATED-DESIGNED BY: SARAH CHRISTENSEN
CHECKED BY: LAN HO
REVISED BY / DATE REVISED

LAST REVISION 09-21-10
DATE PLOTTED => 10/25/2010
TIME PLOTTED => 9:40:21 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/52.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

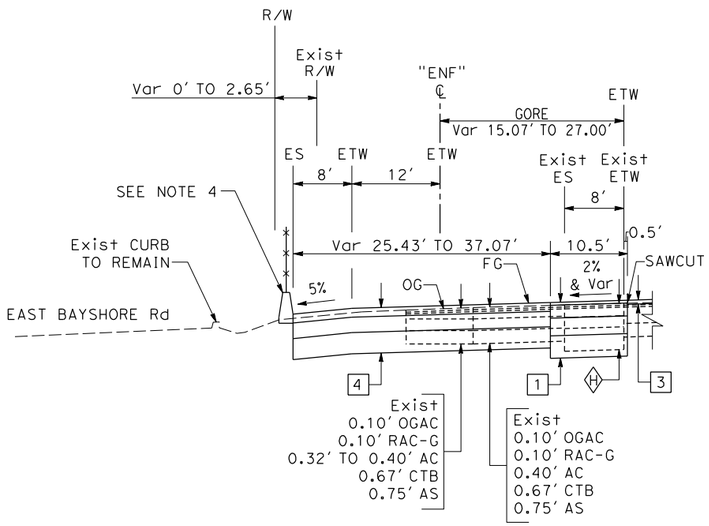
REGISTERED PROFESSIONAL ENGINEER Christopher Lillie No. C61288 Exp. 06/30/11 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

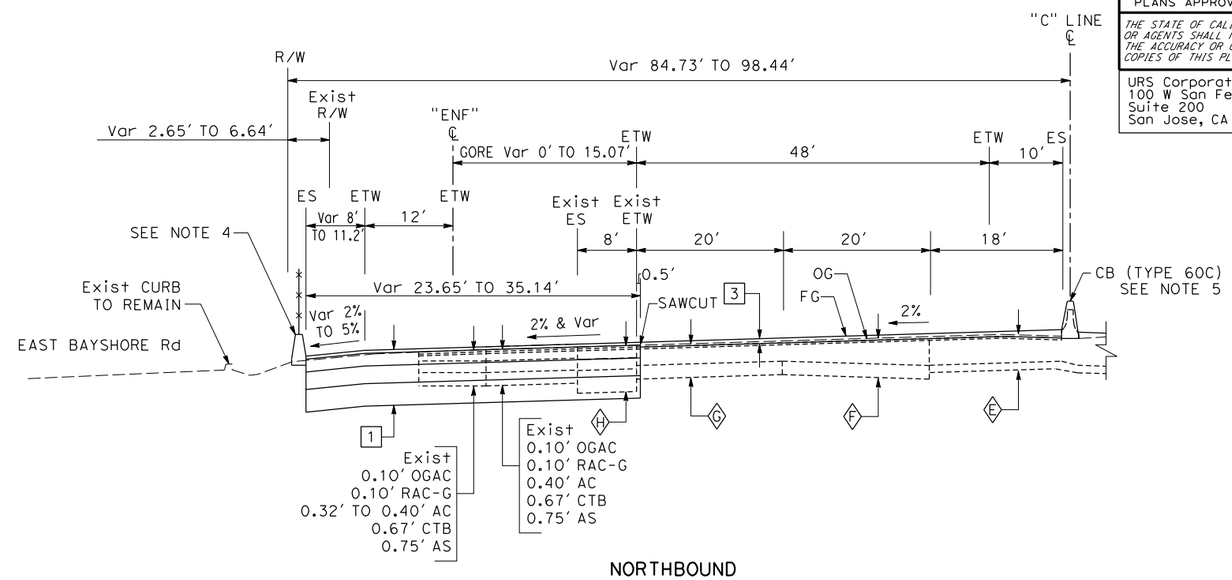
URS Corporation
100 W San Fernando St
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

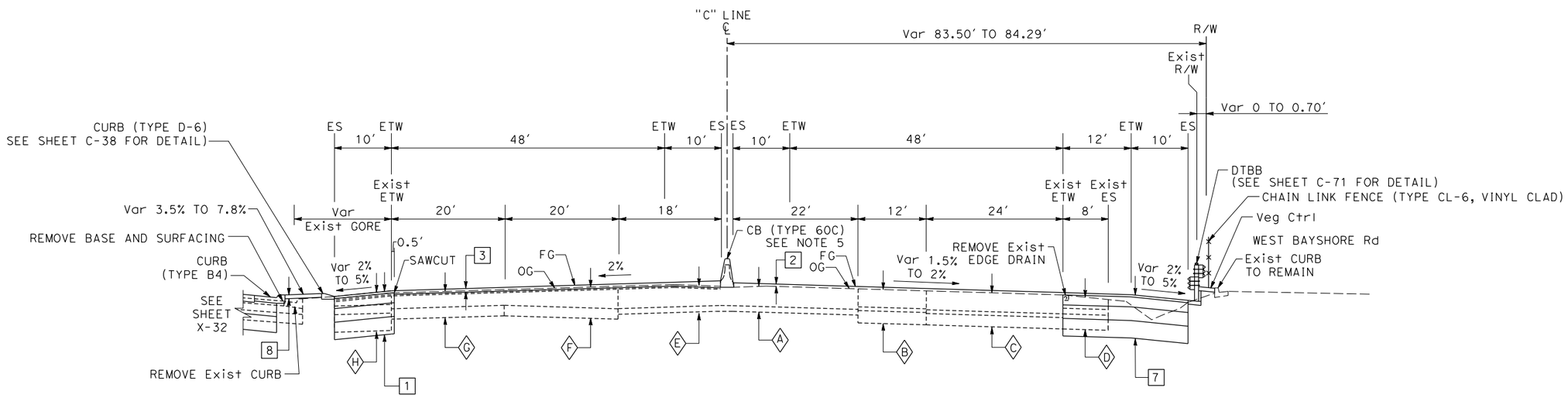
FOR NOTES AND ABBREVIATIONS
SEE SHEET X-1



NORTHBOUND
"C" 52+63.17 TO 54+00.00
ROUTE 101



NORTHBOUND
"C" 54+00.00 TO 55+80.33
ROUTE 101



NORTHBOUND
"C" 51+62.48 TO 52+63.17

SOUTHBOUND
"C" 51+62.48 TO 53+00.00

ROUTE 101

TYPICAL CROSS SECTIONS
NO SCALE

X-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® **DESIGN**

CONSULTANT FUNCTIONAL SUPERVISOR: CHRISTOPHER LILLIE
CALCULATED-DESIGNED BY: SARAH CHRISTENSEN
CHECKED BY: LAN HO
REVISED BY / DATE REVISED

LAST REVISION 09-21-10
DATE PLOTTED => 10/25/2010
TIME PLOTTED => 9:40:28 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/52.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

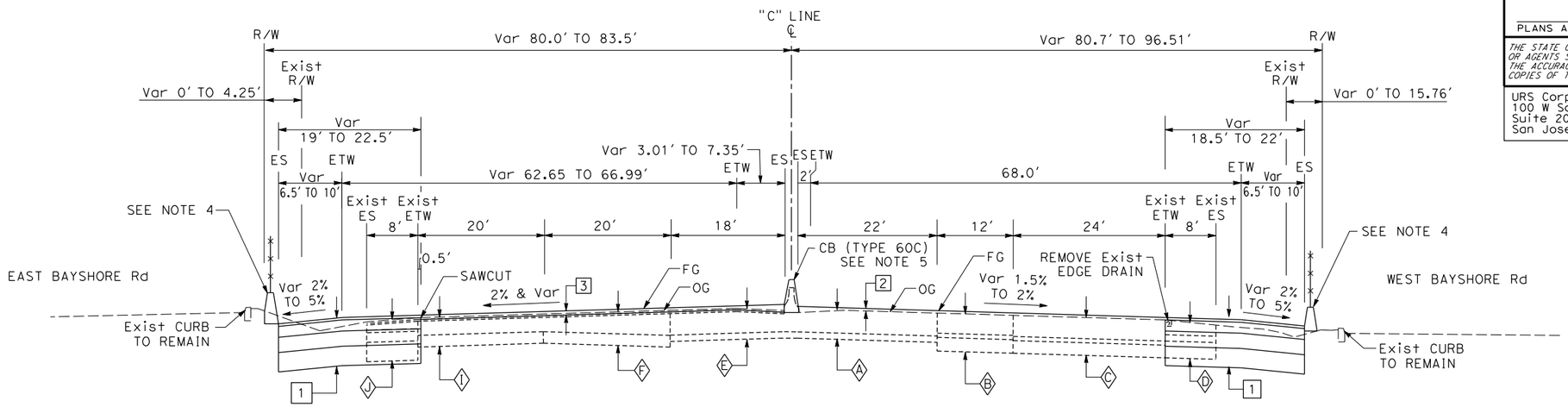
REGISTERED PROFESSIONAL ENGINEER Christopher Lillie No. C61288 Exp. 06/30/11 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 W San Fernando St
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

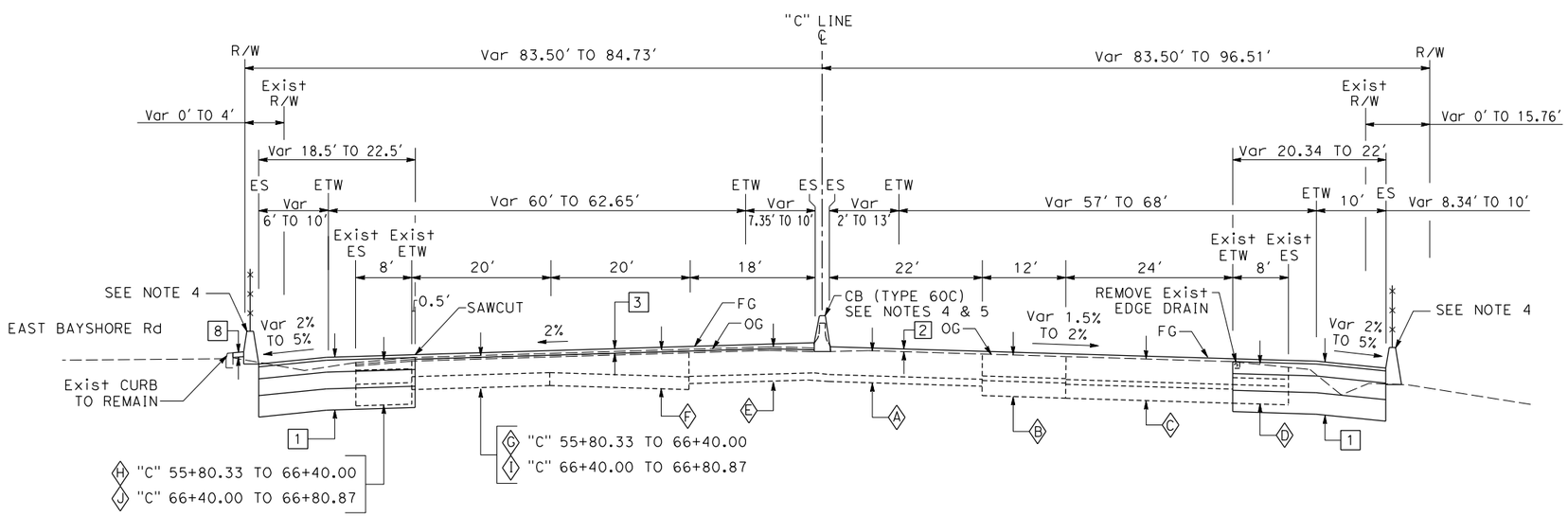
FOR NOTES AND ABBREVIATIONS
SEE SHEET X-1



NORTHBOUND
"C" 69+85.49 TO 71+69.25
"C" 72+50.75 TO 74+84.23

SOUTHBOUND
"C" 70+46.28 TO 71+69.25
"C" 72+50.75 TO 74+51.70

ROUTE 101



NORTHBOUND
"C" 55+80.33 TO 69+85.49

SOUTHBOUND
"C" 53+00.00 TO 70+46.38

ROUTE 101

TYPICAL CROSS SECTIONS
NO SCALE

X-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN

CONSULTANT FUNCTIONAL SUPERVISOR: CHRISTOPHER LILLIE
CALCULATED-DESIGNED BY: SARAH CHRISTENSEN
CHECKED BY: LAN HO
REVISED BY
DATE REVISED

LAST REVISION 09-21-10
DATE PLOTTED => 10/25/2010
TIME PLOTTED => 9:40:33 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/52.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

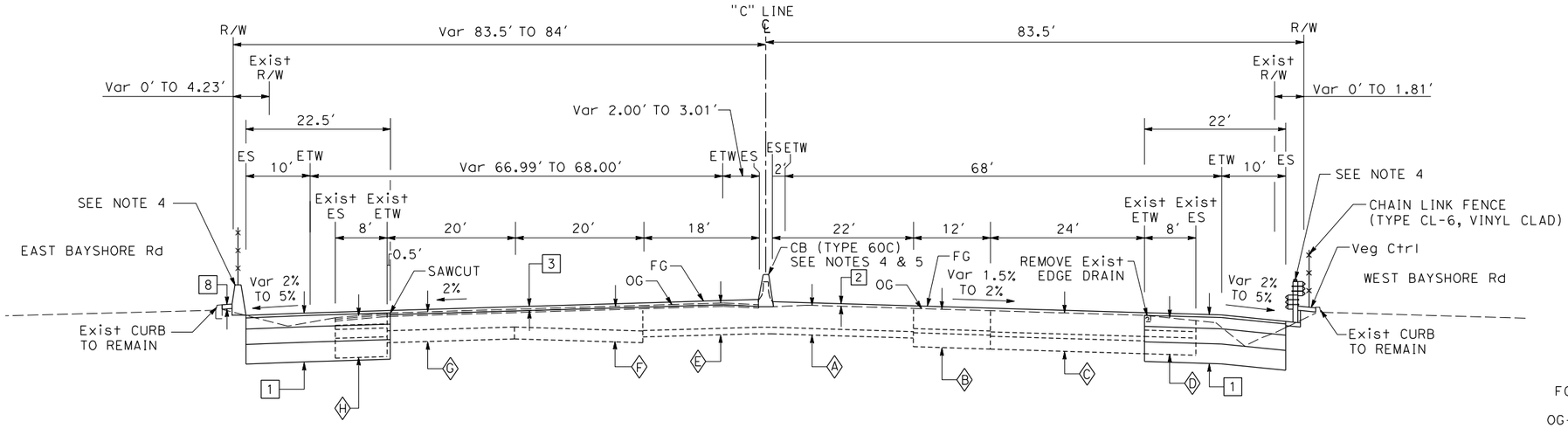
REGISTERED PROFESSIONAL ENGINEER Christopher Lillie No. C61288 Exp. 06/30/11 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 W San Fernando St
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

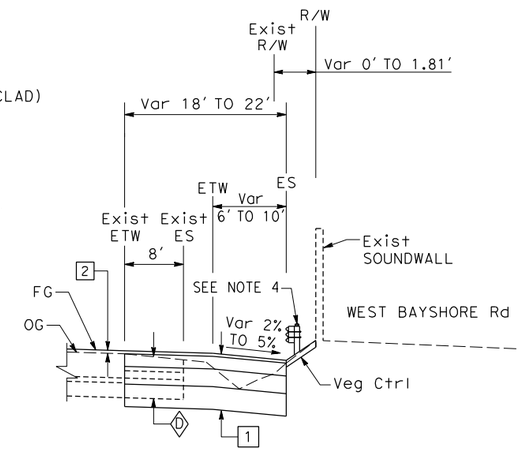
FOR NOTES AND ABBREVIATIONS
SEE SHEET X-1



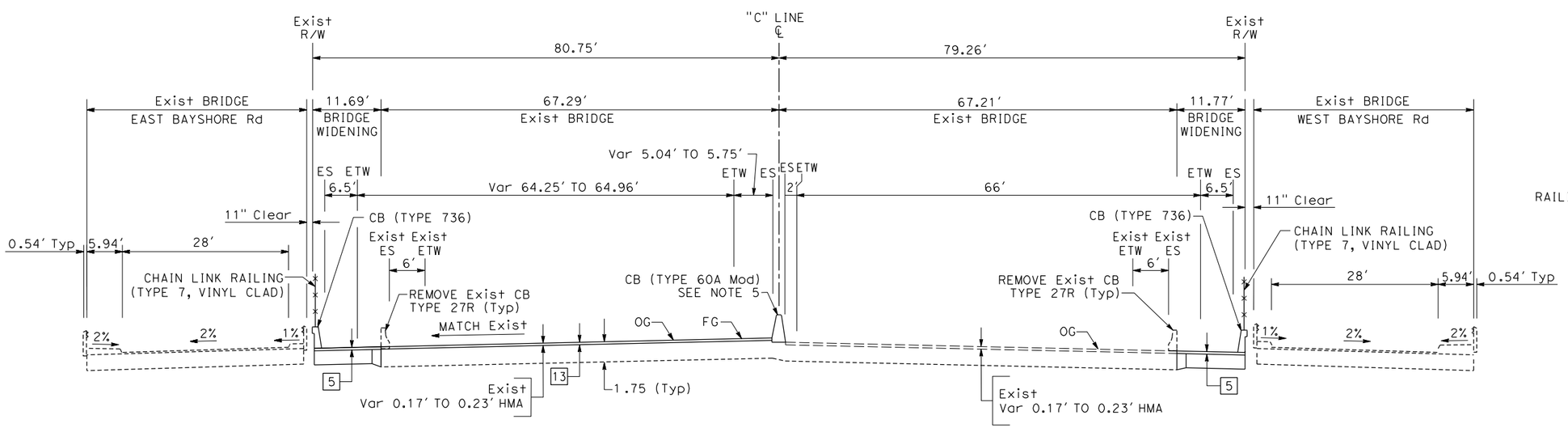
NORTHBOUND
"C" 74+84.23 TO 94+12.00

SOUTHBOUND
"C" 74+51.70 TO 78+26.72
"C" 96+00.00 TO 107+81.33
"C" 111+78.68 TO 115+88.17

ROUTE 101



SOUTHBOUND
"C" 78+26.72 TO 87+49.54



NORTHBOUND
"C" 71+69.25 TO 72+50.75

SOUTHBOUND
"C" 71+69.25 TO 72+50.75

ROUTE 101
(MATADERO CREEK BRIDGE)

TYPICAL CROSS SECTIONS

NO SCALE

X-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® **DESIGN**

CONSULTANT FUNCTIONAL SUPERVISOR: CHRISTOPHER LILLIE
CALCULATED-DESIGNED BY: SARAH CHRISTENSEN
CHECKED BY: LAN HO
REVISED BY / DATE REVISED

LAST REVISION 09-21-10
DATE PLOTTED => 10/25/2010
TIME PLOTTED => 9:40:36 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/52.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

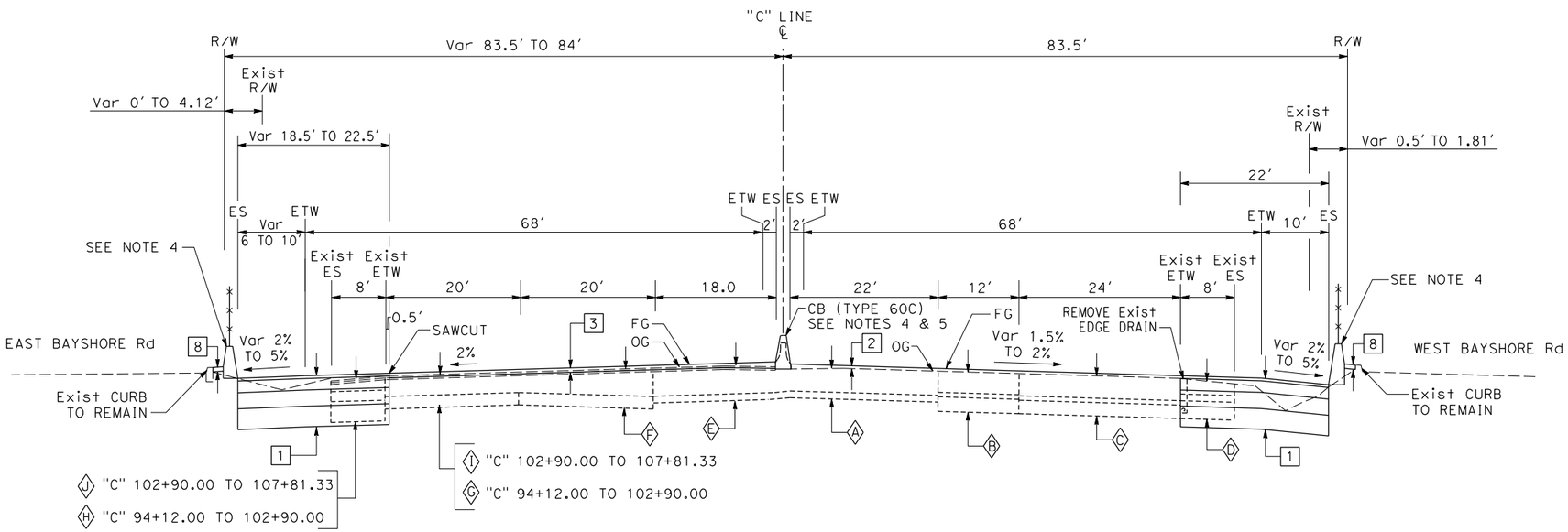
REGISTERED PROFESSIONAL ENGINEER Christopher Lillie No. C61288 Exp. 06/30/11 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 W San Fernando St
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

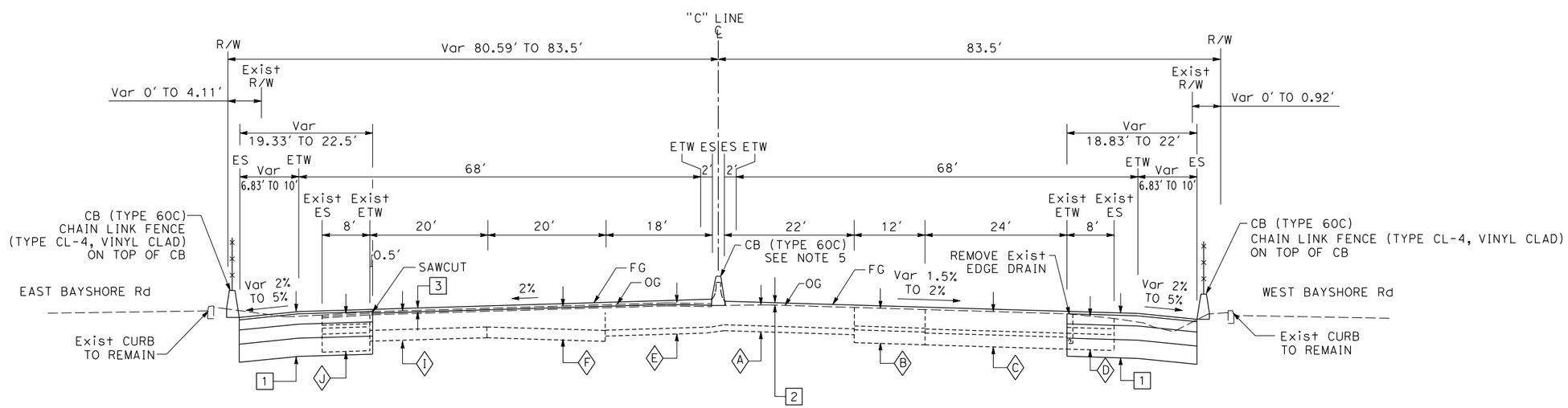
FOR NOTES AND ABBREVIATIONS SEE SHEET X-1



NORTHBOUND
"C" 94+12.00 TO 107+81.33
"C" 111+78.68 TO 113+92.36

SOUTHBOUND
"C" 87+49.54 TO 96+00.00

ROUTE 101



NORTHBOUND
"C" 107+81.33 TO 109+47.58
"C" 110+12.42 TO 111+78.68

SOUTHBOUND
"C" 107+81.33 TO 109+47.58
"C" 110+12.42 TO 111+78.68

ROUTE 101

TYPICAL CROSS SECTIONS
NO SCALE

X-5

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN
CONSULTANT FUNCTIONAL SUPERVISOR: CHRISTOPHER LILLIE
CALCULATED-DESIGNED BY: SARAH CHRISTENSEN
CHECKED BY: LAN HO
REVISED BY / DATE REVISED

LAST REVISION 09-21-10
DATE PLOTTED => 10/25/2010
TIME PLOTTED => 9:40:41 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/52.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

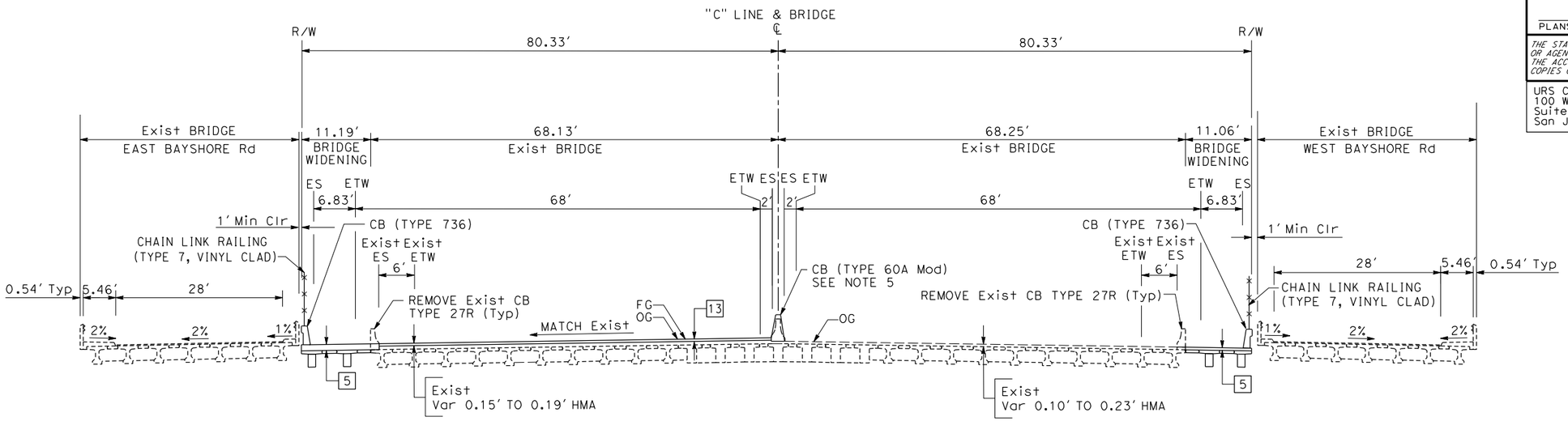
REGISTERED PROFESSIONAL ENGINEER Christopher Lillie No. C61288 Exp. 06/30/11 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 W San Fernando St
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

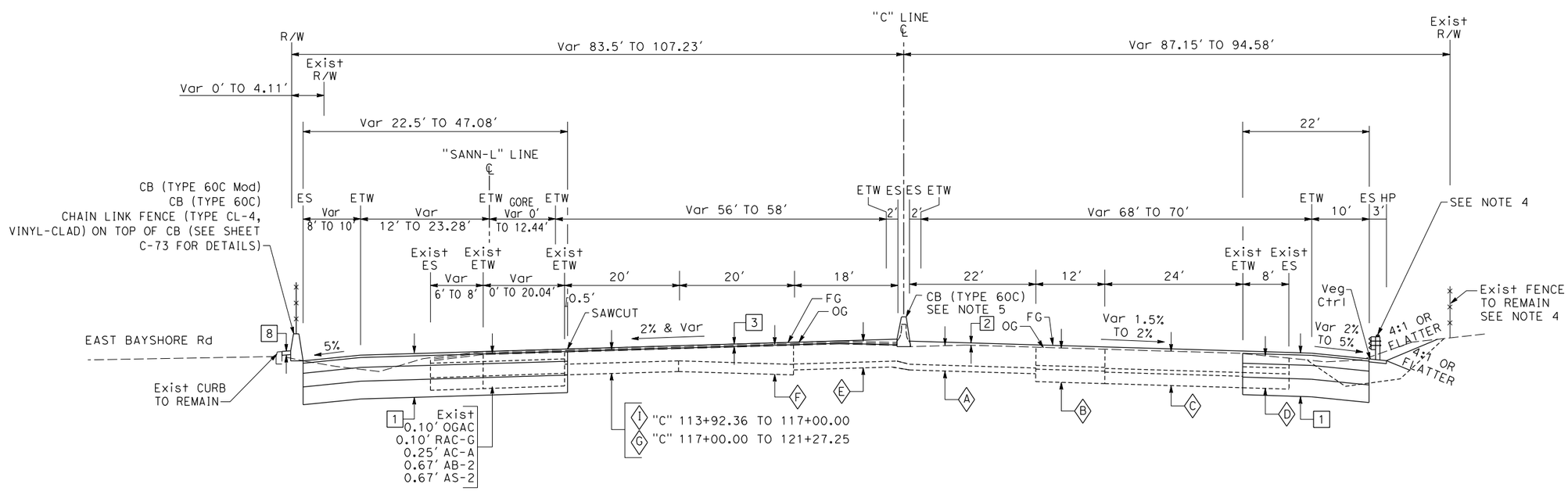
FOR NOTES AND ABBREVIATIONS
SEE SHEET X-1



NORTHBOUND
"C" 109+47.58 TO 110+12.42

SOUTHBOUND
"C" 109+47.58 TO 110+12.42

ROUTE 101
(ADOBE CREEK BRIDGE)



NORTHBOUND
"C" 113+92.36 TO 121+53.62

SOUTHBOUND
"C" 115+88.17 TO 120+03.44

ROUTE 101

TYPICAL CROSS SECTIONS
NO SCALE

X-6

REVISED BY	DATE REVISED

SARAH CHRISTENSEN — LAN HO

CALCULATED-DESIGNED BY — CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR — CHRISTOPHER LILLIE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — DESIGN

Caltrans

LAST REVISION 09-21-10 — DATE PLOTTED => 10/25/2010 TIME PLOTTED => 9:40:45 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/52.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

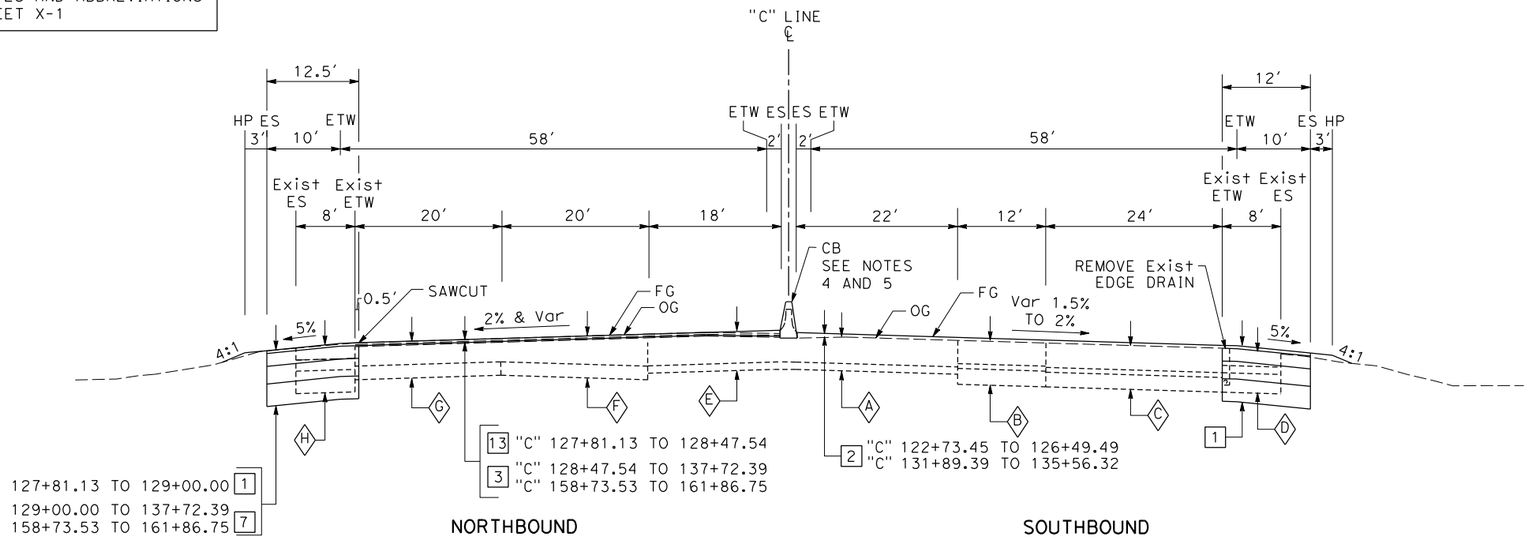
REGISTERED PROFESSIONAL ENGINEER Christopher Lillie No. C61288 Exp. 06/30/11 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 W San Fernando St
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

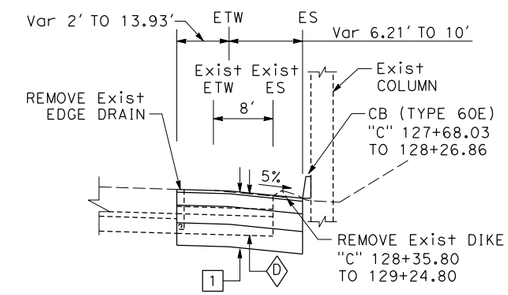
FOR NOTES AND ABBREVIATIONS
SEE SHEET X-1



NORTHBOUND
"C" 127+81.13 TO 137+72.69
"C" 158+73.53 TO 161+86.75

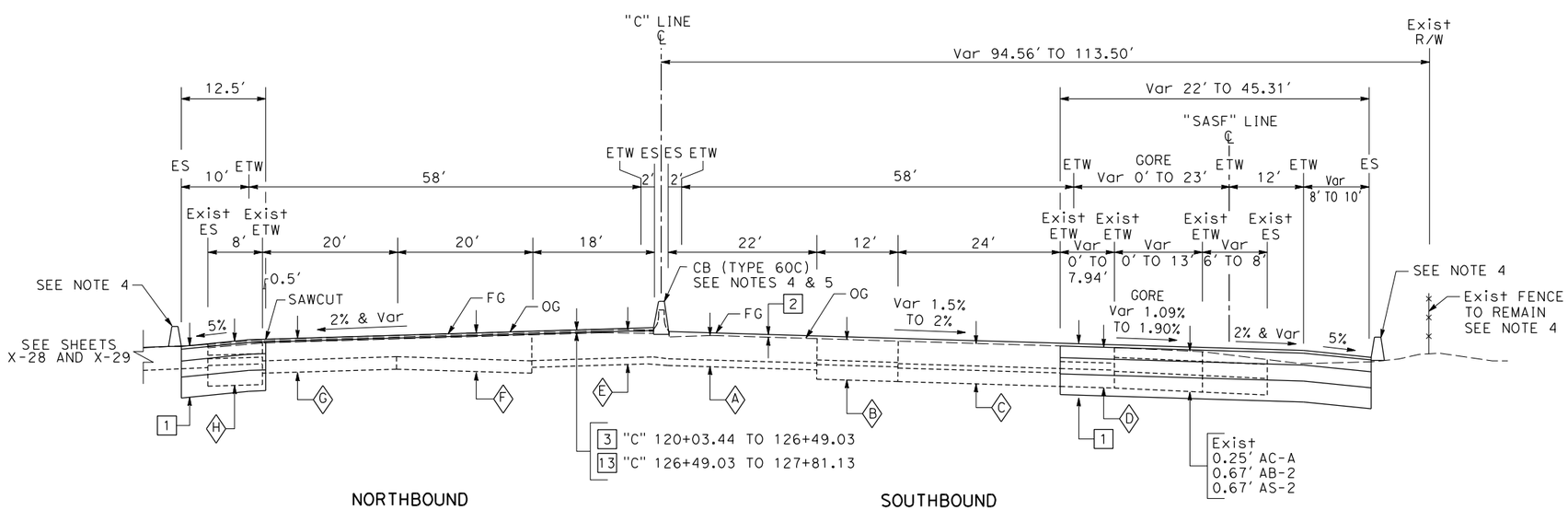
SOUTHBOUND
"C" 122+73.45 TO 127+83.06
"C" 131+89.39 TO 135+56.32

ROUTE 101



SOUTHBOUND
"C" 127+83.06 TO 129+24.80

ROUTE 101



NORTHBOUND
"C" 121+53.62 TO 127+81.13

SOUTHBOUND
"C" 120+03.44 TO 122+73.45

ROUTE 101

TYPICAL CROSS SECTIONS

NO SCALE

X-7

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

CONSULTANT FUNCTIONAL SUPERVISOR: CHRISTOPHER LILLIE
CALCULATED-DESIGNED BY: SARAH CHRISTENSEN
CHECKED BY: LAN HO
REVISED BY / DATE REVISED

LAST REVISION 09-21-10
DATE PLOTTED => 10/25/2010
TIME PLOTTED => 9:40:50 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/52.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

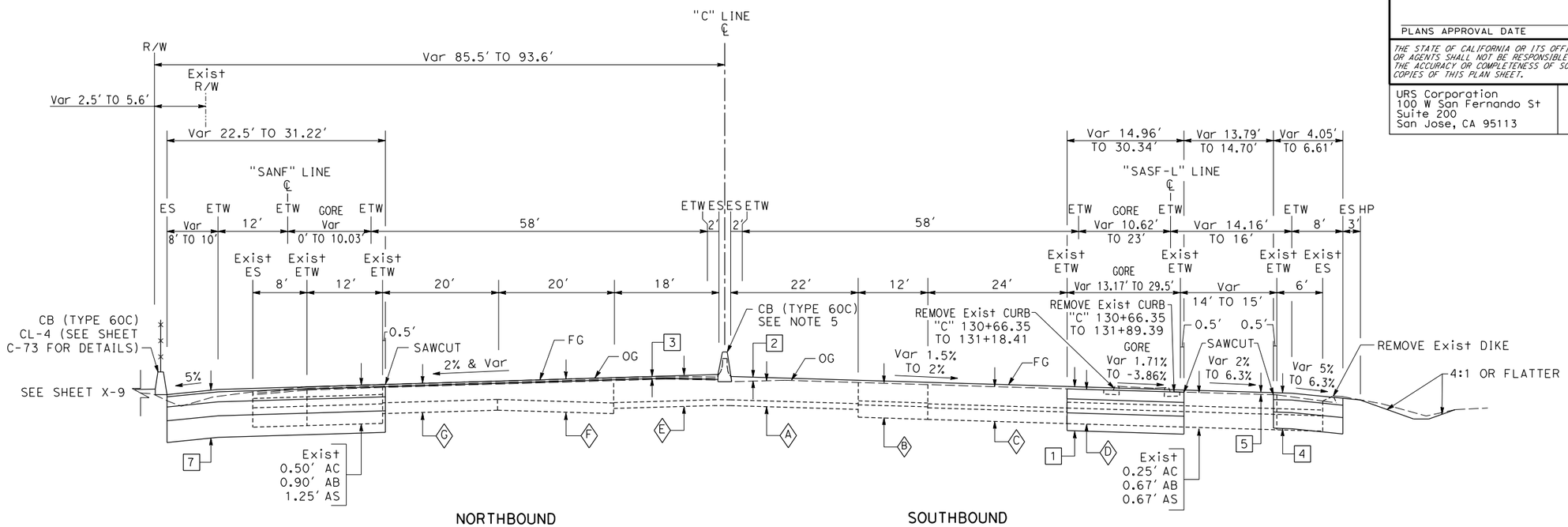
REGISTERED PROFESSIONAL ENGINEER Christopher Lillie No. C61288 Exp. 06/30/11 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 W San Fernando St
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

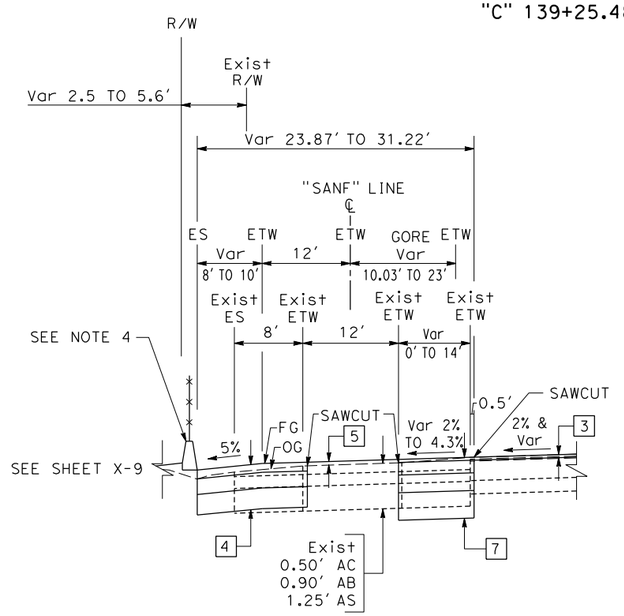
FOR NOTES AND ABBREVIATIONS
SEE SHEET X-1



NORTHBOUND
"C" 139+25.48 TO 140+44.15

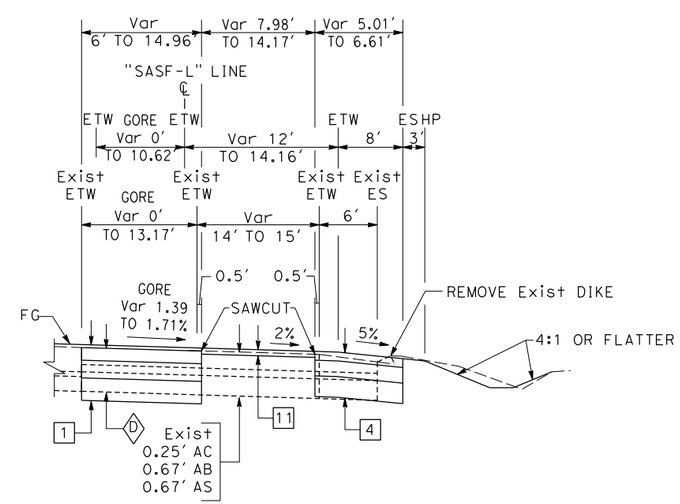
SOUTHBOUND
"C" 130+50.00 TO 131+89.39

ROUTE 101



NORTHBOUND
"C" 137+72.69 TO 139+25.48

ROUTE 101



SOUTHBOUND
"C" 129+24.80 TO 130+50.00

TYPICAL CROSS SECTIONS

NO SCALE

X-8

REVISED BY	DATE REVISED
SARAH CHRISTENSEN	LAN HO
CALCULATED-DESIGNED BY	CHECKED BY
CONSULTANT FUNCTIONAL SUPERVISOR	CHRISTOPHER LILLIE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® **DESIGN**

LAST REVISION 09-21-10
DATE PLOTTED => 10/25/2010
TIME PLOTTED => 9:40:54 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/52.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

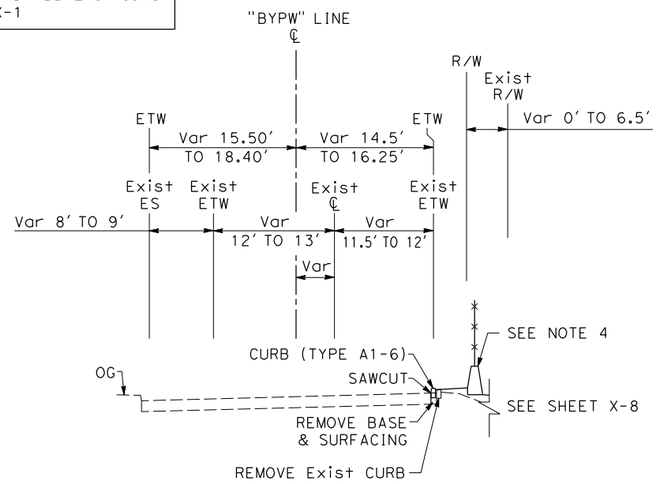
REGISTERED PROFESSIONAL ENGINEER Christopher Lillie No. C61288 Exp. 06/30/11 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 W San Fernando St
Suite 200
San Jose, CA 95113

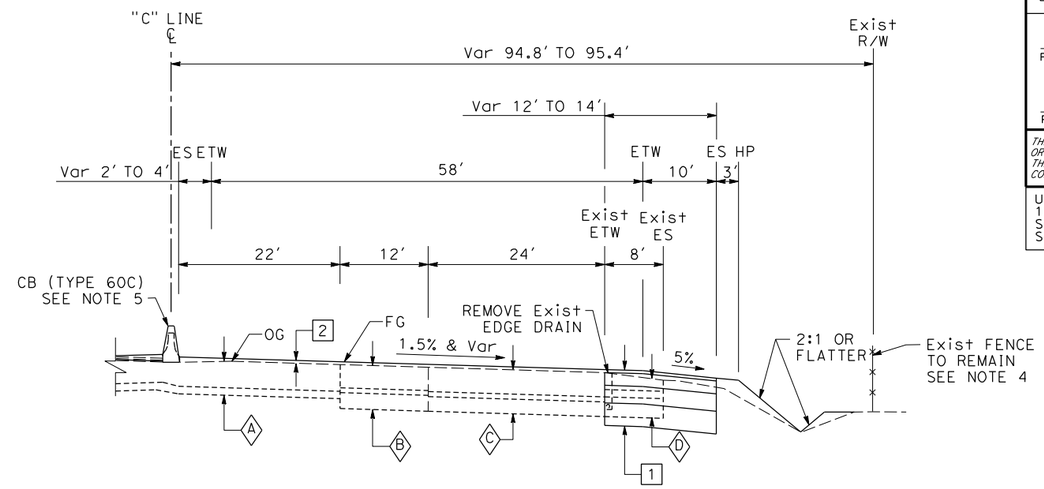
Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR NOTES AND ABBREVIATIONS SEE SHEET X-1



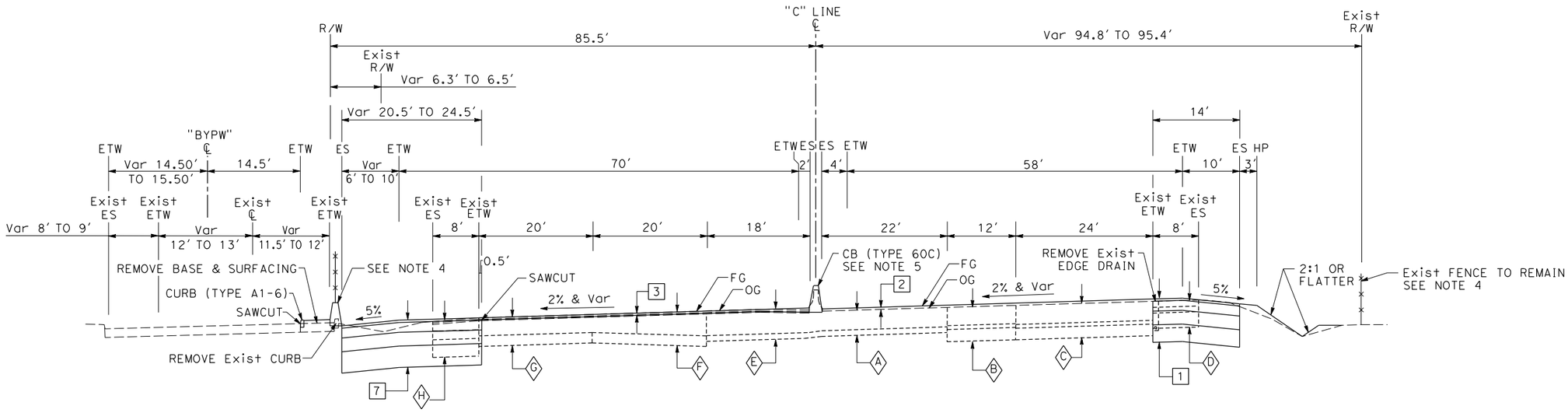
"BYPW" 36+11.15 TO 37+68.01
"BYPW" 54+47.62 TO 54+97.87

BAYSHORE PARKWAY



SOUTHBOUND
"C" 135+56.32 TO 138+52.95
"C" 149+44.61 TO 151+85.39

ROUTE 101



BAYSHORE PARKWAY
"BYPW" 37+68.01 TO 54+47.62

NORTHBOUND
"C" 140+44.15 TO 152+88.62

SOUTHBOUND
"C" 138+52.95 TO 149+44.61

ROUTE 101

TYPICAL CROSS SECTIONS

NO SCALE

X-9

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

CONSULTANT FUNCTIONAL SUPERVISOR: CHRISTOPHER LILLIE
CALCULATED-DESIGNED BY: SARAH CHRISTENSEN
CHECKED BY: LAN HO
REVISED BY / DATE REVISED

LAST REVISION 09-21-10
DATE PLOTTED => 10/25/2010
TIME PLOTTED => 9:40:58 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/52.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

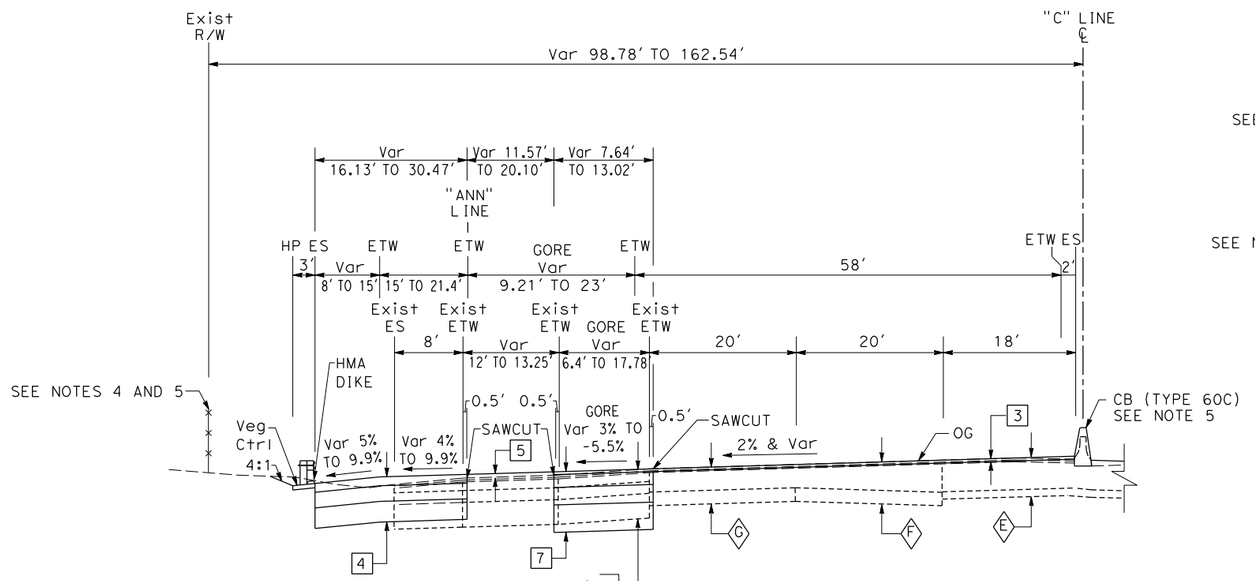
REGISTERED PROFESSIONAL ENGINEER Christopher Lillie No. C61288 Exp. 06/30/11 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

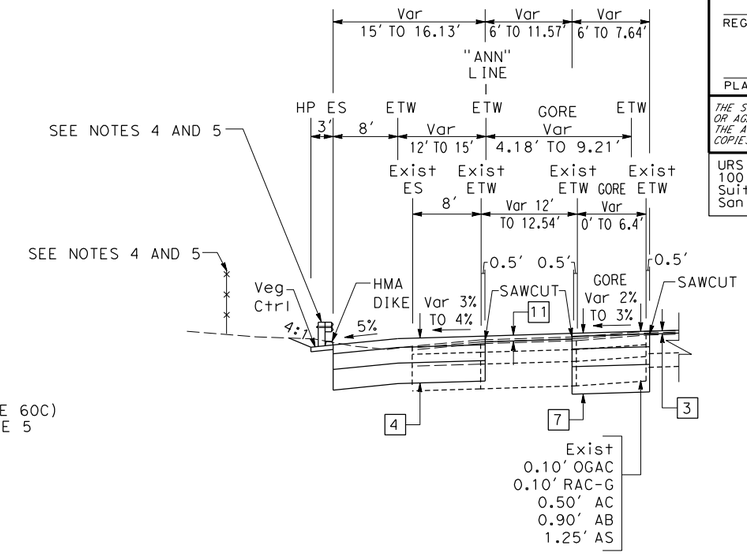
URS Corporation
100 W San Fernando St
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR NOTES AND ABBREVIATIONS
SEE SHEET X-1

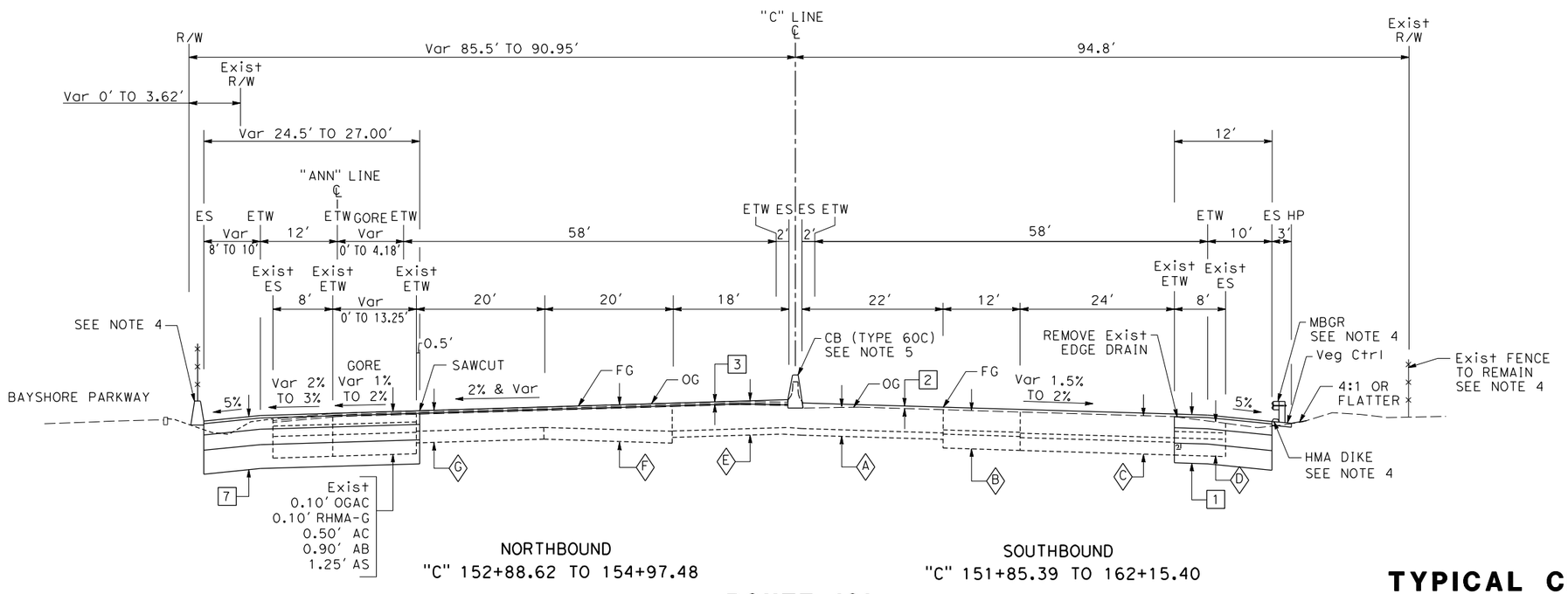


NORTHBOUND
"C" 156+80.00 TO 158+73.53



NORTHBOUND
"C" 154+97.48 TO 156+80.00

ROUTE 101



NORTHBOUND
"C" 152+88.62 TO 154+97.48

SOUTHBOUND
"C" 151+85.39 TO 162+15.40

ROUTE 101

TYPICAL CROSS SECTIONS
NO SCALE

X-10

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

CONSULTANT FUNCTIONAL SUPERVISOR: CHRISTOPHER LILLIE
CALCULATED-DESIGNED BY: SARAH CHRISTENSEN
CHECKED BY: LAN HO
REVISED BY / DATE REVISED

LAST REVISION 09-21-10
DATE PLOTTED => 10/25/2010
TIME PLOTTED => 9:41:02 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/52.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

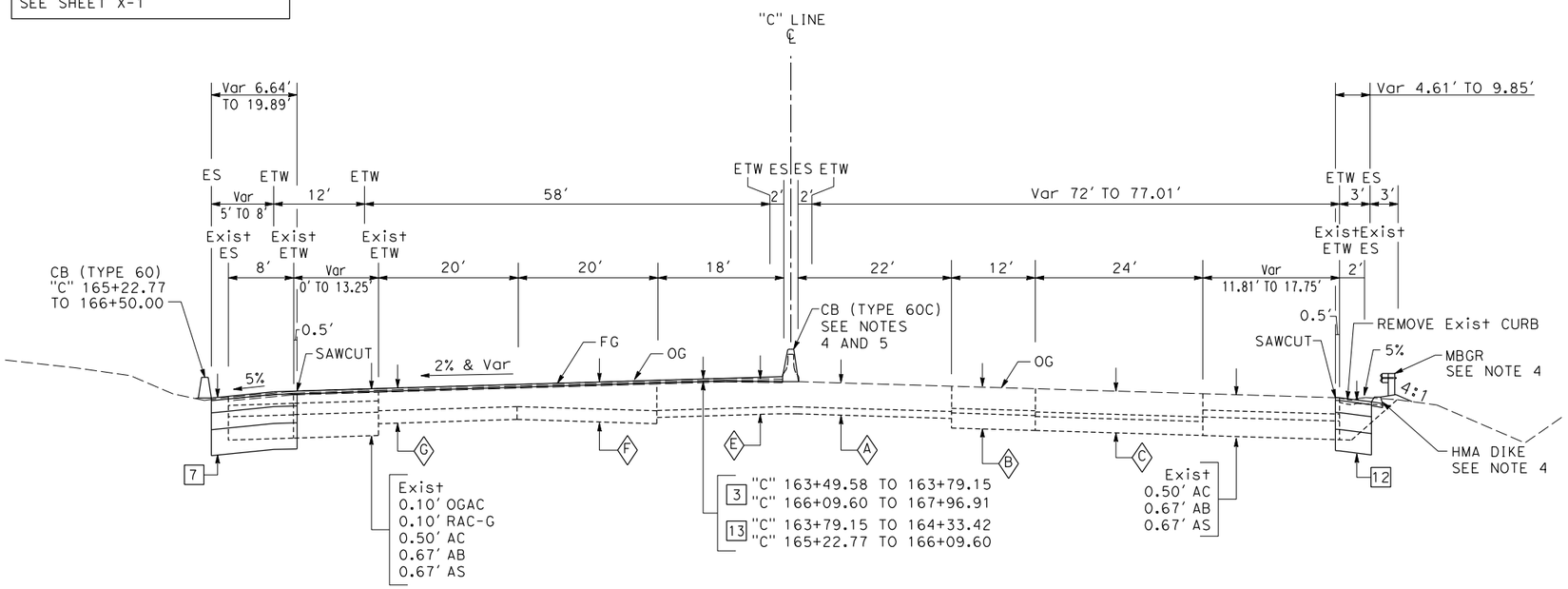
REGISTERED PROFESSIONAL ENGINEER Christopher Lillie No. C61288 Exp. 06/30/11 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 W San Fernando St
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

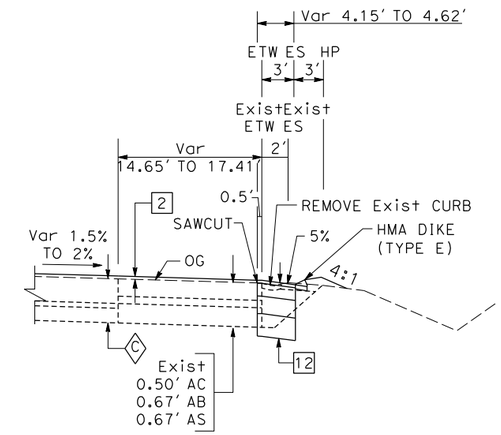
FOR NOTES AND ABBREVIATIONS
SEE SHEET X-1



NORTHBOUND
"C" 163+49.58 TO 164+33.42
"C" 165+22.77 TO 167+96.91

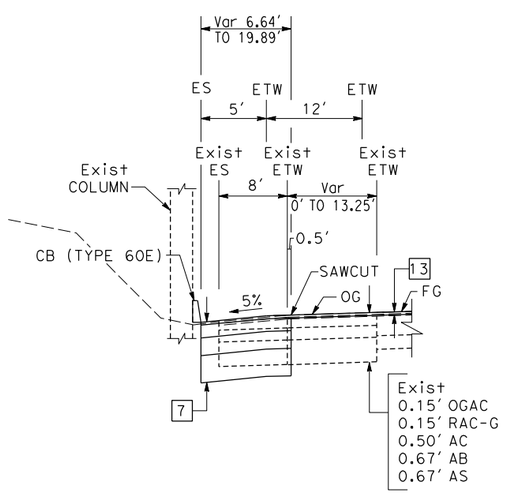
SOUTHBOUND
"C" 163+99.71 TO 166+36.43

ROUTE 101



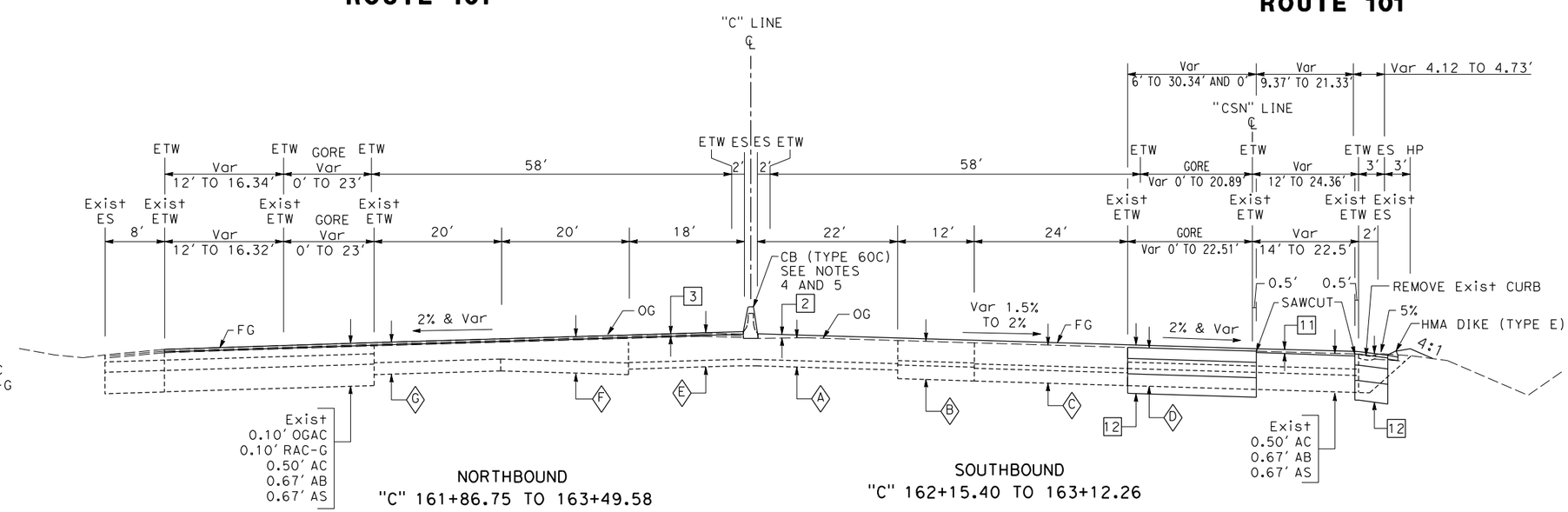
SOUTHBOUND
"C" 163+12.26 TO 163+99.71

ROUTE 101



NORTHBOUND
"C" 164+33.42 TO 165+22.77

ROUTE 101



NORTHBOUND
"C" 161+86.75 TO 163+49.58

SOUTHBOUND
"C" 162+15.40 TO 163+12.26

ROUTE 101

TYPICAL CROSS SECTIONS

NO SCALE

X-11

ALL DIMENSIONS ARE IN FEET
UNLESS OTHERWISE SHOWN

REVISED BY	DATE REVISED

SARAH CHRISTENSEN — LAN HO

CALCULATED-DESIGNED BY — CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR — CHRISTOPHER LILLIE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — DESIGN

LAST REVISION 09-21-10 — DATE PLOTTED => 10/25/2010 TIME PLOTTED => 9:41:06 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/52.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

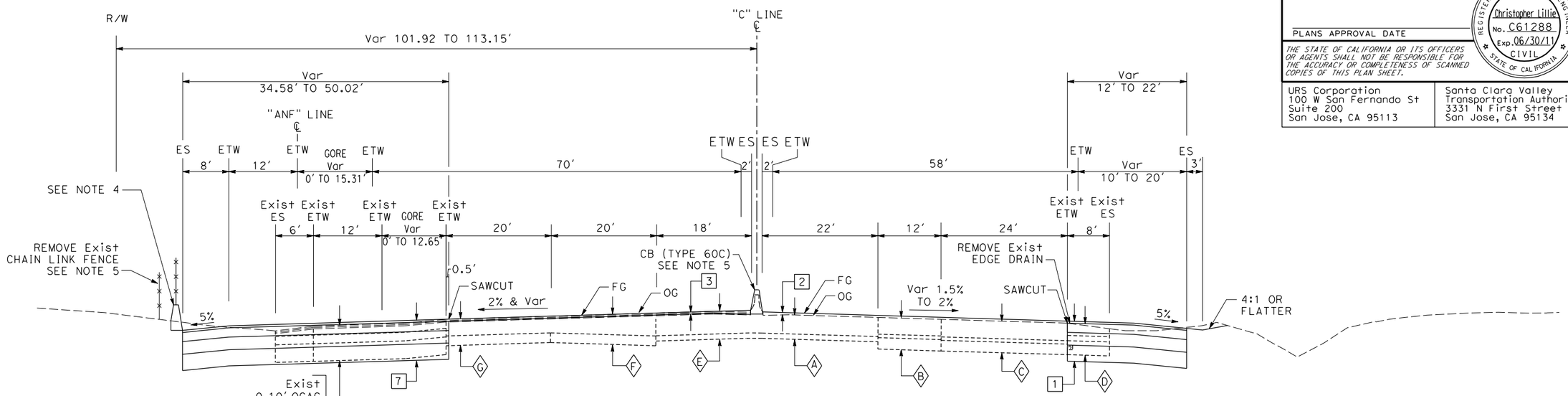
REGISTERED PROFESSIONAL ENGINEER Christopher Lillie No. C61288 Exp. 06/30/11 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 W San Fernando St
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

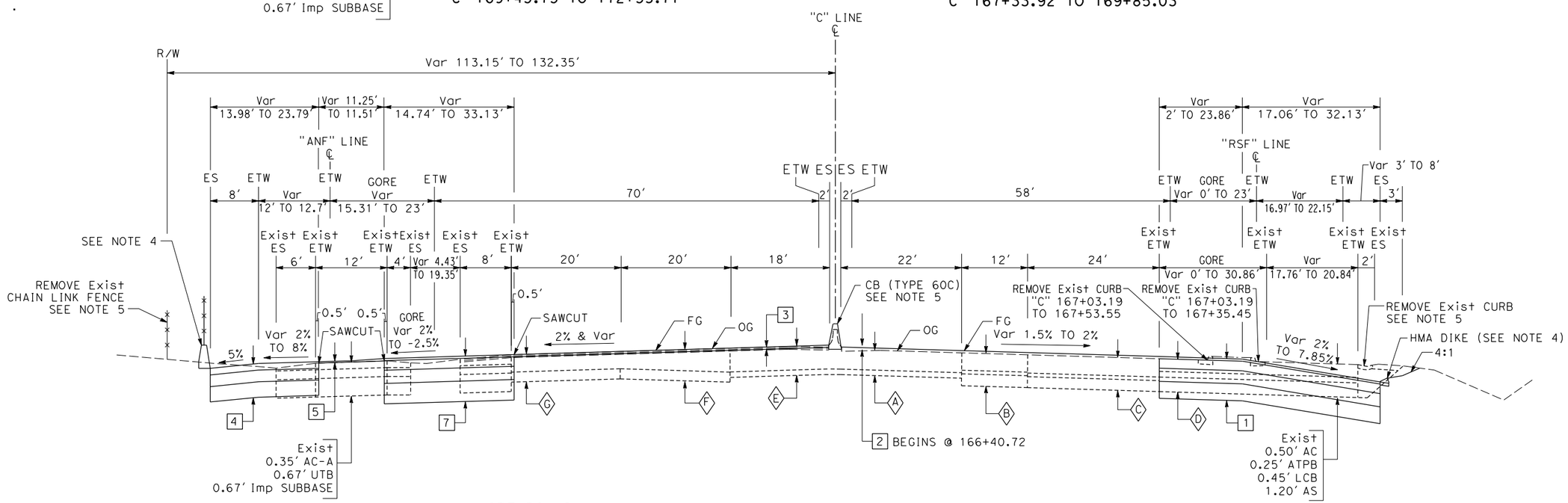
FOR NOTES AND ABBREVIATIONS SEE SHEET X-1



NORTHBOUND
"C" 169+43.73 TO 172+35.77

ROUTE 101

SOUTHBOUND
"C" 167+33.92 TO 169+85.03



NORTHBOUND
"C" 167+96.76 TO 169+43.73

ROUTE 101

SOUTHBOUND
"C" 166+36.43 TO 167+33.92

TYPICAL CROSS SECTIONS

NO SCALE

X-12

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

CONSULTANT FUNCTIONAL SUPERVISOR: CHRISTOPHER LILLIE
CALCULATED-DESIGNED BY: SARAH CHRISTENSEN
CHECKED BY: LAN HO
REVISED BY / DATE REVISED

LAST REVISION 09-21-10
DATE PLOTTED => 10/25/2010
TIME PLOTTED => 9:41:11 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/52.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

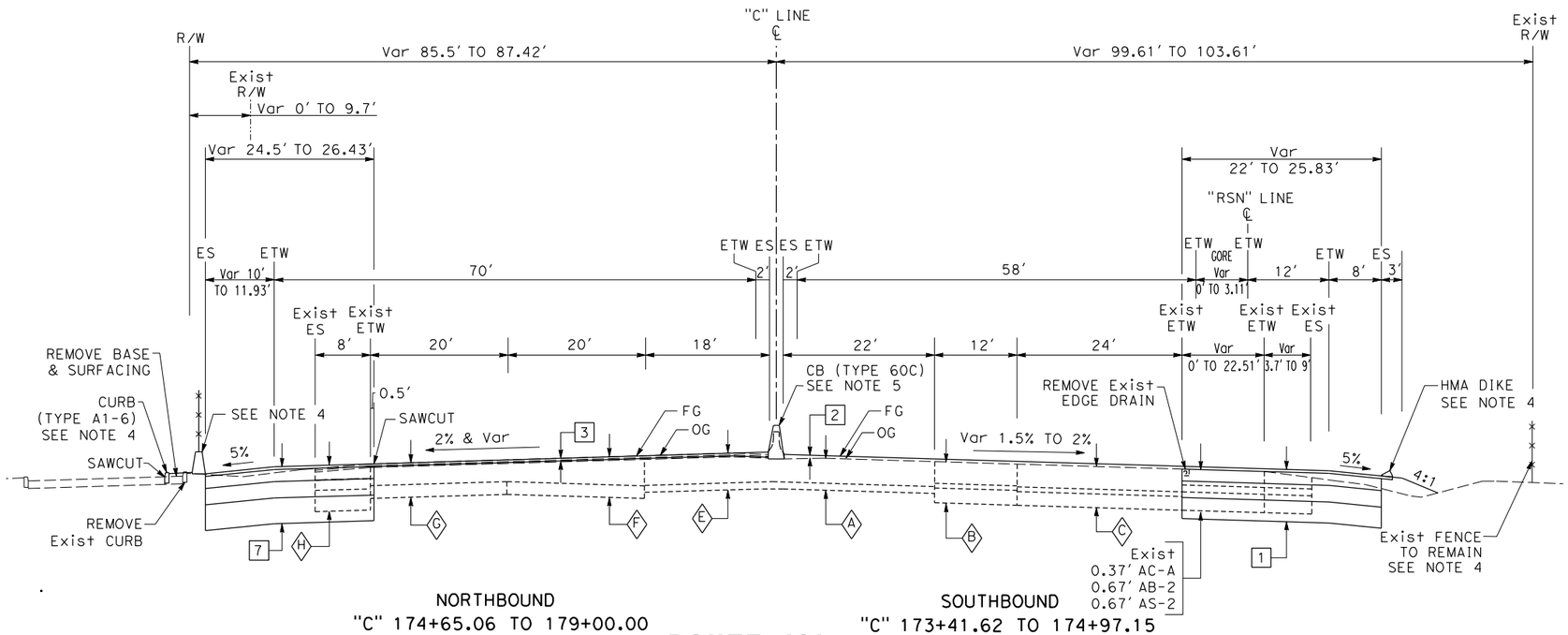
REGISTERED PROFESSIONAL ENGINEER Christopher Lillie No. C61288 Exp. 06/30/11 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 W San Fernando St
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

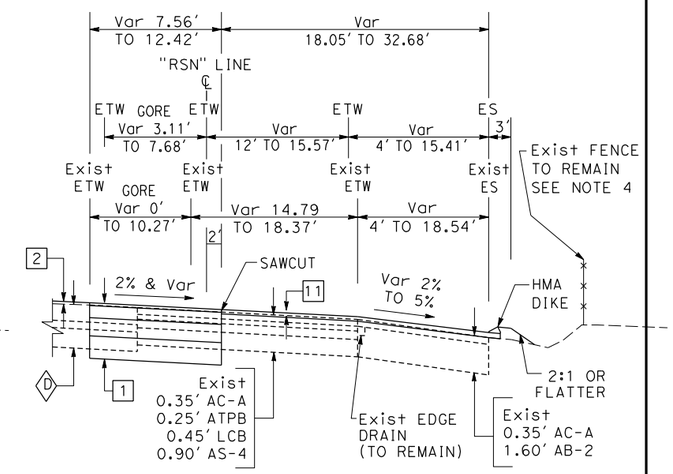
FOR NOTES AND ABBREVIATIONS
SEE SHEET X-1



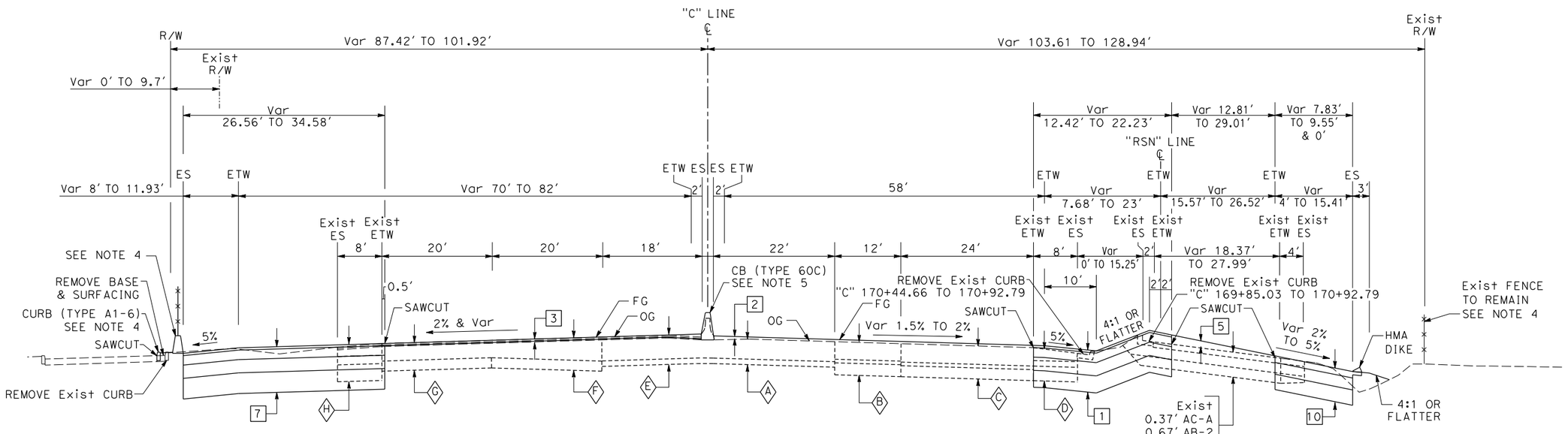
NORTHBOUND
"C" 174+65.06 TO 179+00.00

SOUTHBOUND
"C" 173+41.62 TO 174+97.15

ROUTE 101



SOUTHBOUND
"C" 171+40.00 TO 173+41.62



NORTHBOUND
"C" 172+35.77 TO 174+65.06

SOUTHBOUND
"C" 169+85.03 TO 171+40.00

ROUTE 101

TYPICAL CROSS SECTIONS
NO SCALE

X-13

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

CONSULTANT FUNCTIONAL SUPERVISOR: CHRISTOPHER LILLIE
CALCULATED-DESIGNED BY: SARAH CHRISTENSEN | CHECKED BY: LAN HO
REVISED BY | DATE REVISED

LAST REVISION 09-21-10 | DATE PLOTTED => 10/25/2010 | TIME PLOTTED => 9:41:15 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/52.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

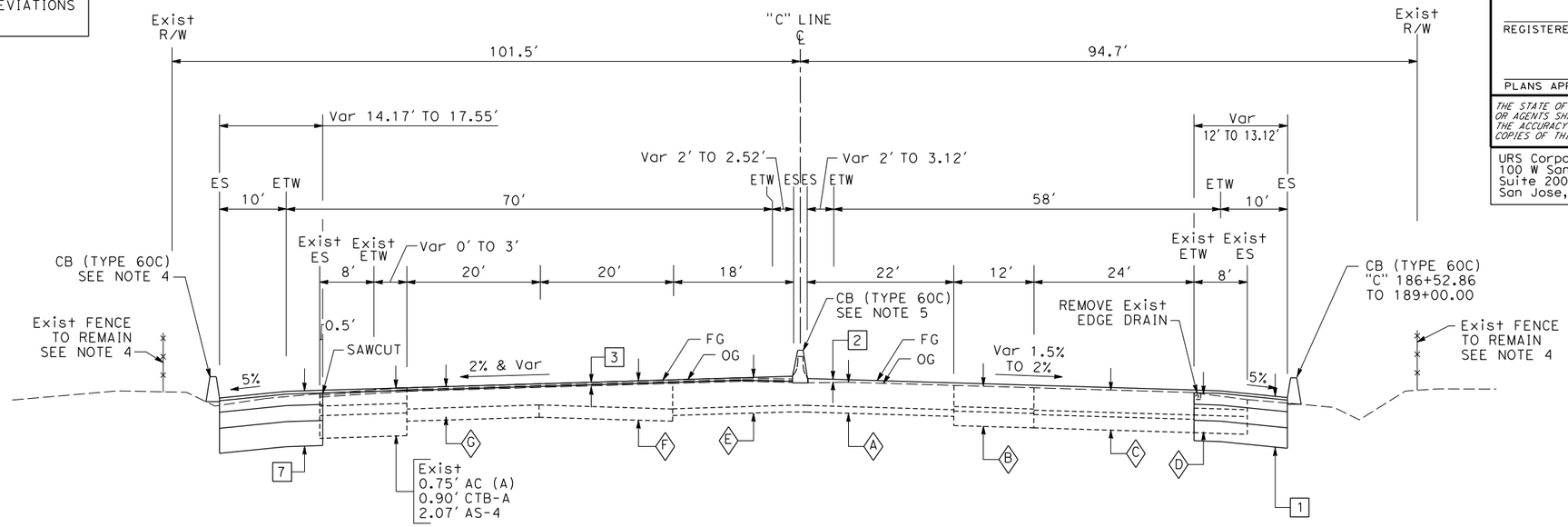
REGISTERED PROFESSIONAL ENGINEER Christopher Lillie No. C61288 Exp. 06/30/11 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 W San Fernando St
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

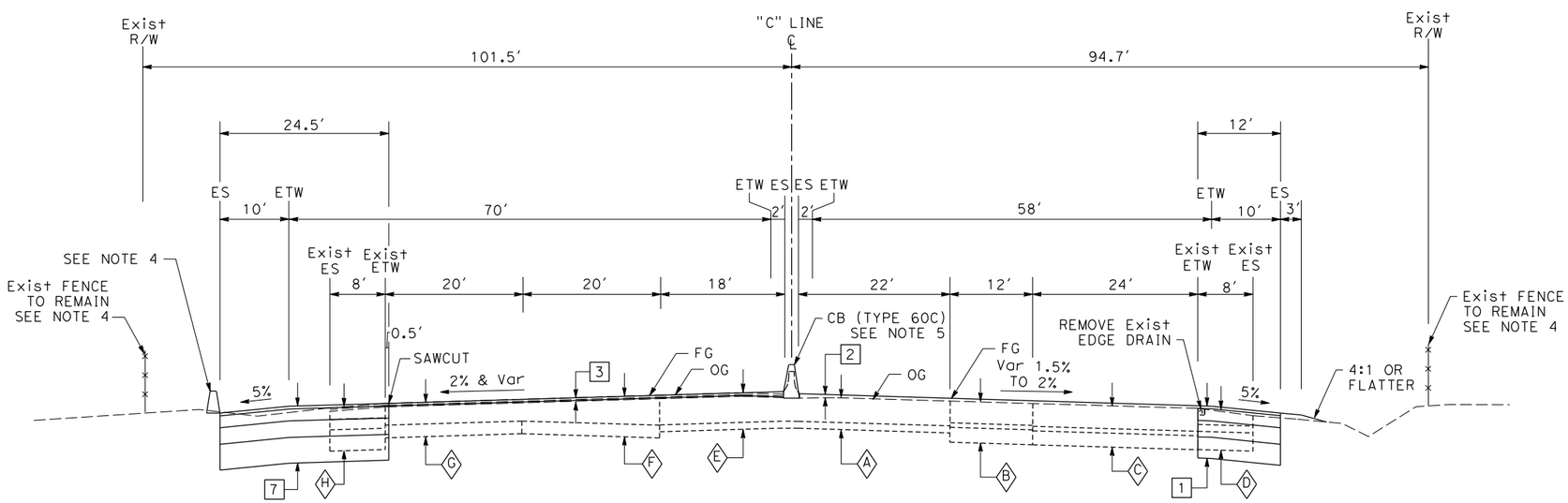
FOR NOTES AND ABBREVIATIONS SEE SHEET X-1



NORTHBOUND
"C" 186+53.46 TO 187+82.26

SOUTHBOUND
"C" 186+52.86 TO 190+50

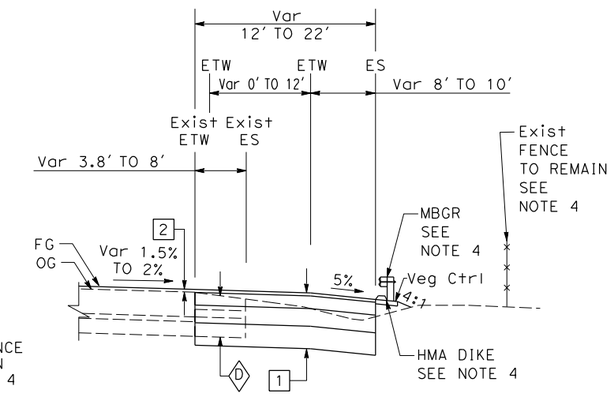
ROUTE 101



NORTHBOUND
"C" 179+00.00 TO 186+53.46

SOUTHBOUND
"C" 180+99.38 TO 186+52.86

ROUTE 101



SOUTHBOUND
"C" 174+97.15 TO 180+99.38

TYPICAL CROSS SECTIONS

NO SCALE

X-14

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

CONSULTANT FUNCTIONAL SUPERVISOR: CHRISTOPHER LILLIE
CALCULATED-DESIGNED BY: SARAH CHRISTENSEN
CHECKED BY: LAN HO
REVISED BY / DATE REVISED

LAST REVISION 09-21-10
DATE PLOTTED => 10/25/2010
TIME PLOTTED => 9:41:20 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/52.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

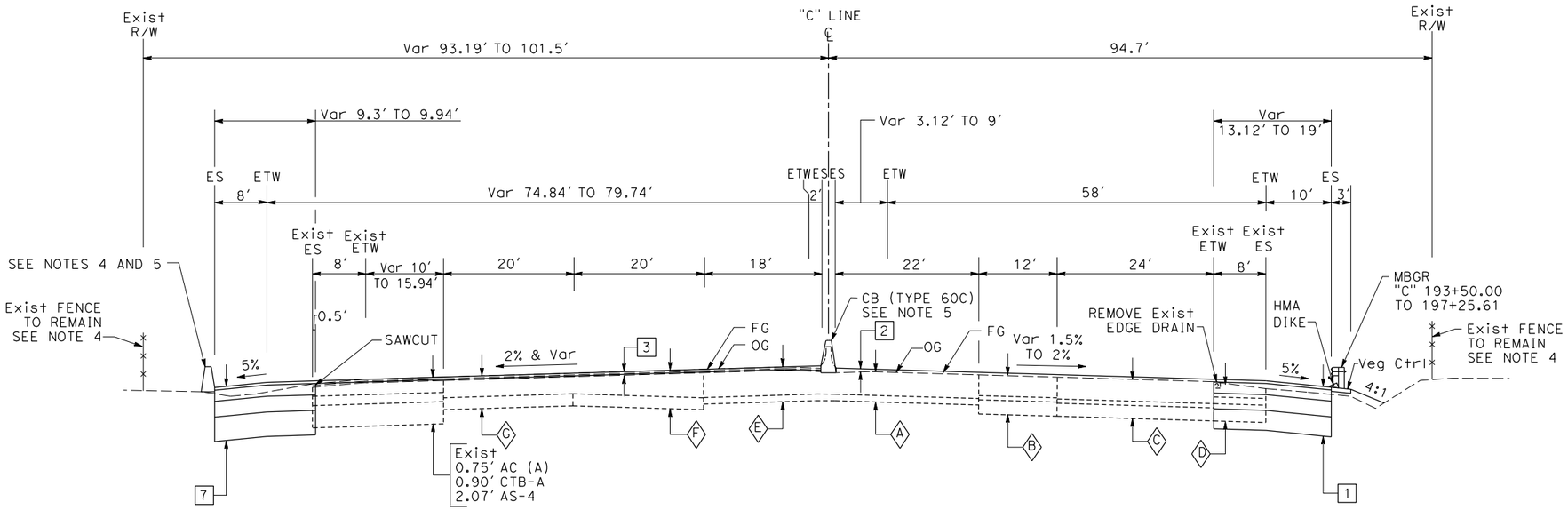
REGISTERED PROFESSIONAL ENGINEER Christopher Lillie No. C61288 Exp. 06/30/11 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 W San Fernando St
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

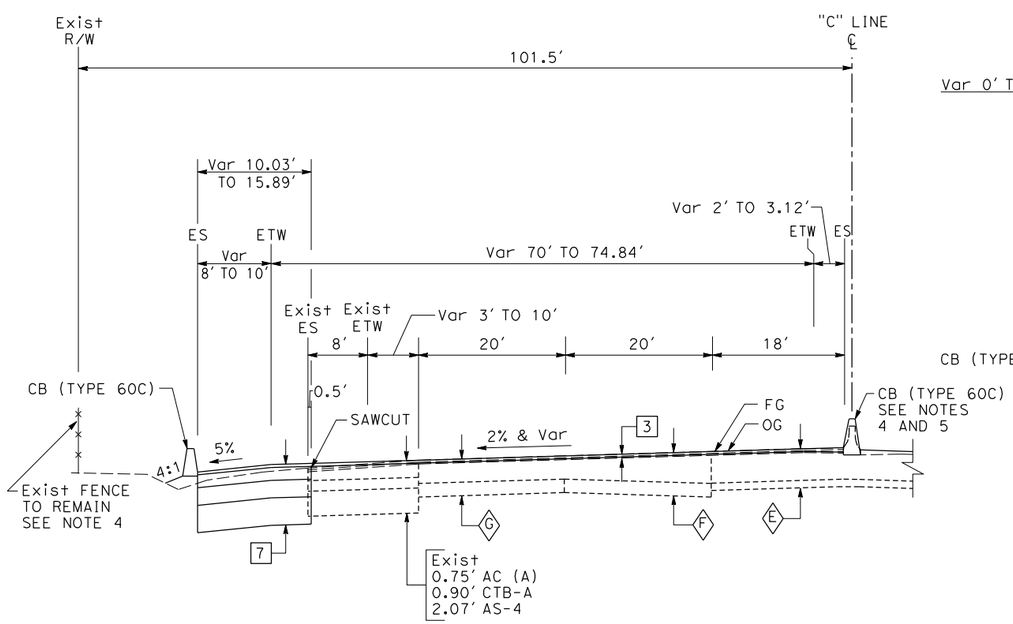
*FOR NOTES AND ABBREVIATIONS SEE SHEET X-1



NORTHBOUND
"C" 189+53.46 TO 191+86.17

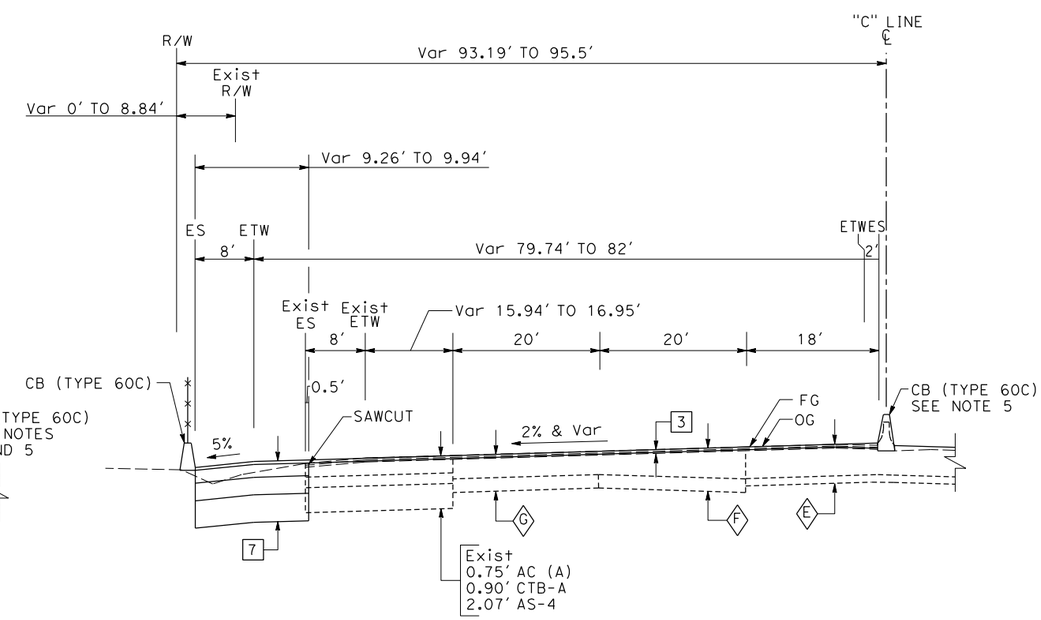
SOUTHBOUND
"C" 190+50 TO 197+26.20

ROUTE 101



NORTHBOUND
"C" 187+82.26 TO 189+53.46

ROUTE 101



NORTHBOUND
"C" 191+86.17 TO 193+13.67

ROUTE 101

TYPICAL CROSS SECTIONS

NO SCALE

X-15

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

CONSULTANT FUNCTIONAL SUPERVISOR: CHRISTOPHER LILLIE
CALCULATED-DESIGNED BY: SARAH CHRISTENSEN
CHECKED BY: LAN HO
REVISED BY / DATE REVISED

LAST REVISION 09-21-10
DATE PLOTTED => 10/25/2010
TIME PLOTTED => 9:41:24 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/52.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

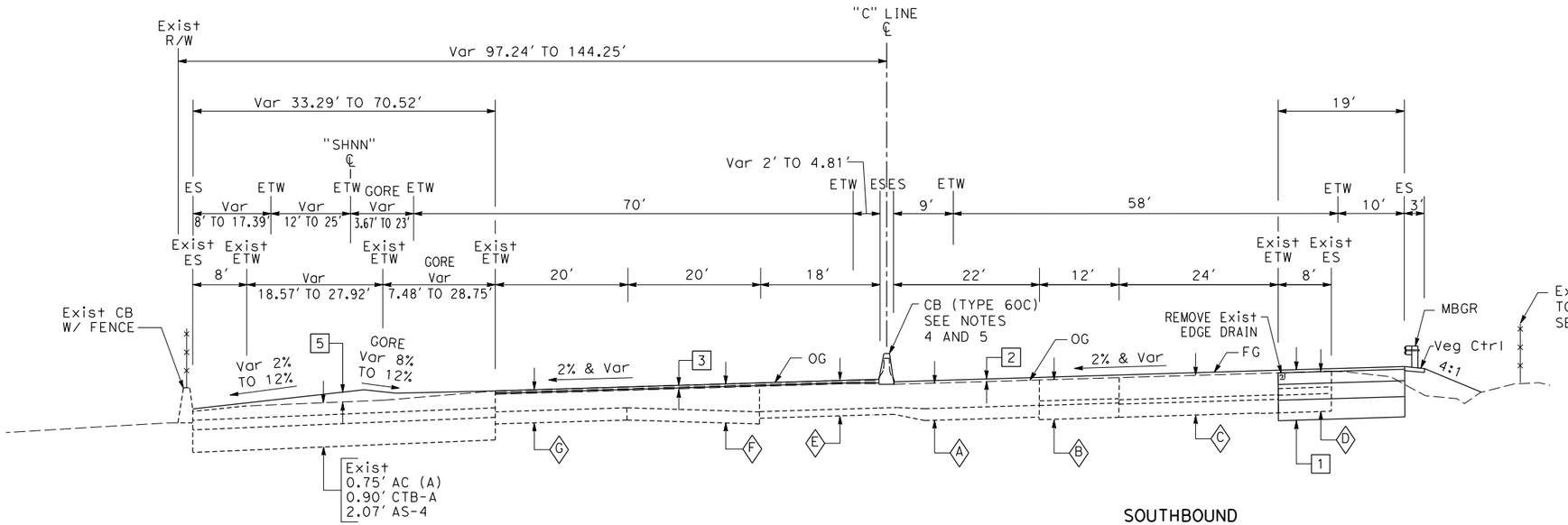
REGISTERED PROFESSIONAL ENGINEER Christopher Lillie No. C61288 Exp. 06/30/11 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 W San Fernando St
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

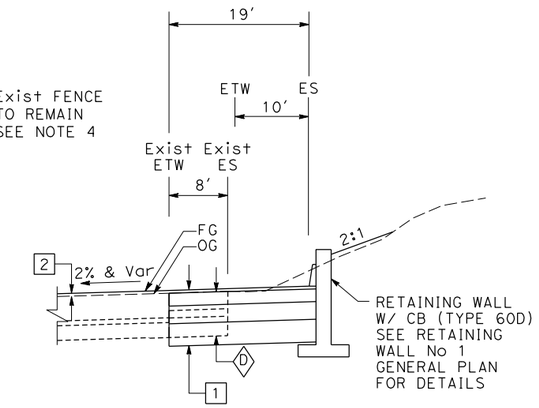
FOR NOTES AND ABBREVIATIONS
SEE SHEET X-1



NORTHBOUND
"C" 195+57.99 TO 199+02.99

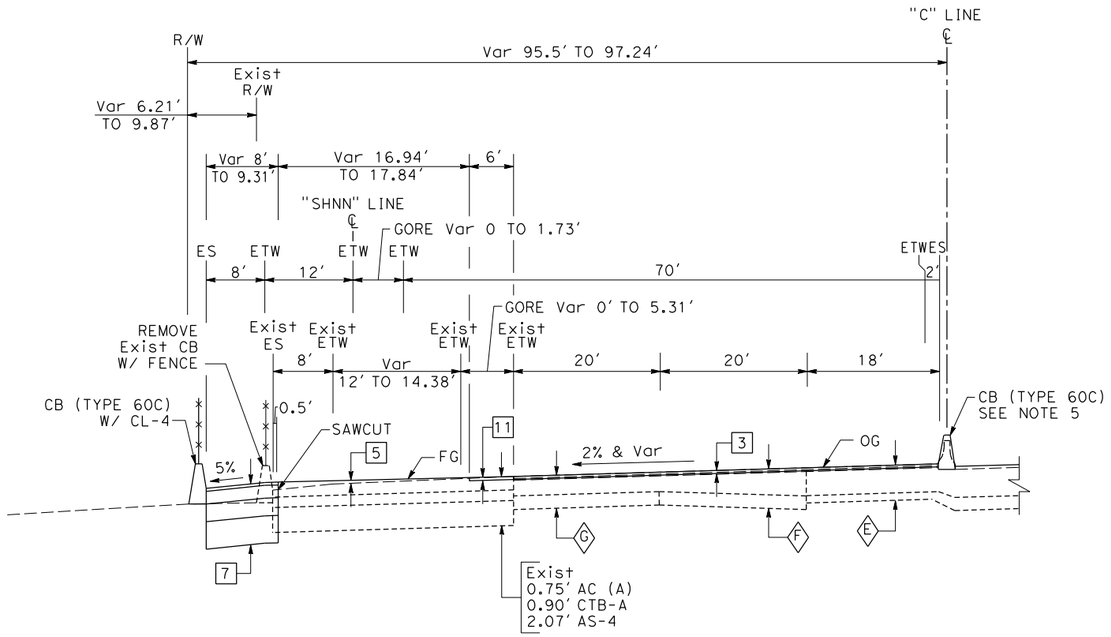
ROUTE 101

SOUTHBOUND
"C" 197+26.20 TO 198+00.00
"C" 198+44.00 TO 202+57.88



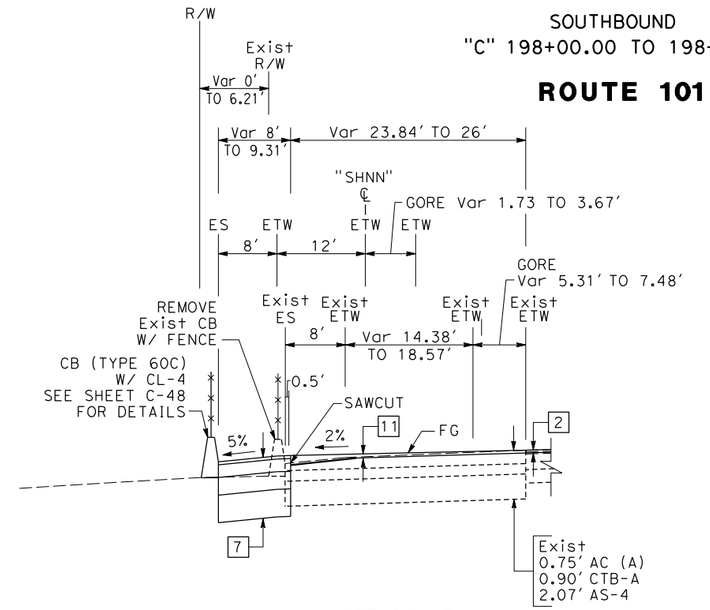
SOUTHBOUND
"C" 198+00.00 TO 198+44.00

ROUTE 101



NORTHBOUND
"C" 193+13.67 TO 194+00.00

ROUTE 101



NORTHBOUND
"C" 194+00.00 TO 195+57.99

TYPICAL CROSS SECTIONS

NO SCALE

X-16

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

CONSULTANT FUNCTIONAL SUPERVISOR: CHRISTOPHER LILLIE
CALCULATED-DESIGNED BY: SARAH CHRISTENSEN
CHECKED BY: LAN HO
REVISED BY / DATE REVISED

LAST REVISION 09-21-10
DATE PLOTTED => 10/25/2010
TIME PLOTTED => 9:41:28 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/52.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

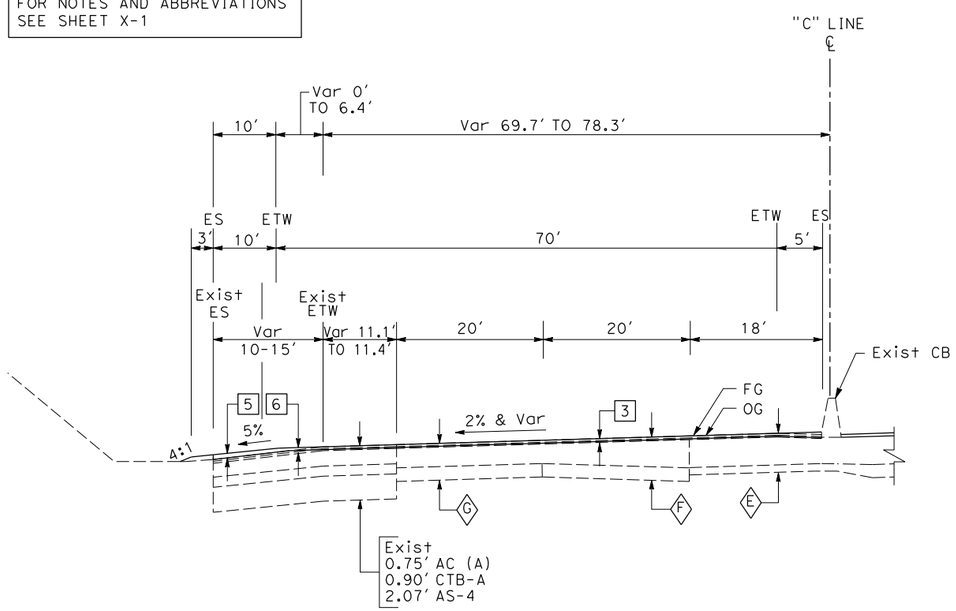
REGISTERED PROFESSIONAL ENGINEER Christopher Lillie No. C61288 Exp. 06/30/11 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 W San Fernando St
Suite 200
San Jose, CA 95113

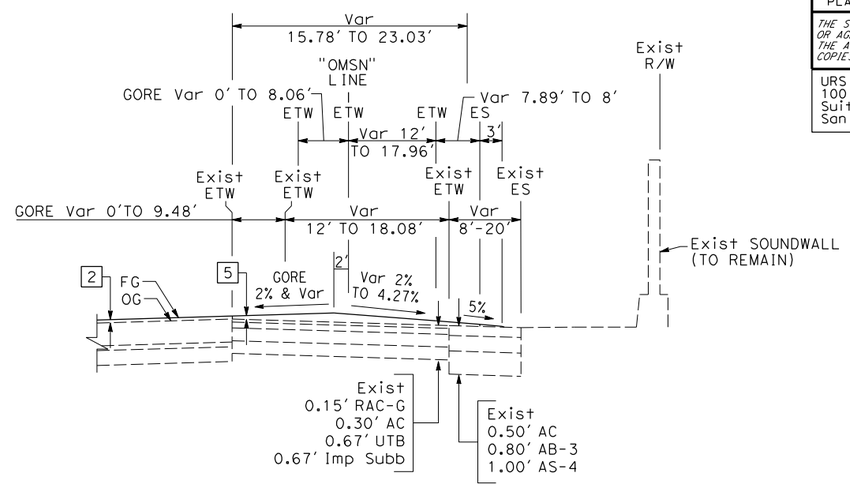
Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR NOTES AND ABBREVIATIONS SEE SHEET X-1



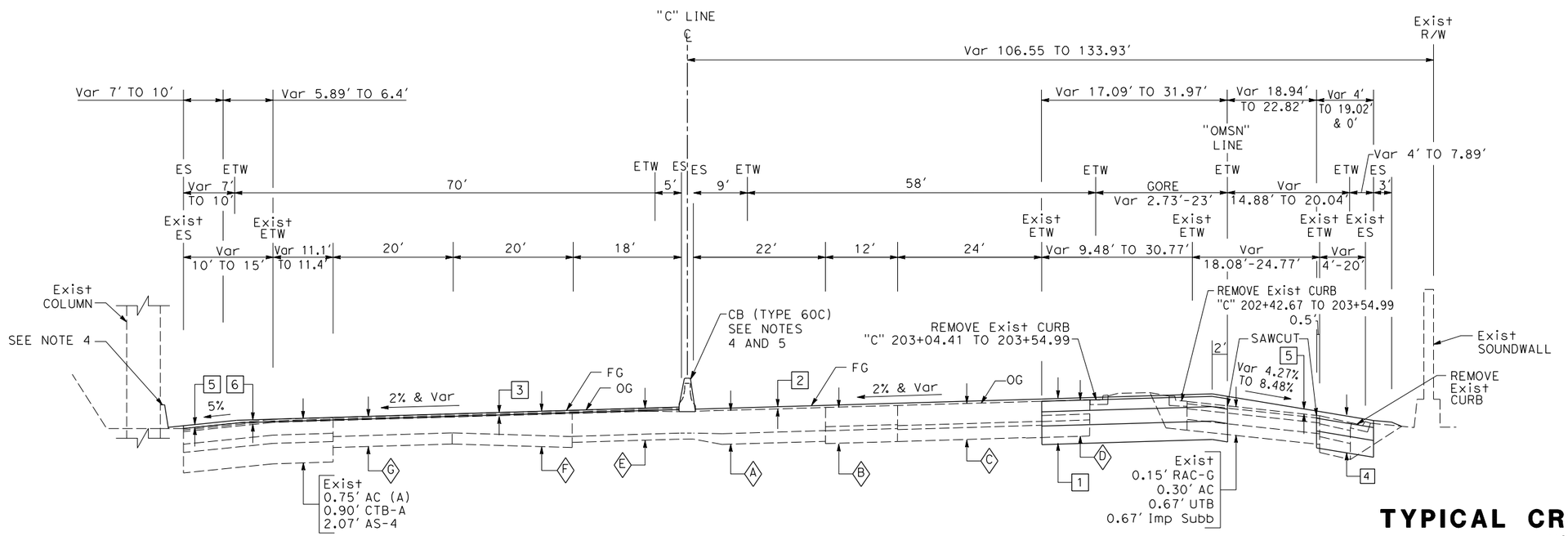
NORTHBOUND
"C" 205+83.54 TO 208+86.74

ROUTE 101



SOUTHBOUND
"C" 203+59.65 TO 204+13.99

ROUTE 101



NORTHBOUND
"C" 199+02.99 TO 205+83.54

ROUTE 101

SOUTHBOUND
"C" 202+57.88 TO 203+59.65

TYPICAL CROSS SECTIONS

NO SCALE

X-17

REVISED BY	DATE REVISED

SARAH CHRISTENSEN — LAN HO

CALCULATED-DESIGNED BY — CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR — CHRISTOPHER LILLIE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — Caltrans® — DESIGN

LAST REVISION 09-21-10 — DATE PLOTTED => 10/25/2010 — TIME PLOTTED => 9:41:32 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/52.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

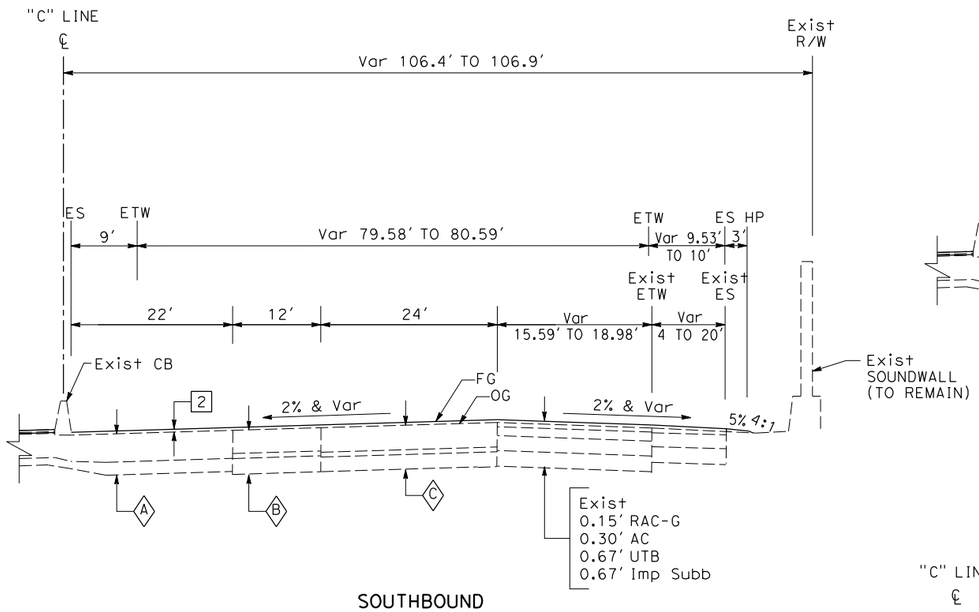
REGISTERED PROFESSIONAL ENGINEER Christopher Lillie No. C61288 Exp. 06/30/11 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 W San Fernando St
Suite 200
San Jose, CA 95113

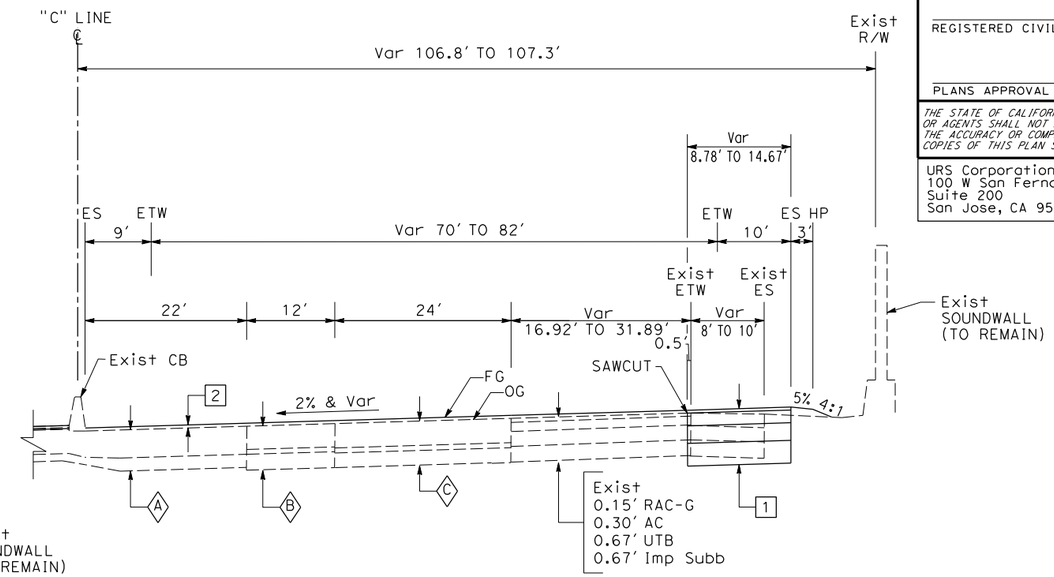
Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR NOTES AND ABBREVIATIONS
SEE SHEET X-1



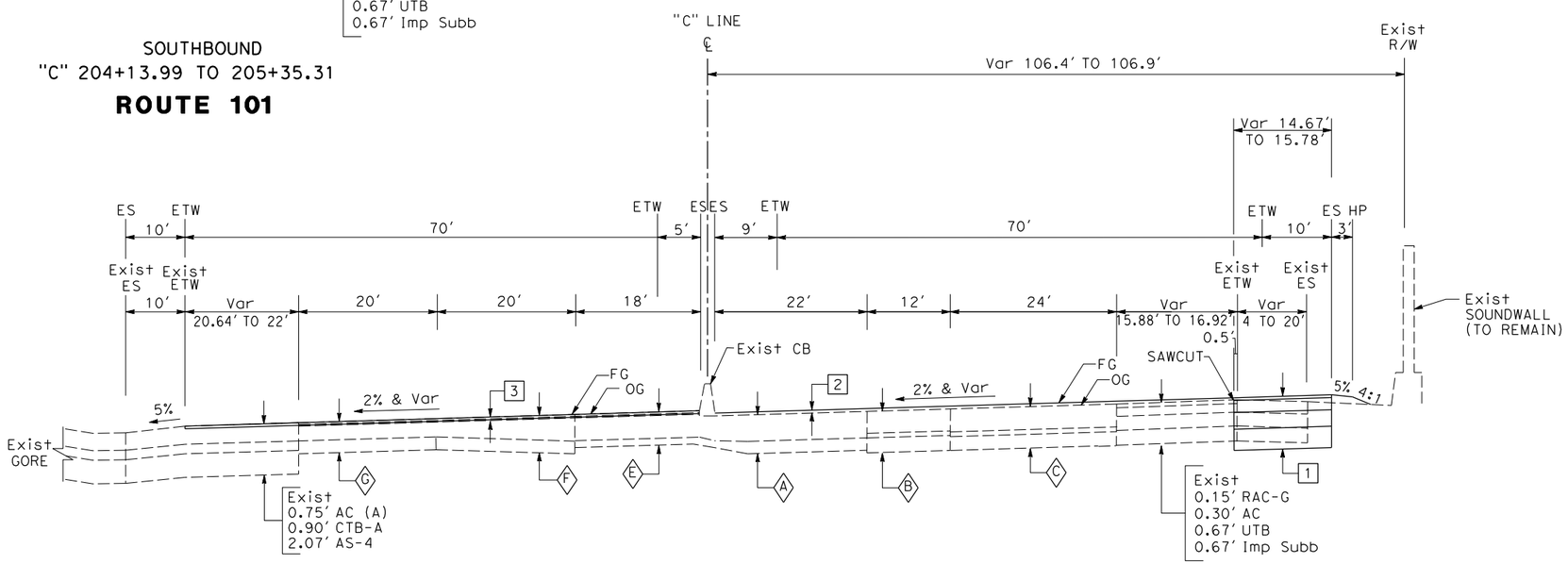
SOUTHBOUND
"C" 204+13.99 TO 205+35.31

ROUTE 101



SOUTHBOUND
"C" 209+16.38 TO 211+50.89

ROUTE 101



NORTHBOUND
"C" 208+86.74 TO 211+24.04

SOUTHBOUND
"C" 205+35.31 TO 209+16.38

ROUTE 101

TYPICAL CROSS SECTIONS

NO SCALE

X-18

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

CONSULTANT FUNCTIONAL SUPERVISOR: CHRISTOPHER LILLIE
CALCULATED-DESIGNED BY: SARAH CHRISTENSEN
CHECKED BY: LAN HO
REVISED BY
DATE REVISED

LAST REVISION 09-21-10
DATE PLOTTED => 10/25/2010
TIME PLOTTED => 9:41:36 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/52.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

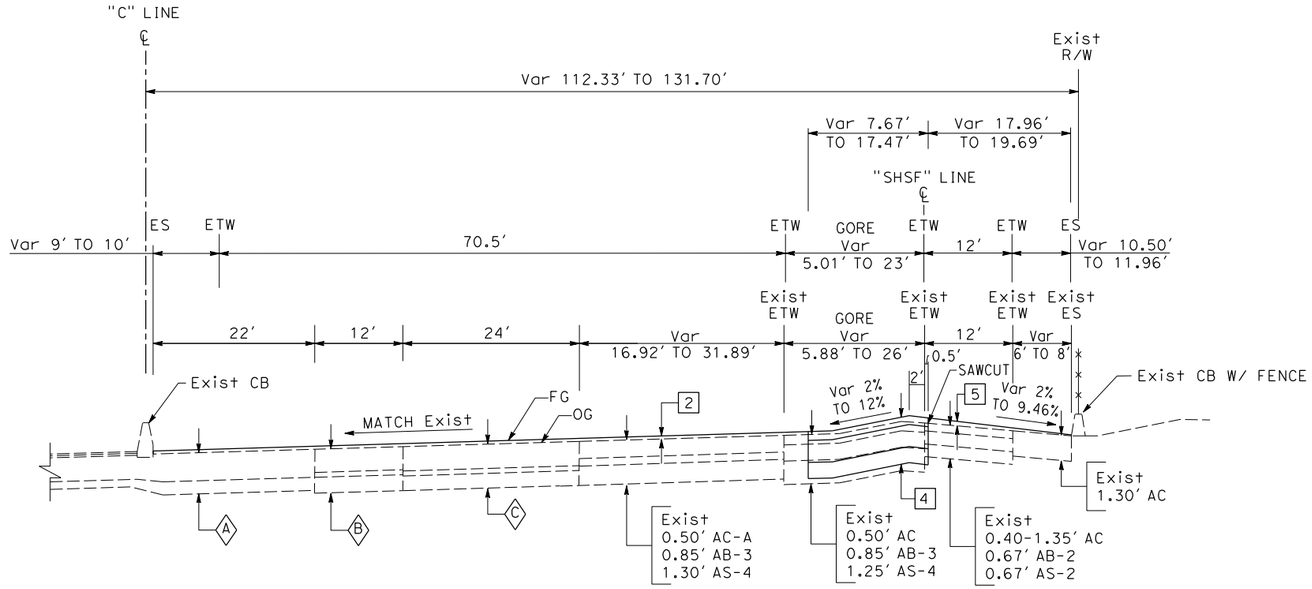
REGISTERED PROFESSIONAL ENGINEER Christopher Lillie No. C61288 Exp. 06/30/11 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 W San Fernando St
Suite 200
San Jose, CA 95113

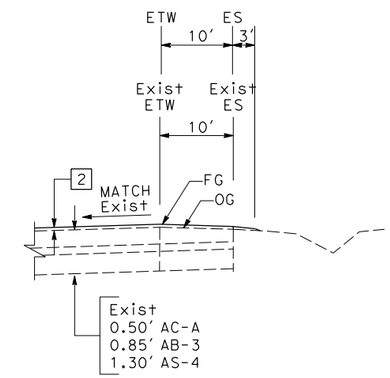
Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR NOTES AND ABBREVIATIONS
SEE SHEET X-1



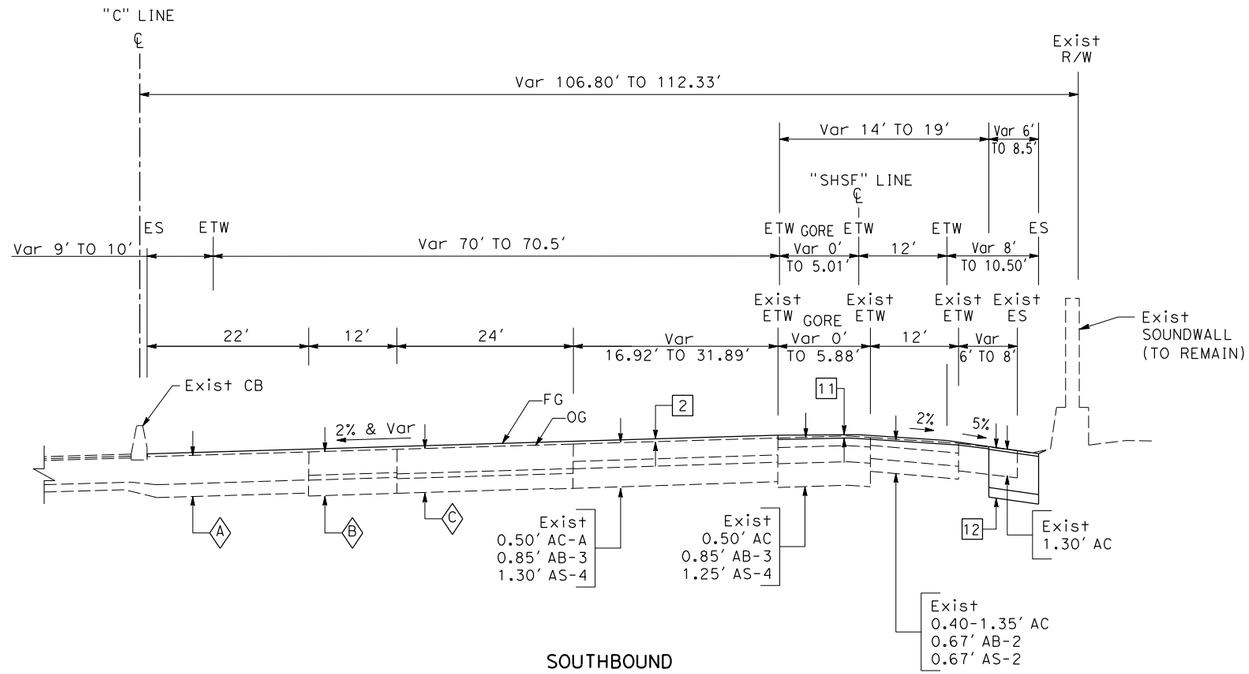
SOUTHBOUND
"C" 212+37.35 TO 214+33.37

ROUTE 101



SOUTHBOUND
"C" 214+33.37 TO 215+00.00

ROUTE 101



SOUTHBOUND
"C" 211+50.89 TO 212+37.35

ROUTE 101

TYPICAL CROSS SECTIONS

NO SCALE

X-19

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® **DESIGN**

CONSULTANT FUNCTIONAL SUPERVISOR: CHRISTOPHER LILLIE
CALCULATED-DESIGNED BY: SARAH CHRISTENSEN
CHECKED BY: LAN HO
REVISED BY / DATE REVISED

LAST REVISION 09-21-10
DATE PLOTTED => 10/25/2010
TIME PLOTTED => 9:41:40 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/52.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

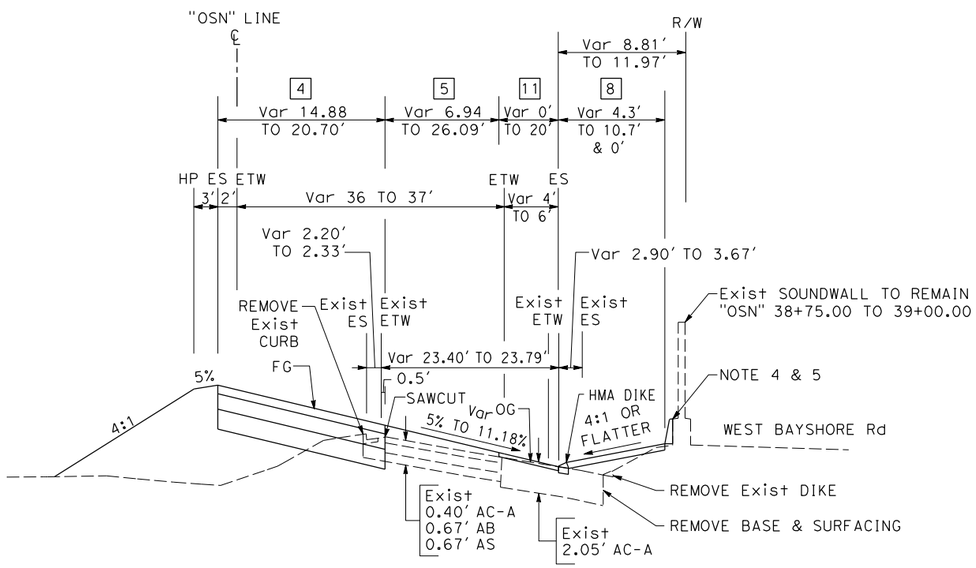
REGISTERED PROFESSIONAL ENGINEER Christopher Lillie No. C61288 Exp. 06/30/11 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 W San Fernando St
Suite 200
San Jose, CA 95113

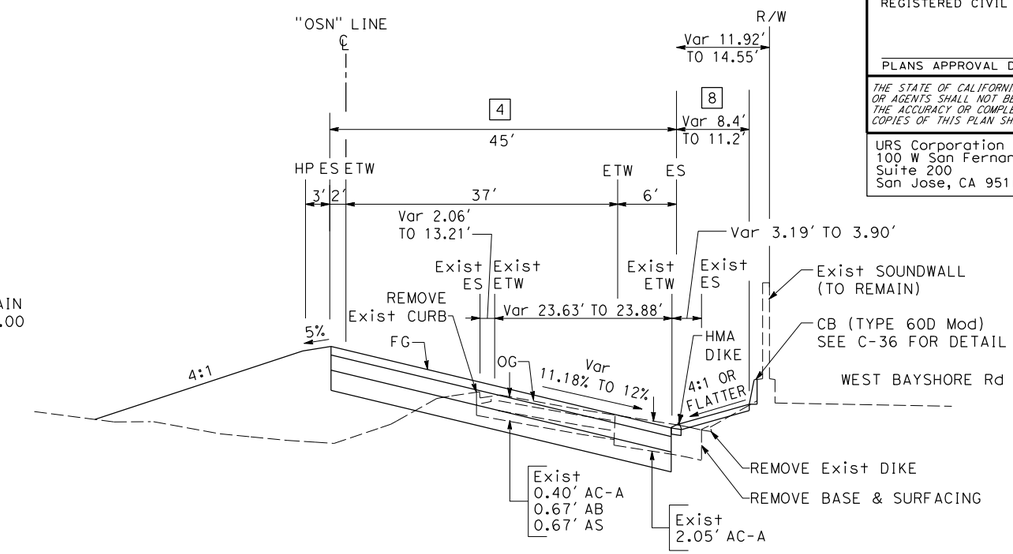
Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

*FOR NOTES AND ABBREVIATIONS SEE SHEET X-1



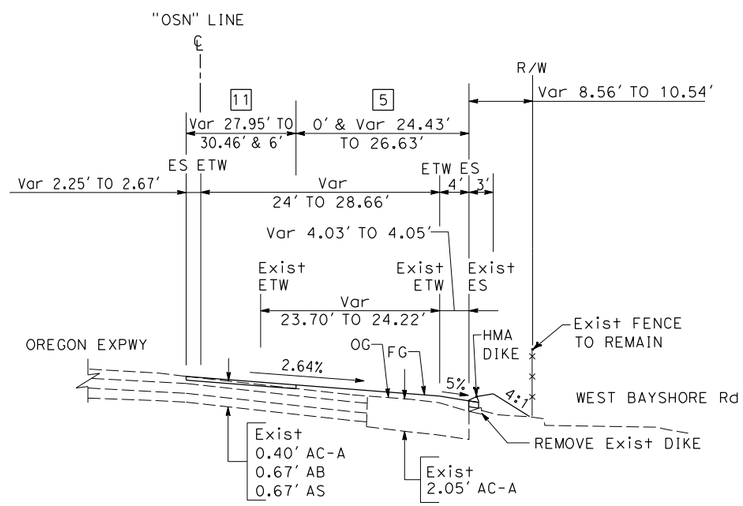
"OSN" 36+94.70 39+00.00

SOUTHBOUND OREGON EXPRESSWAY ON-RAMP



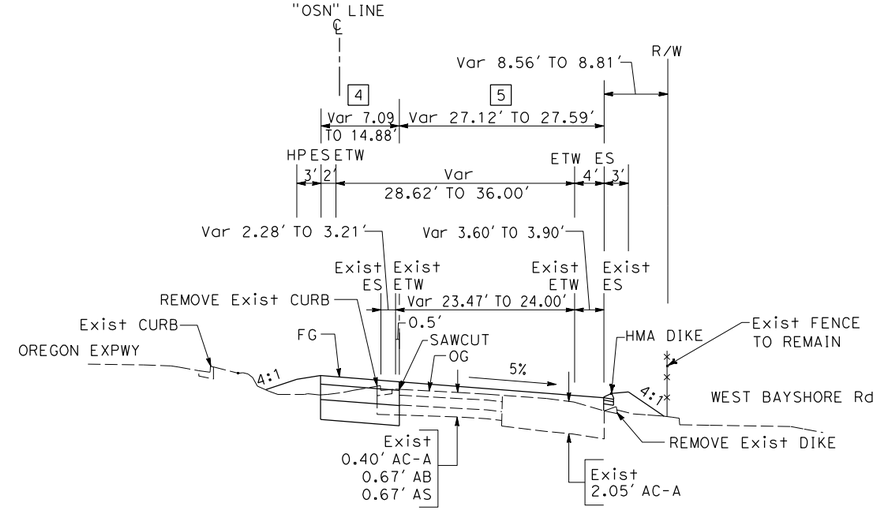
"OSN" 39+00.00 TO 40+90.00

SOUTHBOUND OREGON EXPRESSWAY ON-RAMP



"OSN" 35+75.06 TO 36+21.86

SOUTHBOUND OREGON EXPRESSWAY ON-RAMP



"OSN" 36+21.86 TO 36+94.70

SOUTHBOUND OREGON EXPRESSWAY ON-RAMP

TYPICAL CROSS SECTIONS

NO SCALE

X-20

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

CONSULTANT FUNCTIONAL SUPERVISOR: CHRISTOPHER LILLIE
CALCULATED-DESIGNED BY: SARAH CHRISTENSEN
CHECKED BY: LAN HO
REVISED BY / DATE REVISED

LAST REVISION 09-21-10
DATE PLOTTED => 10/25/2010
TIME PLOTTED => 9:41:44 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/52.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

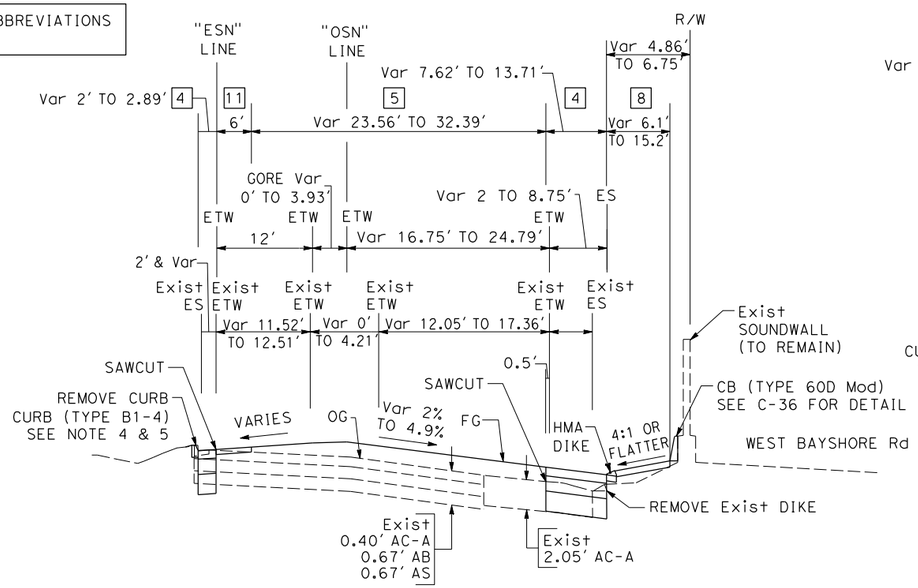
REGISTERED PROFESSIONAL ENGINEER Christopher Lillie No. C61288 Exp. 06/30/11 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 W San Fernando St
Suite 200
San Jose, CA 95113

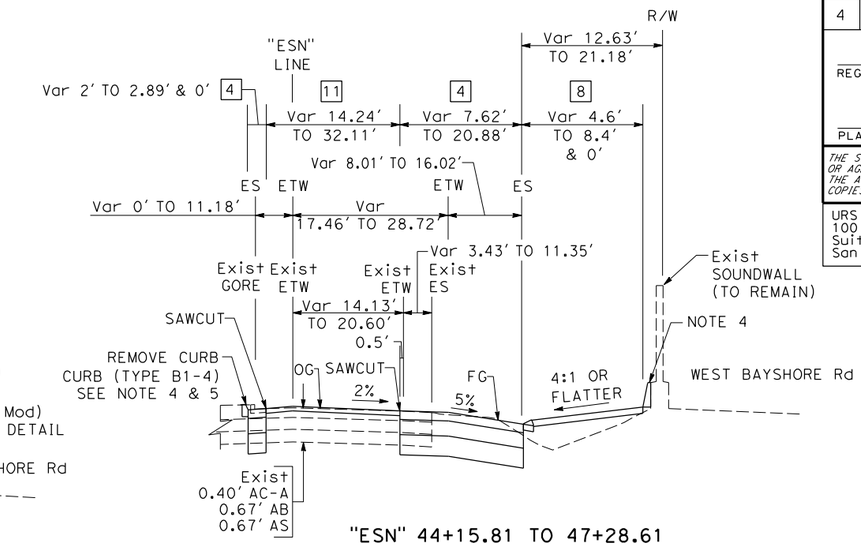
Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR NOTES AND ABBREVIATIONS SEE SHEET X-1



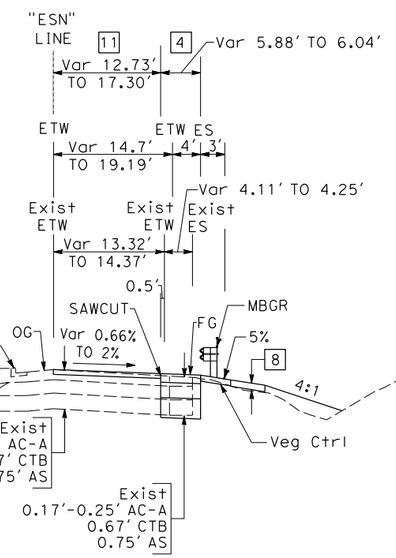
"OSN" 42+86.89 TO 44+15.81
"ESN" 42+86.53 TO 44+15.81

SOUTHBOUND OREGON EXPRESSWAY AND EMBARCADERO ROAD ON-RAMPS



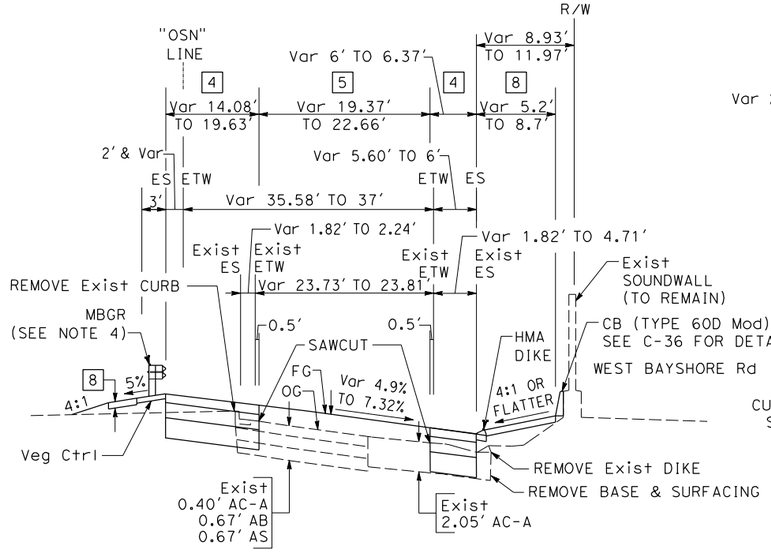
"ESN" 44+15.81 TO 47+28.61

SOUTHBOUND EMBARCADERO ROAD ON-RAMP



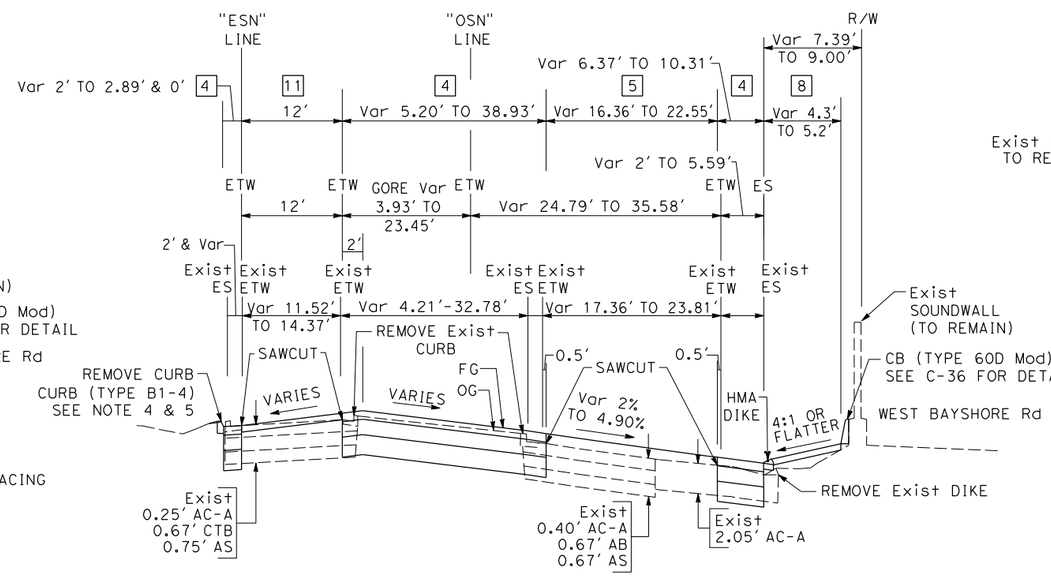
"ESN" 40+71.19 TO 41+51.34

SOUTHBOUND EMBARCADERO ROAD ON-RAMP



"OSN" 40+90.00 TO 41+49.87

SOUTHBOUND OREGON EXPRESSWAY ON-RAMP



"OSN" 41+49.87 TO 42+86.89
"ESN" 41+51.34 TO 42+86.53

SOUTHBOUND OREGON EXPRESSWAY AND EMBARCADERO ROAD ON-RAMPS

TYPICAL CROSS SECTIONS

NO SCALE

X-21

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

CONSULTANT FUNCTIONAL SUPERVISOR: CHRISTOPHER LILLIE
CALCULATED-DESIGNED BY: SARAH CHRISTENSEN
CHECKED BY: LAN HO
REVISED BY / DATE REVISED

LAST REVISION 09-21-10
DATE PLOTTED => 10/25/2010
TIME PLOTTED => 9:41:50 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/52.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

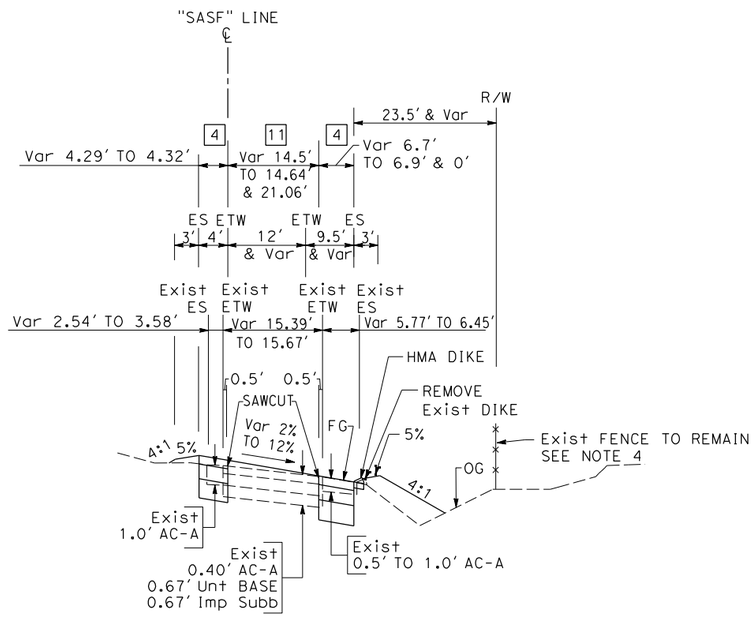
REGISTERED PROFESSIONAL ENGINEER Christopher Lillie No. C61288 Exp. 06/30/11 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 W San Fernando St
Suite 200
San Jose, CA 95113

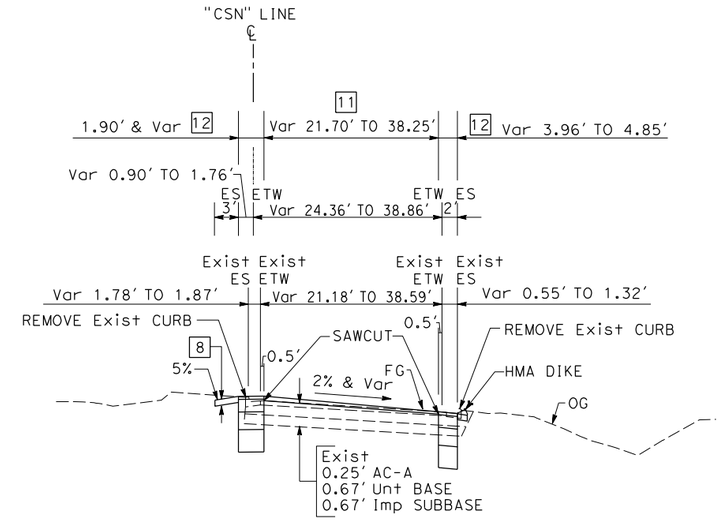
Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR NOTES AND ABBREVIATIONS
SEE SHEET X-1



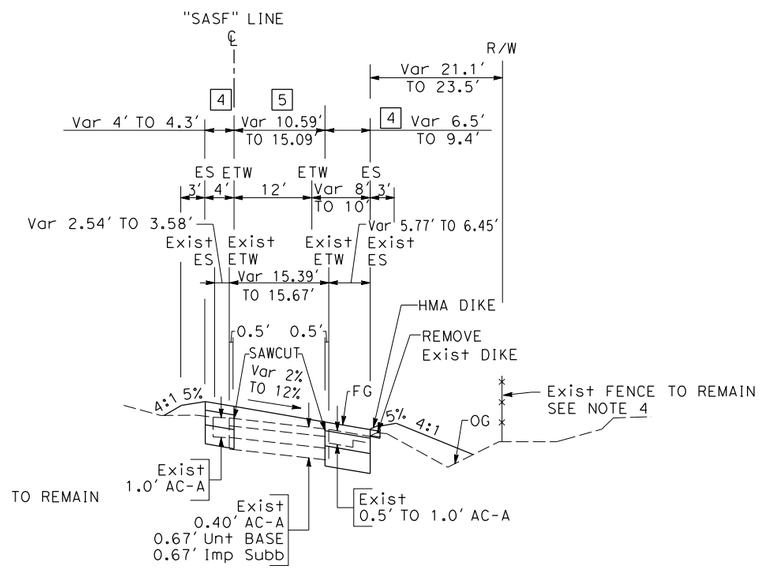
"SASF" 127+30.00 TO 127+73.76

SOUTHBOUND SAN ANTONIO ROAD DIAGONAL OFF-RAMP



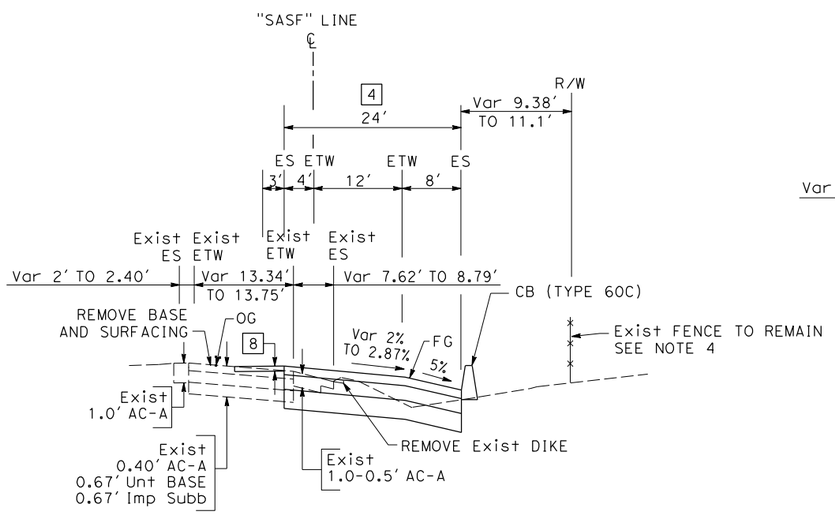
"CSN" 161+74.84 TO 162+15.41

SOUTHBOUND EAST CHARLESTON ROAD ON-RAMP



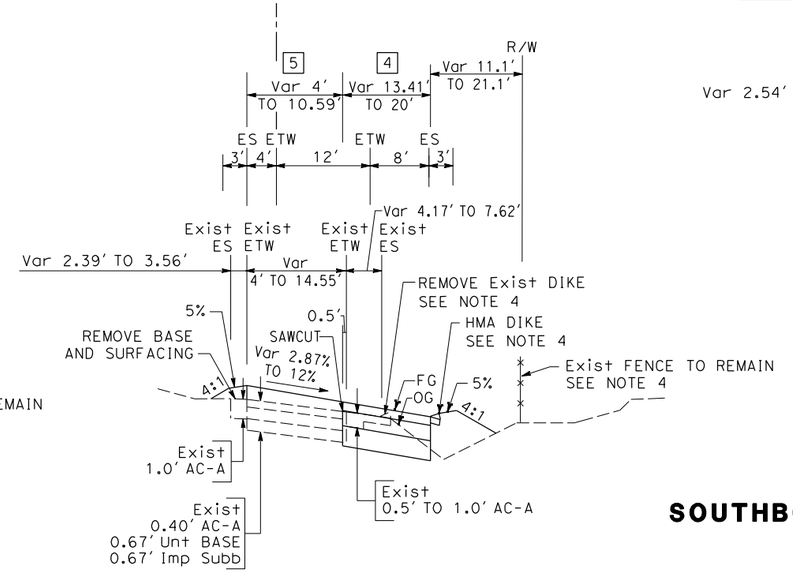
"SASF" 125+42.60 TO 127+30.00

SOUTHBOUND SAN ANTONIO ROAD DIAGONAL OFF-RAMP



"SASF" 122+73.45 TO 123+88.85

SOUTHBOUND SAN ANTONIO ROAD DIAGONAL OFF-RAMP



"SASF" 123+88.85 TO 125+42.60

SOUTHBOUND SAN ANTONIO ROAD DIAGONAL OFF-RAMP

TYPICAL CROSS SECTIONS

NO SCALE

X-22

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN
CONSULTANT FUNCTIONAL SUPERVISOR: CHRISTOPHER LILLIE
CALCULATED-DESIGNED BY: SARAH CHRISTENSEN
CHECKED BY: LAN HO
REVISED BY / DATE REVISED

LAST REVISION 09-21-10
DATE PLOTTED => 10/25/2010
TIME PLOTTED => 9:41:59 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/52.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

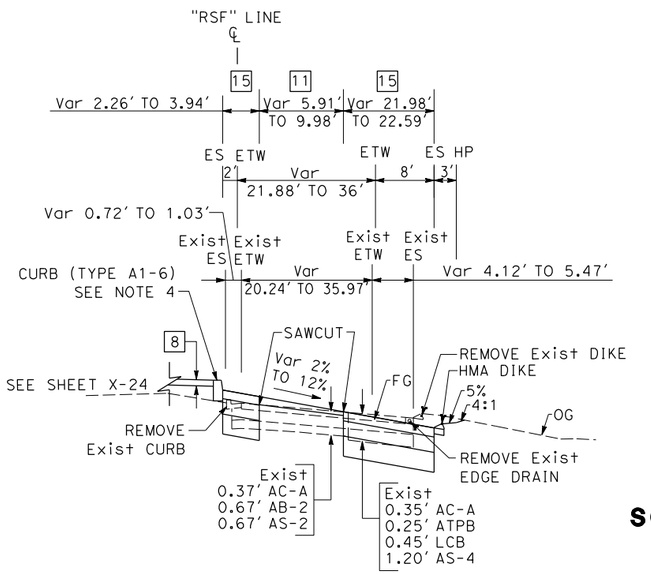
REGISTERED PROFESSIONAL ENGINEER Christopher Lillie No. C61288 Exp. 06/30/11 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 W San Fernando St
Suite 200
San Jose, CA 95113

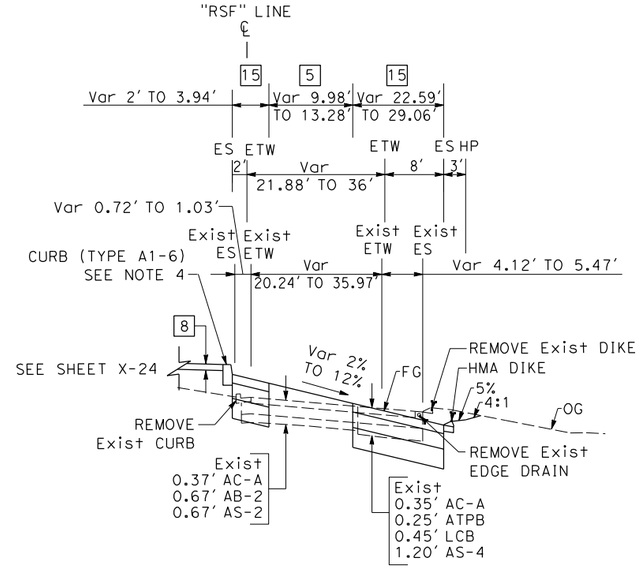
Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR NOTES AND ABBREVIATIONS SEE SHEET X-1



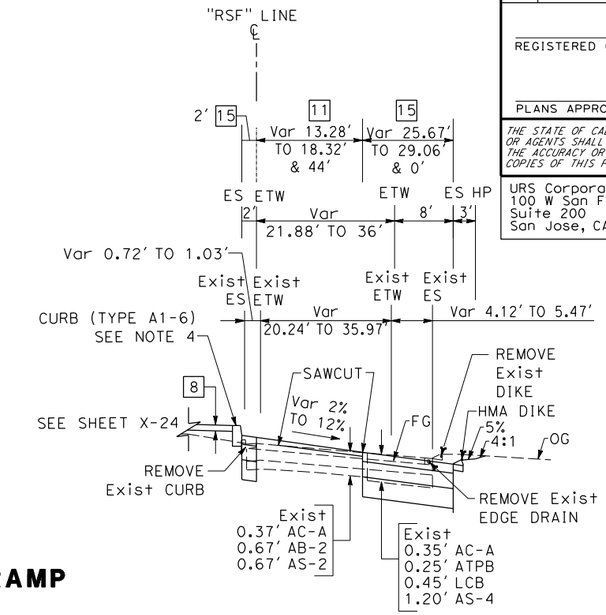
"RSF" 168+09.08 TO 168+80.00

SOUTHBOUND RENGSTORFF AVENUE OFF-RAMP



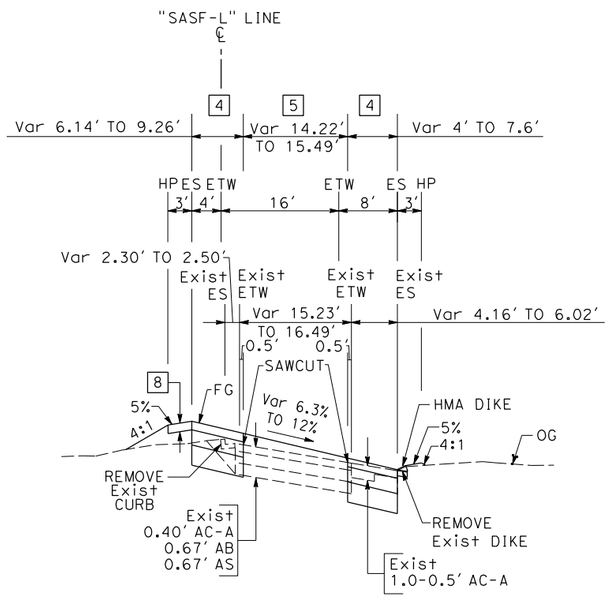
"RSF" 168+80.00 TO 169+60.00

SOUTHBOUND RENGSTORFF AVENUE OFF-RAMP



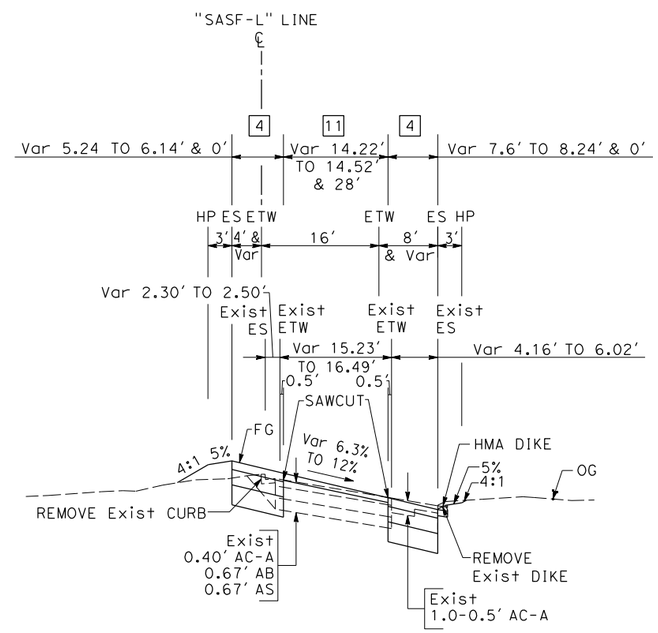
"RSF" 169+60.00 TO 170+53.04

SOUTHBOUND RENGSTORFF AVENUE OFF-RAMP



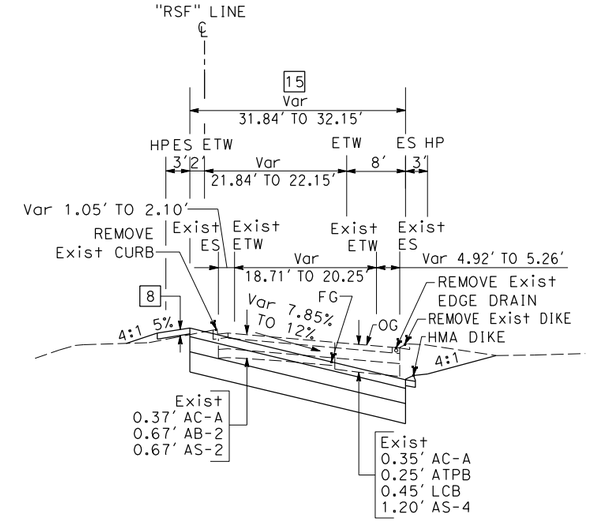
"SASF-L" 131+89.77 TO 133+00.00

SOUTHBOUND SAN ANTONIO ROAD LOOP OFF-RAMP



"SASF-L" 133+00.00 TO 133+78.00

SOUTHBOUND SAN ANTONIO ROAD LOOP OFF-RAMP



"RSF" 167+33.92 TO 168+09.08

SOUTHBOUND RENGSTORFF AVENUE OFF-RAMP

TYPICAL CROSS SECTIONS

NO SCALE

X-23

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN
CONSULTANT FUNCTIONAL SUPERVISOR: CHRISTOPHER LILLIE
CALCULATED-DESIGNED BY: SARAH CHRISTENSEN
CHECKED BY: LAN HO
REVISED BY / DATE REVISED

LAST REVISION 09-21-10
DATE PLOTTED => 10/25/2010
TIME PLOTTED => 9:42:06 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/52.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

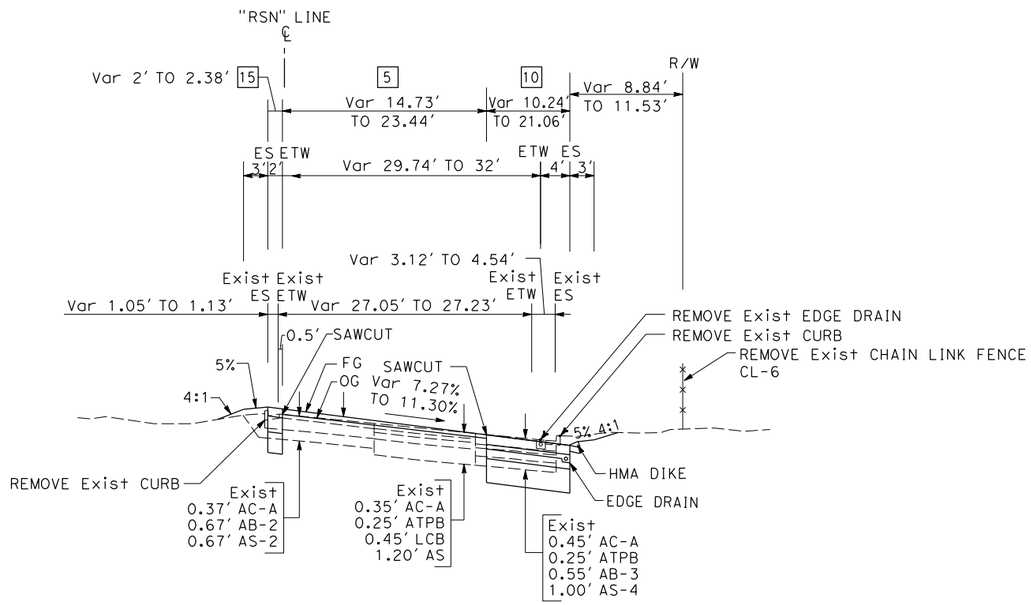
REGISTERED PROFESSIONAL ENGINEER Christopher Lillie No. C61288 Exp. 06/30/11 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

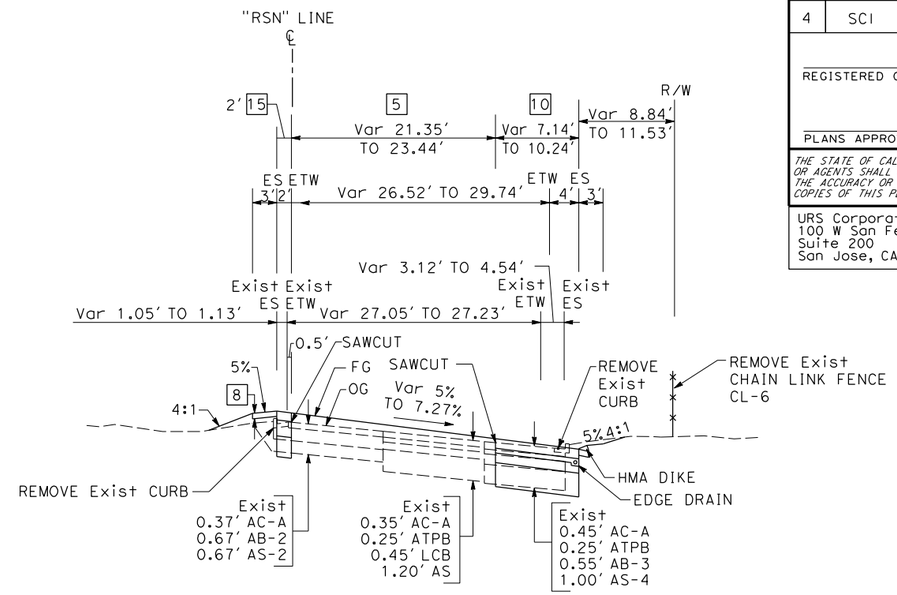
URS Corporation
100 W San Fernando St
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

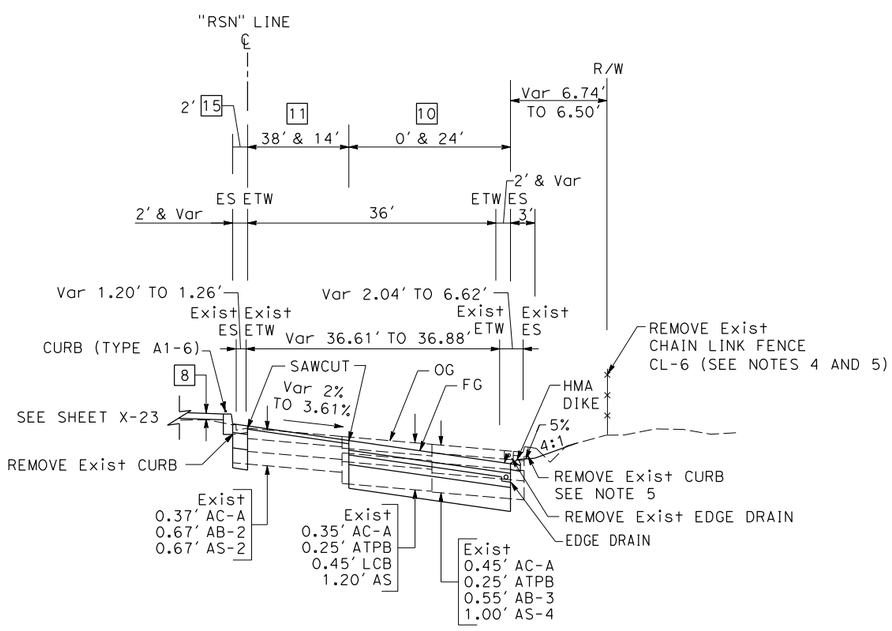
FOR NOTES AND ABBREVIATIONS SEE SHEET X-1



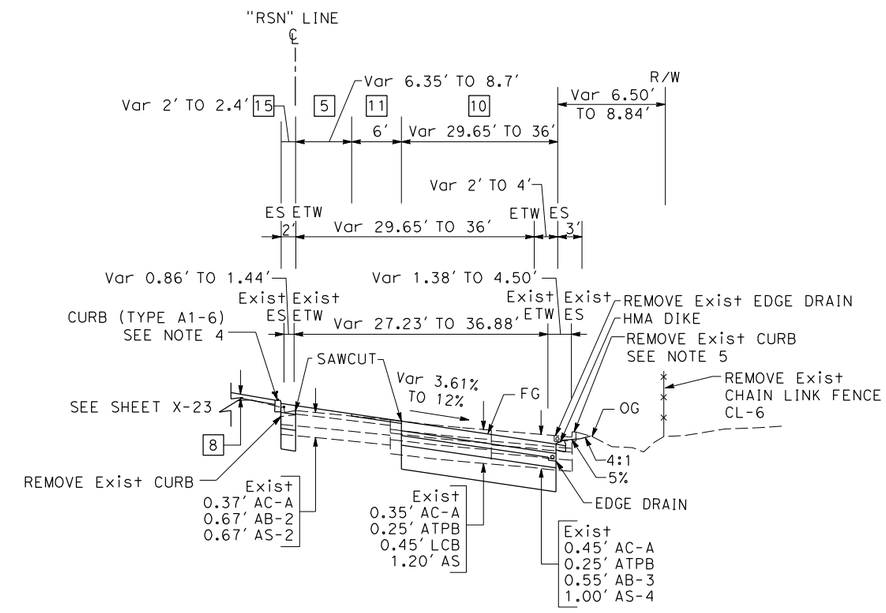
"RSN" 168+80.00 TO 169+42.27
SOUTHBOUND RENGSTORFF AVENUE ON-RAMP



"RSN" 169+42.27 TO 169+84.42
SOUTHBOUND RENGSTORFF AVENUE ON-RAMP



"RSN" 166+49.21 TO 167+66.56
SOUTHBOUND RENGSTORFF AVENUE ON-RAMP



"RSN" 167+66.56 TO 168+80.00
SOUTHBOUND RENGSTORFF AVENUE ON-RAMP

TYPICAL CROSS SECTIONS

NO SCALE

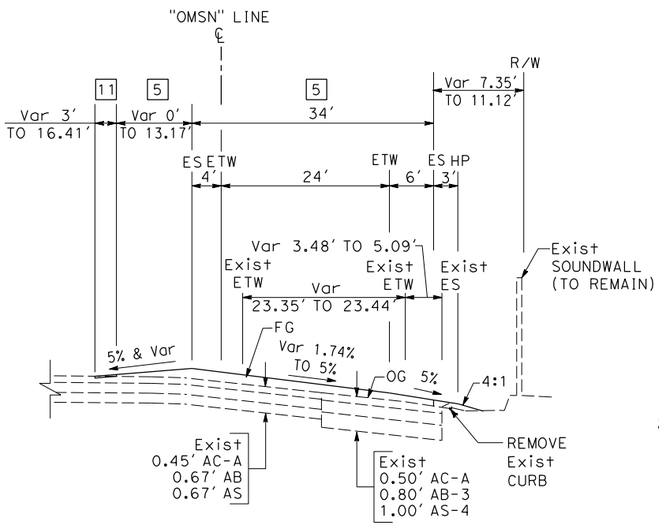
X-24

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

CONSULTANT FUNCTIONAL SUPERVISOR: CHRISTOPHER LILLIE
CALCULATED-DESIGNED BY: SARAH CHRISTENSEN
CHECKED BY: LAN HO
REVISED BY / DATE REVISED

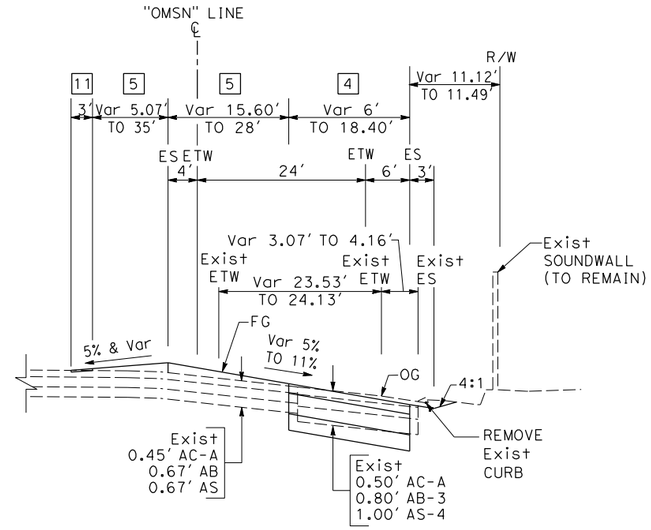
LAST REVISION 09-21-10
DATE PLOTTED => 10/25/2010
TIME PLOTTED => 9:42:14 AM

FOR NOTES AND ABBREVIATIONS SEE SHEET X-1



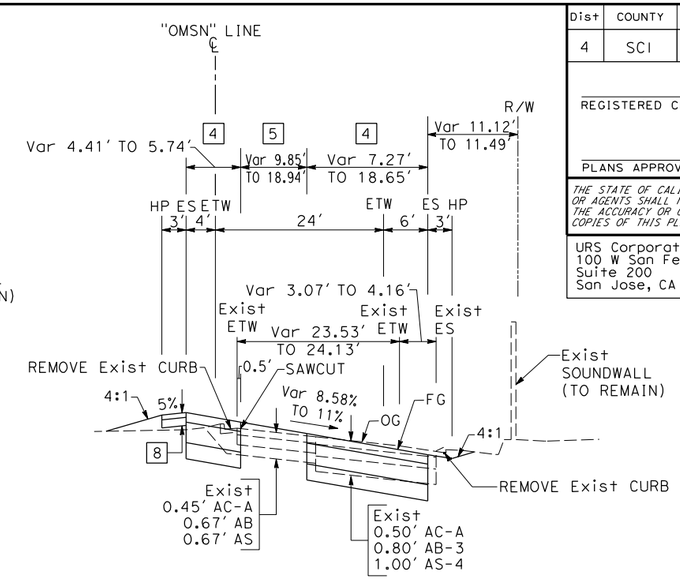
"OMSN" 198+50.00 TO 200+40.00

SOUTHBOUND OLD MIDDLEFIELD WAY ON-RAMP



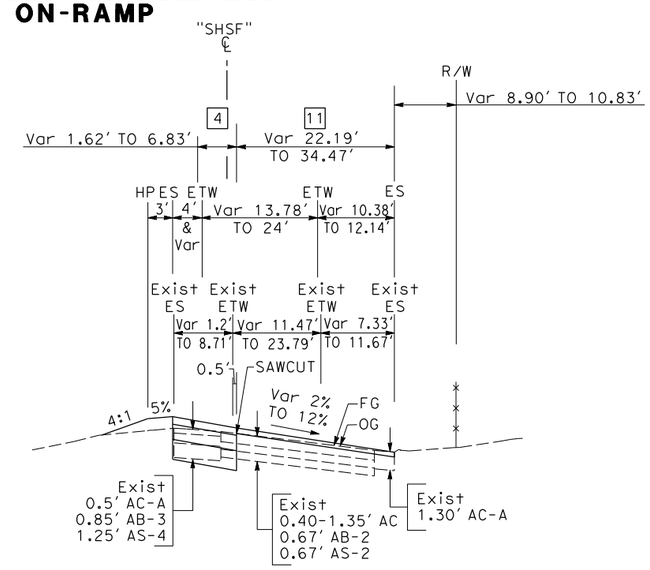
"OMSN" 200+40.00 TO 201+59.67

SOUTHBOUND OLD MIDDLEFIELD WAY ON-RAMP



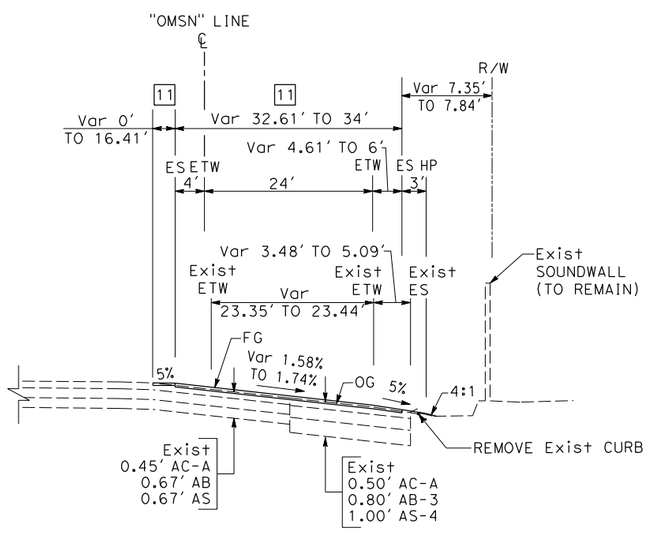
"OMSN" 201+59.67 TO 202+57.88

SOUTHBOUND OLD MIDDLEFIELD WAY ON-RAMP



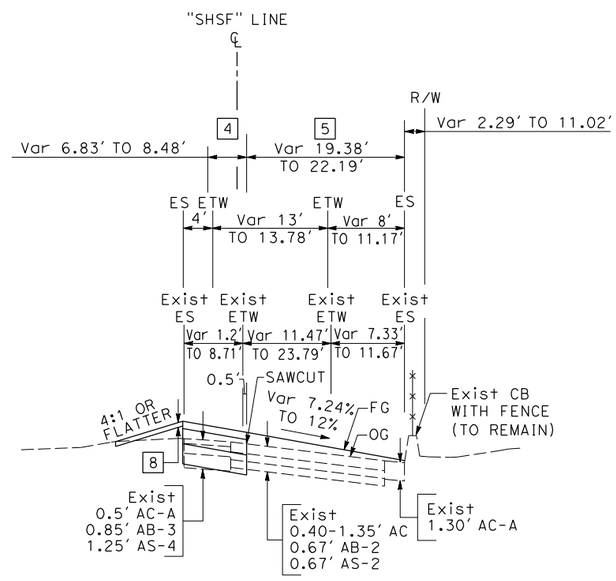
"SHSF" 215+50.00 TO 217+45.31

SOUTHBOUND SHORELINE BLVD OFF-RAMP



"OMSN" 198+00.00 TO 198+50.00

SOUTHBOUND OLD MIDDLEFIELD WAY ON-RAMP



"SHSF" 214+33.21 TO 215+50.00

SOUTHBOUND SHORELINE BLVD OFF-RAMP

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/52.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Christopher Lillie No. C61288 Exp. 06/30/11 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 W San Fernando St
Suite 200
San Jose, CA 95113

Santa Clara Valley Transportation Authority
3331 N First Street
San Jose, CA 95134

TYPICAL CROSS SECTIONS

NO SCALE

X-25

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

CONSULTANT FUNCTIONAL SUPERVISOR: CHRISTOPHER LILLIE

CALCULATED-DESIGNED BY: SARAH CHRISTENSEN
CHECKED BY: LAN HO

REVISED BY | DATE REVISED

LAST REVISION 09-21-10
DATE PLOTTED => 10/25/2010
TIME PLOTTED => 9:42:21 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/52.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

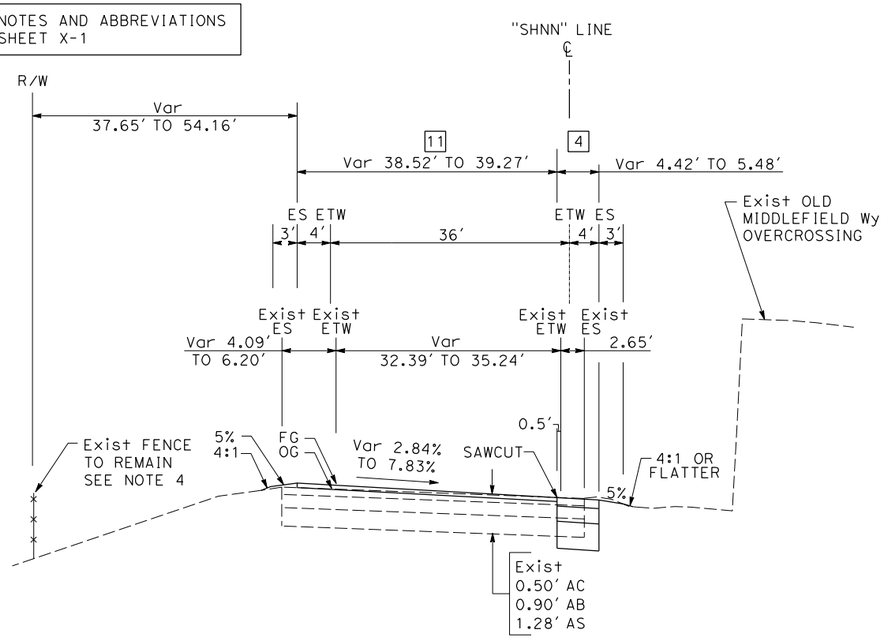
REGISTERED PROFESSIONAL ENGINEER Christopher Lillie No. C61288 Exp. 06/30/11 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 W San Fernando St
Suite 200
San Jose, CA 95113

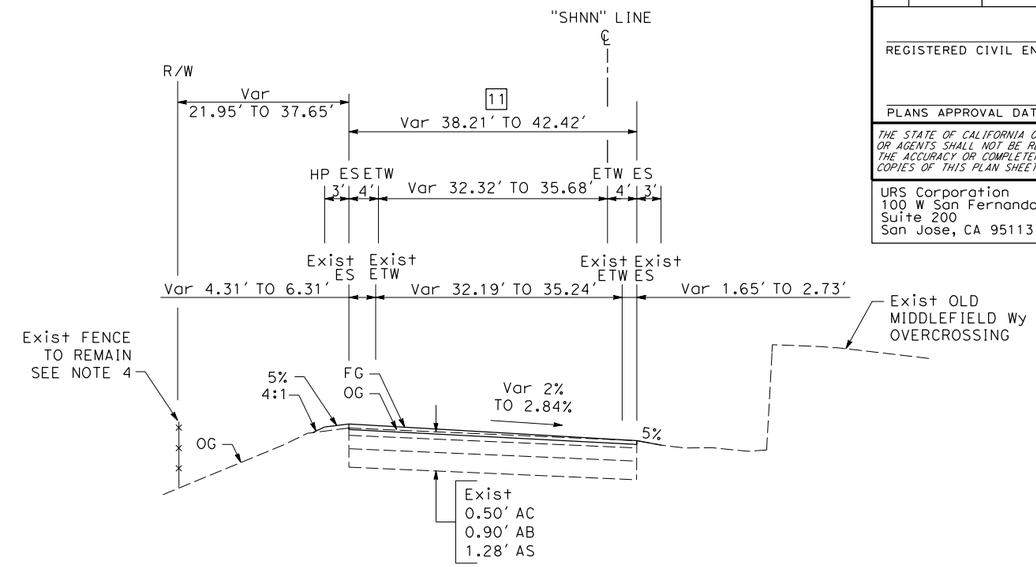
Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR NOTES AND ABBREVIATIONS SEE SHEET X-1



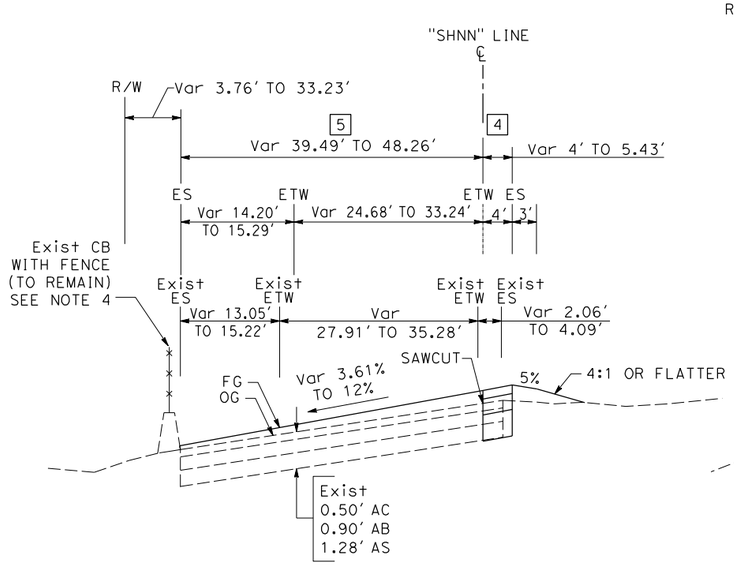
"SHNN" 203+40.00 TO 204+26.18

NORTHBOUND SHORELINE BOULEVARD ON-RAMP



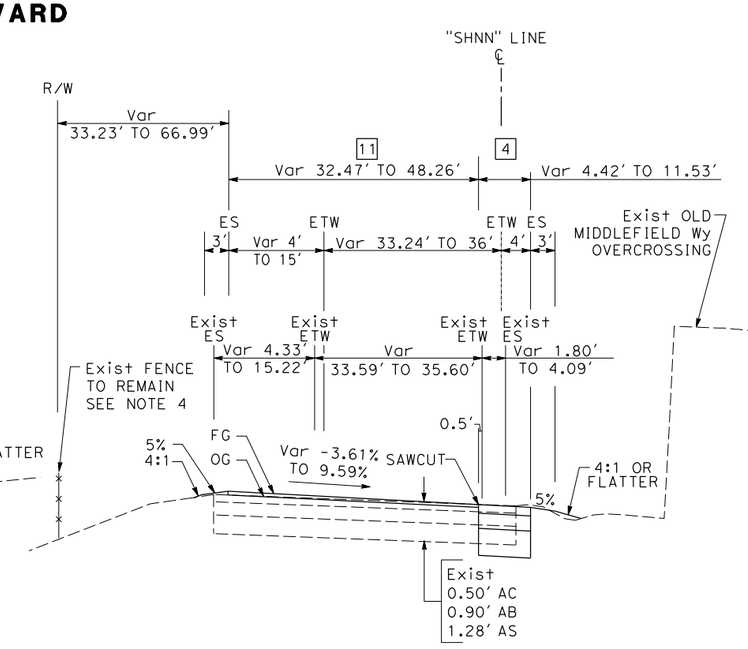
"SHNN" 204+26.18 TO 205+07.47

NORTHBOUND SHORELINE BOULEVARD ON-RAMP



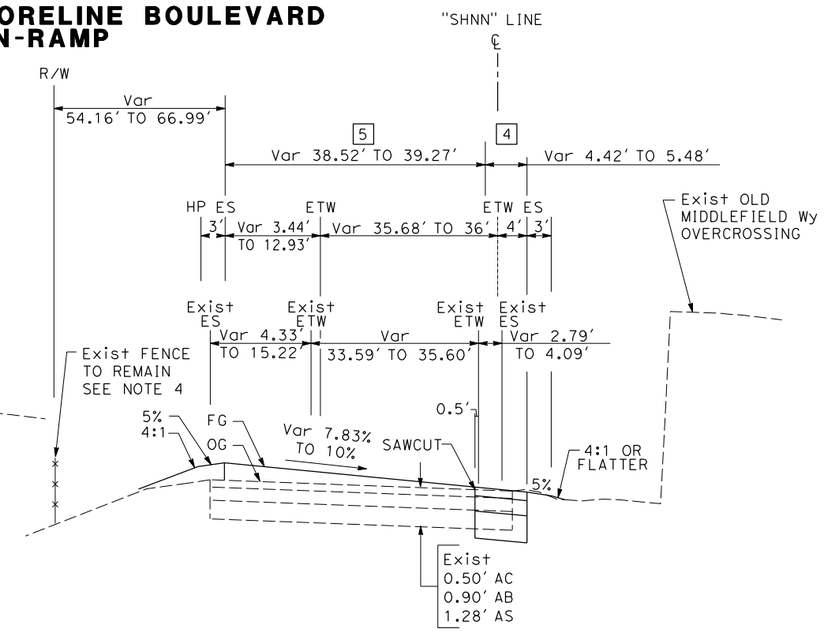
"SHNN" 198+54.58 TO 200+00.00

NORTHBOUND SHORELINE BOULEVARD ON-RAMP



"SHNN" 200+00.00 TO 202+20.00

NORTHBOUND SHORELINE BOULEVARD ON-RAMP



"SHNN" 202+20.00 TO 203+40.00

NORTHBOUND SHORELINE BOULEVARD ON-RAMP

TYPICAL CROSS SECTIONS

NO SCALE

X-26

REVISED BY	DATE REVISED
SARAH CHRISTENSEN	LAN HO
CALCULATED-DESIGNED BY	CHECKED BY
CONSULTANT FUNCTIONAL SUPERVISOR	CHRISTOPHER LILLIE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans® DESIGN

LAST REVISION 09-21-10

DATE PLOTTED => 10/25/2010
TIME PLOTTED => 9:42:28 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/52.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

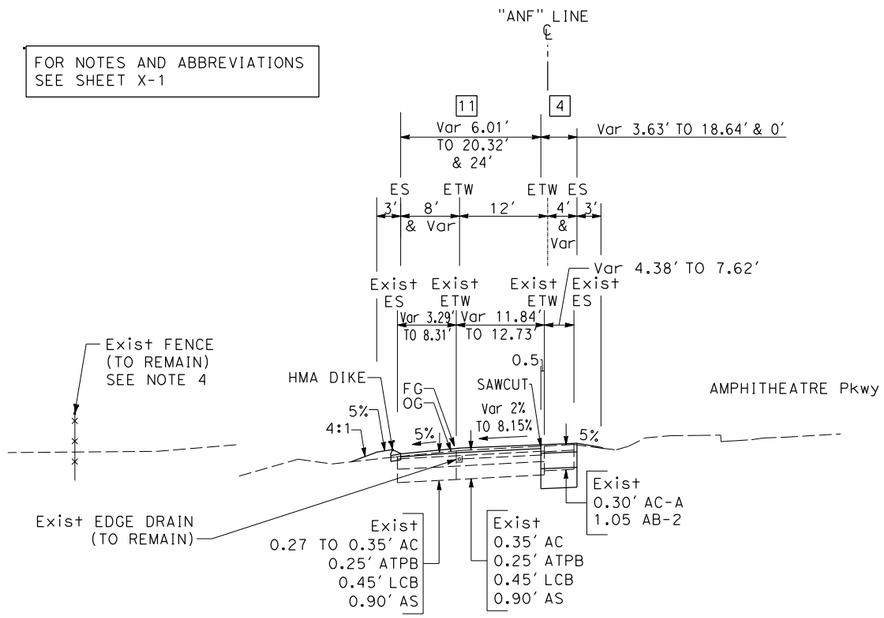
REGISTERED PROFESSIONAL ENGINEER Christopher Lillie No. C61288 Exp. 06/30/11 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 W San Fernando St
Suite 200
San Jose, CA 95113

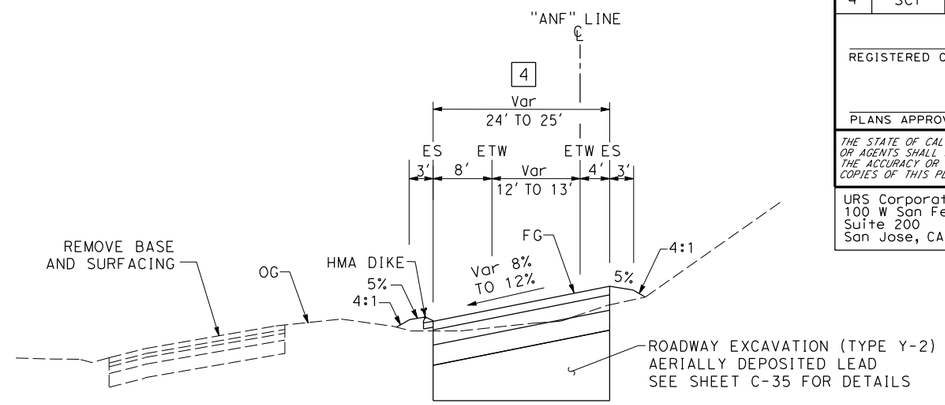
Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR NOTES AND ABBREVIATIONS SEE SHEET X-1



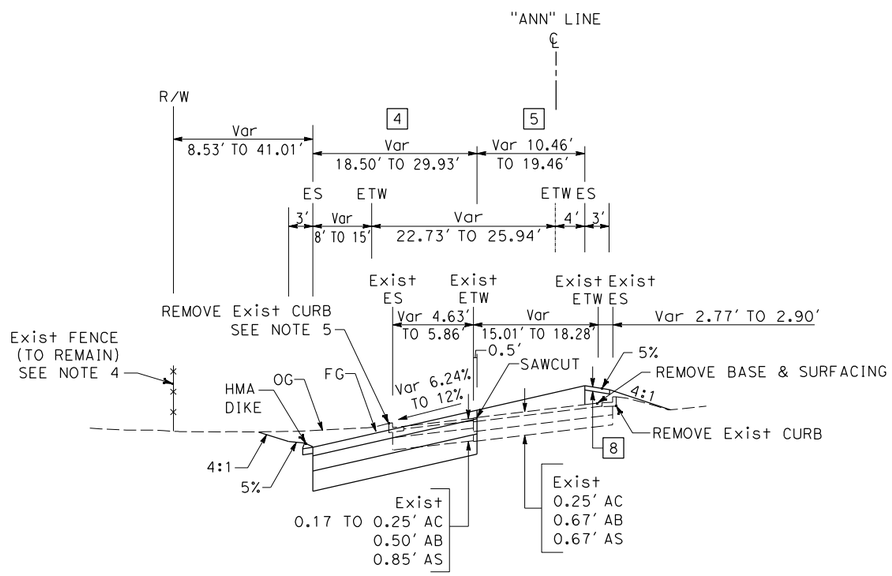
"ANF" 161+90.51 TO 163+96.24

NORTHBOUND AMPHITHEATRE PARKWAY OFF-RAMP



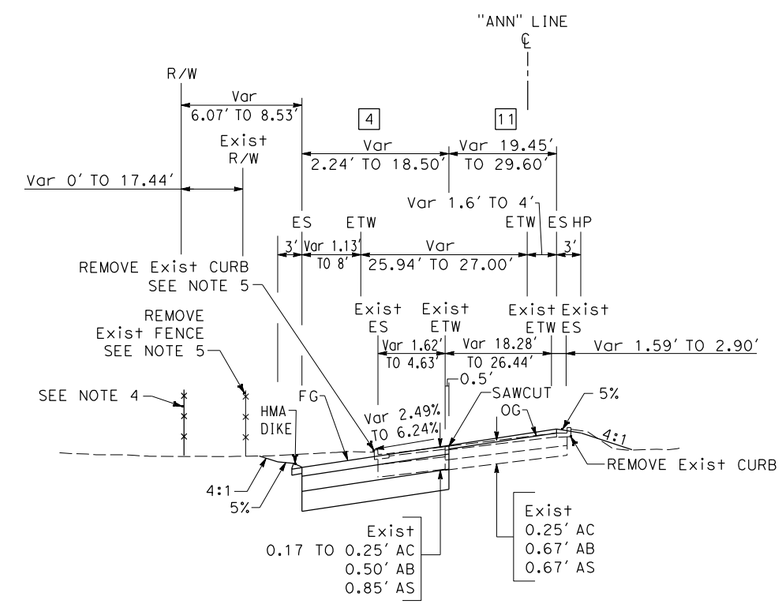
"ANF" 163+96.24 TO 167+96.76

NORTHBOUND AMPHITHEATRE PARKWAY OFF-RAMP



"ANN" 158+73.53 TO 160+40.00

NORTHBOUND AMPHITHEATRE PARKWAY ON-RAMP



"ANN" 160+40.00 TO 161+69.14

NORTHBOUND AMPHITHEATRE PARKWAY ON-RAMP

TYPICAL CROSS SECTIONS

NO SCALE

X-27

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN
CONSULTANT FUNCTIONAL SUPERVISOR: CHRISTOPHER LILLIE
CALCULATED-DESIGNED BY: SARAH CHRISTENSEN
CHECKED BY: LAN HO
REVISED BY / DATE REVISED

LAST REVISION 09-21-10
DATE PLOTTED => 10/25/2010
TIME PLOTTED => 9:42:35 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/52.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

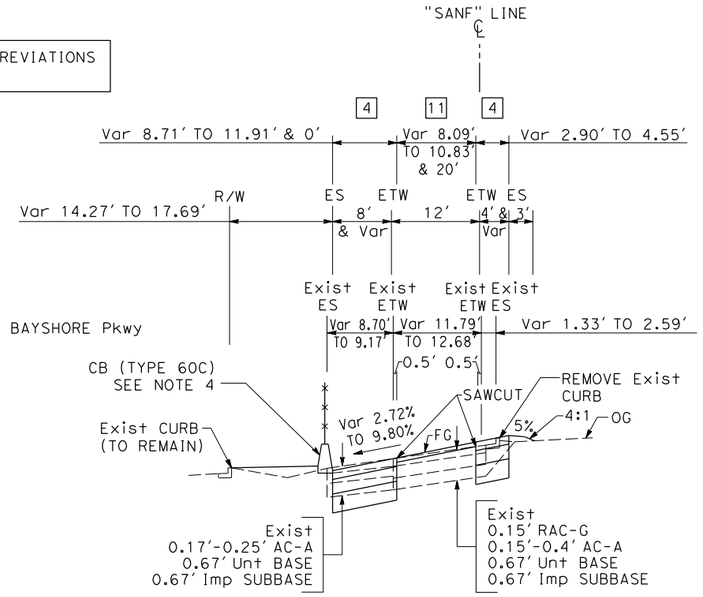
REGISTERED PROFESSIONAL ENGINEER Christopher Lillie No. C61288 Exp. 06/30/11 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 W San Fernando St
Suite 200
San Jose, CA 95113

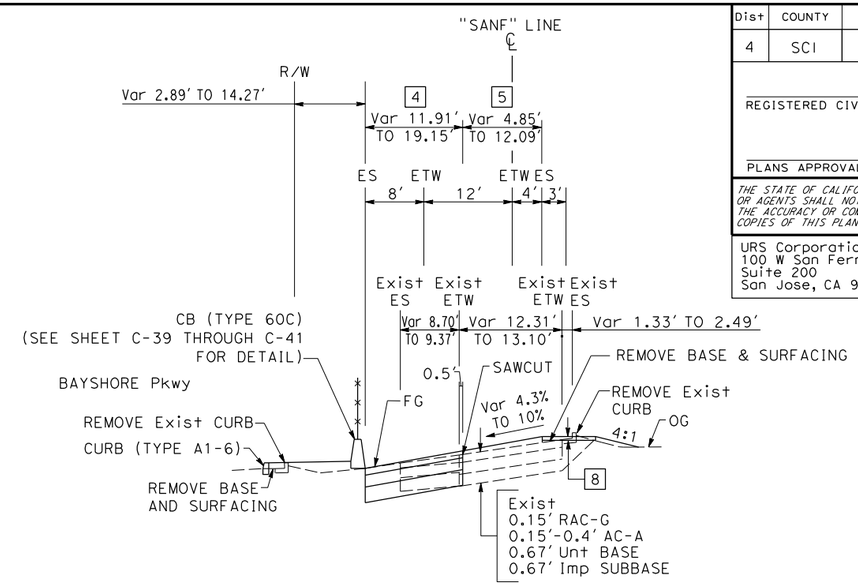
Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR NOTES AND ABBREVIATIONS SEE SHEET X-1



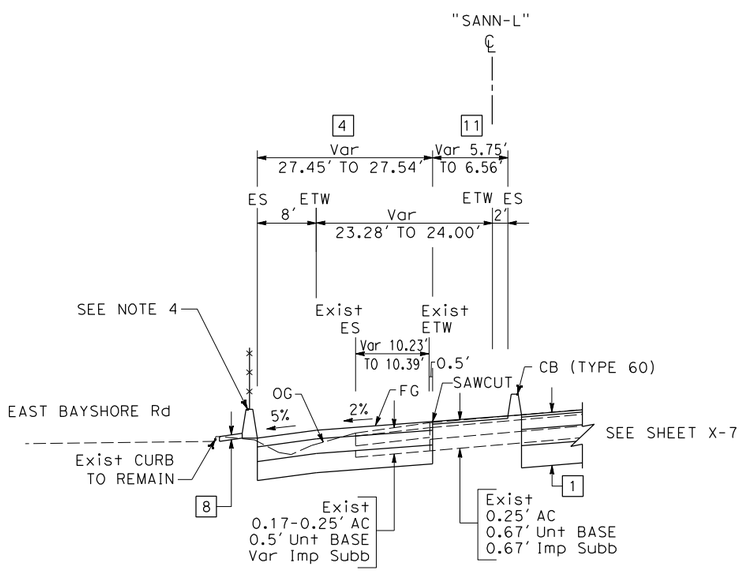
"SANF" 133+79.13 TO 135+76.90

NORTHBOUND SAN ANTONIO ROAD OFF-RAMP



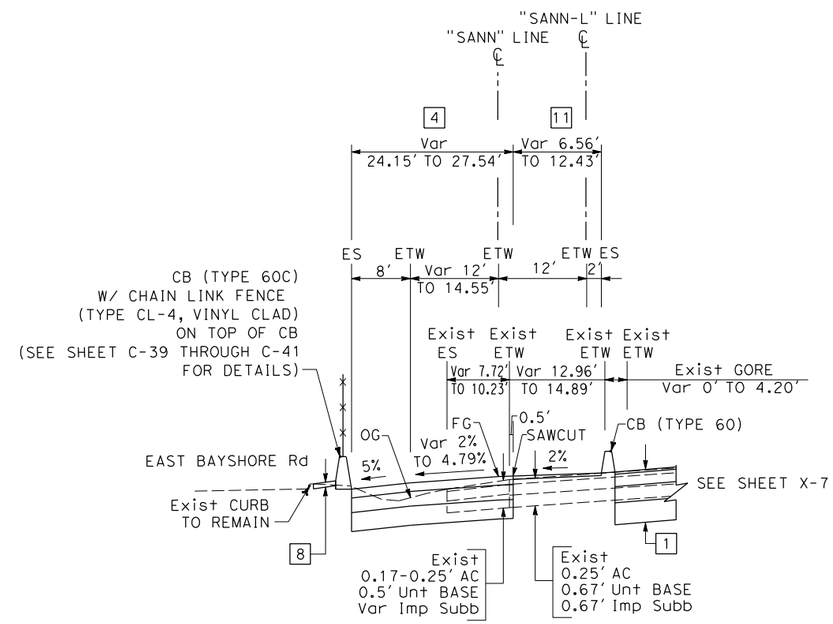
"SANF" 135+76.90 TO 137+72.69

NORTHBOUND SAN ANTONIO ROAD OFF-RAMP



"SANN-L" 121+53.65 TO 121+78.37

NORTHBOUND SAN ANTONIO ROAD LOOP ON-RAMP



"SANN-L" 121+78.37 TO 123+09.87
"SANN" 121+78.37 TO 123+09.59

NORTHBOUND SAN ANTONIO ROAD DIAGONAL AND LOOP ON-RAMPS

TYPICAL CROSS SECTIONS

NO SCALE

X-28

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN
CONSULTANT FUNCTIONAL SUPERVISOR: CHRISTOPHER LILLIE
CALCULATED-DESIGNED BY: SARAH CHRISTENSEN
CHECKED BY: LAN HO
REVISED BY / DATE REVISED

LAST REVISION 09-21-10
DATE PLOTTED => 10/25/2010
TIME PLOTTED => 9:42:42 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/52.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

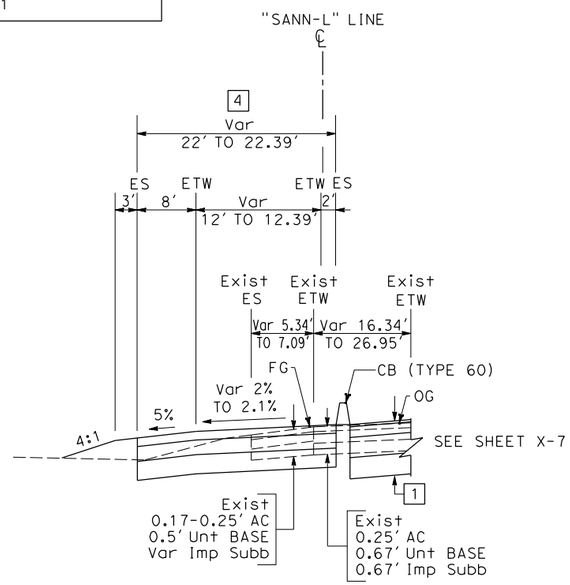
REGISTERED PROFESSIONAL ENGINEER Christopher Lillie No. C61288 Exp. 06/30/11 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 W San Fernando St
Suite 200
San Jose, CA 95113

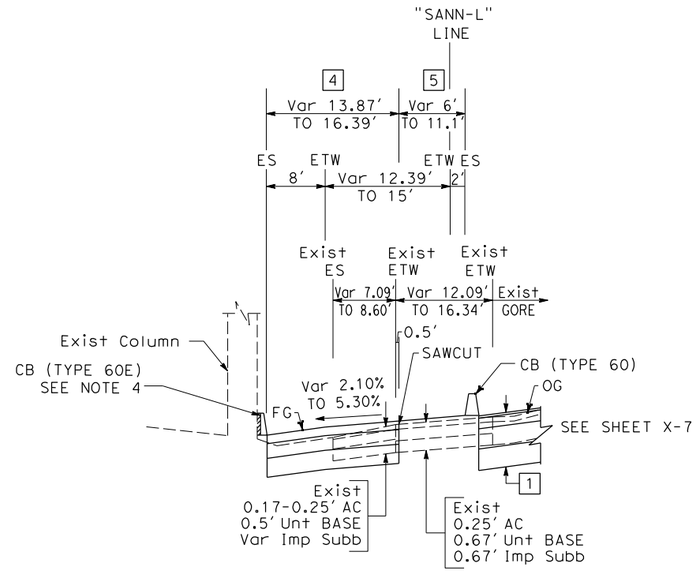
Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR NOTES AND ABBREVIATIONS SEE SHEET X-1



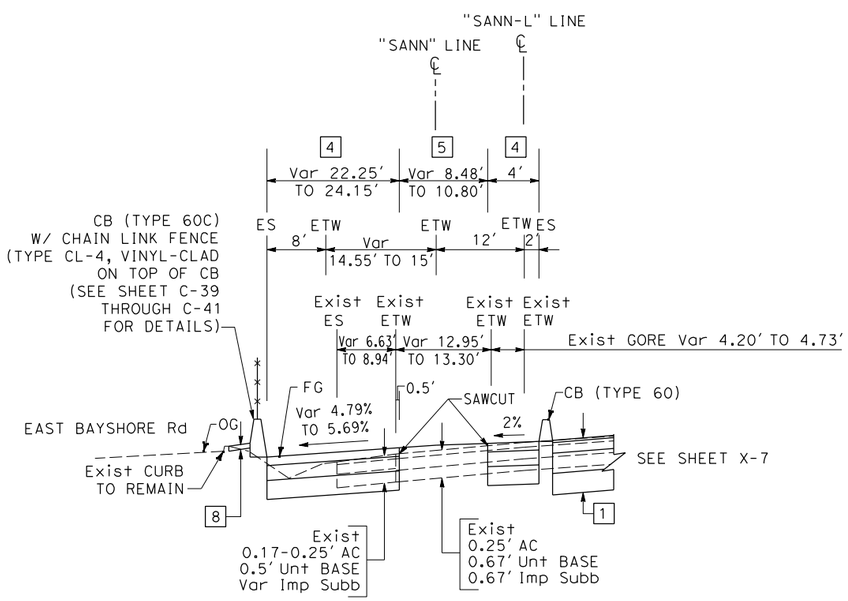
"SANN-L" 124+27.45 TO 125+94.52

NORTHBOUND SAN ANTONIO ROAD LOOP ON-RAMP



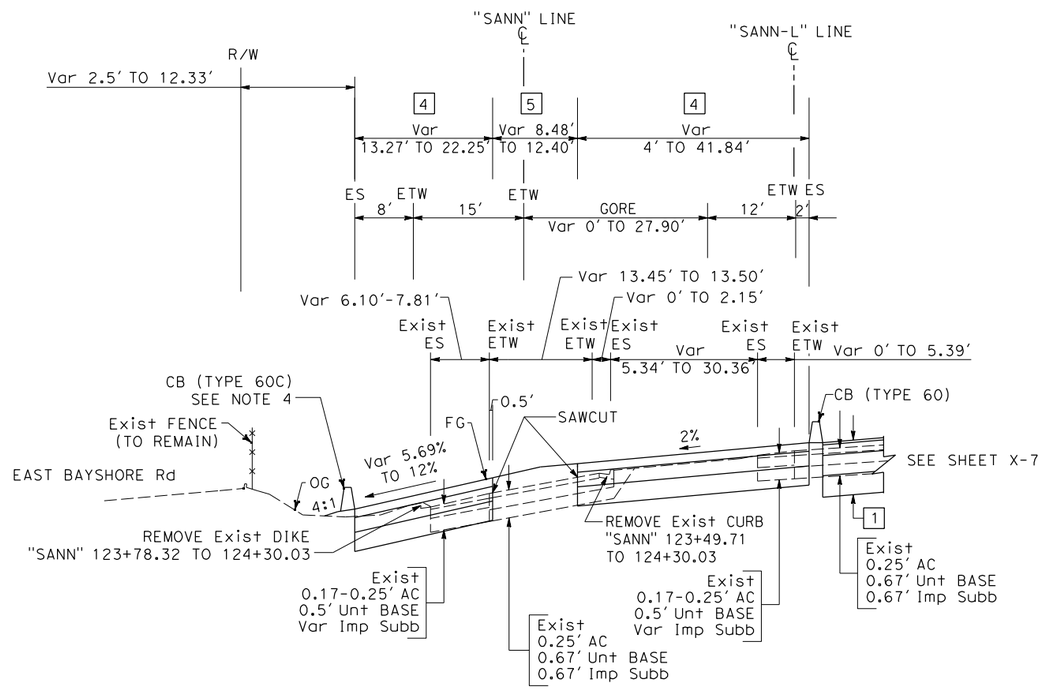
"SANN-L" 125+94.52 TO 127+32.91

NORTHBOUND SAN ANTONIO ROAD LOOP ON-RAMP



"SANN-L" 123+09.87 TO 123+32.87
"SANN" 123+09.59 TO 123+32.73

NORTHBOUND SAN ANTONIO ROAD ON-RAMPS



"SANN-L" 123+32.87 TO 124+27.45
"SANN" 123+32.73 TO 124+20.84

NORTHBOUND SAN ANTONIO ROAD ON-RAMPS

TYPICAL CROSS SECTIONS

NO SCALE

X-29

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN
CONSULTANT FUNCTIONAL SUPERVISOR: CHRISTOPHER LILLIE
CALCULATED-DESIGNED BY: SARAH CHRISTENSEN
CHECKED BY: LAN HO
REVISED BY / DATE REVISED

LAST REVISION 09-21-10
DATE PLOTTED => 10/25/2010
TIME PLOTTED => 9:42:48 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/52.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

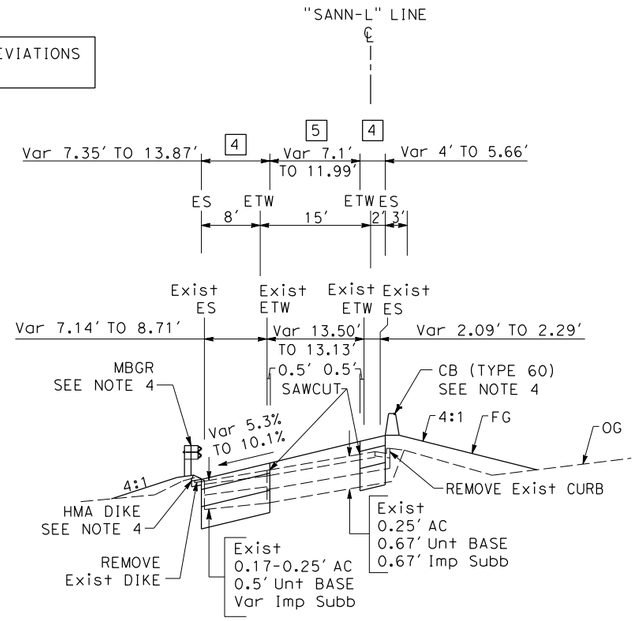
REGISTERED PROFESSIONAL ENGINEER Christopher Lillie No. C61288 Exp. 06/30/11 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 W San Fernando St
Suite 200
San Jose, CA 95113

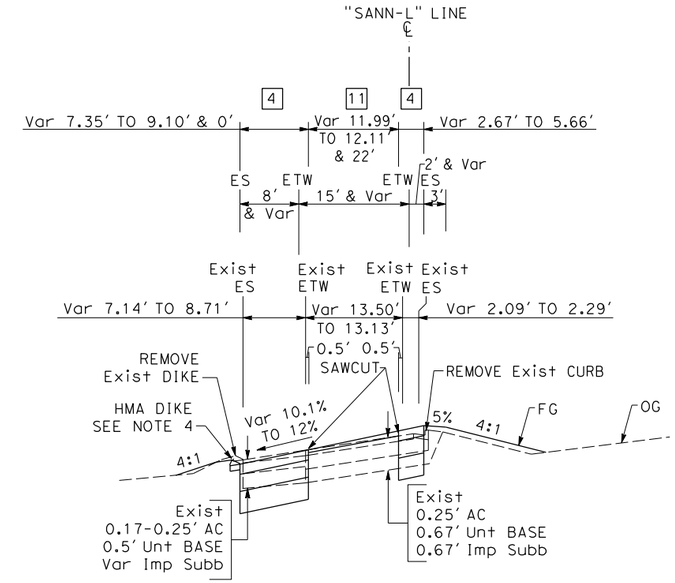
Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR NOTES AND ABBREVIATIONS SEE SHEET X-1



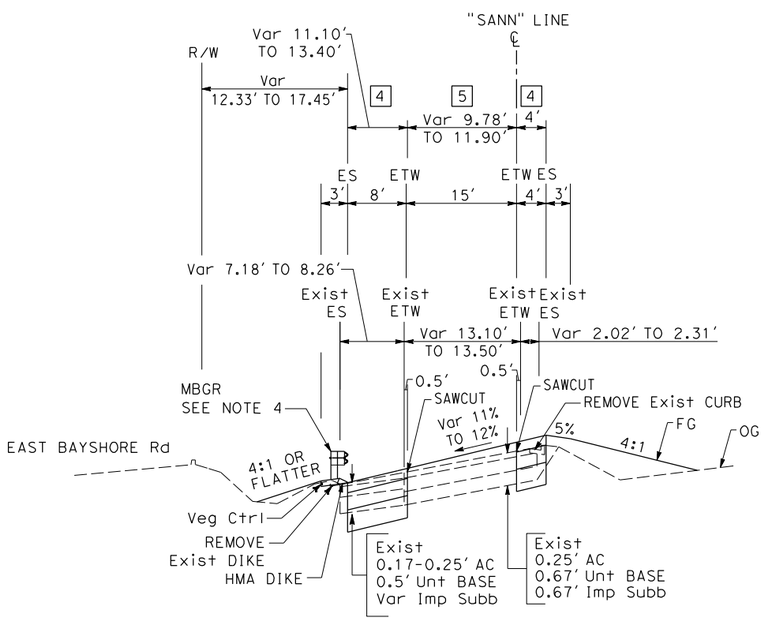
"SANN-L" 127+32.91 TO 129+00.00

NORTHBOUND SAN ANTONIO ROAD LOOP ON-RAMP



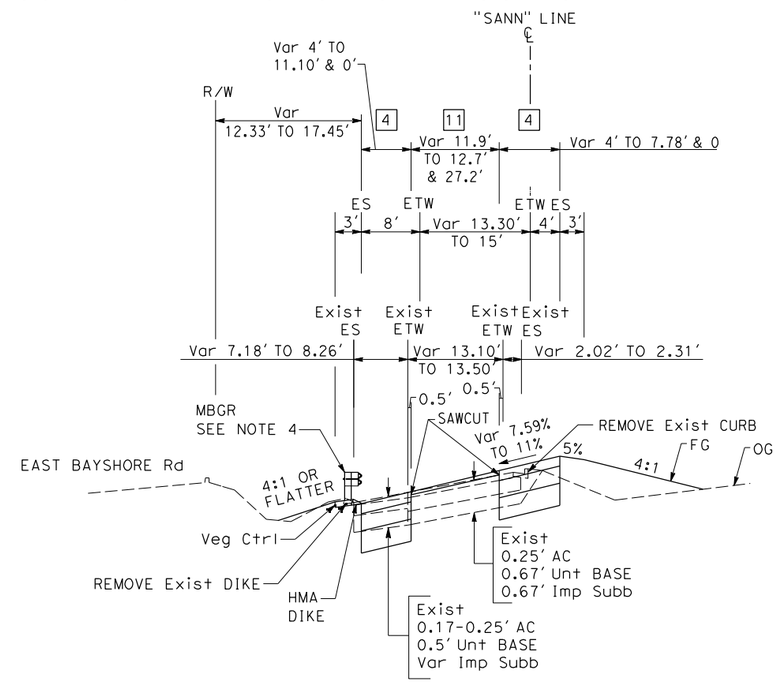
"SANN-L" 129+00.00 TO 129+74.14

NORTHBOUND SAN ANTONIO ROAD LOOP ON-RAMP



"SANN" 124+20.84 TO 124+60.00

NORTHBOUND SAN ANTONIO ROAD DIAGONAL ON-RAMP



"SANN" 124+60.00 TO 126+85.47

NORTHBOUND SAN ANTONIO ROAD DIAGONAL ON-RAMP

TYPICAL CROSS SECTIONS

NO SCALE

X-30

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

CONSULTANT FUNCTIONAL SUPERVISOR: CHRISTOPHER LILLIE
CALCULATED-DESIGNED BY: SARAH CHRISTENSEN
CHECKED BY: LAN HO
REVISED BY / DATE REVISED

LAST REVISION 09-21-10
DATE PLOTTED => 10/25/2010
TIME PLOTTED => 9:42:55 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/52.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

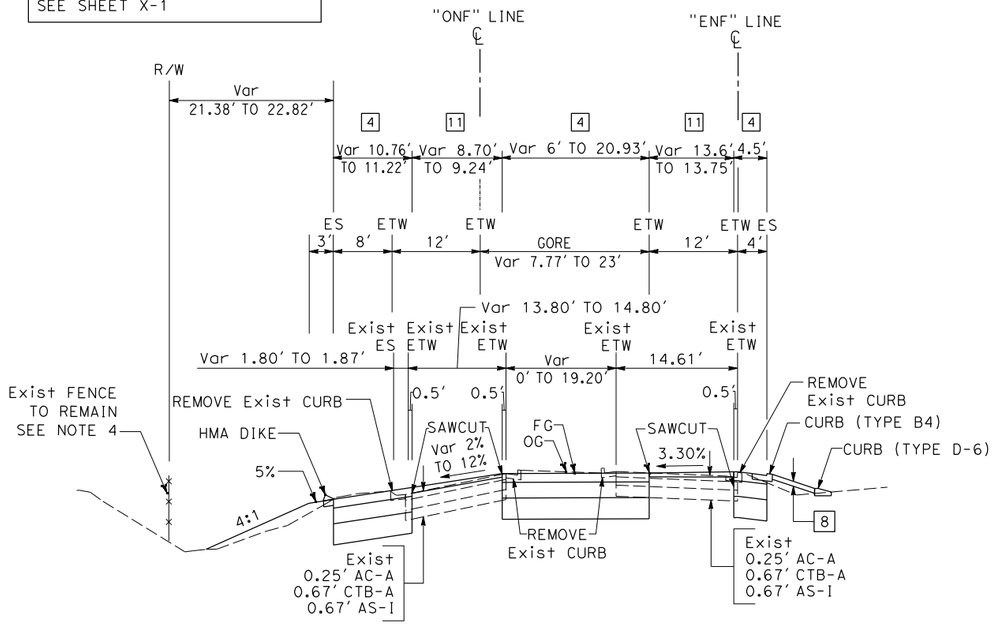
REGISTERED PROFESSIONAL ENGINEER Christopher Lillie No. C61288 Exp. 06/30/11 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 W San Fernando St
Suite 200
San Jose, CA 95113

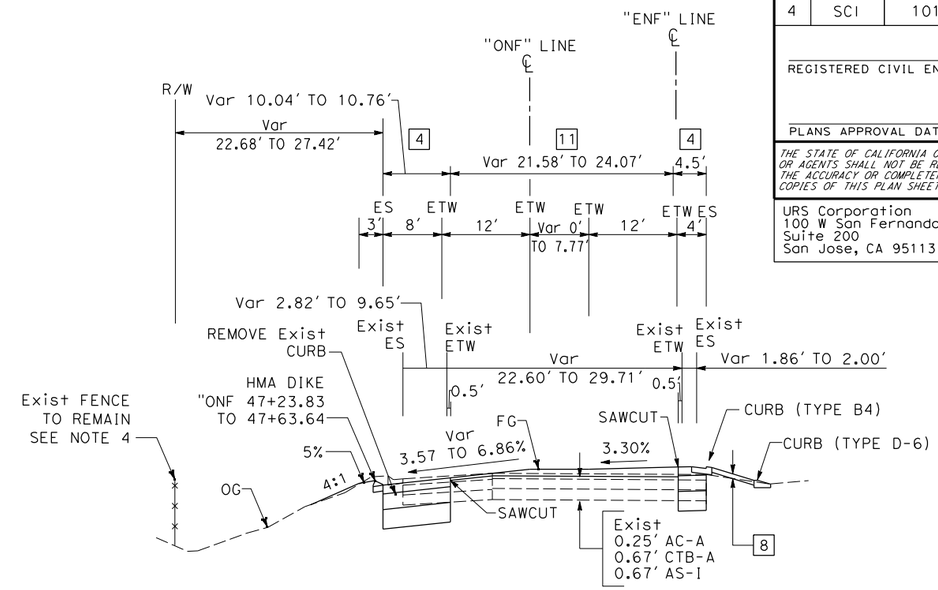
Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR NOTES AND ABBREVIATIONS SEE SHEET X-1



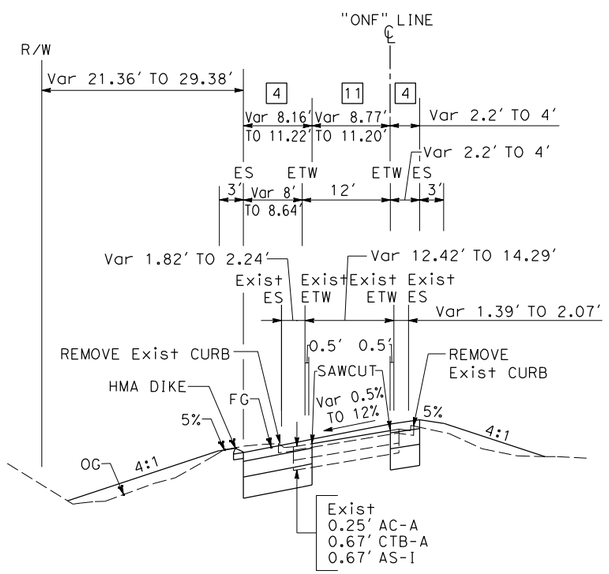
"ENF" 46+16.45 TO 46+68.49
"ONF" 46+15.16 TO 46+67.86

NORTHBOUND OREGON EXPRESSWAY AND EMBARCADERO ROAD OFF-RAMP



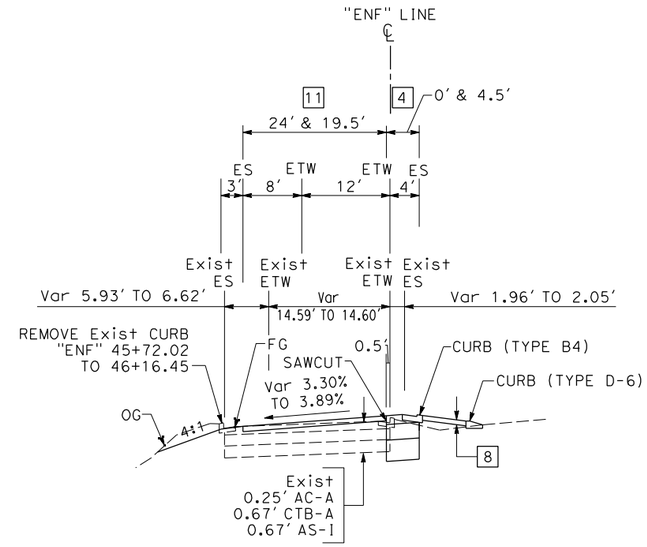
"ENF" 46+68.49 TO 47+23.83
"ONF" 46+67.86 TO 47+23.83

NORTHBOUND OREGON EXPRESSWAY AND EMBARCADERO ROAD OFF-RAMP



"ONF" 43+72.49 TO 46+15.16

NORTHBOUND OREGON EXPRESSWAY OFF-RAMP



"ENF" 45+07.71 TO 46+16.44

NORTHBOUND EMBARCADERO ROAD OFF-RAMP

TYPICAL CROSS SECTIONS

NO SCALE

X-31

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

CONSULTANT FUNCTIONAL SUPERVISOR: CHRISTOPHER LILLIE
CALCULATED-DESIGNED BY: SARAH CHRISTENSEN
CHECKED BY: LAN HO
REVISED BY / DATE REVISED

LAST REVISION 09-21-10
DATE PLOTTED => 10/25/2010
TIME PLOTTED => 9:43:02 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/52.0		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

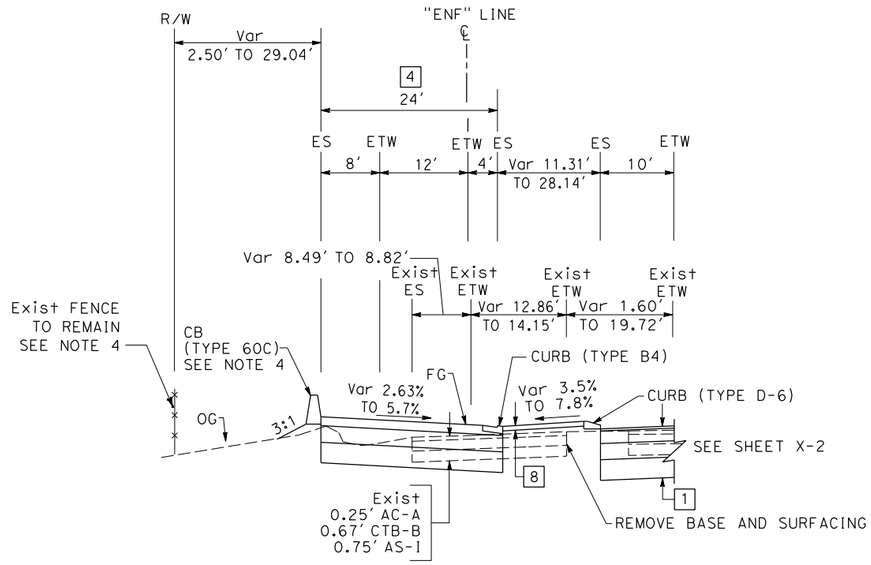
REGISTERED PROFESSIONAL ENGINEER Christopher Lillie No. C61288 Exp. 06/30/11 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 W San Fernando St
Suite 200
San Jose, CA 95113

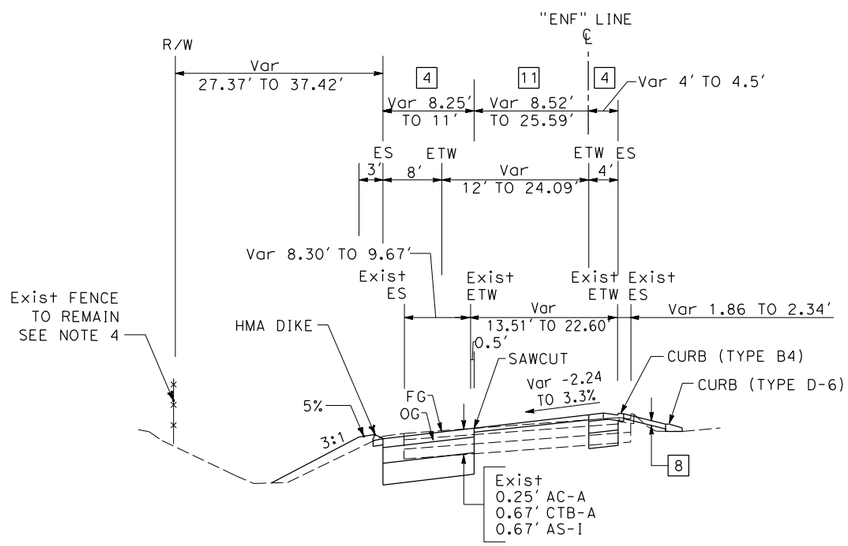
Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR NOTES AND ABBREVIATIONS SEE SHEET X-1



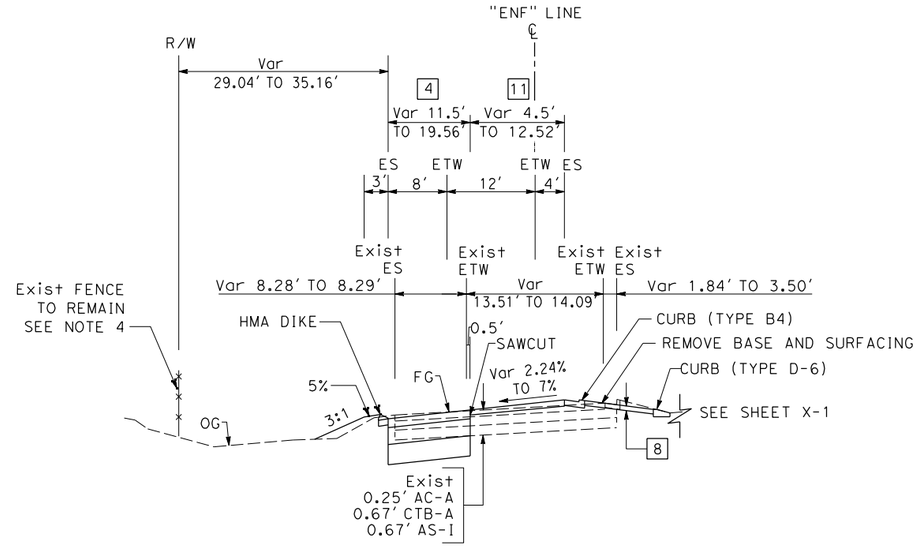
"ENF" 51+60.00 TO 52+62.98

NORTHBOUND EMBARCADERO ROAD OFF-RAMP



"ENF" 47+23.83 TO 49+37.59

NORTHBOUND EMBARCADERO ROAD OFF-RAMP



"ENF" 49+37.59 TO 51+60.00

NORTHBOUND EMBARCADERO ROAD OFF-RAMP

TYPICAL CROSS SECTIONS

NO SCALE

X-32

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans® DESIGN

CONSULTANT FUNCTIONAL SUPERVISOR: CHRISTOPHER LILLIE

CALCULATED-DESIGNED BY: SARAH CHRISTENSEN

CHECKED BY: LAN HO

REVISED BY

DATE REVISED

LAST REVISION 09-21-10

DATE PLOTTED => 10/25/2010
TIME PLOTTED => 9:43:09 AM

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-25-09	3-25-09	1989054.1 ft / 6090928.6 ft NAD83	A-09-101
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 297.68' Rt Sta ~ 39+82.089	10 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96")			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		GRAVELLY lean CLAY with SAND (CL); stiff; brown; moist.												
	1				1	3 4 4	8	45		14	108				
8.00	2														bag sample 2 - 5 feet
	3														
6.00	4				2	5 7 8	15	30							
	5		At 5 ft, becomes dark brown.												
4.00	6														
	7														
2.00	8														
	9		Fat CLAY (CH); medium stiff; dark gray; moist.		3	4 5 6	11	100				PP = 1.75			
0.00	10		Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11														
-2.00	12														
	13														
-4.00	14														
	15														
-6.00	16														
	17														
-8.00	18														
	19														
-10.00	20														
	21														
-12.00	22														
	23														
-14.00	24														
	25														

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-101
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	M. Thummaluru		3-30-09	1 of 1

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-25-09	3-25-09	1989008.6 ft / 6091210.2 ft NAD83	A-09-102
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 107.185' Rt Sta ~ 41+94.412	8 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96")			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	SANDY lean CLAY with GRAVEL (CL); medium stiff; dark brown; moist.												
	1			1	7 6 8	14	50							
6.00	2	At 2 ft, grades to Lean CLAY; trace gravel.												bag sample 2 - 5 feet
	3													
4.00	4			2	5 5 7	12	70		33	86	UC = 0.48			
	5	At 4.5 ft, observed light brown mottling.												
2.00	6													
	7													
0.00	8	Fat CLAY (CH); medium stiff; dark gray; moist.												
	9			3	3 4 5	9	35		36	84	UC = 0.41			
-2.00	10	Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11													
-4.00	12													
	13													
-6.00	14													
	15													
-8.00	16													
	17													
-10.00	18													
	19													
-12.00	20													
	21													
-14.00	22													
	23													
-16.00	24													
	25													

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-102
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY: M. Thummaluru		DATE: 3-30-09	SHEET: 1 of 1

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	4-14-09	4-14-09	1988990.3 ft / 6091643.6 ft NAD83	A-09-103
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 218.416' Lt Sta ~ 44+80.948	9 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B61	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96")			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			9 ft	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		7 inches Asphalt Concrete over 6 inches Aggregate Base underlain by 12 inches sub base.												
	1														
6.50	2		Lean CLAY with SAND (CL); stiff; grayish brown; moist.		1	5 6 6	12	60		10	123	UC = 0.68			Bag Sample 2 - 5 feet
	3														
4.50	4														
	5				2	4 5 5	10	75							
2.50	6		At EL. 3.0 ft, grades to (Lean CLAY) (CL); medium stiff; gray; wet; some sand lenses.												
	7														
0.50	8														
	9				3	2 3 4	7	50							
-1.50	10		Bottom of Borehole at 10.0 ft.												
	11														
-3.50	12														
	13														
-5.50	14														
	15														
-7.50	16														
	17														
-9.50	18														
	19														
-11.50	20														
	21														
-13.50	22														
	23														
-15.50	24														
	25														

URS BORING RECORD 200802 28649951-101AUX_SCL.GPJ SNJ_CT.GLB 1/15/10

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-103
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET	
	M. Thummaluru	4-14-09	1 of 1	

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	4-14-09	4-14-09	1988745.2 ft / 6091672.6 ft NAD83	A-09-104
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 92.618' Lt Sta ~ 46+82.686	10 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B61	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96")			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	8 inches Asphalt Concrete over 34 inches Aggregate Base.												
	1													R
8.00	2													Bag Sample 2 - 5 feet
	3													
6.00	4	Fat CLAY (CH); stiff; black; moist.		1	7 10 11	21	65							
	5	SANDY lean CLAY with GRAVEL (CL); very stiff; gray; moist.		2	3 2 3	5	40							
4.00	6	At 6 ft, grades to Lean Clay (CL); dark gray.												
	7													
2.00	8													
	9	At 8.5 ft, becomes soft.		3	1 1 2	3	45		34	85	UC = 0.17			
0.00	10	Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11													
-2.00	12													
	13													
-4.00	14													
	15													
-6.00	16													
	17													
-8.00	18													
	19													
-10.00	20													
	21													
-12.00	22													
	23													
-14.00	24													
	25													

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-104
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	M. Thummaluru		4-14-09	1 of 1

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-25-09	3-25-09	1988606.1 ft / 6091584.8 ft NAD83	A-09-105
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 68.762' Rt Sta ~ 47+42.910	8 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96")			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		Lean CLAY with GRAVEL (CL); stiff; dark brown; moist.												
	1				1	6 8 9	17	50							
6.00	2														bag sample 2 - 5 feet
	3														
4.00	4				2	6 8 8	16	30							
	5														
2.00	6														
	7														
0.00	8		Fat CLAY (CH); stiff; black mottled with light gray; moist.												
	9				3	6 8 7	15	50							
-2.00	10		Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11														
-4.00	12														
	13														
-6.00	14														
	15														
-8.00	16														
	17														
-10.00	18														
	19														
-12.00	20														
	21														
-14.00	22														
	23														
-16.00	24														
	25														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-105
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY: M. Thummaluru		DATE: 3-30-09	SHEET: 1 of 1

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-25-09	3-25-09	1988206.1 ft / 6091919.7 ft NAD83	A-09-107
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 59.528' Rt Sta ~ 52+64.518	8 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96")			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		Fat CLAY (CH); stiff; dark gray; moist.												
	1				1	4 6 8	14	80		38	80	UC = 0.63			PI, R
6.00	2														bag sample 2 - 5 feet
	3														
4.00	4				2	6 8 11	19	65							
	5														
2.00	6														
	7														
0.00	8														
	9		At 9 ft, with dark gray mottled with light gray.		3	4 7 8	15	75		38	81	UC = 0.75			
-2.00	10		Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11														
-4.00	12														
	13														
-6.00	14														
	15														
-8.00	16														
	17														
-10.00	18														
	19														
-12.00	20														
	21														
-14.00	22														
	23														
-16.00	24														
	25														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-107
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY: M. Thummaluru		DATE: 3-30-09	SHEET: 1 of 1

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-25-09	3-25-09	1987893.9 ft / 6092180.2 ft NAD83	A-09-108
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 53.054' Rt Sta ~ 56+71.088	8 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96")			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry / N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY lean CLAY with GRAVEL (CL); stiff; light brown; moist.												
	1				1	5 7 10	17	75							
6.00	2														bag sample 2 - 5 feet
	3														
4.00	4				2	8 6 6	12	25							disturbed sample
	5														
2.00	6														
	7														
0.00	8		Fat CLAY (CH); stiff; dark gray mottled with light gray; moist.												
	9				3	5 7 8	15	50							
-2.00	10		Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11														
-4.00	12														
	13														
-6.00	14														
	15														
-8.00	16														
	17														
-10.00	18														
	19														
-12.00	20														
	21														
-14.00	22														
	23														
-16.00	24														
	25														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-108
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	M. Thummaluru		3-30-09	1 of 1

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-24-09	3-24-09	1987786.4 ft / 6092526.7 ft NAD83	A-09-109
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 71.225' Lt Sta ~ 59+09.586	7 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96")			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		11 inches Asphalt Concrete.												
	1		CLAYEY GRAVEL with SAND (GC); medium dense; reddish brown; moist.		1	14 13 12	25	80		1	127				
5.00	2														bag sample 2 - 5 feet
	3		SILTY SAND (SM); medium dense; brown to gray; moist.												
3.00	4				2	12 10 7	17	60		12	112				
	5														
1.00	6		Fat CLAY (CH); stiff; grayish brown; moist.												
	7														
-1.00	8														
	9				3	6 7 9	16	75		35	86	UC = 0.70			
-3.00	10		Lean CLAY with SAND (CL); stiff; dark gray; moist. Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11														
-5.00	12														
	13														
-7.00	14														
	15														
-9.00	16														
	17														
-11.00	18														
	19														
-13.00	20														
	21														
-15.00	22														
	23														
-17.00	24														
	25														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-109
DIST. 04	COUNTY Santa Clara	ROUTE 101	POSTMILE 49.0/52.2	EA 04-4A-330
PROJECT OR BRIDGE NAME 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY M. Thummaluru	DATE 3-30-09	SHEET 1 of 1	

URS BORING RECORD 200802 28649951-101AUX_SCL.GPJ SNJ_CT.GLB 1/15/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-26-09	3-26-09	1987547.6 ft / 6092452.2 ft NAD83	A-09-110
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 58.643' Rt Sta ~ 61+11.380	8 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96")			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY lean CLAY with GRAVEL (CL); stiff; light brown; moist.												
	1				1	9 6 6	12	65							
6.00	2														bag sample 2 - 5 feet
	3														
4.00	4				2	3 3 4	7	65		11	118				
	5														
2.00	6														
	7		Fat CLAY (CH); stiff; dark gray; moist.												
0.00	8														
	9				3	4 5 6	11	75		27	95	UC = 0.63			
-2.00	10		Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11														
-4.00	12														
	13														
-6.00	14														
	15														
-8.00	16														
	17														
-10.00	18														
	19														
-12.00	20														
	21														
-14.00	22														
	23														
-16.00	24														
	25														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-110
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET	
	M. Thummaluru	3-30-09	1 of 1	

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-24-09	3-24-09	1987479.0 ft / 6092670.1 ft NAD83	A-09-111
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 67.378' Lt Sta ~ 63+01.634	7 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96")			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		10 inches Asphalt Concrete.												
	1		Poorly graded SAND with GRAVEL (SP); medium dense; reddish brown; moist.		1	9 14 11	25	60							
5.00	2														bag sample 2 - 5 feet R
	3		SANDY lean CLAY (CL); medium stiff; brown; moist.												
3.00	4				2	7 5 6	11	65							
	5		Fat CLAY (CH); stiff; black; moist.												
1.00	6														
	7														
-1.00	8														
	9		At 9 ft, becomes dark gray.		3	5 7 8	15	70							
-3.00	10		Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11														
-5.00	12														
	13														
-7.00	14														
	15														
-9.00	16														
	17														
-11.00	18														
	19														
-13.00	20														
	21														
-15.00	22														
	23														
-17.00	24														
	25														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-111
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	M. Thummaluru		3-30-09	1 of 1

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-24-09	3-24-09	1987280.2 ft / 6092674.9 ft NAD83	A-09-112
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 53.805' Rt Sta ~ 64+59.288	8 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96")			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	CLAYEY SAND with GRAVEL (SC); medium dense; light brown; wet.												
	1			1	6 5 9	14	75		11	114				
5.50	2													bag sample 2 - 5 feet
	3													
3.50	4			2	6 7 10	17	80							
	5	Lean to fat CLAY (CL/CH); medium stiff; grayish brown; moist.												
1.50	6	Fat CLAY (CH); stiff; black; moist.												
	7													
-0.50	8													
	9	Lean CLAY (CL); stiff; light brown; moist.		3	6 7 9	16	50							
-2.50	10	SILTY SAND (SM); medium dense; dark brown; wet.												
	11	Boring dry ATD. Bottom of Borehole at 10.0 ft.												
-4.50	12													
	13													
-6.50	14													
	15													
-8.50	16													
	17													
-10.50	18													
	19													
-12.50	20													
	21													
-14.50	22													
	23													
-16.50	24													
	25													

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-112
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	M. Thummaluru		3-30-09	1 of 1

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-23-09	3-23-09	1987162.0 ft / 6092919.6 ft NAD83	A-09-113
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 62.256' Lt Sta ~ 67+05.055	9 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96")			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		Poorly graded SAND with GRAVEL (SP); medium dense; reddish brown; moist.												
	1				1	8 6 10	16	40							
7.00	2														bag sample 2 - 5 feet
			SANDY lean CLAY (CL); stiff; brown; moist.												
	3														
5.00	4				2	6 7 9	16	60		16	111				
	5														
3.00	6														
	7		Fat CLAY (CH); stiff; dark grayish brown; moist.												
1.00	8														
	9				3	2 4 6	10	65		31	92	UC = 0.42			
-1.00	10		Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11														
-3.00	12														
	13														
-5.00	14														
	15														
-7.00	16														
	17														
-9.00	18														
	19														
-11.00	20														
	21														
-13.00	22														
	23														
-15.00	24														
	25														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-113
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	M. Thummaluru		3-30-09	1 of 1

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-24-09	3-24-09	1986971.6 ft / 6092910.8 ft NAD83	A-09-114
DRILLING CONTRACTOR: Exploration Geoservices			BOREHOLE LOCATION (Offset, Station, Line): ~ 64.139' Rt Sta ~ 68+47.641	SURFACE ELEVATION: 9 ft NAVD 88
DRILLING METHOD: Hollow-Stem Auger			DRILL RIG: Mobile B53	BOREHOLE DIAMETER: 8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID): Modified CA (1.96)			SPT HAMMER TYPE: 140lb/30in - Wire Winch	HAMMER EFFICIENCY, ERi: 46%
BOREHOLE BACKFILL AND COMPLETION: Cement			GROUNDWATER READINGS: DURING DRILLING: Dry; AFTER DRILLING (DATE): N/A	TOTAL DEPTH OF BORING: 10.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	CLAYEY SAND with GRAVEL (SC); medium dense; light brown; moist.												
	1			1	11 9 10	19	50							
7.00	2													bag sample 2-5 ft
	3													
5.00	4			2	11 12 14	26	80		10	123				
	5													
3.00	6													
	7	Fat CLAY (CH); stiff; dark gray; moist.												
1.00	8													
	9			3	7 9 10	19	90		25	101	UC = 0.62			
-1.00	10	Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11													
-3.00	12													
	13													
-5.00	14													
	15													
-7.00	16													
	17													
-9.00	18													
	19													
-11.00	20													
	21													
-13.00	22													
	23													
-15.00	24													
	25													

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-114
DIST. 04	COUNTY Santa Clara	ROUTE 101	POSTMILE 49.0/52.2	EA 04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY M. Thummaluru		DATE 4-6-09	SHEET 1 of 1

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-24-09	3-24-09	1986550.4 ft / 6093431.8 ft NAD83	A-09-115
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 76.427' Lt Sta ~ 75+02.692	11 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	Poorly graded SAND with SILT and GRAVEL (SP-SM); medium dense; reddish brown; moist to wet.												
	1			1	10 13 8	21	65							
8.50	2	SANDY lean CLAY (CL); soft; brown; moist.												bag sample 2 - 5 ft
	3													
6.50	4			2	7 6 7	13			12	121	UC = 0.16			
	5	At 5 ft, grades to Lean CLAY with GRAVEL.												
4.50	6													
	7	Fat CLAY (CH); stiff; black; moist.												
2.50	8													
	9			3	7 9 8	17	70		36	83	UC = 0.87			
0.50	10	Bottom of Borehole at 10.0 ft.												
	11													
-1.50	12													
	13													
-3.50	14													
	15													
-5.50	16													
	17													
-7.50	18													
	19													
-9.50	20													
	21													
-11.50	22													
	23													
-13.50	24													
	25													

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-115
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	M. Thummaluru		4-6-09	1 of 1

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-24-09	3-24-09	1986550.4 ft / 6093431.8 ft NAD83	A-09-116
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 59.19' Rt Sta ~ 75+02.692	8 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	CLAYEY SAND with GRAVEL (SC); medium dense; light brown; moist.												
	1		X	1	15 12 13	25	65		10	119				
6.00	2													bag sample 2-5 ft R
	3	SANDY lean CLAY (CL); stiff; light brown; moist.												
4.00	4	At 4 ft, same as above except with GRAVEL.	X	2	9 11 11	22	80							
	5													
2.00	6													
	7	Fat CLAY (CH); stiff; black to dark gray; moist.												
0.00	8													
	9		X	3	9 11 9	20	65							
-2.00	10	Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11													
-4.00	12													
	13													
-6.00	14													
	15													
-8.00	16													
	17													
-10.00	18													
	19													
-12.00	20													
	21													
-14.00	22													
	23													
-16.00	24													
	25													

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-116
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	M. Thummaluru		4-6-09	1 of 1

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-24-09	3-24-09	1986243.7 ft / 6093668.3 ft NAD83	A-09-117
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 67.743' Lt Sta ~ 78+89.911	8 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY lean CLAY (CL); medium stiff; brown; moist; trace fine GRAVEL.												
	1				1	8 9 9	18	70							
5.50	2														bag sample 2-5 ft
	3		Lean CLAY (CL); medium stiff; brown; moist.												
3.50	4				2	4 4 6	10	80		22	99	UC = 0.46			
	5														
1.50	6														
	7		Fat CLAY (CH); stiff to very stiff; dark gray mottled with light gray; moist.												
-0.50	8														
	9				3	6 7 9	16	65		26	98	UC = 1.01			
-2.50	10		Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11														
-4.50	12														
	13														
-6.50	14														
	15														
-8.50	16														
	17														
-10.50	18														
	19														
-12.50	20														
	21														
-14.50	22														
	23														
-16.50	24														
	25														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-117
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET	
	M. Thummaluru	4-6-09	1 of 1	

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-24-09	3-24-09	1985956.2 ft / 6093724.9 ft NAD83	A-09-118
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 68.89' Rt Sta ~ 81+49.130	7 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	CLAYEY GRAVEL (GC); dense; light brown; wet.												
	1			1	7 16 24	40	50							
5.00	2	GRAVELLY lean CLAY (CL); stiff; light brown; moist; few SAND.												bag sample 2-5 ft
	3													
3.00	4			2	5 7 8	15	22							
	5	At 4.5 ft, becomes grayish brown.												
1.00	6	Lean to fat CLAY (CL/CH); stiff; gray to grayish brown; moist.												
	7													
-1.00	8													
	9			3	6 8 11	19	60		24	102	UC = 0.99			
-3.00	10	Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11													
-5.00	12													
	13													
-7.00	14													
	15													
-9.00	16													
	17													
-11.00	18													
	19													
-13.00	20													
	21													
-15.00	22													
	23													
-17.00	24													
	25													

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-118
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	M. Thummaluru		4-6-09	1 of 1

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-23-09	3-23-09	1985928.6 ft / 6093924.8 ft NAD83	A-09-119
DRILLING CONTRACTOR: Exploration Geoservices			BOREHOLE LOCATION (Offset, Station, Line): ~ 69.323' Lt Sta ~ 82+96.166	SURFACE ELEVATION: 7 ft NAVD 88
DRILLING METHOD: Hollow-Stem Auger			DRILL RIG: Mobile B53	BOREHOLE DIAMETER: 8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID): Modified CA (1.96")			SPT HAMMER TYPE: 140lb/30in - Wire Winch	HAMMER EFFICIENCY, ERi: 46%
BOREHOLE BACKFILL AND COMPLETION: Cement			GROUNDWATER READINGS: DURING DRILLING Dry; AFTER DRILLING (DATE) N/A	TOTAL DEPTH OF BORING: 10.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	10 inches Asphalt Concrete.												
	1	SILTY SAND with GRAVEL (SM); medium dense; dark reddish brown.		1	16 14 11	25	75		5	101				
5.00	2													Bag Sample 2' - 5'
	3	Fat CLAY (CH); very stiff; dark gray to black; trace GRAVEL; some sand lenses.												
3.00	4			2	7 9 11	20	75		20	106	UC = 1.26			
	5													
1.00	6													
	7													
-1.00	8													
	9			3	5 6 8	14	65							
-3.00	10	Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11													
-5.00	12													
	13													
-7.00	14													
	15													
-9.00	16													
	17													
-11.00	18													
	19													
-13.00	20													
	21													
-15.00	22													
	23													
-17.00	24													
	25													

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-119
DIST. 04	COUNTY Santa Clara	ROUTE 101	POSTMILE 49.0/52.2	EA 04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY M. Thummaluru		DATE 3-23-09	SHEET 1 of 1

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-24-09	3-24-09	1985588.7 ft / 6094024.6 ft NAD83	A-09-120
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 66.622' Rt Sta ~ 86+23.317	8 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	CLAYEY GRAVEL (GC); dense; light brown; wet.												
	1			1	7 13 18	31	75							
5.50	2	SANDY lean CLAY with GRAVEL (CL); stiff; light brown; moist.												bag sample 2-5 ft
	3													
3.50	4			2	7 8 9	17	65		12	125	UC = 0.76			
	5	At 4.5 ft, becomes gray to grayish brown; less gravel.												
1.50	6													
	7													
-0.50	8													
	9	At 8.5 ft, becomes medium stiff to stiff.		3	4 5 8	13	100		26	97	UC = 0.50			
-2.50	10	Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11													
-4.50	12													
	13													
-6.50	14													
	15													
-8.50	16													
	17													
-10.50	18													
	19													
-12.50	20													
	21													
-14.50	22													
	23													
-16.50	24													
	25													

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-120
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY: M. Thummaluru		DATE: 4-6-09	SHEET: 1 of 1

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-23-09	3-23-09	1985594.3 ft / 6094195.1 ft NAD83	A-09-121
DRILLING CONTRACTOR: Exploration Geoservices			BOREHOLE LOCATION (Offset, Station, Line): ~ 69.527' Lt Sta ~ 87+26.057	SURFACE ELEVATION: 8 ft NAVD 88
DRILLING METHOD: Hollow-Stem Auger			DRILL RIG: Mobile B53	BOREHOLE DIAMETER: 8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID): Modified CA (1.96")			SPT HAMMER TYPE: 140lb/30in - Wire Winch	HAMMER EFFICIENCY, ERi: 46%
BOREHOLE BACKFILL AND COMPLETION: Cement			GROUNDWATER READINGS: DURING DRILLING 3 ft; AFTER DRILLING (DATE) N/A	TOTAL DEPTH OF BORING: 10.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	10 inches Asphalt Concrete.												
	1	CLAYEY SAND with GRAVEL (SC); medium dense; reddish brown; moist to wet.		1	16 13 13	26	75		12	114				
5.50	2													Bag Sample 2' - 5'
	3	CLAYEY SAND (SC/CL); brown.												
3.50	4	Lean to fat CLAY (CL/CH); medium stiff; dark gray to black; moist.		2	11 10 10	20	75		22	97	UC = 0.50			
	5													
1.50	6													
	7													
-0.50	8													
	9			3	4 7 7	14	50		39	83	UC = 0.49			
-2.50	10	Bottom of Borehole at 10.0 ft.												
	11													
-4.50	12													
	13													
-6.50	14													
	15													
-8.50	16													
	17													
-10.50	18													
	19													
-12.50	20													
	21													
-14.50	22													
	23													
-16.50	24													
	25													

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-121
DIST. 04	COUNTY Santa Clara	ROUTE 101	POSTMILE 49.0/52.2	EA 04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY M. Thummaluru		DATE 3-23-09	SHEET 1 of 1

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-24-09	3-24-09	1985283.0 ft / 6094270.7 ft NAD83	A-09-122
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 67.265' Rt Sta ~ 90+15.715	7 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		GRAVELLY lean CLAY with SAND (CL); stiff; light brown; moist.												
	1				1	12 17 20	37	70							
5.00	2														bag sample 2-5 ft
	3														
3.00	4				2	12 10 12	22	40							
	5														
1.00	6														
	7		Fat CLAY (CH); stiff; dark gray; moist; fine roots.												
-1.00	8														
	9				3	3 4 5	9	100							
-3.00	10		Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11														
-5.00	12														
	13														
-7.00	14														
	15														
-9.00	16														
	17														
-11.00	18														
	19														
-13.00	20														
	21														
-15.00	22														
	23														
-17.00	24														
	25														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-122
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET	
	M. Thummaluru	4-6-09	1 of 1	

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-23-09	3-23-09	1985296.4 ft / 6094435.5 ft NAD83	A-09-123
DRILLING CONTRACTOR: Exploration Geoservices			BOREHOLE LOCATION (Offset, Station, Line): ~ 69.327' Lt Sta ~ 91+09.240	SURFACE ELEVATION: 7 ft NAVD 88
DRILLING METHOD: Hollow-Stem Auger			DRILL RIG: Mobile B53	BOREHOLE DIAMETER: 8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID): Modified CA (1.96")			SPT HAMMER TYPE: 140lb/30in - Wire Winch	HAMMER EFFICIENCY, ERi: 46%
BOREHOLE BACKFILL AND COMPLETION: Cement			GROUNDWATER READINGS: DURING DRILLING: Dry; AFTER DRILLING (DATE): N/A	TOTAL DEPTH OF BORING: 10.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	9 inches Asphalt Concrete.												
	1	CLAYEY SAND with GRAVEL (SC); medium dense; reddish brown; moist.		1	14 16 13	29	45		7	113				
5.00	2													Bag Sample 2' - 5'
	3	SANDY lean CLAY (CL); medium stiff; brown; moist to wet; trace GRAVEL.												
3.00	4			2	7 7 5	12	50		12	117				
	5													
1.00	6													
	7													
-1.00	8	Fat CLAY (CH); medium stiff; dark gray to black; moist to wet.												
	9			3	3 3 5	8	100		51 46	67	UC = 0.37			PI
-3.00	10	Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11													
-5.00	12													
	13													
-7.00	14													
	15													
-9.00	16													
	17													
-11.00	18													
	19													
-13.00	20													
	21													
-15.00	22													
	23													
-17.00	24													
	25													

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-123
DIST. 04	COUNTY Santa Clara	ROUTE 101	POSTMILE 49.0/52.2	EA 04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY M. Thummaluru		DATE 3-23-09	SHEET 1 of 1

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-24-09	3-24-09	1984971.5 ft / 6094526.6 ft NAD83	A-09-124
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 63.92' Rt Sta ~ 94+18.931	7 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		GRAVELLY lean CLAY (CL); stiff; light brown; moist.												
	1				1	8 4 4	8	35							
5.00	2														bag sample 2-5 ft
	3														
3.00	4		At 3.5 ft, grades to Sandy lean Clay with Gravel (CL).		2	4 6 7	13	60							
	5														
1.00	6														
	7		Fat CLAY (CH); stiff; dark gray; moist.												
-1.00	8														
	9				3	4 6 9	15	70		40	82	UC = 0.41			
-3.00	10		Bottom of Borehole at 10.0 ft.												
	11														
-5.00	12														
	13														
-7.00	14														
	15														
-9.00	16														
	17														
-11.00	18														
	19														
-13.00	20														
	21														
-15.00	22														
	23														
-17.00	24														
	25														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-124
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	M. Thummaluru		4-6-09	1 of 1

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-23-09	3-23-09	1984980.8 ft / 6094681.9 ft NAD83	A-09-125
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 69.73' Lt Sta ~ 95+09.24	7 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96")			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			3 ft	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	GRAVELLY lean CLAY (CL); dark reddish brown.												
	1			1	6 7 11	18	35							disturbed sample
5.00	2	SANDY lean CLAY (CL); medium stiff; brown; moist; trace GRAVEL; occcassional clayey sand lenses.												
	3													
3.00	4			2	4 4 5	9	50		16	102				R
	5													
1.00	6													
	7													
-1.00	8	Fat CLAY (CH); medium stiff; black; moist.												
	9			3	2 4 6	10	70		35	86	UC = 0.41			
-3.00	10	Lean CLAY (CL); stiff; light gray; moist.												
		Bottom of Borehole at 10.0 ft.												
	11													
-5.00	12													
	13													
-7.00	14													
	15													
-9.00	16													
	17													
-11.00	18													
	19													
-13.00	20													
	21													
-15.00	22													
	23													
-17.00	24													
	25													

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-125
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	M. Thummaluru		3-23-09	1 of 1

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-24-09	3-24-09	1984700.2 ft / 6094739.3 ft NAD83	A-09-126
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 68.933' Rt Sta ~ 97+63.594	7 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	GRAVELLY lean CLAY with SAND (CL); stiff; light brown to brown; moist.												
	1			1	6 6 5	11	45		18	109				
4.50	2													bag sample 2-5 ft
	3	SANDY lean CLAY (CL); stiff; grayish brown; moist; fine SAND.												
2.50	4			2	3 3 3	6	50		27	95				
	5													
0.50	6													
	7													
-1.50	8	Fat CLAY (CH); medium stiff; gray; moist.												
	9			3	2 3 6	9	70							
-3.50	10	Lean CLAY with SAND (CL); stiff; brown; moist. Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11													
-5.50	12													
	13													
-7.50	14													
	15													
-9.50	16													
	17													
-11.50	18													
	19													
-13.50	20													
	21													
-15.50	22													
	23													
-17.50	24													
	25													

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-126
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY: M. Thummaluru		DATE: 4-6-09	SHEET: 1 of 1

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-23-09	3-23-09	1984679.1 ft / 6094940.2 ft NAD83	A-09-127
DRILLING CONTRACTOR: Exploration Geoservices			BOREHOLE LOCATION (Offset, Station, Line): ~ 74.147' Lt Sta ~ 99+06.185	SURFACE ELEVATION: 7 ft NAVD 88
DRILLING METHOD: Hollow-Stem Auger			DRILL RIG: Mobile B53	BOREHOLE DIAMETER: 8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID): Modified CA (1.96")			SPT HAMMER TYPE: 140lb/30in - Wire Winch	HAMMER EFFICIENCY, ERi: 46%
BOREHOLE BACKFILL AND COMPLETION: Cement			GROUNDWATER READINGS: DURING DRILLING: Dry; AFTER DRILLING (DATE): N/A	TOTAL DEPTH OF BORING: 10.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		GRAVELLY lean CLAY (CL); reddish brown.												
	1		SANDY lean CLAY (CL); medium stiff; dark brown; moist to wet; with sand lenses.		1	7 10 8	18	85							
4.50	2														Bag Sample 2' - 5'
	3														
2.50	4				2	4 5 5	10	65							
	5		Fat CLAY (CH); medium stiff; very dark gray.												
0.50	6														
	7														
-1.50	8														
	9				3	4 5 6	11	75		41	79	UC = 0.57			
-3.50	10		Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11														
-5.50	12														
	13														
-7.50	14														
	15														
-9.50	16														
	17														
-11.50	18														
	19														
-13.50	20														
	21														
-15.50	22														
	23														
-17.50	24														
	25														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-127
DIST. 04	COUNTY Santa Clara	ROUTE 101	POSTMILE 49.0/52.2	EA 04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY M. Thummaluru		DATE 3-23-09	SHEET 1 of 1

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-25-09	3-25-09	1984350.4 ft / 6095022.5 ft NAD83	A-09-128
DRILLING CONTRACTOR: Exploration Geoservices			BOREHOLE LOCATION (Offset, Station, Line): ~ 68.394' Rt Sta ~ 102+13.641	SURFACE ELEVATION: 7 ft NAVD 88
DRILLING METHOD: Hollow-Stem Auger			DRILL RIG: Mobile B53	BOREHOLE DIAMETER: 8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID): Modified CA (1.96)			SPT HAMMER TYPE: 140lb/30in - Wire Winch	HAMMER EFFICIENCY, ERi: 46%
BOREHOLE BACKFILL AND COMPLETION: Cement			GROUNDWATER READINGS: DURING DRILLING: Dry; AFTER DRILLING (DATE): N/A	TOTAL DEPTH OF BORING: 10.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	GRAVELLY lean CLAY (CL); stiff; brown; moist.												
	1			1	7 6 8	14	35							
4.50	2													bag sample 2-5 ft
	3	At 3 ft, same as above except grades to Sandy lean CLAY with Gravel (CL); very stiff; brown; moist.												
2.50	4			2	6 10 11	21	65							
	5	At 4.5 ft, becomes gray; less gravel.												
0.50	6	Fat CLAY (CH); stiff; dark gray; moist.												
	7													
-1.50	8													
	9			3	5 7 9	16	60							
-3.50	10	Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11													
-5.50	12													
	13													
-7.50	14													
	15													
-9.50	16													
	17													
-11.50	18													
	19													
-13.50	20													
	21													
-15.50	22													
	23													
-17.50	24													
	25													

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-128
DIST. 04	COUNTY Santa Clara	ROUTE 101	POSTMILE 49.0/52.2	EA 04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY M. Thummaluru		DATE 4-6-09	SHEET 1 of 1

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-23-09	3-23-09	1984365.1 ft / 6095180.1 ft NAD83	A-09-129
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 63.41' Lt Sta ~ 103+01.238	7 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96")			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		GRAVELLY lean CLAY (CL); very stiff; dark reddish brown; moist.												
	1				1	15 17 14	31	35							
5.00	2														Bag Sample 2' - 5'
	3		SANDY lean CLAY (CL); soft; dark brown; moist to wet.												
3.00	4				2	4 5 6	11	95		24	96	UC = 0.13			
	5														
1.00	6														
	7														
-1.00	8		Fat CLAY (CH); stiff; black; moist.												
	9				3	5 6 9	15	85		42	77	UC = 0.52			
-3.00	10		Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11														
-5.00	12														
	13														
-7.00	14														
	15														
-9.00	16														
	17														
-11.00	18														
	19														
-13.00	20														
	21														
-15.00	22														
	23														
-17.00	24														
	25														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-129
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY: M. Thummaluru		DATE: 3-23-09	SHEET: 1 of 1

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-23-09	3-23-09	1984050.3 ft / 6095438.5 ft NAD83	A-09-130
DRILLING CONTRACTOR: Exploration Geoservices			BOREHOLE LOCATION (Offset, Station, Line): ~ 66.626' Lt Sta ~ 107+08.525	SURFACE ELEVATION: 11 ft NAVD 88
DRILLING METHOD: Hollow-Stem Auger			DRILL RIG: Mobile B53	BOREHOLE DIAMETER: 8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID): Modified CA (1.96")			SPT HAMMER TYPE: 140lb/30in - Wire Winch	HAMMER EFFICIENCY, ERi: 46%
BOREHOLE BACKFILL AND COMPLETION: Cement			GROUNDWATER READINGS: DURING DRILLING Dry; AFTER DRILLING (DATE) N/A	TOTAL DEPTH OF BORING: 10.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	8 inches Asphalt Concrete.												
	1	CLAYEY SAND with GRAVEL (SC); dense; dark reddish brown; moist.		1	26 31 22	53	42		8	130	UC = 0.22			
9.00	2													Bag Sample 2' - 5'
	3	At 2.5 ft, becomes brown.												
7.00	4			2	9 14 21	35	75		9	132				
	5	SANDY fat CLAY with GRAVEL (CH); stiff; moist; with organics.												
5.00	6	Fat CLAY (CH); medium stiff; bluish gray; moist; BAY MUD.												
	7													
3.00	8	At 7.5 ft, becomes stiff; black; moist to wet.												
	9			3	2 2 4	6	70		26	94	UC = 0.53			
1.00	10	Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11													
-1.00	12													
	13													
-3.00	14													
	15													
-5.00	16													
	17													
-7.00	18													
	19													
-9.00	20													
	21													
-11.00	22													
	23													
-13.00	24													
	25													

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-130
DIST. 04	COUNTY Santa Clara	ROUTE 101	POSTMILE 49.0/52.2	EA 04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY M. Thummaluru		DATE 3-23-09	SHEET 1 of 1

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-25-09	3-25-09	1983920.7 ft / 6095362.7 ft NAD83	A-09-131
DRILLING CONTRACTOR: Exploration Geoservices			BOREHOLE LOCATION (Offset, Station, Line): ~ 73.753' Rt Sta ~ 107+61.624	SURFACE ELEVATION: 11 ft NAVD 88
DRILLING METHOD: Hollow-Stem Auger			DRILL RIG: Mobile B53	BOREHOLE DIAMETER: 8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID): Modified CA (1.96")			SPT HAMMER TYPE: 140lb/30in - Wire Winch	HAMMER EFFICIENCY, ERi: 46%
BOREHOLE BACKFILL AND COMPLETION: Cement			GROUNDWATER READINGS: DURING DRILLING Dry; AFTER DRILLING (DATE) N/A	TOTAL DEPTH OF BORING: 10.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	SANDY lean CLAY with GRAVEL (CL); stiff; light brown to brown; moist.												
	1		X	1	6 8 10	18	75		16	112	UC = 0.53			
9.00	2													Bag sample 2 - 5 feet
	3													
7.00	4		X	2	6 7 8	15	50							R
	5	Fat CLAY (CH); stiff to very stiff; moist.												
5.00	6													
	7													
3.00	8													
	9		X	3	7 9 10	19	70		33	89	UC = 1.00			PI
1.00	10	Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11													
-1.00	12													
	13													
-3.00	14													
	15													
-5.00	16													
	17													
-7.00	18													
	19													
-9.00	20													
	21													
-11.00	22													
	23													
-13.00	24													
	25													

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-131
DIST. 04	COUNTY Santa Clara	ROUTE 101	POSTMILE 49.0/52.2	EA 04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY M. Thummaluru		DATE 4-8-09	SHEET 1 of 1

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-23-09	3-23-09	1983579.8 ft / 6095826.0 ft NAD83	A-09-132
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 72.419' Lt Sta ~ 113+17.973	10 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96")			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	9 inches Asphalt Concrete.												
	1	GRAVELLY lean CLAY (CL); stiff; dark reddish brown; moist.		1	26 25 23	48	50							
7.50	2	CLAYEY SAND with GRAVEL (SC); dense; very dark grayish brown; moist; trace GRAVEL.												Bag Sample 2' - 5'
	3													
5.50	4			2	9 11 26	37	50		8	128				
	5	SANDY lean CLAY (CL/CH); black to dark gray; with organics.												
3.50	6													
	7													
1.50	8	Fat CLAY (CH); stiff; black; moist to wet.												
	9			3	5 8 10	18	70							
-0.50	10	Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11													
-2.50	12													
	13													
-4.50	14													
	15													
-6.50	16													
	17													
-8.50	18													
	19													
-10.50	20													
	21													
-12.50	22													
	23													
-14.50	24													
	25													

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-132
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET	
	M. Thummaluru	3-23-09	1 of 1	

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-25-09	3-25-09	1983313.9 ft / 6095858.2 ft NAD83	A-09-133
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 69.575' Rt Sta ~ 115+45.116	7 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY lean CLAY with GRAVEL (CL); stiff; light brown; moist.												
	1				1	7 8 8	16	60							
5.00	2														bag sample 2-5 ft
	3														
3.00	4				2	5 8 14	22	60							
	5		Fat CLAY (CH); stiff; dark gray; moist.												
1.00	6														
	7														
-1.00	8														
	9		At EL. -1.5 ft, becomes light gray to brown; fine roots.		3	6 9 10	19	80							
-3.00	10		Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11														
-5.00	12														
	13														
-7.00	14														
	15														
-9.00	16														
	17														
-11.00	18														
	19														
-13.00	20														
	21														
-15.00	22														
	23														
-17.00	24														
	25														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-133
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET	
	M. Thummaluru	4-6-09	1 of 1	

URS BORING RECORD 200802 28649951-101AUX_SCL.GPJ SNJ_CT.GLB 1/15/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-23-09	3-23-09	1983275.4 ft / 6096058.8 ft NAD83	A-09-134
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 62.274' Lt Sta ~ 117+01.104	7 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96")			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	6 inches Asphalt Concrete over 12 inches Aggregate Base.												
	1			1	14 13 15	28	25							
4.50	2	GRAVELLY lean CLAY (CL); very stiff; dark reddish brown; moist.												Bag Sample 2' - 5' R
	3	Lean CLAY (CL); stiff; dark reddish brown; moist.												
2.50	4	Lean to fat CLAY (CL/CH); medium stiff; dark gray; moist.		2	8 11 15	26	50							
	5													
0.50	6													
	7													
-1.50	8													
	9	Lean CLAY (CL); stiff; light brownish gray; moist.		3	7 9 9	18	85							
-3.50	10	Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11													
-5.50	12													
	13													
-7.50	14													
	15													
-9.50	16													
	17													
-11.50	18													
	19													
-13.50	20													
	21													
-15.50	22													
	23													
-17.50	24													
	25													

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-134
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	M. Thummaluru		3-23-09	1 of 1

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-25-09	3-25-09	1982984.8 ft / 6096126.2 ft NAD83	A-09-135
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 67.876' Rt Sta ~ 119+69.489	6 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY lean CLAY with GRAVEL (CL); stiff; light brown; moist.												
	1				1	6 4 10	14	65		10	117				
3.50	2		Lean CLAY (CL); stiff; dark gray; moist.												bag sample 2-5 ft
	3														
1.50	4				2	10 16 18	34	60							
	5		At 5 ft, with mottled with light gray.												
-0.50	6														
	7														
-2.50	8														
	9		At 8.5 ft, becomes light gray.		3	7 9 13	22	60		25	99	UC = 0.51			
-4.50	10		Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11														
-6.50	12														
	13														
-8.50	14														
	15														
-10.50	16														
	17														
-12.50	18														
	19														
-14.50	20														
	21														
-16.50	22														
	23														
-18.50	24														
	25														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-135
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY: M. Thummaluru		DATE: 4-6-09	SHEET: 1 of 1

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	4-14-09	4-14-09	1982802.8 ft / 6096481.2 ft NAD83	A-09-136
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 93.939' Lt Sta ~ 123+34.086	6 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B61	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
N/A			140lb/30in - Wire Winch	
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
N/A			Dry	N/A	0.8 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		10 inches Asphalt Concrete.												
	1		Boring terminated on top of concrete after drilling at 2 locations.												
3.50	2		Bottom of Borehole at 0.8 ft.												
	3														
1.50	4														
	5														
-0.50	6														
	7														
-2.50	8														
	9														
-4.50	10														
	11														
-6.50	12														
	13														
-8.50	14														
	15														
-10.50	16														
	17														
-12.50	18														
	19														
-14.50	20														
	21														
-16.50	22														
	23														
-18.50	24														
	25														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-136
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	M. Thummaluru		4-15-09	1 of 1

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	4-14-09	4-14-09	1982746.9 ft / 6096711.8 ft NAD83	A-09-137
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 238.226' Lt Sta ~ 125+22.469	6 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B61	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Wire Winch	
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	8 inches Asphalt Concrete over 2 inches Concrete underlain by 32 inches Aggregate Base.												
4.00	2													
2.00	4	Fat CLAY (CH); stiff; black; moist.		1	7 14 20	34	30							Bag sample 3.5 - 5 feet
0.00	6	Lean CLAY with GRAVEL (CL); stiff; grayish brown; moist.												
-2.00	8			2	3 4 6	10	50		38	84	UC = 0.54			
-4.00	10	Boring dry ATD. Bottom of Borehole at 10.0 ft.												
-6.00	12													
-8.00	14													
-10.00	16													
-12.00	18													
-14.00	20													
-16.00	22													
-18.00	24													
	25													

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-137
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	M. Thummaluru		4-15-09	1 of 1

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	4-14-09	4-14-09	1982655.4 ft / 6096563.5 ft NAD83	A-09-138
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 65.356' Lt Sta ~ 125+00.454	6 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B61	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Wire Winch	
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			7.3 ft	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	7.5 inches Asphalt Concrete over 22.5 inches Aggregate Base.												
4.00	2													Bag sample 2 - 5 feet PI, R
	3	Fat CLAY (CH); stiff; black; moist.		1	5 13 16	29	30							
2.00	4													
	5	Lean CLAY (CL); stiff; gray; moist.		2	5 9 11	20	40							
0.00	6													
	7													
-2.00	8													
	9			3	4 5 8	13	45							
-4.00	10	CLAYEY SAND with GRAVEL (SC); medium dense; gray; moist.												
	11	Bottom of Borehole at 10.0 ft.												
-6.00	12													
	13													
-8.00	14													
	15													
-10.00	16													
	17													
-12.00	18													
	19													
-14.00	20													
	21													
-16.00	22													
	23													
-18.00	24													
	25													

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-138
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY: M. Thummaluru		DATE: 4-15-09	SHEET: 1 of 1

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	4-14-09	4-14-09	1982456.9 ft / 6096904.1 ft NAD83	A-09-139
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 205.554' Lt Sta ~ 128+68.963	5 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B61	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Wire Winch	
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	8 inches Asphalt Concrete over 10 inches Aggregate Base.												
3.00	2	Fat CLAY (CH); stiff; black; moist.		1	5 7 10	17	60		32	88	UC = 1.58			Bag sample 2-5 feet
1.00	4													
-1.00	6	At EL. 0.0 ft, becomes grayish brown.		2	3 5 7	12	80		36	86	UC = 0.61			
-3.00	8													
-5.00	9	Lean CLAY (CL); stiff; gray; moist.		3	2 4 4	8	75		24	100	UC = 0.56			
	10	Boring dry ATD. Bottom of Borehole at 10.0 ft.												
-7.00	12													
-9.00	14													
-11.00	16													
-13.00	18													
-15.00	20													
-17.00	22													
-19.00	24													
	25													

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-139
DIST. 04	COUNTY Santa Clara	ROUTE 101	POSTMILE 49.0/52.2	EA 04-4A-330
PROJECT OR BRIDGE NAME 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY M. Thummaluru	DATE 4-15-09	SHEET 1 of 1	

URS BORING RECORD 200802 28649951-101AUX_SCL.GPJ SNJ_CT.GLB 1/15/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-27-09	3-27-09	1982345.8 ft / 6096815.4 ft NAD83	A-09-140
DRILLING CONTRACTOR: Exploration Geoservices			BOREHOLE LOCATION (Offset, Station, Line): ~ 66.76' Lt Sta ~ 128+99.631	SURFACE ELEVATION: 6 ft NAVD 88
DRILLING METHOD: Hollow-Stem Auger			DRILL RIG: Mobile B53	BOREHOLE DIAMETER: 8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID): Modified CA (1.96)			SPT HAMMER TYPE: 140lb/30in - Wire Winch	HAMMER EFFICIENCY, ERi: 46%
BOREHOLE BACKFILL AND COMPLETION: Cement			GROUNDWATER READINGS: DURING DRILLING: Dry; AFTER DRILLING (DATE): N/A	TOTAL DEPTH OF BORING: 10.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY SAND (SM); medium dense; grayish brown; moist.												
	1				1	12 12 10	22	70							
4.00	2														bag sample 2-5 ft
	3														
2.00	4		Fat CLAY (CH); stiff; black; moist.		2	8 10 11	21	50		34	88				R
	5														
0.00	6														
	7														
-2.00	8		At 8 ft, becomes grayish brown.												
	9				3	7 9 9	18	65							
-4.00	10		Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11														
-6.00	12														
	13														
-8.00	14														
	15														
-10.00	16														
	17														
-12.00	18														
	19														
-14.00	20														
	21														
-16.00	22														
	23														
-18.00	24														
	25														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-140
DIST. 04	COUNTY Santa Clara	ROUTE 101	POSTMILE 49.0/52.2	EA 04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY M. Thummaluru		DATE 4-6-09	SHEET 1 of 1

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-27-09	3-27-09	1982038.6 ft / 6097061.6 ft NAD83	A-09-141
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 65.32' Lt Sta ~ 132+93.351	7 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	SILTY SAND with GRAVEL (SM); medium dense; brown.												
	1			1	11 12 8	20	50		6	125				
4.50	2													bag sample 2-5 ft
	3	Fat CLAY (CH); stiff; black; moist.												
2.50	4			2	8 8 9	17	50							
	5													
0.50	6													
	7													
-1.50	8	Lean CLAY with SAND (CL); stiff; light brown; moist.												
	9			3	5 7 10	17	95							
-3.50	10	Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11													
-5.50	12													
	13													
-7.50	14													
	15													
-9.50	16													
	17													
-11.50	18													
	19													
-13.50	20													
	21													
-15.50	22													
	23													
-17.50	24													
	25													

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-141
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET	
	M. Thummaluru	4-6-09	1 of 1	

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-25-09	3-25-09	1982710.0 ft / 6096350.8 ft NAD83	A-09-142
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 65.753' Rt Sta ~ 123+24.365	6 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	10 inches Asphalt Concrete.												
	1	Lean CLAY (CL); medium stiff; light brown; moist to wet; some GRAVEL.		1	5 9 10	19	45							
3.50	2	Fat CLAY (CH); stiff; dark gray; moist.												bag sample 2-5 ft
	3													
1.50	4			2	5 7 8	15	50		37	82	UC = 0.85			
	5	Mottled with gray.												
-0.50	6	Lean CLAY (CL); stiff; light brown; moist; trace SAND.												
	7													
-2.50	8													
	9			3	5 6 8	14	70		22	102	UC = 0.85			
-4.50	10	Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11													
-6.50	12													
	13													
-8.50	14													
	15													
-10.50	16													
	17													
-12.50	18													
	19													
-14.50	20													
	21													
-16.50	22													
	23													
-18.50	24													
	25													

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-142
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET	
	M. Thummaluru	4-6-09	1 of 1	

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-25-09	3-25-09	1982444.1 ft / 6096564.5 ft NAD83	A-09-143
DRILLING CONTRACTOR: Exploration Geoservices			BOREHOLE LOCATION (Offset, Station, Line): ~ 66.619' Rt Sta ~ 126+65.547	SURFACE ELEVATION: 5 ft NAVD 88
DRILLING METHOD: Hollow-Stem Auger			DRILL RIG: Mobile B53	BOREHOLE DIAMETER: 8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID): Modified CA (1.96)			SPT HAMMER TYPE: 140lb/30in - Wire Winch	HAMMER EFFICIENCY, ERi: 46%
BOREHOLE BACKFILL AND COMPLETION: Cement			GROUNDWATER READINGS: DURING DRILLING: Dry; AFTER DRILLING (DATE): N/A	TOTAL DEPTH OF BORING: 10.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	4 inches Asphalt Concrete.												
	1	Poorly graded SAND with GRAVEL (SP-SM); brown; -Aggregate Base.		1	4 8 15	23	45							
3.00	2	Fat CLAY (CH); stiff; black; moist.												bag sample 2-5 ft R
	3													
1.00	4	At 4 ft, becomes gray.		2	8 11 22	33	70							
	5													
-1.00	6													
	7													
-3.00	8													
	9			3	11 14 15	29	30							
-5.00	10	Poorly graded SAND with GRAVEL (SP). Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11													
-7.00	12													
	13													
-9.00	14													
	15													
-11.00	16													
	17													
-13.00	18													
	19													
-15.00	20													
	21													
-17.00	22													
	23													
-19.00	24													
	25													

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-143
DIST. 04	COUNTY Santa Clara	ROUTE 101	POSTMILE 49.0/52.2	EA 04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY M. Thummaluru		DATE 4-6-09	SHEET 1 of 1

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-26-09	3-26-09	1985104.9 ft / 6096843.4 ft NAD83	A-09-144
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 62.827' Rt Sta ~ 131+04.637	6 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		CLAYEY SAND with GRAVEL (SC); medium dense; dark brown; moist.												
	1				1	7 11 17	28	35							
4.00	2		Fat CLAY (CH); very stiff; dark gray; moist.												bag sample 2-5 ft
	3														
2.00	4				2	13 17 21	38	65		33	86	UC = 1.82			
	5		At 4.5 ft, becomes light gray; moist.												
0.00	6														
	7														
-2.00	8														
	9				3	11 14 19	33	100							
-4.00	10		SILTY SAND (SM); medium dense; gray; moist to wet.												
	11		Boring dry ATD. Bottom of Borehole at 10.0 ft.												
-6.00	12														
	13														
-8.00	14														
	15														
-10.00	16														
	17														
-12.00	18														
	19														
-14.00	20														
	21														
-16.00	22														
	23														
-18.00	24														
	25														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-144
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY: M. Thummaluru		DATE: 4-6-09	SHEET: 1 of 1

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-26-09	3-20-09	1981783.3 ft / 6097098.5 ft NAD83	A-09-145
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 66.409' Rt Sta ~ 135+15.137	7 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		Fat CLAY (CH); stiff; dark gray; moist.												
	1				1	9 12 17	29	45		32	80				PI, R
4.50	2														bag sample 2-5 ft
	3														
2.50	4				2	9 14 17	31	30							
	5		At 5 ft, becomes gray.												
0.50	6														
	7														
-1.50	8		Lean to fat CLAY (CL/CH); stiff; light olive brown; moist.												
	9				3	5 9 11	20	95							
-3.50	10		Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11														
-5.50	12														
	13														
-7.50	14														
	15														
-9.50	16														
	17														
-11.50	18														
	19														
-13.50	20														
	21														
-15.50	22														
	23														
-17.50	24														
	25														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-145
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY: M. Thummaluru		DATE: 4-6-09	SHEET: 1 of 1

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-27-09	3-27-09	1981710.1 ft / 6097326.9 ft NAD83	A-09-146
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 65.306' Lt Sta ~ 137+15.546	7 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		11 inches Asphalt Concrete over 8 inches over Aggregate Base.												
	1														
5.00	2		Poorly graded SAND with GRAVEL (SP-SM); medium dense; reddish brown; moist.		1	10 8 9	17	50							bag sample 2-5 ft
	3		Fat CLAY (CH); stiff; black to dark gray; moist.												
3.00	4		At 4 ft, becomes very stiff; gray; moist.		2	12 15 21	36	40							
	5														
1.00	6														
	7														
-1.00	8														
	9		Lean CLAY (CL); very stiff; light brown; moist.		3	6 9 10	19	50		24	101	UC = 1.05			
-3.00	10		Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11														
-5.00	12														
	13														
-7.00	14														
	15														
-9.00	16														
	17														
-11.00	18														
	19														
-13.00	20														
	21														
-15.00	22														
	23														
-17.00	24														
	25														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-146
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET	
	M. Thummaluru	4-6-09	1 of 1	

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-26-09	3-26-09	1981480.4 ft / 6097342.5 ft NAD83	A-09-147
DRILLING CONTRACTOR: Exploration Geoservices			BOREHOLE LOCATION (Offset, Station, Line): ~ 67.024' Rt Sta ~ 139+03.646	SURFACE ELEVATION: 9 ft NAVD 88
DRILLING METHOD: Hollow-Stem Auger			DRILL RIG: Mobile B53	BOREHOLE DIAMETER: 8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID): Modified CA (1.96)			SPT HAMMER TYPE: 140lb/30in - Wire Winch	HAMMER EFFICIENCY, ERi: 46%
BOREHOLE BACKFILL AND COMPLETION: Cement			GROUNDWATER READINGS: DURING DRILLING: Dry; AFTER DRILLING (DATE): N/A	TOTAL DEPTH OF BORING: 10.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	SANDY lean CLAY with GRAVEL (CL); stiff; light brown; moist.												
	1			1	8 7 7	14	35							
6.50	2	At 2 ft, grades to Lean CLAY (CL); dark gray.												bag sample 2-5 ft
	3													
4.50	4	Fat CLAY (CH); stiff; dark gray; moist.		2	7 10 14	24	60							
	5													
2.50	6													
	7													
0.50	8													
	9	At 8.5 ft, becomes grayish brown.		3	7 10 13	23	90							
-1.50	10	Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11													
-3.50	12													
	13													
-5.50	14													
	15													
-7.50	16													
	17													
-9.50	18													
	19													
-11.50	20													
	21													
-13.50	22													
	23													
-15.50	24													
	25													

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-147
DIST. 04	COUNTY Santa Clara	ROUTE 101	POSTMILE 49.0/52.2	EA 04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY M. Thummaluru		DATE 4-6-09	SHEET 1 of 1

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-26-09	3-26-09	1981176.2 ft / 6097621.2 ft NAD83	A-09-148
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 54.492' Rt Sta ~ 143+12.996	9 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY lean CLAY with GRAVEL (CL); light brown to brown; moist.												
	1				1	7 7 11	18	65							
7.00	2														bag sample 2-5 ft
	3														
5.00	4		Fat CLAY (CH); stiff; black to dark gray; moist.		2	5 8 9	17	90							
	5														
3.00	6														
	7														
1.00	8		At EL. 1.5 ft, becomes light olive gray; moist.												
	9		SILTY SAND with GRAVEL (SM); medium dense; gray; moist to wet.		3	7 8 9	17	100							
-1.00	10		Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11														
-3.00	12														
	13														
-5.00	14														
	15														
-7.00	16														
	17														
-9.00	18														
	19														
-11.00	20														
	21														
-13.00	22														
	23														
-15.00	24														
	25														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-148
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET	
	M. Thummaluru	4-6-09	1 of 1	

URS BORING RECORD 200802 28649951-101AUX_SCL.GPJ SNJ_CT.GLB 1/15/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	4-14-09	4-14-09	1981343.3 ft / 6097645.2 ft NAD83	A-09-149
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 75.25' Lt Sta ~ 142+04.348	7 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B61	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Auto	107%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	36.5 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		36 inches Aggregate Base.												
4.50	2														
	3		Fat CLAY (CH); stiff; black; moist.		1	6 11 12	23	65							
2.50	4														
	5		Lean CLAY (CL); very stiff; dark gray mottled with light gray; moist.		2	4 8 13	21	65		27	96	UC = 1.88			
0.50	6														
	7														
-1.50	8														
	9														
-3.50	10		At 10 ft, becomes stiff; tan.		3	2 3 4	7	60		27	96	UC = 0.56			
	11														
-5.50	12														
	13														
-7.50	14														
	15		At 15 ft, grades to Sandy Lean CLAY (CL); medium stiff; trace sand.		4	5 7 13	20	75		17	118	UC = 0.30			drilled added water
-9.50	16		Poorly graded SAND with SILT (SP-SM); medium dense; dark grayish brown; moist.												
	17														
-11.50	18														
	19														
-13.50	20				5	2 7 8	15			22	107				PA
	21														
-15.50	22														
	23														
-17.50	24		Lean CLAY (CL); medium stiff; brown; moist.												
	25														

(continued)

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-149
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	M. Thummaluru		4-14-09	1 of 2

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	25		Lean CLAY (CL) *(continued)*.		6	2 6 7	13	65		24	102	UC = 0.58			
-19.50	26														
	27														
-21.50	28														
	29														
-23.50	30		At 30 ft, grades to Lean CLAY with SAND (CL); very stiff; grayish brown.		7	6 10 12	22	70		18	112	UC = 1.31			
	31														
-25.50	32														
	33														
-27.50	34														
	35		At 35 ft, becomes medium stiff.		8	2 4 5	9	75				PP = 1.0			
-29.50	36														
	37		Bottom of Borehole at 36.5 ft.												
-31.50	38														
	39														
-33.50	40														
	41														
-35.50	42														
	43														
-37.50	44														
	45														
-39.50	46														
	47														
-41.50	48														
	49														
-43.50	50														
	51														
-45.50	52														
	53														
-47.50	54														
	55														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				**A-09-149**
DIST. **04**	COUNTY **Santa Clara**	ROUTE **101**	POSTMILE **49.0/52.2**	EA **04-4A-330**
PROJECT OR BRIDGE NAME **101 Auxillary Lane (URS 28649951)**				
BRIDGE NUMBER	PREPARED BY **M. Thummaluru**		DATE **4-14-09**	SHEET **2 of 2**

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-26-09	3-26-09	1980890.4 ft / 6097881.3 ft NAD83	A-09-150
DRILLING CONTRACTOR: Exploration Geoservices			BOREHOLE LOCATION (Offset, Station, Line): ~ 63.05' Lt Sta ~ 146+96.56	SURFACE ELEVATION: 9 ft NAVD 88
DRILLING METHOD: Hollow-Stem Auger			DRILL RIG: Mobile B53	BOREHOLE DIAMETER: 8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID): Modified CA (1.96)			SPT HAMMER TYPE: 140lb/30in - Wire Winch	HAMMER EFFICIENCY, ERi: 46%
BOREHOLE BACKFILL AND COMPLETION: Cement			GROUNDWATER READINGS: DURING DRILLING: Dry; AFTER DRILLING (DATE): N/A	TOTAL DEPTH OF BORING: 10.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	CLAYEY GRAVEL (GC); dense; light brown; moist.												
	1			1	12 14 16	30	65							
7.00	2													bag sample 2-5 ft
	3													
5.00	4	Fat CLAY (CH); stiff; black to dark gray; moist.		2	6 10 13	23	70		25					
	5													
3.00	6													
	7													
1.00	8	At EL. 1.0 ft, becomes medium stiff; light brown.												
	9			3	7 9 11	20	30							
-1.00	10	Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11													
-3.00	12													
	13													
-5.00	14													
	15													
-7.00	16													
	17													
-9.00	18													
	19													
-11.00	20													
	21													
-13.00	22													
	23													
-15.00	24													
	25													

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-150
DIST. 04	COUNTY Santa Clara	ROUTE 101	POSTMILE 49.0/52.2	EA 04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY M. Thummaluru	DATE 4-6-09	SHEET 1 of 1	

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-30-09	3-30-09	1980673.2 ft / 6098097.2 ft NAD83	A-09-152
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 69.225' Rt Sta ~ 150+00.758	10 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96")			140lb/30in - Auto	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			12 ft	N/A	35.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Remarks
	0	CLAYEY SAND with GRAVEL (SC); loose; brown; moist.										
	1			1	4 5 5	10	85		13	119		
7.50	2											bag sample 2 - 5 feet
	3	Fat CLAY (CH); stiff; black; moist.										
5.50	4			2	4 6 9	15	30					
	5								32	88	UC = 0.88	
3.50	6											
	7											
1.50	8	Lean CLAY (CL); stiff; brown mottled with light brown; moist; trace SAND.										
	9			3	3 5 4	9	80		19	106	UC = 0.52	
-0.50	10											
	11											
-2.50	12											
	13											
-4.50	14	SILTY SAND with GRAVEL (SM); medium dense; dark grayish brown; wet; fine GRAVEL.		4	5 14 27	41	75		9	143		
	15											
-6.50	16											
	17	Lean CLAY (CL); stiff; brown; moist; trace SAND.										
-8.50	18											
	19			5	3 4 8	12	85		25	101	UC = 0.89	
-10.50	20											
	21											
-12.50	22											
	23											
-14.50	24	At 23.5 ft, same as above except increase in sand content; medium stiff.		6	5 5 8	13	75		20	110	UC = 0.47	
	25											

(continued)

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-152
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	M. Thummaluru		3-31-09	1 of 2

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	25		CLAYEY SAND (SC); dense; brown; moist; little fine GRAVEL.												
-16.50	26														
	27		Lean CLAY (CL); very stiff; grayish brown; moist.												
-18.50	28														
	29				7	5 9 10	19	65		24	102	UC = 1.64			
-20.50	30														
	31														
-22.50	32														
	33														
-24.50	34		At 33.5 ft, becomes stiff.		8	4 6 8	14	85		25	99	UC = 0.82			
	35		Bottom of Borehole at 35.0 ft.												
-26.50	36														
	37														
-28.50	38														
	39														
-30.50	40														
	41														
-32.50	42														
	43														
-34.50	44														
	45														
-36.50	46														
	47														
-38.50	48														
	49														
-40.50	50														
	51														
-42.50	52														
	53														
-44.50	54														
	55														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				**A-09-152**
DIST. **04**	COUNTY **Santa Clara**	ROUTE **101**	POSTMILE **49.0/52.2**	EA **04-4A-330**
PROJECT OR BRIDGE NAME **101 Auxillary Lane (URS 28649951)**				
BRIDGE NUMBER	PREPARED BY **M. Thummaluru**		DATE **3-31-09**	SHEET **2 of 2**

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-31-09	3-31-09	1980441.7 ft / 6098347.0 ft NAD83	A-09-153
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 66.451' Rt Sta ~ 153+41.310	9 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96")			140lb/30in - Auto	107%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING 8 ft; AFTER DRILLING (DATE) N/A	TOTAL DEPTH OF BORING
Cement				35.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	CLAYEY SAND with GRAVEL (SC); loose; brown; moist.												
	1			1	4 6 8	14	90		21	101	UC = 1.66			
7.00	2	Fat CLAY (CH); very stiff; dark gray to black; moist.												bag sample 2 - 5 feet
	3	Lean to fat CLAY with SAND (CL/CH); hard; dark gray; moist.												
5.00	4			2	4 9 13	22	75		17	107	UC = 2.07			R
	5	At 5.25 ft, with gravel.												
3.00	6													
	7	At 7 ft, same as above except increase in sand content.												
1.00	8													
	9	Well-graded SAND with SILT and GRAVEL (SW-SM); medium dense; dark gray; wet.		3	10 14 12	26	80		9	138				PA
-1.00	10													
	11													
-3.00	12	Lean CLAY (CL); very stiff; brown with dark brown speckling; moist; trace SAND.												
	13													
-5.00	14			4	3 3 4	7	65		23	104	UC = 1.06			
	15													
-7.00	16													
	17													
-9.00	18													
	19	At 18.5 ft, becomes stiff; no sand.		5	4 8 8	16	80		23	104	UC = 0.94			
-11.00	20													
	21													
-13.00	22	Lean CLAY with SAND (CL); medium stiff; bluish gray; moist; fine SAND.												
	23													
-15.00	24			6	3 2 7	9	75		28	95	UC = 0.27			
	25	SILTY SAND (SM); dense; dark gray; moist.												

(continued)

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-153
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	M. Thummaluru		3-31-09	1 of 2

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	25		SANDY lean CLAY (CL); stiff; dark gray; moist.												
-17.00	26														
	27														
-19.00	28		At 28 ft, grades to Lean CLAY (CL); very stiff; grayish brown.												
	29				7	5 8 13	21	75		15	110	UC = 1.72			
-21.00	30														
	31														
-23.00	32														
	33														
-25.00	34		At 34 ft, becomes stiff; gray to grayish brown.		8	5 7 8	15	65		29	101	UC = 0.63			
	35		Bottom of Borehole at 35.0 ft.												
-27.00	36														
	37														
-29.00	38														
	39														
-31.00	40														
	41														
-33.00	42														
	43														
-35.00	44														
	45														
-37.00	46														
	47														
-39.00	48														
	49														
-41.00	50														
	51														
-43.00	52														
	53														
-45.00	54														
	55														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				**A-09-153**
DIST. **04**	COUNTY **Santa Clara**	ROUTE **101**	POSTMILE **49.0/52.2**	EA **04-4A-330**
PROJECT OR BRIDGE NAME **101 Auxillary Lane (URS 28649951)**				
BRIDGE NUMBER	PREPARED BY **M. Thummaluru**		DATE **3-31-09**	SHEET **2 of 2**

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	4-13-09	4-13-09	1980515.4 ft / 6098467.5 ft NAD83	A-09-154
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 69.77' Lt Sta ~ 153+78.44	9 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B61	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96")			140lb/30in - Auto	107%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING 15 ft; AFTER DRILLING (DATE) N/A	TOTAL DEPTH OF BORING
Cement				36.5 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	6 inches Asphalt Concrete over 12 inches Aggregate Base.												
	1													
7.00	2	Lean CLAY (CL); stiff; brown; moist.		1	3 5 6	11	45							
		Fat CLAY (CH); very stiff; black; moist.												
	3													
5.00	4													
	5			2	3 5 11	16	85		28	93	UC = 1.06			
3.00	6													
	7	Lean CLAY (CL); medium stiff; light tan brown; moist.												
1.00	8													
	9													
-1.00	10			3	2 3 5	8	75		26	99	UC = 0.44			
	11													
-3.00	12													
	13													
-5.00	14													
	15	SILTY SAND (SM); medium dense; dark gray; moist to wet.		4	3 6 7	13	75							
-7.00	16													
	17	Lean CLAY (CL); stiff; light brown; moist.												
-9.00	18													
	19													
-11.00	20			5	3 9 11	20	90		22	107	UC = 0.97			
	21													
-13.00	22													
	23													
-15.00	24													
	25													

(continued)

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-154
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY: M. Thummaluru		DATE: 4-13-09	SHEET: 1 of 2

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	25	SILTY SAND (SM); medium dense; grayish brown; wet.		6	7 7 7	14	95		25	99	UC = 0.66			
-17.00	26	Lean CLAY (CL); medium stiff; light brown.												
	27													
-19.00	28													
	29													
-21.00	30	SILTY SAND (SM); medium dense; brown.		7	5 11 16	27	95		25	101	UC = 1.74			
	31	Lean CLAY (CL); very stiff; grayish brown; moist.												
-23.00	32													
	33	At 33 ft, grades to Lean CLAY with SAND (CL).												
-25.00	34													
	35	At 35 ft, becomes medium stiff.		8	1 4 7	11	60		27	96	UC = 0.26			
-27.00	36													
	37	Bottom of Borehole at 36.5 ft.												
-29.00	38													
	39													
-31.00	40													
	41													
-33.00	42													
	43													
-35.00	44													
	45													
-37.00	46													
	47													
-39.00	48													
	49													
-41.00	50													
	51													
-43.00	52													
	53													
-45.00	54													
	55													

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				**A-09-154**
DIST. **04**	COUNTY **Santa Clara**	ROUTE **101**	POSTMILE **49.0/52.2**	EA **04-4A-330**
PROJECT OR BRIDGE NAME **101 Auxillary Lane (URS 28649951)**				
BRIDGE NUMBER	PREPARED BY **M. Thummaluru**		DATE **4-13-09**	SHEET **2 of 2**

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-26-09	3-26-09	1980089.6 ft / 6098721.9 ft NAD83	A-09-155
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 65.639' Rt Sta ~ 158+55.650	10 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	CLAYEY GRAVEL (GC); medium dense; light brown; moist.												
	1			1	7 13 15	28	45							
8.00	2	Fat CLAY (CH); stiff; dark gray; moist.												bag sample 2-5 ft
	3													
6.00	4	Lean CLAY (CL); stiff; gray; moist.		2	9 14 16	30	20							
	5	At 5 ft, becomes light gray.												
4.00	6													
	7													
2.00	8													
	9	At 9 ft, with trace GRAVEL.		3	6 6 7	13								disturbed sample
0.00	10	Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11													
-2.00	12													
	13													
-4.00	14													
	15													
-6.00	16													
	17													
-8.00	18													
	19													
-10.00	20													
	21													
-12.00	22													
	23													
-14.00	24													
	25													

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-155
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET	
	M. Thummaluru	4-6-09	1 of 1	

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	4-13-09	4-13-09	1980137.3 ft / 6098929.8 ft NAD83	A-09-156
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 111.579' Lt Sta ~ 159+75.203	10 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B61	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	2.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		7 inches Asphalt Concrete over 4 inches Aggregate Base.												
	1		Poorly graded SAND with GRAVEL (SP); reddish brown.												subbase?
8.00	2		Boring dry ATD Boring Terimated at 2 feet. Bottom of Borehole at 2.0 ft.												hit concrete at 2 feet
	3														
6.00	4														
	5														
4.00	6														
	7														
2.00	8														
	9														
0.00	10														
	11														
-2.00	12														
	13														
-4.00	14														
	15														
-6.00	16														
	17														
-8.00	18														
	19														
-10.00	20														
	21														
-12.00	22														
	23														
-14.00	24														
	25														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-156
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	M. Thummaluru		4-13-09	1 of 1

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	4-14-09	4-14-09	1979755.9 ft / 6099441.7 ft NAD83	A-09-157
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 185.028' Lt Sta ~ 166+08.306	12 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B61	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	4 inches Asphalt Concrete over 15 inches Aggregate Base.												
9.50	2	SANDY lean CLAY with GRAVEL (CL); stiff; brown; moist.	X	1	10 8 8	16	65							Bag Sample 2 - 5 feet
7.50	4	Fat CLAY (CH); stiff; black; moist.												
5.50	6	Lean CLAY (CL); stiff; gray; moist.	X	2	5 8 11	19	70		30	92	UC = 1.55			
3.50	8	At EL. 5.0 ft, becomes tan brown; moist.												
1.50	9	At EL. 3.0 ft, grades to Lean CLAY with SAND; medium stiff; moist to wet.	X	3	4 5 6	11	50		25	100	UC = 0.38			
	10	Boring dry ATD. Bottom of Borehole at 10.0 ft.												
-0.50	12													
-2.50	14													
-4.50	16													
-6.50	18													
-8.50	20													
-10.50	22													
-12.50	24													
	25													

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-157
DIST. 04	COUNTY Santa Clara	ROUTE 101	POSTMILE 49.0/52.2	EA 04-4A-330
PROJECT OR BRIDGE NAME 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY M. Thummaluru	DATE 4-14-09	SHEET 1 of 1	

URS BORING RECORD 200802 28649951-101AUX_SCL.GPJ SNJ_CT.GLB 1/15/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-26-09	3-26-09	1979485.9 ft / 6099581.5 ft NAD83	A-09-158
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 84.354' Lt Sta ~ 168+95.219	12 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	8 inches Asphalt Concrete over 10 inches Aggregate Base.												
10.00	2	SILTY SAND with GRAVEL (SM); medium dense; reddish brown.		1	20 7 7	14	25							bag sample 2- 5 ft
8.00	4	Fat CLAY (CH); very stiff; gray; moist.		2	7 13 21	34	70		26	96	UC = 1.17			
4.00	8	Lean CLAY with GRAVEL (CL); medium stiff; light brown; moist.		3	6 7 8	15	70							sample fell out; driller reran the sampler
2.00	10	Boring dry ATD. Bottom of Borehole at 10.0 ft.												

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-158
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	M. Thummaluru		4-6-09	1 of 1

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	4-12-09	4-12-09	1979438.5 ft / 6099417.3 ft NAD83	A-09-159
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 62.737' Rt Sta ~ 168+08.285	12 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B61	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING 8.2 ft; AFTER DRILLING (DATE) N/A	TOTAL DEPTH OF BORING
Cement				10.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	18 inches aggregate base.												
9.50	2	Fat CLAY (CH); very stiff; black; moist.		1	5 6 6	12	75		27	96	UC = 1.10			Bag sample 2-5 feet
7.50	4	Lean CLAY (CL); medium stiff; gray; moist.												
5.50	6	SANDY lean CLAY (CL); medium stiff; light brown; moist to wet.		2	5 9 10	19	90							
3.50	8	SILTY SAND (SM); loose; brown; wet.												
	9	Lean CLAY (CL); medium stiff; grayish brown mottled with brown; trace GRAVEL.		3	4 5 7	12	90							
1.50	10	Bottom of Borehole at 10.0 ft.												
-0.50	12													
-2.50	14													
-4.50	16													
-6.50	18													
-8.50	20													
-10.50	22													
-12.50	24													

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-159
DIST. 04	COUNTY Santa Clara	ROUTE 101	POSTMILE 49.0/52.2	EA 04-4A-330
PROJECT OR BRIDGE NAME 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY M. Thummaluru	DATE 4-13-09	SHEET 1 of 1	

URS BORING RECORD 200802 28649951-101AUX_SCL.GPJ SNJ_CT.GLB 1/15/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	4-12-09	4-12-09	1979219.8 ft / 6099646.1 ft NAD83	A-09-160
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 64.6' Rt Sta ~ 171+24.772	13 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B61	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			8 ft	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	6 inches Asphalt Concrete over 12 inches Aggregate Base.												
11.00	2	Fat CLAY (CH); stiff; black; moist.		1	6 11 16	27	45							
9.00	4	Lean CLAY with GRAVEL (CL); stiff; gray; moist.												
7.00	6			2	7 10 13	23	45							
5.00	8	SILTY SAND (SM); grayish brown; wet.												
	9	Lean CLAY (CL); medium stiff; brown.		3	5 3 3	6	90		23	104	UC = 0.40			
3.00	10	Bottom of Borehole at 10.0 ft.												
1.00	12													
-1.00	14													
-3.00	16													
-5.00	18													
-7.00	20													
-9.00	22													
-11.00	24													

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-160
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	M. Thummaluru		4-13-09	1 of 1

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	4-1-09	4-1-09	1979235.6 ft / 6099850.7 ft NAD83	A-09-161
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 86.747' Lt Sta ~ 172+62.792	13 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B61	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Auto	107%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			10 ft	N/A	36.5 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	Lean CLAY with GRAVEL (CL); brown; some SAND.												
	1			1	4 4 6	10	75		26	97	UC = 1.28			R
11.00	2	Fat CLAY (CH); very stiff; black; moist.												
	3													
9.00	4	Lean CLAY (CL); stiff; grayish brown; moist; trace SAND.												
	5			2	2 4 6	10	70		17	115	UC = 0.82			
7.00	6													
	7													
5.00	8													
	9													
3.00	10	At 10 ft, becomes medium stiff; light grayish brown.		3	2 2 3	5	50		23	103	UC = 0.50			
	11													
1.00	12													
	13													
-1.00	14													
	15	At 15 ft, becomes grayish brown.		4	1 1 3	4	90		22	104	UC = 0.34			
-3.00	16													
	17													
-5.00	18													
	19													
-7.00	20	At 20 ft, becomes very stiff.		5	2 3 5	8	70		22	106	UC = 1.36			
	21													
-9.00	22													
	23													
-11.00	24													
	25													

(continued)

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-161
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY: M. Thummaluru		DATE: 4-6-09	SHEET: 1 of 2

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	25		Lean CLAY (CL) *(continued)*.		6	5 8 11	19	50		21	106	UC = 1.41			
-13.00	26														
	27														
-15.00	28														
	29														
-17.00	30		At 30 ft, becomes stiff; brown.		7	2 3 6	9	90		21	110	UC = 0.60			
	31														
-19.00	32														
	33														
-21.00	34														
	35		At 35 ft, becomes soft; coarse sand.		8	4 4 8	12	50		18	113	UC = 0.21			
-23.00	36		CLAYEY SAND (SC); dense; grayish brown; moist.												
	37		Bottom of Borehole at 36.5 ft.												
-25.00	38														
	39														
-27.00	40														
	41														
-29.00	42														
	43														
-31.00	44														
	45														
-33.00	46														
	47														
-35.00	48														
	49														
-37.00	50														
	51														
-39.00	52														
	53														
-41.00	54														
	55														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				**A-09-161**
DIST. **04**	COUNTY **Santa Clara**	ROUTE **101**	POSTMILE **49.0/52.2**	EA **04-4A-330**
PROJECT OR BRIDGE NAME **101 Auxillary Lane (URS 28649951)**				
BRIDGE NUMBER	PREPARED BY **M. Thummaluru**		DATE **4-6-09**	SHEET **2 of 2**

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	4-12-09	4-12-09	1978919.1 ft / 6099968.3 ft NAD83	A-09-162
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 62.99' Rt Sta ~ 175+65.441	15 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B61	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			8 ft	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		Reddish brown; 24 inches Aggregate Base.												
	1														
13.00	2		Fat CLAY (CH); stiff; black; moist.		1	3 5 7	12	25							Bag sample 2-5 feet
	3														
11.00	4		Lean CLAY with SAND (CL); medium stiff; grayish brown; moist; trace GRAVEL.												
	5				2	5 6 11	17	65		20	105				
9.00	6														
	7														
7.00	8		SILTY SAND with GRAVEL (SM); medium dense; dark grayish brown; wet.												
	9				3	13 7 3	10	90							
5.00	10		Lean CLAY (CL); brown.												
			Bottom of Borehole at 10.0 ft.												
	11														
3.00	12														
	13														
1.00	14														
	15														
-1.00	16														
	17														
-3.00	18														
	19														
-5.00	20														
	21														
-7.00	22														
	23														
-9.00	24														
	25														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-162
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	M. Thummaluru		4-13-09	1 of 1

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-26-09	3-26-09	1978822.8 ft / 6100259.5 ft NAD83	A-09-163
DRILLING CONTRACTOR: Exploration Geoservices			BOREHOLE LOCATION (Offset, Station, Line): ~ 66.602' Lt Sta ~ 178+43.479	SURFACE ELEVATION: 17 ft NAVD 88
DRILLING METHOD: Hollow-Stem Auger			DRILL RIG: Mobile B53	BOREHOLE DIAMETER: 8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID): Modified CA (1.96), SPT (1.44)			SPT HAMMER TYPE: 140lb/30in - Wire Winch	HAMMER EFFICIENCY, ERi: 46%
BOREHOLE BACKFILL AND COMPLETION: Cement			GROUNDWATER READINGS: DURING DRILLING: Dry; AFTER DRILLING (DATE): N/A	TOTAL DEPTH OF BORING: 11.5 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	CLAYEY SAND with GRAVEL (SC); medium dense; reddish brown; moist.												
	1		X	1	11 11 11	22	65							
14.50	2													bag sample 2-5 ft
	3	Fat CLAY (CH); very stiff; black; moist.												
12.50	4		X	2	9 11 11	22	35		24	95	UC = 1.07			
	5													
10.50	6													
	7													
8.50	8													
	9	Lean CLAY (CL); medium stiff; light brown; moist.	X	3	7 3 4	7	0							no recovery
6.50	10		X	4	4 3 4	7	100							
	11													
4.50	12	Boring dry ATD. Bottom of Borehole at 11.5 ft.												
	13													
2.50	14													
	15													
0.50	16													
	17													
-1.50	18													
	19													
-3.50	20													
	21													
-5.50	22													
	23													
-7.50	24													
	25													

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-163
DIST. 04	COUNTY Santa Clara	ROUTE 101	POSTMILE 49.0/52.2	EA 04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY M. Thummaluru		DATE 4-6-09	SHEET 1 of 1

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	4-12-09	4-12-09	1978679.6 ft / 6100223.7 ft NAD83	A-09-164
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 62.615' Rt Sta ~ 179+15.615	17 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B61	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96), SPT (1.44)			140lb/30in - Auto	107%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			8 ft	N/A	36.5 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	30 inches Aggregate Base with a maximum gravel size up to 1.5 inches.												
15.00	2													
	3	Fat CLAY (CH); very stiff; black; moist; fine roots.		1	3 6 8	14	30		21	104	UC = 1.04			
13.00	4													
	5	Lean CLAY with SAND (CL); stiff; gray; moist; trace GRAVEL.		2	3 5 12	17	60		15	116	UC = 0.89			
11.00	6													
	7													
9.00	8	SILTY SAND (SM).												
	9	CLAYEY SAND (SC); loose; brown mottled with dark brown; moist to wet.												
7.00	10			3	0 2 3	5	65		17	115				PA
	11													
5.00	12	At 12 ft, with less fines.												
	13	SILTY SAND (SM); dense; dark grayish brown; trace GRAVEL.												
3.00	14													
	15			4	8 10 12	22	90							
1.00	16													
	17													
-1.00	18													
	19													
-3.00	20													
	21	Lean CLAY (CL); medium stiff; light bluish gray to brown; moist.		5	6 4 4	8	90							
-5.00	22													
	23													
-7.00	24													
	25													

(continued)

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-164
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	M. Thummaluru		4-13-09	1 of 2

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	25		At 25 ft, becomes stiff. Lean CLAY (CL) *(continued)*.		6	6 7 8	15	70							
-9.00	26														
	27														
-11.00	28														
	29														
-13.00	30		At 30 ft, becomes medium stiff; with gray mottling.		7	2 6 6	12	65		22	104	UC = 0.38			
	31														
-15.00	32														
	33														
-17.00	34														
	35				8	3 4 6	10	70		27	97	UC = 0.36			
-19.00	36														
	37		Bottom of Borehole at 36.5 ft.												
-21.00	38														
	39														
-23.00	40														
	41														
-25.00	42														
	43														
-27.00	44														
	45														
-29.00	46														
	47														
-31.00	48														
	49														
-33.00	50														
	51														
-35.00	52														
	53														
-37.00	54														
	55														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				**A-09-164**
DIST. **04**	COUNTY **Santa Clara**	ROUTE **101**	POSTMILE **49.0/52.2**	EA **04-4A-330**
PROJECT OR BRIDGE NAME **101 Auxillary Lane (URS 28649951)**				
BRIDGE NUMBER	PREPARED BY **M. Thummaluru**		DATE **4-13-09**	SHEET **2 of 2**

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-26-09	3-26-09	1978578.7 ft / 6100527.8 ft NAD83	A-09-165
DRILLING CONTRACTOR: Exploration Geoservices			BOREHOLE LOCATION (Offset, Station, Line): ~ 72.966' Lt Sta ~ 182+06.074	SURFACE ELEVATION: 19 ft NAVD 88
DRILLING METHOD: Hollow-Stem Auger			DRILL RIG: Mobile B53	BOREHOLE DIAMETER: 8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID): Modified CA (1.96)			SPT HAMMER TYPE: 140lb/30in - Wire Winch	HAMMER EFFICIENCY, ERi: 46%
BOREHOLE BACKFILL AND COMPLETION: Cement			GROUNDWATER READINGS: DURING DRILLING: Dry; AFTER DRILLING (DATE): N/A	TOTAL DEPTH OF BORING: 10.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	Lean CLAY with SAND (CL); stiff; brown; moist.												
	1			1	6 6 13	19	75		19	101				
16.50	2													bag sample 2-5 ft
	3													
14.50	4	SILTY SAND with GRAVEL (SM); medium dense; dark grayish brown; moist.		2	7 13 12	25	45							
	5	Fat CLAY (CH); stiff; dark gray; moist.												
12.50	6													
	7													
10.50	8													
	9	Lean to fat CLAY (CL/CH/CH); medium stiff; light brown; moist.		3	4 4 5	9	40		24	100	UC = 0.34			
8.50	10	Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11													
6.50	12													
	13													
4.50	14													
	15													
2.50	16													
	17													
0.50	18													
	19													
-1.50	20													
	21													
-3.50	22													
	23													
-5.50	24													
	25													

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-165
DIST. 04	COUNTY Santa Clara	ROUTE 101	POSTMILE 49.0/52.2	EA 04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY M. Thummaluru	DATE 4-6-09	SHEET 1 of 1	

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	4-12-09	4-12-09	1978405.3 ft / 6100518.3 ft NAD83	A-09-166
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 59.794' Rt Sta ~ 183+18.123	20 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B61	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry / N/A	9.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	18 inches Aggregate Base; reddish brown.												
	1													
17.50	2	SANDY lean CLAY (CL); dark reddish brown; [FILL]. GRAVELLY lean CLAY (CL); stiff; gray; moist; [FILL].		1	6 6 8	14	50							Bag Sample 2-5 feet R
	3													
15.50	4													
	5	Lean CLAY with SAND (CL); very stiff; gray; moist.		2	5 6 5	11	40		17	109	UC = 1.82			
13.50	6													
	7													
11.50	8													
	9			3	8		100							Sampler advanced 6 in. storm drain?
9.50	10	Boring dry to ATD Boring terminated at 9 feet due to suspicition of hitting a underground utility. Bottom of Borehole at 9.0 ft.												
	11													
7.50	12													
	13													
5.50	14													
	15													
3.50	16													
	17													
1.50	18													
	19													
-0.50	20													
	21													
-2.50	22													
	23													
-4.50	24													
	25													

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-166
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	M. Thummaluru		4-13-09	1 of 1

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	4-13-09	4-13-09	1978036.1 ft / 6101102.8 ft NAD83	A-09-167
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 72.228' Lt Sta ~ 189+96.7	22 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B61	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Auto	107%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	36.5 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	8 inches Aspahlt Concrete over 46 inches Aggregate Base.												
20.00	2													
18.00	4													
	5	Fat CLAY (CH); hard; black; moist.												
16.00	6			1	5 11 14	25	70		25	97	UC = 2.22			
	7	Lean CLAY (CL); gray.												
14.00	8													
	9	SANDY lean CLAY (CL); medium stiff; grayish brown; moist.												
12.00	10			2	2 2 4	6	65		15	120				
10.00	12													
8.00	14													
	15	Lean CLAY (CL); stiff; gray; moist to wet.												
6.00	16			3	0 2 3	5	95		28	95	UC = 0.61			
4.00	18													
2.00	20	At EL. 2.0 ft, becomes soft; dark gray.		4	0 0 4	4	100		32	89	UC = 0.24			PI
0.00	22													
-2.00	24													
	25													

(continued)

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-167
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET	
	M. Thummaluru	4-14-09	1 of 2	

URS BORING RECORD 200802 28649951-101AUX_SCL.GPJ SNJ_CT.GLB 1/15/10

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	25		At 25 ft, becomes very stiff. Lean CLAY (CL) *(continued)*.		5	3 6 8	14	70		23	104	UC = 1.53			
-4.00	26														
	27														
-6.00	28														
	29														
-8.00	30		At 30 ft, becomes stiff; with light gray speckling.		6	2 3 5	8	70		26	99	UC = 0.76			
	31														
-10.00	32														
	33														
-12.00	34														
	35				7	2 5 7	12	60							
-14.00	36		CLAYEY SAND (SC); dense; gray.												
	37		Bottom of Borehole at 36.5 ft.												
-16.00	38														
	39														
-18.00	40														
	41														
-20.00	42														
	43														
-22.00	44														
	45														
-24.00	46														
	47														
-26.00	48														
	49														
-28.00	50														
	51														
-30.00	52														
	53														
-32.00	54														
	55														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				**A-09-167**
DIST. **04**	COUNTY **Santa Clara**	ROUTE **101**	POSTMILE **49.0/52.2**	EA **04-4A-330**
PROJECT OR BRIDGE NAME **101 Auxillary Lane (URS 28649951)**				
BRIDGE NUMBER	PREPARED BY **M. Thummaluru**		DATE **4-14-09**	SHEET **2 of 2**

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-31-09	3-31-09	1977796.9 ft / 6101158.2 ft NAD83	A-09-168
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 63.852' Rt Sta ~ 192+01.014	22 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Auto	107%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY SAND with GRAVEL (SM); light brown.												
	1		Fat CLAY (CH); stiff; black; moist.		1	8 12 22	34	40							
19.50	2														Bag sample 2 - 5 feet
	3														
17.50	4		At 3.5 ft, becomes dark gray.		2	10 13 18	31	50							
	5														
15.50	6														
	7		Lean CLAY with SAND (CL); medium stiff; grayish brown with some black speckling; moist.												
13.50	8														
	9				3	4 4 5	9	70							
11.50	10		Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11														
9.50	12														
	13														
7.50	14														
	15														
5.50	16														
	17														
3.50	18														
	19														
1.50	20														
	21														
-0.50	22														
	23														
-2.50	24														
	25														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-168
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	M. Thummaluru		4-8-09	1 of 1

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-31-09	3-31-09	1977666.8 ft / 6101301.4 ft NAD83	A-09-169
DRILLING CONTRACTOR: Exploration Geoservices			BOREHOLE LOCATION (Offset, Station, Line): ~ 60.359' Rt Sta ~ 193+94.468	SURFACE ELEVATION: 22 ft NAVD 88
DRILLING METHOD: Hollow-Stem Auger			DRILL RIG: Mobile B53	BOREHOLE DIAMETER: 8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID): Modified CA (1.96), SPT (1.44)			SPT HAMMER TYPE: 140lb/30in - Auto	HAMMER EFFICIENCY, ERi: 107%
BOREHOLE BACKFILL AND COMPLETION: Cement			GROUNDWATER READINGS: DURING DRILLING 18.5 ft; AFTER DRILLING (DATE) 10 ft on 3-31-09	TOTAL DEPTH OF BORING: 35.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	SILTY SAND with GRAVEL (SM); light brown.												
	1	Fat CLAY (CH); hard; black; moist.		1	4 7 8	15	70		30	89	UC = 2.40			
19.50	2													Bag sample 2 - 5 feet
	3													
17.50	4	Lean to fat CLAY (CL/CH); very stiff; dark grayish brown; moist.		2	4 9 11	20	65		27	94	UC = 1.74			
	5													
15.50	6													
	7													
13.50	8	Lean CLAY (CL); stiff; grayish brown mottled with orange brown; moist.												
	9			3	3 4 5	9	70		24	100	UC = 0.76			
11.50	10													
	11													
9.50	12													
	13	At 12.5 ft, becomes medium stiff; brown.												
7.50	14			4	3 3 5	8	45		27	96	UC = 0.37			
	15													
5.50	16													
	17													
3.50	18	CLAYEY SAND (SC); loose; dark gray; moist to wet.												
	19			5	1 3 2	5	85		17	117				PA
1.50	20													
	21													
-0.50	22													
	23	SANDY lean CLAY (CL); medium stiff; gray; moist.												
-2.50	24			6	4 5 5	10	90							
	25													

(continued)

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-169
DIST. 04	COUNTY Santa Clara	ROUTE 101	POSTMILE 49.0/52.2	EA 04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY M. Thummaluru		DATE 4-8-09	SHEET 1 of 2

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	25		SANDY lean CLAY (CL) *(continued)*.												
-4.50	26														
	27														
-6.50	28														
	29		Lean CLAY (CL); very stiff; dark gray; moist; trace SAND.		7	5 7 10	17	70		26	99	UC = 1.16			
-8.50	30														
	31		At 31 ft, becomes stiff.												
-10.50	32														
	33														
-12.50	34				8	4 6 8	14	70		26	99	UC = 0.62			
	35		Bottom of Borehole at 35.0 ft.												
-14.50	36														
	37														
-16.50	38														
	39														
-18.50	40														
	41														
-20.50	42														
	43														
-22.50	44														
	45														
-24.50	46														
	47														
-26.50	48														
	49														
-28.50	50														
	51														
-30.50	52														
	53														
-32.50	54														
	55														

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				**A-09-169**
DIST. **04**	COUNTY **Santa Clara**	ROUTE **101**	POSTMILE **49.0/52.2**	EA **04-4A-330**
PROJECT OR BRIDGE NAME **101 Auxillary Lane (URS 28649951)**				
BRIDGE NUMBER	PREPARED BY **M. Thummaluru**		DATE **4-8-09**	SHEET **2 of 2**

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	4-13-09	4-13-09	1977499.8 ft / 6101741.6 ft NAD83	A-09-170
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 119.756' Lt Sta ~ 198+30.446	21 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B61	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Wire Winch	
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			7.6 ft	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	10 inches Asphalt Concrete over 26 inches Aggregate Base.												
18.50	2													
	3	Lean CLAY (CL); stiff; gray; moist.		1	4 3 4	7	55		14	120				
16.50	4													
	5	SANDY lean CLAY (CL); stiff; gray; moist.		2	3 6 12	18	75		17	116				
14.50	6													
	7													
12.50	8	Poorly graded SAND with GRAVEL (SP); medium dense; dark grayish brown; wet.												
	9			3	10 7 4	11	65		10	127				
10.50	10	Lean CLAY (CL); stiff; grayish brown; moist.												
		Bottom of Borehole at 10.0 ft.												
8.50	12													
6.50	14													
4.50	16													
2.50	18													
0.50	20													
-1.50	22													
-3.50	24													

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-170
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	M. Thummaluru		4-14-09	1 of 1

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	4-1-09	4-1-09	1977377.7 ft / 6101585.5 ft NAD83	A-09-171
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 75.912' Rt Sta ~ 197+99.324	24 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Auto	107%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			10.5 ft	N/A	40.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	Poorly graded SAND with SILT and GRAVEL (SP-SM); reddish brown; moist to wet.												
	1			1	4 3 4	7	65							
21.50	2	Fat CLAY (CH); medium stiff; black; moist; with fine roots.							37	77	UC = 0.47			
	3													
19.50	4	At 3.5 ft, becomes very stiff.		2	4 5 8	13	45		35	85	UC = 1.04			
	5													
17.50	6													
	7	Lean CLAY (CL); medium stiff; grayish brown mottled with orange brown; moist.												
15.50	8													
	9			3	2 2 4	6	50		25	98	UC = 0.32			
13.50	10	At 10 ft, with sand.												
	11													
11.50	12													
	13													
9.50	14	At 14 ft, with fine clayey sand lenses.		4	3 5 6	11	55		20	104	UC = 0.25			
	15													
7.50	16													
	17	Fat CLAY (CH); medium stiff; dark grayish brown; moist.												
5.50	18													
	19			5	3 3 4	7	100		32	89	UC = 0.42			
3.50	20													
	21													
1.50	22	SANDY lean CLAY (CL); soft; gray; moist.												
	23													
-0.50	24			6	2 3 3	6	100		19	113	UC = 0.22			
	25													

(continued)

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-171
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET	
	M. Thummaluru	4-8-09	1 of 2	

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	25		SANDY lean CLAY (CL) *(continued)*.												
-2.50	26														
	27														
-4.50	28														
	29		At 28.5 ft, grades to Lean CLAY with SAND; medium stiff.		7	3 4 5	9	65		26	98	UC = 0.35			
-6.50	30														
	31														
-8.50	32														
	33														
-10.50	34		Fat CLAY (CH); stiff; greenish gray; trace GRAVEL.		8	6 7 8	15	80		31	92	UC = 0.56			
	35		SANDY lean CLAY (CL); medium stiff; gray; moist.												
-12.50	36														
	37														
-14.50	38														
	39				9	3 4 5	9	100		20	110	UC = 0.26			
-16.50	40		Bottom of Borehole at 40.0 ft.												
	41														
-18.50	42														
	43														
-20.50	44														
	45														
-22.50	46														
	47														
-24.50	48														
	49														
-26.50	50														
	51														
-28.50	52														
	53														
-30.50	54														
	55														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				**A-09-171**
DIST. **04**	COUNTY **Santa Clara**	ROUTE **101**	POSTMILE **49.0/52.2**	EA **04-4A-330**
PROJECT OR BRIDGE NAME **101 Auxillary Lane (URS 28649951)**				
BRIDGE NUMBER	PREPARED BY **M. Thummaluru**		DATE **4-8-09**	SHEET **2 of 2**

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-26-09	3-26-09	1977288.9 ft / 6101902.2 ft NAD83	A-09-172
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 67.158' Lt Sta ~ 200+95.277	24 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	10 inches Asphalt Concrete over 12 inches Aggregate Base.												
21.50	2	SILTY SAND with GRAVEL (SM); very dense; dark gray; moist.		1	33 36 27	63	90		7	133				bag sample 2 - 5 ft R
19.50	4	Fat CLAY (CH); stiff; black mottled with grayish brown; moist.												
17.50	6			2	5 6 6	12	50							
15.50	8	Lean CLAY (CL); stiff; grayish brown; moist; trace GRAVEL.												
13.50	10			3	6 8 8	16	75							

Boring dry ATD.
Bottom of Borehole at 10.0 ft.

URS BORING RECORD 200802 28649951-101AUX_SCL.GPJ SNJ_CT.GLB 1/15/10

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-172
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET	
	M. Thummaluru	4-6-09	1 of 1	

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	4-1-09	4-1-09	1977095.0 ft / 6101921.4 ft NAD83	A-09-173
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 71.447' Rt Sta ~ 202+32.124	26 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry	N/A	10.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	SILTY SAND with GRAVEL (SM); medium dense; reddish brown; moist.												
	1			1	28 16 19	35	40							
23.50	2													Bag sample 2 - 5 feet
	3	Fat CLAY (CH); very stiff; black to dark gray; moist.												
21.50	4			2	14 12 13	25	35							
	5													
19.50	6													
	7	SANDY lean CLAY (CL); medium stiff; light gray; moist to wet.												
17.50	8													
	9			3	2 2 6	8	90							
15.50	10	Boring dry ATD. Bottom of Borehole at 10.0 ft.												
	11													
13.50	12													
	13													
11.50	14													
	15													
9.50	16													
	17													
7.50	18													
	19													
5.50	20													
	21													
3.50	22													
	23													
1.50	24													
	25													

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-173
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	M. Thummaluru		4-6-09	1 of 1

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-26-09	3-26-09	1977065.7 ft / 6102203.0 ft NAD83	A-09-174
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 73.901' Lt Sta ~ 204+75.169	25 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96), SPT (1.44)			140lb/30in - Wire Winch	46%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			10 ft	N/A	11.5 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	10 inches Asphalt Concrete over 12 inches Aggregate Base.												
23.00	2	CLAYEY SAND with GRAVEL (SC); medium dense; dark gray; moist.		1	22 21 8	29	45							bag sample 2-5 ft
21.00	4	Fat CLAY (CH); very stiff; dark brown to gray; moist.												
19.00	6			2	8 8 7	15			22	103	UC = 1.66			
17.00	8													
	9	Poorly graded SAND (SP); medium dense; dark grayish brown; wet.		3	9 12 11	23	0							no recovery
15.00	10			4	9 8 12	20	85							
13.00	12	Bottom of Borehole at 11.5 ft.												
11.00	14													
9.00	16													
7.00	18													
5.00	20													
3.00	22													
1.00	24													
	25													

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-174
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	M. Thummaluru		4-6-09	1 of 1

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	4-1-09	4-1-09	1976647.4 ft / 6102565.0 ft NAD83	A-09-175
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 85.244' Rt Sta ~ 210+04.677	29 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96"), SPT (1.44")			140lb/30in - Auto	107%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE) / TOTAL DEPTH OF BORING
Cement			30 ft	8 ft on 4-1-09 / 36.5 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	4 inches Asphalt Concrete over 38 inches Aggregate Base.												
	1			1	7 7 4	11	60							
26.50	2													Bag sample 2 - 5 feet R
	3													
24.50	4	Fat CLAY (CH); medium stiff; black; moist.		2	6 5 7	12	60							
	5			3	3 6 8	14	85		28	94	UC = 1.05			
22.50	6	Lean CLAY (CL); very stiff; grayish brown with dark brown speckling; moist.												
	7													
20.50	8													
	9													
18.50	10	At 10 ft, becomes soft to medium stiff; trace SAND.		4	2 2 3	5	80		21	105	UC = 0.25			
	11													
16.50	12													
	13													
14.50	14													
	15	At 15 ft, grades to moist to wet; Lean CLAY with SAND (CL); medium stiff; dark brown; moist; fine SAND.		5	1 2 4	6	70		24	102	UC = 0.43			
12.50	16													
	17													
10.50	18													
	19	Lean to fat CLAY (CL/CH); medium stiff; dark bluish gray; moist.												
8.50	20			6	1 2 4	6	90		24	103	UC = 0.43			
	21													
6.50	22													
	23													
4.50	24													
	25													

(continued)

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-175
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET	
	M. Thummaluru	4-6-09	1 of 2	

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	25	At 25 ft, becomes medium stiff. Lean to fat CLAY (CL/CH) *(continued)*.		7	1 3 4	7	75		31	93	UC = 0.39			
2.50	26													
	27													
0.50	28													
	29													
-1.50	30			8	1 2 9	11	95							
	31	SILTY SAND with GRAVEL (SM); medium dense; dark bluish gray; moist; trace GRAVEL.							15	123				PA
-3.50	32													
	33													
-5.50	34													
	35			9	7 3 4	7	90							
-7.50	36	Lean CLAY (CL); stiff; brown; moist.												
	37	Bottom of Borehole at 36.5 ft.												
-9.50	38													
	39													
-11.50	40													
	41													
-13.50	42													
	43													
-15.50	44													
	45													
-17.50	46													
	47													
-19.50	48													
	49													
-21.50	50													
	51													
-23.50	52													
	53													
-25.50	54													
	55													

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				**A-09-175**
DIST. **04**	COUNTY **Santa Clara**	ROUTE **101**	POSTMILE **49.0/52.2**	EA **04-4A-330**
PROJECT OR BRIDGE NAME **101 Auxillary Lane (URS 28649951)**				
BRIDGE NUMBER	PREPARED BY **M. Thummaluru**		DATE **4-6-09**	SHEET **2 of 2**

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	4-2-09	4-2-09	1979658.8 ft / 6099400.7 ft NAD83	A-09-177
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 86.282' Lt Sta ~ 166+45.107	11 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B61	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Auto	107%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING 15 ft; AFTER DRILLING (DATE) N/A	TOTAL DEPTH OF BORING
Cement				36.5 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	Lean CLAY (CL); brown; with roots.												
	1	Fat CLAY (CH); stiff; black; moist.												
8.50	2			1	3 5 9	14	65		29	89	UC = 0.80			
	3													
6.50	4	Lean CLAY (CL); very stiff; dark gray; moist.												
	5			2	3 8 11	19	70		22	104	UC = 1.86			
4.50	6													
	7													
2.50	8	At 8 ft, becomes medium stiff; brown with dark brown speckling.												
	9													
0.50	10			3	2 6 2	8	50		28	94	UC = 0.29			
	11													
-1.50	12													
	13													
-3.50	14													
	15	SILTY SAND (SM); medium dense; dark gray; wet.		4	2 4 5	9	85		20	101				
-5.50	16	Lean CLAY (CL); stiff; dark grayish brown; moist.												
	17													
-7.50	18													
	19													
-9.50	20			5	4 5 7	12	70							
	21	SILTY SAND (SM); medium dense; dark grayish brown; wet.							21	111				
-11.50	22	Lean CLAY (CL); stiff; grayish brown; moist.												
	23													
-13.50	24													
	25													

(continued)

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-177
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY: M. Thummaluru		DATE: 4-8-09	SHEET: 1 of 2

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	25		Lean CLAY (CL) *(continued)*.		6	3 4 5	9	65							
-15.50	26		SILTY SAND (SM); medium dense; dark grayish brown; moist to wet.							18	116				PA
	27														
-17.50	28		Lean CLAY (CL); stiff; grayish brown; moist; trace coarse SAND.												
	29														
-19.50	30				7	4 6 9	15	65		18	115	UC = 0.96			
	31														
-21.50	32														
	33														
-23.50	34														
	35		At 35 ft, becomes very stiff.		8	5 11 13	24	90		22	107	UC = 1.95			
-25.50	36														
	37		Bottom of Borehole at 36.5 ft.												
-27.50	38														
	39														
-29.50	40														
	41														
-31.50	42														
	43														
-33.50	44														
	45														
-35.50	46														
	47														
-37.50	48														
	49														
-39.50	50														
	51														
-41.50	52														
	53														
-43.50	54														
	55														

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				**A-09-177**
DIST. **04**	COUNTY **Santa Clara**	ROUTE **101**	POSTMILE **49.0/52.2**	EA **04-4A-330**
PROJECT OR BRIDGE NAME **101 Auxillary Lane (URS 28649951)**				
BRIDGE NUMBER	PREPARED BY **M. Thummaluru**		DATE **4-8-09**	SHEET **2 of 2**

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-30-09	3-30-09	1982954.6 ft / 6096140.7 ft NAD83	A-09-178
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 75.593' Rt Sta ~ 120+02.073	5 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96"), SPT (1.44")			140lb/30in - Auto	107%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING 12 ft; AFTER DRILLING (DATE) N/A	TOTAL DEPTH OF BORING
Cement				35.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0														no sampling from 0 to 13.5 feet
	1														
3.00	2														
	3														
1.00	4														
	5														
-1.00	6														
	7														
-3.00	8														
	9														
-5.00	10														
	11														
-7.00	12														
	13														
-9.00	14		Lean CLAY (CL); very stiff; gray mottled with brown; moist.		1	5 9 9	18	75		22 21	106 107	UC = 1.53			
	15														
-11.00	16														
	17														
-13.00	18		Lean CLAY (CL); stiff; brown; moist. At 18.5 ft, becomes brown; with no mottles.		2	9 8 9	17			29	93	UC = 1.36			
	19														
-15.00	20														
	21														
-17.00	22														
	23														
-19.00	24		SILTY SAND (SM); dense; dark brown; moist to wet; trace fine GRAVEL.		3	7 12 18	30	100		16 14	113 118				
	25														

(continued)

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-178
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	M. Thummaluru		3-31-09	1 of 2

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	25		SILTY SAND (SM) *(continued)*.												
-21.00	26														
	27														
-23.00	28														
	29		At 28.5 ft, with less fines.		4	12 17 21	38	65		8	132				
-25.00	30														
	31														
-27.00	32														
	33														
-29.00	34				5	10 14 15	29			13					PA
	35		Bottom of Borehole at 35.0 ft.												
-31.00	36														
	37														
-33.00	38														
	39														
-35.00	40														
	41														
-37.00	42														
	43														
-39.00	44														
	45														
-41.00	46														
	47														
-43.00	48														
	49														
-45.00	50														
	51														
-47.00	52														
	53														
-49.00	54														
	55														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				**A-09-178**
DIST. **04**	COUNTY **Santa Clara**	ROUTE **101**	POSTMILE **49.0/52.2**	EA **04-4A-330**
PROJECT OR BRIDGE NAME **101 Auxillary Lane (URS 28649951)**				
BRIDGE NUMBER	PREPARED BY **M. Thummaluru**		DATE **3-31-09**	SHEET **2 of 2**

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
Mano	4-2-09	4-6-09	1984956.5 ft / 6094701.3 ft NAD83	A-09-179
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 62.555' Rt Sta ~ 95+40.340	7 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B61	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Auto	107%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING 9.2 ft; AFTER DRILLING (DATE) N/A	TOTAL DEPTH OF BORING
Cement				36.5 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0														
	1														no sampling from 0 to 10 feet
5.00	2														
	3														
3.00	4														
	5														
1.00	6														
	7														
-1.00	8														
	9														
-3.00	10		Lean CLAY with SAND (CL); medium stiff; dark greenish gray; moist.		1	0 1 2	3	60		24	101	UC = 0.30			
	11														
-5.00	12														
	13														
-7.00	14														
	15		At EL. -8.0 ft, becomes medium stiff to stiff; greenish gray mottled with light gray.		2	1 4 4	8	75		21	107	UC = 0.50			
-9.00	16														
	17														
-11.00	18														
	19														
-13.00	20		Well-graded SAND with SILT and GRAVEL (SW-SM); medium dense; dark gray; moist; trace GRAVEL.		3	1 5 7	12	80		17 13	115 116				PA
	21														
-15.00	22														
	23														
-17.00	24														
	25														

(continued)

URS BORING RECORD 200802 28649951-101AUX_SCL.GPJ SNJ_CT.GLB 1/15/10

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-179
DIST. 04	COUNTY Santa Clara	ROUTE 101	POSTMILE 49.0/52.2	EA 04-4A-330
PROJECT OR BRIDGE NAME 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY M. Thummaluru	DATE 4-6-09	SHEET 1 of 2	

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	25		Lean CLAY (CL); soft; dark grayish brown; moist.		4	0 0 2	2	100		32	88	UC = 0.18			
-19.00	26														
	27														
-21.00	28														
	29														
-23.00	30		SILTY SAND (SM); dense; dark gray; wet.		5	5 10 12	22	70		16	121				
	31														
-25.00	32														
	33														
-27.00	34														
	35		Lean CLAY (CL); medium stiff; brown; moist.		6	3 3 5	8	100		30	93	UC = 0.31			
-29.00	36														
	37		Bottom of Borehole at 36.5 ft.												
-31.00	38														
	39														
-33.00	40														
	41														
-35.00	42														
	43														
-37.00	44														
	45														
-39.00	46														
	47														
-41.00	48														
	49														
-43.00	50														
	51														
-45.00	52														
	53														
-47.00	54														
	55														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				**A-09-179**
DIST. **04**	COUNTY **Santa Clara**	ROUTE **101**	POSTMILE **49.0/52.2**	EA **04-4A-330**
PROJECT OR BRIDGE NAME **101 Auxillary Lane (URS 28649951)**				
BRIDGE NUMBER	PREPARED BY **M. Thummaluru**		DATE **4-6-09**	SHEET **2 of 2**

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
Mano	4-2-09	4-6-09	1985276.1 ft / 6094452.6 ft NAD83	A-09-180
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 69.879' Lt Sta ~ 91+35.406	7 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B61	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Auto	107%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			10.5 ft	N/A	36.5 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY GRAVEL with SAND (GM); dark gray; moist.												
	1				1	5 3 9	12	60		23	89	UC = 0.25			
5.00	2		Lean CLAY (CL); soft to medium stiff; very dark grayish brown; moist.												
	3		SANDY lean CLAY with GRAVEL (CL); dark olive brown.												
3.00	4														
	5		SILTY SAND with GRAVEL (SM); loose; moist.		2	3 3 2	5	70							
1.00	6														
	7		SANDY lean CLAY with GRAVEL (CL).												
-1.00	8														
	9														
-3.00	10		Fat CLAY (CH); medium stiff; black to dark gray; moist.		3	1 2 3	5	100		33	89	UC = 0.37			
	11														
-5.00	12														
	13														
-7.00	14														
	15				4	3 5 8	13	70		20	110	UC = 0.50			
-9.00	16														
	17		SILTY SAND (SM); dense; dark gray; moist.												
-11.00	18														
	19														
-13.00	20				5	15 16 9	25	80							
	21														
-15.00	22		SANDY lean CLAY with GRAVEL (CL); brown; moist.												
	23														
-17.00	24		Lean CLAY (CL); very stiff; greenish gray; moist.												
	25														

(continued)

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-180
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY: M. Thummaluru		DATE: 4-6-09	SHEET: 1 of 2

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	25		Lean CLAY (CL) *(continued)*.		6	1 4 6	10	80		23	103	UC = 1.27			
-19.00	26														
	27		At 27 ft, with trace GRAVEL.												
-21.00	28														
	29														
-23.00	30		At 30 ft, becomes stiff; brown mottled with light gray.		7	2 3 4	7	70		31	91	UC = 0.53			
	31														
-25.00	32														
	33														
-27.00	34														
	35				8	3 4 7	11	80		24	100	UC = 0.63			
-29.00	36														
	37		Bottom of Borehole at 36.5 ft.												
-31.00	38														
	39														
-33.00	40														
	41														
-35.00	42														
	43														
-37.00	44														
	45														
-39.00	46														
	47														
-41.00	48														
	49														
-43.00	50														
	51														
-45.00	52														
	53														
-47.00	54														
	55														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				**A-09-180**
DIST. **04**	COUNTY **Santa Clara**	ROUTE **101**	POSTMILE **49.0/52.2**	EA **04-4A-330**
PROJECT OR BRIDGE NAME **101 Auxillary Lane (URS 28649951)**				
BRIDGE NUMBER	PREPARED BY **M. Thummaluru**		DATE **4-6-09**	SHEET **2 of 2**

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
Mano	4-2-09	4-2-09	1985619.7 ft / 6094175.0 ft NAD83	A-09-181
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 69.847' Lt Sta ~ 86+93.689	8 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B61	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Auto	107%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING 28 ft; AFTER DRILLING (DATE) N/A	TOTAL DEPTH OF BORING
Cement				36.5 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0														
	1														no sampling from 0 to 10 feet
5.50	2														
	3														
3.50	4														
	5														
1.50	6														
	7														
-0.50	8														
	9														
-2.50	10		Lean CLAY (CL); medium stiff; dark gray to brown; moist.		1	1 2 3	5	100		25	98	UC = 0.44			
	11														
-4.50	12														
	13														
-6.50	14														
	15		At 15 ft, becomes stiff; brown mottled with light gray; trace GRAVEL.		2	3 3 4	7	100		31	90	UC = 0.70			
-8.50	16														
	17														
-10.50	18														
	19														
-12.50	20		At 20 ft, with no gravel.		3	1 2 4	6	90		21	106	UC = 0.65			
	21														
-14.50	22														
	23														
-16.50	24														
	25														

(continued)

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-181
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY: M. Thummaluru		DATE: 4-6-09	SHEET: 1 of 2

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	25		At 25 ft, becomes very stiff. Lean CLAY (CL) *(continued)*.		4	2 2 5	7	100		20	108	UC = 1.33			
-18.50	26														
	27														
-20.50	28														
	29														
-22.50	30		At 30 ft, becomes medium stiff; greenish gray; trace GRAVEL.		5	1 3 3	6	100		28	95	UC = 0.38			
	31														
-24.50	32														
	33														
-26.50	34														
	35				6	3 3 4	7	0							
-28.50	36														
	37		Bottom of Borehole at 36.5 ft.												
-30.50	38														
	39														
-32.50	40														
	41														
-34.50	42														
	43														
-36.50	44														
	45														
-38.50	46														
	47														
-40.50	48														
	49														
-42.50	50														
	51														
-44.50	52														
	53														
-46.50	54														
	55														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				**A-09-181**
DIST. **04**	COUNTY **Santa Clara**	ROUTE **101**	POSTMILE **49.0/52.2**	EA **04-4A-330**
PROJECT OR BRIDGE NAME **101 Auxillary Lane (URS 28649951)**				
BRIDGE NUMBER	PREPARED BY **M. Thummaluru**		DATE **4-6-09**	SHEET **2 of 2**

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-30-09	3-30-09	1985677.6 ft / 6093949.4 ft NAD83	A-09-182
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 69.3' Rt Sta ~ 85+06.884	7 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96")			140lb/30in - Auto	107%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			8 ft	N/A	35.0 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	CLAYEY SAND with GRAVEL (SC); medium dense; brown; moist.												
5.00	2			1	4 7 9	16	70		11	114				bag sample 2 - 5 feet
	3	SILTY SAND with GRAVEL (SM); medium dense; gray; moist.												
3.00	4			2	8 7 4	11	75							
	5	Fat CLAY with SAND (CH); stiff; black; moist.												
1.00	6													
	7	Lean to fat CLAY (CL/CH); stiff; gray; moist.												
-1.00	8													
	9	Lean CLAY (CL); medium stiff; gray mottled with brown; moist.		3	2 4 6	10	100		26	99	UC = 0.28			
-3.00	10													
	11													
-5.00	12													
	13	SILTY SAND with GRAVEL (SM); medium dense; dark gray; moist to wet; fine GRAVEL.												
-7.00	14	Lean CLAY with GRAVEL (CL); stiff; grayish brown; moist.		4	4 5 6	11	95		27	96	UC = 0.66			
	15													
-9.00	16													
	17													
-11.00	18													
	19	At 19 ft, same as above except medium stiff, some black spekling.		5	4 5 5	10	85		26	99	UC = 0.33			PI
-13.00	20													
	21													
-15.00	22													
	23													
-17.00	24	At 23.5 ft, becomes very stiff.		6	5 6 6	12	75		19	110	UC = 1.36			
	25													

(continued)

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-182
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	M. Thummaluru		3-31-09	1 of 2

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	25		Lean CLAY with GRAVEL (CL) *(continued)*.												
-19.00	26														
	27														
-21.00	28														
	29		At 28.5 ft, becomes medium stiff.		7	3 3 4	7	70		28	94	UC = 0.45			
-23.00	30														
	31														
-25.00	32														
	33														
-27.00	34		At 33.5 ft, becomes soft.		8	2 2 3	5	60		19	108	UC = 0.2			
	35		Bottom of Borehole at 35.0 ft.												
-29.00	36														
	37														
-31.00	38														
	39														
-33.00	40														
	41														
-35.00	42														
	43														
-37.00	44														
	45														
-39.00	46														
	47														
-41.00	48														
	49														
-43.00	50														
	51														
-45.00	52														
	53														
-47.00	54														
	55														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				**A-09-182**
DIST. **04**	COUNTY **Santa Clara**	ROUTE **101**	POSTMILE **49.0/52.2**	EA **04-4A-330**
PROJECT OR BRIDGE NAME **101 Auxillary Lane (URS 28649951)**				
BRIDGE NUMBER	PREPARED BY **M. Thummaluru**		DATE **3-31-09**	SHEET **2 of 2**

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
Mano	4-2-09	4-2-09	1986572.6 ft / 6093407.5 ft NAD83	A-09-183
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 71.5' Lt Sta ~ 74+70	10 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B61	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96), SPT (1.44)			140lb/30in - Auto	107%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			13.6 ft	N/A	36.5 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	10-inches Asphalt Concrete.												
	1	SILTY GRAVEL with SAND (GM); dense; dark brown.		1	15 17 15	32	80		9	125				
8.00	2													
	3													
6.00	4													
	5	SILTY SAND (SM); medium dense; dark gray; moist.		2	6 5 3	8	100		23	97	UC = 0.64			
4.00	6	Fat CLAY (CH); stiff; black; moist.												
	7													
2.00	8													
	9													
0.00	10	Lean CLAY (CL); stiff; black mottled with gray; moist.		3	3 4 6	10	100		29	91	UC = 0.64			
	11													
-2.00	12													
	13													
-4.00	14													
	15	SILTY SAND (SM); dense; dark gray; moist.		4	9 15 15	30	90		12	132				
-6.00	16													
	17													
-8.00	18													
	19													
-10.00	20	At 20 ft, becomes wet; trace GRAVEL.		5	14 11 14	25	100							
	21													
-12.00	22													
	23													
-14.00	24													
	25													

(continued)

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-183
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	M. Thummaluru		4-6-09	1 of 2

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	25		Lean CLAY (CL); soft; brown; moist.		6	2 1 2	3	100		30	91	UC = 0.22			
-16.00	26														
	27														
-18.00	28														
	29														
-20.00	30		SILTY SAND (SM); dense; brown; moist; fine SAND.		7	7 16 15	31	90		22	103				
	31														
-22.00	32														
	33														
-24.00	34														
	35				8	1 3 5	8	100							
-26.00	36		Lean CLAY (CL); stiff; brown; moist.												
	37		Bottom of Borehole at 36.5 ft.												
-28.00	38														
	39														
-30.00	40														
	41														
-32.00	42														
	43														
-34.00	44														
	45														
-36.00	46														
	47														
-38.00	48														
	49														
-40.00	50														
	51														
-42.00	52														
	53														
-44.00	54														
	55														

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				**A-09-183**
DIST. **04**	COUNTY **Santa Clara**	ROUTE **101**	POSTMILE **49.0/52.2**	EA **04-4A-330**
PROJECT OR BRIDGE NAME **101 Auxillary Lane (URS 28649951)**				
BRIDGE NUMBER	PREPARED BY **M. Thummaluru**		DATE **4-6-09**	SHEET **2 of 2**

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-30-09	3-30-09	1986851.5 ft / 6093008.5 ft NAD83	A-09-184
DRILLING CONTRACTOR: Pitcher Drilling			BOREHOLE LOCATION (Offset, Station, Line): ~ 63.7' Rt Sta ~ 70+02	SURFACE ELEVATION: 11 ft NAVD 88
DRILLING METHOD: Hollow-Stem Auger			DRILL RIG: Mobile B53	BOREHOLE DIAMETER: 8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID): Modified CA (1.96)			SPT HAMMER TYPE: 140lb/30in - Auto	HAMMER EFFICIENCY, ERi: 107%
BOREHOLE BACKFILL AND COMPLETION: Cement			GROUNDWATER READINGS: DURING DRILLING 12 ft; AFTER DRILLING (DATE) N/A	TOTAL DEPTH OF BORING: 35.0 ft

ELEVATION (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Remarks
	Lean CLAY with GRAVEL (CL); stiff; grayish brown; moist.										
8.50			1	6 7 6	13	75		11	121	UC = 0.72	bag sample 2 - 5 feet
6.50	SANDY lean CLAY with GRAVEL (CL); medium stiff; grayish brown; moist.		2	3 4 9	13	65		14	120	UC = 0.28	
2.50	SANDY fat CLAY (CH); stiff; black; moist.		3	3 4 4	8	80		28	94	UC = 0.75	
-1.50	Lean to fat CLAY (CL/CH); medium stiff; gray; moist.										
-3.50	Lean CLAY (CL); very stiff; grayish brown; moist.		4	4 4 4	8	75		22	103	UC = 1.44	
-7.50	At 18.5 ft, grades to lean CLAY with Gravel.		5	3 3 3	6	80		26	98	UC = 0.31	
-13.50			6	3 4 4	8	60		28	94	UC = 0.27	

(continued)

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-184
DIST. 04	COUNTY Santa Clara	ROUTE 101	POSTMILE 49.0/52.2	EA 04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY M. Thummaluru		DATE 4-6-09	SHEET 1 of 2

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	25		*(continued).*												
-15.50	26														
	27														
-17.50	28														
	29				7	4 10 11	21	100		13	119				PA
-19.50	30		Well-graded SAND with SILT and GRAVEL (SW-SM); medium dense; grayish brown; wet.												
	31														
-21.50	32														
	33		Lean CLAY (CL); medium stiff; grayish brown; moist.												
-23.50	34				8	4 5 5	10	100		25	101	UC = 0.46			
	35		Bottom of Borehole at 35.0 ft.												
-25.50	36														
	37														
-27.50	38														
	39														
-29.50	40														
	41														
-31.50	42														
	43														
-33.50	44														
	45														
-35.50	46														
	47														
-37.50	48														
	49														
-39.50	50														
	51														
-41.50	52														
	53														
-43.50	54														
	55														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				**A-09-184**
DIST. **04**	COUNTY **Santa Clara**	ROUTE **101**	POSTMILE **49.0/52.2**	EA **04-4A-330**
PROJECT OR BRIDGE NAME **101 Auxillary Lane (URS 28649951)**				
BRIDGE NUMBER	PREPARED BY **M. Thummaluru**		DATE **4-6-09**	SHEET **2 of 2**

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
C. Rambo	3-29-09	4-6-09	1987235.4 ft / 6092687.1 ft NAD83	A-09-185
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Exploration Geoservices			~ 72.408' Rt Sta ~ 65+01.858	8 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Hollow-Stem Auger			Mobile B53	8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96)			140lb/30in - Auto	107%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING	AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			11 ft	N/A	35.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0														
	1														no sampling from 0 to 13.5 feet
5.50	2														
	3														
3.50	4														
	5														
1.50	6														
	7														
-0.50	8														
	9														
-2.50	10														
	11														
-4.50	12														
	13														
-6.50	14		Lean CLAY (CL); medium stiff; gray mottled with brown; moist to wet.		1	2 2 2	4	60		28	96	UC = 0.30			
	15														
-8.50	16														
	17														
-10.50	18														
	19				2	3 3 4	7	100		23	102	UC = 0.38			
-12.50	20														
	21														
-14.50	22														
	23														
-16.50	24		At 23.5 ft, becomes very stiff; trace GRAVEL.		3	5 6 6	12	90		24	102	UC = 1.80			
	25														

(continued)

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				A-09-185
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET	
	M. Thummaluru	4-6-09	1 of 2	

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	25		Lean CLAY (CL) *(continued)*.												
-18.50	26														
	27														
-20.50	28														
	29		At 28.5 ft, becomes medium stiff.		4	2 2 3	5	65		30	91	UC = 0.43			
-22.50	30														
	31														
-24.50	32														
	33		At 32.5 ft, becomes stiff; grayish brown.												
-26.50	34				5	3 5 4	9	55		25	99	UC = 0.74			
	35		Bottom of Borehole at 35.0 ft.												
-28.50	36														
	37														
-30.50	38														
	39														
-32.50	40														
	41														
-34.50	42														
	43														
-36.50	44														
	45														
-38.50	46														
	47														
-40.50	48														
	49														
-42.50	50														
	51														
-44.50	52														
	53														
-46.50	54														
	55														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				**A-09-185**
DIST. **04**	COUNTY **Santa Clara**	ROUTE **101**	POSTMILE **49.0/52.2**	EA **04-4A-330**
PROJECT OR BRIDGE NAME **101 Auxillary Lane (URS 28649951)**				
BRIDGE NUMBER	PREPARED BY **M. Thummaluru**		DATE **4-6-09**	SHEET **2 of 2**

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
M. Selvendran	3-23-09	3-24-09	1986630.1 ft / 6093144.7 ft NAD83	R-09-001
DRILLING CONTRACTOR: Pitcher Drilling			BOREHOLE LOCATION (Offset, Station, Line): ~ 96.8' Rt Sta ~ 72+60	SURFACE ELEVATION: 13 ft NAVD 88
DRILLING METHOD: Rotary Wash			DRILL RIG: CME 55	BOREHOLE DIAMETER: 4-7/8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID): Modified CA (1.96"), SPT (1.44"),Shelby (2.87) ID			SPT HAMMER TYPE: 140lb/30in - Auto	HAMMER EFFICIENCY, ERi: 76.2%
BOREHOLE BACKFILL AND COMPLETION: Cement			GROUNDWATER READINGS: DURING DRILLING: Dry to 7.5 feet; AFTER DRILLING (DATE): N/A	TOTAL DEPTH OF BORING: 101.5 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method / Casing Depth	Remarks
	0	SANDY lean CLAY with GRAVEL (CL); medium stiff; dark brown; moist; fine to medium SAND; FILL.											
	1												Hand auger to 5 feet
11.00	2												
	3												
9.00	4	At 4 feet, same as above except no gravel.											
	5			1	4 4 8	12	100		12	106	UC = 0.31		Solid Flight Auger to 7.5 feet
7.00	6												
	7												Stop drilling 03/23/09 Resume drilling03/24/09
5.00	8	CLAYEY SAND with GRAVEL (SC); medium dense; very dark grayish brown; moist.											Switch to rotarywash
	9			2	6 5 6	11	75		17	106			
3.00	10												
	11	Lean CLAY with SAND (CL); medium stiff; dark greenish gray mottled with light gray; moist.											
1.00	12												
	13			3	2 3 4	7	100		20	109	PP = 2.0 UC = 0.45		
-1.00	14	Fat CLAY with SAND (CH); stiff; dark greenish gray; moist.											
	15	Lean CLAY (CL); hard; grayish brown; moist; trace SAND.		4			10						
-3.00	16												
	17												
-5.00	18												
	19												
-7.00	20	At 20 ft, becomes stiff; dark grayish brown mottled with light gray.		5	1 3 4	7	100		21	106	PP = 1.0 UC = 0.51		
	21												
-9.00	22												
	23												
-11.00	24												
	25												

(continued)

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				R-09-001
DIST. 04	COUNTY Santa Clara	ROUTE 101	POSTMILE 49.0/52.2	EA 04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY M. Thummaluru		DATE 3-29-09	SHEET 1 of 4

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	25	At 25 ft, becomes soft. Lean CLAY (CL) *(continued)*.		6	0 0 3	3	100		24	100	PP = ≤0.5 UC = 0.27			PI
-13.00	26													
	27			7			100							Shelby pushed with 150 psi C
-15.00	28													
	29	CLAYEY SAND (SC); grayish brown; moist.												
-17.00	30	Lean CLAY (CL); stiff; olive gray mottled with orange brown; moist; trace SAND.		8	2 3 4	7			26	97	UC = 0.56			
	31													
-19.00	32													
	33													
-21.00	34													
	35	Fat CLAY (CH); medium stiff; olive gray; moist; trace SAND.		9	2 2 3	5			30	92	UC = 0.29			
-23.00	36													
	37													
-25.00	38													
	39													
-27.00	40			10			100							Shelby pushed with 150 - 275 psi PI
	41													
-29.00	42													
	43													
-31.00	44													
	45	Well-graded SAND with SILT and GRAVEL (SW-SM); very dense; very dark grayish brown; moist.		11	22 28 23	51	100		13	122				
-33.00	46													
	47													
-35.00	48													
	49													
-37.00	50	At 50 ft, becomes dense; wet.		12	12 15 20	35								
	51													
-39.00	52													
	53													
-41.00	54													
	55													

(continued)

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				**R-09-001**
DIST. **04**	COUNTY **Santa Clara**	ROUTE **101**	POSTMILE **49.0/52.2**	EA **04-4A-330**
PROJECT OR BRIDGE NAME **101 Auxillary Lane (URS 28649951)**				
BRIDGE NUMBER	PREPARED BY **M. Thummaluru**		DATE **3-29-09**	SHEET **2 of 4**

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	55	Fat CLAY (CH); medium stiff; olive gray; moist; trace SAND.		13	5 6 8	14			34	87	PP = 1.75 UC = 0.43			
-43.00	56													
	57	At 57 ft, same as above except with trace gravel.												
-45.00	58													
	59													Slight fluid loss
-47.00	60	Lean CLAY (CL); medium stiff; very dark greenish gray; moist; trace SAND.		14	2 3 3	6	100		36		PP = 1.0			PI
	61													
-49.00	62													
	63													
-51.00	64													
	65	At 65 ft, grades to Lean CLAY with SAND (CL); stiff; greenish gray..		15	5 7 10	17	100		25	100	PP = 2.0 UC = 0.55			
-53.00	66													
	67													
-55.00	68													
	69													
-57.00	70	Fat CLAY (CH); stiff; dark greenish gray mottled with bluish gray; moist.		16	4 7 9	16	100		27	96	PP = 1.75 UC = 0.74			PI
	71													
-59.00	72													
	73													
-61.00	74													
	75	At 75 ft, becomes very stiff.		17	5 10 12	22	75		29	93	PP = 2.0 UC = 1.05			
-63.00	76													
	77													
-65.00	78													
	79													
-67.00	80	At 80 feet, same as above except occassional gravel.		18	7 13 14	27	35				PP = 2.0			
	81													
-69.00	82													
	83													
-71.00	84													
	85													

(continued)

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				**R-09-001**
DIST. **04**	COUNTY **Santa Clara**	ROUTE **101**	POSTMILE **49.0/52.2**	EA **04-4A-330**
PROJECT OR BRIDGE NAME **101 Auxillary Lane (URS 28649951)**				
BRIDGE NUMBER	PREPARED BY **M. Thummaluru**	DATE **3-29-09**	SHEET **3 of 4**	

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	85		At 85 ft, becomes stiff; light gray mottles. Fat CLAY (CH) *(continued)*.		19	3 8 9	17	100		28	94	PP = 1.75 UC = 0.61			
-73.00	86														
	87														
-75.00	88														
	89														
-77.00	90				20	5 11 11	22	90		28	94	PP = 2.0 UC = 0.81			
	91														
-79.00	92														
	93														
-81.00	94														
	95														
-83.00	96														
	97														
-85.00	98														
	99														
-87.00	100		At 100 ft, becomes greenish gray.		21	4 8 10	18	100		26	96	UC = 0.79			
	101														
-89.00	102		Bottom of Borehole at 101.5 ft.												
	103														
-91.00	104														
	105														
-93.00	106														
	107														
-95.00	108														
	109														
-97.00	110														
	111														
-99.00	112														
	113														
-101.00	114														
	115														

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				**R-09-001**
DIST. **04**	COUNTY **Santa Clara**	ROUTE **101**	POSTMILE **49.0/52.2**	EA **04-4A-330**
PROJECT OR BRIDGE NAME **101 Auxillary Lane (URS 28649951)**				
BRIDGE NUMBER	PREPARED BY **M. Thummaluru**		DATE **3-29-09**	SHEET **4 of 4**

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
M. Selvendran	3-22-09	3-23-09	1983891.6 ft / 6095598.6 ft NAD83	R-09-004
DRILLING CONTRACTOR			BOREHOLE LOCATION (Offset, Station, Line)	SURFACE ELEVATION
Pitcher Drilling			~ 91.5' Lt Sta ~ 109+32	13 ft NAVD 88
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Rotary Wash			CME 55	4-7/8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Modified CA (1.96"), SPT (1.44"),Shelby (2.87) ID			140lb/30in - Auto	76.2%
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
Cement			Dry to 9 feet / N/A	101.5 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method / Casing Depth	Remarks
	0	SANDY lean CLAY with GRAVEL (CL); dark brown; moist; coarse GRAVEL; FILL.											
11.00	2												
	3	Lean CLAY with GRAVEL (CL); dark brown; moist; little SAND; FILL.											
9.00	4												
	5	SANDY lean CLAY with GRAVEL (CL); medium stiff; dark brown; moist; FILL.		1	4 7 15	22	100		9	120	UC = 0.44		
7.00	6												
	7	Occassional cobbles.											Hard drilling
5.00	8												
	9												4 inches Solid Flight Auger to 9 feet; began rotary wash
3.00	10	Fat CLAY (CH); medium stiff; very dark greenish gray; moist.		2	4 3 4	7	0						
	11												
1.00	12												C
	13			3			100						
-1.00	14	At 14 ft, becomes greenish gray; trace SAND.											Shelby pushed @ 160 psi
	15	At 15 ft, becomes stiff.		4	2 5 5	10	100		34	87	UC = 0.85		
-3.00	16												
	17												
-5.00	18	Well-graded SAND with SILT and GRAVEL (SW-SM); medium dense; grayish brown; moist; medium to coarse SAND.											
	19												
-7.00	20			5	7 10 12	22	100		12	126			PA
	21												
-9.00	22												
	23												
-11.00	24												
	25												

(continued)

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				R-09-004
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	Santa Clara	101	49.0/52.2	04-4A-330
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET	
	M. Thummaluru	3-24-09	1 of 4	

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	25		At 25 ft, becomes loose to medium dense. Well-graded SAND with SILT and GRAVEL (SW-SM) *(continued)*.		6	7 4 1	5	100							
-13.00	26		Fat CLAY with SAND (CH); medium stiff; olive brown mottled with reddish brown; moist; fine SAND.												
	27														
-15.00	28														
	29		Well-graded SAND with SILT (SW-SM); dense; very dark brown; moist; fine to medium SAND.												
-17.00	30				7	12 17 18	35	100		17	116				PA
	31														
-19.00	32		At 32 ft, with trace GRAVEL.												
	33														
-21.00	34		Lean CLAY with SAND (CL); stiff; light yellowish brown; moist.												
	35				8	3 7 7	14	100		26	97	UC = 0.63			
-23.00	36														
	37														
-25.00	38														
	39														
-27.00	40		Fat CLAY (CH); medium stiff; grayish brown; moist.		9	2 3 4	7	100		37	89	UC = 0.36			
	41														
-29.00	42														
	43														
-31.00	44														
	45				10			100							
-33.00	46		Poorly graded SAND with SILT (SP-SM); medium dense; very dark grayish brown; moist; medium SAND.		11	8 9 4	13	100							
	47		Lean CLAY (CL); stiff; dark grayish brown; moist; trace SAND.												
-35.00	48														
	49														
-37.00	50				12	3 6 7	13	100		31	91	UC = 1.2			
	51		Fat CLAY (CH); medium stiff; dark grayish brown; moist; trace SAND.							31	90	UC = 0.47			
-39.00	52														
	53														
-41.00	54														
	55														

(continued)

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				**R-09-004**
DIST. **04**	COUNTY **Santa Clara**	ROUTE **101**	POSTMILE **49.0/52.2**	EA **04-4A-330**
PROJECT OR BRIDGE NAME **101 Auxillary Lane (URS 28649951)**				
BRIDGE NUMBER	PREPARED BY **M. Thummaluru**		DATE **3-24-09**	SHEET **2 of 4**

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	55	At 55 ft, becomes stiff. Fat CLAY (CH) *(continued)*.		13	4 6 7	13	100		31	91	UC = 0.71			PI
-43.00	56													
	57													
-45.00	58													
	59													
-47.00	60	Fat CLAY with SAND (CH); very stiff; dark greenish gray; moist.		14	7 11 12	23	100		26	99	UC = 1.17			
	61													
-49.00	62													
	63													
-51.00	64	SANDY SILTY CLAY (CL-ML); stiff; very dark greenish gray; moist; fine SAND.												
	65			15	5 9 14	23	100		22	102	UC = 0.59			
-53.00	66													
	67													Suspended drilling 03/22/09 Resume drilling 03/23/09
-55.00	68	Fat CLAY (CH); stiff; dark greenish gray mottled with bluish gray; moist; trace SAND.												
	69													
-57.00	70			16	10 10 12	22	100		22	103	UC = 0.92			
	71													
-59.00	72													
	73													
-61.00	74													
	75	At 75 ft, same as above except no mottles..		17	5 10 16	26	95		29	94	UC = 0.82			PI
-63.00	76													
	77													
-65.00	78													
	79													
-67.00	80	At 80 ft, becomes medium stiff.		18	8 17 18	35	75		31	91	UC = 0.38			
	81													
-69.00	82													
	83													
-71.00	84													
	85													

(continued)

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				**R-09-004**
DIST. **04**	COUNTY **Santa Clara**	ROUTE **101**	POSTMILE **49.0/52.2**	EA **04-4A-330**
PROJECT OR BRIDGE NAME **101 Auxillary Lane (URS 28649951)**				
BRIDGE NUMBER	PREPARED BY **M. Thummaluru**		DATE **3-24-09**	SHEET **3 of 4**

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	85		At 85 ft, becomes stiff. Fat CLAY (CH) *(continued)*.		19	9 14 18	32	50		29	92	UC = 0.62			
-73.00	86														
	87														
-75.00	88														
	89		At 89 ft, becomes very dark grayish brown.												
-77.00	90				20	4 9 8	17	100		27	94	UC = 0.71			
	91														
-79.00	92														
	93														
-81.00	94														
	95		At 95 ft, becomes very stiff; very dark grayish brown mottled with bluish gray.		21	7 15 18	33	75		32	109	UC = 1.09			PA
-83.00	96														
	97														
-85.00	98														
	99														
-87.00	100				22	7 12 16	28	100							
	101														
-89.00	102		Bottom of Borehole at 101.5 ft.												
	103														
-91.00	104														
	105														
-93.00	106														
	107														
-95.00	108														
	109														
-97.00	110														
	111														
-99.00	112														
	113														
-101.00	114														
	115														

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				**R-09-004**
DIST. **04**	COUNTY **Santa Clara**	ROUTE **101**	POSTMILE **49.0/52.2**	EA **04-4A-330**
PROJECT OR BRIDGE NAME **101 Auxillary Lane (URS 28649951)**				
BRIDGE NUMBER	PREPARED BY **M. Thummaluru**		DATE **3-24-09**	SHEET **4 of 4**

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
M. Selvendran	3-25-09	3-25-09	1978028.7 ft / 6100899.0 ft NAD83	R-09-005
DRILLING CONTRACTOR: Pitcher Drilling			BOREHOLE LOCATION (Offset, Station, Line): ~ 72.804' Rt Sta ~ 188+53.466	SURFACE ELEVATION: 21 ft NAVD 88
DRILLING METHOD: Rotary Wash			DRILL RIG: CME 55	BOREHOLE DIAMETER: 4-7/8 inch
SAMPLER TYPE(S) AND SIZE(S) (ID): Modified CA (1.96"), SPT (1.44"),Shelby (2.87) ID			SPT HAMMER TYPE: 140lb/30in - Auto	HAMMER EFFICIENCY, ERi: 76.2%
BOREHOLE BACKFILL AND COMPLETION: Cement			GROUNDWATER READINGS: DURING DRILLING: Dry to 8.5 feet; AFTER DRILLING (DATE): N/A	TOTAL DEPTH OF BORING: 51.5 ft

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0	2 inches Asphalt Concrete.												
	1	CLAYEY SAND with GRAVEL (SC); dark reddish gray; moist; FILL.												Hand auger to 5 feet
19.00	2													
	3	Fat CLAY (CH); hard; black; moist; trace GRAVEL.												
17.00	4													
	5			1	5 10 14	24	40		26	95	PP = 2.75 UC = 2.58			
15.00	6													
	7													
13.00	8	SILTY SAND (SM); medium dense; dark greenish gray; moist.												
	9													4 inches solid flight auger to 8.5 feet; began rotarywash
		SANDY SILT (ML); medium stiff; very dark greenish gray; moist.		2	8 4 6	10	80		23	104	UC = 0.48			
11.00	10													
	11													
9.00	12			3	1 2 3	5	100							
	13	SILTY CLAY (CL-ML); medium stiff; very dark greenish gray; moist.							25	100	UC = 0.39			
7.00	14													
	15	SILTY SAND (SM); medium dense; dark greenish gray.		4			80		22	104	UC = 0.25			shelby pushed with 180 psi strain@ failure 3.21% PI Non plastic
5.00	16													
	17													
3.00	18	Poorly graded SAND (SP); medium dense; dark greenish gray; moist to wet.		5	12 10 3	13	75		16					PA
	19													
1.00	20	SANDY lean CLAY (CL); stiff; dark greenish gray; moist.		6	2 3 7	10	100		21	110	PP = 1.5 UC = 0.79			
	21													
-1.00	22													
	23													
-3.00	24													
	25													

(continued)

URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				R-09-005
DIST. 04	COUNTY Santa Clara	ROUTE 101	POSTMILE 49.0/52.2	EA 04-4A-330
PROJECT OR BRIDGE NAME: 101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY M. Thummaluru	DATE 3-29-09	SHEET 1 of 2	

ELEVATION (ft)	DEPTH (ft)	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	25	At 25 ft, becomes medium stiff. SANDY lean CLAY (CL) *(continued)*.		7	2 3 4	7			23	103	PP = 1.0 UC = 0.37			
-5.00	26													
	27													
-7.00	28	Well-graded SAND with SILT and GRAVEL (SW-SM); dense; greenish black; moist.												
	29													
-9.00	30			8	15 13 14	27	95		13					PA
	31													
-11.00	32													
	33													
-13.00	34	SANDY lean CLAY (CL); medium stiff; dark greenish gray; moist.												
	35			9	4 4 10	14	100		19	107				PA
-15.00	36	SILTY SAND (SM); medium dense; dark greenish gray; moist.												
	37													
-17.00	38													
	39													
-19.00	40	Fat CLAY (CH); hard; dark greenish gray; moist.		10	9 13 16	29	90		21	109	PP = 3.0 UC = 2.35			
	41													
-21.00	42													
	43													
-23.00	44													
	45	At 45 ft, with light gray mottling.		11	9 13 16	29	85		25	100	PP = 3.0 UC = 2.06			PI
-25.00	46													
	47													
-27.00	48													
	49													
-29.00	50	At 50 ft, becomes very stiff; olive gray.		12	6 8 10	18	90		24	101	UC = 1.50			
	51													
-31.00	52	Bottom of Borehole at 51.5 ft.												
	53													
-33.00	54													
	55													

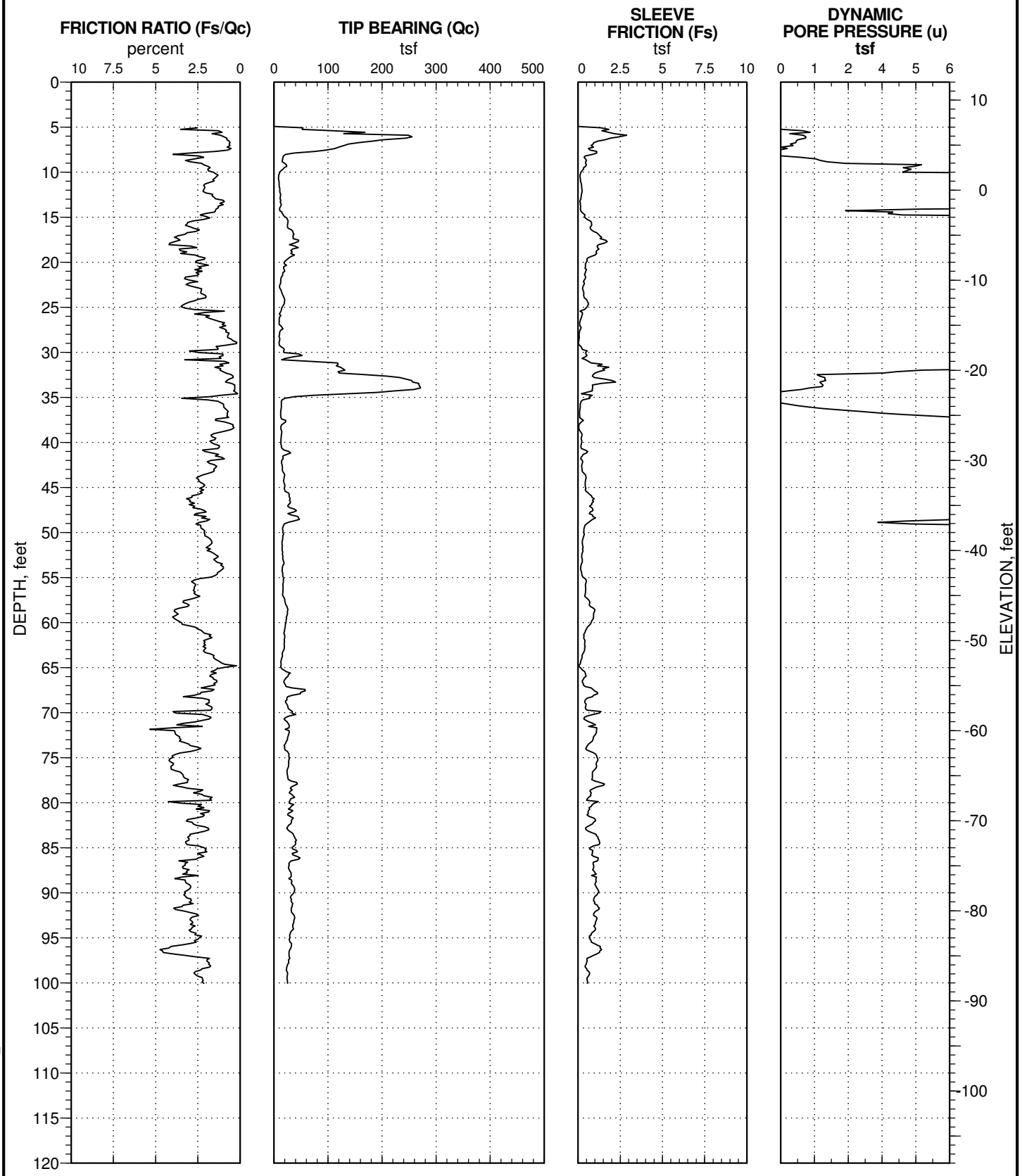
URS BORING RECORD 200802 28649951-101_AUX-VTA.GPJ CT SACTO 061407_R0.GDT 7/10/09

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				**R-09-005**
DIST. **04**	COUNTY **Santa Clara**	ROUTE **101**	POSTMILE **49.0/52.2**	EA **04-4A-330**
PROJECT OR BRIDGE NAME **101 Auxillary Lane (URS 28649951)**				
BRIDGE NUMBER	PREPARED BY **M. Thummaluru**		DATE **3-29-09**	SHEET **2 of 2**



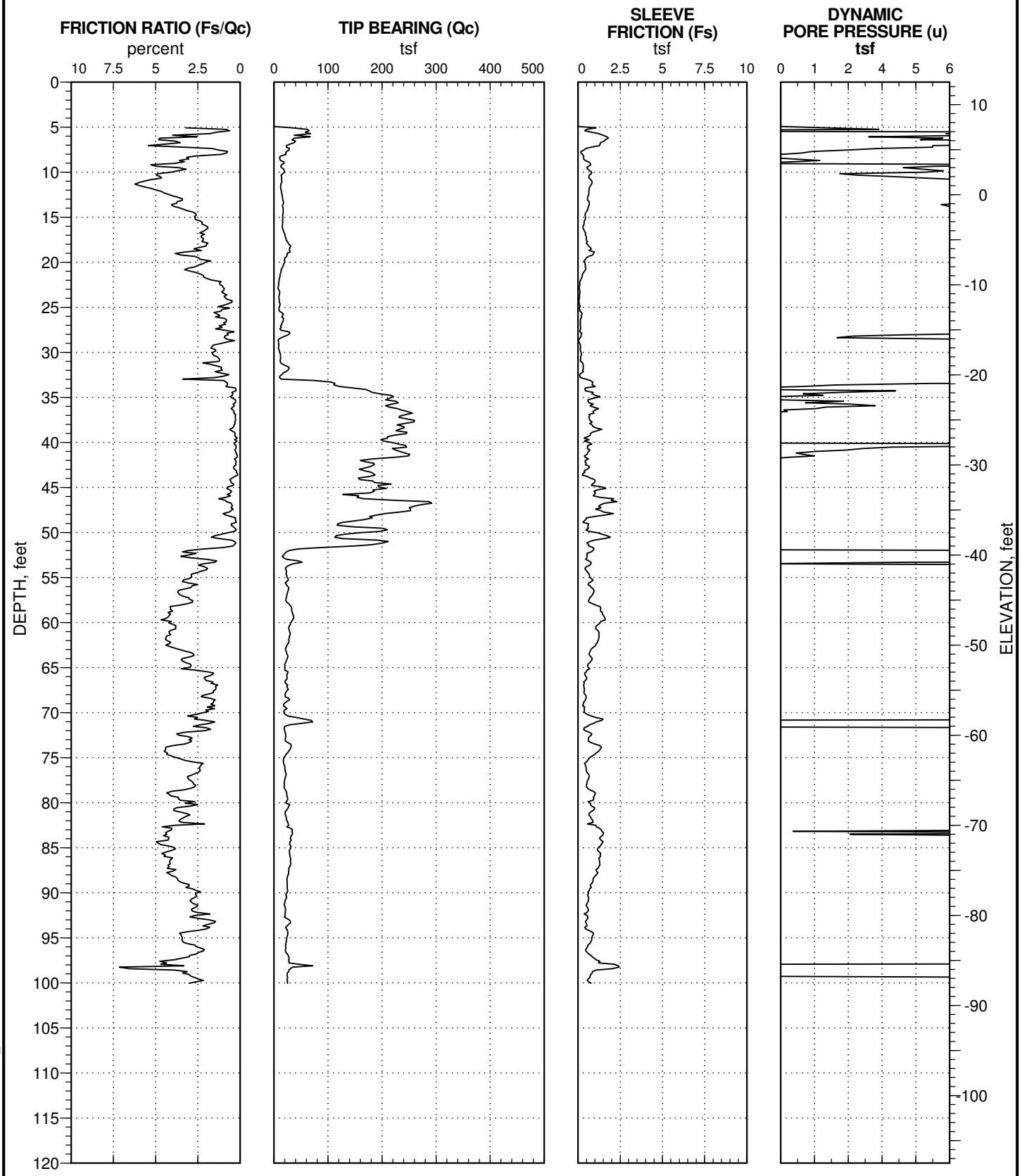
URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				**CPT-09-002**
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	**Santa Clara**	**101**	**49.0/52.2**	**04-4A-330**
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	M. Thummaluru		**3-22-09**	**1 of 1**

CALTRANS CPT RECORD 052007 28649951-101_AUX-VTA.GPJ CT SACTO 053107.GDT 7/10/09



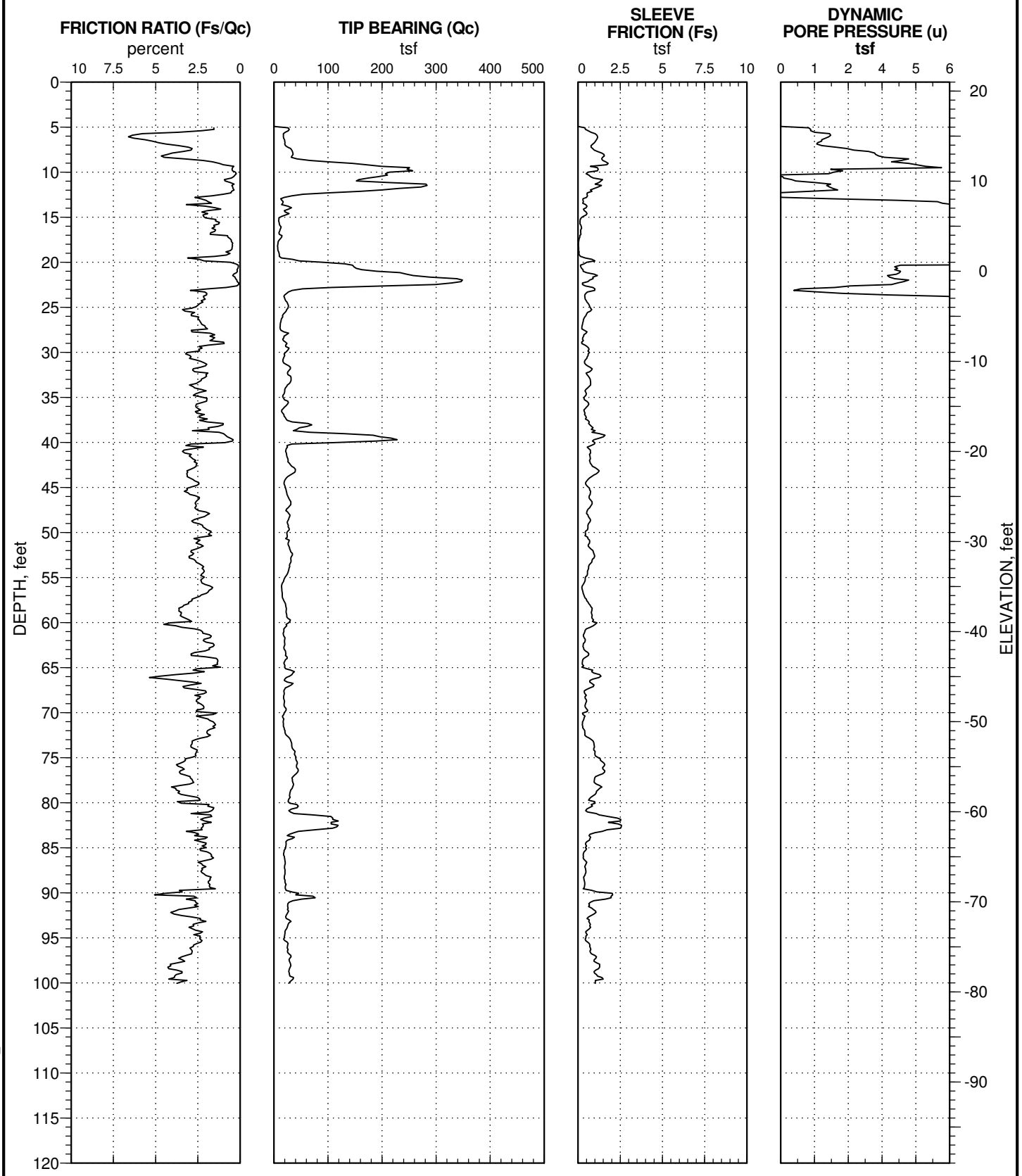
URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				**CPT-09-003**
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	**Santa Clara**	**101**	**49.0/52.2**	**04-4A-330**
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	M. Thummaluru		**3-23-09**	**1 of 1**

CALTRANS CPT RECORD 052007 28649951-101_AUX-VTA.GPJ CT SACTO 053107.GDT 7/10/09



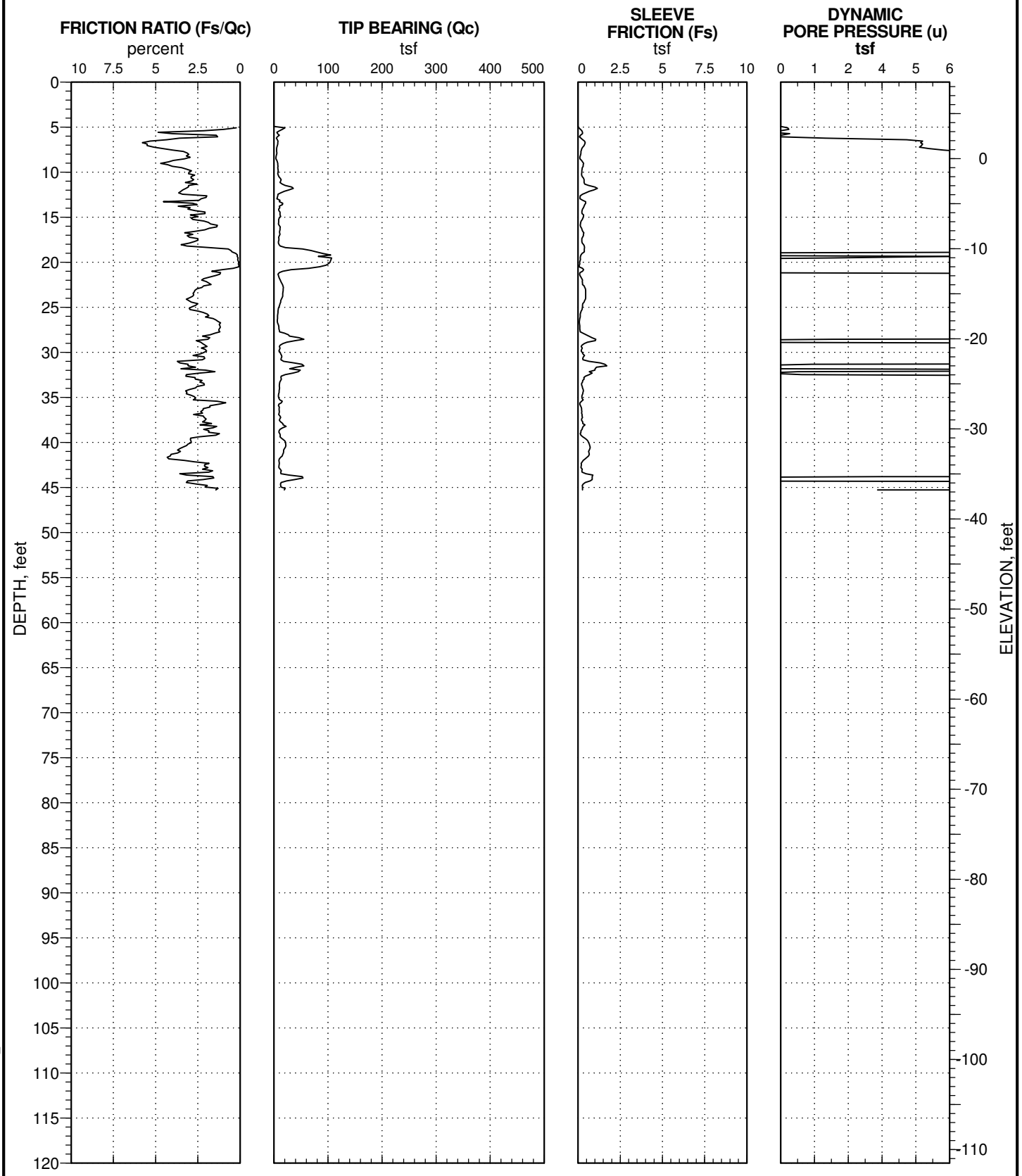
CALTRANS CPT RECORD 052007 28649951-101_AUX-VTA.GPJ CT SACTO 053107.GDT 7/10/09

URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				**CPT-09-006**
DIST.	COUNTY	ROUTE	POSTMILE	EA
04	**Santa Clara**	**101**	**49.0/52.2**	**04-4A-330**
PROJECT OR BRIDGE NAME				
101 Auxillary Lane (URS 28649951)				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
	M. Thummaluru		**4-15-09**	**1 of 1**



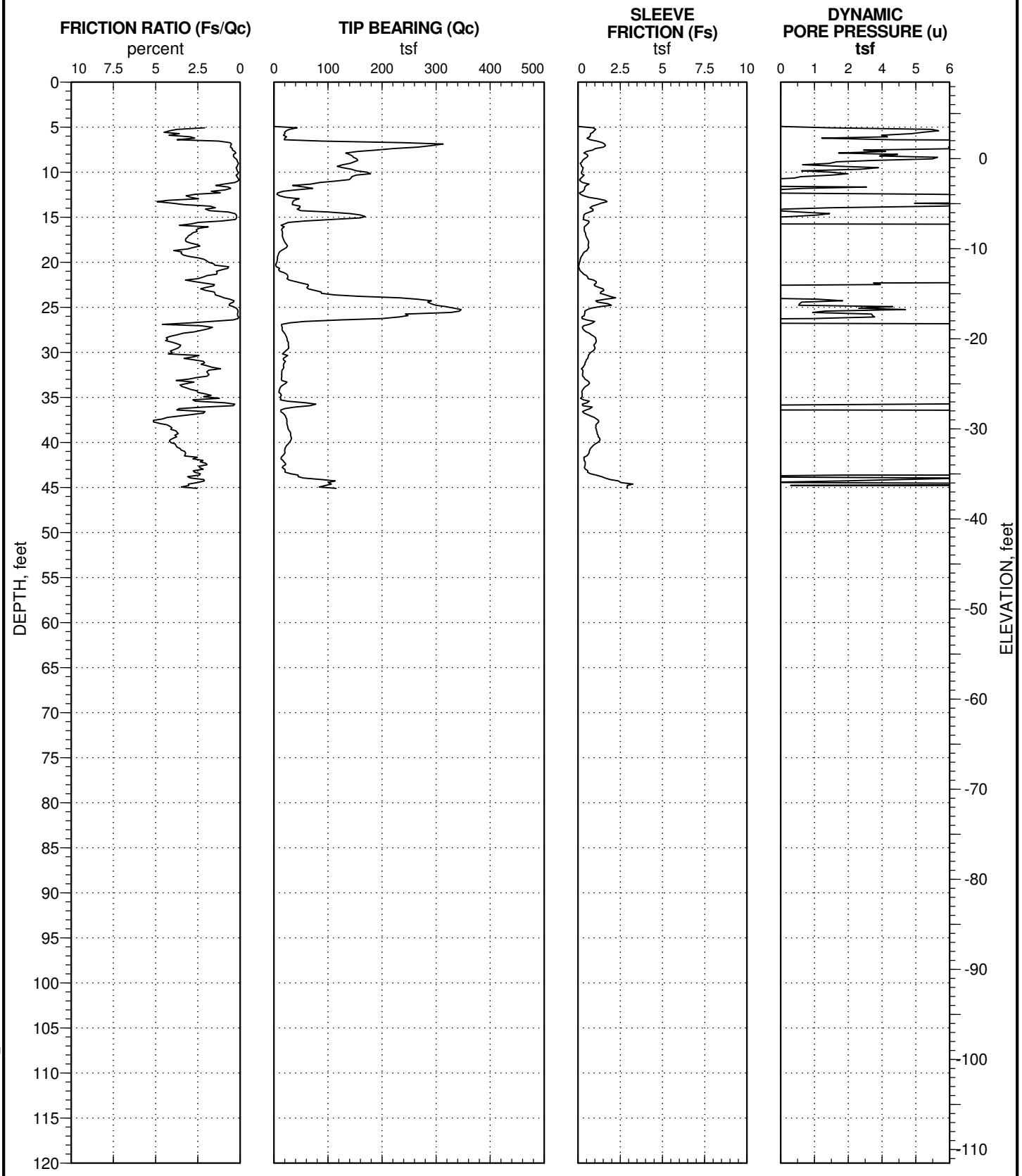
URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				**CPT-09-106**
DIST. **04**	COUNTY **Santa Clara**	ROUTE **101**	POSTMILE **49.0/52.2**	EA **04-4A-330**
PROJECT OR BRIDGE NAME **101 Auxillary Lane (URS 28649951)**				
BRIDGE NUMBER	PREPARED BY **M. Thummaluru**		DATE **4-15-09**	SHEET **1 of 1**

CALTRANS CPT RECORD 052007 28649951-101_AUX-VTA.GPJ CT SACTO 053107.GDT 7/10/09



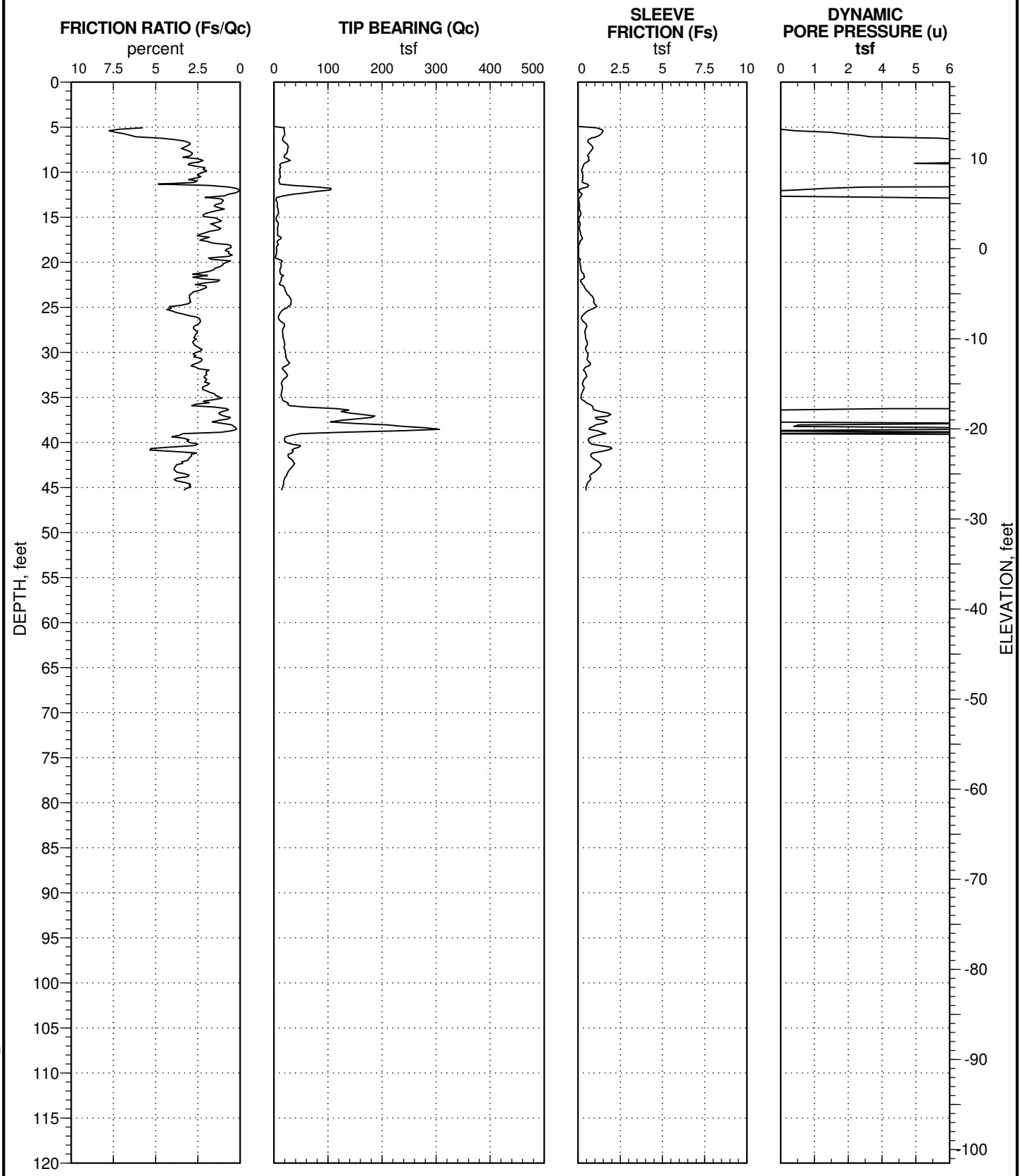
URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

REPORT TITLE				HOLE ID
BORING RECORD				**CPT-09-151**
DIST. **04**	COUNTY **Santa Clara**	ROUTE **101**	POSTMILE **49.0/52.2**	EA **04-4A-330**
PROJECT OR BRIDGE NAME **101 Auxillary Lane (URS 28649951)**				
BRIDGE NUMBER	PREPARED BY **M. Thummaluru**		DATE **4-15-09**	SHEET **1 of 1**

CALTRANS CPT RECORD 052007 28649951-101_AUX-VTA.GPJ CT SACTO 053107.GDT 7/10/09



URS

San Jose Office

55 S. Market St, Ste 1500
San Jose, CA 95113

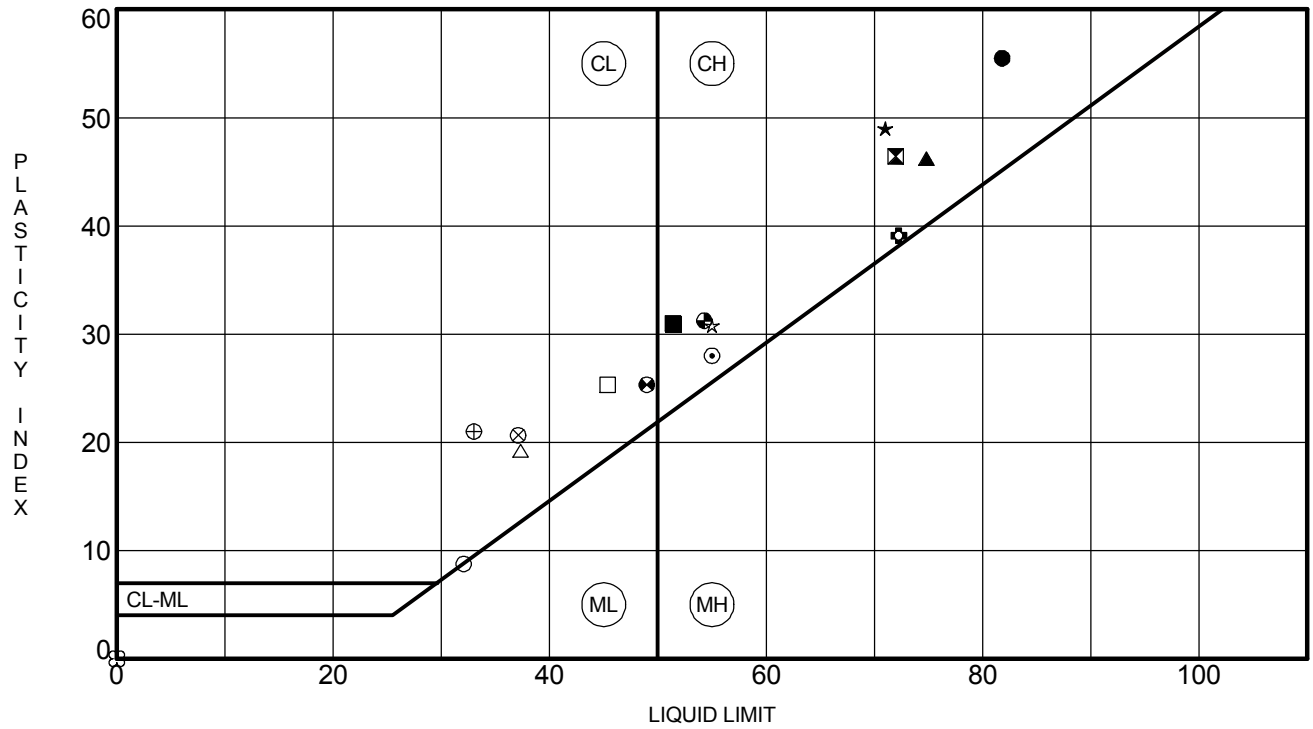
REPORT TITLE				HOLE ID
BORING RECORD				**CPT-09-176**
DIST. **04**	COUNTY **Santa Clara**	ROUTE **101**	POSTMILE **49.0/52.2**	EA **04-4A-330**
PROJECT OR BRIDGE NAME **101 Auxillary Lane (URS 28649951)**				
BRIDGE NUMBER	PREPARED BY **M. Thummaluru**		DATE **4-15-09**	SHEET **1 of 1**

CALTRANS CPT RECORD 052007 28649951-101_AUX-VTA.GPJ CT SACTO 053107.GDT 7/10/09

The water content, dry density and unconfined compressive strength were determined for selected samples to estimate the strength and compressibility of the underlying soils. The results of these tests, together with the resistance to penetration of the sampler are shown at the corresponding sample location on the Boring Records, Appendix C.

Atterberg limit tests were performed on cohesive samples to determine the plasticity characteristics. The results of these tests are presented in this appendix.

Gradations were performed on granular samples to determine the grain size distributions; the results of these tests are presented in this appendix.



	Specimen Identification		LL	PL	PI	Fines	Classification
●	A-09-107	1.0	82	26	56		Fat CLAY (CH)
⊠	A-09-123	8.5	72	26	46		Fat CLAY (CH) with sand
▲	A-09-131	8.5	75	29	46		Fat CLAY (CH) with sand
★	A-09-138	2.5	71	22	49		Fat CLAY (CH)
⊙	A-09-140	3.5	55	27	28		Fat CLAY
✿	A-09-145	1.0	72	33	39		Fat CLAY (CH)
○	A-09-167	20.0	32	23	9		Lean CLAY to SILT (CL/ML)
△	A-09-182	18.5	37	18	19		Lean CLAY (CL) with sand
⊗	R-09-001	25.0	37	16	21		Lean CLAY (CL)
⊕	R-09-001	40.0	33	12	21		Lean CLAY (CL)
□	R-09-001	60.0	45	20	25		Lean CLAY (CL)
⊗	R-09-001	70.0	49	24	25		Lean to fat CLAY (CL/CH)
◕	R-09-004	55.0	54	23	31		Fat CLAY (CH)
☆	R-09-004	75.0	55	24	31		Fat CLAY (CH)
⊠	R-09-005	15.0	NP	NP	NP		Silty SAND (SM)
■	R-09-005	45.0	51	20	31		Fat CLAY (CH)

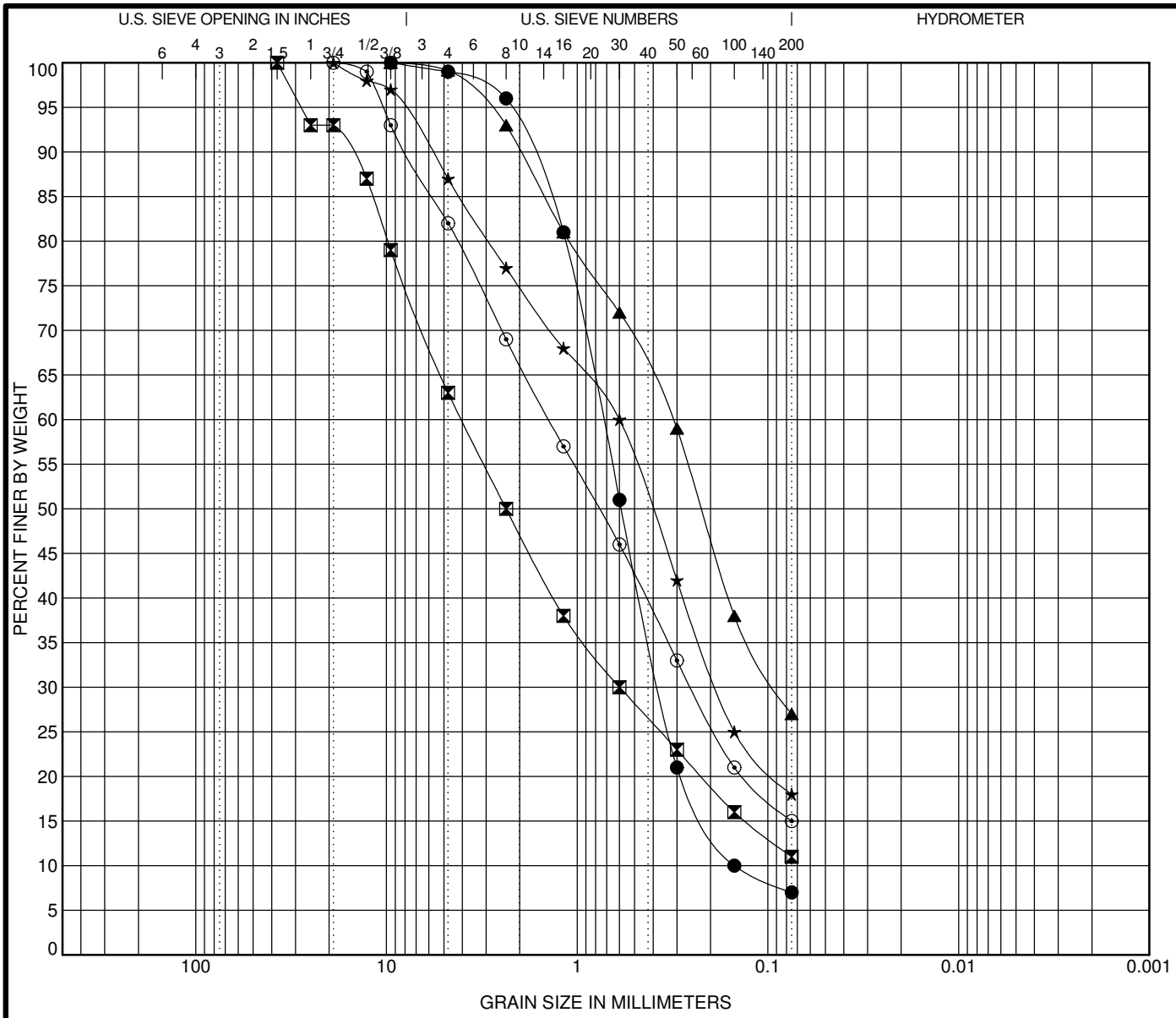
URS

55 S. Market St, Ste 1500
San Jose, CA 95113

ATTERBERG LIMITS' RESULTS

Project Name: 101 Auxillary Lane (URS 28649951)
Location: Santa Clara 101 48.97/52.17
Number: 4A-330

URS ATTERBERG LIMITS 28649951-101AUX SCL.GPJ SNJ CT.GLB 2/3/10



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Specimen Identification		Classification	LL	PL	PI	Cc	Cu
●	A-09-149	20.0	**Poorly graded SAND (SP-SM) with silt**				1.24	4.90
⊠	A-09-153	8.5	**Well-graded SAND (SW-SC) with silt and gravel**				1.36	61.91
▲	A-09-164	10.0	**Clayey SAND (SC)**					
★	A-09-169	18.5	**Clayey SAND (SC)**					
⊙	A-09-175	31.2	**Silty SAND (SM) with gravel**					

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	A-09-149	20.0	9.5	0.735	0.369	0.15	1.0	92.0	7.0	
⊠	A-09-153	8.5	37.5	4.042	0.6		37.0	52.0	11.0	
▲	A-09-164	10.0	9.5	0.316	0.091		0.9	72.1	27.0	
★	A-09-169	18.5	19	0.6	0.184		13.0	69.0	18.0	
⊙	A-09-175	31.2	19	1.403	0.252		18.0	67.0	15.0	

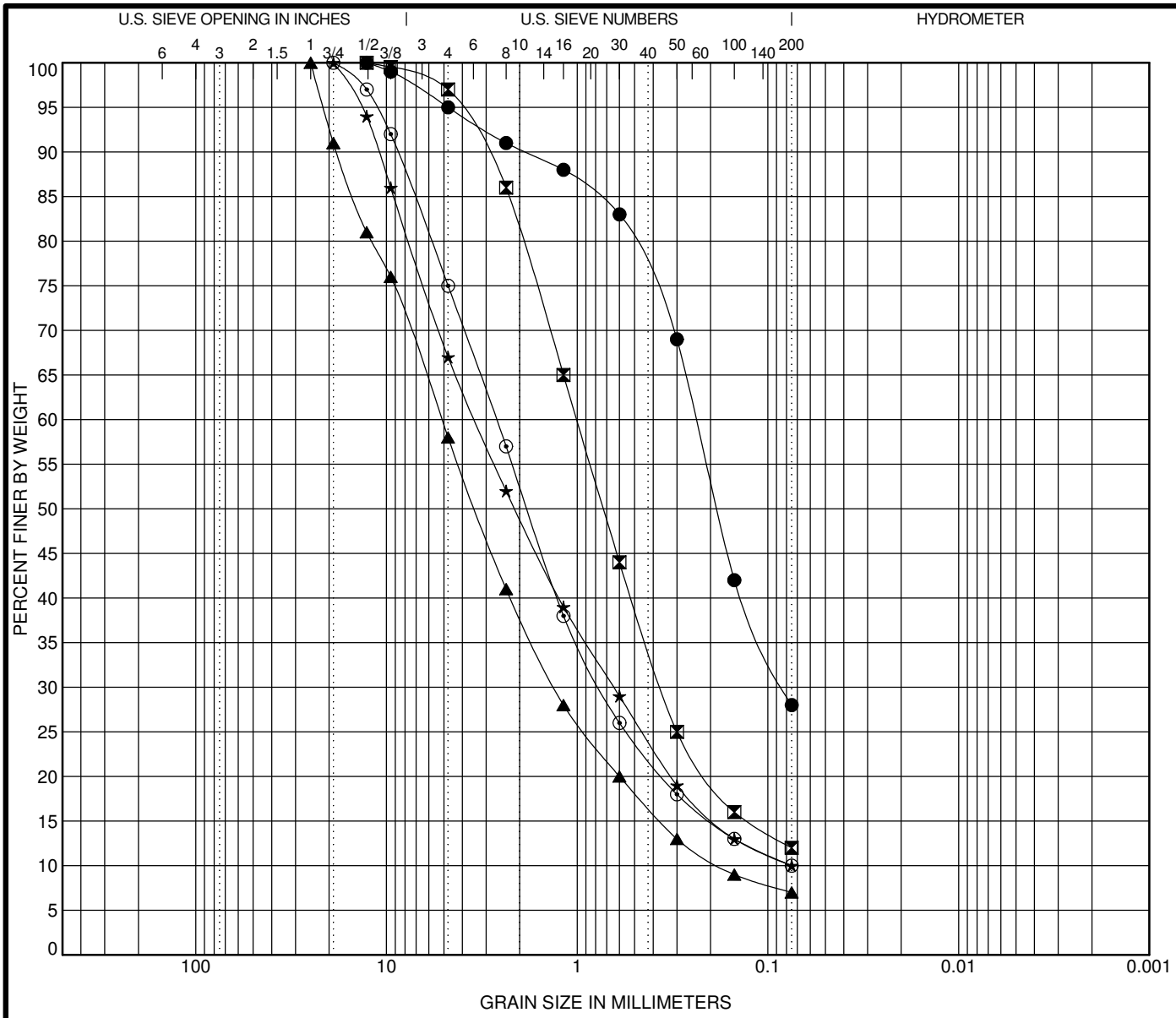
URS

55 S. Market St, Ste 1500
San Jose, CA 95113

GRAIN SIZE DISTRIBUTION

Project Name: 101 Auxillary Lane (URS 28649951)
Location: 04 Santa Clara 101
Number: 4A-330

URS GRAIN SIZE 28649951-101 AUX-VTA.GPJ CT SACTO 061407.GDT 7/10/09



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Specimen Identification		Classification	LL	PL	PI	Cc	Cu
●	**A-09-177**	**26.2**	**Silty Sand**					
⊠	**A-09-178**	**33.5**	**Silty Sand (SM)**				**2.43**	**18.94**
▲	**A-09-179**	**20.0**	**Well-graded SAND (SW-SM) with silt and gravel**				**1.88**	**28.76**
★	**A-09-184**	**29.3**	**Well-graded SAND (SW-SM) with silt and gravel**				**1.60**	**45.69**
⊙	**R-09-004**	**20.0**	**Well-graded SAND (SW-SC) with clay and gravel**				**2.84**	**35.36**

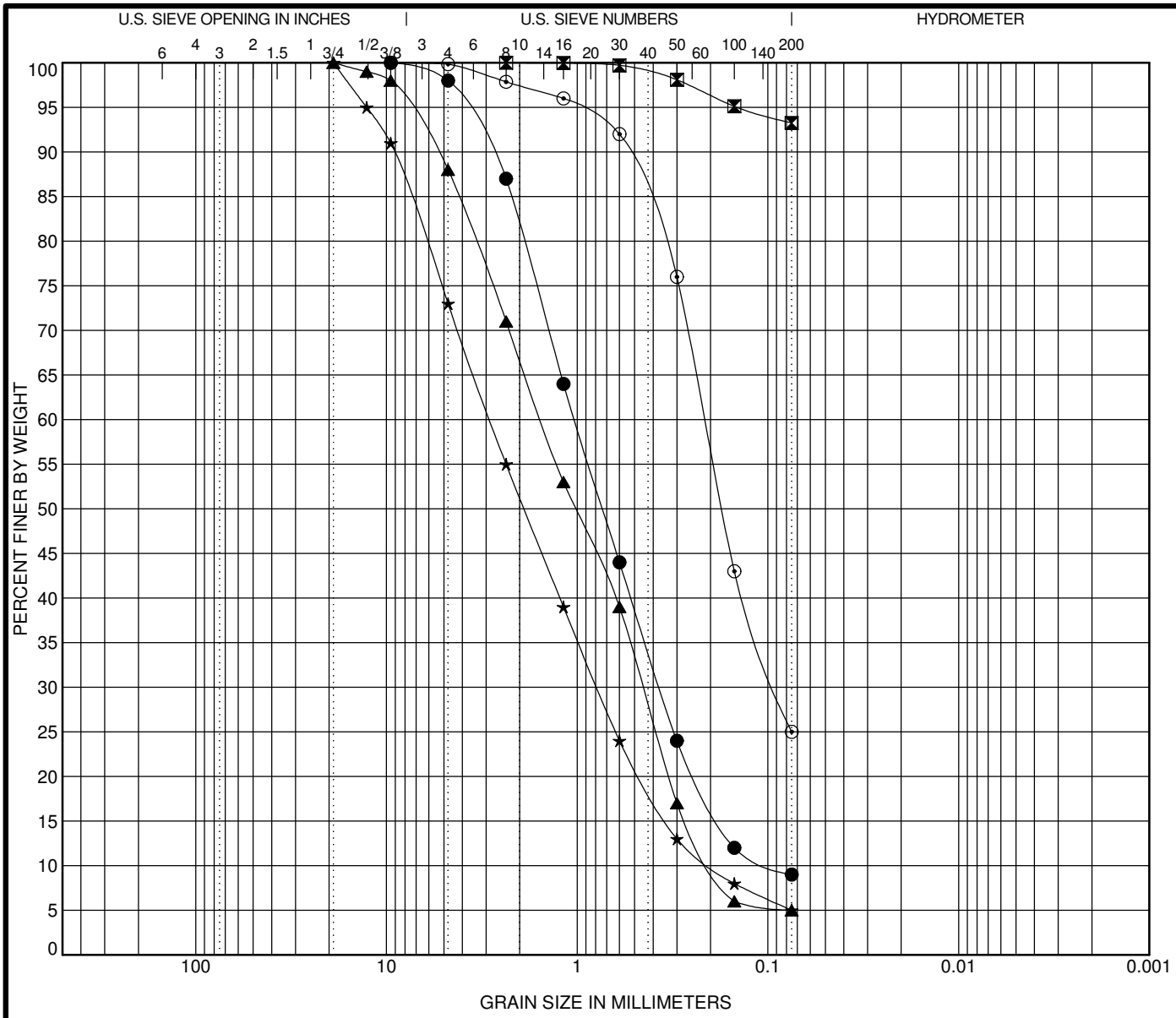
	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**A-09-177**	**26.2**	**12.7**	**0.238**	**0.083**		**5.0**	**67.0**	**28.0**	
⊠	**A-09-178**	**33.5**	**12.7**	**1.004**	**0.36**		**3.0**	**85.0**	**12.0**	
▲	**A-09-179**	**20.0**	**25**	**5.13**	**1.313**	**0.178**	**42.0**	**51.0**	**7.0**	
★	**A-09-184**	**29.3**	**19**	**3.427**	**0.642**	**0.075**	**33.0**	**57.0**	**10.0**	
⊙	**R-09-004**	**20.0**	**19**	**2.652**	**0.752**	**0.075**	**25.0**	**65.0**	**10.0**	

URS

55 S. Market St, Ste 1500
San Jose, CA 95113

GRAIN SIZE DISTRIBUTION

Project Name: 101 Auxillary Lane (URS 28649951)
Location: 04 Santa Clara 101
Number: 4A-330



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Specimen Identification		Classification	LL	PL	PI	Cc	Cu
●	R-09-004	30.0	**Well-graded SAND (SW-SM) with silt**				1.40	10.91
⊠	R-09-004	95.0	**Fat CLAY (CH)**					
▲	R-09-005	17.5	**Poorly graded SAND (SP)**				0.68	8.01
★	R-09-005	30.0	**Well-graded SAND (SW-SM) with silt and gravel**				1.09	14.48
⊙	R-09-005	35.0	**Silty SAND (SM)**					

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	R-09-004	30.0	9.5	1.031	0.369	0.094	2.0	89.0	9.0	
⊠	R-09-004	95.0	2.36				0.0	6.8	93.3	
▲	R-09-005	17.5	19	1.545	0.452	0.193	12.0	83.0	5.0	
★	R-09-005	30.0	19	2.866	0.786	0.198	27.0	68.0	5.0	
⊙	R-09-005	35.0	9.5	0.214	0.091		0.2	74.8	25.0	

URS

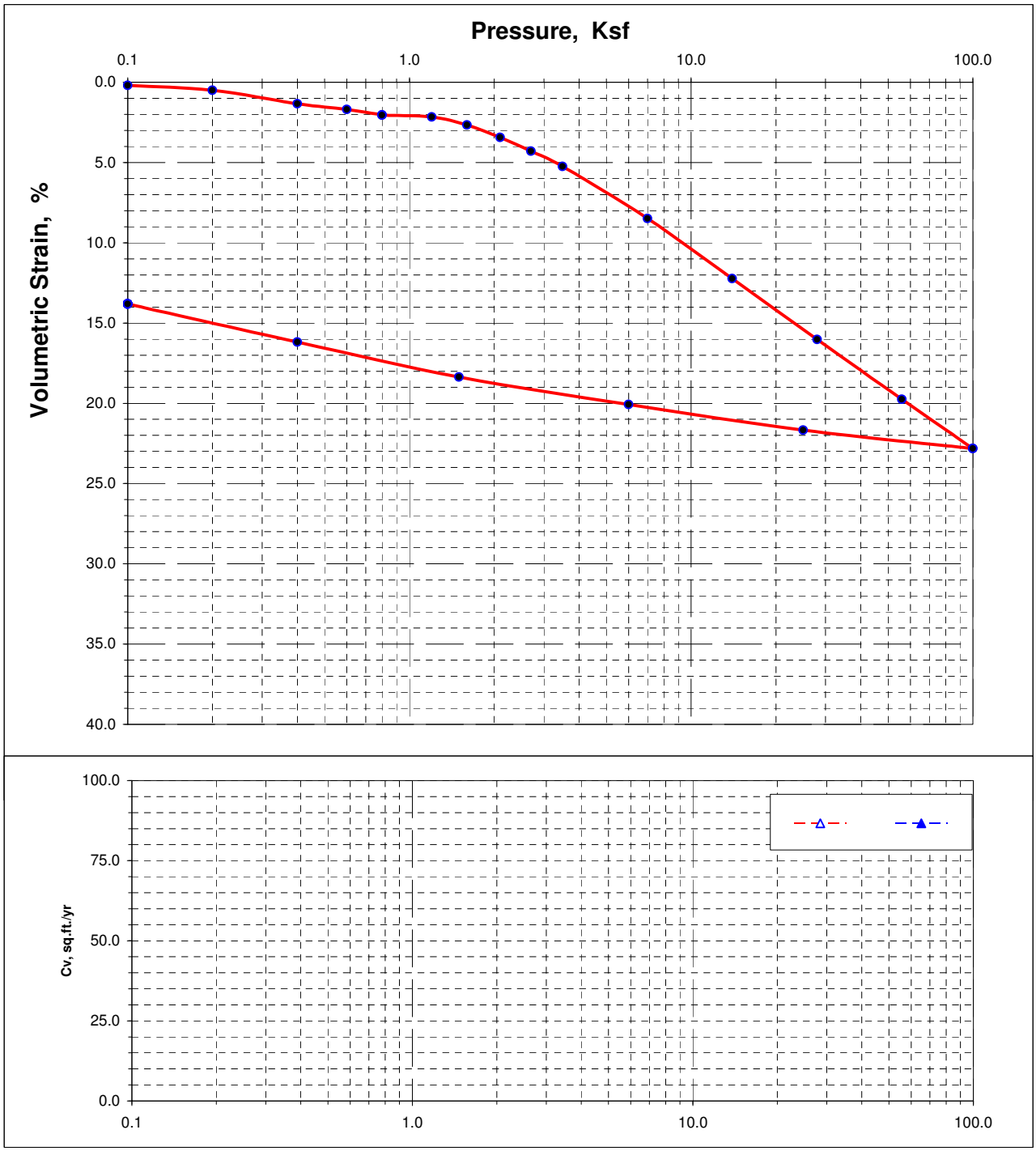
55 S. Market St, Ste 1500
San Jose, CA 95113

GRAIN SIZE DISTRIBUTION

Project Name: 101 Auxillary Lane (URS 28649951)
Location: 04 Santa Clara 101
Number: 4A-330

CONSOLIDATION TEST

Boring Number	R-09-001	Sample Number	7	Depth (ft)	27-29.5			
Soil Description	Olive brown clay with gravel							
	Water Content, %	Total Unit Weight, pcf	Void Ratio	Saturation %	Height in	Diameter in	Specific Gravity	Liquid Limit, %	Plasticity Index, %
Initial	27.3	121.0	0.774	95.1	1.00	2.420	(assumed) 2.70		
Final	19.7	132.0	0.529	100.4	0.862				

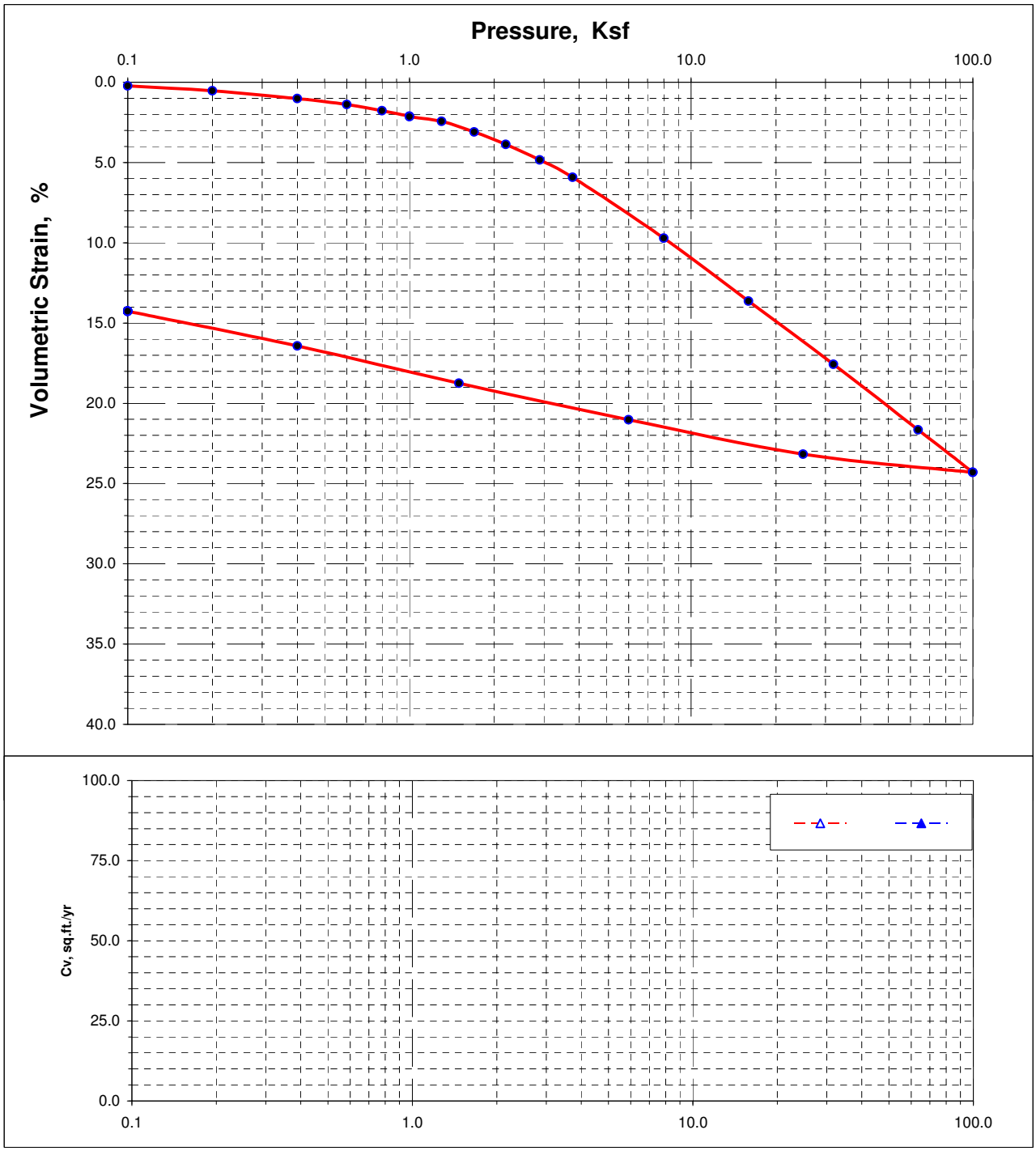


28649951.13

CONSOLIDATION TEST

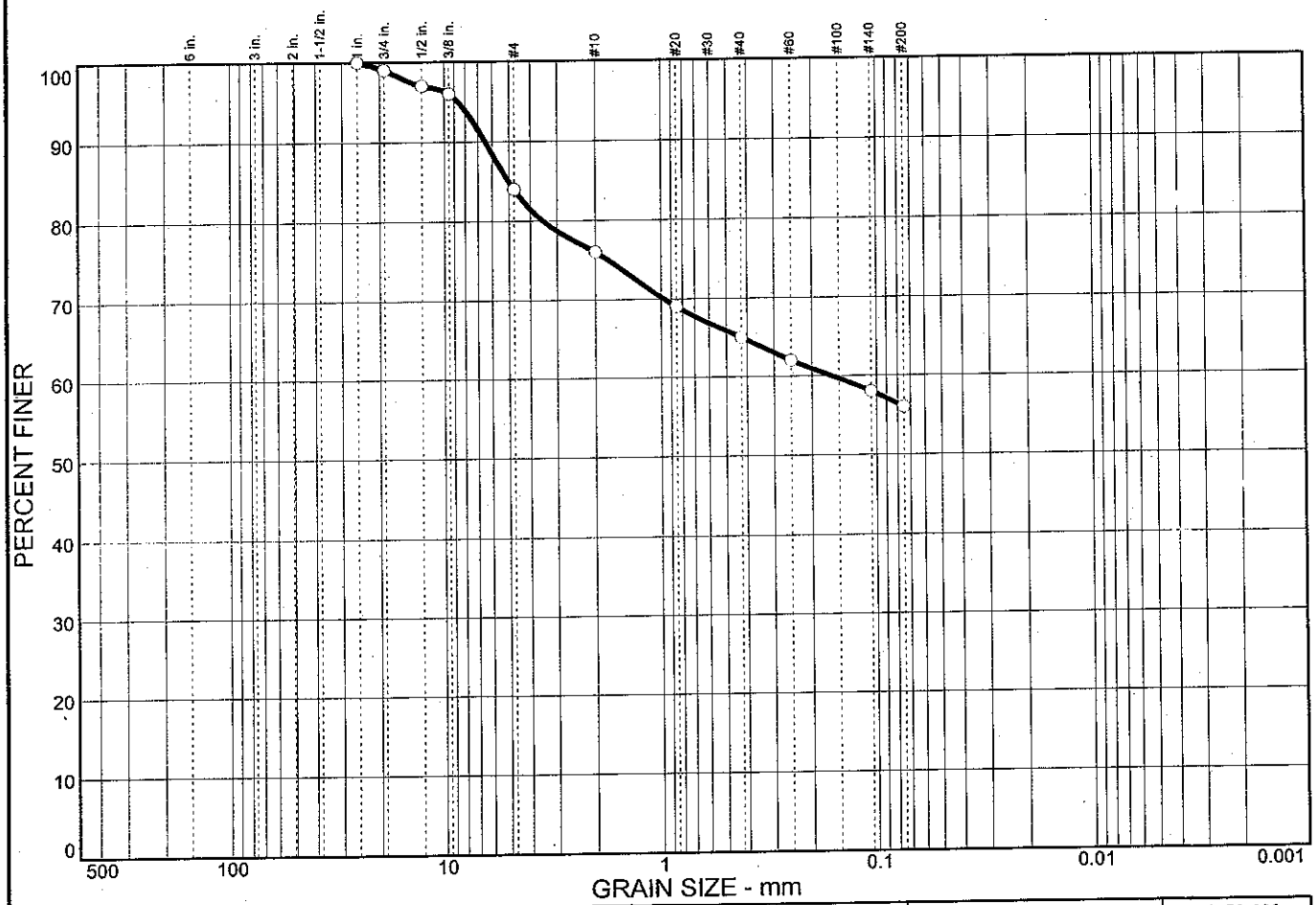
Boring Number	R-09-004	Sample Number	3	Depth (ft)	12-14.5	
Soil Description	Gray clay with gravel					

	Water Content, %	Total Unit Weight, pcf	Void Ratio	Saturation %	Height in	Diameter in	Specific Gravity	Liquid Limit, %	Plasticity Index, %
Initial	37.6	110.5	1.099	92.4	1.00	2.420	(assumed) 2.70		
Final	30.0	121.9	0.799	101.5	0.857				



28649951.13

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	16.0	28.0	56.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1 in.	100.0		
3/4 in.	99.0		
1/2 in.	97.0		
3/8 in.	96.0		
#4	84.0		
#10	76.0		
#20	69.0		
#40	65.0		
#60	62.0		
#140	58.0		
#200	56.0		

* (no specification provided)

Soil Description

A-09-139, A-09-140, A-09-146 (Mixture), Batch 1

Atterberg Limits

PL= 18 LL= 64 PI= 46

Coefficients

D_{85}= 5.03 D_{60}= 0.162 D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

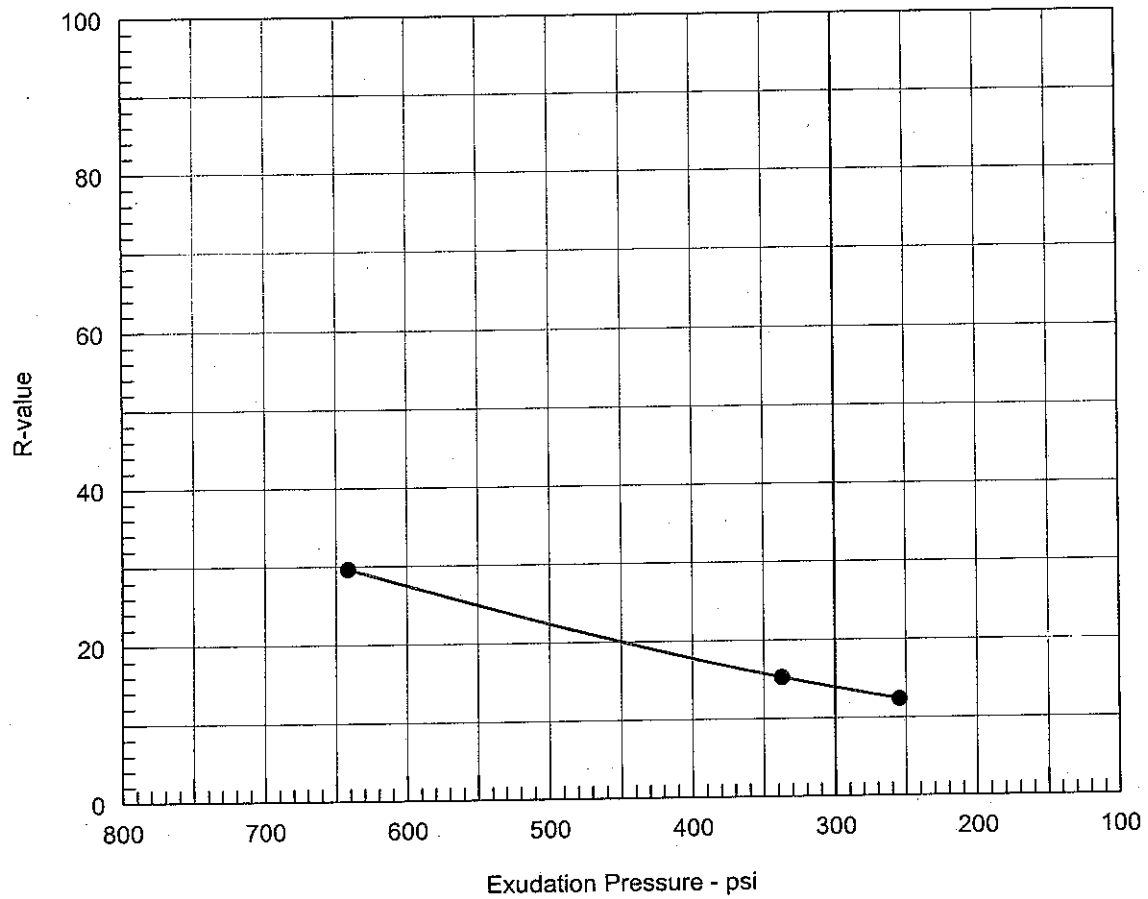
Remarks

Sample No.: SL5 Batch 1 **Source of Sample:** **Date:** 7/1/2009
Location: Batch 1 **Elev./Depth:**

SIGNET Testing Labs

Client: URS Madhu
Project: US 101 Auxillary Lane
Project No: 46224831 **Figure**

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psi	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	105	110.7	18.4	2.24	111	2.50	641	30	30
2	35	103.5	21.9	0.70	132	2.48	337	15	15
3	25	100.7	23.7	0.30	136	2.48	255	12	12

Test Results	Material Description
R-value at 300 psi exudation pressure = 14	A-09-139, A-09-140, A-09-146 (Mixture), Batch 1

Project No.: 46224831
Project: US 101 Auxillary Lane
Location: Batch 1
Sample Number: SL5 Batch 1
Date: 7/31/2009

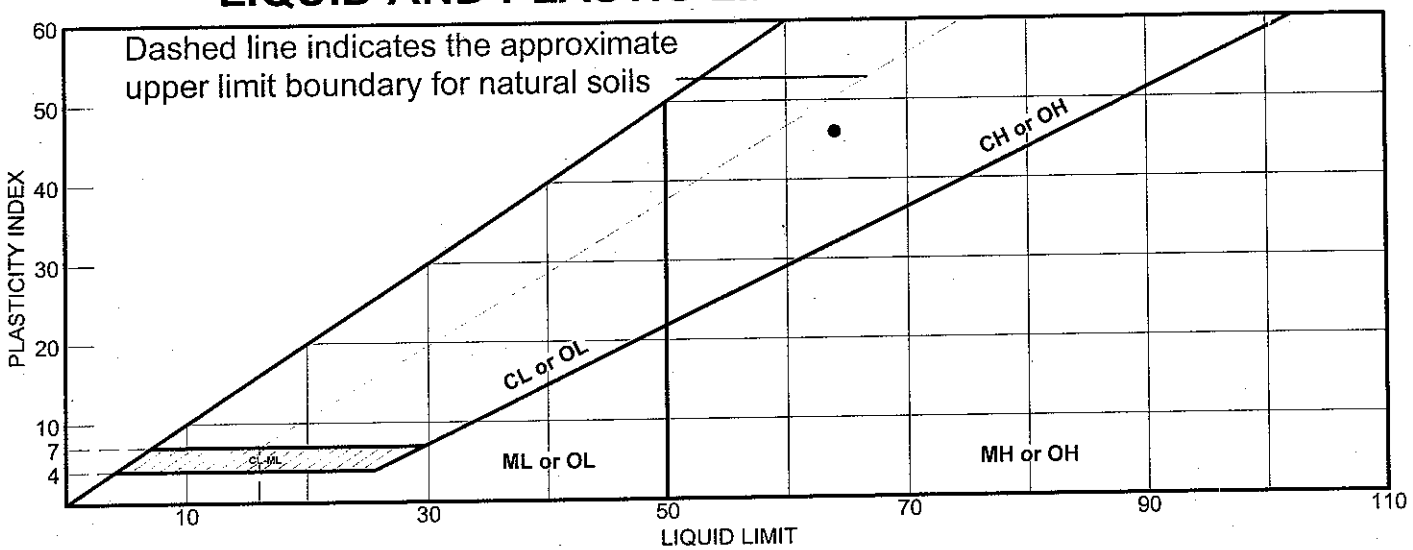
Tested by: DTN
Checked by: LKL
Remarks:
Batch 1

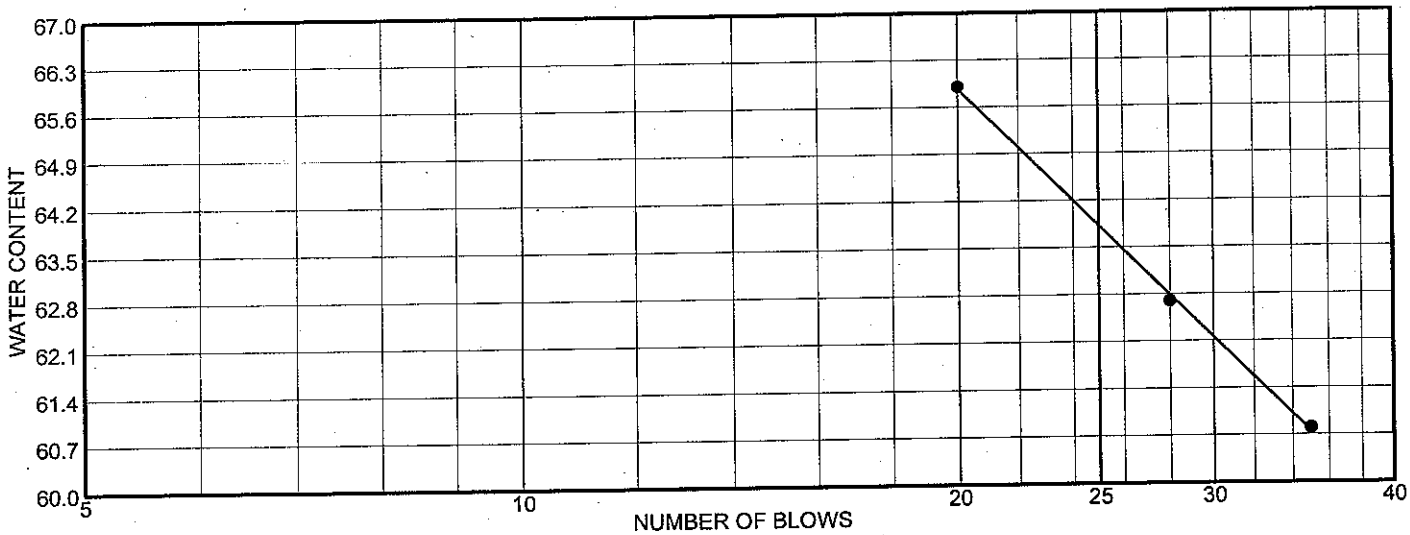
R-VALUE TEST REPORT

SIGNET TESTING LABS, INC.

Figure _____

LIQUID AND PLASTIC LIMITS TEST REPORT





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	A-09-139, A-09-140, A-09-146 (Mixture), Batch 1	64	18	46	65	56	

Project No. 46224831 **Client:** URS Madhu

Project: US 101 Auxillary Lane

● **Location:** Batch 1

Remarks:

● Batch #1

LIQUID AND PLASTIC LIMITS TEST REPORT

SIGNET TESTING LABS, INC.

Figure

SIGNET Testing Labs

Project	URS - US 101 Aux Lane	Lab # 1060 (SL5)
Sample of	Batch 1 (A-09-139, A-09-140, A-09-146)	STL # 46224831

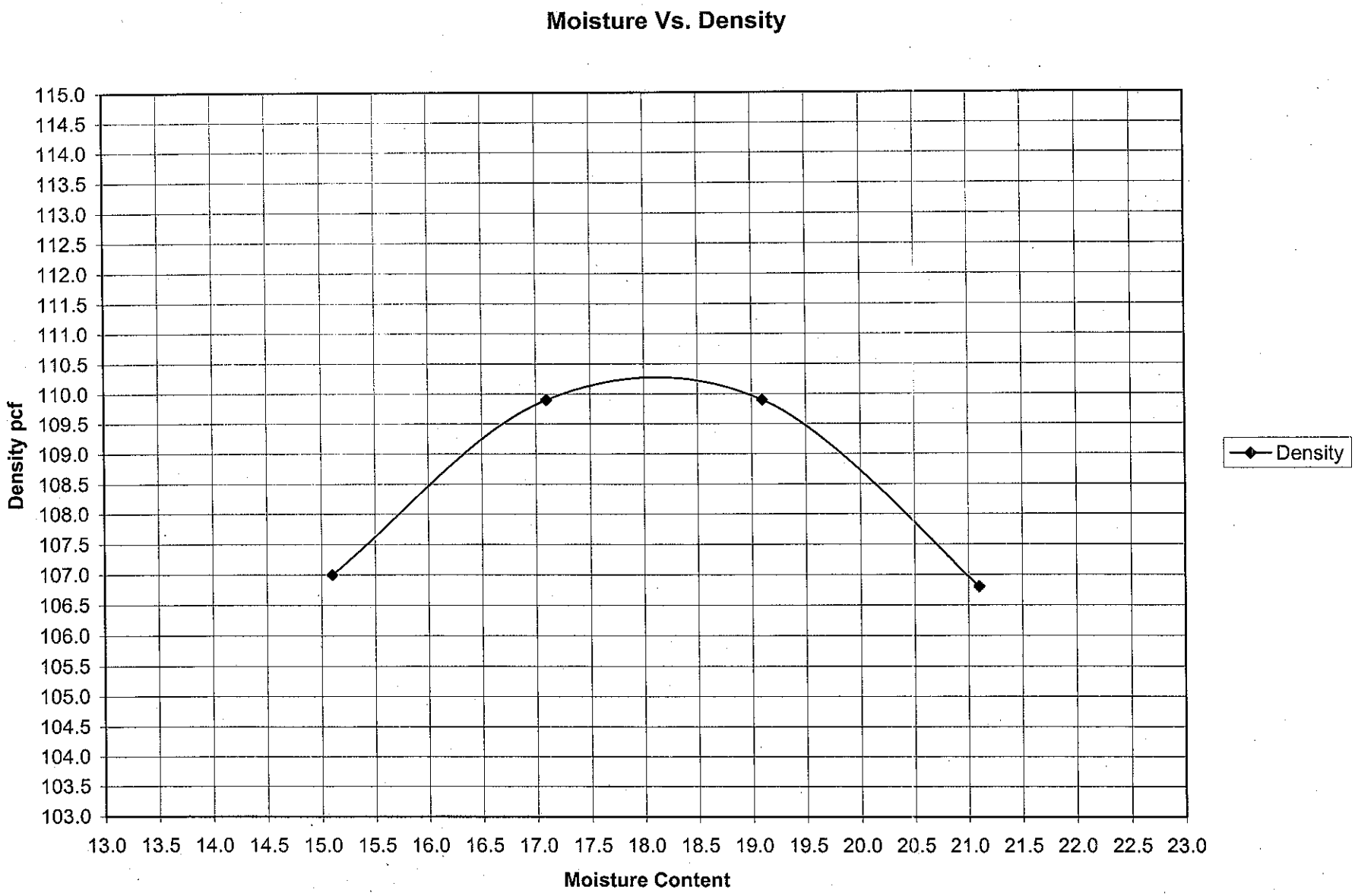
Unconfined Compressive Strength(psi) CTM 373

Percent Lime	Age (Days)	Specimen #1	Specimen #2	Average
3	7	447	446	447
5	7	478	505	492
7	7	457	460	459

Quicklime 3%

Maximum Density 110.3pcf / Opt. Moisture 18.2%

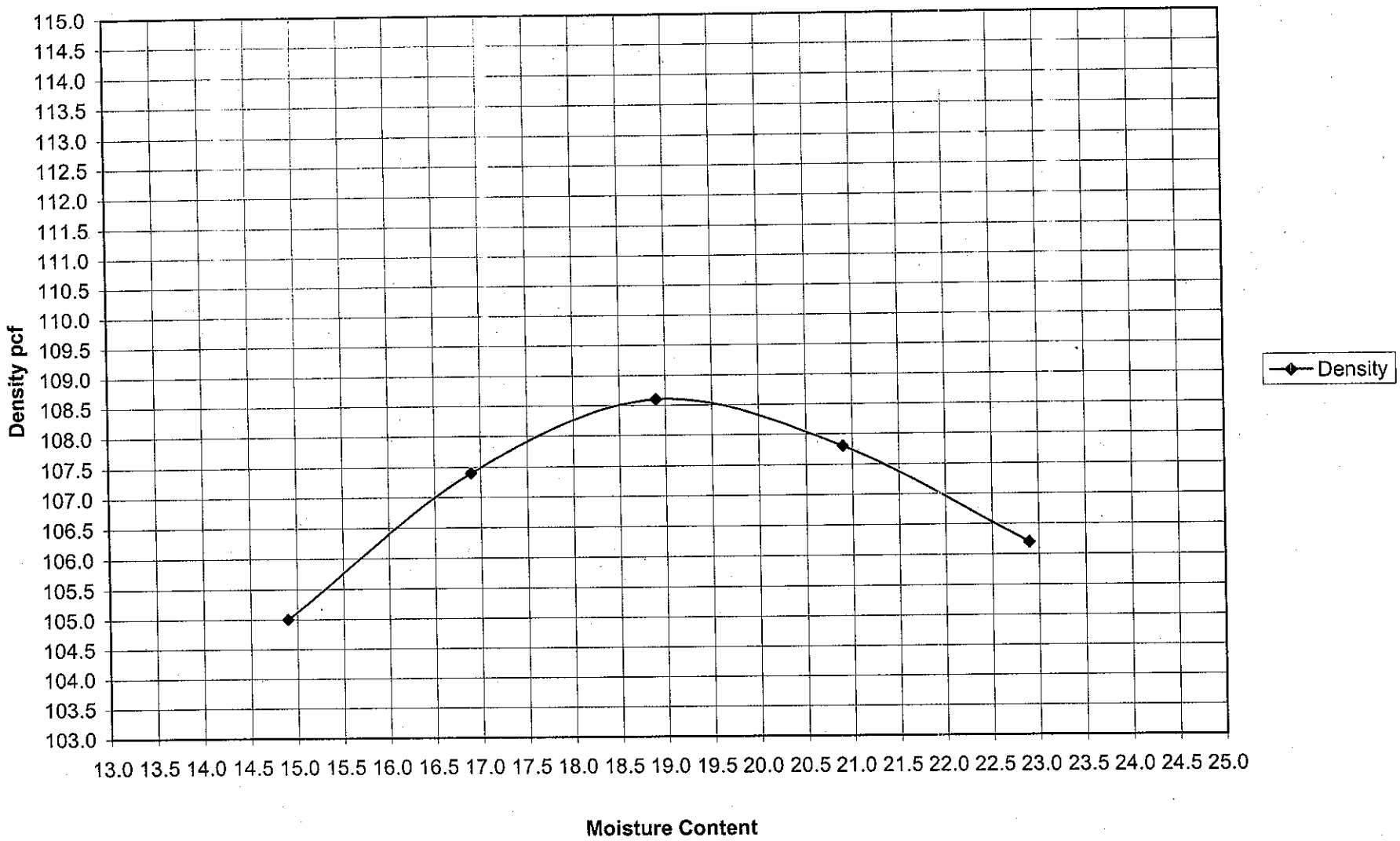
Lab # Batch 1 3%



Quicklime 5%

Maximum Density 108.6pcf / Opt. Moisture 19.0%

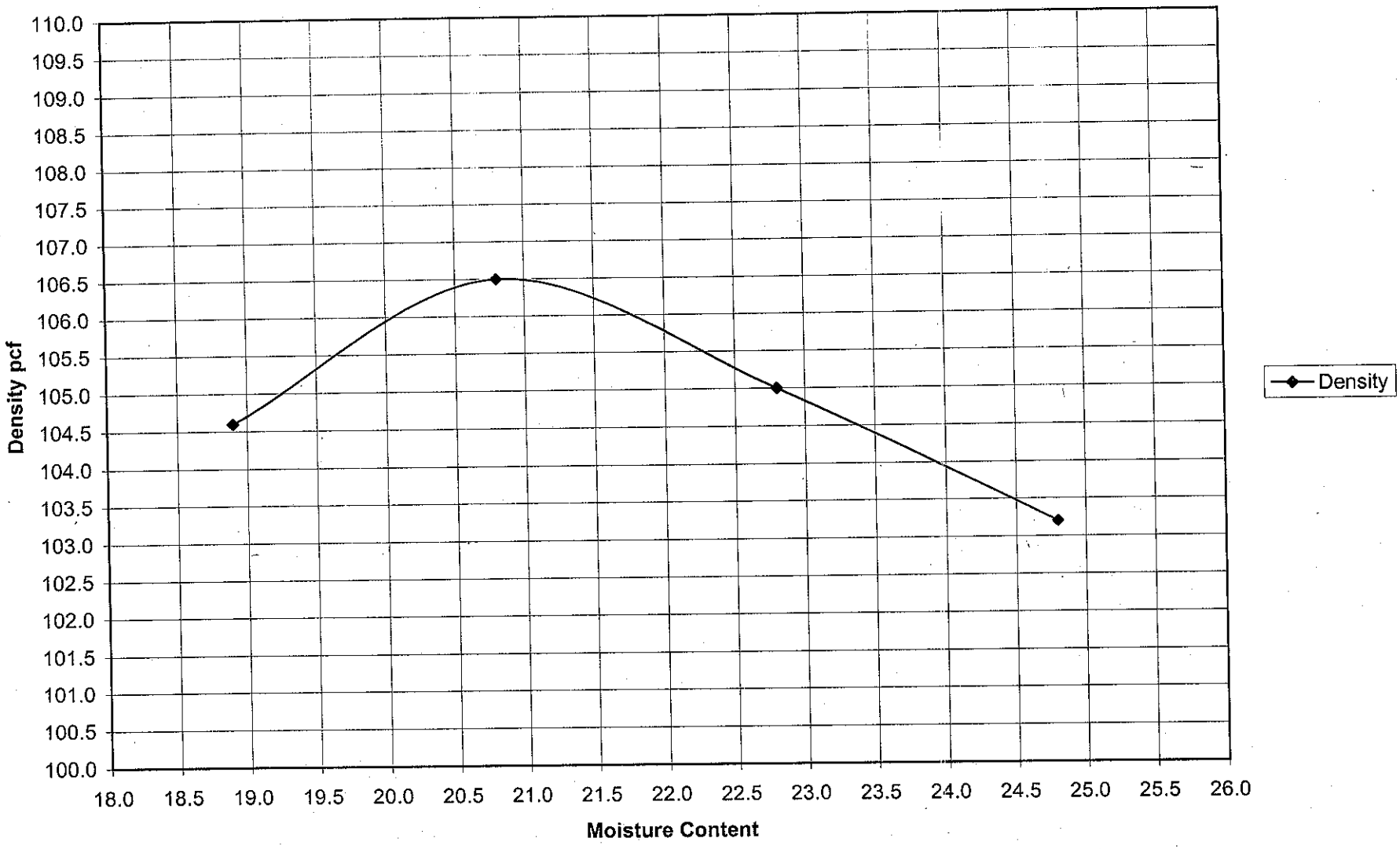
Lab # Batch 1 5%



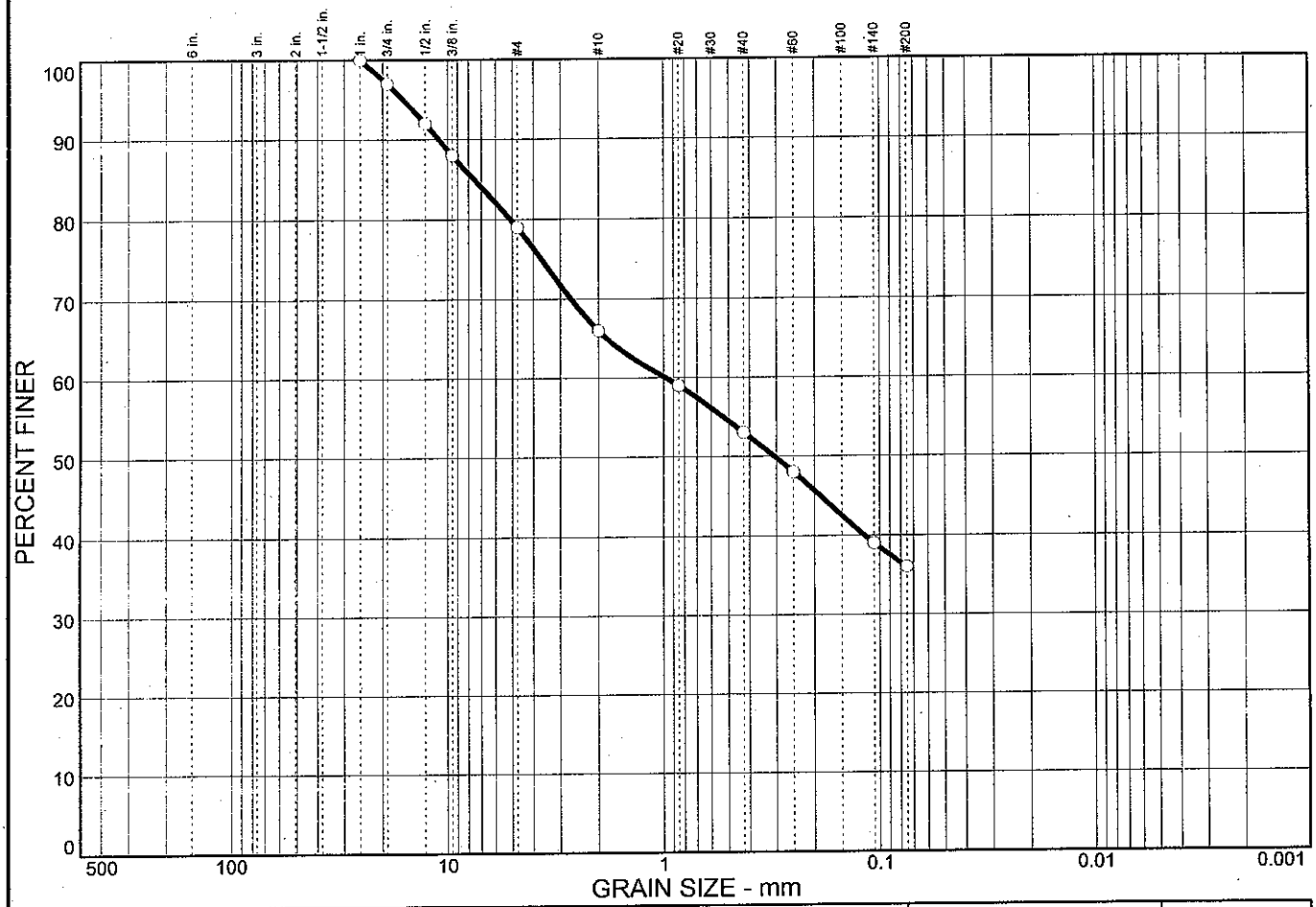
Quicklime 7%

Maximum Density 106.5pcf / Opt. Moisture 20.9%

Lab # Batch 1 7%



Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	21.0	43.0	36.0	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1 in.	100.0		
3/4 in.	97.0		
1/2 in.	92.0		
3/8 in.	88.0		
#4	79.0		
#10	66.0		
#20	59.0		
#40	53.0		
#60	48.0		
#140	39.0		
#200	36.0		

* (no specification provided)

Soil Description

A-09-161, A-09-163, A-09-165 (Mixture), Batch 2

Atterberg Limits

PL= 18 LL= 38 PI= 20

Coefficients

D_{85}= 7.54 D_{60}= 0.977 D_{50}= 0.307
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

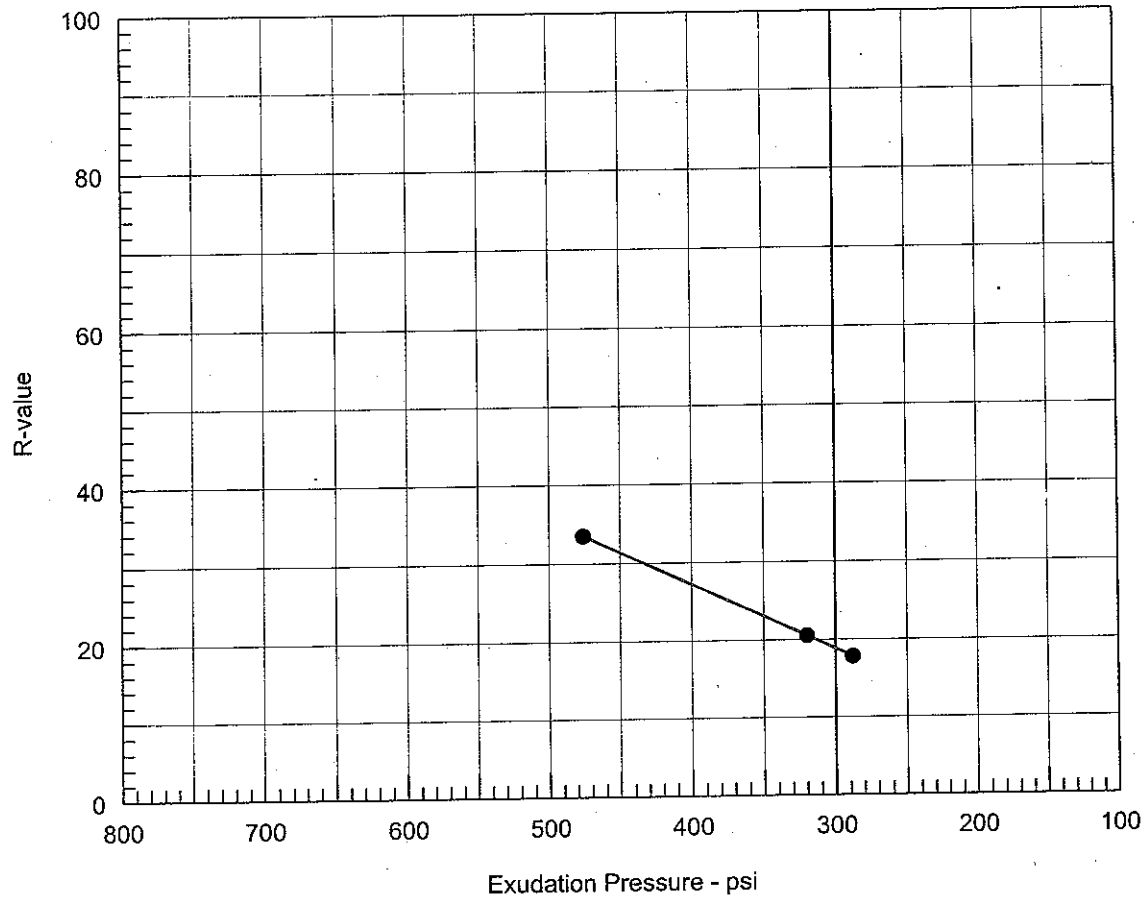
Remarks

Sample No.: SL5 Batch 2 **Source of Sample:** **Date:** 7/1/2009
Location: Batch 2 **Elev./Depth:**

SIGNET Testing Labs

Client: URS Madhu
Project: US 101 Auxillary Lane
Project No: 46224831 **Figure**

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psi	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	30	119.8	13.8	0.24	127	2.55	288	18	18
2	75	124.1	12.1	0.33	102	2.51	476	34	34
3	65	121.5	13.0	0.30	122	2.55	320	21	21

Test Results	Material Description
R-value at 300 psi exudation pressure = 19	A-09-161, A-09-163, A-09-165 (Mixture), Batch 2

Project No.: 46224831
Project: US 101 Auxillary Lane
Location: Batch 2
Sample Number: SL5 Batch 2
Date: 7/31/2009

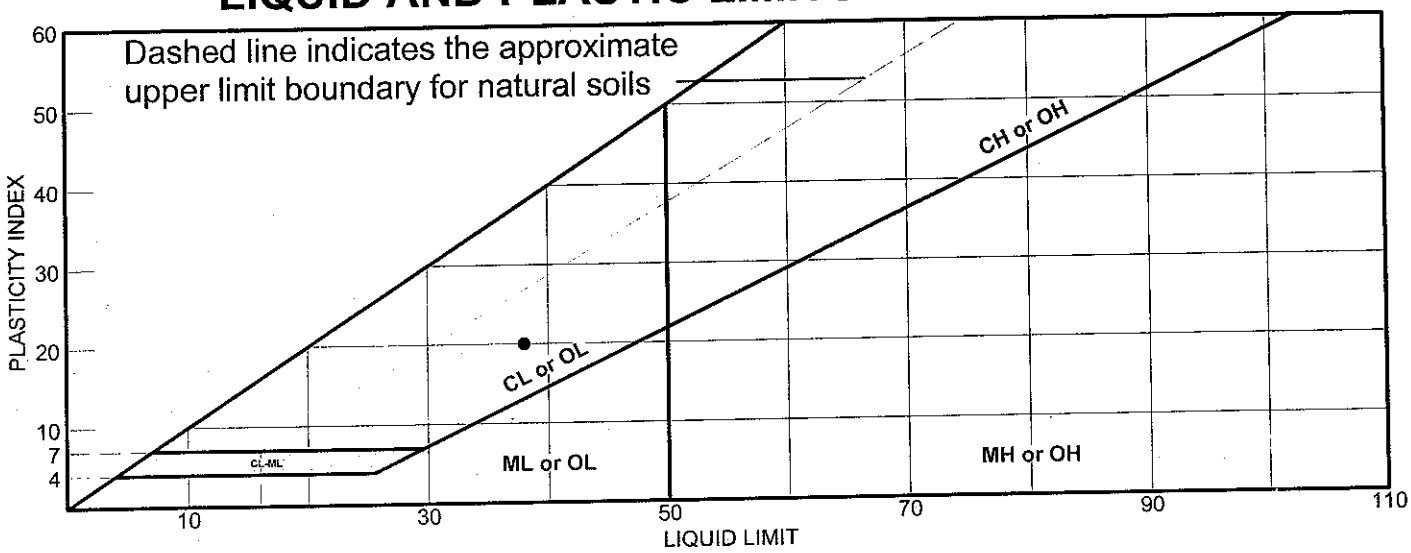
Tested by: DTN
Checked by: LKL
Remarks:
Batch 2

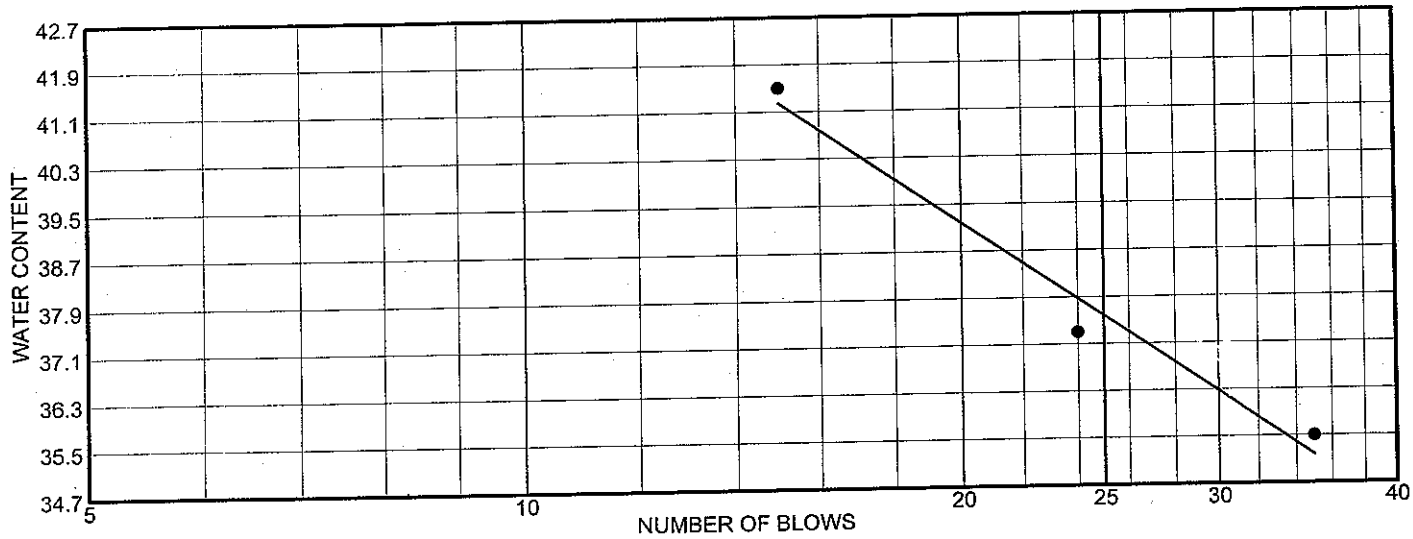
R-VALUE TEST REPORT

SIGNET TESTING LABS, INC.

Figure _____

LIQUID AND PLASTIC LIMITS TEST REPORT





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	A-09-161, A-09-163, A-09-165 (Mixture), Batch 2	38	18	20	53	36	

Project No. 46224831 **Client:** URS Madhu

Project: US 101 Auxillary Lane

● **Location:** Batch 2

Remarks:

● Batch #2

LIQUID AND PLASTIC LIMITS TEST REPORT

SIGNET TESTING LABS, INC.

Figure

SIGNET Testing Labs

Project	URS - US 101 Aux Lane	Lab # 1060 (SL5)
Sample of	Batch 2 (A-09-161, A-09-163, A-09-165)	STL # 46224831

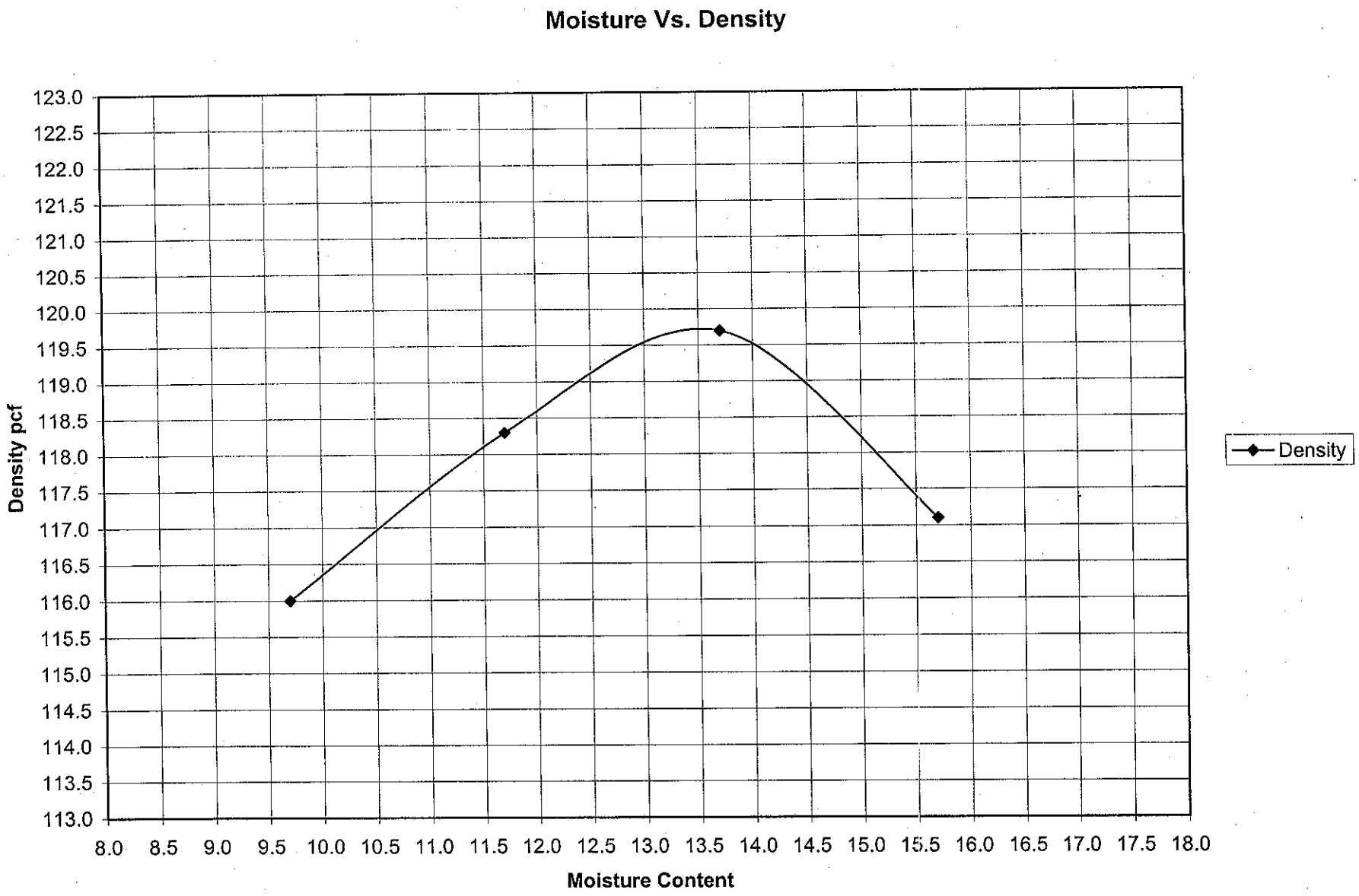
Unconfined Compressive Strength(psi) CTM 373

Percent Lime	Age (Days)	Specimen #1	Specimen #2	Average
3	7	311	325	332
5	7	349	349	349
7	7	285	277	281

Quicklime 3%

Maximum Density 119.7pcf / Opt. Moisture 13.5%

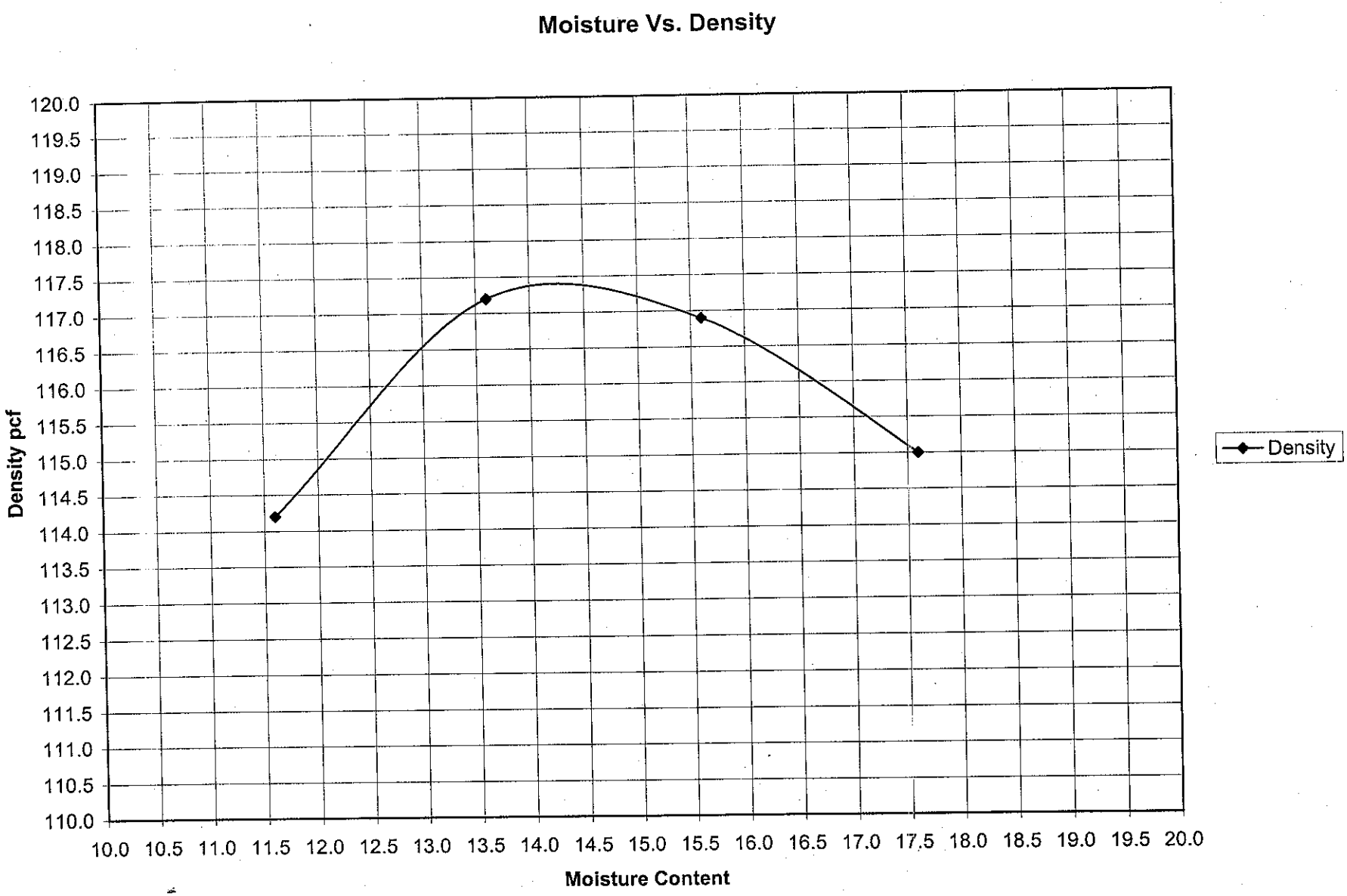
Lab # Batch 2 3%



Quicklime 5%

Maximum Density 117.4pcf / Opt. Moisture 14.3%

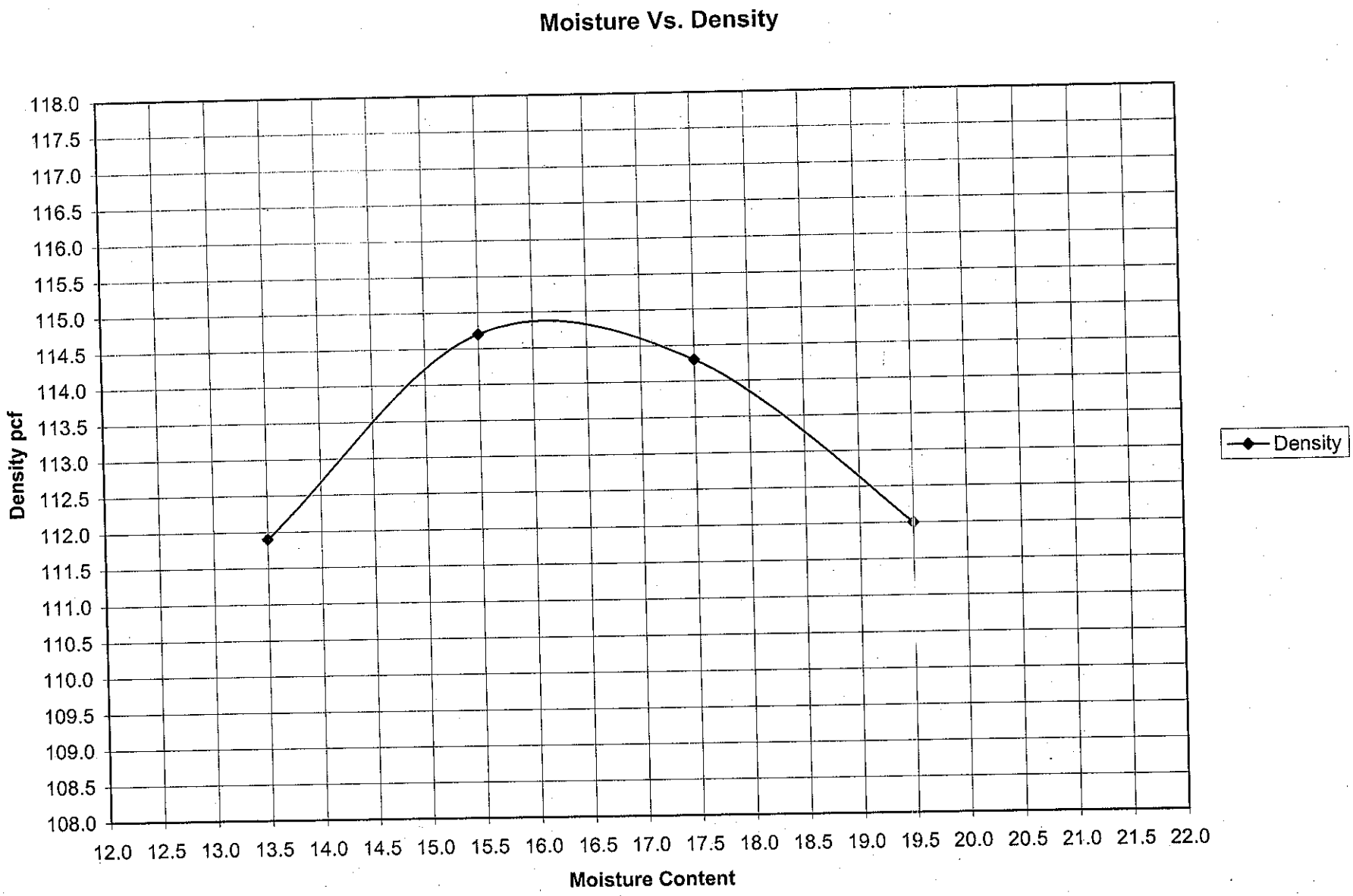
Lab # Batch 2 5%



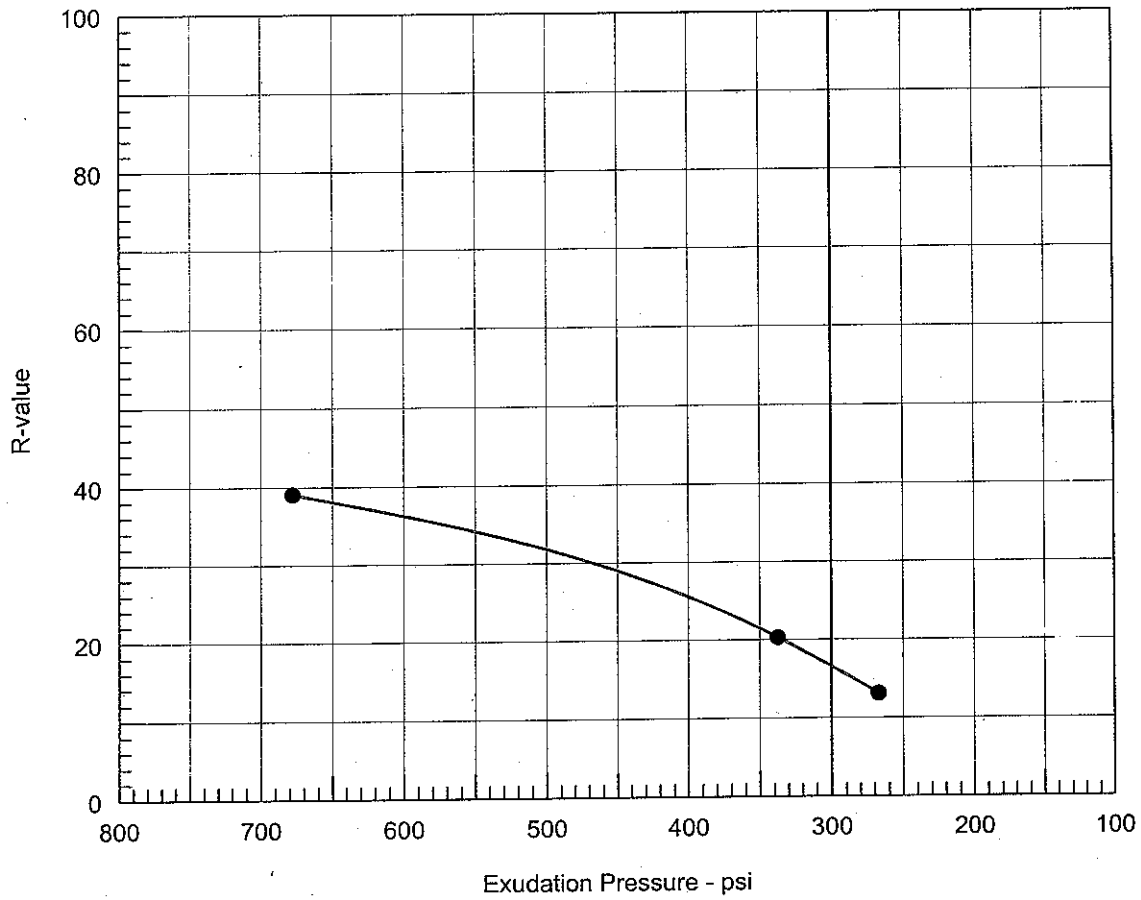
Quicklime 7%

Maximum Density 114.4pcf / Opt. Moisture 16.2%

Lab # Batch 2 7%



R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psi	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	45	121.0	13.7	0.00	124	2.52	337	20	20
2	25	116.1	15.4	0.00	135	2.49	267	13	13
3	90	125.3	12.0	0.49	98	2.56	678	38	39

Test Results	Material Description
R-value at 300 psi exudation pressure = 17	A-09-102, A-09-105, A-09-107 (Mixture), Batch 3

Project No.: 46224831
Project: US 101 Auxillary Lane
Location: Batch 3
Sample Number: SL5 Batch 3
Date: 7/31/2009

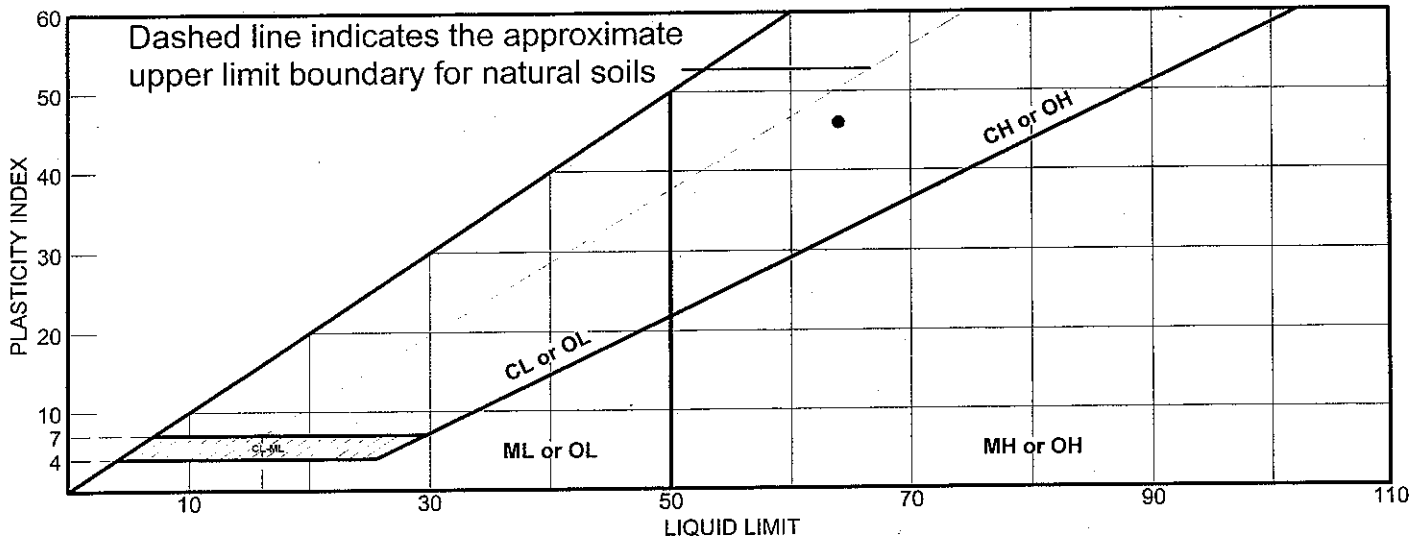
Tested by: DTN
Checked by: LKL
Remarks:
Batch 3

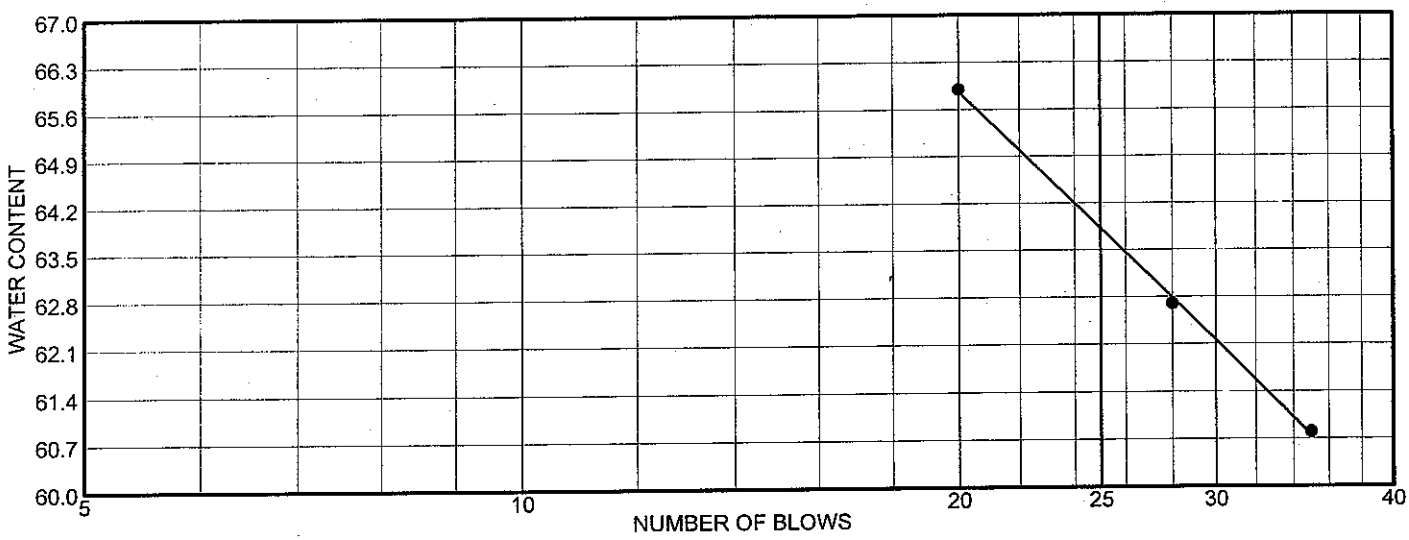
R-VALUE TEST REPORT

SIGNET TESTING LABS, INC.

Figure _____

LIQUID AND PLASTIC LIMITS TEST REPORT





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	A-09-139, A-09-140, A-09-146 (Mixture), Batch 1	64	18	46	65	56	

Project No. 46224831 **Client:** URS Madhu

Project: US 101 Auxillary Lane

● **Location:** Batch 1

Remarks:

● Batch #1

LIQUID AND PLASTIC LIMITS TEST REPORT

SIGNET TESTING LABS, INC.

Figure

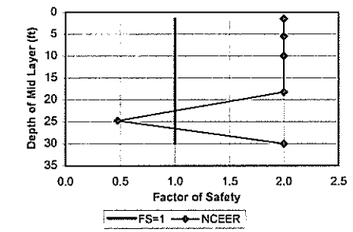
LIQUEFACTION ANALYSIS

Project	101 Auxillary Lane
Project No.	28649951
Boring No.	A-09-153

PGA =	0.5	
M_w =	8.0	
GWT during EQ	8.0	ft
Sampler:	Symbol	Corr. Factor
SPT	S	1
Mod.Cal	M	0.8
California	C	0.7
Mag. Weighting Factor($CSR_M/CSR_{M=7.5}$)		1.21

Note: Cells in Red must be input

Hammer type :	Type		C_E	Code	C_E
	Donut		0.75	1	3
	Safety		1	2	
	Auto		1.78	3	
Borehole Diameter:	(inch)	(mm)	C_B		C_B
	2.5-4.5	65-115	1	1	3
	6	150	1.05	2	
	8	200	1.15	3	
Rod Length:	(feet)	(m)	C_R		
	Default			999	
Sampling Method:	Type		Cs		
	Stand		1		
	No liners		1.2		



Note: F.S. greater than 2 is set to be equal to 2

Layer Number	Soil Type	γ_m	At Bottom of Layer: Depth		At Center of Layer: Depth		σ_o	EQ: u	EQ: σ'_o	r_d	EQ CSR	N raw	Sampler	N SPT	Fines Content	N_{60-cs}	C_N	C_E	C_B	C_R	C_S	$(N_1)_{60-cs}$	$CRR^*_{7.5,1tsf}$	Magnitude Scaling Factor NCEER K_m: Lower	Upper	Middle	Overburden Correction K_σ	Above GWT?	F.S.	Liquefy ?	F.S=1.0
	(USCS)	pcf	ft	m	ft	m	psf	psf	psf						%	FC< 5%	EQ					during EQ	Critical						NCEER	NCEER	
1	CH	123	3.0	0.91	1.5	0.46	185	0	185	0.998	0.325			0		0.0	2.00	1.78	1.15	0.75	1.00			0.85	0.81	0.83	1.000	Y	2.00	N	1
2	CL/CH	126	8.0	2.44	5.5	1.68	684	0	684	0.989	0.321			0		0.0	1.76	1.78	1.15	0.75	1.00			0.85	0.81	0.83	1.000	Y	2.00	N	1
3	SM	140	12.0	3.66	10.0	3.05	1,279	125	1,154	0.979	0.353	26	M	20.8	11	22.6	1.35	1.78	1.15	0.75	1.00	47	0.459	0.85	0.81	0.83	1.000	N	2.00	N	1
4	CL	128	24.5	7.47	18.3	5.56	2,359	640	1,719	0.961	0.429			0		0.0	1.11	1.78	1.15	0.85	1.00			0.85	0.81	0.83	1.000	N	2.00	N	1
5	SM	122	25.0	7.62	24.8	7.54	3,190	1,045	2,144	0.943	0.456	9	M	7.2	25	12.3	0.99	1.78	1.15	0.95	1.00	24	0.264	0.85	0.81	0.83	0.996	N	0.48	Liquef	1
6	CL	127	35.0	10.67	30.0	9.14	3,855	1,373	2,482	0.921	0.465			0		0.0	0.92	1.78	1.15	0.95	1.00			0.85	0.81	0.83	0.976	N	2.00	N	1
7																															
8																															
9																															
10																															

Layer Number	Depth to Bot. Layer	Thickness	σ_o	u	σ'_o	r_d	$(N_1)_{60-cs}$	Liquefy ?	τ_{cyc}	$CSR_{M=7.5}$	CSR_M	Volumetric Strain**			Settl.
		ft	psf	psf	psf			NCEER	psf	τ_{cyc}/σ'_o	τ_{cyc}/σ'_o		%		in
1	3.0	3.0	185	0	185	0.998	0.0	N	59.9	0.325	0.39				0.00
2	8.0	5.0	684	0	684	0.989	0.0	N	219.9	0.321	0.39				0.00
3	12.0	4.0	1,279	125	1,154	0.979	46.9	N	407.0	0.353	0.43				0.00
4	24.5	12.5	2,359	640	1,719	0.961	0.0	N	737.0	0.429	0.52				0.00
5	25.0	0.5	3,190	1,045	2,144	0.943	23.8	Liquef	977.2	0.456	0.55		1.2		0.07
6	35.0	10.0	3,855	1,373	2,482	0.921	0.0	N	1153.4	0.465	0.56				0.00
7															
8															
9															
10															

Total Settlement (inch) = 0.07

* Note: The equation used to obtain $CRR_{7.5}$ is not valid for corrected $(N_1)_{60}$ higher than 30. According to NCEER 1997, the soil layer with corrected $(N_1)_{60}$ higher than 30 blows per foot is unlikely to be susceptible to liquefaction.

** Note: These values were obtained from a chart for estimation of volumetric strain in saturated sands based on a cyclic stress ratio and standard penetration resistance (Tokimatsu and Seed, 1987).
See figure 9.53 from "Geotechnical Earthquake Engineering" by S. Kramer.

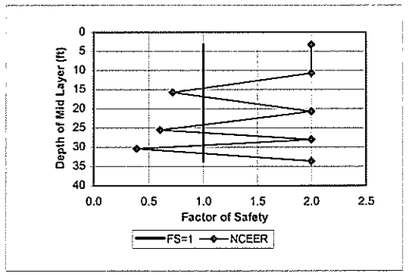
LIQUEFACTION ANALYSIS

Project	101 Auxillary Lane
Project No.	28649951
Boring No.	A-09-154

PGA =	0.5	
M_w =	8.0	
GWT during EQ	15.0	ft
Sampler:	Symbol	Corr. Factor
SPT	S	1
Mod.Cal	M	0.8
California	C	0.7
Mag. Weighting Factor($CSR_M/CSR_{M=7.5}$)		1.21

Note: Cells in Red must be input

Hammer type :	Type		C_E	Code	C_E
	Donut		0.75	1	3
	Safety		1	2	
	Auto		1.78	3	
Borehole Diameter:	(inch)	(mm)	C_B		C_B
	2.5-4.5	65-115	1	1	3
	6	150	1.05	2	
	8	200	1.15	3	
Rod Length:	(feet)	(m)	C_R		
	Default			999	
Sampling Method:	Type		Cs		
	Stand		1		
	No liners		1.2		



Note: F.S. greater than 2 is set to be equal to 2

Layer Number	Soil Type	γ_m	At Bottom of Layer Depth		At Center of Layer Depth		σ_o	EQ u	EQ σ'_o	r_d	EQ CSR	N raw	Sampler	N SPT	Fines Content	$N_{60\text{-}cs}$	C_N	C_E	C_B	C_R	C_S	$(N_1)_{60\text{-}cs}$	$CRR^*_{7.5,1tsf}$	Magnitude Scaling Factor NCEER K_m Lower	Upper	Middle	Overburden Correction K_σ	Above GWT?	F.S.	Liquefy ?	F.S=1.0
	(USCS)	pcf	ft	m	ft	m	psf	psf	psf						%	FC< 5%	EQ					during EQ	Critical						NCEER	NCEER	
1	CH	119	6.5	1.98	3.25	0.99	387	0	387	0.994	0.323			0		0.0	2.00	1.78	1.15	0.75	1.00	0		0.85	0.81	0.83	1.000	Y	2.00	N	1
2	CL	124	15.0	4.57	10.8	3.28	1,301	0	1,301	0.978	0.318			0		0.0	1.28	1.78	1.15	0.75	1.00	0		0.85	0.81	0.83	1.000	Y	2.00	N	1
3	SM	122	16.5	5.03	15.8	4.80	1,919	47	1,872	0.967	0.322	13	M	10.4	15	13.4	1.06	1.78	1.15	0.85	1.00	25	0.279	0.85	0.81	0.83	1.000	N	0.72	Liquef	1
4	CL	130	25.0	7.62	20.8	6.32	2,563	359	2,204	0.955	0.361			0		0.0	0.98	1.78	1.15	0.95	1.00	0		0.85	0.81	0.83	0.992	N	2.00	N	1
5	SM	122	26.0	7.92	25.5	7.77	3,177	655	2,521	0.940	0.385	14	M	11.2	15	14.2	0.92	1.78	1.15	0.95	1.00	25	0.289	0.85	0.81	0.83	0.973	N	0.60	Liquef	1
6	CL	120	30.0	9.14	28.0	8.53	3,478	811	2,666	0.930	0.394			0		0.0	0.89	1.78	1.15	0.95	1.00	0		0.85	0.81	0.83	0.965	N	2.00	N	1
7	SM	126	30.8	9.39	30.4	9.27	3,768	961	2,807	0.919	0.401	10	M	8	15	10.9	0.87	1.78	1.15	0.95	1.00	18	0.198	0.85	0.81	0.83	0.957	N	0.39	Liquef	1
8	CL	122	36.5	11.13	33.7	10.26	4,166	1,164	3,002	0.900	0.406			0		0.0	0.84	1.78	1.15	1.00	1.00	0		0.85	0.81	0.83	0.946	N	2.00	N	1
9																															
10																															

Layer Number	Depth to Bot. Layer	Thickness	σ_o	u	σ'_o	r_d	$(N_1)_{60\text{-}cs}$	Liquefy ?	τ_{cyc}	$CSR_{M=7.5}$	CSR_M	Volumetric Strain**			Settl.
	ft	ft	psf	psf	psf			NCEER	psf	τ_{cyc}/σ'_o	τ_{cyc}/σ'_o		%		in
1	6.5	6.5	387	0	387	0.994	0.0	N	125.0	0.323	0.39				0.00
2	15.0	8.5	1,301	0	1,301	0.978	0.0	N	413.2	0.318	0.38				0.00
3	16.5	1.5	1,919	47	1,872	0.967	24.8	Liquef	603.0	0.322	0.39		1.1		0.20
4	25.0	8.5	2,563	359	2,204	0.955	0.0	N	795.4	0.361	0.44				0.00
5	26.0	1.0	3,177	655	2,521	0.940	25.4	Liquef	970.5	0.385	0.46		1.1		0.13
6	30.0	4.0	3,478	811	2,666	0.930	0.0	N	1051.1	0.394	0.48				0.00
7	30.8	0.8	3,768	961	2,807	0.919	18.4	Liquef	1124.8	0.401	0.48		1.65		0.16
8	36.5	5.7	4,166	1,164	3,002	0.900	0.0	N	1218.1	0.406	0.49				0.00
9															
10															

Total Settlement (inch) =	0.49

* Note: The equation used to obtain $CRR_{7.5}$ is not valid for corrected $(N_1)_{60}$ higher than 30. According to NCEER 1997, the soil layer with corrected $(N_1)_{60}$ higher than 30 blows per foot is unlikely to be susceptible to liquefaction.

** Note: These values were obtained from a chart for estimation of volumetric strain in saturated sands based on a cyclic stress ratio and standard penetration resistance (Tokimatsu and Seed, 1987).
See figure 9.53 from "Geotechnical Earthquake Engineering" by S. Kramer.

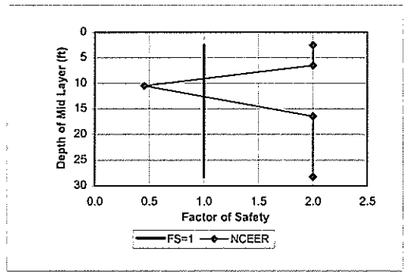
LIQUEFACTION ANALYSIS

Project	101 Auxillary Lane
Project No.	28649951
Boring No.	A-09-164

PGA =	0.5	
M_w =	8.0	
GWT during EQ	8.0	ft
Sampler:	Symbol	Corr. Factor
SPT	S	1
Mod.Cal	M	0.8
California	C	0.7
Mag. Weighting Factor($CSR_M/CSR_{M=7.5}$)		1.21

Note: Cells in Red must be input

Hammer type :	Type		C_E	Code	C_E
	Donut		0.75	1	3
	Safety		1	2	
	Auto		1.78	3	
Borehole Diameter:	(inch)	(mm)	C_B		C_B
	2.5-4.5	65-115	1	1	3
	6	150	1.05	2	
	8	200	1.15	3	
Rod Length:	(feet)	(m)	C_R		
	Default			999	
Sampling Method:	Type		Cs		
	Stand		1		
	No liners		1.2		



Note: F.S. greater than 2 is set to be equal to 2

Layer Number	Soil Type	γ_m	At Bottom of Layer: Depth		At Center of Layer: Depth		σ_o	EQ: u	EQ: σ'_o	r_d	EQ CSR	N raw	Sampler	N SPT	Fines Content	N_{60-cs}	C_N	C_E	C_B	C_R	C_S	$(N_1)_{60-cs}$	$CRR^*_{7.5,1tsf}$	Magnitude Scaling Factor NCEER K_m: Lower	Upper	Middle	Overburden Correction K_σ	Above GWT?	F.S.	Liquefy ?	F.S=1.0
	(USCS)	pcf	ft	m	ft	m	psf	psf	psf						%	FC< 5%	EQ					during EQ	Critical						NCEER	NCEER	
1	CH	127	5.0	1.52	2.5	0.76	318	0	318	0.996	0.324			0		0.0	2.00	1.78	1.15	0.75	1.00	0		0.85	0.81	0.83	1.000	Y	2.00	N	1
2	CL	133	8.0	2.44	6.5	1.98	835	0	835	0.987	0.321			0		0.0	1.59	1.78	1.15	0.75	1.00	0		0.85	0.81	0.83	1.000	Y	2.00	N	1
3	SC/SM	134	13.0	3.96	10.5	3.20	1,369	156	1,213	0.978	0.359	5	M	4	27	9.0	1.32	1.78	1.15	0.75	1.00	18	0.197	0.85	0.81	0.83	1.000	N	0.45	Liquef	1
4	SM	121	20.0	6.10	16.5	5.03	2,128	530	1,597	0.965	0.418	22	S	22	27	29.3	1.15	1.78	1.15	0.85	1.20	71	0.459	0.85	0.81	0.83	1.000	N	2.00	N	1
5	CL	127	36.5	11.13	28.3	8.61	3,599	1,264	2,335	0.929	0.465			0		0.0	0.95	1.78	1.15	0.95	1.00	0		0.85	0.81	0.83	0.984	N	2.00	N	1
6																															
7																															
8																															
9																															
10																															

Layer Number	Depth to Bot. Layer	Thickness	σ_o	u	σ'_o	r_d	$(N_1)_{60-cs}$	Liquefy ?	τ_{cyc}	$CSR_{M=7.5}$	CSR_M	Volumetric Strain**			Settl.
		ft	psf	psf	psf			NCEER	psf	τ_{cyc}/σ'_o	τ_{cyc}/σ'_o		%		in
1	5.0	5.0	318	0	318	0.996	0.0	N	102.8	0.324	0.39				0.00
2	8.0	3.0	835	0	835	0.987	0.0	N	267.6	0.321	0.39				0.00
3	13.0	5.0	1,369	156	1,213	0.978	18.3	Liquef	435.2	0.359	0.43		1.6		0.96
4	20.0	7.0	2,128	530	1,597	0.965	70.5	N	667.4	0.418	0.50				0.00
5	36.5	16.5	3,599	1,264	2,335	0.929	0.0	N	1086.4	0.465	0.56				0.00
6															
7															
8															
9															
10															

Total Settlement (inch) = 0.96

* Note: The equation used to obtain $CRR_{7.5}$ is not valid for corrected $(N_1)_{60}$ higher than 30. According to NCEER 1997, the soil layer with corrected $(N_1)_{60}$ higher than 30 blows per foot is unlikely to be susceptible to liquefaction.

** Note: These values were obtained from a chart for estimation of volumetric strain in saturated sands based on a cyclic stress ratio and standard penetration resistance (Tokimatsu and Seed, 1987).
See figure 9.53 from "Geotechnical Earthquake Engineering" by S. Kramer.

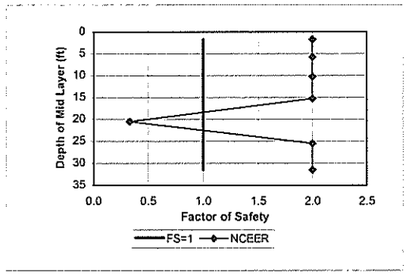
LIQUEFACTION ANALYSIS

Project	101 Auxillary Lane
Project No.	28649951
Boring No.	A-09-169

PGA =	0.5	
M_w =	8.0	
GWT during EQ	10.0	ft
Sampler:	Symbol	Corr. Factor
SPT	S	1
Mod.Cal	M	0.8
California	C	0.7
Mag. Weighting Factor($CSR_M/CSR_{M=7.5}$)		1.21

Note: Cells in Red must be input

Hammer type :	Type		C_E	Code	C_E
	Donut		0.75	1	3
	Safety		1	2	
	Auto		1.78	3	
Borehole Diameter:	(inch)	(mm)	C_B		C_B
	2.5-4.5	65-115	1	1	3
	6	150	1.05	2	
	8	200	1.15	3	
Rod Length:	(feet)	(m)	C_R		
	Default			999	
Sampling Method:	Type		Cs		
	Stand		1		
	No liners		1.2		



Note: F.S. greater than 2 is set to be equal to 2

Layer Number	Soil Type	γ_m	At Bottom of Layer Depth		At Center of Layer Depth		σ_o	EQ u	EQ σ'_o	r_d	EQ CSR	N raw	Sampler	N SPT	Fines Content	N_{60-cs}	C_N	C_E	C_B	C_R	C_S	$(N_1)_{60-cs}$	$CRR^*_{7.5,1tsf}$	Magnitude Scaling Factor NCEER K_m Lower	Upper	Middle	Overburden Correction K_σ	Above GWT?	F.S.	Liquefy ?	F.S=1.0
	(USCS)	pcf	ft	m	ft	m	psf	psf	psf						%	FC< 5%	EQ					during EQ	Critical						NCEER	NCEER	
1	CH	116	3.5	1.07	1.75	0.53	203	0	203	0.998	0.324			0		0.0	2.00	1.78	1.15	0.75	1.00	0		0.85	0.81	0.83	1.000	Y	2.00	N	1
2	CL/CH	120	8.0	2.44	5.8	1.75	676	0	676	0.989	0.321			0		0.0	1.77	1.78	1.15	0.75	1.00	0		0.85	0.81	0.83	1.000	Y	2.00	N	1
3	CL	124	12.5	3.81	10.3	3.12	1,225	16	1,209	0.979	0.322			0		0.0	1.32	1.78	1.15	0.75	1.00	0		0.85	0.81	0.83	1.000	N	2.00	N	1
4	CL	122	18.0	5.49	15.3	4.65	1,840	328	1,512	0.968	0.383			0		0.0	1.18	1.78	1.15	0.85	1.00	0		0.85	0.81	0.83	1.000	N	2.00	N	1
5	SC	127	23.0	7.01	20.5	6.25	2,493	655	1,837	0.956	0.421	5	M	4	18	7.5	1.07	1.78	1.15	0.95	1.00	16	0.169	0.85	0.81	0.83	1.000	N	0.33	Liquef	1
6	CL	125	28.0	8.53	25.5	7.77	3,123	967	2,155	0.940	0.443			0		0.0	0.99	1.78	1.15	0.95	1.00	0		0.85	0.81	0.83	0.995	N	2.00	N	1
7	CL	124	35.0	10.67	31.5	9.60	3,869	1,342	2,527	0.913	0.454			0		0.0	0.92	1.78	1.15	0.95	1.00	0		0.85	0.81	0.83	0.973	N	2.00	N	1
8																															
9																															
10																															

Layer Number	Depth to Bot. Layer	Thickness	σ_o	u	σ'_o	r_d	$(N_1)_{60-cs}$	Liquefy ?	τ_{cyc}	$CSR_{M=7.5}$	CSR_M	Volumetric Strain**			Settl.
		ft	psf	psf	psf			NCEER	psf	τ_{cyc}/σ'_o	τ_{cyc}/σ'_o		%		in
1	3.5	3.5	203	0	203	0.998	0.0	N	65.8	0.324	0.39				0.00
2	8.0	4.5	676	0	676	0.989	0.0	N	217.2	0.321	0.39				0.00
3	12.5	4.5	1,225	16	1,209	0.979	0.0	N	389.6	0.322	0.39				0.00
4	18.0	5.5	1,840	328	1,512	0.968	0.0	N	578.7	0.383	0.46				0.00
5	23.0	5.0	2,493	655	1,837	0.956	15.7	Liquef	774.1	0.421	0.51		1.9		1.14
6	28.0	5.0	3,123	967	2,155	0.940	0.0	N	954.0	0.443	0.53				0.00
7	35.0	7.0	3,869	1,342	2,527	0.913	0.0	N	1147.5	0.454	0.55				0.00
8															
9															
10															

Total Settlement (inch) =	1.14

* Note: The equation used to obtain $CRR_{7.5}$ is not valid for corrected $(N_1)_{60}$ higher than 30. According to NCEER 1997, the soil layer with corrected $(N_1)_{60}$ higher than 30 blows per foot is unlikely to be susceptible to liquefaction.

** Note: These values were obtained from a chart for estimation of volumetric strain in saturated sands based on a cyclic stress ratio and standard penetration resistance (Tokimatsu and Seed, 1987).
See figure 9.53 from "Geotechnical Earthquake Engineering" by S. Kramer.

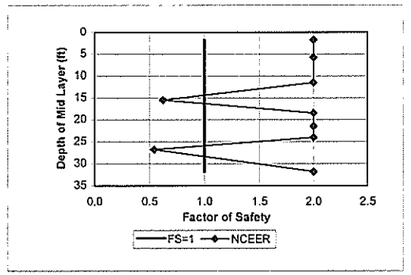
LIQUEFACTION ANALYSIS

Project	101 Auxillary Lane
Project No.	28649951
Boring No.	A-09-177

PGA =	0.5	
M_w =	8.0	
GWT during EQ	15.0	ft
Sampler:	Symbol	Corr. Factor
SPT	S	1
Mod.Cal	M	0.8
California	C	0.7
Mag. Weighting Factor($CSR_M/CSR_{M=7.5}$)		1.21

Note: Cells in Red must be input

Hammer type :	Type		C_E	Code	C_E
	Donut		0.75	1	3
	Safety		1	2	
	Auto		1.78	3	
Borehole Diameter:	(inch)	(mm)	C_B		C_B
	2.5-4.5	65-115	1	1	3
	6	150	1.05	2	
	8	200	1.15	3	
Rod Length:	(feet)	(m)	C_R		
	Default			999	
Sampling Method:	Type		Cs		
	Stand		1		
	No liners		1.2		



Note: F.S. greater than 2 is set to be equal to 2

Layer Number	Soil Type	γ_m	At Bottom of Layer Depth		At Center of Layer Depth		EQ σ_o	EQ u	EQ σ'_o	r_d	EQ CSR	N raw	Sampler	N SPT	Fines Content	N_{60-cs}	C_N	C_E	C_B	C_R	C_S	$(N_1)_{60-cs}$	$CRR^*_{7.5,1tsf}$	Magnitude Scaling Factor NCEER K_m Lower	Upper	Middle	Overburden Correction K_σ	Above GWT?	F.S.	Liquefy ?	F.S=1.0
	(USCS)	pcf	ft	m	ft	m	psf	psf	psf						%	FC< 5%	EQ					during EQ	Critical						NCEER	NCEER	
1	CH	115	3.5	1.07	1.75	0.53	201	0	201	0.998	0.324			0		0.0	2.00	1.78	1.15	0.75	1.00	0		0.85	0.81	0.83	1.000	Y	2.00	N	1
2	CH/CL	128	8.0	2.44	5.8	1.75	691	0	691	0.989	0.321			0		0.0	1.75	1.78	1.15	0.75	1.00	0		0.85	0.81	0.83	1.000	Y	2.00	N	1
3	CL	121	15.0	4.57	11.5	3.51	1,402	0	1,402	0.976	0.317			0		0.0	1.23	1.78	1.15	0.75	1.00	0		0.85	0.81	0.83	1.000	Y	2.00	N	1
4	SM	121	16.0	4.88	15.5	4.72	1,886	31	1,855	0.967	0.320	8	M	6.4	28	11.8	1.07	1.78	1.15	0.85	1.00	22	0.240	0.85	0.81	0.83	1.000	N	0.62	Liquef	1
5	CL	134	21.0	6.40	18.5	5.64	2,282	218	2,063	0.961	0.345			0		0.0	1.01	1.78	1.15	0.85	1.00	0		0.85	0.81	0.83	1.000	N	2.00	N	1
6	SM	134	22.0	6.71	21.5	6.55	2,684	406	2,278	0.953	0.365	14	M	11.2	28	17.3	0.96	1.78	1.15	0.95	1.00	32	0.459	0.85	0.81	0.83	0.988	N	2.00	N	1
7	CL	137	26.0	7.92	24.0	7.32	3,025	562	2,463	0.945	0.377			0		0.0	0.93	1.78	1.15	0.95	1.00	0		0.85	0.81	0.83	0.977	N	2.00	N	1
8	SM	137	27.5	8.38	26.8	8.15	3,401	733	2,668	0.935	0.387	10	M	8	28	13.7	0.89	1.78	1.15	0.95	1.00	24	0.262	0.85	0.81	0.83	0.965	N	0.54	Liquef	1
9	CL	130	36.0	10.97	31.8	9.68	4,057	1,045	3,011	0.911	0.399			0		0.0	0.84	1.78	1.15	0.95	1.00	0		0.85	0.81	0.83	0.945	N	2.00	N	1
10																															

Layer Number	Depth to Bot. Layer	Thickness	σ_o	u	σ'_o	r_d	$(N_1)_{60-cs}$	Liquefy ?	τ_{cyc}	$CSR_{M=7.5}$	CSR_M	Volumetric Strain**			Settl.
		ft	psf	psf	psf			NCEER	psf	τ_{cyc}/σ'_o	τ_{cyc}/σ'_o		%		in
1	3.5	3.5	201	0	201	0.998	0.0	N	65.3	0.324	0.39				0.00
2	8.0	4.5	691	0	691	0.989	0.0	N	221.8	0.321	0.39				0.00
3	15.0	7.0	1,402	0	1,402	0.976	0.0	N	444.7	0.317	0.38				0.00
4	16.0	1.0	1,886	31	1,855	0.967	22.0	Liquef	593.0	0.320	0.39		1.2		0.14
5	21.0	5.0	2,282	218	2,063	0.961	0.0	N	712.3	0.345	0.42				0.00
6	22.0	1.0	2,684	406	2,278	0.953	32.4	N	831.0	0.365	0.44				0.00
7	26.0	4.0	3,025	562	2,463	0.945	0.0	N	929.1	0.377	0.46				0.00
8	27.5	1.5	3,401	733	2,668	0.935	23.7	Liquef	1033.8	0.387	0.47		1.1		0.20
9	36.0	8.5	4,057	1,045	3,011	0.911	0.0	N	1201.3	0.399	0.48				0.00
10															

Total Settlement (inch) =	0.34

* Note: The equation used to obtain $CRR_{7.5}$ is not valid for corrected $(N_1)_{60}$ higher than 30. According to NCEER 1997, the soil layer with corrected $(N_1)_{60}$ higher than 30 blows per foot is unlikely to be susceptible to liquefaction.

** Note: These values were obtained from a chart for estimation of volumetric strain in saturated sands based on a cyclic stress ratio and standard penetration resistance (Tokimatsu and Seed, 1987).
See figure 9.53 from "Geotechnical Earthquake Engineering" by S. Kramer.

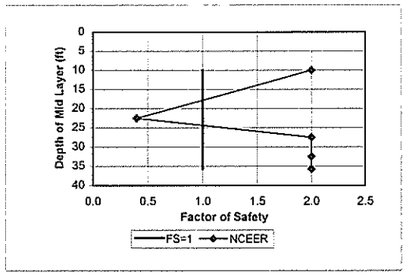
LIQUEFACTION ANALYSIS

Project	101 Auxillary Lane
Project No.	28649951
Boring No.	A-09-179

PGA =	0.5	
M_w =	8.0	
GWT during EQ	9.2	ft
Sampler:	Symbol	Corr. Factor
SPT	S	1
Mod.Cal	M	0.8
California	C	0.7
Mag. Weighting Factor($CSR_M/CSR_{M=7.5}$)		1.21

Note: Cells in Red must be input

Hammer type :	Type		C_E	Code	C_E
	Donut		0.75	1	3
	Safety		1	2	
	Auto		1.78	3	
Borehole Diameter:	(inch)	(mm)	C_B		C_B
	2.5-4.5	65-115	1	1	3
	6	150	1.05	2	
	8	200	1.15	3	
Rod Length:	(feet)	(m)	C_R		
	Default			999	
Sampling Method:	Type		Cs		
	Stand		1		
	No liners		1.2		



Note: F.S. greater than 2 is set to be equal to 2

Layer Number	Soil Type	γ_m	At Bottom of Layer Depth		At Center of Layer Depth			EQ σ_o	EQ u	EQ σ'_o	r_d	EQ CSR	N raw	Sampler	N SPT	Fines Content	N_{60-cs}	C_N	C_E	C_B	C_R	C_S	$(N_1)_{60-cs}$	$CRR^*_{7.5,1tsf}$	Magnitude Scaling Factor NCEER K_m Lower	Upper	Middle	Overburden Correction K_σ	Above GWT?	F.S.	Liquefy ?	F.S=1.0
	(USCS)	pcf	ft	m	ft	m		psf	psf	psf						%	FC< 5%	EQ					during EQ	Critical						NCEER	NCEER	
1	CL	126	20.0	6.10	10	3.05		1,260	50	1,210	0.979	0.331			0		0.0	1.32	1.78	1.15	0.75	1.00	0		0.85	0.81	0.83	1.000	N	2.00	N	1
2	SM	134	25.0	7.62	22.5	6.86		2,855	830	2,025	0.950	0.435	12	M	9.6	7	9.8	1.02	1.78	1.15	0.95	1.00	19	0.210	0.85	0.81	0.83	1.000	N	0.40	Liquef	1
3	CL	116	30.0	9.14	27.5	8.38		3,480	1,142	2,338	0.932	0.451			0		0.0	0.95	1.78	1.15	0.95	1.00	0		0.85	0.81	0.83	0.984	N	2.00	N	1
4	SM	135	35.0	10.67	32.5	9.91		4,108	1,454	2,654	0.907	0.456	22	M	17.6	12	19.7	0.89	1.78	1.15	0.95	1.00	34	0.459	0.85	0.81	0.83	0.966	N	2.00	N	1
5	CL	120	36.5	11.13	35.8	10.90		4,535	1,657	2,878	0.885	0.453			0		0.0	0.86	1.78	1.15	1.00	1.00	0		0.85	0.81	0.83	0.953	N	2.00	N	1
6																																
7																																
8																																
9																																
10																																

Layer Number	Depth to Bot. Layer	Thickness	σ_o	u	σ'_o	r_d	$(N_1)_{60-cs}$	Liquefy ?	τ_{cyc}	$CSR_{M=7.5}$	CSR_M	Volumetric Strain**			Settl.
		ft	psf	psf	psf			NCEER	psf	τ_{cyc}/σ'_o	τ_{cyc}/σ'_o		%		in
1	20.0	20.0	1,260	50	1,210	0.979	0.0	N	401.0	0.331	0.40				0.00
2	25.0	5.0	2,855	830	2,025	0.950	19.5	Liquef	881.4	0.435	0.53		1.5		0.90
3	30.0	5.0	3,480	1,142	2,338	0.932	0.0	N	1054.3	0.451	0.54				0.00
4	35.0	5.0	4,108	1,454	2,654	0.907	34.2	N	1210.5	0.456	0.55				0.00
5	36.5	1.5	4,535	1,657	2,878	0.885	0.0	N	1304.8	0.453	0.55				0.00
6															
7															
8															
9															
10															

Total Settlement (inch) =	0.90

* Note: The equation used to obtain $CRR_{7.5}$ is not valid for corrected $(N_1)_{60}$ higher than 30. According to NCEER 1997, the soil layer with corrected $(N_1)_{60}$ higher than 30 blows per foot is unlikely to be susceptible to liquefaction.

** Note: These values were obtained from a chart for estimation of volumetric strain in saturated sands based on a cyclic stress ratio and standard penetration resistance (Tokimatsu and Seed, 1987).
See figure 9.53 from "Geotechnical Earthquake Engineering" by S. Kramer.

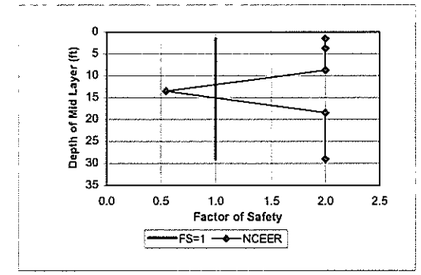
LIQUEFACTION ANALYSIS

Project	101 Auxillary Lane
Project No.	28649951
Boring No.	A-09-182

PGA =	0.5	
M_w =	8.0	
GWT during EQ	8.0	ft
Sampler:	Symbol	Corr. Factor
SPT	S	1
Mod.Cal	M	0.8
California	C	0.7
Mag. Weighting Factor($CSR_M/CSR_{M=7.5}$)		1.21

Note: Cells in Red must be input

Hammer type :	Type		C_E	Code	C_E
	Donut		0.75	1	3
	Safety		1	2	
	Auto		1.78	3	
Borehole Diameter:	(inch)	(mm)	C_B		C_B
	2.5-4.5	65-115	1	1	3
	6	150	1.05	2	
	8	200	1.15	3	
Rod Length:	(feet)	(m)	C_R		
	Default			999	
Sampling Method:	Type		Cs		
	Stand		1		
	No liners		1.2		



Note: F.S. greater than 2 is set to be equal to 2

Layer Number	Soil Type	γ_m	At Bottom of Layer Depth		At Center of Layer Depth		EQ σ_o	EQ u	EQ σ'_o	r_d	EQ CSR	N raw	Sampler	N SPT	Fines Content	N_{60-cs}	C_N	C_E	C_B	C_R	C_S	$(N_1)_{60-cs}$	$CRR^*_{7.5,1tsf}$	Magnitude Scaling Factor NCEER K_m Lower	Upper	Middle	Overburden Correction K_σ	Above GWT?	F.S.	Liquefy ?	F.S=1.0
	(USCS)	pcf	ft	m	ft	m	psf	psf	psf						%	FC< 5%	EQ					during EQ	Critical						NCEER	NCEER	
1	SC	127	3.0	0.91	1.5	0.46	191	0	191	0.998	0.325	16	M	12.8	15	15.9	2.00	1.78	1.15	0.75	1.00	49	0.459	0.85	0.81	0.83	1.000	Y	2.00	N	1
2	SM	140	4.5	1.37	3.8	1.14	486	0	486	0.993	0.323	14	M	11.2	15	14.2	2.00	1.78	1.15	0.75	1.00	44	0.459	0.85	0.81	0.83	1.000	Y	2.00	N	1
3	CL/CH	124	13.0	3.96	8.8	2.67	1,118	47	1,071	0.982	0.333			0		0.0	1.41	1.78	1.15	0.75	1.00	0		0.85	0.81	0.83	1.000	N	2.00	N	1
4	SM	122	14.0	4.27	13.5	4.11	1,706	343	1,363	0.972	0.395	10	M	8	15	10.9	1.25	1.78	1.15	0.85	1.00	24	0.261	0.85	0.81	0.83	1.000	N	0.55	Liquef	1
5	CL	125	23.0	7.01	18.5	5.64	2,330	655	1,674	0.961	0.434			0		0.0	1.12	1.78	1.15	0.85	1.00	0		0.85	0.81	0.83	1.000	N	2.00	N	1
6	CL	130	35.0	10.67	29.0	8.84	3,672	1,310	2,362	0.925	0.468			0		0.0	0.95	1.78	1.15	0.95	1.00	0		0.85	0.81	0.83	0.983	N	2.00	N	1
7																															
8																															
9																															
10																															

Layer Number	Depth to Bot. Layer	Thickness	σ_o	u	σ'_o	r_d	$(N_1)_{60-cs}$	Liquefy ?	τ_{cyc}	$CSR_{M=7.5}$	CSR_M	Volumetric Strain**			Settl.
		ft	psf	psf	psf			NCEER	psf	τ_{cyc}/σ'_o	τ_{cyc}/σ'_o		%		in
1	3.0	3.0	191	0	191	0.998	48.9	N	61.8	0.325	0.39				0.00
2	4.5	1.5	486	0	486	0.993	43.7	N	156.9	0.323	0.39				0.00
3	13.0	8.5	1,118	47	1,071	0.982	0.0	N	356.7	0.333	0.40				0.00
4	14.0	1.0	1,706	343	1,363	0.972	23.6	Liquef	538.8	0.395	0.48		1.2		0.14
5	23.0	9.0	2,330	655	1,674	0.961	0.0	N	727.3	0.434	0.52				0.00
6	35.0	12.0	3,672	1,310	2,362	0.925	0.0	N	1104.4	0.468	0.56				0.00
7															
8															
9															
10															

Total Settlement (inch) = 0.14

* Note: The equation used to obtain $CRR_{7.5}$ is not valid for corrected $(N_1)_{60}$ higher than 30. According to NCEER 1997, the soil layer with corrected $(N_1)_{60}$ higher than 30 blows per foot is unlikely to be susceptible to liquefaction.

** Note: These values were obtained from a chart for estimation of volumetric strain in saturated sands based on a cyclic stress ratio and standard penetration resistance (Tokimatsu and Seed, 1987).
See figure 9.53 from "Geotechnical Earthquake Engineering" by S. Kramer.

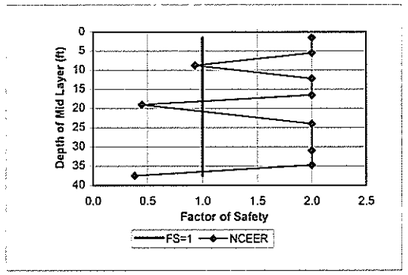
LIQUEFACTION ANALYSIS

Project	101 Auxillary Lane
Project No.	28649951
Boring No.	R-09-005
PGA =	0.5
M_w =	8.0
GWT during EQ	8.0 ft

Sampler:	Symbol	Corr. Factor
SPT	S	1
Mod.Cal	M	0.8
California	C	0.7
Mag. Weighting Factor($CSR_M/CSR_{M=7.5}$)		1.21

Note: Cells in Red must be input

Hammer type :	Type		C_E	Code	C_E
	Donut		0.75	1	3
	Safety		1	2	
	Auto		1.27	3	
Borehole Diameter:	(inch)	(mm)	C_B		C_B
	2.5-4.5	65-115	1	1	3
	6	150	1.05	2	
	8	200	1.15	3	
Rod Length:	(feet)	(m)	C_R		
	Default			999	
Sampling Method:	Type		Cs		
	Stand		1		
	No liners		1.2		



Note: F.S. greater than 2 is set to be equal to 2

Layer Number	Soil Type	γ_m	At Bottom of Layer Depth		At Center of Layer Depth		EQ σ_o	EQ u	EQ σ'_o	r_d	EQ CSR	N raw	Sampler	N SPT	Fines Content	N_{60-cs}	C_N	C_E	C_B	C_R	C_S	$(N_1)_{60-cs}$	$CRR^*_{7.5,1sf}$	Magnitude Scaling Factor NCEER K_m Lower	Upper	Middle	Overburden Correction K_σ	Above GWT?	F.S.	Liquefy ?	F.S=1.0
	(USCS)	pcf	ft	m	ft	m	psf	psf	psf						%	FC< 5%	EQ					during EQ	Critical						NCEER	NCEER	
1	SC	130	3.0	0.91	1.5	0.46	195	0	195	0.998	0.325	24	M	19.2	30	26.9	2.00	1.27	1.15	0.75	1.00	59	0.459	0.85	0.81	0.83	1.000	Y	2.00	N	1
2	CH	120	8.0	2.44	5.5	1.68	690	0	690	0.989	0.321			0		0.0	1.75	1.27	1.15	0.75	1.00			0.85	0.81	0.83	1.000	Y	2.00	N	1
3	SM	128	9.5	2.90	8.8	2.67	1,086	47	1,039	0.982	0.333	16	M	12.8	25	18.6	1.43	1.27	1.15	0.75	1.00	29	0.375	0.85	0.81	0.83	1.000	N	0.93	Liquef	1
4	CL/CI-ML	125	15.0	4.57	12.3	3.73	1,526	265	1,261	0.974	0.383					0.0	1.30	1.27	1.15	0.75	1.00			0.85	0.81	0.83	1.000	N	2.00	N	1
5	SM	125	18.0	5.49	16.5	5.03	2,057	530	1,527	0.965	0.423	22	S	22	12	24.2	1.18	1.27	1.15	0.85	1.20	43	0.459	0.85	0.81	0.83	1.000	N	2.00	N	1
6	SP	130	20.0	6.10	19.0	5.79	2,375	686	1,688	0.959	0.439	13	S	13	5	13.0	1.12	1.27	1.15	0.85	1.20	22	0.237	0.85	0.81	0.83	1.000	N	0.45	Liquef	1
7	CL	130	28.0	8.53	24.0	7.32	3,025	998	2,026	0.945	0.459			0		0.0	1.02	1.27	1.15	0.95	1.00			0.85	0.81	0.83	1.000	N	2.00	N	1
8	SW	135	34.0	10.36	31.0	9.45	3,950	1,435	2,514	0.915	0.467	27	S	27	5	27.0	0.92	1.27	1.15	0.95	1.20	41	0.459	0.85	0.81	0.83	0.974	N	2.00	N	1
9	CL	130	35.5	10.82	34.8	10.59	4,452	1,669	2,783	0.892	0.464			0		0.0	0.87	1.27	1.15	1.00	1.00			0.85	0.81	0.83	0.958	N	2.00	N	1
10	SM	135	39.5	12.04	37.5	11.43	4,820	1,841	2,979	0.872	0.459	14	M	11.2	25	16.8	0.84	1.27	1.15	1.00	1.00	21	0.224	0.85	0.81	0.83	0.947	N	0.38	Liquef	1

Layer Number	Depth to Bot. Layer	Thickness	σ_o	u	σ'_o	r_d	$(N_1)_{60-cs}$	Liquefy ?	τ_{cyc}	$CSR_{M=7.5}$	CSR_M	Volumetric Strain**		Settl.
	ft	ft	psf	psf	psf			NCEER	psf	τ_{cyc}/σ'_o	τ_{cyc}/σ'_o		%	in
1	3.0	3.0	195	0	195	0.998	58.9	N	63.3	0.325	0.39			0.00
2	8.0	5.0	690	0	690	0.989	0.0	N	221.8	0.321	0.39			0.00
3	9.5	1.5	1,086	47	1,039	0.982	29.0	Liquef	346.5	0.333	0.40		1.0	0.18
4	15.0	5.5	1,526	265	1,261	0.974	0.0	N	483.2	0.383	0.46			0.00
5	18.0	3.0	2,057	530	1,527	0.965	42.5	N	645.3	0.423	0.51			0.00
6	20.0	2.0	2,375	686	1,688	0.959	21.7	Liquef	740.4	0.439	0.53		1.4	0.34
7	28.0	8.0	3,025	998	2,026	0.945	0.0	N	929.1	0.459	0.55			0.00
8	34.0	6.0	3,950	1,435	2,514	0.915	41.3	N	1174.9	0.467	0.56			0.00
9	35.5	1.5	4,452	1,669	2,783	0.892	0.0	N	1291.1	0.464	0.56			0.00
10	39.5	4.0	4,820	1,841	2,979	0.872	20.7	Liquef	1365.8	0.459	0.55		1.50	0.72

Total Settlement (inch) = 1.24

* Note: The equation used to obtain $CRR_{7.5}$ is not valid for corrected $(N_1)_{60}$ higher than 30. According to NCEER 1997, the soil layer with corrected $(N_1)_{60}$ higher than 30 blows per foot is unlikely to be susceptible to liquefaction.

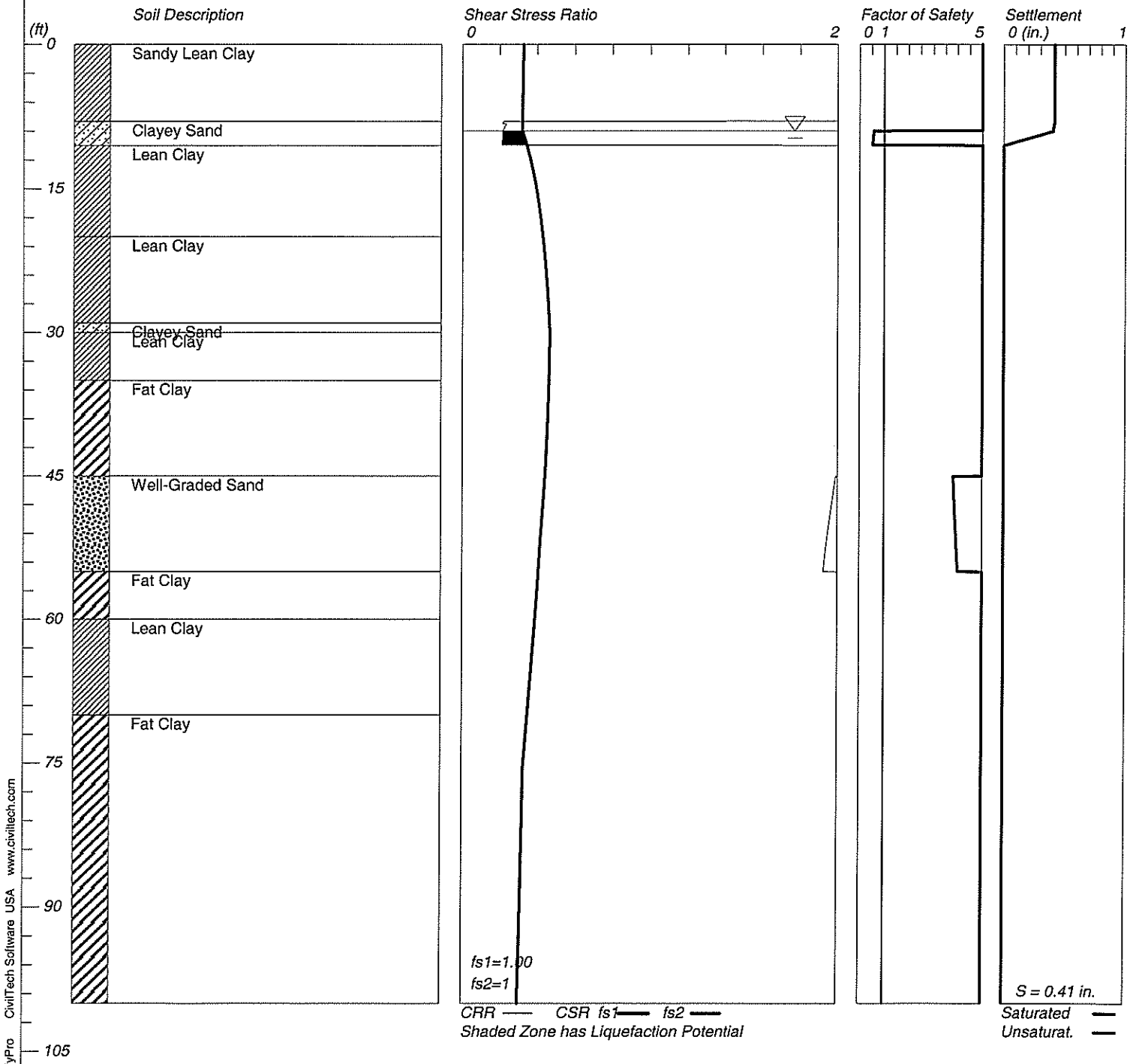
** Note: These values were obtained from a chart for estimation of volumetric strain in saturated sands based on a cyclic stress ratio and standard penetration resistance (Tokimatsu and Seed, 1987).
See figure 9.53 from "Geotechnical Earthquake Engineering" by S. Kramer.

LIQUEFACTION ANALYSIS

101 Auxiliary Lanes

Hole No.=R-09-001 Water Depth=9 ft Surface Elev.=13

Magnitude=8.0
Acceleration=0.5g



URS

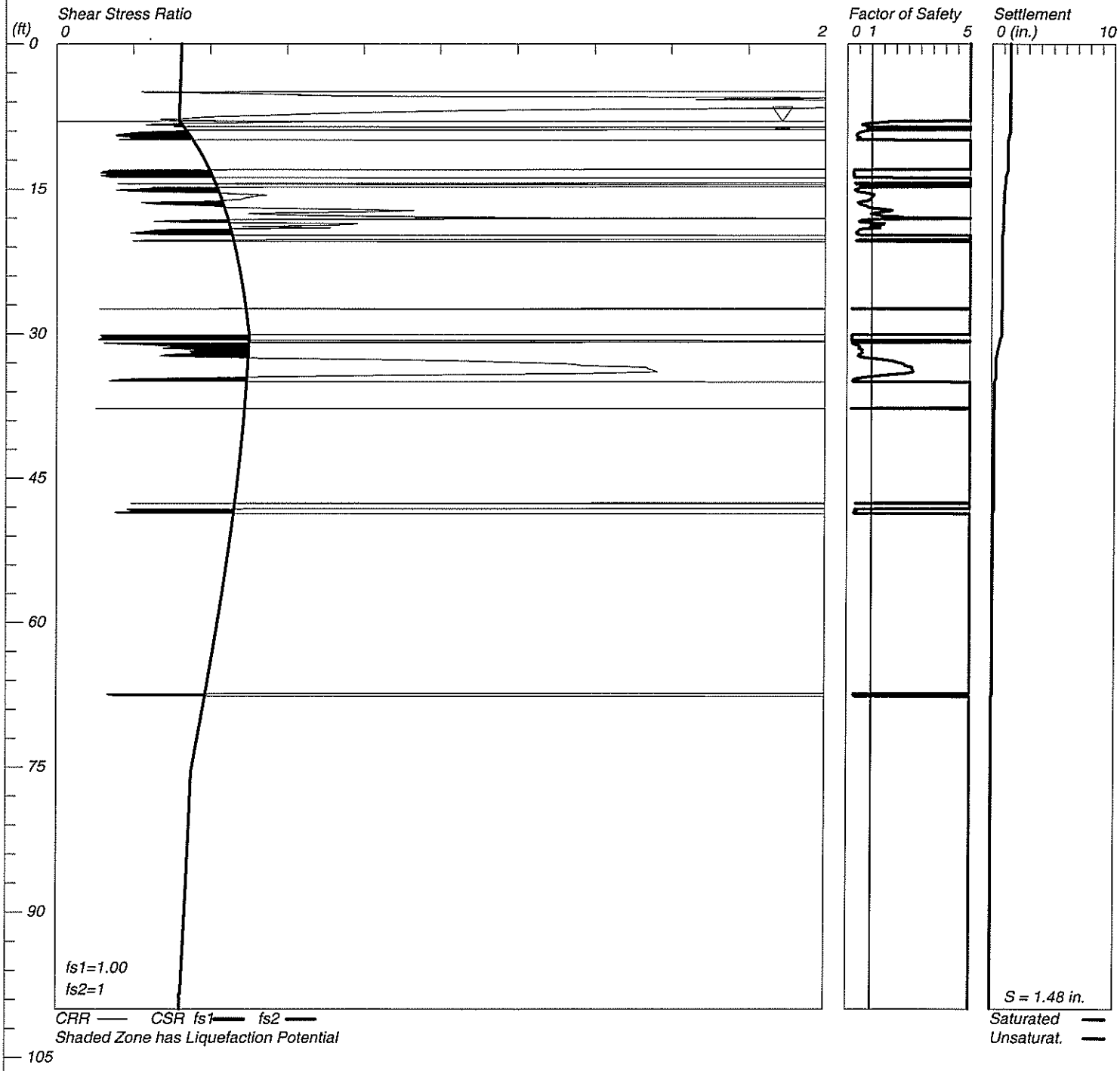
Matadero Creek

LIQUEFACTION ANALYSIS

U.S. 101 Auxiliary Lanes

Hole No.=CPT-09-002 Water Depth=8 ft Surface Elev.=12

Magnitude=8.0
Acceleration=0.5g



URS

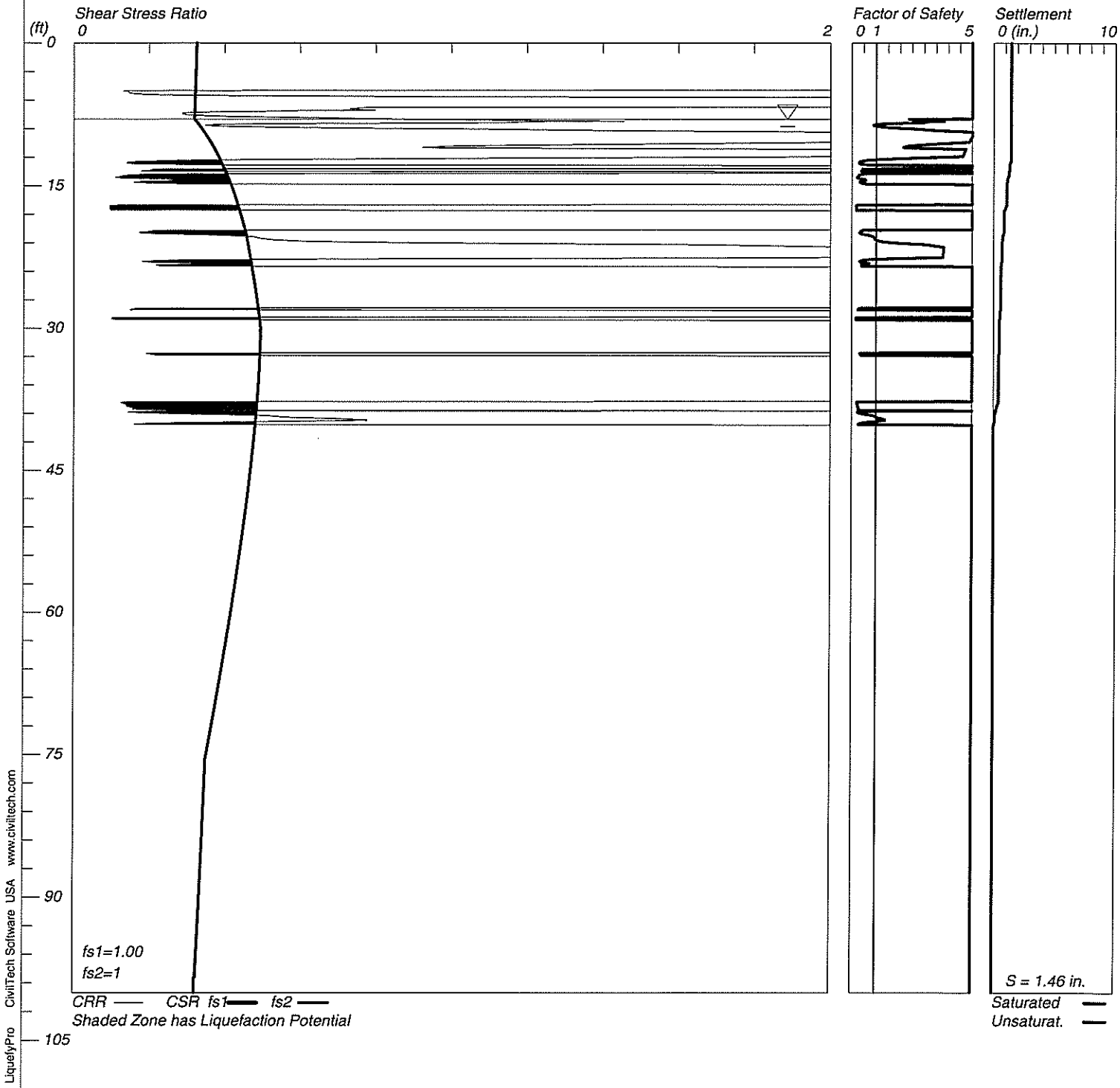
Matadero Creek

LIQUEFACTION ANALYSIS

US 101 Auxiliary Lane

Hole No.=CPT-09-006 Water Depth=8 ft Surface Elev.=21

Magnitude=8
Acceleration=0.5g



URS

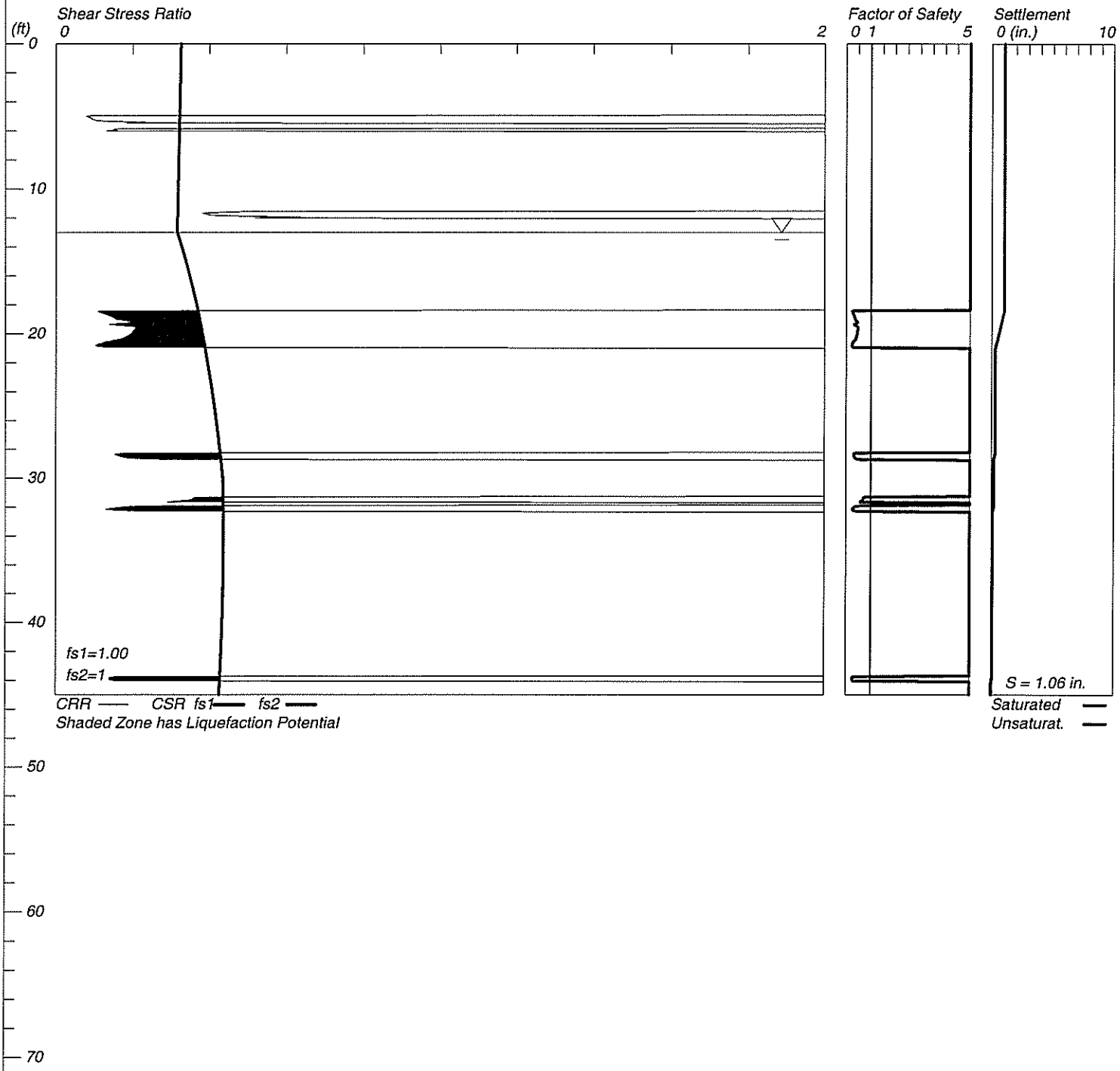
Santa Clara, California

LIQUEFACTION ANALYSIS

US 101 Auxiliary Lane

Hole No.=CPT-09-106 Water Depth=13 ft Surface Elev.=8.5

Magnitude=8
Acceleration=0.5g



LiquefyPro CivilTech Software USA www.civiltech.com

URS

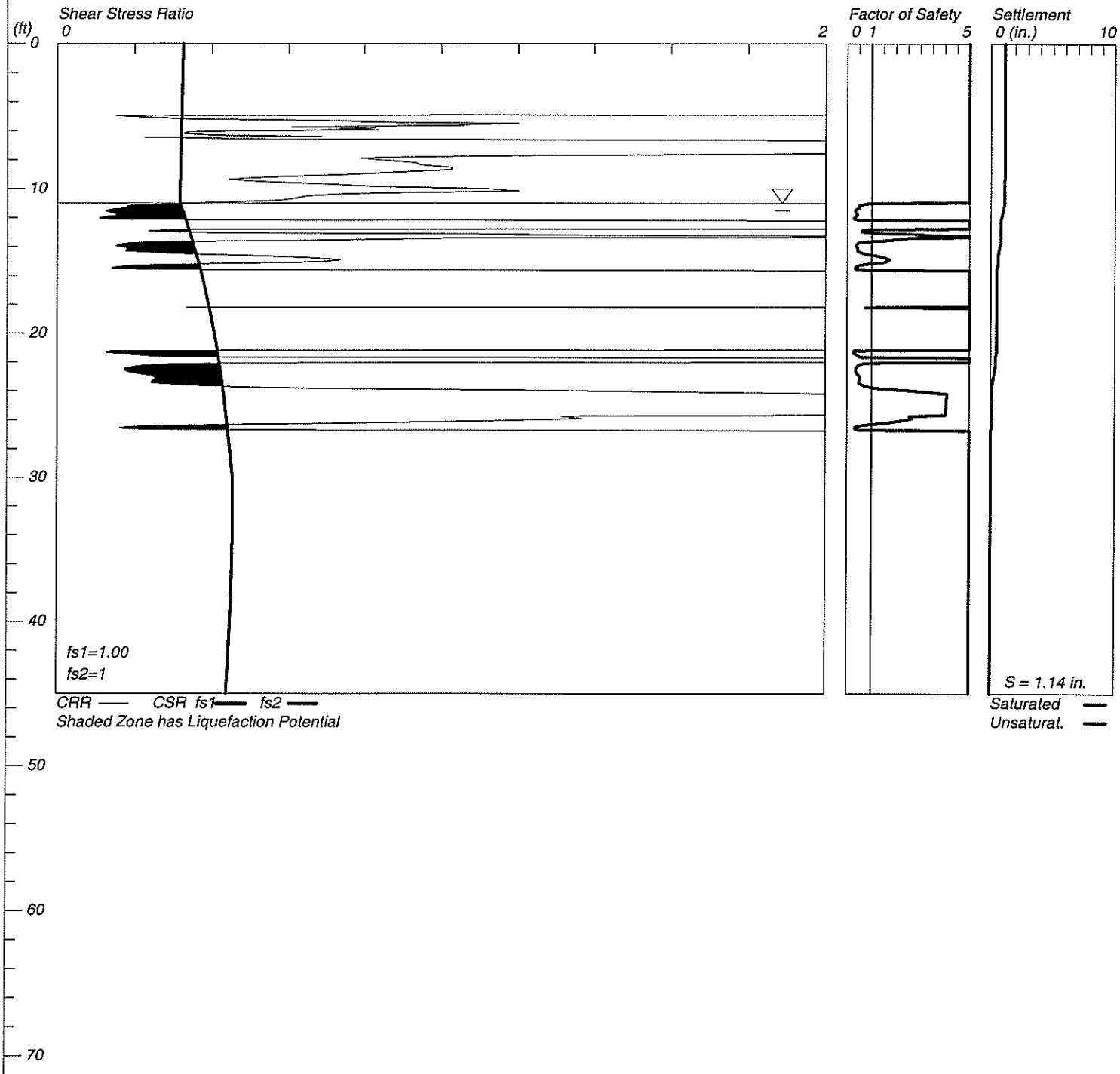
Santa Clara, California

LIQUEFACTION ANALYSIS

US 101 Auxiliary Lane

Hole No.=CPT-09-151 Water Depth=11 ft Surface Elev.=8.5

Magnitude=8
Acceleration=0.5g



LiquefyPro CivilTech Software USA www.civiltech.com

URS

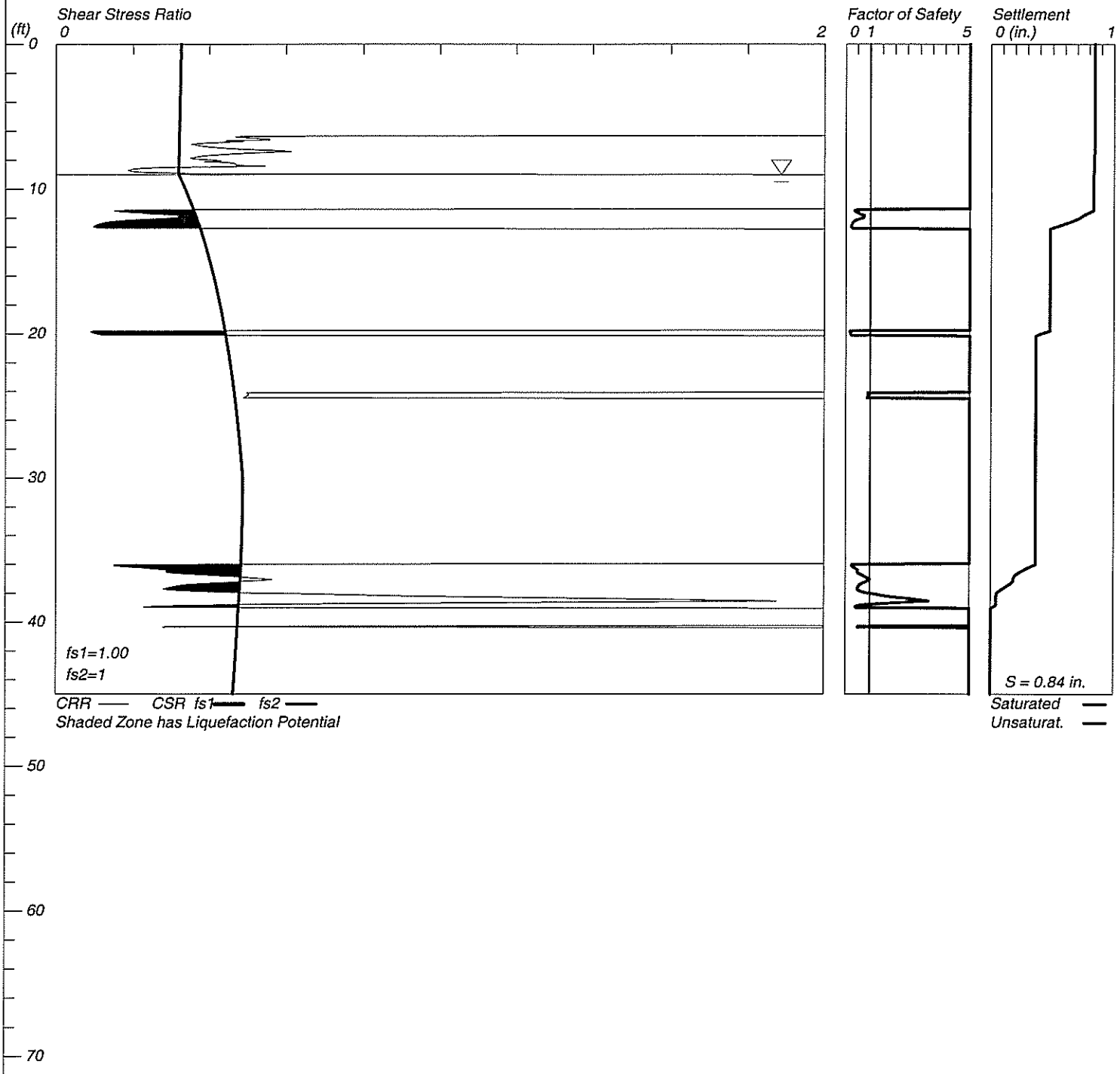
Santa Clara, California

LIQUEFACTION ANALYSIS

US 101 Auxiliary Lane

Hole No.=CPT-09-176 Water Depth=9 ft Surface Elev.=18.5

Magnitude=8
Acceleration=0.5g



LiquefyPro CivilTech Software USA www.civiltech.com

URS

Santa Clara, California

Figure C-1

Resistance value (R-value) tests were performed on thirty two (32) bulk samples of near surface soils at borings. The results of these tests are presented herein.

INDEX OF PLANS

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI	101	48.7/52.0		

STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION

95% SUBMITTAL
JUNE 4, 2010

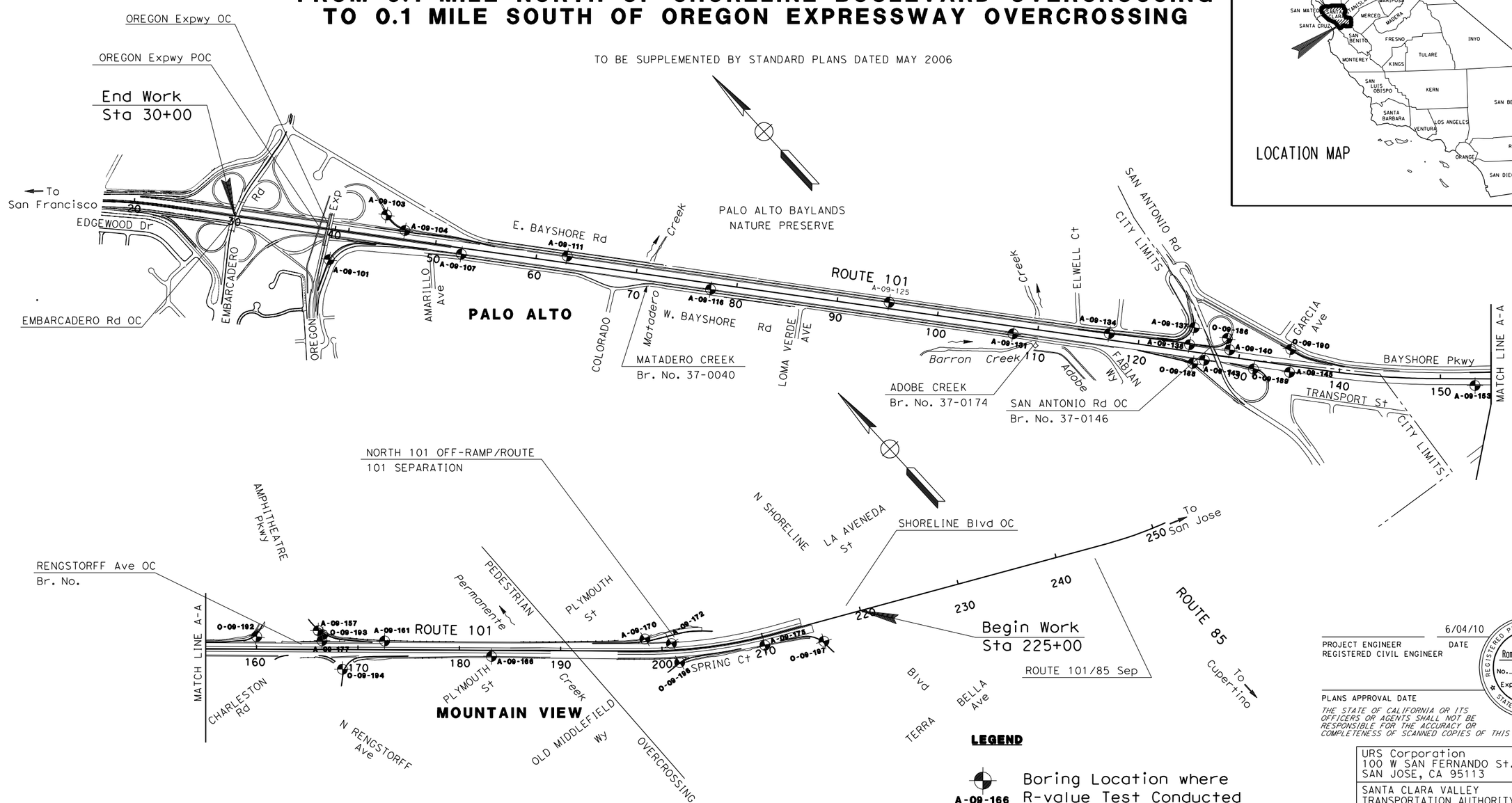
PROJECT PLANS FOR CONSTRUCTION ON

STATE HIGHWAY

IN SANTA CLARA COUNTY
IN MOUNTAIN VIEW AND PALO ALTO
FROM 0.1 MILE NORTH OF SHORELINE BOULEVARD OVERCROSSING
TO 0.1 MILE SOUTH OF OREGON EXPRESSWAY OVERCROSSING

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006

LOCATION MAP



LEGEND

A-09-166 Boring Location where R-value Test Conducted

NO SCALE

THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."

PROJECT ENGINEER REGISTERED CIVIL ENGINEER — DATE 6/04/10

REGISTERED PROFESSIONAL ENGINEER — Ramsey J. Hissen — No. C39608 — Exp. 12/31/11 — CIVIL — STATE OF CALIFORNIA

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 W SAN FERNANDO St., SUITE 200
SAN JOSE, CA 95113

SANTA CLARA VALLEY
TRANSPORTATION AUTHORITY
3331 N. FIRST St., SAN JOSE, CA 95134

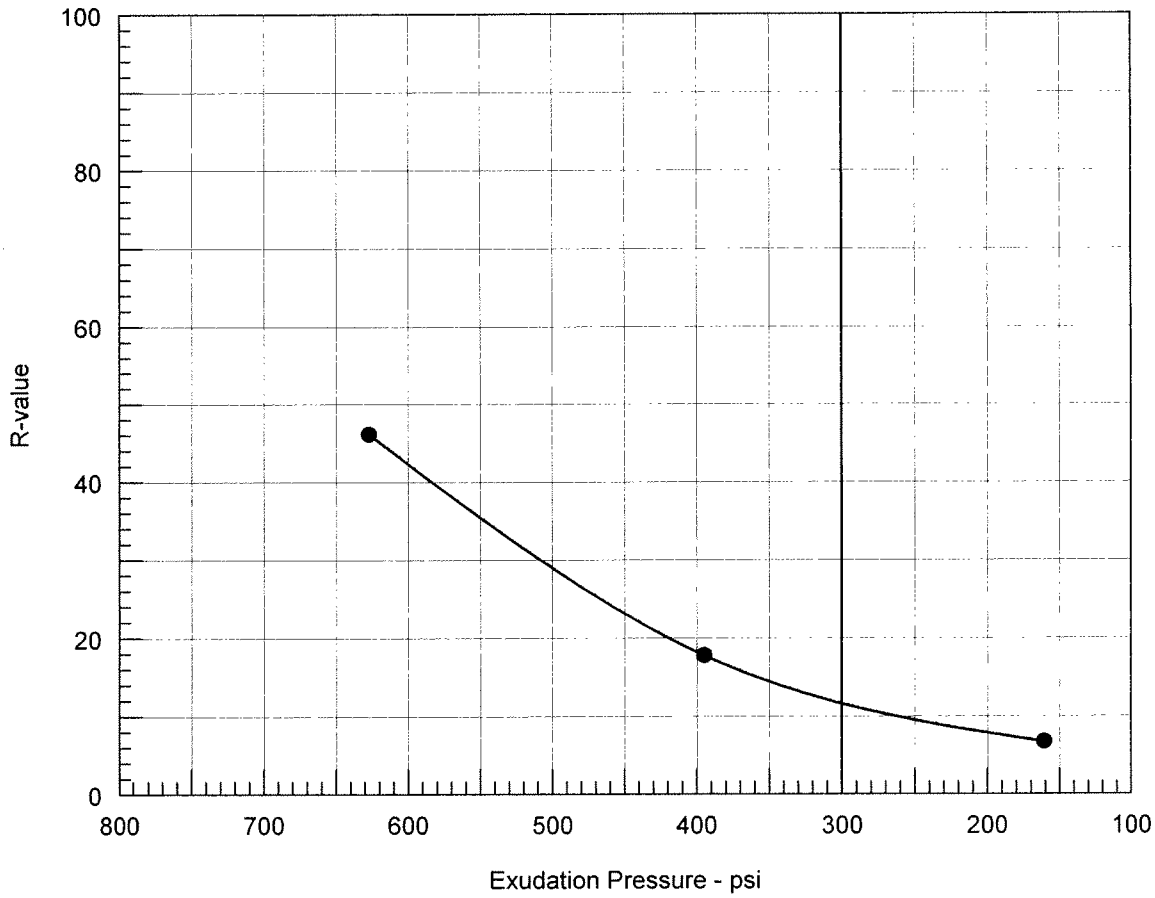
CONTRACT No. **04-4A3304**

APPROVED AS TO IMPACT ON STATE FACILITIES AND CONFORMANCE WITH APPLICABLE STATE STANDARDS AND PRACTICES AND THAT TECHNICAL OVERSIGHT WAS PERFORMED.

CONSULTANT DESIGN ENGINEER | CALTRANS DESIGN OVERSIGHT APPROVAL | REGISTRATION No. | LICENSE Exp DATE | DATE SIGNED

LAST REVISION 6-16-10 | DATE PLOTTED => 6/10/2010 | TIME PLOTTED => 1:33:04 PM

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	30	124.4	11.4	0	144	2.59	161	6	7
2	75	129.9	9.8	0	119	2.54	395	18	18
3	120	131.5	8.9	44	75	2.49	627	46	46

Test Results	Material Description
R-value at 300 psi exudation pressure = 12	Brown gravelly silt with sand and clay

Project No.: 28649951.13
Project: US 101 Auxillary Lane
Source of Sample: A-09-101 **Depth:** 2-5

Date: 12/4/2009

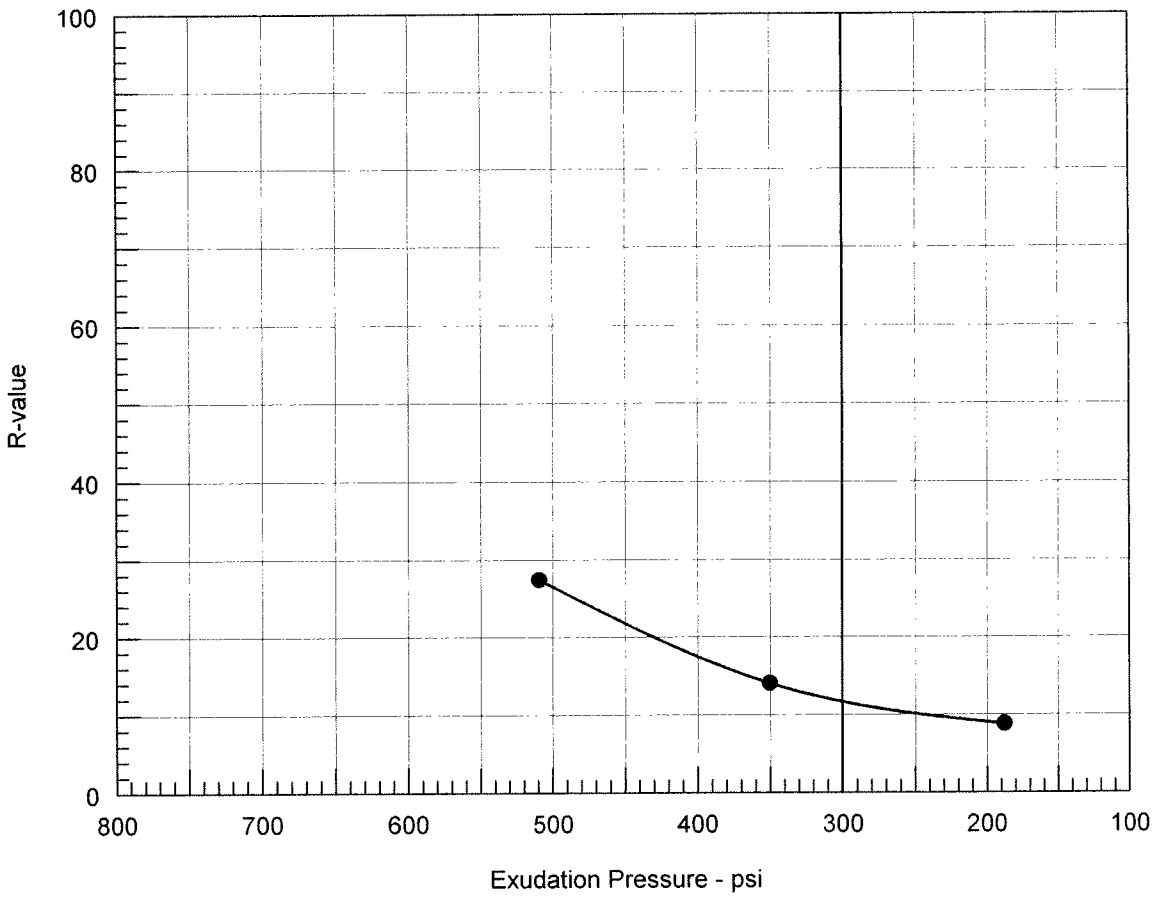
Tested by:
Checked by:
Remarks:

R-VALUE TEST REPORT

SIGNET TESTING LABS, INC.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	70	129.5	11.1	0	107	2.50	509	27	27
2	25	124.6	12.8	0	140	2.64	188	8	9
3	35	127.0	12.0	0	129	2.51	350	14	14

Test Results	Material Description
R-value at 300 psi exudation pressure = 12	Brown gravelly silt with sand

Project No.: 28649951.13
Project: US 101 Auxillary Lane
Source of Sample: A-09-103 **Depth:** 2-5

Date: 12/4/2009

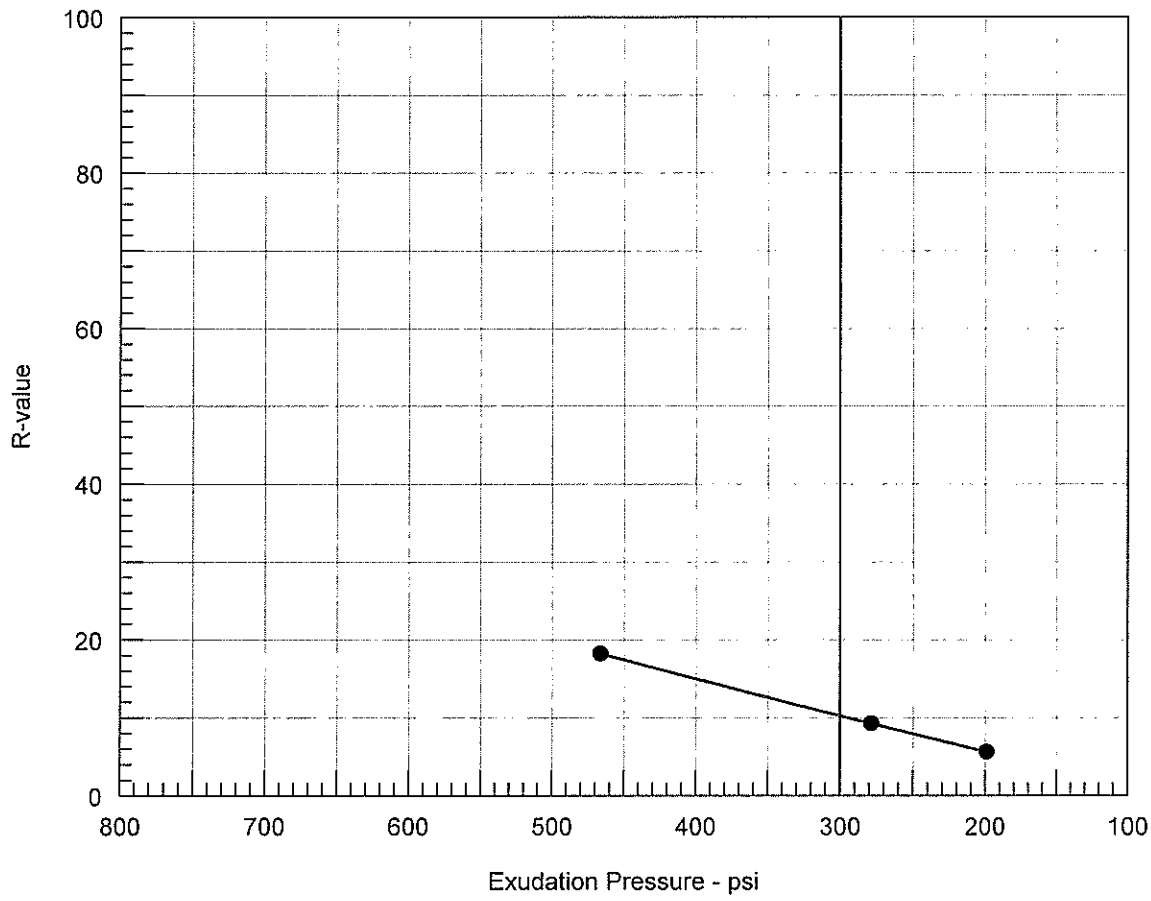
Tested by:
Checked by:
Remarks:

R-VALUE TEST REPORT

SIGNET TESTING LABS, INC.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	20	111.9	17.6	0	146	2.51	199	6	6
2	60	120.3	14.1	0	124	2.57	466	17	18
3	30	117.0	15.8	0	139	2.55	279	9	9

Test Results	Material Description
R-value at 300 psi exudation pressure = 10	Very dark gray gravelly silt with sand

Project No.: 28649951.13301
Project: US 101 Auxillary Lane
Source of Sample: A-09-104 **Depth:** 2-5

Date: 5/12/2009

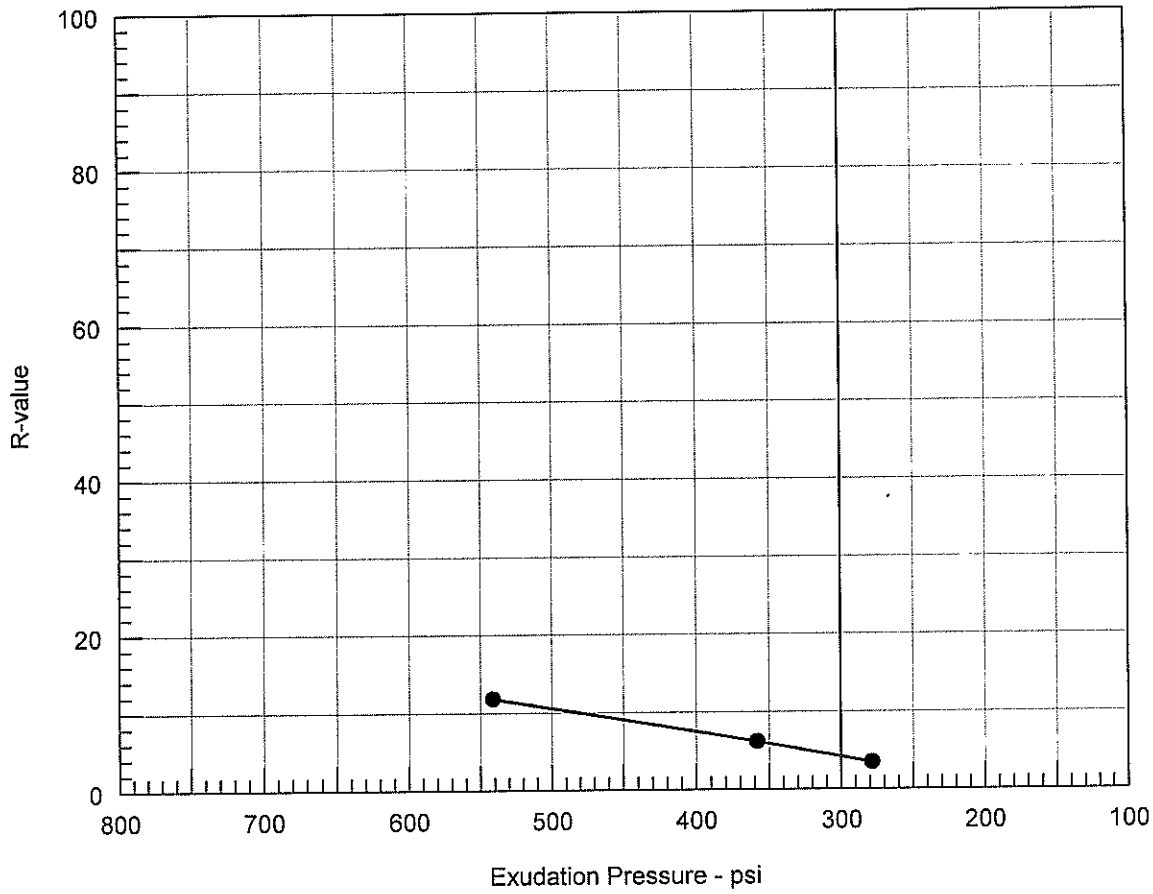
Tested by:
Checked by:
Remarks:

R-VALUE TEST REPORT

SIGNET TESTING LABS, INC.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	45	104.0	22.0	83	138	2.46	541	12	12
2	25	97.5	25.5	35	147	2.47	358	6	6
3	20	95.0	27.3	0	152	2.51	279	3	3

Test Results	Material Description
R-value at 300 psi exudation pressure = 4	Very dark gray clay with sand and grave

Project No.: 28649951.13301
Project: US 101 Auxillary Lane
Source of Sample: A-09-107 **Depth:** 2-5

Date: 4/28/2009

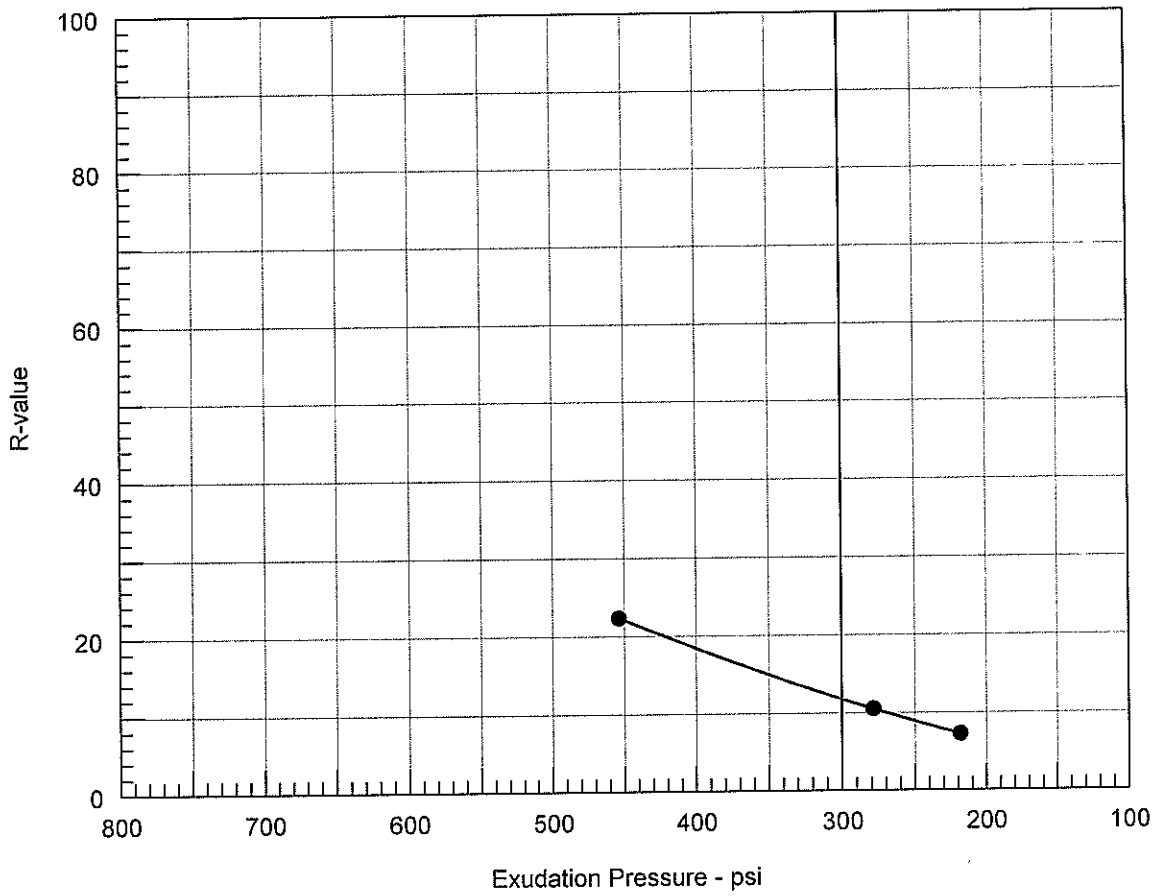
Tested by:
Checked by:
Remarks:

R-VALUE TEST REPORT

SIGNET TESTING LABS, INC.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	25	128.2	12.1	0	144	2.54	218	7	7
2	65	133.2	10.4	0	117	2.56	454	21	22
3	40	130.5	11.2	0	137	2.56	279	10	11

Test Results	Material Description
R-value at 300 psi exudation pressure = 12	Olive brown gravelly silt with clay

Project No.: 28649951.13301
Project: US 101 Auxillary Lane
Source of Sample: A-09-111 **Depth:** 2-5

Date: 4/28/2009

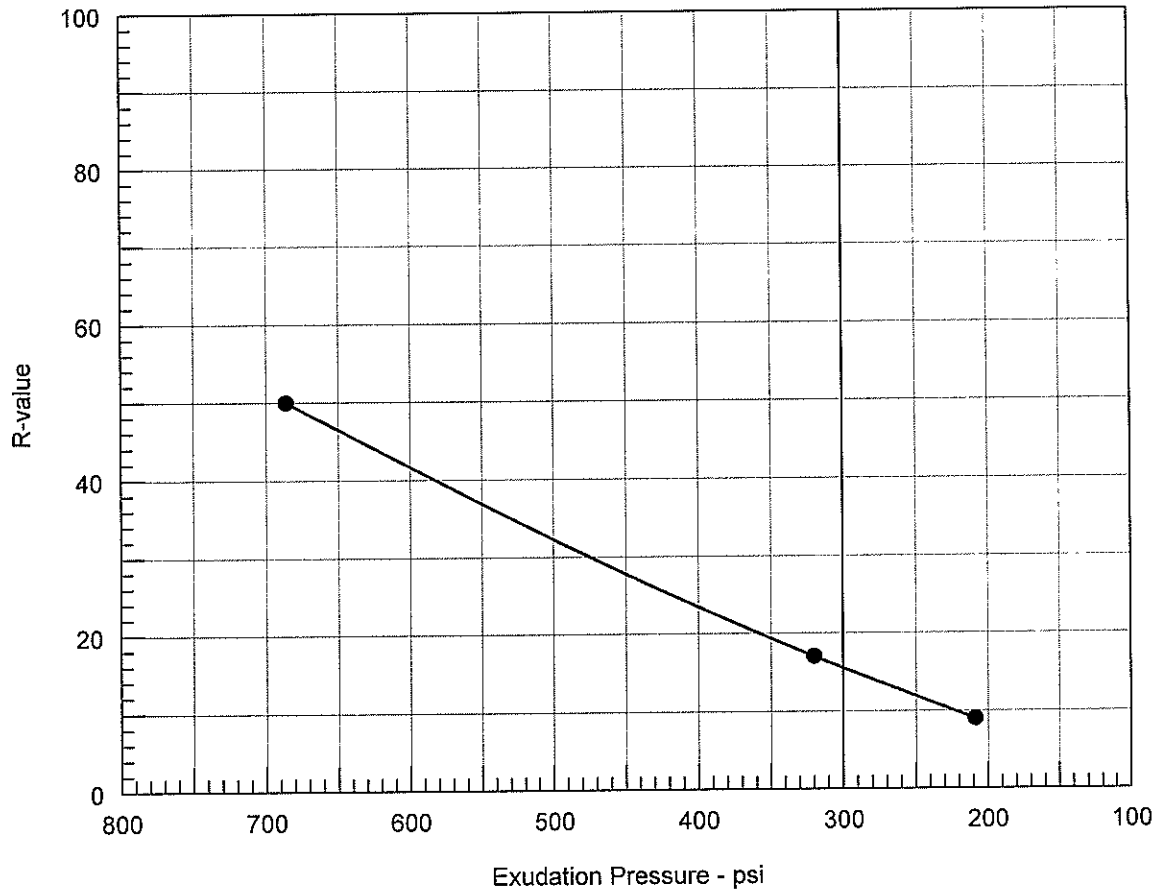
Tested by:
Checked by:
Remarks:

R-VALUE TEST REPORT

SIGNET TESTING LABS, INC.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	35	132.4	9.5	0	122	2.57	320	16	17
2	25	130.4	10.3	0	140	2.54	208	9	9
3	100	135.2	8.6	48	71	2.55	686	50	50

Test Results	Material Description
R-value at 300 psi exudation pressure = 16	Dark reddish brown gravelly clay with sand

Project No.: 28649951.13301
Project: US 101 Auxillary Lane
Source of Sample: A-09-116 **Depth:** 2-5

Date: 4/28/2009

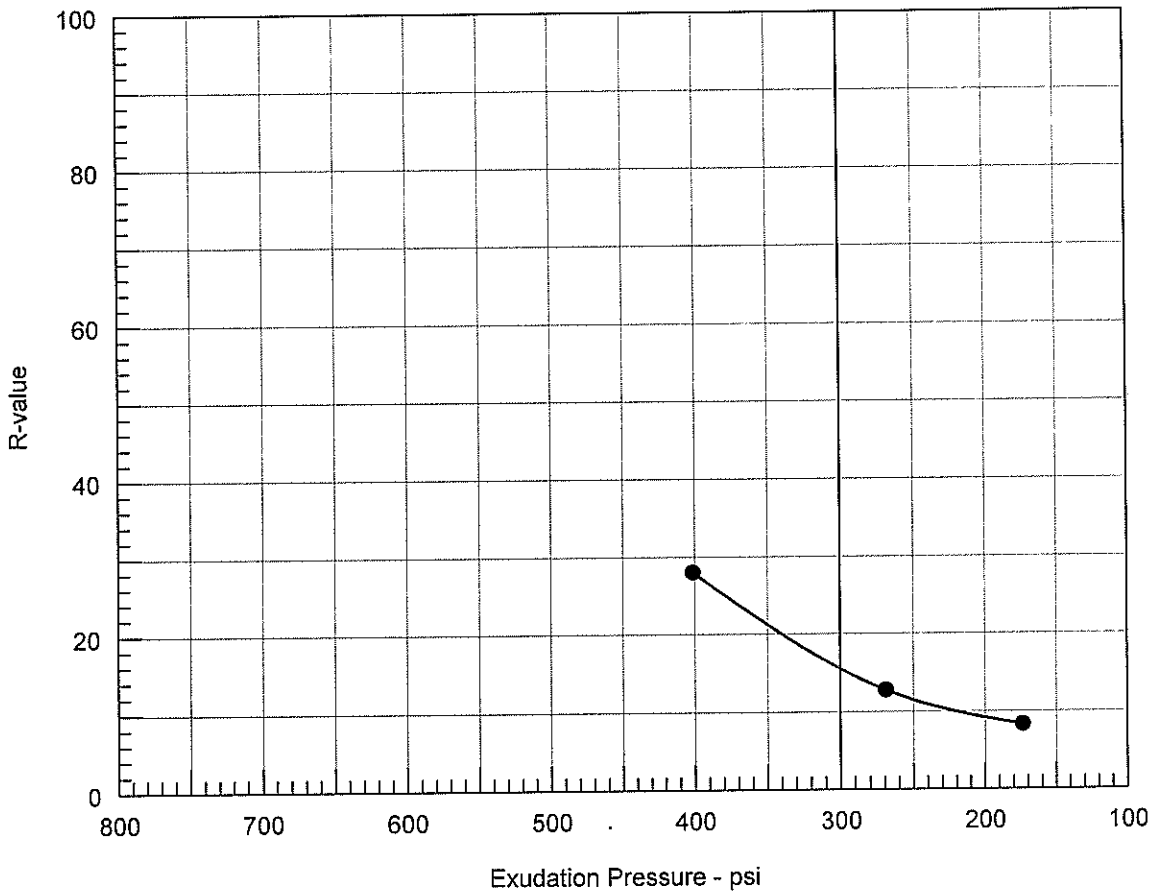
Tested by:
Checked by:
Remarks:

R-VALUE TEST REPORT

SIGNET TESTING LABS, INC.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	95	130.3	9.5	4	105	2.55	401	28	28
2	30	125.9	11.2	0	140	2.55	173	8	8
3	45	128.5	10.3	0	132	2.54	269	13	13

Test Results	Material Description
R-value at 300 psi exudation pressure = 15	Dark grayish brown gravelly silt with sand

Project No.: 28649951.13301

Project: US 101 Auxillary Lane

Source of Sample: A-09-125 **Depth:** 2-5

Date: 4/28/2009

Tested by:

Checked by:

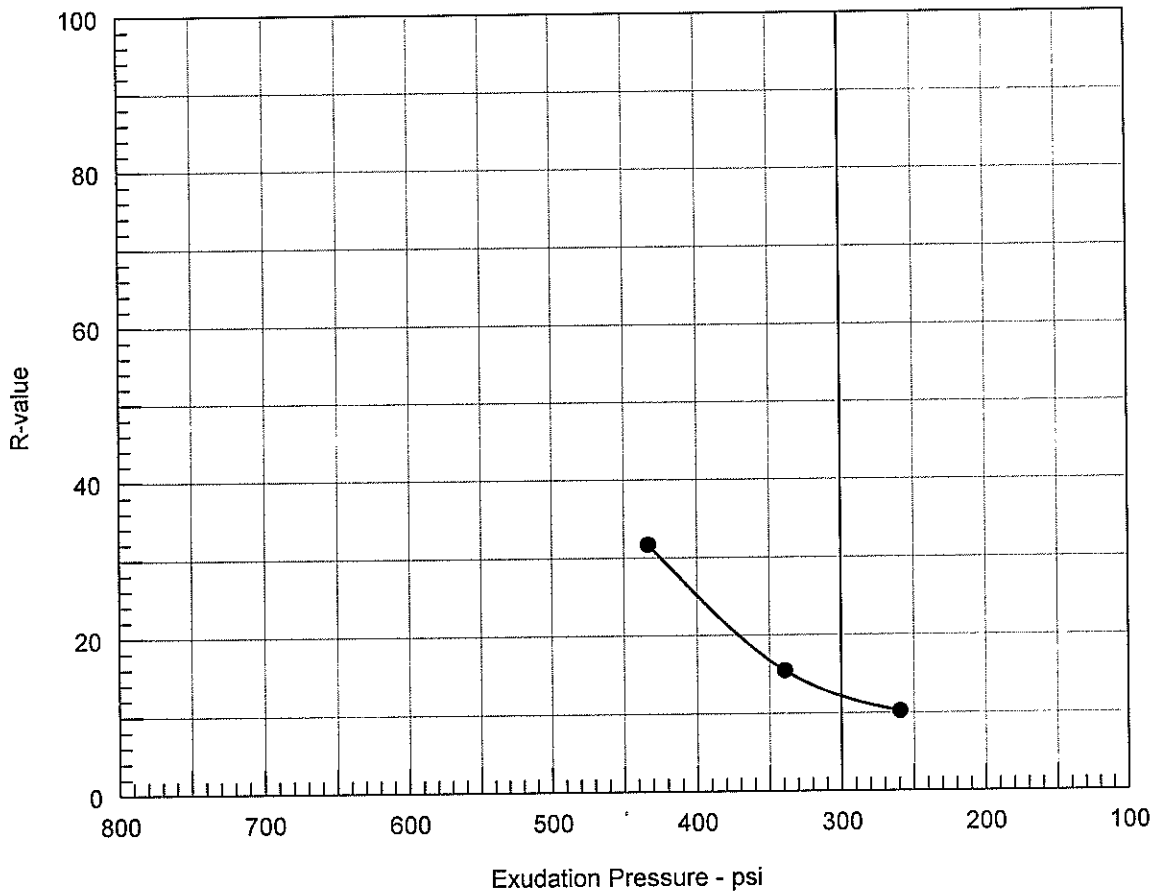
Remarks:

R-VALUE TEST REPORT

SIGNET TESTING LABS, INC.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	55	127.7	11.0	4	130	2.58	339	15	15
2	30	125.6	11.8	0	137	2.50	259	10	10
3	130	130.6	10.1	65	100	2.54	433	32	32

Test Results	Material Description
R-value at 300 psi exudation pressure = 12	Brown sandy silt with clay and gravel

Project No.: 28649951.13301
Project: US 101 Auxillary Lane
Source of Sample: A-09-131 **Depth:** 2-5

Date: 4/28/2009

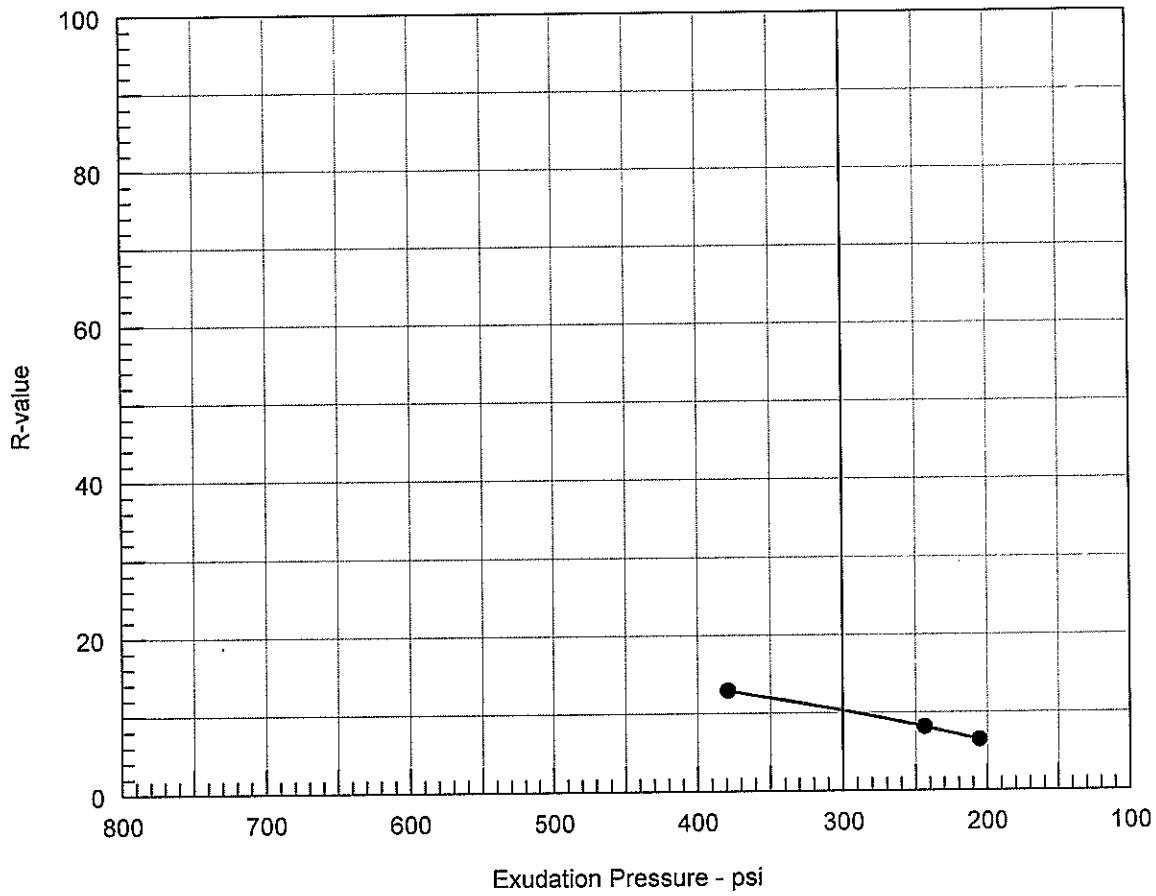
Tested by:
Checked by:
Remarks:

R-VALUE TEST REPORT

SIGNET TESTING LABS, INC.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	45	123.2	13.2	0	131	2.53	379	13	13
2	25	118.5	14.9	0	145	2.54	205	6	6
3	30	120.2	14.0	0	142	2.56	244	8	8

Test Results	Material Description
R-value at 300 psi exudation pressure = 10	Dark brown gravelly silt

Project No.: 28649951.13301
Project: US 101 Auxillary Lane
Source of Sample: A-09-134 **Depth:** 2-5

Date: 4/28/2009

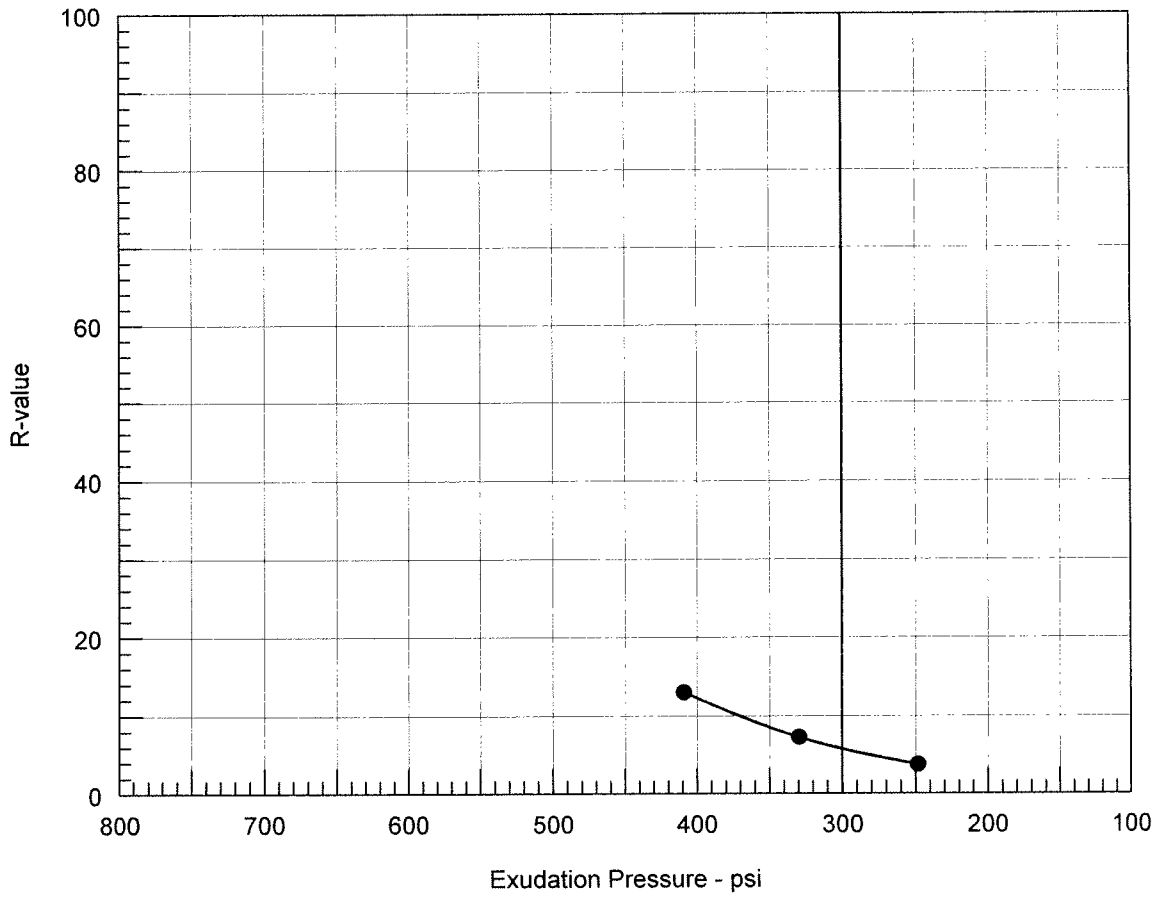
Tested by:
Checked by:
Remarks:

R-VALUE TEST REPORT

SIGNET TESTING LABS, INC.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	40	98.7	24.3	140	133	2.55	409	13	13
2	30	93.5	27.8	35	143	2.50	329	7	7
3	20	88.4	31.3	17	150	2.59	248	4	4

Test Results	Material Description
R-value at 300 psi exudation pressure = 6	Dark gray clay with gravel

Project No.: 28649951.13
Project: US 101 Auxillary Lane
Source of Sample: A-09-137 **Depth:** 2-5

Date: 12/4/2009

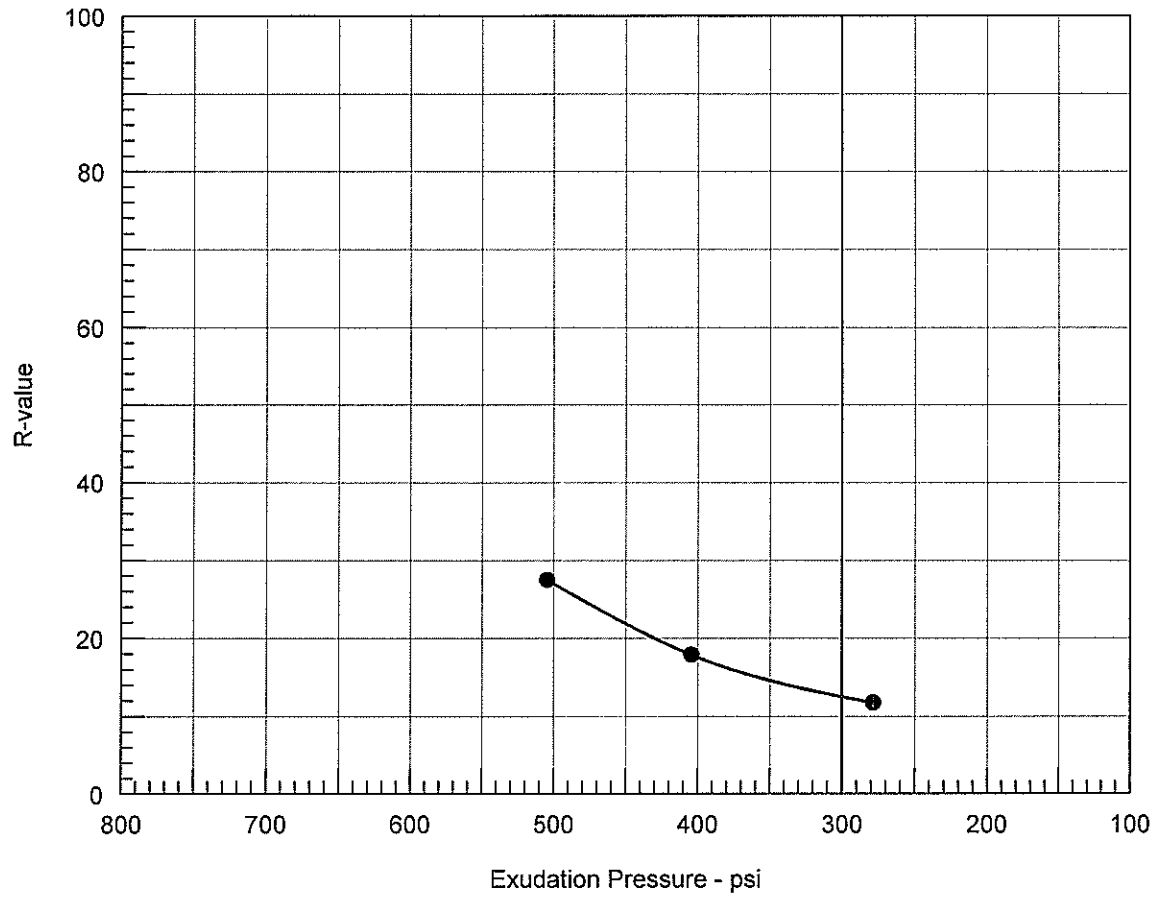
Tested by:
Checked by:
Remarks:

R-VALUE TEST REPORT

SIGNET TESTING LABS, INC.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	60	103.3	23.1	157	125	2.57	505	26	27
2	35	95.8	24.9	70	130	2.57	404	17	18
3	20	95.2	27.7	35	139	2.54	279	12	12

Test Results	Material Description
R-value at 300 psi exudation pressure = 13	Dark gray silty clay with gravel

Project No.: 28649951.13
Project: US 101 Auxillary Lane
Source of Sample: A-09-138 **Depth:** 2-5

Date: 6/18/2009

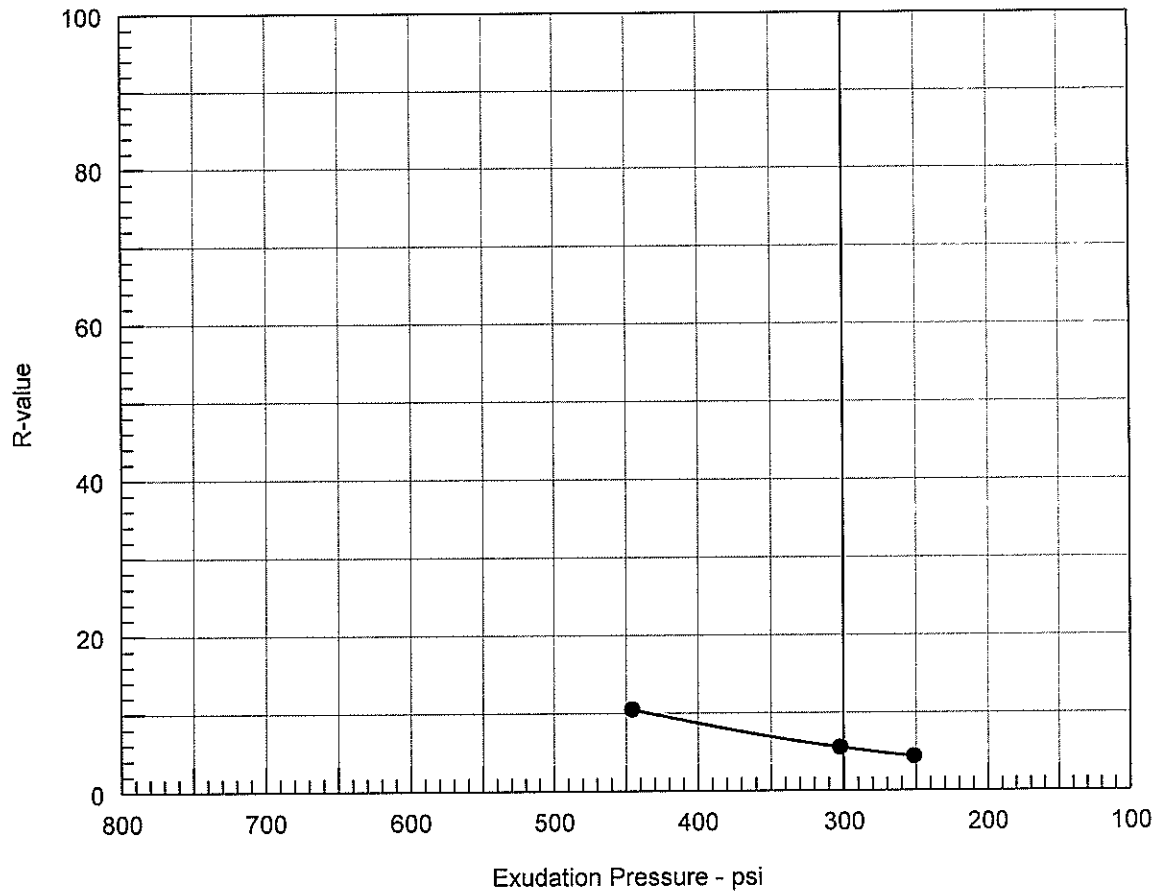
Tested by:
Checked by:
Remarks:

R-VALUE TEST REPORT

SIGNET TESTING LABS, INC.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	40	106.5	21.4	70	140	2.54	446	10	10
2	20	100.2	24.9	9	150	2.50	251	4	4
3	30	103.7	23.1	0	148	2.55	302	6	6

Test Results	Material Description
R-value at 300 psi exudation pressure = 5	Very dark gray gravelly clay with sand

Project No.: 28649951.13301
Project: US 101 Auxillary Lane
Source of Sample: A-09-140 **Depth:** 2-5

Date: 4/28/2009

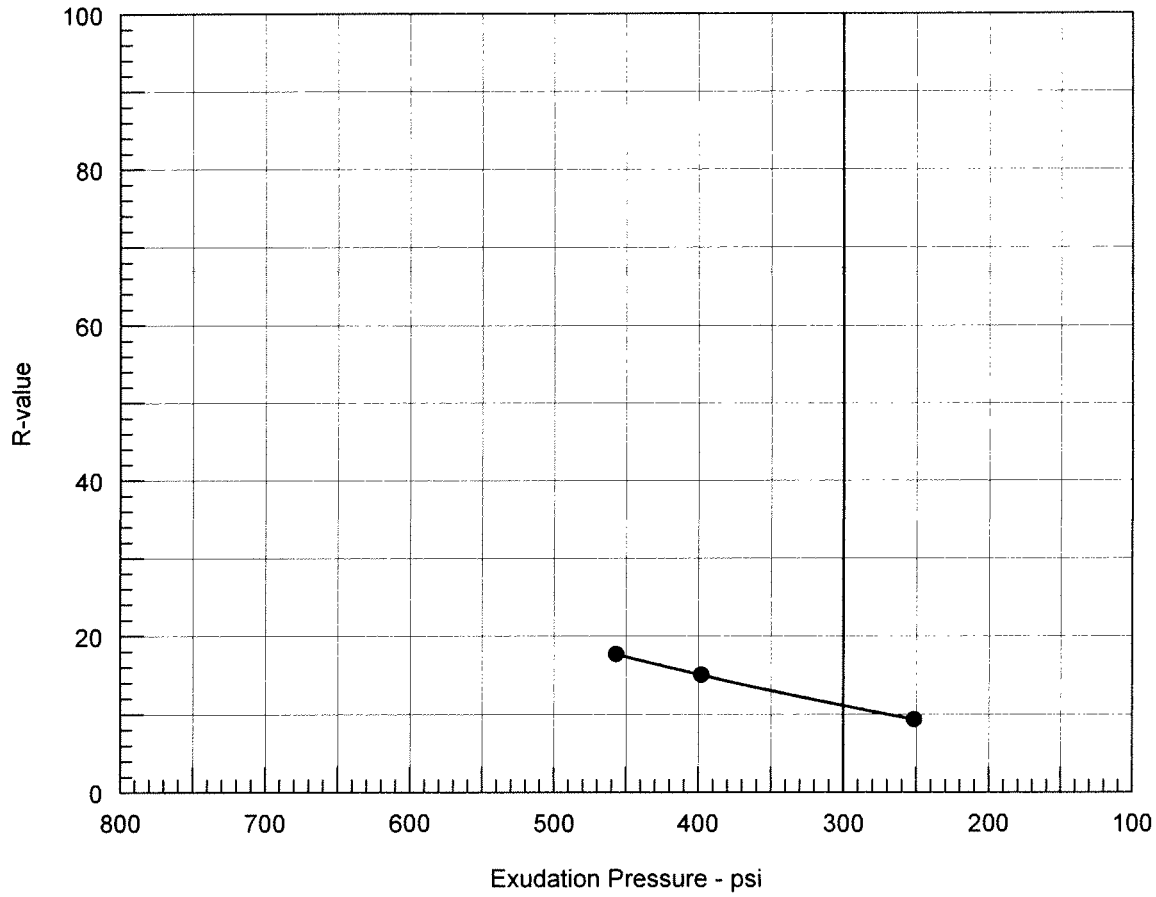
Tested by:
Checked by:
Remarks:

R-VALUE TEST REPORT

SIGNET TESTING LABS, INC.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	75	101.7	22.8	79	126	2.47	457	18	18
2	60	100.9	23.7	70	132	2.49	398	15	15
3	30	98.5	25.1	26	140	2.44	251	10	9

Test Results	Material Description
R-value at 300 psi exudation pressure = 11	Grayish brown silty clay with gravel

Project No.: 28649951.13
Project: US 101 Auxillary Lane
Source of Sample: A-09-140 **Depth:** 2-5

Date: 1/14/2010

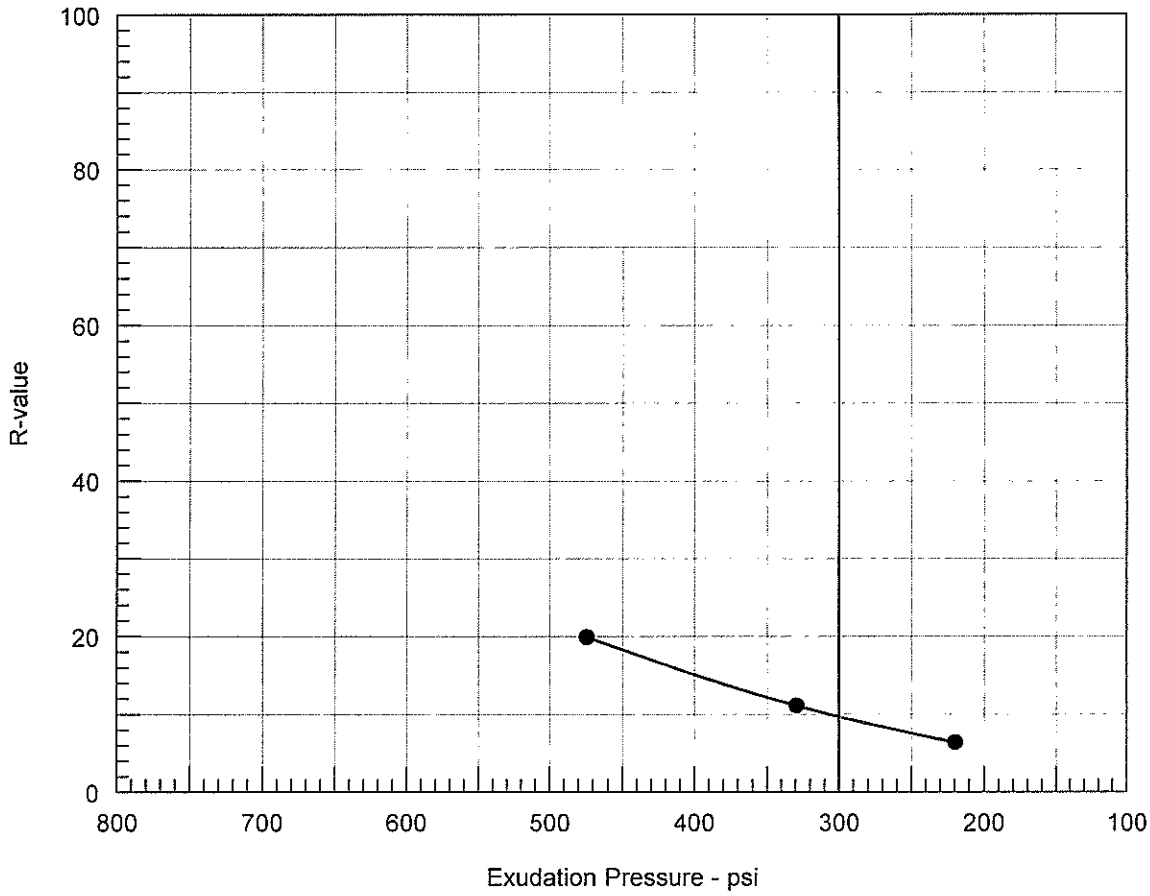
Tested by:
Checked by:
Remarks:

R-VALUE TEST REPORT

SIGNET TESTING LABS, INC.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	90	111.2	19.5	105	121	2.52	474	20	20
2	20	104.4	23.0	0	145	2.52	220	6	6
3	40	107.6	21.3	17	137	2.52	329	11	11

Test Results	Material Description
R-value at 300 psi exudation pressure = 10	Very dark gray sandy clay with gravel

Project No.: 28649951.13301
Project: US 101 Auxillary Lane
Source of Sample: A-09-143 **Depth:** 2-5

Date: 5/12/2009

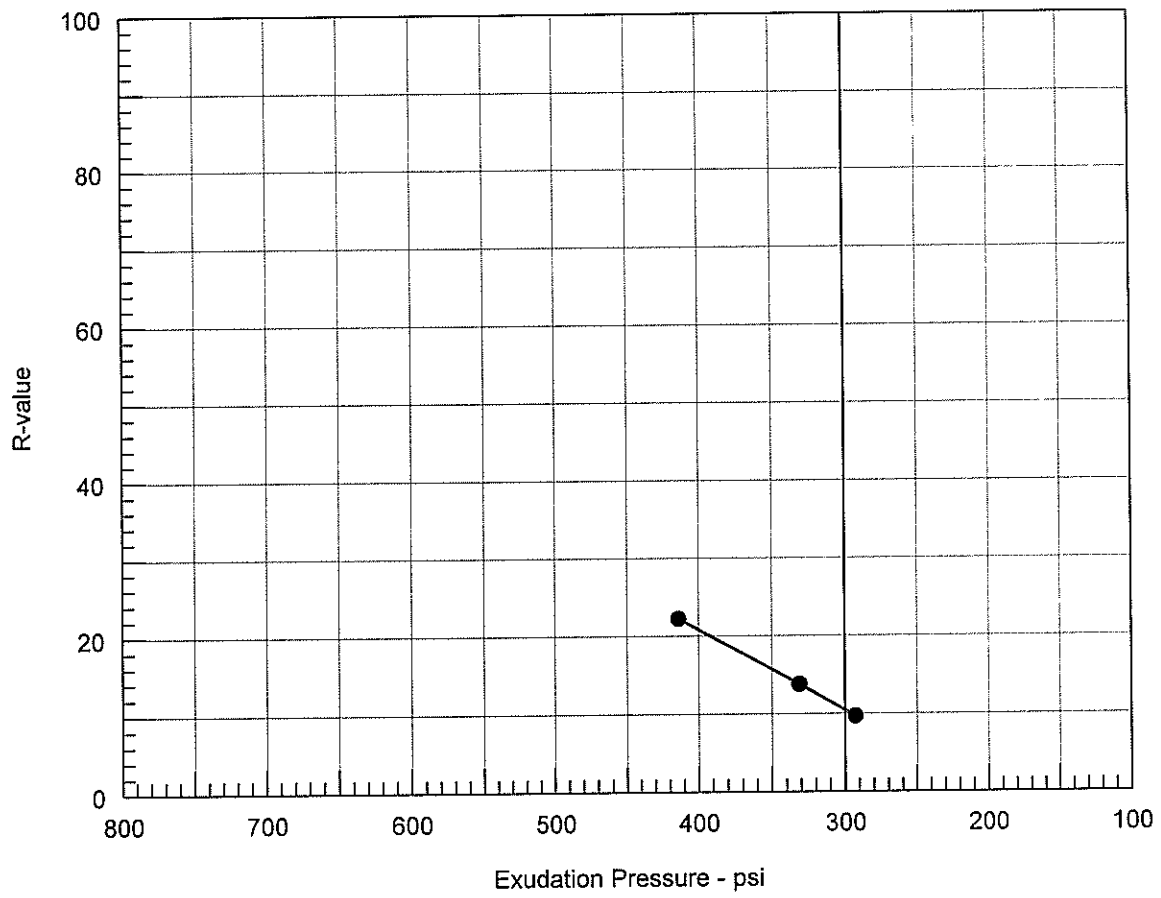
Tested by:
Checked by:
Remarks:

R-VALUE TEST REPORT

SIGNET TESTING LABS, INC.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	70	117.3	16.5	57	119	2.53	414	22	22
2	35	112.9	18.3	0	140	2.56	293	9	10
3	40	113.4	17.4	0	132	2.52	331	14	14

Test Results	Material Description
R-value at 300 psi exudation pressure = 10	Very dark gray sandy clay with gravel

Project No.: 28649951.13301
Project: US 101 Auxillary Lane
Source of Sample: A-09-145 **Depth:** 2-5

Date: 4/28/2009

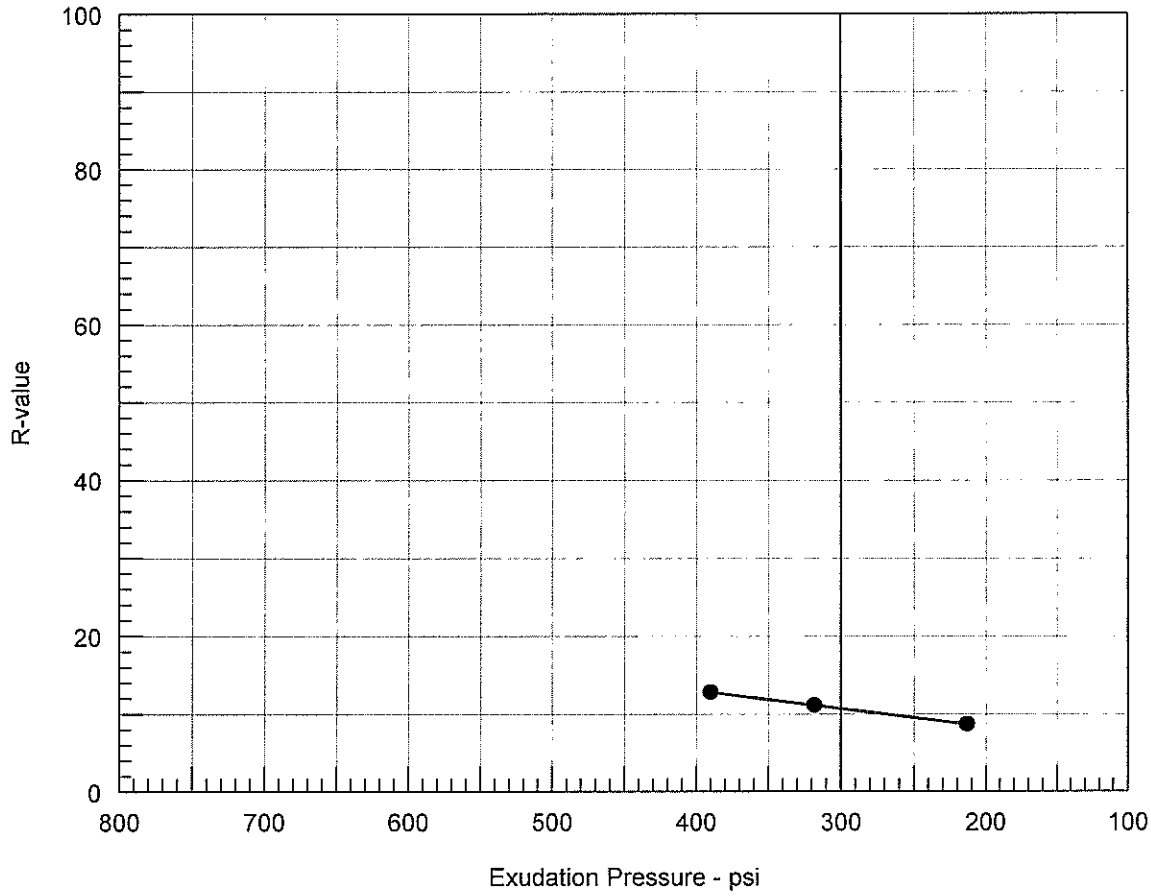
Tested by:
Checked by:
Remarks:

R-VALUE TEST REPORT

SIGNET TESTING LABS, INC.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	30	117.3	16.5	0	138	2.49	318	11	11
2	20	116.1	17.4	0	142	2.50	213	9	9
3	35	119.0	15.6	0	135	2.53	390	13	13

Test Results	Material Description
R-value at 300 psi exudation pressure = 11	Very dark gray gravelly silt with sand

Project No.: 28649951.13301

Project: US 101 Auxillary Lane

Source of Sample: A-09-153 **Depth:** 2-5

Date: 5/12/2009

Tested by:

Checked by:

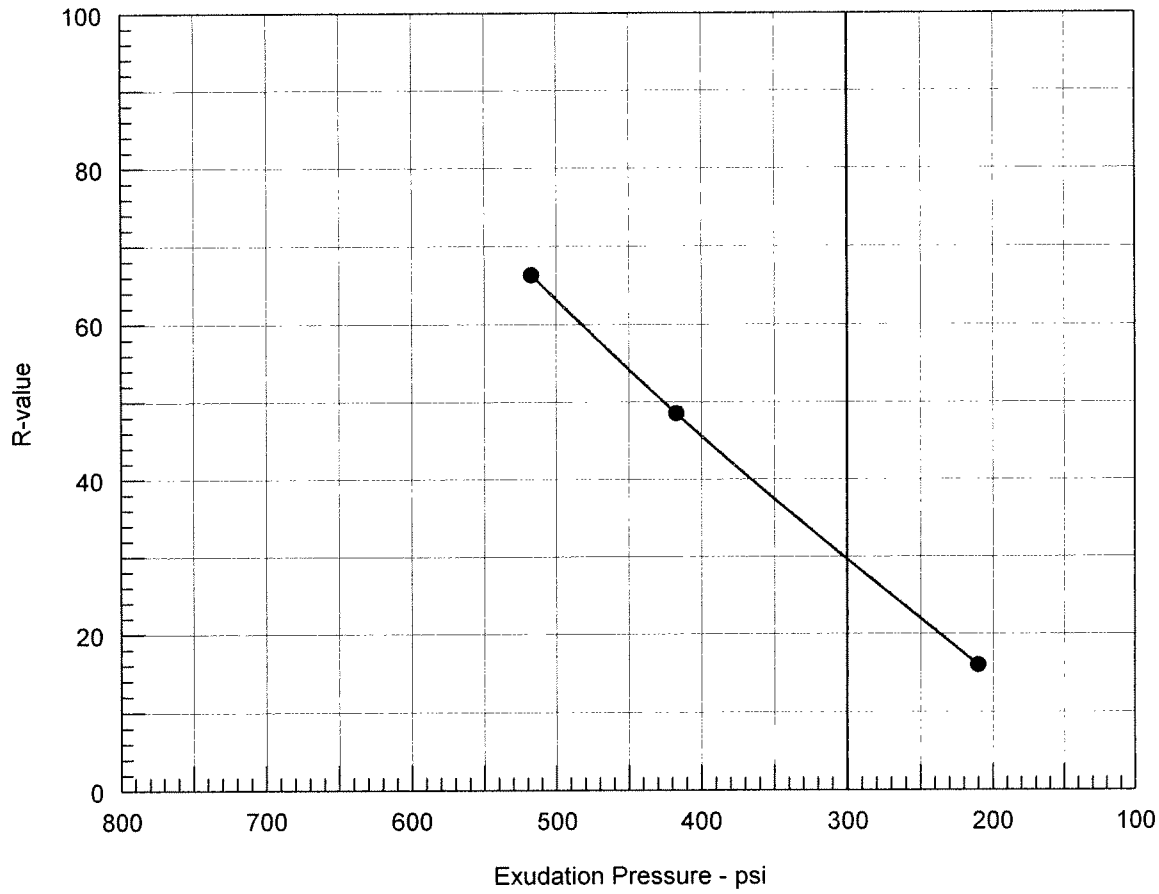
Remarks:

R-VALUE TEST REPORT

SIGNET TESTING LABS, INC.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	125	123.7	12.1	79	69	2.52	417	49	49
2	40	119.4	13.8	0	126	2.53	210	16	16
3	195	124.7	11.3	157	45	2.47	517	66	66

Test Results	Material Description
R-value at 300 psi exudation pressure = 30	Brown sandy clay with gravel

Project No.: 28649951.13
Project: US 101 Auxillary Lane
Source of Sample: A-09-157 **Depth:** 2-5

Date: 12/4/2009

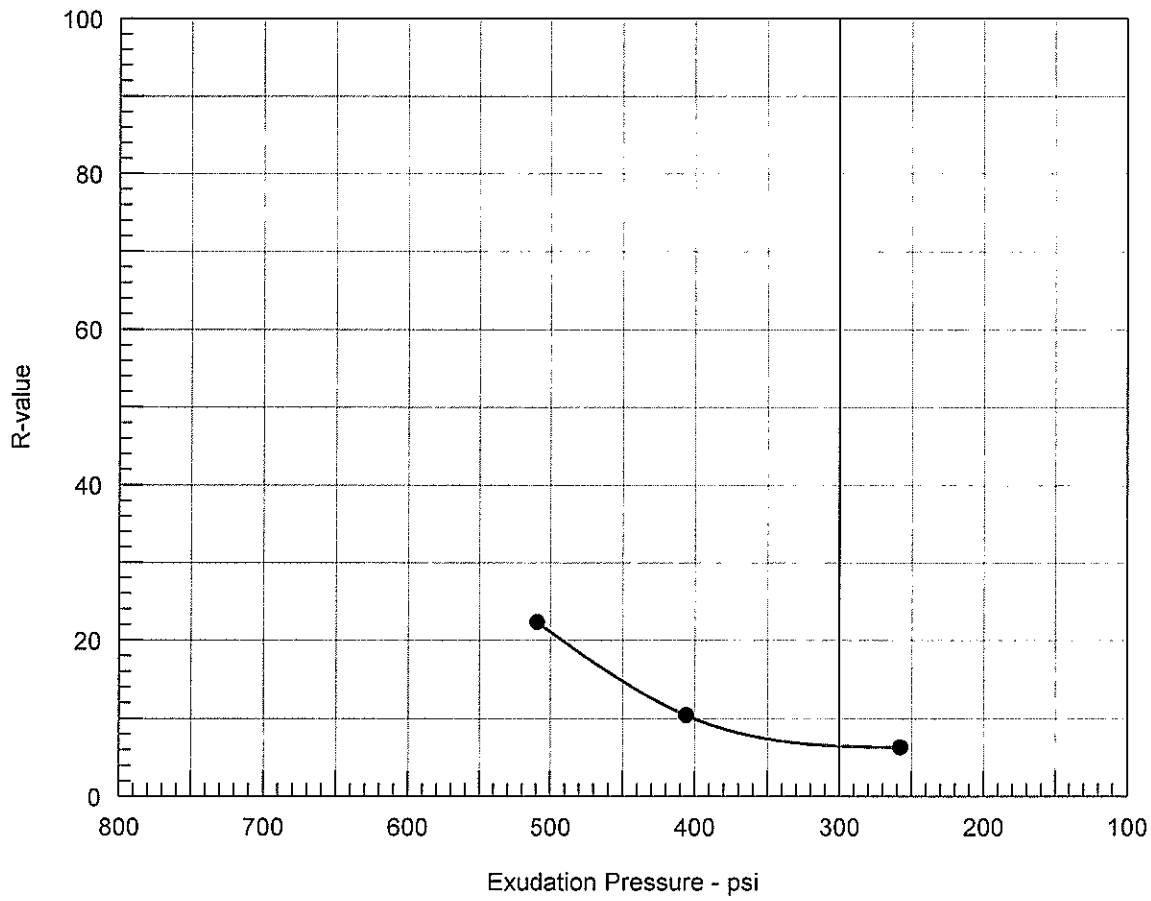
Tested by:
Checked by:
Remarks:

R-VALUE TEST REPORT

SIGNET TESTING LABS, INC.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	50	116.6	15.2	0	139	2.51	406	10	10
2	20	112.5	17.0	0	145	2.54	258	6	6
3	65	117.5	13.5	52	120	2.57	509	21	22

Test Results	Material Description
R-value at 300 psi exudation pressure = 6	Dark reddish black gravelly silt with clay

Project No.: 28649951.13301
Project: US 101 Auxillary Lane
Source of Sample: A-09-161 **Depth:** 2-5

Date: 5/12/2009

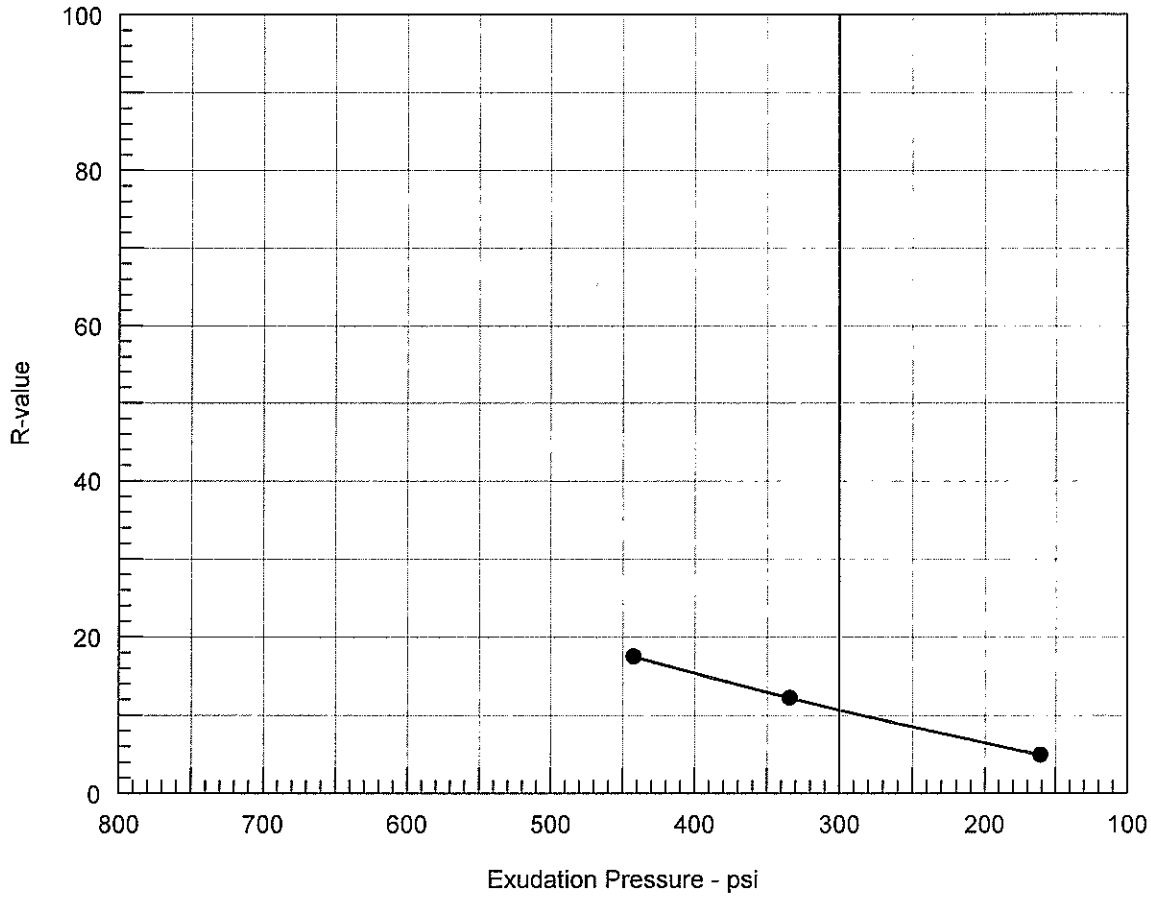
Tested by:
Checked by:
Remarks:

R-VALUE TEST REPORT

SIGNET TESTING LABS, INC.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	35	117.6	16.3	0	134	2.52	334	12	12
2	20	113.9	18.0	0	148	2.52	161	5	5
3	55	122.1	14.5	0	128	2.60	442	16	18

Test Results	Material Description
R-value at 300 psi exudation pressure = 11	Dark grayish brown sandy silt with gravel

Project No.: 28649951.13301
Project: US 101 Auxillary Lane
Source of Sample: A-09-166 **Depth:** 2-5

Date: 5/12/2009

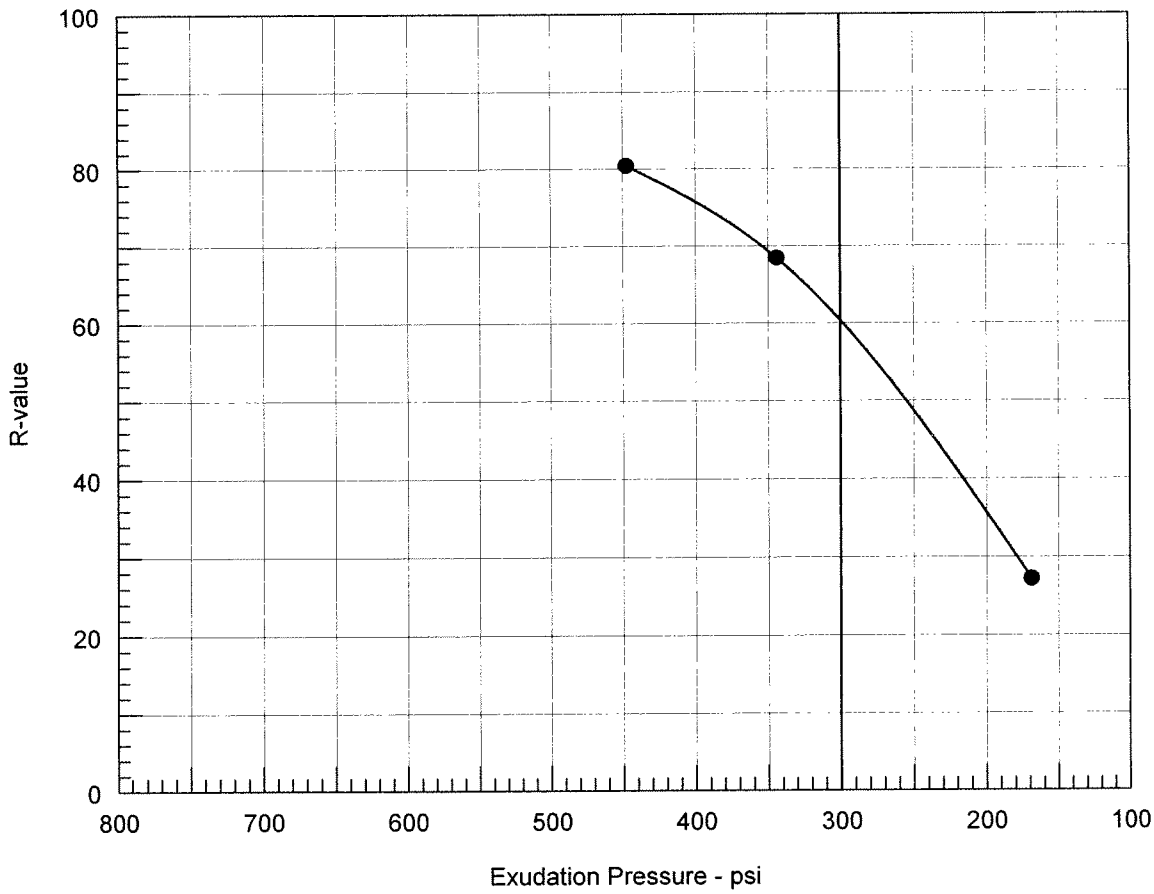
Tested by:
Checked by:
Remarks:

R-VALUE TEST REPORT

SIGNET TESTING LABS, INC.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	85	119.3	12.5	0	102	2.60	169	25	27
2	215	122.2	10.8	9	35	2.42	344	70	68
3	350	123.6	9.9	52	21	2.37	447	82	80

Test Results	Material Description
R-value at 300 psi exudation pressure = 60	Grayish brown sandy silt with gravel

Project No.: 28649951.13
Project: US 101 Auxillary Lane
Source of Sample: A-09-170 **Depth:** 2-5

Date: 12/4/2009

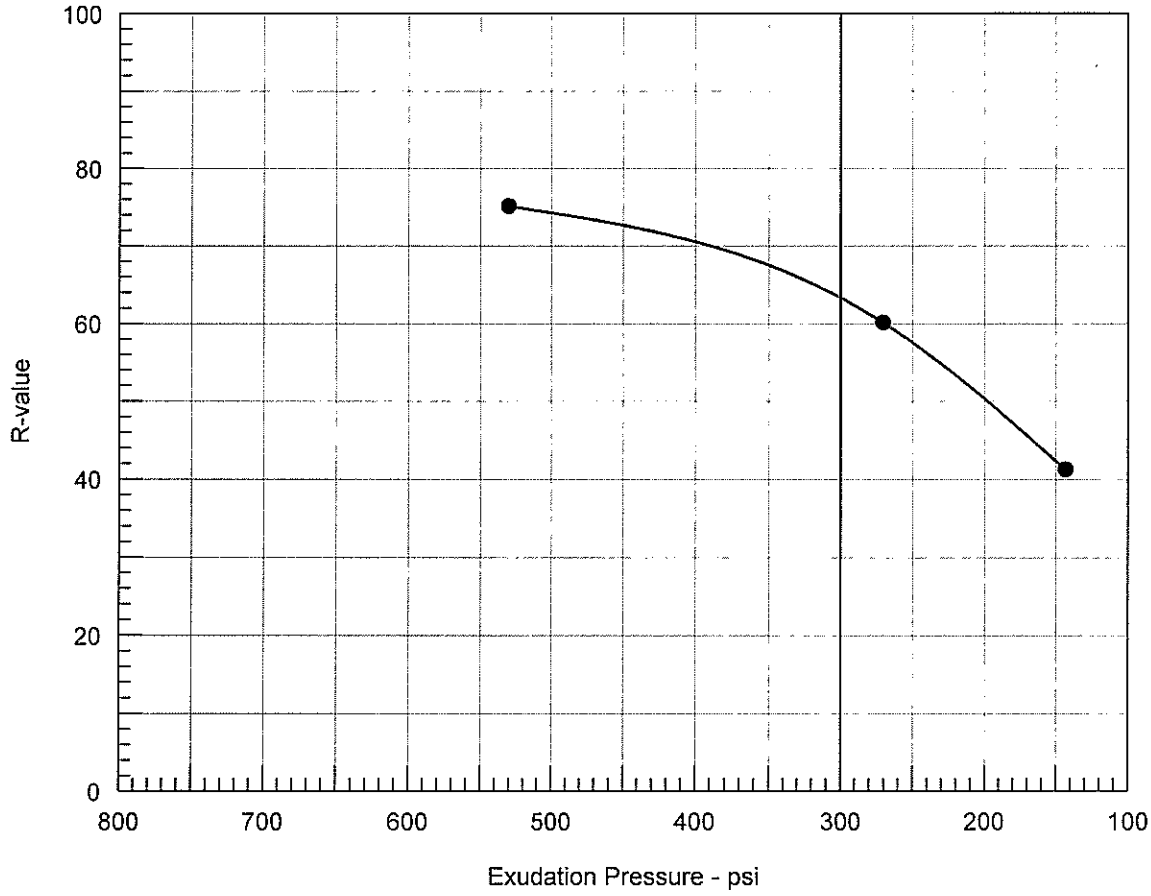
Tested by:
Checked by:
Remarks:

R-VALUE TEST REPORT

SIGNET TESTING LABS, INC.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	60	127.0	10.1	0	78	2.51	143	41	41
2	130	129.3	9.3	0	48	2.53	271	60	60
3	300	131.8	8.4	39	28	2.43	530	76	75

Test Results	Material Description
R-value at 300 psi exudation pressure = 63	Very dark gray gravelly silt with sand and clay

Project No.: 28649951.13301
Project: US 101 Auxillary Lane
Source of Sample: A-09-172 **Depth:** 2-5

Date: 5/12/2009

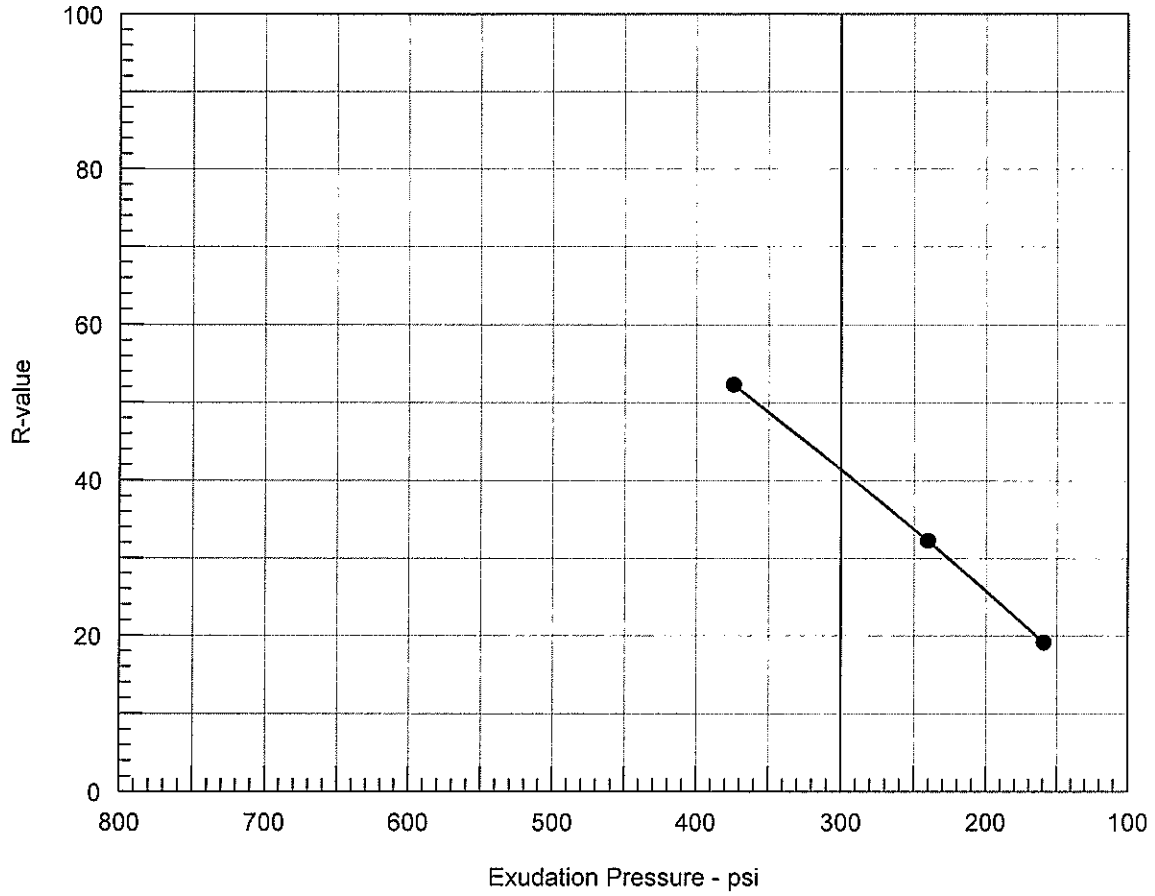
Tested by:
Checked by:
Remarks:

R-VALUE TEST REPORT

SIGNET TESTING LABS, INC.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	150	121.8	13.6	127	64	2.50	374	52	52
2	45	117.8	15.3	0	121	2.49	159	19	19
3	90	120.3	14.4	31	97	2.52	240	32	32

Test Results	Material Description
R-value at 300 psi exudation pressure = 41	Dark gray sandy clay with gravel

Project No.: 28649951.13301
Project: US 101 Auxillary Lane
Source of Sample: A-09-175 **Depth:** 2-5

Date: 5/12/2009

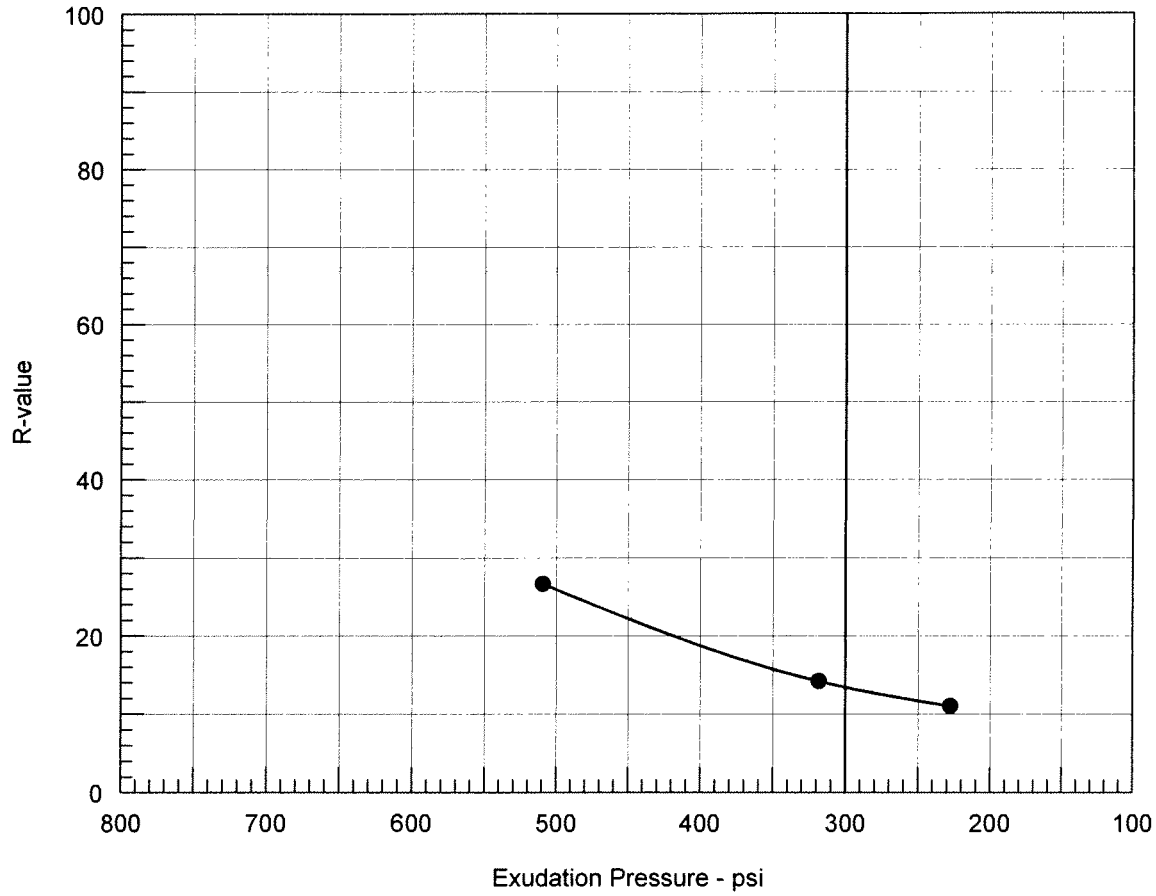
Tested by:
Checked by:
Remarks:

R-VALUE TEST REPORT

SIGNET TESTING LABS, INC.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	135	117.4	15.1	105	109	2.44	509	28	27
2	65	113.1	16.9	48	130	2.55	318	14	14
3	50	111.4	17.8	0	135	2.50	228	11	11

Test Results	Material Description
R-value at 300 psi exudation pressure = 13	Grayish brown silty clay with gravel

Project No.: 28649951.13
Project: US 101 Auxillary Lane
Source of Sample: A-09-177 **Depth:** 2-5

Date: 1/14/2010

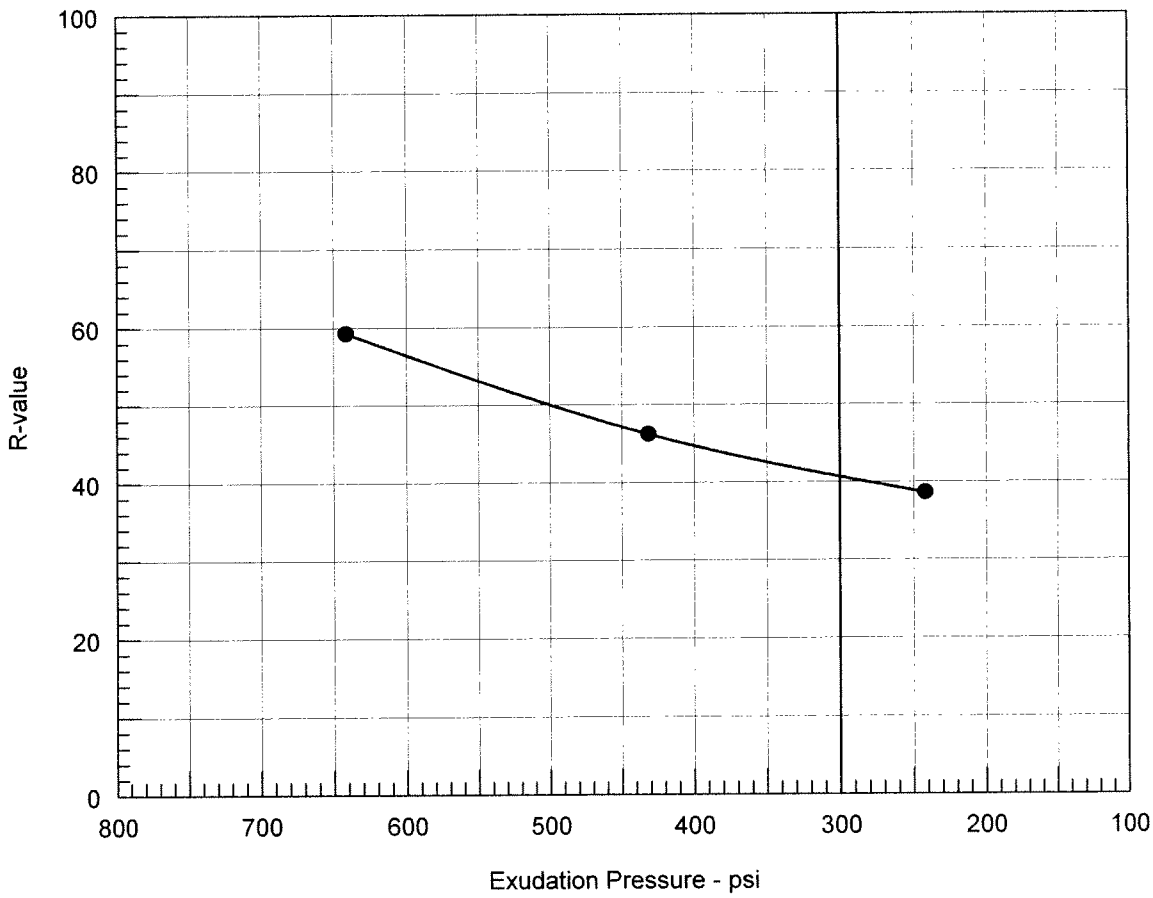
Tested by:
Checked by:
Remarks:

R-VALUE TEST REPORT

SIGNET TESTING LABS, INC.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	125	106.0	19.7	153	73	2.59	431	44	46
2	105	101.5	21.5	114	80	2.57	242	37	39
3	280	106.9	18.3	345	52	2.48	641	59	59

Test Results	Material Description
R-value at 300 psi exudation pressure = 41	Dark brown gravelly silt with organics

Project No.: 28649951.13
Project: US 101 Auxillary Lane
Source of Sample: 0-09-186 **Depth:** 2-5

Date: 12/21/2009

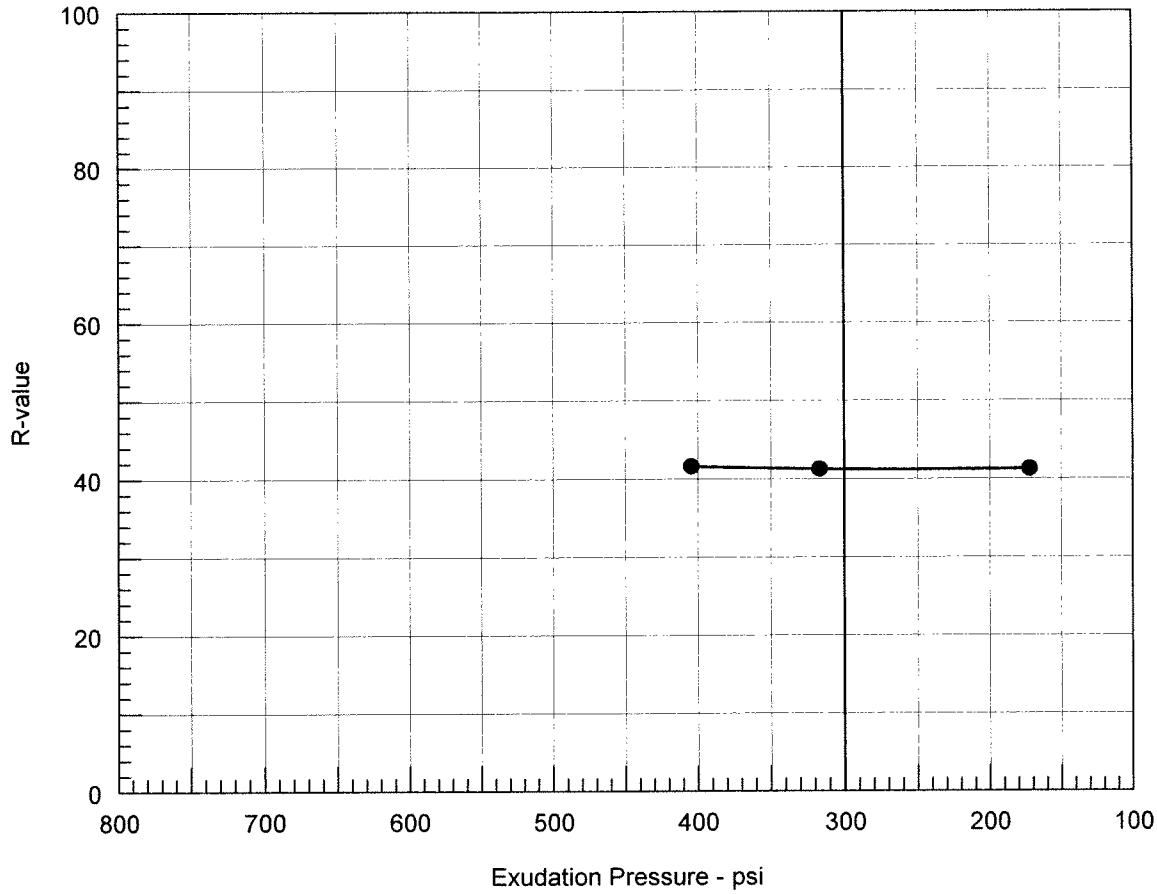
Tested by:
Checked by:
Remarks:

R-VALUE TEST REPORT

SIGNET TESTING LABS, INC.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	200	81.4	24.9	153	66	2.65	317	38	41
2	135	81.2	26.8	148	66	2.65	172	38	41
3	300	85.1	23.1	192	64	2.56	404	40	42

Test Results	Material Description
R-value at 300 psi exudation pressure = 41	Very dark brown silt with organics

Project No.: 28649951.13
Project: US 101 Auxillary Lane
Source of Sample: 0-09-188 **Depth:** 2-5

Date: 12/21/2009

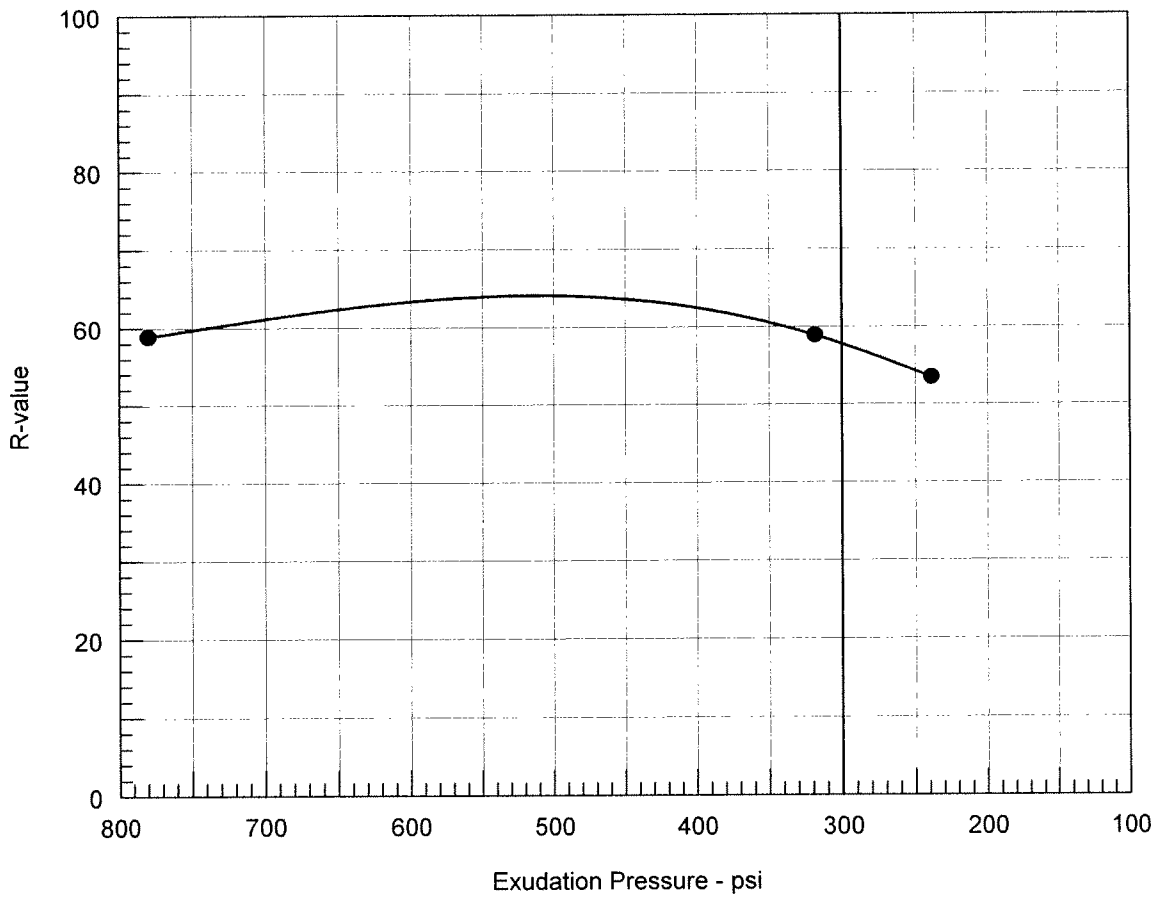
Tested by:
Checked by:
Remarks:

R-VALUE TEST REPORT

SIGNET TESTING LABS, INC.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	350	97.7	19.3	423	39	2.35	780	62	59
2	325	96.7	21.1	297	45	2.57	318	57	59
3	300	95.7	21.8	223	50	2.52	239	53	53

Test Results	Material Description
R-value at 300 psi exudation pressure = 58	Brown sandy silt with gravel and organics

Project No.: 28649951.13
Project: US 101 Auxillary Lane
Source of Sample: 0-09-189 **Depth:** 2-5

Date: 12/21/2009

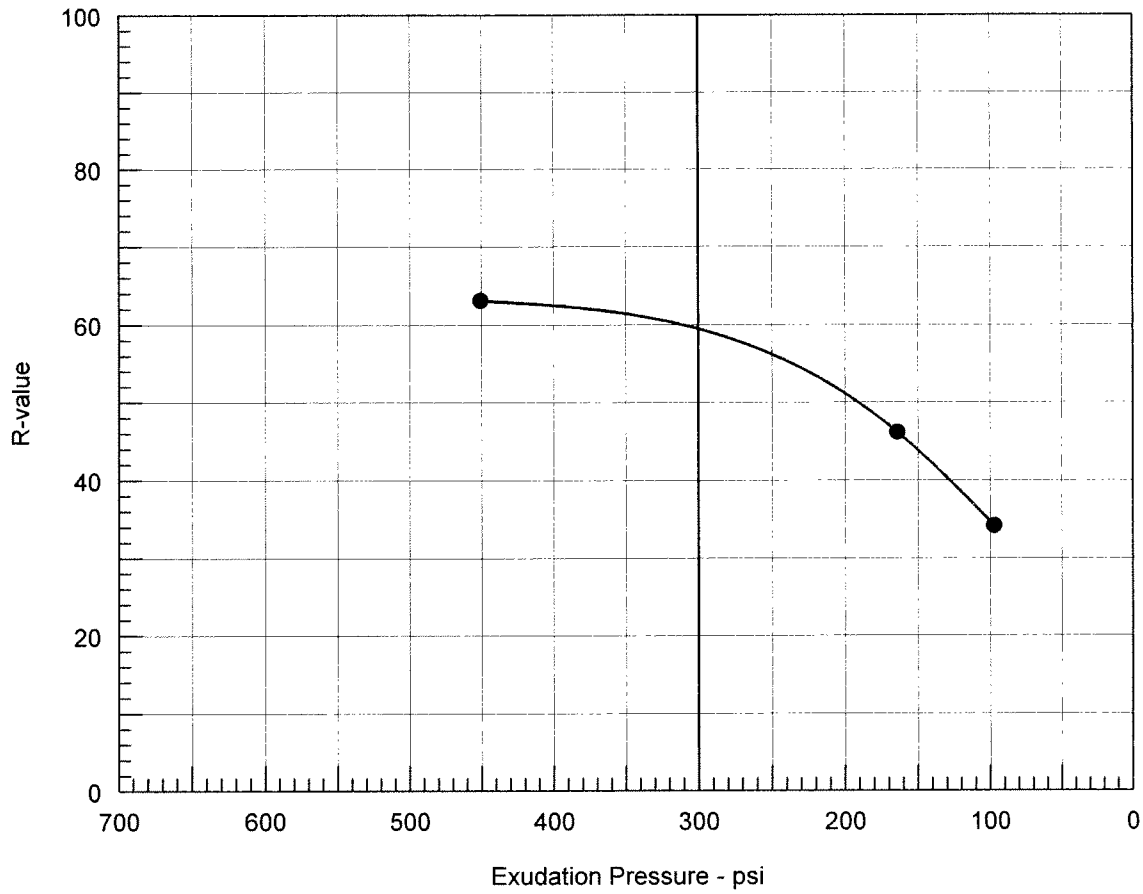
Tested by:
Checked by:
Remarks:

R-VALUE TEST REPORT

SIGNET TESTING LABS, INC.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	80	107.4	17.5	22	82	2.59	97	32	34
2	260	109.3	15.3	87	40	2.49	450	63	63
3	170	108.8	16.4	35	64	2.57	164	44	46

Test Results	Material Description
R-value at 300 psi exudation pressure = 59	Brown gravelly silt with organics

Project No.: 28649951.13
Project: US 101 Auxillary Lane
Source of Sample: 0-09-190 **Depth:** 2-5

Date: 12/21/2009

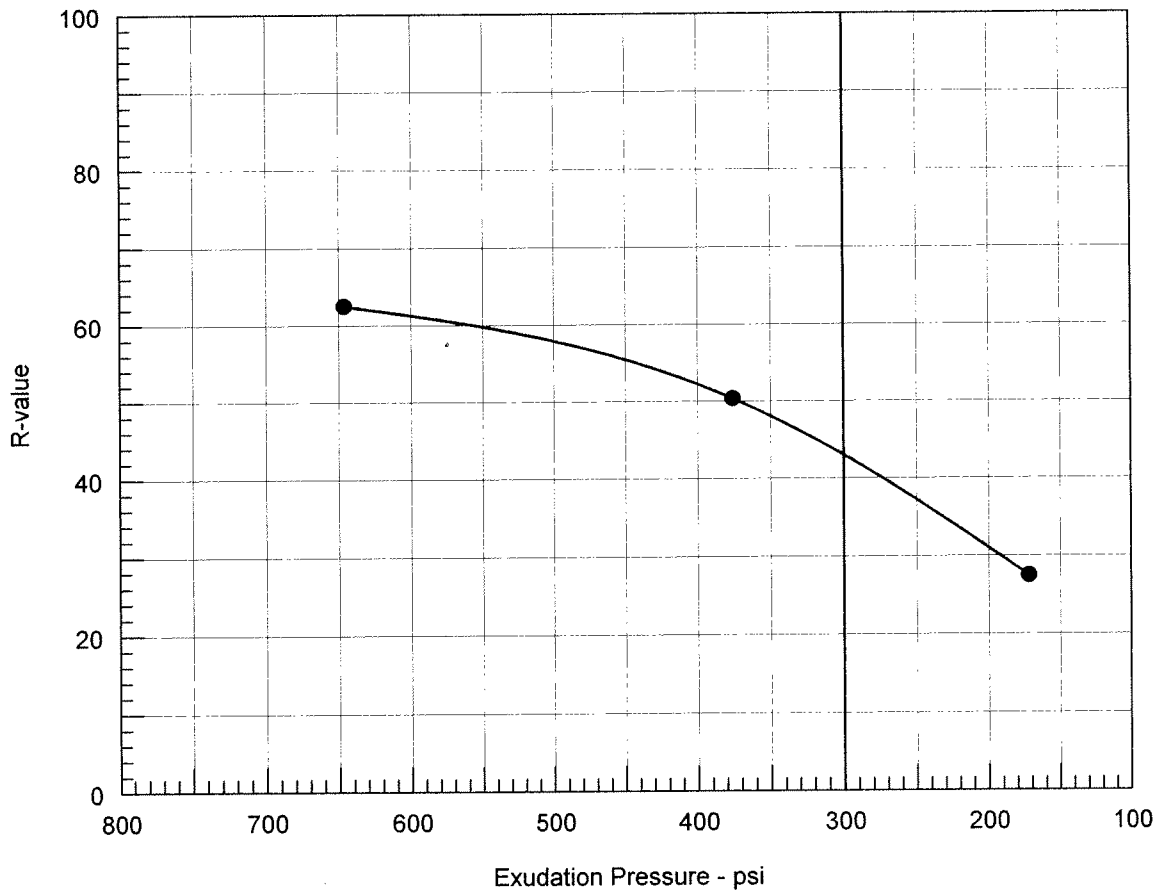
Tested by:
Checked by:
Remarks:

R-VALUE TEST REPORT

SIGNET TESTING LABS, INC.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	190	107.5	17.9	127	64	2.50	376	50	50
2	55	104.3	19.6	74	101	2.61	172	26	27
3	255	111.8	16.1	205	47	2.46	646	62	62

Test Results	Material Description
R-value at 300 psi exudation pressure = 43	Dark brown silty clay with gravel

Project No.: 28649951.13

Project: US 101 Auxillary Lane

Source of Sample: 0-09-192 **Depth:** 2-5

Date: 12/21/2009

Tested by:

Checked by:

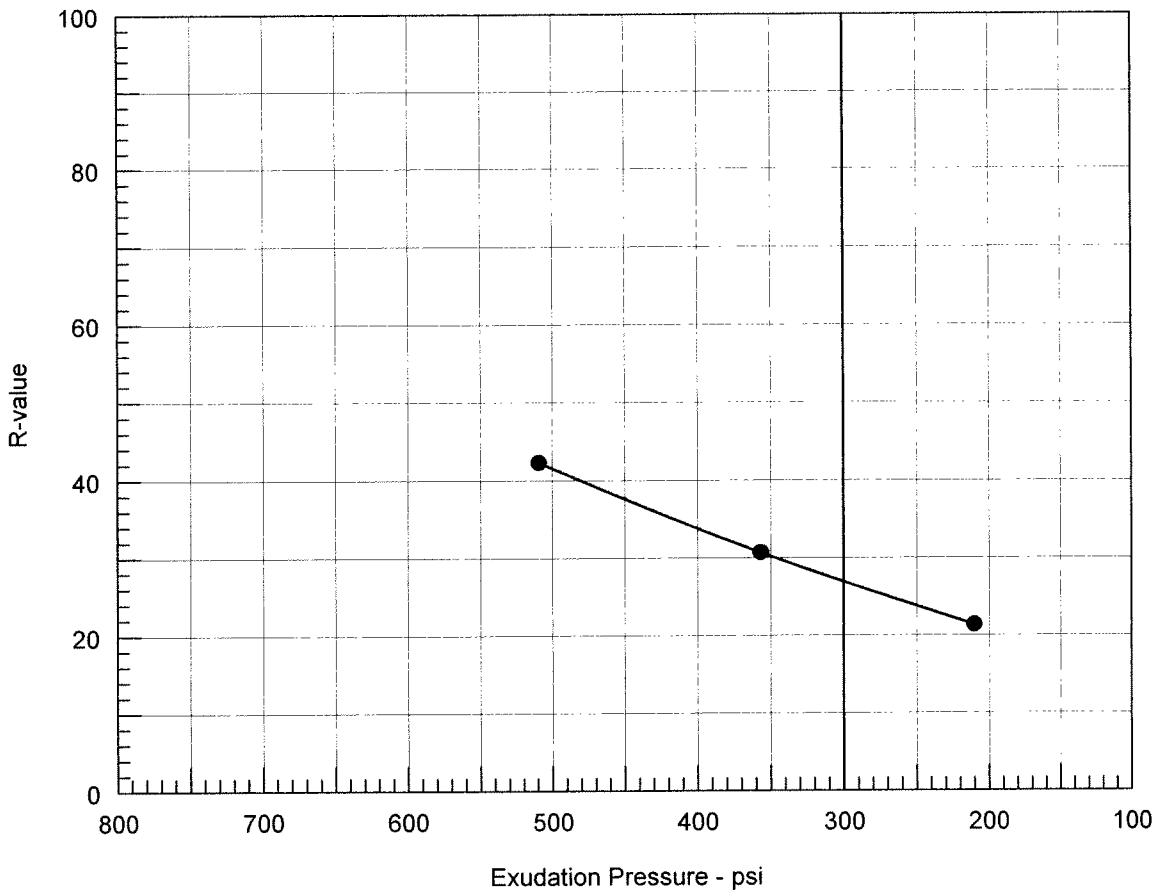
Remarks:

R-VALUE TEST REPORT

SIGNET TESTING LABS, INC.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	120	128.6	11.4	118	86	2.66	509	38	42
2	70	127.3	12.4	61	118	2.46	210	21	21
3	95	127.5	11.9	92	99	2.44	357	32	31

Test Results	Material Description
R-value at 300 psi exudation pressure = 27	Brown gravelly clay with sand

Project No.: 28649951.13
Project: US 101 Auxillary Lane
Source of Sample: 0-09-193 **Depth:** 2-5

Date: 12/21/2009

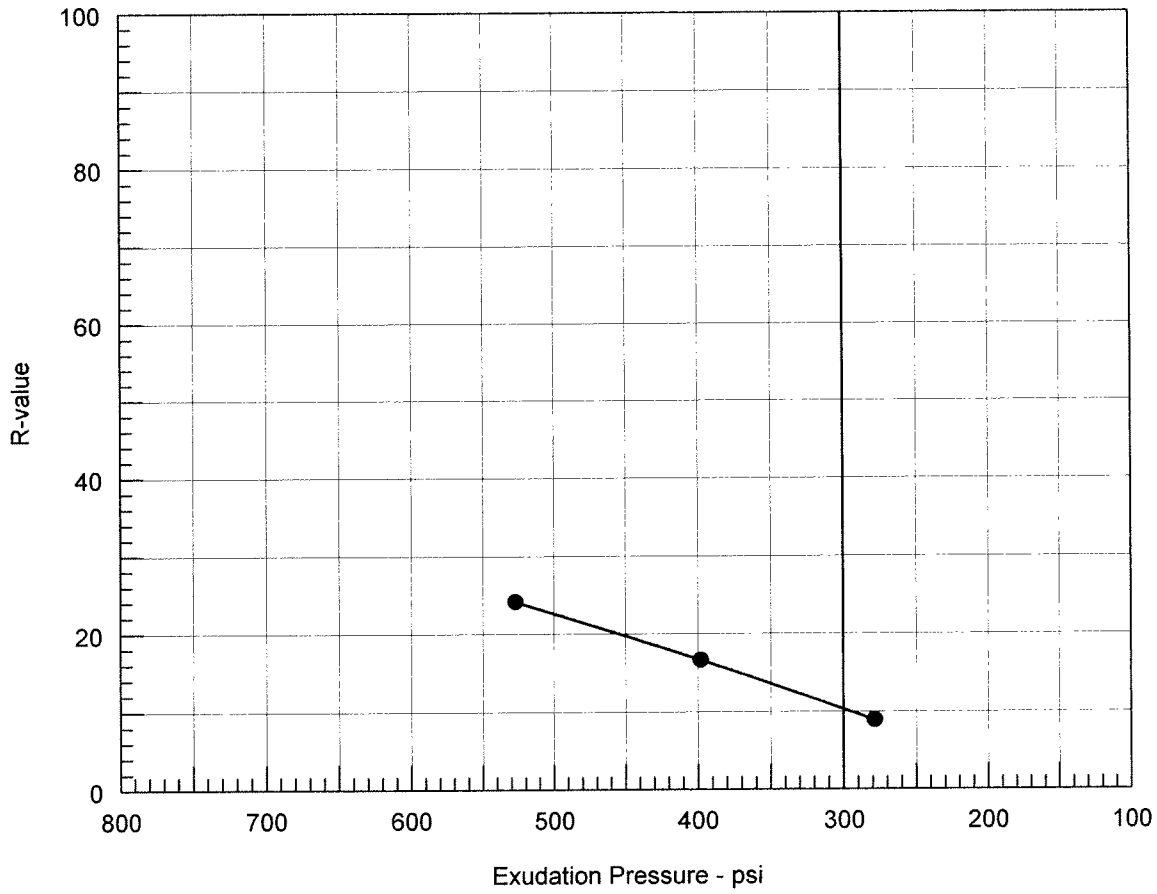
Tested by:
Checked by:
Remarks:

R-VALUE TEST REPORT

SIGNET TESTING LABS, INC.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	35	93.9	27.5	35	140	2.54	279	9	9
2	45	96.9	25.7	44	129	2.59	398	16	17
3	75	100.3	23.8	44	120	2.65	527	22	24

Test Results	Material Description
R-value at 300 psi exudation pressure = 10	Very dark gray clay with gravel

Project No.: 28649951.13
Project: US 101 Auxillary Lane
Source of Sample: 0-09-194 **Depth:** 2-5

Date: 12/21/2009

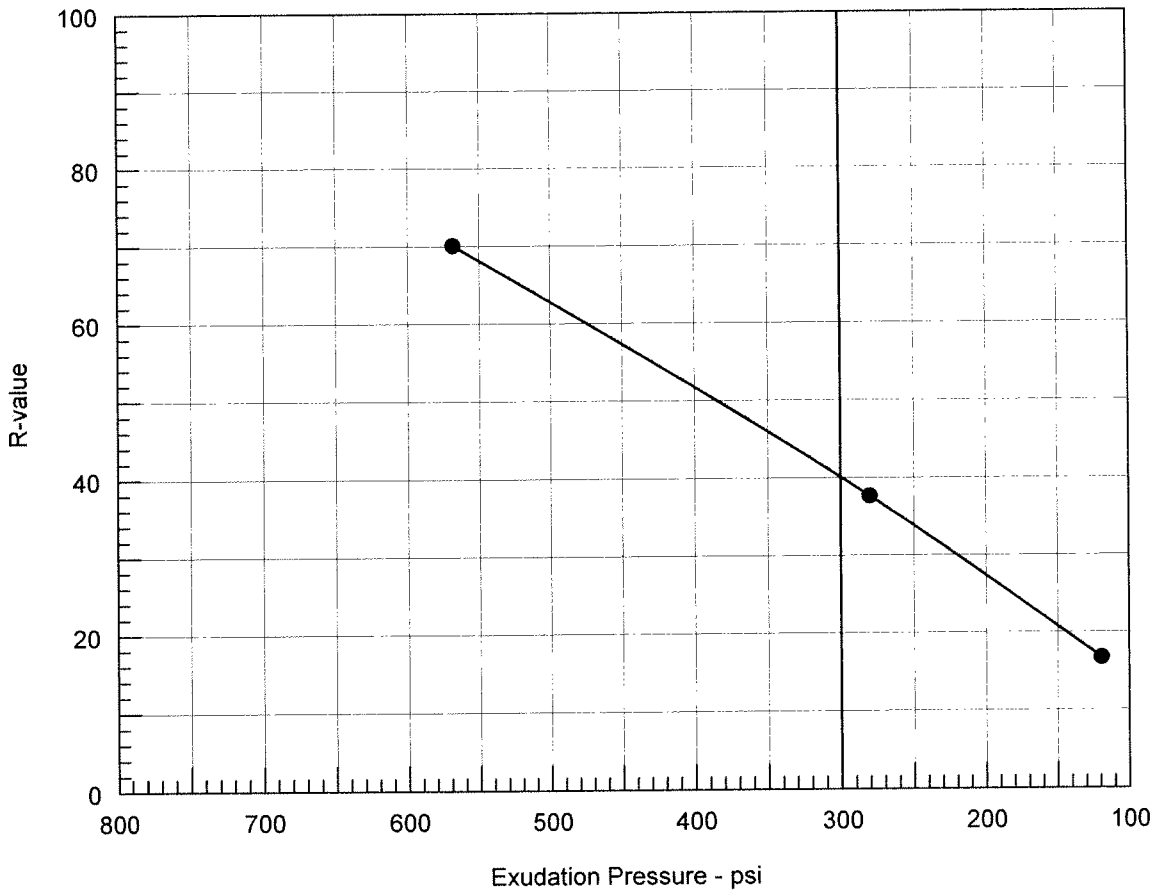
Tested by:
Checked by:
Remarks:

R-VALUE TEST REPORT

SIGNET TESTING LABS, INC.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	30	119.4	13.9	0	125	2.59	119	16	17
2	350	125.9	10.4	205	38	2.50	568	70	70
3	75	122.0	12.6	13	91	2.60	280	35	38

Test Results	Material Description
R-value at 300 psi exudation pressure = 40	Brown gravelly silt with sand

Project No.: 28649951.13
Project: US 101 Auxillary Lane
Source of Sample: 0-09-196 **Depth:** 2-5

Date: 12/21/2009

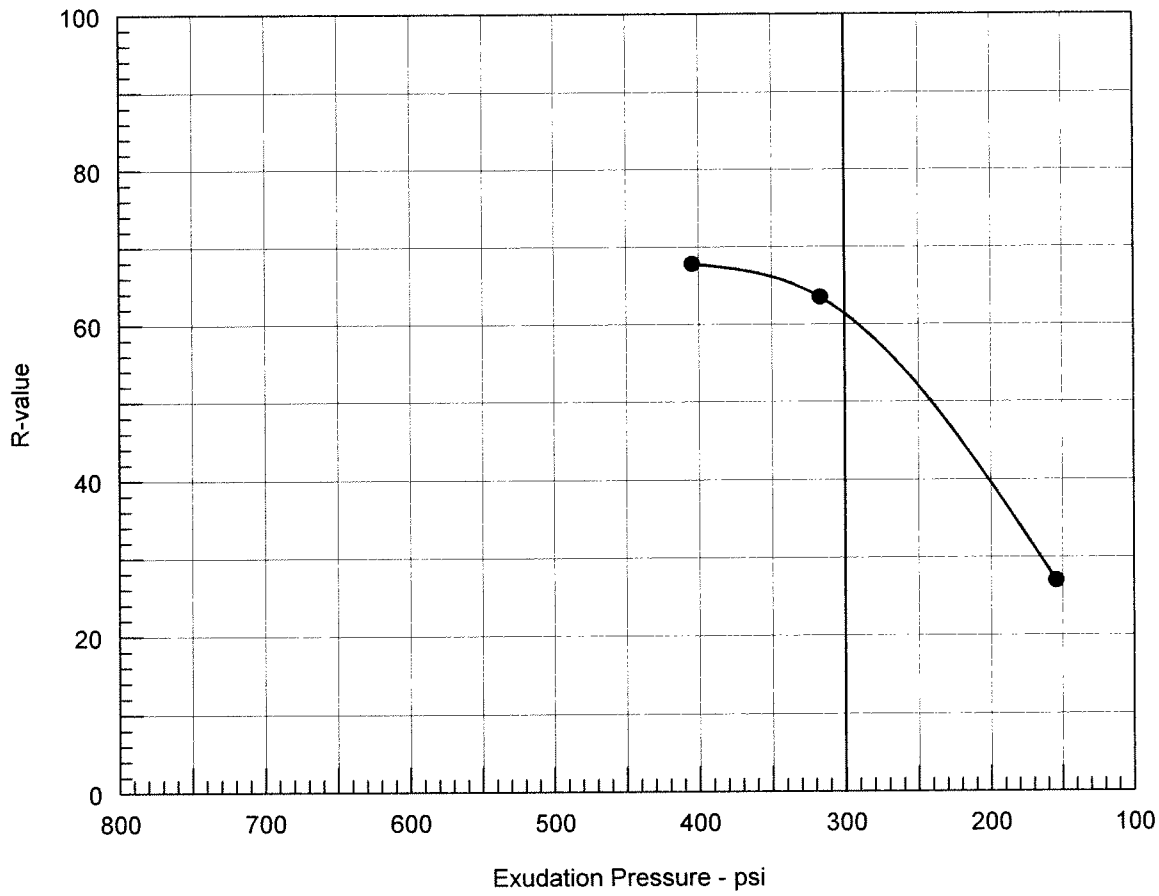
Tested by:
Checked by:
Remarks:

R-VALUE TEST REPORT

SIGNET TESTING LABS, INC.

Figure _____

R-VALUE TEST REPORT



Resistance R-Value and Expansion Pressure - Cal Test 301

No.	Compact. Pressure psi	Density pcf	Moist. %	Expansion Pressure psf	Horizontal Press. psi @ 160 psi	Sample Height in.	Exud. Pressure psi	R Value	R Value Corr.
1	25	126.1	11.1	0	103	2.52	154	27	27
2	100	131.1	8.5	0	41	2.51	404	68	68
3	75	128.9	9.4	0	45	2.50	317	63	63

Test Results	Material Description
R-value at 300 psi exudation pressure = 61	Grayish brown gravelly silt with sand

Project No.: 28649951.13
Project: US 101 Auxillary Lane
Source of Sample: 0-09-197 **Depth:** 2-5

Date: 12/21/2009

Tested by:
Checked by:
Remarks:

R-VALUE TEST REPORT

SIGNET TESTING LABS, INC.

Figure _____

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.97/52.17		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER ANALETTE OCHOA No. C 55279 Exp. 12/31/10 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

WRECO
1243 ALPINE ROAD
SUITE 108
WALNUT CREEK, CA 94596

VALLEY TRANSPORATION AUTHORITY
3331 N FIRST STREET
SAN JOSE, CA 95134

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERGING AT THE DISTRICT OFFICE

LEGEND:

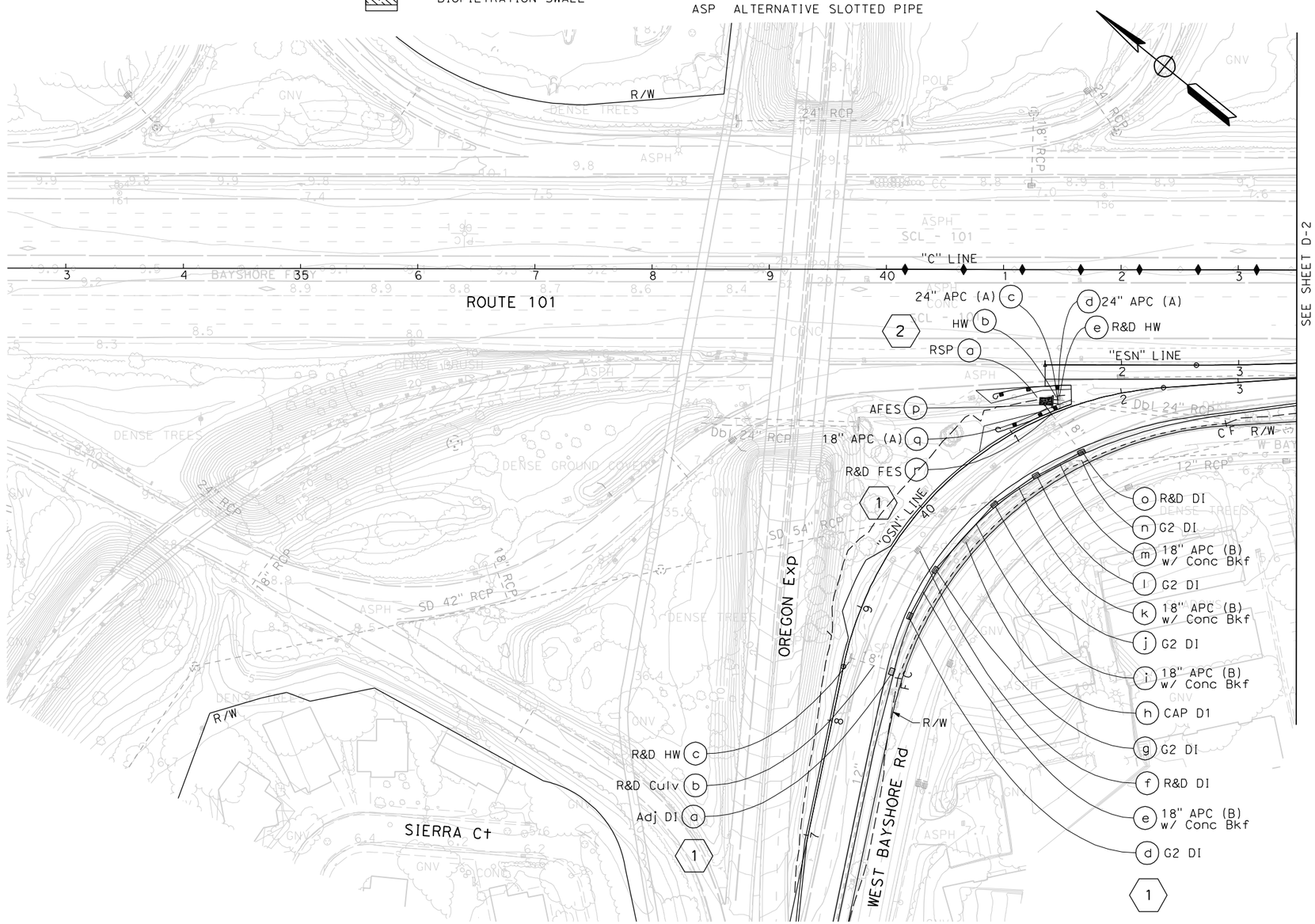
- DRAINAGE SYSTEM No.
- DRAINAGE SYSTEM UNIT
- Exist SD
- Exist INLET
- Exist MH
- MH
- Adj INLET
- GRADE TO DRAIN
- UNLINED DITCH
- BIOFILTRATION SWALE

NOTES:

1. FOR UTILITIES, SEE UTILITY PLAN SHEETS.
2. FOR ABBREVIATIONS NOT SHOWN IN LEGEND, SEE STANDARD PLANS A10A & A10B.
3. FOR SYMBOLS NOT SHOWN IN LEGEND, SEE STANDARD PLANS A10C & A10D.
4. FOR FINISHED GRADE ELEVATIONS, SEE PROFILES AND CONSTRUCTION DETAILS.
5. STATION AND OFFSET TIES TO DRAINAGE STRUCTURES ARE MEASURED AS SHOWN IN THE DETAILS SHEETS.
6. LOCATIONS OF EXISTING DRAINAGE FACILITIES ARE APPROXIMATE. VERIFY LOCATION AND ELEVATION OF EXISTING DRAINAGE FACILITIES PRIOR TO MODIFYING.
7. CALTRANS DISTRICT HYDRAULICS RESERVED THE RIGHT TO REQUEST THAT DRAINAGE STRUCTURES BE "CAST-IN-PLACE" WHERE THE PRE-CAST OPTION IS NOT DEEMED TO BE APPROPRIATE. IF PRE-CAST STRUCTURES ARE USED, CONTRACTOR SHALL FIELD VERIFY ALL EXISTING PIPES PRIOR TO CASTING STRUCTURES.

ABBREVIATIONS:

w/ WITH
MH MANHOLE
ASP ALTERNATIVE SLOTTED PIPE



THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY.

DRAINAGE PLAN

SCALE 1"=50'

D-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR: HAN-BIN LIANG

CALCULATED-DESIGNED BY: CLAIRE COUGHLAN

CHECKED BY: ANALETTE OCHOA

REVISED BY / DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 12/7/2009
TIME PLOTTED => 5:51:31 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.97/52.17		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

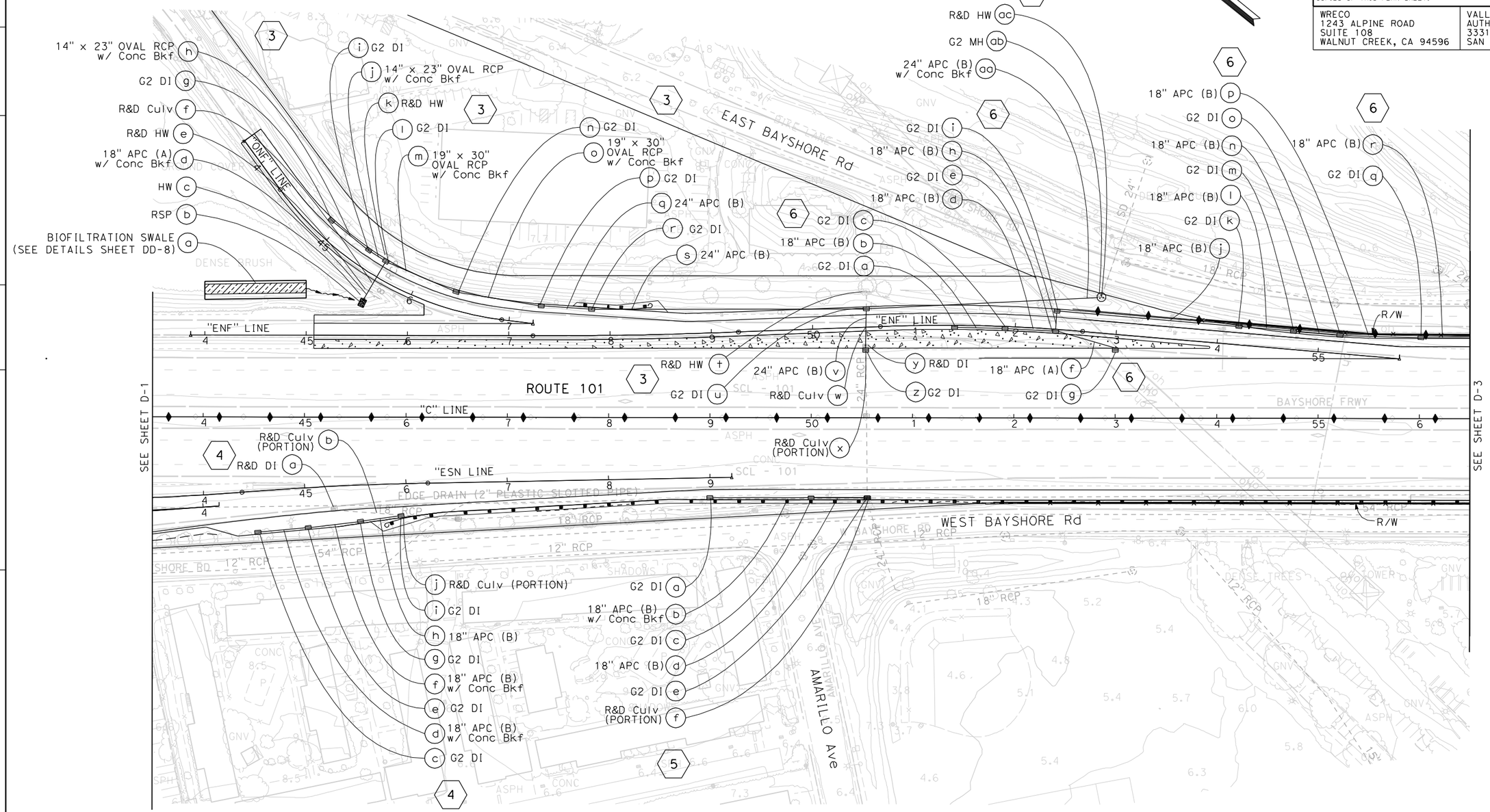
REGISTERED PROFESSIONAL ENGINEER ANALETTE OCHOA No. C 55279 Exp. 12/31/10 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

WRECO
1243 ALPINE ROAD
SUITE 108
WALNUT CREEK, CA 94596

VALLEY TRANSPORATION AUTHORITY
3331 N FIRST STREET
SAN JOSE, CA 95134

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA,
CONTACT RIGHT OF WAY ENGINEERGING AT THE DISTRICT OFFICE



FOR NOTES, ABBREVIATIONS &/OR LEGEND, SEE SHEET D-1

THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY.

DRAINAGE PLAN

SCALE 1"=50'

D-2

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY	CHECKED BY
CLAIRE COUGHLAN	ANALETTE OCHOA

CONSULTANT FUNCTIONAL SUPERVISOR
HAN-BIN LIANG

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00

DATE PLOTTED => 12/7/2009
TIME PLOTTED => 5:51:33 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.97/52.17		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

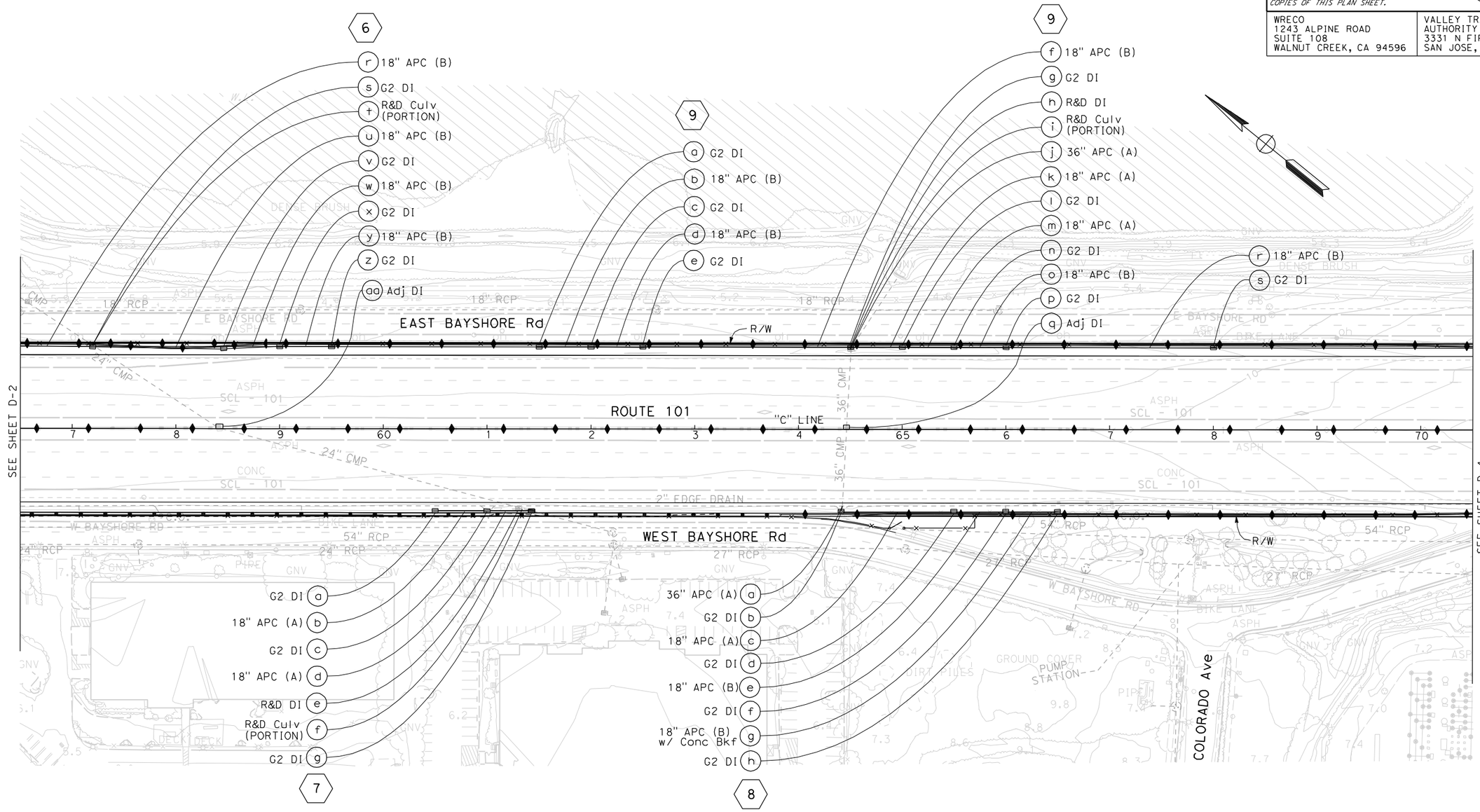
REGISTERED PROFESSIONAL ENGINEER ANALETTE OCHOA No. C 55279 Exp. 12/31/10 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

WRECO
1243 ALPINE ROAD
SUITE 108
WALNUT CREEK, CA 94596

VALLEY TRANSPORATION AUTHORITY
3331 N FIRST STREET
SAN JOSE, CA 95134

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA,
CONTACT RIGHT OF WAY ENGINEERGING AT THE DISTRICT OFFICE



FOR NOTES, ABBREVIATIONS &/OR LEGEND, SEE SHEET D-1

THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY.

DRAINAGE PLAN

SCALE 1"=50'

D-3

REVISED BY	DATE REVISED
CLAIRE COUGHLAN	ANALETTE OCHOA
CALCULATED-DESIGNED BY	CHECKED BY
CONSULTANT FUNCTIONAL SUPERVISOR	HAN-BIN LIANG

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00

DATE PLOTTED => 12/7/2009
TIME PLOTTED => 5:51:37 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.97/52.17		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

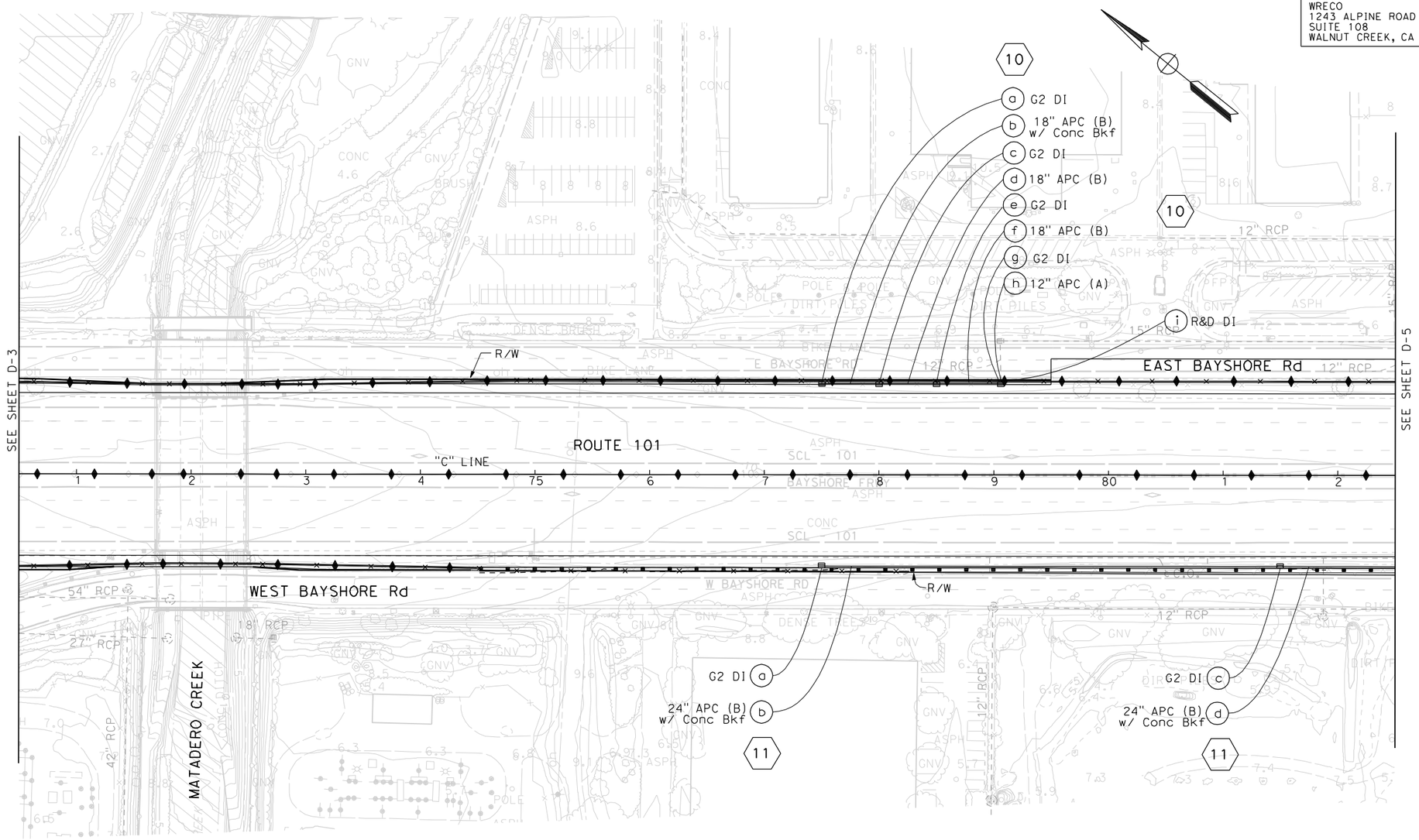
REGISTERED PROFESSIONAL ENGINEER ANALETTE OCHOA No. C 55279 Exp. 12/31/10 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

WRECO
1243 ALPINE ROAD
SUITE 108
WALNUT CREEK, CA 94596

VALLEY TRANSPORATION AUTHORITY
3331 N FIRST STREET
SAN JOSE, CA 95134

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA,
CONTACT RIGHT OF WAY ENGINEERGING AT THE DISTRICT OFFICE



FOR NOTES, ABBREVIATIONS &/OR LEGEND, SEE SHEET D-1

THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY.

DRAINAGE PLAN

SCALE 1"=50'

D-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR: HAN-BIN LIANG

CALCULATED-DESIGNED BY: CLAIRE COUGHLAN

CHECKED BY: ANALETTE OCHOA

REVISED BY | DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 12/7/2009
TIME PLOTTED => 5:51:39 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.97/52.17		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

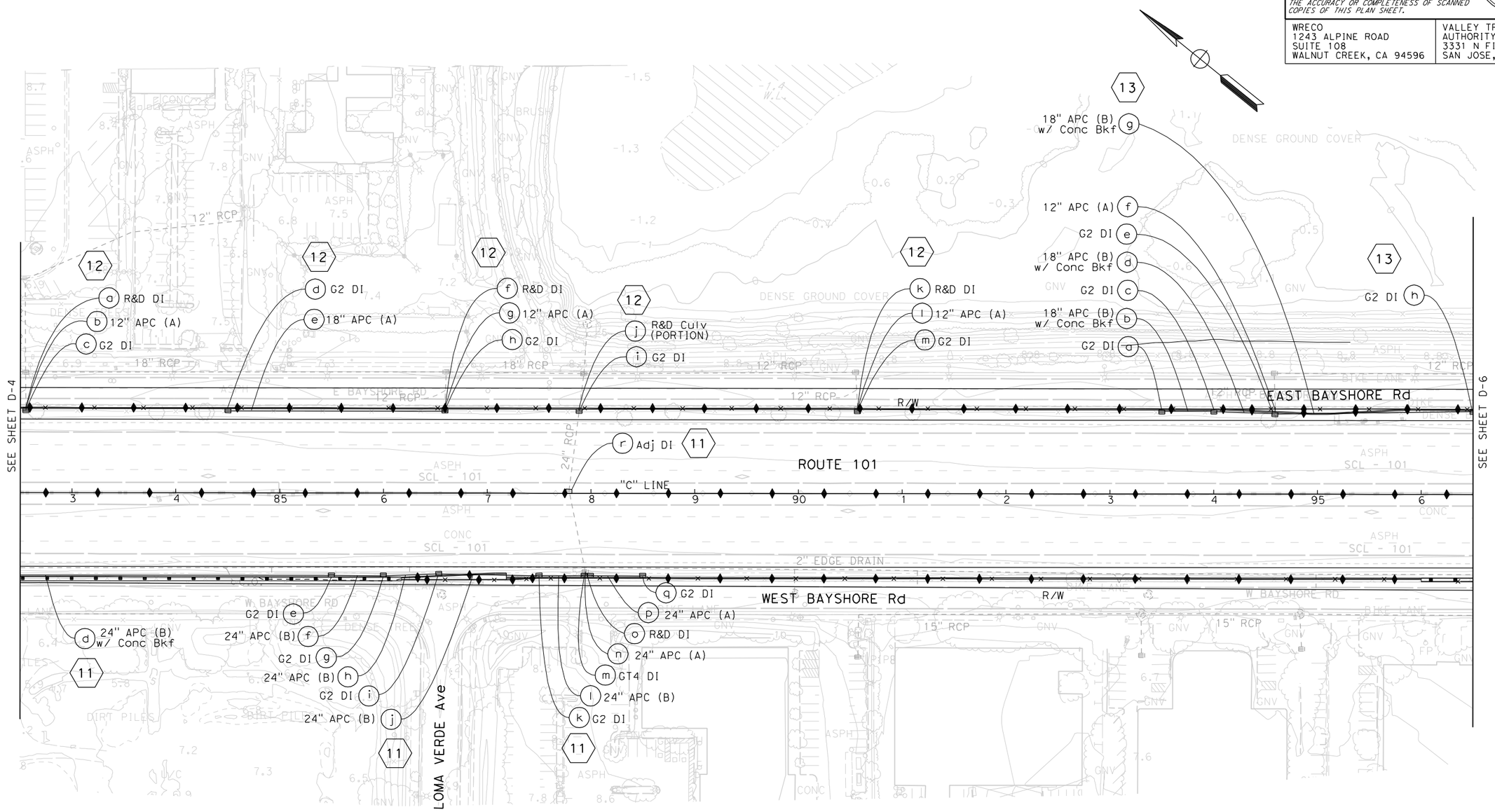
REGISTERED PROFESSIONAL ENGINEER ANALETTE OCHOA No. C 55279 Exp. 12/31/10 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

WRECO
1243 ALPINE ROAD
SUITE 108
WALNUT CREEK, CA 94596

VALLEY TRANSPORATION AUTHORITY
3331 N FIRST STREET
SAN JOSE, CA 95134

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA,
CONTACT RIGHT OF WAY ENGINEERGING AT THE DISTRICT OFFICE



FOR NOTES, ABBREVIATIONS &/OR LEGEND, SEE SHEET D-1

THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY.

DRAINAGE PLAN

SCALE 1"=50'

D-5

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY	CLAIRE COUGHLAN
CHECKED BY	ANALETTE OCHOA

CONSULTANT FUNCTIONAL SUPERVISOR: HAN-BIN LIANG

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00

DATE PLOTTED => 12/7/2009
TIME PLOTTED => 5:51:40 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.97/52.17		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

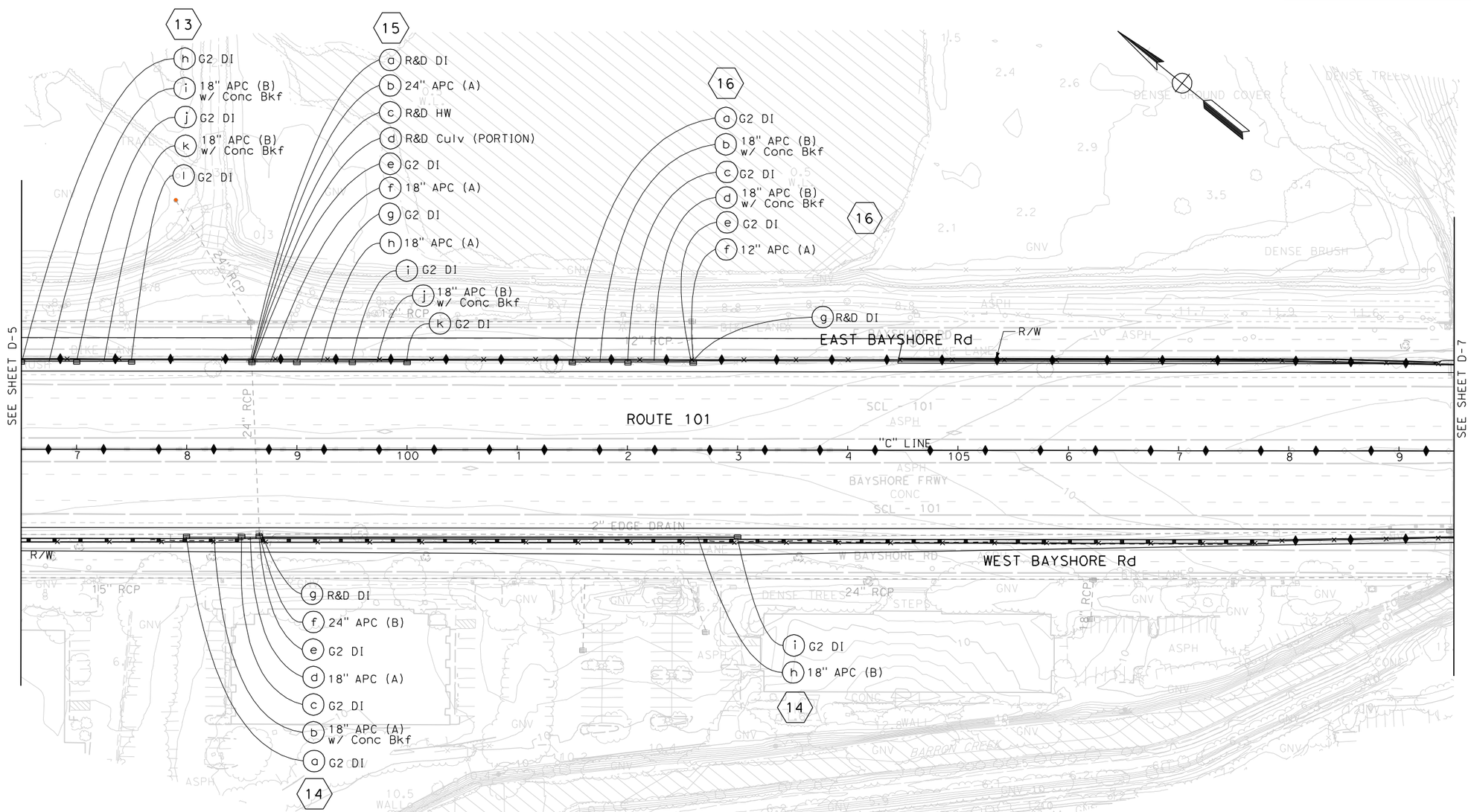
REGISTERED PROFESSIONAL ENGINEER ANALETTE OCHOA No. C 55279 Exp. 12/31/10 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

WRECO
1243 ALPINE ROAD
SUITE 108
WALNUT CREEK, CA 94596

VALLEY TRANSPORATION AUTHORITY
3331 N FIRST STREET
SAN JOSE, CA 95134

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA,
CONTACT RIGHT OF WAY ENGINEERGING AT THE DISTRICT OFFICE



DRAINAGE PLAN

SCALE 1" = 50'

FOR NOTES, ABBREVIATIONS &/OR LEGEND, SEE SHEET D-1

THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY.

D-6

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR: HAN-BIN LIANG

CALCULATED-DESIGNED BY: CLAIRE COUGHLAN

CHECKED BY: ANALETTE OCHOA

REVISED BY / DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 12/7/2009
TIME PLOTTED => 5:51:41 PM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => claire_coughlan
DGN FILE => ...\Dwg\pl\44a330ia006.dgn

CU 04235

EA 4A3301

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.97/52.17		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

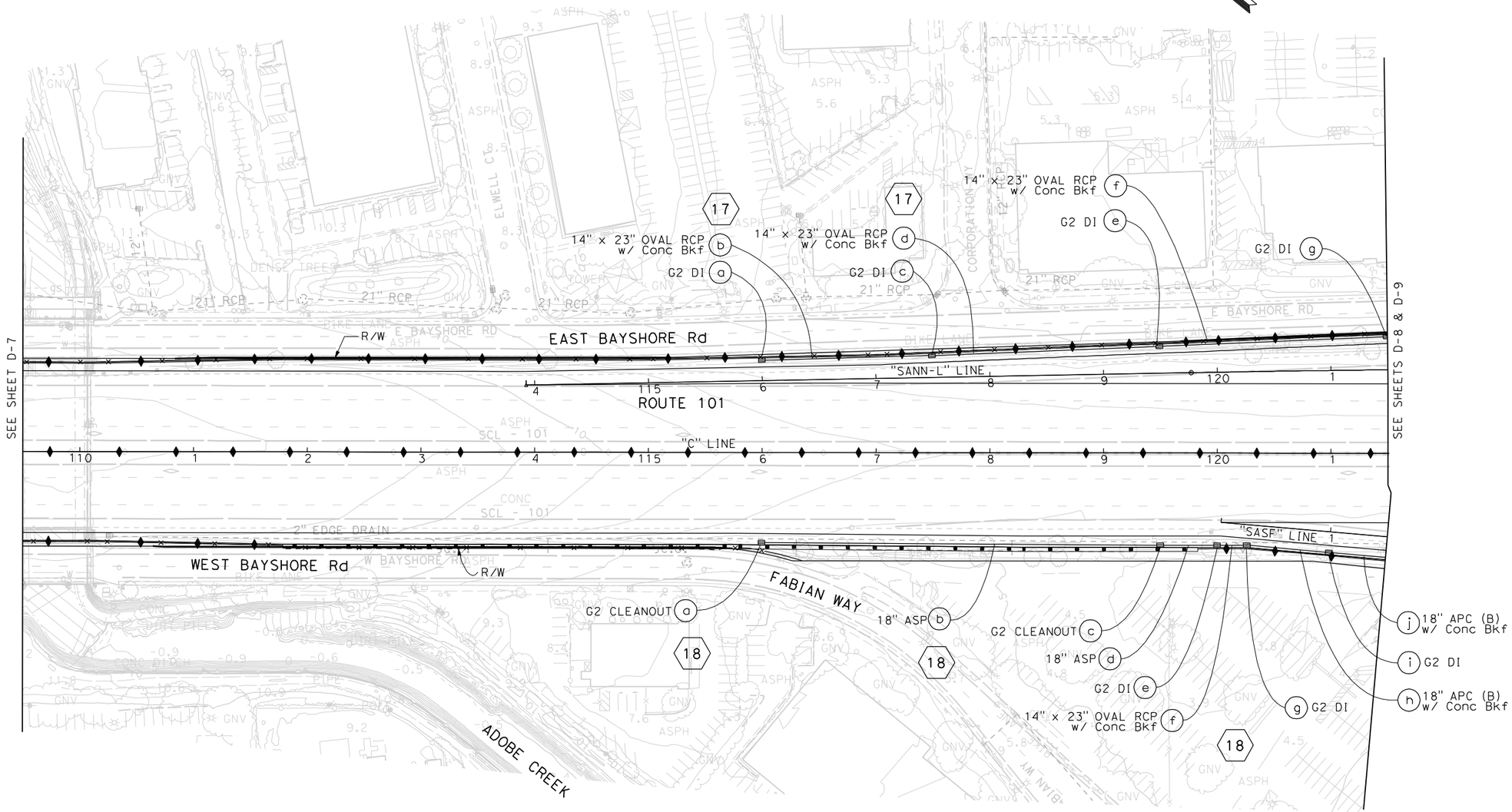
REGISTERED PROFESSIONAL ENGINEER ANALETTE OCHOA No. C 55279 Exp. 12/31/10 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

WRECO
1243 ALPINE ROAD
SUITE 108
WALNUT CREEK, CA 94596

VALLEY TRANSPORATION AUTHORITY
3331 N FIRST STREET
SAN JOSE, CA 95134

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA,
CONTACT RIGHT OF WAY ENGINEERGING AT THE DISTRICT OFFICE



FOR NOTES, ABBREVIATIONS &/OR LEGEND, SEE SHEET D-1

THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY.

DRAINAGE PLAN

SCALE 1"=50'

D-7

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR: HAN-BIN LIANG

CALCULATED-DESIGNED BY: CLAIRE COUGHLAN

CHECKED BY: ANALETTE OCHOA

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 12/7/2009
TIME PLOTTED => 5:51:42 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.97/52.17		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

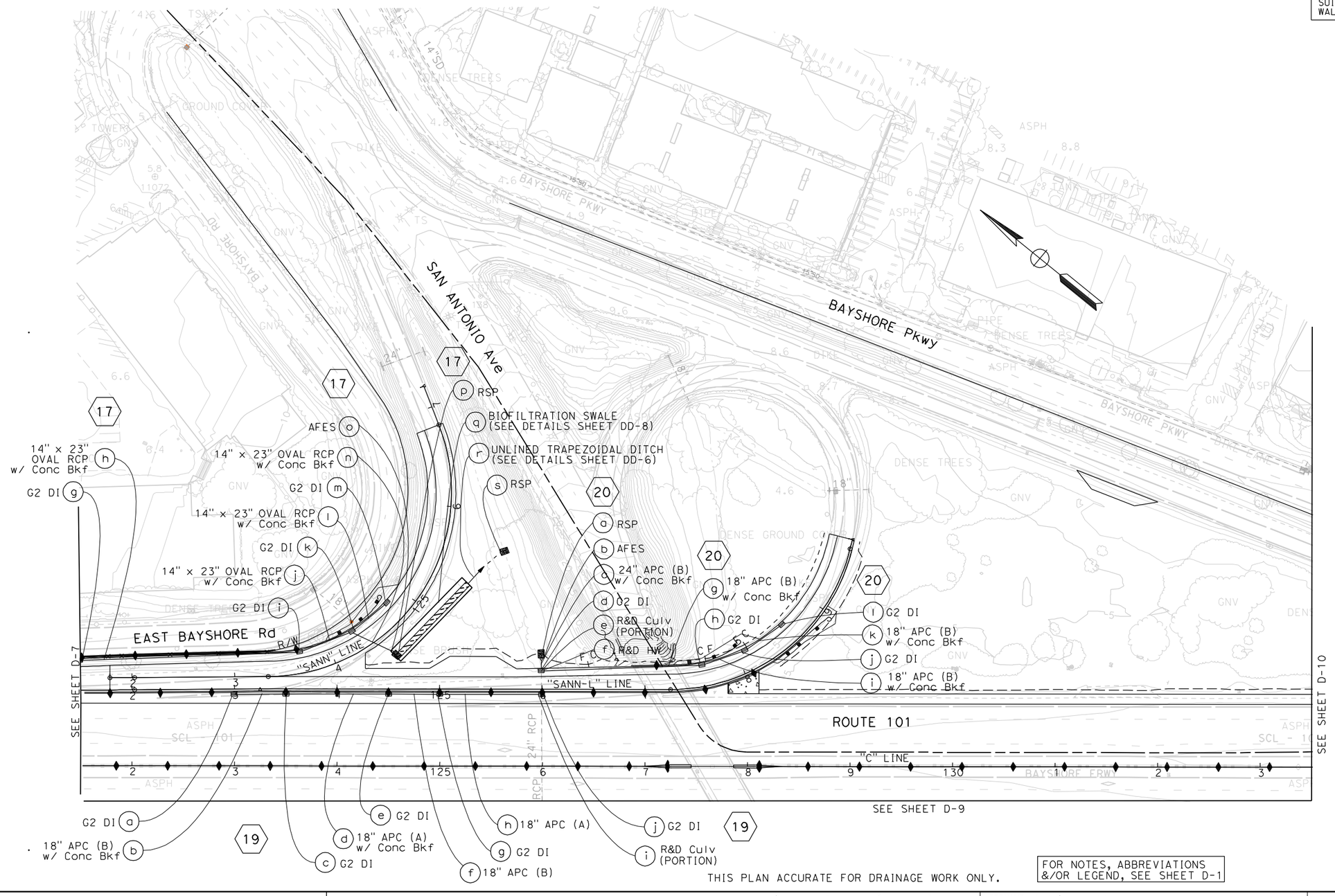
REGISTERED PROFESSIONAL ENGINEER ANALETTE OCHOA No. C 55279 Exp. 12/31/10 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

WRECO
1243 ALPINE ROAD
SUITE 108
WALNUT CREEK, CA 94596

VALLEY TRANSPORATION AUTHORITY
3331 N FIRST STREET
SAN JOSE, CA 95134

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA,
CONTACT RIGHT OF WAY ENGINEERGING AT THE DISTRICT OFFICE



THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY.

FOR NOTES, ABBREVIATIONS &/OR LEGEND, SEE SHEET D-1

DRAINAGE PLAN

SCALE 1"=50'

D-8

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR: HAN-BIN LIANG

CALCULATED-DESIGNED BY: CLAIRE COUGHLAN

CHECKED BY: ANALETTE OCHOA

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 12/7/2009
TIME PLOTTED => 5:51:43 PM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => claire_coughlan
DGN FILE => ...\Dwg\pl\44a330ia008.dgn

CU 04235

EA 4A3301

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.97/52.17		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

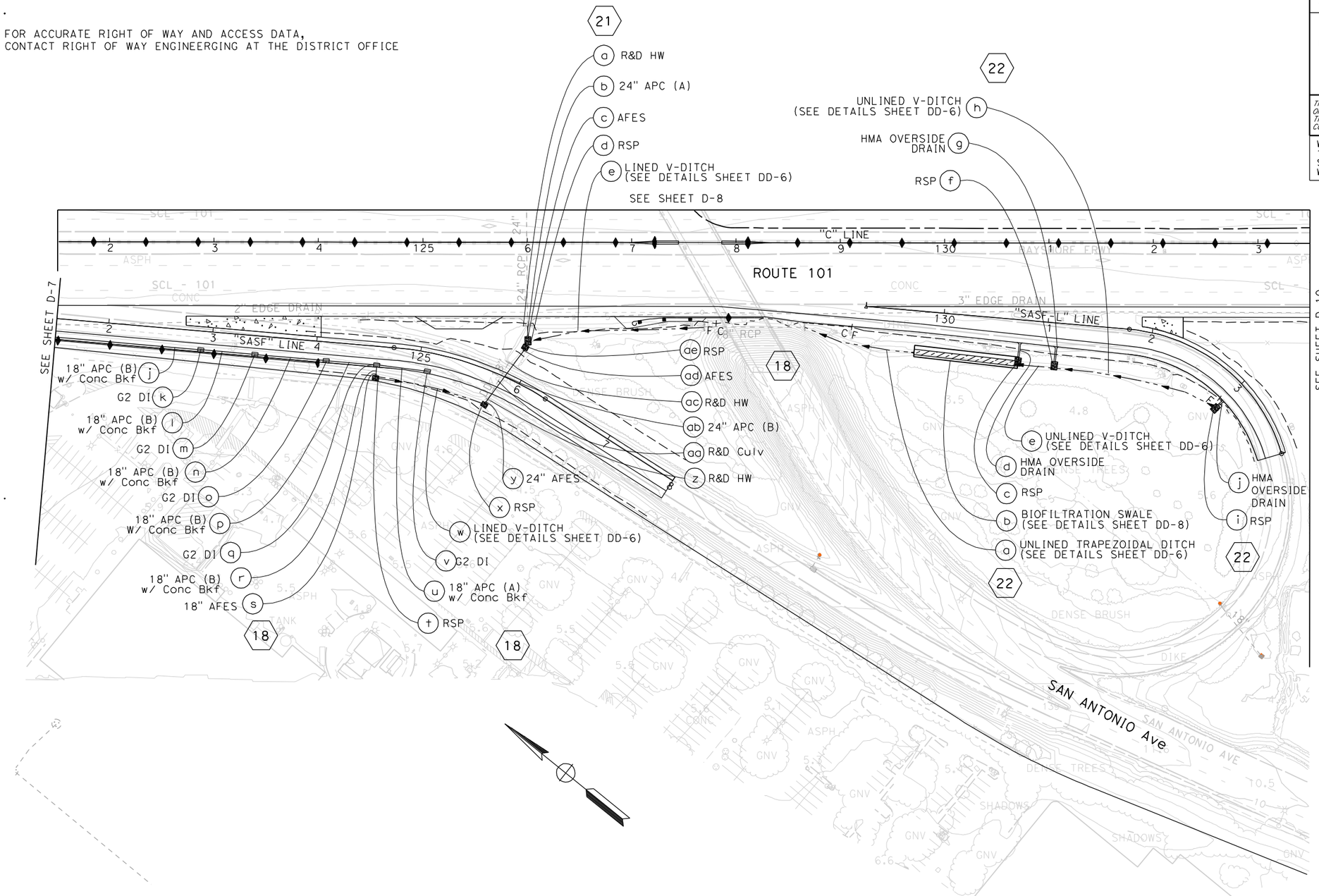
REGISTERED PROFESSIONAL ENGINEER ANALETTE OCHOA No. C 55279 Exp. 12/31/10 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

WRECO
1243 ALPINE ROAD
SUITE 108
WALNUT CREEK, CA 94596

VALLEY TRANSPORATION AUTHORITY
3331 N FIRST STREET
SAN JOSE, CA 95134

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA,
CONTACT RIGHT OF WAY ENGINEERGING AT THE DISTRICT OFFICE



FOR NOTES, ABBREVIATIONS &/OR LEGEND, SEE SHEET D-1

THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY.

DRAINAGE PLAN

SCALE 1"=50'

D-9

REVISED BY	DATE REVISED
CLAIRE COUGHLAN	ANALETTE OCHOA
CALCULATED-DESIGNED BY	CHECKED BY
CONSULTANT FUNCTIONAL SUPERVISOR	HAN-BIN LIANG

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00 | DATE PLOTTED => 12/7/2009 TIME PLOTTED => 5:51:44 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.97/52.17		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

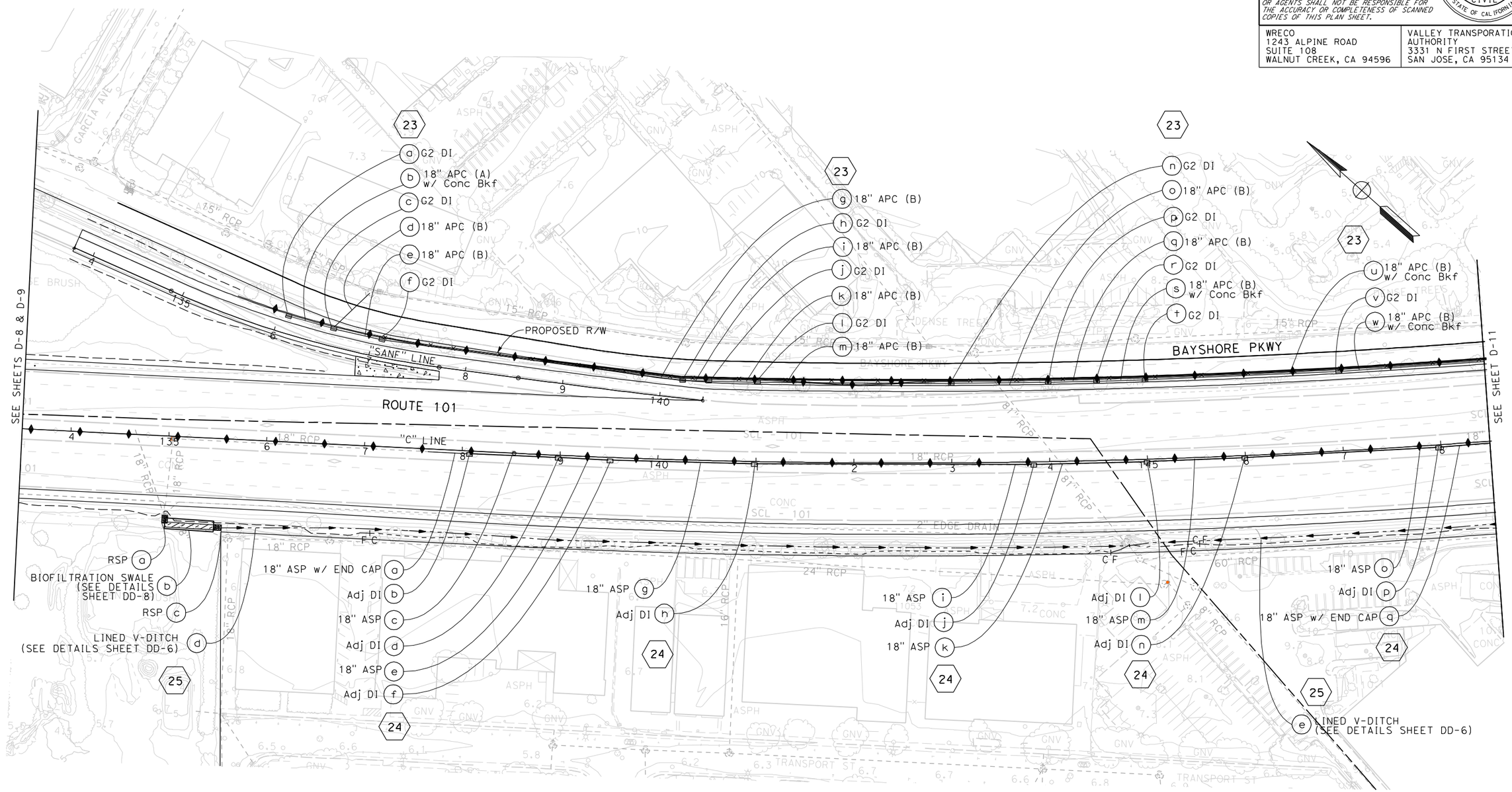
REGISTERED PROFESSIONAL ENGINEER ANALETTE OCHOA No. C 55279 Exp. 12/31/10 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

WRECO
1243 ALPINE ROAD
SUITE 108
WALNUT CREEK, CA 94596

VALLEY TRANSPORATION AUTHORITY
3331 N FIRST STREET
SAN JOSE, CA 95134

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA,
CONTACT RIGHT OF WAY ENGINEERGING AT THE DISTRICT OFFICE



FOR NOTES, ABBREVIATIONS &/OR LEGEND, SEE SHEET D-1

THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY.

DRAINAGE PLAN

SCALE 1"=50'

D-10

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY	CHECKED BY
CLAIRE COUGHLAN	ANALETTE OCHOA

CONSULTANT FUNCTIONAL SUPERVISOR: HAN-BIN LIANG

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00

DATE PLOTTED => 12/7/2009
TIME PLOTTED => 5:51:45 PM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => claire_coughlan
DGN FILE => ...\Dwg\pl\44a330ia010.dgn

CU 04235

EA 4A3301

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.97/52.17		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

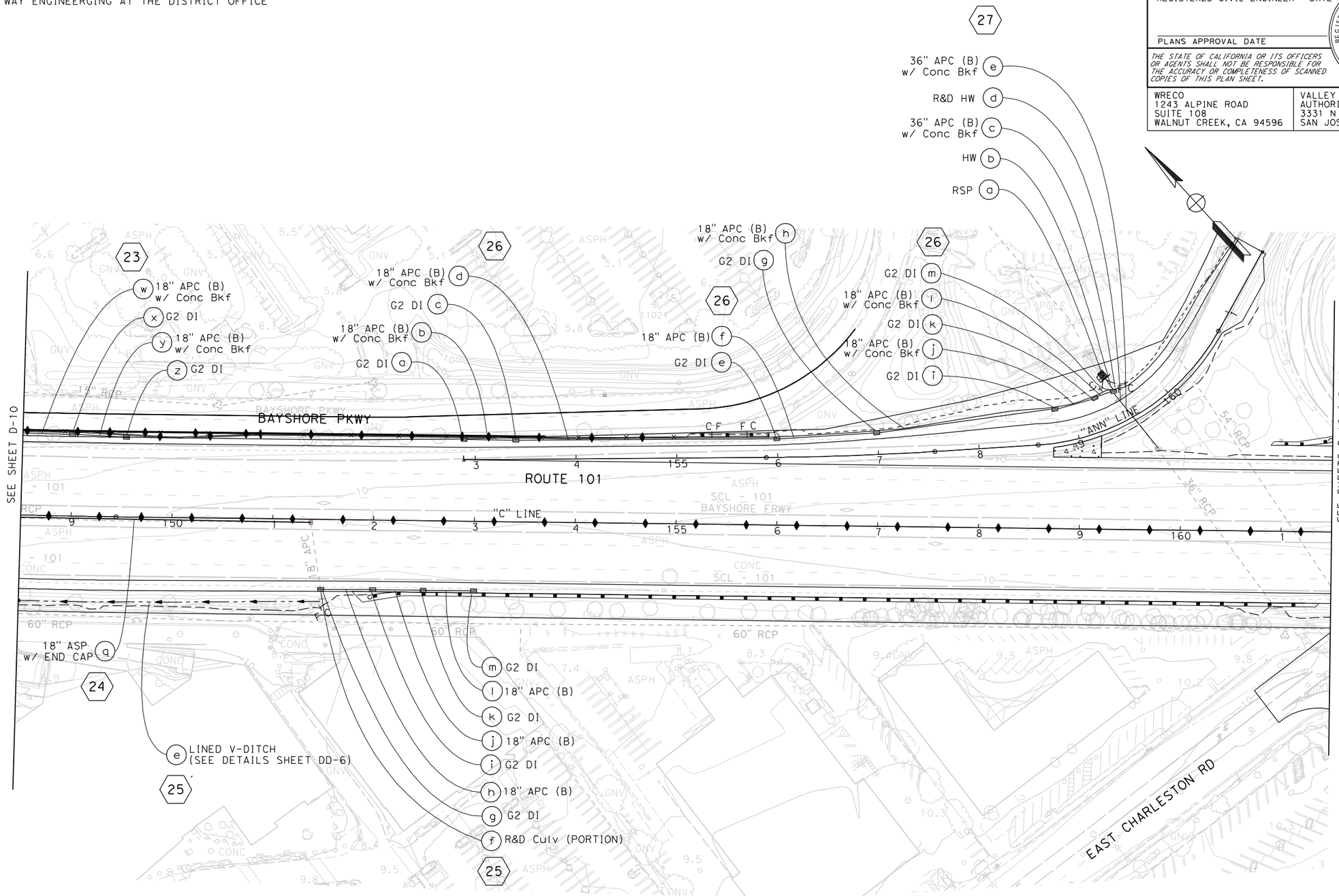
REGISTERED PROFESSIONAL ENGINEER ANALETTE OCHOA No. C 55279 Exp. 12/31/10 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

WRECO
1243 ALPINE ROAD
SUITE 108
WALNUT CREEK, CA 94596

VALLEY TRANSPORATION AUTHORITY
3331 N FIRST STREET
SAN JOSE, CA 95134

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA,
CONTACT RIGHT OF WAY ENGINEERGING AT THE DISTRICT OFFICE



FOR NOTES, ABBREVIATIONS &/OR LEGEND, SEE SHEET D-1

THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY.

DRAINAGE PLAN

SCALE: 1"=50'

D-11

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY	CHECKED BY
CLAIRE COUGHLAN	ANALETTE OCHOA

CONSULTANT FUNCTIONAL SUPERVISOR
HAN-BIN LIANG

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00 DATE PLOTTED => 12/7/2009 TIME PLOTTED => 5:51:47 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.97/52.17		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

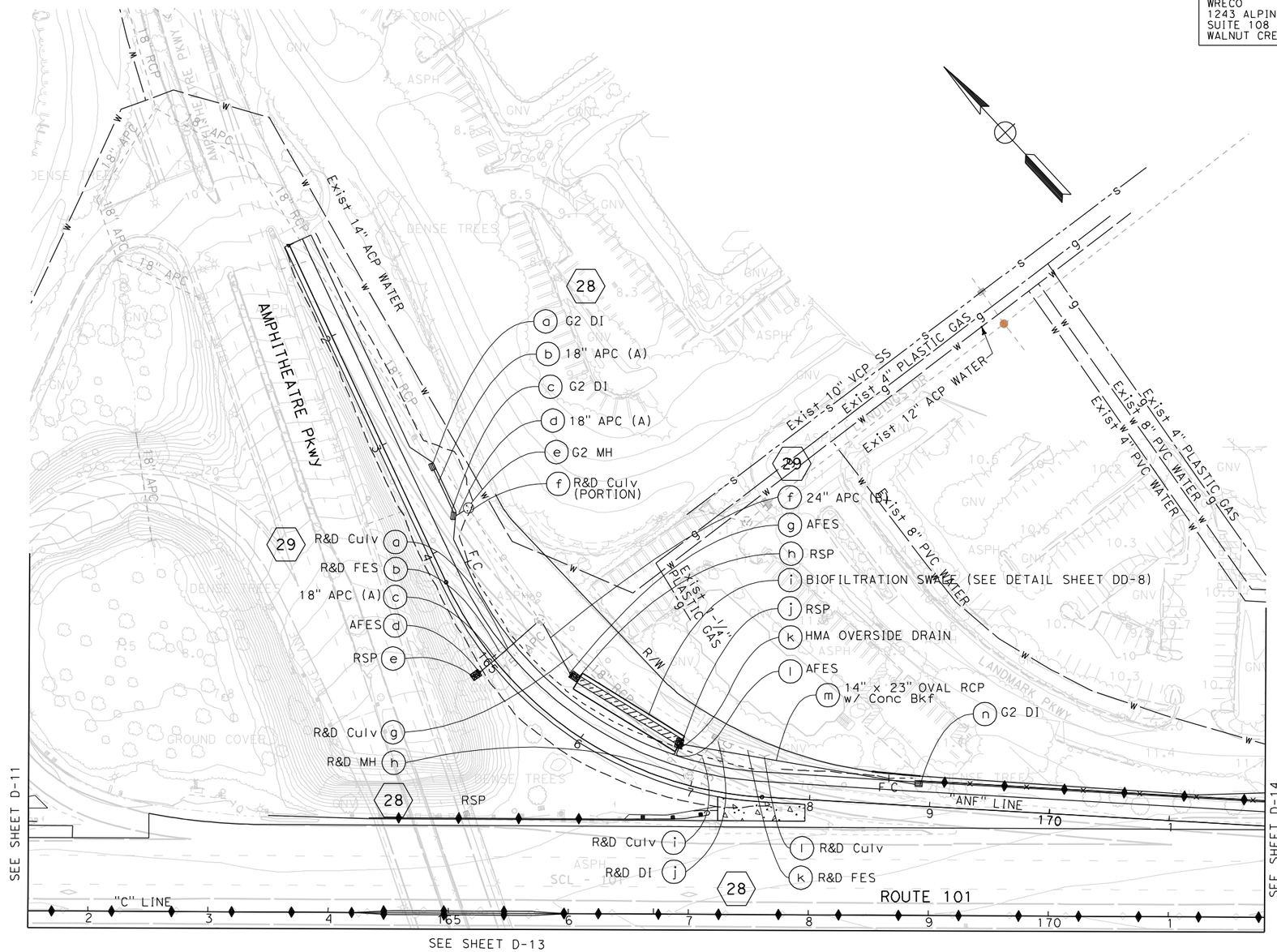
REGISTERED PROFESSIONAL ENGINEER ANALETTE OCHOA No. C 55279 Exp. 12/31/10 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

WRECO
1243 ALPINE ROAD
SUITE 108
WALNUT CREEK, CA 94596

VALLEY TRANSPORATION AUTHORITY
3331 N FIRST STREET
SAN JOSE, CA 95134

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA,
CONTACT RIGHT OF WAY ENGINEERGING AT THE DISTRICT OFFICE



FOR NOTES, ABBREVIATIONS &/OR LEGEND, SEE SHEET D-1

THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY.

DRAINAGE PLAN

SCALE 1"=50'

D-12

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR: HAN-BIN LIANG

CALCULATED-DESIGNED BY: CLAIRE COUGHLAN

CHECKED BY: ANALETTE OCHOA

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 12/7/2009
TIME PLOTTED => 5:51:56 PM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => claire_coughlan
DGN FILE => ...\Dwg\pl\44a330ia012.dgn

CU 04235

EA 4A3301

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.97/52.17		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

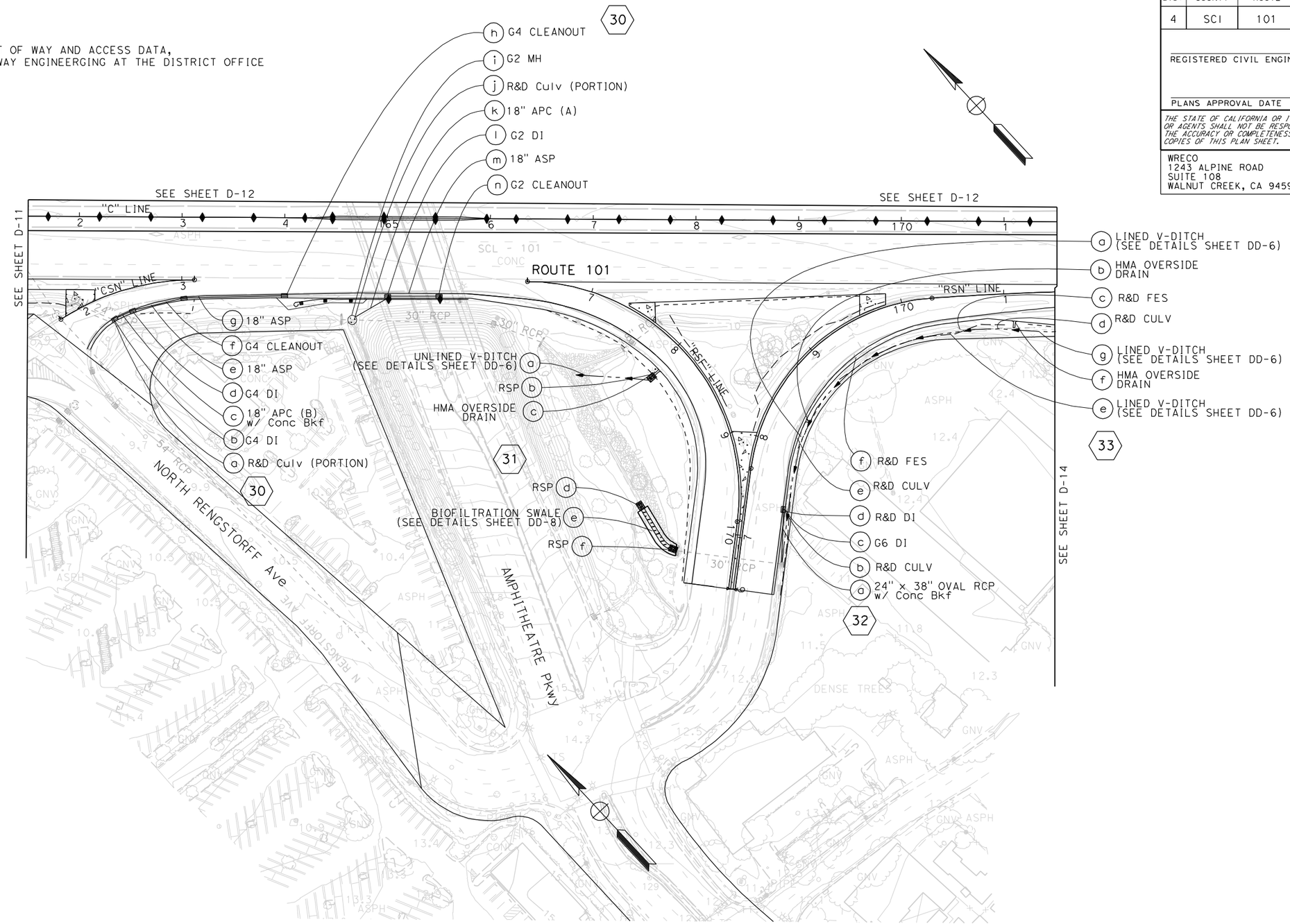
REGISTERED PROFESSIONAL ENGINEER ANALETTE OCHOA No. C 55279 Exp. 12/31/10 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

WRECO
1243 ALPINE ROAD
SUITE 108
WALNUT CREEK, CA 94596

VALLEY TRANSPORATION AUTHORITY
3331 N FIRST STREET
SAN JOSE, CA 95134

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA,
CONTACT RIGHT OF WAY ENGINEERGING AT THE DISTRICT OFFICE



DRAINAGE PLAN

SCALE 1"=50'

D-13

FOR NOTES, ABBREVIATIONS &/OR LEGEND, SEE SHEET D-1

THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR: HAN-BIN LIANG

CALCULATED-DESIGNED BY: CLAIRE COUGHLAN

CHECKED BY: ANALETTE OCHOA

REVISED BY / DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 12/7/2009
TIME PLOTTED => 5:52:02 PM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => claire_coughlan
DGN FILE => ...\Dwg\pl\44a330ia013.dgn

CU 04235

EA 4A3301

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.97/52.17		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

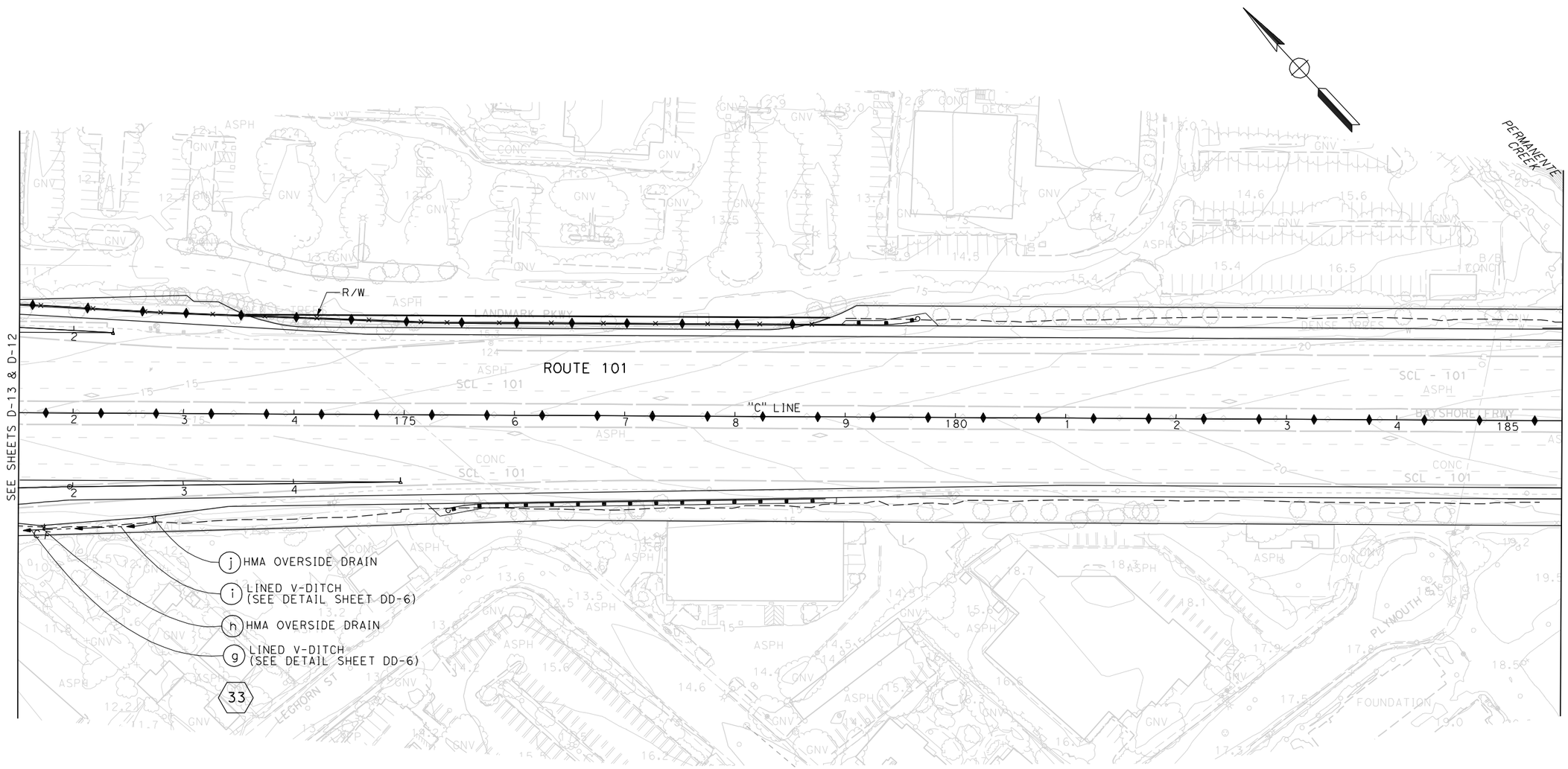
REGISTERED PROFESSIONAL ENGINEER ANALETTE OCHOA No. C 55279 Exp. 12/31/10 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

WRECO
1243 ALPINE ROAD
SUITE 108
WALNUT CREEK, CA 94596

VALLEY TRANSPORATION AUTHORITY
3331 N FIRST STREET
SAN JOSE, CA 95134

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA,
CONTACT RIGHT OF WAY ENGINEERGING AT THE DISTRICT OFFICE



DRAINAGE PLAN

SCALE 1"=50'

D-14

FOR NOTES, ABBREVIATIONS &/OR LEGEND, SEE SHEET D-1

THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR: HAN-BIN LIANG

CALCULATED-DESIGNED BY: CLAIRE COUGHLAN

CHECKED BY: ANALETTE OCHOA

REVISED BY | DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 12/7/2009
TIME PLOTTED => 5:52:03 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.97/52.17		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

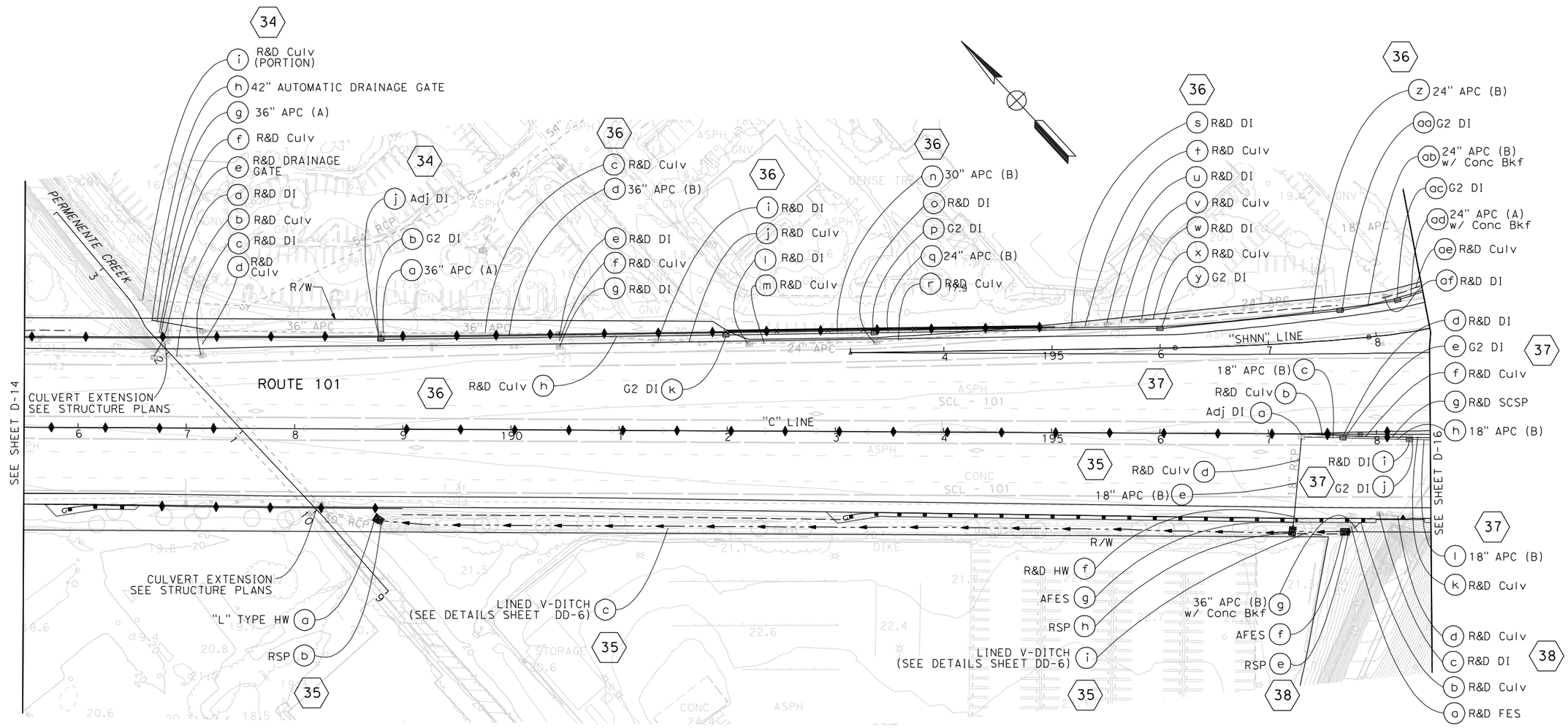
REGISTERED PROFESSIONAL ENGINEER ANALETTE OCHOA No. C 55279 Exp. 12/31/10 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

WRECO
1243 ALPINE ROAD
SUITE 108
WALNUT CREEK, CA 94596

VALLEY TRANSPORATION AUTHORITY
3331 N FIRST STREET
SAN JOSE, CA 95134

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA,
CONTACT RIGHT OF WAY ENGINEERGING AT THE DISTRICT OFFICE



FOR NOTES, ABBREVIATIONS &/OR LEGEND, SEE SHEET D-1

THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY.

DRAINAGE PLAN

SCALE 1"=50'

D-15

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY	CHECKED BY
CLAIRE COUGHLAN	ANALETTE OCHOA

CONSULTANT FUNCTIONAL SUPERVISOR: HAN-BIN LIANG

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00

DATE PLOTTED => 12/7/2009
TIME PLOTTED => 5:52:04 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.97/52.17		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

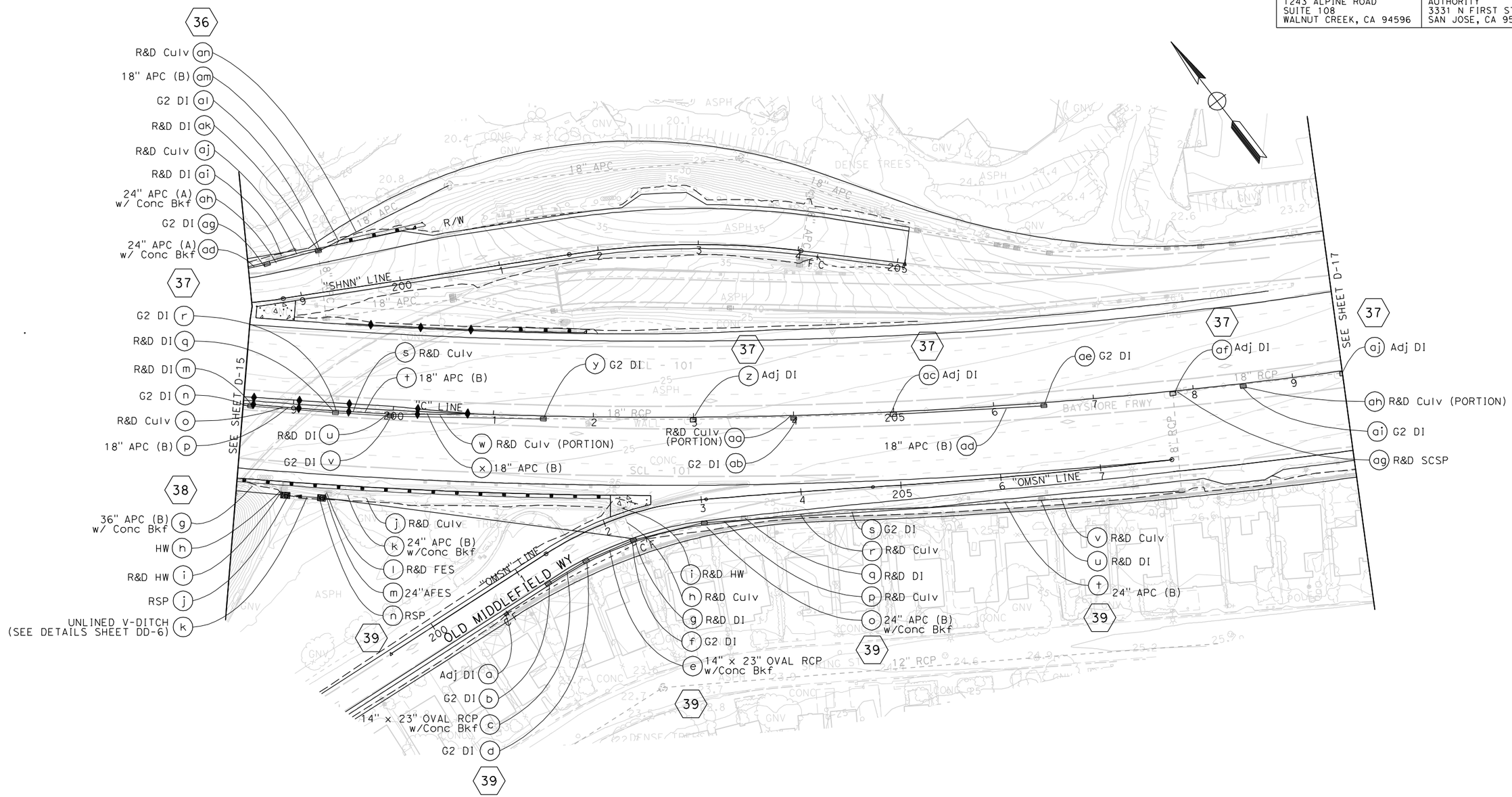
REGISTERED PROFESSIONAL ENGINEER ANALETTE OCHOA No. C 55279 Exp. 12/31/10 CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

WRECO
1243 ALPINE ROAD
SUITE 108
WALNUT CREEK, CA 94596

VALLEY TRANSPORATION AUTHORITY
3331 N FIRST STREET
SAN JOSE, CA 95134

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA,
CONTACT RIGHT OF WAY ENGINEERGING AT THE DISTRICT OFFICE



FOR NOTES, ABBREVIATIONS &/OR LEGEND, SEE SHEET D-1

THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY.

DRAINAGE PLAN

SCALE 1"=50'

D-16

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY	CHECKED BY
CLAIRE COUGHLAN	ANALETTE OCHOA

CONSULTANT FUNCTIONAL SUPERVISOR: HAN-BIN LIANG

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00

DATE PLOTTED => 12/7/2009
TIME PLOTTED => 5:52:06 PM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => claire_coughlan
DGN FILE => ...\Dwg\pl\44a330ia016.dgn

CU 04235

EA 4A3301

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.97/52.17		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

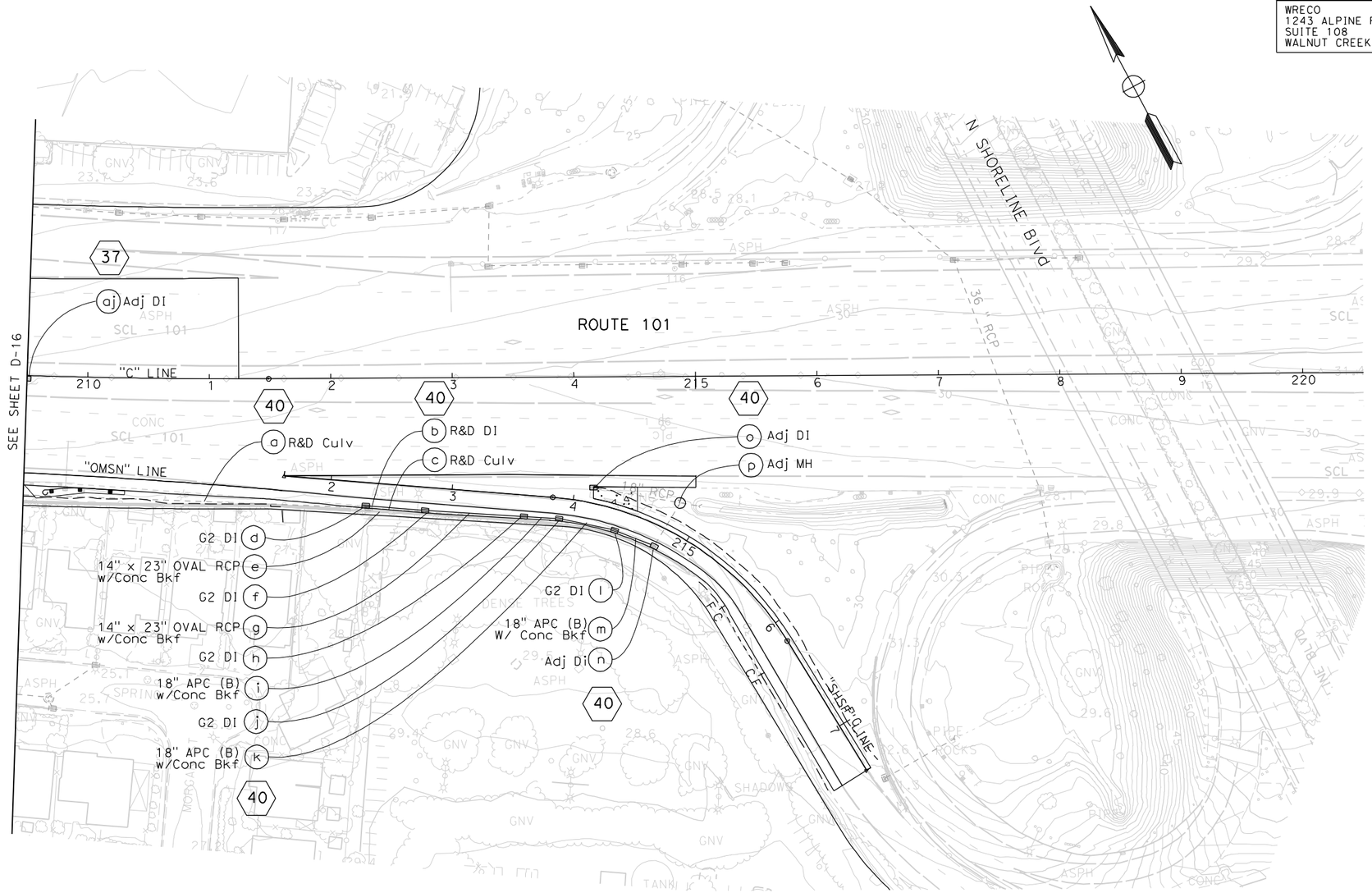
REGISTERED PROFESSIONAL ENGINEER
ANALETTE OCHOA
No. C 55279
Exp. 12/31/10
CIVIL
STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

WRECO
1243 ALPINE ROAD
SUITE 108
WALNUT CREEK, CA 94596

VALLEY TRANSPORATION AUTHORITY
3331 N FIRST STREET
SAN JOSE, CA 95134

FOR ACCURATE RIGHT OF WAY AND ACCESS DATA,
CONTACT RIGHT OF WAY ENGINEERGING AT THE DISTRICT OFFICE



DRAINAGE PLAN

SCALE 1"=50'

D-17

FOR NOTES, ABBREVIATIONS &/OR LEGEND, SEE SHEET D-1

THIS PLAN ACCURATE FOR DRAINAGE WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR: HAN-BIN LIANG

CALCULATED-DESIGNED BY: CLAIRE COUGHLAN

CHECKED BY: ANALETTE OCHOA

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 12/7/2009
TIME PLOTTED => 5:52:09 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCl	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

LEGEND

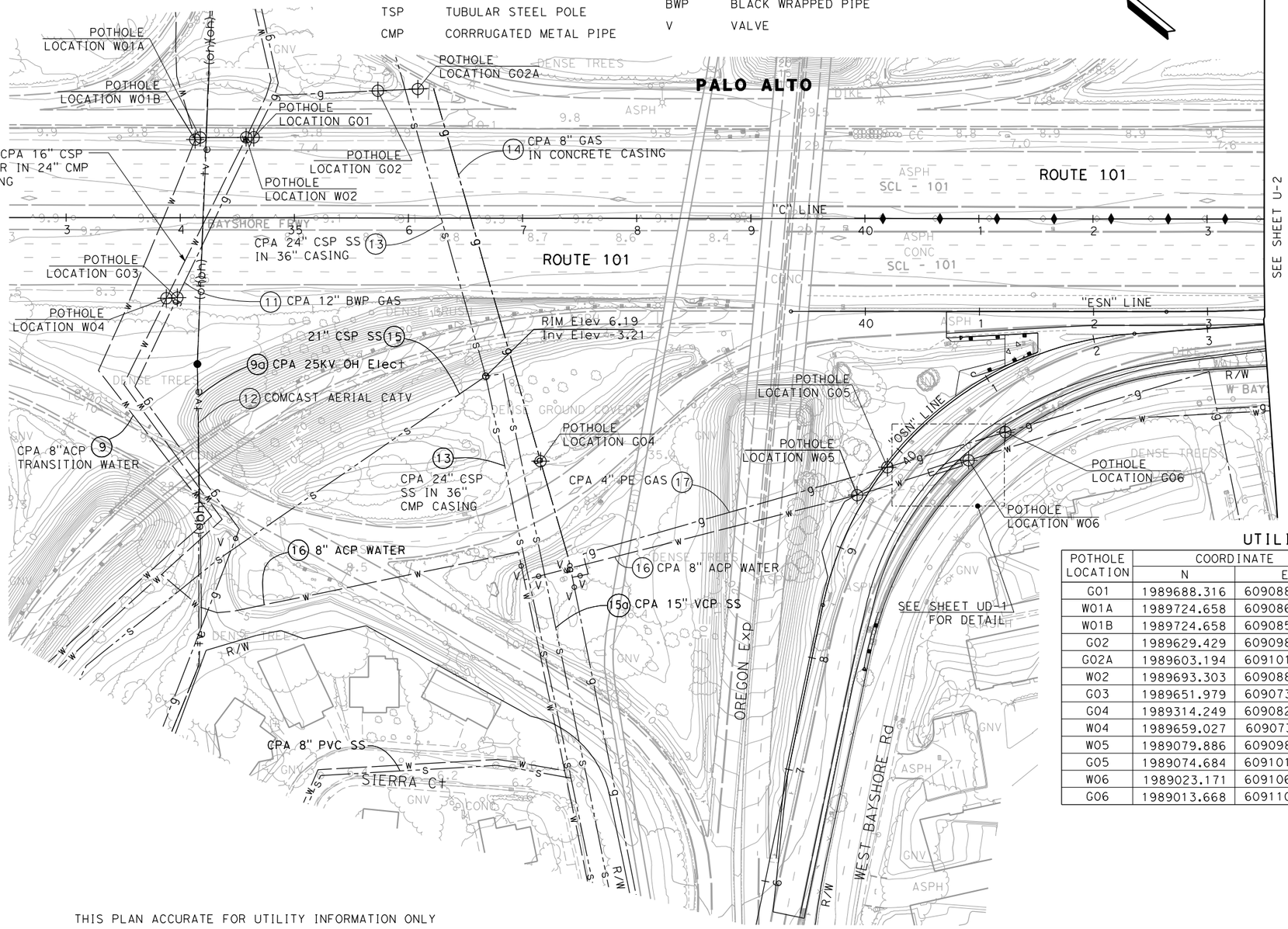
—w—	WATER LINE - EXISTING
—tv—	U/G CABLE TV LINE - EXISTING
—e—	U/G ELECTRICAL CONDUIT - EXISTING
—s—	SANITARY SEWER LINE - EXISTING
—g—	NATURAL GAS LINE - EXISTING
—t—	U/G TELEPHONE LINE - EXISTING
—tc—	U/G COMMUNICATION LINE - EXISTING
—oh—	AERIAL ELECTRICAL LINE - EXISTING
—tv—	AERIAL CABLE TV LINE - EXISTING
⊕	POTHOLE

ABBREVIATIONS

F/O	FIBER OPTIC
KV	KILOVOLTS
CATV	CABLE TELEVISION
OH	OVERHEAD
U/G	UNDERGROUND
PH	POTHOLE
SS	SANITARY SEWER
MH	MANHOLE
CPA	CITY OF PALO ALTO
CMV	CITY OF MOUNTAIN VIEW
LDSP	UGHT DUTY STEEL POLE
TSP	TUBULAR STEEL POLE
CMP	CORRRUGATED METAL PIPE
ACP	ASBESTOS CONCRETE PIPE
RCP	REINFORCED CONCRETE PIPE
VCP	VITRIFIED CONCRETE PIPE
PVC	POLYVINYL CHLORIDE PIPE
CSP	CORRUGATED STEEL PIPE
ABS	ACRYLONITRILE BUTADIENE STYRENE
CIP	CORRUGATED IRON PIPE
HDPE	HIGH DENSITY POLYETYLENE
DIP	DUCTILE IRON PIPE
CLA	CITY OF LOS ALTOS
PCP	POLYMER CONCRETE PIPE
BWP	BLACK WRAPPED PIPE
V	VALVE

NOTE:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. FOR UTILITY DETAIL SEE SHEETS UD-1 THROUGH UD-



UTILITY LOCATIONS

POTHOLE LOCATION	COORDINATE N	COORDINATE E	GROUND Elev	DEPTH	TYPE	SIZE (in.)	OWNER
G01	1989688.316	6090889.729	7.727	2.667	GAS	12.0	CPA
W01A	1989724.658	6090860.162	7.980	5.000	WATER	8.0	CPA
W01B	1989724.658	6090855.977	7.997	4.917	WATER	8.0	CPA
G02	1989629.429	6090989.938	8.000	4.000	GAS	8.0	CPA
G02A	1989603.194	6091013.202	10.050	8.833	GAS	8.0	CPA
W02	1989693.303	6090885.438	7.691	3.667	WATER	16.0	CPA
G03	1989651.979	6090738.384	8.430	2.667	GAS	12.0	CPA
G04	1989314.249	6090827.313	8.089	5.333	GAS	8.0	CPA
W04	1989659.027	6090731.921	8.351	5.500	WATER	16.0	CPA
W05	1989079.886	6090987.782	7.149	4.333	WATER	8.0	CPA
G05	1989074.684	6091014.500	6.740	3.583	GAS	4.0	CPA
W06	1989023.171	6091064.036	7.880	4.333	WATER	8.0	CPA
G06	1989013.668	6091103.487	7.662	4.750	GAS	4.0	CPA

UTILITY PLAN

SCALE: 1"=50'

U-1

THIS PLAN ACCURATE FOR UTILITY INFORMATION ONLY

REVISED BY | DATE REVISED

CALCULATED-DESIGNED BY | CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00 | DATE PLOTTED => 6/2/2010 TIME PLOTTED => 8:28:21 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

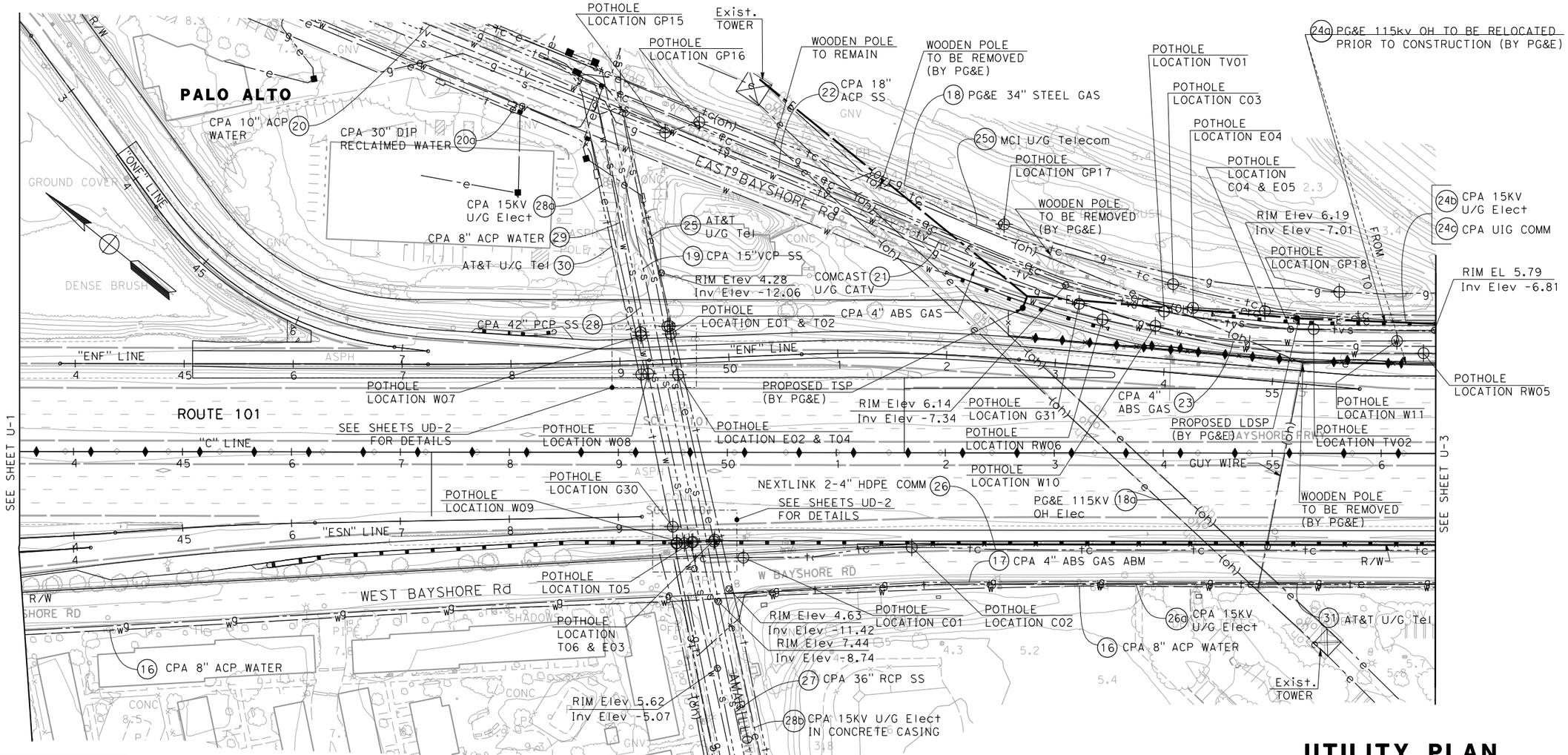
FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

UTILITY LOCATIONS

POTHOLE LOCATION	COORDINATE N	COORDINATE E	GROUND Elev	DEPTH	TYPE	SIZE (in.)	OWNER
C01	1988377.097	6091734.116	8.071	4.000	COMM	2-4.0	NEXTLINK
E01	1988558.094	6091851.735	6.755	7.000	ELEC	-	CPA
TV01	1988219.236	6092152.603	5.885	0.833	CATV	-	COMCAST
C02	1988262.873	6091838.576	8.060	4.083	COMM	2-4.0	NEXTLINK
E02	1988529.398	6091826.732	7.823	8.000	ELEC	-	CPA
T02	1988558.094	6091851.735	6.755	7.000	TEL	-	AT&T
TV02	1988102.369	6092226.422	6.014	0.125	CATV	-	COMCAST
C03	1988288.523	6092177.305	4.941	3.833	COMM	-	MCI
E03	1988408.064	6091730.306	5.538	6.000	ELEC	-	CPA

POTHOLE LOCATION	COORDINATE N	COORDINATE E	GROUND Elev	DEPTH	TYPE	SIZE (in.)	OWNER
C04	1988147.549	6092211.106	5.200	3.000	COMM	-	CPA
E04	1988200.593	6092171.956	5.104	2.250	ELEC	-	CPA
T04	1988529.398	6091826.732	7.823	8.000	TEL	-	AT&T
E05	1988147.549	6092211.106	5.200	3.000	ELEC	-	CPA
RW05	1988010.031	6092272.742	7.007	5.250	REC. WATER	30.0	CPA
T05	1988422.821	6091715.249	5.166	9.000	TEL	-	AT&T
RW06	1988258.420	6092111.250	7.863	5.667	REC. WATER	30.0	CPA
T06	1988408.064	6091730.306	5.885	6.000	TEL	-	AT&T
W07	1988580.792	6091835.494	5.982	6.167	WATER	12.0	CPA
W08	1988551.190	6091810.290	8.000	7.167	WATER	12.0	CPA
W09	1988427.420	6091710.370	5.077	4.750	WATER	12.0	CPA
W10	1988217.079	6092137.378	7.144	4.000	WATER	12.0	CPA
W11	1988036.109	6092266.114	6.473	4.000	WATER	12.0	CPA
GP15	1988678.309	6091991.944	6.195	5.167	GAS	36.0	PG&E
GP16	1988659.987	6092019.102	5.274	5.583	GAS	36.0	PG&E
GP17	1988383.628	6092112.363	5.125	3.583	GAS	36.0	PG&E
GP18	1988105.514	6092267.726	3.800	7.500	GAS	36.0	PG&E

POTHOLE LOCATION	COORDINATE N	COORDINATE E	GROUND Elev	DEPTH	TYPE	SIZE (in.)	OWNER
G30	1988445.277	6091715.332	7.570	3.667	GAS	UNKNOWN	UNKNOWN
G31	1988284.242	6092108.975	7.113	4.917	GAS	4.0	CPA



FOR NOTES, ABBREVIATIONS AND LEGEND SEE SHEET U-1.

THIS PLAN ACCURATE FOR UTILITY INFORMATION ONLY

UTILITY PLAN

SCALE: 1"=50'

U-2

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY
CHECKED BY
CONSULTANT FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00
DATE PLOTTED => 6/2/2010
TIME PLOTTED => 8:28:33 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

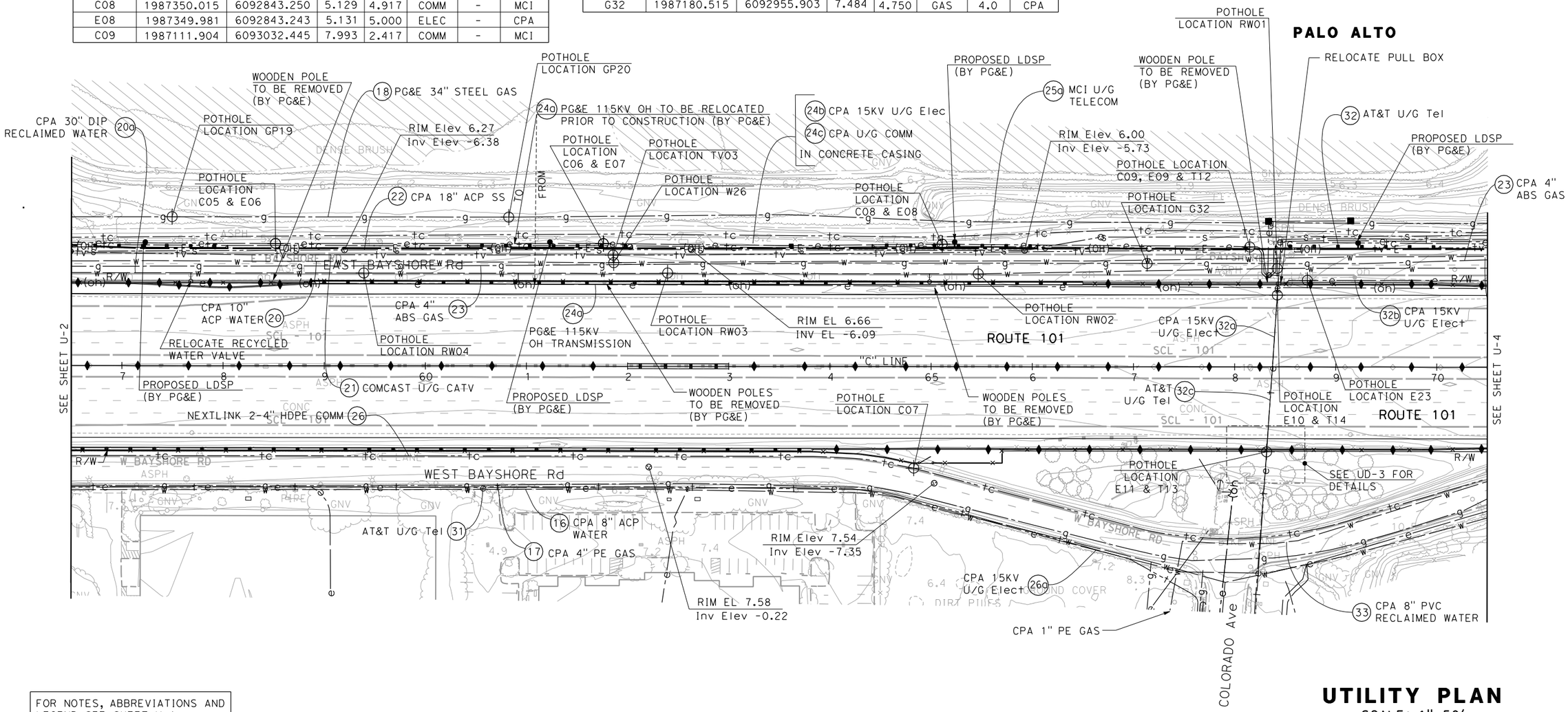
Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

UTILITY LOCATIONS

POTHOLE LOCATION	COORDINATE N	COORDINATE E	GROUND Elev	DEPTH	TYPE	SIZE (in.)	OWNER
RW01	1987077.503	6093032.934	9.425	1.250	REC.WATER	30.0	CPA
RW02	1987303.790	6092842.822	6.585	4.833	REC.WATER	30.0	CPA
RW03	1987542.964	6092650.225	7.283	3.667	REC.WATER	30.0	CPA
TV03	1987596.097	6092630.039	7.020	1.500	CATV	-	COMCAST
RW04	1987776.424	6092461.228	6.953	5.167	REC.WATER	30.0	CPA
C05	1987862.616	6092429.032	5.369	2.500	COMM	-	MCI
C06	1987610.638	6092632.865	5.941	2.917	COMM	-	MCI
E06	1987862.635	6092429.000	5.382	2.667	ELEC	-	CPA
C07	1987232.475	6092653.412	7.786	4.583	COMM	-	NEXTLINK
E07	1987610.655	6092632.880	5.848	3.250	ELEC	-	CPA
C08	1987350.015	6092843.250	5.129	4.917	COMM	-	MCI
E08	1987349.981	6092843.243	5.131	5.000	ELEC	-	CPA
C09	1987111.904	6093032.445	7.993	2.417	COMM	-	MCI

POTHOLE LOCATION	COORDINATE N	COORDINATE E	GROUND Elev	DEPTH	TYPE	SIZE (in.)	OWNER
E09	1987111.929	6093032.429	8.035	3.833	ELEC	-	CPA
E10	1987060.807	6093012.629	8.871	7.667	ELEC	-	CPA
E11	1986971.492	6092885.452	5.560	7.083	ELEC	-	CPA
T12	1987111.923	6093032.443	7.971	2.417	TEL	-	AT&T
T13	1986971.492	6092885.452	5.560	7.083	TEL	-	AT&T
T14	1987060.807	6093012.629	8.871	7.667	TEL	-	AT&T
GP19	1987958.705	6092385.291	4.922	8.000	GAS	36.0	PG&E
GP20	1987699.819	6092594.379	3.869	6.667	GAS	36.0	PG&E
E23	1987046.956	6093042.651	9.936	2.000	ELEC	-	CPA
W26	1987590.866	6092624.677	7.222	3.667	WATER	10.0	CPA
G32	1987180.515	6092955.903	7.484	4.750	GAS	4.0	CPA



FOR NOTES, ABBREVIATIONS AND LEGEND SEE SHEET U-1.

THIS PLAN ACCURATE FOR UTILITY INFORMATION ONLY

UTILITY PLAN

SCALE: 1"=50'

U-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 6/2/2010
TIME PLOTTED => 8:28:44 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

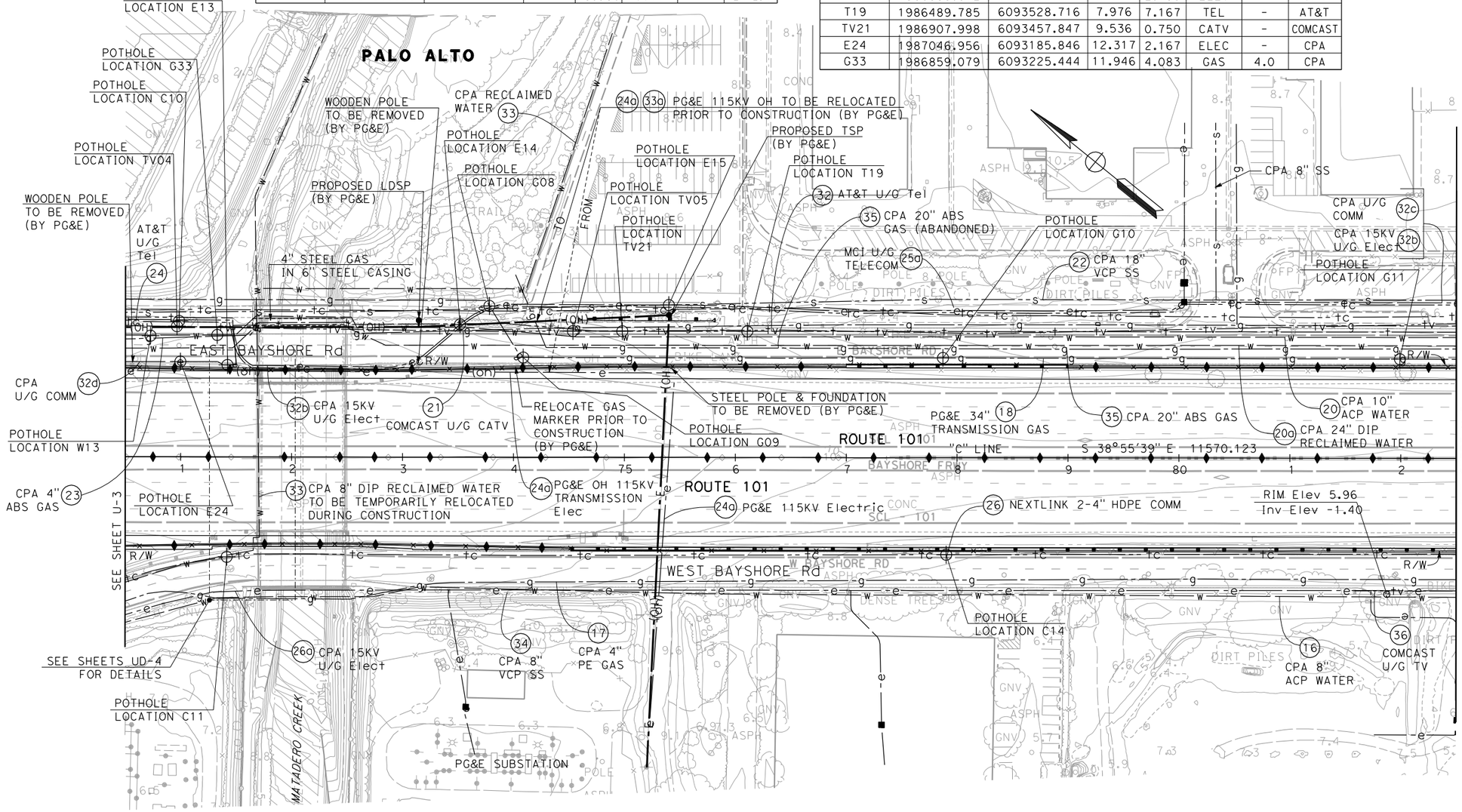
Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

UTILITY LOCATIONS

POTHOLE LOCATION	COORDINATE N	COORDINATE E	GROUND Elev	DEPTH	TYPE	SIZE (in.)	OWNER
TV04	1986892.304	6093208.712	11.442	2.500	CATV	-	COMCAST
TV05	1986612.131	6093429.906	10.187	0.833	CATV	-	COMCAST
G08	1986684.892	6093400.134	10.694	8.500	GAS	36.0	PG&E
G09	1986631.997	6093383.230	11.174	6.333	GAS	36.0	PG&E
C10	1986893.791	6093213.623	10.949	2.250	COMM	-	MCI
G10	1986337.603	6093621.028	6.682	5.500	GAS	36.0	PG&E
C11	1986726.628	6093075.294	12.522	19.083	COMM	-	NEXTLINK

POTHOLE LOCATION	COORDINATE N	COORDINATE E	GROUND Elev	DEPTH	TYPE	SIZE (in.)	OWNER
G11	1986016.748	6093879.447	6.893	6.250	GAS	36.0	PG&E
E13	1986834.948	6093210.236	12.585	1.083	ELEC	-	CPA
W13	1986905.457	6093187.074	11.928	3.667	WATER		CPA
C14	1986223.699	6093485.042	7.124	5.583	COMM	-	MCI
E14	1986694.994	6093370.558	10.864	3.083	ELEC	-	CPA
W14	1986608.929	6093425.868	8.979	3.500	WATER		CPA
E15	1986559.672	6093502.616	8.979	2.750	ELEC	-	CPA
T19	1986489.785	6093528.716	7.976	7.167	TEL	-	AT&T
TV21	1986907.998	6093457.847	9.536	0.750	CATV	-	COMCAST
E24	1987046.956	6093185.846	12.317	2.167	ELEC	-	CPA
G33	1986859.079	6093225.444	11.946	4.083	GAS	4.0	CPA



FOR NOTES, ABBREVIATIONS AND LEGEND SEE SHEET U-1.

UTILITY PLAN

SCALE: 1"=50'

U-4

THIS PLAN ACCURATE FOR UTILITY INFORMATION ONLY

REVISED BY | DATE REVISED | CALCULATED-DESIGNED BY | CHECKED BY | CONSULTANT FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00 | DATE PLOTTED => 6/2/2010 | TIME PLOTTED => 8:28:55 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCl	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

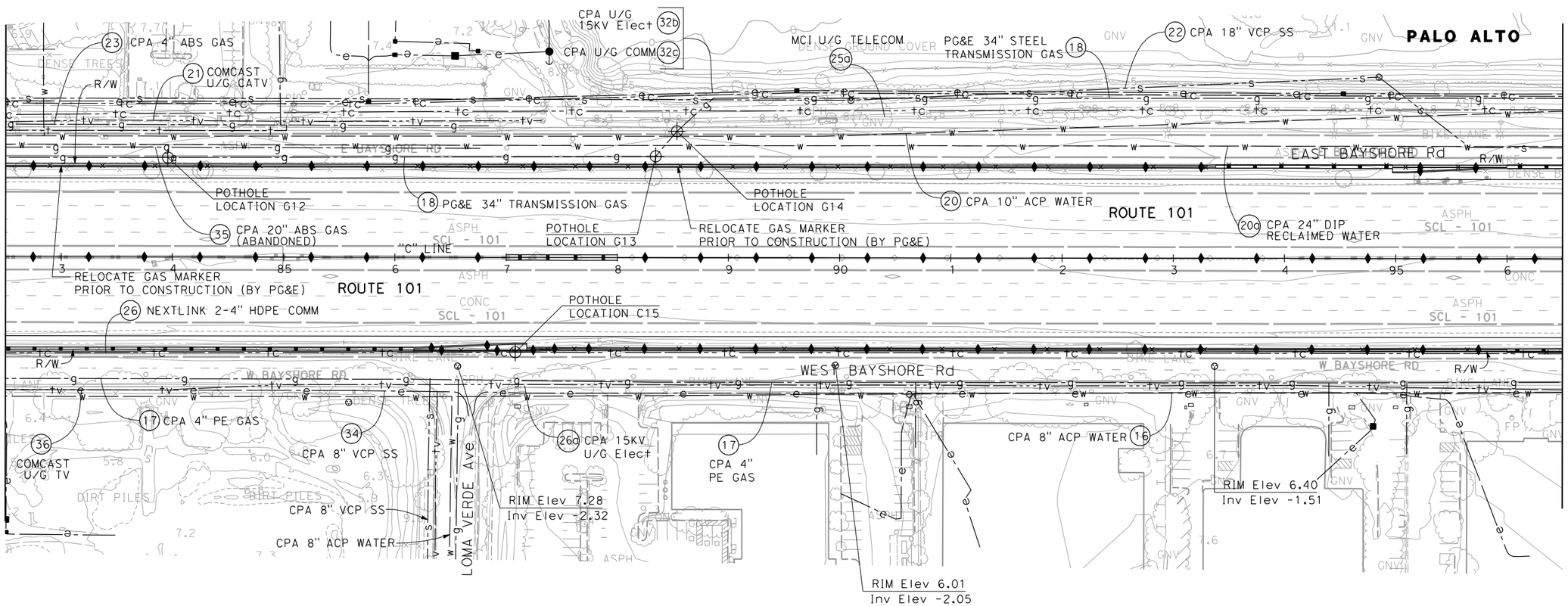
URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

UTILITY LOCATIONS

POTHOLE LOCATION	COORDINATE N	COORDINATE E	GROUND Elev	DEPTH	TYPE	SIZE (in.)	OWNER
G12	1985863.698	6094003.073	7.249	7.000	GAS	36.0	PG&E
G13	1985523.532	6094280.001	7.444	9.000	GAS	36.0	PG&E
G14	1985522.831	6094309.477	6.826	8.667	GAS	36.0	PG&E
C15	1985510.762	6094063.576	7.366	4.833	COMM	-	NEXTLINK



FOR NOTES, ABBREVIATIONS AND LEGEND SEE SHEET U-1.

UTILITY PLAN

SCALE: 1"=50'

U-5

THIS PLAN ACCURATE FOR UTILITY INFORMATION ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 6/2/2010
TIME PLOTTED => 8:29:05 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => ernie_garnica
DGN FILE => ...\KA-Utilities\44A3301KA005.dgn

CU 04235

EA 4A3301

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

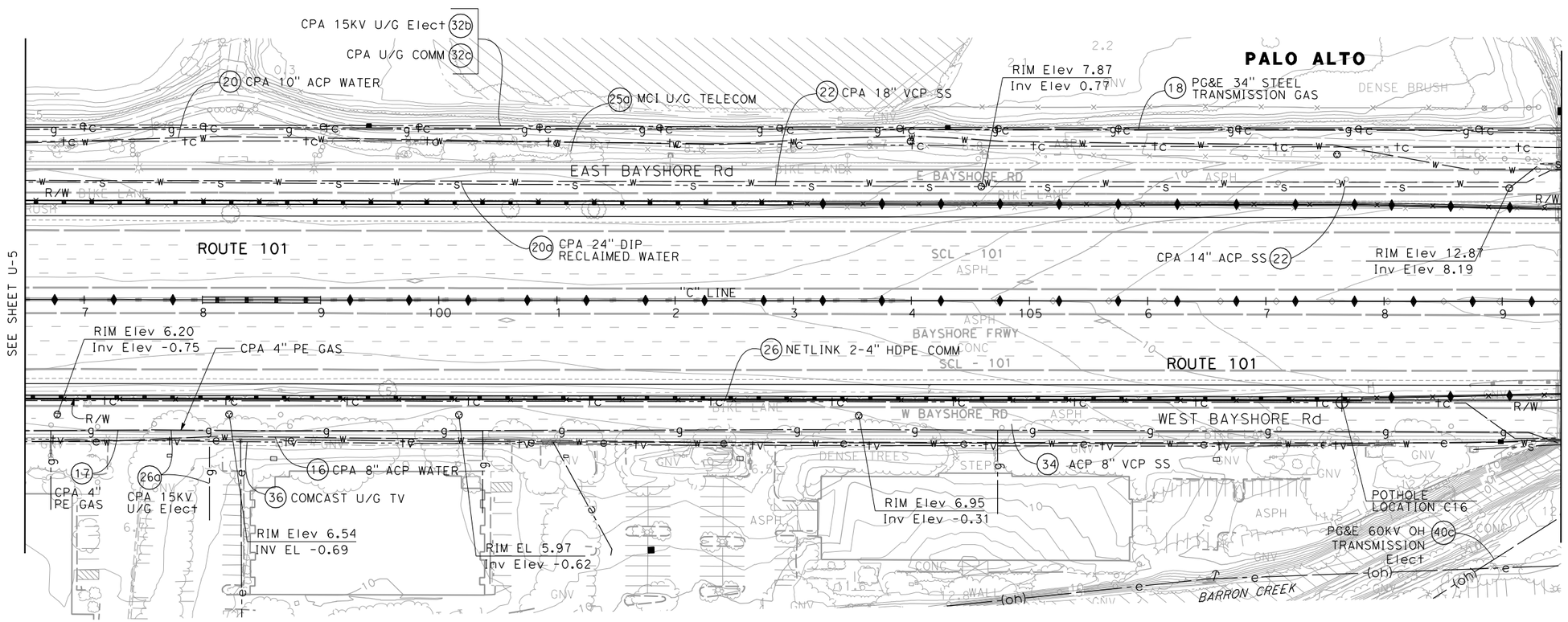
URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

UTILITY LOCATIONS

POTHOLE LOCATION	COORDINATE N	COORDINATE E	GROUND Elev	DEPTH	TYPE	SIZE (in.)	OWNER
C16	1983911.078	6095355.188	11.905	5.000	COMM	-	NEXTLINK



FOR NOTES, ABBREVIATIONS AND/OR LEGEND SEE SHEET U-1.

UTILITY PLAN

SCALE: 1"=50'

U-6

THIS PLAN ACCURATE FOR UTILITY INFORMATION ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 6/2/2010
TIME PLOTTED => 8:29:13 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

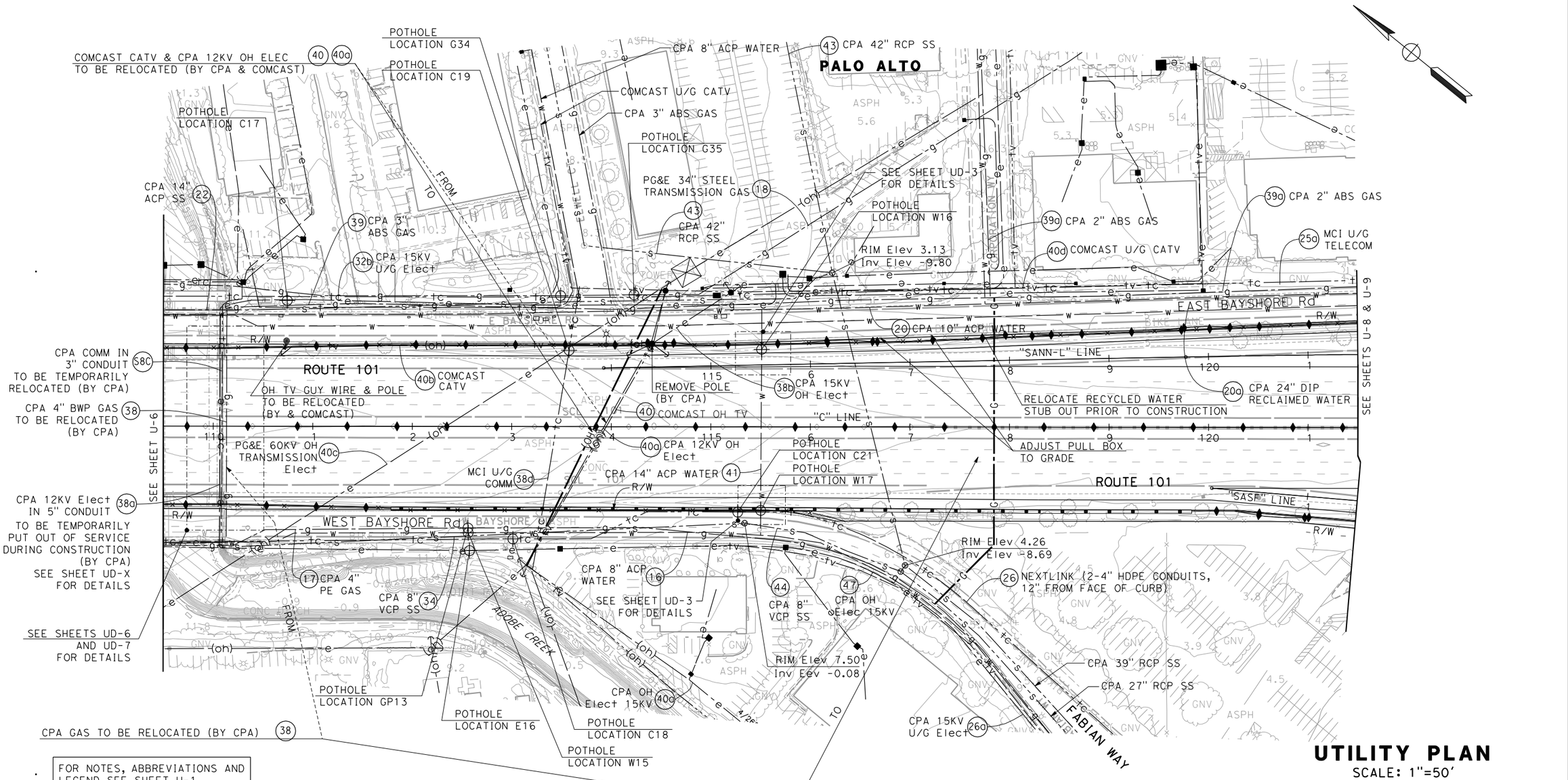
Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

UTILITY LOCATIONS

POTHOLE LOCATION	COORDINATE N	COORDINATE E	GROUND Elev	DEPTH	TYPE	SIZE (in.)	OWNER
GP13	1983518.349	6095651.432	10.906	2.750	GAS	?	CPA
W15	1983515.199	6095647.960	10.634	3.500	WATER	8.0	CPA
E16	1983502.846	6095634.780	10.381	3.500	ELEC	-	CPA
G34	1983592.781	6095891.313	9.399	10.000	GAS	24.0	PG&E
C17	1983803.159	6095714.669	12.016	1.333	COMM	-	MCI

POTHOLE LOCATION	COORDINATE N	COORDINATE E	GROUND Elev	DEPTH	TYPE	SIZE (in.)	OWNER
G35	1983536.026	6095976.485	8.531	9.500	GAS	24.0	PG&E
W16	1983401.932	6095976.485	5.186	4.917	WATER	14.0	CPA
W17	1983300.908	6095850.230	7.818	5.167	WATER	14.0	CPA
C18	1983476.394	6095671.290	9.725	5.583	COMM	-	NEXTLINK
C19	1983551.730	6095854.039	8.360	8.750	COMM	-	MCI
C21	1983317.788	6095834.444	7.744	8.583	COMM	-	NEXTLINK



FOR NOTES, ABBREVIATIONS AND LEGEND SEE SHEET U-1.

THIS PLAN ACCURATE FOR UTILITY INFORMATION ONLY

UTILITY PLAN

SCALE: 1"=50'

U-7

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 6/2/2010
TIME PLOTTED => 8:29:21 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => ernie_garnica
DGN FILE => ...\KA-Utilities\44A3301KA007.dgn

CU 04235

EA 4A3301

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCl	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

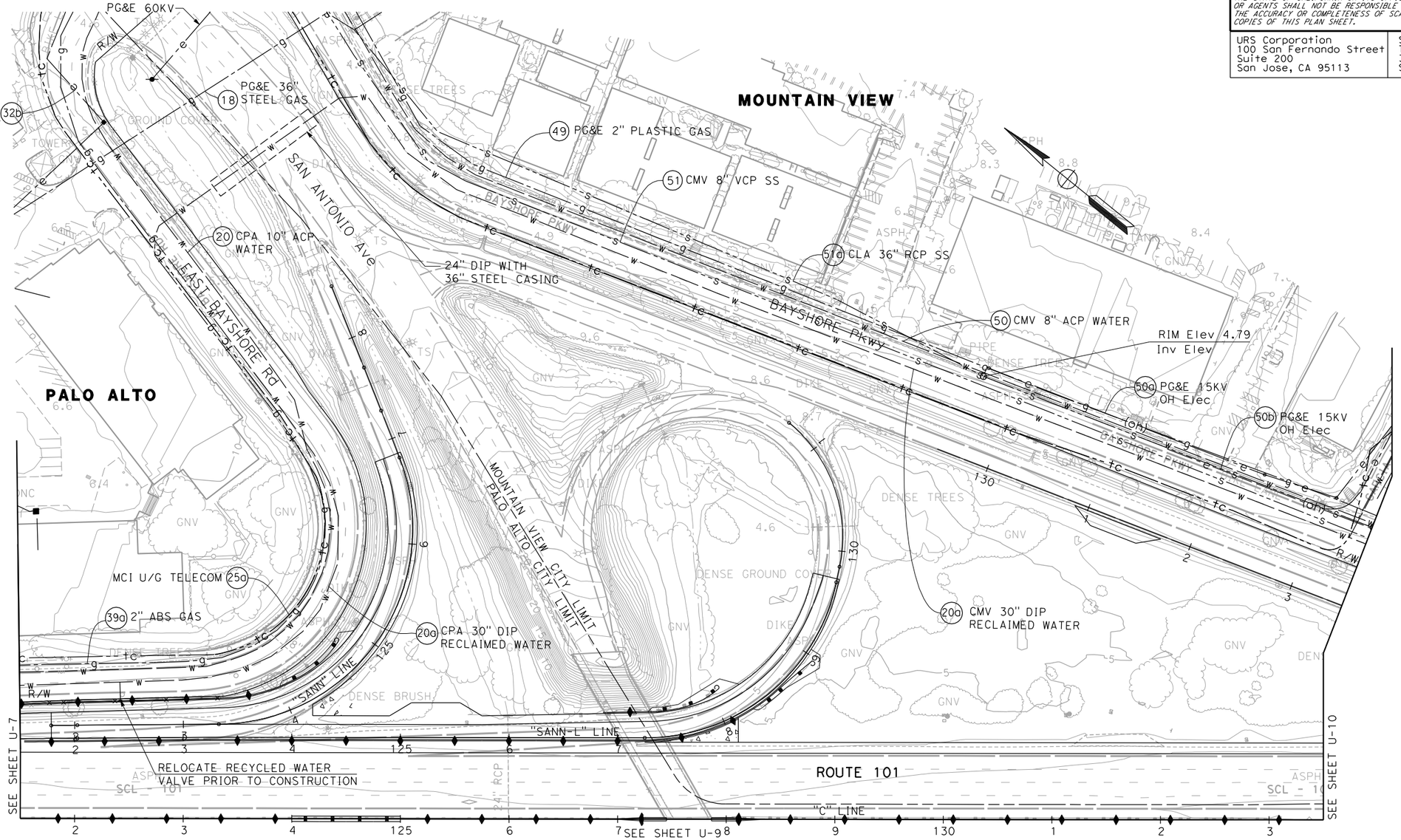
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



UTILITY PLAN

SCALE: 1"=50'

U-8

THIS PLAN ACCURATE FOR UTILITY INFORMATION ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 6/2/2010
TIME PLOTTED => 8:29:33 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => ernie_garnica
DGN FILE => ...\KA-Utilities\44A3301KA008.dgn

CU 04235

EA 4A3301

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

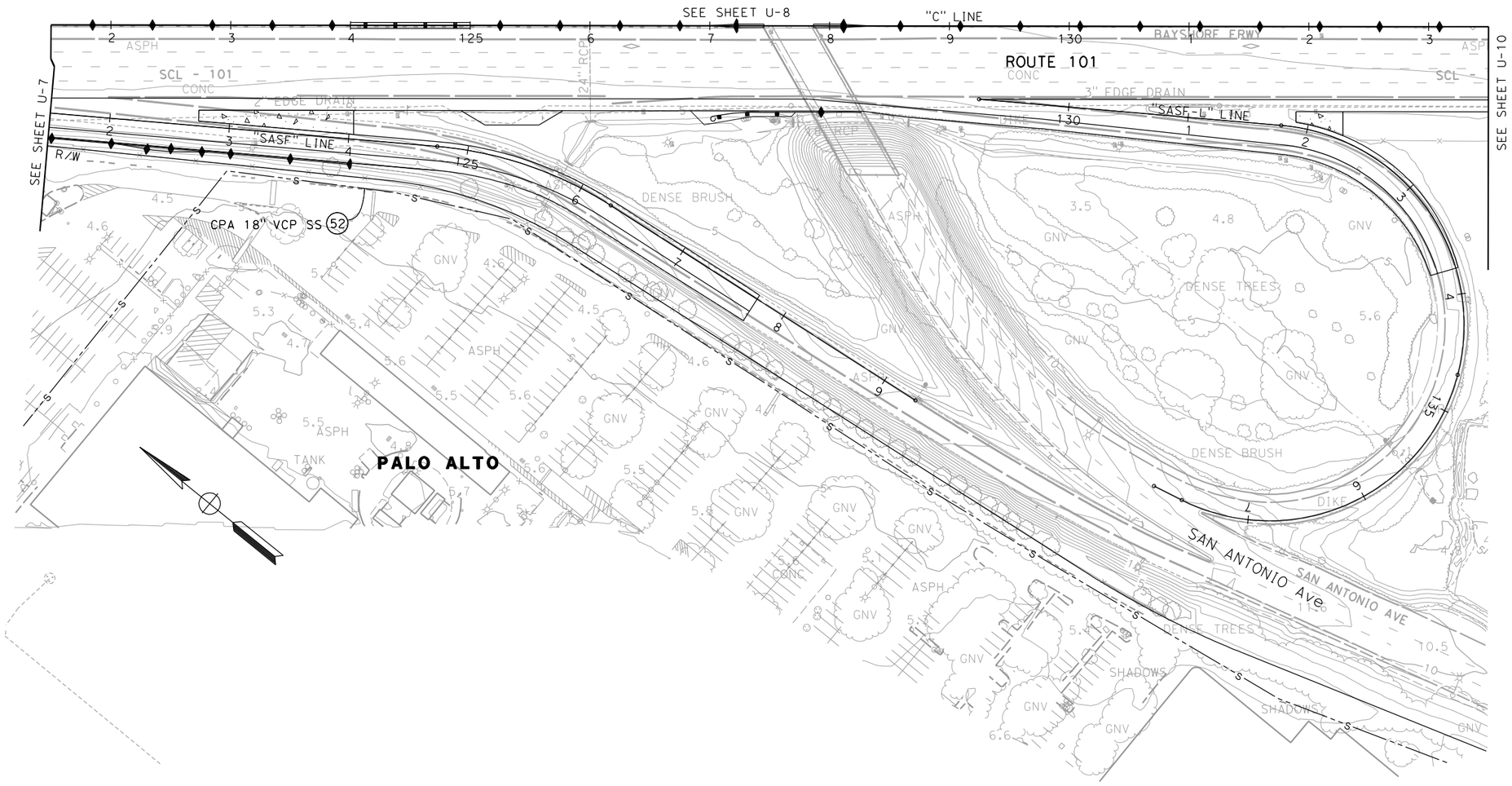
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

MOUNTAIN VIEW



FOR NOTES, ABBREVIATIONS AND LEGEND SEE SHEET U-1.

UTILITY PLAN

SCALE: 1"=50'

U-9

THIS PLAN ACCURATE FOR UTILITY INFORMATION ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 6/2/2010
TIME PLOTTED => 8:29:43 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => ernie_garnica
DGN FILE => ...\KA-Utilities\44A3301KA009.dgn

CU 04235

EA 4A3301

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

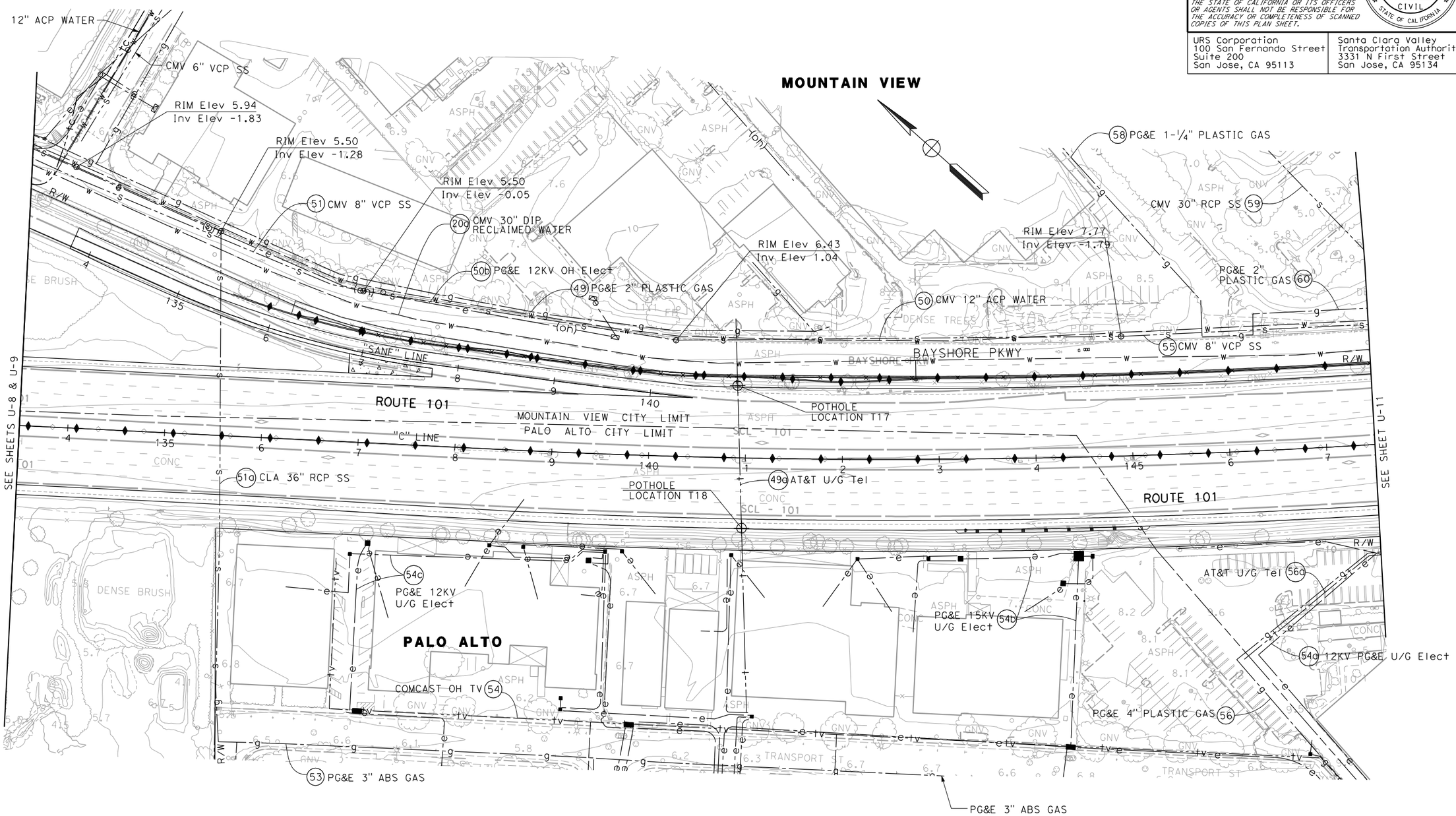
URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

UTILITY LOCATIONS

POTHOLE LOCATION	COORDINATE N	COORDINATE E	GROUND Elev	DEPTH	TYPE	SIZE (in.)	OWNER
T17	1981428.090	6097570.958	6.656	7.833	TEL	-	AT&T
T18	1981327.195	6097463.943	8.553	8.750	TEL	-	AT&T



FOR NOTES, ABBREVIATIONS AND LEGEND SEE SHEET U-1.

UTILITY PLAN

SCALE: 1"=50'

U-10

THIS PLAN ACCURATE FOR UTILITY INFORMATION ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 6/2/2010
TIME PLOTTED => 8:29:51 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => ernie_garnica
DGN FILE => ...\KA-Utilities\44A3301KA010.dgn

CU 04235

EA 4A3301

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCl	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

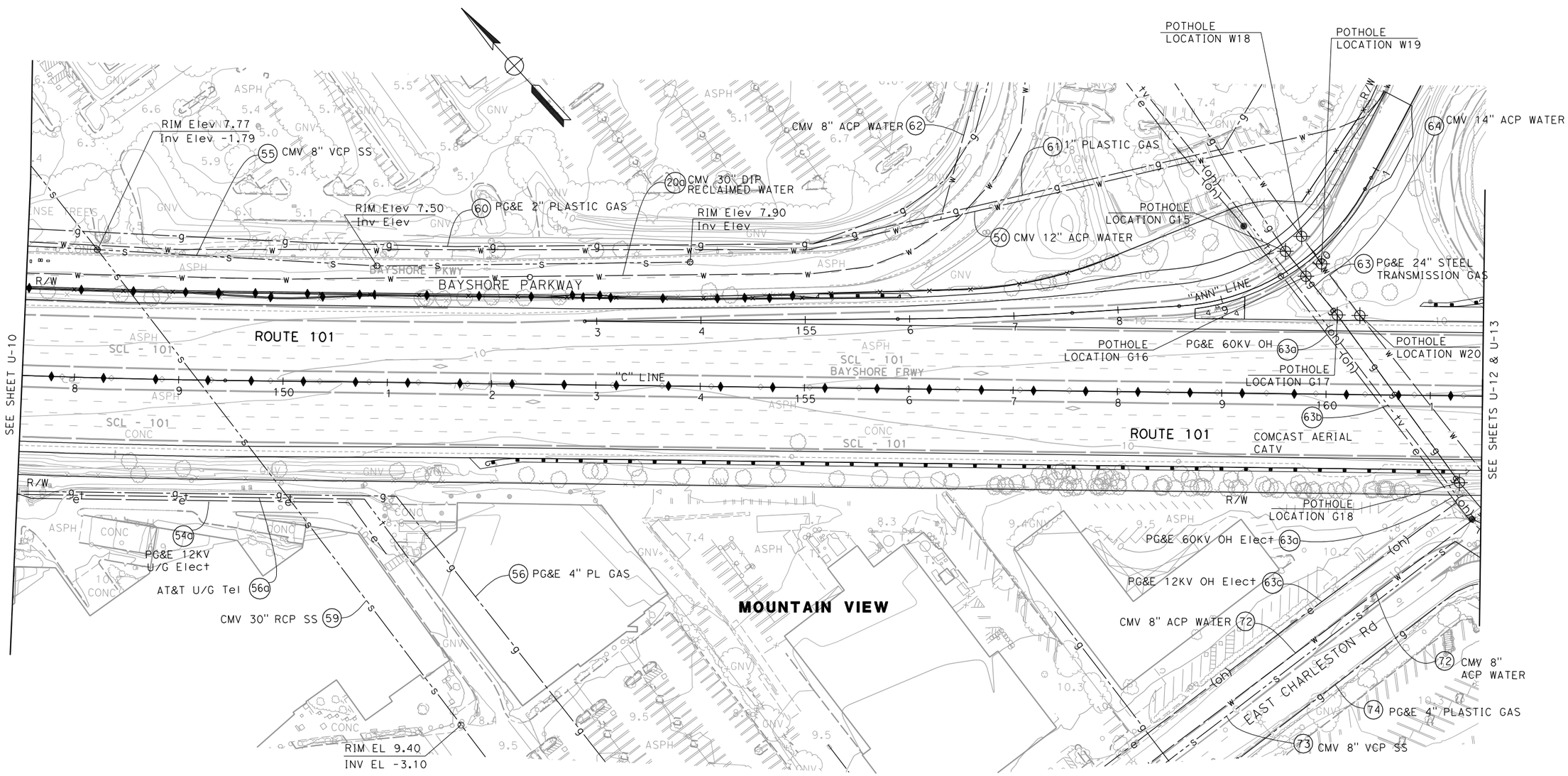
URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

UTILITY LOCATIONS

POTHOLE LOCATION	COORDINATE N	COORDINATE E	GROUND Elev	DEPTH	TYPE	SIZE (in.)	OWNER
G15	1980165.571	6098936.088	9.422	4.833	GAS	34.0	PG&E
G16	1980134.746	6098934.336	10.077	6.000	GAS	34.0	PG&E
G17	1980087.017	6098931.444	9.002	4.333	GAS	34.0	PG&E
G18	1979889.537	6098909.003	5.916	7.000	GAS	34.0	PG&E
W18	1980165.645	6098957.225	9.244	6.750	WATER	14.0	CMV
W19	1980133.259	6098953.500	9.469	6.917	WATER	14.0	CMV
W20	1980072.002	6098946.992	9.318	6.000	WATER	14.0	CMV



FOR NOTES, ABBREVIATIONS AND LEGEND SEE SHEET U-1.

UTILITY PLAN

SCALE: 1"=50'

U-11

THIS PLAN ACCURATE FOR UTILITY INFORMATION ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY | CHECKED BY

REVISED BY | DATE REVISED

LAST REVISION 00-00-00 | DATE PLOTTED => 6/2/2010 | TIME PLOTTED => 8:30:01 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => ernie_garnica
DGN FILE => ...\KA-Utilities\44A3301KA011.dgn

CU 04235

EA 4A3301

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCl	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

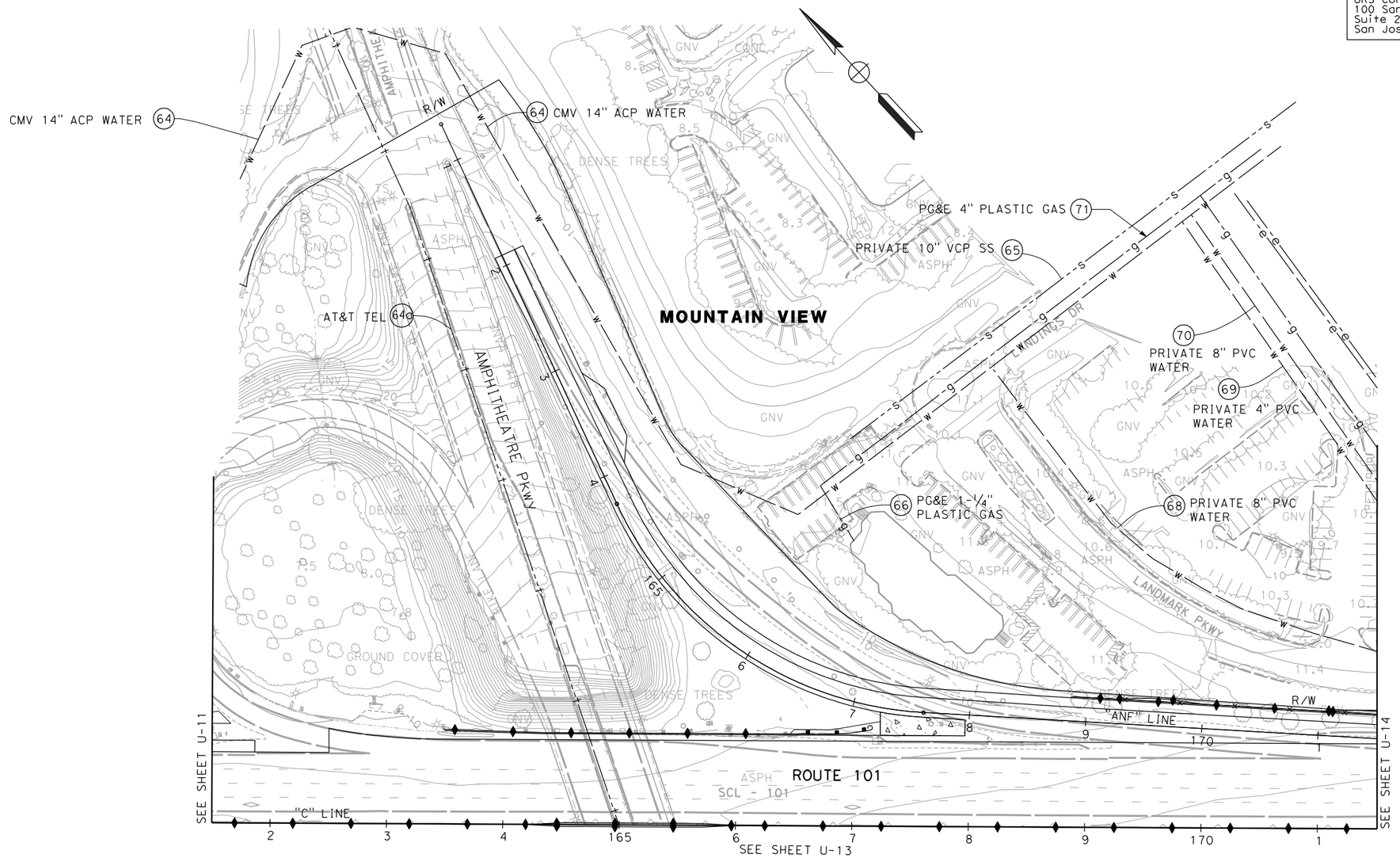
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND LEGEND SEE SHEET U-1.

UTILITY PLAN

SCALE: 1"=50'

U-12

THIS PLAN ACCURATE FOR UTILITY INFORMATION ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 6/2/2010
TIME PLOTTED => 8:30:31 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => ernie_garnica
DGN FILE => ...\KA-Utilities\44A3301KA012.dgn

CU 04235

EA 4A3301

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

UTILITY LOCATIONS

POTHOLE LOCATION	COORDINATE N	COORDINATE E	GROUND Elev	DEPTH	TYPE	SIZE (in.)	OWNER
W21	1979870.497	6098931.146	6.556	2.500	WATER	14.0	CMV

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCl	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

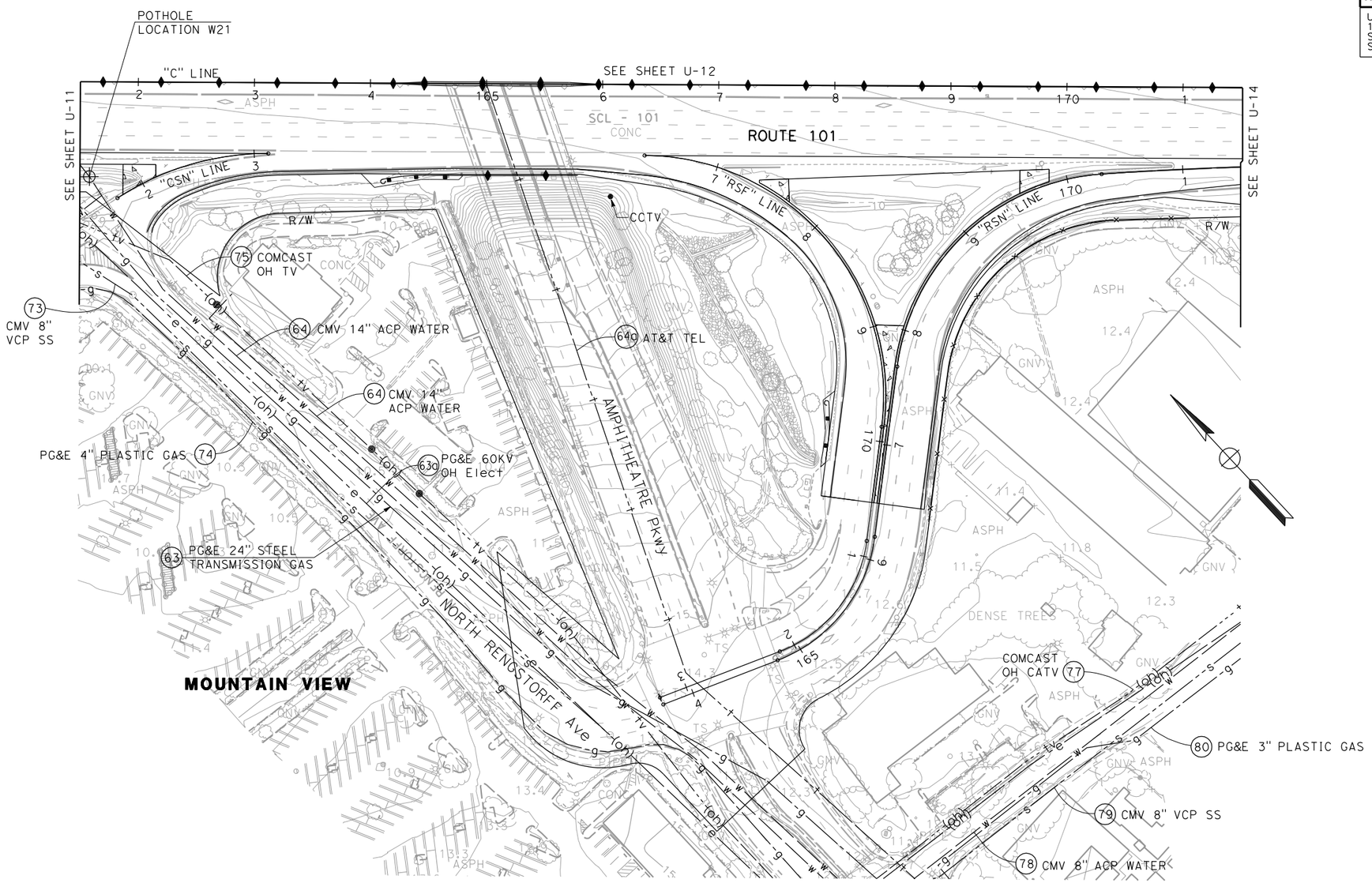
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134



FOR NOTES, ABBREVIATIONS AND LEGEND SEE SHEET U-1.

UTILITY PLAN

SCALE: 1"=50'

U-13

THIS PLAN ACCURATE FOR UTILITY INFORMATION ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 6/2/2010
TIME PLOTTED => 8:30:40 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

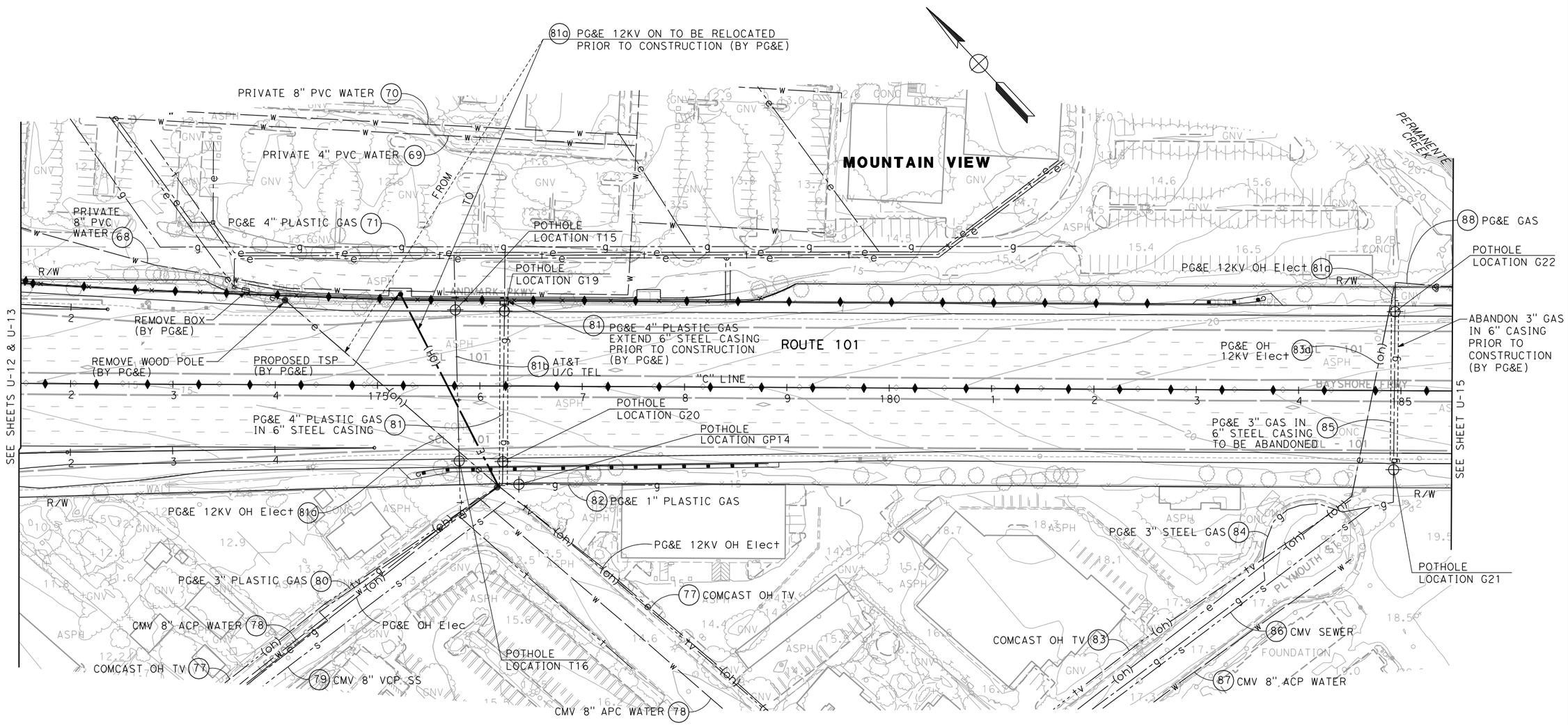
URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

UTILITY LOCATIONS

POTHOLE LOCATION	COORDINATE N	COORDINATE E	GROUND Elev	DEPTH	TYPE	SIZE (in.)	OWNER
GP14	1978844.907	6099998.862	12.911	3.333	GAS	1.0	PG&E
T15	1979011.947	6100069.742	14.427	8.333	TEL	-	AT&T
T16	1978901.432	6099971.833	14.756	6.833	TEL	-	AT&T
G19	1978978.405	6100104.019	14.898	6.250	GAS	4.0	PG&E
G20	1978871.897	6100002.547	14.631	5.583	GAS	4.0	PG&E
G21	1978272.481	6100633.935	19.410	5.083	GAS	3.0	PG&E
G22	1978384.400	6100740.143	19.761	5.333	GAS	3.0	PG&E



FOR NOTES, ABBREVIATIONS AND LEGEND SEE SHEET U-1.

UTILITY PLAN

SCALE: 1"=50'

U-14

THIS PLAN ACCURATE FOR UTILITY INFORMATION ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 6/2/2010
TIME PLOTTED => 8:30:49 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

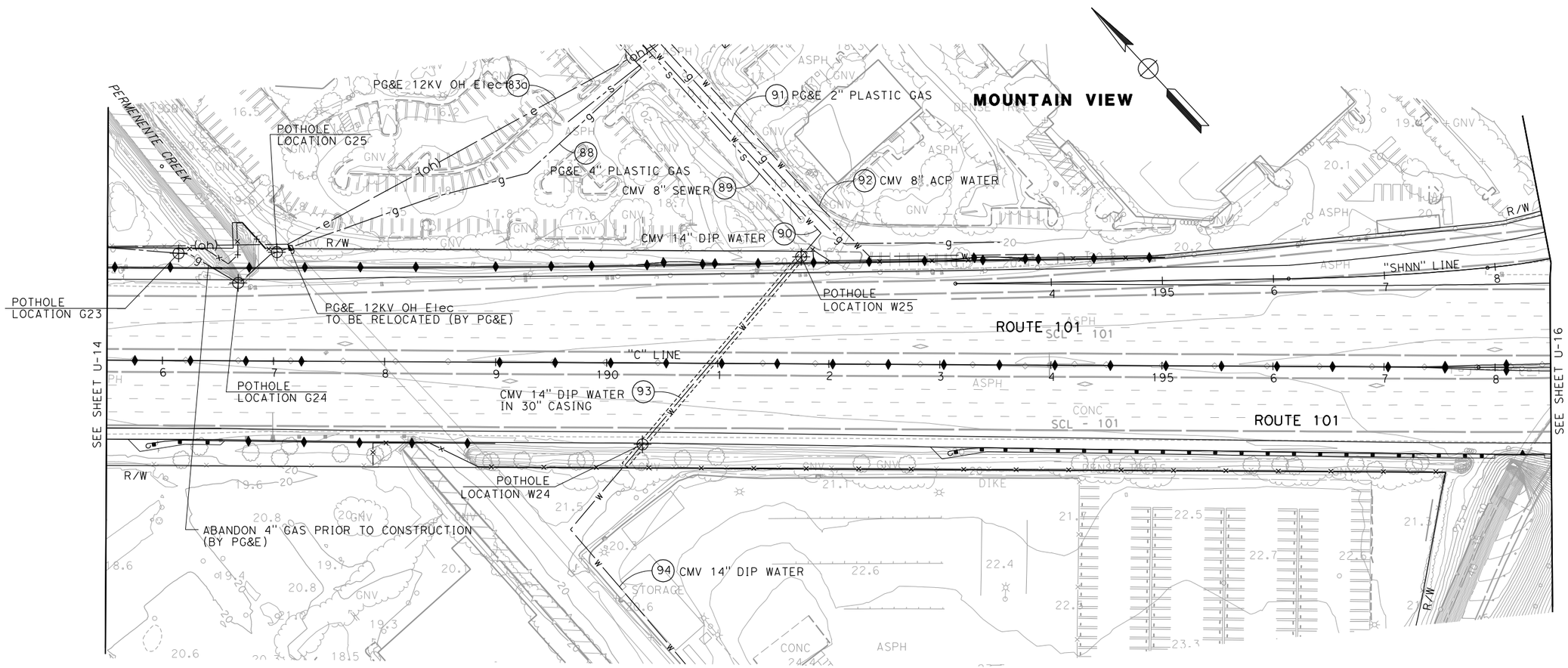
URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

UTILITY LOCATIONS

POTHOLE LOCATION	COORDINATE		GROUND Elev	DEPTH	TYPE	SIZE (in.)	OWNER
	N	E					
W24	1977905.597	6101029.220	20.705	2.583	WATER	14.0	CMV
W25	1977931.689	6101248.887	20.470	3.167	WATER	14.0	CMV
G23	1978316.268	6100840.978	19.184	3.417	GAS	4.0	PG&E
G24	1978260.118	6100862.029	20.868	2.000	GAS	4.0	PG&E
G25	1978256.630	6100906.381	19.787	3.500	GAS	4.0	PG&E



FOR NOTES, ABBREVIATIONS AND LEGEND SEE SHEET U-1.

UTILITY PLAN

SCALE: 1"=50'

U-15

THIS PLAN ACCURATE FOR UTILITY INFORMATION ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY | CHECKED BY

REVISED BY | DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 6/2/2010
TIME PLOTTED => 8:30:59 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => ernie_garnica
DGN FILE => ...\KA-Utilities\44A3301KA015.dgn

CU 04235

EA 4A3301

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCl	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

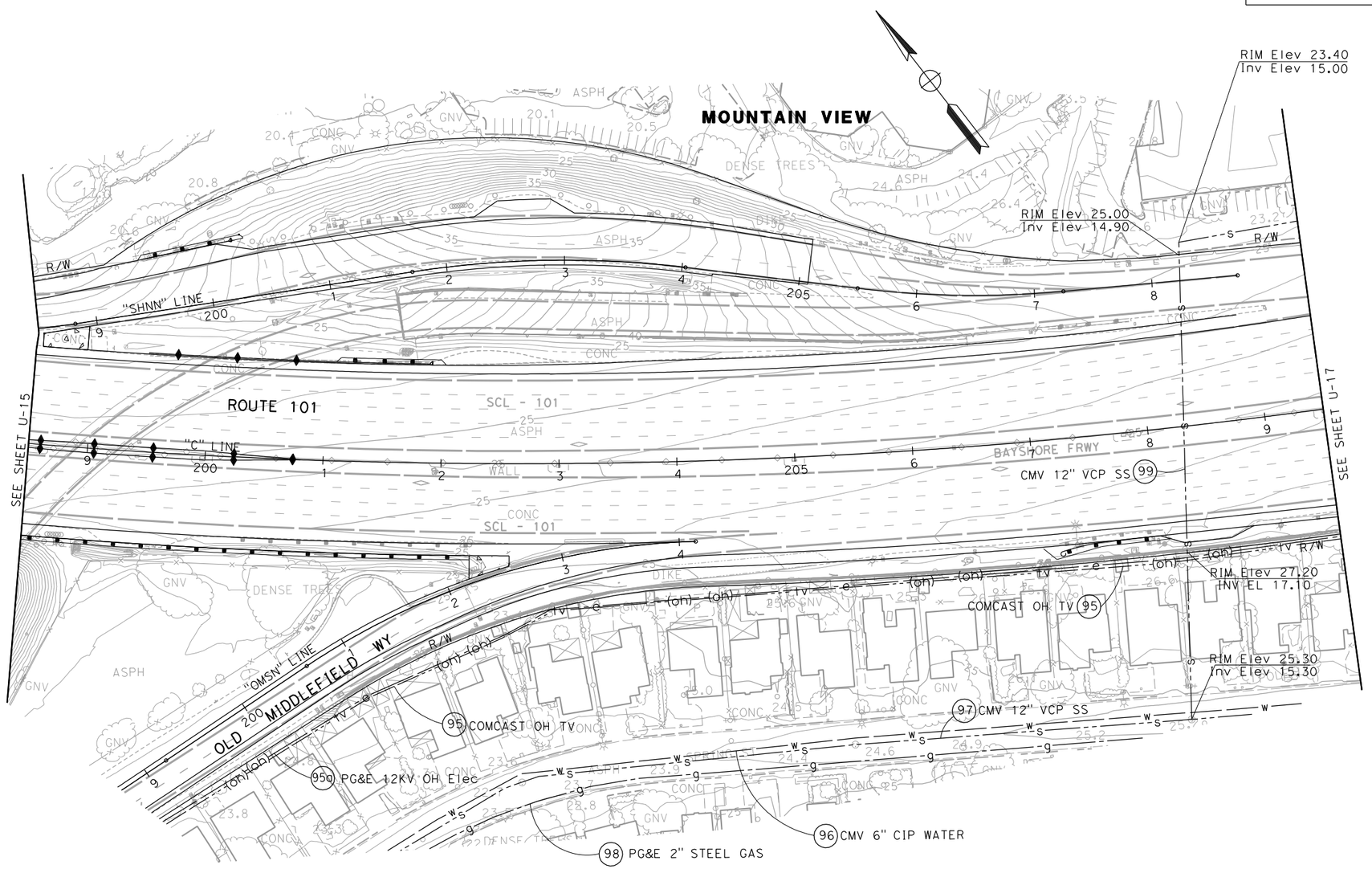
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND LEGEND SEE SHEET U-1.

THIS PLAN ACCURATE FOR UTILITY INFORMATION ONLY

UTILITY PLAN

SCALE: 1"=50'

U-16

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 6/2/2010
TIME PLOTTED => 8:31:06 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => ernie_garnica
DGN FILE => ...\KA-Utilities\44A3301KA016.dgn

CU 04235

EA 4A3301

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

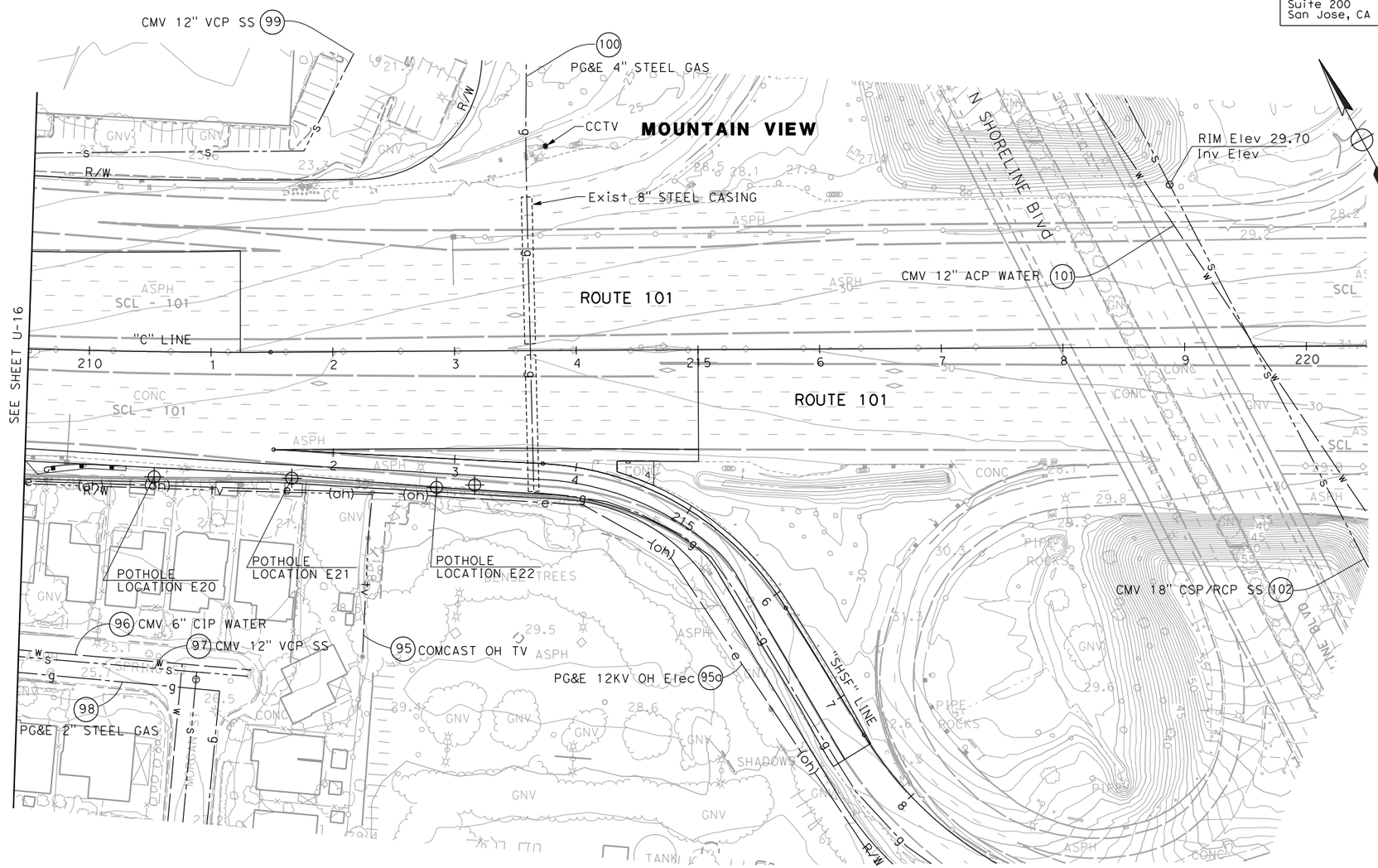
URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

UTILITY LOCATIONS

POTHOLE LOCATION	COORDINATE N	COORDINATE E	GROUND Elev	DEPTH	TYPE	SIZE (in.)	OWNER
E20	1976607.315	6102600.753	27.455	1.000	ELEC	-	CALTRANS
E21	1976553.023	6102700.008	27.717	1.000	ELEC	-	CALTRANS
E22	1976490.311	6102801.336	27.751	1.000	ELEC	-	CALTRANS
G26	1976701.357	6102956.362	26.754	8.000	GAS	8.0	PG&E
G27				5.667	GAS	8.0	PG&E



FOR NOTES, ABBREVIATIONS AND LEGEND SEE SHEET U-1.

UTILITY PLAN

SCALE: 1"=50'

U-17

THIS PLAN ACCURATE FOR UTILITY INFORMATION ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 6/2/2010
TIME PLOTTED => 8:31:14 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => ernie_garnica
DGN FILE => ...\KA-Utilities\44A3301KA017.dgn

CU 04235

EA 4A3301

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCl	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

UTILITY INFORMATION

UTILITY No.	SHEET No.	OWNER	UTILITY DESCRIPTION	DIRECTION	LOCATION
9	U-1	City of Palo Alto	8" Transition Water	TR	ML 33+50
9a	U-1	City of Palo Alto	OH Electrical, 25KV	TR	ML 34+20
10	U-1	City of Palo Alto	16" CSP Water in 24" CMP Casing	TR	ML 34+10
11	U-1	City of Palo Alto	12" Gas	TR	ML 34+20
12	U-1	Comcast	OH TV	TR	ML 34+20
13	U-1	City of Palo Alto	24" CSP SS in 36" Casing	TR	ML 36+30
14	U-1	PG&E	8" Gas	TR	ML 36+80
15	U-1	City of Palo Alto	21" CSP SS	-	Oregon Expressway (West) Interchange
15a	U-1	City of Palo Alto	15" VCP SS	-	Oregon Expressway (West) Interchange
16	U-1, U-2, U-3, U-4, U-5, U-6, U-7	City of Palo Alto	8" ACP Water	PA	ML 35+00 to 119+00 West Bayshore Road
17	U-1, U-2, U-3, U-4, U-5, U-6, U-7	City of Palo Alto	4" PE Gas	PA	ML 37+00 to 119+00 West Bayshore Road
18	U-1, U-2, U-3, U-4, U-5, U-6, U-7, U-8	PG&E	34" Steel Transmission Gas	PA	Embarcadero Interchange to San Antonio Ave Interchange, east of NB 101
18a	U-2	PG&E	OH Electrical 115KV Transmission	TR	ML 54+00
19	U-2	City of Palo Alto	15" VCP Sewer	TR	ML 49+60
20	U-2, U-3, U-4, U-5, U-6, U-7, U-8	City of Palo Alto	10" ACP Water	PA	Embarcadero Interchange to San Antonio Ave Interchange, east of NB 101
20a	U-2, U-3, U-4, U-5, U-6, U-7, U-8, U-10, U-11	CPA/CMV	30" DIP Recycled Water Line	PA	
21	U-2, U-3, U-4, U-5	Comcast	U/G CATV	PA	Embarcadero Interchange to ML 87+50, east of NB 101
22	U-2, U-3, U-4, U-5, U-6, U-7	City of Palo Alto	18" VCP Sewer	PA	Embarcadero Interchange to ML 116+00, east of NB 101
23	U-2, U-3, U-4, U-5	City of Palo Alto	4" ABS Gas	PA	Embarcadero Interchange to ML 71+70, east of NB 101
24	U-2, U-3, U-4	AT&T	U/G Tel	PA	Amarillo Ave to ML 116+00, east of NB 101
24a	U-2, U-3, U-4	PG&E	OH Electrical, 115kV Transmission	PA	East of NB 101 from Amarillo to ML 76+00
24b	U-2, U-3	City of Palo Alto	U/G Electrical, 15kV	PA	East of NB 101 from Amarillo to ML 68+30
25	U-2	AT&T	U/G Tel	TR	ML 49+80
25a	U-2, U-3, U-4, U-5, U-6, U-7, U-8	MCI	U/G Tele Comm	PA	ML 50+00 to 124+50 on E. Bayshore Road
26	U-2, U-3, U-4, U-5, U-6, U-7	Nextlink	Comm. 2-4" HDPE Conduits, 12" from face of curb	PA	Amarillo Ave to Fabian Way, West Bayshore Road
26a	U-2, U-3, U-4, U-5, U-6, U-7	City of Palo Alto	U/G Electrical, 15kV	PA	Amarillo Ave to Fabian Way, West Bayshore Road
27	U-2	City of Palo Alto	36" RCP SS	TR	ML 49+80
28	U-2	City of Palo Alto	42" RCP SS	TR	ML 49+50
28a	U-2	City of Palo Alto	U/G Electrical, 15kV	TR	ML 49+40
28b	U-2	City of Palo Alto	U/G Electrical, 15kV	TR	ML 49+70
29	U-2	City of Palo Alto	Water	TR	ML 49+40
30	U-2	AT&T	U/G Tel	TR	ML 49+30
31	U-2, U-3	AT&T	U/G Tel, 2"-4" HDPE (12" from face of curb)	PA	Amarillo Ave to ML 68+00, West of SB 101
32	U-3, U-4	AT&T	U/G Tel	PA	ML 68+50 to 80+00 on E. Bayshore Rd.
32a	U-3	City of Palo Alto	U/G Electrical, 15kV	TR	ML 68+30
32b	U-3, U-4, U-5, U-6, U-7, U-8	City of Palo Alto	U/G Electrical, 15kV	PA	ML 68+70 to San Antonio Rd, East of NB Lane
32c	U-3	AT&T	U/G Tel	TR	ML 68+50
32d	U-3, U-4	CPA	U/G Communication	PA	ML 68+40 TO 72+00
33	U-3, U-4	City of Palo Alto	8" DIP Reclaimed Water	TR	ML 71+70
34	U-4, U-5, U-6, U-7	City of Palo Alto	8" VCP SS	PA	ML 73+40 to 104+80, West of SB 101
35	U-4, U-5	City of Palo Alto	20" ABS Gas (ABANDONED)	PA	ML 74+00 to 86+70, East of NB 101
36	U-4, U-5, U-6	Comcast	U/G TV	PA	ML 81+60 to 108+10, West of SB 101
38	U-7	City of Palo Alto	4" BWP Gas	TR	ML 110+10
38a	U-7	City of Palo Alto	U/G Electrical, 15kV in 5" Steel Conduit	TR	ML 110+10
38b	U-7	City of Palo Alto	OH Electrical, 15kV	PA	ML 109+40 to 114+50, East of NB 101
38d	U-7	MCI	U/G Tele Com	TR	ML 113+50
39	U-7	City of Palo Alto	3" ABS Gas	PA	ML 110+20 to San Antonio Interchange, East of NB 101
39a	U-7, U-8	City of Palo Alto	2" ABS Gas	PA	ML 117+80 to San Antonio on E Bayshore Rd
88c	U-7	City of Palo Alto	U/G Communication in 3" Steel Conduit	TR	ML 110+10

UTILITY PLAN

U-18

REVISED BY | DATE REVISED

CALCULATED-DESIGNED BY | CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00

DATE PLOTTED => 6/2/2010
TIME PLOTTED => 8:31:20 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCl	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

UTILITY INFORMATION

UTILITY No.	SHEET No.	OWNER	UTILITY DESCRIPTION	DIRECTION	LOCATION
40	U-7	Comcast	OH TV	TR	ML 113+90
40a	U-7	City of Palo Alto	OH Electrical, 15 kV	-	ML 114+50 to 115+00, East of NB 101
40b	U-7	Comcast	OH TV	PA	ML 114+50 to 115+00, East of NB 101
40c	U-6, U-7	PG&E	OH Electrical, 60kV Transmission	TR	ML 113+10
40d	U-7	Comcast	U/G TV	PA	ML 118+00 on E Bayshore Rd & Corporation Wy
41	U-7	City of Palo Alto	14" ACP Water	TR	ML 115+60
42	U-7	PG&E	30" Steel Gas	PA	ML 110+00 to 114+80, East of NB 101
43	U-7	City of Palo Alto	42" RCP SS	TR	ML 115+60
44	U-7	City of Palo Alto	8" VCP SS	-	Fabian Way
47	U-7	Comcast	U/G TV	-	Fabian Way
49	U-8, U-10	PG&E	2" Plastic Gas	PA	Bayshore Parkway to ML 141+90, East of NB 101
49a	U-10	AT&T	U/G Telephone	TR	ML 141+00
50	U-8, U-10, U-11	City of Mountain View	12" ACP Water	PA	Bayshore Parkway to ML 159+40, East of NB 101
50a	U-8	PG&E	OH Electrical, 12kV	PA	San Antonio Rd and Bayshore Parkway
50b	U-8, U-10	PG&E	OH Electrical, 12kV	PA	San Antonio Rd to ML 139+60, East of NB 101
51	U-8, U-10	City of Mountain View	8" VCP SS	PA	Bayshore Parkway near San Antonio Interchange, East of NB 101
51a	U-8, U-10	City of Los Altos	36" RCP SS	TR	ML 135+50
52	U-9	City of Palo Alto	18" VCP SS	PA	San Antonio Interchange, West of SB 101
53	U-10	City of Palo Alto	3" ABS Gas	PA	ML 136+00 to 146+00, West of SB 101
54	U-10	Comcast	OH TV	PA	ML 136+80 to 147+00, West of SB 101
54a	U-10, U-11	PG&E	U/G Electrical, 12kV	-	West of SB 101
54b	U-10	PG&E	U/G Electrical, 15kV	-	West of SB 101
54c	U-10	PG&E	U/G Electrical, 12kV	PA	ML 145+50 to 147+50, West of SB 101
55	U-10, U-11	City of Mountain View	8" VCP SS	PA	Bayshore Parkway Exit to ML 142+00
56	U-10, U-11	PG&E	4" Plastic Gas	PA	ML 147+60 to 151+20, West of SB 101
56a	U-10, U-11	AT&T	U/G Tel	PA	ML 147+60 to 151+20, West of SB 101
58	U-10	PG&E	1¼" Plastic Gas	PA	ML 145+70
59	U-10, U-11	City of Mountain View	30" RCP SS	TR	ML 149+10
60	U-10, U-11	PG&E	2" Plastic Gas	PA	ML 145+70 to Amphitheatre Parkway Interchange, East of NB 101
61	U-11	PG&E	1" Plastic Gas	PA	ML 154+90, East of NB 101
62	U-11	City of Mountain View	8" ACP Water	PA	ML 156+20, East of NB 101
63	U-11, U-13	PG&E	24" Steel Transmission Gas	TR	ML 160+80
63a	U-11, U-13	PG&E	OH Electrical, 60kV	TR	ML 160+20
63b	U-11, U-13	PG&E	OH Electrical, Unknown Voltage	TR	ML 161+50
63c	U-11, U-13	PG&E	OH Electrical, 12kv	-	-
64	U-11, U-12, U-13	City of Mountain View	14" ACP Water	TR	ML 161+00
64a	U-12, U-13	AT&T	TEL	TR	ML 165+00
65	U-12	PG&E	10" VCP Gas	PA	Landings Drive
66	U-12	PG&E	1¼" Plastic Gas	PA	Landings Drive
67	U-12	City of Mountain View	12" ACP Water	-	Landings Drive
68	U-12, U-14	Private	8" PVC Water	PA	Landmark Parkway to ML 179+50, East of NB 101
69	U-12, U-14	Private	4" PVC Water	-	Landings Drive to ML 177+50, East of NB 101
70	U-12, U-14	Private	8" PVC Water	-	Landings Drive to ML 177+50, East of NB 101
71	U-12, U-14	PG&E	4" Plastic Gas	-	Landings Drive to ML 181+80, East of NB 101
72	U-11, U-13	City of Mountain View	8" ACP Water	-	Charleston Road to ML 161+70, West of SB 101
73	U-11, U-13	City of Mountain View	8" VCP SS	-	Charleston Road to North Rengstorff Ave, West of SB 101
74	U-11, U-13	PG&E	4" Plastic Gas	-	Charleston Road to North Rengstorff Ave, West of SB 101
75	U-13	Comcast	OH TV	PA	Charleston Road to North Rengstorff Ave, West of SB 101
76	U-13	City of Mountain View	14" ACP Water	-	Rengstorff Avenue
77	U-13, U-14	Comcast	OH TV	-	Leghorn Street to Sierra Vista Ave
78	U-13, U-14	City of Mountain View	8" ACP Water	-	Leghorn Street to Sierra Vista Ave

UTILITY PLAN

U-19

REVISED BY | DATE REVISED

CALCULATED-DESIGNED BY | CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00 | DATE PLOTTED => 6/2/2010 | TIME PLOTTED => 8:31:24 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCl	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

UTILITY INFORMATION

UTILITY No.	SHEET No.	OWNER	UTILITY DESCRIPTION	DIRECTION	LOCATION
79	U-13, U-14	City of Mountain View	8" VCP SS	-	Leghorn Street
80	U-13, U-14	PG&E	3" Plastic Gas	-	Leghorn St to ML 176+20, West of SB 101
81	U-14	PG&E	4" Plastic Gas in 6" Steel Casing	TR	ML 176+20
81a	U-14	PG&E	OH Electrical, 12kV	TR	ML 174+90
81b	U-14	AT&T	U/G TEL	TR	ML 174+90
82	U-14	PG&E	1" Plastic Gas	PA	ML 176+20 to 177+70, West of SB 101
83	U-14	Comcast	OH TV	-	Plymouth Street
83a	U-14, U-15	PG&E	OH Electrical, 12kV	TR	ML 184+80
84	U-14	PG&E	3" Steel Gas	-	Plymouth Street
85	U-14	PG&E	3" Gas in 6" Steel Casing	TR	ML 184+80
86	U-14	City of Mountain View	Sewer (unknown size)	-	Plymouth Street
87	U-14	City of Mountain View	8" ACP Water	-	Plymouth Street
88	U-14, U-15	PG&E	4" Gas	PA	ML 185+00 to 188+00, East of NB 101
89	U-15	City of Mountain View	8" Sewer	-	ML 190+00 to 191+80 diagonal, East of NB 101
90	U-15	City of Mountain View	14" DIP Water	-	ML 190+00 to 191+80 diagonal, East of NB 101
91	U-15	PG&E	2" Plastic Gas	-	ML 192+30 to 193+60, East of NB 101
92	U-15	City of Mountain View	8" ACP Water	PA	ML 192+30 to 196+10
93	U-15	City of Mountain View	14" DIP Water in 30" Casing	TR	ML 191+20
94	U-15	City of Mountain View	14" DIP WATER	-	ML 190+40, connecting to 93, East of NB 101
95	U-16, U-17	Comcast	OH TV	PA	Old Middlefield Way to ML 212+40 West of SB lane
95a	U-16, U-17	PG&E	OH Electrical, 12kV	PA	Old Middlefield Way to Shoreline Blvd, West of SB lane
96	U-16, U-17	City of Mountain View	6" CIP Water	-	Spring Street
97	U-16, U-17	City of Mountain View	12" VCP SS	-	Spring Street
98	U-16, U-17	PG&E	2" Steel Gas	-	Spring Street
99	U-16	City of Mountain View	12" VCP SS	TR	ML 208+30
100	U-17	PG&E	4" Steel Gas in 8" Steel Casing	TR	ML 213+60
101	U-17	City of Mountain View	12" ACP Water	TR	ML 219+60
102	U-17	City of Mountain View	18" CSP/RCP SS	TR	ML 219+60

UTILITY PLAN

U-20

REVISED BY | DATE REVISED

CALCULATED-DESIGNED BY | CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00 | DATE PLOTTED => 6/2/2010 | TIME PLOTTED => 8:31:28 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

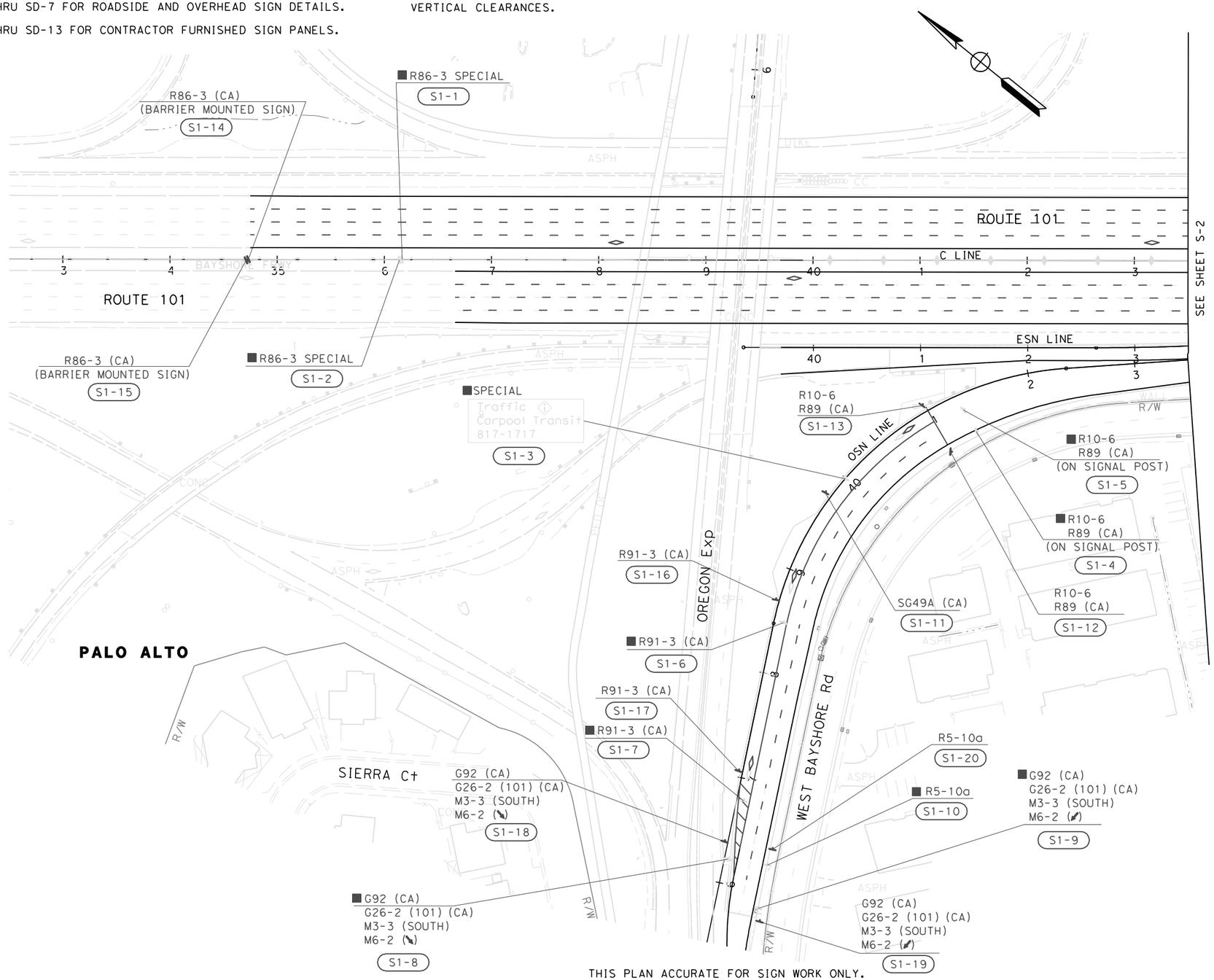
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. EXACT LOCATION AND POSITION OF ROADSIDE SIGNS SHALL BE DETERMINED BY THE ENGINEER.
3. ALL ROADSIDE SIGNS ARE TO BE MOUNTED ON S4S WOOD POSTS, UNLESS OTHERWISE INDICATED.
4. SEE SD-1 THRU SD-7 FOR ROADSIDE AND OVERHEAD SIGN DETAILS.
5. SEE SD-8 THRU SD-13 FOR CONTRACTOR FURNISHED SIGN PANELS.
6. THE MINIMUM VERTICAL CLEARANCES SHOWN ON THE PLANS SHALL BE PROVIDED BETWEEN THE FINISHED SURFACE OF THE ROADWAY AND THE BOTTOM OF ALL OVERHEAD SIGNS.
7. BASE PLATE ELEVATIONS AND ROADWAY ELEVATIONS SHOWN ON THE SIGN PLANS ARE FOR THE PURPOSE OF DETERMINING POST HEIGHTS AND QUANTITIY TAKE OFFS ONLY. THE BASE PLATE ELEVATIONS FOR OVERHEAD SIGNS SHALL BE ADJUSTED IN THE FIELD AS REQUIRED TO MAINTAIN SPECIFIC MINIMUM VERTICAL CLEARANCES.
8. POST SIZE AND LENGTH GIVEN ARE APPROXIMATE, EXACT SIZE AND LENGTH TO BE DETERMINED BY THE ENGINEER.
9. FOR POST AND SIGN DETAILS NOT SHOWN, REFER TO STANDARD PLAN SHEETS RSI THROUGH S-8.



THIS PLAN ACCURATE FOR SIGN WORK ONLY.

LEGEND:

- PROPOSED OVERHEAD SIGN
- EXISTING OVERHEAD SIGN
- CMS — CHANGEABLE MESSAGE SIGN
- PROPOSED TWO POST SIGN LOCATION
- EXISTING TWO POST SIGN LOCATION
- PROPOSED ONE POST SIGN LOCATION
- EXISTING ONE POST SIGN LOCATION
- (SS#-XX) OVERHEAD SIGN LETTER
- (S#-XX) ROADSIDE SIGN NUMBER
- EXISTING SIGN TO REMAIN
- RELOCATE ROADSIDE SIGN
- REMOVE ROADSIDE SIGN

ABBREVIATIONS:

FNBT = FACING NORTH BOUND TRAFFIC.

FSBT = FACING SOUTH BOUND TRAFFIC.

CMS = CHANGEABLE MESSAGE SIGN.

SIGN PLAN

SCALE: 1"=50'

S-1

REVISED BY	DATE REVISED
NAYAN AMIN	RUTA JARIWALA
CALCULATED-DESIGNED BY	CHECKED BY
CONSULTANT FUNCTIONAL SUPERVISOR	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00 | DATE PLOTTED => 6/2/2010 | TIME PLOTTED => 9:18:10 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

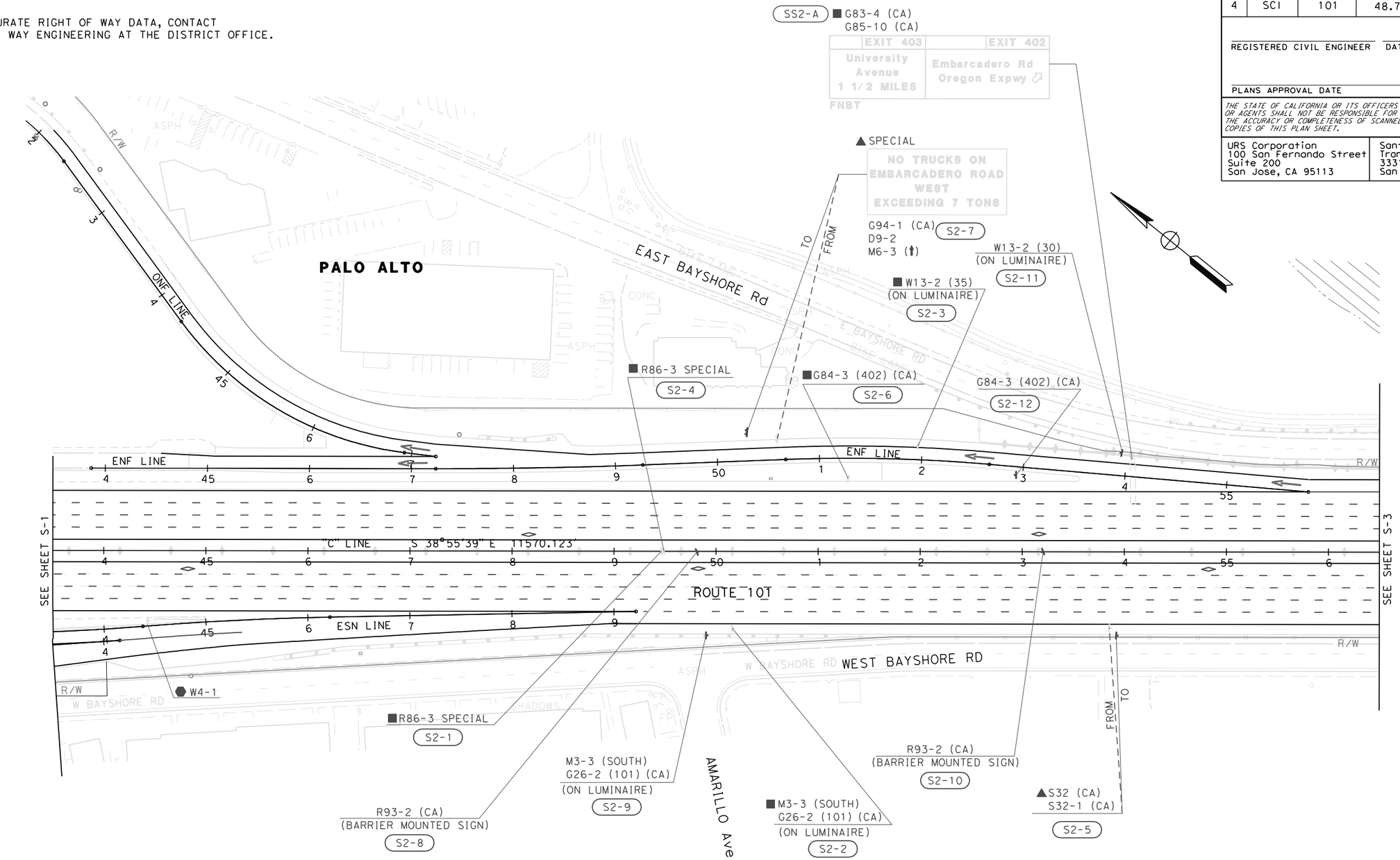
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND LEGEND SEE SHEET S-1

SIGN PLAN

SCALE 1"=50'

S-2

THIS PLAN ACCURATE FOR SIGN WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY NAYAN AMIN

CHECKED BY RUTA JARIWALA

REVISED BY | DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 6/2/2010
TIME PLOTTED => 9:18:13 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => ernie_garnica
DGN FILE => ...\oa-signs\44A3301oa002.dgn

CU 04235

EA 4A3301

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

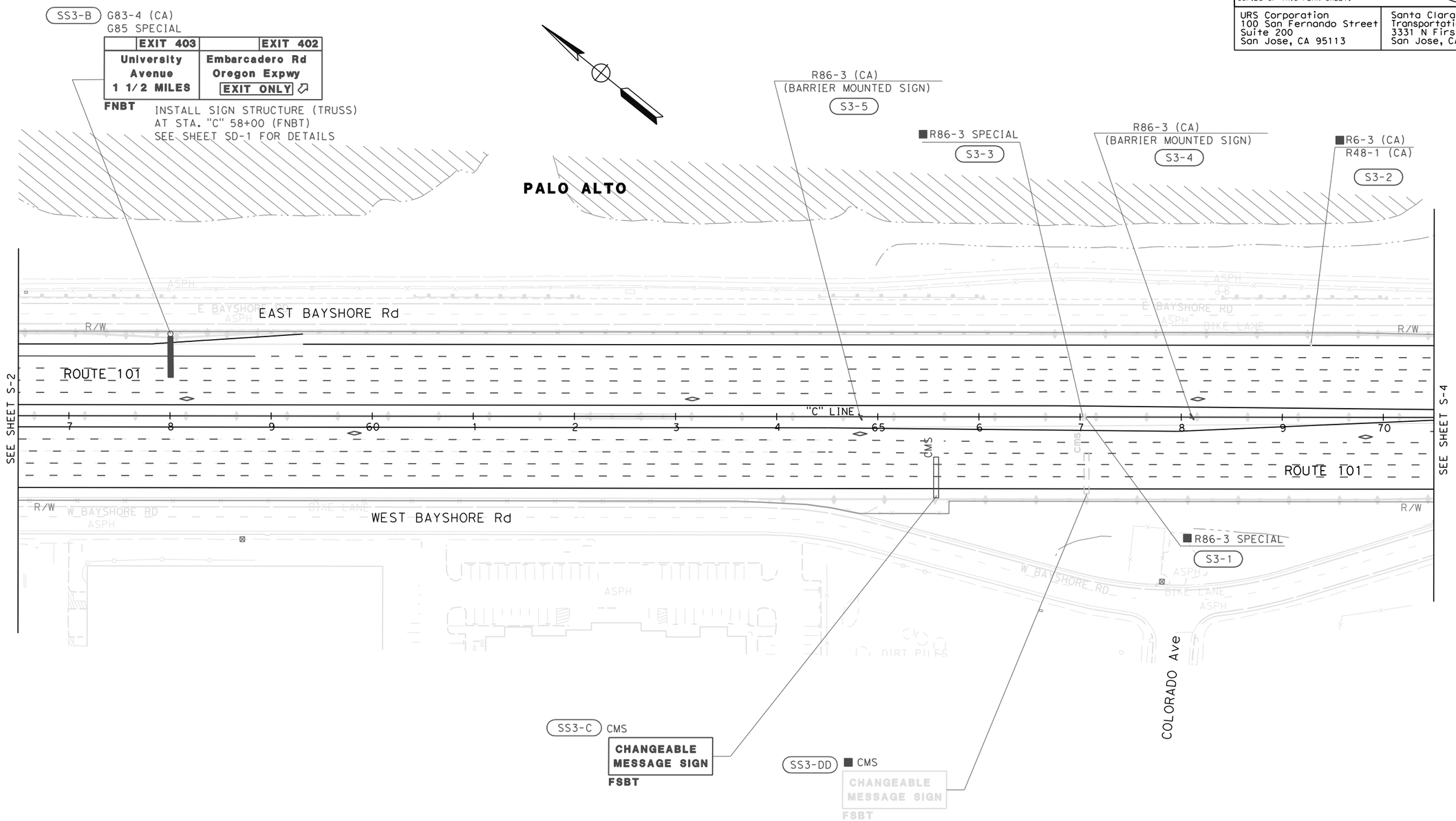
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND LEGEND SEE SHEET S-1

SIGN PLAN

SCALE: 1"=50'

S-3

THIS PLAN ACCURATE FOR SIGN WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY NAYAN AMIN

CHECKED BY RUTA JARIWALA

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 6/2/2010
TIME PLOTTED => 9:18:15 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

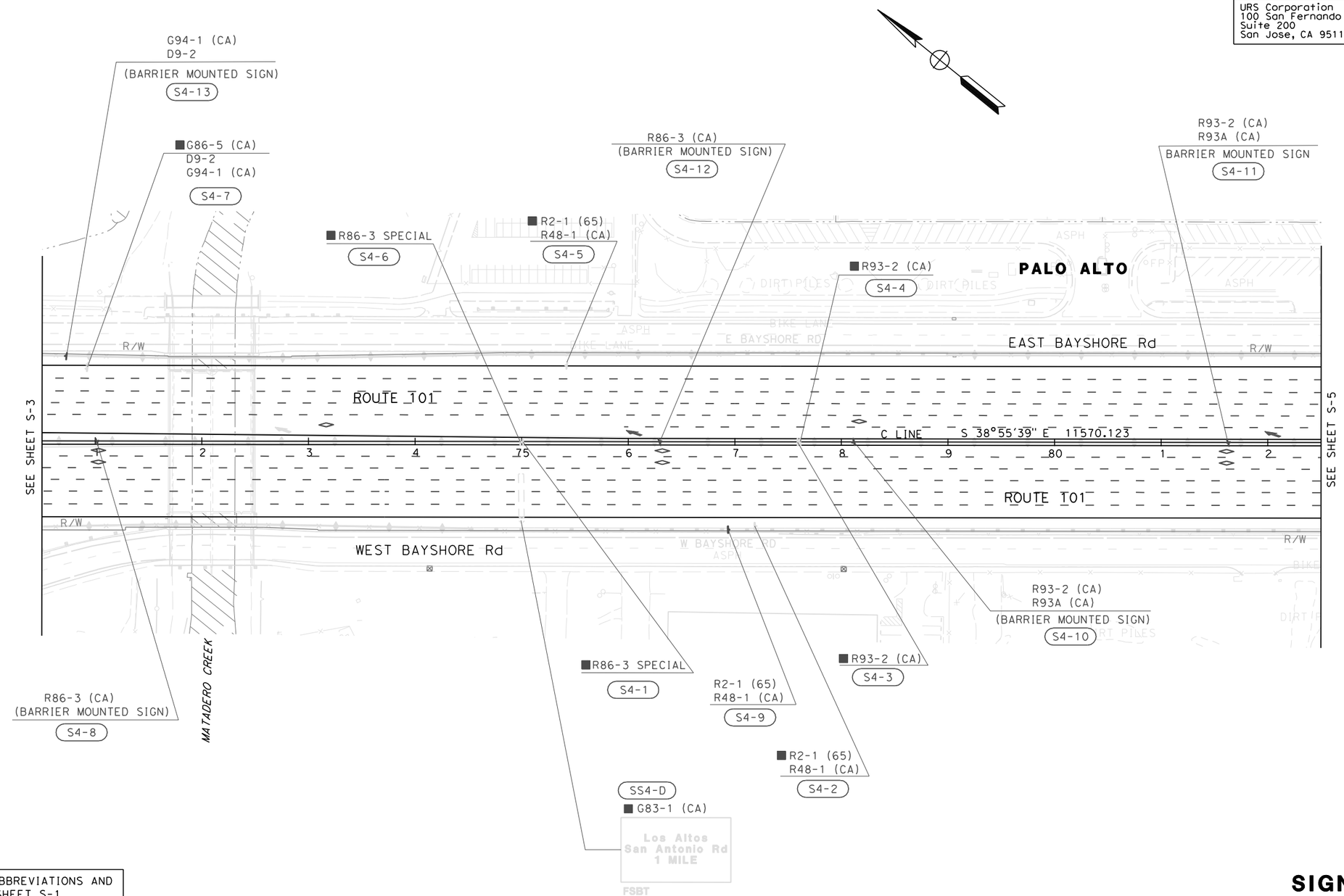
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND LEGEND SEE SHEET S-1

SIGN PLAN

SCALE: 1"=50'

S-4

THIS PLAN ACCURATE FOR SIGN WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY NAYAN AMIN

CHECKED BY RUTA JARIWALA

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 6/2/2010
TIME PLOTTED => 9:18:18 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

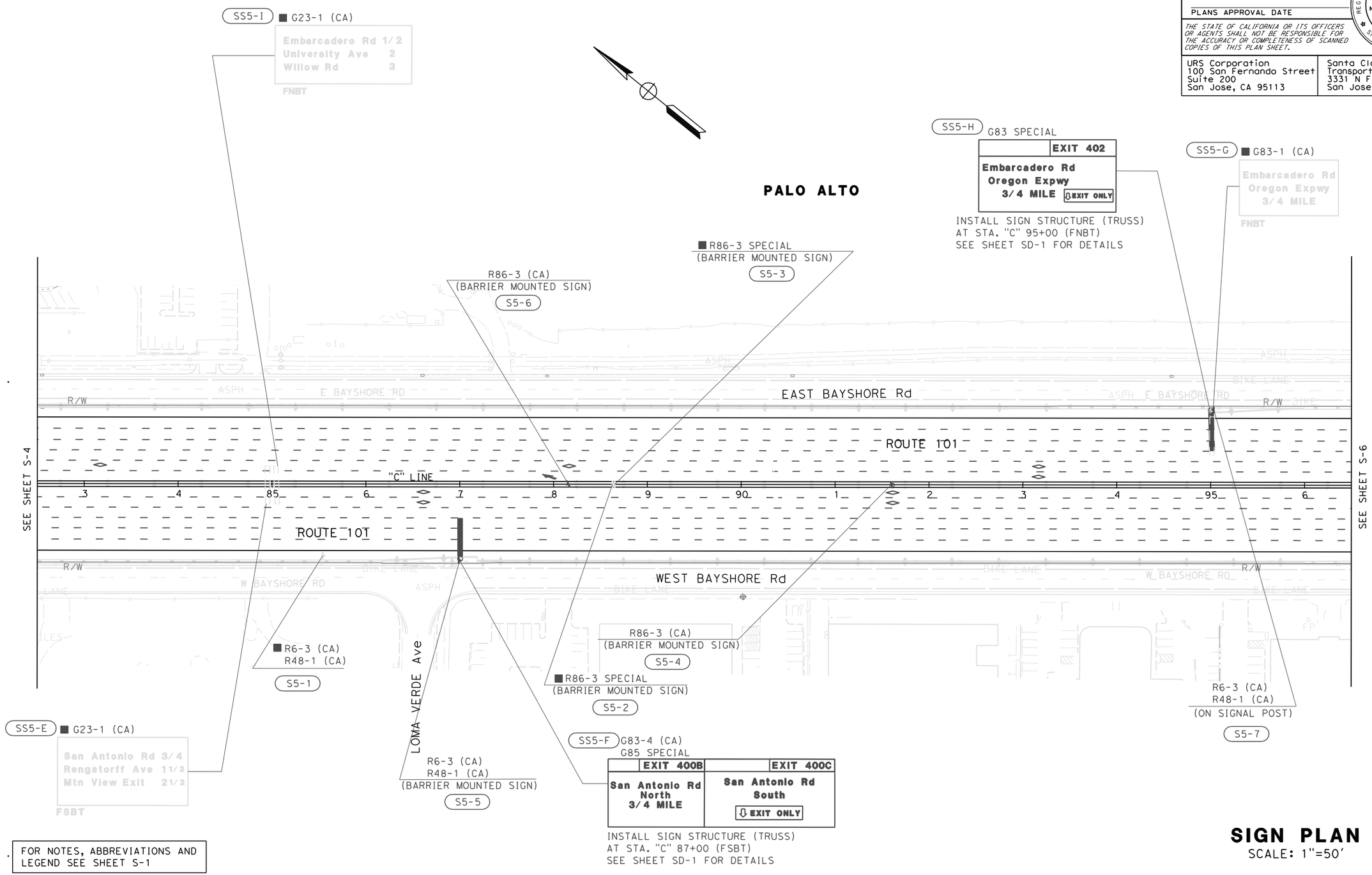
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND LEGEND SEE SHEET S-1

THIS PLAN ACCURATE FOR SIGN WORK ONLY.

SIGN PLAN

SCALE: 1"=50'

S-5

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY NAYAN AMIN

CHECKED BY RUTA JARIWALA

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 6/2/2010
TIME PLOTTED => 9:18:20 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => ernie_garnica
DGN FILE => ...\oa-signs\44A3301oa005.dgn

CU 04235

EA 4A3301

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

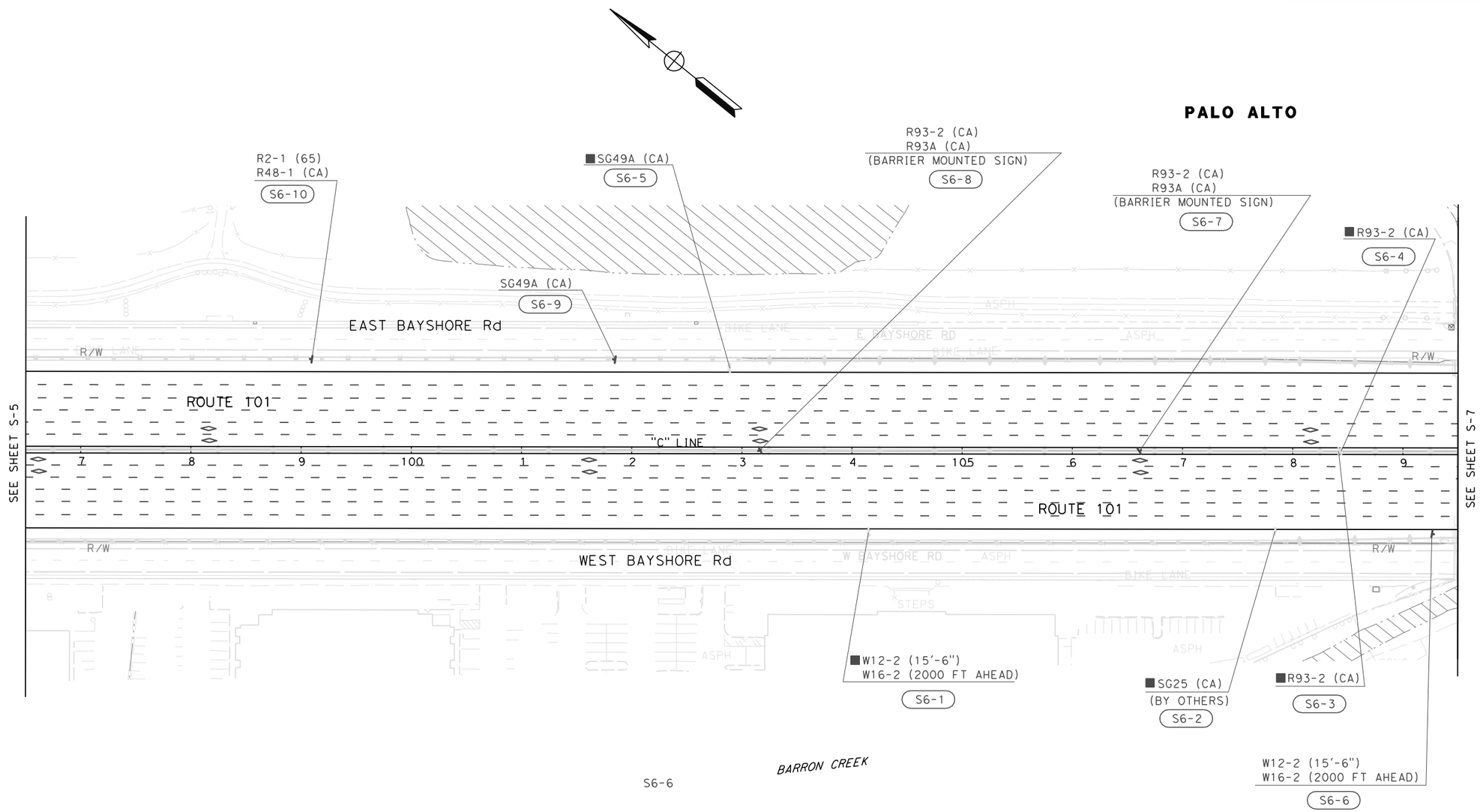
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND LEGEND SEE SHEET S-1

SIGN PLAN

SCALE: 1"=50'

S-6

THIS PLAN ACCURATE FOR SIGN WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY: NAYAN AMIN

CHECKED BY: RUTA JARIWALA

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 6/2/2010
TIME PLOTTED => 9:18:23 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

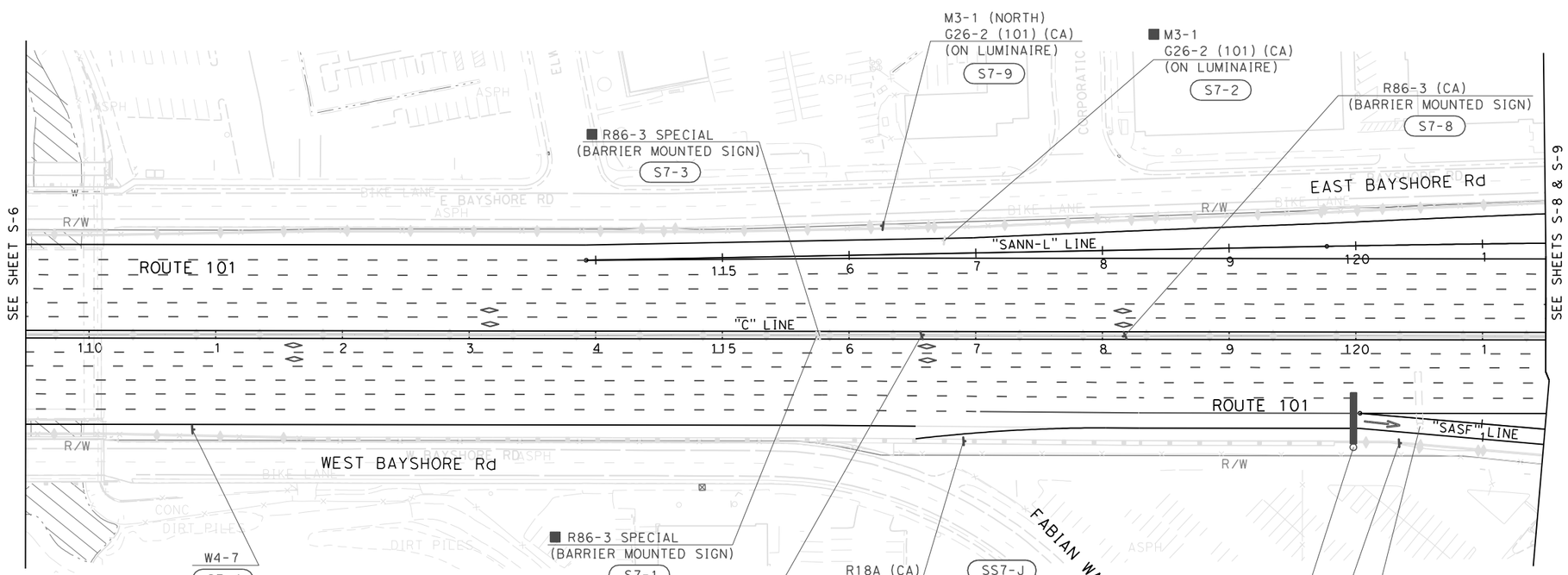
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

PALO ALTO



FOR NOTES, ABBREVIATIONS AND
LEGEND SEE SHEET S-1

THIS PLAN ACCURATE FOR SIGN WORK ONLY.

SIGN PLAN

SCALE: 1"=50'

S-7

REVISED BY	NAYAN AMIN
DATE REVISED	RUTA JARIWALA
CALCULATED-DESIGNED BY	
CHECKED BY	
CONSULTANT FUNCTIONAL SUPERVISOR	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00 | DATE PLOTTED => 6/2/2010 | TIME PLOTTED => 9:18:24 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

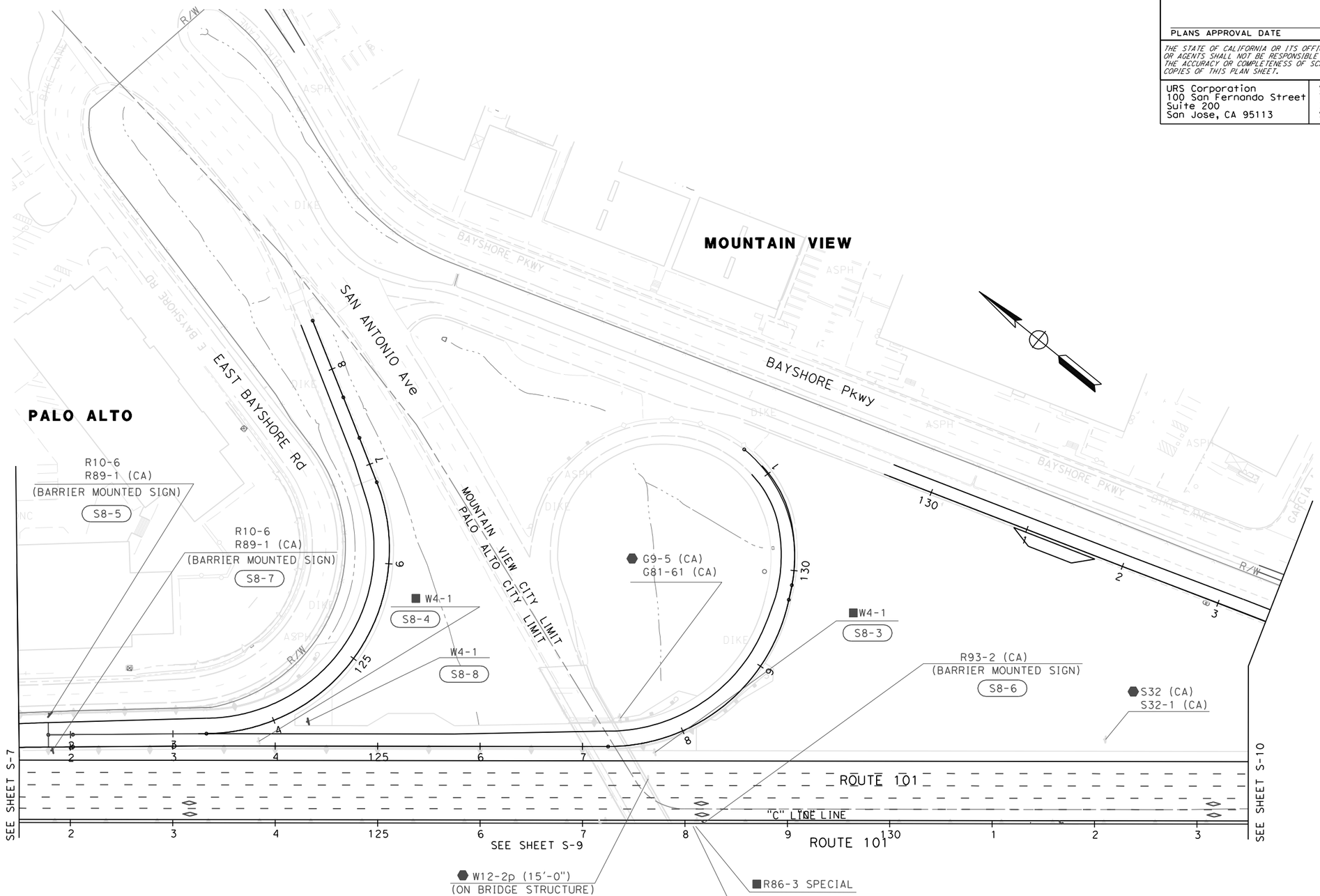
URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

NOTES:

1. FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND LEGEND SEE SHEET S-1

SIGN PLAN

SCALE: 1"=50'

S-8

THIS PLAN ACCURATE FOR SIGN WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY NAYAN AMIN

CHECKED BY RUTA JARIWALA

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 6/2/2010
TIME PLOTTED => 9:18:27 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

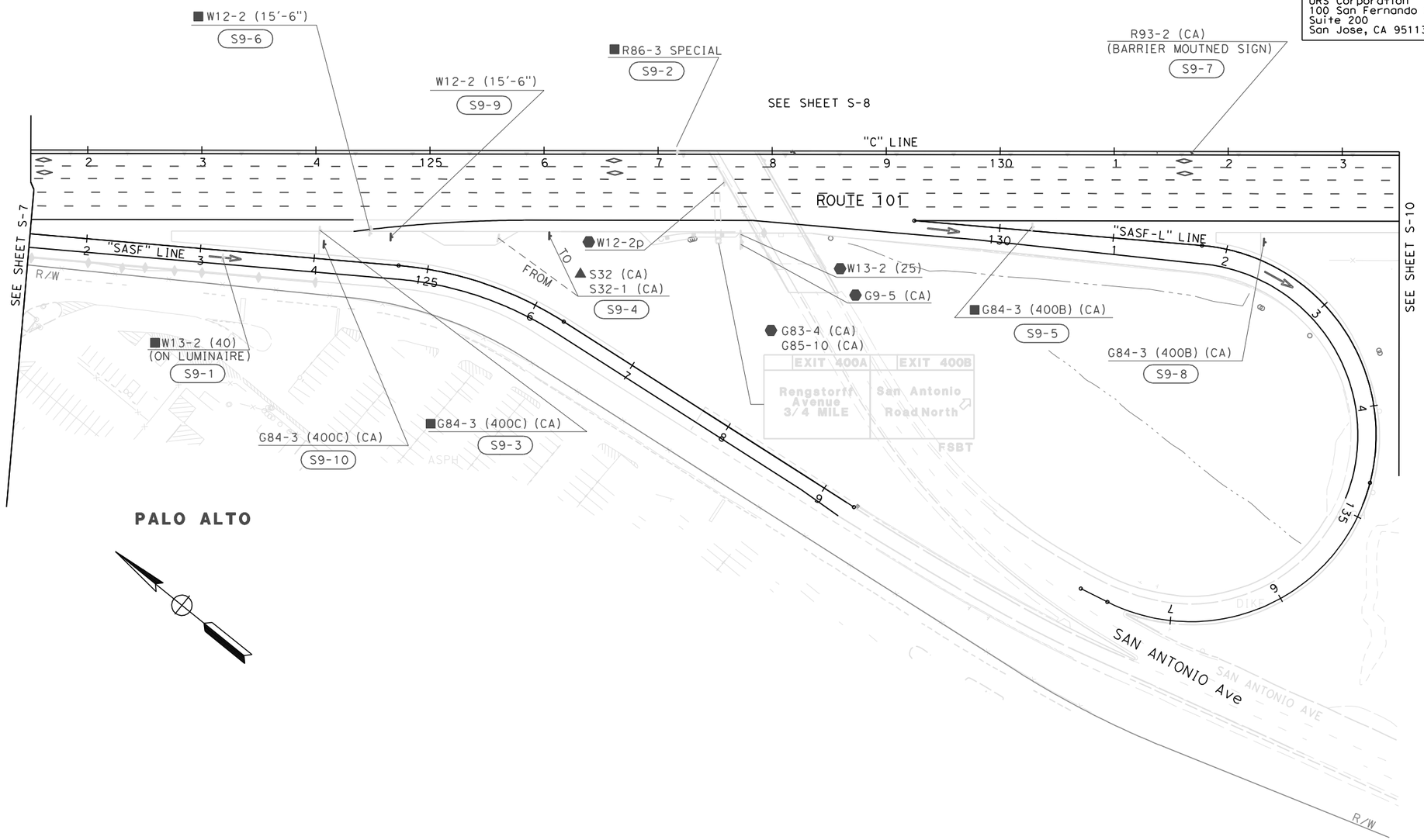
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND
LEGEND SEE SHEET S-1

SIGN PLAN

SCALE 1"=50'

S-9

THIS PLAN ACCURATE FOR SIGN WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY NAYAN AMIN

CHECKED BY RUTA JARIWALA

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 6/2/2010
TIME PLOTTED => 9:18:29 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

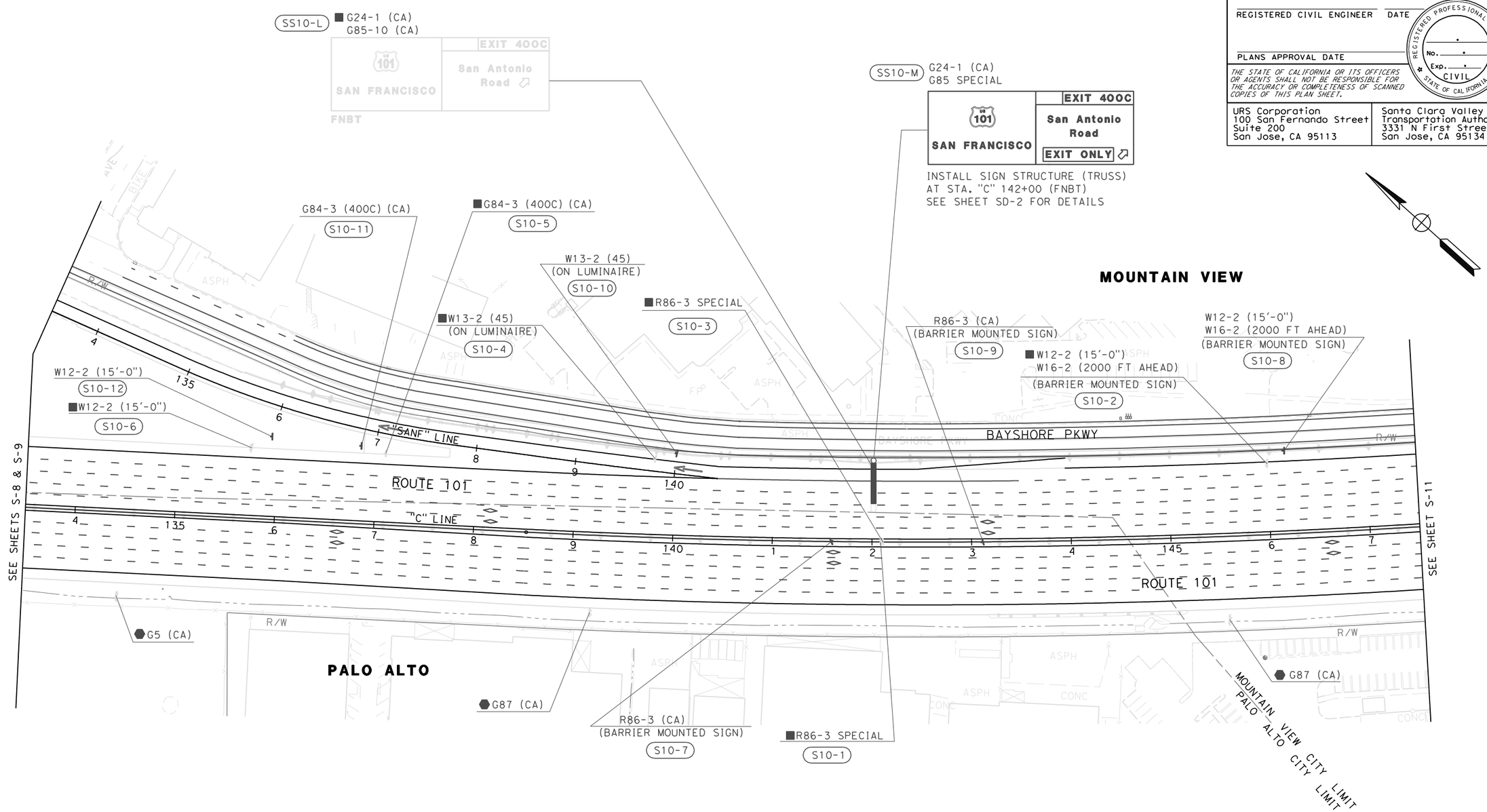
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND LEGEND SEE SHEET S-1

SIGN PLAN

SCALE: 1"=50'

S-10

THIS PLAN ACCURATE FOR SIGN WORK ONLY.

REVISED BY	DATE REVISED
NAYAN AMIN	RUTA JARIWALA
CALCULATED-DESIGNED BY	CHECKED BY
CONSULTANT FUNCTIONAL SUPERVISOR	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00 | DATE PLOTTED => 6/2/2010 | TIME PLOTTED => 9:18:30 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

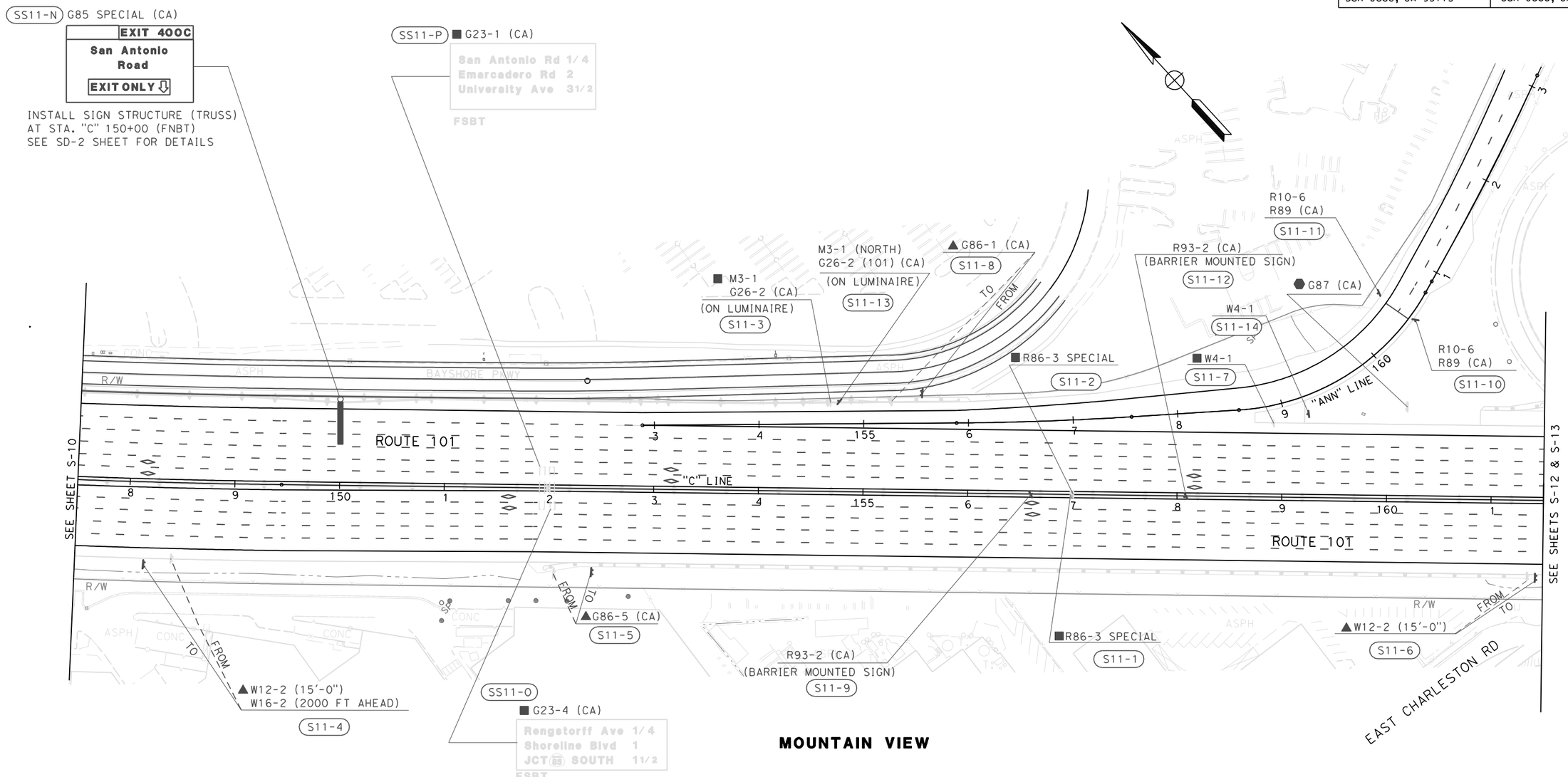
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



MOUNTAIN VIEW

FOR NOTES, ABBREVIATIONS AND LEGEND SEE SHEET S-1

SIGN PLAN

SCALE: 1"=50'

S-11

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED BY: RM N
DESIGNED BY: ROUTA DAR WALA
CHECKED BY:

REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 6/2/2010
TIME PLOTTED => 9:18:32 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => ernie_garnica
DGN FILE => ...\oa-signs\44A3301oa011.dgn

CU 04235

EA 4A3301

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

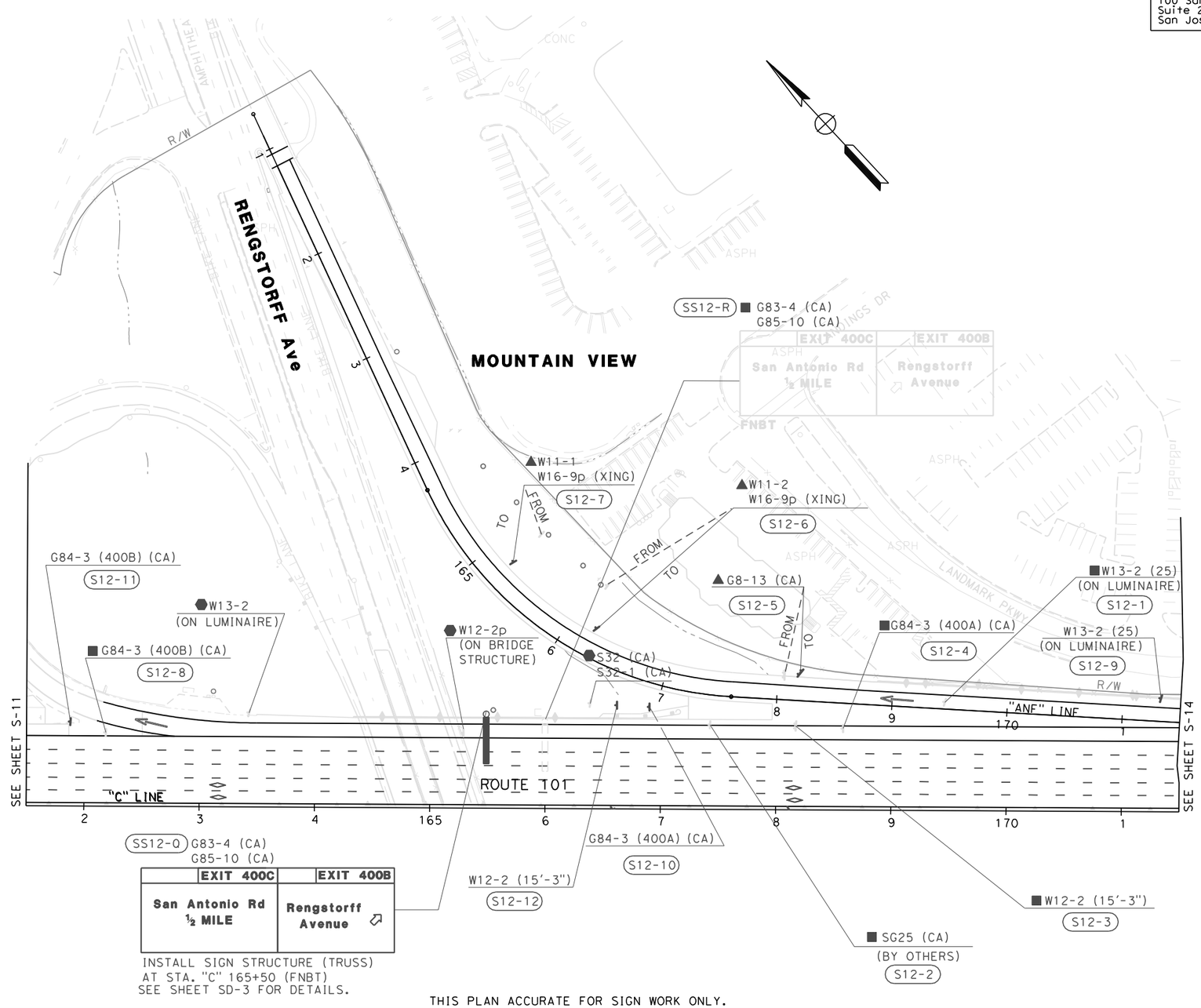
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND
LEGEND SEE SHEET S-1

INSTALL SIGN STRUCTURE (TRUSS)
AT STA. "C" 165+50 (FNBT)
SEE SHEET SD-3 FOR DETAILS.

THIS PLAN ACCURATE FOR SIGN WORK ONLY.

SIGN PLAN

SCALE: 1"=50'

S-12

CALCULATED-DESIGNED BY	NAYAN AMIN	REVISED BY
CHECKED BY	RUTA JARIWALA	DATE REVISED

CONSULTANT FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00 DATE PLOTTED => 6/2/2010 TIME PLOTTED => 9:18:34 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

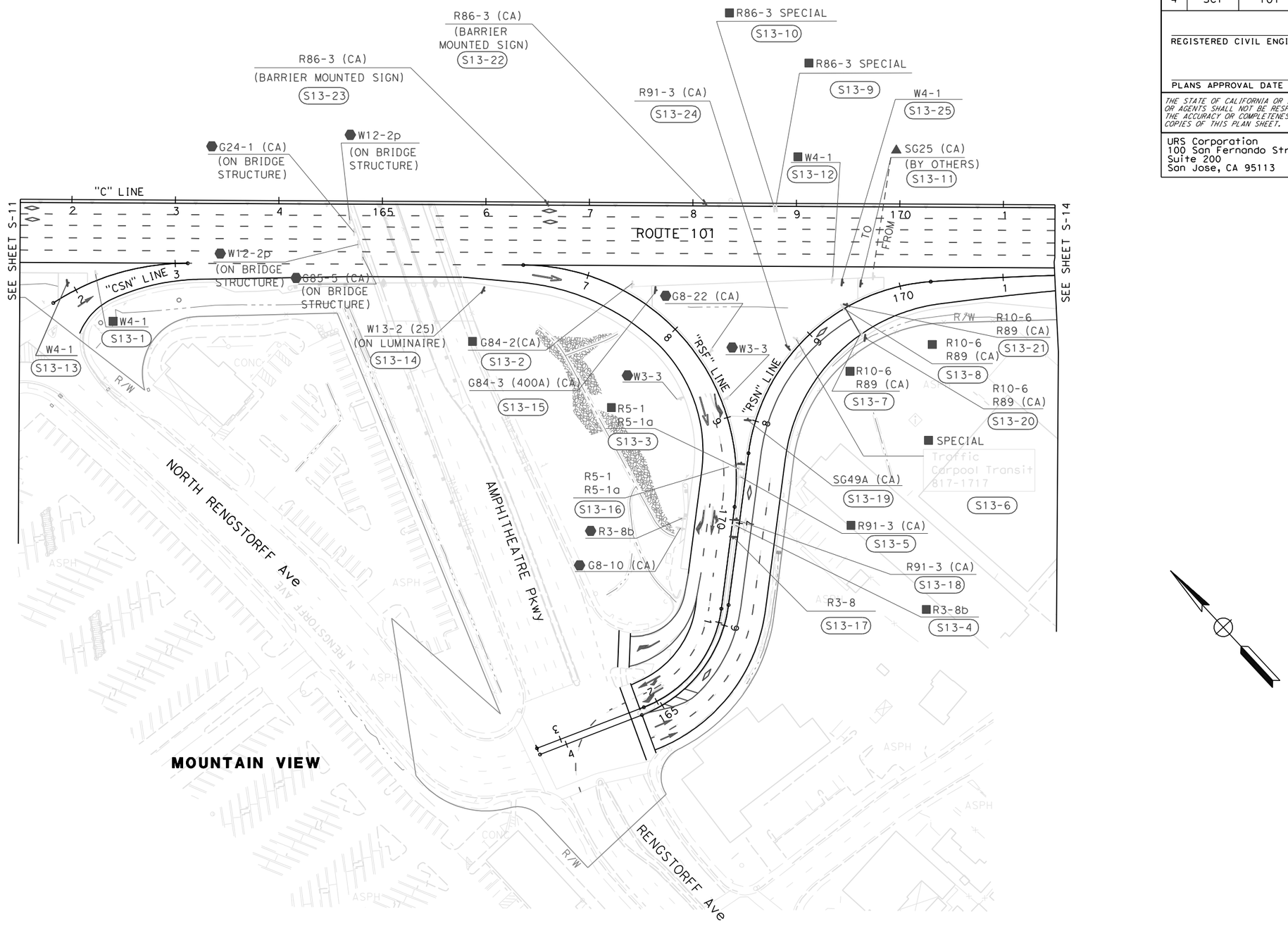
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134



FOR NOTES, ABBREVIATIONS AND LEGEND SEE SHEET S-1

THIS PLAN ACCURATE FOR SIGN WORK ONLY

SIGN PLAN

SCALE 1"=50'

S-13

REVISED BY	DATE REVISED
NAYAN AMIN	
RUTA JARIWALA	

CALCULATED-DESIGNED BY
CHECKED BY
CONSULTANT FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 00-00-00
DATE PLOTTED => 6/2/2010
TIME PLOTTED => 9:18:36 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => ernie_garnica
DGN FILE => ...\oa-signs\44A3301oa013.dgn

CU 04235

EA 4A3301

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

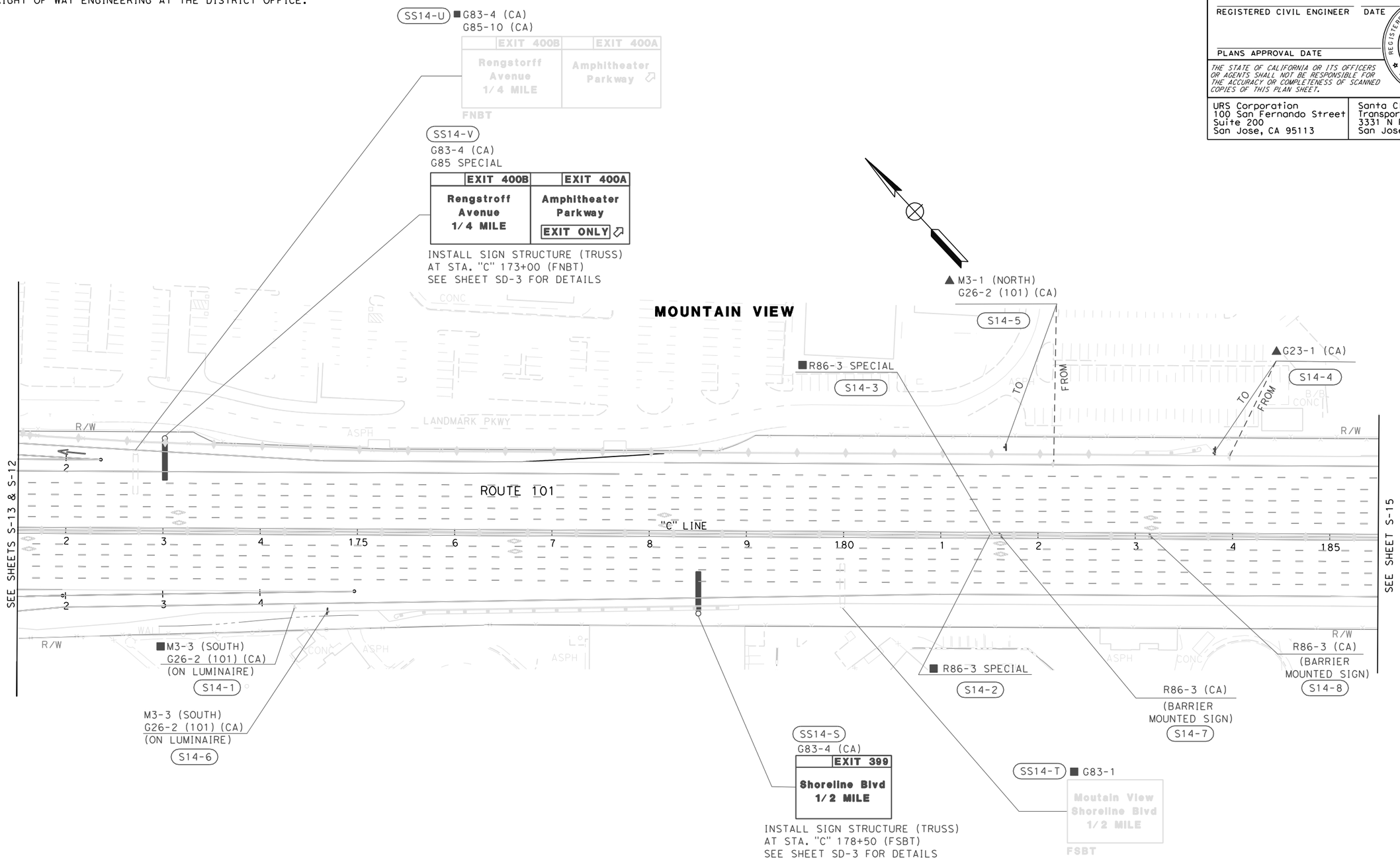
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND/OR LEGEND SEE SHEET S-1

SIGN PLAN

SCALE 1"=50'

S-14

THIS PLAN ACCURATE FOR SIGN WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 6/2/2010
TIME PLOTTED => 9:18:38 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

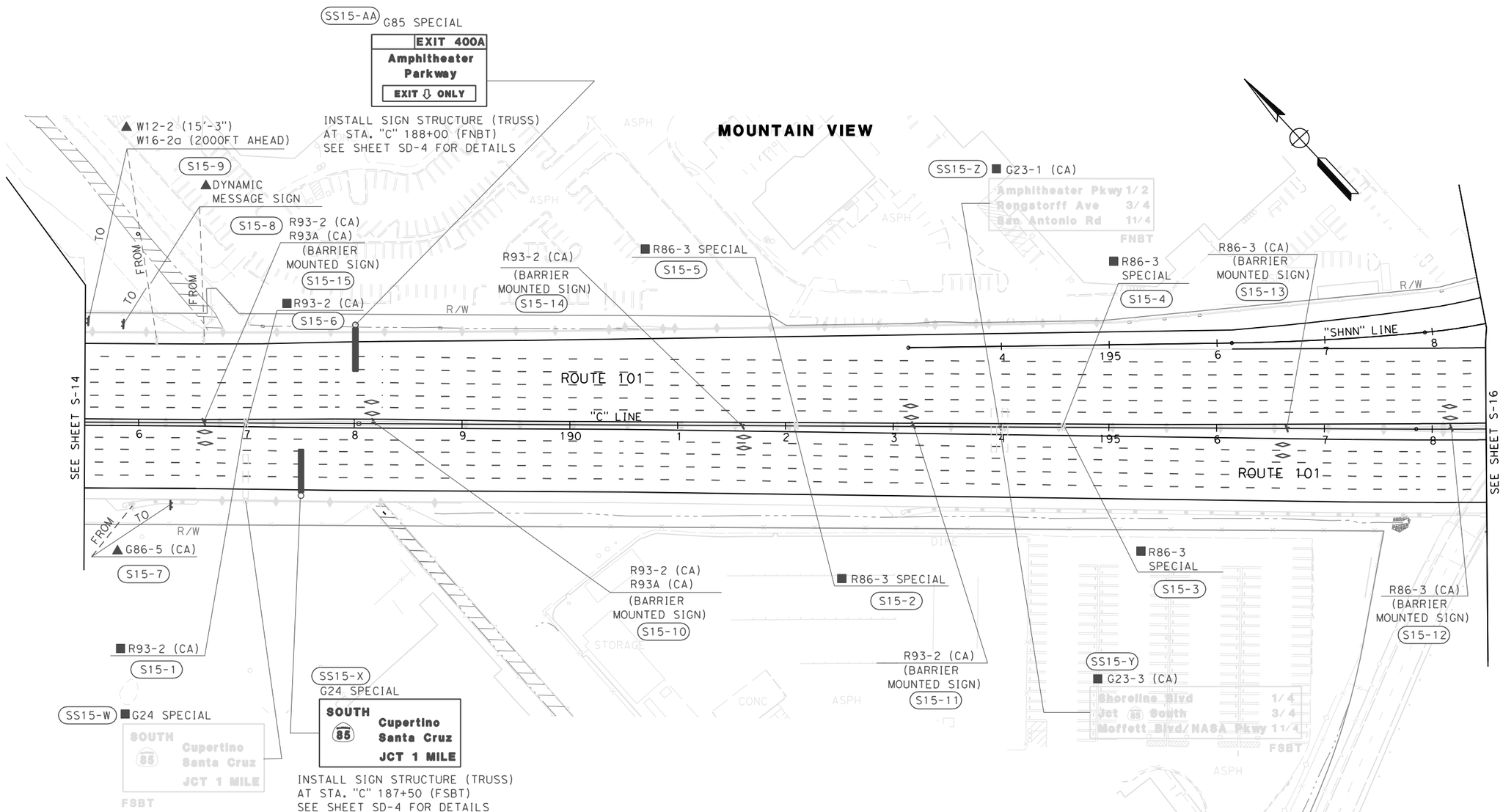
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND LEGEND SEE SHEET S-1

SIGN PLAN

SCALE: 1"=50'

S-15

THIS PLAN ACCURATE FOR SIGN WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 6/2/2010
TIME PLOTTED => 9:18:41 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => ernie_garnica
DGN FILE => ...\oa-signs\44A3301oa015.dgn

CU 04235

EA 4A3301

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

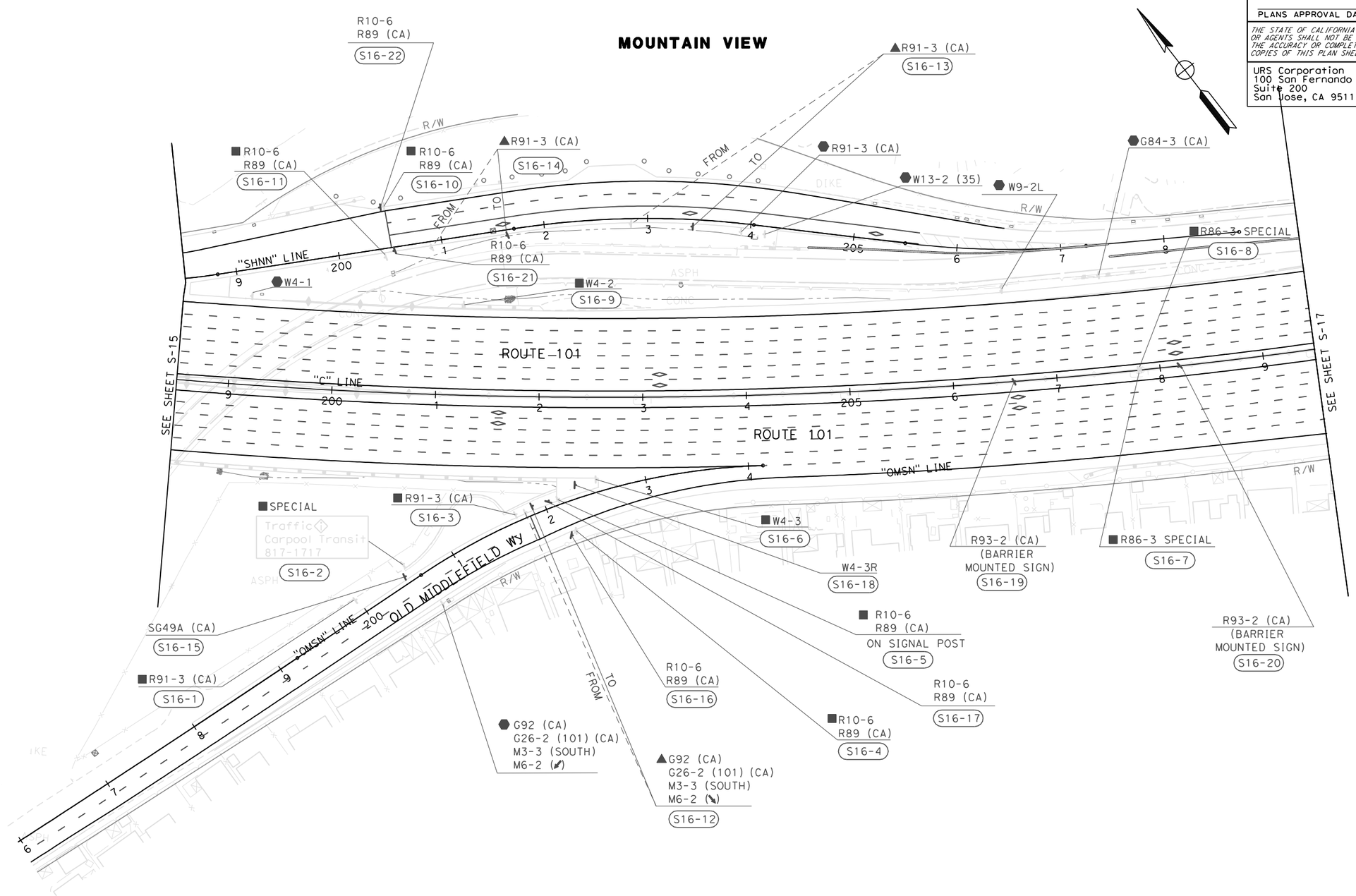
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND
LEGEND SEE SHEET S-1

SIGN PLAN

SCALE: 1"=50'

S-16

THIS PLAN ACCURATE FOR SIGN WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY NAYAN AMIN REVISED BY

CHECKED BY RUTA JABIWALA REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 6/2/2010
TIME PLOTTED => 9:18:42 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

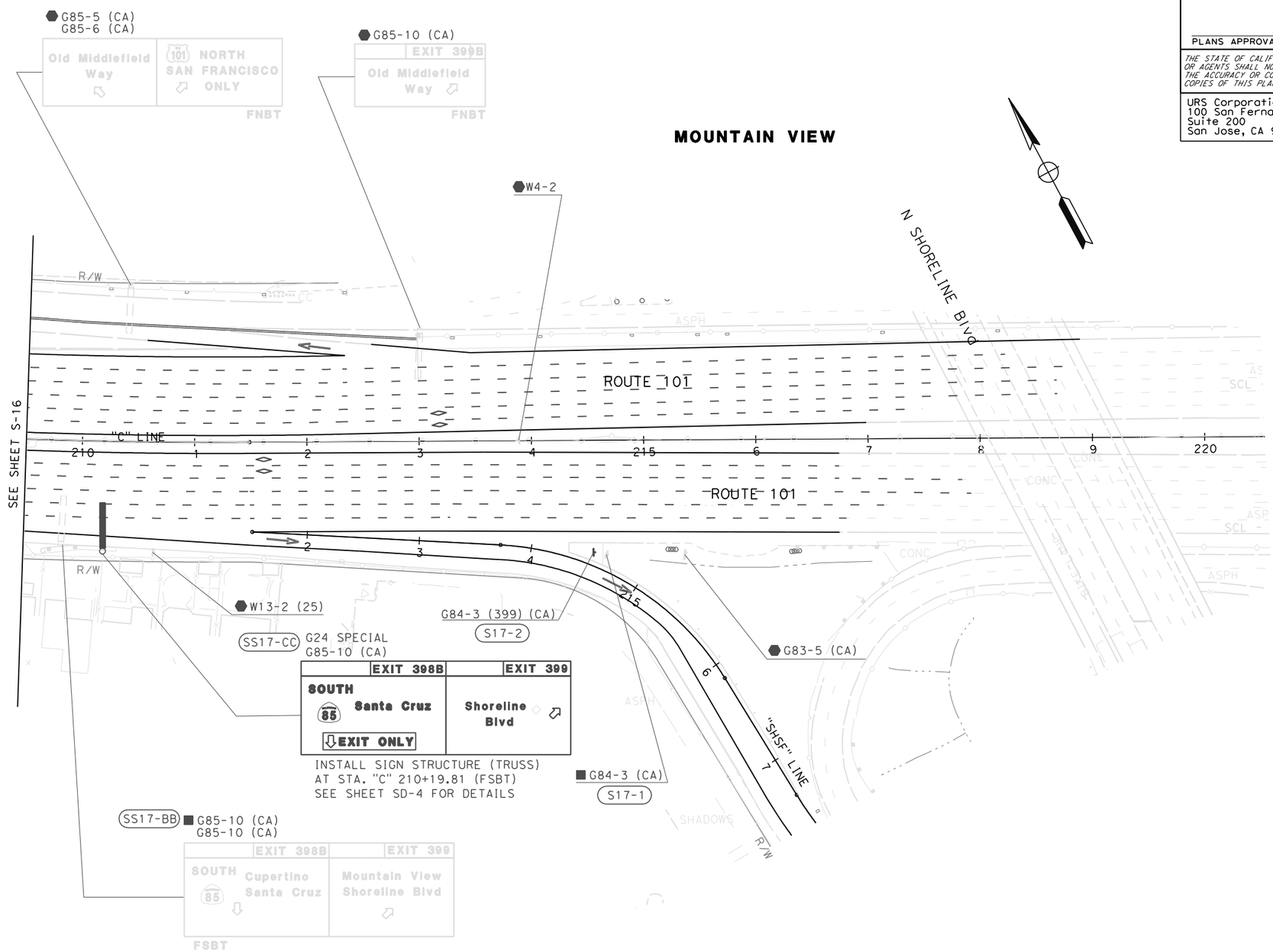
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND LEGEND SEE SHEET S-1

SIGN PLAN

SCALE: 1"=50'

S-17

THIS PLAN ACCURATE FOR SIGN WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY NAYAN AMIN

CHECKED BY RUTA JARIWALA

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 6/2/2010
TIME PLOTTED => 9:18:44 AM

URS

Page 1 of ____

Job 101 AUX LANE. Project No. 28649951 Sheet ____ of ____

Description BOX CULVERT - PERMANANTE CREEK Computed by MT Date 06/22/09

Checked by MLL Date 07/01/09

Reference

CLOSEST BORINGS : R-09-005, CPT-09-006.

12'x12' BOX CULVERT ; EXTEND 20' ON DOWNSTREAM SIDE, 2' ON UPSTREAM

Groundwater not measured in R-09-005 and no pore pressure dissipation test performed in CPT-09-006.

GW @ EL. 11.5 ft in A-09-169 (600' south of creek)

@ EL. 12.9 ft in A-09-170 (1000' south of creek)

@ EL. 9.0 ft in A-09-164 (1000' south of creek).

@ EL. 10.5 ft in B-2, B-7 (parikh consultants, Permanante Creek POC)

design Groundwater @ 12.9 ≅ 13 ft.

Bearing Capacity :-

$S_u = 780$ psf Assume $\phi = 0°$

$N_c = 5.53$ $N_q = 1$

$q_{ult} = cN_c + \gamma D N_q$ — neglect

$= (780)(5.53) = 4313$ psf.

From caltrans standard plans (D82) Design Bearing pressure for 12' height box culvert w/ 10' of cover = 2.6 ksf.

No cover is planned for the box culvert at Permanante creek

so bearing pressure $= 2.6 \text{ ksf} - \frac{(120)(10)}{(1000)} = 1.4$ ksf

URS

Job: 101 AUX LANE | Project No. 28649951 | Page 2 of ___ | Sheet ___ of ___

Description: | Computed by MT | Date 06/22/09

Checked by MLL | Date 07/01/09

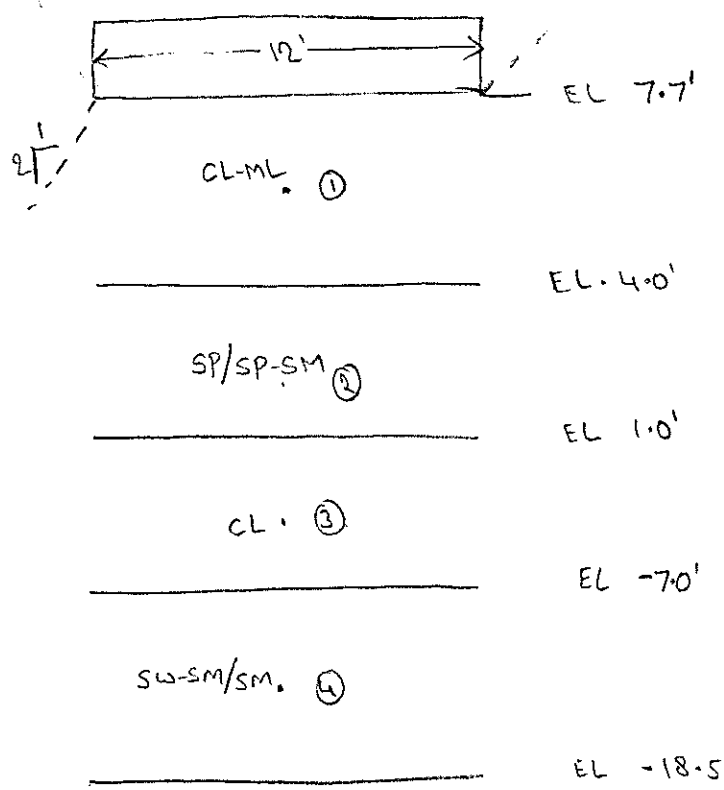
Reference

EL. 21 ft

$FS = \frac{4,313}{1400} = 3.1$ ✓ ok

EL. 13.0 ft

SETTLEMENT:-



Ground surface @ 21 ft. Initial pressure due to adjacent soil $= (120)(8) + (120-62.4)(5) = 960 + 288 = 1248$ psf

$(1/2)(1248) = 624$ psf

Initial pressure @ ① $P_o = (125-62.4)(1.9) = 120$ psf ✓

@ ② $P_o = (125-62.4)(3.7) + (130-62.4)(1.5) = 333$ psf

@ ③ $P_o = (125-62.4)(3.7) + (130-62.4)(3) + (130-62.4)(4) = 705$ psf ✓

@ ④ $P_o = 705 + (130-62.4)(4) + (130)(6) = 1,755$ psf

Add 624 psf to all layers to find P_o.

change in stress $= \Delta P$

ΔP @ ① $= \frac{(1,400)(12)}{(12+0.925+0.925)} = 1,213$ psf ✓

ΔP @ ② $= \frac{(1,400)(12)}{(12+2.6+2.6)} = 977$ psf

URS

Job 101 AUX LANE | Project No. 28649951 | Page 3 of ____
Description ____ | Computed by MTT | Sheet ____ of ____
Checked by MLL | Date 06/22/09
Date 07/01/09
Reference

ΔP @ ③ $= \dfrac{(1{,}400)(12)}{(12+5.35+5.35)} = 740$ psf ✓

ΔP @ ④ $= \dfrac{(1{,}400)(12)}{(12+10.23+10.23)} = 518$ psf

$C_c = 0.009(LL-10)$ From NAVFAC 7.1-224

LL = 30 - layer ①
From nearby boring by Kleinfelder and Parikh
LL = 30 - layer ③

$C_c = 0.009(30-10) = 0.18$ for layer ①

$C_c = 0.009(30-10) = 0.18$ for layer ③

$e_o = \dfrac{(SG)\gamma_w - \gamma_d}{\gamma_d} = \dfrac{(2.7)(62.4)-(100)}{(100)} = 0.68$ for layer ①

$= \dfrac{(2.7)(62.4)-(103)}{(103)} = 0.64$ for layer ③

$\dfrac{C_c}{1+e_o} = \dfrac{0.18}{1+0.68} = 0.107$ - layer ① $\quad \dfrac{C_\gamma}{1+e_o} = 0.1 \times 0.177 = 0.0177$ - layer ①

$\dfrac{C_c}{1+e_o} = \dfrac{0.18}{1+0.64} = 0.109$ - layer ③ $\quad \dfrac{C_\gamma}{1+e_o} = 0.1 \times 0.187 = 0.0187$ - layer ③

consolidation settlement $\Delta H = \dfrac{C_\gamma}{1+e_o} H \log\left(\dfrac{P_o+\Delta P}{P_o}\right)$

$= (0.0177)(3.7)(12) \log\left(\dfrac{744+1213}{744}\right) = 0.33$ in - layer ① ✓

$\Delta H_2 = (0.0187)(8)(12) \log\left(\dfrac{1329+740}{1329}\right) = 0.34$ in - layer ③

URS

Job 101 AUX LANE	Project No. 28664951	Page 4 of	
Description	Computed by MT	Sheet	of
	Checked by MLL	Date 06/22/09	
		Date 07/01/09	
		Reference	

Immediate settlement of layers ② and ④

$$\Delta H = \frac{49 V B^2}{K_{VI}(B+1)^2}$$

N = 13 blows/ft - layer ② $\sigma'_{VO} = (125-62.4)(3.7)+(130-62.4)(1.5) = 333$ PSF $D_r = 75\%$

= 27 blows/ft - layer ④ $\sigma'_{VO} = 1{,}755$ PSF $D_r = 85\%$, (ATTACHED FIGURE

K_{VI} = 240 TONS/FT^3 - Layer ②

K_{VI} = 280 TONS/FT^3 Layer ④

$$\Delta H_2 = \frac{(4)(0.4885)(17.2)^2}{(240)(17.2+1)^2} = 0.00727' = 0.09 \text{ in}$$

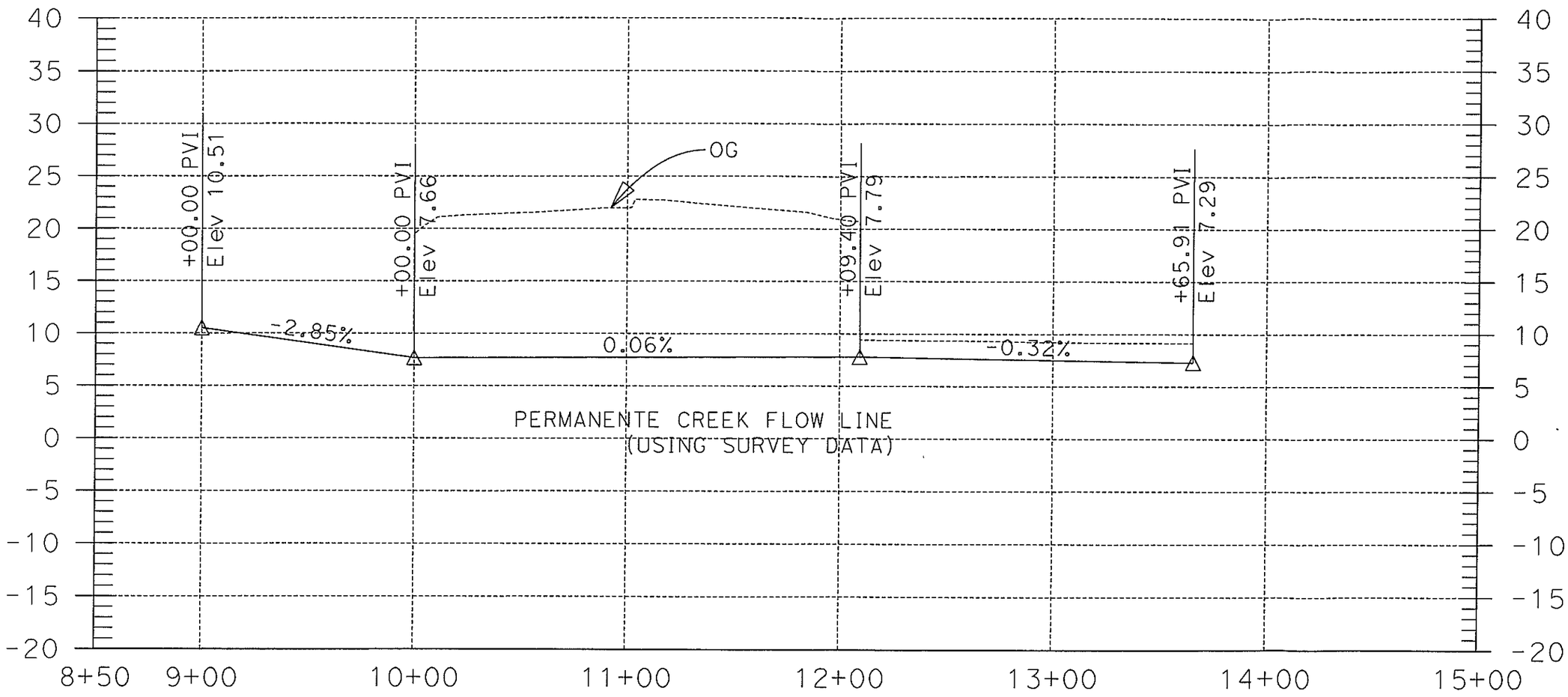
$$\Delta H_4 = \frac{(4)(0.259)(32.5)^2}{(280)(32.5+1)^2} = 0.00348' = 0.04 \text{ in}$$

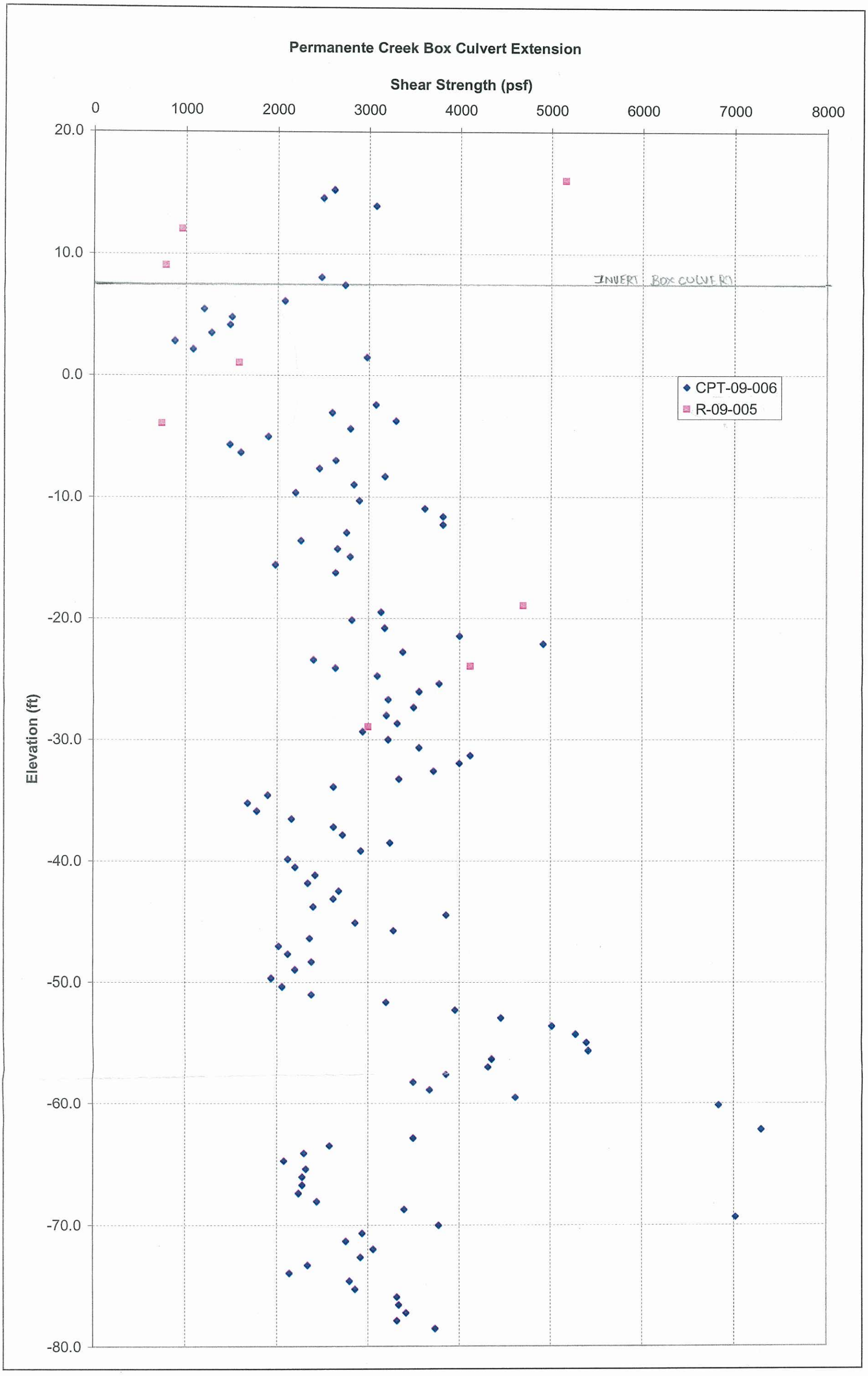
Total settlement = ① + ② + ③ + ④

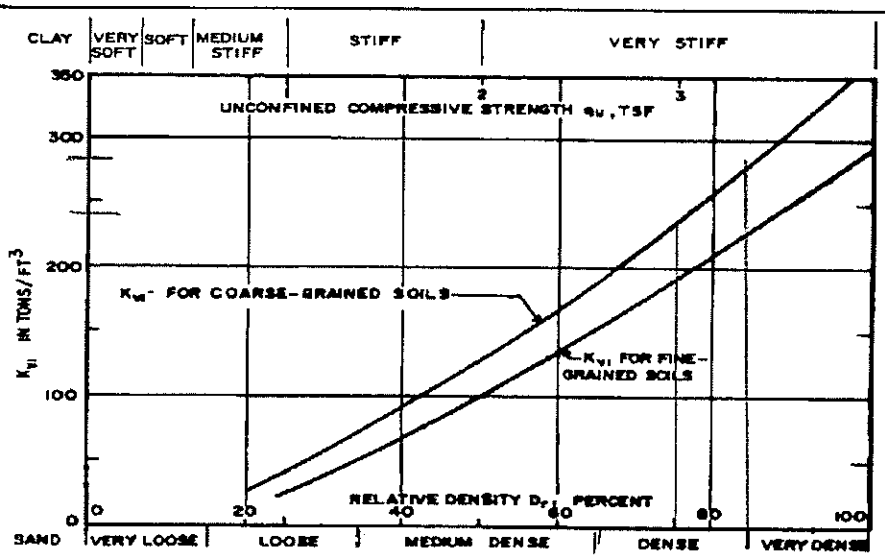
= 0.33 + 0.09 + 0.34 + 0.04 = 0.8 in ≅ 3/4"

Although the calculation shows a settlement of 0.8 inches, no signs of settlement were observed in the existing box culvert during site visit by Michael Carlson.

Settlement of 0.5 inches seems appropriate for the box culvert calculation. Recommend to replaced 2' of material below invert with a fabric and 3/4-inch to 6-inch rock.


+00.00 PVI
Elev 10.51
+00.00 PVI
Elev 7.66
OG
+09.40 PVI
Elev 7.79
+65.91 PVI
Elev 7.29
-2.85%
0.06%
-0.32%
PERMANENTE CREEK FLOW LINE
(USING SURVEY DATA)
40
35
30
25
20
15
10
5
0
-5
-10
-15
-20
8+50
9+00
10+00
11+00
12+00
13+00
14+00
15+00


Permanente Creek Box Culvert Extension
Shear Strength (psf)
0
1000
2000
3000
4000
5000
6000
7000
8000
20.0
10.0
0.0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
Elevation (ft)
INVERT BOX CULVERT
CPT-09-006
R-09-005



DEFINITIONS

ΔH_i = IMMEDIATE SETTLEMENT OF FOOTING
q = FOOTING UNIT LOAD IN tsf
B = FOOTING WIDTH

D = DEPTH OF FOOTING BELOW GROUND SURFACE
K_{vi} = MODULUS OF VERTICAL SUBGRADE REACTION

COARSE-GRAINED SOILS

(MODULUS OF ELASTICITY INCREASING LINEARLY WITH DEPTH)
SHALLOW FOOTINGS $D \leq B$
FOR $B \leq 20$ FT:

$$\Delta H_i = \frac{4\, q\, B^2}{K_{vi}\,(B+1)^2}$$

FOR $B \geq 40$ FT:

$$\Delta H_i = \frac{2\, q\, B^2}{K_{vi}\,(B+1)^2}$$

INTERPOLATE FOR INTERMEDIATE VALUES OF B

DEEP FOUNDATION $D \geq 5B$
FOR $B \leq 20$ FT:

$$\Delta H_i = \frac{2\, q\, B^2}{K_{vi}\,(B+1)^2}$$

NOTES: 1. NONPLASTIC SILT IS ANALYZED AS COARSE-GRAINED SOIL WITH MODULUS OF ELASTICITY INCREASING LINEARLY WITH DEPTH.
2. VALUES OF K_{vi} SHOWN FOR COARSE-GRAINED SOILS APPLY TO DRY OR MOIST MATERIAL WITH THE GROUNDWATER LEVEL AT A DEPTH OF AT LEAST 1.5B BELOW BASE OF FOOTING. IF GROUNDWATER IS AT BASE OF FOOTING, USE $K_{vi}/2$ IN COMPUTING SETTLEMENT
3. FOR CONTINUOUS FOOTINGS MULTIPLY THE SETTLEMENT COMPUTED FOR WIDTH "B" BY 2.

FIGURE 6
Instantaneous Settlement of Isolated Footings on Coarse-Grained Soils

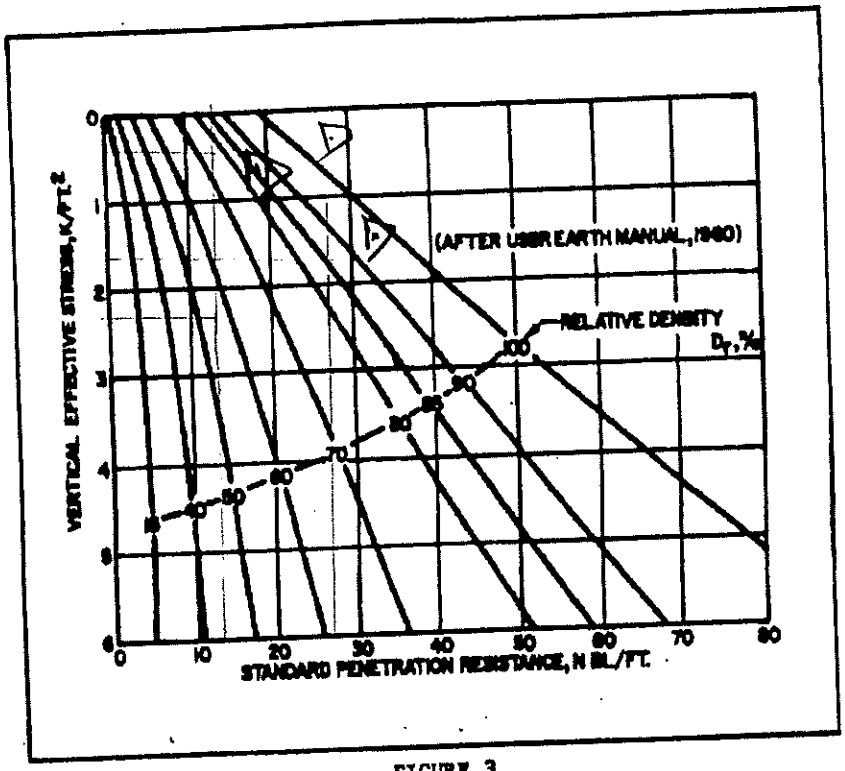
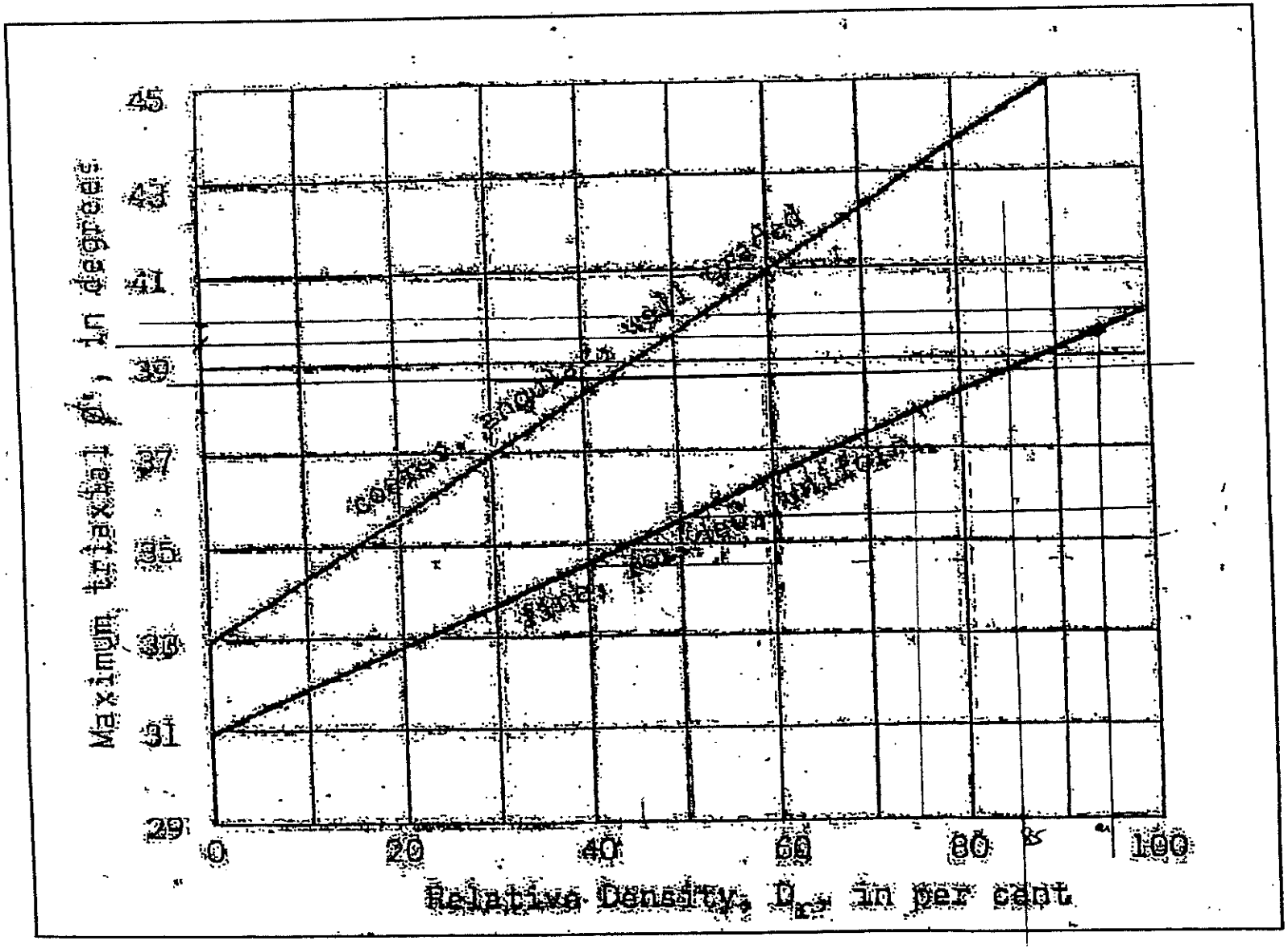


FIGURE 3
Correlations Between Relative Density and Standard Penetration Resistance in Accordance with Gibbs and Holtz



(AFTER SCHMERTMANN, 1975)

URS	Upper Llagas Creek Flood Protection Project	APPROXIMATE CORRELATION BETWEEN THE EFFECTIVE FRICTION ANGLE AND RELATIVE DENSITY FOR QUARTZ SANDS	NOT TO SCALE Figure 112

URS

Job 101 AUX LANE | Project No. 28649951 | Page 1 of 5
Description Retaining wall | Computed by MT | Sheet ___ of ___
Checked by MLL | Date 06/18/09 | Date 07/01/09
Reference

Retaining wall - modified type 1A

Length = 44 feet

maximum design height = 12 feet

closest borings A-09-171, A-09-170, A-09-172

Ground water elevation:

A-09-171 = 13.5 ft

A-09-170 = 13.5 ft

Footing elevation - 9.1 ft

Backfill material : silty, clayey sand.

assume $\gamma_m = 130$ pcf

$\phi = 34°$

Active earth pressure co-efficient

$$K_a = \tan^2\left(45 - \frac{\phi}{2}\right) = 0.283$$

Equivalent fluid pressure for level backfill $= K_a\gamma = (0.283)(130) = 37$ pcf

for $\phi = 35°$ $= 35$ pcf

Equivalent fluid pressure for sloped backfill $\beta = 25°$

$K_a = 0.4$ - FROM NAVFAC DM 7.2-64 $K_a\gamma = (0.4)(130) = 52$ pcf (for ϕ 34)

$= (0.356)(130) = 46$ pcf (for $\phi = 36°$)

URS

Job 101 AUX LANE	Project No. 28649951	Page 2 of 5	
Description	Computed by MT	Sheet ___ of ___	
	Checked by MLL	Date 06/18/09	
		Date 07/01/09	
		Reference	

ultimate Bearing capacity

$q_{ult} = CN_c + \gamma D N_q$ - neglect

$= (1500)(5.53)$

$= 8295$

$S_u = 940$ psf @ 1'

$= 2080$ psf @ 3.5'

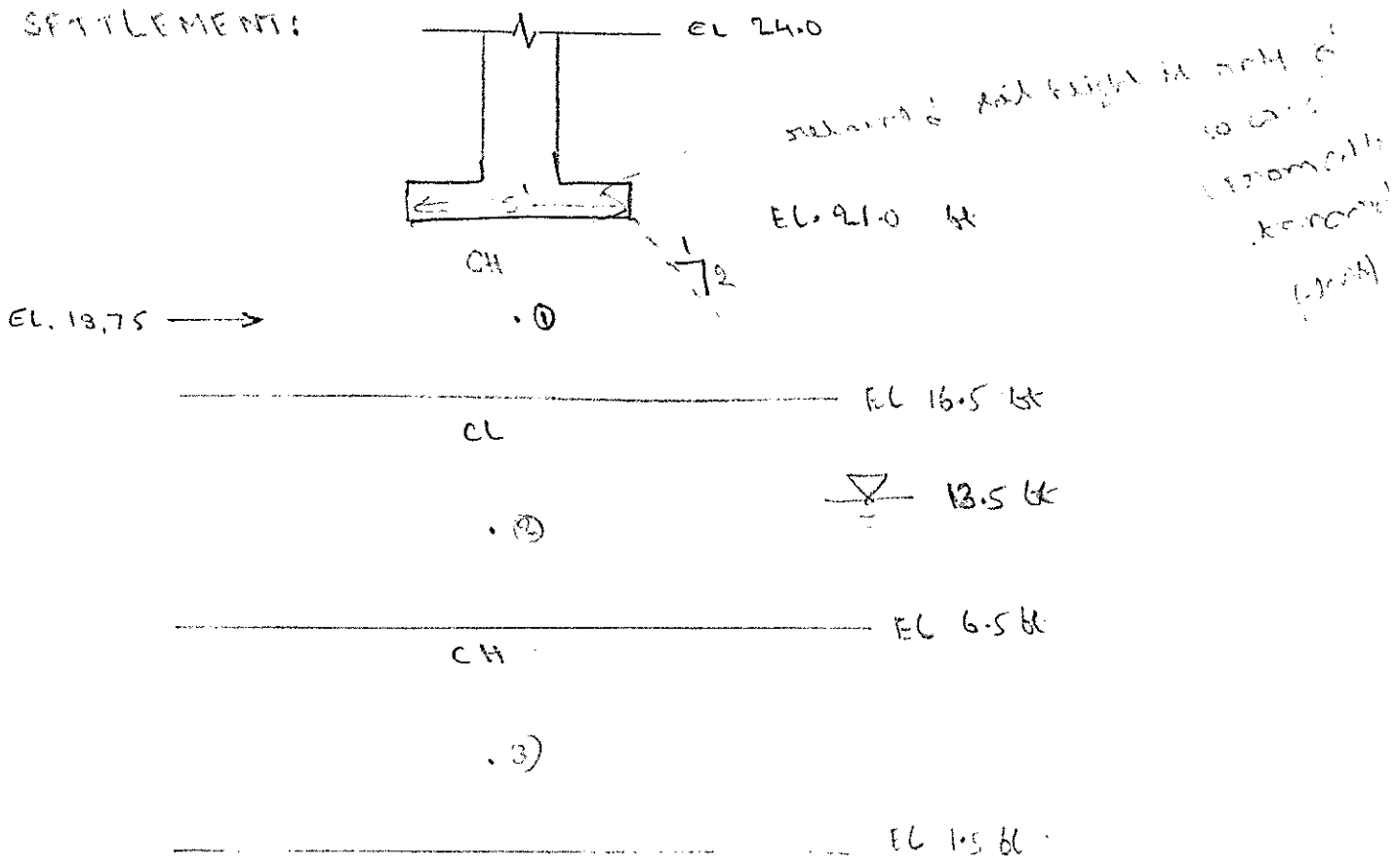
use Avg: 1500 psf

for pressure [ST] 8' design height 1.9 ksf FS = 4.4

12' design height 2.7 ksf FS = 3.1

OK

SETTLEMENT:



NO SETTLEMENT BELOW EL. 1.5 ft

URS

Job 101 AUX LANE | Project No. 28649951 | Sheet ___ of ___

Description ___ | Computed by MT | Date 06/12/09

Checked by MLL | Date 07/01/09

Reference

Initial pressure @ ①: $P_o = (5)(110) = 550$ psf.

@ ②: $P_o = (7.5)(110) + (120)(3) + (120-62.4)(2) = 1300$ psf

@ ③: $P_o = (7.5)(110) + (120)(3) + (120-62.4)(7) + (115-62.4)(0.1)$

$= 1720$ psf

TOC pressure = 2.7 ksf

ΔP @ ① $\cong \frac{5 \times 2700}{7} = 1928$ psf

ΔP @ ② $= \frac{5 \times 2700}{14.5} = 931$ psf

ΔP @ ③ $= \frac{5 \times 2700}{22} = 614$ psf.

$C_c = 0.009\,(LL-10)$ - From NAVFAC 7.1-224

For CH layer LL = 51

For CL layer LL = 45

$C_c = 0.009(51-10) = 0.369$ - for CH

$C_c = 0.009(45-10) = 0.315$ for CL.

$e_o = \frac{(SG)(\gamma_w) - \gamma_d}{\gamma_d} = \frac{(2.6)(62.4) - 85}{85} = 0.91$ - CH

$e_o = \frac{(SG)(\gamma_w) - \gamma_d}{\gamma_d} = \frac{(2.6)(62.4) - 100}{100} = 0.62$ - CL

URS

Job: 101 AUX CANT. | Project No. 28649951 | Page 4 of 5
Description: | Computed by MT | Sheet ___ of ___
Checked by MLL | Date 06/18/09 | Date 09/01/09
Reference

$\frac{C_c}{1+e_0} = \frac{0.369}{1.91} = 0.193$ — CH $\frac{C_r}{1+e_0} = 0.1 \times 0.193 = 0.0193$

$\frac{C_c}{1+e_0} = \frac{0.315}{1.62} = 0.194$ — CL. $\frac{C_r}{1+e_0} = 0.1 \times 0.194 = 0.0194$

FROM ATTACHED CAMBEL CHART GRAPH $\frac{C_c}{1+e_0} = 0.15$ $\frac{C_r}{1+e_0} = 0.1 \times 0.15 = 0.015$

FOR layer ① $\Delta H = \frac{C_r}{1+e_0} H \log\left(\frac{P_0 + \Delta P}{P_0}\right)$ w/o 30% w/o = 0.015

$= (0.015)(4.5) \log\left(\frac{550+1928}{550}\right)$

$= (0.015)(4.5)(0.654)$

$= 0.0448\,ft = 0.53\,in$

FOR layer ② $\Delta H = (0.015)(10) \log\left(\frac{1300+931}{1300}\right)$

$= (0.015)(10)(0.2345)$

$= 0.035\,ft = 0.42\,in$

FOR layer ③ $\Delta H = (0.015)(5) \log\left(\frac{1720+614}{1720}\right)$

$= (0.015)(5)(0.1326)$

$= 0.0099\,ft = 0.12\,in$

TOTAL consolidation settlement $= 0.53 + 0.42 + 0.12 = 1.07$ inches

$\cong 1$ inch

Toe pressure = 1.9 ksf

Δp @ ① $= \frac{5 \times 1900}{7} = 1357$ psf ✓

Δp @ ② $= \frac{5 \times 1900}{14.5} = 655$ psf ✓

Δp @ ③ $= \frac{5 \times 1900}{32} = 432$ psf ✓

ΔH 551 layer ① $= (0.015)(4.5)(12) \log\left(\frac{550+1357}{550}\right)$ ✓

$= (0.81)(0.5399) = 0.44$ in ✓

ΔH 551 layer ② $= (0.015)(10)(12) \log\left(\frac{1300+655}{1300}\right)$ ✓

$= (1.8)(0.177) = 0.32$ in ✓

ΔH 551 layer ③ $= (0.015)(5)(12) \log\left(\frac{1720+432}{1720}\right)$ ✓

$= (0.9)(0.0973) = 0.09$ in ✓

Total consolidation settlement $= 0.44 + 0.32 + 0.09 = 0.85$ in ✓

==========

LPILE Plus for Windows, Version 4.0

Analysis of Individual Piles and Drilled Shafts
Subjected to Lateral Loading Using the p-y Method

(c) Copyright ENSOFT, Inc., 1985-2001
All Rights Reserved

==========

This program is licensed to:

IT - San Jose
URS Corporation

Path to file locations: X:\101-Aux-VTA\440_geotech\Analysis\Pile\Lateral\Overhead Sign Structures\
Name of input data file: OH Sign NB at Sta 173+00.lpd
Name of output file: OH Sign NB at Sta 173+00.lpo
Name of plot output file: OH Sign NB at Sta 173+00.lpp
Name of runtime file: OH Sign NB at Sta 173+00.lpr

Time and Date of Analysis

Date: September 23, 2009 Time: 14:30:37

Problem Title

---

101 Auxillary_OH Sign at NB 170+00

Program Options

Units Used in Computations - US Customary Units, inches, pounds

Basic Program Options:

Analysis Type 1:
- Computation of Lateral Pile Response Using User-specified Constant EI

Computation Options:
- Only internally-generated p-y curves used in analysis
- Analysis does not use p-y multipliers (individual pile or shaft action only)
- Analysis assumes no shear resistance at pile tip
- Analysis includes automatic computation of pile-top deflection vs. pile embedment length

- No computation of foundation stiffness matrix elements
- Output pile response for full length of pile
- Analysis assumes no soil movements acting on pile
- No additional p-y curves to be computed at user-specified depths

Solution Control Parameters:
- Number of pile increments = 50
- Maximum number of iterations allowed = 100
- Deflection tolerance for convergence = 1.0000E-05 in
- Maximum allowable deflection = 1.0000E+02 in

Printing Options:
- Values of pile-head deflection, bending moment, shear force, and soil reaction are printed for full length of pile.
- Printing Increment (spacing of output points) = 1

Pile Structural Properties and Geometry

Pile Length = 300.00 in
Depth of ground surface below top of pile = .00 in
Slope angle of ground surface = .00 deg.

Structural properties of pile defined using 2 points

Point	Depth X in	Pile Diameter in	Moment of Inertia in**4	Pile Area Sq.in	Modulus of Elasticity lbs/Sq.in
1	0.0000	60.000	636172.5000	2827.4000	3600000.000
2	300.0000	60.000	636172.5000	2827.4000	3600000.000

Soil and Rock Layering Information

The soil profile is modelled using 6 layers

Layer 1 is stiff clay without free water
Distance from top of pile to top of layer = .000 in
Distance from top of pile to bottom of layer = 48.000 in
p-y subgrade modulus k for top of soil layer = 625.000 lbs/in**3
p-y subgrade modulus k for bottom of layer = 625.000 lbs/in**3

Layer 2 is stiff clay without free water
Distance from top of pile to top of layer = 48.000 in
Distance from top of pile to bottom of layer = 120.000 in
p-y subgrade modulus k for top of soil layer = 340.000 lbs/in**3
p-y subgrade modulus k for bottom of layer = 340.000 lbs/in**3

Layer 3 is stiff clay without free water
Distance from top of pile to top of layer = 120.000 in
Distance from top of pile to bottom of layer = 168.000 in
p-y subgrade modulus k for top of soil layer = 100.000 lbs/in**3

```
p-y subgrade modulus k for bottom of layer   =      100.000 lbs/in**3

Layer  4 is stiff clay without free water
Distance from top of pile to top of layer    =      168.000 in
Distance from top of pile to bottom of layer =      228.000 in
p-y subgrade modulus k for top of soil layer =       40.000 lbs/in**3
p-y subgrade modulus k for bottom of layer   =       40.000 lbs/in**3

Layer  5 is stiff clay without free water
Distance from top of pile to top of layer    =      228.000 in
Distance from top of pile to bottom of layer =      360.000 in
p-y subgrade modulus k for top of soil layer =      675.000 lbs/in**3
p-y subgrade modulus k for bottom of layer   =      675.000 lbs/in**3

Layer  6 is stiff clay without free water
Distance from top of pile to top of layer    =      360.000 in
Distance from top of pile to bottom of layer =      438.000 in
p-y subgrade modulus k for top of soil layer =      180.000 lbs/in**3
p-y subgrade modulus k for bottom of layer   =      180.000 lbs/in**3


(Depth of lowest layer extends  138.00 in below pile tip)


--------------------------------------------------------------------------------
                   Effective Unit Weight of Soil vs. Depth
--------------------------------------------------------------------------------

Distribution of effective unit weight of soil with depth
is defined using 12 points

Point        Depth X    Eff. Unit Weight
 No.           in          lbs/in**3
-----      ----------   ----------------
  1              .00         .06940
  2            48.00         .06940
  3            48.00         .07520
  4           120.00         .07520
  5           120.00         .03620
  6           168.00         .03620
  7           168.00         .03620
  8           228.00         .03620
  9           228.00         .03620
 10           360.00         .03620
 11           360.00         .03910
 12           438.00         .03910



--------------------------------------------------------------------------------
                            Shear Strength of Soils
--------------------------------------------------------------------------------

Distribution of shear strength parameters with depth
defined using 12 points

Point    Depth X     Cohesion c     Angle of Friction     E50 or      RQD
```

No.	in	lbs/in**2	Deg.	k_rm	%
1	.000	17.36000	.00	.00600	.0
2	48.000	17.36000	.00	.00600	.0
3	48.000	11.11000	.00	.00900	.0
4	120.000	11.11000	.00	.00900	.0
5	120.000	6.94000	.00	.01000	.0
6	168.000	6.94000	.00	.01000	.0
7	168.000	4.51000	.00	.01500	.0
8	228.000	4.51000	.00	.01500	.0
9	228.000	18.75000	.00	.00600	.0
10	360.000	18.75000	.00	.00600	.0
11	360.000	8.33000	.00	.00800	.0
12	438.000	8.33000	.00	.00800	.0

Notes:

(1) Cohesion = uniaxial compressive strength for rock materials.
(2) Values of E50 are reported for clay strata.
(3) Default values will be generated for E50 when input values are 0.
(4) RQD and k_rm are reported only for weak rock strata.

Static loading criteria was used for computation of p-y curves

---

Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 1

Load Case Number 1

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Shear force at pile head = 30994.000 lbs
Bending moment at pile head = 7297227.000 in-lbs
Axial load at pile head = 23500.000 lbs

Non-zero moment at pile head for this load case indicates the pile-head may rotate under the applied pile-head loading, but is not a free-head (zero moment)condition.

Computed Values of Load Distribution and Deflection for Lateral Loading for Load Case Number 1

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Specified shear force at pile head = 30994.000 lbs
Specified bending moment at pile head = 7297227.000 in-lbs
Specified axial load at pile head = 23500.000 lbs

Non-zero moment for this load case indicates the pile-head may rotate under the applied pile-head loading, but is not a free-head (zero moment)condition.

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res p lbs/in
0.000	.049074	7.297E+06	30994.0000	-5.629E-04	352.4270	-755.0861
6.000	.045753	7.470E+06	26447.9018	-5.436E-04	360.5593	-760.2800
12.000	.042551	7.615E+06	21873.3054	-5.238E-04	367.4007	-764.5855
18.000	.039467	7.732E+06	17275.5995	-5.037E-04	372.9440	-767.9832
24.000	.036506	7.822E+06	12660.2910	-4.834E-04	377.1834	-770.4530
30.000	.033667	7.884E+06	8033.0116	-4.628E-04	380.1147	-771.9735
36.000	.030953	7.919E+06	3399.5261	-4.421E-04	381.7353	-772.5217
42.000	.028362	7.925E+06	-1234.2566	-4.213E-04	382.0443	-772.0726
48.000	.025897	7.904E+06	-5736.3720	-4.006E-04	381.0424	-728.6326
54.000	.023555	7.857E+06	-9299.7085	-3.799E-04	378.8035	-459.1463
60.000	.021337	7.793E+06	-12053.1029	-3.594E-04	375.7849	-458.6518
66.000	.019242	7.712E+06	-14801.2489	-3.391E-04	371.9876	-457.3968
72.000	.017268	7.615E+06	-17539.4973	-3.191E-04	367.4137	-455.3526
78.000	.015413	7.502E+06	-20263.0146	-2.993E-04	362.0665	-452.4865
84.000	.013677	7.372E+06	-22966.7572	-2.798E-04	355.9511	-448.7610
90.000	.012056	7.226E+06	-25645.4376	-2.606E-04	349.0737	-444.1324
96.000	.010549	7.064E+06	-28293.4811	-2.419E-04	341.4422	-438.5487
102.000	.009153	6.887E+06	-30904.9683	-2.237E-04	333.0661	-431.9470
108.000	.007865	6.693E+06	-33473.5577	-2.059E-04	323.9566	-424.2494
114.000	.006683	6.485E+06	-35992.3781	-1.886E-04	314.1267	-415.3574
120.000	.005602	6.262E+06	-38506.4102	-1.719E-04	303.5916	-422.6533
126.000	.004620	6.023E+06	-40611.2249	-1.558E-04	292.3388	-278.9516
132.000	.003732	5.774E+06	-42252.3469	-1.404E-04	280.6124	-268.0891
138.000	.002935	5.516E+06	-43824.3537	-1.256E-04	268.4307	-255.9131
144.000	.002225	5.248E+06	-45318.2325	-1.115E-04	255.8145	-242.0465
150.000	.001598	4.972E+06	-46721.9266	-9.808E-05	242.7873	-225.8515
156.000	.001048	4.688E+06	-48017.7814	-8.543E-05	229.3766	-206.1001
162.000	5.73E-04	4.396E+06	-49175.5954	-7.353E-05	215.6160	-179.8379
168.000	1.66E-04	4.098E+06	-50150.4195	-6.240E-05	201.5499	-145.1034
174.000	-1.76E-04	3.794E+06	-50273.2615	-5.206E-05	187.2375	104.1561
180.000	-4.59E-04	3.495E+06	-49556.2618	-4.252E-05	173.1018	134.8438
186.000	-6.86E-04	3.200E+06	-48698.8768	-3.375E-05	159.1949	150.9512
192.000	-8.64E-04	2.910E+06	-47761.0672	-2.574E-05	145.5443	161.6520
198.000	-9.95E-04	2.626E+06	-46768.2730	-1.849E-05	132.1680	169.2794
204.000	-.001086	2.349E+06	-45735.9958	-1.197E-05	119.0791	174.8130
210.000	-.001139	2.078E+06	-44675.2775	-6.176E-06	106.2869	178.7598
216.000	-.001160	1.813E+06	-43594.7585	-1.080E-06	93.7981	181.4132
222.000	-.001152	1.555E+06	-42501.7090	3.331E-06	81.6173	182.9366
228.000	-.001120	1.303E+06	-41357.0994	7.074E-06	69.7471	198.5999
234.000	-.001067	1.058E+06	-38540.6515	1.017E-05	58.2139	740.2160
240.000	-9.98E-04	8.403E+05	-34118.2986	1.265E-05	47.9374	733.9016
246.000	-9.15E-04	6.488E+05	-29744.2214	1.460E-05	38.9067	724.1241
252.000	-8.22E-04	4.834E+05	-25439.4783	1.609E-05	31.1054	710.7903
258.000	-7.22E-04	3.435E+05	-21226.2394	1.717E-05	24.5107	693.6227
264.000	-6.16E-04	2.286E+05	-17129.1277	1.792E-05	19.0936	672.0812
270.000	-5.07E-04	1.380E+05	-13177.2907	1.840E-05	14.8174	645.1978
276.000	-3.96E-04	70508.7127	-9408.0775	1.867E-05	11.6365	611.2066
282.000	-2.83E-04	25059.3210	-5874.6952	1.880E-05	9.4932	566.5875
288.000	-1.70E-04	7.0690	-2666.4912	1.883E-05	8.3119	502.8139
294.000	-5.70E-05	-6943.8837	-.1468	1.882E-05	8.6390	385.9676
300.000	5.59E-05	0.0000	0.0000	1.881E-05	8.3115	-385.9187

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 1:

```
Pile-head deflection             =      .04907366 in
Computed slope at pile head      =     -.00056293
Maximum bending moment           =    7925283.635 lbs-in
Maximum shear force              =     -50273.262 lbs
Depth of maximum bending moment  =         42.000 in
Depth of maximum shear force     =        174.000 in
Number of iterations             =             21
Number of zero deflection points =              2
```

Summary of Pile-head Response

Definition of symbols for pile-head boundary conditions:

y = pile-head displacment, in
M = pile-head moment, lbs-in
V = pile-head shear force, lbs
S = pile-head slope, radians
R = rotational stiffness of pile-head, in-lbs/rad

BC Type	Boundary Condition 1	Boundary Condition 2	Axial Load lbs	Pile Head Deflection in	Maximum Moment in-lbs	Maximum Shear lbs
1	V= 30994.000	M= 7.30E+06	23500.0000	.049074	7.925E+06	-50273.2615

Pile-head Deflection vs. Pile Length

Boundary Condition Type 1, Shear and Moment

```
Shear      =          30994. lbs
Moment     =        7297227. in-lbs
Axial Load =          23500. lbs
```

Pile Length in	Pile Head Deflection in	Maximum Moment in-lbs	Maximum Shear lbs
300.000	.04907366	7925283.635	-50273.262
285.000	.05058801	7921326.153	-51846.517

270.000	.05907683	7896227.694	-54750.254
255.000	.07633532	7858409.814	-57738.852
240.000	.12779381	7789179.786	-63047.755
225.000	.27438469	7706977.478	-70330.598
210.000	.39791621	7671331.937	-74699.979
195.000	.59895741	7635650.964	-79553.762
180.000	.93205560	7602290.361	-85137.902
165.000	1.49280853	7572713.033	-91039.578

The analysis ended normally.

US 101 AUXILIARY LANES PROJECT

IN MOUNTAIN VIEW & PALO ALTO
FROM OREGON EXPRESSWAY TO SHORELINE BOULEVARD

MATERIALS REPORT - REVISED

Prepared for:

URS CORPORATION
55 South Market Street, Suite 1500
San Jose, CA 95113

Prepared By:

V&A
155 Grand Avenue, Suite 700
Oakland, CA 94612

JANUARY 2010

09-0244/Final US 101 Auxiliary Lane Materials Report.doc.

TABLE OF CONTENTS

DESCRIPTION **PAGE NO.**

INTRODUCTION 1
CONCLUSIONS 2
RECOMMENDATIONS 2
- Buried Reinforced Concrete Structures and Cast in Place Piles 2
- Prestressed Concrete Piles 2
- Cast-in-Drilled-Hole (CIDH) Piles 3
- Culvert, Mechanically Stabilized Embankment and Metallic Soil Reinforcement Backfill 3
- Alternative Pipe Material Selection 4

TEST METHODS 4
- In-Situ Soil Resistivity 4
- Laboratory Analysis of Soil and Water 8

TEST RESULTS AND DISCUSSION 8
- In-Situ Soil Resistivity 8
- Laboratory Analysis of Soil and Water Samples 14

FIGURES

Figure 1 - Vicinity and Project Site Map 5
Figure 2 – In-Situ Resistivity Testing Locations 6
Figure 3 – In-Situ Soil Resistivity Measurement 7

REFERENCES 8

TABLES

Table 1 – In-Situ Soil Resistivity Data 10

APPENDICES

Appendix A - Soil Laboratory Chemical Analysis Results

Appendix B - Culvert Service Design Estimates

Appendix C - Alternative Pipe Material Selection

INTRODUCTION

V&A Consulting Engineers was retained by URS Corporation to perform a soil corrosivity Investigation for the proposed US 101 Auxiliary Lanes Project. This project runs from Oregon Expressway in Palo Alto to Shoreline Boulevard (SR 85) in Mountain View, CA. The objective of this investigation is to measure various soil parameters and evaluate the results in order to determine the corrosivity of the soil to the proposed structures associated with the US 101 Auxiliary Lanes Project. Corrosivity was determined for the proposed project structures' materials to depths ranging from 0 to 24.4 meters below grade.

This report provides recommendations for corrosion control for the Concrete Box Culvert at Station 187+50.

The California Department of Transportation, Division of Engineering Services, Materials Engineering and Testing Services, Corrosion Technology Branch has published Corrosion Guidelines (Guidelines) to define corrosive soil. The Guidelines consider soil to be corrosive to structural elements (steel reinforced concrete) if one or more of the following conditions exist for water or soil samples:

> ***"Chloride concentration is 500 ppm (mg/kg) or greater, sulfate concentration is 2,000 mg/kg or greater or the pH is 5.5 or less."***

A wide variety of soluble salts is typically found in soils. Two soils having the same resistivity may have significantly different corrosion characteristics, depending on the specific ions available. The major constituents that accelerate corrosion are chlorides, sulfates and the acidity (pH) of the soil. Chloride ions tend to break down otherwise protective surface deposits and can result in corrosion of reinforcing steel in concrete structures. Sulfates in soil can be highly aggressive to Portland cement concrete by combining chemically with certain constituents of the concrete, principally tricalcium aluminate. This reaction is accompanied by expansion and the eventual disruption of the concrete matrix. High concentrations of bicarbonates tend to decrease soil resistivities. Although bicarbonates are not aggressive to concrete, lower resistivity environments can promote corrosion activity.

Acidity, as indicated by the pH value, is another important factor of soil. The lower the pH (the more acidic the environment), the higher the corrosivity will be with respect to buried metallic and concrete structures. As pH increases above 7 (the neutral value), conditions become increasingly more alkaline and passive to buried structures.

Evaluation of the in-situ soil environment was made in terms of potential damage due to corrosion. Soil resistivity measurements were conducted in the field during the initial stages of the project. In addition, soil samples, collected by URS during the geotechnical investigation, and water samples, collected by V&A from Matadero Creek and Adobe Creek, were forwarded to Cooper Testing Laboratory in Palo Alto, CA, for chemical analysis (Appendix A). The soil borings were analyzed for minimum resistivity, pH, water soluble chloride ion concentration and water soluble sulfate ion concentration, in accordance with the Guidelines.

The pH of the soil samples analyzed ranged from 8.6 to 10.3, while the pH of the water samples analyzed ranged from 7.6 to 7.7. The water soluble chloride ion concentration of the soil borings analyzed ranged from below the minimum detection level of 2 milligrams per kilogram (mg/kg) to 256 mg/kg, while the

water soluble chloride ion concentration of the water samples analyzed ranged from 174 to 187 mg/L. The water soluble sulfate ion concentration of the soil borings analyzed ranged from below the minimum detection level of 5 mg/kg to 203 mg/kg, while water soluble sulfate ion concentration of the water samples analyzed ranged from 12 to 21 mg/L.

Based on the results of the corrosion analyses, the site is considered *non-corrosiv*e.

CONCLUSIONS

- The chloride ion concentration of the soil borings analyzed is less than 500 mg/kg.
- The sulfate ion concentration of the soil borings is less than 2,000 mg/kg.
- The soil pH of the soil borings analyzed is greater than 5.5.
- The site is considered *non-corrosive* in accordance with CALTRANS Guidelines.
- The project site is not located within 300 meters (1,000 feet) of a salt or brackish water source.

RECOMMENDATIONS

Based on the test data and review of the project requirements, specific recommendations for each material alternative are listed below:

Buried Reinforced Concrete Structures and Cast in Place Piles

Buried concrete structures should be constructed of durable concrete as described in ACI Standards 201.2R and 222R. These recommendations include, but are not limited to, the following:

- The water/cement ratio should not exceed 0.50.
- A concrete cover of a minimum of 5.1 centimeters should be applied over all steel reinforcement.
- Sand and water used in concrete mixtures should contain a maximum of 100 ppm of water-soluble chloride ions and water-soluble sulfate ions. They should also have a pH in the range of 6.5 to 8.0. Potable water should be used in concrete mixtures.
- Type I-P (MS) modified or Type II modified cement should be used.
- Standard reinforced concrete pipe design should be suitable for this user defined level of chlorides.
- Concrete and RCP mitigation measures for pH Type IP (MS) modified cement or Type II modified cement is the minimum required by Caltrans Standard Specifications 90-1.01.
- For sulfate resistant concrete and RCP type IP (MS) modified cement or Type II modified cement is the minimum required by Caltrans Standard Specifications 90-1.01

Prestressed Concrete Piles

Prestressed concrete piles should be constructed of durable concrete as described in ACI Standards 201.2R and 222R. These recommendations include, but are not limited to, the following:

- The water/cement ratio should not exceed 0.50.
- A minimum concrete cover of 5.1 centimeters should be applied over all steel reinforcement.
- Sand and water used in concrete mixtures should contain a maximum of 100 ppm of water-soluble chloride ions and water-soluble sulfate ions. They should also have a pH in the range of 6.5 to 8.0. Potable water should be used in concrete mixtures.
- Type I-P (MS) modified or Type II modified cement should be used.

Cast-in-Drilled-Hole (CIDH) Piles

Cast-in-drilled-hole (CIDH) concrete piling shall conform to the provisions in Section 49-4, "Cast-In-Place Concrete Piles," of the Standard Specifications and these special provisions.[1]

The concrete used in CIDH piles should be dense and homogeneous throughout the length and cross section of the pile per California Test 233.[2]

Concrete deposited under slurry shall have a nominal slump equal to or greater than 7 inches, contain not less than 675 pounds of cementitious material per cubic yard, and be proportioned to prevent excessive bleed water and segregation. The nominal and maximum slump and penetration requirements in Section 90-6.06, "Amount of Water and Penetration," of the Standard Specifications shall not apply.[1]

Concrete shall conform to the requirements in "Corrosion Control for Portland Cement Concrete" of these special provisions.[1]

Concrete for portions of CIDH concrete piling to be formed shall contain not less than 675 pounds of cementitious material per cubic yard and shall contain 6.0±1.5 percent air entrainment in the freshly mixed concrete.[1]

Concrete shall conform to the requirements in "Mass Concrete for Cast-in-Place Concrete Piles" of these special provisions.[1]

Culvert, Mechanically Stabilized Embankment and Metallic Soil Reinforcement Backfill

Fast setting concrete backfill may need to be used when placing culverts in existing roadways. When using an admixture to decrease concrete curing times, only non-chloride admixtures should be considered.

Culvert materials were selected using the Department of Transportation CULVERT4 Software that calculates Maintenance-Free Service Design Estimates using California Department of Transportation (Caltrans) criteria (See Appendix B).

Non-corrosive backfill for metallic soil reinforcement, such as tie-back anchors or soil nails and reinforced concrete structures, shall meet the following requirements, in accordance with the Guidelines:

- Minimum resistivity greater than 1,500 ohm-cm.
- Water soluble chloride ion concentration less than 500 mg/kg.
- Water soluble sulfate ion concentration less than 2,000 mg/kg.

- A pH between 5.5 and 10.0.

Alternative Pipe Material Selection

Alternative pipe materials were selected using the Department of Transportation CULVERT4 Software that calculates Maintenance-Free Service Design Estimates using California Department of Transportation (Caltrans) criteria (see Appendix C).

Using the harshest soil conditions from the sampled soil borings (R-09-001 with a pH of 10.2 and a minimum resistivity of 421 ohm-cm, Chloride 256 mg/kg and Sulfate 181 mg/kg), the following material recommendations can be made:

- 10 gage (3.5 mm) galvanized (57g) corrugated steel culverts.
- 12 gage (2.8 mm) galvanized steel culverts with a water-side bitumastic coating.
- 14 gage (2.0 mm) galvanized steel culverts with a bitumastic coating and a paved invert.
- 16 gage (1.6 mm) galvanized steel culverts with a soil-side bitumastic coating.
- 18 gage (1.3 mm) galvanized steel culverts with a polymer sealed 90º invert.
- Plastic pipe is approved for 50 years of service life for corrosive conditions. Abrasion must be evaluated.
- A corrugated aluminum pipe (CAP) should not be used due to corrosive conditions.
- A corrugated aluminized steel pipe (CASP) should not be used due to corrosive conditions.

TEST METHODS

In attempting to predict corrosion problems associated with a particular type of structure prior to installation, it is necessary to investigate the soil conditions the structure will encounter. Since corrosion is an electrochemical process accompanied by current flow, the electrochemical characteristics of a soil are of primary importance when evaluating corrosivity. Test methods utilized during this investigation reflect the most practical methods of evaluating corrosivity.

In-Situ Soil Resistivity

Resistivity of the soil was measured at 24 locations on the project alignment. Figure 1 shows the overall project vicinity map and Figure 2 shows the field soil resistivity testing locations and soil boring locations.

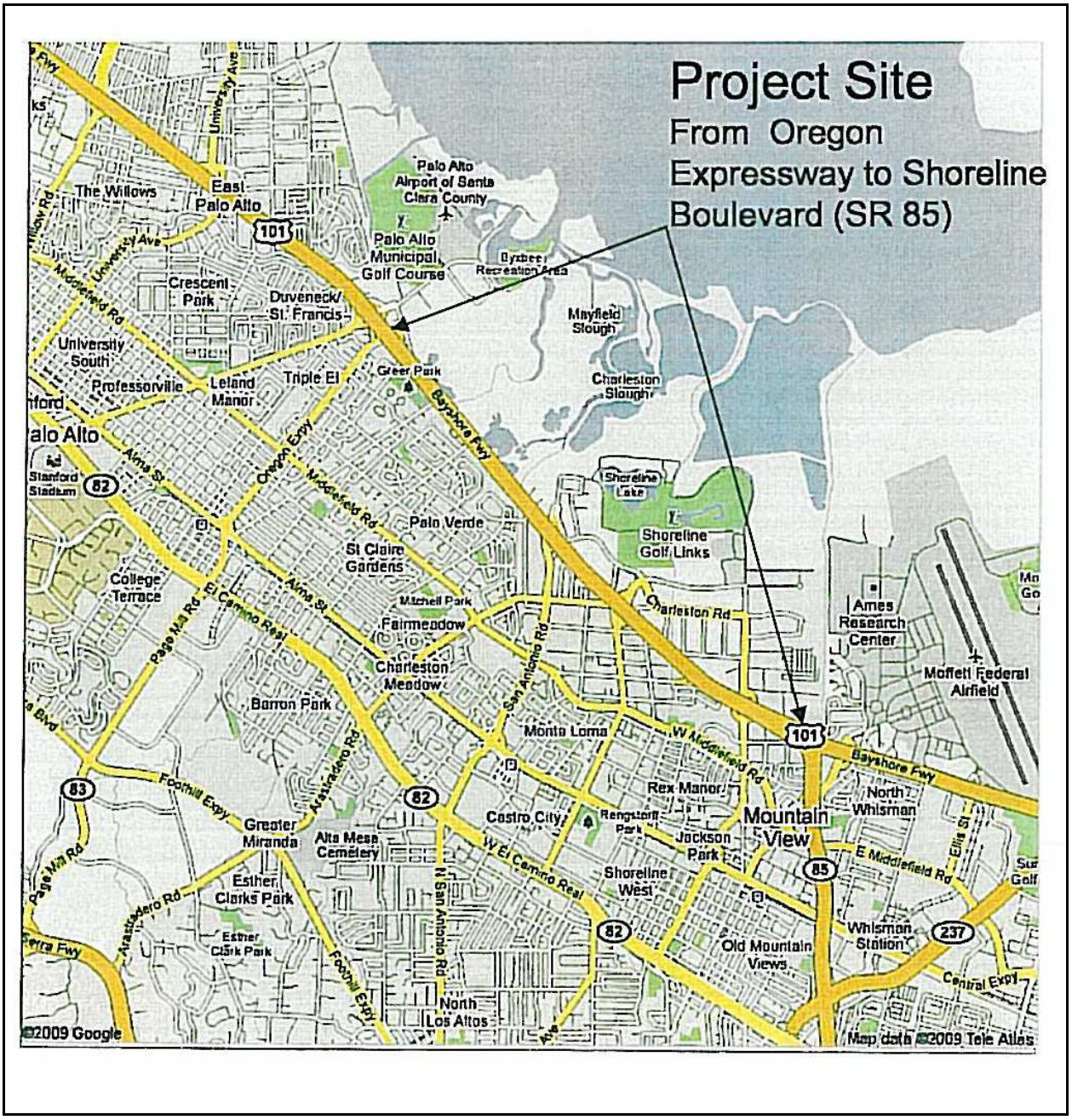


Figure 1 - Vicinity and Project Site Map[1]

[1] Maps courtesy of the Google

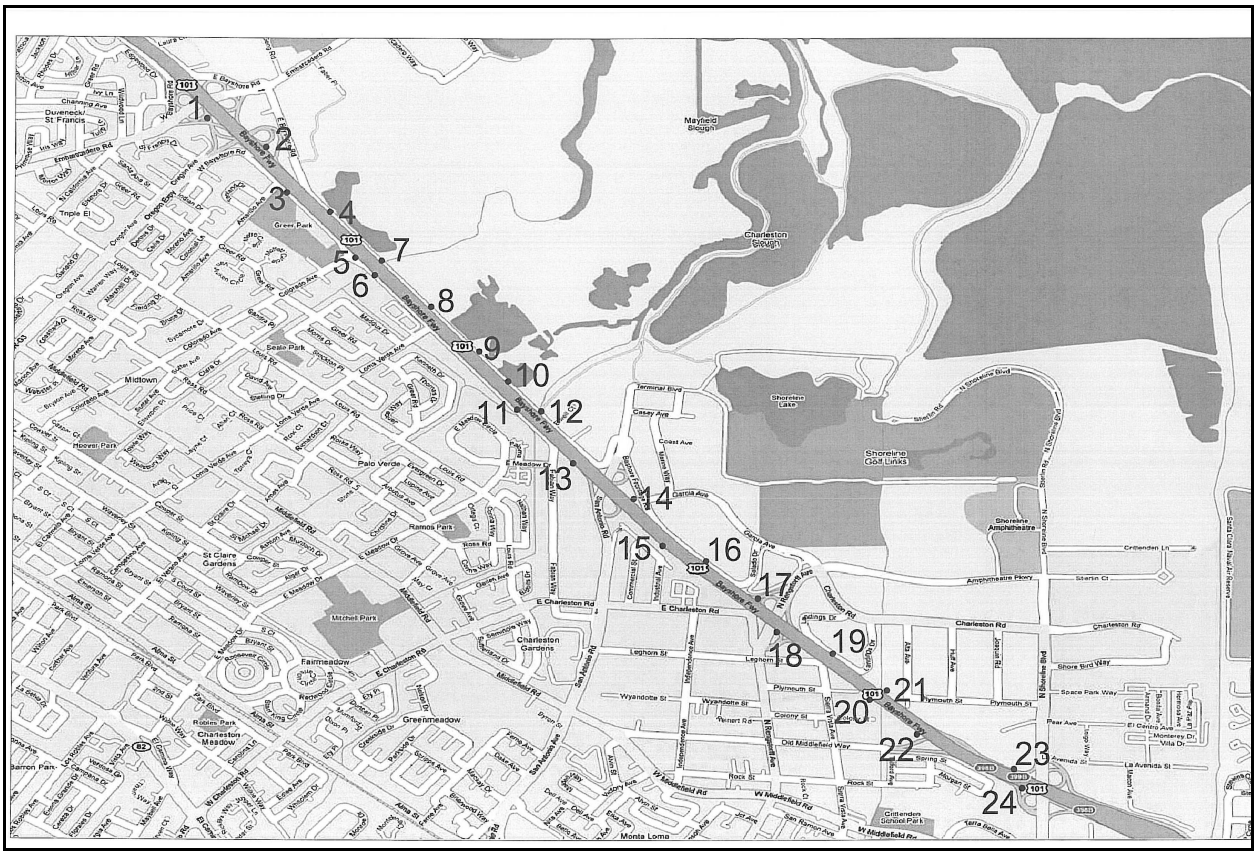


Figure 2 – In-Situ Resistivity Testing Locations

In-situ soil resistivity was measured using the Wenner 4-Electrode (Wenner) Method, with a DIGITAL GROUND RESISTANCE TESTER, Model 4500, manufactured by AEMC Instruments as shown in Figure 4. The Wenner Method involves the use of four metal probes or electrodes, driven into the ground along a straight line, equidistant from each other, as shown in Figure 3.

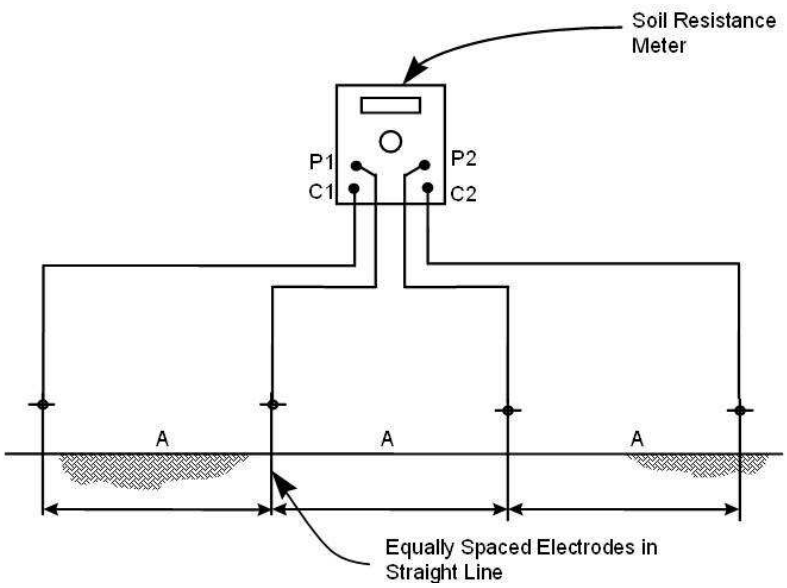


Figure 3 – In-Situ Soil Resistivity Measurement

An alternating current from the Soil Resistance Meter causes a current to flow through the soil between the outside electrodes, C1 and C2. Due to the resistance of the soil, the current creates a voltage gradient, which is proportional to the average resistance of the soil mass to a depth equal to the distance between probes. The voltage drop is then measured across electrodes P1 and P2. Resistivity of the soil is computed from the instrument reading according to the following formula:

$$\rho = 2 \cdot \pi \cdot A \cdot R$$

Where:	ρ	=	soil resistivity (ohm-cm)
	A	=	distance between electrodes (cm)
	R	=	soil resistance, instrument reading (ohms)
	π	=	3.14 (approx.)

Soil resistance was measured with electrodes spaced 0.8, 1.5, 2.3, 3, 4.6, 9.1, 13.7, 18.3 and 24.4 meters apart (2.5, 5, 7.5, 10, 15, 30, 45, 60 and 80 feet). The resistivity values obtained represent the average resistivity of the soil to a depth equal to the electrode spacing. An additional method of calculating the soil resistivity using the data from the Wenner Method is the Barnes-Layer resistivity calculation. The Barnes Layer calculation is used to determine the resistivity of the soil for each soil layer. While the Wenner Method at 3 meters will consider all 3 meters of soil below the surface, the Barnes-Layer method will consider the resistivity of only the layer of soil between 1.5m and 3m below the surface. This method assumes the soil layers are a uniform thickness and parallel to the surface, which may not always be true.

$\rho_{b-a} = KR_{b-a}$ and $\frac{1}{R_{b-a}} = \frac{1}{R_a} - \frac{1}{R_b}$

Where:

ρ_{b-a}	=	Soil resistivity of layer depth b-a (ohm-cm)
a	=	Soil depth to top of layer (cm)
b	=	Soil depth to bottom of layer (cm)
R_a	=	Soil resistance read at depth a (ohms)
R_b	=	Soil resistance read at depth b (ohms)
R_{b-a}	=	Resistance of soil layer from a to b (cm)
K	=	2 π (b-a)

Barnes Layer resistivity is calculated for layers 0 to 0.8, 0.8 to 1.5, 1.5 to 2.3, 2.3 to 3, 3 to 4.6, 4.6 to 9.1, 9.1 to 13.7, 13.7 to 18.3, and 18.3 to 24.4 meters (0 to 2.5, 2.5 to 5, 5 to 10, 10 to 15, 15 to 30, 30 to 45, 45 to 60 and 60 to 80 feet) below grade.

Laboratory Analysis of Soil and Water

To supplement the resistivity data obtained during field testing, soil samples from the project site were obtained from URS. The soil samples, along with water samples collected by V&A, were forwarded to Cooper Testing Laboratory in Palo Alto, CA, for testing. The samples were tested for pH, minimum resistivity and water soluble chloride and sulfate ion concentrations.

TEST RESULTS AND DISCUSSION

Data obtained during this investigation has been summarized in tabular form for analysis and presentation. Table 1 lists the results of the field soil resistivity measurements conducted at the site. Table 2 lists the minimum soil resistivity for each sample collected as well as the chemical analysis of the samples.

In-Situ Soil Resistivity

Since corrosion is a natural electrochemical process accompanied by the flow of electrical current, it is important to understand how easily current will travel through the soil surrounding steel or steel reinforced concrete structure. Resistivity is a measure of the ability of a soil to conduct an electric current. Soil resistivity is primarily dependent on the chemical and moisture content of the soil. As the concentrations of chemical constituents increases, the soil resistivity will decrease. Additional moisture generally decreases the soil resistivity up to the point where the maximum solubility for the dissolved ionic chemicals is achieved. Beyond the maximum solubility, an increase in moisture generally increases the resistivity as

the chemicals become more and more diluted. Since corrosion rate depends on current flow through the soil to and from the metal, soil corrosivity normally increases as soil resistivity decreases.

REFERENCES

[1] CALTRANS, Specifications, Updates 3-13-2009, CIDH Piles

[2] CALTRANS, California Test 233, November 2005

Table 1 – In-Situ Soil Resistivity Data

Site	Depth (Meters)	Resistivity (ohm-cm)	Layer Resistivity (ohm-cm)	Layer (Meters)
1	0.8	5,506	5,506	0 - 0.8
	1.5	4,156	3,337	0.8 - 1.5
	2.3	2,190	1,126	1.5 - 2.3
	3	1,653	952	2.3 - 3
	4.6	1,543	1,361	3 - 4.6
2	0.8	2,739	2,739	0 - 0.8
	1.5	1,444	980	0.8 - 1.5
	2.3	958	573	1.5 - 2.3
	3	1,122	2,310	2.3 - 3
	4.6	1,388	2,631	3 - 4.6
3	0.8	8,699	8,699	0 - 0.8
	1.5	1,350	732	0.8 - 1.5
	2.3	919	561	1.5 - 2.3
	3	977	1,202	2.3 - 3
	4.6	718	470	3 - 4.6
4	0.8	5,913	5,913	0 - 0.8
	1.5	2,164	1,324	0.8 - 1.5
	2.3	903	417	1.5 - 2.3
	3	699	416	2.3 - 3
	4.6	643	555	3 - 4.6
5	0.8	9,279	9,279	0 - 0.8
	1.5	3,658	2,278	0.8 - 1.5
	2.3	1,609	759	1.5 - 2.3
	3	1,053	517	2.3 - 3
	4.6	1,408	4,301	3 - 4.6
6	0.8	14,459	14,459	0 - 0.8
	1.5	4,970	3,001	0.8 - 1.5
	2.3	2,557	1,297	1.5 - 2.3
	3	3,141	9,983	2.3 - 3
	4.6	3,304	3,686	3 - 4.6
	9.1	3,907	4,780	4.6 - 9.1
	13.7	3,016	2,072	9.1 - 13.7
	18.3	1,092	375	13.7 - 18.3
	24.4	628	276	18.3 - 24.4

Table 1 – In-Situ Soil Resistivity Data

Site	Depth (Meters)	Resistivity (ohm-cm)	Layer Resistivity (ohm-cm)	Layer (Meters)
7	0.8	11,634	11,634	0 - 0.8
	1.5	6,167	4,195	0.8 - 1.5
	2.3	3,016	1,492	1.5 - 2.3
	3	2,495	1,644	2.3 - 3
	4.6	2,103	1,600	3 - 4.6
	9.1	1,109	753	4.6 - 9.1
	13.7	1,232	1,586	9.1 - 13.7
	18.3	1,482	3,785	13.7 - 18.3
	24.4	1,593	2,055	18.3 - 24.4
8	0.8	15,752	15,752	0 - 0.8
	1.5	8,197	5,540	0.8 - 1.5
	2.3	4,410	2,292	1.5 - 2.3
	3	3,204	1,760	2.3 - 3
	4.6	1,910	1,057	3 - 4.6
9	0.8	5,922	5,922	0 - 0.8
	1.5	3,304	2,291	0.8 - 1.5
	2.3	12,712	2,707	1.5 - 2.3
	3	839	221	2.3 - 3
	4.6	658	460	3 - 4.6
10	0.8	7,871	7,871	0 - 0.8
	1.5	4,175	2,841	0.8 - 1.5
	2.3	2,223	1,149	1.5 - 2.3
	3	1,603	872	2.3 - 3
	4.6	1,502	1,335	3 - 4.6
11	0.8	9,863	9,863	0 - 0.8
	1.5	4,194	2,663	0.8 - 1.5
	2.3	1,343	569	1.5 - 2.3
	3	1,009	578	2.3 - 3
	4.6	612	342	3 - 4.6
	9.1	770	1,038	4.6 - 9.1
	13.7	1,043	3,583	9.1 - 13.7
	18.3	1,230	2,657	13.7 - 18.3
	24.4	1,471	3,577	18.3 - 24.4

Table1 – In-Situ Soil Resistivity Data

Site	Depth (Meters)	Resistivity (ohm-cm)	Layer Resistivity (ohm-cm)	Layer (Meters)
12	0.8	8,235	8,235	0 - 0.8
	1.5	5,946	4,653	0.8 - 1.5
	2.3	3,706	2,113	1.5 - 2.3
	3	3,313	2,514	2.3 - 3
	4.6	3,464	3,813	3 - 4.6
	30	2,172	1,582	4.6 - 9.1
	45	2,086	1,932	9.1 - 13.7
	60	2,367	3,978	13.7 - 18.3
	80	2,053	1,468	18.3 - 24.4
13	0.8	1,728	1,728	0 - 0.8
	1.5	1,013	717	0.8 - 1.5
	2.3	602	332	1.5 - 2.3
	3	711	1,551	2.3 - 3
	4.6	985	4,352	3 - 4.6
14	0.8	1,326	1,326	0 - 0.8
	1.5	1,062	885	0.8 - 1.5
	2.3	715	433	1.5 - 2.3
	3	822	1,482	2.3 - 3
	4.6	965	1,484	3 - 4.6
15	0.8	6,334	6,334	0 - 0.8
	1.5	3,150	2,097	0.8 - 1.5
	2.3	1,874	1,036	1.5 - 2.3
	3	1,921	2,075	2.3 - 3
	4.6	1,724	1,430	3 - 4.6
16	0.8	15,560	15,560	0 - 0.8
	1.5	11,835	9,549	0.8 - 1.5
	2.3	5,559	2,697	1.5 - 2.3
	3	3,524	1,679	2.3 - 3
	4.6	3,094	2,487	3 - 4.6
17	0.8	9,216	9,216	0 - 0.8
	1.5	3,591	2,230	0.8 - 1.5
	2.3	3,031	2,310	1.5 - 2.3
	3	3,585	7,946	2.3 - 3
	4.6	2,634	1,721	3 - 4.6

Table1 – In-Situ Soil Resistivity Data

Site	Depth (Meters)	Resistivity (ohm-cm)	Layer Resistivity (ohm-cm)	Layer (Meters)
18	0.8	2,858	2,858	0 - 0.8
	1.5	2,269	1,882	0.8 - 1.5
	2.3	1,811	1,290	1.5 - 2.3
	3	1,886	2,155	2.3 - 3
	4.6	2,341	4,522	3 - 4.6
19	0.8	12,975	12,975	0 - 0.8
	1.5	7,297	5,075	0.8 - 1.5
	2.3	3,849	1,979	1.5 - 2.3
	3	2,744	1,475	2.3 - 3
	4.6	2,330	1,789	3 - 4.6
20	0.8	6,607	6,607	0 - 0.8
	1.5	1,570	891	0.8 - 1.5
	2.3	1,609	1,691	1.5 - 2.3
	3	1,718	2,157	2.3 - 3
	4.6	2,307	7,337	3 - 4.6
21	0.8	7,651	7,651	0 - 0.8
	1.5	2,461	1,466	0.8 - 1.5
	2.3	1,273	647	1.5 - 2.3
	3	1,172	947	2.3 - 3
	4.6	1,370	2,071	3 - 4.6
22	0.8	1,489	1,489	0 - 0.8
	1.5	1,587	1,698	0.8 - 1.5
	2.3	1,726	2,096	1.5 - 2.3
	3	1,848	2,343	2.3 - 3
	4.6	2,491	8,175	3 - 4.6
23	0.8	7,244	7,244	0 - 0.8
	1.5	6,942	6,665	0.8 - 1.5
	2.3	3,505	1,761	1.5 - 2.3
	3	2,193	1,033	2.3 - 3
	4.6	1,479	896	3 - 4.6
24	0.8	4,467	4,467	0 - 0.8
	1.5	3,170	2,456	0.8 - 1.5
	2.3	2,093	1,246	1.5 - 2.3
	3	1,969	1,672	2.3 - 3
	4.6	2,155	2,656	3 - 4.6

Laboratory Analysis of Soil and Water Samples

Table 2 lists the minimum soil resistivity for each sample collected, as well as the chemical analysis of the samples.

Based on the corrosion analyses, the soil is classified as *non-corrosive* to *corrosive* in accordance with the Corrosion Guidelines.

Table 2 – Minimum Resistivity and Chemical Data

Item No.	Boring No.	Station	Sample No.	Depth (meters)	Minimum Resistivity (ohm-cm)	Chemical Data		
						pH	Sulfate (mg/kg)	Chloride (mg/kg)
1	Water	72+00	1	N/A	916	7.7	21 mg/L	187 mg/L
2	Water	109+50	1	N/A	1,133	7.6	12 mg/L	174 mg/L
3	R-09-001	72+60	4	4.6	421	10.2	181	256
4	R-09-004	109+32	4	4.6	527	10.3	203	235
5	R-09-005	188+53	2	2.4 – 3	3,850	8.6	<5	6
6	A-09-111	63+02	2	1.1	1,531	9.1	<5	4
7	A-09-131	107+62	2	1.1	3,609	8.9	<5	<2
8	A-09-173	202+32	3	2.1 – 3	2,949	9.0	108	9
9	A-09-180	91+35	2	1.5 – 2.1	11,098	8.8	<5	<2
10	A-09-183	74+70	4	4.6	3,933	10.2	<5	<2

mg/kg – milligrams per kilogram

Based on the corrosion analyses, the soil is classified as *non-corrosive* to *corrosive* in accordance with the Corrosion Guidelines.

Appendix A – Soil Laboratory Chemical Analysis Results

COOPER TESTING LABORATORY

Corrosivity Test Summary

CTL # 632-007 Date: 7/21/2009 Tested By: PJ Checked: PJ
Client: V&A Project: URS Caltrans 101 Auxilliary Lanes Proj. No: 09-0244
Remarks: Due to a very small sample size, the ph and resistivity tests for all soil samples, except for A-09-173-3-3 101, included +#8 material which is an expecption to the test specification.

Sample Location or ID			Resistivity @ 15.5 °C (Ohm-cm)			Chloride	Sulfate		pH	ORP	Moisture	Soil Visual Description
Boring	Sample, No.	Depth, ft.	As Rec.	Minimum	Saturated	mg/kg Dry Wt.	mg/kg Dry Wt.	% Dry Wt.		(Redox) mv	As Received %	
			ASTM G57	Cal 643	ASTM G57	Cal 422-mod.	Cal 417-mod.	Cal 417-mod.	Cal 643	SM 2580B	ASTM D2216	
-	#2- Adobe Creek	-	-	916	-	187 mg/L	21 mg/L	0.0021	7.7	-	-	Water
-	#3- Matadero	-	-	1133	-	174 mg/L	12 mg/L	0.0012	7.6	-	-	Water
-	R-09-001 4-X	15	-	421	-	256	181	0.0181	10.2	-	23.7	Gray Sandy CLAY
-	R-09-004 4-3	15	-	527	-	235	203	0.0203	10.3	-	3.2	Gray CLAY w/ Sand & CaCO3
-	R-09-005 2-3	8 - 10	-	3850	-	6	<5	<0.0005	8.6	-	3.0	Greenish Brown Clayey SAND w/ Gravel
-	A-09-111-2-4 101	3.5	-	1531	-	4	<5	<0.0005	9.1	-	4.7	Brown Sandy CLAY
-	A-09-131-2-4 101	3.5	-	3609	-	<2	<5	<0.0005	8.9	-	3.5	Greenish Brown Clayey SAND w/ Gravel
-	A-09-173-3-3 101	7 - 10	-	2949	-	9	108	0.0108	9.0	-	3.4	Gray Clayey SAND
-	A-09-180-2-4 101	5 - 7	-	11098	-	<2	<5	<0.0005	8.8	-	2.4	Brown Silty SAND w/ Gravel
-	A-09-183-4-3 101	15	-	3933	-	<2	<5	<0.0005	10.2	-	3.3	Greenish Brown Silty SAND

V&A

Appendix B - Culvert Service Design Estimates

Maintenance-Free Service Design Estimates for Drainage Facilities Using California Culvert Criteria and CULVERT4.EXE Software (Release Date 04-16-98)

Project Location...US 101, from Oregon Expressway in Palo Alto to Shoreline Blvd in Mountain View, CA.

UNDERPASS Project Account No.04-4A3301

Sample Location....R-09-005 Soil Bore at 188+53 on US 101 at Permanente Creek culvert, Mountain View, CA

Test Sample No.....R-09-005

Test Date.....03-25-09

CSP Site pH = 8.6, Water pH = 0.0, Soil pH = 8.6

Minimum Resistivity, Ohm-cm: CSP Site = 3,850, Water = 0.0, Soil = 3,850

Estimated Service Life of CSP Culverts, Years (See Caltrans Highway Design Manual Chapter 850)

CSP Thickness Gage & mm		Estimated Service Life in Years				
		Galvanized 57 g	Galv. + Bitum. Coat (water side)	Galv. + Bitum. Coat & Paved Invert	Galv. + Bitum. Coat (Soil Side)	Galv. + Polymer. 90º Invert
18	1.3mm	43	51	58	68	93
16	1.6mm	56	64	71	81	106
14	2.0mm	69	77	84	94	119
12	2.8mm	95	103	110	120	145
10	3.5mm	121	129	136	146	171
08	4.3mm	147	155	162	172	197

Flow velocity <1.5 m/s with non-abrasive conditions, (default values)

Standard reinforced concrete pipe design should be suitable for this user defined level of chlorides

Concrete and RCP mitigation measures for pH Type IP (MS) modified cement or Type II modified cement is the minimum required by Caltrans Standard Specifications 90-1.01

A corrugated aluminum pipe (CAP) should not be used due to corrosive conditions.

A corrugated aluminized steel pipe (CASP) should not be used due to corrosive conditions.

Site conditions meet corrosion requirements established by CALTRANS.

Plastic pipe is approved for 50 years of service life for corrosive conditions. Abrasion must be evaluated.

Consider concrete headwalls and concrete or metal end treatment where fire potential exists.

Appendix C - Alternative Pipe Material Selection

Maintenance-Free Service Design Estimates for Drainage Facilities Using California Culvert Criteria and CULVERT4.EXE Software (Release Date 04-16-98)

Most Corrosive Soil & Water

Project Location...US 101, from Oregon Expressway in Palo Alto to Shoreline Blvd in Mountain View, CA.

UNDERPASS Project Account No.04-4A3301

Sample Location....R-09-004 Soil Bore at 109+32 on US 101, Adobe Creek, Palo Alto, CA

Test Sample No.....R-09-004

Test Date.....03-25-09

CSP Site pH = 10.3, Water pH = 7.7, Soil pH = 10.3

Minimum Resistivity, Ohm-cm: CSP Site = 527, Water = 916, Soil = 527

Estimated Service Life of CSP Culverts, Years (See Caltrans Highway Design Manual Chapter 850)

CSP Thickness Gage & mm		Estimated Service Life in Years				
		Galvanized 57 g	Galv. + Bitum. Coat (water side)	Galv. + Bitum. Coat & Paved Invert	Galv. + Bitum. Coat (Soil Side)	Galv. + Polymer. 90º Invert
18	1.3mm	19	27	34	44	69
16	1.6mm	24	32	39	49	74
14	2.0mm	30	38	45	55	80
12	2.8mm	42	50	57	67	92
10	3.5mm	53	61	68	78	103
08	4.3mm	65	73	80	90	115

Flow velocity <1.5 m/s with non-abrasive conditions, (default values)

Standard reinforced concrete pipe design should be suitable for this user defined level of chlorides

For sulfate resistant concrete and RCP type IP (MS) modified cement or Type II modified cement is the minimum required by Caltrans Standard Specifications 90-1.01

A corrugated aluminum pipe (CAP) should not be used due to corrosive conditions.

A corrugated aluminized steel pipe (CASP) should not be used due to corrosive conditions.

Site conditions meet corrosion requirements established by CALTRANS.

Plastic pipe is approved for 50 years of service life for corrosive conditions. Abrasion must be evaluated.

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

Memorandum

Flex your power!
Be energy efficient!

To: PAUL MAI
DISTRICT OFFICE CHIEF
DESIGN SOUTH, SANTA CLARA B

Attention: Hassan Nikzad
Caroline Pineda

Date: November 2, 2010

File: 04-SCL-101
PM 48.97 / 52.17
04-4A3301
Auxiliary / HOV
Lanes Widening

From: KAN WONG
Materials Design Engineer
Engineering Service I - Materials B

Concurred by: ASHOK DAS, P.E.
District Materials Engineer
Branch Chief, Materials B

Subject: 5th Review Comments for Geotechnical Design and Materials Report (GDMR)

This memorandum is in response to your 5th review request of Geotechnical Design and Materials Report (GDMR) dated October 25, 2010. The purpose of the project is to relieve existing and future traffic congestion on weaving section and at ramp termini, and provide for improved local access over this segment of this segment of the U.S. 101 corridor. The proposed project is located on U.S. 101 in the Cities of Mountain View and Palo Alto in Santa Clara County with project limits extending from State Route (SR) 85 on the south to Embarcadero Road on the north (PM 48.97 / 52.17).

Having reviewed the GDMR, we have the following comments:

A. <u>Section 5.3.7 Recommended Ramp Sections (SPCS 5 - Excluding SB U.S. 101 On-/Off-Ramps at Rengtorff)</u>

Why the AS section did not thickened to achieve a minimum total pavement thickness of 3 feet as Section 5.3.8 and Section 5.3.9 ? Please make the appropriate changes of the proposed Structural Sections to Appendix B "Typical Cross Sections".

B. <u>Appendix B - Typical Cross Sections</u>

Please provide calculation and design factors for "proposed structural sections #12" to <u>Section 5.3 New Structural Pavement Sections</u>. (If TI > 12, please comment why LCB was not use at this section.) How will this structural sections achieve a minimum total pavement thickness of 3 feet as Section 5.3.8 and Section 5.3.9 ?

* * * * * *

If you have any questions, please contact Kan Wong at (510) 622-8814.

Attachments:

c: Route File, Daily File, A. Das, K. Heung

K.Wong/dg/SCL-101, Auxiliary and HOV Lanes Widen

Review Discipline: US 101 Auxiliary Lanes Project
4th Review Comments for Geotechnical Design and Materials Report (GDMR)

By: Caltrans

Comments Due By:

Date: 11/5/2010

Date Reviewed By: November 2, 2010

Next JRT Meeting Date: TBA

TECHNICAL COMMENT REVIEW AND RESPONSE

VTA Highway Program Title: VTA #S07065, CT EA# 04-4A3301 US 101 Auxiliary Lanes (SR 85 to Embarcadero Road). PM 48.97/52.17 in Santa Clara County.	Submittal: 100% PS&E Updated: October 25, 2010 Report Title: Geotechnical Design and Materials Report	

CODE: A - Will Comply; B - Caltrans to Evaluate; C - Will Not Incorporate; D – Agency (SCTA/URS) to Evaluate; E - No Action Required

AGCY	INIT	Item No.	Drawing or Page No.	Review Comments	Designer Responses	Rev. By	Initial Disp.	JRT Disp.	Final Disp.
GDMR Comments / 11.2.2010									
CT	Kan Wong	1		A. <u>Section 5.3.7 Recommended Ramp Sections (SpeS 5 - Excluding SB U.S. 101 On-/Off Ramps at Rengtorff)</u> Why the AS section did not thickened to achieve a minimum total pavement thickness of 3 feet as Section 5.3.8 and Section 5.3.9? Please make the appropriate changes of the proposed Structural Sections to Appendix B "Typical Cross Sections".	The samples and explorations that form the basis for Structural Pavement Section (SPCS) 5 for on and off ramps did not encounter potentially expansive soils (fat clays). Therefore, the AS component of SPCS 5 is not thickened to make the overall pavement thickness exceed 3 feet. A hand augered sample at the south bound off ramp at Rengstorff Avenue revealed fat clay and formed the basis for thickened AS components for SPCS 6 and 7. Will include a footnote in Section 5.3.7 as reference.	SH	E		E
CT	KW	2		B. <u>Appendix B - Typical Cross Sections</u> Please provide calculation and design factors for "proposed structural sections #12" to Section 5.3 New Structural Pavement Sections. (If TI > 12, please comment why LCB was not use at this section.) How will this structural sections	Typical Section (TS) #12 is a full depth HMA section planned for limited sliver widening and gore areas. The proposed section, however, includes an additional 0.5 foot of Class 3 AB below the minimum required full depth HMA. Furthermore, a SEG layer is proposed below the AB; therefore, it is our opinion	SH	A		A

Review Discipline: US 101 Auxiliary Lanes Project
4th Review Comments for Geotechnical Design and Materials Report (GDMR)

By: Caltrans

Comments Due By:

Date: 11/5/2010

Date Reviewed By: November 2, 2010

Next JRT Meeting Date: TBA

TECHNICAL COMMENT REVIEW AND RESPONSE

VTA Highway Program Title: VTA #S07065, CT EA# 04-4A3301 US 101 Auxiliary Lanes (SR 85 to Embarcadero Road). PM 48.97/52.17 in Santa Clara County.	Submittal: 100% PS&E Updated: October 25, 2010 Report Title: Geotechnical Design and Materials Report	

CODE: A - Will Comply; B - Caltrans to Evaluate; C - Will Not Incorporate; D – Agency (SCTA/URS) to Evaluate; E - No Action Required

AGCY	INIT	Item No.	Drawing or Page No.	Review Comments	Designer Responses	Rev. By	Initial Disp.	JRT Disp.	Final Disp.
				achieve a minimum total pavement thickness of 3 feet as Section 5.3.8 and Section 5.3.9?	that this relatively small area of full depth HMA should perform similarly to the District standard HMA/LCB/AS layer section. Will add a new section 5.3.10 to present the design factors and estimated gravel equivalent of the pavement components. A footnote will be included to discuss the basis of the total pavement section thickness regarding potentially expansive subgrade.				

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

Memorandum

Flex your power!
Be energy efficient!

To: PAUL MAI
DISTRICT OFFICE CHIEF
DESIGN SOUTH, SANTA CLARA B

Attention: Hassan Nikzad
Caroline Pineda

Date: October 20, 2010

File: 04-SCL-101
PM 48.97 / 52.17
04-4A3301
Auxiliary / HOV
Lanes Widening

From: KAN WONG
Materials Design Engineer
Engineering Service I - Materials B

Concurred by: for ASHOK DAS, P.E.
District Materials Engineer
Branch Chief, Materials B

Subject: 4th Review Comments for Geotechnical Design and Materials Report (GDMR)

This memorandum is in response to your 4th review request of Geotechnical Design and Materials Report (GDMR) dated October 6, 2010 and excerpt of the GDMR Section 5.2 by email dated October 19, 2010. The purpose of the project is to relieve existing and future traffic congestion on weaving section and at ramp termini, and provide for improved local access over this segment of this segment of the U.S. 101 corridor. The proposed project is located on U.S. 101 in the Cities of Mountain View and Palo Alto in Santa Clara County with project limits extending from State Route (SR) 85 on the south to Embarcadero Road on the north (PM 48.97 / 52.17).

Having reviewed the GDMR, we have the following comments:

A. Section 5.1 Structural Section Design Parameters

The total overlay thickness should comply with Section 5.4 "Pavement Overlay" of 0.15' RHMA(G).

B. Section 5.2.1 Untreated Subgrade

Please comment why compensate for expansive soils and or Subgrade Enhancement Geotextile did not apply to Section 5.3.7 and Section 5.3.8.

C. Section 5.3.3, Section 5.3.4, Section 5.3.5, Section 5.3.6, Section 5.3.7 & Section 5.3.8
Please make the appropriate changes of the proposed Structural Sections to Appendix B "Typical Cross Sections".

D. Section 9.2.2 Structural Pavement Materials

Add Subgrade Enhancement Geotextile if applicable.

E. Section 9.2.3 Standard Special Provisions

Rubberized Hot Mix Asphalt (Gap Graded)

- Please edited the attached nSSP 39-150 to replace SSP 39-150.

F. Appendix B - Typical Cross Sections

1. Please revise the project typical cross section sheets in accordance with Section 5.3 New Structural Pavement Sections and Section 5.4 Pavement Overlay of the Final GDMR.

2. Please request the relevant Office to review the Typical Cross Sections of "Matadero Creek Bridge" on Plan Sheet X-4 and "Adobe Creek Bridge" on Plan Sheet X-6 in Appendix B.

* * * * * *

If you have any questions, please contact Kan Wong at (510) 622-8814.

Attachments:

1. nSSP 39-150 dated 9/10/2010 Rubberized Hot Mix Asphalt-Gap Graded (8 page)

c: Route File, Daily File, A. Das, K. Heung

K.Wong/dg/SCL-101, Auxiliary and HOV Lanes Widen

Review Discipline: US 101 Auxiliary Lanes Project
4th Review Comments for Geotechnical Design and Materials Report (GDMR)

By: Caltrans

Comments Due By:

Date: 10/22/2010

Date Reviewed By: October 20, 2010

Next JRT Meeting Date: TBA

TECHNICAL COMMENT REVIEW AND RESPONSE

VTA Highway Program Title: VTA #S07065, CT EA# 04-4A3301 US 101 Auxiliary Lanes (SR 85 to Embarcadero Road). PM 48.97/52.17 in Santa Clara County.	Submittal: 100% PS&E Updated: October 6, 2010 Report Title: Geotechnical Design and Materials Report	

CODE: A - Will Comply; B - Caltrans to Evaluate; C - Will Not Incorporate; D – Agency (SCTA/URS) to Evaluate; E - No Action Required

AGCY	INIT	Item No.	Drawing or Page No.	Review Comments	Designer Responses	Rev. By	Initial Disp.	JRT Disp.	Final Disp.
GDMR Comments / 10.20.2010									
CT	Kan Wong	1		A. <u>Section 5.1 Structural Section Design Parameters</u> The total overlay thickness should comply with Section 5.4 "Pavement Overlay" of 0.15' RHMA(G).	Will revise to 0.15’ RHMA(G).	SH	A		A
CT	KW	2		B. <u>Section 5.2.1 Untreated Subgrade</u> Please comment why compensate for expansive soils and or Sub grade Enhancement Geotextile did not apply to Section 5.3.7 and Section 5.3.8.	Borings and samples of ramp subgrade revealed no potentially expansive soils (CH) except one hand-augered sample located near the U.S. 101 SB ramps at Rengstorff Avenue. Consequently, swelling and shrinkage is not anticipated within and below the new pavement section, except at U.S. 101 Southbound (SB) on and off ramps at Rengstorff Avenue. For the SB Rengstorff Avenue on-ramp and off-ramp, the planned AS layer of the structural section should be thickened to achieve a total pavement thickness of at least 3 feet in order to minimize expansive potential of the	SH	A		A

Review Discipline: US 101 Auxiliary Lanes Project
4th Review Comments for Geotechnical Design and Materials Report (GDMR)

By: Caltrans

Comments Due By:

Date: 10/22/2010

Date Reviewed By: October 20, 2010

Next JRT Meeting Date: TBA

TECHNICAL COMMENT REVIEW AND RESPONSE

VTA Highway Program Title: VTA #S07065, CT EA# 04-4A3301 US 101 Auxiliary Lanes (SR 85 to Embarcadero Road). PM 48.97/52.17 in Santa Clara County.	Submittal: 100% PS&E Updated: October 6, 2010 Report Title: Geotechnical Design and Materials Report	

CODE: A - Will Comply; B - Caltrans to Evaluate; C - Will Not Incorporate; D – Agency (SCTA/URS) to Evaluate; E - No Action Required

AGCY	INIT	Item No.	Drawing or Page No.	Review Comments	Designer Responses	Rev. By	Initial Disp.	JRT Disp.	Final Disp.
					subgrade. SEG will be included in all new structural pavement sections (mainline and ramps). Report will be revised accordingly.				
CT	KW	3		C. <u>Section 5.3.3, Section 5.3.4, Section 5.3.5, Section 5.3.6, Section 5.3.7 & Section 5.3.8</u> Please make the appropriate changes of the proposed Structural Sections to Appendix B "Typical Cross Sections".	Will comply.	SH	A		A
CT	KW	4		D. <u>Section 9.2.2 Structural Pavement Materials</u> Add Subgrade Enhancement Geotextile if applicable.	Will include SEG in Section 9.2.2 as well as reference to special provisions for SEG in Section 9.2.3.	SH	A		A
CT	KW	5		E. <u>Section 9.2.3 Standard Special Provisions</u> Rubberized Hot Mix Asphalt (Gap Graded) • Please edited the attached nSSP 39-150	Will revise reference to nSSP 39-150.	SH	A		A

Review Discipline: US 101 Auxiliary Lanes Project
4th Review Comments for Geotechnical Design and Materials Report (GDMR)

By: Caltrans

Comments Due By:

Date: 10/22/2010

Date Reviewed By: October 20, 2010

Next JRT Meeting Date: TBA

TECHNICAL COMMENT REVIEW AND RESPONSE

VTA Highway Program Title: VTA #S07065, CT EA# 04-4A3301 US 101 Auxiliary Lanes (SR 85 to Embarcadero Road). PM 48.97/52.17 in Santa Clara County.	Submittal: 100% PS&E Updated: October 6, 2010 Report Title: Geotechnical Design and Materials Report	

CODE: A - Will Comply; B - Caltrans to Evaluate; C - Will Not Incorporate; D – Agency (SCTA/URS) to Evaluate; E - No Action Required

AGCY	INIT	Item No.	Drawing or Page No.	Review Comments	Designer Responses	Rev. By	Initial Disp.	JRT Disp.	Final Disp.
				to replace SSP 39-150..					
CT	KW	6		F. <u>Appendix B - Typical Cross Sections</u> 1. Please revise the project typical cross section sheets in accordance with Section 5.3 New Structural Pavement Sections and Section 5.4 Pavement Overlay of the Final GDMR.	Will comply.	SH	A		A
CT	KW	7		F. <u>Appendix B - Typical Cross Sections</u> 2. Please request the relevant Office to review the Typical Cross Sections of "Matadero Creek Bridge" on Plan Sheet X-4 and "Adobe Creek Bridge" on Plan Sheet X-6 in AppendixB.	Will comply.	SH	A		A

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

Memorandum

Flex your power!
Be energy efficient!

To: PAUL MAI
DISTRICT OFFICE CHIEF
DESIGN SOUTH, SANTA CLARA B

Attention: Hassan Nikzad
Caroline Pineda

Date: June 16, 2010

File: 04-SCL-101
PM 48.97 / 52.17
04-4A3301
Auxiliary / HOV
Lanes Widening

From: KAN WONG
Materials Design Engineer
Engineering Service I - Materials B

Concurred by: ASHOK DAS, P.E.
District Materials Engineer
Branch Chief, Materials B

Subject: 3rd Review Comments for Geotechnical Design and Materials Report (GDMR)

This memorandum is in response to your 3rd review request of Geotechnical Design and Materials Report (GDMR) dated June 11, 2010. The purpose of the project is to relieve existing and future traffic congestion on weaving section and at ramp termini, and provide for improved local access over this segment of this segment of the U.S. 101 corridor. The proposed project is located on U.S. 101 in the Cities of Mountain View and Palo Alto in Santa Clara County with project limits extending from State Route (SR) 85 on the south to Embarcadero Road on the north (PM 48.97 / 52.17).

Having reviewed the GDMR, we have the following comments:

A. Section 5.2.2 Lime Treated Subgrade

The report indicated "lime treated subgrade" will be a viable option on Northbound from station 129+00 to station 173+00 (Batch 1).

There are two conflicts with the above statement:

1. On your response (Appendix L) to our 2nd GDMR Review Comment (dated February 26, 2010), item 2, item 10 and item 12, you indicated there will be no "lime treated subbase" for this project.
2. Option #2 and Option #3 under Section 5.3.4 indicated the usage of "lime treated subgrade" at Northbound from Station 49+00 to Station 56+00, and from Station 125+00 to Station 135+00.

B. Section 5.2.3 Station Intervals of Lime Treatment

The report indicated the following three segments would benefit from lime treatment of subgrade:

1. Southbound, "C" Station 49+00 to 53+00.
2. Northbound, "C" Station 125+00 to 135+00.
3. Northbound, "C" Station 169+00 to 182+00.

Section 5.2.2, however, states that "lime treated subgrade" will be required on Northbound from Station 129+00 to Station 173+00 (Batch 1). Please clarify.

C. Section 5.3.2 RHMA Considerations

Please eliminate the option of using HMA (Type B).

D. Section 5.3.3, Section 5.3.4, Section 5.3.5, Section 5.3.6

Please recalculate and use 0.15' RHMA-G as the last layer to match the adjacent project. Apply this information to Section 5.4 and "Typical Cross Sections" (Appendix B) accordingly.

E. Section 5.3.9 Recommended Full Depth HMA Alternative for Mainline

On your response (Appendix L) to our 2nd GDMR Review Comment (dated February 26, 2010), item 6, you indicated "no full depth HMA sections are proposed" for this project. However, this section still shows a full HMA option. Please clarify.

F. Section 5.4 Pavement Overlay

In order to match the adjacent project and maximize the usage of RHMA-G, please do the following:

1. On Southbound, overlay with 0.15' RHMA-G.
2. On Northbound, cold plane 0.10' existing OGAC and overlay with 0.15' of RHMA-G.
3. Apply the above information to the "Typical Cross Sections" accordingly.

G. Section 9.2.2 Structural Pavement Sections

1. Please revise the section heading to read "Structural Pavement Materials".
2. Add the item Lime Treat Subbase if applicable.

H. Appendix B - Typical Cross Sections

Please revise the project typical cross section sheets in accordance with Section 5.3 New Structural Pavement Sections and Section 5.4 Pavement Overlay of the Final GDMR.

* * * * * *

If you have any questions, please contact Kan Wong at (510) 622-8814.

Attachments:

c: Route File, Daily File

K.Wong/dg/SCL-101, Auxiliary and HOV Lanes Widen

Review Discipline: US 101 Auxiliary Lanes Project
3rd Review Comments for Geotechnical Design and Materials Report (GDMR)

By: Caltrans

Comments Due By:

Date: 07/29/2010

Date Reviewed By: June 16, 2010

Next JRT Meeting Date: TBA

TECHNICAL COMMENT REVIEW AND RESPONSE

VTA Highway Program Title: VTA #S07065, CT EA# 04-4A3301 US 101 Auxiliary Lanes (SR 85 to Embarcadero Road). PM 48.97/52.17 in Santa Clara County.	Submittal: 95% PS&E Updated: June 11, 2010 Report Title: Geotechnical Design and Materials Report	

CODE: A - Will Comply; B - Caltrans to Evaluate; C - Will Not Incorporate; D – Agency (SCTA/URS) to Evaluate; E - No Action Required

AGCY	INIT	Item No.	Drawing or Page No.	Review Comments	Designer Responses	Rev. By	Initial Disp.	JRT Disp.	Final Disp.
GDMR Comments / 06.16.2010									
CT	Kan Wong	1		A. Section 5.2.2 Lime Treated Subgrade The report indicated "lime treated subgrade" will be a viable option on Northbound from station 129+00 to station 173+00 (Batch 1). There are two conflicts with the above statement: 1. On your response (Appendix L) to our 2nd GDMR Review Comment (dated February 26, 2010), item 2, item 10 and item 12, you indicated there will be no "lime treated subbase" for this proj ect. 2. Option #2 and Option #3 under Section 5.3.4 indicated the usage of "lime treated subgrade" at Northbound from Station 49+00 to Station 56+00, and from Station 125+00 to Station 135+00.	It is the project intent to provide a basis for evaluating feasibilityof lime treatment of subgrade soils, in the event if the Contractor proposes a CRIP for lime treated subbase (subgrade improvement) in lieu of aggregate subbase. As recommended in the report more tests should be performed by the Contractor on the fat clays if the Contractor proposes a CRIP for subgrade improvement. Lime treated subbase (LTS) section (options #2 and #3) from Section 5.3.4 will be deleted as it is not planned for the PS&E package at this time. The recommendations for a lime treated subbase section will be added as a separate section for future use in the event a CRIP of LTS is submitted by the Contractor.		A		
CT	KW	2		B. Section 5.2.3 Station Intervals of Lime Treatment The report indicated the following three segments would benefit from lime treatment of subgrade: 1. Southbound, "C" Station 49+00 to 53+00. 2. Northbound, "C" Station 125+00 to 135+00.	Section 5.2.2 will be revised to clarify the segments that could benefit from lime treatment of subgrade.		A		

Review Discipline: US 101 Auxiliary Lanes Project
3rd Review Comments for Geotechnical Design and Materials Report (GDMR)

By: Caltrans

Comments Due By:

Date: 07/29/2010

Date Reviewed By: June 16, 2010

Next JRT Meeting Date: TBA

TECHNICAL COMMENT REVIEW AND RESPONSE

VTA Highway Program Title: VTA #S07065, CT EA# 04-4A3301 US 101 Auxiliary Lanes (SR 85 to Embarcadero Road). PM 48.97/52.17 in Santa Clara County.	Submittal: 95% PS&E Updated: June 11, 2010 Report Title: Geotechnical Design and Materials Report	

CODE: A - Will Comply; B - Caltrans to Evaluate; C - Will Not Incorporate; D – Agency (SCTA/URS) to Evaluate; E - No Action Required

AGCY	INIT	Item No.	Drawing or Page No.	Review Comments	Designer Responses	Rev. By	Initial Disp.	JRT Disp.	Final Disp.
				3. Northbound, "C" Station 169+00 to 182+00. Section 5.2.2, however, states that "lime treated subgrade" will be required on Northbound from Station 129+00 to Station 173+00 (Batch 1). Please clarify.					
CT	KW	3		C. Section 5.3.2 RHMA Considerations Please eliminate the option of using HMA (Type B).	Will comply.		A		
CT	KW	4		D. Section 5.3.3, Section 5.3.4, Section 5.3.5, Section 5.3.6 Please recalculate and use 0.15' RHMA-G as the last layer to match the adjacent project. Apply this information to Section 5.4 and "Typical Cross Sections" (Appendix B) accordingly.	Will comply.		A		
CT	KW	5		E. Section 5.3.9 Recommended Full Depth HMA Alternative for Mainline On your response (Appendix L) to our 2nd GDMR Review Comment (dated February 26, 2010), item 6, you indicated "no full depth HMA sections are proposed" for this project. However, this section still shows a full HMA option. Please clarify.	Full depth HMA option will be deleted (Section 5.3.9).		A		
CT	KW	6		F. Section 5.4 Pavement Overlay In order to match the adjacent project and	Will comply.		A		

Review Discipline: US 101 Auxiliary Lanes Project
3rd Review Comments for Geotechnical Design and Materials Report (GDMR)

By: Caltrans

Comments Due By:

Date: 07/29/2010

Date Reviewed By: June 16, 2010

Next JRT Meeting Date: TBA

TECHNICAL COMMENT REVIEW AND RESPONSE

VTA Highway Program Title: VTA #S07065, CT EA# 04-4A3301 US 101 Auxiliary Lanes (SR 85 to Embarcadero Road). PM 48.97/52.17 in Santa Clara County.	Submittal: 95% PS&E Updated: June 11, 2010 Report Title: Geotechnical Design and Materials Report	

CODE: A - Will Comply; B - Caltrans to Evaluate; C - Will Not Incorporate; D – Agency (SCTA/URS) to Evaluate; E - No Action Required

AGCY	INIT	Item No.	Drawing or Page No.	Review Comments	Designer Responses	Rev. By	Initial Disp.	JRT Disp.	Final Disp.
				maximize the usage of RHMA-G, please do the following: 1. On Southbound, overlay with 0.15' RHMA-G. 2. On Northbound, cold plane 0.10' existing OGAC and overlay with 0.15' of RHMA-G. 3. Apply the above information to the "Typical Cross Sections" accordingly.					
CT	KW	7		G. Section 9.2.2 Structural Pavement Sections 1. Please revise the section heading to read "Structural Pavement Materials". 2. Add the item Lime Treat Subbase if applicable.	1. Will comply. 2. LTS not currently planned.	A			
CT	KW	8		H. Appendix B - Typical Cross Sections Please revise the project typical cross section sheets in accordance with Section 5.3 New Structural Pavement Sections and Section 5.4 Pavement Overlay of the Final GDMR.	Will coordinate with roadway designer.	A			

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

Memorandum

Flex your power!
Be energy efficient!

To: PAUL MAI
DISTRICT OFFICE CHIEF
DESIGN SOUTH, SANTA CLARA B

Attention: Hassan Nikzad
Caroline Pineda

Date: February 26, 2010

File: 04-SCL-101
PM 48.97 / 52.17
04-4A3301
Auxiliary / HOV
Lanes Widening

From: KAN WONG
Materials Design Engineer
Engineering Service I - Materials B

Concurred by: ASHOK DAS, P.E.
District Materials Engineer
Branch Chief, Materials B

Subject: 2nd Review Comments for Geotechnical Design and Materials Report (GDMR) and Life Cycle Cost Analysis (LCCA)

This memorandum is in response to your email dated February 10, 2010 requesting our review of Geotechnical Design and Materials Report (GDMR) and Life Cycle Cost Analysis (LCCA). The purpose of the project is to relieve existing and future traffic congestion on weaving section and at ramp termini, and provide for improved local access over this segment of this segment of the U.S. 101 corridor. The proposed project is located on U.S. 101 in the cities of Mountain View and Palo Alto in Santa Clara County with project limits extend from State Route (SR) 85 on the south to Embarcadero Road on the north (PM 48.97 / 52.17).

Having reviewed the GDMR and LCCA, we have the following comments:

I. Geotechnical Design and Materials Report

A. Section 3.2.3 Groundwater

Does the pavement require the installation of "underdrain" ?

B. Section 5.2.2 Lime Treated Subgrade

Table 5-3 indicated combined bulk samples from different boring locations were used for lime treat testing. The lime treat testing results shown in Table 5-4 might not be the true lime treat testing results.

C. Section 5.3.9 Recommended Full Depth HMA Alternative for Mainline

1. If this is a full depth HMA, why uses Class 3 AB as base ?
2. If base is needed, please consider LCB.
3. Where do you apply this sections ?
4. Full Depth HMA is not recommended to be use on mainline with high TI and low soil R-value.

D. Section 5.3.7 Recommended Ramp Sections

The pavement sections of each ramp should be design with its R-value accordingly.

E. Section 9.2.2 Structural Pavement Sections

1. Add SSP for RHMA-G.
2. Add SSP for ATPB.
3. Add SSP for Lime Treat Subbase if applicable.

F. Appendix B - Typical Cross Sections

1. Please double check; the "proposed structural sections" are not shown in accordance with Section 5 Structural Pavement of the GDMR.
2. Is there any pavement structural sections use "lime treated subbase" in this project ?
3. Please show design factors and support calculation for structural section #8 and #9.

II. Life Cycle Cost Analysis

No comment.

* * * * * *

If you have any questions, please contact Kan Wong at (510) 622-8814.

Attachments:

c: Route File, Daily File

K.Wong/dg/SCL-101, Auxiliary and HOV Lanes Widen

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

Memorandum

Flex your power!
Be energy efficient!

To: MR. PAUL MAI
District Office Chief
Design South SCL "B"

Date: March 1, 2010

Attention: H. Nikzad
C. Pineda

File: 04-SCL-101 PM 49
04-4A3300
101 Auxiliary Lane

MZ

From: M. ZABOLZADEH
Associate M & R Engineer
Office of Geotechnical Design – West
Geotechnical Services
Division of Engineering Services

H. Nikoui
HOOSHMAND NIKOUI
Chief, Branch A
Office of Geotechnical Design – West
Geotechnical Services
Division of Engineering Services

Subject : Review GDR

We have reviewed the submitted Geotechnical Design and Materials Report for the above referenced project and we have the following comments:

- Page 6-10 - The magnitude of the downdrag due to liquefaction, should be specified.
- A sample of the computer program output (Comp 624, etc.) resulting the design length of the piles for the proposed overhead sign structures should be included in the Appendix.

If you have any questions or need additional information, please call me at 510-286-4831 or Hooshmand Nikoui, Branch Chief at 510-286-4811.

c: TPokrywka, HNikoui, Mzabolzadeh, Daily File, Route File

MZabolzadeh/mm/4A3300 Review Final GDR

Review Discipline:	US 101 Auxiliary Lanes Project Review Comments for Geotechnical Design and Materials Report (GDMR) and Life Cycle Cost Analysis (LCCA)	**By:**	Caltrans District 4 Materials B
Comments Due By:	Caltrans	**Date:**	4/1/2010
Date Reviewed By:	February 26, 2010	**Next Meeting Date:**	TBA

TECHNICAL COMMENT REVIEW AND RESPONSE

Title: VTA #S07065, CT EA# 04-4A330 US 101 Auxiliary Lanes (SR 85 to Embarcadero Road). PM 48.97/52.17 in Santa Clara County.	Submittal: 65% PS&E Updated: February 2010 Report Title: Geotechnical Design and Materials Report Date: February 1, 2010	

CODE: A - Will Comply; B - Caltrans to Evaluate; C - Will Not Incorporate; D - Agency to Evaluate; E - No Action Required

AGCY	INIT	Item No.	Drawing or Page No.	Review Comments	Designer Responses	Rev. By	JRT Disp.	Final Disp.
Geotechnical Design and Materials Report								
CT	Kan Wong	1		**Section 3.2.3 Groundwater** Does the pavement require the installation of "underdrain" ?	No; upgradient groundwater flow is not anticipated.			
CT	KW	2		**Section 5.2.2 Lime Treated Sub grade** Table 5-3 indicated combined bulk samples from different boring locations were used for lime treat testing. The lime treat testing results shown in Table 5-4 might not be the true lime treat testing results.	Concurr that more tests on the fat clays are required if the results are for lime treatment design. However, it is the project intent to provide a basis for evaluating feasibility of lime treatment of subgrade soils, in the event if the Contractor proposes a CRIP for lime treated subbase (subgrade improvement) in lieu of aggregate subbase. Design of a lime treated subbase section will be required as part of the CRIP submittal. The report section will be revised to limit the LTS be feasible in segments where subgrade soil is classified as fat clay (CH) and that R-value is less than 10. However, no lime treated subbase layers are proposed for the PS&E package at this time.			
CT	KW	3		**Section 5.3.9 Recommended Full Depth HMA Alternative for Mainline** If this is a full depth HMA, why uses Class 3 AB as base?	This is a modification to flexible pavement with design life greater than 20 years, based on HDM 633.1 (3). However, Class 2 AB and an addition of subgrade enhancement fabric should be used; will			

Review Discipline: US 101 Auxiliary Lanes Project
Review Comments for Geotechnical Design and Materials Report (GDMR) and Life Cycle Cost Analysis (LCCA)

By: Caltrans District 4 Materials B

Comments Due By: Caltrans

Date: 4/1/2010

Date Reviewed By: February 26, 2010

Next Meeting Date: TBA

TECHNICAL COMMENT REVIEW AND RESPONSE

Title: VTA #S07065, CT EA# 04-4A330 US 101 Auxiliary Lanes (SR 85 to Embarcadero Road). PM 48.97/52.17 in Santa Clara County.	Submittal: 65% PS&E Updated: February 2010 Report Title: Geotechnical Design and Materials Report Date: February 1, 2010	

CODE: A - Will Comply; B - Caltrans to Evaluate; C - Will Not Incorporate; D - Agency to Evaluate; E - No Action Required

AGCY	INIT	Item No.	Drawing or Page No.	Review Comments	Designer Responses	Rev. By	JRT Disp.	Final Disp.
					revise.			
CT	KW	4		If base is needed, please consider LCB.	Not required as part of the HDM procedure.			
CT	KW	5		Where do you apply this sections?	This is optional section for sliver widening.			
CT	KW	6		Full Depth HMA is not recommended to be use on mainline with high TI and low soil R-value.	Will comply. No full depth HMA sections are proposed.			
CT	KW	7		**Section 5.3.7 Recommended Ramp Sections** The pavement sections of each ramp should be design with its R-value accordingly.	The sample of R-value is not extensive enough to characterize the full range of the ramp sections. It is our opinion that using the lower bound value is appropriate.			
CT	KW	8		**Section 9.2.2 Structural Pavement Sections** Add SSP for RHMA-G.	Will comply.			
CT	KW	9		Add SSP for ATPB.	Will comply.			
CT	KW	10		Add SSP for Lime Treat Subbase if applicable.	Lime treatment is not proposed.			
CT	KW	11		**Appendix B - Typical Cross Sections** Please double check; the "proposed structural sections" are not shown in accordance with Section 5 Structural Pavement of the GDMR.	Will comply.			
CT	KW	12		Is there any pavement structural sections use "lime treated subbase" in this project?	Currently, no structural sections with “lime treated subbase” are planned.			
CT	KW	13		Please show design factors and support calculation for structural section #8 and #9.	Sections #8 and #9 are intended for slope paving purposes; no traffic loads are anticipated.			
Life Cycle Cost Analysis								
CT	KW	14		No comment.				

Review Discipline:	US 101 Auxiliary Lanes Project Review Comments for Geotechnical Design and Materials Report (GDMR) and Life Cycle Cost Analysis (LCCA)	**By:**	Caltrans District 4 Materials B
Comments Due By:	Caltrans	**Date:**	4/1/2010
Date Reviewed By:	February 26, 2010	**Next Meeting Date:**	TBA

TECHNICAL COMMENT REVIEW AND RESPONSE

Title: VTA #S07065, CT EA# 04-4A330 US 101 Auxiliary Lanes (SR 85 to Embarcadero Road). PM 48.97/52.17 in Santa Clara County.	Submittal: 65% PS&E Updated: February 2010 Report Title: Geotechnical Design and Materials Report Date: February 1, 2010	

CODE: A - Will Comply; B - Caltrans to Evaluate; C - Will Not Incorporate; D - Agency to Evaluate; E - No Action Required

AGCY	INIT	Item No.	Drawing or Page No.	Review Comments	Designer Responses	Rev. By	JRT Disp.	Final Disp.
Ofiice of Geotechnical Design – West, Geotechnical Services								
CT	MZ	1	6-10	The magnitude of the downdrag due to liquefaction, should be specified.	Will comply.			
		2		A sample of the computer program output (Comp 624, etc.) resulting the design length of the piles for the proposed overhead sign structures should be included in the Appendix.	Will comply.			

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

Memorandum

Flex your power!
Be energy efficient!

To: PAUL MAI
DISTRICT OFFICE CHIEF
DESIGN SOUTH, SANTA CLARA B

Attention: Hassan Nikzad
Caroline Pineda

Date: September 16, 2009

File: 04-SCL-101
PM 48.97 / 52.17
04-4A3301
Auxiliary / HOV
Lanes Widening

From: KAN WONG
Materials Design Engineer
Engineering Service I - Materials B

Concurred by: ASHOK DAS, P.E.
District Materials Engineer
Branch Chief, Materials B

Subject: Review Comments for Draft Geotechnical Design and Materials Report (GDMR)

This memorandum is in response to URS's email dated August 14, 2009 requesting our review of Draft Geotechnical Design and Materials Report (GDMR). The purpose of the project is to relieve existing and future traffic congestion on weaving section and at ramp termini, and provide for improved local access over this segment of this segment of the U.S. 101 corridor. The proposed project is located on U.S. 101 in the cities of Mountain View and Palo Alto in Santa Clara County with project limits extend from State Route (SR) 85 on the south to Embarcadero Road on the north (PM 48.97 / 52.17).

Having reviewed the Draft GDMR, we have the following comments:

I. Draft Geotechnical Design and Materials Report

A. <u>Section 5.2.1 Untreated Subgrade</u>

1. Table 5-1 R-Value Test Results
   a. Have any soil samples been taken for ramp modifications?
   b. What are the design R-values for each ramp?
   c. Please show the R-value boring locations (mainline & ramps) on a plan sheet.

2. Table 5-2 Subgrade Design R-Value
   The design R-value of 5 does not agree with the R-values shown in <u>Table 5-4 Bulk Sample Test Results</u>.

B. Section 5.2.2 Lime Treated Subgrade

- Table 5-4 indicated the R-values for Batch #1, #2 and #3 as 14, 19 and 17 respectively which are greater than 10. Is batch #1 still a viable option for "lime treatment"?
- Samples should be taken from one location for each Lime Treat Testing. Combined bulk samples from different borings may not produce a true representative sample for lime testing.
- According to the latest Caltrans Highway Design Manual, the proposed design UCS is 300 psi. Please double check the formula for calculating G_f and modify the design as necessary.

C. Section 5.3.4 Recommended Northbound Mainline and Shoulder Sections from "C" Line Station 129+00 to 214+00 (SPCS 2)

Please redesign the pavement structural sections for Option #2 and #3 using LCB as base for T.I. greater than 12.

D. Section 5.3.7 Recommended Ramp Sections

Do all ramps have an R-value of 5? If not, please show the R-values of each ramp and redesign the pavement sections accordingly.

E. Section 5.4 Pavement Overlay

Please identify the cold plane thickness, overlay material and thickness for the northbound segment.

F. Section 6.1.5 Soil Reuse and Disposal

1. Please consult Caltran's Office of Environmental Engineering for regulation/policy prohibiting the reuse of lead contaminated soil as a component of lime-treated subbase.
2. Has any "lime treated" tests been performed on the lead-impacted soil to verify its usage?

G. Section 7.3.5 Alternative Pipe Material Selection

Please rerun and check by using CULVERT4 Software; whether or not to use Corrugated Aluminum Pipe (CAP) and Corrugated Aluminized Steel Pipe (CASP) due to corrosive conditions. Our analysis shows that these should not be used.

II. Appendix B - Typical Cross Sections

The "proposed structural sections" should be shown in accordance with Section 5 Structural Pavement of the GDMR.

* * * * * *

If you have any questions, please contact Kan Wong at (510) 622-8814.

Attachments:

c: Route File, Daily File

K.Wong/dg/SCL-101, Auxiliary and HOV Lanes Widen

Review Discipline: Review Comments for Draft Geotechnical Design and Materials Report (GDMR)

By: Kan Wong, CT

Comments Due By:

Date: September 16, 2009

Date Reviewed By:

Next Meeting Date:

TECHNICAL COMMENT REVIEW AND RESPONSE

VTA Highway Program
Title: VTA #S07065, CT EA# 04-4A3301
US 101 Auxiliary Lanes (SR 85 to Embarcadero Road).
PM 49.0/52.2 in Santa Clara County.

Submittal: 35% Engineer Estimate Review
Plans Updated date: May 2009

CODE: A - Will Comply; B - Caltrans to Evaluate; C - Will Not Incorporate; D - Agency to Evaluate; E - No Action Required

AGCY	INIT	Item No.	Drawing or Page No.	Review Comments	Designer Responses	Rev. By	JRT Disp.	Final Disp.
Draft Geotechnical Design and Materials Report								
CT	KW	1	Table 5-1 R-Value Test Results	**Section 5.2.1 Untreated Subgrade** a. Have any soil samples been taken for ramp modifications? b. What are the design R-values for each ramp? c. Please show the R-value boring locations (mainline & ramps) on a plan sheet.	a. Yes. b. Will include description in Table 5-1. c. Will comply.	A		
CT	KW	2	Table 5-2 Subgrade Design R-Value	The design R-value of 5 does not agree with the R-values shown in Table 5-4 Bulk Sample Test Results.	The design R-value considers a reasonable lower bound for each station interval.	C		
CT	KW	3		**Section 5.2.2 Lime Treated Subgrade** Table 5-4 indicated the R-values for Batch #1, #2 and #3 as 14, 19 and 17 respectively which are greater than 10. Is batch #1 still a viable option for "lime treatment"?	Considering the potential expansiveness of Batch #1 (LL=64, PI=46), lime treatment should help minimize the swell/shrink potential of the subgrade and help workability.	C		
CT	KW	4		Samples should be taken from one location for each Lime Treat Testing. Combined bulk samples from different borings may not produce a true representative sample for lime testing.	The bulk samples were constituted using similar soil types based on visual classification.	C		
CT	KW	5		According to the latest Caltrans Highway Design Manual, the proposed design UCS is 300 psi. Please double check the formula for calculating G_f and modify the design as necessary.	Based on HDM Section 6.14.4, "Expansive Soil," the G_f equation is valid for UCS greater than or equal to 300 psi. Therefore, the UCS target of 400 psi we selected remains valid.	C		

Review Discipline: Review Comments for Draft Geotechnical Design and Materials Report (GDMR)

By: Kan Wong, CT

Comments Due By:

Date: September 16, 2009

Date Reviewed By:

Next Meeting Date:

TECHNICAL COMMENT REVIEW AND RESPONSE

VTA Highway Program
Title: VTA #S07065, CT EA# 04-4A3301
US 101 Auxiliary Lanes (SR 85 to Embarcadero Road).
PM 49.0/52.2 in Santa Clara County.

Submittal: 35% Engineer Estimate Review
Plans Updated date: May 2009

CODE: A - Will Comply; B - Caltrans to Evaluate; C - Will Not Incorporate; D - Agency to Evaluate; E - No Action Required

AGCY	INIT	Item No.	Drawing or Page No.	Review Comments	Designer Responses	Rev. By	JRT Disp.	Final Disp.
CT	KW	6		**Section 5.3.4 Recommended Northbound Mainline and Shoulder Sections from "C" Line Station 129+00 to 214+00 (SPCS 2)** Please redesign the pavement structural sections for Option #2 and #3 using LCB as base for TI greater than 12.	Will revise.	A		
CT	KW	7		**Section 5.3.7 Recommended Ramp Sections** Do all ramps have an R-value of 5? If not, please show the R-values of each ramp and redesign the pavement sections accordingly.	All ramp sections have been designed conservatively with an R-value of 5.	A		
CT	KW	8		**Section 5.4 Pavement Overlay** Please identify the cold plane thickness, overlay material and thickness for the northbound segment.	Will clarify.	A		
CT	KW	9		**Section 6.1.5 Soil Reuse and Disposal** Please consult Caltran's Office of Environmental Engineering for regulation/policy prohibiting the reuse of lead contaminated soil as a component of lime-treated subbase.	Will confirm and revise report accordingly.	A		
CT	KW	10		Has any "lime treated" tests been performed on the lead-impacted soil to verify its usage?	No.	C		
CT	KW	11		**Section 7.3.5 Alternative Pipe Material Selection** Please rerun and check by using CUL VERT4 Software; whether or not to use Corrugated Aluminum Pipe (CAP) and Corrugated Aluminized Steel Pipe (CASP) due to corrosive conditions. Our analysis shows that these should not be used.	Will confirm.	A		

Review Discipline: Review Comments for Draft Geotechnical Design and Materials Report (GDMR)

By: Kan Wong, CT

Comments Due By:

Date: September 16, 2009

Date Reviewed By:

Next Meeting Date:

TECHNICAL COMMENT REVIEW AND RESPONSE

VTA Highway Program
Title: VTA #S07065, CT EA# 04-4A3301
US 101 Auxiliary Lanes (SR 85 to Embarcadero Road).
PM 49.0/52.2 in Santa Clara County.

Submittal: 35% Engineer Estimate Review
Plans Updated date: May 2009

CODE: A - Will Comply; B - Caltrans to Evaluate; C - Will Not Incorporate; D - Agency to Evaluate; E - No Action Required

AGCY	INIT	Item No.	Drawing or Page No.	Review Comments	Designer Responses	Rev. By	JRT Disp.	Final Disp.
Typical Cross Sections								
CT	KW	12		The "proposed structural sections" should be shown in accordance with Section 5 Structural Pavement of the GDMR.	Will coordinate with roadway designer.	A		

04/SCL/101/ PM 48.97/52.17
EA 04-4A3301
VTA Contract Number: S07065
URS Project Number: 28649951

SITE INVESTIGATION REPORT HIGHWAY 101 AUXILIARY LANES PROJECT

Prepared for
Santa Clara Valley Transportation Agency

May 19, 2010

URS Corporation
100 West San Fernando Street, Suite 200
San Jose, California 95113
408-297-9585

URS

May 19, 2010

Mr. Paul Mai
Office of Design South Santa Clara B
111 Grand Avenue
Oakland, CA 94623-0660

Re: **Revised Report**
Site Investigation Report
Highway 101 Auxiliary Lanes Project
04/SCL/101/ PM 48.97/52.17
EA 04-4A3301
VTA Contract Number S07065
URS Project Number: 28649951

Dear Mr. Mai:

Attached is a copy of the above referenced report. The conclusions and recommendations present our professional judgments and opinions based upon the findings identified in this report.

The report has been revised since the draft from August 2009, to incorporate the revised results from additional statistical analysis that has been undertaken with respect to lead. The groupings of soil samples used within the statistical analysis were amended to reduce the amount of soil that is subject to reuse restrictions.

The following table shows how the original sample groupings (from the August 2009 analysis and report) were re-grouped for the current statistical analysis and attached report. To avoid confusion, the revised report makes no mention of the original groupings.

Original Group (Aug 2009 Report)	Northern Limit Station	Southern Limit Station	Depth*	Revised Group (as used in attached report)
Southbound				
1	Northern end of project	50+00	0-1 ft	1A
1	Northern end of project	50+00	1-3 ft	1B
2A	50+00	113+00	0-1 ft	1A
2B	50+00	113+00	1-3 ft	1B
3A	113+00	197+00	0-0.5 ft	2A
3B	113+00	197+00	0.5-3 ft	2B

URS Corporation
100 W. San Fernando Street
Suite 200
San Jose, CA 95113-2254
Tel: 408.297.9585
Fax: 408.297.6962
www.urscorp.com

URS

Original Group (Aug 2009 Report)	Northern Limit Station	Southern Limit Station	Depth*	Revised Group (as used in attached report)
4	197+00	Southern Project Limit	0-0.5 ft	2A
4	197+00	Southern Project Limit	0.5-3 ft	2B
Northbound				
5	Northern Project Limit	70+00	0-1.5 ft	3A
5	Northern Project Limit	70+00	1.5-3 ft	3B
6A	70+00	105+00	0-1.5 ft	3A
6B	70+00	105+00	1.5-3 ft	3B
7A	105+00	159+00	0-1.5 ft	4A
7B	105+00	159+00	1.5-3 ft	4B
8A	159+00	Southern Project Limit	0-1 ft	5A
8B	159+00	Southern Project Limit	1-3 ft	5B

Based on the revised groupings, the following reuse and disposal requirements apply.

Group	Northern Limit Station	Southern Limit Station	Depth*	Reuse Restriction	Disposal Requirement
Southbound					
1A	Northern Project Limit	113+00	0-1 ft	Below pavement, > 5' above the groundwater table	Cal-Hazardous, or out-of-state
1B	Northern Project Limit	113+00	1-3 ft	None	Non-Hazardous
2A	113+00	Southern Project Limit	0-0.5 ft	Below pavement, > 5' above the groundwater table	Cal-Hazardous, or out-of-state
2B	113+00	Southern Project Limit	0.5-3 ft	None	Non-Hazardous
Northbound					
3A	Northern Project Limit	105+00	0-1.5 ft	Below pavement, > 5' above the groundwater table	Cal-Hazardous, or out-of-state
3B	Northern Project Limit	105+00	1.5-3 ft	None	Cal-Hazardous, or out-of-state
4A	105+00	159+00	0-1.5 ft	Below pavement, > 5' above the groundwater table	Cal-Hazardous, or out-of-state
4B	105+00	159+00	1.5-3 ft	None	Non-Hazardous
5A	159+00	Southern Project Limit	0-1 ft	Below pavement, > 5' above the groundwater table	Cal-Hazardous, or out-of-state
5B	159+00	Southern Project Limit	1-3 ft	None	Non-Hazardous

URS

Please note that as discussed in the August 2009 report, selected areas with higher than typical lead known as "hot spots" at 5 locations are to be preliminarily excavated and off-hauled. In addition to those 5 locations, samples associated with a hot spot at boring N-1-4 has also been removed from the sample set as the analytical results would have negatively impacted soil reuse potential. Soil associated with this boring will be separately excavated and managed.

In addition, sampling related to an additional right of way acquisition area identified as the "Peery Property" was performed subsequent to the initial draft; the results of this sampling effort are discussed in this revised report.

Please do not hesitate to contact us if there are any questions or comments.

Sincerely,
URS Corporation

Christopher Lillie, P.E.
Deputy Project Manager

Patrick D. Walz, P.E.
Project Environmental Task Leader

TABLE OF CONTENTS

Executive Summary **ES-1**

1. Section 1 Introduction **1-1**

2. Section 2 Sampling and Analysis Activities **2-1**

2.1 Description of Sampling and Analysis Activities 2-1
2.1.1 Project Limits 2-1
2.1.2 Sampling Locations 2-1
2.1.3 Sampling Depths 2-1
2.1.4 Pre-Field Activities 2-1
2.1.5 Sample Collection Methods 2-2
2.1.6 Changes to the Field Program 2-3
2.1.7 Soil Laboratory Analysis 2-3
2.1.8 Groundwater Laboratory Analysis 2-5

3. Section 3 Summary of Analytical Results **3-1**

3.1 Regulatory Overview 3-1
3.2 Soil Samples 3-2
3.2.1 Lead 3-2
3.2.2 CAM 17 Metals 3-2
3.2.3 Other Constituents of Concern 3-3
3.3 Groundwater 3-5
3.3.1 California Assessment Metals (CAM 17 Metals) 3-5
3.3.2 Other Constituents of Concern 3-5
3.3.3 Groundwater Elevation 3-6

4. Section 4 Data Evaluation **4-1**

4.1 Soil 4-1
4.1.1 Initial Soil Disposal Assumptions 4-4
4.1.2 Group 1 4-4
4.1.3 Group 2 4-5
4.1.4 Group 3 4-6
4.1.5 Group 4 4-7
4.1.6 Group 5 4-8

5. Section 5 Asbestos/Lead Based Paint Investigation **5-1**

5.1 Inspected Structures 5-1
5.2 Potential-Asbestos Containing Materials (P-ACM) Inspection 5-1
5.2.1 Asbestos Inspection Details 5-1
5.2.2 Asbestos Analytical Quality Control 5-2

TABLE OF CONTENTS

5.2.3 Asbestos Analytical Results 5-2
5.3 Potential-Lead-Based Paint (P-LBP) Inspection 5-2
5.3.1 P-LBP Inspection Details 5-3
5.3.2 Lead Based Paint Analytical Quality Control 5-3
5.3.3 Lead Based Paint Analytical Results 5-3

6. Section 6 Additional Project Considerations 6-1

6.1 Potential Right-of-Way Acquisitions 6-1
6.1.1 Boring N-1 6-1
6.1.2 Boring N-3-5 6-2
6.1.3 Boring N-3-10 6-2
6.2 Potential Impacts Due to Off-Site Contamination 6-2

7. Section 7 Conclusions and Recommendations 7-1

7.1 Conclusions 7-1
7.1.1 Lead – Soil Reuse 7-2
7.1.2 Lead – Soil Disposal 7-2
7.1.3 Other Contaminants of Concern in Soil 7-3
7.1.4 Right-of-Way Acquisition 7-4
7.1.5 Groundwater 7-4
7.1.6 Asbestos/Lead Based Paint 7-5
7.2 Recommendations 7-5
7.2.1 Soil 7-5
7.2.2 Right-of-Way Acquisition Area 7-6
7.2.3 Groundwater 7-6
7.2.4 Structural Demolition Debris 7-6

8. Section 8 Limitations 8-1

9. Section 9 Abbreviations and Acronyms 9-1

10. Section 10 References 10-1

LIST OF TABLES, FIGURES AND APPENDICES

Tables

ES-1 – Soil Reuse/Disposal Requirements

Table 1 – Sampling and Analysis Summary

Table 2 – Soil Results – Total Metals

Table 3 – Soil Results - Metals Leachate and Speciazation

Table 4 – Soil Results – Other COPCs

Table 5 – Groundwater Results – Total Metals

Table 6 – Groundwater Results – Other COPCs

Table 7 – Statistical Analysis, Lead in Soil

Table 8 – Summary of Materials with No Detected Asbestos

Table 9 – Summary of Materials with Detected Lead

Table 10 – Summary of Materials with No Detected Lead

Figures

Figure 1 Location Map

Figures 2-18 Environmental Borings and Soil Reuse Summary

Appendices

Appendix A Hazardous Materials Investigation Workplan (March 12, 2009)

Appendix B Encroachment Permit

Appendix C Boring Logs

Appendix D DTSC Variance

Appendix E Analytical Results (on CD)

Appendix F Kellco-Macs Laboratory Asbestos/Lead Based Paint Investigation Report.

EXECUTIVE SUMMARY

The U. S. 101 Auxiliary Lanes project consists of the segment of U. S. 101 between Embarcadero Road and State Route 85 (S.R. 85) located in the cities of Mountain View and Palo Alto, California. The project limits extend south from Embarcadero Road to S.R. 85, a distance of 3.2 miles (PM 48.97/52.17) and will be referred hereon as "the Site" (Figure 1). The purpose of this Site Investigation Report is to evaluate the soil conditions for on-site use, off-site disposal of site soils, assess the bridges and culverts that will need to be widened for the presence of asbestos or lead-based paint and to assess soil and groundwater to identify work safety issues for construction site workers. The following summarizes URS' conclusions and recommendations.

Soil Reuse/Disposal

With the exception of aerially-deposited lead, no constituent was detected at a concentration limiting soil reuse or requiring disposal of soil as a hazardous waste. However, the detected concentrations of aerially-deposited lead have resulted in restrictions on the reuse and/or disposal of soil within the project limits. The attached Figures 2-18 and the following table summarize the reuse restrictions and disposal requirements of project soil. Please note that selected hotspot removal is assumed as discussed in detail in Section 7.1.2.

Table ES-1 - Soil Reuse/Disposal Requirements

Group	Northern Limit Station	Southern Limit Station	Depth*	Reuse Restriction	Disposal Requirement
Southbound					
1A	Northern Project Limit	113+00	0-1 ft	Below pavement, > 5' above the groundwater table	Cal-Hazardous, or out-of-state
1B	Northern Project Limit	113+00	1-3 ft	None	Non-Hazardous
2A	113+00	Southern Project Limit	0-0.5 ft	Below pavement, > 5' above the groundwater table	Cal-Hazardous, or out-of-state
2B	113+00	Southern Project Limit	0.5-3 ft	None	Non-Hazardous
Northbound					
3A	Northern Project Limit	105+00	0-1.5 ft	Below pavement, > 5' above the groundwater table	Cal-Hazardous, or out-of-state
3B	Northern Project Limit	105+00	1.5-3 ft	None	Cal-Hazardous, or out-of-state
4A	105+00	159+00	0-1.5 ft	Below pavement, > 5' above the groundwater table	Cal-Hazardous, or out-of-state
4B	105+00	159+00	1.5-3 ft	None	Non-Hazardous
5A	159+00	Southern Project Limit	0-1 ft	Below pavement, > 5' above the groundwater table	Cal-Hazardous, or out-of-state
5B	159+00	Southern Project Limit	1-3 ft	None	Non-Hazardous

*Samples typically collected at 0.5, 1.0, 1.5, 2.0, and 3.0 feet below ground surface

Significant project costs may result due to the volume of soil with reuse restrictions or requiring disposal as a hazardous waste, and the presence of a shallow groundwater table. Steps to reduce these costs by minimizing disposal of soil as a hazardous waste, or finding locations to properly reuse the restricted soil, may be necessary.

Structures Scheduled for Retrofit or Demolition

Three structures within the project limits are scheduled for retrofit or widening, and this will involve the partial demolition of all or parts of each structure. Accordingly, an asbestos and lead-based paint inspection was conducted for the following structures:

- Adobe Creek Bridge
- Matadero Creek Bridge
- Permanente Creek box culvert

No asbestos containing materials were detected. Lead-based paint was detected at the Adobe Creek Bridge and the Matadero Creek Bridge. Applicable regulations regarding the demolition and disposal of debris from these bridges must be followed.

Potential Right of Way Acquisition Areas

Borings N-1, N-3-5 and N-3-10 were advanced within or adjacent to potential right-of-way acquisition areas, to classify soil in those areas for reuse and to preliminarily screen the sites for other contamination. Boring N-1 exhibited potential contamination of total Chromium; while borings N-3-5 and N-3-10 exhibited contamination of total petroleum hydrocarbons as motor oil (TPH-mo); and boring N-3-10 exhibited contamination of VOCs in groundwater. Additional characterization of these properties would be required to certify that they are free of hazardous contamination.

Impacts from Off-Site Contamination

Several locations at the project site were discussed during the Initial Site Assessment performed by Baseline Environmental Consultants, April 2008, to have likely been impacted by volatile organic compounds (VOCs) or pesticides originating at several properties adjacent to the project area. One groundwater sample and a full-suite of soil analytical data was collected for each of these areas.

These locations include:

- San Antonio Road area (Boring S-2-3)
- Caltrans yard area near Old Middlefield Way (Borings S-3-12 and S-3-13)
- Area south of Amphitheater Parkway (Boring S-3-14)

URS' investigation did not identify evidence that these potential off-Site sources impacted the project corridor.

Groundwater

URS' investigation of groundwater did not reveal the presence of contamination that would require disposal as a hazardous waste. In general, groundwater was detected at depths varying from 8 feet to 15 feet below ground surface. Based on the terms of the Caltrans variance, these shallow depths could reduce the areas at which Aerial Deposited Lead contaminated soil may be reused.

The US 101 Auxiliary Lanes project consists of the segment of US 101 between Embarcadero Road and State Route 85 (S.R. 85) located in the Cities of Mountain View and Palo Alto, in Santa Clara County within District 4 of the State of California Department of Transportation (Caltrans) and within the Santa Clara Valley Transportation Agency (VTA) planning area (See Figure 1 for a Project Location and Vicinity Map). The project limits extend south from Embarcadero Road to State Route 85, a distance of 3.2 miles (PM 48.97/52.17) and will be referred hereon as "the Site".

The purpose of this project is to relieve existing and future traffic congestion at freeway on-ramp and off-ramp connections, improve safety along the US 101 corridor, and provide for improved local access over this segment of the US 101 corridor. This project proposes to construct auxiliary lanes, extend existing second High Occupancy Vehicle (HOV) lanes, and undertake associated ramp improvements including ramp widening and installing/activating ramp metering in both directions. The proposed improvements include widening of creek crossings and relocation of sign structures, storm drainage and other utilities. As a result of these proposed improvements soil will be excavated along US 101, at interchanges, and at creek crossings.

The purpose of the Hazardous Materials Investigation was to evaluate the soil conditions for on-site use, off-site disposal of site soils, assess the bridges and culverts scheduled for retrofit for the presence of asbestos or lead-based paint and assess soil and groundwater to identify work safety issues for construction site workers. URS submitted the Hazardous Materials investigation workplan to VTA and Caltrans on March 16, 2009. Sampling and resulting laboratory analysis activities were performed between March 22 and April 13, 2009.

This Report has been prepared in accordance with the most recently issued Caltrans District 4 lead-impacted soil handling variance by DTSC. This variance describes reuse restrictions and disposal requirements for soils impacted by lead at various concentrations. These criteria and the corresponding regulatory restrictions are described in Section 3.1.

Soil samples were collected at a total of 91 locations, as described in the workplan included as Appendix A. Soil samples were collected at locations perpendicular from the edge of the roadway. Approximately one-third of samples were collected each at outer pavement edge, at the edge of the proposed widening area, or in the midpoint of the proposed widening area. Of the 91 locations, 47 were from adjacent to the northbound direction mainline or ramp lanes and 44 from adjacent to the southbound direction mainline or ramp lanes. A secondary, duplicate boring was advanced at six of the locations. Samples were generally collected at 0.5, 1.0, 1.5, 2.0, and 3.0 feet below ground surface (bgs), though isolated samples were collected to deeper depths where excavation was expected to be deeper than 3 feet, or where groundwater samples were to be collected. A total of 475 soil samples were collected.

Groundwater samples were collected from the first encountered groundwater zone, typically about 8-15 feet below ground surface (bgs). A total of 9 groundwater samples were collected. Groundwater samples were collected where deeper excavation is planned – at bridge and culvert construction areas and at a retaining wall location. Additionally, groundwater samples were collected at areas identified in the project Initial Site Assessment (ISA) as being potentially impacted by VOCs.

A total of 48 samples of potentially-asbestos containing materials, and 7 samples of potential lead-based paint, were collected from these structures requiring modification or widening. This Report provides analytical data of these materials for the following existing structures:

- Adobe Creek Bridge, 37-0174
- Matadero Creek Bridge, 37-0040
- Permanente Creek box culvert extension

Several locations at the project site were discussed during the Initial Site Assessment performed by Baseline Environmental Consultants, April 2008, to have likely been impacted by VOCs or pesticide use originating at several properties adjacent to the project area. One groundwater sample and a full-suite of soil analytical data was collected for each of these areas.

These locations include:

- San Antonio Road area
- Caltrans yard area near Old Middlefield Way, and
- Area south of Amphitheater Parkway.

2.1 DESCRIPTION OF SAMPLING AND ANALYSIS ACTIVITIES

This section describes the sampling and resulting laboratory analysis activities performed between March 22 and April 13, 2009.

2.1.1 Project Limits

The US 101 Auxiliary Lanes project consists of the segment of US 101 between Embarcadero Road and State Route 85 (SR 85) located in the Cities of Mountain View and Palo Alto, in Santa Clara County within District 4 of the State of California Department of Transportation and within the VTA planning area (See Figure 1 for a Project Location and Vicinity Map). The project limits extend south from Embarcadero Road to SR 85, a distance of 3.2 miles (PM 48.97/52.17) and will be referred hereon as "the Site". General project results are discussed separately for the northbound and southbound directions. Smaller groups were created for statistical evaluation, as discussed in the Data Evaluation section.

2.1.2 Sampling Locations

Figure 1 shows the location of the site. Figures 2 through 18 shows the sampling locations. Sampling locations were surveyed using a Trimble ProXH Global Positioning System (GPS) instrument. Soil samples were collected at a total of 91 locations. Approximately ⅓ of samples were collected each at outer pavement edge, at the outer edge of the proposed widening area, or in the midpoint of the proposed widening area. A secondary, duplicate boring was advanced at six of the locations. A total of 475 soil and 9 groundwater samples were collected, and all samples were analyzed for one or more constituents as described in Table 1.

Three of the sampling locations were performed within or immediately adjacent to areas which are expected to be acquired to construct the proposed project. These samples were associated with borings N-1, N-3-5, and N-3-10.

2.1.3 Sampling Depths

Samples were generally collected at 0.5, 1.0, 1.5, 2.0, and 3.0 feet below ground surface (bgs), though isolated samples were collected to deeper depths where excavation was expected to be deeper than 3 feet, or where groundwater samples were to be collected.

2.1.4 Pre-Field Activities

2.1.4.1 Permits

URS used the existing encroachment permit for access to the Caltrans ROW. A copy of this permit is shown in Appendix B. Due to the shallow nature of the environmental borings, no additional permits were required for the environmental investigation.

2.1.4.2 Health and Safety Plan

A Site specific Health and Safety Plan was prepared for the project's field activities and was implemented by personnel working on-Site. Daily tailgate safety meetings were held before initiation of fieldwork with field personnel and subcontractors to discuss each day's activities and related safety precautions. Additionally, a URS Health and Safety representative performed a field visit to monitor implementation of the HASP.

2.1.4.3 Utility Clearance

URS reviewed utility records to place borings away from known utility lines. URS also reviewed ongoing potholing operations results to further determine optimal boring locations. Additionally, utility clearance at each sampling location was conducted through notification of Underground Services Alert (USA) and with the assistance of a private underground utility locator. In several cases, sample locations were moved slightly in the field to avoid utilities.

2.1.4.4 Traffic Control

Cal-Safety Inc., a Caltrans-certified traffic control subcontractor was retained to divert traffic away from the field crew and sampling rig when working along roadways. All work was performed between the hours of 9 PM to 5 AM, at which time URS was permitted to close the outermost lane of traffic.

2.1.5 Sample Collection Methods

A direct push (DPT) geoprobe soil sampling system operated by ECA, Inc. of Aptos, California (State of California Drilling Contractor License No. C57-695970) was used to collect soil cores for logging purposes and collect soil samples at discrete depths from geoprobe borings. In each of the DPT borings, samples were collected by driving an approximately 4-foot long, 2-inch diameter sample barrel equipped with clean plastic liners. Due to access issues or proximity to potential utilities, samples were collected at some locations using a hand auger. All geoprobe borings were logged by a geologist or environmental engineer familiar with soil sampling procedures. Geoprobe boring logs are included in Appendix C.

Sections of the plastic liner containing soil intervals intended for possible laboratory analysis were cut from the 4-foot long soil core, sealed with Teflon® tape, plastic end caps and masking tape, labeled with Site specific designations, and placed on ice in an ice-chest pending transport to Torrent Analytical Laboratory in Milpitas, California, a State of California certified laboratory, under URS Chain-of-Custody procedures.

Sampling equipment was cleaned after each use. Before leaving each sampling location, boring locations were filled to the surface grade with a mixture of Portland cement and bentonite grout. The limited cuttings related to the environmental investigation filled less than one drum, and were consolidated with cuttings resulting from the concurrent geotechnical investigation. These drums were stored beneath the SR 85 to SR 101 HOV ramp, at the southern end of the Site. These investigation-derived soils were sampled, characterized, and are scheduled to be disposed

of off-Site in accordance with applicable regulations. Limited volumes of decontamination water were generated and handled by the drilling contractor.

2.1.6 Changes to the Field Program

Minor modifications were made to the Field Program during the course of the investigation. These changes fall into one of the following categories:

- One boring was advanced to 2.5 feet, instead of 3.0 feet, due to drilling refusal. .
- Approximately 10% of sample locations were moved slightly because the original locations were at an inaccessible point or soil was not exposed in this area. The total number of sample locations was not reduced, and sample locations remained spaced approximately every 300-350 feet.

2.1.7 Soil Laboratory Analysis

Table 1 provides details of the soil analytical program, including soil sampling intervals and soil analyses conducted at each sampling location. Thirty of the soil samples were duplicated in the field for quality control purposes.

All the soil samples included in the analytical program were analyzed for total lead by EPA Method 6010B. Approximately 5-20% of samples collected at various intervals were analyzed for additional soil analytes. The number of soil samples analyzed for each analyte for the Site follows:

- 429 soil samples were analyzed for lead (Pb) by EPA 6010B
- 50 soil samples were analyzed for California Assessment Metals (CAM 17 metals) which includes lead, by EPA Methods 6010B and 7471
- 48 soil samples were analyzed for pH by EPA Method 9045C
- 14 soil samples were analyzed for total petroleum hydrocarbons (TPH) as diesel and motor oil (TPH-d/mo) by EPA Method 8015B
- 12 soil samples were analyzed for organochlorine pesticides (OCPs) and polychlorinated biphenyls (PCBs) by EPA Method 8081A
- 41 soil samples collected at intervals below the top 6 inches were analyzed for TPH as gasoline (TPH-g) by GC-MS
- 45 soil samples collected at intervals below the top 6 inches were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX), using EPA Method 8260B
- 45 soil samples collected at intervals below the top 6 inches were analyzed for MTBE, TAME, t-Butanol, ETBE, and DIPE (5 Gas Oxygenates) using EPA Method 8260B
- 86 soil samples were collected and analyzed for asbestos using the Polarized Light Microscopy (PLM) method

Additionally, nine soil samples, specifically selected based on the recommendations of the ISA, or in potential right-of-way acquisition areas, were analyzed for VOCs by EPA Method 8260B.

The PLM method of asbestos analysis reveals the presence or absence of asbestos. The results of 5 of the 86 soil samples analyzed for asbestos indicated the presence of asbestos. These samples were subsequently analyzed for asbestos using the Carb 435 Level A (0.25% level of detection) method (Point Count Method).

When total concentration of any metal exceeded ten times its respective Soluble Threshold Limit Concentration (STLC) a sample was extracted with the Standard Water Waste Extraction Tests (WET) and, if the metal was lead, was extracted with the De-ionized Water Waste Extraction Test (DI-WET) and the extracts were analyzed for that metal. The WET test results were used for comparison with California hazardous waste criteria and the DI-WET test results were used to evaluate soils for on-Site use based on the DTSC variance governing soil reuse (a copy of this variance and its subsequent revisions are included as Appendix D). Samples in which the total concentration of any metal exceeded 20 times the STLC criteria were extracted using the (federal) Toxicity Characteristic Leaching Procedure (TCLP) and analyzed for the metal of concern, for further comparison with federal hazardous waste criteria.

Due to limited sample volume, two soil samples exceeding 50 mg/Kg could not be analyzed for DI-WET and five samples exceeding 100 mg/Kg could not be analyzed for TCLP lead. In URS' opinion, a sufficient number of samples have been analyzed using leachate procedures to accurately characterize soil for reuse and disposal.

The number of soil samples analyzed for various metals using WET, DI-WET, and TCLP methods for each project area are as follows:

Lead

- 165 soil samples tested using WET
- 163 soil samples tested using DI WET
- 120 soil samples tested using TCLP

Chromium:

- 21 soil samples tested using WET
- 1 soil samples tested using TCLP

Additionally, four samples were tested for Chromium VI speciation.

Nickel:

- 1 soil sample tested using WET

A complete set of the analytical results, including Chain of Custody forms, are presented in electronic format in Appendix E.

The following analytical quality control procedures were used to comply with Caltrans procedures. Thirty samples were duplicated in the field for quality control purposes. In the laboratory QC, one sample in ten field samples was spiked with lead to ten times the detection limit or at the analyte level. (Approximately one sample in 20 was spiked and a spike duplicate was also run on each spiked sample. This is equivalent to one spike for every ten samples).

A calibration blank sample was run for every ten samples, or per batch, whichever was more frequent.

2.1.8 Groundwater Laboratory Analysis

In the course of this hazardous materials investigation, URS collected groundwater samples near the existing Caltrans maintenance facility adjacent to Old Middlefield Way based on the conclusions of the ISA, in the vicinity of the each bridge or culvert scheduled for replacement due to the possibility of deep excavation and dewatering in those areas, and downgradient or within right of way acquisition areas. Table 1 provides details of the groundwater analytical program. A total of nine groundwater samples were collected. The number of groundwater samples analyzed for each analyte for the Site follows:

- 7 groundwater samples were analyzed for CAM 17 metals by EPA Methods 6010B and 7471
- 6 groundwater samples were analyzed for pH by EPA Method 9045C
- 7 groundwater samples were analyzed for TPH-d and TPH-mo by EPA Method 8015B
- 6 groundwater samples were analyzed for OCPs and PCBs by EPA Method 8081A
- 7 groundwater samples were analyzed for TPH-g by GC-MS
- 10 groundwater samples were analyzed for BTEX, using EPA Method 8260B
- 10 groundwater samples were analyzed for MTBE, TAME, t-Butanol, ETBE, and DIPE (5 Gas Oxygenates) using EPA Method 8260B
- 9 groundwater samples were analyzed for VOCs by EPA Method 8260B

Analyte concentrations in soil are presented in Tables 2 through 6. The analytical results are presented in the following sections, separated into discussions on soil and groundwater, and by analyte. Complete soil and groundwater analytical data are presented in the Analytical Laboratory Reports, attached in electronic format as Appendix E.

3.1 REGULATORY OVERVIEW

Based upon URS' Hazardous Materials Investigation Workplan, and the DTSC Lead Variance for Caltrans, the following soil criteria have been used to evaluate the condition of soil at the Site:

- Soil considered a hazardous waste due to any criteria other than lead may not be reused.
- Soil with total lead <50 mg/kg or extractable lead <5 mg/L with the standard waste extraction test (WET) test, are not considered hazardous waste and are not subject to the reuse restrictions of the Caltrans ADL variance.
- Soil meeting hazardous waste criteria for lead only, with total lead <1411 mg/kg, with <1.5 mg/L extractable lead with the deionized waste extraction test (DI-WET) can be used for fill on-Site as long as it is more than five feet above the water table and must be covered with at least 1.0 foot of non-hazardous cover.
- Soil meeting hazardous waste criteria for lead only, with <3397 mg/kg total lead and >0.5 mg/L and between 1.5 mg/L and 150 mg/L extractable lead with the DI WET can be used within the Right of Way (ROW) on-Site as long as it is more than five feet above the water table and must be covered with a pavement structure which will be maintained by Caltrans.
- Soil with >3397 mg/kg total lead cannot be reused and must be disposed off-Site as a California or Federal Hazardous waste.
- Soil with >5 mg/L extractable lead with TCLP cannot be reused and must be disposed off-Site as a Federal RCRA hazardous waste.
- For soil that must be disposed off-Site if removed from the Caltrans ROW:
    - Soil with <5.0 mg/L extractable lead with the standard WET test is a non-hazardous waste and can be disposed in a non-hazardous waste landfill if removed from the Caltrans ROW.
    - Soil with >5.0 mg/L extractable lead with the standard WET and <5.0 mg/L extractable lead with the TCLP test is a California hazardous waste and must be disposed off-Site in a hazardous waste landfill if removed from the Caltrans ROW, or alternatively can be disposed of out of state, as non-hazardous soil.
    - Soil with >5.0 mg/L extractable lead with the TCLP test is a Federal RCRA waste and must be disposed off-Site in a hazardous waste landfill.

Soil analytical results from the soil samples are discussed below.

3.2 SOIL SAMPLES

3.2.1 Lead

ADL was the primary focus of the soil investigation and the data in Table 2 presents the resulting lead data from the soil samples analyzed for lead as part of this investigation.

Total lead results varied from less than the detection limit of 1 mg/kg in multiple soil samples to 9,700 mg/kg in soil sample S-3-3@0.5 ft.

One-hundred sixty-five of the soil total lead results were above 50 mg/kg. These detections were greater than ten times the STLC criteria of 5 mg/kg (50 mg/kg) for lead, requiring that the WET and DI-WET test be conducted on these samples (limited sample volume prevented DI-WET testing for two of these samples). One-hundred twenty of the total lead results were equal to or greater than 20 times the STLC criteria of 5.0 mg/L (100 mg/kg) for lead. The TCLP test was also conducted on these samples (limited sample volume prevented TCLP testing for five of these samples). Table 3 lists results of all soil samples concentrations using the WET, DI-WET and TCLP tests, if applicable.

3.2.2 CAM 17 Metals

A total of 48 soil samples (including duplicates) were submitted for CAM 17 metals analysis, which includes antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium and zinc. Analytical results for metals and laboratory reporting limits are presented in Table 2.

With the exception of chromium and nickel, no metal was detected at a concentration that requires leachability testing. The results for these metals are discussed in more detail in the following section.

3.2.2.1 Chromium

Chromium concentrations in soil ranged from 18 mg/kg (N-3-5@0.5 ft) to 180 mg/kg (S-1-5@0.5 ft).

Twenty-one of the total soil chromium results were greater than ten times the STLC criteria for total chromium (5 mg/L). The WET test was conducted on these samples, and the concentrations of WET chromium indicate that they did not exceed the criteria for hazardous waste of 5 mg/L. One soil chromium result was greater than 20 times the STLC criteria for chromium. The TCLP test was conducted on this sample, and the concentration of TCLP chromium indicated that it did not exceed the criteria for hazardous waste of 5 mg/L. Four of the 21 soil samples with total chromium detected at concentrations greater than 50 mg/Kg were analyzed for hexavalent chromium (samples N-1@1.0', N-1-4@2.0', S-1-5@0.5', and S-1-14@3.0'). Hexavalent chromium was not detected in any sample above the detection limit of 0.200 mg/Kg. Analytical results for leachate tests and hexavalent chromium are presented in Table 3.

3.2.2.2 Nickel

Nickel concentrations in soil ranged from 25 mg/kg (S-1-5@1.5 ft) to 280 mg/kg (S-1-5@0.5 ft). One total soil nickel result was greater than 10 times the STLC criteria for nickel (20 mg/L). The WET test was conducted on this sample, and the concentration of WET nickel indicated that it did not exceed the criteria for hazardous waste of 1 mg/L. Analytical results for the nickel leachate test is presented in Table 3.

3.2.3 Other Constituents of Concern

Various other chemical analyses were conducted on soil samples collected adjacent to the northbound lanes. These analyses are discussed below. Results and detection limits are tabulated in Table 4.

3.2.3.1 pH

Forty-eight samples were analyzed for pH. Results ranged from 7.63 to 8.86. These pH detections are within the range noted in the DTSC reuse criteria. Therefore, levels of pH are not considered further in this soils evaluation.

3.2.3.2 Organochlorine Pesticides (OCPs)

Twelve samples were analyzed for OCPs. Various OCPs were detected in several samples. The following OCPs were detected in one or more samples at the following maximum concentrations:

4,4-DDD – 11.6 ug/Kg

4,4-DDE – 16.9 ug/Kg

4,4-DDT – 62.1 ug/Kg

Alpha-Chlordane – 18.5 ug/Kg

Dieldrin – 16.9 ug/Kg

Gamma-Chlordane – 18.6 ug/Kg

None of these detection of OCPs exceed the concentration at which leachate testing would be required to determine if the soil qualifies at a hazardous waste. Therefore, OCPs are not considered further in this soils evaluation.

3.2.3.3 Volatile Organic Compounds (VOCs)

Samples collected at three borings advanced within potential Right-of-Way takes, and near the existing Caltrans maintenance facility adjacent to Old Middlefield Way were analyzed for

VOCs. VOCs were not detected at or above the laboratory detection limits, except for sample N-1@1.0', where Methylene Chloride was detected at 12 ug/Kg. Detection limits for analysis of these constituents are included in Appendix E. While the EPA has not established a level at which Methylene Chloride constitutes a hazardous waste, in URS' opinion this concentration does not warrant performance of additional toxicity tests or the analysis of samples collected from deeper intervals. Therefore, VOCs are not considered further in this soils evaluation. However, the presence of VOCs may need to be considered for worker health and safety in the construction contract documents.

3.2.3.4 Polychlorinated Biphenyls (PCBs)

Twelve samples were analyzed for PCBs. PCBs were not detected at or above the laboratory detection limits. Detection limits for analysis of these constituents are included in Appendix E. Therefore, PCBs are not considered further in this soils evaluation.

3.2.3.5 Total Petroleum Hydrocarbon as gasoline (TPH-g)

Forty-one samples were analyzed for TPH-g. TPH-g was not detected at or above the laboratory detection limit of 100 ug/Kg in any soil sample. Therefore, TPH-g is not considered further in this soils evaluation.

3.2.3.6 Benzene/Toleune/Ethylbenzene/Xylenes and 5 Gas Oxygenates

Forty-five samples were analyzed for BTEX and for the constituents, TAME, DIPE, ETBE and t-Butanol (5 Gas Oxygenates). These chemicals were not detected at or above the laboratory detection limit in any soil sample. Therefore, they are not considered further in this soils evaluation. Detection limits for analysis of these constituents are included in Appendix E.

3.2.3.7 Total Petroleum Hydrocarbon as diesel (TPH-d)

Fourteen samples were analyzed for TPH-d. TPH-d was detected in two samples at a maximum concentration of 3.27 mg/kg. While the EPA has not established a level at which TPH-d constitutes a hazardous waste, in URS' opinion these concentrations do not warrant performance of additional toxicity tests or the analysis of samples collected from deeper intervals. Therefore, the presence of TPH-d is not considered further in this soils evaluation.

3.2.3.8 Total Petroleum Hydrocarbon as motor oil (TPH-mo)

Fourteen samples were analyzed for TPH-mo. TPH-mo was detected in all samples at concentrations ranging from 6.7 mg/Kg (N-1@7.0 ft) to 3540 mg/Kg (N-3-10@1.0 ft). While the EPA has not established a level at which TPH-d constitutes a hazardous waste, based on URS' experience these concentrations do not warrant performance of additional toxicity tests or the analysis of samples collected from deeper intervals. Therefore, the presence of TPH-mo is not considered further in this soils evaluation. However, the presence of TPH-mo in soil may need to be considered for health and safety purposes in the construction contract documents.

3.2.3.9 Asbestos in Soil

Eighty-six samples were analyzed for asbestos using the PLM method. The results of this analysis indicated that asbestos was present in 5 samples (see Table 4). For these five samples, the CARB 435 Level A method, which quantifies asbestos with a detection limit of 0.25%. Asbestos was detected at a concentration of <0.25% Chrysotile in four samples, and at 0.50% Chrysotile at sample N-2-11@1.0'. These detections are less than the concentration of asbestos at which the soil would be considered a hazardous waste of 1%, therefore, the presence of asbestos in soil is not considered further in this soils investigation. However, the presence of asbestos in soil may need to be considered for health and safety purposes in the construction contract documents.

3.3 GROUNDWATER

In the course of this hazardous materials investigation, URS collected groundwater samples near the existing Caltrans maintenance facility adjacent to Old Middlefield Way based on the conclusions of the ISA, in the vicinity of the each bridge or culvert scheduled for replacement due to the possibility of deep excavation and dewatering in those areas, and downgradient or within right of way acquisition areas. Analytical results from the groundwater samples are discussed below.

3.3.1 California Assessment Metals (CAM 17 Metals)

A total of 8 groundwater samples were submitted for CAM 17 metals analysis, which includes antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, thallium, vanadium and zinc. Analytical results for metals and laboratory reporting limits are presented in Table 5. No metal was detected at a concentration exceeding the STLC criteria. Therefore, metals are not considered further in this groundwater evaluation.

3.3.2 Other Constituents of Concern

3.3.2.1 pH

Six samples were analyzed for pH. Results ranged from 7.90 to 8.47. These pH detections do not exceed Title 22 corrosivity levels. Therefore, levels of pH are not considered further in this groundwater evaluation. Analytical results for this constituent are included in Table 6.

3.3.2.2 Organochlorine Pesticides (OCPs)

Six samples were analyzed for OCPs. OCPs were not detected in any sample. Therefore, OCPs are not considered further in this groundwater evaluation. Analytical results for this constituent are included in Table 6.

3.3.2.3 Volatile Organic Compounds (VOCs)

Nine samples were analyzed for VOCs. One or more of the following VOCs were detected in seven samples: 1,1,1-Trichloroethane, 1,1-Dichloroethane, 1,1-Dichloroethene, Chloroform, Tetrachlorethene, cis-1,2-Dichlroethene, trans-1,2-Dichloroethene, Trichloroethene, and Trichlorofluromethane (see Table 6 for these results). No VOC detection exceeded the STLC criteria or were detected at concentrations typically considered a hazardous waste. Therefore, VOCs are not considered further in this groundwater evaluation. However, the presence of VOCs in groundwater may need to be considered for worker health and safety in the construction contract documents. Analytical results for this constituent are included in Table 6.

3.3.2.4 Polychlorinated Biphenyls (PCBs)

Six samples were analyzed for PCBs. PCBs were not detected at or above the laboratory detection limits. Detection limits for analysis of these constituents are included in Appendix E. Therefore, PCBs are not considered further in this groundwater evaluation. Analytical results for this constituent are included in Table 6.

3.3.2.5 Total Petroleum Hydrocarbon as gasoline (TPH-g)

Seven samples were analyzed for TPH-g. TPH-g was detected in three samples at concentrations up to 74 ug/L. While the EPA has not established a level at which TPH-g constitutes a hazardous waste, in URS' opinion these concentrations do not warrant performance of additional toxicity tests or the analysis of samples collected from deeper intervals. Therefore, the presence of TPH-g is not considered further in this groundwater evaluation. Analytical results for this constituent are included in Table 6.

3.3.2.6 Total Petroleum Hydrocarbon as diesel or motor oil (TPH-d/mo)

Seven samples were analyzed for TPH-d/mo. TPH-d/mo was not detected at or above the laboratory detection limits in any sample. Detection limits for analysis of these constituents are included in Appendix E. Therefore, TPH-d/mo is not considered further in this groundwater evaluation. Analytical results for this constituent are included in Table 6.

3.3.3 Groundwater Elevation

Based on URS' geotechnical investigation, which was performed in the summer of 2009, depth to groundwater varied throughout the Site, ranging from approximately 8 feet to 15 feet bgs. Accordingly, reuse of soil may be constrained, because a significant percentage of the soil is restricted to reuse at least five feet above the groundwater table.

This section provides our evaluation of the data presented in previous sections. The evaluation includes statistical analysis and comparisons to various regulation criteria and guidelines. A summary of statistical evaluations for total and leachable quantities of lead for the Site is included as Table 7. The boring logs for the soil borings are presented in Appendix C.

4.1 SOIL

To perform a statistical evaluation of total lead, WET lead, DI-WET lead, and TCLP lead the Site was split into several smaller segments that represent logical divisions within the project area for soil management purposes that correspond to the expected soil management to be implemented as part of the construction project. The concentration data were evaluated separately by depth to evaluate if depth dependence exists.

The smaller segments used in the statistical evaluation are described below.

Southbound

- Group 1: Construction adjacent to southbound lanes from northern project limit to Station 113+00. This group was further split into subgroups 1A and 1B, for soil shallower and deeper than 1-foot bgs, respectively.
- Group 2: Construction adjacent to southbound lanes from Station 113+00 to the southern project limit. This group was further split into subgroups 2A and 2B, for soil shallower and deeper than 6 inches bgs, respectively.

Northbound

- Group 3: Construction adjacent to northbound lanes from northern project limit to Station 105+00. This group was further split into subgroups 3A and 3B, for soil shallower and deeper than 1.5 feet bgs, respectively.
- Group 4: Construction adjacent to northbound lanes from Station 105+00 to Station 159+00. This group was further split into subgroups 4A and 4B, for soil shallower and deeper than 1.5 feet bgs, respectively.
- Group 5: Construction adjacent to northbound lanes from Station 159+00 to the southern project limit. This group was further split into subgroups 5A and 5B, for soil shallower and deeper than 1-foot bgs, respectively.

Statistical Evaluation Methodology

A statistical evaluation of the analytical sample results was conducted to assess whether there is a need for special handling of excavated soils, based on criteria set forth for total lead and leachable lead using WET and DI-WET extraction techniques. To accomplish this, representative soil concentrations were compared to relevant and applicable threshold concentrations. This representative concentration term was estimated by the 95% Upper Confidence Limit of the Mean (95% UCL) of the concentration for materials to be sent off-Site for disposal, and the 95% UCL for soils that may be managed on-Site (for comparison only). The ProUCL software version 4.00.04 was used to calculate the 95% UCL (Singh et al., 2009a).

The use of 95% UCL concurs with USEPA statistical guidance in developing a conservative estimator of the mean concentration of soil constituents or contaminants (USEPA, 2002b). The estimated 95% UCL was used to evaluate whether the soil concentrations of total lead and leachable lead exceeded the appropriate threshold criteria. If non-detects were present, the summary statistics (mean and standard deviation) and the 95% UCL were estimated based on the Kaplan-Meier (KM) method (Singh et al., 2009a) in this analysis. Also, the results of primary and duplicate samples were averaged in order to obtain a single value. Samples collected from various depths of the same boring location were considered to be independent data points in this statistical evaluation.

In general, total lead soil samples in which the respective concentrations did not exceed ten times the STLC criteria (50 mg/kg) were not extracted/analyzed with the WET and DI-WET techniques, and soil samples in which the respective concentrations did not exceed twenty times the STLC criteria (100 mg/kg) were not extracted/analyzed with the TCLP technique. As a result, this greatly reduced the number of data points which could be included in the statistical analysis for leachable lead and would also skew the 95% UCL results high (for WET, DI-WET, and TCLP estimates), as only the samples with high total lead concentrations would be included. Therefore, to estimate WET, DI-WET, and TCLP lead concentrations in locations where the samples were not extracted and analyzed, regression equations were developed between existing total and WET, DI-WET, and TCLP lead results. Using the regression equations, WET, DI-WET, and TCLP lead concentrations for samples which were not analyzed for them were estimated. The 95% UCLs for leachable lead, using these estimated WET, DI-WET, and TCLP lead concentrations, in combination with those analyzed by the laboratory, were then obtained as discussed below.

The Site representative concentrations were evaluated by first performing an exploratory data analysis. The objective of the exploratory data analysis was to discover trends and patterns in the data so that appropriate approaches and limitations in using the datasets could be identified. Both numerical and graphical methods of exploratory data analysis were performed.

For the numerical method, a table of basic summary statistics, including mean, standard deviation, minimum and maximum detected values, for raw data (i.e., no logarithmic transformation) was prepared. For WET and DI-WET lead, the summary statistics were also calculated for the combined dataset including both laboratory-reported values and regression-estimated values. These statistics are presented in Table 7 of this report and can be used to make inferences concerning the population from which the sample data were drawn.

The next step involved a test of distributional assumption for the dataset, and the ProUCL software was used in this process. The purpose of this step was to check whether the data (raw or log-transformed) could be assumed to be normally distributed and/or the data (raw only) could be assumed to follow a gamma distribution. Based on the results of this evaluation, an appropriate probability distribution could be assumed for the data to be used in the calculation of the 95% UCL in the next step.

The Shapiro-Wilk W test was used to test the normality of the dataset at a 5% significance level (i.e., 95% confidence level), as described in the USEPA guidance document titled *Data Quality Assessment: Statistical Methods for Practitioners* (USEPA 2006). The test was first applied to

raw data. If the raw dataset passed the normality test, the raw data were assumed to be normally distributed. If the raw data did not pass the normality test, a gamma distribution goodness-of-fit test (at a 5% significance level) was then applied to the data, and if the dataset passed the gamma distribution goodness-of-fit test, the data were assumed to follow a gamma distribution. Otherwise, the Shapiro-Wilk W test (at a 5% significance level) was applied to the log-transformed data. If the log-transformed data passed the normality test, the data were assumed to be lognormally distributed. If the data failed all three tests, the data were assumed to be non-parametric. In all cases, visual inspection of the shape of histograms and normal probability plots was performed to confirm the distributional assumption. The results of this distributional test are presented under the column heading "Goodness-of-Fit Test" "Distribution" in Table 7.

<u>For datasets without nondetect:</u>

If the data were determined to be normally distributed, the 95% UCL was calculated as follows (USEPA, 2002b):

$$UCL = \bar{x} + t_{1-\alpha,n-1}\frac{s}{\sqrt{n}}$$

where $\bar{x}$ = sample mean

t = the Student t value at α significance level, with n-1 degree of freedom

α = 0.05 (one-tailed)

n = sample size

s = sample standard deviation

Otherwise, if the data were determined to follow a gamma or lognormal distribution, or if non-parametric assumption was used, the 95% UCL was determined based on the recommendation of the ProUCL software, which takes into account sample size and data skewness and ensures adequate coverage of the 95% UCL (Singh et al., 2009b). Depending on the sample statistics, the ProUCL software generally recommended one of the following methods:

- For gamma distribution, Approximate Gamma UCL or Adjusted Gamma UCL.
- For lognormal distribution, Chebyshev Theorem using the minimum variance unbiased estimator (MVUE) of the parameters for a lognormal distribution, or Land's H-statistic.
- For a non-parametric assumption, Chebyshev Theorem using the sample arithmetic mean and standard deviation, or the Hall's bootstrap method.

<u>For datasets with nondetect(s):</u>

For total lead datasets, data were censored at the laboratory reporting limit of <1 mg/kg. For WET and DI-WET lead datasets, because a combined laboratory-reported values and regression-estimated values were used, in addition to the laboratory-reporting censoring <0.1 mg/L, all regression-estimated values fell below 0.1 mg/L were also assigned to be <0.1 mg/L.

If the data were normally distributed and/or if the data were symmetric or approximately symmetric, the KM (t) method (i.e., Kaplan-Meier estimates using the Student's t-distribution

cutoff value) was used to calculate the 95% UCL. The equation to compute UCL was the same as the one illustrated above, except that the sample mean and sample standard deviation were substituted by KM estimates of mean and standard deviation.

If the data were assessed to follow a gamma or lognormal distribution, or if the data were assumed to be non-parametric with moderate and high skewness, one of the following methods, in general, was recommended by the ProUCL software for the calculation of UCL:

- UCL based upon KM estimates using the Chebyshev inequality.
- UCL based upon KM estimates using the bias-corrected accelerated (BCA) bootstrap method.

The detailed statistical steps of the various methods described above are documented in the ProUCL software technical guide (Singh et al., 2009b). The recommended calculation methods and UCL results, by the ProUCL software, are presented under the column heading "Method of UCL Calculation" and "Assessed 95% UCL" in Table 7.

If all samples were nondetects, or if there was only one single detected result, the UCL was not calculated because of inadequate information on data distribution, and estimates of summary statistics, such as mean and variance, were unreliable. If the recommended UCL was greater than the maximum detected value, an alternative UCL may be selected from the ProUCL report (instead of the recommendation) to better and realistically represent the mean concentration term.

Statistical Evaluation Limitation

Statistical evaluations described below have been prepared for specific areas of the Site. Performing statistical evaluations on a specified segment of the project reduces the negative impacts of isolated areas with high concentrations of lead. If soils are not managed based on the stages and groups described above and analyzed below, or if limited excavation and disposal of soil is performed, the statistical evaluations become invalid and additional statistical evaluation or sampling may be required.

4.1.1 Initial Soil Disposal Assumptions

A total of five samples exceeded the maximum concentration of total lead or DI-STLC lead at which reuse is permitted. The five samples removed from the statistical evaluation are S-1-5@0.5', S-1-6@0.5', S-3-3@0.5', S-3-10@0.5', and N-2-11@1.0' (as a result of this boring, soil at N-2-11@0.5' will also be excavated and off-hauled and has been removed from the sample set). In addition, boring N-1-4 exhibited higher than typical lead concentrations that would have negatively impacted reuse opportunities, and so all results from this boring were removed from the analytical data set. Disposal recommendations for these areas are discussed in Section 7.1.2.

4.1.2 Group 1

The 95% UCLM/Maximum Detection for total lead in this Group's soils are shown in Table 7; in summary the results were as follows:

- 0-1 ft: 687 mg/Kg
- 1-3 ft: 48.0 mg/Kg

The 95% UCLM/Maximum Detection for DI-WET lead in this Group's soils are shown in Table 7; in summary the results were as follows:

- 0-1 ft: 20.3 mg/L
- 1-3 ft: As the 95% UCLM/Maximum Detection for total lead for soils deeper than 1 ft was less than 50 mg/Kg, the DI-WET concentration is not required for the reuse evaluation.

Based on the Caltrans variance, the results for total lead and for DI-WET lead indicate that soils in Group 1 that are shallower than 1 foot bgs may be reused on-Site but restricted to locations more than 5 feet above the water table and must be covered with a pavement structure that will be maintained by Caltrans. Group 1 soils that are at depths greater than 1 foot bgs are not considered hazardous waste due to lead, and are not subject to the reuse restrictions of the Caltrans variance.

It is not known if all soil in this group can be reused on-site. In the event that soils must be disposed of outside the Caltrans ROW, the following statistical analysis applies:

The 95% UCLM/Maximum Detection for WET lead in this Group's soils are shown in Table 7; in summary the result was as follows:

- 0-1 ft: 37.6 mg/L
- 1-3 ft: As the 95% UCLM/Maximum Detection for total lead for soils deeper than 1 foot was less than 50 mg/Kg, the WET concentration is not required for the disposal evaluation.

Statistical analysis of TCLP results was not undertaken, as no individual TCLP lead result was greater than 5 mg/L.

Based on the Caltrans variance, the WET and TCLP lead results indicate that soils from depths shallower than 1 foot in this Group must be disposed of in a California hazardous waste landfill if removed from the Caltrans ROW. Soils at depths deeper than 1 foot, will not be considered California hazardous wastes if removed from the Caltrans ROW.

4.1.3 Group 2

The 95% UCLM/Maximum Detection for total lead in this Group's soils are shown in Table 7; in summary the results were as follows:

- 0-0.5 foot: 583 mg/Kg
- 0.5-3 ft: 84.4 mg/Kg

The 95% UCLM/Maximum Detection for DI-WET lead in this Group's soils are shown in Table 7; in summary the result was as follows:

- 0-0.5 foot: 20.6 mg/L

- 0.5-3 ft: 1.43 mg/L

The 95% UCLM/Maximum Detection for WET lead in this Group's soils are shown in Table 7; in summary the result was as follows:

- 0-0.5 foot: 25.2 mg/L
- 0.5-3 ft: 4.70 mg/L

Based on the Caltrans variance, the results for total lead and for DI-WET lead indicate that soils in the top 0.5 foot of this Group may be reused on-Site but restricted to locations more than 5 feet above the water table and must be covered with a pavement structure that will be maintained by Caltrans. Group 2 soils that are at depths greater than 0.5 foot bgs are not considered hazardous waste due to lead, and are not subject to the reuse restrictions of the Caltrans variance.

Statistical analysis of TCLP results was not undertaken, as only one of 88 soil samples exhibited TCLP lead results greater than 5 mg/L (S-1-7@1.0' with 5.0 mg/L TCLP lead).

Based on the Caltrans variance, the WET and TCLP lead results indicate that soils in this Group from depths shallower than 0.5 foot must be disposed of in a California hazardous waste landfill if removed from the Caltrans ROW. Soils at depths deeper than 0.5 foot, will not be considered California hazardous wastes if removed from the Caltrans ROW.

4.1.4 Group 3

The 95% UCLM/Maximum Detection for total lead in this Group's soils are shown in Table 7; in summary the results were as follows:

- 0-1 ft: 484 mg/Kg
- 1-3 ft: 40.8 mg/Kg

The 95% UCLM/Maximum Detection for DI-WET lead in this Group's soils are shown in Table 7; in summary the results were as follows:

- 0-1 ft: 9.74 mg/Kg
- 1-3 ft: As the 95% UCLM/Maximum Detection for total lead for soils deeper than 1 foot was less than 50 mg/Kg, the DI-WET concentration is not required for the reuse evaluation.

Based on the Caltrans variance, the results for total lead and for DI-WET lead indicate that soils in the top 1 foot of this Group may be reused on-Site but restricted to locations more than 5 feet above the water table and must be covered with a pavement structure that will be maintained by Caltrans. The results for total lead indicate that soils below 1 foot are not subject to the reuse restrictions of the Caltrans variance.

It is not known if all the soil in this Group can be reused on-site. In the event that soils must be disposed of outside the Caltrans ROW, the following statistical analysis applies:

The 95% UCLM/Maximum Detection for WET lead in this Group's soils are shown in Table 7; in summary the results were as follows:

- 0-1 ft: 33.9 mg/L
- 1-3 ft: 8.18 mg/L.

Statistical analysis of TCLP results was not undertaken, as only one of 70 soil samples exhibited TCLP lead results greater than 5 mg/L (N-1-18@0.5' with 6.8 mg/L TCLP lead).

Based on the Caltrans variance, the WET and TCLP lead results indicate that soils in the top 3 foot of this Group must be disposed of in a California hazardous waste landfill if removed from the Caltrans ROW.

4.1.5 Group 4

The 95% UCLM/Maximum Detection for total lead in this Group's soils are shown in Table 7; in summary the results were as follows:

- 0-1.5 foot: 634 mg/Kg
- 1.5- 3 ft: 35.4 mg/Kg

The 95% UCLM/Maximum Detection for DI-WET lead in this Group's soils are shown in Table 7; in summary the result was as follows:

- 0-1.5 foot: 13.0 mg/L
- 1.5-3 ft: As the 95% UCLM/Maximum Detection for total lead for soils deeper than 1 foot was less than 50 mg/Kg, the DI-WET concentration is not required for the reuse evaluation.

Based on the Caltrans variance, the results for total lead and for DI-WET lead indicate that soils in the top 1.5 foot of this Group may be reused on-Site but restricted to locations more than 5 feet above the water table and must be covered with a pavement structure that will be maintained by Caltrans. Soils below 1.5 feet are not subject to reuse restrictions of the Caltrans variance.

It is not known if all the soil in this Group can be reused on-site. In the event that soils must be disposed of outside the Caltrans ROW, the following statistical analysis applies:

The 95% UCLM/Maximum Detection for WET lead in this Group's soils are shown in Table 7; in summary the result was as follows:

- 0-1.5 foot: 13.0 mg/L
- 1.5-3 ft: As the 95% UCLM/Maximum Detection for total lead for soils deeper than 1.5 feet was less than 50 mg/Kg, the WET concentration is not required for the disposal evaluation

Statistical analysis of TCLP results was not undertaken, as no individual TCLP lead result was greater than 5 mg/L.

Based on the Caltrans variance, the WET and TCLP lead results indicate that soils in the top 1.5 foot of this Group must be disposed of in a California hazardous waste landfill if removed from the Caltrans ROW. Soils at depths deeper than 1.5 foot, will not be considered California hazardous wastes if removed from the Caltrans ROW.

4.1.6 Group 5

The 95% UCLM/Maximum Detection for total lead in this Group's soils are shown in Table 7; in summary the results were as follows:

- 0-1 foot: 257 mg/Kg
- 1-3 ft: 23.3 mg/Kg

The 95% UCLM/Maximum Detection for DI-WET lead in this Group's soils are shown in Table 7; in summary the result was as follows:

- 0-1 foot: 19.4 mg/L
- 1-3 ft: As the 95% UCLM/Maximum Detection for total lead for soils deeper than 1 foot was less than 50 mg/Kg, the DI-WET concentration is not required for the reuse evaluation.

Based on the Caltrans variance, the results for total lead and for DI-WET lead indicate that soils in the top 1 foot of this Group may be reused on-Site but restricted to locations more than 5 feet above the water table and must be covered with a pavement structure that will be maintained by Caltrans. The results for total lead indicate that soils below 1 foot are not subject to the reuse restrictions of the Caltrans variance.

Because design of the Site has not been completed, it is not known if all soil in this Group can be reused on-Site. In the event that soils must be disposed of off-Site, the following statistical analysis applies:

The 95% UCLM/Maximum Detection for WET lead in this Group's soils are shown in Table 7; in summary the result was as follows:

- 0-1 foot: 64.1 mg/L
- 1-3 ft: As the 95% UCLM/Maximum Detection for total lead for soils deeper than 1 ft was less than 50 mg/Kg, the WET concentration is not required for the disposal evaluation.

Statistical analysis of TCLP results was not undertaken, as no individual TCLP lead result was greater than 5 mg/L.

Based on the Caltrans variance, the WET and TCLP lead results indicate that soils in the top 1 foot of this Group must be disposed of in a California hazardous waste landfill if removed from the Caltrans ROW. Soils at depths deeper than 1 foot, will not be considered California hazardous wastes if removed from the Caltrans ROW.

The US 101 Auxiliary Lane Project proposes to widen two bridges and one box culvert to add auxiliary lanes in both directions of US 101. An investigation was performed at each of these structures to determine the presence or absence of asbestos or lead-based paint and identify work safety issues for site construction workers.

On April 27 and 28, 2009, Mr. Eduardo Ortega of URS accompanied certified asbestos and lead based paint inspections Mr. Derrik Quach and Mr. Phillip Bradley of Kellco-Macs Labs of Hayward, California, for the collection of potential asbestos containing material (P-ACM) samples and potential lead-based paint (P-LBP) samples at each of the three structures. The results of these investigations are discussed in this section. A copy of the Kellco-Macs Lab laboratory report is included as Appendix F. Analytical results related to the investigations are included as Tables 8, 9, and 10.

5.1 INSPECTED STRUCTURES

The subject structures are scheduled for partial demolition in order to complete the widening improvements. The survey sites consist of the following two bridges and one culvert:

- Adobe Creek Bridge, 37-0174
- Matadero Creek Bridge, 37-0040
- Permanente Creek box culvert extension

The inspection performed was both visual and tactile. Samples were taken of suspect materials located at exterior of the survey area. The inspection was a reasonable attempt to find suspect materials by a competent inspector. If any non-sampled materials are uncovered during demolition, these should be submitted for asbestos and/or lead paint analysis.

5.2 POTENTIAL-ASBESTOS CONTAINING MATERIALS (P-ACM) INSPECTION

The EPA defines Asbestos Containing Material as any material that contains greater than 1% asbestos. Materials containing greater than 1% asbestos must be removed prior to demolition or renovation. Materials containing less than 10% can be submitted for further analysis by the Point Count method as described in Appendix F. If the Point Count method (and only the point count method) determines that the material contains less than 1% asbestos, it can be disposed of as non-hazardous asbestos containing construction waste. If materials containing less than 10% asbestos by Polarized Light Microscopy are not submitted for point counting, they must be presumed to be asbestos containing material and disposed of as hazardous asbestos waste.

5.2.1 Asbestos Inspection Details

URS provided the consulting oversight services related to the inspection and analysis of P-ACM within the Site. Samples of P-ACM were collected from the exterior of the structures as shown in the figures in Appendix F. Each collected sample was stored in a Zip-Loc® bag, with its original location marked and photographed. The number of samples collected was judged sufficient to provide adequate characterization of these materials.

Samples of P-ACM were analyzed by a certified laboratory using Polarized Light Microscopy (PLM), the recommended method of the U.S. Environmental Protection Agency (EPA). A brief description of the analytical procedures is included in Appendix F. A summary of the laboratory analyses of sampled P-ACMs (positive and non-detect results) is included in the attached tables. Detailed analytical results for sampled materials are included in Appendix F. The determination of a material to be an ACM was made either by direct sample testing or by homogeneity with at least one positive sample of the same material. Kellco-Mac's laboratory credentials are included in Appendix F.

In the event that non-sampled P-ACM is uncovered during future renovation/demolition activities, these materials should be sampled and submitted for asbestos analysis.

5.2.2 Asbestos Analytical Quality Control

For every ten field samples, the laboratory performs a Quality Control (QC) duplicate sample. These samples were submitted and analyzed and compared to the original results. The QC analytical results are on file.

5.2.3 Asbestos Analytical Results

P-ACM samples were collected from each structure as follows:

- 15 samples were collected from Adobe Creek Bridge
- 15 samples were collected from Matadero Creek Bridge
- 18 samples were collected from the Permanente Creek box culvert

Figures and pictures displaying the locations of the samples collected and photographs are included in Appendix F. Laboratory analysis indicated that none of these bulk samples were ACM with at least 1% asbestos content. Table 8 list sampled material that tested non-detect, for ACM.

5.3 POTENTIAL-LEAD-BASED PAINT (P-LBP) INSPECTION

The EPA and define LBP as paint or other surface coatings that contain lead greater than 1 milligram per square centimeter (mg/cm2) which is equivalent to 50 parts per million (ppm), or that having a lead content at least 0.5% by weight. The regulations on lead exposure require that a Negative Initial Determination for lead exposure be made for paint that contains greater than 0.06% (600 ppm) of lead, and a worker protection program that incorporates elements such as work practices, training, personal protection equipment and respiratory protection be implemented pursuant to OSHA regulatory requirements. Removal or disturbance of material with any detectable amount of lead paint must be handled in accordance with OSHA regulations. Structural components with intact lead paint and no other hazardous materials can be disposed of as non-hazardous construction waste. Paint chips and debris must be disposed of as lead containing hazardous waste.

5.3.1 P-LBP Inspection Details

URS provided consulting oversight services related to the inspection and analysis of P-LBP within the Site. Samples of P-LBP were collected from the exterior of the structures. Each collected sample was stored in a sealed plastic container, its original location marked and photographed.

Samples of P-LBP were analyzed by a certified laboratory using Atomic Absorption (AA), the recommended method by the EPA. A brief description of the analytical procedures is included in Appendix F. A summary of the laboratory analyses of sampled P-LBP (positive and non-detect results) is included in Tables 8 and 9. A copy of detailed analytical results for sampled materials and Kellco-Mac's laboratory credentials are included in Appendix F.

In the event that non-sampled P-LBP is uncovered during future demolition activities, these materials should be sampled and submitted for lead analysis.

5.3.2 Lead Based Paint Analytical Quality Control

For every ten field samples, the laboratory performs a Quality Control (QC) duplicate sample. These samples were submitted and analyzed and compared to the original results. The QC analytical results are on file.

5.3.3 Lead Based Paint Analytical Results

P-LBP samples were collected from each structure as follows:

- 2 samples were collected from Adobe Creek Bridge
- 2 samples were collected from Matadero Creek Bridge
- 3 samples were collected from the Permanente Creek box culvert

Laboratory analysis indicated that both samples collected from the Adobe Creek Bridge and one sample collected from the Matadero Creek Bridge were LBP having at least 1 mg/cm2 (50 ppm). The highest detected lead concentration at Adobe Creek Bridge was 113 ppm; the highest detected lead concentration at Matadero Creek bridge was 108 ppm. Tables 9 and 10 list sampled materials from the Site that are respectively above or below the regulatory limits for LBP. Figures illustrating the locations of the samples collected and photographs are included in Appendix F; field sample identifications shown on the figures are cross-referenced in Tables 9 and 10. A brief synopsis of LBP found in tested materials at the Adobe Creek and Matadero Creek Bridges follows:

- Adobe Creek Bridge:
  - Grey paint on concrete on NB 101 Adobe Creek Bridge Barrier Wall, near the southern end
  - Orange/grey/black paint on SB 101 southern wall
- Matadero Creek Bridge:

- Gray, flaking paint, on concrete, NE end of wall.

Paint of the same color on the same bridge, as those noted above, should be considered positive unless proven otherwise by direct sampling with results of non-detect (at or above the detection limit of 1.0 mg/Kg). Disposal requirements for materials containing LBP are discussed in Section 7.2.2.

In addition to the general soils investigation performed to determine soil reuse or disposal requirements, primarily due to the presence of ADL, several borings were advanced with soil and/or groundwater samples collected to preliminarily evaluate areas outside the existing right-of-way which may be acquired as part of the project, or to evaluate areas which were identified in the ISA as having been potentially impacted due to off-Site contamination. These areas are discussed in this Section.

6.1 POTENTIAL RIGHT-OF-WAY ACQUISITIONS

Soil and groundwater samples were collected at three potential right-of-way acquisition areas for preliminary evaluation (N-1, N-3-5 and N-3-10). These sampling efforts were primarily intended to determine the reuse and disposal requirements associated with the soil and to preliminarily screen the areas for contamination; the sampling efforts were not intended to provide sufficient information to certify the presence or absence of 'significant contamination' as typically required by Caltrans prior to right-of-way acquisition. The results of these sampling efforts are described below.

6.1.1 Boring N-1

Boring N-1 was advanced adjacent to the on-ramp from southbound Amphitheater Parkway to northbound US 101, adjacent to a property identified as the Peery Property. The boring was advanced to first encountered groundwater. One groundwater sample was collected and soil samples were collected from 1.0 and 7.0 ft bgs. Both soil samples and the groundwater sample were analyzed for Cam 17 Metals, DITPH-g, BTEX, 5 Gas Oxygenates, VOCs, TPH-d, and TPH-mo. In addition, the shallow soil sample was also tested for STLC Chromium and Hexavalent Chromium.

Total Lead was detected in both soil samples at concentrations at detections of 20 and 3.2 mg/Kg respectively. As this sample was collected at a later date than all other samples, and the detected concentrations were less than 50 mg/Kg, the results from this boring were not included in the statistical evaluation. Soil from this area is not subject to the Caltrans Variance.

Total Chromium was detected in sample N-1@1' at 63 mg/Kg, which is above the 10 x STLC level of 50mg/Kg, while sample N-1@7' had Total Chromium just below the 10 x STLC limit (49 mg/Kg). STLC Chromium and Hexavelent Chromium were run on the N-1@1' sample, but were not detected above the regulatory levels.

TPH-mo was detected in the two soil samples at concentrations of 140 and 6.7 mg/Kg respectively, while the VOC Methylene Chloride was detected at a concentration of 12 ug/Kg in sample N-1@7'. In the groundwater sample, the VOCs 1,1-Dichloroethane, 1,1-Dichloroethene, and cis-1,2-Dichloroethene were detected at concentrations of 0.79, 2.4 and 1.1 ug/L respectively. In URS' opinion, these concentrations do not require further testing to determine soil reuse and soil disposal, however they may qualify as contamination subject to further evaluation prior to right-of-way certification. No other constituent was detected at a concentration meriting further discussion.

6.1.2 Boring N-3-5

Boring N-3-5 was advanced at approximately station 175+00, directly adjacent to a potential right-of-way acquisition area that extends from approximately stations 173+00 to 179+00. The boring was advanced to first encountered groundwater. One groundwater sample was collected and soil samples were collected from 0.5, 1.0, 1.5, 2.0, and 3.0 ft bgs. One or more soil samples were analyzed for Cam 17 Metals, DI-WET Lead, WET Lead, TCLP Lead, pH, TPH-g, BTEX, 5 Gas Oxygenates, TPH-d, TPH-mo, PCBs, and OCPs. The groundwater sample was analyzed for the same list of analytes as well as for VOCs.

Total Lead, WET Lead, DI-WET Lead, and TCLP Lead were detected in one or more soil samples at concentrations within the typical range of detections for the project. These results were included in the statistical evaluation and therefore soil from this potential acquisition area is subject to the reuse and disposal recommendations discussed in Section 7. TPH-mo was detected at a concentration of 1,380 mg/Kg in the sample collected from 0.5' bgs. The VOC cis-1,2-Dichloroethene (cis-1,2-DCE) was detected at a concentration of 1.75 ug/L in groundwater. While these concentrations do not require further testing to determine soil reuse and soil and/or groundwater disposal, they may qualify as contamination subject to further evaluation prior to right-of-way certification. No other constituent was detected at a concentration meriting further discussion.

6.1.3 Boring N-3-10

Boring N-3-10 was advanced at approximately station 193+00, within a potential right-of-way acquisition area that extends from approximately stations 192+00 to 196+00. The boring was advanced to first encountered groundwater. One groundwater sample was collected and soil samples were collected from 1.0, 3.0, and 6.0 ft bgs. One or more soil samples were analyzed for Cam 17 Metals, pH, TPH-g, BTEX, 5 Gas Oxygenates, TPH-d, TPH-mo, PCBs, and OCPs. The groundwater sample was analyzed for the same list of analytes as well as for VOCs.

Total Lead was detected in at low concentrations compared to the typical range of detections for the project. These results were included in the statistical evaluation and therefore soil from this potential acquisition area is subject to the reuse and disposal recommendations discussed in Section 7. TPH-mo was detected at a concentration of 3,540 mg/Kg in the sample collected from 1.0 ft bgs; this detection represents the highest detection of TPH-mo within the Site. The VOCs cis-1,2-DCE, trans-1,2-Dichloroehtene (trans-1,2-DCE), and Trichloroethene (TCE) were detected at concentrations of 61.8 ug/L, 5.8 ug/L, and 37.2 ug/L respectively in groundwater. While these concentrations do not require further testing to determine soil reuse and soil and/or groundwater disposal, they may qualify as contamination subject to further evaluation prior to right-of-way certification. No other constituent was detected at a concentration meriting further discussion.

6.2 POTENTIAL IMPACTS DUE TO OFF-SITE CONTAMINATION

Three locations at the project site were discussed during the Initial Site Assessment performed by Baseline Environmental Consultants, April 2008, to have likely been impacted by volatile

organic compounds (VOCs) or pesticides originating at several properties adjacent to the project area. Soil and groundwater samples were collected for each of these areas.

These locations include:

- San Antonio Road area (Boring S-2-3)
- Caltrans maintenance facility area near Old Middlefield Way (Boring S-3-12 and S-3-13)
- Area south of Amphitheater Parkway (Boring S-3-14)

Soil samples were collected from 0.5, 1.0, 1.5, 2.0, and 3.0 feet at each boring, and one groundwater sample was collected from Borings S-2-3, S-3-13, and S-3-14.

Based upon URS' Hazardous Materials Investigation Workplan, and the DTSC Lead Variance for Caltrans, the soil criteria soil criteria discussed in Section 3.1.1 have been used to evaluate the condition of soil at the Site.

7.1 CONCLUSIONS

A total of five samples exceeded the maximum concentration of total lead or DI-STLC lead at which reuse is permitted. The five samples removed from the statistical evaluation are S-1-5@0.5', S-1-6@0.5', S-3-3@0.5', S-3-10@0.5', and N-2-11@1.0' (as a result of this boring, soil at N-2-11@0.5' will also be excavated and off-hauled and has been removed from the sample set). In addition, boring N-1-4 exhibited higher than typical lead concentrations that would have negatively impacted reuse opportunities, and so all results from this boring were removed from the analytical data set. Soil associated with these borings may not be reused, and disposal recommendations for these areas are discussed in Section 7.1.2.

The smaller segments used in the statistical evaluation are described below.

Southbound

- Group 1: Construction adjacent to southbound lanes from the northern project limit to Station 113+00. This group was further split into subgroups 2A and 2B, for soil shallower and deeper than 1 foot bgs, respectively.
- Group 2: Construction adjacent to southbound lanes from Station 113+00 to the southern project limit. This group was further split into subgroups 2A and 2B, for soil shallower and deeper than 6 inches bgs, respectively.

Northbound

- Group 3: Construction adjacent to northbound lanes from northern project limit to Station 105+00. This group was further split into subgroups 3A and 3B, for soil shallower and deeper than 1.5 feet bgs, respectively.
- Group 4: Construction adjacent to northbound lanes from Station 105+00 to Station 159+00. This group was further split into subgroups 4A and 4B, for soil shallower and deeper than 1.5 feet bgs, respectively.
- Group 5: Construction adjacent to northbound lanes from Station 159+00 to the southern project limit. This group was further split into subgroups 8A and 8B, for soil shallower and deeper than 1 foot bgs, respectively.

The following conclusions have been prepared for specific areas of the Site based on analytical results obtained as part of this Site investigation. Performing statistical evaluations on a specified segment of the project reduces the negative impacts of isolated areas with high concentrations of lead. If soils are not managed based on the groups described above and analyzed in Section 4, or if limited excavation and disposal of soil is performed, the statistical evaluations become invalid and additional statistical evaluation and/or sampling may be required.

7.1.1 Lead – Soil Reuse

Soil reuse opportunities were summarized in Table ES-1, and shown on the attached Figures. Per the terms of the Caltrans variance, Caltrans may move lead-contaminated soil from one Caltrans project to another Caltrans project so long as it remains in the same Caltrans corridor, in this case US 101. This movement must comply with the terms of the variance. This Site Investigation Report has not evaluated the potential reuse of soil outside a Caltrans Corridor.

Southbound

Due to high concentrations of total lead and DI-WET lead, soil adjacent to the Southbound lanes from the following areas may be reused on-Site only at locations more than 5 feet above the water table and must be covered with a pavement structure that will be maintained by Caltrans:

- the top 1 ft of soil from the northern project limit to Station 113+00; and
- the top 6 inches of soil from Station 113+00 to the southern project limit

Soil excavated from deeper depths adjacent to the Southbound lanes exhibit lead and other constituents at concentrations which are not considered hazardous and therefore reuse of this soil will not be restricted.

Northbound

Due to high concentrations of total lead and DI-WET lead, soil adjacent to the Northbound lanes from the following areas may be reused on-Site only at locations more than 5 feet above the water table and must be covered with a pavement structure that will be maintained by Caltrans:

- the top 1.5 ft of soil from the northern project limit to Station 159+00; and
- the top 1 ft of soil from Station 159+00 to the southern project limit.

Soil excavated from deeper depths adjacent to the Northbound lanes exhibit lead and other constituents at concentrations which are not considered hazardous and therefore reuse of this soil will not be restricted.

7.1.2 Lead – Soil Disposal

In the event that soils must be disposed of off-Site, the following conclusions apply.

A total of five samples exceeded the maximum concentration of total lead or DI-STLC lead at which reuse is permitted. The five samples removed from the statistical evaluation are S-1-5@0.5', S-1-6@0.5', S-3-3@0.5', S-3-10@0.5', and N-2-11@1.0' (as a result of this boring, soil at N-2-11@0.5' will also be excavated and off-hauled and has been removed from the sample set). In addition, boring N-1-4 exhibited higher than typical lead concentrations that would have negatively impacted reuse opportunities, and so all results from this boring were removed from the analytical data set. Soil in the vicinity of these samples should be excavated and properly managed and disposed, prior to initiating soil reuse. Because these samples will be disposed of separately, they have been removed from the statistical evaluation. For each sample, excavation and disposal should be performed prior to initiating excavation for stockpiling and reuse.

Excavation for disposal should be performed along the entire width of excavation, for each area, and from the sample location to the midpoint between the sample and the nearest lateral samples. Excavation for disposal should be performed to the depth of sample for each area. Soil excavated associated with samples S-1-5@0.5' and S-3-3@0.5', should be managed as a RCRA hazardous waste due to presence of lead, while soil excavated associated with samples N-1-4 at all depths, S-1-6@0.5' S-3-10@0.5' and N-2-11@0.5 and1.0 should be managed as a California hazardous waste due to the presence of lead. Limits of excavation and waste management associated with these locations are shown on the Figures.

Disposal of soil for the remainder of the project will be governed by California and/or RCRA hazardous waste regulations will vary based on excavation location and depth. Per the terms of the Caltrans variance, Caltrans may move lead-contaminated soil from one Caltrans project to another Caltrans project so long as it remains in the same Caltrans corridor, in this case US 101. This movement must comply with the terms of the variance.

Southbound

Due to high concentrations of WET lead, soil excavated at certain depths adjacent to the Southbound lanes, if removed from the Caltrans ROW, must be disposed of as a California hazardous waste, or disposed of out-of-state, due to the presence of lead. The affected areas are as follows:

- the top 1 ft of soil from the northern project limit to Station 113+00; and
- the top 6 inches of soil from Station 113+00 to the southern project limit

Soil excavated from deeper depths adjacent to the Southbound lanes exhibit lead and other constituents at concentrations which are not considered hazardous.

Northbound

Due to high concentrations of WET lead, soil excavated at certain depths adjacent to the Southbound lanes, if removed from the Caltrans ROW, must be disposed of as a California hazardous waste, or disposed of out-of-state, due to the presence of lead. The affected areas are as follows:

- the top 3.0 ft of soil from the northern project limit to Station 105+00
- the top 1.5 ft of soil from Station 105+00 to Station 159+00; and
- the top 1 ft of soil from Station 159+00 to the southern project limit.

Soil excavated from deeper depths adjacent to the Northbound lanes exhibit lead and other constituents at concentrations which are not considered hazardous and therefore reuse of this soil.

7.1.3 Other Contaminants of Concern in Soil

As described in detail in Sections 3.1.3, various numbers of samples were analyzed for pH, asbestos, OCPs, PCBs, TPH-g, TPH-d, TPH-mo, BTEX, VOCs, and for the 5 Gas Oxygenates.

None of these constituents were detected at a value or concentration which exceeded applicable State or Federal hazardous waste criteria, or for constituents for which no specific criteria has been established, require additional testing or evaluation, in the opinion of URS. Therefore, these constituents do not restrict reuse of soil or require disposal of soil as a California or RCRA hazardous waste. Results are included as Table 4, and raw analytical reports are included on CD as Appendix E.

7.1.4 Right-of-Way Acquisition

Limited sampling was performed within or immediately adjacent to areas which are expected to be acquired to construct the proposed project. These samples were associated with borings N-1, N-3-5 and N-3-10. Samples collected in the latter two of these areas were included in the statistical evaluation of soils scheduled for reuse, and the soil is thus subject to the conclusions for soil reuse and disposal based on the presence of lead, discussed in Sections 7.1.1 and 7.1.2. Samples collected from the N-1 boring were not included in the statistical evaluation, however lead was not detected at concentrations above the 10 x STLC limit, and therefore soil from this area is not subject to the Caltrans Variance or the conclusions in Sections 7.1.1 and 7.1.2 of this report.

All three of the above samples were also analyzed for additional constituents, and the results of those analysis indicated that the soil represented by these samples do not constitute a hazardous waste. URS notes that the highest detected concentration of TPH-mo within the Site of 3540 mg/Kg was collected at sample N-3-10@1.0', within a right-of-way acquisition. Several VOCs were detected in groundwater samples N-1-GW and N-3-10-GW, including TCE at a concentration of 37.2 ug/L, and the VOC Methylene Chloride was detected in soil sample N-1@1' at a concentration of 12 ug/Kg. These detections indicate that additional characterization of these areas are necessary to certify the presence or absence of 'significant contamination' as typically required by Caltrans prior to right-of-way acquisition.

7.1.5 Groundwater

During URS' environmental investigation, groundwater was typically encountered at a depth of approximately 10 feet bgs. Based on URS' geotechnical investigation, which was performed in the summer of 2009, depth to groundwater varied throughout the Site, ranging from approximately 8 feet to 12 feet bgs. Accordingly, reuse of soil may be constrained because soil reuse restrictions limit reuse to at least 5 feet above the groundwater table.

Groundwater samples associated with the environmental investigation were collected primarily adjacent or downgradient of properties identified as potentially impacting the Site in the ISA, at properties scheduled for right-of-way acquisition, or at the locations of bridges where the deepest excavations might be expected. As discussed in Section 3.2, no constituent of concern was detected at a concentration which exceed State or Federal hazardous waste criteria, or for constituents for which no specific criteria has been established, require additional testing or evaluation, in the opinion of URS. Therefore, these constituents do not require disposal of groundwater as a California or RCRA hazardous waste.

7.1.6 Asbestos/Lead Based Paint

The following subject structures are scheduled for partial demolition as part of the widening improvements and were surveyed for asbestos and lead-based paint.

- Adobe Creek Bridge
- Matadero Creek Bridge
- Permanente Creek box culvert extension

Asbestos was not detected in any sample, at any bridge. Lead based paint was detected in the following samples:

- Adobe Creek Bridge:
  - Grey paint on concrete on NB 101 Adobe Creek Bridge Barrier Wall, near the southern end
  - Orange/grey/black paint on SB 101 southern wall
- Matadero Creek Bridge:
  - Gray, flaking paint, on concrete, NE end of NB 101 wall.

7.2 RECOMMENDATIONS

URS makes the following recommendations relating to soil, groundwater, and demolition debris handling during construction:

7.2.1 Soil

If soil is to be excavated and removed from the Caltrans ROW, the disposal location should be reviewed and approved by the VTA and Caltrans prior to granting approval for the contractor to move the soil. The investigation data results reported herein are considered sufficient to characterize the soil for reuse or disposal.

If soils of unusual color or odorous soils are encountered during the project excavations or soil management activities, those soils should be stockpiled separately and subjected to additional sampling and analysis to further evaluate potential contamination.

The following recommendations have been prepared for specific areas of the Site. Performing statistical evaluations on specified segments of the project reduces the negative impacts of isolated areas with high concentrations of lead. If soils are not managed based on the groups described above and analyzed in Section 4, or if limited excavation and disposal of soil beyond that specifically described in Section 4.1.1 is performed, the statistical evaluations become invalid and additional statistical evaluation or sampling are required.

Reuse and disposal of soil for the Site is discussed in detail in Sections 7.1.1 and 7.1.2. Based upon reuse recommendations significant volumes of excavated material used for backfill must be placed at least 5 feet above the groundwater table. The lead-impacted soil may be reused as a component of lime-treated subbase. The depth to groundwater varies from approximately 8 to 15 feet.

Because of high concentrations of lead throughout the project site, URS recommends development and implementation of a site-specific health and safety plan to protect workers and the public from exposure risks due to lead. This health and safety plan will likely require workers to receive HAZWOPER 24 or 40 hour training prior to beginning field work. The health and safety plan should consider concentrations of all detected constituents, and in particular the presence of arsenic, nickel, chromium, lead, asbestos, OCPs, and TPH-mo in soil.

7.2.2 Right-of-Way Acquisition Area

A work plan should be developed to evaluate potential right-of-way acquisition areas for contamination due to detected concentration of TPH-mo in boring N-3-5, and TPH-mo and VOCs in borings N-1 and N-3-10.

7.2.3 Groundwater

Based upon reuse recommendations most excavated material used for backfill must be placed at least 5 feet above the groundwater table. The depth to groundwater varies from approximately 8 feet to 15 feet throughout the project corridor.

Based upon URS' groundwater investigation, groundwater at the Site may be disposed of as a non-hazardous waste.

If groundwater observed in excavations or during dewatering exhibit odors or sheet, this groundwater should be stored separately additional sampling and analysis to further evaluate potential contamination, prior to continued worker contact or disposal.

URS recommends development and implementation of a site-specific health and safety plan to protect workers and the public from exposure risks due to contact with groundwater.

7.2.4 Structural Demolition Debris

Asbestos has not been detected in any sample at any of the three bridges scheduled for retrofit and/or widening as part of the Project. Lead based paint has been detected in samples collected from both the Adobe Creek Bridge and the Matadero Creek Bridge. URS recommends that all paint from both bridges be considered lead-containing. One sample of gray paint, collected from the northeast end of the NB 101 wall, was identified as flaking. Any flaking paint identified as lead-containing must be scraped to the concrete substrate and properly managed and disposed as a lead-containing hazardous waste. Provided that the remainder of the paint remains in good condition (no chipping and peeling), it may be disposed of by the disposal contractor with the demolition debris as non-hazardous, construction waste, following all proper waste profiling

procedures, and all proper procedures and disposal regulations for demolition of a structure. Lead removal and demolition activities should be performed in compliance with all federal, state and local regulations under proper engineering control procedures. Abatement supervision, environmental area, and clearance air monitoring should be performed during the lead removal and demolition by a third party environmental firm employed by the property owner or owner's representative. The abatement contractor, per Cal-OSHA requirements, should conduct employee exposure monitoring of individuals working in proximity of the lead containing material during abatement and/or demolition activities.

This report was prepared for the Santa Clara Valley Transportation Agency and any use by third parties is at the third parties sole risk. No investigation is sufficient enough to explore the presence of hazardous material at every location on the site. It is assumed that the samples collected and analyzed in accordance with the agreed scope of work are representative of conditions at the Site at the time of the planned construction. If soil or groundwater conditions are observed that differ from those in this report, URS Corporation should be notified so that additional recommendations can be made.

It would be extremely expensive, and perhaps impossible, to conduct a Site reconnaissance or investigation that would ensure detection of all materials at the subject property that might be considered hazardous now or in the future. URS' failure to discover hazardous materials through a reasonable and mutually agreed-upon limited scope of work does not guarantee that hazardous materials do not exist in an area. Similarly, an area that is unaffected by hazardous materials at the time of our assessment may later, due to natural phenomena or human intervention, become contaminated.

ADL	aerially deposited lead
ASTM	American Society for Testing and Materials
bgs	below ground surface
Caltrans	California Department of Transportation
CAM 17	California Assessment Manual Metals
CCR	California Code of Regulations
DI-WET	Deionized-Water Waste Extraction Test
DPT	direct-push technology
DTSC	(California) Department of Toxic Substances Control
Ft	Feet
HAZWOPER	Hazardous Waste Operations and Emergency Response
in.	Inch
ISA	Initial Site Assessment
ug/L	micrograms per liter
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
OCPs	organochlorine pesticides
PCBs	polychlorinated biphenyls
PID	photo-ionization detector
PRG	(USEPA Region IX) Preliminary Remediation Goal
QA/QC	quality assurance / quality control
RCRA	Resource Conservation and Recovery Act
RFI	Remedial Facility Investigation
ROW	ROW
RPD	relative percent differences

RWQCB	San Francisco Bay Area Region Water Quality Control Board
STLC	(California) Soluble Threshold Limit Concentration
TPH	total petroleum hydrocarbons
TTLC	(California) Total Threshold Limit Concentration
TCLP	(Federal USEPA RCRA) Toxicity Characteristic Leaching Procedure
USEPA	United States Environmental Protection Agency
UCL	upper confidence limit
UCLM	upper confidence limit of the mean
URS	URS Corporation
Variance	DTSC Variance No. 00-H-VAR-01, includes subsequent revisions/modifications
VTA	Valley Transportation Agency
VOC	volatile organic compounds
WET	(California) Waste Extraction Test

Department of Toxic Substances Control (DTSC), 2009. Variance No. V09HQSCD006, July 1.

Singh, A., R. Maichle, A.K. Singh, S.E. Lee, and N. Armbya. (2009a) *ProUCL Version 4.00.04 User Guide*. Office of Research and Development, U.S. Environmental Protection Agency, Report No. EPA/600/R-07/038.

Singh, A., and A.K. Singh. (2009b) *ProUCL Version 4.00.04 Technical Guide*. Office of Research and Development, U.S. Environmental Protection Agency, Report No. EPA/600/R-07/041.

URS, 2009a. Hazardous Materials Investigation Workplan, Highway 101 Central HOV Lanes Project, March 16.

URS, 2009b. Draft Geotechnical Design and Materials Report, Highway 101 Central HOV Lanes Project, July 10

USEPA, 2006. Data Quality Assessment: Statistical Methods for Practitioners (EPA QA/G-9S). Office of Environmental Information, U.S. Environmental Protection Agency, Report No. EPA/240/B-06/003.

USEPA, 2002b. Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. Office of Emergency and Remedial Response, U.S. Environmental Protection Agency, Report No. OSWER 9285.6-10.

Tables

Boring Sample Location ID	Boring Sample Location Area	Sample Depth (feet)	Lab Sample ID	Sample Date	CAM 17 Metals	Lead (Total)	Lead (DI-STLC)	Lead (STLC)	Lead (TCLP)	Chromium (STLC)	Chromium (TCLP)	Chromium (Hexavalent)	Nickel (STLC)	pH	TPH-g	BTEX	5 Gas Oxygenates	VOCs	TPH-d	TPH-mo	PCBs	OCPs	Asbestos - PLM	Asbestos - CARB435
SOIL SAMPLES																								
Northbound																								
From Embarcadero Road to San Antonio Road																								
N-1-1	Ramp	0 - 0.5	0904088-006	4/13/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-1	Ramp	0.5 - 1.0	0904088-007	4/13/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-1	Ramp	1.0 - 1.5	0904088-008	4/13/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-1	Ramp	1.5 - 2.0	0904088-009	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-1	Ramp	2.5 - 3.0	0904088-010	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-2	Ramp	0 - 0.5	0904088-001	4/13/2009	--	X	++	X	++	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
N-1-2	Ramp	0.5 - 1.0	0904088-002	4/13/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
N-1-2	Ramp	1.0 - 1.5	0904088-003	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
N-1-2	Ramp	1.5 - 2.0	0904088-004	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
N-1-2	Ramp	2.5 - 3.0	0904088-005	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
N-1-4	Ramp	0 - 0.5	0903138-022	3/24/2009	X	X	X	X	X	--	--	--	--	X	--	--	--	--	X	X	X	X	--	--
N-1-4	Ramp	0.5 - 1.0	0903138-023	3/24/2009	X	X	X	X	++	--	--	--	--	X	X	X	X	--	--	--	--	--	--	--
N-1-4	Ramp	1.0 - 1.5	0903138-024	3/24/2009	X	X	X	X	--	X	--	--	--	X	X	X	X	--	--	--	--	--	--	--
N-1-4	Ramp	1.5 - 2.0	0903138-025	3/24/2009	X	X	X	X	X	X	--	X	--	X	X	X	X	--	--	--	--	--	--	--
N-1-4	Ramp	2.0 - 2.5	0903138-026	3/24/2009	X	X	X	X	X	--	--	--	--	X	X	X	X	--	--	--	--	--	--	--
N-1-5	Lane	0 - 0.5	0903138-017	3/24/2009	--	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-5	Lane	0.5 - 1.0	0903138-018	3/24/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-5	Lane	1.0 - 1.5	0903138-019	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-5	Lane	1.5 - 2.0	0903138-020	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-5	Lane	2.5 - 3.0	0903138-021	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-6	Lane	0 - 0.5	0903138-012	3/23/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-6	Lane	0.5 - 1.0	0903138-013	3/23/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-6	Lane	1.0 - 1.5	0903138-014	3/23/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-6	Lane	1.5 - 2.0	0903138-015	3/23/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-6	Lane	2.5 - 3.0	0903138-016	3/23/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-7	Lane	0 - 0.5	0903138-007	3/23/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	X	X
N-1-7	Lane	0.5 - 1.0	0903138-008	3/23/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
N-1-7	Lane	1.0 - 1.5	0903138-009	3/23/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
N-1-7	Lane	1.5 - 2.0	0903138-010	3/23/2009	--	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
N-1-7	Lane	2.5 - 3.0	0903138-011	3/23/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
N-1-8	Matadero Creek	0 - 0.5	0903138-001	3/23/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-8	Matadero Creek	0.5 - 1.0	0903138-002	3/23/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Boring Sample Location ID	Boring Sample Location Area	Sample Depth (feet)	Lab Sample ID	Sample Date	CAM 17 Metals	Lead (Total)	Lead (DI-STLC)	Lead (STLC)	Lead (TCLP)	Chromium (STLC)	Chromium (TCLP)	Chromium (Hexavalent)	Nickel (STLC)	pH	TPH-g	BTEX	5 Gas Oxygenates	VOCs	TPH-d	TPH-mo	PCBs	OCPs	Asbestos - PLM	Asbestos - CARB435
N-1-8	Matadero Creek	1.0 - 1.5	0903138-003	3/23/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-8	Matadero Creek	1.5 - 2.0	0903138-004	3/23/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-8	Matadero Creek	2.5 - 3.0	0903138-005	3/23/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-9	Lane	0 - 0.5	0903138-082	3/23/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-9	Lane	0.5 - 1.0	0903138-083	3/23/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-9	Lane	1.0 - 1.5	0903138-084	3/23/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-9	Lane	1.5 - 2.0	0903138-085	3/23/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-9	Lane	2.5 - 3.0	0903138-086	3/23/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-10	Lane	0 - 0.5	0903138-077	3/23/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-10	Lane	0.5 - 1.0	0903138-078	3/23/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-10	Lane	1.0 - 1.5	0903138-079	3/23/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-10	Lane	1.5 - 2.0	0903138-080	3/23/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-10	Lane	2.5 - 3.0	0903138-081	3/23/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-11	Lane	0 - 0.5	0903131-061	3/23/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
N-1-11	Lane	0.5 - 1.0	0903131-062	3/23/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
N-1-11	Lane	1.0 - 1.5	0903131-063	3/23/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
N-1-11	Lane	1.5 - 2.0	0903131-064	3/23/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
N-1-11	Lane	2.5 - 3.0	0903131-065	3/23/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
N-1-12	Lane	0 - 0.5	0903131-026	3/23/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-12	Lane	0.5 - 1.0	0903131-027	3/23/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-12	Lane	1.0 - 1.5	0903131-028	3/23/2009	--	X	X	X		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-12	Lane	1.5 - 2.0	0903131-029	3/23/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-12	Lane	2.5 - 3.0	0903131-030	3/23/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-13	Lane	0 - 0.5	0903131-021	3/23/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-13	Lane	0.5 - 1.0	0903131-022	3/23/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-13	Lane	1.0 - 1.5	0903131-023	3/23/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-13	Lane	1.5 - 2.0	0903131-024	3/23/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-13	Lane	2.5 - 3.0	0903131-025	3/23/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-14	Lane	0 - 0.5	0903131-036	3/23/2009	X	X	--	--	--	--	--	--	--	X	--	--	--	--	X	X	X	X	--	--
N-1-14	Lane	0.5 - 1.0	0903131-037	2/23/2009	X	X	X	X	X	X	--	--	--	X	X	X	X	--	--	--	--	--	--	--
N-1-14	Lane	1.0 - 1.5	0903131-038	2/23/2009	X	X	X	X	X	X	--	--	--	X	X	X	X	--	--	--	--	--	--	--
N-1-14	Lane	1.5 - 2.0	0903131-039	2/23/2009	X	X	--	--	--	X	--	--	--	X	X	X	X	--	--	--	--	--	--	--
N-1-14	Lane	2.5 - 3.0	0903131-040	2/23/2009	X	X	--	--	--	--	--	--	--	X	X	X	X	--	--	--	--	--	--	--
N-1-15	Lane	0 - 0.5	0903131-031	2/23/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	X
N-1-15	Lane	0.5 - 1.0	0903131-032	2/23/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	X	X
N-1-15	Lane	1.0 - 1.5	0903131-033	2/23/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--

Boring Sample Location ID	Boring Sample Location Area	Sample Depth (feet)	Lab Sample ID	Sample Date	CAM 17 Metals	Lead (Total)	Lead (DI-STLC)	Lead (STLC)	Lead (TCLP)	Chromium (STLC)	Chromium (TCLP)	Chromium (Hexavalent)	Nickel (STLC)	pH	TPH-g	BTEX	5 Gas Oxygenates	VOCs	TPH-d	TPH-mo	PCBs	OCPs	Asbestos - PLM	Asbestos - CARB435
N-1-15	Lane	1.5 - 2.0	0903131-034	2/23/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
N-1-15	Lane	2.5 - 3.0	0903131-035	2/23/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
N-1-16	Lane	0 - 0.5	0903131-046	3/23/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-16	Lane	0.5 - 1.0	0903131-047	3/23/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-16	Lane	1.0 - 1.5	0903131-048	3/23/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-16	Lane	1.5 - 2.0	0903131-049	3/23/2009	--	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-16	Lane	2.5 - 3.0	0903131-050	3/23/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-17	Lane	0 - 0.5	0903131-041	3/23/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-17	Lane	0.5 - 1.0	0903131-042	3/23/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-17	Lane	1.0 - 1.5	0903131-043	3/23/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-17	Lane	1.5 - 2.0	0903131-044	3/23/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-17	Lane	2.5 - 3.0	0903131-045	3/23/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-18	Adobe Creek	0 - 0.5	0904088-022	4/13/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-18	Adobe Creek	0.5 - 1.0	0904088-023	4/13/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-18	Adobe Creek	1.0 - 1.5	0904088-024	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-18	Adobe Creek	1.5 - 2.0	0904088-025	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-18	Adobe Creek	2.5 - 3.0	0904088-026	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-19	Lane	0 - 0.5	0903131-051	3/22/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-19	Lane	0.5 - 1.0	0903131-052	3/22/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-19	Lane	1.0 - 1.5	0903131-053	3/22/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-19	Lane	1.5 - 2.0	0903131-054	3/22/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-19	Lane	2.5 - 3.0	0903131-055	3/22/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-19-d	Lane	0 - 0.5	0903131-056	3/22/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-19-d	Lane	0.5 - 1.0	0903131-057	3/22/2009	--	X	X	X		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-19-d	Lane	1.0 - 1.5	0903131-058	3/22/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-19-d	Lane	1.5 - 2.0	0903131-059	3/22/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-19-d	Lane	2.5 - 3.0	0903131-060	3/22/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-20	Lane	0 - 0.5	0903131-006	3/22/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
N-1-20	Lane	0.5 - 1.0	0903131-007	3/22/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
N-1-20	Lane	1.0 - 1.5	0903131-008	3/22/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	X	X
N-1-20	Lane	1.5 - 2.0	0903131-009	3/22/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
N-1-20	Lane	2.5 - 3.0	0903131-010	3/22/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
From San Antonio Road to Amphitheater Pkwy																								
N-2-1	Ramp	0 - 0.5	0903131-001	3/22/2009	--	X	X	X	++	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-1	Ramp	0.5 - 1.0	0903131-002	3/22/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Boring Sample Location ID	Boring Sample Location Area	Sample Depth (feet)	Lab Sample ID	Sample Date	CAM 17 Metals	Lead (Total)	Lead (DI-STLC)	Lead (STLC)	Lead (TCLP)	Chromium (STLC)	Chromium (TCLP)	Chromium (Hexavalent)	Nickel (STLC)	pH	TPH-g	BTEX	5 Gas Oxygenates	VOCs	TPH-d	TPH-mo	PCBs	OCPs	Asbestos - PLM	Asbestos - CARB435
N-2-1	Ramp	1.0 - 1.5	0903131-003	3/22/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-1	Ramp	1.5 - 2.0	0903131-004	3/22/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-1	Ramp	2.5 - 3.0	0903131-005	3/22/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-2	Ramp	0 - 0.5	0903131-011	3/22/2009	X	X	--	--	--	--	--	--	--	X	--	--	--	--	X	X	X	X	--	--
N-2-2	Ramp	0.5 - 1.0	0903131-012	3/22/2009	X	X	--	--	--	--	--	--	--	X	X	X	X	--	--	--	--	--	--	--
N-2-2	Ramp	1.0 - 1.5	0903131-013	3/22/2009	X	X	--	--	--	--	--	--	--	X	X	X	X	--	--	--	--	--	--	--
N-2-2	Ramp	1.5 - 2.0	0903131-014	3/22/2009	X	X	--	--	--	--	--	--	--	X	X	X	X	--	--	--	--	--	--	--
N-2-2	Ramp	2.5 - 3.0	0903131-015	3/22/2009	X	X	--	--	--	X	--	--	--	X	X	X	X	--	--	--	--	--	--	--
N-2-3	Ramp	0 - 0.5	0904088-032	4/13/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-3	Ramp	0.5 - 1.0	0904088-033	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-3	Ramp	1.0 - 1.5	0904088-034	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-3	Ramp	1.5 - 2.0	0904088-035	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-3	Ramp	2.5 - 3.0	0904088-036	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-4	Lane	0 - 0.5	0903131-016	3/22/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-4	Lane	0.5 - 1.0	0903131-017	3/22/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-4	Lane	1.0 - 1.5	0903131-018	3/22/2009	--	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-4	Lane	1.5 - 2.0	0903131-019	3/22/2009	--	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-4	Lane	2.5 - 3.0	0903131-020	3/22/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-5	Ramp	0 - 0.5	0904088-017	4/13/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-5	Ramp	0.5 - 1.0	0904088-018	4/13/2009	--	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-5	Ramp	1.0 - 1.5	0904088-019	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-5	Ramp	1.5 - 2.0	0904088-020	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-5	Ramp	2.5 - 3.0	0904088-021	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-6	Lane	0 - 0.5	0903161-011	3/26/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
N-2-6	Lane	0.5 - 1.0	0903161-012	3/26/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
N-2-6	Lane	1.0 - 1.5	0903161-013	3/26/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
N-2-6	Lane	1.5 - 2.0	0903161-014	3/26/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
N-2-6	Lane	2.5 - 3.0	0903161-015	3/26/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
N-2-7	Lane	0 - 0.5	0903161-016	3/26/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-7	Lane	0.5 - 1.0	0903161-017	3/26/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-7	Lane	1.0 - 1.5	0903161-018	3/26/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-7	Lane	1.5 - 2.0	0903161-019	3/26/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-7	Lane	2.5 - 3.0	0903161-020	3/26/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-8	Lane	0 - 0.5	0903161-001	3/26/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-8	Lane	0.5 - 1.0	0903161-002	3/26/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-8	Lane	1.0 - 1.5	0903161-003	3/26/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Boring Sample Location ID	Boring Sample Location Area	Sample Depth (feet)	Lab Sample ID	Sample Date	CAM 17 Metals	Lead (Total)	Lead (DI-STLC)	Lead (STLC)	Lead (TCLP)	Chromium (STLC)	Chromium (TCLP)	Chromium (Hexavalent)	Nickel (STLC)	pH	TPH-g	BTEX	5 Gas Oxygenates	VOCs	TPH-d	TPH-mo	PCBs	OCPs	Asbestos - PLM	Asbestos - CARB435
N-2-8	Lane	1.5 - 2.0	0903161-004	3/26/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-8	Lane	2.5 - 3.0	0903161-005	3/26/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-9	Ramp	0 - 0.5	0904088-027	4/13/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-9	Ramp	0.5 - 1.0	0904088-028	4/13/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-9	Ramp	1.0 - 1.5	0904088-029	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-9	Ramp	1.5 - 2.0	0904088-030	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-9	Ramp	2.5 - 3.0	0904088-031	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-10	Ramp	0 - 0.5	0903161-006	3/26/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-10	Ramp	0.5 - 1.0	0903161-007	3/26/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-10	Ramp	1.0 - 1.5	0903161-008	3/26/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-10	Ramp	1.5 - 2.0	0903161-009	3/26/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-10	Ramp	2.5 - 3.0	0903161-010	3/26/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-10-D	Ramp	0 - 0.5	0903161-021	3/26/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-10-D	Ramp	0.5 - 1.0	0903161-022	3/26/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-10-D	Ramp	1.0 - 1.5	0903161-023	3/26/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-10-D	Ramp	1.5 - 2.0	0903161-024	3/26/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-10-D	Ramp	2.5 - 3.0	0903161-025	3/26/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-11	Lane	0 - 0.5	0903161-026	3/26/2009	--	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
N-2-11	Lane	0.5 - 1.0	0903161-027	3/26/2009	--	X	X	X	++	--	--	--	--	--	--	--	--	--	--	--	--	--	X	X
N-2-11	Lane	1.0 - 1.5	0903161-028	3/26/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
N-2-11	Lane	1.5 - 2.0	0903161-029	3/26/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
N-2-11	Lane	2.5 - 3.0	0903161-030	3/26/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
N-2-12	Lane	0 - 0.5	0903161-031	3/26/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-12	Lane	0.5 - 1.0	0903161-032	3/26/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-12	Lane	1.0 - 1.5	0903161-033	3/26/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-12	Lane	1.5 - 2.0	0903161-034	3/26/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-12	Lane	2.5 - 3.0	0903161-035	3/26/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-13	Ramp	0 - 0.5	0903161-036	3/26/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-13	Ramp	0.5 - 1.0	0903161-037	3/26/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-13	Ramp	1.0 - 1.5	0903161-038	3/26/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-13	Ramp	1.5 - 2.0	0903161-039	3/26/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-13	Ramp	2.5 - 3.0	0903161-040	3/26/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-14	Ramp	0 - 0.5	0903160-001	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-14	Ramp	0.5 - 1.0	0903160-002	3/25/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-14	Ramp	1.0 - 1.5	0903160-003	3/25/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-14	Ramp	1.5 - 2.0	0903160-004	3/25/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Boring Sample Location ID	Boring Sample Location Area	Sample Depth (feet)	Lab Sample ID	Sample Date	CAM 17 Metals	Lead (Total)	Lead (DI-STLC)	Lead (STLC)	Lead (TCLP)	Chromium (STLC)	Chromium (TCLP)	Chromium (Hexavalent)	Nickel (STLC)	pH	TPH-g	BTEX	5 Gas Oxygenates	VOCs	TPH-d	TPH-mo	PCBs	OCPs	Asbestos - PLM	Asbestos - CARB435
N-2-14	Ramp	2.5 - 3.0	0903160-005	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-15	Ramp	0 - 0.5	0904074-029	4/13/2009	--	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-15	Ramp	0.5 - 1.0	0904074-030	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-15	Ramp	1.0 - 1.5	0904074-031	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-15	Ramp	1.5 - 2.0	0904074-032	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-15	Ramp	2.5 - 3.0	0904074-033	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1	Peery Property	0-1.0	1003038-001	3/5/2010	X	X	--	--	--	X	--	X	--	--	X	X	X	X	X	X	--	--	--	--
N-1	Peery Property	6.5-7.0	1003038-004	3/5/2010	X	X	--	--	--	--	--	--	--	--	X	X	X	X	X	X	--	--	--	--
From Amphitheater Pkwy to State Route 85																								
N-3-1	Ramp	0 - 0.5	0904074-034	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
N-3-1	Ramp	0.5 - 1.0	0904074-007	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
N-3-1	Ramp	1.0 - 1.5	0904074-008	4/13/2009	--	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
N-3-1	Ramp	1.5 - 2.0	0904074-009	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
N-3-1	Ramp	2.5 - 3.0	0904074-010	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
N-3-2	Ramp	0 - 0.5	0904074-011	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-2	Ramp	0.5 - 1.0	0904074-012	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-2	Ramp	1.0 - 1.5	0904074-013	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-2	Ramp	1.5 - 2.0	0904074-014	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-2	Ramp	2.5 - 3.0	0904074-015	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-3	Ramp	0 - 0.5	0904074-016	4/13/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-3	Ramp	0.5 - 1.0	0904074-017	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-3	Ramp	1.0 - 1.5	0904074-018	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-3	Ramp	1.5 - 2.0	0904074-019	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-3	Ramp	2.5 - 3.0	0904074-020	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-4	Ramp	0 - 0.5	0903160-006	3/25/2009	--	X	X	X		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-4	Ramp	0.5 - 1.0	0903160-007	3/25/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-4	Ramp	1.0 - 1.5	0903160-008	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-4	Ramp	1.5 - 2.0	0903160-009	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-4	Ramp	2.5 - 3.0	0903160-010	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-5	Potential ROW Take Area	0 - 0.5	0903160-011	3/25/2009	X	X	--	--	--	--	--	--	--	X	--	--	--	--	X	X	X	X	--	--
N-3-5	Potential ROW Take Area	0.5 - 1.0	0903160-012	3/25/2009	X	X	X	X	X	--	--	--	--	X	X	X	X	--	--	--	--	--	--	--
N-3-5	Potential ROW Take Area	1.0 - 1.5	0903160-013	3/25/2009	X	X	--	--	--	--	--	--	--	X	X	X	X	--	--	--	--	--	--	--
N-3-5	Potential ROW Take Area	1.5 - 2.0	0903160-014	3/25/2009	X	X	--	--	--	--	--	--	--	X	X	X	X	--	--	--	--	--	--	--
N-3-5	Potential ROW Take Area	2.5 - 3.0	0903160-015	3/25/2009	X	X	--	--	--	X	--	--	--	X	X	X	X	--	--	--	--	--	--	--
N-3-6	Lane	0 - 0.5	0903160-017	3/25/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-6	Lane	0.5 - 1.0	0903160-018	3/25/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Boring Sample Location ID	Boring Sample Location Area	Sample Depth (feet)	Lab Sample ID	Sample Date	CAM 17 Metals	Lead (Total)	Lead (DI-STLC)	Lead (STLC)	Lead (TCLP)	Chromium (STLC)	Chromium (TCLP)	Chromium (Hexavalent)	Nickel (STLC)	pH	TPH-g	BTEX	5 Gas Oxygenates	VOCs	TPH-d	TPH-mo	PCBs	OCPs	Asbestos - PLM	Asbestos - CARB435
N-3-6	Lane	1.0 - 1.5	0903160-019	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-6	Lane	1.5 - 2.0	0903160-020	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Boring Sample Location ID	Boring Sample Location Area	Sample Depth (feet)	Lab Sample ID	Sample Date	CAM 17 Metals	Lead (Total)	Lead (DI-STLC)	Lead (STLC)	Lead (TCLP)	Chromium (STLC)	Chromium (TCLP)	Chromium (Hexavalent)	Nickel (STLC)	pH	TPH-g	BTEX	5 Gas Oxygenates	VOCs	TPH-d	TPH-mo	PCBs	OCPs	Asbestos - PLM	Asbestos - CARB435
N-3-6	Lane	2.5 - 3.0	0903160-021	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-7	Lane	0 - 0.5	0903160-027	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-7	Lane	0.5 - 1.0	0903160-028	3/25/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-7	Lane	1.0 - 1.5	0903160-029	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-7	Lane	1.5 - 2.0	0903160-030	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-7	Lane	2.5 - 3.0	0903160-031	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-8	Permanente Creek	0 - 0.5	0904073-025	4/12/2009	--	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-8	Permanente Creek	0.5 - 1.0	0904073-026	4/12/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-8	Permanente Creek	1.0 - 1.5	0904073-027	4/12/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-8	Permanente Creek	1.5 - 2.0	0904073-028	4/12/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-8	Permanente Creek	2.5 - 3.0	0904073-029	4/12/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-9	Lane	0 - 0.5	0904074-003	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
N-3-9	Lane	0.5 - 1.0	0904074-004	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
N-3-10	Potential ROW Take Area	0.5 - 1.0	0904073-041	4/12/2009	X	X	--	--	--	--	--	--	--	X	X	X	X	X	X	X	X	X	--	--
N-3-10	Potential ROW Take Area	2.5 - 3.0	0904073-042	4/12/2009	X	X	--	--	--	--	--	--	--	X	X	X	X	X	X	X	X	X	--	--
N-3-10	Potential ROW Take Area	5.5 - 6.0	0904073-043	4/12/2009	X	X	--	--	--	--	--	--	--	X	X	X	X	X	X	X	X	X	--	--
N-3-11	Ramp	0 - 0.5	0904074-026	4/12/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-11	Ramp	0.5 - 1.0	0904073-031	4/12/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-11	Ramp	1.0 - 1.5	0904073-032	4/12/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-11	Ramp	1.5 - 2.0	0904073-033	4/12/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-11	Ramp	2.5 - 3.0	0904073-034	4/12/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-12	Ramp	0 - 0.5	0904074-021	4/12/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-12	Ramp	0.5 - 1.0	0904074-022	4/12/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-12	Ramp	1.0 - 1.5	0904074-023	4/12/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-12	Ramp	1.5 - 2.0	0904074-024	4/12/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-12	Ramp	2.5 - 3.0	0904074-025	4/12/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Southbound																								
From Embarcadero Road to San Antonio Road																								
S-1-1	Ramp	0 - 0.5	0903162-006	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-1	Ramp	0.5 - 1.0	0903162-007	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-1	Ramp	1.0 - 1.5	0903162-008	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-1	Ramp	1.5 - 2.0	0903162-009	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-1	Ramp	2.5 - 3.0	0903162-010	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-2	Ramp	0 - 0.5	0903162-001	3/25/2009	--	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-2	Ramp	0.5 - 1.0	0903162-002	3/25/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Boring Sample Location ID	Boring Sample Location Area	Sample Depth (feet)	Lab Sample ID	Sample Date	CAM 17 Metals	Lead (Total)	Lead (DI-STLC)	Lead (STLC)	Lead (TCLP)	Chromium (STLC)	Chromium (TCLP)	Chromium (Hexavalent)	Nickel (STLC)	pH	TPH-g	BTEX	5 Gas Oxygenates	VOCs	TPH-d	TPH-mo	PCBs	OCPs	Asbestos - PLM	Asbestos - CARB435
S-1-2	Ramp	1.0 - 1.5	0903162-003	3/25/2009	--	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-2	Ramp	1.5 - 2.0	0903162-004	3/25/2009	--	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-2	Ramp	2.5 - 3.0	0903162-005	3/25/2009	--	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-3	Lane	0 - 0.5	0903162-016	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-1-3	Lane	0.5 - 1.0	0903162-017	3/25/2009	--	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-1-3	Lane	1.0 - 1.5	0903162-018	3/25/2009	--	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-1-3	Lane	1.5 - 2.0	0903162-019	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-1-3	Lane	2.5 - 3.0	0903162-020	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-1-4	Lane	0 - 0.5	0903162-011	3/25/2009	--	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-4	Lane	0.5 - 1.0	0903162-012	3/25/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-4	Lane	1.0 - 1.5	0903162-013	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-4	Lane	1.5 - 2.0	0903162-014	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-4	Lane	2.5 - 3.0	0903162-015	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-5	Lane	0 - 0.5	0903162-026	3/25/2009	X	X	X	X	X	X	X	X	X	X	--	--	--	--	X	X	X	X	--	--
S-1-5	Lane	0.5 - 1.0	0903162-027	3/25/2009	X	X	X	X	X	--	--	--	--	X	X	X	X	--	--	--	--	--	--	--
S-1-5	Lane	1.0 - 1.5	0903162-028	3/25/2009	X	X	--	--	--	--	--	--	--	X	X	X	X	--	--	--	--	--	--	--
S-1-5	Lane	1.5 - 2.0	0903162-029	3/25/2009	X	X	--	--	--	X	--	--	--	X	X	X	X	--	--	--	--	--	--	--
S-1-5	Lane	2.5 - 3.0	0903162-030	3/25/2009	X	X	--	--	--	--	--	--	--	X	X	X	X	--	--	--	--	--	--	--
S-1-6	Lane	0 - 0.5	0903162-021	3/25/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-1-6	Lane	0.5 - 1.0	0903162-022	3/25/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-1-6	Lane	1.0 - 1.5	0903162-023	3/25/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-1-6	Lane	1.5 - 2.0	0903162-024	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-1-6	Lane	2.5 - 3.0	0903162-025	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-1-7	Lane	0 - 0.5	0903160-022	3/25/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-7	Lane	0.5 - 1.0	0903160-023	3/25/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-7	Lane	1.0 - 1.5	0903160-024	3/25/2009	--	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-7	Lane	1.5 - 2.0	0903160-025	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-7	Lane	2.5 - 3.0	0903160-026	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-8	Lane	0 - 0.5	0903160-032	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-8	Lane	0.5 - 1.0	0903160-033	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-8	Lane	1.0 - 1.5	0903160-034	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-8	Lane	1.5 - 2.0	0903160-035	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-8	Lane	2.5 - 3.0	0903160-036	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-9	Matadero Creek Bridge	0 - 0.5	0903138-027	3/24/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-9	Matadero Creek Bridge	0.5 - 1.0	0903138-028	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-9	Matadero Creek Bridge	1.0 - 1.5	0903138-029	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Boring Sample Location ID	Boring Sample Location Area	Sample Depth (feet)	Lab Sample ID	Sample Date	CAM 17 Metals	Lead (Total)	Lead (DI-STLC)	Lead (STLC)	Lead (TCLP)	Chromium (STLC)	Chromium (TCLP)	Chromium (Hexavalent)	Nickel (STLC)	pH	TPH-g	BTEX	5 Gas Oxygenates	VOCs	TPH-d	TPH-mo	PCBs	OCPs	Asbestos - PLM	Asbestos - CARB435
S-1-9	Matadero Creek Bridge	1.5 - 2.0	0903138-030	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-9	Matadero Creek Bridge	2.5 - 3.0	0903138-031	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-10	Lane	0 - 0.5	0903138-032	3/24/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-1-10	Lane	0.5 - 1.0	0903138-033	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-1-10	Lane	1.0 - 1.5	0903138-034	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-1-10	Lane	1.5 - 2.0	0903138-035	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-1-10	Lane	2.5 - 3.0	0903138-036	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-1-10-d	Lane	0 - 0.5	0903138-037	3/24/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-10-d	Lane	0.5 - 1.0	0903138-038	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-10-d	Lane	1.0 - 1.5	0903138-039	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-10-d	Lane	1.5 - 2.0	0903138-040	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-10-d	Lane	2.5 - 3.0	0903138-041	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-11	Lane	0 - 0.5	0903138-042	3/24/2009	--	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-11	Lane	0.5 - 1.0	0903138-043	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-11	Lane	1.0 - 1.5	0903138-044	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-11	Lane	1.5 - 2.0	0903138-045	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-11	Lane	2.5 - 3.0	0903138-046	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-12	Lane	0 - 0.5	0903138-047	3/24/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-12	Lane	0.5 - 1.0	0903138-048	3/24/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-12	Lane	1.0 - 1.5	0903138-049	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-12	Lane	1.5 - 2.0	0903138-050	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-12	Lane	2.5 - 3.0	0903138-051	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-13	Lane	0 - 0.5	0903138-052	3/24/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-13	Lane	0.5 - 1.0	0903138-053	3/24/2009	--	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-13	Lane	1.0 - 1.5	0903138-054	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-13	Lane	1.5 - 2.0	0903138-055	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-13	Lane	2.5 - 3.0	0903138-056	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-14	Lane	0 - 0.5	0903138-057	3/24/2009	X	X	--	--	--	X	--	--	--	X	--	--	--	--	X	X	X	X	--	--
S-1-14	Lane	0.5 - 1.0	0903138-058	3/24/2009	X	X	X	X	X	X	--	--	--	X	X	X	X	--	--	--	--	--	--	--
S-1-14	Lane	1.0 - 1.5	0903138-059	3/24/2009	X	X	--	--	--	--	--	--	--	X	X	X	X	--	--	--	--	--	--	--
S-1-14	Lane	1.5 - 2.0	0903138-060	3/24/2009	X	X	--	--	--	--	--	--	--	X	X	X	X	--	--	--	--	--	--	--
S-1-14	Lane	2.5 - 3.0	0903138-061	3/24/2009	X	X	--	--	--	X		X	--	X	X	X	X	--	--	--	--	--	--	--
S-1-15	Lane	0 - 0.5	0903138-062	3/24/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-1-15	Lane	0.5 - 1.0	0903138-063	3/24/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-1-15	Lane	1.0 - 1.5	0903138-064	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-1-15	Lane	1.5 - 2.0	0903138-065	3/24/2009	--	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--

Boring Sample Location ID	Boring Sample Location Area	Sample Depth (feet)	Lab Sample ID	Sample Date	CAM 17 Metals	Lead (Total)	Lead (DI-STLC)	Lead (STLC)	Lead (TCLP)	Chromium (STLC)	Chromium (TCLP)	Chromium (Hexavalent)	Nickel (STLC)	pH	TPH-g	BTEX	5 Gas Oxygenates	VOCs	TPH-d	TPH-mo	PCBs	OCPs	Asbestos - PLM	Asbestos - CARB435
S-1-15	Lane	2.5 - 3.0	0903138-066	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-1-16	Lane	0 - 0.5	0903138-067	3/24/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-16	Lane	0.5 - 1.0	0903138-068	3/24/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-16	Lane	1.0 - 1.5	0903138-069	3/24/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-16	Lane	1.5 - 2.0	0903138-070	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-16	Lane	2.5 - 3.0	0903138-071	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-17	Lane	0 - 0.5	0903138-072	3/24/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-17	Lane	0.5 - 1.0	0903138-073	3/24/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-17	Lane	1.0 - 1.5	0903138-074	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-17	Lane	1.5 - 2.0	0903138-075	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-17	Lane	2.5 - 3.0	0903138-076	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-18	Adobe Creek Bridge	0 - 0.5	0903154-081	3/24/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-18	Adobe Creek Bridge	0.5 - 1.0	0903154-082	3/24/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-18	Adobe Creek Bridge	1.0 - 1.5	0903154-083	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-18	Adobe Creek Bridge	1.5 - 2.0	0903154-084	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-18	Adobe Creek Bridge	2.5 - 3.0	0903154-085	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-19	Lane	0 - 0.5	0903154-087	3/24/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-19	Lane	0.5 - 1.0	0903154-088	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-19	Lane	1.0 - 1.5	0903154-089	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-19	Lane	1.5 - 2.0	0903154-090	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-19	Lane	2.5 - 3.0	0903154-091	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-20	Lane	0 - 0.5	0903154-107	3/24/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-1-20	Lane	0.5 - 1.0	0903154-108	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-1-20	Lane	1.0 - 1.5	0903154-109	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-1-20	Lane	1.5 - 2.0	0903154-110	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-1-20	Lane	2.5 - 3.0	0903154-111	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
From San Antonio Road to Amphitheater Pkwy																								
S-2-1	Lane	0 - 0.5	0903154-092	3/24/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-1	Lane	0.5 - 1.0	0903154-093	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-1	Lane	1.0 - 1.5	0903154-094	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-1	Lane	1.5 - 2.0	0903154-095	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-1	Lane	2.5 - 3.0	0903154-096	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-2	Lane	0 - 0.5	0903154-097	3/24/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-2	Lane	0.5 - 1.0	0903154-098	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-2	Lane	1.0 - 1.5	0903154-099	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-2	Lane	1.5 - 2.0	0903154-100	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Boring Sample Location ID	Boring Sample Location Area	Sample Depth (feet)	Lab Sample ID	Sample Date	CAM 17 Metals	Lead (Total)	Lead (DI-STLC)	Lead (STLC)	Lead (TCLP)	Chromium (STLC)	Chromium (TCLP)	Chromium (Hexavalent)	Nickel (STLC)	pH	TPH-g	BTEX	5 Gas Oxygenates	VOCs	TPH-d	TPH-mo	PCBs	OCPs	Asbestos - PLM	Asbestos - CARB435
S-2-2	Lane	2.5 - 3.0	0903154-101	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-2-D	Lane	0 - 0.5	0903154-102	3/24/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-2-D	Lane	0.5 - 1.0	0903154-103	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-2-D	Lane	1.0 - 1.5	0903154-104	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-2-D	Lane	1.5 - 2.0	0903154-105	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-2-D	Lane	2.5 - 3.0	0903154-106	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-3	Ramp	0 - 0.5	0904088-011	4/13/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-3	Ramp	0.5 - 1.0	0904088-012	4/13/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-3	Ramp	1.0 - 1.5	0904088-013	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-3	Ramp	1.5 - 2.0	0904088-014	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-3	Ramp	2.5 - 3.0	0904088-015	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-4	Lane	0 - 0.5	0903154-001	3/24/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-4	Lane	0.5 - 1.0	0903154-002	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-4	Lane	1.0 - 1.5	0903154-003	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-4	Lane	1.5 - 2.0	0903154-004	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-4	Lane	2.5 - 3.0	0903154-005	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-5	Lane	0 - 0.5	0903154-071	3/24/2009	--	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-2-5	Lane	0.5 - 1.0	0903154-072	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-2-5	Lane	1.0 - 1.5	0903154-073	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-2-5	Lane	1.5 - 2.0	0903154-074	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-2-5	Lane	2.5 - 3.0	0903154-075	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-2-6	Lane	0 - 0.5	0903154-061	3/24/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-6	Lane	0.5 - 1.0	0903154-062	3/24/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-6	Lane	1.0 - 1.5	0903154-063	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-6	Lane	1.5 - 2.0	0903154-064	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-6	Lane	2.5 - 3.0	0903154-065	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-7	Lane	0 - 0.5	0903154-006	3/24/2009	X	X	X	X	X	--	--	--	--	X	--	--	--	--	X	X	X	X	--	--
S-2-7	Lane	0.5 - 1.0	0903154-007	3/24/2009	X	X	--	--	--	X	--	--	--	X	X	X	X	--	--	--	--	--	--	--
S-2-7	Lane	1.0 - 1.5	0903154-008	3/24/2009	X	X	--	--	--	--	--	--	--	X	X	X	X	--	--	--	--	--	--	--
S-2-7	Lane	1.5 - 2.0	0903154-009	3/24/2009	X	X	--	--	--	X	--	--	--	X	X	X	X	--	--	--	--	--	--	--
S-2-7	Lane	2.5 - 3.0	0903154-010	3/24/2009	X	X	--	--	--	--	--	--	--	X	X	X	X	--	--	--	--	--	--	--
S-2-8	Lane	0 - 0.5	0903154-016	3/24/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-2-8	Lane	0.5 - 1.0	0903154-017	3/24/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-2-8	Lane	1.0 - 1.5	0903154-018	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-2-8	Lane	1.5 - 2.0	0903154-019	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-2-8	Lane	2.5 - 3.0	0903154-020	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--

Boring Sample Location ID	Boring Sample Location Area	Sample Depth (feet)	Lab Sample ID	Sample Date	CAM 17 Metals	Lead (Total)	Lead (DI-STLC)	Lead (STLC)	Lead (TCLP)	Chromium (STLC)	Chromium (TCLP)	Chromium (Hexavalent)	Nickel (STLC)	pH	TPH-g	BTEX	5 Gas Oxygenates	VOCs	TPH-d	TPH-mo	PCBs	OCPs	Asbestos - PLM	Asbestos - CARB435
S-2-9	Lane	0 - 0.5	0903154-011	3/24/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-9	Lane	0.5 - 1.0	0903154-012	3/24/2009	--	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-9	Lane	1.0 - 1.5	0903154-013	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-9	Lane	1.5 - 2.0	0903154-014	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-9	Lane	2.5 - 3.0	0903154-015	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-10	Lane	0 - 0.5	0903154-026	3/24/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-10	Lane	0.5 - 1.0	0903154-027	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-10	Lane	1.0 - 1.5	0903154-028	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-10	Lane	1.5 - 2.0	0903154-029	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-10	Lane	2.5 - 3.0	0903154-030	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
From Amphitheater to State Route 85																								
S-3-1	Lane	0 - 0.5	0903154-021	3/24/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-1	Lane	0.5 - 1.0	0903154-022	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-1	Lane	1.0 - 1.5	0903154-023	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-1	Lane	1.5 - 2.0	0903154-024	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-1	Lane	2.5 - 3.0	0903154-025	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-2	Ramp	0 - 0.5	0904073-045	4/12/2009	--	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-2	Ramp	0.5 - 1.0	0904073-046	4/12/2009	--	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-2	Ramp	1.0 - 1.5	0904073-047	4/12/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-2	Ramp	1.5 - 2.0	0904073-001	4/12/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-2	Ramp	2.5 - 3.0	0904073-002	4/12/2009	--	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-3	Lane	0 - 0.5	0903154-031	3/24/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-3-3	Lane	0.5 - 1.0	0903154-032	3/24/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-3-3	Lane	1.0 - 1.5	0903154-033	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-3-3	Lane	1.5 - 2.0	0903154-034	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-3-3	Lane	2.5 - 3.0	0903154-035	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-3-4	Lane	0 - 0.5	0903154-036	3/24/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-4	Lane	0.5 - 1.0	0903154-037	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-4	Lane	1.0 - 1.5	0903154-038	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-4	Lane	1.5 - 2.0	0903154-039	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-4	Lane	2.5 - 3.0	0903154-040	3/24/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-5	Lane	0 - 0.5	0903154-041	3/25/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-5	Lane	0.5 - 1.0	0903154-042	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-5	Lane	1.0 - 1.5	0903154-043	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-5	Lane	1.5 - 2.0	0903154-044	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-5	Lane	2.5 - 3.0	0903154-045	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Boring Sample Location ID	Boring Sample Location Area	Sample Depth (feet)	Lab Sample ID	Sample Date	CAM 17 Metals	Lead (Total)	Lead (DI-STLC)	Lead (STLC)	Lead (TCLP)	Chromium (STLC)	Chromium (TCLP)	Chromium (Hexavalent)	Nickel (STLC)	pH	TPH-g	BTEX	5 Gas Oxygenates	VOCs	TPH-d	TPH-mo	PCBs	OCPs	Asbestos - PLM	Asbestos - CARB435
S-3-6	Lane	0 - 0.5	0903154-046	3/25/2009	--	X	++	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-6	Lane	0.5 - 1.0	0903154-047	3/25/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-6	Lane	1.0 - 1.5	0903154-048	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-6	Lane	1.5 - 2.0	0903154-049	3/25/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-6	Lane	2.5 - 3.0	0903154-050	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-7	Lane	0 - 0.5	0903154-051	3/25/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-7	Lane	0.5 - 1.0	0903154-052	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-7	Lane	1.0 - 1.5	0903154-053	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-7	Lane	1.5 - 2.0	0903154-054	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-7	Lane	2.5 - 3.0	0903154-055	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-8	Permanent Creek culvert	0 - 0.5	0903154-076	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-3-8	Permanent Creek culvert	0.5 - 1.0	0903154-077	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-3-8	Permanent Creek culvert	1.0 - 1.5	0903154-078	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-3-8	Permanent Creek culvert	1.5 - 2.0	0903154-079	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	X	--
S-3-8	Permanent Creek culvert	2.5 - 3.0	0903154-080	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-9	Lane	0 - 0.5	0903154-066	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-9	Lane	0.5 - 1.0	0903154-067	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-9	Lane	1.0 - 1.5	0903154-068	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-9	Lane	1.5 - 2.0	0903154-069	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-9	Lane	2.5 - 3.0	0903154-070	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-10	Lane	0 - 0.5	0903154-056	3/25/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-10	Lane	0.5 - 1.0	0903154-057	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-10	Lane	1.0 - 1.5	0903154-058	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-10	Lane	1.5 - 2.0	0903154-059	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-10	Lane	2.5 - 3.0	0903154-060	3/25/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-11	Retaining Wall	0 - 0.5	0904073-035	4/12/2009	X	X	X	X	--	--	--	--	--	X	--	--	--	--	X	X	X	X	--	--
S-3-11	Retaining Wall	0.5 - 1.0	0904073-036	4/12/2009	X	X	X	X	X	--	--	--	--	X	X	X	X	--	--	--	--	--	--	--
S-3-11	Retaining Wall	1.0 - 1.5	0904073-037	4/12/2009	X	X	X	X	X	X	--	--	--	X	X	X	X	--	--	--	--	--	--	--
S-3-11	Retaining Wall	1.5 - 2.0	0904073-038	4/12/2009	X	X	--	--	--	X	--	--	--	X	X	X	X	--	--	--	--	--	--	--
S-3-11	Retaining Wall	2.5 - 3.0	0904073-039	4/12/2009	X	X	--	--	--	X	--	--	--	X	X	X	X	--	--	--	--	--	--	--
S-3-11-D	Retaining Wall	0 - 0.5	0904073-040	4/12/2009	X	X	X	X	--	--	--	--	--	X	--	--	--	--	X	X	X	X	--	--
S-3-11-D	Retaining Wall	0.5 - 1.0	0904073-021	4/12/2009	X	X	X	X	++	--	--	--	--	X	X	X	X	--	--	--	--	--	--	--
S-3-11-D	Retaining Wall	1.0 - 1.5	0904073-022	4/12/2009	X	X	X	X	X	X	--	--	--	X	X	X	X	--	--	--	--	--	--	--
S-3-11-D	Retaining Wall	1.5 - 2.0	0904073-023	4/12/2009	X	X	X	X	--	X	--	--	--	X	X	X	X	--	--	--	--	--	--	--
S-3-11-D	Retaining Wall	2.5 - 3.0	0904073-024	4/12/2009	X	X	--	--	--	X	--	--	--	X	X	X	X	--	--	--	--	--	--	--
S-3-12	Caltrans Yard	0 - 0.5	0904073-003	4/12/2009	--	X	--	--	--	--	--	--	--	--	--	X	X	X	--	--	--	--	--	--

Boring Sample Location ID	Boring Sample Location Area	Sample Depth (feet)	Lab Sample ID	Sample Date	CAM 17 Metals	Lead (Total)	Lead (DI-STLC)	Lead (STLC)	Lead (TCLP)	Chromium (STLC)	Chromium (TCLP)	Chromium (Hexavalent)	Nickel (STLC)	pH	TPH-g	BTEX	5 Gas Oxygenates	VOCs	TPH-d	TPH-mo	PCBs	OCPs	Asbestos - PLM	Asbestos - CARB435
S-3-12	Caltrans Yard	0.5 - 1.0	0904073-004	4/12/2009	--	X	--	--	--	--	--	--	--	--	--	X	X	X	--	--	--	--	--	--
S-3-12	Caltrans Yard	1.0 - 1.5	0904073-005	4/12/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-12	Caltrans Yard	1.5 - 2.0	0904073-006	4/12/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-12	Caltrans Yard	2.5 - 3.0	0904073-007	4/12/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-12-D	Caltrans Yard	0 - 0.5	0904073-008	4/12/2009	--	X	X	X	--	--	--	--	--	--	--	X	X	X	--	--	--	--	--	--
S-3-12-D	Caltrans Yard	0.5 - 1.0	0904073-009	4/12/2009	--	X	--	--	--	--	--	--	--	--	--	X	X	X	--	--	--	--	--	--
S-3-12-D	Caltrans Yard	1.0 - 1.5	0904073-010	4/12/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-12-D	Caltrans Yard	1.5 - 2.0	0904074-001	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-12-D	Caltrans Yard	2.5 - 3.0	0904074-002	4/13/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-13	Caltrans Yard	0 - 0.5	0904073-030	4/12/2009	--	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-13	Caltrans Yard	0.5 - 1.0	0904073-011	4/12/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-13	Caltrans Yard	1.0 - 1.5	0904073-012	4/12/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-13	Caltrans Yard	1.5 - 2.0	0904073-013	4/12/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-13	Caltrans Yard	2.5 - 3.0	0904073-014	4/12/2009	--	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-14	Lane	0 - 0.5	0904073-015	4/12/2009	--	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-14	Lane	0.5 - 1.0	0904073-016	4/12/2009	--	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-14	Lane	1.0 - 1.5	0904073-017	4/12/2009	--	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-14	Lane	1.5 - 2.0	0904073-018	4/12/2009	--	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-14	Lane	2.5 - 3.0	0904073-019	4/12/2009	--	X	X	X	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Boring Sample Location ID	Boring Sample Location Area	Sample Depth (feet)	Lab Sample ID	Sample Date	CAM 17 Metals	Lead (Total)	Lead (DI-STLC)	Lead (STLC)	Lead (TCLP)	Chromium (STLC)	Chromium (TCLP)	Chromium (Hexavalent)	Nickel (STLC)	pH	TPH-g	BTEX	5 Gas Oxygenates	VOCs	TPH-d	TPH-mo	PCBs	OCPs	Asbestos - PLM	Asbestos - CARB435
GROUNDWATER SAMPLES																								
Northbound																								
From Embarcadero Road to San Antonio Road																								
N-1-8-GW	Matadero Creek	--	0903138-006	3/23/09	X	X	--	--	--	--	--	--	--	X	X	X	X	--	X	X	X	X	--	--
N-1-GW	Peery Property	--	1003038-005	3-5-10	X	X	--	--	--	--	--	--	--	--	X	X	X	X	X	X	--	--	--	--
N-3-5-GW	Potential ROW Take Area	--	0903160-016	3/25/09	X	X	--	--	--	--	--	--	--	X	X	X	X	X	X	X	X	X	--	--
N-3-8-GW	Permanent Creek	--	0904074-005	4/12/09	X	X	--	--	--	--	--	--	--	X	X	X	X	X	X	X	X	X	--	--
N-3-10-GW	Potential ROW Take Area	--	0904073-044	4/12/09	X	X	--	--	--	--	--	--	--	X	X	X	X	X	X	X	X	X	--	--
Southbound																								
From Embarcadero Road to San Antonio Road																								
S-1-18-GW	Adobe Creek	--	0903154-086	3/24/09	X	X	--	--	--	--	--	--	--	X	X	X	X	X	X	X	X	X	--	--
S-2-3-GW	VOC potentially impacted area	--	0904088-016	4/13/2009	--	--	--	--	--	--	--	--	--	--	--	X	X	X	--	--	--	--	--	--
S-3-11-GW	Retaining Wall	--	0904074-006	4/12/09	X	X	--	--	--	--	--	--	--	X	X	X	X	X	X	X	X	X	--	--
S-3-13-GW	Caltrans Yard	--	0904074-027	4/12/2009	--	--	--	--	--	--	--	--	--	--	--	X	X	X	--	--	--	--	--	--
S-3-14-GW	VOC potentially impacted area	--	0904074-028	4/12/2009	--	--	--	--	--	--	--	--	--	--	--	X	X	X	--	--	--	--	--	--

Notes:
X = sample analyzed for specified analyte
-- = sample not analyzed for specified analyte
++ = sample should have been analyzed for specified analyte, but was not, due to insufficient sample mass

165

Boring Sample Location ID	Sample Depth (feet)	Lab Sample ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead (Total)	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		EPA Method		6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B
		Units		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
		10 x STLC		150	50	1,000	7.5	10	50	800	250	50	2	3,500	200	10	50	70	240	2,500
		20 x TCLP		NE	100	2,000	NE	20	100	NE	NE	100	4	NE	NE	20	100	NE	NE	NE
Northbound																				
From Embarcadero Road to San Antonio Road																				
N-1-1	0 - 0.5	0904088-006	4/13/2009	--	--	--	--	--	--	--	--	**410**	--	--	--	--	--	--	--	--
N-1-1	0.5 - 1.0	0904088-007	4/13/2009	--	--	--	--	--	--	--	--	**520**	--	--	--	--	--	--	--	--
N-1-1	1.0 - 1.5	0904088-008	4/13/2009	--	--	--	--	--	--	--	--	**380**	--	--	--	--	--	--	--	--
N-1-1	1.5 - 2.0	0904088-009	4/13/2009	--	--	--	--	--	--	--	--	14	--	--	--	--	--	--	--	--
N-1-1	2.5 - 3.0	0904088-010	4/13/2009	--	--	--	--	--	--	--	--	6.3	--	--	--	--	--	--	--	--
N-1-2	0 - 0.5	0904088-001	4/13/2009	--	--	--	--	--	--	--	--	**460**	--	--	--	--	--	--	--	--
N-1-2	0.5 - 1.0	0904088-002	4/13/2009	--	--	--	--	--	--	--	--	**110**	--	--	--	--	--	--	--	--
N-1-2	1.0 - 1.5	0904088-003	4/13/2009	--	--	--	--	--	--	--	--	9.8	--	--	--	--	--	--	--	--
N-1-2	1.5 - 2.0	0904088-004	4/13/2009	--	--	--	--	--	--	--	--	8.1	--	--	--	--	--	--	--	--
N-1-2	2.5 - 3.0	0904088-005	4/13/2009	--	--	--	--	--	--	--	--	3.2	--	--	--	--	--	--	--	--
N-1-4	0 - 0.5	0903138-022	3/24/2009	<5.0	4.4	220	<2.0	1.6	49	10	90	**1100**	0.15	<5.0	50	<5.0	1.7	<5.0	33	390
N-1-4	0.5 - 1.0	0903138-023	3/24/2009	<5.0	5.8	190	<2.0	<1.0	49	15	46	**590**	<0.10	<5.0	46	<5.0	1.9	<5.0	45	100
N-1-4	1.0 - 1.5	0903138-024	3/24/2009	<5.0	5.6	110	<2.0	<1.0	**50**	15	32	**54**	<0.10	<5.0	44	<5.0	2.8	<5.0	59	48
N-1-4	1.5 - 2.0	0903138-025	3/24/2009	<5.0	5.7	170	<2.0	<1.0	**56**	12	41	**400**	<0.10	<5.0	43	<5.0	1.0	<5.0	42	120
N-1-4	2.0 - 2.5	0903138-026	3/24/2009	<5.0	6.5	140	<2.0	<1.0	49	14	45	**630**	<0.10	<5.0	46	<5.0	2.1	<5.0	48	120
N-1-5	0 - 0.5	0903138-017	3/24/2009	--	--	--	--	--	--	--	--	**85**	--	--	--	--	--	--	--	--
N-1-5	0.5 - 1.0	0903138-018	3/24/2009	--	--	--	--	--	--	--	--	**230**	--	--	--	--	--	--	--	--
N-1-5	1.0 - 1.5	0903138-019	3/24/2009	--	--	--	--	--	--	--	--	1.4	--	--	--	--	--	--	--	--
N-1-5	1.5 - 2.0	0903138-020	3/24/2009	--	--	--	--	--	--	--	--	7.2	--	--	--	--	--	--	--	--
N-1-5	2.5 - 3.0	0903138-021	3/24/2009	--	--	--	--	--	--	--	--	4.2	--	--	--	--	--	--	--	--
N-1-6	0 - 0.5	0903138-012	3/23/2009	--	--	--	--	--	--	--	--	**400**	--	--	--	--	--	--	--	--
N-1-6	0.5 - 1.0	0903138-013	3/23/2009	--	--	--	--	--	--	--	--	**840**	--	--	--	--	--	--	--	--
N-1-6	1.0 - 1.5	0903138-014	3/23/2009	--	--	--	--	--	--	--	--	12	--	--	--	--	--	--	--	--
N-1-6	1.5 - 2.0	0903138-015	3/23/2009	--	--	--	--	--	--	--	--	7.4	--	--	--	--	--	--	--	--
N-1-6	2.5 - 3.0	0903138-016	3/23/2009	--	--	--	--	--	--	--	--	6.0	--	--	--	--	--	--	--	--
N-1-7	0 - 0.5	0903138-007	3/23/2009	--	--	--	--	--	--	--	--	**590**	--	--	--	--	--	--	--	--
N-1-7	0.5 - 1.0	0903138-008	3/23/2009	--	--	--	--	--	--	--	--	**1000**	--	--	--	--	--	--	--	--
N-1-7	1.0 - 1.5	0903138-009	3/23/2009	--	--	--	--	--	--	--	--	**130**	--	--	--	--	--	--	--	--
N-1-7	1.5 - 2.0	0903138-010	3/23/2009	--	--	--	--	--	--	--	--	**94**	--	--	--	--	--	--	--	--
N-1-7	2.5 - 3.0	0903138-011	3/23/2009	--	--	--	--	--	--	--	--	7.6	--	--	--	--	--	--	--	--
N-1-8	0 - 0.5	0903138-001	3/23/2009	--	--	--	--	--	--	--	--	6.0	--	--	--	--	--	--	--	--
N-1-8	0.5 - 1.0	0903138-002	3/23/2009	--	--	--	--	--	--	--	--	1.2	--	--	--	--	--	--	--	--
N-1-8	1.0 - 1.5	0903138-003	3/23/2009	--	--	--	--	--	--	--	--	1.2	--	--	--	--	--	--	--	--

Boring Sample Location ID	Sample Depth (feet)	Lab Sample ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead (Total)	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		EPA Method		6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B
		Units		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
		10 x STLC		150	50	1,000	7.5	10	50	800	250	50	2	3,500	200	10	50	70	240	2,500
		20 x TCLP		NE	100	2,000	NE	20	100	NE	NE	100	4	NE	NE	20	100	NE	NE	NE
N-1-8	1.5 - 2.0	0903138-004	3/23/2009	--	--	--	--	--	--	--	--	4.4	--	--	--	--	--	--	--	--
N-1-8	2.5 - 3.0	0903138-005	3/23/2009	--	--	--	--	--	--	--	--	5.8	--	--	--	--	--	--	--	--
N-1-9	0 - 0.5	0903138-082	3/23/2009	--	--	--	--	--	--	--	--	**1400**	--	--	--	--	--	--	--	--
N-1-9	0.5 - 1.0	0903138-083	3/23/2009	--	--	--	--	--	--	--	--	24	--	--	--	--	--	--	--	--
N-1-9	1.0 - 1.5	0903138-084	3/23/2009	--	--	--	--	--	--	--	--	8.7	--	--	--	--	--	--	--	--
N-1-9	1.5 - 2.0	0903138-085	3/23/2009	--	--	--	--	--	--	--	--	5.4	--	--	--	--	--	--	--	--
N-1-9	2.5 - 3.0	0903138-086	3/23/2009	--	--	--	--	--	--	--	--	**120**	--	--	--	--	--	--	--	--
N-1-10	0 - 0.5	0903138-077	3/23/2009	--	--	--	--	--	--	--	--	22	--	--	--	--	--	--	--	--
N-1-10	0.5 - 1.0	0903138-078	3/23/2009	--	--	--	--	--	--	--	--	**290**	--	--	--	--	--	--	--	--
N-1-10	1.0 - 1.5	0903138-079	3/23/2009	--	--	--	--	--	--	--	--	7.4	--	--	--	--	--	--	--	--
N-1-10	1.5 - 2.0	0903138-080	3/23/2009	--	--	--	--	--	--	--	--	5.6	--	--	--	--	--	--	--	--
N-1-10	2.5 - 3.0	0903138-081	3/23/2009	--	--	--	--	--	--	--	--	12	--	--	--	--	--	--	--	--
N-1-11	0 - 0.5	0903131-061	3/23/2009	--	--	--	--	--	--	--	--	30	--	--	--	--	--	--	--	--
N-1-11	0.5 - 1.0	0903131-062	3/23/2009	--	--	--	--	--	--	--	--	7.1	--	--	--	--	--	--	--	--
N-1-11	1.0 - 1.5	0903131-063	3/23/2009	--	--	--	--	--	--	--	--	4.6	--	--	--	--	--	--	--	--
N-1-11	1.5 - 2.0	0903131-064	3/23/2009	--	--	--	--	--	--	--	--	6.4	--	--	--	--	--	--	--	--
N-1-11	2.5 - 3.0	0903131-065	3/23/2009	--	--	--	--	--	--	--	--	4.1	--	--	--	--	--	--	--	--
N-1-12	0 - 0.5	0903131-026	3/23/2009	--	--	--	--	--	--	--	--	**610**	--	--	--	--	--	--	--	--
N-1-12	0.5 - 1.0	0903131-027	3/23/2009	--	--	--	--	--	--	--	--	**73**	--	--	--	--	--	--	--	--
N-1-12	1.0 - 1.5	0903131-028	3/23/2009	--	--	--	--	--	--	--	--	**84**	--	--	--	--	--	--	--	--
N-1-12	1.5 - 2.0	0903131-029	3/23/2009	--	--	--	--	--	--	--	--	7.0	--	--	--	--	--	--	--	--
N-1-12	2.5 - 3.0	0903131-030	3/23/2009	--	--	--	--	--	--	--	--	13	--	--	--	--	--	--	--	--
N-1-13	0 - 0.5	0903131-021	3/23/2009	--	--	--	--	--	--	--	--	**840**	--	--	--	--	--	--	--	--
N-1-13	0.5 - 1.0	0903131-022	3/23/2009	--	--	--	--	--	--	--	--	**620**	--	--	--	--	--	--	--	--
N-1-13	1.0 - 1.5	0903131-023	3/23/2009	--	--	--	--	--	--	--	--	**440**	--	--	--	--	--	--	--	--
N-1-13	1.5 - 2.0	0903131-024	3/23/2009	--	--	--	--	--	--	--	--	10	--	--	--	--	--	--	--	--
N-1-13	2.5 - 3.0	0903131-025	3/23/2009	--	--	--	--	--	--	--	--	4.8	--	--	--	--	--	--	--	--
N-1-14	0 - 0.5	0903131-036	3/23/2009	<5.0	<1.7	140	<2.0	<1.0	21	7.0	39	20	<0.1	<5.0	33	<5.0	1.5	<5.0	25	73
N-1-14	0.5 - 1.0	0903131-037	2/23/2009	<5.0	<1.7	170	<2.0	<1.0	**94**	15	74	**760**	<0.1	<5.0	180	<5.0	2.2	<5.0	32	180
N-1-14	1.0 - 1.5	0903131-038	2/23/2009	<5.0	<1.7	69	<2.0	<1.0	**59**	20	42	**160**	<0.1	<5.0	52	<5.0	1.8	<5.0	51	73
N-1-14	1.5 - 2.0	0903131-039	2/23/2009	<5.0	<1.7	68	<2.0	<1.0	**60**	20	49	<1.0	<0.1	<5.0	40	<5.0	1.6	<5.0	51	36
N-1-14	2.5 - 3.0	0903131-040	2/23/2009	<5.0	6.1	120	<2.0	<1.0	24	8.2	18	15	<0.1	<5.0	32	<5.0	<1.0	<5.0	27	46
N-1-15	0 - 0.5	0903131-031	2/23/2009	--	--	--	--	--	--	--	--	2.6	--	--	--	--	--	--	--	--
N-1-15	0.5 - 1.0	0903131-032	2/23/2009	--	--	--	--	--	--	--	--	**180**	--	--	--	--	--	--	--	--
N-1-15	1.0 - 1.5	0903131-033	2/23/2009	--	--	--	--	--	--	--	--	7.8	--	--	--	--	--	--	--	--

Boring Sample Location ID	Sample Depth (feet)	Lab Sample ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead (Total)	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		EPA Method		6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B
		Units		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
		10 x STLC		150	50	1,000	7.5	10	50	800	250	50	2	3,500	200	10	50	70	240	2,500
		20 x TCLP		NE	100	2,000	NE	20	100	NE	NE	100	4	NE	NE	20	100	NE	NE	NE
N-1-15	1.5 - 2.0	0903131-034	2/23/2009	--	--	--	--	--	--	--	--	8.1	--	--	--	--	--	--	--	--
N-1-15	2.5 - 3.0	0903131-035	2/23/2009	--	--	--	--	--	--	--	--	8.9	--	--	--	--	--	--	--	--
N-1-16	0 - 0.5	0903131-046	3/23/2009	--	--	--	--	--	--	--	--	**370**	--	--	--	--	--	--	--	--
N-1-16	0.5 - 1.0	0903131-047	3/23/2009	--	--	--	--	--	--	--	--	**320**	--	--	--	--	--	--	--	--
N-1-16	1.0 - 1.5	0903131-048	3/23/2009	--	--	--	--	--	--	--	--	**1200**	--	--	--	--	--	--	--	--
N-1-16	1.5 - 2.0	0903131-049	3/23/2009	--	--	--	--	--	--	--	--	**73**	--	--	--	--	--	--	--	--
N-1-16	2.5 - 3.0	0903131-050	3/23/2009	--	--	--	--	--	--	--	--	18	--	--	--	--	--	--	--	--
N-1-17	0 - 0.5	0903131-041	3/23/2009	--	--	--	--	--	--	--	--	**190**	--	--	--	--	--	--	--	--
N-1-17	0.5 - 1.0	0903131-042	3/23/2009	--	--	--	--	--	--	--	--	**2100**	--	--	--	--	--	--	--	--
N-1-17	1.0 - 1.5	0903131-043	3/23/2009	--	--	--	--	--	--	--	--	**2400**	--	--	--	--	--	--	--	--
N-1-17	1.5 - 2.0	0903131-044	3/23/2009	--	--	--	--	--	--	--	--	5.6	--	--	--	--	--	--	--	--
N-1-17	2.5 - 3.0	0903131-045	3/23/2009	--	--	--	--	--	--	--	--	3.1	--	--	--	--	--	--	--	--
N-1-18	0 - 0.5	0904088-022	4/13/2009	--	--	--	--	--	--	--	--	**130**	--	--	--	--	--	--	--	--
N-1-18	0.5 - 1.0	0904088-023	4/13/2009	--	--	--	--	--	--	--	--	**1100**	--	--	--	--	--	--	--	--
N-1-18	1.0 - 1.5	0904088-024	4/13/2009	--	--	--	--	--	--	--	--	1.5	--	--	--	--	--	--	--	--
N-1-18	1.5 - 2.0	0904088-025	4/13/2009	--	--	--	--	--	--	--	--	4.1	--	--	--	--	--	--	--	--
N-1-18	2.5 - 3.0	0904088-026	4/13/2009	--	--	--	--	--	--	--	--	8.8	--	--	--	--	--	--	--	--
N-1-19	0 - 0.5	0903131-051	3/22/2009	--	--	--	--	--	--	--	--	18	--	--	--	--	--	--	--	--
N-1-19	0.5 - 1.0	0903131-052	3/22/2009	--	--	--	--	--	--	--	--	3.5	--	--	--	--	--	--	--	--
N-1-19	1.0 - 1.5	0903131-053	3/22/2009	--	--	--	--	--	--	--	--	3.2	--	--	--	--	--	--	--	--
N-1-19	1.5 - 2.0	0903131-054	3/22/2009	--	--	--	--	--	--	--	--	5.4	--	--	--	--	--	--	--	--
N-1-19	2.5 - 3.0	0903131-055	3/22/2009	--	--	--	--	--	--	--	--	2.4	--	--	--	--	--	--	--	--
N-1-19-d	0 - 0.5	0903131-056	3/22/2009	--	--	--	--	--	--	--	--	**160**	--	--	--	--	--	--	--	--
N-1-19-d	0.5 - 1.0	0903131-057	3/22/2009	--	--	--	--	--	--	--	--	**50**	--	--	--	--	--	--	--	--
N-1-19-d	1.0 - 1.5	0903131-058	3/22/2009	--	--	--	--	--	--	--	--	13	--	--	--	--	--	--	--	--
N-1-19-d	1.5 - 2.0	0903131-059	3/22/2009	--	--	--	--	--	--	--	--	6.4	--	--	--	--	--	--	--	--
N-1-19-d	2.5 - 3.0	0903131-060	3/22/2009	--	--	--	--	--	--	--	--	3.6	--	--	--	--	--	--	--	--
N-1-20	0 - 0.5	0903131-006	3/22/2009	--	--	--	--	--	--	--	--	**640**	--	--	--	--	--	--	--	--
N-1-20	0.5 - 1.0	0903131-007	3/22/2009	--	--	--	--	--	--	--	--	**1200**	--	--	--	--	--	--	--	--
N-1-20	1.0 - 1.5	0903131-008	3/22/2009	--	--	--	--	--	--	--	--	**2300**	--	--	--	--	--	--	--	--
N-1-20	1.5 - 2.0	0903131-009	3/22/2009	--	--	--	--	--	--	--	--	**120**	--	--	--	--	--	--	--	--
N-1-20	2.5 - 3.0	0903131-010	3/22/2009	--	--	--	--	--	--	--	--	22	--	--	--	--	--	--	--	--
From San Antonio Road to Amphitheater Pkwy																				
N-2-1	0 - 0.5	0903131-001	3/22/2009	--	--	--	--	--	--	--	--	**540**	--	--	--	--	--	--	--	--
N-2-1	0.5 - 1.0	0903131-002	3/22/2009	--	--	--	--	--	--	--	--	29	--	--	--	--	--	--	--	--

Boring Sample Location ID	Sample Depth (feet)	Lab Sample ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead (Total)	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		EPA Method		6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B
		Units		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
		10 x STLC		150	50	1,000	7.5	10	50	800	250	50	2	3,500	200	10	50	70	240	2,500
		20 x TCLP		NE	100	2,000	NE	20	100	NE	NE	100	4	NE	NE	20	100	NE	NE	NE
N-2-1	1.0 - 1.5	0903131-003	3/22/2009	--	--	--	--	--	--	--	--	**190**	--	--	--	--	--	--	--	--
N-2-1	1.5 - 2.0	0903131-004	3/22/2009	--	--	--	--	--	--	--	--	5.5	--	--	--	--	--	--	--	--
N-2-1	2.5 - 3.0	0903131-005	3/22/2009	--	--	--	--	--	--	--	--	5	--	--	--	--	--	--	--	--
N-2-2	0 - 0.5	0903131-011	3/22/2009	<5.0	1.8	190	<2.0	<1.0	46	11	43	30	0.11	<5.0	46	<5.0	1.6	<5.0	37	54
N-2-2	0.5 - 1.0	0903131-012	3/22/2009	<5.0	4.9	140	<2.0	<1.0	30	7.7	69	38	<0.1	<5.0	40	<5.0	<1.0	<5.0	26	50
N-2-2	1.0 - 1.5	0903131-013	3/22/2009	<5.0	36	270	<2.0	1.2	35	13	52	35	<0.1	<5.0	51	<5.0	<1.0	<5.0	34	54
N-2-2	1.5 - 2.0	0903131-014	3/22/2009	<5.0	5.4	150	<2.0	<1.0	42	11	60	43	0.63	<5.0	53	<5.0	<1.0	<5.0	37	62
N-2-2	2.5 - 3.0	0903131-015	3/22/2009	<5.0	2.6	170	<2.0	<1.0	**56**	11	28	18	<0.1	<5.0	48	<5.0	2.2	<5.0	41	46
N-2-3	0 - 0.5	0904088-032	4/13/2009	--	--	--	--	--	--	--	--	**590**	--	--	--	--	--	--	--	--
N-2-3	0.5 - 1.0	0904088-033	4/13/2009	--	--	--	--	--	--	--	--	13	--	--	--	--	--	--	--	--
N-2-3	1.0 - 1.5	0904088-034	4/13/2009	--	--	--	--	--	--	--	--	3.4	--	--	--	--	--	--	--	--
N-2-3	1.5 - 2.0	0904088-035	4/13/2009	--	--	--	--	--	--	--	--	7	--	--	--	--	--	--	--	--
N-2-3	2.5 - 3.0	0904088-036	4/13/2009	--	--	--	--	--	--	--	--	5.8	--	--	--	--	--	--	--	--
N-2-4	0 - 0.5	0903131-016	3/22/2009	--	--	--	--	--	--	--	--	**2600**	--	--	--	--	--	--	--	--
N-2-4	0.5 - 1.0	0903131-017	3/22/2009	--	--	--	--	--	--	--	--	**100**	--	--	--	--	--	--	--	--
N-2-4	1.0 - 1.5	0903131-018	3/22/2009	--	--	--	--	--	--	--	--	**78**	--	--	--	--	--	--	--	--
N-2-4	1.5 - 2.0	0903131-019	3/22/2009	--	--	--	--	--	--	--	--	**62**	--	--	--	--	--	--	--	--
N-2-4	2.5 - 3.0	0903131-020	3/22/2009	--	--	--	--	--	--	--	--	4.6	--	--	--	--	--	--	--	--
N-2-5	0 - 0.5	0904088-017	4/13/2009	--	--	--	--	--	--	--	--	**130**	--	--	--	--	--	--	--	--
N-2-5	0.5 - 1.0	0904088-018	4/13/2009	--	--	--	--	--	--	--	--	**88**	--	--	--	--	--	--	--	--
N-2-5	1.0 - 1.5	0904088-019	4/13/2009	--	--	--	--	--	--	--	--	16	--	--	--	--	--	--	--	--
N-2-5	1.5 - 2.0	0904088-020	4/13/2009	--	--	--	--	--	--	--	--	6.2	--	--	--	--	--	--	--	--
N-2-5	2.5 - 3.0	0904088-021	4/13/2009	--	--	--	--	--	--	--	--	3.8	--	--	--	--	--	--	--	--
N-2-6	0 - 0.5	0903161-011	3/26/2009	--	--	--	--	--	--	--	--	**400**	--	--	--	--	--	--	--	--
N-2-6	0.5 - 1.0	0903161-012	3/26/2009	--	--	--	--	--	--	--	--	**350**	--	--	--	--	--	--	--	--
N-2-6	1.0 - 1.5	0903161-013	3/26/2009	--	--	--	--	--	--	--	--	20	--	--	--	--	--	--	--	--
N-2-6	1.5 - 2.0	0903161-014	3/26/2009	--	--	--	--	--	--	--	--	18	--	--	--	--	--	--	--	--
N-2-6	2.5 - 3.0	0903161-015	3/26/2009	--	--	--	--	--	--	--	--	2.6	--	--	--	--	--	--	--	--
N-2-7	0 - 0.5	0903161-016	3/26/2009	--	--	--	--	--	--	--	--	11	--	--	--	--	--	--	--	--
N-2-7	0.5 - 1.0	0903161-017	3/26/2009	--	--	--	--	--	--	--	--	48	--	--	--	--	--	--	--	--
N-2-7	1.0 - 1.5	0903161-018	3/26/2009	--	--	--	--	--	--	--	--	**1000**	--	--	--	--	--	--	--	--
N-2-7	1.5 - 2.0	0903161-019	3/26/2009	--	--	--	--	--	--	--	--	3	--	--	--	--	--	--	--	--
N-2-7	2.5 - 3.0	0903161-020	3/26/2009	--	--	--	--	--	--	--	--	7.5	--	--	--	--	--	--	--	--
N-2-8	0 - 0.5	0903161-001	3/26/2009	--	--	--	--	--	--	--	--	14	--	--	--	--	--	--	--	--
N-2-8	0.5 - 1.0	0903161-002	3/26/2009	--	--	--	--	--	--	--	--	32	--	--	--	--	--	--	--	--

Boring Sample Location ID	Sample Depth (feet)	Lab Sample ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead (Total)	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		EPA Method		6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B
		Units		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
		10 x STLC		150	50	1,000	7.5	10	50	800	250	50	2	3,500	200	10	50	70	240	2,500
		20 x TCLP		NE	100	2,000	NE	20	100	NE	NE	100	4	NE	NE	20	100	NE	NE	NE
N-2-8	1.0 - 1.5	0903161-003	3/26/2009	--	--	--	--	--	--	--	--	**350**	--	--	--	--	--	--	--	--
N-2-8	1.5 - 2.0	0903161-004	3/26/2009	--	--	--	--	--	--	--	--	**400**	--	--	--	--	--	--	--	--
N-2-8 - b	1.5 - 2.0	0903161-004	3/26/2009	--	--	--	--	--	--	--	--	4.2	--	--	--	--	--	--	--	--
N-2-8 - c	1.5 - 2.0	0903161-004	3/26/2009	--	--	--	--	--	--	--	--	3.4	--	--	--	--	--	--	--	--
N-2-8	2.5 - 3.0	0903161-005	3/26/2009	--	--	--	--	--	--	--	--	11	--	--	--	--	--	--	--	--
N-2-9	0 - 0.5	0904088-027	4/13/2009	--	--	--	--	--	--	--	--	**640**	--	--	--	--	--	--	--	--
N-2-9	0.5 - 1.0	0904088-028	4/13/2009	--	--	--	--	--	--	--	--	**190**	--	--	--	--	--	--	--	--
N-2-9	1.0 - 1.5	0904088-029	4/13/2009	--	--	--	--	--	--	--	--	17	--	--	--	--	--	--	--	--
N-2-9	1.5 - 2.0	0904088-030	4/13/2009	--	--	--	--	--	--	--	--	3.8	--	--	--	--	--	--	--	--
N-2-9	2.5 - 3.0	0904088-031	4/13/2009	--	--	--	--	--	--	--	--	2.4	--	--	--	--	--	--	--	--
N-2-10	0 - 0.5	0903161-006	3/26/2009	--	--	--	--	--	--	--	--	**990**	--	--	--	--	--	--	--	--
N-2-10	0.5 - 1.0	0903161-007	3/26/2009	--	--	--	--	--	--	--	--	**590**	--	--	--	--	--	--	--	--
N-2-10	1.0 - 1.5	0903161-008	3/26/2009	--	--	--	--	--	--	--	--	45	--	--	--	--	--	--	--	--
N-2-10	1.5 - 2.0	0903161-009	3/26/2009	--	--	--	--	--	--	--	--	4	--	--	--	--	--	--	--	--
N-2-10	2.5 - 3.0	0903161-010	3/26/2009	--	--	--	--	--	--	--	--	3	--	--	--	--	--	--	--	--
N-2-10-D	0 - 0.5	0903161-021	3/26/2009	--	--	--	--	--	--	--	--	**420**	--	--	--	--	--	--	--	--
N-2-10-D	0.5 - 1.0	0903161-022	3/26/2009	--	--	--	--	--	--	--	--	**210**	--	--	--	--	--	--	--	--
N-2-10-D	1.0 - 1.5	0903161-023	3/26/2009	--	--	--	--	--	--	--	--	**460**	--	--	--	--	--	--	--	--
N-2-10-D	1.5 - 2.0	0903161-024	3/26/2009	--	--	--	--	--	--	--	--	5.6	--	--	--	--	--	--	--	--
N-2-10-D	2.5 - 3.0	0903161-025	3/26/2009	--	--	--	--	--	--	--	--	2.9	--	--	--	--	--	--	--	--
N-2-11	0 - 0.5	0903161-026	3/26/2009	--	--	--	--	--	--	--	--	**79**	--	--	--	--	--	--	--	--
N-2-11	0.5 - 1.0	0903161-027	3/26/2009	--	--	--	--	--	--	--	--	**980**	--	--	--	--	--	--	--	--
N-2-11	1.0 - 1.5	0903161-028	3/26/2009	--	--	--	--	--	--	--	--	18	--	--	--	--	--	--	--	--
N-2-11	1.5 - 2.0	0903161-029	3/26/2009	--	--	--	--	--	--	--	--	5.4	--	--	--	--	--	--	--	--
N-2-11	2.5 - 3.0	0903161-030	3/26/2009	--	--	--	--	--	--	--	--	5.4	--	--	--	--	--	--	--	--
N-2-12	0 - 0.5	0903161-031	3/26/2009	--	--	--	--	--	--	--	--	**110**	--	--	--	--	--	--	--	--
N-2-12	0.5 - 1.0	0903161-032	3/26/2009	--	--	--	--	--	--	--	--	**380**	--	--	--	--	--	--	--	--
N-2-12	1.0 - 1.5	0903161-033	3/26/2009	--	--	--	--	--	--	--	--	**250**	--	--	--	--	--	--	--	--
N-2-12	1.5 - 2.0	0903161-034	3/26/2009	--	--	--	--	--	--	--	--	11	--	--	--	--	--	--	--	--
N-2-12	2.5 - 3.0	0903161-035	3/26/2009	--	--	--	--	--	--	--	--	9.6	--	--	--	--	--	--	--	--
N-2-13	0 - 0.5	0903161-036	3/26/2009	--	--	--	--	--	--	--	--	13	--	--	--	--	--	--	--	--
N-2-13	0.5 - 1.0	0903161-037	3/26/2009	--	--	--	--	--	--	--	--	71	--	--	--	--	--	--	--	--
N-2-13	1.0 - 1.5	0903161-038	3/26/2009	--	--	--	--	--	--	--	--	**2200**	--	--	--	--	--	--	--	--
N-2-13	1.5 - 2.0	0903161-039	3/26/2009	--	--	--	--	--	--	--	--	7.4	--	--	--	--	--	--	--	--
N-2-13	2.5 - 3.0	0903161-040	3/26/2009	--	--	--	--	--	--	--	--	14	--	--	--	--	--	--	--	--

Boring Sample Location ID	Sample Depth (feet)	Lab Sample ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead (Total)	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		EPA Method		6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B
		Units		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
		10 x STLC		150	50	1,000	7.5	10	50	800	250	50	2	3,500	200	10	50	70	240	2,500
		20 x TCLP		NE	100	2,000	NE	20	100	NE	NE	100	4	NE	NE	20	100	NE	NE	NE
N-2-14	0 - 0.5	0903160-001	3/25/2009	--	--	--	--	--	--	--	--	18	--	--	--	--	--	--	--	--
N-2-14	0.5 - 1.0	0903160-002	3/25/2009	--	--	--	--	--	--	--	--	**190**	--	--	--	--	--	--	--	--
N-2-14	1.0 - 1.5	0903160-003	3/25/2009	--	--	--	--	--	--	--	--	**290**	--	--	--	--	--	--	--	--
N-2-14	1.5 - 2.0	0903160-004	3/25/2009	--	--	--	--	--	--	--	--	**110**	--	--	--	--	--	--	--	--
N-2-14	2.5 - 3.0	0903160-005	3/25/2009	--	--	--	--	--	--	--	--	9.6	--	--	--	--	--	--	--	--
N-2-15	0 - 0.5	0904074-029	4/13/2009	--	--	--	--	--	--	--	--	**54**	--	--	--	--	--	--	--	--
N-2-15	0.5 - 1.0	0904074-030	4/13/2009	--	--	--	--	--	--	--	--	6.4	--	--	--	--	--	--	--	--
N-2-15	1.0 - 1.5	0904074-031	4/13/2009	--	--	--	--	--	--	--	--	11	--	--	--	--	--	--	--	--
N-2-15	1.5 - 2.0	0904074-032	4/13/2009	--	--	--	--	--	--	--	--	4.5	--	--	--	--	--	--	--	--
N-2-15	2.5 - 3.0	0904074-033	4/13/2009	--	--	--	--	--	--	--	--	3.2	--	--	--	--	--	--	--	--
N-1	0.5-1.0	1003038-001	3/5/2010	<0.20	3.2	200	<0.0840	<0.0590	**63**	15	37	20	<0.01	<0.590	57	<0.29	2.4	<0.12	61	50
N-1	6.5-7.0	1003038-004	3/5/2010	<0.20	<0.28	170	<0.0840	<0.0590	49	11	25	3.2	<0.01	<0.590	49	<0.29	1.9	<0.12	44	33
From Amphitheater Pkwy to State Route 85																				
N-3-1	0 - 0.5	0904074-034	4/13/2009	--	--	--	--	--	--	--	--	24	--	--	--	--	--	--	--	--
N-3-1	0.5 - 1.0	0904074-007	4/13/2009	--	--	--	--	--	--	--	--	43	--	--	--	--	--	--	--	--
N-3-1	1.0 - 1.5	0904074-008	4/13/2009	--	--	--	--	--	--	--	--	**52**	--	--	--	--	--	--	--	--
N-3-1	1.5 - 2.0	0904074-009	4/13/2009	--	--	--	--	--	--	--	--	36	--	--	--	--	--	--	--	--
N-3-1	2.5 - 3.0	0904074-010	4/13/2009	--	--	--	--	--	--	--	--	44	--	--	--	--	--	--	--	--
N-3-2	0 - 0.5	0904074-011	4/13/2009	--	--	--	--	--	--	--	--	15	--	--	--	--	--	--	--	--
N-3-2	0.5 - 1.0	0904074-012	4/13/2009	--	--	--	--	--	--	--	--	3	--	--	--	--	--	--	--	--
N-3-2	1.0 - 1.5	0904074-013	4/13/2009	--	--	--	--	--	--	--	--	17	--	--	--	--	--	--	--	--
N-3-2	1.5 - 2.0	0904074-014	4/13/2009	--	--	--	--	--	--	--	--	22	--	--	--	--	--	--	--	--
N-3-2	2.5 - 3.0	0904074-015	4/13/2009	--	--	--	--	--	--	--	--	<1.0	--	--	--	--	--	--	--	--
N-3-3	0 - 0.5	0904074-016	4/13/2009	--	--	--	--	--	--	--	--	**190**	--	--	--	--	--	--	--	--
N-3-3	0.5 - 1.0	0904074-017	4/13/2009	--	--	--	--	--	--	--	--	5.8	--	--	--	--	--	--	--	--
N-3-3	1.0 - 1.5	0904074-018	4/13/2009	--	--	--	--	--	--	--	--	6.6	--	--	--	--	--	--	--	--
N-3-3	1.5 - 2.0	0904074-019	4/13/2009	--	--	--	--	--	--	--	--	4.6	--	--	--	--	--	--	--	--
N-3-3	2.5 - 3.0	0904074-020	4/13/2009	--	--	--	--	--	--	--	--	1.1	--	--	--	--	--	--	--	--
N-3-4	0 - 0.5	0903160-006	3/25/2009	--	--	--	--	--	--	--	--	**66**	--	--	--	--	--	--	--	--
N-3-4	0.5 - 1.0	0903160-007	3/25/2009	--	--	--	--	--	--	--	--	**380**	--	--	--	--	--	--	--	--
N-3-4	1.0 - 1.5	0903160-008	3/25/2009	--	--	--	--	--	--	--	--	33	--	--	--	--	--	--	--	--
N-3-4	1.5 - 2.0	0903160-009	3/25/2009	--	--	--	--	--	--	--	--	5.6	--	--	--	--	--	--	--	--
N-3-4	2.5 - 3.0	0903160-010	3/25/2009	--	--	--	--	--	--	--	--	3.7	--	--	--	--	--	--	--	--
N-3-5	0 - 0.5	0903160-011	3/25/2009	<5.0	<1.7	190	<2.0	<1.0	18	6.6	24	11	0.24	<5.0	35	<5.0	1.3	<5.0	26	50
N-3-5	0.5 - 1.0	0903160-012	3/25/2009	<5.0	2.2	250	<2.0	<1.0	42	19	67	**260**	<0.10	<5.0	50	<5.0	1.0	<5.0	48	81

Boring Sample Location ID	Sample Depth (feet)	Lab Sample ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead (Total)	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		EPA Method		6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B
		Units		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
		10 x STLC		150	50	1,000	7.5	10	50	800	250	50	2	3,500	200	10	50	70	240	2,500
		20 x TCLP		NE	100	2,000	NE	20	100	NE	NE	100	4	NE	NE	20	100	NE	NE	NE
N-3-5	1.0 - 1.5	0903160-013	3/25/2009	<5.0	<1.7	700	<2.0	<1.0	31	20	110	8.4	<0.10	<5.0	72	<5.0	<1.0	<5.0	22	62
N-3-5	1.5 - 2.0	0903160-014	3/25/2009	<5.0	<1.7	32	<2.0	<1.0	28	18	32	<1.0	<0.10	<5.0	25	<5.0	1.8	<5.0	53	37
N-3-5	2.5 - 3.0	0903160-015	3/25/2009	<5.0	<1.7	160	<2.0	<1.0	**52**	11	31	6.6	<0.10	<5.0	48	<5.0	1.0	<5.0	39	41
N-3-6	0 - 0.5	0903160-017	3/25/2009	--	--	--	--	--	--	--	--	**360**	--	--	--	--	--	--	--	--
N-3-6	0.5 - 1.0	0903160-018	3/25/2009	--	--	--	--	--	--	--	--	**230**	--	--	--	--	--	--	--	--
N-3-6	1.0 - 1.5	0903160-019	3/25/2009	--	--	--	--	--	--	--	--	10	--	--	--	--	--	--	--	--
N-3-6	1.5 - 2.0	0903160-020	3/25/2009	--	--	--	--	--	--	--	--	13	--	--	--	--	--	--	--	--
N-3-6	2.5 - 3.0	0903160-021	3/25/2009	--	--	--	--	--	--	--	--	4.7	--	--	--	--	--	--	--	--
N-3-7	0 - 0.5	0903160-027	3/25/2009	--	--	--	--	--	--	--	--	8.2	--	--	--	--	--	--	--	--
N-3-7	0.5 - 1.0	0903160-028	3/25/2009	--	--	--	--	--	--	--	--	**750**	--	--	--	--	--	--	--	--
N-3-7	1.0 - 1.5	0903160-029	3/25/2009	--	--	--	--	--	--	--	--	29	--	--	--	--	--	--	--	--
N-3-7	1.5 - 2.0	0903160-030	3/25/2009	--	--	--	--	--	--	--	--	7.6	--	--	--	--	--	--	--	--
N-3-7	2.5 - 3.0	0903160-031	3/25/2009	--	--	--	--	--	--	--	--	7.4	--	--	--	--	--	--	--	--
N-3-8	0 - 0.5	0904073-025	4/12/2009	--	--	--	--	--	--	--	--	**62**	--	--	--	--	--	--	--	--
N-3-8	0.5 - 1.0	0904073-026	4/12/2009	--	--	--	--	--	--	--	--	5.6	--	--	--	--	--	--	--	--
N-3-8	1.0 - 1.5	0904073-027	4/12/2009	--	--	--	--	--	--	--	--	6.4	--	--	--	--	--	--	--	--
N-3-8	1.5 - 2.0	0904073-028	4/12/2009	--	--	--	--	--	--	--	--	5.8	--	--	--	--	--	--	--	--
N-3-8	2.5 - 3.0	0904073-029	4/12/2009	--	--	--	--	--	--	--	--	**270**	--	--	--	--	--	--	--	--
N-3-8 -b	2.5 - 3.0	0904073-029	4/12/2009	--	--	--	--	--	--	--	--	7.2	--	--	--	--	--	--	--	--
N-3-8 - c	2.5 - 3.0	0904073-029	4/12/2009	--	--	--	--	--	--	--	--	8.4	--	--	--	--	--	--	--	--
N-3-9	0 - 0.5	0904074-003	4/13/2009	--	--	--	--	--	--	--	--	40	--	--	--	--	--	--	--	--
N-3-9	0.5 - 1.0	0904074-004	4/13/2009	--	--	--	--	--	--	--	--	30	--	--	--	--	--	--	--	--
N-3-10	0.5 - 1.0	0904073-041	4/12/2009	<5.0	2.6	110	<2.0	<1.0	30	6.7	14	8.8	<0.10	<5.0	40	<5.0	1.0	<5.0	22	29
N-3-10	2.5 - 3.0	0904073-042	4/12/2009	<5.0	2.3	110	<2.0	<1.0	42	11	29	32	0.10	<5.0	43	<5.0	1.6	<5.0	43	44
N-3-10	5.5 - 6.0	0904073-043	4/12/2009	<5.0	<1.7	180	<2.0	<1.0	36	9.8	13	1.4	<0.10	<5.0	37	<5.0	3.0	<5.0	34	24
N-3-11	0 - 0.5	0904074-026	4/12/2009	--	--	--	--	--	--	--	--	14	--	--	--	--	--	--	--	--
N-3-11	0.5 - 1.0	0904073-031	4/12/2009	--	--	--	--	--	--	--	--	21	--	--	--	--	--	--	--	--
N-3-11	1.0 - 1.5	0904073-032	4/12/2009	--	--	--	--	--	--	--	--	17	--	--	--	--	--	--	--	--
N-3-11	1.5 - 2.0	0904073-033	4/12/2009	--	--	--	--	--	--	--	--	20	--	--	--	--	--	--	--	--
N-3-11	2.5 - 3.0	0904073-034	4/12/2009	--	--	--	--	--	--	--	--	20	--	--	--	--	--	--	--	--
N-3-12	0 - 0.5	0904074-021	4/12/2009	--	--	--	--	--	--	--	--	14	--	--	--	--	--	--	--	--
N-3-12	0.5 - 1.0	0904074-022	4/12/2009	--	--	--	--	--	--	--	--	3.4	--	--	--	--	--	--	--	--
N-3-12	1.0 - 1.5	0904074-023	4/12/2009	--	--	--	--	--	--	--	--	13	--	--	--	--	--	--	--	--
N-3-12	1.5 - 2.0	0904074-024	4/12/2009	--	--	--	--	--	--	--	--	18	--	--	--	--	--	--	--	--
N-3-12	2.5 - 3.0	0904074-025	4/12/2009	--	--	--	--	--	--	--	--	9.2	--	--	--	--	--	--	--	--

Boring Sample Location ID	Sample Depth (feet)	Lab Sample ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead (Total)	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		EPA Method		6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B
		Units		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
		10 x STLC		150	50	1,000	7.5	10	50	800	250	50	2	3,500	200	10	50	70	240	2,500
		20 x TCLP		NE	100	2,000	NE	20	100	NE	NE	100	4	NE	NE	20	100	NE	NE	NE
Southbound																				
From Embarcadero Road to San Antonio Road																				
S-1-1	0 - 0.5	0903162-006	3/25/2009	--	--	--	--	--	--	--	--	27	--	--	--	--	--	--	--	--
S-1-1	0.5 - 1.0	0903162-007	3/25/2009	--	--	--	--	--	--	--	--	23	--	--	--	--	--	--	--	--
S-1-1	1.0 - 1.5	0903162-008	3/25/2009	--	--	--	--	--	--	--	--	7	--	--	--	--	--	--	--	--
S-1-1	1.5 - 2.0	0903162-009	3/25/2009	--	--	--	--	--	--	--	--	12	--	--	--	--	--	--	--	--
S-1-1	2.5 - 3.0	0903162-010	3/25/2009	--	--	--	--	--	--	--	--	6.3	--	--	--	--	--	--	--	--
S-1-2	0 - 0.5	0903162-001	3/25/2009	--	--	--	--	--	--	--	--	**58**	--	--	--	--	--	--	--	--
S-1-2	0.5 - 1.0	0903162-002	3/25/2009	--	--	--	--	--	--	--	--	**170**	--	--	--	--	--	--	--	--
S-1-2	1.0 - 1.5	0903162-003	3/25/2009	--	--	--	--	--	--	--	--	**68**	--	--	--	--	--	--	--	--
S-1-2	1.5 - 2.0	0903162-004	3/25/2009	--	--	--	--	--	--	--	--	**75**	--	--	--	--	--	--	--	--
S-1-2	2.5 - 3.0	0903162-005	3/25/2009	--	--	--	--	--	--	--	--	**56**	--	--	--	--	--	--	--	--
S-1-3	0 - 0.5	0903162-016	3/25/2009	--	--	--	--	--	--	--	--	33	--	--	--	--	--	--	--	--
S-1-3	0.5 - 1.0	0903162-017	3/25/2009	--	--	--	--	--	--	--	--	**86**	--	--	--	--	--	--	--	--
S-1-3	1.0 - 1.5	0903162-018	3/25/2009	--	--	--	--	--	--	--	--	**73**	--	--	--	--	--	--	--	--
S-1-3	1.5 - 2.0	0903162-019	3/25/2009	--	--	--	--	--	--	--	--	<1.0	--	--	--	--	--	--	--	--
S-1-3	2.5 - 3.0	0903162-020	3/25/2009	--	--	--	--	--	--	--	--	<1.0	--	--	--	--	--	--	--	--
S-1-4	0 - 0.5	0903162-011	3/25/2009	--	--	--	--	--	--	--	--	**58**	--	--	--	--	--	--	--	--
S-1-4	0.5 - 1.0	0903162-012	3/25/2009	--	--	--	--	--	--	--	--	**890**	--	--	--	--	--	--	--	--
S-1-4	1.0 - 1.5	0903162-013	3/25/2009	--	--	--	--	--	--	--	--	2.0	--	--	--	--	--	--	--	--
S-1-4	1.5 - 2.0	0903162-014	3/25/2009	--	--	--	--	--	--	--	--	1.2	--	--	--	--	--	--	--	--
S-1-4	2.5 - 3.0	0903162-015	3/25/2009	--	--	--	--	--	--	--	--	12	--	--	--	--	--	--	--	--
S-1-5	0 - 0.5	0903162-026	3/25/2009	5.8	<1.7	110	<2.0	<1.0	**180**	16	39	**280**	<0.10	<5.0	**280**	<5.0	2.0	<5.0	19	150
S-1-5	0.5 - 1.0	0903162-027	3/25/2009	<5.0	7.5	110	<2.0	1.6	39	15	65	**2400**	0.14	<5.0	41	<5.0	1.5	<5.0	43	220
S-1-5	1.0 - 1.5	0903162-028	3/25/2009	<5.0	<1.7	17	<2.0	<1.0	34	17	31	6.2	<0.10	<5.0	26	<5.0	<1.0	<5.0	38	36
S-1-5	1.5 - 2.0	0903162-029	3/25/2009	<5.0	2.6	94	<2.0	<1.0	**50**	13	25	5.4	<0.10	<5.0	41	<5.0	3.6	<5.0	55	29
S-1-5	2.5 - 3.0	0903162-030	3/25/2009	<5.0	1.7	110	<2.0	<1.0	46	13	28	5	<0.10	<5.0	37	<5.0	2.8	<5.0	59	33
S-1-6	0 - 0.5	0903162-021	3/25/2009	--	--	--	--	--	--	--	--	**1000**	--	--	--	--	--	--	--	--
S-1-6	0.5 - 1.0	0903162-022	3/25/2009	--	--	--	--	--	--	--	--	**730**	--	--	--	--	--	--	--	--
S-1-6	1.0 - 1.5	0903162-023	3/25/2009	--	--	--	--	--	--	--	--	**160**	--	--	--	--	--	--	--	--
S-1-6	1.5 - 2.0	0903162-024	3/25/2009	--	--	--	--	--	--	--	--	5	--	--	--	--	--	--	--	--
S-1-6	2.5 - 3.0	0903162-025	3/25/2009	--	--	--	--	--	--	--	--	5.6	--	--	--	--	--	--	--	--
S-1-7	0 - 0.5	0903160-022	3/25/2009	--	--	--	--	--	--	--	--	**160**	--	--	--	--	--	--	--	--
S-1-7	0.5 - 1.0	0903160-023	3/25/2009	--	--	--	--	--	--	--	--	**900**	--	--	--	--	--	--	--	--
S-1-7	1.0 - 1.5	0903160-024	3/25/2009	--	--	--	--	--	--	--	--	**56**	--	--	--	--	--	--	--	--

Boring Sample Location ID	Sample Depth (feet)	Lab Sample ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead (Total)	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		EPA Method		6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B
		Units		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
		10 x STLC		150	50	1,000	7.5	10	50	800	250	50	2	3,500	200	10	50	70	240	2,500
		20 x TCLP		NE	100	2,000	NE	20	100	NE	NE	100	4	NE	NE	20	100	NE	NE	NE
S-1-7	1.5 - 2.0	0903160-025	3/25/2009	--	--	--	--	--	--	--	--	4.7	--	--	--	--	--	--	--	--
S-1-7	2.5 - 3.0	0903160-026	3/25/2009	--	--	--	--	--	--	--	--	4.8	--	--	--	--	--	--	--	--
S-1-8	0 - 0.5	0903160-032	3/25/2009	--	--	--	--	--	--	--	--	9.6	--	--	--	--	--	--	--	--
S-1-8	0.5 - 1.0	0903160-033	3/25/2009	--	--	--	--	--	--	--	--	11	--	--	--	--	--	--	--	--
S-1-8	1.0 - 1.5	0903160-034	3/25/2009	--	--	--	--	--	--	--	--	1.7	--	--	--	--	--	--	--	--
S-1-8	1.5 - 2.0	0903160-035	3/25/2009	--	--	--	--	--	--	--	--	<1.0	--	--	--	--	--	--	--	--
S-1-8	2.5 - 3.0	0903160-036	3/25/2009	--	--	--	--	--	--	--	--	5.9	--	--	--	--	--	--	--	--
S-1-9	0 - 0.5	0903138-027	3/24/2009	--	--	--	--	--	--	--	--	**2600**	--	--	--	--	--	--	--	--
S-1-9	0.5 - 1.0	0903138-028	3/24/2009	--	--	--	--	--	--	--	--	12	--	--	--	--	--	--	--	--
S-1-9	1.0 - 1.5	0903138-029	3/24/2009	--	--	--	--	--	--	--	--	7.1	--	--	--	--	--	--	--	--
S-1-9	1.5 - 2.0	0903138-030	3/24/2009	--	--	--	--	--	--	--	--	6.5	--	--	--	--	--	--	--	--
S-1-9	2.5 - 3.0	0903138-031	3/24/2009	--	--	--	--	--	--	--	--	5.2	--	--	--	--	--	--	--	--
S-1-10	0 - 0.5	0903138-032	3/24/2009	--	--	--	--	--	--	--	--	**710**	--	--	--	--	--	--	--	--
S-1-10	0.5 - 1.0	0903138-033	3/24/2009	--	--	--	--	--	--	--	--	13	--	--	--	--	--	--	--	--
S-1-10	1.0 - 1.5	0903138-034	3/24/2009	--	--	--	--	--	--	--	--	6.8	--	--	--	--	--	--	--	--
S-1-10	1.5 - 2.0	0903138-035	3/24/2009	--	--	--	--	--	--	--	--	4.8	--	--	--	--	--	--	--	--
S-1-10	2.5 - 3.0	0903138-036	3/24/2009	--	--	--	--	--	--	--	--	5.5	--	--	--	--	--	--	--	--
S-1-10-d	0 - 0.5	0903138-037	3/24/2009	--	--	--	--	--	--	--	--	**150**	--	--	--	--	--	--	--	--
S-1-10-d	0.5 - 1.0	0903138-038	3/24/2009	--	--	--	--	--	--	--	--	25	--	--	--	--	--	--	--	--
S-1-10-d	1.0 - 1.5	0903138-039	3/24/2009	--	--	--	--	--	--	--	--	6	--	--	--	--	--	--	--	--
S-1-10-d	1.5 - 2.0	0903138-040	3/24/2009	--	--	--	--	--	--	--	--	5.8	--	--	--	--	--	--	--	--
S-1-10-d	2.5 - 3.0	0903138-041	3/24/2009	--	--	--	--	--	--	--	--	9.5	--	--	--	--	--	--	--	--
S-1-11	0 - 0.5	0903138-042	3/24/2009	--	--	--	--	--	--	--	--	**86**	--	--	--	--	--	--	--	--
S-1-11	0.5 - 1.0	0903138-043	3/24/2009	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--
S-1-11	1.0 - 1.5	0903138-044	3/24/2009	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--
S-1-11	1.5 - 2.0	0903138-045	3/24/2009	--	--	--	--	--	--	--	--	7.7	--	--	--	--	--	--	--	--
S-1-11	2.5 - 3.0	0903138-046	3/24/2009	--	--	--	--	--	--	--	--	5.2	--	--	--	--	--	--	--	--
S-1-12	0 - 0.5	0903138-047	3/24/2009	--	--	--	--	--	--	--	--	**290**	--	--	--	--	--	--	--	--
S-1-12	0.5 - 1.0	0903138-048	3/24/2009	--	--	--	--	--	--	--	--	**900**	--	--	--	--	--	--	--	--
S-1-12	1.0 - 1.5	0903138-049	3/24/2009	--	--	--	--	--	--	--	--	12	--	--	--	--	--	--	--	--
S-1-12	1.5 - 2.0	0903138-050	3/24/2009	--	--	--	--	--	--	--	--	7	--	--	--	--	--	--	--	--
S-1-12	2.5 - 3.0	0903138-051	3/24/2009	--	--	--	--	--	--	--	--	5.4	--	--	--	--	--	--	--	--
S-1-13	0 - 0.5	0903138-052	3/24/2009	--	--	--	--	--	--	--	--	**420**	--	--	--	--	--	--	--	--
S-1-13	0.5 - 1.0	0903138-053	3/24/2009	--	--	--	--	--	--	--	--	**59**	--	--	--	--	--	--	--	--
S-1-13	1.0 - 1.5	0903138-054	3/24/2009	--	--	--	--	--	--	--	--	7.7	--	--	--	--	--	--	--	--

Boring Sample Location ID	Sample Depth (feet)	Lab Sample ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead (Total)	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		EPA Method		6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B
		Units		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
		10 x STLC		150	50	1,000	7.5	10	50	800	250	50	2	3,500	200	10	50	70	240	2,500
		20 x TCLP		NE	100	2,000	NE	20	100	NE	NE	100	4	NE	NE	20	100	NE	NE	NE
S-1-13	1.5 - 2.0	0903138-055	3/24/2009	--	--	--	--	--	--	--	--	3	--	--	--	--	--	--	--	--
S-1-13	2.5 - 3.0	0903138-056	3/24/2009	--	--	--	--	--	--	--	--	2.4	--	--	--	--	--	--	--	--
S-1-14	0 - 0.5	0903138-057	3/24/2009	<5.0	2.4	160	<2.0	<1.0	**56**	16	51	28	0.31	<5.0	120	<5.0	<1.0	<5.0	34	99
S-1-14	0.5 - 1.0	0903138-058	3/24/2009	<5.0	<1.7	130	<2.0	<1.0	**79**	13	52	**320**	<0.10	<5.0	100	<5.0	1.6	<5.0	37	170
S-1-14	1.0 - 1.5	0903138-059	3/24/2009	<5.0	<1.7	20	<2.0	<1.0	39	26	45	2.8	<0.10	<5.0	37	<5.0	1.8	<5.0	66	52
S-1-14	1.5 - 2.0	0903138-060	3/24/2009	<5.0	2.8	110	<2.0	<1.0	40	8.0	12	4.4	<0.10	<5.0	39	<5.0	<1.0	<5.0	26	41
S-1-14	2.5 - 3.0	0903138-061	3/24/2009	5.3	2.3	93	<2.0	<1.0	**66**	16	32	7.4	<0.10	<5.0	54	<5.0	2.8	<5.0	66	42
S-1-15	0 - 0.5	0903138-062	3/24/2009	--	--	--	--	--	--	--	--	**470**	--	--	--	--	--	--	--	--
S-1-15	0.5 - 1.0	0903138-063	3/24/2009	--	--	--	--	--	--	--	--	**420**	--	--	--	--	--	--	--	--
S-1-15	1.0 - 1.5	0903138-064	3/24/2009	--	--	--	--	--	--	--	--	49	--	--	--	--	--	--	--	--
S-1-15	1.5 - 2.0	0903138-065	3/24/2009	--	--	--	--	--	--	--	--	**68**	--	--	--	--	--	--	--	--
S-1-15	2.5 - 3.0	0903138-066	3/24/2009	--	--	--	--	--	--	--	--	7.9	--	--	--	--	--	--	--	--
S-1-16	0 - 0.5	0903138-067	3/24/2009	--	--	--	--	--	--	--	--	**260**	--	--	--	--	--	--	--	--
S-1-16	0.5 - 1.0	0903138-068	3/24/2009	--	--	--	--	--	--	--	--	**280**	--	--	--	--	--	--	--	--
S-1-16	1.0 - 1.5	0903138-069	3/24/2009	--	--	--	--	--	--	--	--	**280**	--	--	--	--	--	--	--	--
S-1-16	1.5 - 2.0	0903138-070	3/24/2009	--	--	--	--	--	--	--	--	5.6	--	--	--	--	--	--	--	--
S-1-16	2.5 - 3.0	0903138-071	3/24/2009	--	--	--	--	--	--	--	--	5.1	--	--	--	--	--	--	--	--
S-1-17	0 - 0.5	0903138-072	3/24/2009	--	--	--	--	--	--	--	--	**640**	--	--	--	--	--	--	--	--
S-1-17	0.5 - 1.0	0903138-073	3/24/2009	--	--	--	--	--	--	--	--	**920**	--	--	--	--	--	--	--	--
S-1-17	1.0 - 1.5	0903138-074	3/24/2009	--	--	--	--	--	--	--	--	2.8	--	--	--	--	--	--	--	--
S-1-17	1.5 - 2.0	0903138-075	3/24/2009	--	--	--	--	--	--	--	--	3	--	--	--	--	--	--	--	--
S-1-17	2.5 - 3.0	0903138-076	3/24/2009	--	--	--	--	--	--	--	--	6.9	--	--	--	--	--	--	--	--
S-1-18	0 - 0.5	0903154-081	3/24/2009	--	--	--	--	--	--	--	--	**750**	--	--	--	--	--	--	--	--
S-1-18	0.5 - 1.0	0903154-082	3/24/2009	--	--	--	--	--	--	--	--	**740**	--	--	--	--	--	--	--	--
S-1-18	1.0 - 1.5	0903154-083	3/24/2009	--	--	--	--	--	--	--	--	4.8	--	--	--	--	--	--	--	--
S-1-18	1.5 - 2.0	0903154-084	3/24/2009	--	--	--	--	--	--	--	--	5.4	--	--	--	--	--	--	--	--
S-1-18	2.5 - 3.0	0903154-085	3/24/2009	--	--	--	--	--	--	--	--	5.3	--	--	--	--	--	--	--	--
S-1-19	0 - 0.5	0903154-087	3/24/2009	--	--	--	--	--	--	--	--	**220**	--	--	--	--	--	--	--	--
S-1-19	0.5 - 1.0	0903154-088	3/24/2009	--	--	--	--	--	--	--	--	1.6	--	--	--	--	--	--	--	--
S-1-19	1.0 - 1.5	0903154-089	3/24/2009	--	--	--	--	--	--	--	--	2.2	--	--	--	--	--	--	--	--
S-1-19	1.5 - 2.0	0903154-090	3/24/2009	--	--	--	--	--	--	--	--	6.7	--	--	--	--	--	--	--	--
S-1-19	2.5 - 3.0	0903154-091	3/24/2009	--	--	--	--	--	--	--	--	7.6	--	--	--	--	--	--	--	--
S-1-20	0 - 0.5	0903154-107	3/24/2009	--	--	--	--	--	--	--	--	**680**	--	--	--	--	--	--	--	--
S-1-20	0.5 - 1.0	0903154-108	3/24/2009	--	--	--	--	--	--	--	--	15	--	--	--	--	--	--	--	--
S-1-20	1.0 - 1.5	0903154-109	3/24/2009	--	--	--	--	--	--	--	--	5.8	--	--	--	--	--	--	--	--

Boring Sample Location ID	Sample Depth (feet)	Lab Sample ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead (Total)	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		EPA Method		6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B
		Units		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
		10 x STLC		150	50	1,000	7.5	10	50	800	250	50	2	3,500	200	10	50	70	240	2,500
		20 x TCLP		NE	100	2,000	NE	20	100	NE	NE	100	4	NE	NE	20	100	NE	NE	NE
S-1-20	1.5 - 2.0	0903154-110	3/24/2009	--	--	--	--	--	--	--	--	8.4	--	--	--	--	--	--	--	--
S-1-20	2.5 - 3.0	0903154-111	3/24/2009	--	--	--	--	--	--	--	--	3.4	--	--	--	--	--	--	--	--
From San Antonio Road to Amphitheater Pkwy																				
S-2-1	0 - 0.5	0903154-092	3/24/2009	--	--	--	--	--	--	--	--	**820**	--	--	--	--	--	--	--	--
S-2-1	0.5 - 1.0	0903154-093	3/24/2009	--	--	--	--	--	--	--	--	6.2	--	--	--	--	--	--	--	--
S-2-1	1.0 - 1.5	0903154-094	3/24/2009	--	--	--	--	--	--	--	--	23	--	--	--	--	--	--	--	--
S-2-1	1.5 - 2.0	0903154-095	3/24/2009	--	--	--	--	--	--	--	--	3.8	--	--	--	--	--	--	--	--
S-2-1	2.5 - 3.0	0903154-096	3/24/2009	--	--	--	--	--	--	--	--	3.6	--	--	--	--	--	--	--	--
S-2-2	0 - 0.5	0903154-097	3/24/2009	--	--	--	--	--	--	--	--	**410**	--	--	--	--	--	--	--	--
S-2-2	0.5 - 1.0	0903154-098	3/24/2009	--	--	--	--	--	--	--	--	**40**	--	--	--	--	--	--	--	--
S-2-2	1.0 - 1.5	0903154-099	3/24/2009	--	--	--	--	--	--	--	--	2.9	--	--	--	--	--	--	--	--
S-2-2	1.5 - 2.0	0903154-100	3/24/2009	--	--	--	--	--	--	--	--	2.4	--	--	--	--	--	--	--	--
S-2-2	2.5 - 3.0	0903154-101	3/24/2009	--	--	--	--	--	--	--	--	1.9	--	--	--	--	--	--	--	--
S-2-2-D	0 - 0.5	0903154-102	3/24/2009	--	--	--	--	--	--	--	--	**630**	--	--	--	--	--	--	--	--
S-2-2-D	0.5 - 1.0	0903154-103	3/24/2009	--	--	--	--	--	--	--	--	3.9	--	--	--	--	--	--	--	--
S-2-2-D	1.0 - 1.5	0903154-104	3/24/2009	--	--	--	--	--	--	--	--	2.6	--	--	--	--	--	--	--	--
S-2-2-D	1.5 - 2.0	0903154-105	3/24/2009	--	--	--	--	--	--	--	--	2.2	--	--	--	--	--	--	--	--
S-2-2-D	2.5 - 3.0	0903154-106	3/24/2009	--	--	--	--	--	--	--	--	2.2	--	--	--	--	--	--	--	--
S-2-3	0 - 0.5	0904088-011	4/13/2009	--	--	--	--	--	--	--	--	**200**	--	--	--	--	--	--	--	--
S-2-3	0.5 - 1.0	0904088-012	4/13/2009	--	--	--	--	--	--	--	--	**110**	--	--	--	--	--	--	--	--
S-2-3	1.0 - 1.5	0904088-013	4/13/2009	--	--	--	--	--	--	--	--	8.6	--	--	--	--	--	--	--	--
S-2-3	1.5 - 2.0	0904088-014	4/13/2009	--	--	--	--	--	--	--	--	3.4	--	--	--	--	--	--	--	--
S-2-3	2.5 - 3.0	0904088-015	4/13/2009	--	--	--	--	--	--	--	--	2.9	--	--	--	--	--	--	--	--
S-2-4	0 - 0.5	0903154-001	3/24/2009	--	--	--	--	--	--	--	--	**1000**	--	--	--	--	--	--	--	--
S-2-4	0.5 - 1.0	0903154-002	3/24/2009	--	--	--	--	--	--	--	--	6.2	--	--	--	--	--	--	--	--
S-2-4	1.0 - 1.5	0903154-003	3/24/2009	--	--	--	--	--	--	--	--	2.6	--	--	--	--	--	--	--	--
S-2-4	1.5 - 2.0	0903154-004	3/24/2009	--	--	--	--	--	--	--	--	41	--	--	--	--	--	--	--	--
S-2-4	2.5 - 3.0	0903154-005	3/24/2009	--	--	--	--	--	--	--	--	4.1	--	--	--	--	--	--	--	--
S-2-5	0 - 0.5	0903154-071	3/24/2009	--	--	--	--	--	--	--	--	**68**	--	--	--	--	--	--	--	--
S-2-5	0.5 - 1.0	0903154-072	3/24/2009	--	--	--	--	--	--	--	--	9.2	--	--	--	--	--	--	--	--
S-2-5	1.0 - 1.5	0903154-073	3/24/2009	--	--	--	--	--	--	--	--	5.0	--	--	--	--	--	--	--	--
S-2-5	1.5 - 2.0	0903154-074	3/24/2009	--	--	--	--	--	--	--	--	10	--	--	--	--	--	--	--	--
S-2-5	2.5 - 3.0	0903154-075	3/24/2009	--	--	--	--	--	--	--	--	9.8	--	--	--	--	--	--	--	--
S-2-6	0 - 0.5	0903154-061	3/24/2009	--	--	--	--	--	--	--	--	**490**	--	--	--	--	--	--	--	--
S-2-6	0.5 - 1.0	0903154-062	3/24/2009	--	--	--	--	--	--	--	--	**110**	--	--	--	--	--	--	--	--

Boring Sample Location ID	Sample Depth (feet)	Lab Sample ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead (Total)	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		EPA Method		6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B
		Units		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
		10 x STLC		150	50	1,000	7.5	10	50	800	250	50	2	3,500	200	10	50	70	240	2,500
		20 x TCLP		NE	100	2,000	NE	20	100	NE	NE	100	4	NE	NE	20	100	NE	NE	NE
S-2-6	1.0 - 1.5	0903154-063	3/24/2009	--	--	--	--	--	--	--	--	2.8	--	--	--	--	--	--	--	--
S-2-6	1.5 - 2.0	0903154-064	3/24/2009	--	--	--	--	--	--	--	--	3.4	--	--	--	--	--	--	--	--
S-2-6	2.5 - 3.0	0903154-065	3/24/2009	--	--	--	--	--	--	--	--	2.9	--	--	--	--	--	--	--	--
S-2-7	0 - 0.5	0903154-006	3/24/2009	<5.0	2.0	100	<2.0	<1.0	31	8.6	55	**300**	<0.10	<5.0	33	<5.0	1.4	<5.0	27	170
S-2-7	0.5 - 1.0	0903154-007	3/24/2009	<5.0	<1.7	24	<2.0	<1.0	**63**	27	56	3.7	<0.10	<5.0	48	<5.0	3.2	<5.0	74	49
S-2-7	1.0 - 1.5	0903154-008	3/24/2009	<5.0	<1.7	20	<2.0	<1.0	41	26	43	1.2	<0.10	<5.0	38	<5.0	1.6	<5.0	76	59
S-2-7	1.5 - 2.0	0903154-009	3/24/2009	<5.0	2.0	110	<2.0	<1.0	**61**	16	34	5	<0.10	<5.0	50	<5.0	3.4	<5.0	71	41
S-2-7	2.5 - 3.0	0903154-010	3/24/2009	<5.0	<1.7	91	<2.0	<1.0	42	12	25	4.9	<0.10	<5.0	36	<5.0	2.8	<5.0	49	34
S-2-8	0 - 0.5	0903154-016	3/24/2009	--	--	--	--	--	--	--	--	**900**	--	--	--	--	--	--	--	--
S-2-8	0.5 - 1.0	0903154-017	3/24/2009	--	--	--	--	--	--	--	--	**210**	--	--	--	--	--	--	--	--
S-2-8	1.0 - 1.5	0903154-018	3/24/2009	--	--	--	--	--	--	--	--	9.6	--	--	--	--	--	--	--	--
S-2-8	1.5 - 2.0	0903154-019	3/24/2009	--	--	--	--	--	--	--	--	9.9	--	--	--	--	--	--	--	--
S-2-8	2.5 - 3.0	0903154-020	3/24/2009	--	--	--	--	--	--	--	--	6	--	--	--	--	--	--	--	--
S-2-9	0 - 0.5	0903154-011	3/24/2009	--	--	--	--	--	--	--	--	**560**	--	--	--	--	--	--	--	--
S-2-9	0.5 - 1.0	0903154-012	3/24/2009	--	--	--	--	--	--	--	--	**59**	--	--	--	--	--	--	--	--
S-2-9	1.0 - 1.5	0903154-013	3/24/2009	--	--	--	--	--	--	--	--	8	--	--	--	--	--	--	--	--
S-2-9	1.5 - 2.0	0903154-014	3/24/2009	--	--	--	--	--	--	--	--	10	--	--	--	--	--	--	--	--
S-2-9	2.5 - 3.0	0903154-015	3/24/2009	--	--	--	--	--	--	--	--	4.4	--	--	--	--	--	--	--	--
S-2-10	0 - 0.5	0903154-026	3/24/2009	--	--	--	--	--	--	--	--	**210**	--	--	--	--	--	--	--	--
S-2-10	0.5 - 1.0	0903154-027	3/24/2009	--	--	--	--	--	--	--	--	9.8	--	--	--	--	--	--	--	--
S-2-10	1.0 - 1.5	0903154-028	3/24/2009	--	--	--	--	--	--	--	--	4.7	--	--	--	--	--	--	--	--
S-2-10	1.5 - 2.0	0903154-029	3/24/2009	--	--	--	--	--	--	--	--	2.4	--	--	--	--	--	--	--	--
S-2-10	2.5 - 3.0	0903154-030	3/24/2009	--	--	--	--	--	--	--	--	1.5	--	--	--	--	--	--	--	--
From Amphitheater to State Route 85																				
S-3-1	0 - 0.5	0903154-021	3/24/2009	--	--	--	--	--	--	--	--	**920**	--	--	--	--	--	--	--	--
S-3-1	0.5 - 1.0	0903154-022	3/24/2009	--	--	--	--	--	--	--	--	2	--	--	--	--	--	--	--	--
S-3-1	1.0 - 1.5	0903154-023	3/24/2009	--	--	--	--	--	--	--	--	1.7	--	--	--	--	--	--	--	--
S-3-1	1.5 - 2.0	0903154-024	3/24/2009	--	--	--	--	--	--	--	--	38	--	--	--	--	--	--	--	--
S-3-1	2.5 - 3.0	0903154-025	3/24/2009	--	--	--	--	--	--	--	--	3.3	--	--	--	--	--	--	--	--
S-3-2	0 - 0.5	0904073-045	4/12/2009	--	--	--	--	--	--	--	--	**54**	--	--	--	--	--	--	--	--
S-3-2	0.5 - 1.0	0904073-046	4/12/2009	--	--	--	--	--	--	--	--	**76**	--	--	--	--	--	--	--	--
S-3-2	1.0 - 1.5	0904073-047	4/12/2009	--	--	--	--	--	--	--	--	27	--	--	--	--	--	--	--	--
S-3-2	1.5 - 2.0	0904073-001	4/12/2009	--	--	--	--	--	--	--	--	32	--	--	--	--	--	--	--	--
S-3-2	2.5 - 3.0	0904073-002	4/12/2009	--	--	--	--	--	--	--	--	**50**	--	--	--	--	--	--	--	--
S-3-3	0 - 0.5	0903154-031	3/24/2009	--	--	--	--	--	--	--	--	**9700**	--	--	--	--	--	--	--	--

Boring Sample Location ID	Sample Depth (feet)	Lab Sample ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead (Total)	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		EPA Method		6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B
		Units		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
		10 x STLC		150	50	1,000	7.5	10	50	800	250	50	2	3,500	200	10	50	70	240	2,500
		20 x TCLP		NE	100	2,000	NE	20	100	NE	NE	100	4	NE	NE	20	100	NE	NE	NE
S-3-3	0.5 - 1.0	0903154-032	3/24/2009	--	--	--	--	--	--	--	--	**100**	--	--	--	--	--	--	--	--
S-3-3	1.0 - 1.5	0903154-033	3/24/2009	--	--	--	--	--	--	--	--	2.2	--	--	--	--	--	--	--	--
S-3-3	1.5 - 2.0	0903154-034	3/24/2009	--	--	--	--	--	--	--	--	2.1	--	--	--	--	--	--	--	--
S-3-3	2.5 - 3.0	0903154-035	3/24/2009	--	--	--	--	--	--	--	--	6	--	--	--	--	--	--	--	--
S-3-4	0 - 0.5	0903154-036	3/24/2009	--	--	--	--	--	--	--	--	**150**	--	--	--	--	--	--	--	--
S-3-4	0.5 - 1.0	0903154-037	3/24/2009	--	--	--	--	--	--	--	--	5.4	--	--	--	--	--	--	--	--
S-3-4	1.0 - 1.5	0903154-038	3/24/2009	--	--	--	--	--	--	--	--	4.2	--	--	--	--	--	--	--	--
S-3-4	1.5 - 2.0	0903154-039	3/24/2009	--	--	--	--	--	--	--	--	1.9	--	--	--	--	--	--	--	--
S-3-4	2.5 - 3.0	0903154-040	3/24/2009	--	--	--	--	--	--	--	--	2.5	--	--	--	--	--	--	--	--
S-3-5	0 - 0.5	0903154-041	3/25/2009	--	--	--	--	--	--	--	--	**410**	--	--	--	--	--	--	--	--
S-3-5	0.5 - 1.0	0903154-042	3/25/2009	--	--	--	--	--	--	--	--	**56**	--	--	--	--	--	--	--	--
S-3-5	1.0 - 1.5	0903154-043	3/25/2009	--	--	--	--	--	--	--	--	10	--	--	--	--	--	--	--	--
S-3-5	1.5 - 2.0	0903154-044	3/25/2009	--	--	--	--	--	--	--	--	9.2	--	--	--	--	--	--	--	--
S-3-5	2.5 - 3.0	0903154-045	3/25/2009	--	--	--	--	--	--	--	--	2.9	--	--	--	--	--	--	--	--
S-3-6	0 - 0.5	0903154-046	3/25/2009	--	--	--	--	--	--	--	--	**98**	--	--	--	--	--	--	--	--
S-3-6	0.5 - 1.0	0903154-047	3/25/2009	--	--	--	--	--	--	--	--	**210**	--	--	--	--	--	--	--	--
S-3-6	1.0 - 1.5	0903154-048	3/25/2009	--	--	--	--	--	--	--	--	35	--	--	--	--	--	--	--	--
S-3-6	1.5 - 2.0	0903154-049	3/25/2009	--	--	--	--	--	--	--	--	**140**	--	--	--	--	--	--	--	--
S-3-6	2.5 - 3.0	0903154-050	3/25/2009	--	--	--	--	--	--	--	--	5.1	--	--	--	--	--	--	--	--
S-3-7	0 - 0.5	0903154-051	3/25/2009	--	--	--	--	--	--	--	--	**150**	--	--	--	--	--	--	--	--
S-3-7	0.5 - 1.0	0903154-052	3/25/2009	--	--	--	--	--	--	--	--	47	--	--	--	--	--	--	--	--
S-3-7	1.0 - 1.5	0903154-053	3/25/2009	--	--	--	--	--	--	--	--	7.3	--	--	--	--	--	--	--	--
S-3-7	1.5 - 2.0	0903154-054	3/25/2009	--	--	--	--	--	--	--	--	4	--	--	--	--	--	--	--	--
S-3-7	2.5 - 3.0	0903154-055	3/25/2009	--	--	--	--	--	--	--	--	6.1	--	--	--	--	--	--	--	--
S-3-8	0 - 0.5	0903154-076	3/25/2009	--	--	--	--	--	--	--	--	32	--	--	--	--	--	--	--	--
S-3-8	0.5 - 1.0	0903154-077	3/25/2009	--	--	--	--	--	--	--	--	17	--	--	--	--	--	--	--	--
S-3-8	1.0 - 1.5	0903154-078	3/25/2009	--	--	--	--	--	--	--	--	7.8	--	--	--	--	--	--	--	--
S-3-8	1.5 - 2.0	0903154-079	3/25/2009	--	--	--	--	--	--	--	--	5.5	--	--	--	--	--	--	--	--
S-3-8	2.5 - 3.0	0903154-080	3/25/2009	--	--	--	--	--	--	--	--	4.8	--	--	--	--	--	--	--	--
S-3-9	0 - 0.5	0903154-066	3/25/2009	--	--	--	--	--	--	--	--	17	--	--	--	--	--	--	--	--
S-3-9	0.5 - 1.0	0903154-067	3/25/2009	--	--	--	--	--	--	--	--	5.4	--	--	--	--	--	--	--	--
S-3-9	1.0 - 1.5	0903154-068	3/25/2009	--	--	--	--	--	--	--	--	4.8	--	--	--	--	--	--	--	--
S-3-9	1.5 - 2.0	0903154-069	3/25/2009	--	--	--	--	--	--	--	--	4.1	--	--	--	--	--	--	--	--
S-3-9	2.5 - 3.0	0903154-070	3/25/2009	--	--	--	--	--	--	--	--	4	--	--	--	--	--	--	--	--
S-3-10	0 - 0.5	0903154-056	3/25/2009	--	--	--	--	--	--	--	--	**2200**	--	--	--	--	--	--	--	--

Boring Sample Location ID	Sample Depth (feet)	Lab Sample ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead (Total)	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		EPA Method		6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B
		Units		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
		10 x STLC		150	50	1,000	7.5	10	50	800	250	50	2	3,500	200	10	50	70	240	2,500
		20 x TCLP		NE	100	2,000	NE	20	100	NE	NE	100	4	NE	NE	20	100	NE	NE	NE
S-3-10	0.5 - 1.0	0903154-057	3/25/2009	--	--	--	--	--	--	--	--	11	--	--	--	--	--	--	--	--
S-3-10	1.0 - 1.5	0903154-058	3/25/2009	--	--	--	--	--	--	--	--	9.4	--	--	--	--	--	--	--	--
S-3-10	1.5 - 2.0	0903154-059	3/25/2009	--	--	--	--	--	--	--	--	4.1	--	--	--	--	--	--	--	--
S-3-10	2.5 - 3.0	0903154-060	3/25/2009	--	--	--	--	--	--	--	--	12	--	--	--	--	--	--	--	--
S-3-11	0 - 0.5	0904073-035	4/12/2009	<5.0	1.8	120	<2.0	<1.0	37	11	27	**97**	<0.10	<5.0	37	<5.0	1.5	<5.0	39	69
S-3-11	0.5 - 1.0	0904073-036	4/12/2009	<5.0	3.0	180	<2.0	1.5	49	14	68	**860**	0.14	<5.0	51	<5.0	2.0	<5.0	41	330

Boring Sample Location ID	Sample Depth (feet)	Lab Sample ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead (Total)	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		EPA Method		6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B
		Units		mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
		10 x STLC		150	50	1,000	7.5	10	50	800	250	50	2	3,500	200	10	50	70	240	2,500
		20 x TCLP		NE	100	2,000	NE	20	100	NE	NE	100	4	NE	NE	20	100	NE	NE	NE
S-3-11	1.0 - 1.5	0904073-037	4/12/2009	<5.0	2.6	160	<2.0	<1.0	**58**	17	53	**970**	<0.10	<5.0	48	<5.0	1.9	<5.0	54	170
S-3-11	1.5 - 2.0	0904073-038	4/12/2009	<5.1	3.4	240	<2.0	<1.0	**50**	13	29	18	<0.10	<5.0	52	<5.0	1.2	<5.0	38	48
S-3-11	2.5 - 3.0	0904073-039	4/12/2009	<5.2	2.6	260	<2.0	<1.0	**52**	17	29	7.3	<0.10	<5.0	61	<5.0	1.0	<5.0	39	45
S-3-11-D	0 - 0.5	0904073-040	4/12/2009	<5.3	2.2	180	<2.0	<1.0	47	12	35	**63**	<0.10	<5.0	45	<5.0	2.2	<5.0	42	77
S-3-11-D	0.5 - 1.0	0904073-021	4/12/2009	<5.4	1.9	90	<2.0	<1.0	46	16	41	**260**	<0.10	<5.0	37	<5.0	2.0	<5.0	46	100
S-3-11-D	1.0 - 1.5	0904073-022	4/12/2009	<5.5	2.8	210	<2.0	<1.0	**52**	13	38	**220**	<0.10	<5.0	52	<5.0	<1.0	<5.0	39	100
S-3-11-D	1.5 - 2.0	0904073-023	4/12/2009	<5.6	3.4	220	<2.0	<1.0	**50**	13	33	**52**	<0.10	<5.0	52	<5.0	<1.0	<5.0	40	57
S-3-11-D	2.5 - 3.0	0904073-024	4/12/2009	<5.7	3.8	240	<2.0	<1.0	**54**	14	31	19	<0.10	<5.0	56	<5.0	<1.0	<5.0	41	50
S-3-12	0 - 0.5	0904073-003	4/12/2009	--	--	--	--	--	--	--	--	34	--	--	--	--	--	--	--	--
S-3-12	0.5 - 1.0	0904073-004	4/12/2009	--	--	--	--	--	--	--	--	35	--	--	--	--	--	--	--	--
S-3-12	1.0 - 1.5	0904073-005	4/12/2009	--	--	--	--	--	--	--	--	4.8	--	--	--	--	--	--	--	--
S-3-12	1.5 - 2.0	0904073-006	4/12/2009	--	--	--	--	--	--	--	--	5.8	--	--	--	--	--	--	--	--
S-3-12	2.5 - 3.0	0904073-007	4/12/2009	--	--	--	--	--	--	--	--	3.8	--	--	--	--	--	--	--	--
S-3-12-D	0 - 0.5	0904073-008	4/12/2009	--	--	--	--	--	--	--	--	**59**	--	--	--	--	--	--	--	--
S-3-12-D	0.5 - 1.0	0904073-009	4/12/2009	--	--	--	--	--	--	--	--	4.4	--	--	--	--	--	--	--	--
S-3-12-D	1.0 - 1.5	0904073-010	4/12/2009	--	--	--	--	--	--	--	--	5	--	--	--	--	--	--	--	--
S-3-12-D	1.5 - 2.0	0904074-001	4/13/2009	--	--	--	--	--	--	--	--	7	--	--	--	--	--	--	--	--
S-3-12-D	2.5 - 3.0	0904074-002	4/13/2009	--	--	--	--	--	--	--	--	5.2	--	--	--	--	--	--	--	--
S-3-13	0 - 0.5	0904073-030	4/12/2009	--	--	--	--	--	--	--	--	**1400**	--	--	--	--	--	--	--	--
S-3-13	0.5 - 1.0	0904073-011	4/12/2009	--	--	--	--	--	--	--	--	26	--	--	--	--	--	--	--	--
S-3-13	1.0 - 1.5	0904073-012	4/12/2009	--	--	--	--	--	--	--	--	33	--	--	--	--	--	--	--	--
S-3-13	1.5 - 2.0	0904073-013	4/12/2009	--	--	--	--	--	--	--	--	3.6	--	--	--	--	--	--	--	--
S-3-13	2.5 - 3.0	0904073-014	4/12/2009	--	--	--	--	--	--	--	--	39	--	--	--	--	--	--	--	--
S-3-14	0 - 0.5	0904073-015	4/12/2009	--	--	--	--	--	--	--	--	**64**	--	--	--	--	--	--	--	--
S-3-14	0.5 - 1.0	0904073-016	4/12/2009	--	--	--	--	--	--	--	--	**58**	--	--	--	--	--	--	--	--
S-3-14	1.0 - 1.5	0904073-017	4/12/2009	--	--	--	--	--	--	--	--	**61**	--	--	--	--	--	--	--	--
S-3-14	1.5 - 2.0	0904073-018	4/12/2009	--	--	--	--	--	--	--	--	**64**	--	--	--	--	--	--	--	--
S-3-14	2.5 - 3.0	0904073-019	4/12/2009	--	--	--	--	--	--	--	--	**55**	--	--	--	--	--	--	--	--

Notes:
EPA = US Environmental Protection Agency
mg/Kg = milligrams per kilogram
STLC = Soluble Threshold Limits Concentrations
TCLP = Toxicity Characteristic Leaching Procedure
NE = Not Established
-- = sample not analyzed for specified analyte

Bold indicates value exceeds 10 x STLC
The symbol "<" (less than) indicates that the analyte was not detected at a concentration above the laboratory detection limit specified.

Boring Sample Location ID	Sample Depth (feet)	Lab Sample ID	Sample Date	Lead (Total)	Lead (DI-STLC)	Lead (STLC)	Lead (TCLP)	Chromium (STLC)	Chromium (TCLP)	Chromium (hexavalent)	Nickel (STLC)
		EPA Method		6010B	6010B	6010B	6010B	6010B	6010B	SW7199	6010B
		Units		mg/Kg	mg/L	mg/L	mg/L	mg/L	mg/L	mg/Kg	mg/L
		STLC		50	5.0	5.0		5 (560)		5	20
		TCLP		100	--	--	5.0	--	5	5	--
Northbound											
From Embarcadero Road to San Antonio Road											
N-1-1	0 - 0.5	0904088-006	4/13/2009	**410**	**15**	**27**	0.10	--	--	--	--
N-1-1	0.5 - 1.0	0904088-007	4/13/2009	**520**	**4.8**	**15**	<0.10	--	--	--	--
N-1-1	1.0 - 1.5	0904088-008	4/13/2009	**380**	**1.6**	**9.5**	<0.10	--	--	--	--
N-1-1	1.5 - 2.0	0904088-009	4/13/2009	14	--	--	--	--	--	--	--
N-1-1	2.5 - 3.0	0904088-010	4/13/2009	6.3	--	--	--	--	--	--	--
N-1-2	0 - 0.5	0904088-001	4/13/2009	**460**	NE*	**23**	NE*	--	--	--	--
N-1-2	0.5 - 1.0	0904088-002	4/13/2009	**110**	**3.4**	1.9	<0.10	--	--	--	--
N-1-2	1.0 - 1.5	0904088-003	4/13/2009	9.8	--	--	--	--	--	--	--
N-1-2	1.5 - 2.0	0904088-004	4/13/2009	8.1	--	--	--	--	--	--	--
N-1-2	2.5 - 3.0	0904088-005	4/13/2009	3.2	--	--	--	--	--	--	--
N-1-4	0 - 0.5	0903138-022	3/24/2009	**1100**	**8.8**	**54**	0.21	--	--	--	--
N-1-4	0.5 - 1.0	0903138-023	3/24/2009	**590**	**19**	**46**	NE*	--	--	--	--
N-1-4	1.0 - 1.5	0903138-024	3/24/2009	**54**	**1.8**	1.9	--	<0.10	--	--	--
N-1-4	1.5 - 2.0	0903138-025	3/24/2009	**400**	<0.10	**13**	0.21	0.17	--	<0.020	--
N-1-4	2.0 - 2.5	0903138-026	3/24/2009	**630**	**4.1**	**16**	0.33	--	--	--	--
N-1-5	0 - 0.5	0903138-017	3/24/2009	**85**	<0.10	0.10	--	--	--	--	--
N-1-5	0.5 - 1.0	0903138-018	3/24/2009	**230**	<0.10	2.6	0.68	--	--	--	--
N-1-5	1.0 - 1.5	0903138-019	3/24/2009	1.4	--	--	--	--	--	--	--
N-1-5	1.5 - 2.0	0903138-020	3/24/2009	7.2	--	--	--	--	--	--	--
N-1-5	2.5 - 3.0	0903138-021	3/24/2009	4.2	--	--	--	--	--	--	--
N-1-6	0 - 0.5	0903138-012	3/23/2009	**400**	**0.60**	**23**	<0.10	--	--	--	--
N-1-6	0.5 - 1.0	0903138-013	3/23/2009	**840**	**43**	**54**	2.0	--	--	--	--
N-1-6	1.0 - 1.5	0903138-014	3/23/2009	12	--	--	--	--	--	--	--
N-1-6	1.5 - 2.0	0903138-015	3/23/2009	7.4	--	--	--	--	--	--	--
N-1-6	2.5 - 3.0	0903138-016	3/23/2009	6.0	--	--	--	--	--	--	--
N-1-7	0 - 0.5	0903138-007	3/23/2009	**590**	<0.10	**37**	0.15	--	--	--	--
N-1-7	0.5 - 1.0	0903138-008	3/23/2009	**1000**	<0.10	**39**	0.61	--	--	--	--
N-1-7	1.0 - 1.5	0903138-009	3/23/2009	**130**	**0.93**	**16**	<0.10	--	--	--	--
N-1-7	1.5 - 2.0	0903138-010	3/23/2009	**94**	**0.75**	4.4	--	--	--	--	--
N-1-7	2.5 - 3.0	0903138-011	3/23/2009	7.6	--	--	--	--	--	--	--
N-1-8	0 - 0.5	0903138-001	3/23/2009	6.0	--	--	--	--	--	--	--
N-1-8	0.5 - 1.0	0903138-002	3/23/2009	1.2	--	--	--	--	--	--	--

Boring Sample Location ID	Sample Depth (feet)	Lab Sample ID	Sample Date	Lead (Total)	Lead (DI-STLC)	Lead (STLC)	Lead (TCLP)	Chromium (STLC)	Chromium (TCLP)	Chromium (hexavalent)	Nickel (STLC)
		EPA Method		6010B	6010B	6010B	6010B	6010B	6010B	SW7199	6010B
		Units		mg/Kg	mg/L	mg/L	mg/L	mg/L	mg/L	mg/Kg	mg/L
		STLC		50	5.0	5.0		5 (560)		5	20
		TCLP		100	--	--	5.0	--	5	5	--
N-1-8	1.0 - 1.5	0903138-003	3/23/2009	1.2	--	--	--	--	--	--	--
N-1-8	1.5 - 2.0	0903138-004	3/23/2009	4.4	--	--	--	--	--	--	--
N-1-8	2.5 - 3.0	0903138-005	3/23/2009	5.8	--	--	--	--	--	--	--
N-1-9	0 - 0.5	0903138-082	3/23/2009	**1400**	**15**	**67**	0.30	--	--	--	--
N-1-9	0.5 - 1.0	0903138-083	3/23/2009	24	--	--	--	--	--	--	--
N-1-9	1.0 - 1.5	0903138-084	3/23/2009	8.7	--	--	--	--	--	--	--
N-1-9	1.5 - 2.0	0903138-085	3/23/2009	5.4	--	--	--	--	--	--	--
N-1-9	2.5 - 3.0	0903138-086	3/23/2009	**120**	**1.0**	2.3	<0.10	--	--	--	--
N-1-10	0 - 0.5	0903138-077	3/23/2009	22	--	--	--	--	--	--	--
N-1-10	0.5 - 1.0	0903138-078	3/23/2009	**290**	**1.1**	<0.10	<0.10	--	--	--	--
N-1-10	1.0 - 1.5	0903138-079	3/23/2009	7.4	--	--	--	--	--	--	--
N-1-10	1.5 - 2.0	0903138-080	3/23/2009	5.6	--	--	--	--	--	--	--
N-1-10	2.5 - 3.0	0903138-081	3/23/2009	12	--	--	--	--	--	--	--
N-1-11	0 - 0.5	0903131-061	3/23/2009	30	--	--	--	--	--	--	--
N-1-11	0.5 - 1.0	0903131-062	3/23/2009	7.1	--	--	--	--	--	--	--
N-1-11	1.0 - 1.5	0903131-063	3/23/2009	4.6	--	--	--	--	--	--	--
N-1-11	1.5 - 2.0	0903131-064	3/23/2009	6.4	--	--	--	--	--	--	--
N-1-11	2.5 - 3.0	0903131-065	3/23/2009	4.1	--	--	--	--	--	--	--
N-1-12	0 - 0.5	0903131-026	3/23/2009	**610**	<0.10	**44**	0.13	--	--	--	--
N-1-12	0.5 - 1.0	0903131-027	3/23/2009	**73**	--	--	--	--	--	--	--
N-1-12	1.0 - 1.5	0903131-028	3/23/2009	**84**	<0.10	3.0	--	--	--	--	--
N-1-12	1.5 - 2.0	0903131-029	3/23/2009	7.0	--	--	--	--	--	--	--
N-1-12	2.5 - 3.0	0903131-030	3/23/2009	13	--	--	--	--	--	--	--
N-1-13	0 - 0.5	0903131-021	3/23/2009	**840**	<0.10	**22**	<0.10	--	--	--	--
N-1-13	0.5 - 1.0	0903131-022	3/23/2009	**620**	**1.7**	**13**	0.54	--	--	--	--
N-1-13	1.0 - 1.5	0903131-023	3/23/2009	**440**	0.31	**14**	<0.10	--	--	--	--
N-1-13	1.5 - 2.0	0903131-024	3/23/2009	10	--	--	--	--	--	--	--
N-1-13	2.5 - 3.0	0903131-025	3/23/2009	4.8	--	--	--	--	--	--	--
N-1-14	0 - 0.5	0903131-036	3/23/2009	20	--	--	--	--	--	--	--
N-1-14	0.5 - 1.0	0903131-037	2/23/2009	**760**	<0.10	**14**	<0.10	0.92	--	--	--
N-1-14	1.0 - 1.5	0903131-038	2/23/2009	**160**	<0.10	0.71	<0.10	0.11	--	--	--
N-1-14	1.5 - 2.0	0903131-039	2/23/2009	<1.0	--	--	--	<0.10	--	--	--
N-1-14	2.5 - 3.0	0903131-040	2/23/2009	15	--	--	--	--	--	--	--
N-1-15	0 - 0.5	0903131-031	2/23/2009	2.6	--	--	--	--	--	--	--
N-1-15	0.5 - 1.0	0903131-032	2/23/2009	**180**	<0.10	**130**	<0.10	--	--	--	--

Boring Sample Location ID	Sample Depth (feet)	Lab Sample ID	Sample Date	Lead (Total)	Lead (DI-STLC)	Lead (STLC)	Lead (TCLP)	Chromium (STLC)	Chromium (TCLP)	Chromium (hexavalent)	Nickel (STLC)
		EPA Method		6010B	6010B	6010B	6010B	6010B	6010B	SW7199	6010B
		Units		mg/Kg	mg/L	mg/L	mg/L	mg/L	mg/L	mg/Kg	mg/L
		STLC		50	5.0	5.0		5 (560)		5	20
		TCLP		100	--	--	5.0	--	5	5	--
N-1-15	1.0 - 1.5	0903131-033	2/23/2009	7.8	--	--	--	--	--	--	--
N-1-15	1.5 - 2.0	0903131-034	2/23/2009	8.1	--	--	--	--	--	--	--
N-1-15	2.5 - 3.0	0903131-035	2/23/2009	8.9	--	--	--	--	--	--	--
N-1-16	0 - 0.5	0903131-046	3/23/2009	**370**	<0.10	**15**	<0.10	--	--	--	--
N-1-16	0.5 - 1.0	0903131-047	3/23/2009	**320**	<0.10	**32**	2.1	--	--	--	--
N-1-16	1.0 - 1.5	0903131-048	3/23/2009	**1200**	<0.10	**60**	<0.10	--	--	--	--
N-1-16	1.5 - 2.0	0903131-049	3/23/2009	**73**	**8.0**	**30**	--	--	--	--	--
N-1-16	2.5 - 3.0	0903131-050	3/23/2009	18	--	--	--	--	--	--	--
N-1-17	0 - 0.5	0903131-041	3/23/2009	**190**	<0.10	**11**	<0.10	--	--	--	--
N-1-17	0.5 - 1.0	0903131-042	3/23/2009	**2100**	<0.10	**87**	0.25	--	--	--	--
N-1-17	1.0 - 1.5	0903131-043	3/23/2009	**2400**	<0.10	**140**	1.6	--	--	--	--
N-1-17	1.5 - 2.0	0903131-044	3/23/2009	5.6	--	--	--	--	--	--	--
N-1-17	2.5 - 3.0	0903131-045	3/23/2009	3.1	--	--	--	--	--	--	--
N-1-18	0 - 0.5	0904088-022	4/13/2009	**130**	**45**	**11**	**6.8**	--	--	--	--
N-1-18	0.5 - 1.0	0904088-023	4/13/2009	**1100**	**12**	**41**	<0.10	--	--	--	--
N-1-18	1.0 - 1.5	0904088-024	4/13/2009	1.5	--	--	--	--	--	--	--
N-1-18	1.5 - 2.0	0904088-025	4/13/2009	4.1	--	--	--	--	--	--	--
N-1-18	2.5 - 3.0	0904088-026	4/13/2009	8.8	--	--	--	--	--	--	--
N-1-19	0 - 0.5	0903131-051	3/22/2009	18	--	--	--	--	--	--	--
N-1-19	0.5 - 1.0	0903131-052	3/22/2009	3.5	--	--	--	--	--	--	--
N-1-19	1.0 - 1.5	0903131-053	3/22/2009	3.2	--	--	--	--	--	--	--
N-1-19	1.5 - 2.0	0903131-054	3/22/2009	5.4	--	--	--	--	--	--	--
N-1-19	2.5 - 3.0	0903131-055	3/22/2009	2.4	--	--	--	--	--	--	--
N-1-19-d	0 - 0.5	0903131-056	3/22/2009	**160**	<0.10	0.16	<0.10	--	--	--	--
N-1-19-d	0.5 - 1.0	0903131-057	3/22/2009	**50**	<0.10	0.13	--	--	--	--	--
N-1-19-d	1.0 - 1.5	0903131-058	3/22/2009	13	--	--	--	--	--	--	--
N-1-19-d	1.5 - 2.0	0903131-059	3/22/2009	6.4	--	--	--	--	--	--	--
N-1-19-d	2.5 - 3.0	0903131-060	3/22/2009	3.6	--	--	--	--	--	--	--
N-1-20	0 - 0.5	0903131-006	3/22/2009	**640**	**3.3**	**190**	2.4	--	--	--	--
N-1-20	0.5 - 1.0	0903131-007	3/22/2009	**1200**	<0.10	**94**	0.64	--	--	--	--
N-1-20	1.0 - 1.5	0903131-008	3/22/2009	**2300**	<0.10	**63**	1.8	--	--	--	--
N-1-20	1.5 - 2.0	0903131-009	3/22/2009	**120**	<0.10	**9.3**	0.10	--	--	--	--
N-1-20	2.5 - 3.0	0903131-010	3/22/2009	22	--	--	--	--	--	--	--
From San Antonio Road to Amphitheater Pkwy											

Boring Sample Location ID	Sample Depth (feet)	Lab Sample ID	Sample Date	Lead (Total)	Lead (DI-STLC)	Lead (STLC)	Lead (TCLP)	Chromium (STLC)	Chromium (TCLP)	Chromium (hexavalent)	Nickel (STLC)
		EPA Method		6010B	6010B	6010B	6010B	6010B	6010B	SW7199	6010B
		Units		mg/Kg	mg/L	mg/L	mg/L	mg/L	mg/L	mg/Kg	mg/L
		STLC		50	5.0	5.0		5 (560)		5	20
		TCLP		100	--	--	5.0	--	5	5	--
N-2-1	0 - 0.5	0903131-001	3/22/2009	**540**	<0.10	**28**	NE*	--	--	--	--
N-2-1	0.5 - 1.0	0903131-002	3/22/2009	29	--	--	--	--	--	--	--
N-2-1	1.0 - 1.5	0903131-003	3/22/2009	**190**	<0.10	0.21	<0.10	--	--	--	--
N-2-1	1.5 - 2.0	0903131-004	3/22/2009	5.5	--	--	--	--	--	--	--
N-2-1	2.5 - 3.0	0903131-005	3/22/2009	5	--	--	--	--	--	--	--
N-2-2	0 - 0.5	0903131-011	3/22/2009	30	--	--	--	--	--	--	--
N-2-2	0.5 - 1.0	0903131-012	3/22/2009	38	--	--	--	--	--	--	--
N-2-2	1.0 - 1.5	0903131-013	3/22/2009	35	--	--	--	--	--	--	--
N-2-2	1.5 - 2.0	0903131-014	3/22/2009	43	--	--	--	--	--	--	--
N-2-2	2.5 - 3.0	0903131-015	3/22/2009	18	--	--	--	0.13	--	--	--
N-2-3	0 - 0.5	0904088-032	4/13/2009	**590**	**7.0**	**28**	<0.10	--	--	--	--
N-2-3	0.5 - 1.0	0904088-033	4/13/2009	13	--	--	--	--	--	--	--
N-2-3	1.0 - 1.5	0904088-034	4/13/2009	3.4	--	--	--	--	--	--	--
N-2-3	1.5 - 2.0	0904088-035	4/13/2009	7	--	--	--	--	--	--	--
N-2-3	2.5 - 3.0	0904088-036	4/13/2009	5.8	--	--	--	--	--	--	--
N-2-4	0 - 0.5	0903131-016	3/22/2009	**2600**	0.34	**110**	0.41	--	--	--	--
N-2-4	0.5 - 1.0	0903131-017	3/22/2009	**100**	<0.10	4.4	<0.10	--	--	--	--
N-2-4	1.0 - 1.5	0903131-018	3/22/2009	**78**	<0.10	2.3	--	--	--	--	--
N-2-4	1.5 - 2.0	0903131-019	3/22/2009	**62**	<0.10	0.24	--	--	--	--	--
N-2-4	2.5 - 3.0	0903131-020	3/22/2009	4.6	--	--	--	--	--	--	--
N-2-5	0 - 0.5	0904088-017	4/13/2009	**130**	**4.1**	4.0	<0.10	--	--	--	--
N-2-5	0.5 - 1.0	0904088-018	4/13/2009	**88**	**0.59**	4.5	--	--	--	--	--
N-2-5	1.0 - 1.5	0904088-019	4/13/2009	16	--	--	--	--	--	--	--
N-2-5	1.5 - 2.0	0904088-020	4/13/2009	6.2	--	--	--	--	--	--	--
N-2-5	2.5 - 3.0	0904088-021	4/13/2009	3.8	--	--	--	--	--	--	--
N-2-6	0 - 0.5	0903161-011	3/26/2009	**400**	**31**	**34**	0.14	--	--	--	--
N-2-6	0.5 - 1.0	0903161-012	3/26/2009	**350**	**8.9**	2.9	<0.10	--	--	--	--
N-2-6	1.0 - 1.5	0903161-013	3/26/2009	20	--	--	--	--	--	--	--
N-2-6	1.5 - 2.0	0903161-014	3/26/2009	18	--	--	--	--	--	--	--
N-2-6	2.5 - 3.0	0903161-015	3/26/2009	2.6	--	--	--	--	--	--	--
N-2-7	0 - 0.5	0903161-016	3/26/2009	11	--	--	--	--	--	--	--
N-2-7	0.5 - 1.0	0903161-017	3/26/2009	48	--	--	--	--	--	--	--
N-2-7	1.0 - 1.5	0903161-018	3/26/2009	**1000**	**13**	**88**	<0.10	--	--	--	--
N-2-7	1.5 - 2.0	0903161-019	3/26/2009	3	--	--	--	--	--	--	--
N-2-7	2.5 - 3.0	0903161-020	3/26/2009	7.5	--	--	--	--	--	--	--

Boring Sample Location ID	Sample Depth (feet)	Lab Sample ID	Sample Date	Lead (Total)	Lead (DI-STLC)	Lead (STLC)	Lead (TCLP)	Chromium (STLC)	Chromium (TCLP)	Chromium (hexavalent)	Nickel (STLC)
		EPA Method		6010B	6010B	6010B	6010B	6010B	6010B	SW7199	6010B
		Units		mg/Kg	mg/L	mg/L	mg/L	mg/L	mg/L	mg/Kg	mg/L
		STLC		50	5.0	5.0		5 (560)		5	20
		TCLP		100	--	--	5.0	--	5	5	--
N-2-8	0 - 0.5	0903161-001	3/26/2009	14	--	--	--	--	--	--	--
N-2-8	0.5 - 1.0	0903161-002	3/26/2009	32	--	--	--	--	--	--	--
N-2-8	1.0 - 1.5	0903161-003	3/26/2009	**350**	**41**	**98**	0.29	--	--	--	--
N-2-8	1.5 - 2.0	0903161-004	3/26/2009	**400**	**2.8**	1.6	<0.10	--	--	--	--
N-2-8	2.5 - 3.0	0903161-005	3/26/2009	11	--	--	--	--	--	--	--
N-2-9	0 - 0.5	0904088-027	4/13/2009	**640**	**15**	4.4	0.18	--	--	--	--
N-2-9	0.5 - 1.0	0904088-028	4/13/2009	**190**	<0.10	0.20	<0.10	--	--	--	--
N-2-9	1.0 - 1.5	0904088-029	4/13/2009	17	--	--	--	--	--	--	--
N-2-9	1.5 - 2.0	0904088-030	4/13/2009	3.8	--	--	--	--	--	--	--
N-2-9	2.5 - 3.0	0904088-031	4/13/2009	2.4	--	--	--	--	--	--	--
N-2-10	0 - 0.5	0903161-006	3/26/2009	**990**	**15**	**63**	0.13	--	--	--	--
N-2-10	0.5 - 1.0	0903161-007	3/26/2009	**590**	**17**	0.47	<0.10	--	--	--	--
N-2-10	1.0 - 1.5	0903161-008	3/26/2009	45	--	--	--	--	--	--	--
N-2-10	1.5 - 2.0	0903161-009	3/26/2009	4	--	--	--	--	--	--	--
N-2-10	2.5 - 3.0	0903161-010	3/26/2009	3	--	--	--	--	--	--	--
N-2-10-D	0 - 0.5	0903161-021	3/26/2009	**420**	**29**	**62**	<0.10	--	--	--	--
N-2-10-D	0.5 - 1.0	0903161-022	3/26/2009	**210**	0.39	0.26	<0.10	--	--	--	--
N-2-10-D	1.0 - 1.5	0903161-023	3/26/2009	**460**	0.35	**14**	<0.10	--	--	--	--
N-2-10-D	1.5 - 2.0	0903161-024	3/26/2009	5.6	--	--	--	--	--	--	--
N-2-10-D	2.5 - 3.0	0903161-025	3/26/2009	2.9	--	--	--	--	--	--	--
N-2-11	0 - 0.5	0903161-026	3/26/2009	**79**	**3.5**	3.5	--	--	--	--	--
N-2-11	0.5 - 1.0	0903161-027	3/26/2009	**980**	**100**	**11**	NE*	--	--	--	--
N-2-11	1.0 - 1.5	0903161-028	3/26/2009	18	--	--	--	--	--	--	--
N-2-11	1.5 - 2.0	0903161-029	3/26/2009	5.4	--	--	--	--	--	--	--
N-2-11	2.5 - 3.0	0903161-030	3/26/2009	5.4	--	--	--	--	--	--	--

Boring Sample Location ID	Sample Depth (feet)	Lab Sample ID	Sample Date	Lead (Total)	Lead (DI-STLC)	Lead (STLC)	Lead (TCLP)	Chromium (STLC)	Chromium (TCLP)	Chromium (hexavalent)	Nickel (STLC)
		EPA Method		6010B	6010B	6010B	6010B	6010B	6010B	SW7199	6010B
		Units		mg/Kg	mg/L	mg/L	mg/L	mg/L	mg/L	mg/Kg	mg/L
		STLC		50	5.0	5.0		5 (560)		5	20
		TCLP		100	--	--	5.0	--	5	5	--
N-2-12	0 - 0.5	0903161-031	3/26/2009	**110**	**0.80**	**5.8**	<0.10	--	--	--	--
N-2-12	0.5 - 1.0	0903161-032	3/26/2009	**380**	**1.3**	**12**	<0.10	--	--	--	--
N-2-12	1.0 - 1.5	0903161-033	3/26/2009	**250**	**0.94**	**12**	<0.10	--	--	--	--
N-2-12	1.5 - 2.0	0903161-034	3/26/2009	11	--	--	--	--	--	--	--
N-2-12	2.5 - 3.0	0903161-035	3/26/2009	9.6	--	--	--	--	--	--	--
N-2-13	0 - 0.5	0903161-036	3/26/2009	13	--	--	--	--	--	--	--
N-2-13	0.5 - 1.0	0903161-037	3/26/2009	71	--	--	--	--	--	--	--
N-2-13	1.0 - 1.5	0903161-038	3/26/2009	**2200**	**2.6**	**42**	<0.10	--	--	--	--
N-2-13	1.5 - 2.0	0903161-039	3/26/2009	7.4	--	--	--	--	--	--	--
N-2-13	2.5 - 3.0	0903161-040	3/26/2009	14	--	--	--	--	--	--	--
N-2-14	0 - 0.5	0903160-001	3/25/2009	18	--	--	--	--	--	--	--
N-2-14	0.5 - 1.0	0903160-002	3/25/2009	**190**	**5.7**	1.4	<0.10	--	--	--	--
N-2-14	1.0 - 1.5	0903160-003	3/25/2009	**290**	0.24	0.61	<0.10	--	--	--	--
N-2-14	1.5 - 2.0	0903160-004	3/25/2009	**110**	**1.1**	2.7	<0.10	--	--	--	--
N-2-14	2.5 - 3.0	0903160-005	3/25/2009	9.6	--	--	--	--	--	--	--
N-2-15	0 - 0.5	0904074-029	4/13/2009	**54**	**0.82**	1.0	--	--	--	--	--
N-2-15	0.5 - 1.0	0904074-030	4/13/2009	6.4	--	--	--	--	--	--	--
N-2-15	1.0 - 1.5	0904074-031	4/13/2009	11	--	--	--	--	--	--	--
N-2-15	1.5 - 2.0	0904074-032	4/13/2009	4.5	--	--	--	--	--	--	--
N-2-15	2.5 - 3.0	0904074-033	4/13/2009	3.2	--	--	--	--	--	--	--
N-1	0.5-1.0	1003038-001	3/5/2010	20	--	--	--	0.12	--	<0.00020	--
From Amphitheater Pkwy to State Route 85											
N-3-1	0 - 0.5	0904074-034	4/13/2009	24	--	--	--	--	--	--	--
N-3-1	0.5 - 1.0	0904074-007	4/13/2009	43	--	--	--	--	--	--	--
N-3-1	1.0 - 1.5	0904074-008	4/13/2009	**52**	**0.76**	0.11	--	--	--	--	--
N-3-1	1.5 - 2.0	0904074-009	4/13/2009	36	--	--	--	--	--	--	--
N-3-1	2.5 - 3.0	0904074-010	4/13/2009	44	--	--	--	--	--	--	--
N-3-2	0 - 0.5	0904074-011	4/13/2009	15	--	--	--	--	--	--	--
N-3-2	0.5 - 1.0	0904074-012	4/13/2009	3	--	--	--	--	--	--	--
N-3-2	1.0 - 1.5	0904074-013	4/13/2009	17	--	--	--	--	--	--	--
N-3-2	1.5 - 2.0	0904074-014	4/13/2009	22	--	--	--	--	--	--	--
N-3-2	2.5 - 3.0	0904074-015	4/13/2009	<1.0	--	--	--	--	--	--	--
N-3-3	0 - 0.5	0904074-016	4/13/2009	**190**	**3.4**	**8.2**	<0.10	--	--	--	--

Boring Sample Location ID	Sample Depth (feet)	Lab Sample ID	Sample Date	Lead (Total)	Lead (DI-STLC)	Lead (STLC)	Lead (TCLP)	Chromium (STLC)	Chromium (TCLP)	Chromium (hexavalent)	Nickel (STLC)
		EPA Method		6010B	6010B	6010B	6010B	6010B	6010B	SW7199	6010B
		Units		mg/Kg	mg/L	mg/L	mg/L	mg/L	mg/L	mg/Kg	mg/L
		STLC		50	5.0	5.0		5 (560)		5	20
		TCLP		100	--	--	5.0	--	5	5	--
N-3-3	0.5 - 1.0	0904074-017	4/13/2009	5.8	--	--	--	--	--	--	--
N-3-3	1.0 - 1.5	0904074-018	4/13/2009	6.6	--	--	--	--	--	--	--
N-3-3	1.5 - 2.0	0904074-019	4/13/2009	4.6	--	--	--	--	--	--	--
N-3-3	2.5 - 3.0	0904074-020	4/13/2009	1.1	--	--	--	--	--	--	--
N-3-4	0 - 0.5	0903160-006	3/25/2009	**66**	**3.6**	**18**	--	--	--	--	--
N-3-4	0.5 - 1.0	0903160-007	3/25/2009	**380**	<0.10	**9.0**	<0.10	--	--	--	--
N-3-4	1.0 - 1.5	0903160-008	3/25/2009	33	--	--	--	--	--	--	--
N-3-4	1.5 - 2.0	0903160-009	3/25/2009	5.6	--	--	--	--	--	--	--
N-3-4	2.5 - 3.0	0903160-010	3/25/2009	3.7	--	--	--	--	--	--	--
N-3-5	0 - 0.5	0903160-011	3/25/2009	11	--	--	--	--	--	--	--
N-3-5	0.5 - 1.0	0903160-012	3/25/2009	**260**	**37**	**81**	0.33	--	--	--	--
N-3-5	1.0 - 1.5	0903160-013	3/25/2009	8.4	--	--	--	--	--	--	--
N-3-5	1.5 - 2.0	0903160-014	3/25/2009	<1.0	--	--	--	--	--	--	--
N-3-5	2.5 - 3.0	0903160-015	3/25/2009	6.6	--	--	--	0.16	--	--	--
N-3-6	0 - 0.5	0903160-017	3/25/2009	**360**	**2.8**	**30**	<0.10	--	--	--	--
N-3-6	0.5 - 1.0	0903160-018	3/25/2009	**230**	0.44	**5.3**	<0.10	--	--	--	--
N-3-6	1.0 - 1.5	0903160-019	3/25/2009	10	--	--	--	--	--	--	--
N-3-6	1.5 - 2.0	0903160-020	3/25/2009	13	--	--	--	--	--	--	--
N-3-6	2.5 - 3.0	0903160-021	3/25/2009	4.7	--	--	--	--	--	--	--
N-3-7	0 - 0.5	0903160-027	3/25/2009	8.2	--	--	--	--	--	--	--
N-3-7	0.5 - 1.0	0903160-028	3/25/2009	**750**	**21**	**110**	0.76	--	--	--	--
N-3-7	1.0 - 1.5	0903160-029	3/25/2009	29	--	--	--	--	--	--	--
N-3-7	1.5 - 2.0	0903160-030	3/25/2009	7.6	--	--	--	--	--	--	--
N-3-7	2.5 - 3.0	0903160-031	3/25/2009	7.4	--	--	--	--	--	--	--
N-3-8	0 - 0.5	0904073-025	4/12/2009	**62**	<0.10	0.22	--	--	--	--	--
N-3-8	0.5 - 1.0	0904073-026	4/12/2009	5.6	--	--	--	--	--	--	--
N-3-8	1.0 - 1.5	0904073-027	4/12/2009	6.4	--	--	--	--	--	--	--
N-3-8	1.5 - 2.0	0904073-028	4/12/2009	5.8	--	--	--	--	--	--	--
N-3-8	2.5 - 3.0	0904073-029	4/12/2009	**270**	<0.10	0.14	<0.10	--	--	--	--
N-3-9	0 - 0.5	0904074-003	4/13/2009	40	--	--	--	--	--	--	--
N-3-9	0.5 - 1.0	0904074-004	4/13/2009	30	--	--	--	--	--	--	--
N-3-10	0.5 - 1.0	0904073-041	4/12/2009	8.8	--	--	--	--	--	--	--
N-3-10	2.5 - 3.0	0904073-042	4/12/2009	32	--	--	--	--	--	--	--
N-3-10	5.5 - 6.0	0904073-043	4/12/2009	1.4	--	--	--	--	--	--	--
N-3-11	0 - 0.5	0904074-026	4/12/2009	14	--	--	--	--	--	--	--

Boring Sample Location ID	Sample Depth (feet)	Lab Sample ID	Sample Date	Lead (Total)	Lead (DI-STLC)	Lead (STLC)	Lead (TCLP)	Chromium (STLC)	Chromium (TCLP)	Chromium (hexavalent)	Nickel (STLC)
		EPA Method		6010B	6010B	6010B	6010B	6010B	6010B	SW7199	6010B
		Units		mg/Kg	mg/L	mg/L	mg/L	mg/L	mg/L	mg/Kg	mg/L
		STLC		50	5.0	5.0		5 (560)		5	20
		TCLP		100	--	--	5.0	--	5	5	--
N-3-11	0.5 - 1.0	0904073-031	4/12/2009	21	--	--	--	--	--	--	--
N-3-11	1.0 - 1.5	0904073-032	4/12/2009	17	--	--	--	--	--	--	--
N-3-11	1.5 - 2.0	0904073-033	4/12/2009	20	--	--	--	--	--	--	--
N-3-11	2.5 - 3.0	0904073-034	4/12/2009	20	--	--	--	--	--	--	--
N-3-12	0 - 0.5	0904074-021	4/12/2009	14	--	--	--	--	--	--	--
N-3-12	0.5 - 1.0	0904074-022	4/12/2009	3.4	--	--	--	--	--	--	--
N-3-12	1.0 - 1.5	0904074-023	4/12/2009	13	--	--	--	--	--	--	--
N-3-12	1.5 - 2.0	0904074-024	4/12/2009	18	--	--	--	--	--	--	--
N-3-12	2.5 - 3.0	0904074-025	4/12/2009	9.2	--	--	--	--	--	--	--
Southbound											
From Embarcadero Road to San Antonio Road											
S-1-1	0 - 0.5	0903162-006	3/25/2009	27	--	--	--	--	--	--	--
S-1-1	0.5 - 1.0	0903162-007	3/25/2009	23	--	--	--	--	--	--	--
S-1-1	1.0 - 1.5	0903162-008	3/25/2009	7	--	--	--	--	--	--	--
S-1-1	1.5 - 2.0	0903162-009	3/25/2009	12	--	--	--	--	--	--	--
S-1-1	2.5 - 3.0	0903162-010	3/25/2009	6.3	--	--	--	--	--	--	--
S-1-2	0 - 0.5	0903162-001	3/25/2009	**58**	**0.56**	3.3	--	--	--	--	--
S-1-2	0.5 - 1.0	0903162-002	3/25/2009	**170**	**1.1**	2.2	<0.10	--	--	--	--
S-1-2	1.0 - 1.5	0903162-003	3/25/2009	**68**	**1.9**	3.9	--	--	--	--	--
S-1-2	1.5 - 2.0	0903162-004	3/25/2009	**75**	**0.56**	3.4	--	--	--	--	--
S-1-2	2.5 - 3.0	0903162-005	3/25/2009	**56**	**0.71**	1.1	--	--	--	--	--
S-1-3	0 - 0.5	0903162-016	3/25/2009	33	--	--	--	--	--	--	--
S-1-3	0.5 - 1.0	0903162-017	3/25/2009	**86**	**3.4**	**12**	--	--	--	--	--
S-1-3	1.0 - 1.5	0903162-018	3/25/2009	**73**	**5.3**	**5.8**	--	--	--	--	--
S-1-3	1.5 - 2.0	0903162-019	3/25/2009	<1.0	--	--	--	--	--	--	--
S-1-3	2.5 - 3.0	0903162-020	3/25/2009	<1.0	--	--	--	--	--	--	--
S-1-4	0 - 0.5	0903162-011	3/25/2009	**58**	<0.10	0.40	--	--	--	--	--
S-1-4	0.5 - 1.0	0903162-012	3/25/2009	**890**	**1.6**	**30**	<0.10	--	--	--	--
S-1-4	1.0 - 1.5	0903162-013	3/25/2009	2.0	--	--	--	--	--	--	--
S-1-4	1.5 - 2.0	0903162-014	3/25/2009	1.2	--	--	--	--	--	--	--
S-1-4	2.5 - 3.0	0903162-015	3/25/2009	12	--	--	--	--	--	--	--
S-1-5	0 - 0.5	0903162-026	3/25/2009	**280**	**80**	**76**	**22**	0.59	<0.10	<0.020	1.8
S-1-5	0.5 - 1.0	0903162-027	3/25/2009	**2400**	**36**	**11**	<0.10	--	--	--	--
S-1-5	1.0 - 1.5	0903162-028	3/25/2009	6.2	--	--	--	--	--	--	--

Boring Sample Location ID	Sample Depth (feet)	Lab Sample ID	Sample Date	Lead (Total)	Lead (DI-STLC)	Lead (STLC)	Lead (TCLP)	Chromium (STLC)	Chromium (TCLP)	Chromium (hexavalent)	Nickel (STLC)
		EPA Method		6010B	6010B	6010B	6010B	6010B	6010B	SW7199	6010B
		Units		mg/Kg	mg/L	mg/L	mg/L	mg/L	mg/L	mg/Kg	mg/L
		STLC		50	5.0	5.0		5 (560)		5	20
		TCLP		100	--	--	5.0	--	5	5	--
S-1-5	1.5 - 2.0	0903162-029	3/25/2009	5.4	--	--	--	<0.10	--	--	--
S-1-5	2.5 - 3.0	0903162-030	3/25/2009	5	--	--	--	--	--	--	--
S-1-6	0 - 0.5	0903162-021	3/25/2009	**1000**	**69**	**120**	0.46	--	--	--	--
S-1-6	0.5 - 1.0	0903162-022	3/25/2009	**730**	**18**	**48**	0.48	--	--	--	--
S-1-6	1.0 - 1.5	0903162-023	3/25/2009	**160**	**1.5**	1.9	<0.10	--	--	--	--
S-1-6	1.5 - 2.0	0903162-024	3/25/2009	5	--	--	--	--	--	--	--
S-1-6	2.5 - 3.0	0903162-025	3/25/2009	5.6	--	--	--	--	--	--	--
S-1-7	0 - 0.5	0903160-022	3/25/2009	**160**	**13**	**13**	0.41	--	--	--	--
S-1-7	0.5 - 1.0	0903160-023	3/25/2009	**900**	**44**	**72**	**5.0**	--	--	--	--
S-1-7	1.0 - 1.5	0903160-024	3/25/2009	**56**	0.46	2.5	--	--	--	--	--
S-1-7	1.5 - 2.0	0903160-025	3/25/2009	4.7	--	--	--	--	--	--	--
S-1-7	2.5 - 3.0	0903160-026	3/25/2009	4.8	--	--	--	--	--	--	--
S-1-8	0 - 0.5	0903160-032	3/25/2009	9.6	--	--	--	--	--	--	--
S-1-8	0.5 - 1.0	0903160-033	3/25/2009	11	--	--	--	--	--	--	--
S-1-8	1.0 - 1.5	0903160-034	3/25/2009	1.7	--	--	--	--	--	--	--
S-1-8	1.5 - 2.0	0903160-035	3/25/2009	<1.0	--	--	--	--	--	--	--
S-1-8	2.5 - 3.0	0903160-036	3/25/2009	5.9	--	--	--	--	--	--	--
S-1-9	0 - 0.5	0903138-027	3/24/2009	**2600**	**43**	2.7	0.26	--	--	--	--
S-1-9	0.5 - 1.0	0903138-028	3/24/2009	12	--	--	--	--	--	--	--
S-1-9	1.0 - 1.5	0903138-029	3/24/2009	7.1	--	--	--	--	--	--	--
S-1-9	1.5 - 2.0	0903138-030	3/24/2009	6.5	--	--	--	--	--	--	--
S-1-9	2.5 - 3.0	0903138-031	3/24/2009	5.2	--	--	--	--	--	--	--
S-1-10	0 - 0.5	0903138-032	3/24/2009	**710**	**8.6**	**37**	0.91	--	--	--	--
S-1-10	0.5 - 1.0	0903138-033	3/24/2009	13	--	--	--	--	--	--	--
S-1-10	1.0 - 1.5	0903138-034	3/24/2009	6.8	--	--	--	--	--	--	--
S-1-10	1.5 - 2.0	0903138-035	3/24/2009	4.8	--	--	--	--	--	--	--
S-1-10	2.5 - 3.0	0903138-036	3/24/2009	5.5	--	--	--	--	--	--	--
S-1-10-d	0 - 0.5	0903138-037	3/24/2009	**150**	**8.3**	**52**	0.20	--	--	--	--
S-1-10-d	0.5 - 1.0	0903138-038	3/24/2009	25	--	--	--	--	--	--	--
S-1-10-d	1.0 - 1.5	0903138-039	3/24/2009	6	--	--	--	--	--	--	--
S-1-10-d	1.5 - 2.0	0903138-040	3/24/2009	5.8	--	--	--	--	--	--	--
S-1-10-d	2.5 - 3.0	0903138-041	3/24/2009	9.5	--	--	--	--	--	--	--
S-1-11	0 - 0.5	0903138-042	3/24/2009	**86**	**8.9**	**56**	--	--	--	--	--
S-1-11	0.5 - 1.0	0903138-043	3/24/2009	1	--	--	--	--	--	--	--
S-1-11	1.0 - 1.5	0903138-044	3/24/2009	1	--	--	--	--	--	--	--

Boring Sample Location ID	Sample Depth (feet)	Lab Sample ID	Sample Date	Lead (Total)	Lead (DI-STLC)	Lead (STLC)	Lead (TCLP)	Chromium (STLC)	Chromium (TCLP)	Chromium (hexavalent)	Nickel (STLC)
		EPA Method		6010B	6010B	6010B	6010B	6010B	6010B	SW7199	6010B
		Units		mg/Kg	mg/L	mg/L	mg/L	mg/L	mg/L	mg/Kg	mg/L
		STLC		50	5.0	5.0		5 (560)		5	20
		TCLP		100	--	--	5.0	--	5	5	--
S-1-11	1.5 - 2.0	0903138-045	3/24/2009	7.7	--	--	--	--	--	--	--
S-1-11	2.5 - 3.0	0903138-046	3/24/2009	5.2	--	--	--	--	--	--	--
S-1-12	0 - 0.5	0903138-047	3/24/2009	**290**	**10**	**23**	1.0	--	--	--	--
S-1-12	0.5 - 1.0	0903138-048	3/24/2009	**900**	**5.4**	**60**	<0.10	--	--	--	--
S-1-12	1.0 - 1.5	0903138-049	3/24/2009	12	--	--	--	--	--	--	--
S-1-12	1.5 - 2.0	0903138-050	3/24/2009	7	--	--	--	--	--	--	--
S-1-12	2.5 - 3.0	0903138-051	3/24/2009	5.4	--	--	--	--	--	--	--
S-1-13	0 - 0.5	0903138-052	3/24/2009	**420**	**2.4**	**10**	<0.10	--	--	--	--
S-1-13	0.5 - 1.0	0903138-053	3/24/2009	**59**	**3.8**	**66**	--	--	--	--	--
S-1-13	1.0 - 1.5	0903138-054	3/24/2009	7.7	--	--	--	--	--	--	--
S-1-13	1.5 - 2.0	0903138-055	3/24/2009	3	--	--	--	--	--	--	--
S-1-13	2.5 - 3.0	0903138-056	3/24/2009	2.4	--	--	--	--	--	--	--
S-1-14	0 - 0.5	0903138-057	3/24/2009	28	--	--	--	0.37	--	--	--
S-1-14	0.5 - 1.0	0903138-058	3/24/2009	**320**	**44**	**5.8**	0.39	0.38	--	--	--
S-1-14	1.0 - 1.5	0903138-059	3/24/2009	2.8	--	--	--	--	--	--	--
S-1-14	1.5 - 2.0	0903138-060	3/24/2009	4.4	--	--	--	--	--	--	--
S-1-14	2.5 - 3.0	0903138-061	3/24/2009	7.4	--	--	--	0.10	--	<0.020	--
S-1-15	0 - 0.5	0903138-062	3/24/2009	**470**	**12**	**38**	0.22	--	--	--	--
S-1-15	0.5 - 1.0	0903138-063	3/24/2009	**420**	**5.1**	**28**	<0.10	--	--	--	--
S-1-15	1.0 - 1.5	0903138-064	3/24/2009	49	--	--	--	--	--	--	--
S-1-15	1.5 - 2.0	0903138-065	3/24/2009	**68**	0.33	1.6	--	--	--	--	--
S-1-15	2.5 - 3.0	0903138-066	3/24/2009	7.9	--	--	--	--	--	--	--
S-1-16	0 - 0.5	0903138-067	3/24/2009	**260**	**1.4**	**17**	<0.10	--	--	--	--
S-1-16	0.5 - 1.0	0903138-068	3/24/2009	**280**	**3.9**	**41**	0.15	--	--	--	--
S-1-16	1.0 - 1.5	0903138-069	3/24/2009	**280**	**6.1**	4.8	<0.10	--	--	--	--
S-1-16	1.5 - 2.0	0903138-070	3/24/2009	5.6	--	--	--	--	--	--	--
S-1-16	2.5 - 3.0	0903138-071	3/24/2009	5.1	--	--	--	--	--	--	--

Boring Sample Location ID	Sample Depth (feet)	Lab Sample ID	Sample Date	Lead (Total)	Lead (DI-STLC)	Lead (STLC)	Lead (TCLP)	Chromium (STLC)	Chromium (TCLP)	Chromium (hexavalent)	Nickel (STLC)
		EPA Method		6010B	6010B	6010B	6010B	6010B	6010B	SW7199	6010B
		Units		mg/Kg	mg/L	mg/L	mg/L	mg/L	mg/L	mg/Kg	mg/L
		STLC		50	5.0	5.0		5 (560)		5	20
		TCLP		100	--	--	5.0	--	5	5	--
S-1-17	0 - 0.5	0903138-072	3/24/2009	**640**	**15**	**24**	<0.10	--	--	--	--
S-1-17	0.5 - 1.0	0903138-073	3/24/2009	**920**	**34**	**44**	<0.10	--	--	--	--
S-1-17	1.0 - 1.5	0903138-074	3/24/2009	2.8	--	--	--	--	--	--	--
S-1-17	1.5 - 2.0	0903138-075	3/24/2009	3	--	--	--	--	--	--	--
S-1-17	2.5 - 3.0	0903138-076	3/24/2009	6.9	--	--	--	--	--	--	--
S-1-18	0 - 0.5	0903154-081	3/24/2009	**750**	**19**	**44**	<0.10	--	--	--	--
S-1-18	0.5 - 1.0	0903154-082	3/24/2009	**740**	**0.88**	**8.5**	<0.10	--	--	--	--
S-1-18	1.0 - 1.5	0903154-083	3/24/2009	4.8	--	--	--	--	--	--	--
S-1-18	1.5 - 2.0	0903154-084	3/24/2009	5.4	--	--	--	--	--	--	--
S-1-18	2.5 - 3.0	0903154-085	3/24/2009	5.3	--	--	--	--	--	--	--
S-1-19	0 - 0.5	0903154-087	3/24/2009	**220**	**16**	**27**	0.25	--	--	--	--
S-1-19	0.5 - 1.0	0903154-088	3/24/2009	1.6	--	--	--	--	--	--	--
S-1-19	1.0 - 1.5	0903154-089	3/24/2009	2.2	--	--	--	--	--	--	--
S-1-19	1.5 - 2.0	0903154-090	3/24/2009	6.7	--	--	--	--	--	--	--
S-1-19	2.5 - 3.0	0903154-091	3/24/2009	7.6	--	--	--	--	--	--	--
S-1-20	0 - 0.5	0903154-107	3/24/2009	**680**	**20**	**44**	0.13	--	--	--	--
S-1-20	0.5 - 1.0	0903154-108	3/24/2009	15	--	--	--	--	--	--	--
S-1-20	1.0 - 1.5	0903154-109	3/24/2009	5.8	--	--	--	--	--	--	--
S-1-20	1.5 - 2.0	0903154-110	3/24/2009	8.4	--	--	--	--	--	--	--
S-1-20	2.5 - 3.0	0903154-111	3/24/2009	3.4	--	--	--	--	--	--	--
From San Antonio Road to Amphitheater Pkwy											
S-2-1	0 - 0.5	0903154-092	3/24/2009	**820**	**10**	**32**	<0.10	--	--	--	--
S-2-1	0.5 - 1.0	0903154-093	3/24/2009	6.2	--	--	--	--	--	--	--
S-2-1	1.0 - 1.5	0903154-094	3/24/2009	23	--	--	--	--	--	--	--
S-2-1	1.5 - 2.0	0903154-095	3/24/2009	3.8	--	--	--	--	--	--	--
S-2-1	2.5 - 3.0	0903154-096	3/24/2009	3.6	--	--	--	--	--	--	--
S-2-2	0 - 0.5	0903154-097	3/24/2009	**410**	<0.10	**6.2**	<0.10	--	--	--	--
S-2-2	0.5 - 1.0	0903154-098	3/24/2009	**40**	--	--	--	--	--	--	--
S-2-2	1.0 - 1.5	0903154-099	3/24/2009	2.9	--	--	--	--	--	--	--
S-2-2	1.5 - 2.0	0903154-100	3/24/2009	2.4	--	--	--	--	--	--	--
S-2-2	2.5 - 3.0	0903154-101	3/24/2009	1.9	--	--	--	--	--	--	--
S-2-2-D	0 - 0.5	0903154-102	3/24/2009	**630**	<0.10	**14**	<0.10	--	--	--	--

Boring Sample Location ID	Sample Depth (feet)	Lab Sample ID	Sample Date	Lead (Total)	Lead (DI-STLC)	Lead (STLC)	Lead (TCLP)	Chromium (STLC)	Chromium (TCLP)	Chromium (hexavalent)	Nickel (STLC)
		EPA Method		6010B	6010B	6010B	6010B	6010B	6010B	SW7199	6010B
		Units		mg/Kg	mg/L	mg/L	mg/L	mg/L	mg/L	mg/Kg	mg/L
		STLC		50	5.0	5.0		5 (560)		5	20
		TCLP		100	--	--	5.0	--	5	5	--
S-2-2-D	0.5 - 1.0	0903154-103	3/24/2009	3.9	--	--	--	--	--	--	--
S-2-2-D	1.0 - 1.5	0903154-104	3/24/2009	2.6	--	--	--	--	--	--	--
S-2-2-D	1.5 - 2.0	0903154-105	3/24/2009	2.2	--	--	--	--	--	--	--
S-2-2-D	2.5 - 3.0	0903154-106	3/24/2009	2.2	--	--	--	--	--	--	--
S-2-3	0 - 0.5	0904088-011	4/13/2009	**200**	<0.10	2.4	<0.10	--	--	--	--
S-2-3	0.5 - 1.0	0904088-012	4/13/2009	**110**	<0.10	0.51	<0.10	--	--	--	--
S-2-3	1.0 - 1.5	0904088-013	4/13/2009	8.6	--	--	--	--	--	--	--
S-2-3	1.5 - 2.0	0904088-014	4/13/2009	3.4	--	--	--	--	--	--	--
S-2-3	2.5 - 3.0	0904088-015	4/13/2009	2.9	--	--	--	--	--	--	--
S-2-4	0 - 0.5	0903154-001	3/24/2009	**1000**	**46**	**71**	2.2	--	--	--	--
S-2-4	0.5 - 1.0	0903154-002	3/24/2009	6.2	--	--	--	--	--	--	--
S-2-4	1.0 - 1.5	0903154-003	3/24/2009	2.6	--	--	--	--	--	--	--
S-2-4	1.5 - 2.0	0903154-004	3/24/2009	41	--	--	--	--	--	--	--
S-2-4	2.5 - 3.0	0903154-005	3/24/2009	4.1	--	--	--	--	--	--	--
S-2-5	0 - 0.5	0903154-071	3/24/2009	**68**	**1.6**	0.39	--	--	--	--	--
S-2-5	0.5 - 1.0	0903154-072	3/24/2009	9.2	--	--	--	--	--	--	--
S-2-5	1.0 - 1.5	0903154-073	3/24/2009	5.0	--	--	--	--	--	--	--
S-2-5	1.5 - 2.0	0903154-074	3/24/2009	10	--	--	--	--	--	--	--
S-2-5	2.5 - 3.0	0903154-075	3/24/2009	9.8	--	--	--	--	--	--	--
S-2-6	0 - 0.5	0903154-061	3/24/2009	**490**	**34**	**37**	<0.10	--	--	--	--
S-2-6	0.5 - 1.0	0903154-062	3/24/2009	**110**	<0.10	0.37	<0.10	--	--	--	--
S-2-6	1.0 - 1.5	0903154-063	3/24/2009	2.8	--	--	--	--	--	--	--
S-2-6	1.5 - 2.0	0903154-064	3/24/2009	3.4	--	--	--	--	--	--	--
S-2-6	2.5 - 3.0	0903154-065	3/24/2009	2.9	--	--	--	--	--	--	--
S-2-7	0 - 0.5	0903154-006	3/24/2009	**300**	**6.2**	**7.0**	0.33	--	--	--	--
S-2-7	0.5 - 1.0	0903154-007	3/24/2009	3.7	--	--	--	0.14	--	--	--
S-2-7	1.0 - 1.5	0903154-008	3/24/2009	1.2	--	--	--	--	--	--	--
S-2-7	1.5 - 2.0	0903154-009	3/24/2009	5	--	--	--	0.15	--	--	--
S-2-7	2.5 - 3.0	0903154-010	3/24/2009	4.9				--	--	--	--
S-2-8	0 - 0.5	0903154-016	3/24/2009	**900**	**29**	**33**	0.34	--	--	--	--
S-2-8	0.5 - 1.0	0903154-017	3/24/2009	**210**	**11**	3.9	<0.10	--	--	--	--
S-2-8	1.0 - 1.5	0903154-018	3/24/2009	9.6	--	--	--	--	--	--	--
S-2-8	1.5 - 2.0	0903154-019	3/24/2009	9.9	--	--	--	--	--	--	--
S-2-8	2.5 - 3.0	0903154-020	3/24/2009	6	--	--	--	--	--	--	--
S-2-9	0 - 0.5	0903154-011	3/24/2009	**560**	**18**	**7.2**	<0.10	--	--	--	--

Boring Sample Location ID	Sample Depth (feet)	Lab Sample ID	Sample Date	Lead (Total)	Lead (DI-STLC)	Lead (STLC)	Lead (TCLP)	Chromium (STLC)	Chromium (TCLP)	Chromium (hexavalent)	Nickel (STLC)
		EPA Method		6010B	6010B	6010B	6010B	6010B	6010B	SW7199	6010B
		Units		mg/Kg	mg/L	mg/L	mg/L	mg/L	mg/L	mg/Kg	mg/L
		STLC		50	5.0	5.0		5 (560)		5	20
		TCLP		100	--	--	5.0	--	5	5	--
S-2-9	0.5 - 1.0	0903154-012	3/24/2009	**59**	**24**	**17**	--	--	--	--	--
S-2-9	1.0 - 1.5	0903154-013	3/24/2009	8	--	--	--	--	--	--	--
S-2-9	1.5 - 2.0	0903154-014	3/24/2009	10	--	--	--	--	--	--	--
S-2-9	2.5 - 3.0	0903154-015	3/24/2009	4.4	--	--	--	--	--	--	--
S-2-10	0 - 0.5	0903154-026	3/24/2009	**210**	**7.7**	**6.0**	<0.10	--	--	--	--
S-2-10	0.5 - 1.0	0903154-027	3/24/2009	9.8	--	--	--	--	--	--	--
S-2-10	1.0 - 1.5	0903154-028	3/24/2009	4.7	--	--	--	--	--	--	--
S-2-10	1.5 - 2.0	0903154-029	3/24/2009	2.4	--	--	--	--	--	--	--
S-2-10	2.5 - 3.0	0903154-030	3/24/2009	1.5	--	--	--	--	--	--	--
From Amphitheater to State Route 85											
S-3-1	0 - 0.5	0903154-021	3/24/2009	**920**	**9.1**	**18**	0.13	--	--	--	--
S-3-1	0.5 - 1.0	0903154-022	3/24/2009	2	--	--	--	--	--	--	--
S-3-1	1.0 - 1.5	0903154-023	3/24/2009	1.7	--	--	--	--	--	--	--
S-3-1	1.5 - 2.0	0903154-024	3/24/2009	38	--	--	--	--	--	--	--
S-3-1	2.5 - 3.0	0903154-025	3/24/2009	3.3	--	--	--	--	--	--	--
S-3-2	0 - 0.5	0904073-045	4/12/2009	**54**	**1.3**	0.35	--	--	--	--	--
S-3-2	0.5 - 1.0	0904073-046	4/12/2009	**76**	<0.10	0.51	--	--	--	--	--
S-3-2	1.0 - 1.5	0904073-047	4/12/2009	27	--	--	--	--	--	--	--
S-3-2	1.5 - 2.0	0904073-001	4/12/2009	32	--	--	--	--	--	--	--
S-3-2	2.5 - 3.0	0904073-002	4/12/2009	**50**	<0.10	2.7	--	--	--	--	--
S-3-3	0 - 0.5	0903154-031	3/24/2009	**9700**	**43**	**100**	**9.0**	--	--	--	--
S-3-3	0.5 - 1.0	0903154-032	3/24/2009	**100**	**4.1**	1.0	<0.10	--	--	--	--
S-3-3	1.0 - 1.5	0903154-033	3/24/2009	2.2	--	--	--	--	--	--	--
S-3-3	1.5 - 2.0	0903154-034	3/24/2009	2.1	--	--	--	--	--	--	--
S-3-3	2.5 - 3.0	0903154-035	3/24/2009	6	--	--	--	--	--	--	--
S-3-4	0 - 0.5	0903154-036	3/24/2009	**150**	**1.8**	4.5	<0.10	--	--	--	--
S-3-4	0.5 - 1.0	0903154-037	3/24/2009	5.4	--	--	--	--	--	--	--
S-3-4	1.0 - 1.5	0903154-038	3/24/2009	4.2	--	--	--	--	--	--	--
S-3-4	1.5 - 2.0	0903154-039	3/24/2009	1.9	--	--	--	--	--	--	--
S-3-4	2.5 - 3.0	0903154-040	3/24/2009	2.5	--	--	--	--	--	--	--
S-3-5	0 - 0.5	0903154-041	3/25/2009	**410**	**7.1**	**22**	<0.10	--	--	--	--
S-3-5	0.5 - 1.0	0903154-042	3/25/2009	**56**	NE*	NE*	--	--	--	--	--
S-3-5	1.0 - 1.5	0903154-043	3/25/2009	10	--	--	--	--	--	--	--
S-3-5	1.5 - 2.0	0903154-044	3/25/2009	9.2	--	--	--	--	--	--	--

Boring Sample Location ID	Sample Depth (feet)	Lab Sample ID	Sample Date	Lead (Total)	Lead (DI-STLC)	Lead (STLC)	Lead (TCLP)	Chromium (STLC)	Chromium (TCLP)	Chromium (hexavalent)	Nickel (STLC)
		EPA Method		6010B	6010B	6010B	6010B	6010B	6010B	SW7199	6010B
		Units		mg/Kg	mg/L	mg/L	mg/L	mg/L	mg/L	mg/Kg	mg/L
		STLC		50	5.0	5.0		5 (560)		5	20
		TCLP		100	--	--	5.0	--	5	5	--
S-3-5	2.5 - 3.0	0903154-045	3/25/2009	2.9	--	--	--	--	--	--	--
S-3-6	0 - 0.5	0903154-046	3/25/2009	**98**	NE*	**14**	--	--	--	--	--
S-3-6	0.5 - 1.0	0903154-047	3/25/2009	**210**	**8.3**	**64**	0.62	--	--	--	--
S-3-6	1.0 - 1.5	0903154-048	3/25/2009	35	--	--	--	--	--	--	--
S-3-6	1.5 - 2.0	0903154-049	3/25/2009	**140**	**7.9**	**10**	0.24	--	--	--	--
S-3-6	2.5 - 3.0	0903154-050	3/25/2009	5.1	--	--	--	--	--	--	--
S-3-7	0 - 0.5	0903154-051	3/25/2009	**150**	**16**	**9.5**	0.96	--	--	--	--
S-3-7	0.5 - 1.0	0903154-052	3/25/2009	47	--	--	--	--	--	--	--
S-3-7	1.0 - 1.5	0903154-053	3/25/2009	7.3	--	--	--	--	--	--	--
S-3-7	1.5 - 2.0	0903154-054	3/25/2009	4	--	--	--	--	--	--	--
S-3-7	2.5 - 3.0	0903154-055	3/25/2009	6.1	--	--	--	--	--	--	--
S-3-8	0 - 0.5	0903154-076	3/25/2009	32	--	--	--	--	--	--	--
S-3-8	0.5 - 1.0	0903154-077	3/25/2009	17	--	--	--	--	--	--	--
S-3-8	1.0 - 1.5	0903154-078	3/25/2009	7.8	--	--	--	--	--	--	--
S-3-8	1.5 - 2.0	0903154-079	3/25/2009	5.5	--	--	--	--	--	--	--
S-3-8	2.5 - 3.0	0903154-080	3/25/2009	4.8	--	--	--	--	--	--	--
S-3-9	0 - 0.5	0903154-066	3/25/2009	17	--	--	--	--	--	--	--
S-3-9	0.5 - 1.0	0903154-067	3/25/2009	5.4	--	--	--	--	--	--	--
S-3-9	1.0 - 1.5	0903154-068	3/25/2009	4.8	--	--	--	--	--	--	--
S-3-9	1.5 - 2.0	0903154-069	3/25/2009	4.1	--	--	--	--	--	--	--
S-3-9	2.5 - 3.0	0903154-070	3/25/2009	4	--	--	--	--	--	--	--
S-3-10	0 - 0.5	0903154-056	3/25/2009	**2200**	**50**	**10**	1.2	--	--	--	--
S-3-10	0.5 - 1.0	0903154-057	3/25/2009	11	--	--	--	--	--	--	--
S-3-10	1.0 - 1.5	0903154-058	3/25/2009	9.4	--	--	--	--	--	--	--
S-3-10	1.5 - 2.0	0903154-059	3/25/2009	4.1	--	--	--	--	--	--	--
S-3-10	2.5 - 3.0	0903154-060	3/25/2009	12	--	--	--	--	--	--	--
S-3-11	0 - 0.5	0904073-035	4/12/2009	**97**	**6.0**	4.5	--	--	--	--	--
S-3-11	0.5 - 1.0	0904073-036	4/12/2009	**860**	<0.10	**23**	<0.10	--	--	--	--
S-3-11	1.0 - 1.5	0904073-037	4/12/2009	**970**	**3.9**	**37**	0.62	0.21	--	--	--
S-3-11	1.5 - 2.0	0904073-038	4/12/2009	18	--	--	--	0.18	--	--	--
S-3-11	2.5 - 3.0	0904073-039	4/12/2009	7.3	--	--	--	0.18	--	--	--
S-3-11-D	0 - 0.5	0904073-040	4/12/2009	**63**	<0.10	0.19	--	--	--	--	--
S-3-11-D	0.5 - 1.0	0904073-021	4/12/2009	**260**	**25**	**27**	NE*	--	--	--	--
S-3-11-D	1.0 - 1.5	0904073-022	4/12/2009	**220**	**3.0**	**5.3**	0.15	0.22	--	--	--
S-3-11-D	1.5 - 2.0	0904073-023	4/12/2009	**52**	<0.10	0.83	--	0.19	--	--	--

Boring Sample Location ID	Sample Depth (feet)	Lab Sample ID	Sample Date	Lead (Total)	Lead (DI-STLC)	Lead (STLC)	Lead (TCLP)	Chromium (STLC)	Chromium (TCLP)	Chromium (hexavalent)	Nickel (STLC)
		EPA Method		6010B	6010B	6010B	6010B	6010B	6010B	SW7199	6010B
		Units		mg/Kg	mg/L	mg/L	mg/L	mg/L	mg/L	mg/Kg	mg/L
		STLC		50	5.0	5.0		5 (560)		5	20
		TCLP		100	--	--	5.0	--	5	5	--
S-3-11-D	2.5 - 3.0	0904073-024	4/12/2009	19	--	--	--	0.19	--	--	--
S-3-12	0 - 0.5	0904073-003	4/12/2009	34	--	--	--	--	--	--	--
S-3-12	0.5 - 1.0	0904073-004	4/12/2009	35	--	--	--	--	--	--	--
S-3-12	1.0 - 1.5	0904073-005	4/12/2009	4.8	--	--	--	--	--	--	--
S-3-12	1.5 - 2.0	0904073-006	4/12/2009	5.8	--	--	--	--	--	--	--
S-3-12	2.5 - 3.0	0904073-007	4/12/2009	3.8	--	--	--	--	--	--	--
S-3-12-D	0 - 0.5	0904073-008	4/12/2009	**59**	<0.10	0.19	--	--	--	--	--
S-3-12-D	0.5 - 1.0	0904073-009	4/12/2009	4.4	--	--	--	--	--	--	--
S-3-12-D	1.0 - 1.5	0904073-010	4/12/2009	5	--	--	--	--	--	--	--
S-3-12-D	1.5 - 2.0	0904074-001	4/13/2009	7	--	--	--	--	--	--	--
S-3-12-D	2.5 - 3.0	0904074-002	4/13/2009	5.2	--	--	--	--	--	--	--
S-3-13	0 - 0.5	0904073-030	4/12/2009	**1400**	<0.10	0.15	1.6	--	--	--	--
S-3-13	0.5 - 1.0	0904073-011	4/12/2009	26	--	--	--	--	--	--	--
S-3-13	1.0 - 1.5	0904073-012	4/12/2009	33	--	--	--	--	--	--	--
S-3-13	1.5 - 2.0	0904073-013	4/12/2009	3.6	--	--	--	--	--	--	--
S-3-13	2.5 - 3.0	0904073-014	4/12/2009	39	--	--	--	--	--	--	--
S-3-14	0 - 0.5	0904073-015	4/12/2009	**64**	<0.10	0.23	--	--	--	--	--
S-3-14	0.5 - 1.0	0904073-016	4/12/2009	**58**	<0.10	0.24	--	--	--	--	--
S-3-14	1.0 - 1.5	0904073-017	4/12/2009	**61**	<0.10	0.24	--	--	--	--	--
S-3-14	1.5 - 2.0	0904073-018	4/12/2009	**64**	<0.10	0.18	--	--	--	--	--
S-3-14	2.5 - 3.0	0904073-019	4/12/2009	**55**	**1.6**	0.62	--	--	--	--	--

Notes:
EPA = US Environmental Protection Agency
mg/L = milligrams per liter
mg/Kg = milligrams per kilogram
STLC = Soluble Threshold Limits Concentrations
TCLP = Toxicity Characteristic Leaching Procedure
NE = Not Established
-- = sample not analyzed for specified analyte
Bold indicates value exceeds Criteria
The symbol "<" (less than) indicates that the analyte was not detected at a concentration above the laboratory detection limit specified.
EPA = US Environmental Protection Agency
NE* Due to insufficient sample mass available, no extraction was performed on requested sample.

Boring Sample Location ID	Sample Depth (feet)	Lab Sample ID	Sample Date	pH	TPH-g	BTEX	5 Gas Oxygenates	Other VOCs	Methylene Chloride	TPH-d	TPH-mo	PCBs	Other OCPs	4,4-DDD	4,4-DDE	4,4-DDT	alpha-Chlordane	Dieldrin	gamma-Chlordane	Asbestos
		EPA Method		9045C	8260B	8260B	8260B	8260B	8260B	8015B	8015B	6010B	8081A	8081A	8081A	8081A	8081A	8081A	8081A	600/R-93/116*
		Units		pH units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	mg/Kg	mg/Kg	mg/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	%
		10 x STLC		NE	NE	varies	varies	varies	NE	NE	NE	varies	varies	1,000	1,000	1,000	NE	8,000	NE	NE
		10 x TCLP		NE	NE	varies	varies	varies	NE	NE	NE	varies	varies	NE	NE	NE	NE	NE	NE	NE
Northbound																				
From Embarcadero Road to San Antonio Road																				
N-1-2	0 - 0.5	0904088-001	4/13/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
N-1-2	0.5 - 1.0	0904088-002	4/13/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
N-1-2	1.0 - 1.5	0904088-003	4/13/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
N-1-2	1.5 - 2.0	0904088-004	4/13/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
N-1-2	2.5 - 3.0	0904088-005	4/13/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
N-1-4	0 - 0.5	0903138-022	3/24/2009	7.76	--	--	--	--	--	<10.0	259	ND	ND	11.6 J	<9.52	62.1	18.5 J	16.9 J	18.6 J	--
N-1-4	0.5 - 1.0	0903138-023	3/24/2009	8.24	<100	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-4	1.0 - 1.5	0903138-024	3/24/2009	8.31	<100	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-4	1.5 - 2.0	0903138-025	3/24/2009	7.94	<100	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-4	2.0 - 2.5	0903138-026	3/24/2009	8.06	<100	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-7	0 - 0.5	0903138-007	3/23/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.25% Chrysotile
N-1-7	0.5 - 1.0	0903138-008	3/23/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
N-1-7	1.0 - 1.5	0903138-009	3/23/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
N-1-7	1.5 - 2.0	0903138-010	3/23/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
N-1-7	2.5 - 3.0	0903138-011	3/23/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
N-1-11	0 - 0.5	0903131-061	3/23/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
N-1-11	0.5 - 1.0	0903131-062	3/23/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
N-1-11	1.0 - 1.5	0903131-063	3/23/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
N-1-11	1.5 - 2.0	0903131-064	3/23/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
N-1-11	2.5 - 3.0	0903131-065	3/23/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
N-1-14	0 - 0.5	0903131-036	3/23/2009	7.98	--	--	--	--	--	<200	2,880	ND	ND	<18.8	<19.0	<32.4	<14.3	<17.1	<16.8	--
N-1-14	0.5 - 1.0	0903131-037	3/23/2009	8.27	<100	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-14	1.0 - 1.5	0903131-038	3/23/2009	8.26	<100	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-14	1.5 - 2.0	0903131-039	3/23/2009	8.57	<100	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-14	2.5 - 3.0	0903131-040	3/23/2009	7.96	<100	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
N-1-15	0 - 0.5	0903131-031	3/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.25% Chrysotile
N-1-15	0.5 - 1.0	0903131-032	3/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.25% Chrysotile
N-1-15	1.0 - 1.5	0903131-033	3/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
N-1-15	1.5 - 2.0	0903131-034	3/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
N-1-15	2.5 - 3.0	0903131-035	3/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
N-1-20	0 - 0.5	0903131-006	3/22/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
N-1-20	0.5 - 1.0	0903131-007	3/22/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
N-1-20	1.0 - 1.5	0903131-008	3/22/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.25% Chrysotile
N-1-20	1.5 - 2.0	0903131-009	3/22/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
N-1-20	2.5 - 3.0	0903131-010	3/22/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
From San Antonio Road to Amphitheater Pkwy																				
N-2-2	0 - 0.5	0903131-011	3/22/2009	--	--	--	--	--	--	<2.00	16.8	ND	ND	<2.00	<2.00	<2.00	<2.00	<2.00	<2.00	--
N-2-2	0.5 - 1.0	0903131-012	3/22/2009	--	<100	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--

Boring Sample Location ID	Sample Depth (feet)	Lab Sample ID	Sample Date	pH	TPH-g	BTEX	5 Gas Oxygenates	Other VOCs	Methylene Chloride	TPH-d	TPH-mo	PCBs	Other OCPs	4,4-DDD	4,4-DDE	4,4-DDT	alpha-Chlordane	Dieldrin	gamma-Chlordane	Asbestos
		EPA Method		9045C	8260B	8260B	8260B	8260B	8260B	8015B	8015B	6010B	8081A	8081A	8081A	8081A	8081A	8081A	8081A	600/R-93/116*
		Units		pH units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	mg/Kg	mg/Kg	mg/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	%
		10 x STLC		NE	NE	varies	varies	varies	NE	NE	NE	varies	varies	1,000	1,000	1,000	NE	8,000	NE	NE
		10 x TCLP		NE	NE	varies	varies	varies	NE	NE	NE	varies	varies	NE	NE	NE	NE	NE	NE	NE
N-2-2	1.0 - 1.5	0903131-013	3/22/2009	--	<100	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-2	1.5 - 2.0	0903131-014	3/22/2009	--	<100	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-2	2.5 - 3.0	0903131-015	3/22/2009	--	<100	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
N-2-6	0 - 0.5	0903161-011	3/26/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
N-2-6	0.5 - 1.0	0903161-012	3/26/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
N-2-6	1.0 - 1.5	0903161-013	3/26/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
N-2-6	1.5 - 2.0	0903161-014	3/26/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
N-2-6	2.5 - 3.0	0903161-015	3/26/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
N-2-11	0 - 0.5	0903161-026	3/26/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
N-2-11	0.5 - 1.0	0903161-027	3/26/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.50% Chrysotile
N-2-11	1.0 - 1.5	0903161-028	3/26/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
N-2-11	1.5 - 2.0	0903161-029	3/26/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
N-2-11	2.5 - 3.0	0903161-030	3/26/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
N-1	0 - 0.5	1003038-001	3/5/2010	--	<17	ND	ND	ND	<2.0	<1.52	140	--	--	--	--	--	--	--	--	--
N-1	6.5-7.0	1003038-004	3/5/2010	--	<17	ND	ND	ND	12	<0.759	6.7	--	--	--	--	--	--	--	--	--
From Amphitheater Pkwy to State Route 85																				
N-3-1	0 - 0.5	0904074-034	4/13/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
N-3-1	0.5 - 1.0	0904074-007	4/13/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
N-3-1	1.0 - 1.5	0904074-008	4/13/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
N-3-1	1.5 - 2.0	0904074-009	4/13/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
N-3-1	2.5 - 3.0	0904074-010	4/13/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
N-3-5	0 - 0.5	0903160-011	3/25/2009	8.48	--	--	--	--	--	<50.0	1,380	ND	ND	<9.40	<9.52	<16.2	<7.16	<8.54	<8.40	--
N-3-5	0.5 - 1.0	0903160-012	3/25/2009	8.42	<100	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-5	1.0 - 1.5	0903160-013	3/25/2009	7.63	<100	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-5	1.5 - 2.0	0903160-014	3/25/2009	8.46	<100	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-5	2.5 - 3.0	0903160-015	3/25/2009	7.9	<100	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
N-3-9	0 - 0.5	0904074-003	4/13/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
N-3-9	0.5 - 1.0	0904074-004	4/13/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
N-3-10	0.5 - 1.0	0904073-041	4/12/2009	8.02	<100	ND	ND	ND	<2.0	<100	3,540	ND	ND	<18.8	<19.0	<32.4	<14.3	<17.1	<16.8	--
N-3-10	2.5 - 3.0	0904073-042	4/12/2009	8.19	<100	ND	ND	ND	<2.0	<4.00	142	ND	ND	<9.40	<9.52	<16.2	<7.16	<8.54	<8.40	--
N-3-10	5.5 - 6.0	0904073-043	4/12/2009	8.59	<100	ND	ND	ND	<2.0	<2.00	11.2	ND	ND	<8.00	<8.00	<8.00	<8.00	<8.00	<8.00	--

Boring Sample Location ID	Sample Depth (feet)	Lab Sample ID	Sample Date	pH	TPH-g	BTEX	5 Gas Oxygenates	Other VOCs	Methylene Chloride	TPH-d	TPH-mo	PCBs	Other OCPs	4,4-DDD	4,4-DDE	4,4-DDT	alpha-Chlordane	Dieldrin	gamma-Chlordane	Asbestos
		EPA Method		9045C	8260B	8260B	8260B	8260B	8260B	8015B	8015B	6010B	8081A	8081A	8081A	8081A	8081A	8081A	8081A	600/R-93/116*
		Units		pH units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	mg/Kg	mg/Kg	mg/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	%
		10 x STLC		NE	NE	varies	varies	varies	NE	NE	NE	varies	varies	1,000	1,000	1,000	NE	8,000	NE	NE
		10 x TCLP		NE	NE	varies	varies	varies	NE	NE	NE	varies	varies	NE	NE	NE	NE	NE	NE	NE
Southbound																				
From Embarcadero Road to San Antonio Road																				
S-1-3	0 - 0.5	0903162-016	3/25/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-1-3	0.5 - 1.0	0903162-017	3/25/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-1-3	1.0 - 1.5	0903162-018	3/25/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-1-3	1.5 - 2.0	0903162-019	3/25/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-1-3	2.5 - 3.0	0903162-020	3/25/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-1-5	0 - 0.5	0903162-026	3/25/2009	8.27	--	--	--	--	--	<4.00	242	ND	ND	<9.40	<9.52	<16.2	<7.16	<8.54	<8.40	--
S-1-5	0.5 - 1.0	0903162-027	3/25/2009	8.48	<100	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-5	1.0 - 1.5	0903162-028	3/25/2009	8.75	<100	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-5	1.5 - 2.0	0903162-029	3/25/2009	8.73	<100	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-5	2.5 - 3.0	0903162-030	3/25/2009	8.73	<100	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-6	0 - 0.5	0903162-021	3/25/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-1-6	0.5 - 1.0	0903162-022	3/25/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-1-6	1.0 - 1.5	0903162-023	3/25/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-1-6	1.5 - 2.0	0903162-024	3/25/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-1-6	2.5 - 3.0	0903162-025	3/25/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-1-10	0 - 0.5	0903138-032	3/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-1-10	0.5 - 1.0	0903138-033	3/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-1-10	1.0 - 1.5	0903138-034	3/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-1-10	1.5 - 2.0	0903138-035	3/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-1-10	2.5 - 3.0	0903138-036	3/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-1-14	0 - 0.5	0903138-057	3/24/2009	8.31	--	--	--	--	--	<20.0	730	ND	ND	<9.40	<9.52	<16.2	<7.16	<8.54	<8.40	--
S-1-14	0.5 - 1.0	0903138-058	3/24/2009	8.86	<100	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-14	1.0 - 1.5	0903138-059	3/24/2009	8.13	<100	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-14	1.5 - 2.0	0903138-060	3/24/2009	8.37	<100	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-14	2.5 - 3.0	0903138-061	3/24/2009	8.56	<100	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
S-1-15	0 - 0.5	0903138-062	3/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-1-15	0.5 - 1.0	0903138-063	3/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-1-15	1.0 - 1.5	0903138-064	3/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-1-15	1.5 - 2.0	0903138-065	3/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-1-15	2.5 - 3.0	0903138-066	3/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-1-20	0 - 0.5	0903154-107	3/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-1-20	0.5 - 1.0	0903154-108	3/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-1-20	1.0 - 1.5	0903154-109	3/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-1-20	1.5 - 2.0	0903154-110	3/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-1-20	2.5 - 3.0	0903154-111	3/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND

Boring Sample Location ID	Sample Depth (feet)	Lab Sample ID	Sample Date	pH	TPH-g	BTEX	5 Gas Oxygenates	Other VOCs	Methylene Chloride	TPH-d	TPH-mo	PCBs	Other OCPs	4,4-DDD	4,4-DDE	4,4-DDT	alpha-Chlordane	Dieldrin	gamma-Chlordane	Asbestos
		EPA Method		9045C	8260B	8260B	8260B	8260B	8260B	8015B	8015B	6010B	8081A	8081A	8081A	8081A	8081A	8081A	8081A	600/R-93/116*
		Units		pH units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	mg/Kg	mg/Kg	mg/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	%
		10 x STLC		NE	NE	varies	varies	varies	NE	NE	NE	varies	varies	1,000	1,000	1,000	NE	8,000	NE	NE
		10 x TCLP		NE	NE	varies	varies	varies	NE	NE	NE	varies	varies	NE	NE	NE	NE	NE	NE	NE
From San Antonio Road to Amphitheater Pkwy																				
S-2-5	0 - 0.5	0903154-071	3/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-2-5	0.5 - 1.0	0903154-072	3/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-2-5	1.0 - 1.5	0903154-073	3/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-2-5	1.5 - 2.0	0903154-074	3/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-2-5	2.5 - 3.0	0903154-075	3/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-2-7	0 - 0.5	0903154-006	3/24/2009	8.37	--	--	--	--	--	<50.0	2,390	ND	ND	<18.8	<19.0	<32.4	<14.3	<17.1	<16.8	--
S-2-7	0.5 - 1.0	0903154-007	3/24/2009	8.52	<100	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-7	1.0 - 1.5	0903154-008	3/24/2009	8.55	<100	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-7	1.5 - 2.0	0903154-009	3/24/2009	8.18	<100	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-7	2.5 - 3.0	0903154-010	3/24/2009	8.41	<100	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
S-2-8	0 - 0.5	0903154-016	3/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-2-8	0.5 - 1.0	0903154-017	3/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-2-8	1.0 - 1.5	0903154-018	3/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-2-8	1.5 - 2.0	0903154-019	3/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-2-8	2.5 - 3.0	0903154-020	3/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
From Amphitheater to State Route 85																				
S-3-3	0 - 0.5	0903154-031	3/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-3-3	0.5 - 1.0	0903154-032	3/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-3-3	1.0 - 1.5	0903154-033	3/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-3-3	1.5 - 2.0	0903154-034	3/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-3-3	2.5 - 3.0	0903154-035	3/24/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-3-8	0 - 0.5	0903154-076	3/25/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-3-8	0.5 - 1.0	0903154-077	3/25/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-3-8	1.0 - 1.5	0903154-078	3/25/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-3-8	1.5 - 2.0	0903154-079	3/25/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-3-8	2.5 - 3.0	0903154-080	3/25/2009	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
S-3-11	0 - 0.5	0904073-035	4/12/2009	7.88	--	--	--	--	--	3.27x	42.8	ND	ND	<8.00	<8.00	<8.00	<8.00	<8.00	<8.00	--
S-3-11	0.5 - 1.0	0904073-036	4/12/2009	7.89	<100	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-11	1.0 - 1.5	0904073-037	4/12/2009	7.97	<100	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-11	1.5 - 2.0	0904073-038	4/12/2009	7.76	<100	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-11	2.5 - 3.0	0904073-039	4/12/2009	7.79	<100	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--

Boring Sample Location ID	Sample Depth (feet)	Lab Sample ID	Sample Date	pH	TPH-g	BTEX	5 Gas Oxygenates	Other VOCs	Methylene Chloride	TPH-d	TPH-mo	PCBs	Other OCPs	4,4-DDD	4,4-DDE	4,4-DDT	alpha-Chlordane	Dieldrin	gamma-Chlordane	Asbestos
		EPA Method		9045C	8260B	8260B	8260B	8260B	8260B	8015B	8015B	6010B	8081A	8081A	8081A	8081A	8081A	8081A	8081A	600/R-93/116*
		Units		pH units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	mg/Kg	mg/Kg	mg/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	%
		10 x STLC		NE	NE	varies	varies	varies	NE	NE	NE	varies	varies	1,000	1,000	1,000	NE	8,000	NE	NE
		10 x TCLP		NE	NE	varies	varies	varies	NE	NE	NE	varies	varies	NE	NE	NE	NE	NE	NE	NE
S-3-11-D	0 - 0.5	0904073-040	4/12/2009	7.82	--	--	--	--	--	2.47x	42.8	ND	ND	<8.00	16.9	10.0	<8.00	<8.00	<8.00	--
S-3-11-D	0.5 - 1.0	0904073-021	4/12/2009	8.57	<100	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-11-D	1.0 - 1.5	0904073-022	4/12/2009	7.86	<100	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-11-D	1.5 - 2.0	0904073-023	4/12/2009	7.80	<100	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-11-D	2.5 - 3.0	0904073-024	4/12/2009	7.76	<100	ND	ND	--	--	--	--	--	--	--	--	--	--	--	--	--
S-3-12	0.5 - 1.0	0904073-004	4/12/2009	--	--	ND	ND	ND	<2.0	--	--	--	--	--	--	--	--	--	--	--
S-3-12	1.0 - 1.5	0904073-005	4/12/2009	--	--	ND	ND	ND	<2.0	--	--	--	--	--	--	--	--	--	--	--
S-3-12-D	0.5 - 1.0	0904073-009	4/12/2009	--	--	ND	ND	ND	<2.0	--	--	--	--	--	--	--	--	--	--	--
S-3-12-D	1.0 - 1.5	0904073-010	4/12/2009	--	--	ND	ND	ND	<2.0	--	--	--	--	--	--	--	--	--	--	--

Notes:
EPA = US Environmental Protection Agency
mg/Kg = milligrams per kilogram
ug/Kg = micrograms per kilogram
STLC = Soluble Threshold Limits Concentrations
TCLP = Toxicity Characteristic Leaching Procedure
NE = Not Established
-- = sample not analyzed for specified analyte
Bold indicates value exceeds 10 x STLC
The symbol "<" (less than) indicates that the analyte was not detected at a concentration above the laboratory detection limit specified.
* Asbestos samples with detections above reporting limits were further tested using EPA Method 600/R-93/116 with CARB 435 Prep (Milling) Level A for 0.25% Target Analyte Sensitivity

Boring Sample Location ID	Sample Depth (feet)	Lab Sample ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		EPA Method		6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	6010B	7471A	6010B	6010B	6010B	6010B	6010B	6010B	6010B
		Units		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		STLC		15	5	100	0.75	1	5	80	25	5	0.2	350	20	1	5	7	24	250
		TCLP		NE	5	100	NE	1	5	NE	NE	5	0.2	NE	NE	1	5	NE	NE	NE
Northbound																				
From Embarcadero Road to San Antonio Road																				
N-1-8-GW		0903138-006	3/23/09	<0.010	<0.010	0.22	<0.0050	<0.0050	0.0050	0.0060	0.020	0.025	<0.00020	0.086	0.015	<0.010	<0.0050	<0.010	0.028	0.035
N-1-GW		1003038-005	3/5/2010	<0.0040	<0.005	0.12	<0.0020	<0.001	<0.002	<0.002	<0.0030	<0.0050	<0.00005	0.024	<0.0020	<0.0040	<0.002	<0.0040	0.018	<0.0020
N-3-5-GW		0903160-016	3/25/09	<0.010	<0.010	0.88	<0.0050	0.0060	0.035	0.031	0.094	0.031	<0.00020	<0.0050	0.077	<0.010	0.014	<0.010	0.066	0.11
N-3-8-GW		0904074-005	4/12/09	<0.010	<0.010	0.10	<0.0050	<0.0050	0.0080	<0.0050	<0.010	<0.015	<0.00020	<0.0050	0.012	<0.010	<0.0050	<0.010	0.034	0.0090
N-3-10-GW		0904073-044	4/12/09	<0.010	<0.010	0.18	<0.0050	<0.0050	0.010	0.0050	<0.010	<0.015	<0.00020	0.009	0.014	<0.010	<0.0050	<0.010	0.036	0.011
Southbound																				
From Embarcadero Road to San Antonio Road																				
S-1-18-GW		0903154-086	3/24/09	0.021	<0.010	0.046	<0.0050	<0.0050	0.014	<0.0050	0.013	<0.015	<0.00020	0.12	0.016	<0.010	<0.0050	<0.010	0.089	0.026
S-3-11-GW		0904074-006	4/12/09	<0.010	<0.010	0.13	<0.0050	<0.0050	0.014	<0.0050	<0.010	<0.015	<0.00020	<0.0050	0.013	<0.010	<0.0050	<0.010	0.036	0.016

Notes:
EPA = US Environmental Protection Agency
mg/L = milligrams per Liter
STLC = Soluble Threshold Limits Concentrations
TCLP = Toxicity Characteristic Leaching Procedure
NE = Not Established
-- = sample not analyzed for specified analyte
Bold indicates value exceeds 10 x STLC
The symbol "<" (less than) indicates that the analyte was not detected at a concentration above the laboratory detection limit specified.

Boring Sample Location ID	Lab Sample ID	Sample Date	pH	TPH-g	BTEX	5 Gas Oxygenates	MTBE	TPH-d	TPH-mo	PCBs	OCPs	Other VOCs	1,1,1-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	Chloroform	Tetrachloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Trichloroethene	Trichlorofluoromethane
	EPA Method		E150.1	8260B (TPH	8260B	8260B	8260B	8015B	8015B	8082	8081A	8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B	8260B
	Units		pH units	ug/L	ug/L	ug/L	ug/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
	STLC		NE	NE	NE	NE	NE	NE	NE	varies	varies	varies	NE	NE	NE	NE	NE	NE	NE	204,000	NE
	TCLP		NE	NE	varies	NE	NE	NE	NE	varies	varies	varies	NE	NE	700	6000	700	NE	NE	500	NE
Northbound																					
From Embarcadero Road to San Antonio Road																					
N-1-8-GW	0903138-006	3/23/2009	8.47	<50	ND	ND	<0.500	<0.100	<0.200	ND	ND	--	--	--	--	--	--	--	--	--	--
N-1-GW	1003038-005	3/5/2010	--	<24	ND	ND	ND	<0.0400	<0.0900	--	--	ND	<0.37	0.79	2.4	<0.33	<0.17	1.1	<0.35	<0.43	<0.38
N-3-5-GW	0903160-016	3/25/2009	8.18	<55	ND	ND	<0.55	<0.100	<0.200	ND	ND	ND	<0.55	0.86	<1.1	<0.55	<0.55	1.75	<0.55	<0.55	<0.55
N-3-8-GW	0904074-005	4/12/2009	8.23	<50	ND	ND	<0.50	<0.100	<0.200	ND	ND	ND	<0.50	<0.50	<1.00	<0.50	<0.50	4.35	<0.50	9.90	<0.50
N-3-10-GW	0904073-044	4/12/2009	8.25	74x	ND	ND	<0.50	<0.100	<0.200	ND	ND	ND	<0.50	<0.50	<1.00	<0.50	<0.50	61.8	5.8	37.2	<0.50
Southbound																					
From Embarcadero Road to San Antonio Road																					
S-1-18-GW	0903154-086	3/24/2009	7.90	55	ND	ND	<0.55	<0.100	<0.200	ND	ND	ND	<0.55	<0.55	<1.10	<0.55	<0.55	<0.55	<0.55	<0.55	<0.55
S-2-3-GW	0904088-016	4/13/2009	--	--	ND	ND	5.15	--	--	--	--	ND	1.57	3.37	66.5	0.75	<0.50	11.5	<0.50	47.2	1.18
S-3-11-GW	0904074-006	4/12/2009	8.18	74x	ND	ND	<0.50	<0.100	<0.200	ND	ND	ND	<0.50	<0.50	<1.00	<0.50	2.80	16.0	<0.50	45.7	<0.50
S-3-13-GW	0904074-027	4/12/2009	--	--	ND	ND	<0.50	--	--	--	--	ND	<0.50	<0.50	<1.00	<0.50	1.27	39.2	1.31	87.8	<0.50
S-3-14-GW	0904074-028	4/12/2009	--	--	ND	ND	<0.50	--	--	--	--	ND	<0.50	<0.50	<1.00	<0.50	<0.50	21.3	<0.50	39.5	<0.50

Notes:
EPA = US Environmental Protection Agency
mg/L = milligrams per liter
ug/L = micrograms per liter
STLC = Soluble Threshold Limits Concentrations
TCLP = Toxicity Characteristic Leaching Procedure
NE = Not Established
-- = sample not analyzed for specified analyte
Bold indicates value exceeds 10 x STLC
The symbol "<" (less than) indicates that the analyte was not detected at a concentration above the laboratory detection limit specified.

Table 7 - Highway 101 Auxiliary Lanes Project: Summary Statistics and 95% UCL Results (Revised: 3/22/2010)

			Summary Statistics - Raw Data				Detected and Nondetect Values			Summary Statistics - Data Included Predicted Values from Regression			Goodness-of-Fit Test	Upper Confidence Limit (UCL)		
Parameter	Unit	Group	No. of Samples	Detection Rate	Mean	Std Dev	Min Detected	Max Detected	Reporting Limit of NDs	No. of Samples	Mean	Std Dev	Distribution	Method of UCL Calculation	Assessed 95% UCL	Notes
(1) Lead (Total)	mg/kg	1A	34	100%	447	608	1	2600	-	34	447	608	Gamma	95% Approximate Gamma UCL	**687**	
(1) Lead (Total)	mg/kg	1B	54	94%	20.8	45.4	1	280	1	54	20.8	45.4	Non-parametric	95% KM (Chebyshev) UCL	**48.0**	
(1) Lead (Total)	mg/kg	2A	24	100%	391	383	17	1400	-	24	391	383	Gamma	95% Approximate Gamma UCL	**583**	
(1) Lead (Total)	mg/kg	2B	104	100%	32.2	85.2	1.2	595	-	104	32.2	85.2	Non-parametric	97.5% Chebyshev (Mean, Sd) UCL	**84.4**	
(1) Lead (Total)	mg/kg	3A	42	100%	302	360	1.2	1400	-	42	302	360	Gamma	95% Adjusted Gamma UCL	**466**	
(1) Lead (Total)	mg/kg	3B	28	96%	17.2	28.1	3.2	120	1	28	17.2	28.1	Non-parametric	95% KM (Chebyshev) UCL	**40.8**	
(1) Lead (Total)	mg/kg	4A	52	100%	435	686	1.5	2600	-	52	435	686	Gamma	95% Adjusted Gamma UCL	**634**	
(1) Lead (Total)	mg/kg	4B	36	100%	15.7	27.1	2.4	120	-	36	15.7	27.1	Non-parametric	95% Chebyshev (Mean, Sd) UCL	**35.4**	
(1) Lead (Total)	mg/kg	5A	25	100%	104	176	3	750	-	25	104	176	Lognormal	95% Chebyshev (Mean, Sd) UCL	**257**	
(1) Lead (Total)	mg/kg	5B	35	94%	13.8	12.6	1.1	52	1	35	13.8	12.6	Gamma	95% KM (Chebyshev) UCL	**23.3**	
(2) Lead (STLC)	mg/L	1A	25	100%	28.2	21.8	0.4	72	-	34	20.8	22.1	Gamma	95% KM (Chebyshev) UCL	**37.6**	
(2) Lead (STLC)	mg/L	1B	8	100%	3.13	1.65	1.1	5.8	-	54	0.588	1.221	Non-parametric	95% KM (Chebyshev) UCL	**1.32**	
(2) Lead (STLC)	mg/L	2A	22	100%	15.9	18.3	0.15	71	-	24	14.6	18.0	Gamma	95% Approximate Gamma UCL	**25.2**	
(2) Lead (STLC)	mg/L	2B	16	100%	9.25	16.76	0.18	64	-	104	1.62	7.15	Non-parametric	95% KM (Chebyshev) UCL	**4.70**	
(2) Lead (STLC)	mg/L	3A	25	96%	26.5	28.2	0.1	130	0.1	42	15.9	25.3	Non-parametric	99% KM (Chebyshev) UCL	**55.2**	
(2) Lead (STLC)	mg/L	3B	3	100%	12.2	15.4	2.3	30	-	28	1.46	5.56	Non-parametric	97.5% KM (Chebyshev) UCL	**8.18**	
(2) Lead (STLC)	mg/L	4A	33	100%	36.1	47.9	0.13	190	-	52	23.1	41.3	Non-parametric	99% KM (Chebyshev) UCL	**80.6**	
(2) Lead (STLC)	mg/L	4B	3	100%	4.08	4.68	0.24	9.3	-	36	0.512	1.550	Non-parametric	97.5% KM (Chebyshev) UCL	**2.16**	
(2) Lead (STLC)	mg/L	5A	9	100%	29.2	39.4	0.22	110	-	25	10.7	26.2	Non-parametric	99% KM (Chebyshev) UCL	**64.1**	
(2) Lead (STLC)	mg/L	5B	1	100%	0.11	-	0.11	0.11	-	35	0.284	0.238	Gamma	95% KM (Percentile Bootstrap) UCL	**0.354**	
(3) Lead (DI-STLC)	mg/L	1A	25	96%	13.4	14.5	0.56	44	0.1	34	9.91	13.74	Gamma	95% KM (Chebyshev) UCL	**20.3**	
(3) Lead (DI-STLC)	mg/L	1B	8	100%	2.11	2.29	0.33	6.1	-	54	0.411	1.088	Non-parametric	95% KM (BCA) UCL	**0.695**	
(3) Lead (DI-STLC)	mg/L	2A	21	74%	11.1	12.2	1.3	46	0.1	24	9.54	12.10	Gamma	95% KM (Chebyshev) UCL	**20.6**	
(3) Lead (DI-STLC)	mg/L	2B	16	47%	5.36	6.01	1.6	24	0.1	104	0.830	3.018	Non-parametric	95% KM (BCA) UCL	**1.43**	
(3) Lead (DI-STLC)	mg/L	3A	24	46%	3.81	9.12	0.31	43	0.1	42	2.23	7.13	Non-parametric	97.5% KM (Chebyshev) UCL	**9.25**	
(3) Lead (DI-STLC)	mg/L	3B	3	100%	3.25	4.12	0.75	8	-	28	0.460	1.464	Non-parametric	97.5% KM (Chebyshev) UCL	**2.23**	
(3) Lead (DI-STLC)	mg/L	4A	33	64%	6.87	11.56	0.24	45	0.1	52	4.42	9.76	Non-parametric	97.5% KM (Chebyshev) UCL	**13.0**	
(3) Lead (DI-STLC)	mg/L	4B	3	33%	0.400	0.606	1.1	1.1	0.1	36	0.156	0.169	Non-parametric	95% KM (t) UCL	**0.205**	
(3) Lead (DI-STLC)	mg/L	5A	9	78%	7.77	12.02	0.44	37	0.1	25	2.89	8.09	Non-parametric	99% KM (Chebyshev) UCL	**19.4**	
(3) Lead (DI-STLC)	mg/L	5B	1	100%	0.76	-	0.76	0.76	-	35	0.184	0.127	Gamma	95% KM (Percentile Bootstrap) UCL	**0.224**	

Notes:

(1) If duplicates exist, the average of the duplicate results is used as a single data point.

(2) All samples collected at various depths at the same location are considered independent data points.

(3) If the dataset contains nondetects, summary statistics and UCLs are estimated by the Kaplan-Meier (KM) method when possible.

(4) Goodness-of-Fit Test at 5% significance level is used to test for distributional assumption.

(5) The distributional assumption from (4) is used to select the appropriate UCL calculation method. For normal distribution, the UCL is based on the t-statistics. For lognormal distribution, gamma distribution, and non-parametric assumption, the UCL is based on the recommendations from USEPA (2002) and Singh (2007).

(6) References:

USEPA (2002) *Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites.* Office of Emergency and Remedial Response, U.S. Environmental Protection Agency, Report No. OSWER 9285.6-10.

Singh, A., R. Maichle, A.K. Singh, and S.E. Lee. (2007) *ProUCL Version 4.0 User Guide.* Office of Research and Development, U.S. Environmental Protection Agency, Report No. EPA/600/R-07/038.

(7) Group definition:

Group 1: Southbound S-1-1 to S-1-18. 1A: (0'-0.5') and (0.5'-1'). 1B: (1.0'-1.5'), (1.5'-2'), and (2.5'-3').

Group 2: Southbound S-1-19 to S-3-14. 2A: (0'-0.5'). 2B: (0.5' through 3.0').

Group 3: Northbound N-1-1 to N-1-16. 3A: (0'-0.5'), (0.5'-1.0'), and (1.0'-1.5'). 3B: (1.5'-2.0') and (2.5'-3.0').

Group 4: Northbound N-1-17 to N-2-14. 4A: (0'-0.5'), (0.5'-1.0'), and (1.0'-1.5'). 4B: (1.5'-2.0') and (2.5'-3.0').

Group 5: Northbound N-2-15 to N-3-12. 5A: (0'-0.5') and (0.5'-1'). 5B: (1.0'-1.5'), (1.5'-2'), (2.5'-3'), and (5.5'-6.').

(8) The following locations are excluded:

N-1-4 (all depths), N-2-11 (0-0.5 & 0.5-1.0), S-1-5 (0-0.5), S-1-6 (0-0.5) S-3-3 (0-0.5), S-3-10 (0-0.5)

Table 8
Summary of Materials with No Detected Asbestos
Highway 101 Auxiliary Lane Project

LAB LOGIN #	FIELD SAMPLE #	LOCATION	MATERIAL	COLOR
L189105-1	PCB-W-01	NB 101 @ 4' Above Water	Concrete	Gray
L189105-2	PCB-W-02	NB 101-N End	Cork	Black
L189105-3	PCB-W-03	NB 101-N End	Concrete	Gray
L189105-4	PCB-W-04	NB 101-S End 10' Away From Tunnel	Concrete	Gray
L189105-5	PCB-W-05	NB 101-S End Pipe	Insulation	Black
L189105-6	PCB-W-06	NB 101-N End Pipe	Insulation	Black
L189105-7	PCB-W-07	NB 101-S End Patch	Concrete	Gray
L189105-8	PCB-W-08	NB 101-Hydro E Side	Concrete	Gray
L189105-9	PCB-W-09	NB 101-3' Pipe	Concrete	Gray
L189105-10	PCB-W-10	NB 101-Barrier Wall N End	Concrete	Gray
L189105-11	PCB-W-11	NB 101-Barrier Wall S End	Concrete	Gray
L189105-12	PCB-W-12	NB 101-Upper Tunnel S End	Concrete	Gray
L189105-13	PCB-W-13	SB 101-S End Upper Tunnel	Concrete	Gray
L189105-14	PCB-W-14	SB 101-N End Upper Tunnel	Concrete/Patch	Gray
L189105-15	PCB-W-14a	SB 101-N End Upper Tunnel	Concrete/Patch-Black Patch	Black
L189105-16	PCB-W-15	SB 101-S End	Concrete	Gray
L189105-17	PCB-W-16	SB 101-S End	Concrete	Gray
L189105-18	PCB-P-17	SB 101-S End Pipe	Concrete	Gray
L189108-1	ACB-W-01	NB 101-S End 2nd Beam	Concrete	Gray
L189108-2	ACB-W-02	NB 101-S End Trail	Concrete	Gray

LAB LOGIN #	FIELD SAMPLE #	LOCATION	MATERIAL	COLOR
L189108-3	ACB-W-03	NB 101-S End Joint	Concrete	Gray
L189108-4	ACB-W-04	NB 101-S End Expansion Joint	Cork	Black
L189108-5	ACB-P-05	NB 101-S End Pipe	Insulation	Black
L189108-6	ACB-W-06	NB 101-S End	Mastic	Black
L189108-7	ACB-W-07	SB 101-S End Trail	Paint	Brown
L189108-8	ACB-W-08	SB 101-S End Barrier Wall	Concrete	Gray
L189108-9	ACB-W-09	SB 101-S End Last Beam	Concrete	Gray
L189108-10	ACB-P-10	SB 101-S End Pipe	Insulation	Black
L189108-11	ACB-W-11	SB 101-S End Expansion Joint	Cork	Black
L189108-12	ACB-W-12	NB 101-N End 1st Beam	Concrete	Gray
L189108-13	ACB-W-13	NB 101-N End Expansion Joint	Cork	Brown
L189108-14	ACB-W-14	NB 101-N End Joint	Concrete	Gray
L189108-15	ACB-W-15	NB 101-N End 1st Beam	Concrete	Gray
L189150-1	MCB-01	NE Side of Bridge-Bottom	Concrete	Gray
L189150-2	MCB-02	NE Side of Bridge-N Side & Underneath Bridge	Expansion Joint Packing Material	Black
L189150-3	MCB-03	NE Side of Bridge-Top Of Concrete Fence Between Bridges	Concrete	Gray
L189150-4	MCB-04	NW Side of Bridge-Top Of Concrete Fence For Hwy 101	Concrete	Gray
L189150-5	MCB-05	NW Side of Bridge-Top Of Concrete Between Bridges	Concrete	Gray
L189150-6	MCB-06	NW Side of Bridge-Under Bridge, N Side	Concrete	Gray
L189150-7	MCB-07	NW Side of Bridge-Under Bridge, NE Area	Expansion Joint Packing Material	Black
L189150-8	MCB-08	NW Side of Bridge-Top Of Concrete Embankment	Concrete	Gray

LAB LOGIN #	FIELD SAMPLE #	LOCATION	MATERIAL	COLOR
L189150-9	MCB-09	NW Side of Bridge-S Joints From W Side	Expansion Joint Packing Material	Black
L189150-10	MCB-10	Middle Wall, E End-E Side, Between Bridges	Concrete	Gray
L189150-11	MCB-11	S. Embankment Wall-W Side Top Between Bridges	Concrete	Gray
L189150-12	MCB-12	S Side-Wall Between Bridges, Middle	Concrete	Gray
L189150-13	MCB-13	W Side Between Bridges-S Wall Between Bridges, Middle	Concrete	Gray
L189150-14	MCB-14	W Side Between Bridges-Embankment Between Bridges, Middle	Concrete	Gray
L189150-15	MCB-15	W Side Between Bridges-Middle Wall Between Bridges, W End	Concrete	Gray

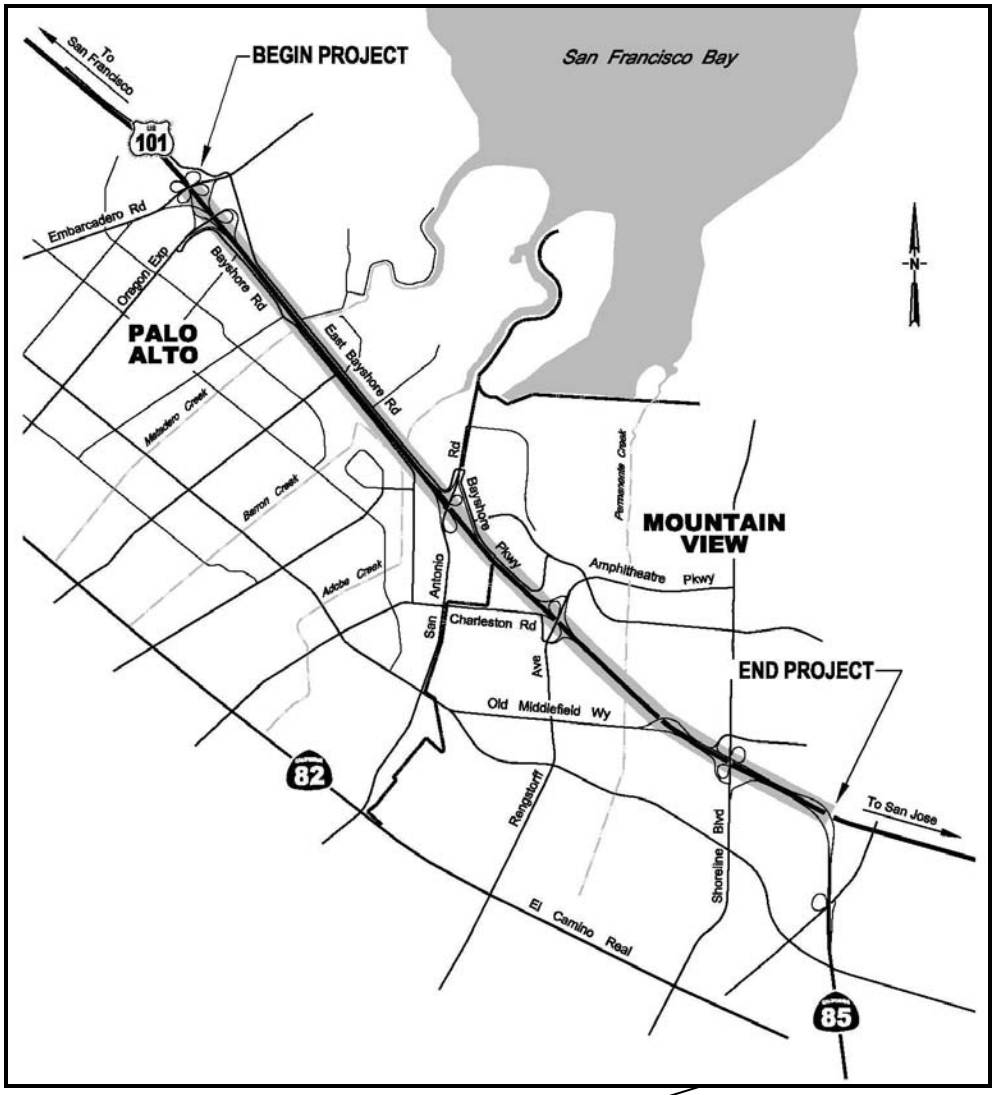
Table 9
Summary of Materials with Detected Lead
Highway 101 Auxiliary Lane Project

MATERIALS POSITIVE FOR LEAD					
LAB LOGIN #	**FIELD SAMPLE**	**LOCATION**	**MATERIAL**	**LEAD PPM**	**LEAD WT%**
P189107-1	ACB-Pb-01	NB 101-Barriers Wall S End	Concrete	113	0.0113
P189107-2	ACB-Pb-02	SB 101-Trail S Wall	Concrete	138	0.0138
P189151-2	MCB-Pb-02	E. Side Of Bridge-Flaking Paint, NE End Of Wall	Concrete	108	0.0108

Table 10
Summary of Materials with No Detected Lead
Highway 101 Auxiliary Lane Project

MATERIALS TESTED NONE DETECTED FOR LEAD			
LAB LOGIN#	**FIELD SAMPLE**	**LOCATION**	**MATERIAL NO LEAD DETECTED**
P189106-1	PCB-Pb-01	Hydro Cap. NB 101	Metal
P189106-2	PCB-Pb-02	NB 101-N Wall Of Bridge	Concrete
P189106-3	PCB-Pb-03	NB 101-N Wall Of Creek	Concrete
P189151-1	MCB-Pb-01	E Side Of Bridge-Paint On N Embankment, 2nd Tier	Concrete

Figures



PROJECT LOCATION & VICINITY
Figure 1

US-101 Auxiliary Lanes Project
State Route 85 to Embarcadero Road

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

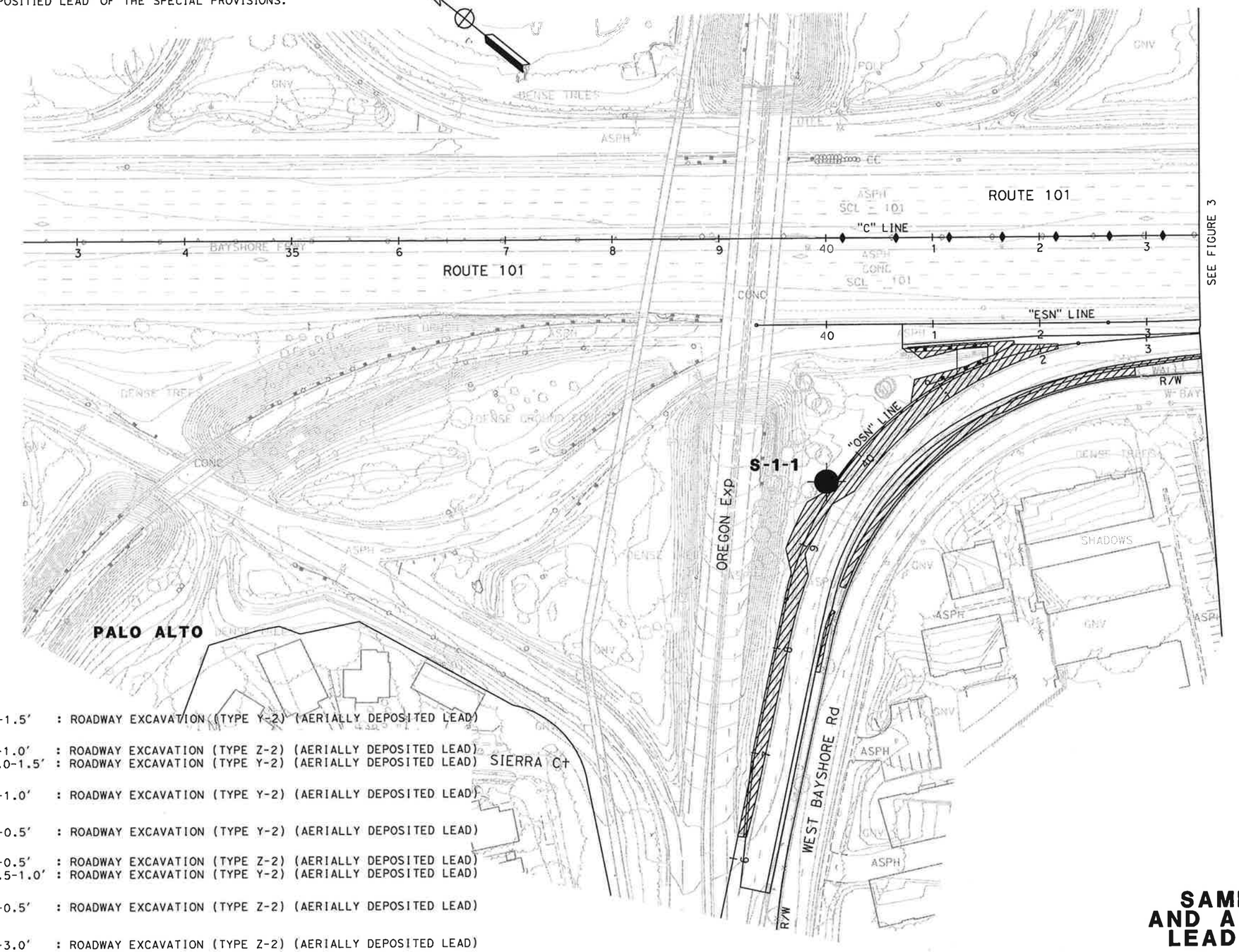
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. EXCAVATION AND PLACEMENT MATERIAL FROM THE AREAS DELINEATED ON THESE SHEETS SHALL CONFORM TO "MATERIAL CONTAINING AERIALLY DEPOSITIED LEAD" OF THE SPECIAL PROVISIONS.



LEGEND:

- 0-1.5′ : ROADWAY EXCAVATION (TYPE Y-2) (AERIALLY DEPOSITED LEAD)
- 0-1.0′ : ROADWAY EXCAVATION (TYPE Z-2) (AERIALLY DEPOSITED LEAD)
  1.0-1.5′ : ROADWAY EXCAVATION (TYPE Y-2) (AERIALLY DEPOSITED LEAD)
- 0-1.0′ : ROADWAY EXCAVATION (TYPE Y-2) (AERIALLY DEPOSITED LEAD)
- 0-0.5′ : ROADWAY EXCAVATION (TYPE Y-2) (AERIALLY DEPOSITED LEAD)
- 0-0.5′ : ROADWAY EXCAVATION (TYPE Z-2) (AERIALLY DEPOSITED LEAD)
  0.5-1.0′ : ROADWAY EXCAVATION (TYPE Y-2) (AERIALLY DEPOSITED LEAD)
- 0-0.5′ : ROADWAY EXCAVATION (TYPE Z-2) (AERIALLY DEPOSITED LEAD)
- 0-3.0′ : ROADWAY EXCAVATION (TYPE Z-2) (AERIALLY DEPOSITED LEAD)
- ENVIRONMENTAL BORING LOCATION

SAMPLING LOCATIONS AND AERIALLY DEPOSITED LEAD USE RESTRICTIONS

SCALE: 1"=50′

FIGURE 2

REVISED BY | DATE REVISED | CALCULATED-DESIGNED BY | CHECKED BY | CONSULTANT FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION | DATE PLOTTED => 4/12/2010

USERNAME => marshall.moore

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

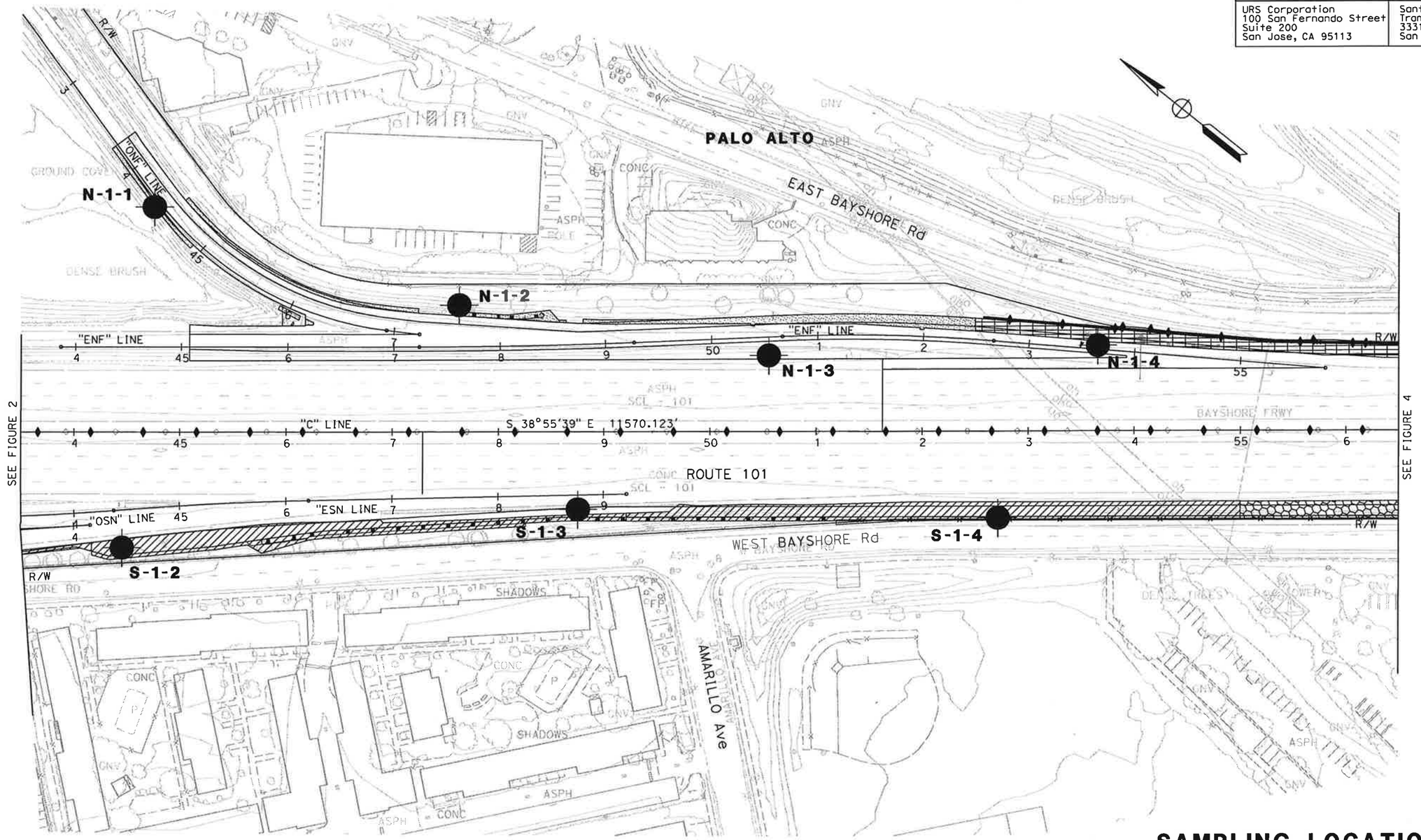
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND/OR LEGEND SEE FIGURE 2

SAMPLING LOCATIONS AND AERIALLY DEPOSITED LEAD USE RESTRICTIONS

SCALE: 1"=50'

FIGURE 3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION DATE PLOTTED => 4/12/2010

RELATIVE PAPER SCALE 0 1 2 3

USERNAME => marshall.moore

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

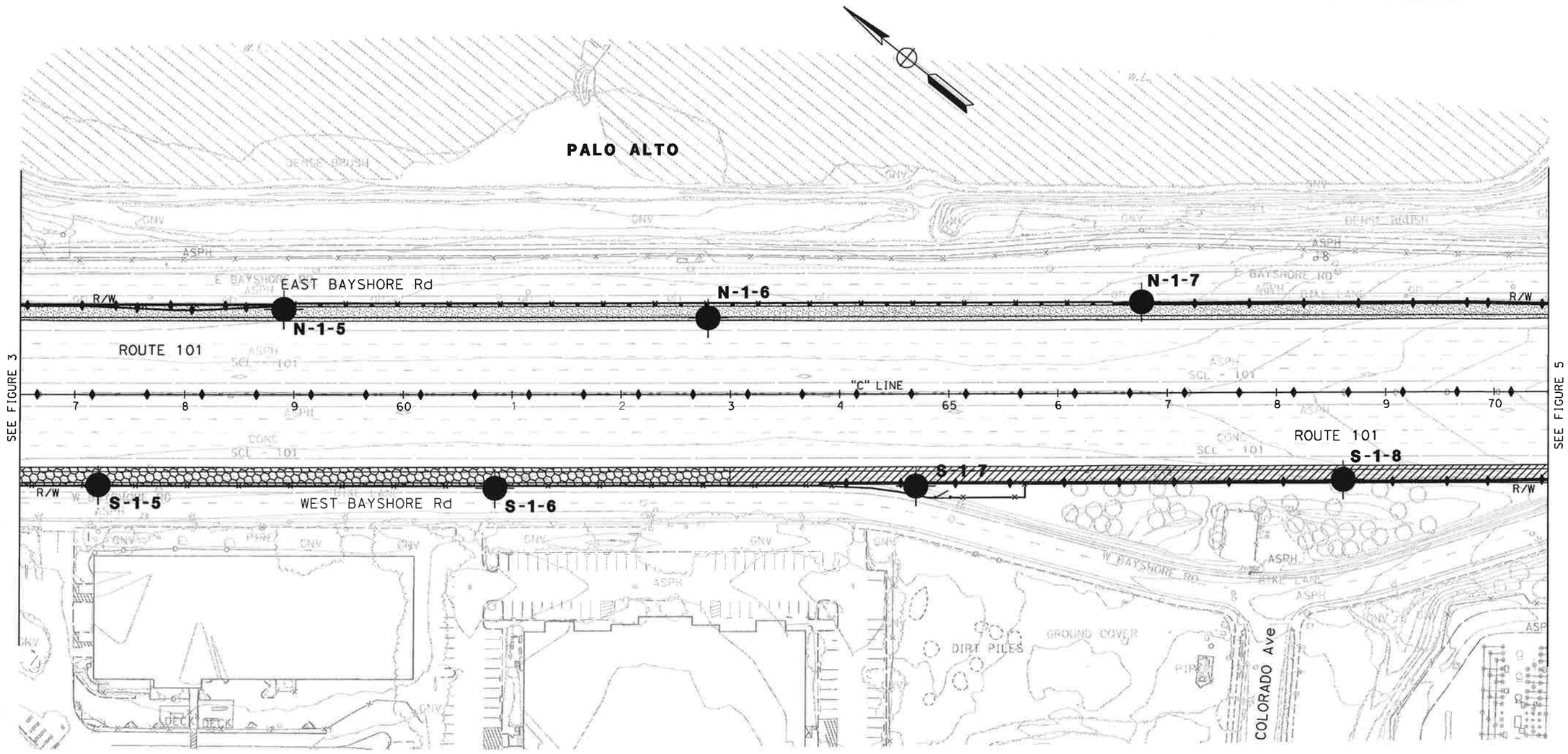
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND/OR LEGEND SEE FIGURE 2

SAMPLING LOCATIONS AND AERIALLY DEPOSITED LEAD USE RESTRICTIONS

SCALE: 1"=50'

FIGURE 4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION

DATE PLOTTED => 4/12/2010

RELATIVE PLOTTED SCALE 0 1 2 3

USERNAME => marshall.moore

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

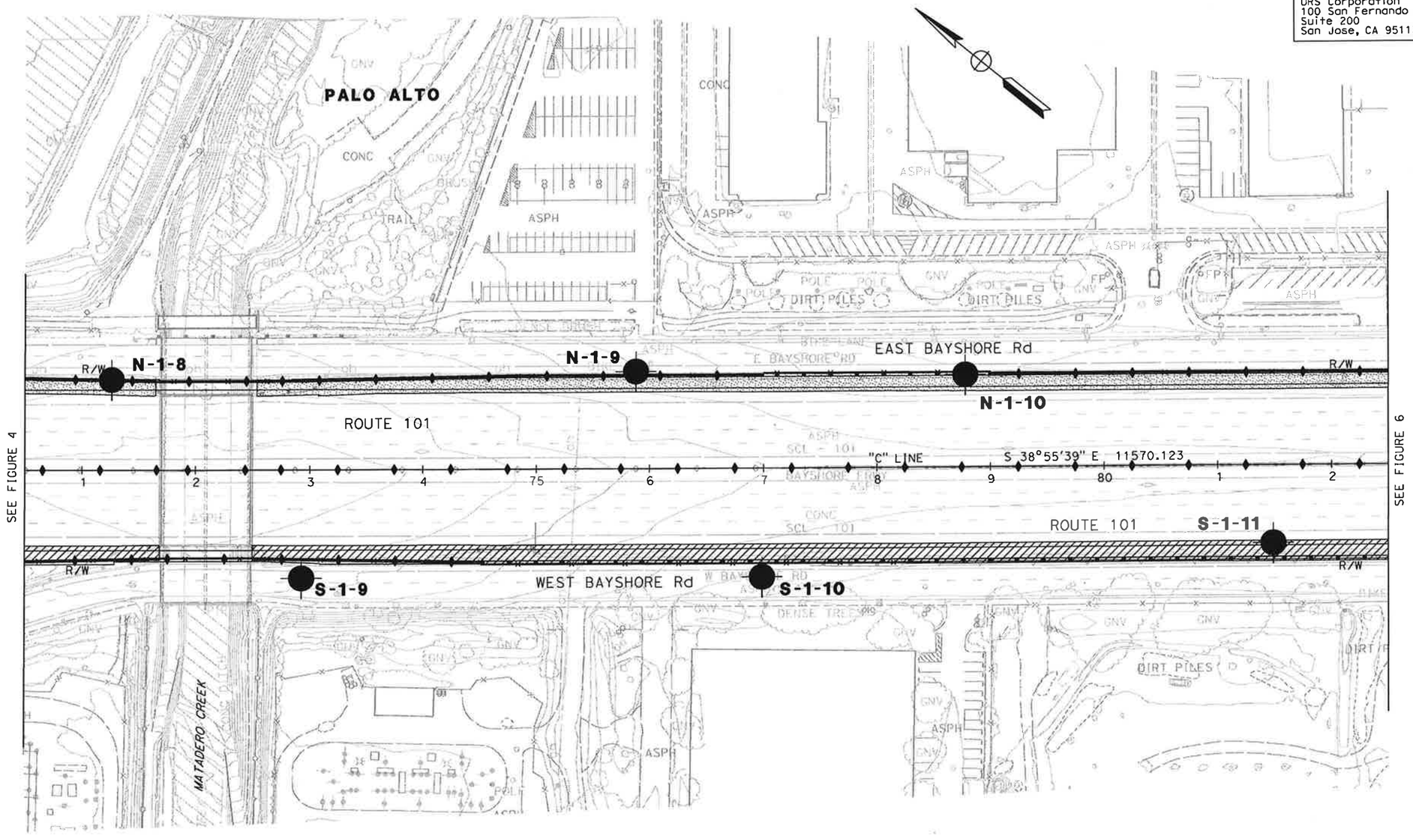
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND/OR LEGEND SEE FIGURE 2

SAMPLING LOCATIONS AND AERIALLY DEPOSITED LEAD USE RESTRICTIONS

SCALE: 1"=50'

FIGURE 5

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION DATE PLOTTED => 4/12/2010

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

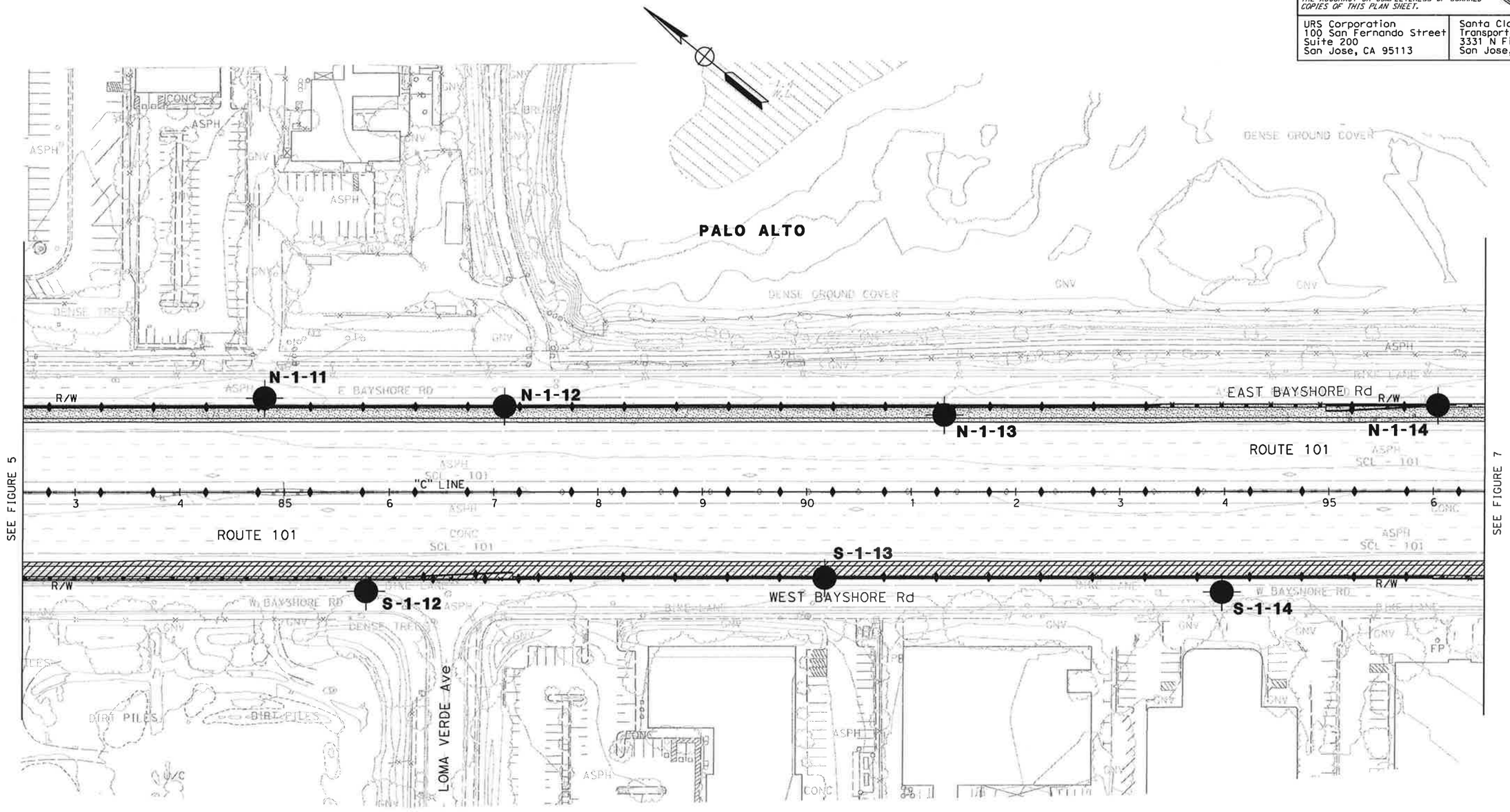
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND/OR LEGEND SEE FIGURE 2

SAMPLING LOCATIONS AND AERIALLY DEPOSITED LEAD USE RESTRICTIONS

SCALE: 1"=50'

FIGURE 6

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION DATE PLOTTED => 4/12/2010

USERNAME => marshall.moore

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

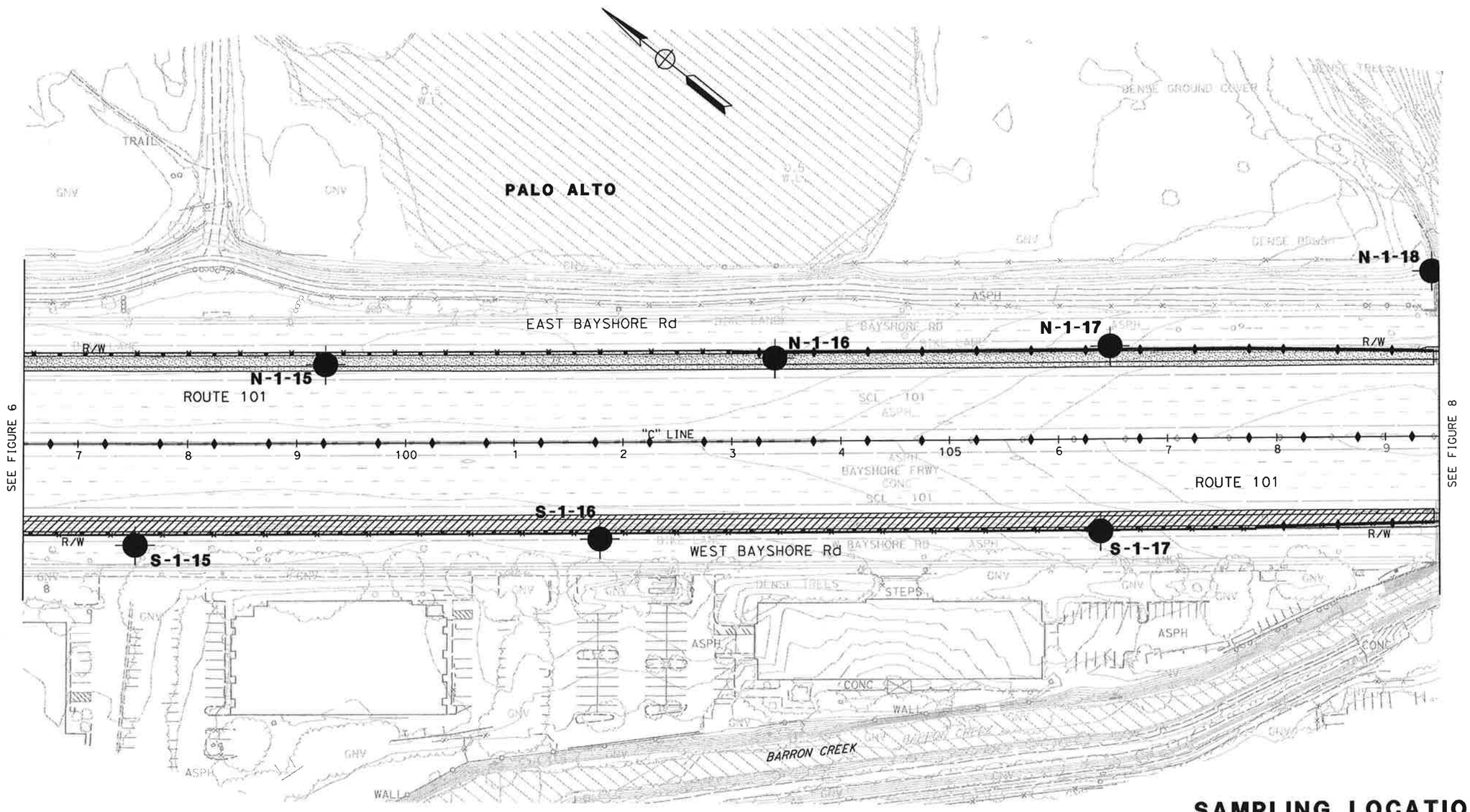
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND/OR LEGEND SEE FIGURE 2

SAMPLING LOCATIONS AND AERIALLY DEPOSITED LEAD USE RESTRICTIONS

SCALE: 1"=50'

FIGURE 7

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION DATE PLOTTED => 4/12/2010

USERNAME => marshall_moore

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

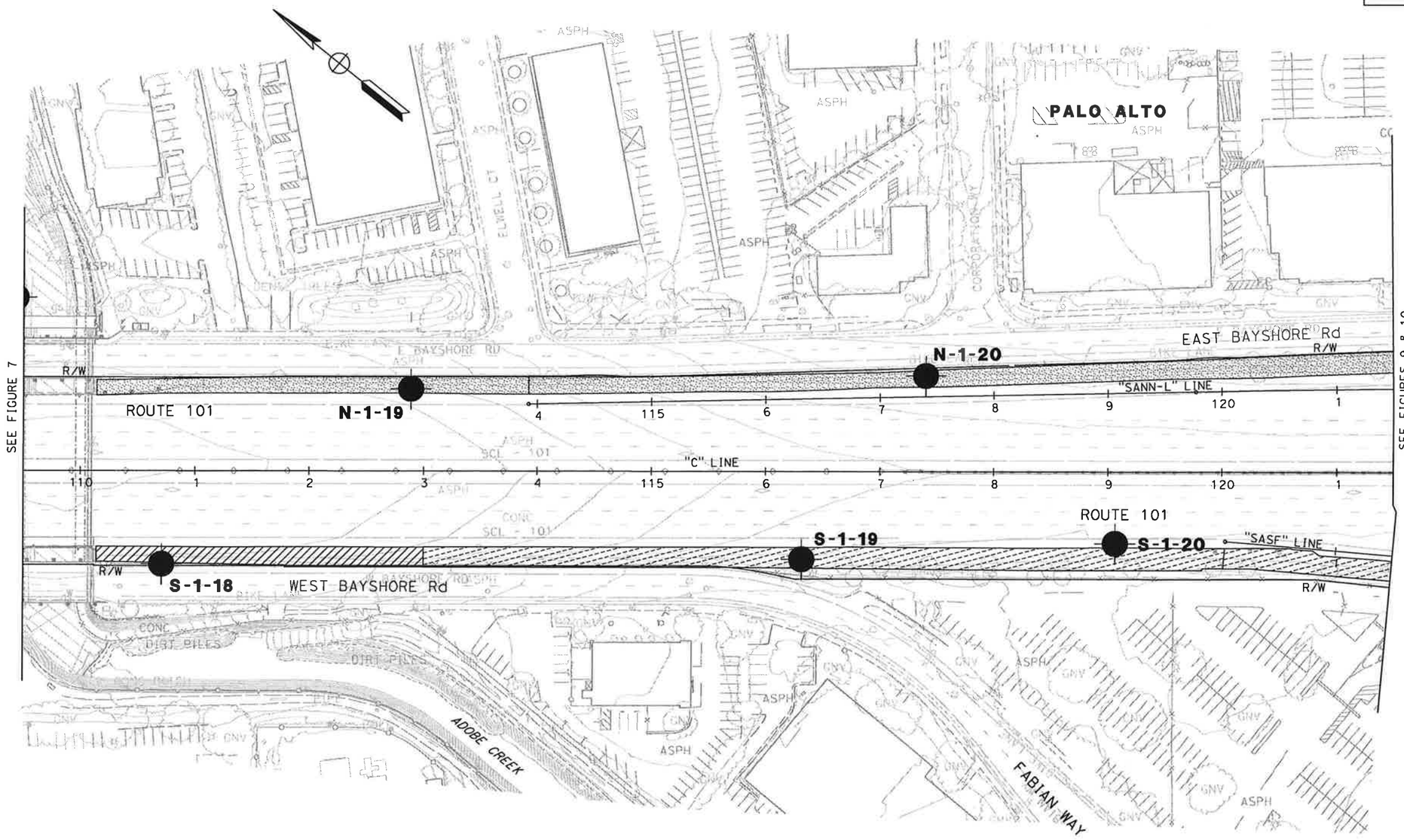
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND/OR LEGEND SEE FIGURE 2

SAMPLING LOCATIONS AND AERIALLY DEPOSITED LEAD USE RESTRICTIONS

SCALE: 1"=50'

FIGURE 8

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION

DATE PLOTTED =>4/13/2010

USERNAME =>marshall.moore

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

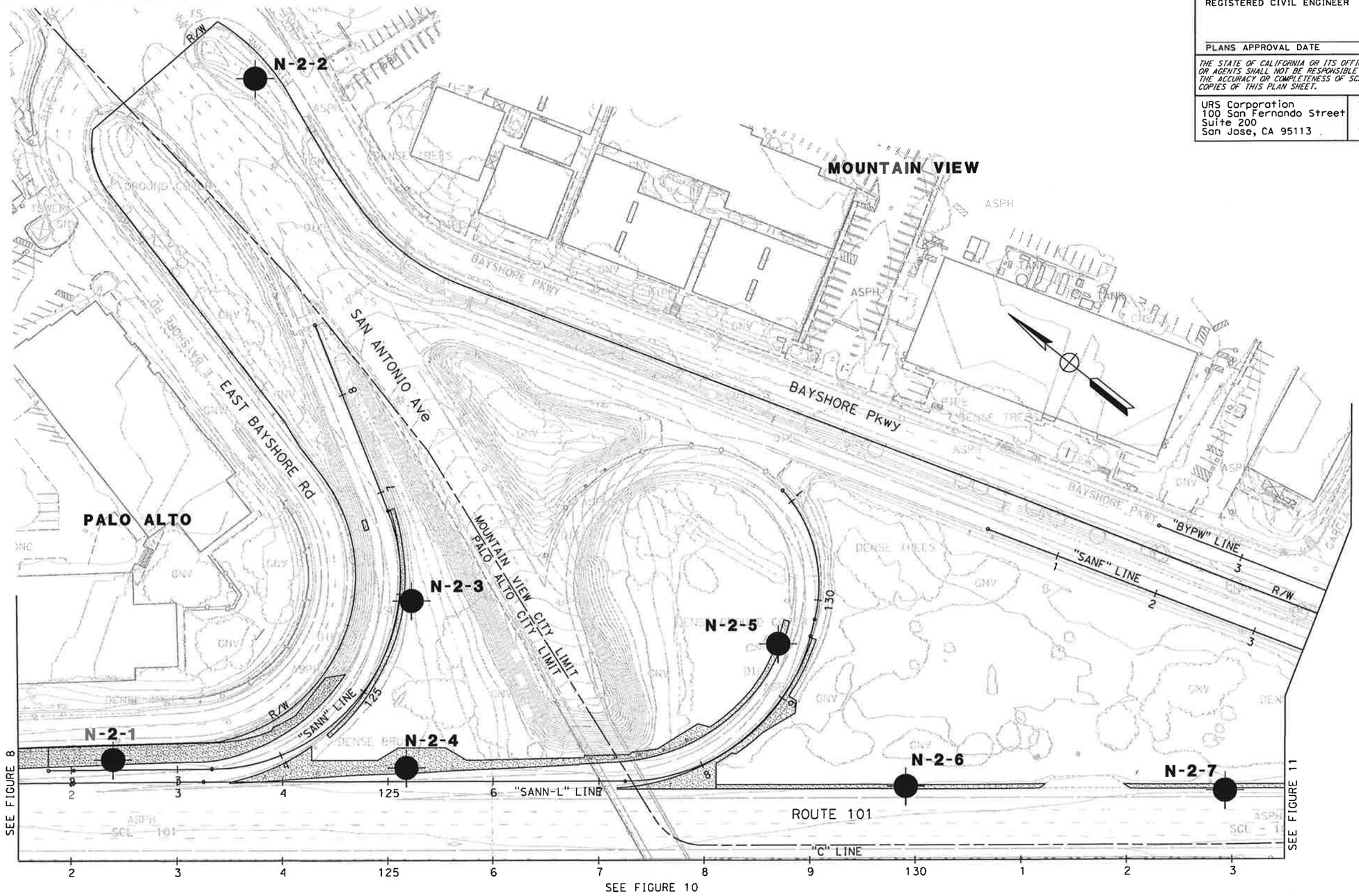
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND/OR LEGEND SEE FIGURE 2

SAMPLING LOCATIONS AND AERIALLY DEPOSITED LEAD USE RESTRICTIONS

SCALE: 1"=50'

FIGURE 9

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION

DATE PLOTTED => 4/12/2010

USERNAME => marshall.moore

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

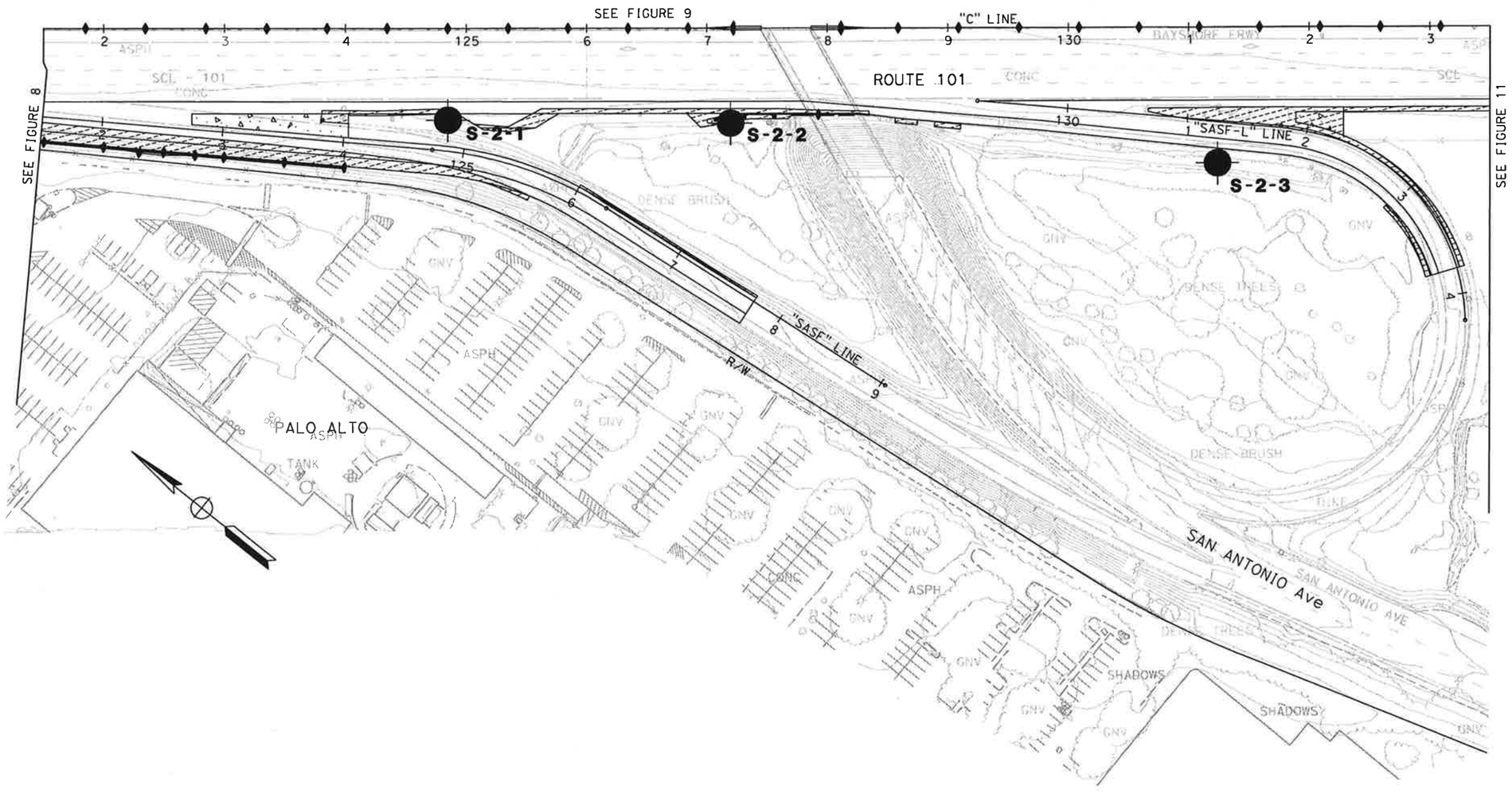
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND/OR LEGEND SEE FIGURE 2

SAMPLING LOCATIONS AND AERIALLY DEPOSITED LEAD USE RESTRICTIONS

SCALE: 1"=50'

FIGURE 10

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION DATE PLOTTED => 4/12/2010

RELATIVE PLOTTER SCALE 0 1 2 3

USERNAME => marshall_moore

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

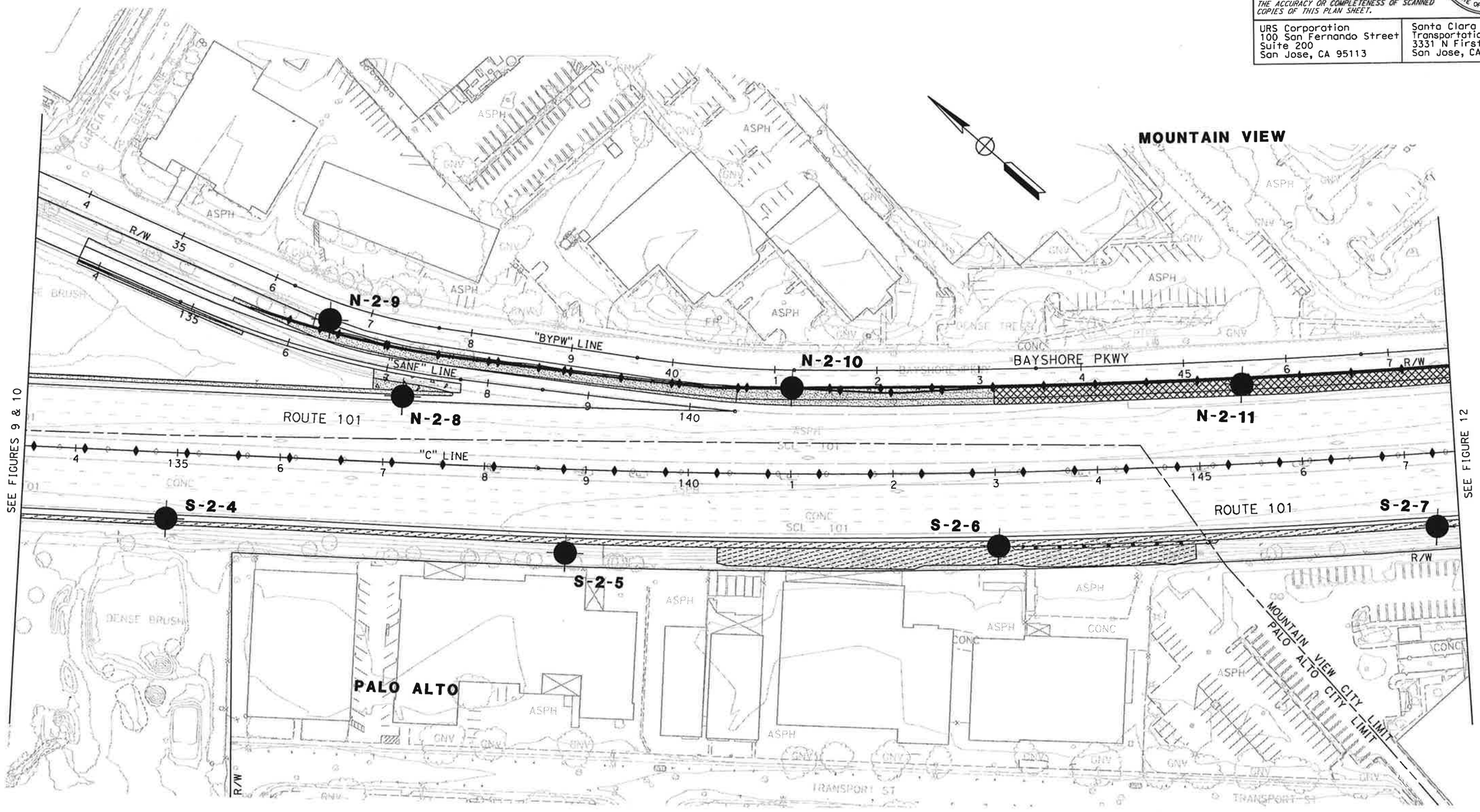
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND/OR
LEGEND SEE FIGURE 2

SAMPLING LOCATIONS AND AERIALLY DEPOSITED LEAD USE RESTRICTIONS

SCALE: 1"=50'

FIGURE 11

REVISED BY | DATE REVISED | CALCULATED-DESIGNED BY | CHECKED BY | CONSULTANT FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION | DATE PLOTTED => 8/13/2010

USERNAME => marshall.moore

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

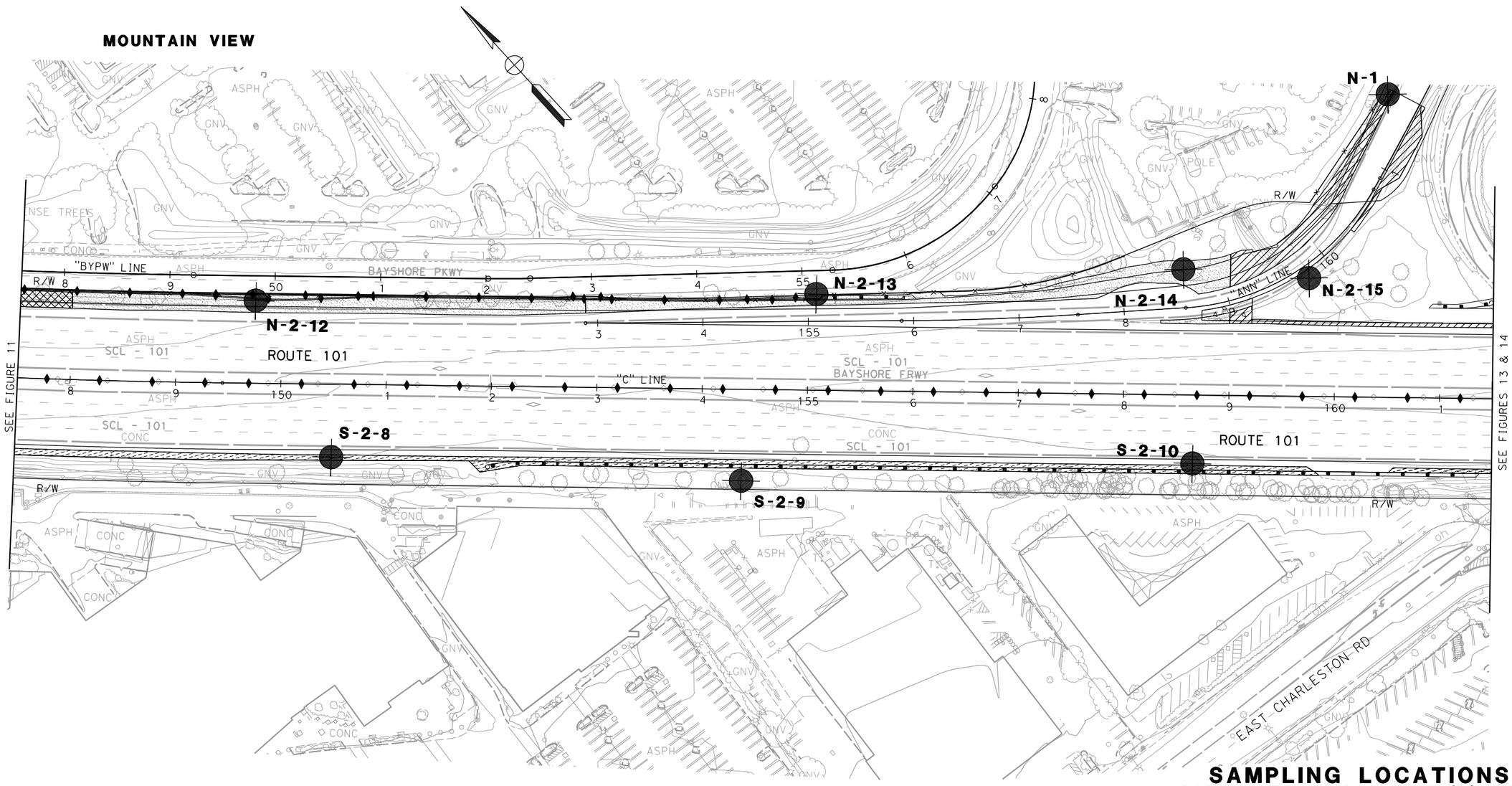
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND/OR LEGEND SEE FIGURE 2

SAMPLING LOCATIONS AND AERIALLY DEPOSITED LEAD USE RESTRICTIONS

SCALE 1"=50'

FIGURE 12

REVISED BY | DATE REVISED

CALCULATED-DESIGNED BY | CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00 | DATE PLOTTED => 5/19/2010 | TIME PLOTTED => 2:12:13 PM

BORDER LAST REVISED 4/11/2008 | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | USERNAME => andrew_cheung | DGN FILE => ...\ADL Fig 12.dgn | CU 04235 | EA 4A3301

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCl	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

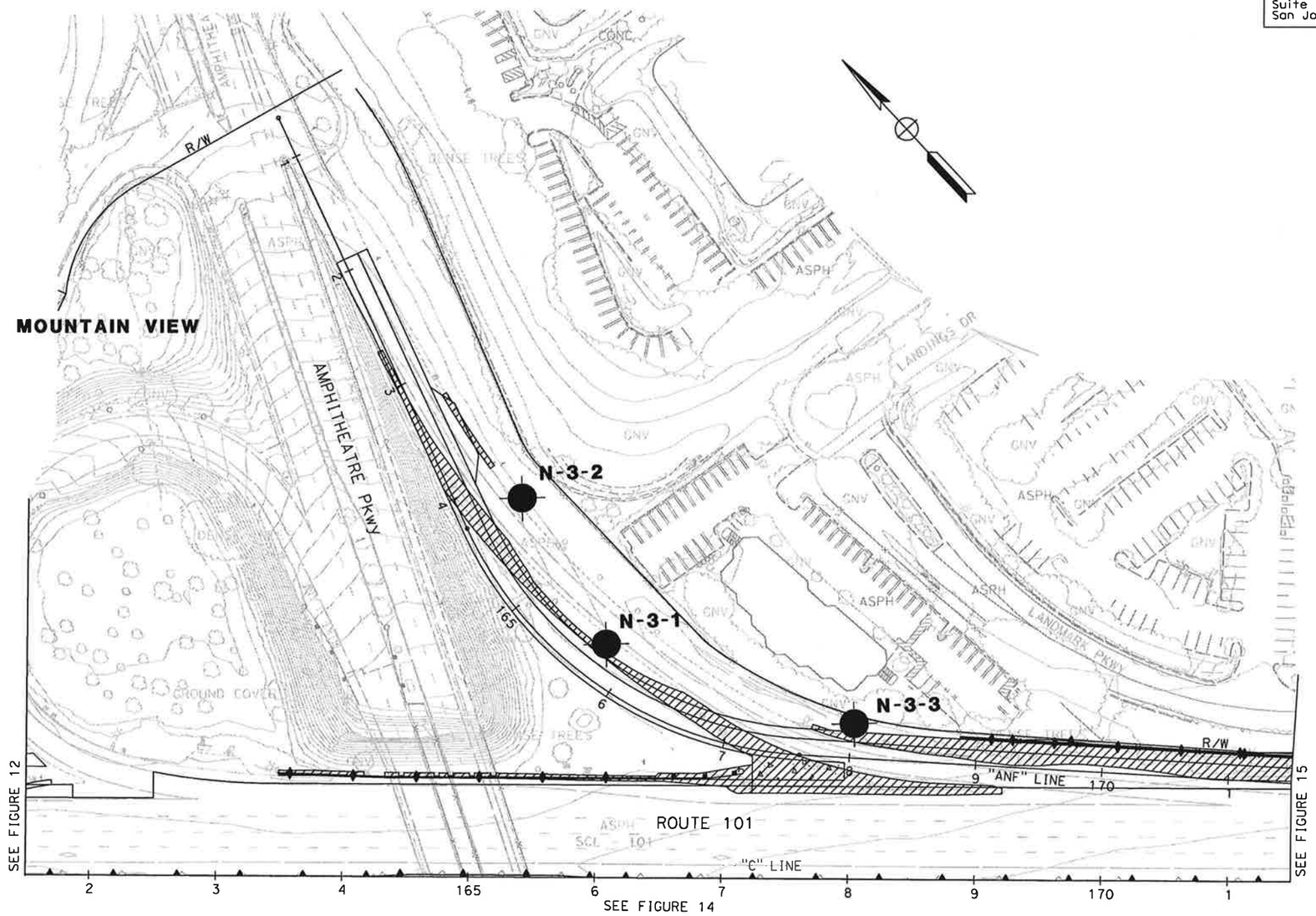
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND/OR
LEGEND SEE FIGURE 2

SAMPLING LOCATIONS AND AERIALLY DEPOSITED LEAD USE RESTRICTIONS

SCALE: 1"=50'

FIGURE 13

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION

DATE PLOTTED => 4/12/2010

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

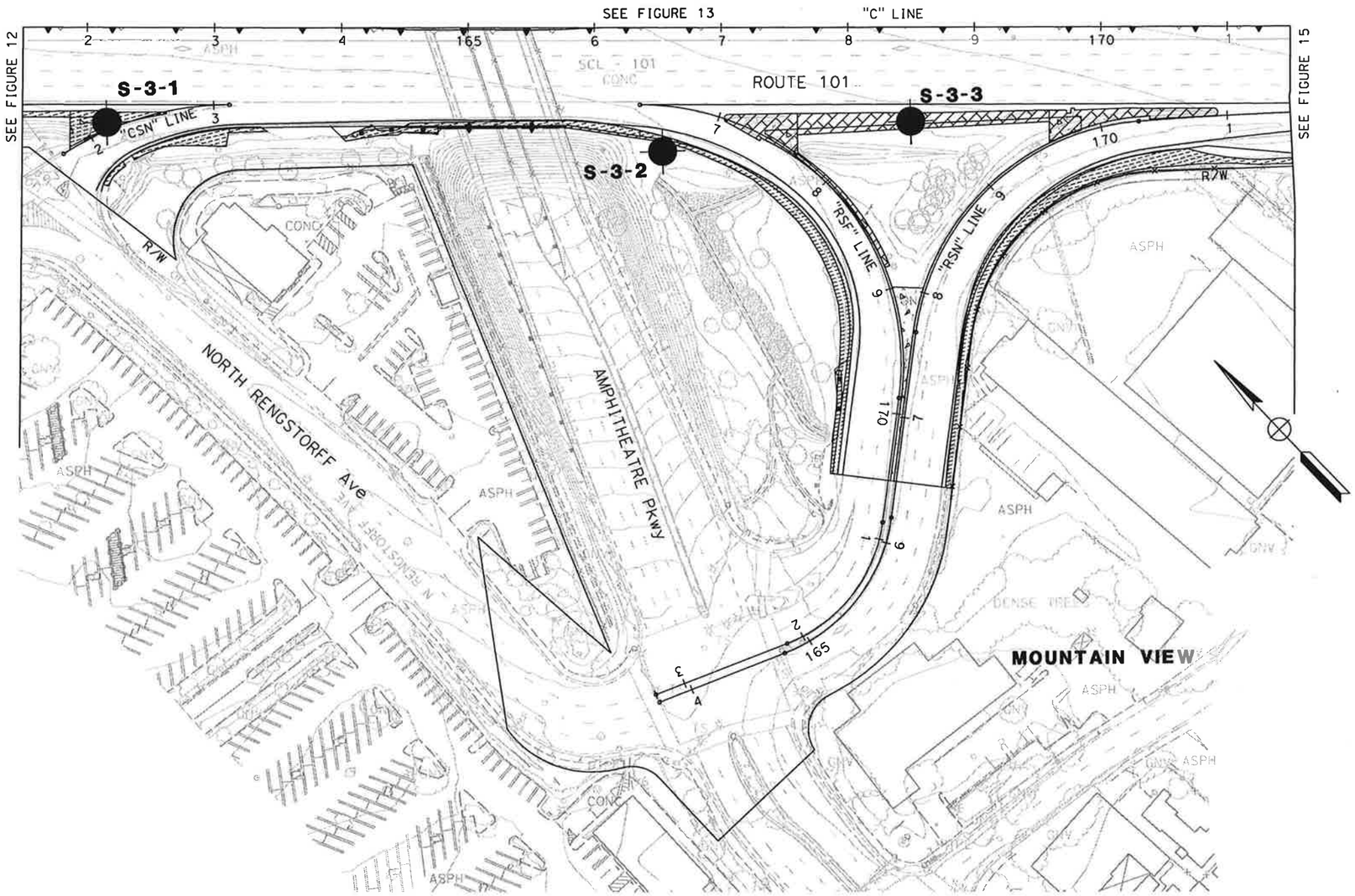
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND
LEGEND SEE FIGURE 2

SAMPLING LOCATIONS AND AERIALLY DEPOSITED LEAD USE RESTRICTIONS

SCALE: 1"=50'

FIGURE 14

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION DATE PLOTTED => 4/12/2010

USERNAME => marshall.moore

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

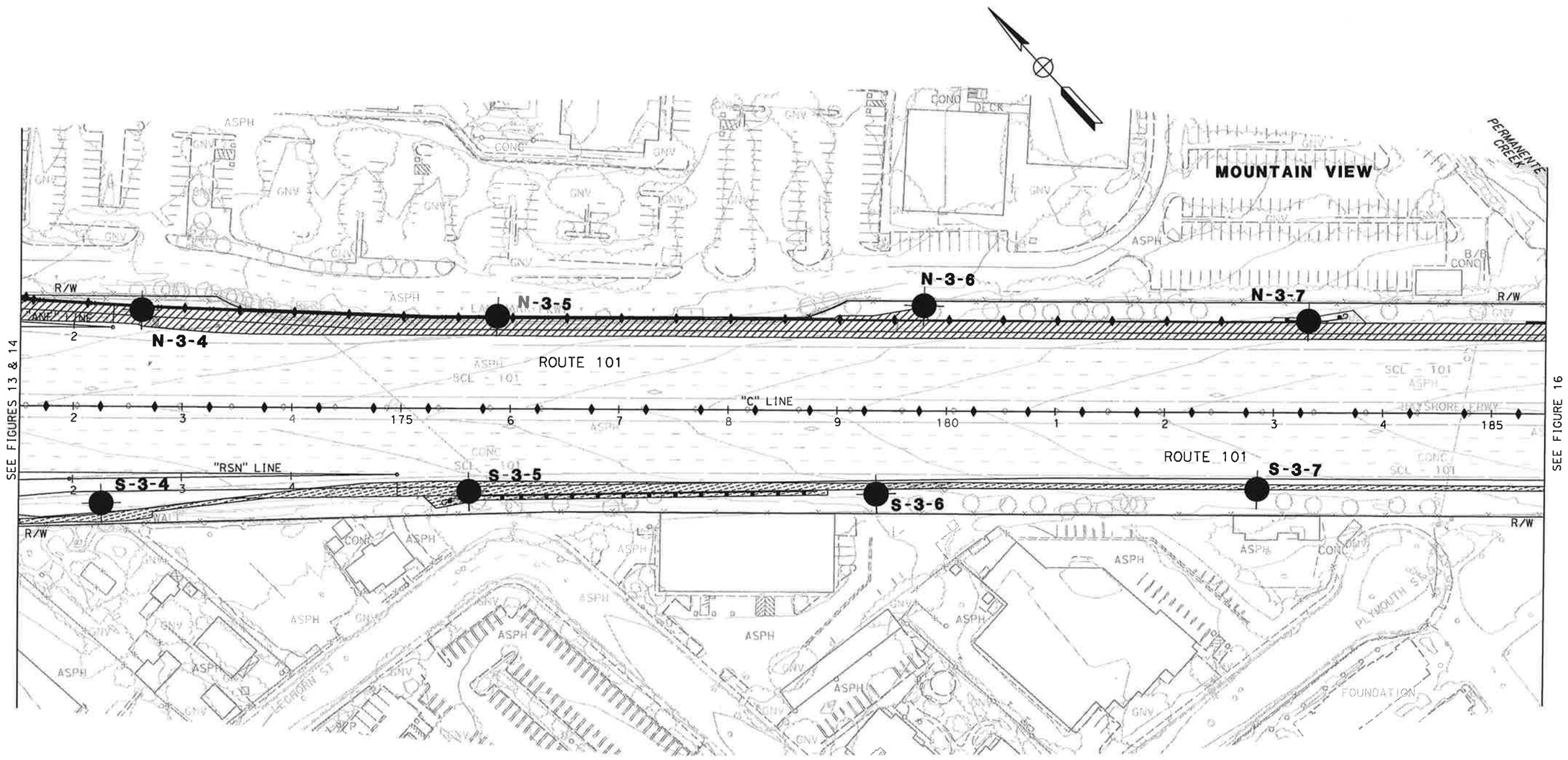
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND/OR LEGEND SEE SHEET C-18

SAMPLING LOCATIONS AND AERIALLY DEPOSITED LEAD USE RESTRICTIONS

SCALE: 1"=50'

FIGURE 15

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION DATE PLOTTED = 3/12/2010

RELATIVE PLOTTER SCALE 0 1 2 3

USERNAME = \marshall.moore

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

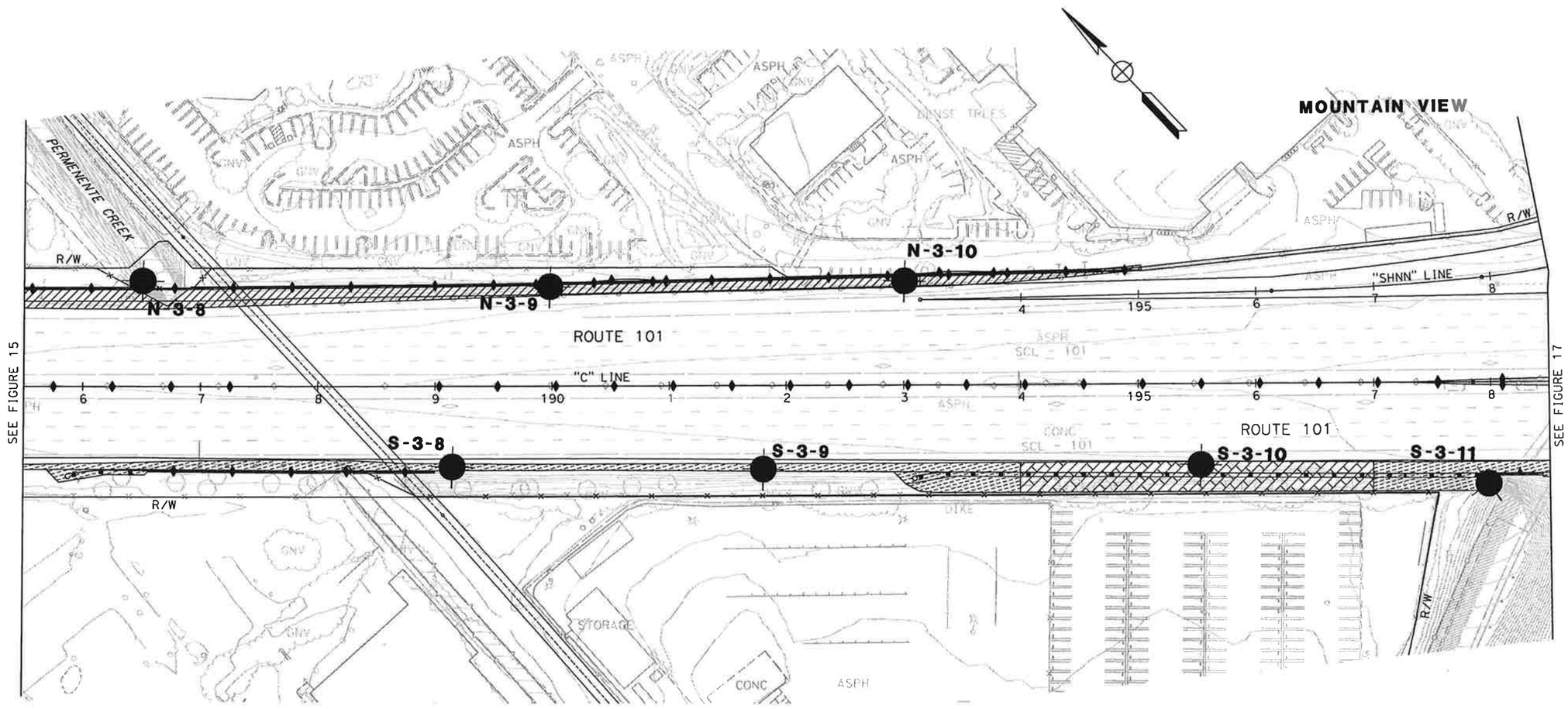
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND/OR LEGEND SEE FIGURE 2

SAMPLING LOCATIONS AND AERIALLY DEPOSITED LEAD USE RESTRICTIONS

SCALE: 1"=50'

FIGURE 16

REVISED BY | DATE REVISED | CALCULATED-DESIGNED BY | CHECKED BY | CONSULTANT FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION | DATE PLOTTED => 8/12/2010

RELATIVE BORDER SCALE 0 1 2 3 | USERNAME => marshall.moore

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

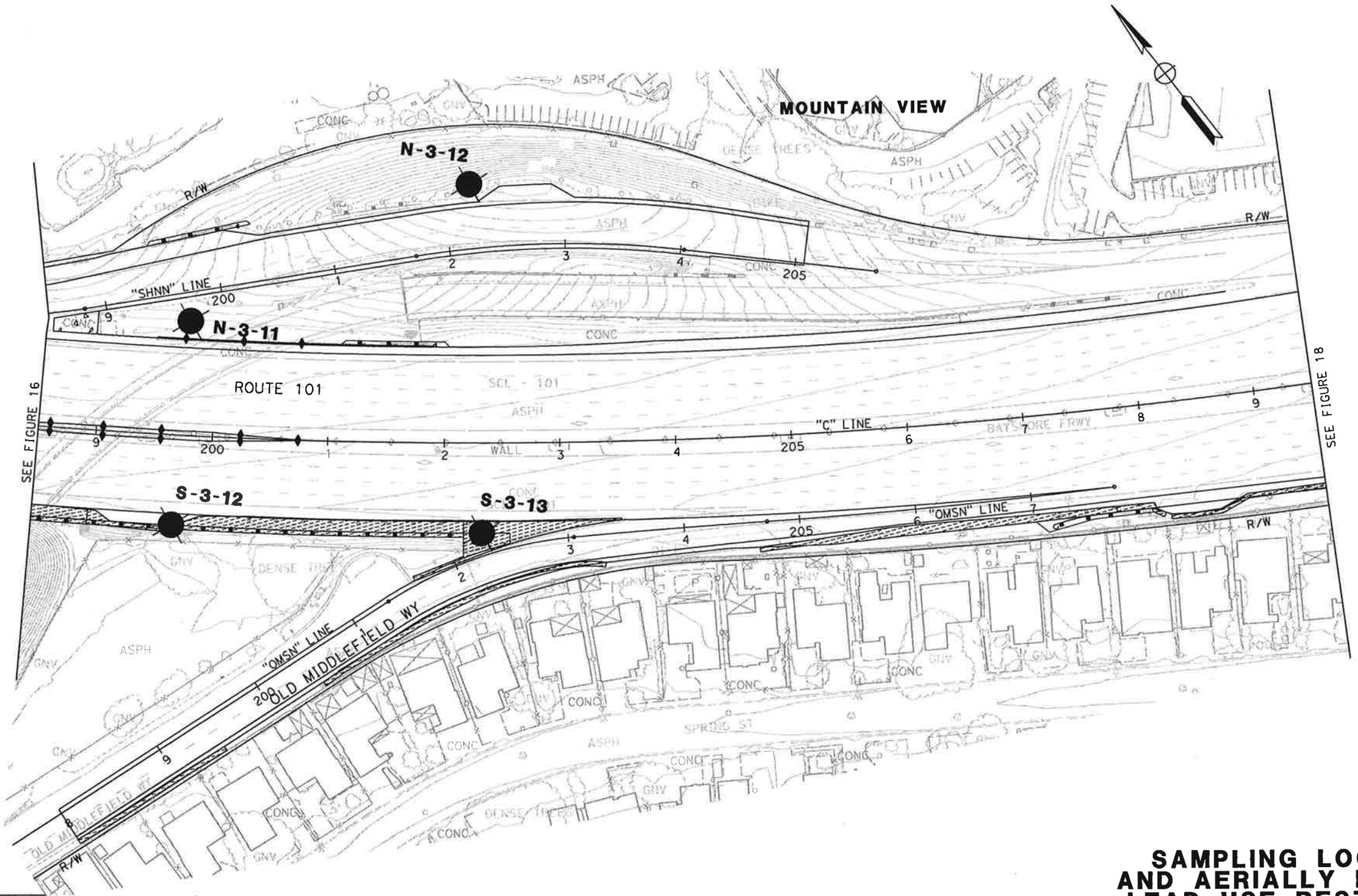
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND/OR
LEGEND SEE FIGURE 2

SAMPLING LOCATIONS AND AERIALLY DEPOSITED LEAD USE RESTRICTIONS

SCALE: 1"=50'

FIGURE 17

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION

DATE PLOTTED => 4/12/2010

RELATIVE PLOTTER SCALE 0 1 2 3

USERNAME => marshall.moore

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

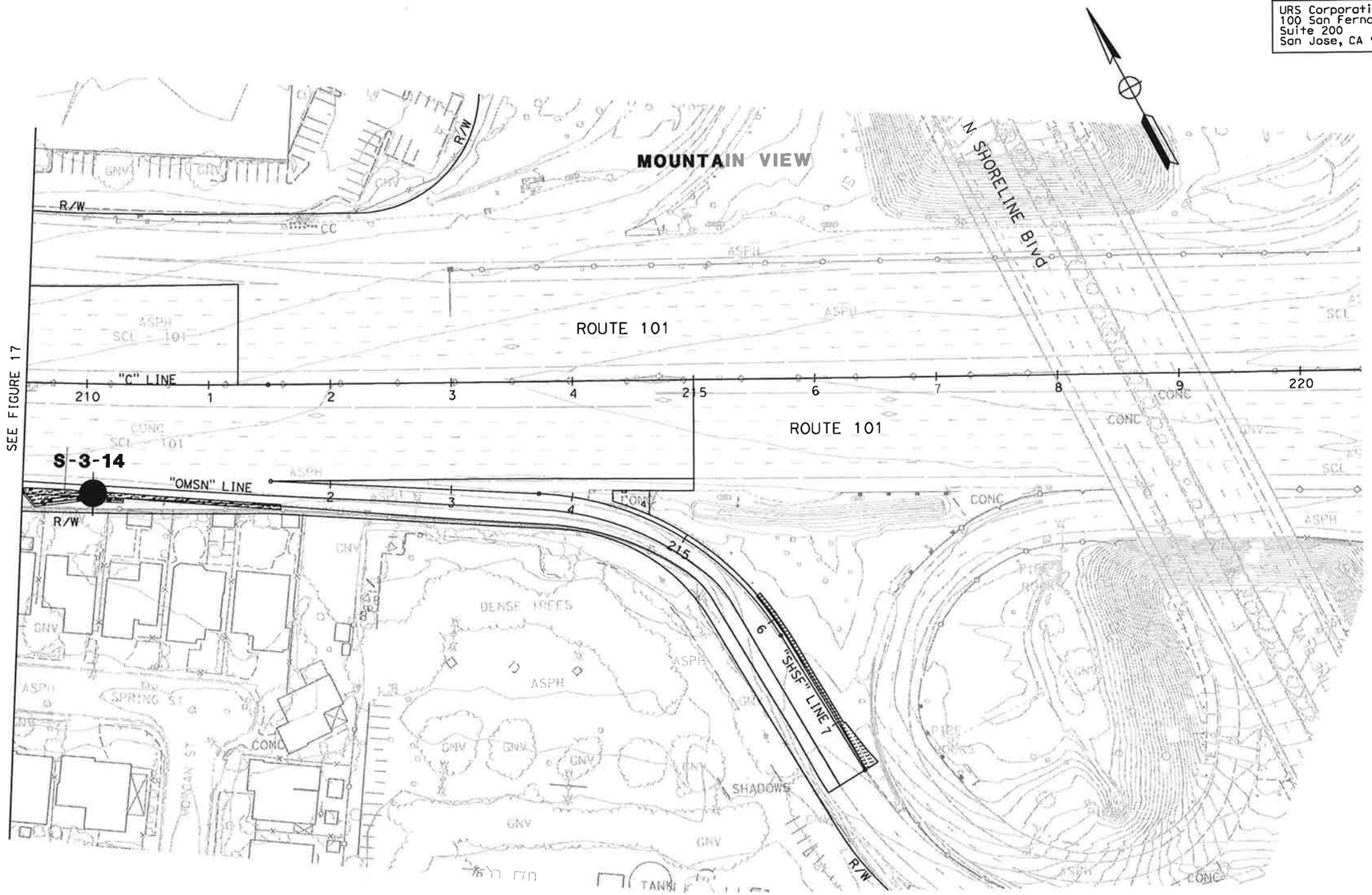
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



FOR NOTES, ABBREVIATIONS AND/OR
LEGEND SEE FIGURE 2

SAMPLING LOCATIONS AND AERIALLY DEPOSITED LEAD USE RESTRICTIONS

SCALE: 1"=50'

FIGURE 18

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION DATE PLOTTED =>4/13/2010

Appendix A

Santa Clara Valley Transportation Authority

and

California Department of Transportation

U.S. 101 Auxiliary Lanes
Embarcadero Road to State Route 85
EA 04-4A3301

FINAL
Hazardous Waste Materials Investigation

Work Plan

Prepared by

URS Corporation

55 S. Market Street, Suite 1500
San Jose, CA 95113
March 12, 2009

BACKGROUND INFORMATION AND PROJECT DESCRIPTION

The U. S. 101 Auxiliary Lanes project consists of the segment of U. S. 101 between Embarcadero Road and State Route 85 (S.R. 85) located in the Cities of Mountain View and Palo Alto, in Santa Clara County within District 4 of the State of California Department of Transportation and within the VTA planning area (See Figure 1 for a Project Location and Vicinity Map). The project limits extend from Embarcadero Road and State Route 85, a distance of 3.2 miles (PM 48.97/52.17) and will be referred hereon as "the Site".

The purpose of this project is to relieve existing and future traffic congestion at freeway on-ramp and off-ramp connections, improve safety along the US 101 corridor, provide for improved local access over this segment of the U.S. 101 corridor. Auxiliary lanes would improve traffic operations on the freeway by providing more room for traffic entering and exiting the freeway at each interchange to merge and by allowing local traffic that is only going from one interchange to the next to use the freeway without impacting the main through lanes.

This project proposes to construct auxiliary lanes, extend existing second High Occupancy Vehicle (HOV) lanes, and undertake associated ramp improvements including ramp widening and installing/activating ramp metering in both directions. The proposed improvements include widening of creek crossings and relocation of sign structures, storm drainage and other utilities. As a result of these proposed improvements soil will be excavated along U.S. 101, at interchanges, and at creek crossings.

Two creek crossing bridge structures and one box culvert crossing structure are planned to be widened:

- Adobe Creek Bridge, 37-0174 - the proposed improvements will include widening both sides of the Adobe Creek Bridge by approximately 11 feet in the northbound and southbound directions, closing the gaps between the U.S. 101 bridges and the adjacent frontage road bridges. The proposed structure type is a single-span precast, prestressed rectangular girder with a cast-in-place concrete deck.
- Matadero Creek Bridge, 37-0040 - the proposed improvements will include widening on both sides of the structure by approximately 12 feet in the northbound and southbound directions. This will close the gaps between the U.S. 101 bridges and the adjacent frontage road bridges. The proposed structure type is a two-span precast, prestressed concrete voided slab.
- Permanent Creek box culvert crossing – the proposed improvement will likely include either extending the box culvert or building a small bridge structure adjacent to the current culvert.

This Hazardous Waste Materials Investigation Work Plan describes the procedures for completing Task 2.6 "Initial Hazardous Waste Soil Investigation" and Task 2.16 "Asbestos/Lead Based Paint Investigation" included in the US 101 Auxiliary Lanes Project Scope of Work dated January 8, 2009. The overall purposes of Hazardous Waste Materials Investigation are evaluate the soil conditions for on-site use, off-site disposal of

site soils, assess the bridges and culvert scheduled for retrofit for the presence of asbestos or lead-based paint and identify work safety issues for site construction workers.

This hazardous waste materials investigation will provide analytical data of soil materials and bridge materials in locations of the following existing structures requiring modifying and widening, and new structure:

- Adobe Creek Bridge, 37-0174
- Matadero Creek Bridge, 37-0040
- Permanente Creek box culvert extension
- Highway soil materials

Several locations at the project site were discussed during the Initial Site Assessment performed by Baseline Environmental Consultants, April 2008, to have likely been impacted by VOCs originated at several properties adjacent to the project area. These issues are being evaluated in this work plan. Samples will be collected within the existing Caltrans Right of Way at the nearest location to these areas as possible.
These locations include at least:

- San Antonio Road area
- Caltrans yard area near Old Middlefield Way, and
- Area south of Amphitheater Parkway.

A site and project specific Health and Safety Plan for personnel completing field activities has been prepared for the hazardous materials and geotechnical investigations during this project and is attached in Appendix A.

CONTACT INFORMATION

The following table lists VTA's, Caltrans's and URS' contacts for this task.

Contact	Function	Office Phone
Lam Trinh	VTA Project Manager	(408) 952-4217
Paul Mai	Caltrans Project Manager	(510) 622-0754
Ray Boyer	Caltrans Hazardous Waste Manager – Santa Clara County	(510) 286-5668
Joe Morgan	URS Technical Expert	(510) 874-3201
Susie Vedantham	URS Hazardous Materials Manager	(408) 297-9585
Ramsey Hissen	URS Project Manager	(408) 297-9585
Patrick Walz	URS Task Manager	(408) 297-9585
Lisa Griggs	URS Health & Safety Manager	(408) 297-9585
Christopher Lillie	URS Project Engineer	(408) 297-9585
Stephen Huang	URS Geotechnical Task Leader	(408) 297-9585

INITIAL HAZARDOUS WASTE INVESTIGATION

URS will conduct a hazardous waste investigation study on the 3.2-mile U.S. Highway 101 Auxiliary Lanes Project from Embarcadero to State Route 85 (the Site) in the Cities of Mountain View and Palo Alto, in Santa Clara County. The primary focus of the investigation will be Aerial Deposited Lead (ADL) at the top 3 feet soil, historically deposited from leaded gasoline automotive emissions. The investigation will also include testing for other roadway potential contaminants for sites identified in the Initial Site Assessment (ISA) prepared by Baseline Environmental Consultants dated April 2008. These constituents include California Assessment Manual (CAM 17) Metals, Total Petroleum Hydrocarbons as Diesel and Motor oil (TPH-d/mo), TPH as Gasoline (TPH-g), Volatile Organic Compounds (VOCs) and 5 Gasoline Oxygenates, Polychlorinated Biphenyl (PCBs) and Organo-chlorine Pesticides (OCPs), pH, and Asbestos. Additionally, groundwater samples will be collected at select locations and analyzed for the same constituents except asbestos.

Soil excavation will be performed along the highway and sections of associated ramps, at Matadero Creek bridge and Adobe Creek bridge bents locations and at the area of the Permanente Creek box culvert extension. Soil excavation will be performed along the highway and sections of associated ramps, between the edge of the current asphalted pavement (including lanes and outer shoulders) and the limit of excavation and will hereafter referred in this report as “the highway excavation area”.

Although it is not known at this time where fill material may be placed, it is anticipated that the U.S. 101 Auxiliary Lines will be a balanced project, assuming that the existing soils to be excavated can be used on the project. If some existing soils cannot be used due to the presence of contaminants or soil compaction characteristics, those soils will require off-site use or disposal at an appropriate landfill in compliance with regulatory requirements, and corresponding amounts of additional clean imported soils will be needed.

URS will collect soil samples to evaluate potential soil uses on the project, disposal options off-site, support Right of Way acquisition processes, and to evaluate potential construction worker exposure to lead impacted dust. The ADL in soil analytical results will be evaluated statistically using Caltrans approved statistical methods. Additionally, URS will collect groundwater samples at selected locations for groundwater quality purposes.

URS reviewed the following documents in developing this Work Plan.

- *Initial Site Assessment – Portions of Route 85/US 101 Interchange Project, Mountain View, Santa Clara County, California*, prepared by Kleinfelder, January 28, 2003.
- *Initial Site Assessment - U.S. 101 Auxiliary Lanes Project (Embarcadero Road to Shoreline Boulevard, Palo Alto and Mountain View, California,* prepared by Baseline Environmental Consultants, April 2008.
- *U.S. 101 Auxiliary Lanes-Oregon Expressway to Shoreline Boulevard 04-4A330, Geotechnical Investigation-Field Work Plan,* prepared by URS, October 15, 2008.

REGULATORY ISSUES

Hazardous Waste Regulatory Criteria

The total concentrations of prescribed elements or compounds are regulated as hazardous waste in California if they exceed the Total Threshold Limit Concentration (TTLC) criteria, which can be found in Title 22 of the California Code of Regulations (CCR).

Leachable elements or compounds are also regulated in California based on the Soluble Threshold Leaching Characteristic (STLC) criteria, which can also be found in Title 22 of the CCR. URS will analyze samples for total suspected contaminant concentrations and subsequently evaluate the leachable components for select samples.

The California Waste Extraction Test (WET) is used to evaluate contaminant leachability from soils and other potential wastes for disposal in landfills. The Standard WET uses a citric acid solution as the extracting medium. The De-ionized (DI) WET version uses DI water as the extraction medium and is used to evaluate soil leachability for reuse on-site. Analytical results of the WET extracts will be analyzed and compared to the California STLC criteria for hazardous waste characterization or potential reuse. Analytical results for the DI-WET extracts will be compared to the Maximum Concentration Limits (MCLs) for evaluation of potential impacts to groundwater, if the soils are left in place. The Toxicity Characteristic Leaching Procedure (TCLP) is the Federal Resource Conservation and Recovery Act (RCRA) leaching procedure and is also used to evaluate contaminant leachability for hazardous waste characterization. The TCLP test is not as stringent as the California WET.

These tests will be run iteratively in the following order: WET, DI-WET, and TCLP based on the total metal concentrations in the samples. Samples with total lead concentrations exceeding 50 mg/kg will be extracted with the WET and the DI-WET and analyzed for lead. Samples with lead concentrations exceeding 100 mg/kg will be extracted with the TCLP and analyzed for lead. Evaluation of other contaminants may also require WET and TCLP leachability testing and evaluation if they exceed 10 or 20 times the STLC or TCLP criteria, respectively.

Lead in soil analytical results will be evaluated against the existing DTSC variance (described below), and California and Federal hazardous waste criteria.

Soils that exceed the TTLC and/or the STLC criteria must be managed, transported, and disposed of off-site as a California hazardous waste, if disposed of in California. Alternatively, California hazardous waste can also be disposed of in other states as non-hazardous. Soils that exceed RCRA criteria must be managed, transported, and disposed of off-site as Federal RCRA waste.

Department of Toxic Substances Control (DTSC) Variance for Aerially Deposited Lead (ADL) in Soil on Caltrans Right of Way

The following paragraphs outline the soil handling requirements in the most recently issued Caltrans District 4 lead-impacted soil handling variance by DTSC. If the soil contaminants exceed the prescribed criteria, the soil must be handled as a hazardous waste.

The following bullet points describe potential lead in soil concentrations and the corresponding regulatory restrictions that apply.

- Soil with total lead <50 mg/kg, are not subject to the reuse restrictions of the Caltrans ADL variance.
- Soil with total lead >50 mg/kg and <1411 mg/kg, with <0.5 mg/L extractable lead with the deionized waste extraction test (DI-WET) can be used for fill on-Site as long as it is more than five feet above the water table and must be covered with at least 1.0 foot of non-hazardous cover.
- Soil with >50 mg/kg and <3397 mg/kg total lead and >0.5 mg/L and <50 mg/L extractable lead with the DI WET can be used on the Right of Way (ROW) on-Site as long as it is more than five feet above the water table and must be covered with a pavement structure which will be maintained by Caltrans.
- Soil with >50 mg/kg and <3397 mg/kg total lead and >50 mg/L extractable lead with the DI WET must be disposed off-Site if removed from the Caltrans ROW.
- Soil with >3397 mg/kg total lead must be disposed off-Site if removed from the Caltrans ROW.
- For soil that must be disposed off-Site if removed from the Caltrans ROW:

– Soil with <5.0 mg/L extractable lead with the standard waste extraction test (WET) is a non-hazardous waste and can be disposed in a non-hazardous waste landfill if removed from the Caltrans ROW.

– Soil with >5.0 mg/L extractable lead with the standard WET and <5.0 mg/L extractable lead with the TCLP test is a California hazardous waste and must be disposed off-Site in a hazardous waste landfill if removed from the Caltrans ROW, or alternatively can be disposed of out of state, as non-hazardous soil.

– Soil with >5.0 mg/L extractable lead with the TCLP test is a Federal RCRA waste and must be disposed off-Site in a hazardous waste landfill, if removed from the Caltrans ROW.

- Soil with pH <5.0 can only be reused on-Site if it is used below a paved surface.
- Soil may not be reused on the Caltrans ROW if it is considered hazardous due to the presence of any material other than lead.

PROPOSED INVESTIGATION

The purpose of our screening level investigation is to conduct sampling, chemical analysis, and evaluation of the chemical characteristics of soils to be excavated from the site and groundwater at select locations at the Site.

The evaluation results for soil will be used for the following identification purposes:

- Soil that is not subject to reuse restrictions to be used on-site or off-site for fill.
- Restricted soil to be used on-site for fill under the Caltrans ADL impacted soil variance, from the DTSC, in force during the construction period.
- Hazardous waste that must be removed from the site for off-site disposal at a hazardous waste landfill.
- Non-hazardous soils to be taken off-site for disposal due to excess soils generated by the project or because the geotechnical report indicates that the soils cannot be used for fill due to their poor compaction characteristics.
- Notification and potential required training of on-site workers, if potential contaminant levels warrant it.
- Guidance for development of follow-up soil investigations, if needed.

Based on the above factors, URS proposes to conduct a soil investigation at the highway excavation area, the Matadero Creek bridge and Adobe Creek bridge bent locations and the Permanente box culvert extension area. Soil will be evaluated for ADL, CAM 17 Metals, TPH-d/mo, TPH-g, VOCs and 5 Gasoline Oxygenates, PCBs and Pesticides (OCPs), pH, and Asbestos.

All the soil samples will be analysis and analyzed for total lead. 10 percent of these samples will also be analyzed for CAM 17 metals. Approximately 20 percent of the samples collected will be analyzed for asbestos using PLM Method, and 10 percent of samples will be analyzed for pH. At approximately 10 percent of sample locations, samples will be analyzed for TPH-D/Mo, TPH-G/BTEX, 5 Gas Oxygenates, PCBs and pesticides. TPH-g/BTEX and Gasoline Oxygenates will not be tested in the upper 6 inches due to the volatility of these components, and PCBs and Pesticides (OCPs) will only be tested in the upper 6 inches. Although the final analytical suite will be randomly determined for each soil sample during field work, analytical suites have been already established for soil samples collected at specific locations at the Site including:

- Two of the soil samples collected in the vicinity of the Caltrans yard will be also analyzed for VOCs.
- Soil samples collected at two Right of Way acquisition areas will be analyzed for the full analytical suite.
- Soil samples collected at the retaining wall area scheduled near Old Middlefield Way will be analyzed for the full analytical suite.

The groundwater investigation will be used to evaluate groundwater quality for the following purposes:

- To confirm potential impact to groundwater at those locations discussed at the ISA. Grab groundwater samples will be collected at these locations and analyzed for VOCs.
- To support acquisition processes at Right of Way areas. Grab groundwater samples will be collected at these areas and analyzed for the full analytical suite.
- To evaluate the suitability of dewatering system designs at the bridge locations and at the retaining wall scheduled near the Old Middlefield Way during the construction process. Grab groundwater samples will be collected at these locations and analyzed for the full analytical suite.

Sample locations are shown in the attached drawings.

HEALTH AND SAFETY PLAN

Safety of our staff is a priority. URS personnel have developed a site and project specific Health & Safety Plan (HASP) for personnel conducting the proposed fieldwork and similar geotechnical fieldwork associated with this project. This plan has been reviewed and signed by an office Health & Safety Officer based in San Jose, California. A copy of this HASP has been included as Appendix A.

PERMITS

Caltrans has granted encroachment permit 0408-NSV0710 to VTA and its consultant URS, allowing entry to the State Right of Way including US 101. This encroachment permit allows along US 101 shoulder closures between the hours of 9 AM and 3 PM, and lane closures along US 101 between the hours of 9 PM and 3 AM on weekdays. This permit specifies additional requirements, including work notification, shoulder and lane closure procedures, and personal protective equipment requirements. A copy of this permit has been included as Appendix B.

URS will mark and conduct utility surveys on all proposed sampling locations before the start of the field sampling efforts. An underground utility location contractor will be retained to evaluate the location of underground utilities at each boring location. Underground Service Alert (USA) will be notified of the planned boring locations so participating public utilities can provide the location of underground utilities in the area of the borings. Additionally, URS will review the results of potholing operations performed to determine the location of known utilities to aid in the project design efforts to ensure that borings to not impact these utilities.

A Caltrans-certified traffic control subcontractor will be retained to divert traffic away from the field crew and sampling rig when working along roadways. Shoulder closures, at minimum, will be required for all work adjacent to the outside lanes of US 101 and all work adjacent to entrance and exit ramps. Lane closures on the number one lane of the highway may be required at times. The attached encroachment permit regulates lane and shoulder closure times.

Sampling locations may be marked and surveyed during sampling operations to limit lane and shoulder closures. Sampling locations shown on the attached figures (Figures 2-18) are approximate and may be moved due to field conditions identified during the utility location fieldwork, accessibility, and crew safety considerations.

SAMPLING

URS will retain a drilling subcontractor to assist in the fieldwork sampling including both direct push and hand auger. URS personnel will supervise all fieldwork conducted under this Work Plan and will collect and ship the samples. URS proposes to use direct push sampling techniques to minimize cuttings collection and disposal. Where the direct push equipment cannot be used due to physical or other constraints, we will use hand auger sampling methods.

Boring locations at the Site will be labeled as follow:

- Between Embarcadero Road and San Antonio Road:, Boring locations will be labeled from west to east as N-1-1 through N-1-20 for the northbound side and S-1-1 through S-1-20 for the southbound side.
- Between San Antonio Road and Amphitheater Pkwy: Boring locations will be labeled from west to east as N-2-1 through N-2-15 for the northbound side and S-2-1 through S-2-10 for the southbound side.
- Between Amphitheater Pkwy and State Route 85: Boring locations will be labeled from west to east as N-3-1 through N-3-12 for the northbound side and S-3-1 through S-3-14 for the southbound side.

Sample Locations

- At highway excavation area: URS will collect representative soil samples of the excavation area at intervals perpendicular to the US 101 mainline and ramps. The location of these soil samples relative to the edge of traveled way will be rotated. Approximately 1/3rd of samples will be collected at each of the following areas: the edge of the pavement, midpoint between edge of pavement and limit of excavation. Soil samples will be collected approximately every 400-500 feet at a total of approximately 85 selected locations, as shown on the attached Drawings. The exact number of sample locations and the actual interval distances may change slightly based on field observations, access issues and available space at each location. These locations also include those at the Caltrans Yard area (S-3-12 and S-3-13), the Right of Way acquisition areas (N-3-5 and N-3-10) and the one located at the retaining wall area scheduled near Old Middlefield Way (S-3-11). A total of six groundwater will be collected in the highway excavation area including three groundwater samples at those locations discussed in the ISA (San Antonio Road area at sample S-2-3, Caltrans yard area near Old Middlefield Way at sample S-3-13, and area between Old Middlefield Way and North Shoreline Blvd at sample S-3-14); two groundwater samples at Right of Way acquisition areas (N-3-5 and N-3-10); and one groundwater sample at the scheduled retaining wall area (S-3-11).
- Bridges: Two bridges and a box culvert located along the US 101 mainline are scheduled for widening associated to the freeway widening. These bridges include

Adobe Creek Bridge, Matadero Creek Bridge and Permanente Creek Box Culvert. Bridge bents are scheduled at Adobe Creek and Matadero Creek bridges, while a box culvert extension is scheduled at Permanente Creek. The bridges are paved at the exact locations of the proposed bents, therefore soil samples will be collected at the closest exposed soil location. Soil samples will be collected at a total of 6 selected locations, two locations at each of the two bridges areas and two at the box culvert area, at northbound and southbound, as shown on the attached Drawings. A total of 3 groundwater samples will be collected including one at each of the bridges areas (N-1-8 and S-1-18) and one at the box culvert area (S-3-8).

Each sampling location will be recorded by GPS. All samples collected will be submitted for laboratory analysis. Analytical suite is discussed in Laboratory Analysis section.

Sampling Depths

Although excavations depths for the construction at the highway excavation area may vary between 2 and 5 feet, most excavation will be between 2 and 3 feet below existing grade. Additionally, it is URS experience that ADL impact are not expected at depths greater than 3 feet below ground surface (bgs). Therefore, borings will be advanced to maximum depth of 3 feet bgs or maximum excavation depth if less than 3 feet. Borings will be advanced to first groundwater found at those locations where groundwater sampling is scheduled. According to previous environmental investigation at the site, groundwater is expected at depths between five to eight feet bgs. Actual depth may change if refusal is encountered or utility locations require a change for safe work to proceeed.

At each sampling location URS will collect soil samples at 0 to 0.5 ft, 0.5 ft to 1 ft, 1.0 ft. to 1.5 ft, 1.5 ft to 2 ft, and 2.5 ft. to 3.0 ft. Therefore approximately 450 soil samples will be collected and all samples will be analyzed for, at minimum, lead, as further discussed below.

Sample Collection Methods

Soil samples will be collected using three different sampling methods:

- Direct-push borings samples will be collected at those locations where no access problems are expected. This sample collection method can be advanced at a high rate and is intended to be the primarily sample collection method. These samples will be collected by driving an approximately 2-inch diameter sampler equipped with clean acrylic tube liners provided by the drilling subcontractor. Drive sampling equipment will be pressure-washed after each use.
- Hand auger samples will be collected at those locations where access problems are found.
- Geotechnical borings including Standard Penetration Test and/or Modified California Penetration Test methods may be used at those locations where geotechnical and environmental representative samples may be collected jointly.

Soil samples will be collected in clean soil sampling tubes and/or laboratory provided bottles, respectively. Each soil sample tube will be sealed with Teflon and plastic end caps. All samples will be labeled with site-specific unique numbers, placed on ice and shipped daily to a State of California certified analytical laboratory under URS chain of custody procedures.

Groundwater samples will be collected from direct-push borings using disposable bailers. Temporary screened PVC wells may be constructed to facilitate sampling at each location. No permanent installation, development, or surveying of the temporary wells are proposed. Temporary screened PVC will be left up to 4 hours to allow for sample collection. If no groundwater is present after that time boring will be closed and groundwater sample not collected.

At the end of each sampling day, the borings will be backfilled to the surface elevation with neat cement grout as per SCVWD requirements. The limited cuttings and decontamination water derived during the investigation activities will be drummed, sampled and analyzed separately for off-site disposal purposes. The investigation-derived waste (IDW) will be properly labeled and stored at a site, on the Right of Way, approved by Caltrans, until it can be analyzed and characterized for disposal. URS has assumes that no more than two drums of IDW will be generated during this phase of work.

Laboratory Analyses and Analytical Methodology

All the soil samples will be submitted for analysis and analyzed for total lead by EPA Method 6010. Up to 10 percent of these will also be analyzed for CAM 17 metals by EPA Method 6010 (which includes lead), and for pH. Up to 10 percent of the samples collected from intervals below 0.5 ft will be analyzed for TPH-d/mo by EPA Test Method 8015B, TPH-G/BTEX by EPA Test Method 8015B, and 5 Gas Oxygenates by EPA method 8260. Up to 10 percent of samples collected from the 0.5 ft interval will be analyzed for PCBs and pesticides by EPA Test Method 8081/8082. Up to 20 percent of the samples collected will be analyzed for asbestos using PLM Method. Two of the subsurface soil samples collected in the vicinity of the Caltrans yard will be also analyzed for VOCs using EPA Test Methods 8082/8260. Soil samples collected at Right of Way acquisition areas will be analyzed for the full analytical suit. Soil samples collected at the retaining wall area will be analyzed for the full analytical suit.

Groundwater samples will be analyzed for CAM 17 metals by EPA Method 6010 (which includes lead), pH, TPH-d/mo by EPA Test Method 8015B, TPH-G/BTEX by EPA Test Method 8015B, 5 Gas Oxygenates by EPA method 8260, PCBs and pesticides by EPA Test Method 8081/8082, and for VOCs using EPA Test Methods 8082/8260.

All TPH-d and TPH-mo sample extracts will be first extracted with silica gel to remove biogenic sources that could result in false positive results when required to obtain reliable analytical data.

Soil samples with a total lead content exceeding 50 mg/kg will be extracted with the Standard and De-ionized Water WET and analyzed for lead. Soils with total lead content over 100 mg/kg will be extracted with the TCLP test and analyzed for lead. According to URS experience in similar projects, it is estimated that up to 40 percent of the samples initially analyzed for lead may have to be analyzed for lead using WET and DI-WET procedures and that up to 20 percent of the samples initially analyzed for lead may have to be analyzed for lead using the TCLP procedure. Other constituents may also need leachability testing. If so, URS will notify VTA and Caltrans of such samples before ordering the additional leachability testing. All samples will be analyzed on standard turn around time (TAT) of 10 business days. Each iteration of leachability testing will add another 5-10 business days to the analytical schedule.

The goal of this analytical program is to obtain representative information of the quality of the soil to be excavated and groundwater. Therefore, the specific initial analytical suite for each sample will be determined during the field work depending on the actual number of samples collected, their distribution and field observations.

Additional sampling, testing, and statistics may be needed to reduce the volume of hazardous waste identified during the proposed round of investigation.

STATISTICAL ANALYSIS

The following analytical quality control procedures will be used to comply with Caltrans procedures. A calibration blank sample will be run for every ten samples or per batch which ever is more frequent. One sample in 15 will be duplicated in the field for quality control purposes. In the laboratory QC, one in ten field samples will be spiked with lead to ten times the detection limit or at the analyte level.

URS personnel trained in laboratory data review will review each data package submitted by the laboratory for data quality control. The data will then be tabulated and evaluated.

The evaluation will include comparison to the Caltrans District 4/DTSC variance, California's Title 22 hazardous waste regulations, Federal Resource Conservation and Recovery Act (RCRA) regulations, EPA Region IX Preliminary Remediation Goals (PRGs) and the San Francisco Bay Regional Water Quality Control Board (RWQCB) Environmental Screening Levels (ESLs). The 90% Upper Confidence Limit for lead in soil concentrations will be calculated for soil left on site for all soils and layers of soils. The 95% Upper Confidence Limit for lead in soil concentrations will be calculated for soils to be taken off-site. An additional statistical iteration will be conducted to evaluate "hotspot" soil removal, if needed. Recommendations will be made on handling the soil to comply with the regulations. Additional statistical iterations, sample analysis, or sample collection, if needed, can be conducted to evaluate other handling methods under a separate Work Plan.

STRUCTURE INVESTIGATION – ASBESTOS/LEAD BASED PAINT

The outside walls of bridges scheduled for demolition to allow for construction of bridge widening will be visually surveyed for potential Asbestos Containing Materials (P-ACMs) . If potential ACMs are identified, samples will be collected and analyzed for asbestos to allow for characterization of these portions of bridges prior to demolition or disposal. Examples of materials that will be included in our visual survey for potential ACMs are abrasion pads between the bridge decks and the support structures and caulking/filler between the intersection of the bridge decks and the adjoining roadway surface. ACM will be initially analyzed by Polarized Light Microscopy (PLM) and 6010B, respectively. Samples with asbestos will be further analyzed by the Point Count Method to refine the asbestos content. URS will subcontract these sample collection and analysis activities to Kellco Macs Laboratory, a State of California certified asbestos analytical laboratory.

The following bridges will be assessed for potential Asbestos Containing Materials: Adobe Creek Bridge, Matadero Creek Bridge and Permanente Creek Culvert.

LIMITATIONS

This Workplan includes soil and groundwater sampling within the proposed Right of Way acquisition areas. This sampling is primarily to evaluate the soil within these areas for reuse and/or disposal. In addition, soil and/or groundwater samples collected within these areas will be screened for additional analytes based upon findings of the ISA document. However, this sampling does not constitute a "Phase II" Environmental Site Investigation for these areas, and it is possible that this sampling will not be sufficient to certify that the property is free from hazardous materials. URS may recommend additional sampling in these areas prior to acquisition, and this additional sampling is not included in this Workplan.

SIGNATURES

This Work Plan was prepared under the contract provisions between Santa Clara Valley Transportation Authority and URS Corporation. It will be done in accordance with the State of California, Department of Transportation guidelines and policies. By signature below, Caltrans and URS hereby approve the Work Plan and attached Health and Safety Plan (Appendix A).

Consultant Project Engineer	Consultant Environmental Task Leader
Christopher Lillie, PE	Patrick Walz, PE
URS Corporation	URS Corporation

Attachments:
Figure 1 – Project Location and Vicinity Map
Figures 2 through 18 – Site and Proposed Environmental Boring Location Plan Sheets
Appendix A. Health and Safety Plan
Appendix B. Encroachment Permits

Appendix B

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

ENCROACHMENT PERMIT

TR-0120

Permit No. 0408-NSV0710	
Dist/Co/Rte/PM 04-SCL-VAR VAR	
Date May 6, 2008	
Fee Paid $	Deposit $
Performance Bond Amount (1) $	Payment Bond Amount (2) $
Bond Company	
Bond Number (1)	Bond Number (2)

In compliance with (*Check one*):

☒ Your application of April 24, 2008

☐ Utility Notice No. _____ of _____

☐ Agreement No. _____ of _____

☐ R/W Contract No. _____ of _____

TO: Santa Clara Valley Transportation Authority
3331 North First Street
San Jose, CA 95134

Attn: John Ristow
Phone: (408) 321- 5713

, **PERMITTEE**

and subject to the following, **PERMISSION IS HEREBY GRANTED** to:

Perform field surveys, soil investigation and exploration, hazardous material testing, potholing and environmental traffic data measurements and conduct the required services to preclude nesting and roosting of swallows, swifts, and bats on structures for work under District Agreements No. 4-1869-C and No.4-1794-C, and 04239-EA262000, on State Highways 04-SCL-85,87,101,237,880, 152, 17,9, 25,35, 82, 130,156, 280, and 680, Post Mile Various, in Santa Clara County.

A minimum of one week prior to the start of work under this permit, notice shall be given and advance approval of construction detail, operation, public safety and traffic control shall be obtained from State Representative, J. Wong, 500 Queens Lane, San Jose 95112, (408) 452 7131, weekdays, between 7:30 AM and 4:00 PM .

All permitted work requires the permittee to apply for and obtain a work authorization number prior to the start of work. See the attached "Encroachment Permit Project Work Scheduling Procedures" and the attached "Permit Project Work Scheduling Request Form". Additional time beyond the minimum seven day advanced notice required in the above paragraph may be required for obtaining approval .

The following attachments are also included as part of this permit (*Check applicable*):

☒ Yes	☐ No	General Provisions
☐ Yes	☒ No	Utility Maintenance Provisions
☒ Yes	☐ No	Storm Water Special Previsions
☐ Yes	☒ No	A Cal-OSHA permit required prior to beginning work: # _____

In addition to fee, the permittee will be billed actual costs for:

☐ Yes	☒ No	Review
☒ Yes	☐ No	Inspection
☒ Yes	--------	Field Work

(If any Caltrans effort expended)

☐ Yes ☒ No The information in the environmental documentation has been reviewed and considered prior to approval of this permit.

This permit is void unless the work is completed before May 31, 2010

This permit is to be strictly construed and no other work other than specifically mentioned is hereby authorized.
No project work shall be commenced until all other necessary permits and environmental clearances have been obtained.

KR
CC: Bob Salazar (2), J.Wong
Dist. Traffic Manager/P. chan
TMC/ J. Richardson,
PD SCL "B"/P. Mai

APPROVED:

BIJAN SARTIPI, District Director

BY: Michael D. Condie

MICHAEL D. CONDIE, District Permit Engineer

Before any work is begun which will interrupt the normal flow of public traffic, approval shall be obtained from State's representative, and closures shall be in accordance with the appropriate State Standard Plans T-10 through T-14. Where required by the plan, the use of a flashing arrow-board is MANDATORY.

Traffic control is authorized with State's representative permission, between 9:00 A.M. and 3:00 P.M., and between 9:00 P.M. to 3:00 A.M. Monday through Friday, holidays excepted.

For shoulder closures, see Standard Plan Sheet T-10. Parking may be restricted, as needed.

Traffic control on freeways and freeway ramps are restricted to closure of shoulders between 9:00 AM to 3:00 PM, Monday through Friday, holidays excepted.

The site of the work shall be enclosed by suitable barricades, signs and lights, as approved by State's representative, to warn and protect traffic effectively.

When survey operation is being conducted, the permittee shall furnish, place and maintain signs and safety equipment in accordance with the latest edition of the "Manual of Traffic Controls for Construction and Maintenance Work Zones"

Excavation backfill shall be in accordance with the State standards and as directed by the State's representative.

Certain details of work authorized hereby are shown on District Agreements No. 4-1869-C and No.4-1794-C, and 04239-EA262000.

Any damage to the existing State's facilities shall be repaired or replaced immediately

All Permittee's personnel shall wear appropriate personal protective equipment, including hard hats and bright-colored vests, shirts or jackets with retro-reflective material while on State highway right-of-way.

Permittee's Consultants are authorized to perform the works for permittee.

Immediately following completion of the work permitted herein, the permittee shall fill out and mail the notice of completion attached to this permit.

1. **AUTHORITY:** The Department's authority to issue encroachment permits is provided under, Div. 1, Chpt. 3, Art. 1, Sect. 660 to 734 of the Streets and Highways Code.

2. **REVOCATION:** Encroachment permits are revocable on five days notice unless otherwise stated on the permit and except as provided by law for public corporations, franchise holders, and utilities. These General Provisions and the Encroachment Permit Utility Provisions are subject to modification or abrogation at any time. Permittees' joint use agreements, franchise rights, reserved rights or any other agreements for operating purposes in State highway right of way are exceptions to this revocation.

3. **DENIAL FOR NONPAYMENT OF FEES:** Failure to pay permit fees when due can result in rejection of future applications and denial of permits.

4. **ASSIGNMENT:** No party other than the permittee or permittee's authorized agent is allowed to work under this permit.

5. **ACCEPTANCE OF PROVISIONS:** Permittee understands and agrees to accept these General Provisions and all attachments to this permit, for any work to be performed under this permit.

6. **BEGINNING OF WORK:** When traffic is not impacted (see Number 35), the permittee shall notify the Department's representative, two (2) days before the intent to start permitted work. Permittee shall notify the Department's Representative if the work is to be interrupted for a period of five (5) days or more, unless otherwise agreed upon. All work shall be performed on weekdays during regular work hours, excluding holidays, unless otherwise specified in this permit.

7. **STANDARDS OF CONSTRUCTION:** All work performed within highway right of way shall conform to recognized construction standards and current Department Standard Specifications, Department Standard Plans High and Low Risk Facility Specifications, and Utility Special Provisions. Where reference is made to "Contractor and Engineer," these are amended to be read as "Permittee and Department representative."

8. **PLAN CHANGES:** Changes to plans, specifications, and permit provisions are not allowed without prior approval from the State representative.

9. **INSPECTION AND APPROVAL:** All work is subject to monitoring and inspection. Upon completion of work, permittee shall request a final inspection for acceptance and approval by the Department. The local agency permittee shall not give final construction approval to its contractor until final acceptance and approval by the Department is obtained.

10. **PERMIT AT WORKSITE:** Permittee shall keep the permit package or a copy thereof, at the work site and show it upon request to any Department representative or law enforcement officer. If the permit package is not kept and made available at the work site, the work shall be suspended.

11. **CONFLICTING ENCROACHMENTS:** Permittee shall yield start of work to ongoing, prior authorized, work adjacent to or within the limits of the project site. When existing encroachments conflict with new work, the permittee shall bear all cost for rearrangements, (e.g., relocation, alteration, removal, etc.).

12. **PERMITS FROM OTHER AGENCIES:** This permit is invalidated if the permittee has not obtained all permits necessary and required by law, from the Public Utilities Commission of the State of California (PUC), California Occupational Safety and Health Administration (Cal-OSHA), or any other public agency having jurisdiction.

13. **PEDESTRIAN AND BICYCLIST SAFETY:** A safe minimum passageway of 4' shall be maintained through the work area at existing pedestrian or bicycle facilities. At no time shall pedestrians be diverted onto a portion of the street used for vehicular traffic. At locations where safe alternate passageways cannot be provided, appropriate signs and barricades shall be installed at the limits of construction and in advance of the limits of construction at the nearest crosswalk or intersection to detour pedestrians to facilities across the street. Attention is directed to Section 7-1.09 Public Safety of the Department Standard Specifications.

14. **PUBLIC TRAFFIC CONTROL:** As required by law, the permittee shall provide traffic control protection warning signs, lights, safety devices, etc., and take all other measures necessary for traveling public's safety. While providing traffic control, the needs and control of all road users [motorists, bicyclists and pedestrians, including persons with disabilities in accordance with the Americans with Disabilities Act of 1990 (ADA)] shall be an essential part of the work activity.

    Day and night time lane closures shall comply with the California Manual on Uniform Traffic Control Devices (Part 6, Temporary Traffic Control), Standard Plans, and Standard Specifications for traffic control systems. These General Provisions are not intended to impose upon the permittee, by third parties, any duty or standard of care, greater than or different from, as required by law.

15. **MINIMUM INTERFERENCE WITH TRAFFIC:** Permittee shall plan and conduct work so as to create the least possible inconvenience to the traveling public; traffic shall not be unreasonably delayed. On conventional highways, permittee shall place properly attired flagger(s) to stop or warn the traveling public in compliance with the California Manual on Uniform Traffic Control Devices (Chapter 6E, Flagger Control).

16. **STORAGE OF EQUIPMENT AND MATERIALS:** The storage of equipment or materials <u>is not</u> allowed within State highway right-of-way, <u>unless specified</u> within the Special Provisions of this specific encroachment permit. If Encroachment Permit Special Provisions allow for the storage of equipment or materials within the State right of way, the equipment and material storage shall comply with Standard Specifications, Standard Plans, Special Provisions, and the Highway Design Manual. The clear recovery zone widths must be followed and are the minimum desirable for the type of facility indicated below: freeways and expressways - 30', conventional highways (no curbs) - 20', conventional highways (with curbs) – 1.5'. If a fixed object cannot be eliminated, moved outside the clear recovery zone, or modified to be made yielding, it should be shielded by a guardrail or a crash cushion.

17. **CARE OF DRAINAGE:** Permittee shall provide alternate drainage for any work interfering with an existing drainage facility in compliance with the Standard Specifications, Standard Plans and/or as directed by the Department's representative.

18. **RESTORATION AND REPAIRS IN RIGHT OF WAY:** Permittee is responsible for restoration and repair of State highway right of way resulting from permitted work (State Streets and Highways Code, Sections 670 et. seq.).

19. **RIGHT OF WAY CLEAN UP:** Upon completion of work, permittee shall remove and dispose of all scraps, brush, timber, materials, etc. off the right of way. The aesthetics of the highway shall be as it was before work started.

20. **COST OF WORK:** Unless stated in the permit, or a separate written agreement, the permittee shall bear all costs incurred for work within the State right of way and waives all claims for indemnification or contribution from the State.

21. **ACTUAL COST BILLING:** When specified in the permit, the Department will bill the permittee actual costs at the currently set hourly rate for encroachment permits.

22 **AS-BUILT PLANS:** When required, permittee shall submit one (1) set of folded as-built plans within thirty (30) days after completion and approval of work in compliance with requirements listed as follows:

1. Upon completion of the work provided herein, the permittee shall send one vellum or paper set of As-Built plans, to the State representative. Mylar or paper sepia plans are not acceptable.
2. All changes in the work will be shown on the plans, as issued with the permit, including changes approved by Encroachment Permit Rider.
3. The plans are to be stamped or otherwise noted AS-BUILT by the permittee's representative who was responsible for overseeing the work. Any original plan that was approved with a State stamp, or Caltrans representative signature, shall be used for producing the As-Built plans.
4. If As-Built plans include signing or striping, the dates of signing or striping removal, relocation, or installation shall be shown on the plans when required as a condition of the permit. When the construction plans show signing and striping for staged construction on separate sheets, the sheet for each stage shall show the removal, relocation, or installation dates of the appropriate staged striping and signing.
5. As-Built plans shall contain the Permit Number, County, Route, and Post Mile on each sheet.
6. Disclaimer statement of any kind that differ from the obligations and protections provided by Sections 6735 through 6735.6 of the California Business and Professions Code, shall not be included on the As-Built plans. Such statements constitute non-compliance with Encroachment Permit requirements, and may result in the Department of Transportation retaining Performance Bonds or deposits until proper plans are submitted. Failure to comply may also result in denial of future permits, or a provision requiring a public agency to supply additional bonding.

23. **PERMITS FOR RECORD PURPOSES ONLY:** When work in the right of way is within an area under a Joint Use Agreement (JUA) or a Consent to Common Use Agreement (CCUA), a fee exempt permit is issued to the permittee for the purpose of providing a notice and record of work. The Permittee's prior rights shall be preserved without the intention of creating new or different rights or obligations. "Notice and Record Purposes Only" shall be stamped across the face of the permit.

24. **BONDING:** The permittee shall file bond(s), in advance, in the amount set by the Department. Failure to maintain bond(s) in full force and effect will result in the Department stopping of all work and revoking permit(s). Bonds are not required of public corporations or privately owned utilities, unless permittee failed to comply with the provision and conditions under a prior permit. The surety company is responsible for any latent defects as provided in California Code of Civil Procedures, Section 337.15. Local agency permittee shall comply with requirements established as follows: In recognition that project construction work done on State property will not be directly funded and paid by State, for the purpose of protecting stop notice claimants and the interests of State relative to successful project completion, the local agency permittee agrees to require the construction contractor furnish both a payment and performance bond in the local agency's name with both bonds complying with the requirements set forth in Section 3-1.02 of State's current Standard Specifications before performing any project construction work. The local agency permittee shall defend, indemnify, and hold harmless the State, its officers and employees from all project construction related claims by contractors and all stop notice or mechanic's lien claimants. The local agency also agrees to remedy, in a timely manner and to State's satisfaction, any latent defects occurring as a result of the project construction work.

25. **FUTURE MOVING OF INSTALLATIONS:** Permittee understands and agrees to relocate a permitted installation upon notice by the Department. Unless under prior property right or agreement, the permittee shall comply with said notice at his sole expense.

26. **ARCHAEOLOGICAL/HISTORICAL:** If any archaeological or historical resources are revealed in the work vicinity, the permittee shall immediately stop work, notify the Department's representative, retain a qualified archaeologist who shall evaluate the site, and make recommendations to the Department representative regarding the continuance of work.

27. **PREVAILING WAGES:** Work performed by or under a permit may require permittee's contractors and subcontractors to pay appropriate prevailing wages as set by the Department of Industrial Relations. Inquiries or requests for interpretations relative to enforcement of prevailing wage requirements are directed to State of California Department of Industrial Relations, 525 Golden Gate Avenue, San Francisco, California 94102.

28. **RESPONSIBILITY FOR DAMAGE:** The State of California and all officers and employees thereof, including but not limited to the Director of Transportation and the Deputy Director, shall not be answerable or accountable in any manner for injury to or death of any person, including but not limited to the permittee, persons employed by the permittee, persons acting in behalf of the permittee, or for damage to property from any cause. The permittee shall be responsible for any liability imposed by law and for injuries to or death of any person, including but not limited to the permittee, persons employed by the permittee, persons acting in behalf of the permittee, or for damage to property arising out of work, or other activity permitted and done by the permittee under a permit, or arising out of the failure on the permittee's part to perform his obligations under any permit in respect to maintenance or any other obligations, or resulting from defects or obstructions, or from any cause whatsoever during the progress of the work, or other activity or at any subsequent time, work or other activity is being performed under the obligations provided by and contemplated by the permit.

The permittee shall indemnify and save harmless the State of California, all officers, employees, and State's contractors, thereof, including but not limited to the Director of Transportation and the Deputy Director, from all claims, suits or actions of every name, kind and description brought for or on account of injuries to or death of any person, including but not limited to the permittee, persons employed by the permittee, persons acting in behalf of the permittee and the public, or damage to property resulting from the performance of work or other activity under the permit, or arising out of the failure on the permittee's part to perform his obligations under any permit in respect to maintenance or any other obligations, or resulting from defects or obstructions, or from any cause whatsoever during the progress of the work, or other activity or at any subsequent time, work or other activity is being performed under the obligations provided by and contemplated by the permit, except as otherwise provided by statute.

The duty of the permittee to indemnify and save harmless includes the duties to defend as set forth in Section 2778 of the Civil Code. The permittee waives any and all rights to any type of expressed or implied indemnity against the State, its officers, employees, and State contractors. It is the intent of the parties that the permittee will indemnify and hold harmless the State, its officers, employees, and State's contractors, from any and all claims, suits or actions as set forth above regardless of the existence or degree of fault or negligence, whether active or passive, primary or secondary, on the part of the State, the permittee, persons employed by the permittee, or acting on behalf of the permittee.

For the purpose of this section, "State's contractors" shall include contractors and their subcontractors under contract to the State of California performing work within the limits of this permit.

29. **NO PRECEDENT ESTABLISHED:** This permit is issued with the understanding that it does not establish a precedent.

30. **FEDERAL CIVIL RIGHTS REQUIREMENTS FOR PUBLIC ACCOMMODATION:**
A. The permittee, for himself, his personal representative, successors in interest, and assigns as part of the consideration hereof, does hereby covenant and agree that:
1. No person on the grounds of race, color, or national origin shall be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities.
2. That in connection with the construction of any improvements on said lands and the furnishings of services thereon, no discrimination shall be practiced in the selection and retention of first-tier subcontractors in the selection of second-tier subcontractors.
3. That such discrimination shall not be practiced against the public in their access to and use of the facilities and services provided for public accommodations (such as eating, sleeping, rest, recreation), and operation on, over, or under the space of the right of way.
4. That the permittee shall use the premises in compliance with all other requirements imposed pursuant to Title 15, Code of Federal Regulations, Commerce and Foreign Trade, Subtitle A. Office of the Secretary of Commerce, Part 8 (15 C.F.R. Part 8) and as said Regulations may be amended.
5. That in the event of breach of any of the above nondiscrimination covenants, the State shall have the right to terminate the permit and to re-enter and repossess said land and the land and the facilities thereon, and hold the same as if said permit had never been made or issued.

31. **MAINTENANCE OF HIGHWAYS:** The permittee agrees, by acceptance of a permit, to properly maintain any encroachment. This assurance requires the permittee to provide inspection and repair any damage, at permittee's expense, to State facilities resulting from the encroachment.

32. **SPECIAL EVENTS:** In accordance with subdivision (a) of Streets and Highways Code Section 682.5, the Department of Transportation shall not be responsible for the conduct or operation of the permitted activity, and the applicant agrees to defend, indemnify, and hold harmless the State and the city or county against any and all claims arising out of any activity for which the permit is issued.

Permittee understands and agrees that it will comply with the obligations of Titles II and III of the Americans with Disabilities Act of 1990 in the conduct of the event, and further agrees to indemnify and save harmless the State of California, all officers and employees thereof, including but not limited to the Director of Transportation, from any claims or liability arising out of or by virtue of said Act.

33. **PRIVATE USE OF RIGHT OF WAY:** Highway right of way shall not be used for private purposes without compensation to the State. The gifting of public property use and therefore public funds is prohibited under the California Constitution, Article 16.

34. **FIELD WORK REIMBURSEMENT:** Permittee shall reimburse State for field work performed on permittee's behalf to correct or remedy hazards or damaged facilities, or clear debris not attended to by the permittee.

35. **NOTIFICATION OF DEPARTMENT AND TMC:** The permittee shall notify the Department's representative and the Transportation Management Center (TMC) at least 7 days before initiating a lane closure or conducting an activity that may cause a traffic impact. A confirmation notification should occur 3 days before closure or other potential traffic impacts. In emergency situations when the corrective work or the emergency itself may affect traffic, TMC and the Department's representative shall be notified as soon as possible.

36. **SUSPENSION OF TRAFFIC CONTROL OPERATION:** The permittee, upon notification by the Department's representative, shall immediately suspend all lane closure operations and any operation that impedes the flow of traffic. All costs associated with this suspension shall be borne by the permittee.

37. **UNDERGROUND SERVICE ALERT (USA) NOTIFICATION:** Any excavation requires compliance with the provisions of Government Code Section 4216 et. seq., including, but not limited to notice to a regional notification center, such as Underground Service Alert (USA). The permittee shall provide notification at least 48 hours before performing any excavation work within the right of way.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER

May 1, 2006
PLANS APPROVAL DATE

Greg N. Edwards C36386 6-30-06 CIVIL STATE OF CALIFORNIA

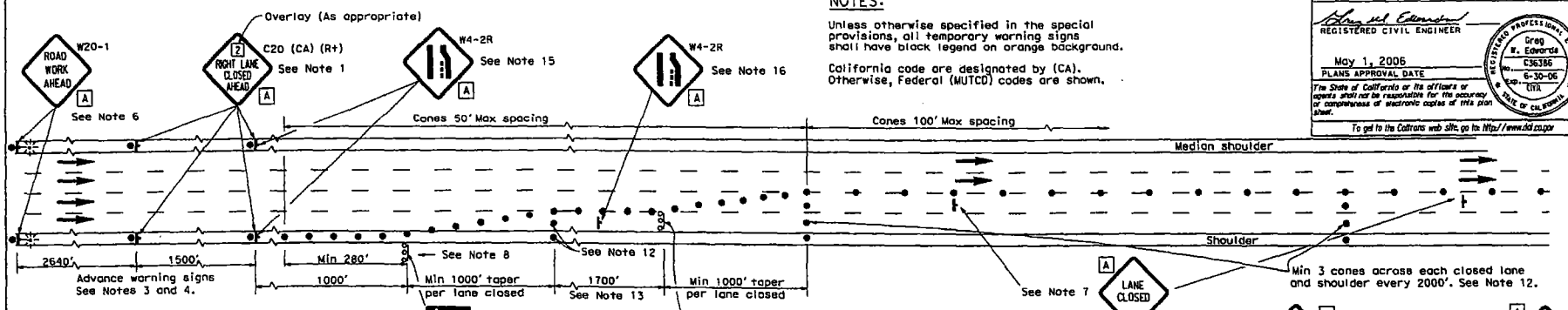
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To get to the Caltrans web site, go to: http://www.dot.ca.gov

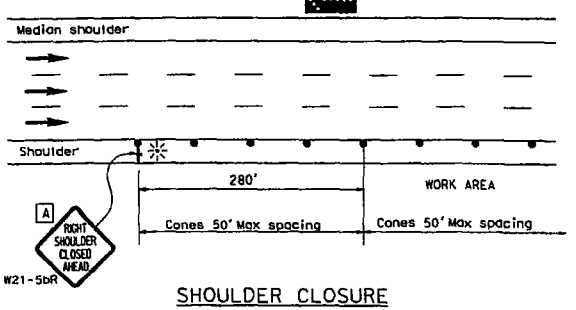
NOTES:

Unless otherwise specified in the special provisions, all temporary warning signs shall have black legend on orange background.

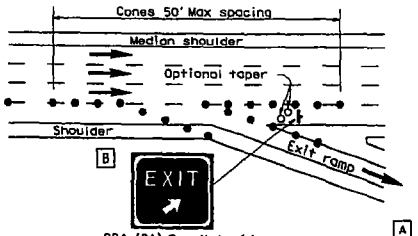
California code are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.



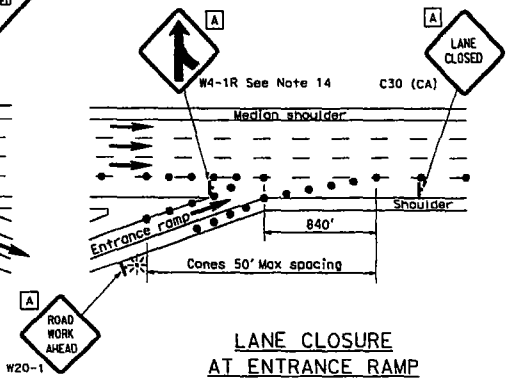
LANE CLOSURE



SHOULDER CLOSURE



LANE CLOSURE AT EXIT RAMP



LANE CLOSURE AT ENTRANCE RAMP

NOTES:

1. Median lane closures shall conform to the details for outside lane closures except that C20 (CA) (Lt) signs shall be used.
2. At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closures.
3. Duplicate sign installations are not required:
   a) On opposite shoulder if at least one-half of the available lanes remain open to traffic.
   b) In the median if the width of the median shoulder is less than 8' and the outside lanes are to be closed.
4. Each advance warning sign on each side of the roadway shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
5. A C14 (CA) "END ROAD WORK" sign, as appropriate, shall be placed at the end of the lane closure unless the end of work area is obvious or ends within a larger project's limits.
6. If the W20-1 sign would follow within 2000' of a stationary W20-1 or C11 (CA) "ROAD WORK NEXT _____ MILES", use a C20 (CA) sign for the first advance warning sign.
7. Place a C30 (CA) sign every 2000' throughout length of lane closure.
8. One flashing arrow sign for each lane closed. The first flashing arrow sign shall be Type I. All others may be either Type I or Type II.
9. A minimum 1500' of sight distance shall be provided where possible for vehicles approaching the first flashing arrow sign. Lane closures shall not begin at top of crest vertical curve or on a horizontal curve.
10. All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
11. Portable delineators, placed at one-half the spacing indicated for traffic cones may be used instead of cones for daytime closures only.
12. Unless otherwise specified in the special provisions, a minimum of 3 cones shall be placed transversely across each closed lane and shoulder at each location where a taper across a traffic lane ends and every 2000' as shown on the "Lane Closure" detail. Two Type II barricades may be used instead of the 3 cones. The transverse alignment of the cones or barricades on the closed shoulder may be shifted from the transverse alignment to provide access to the work.
13. Unless otherwise specified in the special provisions, the 1700' tangent shown along lane lines shall be used between the 1000' tapers required for each closed traffic lane.
14. Unless otherwise specified in the special provisions, the G84 (CA) and W4-1 signs shall be used as shown.
15. When specified in the special provisions, a W4-2 "LANE ENDS" symbol sign is to be used in place of the C20 (CA) "RIGHT LANE CLOSED AHEAD" sign.
16. The W4-2 "LANE ENDS" symbol sign shown at this location is to be used where the W4-2 sign is used as advance warning as described in Note 15.

SIGN PANEL SIZE (Min)

A	48" x 48"
B	54" x 48"

LEGEND

- Traffic Cone
- Traffic Cone (optional taper)
- Temporary Sign
- Flashing Arrow Sign (FAS)
- FAS Support or Trailer
- Direction of Travel
- Portable Flashing Beacon

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE ON FREEWAYS AND EXPRESSWAYS

NO SCALE

T10

2006 STANDARD PLAN T10

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS

REGISTERED CIVIL ENGINEER

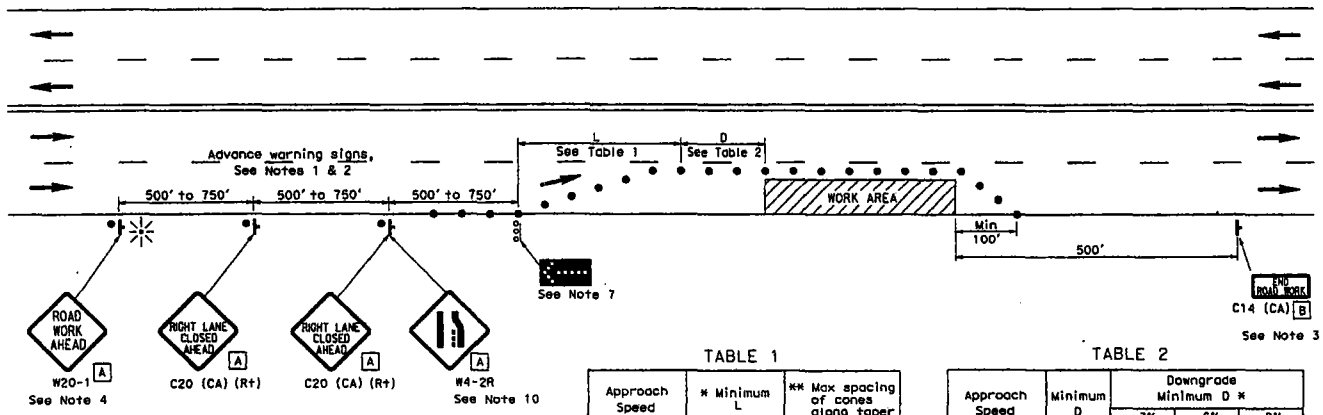
May 1, 2006
PLANS APPROVAL DATE

Greg N. Edwards
C36386
6-30-06
CIVIL
STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To get to the Caltrans web site, go to: http://www.dot.ca.gov

TYPICAL LANE CLOSURE



NOTES:

Unless otherwise specified in the special provisions, all temporary warning signs shall have black legend on orange background.

California code are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

TABLE 1

Approach Speed	* Minimum L	** Max spacing of cones along taper
mph	ft	ft
20 and below	80	20
25	125	25
30	180	30
35	245	35
40	320	40
45	540	45
50	600	50
Over 50	See Note 9	

* Use L for lane widths less than or equal to 12'.
** See Note 8.

TABLE 2

Approach Speed	Minimum D	Downgrade Minimum D *		
		-3%	-6%	-9%
mph	ft	ft	ft	ft
25 and below	155	158	165	173
30	200	205	215	227
35	250	257	271	287
40	305	315	333	354
45	360	378	400	427
50	425	446	474	507
Over 50	See Note 9			

* Use on sustained downgrade steeper than -3 percent and longer than 1 mile.

LEGEND

- Traffic Cone
- Temporary Sign
- Direction of Travel
- Flashing Arrow Sign (FAS)
- FAS Support or Trailer
- Portable Flashing Beacon

SIGN PANEL SIZE (Min)

A 36" x 36"
B 36" x 18"

NOTES:

1. Where approach speeds are low, advance warning signs may be placed at 300' spacing and placed closer in urban areas.
2. Each advance warning sign shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
3. A C14 (CA) "END ROAD WORK" sign, as appropriate, shall be placed at the end of the lane closure unless the end of work area is obvious, or ends within a larger project's limits.
4. If the W20-1 sign would follow within 2000' of a stationary W20-1 or C11 (CA) "ROAD WORK NEXT _____ MILES", use a C20 (CA) sign for the first advance warning sign.
5. All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
6. Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime closures only.
7. Flashing arrow sign shall be either Type I or Type II.
8. The maximum spacing between cones along a tangent shall be 50' and along a taper shall be approximately as shown in Table 1.
9. For approach speeds over 50 mph, use the "Traffic Control System for Lane Closure On Freeways And Expressways" plan for lane closure details and requirements.
10. When specified in the special provisions, a W4-2 "LANE ENDS" symbol sign is to be used in place of the C20 (CA) "RIGHT LANE CLOSED AHEAD" sign.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE ON MULTILANE CONVENTIONAL HIGHWAYS

NO SCALE

T11

2006 STANDARD PLAN T11

Encroachment Permit Work Scheduling Request Form

Submit request to schedule traffic control weekly, 7 days in advance, using this form. Submit to Permit Duty Station by FAX, **510-286-3960**, or E-mail: *Permit_Duty_Engineer@dot.ca.gov*. ***Reminder!*** - Notify Inspector listed on page 1 or 2 of your Permit. Check Permit Special Provisions for authorized **work hours**. Any deviation from the Permit must be requested in writing.

INSTRUCTIONS AND ABBREVIATIONS: See Procedures on reverse of this form (page 2).

1. Permit No.: _____ 2.Expiration Date: _____ 3. Request Date: _____
4. Caltrans Inspector: _____ 5. Requested Work Week: _____ to _____
6. Route: _____ 7. County: _____ 8. City or township: _____
9. ☐PostMiles or ☐Kilopost: From: _____ To: _____ 10. Existing Lanes (in each Dir): Dir____ Lns____ / Dir____ Lns ____
11. Describe Location (use landmark if necessary): From: _____ To: _____
12 Name of Conventional Highway or Surface St: _____
13. (a through k) Fill in or 'x' if applicable: (a) ☐ Divided Hwy *or* ☐ Undivided Hwy (b) ☐ Full-Closure ☐ 1 dir or ☐ both dir
(c)☐One-way Traffic Control: Only on "Undivided" Hwy (*Alternate use of same lane for both directions--hold trfc 5 -10 min w/flaggers*)
(d)☐Connector Ramp: (*State Highway #*) _____ to (*State Highway #*) _____ Closed ☐ *or* Lane # _____
(e)☐Off/ramp: *(Freeway to City St)* Ramp Name: _____ Off/ramp Closed ☐ *or* Lane#: _____
(f)☐On/ramp: *(City St to Freeway)* Ramp Name: _____ On/ramp Closed ☐ *or* Lane#: _____
(g)☐Divert Trfc or Contra Flow: Reconfigure lanes/divert trfc to Lane# ___ in the ___ Direction; ___ Lane(s) open ea direction.
(h)☐Intermittent Traffic Control (i) ☐Various Locations (j) ☐Long-Term (24± hours continuous) ETO _____

(k) Year:			Time		Dir		* * * * * * Restricted Lanes * * * * * *																	Brks		Closure ID#
From DATE	To DATE	DAY(S) SU-M-T-W-TH-F-SA	24-HR CLOCK Start (10-97)	Finish (10-98)	NB EB	SB WB	Full Closure See Detour	SHLDR L	SHLDR R	1	2	3	4	5	6	V L	Aux or Coll	CD or Med	TURN PCKT(S) L	TURN PCKT(S) R	Park Strip	5 to 15 Min	Roll -ing	*Caltrans will complete & return*

14. Description of work/comments: _____

15. Detour (*Required for full closure*): _____

16. Contingency Plan: _____
17. On-site during work (*circle if applicable*) CHP / PD / Other: _____

18. Name:	Permittee:	Contractor (if different than permittee):
Address:		
On-site Personnel Contact Name(s) & Phone No.	Name:	Name:
	Office:	Office:
	Cell:	Cell:
	FAX:	FAX:

19. **"REAL-TIME" STATUS INSTRUCTIONS – PLEASE MAKE YOUR FIELD PERSONNEL AWARE & RESPONSIBLE!**
Permittee shall **STATUS** scheduled work **DAILY** via Caltrans 24-Hour Communication Center at **510-286-6359.** Status using Closure ID No(s) at the start of work, **(10-97),** and again when work is finished for the day, **(10-98).** To cancel **(10-22),** phone **510-286-6359** or fax to **510-286-6358** before the scheduled 10-97 time, but no later than 1 hour prior to the scheduled 10-98 time. Any **delay** in picking up your closure must be reported immediately to **510-286-6359** or Permit Inspector. See item 9 on reverse/page 2.

ENCROACHMENT PERMIT WORK SCHEDULING PROCEDURES

1. **INSTRUCTIONS:** Fill in blanks or check appropriate boxes. Attach maps or diagrams, if available. Enter **beginning day** through **ending day of work week** (M-T-W-TH-F-SA-SU). **Month/Day:** Enter month (1-12) and day (1-31) of requested week. **Start & Finish Time:** Use 24 hour clock format. **Read page 2** of your Permit Special Provisions for **hours** & days allowed. Separate lane closure #'s are required for each direction and facility. Use separate line for each. **Lanes are numbered in direction of travel from left to right,** excluding turn pockets; left being #1 or "fast lane". Check boxes under **RESTRICTED LANES** to indicate lanes or parts of highway to be closed. **"VL"(Various Lanes)** may be checked with note in **Comments** Section stating number of lanes to remain open at all times.
2. **ABBREVIATIONS:** **Aux**=auxiliary, **CD**=Center Divide; **Coll**=Collector; **Conn**=Connector; **Contra Flow**=Close 1 direction of traffic and divert to lane(s) in opposite direction or a turn lane. **Day of Week**=(M-T-W-TH-F-SA-SU); **Dir**=Direction (**NB**=North, **SB**=South,**WB**=West, or **EB**=East); **F/L**=fog line; **Lns**=Lanes; **L**=Left; **Med**= Median; **Off/R**=Off-Ramp; **On/R**=On-Ramp; **Park Strip**=Parking area parallel to lane; **Pckt**=Pocket; **Roll**=Rolling (for closure such as sweeping); **R**=Right; **Shldr**=Shoulder; **SR**=State Route; **V/L**=Various Lanes; **V/Loc**=Various Locations.
3. Requests for scheduling shall be submitted on this form via FAX to 510-286-3960, or, via E-Mail to *Permit_Duty_Engineer@dot.ca.gov*, or, through the designated State Representative (page 1 of permit).
4. All permitted work **(with or without traffic control)** is subject to advance scheduling on this form, seven (7)days in advance of the work week requested. Submittals and approvals shall continue on a weekly basis.
5. If work begins weekly on Sunday, the work week shall be Sunday through Saturday. If work week begins on Monday, the work week shall be Monday through Sunday.
6. Incomplete, illegible, or inaccurate requests may be returned for correction. Assistance for completing the request may be obtained from the designated State Representative.
7. Every attempt will be made to return timely requests with closure ID or work authorization numbers, to the Permittee by close of business on Thursday, prior to the scheduled work week. When deemed necessary to ensure public convenience, Caltrans may deny and/or reschedule the request.
8. All requests must include a contingency plan for restoring public traffic (i.e. reopening of a closed lane, ramp and/or shoulder) in the event of (1) CHP or the local authority requires opening due to an unforeseeable incident in the nearby vicinity, or (2) permitted experiences an equipment breakdown, shortage of or lack of production materials or any other failure which would otherwise delay restoring public convenience within the time limits specified in the permit. The contingency plan shall include availability of any proposed standby equipment and stockpiled materials that can be utilized for the immediate opening of closures when ordered by the State representative. Acceptance of the contingency plan by the Engineer shall not relieve the Contractor from the requirement of opening the restricted travel way to accommodate public traffic as specified in the lane closure hour's section of the permit provisions.
9. Caltrans will review and process the request by entering all information into the State-wide Lane-Closure System (LCS). This process generates a work authorization number*. This number will be entered on the request form and returned to Permittee as approval to proceed AND will be used to **"Real-Time Status"** on a daily basis. Permittee shall communicate with Caltrans 24-hour District Communication Center (DCC) via telephone at **510-286-6359** twice daily when working, or once daily if cancelled.
   a. When work begins (first cone down), Permittee shall contact Caltrans DCC and relay: **"(Closure ID #*) is 10-97".**
   b. When work ends (last cone removed), Permittee shall contact Caltrans DCC and relay: **"(Closure ID #*) is 10-98".**
   c. If the work is cancelled on any scheduled day, Permittee shall contact Caltrans DCC and relay; **"(Closure ID #*) is 10-22".** A "10-22" (cancellation) can be phoned at anytime before the scheduled "10-97" time, but no later than 1 hour prior to scheduled "10-98" time. You may be asked to fax confirmation of "10-22" to the **DCC FAX at 510-286-6358.**
   d. During the work, any unexpected occurrences including delayed openings, accidents, etc., shall be communicated to Caltrans DCC @ **510-286-6359,** immediately.

Avoid possible miscommunication when calling status. Use the **PHONETIC ALPHABET** to state your Closure ID:
A = Adam, **B** = Boy, **C** = Charles, **D** = David, **E** = Edward, **F** = Frank, **G** = George, **H** = Henry, **I** = Ida, **J** = John, **K** = King, **L** = Lincoln, **M** = Mary, **N** = Nora, **O** = Ocean, **P** = Paul, **Q** = Queen, **R** = Robert, **S** = Sam, **T** = Tom, **U** = Union, **V** = Victor, **W** = William, **X** = X-ray, **Y** = Yellow, **Z** = Zebra. *Example:* P82CA="Paul 82 Charles Adam"

10. The intent of these procedures is to help ensure public convenience by identifying planned closures on the State Highway system, resolving potential conflicts, and disseminating all available **"REAL-TIME"** information, via the traffic media to all motorists, including but not limited to the public, CHP, local police and sheriffs' office, and emergency fire and rescue personnel.

***** *"closure ID number" is the same as "work authorization number"*

Revised 7-21-05

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

CUSTOMER SERVICE QUESTIONNAIRE

TR-0164 (REV 2/2001)

PERMIT NUMBER 0408-NSV0710

Dear Customer:

Our goal is to provide the best service possible to our customers. Please take a few minutes to complete this questionnaire. Your comments will enable us to see how we are doing overall and any areas which may need improvement.

PLEASE TELL US HOW WE'RE DOING

INSIDE THE OFFICE	EXCELLENT	VERY GOOD	GOOD	POOR
Staff courteous and helpful				
Staff quick and efficient				
Explanations and instructions clear				
TELEPHONE ANSWERING				
Timely response				
Receiving information or answers				
INSPECTION				
Inspector courteous and helpful				
Pre-construction meeting set and held in a timely manner				
Inspector at job site frequently				
Inspector able to answer questions and deal with problems				
OVERALL PERFORMANCE				
What would you say is our overall performance?				
Is there a staff person you would like to commend?	STAFF'S NAME:			

COMMENTS:

NAME *(Optional)*	BUSINESS PHONE NUMBER	DATE

ADA Notice For individuals with sensory disabilities, this document is available in alternate formats. For information call (916) 654-6410 or TDD (916) 654-3880 or write Records and Forms Management, 1120 N Street, MS-89, Sacramento, CA 95814.

NOTICE OF COMPLETION

Permit No.: 0408-0710 Sol-Var Var

Inspector: T Wong

All work authorized by the above-numbered permit was completed on _____.

_____

Permittee Signature

Appendix C

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
E. Ortega	4-13-09	4-13-09		N-1-1
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY SAND with GRAVEL (SM).		1										
	1				2										
	2				3										
					4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-1-1
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET 1 of 1

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-23-09	3-23-09		N-1-10
DRILLING CONTRACTOR			BOREHOLE LOCATION (Station, Offset, Line)	SURFACE ELEVATION
ECA, Inc.			Offset L	
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Continuous Push			Geoprobe 5410	2"
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Other				
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS DURING DRILLING AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
				3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY SILT (ML); stiff; brown; trace fine to coarse GRAVEL; with fine to medium SAND; low plasticity fines; no odor.		1										
	1				2										
	2				3										
					4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-1-10
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-23-09	3-23-09		N-1-11
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY SILT (ML); medium stiff; brown; moist; fine, subrounded SAND; low plasticity fines.		1										
	1				2										
	2				3										
					4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-1-11
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-23-09	3-23-09		N-1-12
DRILLING CONTRACTOR			BOREHOLE LOCATION (Station, Offset, Line)	SURFACE ELEVATION
ECA, Inc.			Offset L	
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Continuous Push			Geoprobe 5410	2"
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Other				
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS DURING DRILLING AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY SILT (ML); medium stiff; moist; trace coarse GRAVEL; fine to medium SAND; medium plasticity fines.		1										
	1		SANDY SILT (ML); medium stiff.		2										
	2				3										
					4										
					5										
	3		Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-1-12
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME 101 Aux				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET 1 of 1

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-23-09	3-23-09		N-1-13
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY SILT (ML); medium stiff; light brown; moist; fine SAND; low plasticity fines; no odor.		1										
	1				2										
	2				3										
					4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-1-13
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-23-09	3-23-09		N-1-14
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY SILT (ML); stiff; with coarse, angular SAND; low plasticity fines.		1										
	1				2										
	2				3										
					4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-1-14
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET 1 of 1

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-23-09	3-23-09		N-1-15
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY SILT with GRAVEL (ML); greenish gray; with coarse, angular GRAVEL; medium plasticity fines; no odor.		1										
	1				2										
					3										
	2				4										
			CLAYEY SILT with SAND (ML); light gray; some fine SAND; medium plasticity fines.		5										
	3		Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-1-15
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET 1 of 1

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-23-09	3-23-09		N-1-16
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		CLAYEY SILT with SAND (ML); moist; some fine, subrounded SAND; medium plasticity fines.		1										
	1				2										
	2				3										
					4										
	3		Bottom of Borehole at 3.0 ft.		5										
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-1-16
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-23-09	3-23-09		N-1-17
DRILLING CONTRACTOR			BOREHOLE LOCATION (Station, Offset, Line)	SURFACE ELEVATION
ECA, Inc.			Offset L	
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Continuous Push			Geoprobe 5410	2"
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Other				
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS DURING DRILLING AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
				3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		CLAYEY SILT with SAND (ML); fine, rounded GRAVEL; medium to coarse, subangular SAND; low plasticity fines.		1										
	1				2										
					3										
	2		CLAYEY SILT with SAND (ML); medium to coarse, subangular SAND.		4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-1-17
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
E. Ortega	4-13-09	4-13-09		N-1-18
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY SAND with GRAVEL (SM).		1										
	1		Lean CLAY (CL); dark brown.		2										
	2				3										
					4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-1-18
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-22-09	3-22-09		N-1-19
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY SILT with GRAVEL (ML); light brown; dry; fine, subrounded to rounded GRAVEL; low plasticity fines.		1										
	1				2										
	2				3										
					4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-1-19
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET 1 of 1

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
E. Ortega	4-13-09	4-13-09		N-1-2
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY SAND with GRAVEL (SM).		1										
	1				2										
	2				3										
					4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-1-2
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-22-09	3-22-09		N-1-20
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Hand Auger			DRILL RIG	BOREHOLE DIAMETER
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY CLAY (CL); dark gray; moist; medium to high plasticity fines; no odor.		1										
	1				2										
	2				3										
					4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-1-20
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-24-09	3-24-09		N-1-4
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Hand Auger			DRILL RIG	BOREHOLE DIAMETER
SAMPLER TYPE(S) AND SIZE(S) (ID): Jars			SPT HAMMER TYPE: N/A	HAMMER EFFICIENCY, ERi: N/A
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE): Not Encountered	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY SILT (ML); very stiff; dark brown; low plasticity fines.		1										
	1				2										
	2				3										
					4										
					5										
	3		Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-1-4
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY S.Ball	DATE 7-10-09	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-24-09	3-24-09		N-1-5
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Jars			SPT HAMMER TYPE: N/A	HAMMER EFFICIENCY, ERi: N/A
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE): Not Encountered	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY SILT (ML); medium stiff; light brown; moist; about 25 to 30% some fine SAND; low plasticity fines.		1										
	1				2										
	2				3										
					4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-1-5
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY S.Ball	DATE 7-10-09	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-23-09	3-23-09		N-1-6
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Jars			SPT HAMMER TYPE: N/A	HAMMER EFFICIENCY, ERi: N/A
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE): Not Encountered	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY SILT (ML); stiff; light brown; fine SAND; low to medium plasticity fines.		1										
	1				2										
					3										
	2				4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-1-6
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY S.Ball	DATE 7-10-09	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-23-09	3-23-09		N-1-7
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Jars			SPT HAMMER TYPE: N/A	HAMMER EFFICIENCY, ERi: N/A
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE): Not Encountered	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY SILT (ML); medium stiff; light brown; moist; about 15 to 20% fine SAND; medium plasticity fines; no odor.		1										
	1				2										
	2				3										
					4										
	3		Bottom of Borehole at 3.0 ft.		5										
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-1-7
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY S.Ball	DATE 7-9-09	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-23-09	3-23-09		N-1-8
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Jars			SPT HAMMER TYPE: N/A	HAMMER EFFICIENCY, ERi: N/A
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING 15.32 ft; AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 20.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		CLAYEY SILT with SAND (CL); very stiff; light brown; moist; some fine SAND; low plasticity fines.		1										
	1				2										
					3										
					4										
	2														
					5										
	3														
	4														
	5		SANDY SILT (ML); medium stiff; light brown; moist; some coarse, angular SAND; low plasticity fines.												
	6														
	7														
	8		SILTY CLAY (CL-ML); very stiff; dark brown.												
	9		SILTY SAND with GRAVEL (SM); medium stiff; fine GRAVEL; medium plasticity fines.												
	10		SILTY CLAY medium stiff.												
	11														
	12														
	13		Lean CLAY (CL); stiff; light brown; high plasticity fines.												
	14														
	15		SILTY CLAY (CL-ML).												
					6										
	16														
	17		Lean CLAY (CL).												
	18														
	19														
	20		Bottom of Borehole at 20.0 ft.												
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-1-8
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY S.Ball	DATE 7-9-09	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-23-09	3-23-09		N-1-9
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY SILT (ML); medium stiff; brown; moist; some fine to coarse SAND; no odor.		1										
	1				2										
	2				3										
					4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-1-9
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-22-09	3-22-09		N-2-1
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Hand Auger			DRILL RIG	BOREHOLE DIAMETER
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY CLAY (CL); dark gray; moist; medium to high plasticity fines.		1										
	1				2										
	2				3										
					4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-2-1
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-26-09	3-26-09		N-2-10
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY CLAY (CL); stiff; dark brown; moist; medium plasticity fines.		1										
	1				2										
	2				3										
					4										
	3		Bottom of Borehole at 3.0 ft.		5										
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-2-10
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET 1 of 1

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-26-09	3-26-09		N-2-11
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY SILT (ML); stiff; dark brown; moist; fine to coarse SAND; low plasticity fines.		1										
	1				2										
	2				3										
					4										
	3		Bottom of Borehole at 3.0 ft.		5										
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-2-11
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-26-09	3-26-09		N-2-12
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY SAND (SM); medium dense; olive brown; fine SAND; medium plasticity fines.		1										
	1				2										
	2				3										
					4										
	3		Bottom of Borehole at 3.0 ft.		5										
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

CALTRANS BORING RECORD 052007 28649951-101 AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-2-12
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-26-09	3-26-09		N-2-13
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY SILT (ML); very stiff; light brown; moist; some fine SAND; low plasticity fines.		1										
	1				2										
	2				3										
					4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-2-13
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET 1 of 1

CALTRANS BORING RECORD 052007 28649951-101 AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-25-09	3-25-09		N-2-14
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		At 0 ft, grades to medium stiff; light brown grades to dark gray; moist; medium plasticity fines.		1										
	1				2										
	2				3										
					4										
	3		Bottom of Borehole at 3.0 ft.		5										
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-2-14
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-22-09	3-22-09		N-2-2
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Hand Auger			DRILL RIG	BOREHOLE DIAMETER
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY CLAY (CL); light brown; moist; trace fine SAND; medium plasticity fines; no odor.		1										
	1				3										
					4										
	2		SILTY CLAY with GRAVEL (CL); light brown; moist; coarse GRAVEL; trace fine SAND.		5										
	3		Bottom of Borehole at 3.0 ft.												
	4														
	5				2										
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-2-2
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101 AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
E. Ortega	4-13-09	4-13-09		N-2-3
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY SAND with GRAVEL (SM).		1										
	1				2										
	2				3										
	3				4										
					5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-2-3
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-22-09	3-22-09		N-2-4
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY CLAY (CL); moist; trace fine SAND; medium plasticity fines; no odor.		1										
	1				2										
	2				3										
					4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-2-4
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET 1 of 1

CALTRANS BORING RECORD 052007 28649951-101 AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
E. Ortega	4-13-09	4-13-09		N-2-5
DRILLING CONTRACTOR			BOREHOLE LOCATION (Station, Offset, Line)	SURFACE ELEVATION
ECA, Inc.			Offset L	
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Continuous Push			Geoprobe 5410	2"
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Other				
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS DURING DRILLING AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
				3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY SAND (SM).		1										
	1				2										
					3										
	2		Lean CLAY (CL); black.		4										
	3		Bottom of Borehole at 3.0 ft.		5										
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-2-5
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-26-09	3-26-09		N-2-6
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY CLAY (CL); stiff; dark gray; moist; low to medium plasticity fines.		1										
	1				2										
	2				3										
					4										
	3		Bottom of Borehole at 3.0 ft.		5										
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-2-6
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET 1 of 1

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-26-09	3-26-09		N-2-7
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY CLAY (CL); stiff; dark brown; moist; medium plasticity fines; no odor.		1										
	1				2										
	2				3										
					4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-2-7
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET 1 of 1

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-26-09	3-26-09		N-2-8
DRILLING CONTRACTOR			BOREHOLE LOCATION (Station, Offset, Line)	SURFACE ELEVATION
ECA, Inc.			Offset L	
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Continuous Push			Geoprobe 5410	2"
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Other				
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS DURING DRILLING AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
				3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY SILT (ML); medium stiff; brown; fine to coarse, angular SAND; low plasticity fines.		1										
	1				2										
					3										
	2				4										
					5										
	3		Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-2-8
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
E. Ortega	4-13-09	4-13-09		N-2-9
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY SAND with GRAVEL (SM).		1										
	1		Lean CLAY (CL); dark brown.		2										
	2				3										
	3				4										
					5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-2-9
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET 1 of 1

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
E. Ortega	4-13-09	4-13-09		N-3-1
DRILLING CONTRACTOR			BOREHOLE LOCATION (Station, Offset, Line)	SURFACE ELEVATION
ECA, Inc.			Offset L	
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Continuous Push			Geoprobe 5410	2"
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Other				
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS DURING DRILLING AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
				3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY SAND with GRAVEL (SM).		1										
	1				2										
	2				3										
					4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-3-1
DIST.	COUNTY	ROUTE	POSTMILE	PROJECT
04	Santa Clara			28649951
PROJECT OR BRIDGE NAME				
101 Aux				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
				1 of 1

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
E. Ortega	4-12-09	4-12-09		N-3-10
DRILLING CONTRACTOR			BOREHOLE LOCATION (Station, Offset, Line)	SURFACE ELEVATION
ECA, Inc.			Offset L	
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Continuous Push			Geoprobe 5410	2"
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Other				
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS DURING DRILLING AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
				12.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY SAND with GRAVEL (SM).		1										
	1														
	2				2										
	3		Lean CLAY (CL); gray.												
	4														
	5				3										
	6		Poorly graded SAND with SILT and GRAVEL (SP-SM).												
	7														
	8														
	9														
	10														
	11				4										
	12		Bottom of Borehole at 12.0 ft.												
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-3-10
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
E. Ortega	4-12-09	4-12-09		N-3-11
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY SAND (SM).		1										
	1				2										
					3										
	2		Lean CLAY (CL); black.		4										
	3		Bottom of Borehole at 3.0 ft.		5										
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-3-11
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
E. Ortega	4-12-09	4-12-09		N-3-12
DRILLING CONTRACTOR			BOREHOLE LOCATION (Station, Offset, Line)	SURFACE ELEVATION
ECA, Inc.			Offset L	
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Continuous Push			Geoprobe 5410	2"
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Other				
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS DURING DRILLING AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
				3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY SAND with GRAVEL (SM).		1										
	1				2										
	2				3										
					4										
	3		Bottom of Borehole at 3.0 ft.		5										
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-3-12
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
E. Ortega	4-13-09	4-13-09		N-3-2
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY SAND with GRAVEL (SM).		1										
	1				2										
	2				3										
					4										
					5										
	3		Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-3-2
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
E. Ortega	4-13-09	4-13-09		N-3-3
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY SAND with GRAVEL (SM).		1										
	1				2										
					3										
	2		CLAYEY SILT (CL-ML).		4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-3-3
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	4-13-09	4-13-09		N-3-4
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY SILT (ML); very stiff; dark gray; moist; little fine SAND; low plasticity fines.		1										
	1				2										
					3										
	2				4										
					5										
	3		Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-3-4
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET 1 of 1

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-25-09	3-25-09		N-3-5
DRILLING CONTRACTOR			BOREHOLE LOCATION (Station, Offset, Line)	SURFACE ELEVATION
ECA, Inc.			Offset L	
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Continuous Push			Geoprobe 5410	2"
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Other				
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS — DURING DRILLING	AFTER DRILLING (DATE) / TOTAL DEPTH OF BORING
				8.11' ft on 12-30-99 / 11:00 PM / 16.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY SILT (ML); medium stiff; brown; moist; fine to medium, angular SAND; low plasticity fines.		1										
	1				2										
					3										
	2				4										
					5										
	3		SANDY SILTY CLAY (CL-ML/CL-ML); medium stiff; light gray; fine to medium SAND; low plasticity fines.												
	4														
	5														
	6														
	7														
	8		SILTY CLAY (CL); stiff; dark gray; moist; medium plasticity fines.												
	9		SILTY SAND (SM); medium dense; light gray; wet; fine to medium, rounded SAND.												
	10														
	11		SANDY lean CLAY medium stiff; light brown; moist; fine SAND; medium plasticity fines.												
	12		SILTY SAND (SM); medium dense; light brown; wet; coarse, subrounded SAND.												
	13														
	14														
	15		SILTY SAND (SM); medium dense; light brown; wet; fine to medium, rounded SAND.		6										
	16		Bottom of Borehole at 16.0 ft.												
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-3-5
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME 101 Aux				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET 1 of 1

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-25-09	3-25-09		N-3-6
DRILLING CONTRACTOR			BOREHOLE LOCATION (Station, Offset, Line)	SURFACE ELEVATION
ECA, Inc.			Offset L	
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Continuous Push			Geoprobe 5410	2"
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Other				
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS DURING DRILLING AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
				3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY CLAY medium stiff; dark gray; moist; little fine SAND; low plasticity fines.		1										
	1				2										
	2				3										
					4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-3-6
DIST.	COUNTY	ROUTE	POSTMILE	PROJECT
04	Santa Clara			28649951
PROJECT OR BRIDGE NAME				
101 Aux				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
				1 of 1

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-25-09	3-25-09		N-3-7
DRILLING CONTRACTOR			BOREHOLE LOCATION (Station, Offset, Line)	SURFACE ELEVATION
ECA, Inc.			Offset L	
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Continuous Push			Geoprobe 5410	2"
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Other				
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS DURING DRILLING AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
				3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY SAND (SM); loose to medium dense; light brown; fine SAND; medium plasticity fines.		1										
	1				2										
	2				3										
					4										
					5										
	3		Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-3-7
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
E. Ortega	4-12-09	4-12-09		N-3-8
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 16.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY SAND with GRAVEL (SM).		1										
	1				2										
	2				3										
					4										
	3				5										
			Hydropunch 12-16'.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16				6										
			Bottom of Borehole at 16.0 ft.												
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				N-3-8
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-25-09	3-25-09		S-1-1
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY SILT (ML); light brown; moist; low plasticity fines.		1										
	1				2										
	2				3										
					4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-1-1
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-24-09	3-24-09		S-1-10
DRILLING CONTRACTOR			BOREHOLE LOCATION (Station, Offset, Line)	SURFACE ELEVATION
ECA, Inc.			Offset L	
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Continuous Push			Geoprobe 5410	2"
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Jars			N/A	N/A
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
			Not Encountered	3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY SILT (ML); light brown; about 25 to 30% fine to medium, subrounded SAND.		1										
	1				2										
	2				3										
					4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-1-10
DIST.	COUNTY	ROUTE	POSTMILE	PROJECT
04	Santa Clara			28649951
PROJECT OR BRIDGE NAME				
101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET	
	S.Ball	7-10-09	1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-24-09	3-24-09		S-1-11
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Jars			SPT HAMMER TYPE: N/A	HAMMER EFFICIENCY, ERi: N/A
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE): Not Encountered	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY SILT (ML); light brown; moist.		1										
	1				2										
	2				3										
					4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-1-11
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY S.Ball		DATE 7-10-09	SHEET 1 of 1

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-24-09	3-24-09		S-1-12
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Jars			SPT HAMMER TYPE: N/A	HAMMER EFFICIENCY, ERi: N/A
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE): Not Encountered	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY SILT (ML); medium stiff; light brown; moist; about 30 to 40% coarse, angular SAND; low plasticity fines.		1										
	1				2										
	2				3										
					4										
	3		Bottom of Borehole at 3.0 ft.		5										
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-1-12
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY S.Ball	DATE 7-10-09	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101 AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-24-09	3-24-09		S-1-13
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION:
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Jars			SPT HAMMER TYPE: N/A	HAMMER EFFICIENCY, ERi: N/A
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE): Not Encountered	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY CLAYEY SILT (CL); medium stiff; brown; moist; fine to medium SAND; medium to high plasticity fines.		1										
	1				2										
	2				3										
					4										
	3		Bottom of Borehole at 3.0 ft.		5										
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-1-13
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY S.Ball		DATE 7-10-09	SHEET 1 of 1

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-24-09	3-24-09		S-1-14
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY CLAY (CL-ML); medium stiff; light brown; trace coarse SAND; medium plasticity fines.		1										
	1				2										
					3										
	2		At 2 ft, grades to medium stiff; light brown.		4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-1-14
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101 AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-24-09	3-24-09		S-1-15
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Jars			SPT HAMMER TYPE: N/A	HAMMER EFFICIENCY, ERi: N/A
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE): Not Encountered	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		CLAYEY SILT (CL-ML); medium stiff; light brown; moist to wet; trace fine SAND; medium plasticity fines; no odor.		1										
	1				2										
	2				3										
					4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-1-15
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY S.Ball	DATE 7-10-09	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-24-09	3-24-09		S-1-16
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Jars			SPT HAMMER TYPE: N/A	HAMMER EFFICIENCY, ERi: N/A
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE): Not Encountered	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY CLAY (CL-ML); medium stiff; light brown; moist; trace coarse, angular SAND; medium plasticity fines; no odor.		1										
	1				2										
	2				3										
					4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-1-16
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY S.Ball	DATE 7-10-09	SHEET 1 of 1	

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-24-09	3-24-09		S-1-17
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Jars			SPT HAMMER TYPE: N/A	HAMMER EFFICIENCY, ERi: N/A
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE): Not Encountered	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY CLAY (CL-ML); medium stiff; light brown; moist; trace fine SAND; medium plasticity fines; no odor.		1										
	1				2										
	2				3										
					4										
	3		Bottom of Borehole at 3.0 ft.		5										
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-1-17
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY S.Ball	DATE 7-10-09	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-24-09	3-24-09		S-1-18
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING; AFTER DRILLING (DATE): 13.19' ft on 12-30-99	TOTAL DEPTH OF BORING: 20.0 FT

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY SAND (SM/ML); light brown; moist; fine SAND.		1										
	1				2										
	2				3										
	3				4										
	4		SANDY SILT (ML); medium stiff; light brown; moist; fine SAND.		5										
	5														
	6														
	7														
	8		SILTY CLAY (CL); stiff; dark brown; moist; medium plasticity fines.												
	9														
	10														
	11														
	12		No recovery.		6										
	13														
	14		SILTY CLAY with SAND (CL); fine SAND.												
	15		SILTY CLAY (CL); stiff; dark gray; moist; medium plasticity fines.												
	16														
	17		SILTY CLAY (CL/ML); light gray.												
	18														
	19														
	20		Bottom of Borehole at 20.0 ft.												
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-1-18
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-24-09	3-24-09		S-1-19
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY SILT (ML); medium stiff; light brown; moist; fine SAND; low plasticity fines.		1										
	1				2										
	2				3										
					4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-1-19
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-25-09	3-25-09		S-1-2
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY SILT (ML); light brown; fine to coarse SAND; low plasticity fines.		1										
	1				2										
	2				3										
					4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-1-2
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-24-09	3-24-09		S-1-20
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY CLAY very stiff; dark gray; moist; low plasticity fines; no odor.		1										
	1				2										
	2				3										
					4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-1-20
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-25-09	3-25-09		S-1-3
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY SAND (SM); loose; light brown; few fine GRAVEL; coarse SAND.		1										
	1				2										
	2				3										
					4										
	3		Bottom of Borehole at 3.0 ft.		5										
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-1-3
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-25-09	3-25-09		S-1-4
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION:
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Jars			SPT HAMMER TYPE: N/A	HAMMER EFFICIENCY, ERi: N/A
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE): Not Encountered	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY CLAY (CL-ML); light brown; wet; with fine to coarse SAND; medium plasticity fines; no odor.		1										
	1				2										
	2				3										
					4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-1-4
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY S.Ball	DATE 7-10-09	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-25-09	3-25-09		S-1-5
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY SILT (ML); medium stiff; light brown; moist; fine to medium SAND; medium plasticity fines.		1										
	1				2										
	2				3										
					4										
	3		Bottom of Borehole at 3.0 ft.		5										
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-1-5
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-25-09	3-25-09		S-1-6
DRILLING CONTRACTOR			BOREHOLE LOCATION (Station, Offset, Line)	SURFACE ELEVATION
ECA, Inc.			Offset L	
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Continuous Push			Geoprobe 5410	2"
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Other				
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS DURING DRILLING AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
				3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY lean CLAY (CL); medium stiff; light brown; moist; fine SAND; medium plasticity fines.		1										
	1				2										
	2				3										
					4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-1-6
DIST.	COUNTY	ROUTE	POSTMILE	PROJECT
04	Santa Clara			28649951
PROJECT OR BRIDGE NAME				
101 Aux				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
				1 of 1

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-25-09	3-25-09		S-1-7
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY SILT (ML); medium stiff; light brown; moist; fine SAND; medium plasticity fines.		1										
	1				2										
					3										
	2				4										
	3		Bottom of Borehole at 3.0 ft.		5										
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-1-7
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-25-09	3-25-09		S-1-8
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY SILT (ML); stiff; light brown; fine to medium SAND; medium plasticity fines.		1										
	1				2										
	2				3										
					4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-1-8
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-24-09	3-24-09		S-1-9
DRILLING CONTRACTOR			BOREHOLE LOCATION (Station, Offset, Line)	SURFACE ELEVATION
ECA, Inc.			Offset L	
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Continuous Push			Geoprobe 5410	2"
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Jars			N/A	N/A
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS DURING DRILLING AFTER DRILLING (DATE) Not Encountered	TOTAL DEPTH OF BORING 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY SILT (ML); medium stiff; light brown; moist; about 30 to 35% fine SAND; low to medium plasticity fines; no odor.		1										
	1				2										
	2				3										
					4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-1-9
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME 101 Aux				
BRIDGE NUMBER	PREPARED BY S.Ball	DATE 7-10-09	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-24-09	3-24-09		S-2-1
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY CLAY (CL-ML); very stiff; dark gray; moist; medium plasticity fines; no odor.		1										
	1				2										
	2				3										
					4										
	3		Bottom of Borehole at 3.0 ft.		5										
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-2-1
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101 AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-24-09	3-24-09		S-2-10
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY SILT (ML); stiff; light brown; moist; trace GRAVEL; coarse, angular SAND; low plasticity fines.		1										
	1				2										
	2				3										
					4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-2-10
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-24-09	3-24-09		S-2-2
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY CLAY (CL-ML); medium stiff; light gray; moist; low plasticity fines.		1										
	1				2										
	2				3										
					4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-2-2
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
E. Ortega	4-13-09	4-13-09		S-2-3
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY SAND with GRAVEL (SM).		1										
	1		Lean CLAY (CL); dark brown.		2										
	2				3										
					4										
	3		Bottom of Borehole at 3.0 ft.		5										
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-2-3
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-24-09	3-24-09		S-2-4
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY CLAY (CL-ML); very stiff; dark gray; medium plasticity fines; no odor.		1										
	1				2										
	2				3										
					4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-2-4
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-24-09	3-24-09		S-2-5
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Hand Auger			DRILL RIG	BOREHOLE DIAMETER
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY CLAY (CL); stiff; light gray; moist; medium plasticity fines; no odor.		1										
	1				2										
	2				3										
					4										
					5										
	3		Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-2-5
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-24-09	3-24-09		S-2-6
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY CLAY (CL); medium stiff; light gray; moist; low to medium plasticity fines; no odor.		1										
	1				2										
	2				3										
					4										
	3		Bottom of Borehole at 3.0 ft.		5										
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-2-6
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-24-09	3-24-09		S-2-7
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY SILT (ML); stiff; light brown; moist; fine to medium SAND; low plasticity fines.		1										
	1				2										
	2				3										
					4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-2-7
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-24-09	3-24-09		S-2-8
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY CLAY medium stiff; light gray; moist; medium plasticity fines; no odor.		1										
	1				2										
					3										
	2				4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-2-8
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME 101 Aux				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET 1 of 1

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-24-09	3-24-09		S-2-9
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY CLAY (CL); stiff; dark gray; moist; trace medium, angular SAND; low plasticity fines.		1										
	1				2										
	2				3										
					4										
	3		Bottom of Borehole at 3.0 ft.		5										
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-2-9
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-24-09	3-24-09		S-3-1
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY CLAY (CL); medium stiff; gray mottled with brown; moist; trace coarse, angular SAND; medium plasticity fines.		1										
	1				2										
					3										
	2				4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-3-1
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-25-09	3-25-09		S-3-10
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY SILT (ML); light brown; trace fine GRAVEL; some coarse, angular SAND.		1										
	1				2										
					3										
	2		SILTY CLAY (CL); medium stiff; dark gray; moist; medium plasticity fines; no odor.		4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-3-10
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
E. Ortega	4-12-09	4-12-09		S-3-11
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 12.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		Lean CLAY (CL); black.		1										
	1				2										
					3										
	2				4										
	3				5										
			Hydropunch 7-11'.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12				6										
			Bottom of Borehole at 12.0 ft.												
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-3-11
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
E. Ortega	4-12-09	4-12-09		S-3-12
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY SAND (SM).		1										
	1				2										
					3										
					4										
	2		SILT (ML).												
					5										
	3		Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-3-12
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
E. Ortega	4-12-09	4-12-09		S-3-13
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 12.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY SAND with GRAVEL (SM).		1										
	1				2										
					3										
	2				4										
	3				5										
			Hydropunch 7-11'.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11				6										
	12		Bottom of Borehole at 12.0 ft.												
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-3-13
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
E. Ortega	4-12-09	4-12-09		S-3-14
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 12.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY SAND with GRAVEL (SM).		1										
	1				2										
					3										
	2				4										
	3		Hydropunch 7-11'.		5										
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11				6										
	12		Bottom of Borehole at 12.0 ft.												
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-3-14
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY	DATE	SHEET 1 of 1	

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
E. Ortega	4-12-09	4-12-09		S-3-2
DRILLING CONTRACTOR			BOREHOLE LOCATION (Station, Offset, Line)	SURFACE ELEVATION
ECA, Inc.			Offset L	
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Continuous Push			Geoprobe 5410	2"
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Other				
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS DURING DRILLING AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
				3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY SAND with GRAVEL (SM); brown.		1										
	1				2										
	2				3										
					4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-3-2
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME 101 Aux				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET 1 of 1

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-24-09	3-24-09		S-3-3
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY SILT (ML); light brown.		1										
	1				2										
					3										
	2				4										
			SILTY CLAY to CLAYEY SILT (CL-ML); medium stiff; dark gray; moist; medium to high plasticity fines.		5										
	3		Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-3-3
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET 1 of 1

CALTRANS BORING RECORD 052007 28649951-101 AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-24-09	3-24-09		S-3-4
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		CLAYEY SILT (ML); medium stiff; light gray; moist; low plasticity fines; no odor.		1										
	1				2										
	2				3										
					4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-3-4
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET 1 of 1

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-25-09	3-25-09		S-3-5
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		CLAYEY SILT (ML); medium stiff; dark gray; moist; trace fine SAND; low plasticity fines; no odor.		1										
	1				2										
	2				3										
					4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-3-5
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET 1 of 1

CALTRANS BORING RECORD 052007 28649951-101 AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-25-09	3-25-09		S-3-6
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		CLAYEY SILT (CL-ML); medium stiff; light brown mottled with dark gray; moist; medium plasticity fines.		1										
	1				2										
	2				3										
					4										
	3		Bottom of Borehole at 3.0 ft.		5										
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-3-6
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET 1 of 1

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-25-09	3-25-09		S-3-7
DRILLING CONTRACTOR			BOREHOLE LOCATION (Station, Offset, Line)	SURFACE ELEVATION
ECA, Inc.			Offset L	
DRILLING METHOD			DRILL RIG	BOREHOLE DIAMETER
Continuous Push			Geoprobe 5410	2"
SAMPLER TYPE(S) AND SIZE(S) (ID)			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
Other				
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS DURING DRILLING AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING
				3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SANDY SILT (ML); medium stiff; light brown; fine, angular SAND; low plasticity fines.		1										
	1				2										
					3										
	2				4										
					5										
	3		Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-3-7
DIST.	COUNTY	ROUTE	POSTMILE	PROJECT
04	Santa Clara			28649951
PROJECT OR BRIDGE NAME				
101 Aux				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET
				1 of 1

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-25-09	3-25-09		S-3-8
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING / AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		CLAYEY SILT (CL-ML); medium stiff to stiff; dark gray; moist; medium to high plasticity fines; no odor.		1										
	1				2										
					3										
	2				4										
	3				5										
			Bottom of Borehole at 3.0 ft.												
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-3-8
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET 1 of 1

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

LOGGED BY	BEGIN DATE	COMPLETION DATE	BOREHOLE LOCATION (Lat/Long or North/East and Datum)	HOLE ID
A. Mathew	3-25-09	3-25-09		S-3-9
DRILLING CONTRACTOR: ECA, Inc.			BOREHOLE LOCATION (Station, Offset, Line): Offset L	SURFACE ELEVATION
DRILLING METHOD: Continuous Push			DRILL RIG: Geoprobe 5410	BOREHOLE DIAMETER: 2"
SAMPLER TYPE(S) AND SIZE(S) (ID): Other			SPT HAMMER TYPE	HAMMER EFFICIENCY, ERi
BOREHOLE BACKFILL AND COMPLETION			GROUNDWATER READINGS: DURING DRILLING AFTER DRILLING (DATE)	TOTAL DEPTH OF BORING: 3.0 ft

ELEVATION (ft)	DEPTH (ft)	Material Graphics	DESCRIPTION	Sample Location	Sample Number	Blows per 6 in.	Blows per Foot	Recovery (%)	RQD (%)	Moisture Content (%)	Dry Unit Weight (pcf)	Shear Strength (tsf)	Drilling Method	Casing Depth	Remarks
	0		SILTY CLAY to CLAYEY SILT (CL-ML); stiff; dark gray; moist; medium plasticity fines; no odor.		1										
	1				2										
	2				3										
					4										
	3		Bottom of Borehole at 3.0 ft.		5										
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														
	17														
	18														
	19														
	20														
	21														
	22														
	23														
	24														
	25														

URS

URS Corporation
55 South Market Street; Suite 1500
San Jose, CA 95113
North

REPORT TITLE				HOLE ID
BORING RECORD				S-3-9
DIST. 04	COUNTY Santa Clara	ROUTE	POSTMILE	PROJECT 28649951
PROJECT OR BRIDGE NAME: 101 Aux				
BRIDGE NUMBER	PREPARED BY		DATE	SHEET 1 of 1

CALTRANS BORING RECORD 052007 28649951-101AUX(ENV).GPJ CT SACTO 053107.GDT 5/4/10

Appendix D

California Environmental Protection Agency
Department of Toxic Substances Control

VARIANCE

Applicant Names:

State of California
Department of Transportation
(Caltrans)
1120 N Street
Sacramento, California 95814

Variance No. V09HQSCD006

Effective Date: July 1, 2009

Expiration Date: July 1, 2014

Modification History:

Pursuant to California Health and Safety Code, Section 25143, the Department of Toxic Substances Control hereby issues the attached Variance consisting of 9 pages to the Department of Transportation.

Beverly Rikala
Team Leader, Operating Facilities Team
Department of Toxic Substances Control

Date:

1. INTRODUCTION.

a) Pursuant to Health and Safety Code, section 25143, the California Department of Toxic Substances Control (DTSC) grants this variance to the applicant below for waste considered to be hazardous solely because of its lead concentrations and as further specified herein.

b) DTSC hereby grants this variance only from the requirements specified herein and only in accordance with all terms and conditions specified herein.

2. IDENTIFYING INFORMATION.

APPLICANT/OWNER/OPERATOR

State of California
Department of Transportation, (Caltrans)
All Districts

3. TYPE OF VARIANCE.

Generation, Manifest, Transportation, Storage and Disposal.

4. ISSUANCE AND EXPIRATION DATES.

DATE ISSUED: July 1, 2009 EXPIRATION DATE: July 1, 2014

5. APPLICABLE STATUTES AND REGULATIONS. The hazardous waste that is the subject of this variance is fully regulated under Health and Safety Code, section 25100, et seq. and California Code of Regulations, title 22, division 4.5 except as specifically identified in Section 8 of this variance.

6. DEFINITION. For purposes of this variance, “lead-contaminated soil(s)” shall mean soil that meets the criteria for hazardous waste but contains less than 3397 mg/kg total lead and is hazardous primarily because of aerially-deposited lead contamination associated with exhaust emissions from the operation of motor vehicles.

7. FINDINGS/DETERMINATIONS. DTSC has determined that the variance applicant meets the requirements set forth in Health and Safety Code, section 25143 for a variance from specific regulatory requirements as outlined in Section 8 of this variance. The specific determinations and findings made by DTSC are as follows:

a) Caltrans intends to excavate, stockpile, transport, bury and cover large volumes of soil associated with highway construction projects. In the more urbanized highway corridors around the State this soil is contaminated with lead, primarily due to historic emissions from automobile exhausts. In situ sampling and laboratory testing has shown that some of the soil contains concentrations of lead in excess of State

regulatory thresholds, and thus any generated waste from disturbance of the soil would be regulated as hazardous waste. Such soil contains a Total Threshold Limit Concentration (TTLC) of 1000 milligrams per kilogram (mg/kg) or more lead and/or it meets or exceeds the Soluble Threshold Limit Concentration (STLC) for lead of 5 milligrams per liter (mg/l). A Human Health Risk Assessment prepared for this variance concludes that soil contaminated with elevated concentrations of lead can be managed in a way that presents no significant risk to human health.

b) The lead-contaminated soil will be placed only in Caltrans' right-of-way. Depending on concentration levels, the wastes will be covered with a minimum thickness of one (1) foot of non-hazardous soil or asphalt/concrete cover and will always be at least five (5) feet above the highest groundwater elevation. Caltrans will assure that proper health and safety procedures will be followed for workers, including any persons engaged in maintenance work in areas where the waste has been buried and covered.

c) DTSC finds and requires that the lead-contaminated soil excavated, stockpiled, transported, buried and covered pursuant to this variance is a non-RCRA hazardous waste, and that the waste management activity is insignificant as a potential hazard to human health and safety and the environment, when managed in accordance with the conditions, limitations and other requirements specified in this variance.

8. PROVISIONS WAIVED.

Provided Caltrans meets the terms and conditions of this variance, DTSC waives the hazardous waste management requirements of Health and Safety Code, Chapter 6.5 and California Code of Regulations, title 22 for the lead-contaminated soil that Caltrans reuses in projects that would require Caltrans to obtain a permit for a disposal facility and any other generator requirements that concern the transportation, manifesting, storage and land disposal of hazardous waste.

9. SPECIFIC CONDITIONS, LIMITATIONS AND OTHER REQUIREMENTS.

In order for the provisions discussed in section 8 to be waived, lead-contaminated soil must not exceed the contaminant concentrations discussed below and Caltrans management practices must meet all the following conditions:

a) Caltrans implementation of this variance shall comply with all applicable state laws and regulations for water quality control, water quality control plans, waste discharge requirements (including storm water permits), and others issued by the State Water Resources Control Board (SWRCB) and/or a California Regional Water Quality Control Board (RWQCB). Caltrans shall provide written notification to the appropriate RWQCB at least 30 days prior to advertisement for bids of projects that involve invocation of this variance, or as otherwise negotiated with the SWRCB or appropriate RWQCB.

b) The waivers in this variance shall only be applied to lead-contaminated soil that is

not a RCRA hazardous waste and is hazardous primarily because of aerially-deposited lead contamination associated with exhaust emissions from the operation of motor vehicles. The variance is not applicable to any other hazardous waste.

c) Soil containing 1.5 mg/l extractable lead or less (based on a modified waste extraction test using deionized water as the extractant) and 1411 mg/kg or less total lead may be used as fill provided that the lead-contaminated soil is placed a minimum of five (5) feet above the maximum historic water table elevation and covered with at least one (1) foot of nonhazardous soil that will be maintained by Caltrans to prevent future erosion.

d) Soil containing 150 mg/L extractable lead or less (based on a modified waste extraction test using deionized water as the extractant) and 3397 mg/kg or less total lead may be used as fill provided that the lead-contaminated soils are placed a minimum of five (5) feet above the maximum historic water table elevation and protected from infiltration by a pavement structure which will be maintained by Caltrans.

e) Lead-contaminated soil with a pH less than 5.5 but greater than 5.0 shall only be used as fill material under the paved portion of the roadway. Lead-contaminated soil with a pH at or less than 5.0 shall be managed as a hazardous waste.

f) For each project that has the potential to generate waste by disturbing lead-contaminated soil (as defined in 6), Caltrans shall conduct sampling and analysis to adequately characterize the soils containing aerially deposited lead in the areas of planned excavation along the project route. Such sampling and analysis shall include the Toxicity Characteristic Leaching Procedure (TCLP) as prescribed by the United States Environmental Protection Agency to determine whether concentrations of contaminants in soil exceed federal criteria for classification as a hazardous waste.

g) Lead-contaminated soil managed pursuant to this variance shall not be moved outside the designated corridor boundaries (see paragraph t) below. All lead-contaminated soil not buried and covered within the same Caltrans corridor where it originated is not eligible for management under this variance and shall be managed as a hazardous waste.

h) Lead-contaminated soil managed pursuant to this variance shall not be placed in areas where it would become in contact with groundwater or surface water (such as streams and rivers).

i) Lead-contaminated soil managed pursuant to this variance shall be buried and covered only in locations that are protected from erosion that may result from storm water run-on and run-off.

j) The lead-contaminated soil shall be buried and covered in a manner that will prevent accidental or deliberate breach of the asphalt, concrete, and/or cover soil.

k) The presence of lead-contaminated soil shall be incorporated into the projects' as-built drawings. The as-built drawings shall be annotated with the location, representative analytical data, and volume of lead-contaminated soil. The as-built drawings shall also state the depth of the cover. These as-built drawings shall be retained by Caltrans.

l) Caltrans shall ensure that no other hazardous wastes, other than the lead-contaminated hazardous waste soil, are placed in the burial areas.

m) Lead-contaminated soil shall not be buried within ten (10) feet of culverts or locations subject to frequent worker exposure.

n) Excavated lead-contaminated soil not placed into the designated area (fill area, roadbed area) by the end of the working day shall be stockpiled and covered with sheets of polyethylene or at least one foot of non-hazardous soil. The lead-contaminated soil, while stockpiled or under transport, shall be protected from contacting surface water and from being dislodged or transported by wind or storm water. The stockpile covers shall be inspected at least once a week and within 24 hours after rainstorms. If the lead-contaminated soil is stockpiled for more than 4 days from the time of excavation, Caltrans shall restrict public access to the stockpile by using barriers that meet the safety requirements of the construction zone. The lead-contaminated soil shall be stockpiled for no more than 90 days from the time the soil is first excavated. If the contaminated soil is stockpiled beyond the 90 day limit Caltrans shall:

1. notify DTSC in writing of the 90 day exceedance and expected date of removal;
2. perform weekly inspections of the stockpiled material to ensure that there is adequate protection from run-on, runoff, public access, and wind dispersion; and
3. notify DTSC on weekly basis of the stockpile status until the stockpile is removed.

The lead-contaminated soil shall be stockpiled for no more than 180 days from the time the soil is first excavated.

o) Caltrans shall ensure that all stockpiling of lead-contaminated soil remains within the project area of the specified corridor. Stockpiling of lead-contaminated soil within the specified corridor, but outside the project area, is prohibited.

p) Caltrans shall conduct confirmatory sampling of any stockpile area in areas not known or expected to contain lead-contaminated soil after removal of the lead-contaminated soil to ensure that contamination has not been left behind or has not migrated from the stockpiled material to the surrounding soils.

q) Caltrans shall stockpile lead-contaminated soil only on high ground (i.e. no sump

areas or low points) so that stockpiled soil will not come in contact with surface water run-on or run-off.

r) Caltrans shall not stockpile lead-contaminated soil in environmentally and ecologically sensitive areas.

s) Caltrans shall ensure that storm/rain run-off that has come into contact with stockpiled lead-contaminated soil will not flow to storm drains, inlets, or waters of the State.

t) Caltrans may dispose of the lead-contaminated soil only within the operating right-of-way of an existing highway, as defined in Streets and Highways Code, section 23. Caltrans may move lead-contaminated soil from one Caltrans project to another Caltrans project only if the lead-contaminated soil remains within the same designated corridor.

Caltrans shall record any movement of lead-contaminated soil by using a bill of lading. The bill of lading must contain: 1) the US DOT description including shipping name, hazard class and ID number; 2) handling codes; 3) quantity of material; 4) volume of material; 5) date of shipment; 6) origin and destination of shipment; and 7) any specific handling instructions. The bill of lading shall be referenced in and kept on file with the project's as-built drawings. The lead-contaminated soil must be kept covered during transportation.

u) For each specific corridor where this variance is to be implemented, all of the following information shall be submitted in writing to DTSC at least five (5) days before construction of any project begins:

1. plan drawing designating the boundaries of the corridor where lead-contaminated soils will be excavated, stockpiled, buried and covered;

2. a list of the Caltrans projects that the corridor encompasses;

3. a list of Caltrans contractors that will be conducting any phase of work on any project affected by this variance;

4. duration of corridor construction;

5. location where sampling and analytical data used to make lead concentration level determinations are kept (e.g. a particular Caltrans project file);

6. name and phone number (including area code) of project resident engineer and project manager;

7. location where Caltrans and contractor health and safety plan and records are kept;

8. location of project special provisions (including page or section number) for soil excavation, transportation, stockpile, burial and placement of cover material;

9. location of project drawings (including drawing page number) for soil excavation, burial and placement of cover in plan and cross section (for example, "The project plans are located at the resident engineer's office located at 5th and Main Streets, City of Fresno, See pages xxxxx of contract xxxx");

10. updated information if a Caltrans project within the corridor is added, changed or deleted; and

11. type of environmental document prepared for each project, date of adoption, document title, Clearing House number and where the document is available for review. A copy of the Caltrans Categorical Exemption, Categorical Exclusion Form, or if filed, the Notice of Exemption for any project shall be submitted to the DTSC Headquarters Project Manager.

v) Changes in location of lead-contaminated soil placement, quantities or protection measures (field changes) shall be noted in the resident engineer's project log within five (5) days of the field change.

w) Caltrans shall ensure that field changes are in compliance with the requirements of this variance.

x) Operational procedures described in the California Environmental Quality Act (CEQA) Special Initial Study shall be followed by Caltrans for activities conducted under this variance.

y) Caltrans shall implement appropriate health and safety procedures to protect its employees and the public, and to prevent or minimize exposure to potentially hazardous wastes. A project-specific health and safety plan must be prepared and implemented. The monitoring and exposure standards shall be based on construction standards for exposure to lead in California Code of Regulations, title 8, section 1532.1.

z) Caltrans shall provide a district Coordinator for this variance. This Coordinator will be the primary point of contact for information flowing to, or received from, DTSC regarding any matter or submission under this variance. Caltrans shall promptly notify DTSC of the name of Coordinator and any change in the Coordinator.

aa) Caltrans shall conduct regular inspections, consistent with Caltrans' Maintenance Division's current Pavement Inspection and Slope Inspection programs, of the locations where lead-contaminated soil has been buried and/or covered pursuant to this variance. If site inspection reveals deterioration of cover so

that conditions in the variance are not met, Caltrans shall repair or replace the cover.

bb) Caltrans shall develop and implement a record keeping mechanisms to record and retain permanent records of all locations where lead-contaminated soil has been buried per this variance. The records shall be made available to DTSC.

cc) If areas subject to the terms of this variance are sold, relinquished or abandoned (including roadways), all future property owners shall be notified in writing in advance by Caltrans of the requirements of this variance, and Caltrans shall provide the owner with a copy of the variance. A copy of such a notice shall be sent to DTSC and contain the corridor location and project. Caltrans shall also disclose to DTSC and the new owner the location of areas where lead-contaminated soil has been buried. Future property owners shall be subject to the same requirements as Caltrans.

dd) For the purposes of informing the public about instances where the variance is implemented, Caltrans shall:

1. maintain current fact sheets at all Caltrans resident engineer offices and the Caltrans District office. Caltrans shall make the fact sheets available to anyone expressing an interest in variance-related work.

2. maintain a binder(s) containing copies of all reports submitted to DTSC at the District office. Caltrans shall ensure that the binders are readily accessible to the public.

3. carry out the following actions when it identifies additional projects:

(A) notify the public via a display advertisement in a newspaper of general circulation in that area.

(B) update and distribute the fact sheet to the mailing list and repository locations.

ee) Lead-contaminated soil may be buried only in areas where access is limited or where lead-contaminated soil is covered and contained by a pavement structure.

ff) Dust containing lead-contaminated soil must be controlled. Water or dust palliative may be applied to control dust. If visible dust migration occurs, all excavation, stockpiling and truck loading and burying must be stopped. The granting of this variance confers no relief on Caltrans from compliance with the laws, regulations and requirements enforced by any local air district or the California Air Resources Board.

gg) Sampling and analysis is required to show the lead-contaminated soil meets the variance criteria. All sampling and analysis must be conducted in

accordance with the appropriate methods specified in U.S. EPA SW-846.

hh) DTSC retains the right to require Caltrans or any future owner to remove, and properly dispose of, lead-contaminated soil in the event DTSC determines it is necessary for protection of public health, safety or the environment.

ii) DTSC finds that some projects involving lead-contaminated soil are joint projects between Caltrans and other government entities. In these joint projects, Caltrans may not be the lead agency implementing the project although Caltrans is still involved if the project occurs on its right-of-way.

Caltrans may invoke this variance for joint projects where Caltrans and local government entity are involved provided that 1) the project is within the Caltrans Right-of-Way; 2) Caltrans reviews/ oversees all phases of the project including design, contracting, environmental assessment, construction, operation, and maintenance; and 3) Caltrans oversees the project to verify all variance conditions are complied with. Caltrans will be fully responsible for the variance notification and implementation in these joint projects.

jj) All correspondence shall be directed to the following office:

Hazardous Waste Permitting
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826

Attn: Caltrans Lead Variance Notification Unit

10. DISCLAIMER.

a) The issuance of this variance does not relieve Caltrans of the responsibility for compliance with Health and Safety Code, chapter 6.5, or the regulations adopted thereunder, and any other laws and regulations other than those specifically identified in Section 8 of this variance. Caltrans is subject to all terms and conditions herein. The granting of this variance confers no relief from compliance with any federal, State or local requirements other than those specifically provided herein.

b) The issuance of this variance does not release Caltrans from any liability associated with the handling of hazardous waste, except as specifically provided herein and subject to all terms and conditions of this variance.

11. VARIANCE MODIFICATION OR REVOCATION. This variance is subject to review at the discretion of DTSC and may be modified or revoked by DTSC upon change of ownership and at any other time pursuant to Health and Safety Code, section 25143.

12. CEQA DETERMINATION. DTSC adopted a Negative Declaration on June 30, 2009.

Approved:

_____	_____
Date	Beverly Rikala Operating Facilities Team Department of Toxic Substances Control

Appendix E

Torrent Laboratory, Inc.

Date: *20-Aug-09*

CLIENT:	URS Corporation, San Jose	**Client Sample ID:**	N-3-8 @ 3.0
Lab Order:	0904073	**Collection Date:**	4/12/2009 11:35:00 PM
Project:	101 Aux Lanes	**Date Received:**	4/13/2009
Lab ID:	0904073-029	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
WET EXTRACTION FOR TOTAL METALS IN DI W		**6010B (DI-STLC)**		**SW3010A**		Analyst: **VP**
Lead (DI-STLC)	ND	0.10		mg/L	1	6/5/2009
WET EXTRACTION FOR TOTAL METALS		**6010B (STLC)**		**SW3010A**		Analyst: **VP**
Lead (STLC)	0.14	0.10		mg/L	1	6/4/2009
TCLP EXTRACTION FOR TOTAL METALS		**6010B (TCLP)**		**SW3010A**		Analyst: **VP**
Lead (TCLP)	ND	0.10		mg/L	1	6/18/2009
TOTAL METALS BY ICP		**SW6010B**		**SW3050B**		Analyst: **VP**
Lead	270	1.0		mg/Kg	1	4/17/2009
TOTAL METALS BY ICP		**SW6010B**		**SW3050B**		Analyst: **PL**
Lead	7.2	1.0		mg/Kg	1	8/19/2009
TOTAL METALS BY ICP		**SW6010B**		**SW3050B**		Analyst: **PL**
Lead	8.4	1.0		mg/Kg	1	8/19/2009

Qualifiers:				
	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	S	Spike Recovery outside accepted recovery limits		

Torrent Laboratory, Inc.

Date: *20-Aug-09*

CLIENT:	URS Corporation, San Jose	**Client Sample ID:**	N-2-8@2.0
Lab Order:	0903161	**Collection Date:**	3/26/2009 12:32:00 AM
Project:	Hwy 101-Aux Lane	**Date Received:**	3/26/2009
Lab ID:	0903161-004	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
WET EXTRACTION FOR TOTAL METALS IN DI W		**6010B (DI-STLC)**		**SW3010A**		Analyst: **VP**
Lead (DI-STLC)	2.8	0.10		mg/L	1	6/3/2009
WET EXTRACTION FOR TOTAL METALS		**6010B (STLC)**		**SW3010A**		Analyst: **VP**
Lead (STLC)	1.6	0.10		mg/L	1	6/3/2009
TCLP EXTRACTION FOR TOTAL METALS		**6010B (TCLP)**		**SW3010A**		Analyst: **VP**
Lead (TCLP)	ND	0.10		mg/L	1	6/15/2009
TOTAL METALS BY ICP		**SW6010B**		**SW3050B**		Analyst: **PL**
Lead	400	1.0		mg/Kg	1	4/2/2009
TOTAL METALS BY ICP		**SW6010B**		**SW3050B**		Analyst: **VP**
Lead	4.2	1.0		mg/Kg	1	8/20/2009
TOTAL METALS BY ICP		**SW6010B**		**SW3050B**		Analyst: **VP**
Lead	3.4	1.0		mg/Kg	1	8/20/2009

Qualifiers:				
	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	S	Spike Recovery outside accepted recovery limits		

EMSL Analytical, Inc
2235 Polvorosa Ave , Suite 230, San Leandro, CA 94577
Phone: (510) 895-3675 Fax: (510) 895-3680 Email: milpitaslab@emsl.com

Attn: **Nutan Kabir**
Torrent Laboratory, Inc.
483 Sinclair Frontage Rd.
Milpitas, CA 95035

Fax: (408) 263-8293 Phone: (408) 263-5258
Project: **0903131, 0903138**

Customer ID: TORR80
Customer PO: 0903131,0903138
Received: 03/25/09 9:00 AM
EMSL Order: 090902214

EMSL Proj:
Analysis Date: 6/2/2009

PLM Analysis of Bulk Samples for Asbestos via EPA 600/R-93/116 Method with CARB 435 Prep (Milling) Level A for 0.25% Target Analytical Sensitivity

			Non-Asbestos		Asbestos	
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**	
0903131-008A *090902214-0003*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**<0.25% Chrysotile**	
0903131-031A *090902214-0006*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**<0.25% Chrysotile**	
0903131-032A *090902214-0007*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**<0.25% Chrysotile**	
0903138-007A *090902214-0016*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**<0.25% Chrysotile**	

Analyst(s)
Jorge Leon (4)

Baojia Ke, Laboratory Manager
or other approved signatory

This report relates only to the samples listed above and may not be reproduced except in full, without EMSL's written approval. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. EMSL is not responsible for sample collection activities or method limitations. Some samples may contain asbestos fibers below the resolution limit of PLM. EMSL recommends that samples reported as none detected or less than the limit of detection undergo additional analysis via TEM.Samples received in good condition unless otherwise noted.

THIS IS THE LAST PAGE OF THE REPORT.

Torrent
LABORATORY, INC.

April 24, 2009

Patrick Walz
URS Corporation, San Jose
55 South Market St., Suite 1500
San Jose, CA 95113

TEL: (408) 297-9585
FAX (408) 297-6962

RE: 101 Aux Lanes

Order No.: 0904088

Dear Patrick Walz:

Torrent Laboratory, Inc. received 36 samples on 4/14/2009 for the analyses presented in the following report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.
Reported data is applicable for only the samples received as part of the order number referenced above.

Torrent Laboratory, Inc, is certified by the State of California, ELAP #1991. If you have any questions regarding these tests results, please feel free to contact the Project Management Team at (408)263-5258;ext: 204.

Sincerely,

Laboratory Director 4/24/09 Date

Patti Sandrock
QA Officer

Torrent Laboratory, Inc. **Date:** *24-Apr-09*

CLIENT: URS Corporation, San Jose
Project: 101 Aux Lanes
Lab Order: 0904088

CASE NARRATIVE

Analytical Comments for Asbestos PLM, Note: Analysis performed by NVLAP Certified sub-contract laboratory. (Certification # 101048-3).

Analytical Comment for Method 6010B for RunNo 19315 and 19317, Note:The % recoveries in the MS/MSD for Lead are outside of laboratory control limits but within % RPD limits and % recovery limits for the LCS/LCSD. No corrective action is required.

TORRENT LABORATORY, INC.

483 Sinclair Frontage Road • Milpitas, CA • Phone: (408) 263-5258 • Fax: (408) 263-8293

Visit us at www.torrentlab.com email: analysis@torrentlab.com

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 4/24/2009

Client Sample ID: N-1-2 @ 0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:25:00 PM

Lab Sample ID: 0904088-001
Date Prepared: 4/17/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	1	1.0	460	mg/Kg	5113

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 4/24/2009

Client Sample ID: N-1-2 @ 1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:25:00 PM

Lab Sample ID: 0904088-002
Date Prepared: 4/17/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	1	1.0	110	mg/Kg	5113

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 4/24/2009

Client Sample ID: N-1-2 @ 1.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:25:00 PM

Lab Sample ID: 0904088-003
Date Prepared: 4/17/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	1	1.0	9.8	mg/Kg	5113

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 4/24/2009

Client Sample ID: N-1-2 @ 2.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:25:00 PM

Lab Sample ID: 0904088-004
Date Prepared: 4/17/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	1	1.0	8.1	mg/Kg	5113

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 4/24/2009

Client Sample ID: N-1-2 @ 3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:25:00 PM

Lab Sample ID: 0904088-005
Date Prepared: 4/17/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	1	1.0	3.2	mg/Kg	5113

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 4/24/2009

Client Sample ID: N-1-1 @ 0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:30:00 PM

Lab Sample ID: 0904088-006
Date Prepared: 4/17/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	1	1.0	410	mg/Kg	5113

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 4/24/2009

Client Sample ID: N-1-1 @ 1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:30:00 PM

Lab Sample ID: 0904088-007
Date Prepared: 4/17/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	1	1.0	520	mg/Kg	5113

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 4/24/2009

Client Sample ID: N-1-1 @ 1.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:30:00 PM

Lab Sample ID: 0904088-008
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	380	mg/Kg	5114

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 4/24/2009

Client Sample ID: N-1-1 @ 2.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:30:00 PM

Lab Sample ID: 0904088-009
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	14	mg/Kg	5114

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 4/24/2009

Client Sample ID: N-1-1 @ 3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:30:00 PM

Lab Sample ID: 0904088-010
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	6.3	mg/Kg	5114

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 4/24/2009

Client Sample ID: S-2-3 @ 0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 10:45:00 PM

Lab Sample ID: 0904088-011
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	200	mg/Kg	5114

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 4/24/2009

Client Sample ID: S-2-3 @ 1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 10:45:00 PM

Lab Sample ID: 0904088-012
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	110	mg/Kg	5114

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 4/24/2009

Client Sample ID: S-2-3 @ 1.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 10:45:00 PM

Lab Sample ID: 0904088-013
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	8.6	mg/Kg	5114

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 4/24/2009

Client Sample ID: S-2-3 @ 2.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 10:45:00 PM

Lab Sample ID: 0904088-014
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	3.4	mg/Kg	5114

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 4/24/2009

Client Sample ID: S-2-3 @ 3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 10:45:00 PM

Lab Sample ID: 0904088-015
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	2.9	mg/Kg	5114

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 4/24/2009

Client Sample ID: S-2-3-GW
Sample Location: 101 Aux Lanes
Sample Matrix: GROUNDWATER
Date/Time Sampled 4/13/2009 10:50:00 PM

Lab Sample ID: 0904088-016
Date Prepared: 4/17/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
1,1,1,2-Tetrachloroethane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,1,1-Trichloroethane	SW8260B	4/17/2009	0.5	1	0.50	1.57	µg/L	R19276
1,1,2,2-Tetrachloroethane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,1,2-Trichloroethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,1-Dichloroethane	SW8260B	4/17/2009	0.5	1	0.50	3.37	µg/L	R19276
1,1-Dichloroethene	SW8260B	4/17/2009	1	1	1.00	66.5	µg/L	R19276
1,1-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2,3-Trichlorobenzene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,2,3-Trichloropropane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,2,4-Trichlorobenzene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,2,4-Trimethylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dibromo-3-chloropropane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dibromoethane (EDB)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dichlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dichloroethane (EDC)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dichloropropane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,3,5-Trimethylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,3-Dichlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,3-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,4-Dichlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
2,2-Dichloropropane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
2-Chloroethyl vinyl ether	SW8260B	4/17/2009	6	1	6.00	ND	µg/L	R19276
2-Chlorotoluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
4-Chlorotoluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
4-Isopropyltoluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Acetone	SW8260B	4/17/2009	10	1	10.0	ND	µg/L	R19276
Benzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromochloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromodichloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromoform	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Bromomethane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Carbon tetrachloride	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Chlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Chloroform	SW8260B	4/17/2009	0.5	1	0.50	0.75	µg/L	R19276
Chloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
cis-1,2-Dichloroethene	SW8260B	4/17/2009	0.5	1	0.50	11.5	µg/L	R19276
cis-1,3-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Dibromochloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Dibromomethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Dichlorodifluoromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Diisopropyl ether (DIPE)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Ethyl tert-butyl ether (ETBE)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 4/24/2009

Client Sample ID: S-2-3-GW
Sample Location: 101 Aux Lanes
Sample Matrix: GROUNDWATER
Date/Time Sampled 4/13/2009 10:50:00 PM

Lab Sample ID: 0904088-016
Date Prepared: 4/17/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Ethylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Freon-113	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Hexachlorobutadiene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Isopropylbenzene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Methyl tert-butyl ether (MTBE)	SW8260B	4/17/2009	0.5	1	0.50	5.15	µg/L	R19276
Methylene chloride	SW8260B	4/17/2009	5	1	5.00	ND	µg/L	R19276
Naphthalene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
n-Butylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
n-Propylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
sec-Butylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Styrene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
t-Butyl alcohol (t-Butanol)	SW8260B	4/17/2009	5	1	5.00	ND	µg/L	R19276
tert-Amyl methyl ether (TAME)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
tert-Butylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Tetrachloroethene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Toluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
trans-1,2-Dichloroethene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
trans-1,3-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Trichloroethene	SW8260B	4/17/2009	0.5	1	0.50	47.2	µg/L	R19276
Trichlorofluoromethane	SW8260B	4/17/2009	0.5	1	0.50	1.18	µg/L	R19276
Vinyl chloride	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Xylenes, Total	SW8260B	4/17/2009	1.5	1	1.50	ND	µg/L	R19276
Surr: Dibromofluoromethane	SW8260B	4/17/2009	0	1	61.2-131	110	%REC	R19276
Surr: 4-Bromofluorobenzene	SW8260B	4/17/2009	0	1	64.1-120	92.9	%REC	R19276
Surr: Toluene-d8	SW8260B	4/17/2009	0	1	75.1-127	103	%REC	R19276

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 4/24/2009

Client Sample ID: N-2-5 @ 0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:55:00 PM

Lab Sample ID: 0904088-017
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	130	mg/Kg	5114

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 4/24/2009

Client Sample ID: N-2-5 @ 1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:55:00 PM

Lab Sample ID: 0904088-018
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	88	mg/Kg	5114

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 4/24/2009

Client Sample ID: N-2-5 @ 1.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:55:00 PM

Lab Sample ID: 0904088-019
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	16	mg/Kg	5114

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 4/24/2009

Client Sample ID: N-2-5 @ 2.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:55:00 PM

Lab Sample ID: 0904088-020
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	6.2	mg/Kg	5114

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 4/24/2009

Client Sample ID: N-2-5 @ 3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:55:00 PM

Lab Sample ID: 0904088-021
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	3.8	mg/Kg	5114

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 4/24/2009

Client Sample ID: N-1-10 @ 0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 10:15:00 PM

Lab Sample ID: 0904088-022
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	130	mg/Kg	5114

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 4/24/2009

Client Sample ID: N-1-10 @ 1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 10:15:00 PM

Lab Sample ID: 0904088-023
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	1100	mg/Kg	5114

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 4/24/2009

Client Sample ID: N-1-10 @ 1.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 10:15:00 PM

Lab Sample ID: 0904088-024
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	1.5	mg/Kg	5114

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 4/24/2009

Client Sample ID: N-1-10 @ 2.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 10:15:00 PM

Lab Sample ID: 0904088-025
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	4.1	mg/Kg	5114

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 4/24/2009

Client Sample ID: N-1-10 @ 3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 10:15:00 PM

Lab Sample ID: 0904088-026
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	8.8	mg/Kg	5114

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for:	Patrick Walz	**Date Received:**	4/14/2009
	URS Corporation, San Jose	**Date Reported:**	4/24/2009

Client Sample ID:	N-2-9 @ 0.5	**Lab Sample ID:**	0904088-027
Sample Location:	101 Aux Lanes	**Date Prepared:**	4/18/2009
Sample Matrix:	SOIL		
Date/Time Sampled	4/13/2009 9:30:00 PM		

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	640	mg/Kg	5114

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 4/24/2009

Client Sample ID: N-2-9 @ 1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:30:00 PM

Lab Sample ID: 0904088-028
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	190	mg/Kg	5115

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 4/24/2009

Client Sample ID: N-2-9 @ 1.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:30:00 PM

Lab Sample ID: 0904088-029
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	17	mg/Kg	5115

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 4/24/2009

Client Sample ID: N-2-9 @ 2.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:30:00 PM

Lab Sample ID: 0904088-030
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	3.8	mg/Kg	5115

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 4/24/2009

Client Sample ID: N-2-9 @ 3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:30:00 PM

Lab Sample ID: 0904088-031
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	2.4	mg/Kg	5115

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 4/24/2009

Client Sample ID: N-2-3 @ 0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:35:00 PM

Lab Sample ID: 0904088-032
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	590	mg/Kg	5115

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 4/24/2009

Client Sample ID: N-2-3 @ 1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:35:00 PM

Lab Sample ID: 0904088-033
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	13	mg/Kg	5115

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 4/24/2009

Client Sample ID: N-2-3 @ 1.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:35:00 PM

Lab Sample ID: 0904088-034
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	3.4	mg/Kg	5115

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 4/24/2009

Client Sample ID: N-2-3 @ 2.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:35:00 PM

Lab Sample ID: 0904088-035
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	7.0	mg/Kg	5115

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 4/24/2009

Client Sample ID: N-2-3 @ 3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:35:00 PM

Lab Sample ID: 0904088-036
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	5.8	mg/Kg	5115

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Definitions, legends and Notes

Note	Description
ug/kg	Microgram per kilogram (ppb, part per billion).
ug/L	Microgram per liter (ppb, part per billion).
mg/kg	Milligram per kilogram (ppm, part per million).
mg/L	Milligram per liter (ppm, part per million).
LCS/LCSD	Laboratory control sample/laboratory control sample duplicate.
MDL	Method detection limit.
MRL	Modified reporting limit. When sample is subject to dilution, reporting limit times dilution factor yields MRL.
MS/MSD	Matrix spike/matrix spike duplicate.
N/A	Not applicable.
ND	Not detected at or above detection limit.
NR	Not reported.
QC	Quality Control.
RL	Reporting limit.
% RPD	Percent relative difference.
a	pH was measured immediately upon the receipt of the sample, but it was still done outside the holding time.
sub	Analyzed by subcontracting laboratory, Lab Certificate #

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

EMSL Analytical, Inc
2235 Polvorosa Ave , Suite 230, San Leandro, CA 94577
Phone: (510) 895-3675 Fax: (510) 895-3680 Email: milpitaslab@emsl.com

Attn: **Nutan Kabir**
Torrent Laboratory, Inc.
483 Sinclair Frontage Rd.
Milpitas, CA 95035

Fax: (408) 263-8293 Phone: (408) 263-5258
Project: **0904088**

Customer ID: TORR80
Customer PO: 0904088
Received: 04/16/09 9:00 AM
EMSL Order: 090902788

EMSL Proj:
Analysis Date: 4/20/2009
Report Date: 4/20/2009

Qualitative asbestos analysis of soils using the EPA 600/R-93/116 method

Sample	Location	Appearance	Result	Notes
0904088-001A, Soil *090902788-0001*			**None Detected**	
0904088-002A, Soil *090902788-0002*			**None Detected**	
0904088-003A, Soil *090902788-0003*			**None Detected**	
0904088-004A, Soil *090902788-0004*			**None Detected**	
0904088-005A, Soil *090902788-0005*			**None Detected**	

Analyst(s)

Adam C. Fink (4)

Baojia Ke, Laboratory Manager
or other approved signatory

EMSL recommends that soil samples reported as "ND" be tested by the EPA Screening Method/Qualitative. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. The above test must not be used by the client to claim product endorsement by NVLAP nor any agency of the United States Government. Unless otherwise noted, the results in this report have not been blank corrected.Samples received in good condition unless otherwise noted.

THIS IS THE LAST PAGE OF THE REPORT.

Torrent Laboratory, Inc.

Date: *24-Apr-09*

CLIENT: URS Corporation, San Jose
Work Order: 0904088
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5113

Sample ID **MB-5113** SampType: **MBLK** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **4/17/2009** RunNo: **19304**
Client ID: **ZZZZZ** Batch ID: **5113** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **4/20/2009** SeqNo: **278858**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	1.0									

Sample ID **LCS-5113** SampType: **LCS** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **4/17/2009** RunNo: **19304**
Client ID: **ZZZZZ** Batch ID: **5113** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **4/20/2009** SeqNo: **278856**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	49.15	1.0	50	0.4	97.5	67.9	118				

Sample ID **LCSD-5113** SampType: **LCSD** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **4/17/2009** RunNo: **19304**
Client ID: **ZZZZZ** Batch ID: **5113** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **4/20/2009** SeqNo: **278857**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	48.85	1.0	50	0.4	96.9	67.9	118	49.15	0.612	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904088
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5114

Sample ID	MB-5114	SampType:	MBLK	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	4/18/2009	RunNo:	19315
Client ID:	ZZZZZ	Batch ID:	5114	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/21/2009	SeqNo:	279018

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	1.0									

Sample ID	LCS-5114	SampType:	LCS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	4/18/2009	RunNo:	19315
Client ID:	ZZZZZ	Batch ID:	5114	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/21/2009	SeqNo:	279016

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	45.60	1.0	50	0.25	90.7	67.9	118				

Sample ID	LCSD-5114	SampType:	LCSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	4/18/2009	RunNo:	19315
Client ID:	ZZZZZ	Batch ID:	5114	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/21/2009	SeqNo:	279017

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	45.40	1.0	50	0.25	90.3	67.9	118	45.6	0.440	30	

Sample ID	0904088-008AMS	SampType:	MS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	4/18/2009	RunNo:	19315
Client ID:	N-1-1 @ 1.5	Batch ID:	5114	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/21/2009	SeqNo:	278995

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	295.6	1.0	50	384.7	-178	60.5	113				S

Sample ID	0904088-008AMSD	SampType:	MSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	4/18/2009	RunNo:	19315
Client ID:	N-1-1 @ 1.5	Batch ID:	5114	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/21/2009	SeqNo:	278996

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	395.8	1.0	50	384.7	22.2	60.5	113	295.6	29.0	30	S

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904088
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5115

Sample ID	MB-5115	SampType:	MBLK	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	4/18/2009	RunNo:	19317
Client ID:	ZZZZZ	Batch ID:	5115	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/21/2009	SeqNo:	279060

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	1.0									

Sample ID	LCS-5115	SampType:	LCS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	4/18/2009	RunNo:	19317
Client ID:	ZZZZZ	Batch ID:	5115	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/21/2009	SeqNo:	279058

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	46.85	1.0	50	0.35	93.0	67.9	118				

Sample ID	LCSD-5115	SampType:	LCSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	4/18/2009	RunNo:	19317
Client ID:	ZZZZZ	Batch ID:	5115	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/21/2009	SeqNo:	279059

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	47.70	1.0	50	0.35	94.7	67.9	118	46.85	1.80	30	

Sample ID	0904088-028AMS	SampType:	MS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	4/18/2009	RunNo:	19317
Client ID:	N-2-9 @ 1.0	Batch ID:	5115	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/21/2009	SeqNo:	279047

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	118.2	1.0	50	193.2	-150	60.5	113				S

Sample ID	0904088-028AMSD	SampType:	MSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	4/18/2009	RunNo:	19317
Client ID:	N-2-9 @ 1.0	Batch ID:	5115	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/21/2009	SeqNo:	279048

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	147.1	1.0	50	193.2	-92.3	60.5	113	118.2	21.8	30	S

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904088
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19276

Sample ID	MB-R19276	SampType:	MBLK	TestCode:	8260B_W	Units:	µg/L	Prep Date:	4/17/2009	RunNo:	19276
Client ID:	ZZZZZ	Batch ID:	R19276	TestNo:	SW8260B			Analysis Date:	4/17/2009	SeqNo:	278322

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	1.00									
1,1,1-Trichloroethane	ND	0.500									
1,1,2,2-Tetrachloroethane	ND	1.00									
1,1,2-Trichloroethane	ND	0.500									
1,1-Dichloroethane	ND	0.500									
1,1-Dichloroethene	ND	1.00									
1,1-Dichloropropene	ND	0.500									
1,2,3-Trichlorobenzene	ND	1.00									
1,2,3-Trichloropropane	ND	1.00									
1,2,4-Trichlorobenzene	ND	1.00									
1,2,4-Trimethylbenzene	ND	0.500									
1,2-Dibromo-3-chloropropane	ND	0.500									
1,2-Dibromoethane (EDB)	ND	0.500									
1,2-Dichlorobenzene	ND	0.500									
1,2-Dichloroethane (EDC)	ND	0.500									
1,2-Dichloropropane	ND	1.00									
1,3,5-Trimethylbenzene	ND	0.500									
1,3-Dichlorobenzene	ND	0.500									
1,4-Dichlorobenzene	ND	0.500									
2,2-Dichloropropane	ND	0.500									
2-Chloroethyl vinyl ether	ND	6.00									
2-Chlorotoluene	ND	0.500									
4-Chlorotoluene	ND	0.500									
4-Isopropyltoluene	ND	0.500									
Acetone	ND	10.0									
Benzene	ND	0.500									
Bromobenzene	ND	0.500									
Bromochloromethane	ND	0.500									
Bromodichloromethane	ND	0.500									
Bromoform	ND	1.00									
Bromomethane	ND	1.00									

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904088
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19276

Sample ID	MB-R19276	SampType:	MBLK	TestCode:	8260B_W	Units:	µg/L	Prep Date:	4/17/2009	RunNo:	19276
Client ID:	ZZZZZ	Batch ID:	R19276	TestNo:	SW8260B			Analysis Date:	4/17/2009	SeqNo:	278322

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon tetrachloride	ND	1.00									
Chlorobenzene	ND	0.500									
Chloroform	ND	0.500									
Chloromethane	ND	0.500									
cis-1,2-Dichloroethene	ND	0.500									
cis-1,3-Dichloropropene	ND	0.500									
Dibromochloromethane	ND	0.500									
Dibromomethane	ND	0.500									
Dichlorodifluoromethane	ND	0.500									
Diisopropyl ether (DIPE)	ND	0.500									
Ethyl tert-butyl ether (ETBE)	ND	0.500									
Ethylbenzene	ND	0.500									
Freon-113	ND	1.00									
Hexachlorobutadiene	ND	0.500									
Isopropylbenzene	ND	1.00									
Methyl tert-butyl ether (MTBE)	ND	0.500									
Methylene chloride	ND	5.00									
Naphthalene	ND	1.00									
n-Butylbenzene	ND	0.500									
n-Propylbenzene	ND	0.500									
sec-Butylbenzene	ND	0.500									
Styrene	ND	0.500									
t-Butyl alcohol (t-Butanol)	ND	5.00									
tert-Amyl methyl ether (TAME)	ND	0.500									
tert-Butylbenzene	ND	0.500									
Tetrachloroethene	ND	0.500									
Toluene	ND	0.500									
trans-1,2-Dichloroethene	ND	0.500									
trans-1,3-Dichloropropene	ND	0.500									
Trichloroethene	ND	0.500									
Trichlorofluoromethane	ND	0.500									

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904088
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19276

Sample ID	MB-R19276	SampType:	MBLK	TestCode:	8260B_W	Units:	µg/L	Prep Date:	4/17/2009	RunNo:	19276
Client ID:	ZZZZZ	Batch ID:	R19276	TestNo:	SW8260B			Analysis Date:	4/17/2009	SeqNo:	278322

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	ND	0.500									
Xylenes, Total	ND	1.50									
Surr: Dibromofluoromethane	10.65	0	11.36	0	93.8	61.2	131				
Surr: 4-Bromofluorobenzene	11.69	0	11.36	0	103	64.1	120				
Surr: Toluene-d8	11.42	0	11.36	0	101	75.1	127				

Sample ID	LCS-R19276	SampType:	LCS	TestCode:	8260B_W	Units:	µg/L	Prep Date:	4/16/2009	RunNo:	19276
Client ID:	ZZZZZ	Batch ID:	R19276	TestNo:	SW8260B			Analysis Date:	4/16/2009	SeqNo:	278323

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	14.15	1.00	17.04	0	83.0	61.4	129				
Benzene	15.62	0.500	17.04	0	91.7	66.9	140				
Chlorobenzene	14.93	0.500	17.04	0	87.6	73.9	137				
Toluene	14.71	0.500	17.04	0	86.3	76.6	123				
Trichloroethene	14.09	0.500	17.04	0	82.7	69.3	144				
Surr: Dibromofluoromethane	11.68	0	11.36	0	103	61.2	131				
Surr: 4-Bromofluorobenzene	11.79	0	11.36	0	104	64.1	120				
Surr: Toluene-d8	12.40	0	11.36	0	109	75.1	127				

Sample ID	LCSD-R19276	SampType:	LCSD	TestCode:	8260B_W	Units:	µg/L	Prep Date:	4/16/2009	RunNo:	19276
Client ID:	ZZZZZ	Batch ID:	R19276	TestNo:	SW8260B			Analysis Date:	4/16/2009	SeqNo:	278328

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	15.74	1.00	17.04	0	92.4	61.4	129	14.15	10.6	20	
Benzene	16.98	0.500	17.04	0	99.6	66.9	140	15.62	8.34	20	
Chlorobenzene	15.64	0.500	17.04	0	91.8	73.9	137	14.93	4.65	20	
Toluene	15.52	0.500	17.04	0	91.1	76.6	123	14.71	5.36	20	
Trichloroethene	15.48	0.500	17.04	0	90.8	69.3	144	14.09	9.40	20	
Surr: Dibromofluoromethane	11.99	0	11.36	0	106	61.2	131	0	0	0	
Surr: 4-Bromofluorobenzene	11.72	0	11.36	0	103	64.1	120	0	0	0	
Surr: Toluene-d8	12.65	0	11.36	0	111	75.1	127	0	0	0	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0904088

Company Name: UPS San Jose	Location of Sampling: 101 Ave Laures
Address:	Purpose:
City: State: Zip Code:	Special Instructions / Comments:
Telephone: FAX:	
REPORT TO: Patrick Walz SAMPLER: Eduardo O.	P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Working Days ☐ 3 Working Days ☐ Noon - Nxt Day ☐ 7 Working Days ☐ 2 Working Days ☐ 2 - 8 Hours ☑ 5 Working Days ☐ 1 Working Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☑ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

	CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	VOCs	TPH-g / BTEX	TPH-d / Fuels	pesticides	PCBs	CAM 17 + TPH	Lead	Asbestos	TORRENT'S SAMPLE I.D.
001A	1. N-1-2 @ 0.5	04/13/09 2125	S	1	Sleeve.							X	X	
002A	2. @ 1.0	|	|	1								X	X	
003A	3. @ 1.5	|	|	|								X	X	
004A	4. @ 2.0	|	|	|								X	X	
005A	5. @ 3.0	|	|	|								X	X	
006A	6. N-1-1 @ 0.5	04/13/09 2130	S	1	Sleeve							X		
007A	7. @ 1.0	|	|	1								X		
008A	8. @ 1.5	|	|	|								X		
009A	9. @ 2.0	|	|	1								X		
010A	10. @ 3.0	|	|	|								X		

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		04/13/09		[signature]		4/14/09	
2								

Were Samples Received in Good Condition? ☐ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment _____ Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrange -ments are made.

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date: _____

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0904088

Company Name: UPS San Jose	Location of Sampling: 101 Ax Lanes
Address:	Purpose:
City: State: Zip Code:	Special Instructions / Comments:
Telephone: FAX:	
REPORT TO: Patrick Walz SAMPLER: Eduardo O.	P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Working Days ☐ 3 Working Days ☐ Noon - Nxt Day ☐ 7 Working Days ☐ 2 Working Days ☐ 2 - 8 Hours ☒ 5 Working Days ☐ 1 Working Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☒ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

	CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	Lead	VOCs								TORRENT'S SAMPLE I.D.
011A	1. S-2-3@0.5	04/13/09 2245	S	1	sleeve	X									
012A	2. @1.0			1		X									
013A	3. @1.5			1		X									
014A	4. @2.0			1		X									
015A	5. @3.0			1		X									
016A	6. S-2-3 GW	04/13/09 2250	GW	3	VOA		X								
017A	7. N-2-5 @0.5	04/13/09 2155	S	1	sleeve	X									
018A	8. @1.0			1		X									
019A	9. @1.5			1		X									
020A	10. @2.0			1		X									

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		04/13/09		[signature]		4/14/09	
2	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:

Were Samples Received in Good Condition? ☐ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment _____ Sample seals intact? ☐ Yes ☐ NO ☐ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrange -ments are made.

Page 2 of 4

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date: _____

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0904088

Company Name: URS San Jose	Location of Sampling: 101 Ax Lanes
Address:	Purpose:
City: State: Zip Code:	Special Instructions / Comments:
Telephone: FAX:	
REPORT TO: Patrick Walz SAMPLER: Eduardo Ortiz	P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Working Days ☐ 3 Working Days ☐ Noon - Nxt Day ☐ 7 Working Days ☐ 2 Working Days ☐ 2 - 8 Hours ☒ 5 Working Days ☐ 1 Working Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☒ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED: Lead

	CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	Lead								TORRENT'S SAMPLE I.D.
021A	1. N-2-5 @3.0	04/13/09 2155	S	1	sleeve	X								
022A	2. N-1-18 @0.5	04/13/09 2215	S	1	sleeve	X								
023A	3. @1.0					X								
024A	4. @1.5					X								
025A	5. @2.0					X								
026A	6. @2.0					X								
027A	7. N-2-9 @0.5	04/13/09 2130	S	1		X								
028A	8. @1.0					X								
029A	9. @1.5					X								
030A	10. @2.0					X								

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		04/13/09		[signature]		4/14/09	
2								

Were Samples Received in Good Condition? ☐ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment _____ Sample seals intact? ☐ Yes ☐ NO ☐ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrange -ments are made.

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date: _____

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0904088

Company Name: UTRS San Jose	Location of Sampling: 101 Ayx Lanes
Address:	Purpose:
City: State: Zip Code:	Special Instructions / Comments:
Telephone: FAX:	
REPORT TO: Patrick Walz SAMPLER: Edmundo O.	P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Working Days ☐ 3 Working Days ☐ Noon - Nxt Day ☐ 7 Working Days ☐ 2 Working Days ☐ 2 - 8 Hours ☒ 5 Working Days ☐ 1 Working Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☒ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

	CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	Lead								TORRENT'S SAMPLE I.D.
031A	1. N-2-9 @3.0	04/13/09 2130	S	1	Sleeve	X								
032A	2. N-2-3 @0.5	04/13/09 2135	S	1	Sleeve	X								
033A	3. @1.0					X								
034A	4. @1.5					X								
035A	5. @2.0					X								
036A	6. @3.0					X								
	7.													
	8.													
	9.													
	10.													

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		04/13/09		[signature]		4/14/09	
2								

Were Samples Received in Good Condition? ☐ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment _____ Sample seals intact? ☐ Yes ☐ NO ☐ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrange -ments are made.

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date: _____

Torrent
LABORATORY, INC.

June 18, 2009 (Revision 2)

Patrick Walz
URS Corporation, San Jose
55 South Market St., Suite 1500
San Jose, CA 95113

TEL: (408) 297-9585
FAX: (408) 297-6962

RE: 101 Aux Lanes - See narrative for revision details

Order No.: 0904088

Dear Patrick Walz:

Torrent Laboratory, Inc. received 36 samples on 4/14/2009 for the analyses presented in the following report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.
Reported data is applicable for only the samples received as part of the order number referenced above.

Torrent Laboratory, Inc, is certified by the State of California, ELAP #1991. If you have any questions regarding these tests results, please feel free to contact the Project Management Team at (408)263-5258;ext: 204.

Sincerely,

Laboratory Director 6/18/09 Date

Patti Sandrock
QA Officer

Torrent Laboratory, Inc. **Date:** *18-Jun-09*

CLIENT: URS Corporation, San Jose
Project: 101 Aux Lanes
Lab Order: 0904088

CASE NARRATIVE

Analytical Comments for Asbestos PLM, Note: Analysis performed by NVLAP Certified sub-contract laboratory. (Certification # 101048-3).

Analytical Comment for Method 6010B for RunNo 19315 and 19317, Note:The % recoveries in the MS/MSD for Lead are outside of laboratory control limits but within % RPD limits and % recovery limits for the LCS/LCSD. No corrective action is required.

REVISIONS:

Per client request, STLC, DI STLC and TCLP analysis was added to specified samples. Due to insufficient sample mass available, no DI STLC or TCLP was performed on requested sample -001 (N-1-2 @ 0.5). Due to limited sample available for all samples, STLC, DI STLC and TCLP was performed using only 25 g of homogenized sample.

Note: Extraction of 25 g sample / 250g 0.2M Sodium Citrate Solution was performed according to DI wet extraction procedure (WET) which was rotated in a rotary shaker for 48 hours.

Extraction started on 05/30/2009 @ 12.15 PM and ended on 06/01/2009 @ 12:15 PM

Note: Extraction of 25 g sample / 250g 0.2M Sodium Citrate Solution was performed according to wet extraction procedure (WET) which was rotated in a rotary shaker for 48 hours.

Extraction started on 05/30/2009 @ 12.15 PM and ended on 06/01/2009 @ 12:15 PM

Note: Extraction of 25 g sample / 500g TCLP Fluid #1 was performed according to Toxicity Characteristic Leaching Procedure (TCLP) which was rotated in a rotary shaker for 18 hours.

Extraction started on 06/12/2009 @ 4:00 PM and ended on 06/13/2009 @ 10:00 AM

TORRENT LABORATORY, INC.

483 Sinclair Frontage Road • Milpitas, CA • Phone: (408) 263-5258 • Fax: (408) 263-8293

Visit us at www.torrentlab.com email: analysis@torrentlab.com

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 6/18/2009

Client Sample ID: N-1-2 @ 0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:25:00 PM

Lab Sample ID: 0904088-001
Date Prepared:

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (STLC)	6010B (STLC)	6/13/2009	0.1	1	0.10	23	mg/L	5280
Lead	SW6010B	4/20/2009	1	1	1.0	460	mg/Kg	5113

Client Sample ID: N-1-2 @ 1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:25:00 PM

Lab Sample ID: 0904088-002
Date Prepared: 6/4/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/5/2009	0.1	1	0.10	3.4	mg/L	5262
Lead (STLC)	6010B (STLC)	6/13/2009	0.1	1	0.10	1.9	mg/L	5280
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	ND	mg/L	5285
Lead	SW6010B	4/20/2009	1	1	1.0	110	mg/Kg	5113

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 6/18/2009

Client Sample ID: N-1-2 @ 1.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:25:00 PM

Lab Sample ID: 0904088-003
Date Prepared: 4/17/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	1	1.0	9.8	mg/Kg	5113

Client Sample ID: N-1-2 @ 2.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:25:00 PM

Lab Sample ID: 0904088-004
Date Prepared: 4/17/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	1	1.0	8.1	mg/Kg	5113

Client Sample ID: N-1-2 @ 3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:25:00 PM

Lab Sample ID: 0904088-005
Date Prepared: 4/17/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	1	1.0	3.2	mg/Kg	5113

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 6/18/2009

Client Sample ID: N-1-1 @ 0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:30:00 PM

Lab Sample ID: 0904088-006
Date Prepared: 6/4/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/5/2009	0.1	1	0.10	15	mg/L	5262
Lead (STLC)	6010B (STLC)	6/13/2009	0.1	1	0.10	27	mg/L	5280
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	0.10	mg/L	5285
Lead	SW6010B	4/20/2009	1	1	1.0	410	mg/Kg	5113

Client Sample ID: N-1-1 @ 1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:30:00 PM

Lab Sample ID: 0904088-007
Date Prepared: 6/4/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/5/2009	0.1	1	0.10	4.8	mg/L	5262
Lead (STLC)	6010B (STLC)	6/13/2009	0.1	1	0.10	15	mg/L	5280
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	ND	mg/L	5285
Lead	SW6010B	4/20/2009	1	1	1.0	520	mg/Kg	5113

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 6/18/2009

Client Sample ID: N-1-1 @ 1.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:30:00 PM

Lab Sample ID: 0904088-008
Date Prepared: 6/4/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/5/2009	0.1	1	0.10	1.6	mg/L	5262
Lead (STLC)	6010B (STLC)	6/13/2009	0.1	1	0.10	9.5	mg/L	5280
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	ND	mg/L	5285
Lead	SW6010B	4/21/2009	1	1	1.0	380	mg/Kg	5114

Client Sample ID: N-1-1 @ 2.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:30:00 PM

Lab Sample ID: 0904088-009
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	14	mg/Kg	5114

Client Sample ID: N-1-1 @ 3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:30:00 PM

Lab Sample ID: 0904088-010
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	6.3	mg/Kg	5114

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 6/18/2009

Client Sample ID: S-2-3 @ 0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 10:45:00 PM

Lab Sample ID: 0904088-011
Date Prepared: 6/4/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/5/2009	0.1	1	0.10	ND	mg/L	5262
Lead (STLC)	6010B (STLC)	6/13/2009	0.1	1	0.10	2.4	mg/L	5280
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	ND	mg/L	5285
Lead	SW6010B	4/21/2009	1	1	1.0	200	mg/Kg	5114

Client Sample ID: S-2-3 @ 1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 10:45:00 PM

Lab Sample ID: 0904088-012
Date Prepared: 6/4/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/5/2009	0.1	1	0.10	ND	mg/L	5262
Lead (STLC)	6010B (STLC)	6/13/2009	0.1	1	0.10	0.51	mg/L	5280
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	ND	mg/L	5285
Lead	SW6010B	4/21/2009	1	1	1.0	110	mg/Kg	5114

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 6/18/2009

Client Sample ID: S-2-3 @ 1.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 10:45:00 PM

Lab Sample ID: 0904088-013
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	8.6	mg/Kg	5114

Client Sample ID: S-2-3 @ 2.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 10:45:00 PM

Lab Sample ID: 0904088-014
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	3.4	mg/Kg	5114

Client Sample ID: S-2-3 @ 3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 10:45:00 PM

Lab Sample ID: 0904088-015
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	2.9	mg/Kg	5114

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for:	Patrick Walz	**Date Received:**	4/14/2009
	URS Corporation, San Jose	**Date Reported:**	6/18/2009

Client Sample ID:	S-2-3-GW	**Lab Sample ID:**	0904088-016
Sample Location:	101 Aux Lanes	**Date Prepared:**	4/17/2009
Sample Matrix:	GROUNDWATER		
Date/Time Sampled	4/13/2009 10:50:00 PM		

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

1,1,1,2-Tetrachloroethane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,1,1-Trichloroethane	SW8260B	4/17/2009	0.5	1	0.50	1.57	µg/L	R19276
1,1,2,2-Tetrachloroethane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,1,2-Trichloroethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,1-Dichloroethane	SW8260B	4/17/2009	0.5	1	0.50	3.37	µg/L	R19276
1,1-Dichloroethene	SW8260B	4/17/2009	1	1	1.00	66.5	µg/L	R19276
1,1-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2,3-Trichlorobenzene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,2,3-Trichloropropane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,2,4-Trichlorobenzene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,2,4-Trimethylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dibromo-3-chloropropane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dibromoethane (EDB)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dichlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dichloroethane (EDC)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dichloropropane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,3,5-Trimethylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,3-Dichlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,3-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,4-Dichlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
2,2-Dichloropropane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
2-Chloroethyl vinyl ether	SW8260B	4/17/2009	6	1	6.00	ND	µg/L	R19276
2-Chlorotoluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
4-Chlorotoluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
4-Isopropyltoluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Acetone	SW8260B	4/17/2009	10	1	10.0	ND	µg/L	R19276
Benzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromochloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromodichloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromoform	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Bromomethane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Carbon tetrachloride	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Chlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Chloroform	SW8260B	4/17/2009	0.5	1	0.50	0.75	µg/L	R19276
Chloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
cis-1,2-Dichloroethene	SW8260B	4/17/2009	0.5	1	0.50	11.5	µg/L	R19276
cis-1,3-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Dibromochloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Dibromomethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Dichlorodifluoromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Diisopropyl ether (DIPE)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Ethyl tert-butyl ether (ETBE)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Ethylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Freon-113	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Hexachlorobutadiene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Isopropylbenzene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Methyl tert-butyl ether (MTBE)	SW8260B	4/17/2009	0.5	1	0.50	5.15	µg/L	R19276
Methylene chloride	SW8260B	4/17/2009	5	1	5.00	ND	µg/L	R19276
Naphthalene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
n-Butylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
n-Propylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
sec-Butylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 6/18/2009

Styrene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
t-Butyl alcohol (t-Butanol)	SW8260B	4/17/2009	5	1	5.00	ND	µg/L	R19276
tert-Amyl methyl ether (TAME)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
tert-Butylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Tetrachloroethene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Toluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
trans-1,2-Dichloroethene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
trans-1,3-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Trichloroethene	SW8260B	4/17/2009	0.5	1	0.50	47.2	µg/L	R19276
Trichlorofluoromethane	SW8260B	4/17/2009	0.5	1	0.50	1.18	µg/L	R19276
Vinyl chloride	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Xylenes, Total	SW8260B	4/17/2009	1.5	1	1.50	ND	µg/L	R19276
Surr: Dibromofluoromethane	SW8260B	4/17/2009	0	1	61.2-131	110	%REC	R19276
Surr: 4-Bromofluorobenzene	SW8260B	4/17/2009	0	1	64.1-120	92.9	%REC	R19276
Surr: Toluene-d8	SW8260B	4/17/2009	0	1	75.1-127	103	%REC	R19276

Client Sample ID: N-2-5 @ 0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:55:00 PM

Lab Sample ID: 0904088-017
Date Prepared: 6/4/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/5/2009	0.1	1	0.10	4.1	mg/L	5262
Lead (STLC)	6010B (STLC)	6/13/2009	0.1	1	0.10	4.0	mg/L	5280
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	ND	mg/L	5285
Lead	SW6010B	4/21/2009	1	1	1.0	130	mg/Kg	5114

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 6/18/2009

Client Sample ID: N-2-5 @ 1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:55:00 PM

Lab Sample ID: 0904088-018
Date Prepared: 6/4/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/5/2009	0.1	1	0.10	0.59	mg/L	5262
Lead (STLC)	6010B (STLC)	6/13/2009	0.1	1	0.10	4.5	mg/L	5280
Lead	SW6010B	4/21/2009	1	1	1.0	88	mg/Kg	5114

Client Sample ID: N-2-5 @ 1.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:55:00 PM

Lab Sample ID: 0904088-019
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	16	mg/Kg	5114

Client Sample ID: N-2-5 @ 2.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:55:00 PM

Lab Sample ID: 0904088-020
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	6.2	mg/Kg	5114

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 6/18/2009

Client Sample ID: N-2-5 @ 3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:55:00 PM

Lab Sample ID: 0904088-021
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	3.8	mg/Kg	5114

Client Sample ID: N-1-18 @ 0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 10:15:00 PM

Lab Sample ID: 0904088-022
Date Prepared: 6/4/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/5/2009	0.1	1	0.10	45	mg/L	5262
Lead (STLC)	6010B (STLC)	6/13/2009	0.1	1	0.10	11	mg/L	5280
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	6.8	mg/L	5285
Lead	SW6010B	4/21/2009	1	1	1.0	130	mg/Kg	5114

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 6/18/2009

Client Sample ID: N-1-18 @ 1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 10:15:00 PM

Lab Sample ID: 0904088-023
Date Prepared: 6/4/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/5/2009	0.1	1	0.10	12	mg/L	5262
Lead (STLC)	6010B (STLC)	6/13/2009	0.1	1	0.10	41	mg/L	5280
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	ND	mg/L	5285
Lead	SW6010B	4/21/2009	1	1	1.0	1100	mg/Kg	5114

Client Sample ID: N-1-18 @ 1.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 10:15:00 PM

Lab Sample ID: 0904088-024
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	1.5	mg/Kg	5114

Client Sample ID: N-1-18 @ 2.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 10:15:00 PM

Lab Sample ID: 0904088-025
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	4.1	mg/Kg	5114

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 6/18/2009

Client Sample ID: N-1-18 @ 3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 10:15:00 PM

Lab Sample ID: 0904088-026
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	8.8	mg/Kg	5114

Client Sample ID: N-2-9 @ 0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:30:00 PM

Lab Sample ID: 0904088-027
Date Prepared: 6/4/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/5/2009	0.1	1	0.10	15	mg/L	5262
Lead (STLC)	6010B (STLC)	6/13/2009	0.1	1	0.10	4.4	mg/L	5280
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	0.18	mg/L	5285
Lead	SW6010B	4/21/2009	1	1	1.0	640	mg/Kg	5114

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 6/18/2009

Client Sample ID: N-2-9 @ 1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:30:00 PM

Lab Sample ID: 0904088-028
Date Prepared: 6/4/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/5/2009	0.1	1	0.10	ND	mg/L	5262
Lead (STLC)	6010B (STLC)	6/13/2009	0.1	1	0.10	0.20	mg/L	5280
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	ND	mg/L	5285
Lead	SW6010B	4/21/2009	1	1	1.0	190	mg/Kg	5115

Client Sample ID: N-2-9 @ 1.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:30:00 PM

Lab Sample ID: 0904088-029
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	17	mg/Kg	5115

Client Sample ID: N-2-9 @ 2.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:30:00 PM

Lab Sample ID: 0904088-030
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	3.8	mg/Kg	5115

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 6/18/2009

Client Sample ID: N-2-9 @ 3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:30:00 PM

Lab Sample ID: 0904088-031
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	2.4	mg/Kg	5115

Client Sample ID: N-2-3 @ 0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:35:00 PM

Lab Sample ID: 0904088-032
Date Prepared: 6/4/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/5/2009	0.1	1	0.10	7.0	mg/L	5262
Lead (STLC)	6010B (STLC)	6/13/2009	0.1	1	0.10	28	mg/L	5280
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	ND	mg/L	5285
Lead	SW6010B	4/21/2009	1	1	1.0	590	mg/Kg	5115

Client Sample ID: N-2-3 @ 1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:35:00 PM

Lab Sample ID: 0904088-033
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	13	mg/Kg	5115

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/14/2009
Date Reported: 6/18/2009

Client Sample ID: N-2-3 @ 1.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:35:00 PM

Lab Sample ID: 0904088-034
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	3.4	mg/Kg	5115

Client Sample ID: N-2-3 @ 2.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:35:00 PM

Lab Sample ID: 0904088-035
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	7.0	mg/Kg	5115

Client Sample ID: N-2-3 @ 3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 9:35:00 PM

Lab Sample ID: 0904088-036
Date Prepared: 4/18/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/21/2009	1	1	1.0	5.8	mg/Kg	5115

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Definitions, legends and Notes

Note	Description
ug/kg	Microgram per kilogram (ppb, part per billion).
ug/L	Microgram per liter (ppb, part per billion).
mg/kg	Milligram per kilogram (ppm, part per million).
mg/L	Milligram per liter (ppm, part per million).
LCS/LCSD	Laboratory control sample/laboratory control sample duplicate.
MDL	Method detection limit.
MRL	Modified reporting limit. When sample is subject to dilution, reporting limit times dilution factor yields MRL.
MS/MSD	Matrix spike/matrix spike duplicate.
N/A	Not applicable.
ND	Not detected at or above detection limit.
NR	Not reported.
QC	Quality Control.
RL	Reporting limit.
% RPD	Percent relative difference.
a	pH was measured immediately upon the receipt of the sample, but it was still done outside the holding time.
sub	Analyzed by subcontracting laboratory, Lab Certificate #

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

EMSL Analytical, Inc
2235 Polvorosa Ave , Suite 230, San Leandro, CA 94577
Phone: (510) 895-3675 Fax: (510) 895-3680 Email: milpitaslab@emsl.com

Attn: **Nutan Kabir**
Torrent Laboratory, Inc.
483 Sinclair Frontage Rd.
Milpitas, CA 95035

Fax: (408) 263-8293 Phone: (408) 263-5258
Project: **0904088**

Customer ID: TORR80
Customer PO: 0904088
Received: 04/16/09 9:00 AM
EMSL Order: 090902788

EMSL Proj:
Analysis Date: 4/20/2009
Report Date: 4/20/2009

Qualitative asbestos analysis of soils using the EPA 600/R-93/116 method

Sample	Location	Appearance	Result	Notes
0904088-001A, Soil *090902788-0001*			**None Detected**	
0904088-002A, Soil *090902788-0002*			**None Detected**	
0904088-003A, Soil *090902788-0003*			**None Detected**	
0904088-004A, Soil *090902788-0004*			**None Detected**	
0904088-005A, Soil *090902788-0005*			**None Detected**	

Analyst(s)

Adam C. Fink (4)

Baojia Ke, Laboratory Manager
or other approved signatory

EMSL recommends that soil samples reported as "ND" be tested by the EPA Screening Method/Qualitative. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. The above test must not be used by the client to claim product endorsement by NVLAP nor any agency of the United States Government. Unless otherwise noted, the results in this report have not been blank corrected.Samples received in good condition unless otherwise noted.

THIS IS THE LAST PAGE OF THE REPORT.

Torrent Laboratory, Inc.

Date: *18-Jun-09*

CLIENT: URS Corporation, San Jose
Work Order: 0904088
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5113

Sample ID: **MB-5113** SampType: **MBLK** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **4/17/2009** RunNo: **19304**
Client ID: **ZZZZZ** Batch ID: **5113** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **4/20/2009** SeqNo: **278858**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	1.0									

Sample ID: **LCS-5113** SampType: **LCS** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **4/17/2009** RunNo: **19304**
Client ID: **ZZZZZ** Batch ID: **5113** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **4/20/2009** SeqNo: **278856**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	49.15	1.0	50	0.4	97.5	67.9	118				

Sample ID: **LCSD-5113** SampType: **LCSD** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **4/17/2009** RunNo: **19304**
Client ID: **ZZZZZ** Batch ID: **5113** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **4/20/2009** SeqNo: **278857**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	48.85	1.0	50	0.4	96.9	67.9	118	49.15	0.612	30	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904088
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5114

Sample ID: **MB-5114** SampType: **MBLK** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **4/18/2009** RunNo: **19315**
Client ID: **ZZZZZ** Batch ID: **5114** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **4/21/2009** SeqNo: **279018**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	1.0									

Sample ID: **LCS-5114** SampType: **LCS** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **4/18/2009** RunNo: **19315**
Client ID: **ZZZZZ** Batch ID: **5114** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **4/21/2009** SeqNo: **279016**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	45.60	1.0	50	0.25	90.7	67.9	118				

Sample ID: **LCSD-5114** SampType: **LCSD** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **4/18/2009** RunNo: **19315**
Client ID: **ZZZZZ** Batch ID: **5114** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **4/21/2009** SeqNo: **279017**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	45.40	1.0	50	0.25	90.3	67.9	118	45.6	0.440	30	

Sample ID: **0904088-008AMS** SampType: **MS** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **4/18/2009** RunNo: **19315**
Client ID: **N-1-1 @ 1.5** Batch ID: **5114** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **4/21/2009** SeqNo: **278995**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	295.6	1.0	50	384.7	-178	60.5	113				S

Sample ID: **0904088-008AMSD** SampType: **MSD** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **4/18/2009** RunNo: **19315**
Client ID: **N-1-1 @ 1.5** Batch ID: **5114** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **4/21/2009** SeqNo: **278996**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	395.8	1.0	50	384.7	22.2	60.5	113	295.6	29.0	30	S

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904088
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5115

Sample ID: **MB-5115** SampType: **MBLK** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **4/18/2009** RunNo: **19317**
Client ID: **ZZZZZ** Batch ID: **5115** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **4/21/2009** SeqNo: **279060**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	1.0									

Sample ID: **LCS-5115** SampType: **LCS** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **4/18/2009** RunNo: **19317**
Client ID: **ZZZZZ** Batch ID: **5115** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **4/21/2009** SeqNo: **279058**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	46.85	1.0	50	0.35	93.0	67.9	118				

Sample ID: **LCSD-5115** SampType: **LCSD** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **4/18/2009** RunNo: **19317**
Client ID: **ZZZZZ** Batch ID: **5115** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **4/21/2009** SeqNo: **279059**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	47.70	1.0	50	0.35	94.7	67.9	118	46.85	1.80	30	

Sample ID: **0904088-028AMS** SampType: **MS** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **4/18/2009** RunNo: **19317**
Client ID: **N-2-9 @ 1.0** Batch ID: **5115** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **4/21/2009** SeqNo: **279047**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	118.2	1.0	50	193.2	-150	60.5	113				S

Sample ID: **0904088-028AMSD** SampType: **MSD** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **4/18/2009** RunNo: **19317**
Client ID: **N-2-9 @ 1.0** Batch ID: **5115** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **4/21/2009** SeqNo: **279048**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	147.1	1.0	50	193.2	-92.3	60.5	113	118.2	21.8	30	S

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904088
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5262

Sample ID: **MB-5262** SampType: **MBLK** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **6/4/2009** RunNo: **19816**
Client ID: **ZZZZZ** Batch ID: **5262** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/5/2009** SeqNo: **286573**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	ND	0.10									

Sample ID: **LCS-5262** SampType: **LCS** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **6/4/2009** RunNo: **19816**
Client ID: **ZZZZZ** Batch ID: **5262** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/5/2009** SeqNo: **286571**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	9.940	0.10	10	0	99.4	75	125				

Sample ID: **LCSD-5262** SampType: **LCSD** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **6/4/2009** RunNo: **19816**
Client ID: **ZZZZZ** Batch ID: **5262** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/5/2009** SeqNo: **286572**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	9.880	0.10	10	0	98.8	75	125	9.94	0.605	30	

Sample ID: **0904088-002AMS** SampType: **MS** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **6/4/2009** RunNo: **19816**
Client ID: **N-1-2 @ 1.0** Batch ID: **5262** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/5/2009** SeqNo: **286558**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	12.83	0.10	10	3.37	94.6	75	125				

Sample ID: **0904088-002AMSD** SampType: **MSD** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **6/4/2009** RunNo: **19816**
Client ID: **N-1-2 @ 1.0** Batch ID: **5262** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/5/2009** SeqNo: **286559**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	12.74	0.10	10	3.37	93.7	75	125	12.83	0.704	30	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904088
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5280

Sample ID: **MB-5280** SampType: **MBLK** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **6/12/2009** RunNo: **19871**
Client ID: **ZZZZZ** Batch ID: **5280** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **6/13/2009** SeqNo: **287426**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (STLC)	ND	0.10									

Sample ID: **LCS-5280** SampType: **LCS** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **6/12/2009** RunNo: **19871**
Client ID: **ZZZZZ** Batch ID: **5280** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **6/13/2009** SeqNo: **287422**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (STLC)	10.28	0.10	10	0	103	75	125				

Sample ID: **LCSD-5280** SampType: **LCSD** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **6/12/2009** RunNo: **19871**
Client ID: **ZZZZZ** Batch ID: **5280** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **6/13/2009** SeqNo: **287424**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (STLC)	10.76	0.10	10	0	108	75	125	10.28	4.56	30	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904088
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5285

Sample ID: **MB-5285** SampType: **MBLK** TestCode: **6010B (TCLP)** Units: **mg/L** Prep Date: **6/14/2009** RunNo: **19897**
Client ID: **ZZZZZ** Batch ID: **5285** TestNo: **6010B (TCLP) (SW3010A)** Analysis Date: **6/15/2009** SeqNo: **287813**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	ND	0.10									

Sample ID: **LCS-5285** SampType: **LCS** TestCode: **6010B (TCLP)** Units: **mg/L** Prep Date: **6/14/2009** RunNo: **19897**
Client ID: **ZZZZZ** Batch ID: **5285** TestNo: **6010B (TCLP) (SW3010A)** Analysis Date: **6/15/2009** SeqNo: **287811**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	9.810	0.10	10	0.01	98.0	75	125				

Sample ID: **LCSD-5285** SampType: **LCSD** TestCode: **6010B (TCLP)** Units: **mg/L** Prep Date: **6/14/2009** RunNo: **19897**
Client ID: **ZZZZZ** Batch ID: **5285** TestNo: **6010B (TCLP) (SW3010A)** Analysis Date: **6/15/2009** SeqNo: **287812**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	9.880	0.10	10	0.01	98.7	75	125	9.81	0.711	30	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904088
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19276

Sample ID: **MB-R19276**	SampType: **MBLK**	TestCode: **8260B_W**	Units: **µg/L**	Prep Date: **4/17/2009**	RunNo: **19276**
Client ID: **ZZZZZ**	Batch ID: **R19276**	TestNo: **SW8260B**		Analysis Date: **4/17/2009**	SeqNo: **278322**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	1.00									
1,1,1-Trichloroethane	ND	0.500									
1,1,2,2-Tetrachloroethane	ND	1.00									
1,1,2-Trichloroethane	ND	0.500									
1,1-Dichloroethane	ND	0.500									
1,1-Dichloroethene	ND	1.00									
1,1-Dichloropropene	ND	0.500									
1,2,3-Trichlorobenzene	ND	1.00									
1,2,3-Trichloropropane	ND	1.00									
1,2,4-Trichlorobenzene	ND	1.00									
1,2,4-Trimethylbenzene	ND	0.500									
1,2-Dibromo-3-chloropropane	ND	0.500									
1,2-Dibromoethane (EDB)	ND	0.500									
1,2-Dichlorobenzene	ND	0.500									
1,2-Dichloroethane (EDC)	ND	0.500									
1,2-Dichloropropane	ND	1.00									
1,3,5-Trimethylbenzene	ND	0.500									
1,3-Dichlorobenzene	ND	0.500									
1,4-Dichlorobenzene	ND	0.500									
2,2-Dichloropropane	ND	0.500									
2-Chloroethyl vinyl ether	ND	6.00									
2-Chlorotoluene	ND	0.500									
4-Chlorotoluene	ND	0.500									
4-Isopropyltoluene	ND	0.500									
Acetone	ND	10.0									
Benzene	ND	0.500									
Bromobenzene	ND	0.500									
Bromochloromethane	ND	0.500									
Bromodichloromethane	ND	0.500									
Bromoform	ND	1.00									
Bromomethane	ND	1.00									

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904088
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19276

Sample ID: **MB-R19276**	SampType: **MBLK**	TestCode: **8260B_W**	Units: **µg/L**	Prep Date: **4/17/2009**	RunNo: **19276**
Client ID: **ZZZZZ**	Batch ID: **R19276**	TestNo: **SW8260B**		Analysis Date: **4/17/2009**	SeqNo: **278322**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon tetrachloride	ND	1.00									
Chlorobenzene	ND	0.500									
Chloroform	ND	0.500									
Chloromethane	ND	0.500									
cis-1,2-Dichloroethene	ND	0.500									
cis-1,3-Dichloropropene	ND	0.500									
Dibromochloromethane	ND	0.500									
Dibromomethane	ND	0.500									
Dichlorodifluoromethane	ND	0.500									
Diisopropyl ether (DIPE)	ND	0.500									
Ethyl tert-butyl ether (ETBE)	ND	0.500									
Ethylbenzene	ND	0.500									
Freon-113	ND	1.00									
Hexachlorobutadiene	ND	0.500									
Isopropylbenzene	ND	1.00									
Methyl tert-butyl ether (MTBE)	ND	0.500									
Methylene chloride	ND	5.00									
Naphthalene	ND	1.00									
n-Butylbenzene	ND	0.500									
n-Propylbenzene	ND	0.500									
sec-Butylbenzene	ND	0.500									
Styrene	ND	0.500									
t-Butyl alcohol (t-Butanol)	ND	5.00									
tert-Amyl methyl ether (TAME)	ND	0.500									
tert-Butylbenzene	ND	0.500									
Tetrachloroethene	ND	0.500									
Toluene	ND	0.500									
trans-1,2-Dichloroethene	ND	0.500									
trans-1,3-Dichloropropene	ND	0.500									
Trichloroethene	ND	0.500									
Trichlorofluoromethane	ND	0.500									

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904088
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19276

Sample ID: **MB-R19276** SampType: **MBLK** TestCode: **8260B_W** Units: **µg/L** Prep Date: **4/17/2009** RunNo: **19276**
Client ID: **ZZZZZ** Batch ID: **R19276** TestNo: **SW8260B** Analysis Date: **4/17/2009** SeqNo: **278322**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	ND	0.500									
Xylenes, Total	ND	1.50									
Surr: Dibromofluoromethane	10.65	0	11.36	0	93.8	61.2	131				
Surr: 4-Bromofluorobenzene	11.69	0	11.36	0	103	64.1	120				
Surr: Toluene-d8	11.42	0	11.36	0	101	75.1	127				

Sample ID: **LCS-R19276** SampType: **LCS** TestCode: **8260B_W** Units: **µg/L** Prep Date: **4/16/2009** RunNo: **19276**
Client ID: **ZZZZZ** Batch ID: **R19276** TestNo: **SW8260B** Analysis Date: **4/16/2009** SeqNo: **278323**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	14.15	1.00	17.04	0	83.0	61.4	129				
Benzene	15.62	0.500	17.04	0	91.7	66.9	140				
Chlorobenzene	14.93	0.500	17.04	0	87.6	73.9	137				
Toluene	14.71	0.500	17.04	0	86.3	76.6	123				
Trichloroethene	14.09	0.500	17.04	0	82.7	69.3	144				
Surr: Dibromofluoromethane	11.68	0	11.36	0	103	61.2	131				
Surr: 4-Bromofluorobenzene	11.79	0	11.36	0	104	64.1	120				
Surr: Toluene-d8	12.40	0	11.36	0	109	75.1	127				

Sample ID: **LCSD-R19276** SampType: **LCSD** TestCode: **8260B_W** Units: **µg/L** Prep Date: **4/16/2009** RunNo: **19276**
Client ID: **ZZZZZ** Batch ID: **R19276** TestNo: **SW8260B** Analysis Date: **4/16/2009** SeqNo: **278328**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	15.74	1.00	17.04	0	92.4	61.4	129	14.15	10.6	20	
Benzene	16.98	0.500	17.04	0	99.6	66.9	140	15.62	8.34	20	
Chlorobenzene	15.64	0.500	17.04	0	91.8	73.9	137	14.93	4.65	20	
Toluene	15.52	0.500	17.04	0	91.1	76.6	123	14.71	5.36	20	
Trichloroethene	15.48	0.500	17.04	0	90.8	69.3	144	14.09	9.40	20	
Surr: Dibromofluoromethane	11.99	0	11.36	0	106	61.2	131	0	0	0	
Surr: 4-Bromofluorobenzene	11.72	0	11.36	0	103	64.1	120	0	0	0	
Surr: Toluene-d8	12.65	0	11.36	0	111	75.1	127	0	0	0	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0904088

Company Name: UPS San Jose	Location of Sampling: 101 Ave Laures
Address:	Purpose:
City: State: Zip Code:	Special Instructions / Comments:
Telephone: FAX:	
REPORT TO: Patrick Walz SAMPLER: Eduardo O.	P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Working Days ☐ 3 Working Days ☐ Noon - Nxt Day ☐ 7 Working Days ☐ 2 Working Days ☐ 2 - 8 Hours ☑ 5 Working Days ☐ 1 Working Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☑ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

	CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	VOCs	TPH-g / BTEX	TPH-d / Fuels	pesticides	PCBs	CAM 17 + TPH	Lead	Asbestos	TORRENT'S SAMPLE I.D.
001A	1. N-1-2 @ 0.5	04/13/09 2125	S	1	Sleeve.							X	X	
002A	2. @ 1.0	|	|	1								X	X	
003A	3. @ 1.5	|	|	|								X	X	
004A	4. @ 2.0	|	|	|								X	X	
005A	5. @ 3.0	|	|	|								X	X	
006A	6. N-1-1 @ 0.5	04/13/09 2130	S	1	Sleeve							X		
007A	7. @ 1.0	|	|	1								X		
008A	8. @ 1.5	|	|	|								X		
009A	9. @ 2.0	|	|	1								X		
010A	10. @ 3.0	|	|	|								X		

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		04/13/09		[signature]		4/14/09	
2								

Were Samples Received in Good Condition? ☐ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment _____ Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrange -ments are made.

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date: _____

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0904088

Company Name: UPS San Jose	Location of Sampling: 101 Ax Lanes
Address:	Purpose:
City: State: Zip Code:	Special Instructions / Comments:
Telephone: FAX:	
REPORT TO: Patrick Walz SAMPLER: Eduardo O.	P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Working Days ☐ 3 Working Days ☐ Noon - Nxt Day ☐ 7 Working Days ☐ 2 Working Days ☐ 2 - 8 Hours ☒ 5 Working Days ☐ 1 Working Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☒ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

	CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	Lead	VOCs								TORRENT'S SAMPLE I.D.
011A	1. S-2-3@0.5	04/13/09 2245	S	1	sleeve	X									
012A	2. @1.0			1		X									
013A	3. @1.5			1		X									
014A	4. @2.0			1		X									
015A	5. @3.0			1		X									
016A	6. S-2-3 GW	04/13/09 2250	GW	3	VOA		X								
017A	7. N-2-5 @0.5	04/13/09 2155	S	1	sleeve	X									
018A	8. @1.0			1		X									
019A	9. @1.5			1		X									
020A	10. @2.0			1		X									

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		04/13/09		[signature]		4/14/09	
2	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:

Were Samples Received in Good Condition? ☐ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment _____ Sample seals intact? ☐ Yes ☐ NO ☐ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrange -ments are made.

Page 2 of 4

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date: _____

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0904088

Company Name: URS San Jose	Location of Sampling: 101 Ax Lanes
Address:	Purpose:
City: State: Zip Code:	Special Instructions / Comments:
Telephone: FAX:	
REPORT TO: Patrick Walz SAMPLER: Eduardo Ortiz	P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Working Days ☐ 3 Working Days ☐ Noon - Nxt Day ☐ 7 Working Days ☐ 2 Working Days ☐ 2 - 8 Hours ☒ 5 Working Days ☐ 1 Working Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☒ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED: Lead

	CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	Lead								TORRENT'S SAMPLE I.D.
021A	1. N-2-5 @3.0	04/13/09 2155	S	1	sleeve	X								
022A	2. N-1-18 @0.5	04/13/09 2215	S	1	sleeve	X								
023A	3. @1.0					X								
024A	4. @1.5					X								
025A	5. @2.0					X								
026A	6. @2.0					X								
027A	7. N-2-9 @0.5	04/13/09 2130	S	1		X								
028A	8. @1.0					X								
029A	9. @1.5					X								
030A	10. @2.0					X								

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		04/13/09		[signature]		4/14/09	
2								

Were Samples Received in Good Condition? ☐ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment _____ Sample seals intact? ☐ Yes ☐ NO ☐ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrange -ments are made.

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date: _____

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0904088

Company Name: UTRS San Jose	Location of Sampling: 101 Ayx Lanes
Address:	Purpose:
City: State: Zip Code:	Special Instructions / Comments:
Telephone: FAX:	
REPORT TO: Patrick Walz SAMPLER: Edmundo O.	P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Working Days ☐ 3 Working Days ☐ Noon - Nxt Day ☐ 7 Working Days ☐ 2 Working Days ☐ 2 - 8 Hours ☒ 5 Working Days ☐ 1 Working Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☒ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

	CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	Lead								TORRENT'S SAMPLE I.D.
031A	1. N-2-9 @3.0	04/13/09 2130	S	1	Sleeve	X								
032A	2. N-2-3 @0.5	04/13/09 2135	S	1	Sleeve	X								
033A	3. @1.0					X								
034A	4. @1.5					X								
035A	5. @2.0					X								
036A	6. @3.0					X								
	7.													
	8.													
	9.													
	10.													

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		04/13/09		[signature]		4/14/09	
2								

Were Samples Received in Good Condition? ☐ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment _____ Sample seals intact? ☐ Yes ☐ NO ☐ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrange -ments are made.

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date: _____

Torrent
LABORATORY, INC.

April 23, 2009

Patrick Walz
URS Corporation, San Jose
55 South Market St., Suite 1500
San Jose, CA 95113

TEL: (408) 297-9585
FAX (408) 297-6962

RE: 101 Aux Lanes

Order No.: 0904074

Dear Patrick Walz:

Torrent Laboratory, Inc. received 34 samples on 4/13/2009 for the analyses presented in the following report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.
Reported data is applicable for only the samples received as part of the order number referenced above.

Torrent Laboratory, Inc, is certified by the State of California, ELAP #1991. If you have any questions regarding these tests results, please feel free to contact the Project Management Team at (408)263-5258;ext: 204.

Sincerely,

Laboratory Director

04-23-09
Date

Patti Sandrock
QA Officer

Torrent Laboratory, Inc. **Date:** *23-Apr-09*

CLIENT: URS Corporation, San Jose
Project: 101 Aux Lanes
Lab Order: 0904074

CASE NARRATIVE

Analytical Comments for Asbestos PLM, Note: Analysis performed by NVLAP Certified sub-contract laboratory. (Certification # 101048-3).

Note: although pH was measured upon laboratory receipt, the samples were received outside of the recommended holding time (24 hours from collection).

TORRENT LABORATORY, INC.

483 Sinclair Frontage Road • Milpitas, CA • Phone: (408) 263-5258 • Fax: (408) 263-8293

Visit us at www.torrentlab.com email: analysis@torrentlab.com

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: S3-12@2.0-D
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009

Lab Sample ID: 0904074-001
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	1	1.0	7.0	mg/Kg	5109

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: S-3-12@3.0-D
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009

Lab Sample ID: 0904074-002
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	1	1.0	5.2	mg/Kg	5109

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-3-9@0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 12:10:00 AM

Lab Sample ID: 0904074-003
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	1	1.0	40	mg/Kg	5109

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-3-9@1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 12:10:00 AM

Lab Sample ID: 0904074-004
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	1	1.0	30	mg/Kg	5109

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-3-8-GW
Sample Location: 101 Aux Lanes
Sample Matrix: GROUNDWATER
Date/Time Sampled 4/12/2009 11:40:00 PM

Lab Sample ID: 0904074-005
Date Prepared: 4/14/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
pH	E150.1	4/14/2009	0.05	1	0.0500	8.23	pH units	R19234
pH was out of hold time upon receipt.								
Antimony	SW6010B	4/14/2009	0.01	1	0.010	ND	mg/L	5098
Arsenic	SW6010B	4/14/2009	0.01	1	0.010	ND	mg/L	5098
Barium	SW6010B	4/14/2009	0.01	1	0.010	0.10	mg/L	5098
Beryllium	SW6010B	4/14/2009	0.005	1	0.0050	ND	mg/L	5098
Cadmium	SW6010B	4/14/2009	0.005	1	0.0050	ND	mg/L	5098
Chromium	SW6010B	4/14/2009	0.005	1	0.0050	0.0080	mg/L	5098
Cobalt	SW6010B	4/14/2009	0.005	1	0.0050	ND	mg/L	5098
Copper	SW6010B	4/14/2009	0.01	1	0.010	ND	mg/L	5098
Lead	SW6010B	4/14/2009	0.015	1	0.015	ND	mg/L	5098
Molybdenum	SW6010B	4/14/2009	0.005	1	0.0050	ND	mg/L	5098
Nickel	SW6010B	4/14/2009	0.01	1	0.010	0.012	mg/L	5098
Selenium	SW6010B	4/14/2009	0.01	1	0.010	ND	mg/L	5098
Silver	SW6010B	4/14/2009	0.005	1	0.0050	ND	mg/L	5098
Thallium	SW6010B	4/14/2009	0.01	1	0.010	ND	mg/L	5098
Vanadium	SW6010B	4/14/2009	0.01	1	0.010	0.034	mg/L	5098
Zinc	SW6010B	4/14/2009	0.005	1	0.0050	0.0090	mg/L	5098
Mercury	SW7470A	4/14/2009	0.0002	1	0.00020	ND	mg/L	5095
TPH (Diesel)	SW8015B	4/17/2009	0.1	1	0.100	ND	mg/L	R19291
TPH (Motor Oil)	SW8015B	4/17/2009	0.2	1	0.200	ND	mg/L	R19291
Surr: Pentacosane	SW8015B	4/17/2009	0	1	57.9-125	99.0	%REC	R19291

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-3-8-GW
Sample Location: 101 Aux Lanes
Sample Matrix: GROUNDWATER
Date/Time Sampled 4/12/2009 11:40:00 PM

Lab Sample ID: 0904074-005
Date Prepared: 4/14/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
4,4´-DDD	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
4,4´-DDE	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
4,4´-DDT	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Aldrin	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
alpha-BHC	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
alpha-Chlordane	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
beta-BHC	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Chlordane	SW8081A	4/17/2009	0.25	1	0.250	ND	µg/L	R19286
delta-BHC	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Dieldrin	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Endosulfan I	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Endosulfan II	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Endosulfan sulfate	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Endrin	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Endrin aldehyde	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Endrin ketone	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
gamma-BHC	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
gamma-Chlordane	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Heptachlor	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Heptachlor epoxide	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Methoxychlor	SW8081A	4/17/2009	0.05	1	0.050	ND	µg/L	R19286
Toxaphene	SW8081A	4/17/2009	1	1	1.00	ND	µg/L	R19286
Surr: Decachlorobiphenyl	SW8081A	4/17/2009	0	1	52-116	56.4	%REC	R19286
Surr: Tetrachloro-m-xylene	SW8081A	4/17/2009	0	1	40.3-118	74.3	%REC	R19286
Aroclor 1016	SW8082	4/14/2009	10	1	10.0	ND	µg/L	R19239
Aroclor 1221	SW8082	4/14/2009	10	1	10.0	ND	µg/L	R19239
Aroclor 1232	SW8082	4/14/2009	10	1	10.0	ND	µg/L	R19239
Aroclor 1242	SW8082	4/14/2009	10	1	10.0	ND	µg/L	R19239
Aroclor 1248	SW8082	4/14/2009	10	1	10.0	ND	µg/L	R19239
Aroclor 1254	SW8082	4/14/2009	10	1	10.0	ND	µg/L	R19239
Aroclor 1260	SW8082	4/14/2009	10	1	10.0	ND	µg/L	R19239
Surr: Decachlorobiphenyl	SW8082	4/14/2009	0	1	44.5-127	105	%REC	R19239
Surr: Tetrachloro-m-xylene	SW8082	4/14/2009	0	1	52.7-126	98.4	%REC	R19239

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-3-8-GW
Sample Location: 101 Aux Lanes
Sample Matrix: GROUNDWATER
Date/Time Sampled 4/12/2009 11:40:00 PM

Lab Sample ID: 0904074-005
Date Prepared: 4/14/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
1,1,1,2-Tetrachloroethane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,1,1-Trichloroethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,1,2,2-Tetrachloroethane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,1,2-Trichloroethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,1-Dichloroethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,1-Dichloroethene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,1-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2,3-Trichlorobenzene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,2,3-Trichloropropane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,2,4-Trichlorobenzene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,2,4-Trimethylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dibromo-3-chloropropane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dibromoethane (EDB)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dichlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dichloroethane (EDC)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dichloropropane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,3,5-Trimethylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,3-Dichlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,3-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,4-Dichlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
2,2-Dichloropropane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
2-Chloroethyl vinyl ether	SW8260B	4/17/2009	6	1	6.00	ND	µg/L	R19276
2-Chlorotoluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
4-Chlorotoluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
4-Isopropyltoluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Acetone	SW8260B	4/17/2009	10	1	10.0	ND	µg/L	R19276
Benzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromochloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromodichloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromoform	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Bromomethane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Carbon tetrachloride	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Chlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Chloroform	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Chloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
cis-1,2-Dichloroethene	SW8260B	4/17/2009	0.5	1	0.50	4.35	µg/L	R19276
cis-1,3-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Dibromochloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Dibromomethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Dichlorodifluoromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Diisopropyl ether (DIPE)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Ethyl tert-butyl ether (ETBE)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-3-8-GW
Sample Location: 101 Aux Lanes
Sample Matrix: GROUNDWATER
Date/Time Sampled 4/12/2009 11:40:00 PM

Lab Sample ID: 0904074-005
Date Prepared: 4/14/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Ethylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Freon-113	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Hexachlorobutadiene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Isopropylbenzene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Methyl tert-butyl ether (MTBE)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Methylene chloride	SW8260B	4/17/2009	5	1	5.00	ND	µg/L	R19276
Naphthalene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
n-Butylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
n-Propylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
sec-Butylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Styrene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
t-Butyl alcohol (t-Butanol)	SW8260B	4/17/2009	5	1	5.00	ND	µg/L	R19276
tert-Amyl methyl ether (TAME)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
tert-Butylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Tetrachloroethene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Toluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
trans-1,2-Dichloroethene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
trans-1,3-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Trichloroethene	SW8260B	4/17/2009	0.5	1	0.50	9.90	µg/L	R19276
Trichlorofluoromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Vinyl chloride	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Xylenes, Total	SW8260B	4/17/2009	1.5	1	1.50	ND	µg/L	R19276
Surr: Dibromofluoromethane	SW8260B	4/17/2009	0	1	61.2-131	115	%REC	R19276
Surr: 4-Bromofluorobenzene	SW8260B	4/17/2009	0	1	64.1-120	113	%REC	R19276
Surr: Toluene-d8	SW8260B	4/17/2009	0	1	75.1-127	105	%REC	R19276
TPH (Gasoline)	SW8260B(TPH)	4/17/2009	50	1	50	ND	µg/L	G19276
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	4/17/2009	0	1	58.4-133	90.0	%REC	G19276

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: S-3-11-GW
Sample Location: 101 Aux Lanes
Sample Matrix: GROUNDWATER
Date/Time Sampled 4/12/2009 9:55:00 PM

Lab Sample ID: 0904074-006
Date Prepared: 4/14/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
pH	E150.1	4/14/2009	0.05	1	0.0500	8.18	pH units	R19234
pH was out of hold time upon receipt.								
Antimony	SW6010B	4/14/2009	0.01	1	0.010	ND	mg/L	5098
Arsenic	SW6010B	4/14/2009	0.01	1	0.010	ND	mg/L	5098
Barium	SW6010B	4/14/2009	0.01	1	0.010	0.13	mg/L	5098
Beryllium	SW6010B	4/14/2009	0.005	1	0.0050	ND	mg/L	5098
Cadmium	SW6010B	4/14/2009	0.005	1	0.0050	ND	mg/L	5098
Chromium	SW6010B	4/14/2009	0.005	1	0.0050	0.014	mg/L	5098
Cobalt	SW6010B	4/14/2009	0.005	1	0.0050	ND	mg/L	5098
Copper	SW6010B	4/14/2009	0.01	1	0.010	ND	mg/L	5098
Lead	SW6010B	4/14/2009	0.015	1	0.015	ND	mg/L	5098
Molybdenum	SW6010B	4/14/2009	0.005	1	0.0050	ND	mg/L	5098
Nickel	SW6010B	4/14/2009	0.01	1	0.010	0.013	mg/L	5098
Selenium	SW6010B	4/14/2009	0.01	1	0.010	ND	mg/L	5098
Silver	SW6010B	4/14/2009	0.005	1	0.0050	ND	mg/L	5098
Thallium	SW6010B	4/14/2009	0.01	1	0.010	ND	mg/L	5098
Vanadium	SW6010B	4/14/2009	0.01	1	0.010	0.036	mg/L	5098
Zinc	SW6010B	4/14/2009	0.005	1	0.0050	0.016	mg/L	5098
Mercury	SW7470A	4/14/2009	0.0002	1	0.00020	ND	mg/L	5095
TPH (Diesel)	SW8015B	4/17/2009	0.1	1	0.100	ND	mg/L	R19291
TPH (Motor Oil)	SW8015B	4/17/2009	0.2	1	0.200	ND	mg/L	R19291
Surr: Pentacosane	SW8015B	4/17/2009	0	1	57.9-125	103	%REC	R19291

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: S-3-11-GW
Sample Location: 101 Aux Lanes
Sample Matrix: GROUNDWATER
Date/Time Sampled 4/12/2009 9:55:00 PM

Lab Sample ID: 0904074-006
Date Prepared: 4/14/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
4,4´-DDD	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
4,4´-DDE	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
4,4´-DDT	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Aldrin	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
alpha-BHC	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
alpha-Chlordane	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
beta-BHC	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Chlordane	SW8081A	4/17/2009	0.25	1	0.250	ND	µg/L	R19286
delta-BHC	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Dieldrin	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Endosulfan I	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Endosulfan II	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Endosulfan sulfate	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Endrin	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Endrin aldehyde	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Endrin ketone	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
gamma-BHC	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
gamma-Chlordane	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Heptachlor	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Heptachlor epoxide	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Methoxychlor	SW8081A	4/17/2009	0.05	1	0.050	ND	µg/L	R19286
Toxaphene	SW8081A	4/17/2009	1	1	1.00	ND	µg/L	R19286
Surr: Decachlorobiphenyl	SW8081A	4/17/2009	0	1	52-116	58.0	%REC	R19286
Surr: Tetrachloro-m-xylene	SW8081A	4/17/2009	0	1	40.3-118	71.9	%REC	R19286
Aroclor 1016	SW8082	4/14/2009	10	1	10.0	ND	µg/L	R19239
Aroclor 1221	SW8082	4/14/2009	10	1	10.0	ND	µg/L	R19239
Aroclor 1232	SW8082	4/14/2009	10	1	10.0	ND	µg/L	R19239
Aroclor 1242	SW8082	4/14/2009	10	1	10.0	ND	µg/L	R19239
Aroclor 1248	SW8082	4/14/2009	10	1	10.0	ND	µg/L	R19239
Aroclor 1254	SW8082	4/14/2009	10	1	10.0	ND	µg/L	R19239
Aroclor 1260	SW8082	4/14/2009	10	1	10.0	ND	µg/L	R19239
Surr: Decachlorobiphenyl	SW8082	4/14/2009	0	1	44.5-127	105	%REC	R19239
Surr: Tetrachloro-m-xylene	SW8082	4/14/2009	0	1	52.7-126	98.0	%REC	R19239

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: S-3-11-GW
Sample Location: 101 Aux Lanes
Sample Matrix: GROUNDWATER
Date/Time Sampled 4/12/2009 9:55:00 PM

Lab Sample ID: 0904074-006
Date Prepared: 4/14/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
1,1,1,2-Tetrachloroethane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,1,1-Trichloroethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,1,2,2-Tetrachloroethane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,1,2-Trichloroethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,1-Dichloroethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,1-Dichloroethene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,1-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2,3-Trichlorobenzene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,2,3-Trichloropropane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,2,4-Trichlorobenzene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,2,4-Trimethylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dibromo-3-chloropropane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dibromoethane (EDB)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dichlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dichloroethane (EDC)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dichloropropane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,3,5-Trimethylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,3-Dichlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,3-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,4-Dichlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
2,2-Dichloropropane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
2-Chloroethyl vinyl ether	SW8260B	4/17/2009	6	1	6.00	ND	µg/L	R19276
2-Chlorotoluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
4-Chlorotoluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
4-Isopropyltoluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Acetone	SW8260B	4/17/2009	10	1	10.0	ND	µg/L	R19276
Benzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromochloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromodichloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromoform	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Bromomethane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Carbon tetrachloride	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Chlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Chloroform	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Chloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
cis-1,2-Dichloroethene	SW8260B	4/17/2009	0.5	1	0.50	16.0	µg/L	R19276
cis-1,3-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Dibromochloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Dibromomethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Dichlorodifluoromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Diisopropyl ether (DIPE)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Ethyl tert-butyl ether (ETBE)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: S-3-11-GW
Sample Location: 101 Aux Lanes
Sample Matrix: GROUNDWATER
Date/Time Sampled 4/12/2009 9:55:00 PM

Lab Sample ID: 0904074-006
Date Prepared: 4/14/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Ethylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Freon-113	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Hexachlorobutadiene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Isopropylbenzene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Methyl tert-butyl ether (MTBE)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Methylene chloride	SW8260B	4/17/2009	5	1	5.00	ND	µg/L	R19276
Naphthalene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
n-Butylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
n-Propylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
sec-Butylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Styrene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
t-Butyl alcohol (t-Butanol)	SW8260B	4/17/2009	5	1	5.00	ND	µg/L	R19276
tert-Amyl methyl ether (TAME)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
tert-Butylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Tetrachloroethene	SW8260B	4/17/2009	0.5	1	0.50	2.80	µg/L	R19276
Toluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
trans-1,2-Dichloroethene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
trans-1,3-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Trichloroethene	SW8260B	4/17/2009	0.5	1	0.50	45.7	µg/L	R19276
Trichlorofluoromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Vinyl chloride	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Xylenes, Total	SW8260B	4/17/2009	1.5	1	1.50	ND	µg/L	R19276
Surr: Dibromofluoromethane	SW8260B	4/17/2009	0	1	61.2-131	112	%REC	R19276
Surr: 4-Bromofluorobenzene	SW8260B	4/17/2009	0	1	64.1-120	104	%REC	R19276
Surr: Toluene-d8	SW8260B	4/17/2009	0	1	75.1-127	101	%REC	R19276
TPH (Gasoline)	SW8260B(TPH)	4/17/2009	50	1	50	74x	µg/L	G19276
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	4/17/2009	0	1	58.4-133	87.7	%REC	G19276

Note: x- Sample chromatogram does not resemble gasoline standard pattern. Reported value due to individual peaks of non-gasoline compounds within range of C5-C12 quantified as Gasoline (see 8260B results).

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-3-1@1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 12:40:00 AM

Lab Sample ID: 0904074-007
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	1	1.0	43	mg/Kg	5109

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-3-1@1.5
Sample Location: N-3-1@2.0
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 12:40:00 AM

Lab Sample ID: 0904074-008
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	1	1.0	52	mg/Kg	5109

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-3-1@2.0
Sample Location: N-3-1@2.0
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 12:40:00 AM

Lab Sample ID: 0904074-009
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	10	10	36	mg/Kg	5109

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-3-1@3.0
Sample Location: N-3-1@2.0
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 12:40:00 AM

Lab Sample ID: 0904074-010
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	10	10	44	mg/Kg	5109

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-3-2@0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 12:40:00 AM

Lab Sample ID: 0904074-011
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	1	1.0	15	mg/Kg	5109

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-3-2@1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 12:40:00 AM

Lab Sample ID: 0904074-012
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	1	1.0	3.0	mg/Kg	5109

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-3-2@1.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 12:40:00 AM

Lab Sample ID: 0904074-013
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	1	1.0	17	mg/Kg	5109

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-3-2@2.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 12:40:00 AM

Lab Sample ID: 0904074-014
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	10	10	22	mg/Kg	5109

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-3-2@3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 12:40:00 AM

Lab Sample ID: 0904074-015
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	ND	mg/Kg	5110

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-3-3@0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 12:30:00 AM

Lab Sample ID: 0904074-016
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	190	mg/Kg	5110

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-3-3@1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 12:30:00 AM

Lab Sample ID: 0904074-017
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	5.8	mg/Kg	5110

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-3-3@1.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 12:30:00 AM

Lab Sample ID: 0904074-018
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	6.6	mg/Kg	5110

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-3-3@2.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 12:30:00 AM

Lab Sample ID: 0904074-019
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	4.6	mg/Kg	5110

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-3-3@3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 12:30:00 AM

Lab Sample ID: 0904074-020
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	1.1	mg/Kg	5110

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-3-12@0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 11:15:00 PM

Lab Sample ID: 0904074-021
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	14	mg/Kg	5110

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-3-12@1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 11:15:00 PM

Lab Sample ID: 0904074-022
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	3.4	mg/Kg	5110

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-3-12@1.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 11:15:00 PM

Lab Sample ID: 0904074-023
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	13	mg/Kg	5110

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-3-12@2.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 11:15:00 PM

Lab Sample ID: 0904074-024
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	18	mg/Kg	5110

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-3-12@3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 11:15:00 PM

Lab Sample ID: 0904074-025
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	9.2	mg/Kg	5110

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-3-11@0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 11:20:00 PM

Lab Sample ID: 0904074-026
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	14	mg/Kg	5110

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: S-3-13-GW
Sample Location: 101 Aux Lanes
Sample Matrix: GROUNDWATER
Date/Time Sampled 4/12/2009 10:40:00 PM

Lab Sample ID: 0904074-027
Date Prepared: 4/17/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
1,1,1,2-Tetrachloroethane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,1,1-Trichloroethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,1,2,2-Tetrachloroethane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,1,2-Trichloroethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,1-Dichloroethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,1-Dichloroethene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,1-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2,3-Trichlorobenzene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,2,3-Trichloropropane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,2,4-Trichlorobenzene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,2,4-Trimethylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dibromo-3-chloropropane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dibromoethane (EDB)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dichlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dichloroethane (EDC)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dichloropropane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,3,5-Trimethylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,3-Dichlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,3-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,4-Dichlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
2,2-Dichloropropane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
2-Chloroethyl vinyl ether	SW8260B	4/17/2009	6	1	6.00	ND	µg/L	R19276
2-Chlorotoluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
4-Chlorotoluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
4-Isopropyltoluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Acetone	SW8260B	4/17/2009	10	1	10.0	ND	µg/L	R19276
Benzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromochloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromodichloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromoform	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Bromomethane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Carbon tetrachloride	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Chlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Chloroform	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Chloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
cis-1,2-Dichloroethene	SW8260B	4/17/2009	0.5	1	0.50	39.2	µg/L	R19276
cis-1,3-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Dibromochloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Dibromomethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Dichlorodifluoromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Diisopropyl ether (DIPE)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Ethyl tert-butyl ether (ETBE)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: S-3-13-GW
Sample Location: 101 Aux Lanes
Sample Matrix: GROUNDWATER
Date/Time Sampled 4/12/2009 10:40:00 PM

Lab Sample ID: 0904074-027
Date Prepared: 4/17/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Ethylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Freon-113	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Hexachlorobutadiene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Isopropylbenzene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Methyl tert-butyl ether (MTBE)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Methylene chloride	SW8260B	4/17/2009	5	1	5.00	ND	µg/L	R19276
Naphthalene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
n-Butylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
n-Propylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
sec-Butylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Styrene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
t-Butyl alcohol (t-Butanol)	SW8260B	4/17/2009	5	1	5.00	ND	µg/L	R19276
tert-Amyl methyl ether (TAME)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
tert-Butylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Tetrachloroethene	SW8260B	4/17/2009	0.5	1	0.50	1.27	µg/L	R19276
Toluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
trans-1,2-Dichloroethene	SW8260B	4/17/2009	0.5	1	0.50	1.31	µg/L	R19276
trans-1,3-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Trichloroethene	SW8260B	4/17/2009	0.5	1	0.50	87.8	µg/L	R19276
Trichlorofluoromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Vinyl chloride	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Xylenes, Total	SW8260B	4/17/2009	1.5	1	1.50	ND	µg/L	R19276
Surr: Dibromofluoromethane	SW8260B	4/17/2009	0	1	61.2-131	116	%REC	R19276
Surr: 4-Bromofluorobenzene	SW8260B	4/17/2009	0	1	64.1-120	106	%REC	R19276
Surr: Toluene-d8	SW8260B	4/17/2009	0	1	75.1-127	98.9	%REC	R19276

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: S-3-14-GW
Sample Location: 101 Aux Lanes
Sample Matrix: GROUNDWATER
Date/Time Sampled 4/12/2009 11:00:00 PM

Lab Sample ID: 0904074-028
Date Prepared: 4/17/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
1,1,1,2-Tetrachloroethane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,1,1-Trichloroethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,1,2,2-Tetrachloroethane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,1,2-Trichloroethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,1-Dichloroethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,1-Dichloroethene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,1-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2,3-Trichlorobenzene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,2,3-Trichloropropane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,2,4-Trichlorobenzene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,2,4-Trimethylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dibromo-3-chloropropane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dibromoethane (EDB)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dichlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dichloroethane (EDC)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dichloropropane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,3,5-Trimethylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,3-Dichlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,3-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,4-Dichlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
2,2-Dichloropropane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
2-Chloroethyl vinyl ether	SW8260B	4/17/2009	6	1	6.00	ND	µg/L	R19276
2-Chlorotoluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
4-Chlorotoluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
4-Isopropyltoluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Acetone	SW8260B	4/17/2009	10	1	10.0	ND	µg/L	R19276
Benzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromochloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromodichloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromoform	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Bromomethane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Carbon tetrachloride	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Chlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Chloroform	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Chloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
cis-1,2-Dichloroethene	SW8260B	4/17/2009	0.5	1	0.50	21.3	µg/L	R19276
cis-1,3-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Dibromochloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Dibromomethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Dichlorodifluoromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Diisopropyl ether (DIPE)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Ethyl tert-butyl ether (ETBE)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: S-3-14-GW
Sample Location: 101 Aux Lanes
Sample Matrix: GROUNDWATER
Date/Time Sampled 4/12/2009 11:00:00 PM

Lab Sample ID: 0904074-028
Date Prepared: 4/17/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Ethylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Freon-113	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Hexachlorobutadiene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Isopropylbenzene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Methyl tert-butyl ether (MTBE)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Methylene chloride	SW8260B	4/17/2009	5	1	5.00	ND	µg/L	R19276
Naphthalene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
n-Butylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
n-Propylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
sec-Butylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Styrene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
t-Butyl alcohol (t-Butanol)	SW8260B	4/17/2009	5	1	5.00	ND	µg/L	R19276
tert-Amyl methyl ether (TAME)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
tert-Butylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Tetrachloroethene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Toluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
trans-1,2-Dichloroethene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
trans-1,3-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Trichloroethene	SW8260B	4/17/2009	0.5	1	0.50	39.5	µg/L	R19276
Trichlorofluoromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Vinyl chloride	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Xylenes, Total	SW8260B	4/17/2009	1.5	1	1.50	ND	µg/L	R19276
Surr: Dibromofluoromethane	SW8260B	4/17/2009	0	1	61.2-131	112	%REC	R19276
Surr: 4-Bromofluorobenzene	SW8260B	4/17/2009	0	1	64.1-120	105	%REC	R19276
Surr: Toluene-d8	SW8260B	4/17/2009	0	1	75.1-127	107	%REC	R19276

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-2-5@0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 1:50:00 AM

Lab Sample ID: 0904074-029
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	54	mg/Kg	5110

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-2-5@1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 1:50:00 AM

Lab Sample ID: 0904074-030
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	6.4	mg/Kg	5110

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-2-5@1.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 1:50:00 AM

Lab Sample ID: 0904074-031
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	11	mg/Kg	5110

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-2-5@2.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 1:50:00 AM

Lab Sample ID: 0904074-032
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	4.5	mg/Kg	5110

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-2-5@3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 1:50:00 AM

Lab Sample ID: 0904074-033
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	3.2	mg/Kg	5110

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-3-1@0.5
Sample Location: 101 Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 12:40:00 AM

Lab Sample ID: 0904074-034
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	24	mg/Kg	5110

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Definitions, legends and Notes

Note	Description
ug/kg	Microgram per kilogram (ppb, part per billion).
ug/L	Microgram per liter (ppb, part per billion).
mg/kg	Milligram per kilogram (ppm, part per million).
mg/L	Milligram per liter (ppm, part per million).
LCS/LCSD	Laboratory control sample/laboratory control sample duplicate.
MDL	Method detection limit.
MRL	Modified reporting limit. When sample is subject to dilution, reporting limit times dilution factor yields MRL.
MS/MSD	Matrix spike/matrix spike duplicate.
N/A	Not applicable.
ND	Not detected at or above detection limit.
NR	Not reported.
QC	Quality Control.
RL	Reporting limit.
% RPD	Percent relative difference.
a	pH was measured immediately upon the receipt of the sample, but it was still done outside the holding time.
sub	Analyzed by subcontracting laboratory, Lab Certificate #

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

EMSL Analytical, Inc
2235 Polvorosa Ave , Suite 230, San Leandro, CA 94577
Phone: (510) 895-3675 Fax: (510) 895-3680 Email: milpitaslab@emsl.com

Attn: **Nutan Kabir**
Torrent Laboratory, Inc.
483 Sinclair Frontage Rd.
Milpitas, CA 95035

Fax: (408) 263-8293 Phone: (408) 263-5258
Project: **0904074**

Customer ID: TORR80
Customer PO: 0904074
Received: 04/14/09 9:00 AM
EMSL Order: 090902733

EMSL Proj:
Analysis Date: 4/20/2009
Report Date: 4/20/2009

Qualitative asbestos analysis of soils using the EPA 600/R-93/116 method

Sample	Location	Appearance	Result	Notes
0904074-003A, Soil *090902733-0001*			**None Detected**	
0904074-004A, Soil *090902733-0002*			**None Detected**	
0904074-007A, Soil *090902733-0003*			**None Detected**	
0904074-008A, Soil *090902733-0004*			**None Detected**	
0904074-009A, Soil *090902733-0005*			**None Detected**	
0904074-010A, Soil *090902733-0006*			**None Detected**	
0904074-034A, Soil *090902733-0007*			**None Detected**	

Analyst(s)

Adam C. Fink (7)

Baojia Ke, Laboratory Manager
or other approved signatory

EMSL recommends that soil samples reported as "ND" be tested by the EPA Screening Method/Qualitative. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. The above test must not be used by the client to claim product endorsement by NVLAP nor any agency of the United States Government. Unless otherwise noted, the results in this report have not been blank corrected.Samples received in good condition unless otherwise noted.

THIS IS THE LAST PAGE OF THE REPORT.

Torrent Laboratory, Inc.

Date: *23-Apr-09*

CLIENT: URS Corporation, San Jose
Work Order: 0904074
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5095

Sample ID	MB-5095	SampType:	MBLK	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	4/14/2009	RunNo:	19235
Client ID:	ZZZZZ	Batch ID:	5095	TestNo:	SW7470A	(SW7470A)		Analysis Date:	4/14/2009	SeqNo:	277743

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.00020									

Sample ID	LCS-5095	SampType:	LCS	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	4/14/2009	RunNo:	19235
Client ID:	ZZZZZ	Batch ID:	5095	TestNo:	SW7470A	(SW7470A)		Analysis Date:	4/14/2009	SeqNo:	277741

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.01569	0.00020	0.015	0	105	80	120				

Sample ID	LCSD-5095	SampType:	LCSD	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	4/14/2009	RunNo:	19235
Client ID:	ZZZZZ	Batch ID:	5095	TestNo:	SW7470A	(SW7470A)		Analysis Date:	4/14/2009	SeqNo:	277742

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.01566	0.00020	0.015	0	104	80	120	0.01569	0.191	20	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904074
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5098

Sample ID	MB-5098	SampType:	MBLK	TestCode:	6010B_W	Units:	mg/L	Prep Date:	4/14/2009	RunNo:	19247
Client ID:	ZZZZZ	Batch ID:	5098	TestNo:	SW6010B	(E200.7/SW3		Analysis Date:	4/14/2009	SeqNo:	277886

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.010									
Arsenic	ND	0.010									
Barium	ND	0.010									
Beryllium	ND	0.0050									
Cadmium	ND	0.0050									
Chromium	ND	0.0050									
Cobalt	ND	0.0050									
Copper	ND	0.010									
Lead	ND	0.015									
Molybdenum	ND	0.0050									
Nickel	ND	0.010									
Selenium	ND	0.020									
Silver	ND	0.0050									
Thallium	ND	0.010									
Vanadium	ND	0.010									
Zinc	ND	0.010									

Sample ID	LCS-5098	SampType:	LCS	TestCode:	6010B_W	Units:	mg/L	Prep Date:	4/14/2009	RunNo:	19247
Client ID:	ZZZZZ	Batch ID:	5098	TestNo:	SW6010B	(E200.7/SW3		Analysis Date:	4/14/2009	SeqNo:	277884

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	1.057	0.010	1	0	106	80	120				
Arsenic	1.100	0.010	1	0	110	80	120				
Barium	0.9690	0.010	1	0	96.9	80	120				
Beryllium	1.007	0.0050	1	0	101	80	120				
Cadmium	0.9610	0.0050	1	0	96.1	80	120				
Chromium	0.9690	0.0050	1	0	96.9	80	120				
Cobalt	0.9740	0.0050	1	0	97.4	80	120				
Copper	0.9710	0.010	1	0	97.1	80	120				
Lead	0.9990	0.015	1	0	99.9	80	120				
Molybdenum	0.9910	0.0050	1	0	99.1	80	120				

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904074
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5098

Sample ID	LCS-5098	SampType:	LCS	TestCode:	6010B_W	Units:	mg/L	Prep Date:	4/14/2009	RunNo:	19247
Client ID:	ZZZZZ	Batch ID:	5098	TestNo:	SW6010B	(E200.7/SW3		Analysis Date:	4/14/2009	SeqNo:	277884

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	0.9740	0.010	1	0	97.4	80	120				
Selenium	0.9880	0.020	1	0.006	98.2	80	120				
Silver	0.9750	0.0050	1	0.002	97.3	80	120				
Thallium	0.9800	0.010	1	0	98.0	80	120				
Vanadium	0.9660	0.010	1	0	96.6	80	120				
Zinc	1.004	0.010	1	0	100	80	120				

Sample ID	LCSD-5098	SampType:	LCSD	TestCode:	6010B_W	Units:	mg/L	Prep Date:	4/14/2009	RunNo:	19247
Client ID:	ZZZZZ	Batch ID:	5098	TestNo:	SW6010B	(E200.7/SW3		Analysis Date:	4/14/2009	SeqNo:	277885

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	1.045	0.010	1	0	104	80	120	1.057	1.14	20	
Arsenic	1.091	0.010	1	0	109	80	120	1.1	0.822	20	
Barium	0.9880	0.010	1	0	98.8	80	120	0.969	1.94	20	
Beryllium	0.9760	0.0050	1	0	97.6	80	120	1.007	3.13	20	
Cadmium	0.9760	0.0050	1	0	97.6	80	120	0.961	1.55	20	
Chromium	0.9660	0.0050	1	0	96.6	80	120	0.969	0.310	20	
Cobalt	0.9920	0.0050	1	0	99.2	80	120	0.974	1.83	20	
Copper	0.9800	0.010	1	0	98.0	80	120	0.971	0.923	20	
Lead	0.9960	0.015	1	0	99.6	80	120	0.999	0.301	20	
Molybdenum	0.9840	0.0050	1	0	98.4	80	120	0.991	0.709	20	
Nickel	0.9900	0.010	1	0	99.0	80	120	0.974	1.63	20	
Selenium	0.9900	0.020	1	0.006	98.4	80	120	0.988	0.202	20	
Silver	0.9890	0.0050	1	0.002	98.7	80	120	0.975	1.43	20	
Thallium	0.9750	0.010	1	0	97.5	80	120	0.98	0.512	20	
Vanadium	0.9820	0.010	1	0	98.2	80	120	0.966	1.64	20	
Zinc	1.029	0.010	1	0	103	80	120	1.004	2.46	20	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904074
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5109

Sample ID	MB-5109	SampType:	MBLK	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	4/16/2009	RunNo:	19303
Client ID:	ZZZZZ	Batch ID:	5109	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/20/2009	SeqNo:	278818

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	1.0									

Sample ID	LCS-5109	SampType:	LCS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	4/16/2009	RunNo:	19303
Client ID:	ZZZZZ	Batch ID:	5109	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/20/2009	SeqNo:	278816

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	48.10	1.0	50	0.35	95.5	67.9	118				

Sample ID	LCSD-5109	SampType:	LCSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	4/16/2009	RunNo:	19303
Client ID:	ZZZZZ	Batch ID:	5109	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/20/2009	SeqNo:	278817

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	48.90	1.0	50	0.35	97.1	67.9	118	48.1	1.65	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904074
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5110

Sample ID	MB-5110	SampType:	MBLK	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	4/16/2009	RunNo:	19289
Client ID:	ZZZZZ	Batch ID:	5110	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/17/2009	SeqNo:	278553

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	1.0									

Sample ID	LCS-5110	SampType:	LCS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	4/16/2009	RunNo:	19289
Client ID:	ZZZZZ	Batch ID:	5110	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/17/2009	SeqNo:	278551

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	47.70	1.0	50	0.4	94.6	67.9	118				

Sample ID	LCSD-5110	SampType:	LCSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	4/16/2009	RunNo:	19289
Client ID:	ZZZZZ	Batch ID:	5110	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/17/2009	SeqNo:	278552

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	47.45	1.0	50	0.4	94.1	67.9	118	47.7	0.525	30	

Sample ID	0904074-015AMS	SampType:	MS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	4/16/2009	RunNo:	19289
Client ID:	N-3-2@3.0	Batch ID:	5110	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/17/2009	SeqNo:	278531

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	32.85	1.0	50	0	65.7	60.5	113				

Sample ID	0904074-015AMSD	SampType:	MSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	4/16/2009	RunNo:	19289
Client ID:	N-3-2@3.0	Batch ID:	5110	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/17/2009	SeqNo:	278532

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	31.60	1.0	50	0	63.2	60.5	113	32.85	3.88	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904074
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: G19276

Sample ID	MBG-G19276	SampType:	MBLK	TestCode:	TPH_GAS_W	Units:	µg/L	Prep Date:	4/17/2009	RunNo:	19276
Client ID:	ZZZZZ	Batch ID:	G19276	TestNo:	SW8260B(TP			Analysis Date:	4/17/2009	SeqNo:	278330

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	ND	50									
Surr: 4-Bromofllurobenzene	8.800	0	11.36	0	77.5	58.4	133				

Sample ID	LCSG-G19276	SampType:	LCS	TestCode:	TPH_GAS_W	Units:	µg/L	Prep Date:	4/17/2009	RunNo:	19276
Client ID:	ZZZZZ	Batch ID:	G19276	TestNo:	SW8260B(TP			Analysis Date:	4/17/2009	SeqNo:	278331

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	208.3	50	227	0	91.8	52.4	127				
Surr: 4-Bromofllurobenzene	9.900	0	11.36	0	87.1	58.4	133				

Sample ID	LCSDG-G19276	SampType:	LCSD	TestCode:	TPH_GAS_W	Units:	µg/L	Prep Date:	4/17/2009	RunNo:	19276
Client ID:	ZZZZZ	Batch ID:	G19276	TestNo:	SW8260B(TP			Analysis Date:	4/17/2009	SeqNo:	278332

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	227.8	50	227	0	100	52.4	127	208.3	8.94	20	
Surr: 4-Bromofllurobenzene	9.300	0	11.36	0	81.9	58.4	133	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904074
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19239

Sample ID **WQ090414A-MB** SampType: **MBLK** TestCode: **8082W** Units: **µg/L** Prep Date: **4/14/2009** RunNo: **19239**
Client ID: **ZZZZZ** Batch ID: **R19239** TestNo: **SW8082** Analysis Date: **4/14/2009** SeqNo: **277765**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	10.0									
Aroclor 1221	ND	10.0									
Aroclor 1232	ND	10.0									
Aroclor 1242	ND	10.0									
Aroclor 1248	ND	10.0									
Aroclor 1254	ND	10.0									
Aroclor 1260	ND	10.0									
Surr: Decachlorobiphenyl	5.200	0	5	0	104	64.8	121				
Surr: Tetrachloro-m-xylene	5.160	0	5	0	103	64.7	115				

Sample ID **WQ090414A-LCS** SampType: **LCS** TestCode: **8082W** Units: **µg/L** Prep Date: **4/14/2009** RunNo: **19239**
Client ID: **ZZZZZ** Batch ID: **R19239** TestNo: **SW8082** Analysis Date: **4/14/2009** SeqNo: **277766**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	52.49	10.0	50	0	105	69.7	139				
Aroclor 1260	48.72	10.0	50	0	97.4	71.3	131				
Surr: Decachlorobiphenyl	5.430	0	5	0	109	64.8	121				
Surr: Tetrachloro-m-xylene	5.090	0	5	0	102	64.7	115				

Sample ID **WQ090414A-LCSD** SampType: **LCSD** TestCode: **8082W** Units: **µg/L** Prep Date: **4/14/2009** RunNo: **19239**
Client ID: **ZZZZZ** Batch ID: **R19239** TestNo: **SW8082** Analysis Date: **4/14/2009** SeqNo: **277767**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	52.61	10.0	50	0	105	69.7	139	52.49	0.228	30	
Aroclor 1260	50.32	10.0	50	0	101	71.3	131	48.72	3.23	30	
Surr: Decachlorobiphenyl	5.420	0	5	0	108	64.8	121	0	0		
Surr: Tetrachloro-m-xylene	5.130	0	5	0	103	64.7	115	0	0		

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904074
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19276

Sample ID	MB-R19276	SampType:	MBLK	TestCode:	8260B_W	Units:	µg/L	Prep Date:	4/17/2009	RunNo:	19276
Client ID:	ZZZZZ	Batch ID:	R19276	TestNo:	SW8260B			Analysis Date:	4/17/2009	SeqNo:	278322

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	1.00									
1,1,1-Trichloroethane	ND	0.500									
1,1,2,2-Tetrachloroethane	ND	1.00									
1,1,2-Trichloroethane	ND	0.500									
1,1-Dichloroethane	ND	0.500									
1,1-Dichloroethene	ND	1.00									
1,1-Dichloropropene	ND	0.500									
1,2,3-Trichlorobenzene	ND	1.00									
1,2,3-Trichloropropane	ND	1.00									
1,2,4-Trichlorobenzene	ND	1.00									
1,2,4-Trimethylbenzene	ND	0.500									
1,2-Dibromo-3-chloropropane	ND	0.500									
1,2-Dibromoethane (EDB)	ND	0.500									
1,2-Dichlorobenzene	ND	0.500									
1,2-Dichloroethane (EDC)	ND	0.500									
1,2-Dichloropropane	ND	1.00									
1,3,5-Trimethylbenzene	ND	0.500									
1,3-Dichlorobenzene	ND	0.500									
1,4-Dichlorobenzene	ND	0.500									
2,2-Dichloropropane	ND	0.500									
2-Chloroethyl vinyl ether	ND	6.00									
2-Chlorotoluene	ND	0.500									
4-Chlorotoluene	ND	0.500									
4-Isopropyltoluene	ND	0.500									
Acetone	ND	10.0									
Benzene	ND	0.500									
Bromobenzene	ND	0.500									
Bromochloromethane	ND	0.500									
Bromodichloromethane	ND	0.500									
Bromoform	ND	1.00									
Bromomethane	ND	1.00									

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904074
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19276

Sample ID	MB-R19276	SampType:	MBLK	TestCode:	8260B_W	Units:	µg/L	Prep Date:	4/17/2009	RunNo:	19276
Client ID:	ZZZZZ	Batch ID:	R19276	TestNo:	SW8260B			Analysis Date:	4/17/2009	SeqNo:	278322

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon tetrachloride	ND	1.00									
Chlorobenzene	ND	0.500									
Chloroform	ND	0.500									
Chloromethane	ND	0.500									
cis-1,2-Dichloroethene	ND	0.500									
cis-1,3-Dichloropropene	ND	0.500									
Dibromochloromethane	ND	0.500									
Dibromomethane	ND	0.500									
Dichlorodifluoromethane	ND	0.500									
Diisopropyl ether (DIPE)	ND	0.500									
Ethyl tert-butyl ether (ETBE)	ND	0.500									
Ethylbenzene	ND	0.500									
Freon-113	ND	1.00									
Hexachlorobutadiene	ND	0.500									
Isopropylbenzene	ND	1.00									
Methyl tert-butyl ether (MTBE)	ND	0.500									
Methylene chloride	ND	5.00									
Naphthalene	ND	1.00									
n-Butylbenzene	ND	0.500									
n-Propylbenzene	ND	0.500									
sec-Butylbenzene	ND	0.500									
Styrene	ND	0.500									
t-Butyl alcohol (t-Butanol)	ND	5.00									
tert-Amyl methyl ether (TAME)	ND	0.500									
tert-Butylbenzene	ND	0.500									
Tetrachloroethene	ND	0.500									
Toluene	ND	0.500									
trans-1,2-Dichloroethene	ND	0.500									
trans-1,3-Dichloropropene	ND	0.500									
Trichloroethene	ND	0.500									
Trichlorofluoromethane	ND	0.500									

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904074
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19276

Sample ID	MB-R19276	SampType:	MBLK	TestCode:	8260B_W	Units:	µg/L	Prep Date:	4/17/2009	RunNo:	19276
Client ID:	ZZZZZ	Batch ID:	R19276	TestNo:	SW8260B			Analysis Date:	4/17/2009	SeqNo:	278322

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	ND	0.500									
Xylenes, Total	ND	1.50									
Surr: Dibromofluoromethane	10.65	0	11.36	0	93.8	61.2	131				
Surr: 4-Bromofluorobenzene	11.69	0	11.36	0	103	64.1	120				
Surr: Toluene-d8	11.42	0	11.36	0	101	75.1	127				

Sample ID	LCS-R19276	SampType:	LCS	TestCode:	8260B_W	Units:	µg/L	Prep Date:	4/16/2009	RunNo:	19276
Client ID:	ZZZZZ	Batch ID:	R19276	TestNo:	SW8260B			Analysis Date:	4/16/2009	SeqNo:	278323

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	14.15	1.00	17.04	0	83.0	61.4	129				
Benzene	15.62	0.500	17.04	0	91.7	66.9	140				
Chlorobenzene	14.93	0.500	17.04	0	87.6	73.9	137				
Toluene	14.71	0.500	17.04	0	86.3	76.6	123				
Trichloroethene	14.09	0.500	17.04	0	82.7	69.3	144				
Surr: Dibromofluoromethane	11.68	0	11.36	0	103	61.2	131				
Surr: 4-Bromofluorobenzene	11.79	0	11.36	0	104	64.1	120				
Surr: Toluene-d8	12.40	0	11.36	0	109	75.1	127				

Sample ID	LCSD-R19276	SampType:	LCSD	TestCode:	8260B_W	Units:	µg/L	Prep Date:	4/16/2009	RunNo:	19276
Client ID:	ZZZZZ	Batch ID:	R19276	TestNo:	SW8260B			Analysis Date:	4/16/2009	SeqNo:	278328

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	15.74	1.00	17.04	0	92.4	61.4	129	14.15	10.6	20	
Benzene	16.98	0.500	17.04	0	99.6	66.9	140	15.62	8.34	20	
Chlorobenzene	15.64	0.500	17.04	0	91.8	73.9	137	14.93	4.65	20	
Toluene	15.52	0.500	17.04	0	91.1	76.6	123	14.71	5.36	20	
Trichloroethene	15.48	0.500	17.04	0	90.8	69.3	144	14.09	9.40	20	
Surr: Dibromofluoromethane	11.99	0	11.36	0	106	61.2	131	0	0	0	
Surr: 4-Bromofluorobenzene	11.72	0	11.36	0	103	64.1	120	0	0	0	
Surr: Toluene-d8	12.65	0	11.36	0	111	75.1	127	0	0	0	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904074
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19286

Sample ID	WP090415A-MB	SampType:	MBLK	TestCode:	8081W	Units:	µg/L	Prep Date:	4/15/2009	RunNo:	19286
Client ID:	ZZZZZ	Batch ID:	R19286	TestNo:	SW8081A			Analysis Date:	4/16/2009	SeqNo:	278455

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDD	ND	0.0200									
4,4´-DDE	ND	0.0200									
4,4´-DDT	ND	0.0200									
Aldrin	ND	0.0200									
alpha-BHC	ND	0.0200									
alpha-Chlordane	ND	0.0200									
beta-BHC	ND	0.0200									
Chlordane	ND	0.250									
delta-BHC	ND	0.0200									
Dieldrin	ND	0.0200									
Endosulfan I	ND	0.0200									
Endosulfan II	ND	0.0200									
Endosulfan sulfate	ND	0.0200									
Endrin	ND	0.0200									
Endrin aldehyde	ND	0.0200									
Endrin ketone	ND	0.0200									
gamma-BHC	ND	0.0200									
gamma-Chlordane	ND	0.0200									
Heptachlor	ND	0.0200									
Heptachlor epoxide	ND	0.0200									
Methoxychlor	ND	0.0500									
Toxaphene	ND	1.00									
Surr: Decachlorobiphenyl	0.2286	0	0.25	0	91.4	52	116				
Surr: Tetrachloro-m-xylene	0.1662	0	0.25	0	66.5	40.3	118				

Sample ID	WP090415A-LCS	SampType:	LCS	TestCode:	8081W	Units:	µg/L	Prep Date:	4/15/2009	RunNo:	19286
Client ID:	ZZZZZ	Batch ID:	R19286	TestNo:	SW8081A			Analysis Date:	4/16/2009	SeqNo:	278456

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDT	0.1063	0.0200	0.1	0	106	58.4	126				
Aldrin	0.06929	0.0200	0.1	0	69.3	55.3	101				

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904074
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19286

Sample ID	WP090415A-LCS	SampType:	LCS	TestCode:	8081W	Units:	µg/L	Prep Date:	4/15/2009	RunNo:	19286
Client ID:	ZZZZZ	Batch ID:	R19286	TestNo:	SW8081A			Analysis Date:	4/16/2009	SeqNo:	278456

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dieldrin	0.09827	0.0200	0.1	0	98.3	60.3	116				
Endrin	0.1086	0.0200	0.1	0	109	60.4	134				
gamma-BHC	0.1041	0.0200	0.1	0	104	61.6	135				
Heptachlor	0.07503	0.0200	0.1	0	75.0	60	97.8				
Surr: Decachlorobiphenyl	0.2740	0	0.35	0	78.3	52	116				
Surr: Tetrachloro-m-xylene	0.2018	0	0.35	0	57.6	40.3	118				

Sample ID	WP090415A-LCSD	SampType:	LCSD	TestCode:	8081W	Units:	µg/L	Prep Date:	4/15/2009	RunNo:	19286
Client ID:	ZZZZZ	Batch ID:	R19286	TestNo:	SW8081A			Analysis Date:	4/16/2009	SeqNo:	278457

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDT	0.1116	0.0200	0.1	0	112	58.4	126	0.1063	4.86	35	
Aldrin	0.07522	0.0200	0.1	0	75.2	55.3	101	0.06929	8.21	35	
Dieldrin	0.1025	0.0200	0.1	0	102	60.3	116	0.09827	4.18	35	
Endrin	0.1138	0.0200	0.1	0	114	60.4	134	0.1086	4.70	35	
gamma-BHC	0.08359	0.0200	0.1	0	83.6	61.6	135	0.1041	21.9	35	
Heptachlor	0.08458	0.0200	0.1	0	84.6	60	97.8	0.07503	12.0	35	
Surr: Decachlorobiphenyl	0.2849	0	0.35	0	81.4	52	116	0	0	0	
Surr: Tetrachloro-m-xylene	0.2401	0	0.35	0	68.6	40.3	118	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904074
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19291

Sample ID **WD090417A-MB** SampType: **MBLK** TestCode: **TPHDO_W** Units: **mg/L** Prep Date: **4/17/2009** RunNo: **19291**
Client ID: **ZZZZZ** Batch ID: **R19291** TestNo: **SW8015B** Analysis Date: **4/17/2009** SeqNo: **278585**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	ND	0.100									
TPH (Motor Oil)	ND	0.200									
Surr: Pentacosane	0.09700	0	0.1	0	97.0	57.9	125				

Sample ID **WD090417A-LCS** SampType: **LCS** TestCode: **TPHDO_W** Units: **mg/L** Prep Date: **4/17/2009** RunNo: **19291**
Client ID: **ZZZZZ** Batch ID: **R19291** TestNo: **SW8015B** Analysis Date: **4/17/2009** SeqNo: **278586**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	0.7320	0.100	1	0	73.2	50.3	125				
Surr: Pentacosane	0.09100	0	0.1	0	91.0	57.9	125				

Sample ID **WD090417A-LCSD** SampType: **LCSD** TestCode: **TPHDO_W** Units: **mg/L** Prep Date: **4/17/2009** RunNo: **19291**
Client ID: **ZZZZZ** Batch ID: **R19291** TestNo: **SW8015B** Analysis Date: **4/17/2009** SeqNo: **278587**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	0.7280	0.100	1	0	72.8	50.3	125	0.732	0.548	30	
Surr: Pentacosane	0.1030	0	0.1	0	103	57.9	125	0	0	0	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

Torrent Laboratory, Inc.

WORK ORDER Summary

14-Apr-09

Work Order 0904074

Client ID: URS CORPORATION

Project: 101 Aux Lanes **QC Level:**

Comments: 5 day TAT!! Sub PLM Asbestos! Where CAM17 is requested, also run pH! Report to Patrick!

Sample ID	Client Sample ID	Collection Date	Date Received	Date Due	Matrix	Test Code	Hld	MS	SEL	Sub	Storage
0904074-001A	S3-12@2.0-D	4/13/2009	4/13/2009	4/17/2009	Soil	3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904074-002A	S-3-12@3.0-D			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904074-003A	N-3-9@0.5	4/13/2009 12:10:00 AM		4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
				4/17/2009		ASBESTOS_PLM_SUB	☐	☐	☐	☑	SR
0904074-004A	N-3-9@1.0			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
				4/17/2009		ASBESTOS_PLM_SUB	☐	☐	☐	☑	SR
0904074-005A	N-3-8-GW	4/12/2009 11:40:00 PM		4/17/2009	Groundwater	200.7PR/3010A_W	☐	☐	☐	☐	SR
				4/17/2009		6010B_W	☐	☐	☑	☐	SR
				4/17/2009		7470A_PREP	☐	☐	☐	☐	SR
				4/17/2009		8081W	☐	☐	☐	☐	SR
				4/17/2009		8082W	☐	☐	☐	☐	SR
				4/17/2009		8260B_W	☐	☐	☐	☐	SR
				4/17/2009		HG_W_7470A	☐	☐	☐	☐	SR
				4/17/2009		PH_W	☐	☐	☐	☐	SR
				4/17/2009		TPH_GAS_W_GC_MS	☐	☐	☐	☐	SR
				4/17/2009		TPHDO_W	☐	☐	☐	☐	SR
0904074-006A	S-3-11-GW	4/12/2009 9:55:00 PM		4/17/2009		200.7PR/3010A_W	☐	☐	☐	☐	SR
				4/17/2009		6010B_W	☐	☐	☑	☐	SR
				4/17/2009		7470A_PREP	☐	☐	☐	☐	SR
				4/17/2009		8081W	☐	☐	☐	☐	SR
				4/17/2009		8082W	☐	☐	☐	☐	SR
				4/17/2009		8260B_W	☐	☐	☐	☐	SR
				4/17/2009		HG_W_7470A	☐	☐	☐	☐	SR

WORK ORDER Summary

14-Apr-09

Work Order 0904074

Client ID: URS CORPORATION

Project: 101 Aux Lanes **QC Level:**

Comments: 5 day TAT!! Sub PLM Asbestos! Where CAM17 is requested, also run pH! Report to Patrick!

Sample ID	Client Sample ID	Collection Date	Date Received	Date Due	Matrix	Test Code	Hld	MS	SEL	Sub	Storage
0904074-006A	S-3-11-GW	4/12/2009 9:55:00 PM	4/13/2009	4/17/2009	Groundwater	PH_W	☐	☐	☐	☐	SR
				4/17/2009		TPH_GAS_W_GC_MS	☐	☐	☐	☐	SR
				4/17/2009		TPHDO_W	☐	☐	☐	☐	SR
0904074-007A	N-3-1@1.0	4/13/2009 12:40:00 AM		4/17/2009	Soil	3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
				4/17/2009		ASBESTOS_PLM_SUB	☐	☐	☐	☑	SR
0904074-008A	N-3-1@1.5			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
				4/17/2009		ASBESTOS_PLM_SUB	☐	☐	☐	☑	SR
0904074-009A	N-3-1@2.0			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
				4/17/2009		ASBESTOS_PLM_SUB	☐	☐	☐	☑	SR
0904074-010A	N-3-1@3.0			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
				4/17/2009		ASBESTOS_PLM_SUB	☐	☐	☐	☑	SR
0904074-011A	N-3-2@0.5			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904074-012A	N-3-2@1.0			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904074-013A	N-3-2@1.5			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904074-014A	N-3-2@2.0			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904074-015A	N-3-2@3.0			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904074-016A	N-3-3@0.5	4/13/2009 12:30:00 AM		4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904074-017A	N-3-3@1.0			4/17/2009		3050B_S	☐	☐	☐	☐	SR

WORK ORDER Summary

14-Apr-09

Work Order 0904074

Client ID: URS CORPORATION

Project: 101 Aux Lanes **QC Level:**

Comments: 5 day TAT!! Sub PLM Asbestos! Where CAM17 is requested, also run pH! Report to Patrick!

Sample ID	Client Sample ID	Collection Date	Date Received	Date Due	Matrix	Test Code	Hld	MS	SEL	Sub	Storage
0904074-017A	N-3-3@1.0	4/13/2009 12:30:00 AM	4/13/2009	4/17/2009	Soil	6010B_S	☐	☐	☑	☐	SR
0904074-018A	N-3-3@1.5			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904074-019A	N-3-3@2.0			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904074-020A	N-3-3@3.0			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904074-021A	N-3-12@0.5	4/12/2009 11:15:00 PM		4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904074-022A	N-3-12@1.0			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904074-023A	N-3-12@1.5			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904074-024A	N-3-12@2.0			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904074-025A	N-3-12@3.0			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904074-026A	N-3-11@0.5	4/12/2009 11:20:00 PM		4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904074-027A	S-3-13-GW	4/12/2009 10:40:00 PM		4/17/2009	Groundwater	8260B_W	☐	☐	☐	☐	SR
0904074-028A	S-3-14-GW	4/12/2009 11:00:00 PM		4/17/2009		8260B_W	☐	☐	☐	☐	SR
0904074-029A	N-2-5@0.5	4/13/2009 1:50:00 AM		4/17/2009	Soil	3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904074-030A	N-2-5@1.0			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904074-031A	N-2-5@1.5			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904074-032A	N-2-5@2.0			4/17/2009		3050B_S	☐	☐	☐	☐	SR

WORK ORDER Summary

14-Apr-09

Work Order 0904074

Client ID: URS CORPORATION

Project: 101 Aux Lanes **QC Level:**

Comments: 5 day TAT!! Sub PLM Asbestos! Where CAM17 is requested, also run pH! Report to Patrick!

Sample ID	Client Sample ID	Collection Date	Date Received	Date Due	Matrix	Test Code	Hld	MS	SEL	Sub	Storage
0904074-032A	N-2-5@2.0	4/13/2009 1:50:00 AM	4/13/2009	4/17/2009	Soil	6010B_S	☐	☐	☑	☐	SR
0904074-033A	N-2-5@3.0			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904074-034A	N-3-1@0.5	4/13/2009 12:40:00 AM		4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
				4/17/2009		ASBESTOS_PLM SUB	☐	☐	☐	☑	SR

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0904074

Company Name: VRS San Jose	Location of Sampling: 101 Ave Lanes
Address:	Purpose:
City: State: Zip Code:	Special Instructions / Comments:
Telephone: FAX:	
REPORT TO: Patrick Wolz SAMPLER: Eduardo Ortiz	P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Working Days ☐ 3 Working Days ☐ Noon - Nxt Day ☐ 7 Working Days ☐ 2 Working Days ☐ 2 - 8 Hours ☒ 5 Working Days ☐ 1 Working Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☐ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	VOCs EPA 8260B	TPH Gas + BTEX + oxygenates	TPH diesel Motor oil	Pesticides	PCBs	CAM 17 + pH		Lead	Asbestos	TORRENT'S SAMPLE I.D.
1. S-3-12@20-D	|	S	1	4oz								X		-001A
2. @30-D	|	S	1	|								X		-002A
3. N-3-9@0.5	04/13/09 0010	S	1	8oz								X	X	-003A
4. @1.0	|	S	1	8oz								X	X	-004A
5. N-3-8-GW	04/12/09 2340	GW	1	1lto				X	X					-005A
6. |	|	|	2	1lto			X							|
7. |	|	|	1	250						X				|
8. |	|	|	3	voa	X	X								↓
9. S-3-1L-GW	04/12/09 2155	GW	1	1lto				X	X					-006A
10. |	|	|	2	1lto			X							↓

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		04/13/09					
2								

Were Samples Received in Good Condition? ☐ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment _____ Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrange -ments are made.

Page 1 of 4

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date: _____

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0904074

Company Name: VRS San Jose	Location of Sampling: 101 Ave Lanes
Address:	Purpose:
City: State: Zip Code:	Special Instructions / Comments:
Telephone: FAX:	
REPORT TO: Patrick Wolz SAMPLER: Eduardo Ortiz	P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Working Days ☐ 3 Working Days ☐ Noon - Nxt Day ☐ 7 Working Days ☐ 2 Working Days ☐ 2 - 8 Hours ☒ 5 Working Days ☐ 1 Working Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☐ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	VOCs EPA 8260B	TPH gas + BTEX oxygenates	TPH diesel motor oil	Pesticides	PCBs	CAM 17 + pH		Lead	Asbestos	TORRENT'S SAMPLE I.D.
1. N-3-1@1.0	04/13/09 0040	S	1	sleeve								X	X	-007A
2. @1.5			1									X	X	-008A
3. @2.0			1									X	X	-009A
4. @3.0			1									X	X	-010A
5. N-3-2@0.5	04/13/09 0040											X		-011A
6. @1.0												X		-012A
7. @1.5												X		-013A
8. @2.0												X		-014A
9. @3.0												X		-015A
10. N-3-3@0.5	04/13/09 0030	S										X		-016A

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1								
2								

Were Samples Received in Good Condition? ☐ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment _____ Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrange -ments are made.

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date: _____

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0904074

Company Name: VRS San Jose	Location of Sampling: 101 Ave Lanes
Address:	Purpose:
City: State: Zip Code:	Special Instructions / Comments:
Telephone: FAX:	
REPORT TO: Patrick Wolz SAMPLER: Eduardo Ortiz	P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Working Days ☐ 3 Working Days ☐ Noon - Nxt Day ☐ 7 Working Days ☐ 2 Working Days ☐ 2 - 8 Hours ☒ 5 Working Days ☐ 1 Working Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☐ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

	CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	VOCs EPA 8260B	TPH gas + BTEX oxygenates	TPH diesel Motor oil	Pesticides	PCBs	CAM 17 + TPH		Lead	Asbestos	TORRENT'S SAMPLE I.D.
1.	N-3-3 @ 1.0	04/13/09 0930	S	1	sleeve								X		-017A
2.	@ 1.5		S	1									X		-018A
3.	@ 2.0			1									X		-019A
4.	@ 3.0			1									X		-020A
5.	N-3-12 @ 0.5	04/13/09 2315	S	1	sleeve								X		-021A
6.	@ 1.0			1									X		-022A
7.	@ 1.5			1									X		-023A
8.	@ 2.0			1									X		-024A
9.	@ 3.0			1									X		-025A
10.	N-3-11 @ 0.5	04/12/09 2320		1	sleeve								X		-026A

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1								
2								

Were Samples Received in Good Condition? ☐ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment _____ Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrange -ments are made.

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date: _____

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0904074

Company Name: VRS San Jose
Address:
City: State: Zip Code:
Telephone: FAX:
REPORT TO: Patrick Walz SAMPLER: Eduardo Ortiz

Location of Sampling: 101 Ave Lanes
Purpose:
Special Instructions / Comments:
P.O. #: EMAIL:

TURNAROUND TIME:
- [ ] 10 Working Days
- [ ] 7 Working Days
- [x] 5 Working Days
- [ ] 3 Working Days
- [ ] 2 Working Days
- [ ] 1 Working Day
- [ ] Noon - Nxt Day
- [ ] 2 - 8 Hours
- [ ] Other

SAMPLE TYPE:
- [ ] Storm Water
- [ ] Waste Water
- [ ] Ground Water
- [ ] Soil
- [ ] Air
- [ ] Other

REPORT FORMAT:
- [ ] QC Level IV
- [ ] EDF
- [ ] Excel / EDD

ANALYSIS REQUESTED

CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	VOCs EPA 8260B	TPH Gas + BTEX or Gasoline	TPH diesel Total oil	Pesticides	PCBs	CAM 17 + pH		Lead	Asbestos	TORRENT'S SAMPLE I.D.
1. S-3-11-GW	04/12/09 2155	GW	1	250						X				-027A -006A
2. |	|	|	3	VOC	X	X								↓ ↓
3. S-3-13-GW	04/12/09 2240	GW	3	VOC	X									-028A -027A
4. S-3-14-GW	04/12/09 2300	GW	3	VOA	X									-029A -028A
5. N-2-5 @0.5	04/13/09 0150	S	1	sleeve								X		-030A -029A
6. | @1.0	|	|	1	|								X		-031A -030A
7. | @1.5	|	|	1	|								X		-032A -031A
8. | @2.0	|	|	1	|								X		-033A -032A
9. | @3.0	|	|	1	|								X		-034A -033A
10. N-3-1 @0.5	04/13/09 0040	S	1	sleeve								X	X	-035A -034A

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1			04/13/09					4-13-09
2								

Were Samples Received in Good Condition? [ ] Yes [ ] NO Samples on Ice? [ ] Yes [ ] NO Method of Shipment _____ Sample seals intact? [ ] Yes [ ] NO [x] N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Page 4 of 4

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date: _____

Torrent
LABORATORY, INC.

June 18, 2009 (Revision 1)

Patrick Walz
URS Corporation, San Jose
55 South Market St., Suite 1500
San Jose, CA 95113

TEL: (408) 297-9585
FAX: (408) 297-6962

RE: 101 Aux Lanes - See case narrative for revision details.

Order No.: 0904074

Dear Patrick Walz:

Torrent Laboratory, Inc. received 34 samples on 4/13/2009 for the analyses presented in the following report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.
Reported data is applicable for only the samples received as part of the order number referenced above.

Torrent Laboratory, Inc, is certified by the State of California, ELAP #1991. If you have any questions regarding these tests results, please feel free to contact the Project Management Team at (408)263-5258;ext: 204.

Sincerely,

Laboratory Director

6/18/09
Date

Patti Sandrock
QA Officer

Torrent Laboratory, Inc. **Date:** *18-Jun-09*

CLIENT: URS Corporation, San Jose
Project: 101 Aux Lanes
Lab Order: 0904074

CASE NARRATIVE

Analytical Comments for Asbestos PLM, Note: Analysis performed by NVLAP Certified sub-contract laboratory. (Certification # 101048-3).

Note: although pH was measured upon laboratory receipt, the samples were received outside of the recommended holding time (24 hours from collection).

REVISIONS: 6/18/09

Per client request, STLC, DI STLC and TCLP analysis was added to specified samples.
Due to limited sample available for all samples, STLC, DI STLC and TCLP was performed using only 25 g of homogenized sample.

Note: Extraction of 25 g sample / 250g 0.2M Sodium Citrate Solution was performed according to DI wet extraction procedure (WET) which was rotated in a rotary shaker for 48 hours.

Extraction started on 05/30/2009 @ 12.15 PM and ended on 06/01/2009 @ 12:15 PM

Note: Extraction of 25 g sample / 250g 0.2M Sodium Citrate Solution was performed according to wet extraction procedure (WET) which was rotated in a rotary shaker for 48 hours.

Extraction started on 05/30/2009 @ 12.15 PM and ended on 06/01/2009 @ 12:15 PM

Note: Extraction of 25 g sample / 500g TCLP Fluid #1 was performed according to Toxicity Characteristic Leaching Procedure (TCLP) which was rotated in a rotary shaker for 18 hours.

Extraction started on 06/12/2009 @ 4:00 PM and ended on 06/13/2009 @ 10:00 AM

TORRENT LABORATORY, INC.

483 Sinclair Frontage Road • Milpitas, CA • Phone: (408) 263-5258 • Fax: (408) 263-8293

Visit us at www.torrentlab.com email: analysis@torrentlab.com

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: S3-12@2.0-D
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009

Lab Sample ID: 0904074-001
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	1	1.0	7.0	mg/Kg	5109

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: S-3-12@3.0-D
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009

Lab Sample ID: 0904074-002
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	1	1.0	5.2	mg/Kg	5109

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-9@0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 12:10:00 AM

Lab Sample ID: 0904074-003
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	1	1.0	40	mg/Kg	5109

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-9@1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 12:10:00 AM

Lab Sample ID: 0904074-004
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	1	1.0	30	mg/Kg	5109

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-8-GW
Sample Location: 101 Aux Lanes
Sample Matrix: GROUNDWATER
Date/Time Sampled 4/12/2009 11:40:00 PM

Lab Sample ID: 0904074-005
Date Prepared: 4/14/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
pH	E150.1	4/14/2009	0.05	1	0.0500	8.23	pH units	R19234
pH was out of hold time upon receipt.								
Antimony	SW6010B	4/14/2009	0.01	1	0.010	ND	mg/L	5098
Arsenic	SW6010B	4/14/2009	0.01	1	0.010	ND	mg/L	5098
Barium	SW6010B	4/14/2009	0.01	1	0.010	0.10	mg/L	5098
Beryllium	SW6010B	4/14/2009	0.005	1	0.0050	ND	mg/L	5098
Cadmium	SW6010B	4/14/2009	0.005	1	0.0050	ND	mg/L	5098
Chromium	SW6010B	4/14/2009	0.005	1	0.0050	0.0080	mg/L	5098
Cobalt	SW6010B	4/14/2009	0.005	1	0.0050	ND	mg/L	5098
Copper	SW6010B	4/14/2009	0.01	1	0.010	ND	mg/L	5098
Lead	SW6010B	4/14/2009	0.015	1	0.015	ND	mg/L	5098
Molybdenum	SW6010B	4/14/2009	0.005	1	0.0050	ND	mg/L	5098
Nickel	SW6010B	4/14/2009	0.01	1	0.010	0.012	mg/L	5098
Selenium	SW6010B	4/14/2009	0.01	1	0.010	ND	mg/L	5098
Silver	SW6010B	4/14/2009	0.005	1	0.0050	ND	mg/L	5098
Thallium	SW6010B	4/14/2009	0.01	1	0.010	ND	mg/L	5098
Vanadium	SW6010B	4/14/2009	0.01	1	0.010	0.034	mg/L	5098
Zinc	SW6010B	4/14/2009	0.005	1	0.0050	0.0090	mg/L	5098
Mercury	SW7470A	4/14/2009	0.0002	1	0.00020	ND	mg/L	5095
TPH (Diesel)	SW8015B	4/17/2009	0.1	1	0.100	ND	mg/L	R19291
TPH (Motor Oil)	SW8015B	4/17/2009	0.2	1	0.200	ND	mg/L	R19291
Surr: Pentacosane	SW8015B	4/17/2009	0	1	57.9-125	99.0	%REC	R19291

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-8-GW
Sample Location: 101 Aux Lanes
Sample Matrix: GROUNDWATER
Date/Time Sampled 4/12/2009 11:40:00 PM

Lab Sample ID: 0904074-005
Date Prepared: 4/14/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
4,4´-DDD	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
4,4´-DDE	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
4,4´-DDT	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Aldrin	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
alpha-BHC	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
alpha-Chlordane	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
beta-BHC	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Chlordane	SW8081A	4/17/2009	0.25	1	0.250	ND	µg/L	R19286
delta-BHC	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Dieldrin	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Endosulfan I	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Endosulfan II	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Endosulfan sulfate	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Endrin	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Endrin aldehyde	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Endrin ketone	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
gamma-BHC	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
gamma-Chlordane	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Heptachlor	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Heptachlor epoxide	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Methoxychlor	SW8081A	4/17/2009	0.05	1	0.050	ND	µg/L	R19286
Toxaphene	SW8081A	4/17/2009	1	1	1.00	ND	µg/L	R19286
Surr: Decachlorobiphenyl	SW8081A	4/17/2009	0	1	52-116	56.4	%REC	R19286
Surr: Tetrachloro-m-xylene	SW8081A	4/17/2009	0	1	40.3-118	74.3	%REC	R19286
Aroclor 1016	SW8082	4/14/2009	10	1	10.0	ND	µg/L	R19239
Aroclor 1221	SW8082	4/14/2009	10	1	10.0	ND	µg/L	R19239
Aroclor 1232	SW8082	4/14/2009	10	1	10.0	ND	µg/L	R19239
Aroclor 1242	SW8082	4/14/2009	10	1	10.0	ND	µg/L	R19239
Aroclor 1248	SW8082	4/14/2009	10	1	10.0	ND	µg/L	R19239
Aroclor 1254	SW8082	4/14/2009	10	1	10.0	ND	µg/L	R19239
Aroclor 1260	SW8082	4/14/2009	10	1	10.0	ND	µg/L	R19239
Surr: Decachlorobiphenyl	SW8082	4/14/2009	0	1	44.5-127	105	%REC	R19239
Surr: Tetrachloro-m-xylene	SW8082	4/14/2009	0	1	52.7-126	98.4	%REC	R19239

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-8-GW
Sample Location: 101 Aux Lanes
Sample Matrix: GROUNDWATER
Date/Time Sampled 4/12/2009 11:40:00 PM

Lab Sample ID: 0904074-005
Date Prepared: 4/14/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
1,1,1,2-Tetrachloroethane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,1,1-Trichloroethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,1,2,2-Tetrachloroethane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,1,2-Trichloroethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,1-Dichloroethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,1-Dichloroethene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,1-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2,3-Trichlorobenzene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,2,3-Trichloropropane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,2,4-Trichlorobenzene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,2,4-Trimethylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dibromo-3-chloropropane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dibromoethane (EDB)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dichlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dichloroethane (EDC)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dichloropropane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,3,5-Trimethylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,3-Dichlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,3-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,4-Dichlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
2,2-Dichloropropane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
2-Chloroethyl vinyl ether	SW8260B	4/17/2009	6	1	6.00	ND	µg/L	R19276
2-Chlorotoluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
4-Chlorotoluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
4-Isopropyltoluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Acetone	SW8260B	4/17/2009	10	1	10.0	ND	µg/L	R19276
Benzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromochloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromodichloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromoform	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Bromomethane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Carbon tetrachloride	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Chlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Chloroform	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Chloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
cis-1,2-Dichloroethene	SW8260B	4/17/2009	0.5	1	0.50	4.35	µg/L	R19276
cis-1,3-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Dibromochloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Dibromomethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Dichlorodifluoromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Diisopropyl ether (DIPE)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Ethyl tert-butyl ether (ETBE)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-8-GW
Sample Location: 101 Aux Lanes
Sample Matrix: GROUNDWATER
Date/Time Sampled 4/12/2009 11:40:00 PM

Lab Sample ID: 0904074-005
Date Prepared: 4/14/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Ethylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Freon-113	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Hexachlorobutadiene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Isopropylbenzene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Methyl tert-butyl ether (MTBE)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Methylene chloride	SW8260B	4/17/2009	5	1	5.00	ND	µg/L	R19276
Naphthalene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
n-Butylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
n-Propylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
sec-Butylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Styrene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
t-Butyl alcohol (t-Butanol)	SW8260B	4/17/2009	5	1	5.00	ND	µg/L	R19276
tert-Amyl methyl ether (TAME)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
tert-Butylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Tetrachloroethene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Toluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
trans-1,2-Dichloroethene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
trans-1,3-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Trichloroethene	SW8260B	4/17/2009	0.5	1	0.50	9.90	µg/L	R19276
Trichlorofluoromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Vinyl chloride	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Xylenes, Total	SW8260B	4/17/2009	1.5	1	1.50	ND	µg/L	R19276
Surr: Dibromofluoromethane	SW8260B	4/17/2009	0	1	61.2-131	115	%REC	R19276
Surr: 4-Bromofluorobenzene	SW8260B	4/17/2009	0	1	64.1-120	113	%REC	R19276
Surr: Toluene-d8	SW8260B	4/17/2009	0	1	75.1-127	105	%REC	R19276
TPH (Gasoline)	SW8260B(TPH)	4/17/2009	50	1	50	ND	µg/L	G19276
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	4/17/2009	0	1	58.4-133	90.0	%REC	G19276

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: S-3-11-GW
Sample Location: 101 Aux Lanes
Sample Matrix: GROUNDWATER
Date/Time Sampled 4/12/2009 9:55:00 PM

Lab Sample ID: 0904074-006
Date Prepared: 4/14/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
pH	E150.1	4/14/2009	0.05	1	0.0500	8.18	pH units	R19234
pH was out of hold time upon receipt.								
Antimony	SW6010B	4/14/2009	0.01	1	0.010	ND	mg/L	5098
Arsenic	SW6010B	4/14/2009	0.01	1	0.010	ND	mg/L	5098
Barium	SW6010B	4/14/2009	0.01	1	0.010	0.13	mg/L	5098
Beryllium	SW6010B	4/14/2009	0.005	1	0.0050	ND	mg/L	5098
Cadmium	SW6010B	4/14/2009	0.005	1	0.0050	ND	mg/L	5098
Chromium	SW6010B	4/14/2009	0.005	1	0.0050	0.014	mg/L	5098
Cobalt	SW6010B	4/14/2009	0.005	1	0.0050	ND	mg/L	5098
Copper	SW6010B	4/14/2009	0.01	1	0.010	ND	mg/L	5098
Lead	SW6010B	4/14/2009	0.015	1	0.015	ND	mg/L	5098
Molybdenum	SW6010B	4/14/2009	0.005	1	0.0050	ND	mg/L	5098
Nickel	SW6010B	4/14/2009	0.01	1	0.010	0.013	mg/L	5098
Selenium	SW6010B	4/14/2009	0.01	1	0.010	ND	mg/L	5098
Silver	SW6010B	4/14/2009	0.005	1	0.0050	ND	mg/L	5098
Thallium	SW6010B	4/14/2009	0.01	1	0.010	ND	mg/L	5098
Vanadium	SW6010B	4/14/2009	0.01	1	0.010	0.036	mg/L	5098
Zinc	SW6010B	4/14/2009	0.005	1	0.0050	0.016	mg/L	5098
Mercury	SW7470A	4/14/2009	0.0002	1	0.00020	ND	mg/L	5095
TPH (Diesel)	SW8015B	4/17/2009	0.1	1	0.100	ND	mg/L	R19291
TPH (Motor Oil)	SW8015B	4/17/2009	0.2	1	0.200	ND	mg/L	R19291
Surr: Pentacosane	SW8015B	4/17/2009	0	1	57.9-125	103	%REC	R19291

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: S-3-11-GW
Sample Location: 101 Aux Lanes
Sample Matrix: GROUNDWATER
Date/Time Sampled 4/12/2009 9:55:00 PM

Lab Sample ID: 0904074-006
Date Prepared: 4/14/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
4,4´-DDD	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
4,4´-DDE	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
4,4´-DDT	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Aldrin	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
alpha-BHC	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
alpha-Chlordane	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
beta-BHC	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Chlordane	SW8081A	4/17/2009	0.25	1	0.250	ND	µg/L	R19286
delta-BHC	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Dieldrin	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Endosulfan I	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Endosulfan II	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Endosulfan sulfate	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Endrin	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Endrin aldehyde	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Endrin ketone	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
gamma-BHC	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
gamma-Chlordane	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Heptachlor	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Heptachlor epoxide	SW8081A	4/17/2009	0.02	1	0.020	ND	µg/L	R19286
Methoxychlor	SW8081A	4/17/2009	0.05	1	0.050	ND	µg/L	R19286
Toxaphene	SW8081A	4/17/2009	1	1	1.00	ND	µg/L	R19286
Surr: Decachlorobiphenyl	SW8081A	4/17/2009	0	1	52-116	58.0	%REC	R19286
Surr: Tetrachloro-m-xylene	SW8081A	4/17/2009	0	1	40.3-118	71.9	%REC	R19286
Aroclor 1016	SW8082	4/14/2009	10	1	10.0	ND	µg/L	R19239
Aroclor 1221	SW8082	4/14/2009	10	1	10.0	ND	µg/L	R19239
Aroclor 1232	SW8082	4/14/2009	10	1	10.0	ND	µg/L	R19239
Aroclor 1242	SW8082	4/14/2009	10	1	10.0	ND	µg/L	R19239
Aroclor 1248	SW8082	4/14/2009	10	1	10.0	ND	µg/L	R19239
Aroclor 1254	SW8082	4/14/2009	10	1	10.0	ND	µg/L	R19239
Aroclor 1260	SW8082	4/14/2009	10	1	10.0	ND	µg/L	R19239
Surr: Decachlorobiphenyl	SW8082	4/14/2009	0	1	44.5-127	105	%REC	R19239
Surr: Tetrachloro-m-xylene	SW8082	4/14/2009	0	1	52.7-126	98.0	%REC	R19239

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: S-3-11-GW
Sample Location: 101 Aux Lanes
Sample Matrix: GROUNDWATER
Date/Time Sampled 4/12/2009 9:55:00 PM

Lab Sample ID: 0904074-006
Date Prepared: 4/14/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
1,1,1,2-Tetrachloroethane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,1,1-Trichloroethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,1,2,2-Tetrachloroethane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,1,2-Trichloroethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,1-Dichloroethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,1-Dichloroethene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,1-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2,3-Trichlorobenzene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,2,3-Trichloropropane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,2,4-Trichlorobenzene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,2,4-Trimethylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dibromo-3-chloropropane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dibromoethane (EDB)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dichlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dichloroethane (EDC)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dichloropropane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,3,5-Trimethylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,3-Dichlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,3-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,4-Dichlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
2,2-Dichloropropane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
2-Chloroethyl vinyl ether	SW8260B	4/17/2009	6	1	6.00	ND	µg/L	R19276
2-Chlorotoluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
4-Chlorotoluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
4-Isopropyltoluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Acetone	SW8260B	4/17/2009	10	1	10.0	ND	µg/L	R19276
Benzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromochloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromodichloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromoform	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Bromomethane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Carbon tetrachloride	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Chlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Chloroform	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Chloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
cis-1,2-Dichloroethene	SW8260B	4/17/2009	0.5	1	0.50	16.0	µg/L	R19276
cis-1,3-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Dibromochloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Dibromomethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Dichlorodifluoromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Diisopropyl ether (DIPE)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Ethyl tert-butyl ether (ETBE)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: S-3-11-GW
Sample Location: 101 Aux Lanes
Sample Matrix: GROUNDWATER
Date/Time Sampled 4/12/2009 9:55:00 PM

Lab Sample ID: 0904074-006
Date Prepared: 4/14/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Ethylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Freon-113	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Hexachlorobutadiene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Isopropylbenzene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Methyl tert-butyl ether (MTBE)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Methylene chloride	SW8260B	4/17/2009	5	1	5.00	ND	µg/L	R19276
Naphthalene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
n-Butylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
n-Propylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
sec-Butylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Styrene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
t-Butyl alcohol (t-Butanol)	SW8260B	4/17/2009	5	1	5.00	ND	µg/L	R19276
tert-Amyl methyl ether (TAME)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
tert-Butylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Tetrachloroethene	SW8260B	4/17/2009	0.5	1	0.50	2.80	µg/L	R19276
Toluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
trans-1,2-Dichloroethene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
trans-1,3-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Trichloroethene	SW8260B	4/17/2009	0.5	1	0.50	45.7	µg/L	R19276
Trichlorofluoromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Vinyl chloride	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Xylenes, Total	SW8260B	4/17/2009	1.5	1	1.50	ND	µg/L	R19276
Surr: Dibromofluoromethane	SW8260B	4/17/2009	0	1	61.2-131	112	%REC	R19276
Surr: 4-Bromofluorobenzene	SW8260B	4/17/2009	0	1	64.1-120	104	%REC	R19276
Surr: Toluene-d8	SW8260B	4/17/2009	0	1	75.1-127	101	%REC	R19276
TPH (Gasoline)	SW8260B(TPH)	4/17/2009	50	1	50	74x	µg/L	G19276
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	4/17/2009	0	1	58.4-133	87.7	%REC	G19276

Note: x- Sample chromatogram does not resemble gasoline standard pattern. Reported value due to individual peaks of non-gasoline compounds within range of C5-C12 quantified as Gasoline (see 8260B results).

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-1@1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 12:40:00 AM

Lab Sample ID: 0904074-007
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	1	1.0	43	mg/Kg	5109

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-1@1.5
Sample Location: N-3-1@2.0
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 12:40:00 AM

Lab Sample ID: 0904074-008
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/5/2009	0.1	1	0.10	0.76	mg/L	5261
Lead (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	0.11	mg/L	5258
Lead	SW6010B	4/20/2009	1	1	1.0	52	mg/Kg	5109

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-1@2.0
Sample Location: N-3-1@2.0
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 12:40:00 AM

Lab Sample ID: 0904074-009
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	10	10	36	mg/Kg	5109

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-1@3.0
Sample Location: N-3-1@2.0
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 12:40:00 AM

Lab Sample ID: 0904074-010
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	10	10	44	mg/Kg	5109

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-2@0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 12:40:00 AM

Lab Sample ID: 0904074-011
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	1	1.0	15	mg/Kg	5109

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-2@1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 12:40:00 AM

Lab Sample ID: 0904074-012
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	1	1.0	3.0	mg/Kg	5109

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-2@1.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 12:40:00 AM

Lab Sample ID: 0904074-013
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	1	1.0	17	mg/Kg	5109

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-2@2.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 12:40:00 AM

Lab Sample ID: 0904074-014
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	10	10	22	mg/Kg	5109

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-2@3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 12:40:00 AM

Lab Sample ID: 0904074-015
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	ND	mg/Kg	5110

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-3@0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 12:30:00 AM

Lab Sample ID: 0904074-016
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/5/2009	0.1	1	0.10	3.4	mg/L	5261
Lead (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	8.2	mg/L	5258
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	ND	mg/L	5285
Lead	SW6010B	4/17/2009	1	1	1.0	190	mg/Kg	5110

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-3@1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 12:30:00 AM

Lab Sample ID: 0904074-017
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	5.8	mg/Kg	5110

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-3@1.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 12:30:00 AM

Lab Sample ID: 0904074-018
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	6.6	mg/Kg	5110

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-3@2.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 12:30:00 AM

Lab Sample ID: 0904074-019
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	4.6	mg/Kg	5110

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-3@3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 12:30:00 AM

Lab Sample ID: 0904074-020
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	1.1	mg/Kg	5110

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-12@0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 11:15:00 PM

Lab Sample ID: 0904074-021
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	14	mg/Kg	5110

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-12@1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 11:15:00 PM

Lab Sample ID: 0904074-022
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	3.4	mg/Kg	5110

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-12@1.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 11:15:00 PM

Lab Sample ID: 0904074-023
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	13	mg/Kg	5110

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-12@2.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 11:15:00 PM

Lab Sample ID: 0904074-024
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	18	mg/Kg	5110

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-12@3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 11:15:00 PM

Lab Sample ID: 0904074-025
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	9.2	mg/Kg	5110

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-11@0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 11:20:00 PM

Lab Sample ID: 0904074-026
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	14	mg/Kg	5110

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: S-3-13-GW
Sample Location: 101 Aux Lanes
Sample Matrix: GROUNDWATER
Date/Time Sampled 4/12/2009 10:40:00 PM

Lab Sample ID: 0904074-027
Date Prepared: 4/17/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
1,1,1,2-Tetrachloroethane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,1,1-Trichloroethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,1,2,2-Tetrachloroethane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,1,2-Trichloroethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,1-Dichloroethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,1-Dichloroethene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,1-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2,3-Trichlorobenzene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,2,3-Trichloropropane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,2,4-Trichlorobenzene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,2,4-Trimethylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dibromo-3-chloropropane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dibromoethane (EDB)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dichlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dichloroethane (EDC)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dichloropropane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,3,5-Trimethylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,3-Dichlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,3-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,4-Dichlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
2,2-Dichloropropane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
2-Chloroethyl vinyl ether	SW8260B	4/17/2009	6	1	6.00	ND	µg/L	R19276
2-Chlorotoluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
4-Chlorotoluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
4-Isopropyltoluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Acetone	SW8260B	4/17/2009	10	1	10.0	ND	µg/L	R19276
Benzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromochloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromodichloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromoform	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Bromomethane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Carbon tetrachloride	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Chlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Chloroform	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Chloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
cis-1,2-Dichloroethene	SW8260B	4/17/2009	0.5	1	0.50	39.2	µg/L	R19276
cis-1,3-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Dibromochloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Dibromomethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Dichlorodifluoromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Diisopropyl ether (DIPE)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Ethyl tert-butyl ether (ETBE)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: S-3-13-GW
Sample Location: 101 Aux Lanes
Sample Matrix: GROUNDWATER
Date/Time Sampled 4/12/2009 10:40:00 PM

Lab Sample ID: 0904074-027
Date Prepared: 4/17/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Ethylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Freon-113	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Hexachlorobutadiene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Isopropylbenzene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Methyl tert-butyl ether (MTBE)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Methylene chloride	SW8260B	4/17/2009	5	1	5.00	ND	µg/L	R19276
Naphthalene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
n-Butylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
n-Propylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
sec-Butylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Styrene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
t-Butyl alcohol (t-Butanol)	SW8260B	4/17/2009	5	1	5.00	ND	µg/L	R19276
tert-Amyl methyl ether (TAME)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
tert-Butylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Tetrachloroethene	SW8260B	4/17/2009	0.5	1	0.50	1.27	µg/L	R19276
Toluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
trans-1,2-Dichloroethene	SW8260B	4/17/2009	0.5	1	0.50	1.31	µg/L	R19276
trans-1,3-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Trichloroethene	SW8260B	4/17/2009	0.5	1	0.50	87.8	µg/L	R19276
Trichlorofluoromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Vinyl chloride	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Xylenes, Total	SW8260B	4/17/2009	1.5	1	1.50	ND	µg/L	R19276
Surr: Dibromofluoromethane	SW8260B	4/17/2009	0	1	61.2-131	116	%REC	R19276
Surr: 4-Bromofluorobenzene	SW8260B	4/17/2009	0	1	64.1-120	106	%REC	R19276
Surr: Toluene-d8	SW8260B	4/17/2009	0	1	75.1-127	98.9	%REC	R19276

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: S-3-14-GW
Sample Location: 101 Aux Lanes
Sample Matrix: GROUNDWATER
Date/Time Sampled 4/12/2009 11:00:00 PM

Lab Sample ID: 0904074-028
Date Prepared: 4/17/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
1,1,1,2-Tetrachloroethane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,1,1-Trichloroethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,1,2,2-Tetrachloroethane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,1,2-Trichloroethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,1-Dichloroethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,1-Dichloroethene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,1-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2,3-Trichlorobenzene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,2,3-Trichloropropane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,2,4-Trichlorobenzene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,2,4-Trimethylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dibromo-3-chloropropane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dibromoethane (EDB)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dichlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dichloroethane (EDC)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dichloropropane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,3,5-Trimethylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,3-Dichlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,3-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,4-Dichlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
2,2-Dichloropropane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
2-Chloroethyl vinyl ether	SW8260B	4/17/2009	6	1	6.00	ND	µg/L	R19276
2-Chlorotoluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
4-Chlorotoluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
4-Isopropyltoluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Acetone	SW8260B	4/17/2009	10	1	10.0	ND	µg/L	R19276
Benzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromochloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromodichloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromoform	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Bromomethane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Carbon tetrachloride	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Chlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Chloroform	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Chloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
cis-1,2-Dichloroethene	SW8260B	4/17/2009	0.5	1	0.50	21.3	µg/L	R19276
cis-1,3-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Dibromochloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Dibromomethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Dichlorodifluoromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Diisopropyl ether (DIPE)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Ethyl tert-butyl ether (ETBE)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: S-3-14-GW
Sample Location: 101 Aux Lanes
Sample Matrix: GROUNDWATER
Date/Time Sampled 4/12/2009 11:00:00 PM

Lab Sample ID: 0904074-028
Date Prepared: 4/17/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Ethylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Freon-113	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Hexachlorobutadiene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Isopropylbenzene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Methyl tert-butyl ether (MTBE)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Methylene chloride	SW8260B	4/17/2009	5	1	5.00	ND	µg/L	R19276
Naphthalene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
n-Butylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
n-Propylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
sec-Butylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Styrene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
t-Butyl alcohol (t-Butanol)	SW8260B	4/17/2009	5	1	5.00	ND	µg/L	R19276
tert-Amyl methyl ether (TAME)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
tert-Butylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Tetrachloroethene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Toluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
trans-1,2-Dichloroethene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
trans-1,3-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Trichloroethene	SW8260B	4/17/2009	0.5	1	0.50	39.5	µg/L	R19276
Trichlorofluoromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Vinyl chloride	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Xylenes, Total	SW8260B	4/17/2009	1.5	1	1.50	ND	µg/L	R19276
Surr: Dibromofluoromethane	SW8260B	4/17/2009	0	1	61.2-131	112	%REC	R19276
Surr: 4-Bromofluorobenzene	SW8260B	4/17/2009	0	1	64.1-120	105	%REC	R19276
Surr: Toluene-d8	SW8260B	4/17/2009	0	1	75.1-127	107	%REC	R19276

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: N-2-15@0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 1:50:00 AM

Lab Sample ID: 0904074-029
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/5/2009	0.1	1	0.10	0.82	mg/L	5261
Lead (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	1.0	mg/L	5258
Lead	SW6010B	4/17/2009	1	1	1.0	54	mg/Kg	5110

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: N-2-15@1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 1:50:00 AM

Lab Sample ID: 0904074-030
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	6.4	mg/Kg	5110

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: N-2-15@1.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 1:50:00 AM

Lab Sample ID: 0904074-031
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	11	mg/Kg	5110

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: N-2-15@2.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 1:50:00 AM

Lab Sample ID: 0904074-032
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	4.5	mg/Kg	5110

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: N-2-15@3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 1:50:00 AM

Lab Sample ID: 0904074-033
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	3.2	mg/Kg	5110

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-1@0.5
Sample Location: 101 Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 4/13/2009 12:40:00 AM

Lab Sample ID: 0904074-034
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	24	mg/Kg	5110

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Definitions, legends and Notes

Note	Description
ug/kg	Microgram per kilogram (ppb, part per billion).
ug/L	Microgram per liter (ppb, part per billion).
mg/kg	Milligram per kilogram (ppm, part per million).
mg/L	Milligram per liter (ppm, part per million).
LCS/LCSD	Laboratory control sample/laboratory control sample duplicate.
MDL	Method detection limit.
MRL	Modified reporting limit. When sample is subject to dilution, reporting limit times dilution factor yields MRL.
MS/MSD	Matrix spike/matrix spike duplicate.
N/A	Not applicable.
ND	Not detected at or above detection limit.
NR	Not reported.
QC	Quality Control.
RL	Reporting limit.
% RPD	Percent relative difference.
a	pH was measured immediately upon the receipt of the sample, but it was still done outside the holding time.
sub	Analyzed by subcontracting laboratory, Lab Certificate #

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

EMSL Analytical, Inc
2235 Polvorosa Ave , Suite 230, San Leandro, CA 94577
Phone: (510) 895-3675 Fax: (510) 895-3680 Email: milpitaslab@emsl.com

Attn: **Nutan Kabir**
Torrent Laboratory, Inc.
483 Sinclair Frontage Rd.
Milpitas, CA 95035

Fax: (408) 263-8293 Phone: (408) 263-5258
Project: **0904074**

Customer ID: TORR80
Customer PO: 0904074
Received: 04/14/09 9:00 AM
EMSL Order: 090902733

EMSL Proj:
Analysis Date: 4/20/2009
Report Date: 4/20/2009

Qualitative asbestos analysis of soils using the EPA 600/R-93/116 method

Sample	Location	Appearance	Result	Notes
0904074-003A, Soil *090902733-0001*			**None Detected**	
0904074-004A, Soil *090902733-0002*			**None Detected**	
0904074-007A, Soil *090902733-0003*			**None Detected**	
0904074-008A, Soil *090902733-0004*			**None Detected**	
0904074-009A, Soil *090902733-0005*			**None Detected**	
0904074-010A, Soil *090902733-0006*			**None Detected**	
0904074-034A, Soil *090902733-0007*			**None Detected**	

Analyst(s)

Adam C. Fink (7)

Baojia Ke, Laboratory Manager
or other approved signatory

EMSL recommends that soil samples reported as "ND" be tested by the EPA Screening Method/Qualitative. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. The above test must not be used by the client to claim product endorsement by NVLAP nor any agency of the United States Government. Unless otherwise noted, the results in this report have not been blank corrected.Samples received in good condition unless otherwise noted.

THIS IS THE LAST PAGE OF THE REPORT.

Torrent Laboratory, Inc.

Date: *18-Jun-09*

CLIENT: URS Corporation, San Jose
Work Order: 0904074
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5095

Sample ID: **MB-5095** SampType: **MBLK** TestCode: **HG_W_7470A** Units: **mg/L** Prep Date: **4/14/2009** RunNo: **19235**
Client ID: **ZZZZZ** Batch ID: **5095** TestNo: **SW7470A** **(SW7470A)** Analysis Date: **4/14/2009** SeqNo: **277743**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.00020									

Sample ID: **LCS-5095** SampType: **LCS** TestCode: **HG_W_7470A** Units: **mg/L** Prep Date: **4/14/2009** RunNo: **19235**
Client ID: **ZZZZZ** Batch ID: **5095** TestNo: **SW7470A** **(SW7470A)** Analysis Date: **4/14/2009** SeqNo: **277741**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.01569	0.00020	0.015	0	105	80	120				

Sample ID: **LCSD-5095** SampType: **LCSD** TestCode: **HG_W_7470A** Units: **mg/L** Prep Date: **4/14/2009** RunNo: **19235**
Client ID: **ZZZZZ** Batch ID: **5095** TestNo: **SW7470A** **(SW7470A)** Analysis Date: **4/14/2009** SeqNo: **277742**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.01566	0.00020	0.015	0	104	80	120	0.01569	0.191	20	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904074
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5098

Sample ID: **MB-5098**	SampType: **MBLK**	TestCode: **6010B_W**	Units: **mg/L**	Prep Date: **4/14/2009**	RunNo: **19247**
Client ID: **ZZZZZ**	Batch ID: **5098**	TestNo: **SW6010B**	**(E200.7/SW30**	Analysis Date: **4/14/2009**	SeqNo: **277886**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.010									
Arsenic	ND	0.010									
Barium	ND	0.010									
Beryllium	ND	0.0050									
Cadmium	ND	0.0050									
Chromium	ND	0.0050									
Cobalt	ND	0.0050									
Copper	ND	0.010									
Lead	ND	0.015									
Molybdenum	ND	0.0050									
Nickel	ND	0.010									
Selenium	ND	0.020									
Silver	ND	0.0050									
Thallium	ND	0.010									
Vanadium	ND	0.010									
Zinc	ND	0.010									

Sample ID: **LCS-5098**	SampType: **LCS**	TestCode: **6010B_W**	Units: **mg/L**	Prep Date: **4/14/2009**	RunNo: **19247**
Client ID: **ZZZZZ**	Batch ID: **5098**	TestNo: **SW6010B**	**(E200.7/SW30**	Analysis Date: **4/14/2009**	SeqNo: **277884**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	1.057	0.010	1	0	106	80	120				
Arsenic	1.100	0.010	1	0	110	80	120				
Barium	0.9690	0.010	1	0	96.9	80	120				
Beryllium	1.007	0.0050	1	0	101	80	120				
Cadmium	0.9610	0.0050	1	0	96.1	80	120				
Chromium	0.9690	0.0050	1	0	96.9	80	120				
Cobalt	0.9740	0.0050	1	0	97.4	80	120				
Copper	0.9710	0.010	1	0	97.1	80	120				
Lead	0.9990	0.015	1	0	99.9	80	120				
Molybdenum	0.9910	0.0050	1	0	99.1	80	120				

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904074
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5098

Sample ID: **LCS-5098** SampType: **LCS** TestCode: **6010B_W** Units: **mg/L** Prep Date: **4/14/2009** RunNo: **19247**
Client ID: **ZZZZZ** Batch ID: **5098** TestNo: **SW6010B** **(E200.7/SW30** Analysis Date: **4/14/2009** SeqNo: **277884**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	0.9740	0.010	1	0	97.4	80	120				
Selenium	0.9880	0.020	1	0.006	98.2	80	120				
Silver	0.9750	0.0050	1	0.002	97.3	80	120				
Thallium	0.9800	0.010	1	0	98.0	80	120				
Vanadium	0.9660	0.010	1	0	96.6	80	120				
Zinc	1.004	0.010	1	0	100	80	120				

Sample ID: **LCSD-5098** SampType: **LCSD** TestCode: **6010B_W** Units: **mg/L** Prep Date: **4/14/2009** RunNo: **19247**
Client ID: **ZZZZZ** Batch ID: **5098** TestNo: **SW6010B** **(E200.7/SW30** Analysis Date: **4/14/2009** SeqNo: **277885**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	1.045	0.010	1	0	104	80	120	1.057	1.14	20	
Arsenic	1.091	0.010	1	0	109	80	120	1.1	0.822	20	
Barium	0.9880	0.010	1	0	98.8	80	120	0.969	1.94	20	
Beryllium	0.9760	0.0050	1	0	97.6	80	120	1.007	3.13	20	
Cadmium	0.9760	0.0050	1	0	97.6	80	120	0.961	1.55	20	
Chromium	0.9660	0.0050	1	0	96.6	80	120	0.969	0.310	20	
Cobalt	0.9920	0.0050	1	0	99.2	80	120	0.974	1.83	20	
Copper	0.9800	0.010	1	0	98.0	80	120	0.971	0.923	20	
Lead	0.9960	0.015	1	0	99.6	80	120	0.999	0.301	20	
Molybdenum	0.9840	0.0050	1	0	98.4	80	120	0.991	0.709	20	
Nickel	0.9900	0.010	1	0	99.0	80	120	0.974	1.63	20	
Selenium	0.9900	0.020	1	0.006	98.4	80	120	0.988	0.202	20	
Silver	0.9890	0.0050	1	0.002	98.7	80	120	0.975	1.43	20	
Thallium	0.9750	0.010	1	0	97.5	80	120	0.98	0.512	20	
Vanadium	0.9820	0.010	1	0	98.2	80	120	0.966	1.64	20	
Zinc	1.029	0.010	1	0	103	80	120	1.004	2.46	20	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904074
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5109

Sample ID: **MB-5109** SampType: **MBLK** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **4/16/2009** RunNo: **19303**
Client ID: **ZZZZZ** Batch ID: **5109** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **4/20/2009** SeqNo: **278818**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	1.0									

Sample ID: **LCS-5109** SampType: **LCS** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **4/16/2009** RunNo: **19303**
Client ID: **ZZZZZ** Batch ID: **5109** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **4/20/2009** SeqNo: **278816**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	48.10	1.0	50	0.35	95.5	67.9	118				

Sample ID: **LCSD-5109** SampType: **LCSD** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **4/16/2009** RunNo: **19303**
Client ID: **ZZZZZ** Batch ID: **5109** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **4/20/2009** SeqNo: **278817**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	48.90	1.0	50	0.35	97.1	67.9	118	48.1	1.65	30	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904074
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5110

Sample ID: **MB-5110** SampType: **MBLK** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **4/16/2009** RunNo: **19289**
Client ID: **ZZZZZ** Batch ID: **5110** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **4/17/2009** SeqNo: **278553**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	1.0									

Sample ID: **LCS-5110** SampType: **LCS** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **4/16/2009** RunNo: **19289**
Client ID: **ZZZZZ** Batch ID: **5110** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **4/17/2009** SeqNo: **278551**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	47.70	1.0	50	0.4	94.6	67.9	118				

Sample ID: **LCSD-5110** SampType: **LCSD** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **4/16/2009** RunNo: **19289**
Client ID: **ZZZZZ** Batch ID: **5110** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **4/17/2009** SeqNo: **278552**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	47.45	1.0	50	0.4	94.1	67.9	118	47.7	0.525	30	

Sample ID: **0904074-015AMS** SampType: **MS** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **4/16/2009** RunNo: **19289**
Client ID: **N-3-2@3.0** Batch ID: **5110** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **4/17/2009** SeqNo: **278531**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	32.85	1.0	50	0	65.7	60.5	113				

Sample ID: **0904074-015AMSD** SampType: **MSD** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **4/16/2009** RunNo: **19289**
Client ID: **N-3-2@3.0** Batch ID: **5110** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **4/17/2009** SeqNo: **278532**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	31.60	1.0	50	0	63.2	60.5	113	32.85	3.88	30	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904074
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5258

Sample ID: **MB-5258** SampType: **MBLK** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **6/3/2009** RunNo: **19814**
Client ID: **ZZZZZ** Batch ID: **5258** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **6/4/2009** SeqNo: **286529**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (STLC)	ND	0.10									

Sample ID: **LCS-5258** SampType: **LCS** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **6/3/2009** RunNo: **19814**
Client ID: **ZZZZZ** Batch ID: **5258** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **6/4/2009** SeqNo: **286527**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (STLC)	8.240	0.10	10	0	82.4	75	125				

Sample ID: **LCSD-5258** SampType: **LCSD** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **6/3/2009** RunNo: **19814**
Client ID: **ZZZZZ** Batch ID: **5258** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **6/4/2009** SeqNo: **286528**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (STLC)	8.160	0.10	10	0	81.6	75	125	8.24	0.976	30	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904074
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5261

Sample ID: **MB-5261** SampType: **MBLK** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **6/4/2009** RunNo: **19815**
Client ID: **ZZZZZ** Batch ID: **5261** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/5/2009** SeqNo: **286554**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	ND	0.10									

Sample ID: **LCS-5261** SampType: **LCS** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **6/4/2009** RunNo: **19815**
Client ID: **ZZZZZ** Batch ID: **5261** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/5/2009** SeqNo: **286552**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	10.04	0.10	10	0	100	75	125				

Sample ID: **LCSD-5261** SampType: **LCSD** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **6/4/2009** RunNo: **19815**
Client ID: **ZZZZZ** Batch ID: **5261** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/5/2009** SeqNo: **286553**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	9.930	0.10	10	0	99.3	75	125	10.04	1.10	30	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904074
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5285

Sample ID: **MB-5285** SampType: **MBLK** TestCode: **6010B (TCLP)** Units: **mg/L** Prep Date: **6/14/2009** RunNo: **19897**
Client ID: **ZZZZZ** Batch ID: **5285** TestNo: **6010B (TCLP) (SW3010A)** Analysis Date: **6/15/2009** SeqNo: **287813**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	ND	0.10									

Sample ID: **LCS-5285** SampType: **LCS** TestCode: **6010B (TCLP)** Units: **mg/L** Prep Date: **6/14/2009** RunNo: **19897**
Client ID: **ZZZZZ** Batch ID: **5285** TestNo: **6010B (TCLP) (SW3010A)** Analysis Date: **6/15/2009** SeqNo: **287811**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	9.810	0.10	10	0.01	98.0	75	125				

Sample ID: **LCSD-5285** SampType: **LCSD** TestCode: **6010B (TCLP)** Units: **mg/L** Prep Date: **6/14/2009** RunNo: **19897**
Client ID: **ZZZZZ** Batch ID: **5285** TestNo: **6010B (TCLP) (SW3010A)** Analysis Date: **6/15/2009** SeqNo: **287812**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	9.880	0.10	10	0.01	98.7	75	125	9.81	0.711	30	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904074
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: G19276

Sample ID: **MBG-G19276** SampType: **MBLK** TestCode: **TPH_GAS_W** Units: **µg/L** Prep Date: **4/17/2009** RunNo: **19276**
Client ID: **ZZZZZ** Batch ID: **G19276** TestNo: **SW8260B(TP** Analysis Date: **4/17/2009** SeqNo: **278330**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	ND	50									
Surr: 4-Bromofllurobenzene	8.800	0	11.36	0	77.5	58.4	133				

Sample ID: **LCSG-G19276** SampType: **LCS** TestCode: **TPH_GAS_W** Units: **µg/L** Prep Date: **4/17/2009** RunNo: **19276**
Client ID: **ZZZZZ** Batch ID: **G19276** TestNo: **SW8260B(TP** Analysis Date: **4/17/2009** SeqNo: **278331**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	208.3	50	227	0	91.8	52.4	127				
Surr: 4-Bromofllurobenzene	9.900	0	11.36	0	87.1	58.4	133				

Sample ID: **LCSDG-G19276** SampType: **LCSD** TestCode: **TPH_GAS_W** Units: **µg/L** Prep Date: **4/17/2009** RunNo: **19276**
Client ID: **ZZZZZ** Batch ID: **G19276** TestNo: **SW8260B(TP** Analysis Date: **4/17/2009** SeqNo: **278332**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	227.8	50	227	0	100	52.4	127	208.3	8.94	20	
Surr: 4-Bromofllurobenzene	9.300	0	11.36	0	81.9	58.4	133	0	0	0	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904074
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19239

Sample ID: **WQ090414A-MB** SampType: **MBLK** TestCode: **8082W** Units: **µg/L** Prep Date: **4/14/2009** RunNo: **19239**
Client ID: **ZZZZZ** Batch ID: **R19239** TestNo: **SW8082** Analysis Date: **4/14/2009** SeqNo: **277765**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	10.0									
Aroclor 1221	ND	10.0									
Aroclor 1232	ND	10.0									
Aroclor 1242	ND	10.0									
Aroclor 1248	ND	10.0									
Aroclor 1254	ND	10.0									
Aroclor 1260	ND	10.0									
Surr: Decachlorobiphenyl	5.200	0	5	0	104	64.8	121				
Surr: Tetrachloro-m-xylene	5.160	0	5	0	103	64.7	115				

Sample ID: **WQ090414A-LCS** SampType: **LCS** TestCode: **8082W** Units: **µg/L** Prep Date: **4/14/2009** RunNo: **19239**
Client ID: **ZZZZZ** Batch ID: **R19239** TestNo: **SW8082** Analysis Date: **4/14/2009** SeqNo: **277766**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	52.49	10.0	50	0	105	69.7	139				
Aroclor 1260	48.72	10.0	50	0	97.4	71.3	131				
Surr: Decachlorobiphenyl	5.430	0	5	0	109	64.8	121				
Surr: Tetrachloro-m-xylene	5.090	0	5	0	102	64.7	115				

Sample ID: **WQ090414A-LCSD** SampType: **LCSD** TestCode: **8082W** Units: **µg/L** Prep Date: **4/14/2009** RunNo: **19239**
Client ID: **ZZZZZ** Batch ID: **R19239** TestNo: **SW8082** Analysis Date: **4/14/2009** SeqNo: **277767**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	52.61	10.0	50	0	105	69.7	139	52.49	0.228	30	
Aroclor 1260	50.32	10.0	50	0	101	71.3	131	48.72	3.23	30	
Surr: Decachlorobiphenyl	5.420	0	5	0	108	64.8	121	0	0		
Surr: Tetrachloro-m-xylene	5.130	0	5	0	103	64.7	115	0	0		

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904074
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19276

Sample ID: **MB-R19276**	SampType: **MBLK**	TestCode: **8260B_W**	Units: **µg/L**	Prep Date: **4/17/2009**	RunNo: **19276**
Client ID: **ZZZZZ**	Batch ID: **R19276**	TestNo: **SW8260B**		Analysis Date: **4/17/2009**	SeqNo: **278322**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	1.00									
1,1,1-Trichloroethane	ND	0.500									
1,1,2,2-Tetrachloroethane	ND	1.00									
1,1,2-Trichloroethane	ND	0.500									
1,1-Dichloroethane	ND	0.500									
1,1-Dichloroethene	ND	1.00									
1,1-Dichloropropene	ND	0.500									
1,2,3-Trichlorobenzene	ND	1.00									
1,2,3-Trichloropropane	ND	1.00									
1,2,4-Trichlorobenzene	ND	1.00									
1,2,4-Trimethylbenzene	ND	0.500									
1,2-Dibromo-3-chloropropane	ND	0.500									
1,2-Dibromoethane (EDB)	ND	0.500									
1,2-Dichlorobenzene	ND	0.500									
1,2-Dichloroethane (EDC)	ND	0.500									
1,2-Dichloropropane	ND	1.00									
1,3,5-Trimethylbenzene	ND	0.500									
1,3-Dichlorobenzene	ND	0.500									
1,4-Dichlorobenzene	ND	0.500									
2,2-Dichloropropane	ND	0.500									
2-Chloroethyl vinyl ether	ND	6.00									
2-Chlorotoluene	ND	0.500									
4-Chlorotoluene	ND	0.500									
4-Isopropyltoluene	ND	0.500									
Acetone	ND	10.0									
Benzene	ND	0.500									
Bromobenzene	ND	0.500									
Bromochloromethane	ND	0.500									
Bromodichloromethane	ND	0.500									
Bromoform	ND	1.00									
Bromomethane	ND	1.00									

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904074
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19276

Sample ID: **MB-R19276**	SampType: **MBLK**	TestCode: **8260B_W**	Units: **µg/L**	Prep Date: **4/17/2009**	RunNo: **19276**
Client ID: **ZZZZZ**	Batch ID: **R19276**	TestNo: **SW8260B**		Analysis Date: **4/17/2009**	SeqNo: **278322**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon tetrachloride	ND	1.00									
Chlorobenzene	ND	0.500									
Chloroform	ND	0.500									
Chloromethane	ND	0.500									
cis-1,2-Dichloroethene	ND	0.500									
cis-1,3-Dichloropropene	ND	0.500									
Dibromochloromethane	ND	0.500									
Dibromomethane	ND	0.500									
Dichlorodifluoromethane	ND	0.500									
Diisopropyl ether (DIPE)	ND	0.500									
Ethyl tert-butyl ether (ETBE)	ND	0.500									
Ethylbenzene	ND	0.500									
Freon-113	ND	1.00									
Hexachlorobutadiene	ND	0.500									
Isopropylbenzene	ND	1.00									
Methyl tert-butyl ether (MTBE)	ND	0.500									
Methylene chloride	ND	5.00									
Naphthalene	ND	1.00									
n-Butylbenzene	ND	0.500									
n-Propylbenzene	ND	0.500									
sec-Butylbenzene	ND	0.500									
Styrene	ND	0.500									
t-Butyl alcohol (t-Butanol)	ND	5.00									
tert-Amyl methyl ether (TAME)	ND	0.500									
tert-Butylbenzene	ND	0.500									
Tetrachloroethene	ND	0.500									
Toluene	ND	0.500									
trans-1,2-Dichloroethene	ND	0.500									
trans-1,3-Dichloropropene	ND	0.500									
Trichloroethene	ND	0.500									
Trichlorofluoromethane	ND	0.500									

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904074
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19276

Sample ID: **MB-R19276** SampType: **MBLK** TestCode: **8260B_W** Units: **µg/L** Prep Date: **4/17/2009** RunNo: **19276**
Client ID: **ZZZZZ** Batch ID: **R19276** TestNo: **SW8260B** Analysis Date: **4/17/2009** SeqNo: **278322**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	ND	0.500									
Xylenes, Total	ND	1.50									
Surr: Dibromofluoromethane	10.65	0	11.36	0	93.8	61.2	131				
Surr: 4-Bromofluorobenzene	11.69	0	11.36	0	103	64.1	120				
Surr: Toluene-d8	11.42	0	11.36	0	101	75.1	127				

Sample ID: **LCS-R19276** SampType: **LCS** TestCode: **8260B_W** Units: **µg/L** Prep Date: **4/16/2009** RunNo: **19276**
Client ID: **ZZZZZ** Batch ID: **R19276** TestNo: **SW8260B** Analysis Date: **4/16/2009** SeqNo: **278323**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	14.15	1.00	17.04	0	83.0	61.4	129				
Benzene	15.62	0.500	17.04	0	91.7	66.9	140				
Chlorobenzene	14.93	0.500	17.04	0	87.6	73.9	137				
Toluene	14.71	0.500	17.04	0	86.3	76.6	123				
Trichloroethene	14.09	0.500	17.04	0	82.7	69.3	144				
Surr: Dibromofluoromethane	11.68	0	11.36	0	103	61.2	131				
Surr: 4-Bromofluorobenzene	11.79	0	11.36	0	104	64.1	120				
Surr: Toluene-d8	12.40	0	11.36	0	109	75.1	127				

Sample ID: **LCSD-R19276** SampType: **LCSD** TestCode: **8260B_W** Units: **µg/L** Prep Date: **4/16/2009** RunNo: **19276**
Client ID: **ZZZZZ** Batch ID: **R19276** TestNo: **SW8260B** Analysis Date: **4/16/2009** SeqNo: **278328**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	15.74	1.00	17.04	0	92.4	61.4	129	14.15	10.6	20	
Benzene	16.98	0.500	17.04	0	99.6	66.9	140	15.62	8.34	20	
Chlorobenzene	15.64	0.500	17.04	0	91.8	73.9	137	14.93	4.65	20	
Toluene	15.52	0.500	17.04	0	91.1	76.6	123	14.71	5.36	20	
Trichloroethene	15.48	0.500	17.04	0	90.8	69.3	144	14.09	9.40	20	
Surr: Dibromofluoromethane	11.99	0	11.36	0	106	61.2	131	0	0	0	
Surr: 4-Bromofluorobenzene	11.72	0	11.36	0	103	64.1	120	0	0	0	
Surr: Toluene-d8	12.65	0	11.36	0	111	75.1	127	0	0	0	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904074
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19286

Sample ID: **WP090415A-MB** SampType: **MBLK** TestCode: **8081W** Units: **µg/L** Prep Date: **4/15/2009** RunNo: **19286**
Client ID: **ZZZZZ** Batch ID: **R19286** TestNo: **SW8081A** Analysis Date: **4/16/2009** SeqNo: **278455**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDD	ND	0.0200									
4,4´-DDE	ND	0.0200									
4,4´-DDT	ND	0.0200									
Aldrin	ND	0.0200									
alpha-BHC	ND	0.0200									
alpha-Chlordane	ND	0.0200									
beta-BHC	ND	0.0200									
Chlordane	ND	0.250									
delta-BHC	ND	0.0200									
Dieldrin	ND	0.0200									
Endosulfan I	ND	0.0200									
Endosulfan II	ND	0.0200									
Endosulfan sulfate	ND	0.0200									
Endrin	ND	0.0200									
Endrin aldehyde	ND	0.0200									
Endrin ketone	ND	0.0200									
gamma-BHC	ND	0.0200									
gamma-Chlordane	ND	0.0200									
Heptachlor	ND	0.0200									
Heptachlor epoxide	ND	0.0200									
Methoxychlor	ND	0.0500									
Toxaphene	ND	1.00									
Surr: Decachlorobiphenyl	0.2286	0	0.25	0	91.4	52	116				
Surr: Tetrachloro-m-xylene	0.1662	0	0.25	0	66.5	40.3	118				

Sample ID: **WP090415A-LCS** SampType: **LCS** TestCode: **8081W** Units: **µg/L** Prep Date: **4/15/2009** RunNo: **19286**
Client ID: **ZZZZZ** Batch ID: **R19286** TestNo: **SW8081A** Analysis Date: **4/16/2009** SeqNo: **278456**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDT	0.1063	0.0200	0.1	0	106	58.4	126				
Aldrin	0.06929	0.0200	0.1	0	69.3	55.3	101				

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904074
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19286

Sample ID: **WP090415A-LCS** SampType: **LCS** TestCode: **8081W** Units: **µg/L** Prep Date: **4/15/2009** RunNo: **19286**
Client ID: **ZZZZZ** Batch ID: **R19286** TestNo: **SW8081A** Analysis Date: **4/16/2009** SeqNo: **278456**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dieldrin	0.09827	0.0200	0.1	0	98.3	60.3	116				
Endrin	0.1086	0.0200	0.1	0	109	60.4	134				
gamma-BHC	0.1041	0.0200	0.1	0	104	61.6	135				
Heptachlor	0.07503	0.0200	0.1	0	75.0	60	97.8				
Surr: Decachlorobiphenyl	0.2740	0	0.35	0	78.3	52	116				
Surr: Tetrachloro-m-xylene	0.2018	0	0.35	0	57.6	40.3	118				

Sample ID: **WP090415A-LCSD** SampType: **LCSD** TestCode: **8081W** Units: **µg/L** Prep Date: **4/15/2009** RunNo: **19286**
Client ID: **ZZZZZ** Batch ID: **R19286** TestNo: **SW8081A** Analysis Date: **4/16/2009** SeqNo: **278457**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDT	0.1116	0.0200	0.1	0	112	58.4	126	0.1063	4.86	35	
Aldrin	0.07522	0.0200	0.1	0	75.2	55.3	101	0.06929	8.21	35	
Dieldrin	0.1025	0.0200	0.1	0	102	60.3	116	0.09827	4.18	35	
Endrin	0.1138	0.0200	0.1	0	114	60.4	134	0.1086	4.70	35	
gamma-BHC	0.08359	0.0200	0.1	0	83.6	61.6	135	0.1041	21.9	35	
Heptachlor	0.08458	0.0200	0.1	0	84.6	60	97.8	0.07503	12.0	35	
Surr: Decachlorobiphenyl	0.2849	0	0.35	0	81.4	52	116	0	0	0	
Surr: Tetrachloro-m-xylene	0.2401	0	0.35	0	68.6	40.3	118	0	0	0	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904074
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19291

Sample ID: **WD090417A-MB** SampType: **MBLK** TestCode: **TPHDO_W** Units: **mg/L** Prep Date: **4/17/2009** RunNo: **19291**
Client ID: **ZZZZZ** Batch ID: **R19291** TestNo: **SW8015B** Analysis Date: **4/17/2009** SeqNo: **278585**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	ND	0.100									
TPH (Motor Oil)	ND	0.200									
Surr: Pentacosane	0.09700	0	0.1	0	97.0	57.9	125				

Sample ID: **WD090417A-LCS** SampType: **LCS** TestCode: **TPHDO_W** Units: **mg/L** Prep Date: **4/17/2009** RunNo: **19291**
Client ID: **ZZZZZ** Batch ID: **R19291** TestNo: **SW8015B** Analysis Date: **4/17/2009** SeqNo: **278586**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	0.7320	0.100	1	0	73.2	50.3	125				
Surr: Pentacosane	0.09100	0	0.1	0	91.0	57.9	125				

Sample ID: **WD090417A-LCSD** SampType: **LCSD** TestCode: **TPHDO_W** Units: **mg/L** Prep Date: **4/17/2009** RunNo: **19291**
Client ID: **ZZZZZ** Batch ID: **R19291** TestNo: **SW8015B** Analysis Date: **4/17/2009** SeqNo: **278587**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	0.7280	0.100	1	0	72.8	50.3	125	0.732	0.548	30	
Surr: Pentacosane	0.1030	0	0.1	0	103	57.9	125	0	0	0	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0904074

Company Name: VRS San Jose	Location of Sampling: 101 Ave Lanes
Address:	Purpose:
City: State: Zip Code:	Special Instructions / Comments:
Telephone: FAX:	
REPORT TO: Patrick Wolz SAMPLER: Eduardo Ortiz	P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Working Days ☐ 3 Working Days ☐ Noon - Nxt Day ☐ 7 Working Days ☐ 2 Working Days ☐ 2 - 8 Hours ☒ 5 Working Days ☐ 1 Working Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☐ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	VOCs EPA 8260B	TPH gas + BTEX oxygenates	TPH diesel motor oil	Pesticides	PCBs	CAM 17 + pH		Lead	Asbestos	TORRENT'S SAMPLE I.D.
1. N-3-1@1.0	04/13/09 0040	S	1	sleeve								X	X	-007A
2. @1.5			1									X	X	-008A
3. @2.0			1									X	X	-009A
4. @3.0			1									X	X	-010A
5. N-3-2@0.5	04/13/09 0040											X		-011A
6. @1.0												X		-012A
7. @1.5												X		-013A
8. @2.0												X		-014A
9. @3.0												X		-015A
10. N-3-3@0.5	04/13/09 0030	S										X		-016A

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1								
2								

Were Samples Received in Good Condition? ☐ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment _____ Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrange -ments are made.

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date: _____

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0904074

Company Name: VRS San Jose	Location of Sampling: 101 Ave Lanes
Address:	Purpose:
City: State: Zip Code:	Special Instructions / Comments:
Telephone: FAX:	
REPORT TO: Patrick Wolz SAMPLER: Eduardo Ortiz	P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Working Days ☐ 3 Working Days ☐ Noon - Nxt Day ☐ 7 Working Days ☐ 2 Working Days ☐ 2 - 8 Hours ☒ 5 Working Days ☐ 1 Working Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☐ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

	CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	VOCs EPA 8260B	TPH gas + BTEX oxygenates	TPH diesel Motor oil	Pesticides	PCBs	CAM 17 + TPH		Lead	Asbestos	TORRENT'S SAMPLE I.D.
1.	N-3-3 @ 1.0	04/13/09 0930	S	1	sleeve								X		-017A
2.	@ 1.5		S	1									X		-018A
3.	@ 2.0			1									X		-019A
4.	@ 3.0			1									X		-020A
5.	N-3-12 @ 0.5	04/13/09 2315	S	1	sleeve								X		-021A
6.	@ 1.0			1									X		-022A
7.	@ 1.5			1									X		-023A
8.	@ 2.0			1									X		-024A
9.	@ 3.0			1									X		-025A
10.	N-3-11 @ 0.5	04/12/09 2320		1	sleeve								X		-026A

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1								
2								

Were Samples Received in Good Condition? ☐ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment _____ Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrange -ments are made.

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date: _____

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0904074

Company Name: VRS San Jose
Address:
City: State: Zip Code:
Telephone: FAX:
REPORT TO: Patrick Walz SAMPLER: Eduardo Ortiz

Location of Sampling: 101 Ave Lanes
Purpose:
Special Instructions / Comments:
P.O. #: EMAIL:

TURNAROUND TIME:
- [ ] 10 Working Days
- [ ] 7 Working Days
- [x] 5 Working Days
- [ ] 3 Working Days
- [ ] 2 Working Days
- [ ] 1 Working Day
- [ ] Noon - Nxt Day
- [ ] 2 - 8 Hours
- [ ] Other

SAMPLE TYPE:
- [ ] Storm Water
- [ ] Waste Water
- [ ] Ground Water
- [ ] Soil
- [ ] Air
- [ ] Other

REPORT FORMAT:
- [ ] QC Level IV
- [ ] EDF
- [ ] Excel / EDD

ANALYSIS REQUESTED

CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	VOCs EPA 8260B	TPH Gas + BTEX or Gasoline	TPH diesel Total oil	Pesticides	PCBs	CAM 17 + pH		Lead	Asbestos	TORRENT'S SAMPLE I.D.
1. S-3-11-GW	04/12/09 2155	GW	1	250						X				-027A -006A
2. |	|	|	3	VOC	X	X								↓ ↓
3. S-3-13-GW	04/12/09 2240	GW	3	VOC	X									-028A -027A
4. S-3-14-GW	04/12/09 2300	GW	3	VOA	X									-029A -028A
5. N-2-5 @0.5	04/13/09 0150	S	1	sleeve								X		-030A -029A
6. | @1.0	|	|	1	|								X		-031A -030A
7. | @1.5	|	|	1	|								X		-032A -031A
8. | @2.0	|	|	1	|								X		-033A -032A
9. | @3.0	|	|	1	|								X		-034A -033A
10. N-3-1 @0.5	04/13/09 0040	S	1	sleeve								X	X	-035A -034A

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1			04/13/09					4-13-09
2								

Were Samples Received in Good Condition? [ ] Yes [ ] NO Samples on Ice? [ ] Yes [ ] NO Method of Shipment _____ Sample seals intact? [ ] Yes [ ] NO [x] N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Page 4 of 4

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date: _____

Torrent
LABORATORY, INC.

April 23, 2009

Patrick Walz
URS Corporation, San Jose
55 South Market St., Suite 1500
San Jose, CA 95113

TEL: (408) 297-9585
FAX (408) 297-6962

RE: 101 Aux Lanes

Order No.: 0904073

Dear Patrick Walz:

Torrent Laboratory, Inc. received 46 samples on 4/13/2009 for the analyses presented in the following report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.
Reported data is applicable for only the samples received as part of the order number referenced above.

Torrent Laboratory, Inc, is certified by the State of California, ELAP #1991. If you have any questions regarding these tests results, please feel free to contact the Project Management Team at (408)263-5258;ext: 204.

Sincerely,

Laboratory Director

04-23-09
Date

Patti Sandrock
QA Officer

Torrent Laboratory, Inc. **Date:** *23-Apr-09*

CLIENT: URS Corporation, San Jose
Project: 101 Aux Lanes
Lab Order: 0904073

CASE NARRATIVE

Note: although pH was measured upon laboratory receipt, the samples were received outside of the recommended holding time (24 hours from collection).

TORRENT LABORATORY, INC.

483 Sinclair Frontage Road • Milpitas, CA • Phone: (408) 263-5258 • Fax: (408) 263-8293

Visit us at www.torrentlab.com email: analysis@torrentlab.com

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: S-3-2 @ 2.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 9:25:00 PM

Lab Sample ID: 0904073-001
Date Prepared: 4/15/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/15/2009	1	1	1.0	32	mg/Kg	5101

Client Sample ID: S-3-2 @ 3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 9:25:00 PM

Lab Sample ID: 0904073-002
Date Prepared: 4/15/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/15/2009	1	1	1.0	50	mg/Kg	5101

Client Sample ID: S-3-12 @ 0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:25:00 PM

Lab Sample ID: 0904073-003
Date Prepared: 4/15/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/15/2009	1	1	1.0	34	mg/Kg	5101

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for:	Patrick Walz	**Date Received:**	4/13/2009
	URS Corporation, San Jose	**Date Reported:**	4/23/2009

Client Sample ID:	S-3-12 @ 1.0	**Lab Sample ID:**	0904073-004
Sample Location:	101 Aux Lanes	**Date Prepared:**	4/15/2009
Sample Matrix:	SOIL		
Date/Time Sampled	4/12/2009 10:25:00 PM		

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/15/2009	1	1	1.0	35	mg/Kg	5101

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

1,1,1,2-Tetrachloroethane	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
1,1,1-Trichloroethane	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
1,1,2,2-Tetrachloroethane	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
1,1,2-Trichloroethane	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
1,1-Dichloroethane	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
1,1-Dichloroethene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
1,1-Dichloropropene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
1,2,3-Trichlorobenzene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
1,2,3-Trichloropropane	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
1,2,4-Trichlorobenzene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
1,2,4-Trimethylbenzene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
1,2-Dibromo-3-chloropropane	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
1,2-Dibromoethane (EDB)	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
1,2-Dichlorobenzene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
1,2-Dichloroethane (EDC)	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
1,2-Dichloropropane	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
1,3,5-Trimethylbenzene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
1,3-Dichlorobenzene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
1,4-Dichlorobenzene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
2,2-Dichloropropane	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
2-Chloroethyl vinyl ether	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
2-Chlorotoluene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
4-Chlorotoluene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
4-Isopropyltoluene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Benzene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Bromobenzene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Bromochloromethane	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Bromodichloromethane	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Bromoform	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Bromomethane	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Carbon tetrachloride	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Chlorobenzene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Chloroform	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Chloromethane	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
cis-1,2-Dichloroethene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
cis-1,3-Dichloropropene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Dibromochloromethane	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Dibromomethane	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Dichlorodifluoromethane	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Ethyl tert-butyl ether (ETBE)	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Ethylbenzene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Freon-113	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Hexachlorobutadiene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Isopropyl Ether	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Isopropylbenzene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Methyl tert-butyl ether (MTBE)	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Methylene chloride	SW8260B	4/16/2009	50	1	50	ND	µg/Kg	R19277
Naphthalene	SW8260B	4/16/2009	20	1	20	ND	µg/Kg	R19277
n-Butylbenzene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
n-Propylbenzene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
sec-Butylbenzene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Styrene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
t-Butyl alcohol (t-Butanol)	SW8260B	4/16/2009	50	1	50	ND	µg/Kg	R19277

tert-Amyl methyl ether (TAME)	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
tert-Butylbenzene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Tetrachloroethene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Toluene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
trans-1,2-Dichloroethene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
trans-1,3-Dichloropropene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Trichloroethene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Trichlorofluoromethane	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Vinyl chloride	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Xylenes, Total	SW8260B	4/16/2009	15	1	15	ND	µg/Kg	R19277
Surr: 4-Bromofluorobenzene	SW8260B	4/16/2009	0	1	55.8-141	99.5	%REC	R19277
Surr: Dibromofluoromethane	SW8260B	4/16/2009	0	1	59.8-148	97.8	%REC	R19277
Surr: Toluene-d8	SW8260B	4/16/2009	0	1	55.2-133	92.2	%REC	R19277

Report prepared for:	Patrick Walz	**Date Received:**	4/13/2009
	URS Corporation, San Jose	**Date Reported:**	4/23/2009

Client Sample ID:	S-3-12 @ 1.5	**Lab Sample ID:**	0904073-005
Sample Location:	101 Aux Lanes	**Date Prepared:**	4/15/2009
Sample Matrix:	SOIL		
Date/Time Sampled	4/12/2009 10:25:00 PM		

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/15/2009	1	1	1.0	4.8	mg/Kg	5101

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

1,1,1,2-Tetrachloroethane	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
1,1,1-Trichloroethane	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
1,1,2,2-Tetrachloroethane	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
1,1,2-Trichloroethane	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
1,1-Dichloroethane	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
1,1-Dichloroethene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
1,1-Dichloropropene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
1,2,3-Trichlorobenzene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
1,2,3-Trichloropropane	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
1,2,4-Trichlorobenzene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
1,2,4-Trimethylbenzene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
1,2-Dibromo-3-chloropropane	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
1,2-Dibromoethane (EDB)	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
1,2-Dichlorobenzene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
1,2-Dichloroethane (EDC)	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
1,2-Dichloropropane	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
1,3,5-Trimethylbenzene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
1,3-Dichlorobenzene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
1,4-Dichlorobenzene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
2,2-Dichloropropane	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
2-Chloroethyl vinyl ether	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
2-Chlorotoluene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
4-Chlorotoluene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
4-Isopropyltoluene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Benzene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Bromobenzene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Bromochloromethane	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Bromodichloromethane	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Bromoform	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Bromomethane	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Carbon tetrachloride	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Chlorobenzene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Chloroform	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Chloromethane	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
cis-1,2-Dichloroethene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
cis-1,3-Dichloropropene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Dibromochloromethane	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Dibromomethane	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Dichlorodifluoromethane	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Ethyl tert-butyl ether (ETBE)	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Ethylbenzene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Freon-113	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Hexachlorobutadiene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Isopropyl Ether	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Isopropylbenzene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Methyl tert-butyl ether (MTBE)	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Methylene chloride	SW8260B	4/16/2009	50	1	50	ND	µg/Kg	R19277
Naphthalene	SW8260B	4/16/2009	20	1	20	ND	µg/Kg	R19277
n-Butylbenzene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
n-Propylbenzene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
sec-Butylbenzene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Styrene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
t-Butyl alcohol (t-Butanol)	SW8260B	4/16/2009	50	1	50	ND	µg/Kg	R19277

tert-Amyl methyl ether (TAME)	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
tert-Butylbenzene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Tetrachloroethene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Toluene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
trans-1,2-Dichloroethene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
trans-1,3-Dichloropropene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Trichloroethene	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Trichlorofluoromethane	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Vinyl chloride	SW8260B	4/16/2009	10	1	10	ND	µg/Kg	R19277
Xylenes, Total	SW8260B	4/16/2009	15	1	15	ND	µg/Kg	R19277
Surr: 4-Bromofluorobenzene	SW8260B	4/16/2009	0	1	55.8-141	101	%REC	R19277
Surr: Dibromofluoromethane	SW8260B	4/16/2009	0	1	59.8-148	93.7	%REC	R19277
Surr: Toluene-d8	SW8260B	4/16/2009	0	1	55.2-133	95.3	%REC	R19277

Client Sample ID: S-3-12 @ 2.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:25:00 PM

Lab Sample ID: 0904073-006
Date Prepared: 4/15/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/15/2009	1	1	1.0	5.8	mg/Kg	5101

Client Sample ID: S-3-12 @ 3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:25:00 PM

Lab Sample ID: 0904073-007
Date Prepared: 4/15/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/15/2009	1	1	1.0	3.8	mg/Kg	5101

Client Sample ID: S-3-12 @ 0.5-D
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:25:00 PM

Lab Sample ID: 0904073-008
Date Prepared: 4/15/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/15/2009	1	1	1.0	59	mg/Kg	5101

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: S-3-12 @ 1.0-D
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:25:00 PM

Lab Sample ID: 0904073-009
Date Prepared: 4/15/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/15/2009	1	1	1.0	4.4	mg/Kg	5101

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

1,1,1,2-Tetrachloroethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,1,1-Trichloroethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,1,2,2-Tetrachloroethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,1,2-Trichloroethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,1-Dichloroethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,1-Dichloroethene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,1-Dichloropropene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2,3-Trichlorobenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2,3-Trichloropropane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2,4-Trichlorobenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2,4-Trimethylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2-Dibromo-3-chloropropane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2-Dibromoethane (EDB)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2-Dichlorobenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2-Dichloroethane (EDC)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2-Dichloropropane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,3,5-Trimethylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,3-Dichlorobenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,4-Dichlorobenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
2,2-Dichloropropane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
2-Chloroethyl vinyl ether	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
2-Chlorotoluene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
4-Chlorotoluene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
4-Isopropyltoluene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Benzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Bromobenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Bromochloromethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Bromodichloromethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Bromoform	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Bromomethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Carbon tetrachloride	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Chlorobenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Chloroform	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Chloromethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
cis-1,2-Dichloroethene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
cis-1,3-Dichloropropene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Dibromochloromethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Dibromomethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Dichlorodifluoromethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Ethyl tert-butyl ether (ETBE)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Ethylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Freon-113	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Hexachlorobutadiene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Isopropyl Ether	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Isopropylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Methyl tert-butyl ether (MTBE)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Methylene chloride	SW8260B	4/17/2009	50	1	50	ND	µg/Kg	R19277
Naphthalene	SW8260B	4/17/2009	20	1	20	ND	µg/Kg	R19277
n-Butylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
n-Propylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
sec-Butylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Styrene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
t-Butyl alcohol (t-Butanol)	SW8260B	4/17/2009	50	1	50	ND	µg/Kg	R19277

tert-Amyl methyl ether (TAME)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
tert-Butylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Tetrachloroethene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Toluene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
trans-1,2-Dichloroethene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
trans-1,3-Dichloropropene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Trichloroethene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Trichlorofluoromethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Vinyl chloride	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Xylenes, Total	SW8260B	4/17/2009	15	1	15	ND	µg/Kg	R19277
Surr: 4-Bromofluorobenzene	SW8260B	4/17/2009	0	1	55.8-141	99.7	%REC	R19277
Surr: Dibromofluoromethane	SW8260B	4/17/2009	0	1	59.8-148	110	%REC	R19277
Surr: Toluene-d8	SW8260B	4/17/2009	0	1	55.2-133	91.3	%REC	R19277

Report prepared for:	Patrick Walz	**Date Received:**	4/13/2009
	URS Corporation, San Jose	**Date Reported:**	4/23/2009

Client Sample ID:	S-3-12 @ 1.5-D	**Lab Sample ID:**	0904073-010
Sample Location:	101 Aux Lanes	**Date Prepared:**	4/15/2009
Sample Matrix:	SOIL		
Date/Time Sampled	4/12/2009 10:25:00 PM		

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/15/2009	1	1	1.0	5.0	mg/Kg	5101

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

1,1,1,2-Tetrachloroethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,1,1-Trichloroethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,1,2,2-Tetrachloroethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,1,2-Trichloroethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,1-Dichloroethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,1-Dichloroethene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,1-Dichloropropene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2,3-Trichlorobenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2,3-Trichloropropane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2,4-Trichlorobenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2,4-Trimethylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2-Dibromo-3-chloropropane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2-Dibromoethane (EDB)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2-Dichlorobenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2-Dichloroethane (EDC)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2-Dichloropropane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,3,5-Trimethylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,3-Dichlorobenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,4-Dichlorobenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
2,2-Dichloropropane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
2-Chloroethyl vinyl ether	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
2-Chlorotoluene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
4-Chlorotoluene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
4-Isopropyltoluene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Benzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Bromobenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Bromochloromethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Bromodichloromethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Bromoform	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Bromomethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Carbon tetrachloride	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Chlorobenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Chloroform	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Chloromethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
cis-1,2-Dichloroethene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
cis-1,3-Dichloropropene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Dibromochloromethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Dibromomethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Dichlorodifluoromethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Ethyl tert-butyl ether (ETBE)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Ethylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Freon-113	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Hexachlorobutadiene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Isopropyl Ether	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Isopropylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Methyl tert-butyl ether (MTBE)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Methylene chloride	SW8260B	4/17/2009	50	1	50	ND	µg/Kg	R19277
Naphthalene	SW8260B	4/17/2009	20	1	20	ND	µg/Kg	R19277
n-Butylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
n-Propylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
sec-Butylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Styrene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
t-Butyl alcohol (t-Butanol)	SW8260B	4/17/2009	50	1	50	ND	µg/Kg	R19277

tert-Amyl methyl ether (TAME)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
tert-Butylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Tetrachloroethene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Toluene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
trans-1,2-Dichloroethene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
trans-1,3-Dichloropropene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Trichloroethene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Trichlorofluoromethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Vinyl chloride	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Xylenes, Total	SW8260B	4/17/2009	15	1	15	ND	µg/Kg	R19277
Surr: 4-Bromofluorobenzene	SW8260B	4/17/2009	0	1	55.8-141	99.6	%REC	R19277
Surr: Dibromofluoromethane	SW8260B	4/17/2009	0	1	59.8-148	97.3	%REC	R19277
Surr: Toluene-d8	SW8260B	4/17/2009	0	1	55.2-133	92.2	%REC	R19277

Client Sample ID: S-3-13 @ 1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:40:00 PM

Lab Sample ID: 0904073-011
Date Prepared: 4/15/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/15/2009	1	1	1.0	26	mg/Kg	5101

Client Sample ID: S-3-13 @ 1.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:40:00 PM

Lab Sample ID: 0904073-012
Date Prepared: 4/15/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/15/2009	1	1	1.0	33	mg/Kg	5101

Client Sample ID: S-3-13 @ 2.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:40:00 PM

Lab Sample ID: 0904073-013
Date Prepared: 4/15/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/15/2009	1	1	1.0	3.6	mg/Kg	5101

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: S-3-13 @ 3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:40:00 PM

Lab Sample ID: 0904073-014
Date Prepared: 4/15/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/15/2009	1	1	1.0	39	mg/Kg	5101

Client Sample ID: S-3-14 @ 0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:50:00 PM

Lab Sample ID: 0904073-015
Date Prepared: 4/15/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/15/2009	1	1	1.0	64	mg/Kg	5101

Client Sample ID: S-3-14 @ 1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:50:00 PM

Lab Sample ID: 0904073-016
Date Prepared: 4/15/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/15/2009	1	1	1.0	58	mg/Kg	5101

Client Sample ID: S-3-14 @ 1.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:50:00 PM

Lab Sample ID: 0904073-017
Date Prepared: 4/15/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/15/2009	1	1	1.0	61	mg/Kg	5101

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: S-3-14 @ 2.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:50:00 PM

Lab Sample ID: 0904073-018
Date Prepared: 4/15/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/15/2009	1	1	1.0	64	mg/Kg	5101

Client Sample ID: S-3-14 @ 3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:50:00 PM

Lab Sample ID: 0904073-019
Date Prepared: 4/15/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/15/2009	1	1	1.0	55	mg/Kg	5101

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: S-3-11 @ 1.0-D
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:05:00 PM

Lab Sample ID: 0904073-021
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Arsenic	SW6010B	4/17/2009	1.7	1	1.7	1.9	mg/Kg	5108
Barium	SW6010B	4/17/2009	5	1	5.0	90	mg/Kg	5108
Beryllium	SW6010B	4/17/2009	2	1	2.0	ND	mg/Kg	5108
Cadmium	SW6010B	4/17/2009	1	1	1.0	ND	mg/Kg	5108
Chromium	SW6010B	4/17/2009	5	1	5.0	46	mg/Kg	5108
Cobalt	SW6010B	4/17/2009	5	1	5.0	16	mg/Kg	5108
Copper	SW6010B	4/17/2009	5	1	5.0	41	mg/Kg	5108
Lead	SW6010B	4/17/2009	1	1	1.0	260	mg/Kg	5108
Molybdenum	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Nickel	SW6010B	4/17/2009	5	1	5.0	37	mg/Kg	5108
Selenium	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Silver	SW6010B	4/17/2009	1	1	1.0	2.0	mg/Kg	5108
Thallium	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Vanadium	SW6010B	4/17/2009	5	1	5.0	46	mg/Kg	5108
Zinc	SW6010B	4/17/2009	5	1	5.0	100	mg/Kg	5108
Mercury	SW7471A	4/17/2009	0.1	1	0.10	ND	mg/Kg	5105
Benzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Diisopropyl ether (DIPE)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Ethyl tert-butyl ether (ETBE)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Ethylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Methyl tert-butyl ether (MTBE)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
t-Butyl alcohol (t-Butanol)	SW8260B	4/17/2009	50	1	50	ND	µg/Kg	R19277
tert-Amyl methyl ether (TAME)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Toluene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Xylenes, Total	SW8260B	4/17/2009	15	1	15	ND	µg/Kg	R19277
Surr: 4-Bromofluorobenzene	SW8260B	4/17/2009	0	1	55.8-141	96.9	%REC	R19277
Surr: Dibromofluoromethane	SW8260B	4/17/2009	0	1	59.8-148	96.8	%REC	R19277
Surr: Toluene-d8	SW8260B	4/17/2009	0	1	55.2-133	96.3	%REC	R19277
TPH (Gasoline)	SW8260B(TPH)	4/18/2009	100	1	100	ND	µg/Kg	T19277
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	4/18/2009	0	1	56.9-133	72.0	%REC	T19277
pH	SW9045C	4/15/2009	0.05	1	0.0500	8.57	pH Units	R19257

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: S-3-11 @ 1.5-D
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:05:00 PM

Lab Sample ID: 0904073-022
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Arsenic	SW6010B	4/17/2009	1.7	1	1.7	2.8	mg/Kg	5108
Barium	SW6010B	4/17/2009	5	1	5.0	210	mg/Kg	5108
Beryllium	SW6010B	4/17/2009	2	1	2.0	ND	mg/Kg	5108
Cadmium	SW6010B	4/17/2009	1	1	1.0	ND	mg/Kg	5108
Chromium	SW6010B	4/17/2009	5	1	5.0	52	mg/Kg	5108
Cobalt	SW6010B	4/17/2009	5	1	5.0	13	mg/Kg	5108
Copper	SW6010B	4/17/2009	5	1	5.0	38	mg/Kg	5108
Lead	SW6010B	4/17/2009	1	1	1.0	220	mg/Kg	5108
Molybdenum	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Nickel	SW6010B	4/17/2009	5	1	5.0	52	mg/Kg	5108
Selenium	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Silver	SW6010B	4/17/2009	1	1	1.0	ND	mg/Kg	5108
Thallium	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Vanadium	SW6010B	4/17/2009	5	1	5.0	39	mg/Kg	5108
Zinc	SW6010B	4/17/2009	5	1	5.0	100	mg/Kg	5108
Mercury	SW7471A	4/17/2009	0.1	1	0.10	ND	mg/Kg	5105
Benzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Diisopropyl ether (DIPE)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Ethyl tert-butyl ether (ETBE)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Ethylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Methyl tert-butyl ether (MTBE)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
t-Butyl alcohol (t-Butanol)	SW8260B	4/17/2009	50	1	50	ND	µg/Kg	R19277
tert-Amyl methyl ether (TAME)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Toluene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Xylenes, Total	SW8260B	4/17/2009	15	1	15	ND	µg/Kg	R19277
Surr: 4-Bromofluorobenzene	SW8260B	4/17/2009	0	1	55.8-141	107	%REC	R19277
Surr: Dibromofluoromethane	SW8260B	4/17/2009	0	1	59.8-148	105	%REC	R19277
Surr: Toluene-d8	SW8260B	4/17/2009	0	1	55.2-133	102	%REC	R19277
TPH (Gasoline)	SW8260B(TPH)	4/17/2009	100	1	100	ND	µg/Kg	G19277
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	4/17/2009	0	1	56.9-133	28.0	%REC	G19277

Note: S- Outlying surrogate recovery observed. A duplicate analysis was performed with similar result indicated a matrix effect.

pH	SW9045C	4/15/2009	0.05	1	0.0500	7.86	pH Units	R19257

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: S-3-11 @ 2.0-D
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:05:00 PM

Lab Sample ID: 0904073-023
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Arsenic	SW6010B	4/17/2009	1.7	1	1.7	3.4	mg/Kg	5108
Barium	SW6010B	4/17/2009	5	1	5.0	220	mg/Kg	5108
Beryllium	SW6010B	4/17/2009	2	1	2.0	ND	mg/Kg	5108
Cadmium	SW6010B	4/17/2009	1	1	1.0	ND	mg/Kg	5108
Chromium	SW6010B	4/17/2009	5	1	5.0	50	mg/Kg	5108
Cobalt	SW6010B	4/17/2009	5	1	5.0	13	mg/Kg	5108
Copper	SW6010B	4/17/2009	5	1	5.0	33	mg/Kg	5108
Lead	SW6010B	4/17/2009	1	1	1.0	52	mg/Kg	5108
Molybdenum	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Nickel	SW6010B	4/17/2009	5	1	5.0	52	mg/Kg	5108
Selenium	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Silver	SW6010B	4/17/2009	1	1	1.0	ND	mg/Kg	5108
Thallium	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Vanadium	SW6010B	4/17/2009	5	1	5.0	40	mg/Kg	5108
Zinc	SW6010B	4/17/2009	5	1	5.0	57	mg/Kg	5108
Mercury	SW7471A	4/17/2009	0.1	1	0.10	ND	mg/Kg	5105
Benzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Diisopropyl ether (DIPE)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Ethyl tert-butyl ether (ETBE)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Ethylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Methyl tert-butyl ether (MTBE)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
t-Butyl alcohol (t-Butanol)	SW8260B	4/17/2009	50	1	50	ND	µg/Kg	R19277
tert-Amyl methyl ether (TAME)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Toluene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Xylenes, Total	SW8260B	4/17/2009	15	1	15	ND	µg/Kg	R19277
Surr: 4-Bromofluorobenzene	SW8260B	4/17/2009	0	1	55.8-141	107	%REC	R19277
Surr: Dibromofluoromethane	SW8260B	4/17/2009	0	1	59.8-148	111	%REC	R19277
Surr: Toluene-d8	SW8260B	4/17/2009	0	1	55.2-133	96.1	%REC	R19277
TPH (Gasoline)	SW8260B(TPH)	4/17/2009	100	1	100	ND	µg/Kg	G19277
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	4/17/2009	0	1	56.9-133	34.0	%REC	G19277

Note: S- Outlying surrogate recovery observed. A duplicate analysis was performed with similar result indicated a matrix effect.

pH	SW9045C	4/15/2009	0.05	1	0.0500	7.80	pH Units	R19257

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: S-3-11 @ 3.0-D
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:05:00 PM

Lab Sample ID: 0904073-024
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Arsenic	SW6010B	4/17/2009	1.7	1	1.7	3.8	mg/Kg	5108
Barium	SW6010B	4/17/2009	5	1	5.0	240	mg/Kg	5108
Beryllium	SW6010B	4/17/2009	2	1	2.0	ND	mg/Kg	5108
Cadmium	SW6010B	4/17/2009	1	1	1.0	ND	mg/Kg	5108
Chromium	SW6010B	4/17/2009	5	1	5.0	54	mg/Kg	5108
Cobalt	SW6010B	4/17/2009	5	1	5.0	14	mg/Kg	5108
Copper	SW6010B	4/17/2009	5	1	5.0	31	mg/Kg	5108
Lead	SW6010B	4/17/2009	1	1	1.0	19	mg/Kg	5108
Molybdenum	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Nickel	SW6010B	4/17/2009	5	1	5.0	56	mg/Kg	5108
Selenium	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Silver	SW6010B	4/17/2009	1	1	1.0	ND	mg/Kg	5108
Thallium	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Vanadium	SW6010B	4/17/2009	5	1	5.0	41	mg/Kg	5108
Zinc	SW6010B	4/17/2009	5	1	5.0	50	mg/Kg	5108
Mercury	SW7471A	4/17/2009	0.1	1	0.10	ND	mg/Kg	5105
Benzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Diisopropyl ether (DIPE)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Ethyl tert-butyl ether (ETBE)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Ethylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Methyl tert-butyl ether (MTBE)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
t-Butyl alcohol (t-Butanol)	SW8260B	4/17/2009	50	1	50	ND	µg/Kg	R19277
tert-Amyl methyl ether (TAME)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Toluene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Xylenes, Total	SW8260B	4/17/2009	15	1	15	ND	µg/Kg	R19277
Surr: 4-Bromofluorobenzene	SW8260B	4/17/2009	0	1	55.8-141	113	%REC	R19277
Surr: Dibromofluoromethane	SW8260B	4/17/2009	0	1	59.8-148	113	%REC	R19277
Surr: Toluene-d8	SW8260B	4/17/2009	0	1	55.2-133	112	%REC	R19277
TPH (Gasoline)	SW8260B(TPH)	4/17/2009	100	1	100	ND	µg/Kg	G19277
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	4/17/2009	0	1	56.9-133	24.0	%REC	G19277

Note: S- Outlying surrogate recovery observed. A duplicate analysis was performed with similar result indicated a matrix effect.

pH	SW9045C	4/15/2009	0.05	1	0.0500	7.76	pH Units	R19257

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-3--8 @ 0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 11:35:00 PM

Lab Sample ID: 0904073-025
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	62	mg/Kg	5108

Client Sample ID: N-3-8 @ 1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 11:35:00 PM

Lab Sample ID: 0904073-026
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	5.6	mg/Kg	5108

Client Sample ID: N-3-8 @ 1.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 11:35:00 PM

Lab Sample ID: 0904073-027
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	6.4	mg/Kg	5108

Client Sample ID: N-3-8 @ 2.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 11:35:00 PM

Lab Sample ID: 0904073-028
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	5.8	mg/Kg	5108

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-3-8 @ 3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 11:35:00 PM

Lab Sample ID: 0904073-029
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	270	mg/Kg	5108

Client Sample ID: S-3-13 @ 0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:40:00 PM

Lab Sample ID: 0904073-030
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	1400	mg/Kg	5108

Client Sample ID: N-3-11 @ 1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 11:20:00 PM

Lab Sample ID: 0904073-031
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	21	mg/Kg	5108

Client Sample ID: N-3-11 @ 1.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 11:20:00 PM

Lab Sample ID: 0904073-032
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	17	mg/Kg	5108

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-3-11 @ 2.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 11:20:00 PM

Lab Sample ID: 0904073-033
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	20	mg/Kg	5108

Client Sample ID: N-3-11 @ 3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 11:20:00 PM

Lab Sample ID: 0904073-034
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	20	mg/Kg	5108

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: S-3-11 @ 0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 9:50:00 PM

Lab Sample ID: 0904073-035
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Arsenic	SW6010B	4/17/2009	1.7	1	1.7	1.8	mg/Kg	5108
Barium	SW6010B	4/17/2009	5	1	5.0	120	mg/Kg	5108
Beryllium	SW6010B	4/17/2009	2	1	2.0	ND	mg/Kg	5108
Cadmium	SW6010B	4/17/2009	1	1	1.0	ND	mg/Kg	5108
Chromium	SW6010B	4/17/2009	5	1	5.0	37	mg/Kg	5108
Cobalt	SW6010B	4/17/2009	5	1	5.0	11	mg/Kg	5108
Copper	SW6010B	4/17/2009	5	1	5.0	27	mg/Kg	5108
Lead	SW6010B	4/17/2009	1	1	1.0	97	mg/Kg	5108
Molybdenum	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Nickel	SW6010B	4/17/2009	5	1	5.0	37	mg/Kg	5108
Selenium	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Silver	SW6010B	4/17/2009	1	1	1.0	1.5	mg/Kg	5108
Thallium	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Vanadium	SW6010B	4/17/2009	5	1	5.0	39	mg/Kg	5108
Zinc	SW6010B	4/17/2009	5	1	5.0	69	mg/Kg	5108
Mercury	SW7471A	4/17/2009	0.1	1	0.10	ND	mg/Kg	5105
TPH (Diesel)	SW8015B	4/16/2009	2	1	2.00	3.27x	mg/Kg	R19272
TPH (Motor Oil)	SW8015B	4/16/2009	4	1	4.00	42.8	mg/Kg	R19272
Surr: Pentacosane	SW8015B	4/16/2009	0	1	59.7-129	96.2	%REC	R19272

Note:x-Sample chromatogram does not resemble typical diesel pattern (discrete peak present). Hydrocarbons and hydrocarbon peak within the diesel range quantitated as diesel.

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

4,4´-DDD	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
4,4´-DDE	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
4,4´-DDT	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
Aldrin	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
alpha-BHC	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
alpha-Chlordane	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
beta-BHC	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
Chlordane	SW8081A	4/20/2009	20	4	80.0	ND	µg/Kg	R19282
delta-BHC	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
Dieldrin	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
Endosulfan I	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
Endosulfan II	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
Endosulfan sulfate	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
Endrin	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
Endrin aldehyde	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
Endrin ketone	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
gamma-BHC	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
gamma-Chlordane	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
Heptachlor	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
Heptachlor epoxide	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
Methoxychlor	SW8081A	4/20/2009	5	4	20.0	ND	µg/Kg	R19282
Toxaphene	SW8081A	4/20/2009	100	4	400	ND	µg/Kg	R19282
Surr: Decachlorobiphenyl	SW8081A	4/20/2009	0	4	54.6-127	90.7	%REC	R19282
Surr: Tetrachloro-m-xylene	SW8081A	4/20/2009	0	4	54-122	86.9	%REC	R19282

Note: Reporting limits increased due to the nature of the sample matrix (dark color extract).

Aroclor 1016	SW8082	4/17/2009	0.1	1	0.100	ND	mg/Kg	R19284
Aroclor 1221	SW8082	4/17/2009	0.2	1	0.200	ND	mg/Kg	R19284
Aroclor 1232	SW8082	4/17/2009	0.1	1	0.100	ND	mg/Kg	R19284
Aroclor 1242	SW8082	4/17/2009	0.1	1	0.100	ND	mg/Kg	R19284
Aroclor 1248	SW8082	4/17/2009	0.1	1	0.100	ND	mg/Kg	R19284
Aroclor 1254	SW8082	4/17/2009	0.1	1	0.100	ND	mg/Kg	R19284
Aroclor 1260	SW8082	4/17/2009	0.1	1	0.100	ND	mg/Kg	R19284
Surr: Decachlorobiphenyl	SW8082	4/17/2009	0	1	63.7-126	88.3	%REC	R19284
Surr: Tetrachloro-m-xylene	SW8082	4/17/2009	0	1	51.7-128	104	%REC	R19284

pH	SW9045C	4/15/2009	0.05	1	0.0500	7.88	pH Units	R19257

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: S-3-11 @ 1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 9:50:00 PM

Lab Sample ID: 0904073-036
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Arsenic	SW6010B	4/17/2009	1.7	1	1.7	3.0	mg/Kg	5108
Barium	SW6010B	4/17/2009	5	1	5.0	180	mg/Kg	5108
Beryllium	SW6010B	4/17/2009	2	1	2.0	ND	mg/Kg	5108
Cadmium	SW6010B	4/17/2009	1	1	1.0	1.5	mg/Kg	5108
Chromium	SW6010B	4/17/2009	5	1	5.0	49	mg/Kg	5108
Cobalt	SW6010B	4/17/2009	5	1	5.0	14	mg/Kg	5108
Copper	SW6010B	4/17/2009	5	1	5.0	68	mg/Kg	5108
Lead	SW6010B	4/17/2009	1	1	1.0	860	mg/Kg	5108
Molybdenum	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Nickel	SW6010B	4/17/2009	5	1	5.0	51	mg/Kg	5108
Selenium	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Silver	SW6010B	4/17/2009	1	1	1.0	2.0	mg/Kg	5108
Thallium	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Vanadium	SW6010B	4/17/2009	5	1	5.0	41	mg/Kg	5108
Zinc	SW6010B	4/17/2009	5	1	5.0	330	mg/Kg	5108
Mercury	SW7471A	4/17/2009	0.1	1	0.10	0.14	mg/Kg	5105
Benzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Diisopropyl ether (DIPE)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Ethyl tert-butyl ether (ETBE)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Ethylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Methyl tert-butyl ether (MTBE)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
t-Butyl alcohol (t-Butanol)	SW8260B	4/17/2009	50	1	50	ND	µg/Kg	R19277
tert-Amyl methyl ether (TAME)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Toluene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Xylenes, Total	SW8260B	4/17/2009	15	1	15	ND	µg/Kg	R19277
Surr: 4-Bromofluorobenzene	SW8260B	4/17/2009	0	1	55.8-141	114	%REC	R19277
Surr: Dibromofluoromethane	SW8260B	4/17/2009	0	1	59.8-148	101	%REC	R19277
Surr: Toluene-d8	SW8260B	4/17/2009	0	1	55.2-133	101	%REC	R19277
TPH (Gasoline)	SW8260B(TPH)	4/17/2009	100	1	100	ND	µg/Kg	G19277
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	4/17/2009	0	1	56.9-133	32.0	%REC	G19277

Note: S- Outlying surrogate recovery observed. A duplicate analysis was performed with similar result indicated a matrix effect.

pH	SW9045C	4/15/2009	0.05	1	0.0500	7.89	pH Units	R19257

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: S-3-11 @ 1.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 9:50:00 PM

Lab Sample ID: 0904073-037
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Arsenic	SW6010B	4/17/2009	1.7	1	1.7	2.6	mg/Kg	5108
Barium	SW6010B	4/17/2009	5	1	5.0	160	mg/Kg	5108
Beryllium	SW6010B	4/17/2009	2	1	2.0	ND	mg/Kg	5108
Cadmium	SW6010B	4/17/2009	1	1	1.0	ND	mg/Kg	5108
Chromium	SW6010B	4/17/2009	5	1	5.0	58	mg/Kg	5108
Cobalt	SW6010B	4/17/2009	5	1	5.0	17	mg/Kg	5108
Copper	SW6010B	4/17/2009	5	1	5.0	53	mg/Kg	5108
Lead	SW6010B	4/17/2009	1	1	1.0	970	mg/Kg	5108
Molybdenum	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Nickel	SW6010B	4/17/2009	5	1	5.0	48	mg/Kg	5108
Selenium	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Silver	SW6010B	4/17/2009	1	1	1.0	1.9	mg/Kg	5108
Thallium	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Vanadium	SW6010B	4/17/2009	5	1	5.0	54	mg/Kg	5108
Zinc	SW6010B	4/17/2009	5	1	5.0	170	mg/Kg	5108
Mercury	SW7471A	4/17/2009	0.1	1	0.10	ND	mg/Kg	5105
Benzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Diisopropyl ether (DIPE)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Ethyl tert-butyl ether (ETBE)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Ethylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Methyl tert-butyl ether (MTBE)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
t-Butyl alcohol (t-Butanol)	SW8260B	4/17/2009	50	1	50	ND	µg/Kg	R19277
tert-Amyl methyl ether (TAME)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Toluene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Xylenes, Total	SW8260B	4/17/2009	15	1	15	ND	µg/Kg	R19277
Surr: 4-Bromofluorobenzene	SW8260B	4/17/2009	0	1	55.8-141	109	%REC	R19277
Surr: Dibromofluoromethane	SW8260B	4/17/2009	0	1	59.8-148	107	%REC	R19277
Surr: Toluene-d8	SW8260B	4/17/2009	0	1	55.2-133	101	%REC	R19277
TPH (Gasoline)	SW8260B(TPH)	4/18/2009	100	1	100	ND	µg/Kg	T19277
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	4/18/2009	0	1	56.9-133	58.0	%REC	T19277
pH	SW9045C	4/15/2009	0.05	1	0.0500	7.97	pH Units	R19257

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: S-3-11 @ 2.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 9:50:00 PM

Lab Sample ID: 0904073-038
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Arsenic	SW6010B	4/17/2009	1.7	1	1.7	3.4	mg/Kg	5108
Barium	SW6010B	4/17/2009	5	1	5.0	240	mg/Kg	5108
Beryllium	SW6010B	4/17/2009	2	1	2.0	ND	mg/Kg	5108
Cadmium	SW6010B	4/17/2009	1	1	1.0	ND	mg/Kg	5108
Chromium	SW6010B	4/17/2009	5	1	5.0	50	mg/Kg	5108
Cobalt	SW6010B	4/17/2009	5	1	5.0	13	mg/Kg	5108
Copper	SW6010B	4/17/2009	5	1	5.0	29	mg/Kg	5108
Lead	SW6010B	4/17/2009	1	1	1.0	18	mg/Kg	5108
Molybdenum	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Nickel	SW6010B	4/17/2009	5	1	5.0	52	mg/Kg	5108
Selenium	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Silver	SW6010B	4/17/2009	1	1	1.0	1.2	mg/Kg	5108
Thallium	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Vanadium	SW6010B	4/17/2009	5	1	5.0	38	mg/Kg	5108
Zinc	SW6010B	4/17/2009	5	1	5.0	48	mg/Kg	5108
Mercury	SW7471A	4/17/2009	0.1	1	0.10	ND	mg/Kg	5105
Benzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Diisopropyl ether (DIPE)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Ethyl tert-butyl ether (ETBE)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Ethylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Methyl tert-butyl ether (MTBE)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
t-Butyl alcohol (t-Butanol)	SW8260B	4/17/2009	50	1	50	ND	µg/Kg	R19277
tert-Amyl methyl ether (TAME)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Toluene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Xylenes, Total	SW8260B	4/17/2009	15	1	15	ND	µg/Kg	R19277
Surr: 4-Bromofluorobenzene	SW8260B	4/17/2009	0	1	55.8-141	113	%REC	R19277
Surr: Dibromofluoromethane	SW8260B	4/17/2009	0	1	59.8-148	112	%REC	R19277
Surr: Toluene-d8	SW8260B	4/17/2009	0	1	55.2-133	115	%REC	R19277
TPH (Gasoline)	SW8260B(TPH)	4/17/2009	100	1	100	ND	µg/Kg	G19277
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	4/17/2009	0	1	56.9-133	24.0	%REC	G19277

Note: S- Outlying surrogate recovery observed. A duplicate analysis was performed with similar result indicated a matrix effect.

pH	SW9045C	4/15/2009	0.05	1	0.0500	7.76	pH Units	R19257

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: S-3-11 @ 3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 9:50:00 PM

Lab Sample ID: 0904073-039
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Arsenic	SW6010B	4/17/2009	1.7	1	1.7	2.6	mg/Kg	5108
Barium	SW6010B	4/17/2009	5	1	5.0	260	mg/Kg	5108
Beryllium	SW6010B	4/17/2009	2	1	2.0	ND	mg/Kg	5108
Cadmium	SW6010B	4/17/2009	1	1	1.0	ND	mg/Kg	5108
Chromium	SW6010B	4/17/2009	5	1	5.0	52	mg/Kg	5108
Cobalt	SW6010B	4/17/2009	5	1	5.0	17	mg/Kg	5108
Copper	SW6010B	4/17/2009	5	1	5.0	29	mg/Kg	5108
Lead	SW6010B	4/17/2009	1	1	1.0	7.3	mg/Kg	5108
Molybdenum	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Nickel	SW6010B	4/17/2009	5	1	5.0	61	mg/Kg	5108
Selenium	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Silver	SW6010B	4/17/2009	1	1	1.0	1.0	mg/Kg	5108
Thallium	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Vanadium	SW6010B	4/17/2009	5	1	5.0	39	mg/Kg	5108
Zinc	SW6010B	4/17/2009	5	1	5.0	45	mg/Kg	5108
Mercury	SW7471A	4/17/2009	0.1	1	0.10	ND	mg/Kg	5105
Benzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Diisopropyl ether (DIPE)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Ethyl tert-butyl ether (ETBE)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Ethylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Methyl tert-butyl ether (MTBE)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
t-Butyl alcohol (t-Butanol)	SW8260B	4/17/2009	50	1	50	ND	µg/Kg	R19277
tert-Amyl methyl ether (TAME)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Toluene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Xylenes, Total	SW8260B	4/17/2009	15	1	15	ND	µg/Kg	R19277
Surr: 4-Bromofluorobenzene	SW8260B	4/17/2009	0	1	55.8-141	110	%REC	R19277
Surr: Dibromofluoromethane	SW8260B	4/17/2009	0	1	59.8-148	109	%REC	R19277
Surr: Toluene-d8	SW8260B	4/17/2009	0	1	55.2-133	104	%REC	R19277
TPH (Gasoline)	SW8260B(TPH)	4/17/2009	100	1	100	ND	µg/Kg	G19277
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	4/17/2009	0	1	56.9-133	32.0	%REC	G19277

Note: S- Outlying surrogate recovery observed. A duplicate analysis was performed with similar result indicated a matrix effect.

pH	SW9045C	4/15/2009	0.05	1	0.0500	7.79	pH Units	R19257

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: S-3-11 @ 0.5-D
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:05:00 PM

Lab Sample ID: 0904073-040
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	4/20/2009	5	1	5.0	ND	mg/Kg	5109
Arsenic	SW6010B	4/20/2009	1.7	1	1.7	2.2	mg/Kg	5109
Barium	SW6010B	4/20/2009	5	1	5.0	180	mg/Kg	5109
Beryllium	SW6010B	4/20/2009	2	1	2.0	ND	mg/Kg	5109
Cadmium	SW6010B	4/20/2009	1	1	1.0	ND	mg/Kg	5109
Chromium	SW6010B	4/20/2009	5	1	5.0	47	mg/Kg	5109
Cobalt	SW6010B	4/20/2009	5	1	5.0	12	mg/Kg	5109
Copper	SW6010B	4/20/2009	5	1	5.0	35	mg/Kg	5109
Lead	SW6010B	4/20/2009	1	1	1.0	63	mg/Kg	5109
Molybdenum	SW6010B	4/20/2009	5	1	5.0	ND	mg/Kg	5109
Nickel	SW6010B	4/20/2009	5	1	5.0	45	mg/Kg	5109
Selenium	SW6010B	4/20/2009	5	1	5.0	ND	mg/Kg	5109
Silver	SW6010B	4/20/2009	1	1	1.0	2.2	mg/Kg	5109
Thallium	SW6010B	4/20/2009	5	1	5.0	ND	mg/Kg	5109
Vanadium	SW6010B	4/20/2009	5	1	5.0	42	mg/Kg	5109
Zinc	SW6010B	4/20/2009	5	1	5.0	77	mg/Kg	5109
Mercury	SW7471A	4/17/2009	0.1	1	0.10	ND	mg/Kg	5105
TPH (Diesel)	SW8015B	4/16/2009	2	1	2.00	2.47x	mg/Kg	R19272
TPH (Motor Oil)	SW8015B	4/16/2009	4	1	4.00	42.8	mg/Kg	R19272
Surr: Pentacosane	SW8015B	4/16/2009	0	1	59.7-129	90.0	%REC	R19272

Note:x-Sample chromatogram does not resemble typical diesel pattern (discrete peak present). Hydrocarbons and hydrocarbon peak within the diesel range quantitated as diesel.

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

4,4´-DDD	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
4,4´-DDE	SW8081A	4/20/2009	2	4	8.00	16.9	µg/Kg	R19282
4,4´-DDT	SW8081A	4/20/2009	2	4	8.00	10.0	µg/Kg	R19282
Aldrin	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
alpha-BHC	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
alpha-Chlordane	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
beta-BHC	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
Chlordane	SW8081A	4/20/2009	20	4	80.0	ND	µg/Kg	R19282
delta-BHC	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
Dieldrin	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
Endosulfan I	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
Endosulfan II	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
Endosulfan sulfate	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
Endrin	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
Endrin aldehyde	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
Endrin ketone	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
gamma-BHC	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
gamma-Chlordane	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
Heptachlor	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
Heptachlor epoxide	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
Methoxychlor	SW8081A	4/20/2009	5	4	20.0	ND	µg/Kg	R19282
Toxaphene	SW8081A	4/20/2009	100	4	400	ND	µg/Kg	R19282
Surr: Decachlorobiphenyl	SW8081A	4/20/2009	0	4	54.6-127	87.7	%REC	R19282
Surr: Tetrachloro-m-xylene	SW8081A	4/20/2009	0	4	54-122	96.5	%REC	R19282

Note: Reporting limits increased due to the nature of the sample matrix (dark color extract).

Aroclor 1016	SW8082	4/17/2009	0.1	1	0.100	ND	mg/Kg	R19284
Aroclor 1221	SW8082	4/17/2009	0.2	1	0.200	ND	mg/Kg	R19284
Aroclor 1232	SW8082	4/17/2009	0.1	1	0.100	ND	mg/Kg	R19284
Aroclor 1242	SW8082	4/17/2009	0.1	1	0.100	ND	mg/Kg	R19284
Aroclor 1248	SW8082	4/17/2009	0.1	1	0.100	ND	mg/Kg	R19284
Aroclor 1254	SW8082	4/17/2009	0.1	1	0.100	ND	mg/Kg	R19284
Aroclor 1260	SW8082	4/17/2009	0.1	1	0.100	ND	mg/Kg	R19284
Surr: Decachlorobiphenyl	SW8082	4/17/2009	0	1	63.7-126	80.4	%REC	R19284
Surr: Tetrachloro-m-xylene	SW8082	4/17/2009	0	1	51.7-128	104	%REC	R19284

pH	SW9045C	4/15/2009	0.05	1	0.0500	7.82	pH Units	R19257

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-3-10 @ 1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 8:15:00 PM

Lab Sample ID: 0904073-041
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	4/20/2009	5	1	5.0	ND	mg/Kg	5109
Arsenic	SW6010B	4/20/2009	1.7	1	1.7	2.6	mg/Kg	5109
Barium	SW6010B	4/20/2009	5	1	5.0	110	mg/Kg	5109
Beryllium	SW6010B	4/20/2009	2	1	2.0	ND	mg/Kg	5109
Cadmium	SW6010B	4/20/2009	1	1	1.0	ND	mg/Kg	5109
Chromium	SW6010B	4/20/2009	5	1	5.0	30	mg/Kg	5109
Cobalt	SW6010B	4/20/2009	5	1	5.0	6.7	mg/Kg	5109
Copper	SW6010B	4/20/2009	5	1	5.0	14	mg/Kg	5109
Lead	SW6010B	4/20/2009	1	1	1.0	8.8	mg/Kg	5109
Molybdenum	SW6010B	4/20/2009	5	1	5.0	ND	mg/Kg	5109
Nickel	SW6010B	4/20/2009	5	1	5.0	40	mg/Kg	5109
Selenium	SW6010B	4/20/2009	5	1	5.0	ND	mg/Kg	5109
Silver	SW6010B	4/20/2009	1	1	1.0	1.0	mg/Kg	5109
Thallium	SW6010B	4/20/2009	5	1	5.0	ND	mg/Kg	5109
Vanadium	SW6010B	4/20/2009	5	1	5.0	22	mg/Kg	5109
Zinc	SW6010B	4/20/2009	5	1	5.0	29	mg/Kg	5109
Mercury	SW7471A	4/17/2009	0.1	1	0.10	ND	mg/Kg	5105
TPH (Diesel)	SW8015B	4/16/2009	2	50	100	ND	mg/Kg	R19272
TPH (Motor Oil)	SW8015B	4/16/2009	4	50	200	3540	mg/Kg	R19272
Surr: Pentacosane	SW8015B	4/16/2009	0	50	59.7-129	D	%REC	R19272

Note: D - Surrogates diluted out.

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

4,4´-DDD	SW8081A	4/20/2009	0.47	40	18.8	ND	µg/Kg	R19282
4,4´-DDE	SW8081A	4/20/2009	0.476	40	19.0	ND	µg/Kg	R19282
4,4´-DDT	SW8081A	4/20/2009	0.809	40	32.4	ND	µg/Kg	R19282
Aldrin	SW8081A	4/20/2009	0.44	40	17.6	ND	µg/Kg	R19282
alpha-BHC	SW8081A	4/20/2009	0.439	40	17.6	ND	µg/Kg	R19282
alpha-Chlordane	SW8081A	4/20/2009	0.358	40	14.3	ND	µg/Kg	R19282
beta-BHC	SW8081A	4/20/2009	0.364	40	14.6	ND	µg/Kg	R19282
Chlordane	SW8081A	4/20/2009	10	40	400	ND	µg/Kg	R19282
delta-BHC	SW8081A	4/20/2009	0.49	40	19.6	ND	µg/Kg	R19282
Dieldrin	SW8081A	4/20/2009	0.427	40	17.1	ND	µg/Kg	R19282
Endosulfan I	SW8081A	4/20/2009	0.59	40	23.6	ND	µg/Kg	R19282
Endosulfan II	SW8081A	4/20/2009	1.526	40	61.0	ND	µg/Kg	R19282
Endosulfan sulfate	SW8081A	4/20/2009	0.489	40	19.6	ND	µg/Kg	R19282
Endrin	SW8081A	4/20/2009	0.569	40	22.8	ND	µg/Kg	R19282
Endrin aldehyde	SW8081A	4/20/2009	1.028	40	41.1	ND	µg/Kg	R19282
Endrin ketone	SW8081A	4/20/2009	0.401	40	16.0	ND	µg/Kg	R19282
gamma-BHC	SW8081A	4/20/2009	0.396	40	15.8	ND	µg/Kg	R19282
gamma-Chlordane	SW8081A	4/20/2009	0.42	40	16.8	ND	µg/Kg	R19282
Heptachlor	SW8081A	4/20/2009	1.1	40	44.0	ND	µg/Kg	R19282
Heptachlor epoxide	SW8081A	4/20/2009	0.316	40	12.6	ND	µg/Kg	R19282
Methoxychlor	SW8081A	4/20/2009	0.616	40	24.6	ND	µg/Kg	R19282
Toxaphene	SW8081A	4/20/2009	10	40	400	ND	µg/Kg	R19282
Surr: Decachlorobiphenyl	SW8081A	4/20/2009		40	54.6-127	75.7	%REC	R19282
Surr: Tetrachloro-m-xylene	SW8081A	4/20/2009		40	54-122	72.4	%REC	R19282

Note: Reporting limits increased due to the nature of the sample matrix (dark color extract). All compounds reported to the MDL.

Aroclor 1016	SW8082	4/20/2009	0.1	1	0.100	ND	mg/Kg	R19284
Aroclor 1221	SW8082	4/20/2009	0.2	1	0.200	ND	mg/Kg	R19284
Aroclor 1232	SW8082	4/20/2009	0.1	1	0.100	ND	mg/Kg	R19284
Aroclor 1242	SW8082	4/20/2009	0.1	1	0.100	ND	mg/Kg	R19284
Aroclor 1248	SW8082	4/20/2009	0.1	1	0.100	ND	mg/Kg	R19284
Aroclor 1254	SW8082	4/20/2009	0.1	1	0.100	ND	mg/Kg	R19284
Aroclor 1260	SW8082	4/20/2009	0.1	1	0.100	ND	mg/Kg	R19284
Surr: Decachlorobiphenyl	SW8082	4/20/2009	0	1	63.7-126	104	%REC	R19284
Surr: Tetrachloro-m-xylene	SW8082	4/20/2009	0	1	51.7-128	104	%REC	R19284

1,1,1,2-Tetrachloroethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,1,1-Trichloroethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,1,2,2-Tetrachloroethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,1,2-Trichloroethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,1-Dichloroethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,1-Dichloroethene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,1-Dichloropropene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2,3-Trichlorobenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2,3-Trichloropropane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2,4-Trichlorobenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2,4-Trimethylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2-Dibromo-3-chloropropane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2-Dibromoethane (EDB)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2-Dichlorobenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2-Dichloroethane (EDC)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2-Dichloropropane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,3,5-Trimethylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,3-Dichlorobenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,4-Dichlorobenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
2,2-Dichloropropane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
2-Chloroethyl vinyl ether	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
2-Chlorotoluene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
4-Chlorotoluene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
4-Isopropyltoluene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Benzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Bromobenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Bromochloromethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Bromodichloromethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Bromoform	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Bromomethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Carbon tetrachloride	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Chlorobenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Chloroform	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Chloromethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
cis-1,2-Dichloroethene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
cis-1,3-Dichloropropene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Dibromochloromethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Dibromomethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Dichlorodifluoromethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Ethyl tert-butyl ether (ETBE)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Ethylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Freon-113	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Hexachlorobutadiene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Isopropyl Ether	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Isopropylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Methyl tert-butyl ether (MTBE)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Methylene chloride	SW8260B	4/17/2009	50	1	50	ND	µg/Kg	R19277
Naphthalene	SW8260B	4/17/2009	20	1	20	ND	µg/Kg	R19277
n-Butylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
n-Propylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
sec-Butylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Styrene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
t-Butyl alcohol (t-Butanol)	SW8260B	4/17/2009	50	1	50	ND	µg/Kg	R19277

tert-Amyl methyl ether (TAME)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
tert-Butylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Tetrachloroethene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Toluene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
trans-1,2-Dichloroethene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
trans-1,3-Dichloropropene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Trichloroethene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Trichlorofluoromethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Vinyl chloride	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Xylenes, Total	SW8260B	4/17/2009	15	1	15	ND	µg/Kg	R19277
Surr: 4-Bromofluorobenzene	SW8260B	4/17/2009	0	1	55.8-141	134	%REC	R19277
Surr: Dibromofluoromethane	SW8260B	4/17/2009	0	1	59.8-148	100	%REC	R19277
Surr: Toluene-d8	SW8260B	4/17/2009	0	1	55.2-133	111	%REC	R19277
TPH (Gasoline)	SW8260B(TPH)	4/17/2009	100	1	100	ND	µg/Kg	G19277
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	4/17/2009	0	1	56.9-133	20.0	%REC	G19277

Note: S- Outlying surrogate recovery observed. A duplicate analysis was performed with similar result indicated a matrix effect.

pH	SW9045C	4/15/2009	0.05	1	0.0500	8.02	pH Units	R19257

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-3-10 @ 3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 8:15:00 PM

Lab Sample ID: 0904073-042
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	4/20/2009	5	1	5.0	ND	mg/Kg	5109
Arsenic	SW6010B	4/20/2009	1.7	1	1.7	2.3	mg/Kg	5109
Barium	SW6010B	4/20/2009	5	1	5.0	110	mg/Kg	5109
Beryllium	SW6010B	4/20/2009	2	1	2.0	ND	mg/Kg	5109
Cadmium	SW6010B	4/20/2009	1	1	1.0	ND	mg/Kg	5109
Chromium	SW6010B	4/20/2009	5	1	5.0	42	mg/Kg	5109
Cobalt	SW6010B	4/20/2009	5	1	5.0	11	mg/Kg	5109
Copper	SW6010B	4/20/2009	5	1	5.0	29	mg/Kg	5109
Lead	SW6010B	4/20/2009	1	1	1.0	32	mg/Kg	5109
Molybdenum	SW6010B	4/20/2009	5	1	5.0	ND	mg/Kg	5109
Nickel	SW6010B	4/20/2009	5	1	5.0	43	mg/Kg	5109
Selenium	SW6010B	4/20/2009	5	1	5.0	ND	mg/Kg	5109
Silver	SW6010B	4/20/2009	1	1	1.0	1.6	mg/Kg	5109
Thallium	SW6010B	4/20/2009	5	1	5.0	ND	mg/Kg	5109
Vanadium	SW6010B	4/20/2009	5	1	5.0	43	mg/Kg	5109
Zinc	SW6010B	4/20/2009	5	1	5.0	44	mg/Kg	5109
Mercury	SW7471A	4/17/2009	0.1	1	0.10	0.10	mg/Kg	5105
TPH (Diesel)	SW8015B	4/17/2009	2	2	4.00	ND	mg/Kg	R19272
TPH (Motor Oil)	SW8015B	4/17/2009	4	2	8.00	142	mg/Kg	R19272
Surr: Pentacosane	SW8015B	4/17/2009	0	2	59.7-129	73.7	%REC	R19272

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

4,4´-DDD	SW8081A	4/20/2009	0.47	20	9.40	ND	µg/Kg	R19282
4,4´-DDE	SW8081A	4/20/2009	0.476	20	9.52	ND	µg/Kg	R19282
4,4´-DDT	SW8081A	4/20/2009	0.809	20	16.2	ND	µg/Kg	R19282
Aldrin	SW8081A	4/20/2009	0.44	20	8.80	ND	µg/Kg	R19282
alpha-BHC	SW8081A	4/20/2009	0.439	20	8.78	ND	µg/Kg	R19282
alpha-Chlordane	SW8081A	4/20/2009	0.358	20	7.16	ND	µg/Kg	R19282
beta-BHC	SW8081A	4/20/2009	0.364	20	7.28	ND	µg/Kg	R19282
Chlordane	SW8081A	4/20/2009	10	20	200	ND	µg/Kg	R19282
delta-BHC	SW8081A	4/20/2009	0.49	20	9.80	ND	µg/Kg	R19282
Dieldrin	SW8081A	4/20/2009	0.427	20	8.54	ND	µg/Kg	R19282
Endosulfan I	SW8081A	4/20/2009	0.59	20	11.8	ND	µg/Kg	R19282
Endosulfan II	SW8081A	4/20/2009	1.526	20	30.5	ND	µg/Kg	R19282
Endosulfan sulfate	SW8081A	4/20/2009	0.489	20	9.78	ND	µg/Kg	R19282
Endrin	SW8081A	4/20/2009	0.569	20	11.4	ND	µg/Kg	R19282
Endrin aldehyde	SW8081A	4/20/2009	1.028	20	20.6	ND	µg/Kg	R19282
Endrin ketone	SW8081A	4/20/2009	0.401	20	8.02	ND	µg/Kg	R19282
gamma-BHC	SW8081A	4/20/2009	0.396	20	7.92	ND	µg/Kg	R19282
gamma-Chlordane	SW8081A	4/20/2009	0.42	20	8.40	ND	µg/Kg	R19282
Heptachlor	SW8081A	4/20/2009	1.1	20	22.0	ND	µg/Kg	R19282
Heptachlor epoxide	SW8081A	4/20/2009	0.316	20	6.32	ND	µg/Kg	R19282
Methoxychlor	SW8081A	4/20/2009	0.616	20	12.3	ND	µg/Kg	R19282
Toxaphene	SW8081A	4/20/2009	10	20	200	ND	µg/Kg	R19282
Surr: Decachlorobiphenyl	SW8081A	4/20/2009		20	54.6-127	109	%REC	R19282
Surr: Tetrachloro-m-xylene	SW8081A	4/20/2009		20	54-122	114	%REC	R19282

Note: Reporting limits increased due to the nature of the sample matrix (dark color extract). All compounds reported to the MDL.

Aroclor 1016	SW8082	4/17/2009	0.1	1	0.100	ND	mg/Kg	R19284
Aroclor 1221	SW8082	4/17/2009	0.2	1	0.200	ND	mg/Kg	R19284
Aroclor 1232	SW8082	4/17/2009	0.1	1	0.100	ND	mg/Kg	R19284
Aroclor 1242	SW8082	4/17/2009	0.1	1	0.100	ND	mg/Kg	R19284
Aroclor 1248	SW8082	4/17/2009	0.1	1	0.100	ND	mg/Kg	R19284
Aroclor 1254	SW8082	4/17/2009	0.1	1	0.100	ND	mg/Kg	R19284
Aroclor 1260	SW8082	4/17/2009	0.1	1	0.100	ND	mg/Kg	R19284
Surr: Decachlorobiphenyl	SW8082	4/17/2009	0	1	63.7-126	104	%REC	R19284
Surr: Tetrachloro-m-xylene	SW8082	4/17/2009	0	1	51.7-128	109	%REC	R19284

1,1,1,2-Tetrachloroethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,1,1-Trichloroethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,1,2,2-Tetrachloroethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,1,2-Trichloroethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,1-Dichloroethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,1-Dichloroethene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,1-Dichloropropene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2,3-Trichlorobenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2,3-Trichloropropane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2,4-Trichlorobenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2,4-Trimethylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2-Dibromo-3-chloropropane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2-Dibromoethane (EDB)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2-Dichlorobenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2-Dichloroethane (EDC)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2-Dichloropropane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,3,5-Trimethylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,3-Dichlorobenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,4-Dichlorobenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
2,2-Dichloropropane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
2-Chloroethyl vinyl ether	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
2-Chlorotoluene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
4-Chlorotoluene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
4-Isopropyltoluene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Benzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Bromobenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Bromochloromethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Bromodichloromethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Bromoform	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Bromomethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Carbon tetrachloride	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Chlorobenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Chloroform	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Chloromethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
cis-1,2-Dichloroethene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
cis-1,3-Dichloropropene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Dibromochloromethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Dibromomethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Dichlorodifluoromethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Ethyl tert-butyl ether (ETBE)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Ethylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Freon-113	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Hexachlorobutadiene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Isopropyl Ether	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Isopropylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Methyl tert-butyl ether (MTBE)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Methylene chloride	SW8260B	4/17/2009	50	1	50	ND	µg/Kg	R19277
Naphthalene	SW8260B	4/17/2009	20	1	20	ND	µg/Kg	R19277
n-Butylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
n-Propylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
sec-Butylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Styrene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
t-Butyl alcohol (t-Butanol)	SW8260B	4/17/2009	50	1	50	ND	µg/Kg	R19277

tert-Amyl methyl ether (TAME)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
tert-Butylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Tetrachloroethene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Toluene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
trans-1,2-Dichloroethene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
trans-1,3-Dichloropropene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Trichloroethene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Trichlorofluoromethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Vinyl chloride	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Xylenes, Total	SW8260B	4/17/2009	15	1	15	ND	µg/Kg	R19277
Surr: 4-Bromofluorobenzene	SW8260B	4/17/2009	0	1	55.8-141	109	%REC	R19277
Surr: Dibromofluoromethane	SW8260B	4/17/2009	0	1	59.8-148	104	%REC	R19277
Surr: Toluene-d8	SW8260B	4/17/2009	0	1	55.2-133	109	%REC	R19277
TPH (Gasoline)	SW8260B(TPH)	4/18/2009	100	1	100	ND	µg/Kg	T19277
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	4/18/2009	0	1	56.9-133	78.0	%REC	T19277
pH	SW9045C	4/15/2009	0.05	1	0.0500	8.19	pH Units	R19257

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-3-10 @ 6.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 8:15:00 PM

Lab Sample ID: 0904073-043
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	4/20/2009	5	1	5.0	ND	mg/Kg	5109
Arsenic	SW6010B	4/20/2009	1.7	1	1.7	ND	mg/Kg	5109
Barium	SW6010B	4/20/2009	5	1	5.0	180	mg/Kg	5109
Beryllium	SW6010B	4/20/2009	2	1	2.0	ND	mg/Kg	5109
Cadmium	SW6010B	4/20/2009	1	1	1.0	ND	mg/Kg	5109
Chromium	SW6010B	4/20/2009	5	1	5.0	36	mg/Kg	5109
Cobalt	SW6010B	4/20/2009	5	1	5.0	9.8	mg/Kg	5109
Copper	SW6010B	4/20/2009	5	1	5.0	13	mg/Kg	5109
Lead	SW6010B	4/20/2009	1	1	1.0	1.4	mg/Kg	5109
Molybdenum	SW6010B	4/20/2009	5	1	5.0	ND	mg/Kg	5109
Nickel	SW6010B	4/20/2009	5	1	5.0	37	mg/Kg	5109
Selenium	SW6010B	4/20/2009	5	1	5.0	ND	mg/Kg	5109
Silver	SW6010B	4/20/2009	1	1	1.0	3.0	mg/Kg	5109
Thallium	SW6010B	4/20/2009	5	1	5.0	ND	mg/Kg	5109
Vanadium	SW6010B	4/20/2009	5	1	5.0	34	mg/Kg	5109
Zinc	SW6010B	4/20/2009	5	1	5.0	24	mg/Kg	5109
Mercury	SW7471A	4/17/2009	0.1	1	0.10	ND	mg/Kg	5105
TPH (Diesel)	SW8015B	4/16/2009	2	1	2.00	ND	mg/Kg	R19272
TPH (Motor Oil)	SW8015B	4/16/2009	4	1	4.00	11.2	mg/Kg	R19272
Surr: Pentacosane	SW8015B	4/16/2009	0	1	59.7-129	94.9	%REC	R19272

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

4,4´-DDD	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
4,4´-DDE	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
4,4´-DDT	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
Aldrin	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
alpha-BHC	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
alpha-Chlordane	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
beta-BHC	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
Chlordane	SW8081A	4/20/2009	20	4	80.0	ND	µg/Kg	R19282
delta-BHC	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
Dieldrin	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
Endosulfan I	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
Endosulfan II	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
Endosulfan sulfate	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
Endrin	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
Endrin aldehyde	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
Endrin ketone	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
gamma-BHC	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
gamma-Chlordane	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
Heptachlor	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
Heptachlor epoxide	SW8081A	4/20/2009	2	4	8.00	ND	µg/Kg	R19282
Methoxychlor	SW8081A	4/20/2009	5	4	20.0	ND	µg/Kg	R19282
Toxaphene	SW8081A	4/20/2009	100	4	400	ND	µg/Kg	R19282
Surr: Decachlorobiphenyl	SW8081A	4/20/2009	0	4	54.6-127	85.3	%REC	R19282
Surr: Tetrachloro-m-xylene	SW8081A	4/20/2009	0	4	54-122	89.6	%REC	R19282

Note: Reporting limits increased due to the nature of the sample matrix (dark color extract).

Aroclor 1016	SW8082	4/17/2009	0.1	1	0.100	ND	mg/Kg	R19284
Aroclor 1221	SW8082	4/17/2009	0.2	1	0.200	ND	mg/Kg	R19284
Aroclor 1232	SW8082	4/17/2009	0.1	1	0.100	ND	mg/Kg	R19284
Aroclor 1242	SW8082	4/17/2009	0.1	1	0.100	ND	mg/Kg	R19284
Aroclor 1248	SW8082	4/17/2009	0.1	1	0.100	ND	mg/Kg	R19284
Aroclor 1254	SW8082	4/17/2009	0.1	1	0.100	ND	mg/Kg	R19284
Aroclor 1260	SW8082	4/17/2009	0.1	1	0.100	ND	mg/Kg	R19284
Surr: Decachlorobiphenyl	SW8082	4/17/2009	0	1	63.7-126	83.9	%REC	R19284
Surr: Tetrachloro-m-xylene	SW8082	4/17/2009	0	1	51.7-128	106	%REC	R19284

1,1,1,2-Tetrachloroethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,1,1-Trichloroethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,1,2,2-Tetrachloroethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,1,2-Trichloroethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,1-Dichloroethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,1-Dichloroethene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,1-Dichloropropene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2,3-Trichlorobenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2,3-Trichloropropane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2,4-Trichlorobenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2,4-Trimethylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2-Dibromo-3-chloropropane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2-Dibromoethane (EDB)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2-Dichlorobenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2-Dichloroethane (EDC)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,2-Dichloropropane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,3,5-Trimethylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,3-Dichlorobenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
1,4-Dichlorobenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
2,2-Dichloropropane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
2-Chloroethyl vinyl ether	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
2-Chlorotoluene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
4-Chlorotoluene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
4-Isopropyltoluene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Benzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Bromobenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Bromochloromethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Bromodichloromethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Bromoform	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Bromomethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Carbon tetrachloride	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Chlorobenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Chloroform	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Chloromethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
cis-1,2-Dichloroethene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
cis-1,3-Dichloropropene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Dibromochloromethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Dibromomethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Dichlorodifluoromethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Ethyl tert-butyl ether (ETBE)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Ethylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Freon-113	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Hexachlorobutadiene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Isopropyl Ether	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Isopropylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Methyl tert-butyl ether (MTBE)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Methylene chloride	SW8260B	4/17/2009	50	1	50	ND	µg/Kg	R19277
Naphthalene	SW8260B	4/17/2009	20	1	20	ND	µg/Kg	R19277
n-Butylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
n-Propylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
sec-Butylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Styrene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
t-Butyl alcohol (t-Butanol)	SW8260B	4/17/2009	50	1	50	ND	µg/Kg	R19277

tert-Amyl methyl ether (TAME)	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
tert-Butylbenzene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Tetrachloroethene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Toluene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
trans-1,2-Dichloroethene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
trans-1,3-Dichloropropene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Trichloroethene	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Trichlorofluoromethane	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Vinyl chloride	SW8260B	4/17/2009	10	1	10	ND	µg/Kg	R19277
Xylenes, Total	SW8260B	4/17/2009	15	1	15	ND	µg/Kg	R19277
Surr: 4-Bromofluorobenzene	SW8260B	4/17/2009	0	1	55.8-141	97.6	%REC	R19277
Surr: Dibromofluoromethane	SW8260B	4/17/2009	0	1	59.8-148	103	%REC	R19277
Surr: Toluene-d8	SW8260B	4/17/2009	0	1	55.2-133	93.9	%REC	R19277
TPH (Gasoline)	SW8260B(TPH)	4/18/2009	100	1	100	ND	µg/Kg	T19277
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	4/18/2009	0	1	56.9-133	82.0	%REC	T19277
pH	SW9045C	4/15/2009	0.05	1	0.0500	8.59	pH Units	R19257

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Client Sample ID: N-3-10-GW
Sample Location: 101 Aux Lanes
Sample Matrix: GROUNDWATER
Date/Time Sampled 4/12/2009 8:30:00 PM

Lab Sample ID: 0904073-044
Date Prepared:

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
pH	E150.1	4/14/2009	0.05	1	0.0500	8.25	pH units	R19234
pH was out of hold time upon receipt.								
Antimony	SW6010B	4/14/2009	0.01	1	0.010	ND	mg/L	5098
Arsenic	SW6010B	4/14/2009	0.01	1	0.010	ND	mg/L	5098
Barium	SW6010B	4/14/2009	0.01	1	0.010	0.18	mg/L	5098
Beryllium	SW6010B	4/14/2009	0.005	1	0.0050	ND	mg/L	5098
Cadmium	SW6010B	4/14/2009	0.005	1	0.0050	ND	mg/L	5098
Chromium	SW6010B	4/14/2009	0.005	1	0.0050	0.010	mg/L	5098
Cobalt	SW6010B	4/14/2009	0.005	1	0.0050	0.0050	mg/L	5098
Copper	SW6010B	4/14/2009	0.01	1	0.010	ND	mg/L	5098
Lead	SW6010B	4/14/2009	0.015	1	0.015	ND	mg/L	5098
Molybdenum	SW6010B	4/14/2009	0.005	1	0.0050	0.0090	mg/L	5098
Nickel	SW6010B	4/14/2009	0.01	1	0.010	0.014	mg/L	5098
Selenium	SW6010B	4/14/2009	0.01	1	0.010	ND	mg/L	5098
Silver	SW6010B	4/14/2009	0.005	1	0.0050	ND	mg/L	5098
Thallium	SW6010B	4/14/2009	0.01	1	0.010	ND	mg/L	5098
Vanadium	SW6010B	4/14/2009	0.01	1	0.010	0.036	mg/L	5098
Zinc	SW6010B	4/14/2009	0.005	1	0.0050	0.011	mg/L	5098
Mercury	SW7470A	4/14/2009	0.0002	1	0.00020	ND	mg/L	5095
TPH (Diesel)	SW8015B	4/17/2009	0.1	1	0.100	ND	mg/L	R19291
TPH (Motor Oil)	SW8015B	4/17/2009	0.2	1	0.200	ND	mg/L	R19291
Surr: Pentacosane	SW8015B	4/17/2009	0	1	57.9-125	86.0	%REC	R19291

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

4,4´-DDD	SW8081A	4/16/2009	0.02	1	0.020	ND	µg/L	R19286
4,4´-DDE	SW8081A	4/16/2009	0.02	1	0.020	ND	µg/L	R19286
4,4´-DDT	SW8081A	4/16/2009	0.02	1	0.020	ND	µg/L	R19286
Aldrin	SW8081A	4/16/2009	0.02	1	0.020	ND	µg/L	R19286
alpha-BHC	SW8081A	4/16/2009	0.02	1	0.020	ND	µg/L	R19286
alpha-Chlordane	SW8081A	4/16/2009	0.02	1	0.020	ND	µg/L	R19286
beta-BHC	SW8081A	4/16/2009	0.02	1	0.020	ND	µg/L	R19286
Chlordane	SW8081A	4/16/2009	0.25	1	0.250	ND	µg/L	R19286
delta-BHC	SW8081A	4/16/2009	0.02	1	0.020	ND	µg/L	R19286
Dieldrin	SW8081A	4/16/2009	0.02	1	0.020	ND	µg/L	R19286
Endosulfan I	SW8081A	4/16/2009	0.02	1	0.020	ND	µg/L	R19286
Endosulfan II	SW8081A	4/16/2009	0.02	1	0.020	ND	µg/L	R19286
Endosulfan sulfate	SW8081A	4/16/2009	0.02	1	0.020	ND	µg/L	R19286
Endrin	SW8081A	4/16/2009	0.02	1	0.020	ND	µg/L	R19286
Endrin aldehyde	SW8081A	4/16/2009	0.02	1	0.020	ND	µg/L	R19286
Endrin ketone	SW8081A	4/16/2009	0.02	1	0.020	ND	µg/L	R19286
gamma-BHC	SW8081A	4/16/2009	0.02	1	0.020	ND	µg/L	R19286
gamma-Chlordane	SW8081A	4/16/2009	0.02	1	0.020	ND	µg/L	R19286
Heptachlor	SW8081A	4/16/2009	0.02	1	0.020	ND	µg/L	R19286
Heptachlor epoxide	SW8081A	4/16/2009	0.02	1	0.020	ND	µg/L	R19286
Methoxychlor	SW8081A	4/16/2009	0.05	1	0.050	ND	µg/L	R19286
Toxaphene	SW8081A	4/16/2009	1	1	1.00	ND	µg/L	R19286
Surr: Decachlorobiphenyl	SW8081A	4/16/2009	0	1	52-116	71.4	%REC	R19286
Surr: Tetrachloro-m-xylene	SW8081A	4/16/2009	0	1	40.3-118	60.9	%REC	R19286

Aroclor 1016	SW8082	4/14/2009	10	1	10.0	ND	µg/L	R19239
Aroclor 1221	SW8082	4/14/2009	10	1	10.0	ND	µg/L	R19239
Aroclor 1232	SW8082	4/14/2009	10	1	10.0	ND	µg/L	R19239
Aroclor 1242	SW8082	4/14/2009	10	1	10.0	ND	µg/L	R19239
Aroclor 1248	SW8082	4/14/2009	10	1	10.0	ND	µg/L	R19239
Aroclor 1254	SW8082	4/14/2009	10	1	10.0	ND	µg/L	R19239
Aroclor 1260	SW8082	4/14/2009	10	1	10.0	ND	µg/L	R19239
Surr: Decachlorobiphenyl	SW8082	4/14/2009	0	1	44.5-127	105	%REC	R19239
Surr: Tetrachloro-m-xylene	SW8082	4/14/2009	0	1	52.7-126	98.4	%REC	R19239

1,1,1,2-Tetrachloroethane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,1,1-Trichloroethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,1,2,2-Tetrachloroethane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,1,2-Trichloroethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,1-Dichloroethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,1-Dichloroethene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,1-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2,3-Trichlorobenzene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,2,3-Trichloropropane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,2,4-Trichlorobenzene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,2,4-Trimethylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dibromo-3-chloropropane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dibromoethane (EDB)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dichlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dichloroethane (EDC)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,2-Dichloropropane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
1,3,5-Trimethylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,3-Dichlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,3-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
1,4-Dichlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
2,2-Dichloropropane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
2-Chloroethyl vinyl ether	SW8260B	4/17/2009	6	1	6.00	ND	µg/L	R19276
2-Chlorotoluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
4-Chlorotoluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
4-Isopropyltoluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Acetone	SW8260B	4/17/2009	10	1	10.0	ND	µg/L	R19276
Benzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromochloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromodichloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Bromoform	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Bromomethane	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Carbon tetrachloride	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Chlorobenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Chloroform	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Chloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
cis-1,2-Dichloroethene	SW8260B	4/17/2009	0.5	1	0.50	61.8	µg/L	R19276
cis-1,3-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Dibromochloromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Dibromomethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Dichlorodifluoromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Diisopropyl ether (DIPE)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Ethyl tert-butyl ether (ETBE)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Ethylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Freon-113	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Hexachlorobutadiene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Isopropylbenzene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
Methyl tert-butyl ether (MTBE)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Methylene chloride	SW8260B	4/17/2009	5	1	5.00	ND	µg/L	R19276
Naphthalene	SW8260B	4/17/2009	1	1	1.00	ND	µg/L	R19276
n-Butylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
n-Propylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
sec-Butylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 4/23/2009

Styrene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
t-Butyl alcohol (t-Butanol)	SW8260B	4/17/2009	5	1	5.00	ND	µg/L	R19276
tert-Amyl methyl ether (TAME)	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
tert-Butylbenzene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Tetrachloroethene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Toluene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
trans-1,2-Dichloroethene	SW8260B	4/17/2009	0.5	1	0.50	5.80	µg/L	R19276
trans-1,3-Dichloropropene	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Trichloroethene	SW8260B	4/17/2009	0.5	1	0.50	37.2	µg/L	R19276
Trichlorofluoromethane	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Vinyl chloride	SW8260B	4/17/2009	0.5	1	0.50	ND	µg/L	R19276
Xylenes, Total	SW8260B	4/17/2009	1.5	1	1.50	ND	µg/L	R19276
Surr: Dibromofluoromethane	SW8260B	4/17/2009	0	1	61.2-131	114	%REC	R19276
Surr: 4-Bromofluorobenzene	SW8260B	4/17/2009	0	1	64.1-120	105	%REC	R19276
Surr: Toluene-d8	SW8260B	4/17/2009	0	1	75.1-127	94.6	%REC	R19276
TPH (Gasoline)	SW8260B(TPH)	4/17/2009	50	1	50	74x	µg/L	G19276
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	4/17/2009	0	1	58.4-133	82.6	%REC	G19276

Note: x- Sample chromatogram does not resemble gasoline standard pattern. Reported value due to individual peaks of non-gasoline compounds within range of C5-C12 quantified as Gasoline (see 8260B results).

Client Sample ID: S-3-2 @ 0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 9:25:00 PM

Lab Sample ID: 0904073-045
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	1	1.0	54	mg/Kg	5109

Client Sample ID: S-3-2 @ 1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 9:25:00 PM

Lab Sample ID: 0904073-046
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	1	1.0	76	mg/Kg	5109

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for:	Patrick Walz	**Date Received:**	4/13/2009
	URS Corporation, San Jose	**Date Reported:**	4/23/2009

Client Sample ID:	S-3-2 @ 1.5	**Lab Sample ID:**	0904073-047
Sample Location:	101 Aux Lanes	**Date Prepared:**	4/16/2009
Sample Matrix:	SOIL		
Date/Time Sampled	4/12/2009 9:25:00 PM		

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	1	1.0	27	mg/Kg	5109

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Definitions, legends and Notes

Note	Description
ug/kg	Microgram per kilogram (ppb, part per billion).
ug/L	Microgram per liter (ppb, part per billion).
mg/kg	Milligram per kilogram (ppm, part per million).
mg/L	Milligram per liter (ppm, part per million).
LCS/LCSD	Laboratory control sample/laboratory control sample duplicate.
MDL	Method detection limit.
MRL	Modified reporting limit. When sample is subject to dilution, reporting limit times dilution factor yields MRL.
MS/MSD	Matrix spike/matrix spike duplicate.
N/A	Not applicable.
ND	Not detected at or above detection limit.
NR	Not reported.
QC	Quality Control.
RL	Reporting limit.
% RPD	Percent relative difference.
a	pH was measured immediately upon the receipt of the sample, but it was still done outside the holding time.
sub	Analyzed by subcontracting laboratory, Lab Certificate #

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Torrent Laboratory, Inc.

Date: *23-Apr-09*

CLIENT: URS Corporation, San Jose
Work Order: 0904073
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5095

Sample ID **MB-5095** SampType: **MBLK** TestCode: **HG_W_7470** Units: **mg/L** Prep Date: **4/14/2009** RunNo: **19235**
Client ID: **ZZZZZ** Batch ID: **5095** TestNo: **SW7470A** **(SW7470A)** Analysis Date: **4/14/2009** SeqNo: **277743**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.00020									

Sample ID **LCS-5095** SampType: **LCS** TestCode: **HG_W_7470** Units: **mg/L** Prep Date: **4/14/2009** RunNo: **19235**
Client ID: **ZZZZZ** Batch ID: **5095** TestNo: **SW7470A** **(SW7470A)** Analysis Date: **4/14/2009** SeqNo: **277741**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.01569	0.00020	0.015	0	105	80	120				

Sample ID **LCSD-5095** SampType: **LCSD** TestCode: **HG_W_7470** Units: **mg/L** Prep Date: **4/14/2009** RunNo: **19235**
Client ID: **ZZZZZ** Batch ID: **5095** TestNo: **SW7470A** **(SW7470A)** Analysis Date: **4/14/2009** SeqNo: **277742**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.01566	0.00020	0.015	0	104	80	120	0.01569	0.191	20	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904073
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5098

Sample ID	MB-5098	SampType:	MBLK	TestCode:	6010B_W	Units:	mg/L	Prep Date:	4/14/2009	RunNo:	19247
Client ID:	ZZZZZ	Batch ID:	5098	TestNo:	SW6010B	(E200.7/SW3		Analysis Date:	4/14/2009	SeqNo:	277886

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.010									
Arsenic	ND	0.010									
Barium	ND	0.010									
Beryllium	ND	0.0050									
Cadmium	ND	0.0050									
Chromium	ND	0.0050									
Cobalt	ND	0.0050									
Copper	ND	0.010									
Lead	ND	0.015									
Molybdenum	ND	0.0050									
Nickel	ND	0.010									
Selenium	ND	0.020									
Silver	ND	0.0050									
Thallium	ND	0.010									
Vanadium	ND	0.010									
Zinc	ND	0.010									

Sample ID	LCS-5098	SampType:	LCS	TestCode:	6010B_W	Units:	mg/L	Prep Date:	4/14/2009	RunNo:	19247
Client ID:	ZZZZZ	Batch ID:	5098	TestNo:	SW6010B	(E200.7/SW3		Analysis Date:	4/14/2009	SeqNo:	277884

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	1.057	0.010	1	0	106	80	120				
Arsenic	1.100	0.010	1	0	110	80	120				
Barium	0.9690	0.010	1	0	96.9	80	120				
Beryllium	1.007	0.0050	1	0	101	80	120				
Cadmium	0.9610	0.0050	1	0	96.1	80	120				
Chromium	0.9690	0.0050	1	0	96.9	80	120				
Cobalt	0.9740	0.0050	1	0	97.4	80	120				
Copper	0.9710	0.010	1	0	97.1	80	120				
Lead	0.9990	0.015	1	0	99.9	80	120				
Molybdenum	0.9910	0.0050	1	0	99.1	80	120				

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904073
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5098

Sample ID	LCS-5098	SampType:	LCS	TestCode:	6010B_W	Units:	mg/L	Prep Date:	4/14/2009	RunNo:	19247
Client ID:	ZZZZZ	Batch ID:	5098	TestNo:	SW6010B	(E200.7/SW3		Analysis Date:	4/14/2009	SeqNo:	277884

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	0.9740	0.010	1	0	97.4	80	120				
Selenium	0.9880	0.020	1	0.006	98.2	80	120				
Silver	0.9750	0.0050	1	0.002	97.3	80	120				
Thallium	0.9800	0.010	1	0	98.0	80	120				
Vanadium	0.9660	0.010	1	0	96.6	80	120				
Zinc	1.004	0.010	1	0	100	80	120				

Sample ID	LCSD-5098	SampType:	LCSD	TestCode:	6010B_W	Units:	mg/L	Prep Date:	4/14/2009	RunNo:	19247
Client ID:	ZZZZZ	Batch ID:	5098	TestNo:	SW6010B	(E200.7/SW3		Analysis Date:	4/14/2009	SeqNo:	277885

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	1.045	0.010	1	0	104	80	120	1.057	1.14	20	
Arsenic	1.091	0.010	1	0	109	80	120	1.1	0.822	20	
Barium	0.9880	0.010	1	0	98.8	80	120	0.969	1.94	20	
Beryllium	0.9760	0.0050	1	0	97.6	80	120	1.007	3.13	20	
Cadmium	0.9760	0.0050	1	0	97.6	80	120	0.961	1.55	20	
Chromium	0.9660	0.0050	1	0	96.6	80	120	0.969	0.310	20	
Cobalt	0.9920	0.0050	1	0	99.2	80	120	0.974	1.83	20	
Copper	0.9800	0.010	1	0	98.0	80	120	0.971	0.923	20	
Lead	0.9960	0.015	1	0	99.6	80	120	0.999	0.301	20	
Molybdenum	0.9840	0.0050	1	0	98.4	80	120	0.991	0.709	20	
Nickel	0.9900	0.010	1	0	99.0	80	120	0.974	1.63	20	
Selenium	0.9900	0.020	1	0.006	98.4	80	120	0.988	0.202	20	
Silver	0.9890	0.0050	1	0.002	98.7	80	120	0.975	1.43	20	
Thallium	0.9750	0.010	1	0	97.5	80	120	0.98	0.512	20	
Vanadium	0.9820	0.010	1	0	98.2	80	120	0.966	1.64	20	
Zinc	1.029	0.010	1	0	103	80	120	1.004	2.46	20	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904073
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5101

Sample ID	MB-5101	SampType:	MBLK	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	4/15/2009	RunNo:	19255
Client ID:	ZZZZZ	Batch ID:	5101	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/15/2009	SeqNo:	278017

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	1.0									

Sample ID	LCS-5101	SampType:	LCS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	4/15/2009	RunNo:	19255
Client ID:	ZZZZZ	Batch ID:	5101	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/15/2009	SeqNo:	278015

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	48.15	1.0	50	0.285	95.7	67.9	118				

Sample ID	LCSD-5101	SampType:	LCSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	4/15/2009	RunNo:	19255
Client ID:	ZZZZZ	Batch ID:	5101	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/15/2009	SeqNo:	278016

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	48.15	1.0	50	0.285	95.7	67.9	118	48.15	0	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904073
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5105

Sample ID	MB-5105	SampType:	MBLK	TestCode:	HG_CTS	Units:	mg/Kg	Prep Date:	4/16/2009	RunNo:	19280
Client ID:	ZZZZZ	Batch ID:	5105	TestNo:	SW7471A	(SW7471APR		Analysis Date:	4/17/2009	SeqNo:	278394

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.10									

Sample ID	LCS-5105	SampType:	LCS	TestCode:	HG_CTS	Units:	mg/Kg	Prep Date:	4/16/2009	RunNo:	19280
Client ID:	ZZZZZ	Batch ID:	5105	TestNo:	SW7471A	(SW7471APR		Analysis Date:	4/17/2009	SeqNo:	278392

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.254	0.10	1.25	0	100	80.5	133				

Sample ID	LCSD-5105	SampType:	LCSD	TestCode:	HG_CTS	Units:	mg/Kg	Prep Date:	4/16/2009	RunNo:	19280
Client ID:	ZZZZZ	Batch ID:	5105	TestNo:	SW7471A	(SW7471APR		Analysis Date:	4/17/2009	SeqNo:	278393

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.498	0.10	1.25	0	120	80.5	133	1.254	17.7	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904073
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5108

Sample ID	MB-5108	SampType:	MBLK	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	4/16/2009	RunNo:	19290
Client ID:	ZZZZZ	Batch ID:	5108	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/17/2009	SeqNo:	278583

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	5.0									
Arsenic	ND	1.7									
Barium	ND	5.0									
Beryllium	ND	2.0									
Cadmium	ND	1.0									
Chromium	ND	5.0									
Cobalt	ND	5.0									
Copper	ND	5.0									
Lead	ND	1.0									
Molybdenum	ND	5.0									
Nickel	ND	5.0									
Selenium	ND	5.0									
Silver	ND	1.0									
Thallium	ND	5.0									
Vanadium	ND	5.0									
Zinc	ND	5.0									

Sample ID	LCS-5108	SampType:	LCS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	4/16/2009	RunNo:	19290
Client ID:	ZZZZZ	Batch ID:	5108	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/17/2009	SeqNo:	278581

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	46.50	5.0	50	0	93.0	30.7	130				
Arsenic	48.55	1.7	50	0	97.1	71	121				
Barium	47.25	5.0	50	0.15	94.2	70.2	130				
Beryllium	46.80	2.0	50	0	93.6	73.3	115				
Cadmium	44.65	1.0	50	0	89.3	68.7	110				
Chromium	47.60	5.0	50	2.6	90.0	76	116				
Cobalt	46.25	5.0	50	0	92.5	57.4	122				
Copper	47.25	5.0	50	0.55	93.4	74.8	119				
Lead	47.10	1.0	50	0.3	93.6	67.9	118				
Molybdenum	48.10	5.0	50	0.2	95.8	62.9	123				

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904073
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5108

Sample ID	LCS-5108	SampType:	LCS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	4/16/2009	RunNo:	19290
Client ID:	ZZZZZ	Batch ID:	5108	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/17/2009	SeqNo:	278581

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	46.15	5.0	50	0.15	92.0	61.5	122				
Selenium	42.20	5.0	50	0	84.4	62	111				
Silver	45.95	1.0	50	0	91.9	81.1	109				
Thallium	45.35	5.0	50	0	90.7	39.2	125				
Vanadium	47.35	5.0	50	0	94.7	65.8	122				
Zinc	46.05	5.0	50	1.1	89.9	59.9	122				

Sample ID	LCSD-5108	SampType:	LCSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	4/16/2009	RunNo:	19290
Client ID:	ZZZZZ	Batch ID:	5108	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/17/2009	SeqNo:	278582

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	46.65	5.0	50	0	93.3	30.7	130	46.5	0.322	30	
Arsenic	48.55	1.7	50	0	97.1	71	121	48.55	0	30	
Barium	49.15	5.0	50	0.15	98.0	70.2	130	47.25	3.94	30	
Beryllium	46.95	2.0	50	0	93.9	73.3	115	46.8	0.320	30	
Cadmium	46.45	1.0	50	0	92.9	68.7	110	44.65	3.95	30	
Chromium	49.50	5.0	50	2.6	93.8	76	116	47.6	3.91	30	
Cobalt	48.15	5.0	50	0	96.3	57.4	122	46.25	4.03	30	
Copper	48.95	5.0	50	0.55	96.8	74.8	119	47.25	3.53	30	
Lead	47.20	1.0	50	0.3	93.8	67.9	118	47.1	0.212	30	
Molybdenum	48.00	5.0	50	0.2	95.6	62.9	123	48.1	0.208	30	
Nickel	47.95	5.0	50	0.15	95.6	61.5	122	46.15	3.83	30	
Selenium	42.25	5.0	50	0	84.5	62	111	42.2	0.118	30	
Silver	47.95	1.0	50	0	95.9	81.1	109	45.95	4.26	30	
Thallium	45.85	5.0	50	0	91.7	39.2	125	45.35	1.10	30	
Vanadium	49.10	5.0	50	0	98.2	65.8	122	47.35	3.63	30	
Zinc	47.80	5.0	50	1.1	93.4	59.9	122	46.05	3.73	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904073
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5109

Sample ID	MB-5109	SampType:	MBLK	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	4/16/2009	RunNo:	19303
Client ID:	ZZZZZ	Batch ID:	5109	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/20/2009	SeqNo:	278818

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	5.0									
Arsenic	ND	1.7									
Barium	ND	5.0									
Beryllium	ND	2.0									
Cadmium	ND	1.0									
Chromium	ND	5.0									
Cobalt	ND	5.0									
Copper	ND	5.0									
Lead	ND	1.0									
Molybdenum	ND	5.0									
Nickel	ND	5.0									
Selenium	ND	5.0									
Silver	ND	1.0									
Thallium	ND	5.0									
Vanadium	ND	5.0									
Zinc	ND	5.0									

Sample ID	LCS-5109	SampType:	LCS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	4/16/2009	RunNo:	19303
Client ID:	ZZZZZ	Batch ID:	5109	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/20/2009	SeqNo:	278816

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	49.20	5.0	50	0.4	97.6	30.7	130				
Arsenic	49.40	1.7	50	0	98.8	71	121				
Barium	47.85	5.0	50	0.2	95.3	70.2	130				
Beryllium	47.25	2.0	50	0	94.5	73.3	115				
Cadmium	45.60	1.0	50	0	91.2	68.7	110				
Chromium	47.60	5.0	50	0.2	94.8	76	116				
Cobalt	47.10	5.0	50	0	94.2	57.4	122				
Copper	48.75	5.0	50	0.65	96.2	74.8	119				
Lead	48.10	1.0	50	0.35	95.5	67.9	118				
Molybdenum	48.90	5.0	50	0	97.8	62.9	123				

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904073
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5109

Sample ID	LCS-5109	SampType:	LCS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	4/16/2009	RunNo:	19303
Client ID:	ZZZZZ	Batch ID:	5109	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/20/2009	SeqNo:	278816

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	46.55	5.0	50	0.1	92.9	61.5	122				
Selenium	44.10	5.0	50	0	88.2	62	111				
Silver	46.95	1.0	50	0	93.9	81.1	109				
Thallium	46.60	5.0	50	0	93.2	39.2	125				
Vanadium	47.70	5.0	50	0	95.4	65.8	122				
Zinc	45.95	5.0	50	1.05	89.8	59.9	122				

Sample ID	LCSD-5109	SampType:	LCSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	4/16/2009	RunNo:	19303
Client ID:	ZZZZZ	Batch ID:	5109	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/20/2009	SeqNo:	278817

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	49.95	5.0	50	0.4	99.1	30.7	130	49.2	1.51	30	
Arsenic	50.20	1.7	50	0	100	71	121	49.4	1.61	30	
Barium	48.70	5.0	50	0.2	97.0	70.2	130	47.85	1.76	30	
Beryllium	47.90	2.0	50	0	95.8	73.3	115	47.25	1.37	30	
Cadmium	46.70	1.0	50	0	93.4	68.7	110	45.6	2.38	30	
Chromium	49.00	5.0	50	0.2	97.6	76	116	47.6	2.90	30	
Cobalt	47.35	5.0	50	0	94.7	57.4	122	47.1	0.529	30	
Copper	49.90	5.0	50	0.65	98.5	74.8	119	48.75	2.33	30	
Lead	48.90	1.0	50	0.35	97.1	67.9	118	48.1	1.65	30	
Molybdenum	49.90	5.0	50	0	99.8	62.9	123	48.9	2.02	30	
Nickel	47.60	5.0	50	0.1	95.0	61.5	122	46.55	2.23	30	
Selenium	44.65	5.0	50	0	89.3	62	111	44.1	1.24	30	
Silver	48.10	1.0	50	0	96.2	81.1	109	46.95	2.42	30	
Thallium	47.55	5.0	50	0	95.1	39.2	125	46.6	2.02	30	
Vanadium	48.70	5.0	50	0	97.4	65.8	122	47.7	2.07	30	
Zinc	46.90	5.0	50	1.05	91.7	59.9	122	45.95	2.05	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904073
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: G19276

Sample ID	MBG-G19276	SampType:	MBLK	TestCode:	TPH_GAS_W	Units:	µg/L	Prep Date:	4/17/2009	RunNo:	19276
Client ID:	ZZZZZ	Batch ID:	G19276	TestNo:	SW8260B(TP			Analysis Date:	4/17/2009	SeqNo:	278330

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	ND	50									
Surr: 4-Bromofllurobenzene	8.800	0	11.36	0	77.5	58.4	133				

Sample ID	LCSG-G19276	SampType:	LCS	TestCode:	TPH_GAS_W	Units:	µg/L	Prep Date:	4/17/2009	RunNo:	19276
Client ID:	ZZZZZ	Batch ID:	G19276	TestNo:	SW8260B(TP			Analysis Date:	4/17/2009	SeqNo:	278331

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	208.3	50	227	0	91.8	52.4	127				
Surr: 4-Bromofllurobenzene	9.900	0	11.36	0	87.1	58.4	133				

Sample ID	LCSDG-G19276	SampType:	LCSD	TestCode:	TPH_GAS_W	Units:	µg/L	Prep Date:	4/17/2009	RunNo:	19276
Client ID:	ZZZZZ	Batch ID:	G19276	TestNo:	SW8260B(TP			Analysis Date:	4/17/2009	SeqNo:	278332

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	227.8	50	227	0	100	52.4	127	208.3	8.94	20	
Surr: 4-Bromofllurobenzene	9.300	0	11.36	0	81.9	58.4	133	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904073
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: G19277

Sample ID	MB_G19277	SampType:	MBLK	TestCode:	TPH_GAS_S	Units:	µg/Kg	Prep Date:	4/16/2009	RunNo:	19277
Client ID:	ZZZZZ	Batch ID:	G19277	TestNo:	SW8260B(TP			Analysis Date:	4/16/2009	SeqNo:	278343

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	ND	100									
Surr: 4-Bromofllurobenzene	29.00	0	50	0	58.0	56.9	133				

Sample ID	LCS_G19277	SampType:	LCS	TestCode:	TPH_GAS_S	Units:	µg/Kg	Prep Date:	4/16/2009	RunNo:	19277
Client ID:	ZZZZZ	Batch ID:	G19277	TestNo:	SW8260B(TP			Analysis Date:	4/16/2009	SeqNo:	278344

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	861.0	100	1000	0	86.1	48.2	132				
Surr: 4-Bromofllurobenzene	31.00	0	50	0	62.0	56.9	133				

Sample ID	LCSD_G19277	SampType:	LCSD	TestCode:	TPH_GAS_S	Units:	µg/Kg	Prep Date:	4/17/2009	RunNo:	19277
Client ID:	ZZZZZ	Batch ID:	G19277	TestNo:	SW8260B(TP			Analysis Date:	4/17/2009	SeqNo:	278345

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	855.0	100	1000	0	85.5	48.2	132	861	0.699	30	
Surr: 4-Bromofllurobenzene	29.00	0	50	0	58.0	56.9	133	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904073
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19239

Sample ID **WQ090414A-MB** SampType: **MBLK** TestCode: **8082W** Units: **µg/L** Prep Date: **4/14/2009** RunNo: **19239**
Client ID: **ZZZZZ** Batch ID: **R19239** TestNo: **SW8082** Analysis Date: **4/14/2009** SeqNo: **277765**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	10.0									
Aroclor 1221	ND	10.0									
Aroclor 1232	ND	10.0									
Aroclor 1242	ND	10.0									
Aroclor 1248	ND	10.0									
Aroclor 1254	ND	10.0									
Aroclor 1260	ND	10.0									
Surr: Decachlorobiphenyl	5.200	0	5	0	104	64.8	121				
Surr: Tetrachloro-m-xylene	5.160	0	5	0	103	64.7	115				

Sample ID **WQ090414A-LCS** SampType: **LCS** TestCode: **8082W** Units: **µg/L** Prep Date: **4/14/2009** RunNo: **19239**
Client ID: **ZZZZZ** Batch ID: **R19239** TestNo: **SW8082** Analysis Date: **4/14/2009** SeqNo: **277766**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	52.49	10.0	50	0	105	69.7	139				
Aroclor 1260	48.72	10.0	50	0	97.4	71.3	131				
Surr: Decachlorobiphenyl	5.430	0	5	0	109	64.8	121				
Surr: Tetrachloro-m-xylene	5.090	0	5	0	102	64.7	115				

Sample ID **WQ090414A-LCSD** SampType: **LCSD** TestCode: **8082W** Units: **µg/L** Prep Date: **4/14/2009** RunNo: **19239**
Client ID: **ZZZZZ** Batch ID: **R19239** TestNo: **SW8082** Analysis Date: **4/14/2009** SeqNo: **277767**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	52.61	10.0	50	0	105	69.7	139	52.49	0.228	30	
Aroclor 1260	50.32	10.0	50	0	101	71.3	131	48.72	3.23	30	
Surr: Decachlorobiphenyl	5.420	0	5	0	108	64.8	121	0	0		
Surr: Tetrachloro-m-xylene	5.130	0	5	0	103	64.7	115	0	0		

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904073
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19272

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
SD090416A-MB	MBLK	TPHD_S	mg/Kg	4/16/2009	19272
Client ID: ZZZZZ	Batch ID: R19272	TestNo: SW8015B		Analysis Date: 4/16/2009	SeqNo: 278311

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	ND	2.00									
Surr: Pentacosane	2.925	0	3.3	0	88.6	59.7	129				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
SD090416A-LCS	LCS	TPHD_S	mg/Kg	4/16/2009	19272
Client ID: ZZZZZ	Batch ID: R19272	TestNo: SW8015B		Analysis Date: 4/16/2009	SeqNo: 278312

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	26.92	2.00	33.33	0	80.8	52.7	115				
Surr: Pentacosane	2.805	0	3.3	0	85.0	59.7	129				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
SD090416A-LCSD	LCSD	TPHD_S	mg/Kg	4/16/2009	19272
Client ID: ZZZZZ	Batch ID: R19272	TestNo: SW8015B		Analysis Date: 4/16/2009	SeqNo: 278313

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	23.78	2.00	33.33	0	71.4	52.7	115	26.92	12.4	30	
Surr: Pentacosane	2.549	0	3.3	0	77.2	59.7	129	0	0	0	

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
SD090416A-MB	MBLK	TPHDO_S	mg/Kg	4/16/2009	19272
Client ID: ZZZZZ	Batch ID: R19272	TestNo: SW8015B		Analysis Date: 4/16/2009	SeqNo: 278449

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	ND	2.00									
TPH (Motor Oil)	ND	4.00									
Surr: Pentacosane	2.925	0	3.3	0	88.6	59.7	129				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
SD090416A-LCS	LCS	TPHDO_S	mg/Kg	4/16/2009	19272
Client ID: ZZZZZ	Batch ID: R19272	TestNo: SW8015B		Analysis Date: 4/16/2009	SeqNo: 278450

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	26.92	2.00	33.33	0	80.8	52.7	115				

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904073
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19272

Sample ID	SD090416A-LCS	SampType:	LCS	TestCode:	TPHDO_S	Units:	mg/Kg	Prep Date:	4/16/2009	RunNo:	19272
Client ID:	ZZZZZ	Batch ID:	R19272	TestNo:	SW8015B			Analysis Date:	4/16/2009	SeqNo:	278450

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Pentacosane	2.805	0	3.3	0	85.0	59.7	129				

Sample ID	SD090416A-LCSD	SampType:	LCSD	TestCode:	TPHDO_S	Units:	mg/Kg	Prep Date:	4/16/2009	RunNo:	19272
Client ID:	ZZZZZ	Batch ID:	R19272	TestNo:	SW8015B			Analysis Date:	4/16/2009	SeqNo:	278451

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	23.78	2.00	33.33	0	71.4	52.7	115	26.92	12.4	30	
Surr: Pentacosane	2.549	0	3.3	0	77.2	59.7	129	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904073
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19276

Sample ID	MB-R19276	SampType:	MBLK	TestCode:	8260B_W	Units:	µg/L	Prep Date:	4/17/2009	RunNo:	19276
Client ID:	ZZZZZ	Batch ID:	R19276	TestNo:	SW8260B			Analysis Date:	4/17/2009	SeqNo:	278322

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	1.00									
1,1,1-Trichloroethane	ND	0.500									
1,1,2,2-Tetrachloroethane	ND	1.00									
1,1,2-Trichloroethane	ND	0.500									
1,1-Dichloroethane	ND	0.500									
1,1-Dichloroethene	ND	1.00									
1,1-Dichloropropene	ND	0.500									
1,2,3-Trichlorobenzene	ND	1.00									
1,2,3-Trichloropropane	ND	1.00									
1,2,4-Trichlorobenzene	ND	1.00									
1,2,4-Trimethylbenzene	ND	0.500									
1,2-Dibromo-3-chloropropane	ND	0.500									
1,2-Dibromoethane (EDB)	ND	0.500									
1,2-Dichlorobenzene	ND	0.500									
1,2-Dichloroethane (EDC)	ND	0.500									
1,2-Dichloropropane	ND	1.00									
1,3,5-Trimethylbenzene	ND	0.500									
1,3-Dichlorobenzene	ND	0.500									
1,4-Dichlorobenzene	ND	0.500									
2,2-Dichloropropane	ND	0.500									
2-Chloroethyl vinyl ether	ND	6.00									
2-Chlorotoluene	ND	0.500									
4-Chlorotoluene	ND	0.500									
4-Isopropyltoluene	ND	0.500									
Acetone	ND	10.0									
Benzene	ND	0.500									
Bromobenzene	ND	0.500									
Bromochloromethane	ND	0.500									
Bromodichloromethane	ND	0.500									
Bromoform	ND	1.00									
Bromomethane	ND	1.00									

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904073
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19276

Sample ID	MB-R19276	SampType:	MBLK	TestCode:	8260B_W	Units:	µg/L	Prep Date:	4/17/2009	RunNo:	19276
Client ID:	ZZZZZ	Batch ID:	R19276	TestNo:	SW8260B			Analysis Date:	4/17/2009	SeqNo:	278322

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon tetrachloride	ND	1.00									
Chlorobenzene	ND	0.500									
Chloroform	ND	0.500									
Chloromethane	ND	0.500									
cis-1,2-Dichloroethene	ND	0.500									
cis-1,3-Dichloropropene	ND	0.500									
Dibromochloromethane	ND	0.500									
Dibromomethane	ND	0.500									
Dichlorodifluoromethane	ND	0.500									
Diisopropyl ether (DIPE)	ND	0.500									
Ethyl tert-butyl ether (ETBE)	ND	0.500									
Ethylbenzene	ND	0.500									
Freon-113	ND	1.00									
Hexachlorobutadiene	ND	0.500									
Isopropylbenzene	ND	1.00									
Methyl tert-butyl ether (MTBE)	ND	0.500									
Methylene chloride	ND	5.00									
Naphthalene	ND	1.00									
n-Butylbenzene	ND	0.500									
n-Propylbenzene	ND	0.500									
sec-Butylbenzene	ND	0.500									
Styrene	ND	0.500									
t-Butyl alcohol (t-Butanol)	ND	5.00									
tert-Amyl methyl ether (TAME)	ND	0.500									
tert-Butylbenzene	ND	0.500									
Tetrachloroethene	ND	0.500									
Toluene	ND	0.500									
trans-1,2-Dichloroethene	ND	0.500									
trans-1,3-Dichloropropene	ND	0.500									
Trichloroethene	ND	0.500									
Trichlorofluoromethane	ND	0.500									

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904073
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19276

Sample ID **MB-R19276** SampType: **MBLK** TestCode: **8260B_W** Units: **µg/L** Prep Date: **4/17/2009** RunNo: **19276**
Client ID: **ZZZZZ** Batch ID: **R19276** TestNo: **SW8260B** Analysis Date: **4/17/2009** SeqNo: **278322**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	ND	0.500									
Xylenes, Total	ND	1.50									
Surr: Dibromofluoromethane	10.65	0	11.36	0	93.8	61.2	131				
Surr: 4-Bromofluorobenzene	11.69	0	11.36	0	103	64.1	120				
Surr: Toluene-d8	11.42	0	11.36	0	101	75.1	127				

Sample ID **LCS-R19276** SampType: **LCS** TestCode: **8260B_W** Units: **µg/L** Prep Date: **4/16/2009** RunNo: **19276**
Client ID: **ZZZZZ** Batch ID: **R19276** TestNo: **SW8260B** Analysis Date: **4/16/2009** SeqNo: **278323**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	14.15	1.00	17.04	0	83.0	61.4	129				
Benzene	15.62	0.500	17.04	0	91.7	66.9	140				
Chlorobenzene	14.93	0.500	17.04	0	87.6	73.9	137				
Toluene	14.71	0.500	17.04	0	86.3	76.6	123				
Trichloroethene	14.09	0.500	17.04	0	82.7	69.3	144				
Surr: Dibromofluoromethane	11.68	0	11.36	0	103	61.2	131				
Surr: 4-Bromofluorobenzene	11.79	0	11.36	0	104	64.1	120				
Surr: Toluene-d8	12.40	0	11.36	0	109	75.1	127				

Sample ID **LCSD-R19276** SampType: **LCSD** TestCode: **8260B_W** Units: **µg/L** Prep Date: **4/16/2009** RunNo: **19276**
Client ID: **ZZZZZ** Batch ID: **R19276** TestNo: **SW8260B** Analysis Date: **4/16/2009** SeqNo: **278328**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	15.74	1.00	17.04	0	92.4	61.4	129	14.15	10.6	20	
Benzene	16.98	0.500	17.04	0	99.6	66.9	140	15.62	8.34	20	
Chlorobenzene	15.64	0.500	17.04	0	91.8	73.9	137	14.93	4.65	20	
Toluene	15.52	0.500	17.04	0	91.1	76.6	123	14.71	5.36	20	
Trichloroethene	15.48	0.500	17.04	0	90.8	69.3	144	14.09	9.40	20	
Surr: Dibromofluoromethane	11.99	0	11.36	0	106	61.2	131	0	0	0	
Surr: 4-Bromofluorobenzene	11.72	0	11.36	0	103	64.1	120	0	0	0	
Surr: Toluene-d8	12.65	0	11.36	0	111	75.1	127	0	0	0	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904073
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19277

Sample ID	MB_R19277	SampType:	MBLK	TestCode:	8260B_S	Units:	µg/Kg	Prep Date:	4/16/2009	RunNo:	19277
Client ID:	ZZZZZ	Batch ID:	R19277	TestNo:	SW8260B			Analysis Date:	4/16/2009	SeqNo:	278336

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	10									
1,1,1-Trichloroethane	ND	10									
1,1,2,2-Tetrachloroethane	ND	10									
1,1,2-Trichloroethane	ND	10									
1,1-Dichloroethane	ND	10									
1,1-Dichloroethene	ND	10									
1,1-Dichloropropene	ND	10									
1,2,3-Trichlorobenzene	ND	10									
1,2,3-Trichloropropane	ND	10									
1,2,4-Trichlorobenzene	ND	10									
1,2,4-Trimethylbenzene	ND	10									
1,2-Dibromo-3-chloropropane	ND	10									
1,2-Dibromoethane (EDB)	ND	10									
1,2-Dichlorobenzene	ND	10									
1,2-Dichloroethane (EDC)	ND	10									
1,2-Dichloropropane	ND	10									
1,3,5-Trimethylbenzene	ND	10									
1,3-Dichlorobenzene	ND	10									
1,3-Dichloropropene	ND	10									
1,4-Dichlorobenzene	ND	10									
2,2-Dichloropropane	ND	10									
2-Chloroethyl vinyl ether	ND	10									
2-Chlorotoluene	ND	10									
4-Chlorotoluene	ND	10									
4-Isopropyltoluene	ND	10									
Benzene	ND	10									
Bromobenzene	ND	10									
Bromochloromethane	ND	10									
Bromodichloromethane	ND	10									
Bromoform	ND	10									
Bromomethane	ND	10									

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904073
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19277

Sample ID	MB_R19277	SampType:	MBLK	TestCode:	8260B_S	Units:	µg/Kg	Prep Date:	4/16/2009	RunNo:	19277
Client ID:	ZZZZZ	Batch ID:	R19277	TestNo:	SW8260B			Analysis Date:	4/16/2009	SeqNo:	278336

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon tetrachloride	ND	10									
Chlorobenzene	ND	10									
Chloroform	ND	10									
Chloromethane	ND	10									
cis-1,2-Dichloroethene	ND	10									
cis-1,3-Dichloropropene	ND	10									
Dibromochloromethane	ND	10									
Dibromomethane	ND	10									
Dichlorodifluoromethane	ND	10									
Ethyl tert-butyl ether (ETBE)	ND	10									
Ethylbenzene	ND	10									
Freon-113	ND	10									
Hexachlorobutadiene	ND	10									
Isopropyl Ether	ND	10									
Isopropylbenzene	ND	10									
Methyl tert-butyl ether (MTBE)	ND	10									
Methylene chloride	ND	50									
Naphthalene	ND	20									
n-Butylbenzene	ND	10									
n-Propylbenzene	ND	10									
sec-Butylbenzene	ND	10									
Styrene	ND	10									
t-Butyl alcohol (t-Butanol)	ND	50									
tert-Amyl methyl ether (TAME)	ND	10									
tert-Butylbenzene	ND	10									
Tetrachloroethene	ND	10									
Toluene	ND	10									
trans-1,2-Dichloroethene	ND	10									
trans-1,3-Dichloropropene	ND	10									
Trichloroethene	ND	10									
Trichlorofluoromethane	ND	10									

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904073
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19277

Sample ID **MB_R19277** SampType: **MBLK** TestCode: **8260B_S** Units: **µg/Kg** Prep Date: **4/16/2009** RunNo: **19277**
Client ID: **ZZZZZ** Batch ID: **R19277** TestNo: **SW8260B** Analysis Date: **4/16/2009** SeqNo: **278336**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	ND	10									
Xylenes, Total	ND	15									
Surr: 4-Bromofluorobenzene	43.96	0	50	0	87.9	55.8	141				
Surr: Dibromofluoromethane	46.70	0	50	0	93.4	59.8	148				
Surr: Toluene-d8	52.92	0	50	0	106	55.2	133				

Sample ID **LCS_R19277** SampType: **LCS** TestCode: **8260B_S** Units: **µg/Kg** Prep Date: **4/16/2009** RunNo: **19277**
Client ID: **ZZZZZ** Batch ID: **R19277** TestNo: **SW8260B** Analysis Date: **4/16/2009** SeqNo: **278337**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	46.87	10	50	0	93.7	53.7	139				
Benzene	48.46	10	50	0	96.9	66.5	135				
Chlorobenzene	60.33	10	50	0	121	57.5	150				
Toluene	47.55	10	50	0	95.1	56.8	134				
Trichloroethene	56.04	10	50	0	112	57.4	134				
Surr: 4-Bromofluorobenzene	44.68	0	50	0	89.4	55.8	141				
Surr: Dibromofluoromethane	47.97	0	50	0	95.9	59.8	148				
Surr: Toluene-d8	46.22	0	50	0	92.4	55.2	133				

Sample ID **LCSD_R19277** SampType: **LCSD** TestCode: **8260B_S** Units: **µg/Kg** Prep Date: **4/16/2009** RunNo: **19277**
Client ID: **ZZZZZ** Batch ID: **R19277** TestNo: **SW8260B** Analysis Date: **4/16/2009** SeqNo: **278338**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	46.96	10	50	0	93.9	53.7	139	46.87	0.192	30	
Benzene	48.49	10	50	0	97.0	66.5	135	48.46	0.0619	30	
Chlorobenzene	57.59	10	50	0	115	57.5	150	60.33	4.65	30	
Toluene	44.65	10	50	0	89.3	56.8	134	47.55	6.29	30	
Trichloroethene	48.85	10	50	0	97.7	57.4	134	56.04	13.7	30	
Surr: 4-Bromofluorobenzene	45.49	0	50	0	91.0	55.8	141	0	0	0	
Surr: Dibromofluoromethane	49.59	0	50	0	99.2	59.8	148	0	0	0	
Surr: Toluene-d8	45.28	0	50	0	90.6	55.2	133	0	0	0	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904073
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19282

Sample ID	SP090415A-MB	SampType:	MBLK	TestCode:	8081S	Units:	µg/Kg	Prep Date:	4/15/2009	RunNo:	19282
Client ID:	ZZZZZ	Batch ID:	R19282	TestNo:	SW8081A			Analysis Date:	4/16/2009	SeqNo:	278424

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDD	ND	2.00									
4,4´-DDE	ND	2.00									
4,4´-DDT	ND	2.00									
Aldrin	ND	2.00									
alpha-BHC	ND	2.00									
alpha-Chlordane	ND	2.00									
beta-BHC	ND	2.00									
Chlordane	ND	20.0									
delta-BHC	ND	2.00									
Dieldrin	ND	2.00									
Endosulfan I	ND	2.00									
Endosulfan II	ND	2.00									
Endosulfan sulfate	ND	2.00									
Endrin	ND	2.00									
Endrin aldehyde	ND	2.00									
Endrin ketone	ND	2.00									
gamma-BHC	ND	2.00									
gamma-Chlordane	ND	2.00									
Heptachlor	ND	2.00									
Heptachlor epoxide	ND	2.00									
Methoxychlor	ND	5.00									
Toxaphene	ND	100									
Surr: Decachlorobiphenyl	47.83	0	50	0	95.7	57	126				
Surr: Tetrachloro-m-xylene	45.44	0	50	0	90.9	55.7	122				

Sample ID	SP090415A-LCS	SampType:	LCS	TestCode:	8081S	Units:	µg/Kg	Prep Date:	4/15/2009	RunNo:	19282
Client ID:	ZZZZZ	Batch ID:	R19282	TestNo:	SW8081A			Analysis Date:	4/16/2009	SeqNo:	278425

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDT	19.26	2.00	20	0	96.3	52.8	134				
Aldrin	18.48	2.00	20	0	92.4	53	123				

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904073
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19282

Sample ID	SP090415A-LCS	SampType:	LCS	TestCode:	8081S	Units:	µg/Kg	Prep Date:	4/15/2009	RunNo:	19282
Client ID:	ZZZZZ	Batch ID:	R19282	TestNo:	SW8081A			Analysis Date:	4/16/2009	SeqNo:	278425

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dieldrin	20.33	2.00	20	0	102	44	130				
Endrin	20.69	2.00	20	0	103	44.1	121				
gamma-BHC	17.94	2.00	20	0	89.7	56.9	120				
Heptachlor	18.66	2.00	20	0	93.3	63.6	117				
Surr: Decachlorobiphenyl	65.09	0	70	0	93.0	57	126				
Surr: Tetrachloro-m-xylene	66.72	0	70	0	95.3	55.7	122				

Sample ID	SP090415A-LCSD	SampType:	LCSD	TestCode:	8081S	Units:	µg/Kg	Prep Date:	4/15/2009	RunNo:	19282
Client ID:	ZZZZZ	Batch ID:	R19282	TestNo:	SW8081A			Analysis Date:	4/16/2009	SeqNo:	278426

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDT	17.85	2.00	20	0	89.3	52.8	134	19.26	7.61	30	
Aldrin	16.94	2.00	20	0	84.7	53	123	18.48	8.68	30	
Dieldrin	18.11	2.00	20	0	90.5	44	130	20.33	11.6	30	
Endrin	18.42	2.00	20	0	92.1	44.1	121	20.69	11.6	30	
gamma-BHC	16.50	2.00	20	0	82.5	56.9	120	17.94	8.38	30	
Heptachlor	17.27	2.00	20	0	86.4	63.6	117	18.66	7.71	30	
Surr: Decachlorobiphenyl	57.85	0	70	0	82.6	57	126	0	0	0	
Surr: Tetrachloro-m-xylene	59.40	0	70	0	84.9	55.7	122	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904073
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19284

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
SQ090416A-MB	**MBLK**	**8082S**	**mg/Kg**	**4/16/2009**	**19284**
Client ID: **ZZZZZ**	Batch ID: **R19284**	TestNo: **SW8082**		Analysis Date: **4/17/2009**	SeqNo: **278433**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	0.0230									
Aroclor 1221	ND	0.0920									
Aroclor 1232	ND	0.0460									
Aroclor 1242	ND	0.0430									
Aroclor 1248	ND	0.0360									
Aroclor 1254	ND	0.0240									
Aroclor 1260	ND	0.0270									
Surr: Decachlorobiphenyl	0.04154	0	0.05	0	83.1	55.1	113				
Surr: Tetrachloro-m-xylene	0.04611	0	0.05	0	92.2	51.7	128				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
SQ090417A-MB	**MBLK**	**8082S**	**mg/Kg**	**4/17/2009**	**19284**
Client ID: **ZZZZZ**	Batch ID: **R19284**	TestNo: **SW8082**		Analysis Date: **4/17/2009**	SeqNo: **278740**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	0.100									
Aroclor 1221	ND	0.200									
Aroclor 1232	ND	0.100									
Aroclor 1242	ND	0.100									
Aroclor 1248	ND	0.100									
Aroclor 1254	ND	0.100									
Aroclor 1260	ND	0.100									
Surr: Decachlorobiphenyl	0.04835	0	0.05	0	96.7	55.1	113				
Surr: Tetrachloro-m-xylene	0.05442	0	0.05	0	109	51.7	128				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
SQ090416A-LCS	**LCS**	**8082S**	**mg/Kg**	**4/16/2009**	**19284**
Client ID: **ZZZZZ**	Batch ID: **R19284**	TestNo: **SW8082**		Analysis Date: **4/17/2009**	SeqNo: **278434**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	0.8351	0.100	1	0	83.5	55.6	135				
Aroclor 1260	0.4214	0.100	0.5	0	84.3	65.6	132				
Surr: Decachlorobiphenyl	0.04683	0	0.05	0	93.7	55.1	113				

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904073
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19284

Sample ID	SQ090416A-LCS	SampType:	LCS	TestCode:	8082S	Units:	mg/Kg	Prep Date:	4/16/2009	RunNo:	19284
Client ID:	ZZZZZ	Batch ID:	R19284	TestNo:	SW8082			Analysis Date:	4/17/2009	SeqNo:	278434

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Tetrachloro-m-xylene	0.04491	0	0.05	0	89.8	51.7	128				

Sample ID	SQ090416A-LCSD	SampType:	LCSD	TestCode:	8082S	Units:	mg/Kg	Prep Date:	4/16/2009	RunNo:	19284
Client ID:	ZZZZZ	Batch ID:	R19284	TestNo:	SW8082			Analysis Date:	4/17/2009	SeqNo:	278435

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	0.9646	0.100	1	0	96.5	55.6	135	0.8351	14.4	30	
Aroclor 1260	0.4518	0.100	0.5	0	90.4	65.6	132	0.4214	6.96	30	
Surr: Decachlorobiphenyl	0.05176	0	0.05	0	104	55.1	113	0	0	0	
Surr: Tetrachloro-m-xylene	0.05015	0	0.05	0	100	51.7	128	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904073
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19286

Sample ID	WP090415A-MB	SampType:	MBLK	TestCode:	8081W	Units:	µg/L	Prep Date:	4/15/2009	RunNo:	19286
Client ID:	ZZZZZ	Batch ID:	R19286	TestNo:	SW8081A			Analysis Date:	4/16/2009	SeqNo:	278455

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDD	ND	0.0200									
4,4´-DDE	ND	0.0200									
4,4´-DDT	ND	0.0200									
Aldrin	ND	0.0200									
alpha-BHC	ND	0.0200									
alpha-Chlordane	ND	0.0200									
beta-BHC	ND	0.0200									
Chlordane	ND	0.250									
delta-BHC	ND	0.0200									
Dieldrin	ND	0.0200									
Endosulfan I	ND	0.0200									
Endosulfan II	ND	0.0200									
Endosulfan sulfate	ND	0.0200									
Endrin	ND	0.0200									
Endrin aldehyde	ND	0.0200									
Endrin ketone	ND	0.0200									
gamma-BHC	ND	0.0200									
gamma-Chlordane	ND	0.0200									
Heptachlor	ND	0.0200									
Heptachlor epoxide	ND	0.0200									
Methoxychlor	ND	0.0500									
Toxaphene	ND	1.00									
Surr: Decachlorobiphenyl	0.2286	0	0.25	0	91.4	52	116				
Surr: Tetrachloro-m-xylene	0.1662	0	0.25	0	66.5	40.3	118				

Sample ID	WP090415A-LCS	SampType:	LCS	TestCode:	8081W	Units:	µg/L	Prep Date:	4/15/2009	RunNo:	19286
Client ID:	ZZZZZ	Batch ID:	R19286	TestNo:	SW8081A			Analysis Date:	4/16/2009	SeqNo:	278456

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDT	0.1063	0.0200	0.1	0	106	58.4	126				
Aldrin	0.06929	0.0200	0.1	0	69.3	55.3	101				

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904073
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19286

Sample ID	WP090415A-LCS	SampType:	LCS	TestCode:	8081W	Units:	µg/L	Prep Date:	4/15/2009	RunNo:	19286
Client ID:	ZZZZZ	Batch ID:	R19286	TestNo:	SW8081A			Analysis Date:	4/16/2009	SeqNo:	278456

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dieldrin	0.09827	0.0200	0.1	0	98.3	60.3	116				
Endrin	0.1086	0.0200	0.1	0	109	60.4	134				
gamma-BHC	0.1041	0.0200	0.1	0	104	61.6	135				
Heptachlor	0.07503	0.0200	0.1	0	75.0	60	97.8				
Surr: Decachlorobiphenyl	0.2740	0	0.35	0	78.3	52	116				
Surr: Tetrachloro-m-xylene	0.2018	0	0.35	0	57.6	40.3	118				

Sample ID	WP090415A-LCSD	SampType:	LCSD	TestCode:	8081W	Units:	µg/L	Prep Date:	4/15/2009	RunNo:	19286
Client ID:	ZZZZZ	Batch ID:	R19286	TestNo:	SW8081A			Analysis Date:	4/16/2009	SeqNo:	278457

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDT	0.1116	0.0200	0.1	0	112	58.4	126	0.1063	4.86	35	
Aldrin	0.07522	0.0200	0.1	0	75.2	55.3	101	0.06929	8.21	35	
Dieldrin	0.1025	0.0200	0.1	0	102	60.3	116	0.09827	4.18	35	
Endrin	0.1138	0.0200	0.1	0	114	60.4	134	0.1086	4.70	35	
gamma-BHC	0.08359	0.0200	0.1	0	83.6	61.6	135	0.1041	21.9	35	
Heptachlor	0.08458	0.0200	0.1	0	84.6	60	97.8	0.07503	12.0	35	
Surr: Decachlorobiphenyl	0.2849	0	0.35	0	81.4	52	116	0	0	0	
Surr: Tetrachloro-m-xylene	0.2401	0	0.35	0	68.6	40.3	118	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904073
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19291

Sample ID **WD090417A-MB** SampType: **MBLK** TestCode: **TPHDO_W** Units: **mg/L** Prep Date: **4/17/2009** RunNo: **19291**
Client ID: **ZZZZZ** Batch ID: **R19291** TestNo: **SW8015B** Analysis Date: **4/17/2009** SeqNo: **278585**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	ND	0.100									
TPH (Motor Oil)	ND	0.200									
Surr: Pentacosane	0.09700	0	0.1	0	97.0	57.9	125				

Sample ID **WD090417A-LCS** SampType: **LCS** TestCode: **TPHDO_W** Units: **mg/L** Prep Date: **4/17/2009** RunNo: **19291**
Client ID: **ZZZZZ** Batch ID: **R19291** TestNo: **SW8015B** Analysis Date: **4/17/2009** SeqNo: **278586**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	0.7320	0.100	1	0	73.2	50.3	125				
Surr: Pentacosane	0.09100	0	0.1	0	91.0	57.9	125				

Sample ID **WD090417A-LCSD** SampType: **LCSD** TestCode: **TPHDO_W** Units: **mg/L** Prep Date: **4/17/2009** RunNo: **19291**
Client ID: **ZZZZZ** Batch ID: **R19291** TestNo: **SW8015B** Analysis Date: **4/17/2009** SeqNo: **278587**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	0.7280	0.100	1	0	72.8	50.3	125	0.732	0.548	30	
Surr: Pentacosane	0.1030	0	0.1	0	103	57.9	125	0	0	0	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904073
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: T19277

Sample ID **MB_T19277** SampType: **MBLK** TestCode: **TPH_GAS_S** Units: **µg/Kg** Prep Date: **4/18/2009** RunNo: **19277**
Client ID: **ZZZZZ** Batch ID: **T19277** TestNo: **SW8260B(TP** Analysis Date: **4/18/2009** SeqNo: **278644**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	ND	100									
Surr: 4-Bromofllurobenzene	55.00	0	50	0	110	56.9	133				

Sample ID **LCS_T19277** SampType: **LCS** TestCode: **TPH_GAS_S** Units: **µg/Kg** Prep Date: **4/18/2009** RunNo: **19277**
Client ID: **ZZZZZ** Batch ID: **T19277** TestNo: **SW8260B(TP** Analysis Date: **4/18/2009** SeqNo: **278645**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	810.0	100	1000	65	74.5	48.2	132				
Surr: 4-Bromofllurobenzene	52.00	0	50	0	104	56.9	133				

Sample ID **LCSD_T19277** SampType: **LCSD** TestCode: **TPH_GAS_S** Units: **µg/Kg** Prep Date: **4/18/2009** RunNo: **19277**
Client ID: **ZZZZZ** Batch ID: **T19277** TestNo: **SW8260B(TP** Analysis Date: **4/18/2009** SeqNo: **278646**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	842.0	100	1000	65	77.7	48.2	132	810	3.87	30	
Surr: 4-Bromofllurobenzene	53.00	0	50	0	106	56.9	133	0	0	0	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

Torrent Laboratory, Inc.

WORK ORDER Summary

14-Apr-09

Work Order 0904073

Client ID: URS CORPORATION

Project: 101 Aux Lanes **QC Level:**

Comments: 5 day TAT! Received 45 soils (sample 020A does not exists) and 1 water. Report to Patrick no Asbestos!!

Sample ID	Client Sample ID	Collection Date	Date Received	Date Due	Matrix	Test Code	Hld	MS	SEL	Sub	Storage
0904073-001A	S-3-2 @ 2.0	4/12/2009 9:25:00 PM	4/13/2009	4/17/2009	Soil	3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904073-002A	S-3-2 @ 3.0			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904073-003A	S-3-12 @ 0.5	4/12/2009 10:25:00 PM		4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904073-004A	S-3-12 @ 1.0			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
				4/17/2009		8260B_S	☐	☐	☐	☐	SR
0904073-005A	S-3-12 @ 1.5			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
				4/17/2009		8260B_S	☐	☐	☐	☐	SR
0904073-006A	S-3-12 @ 2.0			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904073-007A	S-3-12 @ 3.0			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904073-008A	S-3-12 @ 0.5-D			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904073-009A	S-3-12 @ 1.0-D			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
				4/17/2009		8260B_S	☐	☐	☐	☐	SR
0904073-010A	S-3-12 @ 1.5-D			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
				4/17/2009		8260B_S	☐	☐	☐	☐	SR
0904073-011A	S-3-13 @ 1.0	4/12/2009 10:40:00 PM		4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904073-012A	S-3-13 @ 1.5			4/17/2009		3050B_S	☐	☐	☐	☐	SR

WORK ORDER Summary

14-Apr-09

Work Order 0904073

Client ID: URS CORPORATION

Project: 101 Aux Lanes **QC Level:**

Comments: 5 day TAT! Received 45 soils (sample 020A does not exists) and 1 water. Report to Patrick no Asbestos!!

Sample ID	Client Sample ID	Collection Date	Date Received	Date Due	Matrix	Test Code	Hld	MS	SEL	Sub	Storage
0904073-012A	S-3-13 @ 1.5	4/12/2009 10:40:00 PM	4/13/2009	4/17/2009	Soil	6010B_S	☐	☐	☑	☐	SR
0904073-013A	S-3-13 @ 2.0			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904073-014A	S-3-13 @ 3.0			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904073-015A	S-3-14 @ 0.5	4/12/2009 10:50:00 PM		4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904073-016A	S-3-14 @ 1.0			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904073-017A	S-3-14 @ 1.5			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904073-018A	S-3-14 @ 2.0			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904073-019A	S-3-14 @ 3.0			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904073-021A	S-3-11 @ 1.0-D	4/12/2009 10:05:00 PM		4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
				4/17/2009		7471_PREP	☐	☐	☐	☐	SR
				4/17/2009		8260B_S_PETROLEUM	☐	☐	☑	☐	SR
				4/17/2009		HG_CTS	☐	☐	☐	☐	SR
				4/17/2009		PH_S	☐	☐	☐	☐	SR
				4/17/2009		TPH_GAS_S_GC MS	☐	☐	☐	☐	SR
0904073-022A	S-3-11 @ 1.5-D			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
				4/17/2009		7471_PREP	☐	☐	☐	☐	SR
				4/17/2009		8260B_S_PETROLEUM	☐	☐	☑	☐	SR
				4/17/2009		HG_CTS	☐	☐	☐	☐	SR
				4/17/2009		PH_S	☐	☐	☐	☐	SR

WORK ORDER Summary

14-Apr-09

Work Order 0904073

Client ID: URS CORPORATION

Project: 101 Aux Lanes **QC Level:**

Comments: 5 day TAT! Received 45 soils (sample 020A does not exists) and 1 water. Report to Patrick no Asbestos!!

Sample ID	Client Sample ID	Collection Date	Date Received	Date Due	Matrix	Test Code	Hld	MS	SEL	Sub	Storage
0904073-022A	S-3-11 @ 1.5-D	4/12/2009 10:05:00 PM	4/13/2009	4/17/2009	Soil	TPH_GAS_S_GC MS	☐	☐	☐	☐	SR
0904073-023A	S-3-11 @ 2.0-D			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
				4/17/2009		7471_PREP	☐	☐	☐	☐	SR
				4/17/2009		8260B_S_PETRO LEUM	☐	☐	☑	☐	SR
				4/17/2009		HG_CTS	☐	☐	☐	☐	SR
				4/17/2009		PH_S	☐	☐	☐	☐	SR
				4/17/2009		TPH_GAS_S_GC MS	☐	☐	☐	☐	SR
0904073-024A	S-3-11 @ 3.0-D			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
				4/17/2009		7471_PREP	☐	☐	☐	☐	SR
				4/17/2009		8260B_S_PETRO LEUM	☐	☐	☑	☐	SR
				4/17/2009		HG_CTS	☐	☐	☐	☐	SR
				4/17/2009		PH_S	☐	☐	☐	☐	SR
				4/17/2009		TPH_GAS_S_GC MS	☐	☐	☐	☐	SR
0904073-025A	N-3--8 @ 0.5	4/12/2009 11:35:00 PM		4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904073-026A	N-3-8 @ 1.0			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904073-027A	N-3-8 @ 1.5			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904073-028A	N-3-8 @ 2.0			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904073-029A	N-3-8 @ 3.0			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904073-030A	S-3-13 @ 0.5	4/12/2009 10:40:00 PM		4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904073-031A	N-3-11 @ 1.0	4/12/2009 11:20:00 PM		4/17/2009		3050B_S	☐	☐	☐	☐	SR

WORK ORDER Summary

14-Apr-09

Work Order 0904073

Client ID: URS CORPORATION

Project: 101 Aux Lanes **QC Level:**

Comments: 5 day TAT! Received 45 soils (sample 020A does not exists) and 1 water. Report to Patrick no Asbestos!!

Sample ID	Client Sample ID	Collection Date	Date Received	Date Due	Matrix	Test Code	Hld	MS	SEL	Sub	Storage
0904073-031A	N-3-11 @ 1.0	4/12/2009 11:20:00 PM	4/13/2009	4/17/2009	Soil	6010B_S	☐	☐	☑	☐	SR
0904073-032A	N-3-11 @ 1.5			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904073-033A	N-3-11 @ 2.0			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904073-034A	N-3-11 @ 3.0			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904073-035A	S-3-11 @ 0.5	4/12/2009 9:50:00 PM		4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
				4/17/2009		7471_PREP	☐	☐	☐	☐	SR
				4/17/2009		8081S	☐	☐	☐	☐	SR
				4/17/2009		8082S	☐	☐	☐	☐	SR
				4/17/2009		HG_CTS	☐	☐	☐	☐	SR
				4/17/2009		PH_S	☐	☐	☐	☐	SR
				4/17/2009		TPHDO_S	☐	☐	☐	☐	SR
0904073-036A	S-3-11 @ 1.0			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
				4/17/2009		7471_PREP	☐	☐	☐	☐	SR
				4/17/2009		8260B_S_PETROLEUM	☐	☐	☑	☐	SR
				4/17/2009		HG_CTS	☐	☐	☐	☐	SR
				4/17/2009		PH_S	☐	☐	☐	☐	SR
				4/17/2009		TPH_GAS_S_GC MS	☐	☐	☐	☐	SR
0904073-037A	S-3-11 @ 1.5			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
				4/17/2009		7471_PREP	☐	☐	☐	☐	SR
				4/17/2009		8260B_S_PETROLEUM	☐	☐	☑	☐	SR
				4/17/2009		HG_CTS	☐	☐	☐	☐	SR
				4/17/2009		PH_S	☐	☐	☐	☐	SR

WORK ORDER Summary

14-Apr-09

Work Order 0904073

Client ID: URS CORPORATION

Project: 101 Aux Lanes **QC Level:**

Comments: 5 day TAT! Received 45 soils (sample 020A does not exists) and 1 water. Report to Patrick no Asbestos!!

Sample ID	Client Sample ID	Collection Date	Date Received	Date Due	Matrix	Test Code	Hld	MS	SEL	Sub	Storage
0904073-037A	S-3-11 @ 1.5	4/12/2009 9:50:00 PM	4/13/2009	4/17/2009	Soil	TPH_GAS_S_GC_MS	☐	☐	☐	☐	SR
0904073-038A	S-3-11 @ 2.0			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
				4/17/2009		7471_PREP	☐	☐	☐	☐	SR
				4/17/2009		8260B_S_PETROLEUM	☐	☐	☑	☐	SR
				4/17/2009		HG_CTS	☐	☐	☐	☐	SR
				4/17/2009		PH_S	☐	☐	☐	☐	SR
				4/17/2009		TPH_GAS_S_GC_MS	☐	☐	☐	☐	SR
0904073-039A	S-3-11 @ 3.0			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
				4/17/2009		7471_PREP	☐	☐	☐	☐	SR
				4/17/2009		8260B_S_PETROLEUM	☐	☐	☑	☐	SR
				4/17/2009		HG_CTS	☐	☐	☐	☐	SR
				4/17/2009		PH_S	☐	☐	☐	☐	SR
				4/17/2009		TPH_GAS_S_GC_MS	☐	☐	☐	☐	SR
0904073-040A	S-3-11 @ 0.5-D	4/12/2009 10:05:00 PM		4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
				4/17/2009		7471_PREP	☐	☐	☐	☐	SR
				4/17/2009		8081S	☐	☐	☐	☐	SR
				4/17/2009		8082S	☐	☐	☐	☐	SR
				4/17/2009		HG_CTS	☐	☐	☐	☐	SR
				4/17/2009		PH_S	☐	☐	☐	☐	SR
				4/17/2009		TPHDO_S	☐	☐	☐	☐	SR
0904073-041A	N-3-10 @ 1.0	4/12/2009 8:15:00 PM		4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
				4/17/2009		7471_PREP	☐	☐	☐	☐	SR
				4/17/2009		8081S	☐	☐	☐	☐	SR
				4/17/2009		8082S	☐	☐	☐	☐	SR

WORK ORDER Summary

14-Apr-09

Work Order 0904073

Client ID: URS CORPORATION

Project: 101 Aux Lanes **QC Level:**

Comments: 5 day TAT! Received 45 soils (sample 020A does not exists) and 1 water. Report to Patrick no Asbestos!!

Sample ID	Client Sample ID	Collection Date	Date Received	Date Due	Matrix	Test Code	Hld	MS	SEL	Sub	Storage
0904073-041A	N-3-10 @ 1.0	4/12/2009 8:15:00 PM	4/13/2009	4/17/2009	Soil	8260B_S	☐	☐	☐	☐	SR
				4/17/2009		HG_CTS	☐	☐	☐	☐	SR
				4/17/2009		PH_S	☐	☐	☐	☐	SR
				4/17/2009		TPH_GAS_S_GC MS	☐	☐	☐	☐	SR
				4/17/2009		TPHDO_S	☐	☐	☐	☐	SR
0904073-042A	N-3-10 @ 3.0			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
				4/17/2009		7471_PREP	☐	☐	☐	☐	SR
				4/17/2009		8081S	☐	☐	☐	☐	SR
				4/17/2009		8082S	☐	☐	☐	☐	SR
				4/17/2009		8260B_S	☐	☐	☐	☐	SR
				4/17/2009		HG_CTS	☐	☐	☐	☐	SR
				4/17/2009		PH_S	☐	☐	☐	☐	SR
				4/17/2009		TPH_GAS_S_GC MS	☐	☐	☐	☐	SR
				4/17/2009		TPHDO_S	☐	☐	☐	☐	SR
0904073-043A	N-3-10 @ 6.0			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
				4/17/2009		7471_PREP	☐	☐	☐	☐	SR
				4/17/2009		8081S	☐	☐	☐	☐	SR
				4/17/2009		8082S	☐	☐	☐	☐	SR
				4/17/2009		8260B_S	☐	☐	☐	☐	SR
				4/17/2009		HG_CTS	☐	☐	☐	☐	SR
				4/17/2009		PH_S	☐	☐	☐	☐	SR
				4/17/2009		TPH_GAS_S_GC MS	☐	☐	☐	☐	SR
				4/17/2009		TPHDO_S	☐	☐	☐	☐	SR
0904073-044A	N-3-10-GW	4/12/2009 8:30:00 PM		4/17/2009	Groundwater	200.7PR/3010A_W	☐	☐	☐	☐	SR
				4/17/2009		3510_B	☐	☐	☐	☐	SR
				4/17/2009		6010B_W	☐	☐	☑	☐	SR

WORK ORDER Summary

14-Apr-09

Work Order 0904073

Client ID: URS CORPORATION

Project: 101 Aux Lanes **QC Level:**

Comments: 5 day TAT! Received 45 soils (sample 020A does not exists) and 1 water. Report to Patrick no Asbestos!!

Sample ID	Client Sample ID	Collection Date	Date Received	Date Due	Matrix	Test Code	Hld	MS	SEL	Sub	Storage
0904073-044A	N-3-10-GW	4/12/2009 8:30:00 PM	4/13/2009	4/17/2009	Groundwater	7470A_PREP	☐	☐	☐	☐	SR
				4/17/2009		8081W	☐	☐	☐	☐	SR
				4/17/2009		8082W	☐	☐	☐	☐	SR
				4/17/2009		8260B_W	☐	☐	☐	☐	SR
				4/17/2009		HG_W_7470A	☐	☐	☐	☐	SR
				4/17/2009		PH_W	☐	☐	☐	☐	SR
				4/17/2009		TPH_GAS_W_GC MS	☐	☐	☐	☐	SR
				4/17/2009		TPHDO_W	☐	☐	☐	☐	SR
0904073-045A	S-3-2 @ 0.5	4/12/2009 9:25:00 PM		4/17/2009	Soil	3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904073-046A	S-3-2 @ 1.0			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR
0904073-047A	S-3-2 @ 1.5			4/17/2009		3050B_S	☐	☐	☐	☐	SR
				4/17/2009		6010B_S	☐	☐	☑	☐	SR

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0904073

Company Name: VRS San Jose	Location of Sampling: 101 Ave Lanes
Address:	Purpose:
City: State: Zip Code:	Special Instructions / Comments:
Telephone: FAX:	
REPORT TO: Patrick Wolz SAMPLER: Eduardo Ortiz	P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Working Days ☐ 3 Working Days ☐ Noon - Nxt Day ☐ 7 Working Days ☐ 2 Working Days ☐ 2 - 8 Hours ☒ 5 Working Days ☐ 1 Working Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☐ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

	CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	VOCs EPA 8260B	TPH Gas + BTEX oxygenates	TPH diesel Motor oil	Pesticides	PCBs	CAM 17 + pH	Lead	Asbestos	TORRENT'S SAMPLE I.D.
001A	1. S-3-2 @ 2.0	04/12/09 2125	S	1	sleeve							X		
002A	2. 3.0		S	1	sleeve							X		
003A	3. S-3-12 @ 0.5	04/12/09 2275	S	1	4oz							X		
004A	4. @ 1.0					X						X		
005A	5. @ 1.5					X						X		
006A	6. @ 2.0											X		
007A	7. @ 3.0											X		
008A	8. S-3-12 @ 0.5-D											X		
009A	9. @ 1.0-D					X						X		
010A	10. @ 1.5-D					X						X		

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		04/12/09	2140				
2								

Were Samples Received in Good Condition? ☐ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment _____ Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrange -ments are made.

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date: _____

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0904073

Company Name: URS San Jose	Location of Sampling: 101 Ave Lanes
Address:	Purpose:
City: State: Zip Code:	Special Instructions / Comments:
Telephone: FAX:	
REPORT TO: Patrick Walz SAMPLER: Eduardo Ortiz	P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Working Days ☐ 3 Working Days ☐ Noon - Nxt Day ☐ 7 Working Days ☐ 2 Working Days ☐ 2 - 8 Hours ☒ 5 Working Days ☐ 1 Working Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☐ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

	CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	VOCs EPA 8260B	TPH Gas + BTEX + oxygenates	TPH diesel Total oil	Pesticides	PCBs	CAM 17 + pH		Lead	Asbestos	TORRENT'S SAMPLE I.D.
011A	1. S-3-13 @ 1.0	04/12/09 1240	S	1	Sleeve								X		
012A	2. @ 1.5												X		
013A	3. @ 2.0												X		
014A	4. @ 3.0												X		
015A	5. S-3-14 @ 0.5	04/12/09 1225	S	1	Sleeve								X		
016A	6. @ 1.0												X		
017A	7. @ 1.5												X		
018A	8. @ 2.0												X		
019A	9. @ 3.0												X		
020A	10.														

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1								
2								

Were Samples Received in Good Condition? ☐ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment _____ Sample seals intact? ☐ Yes ☐ NO ☐ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrange -ments are made.

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date: _____

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0904073

Company Name: URS San Jose	Location of Sampling: 101 Ave Lanes
Address:	Purpose:
City: State: Zip Code:	Special Instructions / Comments:
Telephone: FAX:	
REPORT TO: Patrick Wolz SAMPLER: Eduardo Ortiz	P.O. #: EMAIL:

TURNAROUND TIME:
- ☐ 10 Working Days ☐ 3 Working Days ☐ Noon - Nxt Day
- ☐ 7 Working Days ☐ 2 Working Days ☐ 2 - 8 Hours
- ☒ 5 Working Days ☐ 1 Working Day ☐ Other

SAMPLE TYPE:
- ☐ Storm Water ☐ Air
- ☐ Waste Water ☐ Other
- ☐ Ground Water
- ☐ Soil

REPORT FORMAT:
- ☐ QC Level IV
- ☐ EDF
- ☐ Excel / EDD

ANALYSIS REQUESTED

	CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	VOCs EPA 8260B	TPH gas + BTEX oxygenates	TPH diesel Motor oil	Pesticides	PCBs	CAM 17 + TPH		Lead	Asbestos	TORRENT'S SAMPLE I.D.
021A	1. S-3-11 @1.0-D	04/12/09 2205	S	1	sleeve		X				X				
022A	2. @1.5-D	|	|	|	|		X				X				
023A	3. @2.0-D	|	|	|	|		X				X				
024A	4. @3.0-D	|	|	|	|		X				X				
025A	5. N-3-8 @0.5	04/12/09 2335	S	1	sleeve								X		
026A	6. @1.0	|	|	|	|							X		
027A	7. @1.5	|	|	|	|							X		
028A	8. @2.0	|	|	|	|							X		
029A	9. @3.0	|	|	|	|							X		
030A	10. S-3-13 @0.5	04/12/09 2240	S	1	sleev								X		

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1								
2								

Were Samples Received in Good Condition? ☐ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment _____ Sample seals intact? ☐ Yes ☐ NO ☐ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrange -ments are made.

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date: _____

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0904073

Company Name: VRS San Jose	Location of Sampling: 101 Ave Lanes
Address:	Purpose:
City: / State: / Zip Code:	Special Instructions / Comments:
Telephone: / FAX:	
REPORT TO: Patrick Wolz / SAMPLER: Eduardo Ortiz	P.O. #: / EMAIL:

TURNAROUND TIME: ☐ 10 Working Days ☐ 3 Working Days ☐ Noon - Nxt Day ☐ 7 Working Days ☐ 2 Working Days ☐ 2 - 8 Hours ☒ 5 Working Days ☐ 1 Working Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☐ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

	CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	VOCs EPA 8260B	TPH gas + BTEX oxygenates	TPH diesel motor oil	Pesticides	PCBs	CAM 17 + pH		Lead	Asbestos	TORRENT'S SAMPLE I.D.
031A	1. N-3-11 @1.0	04/12/09 2320	S	1	Steers								X		
032A	2. @1.5	|	|	|	|								X		
033A	3. @2.0	|	|	|	|								X		
034A	4. @3.0	|	|	|	|								X		
035A	5. S-3-11 @0.5	04/12/09 2150	S	1	|			X	X	X	X				
036A	6. @1.0	|	|	1	|		X				X				
037A	7. @1.5	|	|	|	|		X				X				
038A	8. @2.0	|	|	1	|		X				X				
039A	9. @3.0	|	|	|	|		X				X				
040A	10. S-3-11 @0.5-D	04/12/09 2205	S	1	1			X	X	X	X				

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1								
2								

Were Samples Received in Good Condition? ☐ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment _____ Sample seals intact? ☐ Yes ☐ NO ☐ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrange -ments are made.

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date: _____

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0904073

Company Name: URS San Jose	Location of Sampling: 101 Ave Lanes
Address:	Purpose:
City: / State: / Zip Code:	Special Instructions / Comments:
Telephone: / FAX:	
REPORT TO: Patrick Wolz / SAMPLER: Eduardo Ortiz	P.O. #: / EMAIL:

TURNAROUND TIME: ☐ 10 Working Days ☐ 3 Working Days ☐ Noon - Nxt Day ☐ 7 Working Days ☐ 2 Working Days ☐ 2 - 8 Hours ☒ 5 Working Days ☐ 1 Working Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☐ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

	CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	VOCs EPA 8260B	TPH gas + BTEX + oxygenates	TPH diesel motor oil	Pesticides	PCBs	CAM 17 + TPH		Lead	Asbestos	TORRENT'S SAMPLE I.D.
041A	1. N-3-10@1.0	04/12/09 2015	S	~~1~~	sleeve	X	X	X	X	X	X				
042A	2. " @3.0	|	S	1	|	X	X	X	X	X	X				
043A	3. " @6.0	|	S	1	|	X	X	X	X	X	X				
044A	4. N-3-10-GW	2030	GW	2	1 liter			X	~~X~~						
044A	5. "	|	GW	1	1 liter				X	X					
044A	6. "	|	GW	3	voa	X	X								
044A	7. "	|	GW	1	250						X				
045A	8. S-3-2@0.5	2125	S	1	sleeve								X		
046A	9. 1.0	|	|	1	sleeve								X		
~~047A~~ 047A	10. 1.5	|		1	sleeve								X		

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		04/12/09	2030				
2								

Were Samples Received in Good Condition? ☐ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment _____ Sample seals intact? ☐ Yes ☐ NO ☐ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrange-ments are made.

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date: _____

Torrent Laboratory, Inc. **Date:** *19-Jun-09*

CLIENT: URS Corporation, San Jose
Project: 101 Aux Lanes
Lab Order: 0904073

CASE NARRATIVE

Note: although pH was measured upon laboratory receipt, the samples were received outside of the recommended holding time (24 hours from collection).

REVISIONS:

Per client request, STLC, DI STLC and TCLP analysis was added to specified samples. Due to insufficient sample mass available, no TCLP was performed on requested sample -021 (S-3-11 @ 1.0-D). Due to limited sample available for all samples, STLC, DI STLC and TCLP was performed using only 25 g of homogenized sample.

Note: Extraction of 25 g sample / 250g 0.2M Sodium Citrate Solution was performed according to DI wet extraction procedure (WET) which was rotated in a rotary shaker for 48 hours.

Extraction started on 05/30/2009 @ 12.15 PM and ended on 06/01/2009 @ 12:15 PM

Note: Extraction of 25 g sample / 250g 0.2M Sodium Citrate Solution was performed according to wet extraction procedure (WET) which was rotated in a rotary shaker for 48 hours.

Extraction started on 05/30/2009 @ 12.15 PM and ended on 06/01/2009 @ 12:15 PM

Note: Extraction of 25 g sample / 500g TCLP Fluid #1 or Fluid #1 (-030 and -036) was performed according to Toxicity Characteristic Leaching Procedure (TCLP) which was rotated in a rotary shaker for 18 hours.

Extraction started on 06/16/2009 @ 4:45PM and ended on 06/17/2009 @ 10:45 AM

TORRENT LABORATORY, INC.

483 Sinclair Frontage Road • Milpitas, CA • Phone: (408) 263-5258 • Fax: (408) 263-8293

Visit us at www.torrentlab.com email: analysis@torrentlab.com

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/19/2009

Client Sample ID: S-3-2 @ 2.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 9:25:00 PM

Lab Sample ID: 0904073-001
Date Prepared: 4/15/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/15/2009	1	1	1.0	32	mg/Kg	5101

Client Sample ID: S-3-2 @ 3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 9:25:00 PM

Lab Sample ID: 0904073-002
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	ND	mg/L	5250
Lead (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	2.7	mg/L	5257
Lead	SW6010B	4/15/2009	1	1	1.0	50	mg/Kg	5101

Client Sample ID: S-3-12 @ 0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:25:00 PM

Lab Sample ID: 0904073-003
Date Prepared: 4/15/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/15/2009	1	1	1.0	34	mg/Kg	5101

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/19/2009

Client Sample ID: S-3-12 @ 1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:25:00 PM

Lab Sample ID: 0904073-004
Date Prepared: 4/15/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/15/2009	1	1	1.0	35	mg/Kg	5101

Client Sample ID: S-3-12 @ 1.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:25:00 PM

Lab Sample ID: 0904073-005
Date Prepared: 4/15/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/15/2009	1	1	1.0	4.8	mg/Kg	5101

Client Sample ID: S-3-12 @ 2.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:25:00 PM

Lab Sample ID: 0904073-006
Date Prepared: 4/15/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/15/2009	1	1	1.0	5.8	mg/Kg	5101

Client Sample ID: S-3-12 @ 3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:25:00 PM

Lab Sample ID: 0904073-007
Date Prepared: 4/15/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/15/2009	1	1	1.0	3.8	mg/Kg	5101

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/19/2009

Client Sample ID: S-3-12 @ 0.5-D
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:25:00 PM

Lab Sample ID: 0904073-008
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	ND	mg/L	5250
Lead (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	0.19	mg/L	5257
Lead	SW6010B	4/15/2009	1	1	1.0	59	mg/Kg	5101

Client Sample ID: S-3-12 @ 1.0-D
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:25:00 PM

Lab Sample ID: 0904073-009
Date Prepared: 4/15/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/15/2009	1	1	1.0	4.4	mg/Kg	5101

Client Sample ID: S-3-12 @ 1.5-D
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:25:00 PM

Lab Sample ID: 0904073-010
Date Prepared: 4/15/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/15/2009	1	1	1.0	5.0	mg/Kg	5101

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/19/2009

Client Sample ID: S-3-13 @ 1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:40:00 PM

Lab Sample ID: 0904073-011
Date Prepared: 4/15/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/15/2009	1	1	1.0	26	mg/Kg	5101

Client Sample ID: S-3-13 @ 1.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:40:00 PM

Lab Sample ID: 0904073-012
Date Prepared: 4/15/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/15/2009	1	1	1.0	33	mg/Kg	5101

Client Sample ID: S-3-13 @ 2.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:40:00 PM

Lab Sample ID: 0904073-013
Date Prepared: 4/15/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/15/2009	1	1	1.0	3.6	mg/Kg	5101

Client Sample ID: S-3-13 @ 3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:40:00 PM

Lab Sample ID: 0904073-014
Date Prepared: 4/15/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/15/2009	1	1	1.0	39	mg/Kg	5101

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/19/2009

Client Sample ID: S-3-14 @ 0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:50:00 PM

Lab Sample ID: 0904073-015
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	ND	mg/L	5250
Lead (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	0.23	mg/L	5257
Lead	SW6010B	4/15/2009	1	1	1.0	64	mg/Kg	5101

Client Sample ID: S-3-14 @ 1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:50:00 PM

Lab Sample ID: 0904073-016
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	ND	mg/L	5250
Lead (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	0.24	mg/L	5257
Lead	SW6010B	4/15/2009	1	1	1.0	58	mg/Kg	5101

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/19/2009

Client Sample ID: S-3-14 @ 1.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:50:00 PM

Lab Sample ID: 0904073-017
Date Prepared: 6/4/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/5/2009	0.1	1	0.10	ND	mg/L	5261
Lead (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	0.24	mg/L	5257
Lead	SW6010B	4/15/2009	1	1	1.0	61	mg/Kg	5101

Client Sample ID: S-3-14 @ 2.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:50:00 PM

Lab Sample ID: 0904073-018
Date Prepared: 6/4/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/5/2009	0.1	1	0.10	ND	mg/L	5261
Lead (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	0.18	mg/L	5257
Lead	SW6010B	4/15/2009	1	1	1.0	64	mg/Kg	5101

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/19/2009

Client Sample ID: S-3-14 @ 3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:50:00 PM

Lab Sample ID: 0904073-019
Date Prepared: 6/4/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/5/2009	0.1	1	0.10	1.6	mg/L	5261
Lead (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	0.62	mg/L	5258
Lead	SW6010B	4/15/2009	1	1	1.0	55	mg/Kg	5101

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/19/2009

Client Sample ID: S-3-11 @ 1.0-D
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:05:00 PM

Lab Sample ID: 0904073-021
Date Prepared: 6/4/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/5/2009	0.1	1	0.10	25	mg/L	5261
Lead (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	27	mg/L	5258
Antimony	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Arsenic	SW6010B	4/17/2009	1.7	1	1.7	1.9	mg/Kg	5108
Barium	SW6010B	4/17/2009	5	1	5.0	90	mg/Kg	5108
Beryllium	SW6010B	4/17/2009	2	1	2.0	ND	mg/Kg	5108
Cadmium	SW6010B	4/17/2009	1	1	1.0	ND	mg/Kg	5108
Chromium	SW6010B	4/17/2009	5	1	5.0	46	mg/Kg	5108
Cobalt	SW6010B	4/17/2009	5	1	5.0	16	mg/Kg	5108
Copper	SW6010B	4/17/2009	5	1	5.0	41	mg/Kg	5108
Lead	SW6010B	4/17/2009	1	1	1.0	260	mg/Kg	5108
Molybdenum	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Nickel	SW6010B	4/17/2009	5	1	5.0	37	mg/Kg	5108
Selenium	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Silver	SW6010B	4/17/2009	1	1	1.0	2.0	mg/Kg	5108
Thallium	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Vanadium	SW6010B	4/17/2009	5	1	5.0	46	mg/Kg	5108
Zinc	SW6010B	4/17/2009	5	1	5.0	100	mg/Kg	5108

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/19/2009

Client Sample ID: S-3-11 @ 1.5-D
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:05:00 PM

Lab Sample ID: 0904073-022
Date Prepared: 6/4/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/5/2009	0.1	1	0.10	3.0	mg/L	5261
Chromium (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	0.22	mg/L	5258
Lead (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	5.3	mg/L	5258
Lead (TCLP)	6010B (TCLP)	6/18/2009	0.1	1	0.10	0.15	mg/L	5302
Antimony	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Arsenic	SW6010B	4/17/2009	1.7	1	1.7	2.8	mg/Kg	5108
Barium	SW6010B	4/17/2009	5	1	5.0	210	mg/Kg	5108
Beryllium	SW6010B	4/17/2009	2	1	2.0	ND	mg/Kg	5108
Cadmium	SW6010B	4/17/2009	1	1	1.0	ND	mg/Kg	5108
Chromium	SW6010B	4/17/2009	5	1	5.0	52	mg/Kg	5108
Cobalt	SW6010B	4/17/2009	5	1	5.0	13	mg/Kg	5108
Copper	SW6010B	4/17/2009	5	1	5.0	38	mg/Kg	5108
Lead	SW6010B	4/17/2009	1	1	1.0	220	mg/Kg	5108
Molybdenum	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Nickel	SW6010B	4/17/2009	5	1	5.0	52	mg/Kg	5108
Selenium	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Silver	SW6010B	4/17/2009	1	1	1.0	ND	mg/Kg	5108
Thallium	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Vanadium	SW6010B	4/17/2009	5	1	5.0	39	mg/Kg	5108
Zinc	SW6010B	4/17/2009	5	1	5.0	100	mg/Kg	5108

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/19/2009

Client Sample ID: S-3-11 @ 2.0-D
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:05:00 PM

Lab Sample ID: 0904073-023
Date Prepared: 6/4/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/5/2009	0.1	1	0.10	ND	mg/L	5261
Chromium (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	0.19	mg/L	5258
Lead (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	0.83	mg/L	5258
Antimony	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Arsenic	SW6010B	4/17/2009	1.7	1	1.7	3.4	mg/Kg	5108
Barium	SW6010B	4/17/2009	5	1	5.0	220	mg/Kg	5108
Beryllium	SW6010B	4/17/2009	2	1	2.0	ND	mg/Kg	5108
Cadmium	SW6010B	4/17/2009	1	1	1.0	ND	mg/Kg	5108
Chromium	SW6010B	4/17/2009	5	1	5.0	50	mg/Kg	5108
Cobalt	SW6010B	4/17/2009	5	1	5.0	13	mg/Kg	5108
Copper	SW6010B	4/17/2009	5	1	5.0	33	mg/Kg	5108
Lead	SW6010B	4/17/2009	1	1	1.0	52	mg/Kg	5108
Molybdenum	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Nickel	SW6010B	4/17/2009	5	1	5.0	52	mg/Kg	5108
Selenium	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Silver	SW6010B	4/17/2009	1	1	1.0	ND	mg/Kg	5108
Thallium	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Vanadium	SW6010B	4/17/2009	5	1	5.0	40	mg/Kg	5108
Zinc	SW6010B	4/17/2009	5	1	5.0	57	mg/Kg	5108

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/19/2009

Client Sample ID: S-3-11 @ 3.0-D
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:05:00 PM

Lab Sample ID: 0904073-024
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Chromium (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	0.19	mg/L	5258
Antimony	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Arsenic	SW6010B	4/17/2009	1.7	1	1.7	3.8	mg/Kg	5108
Barium	SW6010B	4/17/2009	5	1	5.0	240	mg/Kg	5108
Beryllium	SW6010B	4/17/2009	2	1	2.0	ND	mg/Kg	5108
Cadmium	SW6010B	4/17/2009	1	1	1.0	ND	mg/Kg	5108
Chromium	SW6010B	4/17/2009	5	1	5.0	54	mg/Kg	5108
Cobalt	SW6010B	4/17/2009	5	1	5.0	14	mg/Kg	5108
Copper	SW6010B	4/17/2009	5	1	5.0	31	mg/Kg	5108
Lead	SW6010B	4/17/2009	1	1	1.0	19	mg/Kg	5108
Molybdenum	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Nickel	SW6010B	4/17/2009	5	1	5.0	56	mg/Kg	5108
Selenium	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Silver	SW6010B	4/17/2009	1	1	1.0	ND	mg/Kg	5108
Thallium	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Vanadium	SW6010B	4/17/2009	5	1	5.0	41	mg/Kg	5108
Zinc	SW6010B	4/17/2009	5	1	5.0	50	mg/Kg	5108

Client Sample ID: N-3--8 @ 0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 11:35:00 PM

Lab Sample ID: 0904073-025
Date Prepared: 6/4/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/5/2009	0.1	1	0.10	ND	mg/L	5261
Lead (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	0.22	mg/L	5258
Lead	SW6010B	4/17/2009	1	1	1.0	62	mg/Kg	5108

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/19/2009

Client Sample ID: N-3-8 @ 1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 11:35:00 PM

Lab Sample ID: 0904073-026
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	5.6	mg/Kg	5108

Client Sample ID: N-3-8 @ 1.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 11:35:00 PM

Lab Sample ID: 0904073-027
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	6.4	mg/Kg	5108

Client Sample ID: N-3-8 @ 2.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 11:35:00 PM

Lab Sample ID: 0904073-028
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	5.8	mg/Kg	5108

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/19/2009

Client Sample ID: N-3-8 @ 3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 11:35:00 PM

Lab Sample ID: 0904073-029
Date Prepared: 6/4/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/5/2009	0.1	1	0.10	ND	mg/L	5261
Lead (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	0.14	mg/L	5258
Lead (TCLP)	6010B (TCLP)	6/18/2009	0.1	1	0.10	ND	mg/L	5302
Lead	SW6010B	4/17/2009	1	1	1.0	270	mg/Kg	5108

Client Sample ID: S-3-13 @ 0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:40:00 PM

Lab Sample ID: 0904073-030
Date Prepared: 6/4/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/5/2009	0.1	1	0.10	ND	mg/L	5261
Lead (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	0.15	mg/L	5258
Lead (TCLP)	6010B (TCLP)	6/18/2009	0.1	1	0.10	1.6	mg/L	5302
Lead	SW6010B	4/17/2009	1	1	1.0	1400	mg/Kg	5108

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/19/2009

Client Sample ID: N-3-11 @ 1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 11:20:00 PM

Lab Sample ID: 0904073-031
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	21	mg/Kg	5108

Client Sample ID: N-3-11 @ 1.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 11:20:00 PM

Lab Sample ID: 0904073-032
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	17	mg/Kg	5108

Client Sample ID: N-3-11 @ 2.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 11:20:00 PM

Lab Sample ID: 0904073-033
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	20	mg/Kg	5108

Client Sample ID: N-3-11 @ 3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 11:20:00 PM

Lab Sample ID: 0904073-034
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/17/2009	1	1	1.0	20	mg/Kg	5108

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/19/2009

Client Sample ID: S-3-11 @ 0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 9:50:00 PM

Lab Sample ID: 0904073-035
Date Prepared: 6/4/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/5/2009	0.1	1	0.10	6.0	mg/L	5261
Lead (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	4.5	mg/L	5258
Antimony	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Arsenic	SW6010B	4/17/2009	1.7	1	1.7	1.8	mg/Kg	5108
Barium	SW6010B	4/17/2009	5	1	5.0	120	mg/Kg	5108
Beryllium	SW6010B	4/17/2009	2	1	2.0	ND	mg/Kg	5108
Cadmium	SW6010B	4/17/2009	1	1	1.0	ND	mg/Kg	5108
Chromium	SW6010B	4/17/2009	5	1	5.0	37	mg/Kg	5108
Cobalt	SW6010B	4/17/2009	5	1	5.0	11	mg/Kg	5108
Copper	SW6010B	4/17/2009	5	1	5.0	27	mg/Kg	5108
Lead	SW6010B	4/17/2009	1	1	1.0	97	mg/Kg	5108
Molybdenum	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Nickel	SW6010B	4/17/2009	5	1	5.0	37	mg/Kg	5108
Selenium	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Silver	SW6010B	4/17/2009	1	1	1.0	1.5	mg/Kg	5108
Thallium	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Vanadium	SW6010B	4/17/2009	5	1	5.0	39	mg/Kg	5108
Zinc	SW6010B	4/17/2009	5	1	5.0	69	mg/Kg	5108

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/19/2009

Client Sample ID: S-3-11 @ 1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 9:50:00 PM

Lab Sample ID: 0904073-036
Date Prepared: 6/10/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/11/2009	0.1	1	0.10	ND	mg/L	5275
Lead (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	23	mg/L	5258
Lead (TCLP)	6010B (TCLP)	6/18/2009	0.1	1	0.10	ND	mg/L	5302
Antimony	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Arsenic	SW6010B	4/17/2009	1.7	1	1.7	3.0	mg/Kg	5108
Barium	SW6010B	4/17/2009	5	1	5.0	180	mg/Kg	5108
Beryllium	SW6010B	4/17/2009	2	1	2.0	ND	mg/Kg	5108
Cadmium	SW6010B	4/17/2009	1	1	1.0	1.5	mg/Kg	5108
Chromium	SW6010B	4/17/2009	5	1	5.0	49	mg/Kg	5108
Cobalt	SW6010B	4/17/2009	5	1	5.0	14	mg/Kg	5108
Copper	SW6010B	4/17/2009	5	1	5.0	68	mg/Kg	5108
Lead	SW6010B	4/17/2009	1	1	1.0	860	mg/Kg	5108
Molybdenum	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Nickel	SW6010B	4/17/2009	5	1	5.0	51	mg/Kg	5108
Selenium	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Silver	SW6010B	4/17/2009	1	1	1.0	2.0	mg/Kg	5108
Thallium	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Vanadium	SW6010B	4/17/2009	5	1	5.0	41	mg/Kg	5108
Zinc	SW6010B	4/17/2009	5	1	5.0	330	mg/Kg	5108

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/19/2009

Client Sample ID: S-3-11 @ 1.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 9:50:00 PM

Lab Sample ID: 0904073-037
Date Prepared: 6/10/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/11/2009	0.1	1	0.10	3.9	mg/L	5275
Chromium (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	0.21	mg/L	5258
Lead (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	37	mg/L	5258
Lead (TCLP)	6010B (TCLP)	6/18/2009	0.1	1	0.10	0.62	mg/L	5302
Antimony	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Arsenic	SW6010B	4/17/2009	1.7	1	1.7	2.6	mg/Kg	5108
Barium	SW6010B	4/17/2009	5	1	5.0	160	mg/Kg	5108
Beryllium	SW6010B	4/17/2009	2	1	2.0	ND	mg/Kg	5108
Cadmium	SW6010B	4/17/2009	1	1	1.0	ND	mg/Kg	5108
Chromium	SW6010B	4/17/2009	5	1	5.0	58	mg/Kg	5108
Cobalt	SW6010B	4/17/2009	5	1	5.0	17	mg/Kg	5108
Copper	SW6010B	4/17/2009	5	1	5.0	53	mg/Kg	5108
Lead	SW6010B	4/17/2009	1	1	1.0	970	mg/Kg	5108
Molybdenum	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Nickel	SW6010B	4/17/2009	5	1	5.0	48	mg/Kg	5108
Selenium	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Silver	SW6010B	4/17/2009	1	1	1.0	1.9	mg/Kg	5108
Thallium	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Vanadium	SW6010B	4/17/2009	5	1	5.0	54	mg/Kg	5108
Zinc	SW6010B	4/17/2009	5	1	5.0	170	mg/Kg	5108

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/19/2009

Client Sample ID: S-3-11 @ 2.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 9:50:00 PM

Lab Sample ID: 0904073-038
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Chromium (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	0.18	mg/L	5258
Antimony	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Arsenic	SW6010B	4/17/2009	1.7	1	1.7	3.4	mg/Kg	5108
Barium	SW6010B	4/17/2009	5	1	5.0	240	mg/Kg	5108
Beryllium	SW6010B	4/17/2009	2	1	2.0	ND	mg/Kg	5108
Cadmium	SW6010B	4/17/2009	1	1	1.0	ND	mg/Kg	5108
Chromium	SW6010B	4/17/2009	5	1	5.0	50	mg/Kg	5108
Cobalt	SW6010B	4/17/2009	5	1	5.0	13	mg/Kg	5108
Copper	SW6010B	4/17/2009	5	1	5.0	29	mg/Kg	5108
Lead	SW6010B	4/17/2009	1	1	1.0	18	mg/Kg	5108
Molybdenum	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Nickel	SW6010B	4/17/2009	5	1	5.0	52	mg/Kg	5108
Selenium	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Silver	SW6010B	4/17/2009	1	1	1.0	1.2	mg/Kg	5108
Thallium	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Vanadium	SW6010B	4/17/2009	5	1	5.0	38	mg/Kg	5108
Zinc	SW6010B	4/17/2009	5	1	5.0	48	mg/Kg	5108

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/19/2009

Client Sample ID: S-3-11 @ 3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 9:50:00 PM

Lab Sample ID: 0904073-039
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Chromium (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	0.18	mg/L	5258
Antimony	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Arsenic	SW6010B	4/17/2009	1.7	1	1.7	2.6	mg/Kg	5108
Barium	SW6010B	4/17/2009	5	1	5.0	260	mg/Kg	5108
Beryllium	SW6010B	4/17/2009	2	1	2.0	ND	mg/Kg	5108
Cadmium	SW6010B	4/17/2009	1	1	1.0	ND	mg/Kg	5108
Chromium	SW6010B	4/17/2009	5	1	5.0	52	mg/Kg	5108
Cobalt	SW6010B	4/17/2009	5	1	5.0	17	mg/Kg	5108
Copper	SW6010B	4/17/2009	5	1	5.0	29	mg/Kg	5108
Lead	SW6010B	4/17/2009	1	1	1.0	7.3	mg/Kg	5108
Molybdenum	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Nickel	SW6010B	4/17/2009	5	1	5.0	61	mg/Kg	5108
Selenium	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Silver	SW6010B	4/17/2009	1	1	1.0	1.0	mg/Kg	5108
Thallium	SW6010B	4/17/2009	5	1	5.0	ND	mg/Kg	5108
Vanadium	SW6010B	4/17/2009	5	1	5.0	39	mg/Kg	5108
Zinc	SW6010B	4/17/2009	5	1	5.0	45	mg/Kg	5108

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/19/2009

Client Sample ID: S-3-11 @ 0.5-D
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 10:05:00 PM

Lab Sample ID: 0904073-040
Date Prepared: 6/10/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/11/2009	0.1	1	0.10	ND	mg/L	5275
Lead (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	0.19	mg/L	5258
Antimony	SW6010B	4/20/2009	5	1	5.0	ND	mg/Kg	5109
Arsenic	SW6010B	4/20/2009	1.7	1	1.7	2.2	mg/Kg	5109
Barium	SW6010B	4/20/2009	5	1	5.0	180	mg/Kg	5109
Beryllium	SW6010B	4/20/2009	2	1	2.0	ND	mg/Kg	5109
Cadmium	SW6010B	4/20/2009	1	1	1.0	ND	mg/Kg	5109
Chromium	SW6010B	4/20/2009	5	1	5.0	47	mg/Kg	5109
Cobalt	SW6010B	4/20/2009	5	1	5.0	12	mg/Kg	5109
Copper	SW6010B	4/20/2009	5	1	5.0	35	mg/Kg	5109
Lead	SW6010B	4/20/2009	1	1	1.0	63	mg/Kg	5109
Molybdenum	SW6010B	4/20/2009	5	1	5.0	ND	mg/Kg	5109
Nickel	SW6010B	4/20/2009	5	1	5.0	45	mg/Kg	5109
Selenium	SW6010B	4/20/2009	5	1	5.0	ND	mg/Kg	5109
Silver	SW6010B	4/20/2009	1	1	1.0	2.2	mg/Kg	5109
Thallium	SW6010B	4/20/2009	5	1	5.0	ND	mg/Kg	5109
Vanadium	SW6010B	4/20/2009	5	1	5.0	42	mg/Kg	5109
Zinc	SW6010B	4/20/2009	5	1	5.0	77	mg/Kg	5109

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/19/2009

Client Sample ID: N-3-10 @ 1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 8:15:00 PM

Lab Sample ID: 0904073-041
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	4/20/2009	5	1	5.0	ND	mg/Kg	5109
Arsenic	SW6010B	4/20/2009	1.7	1	1.7	2.6	mg/Kg	5109
Barium	SW6010B	4/20/2009	5	1	5.0	110	mg/Kg	5109
Beryllium	SW6010B	4/20/2009	2	1	2.0	ND	mg/Kg	5109
Cadmium	SW6010B	4/20/2009	1	1	1.0	ND	mg/Kg	5109
Chromium	SW6010B	4/20/2009	5	1	5.0	30	mg/Kg	5109
Cobalt	SW6010B	4/20/2009	5	1	5.0	6.7	mg/Kg	5109
Copper	SW6010B	4/20/2009	5	1	5.0	14	mg/Kg	5109
Lead	SW6010B	4/20/2009	1	1	1.0	8.8	mg/Kg	5109
Molybdenum	SW6010B	4/20/2009	5	1	5.0	ND	mg/Kg	5109
Nickel	SW6010B	4/20/2009	5	1	5.0	40	mg/Kg	5109
Selenium	SW6010B	4/20/2009	5	1	5.0	ND	mg/Kg	5109
Silver	SW6010B	4/20/2009	1	1	1.0	1.0	mg/Kg	5109
Thallium	SW6010B	4/20/2009	5	1	5.0	ND	mg/Kg	5109
Vanadium	SW6010B	4/20/2009	5	1	5.0	22	mg/Kg	5109
Zinc	SW6010B	4/20/2009	5	1	5.0	29	mg/Kg	5109

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/19/2009

Client Sample ID: N-3-10 @ 3.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 8:15:00 PM

Lab Sample ID: 0904073-042
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	4/20/2009	5	1	5.0	ND	mg/Kg	5109
Arsenic	SW6010B	4/20/2009	1.7	1	1.7	2.3	mg/Kg	5109
Barium	SW6010B	4/20/2009	5	1	5.0	110	mg/Kg	5109
Beryllium	SW6010B	4/20/2009	2	1	2.0	ND	mg/Kg	5109
Cadmium	SW6010B	4/20/2009	1	1	1.0	ND	mg/Kg	5109
Chromium	SW6010B	4/20/2009	5	1	5.0	42	mg/Kg	5109
Cobalt	SW6010B	4/20/2009	5	1	5.0	11	mg/Kg	5109
Copper	SW6010B	4/20/2009	5	1	5.0	29	mg/Kg	5109
Lead	SW6010B	4/20/2009	1	1	1.0	32	mg/Kg	5109
Molybdenum	SW6010B	4/20/2009	5	1	5.0	ND	mg/Kg	5109
Nickel	SW6010B	4/20/2009	5	1	5.0	43	mg/Kg	5109
Selenium	SW6010B	4/20/2009	5	1	5.0	ND	mg/Kg	5109
Silver	SW6010B	4/20/2009	1	1	1.0	1.6	mg/Kg	5109
Thallium	SW6010B	4/20/2009	5	1	5.0	ND	mg/Kg	5109
Vanadium	SW6010B	4/20/2009	5	1	5.0	43	mg/Kg	5109
Zinc	SW6010B	4/20/2009	5	1	5.0	44	mg/Kg	5109

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/19/2009

Client Sample ID: N-3-10 @ 6.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 8:15:00 PM

Lab Sample ID: 0904073-043
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	4/20/2009	5	1	5.0	ND	mg/Kg	5109
Arsenic	SW6010B	4/20/2009	1.7	1	1.7	ND	mg/Kg	5109
Barium	SW6010B	4/20/2009	5	1	5.0	180	mg/Kg	5109
Beryllium	SW6010B	4/20/2009	2	1	2.0	ND	mg/Kg	5109
Cadmium	SW6010B	4/20/2009	1	1	1.0	ND	mg/Kg	5109
Chromium	SW6010B	4/20/2009	5	1	5.0	36	mg/Kg	5109
Cobalt	SW6010B	4/20/2009	5	1	5.0	9.8	mg/Kg	5109
Copper	SW6010B	4/20/2009	5	1	5.0	13	mg/Kg	5109
Lead	SW6010B	4/20/2009	1	1	1.0	1.4	mg/Kg	5109
Molybdenum	SW6010B	4/20/2009	5	1	5.0	ND	mg/Kg	5109
Nickel	SW6010B	4/20/2009	5	1	5.0	37	mg/Kg	5109
Selenium	SW6010B	4/20/2009	5	1	5.0	ND	mg/Kg	5109
Silver	SW6010B	4/20/2009	1	1	1.0	3.0	mg/Kg	5109
Thallium	SW6010B	4/20/2009	5	1	5.0	ND	mg/Kg	5109
Vanadium	SW6010B	4/20/2009	5	1	5.0	34	mg/Kg	5109
Zinc	SW6010B	4/20/2009	5	1	5.0	24	mg/Kg	5109

Client Sample ID: S-3-2 @ 0.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 9:25:00 PM

Lab Sample ID: 0904073-045
Date Prepared: 6/10/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/11/2009	0.1	1	0.10	1.3	mg/L	5275
Lead (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	0.35	mg/L	5258
Lead	SW6010B	4/20/2009	1	1	1.0	54	mg/Kg	5109

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/13/2009
Date Reported: 6/19/2009

Client Sample ID: S-3-2 @ 1.0
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 9:25:00 PM

Lab Sample ID: 0904073-046
Date Prepared: 6/10/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/11/2009	0.1	1	0.10	ND	mg/L	5275
Lead (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	0.51	mg/L	5258
Lead	SW6010B	4/20/2009	1	1	1.0	76	mg/Kg	5109

Client Sample ID: S-3-2 @ 1.5
Sample Location: 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 4/12/2009 9:25:00 PM

Lab Sample ID: 0904073-047
Date Prepared: 4/16/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/20/2009	1	1	1.0	27	mg/Kg	5109

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Definitions, legends and Notes

Note	Description
ug/kg	Microgram per kilogram (ppb, part per billion).
ug/L	Microgram per liter (ppb, part per billion).
mg/kg	Milligram per kilogram (ppm, part per million).
mg/L	Milligram per liter (ppm, part per million).
LCS/LCSD	Laboratory control sample/laboratory control sample duplicate.
MDL	Method detection limit.
MRL	Modified reporting limit. When sample is subject to dilution, reporting limit times dilution factor yields MRL.
MS/MSD	Matrix spike/matrix spike duplicate.
N/A	Not applicable.
ND	Not detected at or above detection limit.
NR	Not reported.
QC	Quality Control.
RL	Reporting limit.
% RPD	Percent relative difference.
a	pH was measured immediately upon the receipt of the sample, but it was still done outside the holding time.
sub	Analyzed by subcontracting laboratory, Lab Certificate #

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

CLIENT: URS Corporation, San Jose
Work Order: 0904073
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5250

Sample ID	MB-5250	SampType:	MBLK	TestCode:	6010B (DI-ST	Units:	mg/L	Prep Date:	6/3/2009	RunNo:	19810
Client ID:	ZZZZZ	Batch ID:	5250	TestNo:	6010B (DI-ST	(SW3010A)		Analysis Date:	6/3/2009	SeqNo:	286454

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	ND	0.10									

Sample ID	LCS-5250	SampType:	LCS	TestCode:	6010B (DI-ST	Units:	mg/L	Prep Date:	6/3/2009	RunNo:	19810
Client ID:	ZZZZZ	Batch ID:	5250	TestNo:	6010B (DI-ST	(SW3010A)		Analysis Date:	6/3/2009	SeqNo:	286452

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	9.540	0.10	10	0.09	94.5	75	125				

Sample ID	LCSD-5250	SampType:	LCSD	TestCode:	6010B (DI-ST	Units:	mg/L	Prep Date:	6/3/2009	RunNo:	19810
Client ID:	ZZZZZ	Batch ID:	5250	TestNo:	6010B (DI-ST	(SW3010A)		Analysis Date:	6/3/2009	SeqNo:	286453

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	9.430	0.10	10	0.09	93.4	75	125	9.54	1.16	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904073
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5257

Sample ID	MB-5257	SampType:	MBLK	TestCode:	6010B (STLC	Units:	mg/L	Prep Date:	6/3/2009	RunNo:	19813
Client ID:	ZZZZZ	Batch ID:	5257	TestNo:	6010B (STLC	(SW3010A)		Analysis Date:	6/4/2009	SeqNo:	286502

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (STLC)	ND	0.10									

Sample ID	LCS-5257	SampType:	LCS	TestCode:	6010B (STLC	Units:	mg/L	Prep Date:	6/3/2009	RunNo:	19813
Client ID:	ZZZZZ	Batch ID:	5257	TestNo:	6010B (STLC	(SW3010A)		Analysis Date:	6/4/2009	SeqNo:	286500

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (STLC)	8.270	0.10	10	0	82.7	75	125				

Sample ID	LCSD-5257	SampType:	LCSD	TestCode:	6010B (STLC	Units:	mg/L	Prep Date:	6/3/2009	RunNo:	19813
Client ID:	ZZZZZ	Batch ID:	5257	TestNo:	6010B (STLC	(SW3010A)		Analysis Date:	6/4/2009	SeqNo:	286501

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (STLC)	8.090	0.10	10	0	80.9	75	125	8.27	2.20	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904073
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5258

Sample ID **MB-5258** SampType: **MBLK** TestCode: **6010B (STLC** Units: **mg/L** Prep Date: **6/3/2009** RunNo: **19814**
Client ID: **ZZZZZ** Batch ID: **5258** TestNo: **6010B (STLC (SW3010A)** Analysis Date: **6/4/2009** SeqNo: **286529**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	ND	0.10									
Lead (STLC)	ND	0.10									

Sample ID **LCS-5258** SampType: **LCS** TestCode: **6010B (STLC** Units: **mg/L** Prep Date: **6/3/2009** RunNo: **19814**
Client ID: **ZZZZZ** Batch ID: **5258** TestNo: **6010B (STLC (SW3010A)** Analysis Date: **6/4/2009** SeqNo: **286527**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	8.710	0.10	10	0.01	87.0	75	125				
Lead (STLC)	8.240	0.10	10	0	82.4	75	125				

Sample ID **LCSD-5258** SampType: **LCSD** TestCode: **6010B (STLC** Units: **mg/L** Prep Date: **6/3/2009** RunNo: **19814**
Client ID: **ZZZZZ** Batch ID: **5258** TestNo: **6010B (STLC (SW3010A)** Analysis Date: **6/4/2009** SeqNo: **286528**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	9.070	0.10	10	0.01	90.6	75	125	8.71	4.05	30	
Lead (STLC)	8.160	0.10	10	0	81.6	75	125	8.24	0.976	30	

Sample ID **0904073-019AMS** SampType: **MS** TestCode: **6010B (STLC** Units: **mg/L** Prep Date: **6/3/2009** RunNo: **19814**
Client ID: **S-3-14 @ 3.0** Batch ID: **5258** TestNo: **6010B (STLC (SW3010A)** Analysis Date: **6/4/2009** SeqNo: **286507**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	8.920	0.10	10	0.14	87.8	75	125				
Lead (STLC)	8.600	0.10	10	0.62	79.8	75	125				

Sample ID **0904073-019AMSD** SampType: **MSD** TestCode: **6010B (STLC** Units: **mg/L** Prep Date: **6/3/2009** RunNo: **19814**
Client ID: **S-3-14 @ 3.0** Batch ID: **5258** TestNo: **6010B (STLC (SW3010A)** Analysis Date: **6/4/2009** SeqNo: **286508**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	8.830	0.10	10	0.14	86.9	75	125	8.92	1.01	30	
Lead (STLC)	8.630	0.10	10	0.62	80.1	75	125	8.6	0.348	30	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904073
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5261

Sample ID	MB-5261	SampType:	MBLK	TestCode:	6010B (DI-ST	Units:	mg/L	Prep Date:	6/4/2009	RunNo:	19815
Client ID:	ZZZZZ	Batch ID:	5261	TestNo:	6010B (DI-ST	(SW3010A)		Analysis Date:	6/5/2009	SeqNo:	286554

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	ND	0.10									

Sample ID	LCS-5261	SampType:	LCS	TestCode:	6010B (DI-ST	Units:	mg/L	Prep Date:	6/4/2009	RunNo:	19815
Client ID:	ZZZZZ	Batch ID:	5261	TestNo:	6010B (DI-ST	(SW3010A)		Analysis Date:	6/5/2009	SeqNo:	286552

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	10.04	0.10	10	0	100	75	125				

Sample ID	LCSD-5261	SampType:	LCSD	TestCode:	6010B (DI-ST	Units:	mg/L	Prep Date:	6/4/2009	RunNo:	19815
Client ID:	ZZZZZ	Batch ID:	5261	TestNo:	6010B (DI-ST	(SW3010A)		Analysis Date:	6/5/2009	SeqNo:	286553

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	9.930	0.10	10	0	99.3	75	125	10.04	1.10	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904073
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5275

Sample ID **MB-5275** SampType: **MBLK** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **6/10/2009** RunNo: **19851**
Client ID: **ZZZZZ** Batch ID: **5275** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/11/2009** SeqNo: **287093**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	ND	0.10									

Sample ID **LCS-5275** SampType: **LCS** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **6/10/2009** RunNo: **19851**
Client ID: **ZZZZZ** Batch ID: **5275** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/11/2009** SeqNo: **287091**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	10.28	0.10	10	0	103	75	125				

Sample ID **LCSD-5275** SampType: **LCSD** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **6/10/2009** RunNo: **19851**
Client ID: **ZZZZZ** Batch ID: **5275** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/11/2009** SeqNo: **287092**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	10.36	0.10	10	0	104	75	125	10.28	0.775	30	

Sample ID **0904073-036AMS** SampType: **MS** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **6/10/2009** RunNo: **19851**
Client ID: **S-3-11 @ 1.0** Batch ID: **5275** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/11/2009** SeqNo: **287085**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	9.640	0.10	10	0.01	96.3	75	125				

Sample ID **0904073-036AMSD** SampType: **MSD** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **6/10/2009** RunNo: **19851**
Client ID: **S-3-11 @ 1.0** Batch ID: **5275** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/11/2009** SeqNo: **287086**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	9.880	0.10	10	0.01	98.7	75	125	9.64	2.46	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904073
Project: 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5302

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-5302	**MBLK**	**6010B (TCLP**	**mg/L**	**6/17/2009**	**19950**
Client ID: **ZZZZZ**	Batch ID: **5302**	TestNo: **6010B (TCLP (SW3010A)**		Analysis Date: **6/18/2009**	SeqNo: **288520**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	ND	0.10									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCS-5302	**LCS**	**6010B (TCLP**	**mg/L**	**6/17/2009**	**19950**
Client ID: **ZZZZZ**	Batch ID: **5302**	TestNo: **6010B (TCLP (SW3010A)**		Analysis Date: **6/18/2009**	SeqNo: **288518**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	11.04	0.10	10	0.01	110	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCSD-5302	**LCSD**	**6010B (TCLP**	**mg/L**	**6/17/2009**	**19950**
Client ID: **ZZZZZ**	Batch ID: **5302**	TestNo: **6010B (TCLP (SW3010A)**		Analysis Date: **6/18/2009**	SeqNo: **288519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	10.98	0.10	10	0.01	110	75	125	11.04	0.545	30	

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
0904073-022AMS	**MS**	**6010B (TCLP**	**mg/L**	**6/17/2009**	**19950**
Client ID: **S-3-11 @ 1.5-D**	Batch ID: **5302**	TestNo: **6010B (TCLP (SW3010A)**		Analysis Date: **6/18/2009**	SeqNo: **288512**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	10.57	0.10	10	0.15	104	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
0904073-022AMSD	**MSD**	**6010B (TCLP**	**mg/L**	**6/17/2009**	**19950**
Client ID: **S-3-11 @ 1.5-D**	Batch ID: **5302**	TestNo: **6010B (TCLP (SW3010A)**		Analysis Date: **6/18/2009**	SeqNo: **288513**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	10.55	0.10	10	0.15	104	75	125	10.57	0.189	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

Torrent
LABORATORY, INC.

April 08, 2009

Patrick Walz
URS Corporation, San Jose
55 South Market St., Suite 1500
San Jose, CA 95113

TEL: (408) 297-9585
FAX: (408) 297-6962

RE: Hwy 101-Aux Lane

Order No.: 0903162

Dear Patrick Walz:

Torrent Laboratory, Inc. received 30 samples on 3/26/2009 for the analyses presented in the following report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.
Reported data is applicable for only the samples received as part of the order number referenced above.

Torrent Laboratory, Inc, is certified by the State of California, ELAP #1991. If you have any questions regarding these tests results, please feel free to contact the Project Management Team at (408)263-5258;ext: 204.

Sincerely,

4/8/09

Laboratory Director Date

Patti Sandrock
QA Officer

Torrent Laboratory, Inc. **Date:** *08-Apr-09*

CLIENT: URS Corporation, San Jose
Project: Hwy 101-Aux Lane
Lab Order: 0903162

CASE NARRATIVE

Analytical Comments for Asbestos, PLM Note: Analysis performed by NVLAP Certified sub-contract laboratory. (Certification # 101048-3).

Analytical Comment for METHOD 6010B_S, 0903162-026A MS/MSD, QC Batch ID 19125, Note:The % recoveries in the MS/MSD for Lead and Nickel are not recoverable. The sample concentration is greater than 4X the spike concentration. No corrective action is required.

Analytical Comment for METHOD 6010B_S, 0903162-026A MS/MSD, QC Batch ID 19125, Note:The % recoveries in the MS for Barium, Chromium, Copper and Zinc, and in the MSD for Barium are outside of laboratory control limit but are within % RPD limits and % Recovery limits for the LCS/LCSD. No corrective action is required.

Analytical Comment for METHOD 6010B, 0903162-005A MS/MSD, QC Batch ID 19162, Note:The % recoveries in the MS/MSD for Lead are outside of laboratory control limits but within % RPD limits and % recovery limits for the LCS/LCSD. No corrective action is required.

TORRENT LABORATORY, INC.

483 Sinclair Frontage Road • Milpitas, CA • Phone: (408) 263-5258 • Fax: (408) 263-8293

Visit us at www.torrentlab.com email: analysis@torrentlab.com

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 4/8/2009

Client Sample ID: S-1-2@0.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:35:00 PM

Lab Sample ID: 0903162-001
Date Prepared: 3/31/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	58	mg/Kg	5070

Client Sample ID: S-1-2@1.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:35:00 PM

Lab Sample ID: 0903162-002
Date Prepared: 3/31/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	170	mg/Kg	5070

Client Sample ID: S-1-2@1.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:35:00 PM

Lab Sample ID: 0903162-003
Date Prepared: 3/31/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	68	mg/Kg	5070

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 4/8/2009

Client Sample ID: S-1-2@2.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:35:00 PM

Lab Sample ID: 0903162-004
Date Prepared: 3/31/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	75	mg/Kg	5070

Client Sample ID: S-1-2@3.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:35:00 PM

Lab Sample ID: 0903162-005
Date Prepared: 4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	56	mg/Kg	5062

Client Sample ID: S-1-1@0.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:25:00 PM

Lab Sample ID: 0903162-006
Date Prepared: 4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	27	mg/Kg	5062

Client Sample ID: S-1-1@1.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:25:00 PM

Lab Sample ID: 0903162-007
Date Prepared: 4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	23	mg/Kg	5062

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 4/8/2009

Client Sample ID: S-1-1@1.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:25:00 PM

Lab Sample ID: 0903162-008
Date Prepared: 4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	7.0	mg/Kg	5062

Client Sample ID: S-1-1@2.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:25:00 PM

Lab Sample ID: 0903162-009
Date Prepared: 4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	12	mg/Kg	5062

Client Sample ID: S-1-1@3.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:25:00 PM

Lab Sample ID: 0903162-010
Date Prepared: 4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	6.3	mg/Kg	5062

Client Sample ID: S-1-4@0.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:50:00 PM

Lab Sample ID: 0903162-011
Date Prepared: 4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	58	mg/Kg	5062

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 4/8/2009

Client Sample ID: S-1-4@1.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:50:00 PM

Lab Sample ID: 0903162-012
Date Prepared: 4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	890	mg/Kg	5062

Client Sample ID: S-1-4@1.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:50:00 PM

Lab Sample ID: 0903162-013
Date Prepared: 4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	2.0	mg/Kg	5062

Client Sample ID: S-1-4@2.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:50:00 PM

Lab Sample ID: 0903162-014
Date Prepared: 4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	1.2	mg/Kg	5062

Client Sample ID: S-1-4@3.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:50:00 PM

Lab Sample ID: 0903162-015
Date Prepared: 4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	12	mg/Kg	5062

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 4/8/2009

Client Sample ID: S-1-3@.05
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:45:00 PM

Lab Sample ID: 0903162-016
Date Prepared: 4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	33	mg/Kg	5062

Client Sample ID: S-1-3@1.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:45:00 PM

Lab Sample ID: 0903162-017
Date Prepared: 4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	86	mg/Kg	5062

Client Sample ID: S-1-3@1.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:45:00 PM

Lab Sample ID: 0903162-018
Date Prepared: 4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	73	mg/Kg	5062

Client Sample ID: S-1-3@2.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:45:00 PM

Lab Sample ID: 0903162-019
Date Prepared: 4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	ND	mg/Kg	5062

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 4/8/2009

Client Sample ID: S-1-3@3.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:45:00 PM

Lab Sample ID: 0903162-020
Date Prepared: 4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	ND	mg/Kg	5062

Client Sample ID: S-1-6@0.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:07:00 PM

Lab Sample ID: 0903162-021
Date Prepared: 4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	1000	mg/Kg	5062

Client Sample ID: S-1-6@1.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:07:00 PM

Lab Sample ID: 0903162-022
Date Prepared: 4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	730	mg/Kg	5062

Client Sample ID: S-1-6@1.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:07:00 PM

Lab Sample ID: 0903162-023
Date Prepared: 4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	160	mg/Kg	5062

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 4/8/2009

Client Sample ID: S-1-6@2.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:07:00 PM

Lab Sample ID: 0903162-024
Date Prepared: 4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	5.0	mg/Kg	5061

Client Sample ID: S-1-6@3.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:07:00 PM

Lab Sample ID: 0903162-025
Date Prepared: 4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	5.6	mg/Kg	5061

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 4/8/2009

Client Sample ID: S-1-5@0.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:00:00 PM

Lab Sample ID: 0903162-026
Date Prepared: 3/27/2009-4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	4/2/2009	5	1	5.0	5.8	mg/Kg	5061
Arsenic	SW6010B	4/2/2009	1.7	1	1.7	ND	mg/Kg	5061
Barium	SW6010B	4/2/2009	5	1	5.0	110	mg/Kg	5061
Beryllium	SW6010B	4/2/2009	2	1	2.0	ND	mg/Kg	5061
Cadmium	SW6010B	4/2/2009	1	1	1.0	ND	mg/Kg	5061
Chromium	SW6010B	4/2/2009	5	1	5.0	180	mg/Kg	5061
Cobalt	SW6010B	4/2/2009	5	1	5.0	16	mg/Kg	5061
Copper	SW6010B	4/2/2009	5	1	5.0	39	mg/Kg	5061
Lead	SW6010B	4/2/2009	1	1	1.0	280	mg/Kg	5061
Molybdenum	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Nickel	SW6010B	4/2/2009	5	1	5.0	280	mg/Kg	5061
Selenium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Silver	SW6010B	4/2/2009	1	1	1.0	2.0	mg/Kg	5061
Thallium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Vanadium	SW6010B	4/2/2009	5	1	5.0	19	mg/Kg	5061
Zinc	SW6010B	4/2/2009	5	1	5.0	150	mg/Kg	5061
Mercury	SW7471A	3/30/2009	0.1	1	0.10	ND	mg/Kg	5053
TPH (Diesel)	SW8015B	3/31/2009	2	2	4.00	ND	mg/Kg	R19074
TPH (Motor Oil)	SW8015B	3/31/2009	4	2	8.00	242	mg/Kg	R19074
Surr: Pentacosane	SW8015B	3/31/2009	0	2	59.7-129	102	%REC	R19074

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

4,4´-DDD	SW8081A	3/30/2009	0.47	20	9.40	ND	µg/Kg	R19073
4,4´-DDE	SW8081A	3/30/2009	0.476	20	9.52	ND	µg/Kg	R19073
4,4´-DDT	SW8081A	3/30/2009	0.809	20	16.2	ND	µg/Kg	R19073
Aldrin	SW8081A	3/30/2009	0.44	20	8.80	ND	µg/Kg	R19073
alpha-BHC	SW8081A	3/30/2009	0.439	20	8.78	ND	µg/Kg	R19073
alpha-Chlordane	SW8081A	3/30/2009	0.358	20	7.16	ND	µg/Kg	R19073
beta-BHC	SW8081A	3/30/2009	0.364	20	7.28	ND	µg/Kg	R19073
Chlordane	SW8081A	3/30/2009	10	20	200	ND	µg/Kg	R19073
delta-BHC	SW8081A	3/30/2009	0.49	20	9.80	ND	µg/Kg	R19073
Dieldrin	SW8081A	3/30/2009	0.427	20	8.54	ND	µg/Kg	R19073
Endosulfan I	SW8081A	3/30/2009	0.59	20	11.8	ND	µg/Kg	R19073
Endosulfan II	SW8081A	3/30/2009	1.526	20	30.5	ND	µg/Kg	R19073
Endosulfan sulfate	SW8081A	3/30/2009	0.489	20	9.78	ND	µg/Kg	R19073
Endrin	SW8081A	3/30/2009	0.569	20	11.4	ND	µg/Kg	R19073
Endrin aldehyde	SW8081A	3/30/2009	1.028	20	20.6	ND	µg/Kg	R19073
Endrin ketone	SW8081A	3/30/2009	0.401	20	8.02	ND	µg/Kg	R19073
gamma-BHC	SW8081A	3/30/2009	0.396	20	7.92	ND	µg/Kg	R19073
gamma-Chlordane	SW8081A	3/30/2009	0.42	20	8.40	ND	µg/Kg	R19073
Heptachlor	SW8081A	3/30/2009	1.1	20	22.0	ND	µg/Kg	R19073
Heptachlor epoxide	SW8081A	3/30/2009	0.316	20	6.32	ND	µg/Kg	R19073
Methoxychlor	SW8081A	3/30/2009	0.616	20	12.3	ND	µg/Kg	R19073
Toxaphene	SW8081A	3/30/2009	10	20	200	ND	µg/Kg	R19073
Surr: Decachlorobiphenyl	SW8081A	3/30/2009		20	54.6-127	105	%REC	R19073
Surr: Tetrachloro-m-xylene	SW8081A	3/30/2009		20	54-122	118	%REC	R19073

Note: Reporting limits increased due to the nature of the sample matrix (dark color extract). Compounds reported to the MDL.

Aroclor 1016	SW8082	3/31/2009	0.1	1	0.100	ND	mg/Kg	R19084
Aroclor 1221	SW8082	3/31/2009	0.2	1	0.200	ND	mg/Kg	R19084
Aroclor 1232	SW8082	3/31/2009	0.1	1	0.100	ND	mg/Kg	R19084
Aroclor 1242	SW8082	3/31/2009	0.1	1	0.100	ND	mg/Kg	R19084
Aroclor 1248	SW8082	3/31/2009	0.1	1	0.100	ND	mg/Kg	R19084
Aroclor 1254	SW8082	3/31/2009	0.1	1	0.100	ND	mg/Kg	R19084
Aroclor 1260	SW8082	3/31/2009	0.1	1	0.100	ND	mg/Kg	R19084
Surr: Decachlorobiphenyl	SW8082	3/31/2009	0	1	63.7-126	88.4	%REC	R19084
Surr: Tetrachloro-m-xylene	SW8082	3/31/2009	0	1	51.7-128	89.6	%REC	R19084

pH	SW9045C	3/31/2009	0.05	1	0.0500	8.27	pH Units	R19100

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 4/8/2009

Client Sample ID: S-1-5@1.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:00:00 PM

Lab Sample ID: 0903162-027
Date Prepared: 3/27/2009-4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Arsenic	SW6010B	4/2/2009	1.7	1	1.7	7.5	mg/Kg	5061
Barium	SW6010B	4/2/2009	5	1	5.0	110	mg/Kg	5061
Beryllium	SW6010B	4/2/2009	2	1	2.0	ND	mg/Kg	5061
Cadmium	SW6010B	4/2/2009	1	1	1.0	1.6	mg/Kg	5061
Chromium	SW6010B	4/2/2009	5	1	5.0	39	mg/Kg	5061
Cobalt	SW6010B	4/2/2009	5	1	5.0	15	mg/Kg	5061
Copper	SW6010B	4/2/2009	5	1	5.0	65	mg/Kg	5061
Lead	SW6010B	4/2/2009	1	1	1.0	2400	mg/Kg	5061
Molybdenum	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Nickel	SW6010B	4/2/2009	5	1	5.0	41	mg/Kg	5061
Selenium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Silver	SW6010B	4/2/2009	1	1	1.0	1.5	mg/Kg	5061
Thallium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Vanadium	SW6010B	4/2/2009	5	1	5.0	43	mg/Kg	5061
Zinc	SW6010B	4/2/2009	5	1	5.0	220	mg/Kg	5061
Mercury	SW7471A	3/30/2009	0.1	1	0.10	0.14	mg/Kg	5053
Benzene	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Diisopropyl ether (DIPE)	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Ethyl tert-butyl ether (ETBE)	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Ethylbenzene	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Methyl tert-butyl ether (MTBE)	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
t-Butyl alcohol (t-Butanol)	SW8260B	3/27/2009	50	1	50	ND	µg/Kg	U19078
tert-Amyl methyl ether (TAME)	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Toluene	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Xylenes, Total	SW8260B	3/27/2009	15	1	15	ND	µg/Kg	U19078
Surr: 4-Bromofluorobenzene	SW8260B	3/27/2009	0	1	55.8-141	90.0	%REC	U19078
Surr: Dibromofluoromethane	SW8260B	3/27/2009	0	1	59.8-148	95.0	%REC	U19078
Surr: Toluene-d8	SW8260B	3/27/2009	0	1	55.2-133	83.8	%REC	U19078
TPH (Gasoline)	SW8260B(TPH)	3/27/2009	100	1	100	ND	µg/Kg	G19078
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	3/27/2009	0	1	56.9-133	78.0	%REC	G19078
pH	SW9045C	3/31/2009	0.05	1	0.0500	8.48	pH Units	R19100

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 4/8/2009

Client Sample ID: S-1-5@1.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:00:00 PM

Lab Sample ID: 0903162-028
Date Prepared: 3/27/2009-4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Arsenic	SW6010B	4/2/2009	1.7	1	1.7	ND	mg/Kg	5061
Barium	SW6010B	4/2/2009	5	1	5.0	17	mg/Kg	5061
Beryllium	SW6010B	4/2/2009	2	1	2.0	ND	mg/Kg	5061
Cadmium	SW6010B	4/2/2009	1	1	1.0	ND	mg/Kg	5061
Chromium	SW6010B	4/2/2009	5	1	5.0	34	mg/Kg	5061
Cobalt	SW6010B	4/2/2009	5	1	5.0	17	mg/Kg	5061
Copper	SW6010B	4/2/2009	5	1	5.0	31	mg/Kg	5061
Lead	SW6010B	4/2/2009	1	1	1.0	6.2	mg/Kg	5061
Molybdenum	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Nickel	SW6010B	4/2/2009	5	1	5.0	26	mg/Kg	5061
Selenium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Silver	SW6010B	4/2/2009	1	1	1.0	ND	mg/Kg	5061
Thallium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Vanadium	SW6010B	4/2/2009	5	1	5.0	38	mg/Kg	5061
Zinc	SW6010B	4/2/2009	5	1	5.0	36	mg/Kg	5061
Mercury	SW7471A	3/30/2009	0.1	1	0.10	ND	mg/Kg	5053
Benzene	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Diisopropyl ether (DIPE)	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Ethyl tert-butyl ether (ETBE)	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Ethylbenzene	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Methyl tert-butyl ether (MTBE)	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
t-Butyl alcohol (t-Butanol)	SW8260B	3/27/2009	50	1	50	ND	µg/Kg	U19078
Toluene	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Xylenes, Total	SW8260B	3/27/2009	15	1	15	ND	µg/Kg	U19078
Surr: 4-Bromofluorobenzene	SW8260B	3/27/2009	0	1	55.8-141	95.0	%REC	U19078
Surr: Dibromofluoromethane	SW8260B	3/27/2009	0	1	59.8-148	95.3	%REC	U19078
Surr: Toluene-d8	SW8260B	3/27/2009	0	1	55.2-133	88.0	%REC	U19078
TPH (Gasoline)	SW8260B(TPH)	3/27/2009	100	1	100	ND	µg/Kg	G19078
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	3/27/2009	0	1	56.9-133	66.0	%REC	G19078
pH	SW9045C	3/31/2009	0.05	1	0.0500	8.75	pH Units	R19100

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 4/8/2009

Client Sample ID: S-1-5@2.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:00:00 PM

Lab Sample ID: 0903162-029
Date Prepared: 3/27/2009-4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Arsenic	SW6010B	4/2/2009	1.7	1	1.7	2.6	mg/Kg	5061
Barium	SW6010B	4/2/2009	5	1	5.0	94	mg/Kg	5061
Beryllium	SW6010B	4/2/2009	2	1	2.0	ND	mg/Kg	5061
Cadmium	SW6010B	4/2/2009	1	1	1.0	ND	mg/Kg	5061
Chromium	SW6010B	4/2/2009	5	1	5.0	50	mg/Kg	5061
Cobalt	SW6010B	4/2/2009	5	1	5.0	13	mg/Kg	5061
Copper	SW6010B	4/2/2009	5	1	5.0	25	mg/Kg	5061
Lead	SW6010B	4/2/2009	1	1	1.0	5.4	mg/Kg	5061
Molybdenum	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Nickel	SW6010B	4/2/2009	5	1	5.0	41	mg/Kg	5061
Selenium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Silver	SW6010B	4/2/2009	1	1	1.0	3.6	mg/Kg	5061
Thallium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Vanadium	SW6010B	4/2/2009	5	1	5.0	55	mg/Kg	5061
Zinc	SW6010B	4/2/2009	5	1	5.0	29	mg/Kg	5061
Mercury	SW7471A	3/30/2009	0.1	1	0.10	ND	mg/Kg	5053
Benzene	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Diisopropyl ether (DIPE)	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Ethyl tert-butyl ether (ETBE)	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Ethylbenzene	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Methyl tert-butyl ether (MTBE)	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
t-Butyl alcohol (t-Butanol)	SW8260B	3/27/2009	50	1	50	ND	µg/Kg	U19078
Toluene	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Xylenes, Total	SW8260B	3/27/2009	15	1	15	ND	µg/Kg	U19078
Surr: 4-Bromofluorobenzene	SW8260B	3/27/2009	0	1	55.8-141	93.5	%REC	U19078
Surr: Dibromofluoromethane	SW8260B	3/27/2009	0	1	59.8-148	83.2	%REC	U19078
Surr: Toluene-d8	SW8260B	3/27/2009	0	1	55.2-133	88.6	%REC	U19078
TPH (Gasoline)	SW8260B(TPH)	3/27/2009	100	1	100	ND	µg/Kg	G19078
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	3/27/2009	0	1	56.9-133	72.0	%REC	G19078
pH	SW9045C	3/31/2009	0.05	1	0.0500	8.73	pH Units	R19100

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 4/8/2009

Client Sample ID: S-1-5@3.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:00:00 PM

Lab Sample ID: 0903162-030
Date Prepared: 3/27/2009-4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Arsenic	SW6010B	4/2/2009	1.7	1	1.7	1.7	mg/Kg	5061
Barium	SW6010B	4/2/2009	5	1	5.0	110	mg/Kg	5061
Beryllium	SW6010B	4/2/2009	2	1	2.0	ND	mg/Kg	5061
Cadmium	SW6010B	4/2/2009	1	1	1.0	ND	mg/Kg	5061
Chromium	SW6010B	4/2/2009	5	1	5.0	46	mg/Kg	5061
Cobalt	SW6010B	4/2/2009	5	1	5.0	13	mg/Kg	5061
Copper	SW6010B	4/2/2009	5	1	5.0	28	mg/Kg	5061
Lead	SW6010B	4/2/2009	1	1	1.0	5.0	mg/Kg	5061
Molybdenum	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Nickel	SW6010B	4/2/2009	5	1	5.0	37	mg/Kg	5061
Selenium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Silver	SW6010B	4/2/2009	1	1	1.0	2.8	mg/Kg	5061
Thallium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Vanadium	SW6010B	4/2/2009	5	1	5.0	59	mg/Kg	5061
Zinc	SW6010B	4/2/2009	5	1	5.0	33	mg/Kg	5061
Mercury	SW7471A	3/30/2009	0.1	1	0.10	ND	mg/Kg	5053
Benzene	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Diisopropyl ether (DIPE)	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Ethyl tert-butyl ether (ETBE)	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Ethylbenzene	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Methyl tert-butyl ether (MTBE)	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
t-Butyl alcohol (t-Butanol)	SW8260B	3/27/2009	50	1	50	ND	µg/Kg	U19078
Toluene	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Xylenes, Total	SW8260B	3/27/2009	15	1	15	ND	µg/Kg	U19078
Surr: 4-Bromofluorobenzene	SW8260B	3/27/2009	0	1	55.8-141	90.2	%REC	U19078
Surr: Dibromofluoromethane	SW8260B	3/27/2009	0	1	59.8-148	86.5	%REC	U19078
Surr: Toluene-d8	SW8260B	3/27/2009	0	1	55.2-133	86.3	%REC	U19078
TPH (Gasoline)	SW8260B(TPH)	3/27/2009	100	1	100	ND	µg/Kg	G19078
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	3/27/2009	0	1	56.9-133	72.0	%REC	G19078
pH	SW9045C	3/31/2009	0.05	1	0.0500	8.73	pH Units	R19100

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Definitions, legends and Notes

Note	Description
ug/kg	Microgram per kilogram (ppb, part per billion).
ug/L	Microgram per liter (ppb, part per billion).
mg/kg	Milligram per kilogram (ppm, part per million).
mg/L	Milligram per liter (ppm, part per million).
LCS/LCSD	Laboratory control sample/laboratory control sample duplicate.
MDL	Method detection limit.
MRL	Modified reporting limit. When sample is subject to dilution, reporting limit times dilution factor yields MRL.
MS/MSD	Matrix spike/matrix spike duplicate.
N/A	Not applicable.
ND	Not detected at or above detection limit.
NR	Not reported.
QC	Quality Control.
RL	Reporting limit.
% RPD	Percent relative difference.
a	pH was measured immediately upon the receipt of the sample, but it was still done outside the holding time.
sub	Analyzed by subcontracting laboratory, Lab Certificate #

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

EMSL Analytical, Inc
2235 Polvorosa Ave , Suite 230, San Leandro, CA 94577
Phone: (510) 895-3675 Fax: (510) 895-3680 Email: milpitaslab@emsl.com

Attn: **Nutan Kabir**
Torrent Laboratory, Inc.
483 Sinclair Frontage Rd.
Milpitas, CA 95035

Fax: (408) 263-8293 Phone: (408) 263-5258
Project: **0903162**

Customer ID: TORR80
Customer PO: 0903162
Received: 03/30/09 8:30 AM
EMSL Order: 090902265

EMSL Proj:
Analysis Date: 3/30/2009
Report Date: 3/31/2009

Qualitative asbestos analysis of soils using the EPA 600/R-93/116 method

Sample	Location	Appearance	Result	Notes
0903162-016A, Soil *090902265-0001*			**None Detected**	
0903162-017A, Soil *090902265-0002*			**None Detected**	
0903162-018A, Soil *090902265-0003*			**None Detected**	
0903162-019A, Soil *090902265-0004*			**None Detected**	
0903162-020A, Soil *090902265-0005*			**None Detected**	
0903162-021A, Soil *090902265-0006*			**None Detected**	
0903162-022A, Soil *090902265-0007*			**None Detected**	
0903162-023A, Soil *090902265-0008*			**None Detected**	
0903162-024A, Soil *090902265-0009*			**None Detected**	

Analyst(s)

Alan Tahran (10)

Baojia Ke, Laboratory Manager
or other approved signatory

EMSL recommends that soil samples reported as "ND" be tested by the EPA Screening Method/Qualitative. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. The above test must not be used by the client to claim product endorsement by NVLAP nor any agency of the United States Government. Unless otherwise noted, the results in this report have not been blank corrected.Samples received in good condition unless otherwise noted.

EMSL Analytical, Inc
2235 Polvorosa Ave , Suite 230, San Leandro, CA 94577
Phone: (510) 895-3675 Fax: (510) 895-3680 Email: milpitaslab@emsl.com

Attn: **Nutan Kabir**
Torrent Laboratory, Inc.
483 Sinclair Frontage Rd.
Milpitas, CA 95035

Fax: (408) 263-8293 Phone: (408) 263-5258
Project: **0903162**

Customer ID:	TORR80
Customer PO:	0903162
Received:	03/30/09 8:30 AM
EMSL Order:	090902265
EMSL Proj:	
Analysis Date:	3/30/2009
Report Date:	3/31/2009

Qualitative asbestos analysis of soils using the EPA 600/R-93/116 method

Sample	Location	Appearance	Result	Notes
0903162-025A, Soil *090902265-0010*			**None Detected**	

Analyst(s)

Alan Tahran (10)

Baojia Ke, Laboratory Manager
or other approved signatory

EMSL recommends that soil samples reported as "ND" be tested by the EPA Screening Method/Qualitative. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. The above test must not be used by the client to claim product endorsement by NVLAP nor any agency of the United States Government. Unless otherwise noted, the results in this report have not been blank corrected.Samples received in good condition unless otherwise noted.

THIS IS THE LAST PAGE OF THE REPORT.

Torrent Laboratory, Inc.

Date: *08-Apr-09*

CLIENT: URS Corporation, San Jose
Work Order: 0903162
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5053

Sample ID: **MB-5053** SampType: **MBLK** TestCode: **HG_CTS** Units: **mg/Kg** Prep Date: **3/27/2009** RunNo: **19076**
Client ID: **ZZZZZ** Batch ID: **5053** TestNo: **SW7471A** **(SW7471APR)** Analysis Date: **3/30/2009** SeqNo: **275383**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.10									

Sample ID: **LCS-5053** SampType: **LCS** TestCode: **HG_CTS** Units: **mg/Kg** Prep Date: **3/27/2009** RunNo: **19076**
Client ID: **ZZZZZ** Batch ID: **5053** TestNo: **SW7471A** **(SW7471APR)** Analysis Date: **3/30/2009** SeqNo: **275381**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.410	0.10	1.25	0	113	80.5	133				

Sample ID: **LCSD-5053** SampType: **LCSD** TestCode: **HG_CTS** Units: **mg/Kg** Prep Date: **3/27/2009** RunNo: **19076**
Client ID: **ZZZZZ** Batch ID: **5053** TestNo: **SW7471A** **(SW7471APR)** Analysis Date: **3/30/2009** SeqNo: **275382**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.518	0.10	1.25	0	121	80.5	133	1.41	7.40	30	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903162
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5061

Sample ID: **MB-5061** SampType: **MBLK** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **4/1/2009** RunNo: **19125**
Client ID: **ZZZZZ** Batch ID: **5061** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **4/2/2009** SeqNo: **276119**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	5.0									
Arsenic	ND	1.7									
Barium	ND	5.0									
Beryllium	ND	2.0									
Cadmium	ND	1.0									
Chromium	ND	5.0									
Cobalt	ND	5.0									
Copper	ND	5.0									
Lead	ND	1.0									
Molybdenum	ND	5.0									
Nickel	ND	5.0									
Selenium	ND	5.0									
Silver	ND	1.0									
Thallium	ND	5.0									
Vanadium	ND	5.0									
Zinc	ND	5.0									

Sample ID: **LCS-5061** SampType: **LCS** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **4/1/2009** RunNo: **19125**
Client ID: **ZZZZZ** Batch ID: **5061** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **4/2/2009** SeqNo: **276117**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	48.50	5.0	50	0	97.0	30.7	130				
Arsenic	48.55	1.7	50	0	97.1	71	121				
Barium	46.45	5.0	50	0.15	92.6	70.2	130				
Beryllium	48.15	2.0	50	0	96.3	73.3	115				
Cadmium	44.45	1.0	50	0	88.9	68.7	110				
Chromium	46.20	5.0	50	0.1	92.2	76	116				
Cobalt	45.15	5.0	50	0	90.3	57.4	122				
Copper	48.35	5.0	50	0.95	94.8	74.8	119				
Lead	46.85	1.0	50	0.3	93.1	67.9	118				
Molybdenum	48.40	5.0	50	0	96.8	62.9	123				

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903162
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5061

Sample ID: **LCS-5061** SampType: **LCS** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **4/1/2009** RunNo: **19125**
Client ID: **ZZZZZ** Batch ID: **5061** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **4/2/2009** SeqNo: **276117**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	44.85	5.0	50	0.1	89.5	61.5	122				
Selenium	43.75	5.0	50	0	87.5	62	111				
Silver	45.85	1.0	50	0	91.7	81.1	109				
Thallium	45.75	5.0	50	0	91.5	39.2	125				
Vanadium	46.75	5.0	50	0	93.5	65.8	122				
Zinc	44.35	5.0	50	1.25	86.2	59.9	122				

Sample ID: **LCSD-5061** SampType: **LCSD** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **4/1/2009** RunNo: **19125**
Client ID: **ZZZZZ** Batch ID: **5061** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **4/2/2009** SeqNo: **276118**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	47.80	5.0	50	0	95.6	30.7	130	48.5	1.45	30	
Arsenic	47.80	1.7	50	0	95.6	71	121	48.55	1.56	30	
Barium	47.65	5.0	50	0.15	95.0	70.2	130	46.45	2.55	30	
Beryllium	46.75	2.0	50	0	93.5	73.3	115	48.15	2.95	30	
Cadmium	45.80	1.0	50	0	91.6	68.7	110	44.45	2.99	30	
Chromium	47.65	5.0	50	0.1	95.1	76	116	46.2	3.09	30	
Cobalt	46.25	5.0	50	0	92.5	57.4	122	45.15	2.41	30	
Copper	49.75	5.0	50	0.95	97.6	74.8	119	48.35	2.85	30	
Lead	46.05	1.0	50	0.3	91.5	67.9	118	46.85	1.72	30	
Molybdenum	47.75	5.0	50	0	95.5	62.9	123	48.4	1.35	30	
Nickel	46.00	5.0	50	0.1	91.8	61.5	122	44.85	2.53	30	
Selenium	43.05	5.0	50	0	86.1	62	111	43.75	1.61	30	
Silver	47.45	1.0	50	0	94.9	81.1	109	45.85	3.43	30	
Thallium	45.35	5.0	50	0	90.7	39.2	125	45.75	0.878	30	
Vanadium	48.25	5.0	50	0	96.5	65.8	122	46.75	3.16	30	
Zinc	44.85	5.0	50	1.25	87.2	59.9	122	44.35	1.12	30	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903162
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5061

Sample ID: **0903162-026AMS** SampType: **MS** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **4/1/2009** RunNo: **19125**
Client ID: **S-1-5@0.5** Batch ID: **5061** TestNo: **SW6010B (SW3050B)** Analysis Date: **4/2/2009** SeqNo: **276098**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	25.45	5.0	50	5.8	39.3	30.7	130				
Arsenic	42.25	1.7	50	0	84.5	71	121				
Barium	213.6	5.0	50	105.2	217	56.2	127				S
Beryllium	40.70	2.0	50	0	81.4	73.3	115				
Cadmium	41.70	1.0	50	0.85	81.7	68.7	110				
Chromium	189.1	5.0	50	175.4	27.3	76	116				S
Cobalt	53.45	5.0	50	16.4	74.1	57.4	122				
Copper	103.7	5.0	50	38.7	130	74.8	119				S
Lead	NR	1.0	50	277.4	268	60.5	113				NR
Molybdenum	41.00	5.0	50	0.45	81.1	62.9	123				
Nickel	NR	5.0	50	281.9	-59.4	61.5	122				NR
Selenium	38.40	5.0	50	1.75	73.3	62	111				
Silver	45.70	1.0	50	2	87.4	81.1	109				
Thallium	32.75	5.0	50	0	65.5	39.2	125				
Vanadium	71.90	5.0	50	19.3	105	65.8	122				
Zinc	269.0	5.0	50	149.6	239	59.9	122				S

Sample ID: **0903162-026AMSD** SampType: **MSD** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **4/1/2009** RunNo: **19125**
Client ID: **S-1-5@0.5** Batch ID: **5061** TestNo: **SW6010B (SW3050B)** Analysis Date: **4/2/2009** SeqNo: **276099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	27.55	5.0	50	5.8	43.5	30.7	130	25.45	7.92	30	
Arsenic	42.10	1.7	50	0	84.2	71	121	42.25	0.356	30	
Barium	177.1	5.0	50	105.2	144	56.2	127	213.6	18.7	30	S
Beryllium	40.65	2.0	50	0	81.3	73.3	115	40.7	0.123	30	
Cadmium	41.60	1.0	50	0.85	81.5	68.7	110	41.7	0.240	30	
Chromium	216.0	5.0	50	175.4	81.0	76	116	189.1	13.3	30	
Cobalt	50.85	5.0	50	16.4	68.9	57.4	122	53.45	4.99	30	
Copper	94.10	5.0	50	38.7	111	74.8	119	103.7	9.71	30	
Lead	NR	1.0	50	277.4	200	60.5	113	411.4	8.59	30	NR
Molybdenum	41.00	5.0	50	0.45	81.1	62.9	123	41	0	30	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903162
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5061

Sample ID: **0903162-026AMSD** SampType: **MSD** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **4/1/2009** RunNo: **19125**
Client ID: **S-1-5@0.5** Batch ID: **5061** TestNo: **SW6010B (SW3050B)** Analysis Date: **4/2/2009** SeqNo: **276099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	NR	5.0	50	281.9	-16.2	61.5	122	252.2	8.21	30	NR
Selenium	37.40	5.0	50	1.75	71.3	62	111	38.4	2.64	30	
Silver	46.45	1.0	50	2	88.9	81.1	109	45.7	1.63	30	
Thallium	32.95	5.0	50	0	65.9	39.2	125	32.75	0.609	30	
Vanadium	65.55	5.0	50	19.3	92.5	65.8	122	71.9	9.24	30	
Zinc	205.6	5.0	50	149.6	112	59.9	122	269	26.7	30	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903162
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5062

Sample ID: **MB-5062**	SampType: **MBLK**	TestCode: **6010B_S**	Units: **mg/Kg**	Prep Date: **4/1/2009**	RunNo: **19162**
Client ID: **ZZZZZ**	Batch ID: **5062**	TestNo: **SW6010B**	**(SW3050B)**	Analysis Date: **4/6/2009**	SeqNo: **276722**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	1.0									

Sample ID: **LCS-5062**	SampType: **LCS**	TestCode: **6010B_S**	Units: **mg/Kg**	Prep Date: **4/1/2009**	RunNo: **19162**
Client ID: **ZZZZZ**	Batch ID: **5062**	TestNo: **SW6010B**	**(SW3050B)**	Analysis Date: **4/6/2009**	SeqNo: **276720**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	52.00	1.0	50	0.3	103	67.9	118				

Sample ID: **LCSD-5062**	SampType: **LCSD**	TestCode: **6010B_S**	Units: **mg/Kg**	Prep Date: **4/1/2009**	RunNo: **19162**
Client ID: **ZZZZZ**	Batch ID: **5062**	TestNo: **SW6010B**	**(SW3050B)**	Analysis Date: **4/6/2009**	SeqNo: **276721**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	50.90	1.0	50	0.3	101	67.9	118	52	2.14	30	

Sample ID: **0903162-005AMS**	SampType: **MS**	TestCode: **6010B_S**	Units: **mg/Kg**	Prep Date: **4/1/2009**	RunNo: **19162**
Client ID: **S-1-2@3.0**	Batch ID: **5062**	TestNo: **SW6010B**	**(SW3050B)**	Analysis Date: **4/6/2009**	SeqNo: **276699**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	84.50	1.0	50	55.85	57.3	60.5	113				S

Sample ID: **0903162-005AMSD**	SampType: **MSD**	TestCode: **6010B_S**	Units: **mg/Kg**	Prep Date: **4/1/2009**	RunNo: **19162**
Client ID: **S-1-2@3.0**	Batch ID: **5062**	TestNo: **SW6010B**	**(SW3050B)**	Analysis Date: **4/6/2009**	SeqNo: **276700**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	100.9	1.0	50	55.85	90.1	60.5	113	84.5	17.7	30	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903162
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5070

Sample ID: **MB-5070**	SampType: **MBLK**	TestCode: **6010B_S**	Units: **mg/Kg**	Prep Date: **3/31/2009**	RunNo: **19159**
Client ID: **ZZZZZ**	Batch ID: **5070**	TestNo: **SW6010B**	**(SW3050B)**	Analysis Date: **4/6/2009**	SeqNo: **276681**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	1.0									

Sample ID: **LCS-5070**	SampType: **LCS**	TestCode: **6010B_S**	Units: **mg/Kg**	Prep Date: **3/31/2009**	RunNo: **19159**
Client ID: **ZZZZZ**	Batch ID: **5070**	TestNo: **SW6010B**	**(SW3050B)**	Analysis Date: **4/6/2009**	SeqNo: **276679**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	51.00	1.0	50	0.35	101	67.9	118				

Sample ID: **LCSD-5070**	SampType: **LCSD**	TestCode: **6010B_S**	Units: **mg/Kg**	Prep Date: **3/31/2009**	RunNo: **19159**
Client ID: **ZZZZZ**	Batch ID: **5070**	TestNo: **SW6010B**	**(SW3050B)**	Analysis Date: **4/6/2009**	SeqNo: **276680**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	49.70	1.0	50	0.35	98.7	67.9	118	51	2.58	30	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903162
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: G19078

Sample ID: **MB_G19078** SampType: **MBLK** TestCode: **TPH_GAS_S_** Units: **µg/Kg** Prep Date: **3/27/2009** RunNo: **19078**
Client ID: **ZZZZZ** Batch ID: **G19078** TestNo: **SW8260B(TP** Analysis Date: **3/27/2009** SeqNo: **275437**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	ND	100									
Surr: 4-Bromofllurobenzene	43.00	0	50	0	86.0	56.9	133				

Sample ID: **LCS_G19078** SampType: **LCS** TestCode: **TPH_GAS_S_** Units: **µg/Kg** Prep Date: **3/27/2009** RunNo: **19078**
Client ID: **ZZZZZ** Batch ID: **G19078** TestNo: **SW8260B(TP** Analysis Date: **3/27/2009** SeqNo: **275438**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	941.0	100	1000	0	94.1	48.2	132				
Surr: 4-Bromofllurobenzene	42.00	0	50	0	84.0	56.9	133				

Sample ID: **LCSD_G19078** SampType: **LCSD** TestCode: **TPH_GAS_S_** Units: **µg/Kg** Prep Date: **3/27/2009** RunNo: **19078**
Client ID: **ZZZZZ** Batch ID: **G19078** TestNo: **SW8260B(TP** Analysis Date: **3/27/2009** SeqNo: **275439**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	923.0	100	1000	0	92.3	48.2	132	941	1.93	30	
Surr: 4-Bromofllurobenzene	44.00	0	50	0	88.0	56.9	133	0	0	0	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903162
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: R19073

Sample ID: **SP090327B-MB** SampType: **MBLK** TestCode: **8081S** Units: **µg/Kg** Prep Date: **3/27/2009** RunNo: **19073**
Client ID: **ZZZZZ** Batch ID: **R19073** TestNo: **SW8081A** Analysis Date: **3/28/2009** SeqNo: **275321**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDD	ND	2.00									
4,4´-DDE	ND	2.00									
4,4´-DDT	ND	2.00									
Aldrin	ND	2.00									
alpha-BHC	ND	2.00									
alpha-Chlordane	ND	2.00									
beta-BHC	ND	2.00									
Chlordane	ND	20.0									
delta-BHC	ND	2.00									
Dieldrin	ND	2.00									
Endosulfan I	ND	2.00									
Endosulfan II	ND	2.00									
Endosulfan sulfate	ND	2.00									
Endrin	ND	2.00									
Endrin aldehyde	ND	2.00									
Endrin ketone	ND	2.00									
gamma-BHC	ND	2.00									
gamma-Chlordane	ND	2.00									
Heptachlor	ND	2.00									
Heptachlor epoxide	ND	2.00									
Methoxychlor	ND	5.00									
Toxaphene	ND	100									
Surr: Decachlorobiphenyl	43.53	0	50	0	87.1	57	126				
Surr: Tetrachloro-m-xylene	42.52	0	50	0	85.0	55.7	122				

Sample ID: **SP090327B-LCS** SampType: **LCS** TestCode: **8081S** Units: **µg/Kg** Prep Date: **3/27/2009** RunNo: **19073**
Client ID: **ZZZZZ** Batch ID: **R19073** TestNo: **SW8081A** Analysis Date: **3/28/2009** SeqNo: **275322**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDT	17.89	2.00	20	0	89.5	52.8	134				
Aldrin	17.74	2.00	20	0	88.7	53	123				

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903162
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: R19073

Sample ID: **SP090327B-LCS** SampType: **LCS** TestCode: **8081S** Units: **µg/Kg** Prep Date: **3/27/2009** RunNo: **19073**
Client ID: **ZZZZZ** Batch ID: **R19073** TestNo: **SW8081A** Analysis Date: **3/28/2009** SeqNo: **275322**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dieldrin	18.10	2.00	20	0	90.5	44	130				
Endrin	16.97	2.00	20	0	84.9	44.1	121				
gamma-BHC	16.31	2.00	20	0	81.5	56.9	120				
Heptachlor	16.65	2.00	20	0	83.3	63.6	117				
Surr: Decachlorobiphenyl	58.34	0	70	0	83.3	57	126				
Surr: Tetrachloro-m-xylene	58.13	0	70	0	83.0	55.7	122				

Sample ID: **SP090327B-LCSD** SampType: **LCSD** TestCode: **8081S** Units: **µg/Kg** Prep Date: **3/27/2009** RunNo: **19073**
Client ID: **ZZZZZ** Batch ID: **R19073** TestNo: **SW8081A** Analysis Date: **3/28/2009** SeqNo: **275323**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDT	14.41	2.00	20	0	72.0	52.8	134	17.89	21.6	30	
Aldrin	14.61	2.00	20	0	73.0	53	123	17.74	19.4	30	
Dieldrin	14.93	2.00	20	0	74.7	44	130	18.1	19.2	30	
Endrin	14.03	2.00	20	0	70.1	44.1	121	16.97	19.0	30	
gamma-BHC	13.64	2.00	20	0	68.2	56.9	120	16.31	17.8	30	
Heptachlor	14.13	2.00	20	0	70.6	63.6	117	16.65	16.4	30	
Surr: Decachlorobiphenyl	48.60	0	70	0	69.4	57	126	0	0	0	
Surr: Tetrachloro-m-xylene	49.53	0	70	0	70.8	55.7	122	0	0	0	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903162
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: R19074

Sample ID: **SD090326B-MB** SampType: **MBLK** TestCode: **TPHDO_S** Units: **mg/Kg** Prep Date: **3/26/2009** RunNo: **19074**
Client ID: **ZZZZZ** Batch ID: **R19074** TestNo: **SW8015B** Analysis Date: **3/27/2009** SeqNo: **275357**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	ND	2.00									
TPH (Motor Oil)	ND	4.00									
Surr: Pentacosane	3.504	0	3.3	0	106	59.7	129				

Sample ID: **SD090326B-LCS** SampType: **LCS** TestCode: **TPHDO_S** Units: **mg/Kg** Prep Date: **3/26/2009** RunNo: **19074**
Client ID: **ZZZZZ** Batch ID: **R19074** TestNo: **SW8015B** Analysis Date: **3/27/2009** SeqNo: **275358**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	31.18	2.00	33.33	0	93.5	52.7	115				
Surr: Pentacosane	3.496	0	3.3	0	106	59.7	129				

Sample ID: **SD090326B-LCSD** SampType: **LCSD** TestCode: **TPHDO_S** Units: **mg/Kg** Prep Date: **3/26/2009** RunNo: **19074**
Client ID: **ZZZZZ** Batch ID: **R19074** TestNo: **SW8015B** Analysis Date: **3/27/2009** SeqNo: **275359**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	29.83	2.00	33.33	0	89.5	52.7	115	31.18	4.41	30	
Surr: Pentacosane	3.333	0	3.3	0	101	59.7	129	0	0	0	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903162
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: R19084

Sample ID: **SQ090327A-MB** SampType: **MBLK** TestCode: **8082S** Units: **mg/Kg** Prep Date: **3/27/2009** RunNo: **19084**
Client ID: **ZZZZZ** Batch ID: **R19084** TestNo: **SW8082** Analysis Date: **3/28/2009** SeqNo: **275502**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	0.0230									
Aroclor 1221	ND	0.0920									
Aroclor 1232	ND	0.0460									
Aroclor 1242	ND	0.0430									
Aroclor 1248	ND	0.0360									
Aroclor 1254	ND	0.0240									
Aroclor 1260	ND	0.0270									
Surr: Decachlorobiphenyl	0.04472	0	0.05	0	89.4	55.1	113				
Surr: Tetrachloro-m-xylene	0.04397	0	0.05	0	87.9	51.7	128				

Sample ID: **SQ090327A-LCS** SampType: **LCS** TestCode: **8082S** Units: **mg/Kg** Prep Date: **3/27/2009** RunNo: **19084**
Client ID: **ZZZZZ** Batch ID: **R19084** TestNo: **SW8082** Analysis Date: **3/28/2009** SeqNo: **275503**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	0.8610	0.100	1	0	86.1	55.6	135				
Aroclor 1260	0.5035	0.100	0.5	0	101	65.6	132				
Surr: Decachlorobiphenyl	0.05204	0	0.05	0	104	55.1	113				
Surr: Tetrachloro-m-xylene	0.05232	0	0.05	0	105	51.7	128				

Sample ID: **SQ090327A-LCSD** SampType: **LCSD** TestCode: **8082S** Units: **mg/Kg** Prep Date: **3/27/2009** RunNo: **19084**
Client ID: **ZZZZZ** Batch ID: **R19084** TestNo: **SW8082** Analysis Date: **3/28/2009** SeqNo: **275504**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	0.8186	0.100	1	0	81.9	55.6	135	0.861	5.04	30	
Aroclor 1260	0.4812	0.100	0.5	0	96.2	65.6	132	0.5035	4.52	30	
Surr: Decachlorobiphenyl	0.04821	0	0.05	0	96.4	55.1	113	0	0	0	
Surr: Tetrachloro-m-xylene	0.04768	0	0.05	0	95.4	51.7	128	0	0	0	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903162
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: R19084

Sample ID: **0903162-026A MS** SampType: **MS** TestCode: **8082S** Units: **mg/Kg** Prep Date: **3/27/2009** RunNo: **19084**
Client ID: **S-1-5@0.5** Batch ID: **R19084** TestNo: **SW8082** Analysis Date: **3/31/2009** SeqNo: **275824**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	0.8545	0.100	1	0	85.5	55.9	130				
Aroclor 1260	0.5241	0.100	0.5	0	105	57.1	130				
Surr: Decachlorobiphenyl	0.04353	0	0.05	0	87.1	55.1	113				
Surr: Tetrachloro-m-xylene	0.04559	0	0.05	0	91.2	65.3	133				

Sample ID: **0903162-026A MSD** SampType: **MSD** TestCode: **8082S** Units: **mg/Kg** Prep Date: **3/27/2009** RunNo: **19084**
Client ID: **S-1-5@0.5** Batch ID: **R19084** TestNo: **SW8082** Analysis Date: **3/31/2009** SeqNo: **275825**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	0.8136	0.100	1	0	81.4	55.9	130	0.8545	4.90	30	
Aroclor 1260	0.4881	0.100	0.5	0	97.6	57.1	130	0.5241	7.11	30	
Surr: Decachlorobiphenyl	0.04190	0	0.05	0	83.8	55.1	113	0	0	0	
Surr: Tetrachloro-m-xylene	0.04354	0	0.05	0	87.1	65.3	133	0	0	0	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903162
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: U19078

Sample ID: **MB_U19078** SampType: **MBLK** TestCode: **8260B_S_PE** Units: **µg/Kg** Prep Date: **3/27/2009** RunNo: **19078**
Client ID: **ZZZZZ** Batch ID: **U19078** TestNo: **SW8260B** Analysis Date: **3/27/2009** SeqNo: **275925**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	10									
Diisopropyl ether (DIPE)	ND	10									
Ethyl tert-butyl ether (ETBE)	ND	10									
Ethylbenzene	ND	10									
Methyl tert-butyl ether (MTBE)	ND	10									
t-Butyl alcohol (t-Butanol)	ND	50									
tert-Amyl methyl ether (TAME)	ND	10									
Toluene	ND	10									
Xylenes, Total	ND	15									
Surr: 4-Bromofluorobenzene	45.99	0	50	0	92.0	55.8	141				
Surr: Dibromofluoromethane	45.01	0	50	0	90.0	59.8	148				
Surr: Toluene-d8	42.83	0	50	0	85.7	55.2	133				

Sample ID: **LCS_U19078** SampType: **LCS** TestCode: **8260B_S_PE** Units: **µg/Kg** Prep Date: **3/27/2009** RunNo: **19078**
Client ID: **ZZZZZ** Batch ID: **U19078** TestNo: **SW8260B** Analysis Date: **3/27/2009** SeqNo: **275926**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	56.40	10	50	0	113	66.5	135				
Toluene	47.21	10	50	0	94.4	56.8	134				
Surr: 4-Bromofluorobenzene	46.06	0	50	0	92.1	55.8	141				
Surr: Dibromofluoromethane	46.18	0	50	0	92.4	59.8	148				
Surr: Toluene-d8	41.62	0	50	0	83.2	55.2	133				

Sample ID: **LCSD_U19078** SampType: **LCSD** TestCode: **8260B_S_PE** Units: **µg/Kg** Prep Date: **3/27/2009** RunNo: **19078**
Client ID: **ZZZZZ** Batch ID: **U19078** TestNo: **SW8260B** Analysis Date: **3/27/2009** SeqNo: **275927**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	57.21	10	50	0	114	66.5	135	56.4	1.43	30	
Toluene	47.25	10	50	0	94.5	56.8	134	47.21	0.0847	30	
Surr: 4-Bromofluorobenzene	45.50	0	50	0	91.0	55.8	141	0	0	0	
Surr: Dibromofluoromethane	41.70	0	50	0	83.4	59.8	148	0	0	0	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903162
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: U19078

Sample ID: **LCSD_U19078** SampType: **LCSD** TestCode: **8260B_S_PE** Units: **µg/Kg** Prep Date: **3/27/2009** RunNo: **19078**
Client ID: **ZZZZZ** Batch ID: **U19078** TestNo: **SW8260B** Analysis Date: **3/27/2009** SeqNo: **275927**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Toluene-d8	41.40	0	50	0	82.8	55.2	133	0	0	0	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903162

Company Name: URS San Jose	Location of Sampling: Hwy 101 – Auxiliary Lanes
Address:	Purpose:
City: State: Zip Code:	Special Instructions / Comments:
Telephone: FAX:	
REPORT TO: Patrick W. SAMPLER: Eduardo O.	P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Working Days ☐ 3 Working Days ☐ Noon - Nxt Day ☐ 7 Working Days ☐ 2 Working Days ☐ 2 - 8 Hours ☑ 5 Working Days ☐ 1 Working Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☑ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED: Lead

	CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	Lead	TORRENT'S SAMPLE I.D.
001A	1. S-1-2 @ 0.5	03/25/09 2135	S	1	Sleev	X	
002A	2. @ 1.0					X	
003A	3. @ 1.5					X	
004A	4. @ 2.0					X	
005A	5. @ 3.0					X	
006A	6. S-1-1 @ 0.5	03/25/09 2125				X	
007A	7. @ 1.0					X	
008A	8. @ 1.5					X	
009A	9. @ 2.0					X	
010A	10. @ 3.0					X	

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/26/09	10:15 AM	D. G. Khodasara	NAVIN	3/26/09	10:15 AM
2								

Were Samples Received in Good Condition? ☑ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment Drop-off Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrange -ments are made.

Log In By: Date: Log In Reviewed By: Date:

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903162

Company Name: UNS San Jose	Location of Sampling: Hwy 101 - Auf Laces
Address:	Purpose:
City: State: Zip Code:	Special Instructions / Comments:
Telephone: FAX:	
REPORT TO: Patrick U. SAMPLER: Eduardo G	P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Working Days ☐ 3 Working Days ☐ Noon - Nxt Day ☐ 7 Working Days ☐ 2 Working Days ☐ 2 - 8 Hours ☒ 5 Working Days ☐ 1 Working Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☒ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

	CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	Lead	asbestos								TORRENT'S SAMPLE I.D.
011A	1. S-1-4 @ 0.5	03/25/09 2150	S	1	sleeve	X									
012A	2. @ 1.0					X									
013A	3. @ 1.5					X									
014A	4. @ 2.0					X									
015A	5. @ 3.0					X									
016A	6. S-1-3 @ 0.5	03/25/09 2145	S	1		X	X								
017A	7. @ 1.0					X	X								
018A	8. @ 1.5					X	X								
019A	9. @ 2.0					X	X								
020A	10. @ 3.0					X	X								

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/26/09	10:15 Am	[signature]	NAVIN	3/26/09	10:15 Am
2								

Were Samples Received in Good Condition? ☑ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment Drop-off Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrange -ments are made.

Log In By: Date: Log In Reviewed By: Date:

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903162

Company Name: UPS San Jose	Location of Sampling: Hwy 101 – Auto Lanes
Address:	Purpose:
City: State: Zip Code:	Special Instructions / Comments:
Telephone: FAX:	
REPORT TO: Patrick W. SAMPLER: Eduardo O.	P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Working Days ☐ 3 Working Days ☐ Noon - Nxt Day ☐ 7 Working Days ☐ 2 Working Days ☐ 2 - 8 Hours ☑ 5 Working Days ☐ 1 Working Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☑ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

	CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	Lead	as Lead	CAM17 + pH	TPH-d/mo	PCBs	pesticide	TPH-g/BTEX	Gas organics		TORRENT'S SAMPLE I.D.
021A	1. S-1-6 @0.5	03/25/09 2207	S	1	sleeve	X	X								
022A	2. @1.0			1		X	X								
023A	3. @1.5					X	X								
024A	4. @2.0			1		X	X								
025A	5. @3.0					X	X								
026A	6. S-1-5 @0.5	03/25/09 2200						X	X	X	X				
027A	7. @1.0							X				X			
028A	8. @1.5							X				X			
029A	9. @2.0							X				X			
030A	10. @3.0							X				X			

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/26/09	10:15 AM	[signature]	NAVIN	3/26/09	10:15 AM
2								

Were Samples Received in Good Condition? ☑ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment Drop-off Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrange -ments are made.

Log In By: Date: Log In Reviewed By: Date:

Torrent Laboratory, Inc. **Date:** *18-Jun-09*

CLIENT: URS Corporation, San Jose
Project: Hwy 101-Aux Lane
Lab Order: 0903162

CASE NARRATIVE

Analytical Comments for Asbestos, PLM Note: Analysis performed by NVLAP Certified sub-contract laboratory. (Certification # 101048-3).

Analytical Comment for METHOD 6010B_S, 0903162-026A MS/MSD, QC Batch ID 19125, Note:The % recoveries in the MS/MSD for Lead and Nickel are not recoverable. The sample concentration is greater than 4X the spike concentration. No corrective action is required.

Analytical Comment for METHOD 6010B_S, 0903162-026A MS/MSD, QC Batch ID 19125, Note:The % recoveries in the MS for Barium, Chromium, Copper and Zinc, and in the MSD for Barium are outside of laboratory control limit but are within % RPD limits and % Recovery limits for the LCS/LCSD. No corrective action is required.

Analytical Comment for METHOD 6010B, 0903162-005A MS/MSD, QC Batch ID 19162, Note:The % recoveries in the MS/MSD for Lead are outside of laboratory control limits but within % RPD limits and % recovery limits for the LCS/LCSD. No corrective action is required. Analytical Comments for METHOD 6010B (STLC), SAMPLE 0903162-003AMSD: Pb,Ni are out of control limit.

REVISIONS:

Per client request, STLC, DI STLC and TCLP analysis was added to specified samples. Due to insufficient sample mass available, no TCLP was performed on requested sample -027 (N-2-11@1.0). Due to limited sample available for all samples, STLC, DI STLC and TCLP was performed using only 25 g of homogenized sample.

Note: Extraction of 25 g sample / 250g 0.2M Sodium Citrate Solution was performed according to DI wet extraction procedure (WET) which was rotated in a rotary shaker for 48 hours.

Extraction started on 05/27/2009 @ 2.00 PM and ended on 05/29/2009 @ 2:00 PM

Note: Extraction of 25 g sample / 250g 0.2M Sodium Citrate Solution was performed according to wet extraction procedure (WET) which was rotated in a rotary shaker for 48 hours.

CLIENT:	URS Corporation, San Jose
Project:	Hwy 101-Aux Lane
Lab Order:	0903162

CASE NARRATIVE

Extraction started on 05/27/2009 @ 2.00 PM and ended on 05/29/2009 @ 2:00 PM

Note: Extraction of 25 g sample / 500g TCLP Fluid #1 was performed according to Toxicity Characteristic Leaching Procedure (TCLP) which was rotated in a rotary shaker for 18 hours.

Extraction started on 06/12/2009 @ 4:00 PM and ended on 06/13/2009 @ 10:00 AM

TORRENT LABORATORY, INC.

483 Sinclair Frontage Road • Milpitas, CA • Phone: (408) 263-5258 • Fax: (408) 263-8293

Visit us at www.torrentlab.com email: analysis@torrentlab.com

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-2@0.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:35:00 PM

Lab Sample ID: 0903162-001
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	0.56	mg/L	5250
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	3.3	mg/L	5248
Lead	SW6010B	4/6/2009	1	1	1.0	58	mg/Kg	5070

Client Sample ID: S-1-2@1.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:35:00 PM

Lab Sample ID: 0903162-002
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	1.1	mg/L	5250
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	2.2	mg/L	5248
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	ND	mg/L	5284
Lead	SW6010B	4/6/2009	1	1	1.0	170	mg/Kg	5070

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-2@1.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:35:00 PM

Lab Sample ID: 0903162-003
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	1.9	mg/L	5250
Lead (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	3.9	mg/L	5257
Lead	SW6010B	4/6/2009	1	1	1.0	68	mg/Kg	5070

Client Sample ID: S-1-2@2.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:35:00 PM

Lab Sample ID: 0903162-004
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	0.56	mg/L	5250
Lead (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	3.4	mg/L	5257
Lead	SW6010B	4/6/2009	1	1	1.0	75	mg/Kg	5070

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-2@3.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:35:00 PM

Lab Sample ID: 0903162-005
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	0.71	mg/L	5250
Lead (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	1.1	mg/L	5257
Lead	SW6010B	4/6/2009	1	1	1.0	56	mg/Kg	5062

Client Sample ID: S-1-1@0.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:25:00 PM

Lab Sample ID: 0903162-006
Date Prepared: 4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	27	mg/Kg	5062

Client Sample ID: S-1-1@1.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:25:00 PM

Lab Sample ID: 0903162-007
Date Prepared: 4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	23	mg/Kg	5062

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-1@1.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:25:00 PM

Lab Sample ID: 0903162-008
Date Prepared: 4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	7.0	mg/Kg	5062

Client Sample ID: S-1-1@2.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:25:00 PM

Lab Sample ID: 0903162-009
Date Prepared: 4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	12	mg/Kg	5062

Client Sample ID: S-1-1@3.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:25:00 PM

Lab Sample ID: 0903162-010
Date Prepared: 4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	6.3	mg/Kg	5062

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-4@0.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:50:00 PM

Lab Sample ID: 0903162-011
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	ND	mg/L	5250
Lead (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	0.40	mg/L	5257
Lead	SW6010B	4/6/2009	1	1	1.0	58	mg/Kg	5062

Client Sample ID: S-1-4@1.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:50:00 PM

Lab Sample ID: 0903162-012
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	1.6	mg/L	5250
Lead (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	30	mg/L	5257
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	ND	mg/L	5285
Lead	SW6010B	4/6/2009	1	1	1.0	890	mg/Kg	5062

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-4@1.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:50:00 PM

Lab Sample ID: 0903162-013
Date Prepared: 4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	2.0	mg/Kg	5062

Client Sample ID: S-1-4@2.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:50:00 PM

Lab Sample ID: 0903162-014
Date Prepared: 4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	1.2	mg/Kg	5062

Client Sample ID: S-1-4@3.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:50:00 PM

Lab Sample ID: 0903162-015
Date Prepared: 4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	12	mg/Kg	5062

Client Sample ID: S-1-3@.05
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:45:00 PM

Lab Sample ID: 0903162-016
Date Prepared: 4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	33	mg/Kg	5062

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-3@1.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:45:00 PM

Lab Sample ID: 0903162-017
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	3.4	mg/L	5250
Lead (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	12	mg/L	5257
Lead	SW6010B	4/6/2009	1	1	1.0	86	mg/Kg	5062

Client Sample ID: S-1-3@1.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:45:00 PM

Lab Sample ID: 0903162-018
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	5.3	mg/L	5250
Lead (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	5.8	mg/L	5257
Lead	SW6010B	4/6/2009	1	1	1.0	73	mg/Kg	5062

Client Sample ID: S-1-3@2.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:45:00 PM

Lab Sample ID: 0903162-019
Date Prepared: 4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	ND	mg/Kg	5062

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-3@3.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 9:45:00 PM

Lab Sample ID: 0903162-020
Date Prepared: 4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	ND	mg/Kg	5062

Client Sample ID: S-1-6@0.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:07:00 PM

Lab Sample ID: 0903162-021
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	69	mg/L	5250
Lead (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	120	mg/L	5257
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	0.46	mg/L	5285
Lead	SW6010B	4/6/2009	1	1	1.0	1000	mg/Kg	5062

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-6@1.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:07:00 PM

Lab Sample ID: 0903162-022
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	18	mg/L	5250
Lead (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	48	mg/L	5257
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	0.48	mg/L	5285
Lead	SW6010B	4/6/2009	1	1	1.0	730	mg/Kg	5062

Client Sample ID: S-1-6@1.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:07:00 PM

Lab Sample ID: 0903162-023
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	1.5	mg/L	5250
Lead (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	1.9	mg/L	5257
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	ND	mg/L	5285
Lead	SW6010B	4/6/2009	1	1	1.0	160	mg/Kg	5062

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-6@2.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:07:00 PM

Lab Sample ID: 0903162-024
Date Prepared: 4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	5.0	mg/Kg	5061

Client Sample ID: S-1-6@3.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:07:00 PM

Lab Sample ID: 0903162-025
Date Prepared: 4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	5.6	mg/Kg	5061

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-5@0.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:00:00 PM

Lab Sample ID: 0903162-026
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	80	mg/L	5250
Chromium (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	0.59	mg/L	5257
Lead (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	76	mg/L	5257
Nickel (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	1.8	mg/L	5257
Chromium (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	ND	mg/L	5285
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	22	mg/L	5285
Antimony	SW6010B	4/2/2009	5	1	5.0	5.8	mg/Kg	5061
Arsenic	SW6010B	4/2/2009	1.7	1	1.7	ND	mg/Kg	5061
Barium	SW6010B	4/2/2009	5	1	5.0	110	mg/Kg	5061
Beryllium	SW6010B	4/2/2009	2	1	2.0	ND	mg/Kg	5061
Cadmium	SW6010B	4/2/2009	1	1	1.0	ND	mg/Kg	5061
Chromium	SW6010B	4/2/2009	5	1	5.0	180	mg/Kg	5061
Cobalt	SW6010B	4/2/2009	5	1	5.0	16	mg/Kg	5061
Copper	SW6010B	4/2/2009	5	1	5.0	39	mg/Kg	5061
Lead	SW6010B	4/2/2009	1	1	1.0	280	mg/Kg	5061
Molybdenum	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Nickel	SW6010B	4/2/2009	5	1	5.0	280	mg/Kg	5061
Selenium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Silver	SW6010B	4/2/2009	1	1	1.0	2.0	mg/Kg	5061
Thallium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Vanadium	SW6010B	4/2/2009	5	1	5.0	19	mg/Kg	5061
Zinc	SW6010B	4/2/2009	5	1	5.0	150	mg/Kg	5061

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-5@1.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:00:00 PM

Lab Sample ID: 0903162-027
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	36	mg/L	5250
Lead (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	11	mg/L	5257
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	ND	mg/L	5285
Antimony	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Arsenic	SW6010B	4/2/2009	1.7	1	1.7	7.5	mg/Kg	5061
Barium	SW6010B	4/2/2009	5	1	5.0	110	mg/Kg	5061
Beryllium	SW6010B	4/2/2009	2	1	2.0	ND	mg/Kg	5061
Cadmium	SW6010B	4/2/2009	1	1	1.0	1.6	mg/Kg	5061
Chromium	SW6010B	4/2/2009	5	1	5.0	39	mg/Kg	5061
Cobalt	SW6010B	4/2/2009	5	1	5.0	15	mg/Kg	5061
Copper	SW6010B	4/2/2009	5	1	5.0	65	mg/Kg	5061
Lead	SW6010B	4/2/2009	1	1	1.0	2400	mg/Kg	5061
Molybdenum	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Nickel	SW6010B	4/2/2009	5	1	5.0	41	mg/Kg	5061
Selenium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Silver	SW6010B	4/2/2009	1	1	1.0	1.5	mg/Kg	5061
Thallium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Vanadium	SW6010B	4/2/2009	5	1	5.0	43	mg/Kg	5061
Zinc	SW6010B	4/2/2009	5	1	5.0	220	mg/Kg	5061

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-5@1.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:00:00 PM

Lab Sample ID: 0903162-028
Date Prepared: 3/27/2009-4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Arsenic	SW6010B	4/2/2009	1.7	1	1.7	ND	mg/Kg	5061
Barium	SW6010B	4/2/2009	5	1	5.0	17	mg/Kg	5061
Beryllium	SW6010B	4/2/2009	2	1	2.0	ND	mg/Kg	5061
Cadmium	SW6010B	4/2/2009	1	1	1.0	ND	mg/Kg	5061
Chromium	SW6010B	4/2/2009	5	1	5.0	34	mg/Kg	5061
Cobalt	SW6010B	4/2/2009	5	1	5.0	17	mg/Kg	5061
Copper	SW6010B	4/2/2009	5	1	5.0	31	mg/Kg	5061
Lead	SW6010B	4/2/2009	1	1	1.0	6.2	mg/Kg	5061
Molybdenum	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Nickel	SW6010B	4/2/2009	5	1	5.0	26	mg/Kg	5061
Selenium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Silver	SW6010B	4/2/2009	1	1	1.0	ND	mg/Kg	5061
Thallium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Vanadium	SW6010B	4/2/2009	5	1	5.0	38	mg/Kg	5061
Zinc	SW6010B	4/2/2009	5	1	5.0	36	mg/Kg	5061

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-5@2.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:00:00 PM

Lab Sample ID: 0903162-029
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Chromium (STLC)	6010B (STLC)	6/4/2009	0.1	1	0.10	ND	mg/L	5257
Antimony	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Arsenic	SW6010B	4/2/2009	1.7	1	1.7	2.6	mg/Kg	5061
Barium	SW6010B	4/2/2009	5	1	5.0	94	mg/Kg	5061
Beryllium	SW6010B	4/2/2009	2	1	2.0	ND	mg/Kg	5061
Cadmium	SW6010B	4/2/2009	1	1	1.0	ND	mg/Kg	5061
Chromium	SW6010B	4/2/2009	5	1	5.0	50	mg/Kg	5061
Cobalt	SW6010B	4/2/2009	5	1	5.0	13	mg/Kg	5061
Copper	SW6010B	4/2/2009	5	1	5.0	25	mg/Kg	5061
Lead	SW6010B	4/2/2009	1	1	1.0	5.4	mg/Kg	5061
Molybdenum	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Nickel	SW6010B	4/2/2009	5	1	5.0	41	mg/Kg	5061
Selenium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Silver	SW6010B	4/2/2009	1	1	1.0	3.6	mg/Kg	5061
Thallium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Vanadium	SW6010B	4/2/2009	5	1	5.0	55	mg/Kg	5061
Zinc	SW6010B	4/2/2009	5	1	5.0	29	mg/Kg	5061

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-5@3.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:00:00 PM

Lab Sample ID: 0903162-030
Date Prepared: 3/27/2009-4/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Arsenic	SW6010B	4/2/2009	1.7	1	1.7	1.7	mg/Kg	5061
Barium	SW6010B	4/2/2009	5	1	5.0	110	mg/Kg	5061
Beryllium	SW6010B	4/2/2009	2	1	2.0	ND	mg/Kg	5061
Cadmium	SW6010B	4/2/2009	1	1	1.0	ND	mg/Kg	5061
Chromium	SW6010B	4/2/2009	5	1	5.0	46	mg/Kg	5061
Cobalt	SW6010B	4/2/2009	5	1	5.0	13	mg/Kg	5061
Copper	SW6010B	4/2/2009	5	1	5.0	28	mg/Kg	5061
Lead	SW6010B	4/2/2009	1	1	1.0	5.0	mg/Kg	5061
Molybdenum	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Nickel	SW6010B	4/2/2009	5	1	5.0	37	mg/Kg	5061
Selenium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Silver	SW6010B	4/2/2009	1	1	1.0	2.8	mg/Kg	5061
Thallium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5061
Vanadium	SW6010B	4/2/2009	5	1	5.0	59	mg/Kg	5061
Zinc	SW6010B	4/2/2009	5	1	5.0	33	mg/Kg	5061

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Definitions, legends and Notes

Note	Description
ug/kg	Microgram per kilogram (ppb, part per billion).
ug/L	Microgram per liter (ppb, part per billion).
mg/kg	Milligram per kilogram (ppm, part per million).
mg/L	Milligram per liter (ppm, part per million).
LCS/LCSD	Laboratory control sample/laboratory control sample duplicate.
MDL	Method detection limit.
MRL	Modified reporting limit. When sample is subject to dilution, reporting limit times dilution factor yields MRL.
MS/MSD	Matrix spike/matrix spike duplicate.
N/A	Not applicable.
ND	Not detected at or above detection limit.
NR	Not reported.
QC	Quality Control.
RL	Reporting limit.
% RPD	Percent relative difference.
a	pH was measured immediately upon the receipt of the sample, but it was still done outside the holding time.
sub	Analyzed by subcontracting laboratory, Lab Certificate #

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

CLIENT: URS Corporation, San Jose
Work Order: 0903162
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5248

Sample ID: **MB-5248** SampType: **MBLK** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **6/2/2009** RunNo: **19808**
Client ID: **ZZZZZ** Batch ID: **5248** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **6/3/2009** SeqNo: **286404**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (STLC)	ND	0.10									

Sample ID: **LCS-5248** SampType: **LCS** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **6/2/2009** RunNo: **19808**
Client ID: **ZZZZZ** Batch ID: **5248** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **6/3/2009** SeqNo: **286402**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (STLC)	8.710	0.10	10	0.01	87.0	75	125				

Sample ID: **LCSD-5248** SampType: **LCSD** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **6/2/2009** RunNo: **19808**
Client ID: **ZZZZZ** Batch ID: **5248** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **6/3/2009** SeqNo: **286403**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (STLC)	8.690	0.10	10	0.01	86.8	75	125	8.71	0.230	30	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903162
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5250

Sample ID: **MB-5250** SampType: **MBLK** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **6/3/2009** RunNo: **19810**
Client ID: **ZZZZZ** Batch ID: **5250** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/3/2009** SeqNo: **286454**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	ND	0.10									

Sample ID: **LCS-5250** SampType: **LCS** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **6/3/2009** RunNo: **19810**
Client ID: **ZZZZZ** Batch ID: **5250** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/3/2009** SeqNo: **286452**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	9.540	0.10	10	0.09	94.5	75	125				

Sample ID: **LCSD-5250** SampType: **LCSD** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **6/3/2009** RunNo: **19810**
Client ID: **ZZZZZ** Batch ID: **5250** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/3/2009** SeqNo: **286453**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	9.430	0.10	10	0.09	93.4	75	125	9.54	1.16	30	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903162
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5257

Sample ID: **MB-5257** SampType: **MBLK** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **6/3/2009** RunNo: **19813**
Client ID: **ZZZZZ** Batch ID: **5257** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **6/4/2009** SeqNo: **286502**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	ND	0.10									
Lead (STLC)	ND	0.10									
Nickel (STLC)	ND	0.10									

Sample ID: **LCS-5257** SampType: **LCS** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **6/3/2009** RunNo: **19813**
Client ID: **ZZZZZ** Batch ID: **5257** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **6/4/2009** SeqNo: **286500**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	8.830	0.10	10	0.01	88.2	75	125				
Lead (STLC)	8.270	0.10	10	0	82.7	75	125				
Nickel (STLC)	8.610	0.10	10	0	86.1	75	125				

Sample ID: **LCSD-5257** SampType: **LCSD** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **6/3/2009** RunNo: **19813**
Client ID: **ZZZZZ** Batch ID: **5257** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **6/4/2009** SeqNo: **286501**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	8.340	0.10	10	0.01	83.3	75	125	8.83	5.71	30	
Lead (STLC)	8.090	0.10	10	0	80.9	75	125	8.27	2.20	30	
Nickel (STLC)	8.150	0.10	10	0	81.5	75	125	8.61	5.49	30	

Sample ID: **0903162-003AMS** SampType: **MS** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **6/3/2009** RunNo: **19813**
Client ID: **S-1-2@1.5** Batch ID: **5257** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **6/4/2009** SeqNo: **286480**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	8.350	0.10	10	0.15	82.0	75	125				
Lead (STLC)	11.89	0.10	10	3.93	79.6	75	125				
Nickel (STLC)	8.580	0.10	10	0.65	79.3	75	125				

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903162
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5257

Sample ID: **0903162-003AMSD** SampType: **MSD** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **6/3/2009** RunNo: **19813**
Client ID: **S-1-2@1.5** Batch ID: **5257** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **6/4/2009** SeqNo: **286481**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	7.890	0.10	10	0.15	77.4	75	125	8.35	5.67	30	
Lead (STLC)	10.79	0.10	10	3.93	68.6	75	125	11.89	9.70	30	S
Nickel (STLC)	8.050	0.10	10	0.65	74.0	75	125	8.58	6.37	30	S

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903162
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5284

Sample ID: **MB-5284** SampType: **MBLK** TestCode: **6010B (TCLP)** Units: **mg/L** Prep Date: **6/14/2009** RunNo: **19896**
Client ID: **ZZZZZ** Batch ID: **5284** TestNo: **6010B (TCLP) (SW3010A)** Analysis Date: **6/15/2009** SeqNo: **287788**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	ND	0.10									

Sample ID: **LCS-5284** SampType: **LCS** TestCode: **6010B (TCLP)** Units: **mg/L** Prep Date: **6/14/2009** RunNo: **19896**
Client ID: **ZZZZZ** Batch ID: **5284** TestNo: **6010B (TCLP) (SW3010A)** Analysis Date: **6/15/2009** SeqNo: **287786**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	10.36	0.10	10	0	104	75	125				

Sample ID: **LCSD-5284** SampType: **LCSD** TestCode: **6010B (TCLP)** Units: **mg/L** Prep Date: **6/14/2009** RunNo: **19896**
Client ID: **ZZZZZ** Batch ID: **5284** TestNo: **6010B (TCLP) (SW3010A)** Analysis Date: **6/15/2009** SeqNo: **287787**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	10.70	0.10	10	0	107	75	125	10.36	3.23	30	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903162
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5285

Sample ID: **MB-5285** SampType: **MBLK** TestCode: **6010B (TCLP)** Units: **mg/L** Prep Date: **6/14/2009** RunNo: **19897**
Client ID: **ZZZZZ** Batch ID: **5285** TestNo: **6010B (TCLP) (SW3010A)** Analysis Date: **6/15/2009** SeqNo: **287813**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	ND	0.10									

Sample ID: **LCS-5285** SampType: **LCS** TestCode: **6010B (TCLP)** Units: **mg/L** Prep Date: **6/14/2009** RunNo: **19897**
Client ID: **ZZZZZ** Batch ID: **5285** TestNo: **6010B (TCLP) (SW3010A)** Analysis Date: **6/15/2009** SeqNo: **287811**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	9.810	0.10	10	0.01	98.0	75	125				

Sample ID: **LCSD-5285** SampType: **LCSD** TestCode: **6010B (TCLP)** Units: **mg/L** Prep Date: **6/14/2009** RunNo: **19897**
Client ID: **ZZZZZ** Batch ID: **5285** TestNo: **6010B (TCLP) (SW3010A)** Analysis Date: **6/15/2009** SeqNo: **287812**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	9.880	0.10	10	0.01	98.7	75	125	9.81	0.711	30	

Sample ID: **0903162-012AMS** SampType: **MS** TestCode: **6010B (TCLP)** Units: **mg/L** Prep Date: **6/14/2009** RunNo: **19897**
Client ID: **S-1-4@1.0** Batch ID: **5285** TestNo: **6010B (TCLP) (SW3010A)** Analysis Date: **6/15/2009** SeqNo: **287791**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	9.040	0.10	10	0	90.4	75	125				

Sample ID: **0903162-012AMSD** SampType: **MSD** TestCode: **6010B (TCLP)** Units: **mg/L** Prep Date: **6/14/2009** RunNo: **19897**
Client ID: **S-1-4@1.0** Batch ID: **5285** TestNo: **6010B (TCLP) (SW3010A)** Analysis Date: **6/15/2009** SeqNo: **287792**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	9.060	0.10	10	0	90.6	75	125	9.04	0.221	30	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

TORRENT LABORATORY, INC.

483 Sinclair Frontage Road • Milpitas, CA • Phone: (408) 263-5258 • Fax: (408) 263-8293

Visit us at www.torrentlab.com email: analysis@torrentlab.com

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-5@0.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:00:00 PM

Lab Sample ID: 0903162-026
Date Prepared: 5/14/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Chromium, Hexavalent	SW7199	5/14/2009	0.02	1	0.020	ND	mg/Kg	R19588

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Definitions, legends and Notes

Note	Description
ug/kg	Microgram per kilogram (ppb, part per billion).
ug/L	Microgram per liter (ppb, part per billion).
mg/kg	Milligram per kilogram (ppm, part per million).
mg/L	Milligram per liter (ppm, part per million).
LCS/LCSD	Laboratory control sample/laboratory control sample duplicate.
MDL	Method detection limit.
MRL	Modified reporting limit. When sample is subject to dilution, reporting limit times dilution factor yields MRL.
MS/MSD	Matrix spike/matrix spike duplicate.
N/A	Not applicable.
ND	Not detected at or above detection limit.
NR	Not reported.
QC	Quality Control.
RL	Reporting limit.
% RPD	Percent relative difference.
a	pH was measured immediately upon the receipt of the sample, but it was still done outside the holding time.
sub	Analyzed by subcontracting laboratory, Lab Certificate #

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Torrent
LABORATORY, INC.

June 18, 2009 (Revision 1)

Patrick Walz
URS Corporation, San Jose
55 South Market St., Suite 1500
San Jose, CA 95113

TEL: (408) 297-9585
FAX: (408) 297-6962

RE: Hwy 101-Aux Lane - See narrative for revision details.

Order No.: 0903161

Dear Patrick Walz:

Torrent Laboratory, Inc. received 40 samples on 3/26/2009 for the analyses presented in the following report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.
Reported data is applicable for only the samples received as part of the order number referenced above.

Torrent Laboratory, Inc, is certified by the State of California, ELAP #1991. If you have any questions regarding these tests results, please feel free to contact the Project Management Team at (408)263-5258;ext: 204.

Sincerely,

Laboratory Director

6/18/09
Date

Patti Sandrock
QA Officer

Torrent Laboratory, Inc. **Date:** *18-Jun-09*

CLIENT: URS Corporation, San Jose
Project: Hwy 101-Aux Lane
Lab Order: 0903161

CASE NARRATIVE

Analytical Comments for Asbestos, PLM Note: Analysis performed by NVLAP Certified sub-contract laboratory. (Certification # 101048-3).

Analytical Comment for METHOD 6010B_S, 0903161-007A MS/MSD, QC Batch ID 190138, Note:The % recoveries in the MS/MSD for Lead are not recoverable. The sample concentration is greater than 4X the spike concentration. No corrective action is required.

Analytical Comment for METHOD 6010B_S, 0903154-001A MS/MSD, QC Batch ID 19067, Note:The % recoveries in the MS/MSD for Lead are outside of laboratory control limits and % RPD but are within % RPD limits and % Recovery limits for the LCS/LCSD. A post digestion spike on the parent sample was anlayzed and Lead was recovered within control limits indicating probable non-homogenity of the samples. No corrective action is required.

REVISIONS:

Per client request, STLC, DI STLC and TCLP analysis was added to specified samples. Due to insufficient sample mass available, no TCLP was performed on requested sample -027 (N-2-11@1.0). Due to limited sample available for all samples, STLC, DI STLC and TCLP was performed using only 25 g of homogenized sample.

Note: Extraction of 25 g sample / 250g 0.2M Sodium Citrate Solution was performed according to DI wet extraction procedure (WET) which was rotated in a rotary shaker for 48 hours.

Extraction started on 05/19/2009 @ 4.00 PM and ended on 05/21/2009 @ 4:00 PM

Note: Extraction of 25 g sample / 250g 0.2M Sodium Citrate Solution was performed according to wet extraction procedure (WET) which was rotated in a rotary shaker for 48 hours.

Extraction started on 05/19/2009 @ 4.00 PM and ended on 05/21/2009 @ 4:00 PM

Note: Extraction of 25 g sample / 500g TCLP Fluid #1 was performed according to Toxicity

Characteristic Leaching Procedure (TCLP) which was rotated in a rotary shaker for 18 hours.

Extraction started on 06/11/2009 @ 5:00 PM and ended on 06/12/2009 @ 11:00 AM
and
Extraction started on 06/12/2009 @ 4:00 PM and ended on 06/13/2009 @ 10:00 AM

TORRENT LABORATORY, INC.

483 Sinclair Frontage Road • Milpitas, CA • Phone: (408) 263-5258 • Fax: (408) 263-8293

Visit us at www.torrentlab.com email: analysis@torrentlab.com

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: N-2-8@0.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:32:00 AM

Lab Sample ID: 0903161-001
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	14	mg/Kg	5055

Client Sample ID: N-2-8@1.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:32:00 AM

Lab Sample ID: 0903161-002
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	32	mg/Kg	5055

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: N-2-8@1.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:32:00 AM

Lab Sample ID: 0903161-003
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	41	mg/L	5249
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	98	mg/L	5248
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	0.29	mg/L	5284
Lead	SW6010B	4/2/2009	1	1	1.0	350	mg/Kg	5055

Client Sample ID: N-2-8@2.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:32:00 AM

Lab Sample ID: 0903161-004
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	2.8	mg/L	5249
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	1.6	mg/L	5248
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	ND	mg/L	5284
Lead	SW6010B	4/2/2009	1	1	1.0	400	mg/Kg	5055

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: N-2-8@3.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:32:00 AM

Lab Sample ID: 0903161-005
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	11	mg/Kg	5055

Client Sample ID: N-2-10@0.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:25:00 AM

Lab Sample ID: 0903161-006
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	15	mg/L	5249
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	63	mg/L	5248
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	0.13	mg/L	5284
Lead	SW6010B	4/2/2009	1	1	1.0	990	mg/Kg	5055

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: N-2-10@1.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:25:00 AM

Lab Sample ID: 0903161-007
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	17	mg/L	5249
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	0.47	mg/L	5248
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	ND	mg/L	5284
Lead	SW6010B	4/2/2009	1	1	1.0	590	mg/Kg	5069

Client Sample ID: N-2-10@1.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:25:00 AM

Lab Sample ID: 0903161-008
Date Prepared: 3/31/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	45	mg/Kg	5069

Analyte conc. for Pb is too high to get accurate spike recovery. PDS was run to support.

Client Sample ID: N-2-10@2.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:25:00 AM

Lab Sample ID: 0903161-009
Date Prepared: 3/31/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	4.0	mg/Kg	5069

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: N-2-10@3.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:25:00 AM

Lab Sample ID: 0903161-010
Date Prepared: 3/31/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	3.0	mg/Kg	5069

Client Sample ID: N-2-6@0.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:45:00 AM

Lab Sample ID: 0903161-011
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	31	mg/L	5249
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	34	mg/L	5248
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	0.14	mg/L	5284
Lead	SW6010B	4/2/2009	1	1	1.0	400	mg/Kg	5069

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: N-2-6@1.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:45:00 AM

Lab Sample ID: 0903161-012
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	8.9	mg/L	5249
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	2.9	mg/L	5248
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	ND	mg/L	5284
Lead	SW6010B	4/2/2009	1	1	1.0	350	mg/Kg	5069

Client Sample ID: N-2-6@1.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:45:00 AM

Lab Sample ID: 0903161-013
Date Prepared: 3/31/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	20	mg/Kg	5069

Client Sample ID: N-2-6@2.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:45:00 AM

Lab Sample ID: 0903161-014
Date Prepared: 3/31/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	18	mg/Kg	5069

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: N-2-6@3.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:45:00 AM

Lab Sample ID: 0903161-015
Date Prepared: 3/31/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	2.6	mg/Kg	5069

Client Sample ID: N-2-7@0.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:40:00 AM

Lab Sample ID: 0903161-016
Date Prepared: 3/31/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	11	mg/Kg	5069

Client Sample ID: N-2-7@1.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:40:00 AM

Lab Sample ID: 0903161-017
Date Prepared: 3/31/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	48	mg/Kg	5069

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: N-2-7@1.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:40:00 AM

Lab Sample ID: 0903161-018
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	13	mg/L	5249
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	88	mg/L	5248
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	ND	mg/L	5284
Lead	SW6010B	4/2/2009	1	1	1.0	1000	mg/Kg	5069

Client Sample ID: N-2-7@2.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:40:00 AM

Lab Sample ID: 0903161-019
Date Prepared: 3/31/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	3.0	mg/Kg	5069

Client Sample ID: N-2-7@3.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:40:00 AM

Lab Sample ID: 0903161-020
Date Prepared: 3/31/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	7.5	mg/Kg	5069

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: N-2-10-D @ 0.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:27:00 AM

Lab Sample ID: 0903161-021
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	29	mg/L	5249
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	62	mg/L	5248
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	ND	mg/L	5284
Lead	SW6010B	4/2/2009	1	1	1.0	420	mg/Kg	5069

Client Sample ID: N-2-10-D @1.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:27:00 AM

Lab Sample ID: 0903161-022
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	0.39	mg/L	5249
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	0.26	mg/L	5248
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	ND	mg/L	5284
Lead	SW6010B	4/2/2009	1	1	1.0	210	mg/Kg	5069

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: N-2-10-D @1.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:27:00 AM

Lab Sample ID: 0903161-023
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	0.35	mg/L	5249
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	14	mg/L	5248
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	ND	mg/L	5284
Lead	SW6010B	4/2/2009	1	1	1.0	460	mg/Kg	5069

Client Sample ID: N-2-10-D @2.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:27:00 AM

Lab Sample ID: 0903161-024
Date Prepared: 3/31/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	5.6	mg/Kg	5069

Client Sample ID: N-2-10-D @3.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:27:00 AM

Lab Sample ID: 0903161-025
Date Prepared: 3/31/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	2.9	mg/Kg	5069

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: N-2-11@0.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:13:00 AM

Lab Sample ID: 0903161-026
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	3.5	mg/L	5249
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	3.5	mg/L	5248
Lead	SW6010B	4/6/2009	1	1	1.0	79	mg/Kg	5070

Client Sample ID: N-2-11@1.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:13:00 AM

Lab Sample ID: 0903161-027
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	100	mg/L	5249
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	11	mg/L	5248
Lead	SW6010B	4/6/2009	1	1	1.0	980	mg/Kg	5070

Client Sample ID: N-2-11@1.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:13:00 AM

Lab Sample ID: 0903161-028
Date Prepared: 3/31/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	18	mg/Kg	5070

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: N-2-11@2.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:13:00 AM

Lab Sample ID: 0903161-029
Date Prepared: 3/31/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	5.4	mg/Kg	5070

Client Sample ID: N-2-11@3.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:13:00 AM

Lab Sample ID: 0903161-030
Date Prepared: 3/31/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	5.4	mg/Kg	5070

Client Sample ID: N-2-12@0.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:07:00 AM

Lab Sample ID: 0903161-031
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	0.80	mg/L	5249
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	5.8	mg/L	5248
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	ND	mg/L	5284
Lead	SW6010B	4/6/2009	1	1	1.0	110	mg/Kg	5070

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: N-2-12@1.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:07:00 AM

Lab Sample ID: 0903161-032
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	1.3	mg/L	5249
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	12	mg/L	5248
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	ND	mg/L	5284
Lead	SW6010B	4/6/2009	1	1	1.0	380	mg/Kg	5070

Client Sample ID: N-2-12@1.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:07:00 AM

Lab Sample ID: 0903161-033
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	0.94	mg/L	5249
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	12	mg/L	5248
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	ND	mg/L	5284
Lead	SW6010B	4/6/2009	1	1	1.0	250	mg/Kg	5070

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: N-2-12@2.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:07:00 AM

Lab Sample ID: 0903161-034
Date Prepared: 3/31/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	11	mg/Kg	5070

Client Sample ID: N-2-12@3.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:07:00 AM

Lab Sample ID: 0903161-035
Date Prepared: 3/31/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	9.6	mg/Kg	5070

Client Sample ID: N-2-13@0.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:01:00 AM

Lab Sample ID: 0903161-036
Date Prepared: 3/31/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	13	mg/Kg	5070

Client Sample ID: N-2-13@1.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:01:00 AM

Lab Sample ID: 0903161-037
Date Prepared: 3/31/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	71	mg/Kg	5070

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: N-2-13@1.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:01:00 AM

Lab Sample ID: 0903161-038
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	2.6	mg/L	5250
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	42	mg/L	5248
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	ND	mg/L	5284
Lead	SW6010B	4/6/2009	1	1	1.0	2200	mg/Kg	5070

Client Sample ID: N-2-13@2.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:01:00 AM

Lab Sample ID: 0903161-039
Date Prepared: 3/31/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	7.4	mg/Kg	5070

Client Sample ID: N-2-13@3.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/26/2009 12:01:00 AM

Lab Sample ID: 0903161-040
Date Prepared: 3/31/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/6/2009	1	1	1.0	14	mg/Kg	5070

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Definitions, legends and Notes

Note	Description
ug/kg	Microgram per kilogram (ppb, part per billion).
ug/L	Microgram per liter (ppb, part per billion).
mg/kg	Milligram per kilogram (ppm, part per million).
mg/L	Milligram per liter (ppm, part per million).
LCS/LCSD	Laboratory control sample/laboratory control sample duplicate.
MDL	Method detection limit.
MRL	Modified reporting limit. When sample is subject to dilution, reporting limit times dilution factor yields MRL.
MS/MSD	Matrix spike/matrix spike duplicate.
N/A	Not applicable.
ND	Not detected at or above detection limit.
NR	Not reported.
QC	Quality Control.
RL	Reporting limit.
% RPD	Percent relative difference.
a	pH was measured immediately upon the receipt of the sample, but it was still done outside the holding time.
sub	Analyzed by subcontracting laboratory, Lab Certificate #

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

EMSL Analytical, Inc
2235 Polvorosa Ave , Suite 230, San Leandro, CA 94577
Phone: (510) 895-3675 Fax: (510) 895-3680 Email: milpitaslab@emsl.com

Attn: **Nutan Kabir**
Torrent Laboratory, Inc.
483 Sinclair Frontage Rd.
Milpitas, CA 95035

Fax: (408) 263-8293 Phone: (408) 263-5258
Project: **0903161**

Customer ID: TORR80
Customer PO: 0903161
Received: 03/30/09 8:30 AM
EMSL Order: 090902259

EMSL Proj:
Analysis Date: 3/30/2009
Report Date: 3/31/2009

Qualitative asbestos analysis of soils using the EPA 600/R-93/116 method

Sample	Location	Appearance	Result	Notes
0903161-011A, Soil *090902259-0001*			**None Detected**	
0903161-012A, Soil *090902259-0002*			**None Detected**	
0903161-013A, Soil *090902259-0003*			**None Detected**	
0903161-014A, Soil *090902259-0004*			**None Detected**	
0903161-015A, Soil *090902259-0005*			**None Detected**	
0903161-026A, Soil *090902259-0006*			**None Detected**	
0903161-027A, Soil *090902259-0007*			**Chrysotile**	
0903161-028A, Soil *090902259-0008*			**None Detected**	
0903161-029A, Soil *090902259-0009*			**None Detected**	

Analyst(s)

Alan Tahran (10)

Baojia Ke, Laboratory Manager
or other approved signatory

EMSL recommends that soil samples reported as "ND" be tested by the EPA Screening Method/Qualitative. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. The above test must not be used by the client to claim product endorsement by NVLAP nor any agency of the United States Government. Unless otherwise noted, the results in this report have not been blank corrected.Samples received in good condition unless otherwise noted.

EMSL Analytical, Inc
2235 Polvorosa Ave , Suite 230, San Leandro, CA 94577
Phone: (510) 895-3675 Fax: (510) 895-3680 Email: milpitaslab@emsl.com

Attn: **Nutan Kabir**
Torrent Laboratory, Inc.
483 Sinclair Frontage Rd.
Milpitas, CA 95035

Fax: (408) 263-8293 Phone: (408) 263-5258
Project: **0903161**

Customer ID:	TORR80
Customer PO:	0903161
Received:	03/30/09 8:30 AM
EMSL Order:	090902259
EMSL Proj:	
Analysis Date:	3/30/2009
Report Date:	3/31/2009

Qualitative asbestos analysis of soils using the EPA 600/R-93/116 method

Sample	Location	Appearance	Result	Notes
0903161-030A, Soil *090902259-0010*			**None Detected**	

Analyst(s)

Alan Tahran (10)

Baojia Ke, Laboratory Manager
or other approved signatory

EMSL recommends that soil samples reported as "ND" be tested by the EPA Screening Method/Qualitative. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. The above test must not be used by the client to claim product endorsement by NVLAP nor any agency of the United States Government. Unless otherwise noted, the results in this report have not been blank corrected.Samples received in good condition unless otherwise noted.

THIS IS THE LAST PAGE OF THE REPORT.

Torrent Laboratory, Inc.

Date: *18-Jun-09*

CLIENT: URS Corporation, San Jose
Work Order: 0903161
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5055

Sample ID: **MB-5055** SampType: **MBLK** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **3/30/2009** RunNo: **19136**
Client ID: **ZZZZZ** Batch ID: **5055** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **4/2/2009** SeqNo: **276317**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	1.0									

Sample ID: **LCS-5055** SampType: **LCS** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **3/30/2009** RunNo: **19136**
Client ID: **ZZZZZ** Batch ID: **5055** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **4/2/2009** SeqNo: **276315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	49.65	1.0	50	0.45	98.4	67.9	118				

Sample ID: **LCSD-5055** SampType: **LCSD** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **3/30/2009** RunNo: **19136**
Client ID: **ZZZZZ** Batch ID: **5055** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **4/2/2009** SeqNo: **276316**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	49.80	1.0	50	0.45	98.7	67.9	118	49.65	0.302	30	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903161
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5069

Sample ID: **MB-5069** SampType: **MBLK** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **3/31/2009** RunNo: **19138**
Client ID: **ZZZZZ** Batch ID: **5069** TestNo: **SW6010B (SW3050B)** Analysis Date: **4/2/2009** SeqNo: **276364**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	1.0									

Sample ID: **LCS-5069** SampType: **LCS** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **3/31/2009** RunNo: **19138**
Client ID: **ZZZZZ** Batch ID: **5069** TestNo: **SW6010B (SW3050B)** Analysis Date: **4/2/2009** SeqNo: **276362**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	45.40	1.0	50	0.4	90.0	67.9	118				

Sample ID: **LCSD-5069** SampType: **LCSD** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **3/31/2009** RunNo: **19138**
Client ID: **ZZZZZ** Batch ID: **5069** TestNo: **SW6010B (SW3050B)** Analysis Date: **4/2/2009** SeqNo: **276363**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	45.30	1.0	50	0.4	89.8	67.9	118	45.4	0.221	30	

Sample ID: **0903161-007AMS** SampType: **MS** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **3/31/2009** RunNo: **19138**
Client ID: **N-2-10@1.0** Batch ID: **5069** TestNo: **SW6010B (SW3050B)** Analysis Date: **4/2/2009** SeqNo: **276341**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	NR	1.0	50	586.5	-183	60.5	113				NR

Sample ID: **0903161-007AMSD** SampType: **MSD** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **3/31/2009** RunNo: **19138**
Client ID: **N-2-10@1.0** Batch ID: **5069** TestNo: **SW6010B (SW3050B)** Analysis Date: **4/2/2009** SeqNo: **276342**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	NR	1.0	50	586.5	-60.0	60.5	113	494.8	11.7	30	NR

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903161
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5070

Sample ID: **MB-5070** SampType: **MBLK** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **3/31/2009** RunNo: **19159**
Client ID: **ZZZZZ** Batch ID: **5070** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **4/6/2009** SeqNo: **276681**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	1.0									

Sample ID: **LCS-5070** SampType: **LCS** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **3/31/2009** RunNo: **19159**
Client ID: **ZZZZZ** Batch ID: **5070** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **4/6/2009** SeqNo: **276679**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	51.00	1.0	50	0.35	101	67.9	118				

Sample ID: **LCSD-5070** SampType: **LCSD** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **3/31/2009** RunNo: **19159**
Client ID: **ZZZZZ** Batch ID: **5070** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **4/6/2009** SeqNo: **276680**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	49.70	1.0	50	0.35	98.7	67.9	118	51	2.58	30	

Sample ID: **0903161-026AMS** SampType: **MS** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **3/31/2009** RunNo: **19159**
Client ID: **N-2-11@0.5** Batch ID: **5070** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **4/6/2009** SeqNo: **276658**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	106.0	1.0	50	79.25	53.5	60.5	113				S

Sample ID: **0903161-026AMSD** SampType: **MSD** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **3/31/2009** RunNo: **19159**
Client ID: **N-2-11@0.5** Batch ID: **5070** TestNo: **SW6010B** **(SW3050B)** Analysis Date: **4/6/2009** SeqNo: **276659**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	199.2	1.0	50	79.25	240	60.5	113	106	61.1	30	SR

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903161
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5248

Sample ID: **MB-5248** SampType: **MBLK** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **6/2/2009** RunNo: **19808**
Client ID: **ZZZZZ** Batch ID: **5248** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **6/3/2009** SeqNo: **286404**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (STLC)	ND	0.10									

Sample ID: **LCS-5248** SampType: **LCS** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **6/2/2009** RunNo: **19808**
Client ID: **ZZZZZ** Batch ID: **5248** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **6/3/2009** SeqNo: **286402**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (STLC)	8.710	0.10	10	0.01	87.0	75	125				

Sample ID: **LCSD-5248** SampType: **LCSD** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **6/2/2009** RunNo: **19808**
Client ID: **ZZZZZ** Batch ID: **5248** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **6/3/2009** SeqNo: **286403**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (STLC)	8.690	0.10	10	0.01	86.8	75	125	8.71	0.230	30	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903161
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5249

Sample ID: **MB-5249** SampType: **MBLK** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **6/3/2009** RunNo: **19809**
Client ID: **ZZZZZ** Batch ID: **5249** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/3/2009** SeqNo: **286429**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	ND	0.10									

Sample ID: **LCS-5249** SampType: **LCS** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **6/3/2009** RunNo: **19809**
Client ID: **ZZZZZ** Batch ID: **5249** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/3/2009** SeqNo: **286427**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	9.750	0.10	10	0	97.5	75	125				

Sample ID: **LCSD-5249** SampType: **LCSD** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **6/3/2009** RunNo: **19809**
Client ID: **ZZZZZ** Batch ID: **5249** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/3/2009** SeqNo: **286428**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	9.560	0.10	10	0	95.6	75	125	9.75	1.97	30	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903161
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5250

Sample ID: **MB-5250** SampType: **MBLK** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **6/3/2009** RunNo: **19810**
Client ID: **ZZZZZ** Batch ID: **5250** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/3/2009** SeqNo: **286454**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	ND	0.10									

Sample ID: **LCS-5250** SampType: **LCS** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **6/3/2009** RunNo: **19810**
Client ID: **ZZZZZ** Batch ID: **5250** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/3/2009** SeqNo: **286452**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	9.540	0.10	10	0.09	94.5	75	125				

Sample ID: **LCSD-5250** SampType: **LCSD** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **6/3/2009** RunNo: **19810**
Client ID: **ZZZZZ** Batch ID: **5250** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/3/2009** SeqNo: **286453**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	9.430	0.10	10	0.09	93.4	75	125	9.54	1.16	30	

Sample ID: **0903161-038AMS** SampType: **MS** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **6/3/2009** RunNo: **19810**
Client ID: **N-2-13@1.5** Batch ID: **5250** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/3/2009** SeqNo: **286433**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	11.78	0.10	10	2.63	91.5	75	125				

Sample ID: **0903161-038AMSD** SampType: **MSD** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **6/3/2009** RunNo: **19810**
Client ID: **N-2-13@1.5** Batch ID: **5250** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/3/2009** SeqNo: **286434**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	11.82	0.10	10	2.63	91.9	75	125	11.78	0.339	30	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903161
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5284

Sample ID: **MB-5284** SampType: **MBLK** TestCode: **6010B (TCLP)** Units: **mg/L** Prep Date: **6/14/2009** RunNo: **19896**
Client ID: **ZZZZZ** Batch ID: **5284** TestNo: **6010B (TCLP) (SW3010A)** Analysis Date: **6/15/2009** SeqNo: **287788**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	ND	0.10									

Sample ID: **LCS-5284** SampType: **LCS** TestCode: **6010B (TCLP)** Units: **mg/L** Prep Date: **6/14/2009** RunNo: **19896**
Client ID: **ZZZZZ** Batch ID: **5284** TestNo: **6010B (TCLP) (SW3010A)** Analysis Date: **6/15/2009** SeqNo: **287786**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	10.36	0.10	10	0	104	75	125				

Sample ID: **LCSD-5284** SampType: **LCSD** TestCode: **6010B (TCLP)** Units: **mg/L** Prep Date: **6/14/2009** RunNo: **19896**
Client ID: **ZZZZZ** Batch ID: **5284** TestNo: **6010B (TCLP) (SW3010A)** Analysis Date: **6/15/2009** SeqNo: **287787**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	10.70	0.10	10	0	107	75	125	10.36	3.23	30	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903161

Company Name: VIRS San Jose	Location of Sampling: Hwy 101 - Aux Lanes
Address:	Purpose:
City: State: Zip Code:	Special Instructions / Comments:
Telephone: FAX:	
REPORT TO: Patricia W. SAMPLER: Eduardo O.	P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Working Days ☐ 3 Working Days ☐ Noon - Nxt Day ☐ 7 Working Days ☐ 2 Working Days ☐ 2 - 8 Hours ☐ 5 Working Days ☐ 1 Working Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☐ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

	CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	Lead									TORRENT'S SAMPLE I.D.
001A	1. N-2-8 @ 0.5	03/26/09 0032	S	1	sleeve	X									
002A	2. N-2-8 @ 1.0			1		X									
003A	3. N-2-8 @ 1.5			1		X									
004A	4. N-2-8 @ 2.0			1		X									
005A	5. N-2-8 @ 3.0			1		X									
006A	6. N-2-10 @ 0.5	03/26/09 0025	S			X									
007A	7. @ 1.0					X									
008A	8. @ 1.5					X									
009A	9. @ 2.0					X									
010A	10. @ 3.0					X									

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/26/09	10:15 AM	D. G. Khodasara	NAVIN	3/26/09	10:15 AM
2								

Were Samples Received in Good Condition? ☑ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment Drop-off Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrange -ments are made.

Page 1 of 4

Log In By: Date: Log In Reviewed By: Date:

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903161

Company Name: URS San Jose	Location of Sampling: Hwy 101 – Alux Lane
Address:	Purpose:
City: State: Zip Code:	Special Instructions / Comments:
Telephone: FAX:	
REPORT TO: Patrick W. SAMPLER: Eduardo O.	P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Working Days ☐ 3 Working Days ☐ Noon - Nxt Day ☐ 7 Working Days ☐ 2 Working Days ☐ 2 - 8 Hours ☐ 5 Working Days ☐ 1 Working Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☐ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

	CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	Lead	Asbestos								TORRENT'S SAMPLE I.D.
011A	1. N-2-6 @ 0.5	03/26/09 0045	S	1	sleeve	X	X								
012A	2. @ 1.0	↓	S	1	↓	X	X								
013A	3. @ 1.5	↓	S	1	↓	X	X								
014A	4. @ 2.0	↓	↓	1	↓	X	X								
015A	5. @ 3.0	↓	↓	1	↓	X	X								
016A	6. N-2-7 @ 0.5	03/26/09 0040	↓	↓	↓	X									
017A	7. @ 1.0	↓	↓	↓	↓	X									
018A	8. @ 1.5	↓	↓	↓	↓	X									
019A	9. @ 2.0	↓	↓	↓	↓	X									
020A	10. @ 3.0	↓	↓	↓	↓	X									

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/26/09	10:15 Am	D.K. Chodasara	NAVIN	3/26/09	10:15 Am
2								

Were Samples Received in Good Condition? ☑ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment Drop-off Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrange -ments are made.

Log In By: Date: Log In Reviewed By: Date:

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903161

Company Name: URS San Jose	Location of Sampling: Hwy 101 - Auxlanes
Address:	Purpose:
City: State: Zip Code:	Special Instructions / Comments:
Telephone: FAX:	
REPORT TO: Patrick W. SAMPLER: Eduardo G.	P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Working Days ☐ 3 Working Days ☐ Noon - Nxt Day ☐ 7 Working Days ☐ 2 Working Days ☐ 2 - 8 Hours ☒ 5 Working Days ☐ 1 Working Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☒ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

	CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	Lead as Sentre									TORRENT'S SAMPLE I.D.
021A	1. N-2-10-D @0.5	03/26/09 0027	S	1	sleeve	X									
022A	2. @1.0			1		X									
023A	3. @1.5			1		X									
024A	4. @2.0			1		X									
025A	5. @3.0			1		X									
026A	6. N-2-11 @0.5	03/26/09 0013		1		X	X								
027A	7. @1.0			1		X	X								
028A	8. @1.5			1		X	X								
029A	9. @2.0			1		X	X								
030A	10. @3.0			1		X	X								

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/26/09	10:15 Am	D. G. Khodasara	NAVIN	3/26/09	10:15 Am
2								

Were Samples Received in Good Condition? ☑ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment Drop-off Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrange -ments are made.

Log In By: Date: Log In Reviewed By: Date:

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903161

Company Name: URS San Jose	Location of Sampling: Hwy 101 + Aux Lanes
Address:	Purpose:
City: State: Zip Code:	Special Instructions / Comments:
Telephone: FAX:	
REPORT TO: Patrick W. SAMPLER: Eduardo G.	P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Working Days ☐ 3 Working Days ☐ Noon - Nxt Day ☐ 7 Working Days ☐ 2 Working Days ☐ 2 - 8 Hours ☒ 5 Working Days ☐ 1 Working Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☒ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

	CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	Lead								TORRENT'S SAMPLE I.D.
031A	1. N-2-12 @ 0.5	03/26/09 0007	S	1	sleev	X								
032A	2. @ 1.0					X								
033A	3. @ 1.5					X								
034A	4. @ 2.0					X								
035A	5. @ 3.0					X								
036A	6. N-2-13 @ 0.5	03/26/09 0001				X								
037A	7. N-2-13 @ 1.0					X								
038A	8. @ 1.5					X								
039A	9. @ 2.0					X								
040A	10. @ 3.0					X								

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/26/09	10:15 Am	[signature]	NAVIN	3/26/09	10:15 Am
2								

Were Samples Received in Good Condition? ☒ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment Drop-off Sample seals intact? ☐ Yes ☐ NO ☒ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Page 4 of 4

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date: _____

EMSL Analytical, Inc
2235 Polvorosa Ave , Suite 230, San Leandro, CA 94577
Phone: (510) 895-3675 Fax: (510) 895-3680 Email: milpitaslab@emsl.com

Attn: **Nutan Kabir**
Torrent Laboratory, Inc.
483 Sinclair Frontage Rd.
Milpitas, CA 95035

Fax: (408) 263-8293 Phone: (408) 263-5258
Project: **0903161**

Customer ID: TORR80
Customer PO: 0903161
Received: 03/30/09 8:30 AM
EMSL Order: 090902259

EMSL Proj:
Analysis Date: 6/2/2009

PLM Analysis of Bulk Samples for Asbestos via EPA 600/R-93/116 Method with CARB 435 Prep (Milling) Level A for 0.25% Target Analytical Sensitivity

			Non-Asbestos			Asbestos	
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**% Non-Fibrous**	**%**	**Type**
0903161-027A, Soil *090902259-0007*		Brown Non-Fibrous Homogeneous			99.50% Non-fibrous (other)	**0.50%**	**Chrysotile**

Analyst(s)
Jorge Leon (1)

Baojia Ke, Laboratory Manager
or other approved signatory

This report relates only to the samples listed above and may not be reproduced except in full, without EMSL's written approval. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. EMSL is not responsible for sample collection activities or method limitations. Some samples may contain asbestos fibers below the resolution limit of PLM. EMSL recommends that samples reported as none detected or less than the limit of detection undergo additional analysis via TEM.Samples received in good condition unless otherwise noted.

THIS IS THE LAST PAGE OF THE REPORT.

Torrent
LABORATORY, INC.

April 06, 2009

Patrick Walz
URS Corporation, San Jose
55 South Market St., Suite 1500
San Jose, CA 95113

TEL: (408) 297-9585
FAX (408) 297-6962

RE:

Order No.: 0903160

Dear Patrick Walz:

Torrent Laboratory, Inc. received 36 samples on 3/26/2009 for the analyses presented in the following report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.
Reported data is applicable for only the samples received as part of the order number referenced above.

Torrent Laboratory, Inc, is certified by the State of California, ELAP #1991. If you have any questions regarding these tests results, please feel free to contact the Project Management Team at (408)263-5258;ext: 204.

Sincerely,

Laboratory Director

04/06/09
Date

Patti Sandrock
QA Officer

Torrent Laboratory, Inc. **Date:** *06-Apr-09*

CLIENT: URS Corporation, San Jose
Project:
Lab Order: 0903160

CASE NARRATIVE

Analytical Comment for METHOD 6010B_S, 0903160-024A MS/MSD, QC Batch ID 19136, Note:The % recovery in the MS for and MSD for leadl are outside of laboratory control limits but within % RPD limits and % Recovery limits for the LCS/LCSD. A post digestion spike on the parent sample was anlayzed and all parameters were recovered within control limits indicating probable non-homogenity of the samples. No corrective action is required.

Analytical Comment for METHOD 7471A, 0903160-011MS/MSD, QC Batch ID 19076, Note:The % recoveries in the MS/MSD for Mercury are outside of laboratory control limits but within % RPD limits and % recovery limits for the LCS/LCSD. No corrective action is required.

Analytical Comment for METHOD 6010B, 0903160-011MS/MSD, QC Batch ID 19132, Note:The % recovery in the MS for Barium is outside of laboratory control limits but within % RPD limits and % recovery limits for the LCS/LCSD. No corrective action is required.

TORRENT LABORATORY, INC.

483 Sinclair Frontage Road • Milpitas, CA • Phone: (408) 263-5258 • Fax: (408) 263-8293

Visit us at www.torrentlab.com email: analysis@torrentlab.com

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 4/6/2009

Client Sample ID: N-2-14@0.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 11:55:00 PM

Lab Sample ID: 0903160-001
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/28/2009	1	1	1.0	18	mg/Kg	5048

Client Sample ID: N-2-14@1.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 11:55:00 PM

Lab Sample ID: 0903160-002
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/28/2009	1	1	1.0	190	mg/Kg	5048

Client Sample ID: N-2-14@1.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 11:55:00 PM

Lab Sample ID: 0903160-003
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/28/2009	1	1	1.0	290	mg/Kg	5048

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 4/6/2009

Client Sample ID: N-2-14@2.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 11:55:00 PM

Lab Sample ID: 0903160-004
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	110	mg/Kg	5054

Client Sample ID: N-2-14@3.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 11:55:00 PM

Lab Sample ID: 0903160-005
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	9.6	mg/Kg	5054

Client Sample ID: N-3-4@0.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 11:40:00 PM

Lab Sample ID: 0903160-006
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	66	mg/Kg	5054

Client Sample ID: N-3-4@1.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 11:40:00 PM

Lab Sample ID: 0903160-007
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	380	mg/Kg	5054

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 4/6/2009

Client Sample ID: N-3-4@1.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 11:40:00 PM

Lab Sample ID: 0903160-008
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	33	mg/Kg	5054

Client Sample ID: N-3-4@2.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 11:40:00 PM

Lab Sample ID: 0903160-009
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	5.6	mg/Kg	5054

Client Sample ID: N-3-4@3.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 11:40:00 PM

Lab Sample ID: 0903160-010
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	3.7	mg/Kg	5054

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 4/6/2009

Client Sample ID: N-3-5@0.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:55:00 PM

Lab Sample ID: 0903160-011
Date Prepared: 3/27/2009-3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Arsenic	SW6010B	4/2/2009	1.7	1	1.7	ND	mg/Kg	5054
Barium	SW6010B	4/2/2009	5	1	5.0	190	mg/Kg	5054
Beryllium	SW6010B	4/2/2009	2	1	2.0	ND	mg/Kg	5054
Cadmium	SW6010B	4/2/2009	1	1	1.0	ND	mg/Kg	5054
Chromium	SW6010B	4/2/2009	5	1	5.0	18	mg/Kg	5054
Cobalt	SW6010B	4/2/2009	5	1	5.0	6.6	mg/Kg	5054
Copper	SW6010B	4/2/2009	5	1	5.0	24	mg/Kg	5054
Lead	SW6010B	4/2/2009	1	1	1.0	11	mg/Kg	5054
Molybdenum	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Nickel	SW6010B	4/2/2009	5	1	5.0	35	mg/Kg	5054
Selenium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Silver	SW6010B	4/2/2009	1	1	1.0	1.3	mg/Kg	5054
Thallium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Vanadium	SW6010B	4/2/2009	5	1	5.0	26	mg/Kg	5054
Zinc	SW6010B	4/2/2009	5	1	5.0	50	mg/Kg	5054
Mercury	SW7471A	3/30/2009	0.1	1	0.10	0.24	mg/Kg	5053
TPH (Diesel)	SW8015B	3/31/2009	2	25	50.0	ND	mg/Kg	R19071
TPH (Motor Oil)	SW8015B	3/31/2009	4	25	100	1380	mg/Kg	R19071
Surr: Pentacosane	SW8015B	3/31/2009	0	25	59.7-129	70.5	%REC	R19071

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

4,4´-DDD	SW8081A	3/30/2009	0.47	20	9.40	ND	µg/Kg	R19073
4,4´-DDE	SW8081A	3/30/2009	0.476	20	9.52	ND	µg/Kg	R19073
4,4´-DDT	SW8081A	3/30/2009	0.809	20	16.2	ND	µg/Kg	R19073
Aldrin	SW8081A	3/30/2009	0.44	20	8.80	ND	µg/Kg	R19073
alpha-BHC	SW8081A	3/30/2009	0.439	20	8.78	ND	µg/Kg	R19073
alpha-Chlordane	SW8081A	3/30/2009	0.358	20	7.16	ND	µg/Kg	R19073
beta-BHC	SW8081A	3/30/2009	0.364	20	7.28	ND	µg/Kg	R19073
Chlordane	SW8081A	3/30/2009	10	20	200	ND	µg/Kg	R19073
delta-BHC	SW8081A	3/30/2009	0.49	20	9.80	ND	µg/Kg	R19073
Dieldrin	SW8081A	3/30/2009	0.427	20	8.54	ND	µg/Kg	R19073
Endosulfan I	SW8081A	3/30/2009	0.59	20	11.8	ND	µg/Kg	R19073
Endosulfan II	SW8081A	3/30/2009	1.526	20	30.5	ND	µg/Kg	R19073
Endosulfan sulfate	SW8081A	3/30/2009	0.489	20	9.78	ND	µg/Kg	R19073
Endrin	SW8081A	3/30/2009	0.569	20	11.4	ND	µg/Kg	R19073
Endrin aldehyde	SW8081A	3/30/2009	1.028	20	20.6	ND	µg/Kg	R19073
Endrin ketone	SW8081A	3/30/2009	0.401	20	8.02	ND	µg/Kg	R19073
gamma-BHC	SW8081A	3/30/2009	0.396	20	7.92	ND	µg/Kg	R19073
gamma-Chlordane	SW8081A	3/30/2009	0.42	20	8.40	ND	µg/Kg	R19073
Heptachlor	SW8081A	3/30/2009	1.1	20	22.0	ND	µg/Kg	R19073
Heptachlor epoxide	SW8081A	3/30/2009	0.316	20	6.32	ND	µg/Kg	R19073
Methoxychlor	SW8081A	3/30/2009	0.616	20	12.3	ND	µg/Kg	R19073
Toxaphene	SW8081A	3/30/2009	10	20	200	ND	µg/Kg	R19073
Surr: Decachlorobiphenyl	SW8081A	3/30/2009		20	54.6-127	118	%REC	R19073
Surr: Tetrachloro-m-xylene	SW8081A	3/30/2009		20	54-122	105	%REC	R19073

Note: Reporting limits increased due to the nature of the sample matrix (dark color extract). Compounds reported to the MDL.

Aroclor 1016	SW8082	3/31/2009	0.1	1	0.100	ND	mg/Kg	R19084
Aroclor 1221	SW8082	3/31/2009	0.2	1	0.200	ND	mg/Kg	R19084
Aroclor 1232	SW8082	3/31/2009	0.1	1	0.100	ND	mg/Kg	R19084
Aroclor 1242	SW8082	3/31/2009	0.1	1	0.100	ND	mg/Kg	R19084
Aroclor 1248	SW8082	3/31/2009	0.1	1	0.100	ND	mg/Kg	R19084
Aroclor 1254	SW8082	3/31/2009	0.1	1	0.100	ND	mg/Kg	R19084
Aroclor 1260	SW8082	3/31/2009	0.1	1	0.100	ND	mg/Kg	R19084
Surr: Decachlorobiphenyl	SW8082	3/31/2009	0	1	63.7-126	85.0	%REC	R19084
Surr: Tetrachloro-m-xylene	SW8082	3/31/2009	0	1	51.7-128	84.4	%REC	R19084

pH	SW9045C	3/31/2009	0.05	1	0.0500	8.48	pH Units	R19100

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 4/6/2009

Client Sample ID: N-3-5@1.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:55:00 PM

Lab Sample ID: 0903160-012
Date Prepared: 3/27/2009-3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Arsenic	SW6010B	4/2/2009	1.7	1	1.7	2.2	mg/Kg	5054
Barium	SW6010B	4/2/2009	5	1	5.0	250	mg/Kg	5054
Beryllium	SW6010B	4/2/2009	2	1	2.0	ND	mg/Kg	5054
Cadmium	SW6010B	4/2/2009	1	1	1.0	ND	mg/Kg	5054
Chromium	SW6010B	4/2/2009	5	1	5.0	42	mg/Kg	5054
Cobalt	SW6010B	4/2/2009	5	1	5.0	19	mg/Kg	5054
Copper	SW6010B	4/2/2009	5	1	5.0	67	mg/Kg	5054
Lead	SW6010B	4/2/2009	1	1	1.0	260	mg/Kg	5054
Molybdenum	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Nickel	SW6010B	4/2/2009	5	1	5.0	50	mg/Kg	5054
Selenium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Silver	SW6010B	4/2/2009	1	1	1.0	1.0	mg/Kg	5054
Thallium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Vanadium	SW6010B	4/2/2009	5	1	5.0	48	mg/Kg	5054
Zinc	SW6010B	4/2/2009	5	1	5.0	81	mg/Kg	5054
Mercury	SW7471A	3/30/2009	0.1	1	0.10	ND	mg/Kg	5053
Benzene	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Diisopropyl ether (DIPE)	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Ethyl tert-butyl ether (ETBE)	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Ethylbenzene	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Methyl tert-butyl ether (MTBE)	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
t-Butyl alcohol (t-Butanol)	SW8260B	3/27/2009	50	1	50	ND	µg/Kg	U19078
tert-Amyl methyl ether (TAME)	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Toluene	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Xylenes, Total	SW8260B	3/27/2009	15	1	15	ND	µg/Kg	U19078
Surr: 4-Bromofluorobenzene	SW8260B	3/27/2009	0	1	55.8-141	120	%REC	U19078
Surr: Dibromofluoromethane	SW8260B	3/27/2009	0	1	59.8-148	96.2	%REC	U19078
Surr: Toluene-d8	SW8260B	3/27/2009	0	1	55.2-133	99.0	%REC	U19078
TPH (Gasoline)	SW8260B(TPH)	3/27/2009	100	1	100	ND	µg/Kg	G19078
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	3/27/2009	0	1	56.9-133	40.0	%REC	G19078

Note: S- Outlying surrogate recovery observed. A duplicate analysis was performed with similar result indicating a matrix effect.

pH	SW9045C	3/31/2009	0.05	1	0.0500	8.42	pH Units	R19100

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 4/6/2009

Client Sample ID: N-3-5@1.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:55:00 PM

Lab Sample ID: 0903160-013
Date Prepared: 3/27/2009-3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Arsenic	SW6010B	4/2/2009	1.7	1	1.7	ND	mg/Kg	5054
Barium	SW6010B	4/2/2009	5	1	5.0	700	mg/Kg	5054
Beryllium	SW6010B	4/2/2009	2	1	2.0	ND	mg/Kg	5054
Cadmium	SW6010B	4/2/2009	1	1	1.0	ND	mg/Kg	5054
Chromium	SW6010B	4/2/2009	5	1	5.0	31	mg/Kg	5054
Cobalt	SW6010B	4/2/2009	5	1	5.0	20	mg/Kg	5054
Copper	SW6010B	4/2/2009	5	1	5.0	110	mg/Kg	5054
Lead	SW6010B	4/2/2009	1	1	1.0	8.4	mg/Kg	5054
Molybdenum	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Nickel	SW6010B	4/2/2009	5	1	5.0	72	mg/Kg	5054
Selenium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Silver	SW6010B	4/2/2009	1	1	1.0	ND	mg/Kg	5054
Thallium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Vanadium	SW6010B	4/2/2009	5	1	5.0	22	mg/Kg	5054
Zinc	SW6010B	4/2/2009	5	1	5.0	62	mg/Kg	5054
Mercury	SW7471A	3/30/2009	0.1	1	0.10	ND	mg/Kg	5053
Benzene	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Diisopropyl ether (DIPE)	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Ethyl tert-butyl ether (ETBE)	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Ethylbenzene	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Methyl tert-butyl ether (MTBE)	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
t-Butyl alcohol (t-Butanol)	SW8260B	3/27/2009	50	1	50	ND	µg/Kg	U19078
Toluene	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Xylenes, Total	SW8260B	3/27/2009	15	1	15	ND	µg/Kg	U19078
Surr: 4-Bromofluorobenzene	SW8260B	3/27/2009	0	1	55.8-141	94.3	%REC	U19078
Surr: Dibromofluoromethane	SW8260B	3/27/2009	0	1	59.8-148	101	%REC	U19078
Surr: Toluene-d8	SW8260B	3/27/2009	0	1	55.2-133	89.2	%REC	U19078
TPH (Gasoline)	SW8260B(TPH)	3/27/2009	100	1	100	ND	µg/Kg	G19078
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	3/27/2009	0	1	56.9-133	64.0	%REC	G19078
pH	SW9045C	3/31/2009	0.05	1	0.0500	7.63	pH Units	R19100

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 4/6/2009

Client Sample ID: N-3-5@2.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:55:00 PM

Lab Sample ID: 0903160-014
Date Prepared: 3/27/2009-3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Arsenic	SW6010B	4/2/2009	1.7	1	1.7	ND	mg/Kg	5054
Barium	SW6010B	4/2/2009	5	1	5.0	32	mg/Kg	5054
Beryllium	SW6010B	4/2/2009	2	1	2.0	ND	mg/Kg	5054
Cadmium	SW6010B	4/2/2009	1	1	1.0	ND	mg/Kg	5054
Chromium	SW6010B	4/2/2009	5	1	5.0	28	mg/Kg	5054
Cobalt	SW6010B	4/2/2009	5	1	5.0	18	mg/Kg	5054
Copper	SW6010B	4/2/2009	5	1	5.0	32	mg/Kg	5054
Lead	SW6010B	4/2/2009	1	1	1.0	ND	mg/Kg	5054
Molybdenum	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Nickel	SW6010B	4/2/2009	5	1	5.0	25	mg/Kg	5054
Selenium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Silver	SW6010B	4/2/2009	1	1	1.0	1.8	mg/Kg	5054
Thallium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Vanadium	SW6010B	4/2/2009	5	1	5.0	53	mg/Kg	5054
Zinc	SW6010B	4/2/2009	5	1	5.0	37	mg/Kg	5054
Mercury	SW7471A	3/30/2009	0.1	1	0.10	ND	mg/Kg	5053
Benzene	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Diisopropyl ether (DIPE)	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Ethyl tert-butyl ether (ETBE)	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Ethylbenzene	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Methyl tert-butyl ether (MTBE)	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
t-Butyl alcohol (t-Butanol)	SW8260B	3/27/2009	50	1	50	ND	µg/Kg	U19078
Toluene	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Xylenes, Total	SW8260B	3/27/2009	15	1	15	ND	µg/Kg	U19078
Surr: 4-Bromofluorobenzene	SW8260B	3/27/2009	0	1	55.8-141	87.7	%REC	U19078
Surr: Dibromofluoromethane	SW8260B	3/27/2009	0	1	59.8-148	104	%REC	U19078
Surr: Toluene-d8	SW8260B	3/27/2009	0	1	55.2-133	87.6	%REC	U19078
TPH (Gasoline)	SW8260B(TPH)	3/27/2009	100	1	100	ND	µg/Kg	G19078
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	3/27/2009	0	1	56.9-133	76.0	%REC	G19078
pH	SW9045C	3/31/2009	0.05	1	0.0500	8.46	pH Units	R19100

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 4/6/2009

Client Sample ID: N-3-5@3.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:55:00 PM

Lab Sample ID: 0903160-015
Date Prepared: 3/27/2009-3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Arsenic	SW6010B	4/2/2009	1.7	1	1.7	ND	mg/Kg	5054
Barium	SW6010B	4/2/2009	5	1	5.0	160	mg/Kg	5054
Beryllium	SW6010B	4/2/2009	2	1	2.0	ND	mg/Kg	5054
Cadmium	SW6010B	4/2/2009	1	1	1.0	ND	mg/Kg	5054
Chromium	SW6010B	4/2/2009	5	1	5.0	52	mg/Kg	5054
Cobalt	SW6010B	4/2/2009	5	1	5.0	11	mg/Kg	5054
Copper	SW6010B	4/2/2009	5	1	5.0	31	mg/Kg	5054
Lead	SW6010B	4/2/2009	1	1	1.0	6.6	mg/Kg	5054
Molybdenum	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Nickel	SW6010B	4/2/2009	5	1	5.0	48	mg/Kg	5054
Selenium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Silver	SW6010B	4/2/2009	1	1	1.0	1.0	mg/Kg	5054
Thallium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Vanadium	SW6010B	4/2/2009	5	1	5.0	39	mg/Kg	5054
Zinc	SW6010B	4/2/2009	5	1	5.0	41	mg/Kg	5054
Mercury	SW7471A	3/30/2009	0.1	1	0.10	ND	mg/Kg	5053
Benzene	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Diisopropyl ether (DIPE)	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Ethyl tert-butyl ether (ETBE)	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Ethylbenzene	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Methyl tert-butyl ether (MTBE)	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
t-Butyl alcohol (t-Butanol)	SW8260B	3/27/2009	50	1	50	ND	µg/Kg	U19078
Toluene	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	U19078
Xylenes, Total	SW8260B	3/27/2009	15	1	15	ND	µg/Kg	U19078
Surr: 4-Bromofluorobenzene	SW8260B	3/27/2009	0	1	55.8-141	102	%REC	U19078
Surr: Dibromofluoromethane	SW8260B	3/27/2009	0	1	59.8-148	110	%REC	U19078
Surr: Toluene-d8	SW8260B	3/27/2009	0	1	55.2-133	93.9	%REC	U19078
TPH (Gasoline)	SW8260B(TPH)	3/27/2009	100	1	100	ND	µg/Kg	G19078
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	3/27/2009	0	1	56.9-133	56.0	%REC	G19078

Note: S- Outlying surrogate recovery observed. A duplicate analysis was performed with similar result indicating a matrix effect.

pH	SW9045C	3/31/2009	0.05	1	0.0500	7.90	pH Units	R19100

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 4/6/2009

Client Sample ID: N-3-5-GW
Sample Location: Hwy 101-Aux Lane
Sample Matrix: WATER
Date/Time Sampled 3/25/2009 11:20:00 PM

Lab Sample ID: 0903160-016
Date Prepared:

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
pH	E150.1	3/26/2009	0.05	1	0.0500	8.18	pH units	R19097
Antimony	SW6010B	4/2/2009	0.01	1	0.010	ND	mg/L	5064
Arsenic	SW6010B	4/2/2009	0.01	1	0.010	ND	mg/L	5064
Barium	SW6010B	4/2/2009	0.01	1	0.010	0.88	mg/L	5064
Beryllium	SW6010B	4/2/2009	0.005	1	0.0050	ND	mg/L	5064
Cadmium	SW6010B	4/2/2009	0.005	1	0.0050	0.0060	mg/L	5064
Chromium	SW6010B	4/2/2009	0.005	1	0.0050	0.035	mg/L	5064
Cobalt	SW6010B	4/2/2009	0.005	1	0.0050	0.031	mg/L	5064
Copper	SW6010B	4/2/2009	0.01	1	0.010	0.094	mg/L	5064
Lead	SW6010B	4/2/2009	0.015	1	0.015	0.031	mg/L	5064
Molybdenum	SW6010B	4/2/2009	0.005	1	0.0050	ND	mg/L	5064
Nickel	SW6010B	4/2/2009	0.01	1	0.010	0.077	mg/L	5064
Selenium	SW6010B	4/2/2009	0.01	1	0.010	ND	mg/L	5064
Silver	SW6010B	4/2/2009	0.005	1	0.0050	0.014	mg/L	5064
Thallium	SW6010B	4/2/2009	0.01	1	0.010	ND	mg/L	5064
Vanadium	SW6010B	4/2/2009	0.01	1	0.010	0.066	mg/L	5064
Zinc	SW6010B	4/2/2009	0.005	1	0.0050	0.11	mg/L	5064
Mercury	SW7470A	4/1/2009	0.0002	1	0.00020	ND	mg/L	5056
TPH (Diesel)	SW8015B	3/30/2009	0.1	1	0.100	ND	mg/L	R19094
TPH (Motor Oil)	SW8015B	3/30/2009	0.2	1	0.200	ND	mg/L	R19094
Surr: Pentacosane	SW8015B	3/30/2009	0	1	57.9-125	102	%REC	R19094

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

4,4´-DDD	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
4,4´-DDE	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
4,4´-DDT	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
Aldrin	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
alpha-BHC	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
alpha-Chlordane	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
beta-BHC	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
Chlordane	SW8081A	3/27/2009	0.25	1	0.250	ND	µg/L	R19075
delta-BHC	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
Dieldrin	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
Endosulfan I	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
Endosulfan II	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
Endosulfan sulfate	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
Endrin	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
Endrin aldehyde	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
Endrin ketone	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
gamma-BHC	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
gamma-Chlordane	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
Heptachlor	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
Heptachlor epoxide	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
Methoxychlor	SW8081A	3/27/2009	0.05	1	0.050	ND	µg/L	R19075
Toxaphene	SW8081A	3/27/2009	1	1	1.00	ND	µg/L	R19075
Surr: Decachlorobiphenyl	SW8081A	3/27/2009	0	1	52-116	41.9	%REC	R19075
Surr: Tetrachloro-m-xylene	SW8081A	3/27/2009	0	1	40.3-118	43.5	%REC	R19075

Note: Surrogate recovery of DCBP is bias low; recovery of second surrogate supports data quality. Reporting limits increased due to limited sample available (sediment present).

Aroclor 1016	SW8082	3/28/2009	10	1	10.0	ND	µg/L	R19089
Aroclor 1221	SW8082	3/28/2009	10	1	10.0	ND	µg/L	R19089
Aroclor 1232	SW8082	3/28/2009	10	1	10.0	ND	µg/L	R19089
Aroclor 1242	SW8082	3/28/2009	10	1	10.0	ND	µg/L	R19089
Aroclor 1248	SW8082	3/28/2009	10	1	10.0	ND	µg/L	R19089
Aroclor 1254	SW8082	3/28/2009	10	1	10.0	ND	µg/L	R19089
Aroclor 1260	SW8082	3/28/2009	10	1	10.0	ND	µg/L	R19089
Surr: Decachlorobiphenyl	SW8082	3/28/2009	0	1	44.5-127	100	%REC	R19089
Surr: Tetrachloro-m-xylene	SW8082	3/28/2009	0	1	52.7-126	97.4	%REC	R19089

1,1,1,2-Tetrachloroethane	SW8260B	4/1/2009	1	1.1	1.10	ND	µg/L	R19113
1,1,1-Trichloroethane	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
1,1,2,2-Tetrachloroethane	SW8260B	4/1/2009	1	1.1	1.10	ND	µg/L	R19113
1,1,2-Trichloroethane	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
1,1-Dichloroethane	SW8260B	4/1/2009	0.5	1.1	0.55	0.86	µg/L	R19113
1,1-Dichloroethene	SW8260B	4/1/2009	1	1.1	1.10	ND	µg/L	R19113
1,1-Dichloropropene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
1,2,3-Trichlorobenzene	SW8260B	4/1/2009	1	1.1	1.10	ND	µg/L	R19113
1,2,3-Trichloropropane	SW8260B	4/1/2009	1	1.1	1.10	ND	µg/L	R19113
1,2,4-Trichlorobenzene	SW8260B	4/1/2009	1	1.1	1.10	ND	µg/L	R19113
1,2,4-Trimethylbenzene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
1,2-Dibromo-3-chloropropane	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
1,2-Dibromoethane (EDB)	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
1,2-Dichlorobenzene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
1,2-Dichloroethane (EDC)	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
1,2-Dichloropropane	SW8260B	4/1/2009	1	1.1	1.10	ND	µg/L	R19113
1,3,5-Trimethylbenzene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
1,3-Dichlorobenzene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
1,3-Dichloropropene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
1,4-Dichlorobenzene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
2,2-Dichloropropane	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
2-Chloroethyl vinyl ether	SW8260B	4/1/2009	6	1.1	6.60	ND	µg/L	R19113
2-Chlorotoluene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
4-Chlorotoluene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
4-Isopropyltoluene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Acetone	SW8260B	4/1/2009	10	1.1	11.0	ND	µg/L	R19113
Benzene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Bromobenzene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Bromochloromethane	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Bromodichloromethane	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Bromoform	SW8260B	4/1/2009	1	1.1	1.10	ND	µg/L	R19113
Bromomethane	SW8260B	4/1/2009	1	1.1	1.10	ND	µg/L	R19113
Carbon tetrachloride	SW8260B	4/1/2009	1	1.1	1.10	ND	µg/L	R19113
Chlorobenzene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Chloroform	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Chloromethane	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
cis-1,2-Dichloroethene	SW8260B	4/1/2009	0.5	1.1	0.55	1.75	µg/L	R19113
cis-1,3-Dichloropropene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Dibromochloromethane	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Dibromomethane	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Dichlorodifluoromethane	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Diisopropyl ether (DIPE)	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Ethyl tert-butyl ether (ETBE)	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Ethylbenzene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Freon-113	SW8260B	4/1/2009	1	1.1	1.10	ND	µg/L	R19113
Hexachlorobutadiene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Isopropylbenzene	SW8260B	4/1/2009	1	1.1	1.10	ND	µg/L	R19113
Methyl tert-butyl ether (MTBE)	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Methylene chloride	SW8260B	4/1/2009	5	1.1	5.50	ND	µg/L	R19113
Naphthalene	SW8260B	4/1/2009	1	1.1	1.10	ND	µg/L	R19113
n-Butylbenzene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
n-Propylbenzene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
sec-Butylbenzene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 4/6/2009

Styrene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
t-Butyl alcohol (t-Butanol)	SW8260B	4/1/2009	5	1.1	5.50	ND	µg/L	R19113
tert-Amyl methyl ether (TAME)	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
tert-Butylbenzene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Tetrachloroethene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Toluene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
trans-1,2-Dichloroethene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
trans-1,3-Dichloropropene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Trichloroethene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Trichlorofluoromethane	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Vinyl chloride	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Xylenes, Total	SW8260B	4/1/2009	1.5	1.1	1.65	ND	µg/L	R19113
Surr: Dibromofluoromethane	SW8260B	4/1/2009	0	1.1	61.2-131	109	%REC	R19113
Surr: 4-Bromofluorobenzene	SW8260B	4/1/2009	0	1.1	64.1-120	95.2	%REC	R19113
Surr: Toluene-d8	SW8260B	4/1/2009	0	1.1	75.1-127	83.9	%REC	R19113

Note: Reporting limits were raised due to high level of sediment in all VOAs.

TPH (Gasoline)	SW8260B(TPH)	3/31/2009	50	1.1	55	ND	µg/L	G19085
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	3/31/2009	0	1.1	58.4-133	109	%REC	G19085

Note: Reporting limits were raised due to high level of sediment in all VOAs.

Client Sample ID: N-3-6@0.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:40:00 PM

Lab Sample ID: 0903160-017
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	360	mg/Kg	5054

Client Sample ID: N-3-6@1.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:40:00 PM

Lab Sample ID: 0903160-018
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	230	mg/Kg	5054

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 4/6/2009

Client Sample ID: N-3-6@1.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:40:00 PM

Lab Sample ID: 0903160-019
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	10	mg/Kg	5054

Client Sample ID: N-3-6@2.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:40:00 PM

Lab Sample ID: 0903160-020
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	13	mg/Kg	5054

Client Sample ID: N-3-6@3.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:40:00 PM

Lab Sample ID: 0903160-021
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	4.7	mg/Kg	5054

Client Sample ID: S-1-7@0.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:13:00 PM

Lab Sample ID: 0903160-022
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	160	mg/Kg	5054

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 4/6/2009

Client Sample ID: S-1-7@1.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:13:00 PM

Lab Sample ID: 0903160-023
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	900	mg/Kg	5054

Client Sample ID: S-1-7@1.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:13:00 PM

Lab Sample ID: 0903160-024
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	56	mg/Kg	5055

Client Sample ID: S-1-7@2.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:13:00 PM

Lab Sample ID: 0903160-025
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	4.7	mg/Kg	5055

Client Sample ID: S-1-7@3.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:13:00 PM

Lab Sample ID: 0903160-026
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	4.8	mg/Kg	5055

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 4/6/2009

Client Sample ID: N-3-7@0.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:32:00 PM

Lab Sample ID: 0903160-027
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	8.2	mg/Kg	5055

Client Sample ID: N-3-7@1.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:32:00 PM

Lab Sample ID: 0903160-028
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	750	mg/Kg	5055

Client Sample ID: N-3-7@1.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:32:00 PM

Lab Sample ID: 0903160-029
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	29	mg/Kg	5055

Client Sample ID: N-3-7@2.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:32:00 PM

Lab Sample ID: 0903160-030
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	7.6	mg/Kg	5055

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 4/6/2009

Client Sample ID: N-3-7@3.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:32:00 PM

Lab Sample ID: 0903160-031
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	7.4	mg/Kg	5055

Client Sample ID: S-1-8@0.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:17:00 PM

Lab Sample ID: 0903160-032
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	9.6	mg/Kg	5055

Client Sample ID: S-1-8@1.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:17:00 PM

Lab Sample ID: 0903160-033
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	11	mg/Kg	5055

Client Sample ID: S-1-8@1.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:17:00 PM

Lab Sample ID: 0903160-034
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	1.7	mg/Kg	5055

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 4/6/2009

Client Sample ID: S-1-8@2.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:17:00 PM

Lab Sample ID: 0903160-035
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	ND	mg/Kg	5055

Client Sample ID: S-1-8@3.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:17:00 PM

Lab Sample ID: 0903160-036
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	5.9	mg/Kg	5055

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Definitions, legends and Notes

Note	Description
ug/kg	Microgram per kilogram (ppb, part per billion).
ug/L	Microgram per liter (ppb, part per billion).
mg/kg	Milligram per kilogram (ppm, part per million).
mg/L	Milligram per liter (ppm, part per million).
LCS/LCSD	Laboratory control sample/laboratory control sample duplicate.
MDL	Method detection limit.
MRL	Modified reporting limit. When sample is subject to dilution, reporting limit times dilution factor yields MRL.
MS/MSD	Matrix spike/matrix spike duplicate.
N/A	Not applicable.
ND	Not detected at or above detection limit.
NR	Not reported.
QC	Quality Control.
RL	Reporting limit.
% RPD	Percent relative difference.
a	pH was measured immediately upon the receipt of the sample, but it was still done outside the holding time.
sub	Analyzed by subcontracting laboratory, Lab Certificate #

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Torrent Laboratory, Inc.

Date: *06-Apr-09*

CLIENT: URS Corporation, San Jose
Work Order: 0903160
Project:

ANALYTICAL QC SUMMARY REPORT

BatchID: 5048

Sample ID	**MB-5048**	SampType:	**MBLK**	TestCode:	**6010B_S**	Units:	**mg/Kg**	Prep Date:	**3/27/2009**	RunNo:	**19065**
Client ID:	**ZZZZZ**	Batch ID:	**5048**	TestNo:	**SW6010B**	**(SW3050B)**		Analysis Date:	**3/28/2009**	SeqNo:	**275119**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	1.0									

Sample ID	**LCS-5048**	SampType:	**LCS**	TestCode:	**6010B_S**	Units:	**mg/Kg**	Prep Date:	**3/27/2009**	RunNo:	**19065**
Client ID:	**ZZZZZ**	Batch ID:	**5048**	TestNo:	**SW6010B**	**(SW3050B)**		Analysis Date:	**3/28/2009**	SeqNo:	**275117**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	48.50	1.0	50	0.3	96.4	67.9	118				

Sample ID	**LCSD-5048**	SampType:	**LCSD**	TestCode:	**6010B_S**	Units:	**mg/Kg**	Prep Date:	**3/27/2009**	RunNo:	**19065**
Client ID:	**ZZZZZ**	Batch ID:	**5048**	TestNo:	**SW6010B**	**(SW3050B)**		Analysis Date:	**3/28/2009**	SeqNo:	**275118**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	48.95	1.0	50	0.3	97.3	67.9	118	48.5	0.924	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903160
Project:

ANALYTICAL QC SUMMARY REPORT

BatchID: 5053

Sample ID	MB-5053	SampType:	MBLK	TestCode:	HG_CTS	Units:	mg/Kg	Prep Date:	3/27/2009	RunNo:	19076
Client ID:	ZZZZZ	Batch ID:	5053	TestNo:	SW7471A	(SW7471APR		Analysis Date:	3/30/2009	SeqNo:	275383

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.10									

Sample ID	LCS-5053	SampType:	LCS	TestCode:	HG_CTS	Units:	mg/Kg	Prep Date:	3/27/2009	RunNo:	19076
Client ID:	ZZZZZ	Batch ID:	5053	TestNo:	SW7471A	(SW7471APR		Analysis Date:	3/30/2009	SeqNo:	275381

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.410	0.10	1.25	0	113	80.5	133				

Sample ID	LCSD-5053	SampType:	LCSD	TestCode:	HG_CTS	Units:	mg/Kg	Prep Date:	3/27/2009	RunNo:	19076
Client ID:	ZZZZZ	Batch ID:	5053	TestNo:	SW7471A	(SW7471APR		Analysis Date:	3/30/2009	SeqNo:	275382

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.518	0.10	1.25	0	121	80.5	133	1.41	7.40	30	

Sample ID	0903160-011AMS	SampType:	MS	TestCode:	HG_CTS	Units:	mg/Kg	Prep Date:	3/27/2009	RunNo:	19076
Client ID:	N-3-5@0.5	Batch ID:	5053	TestNo:	SW7471A	(SW7471APR		Analysis Date:	3/30/2009	SeqNo:	275368

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.208	0.10	1.25	0.2417	77.3	80.5	133				S

Sample ID	0903160-011AMSD	SampType:	MSD	TestCode:	HG_CTS	Units:	mg/Kg	Prep Date:	3/27/2009	RunNo:	19076
Client ID:	N-3-5@0.5	Batch ID:	5053	TestNo:	SW7471A	(SW7471APR		Analysis Date:	3/30/2009	SeqNo:	275369

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.155	0.10	1.25	0.2417	73.1	80.5	133	1.208	4.44	30	S

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903160
Project:

ANALYTICAL QC SUMMARY REPORT

BatchID: 5054

Sample ID	MB-5054	SampType:	MBLK	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/30/2009	RunNo:	19132
Client ID:	ZZZZZ	Batch ID:	5054	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/2/2009	SeqNo:	276288

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	5.0									
Arsenic	ND	1.7									
Barium	ND	5.0									
Beryllium	ND	2.0									
Cadmium	ND	1.0									
Chromium	ND	5.0									
Cobalt	ND	5.0									
Copper	ND	5.0									
Lead	ND	1.0									
Molybdenum	ND	5.0									
Nickel	ND	5.0									
Selenium	ND	5.0									
Silver	ND	1.0									
Thallium	ND	5.0									
Vanadium	ND	5.0									
Zinc	ND	5.0									

Sample ID	LCS-5054	SampType:	LCS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/30/2009	RunNo:	19132
Client ID:	ZZZZZ	Batch ID:	5054	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/2/2009	SeqNo:	276286

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	50.05	5.0	50	0.25	99.6	30.7	130				
Arsenic	49.75	1.7	50	0	99.5	71	121				
Barium	49.00	5.0	50	0.15	97.7	70.2	130				
Beryllium	47.20	2.0	50	0	94.4	73.3	115				
Cadmium	47.00	1.0	50	0	94.0	68.7	110				
Chromium	48.95	5.0	50	0.1	97.7	76	116				
Cobalt	48.05	5.0	50	0	96.1	57.4	122				
Copper	49.75	5.0	50	0.6	98.3	74.8	119				
Lead	47.65	1.0	50	0.35	94.6	67.9	118				
Molybdenum	48.50	5.0	50	0	97.0	62.9	123				

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903160
Project:

ANALYTICAL QC SUMMARY REPORT

BatchID: 5054

Sample ID	LCS-5054	SampType:	LCS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/30/2009	RunNo:	19132
Client ID:	ZZZZZ	Batch ID:	5054	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/2/2009	SeqNo:	276286

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	47.60	5.0	50	0	95.2	61.5	122				
Selenium	44.70	5.0	50	0	89.4	62	111				
Silver	47.80	1.0	50	0	95.6	81.1	109				
Thallium	46.10	5.0	50	0	92.2	39.2	125				
Vanadium	49.10	5.0	50	0.15	97.9	65.8	122				
Zinc	47.05	5.0	50	0.9	92.3	59.9	122				

Sample ID	LCSD-5054	SampType:	LCSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/30/2009	RunNo:	19132
Client ID:	ZZZZZ	Batch ID:	5054	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/2/2009	SeqNo:	276287

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	50.75	5.0	50	0.25	101	30.7	130	50.05	1.39	30	
Arsenic	50.30	1.7	50	0	101	71	121	49.75	1.10	30	
Barium	51.10	5.0	50	0.15	102	70.2	130	49	4.20	30	
Beryllium	47.80	2.0	50	0	95.6	73.3	115	47.2	1.26	30	
Cadmium	49.10	1.0	50	0	98.2	68.7	110	47	4.37	30	
Chromium	50.70	5.0	50	0.1	101	76	116	48.95	3.51	30	
Cobalt	49.80	5.0	50	0	99.6	57.4	122	48.05	3.58	30	
Copper	51.80	5.0	50	0.6	102	74.8	119	49.75	4.04	30	
Lead	47.90	1.0	50	0.35	95.1	67.9	118	47.65	0.523	30	
Molybdenum	49.05	5.0	50	0	98.1	62.9	123	48.5	1.13	30	
Nickel	49.40	5.0	50	0	98.8	61.5	122	47.6	3.71	30	
Selenium	44.95	5.0	50	0	89.9	62	111	44.7	0.558	30	
Silver	49.75	1.0	50	0	99.5	81.1	109	47.8	4.00	30	
Thallium	46.75	5.0	50	0	93.5	39.2	125	46.1	1.40	30	
Vanadium	51.15	5.0	50	0.15	102	65.8	122	49.1	4.09	30	
Zinc	49.15	5.0	50	0.9	96.5	59.9	122	47.05	4.37	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903160
Project:

ANALYTICAL QC SUMMARY REPORT

BatchID: 5054

Sample ID	0903160-011AMS	SampType:	MS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/30/2009	RunNo:	19132
Client ID:	N-3-5@0.5	Batch ID:	5054	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/2/2009	SeqNo:	276272

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	28.95	5.0	50	1.8	54.3	30.7	130				
Arsenic	45.55	1.7	50	1.1	88.9	71	121				
Barium	205.0	5.0	50	186.8	36.6	56.2	127				S
Beryllium	41.75	2.0	50	0	83.5	73.3	115				
Cadmium	44.15	1.0	50	0.4	87.5	68.7	110				
Chromium	59.20	5.0	50	18.25	81.9	76	116				
Cobalt	46.05	5.0	50	6.65	78.8	57.4	122				
Copper	73.60	5.0	50	24.3	98.6	74.8	119				
Lead	48.35	1.0	50	10.95	74.8	60.5	113				
Molybdenum	40.95	5.0	50	0.5	80.9	62.9	123				
Nickel	79.50	5.0	50	35	89.0	61.5	122				
Selenium	40.90	5.0	50	0	81.8	62	111				
Silver	47.55	1.0	50	1.3	92.5	81.1	109				
Thallium	30.20	5.0	50	0	60.4	39.2	125				
Vanadium	71.10	5.0	50	25.7	90.8	65.8	122				
Zinc	91.45	5.0	50	50.35	82.2	59.9	122				

Sample ID	0903160-011AMSD	SampType:	MSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/30/2009	RunNo:	19132
Client ID:	N-3-5@0.5	Batch ID:	5054	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/2/2009	SeqNo:	276273

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	32.45	5.0	50	1.8	61.3	30.7	130	28.95	11.4	30	
Arsenic	46.50	1.7	50	1.1	90.8	71	121	45.55	2.06	30	
Barium	221.2	5.0	50	186.8	69.0	56.2	127	205	7.60	30	
Beryllium	42.35	2.0	50	0	84.7	73.3	115	41.75	1.43	30	
Cadmium	44.55	1.0	50	0.4	88.3	68.7	110	44.15	0.902	30	
Chromium	58.70	5.0	50	18.25	80.9	76	116	59.2	0.848	30	
Cobalt	45.15	5.0	50	6.65	77.0	57.4	122	46.05	1.97	30	
Copper	69.95	5.0	50	24.3	91.3	74.8	119	73.6	5.09	30	
Lead	53.55	1.0	50	10.95	85.2	60.5	113	48.35	10.2	30	
Molybdenum	43.15	5.0	50	0.5	85.3	62.9	123	40.95	5.23	30	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903160
Project:

ANALYTICAL QC SUMMARY REPORT

BatchID: 5054

Sample ID	0903160-011AMSD	SampType:	MSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/30/2009	RunNo:	19132
Client ID:	N-3-5@0.5	Batch ID:	5054	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/2/2009	SeqNo:	276273

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	73.20	5.0	50	35	76.4	61.5	122	79.5	8.25	30	
Selenium	43.30	5.0	50	0	86.6	62	111	40.9	5.70	30	
Silver	48.80	1.0	50	1.3	95.0	81.1	109	47.55	2.59	30	
Thallium	31.75	5.0	50	0	63.5	39.2	125	30.2	5.00	30	
Vanadium	74.50	5.0	50	25.7	97.6	65.8	122	71.1	4.67	30	
Zinc	94.10	5.0	50	50.35	87.5	59.9	122	91.45	2.86	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903160
Project:

ANALYTICAL QC SUMMARY REPORT

BatchID: 5055

Sample ID	MB-5055	SampType:	MBLK	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/30/2009	RunNo:	19136
Client ID:	ZZZZZ	Batch ID:	5055	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/2/2009	SeqNo:	276317

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	1.0									

Sample ID	LCS-5055	SampType:	LCS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/30/2009	RunNo:	19136
Client ID:	ZZZZZ	Batch ID:	5055	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/2/2009	SeqNo:	276315

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	49.65	1.0	50	0.45	98.4	67.9	118				

Sample ID	LCSD-5055	SampType:	LCSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/30/2009	RunNo:	19136
Client ID:	ZZZZZ	Batch ID:	5055	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/2/2009	SeqNo:	276316

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	49.80	1.0	50	0.45	98.7	67.9	118	49.65	0.302	30	

Sample ID	0903160-024AMS	SampType:	MS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/30/2009	RunNo:	19136
Client ID:	S-1-7@1.5	Batch ID:	5055	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/2/2009	SeqNo:	276294

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	80.40	1.0	50	56.3	48.2	60.5	113				S

Sample ID	0903160-024AMSD	SampType:	MSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/30/2009	RunNo:	19136
Client ID:	S-1-7@1.5	Batch ID:	5055	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/2/2009	SeqNo:	276295

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	79.90	1.0	50	56.3	47.2	60.5	113	80.4	0.624	30	S

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903160
Project:

ANALYTICAL QC SUMMARY REPORT

BatchID: 5056

Sample ID	MB-5056	SampType:	MBLK	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	3/31/2009	RunNo:	19107
Client ID:	ZZZZZ	Batch ID:	5056	TestNo:	SW7470A	(SW7470A)		Analysis Date:	4/1/2009	SeqNo:	275840

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.00020									

Sample ID	LCS-5056	SampType:	LCS	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	3/31/2009	RunNo:	19107
Client ID:	ZZZZZ	Batch ID:	5056	TestNo:	SW7470A	(SW7470A)		Analysis Date:	4/1/2009	SeqNo:	275838

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.01632	0.00020	0.015	0	109	80	120				

Sample ID	LCSD-5056	SampType:	LCSD	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	3/31/2009	RunNo:	19107
Client ID:	ZZZZZ	Batch ID:	5056	TestNo:	SW7470A	(SW7470A)		Analysis Date:	4/1/2009	SeqNo:	275839

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.01635	0.00020	0.015	0	109	80	120	0.01632	0.184	20	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903160
Project:

ANALYTICAL QC SUMMARY REPORT

BatchID: 5064

Sample ID	MB-5064	SampType:	MBLK	TestCode:	6010B_W	Units:	mg/L	Prep Date:	3/31/2009	RunNo:	19129
Client ID:	ZZZZZ	Batch ID:	5064	TestNo:	SW6010B	(E200.7/SW3		Analysis Date:	4/2/2009	SeqNo:	276153

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.010									
Arsenic	ND	0.010									
Barium	ND	0.010									
Beryllium	ND	0.0050									
Cadmium	ND	0.0050									
Chromium	ND	0.0050									
Cobalt	ND	0.0050									
Copper	ND	0.010									
Lead	ND	0.015									
Molybdenum	ND	0.0050									
Nickel	ND	0.010									
Selenium	ND	0.020									
Silver	ND	0.0050									
Thallium	ND	0.010									
Vanadium	ND	0.010									
Zinc	ND	0.010									

Sample ID	LCS-5064	SampType:	LCS	TestCode:	6010B_W	Units:	mg/L	Prep Date:	3/31/2009	RunNo:	19129
Client ID:	ZZZZZ	Batch ID:	5064	TestNo:	SW6010B	(E200.7/SW3		Analysis Date:	4/2/2009	SeqNo:	276151

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	1.111	0.010	1	0	111	80	120				
Arsenic	1.136	0.010	1	0	114	80	120				
Barium	1.001	0.010	1	0	100	80	120				
Beryllium	1.024	0.0050	1	0	102	80	120				
Cadmium	1.003	0.0050	1	0	100	80	120				
Chromium	0.9960	0.0050	1	0	99.6	80	120				
Cobalt	1.003	0.0050	1	0	100	80	120				
Copper	0.9720	0.010	1	0	97.2	80	120				
Lead	1.062	0.015	1	0	106	80	120				
Molybdenum	1.040	0.0050	1	0	104	80	120				

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903160
Project:

ANALYTICAL QC SUMMARY REPORT

BatchID: 5064

Sample ID	LCS-5064	SampType:	LCS	TestCode:	6010B_W	Units:	mg/L	Prep Date:	3/31/2009	RunNo:	19129
Client ID:	ZZZZZ	Batch ID:	5064	TestNo:	SW6010B	(E200.7/SW3		Analysis Date:	4/2/2009	SeqNo:	276151

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	1.004	0.010	1	0	100	80	120				
Selenium	1.066	0.020	1	0.004	106	80	120				
Silver	0.9830	0.0050	1	0	98.3	80	120				
Thallium	1.035	0.010	1	0	104	80	120				
Vanadium	0.9880	0.010	1	0	98.8	80	120				
Zinc	1.026	0.010	1	0	103	80	120				

Sample ID	LCSD-5064	SampType:	LCSD	TestCode:	6010B_W	Units:	mg/L	Prep Date:	3/31/2009	RunNo:	19129
Client ID:	ZZZZZ	Batch ID:	5064	TestNo:	SW6010B	(E200.7/SW3		Analysis Date:	4/2/2009	SeqNo:	276152

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	1.127	0.010	1	0	113	80	120	1.111	1.43	20	
Arsenic	1.155	0.010	1	0	116	80	120	1.136	1.66	20	
Barium	1.032	0.010	1	0	103	80	120	1.001	3.05	20	
Beryllium	1.017	0.0050	1	0	102	80	120	1.024	0.686	20	
Cadmium	1.026	0.0050	1	0	103	80	120	1.003	2.27	20	
Chromium	1.030	0.0050	1	0	103	80	120	0.996	3.36	20	
Cobalt	1.028	0.0050	1	0	103	80	120	1.003	2.46	20	
Copper	1.002	0.010	1	0	100	80	120	0.972	3.04	20	
Lead	1.076	0.015	1	0	108	80	120	1.062	1.31	20	
Molybdenum	1.056	0.0050	1	0	106	80	120	1.04	1.53	20	
Nickel	1.032	0.010	1	0	103	80	120	1.004	2.75	20	
Selenium	1.080	0.020	1	0.004	108	80	120	1.066	1.30	20	
Silver	1.007	0.0050	1	0	101	80	120	0.983	2.41	20	
Thallium	1.053	0.010	1	0	105	80	120	1.035	1.72	20	
Vanadium	1.016	0.010	1	0	102	80	120	0.988	2.79	20	
Zinc	1.039	0.010	1	0	104	80	120	1.026	1.26	20	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903160
Project:

ANALYTICAL QC SUMMARY REPORT

BatchID: 5064

Sample ID	0903160-016AMS	SampType:	MS	TestCode:	6010B_W	Units:	mg/L	Prep Date:	3/31/2009	RunNo:	19129
Client ID:	N-3-5-GW	Batch ID:	5064	TestNo:	SW6010B	(E200.7/SW3		Analysis Date:	4/2/2009	SeqNo:	276149

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	1.015	0.010	1	0	102	75	125				
Arsenic	1.064	0.010	1	0.005	106	75	125				
Barium	1.682	0.010	1	0.877	80.5	75	125				
Beryllium	0.8620	0.0050	1	0.002	86.0	75	125				
Cadmium	0.9350	0.0050	1	0.006	92.9	75	125				
Chromium	0.9500	0.0050	1	0.035	91.5	75	125				
Cobalt	0.8610	0.0050	1	0.031	83.0	75	125				
Copper	0.9810	0.010	1	0.094	88.7	75	125				
Lead	0.8820	0.015	1	0.031	85.1	75	125				
Molybdenum	0.9160	0.0050	1	0.003	91.3	75	125				
Nickel	0.9510	0.010	1	0.077	87.4	75	125				
Selenium	0.9680	0.020	1	0.007	96.1	75	125				
Silver	0.9750	0.0050	1	0.014	96.1	75	125				
Thallium	0.8110	0.010	1	0	81.1	75	125				
Vanadium	0.9860	0.010	1	0.066	92.0	75	125				
Zinc	1.001	0.010	1	0.109	89.2	75	125				

Sample ID	0903160-016AMSD	SampType:	MSD	TestCode:	6010B_W	Units:	mg/L	Prep Date:	3/31/2009	RunNo:	19129
Client ID:	N-3-5-GW	Batch ID:	5064	TestNo:	SW6010B	(E200.7/SW3		Analysis Date:	4/2/2009	SeqNo:	276150

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	1.001	0.010	1	0	100	75	125	1.015	1.39	30	
Arsenic	1.053	0.010	1	0.005	105	75	125	1.064	1.04	30	
Barium	1.715	0.010	1	0.877	83.8	75	125	1.682	1.94	30	
Beryllium	0.8470	0.0050	1	0.002	84.5	75	125	0.862	1.76	30	
Cadmium	0.9070	0.0050	1	0.006	90.1	75	125	0.935	3.04	30	
Chromium	0.9170	0.0050	1	0.035	88.2	75	125	0.95	3.54	30	
Cobalt	0.8280	0.0050	1	0.031	79.7	75	125	0.861	3.91	30	
Copper	0.9710	0.010	1	0.094	87.7	75	125	0.981	1.02	30	
Lead	0.8720	0.015	1	0.031	84.1	75	125	0.882	1.14	30	
Molybdenum	0.9030	0.0050	1	0.003	90.0	75	125	0.916	1.43	30	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903160
Project:

ANALYTICAL QC SUMMARY REPORT

BatchID: 5064

Sample ID	0903160-016AMSD	SampType:	MSD	TestCode:	6010B_W	Units:	mg/L	Prep Date:	3/31/2009	RunNo:	19129
Client ID:	N-3-5-GW	Batch ID:	5064	TestNo:	SW6010B		(E200.7/SW3	Analysis Date:	4/2/2009	SeqNo:	276150

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	0.8980	0.010	1	0.077	82.1	75	125	0.951	5.73	30	
Selenium	0.9520	0.020	1	0.007	94.5	75	125	0.968	1.67	30	
Silver	0.9560	0.0050	1	0.014	94.2	75	125	0.975	1.97	30	
Thallium	0.8000	0.010	1	0	80.0	75	125	0.811	1.37	30	
Vanadium	0.9640	0.010	1	0.066	89.8	75	125	0.986	2.26	30	
Zinc	0.9460	0.010	1	0.109	83.7	75	125	1.001	5.65	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903160
Project:

ANALYTICAL QC SUMMARY REPORT

BatchID: G19078

Sample ID **MB_G19078** SampType: **MBLK** TestCode: **TPH_GAS_S** Units: **µg/Kg** Prep Date: **3/27/2009** RunNo: **19078**
Client ID: **ZZZZZ** Batch ID: **G19078** TestNo: **SW8260B(TP** Analysis Date: **3/27/2009** SeqNo: **275437**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	ND	100									
Surr: 4-Bromofllurobenzene	43.00	0	50	0	86.0	56.9	133				

Sample ID **LCS_G19078** SampType: **LCS** TestCode: **TPH_GAS_S** Units: **µg/Kg** Prep Date: **3/27/2009** RunNo: **19078**
Client ID: **ZZZZZ** Batch ID: **G19078** TestNo: **SW8260B(TP** Analysis Date: **3/27/2009** SeqNo: **275438**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	941.0	100	1000	0	94.1	48.2	132				
Surr: 4-Bromofllurobenzene	42.00	0	50	0	84.0	56.9	133				

Sample ID **LCSD_G19078** SampType: **LCSD** TestCode: **TPH_GAS_S** Units: **µg/Kg** Prep Date: **3/27/2009** RunNo: **19078**
Client ID: **ZZZZZ** Batch ID: **G19078** TestNo: **SW8260B(TP** Analysis Date: **3/27/2009** SeqNo: **275439**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	923.0	100	1000	0	92.3	48.2	132	941	1.93	30	
Surr: 4-Bromofllurobenzene	44.00	0	50	0	88.0	56.9	133	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903160
Project:

ANALYTICAL QC SUMMARY REPORT

BatchID: G19085

Sample ID	MB_G19085	SampType:	MBLK	TestCode:	TPH_GAS_W	Units:	µg/L	Prep Date:	3/30/2009	RunNo:	19085
Client ID:	ZZZZZ	Batch ID:	G19085	TestNo:	SW8260B(TP			Analysis Date:	3/30/2009	SeqNo:	275688

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	ND	50									
Surr: 4-Bromofllurobenzene	12.80	0	11.36	0	113	58.4	133				

Sample ID	LCS_G19085	SampType:	LCS	TestCode:	TPH_GAS_W	Units:	µg/L	Prep Date:	3/30/2009	RunNo:	19085
Client ID:	ZZZZZ	Batch ID:	G19085	TestNo:	SW8260B(TP			Analysis Date:	3/30/2009	SeqNo:	275689

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	213.0	50	227	0	93.8	52.4	127				
Surr: 4-Bromofllurobenzene	13.47	0	11.36	0	119	58.4	133				

Sample ID	LCSD_G19085	SampType:	LCSD	TestCode:	TPH_GAS_W	Units:	µg/L	Prep Date:	3/30/2009	RunNo:	19085
Client ID:	ZZZZZ	Batch ID:	G19085	TestNo:	SW8260B(TP			Analysis Date:	3/30/2009	SeqNo:	275690

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	209.0	50	227	0	92.1	52.4	127	213	1.90	20	
Surr: 4-Bromofllurobenzene	12.68	0	11.36	0	112	58.4	133	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903160
Project:

ANALYTICAL QC SUMMARY REPORT

BatchID: R19071

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
SD090327A-MB	**MBLK**	**TPHDO_S**	**mg/Kg**	**3/27/2009**	**19071**
Client ID: **ZZZZZ**	Batch ID: **R19071**	TestNo: **SW8015B**		Analysis Date: **3/28/2009**	SeqNo: **275287**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	ND	2.00									
TPH (Motor Oil)	ND	4.00									
Surr: Pentacosane	3.470	0	3.3	0	105	59.7	129				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
SD090327A-LCS	**LCS**	**TPHDO_S**	**mg/Kg**	**3/27/2009**	**19071**
Client ID: **ZZZZZ**	Batch ID: **R19071**	TestNo: **SW8015B**		Analysis Date: **3/28/2009**	SeqNo: **275288**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	30.32	2.00	33.33	0	91.0	52.7	115				
Surr: Pentacosane	3.698	0	3.3	0	112	59.7	129				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
SD090327A-LCSD	**LCSD**	**TPHDO_S**	**mg/Kg**	**3/27/2009**	**19071**
Client ID: **ZZZZZ**	Batch ID: **R19071**	TestNo: **SW8015B**		Analysis Date: **3/28/2009**	SeqNo: **275289**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	30.54	2.00	33.33	0	91.6	52.7	115	30.32	0.726	30	
Surr: Pentacosane	3.600	0	3.3	0	109	59.7	129	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903160
Project:

ANALYTICAL QC SUMMARY REPORT

BatchID: R19073

Sample ID	SP090327B-MB	SampType:	MBLK	TestCode:	8081S	Units:	µg/Kg	Prep Date:	3/27/2009	RunNo:	19073
Client ID:	ZZZZZ	Batch ID:	R19073	TestNo:	SW8081A			Analysis Date:	3/28/2009	SeqNo:	275321

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDD	ND	2.00									
4,4´-DDE	ND	2.00									
4,4´-DDT	ND	2.00									
Aldrin	ND	2.00									
alpha-BHC	ND	2.00									
alpha-Chlordane	ND	2.00									
beta-BHC	ND	2.00									
Chlordane	ND	20.0									
delta-BHC	ND	2.00									
Dieldrin	ND	2.00									
Endosulfan I	ND	2.00									
Endosulfan II	ND	2.00									
Endosulfan sulfate	ND	2.00									
Endrin	ND	2.00									
Endrin aldehyde	ND	2.00									
Endrin ketone	ND	2.00									
gamma-BHC	ND	2.00									
gamma-Chlordane	ND	2.00									
Heptachlor	ND	2.00									
Heptachlor epoxide	ND	2.00									
Methoxychlor	ND	5.00									
Toxaphene	ND	100									
Surr: Decachlorobiphenyl	43.53	0	50	0	87.1	57	126				
Surr: Tetrachloro-m-xylene	42.52	0	50	0	85.0	55.7	122				

Sample ID	SP090327B-LCS	SampType:	LCS	TestCode:	8081S	Units:	µg/Kg	Prep Date:	3/27/2009	RunNo:	19073
Client ID:	ZZZZZ	Batch ID:	R19073	TestNo:	SW8081A			Analysis Date:	3/28/2009	SeqNo:	275322

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDT	17.89	2.00	20	0	89.5	52.8	134				
Aldrin	17.74	2.00	20	0	88.7	53	123				

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903160
Project:

ANALYTICAL QC SUMMARY REPORT

BatchID: R19073

Sample ID	SP090327B-LCS	SampType:	LCS	TestCode:	8081S	Units:	µg/Kg	Prep Date:	3/27/2009	RunNo:	19073
Client ID:	ZZZZZ	Batch ID:	R19073	TestNo:	SW8081A			Analysis Date:	3/28/2009	SeqNo:	275322

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dieldrin	18.10	2.00	20	0	90.5	44	130				
Endrin	16.97	2.00	20	0	84.9	44.1	121				
gamma-BHC	16.31	2.00	20	0	81.5	56.9	120				
Heptachlor	16.65	2.00	20	0	83.3	63.6	117				
Surr: Decachlorobiphenyl	58.34	0	70	0	83.3	57	126				
Surr: Tetrachloro-m-xylene	58.13	0	70	0	83.0	55.7	122				

Sample ID	SP090327B-LCSD	SampType:	LCSD	TestCode:	8081S	Units:	µg/Kg	Prep Date:	3/27/2009	RunNo:	19073
Client ID:	ZZZZZ	Batch ID:	R19073	TestNo:	SW8081A			Analysis Date:	3/28/2009	SeqNo:	275323

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDT	14.41	2.00	20	0	72.0	52.8	134	17.89	21.6	30	
Aldrin	14.61	2.00	20	0	73.0	53	123	17.74	19.4	30	
Dieldrin	14.93	2.00	20	0	74.7	44	130	18.1	19.2	30	
Endrin	14.03	2.00	20	0	70.1	44.1	121	16.97	19.0	30	
gamma-BHC	13.64	2.00	20	0	68.2	56.9	120	16.31	17.8	30	
Heptachlor	14.13	2.00	20	0	70.6	63.6	117	16.65	16.4	30	
Surr: Decachlorobiphenyl	48.60	0	70	0	69.4	57	126	0	0	0	
Surr: Tetrachloro-m-xylene	49.53	0	70	0	70.8	55.7	122	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903160
Project:

ANALYTICAL QC SUMMARY REPORT

BatchID: R19075

Sample ID	WP090327A-MB	SampType:	MBLK	TestCode:	8081W	Units:	µg/L	Prep Date:	3/27/2009	RunNo:	19075
Client ID:	ZZZZZ	Batch ID:	R19075	TestNo:	SW8081A			Analysis Date:	3/27/2009	SeqNo:	275366

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDD	ND	0.0200									
4,4´-DDE	ND	0.0200									
4,4´-DDT	ND	0.0200									
Aldrin	ND	0.0200									
alpha-BHC	ND	0.0200									
alpha-Chlordane	ND	0.0200									
beta-BHC	ND	0.0200									
Chlordane	ND	0.250									
delta-BHC	ND	0.0200									
Dieldrin	ND	0.0200									
Endosulfan I	ND	0.0200									
Endosulfan II	ND	0.0200									
Endosulfan sulfate	ND	0.0200									
Endrin	ND	0.0200									
Endrin aldehyde	ND	0.0200									
Endrin ketone	ND	0.0200									
gamma-BHC	ND	0.0200									
gamma-Chlordane	ND	0.0200									
Heptachlor	ND	0.0200									
Heptachlor epoxide	ND	0.0200									
Methoxychlor	ND	0.0500									
Toxaphene	ND	1.00									
Surr: Decachlorobiphenyl	0.1985	0	0.25	0	79.4	52	116				
Surr: Tetrachloro-m-xylene	0.1382	0	0.25	0	55.3	40.3	118				

Sample ID	WP090327A-LCS	SampType:	LCS	TestCode:	8081W	Units:	µg/L	Prep Date:	3/27/2009	RunNo:	19075
Client ID:	ZZZZZ	Batch ID:	R19075	TestNo:	SW8081A			Analysis Date:	3/28/2009	SeqNo:	275390

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDT	0.07535	0.0200	0.1	0	75.4	58.4	126				
Aldrin	0.05703	0.0200	0.1	0	57.0	55.3	101				

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903160
Project:

ANALYTICAL QC SUMMARY REPORT

BatchID: R19075

Sample ID	WP090327A-LCS	SampType:	LCS	TestCode:	8081W	Units:	µg/L	Prep Date:	3/27/2009	RunNo:	19075
Client ID:	ZZZZZ	Batch ID:	R19075	TestNo:	SW8081A			Analysis Date:	3/28/2009	SeqNo:	275390

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dieldrin	0.06883	0.0200	0.1	0	68.8	60.3	116				
Endrin	0.06695	0.0200	0.1	0	67.0	60.4	134				
gamma-BHC	0.06167	0.0200	0.1	0	61.7	61.6	135				
Heptachlor	0.06480	0.0200	0.1	0	64.8	60	97.8				
Surr: Decachlorobiphenyl	0.2212	0	0.35	0	63.2	52	116				
Surr: Tetrachloro-m-xylene	0.1554	0	0.35	0	44.4	40.3	118				

Sample ID	WP090327A-LCSD	SampType:	LCSD	TestCode:	8081W	Units:	µg/L	Prep Date:	3/27/2009	RunNo:	19075
Client ID:	ZZZZZ	Batch ID:	R19075	TestNo:	SW8081A			Analysis Date:	3/28/2009	SeqNo:	275391

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDT	0.09525	0.0200	0.1	0	95.2	58.4	126	0.07535	23.3	35	
Aldrin	0.06702	0.0200	0.1	0	67.0	55.3	101	0.05703	16.1	35	
Dieldrin	0.08987	0.0200	0.1	0	89.9	60.3	116	0.06883	26.5	35	
Endrin	0.08715	0.0200	0.1	0	87.2	60.4	134	0.06695	26.2	35	
gamma-BHC	0.07110	0.0200	0.1	0	71.1	61.6	135	0.06167	14.2	35	
Heptachlor	0.07485	0.0200	0.1	0	74.8	60	97.8	0.0648	14.4	35	
Surr: Decachlorobiphenyl	0.3166	0	0.35	0	90.4	52	116	0	0	0	
Surr: Tetrachloro-m-xylene	0.1818	0	0.35	0	51.9	40.3	118	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903160
Project:

ANALYTICAL QC SUMMARY REPORT

BatchID: R19084

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
SQ090327A-MB	MBLK	8082S	mg/Kg	3/27/2009	19084
Client ID: ZZZZZ	Batch ID: R19084	TestNo: SW8082		Analysis Date: 3/28/2009	SeqNo: 275502

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	0.0230									
Aroclor 1221	ND	0.0920									
Aroclor 1232	ND	0.0460									
Aroclor 1242	ND	0.0430									
Aroclor 1248	ND	0.0360									
Aroclor 1254	ND	0.0240									
Aroclor 1260	ND	0.0270									
Surr: Decachlorobiphenyl	0.04472	0	0.05	0	89.4	55.1	113				
Surr: Tetrachloro-m-xylene	0.04397	0	0.05	0	87.9	51.7	128				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
SQ090327A-LCS	LCS	8082S	mg/Kg	3/27/2009	19084
Client ID: ZZZZZ	Batch ID: R19084	TestNo: SW8082		Analysis Date: 3/28/2009	SeqNo: 275503

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	0.8610	0.100	1	0	86.1	55.6	135				
Aroclor 1260	0.5035	0.100	0.5	0	101	65.6	132				
Surr: Decachlorobiphenyl	0.05204	0	0.05	0	104	55.1	113				
Surr: Tetrachloro-m-xylene	0.05232	0	0.05	0	105	51.7	128				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
SQ090327A-LCSD	LCSD	8082S	mg/Kg	3/27/2009	19084
Client ID: ZZZZZ	Batch ID: R19084	TestNo: SW8082		Analysis Date: 3/28/2009	SeqNo: 275504

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	0.8186	0.100	1	0	81.9	55.6	135	0.861	5.04	30	
Aroclor 1260	0.4812	0.100	0.5	0	96.2	65.6	132	0.5035	4.52	30	
Surr: Decachlorobiphenyl	0.04821	0	0.05	0	96.4	55.1	113	0	0	0	
Surr: Tetrachloro-m-xylene	0.04768	0	0.05	0	95.4	51.7	128	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903160
Project:

ANALYTICAL QC SUMMARY REPORT

BatchID: R19089

Sample ID **WQ090328A-MB** SampType: **MBLK** TestCode: **8082W** Units: **µg/L** Prep Date: **3/28/2009** RunNo: **19089**
Client ID: **ZZZZZ** Batch ID: **R19089** TestNo: **SW8082** Analysis Date: **3/28/2009** SeqNo: **275620**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	10.0									
Aroclor 1221	ND	10.0									
Aroclor 1232	ND	10.0									
Aroclor 1242	ND	10.0									
Aroclor 1248	ND	10.0									
Aroclor 1254	ND	10.0									
Aroclor 1260	ND	10.0									
Surr: Decachlorobiphenyl	4.860	0	5	0	97.2	64.8	121				
Surr: Tetrachloro-m-xylene	4.790	0	5	0	95.8	64.7	115				

Sample ID **WQ090328A-LCS** SampType: **LCS** TestCode: **8082W** Units: **µg/L** Prep Date: **3/28/2009** RunNo: **19089**
Client ID: **ZZZZZ** Batch ID: **R19089** TestNo: **SW8082** Analysis Date: **3/28/2009** SeqNo: **275621**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	59.10	10.0	50	0	118	69.7	139				
Aroclor 1260	59.90	10.0	50	0	120	71.3	131				
Surr: Decachlorobiphenyl	4.990	0	5	0	99.8	64.8	121				
Surr: Tetrachloro-m-xylene	5.050	0	5	0	101	64.7	115				

Sample ID **WQ090328A-LCSD** SampType: **LCSD** TestCode: **8082W** Units: **µg/L** Prep Date: **3/28/2009** RunNo: **19089**
Client ID: **ZZZZZ** Batch ID: **R19089** TestNo: **SW8082** Analysis Date: **3/28/2009** SeqNo: **275629**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	59.50	10.0	50	0	119	69.7	139	59.1	0.675	30	
Aroclor 1260	60.50	10.0	50	0	121	71.3	131	59.9	0.997	30	
Surr: Decachlorobiphenyl	5.050	0	5	0	101	64.8	121	0	0		
Surr: Tetrachloro-m-xylene	5.040	0	5	0	101	64.7	115	0	0		

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903160
Project:

ANALYTICAL QC SUMMARY REPORT

BatchID: R19094

Sample ID	WD090330A-MB	SampType:	MBLK	TestCode:	TPHDO_W	Units:	mg/L	Prep Date:	3/30/2009	RunNo:	19094
Client ID:	ZZZZZ	Batch ID:	R19094	TestNo:	SW8015B			Analysis Date:	3/30/2009	SeqNo:	275719

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	ND	0.100									
TPH (Motor Oil)	ND	0.200									
Surr: Pentacosane	0.1020	0	0.1	0	102	57.9	125				

Sample ID	WD090330A-LCS	SampType:	LCS	TestCode:	TPHDO_W	Units:	mg/L	Prep Date:	3/30/2009	RunNo:	19094
Client ID:	ZZZZZ	Batch ID:	R19094	TestNo:	SW8015B			Analysis Date:	3/30/2009	SeqNo:	275720

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	0.7080	0.100	1	0	70.8	50.3	125				
Surr: Pentacosane	0.1030	0	0.1	0	103	57.9	125				

Sample ID	WD090330A-LCSD	SampType:	LCSD	TestCode:	TPHDO_W	Units:	mg/L	Prep Date:	3/30/2009	RunNo:	19094
Client ID:	ZZZZZ	Batch ID:	R19094	TestNo:	SW8015B			Analysis Date:	3/30/2009	SeqNo:	275721

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	0.6750	0.100	1	0	67.5	50.3	125	0.708	4.77	30	
Surr: Pentacosane	0.09900	0	0.1	0	99.0	57.9	125	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903160
Project:

ANALYTICAL QC SUMMARY REPORT

BatchID: R19113

Sample ID	BLK-R19113	SampType:	MBLK	TestCode:	8260B_W	Units:	µg/L	Prep Date:	4/1/2009	RunNo:	19113
Client ID:	ZZZZZ	Batch ID:	R19113	TestNo:	SW8260B			Analysis Date:	4/1/2009	SeqNo:	275896

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	1.00									
1,1,1-Trichloroethane	ND	0.500									
1,1,2,2-Tetrachloroethane	ND	1.00									
1,1,2-Trichloroethane	ND	0.500									
1,1-Dichloroethane	ND	0.500									
1,1-Dichloroethene	ND	1.00									
1,1-Dichloropropene	ND	0.500									
1,2,3-Trichlorobenzene	ND	1.00									
1,2,3-Trichloropropane	ND	1.00									
1,2,4-Trichlorobenzene	ND	1.00									
1,2,4-Trimethylbenzene	ND	0.500									
1,2-Dibromo-3-chloropropane	ND	0.500									
1,2-Dibromoethane (EDB)	ND	0.500									
1,2-Dichlorobenzene	ND	0.500									
1,2-Dichloroethane (EDC)	ND	0.500									
1,2-Dichloropropane	ND	1.00									
1,3,5-Trimethylbenzene	ND	0.500									
1,3-Dichlorobenzene	ND	0.500									
1,4-Dichlorobenzene	ND	0.500									
2,2-Dichloropropane	ND	0.500									
2-Chloroethyl vinyl ether	ND	6.00									
2-Chlorotoluene	ND	0.500									
4-Chlorotoluene	ND	0.500									
4-Isopropyltoluene	ND	0.500									
Acetone	ND	10.0									
Benzene	ND	0.500									
Bromobenzene	ND	0.500									
Bromochloromethane	ND	0.500									
Bromodichloromethane	ND	0.500									
Bromoform	ND	1.00									
Bromomethane	ND	1.00									

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903160
Project:

ANALYTICAL QC SUMMARY REPORT

BatchID: R19113

Sample ID	BLK-R19113	SampType:	MBLK	TestCode:	8260B_W	Units:	µg/L	Prep Date:	4/1/2009	RunNo:	19113
Client ID:	ZZZZZ	Batch ID:	R19113	TestNo:	SW8260B			Analysis Date:	4/1/2009	SeqNo:	275896

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon tetrachloride	ND	1.00									
Chlorobenzene	ND	0.500									
Chloroform	ND	0.500									
Chloromethane	ND	0.500									
cis-1,2-Dichloroethene	ND	0.500									
cis-1,3-Dichloropropene	ND	0.500									
Dibromochloromethane	ND	0.500									
Dibromomethane	ND	0.500									
Dichlorodifluoromethane	ND	0.500									
Diisopropyl ether (DIPE)	ND	0.500									
Ethyl tert-butyl ether (ETBE)	ND	0.500									
Ethylbenzene	ND	0.500									
Freon-113	ND	1.00									
Hexachlorobutadiene	ND	0.500									
Isopropylbenzene	ND	1.00									
Methyl tert-butyl ether (MTBE)	ND	0.500									
Methylene chloride	ND	5.00									
Naphthalene	ND	1.00									
n-Butylbenzene	ND	0.500									
n-Propylbenzene	ND	0.500									
sec-Butylbenzene	ND	0.500									
Styrene	ND	0.500									
t-Butyl alcohol (t-Butanol)	ND	5.00									
tert-Amyl methyl ether (TAME)	ND	0.500									
tert-Butylbenzene	ND	0.500									
Tetrachloroethene	ND	0.500									
Toluene	ND	0.500									
trans-1,2-Dichloroethene	ND	0.500									
trans-1,3-Dichloropropene	ND	0.500									
Trichloroethene	ND	0.500									
Trichlorofluoromethane	ND	0.500									

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903160
Project:

ANALYTICAL QC SUMMARY REPORT

BatchID: R19113

Sample ID	BLK-R19113	SampType:	MBLK	TestCode:	8260B_W	Units:	µg/L	Prep Date:	4/1/2009	RunNo:	19113
Client ID:	ZZZZZ	Batch ID:	R19113	TestNo:	SW8260B			Analysis Date:	4/1/2009	SeqNo:	275896

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	ND	0.500									
Xylenes, Total	ND	1.50									
Surr: Dibromofluoromethane	12.64	0	11.36	0	111	61.2	131				
Surr: 4-Bromofluorobenzene	11.84	0	11.36	0	104	64.1	120				
Surr: Toluene-d8	9.870	0	11.36	0	86.9	75.1	127				

Sample ID	LCS-R19113	SampType:	LCS	TestCode:	8260B_W	Units:	µg/L	Prep Date:	4/1/2009	RunNo:	19113
Client ID:	ZZZZZ	Batch ID:	R19113	TestNo:	SW8260B			Analysis Date:	4/1/2009	SeqNo:	275897

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	14.79	1.00	17.04	0	86.8	61.4	129				
Benzene	16.83	0.500	17.04	0	98.8	66.9	140				
Chlorobenzene	17.30	0.500	17.04	0	102	73.9	137				
Toluene	16.17	0.500	17.04	0	94.9	76.6	123				
Trichloroethene	18.97	0.500	17.04	0	111	69.3	144				
Surr: Dibromofluoromethane	12.84	0	11.36	0	113	61.2	131				
Surr: 4-Bromofluorobenzene	10.54	0	11.36	0	92.8	64.1	120				
Surr: Toluene-d8	11.35	0	11.36	0	99.9	75.1	127				

Sample ID	LCSD-R19113	SampType:	LCSD	TestCode:	8260B_W	Units:	µg/L	Prep Date:	4/1/2009	RunNo:	19113
Client ID:	ZZZZZ	Batch ID:	R19113	TestNo:	SW8260B			Analysis Date:	4/1/2009	SeqNo:	275898

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	15.94	1.00	17.04	0	93.5	61.4	129	14.79	7.48	20	
Benzene	17.87	0.500	17.04	0	105	66.9	140	16.83	5.99	20	
Chlorobenzene	18.62	0.500	17.04	0	109	73.9	137	17.3	7.35	20	
Toluene	15.74	0.500	17.04	0	92.4	76.6	123	16.17	2.70	20	
Trichloroethene	18.19	0.500	17.04	0	107	69.3	144	18.97	4.20	20	
Surr: Dibromofluoromethane	11.17	0	11.36	0	98.3	61.2	131	0	0	0	
Surr: 4-Bromofluorobenzene	9.500	0	11.36	0	83.6	64.1	120	0	0	0	
Surr: Toluene-d8	12.72	0	11.36	0	112	75.1	127	0	0	0	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903160
Project:

ANALYTICAL QC SUMMARY REPORT

BatchID: U19078

Sample ID	MB_U19078	SampType:	MBLK	TestCode:	8260B_S_PE	Units:	µg/Kg	Prep Date:	3/27/2009	RunNo:	19078
Client ID:	ZZZZZ	Batch ID:	U19078	TestNo:	SW8260B			Analysis Date:	3/27/2009	SeqNo:	275925

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	10									
Diisopropyl ether (DIPE)	ND	10									
Ethyl tert-butyl ether (ETBE)	ND	10									
Ethylbenzene	ND	10									
Methyl tert-butyl ether (MTBE)	ND	10									
t-Butyl alcohol (t-Butanol)	ND	50									
tert-Amyl methyl ether (TAME)	ND	10									
Toluene	ND	10									
Xylenes, Total	ND	15									
Surr: 4-Bromofluorobenzene	45.99	0	50	0	92.0	55.8	141				
Surr: Dibromofluoromethane	45.01	0	50	0	90.0	59.8	148				
Surr: Toluene-d8	42.83	0	50	0	85.7	55.2	133				

Sample ID	LCS_U19078	SampType:	LCS	TestCode:	8260B_S_PE	Units:	µg/Kg	Prep Date:	3/27/2009	RunNo:	19078
Client ID:	ZZZZZ	Batch ID:	U19078	TestNo:	SW8260B			Analysis Date:	3/27/2009	SeqNo:	275926

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	56.40	10	50	0	113	66.5	135				
Toluene	47.21	10	50	0	94.4	56.8	134				
Surr: 4-Bromofluorobenzene	46.06	0	50	0	92.1	55.8	141				
Surr: Dibromofluoromethane	46.18	0	50	0	92.4	59.8	148				
Surr: Toluene-d8	41.62	0	50	0	83.2	55.2	133				

Sample ID	LCSD_U19078	SampType:	LCSD	TestCode:	8260B_S_PE	Units:	µg/Kg	Prep Date:	3/27/2009	RunNo:	19078
Client ID:	ZZZZZ	Batch ID:	U19078	TestNo:	SW8260B			Analysis Date:	3/27/2009	SeqNo:	275927

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	57.21	10	50	0	114	66.5	135	56.4	1.43	30	
Toluene	47.25	10	50	0	94.5	56.8	134	47.21	0.0847	30	
Surr: 4-Bromofluorobenzene	45.50	0	50	0	91.0	55.8	141	0	0	0	
Surr: Dibromofluoromethane	41.70	0	50	0	83.4	59.8	148	0	0	0	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903160
Project:

ANALYTICAL QC SUMMARY REPORT

BatchID: U19078

Sample ID	LCSD_U19078	SampType:	LCSD	TestCode:	8260B_S_PE	Units:	µg/Kg	Prep Date:	3/27/2009	RunNo:	19078
Client ID:	ZZZZZ	Batch ID:	U19078	TestNo:	SW8260B			Analysis Date:	3/27/2009	SeqNo:	275927

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Toluene-d8	41.40	0	50	0	82.8	55.2	133	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903160

Company Name: UPS San Jose	Location of Sampling: Hwy 101 – Ave Laves
Address:	Purpose:
City: State: Zip Code:	Special Instructions / Comments:
Telephone: FAX:	
REPORT TO: Patrick Wa SAMPLER: Eduardo C.	P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Working Days ☐ 3 Working Days ☐ Noon - Nxt Day ☐ 7 Working Days ☐ 2 Working Days ☐ 2 - 8 Hours ☒ 5 Working Days ☐ 1 Working Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☒ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

	CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	Lead								TORRENT'S SAMPLE I.D.
001A	1. N-2-14 @ 0.5	03/25/09 2355	S	1	sleeve	X								
002A	2. @ 1.0			1		X								
003A	3. @ 1.5					X								
004A	4. @ 2.0					X								
005A	5. @ 3.0					X								
006A	6. N-3-4 @ 0.5	03/25/09 2340				X								
007A	7. @ 1.0					X								
008A	8. @ 1.5					X								
009A	9. @ 2.0					X								
010A	10. @ 3.0					X								

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/26/09	10:15 AM	[signature]	NAVIN	3/26/09	10:15 AM
2								

Were Samples Received in Good Condition? ☑ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment Drop-off Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrange -ments are made.

Log In By: Date: Log In Reviewed By: Date:

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903160

Company Name: UTS San Jose	Location of Sampling: Hwy 101 - Aux Lanes
Address:	Purpose:
City: State: Zip Code:	Special Instructions / Comments:
Telephone: FAX:	
REPORT TO: Patrick W. SAMPLER: Eduardo Ortiz	P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Working Days ☐ 3 Working Days ☐ Noon - Nxt Day ☐ 7 Working Days ☐ 2 Working Days ☐ 2 - 8 Hours ☒ 5 Working Days ☐ 1 Working Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☒ Ground Water ☒ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

	CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	Lead	CAM 17 + pH	TPH-S/DIEX Gas Engine	TPH d/uo	PCBs	pesticides	VOCs				TORRENT'S SAMPLE I.D.
011A	1. N-3-5@0.5	03/25/09 2255	S				X		X	X	X					
012A	2. @1.0		S				X	X								
013A	3. @1.5		S				X	X								
014A	4. @2.0		S				X	X								
015A	5. @3.0		S				X	X								
	6. N-3-5-GW	03/25/09 2320	GW	1	250 ml		X									
	7.		GW	2	1 liter				X							
016A	8.		GW	3	VOA			X				X				
	9.		GW	1	1 liter					X	X					
	10.															

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/26/09	10:15 Am	[signature]	NAVIN	3/26/09	10:15 Am
2								

Were Samples Received in Good Condition? ☑ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment Drop-off Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrange -ments are made.

Log In By: Date: Log In Reviewed By: Date:

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903160

Company Name: VIRS San Jose	Location of Sampling: Hwy 101 - Avo lower
Address:	Purpose:
City: State: Zip Code:	Special Instructions / Comments:
Telephone: FAX:	
REPORT TO: Patrick W SAMPLER: Eduardo G.	P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Working Days ☐ 3 Working Days ☐ Noon - Nxt Day ☐ 7 Working Days ☐ 2 Working Days ☐ 2 - 8 Hours ☒ 5 Working Days ☐ 1 Working Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☒ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

	CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	Lead									TORRENT'S SAMPLE I.D.
017A	1. N-3-6 @ 0.5	03/25/09 2240	S	1	sleeve	X									
018A	2. @ 1.0					X									
019A	3. @ 1.5					X									
020A	4. @ 2.0					X									
021A	5. @ 3.0					X									
022A	6. S-1-7 @ 0.5	03/25/09 2213				X									
023A	7. @ 1.0					X									
024A	8. @ 1.5					X									
025A	9. @ 2.0					X									
026A	10. @ 3.0					X									

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/25/09	10:15 Am	M.G. Khodasara	NAVIN	3/26/09	10:15 Am
2								

Were Samples Received in Good Condition? ☑ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment Drop-off Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrange -ments are made.

Log In By: Date: Log In Reviewed By: Date:

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903160

Company Name: UPS San Jose	Location of Sampling: Hwy 101 – Nix Lane
Address:	Purpose:
City: State: Zip Code:	Special Instructions / Comments:
Telephone: FAX:	
REPORT TO: Patrick W. SAMPLER: Eduardo O.	P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Working Days ☐ 3 Working Days ☐ Noon - Nxt Day ☐ 7 Working Days ☐ 2 Working Days ☐ 2 - 8 Hours ☑ 5 Working Days ☐ 1 Working Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☑ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED: Lead

	CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	Lead									TORRENT'S SAMPLE I.D.
027A	1. N-3-7 @ 0.5	03/25/09 2233	S	1	Sleev	X									
028A	2. @ 1.0			1		X									
029A	3. @ 1.5			1		X									
030A	4. @ 2.0			1		X									
031A	5. @ 3.0			1		X									
032A	6. S-1-8 @ 0.5	03/25/09 2217				X									
033A	7. @ 1.0					X									
034A	8. @ 1.5					X									
035A	9. @ 2.0					X									
036A	10. @ 3.0					X									

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/25/09	10:15 Am	D. G. Ghodasara	NAVIN	3/26/09	10:15AM
2								

Were Samples Received in Good Condition? ☑ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment Drop-off Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrange -ments are made.

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date: _____

Torrent Laboratory, Inc. **Date:** *18-Jun-09*

CLIENT: URS Corporation, San Jose
Project: Hwy 101-Aux Lane
Lab Order: 0903160

CASE NARRATIVE

Analytical Comment for METHOD 6010B_S, 0903160-024A MS/MSD, QC Batch ID 19136, Note:The % recovery in the MS for and MSD for leadl are outside of laboratory control limits but within % RPD limits and % Recovery limits for the LCS/LCSD. A post digestion spike on the parent sample was anlayzed and all parameters were recovered within control limits indicating probable non-homogenity of the samples. No corrective action is required.

Analytical Comment for METHOD 7471A, 0903160-011MS/MSD, QC Batch ID 19076, Note:The % recoveries in the MS/MSD for Mercury are outside of laboratory control limits but within % RPD limits and % recovery limits for the LCS/LCSD. No corrective action is required.

Analytical Comment for METHOD 6010B, 0903160-011MS/MSD, QC Batch ID 19132, Note:The % recovery in the MS for Barium is outside of laboratory control limits but within % RPD limits and % recovery limits for the LCS/LCSD. No corrective action is required. Analytical Comments for METHOD 6010B (STLC), SAMPLE 0903160-028AMSD: Pb is out of control limit.

REVISIONS:

Per client request, STLC, DI STLC and TCLP analysis was added to specified samples. Due to limited sample available for all samples, STLC, DI STLC and TCLP was performed using only 25 g of homogenized sample.

Note: Extraction of 25 g sample / 250g 0.2M Sodium Citrate Solution was performed according to DI wet extraction procedure (WET) which was rotated in a rotary shaker for 48 hours.

Extraction started on 05/19/2009 @ 4.00 PM and ended on 05/21/2009 @ 4:00 PM

Note: Extraction of 25 g sample / 250g 0.2M Sodium Citrate Solution was performed according to wet extraction procedure (WET) which was rotated in a rotary shaker for 48 hours.

Extraction started on 05/19/2009 @ 4.00 PM and ended on 05/21/2009 @ 4:00 PM

Note: Extraction of 25 g sample / 500g TCLP Fluid #1 was performed according to Toxicity

Characteristic Leaching Procedure (TCLP) which was rotated in a rotary shaker for 18 hours.

Extraction started on 06/11/2009 @ 5:00 PM and ended on 06/12/2009 @ 11:00 AM

TORRENT LABORATORY, INC.

483 Sinclair Frontage Road • Milpitas, CA • Phone: (408) 263-5258 • Fax: (408) 263-8293

Visit us at www.torrentlab.com email: analysis@torrentlab.com

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: N-2-14@0.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 11:55:00 PM

Lab Sample ID: 0903160-001
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/28/2009	1	1	1.0	18	mg/Kg	5048

Client Sample ID: N-2-14@1.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 11:55:00 PM

Lab Sample ID: 0903160-002
Date Prepared: 6/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/2/2009	0.1	1	0.10	5.7	mg/L	5241
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	1.4	mg/L	5247
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	ND	mg/L	5283
Lead	SW6010B	3/28/2009	1	1	1.0	190	mg/Kg	5048

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: N-2-14@1.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 11:55:00 PM

Lab Sample ID: 0903160-003
Date Prepared: 6/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/2/2009	0.1	1	0.10	0.24	mg/L	5241
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	0.61	mg/L	5247
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	ND	mg/L	5283
Lead	SW6010B	3/28/2009	1	1	1.0	290	mg/Kg	5048

Client Sample ID: N-2-14@2.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 11:55:00 PM

Lab Sample ID: 0903160-004
Date Prepared: 6/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/2/2009	0.1	1	0.10	1.1	mg/L	5241
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	2.7	mg/L	5247
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	ND	mg/L	5283
Lead	SW6010B	4/2/2009	1	1	1.0	110	mg/Kg	5054

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: N-2-14@3.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 11:55:00 PM

Lab Sample ID: 0903160-005
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	9.6	mg/Kg	5054

Client Sample ID: N-3-4@0.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 11:40:00 PM

Lab Sample ID: 0903160-006
Date Prepared: 6/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/2/2009	0.1	1	0.10	3.6	mg/L	5241
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	18	mg/L	5247
Lead	SW6010B	4/2/2009	1	1	1.0	66	mg/Kg	5054

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-4@1.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 11:40:00 PM

Lab Sample ID: 0903160-007
Date Prepared: 6/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/2/2009	0.1	1	0.10	ND	mg/L	5241
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	9.0	mg/L	5247
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	ND	mg/L	5283
Lead	SW6010B	4/2/2009	1	1	1.0	380	mg/Kg	5054

Client Sample ID: N-3-4@1.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 11:40:00 PM

Lab Sample ID: 0903160-008
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	33	mg/Kg	5054

Client Sample ID: N-3-4@2.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 11:40:00 PM

Lab Sample ID: 0903160-009
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	5.6	mg/Kg	5054

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-4@3.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 11:40:00 PM

Lab Sample ID: 0903160-010
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	3.7	mg/Kg	5054

Client Sample ID: N-3-5@0.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:55:00 PM

Lab Sample ID: 0903160-011
Date Prepared: 3/27/2009-3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Arsenic	SW6010B	4/2/2009	1.7	1	1.7	ND	mg/Kg	5054
Barium	SW6010B	4/2/2009	5	1	5.0	190	mg/Kg	5054
Beryllium	SW6010B	4/2/2009	2	1	2.0	ND	mg/Kg	5054
Cadmium	SW6010B	4/2/2009	1	1	1.0	ND	mg/Kg	5054
Chromium	SW6010B	4/2/2009	5	1	5.0	18	mg/Kg	5054
Cobalt	SW6010B	4/2/2009	5	1	5.0	6.6	mg/Kg	5054
Copper	SW6010B	4/2/2009	5	1	5.0	24	mg/Kg	5054
Lead	SW6010B	4/2/2009	1	1	1.0	11	mg/Kg	5054
Molybdenum	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Nickel	SW6010B	4/2/2009	5	1	5.0	35	mg/Kg	5054
Selenium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Silver	SW6010B	4/2/2009	1	1	1.0	1.3	mg/Kg	5054
Thallium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Vanadium	SW6010B	4/2/2009	5	1	5.0	26	mg/Kg	5054
Zinc	SW6010B	4/2/2009	5	1	5.0	50	mg/Kg	5054

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-5@1.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:55:00 PM

Lab Sample ID: 0903160-012
Date Prepared: 6/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/2/2009	0.1	1	0.10	37	mg/L	5241
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	81	mg/L	5247
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	0.33	mg/L	5283
Antimony	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Arsenic	SW6010B	4/2/2009	1.7	1	1.7	2.2	mg/Kg	5054
Barium	SW6010B	4/2/2009	5	1	5.0	250	mg/Kg	5054
Beryllium	SW6010B	4/2/2009	2	1	2.0	ND	mg/Kg	5054
Cadmium	SW6010B	4/2/2009	1	1	1.0	ND	mg/Kg	5054
Chromium	SW6010B	4/2/2009	5	1	5.0	42	mg/Kg	5054
Cobalt	SW6010B	4/2/2009	5	1	5.0	19	mg/Kg	5054
Copper	SW6010B	4/2/2009	5	1	5.0	67	mg/Kg	5054
Lead	SW6010B	4/2/2009	1	1	1.0	260	mg/Kg	5054
Molybdenum	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Nickel	SW6010B	4/2/2009	5	1	5.0	50	mg/Kg	5054
Selenium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Silver	SW6010B	4/2/2009	1	1	1.0	1.0	mg/Kg	5054
Thallium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Vanadium	SW6010B	4/2/2009	5	1	5.0	48	mg/Kg	5054
Zinc	SW6010B	4/2/2009	5	1	5.0	81	mg/Kg	5054

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-5@1.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:55:00 PM

Lab Sample ID: 0903160-013
Date Prepared: 3/27/2009-3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Arsenic	SW6010B	4/2/2009	1.7	1	1.7	ND	mg/Kg	5054
Barium	SW6010B	4/2/2009	5	1	5.0	700	mg/Kg	5054
Beryllium	SW6010B	4/2/2009	2	1	2.0	ND	mg/Kg	5054
Cadmium	SW6010B	4/2/2009	1	1	1.0	ND	mg/Kg	5054
Chromium	SW6010B	4/2/2009	5	1	5.0	31	mg/Kg	5054
Cobalt	SW6010B	4/2/2009	5	1	5.0	20	mg/Kg	5054
Copper	SW6010B	4/2/2009	5	1	5.0	110	mg/Kg	5054
Lead	SW6010B	4/2/2009	1	1	1.0	8.4	mg/Kg	5054
Molybdenum	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Nickel	SW6010B	4/2/2009	5	1	5.0	72	mg/Kg	5054
Selenium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Silver	SW6010B	4/2/2009	1	1	1.0	ND	mg/Kg	5054
Thallium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Vanadium	SW6010B	4/2/2009	5	1	5.0	22	mg/Kg	5054
Zinc	SW6010B	4/2/2009	5	1	5.0	62	mg/Kg	5054

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-5@2.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:55:00 PM

Lab Sample ID: 0903160-014
Date Prepared: 3/27/2009-3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Arsenic	SW6010B	4/2/2009	1.7	1	1.7	ND	mg/Kg	5054
Barium	SW6010B	4/2/2009	5	1	5.0	32	mg/Kg	5054
Beryllium	SW6010B	4/2/2009	2	1	2.0	ND	mg/Kg	5054
Cadmium	SW6010B	4/2/2009	1	1	1.0	ND	mg/Kg	5054
Chromium	SW6010B	4/2/2009	5	1	5.0	28	mg/Kg	5054
Cobalt	SW6010B	4/2/2009	5	1	5.0	18	mg/Kg	5054
Copper	SW6010B	4/2/2009	5	1	5.0	32	mg/Kg	5054
Lead	SW6010B	4/2/2009	1	1	1.0	ND	mg/Kg	5054
Molybdenum	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Nickel	SW6010B	4/2/2009	5	1	5.0	25	mg/Kg	5054
Selenium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Silver	SW6010B	4/2/2009	1	1	1.0	1.8	mg/Kg	5054
Thallium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Vanadium	SW6010B	4/2/2009	5	1	5.0	53	mg/Kg	5054
Zinc	SW6010B	4/2/2009	5	1	5.0	37	mg/Kg	5054

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-5@3.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:55:00 PM

Lab Sample ID: 0903160-015
Date Prepared: 6/2/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Chromium (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	0.16	mg/L	5247
Antimony	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Arsenic	SW6010B	4/2/2009	1.7	1	1.7	ND	mg/Kg	5054
Barium	SW6010B	4/2/2009	5	1	5.0	160	mg/Kg	5054
Beryllium	SW6010B	4/2/2009	2	1	2.0	ND	mg/Kg	5054
Cadmium	SW6010B	4/2/2009	1	1	1.0	ND	mg/Kg	5054
Chromium	SW6010B	4/2/2009	5	1	5.0	52	mg/Kg	5054
Cobalt	SW6010B	4/2/2009	5	1	5.0	11	mg/Kg	5054
Copper	SW6010B	4/2/2009	5	1	5.0	31	mg/Kg	5054
Lead	SW6010B	4/2/2009	1	1	1.0	6.6	mg/Kg	5054
Molybdenum	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Nickel	SW6010B	4/2/2009	5	1	5.0	48	mg/Kg	5054
Selenium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Silver	SW6010B	4/2/2009	1	1	1.0	1.0	mg/Kg	5054
Thallium	SW6010B	4/2/2009	5	1	5.0	ND	mg/Kg	5054
Vanadium	SW6010B	4/2/2009	5	1	5.0	39	mg/Kg	5054
Zinc	SW6010B	4/2/2009	5	1	5.0	41	mg/Kg	5054

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-5-GW
Sample Location: Hwy 101-Aux Lane
Sample Matrix: WATER
Date/Time Sampled 3/25/2009 11:20:00 PM

Lab Sample ID: 0903160-016
Date Prepared: 3/31/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	4/2/2009	0.01	1	0.010	ND	mg/L	5064
Arsenic	SW6010B	4/2/2009	0.01	1	0.010	ND	mg/L	5064
Barium	SW6010B	4/2/2009	0.01	1	0.010	0.88	mg/L	5064
Beryllium	SW6010B	4/2/2009	0.005	1	0.0050	ND	mg/L	5064
Cadmium	SW6010B	4/2/2009	0.005	1	0.0050	0.0060	mg/L	5064
Chromium	SW6010B	4/2/2009	0.005	1	0.0050	0.035	mg/L	5064
Cobalt	SW6010B	4/2/2009	0.005	1	0.0050	0.031	mg/L	5064
Copper	SW6010B	4/2/2009	0.01	1	0.010	0.094	mg/L	5064
Lead	SW6010B	4/2/2009	0.015	1	0.015	0.031	mg/L	5064
Molybdenum	SW6010B	4/2/2009	0.005	1	0.0050	ND	mg/L	5064
Nickel	SW6010B	4/2/2009	0.01	1	0.010	0.077	mg/L	5064
Selenium	SW6010B	4/2/2009	0.01	1	0.010	ND	mg/L	5064
Silver	SW6010B	4/2/2009	0.005	1	0.0050	0.014	mg/L	5064
Thallium	SW6010B	4/2/2009	0.01	1	0.010	ND	mg/L	5064
Vanadium	SW6010B	4/2/2009	0.01	1	0.010	0.066	mg/L	5064
Zinc	SW6010B	4/2/2009	0.005	1	0.0050	0.11	mg/L	5064

Client Sample ID: N-3-6@0.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:40:00 PM

Lab Sample ID: 0903160-017
Date Prepared: 6/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/2/2009	0.1	1	0.10	2.8	mg/L	5241
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	30	mg/L	5247
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	ND	mg/L	5283
Lead	SW6010B	4/2/2009	1	1	1.0	360	mg/Kg	5054

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-6@1.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:40:00 PM

Lab Sample ID: 0903160-018
Date Prepared: 6/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/2/2009	0.1	1	0.10	0.44	mg/L	5241
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	5.3	mg/L	5247
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	ND	mg/L	5284
Lead	SW6010B	4/2/2009	1	1	1.0	230	mg/Kg	5054

Client Sample ID: N-3-6@1.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:40:00 PM

Lab Sample ID: 0903160-019
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	10	mg/Kg	5054

Client Sample ID: N-3-6@2.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:40:00 PM

Lab Sample ID: 0903160-020
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	13	mg/Kg	5054

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-6@3.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:40:00 PM

Lab Sample ID: 0903160-021
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	4.7	mg/Kg	5054

Client Sample ID: S-1-7@0.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:13:00 PM

Lab Sample ID: 0903160-022
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	13	mg/L	5249
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	13	mg/L	5247
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	0.41	mg/L	5284
Lead	SW6010B	4/2/2009	1	1	1.0	160	mg/Kg	5054

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-7@1.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:13:00 PM

Lab Sample ID: 0903160-023
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	44	mg/L	5249
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	72	mg/L	5247
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	5.0	mg/L	5284
Lead	SW6010B	4/2/2009	1	1	1.0	900	mg/Kg	5054

Client Sample ID: S-1-7@1.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:13:00 PM

Lab Sample ID: 0903160-024
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	0.46	mg/L	5249
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	2.5	mg/L	5247
Lead	SW6010B	4/2/2009	1	1	1.0	56	mg/Kg	5055

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-7@2.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:13:00 PM

Lab Sample ID: 0903160-025
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	4.7	mg/Kg	5055

Client Sample ID: S-1-7@3.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:13:00 PM

Lab Sample ID: 0903160-026
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	4.8	mg/Kg	5055

Client Sample ID: N-3-7@0.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:32:00 PM

Lab Sample ID: 0903160-027
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	8.2	mg/Kg	5055

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-7@1.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:32:00 PM

Lab Sample ID: 0903160-028
Date Prepared: 6/3/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/3/2009	0.1	1	0.10	21	mg/L	5249
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	110	mg/L	5248
Lead (TCLP)	6010B (TCLP)	6/15/2009	0.1	1	0.10	0.76	mg/L	5284
Lead	SW6010B	4/2/2009	1	1	1.0	750	mg/Kg	5055

Client Sample ID: N-3-7@1.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:32:00 PM

Lab Sample ID: 0903160-029
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	29	mg/Kg	5055

Client Sample ID: N-3-7@2.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:32:00 PM

Lab Sample ID: 0903160-030
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	7.6	mg/Kg	5055

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: N-3-7@3.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:32:00 PM

Lab Sample ID: 0903160-031
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	7.4	mg/Kg	5055

Client Sample ID: S-1-8@0.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:17:00 PM

Lab Sample ID: 0903160-032
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	9.6	mg/Kg	5055

Client Sample ID: S-1-8@1.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:17:00 PM

Lab Sample ID: 0903160-033
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	11	mg/Kg	5055

Client Sample ID: S-1-8@1.5
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:17:00 PM

Lab Sample ID: 0903160-034
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	1.7	mg/Kg	5055

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/26/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-8@2.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:17:00 PM

Lab Sample ID: 0903160-035
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	ND	mg/Kg	5055

Client Sample ID: S-1-8@3.0
Sample Location: Hwy 101-Aux Lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 10:17:00 PM

Lab Sample ID: 0903160-036
Date Prepared: 3/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	4/2/2009	1	1	1.0	5.9	mg/Kg	5055

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Definitions, legends and Notes

Note	Description
ug/kg	Microgram per kilogram (ppb, part per billion).
ug/L	Microgram per liter (ppb, part per billion).
mg/kg	Milligram per kilogram (ppm, part per million).
mg/L	Milligram per liter (ppm, part per million).
LCS/LCSD	Laboratory control sample/laboratory control sample duplicate.
MDL	Method detection limit.
MRL	Modified reporting limit. When sample is subject to dilution, reporting limit times dilution factor yields MRL.
MS/MSD	Matrix spike/matrix spike duplicate.
N/A	Not applicable.
ND	Not detected at or above detection limit.
NR	Not reported.
QC	Quality Control.
RL	Reporting limit.
% RPD	Percent relative difference.
a	pH was measured immediately upon the receipt of the sample, but it was still done outside the holding time.
sub	Analyzed by subcontracting laboratory, Lab Certificate #

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

CLIENT: URS Corporation, San Jose
Work Order: 0903160
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5247

Sample ID: **MB-5247** SampType: **MBLK** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **6/2/2009** RunNo: **19807**
Client ID: **ZZZZZ** Batch ID: **5247** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **6/3/2009** SeqNo: **286379**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	ND	0.10									
Lead (STLC)	ND	0.10									

Sample ID: **LCS-5247** SampType: **LCS** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **6/2/2009** RunNo: **19807**
Client ID: **ZZZZZ** Batch ID: **5247** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **6/3/2009** SeqNo: **286377**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	9.070	0.10	10	0.01	90.6	75	125				
Lead (STLC)	8.560	0.10	10	0.01	85.5	75	125				

Sample ID: **LCSD-5247** SampType: **LCSD** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **6/2/2009** RunNo: **19807**
Client ID: **ZZZZZ** Batch ID: **5247** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **6/3/2009** SeqNo: **286378**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	8.840	0.10	10	0.01	88.3	75	125	9.07	2.57	30	
Lead (STLC)	8.640	0.10	10	0.01	86.3	75	125	8.56	0.930	30	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903160
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5248

Sample ID: **MB-5248** SampType: **MBLK** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **6/2/2009** RunNo: **19808**
Client ID: **ZZZZZ** Batch ID: **5248** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **6/3/2009** SeqNo: **286404**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (STLC)	ND	0.10									

Sample ID: **LCS-5248** SampType: **LCS** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **6/2/2009** RunNo: **19808**
Client ID: **ZZZZZ** Batch ID: **5248** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **6/3/2009** SeqNo: **286402**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (STLC)	8.710	0.10	10	0.01	87.0	75	125				

Sample ID: **LCSD-5248** SampType: **LCSD** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **6/2/2009** RunNo: **19808**
Client ID: **ZZZZZ** Batch ID: **5248** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **6/3/2009** SeqNo: **286403**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (STLC)	8.690	0.10	10	0.01	86.8	75	125	8.71	0.230	30	

Sample ID: **0903160-028AMS** SampType: **MS** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **6/2/2009** RunNo: **19808**
Client ID: **N-3-7@1.0** Batch ID: **5248** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **6/3/2009** SeqNo: **286383**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (STLC)	123.8	0.10	10	113.9	99.0	75	125				

Sample ID: **0903160-028AMSD** SampType: **MSD** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **6/2/2009** RunNo: **19808**
Client ID: **N-3-7@1.0** Batch ID: **5248** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **6/3/2009** SeqNo: **286384**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (STLC)	117.7	0.10	10	113.9	38.0	75	125	123.8	5.05	30	S

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903160
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5249

Sample ID: **MB-5249** SampType: **MBLK** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **6/3/2009** RunNo: **19809**
Client ID: **ZZZZZ** Batch ID: **5249** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/3/2009** SeqNo: **286429**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	ND	0.10									

Sample ID: **LCS-5249** SampType: **LCS** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **6/3/2009** RunNo: **19809**
Client ID: **ZZZZZ** Batch ID: **5249** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/3/2009** SeqNo: **286427**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	9.750	0.10	10	0	97.5	75	125				

Sample ID: **LCSD-5249** SampType: **LCSD** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **6/3/2009** RunNo: **19809**
Client ID: **ZZZZZ** Batch ID: **5249** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/3/2009** SeqNo: **286428**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	9.560	0.10	10	0	95.6	75	125	9.75	1.97	30	

Sample ID: **0903160-022AMS** SampType: **MS** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **6/3/2009** RunNo: **19809**
Client ID: **S-1-7@0.5** Batch ID: **5249** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/3/2009** SeqNo: **286410**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	21.15	0.10	10	12.78	83.7	75	125				

Sample ID: **0903160-022AMSD** SampType: **MSD** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **6/3/2009** RunNo: **19809**
Client ID: **S-1-7@0.5** Batch ID: **5249** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/3/2009** SeqNo: **286411**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	21.78	0.10	10	12.78	90.0	75	125	21.15	2.94	30	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903160
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5283

Sample ID: **MB-5283** SampType: **MBLK** TestCode: **6010B (TCLP)** Units: **mg/L** Prep Date: **6/14/2009** RunNo: **19875**
Client ID: **ZZZZZ** Batch ID: **5283** TestNo: **6010B (TCLP) (SW3010A)** Analysis Date: **6/14/2009** SeqNo: **287500**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	ND	0.10									

Sample ID: **LCS-5283** SampType: **LCS** TestCode: **6010B (TCLP)** Units: **mg/L** Prep Date: **6/14/2009** RunNo: **19875**
Client ID: **ZZZZZ** Batch ID: **5283** TestNo: **6010B (TCLP) (SW3010A)** Analysis Date: **6/14/2009** SeqNo: **287498**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	11.04	0.10	10	0	110	75	125				

Sample ID: **LCSD-5283** SampType: **LCSD** TestCode: **6010B (TCLP)** Units: **mg/L** Prep Date: **6/14/2009** RunNo: **19875**
Client ID: **ZZZZZ** Batch ID: **5283** TestNo: **6010B (TCLP) (SW3010A)** Analysis Date: **6/14/2009** SeqNo: **287499**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	10.71	0.10	10	0	107	75	125	11.04	3.03	30	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903160
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5284

Sample ID: **MB-5284** SampType: **MBLK** TestCode: **6010B (TCLP)** Units: **mg/L** Prep Date: **6/14/2009** RunNo: **19896**
Client ID: **ZZZZZ** Batch ID: **5284** TestNo: **6010B (TCLP) (SW3010A)** Analysis Date: **6/15/2009** SeqNo: **287788**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	ND	0.10									

Sample ID: **LCS-5284** SampType: **LCS** TestCode: **6010B (TCLP)** Units: **mg/L** Prep Date: **6/14/2009** RunNo: **19896**
Client ID: **ZZZZZ** Batch ID: **5284** TestNo: **6010B (TCLP) (SW3010A)** Analysis Date: **6/15/2009** SeqNo: **287786**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	10.36	0.10	10	0	104	75	125				

Sample ID: **LCSD-5284** SampType: **LCSD** TestCode: **6010B (TCLP)** Units: **mg/L** Prep Date: **6/14/2009** RunNo: **19896**
Client ID: **ZZZZZ** Batch ID: **5284** TestNo: **6010B (TCLP) (SW3010A)** Analysis Date: **6/15/2009** SeqNo: **287787**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	10.70	0.10	10	0	107	75	125	10.36	3.23	30	

Sample ID: **0903160-018AMS** SampType: **MS** TestCode: **6010B (TCLP)** Units: **mg/L** Prep Date: **6/14/2009** RunNo: **19896**
Client ID: **N-3-6@1.0** Batch ID: **5284** TestNo: **6010B (TCLP) (SW3010A)** Analysis Date: **6/15/2009** SeqNo: **287766**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	9.440	0.10	10	0	94.4	75	125				

Sample ID: **0903160-018AMSD** SampType: **MSD** TestCode: **6010B (TCLP)** Units: **mg/L** Prep Date: **6/14/2009** RunNo: **19896**
Client ID: **N-3-6@1.0** Batch ID: **5284** TestNo: **6010B (TCLP) (SW3010A)** Analysis Date: **6/15/2009** SeqNo: **287767**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	11.48	0.10	10	0	115	75	125	9.44	19.5	30	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

Torrent
LABORATORY, INC.

April 01, 2009

Patrick Walz
URS Corporation, San Jose
55 South Market St., Suite 1500
San Jose, CA 95113

TEL: (408) 297-9585
FAX (408) 297-6962

RE: HWY 101-Aux lane

Order No.: 0903154

Dear Patrick Walz:

Torrent Laboratory, Inc. received 111 samples on 3/25/2009 for the analyses presented in the following report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.
Reported data is applicable for only the samples received as part of the order number referenced above.

Torrent Laboratory, Inc, is certified by the State of California, ELAP #1991. If you have any questions regarding these tests results, please feel free to contact the Project Management Team at (408)263-5258;ext: 204.

Sincerely,

Laboratory Director

4/1/09
Date

Patti Sandroek
QA Officer

Torrent Laboratory, Inc.

Date: *01-Apr-09*

CLIENT: URS Corporation, San Jose
Project: HWY 101-Aux lane
Lab Order: 0903154

CASE NARRATIVE

Analytical Comments for Asbestos, PLM Note: Analysis performed by NVLAP Certified sub-contract laboratory. (Certification # 101048-3).

Analytical Comment for METHOD 6010B_S, 0903154-001A MS/MSD, QC Batch ID 19070, Note:The % recoveries in the MS/MSD for Lead and Zinc are not recoverable. The sample concentration is greater than 4X the spike concentration. No corrective action is required.

Analytical Comment for METHOD 6010B_S, 0903154-001A MS/MSD, QC Batch ID 19067, Note:The % recovery in the MS for Barium and Copper and in the MSD for Copper and Nickel are outside of laboratory control limits but within % RPD limits and % Recovery limits for the LCS/LCSD. A post digestion spike on the parent sample was anlayzed and all parameters were recovered within control limits indicating probable non-homogenity of the samples. No corrective action is required.

Analytical Comment for METHOD 6010B_S, 0903154-097A MS/MSD, QC Batch ID 19065, Note:The % recoveries in the MS/MSD for Lead are not recoverable. The sample concentration is greater than 4X the spike concentration. No corrective action is required.

Analytical Comment for METHOD 7470A, 0903154-086 MS/MSD, QC Batch ID 19062, Note:The % recoveries in the MS/MSD for Mercury are outside of laboratory control limits but within % RPD limits and % recovery limits for the LCS/LCSD. No corrective action is required.

TORRENT LABORATORY, INC.

483 Sinclair Frontage Road • Milpitas, CA • Phone: (408) 263-5258 • Fax: (408) 263-8293

Visit us at www.torrentlab.com email: analysis@torrentlab.com

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 4/1/2009

Client Sample ID: S-2-4@0.5
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:55:00 PM

Lab Sample ID: 0903154-001
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/29/2009	1	1	1.0	1000	mg/Kg	5046

Client Sample ID: S-2-4@1.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:55:00 PM

Lab Sample ID: 0903154-002
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/29/2009	1	1	1.0	6.2	mg/Kg	5046

Client Sample ID: S-2-4@1.5
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:55:00 PM

Lab Sample ID: 0903154-003
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/29/2009	1	1	1.0	2.6	mg/Kg	5046

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 4/1/2009

Client Sample ID: S-2-4@2.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:55:00 PM

Lab Sample ID: 0903154-004
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/29/2009	1	1	1.0	41	mg/Kg	5046

Client Sample ID: S-2-4@3.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:55:00 PM

Lab Sample ID: 0903154-005
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/29/2009	1	1	1.0	4.1	mg/Kg	5046

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 4/1/2009

Client Sample ID: S-2-7@0.5
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:30:00 PM

Lab Sample ID: 0903154-006
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Arsenic	SW6010B	3/29/2009	1.7	1	1.7	2.0	mg/Kg	5046
Barium	SW6010B	3/29/2009	5	1	5.0	100	mg/Kg	5046
Beryllium	SW6010B	3/29/2009	2	1	2.0	ND	mg/Kg	5046
Cadmium	SW6010B	3/29/2009	1	1	1.0	ND	mg/Kg	5046
Chromium	SW6010B	3/29/2009	5	1	5.0	31	mg/Kg	5046
Cobalt	SW6010B	3/29/2009	5	1	5.0	8.6	mg/Kg	5046
Copper	SW6010B	3/29/2009	5	1	5.0	55	mg/Kg	5046
Lead	SW6010B	3/29/2009	1	1	1.0	300	mg/Kg	5046
Molybdenum	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Nickel	SW6010B	3/29/2009	5	1	5.0	33	mg/Kg	5046
Selenium	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Silver	SW6010B	3/29/2009	1	1	1.0	1.4	mg/Kg	5046
Thallium	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Vanadium	SW6010B	3/29/2009	5	1	5.0	27	mg/Kg	5046
Zinc	SW6010B	3/29/2009	5	1	5.0	170	mg/Kg	5046
Mercury	SW7471A	3/26/2009	0.1	1	0.10	ND	mg/Kg	5044
TPH (Diesel)	SW8015B	3/26/2009	2	25	50.0	ND	mg/Kg	R19060
TPH (Motor Oil)	SW8015B	3/26/2009	4	25	100	2390	mg/Kg	R19060
Surr: Pentacosane	SW8015B	3/26/2009	0	25	59.7-129	101	%REC	R19060

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

4,4´-DDD	SW8081A	3/30/2009	0.47	40	18.8	ND	µg/Kg	R19073
4,4´-DDE	SW8081A	3/30/2009	0.476	40	19.0	ND	µg/Kg	R19073
4,4´-DDT	SW8081A	3/30/2009	0.809	40	32.4	ND	µg/Kg	R19073
Aldrin	SW8081A	3/30/2009	0.44	40	17.6	ND	µg/Kg	R19073
alpha-BHC	SW8081A	3/30/2009	0.439	40	17.6	ND	µg/Kg	R19073
alpha-Chlordane	SW8081A	3/30/2009	0.358	40	14.3	ND	µg/Kg	R19073
beta-BHC	SW8081A	3/30/2009	0.364	40	14.6	ND	µg/Kg	R19073
Chlordane	SW8081A	3/30/2009	10	40	400	ND	µg/Kg	R19073
delta-BHC	SW8081A	3/30/2009	0.49	40	19.6	ND	µg/Kg	R19073
Dieldrin	SW8081A	3/30/2009	0.427	40	17.1	ND	µg/Kg	R19073
Endosulfan I	SW8081A	3/30/2009	0.59	40	23.6	ND	µg/Kg	R19073
Endosulfan II	SW8081A	3/30/2009	1.526	40	61.0	ND	µg/Kg	R19073
Endosulfan sulfate	SW8081A	3/30/2009	0.489	40	19.6	ND	µg/Kg	R19073
Endrin	SW8081A	3/30/2009	0.569	40	22.8	ND	µg/Kg	R19073
Endrin aldehyde	SW8081A	3/30/2009	1.028	40	41.1	ND	µg/Kg	R19073
Endrin ketone	SW8081A	3/30/2009	0.401	40	16.0	ND	µg/Kg	R19073
gamma-BHC	SW8081A	3/30/2009	0.396	40	15.8	ND	µg/Kg	R19073
gamma-Chlordane	SW8081A	3/30/2009	0.42	40	16.8	ND	µg/Kg	R19073
Heptachlor	SW8081A	3/30/2009	1.1	40	44.0	ND	µg/Kg	R19073
Heptachlor epoxide	SW8081A	3/30/2009	0.316	40	12.6	ND	µg/Kg	R19073
Methoxychlor	SW8081A	3/30/2009	0.616	40	24.6	ND	µg/Kg	R19073
Toxaphene	SW8081A	3/30/2009	10	40	400	ND	µg/Kg	R19073
Surr: Decachlorobiphenyl	SW8081A	3/30/2009		40	54.6-127	112	%REC	R19073
Surr: Tetrachloro-m-xylene	SW8081A	3/30/2009		40	54-122	136	%REC	R19073

Note: Reporting limits increased due to the nature of the sample matrix (dark color extract). Compounds reported to the MDL. Surrogate recovery of TCMX is bias high possibly due to dilution made on sample; recovery of second surrogate supports data quality.

Aroclor 1016	SW8082	3/31/2009	0.1	5	0.500	ND	mg/Kg	R19084
Aroclor 1221	SW8082	3/31/2009	0.2	5	1.00	ND	mg/Kg	R19084
Aroclor 1232	SW8082	3/31/2009	0.1	5	0.500	ND	mg/Kg	R19084
Aroclor 1242	SW8082	3/31/2009	0.1	5	0.500	ND	mg/Kg	R19084
Aroclor 1248	SW8082	3/31/2009	0.1	5	0.500	ND	mg/Kg	R19084
Aroclor 1254	SW8082	3/31/2009	0.1	5	0.500	ND	mg/Kg	R19084
Aroclor 1260	SW8082	3/31/2009	0.1	5	0.500	ND	mg/Kg	R19084
Surr: Decachlorobiphenyl	SW8082	3/31/2009	0	5	63.7-126	104	%REC	R19084
Surr: Tetrachloro-m-xylene	SW8082	3/31/2009	0	5	51.7-128	112	%REC	R19084

Note: Reporting limits increased due to the nature of the sample matrix (dark color extract).

pH	SW9045C	3/25/2009	0.05	1	0.0500	8.37	pH Units	R19059

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 4/1/2009

Client Sample ID: S-2-7@1.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:30:00 PM

Lab Sample ID: 0903154-007
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Arsenic	SW6010B	3/29/2009	1.7	1	1.7	ND	mg/Kg	5046
Barium	SW6010B	3/29/2009	5	1	5.0	24	mg/Kg	5046
Beryllium	SW6010B	3/29/2009	2	1	2.0	ND	mg/Kg	5046
Cadmium	SW6010B	3/29/2009	1	1	1.0	ND	mg/Kg	5046
Chromium	SW6010B	3/29/2009	5	1	5.0	63	mg/Kg	5046
Cobalt	SW6010B	3/29/2009	5	1	5.0	27	mg/Kg	5046
Copper	SW6010B	3/29/2009	5	1	5.0	56	mg/Kg	5046
Lead	SW6010B	3/29/2009	1	1	1.0	3.7	mg/Kg	5046
Molybdenum	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Nickel	SW6010B	3/29/2009	5	1	5.0	48	mg/Kg	5046
Selenium	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Silver	SW6010B	3/29/2009	1	1	1.0	3.2	mg/Kg	5046
Thallium	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Vanadium	SW6010B	3/29/2009	5	1	5.0	74	mg/Kg	5046
Zinc	SW6010B	3/29/2009	5	1	5.0	49	mg/Kg	5046
Mercury	SW7471A	3/26/2009	0.1	1	0.10	ND	mg/Kg	5044
Benzene	SW8260B	3/26/2009	10	1	10	ND	µg/Kg	U19069
Diisopropyl ether (DIPE)	SW8260B	3/26/2009	10	1	10	ND	µg/Kg	U19069
Ethyl tert-butyl ether (ETBE)	SW8260B	3/26/2009	10	1	10	ND	µg/Kg	U19069
Ethylbenzene	SW8260B	3/26/2009	10	1	10	ND	µg/Kg	U19069
Methyl tert-butyl ether (MTBE)	SW8260B	3/26/2009	10	1	10	ND	µg/Kg	U19069
t-Butyl alcohol (t-Butanol)	SW8260B	3/26/2009	50	1	50	ND	µg/Kg	U19069
tert-Amyl methyl ether (TAME)	SW8260B	3/26/2009	10	1	10	ND	µg/Kg	U19069
Toluene	SW8260B	3/26/2009	10	1	10	ND	µg/Kg	U19069
Xylenes, Total	SW8260B	3/26/2009	15	1	15	ND	µg/Kg	U19069
Surr: 4-Bromofluorobenzene	SW8260B	3/26/2009	0	1	55.8-141	92.9	%REC	U19069
Surr: Dibromofluoromethane	SW8260B	3/26/2009	0	1	59.8-148	90.7	%REC	U19069
Surr: Toluene-d8	SW8260B	3/26/2009	0	1	55.2-133	86.8	%REC	U19069
TPH (Gasoline)	SW8260B(TPH)	3/26/2009	100	1	100	ND	µg/Kg	T19069
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	3/26/2009	0	1	56.9-133	70.0	%REC	T19069
pH	SW9045C	3/25/2009	0.05	1	0.0500	8.52	pH Units	R19059

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 4/1/2009

Client Sample ID: S-2-7@1.5
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:30:00 PM

Lab Sample ID: 0903154-008
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Arsenic	SW6010B	3/29/2009	1.7	1	1.7	ND	mg/Kg	5046
Barium	SW6010B	3/29/2009	5	1	5.0	20	mg/Kg	5046
Beryllium	SW6010B	3/29/2009	2	1	2.0	ND	mg/Kg	5046
Cadmium	SW6010B	3/29/2009	1	1	1.0	ND	mg/Kg	5046
Chromium	SW6010B	3/29/2009	5	1	5.0	41	mg/Kg	5046
Cobalt	SW6010B	3/29/2009	5	1	5.0	26	mg/Kg	5046
Copper	SW6010B	3/29/2009	5	1	5.0	43	mg/Kg	5046
Lead	SW6010B	3/29/2009	1	1	1.0	1.2	mg/Kg	5046
Molybdenum	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Nickel	SW6010B	3/29/2009	5	1	5.0	38	mg/Kg	5046
Selenium	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Silver	SW6010B	3/29/2009	1	1	1.0	1.6	mg/Kg	5046
Thallium	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Vanadium	SW6010B	3/29/2009	5	1	5.0	76	mg/Kg	5046
Zinc	SW6010B	3/29/2009	5	1	5.0	59	mg/Kg	5046
Mercury	SW7471A	3/26/2009	0.1	1	0.10	ND	mg/Kg	5044
Benzene	SW8260B	3/26/2009	10	1	10	ND	µg/Kg	U19069
Diisopropyl ether (DIPE)	SW8260B	3/26/2009	10	1	10	ND	µg/Kg	U19069
Ethyl tert-butyl ether (ETBE)	SW8260B	3/26/2009	10	1	10	ND	µg/Kg	U19069
Ethylbenzene	SW8260B	3/26/2009	10	1	10	ND	µg/Kg	U19069
Methyl tert-butyl ether (MTBE)	SW8260B	3/26/2009	10	1	10	ND	µg/Kg	U19069
t-Butyl alcohol (t-Butanol)	SW8260B	3/26/2009	50	1	50	ND	µg/Kg	U19069
tert-Amyl methyl ether (TAME)	SW8260B	3/26/2009	10	1	10	ND	µg/Kg	U19069
Toluene	SW8260B	3/26/2009	10	1	10	ND	µg/Kg	U19069
Xylenes, Total	SW8260B	3/26/2009	15	1	15	ND	µg/Kg	U19069
Surr: 4-Bromofluorobenzene	SW8260B	3/26/2009	0	1	55.8-141	92.1	%REC	U19069
Surr: Dibromofluoromethane	SW8260B	3/26/2009	0	1	59.8-148	86.6	%REC	U19069
Surr: Toluene-d8	SW8260B	3/26/2009	0	1	55.2-133	85.3	%REC	U19069
TPH (Gasoline)	SW8260B(TPH)	3/26/2009	100	1	100	ND	µg/Kg	T19069
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	3/26/2009	0	1	56.9-133	78.0	%REC	T19069
pH	SW9045C	3/25/2009	0.05	1	0.0500	8.55	pH Units	R19059

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 4/1/2009

Client Sample ID: S-2-7@2.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:30:00 PM

Lab Sample ID: 0903154-009
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Arsenic	SW6010B	3/29/2009	1.7	1	1.7	2.0	mg/Kg	5046
Barium	SW6010B	3/29/2009	5	1	5.0	110	mg/Kg	5046
Beryllium	SW6010B	3/29/2009	2	1	2.0	ND	mg/Kg	5046
Cadmium	SW6010B	3/29/2009	1	1	1.0	ND	mg/Kg	5046
Chromium	SW6010B	3/29/2009	5	1	5.0	61	mg/Kg	5046
Cobalt	SW6010B	3/29/2009	5	1	5.0	16	mg/Kg	5046
Copper	SW6010B	3/29/2009	5	1	5.0	34	mg/Kg	5046
Lead	SW6010B	3/29/2009	1	1	1.0	5.0	mg/Kg	5046
Molybdenum	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Nickel	SW6010B	3/29/2009	5	1	5.0	50	mg/Kg	5046
Selenium	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Silver	SW6010B	3/29/2009	1	1	1.0	3.4	mg/Kg	5046
Thallium	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Vanadium	SW6010B	3/29/2009	5	1	5.0	71	mg/Kg	5046
Zinc	SW6010B	3/29/2009	5	1	5.0	41	mg/Kg	5046
Mercury	SW7471A	3/26/2009	0.1	1	0.10	ND	mg/Kg	5044
Benzene	SW8260B	3/26/2009	10	1	10	ND	µg/Kg	U19069
Diisopropyl ether (DIPE)	SW8260B	3/26/2009	10	1	10	ND	µg/Kg	U19069
Ethyl tert-butyl ether (ETBE)	SW8260B	3/26/2009	10	1	10	ND	µg/Kg	U19069
Ethylbenzene	SW8260B	3/26/2009	10	1	10	ND	µg/Kg	U19069
Methyl tert-butyl ether (MTBE)	SW8260B	3/26/2009	10	1	10	ND	µg/Kg	U19069
t-Butyl alcohol (t-Butanol)	SW8260B	3/26/2009	50	1	50	ND	µg/Kg	U19069
tert-Amyl methyl ether (TAME)	SW8260B	3/26/2009	10	1	10	ND	µg/Kg	U19069
Toluene	SW8260B	3/26/2009	10	1	10	ND	µg/Kg	U19069
Xylenes, Total	SW8260B	3/26/2009	15	1	15	ND	µg/Kg	U19069
Surr: 4-Bromofluorobenzene	SW8260B	3/26/2009	0	1	55.8-141	90.1	%REC	U19069
Surr: Dibromofluoromethane	SW8260B	3/26/2009	0	1	59.8-148	121	%REC	U19069
Surr: Toluene-d8	SW8260B	3/26/2009	0	1	55.2-133	86.8	%REC	U19069
TPH (Gasoline)	SW8260B(TPH)	3/26/2009	100	1	100	ND	µg/Kg	T19069
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	3/26/2009	0	1	56.9-133	76.0	%REC	T19069
pH	SW9045C	3/25/2009	0.05	1	0.0500	8.18	pH Units	R19059

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 4/1/2009

Client Sample ID: S-2-7@3.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:30:00 PM

Lab Sample ID: 0903154-010
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Arsenic	SW6010B	3/29/2009	1.7	1	1.7	ND	mg/Kg	5046
Barium	SW6010B	3/29/2009	5	1	5.0	91	mg/Kg	5046
Beryllium	SW6010B	3/29/2009	2	1	2.0	ND	mg/Kg	5046
Cadmium	SW6010B	3/29/2009	1	1	1.0	ND	mg/Kg	5046
Chromium	SW6010B	3/29/2009	5	1	5.0	42	mg/Kg	5046
Cobalt	SW6010B	3/29/2009	5	1	5.0	12	mg/Kg	5046
Copper	SW6010B	3/29/2009	5	1	5.0	25	mg/Kg	5046
Lead	SW6010B	3/29/2009	1	1	1.0	4.9	mg/Kg	5046
Molybdenum	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Nickel	SW6010B	3/29/2009	5	1	5.0	36	mg/Kg	5046
Selenium	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Silver	SW6010B	3/29/2009	1	1	1.0	2.8	mg/Kg	5046
Thallium	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Vanadium	SW6010B	3/29/2009	5	1	5.0	49	mg/Kg	5046
Zinc	SW6010B	3/29/2009	5	1	5.0	34	mg/Kg	5046
Mercury	SW7471A	3/26/2009	0.1	1	0.10	ND	mg/Kg	5044
Benzene	SW8260B	3/26/2009	10	1	10	ND	µg/Kg	U19069
Diisopropyl ether (DIPE)	SW8260B	3/26/2009	10	1	10	ND	µg/Kg	U19069
Ethyl tert-butyl ether (ETBE)	SW8260B	3/26/2009	10	1	10	ND	µg/Kg	U19069
Ethylbenzene	SW8260B	3/26/2009	10	1	10	ND	µg/Kg	U19069
Methyl tert-butyl ether (MTBE)	SW8260B	3/26/2009	10	1	10	ND	µg/Kg	U19069
t-Butyl alcohol (t-Butanol)	SW8260B	3/26/2009	50	1	50	ND	µg/Kg	U19069
tert-Amyl methyl ether (TAME)	SW8260B	3/26/2009	10	1	10	ND	µg/Kg	U19069
Toluene	SW8260B	3/26/2009	10	1	10	ND	µg/Kg	U19069
Xylenes, Total	SW8260B	3/26/2009	15	1	15	ND	µg/Kg	U19069
Surr: 4-Bromofluorobenzene	SW8260B	3/26/2009	0	1	55.8-141	88.0	%REC	U19069
Surr: Dibromofluoromethane	SW8260B	3/26/2009	0	1	59.8-148	92.7	%REC	U19069
Surr: Toluene-d8	SW8260B	3/26/2009	0	1	55.2-133	85.8	%REC	U19069
TPH (Gasoline)	SW8260B(TPH)	3/26/2009	100	1	100	ND	µg/Kg	T19069
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	3/26/2009	0	1	56.9-133	70.0	%REC	T19069
pH	SW9045C	3/25/2009	0.05	1	0.0500	8.41	pH Units	R19059

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 4/1/2009

Client Sample ID: S-2-9@0.5
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:40:00 PM

Lab Sample ID: 0903154-011
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/29/2009	1	1	1.0	560	mg/Kg	5046

Client Sample ID: S-2-9@1.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:40:00 PM

Lab Sample ID: 0903154-012
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/29/2009	1	1	1.0	59	mg/Kg	5046

Client Sample ID: S-2-9@1.5
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:40:00 PM

Lab Sample ID: 0903154-013
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/29/2009	1	1	1.0	8.0	mg/Kg	5046

Client Sample ID: S-2-9@2.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:40:00 PM

Lab Sample ID: 0903154-014
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/29/2009	1	1	1.0	10	mg/Kg	5046

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 4/1/2009

Client Sample ID: S-2-9@3.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:40:00 PM

Lab Sample ID: 0903154-015
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/29/2009	1	1	1.0	4.4	mg/Kg	5046

Client Sample ID: S-2-8@0.5
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:35:00 PM

Lab Sample ID: 0903154-016
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/29/2009	1	1	1.0	900	mg/Kg	5046

Client Sample ID: S-2-8@1.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:35:00 PM

Lab Sample ID: 0903154-017
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/29/2009	1	1	1.0	210	mg/Kg	5046

Client Sample ID: S-2-8@1.5
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:35:00 PM

Lab Sample ID: 0903154-018
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/29/2009	1	1	1.0	9.6	mg/Kg	5046

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 4/1/2009

Client Sample ID: S-2-8@2.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:35:00 PM

Lab Sample ID: 0903154-019
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/29/2009	1	1	1.0	9.9	mg/Kg	5046

Client Sample ID: S-2-8@3.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:35:00 PM

Lab Sample ID: 0903154-020
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	6.0	mg/Kg	5047

Client Sample ID: S-3-1@0.5
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:51:00 PM

Lab Sample ID: 0903154-021
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	920	mg/Kg	5047

Client Sample ID: S-3-1@1.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:51:00 PM

Lab Sample ID: 0903154-022
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	2.0	mg/Kg	5047

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 4/1/2009

Client Sample ID: S-3-1@1.5
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:51:00 PM

Lab Sample ID: 0903154-023
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	1.7	mg/Kg	5047

Client Sample ID: S-3-1@2.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:51:00 PM

Lab Sample ID: 0903154-024
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	38	mg/Kg	5047

Client Sample ID: S-3-1@3.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:51:00 PM

Lab Sample ID: 0903154-025
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	3.3	mg/Kg	5047

Client Sample ID: S-2-10@0.5
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:45:00 PM

Lab Sample ID: 0903154-026
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	210	mg/Kg	5047

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 4/1/2009

Client Sample ID: S-2-10@1.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:45:00 PM

Lab Sample ID: 0903154-027
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	9.8	mg/Kg	5047

Client Sample ID: S-2-10@1.5
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:45:00 PM

Lab Sample ID: 0903154-028
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	4.7	mg/Kg	5047

Client Sample ID: S-2-10@2.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:51:00 PM

Lab Sample ID: 0903154-029
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	2.4	mg/Kg	5047

Client Sample ID: S-2-10@3.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:45:00 PM

Lab Sample ID: 0903154-030
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	1.5	mg/Kg	5047

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 4/1/2009

Client Sample ID: S-3-3@0.5
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:58:00 PM

Lab Sample ID: 0903154-031
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/29/2009	1	10	10	9700	mg/Kg	5047

Client Sample ID: S-3-3@1.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:58:00 PM

Lab Sample ID: 0903154-032
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	100	mg/Kg	5047

Client Sample ID: S-3-3@1.5
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:58:00 PM

Lab Sample ID: 0903154-033
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	2.2	mg/Kg	5047

Client Sample ID: S-3-3@2.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:58:00 PM

Lab Sample ID: 0903154-034
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	2.1	mg/Kg	5047

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 4/1/2009

Client Sample ID: S-3-3@3.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:58:00 PM

Lab Sample ID: 0903154-035
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	6.0	mg/Kg	5047

Client Sample ID: S-3-4@0.5
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 12:07:00 AM

Lab Sample ID: 0903154-036
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	150	mg/Kg	5047

Client Sample ID: S-3-4@1.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 12:07:00 AM

Lab Sample ID: 0903154-037
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	5.4	mg/Kg	5047

Client Sample ID: S-3-4@1.5
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 12:07:00 AM

Lab Sample ID: 0903154-038
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	4.2	mg/Kg	5047

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 4/1/2009

Client Sample ID: S-3-4@2.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 12:07:00 AM

Lab Sample ID: 0903154-039
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	1.9	mg/Kg	5049

Client Sample ID: S-3-4@3.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 12:07:00 AM

Lab Sample ID: 0903154-040
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	2.5	mg/Kg	5049

Client Sample ID: S-3-5 @ 0.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:15:00 AM

Lab Sample ID: 0903154-041
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	410	mg/Kg	5049

Client Sample ID: S-3-5 @ 1.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:15:00 AM

Lab Sample ID: 0903154-042
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	56	mg/Kg	5049

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 4/1/2009

Client Sample ID: S-3-5 @ 1.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:15:00 AM

Lab Sample ID: 0903154-043
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	10	mg/Kg	5049

Client Sample ID: S-3-5 @ 2.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:15:00 AM

Lab Sample ID: 0903154-044
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	9.2	mg/Kg	5049

Client Sample ID: S-3-5 @ 3.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:15:00 AM

Lab Sample ID: 0903154-045
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	2.9	mg/Kg	5049

Client Sample ID: S-3-6 @ 0.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:22:00 AM

Lab Sample ID: 0903154-046
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	98	mg/Kg	5049

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 4/1/2009

Client Sample ID: S-3-6 @ 1.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:22:00 AM

Lab Sample ID: 0903154-047
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	210	mg/Kg	5049

Client Sample ID: S-3-6 @ 1.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:22:00 AM

Lab Sample ID: 0903154-048
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	35	mg/Kg	5049

Client Sample ID: S-3-6 @ 2.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:22:00 AM

Lab Sample ID: 0903154-049
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	140	mg/Kg	5049

Client Sample ID: S-3-6 @ 3.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:22:00 AM

Lab Sample ID: 0903154-050
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	5.1	mg/Kg	5049

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 4/1/2009

Client Sample ID: S-3-7 @ 0.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:28:00 AM

Lab Sample ID: 0903154-051
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	150	mg/Kg	5049

Client Sample ID: S-3-7 @ 1.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:28:00 AM

Lab Sample ID: 0903154-052
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	47	mg/Kg	5049

Client Sample ID: S-3-7 @ 1.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:28:00 AM

Lab Sample ID: 0903154-053
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	7.3	mg/Kg	5049

Client Sample ID: S-3-7 @ 2.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:28:00 AM

Lab Sample ID: 0903154-054
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	4.0	mg/Kg	5049

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 4/1/2009

Client Sample ID: S-3-7 @ 3.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:28:00 AM

Lab Sample ID: 0903154-055
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	6.1	mg/Kg	5049

Client Sample ID: S-3-10 @ 0.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:55:00 AM

Lab Sample ID: 0903154-056
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	2200	mg/Kg	5049

Client Sample ID: S-3-10 @ 1.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:55:00 AM

Lab Sample ID: 0903154-057
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	11	mg/Kg	5049

Client Sample ID: S-3-10 @ 1.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:55:00 AM

Lab Sample ID: 0903154-058
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	9.4	mg/Kg	5050

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 4/1/2009

Client Sample ID: S-3-10 @ 2.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:55:00 AM

Lab Sample ID: 0903154-059
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	4.1	mg/Kg	5050

Client Sample ID: S-3-10 @ 3.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:55:00 AM

Lab Sample ID: 0903154-060
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	12	mg/Kg	5050

Client Sample ID: S-2-6 @ 0.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:20:00 PM

Lab Sample ID: 0903154-061
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	490	mg/Kg	5050

Client Sample ID: S-2-6 @ 1.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:20:00 PM

Lab Sample ID: 0903154-062
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	110	mg/Kg	5050

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 4/1/2009

Client Sample ID: S-2-6 @ 1.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:20:00 PM

Lab Sample ID: 0903154-063
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	2.8	mg/Kg	5050

Client Sample ID: S-2-6 @ 2.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:20:00 PM

Lab Sample ID: 0903154-064
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	3.4	mg/Kg	5050

Client Sample ID: S-2-6 @ 3.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:20:00 PM

Lab Sample ID: 0903154-065
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	2.9	mg/Kg	5050

Client Sample ID: S-3-9 @ 0.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:45:00 AM

Lab Sample ID: 0903154-066
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	17	mg/Kg	5050

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 4/1/2009

Client Sample ID: S-3-9 @ 1.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:45:00 AM

Lab Sample ID: 0903154-067
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	5.4	mg/Kg	5050

Client Sample ID: S-3-9 @ 1.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:45:00 AM

Lab Sample ID: 0903154-068
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	4.8	mg/Kg	5050

Client Sample ID: S-3-9 @ 2.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:45:00 AM

Lab Sample ID: 0903154-069
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	4.1	mg/Kg	5050

Client Sample ID: S-3-9 @ 3.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:45:00 AM

Lab Sample ID: 0903154-070
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	4.0	mg/Kg	5050

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 4/1/2009

Client Sample ID: S-2-5 @ 0.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:10:00 PM

Lab Sample ID: 0903154-071
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	68	mg/Kg	5050

Client Sample ID: S-2-5 @ 1.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:10:00 PM

Lab Sample ID: 0903154-072
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	9.2	mg/Kg	5050

Client Sample ID: S-2-5 @ 1.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:10:00 PM

Lab Sample ID: 0903154-073
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	5.0	mg/Kg	5050

Client Sample ID: S-2-5 @ 2.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:10:00 PM

Lab Sample ID: 0903154-074
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	10	mg/Kg	5050

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 4/1/2009

Client Sample ID: S-2-5 @ 3.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:10:00 PM

Lab Sample ID: 0903154-075
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	9.8	mg/Kg	5050

Client Sample ID: S-3-8 @ 0.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:35:00 AM

Lab Sample ID: 0903154-076
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	32	mg/Kg	5050

Client Sample ID: S-3-8 @ 1.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:35:00 AM

Lab Sample ID: 0903154-077
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	17	mg/Kg	5051

Client Sample ID: S-3-8 @ 1.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:35:00 AM

Lab Sample ID: 0903154-078
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	7.8	mg/Kg	5051

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 4/1/2009

Client Sample ID: S-3-8 @ 2.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:35:00 AM

Lab Sample ID: 0903154-079
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	5.5	mg/Kg	5051

Client Sample ID: S-3-8 @ 3.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:35:00 AM

Lab Sample ID: 0903154-080
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	4.8	mg/Kg	5051

Client Sample ID: S-1-18 @ 0.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 9:37:00 PM

Lab Sample ID: 0903154-081
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	750	mg/Kg	5051

Client Sample ID: S-1-18 @ 1.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 9:37:00 PM

Lab Sample ID: 0903154-082
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	740	mg/Kg	5051

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 4/1/2009

Client Sample ID: S-1-18 @ 1.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 9:37:00 PM

Lab Sample ID: 0903154-083
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	4.8	mg/Kg	5051

Client Sample ID: S-1-18 @ 2.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 9:37:00 PM

Lab Sample ID: 0903154-084
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	5.4	mg/Kg	5051

Client Sample ID: S-1-18 @ 3.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 9:37:00 PM

Lab Sample ID: 0903154-085
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	5.3	mg/Kg	5051

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 4/1/2009

Client Sample ID: S-1-18-GW
Sample Location: Hwy 101-Aux lane
Sample Matrix: GROUNDWATER
Date/Time Sampled 3/24/2009 10:00:00 PM

Lab Sample ID: 0903154-086
Date Prepared:

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
pH	E150.1	3/25/2009	0.05	1	0.0500	7.90	pH units	R19058
Antimony	SW6010B	3/26/2009	0.01	1	0.010	0.021	mg/L	5040
Arsenic	SW6010B	3/26/2009	0.01	1	0.010	ND	mg/L	5040
Barium	SW6010B	3/26/2009	0.01	1	0.010	0.046	mg/L	5040
Beryllium	SW6010B	3/26/2009	0.005	1	0.0050	ND	mg/L	5040
Cadmium	SW6010B	3/26/2009	0.005	1	0.0050	ND	mg/L	5040
Chromium	SW6010B	3/26/2009	0.005	1	0.0050	0.014	mg/L	5040
Cobalt	SW6010B	3/26/2009	0.005	1	0.0050	ND	mg/L	5040
Copper	SW6010B	3/26/2009	0.01	1	0.010	0.013	mg/L	5040
Lead	SW6010B	3/26/2009	0.015	1	0.015	ND	mg/L	5040
Molybdenum	SW6010B	3/26/2009	0.005	1	0.0050	0.12	mg/L	5040
Nickel	SW6010B	3/26/2009	0.01	1	0.010	0.016	mg/L	5040
Selenium	SW6010B	3/26/2009	0.01	1	0.010	ND	mg/L	5040
Silver	SW6010B	3/26/2009	0.005	1	0.0050	ND	mg/L	5040
Thallium	SW6010B	3/26/2009	0.01	1	0.010	ND	mg/L	5040
Vanadium	SW6010B	3/26/2009	0.01	1	0.010	0.089	mg/L	5040
Zinc	SW6010B	3/26/2009	0.005	1	0.0050	0.026	mg/L	5040
Mercury	SW7470A	3/26/2009	0.0002	1	0.00020	ND	mg/L	5041
TPH (Diesel)	SW8015B	3/30/2009	0.1	1	0.100	ND	mg/L	R19094
TPH (Motor Oil)	SW8015B	3/30/2009	0.2	1	0.200	ND	mg/L	R19094
Surr: Pentacosane	SW8015B	3/30/2009	0	1	57.9-125	87.0	%REC	R19094

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

4,4´-DDD	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
4,4´-DDE	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
4,4´-DDT	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
Aldrin	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
alpha-BHC	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
alpha-Chlordane	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
beta-BHC	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
Chlordane	SW8081A	3/27/2009	0.25	1	0.250	ND	µg/L	R19075
delta-BHC	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
Dieldrin	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
Endosulfan I	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
Endosulfan II	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
Endosulfan sulfate	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
Endrin	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
Endrin aldehyde	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
Endrin ketone	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
gamma-BHC	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
gamma-Chlordane	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
Heptachlor	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
Heptachlor epoxide	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
Methoxychlor	SW8081A	3/27/2009	0.05	1	0.050	ND	µg/L	R19075
Toxaphene	SW8081A	3/27/2009	1	1	1.00	ND	µg/L	R19075
Surr: Decachlorobiphenyl	SW8081A	3/27/2009	0	1	52-116	39.5	%REC	R19075
Surr: Tetrachloro-m-xylene	SW8081A	3/27/2009	0	1	40.3-118	41.4	%REC	R19075

Note: Surrogate recovery of DCBP is bias low; recovery of second surrogate supports data quality.

Aroclor 1016	SW8082	3/28/2009	10	1	10.0	ND	µg/L	R19089
Aroclor 1221	SW8082	3/28/2009	10	1	10.0	ND	µg/L	R19089
Aroclor 1232	SW8082	3/28/2009	10	1	10.0	ND	µg/L	R19089
Aroclor 1242	SW8082	3/28/2009	10	1	10.0	ND	µg/L	R19089
Aroclor 1248	SW8082	3/28/2009	10	1	10.0	ND	µg/L	R19089
Aroclor 1254	SW8082	3/28/2009	10	1	10.0	ND	µg/L	R19089
Aroclor 1260	SW8082	3/28/2009	10	1	10.0	ND	µg/L	R19089
Surr: Decachlorobiphenyl	SW8082	3/28/2009	0	1	44.5-127	100	%REC	R19089
Surr: Tetrachloro-m-xylene	SW8082	3/28/2009	0	1	52.7-126	97.0	%REC	R19089

1,1,1,2-Tetrachloroethane	SW8260B	4/1/2009	1	1.1	1.10	ND	µg/L	R19113
1,1,1-Trichloroethane	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
1,1,2,2-Tetrachloroethane	SW8260B	4/1/2009	1	1.1	1.10	ND	µg/L	R19113
1,1,2-Trichloroethane	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
1,1-Dichloroethane	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
1,1-Dichloroethene	SW8260B	4/1/2009	1	1.1	1.10	ND	µg/L	R19113
1,1-Dichloropropene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
1,2,3-Trichlorobenzene	SW8260B	4/1/2009	1	1.1	1.10	ND	µg/L	R19113
1,2,3-Trichloropropane	SW8260B	4/1/2009	1	1.1	1.10	ND	µg/L	R19113
1,2,4-Trichlorobenzene	SW8260B	4/1/2009	1	1.1	1.10	ND	µg/L	R19113
1,2,4-Trimethylbenzene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
1,2-Dibromo-3-chloropropane	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
1,2-Dibromoethane (EDB)	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
1,2-Dichlorobenzene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
1,2-Dichloroethane (EDC)	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
1,2-Dichloropropane	SW8260B	4/1/2009	1	1.1	1.10	ND	µg/L	R19113
1,3,5-Trimethylbenzene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
1,3-Dichlorobenzene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
1,3-Dichloropropene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
1,4-Dichlorobenzene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
2,2-Dichloropropane	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
2-Chloroethyl vinyl ether	SW8260B	4/1/2009	6	1.1	6.60	ND	µg/L	R19113
2-Chlorotoluene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
4-Chlorotoluene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
4-Isopropyltoluene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Acetone	SW8260B	4/1/2009	10	1.1	11.0	ND	µg/L	R19113
Benzene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Bromobenzene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Bromochloromethane	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Bromodichloromethane	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Bromoform	SW8260B	4/1/2009	1	1.1	1.10	ND	µg/L	R19113
Bromomethane	SW8260B	4/1/2009	1	1.1	1.10	ND	µg/L	R19113
Carbon tetrachloride	SW8260B	4/1/2009	1	1.1	1.10	ND	µg/L	R19113
Chlorobenzene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Chloroform	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Chloromethane	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
cis-1,2-Dichloroethene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
cis-1,3-Dichloropropene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Dibromochloromethane	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Dibromomethane	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Dichlorodifluoromethane	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Diisopropyl ether (DIPE)	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Ethyl tert-butyl ether (ETBE)	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Ethylbenzene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Freon-113	SW8260B	4/1/2009	1	1.1	1.10	ND	µg/L	R19113
Hexachlorobutadiene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Isopropylbenzene	SW8260B	4/1/2009	1	1.1	1.10	ND	µg/L	R19113
Methyl tert-butyl ether (MTBE)	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Methylene chloride	SW8260B	4/1/2009	5	1.1	5.50	ND	µg/L	R19113
Naphthalene	SW8260B	4/1/2009	1	1.1	1.10	ND	µg/L	R19113
n-Butylbenzene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
n-Propylbenzene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
sec-Butylbenzene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113

Styrene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
t-Butyl alcohol (t-Butanol)	SW8260B	4/1/2009	5	1.1	5.50	ND	µg/L	R19113
tert-Amyl methyl ether (TAME)	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
tert-Butylbenzene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Tetrachloroethene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Toluene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
trans-1,2-Dichloroethene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
trans-1,3-Dichloropropene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Trichloroethene	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Trichlorofluoromethane	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Vinyl chloride	SW8260B	4/1/2009	0.5	1.1	0.55	ND	µg/L	R19113
Xylenes, Total	SW8260B	4/1/2009	1.5	1.1	1.65	ND	µg/L	R19113
Surr: Dibromofluoromethane	SW8260B	4/1/2009	0	1.1	61.2-131	116	%REC	R19113
Surr: 4-Bromofluorobenzene	SW8260B	4/1/2009	0	1.1	64.1-120	99.1	%REC	R19113
Surr: Toluene-d8	SW8260B	4/1/2009	0	1.1	75.1-127	85.0	%REC	R19113

Note: Reporting limits were raised due to high level of sediment in all VOAs.

TPH (Gasoline)	SW8260B(TPH)	3/30/2009	50	1.1	55	ND	µg/L	G19085
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	3/30/2009	0	1.1	58.4-133	112	%REC	G19085

Note: Reporting limits were raised due to high level of sediment in all VOAs.

Client Sample ID: S-1-19 @ 0.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:25:00 PM

Lab Sample ID: 0903154-087
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	220	mg/Kg	5051

Client Sample ID: S-1-19 @ 1.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:25:00 PM

Lab Sample ID: 0903154-088
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	1.6	mg/Kg	5051

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 4/1/2009

Client Sample ID: S-1-19 @ 1.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:25:00 PM

Lab Sample ID: 0903154-089
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	2.2	mg/Kg	5051

Client Sample ID: S-1-19 @ 2.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:25:00 PM

Lab Sample ID: 0903154-090
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	6.7	mg/Kg	5051

Client Sample ID: S-1-19 @ 3.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:25:00 PM

Lab Sample ID: 0903154-091
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	7.6	mg/Kg	5051

Client Sample ID: S-2-1 @ 0.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:40:00 PM

Lab Sample ID: 0903154-092
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	820	mg/Kg	5051

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 4/1/2009

Client Sample ID: S-2-1 @ 1.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:40:00 PM

Lab Sample ID: 0903154-093
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	6.2	mg/Kg	5051

Client Sample ID: S-2-1 @ 1.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:40:00 PM

Lab Sample ID: 0903154-094
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	23	mg/Kg	5051

Client Sample ID: S-2-1 @ 2.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:40:00 PM

Lab Sample ID: 0903154-095
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	3.8	mg/Kg	5051

Client Sample ID: S-2-1 @ 3.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:40:00 PM

Lab Sample ID: 0903154-096
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	3.6	mg/Kg	5051

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 4/1/2009

Client Sample ID: S-2-2 @ 0.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:43:00 PM

Lab Sample ID: 0903154-097
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/28/2009	1	1	1.0	410	mg/Kg	5048

Client Sample ID: S-2-2 @ 1.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:43:00 PM

Lab Sample ID: 0903154-098
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/28/2009	1	1	1.0	40	mg/Kg	5048

Client Sample ID: S-2-2 @ 1.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:43:00 PM

Lab Sample ID: 0903154-099
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/28/2009	1	1	1.0	2.9	mg/Kg	5048

Client Sample ID: S-2-2 @ 2.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:43:00 PM

Lab Sample ID: 0903154-100
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/28/2009	1	1	1.0	2.4	mg/Kg	5048

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 4/1/2009

Client Sample ID: S-2-2 @ 3.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:43:00 PM

Lab Sample ID: 0903154-101
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/28/2009	1	1	1.0	1.9	mg/Kg	5048

Client Sample ID: S-2-2-D @ 0.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:43:00 PM

Lab Sample ID: 0903154-102
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/28/2009	1	1	1.0	630	mg/Kg	5048

Client Sample ID: S-2-2-D @ 1.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:43:00 PM

Lab Sample ID: 0903154-103
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/28/2009	1	1	1.0	3.9	mg/Kg	5048

Client Sample ID: S-2-2-D @ 1.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:43:00 PM

Lab Sample ID: 0903154-104
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/28/2009	1	1	1.0	2.6	mg/Kg	5048

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 4/1/2009

Client Sample ID: S-2-2-D @ 2.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:43:00 PM

Lab Sample ID: 0903154-105
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/28/2009	1	1	1.0	2.2	mg/Kg	5048

Client Sample ID: S-2-2-D @ 3.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:43:00 PM

Lab Sample ID: 0903154-106
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/28/2009	1	1	1.0	2.2	mg/Kg	5048

Client Sample ID: S-1-20 @ 0.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:30:00 PM

Lab Sample ID: 0903154-107
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/28/2009	1	1	1.0	680	mg/Kg	5048

Client Sample ID: S-1-20 @ 1.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:30:00 PM

Lab Sample ID: 0903154-108
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/28/2009	1	1	1.0	15	mg/Kg	5048

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 4/1/2009

Client Sample ID: S-1-20 @ 1.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:30:00 PM

Lab Sample ID: 0903154-109
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/28/2009	1	1	1.0	5.8	mg/Kg	5048

Client Sample ID: S-1-20 @ 2.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:30:00 PM

Lab Sample ID: 0903154-110
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/28/2009	1	1	1.0	8.4	mg/Kg	5048

Client Sample ID: S-1-20 @ 3.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:30:00 PM

Lab Sample ID: 0903154-111
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/28/2009	1	1	1.0	3.4	mg/Kg	5048

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Definitions, legends and Notes

Note	Description
ug/kg	Microgram per kilogram (ppb, part per billion).
ug/L	Microgram per liter (ppb, part per billion).
mg/kg	Milligram per kilogram (ppm, part per million).
mg/L	Milligram per liter (ppm, part per million).
LCS/LCSD	Laboratory control sample/laboratory control sample duplicate.
MDL	Method detection limit.
MRL	Modified reporting limit. When sample is subject to dilution, reporting limit times dilution factor yields MRL.
MS/MSD	Matrix spike/matrix spike duplicate.
N/A	Not applicable.
ND	Not detected at or above detection limit.
NR	Not reported.
QC	Quality Control.
RL	Reporting limit.
% RPD	Percent relative difference.
a	pH was measured immediately upon the receipt of the sample, but it was still done outside the holding time.
sub	Analyzed by subcontracting laboratory, Lab Certificate #

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

EMSL Analytical, Inc
2235 Polvorosa Ave , Suite 230, San Leandro, CA 94577
Phone: (510) 895-3675 Fax: (510) 895-3680 Email: milpitaslab@emsl.com

Attn: **Patti Sandrock**
Torrent Laboratory, Inc.
483 Sinclair Frontage Rd.
Milpitas, CA 95035

Fax: (408) 263-8293 Phone: (408) 263-5258
Project: **0903154**

Customer ID: TORR80
Customer PO: 0903154
Received: 03/27/09 9:00 AM
EMSL Order: 090902203

EMSL Proj:
Analysis Date: 3/30/2009
Report Date: 4/8/2009

Qualitative asbestos analysis of soils using the EPA 600/R-93/116 method

Sample	Location	Appearance	Result	Notes
0903154-016A *090902203-0001*			**None Detected**	
0903154-017A *090902203-0002*			**None Detected**	
0903154-018A *090902203-0003*			**None Detected**	
0903154-019A *090902203-0004*			**None Detected**	
0903154-020A *090902203-0005*			**None Detected**	
0903154-031A *090902203-0006*			**None Detected**	
0903154-032A *090902203-0007*			**None Detected**	
0903154-033A *090902203-0008*			**None Detected**	
0903154-034A *090902203-0009*			**None Detected**	

Analyst(s)

Nathee Dummai (25)

Baojia Ke, Laboratory Manager
or other approved signatory

EMSL recommends that soil samples reported as "ND" be tested by the EPA Screening Method/Qualitative. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. The above test must not be used by the client to claim product endorsement by NVLAP nor any agency of the United States Government. Unless otherwise noted, the results in this report have not been blank corrected.Samples received in good condition unless otherwise noted.

EMSL Analytical, Inc
2235 Polvorosa Ave , Suite 230, San Leandro, CA 94577
Phone: (510) 895-3675 Fax: (510) 895-3680 Email: milpitaslab@emsl.com

Attn: **Patti Sandrock**
Torrent Laboratory, Inc.
483 Sinclair Frontage Rd.
Milpitas, CA 95035

Fax: (408) 263-8293 Phone: (408) 263-5258
Project: **0903154**

Customer ID: TORR80
Customer PO: 0903154
Received: 03/27/09 9:00 AM
EMSL Order: 090902203

EMSL Proj:
Analysis Date: 3/30/2009
Report Date: 4/8/2009

Qualitative asbestos analysis of soils using the EPA 600/R-93/116 method

Sample	Location	Appearance	Result	Notes
0903154-035A *090902203-0010*			**None Detected**	
0903154-071A *090902203-0011*			**None Detected**	
0903154-072A *090902203-0012*			**None Detected**	
0903154-073A *090902203-0013*			**None Detected**	
0903154-074A *090902203-0014*			**None Detected**	
0903154-075A *090902203-0015*			**None Detected**	
0903154-076A *090902203-0016*			**None Detected**	
0903154-077A *090902203-0017*			**None Detected**	
0903154-078A *090902203-0018*			**None Detected**	

Analyst(s)

Nathee Dummai (25)

Baojia Ke, Laboratory Manager
or other approved signatory

EMSL recommends that soil samples reported as "ND" be tested by the EPA Screening Method/Qualitative. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. The above test must not be used by the client to claim product endorsement by NVLAP nor any agency of the United States Government. Unless otherwise noted, the results in this report have not been blank corrected.Samples received in good condition unless otherwise noted.

EMSL Analytical, Inc
2235 Polvorosa Ave , Suite 230, San Leandro, CA 94577
Phone: (510) 895-3675 Fax: (510) 895-3680 Email: milpitaslab@emsl.com

Attn: **Patti Sandrock**
Torrent Laboratory, Inc.
483 Sinclair Frontage Rd.
Milpitas, CA 95035

Fax: (408) 263-8293 Phone: (408) 263-5258
Project: **0903154**

Customer ID:	TORR80
Customer PO:	0903154
Received:	03/27/09 9:00 AM
EMSL Order:	090902203
EMSL Proj:	
Analysis Date:	3/30/2009
Report Date:	4/8/2009

Qualitative asbestos analysis of soils using the EPA 600/R-93/116 method

Sample	Location	Appearance	Result	Notes
0903154-079A *090902203-0019*			**None Detected**	
0903154-080A *090902203-0020*			**None Detected**	
0903154-107A *090902203-0021*			**None Detected**	
0903154-108A *090902203-0022*			**None Detected**	
0903154-109A *090902203-0023*			**None Detected**	
0903154-110A *090902203-0024*			**None Detected**	
0903154-111A *090902203-0025*			**None Detected**	

Analyst(s)

Nathee Dummai (25)

Baojia Ke, Laboratory Manager
or other approved signatory

EMSL recommends that soil samples reported as "ND" be tested by the EPA Screening Method/Qualitative. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. The above test must not be used by the client to claim product endorsement by NVLAP nor any agency of the United States Government. Unless otherwise noted, the results in this report have not been blank corrected.Samples received in good condition unless otherwise noted.

THIS IS THE LAST PAGE OF THE REPORT.

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903154

Company Name: UCS San Jose	Location of Sampling: Hwy 101 - Ave Lanes
Address:	Purpose:
City: State: Zip Code:	Special Instructions / Comments:
Telephone: FAX:	
REPORT TO: Patrick W. SAMPLER: Eduardo Ortiz	P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Work Days ☐ 3 Work Days ☐ Noon - Nxt Day ☐ 7 Work Days ☐ 2 Work Days ☐ 2 - 8 Hours ☐ 5 Work Days ☐ 1 Work Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☐ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

LAB ID	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	Lead	VOCs 8260 Tool list	TPH-gas 8TEX Oxygenates	TPH-diesel motor oil	pesticides	PCBs	CAM 17 + pH			REMARKS
001A	S-2-4 @0.5	03/24/09 2255	S	1	sleeve	X									
002A	@1.0			1		X									
003A	@1.5			1		X									
004A	@2.0			1		X									
005A	@3.0			1		X									
006A	S-2-7 @0.5	03/24/09 2330	S						X	X	X	X			
007A	@1.0						X	X				X			
008A	@1.5						X	X				X			
009A	@2.0						X	X				X			
010A	@3.0						X	X				X			

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/24/09	10:10 AM	N. G. Khodasara	NAVIN	3/25/09	10:10 AM
2								

Were Samples Received in Good Condition? ☑ Yes ☐ NO Samples on Ice? ☑ Yes ☐ NO Method of Shipment Drop-off Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Page 1 of 12

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date:

TORRENT LAB

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903154

Company Name: UPS San Jose	Location of Sampling: Hwy 101 - Hux Lanes
Address:	Purpose:
City: State: Zip Code:	Special Instructions / Comments:
Telephone: FAX:	
REPORT TO: Patrick W. SAMPLER: Eduardo C.	P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Work Days ☐ 3 Work Days ☐ Noon - Nxt Day ☐ 7 Work Days ☐ 2 Work Days ☐ 2 - 8 Hours ☑ 5 Work Days ☐ 1 Work Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☑ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

LAB ID	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	Lead	Asbestos								REMARKS
011A	S-2-9 @ 0.5	03/24/09 2340	S	1	sleeve	X									
012A	@ 1.0					X									
013A	@ 1.5					X									
014A	@ 2.0					X									
015A	@ 3.0					X									
016A	S-2-8 @ 0.5	03/24/09 2335				X	X								
017A	@ 1.0					X	X								
018A	@ 1.5					X	X								
019A	@ 2.0					X	X								
020A	@ 3.0					X	X								

TORRENT LAB

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/24/09	10:10 AM	M. G. Ghodasara	NAVIN	3/25/09	10:10 AM
2								

Were Samples Received in Good Condition? ☑ Yes ☐ NO Samples on Ice? ☑ Yes ☐ NO Method of Shipment: Drop-off Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Log In By: Date: Log In Reviewed By: Date:

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

0903154
LAB WORK ORDER NO
0903154

Company Name: URS San Jose			Location of Sampling: Hwy 101 - Aux Lanes
Address:			Purpose:
City:	State:	Zip Code:	Special Instructions / Comments:
Telephone:	FAX:		
REPORT TO: Patrick W.	SAMPLER: Eduardo O.		P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Work Days ☐ 3 Work Days ☐ Noon - Nxt Day ☐ 7 Work Days ☐ 2 Work Days ☐ 2 - 8 Hours ☐ 5 Work Days ☐ 1 Work Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☐ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

LAB ID	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	Lead								REMARKS
021A	S-3-1 @ 0.5	03/24/09 2351	S	1	Sleeve	X								
022A	@ 1.0					X								
023A	@ 1.5					X								
024A	@ 2.0					X								
025A	@ 3.0					X								
026A	S-2-10 @ 0.5	03/24/09 2345				X								
027A	@ 1.0					X								
028A	@ 1.5					X								
029A	@ 2.0					X								
030A	@ 3.0					X								

TORRENT LAB

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/25/09	10:10 AM	D. G. Khodasara	NAVIN	3/25/09	10:10 AM
2								

Were Samples Received in Good Condition? ☑ Yes ☐ NO Samples on Ice? ☑ Yes ☐ NO Method of Shipment: Drop-off Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date: _____

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903154

Company Name: UPS San Jose
Address:
City: State: Zip Code:
Telephone: FAX:
REPORT TO: Patrick W. SAMPLER: Eduardo C.

Location of Sampling: Hwy 101 – Avx lanes
Purpose:
Special Instructions / Comments:
P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Work Days ☐ 3 Work Days ☐ Noon - Nxt Day ☐ 7 Work Days ☐ 2 Work Days ☐ 2 - 8 Hours ☐ 5 Work Days ☐ 1 Work Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☐ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

LAB ID	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	Lead	Asbestos								REMARKS
031A	S-3-3 @ 0.5	03/24/09 2358	S	1	sleeve	X	X								
032A	@ 1.0			1		X	X								
033A	@ 1.5			1		X	X								
034A	@ 2.0			1		X	X								
035A	@ 3.0			1		X	X								
036A	S-3-4 @ 0.5	03/25/09 0007	S	1		X									
037A	@ 1.0			1		X									
038A	@ 1.5			1		X									
039A	@ 2.0			1		X									
040A	@ 3.0			1		X									

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/25/09	10:10 Am	M. G. Ghodasara	NAVIN	3/25/09	10:10 AM
2								

Were Samples Received in Good Condition? ☑ Yes ☐ NO Samples on Ice? ☑ Yes ☐ NO Method of Shipment Drop off Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Log In By: Date: Log In Reviewed By: Date:

TORRENT LAB

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903154

Company Name: URS San Jose
Location of Sampling: Hwy 101 - Aux Lam
Address:
Purpose:
City: State: Zip Code:
Special Instructions / Comments:
Telephone: FAX:
REPORT TO: Patrick Walz SAMPLER: Eduardo Ortiz
P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Work Days ☐ 3 Work Days ☐ Noon - Nxt Day ☐ 7 Work Days ☐ 2 Work Days ☐ 2 - 8 Hours ☑ 5 Work Days ☐ 1 Work Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☑ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

LAB ID	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	Lead								REMARKS
041A	S-3-5 @ 0.5	03/25/09 0015	S	1	sleeve	Y								
042A	@ 1.0			1		Y								
043A	@ 1.5					Y								
044A	@ 2.0			1		Y								
045A	@ 3.0			1		Y								
046A	S-3-6 @ 0.5	03/25/09 0022	S		sleev	Y								
047A	@ 1.0					Y								
048A	@ 1.5					Y								
049A	@ 2.0					Y								
050A	@ 3.0					Y								

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/25/09	10:10 Am	R. G. Ghodasara	NAVIN	3/25/09	10:10 AM
2								

Were Samples Received in Good Condition? ☑ Yes ☐ NO Samples on Ice? ☑ Yes ☐ NO Method of Shipment Drop-off Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Log In By: Date: Log In Reviewed By: Date:

TORRENT LAB

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903154

Company Name: URS San Jose	Location of Sampling: Hwy 101 – Alex Lewis
Address:	Purpose:
City: State: Zip Code:	Special Instructions / Comments:
Telephone: FAX:	
REPORT TO: Patrick Walz SAMPLER: Eduardo Ortega	P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Work Days ☐ 3 Work Days ☐ Noon - Nxt Day ☐ 7 Work Days ☐ 2 Work Days ☐ 2 - 8 Hours ☒ 5 Work Days ☐ 1 Work Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☒ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

LAB ID	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	Lead									REMARKS
051A	S-3-7 @ 0.5	03/25/09 0028	S	1	sleeve	X									
052A	S-3-7 @ 1.0			1		X									
053A	@ 1.5			1		X									
054A	@ 2.0			1		X									
055A	@ 3.0			1		X									
056A	S-3-10 @ 0.5	03/25/09 0055	S	1		X									
057A	@ 1.0			1		X									
058A	@ 1.5			1		X									
059A	@ 2.0			1		X									
060A	@ 3.0			1		X									

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/25/09	10:10 AM	D. G. Ghodasara	NAVIN	3/25/09	10:10 AM
2								

Were Samples Received in Good Condition? ☒ Yes ☐ NO Samples on Ice? ☒ Yes ☐ NO Method of Shipment Drop-off Sample seals intact? ☐ Yes ☐ NO ☒ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date:

TORRENT LAB

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903154

Company Name: URS San Jose
Location of Sampling: Hwy 101 – Aux lanes
Address:
Purpose:
City: State: Zip Code:
Special Instructions / Comments:
Telephone: FAX:
REPORT TO: Patrick Walz SAMPLER: Eduardo Ortiz
P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Work Days ☐ 3 Work Days ☐ Noon - Nxt Day ☐ 7 Work Days ☐ 2 Work Days ☐ 2 - 8 Hours ☒ 5 Work Days ☐ 1 Work Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☒ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

LAB ID	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	EPA 8260B - Full List / EPA 8260B - 8010 List	THP gas / BTEX / Oxygenates / MTBE	THP Diesel / Si-Gel / Motor Oil	Pesticide - 8081	PCB - 8082	Metals / CAM - 17 / LUFT 5 / 7 Metals	8270 Full List / PAHs Only	Lead		REMARKS
061A	S-2-6 @0.5	03/24/09 2320	S	1	4oz Jar								X		
062A	S-2-6 @1.0		S										X		
063A	S-2-6 @1.5		S										X		
064A	S-2-6 @2.0												X		
065A	S-2-6 @3.0												X		
066A	S-3-9 @0.5	03/25/09 0045											X		
067A	S-3-9 @1.0												X		
068A	@1.5												X		
069A	@2.0												X		
070A	@3.0												X		

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/25/09	10:10 AM	P. G. Ghodasara	NAVIN	3/25/09	10:10 AM
2								

Were Samples Received in Good Condition? ☒ Yes ☐ NO Samples on Ice? ☒ Yes ☐ NO Method of Shipment Drop-off Sample seals intact? ☐ Yes ☐ NO ☒ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Log In By: Date: Log In Reviewed By: Date:

TORRENT LAB

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903154

Company Name: URS San Jose
Location of Sampling:
Address:
Purpose:
City: State: Zip Code:
Special Instructions / Comments:
Telephone: FAX:
REPORT TO: Patrick Walz SAMPLER: Eduardo Ortiz
P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Work Days ☐ 3 Work Days ☐ Noon - Nxt Day ☐ 7 Work Days ☐ 2 Work Days ☐ 2 - 8 Hours ☒ 5 Work Days ☐ 1 Work Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☒ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

LAB ID	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	EPA 8260B - Full List / EPA 8260B - 8010 List	THP gas / BTEX / Oxygenates / MTBE	THP Diesel / Si-Gel / Motor Oil	Pesticide - 8081	PCB - 8082	Metals / CAM - 17 / LUFT 5 / 7 Metals	8270 Full List / PAHs Only	Lead	asbestos	REMARKS
071A	S-2-5@0.5	03/24/09 2310	S	1	8oz jar								X	X	
072A	S-2-5@1.0			1									X	X	
073A	@1.5			1									X	X	
074A	@2.0			1									X	X	
075A	@3.0			1									X	X	
076A	S-3-8@0.5	03/25/09 0035	S	1	sleeve								X	X	
077A	@1.0												X	X	
078A	@1.5												X	X	
079A	@2.0												X	X	
080A	@3.0												X	X	

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/25/09	10:10 Am	D. G. Ghodasara	NAVIN	3/25/09	10:10 Am
2								

Were Samples Received in Good Condition? ☑ Yes ☐ NO Samples on Ice? ☑ Yes ☐ NO Method of Shipment: Drop-off Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Log In By: Date: Log In Reviewed By: Date:

TORRENT LAB

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903154

Company Name: UPG San Jose
Location of Sampling: Hwy 101 – Alexander
Address:
Purpose:
City: State: Zip Code:
Special Instructions / Comments:
Telephone: FAX:
REPORT TO: Patrick Walz SAMPLER: Eduardo Ortega
P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Work Days ☐ 3 Work Days ☐ Noon - Nxt Day ☐ 7 Work Days ☐ 2 Work Days ☐ 2 - 8 Hours ☒ 5 Work Days ☐ 1 Work Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☒ Ground Water ☒ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

LAB ID	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	EPA 8260B - Full List ☒ / EPA 8260B - 8010 List ☐	THP gas ☒ BTEX ☒ / Oxygenates ☒ MTBE ☐	THP Diesel ☒ Si-Gel ☐ / Motor Oil ☒	Pesticide - 8081 ☒	PCB - 8082 ☒	Metals ☒ CAM - 17 + pH / LUFT 5 ☐ 7 Metals ☐	8270 Full List ☐ / PAHs Only ☐	lead		REMARKS
081A	S-1-18 @ 0.5	03/24/09 2137	S										X		
082A	S-1-18 @ 1.0	↓	S										X		
083A	S-1-18 @ 1.5		S										X		
084A	S-1-18 @ 2.0		S										X		
085A	S-1-18 @ 3.0		S										X		
086A	S-1-18 ~~@~~ - GW	03/24/09 2200	GW	1	250ml						X				
~~087A~~	S-1-18 - GW		GW	2	1 liter			X							
~~088A~~	S-1-18 - GW		GW	3	voa	X	X								
~~089A~~	S-1-18 - GW		GW	1	liter				X	X					
~~090A~~															

086A Large

TORRENT LAB

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/24/09	10:10 Am	M. G. Ghadasara	NAVIN	3/25/09	10:10 Am
2								

Were Samples Received in Good Condition? ☑ Yes ☐ NO Samples on Ice? ☑ Yes ☐ NO Method of Shipment: Drop-off Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Page 9 of 12

Log In By: Date: Log In Reviewed By: Date:

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903154

Company Name: UPS San Jose	Location of Sampling: Hwy 101 – Aux Lanes
Address:	Purpose:
City: State: Zip Code:	Special Instructions / Comments:
Telephone: FAX:	
REPORT TO: Patrick W. SAMPLER: Eduardo C.	P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Working Days ☐ 3 Working Days ☐ Noon - Nxt Day ☐ 7 Working Days ☐ 2 Working Days ☐ 2 - 8 Hours ☒ 5 Working Days ☐ 1 Working Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☒ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

	CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	Lead								TORRENT'S SAMPLE I.D.
091A	1. S-1-19@0.5	03/24/09 2225	S	1	sleeve	X								087A
092A	2. @1.0					X								088A
093A	3. @1.5					X								089A
094A	4. @2.0					X								090A
095A	5. @3.0					X								091A
096A	6. S-2-1 @0.5	03/24/09 2240	S			X								092A
097A	7. @1.0					X								093A
098A	8. @1.5					X								094A
099A	9. @2.0					X								095A
100A	10. @3.0					X								096A

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/24/09	10:10 Am	R. G. Ghadasara	NAVIN	3/25/09	10:10 Am
2								

Were Samples Received in Good Condition? ☑ Yes ☐ NO Samples on Ice? ☑ Yes ☐ NO Method of Shipment Drop-off Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrange -ments are made.

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date: _____

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

•NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY•

LAB WORK ORDER NO: 0903154

Company Name: URS San Jose	Location of Sampling: Hwy 101 – Alex Lane
Address:	Purpose:
City: State: Zip Code:	Special Instructions / Comments:
Telephone: FAX:	
REPORT TO: Patrick W. SAMPLER: Eduardo C.	P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Working Days ☐ 3 Working Days ☐ Noon - Nxt Day ☐ 7 Working Days ☐ 2 Working Days ☐ 2 - 8 Hours ☒ 5 Working Days ☐ 1 Working Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☒ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED: Lead

	CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	Lead	TORRENT'S SAMPLE I.D.
101	1. S-2-2@0.5	03/24/09 2243	S	1	sleeve	Y	097A mgy
102	2. @1.0					Y	098A
103	3. @1.5					Y	099A
104	4. @2.0					Y	100A
105	5. @3.0					Y	101A
106	6. S-2-2-D@0.5					Y	102A
107	7. @1.0					Y	103A
108	8. @1.5					Y	104A
109	9. @2.0					Y	105A
110	10. @3.0					Y	106A

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/24/09	10:10 Am	N. G. Ghodasara	NAVIN	3/25/09	10:10 Am
2								

mgy

Were Samples Received in Good Condition? ☑ Yes ☐ NO Samples on Ice? ☑ Yes ☐ NO Method of Shipment Drop-off Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrange -ments are made.

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date: _____

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903154

Company Name: UNS San Jose	Location of Sampling: Hwy 101 — Aux Lanes
Address:	Purpose:
City: State: Zip Code:	Special Instructions / Comments:
Telephone: FAX:	
REPORT TO: Patrick W. SAMPLER: Eduardo C.	P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Working Days ☐ 3 Working Days ☐ Noon - Nxt Day ☐ 7 Working Days ☐ 2 Working Days ☐ 2 - 8 Hours ☒ 5 Working Days ☐ 1 Working Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☒ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

	CLIENT'S SAMPLE I.D.	DATE/TIME SAMPLED	SAMPLE TYPE	# OF CONT	CONT TYPE	Lead	asbestos								TORRENT'S SAMPLE I.D.
1/1	1. S-1-20 @0.5	03/24/09 2230	S	1	sleeve	Y	Y								107A
1/2	2. @1.0					Y	Y								108A
1/3	3. @1.5					Y	Y								109A
1/4	4. @2.0					Y	Y								110A
1/5	5. @3.0					Y	Y								111A
	6.														
	7.														
	8.														
	9.														
	10.														

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/24/09	10:10 Am	[signature]	NAVIN	3/25/09	10:10 Am
2								

Were Samples Received in Good Condition? ☑ Yes ☐ NO Samples on Ice? ☑ Yes ☐ NO Method of Shipment Drop-off Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrange -ments are made.

Log In By: Date: Log In Reviewed By: Date:

Torrent Laboratory, Inc.

Date: *01-Apr-09*

CLIENT: URS Corporation, San Jose
Work Order: 0903154
Project: HWY 101-Aux lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5040

Sample ID **MB-5040** SampType: **MBLK** TestCode: **6010B_W** Units: **mg/L** Prep Date: **3/25/2009** RunNo: **19051**
Client ID: **ZZZZZ** Batch ID: **5040** TestNo: **SW6010B** **(E200.7/SW3** Analysis Date: **3/26/2009** SeqNo: **274797**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.010									
Arsenic	ND	0.010									
Barium	ND	0.010									
Beryllium	ND	0.0050									
Cadmium	ND	0.0050									
Chromium	ND	0.0050									
Cobalt	ND	0.0050									
Copper	ND	0.010									
Lead	ND	0.015									
Molybdenum	ND	0.0050									
Nickel	ND	0.010									
Selenium	ND	0.020									
Silver	ND	0.0050									
Thallium	ND	0.010									
Vanadium	ND	0.010									
Zinc	ND	0.010									

Sample ID **LCS-5040** SampType: **LCS** TestCode: **6010B_W** Units: **mg/L** Prep Date: **3/25/2009** RunNo: **19051**
Client ID: **ZZZZZ** Batch ID: **5040** TestNo: **SW6010B** **(E200.7/SW3** Analysis Date: **3/26/2009** SeqNo: **274795**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	1.053	0.010	1	0	105	80	120				
Arsenic	1.057	0.010	1	0	106	80	120				
Barium	0.9820	0.010	1	0	98.2	80	120				
Beryllium	0.9610	0.0050	1	0	96.1	80	120				
Cadmium	0.9790	0.0050	1	0	97.9	80	120				
Chromium	0.9770	0.0050	1	0	97.7	80	120				
Cobalt	0.9840	0.0050	1	0	98.4	80	120				
Copper	0.9790	0.010	1	0	97.9	80	120				

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903154
Project: HWY 101-Aux lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5040

Sample ID	LCS-5040	SampType:	LCS	TestCode:	6010B_W	Units:	mg/L	Prep Date:	3/25/2009	RunNo:	19051
Client ID:	ZZZZZ	Batch ID:	5040	TestNo:	SW6010B	(E200.7/SW3		Analysis Date:	3/26/2009	SeqNo:	274795

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	0.9900	0.015	1	0	99.0	80	120				
Molybdenum	0.9860	0.0050	1	0	98.6	80	120				
Nickel	0.9810	0.010	1	0	98.1	80	120				
Selenium	0.9950	0.020	1	0	99.5	80	120				
Silver	0.9750	0.0050	1	0.002	97.3	80	120				
Thallium	0.9840	0.010	1	0	98.4	80	120				
Vanadium	0.9740	0.010	1	0	97.4	80	120				
Zinc	0.9750	0.010	1	0.002	97.3	80	120				

Sample ID	LCSD-5040	SampType:	LCSD	TestCode:	6010B_W	Units:	mg/L	Prep Date:	3/25/2009	RunNo:	19051
Client ID:	ZZZZZ	Batch ID:	5040	TestNo:	SW6010B	(E200.7/SW3		Analysis Date:	3/26/2009	SeqNo:	274796

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	1.058	0.010	1	0	106	80	120	1.053	0.474	20	
Arsenic	1.061	0.010	1	0	106	80	120	1.057	0.378	20	
Barium	0.9800	0.010	1	0	98.0	80	120	0.982	0.204	20	
Beryllium	0.9790	0.0050	1	0	97.9	80	120	0.961	1.86	20	
Cadmium	0.9770	0.0050	1	0	97.7	80	120	0.979	0.204	20	
Chromium	0.9720	0.0050	1	0	97.2	80	120	0.977	0.513	20	
Cobalt	0.9800	0.0050	1	0	98.0	80	120	0.984	0.407	20	
Copper	0.9840	0.010	1	0	98.4	80	120	0.979	0.509	20	
Lead	0.9960	0.015	1	0	99.6	80	120	0.99	0.604	20	
Molybdenum	0.9930	0.0050	1	0	99.3	80	120	0.986	0.707	20	
Nickel	0.9740	0.010	1	0	97.4	80	120	0.981	0.716	20	
Selenium	0.9950	0.020	1	0	99.5	80	120	0.995	0	20	
Silver	0.9780	0.0050	1	0.002	97.6	80	120	0.975	0.307	20	
Thallium	0.9890	0.010	1	0	98.9	80	120	0.984	0.507	20	
Vanadium	0.9790	0.010	1	0	97.9	80	120	0.974	0.512	20	
Zinc	0.9700	0.010	1	0.002	96.8	80	120	0.975	0.514	20	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903154
Project: HWY 101-Aux lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5041

Sample ID	MB-5041	SampType:	MBLK	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	3/25/2009	RunNo:	19062
Client ID:	ZZZZZ	Batch ID:	5041	TestNo:	SW7470A	(SW7470A)		Analysis Date:	3/26/2009	SeqNo:	275067

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.00020									

Sample ID	LCS-5041	SampType:	LCS	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	3/25/2009	RunNo:	19062
Client ID:	ZZZZZ	Batch ID:	5041	TestNo:	SW7470A	(SW7470A)		Analysis Date:	3/26/2009	SeqNo:	275065

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.01671	0.00020	0.015	0	111	80	120				

Sample ID	LCSD-5041	SampType:	LCSD	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	3/25/2009	RunNo:	19062
Client ID:	ZZZZZ	Batch ID:	5041	TestNo:	SW7470A	(SW7470A)		Analysis Date:	3/26/2009	SeqNo:	275066

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.01689	0.00020	0.015	0	113	80	120	0.01671	1.07	20	

Sample ID	0903154-086AMS	SampType:	MS	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	3/25/2009	RunNo:	19062
Client ID:	S-1-18-GW	Batch ID:	5041	TestNo:	SW7470A	(SW7470A)		Analysis Date:	3/26/2009	SeqNo:	275063

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.005350	0.00020	0.015	0	35.7	70	130				S

Sample ID	0903154-086AMSD	SampType:	MSD	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	3/25/2009	RunNo:	19062
Client ID:	S-1-18-GW	Batch ID:	5041	TestNo:	SW7470A	(SW7470A)		Analysis Date:	3/26/2009	SeqNo:	275064

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.005410	0.00020	0.015	0	36.1	70	130	0.00535	1.12	20	S

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903154
Project: HWY 101-Aux lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5044

Sample ID	MB-5044	SampType:	MBLK	TestCode:	HG_CTS	Units:	mg/Kg	Prep Date:	3/26/2009	RunNo:	19063
Client ID:	ZZZZZ	Batch ID:	5044	TestNo:	SW7471A	(SW7471APR		Analysis Date:	3/26/2009	SeqNo:	275088

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.10									

Sample ID	LCS-5044	SampType:	LCS	TestCode:	HG_CTS	Units:	mg/Kg	Prep Date:	3/26/2009	RunNo:	19063
Client ID:	ZZZZZ	Batch ID:	5044	TestNo:	SW7471A	(SW7471APR		Analysis Date:	3/26/2009	SeqNo:	275086

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.400	0.10	1.25	0	112	80.5	133				

Sample ID	LCSD-5044	SampType:	LCSD	TestCode:	HG_CTS	Units:	mg/Kg	Prep Date:	3/26/2009	RunNo:	19063
Client ID:	ZZZZZ	Batch ID:	5044	TestNo:	SW7471A	(SW7471APR		Analysis Date:	3/26/2009	SeqNo:	275087

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.433	0.10	1.25	0	115	80.5	133	1.4	2.35	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903154
Project: HWY 101-Aux lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5046

Sample ID	MB-5046	SampType:	MBLK	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/26/2009	RunNo:	19070
Client ID:	ZZZZZ	Batch ID:	5046	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/29/2009	SeqNo:	275285

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	5.0									
Arsenic	ND	1.7									
Barium	ND	5.0									
Beryllium	ND	2.0									
Cadmium	ND	1.0									
Chromium	ND	5.0									
Cobalt	ND	5.0									
Copper	ND	5.0									
Lead	ND	1.0									
Molybdenum	ND	5.0									
Nickel	ND	5.0									
Selenium	ND	5.0									
Silver	ND	1.0									
Thallium	ND	5.0									
Vanadium	ND	5.0									
Zinc	ND	5.0									

Sample ID	LCS-5046	SampType:	LCS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/26/2009	RunNo:	19070
Client ID:	ZZZZZ	Batch ID:	5046	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/29/2009	SeqNo:	275283

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	50.35	5.0	50	0	101	30.7	130				
Arsenic	52.35	1.7	50	0	105	71	121				
Barium	50.75	5.0	50	0.15	101	70.2	130				
Beryllium	50.00	2.0	50	0	100	73.3	115				
Cadmium	50.55	1.0	50	0	101	68.7	110				
Chromium	52.45	5.0	50	0.1	105	76	116				
Cobalt	51.55	5.0	50	0	103	57.4	122				
Copper	53.00	5.0	50	0.2	106	74.8	119				
Lead	52.35	1.0	50	0.35	104	67.9	118				
Molybdenum	52.45	5.0	50	0	105	62.9	123				

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903154
Project: HWY 101-Aux lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5046

Sample ID	LCS-5046	SampType:	LCS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/26/2009	RunNo:	19070
Client ID:	ZZZZZ	Batch ID:	5046	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/29/2009	SeqNo:	275283

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	49.35	5.0	50	0	98.7	61.5	122				
Selenium	47.50	5.0	50	0	95.0	62	111				
Silver	49.55	1.0	50	0	99.1	81.1	109				
Thallium	49.10	5.0	50	0	98.2	39.2	125				
Vanadium	53.35	5.0	50	0	107	65.8	122				
Zinc	51.85	5.0	50	0.6	103	59.9	122				

Sample ID	LCSD-5046	SampType:	LCSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/26/2009	RunNo:	19070
Client ID:	ZZZZZ	Batch ID:	5046	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/29/2009	SeqNo:	275284

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	48.35	5.0	50	0	96.7	30.7	130	50.35	4.05	30	
Arsenic	51.65	1.7	50	0	103	71	121	52.35	1.35	30	
Barium	50.80	5.0	50	0.15	101	70.2	130	50.75	0.0985	30	
Beryllium	49.95	2.0	50	0	99.9	73.3	115	50	0.100	30	
Cadmium	48.05	1.0	50	0	96.1	68.7	110	50.55	5.07	30	
Chromium	51.20	5.0	50	0.1	102	76	116	52.45	2.41	30	
Cobalt	49.75	5.0	50	0	99.5	57.4	122	51.55	3.55	30	
Copper	53.00	5.0	50	0.2	106	74.8	119	53	0	30	
Lead	51.70	1.0	50	0.35	103	67.9	118	52.35	1.25	30	
Molybdenum	51.80	5.0	50	0	104	62.9	123	52.45	1.25	30	
Nickel	49.60	5.0	50	0	99.2	61.5	122	49.35	0.505	30	
Selenium	46.90	5.0	50	0	93.8	62	111	47.5	1.27	30	
Silver	49.55	1.0	50	0	99.1	81.1	109	49.55	0	30	
Thallium	48.70	5.0	50	0	97.4	39.2	125	49.1	0.818	30	
Vanadium	51.15	5.0	50	0	102	65.8	122	53.35	4.21	30	
Zinc	51.85	5.0	50	0.6	103	59.9	122	51.85	0	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903154
Project: HWY 101-Aux lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5046

Sample ID	0903154-001AMS	SampType:	MS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/26/2009	RunNo:	19070
Client ID:	S-2-4@0.5	Batch ID:	5046	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/29/2009	SeqNo:	275261

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	30.25	5.0	50	3.35	53.8	30.7	130				
Arsenic	48.30	1.7	50	2.45	91.7	71	121				
Barium	181.8	5.0	50	158.8	46.0	56.2	127				S
Beryllium	44.40	2.0	50	0	88.8	73.3	115				
Cadmium	45.95	1.0	50	1.35	89.2	68.7	110				
Chromium	79.05	5.0	50	36.8	84.5	76	116				
Cobalt	51.05	5.0	50	7.9	86.3	57.4	122				
Copper	150.0	5.0	50	87.45	125	74.8	119				S
Lead	NR	1.0	50	1026	-88.0	60.5	113				NR
Molybdenum	45.90	5.0	50	1.6	88.6	62.9	123				
Nickel	78.75	5.0	50	39.25	79.0	61.5	122				
Selenium	43.40	5.0	50	0.65	85.5	62	111				
Silver	49.60	1.0	50	1.05	97.1	81.1	109				
Thallium	34.70	5.0	50	0	69.4	39.2	125				
Vanadium	76.55	5.0	50	26.6	99.9	65.8	122				
Zinc	NR	5.0	50	247.4	120	59.9	122				NR

Sample ID	0903154-001AMSD	SampType:	MSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/26/2009	RunNo:	19070
Client ID:	S-2-4@0.5	Batch ID:	5046	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/29/2009	SeqNo:	275262

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	34.00	5.0	50	3.35	61.3	30.7	130	30.25	11.7	30	
Arsenic	48.75	1.7	50	2.45	92.6	71	121	48.3	0.927	30	
Barium	196.8	5.0	50	158.8	76.0	56.2	127	181.8	7.92	30	
Beryllium	44.65	2.0	50	0	89.3	73.3	115	44.4	0.561	30	
Cadmium	46.35	1.0	50	1.35	90.0	68.7	110	45.95	0.867	30	
Chromium	86.65	5.0	50	36.8	99.7	76	116	79.05	9.17	30	
Cobalt	51.00	5.0	50	7.9	86.2	57.4	122	51.05	0.0980	30	
Copper	167.9	5.0	50	87.45	161	74.8	119	150	11.3	30	S
Lead	NR	1.0	50	1026	3160	60.5	113	982	90.5	30	NR
Molybdenum	46.60	5.0	50	1.6	90.0	62.9	123	45.9	1.51	30	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903154
Project: HWY 101-Aux lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5046

Sample ID	0903154-001AMSD	SampType:	MSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/26/2009	RunNo:	19070
Client ID:	S-2-4@0.5	Batch ID:	5046	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/29/2009	SeqNo:	275262

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	111.0	5.0	50	39.25	144	61.5	122	78.75	34.0	30	SR
Selenium	41.00	5.0	50	0.65	80.7	62	111	43.4	5.69	30	
Silver	49.60	1.0	50	1.05	97.1	81.1	109	49.6	0	30	
Thallium	35.55	5.0	50	0	71.1	39.2	125	34.7	2.42	30	
Vanadium	76.10	5.0	50	26.6	99.0	65.8	122	76.55	0.590	30	
Zinc	NR	5.0	50	247.4	188	59.9	122	307.2	10.6	30	NR

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903154
Project: HWY 101-Aux lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5047

Sample ID	MB-5047	SampType:	MBLK	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/26/2009	RunNo:	19068
Client ID:	ZZZZZ	Batch ID:	5047	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/27/2009	SeqNo:	275197

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	1.0									

Sample ID	LCS-5047	SampType:	LCS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/26/2009	RunNo:	19068
Client ID:	ZZZZZ	Batch ID:	5047	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/27/2009	SeqNo:	275195

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	48.15	1.0	50	0.35	95.6	67.9	118				

Sample ID	LCSD-5047	SampType:	LCSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/26/2009	RunNo:	19068
Client ID:	ZZZZZ	Batch ID:	5047	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/27/2009	SeqNo:	275196

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	47.30	1.0	50	0.35	93.9	67.9	118	48.15	1.78	30	

Sample ID	0903154-020AMS	SampType:	MS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/26/2009	RunNo:	19068
Client ID:	S-2-8@3.0	Batch ID:	5047	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/27/2009	SeqNo:	275174

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	49.65	1.0	50	6	87.3	60.5	113				

Sample ID	0903154-020AMSD	SampType:	MSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/26/2009	RunNo:	19068
Client ID:	S-2-8@3.0	Batch ID:	5047	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/27/2009	SeqNo:	275175

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	42.75	1.0	50	6	73.5	60.5	113	49.65	14.9	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903154
Project: HWY 101-Aux lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5048

Sample ID	MB-5048	SampType:	MBLK	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/27/2009	RunNo:	19065
Client ID:	ZZZZZ	Batch ID:	5048	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/28/2009	SeqNo:	275119

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	1.0									

Sample ID	LCS-5048	SampType:	LCS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/27/2009	RunNo:	19065
Client ID:	ZZZZZ	Batch ID:	5048	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/28/2009	SeqNo:	275117

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	48.50	1.0	50	0.3	96.4	67.9	118				

Sample ID	LCSD-5048	SampType:	LCSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/27/2009	RunNo:	19065
Client ID:	ZZZZZ	Batch ID:	5048	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/28/2009	SeqNo:	275118

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	48.95	1.0	50	0.3	97.3	67.9	118	48.5	0.924	30	

Sample ID	0903154-097AMS	SampType:	MS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/27/2009	RunNo:	19065
Client ID:	S-2-2 @ 0.5	Batch ID:	5048	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/28/2009	SeqNo:	275095

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	NR	1.0	50	412	21.6	60.5	113				NR

Sample ID	0903154-097AMSD	SampType:	MSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/27/2009	RunNo:	19065
Client ID:	S-2-2 @ 0.5	Batch ID:	5048	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/28/2009	SeqNo:	275096

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	NR	1.0	50	412	-216	60.5	113	422.8	32.8	30	NR

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903154
Project: HWY 101-Aux lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5049

Sample ID	MB-5049	SampType:	MBLK	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/27/2009	RunNo:	19086
Client ID:	ZZZZZ	Batch ID:	5049	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/30/2009	SeqNo:	275554

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	1.0									

Sample ID	LCS-5049	SampType:	LCS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/27/2009	RunNo:	19086
Client ID:	ZZZZZ	Batch ID:	5049	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/30/2009	SeqNo:	275552

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	51.20	1.0	50	0.3	102	67.9	118				

Sample ID	LCSD-5049	SampType:	LCSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/27/2009	RunNo:	19086
Client ID:	ZZZZZ	Batch ID:	5049	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/30/2009	SeqNo:	275553

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	50.70	1.0	50	0.3	101	67.9	118	51.2	0.981	30	

Sample ID	0903154-039AMS	SampType:	MS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/27/2009	RunNo:	19086
Client ID:	S-3-4@2.0	Batch ID:	5049	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/30/2009	SeqNo:	275531

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	39.70	1.0	50	1.9	75.6	60.5	113				

Sample ID	0903154-039AMSD	SampType:	MSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/27/2009	RunNo:	19086
Client ID:	S-3-4@2.0	Batch ID:	5049	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/30/2009	SeqNo:	275532

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	41.25	1.0	50	1.9	78.7	60.5	113	39.7	3.83	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903154
Project: HWY 101-Aux lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5050

Sample ID	MB-5050	SampType:	MBLK	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/27/2009	RunNo:	19087
Client ID:	ZZZZZ	Batch ID:	5050	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/30/2009	SeqNo:	275585

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	1.0									

Sample ID	LCS-5050	SampType:	LCS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/27/2009	RunNo:	19087
Client ID:	ZZZZZ	Batch ID:	5050	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/30/2009	SeqNo:	275583

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	48.05	1.0	50	0.4	95.3	67.9	118				

Sample ID	LCSD-5050	SampType:	LCSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/27/2009	RunNo:	19087
Client ID:	ZZZZZ	Batch ID:	5050	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/30/2009	SeqNo:	275584

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	47.10	1.0	50	0.4	93.4	67.9	118	48.05	2.00	30	

Sample ID	0903154-058AMS	SampType:	MS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/27/2009	RunNo:	19087
Client ID:	S-3-10 @ 1.5	Batch ID:	5050	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/30/2009	SeqNo:	275562

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	49.15	1.0	50	9.4	79.5	60.5	113				

Sample ID	0903154-058AMSD	SampType:	MSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/27/2009	RunNo:	19087
Client ID:	S-3-10 @ 1.5	Batch ID:	5050	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/30/2009	SeqNo:	275563

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	51.60	1.0	50	9.4	84.4	60.5	113	49.15	4.86	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903154
Project: HWY 101-Aux lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5051

Sample ID	MB-5051	SampType:	MBLK	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/27/2009	RunNo:	19088
Client ID:	ZZZZZ	Batch ID:	5051	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/30/2009	SeqNo:	275618

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	1.0									

Sample ID	LCS-5051	SampType:	LCS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/27/2009	RunNo:	19088
Client ID:	ZZZZZ	Batch ID:	5051	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/30/2009	SeqNo:	275616

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	48.30	1.0	50	0.45	95.7	67.9	118				

Sample ID	LCSD-5051	SampType:	LCSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/27/2009	RunNo:	19088
Client ID:	ZZZZZ	Batch ID:	5051	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/30/2009	SeqNo:	275617

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	47.95	1.0	50	0.45	95.0	67.9	118	48.3	0.727	30	

Sample ID	0903154-077AMS	SampType:	MS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/27/2009	RunNo:	19088
Client ID:	S-3-8 @ 1.0	Batch ID:	5051	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/30/2009	SeqNo:	275595

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	49.70	1.0	50	16.85	65.7	60.5	113				

Sample ID	0903154-077AMSD	SampType:	MSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/27/2009	RunNo:	19088
Client ID:	S-3-8 @ 1.0	Batch ID:	5051	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/30/2009	SeqNo:	275596

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	63.85	1.0	50	16.85	94.0	60.5	113	49.7	24.9	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903154
Project: HWY 101-Aux lane

ANALYTICAL QC SUMMARY REPORT

BatchID: G19085

Sample ID	MB_G19085	SampType:	MBLK	TestCode:	TPH_GAS_W	Units:	µg/L	Prep Date:	3/30/2009	RunNo:	19085
Client ID:	ZZZZZ	Batch ID:	G19085	TestNo:	SW8260B(TP			Analysis Date:	3/30/2009	SeqNo:	275688

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	ND	50									
Surr: 4-Bromofllurobenzene	12.80	0	11.36	0	113	58.4	133				

Sample ID	LCS_G19085	SampType:	LCS	TestCode:	TPH_GAS_W	Units:	µg/L	Prep Date:	3/30/2009	RunNo:	19085
Client ID:	ZZZZZ	Batch ID:	G19085	TestNo:	SW8260B(TP			Analysis Date:	3/30/2009	SeqNo:	275689

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	213.0	50	227	0	93.8	52.4	127				
Surr: 4-Bromofllurobenzene	13.47	0	11.36	0	119	58.4	133				

Sample ID	LCSD_G19085	SampType:	LCSD	TestCode:	TPH_GAS_W	Units:	µg/L	Prep Date:	3/30/2009	RunNo:	19085
Client ID:	ZZZZZ	Batch ID:	G19085	TestNo:	SW8260B(TP			Analysis Date:	3/30/2009	SeqNo:	275690

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	209.0	50	227	0	92.1	52.4	127	213	1.90	20	
Surr: 4-Bromofllurobenzene	12.68	0	11.36	0	112	58.4	133	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903154
Project: HWY 101-Aux lane

ANALYTICAL QC SUMMARY REPORT

BatchID: R19060

Sample ID **SD090326A-MB** SampType: **MBLK** TestCode: **TPHDO_S** Units: **mg/Kg** Prep Date: **3/26/2009** RunNo: **19060**
Client ID: **ZZZZZ** Batch ID: **R19060** TestNo: **SW8015B** Analysis Date: **3/26/2009** SeqNo: **275019**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	ND	2.00									
TPH (Motor Oil)	ND	4.00									
Surr: Pentacosane	3.858	0	3.3	0	117	59.7	129				

Sample ID **SD090330A-MB** SampType: **MBLK** TestCode: **TPHDO_S** Units: **mg/Kg** Prep Date: **3/30/2009** RunNo: **19060**
Client ID: **ZZZZZ** Batch ID: **R19060** TestNo: **SW8015B** Analysis Date: **3/30/2009** SeqNo: **275704**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	ND	2.00									
TPH (Motor Oil)	ND	4.00									
Surr: Pentacosane	3.300	0	3.3	0	100	59.7	129				

Sample ID **SD090326A-LCS** SampType: **LCS** TestCode: **TPHDO_S** Units: **mg/Kg** Prep Date: **3/26/2009** RunNo: **19060**
Client ID: **ZZZZZ** Batch ID: **R19060** TestNo: **SW8015B** Analysis Date: **3/26/2009** SeqNo: **275020**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	27.16	2.00	33.33	0	81.5	52.7	115				
Surr: Pentacosane	3.070	0	3.3	0	93.0	59.7	129				

Sample ID **SD090326A-LCSD** SampType: **LCSD** TestCode: **TPHDO_S** Units: **mg/Kg** Prep Date: **3/26/2009** RunNo: **19060**
Client ID: **ZZZZZ** Batch ID: **R19060** TestNo: **SW8015B** Analysis Date: **3/26/2009** SeqNo: **275021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	29.28	2.00	33.33	0	87.9	52.7	115	27.16	7.53	30	
Surr: Pentacosane	3.420	0	3.3	0	104	59.7	129	0	0	0	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903154
Project: HWY 101-Aux lane

ANALYTICAL QC SUMMARY REPORT

BatchID: R19073

Sample ID	SP090327B-MB	SampType:	MBLK	TestCode:	8081S	Units:	µg/Kg	Prep Date:	3/27/2009	RunNo:	19073
Client ID:	ZZZZZ	Batch ID:	R19073	TestNo:	SW8081A			Analysis Date:	3/28/2009	SeqNo:	275321

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDD	ND	2.00									
4,4´-DDE	ND	2.00									
4,4´-DDT	ND	2.00									
Aldrin	ND	2.00									
alpha-BHC	ND	2.00									
alpha-Chlordane	ND	2.00									
beta-BHC	ND	2.00									
Chlordane	ND	20.0									
delta-BHC	ND	2.00									
Dieldrin	ND	2.00									
Endosulfan I	ND	2.00									
Endosulfan II	ND	2.00									
Endosulfan sulfate	ND	2.00									
Endrin	ND	2.00									
Endrin aldehyde	ND	2.00									
Endrin ketone	ND	2.00									
gamma-BHC	ND	2.00									
gamma-Chlordane	ND	2.00									
Heptachlor	ND	2.00									
Heptachlor epoxide	ND	2.00									
Methoxychlor	ND	5.00									
Toxaphene	ND	100									
Surr: Decachlorobiphenyl	43.53	0	50	0	87.1	57	126				
Surr: Tetrachloro-m-xylene	42.52	0	50	0	85.0	55.7	122				

Sample ID	SP090327B-LCS	SampType:	LCS	TestCode:	8081S	Units:	µg/Kg	Prep Date:	3/27/2009	RunNo:	19073
Client ID:	ZZZZZ	Batch ID:	R19073	TestNo:	SW8081A			Analysis Date:	3/28/2009	SeqNo:	275322

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDT	17.89	2.00	20	0	89.5	52.8	134				
Aldrin	17.74	2.00	20	0	88.7	53	123				

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903154
Project: HWY 101-Aux lane

ANALYTICAL QC SUMMARY REPORT

BatchID: R19073

Sample ID	SP090327B-LCS	SampType:	LCS	TestCode:	8081S	Units:	µg/Kg	Prep Date:	3/27/2009	RunNo:	19073
Client ID:	ZZZZZ	Batch ID:	R19073	TestNo:	SW8081A			Analysis Date:	3/28/2009	SeqNo:	275322

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dieldrin	18.10	2.00	20	0	90.5	44	130				
Endrin	16.97	2.00	20	0	84.9	44.1	121				
gamma-BHC	16.31	2.00	20	0	81.5	56.9	120				
Heptachlor	16.65	2.00	20	0	83.3	63.6	117				
Surr: Decachlorobiphenyl	58.34	0	70	0	83.3	57	126				
Surr: Tetrachloro-m-xylene	58.13	0	70	0	83.0	55.7	122				

Sample ID	SP090327B-LCSD	SampType:	LCSD	TestCode:	8081S	Units:	µg/Kg	Prep Date:	3/27/2009	RunNo:	19073
Client ID:	ZZZZZ	Batch ID:	R19073	TestNo:	SW8081A			Analysis Date:	3/28/2009	SeqNo:	275323

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDT	14.41	2.00	20	0	72.0	52.8	134	17.89	21.6	30	
Aldrin	14.61	2.00	20	0	73.0	53	123	17.74	19.4	30	
Dieldrin	14.93	2.00	20	0	74.7	44	130	18.1	19.2	30	
Endrin	14.03	2.00	20	0	70.1	44.1	121	16.97	19.0	30	
gamma-BHC	13.64	2.00	20	0	68.2	56.9	120	16.31	17.8	30	
Heptachlor	14.13	2.00	20	0	70.6	63.6	117	16.65	16.4	30	
Surr: Decachlorobiphenyl	48.60	0	70	0	69.4	57	126	0	0	0	
Surr: Tetrachloro-m-xylene	49.53	0	70	0	70.8	55.7	122	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903154
Project: HWY 101-Aux lane

ANALYTICAL QC SUMMARY REPORT

BatchID: R19075

Sample ID	WP090327A-MB	SampType:	MBLK	TestCode:	8081W	Units:	µg/L	Prep Date:	3/27/2009	RunNo:	19075
Client ID:	ZZZZZ	Batch ID:	R19075	TestNo:	SW8081A			Analysis Date:	3/27/2009	SeqNo:	275366

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDD	ND	0.0200									
4,4´-DDE	ND	0.0200									
4,4´-DDT	ND	0.0200									
Aldrin	ND	0.0200									
alpha-BHC	ND	0.0200									
alpha-Chlordane	ND	0.0200									
beta-BHC	ND	0.0200									
Chlordane	ND	0.250									
delta-BHC	ND	0.0200									
Dieldrin	ND	0.0200									
Endosulfan I	ND	0.0200									
Endosulfan II	ND	0.0200									
Endosulfan sulfate	ND	0.0200									
Endrin	ND	0.0200									
Endrin aldehyde	ND	0.0200									
Endrin ketone	ND	0.0200									
gamma-BHC	ND	0.0200									
gamma-Chlordane	ND	0.0200									
Heptachlor	ND	0.0200									
Heptachlor epoxide	ND	0.0200									
Methoxychlor	ND	0.0500									
Toxaphene	ND	1.00									
Surr: Decachlorobiphenyl	0.1985	0	0.25	0	79.4	52	116				
Surr: Tetrachloro-m-xylene	0.1382	0	0.25	0	55.3	40.3	118				

Sample ID	WP090327A-LCS	SampType:	LCS	TestCode:	8081W	Units:	µg/L	Prep Date:	3/27/2009	RunNo:	19075
Client ID:	ZZZZZ	Batch ID:	R19075	TestNo:	SW8081A			Analysis Date:	3/28/2009	SeqNo:	275390

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDT	0.07535	0.0200	0.1	0	75.4	58.4	126				
Aldrin	0.05703	0.0200	0.1	0	57.0	55.3	101				

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903154
Project: HWY 101-Aux lane

ANALYTICAL QC SUMMARY REPORT

BatchID: R19075

Sample ID	WP090327A-LCS	SampType:	LCS	TestCode:	8081W	Units:	µg/L	Prep Date:	3/27/2009	RunNo:	19075
Client ID:	ZZZZZ	Batch ID:	R19075	TestNo:	SW8081A			Analysis Date:	3/28/2009	SeqNo:	275390

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dieldrin	0.06883	0.0200	0.1	0	68.8	60.3	116				
Endrin	0.06695	0.0200	0.1	0	67.0	60.4	134				
gamma-BHC	0.06167	0.0200	0.1	0	61.7	61.6	135				
Heptachlor	0.06480	0.0200	0.1	0	64.8	60	97.8				
Surr: Decachlorobiphenyl	0.2212	0	0.35	0	63.2	52	116				
Surr: Tetrachloro-m-xylene	0.1554	0	0.35	0	44.4	40.3	118				

Sample ID	WP090327A-LCSD	SampType:	LCSD	TestCode:	8081W	Units:	µg/L	Prep Date:	3/27/2009	RunNo:	19075
Client ID:	ZZZZZ	Batch ID:	R19075	TestNo:	SW8081A			Analysis Date:	3/28/2009	SeqNo:	275391

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDT	0.09525	0.0200	0.1	0	95.2	58.4	126	0.07535	23.3	35	
Aldrin	0.06702	0.0200	0.1	0	67.0	55.3	101	0.05703	16.1	35	
Dieldrin	0.08987	0.0200	0.1	0	89.9	60.3	116	0.06883	26.5	35	
Endrin	0.08715	0.0200	0.1	0	87.2	60.4	134	0.06695	26.2	35	
gamma-BHC	0.07110	0.0200	0.1	0	71.1	61.6	135	0.06167	14.2	35	
Heptachlor	0.07485	0.0200	0.1	0	74.8	60	97.8	0.0648	14.4	35	
Surr: Decachlorobiphenyl	0.3166	0	0.35	0	90.4	52	116	0	0	0	
Surr: Tetrachloro-m-xylene	0.1818	0	0.35	0	51.9	40.3	118	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903154
Project: HWY 101-Aux lane

ANALYTICAL QC SUMMARY REPORT

BatchID: R19084

Sample ID **SQ090327A-MB** SampType: **MBLK** TestCode: **8082S** Units: **mg/Kg** Prep Date: **3/27/2009** RunNo: **19084**
Client ID: **ZZZZZ** Batch ID: **R19084** TestNo: **SW8082** Analysis Date: **3/28/2009** SeqNo: **275502**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	0.0230									
Aroclor 1221	ND	0.0920									
Aroclor 1232	ND	0.0460									
Aroclor 1242	ND	0.0430									
Aroclor 1248	ND	0.0360									
Aroclor 1254	ND	0.0240									
Aroclor 1260	ND	0.0270									
Surr: Decachlorobiphenyl	0.04472	0	0.05	0	89.4	55.1	113				
Surr: Tetrachloro-m-xylene	0.04397	0	0.05	0	87.9	51.7	128				

Sample ID **SQ090327A-LCS** SampType: **LCS** TestCode: **8082S** Units: **mg/Kg** Prep Date: **3/27/2009** RunNo: **19084**
Client ID: **ZZZZZ** Batch ID: **R19084** TestNo: **SW8082** Analysis Date: **3/28/2009** SeqNo: **275503**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	0.8610	0.100	1	0	86.1	55.6	135				
Aroclor 1260	0.5035	0.100	0.5	0	101	65.6	132				
Surr: Decachlorobiphenyl	0.05204	0	0.05	0	104	55.1	113				
Surr: Tetrachloro-m-xylene	0.05232	0	0.05	0	105	51.7	128				

Sample ID **SQ090327A-LCSD** SampType: **LCSD** TestCode: **8082S** Units: **mg/Kg** Prep Date: **3/27/2009** RunNo: **19084**
Client ID: **ZZZZZ** Batch ID: **R19084** TestNo: **SW8082** Analysis Date: **3/28/2009** SeqNo: **275504**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	0.8186	0.100	1	0	81.9	55.6	135	0.861	5.04	30	
Aroclor 1260	0.4812	0.100	0.5	0	96.2	65.6	132	0.5035	4.52	30	
Surr: Decachlorobiphenyl	0.04821	0	0.05	0	96.4	55.1	113	0	0	0	
Surr: Tetrachloro-m-xylene	0.04768	0	0.05	0	95.4	51.7	128	0	0	0	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903154
Project: HWY 101-Aux lane

ANALYTICAL QC SUMMARY REPORT

BatchID: R19089

Sample ID **WQ090328A-MB** SampType: **MBLK** TestCode: **8082W** Units: **µg/L** Prep Date: **3/28/2009** RunNo: **19089**
Client ID: **ZZZZZ** Batch ID: **R19089** TestNo: **SW8082** Analysis Date: **3/28/2009** SeqNo: **275620**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	10.0									
Aroclor 1221	ND	10.0									
Aroclor 1232	ND	10.0									
Aroclor 1242	ND	10.0									
Aroclor 1248	ND	10.0									
Aroclor 1254	ND	10.0									
Aroclor 1260	ND	10.0									
Surr: Decachlorobiphenyl	4.860	0	5	0	97.2	64.8	121				
Surr: Tetrachloro-m-xylene	4.790	0	5	0	95.8	64.7	115				

Sample ID **WQ090328A-LCS** SampType: **LCS** TestCode: **8082W** Units: **µg/L** Prep Date: **3/28/2009** RunNo: **19089**
Client ID: **ZZZZZ** Batch ID: **R19089** TestNo: **SW8082** Analysis Date: **3/28/2009** SeqNo: **275621**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	59.10	10.0	50	0	118	69.7	139				
Aroclor 1260	59.90	10.0	50	0	120	71.3	131				
Surr: Decachlorobiphenyl	4.990	0	5	0	99.8	64.8	121				
Surr: Tetrachloro-m-xylene	5.050	0	5	0	101	64.7	115				

Sample ID **WQ090328A-LCSD** SampType: **LCSD** TestCode: **8082W** Units: **µg/L** Prep Date: **3/28/2009** RunNo: **19089**
Client ID: **ZZZZZ** Batch ID: **R19089** TestNo: **SW8082** Analysis Date: **3/28/2009** SeqNo: **275629**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	59.50	10.0	50	0	119	69.7	139	59.1	0.675	30	
Aroclor 1260	60.50	10.0	50	0	121	71.3	131	59.9	0.997	30	
Surr: Decachlorobiphenyl	5.050	0	5	0	101	64.8	121	0	0		
Surr: Tetrachloro-m-xylene	5.040	0	5	0	101	64.7	115	0	0		

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903154
Project: HWY 101-Aux lane

ANALYTICAL QC SUMMARY REPORT

BatchID: R19094

Sample ID **WD090330A-MB** SampType: **MBLK** TestCode: **TPHDO_W** Units: **mg/L** Prep Date: **3/30/2009** RunNo: **19094**
Client ID: **ZZZZZ** Batch ID: **R19094** TestNo: **SW8015B** Analysis Date: **3/30/2009** SeqNo: **275719**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	ND	0.100									
TPH (Motor Oil)	ND	0.200									
Surr: Pentacosane	0.1020	0	0.1	0	102	57.9	125				

Sample ID **WD090330A-LCS** SampType: **LCS** TestCode: **TPHDO_W** Units: **mg/L** Prep Date: **3/30/2009** RunNo: **19094**
Client ID: **ZZZZZ** Batch ID: **R19094** TestNo: **SW8015B** Analysis Date: **3/30/2009** SeqNo: **275720**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	0.7080	0.100	1	0	70.8	50.3	125				
Surr: Pentacosane	0.1030	0	0.1	0	103	57.9	125				

Sample ID **WD090330A-LCSD** SampType: **LCSD** TestCode: **TPHDO_W** Units: **mg/L** Prep Date: **3/30/2009** RunNo: **19094**
Client ID: **ZZZZZ** Batch ID: **R19094** TestNo: **SW8015B** Analysis Date: **3/30/2009** SeqNo: **275721**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	0.6750	0.100	1	0	67.5	50.3	125	0.708	4.77	30	
Surr: Pentacosane	0.09900	0	0.1	0	99.0	57.9	125	0	0	0	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903154
Project: HWY 101-Aux lane

ANALYTICAL QC SUMMARY REPORT

BatchID: R19113

Sample ID	BLK-R19113	SampType:	MBLK	TestCode:	8260B_W	Units:	µg/L	Prep Date:	4/1/2009	RunNo:	19113
Client ID:	ZZZZZ	Batch ID:	R19113	TestNo:	SW8260B			Analysis Date:	4/1/2009	SeqNo:	275896

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	1.00									
1,1,1-Trichloroethane	ND	0.500									
1,1,2,2-Tetrachloroethane	ND	1.00									
1,1,2-Trichloroethane	ND	0.500									
1,1-Dichloroethane	ND	0.500									
1,1-Dichloroethene	ND	1.00									
1,1-Dichloropropene	ND	0.500									
1,2,3-Trichlorobenzene	ND	1.00									
1,2,3-Trichloropropane	ND	1.00									
1,2,4-Trichlorobenzene	ND	1.00									
1,2,4-Trimethylbenzene	ND	0.500									
1,2-Dibromo-3-chloropropane	ND	0.500									
1,2-Dibromoethane (EDB)	ND	0.500									
1,2-Dichlorobenzene	ND	0.500									
1,2-Dichloroethane (EDC)	ND	0.500									
1,2-Dichloropropane	ND	1.00									
1,3,5-Trimethylbenzene	ND	0.500									
1,3-Dichlorobenzene	ND	0.500									
1,4-Dichlorobenzene	ND	0.500									
2,2-Dichloropropane	ND	0.500									
2-Chloroethyl vinyl ether	ND	6.00									
2-Chlorotoluene	ND	0.500									
4-Chlorotoluene	ND	0.500									
4-Isopropyltoluene	ND	0.500									
Acetone	ND	10.0									
Benzene	ND	0.500									
Bromobenzene	ND	0.500									
Bromochloromethane	ND	0.500									
Bromodichloromethane	ND	0.500									
Bromoform	ND	1.00									
Bromomethane	ND	1.00									

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903154
Project: HWY 101-Aux lane

ANALYTICAL QC SUMMARY REPORT

BatchID: R19113

Sample ID	BLK-R19113	SampType:	MBLK	TestCode:	8260B_W	Units:	µg/L	Prep Date:	4/1/2009	RunNo:	19113
Client ID:	ZZZZZ	Batch ID:	R19113	TestNo:	SW8260B			Analysis Date:	4/1/2009	SeqNo:	275896

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon tetrachloride	ND	1.00									
Chlorobenzene	ND	0.500									
Chloroform	ND	0.500									
Chloromethane	ND	0.500									
cis-1,2-Dichloroethene	ND	0.500									
cis-1,3-Dichloropropene	ND	0.500									
Dibromochloromethane	ND	0.500									
Dibromomethane	ND	0.500									
Dichlorodifluoromethane	ND	0.500									
Diisopropyl ether (DIPE)	ND	0.500									
Ethyl tert-butyl ether (ETBE)	ND	0.500									
Ethylbenzene	ND	0.500									
Freon-113	ND	1.00									
Hexachlorobutadiene	ND	0.500									
Isopropylbenzene	ND	1.00									
Methyl tert-butyl ether (MTBE)	ND	0.500									
Methylene chloride	ND	5.00									
Naphthalene	ND	1.00									
n-Butylbenzene	ND	0.500									
n-Propylbenzene	ND	0.500									
sec-Butylbenzene	ND	0.500									
Styrene	ND	0.500									
t-Butyl alcohol (t-Butanol)	ND	5.00									
tert-Amyl methyl ether (TAME)	ND	0.500									
tert-Butylbenzene	ND	0.500									
Tetrachloroethene	ND	0.500									
Toluene	ND	0.500									
trans-1,2-Dichloroethene	ND	0.500									
trans-1,3-Dichloropropene	ND	0.500									
Trichloroethene	ND	0.500									
Trichlorofluoromethane	ND	0.500									

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903154
Project: HWY 101-Aux lane

ANALYTICAL QC SUMMARY REPORT

BatchID: R19113

Sample ID **BLK-R19113** SampType: **MBLK** TestCode: **8260B_W** Units: **µg/L** Prep Date: **4/1/2009** RunNo: **19113**
Client ID: **ZZZZZ** Batch ID: **R19113** TestNo: **SW8260B** Analysis Date: **4/1/2009** SeqNo: **275896**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	ND	0.500									
Xylenes, Total	ND	1.50									
Surr: Dibromofluoromethane	12.64	0	11.36	0	111	61.2	131				
Surr: 4-Bromofluorobenzene	11.84	0	11.36	0	104	64.1	120				
Surr: Toluene-d8	9.870	0	11.36	0	86.9	75.1	127				

Sample ID **LCS-R19113** SampType: **LCS** TestCode: **8260B_W** Units: **µg/L** Prep Date: **4/1/2009** RunNo: **19113**
Client ID: **ZZZZZ** Batch ID: **R19113** TestNo: **SW8260B** Analysis Date: **4/1/2009** SeqNo: **275897**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	14.79	1.00	17.04	0	86.8	61.4	129				
Benzene	16.83	0.500	17.04	0	98.8	66.9	140				
Chlorobenzene	17.30	0.500	17.04	0	102	73.9	137				
Toluene	16.17	0.500	17.04	0	94.9	76.6	123				
Trichloroethene	18.97	0.500	17.04	0	111	69.3	144				
Surr: Dibromofluoromethane	12.84	0	11.36	0	113	61.2	131				
Surr: 4-Bromofluorobenzene	10.54	0	11.36	0	92.8	64.1	120				
Surr: Toluene-d8	11.35	0	11.36	0	99.9	75.1	127				

Sample ID **LCSD-R19113** SampType: **LCSD** TestCode: **8260B_W** Units: **µg/L** Prep Date: **4/1/2009** RunNo: **19113**
Client ID: **ZZZZZ** Batch ID: **R19113** TestNo: **SW8260B** Analysis Date: **4/1/2009** SeqNo: **275898**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	15.94	1.00	17.04	0	93.5	61.4	129	14.79	7.48	20	
Benzene	17.87	0.500	17.04	0	105	66.9	140	16.83	5.99	20	
Chlorobenzene	18.62	0.500	17.04	0	109	73.9	137	17.3	7.35	20	
Toluene	15.74	0.500	17.04	0	92.4	76.6	123	16.17	2.70	20	
Trichloroethene	18.19	0.500	17.04	0	107	69.3	144	18.97	4.20	20	
Surr: Dibromofluoromethane	11.17	0	11.36	0	98.3	61.2	131	0	0	0	
Surr: 4-Bromofluorobenzene	9.500	0	11.36	0	83.6	64.1	120	0	0	0	
Surr: Toluene-d8	12.72	0	11.36	0	112	75.1	127	0	0	0	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903154
Project: HWY 101-Aux lane

ANALYTICAL QC SUMMARY REPORT

BatchID: T19069

Sample ID **MB_T19069** SampType: **MBLK** TestCode: **TPH_GAS_S** Units: **µg/Kg** Prep Date: **3/26/2009** RunNo: **19069**
Client ID: **ZZZZZ** Batch ID: **T19069** TestNo: **SW8260B(TP** Analysis Date: **3/26/2009** SeqNo: **275344**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	ND	100									
Surr: 4-Bromofllurobenzene	42.00	0	50	0	84.0	56.9	133				

Sample ID **LCS_T19069** SampType: **LCS** TestCode: **TPH_GAS_S** Units: **µg/Kg** Prep Date: **3/26/2009** RunNo: **19069**
Client ID: **ZZZZZ** Batch ID: **T19069** TestNo: **SW8260B(TP** Analysis Date: **3/26/2009** SeqNo: **275345**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	1123	100	1000	0	112	48.2	132				
Surr: 4-Bromofllurobenzene	42.00	0	50	0	84.0	56.9	133				

Sample ID **LCSD_T19069** SampType: **LCSD** TestCode: **TPH_GAS_S** Units: **µg/Kg** Prep Date: **3/27/2009** RunNo: **19069**
Client ID: **ZZZZZ** Batch ID: **T19069** TestNo: **SW8260B(TP** Analysis Date: **3/27/2009** SeqNo: **275346**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	1107	100	1000	0	111	48.2	132	1123	1.43	30	
Surr: 4-Bromofllurobenzene	35.00	0	50	0	70.0	56.9	133	0	0	0	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903154
Project: HWY 101-Aux lane

ANALYTICAL QC SUMMARY REPORT

BatchID: U19069

Sample ID **MB_U19069** SampType: **MBLK** TestCode: **8260B_S_PE** Units: **µg/Kg** Prep Date: **3/25/2009** RunNo: **19069**
Client ID: **ZZZZZ** Batch ID: **U19069** TestNo: **SW8260B** Analysis Date: **3/25/2009** SeqNo: **275915**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	10									
Diisopropyl ether (DIPE)	ND	10									
Ethyl tert-butyl ether (ETBE)	ND	10									
Ethylbenzene	ND	10									
Methyl tert-butyl ether (MTBE)	ND	10									
t-Butyl alcohol (t-Butanol)	ND	50									
tert-Amyl methyl ether (TAME)	ND	10									
Toluene	ND	10									
Xylenes, Total	ND	15									
Surr: 4-Bromofluorobenzene	43.36	0	50	0	86.7	55.8	141				
Surr: Dibromofluoromethane	45.59	0	50	0	91.2	59.8	148				
Surr: Toluene-d8	41.98	0	50	0	84.0	55.2	133				

Sample ID **LCS_U19069** SampType: **LCS** TestCode: **8260B_S_PE** Units: **µg/Kg** Prep Date: **3/25/2009** RunNo: **19069**
Client ID: **ZZZZZ** Batch ID: **U19069** TestNo: **SW8260B** Analysis Date: **3/25/2009** SeqNo: **275916**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	48.48	10	50	0	97.0	66.5	135				
Toluene	41.46	10	50	0	82.9	56.8	134				
Surr: 4-Bromofluorobenzene	44.98	0	50	0	90.0	55.8	141				
Surr: Dibromofluoromethane	46.41	0	50	0	92.8	59.8	148				
Surr: Toluene-d8	40.44	0	50	0	80.9	55.2	133				

Sample ID **LCSD_U19069** SampType: **LCSD** TestCode: **8260B_S_PE** Units: **µg/Kg** Prep Date: **3/25/2009** RunNo: **19069**
Client ID: **ZZZZZ** Batch ID: **U19069** TestNo: **SW8260B** Analysis Date: **3/25/2009** SeqNo: **275917**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	49.69	10	50	0	99.4	66.5	135	49.69	0	30	
Toluene	39.52	10	50	0	79.0	56.8	134	39.52	0	30	
Surr: 4-Bromofluorobenzene	41.27	0	50	0	82.5	55.8	141	0	0	0	
Surr: Dibromofluoromethane	45.84	0	50	0	91.7	59.8	148	0	0	0	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903154
Project: HWY 101-Aux lane

ANALYTICAL QC SUMMARY REPORT

BatchID: U19069

Sample ID	LCSD_U19069	SampType:	LCSD	TestCode:	8260B_S_PE	Units:	µg/Kg	Prep Date:	3/25/2009	RunNo:	19069
Client ID:	ZZZZZ	Batch ID:	U19069	TestNo:	SW8260B			Analysis Date:	3/25/2009	SeqNo:	275917

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Toluene-d8	39.93	0	50	0	79.9	55.2	133	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

Torrent Laboratory, Inc. **Date:** *19-Jun-09*

CLIENT: URS Corporation, San Jose
Project: HWY 101-Aux lane
Lab Order: 0903154

CASE NARRATIVE

Analytical Comments for Asbestos, PLM Note: Analysis performed by NVLAP Certified sub-contract laboratory. (Certification # 101048-3).

Analytical Comment for METHOD 6010B_S, 0903154-001A MS/MSD, QC Batch ID 19070, Note:The % recoveries in the MS/MSD for Lead and Zinc are not recoverable. The sample concentration is greater than 4X the spike concentration. No corrective action is required.

Analytical Comment for METHOD 6010B_S, 0903154-001A MS/MSD, QC Batch ID 19067, Note:The % recovery in the MS for Barium and Copper and in the MSD for Copper and Nickel are outside of laboratory control limits but within % RPD limits and % Recovery limits for the LCS/LCSD. A post digestion spike on the parent sample was anlayzed and all parameters were recovered within control limits indicating probable non-homogenity of the samples. No corrective action is required.

Analytical Comment for METHOD 6010B_S, 0903154-097A MS/MSD, QC Batch ID 19065, Note:The % recoveries in the MS/MSD for Lead are not recoverable. The sample concentration is greater than 4X the spike concentration. No corrective action is required.

Analytical Comment for METHOD 7470A, 0903154-086 MS/MSD, QC Batch ID 19062, Note:The % recoveries in the MS/MSD for Mercury are outside of laboratory control limits but within % RPD limits and % recovery limits for the LCS/LCSD. No corrective action is required.

REVISIONS:

Per client request, STLC, DI STLC and TCLP analysis was added to specified samples. Due to insufficient sample mass available, no DI STLC or TCLP was performed on requested sample -046 (S-3-6 @ 0.5). Due to limited sample available for all samples, STLC, DI STLC and TCLP was performed using only 25 g of homogenized sample.

Note: Extraction of 25 g sample / 250g 0.2M Sodium Citrate Solution was performed according to DI wet extraction procedure (WET) which was rotated in a rotary shaker for 48 hours.

Extraction started on 05/17/2009 @ 4.00 PM and ended on 05/19/2009 @ 4:00 PM
and
Extraction started on 05/19/2009 @ 4.00 PM and ended on 05/21/2009 @ 4:00 PM

CLIENT:	URS Corporation, San Jose
Project:	HWY 101-Aux lane
Lab Order:	0903154

CASE NARRATIVE

Note: Extraction of 25 g sample / 250g 0.2M Sodium Citrate Solution was performed according to wet extraction procedure (WET) which was rotated in a rotary shaker for 48 hours.

Extraction started on 05/17/2009 @ 4.00 PM and ended on 05/19/2009 @ 4:00 PM
and
Extraction started on 05/19/2009 @ 4.00 PM and ended on 05/21/2009 @ 4:00 PM

Note: Extraction of 25 g sample / 500g TCLP Fluid #1 or TCLP Flluid #2 (-016A, -017A, 062A, 097A, and -102A) was performed according to Toxicity Characteristic Leaching Procedure (TCLP) which was rotated in a rotary shaker for 18 hours.

Extraction started on 06/10/2009 @ 3:30 PM and ended on 06/11/2009 @ 9:30 AM
and
Extraction started on 06/11/2009 @ 5:00 PM and ended on 06/12/2009 @ 11:00 AM

TORRENT LABORATORY, INC.

483 Sinclair Frontage Road • Milpitas, CA • Phone: (408) 263-5258 • Fax: (408) 263-8293

Visit us at www.torrentlab.com email: analysis@torrentlab.com

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-2-4@0.5
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:55:00 PM

Lab Sample ID: 0903154-001
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	46	mg/L	5238
Lead (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	71	mg/L	5236
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	2.2	mg/L	5282
Lead	SW6010B	3/29/2009	1	1	1.0	1000	mg/Kg	5046

Client Sample ID: S-2-4@1.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:55:00 PM

Lab Sample ID: 0903154-002
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/29/2009	1	1	1.0	6.2	mg/Kg	5046

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-2-4@1.5
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:55:00 PM

Lab Sample ID: 0903154-003
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/29/2009	1	1	1.0	2.6	mg/Kg	5046

Client Sample ID: S-2-4@2.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:55:00 PM

Lab Sample ID: 0903154-004
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/29/2009	1	1	1.0	41	mg/Kg	5046

Client Sample ID: S-2-4@3.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:55:00 PM

Lab Sample ID: 0903154-005
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/29/2009	1	1	1.0	4.1	mg/Kg	5046

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-2-7@0.5
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:30:00 PM

Lab Sample ID: 0903154-006
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	6.2	mg/L	5238
Lead (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	7.0	mg/L	5236
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	0.33	mg/L	5282
Antimony	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Arsenic	SW6010B	3/29/2009	1.7	1	1.7	2.0	mg/Kg	5046
Barium	SW6010B	3/29/2009	5	1	5.0	100	mg/Kg	5046
Beryllium	SW6010B	3/29/2009	2	1	2.0	ND	mg/Kg	5046
Cadmium	SW6010B	3/29/2009	1	1	1.0	ND	mg/Kg	5046
Chromium	SW6010B	3/29/2009	5	1	5.0	31	mg/Kg	5046
Cobalt	SW6010B	3/29/2009	5	1	5.0	8.6	mg/Kg	5046
Copper	SW6010B	3/29/2009	5	1	5.0	55	mg/Kg	5046
Lead	SW6010B	3/29/2009	1	1	1.0	300	mg/Kg	5046
Molybdenum	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Nickel	SW6010B	3/29/2009	5	1	5.0	33	mg/Kg	5046
Selenium	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Silver	SW6010B	3/29/2009	1	1	1.0	1.4	mg/Kg	5046
Thallium	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Vanadium	SW6010B	3/29/2009	5	1	5.0	27	mg/Kg	5046
Zinc	SW6010B	3/29/2009	5	1	5.0	170	mg/Kg	5046

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-2-7@1.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:30:00 PM

Lab Sample ID: 0903154-007
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Chromium (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	0.14	mg/L	5236
Antimony	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Arsenic	SW6010B	3/29/2009	1.7	1	1.7	ND	mg/Kg	5046
Barium	SW6010B	3/29/2009	5	1	5.0	24	mg/Kg	5046
Beryllium	SW6010B	3/29/2009	2	1	2.0	ND	mg/Kg	5046
Cadmium	SW6010B	3/29/2009	1	1	1.0	ND	mg/Kg	5046
Chromium	SW6010B	3/29/2009	5	1	5.0	63	mg/Kg	5046
Cobalt	SW6010B	3/29/2009	5	1	5.0	27	mg/Kg	5046
Copper	SW6010B	3/29/2009	5	1	5.0	56	mg/Kg	5046
Lead	SW6010B	3/29/2009	1	1	1.0	3.7	mg/Kg	5046
Molybdenum	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Nickel	SW6010B	3/29/2009	5	1	5.0	48	mg/Kg	5046
Selenium	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Silver	SW6010B	3/29/2009	1	1	1.0	3.2	mg/Kg	5046
Thallium	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Vanadium	SW6010B	3/29/2009	5	1	5.0	74	mg/Kg	5046
Zinc	SW6010B	3/29/2009	5	1	5.0	49	mg/Kg	5046

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-2-7@1.5
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:30:00 PM

Lab Sample ID: 0903154-008
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Arsenic	SW6010B	3/29/2009	1.7	1	1.7	ND	mg/Kg	5046
Barium	SW6010B	3/29/2009	5	1	5.0	20	mg/Kg	5046
Beryllium	SW6010B	3/29/2009	2	1	2.0	ND	mg/Kg	5046
Cadmium	SW6010B	3/29/2009	1	1	1.0	ND	mg/Kg	5046
Chromium	SW6010B	3/29/2009	5	1	5.0	41	mg/Kg	5046
Cobalt	SW6010B	3/29/2009	5	1	5.0	26	mg/Kg	5046
Copper	SW6010B	3/29/2009	5	1	5.0	43	mg/Kg	5046
Lead	SW6010B	3/29/2009	1	1	1.0	1.2	mg/Kg	5046
Molybdenum	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Nickel	SW6010B	3/29/2009	5	1	5.0	38	mg/Kg	5046
Selenium	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Silver	SW6010B	3/29/2009	1	1	1.0	1.6	mg/Kg	5046
Thallium	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Vanadium	SW6010B	3/29/2009	5	1	5.0	76	mg/Kg	5046
Zinc	SW6010B	3/29/2009	5	1	5.0	59	mg/Kg	5046

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-2-7@2.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:30:00 PM

Lab Sample ID: 0903154-009
Date Prepared: 6/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Chromium (STLC)	6010B (STLC)	6/2/2009	0.1	1	0.10	0.15	mg/L	5242
Antimony	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Arsenic	SW6010B	3/29/2009	1.7	1	1.7	2.0	mg/Kg	5046
Barium	SW6010B	3/29/2009	5	1	5.0	110	mg/Kg	5046
Beryllium	SW6010B	3/29/2009	2	1	2.0	ND	mg/Kg	5046
Cadmium	SW6010B	3/29/2009	1	1	1.0	ND	mg/Kg	5046
Chromium	SW6010B	3/29/2009	5	1	5.0	61	mg/Kg	5046
Cobalt	SW6010B	3/29/2009	5	1	5.0	16	mg/Kg	5046
Copper	SW6010B	3/29/2009	5	1	5.0	34	mg/Kg	5046
Lead	SW6010B	3/29/2009	1	1	1.0	5.0	mg/Kg	5046
Molybdenum	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Nickel	SW6010B	3/29/2009	5	1	5.0	50	mg/Kg	5046
Selenium	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Silver	SW6010B	3/29/2009	1	1	1.0	3.4	mg/Kg	5046
Thallium	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Vanadium	SW6010B	3/29/2009	5	1	5.0	71	mg/Kg	5046
Zinc	SW6010B	3/29/2009	5	1	5.0	41	mg/Kg	5046

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-2-7@3.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:30:00 PM

Lab Sample ID: 0903154-010
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Arsenic	SW6010B	3/29/2009	1.7	1	1.7	ND	mg/Kg	5046
Barium	SW6010B	3/29/2009	5	1	5.0	91	mg/Kg	5046
Beryllium	SW6010B	3/29/2009	2	1	2.0	ND	mg/Kg	5046
Cadmium	SW6010B	3/29/2009	1	1	1.0	ND	mg/Kg	5046
Chromium	SW6010B	3/29/2009	5	1	5.0	42	mg/Kg	5046
Cobalt	SW6010B	3/29/2009	5	1	5.0	12	mg/Kg	5046
Copper	SW6010B	3/29/2009	5	1	5.0	25	mg/Kg	5046
Lead	SW6010B	3/29/2009	1	1	1.0	4.9	mg/Kg	5046
Molybdenum	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Nickel	SW6010B	3/29/2009	5	1	5.0	36	mg/Kg	5046
Selenium	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Silver	SW6010B	3/29/2009	1	1	1.0	2.8	mg/Kg	5046
Thallium	SW6010B	3/29/2009	5	1	5.0	ND	mg/Kg	5046
Vanadium	SW6010B	3/29/2009	5	1	5.0	49	mg/Kg	5046
Zinc	SW6010B	3/29/2009	5	1	5.0	34	mg/Kg	5046

Client Sample ID: S-2-9@0.5
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:40:00 PM

Lab Sample ID: 0903154-011
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	18	mg/L	5238
Lead (STLC)	6010B (STLC)	6/2/2009	0.1	1	0.10	7.2	mg/L	5242
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	ND	mg/L	5282
Lead	SW6010B	3/29/2009	1	1	1.0	560	mg/Kg	5046

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-2-9@1.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:40:00 PM

Lab Sample ID: 0903154-012
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	24	mg/L	5238
Lead (STLC)	6010B (STLC)	6/2/2009	0.1	1	0.10	17	mg/L	5242
Lead	SW6010B	3/29/2009	1	1	1.0	59	mg/Kg	5046

Client Sample ID: S-2-9@1.5
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:40:00 PM

Lab Sample ID: 0903154-013
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/29/2009	1	1	1.0	8.0	mg/Kg	5046

Client Sample ID: S-2-9@2.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:40:00 PM

Lab Sample ID: 0903154-014
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/29/2009	1	1	1.0	10	mg/Kg	5046

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-2-9@3.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:40:00 PM

Lab Sample ID: 0903154-015
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/29/2009	1	1	1.0	4.4	mg/Kg	5046

Client Sample ID: S-2-8@0.5
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:35:00 PM

Lab Sample ID: 0903154-016
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	29	mg/L	5238
Lead (STLC)	6010B (STLC)	6/2/2009	0.1	1	0.10	33	mg/L	5242
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	0.34	mg/L	5282
Lead	SW6010B	3/29/2009	1	1	1.0	900	mg/Kg	5046

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-2-8@1.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:35:00 PM

Lab Sample ID: 0903154-017
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	11	mg/L	5238
Lead (STLC)	6010B (STLC)	6/2/2009	0.1	1	0.10	3.9	mg/L	5242
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	ND	mg/L	5282
Lead	SW6010B	3/29/2009	1	1	1.0	210	mg/Kg	5046

Client Sample ID: S-2-8@1.5
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:35:00 PM

Lab Sample ID: 0903154-018
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/29/2009	1	1	1.0	9.6	mg/Kg	5046

Client Sample ID: S-2-8@2.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:35:00 PM

Lab Sample ID: 0903154-019
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/29/2009	1	1	1.0	9.9	mg/Kg	5046

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-2-8@3.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:35:00 PM

Lab Sample ID: 0903154-020
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	6.0	mg/Kg	5047

Client Sample ID: S-3-1@0.5
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:51:00 PM

Lab Sample ID: 0903154-021
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	9.1	mg/L	5238
Lead (STLC)	6010B (STLC)	6/2/2009	0.1	1	0.10	18	mg/L	5242
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	0.13	mg/L	5282
Lead	SW6010B	3/27/2009	1	1	1.0	920	mg/Kg	5047

Client Sample ID: S-3-1@1.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:51:00 PM

Lab Sample ID: 0903154-022
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	2.0	mg/Kg	5047

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-3-1@1.5
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:51:00 PM

Lab Sample ID: 0903154-023
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	1.7	mg/Kg	5047

Client Sample ID: S-3-1@2.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:51:00 PM

Lab Sample ID: 0903154-024
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	38	mg/Kg	5047

Client Sample ID: S-3-1@3.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:51:00 PM

Lab Sample ID: 0903154-025
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	3.3	mg/Kg	5047

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-2-10@0.5
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:45:00 PM

Lab Sample ID: 0903154-026
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	7.7	mg/L	5238
Lead (STLC)	6010B (STLC)	6/2/2009	0.1	1	0.10	6.0	mg/L	5242
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	ND	mg/L	5282
Lead	SW6010B	3/27/2009	1	1	1.0	210	mg/Kg	5047

Client Sample ID: S-2-10@1.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:45:00 PM

Lab Sample ID: 0903154-027
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	9.8	mg/Kg	5047

Client Sample ID: S-2-10@1.5
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:45:00 PM

Lab Sample ID: 0903154-028
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	4.7	mg/Kg	5047

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-2-10@2.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:51:00 PM

Lab Sample ID: 0903154-029
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	2.4	mg/Kg	5047

Client Sample ID: S-2-10@3.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:45:00 PM

Lab Sample ID: 0903154-030
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	1.5	mg/Kg	5047

Client Sample ID: S-3-3@0.5
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:58:00 PM

Lab Sample ID: 0903154-031
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	43	mg/L	5238
Lead (STLC)	6010B (STLC)	6/2/2009	0.1	1	0.10	100	mg/L	5242
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	9.0	mg/L	5282
Lead	SW6010B	3/29/2009	1	10	10	9700	mg/Kg	5047

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-3-3@1.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:58:00 PM

Lab Sample ID: 0903154-032
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	4.1	mg/L	5238
Lead (STLC)	6010B (STLC)	6/2/2009	0.1	1	0.10	1.0	mg/L	5242
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	ND	mg/L	5282
Lead	SW6010B	3/27/2009	1	1	1.0	100	mg/Kg	5047

Client Sample ID: S-3-3@1.5
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:58:00 PM

Lab Sample ID: 0903154-033
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	2.2	mg/Kg	5047

Client Sample ID: S-3-3@2.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:58:00 PM

Lab Sample ID: 0903154-034
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	2.1	mg/Kg	5047

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-3-3@3.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:58:00 PM

Lab Sample ID: 0903154-035
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	6.0	mg/Kg	5047

Client Sample ID: S-3-4@0.5
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 12:07:00 AM

Lab Sample ID: 0903154-036
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	1.8	mg/L	5238
Lead (STLC)	6010B (STLC)	6/2/2009	0.1	1	0.10	4.5	mg/L	5242
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	ND	mg/L	5282
Lead	SW6010B	3/27/2009	1	1	1.0	150	mg/Kg	5047

Client Sample ID: S-3-4@1.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 12:07:00 AM

Lab Sample ID: 0903154-037
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	5.4	mg/Kg	5047

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-3-4@1.5
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 12:07:00 AM

Lab Sample ID: 0903154-038
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	4.2	mg/Kg	5047

Client Sample ID: S-3-4@2.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 12:07:00 AM

Lab Sample ID: 0903154-039
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	1.9	mg/Kg	5049

Client Sample ID: S-3-4@3.0
Sample Location: HWY 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 12:07:00 AM

Lab Sample ID: 0903154-040
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	2.5	mg/Kg	5049

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-3-5 @ 0.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:15:00 AM

Lab Sample ID: 0903154-041
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	7.1	mg/L	5238
Lead (STLC)	6010B (STLC)	6/2/2009	0.1	1	0.10	22	mg/L	5242
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	ND	mg/L	5282
Lead	SW6010B	3/30/2009	1	1	1.0	410	mg/Kg	5049

Client Sample ID: S-3-5 @ 1.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:15:00 AM

Lab Sample ID: 0903154-042
Date Prepared:

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	56	mg/Kg	5049

Client Sample ID: S-3-5 @ 1.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:15:00 AM

Lab Sample ID: 0903154-043
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	10	mg/Kg	5049

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-3-5 @ 2.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:15:00 AM

Lab Sample ID: 0903154-044
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	9.2	mg/Kg	5049

Client Sample ID: S-3-5 @ 3.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:15:00 AM

Lab Sample ID: 0903154-045
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	2.9	mg/Kg	5049

Client Sample ID: S-3-6 @ 0.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:22:00 AM

Lab Sample ID: 0903154-046
Date Prepared:

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (STLC)	6010B (STLC)	6/2/2009	0.1	1	0.10	14	mg/L	5242
Lead	SW6010B	3/30/2009	1	1	1.0	98	mg/Kg	5049

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-3-6 @ 1.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:22:00 AM

Lab Sample ID: 0903154-047
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	8.3	mg/L	5238
Lead (STLC)	6010B (STLC)	6/2/2009	0.1	1	0.10	64	mg/L	5242
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	0.62	mg/L	5283
Lead	SW6010B	3/30/2009	1	1	1.0	210	mg/Kg	5049

Client Sample ID: S-3-6 @ 1.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:22:00 AM

Lab Sample ID: 0903154-048
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	35	mg/Kg	5049

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-3-6 @ 2.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:22:00 AM

Lab Sample ID: 0903154-049
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	7.9	mg/L	5238
Lead (STLC)	6010B (STLC)	6/2/2009	0.1	1	0.10	10	mg/L	5242
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	0.24	mg/L	5283
Lead	SW6010B	3/30/2009	1	1	1.0	140	mg/Kg	5049

Client Sample ID: S-3-6 @ 3.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:22:00 AM

Lab Sample ID: 0903154-050
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	5.1	mg/Kg	5049

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-3-7 @ 0.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:28:00 AM

Lab Sample ID: 0903154-051
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	16	mg/L	5238
Lead (STLC)	6010B (STLC)	6/2/2009	0.1	1	0.10	9.5	mg/L	5242
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	0.96	mg/L	5283
Lead	SW6010B	3/30/2009	1	1	1.0	150	mg/Kg	5049

Client Sample ID: S-3-7 @ 1.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:28:00 AM

Lab Sample ID: 0903154-052
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	47	mg/Kg	5049

Client Sample ID: S-3-7 @ 1.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:28:00 AM

Lab Sample ID: 0903154-053
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	7.3	mg/Kg	5049

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-3-7 @ 2.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:28:00 AM

Lab Sample ID: 0903154-054
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	4.0	mg/Kg	5049

Client Sample ID: S-3-7 @ 3.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:28:00 AM

Lab Sample ID: 0903154-055
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	6.1	mg/Kg	5049

Client Sample ID: S-3-10 @ 0.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:55:00 AM

Lab Sample ID: 0903154-056
Date Prepared: 6/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/2/2009	0.1	1	0.10	50	mg/L	5241
Lead (STLC)	6010B (STLC)	6/2/2009	0.1	1	0.10	10	mg/L	5242
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	1.2	mg/L	5283
Lead	SW6010B	3/30/2009	1	1	1.0	2200	mg/Kg	5049

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-3-10 @ 1.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:55:00 AM

Lab Sample ID: 0903154-057
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	11	mg/Kg	5049

Client Sample ID: S-3-10 @ 1.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:55:00 AM

Lab Sample ID: 0903154-058
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	9.4	mg/Kg	5050

Client Sample ID: S-3-10 @ 2.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:55:00 AM

Lab Sample ID: 0903154-059
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	4.1	mg/Kg	5050

Client Sample ID: S-3-10 @ 3.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:55:00 AM

Lab Sample ID: 0903154-060
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	12	mg/Kg	5050

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-2-6 @ 0.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:20:00 PM

Lab Sample ID: 0903154-061
Date Prepared: 6/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/2/2009	0.1	1	0.10	34	mg/L	5241
Lead (STLC)	6010B (STLC)	6/2/2009	0.1	1	0.10	37	mg/L	5242
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	ND	mg/L	5283
Lead	SW6010B	3/30/2009	1	1	1.0	490	mg/Kg	5050

Client Sample ID: S-2-6 @ 1.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:20:00 PM

Lab Sample ID: 0903154-062
Date Prepared: 6/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/2/2009	0.1	1	0.10	ND	mg/L	5241
Lead (STLC)	6010B (STLC)	6/2/2009	0.1	1	0.10	0.37	mg/L	5242
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	ND	mg/L	5283
Lead	SW6010B	3/30/2009	1	1	1.0	110	mg/Kg	5050

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-2-6 @ 1.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:20:00 PM

Lab Sample ID: 0903154-063
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	2.8	mg/Kg	5050

Client Sample ID: S-2-6 @ 2.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:20:00 PM

Lab Sample ID: 0903154-064
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	3.4	mg/Kg	5050

Client Sample ID: S-2-6 @ 3.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:20:00 PM

Lab Sample ID: 0903154-065
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	2.9	mg/Kg	5050

Client Sample ID: S-3-9 @ 0.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:45:00 AM

Lab Sample ID: 0903154-066
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	17	mg/Kg	5050

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-3-9 @ 1.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:45:00 AM

Lab Sample ID: 0903154-067
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	5.4	mg/Kg	5050

Client Sample ID: S-3-9 @ 1.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:45:00 AM

Lab Sample ID: 0903154-068
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	4.8	mg/Kg	5050

Client Sample ID: S-3-9 @ 2.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:45:00 AM

Lab Sample ID: 0903154-069
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	4.1	mg/Kg	5050

Client Sample ID: S-3-9 @ 3.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:45:00 AM

Lab Sample ID: 0903154-070
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	4.0	mg/Kg	5050

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-2-5 @ 0.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:10:00 PM

Lab Sample ID: 0903154-071
Date Prepared: 6/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/2/2009	0.1	1	0.10	1.6	mg/L	5241
Lead (STLC)	6010B (STLC)	6/2/2009	0.1	1	0.10	0.39	mg/L	5242
Lead	SW6010B	3/30/2009	1	1	1.0	68	mg/Kg	5050

Client Sample ID: S-2-5 @ 1.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:10:00 PM

Lab Sample ID: 0903154-072
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	9.2	mg/Kg	5050

Client Sample ID: S-2-5 @ 1.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:10:00 PM

Lab Sample ID: 0903154-073
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	5.0	mg/Kg	5050

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-2-5 @ 2.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:10:00 PM

Lab Sample ID: 0903154-074
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	10	mg/Kg	5050

Client Sample ID: S-2-5 @ 3.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 11:10:00 PM

Lab Sample ID: 0903154-075
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	9.8	mg/Kg	5050

Client Sample ID: S-3-8 @ 0.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:35:00 AM

Lab Sample ID: 0903154-076
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	32	mg/Kg	5050

Client Sample ID: S-3-8 @ 1.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:35:00 AM

Lab Sample ID: 0903154-077
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	17	mg/Kg	5051

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-3-8 @ 1.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:35:00 AM

Lab Sample ID: 0903154-078
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	7.8	mg/Kg	5051

Client Sample ID: S-3-8 @ 2.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:35:00 AM

Lab Sample ID: 0903154-079
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	5.5	mg/Kg	5051

Client Sample ID: S-3-8 @ 3.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/25/2009 12:35:00 AM

Lab Sample ID: 0903154-080
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	4.8	mg/Kg	5051

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-1-18 @ 0.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 9:37:00 PM

Lab Sample ID: 0903154-081
Date Prepared: 6/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/2/2009	0.1	1	0.10	19	mg/L	5241
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	44	mg/L	5247
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	ND	mg/L	5283
Lead	SW6010B	3/30/2009	1	1	1.0	750	mg/Kg	5051

Client Sample ID: S-1-18 @ 1.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 9:37:00 PM

Lab Sample ID: 0903154-082
Date Prepared: 6/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/2/2009	0.1	1	0.10	0.88	mg/L	5241
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	8.5	mg/L	5247
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	ND	mg/L	5283
Lead	SW6010B	3/30/2009	1	1	1.0	740	mg/Kg	5051

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-1-18 @ 1.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 9:37:00 PM

Lab Sample ID: 0903154-083
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	4.8	mg/Kg	5051

Client Sample ID: S-1-18 @ 2.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 9:37:00 PM

Lab Sample ID: 0903154-084
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	5.4	mg/Kg	5051

Client Sample ID: S-1-18 @ 3.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 9:37:00 PM

Lab Sample ID: 0903154-085
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	5.3	mg/Kg	5051

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-1-19 @ 0.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:25:00 PM

Lab Sample ID: 0903154-087
Date Prepared: 6/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/2/2009	0.1	1	0.10	16	mg/L	5241
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	27	mg/L	5247
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	0.25	mg/L	5283
Lead	SW6010B	3/30/2009	1	1	1.0	220	mg/Kg	5051

Client Sample ID: S-1-19 @ 1.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:25:00 PM

Lab Sample ID: 0903154-088
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	1.6	mg/Kg	5051

Client Sample ID: S-1-19 @ 1.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:25:00 PM

Lab Sample ID: 0903154-089
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	2.2	mg/Kg	5051

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-1-19 @ 2.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:25:00 PM

Lab Sample ID: 0903154-090
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	6.7	mg/Kg	5051

Client Sample ID: S-1-19 @ 3.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:25:00 PM

Lab Sample ID: 0903154-091
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	7.6	mg/Kg	5051

Client Sample ID: S-2-1 @ 0.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:40:00 PM

Lab Sample ID: 0903154-092
Date Prepared: 6/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/2/2009	0.1	1	0.10	10	mg/L	5241
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	32	mg/L	5247
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	ND	mg/L	5283
Lead	SW6010B	3/30/2009	1	1	1.0	820	mg/Kg	5051

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-2-1 @ 1.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:40:00 PM

Lab Sample ID: 0903154-093
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	6.2	mg/Kg	5051

Client Sample ID: S-2-1 @ 1.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:40:00 PM

Lab Sample ID: 0903154-094
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	23	mg/Kg	5051

Client Sample ID: S-2-1 @ 2.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:40:00 PM

Lab Sample ID: 0903154-095
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	3.8	mg/Kg	5051

Client Sample ID: S-2-1 @ 3.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:40:00 PM

Lab Sample ID: 0903154-096
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/30/2009	1	1	1.0	3.6	mg/Kg	5051

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-2-2 @ 0.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:43:00 PM

Lab Sample ID: 0903154-097
Date Prepared: 6/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/2/2009	0.1	1	0.10	ND	mg/L	5241
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	6.2	mg/L	5247
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	ND	mg/L	5283
Lead	SW6010B	3/28/2009	1	1	1.0	410	mg/Kg	5048

Client Sample ID: S-2-2 @ 1.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:43:00 PM

Lab Sample ID: 0903154-098
Date Prepared:

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/28/2009	1	1	1.0	40	mg/Kg	5048

Client Sample ID: S-2-2 @ 1.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:43:00 PM

Lab Sample ID: 0903154-099
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/28/2009	1	1	1.0	2.9	mg/Kg	5048

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-2-2 @ 2.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:43:00 PM

Lab Sample ID: 0903154-100
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/28/2009	1	1	1.0	2.4	mg/Kg	5048

Client Sample ID: S-2-2 @ 3.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:43:00 PM

Lab Sample ID: 0903154-101
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/28/2009	1	1	1.0	1.9	mg/Kg	5048

Client Sample ID: S-2-2-D @ 0.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:43:00 PM

Lab Sample ID: 0903154-102
Date Prepared: 6/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/2/2009	0.1	1	0.10	ND	mg/L	5241
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	14	mg/L	5247
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	ND	mg/L	5283
Lead	SW6010B	3/28/2009	1	1	1.0	630	mg/Kg	5048

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-2-2-D @ 1.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:43:00 PM

Lab Sample ID: 0903154-103
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/28/2009	1	1	1.0	3.9	mg/Kg	5048

Client Sample ID: S-2-2-D @ 1.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:43:00 PM

Lab Sample ID: 0903154-104
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/28/2009	1	1	1.0	2.6	mg/Kg	5048

Client Sample ID: S-2-2-D @ 2.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:43:00 PM

Lab Sample ID: 0903154-105
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/28/2009	1	1	1.0	2.2	mg/Kg	5048

Client Sample ID: S-2-2-D @ 3.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:43:00 PM

Lab Sample ID: 0903154-106
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/28/2009	1	1	1.0	2.2	mg/Kg	5048

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-1-20 @ 0.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:30:00 PM

Lab Sample ID: 0903154-107
Date Prepared: 6/1/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/2/2009	0.1	1	0.10	20	mg/L	5241
Lead (STLC)	6010B (STLC)	6/3/2009	0.1	1	0.10	44	mg/L	5247
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	0.13	mg/L	5283
Lead	SW6010B	3/28/2009	1	1	1.0	680	mg/Kg	5048

Client Sample ID: S-1-20 @ 1.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:30:00 PM

Lab Sample ID: 0903154-108
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/28/2009	1	1	1.0	15	mg/Kg	5048

Client Sample ID: S-1-20 @ 1.5
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:30:00 PM

Lab Sample ID: 0903154-109
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/28/2009	1	1	1.0	5.8	mg/Kg	5048

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/25/2009
Date Reported: 6/19/2009

Client Sample ID: S-1-20 @ 2.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:30:00 PM

Lab Sample ID: 0903154-110
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/28/2009	1	1	1.0	8.4	mg/Kg	5048

Client Sample ID: S-1-20 @ 3.0
Sample Location: Hwy 101-Aux lane
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 10:30:00 PM

Lab Sample ID: 0903154-111
Date Prepared: 3/27/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/28/2009	1	1	1.0	3.4	mg/Kg	5048

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Definitions, legends and Notes

Note	Description
ug/kg	Microgram per kilogram (ppb, part per billion).
ug/L	Microgram per liter (ppb, part per billion).
mg/kg	Milligram per kilogram (ppm, part per million).
mg/L	Milligram per liter (ppm, part per million).
LCS/LCSD	Laboratory control sample/laboratory control sample duplicate.
MDL	Method detection limit.
MRL	Modified reporting limit. When sample is subject to dilution, reporting limit times dilution factor yields MRL.
MS/MSD	Matrix spike/matrix spike duplicate.
N/A	Not applicable.
ND	Not detected at or above detection limit.
NR	Not reported.
QC	Quality Control.
RL	Reporting limit.
% RPD	Percent relative difference.
a	pH was measured immediately upon the receipt of the sample, but it was still done outside the holding time.
sub	Analyzed by subcontracting laboratory, Lab Certificate #

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

CLIENT: URS Corporation, San Jose
Work Order: 0903154
Project: HWY 101-Aux lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5236

Sample ID **MB-5236** SampType: **MBLK** TestCode: **6010B (STLC** Units: **mg/L** Prep Date: **5/30/2009** RunNo: **19718**
Client ID: **ZZZZZ** Batch ID: **5236** TestNo: **6010B (STLC (SW3010A)** Analysis Date: **5/30/2009** SeqNo: **285079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	ND	0.10									
Lead (STLC)	ND	0.10									

Sample ID **LCS-5236** SampType: **LCS** TestCode: **6010B (STLC** Units: **mg/L** Prep Date: **5/30/2009** RunNo: **19718**
Client ID: **ZZZZZ** Batch ID: **5236** TestNo: **6010B (STLC (SW3010A)** Analysis Date: **5/30/2009** SeqNo: **285077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	9.170	0.10	10	0.01	91.6	75	125				
Lead (STLC)	9.250	0.10	10	0	92.5	75	125				

Sample ID **LCSD-5236** SampType: **LCSD** TestCode: **6010B (STLC** Units: **mg/L** Prep Date: **5/30/2009** RunNo: **19718**
Client ID: **ZZZZZ** Batch ID: **5236** TestNo: **6010B (STLC (SW3010A)** Analysis Date: **5/30/2009** SeqNo: **285078**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	9.250	0.10	10	0.01	92.4	75	125	9.17	0.869	30	
Lead (STLC)	9.330	0.10	10	0	93.3	75	125	9.25	0.861	30	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903154
Project: HWY 101-Aux lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5238

Sample ID	MB-5238	SampType:	MBLK	TestCode:	6010B (DI-ST	Units:	mg/L	Prep Date:	5/30/2009	RunNo:	19722
Client ID:	ZZZZZ	Batch ID:	5238	TestNo:	6010B (DI-ST (SW3010A)			Analysis Date:	6/1/2009	SeqNo:	285240

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	ND	0.10									

Sample ID	LCS-5238	SampType:	LCS	TestCode:	6010B (DI-ST	Units:	mg/L	Prep Date:	5/30/2009	RunNo:	19722
Client ID:	ZZZZZ	Batch ID:	5238	TestNo:	6010B (DI-ST (SW3010A)			Analysis Date:	6/1/2009	SeqNo:	285238

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	9.720	0.10	10	0.02	97.0	75	125				

Sample ID	LCSD-5238	SampType:	LCSD	TestCode:	6010B (DI-ST	Units:	mg/L	Prep Date:	5/30/2009	RunNo:	19722
Client ID:	ZZZZZ	Batch ID:	5238	TestNo:	6010B (DI-ST (SW3010A)			Analysis Date:	6/1/2009	SeqNo:	285239

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	9.830	0.10	10	0.02	98.1	75	125	9.72	1.13	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903154
Project: HWY 101-Aux lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5241

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-5241	**MBLK**	**6010B (DI-ST**	**mg/L**	**6/1/2009**	**19793**
Client ID: **ZZZZZ**	Batch ID: **5241**	TestNo: **6010B (DI-ST (SW3010A)**		Analysis Date: **6/2/2009**	SeqNo: **286127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	ND	0.10									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCS-5241	**LCS**	**6010B (DI-ST**	**mg/L**	**6/1/2009**	**19793**
Client ID: **ZZZZZ**	Batch ID: **5241**	TestNo: **6010B (DI-ST (SW3010A)**		Analysis Date: **6/2/2009**	SeqNo: **286125**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	9.980	0.10	10	0	99.8	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCSD-5241	**LCSD**	**6010B (DI-ST**	**mg/L**	**6/1/2009**	**19793**
Client ID: **ZZZZZ**	Batch ID: **5241**	TestNo: **6010B (DI-ST (SW3010A)**		Analysis Date: **6/2/2009**	SeqNo: **286126**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	9.710	0.10	10	0	97.1	75	125	9.98	2.74	30	

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
0903154-056AMS	**MS**	**6010B (DI-ST**	**mg/L**	**6/1/2009**	**19793**
Client ID: **S-3-10 @ 0.5**	Batch ID: **5241**	TestNo: **6010B (DI-ST (SW3010A)**		Analysis Date: **6/2/2009**	SeqNo: **286105**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	59.13	0.10	10	50.18	89.5	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
0903154-056AMSD	**MSD**	**6010B (DI-ST**	**mg/L**	**6/1/2009**	**19793**
Client ID: **S-3-10 @ 0.5**	Batch ID: **5241**	TestNo: **6010B (DI-ST (SW3010A)**		Analysis Date: **6/2/2009**	SeqNo: **286106**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	59.56	0.10	10	50.18	93.8	75	125	59.13	0.725	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903154
Project: HWY 101-Aux lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5242

Sample ID **MB-5242** SampType: **MBLK** TestCode: **6010B (STLC** Units: **mg/L** Prep Date: **6/1/2009** RunNo: **19794**
Client ID: **ZZZZZ** Batch ID: **5242** TestNo: **6010B (STLC (SW3010A)** Analysis Date: **6/2/2009** SeqNo: **286158**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	ND	0.10									
Lead (STLC)	ND	0.10									

Sample ID **LCS-5242** SampType: **LCS** TestCode: **6010B (STLC** Units: **mg/L** Prep Date: **6/1/2009** RunNo: **19794**
Client ID: **ZZZZZ** Batch ID: **5242** TestNo: **6010B (STLC (SW3010A)** Analysis Date: **6/2/2009** SeqNo: **286156**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	7.970	0.10	10	0.01	79.6	75	125				
Lead (STLC)	8.850	0.10	10	0	88.5	75	125				

Sample ID **LCSD-5242** SampType: **LCSD** TestCode: **6010B (STLC** Units: **mg/L** Prep Date: **6/1/2009** RunNo: **19794**
Client ID: **ZZZZZ** Batch ID: **5242** TestNo: **6010B (STLC (SW3010A)** Analysis Date: **6/2/2009** SeqNo: **286157**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	8.030	0.10	10	0.01	80.2	75	125	7.97	0.750	30	
Lead (STLC)	8.710	0.10	10	0	87.1	75	125	8.85	1.59	30	

Sample ID **0903154-009AMS** SampType: **MS** TestCode: **6010B (STLC** Units: **mg/L** Prep Date: **6/1/2009** RunNo: **19794**
Client ID: **S-2-7@2.0** Batch ID: **5242** TestNo: **6010B (STLC (SW3010A)** Analysis Date: **6/2/2009** SeqNo: **286136**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	8.790	0.10	10	0.15	86.4	75	125				
Lead (STLC)	8.620	0.10	10	0.01	86.1	75	125				

Sample ID **0903154-009AMSD** SampType: **MSD** TestCode: **6010B (STLC** Units: **mg/L** Prep Date: **6/1/2009** RunNo: **19794**
Client ID: **S-2-7@2.0** Batch ID: **5242** TestNo: **6010B (STLC (SW3010A)** Analysis Date: **6/2/2009** SeqNo: **286137**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	9.170	0.10	10	0.15	90.2	75	125	8.79	4.23	30	
Lead (STLC)	8.750	0.10	10	0.01	87.4	75	125	8.62	1.50	30	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903154
Project: HWY 101-Aux lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5247

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-5247	**MBLK**	**6010B (STLC**	**mg/L**	**6/2/2009**	**19807**
Client ID: **ZZZZZ**	Batch ID: **5247**	TestNo: **6010B (STLC (SW3010A)**		Analysis Date: **6/3/2009**	SeqNo: **286379**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (STLC)	ND	0.10									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCS-5247	**LCS**	**6010B (STLC**	**mg/L**	**6/2/2009**	**19807**
Client ID: **ZZZZZ**	Batch ID: **5247**	TestNo: **6010B (STLC (SW3010A)**		Analysis Date: **6/3/2009**	SeqNo: **286377**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (STLC)	8.560	0.10	10	0.01	85.5	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCSD-5247	**LCSD**	**6010B (STLC**	**mg/L**	**6/2/2009**	**19807**
Client ID: **ZZZZZ**	Batch ID: **5247**	TestNo: **6010B (STLC (SW3010A)**		Analysis Date: **6/3/2009**	SeqNo: **286378**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (STLC)	8.640	0.10	10	0.01	86.3	75	125	8.56	0.930	30	

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
0903154-081AMS	**MS**	**6010B (STLC**	**mg/L**	**6/2/2009**	**19807**
Client ID: **S-1-18 @ 0.5**	Batch ID: **5247**	TestNo: **6010B (STLC (SW3010A)**		Analysis Date: **6/3/2009**	SeqNo: **286357**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (STLC)	54.24	0.10	10	43.55	107	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
0903154-081AMSD	**MSD**	**6010B (STLC**	**mg/L**	**6/2/2009**	**19807**
Client ID: **S-1-18 @ 0.5**	Batch ID: **5247**	TestNo: **6010B (STLC (SW3010A)**		Analysis Date: **6/3/2009**	SeqNo: **286358**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (STLC)	52.21	0.10	10	43.55	86.6	75	125	54.24	3.81	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903154
Project: HWY 101-Aux lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5282

Sample ID	MB-5282	SampType:	MBLK	TestCode:	6010B (TCLP	Units:	mg/L	Prep Date:	6/14/2009	RunNo:	19874
Client ID:	ZZZZZ	Batch ID:	5282	TestNo:	6010B (TCLP	(SW3010A)		Analysis Date:	6/14/2009	SeqNo:	287493

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	ND	0.10									

Sample ID	LCS-5282	SampType:	LCS	TestCode:	6010B (TCLP	Units:	mg/L	Prep Date:	6/14/2009	RunNo:	19874
Client ID:	ZZZZZ	Batch ID:	5282	TestNo:	6010B (TCLP	(SW3010A)		Analysis Date:	6/14/2009	SeqNo:	287491

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	10.37	0.10	10	0	104	75	125				

Sample ID	LCSD-5282	SampType:	LCSD	TestCode:	6010B (TCLP	Units:	mg/L	Prep Date:	6/14/2009	RunNo:	19874
Client ID:	ZZZZZ	Batch ID:	5282	TestNo:	6010B (TCLP	(SW3010A)		Analysis Date:	6/14/2009	SeqNo:	287492

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	11.13	0.10	10	0	111	75	125	10.37	7.07	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903154
Project: HWY 101-Aux lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5283

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-5283	**MBLK**	**6010B (TCLP**	**mg/L**	**6/14/2009**	**19875**
Client ID: **ZZZZZ**	Batch ID: **5283**	TestNo: **6010B (TCLP (SW3010A)**		Analysis Date: **6/14/2009**	SeqNo: **287500**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	ND	0.10									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCS-5283	**LCS**	**6010B (TCLP**	**mg/L**	**6/14/2009**	**19875**
Client ID: **ZZZZZ**	Batch ID: **5283**	TestNo: **6010B (TCLP (SW3010A)**		Analysis Date: **6/14/2009**	SeqNo: **287498**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	11.04	0.10	10	0	110	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCSD-5283	**LCSD**	**6010B (TCLP**	**mg/L**	**6/14/2009**	**19875**
Client ID: **ZZZZZ**	Batch ID: **5283**	TestNo: **6010B (TCLP (SW3010A)**		Analysis Date: **6/14/2009**	SeqNo: **287499**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	10.71	0.10	10	0	107	75	125	11.04	3.03	30	

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
0903154-047AMS	**MS**	**6010B (TCLP**	**mg/L**	**6/14/2009**	**19875**
Client ID: **S-3-6 @ 1.0**	Batch ID: **5283**	TestNo: **6010B (TCLP (SW3010A)**		Analysis Date: **6/14/2009**	SeqNo: **287496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	10.76	0.10	10	0.62	101	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
0903154-047AMSD	**MSD**	**6010B (TCLP**	**mg/L**	**6/14/2009**	**19875**
Client ID: **S-3-6 @ 1.0**	Batch ID: **5283**	TestNo: **6010B (TCLP (SW3010A)**		Analysis Date: **6/14/2009**	SeqNo: **287497**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	10.32	0.10	10	0.62	97.0	75	125	10.76	4.17	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

Torrent
LABORATORY, INC.

April 01, 2009

Patrick Walz
URS Corporation, San Jose
55 South Market St., Suite 1500
San Jose, CA 95113

TEL: (408) 297-9585
FAX (408) 297-6962

RE: Hwy 101-Aux Lane

Order No.: 0903138

Dear Patrick Walz:

Torrent Laboratory, Inc. received 86 samples on 3/24/2009 for the analyses presented in the following report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.
Reported data is applicable for only the samples received as part of the order number referenced above.

Torrent Laboratory, Inc, is certified by the State of California, ELAP #1991. If you have any questions regarding these tests results, please feel free to contact the Project Management Team at (408)263-5258;ext: 204.

Sincerely,

Laboratory Director 4/1/09
Date

Patti Sandrock
QA Officer

Torrent Laboratory, Inc. **Date:** *01-Apr-09*

CLIENT: URS Corporation, San Jose
Project: Hwy 101-Aux Lane
Lab Order: 0903138

CASE NARRATIVE

Analytical Comments for Asbestos, PLM Note: Analysis performed by NVLAP Certified sub-contract laboratory. (Certification # 101048-3).

Analytical Comment for METHOD 6010B_S, 0903138-049A MS/MSD, QC Batch ID 19067, Note:The % recoveries in the MS/MSD for Barium are not recoverable. The sample concentration is greater than 4X the spike concentration. No corrective action is required.

Analytical Comment for METHOD 6010B_S, 0903138-049A MS/MSD, QC Batch ID 19067, Note:The % recovery in the MSD for Copper is outside of laboratory control limits but within % RPD limits and % recovery limits for the LCS/LCSD. No corrective action is required.

Analytical Comment for METHOD 6010B_S, 0903138-068A MS/MSD, QC Batch ID 19066, Note:The % recoveries in the MS/MSD for Lead are not recoverable. The sample concentration is greater than 4X the spike concentration. No corrective action is required.

TORRENT LABORATORY, INC.

483 Sinclair Frontage Road • Milpitas, CA • Phone: (408) 263-5258 • Fax: (408) 263-8293

Visit us at www.torrentlab.com email: analysis@torrentlab.com

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 4/1/2009

Client Sample ID: N-1-8 @ 0.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 10:20:00 PM

Lab Sample ID: 0903138-001
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/25/2009	1	1	1.0	6.0	mg/Kg	5038

Client Sample ID: N-1-8 @ 1.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 10:20:00 PM

Lab Sample ID: 0903138-002
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/25/2009	1	1	1.0	1.2	mg/Kg	5038

Client Sample ID: N-1-8 @ 1.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 10:20:00 PM

Lab Sample ID: 0903138-003
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/25/2009	1	1	1.0	1.2	mg/Kg	5038

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 4/1/2009

Client Sample ID: N-1-8 @ 2.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 10:20:00 PM

Lab Sample ID: 0903138-004
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/25/2009	1	1	1.0	4.4	mg/Kg	5038

Client Sample ID: N-1-8 @ 3.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 10:20:00 PM

Lab Sample ID: 0903138-005
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/25/2009	1	1	1.0	5.8	mg/Kg	5038

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 4/1/2009

Client Sample ID: N-1-8-GW
Sample Location: Hwy 101-Aux lanes
Sample Matrix: GROUNDWATER
Date/Time Sampled 3/23/2009 10:45:00 PM

Lab Sample ID: 0903138-006
Date Prepared:

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
pH	E150.1	3/24/2009	0.05	1	0.0500	8.47	pH units	R19040
Antimony	SW6010B	3/26/2009	0.01	1	0.010	ND	mg/L	5040
Arsenic	SW6010B	3/26/2009	0.01	1	0.010	ND	mg/L	5040
Barium	SW6010B	3/26/2009	0.01	1	0.010	0.22	mg/L	5040
Beryllium	SW6010B	3/26/2009	0.005	1	0.0050	ND	mg/L	5040
Cadmium	SW6010B	3/26/2009	0.005	1	0.0050	ND	mg/L	5040
Chromium	SW6010B	3/26/2009	0.005	1	0.0050	0.0050	mg/L	5040
Cobalt	SW6010B	3/26/2009	0.005	1	0.0050	0.0060	mg/L	5040
Copper	SW6010B	3/26/2009	0.01	1	0.010	0.020	mg/L	5040
Lead	SW6010B	3/26/2009	0.015	1	0.015	0.025	mg/L	5040
Molybdenum	SW6010B	3/26/2009	0.005	1	0.0050	0.086	mg/L	5040
Nickel	SW6010B	3/26/2009	0.01	1	0.010	0.015	mg/L	5040
Selenium	SW6010B	3/26/2009	0.01	1	0.010	ND	mg/L	5040
Silver	SW6010B	3/26/2009	0.005	1	0.0050	ND	mg/L	5040
Thallium	SW6010B	3/26/2009	0.01	1	0.010	ND	mg/L	5040
Vanadium	SW6010B	3/26/2009	0.01	1	0.010	0.028	mg/L	5040
Zinc	SW6010B	3/26/2009	0.005	1	0.0050	0.035	mg/L	5040
Mercury	SW7470A	3/26/2009	0.0002	1	0.00020	ND	mg/L	5041
TPH (Diesel)	SW8015B	3/30/2009	0.1	1	0.100	ND	mg/L	R19094
TPH (Motor Oil)	SW8015B	3/30/2009	0.2	1	0.200	ND	mg/L	R19094
Surr: Pentacosane	SW8015B	3/30/2009	0	1	57.9-125	87.0	%REC	R19094

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

4,4´-DDD	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
4,4´-DDE	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
4,4´-DDT	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
Aldrin	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
alpha-BHC	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
alpha-Chlordane	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
beta-BHC	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
Chlordane	SW8081A	3/27/2009	0.25	1	0.250	ND	µg/L	R19075
delta-BHC	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
Dieldrin	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
Endosulfan I	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
Endosulfan II	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
Endosulfan sulfate	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
Endrin	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
Endrin aldehyde	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
Endrin ketone	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
gamma-BHC	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
gamma-Chlordane	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
Heptachlor	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
Heptachlor epoxide	SW8081A	3/27/2009	0.02	1	0.020	ND	µg/L	R19075
Methoxychlor	SW8081A	3/27/2009	0.05	1	0.050	ND	µg/L	R19075
Toxaphene	SW8081A	3/27/2009	1	1	1.00	ND	µg/L	R19075
Surr: Decachlorobiphenyl	SW8081A	3/27/2009	0	1	52-116	45.8	%REC	R19075
Surr: Tetrachloro-m-xylene	SW8081A	3/27/2009	0	1	40.3-118	41.6	%REC	R19075

Note: Surrogate recovery of DCBP is bias low; recovery of second surrogate supports data quality.

Aroclor 1016	SW8082	3/28/2009	10	1	10.0	ND	µg/L	R19089
Aroclor 1221	SW8082	3/28/2009	10	1	10.0	ND	µg/L	R19089
Aroclor 1232	SW8082	3/28/2009	10	1	10.0	ND	µg/L	R19089
Aroclor 1242	SW8082	3/28/2009	10	1	10.0	ND	µg/L	R19089
Aroclor 1248	SW8082	3/28/2009	10	1	10.0	ND	µg/L	R19089
Aroclor 1254	SW8082	3/28/2009	10	1	10.0	ND	µg/L	R19089
Aroclor 1260	SW8082	3/28/2009	10	1	10.0	ND	µg/L	R19089
Surr: Decachlorobiphenyl	SW8082	3/28/2009	0	1	44.5-127	102	%REC	R19089
Surr: Tetrachloro-m-xylene	SW8082	3/28/2009	0	1	52.7-126	98.6	%REC	R19089

Benzene	SW8260B	3/26/2009	0.5	1	0.500	ND	µg/L	U19053
Toluene	SW8260B	3/26/2009	0.5	1	0.500	ND	µg/L	U19053
Ethylbenzene	SW8260B	3/26/2009	0.5	1	0.500	ND	µg/L	U19053
Methyl tert-butyl ether (MTBE)	SW8260B	3/26/2009	0.5	1	0.500	ND	µg/L	U19053
Diisopropyl ether (DIPE)	SW8260B	3/26/2009	0.5	1	0.500	ND	µg/L	U19053
Ethyl tert-butyl ether (ETBE)	SW8260B	3/26/2009	0.5	1	0.500	ND	µg/L	U19053
tert-Amyl methyl ether (TAME)	SW8260B	3/26/2009	0.5	1	0.500	ND	µg/L	U19053
t-Butyl alcohol (t-Butanol)	SW8260B	3/26/2009	10	1	10.0	ND	µg/L	U19053
Xylenes, Total	SW8260B	3/26/2009	1.5	1	1.50	ND	µg/L	U19053
Surr: Dibromofluoromethane	SW8260B	3/26/2009	0	1	61.2-131	107	%REC	U19053
Surr: 4-Bromofluorobenzene	SW8260B	3/26/2009	0	1	64.1-120	92.0	%REC	U19053
Surr: Toluene-d8	SW8260B	3/26/2009	0	1	75.1-127	83.6	%REC	U19053

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 4/1/2009

TPH (Gasoline)	SW8260B(TPH)	3/26/2009	50	1	50	ND	µg/L	G19053
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	3/26/2009	0	1	58.4-133	75.0	%REC	G19053

Client Sample ID: N-1-7 @ 0.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 11:25:00 PM

Lab Sample ID: 0903138-007
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/25/2009	1	1	1.0	590	mg/Kg	5038

Client Sample ID: N-1-7 @ 1.0
Sample Location: Hwy 101-Aux lanesHwy 101-Au
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 11:23:00 PM

Lab Sample ID: 0903138-008
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/25/2009	1	1	1.0	1000	mg/Kg	5038

Client Sample ID: N-1-7 @ 1.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 11:25:00 PM

Lab Sample ID: 0903138-009
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/25/2009	1	1	1.0	130	mg/Kg	5038

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 4/1/2009

Client Sample ID: N-1-7 @ 2.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 11:25:00 PM

Lab Sample ID: 0903138-010
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/25/2009	1	1	1.0	94	mg/Kg	5038

Client Sample ID: N-1-7 @ 3.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 11:25:00 PM

Lab Sample ID: 0903138-011
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	7.6	mg/Kg	5039

Client Sample ID: N-1-6 @ 0.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 11:45:00 PM

Lab Sample ID: 0903138-012
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	400	mg/Kg	5039

Client Sample ID: N-1-6 @ 1.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 11:45:00 PM

Lab Sample ID: 0903138-013
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	840	mg/Kg	5039

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 4/1/2009

Client Sample ID: N-1-6 @ 1.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 11:45:00 PM

Lab Sample ID: 0903138-014
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	12	mg/Kg	5039

Client Sample ID: N-1-6 @ 2.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 11:45:00 PM

Lab Sample ID: 0903138-015
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	7.4	mg/Kg	5039

Client Sample ID: N-1-6 @ 3.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 11:45:00 PM

Lab Sample ID: 0903138-016
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	6.0	mg/Kg	5039

Client Sample ID: N-1-5 @ 0.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009

Lab Sample ID: 0903138-017
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	85	mg/Kg	5039

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 4/1/2009

Client Sample ID: N-1-5 @ 1.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009

Lab Sample ID: 0903138-018
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	230	mg/Kg	5039

Client Sample ID: N-1-5 @ 1.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009

Lab Sample ID: 0903138-019
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	1.4	mg/Kg	5039

Client Sample ID: N-1-5 @ 2.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009

Lab Sample ID: 0903138-020
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	7.2	mg/Kg	5039

Client Sample ID: N-1-5 @ 3.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009

Lab Sample ID: 0903138-021
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	4.2	mg/Kg	5039

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 4/1/2009

Client Sample ID: N-1-4 @ 0.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 12:20:00 AM

Lab Sample ID: 0903138-022
Date Prepared: 3/25/2009-3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Arsenic	SW6010B	3/26/2009	1.7	1	1.7	4.4	mg/Kg	5039
Barium	SW6010B	3/26/2009	5	1	5.0	220	mg/Kg	5039
Beryllium	SW6010B	3/26/2009	2	1	2.0	ND	mg/Kg	5039
Cadmium	SW6010B	3/26/2009	1	1	1.0	1.6	mg/Kg	5039
Chromium	SW6010B	3/26/2009	5	1	5.0	49	mg/Kg	5039
Cobalt	SW6010B	3/26/2009	5	1	5.0	10	mg/Kg	5039
Copper	SW6010B	3/26/2009	5	1	5.0	90	mg/Kg	5039
Lead	SW6010B	3/26/2009	1	1	1.0	1100	mg/Kg	5039
Molybdenum	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Nickel	SW6010B	3/26/2009	5	1	5.0	50	mg/Kg	5039
Selenium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Silver	SW6010B	3/26/2009	1	1	1.0	1.7	mg/Kg	5039
Thallium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Vanadium	SW6010B	3/26/2009	5	1	5.0	33	mg/Kg	5039
Zinc	SW6010B	3/26/2009	5	1	5.0	390	mg/Kg	5039
Mercury	SW7471A	3/26/2009	0.1	1	0.10	0.15	mg/Kg	5044
TPH (Diesel)	SW8015B	3/28/2009	2	5	10.0	ND	mg/Kg	R19060
TPH (Motor Oil)	SW8015B	3/28/2009	4	5	20.0	259	mg/Kg	R19060
Surr: Pentacosane	SW8015B	3/28/2009	0	5	59.7-129	74.4	%REC	R19060

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

4,4´-DDD	SW8081A	3/30/2009	0.47	20	9.40	11.6 J	µg/Kg	R19073
4,4´-DDE	SW8081A	3/30/2009	0.476	20	9.52	ND	µg/Kg	R19073
4,4´-DDT	SW8081A	3/30/2009	0.809	20	16.2	62.1	µg/Kg	R19073
Aldrin	SW8081A	3/30/2009	0.44	20	8.80	ND	µg/Kg	R19073
alpha-BHC	SW8081A	3/30/2009	0.439	20	8.78	ND	µg/Kg	R19073
alpha-Chlordane	SW8081A	3/30/2009	0.358	20	7.16	18.5 J	µg/Kg	R19073
beta-BHC	SW8081A	3/30/2009	0.364	20	7.28	ND	µg/Kg	R19073
Chlordane	SW8081A	3/30/2009	10	20	200	ND	µg/Kg	R19073
delta-BHC	SW8081A	3/30/2009	0.49	20	9.80	ND	µg/Kg	R19073
Dieldrin	SW8081A	3/30/2009	0.427	20	8.54	16.9 J	µg/Kg	R19073
Endosulfan I	SW8081A	3/30/2009	0.59	20	11.8	ND	µg/Kg	R19073
Endosulfan II	SW8081A	3/30/2009	1.526	20	30.5	ND	µg/Kg	R19073
Endosulfan sulfate	SW8081A	3/30/2009	0.489	20	9.78	ND	µg/Kg	R19073
Endrin	SW8081A	3/30/2009	0.569	20	11.4	ND	µg/Kg	R19073
Endrin aldehyde	SW8081A	3/30/2009	1.028	20	20.6	ND	µg/Kg	R19073
Endrin ketone	SW8081A	3/30/2009	0.401	20	8.02	ND	µg/Kg	R19073
gamma-BHC	SW8081A	3/30/2009	0.396	20	7.92	ND	µg/Kg	R19073
gamma-Chlordane	SW8081A	3/30/2009	0.42	20	8.40	18.6 J	µg/Kg	R19073
Heptachlor	SW8081A	3/30/2009	1.1	20	22.0	ND	µg/Kg	R19073
Heptachlor epoxide	SW8081A	3/30/2009	0.316	20	6.32	ND	µg/Kg	R19073
Methoxychlor	SW8081A	3/30/2009	0.616	20	12.3	ND	µg/Kg	R19073
Toxaphene	SW8081A	3/30/2009	10	20	200	ND	µg/Kg	R19073
Surr: Decachlorobiphenyl	SW8081A	3/30/2009		20	54.6-127	136	%REC	R19073
Surr: Tetrachloro-m-xylene	SW8081A	3/30/2009		20	54-122	120	%REC	R19073

Note: Reporting limits increased due to the nature of the sample matrix (dark color extract). Compounds reported to the MDL. Surrogate recovery of DCBP is bias high possibly due to dilution made on sample; recovery of second surrogate supports data quality.

Aroclor 1016	SW8082	3/31/2009	0.1	5	0.500	ND	mg/Kg	R19084
Aroclor 1221	SW8082	3/31/2009	0.2	5	1.00	ND	mg/Kg	R19084
Aroclor 1232	SW8082	3/31/2009	0.1	5	0.500	ND	mg/Kg	R19084
Aroclor 1242	SW8082	3/31/2009	0.1	5	0.500	ND	mg/Kg	R19084
Aroclor 1248	SW8082	3/31/2009	0.1	5	0.500	ND	mg/Kg	R19084
Aroclor 1254	SW8082	3/31/2009	0.1	5	0.500	ND	mg/Kg	R19084
Aroclor 1260	SW8082	3/31/2009	0.1	5	0.500	ND	mg/Kg	R19084
Surr: Decachlorobiphenyl	SW8082	3/31/2009	0	5	63.7-126	107	%REC	R19084
Surr: Tetrachloro-m-xylene	SW8082	3/31/2009	0	5	51.7-128	109	%REC	R19084

Note: Reporting limits increased due to the nature of the sample matrix (dark color extract).

pH	SW9045C	3/25/2009	0.05	1	0.0500	7.76	pH Units	R19059

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 4/1/2009

Client Sample ID: N-1-4 @ 1.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 12:20:00 AM

Lab Sample ID: 0903138-023
Date Prepared: 3/25/2009-3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Arsenic	SW6010B	3/26/2009	1.7	1	1.7	5.8	mg/Kg	5039
Barium	SW6010B	3/26/2009	5	1	5.0	190	mg/Kg	5039
Beryllium	SW6010B	3/26/2009	2	1	2.0	ND	mg/Kg	5039
Cadmium	SW6010B	3/26/2009	1	1	1.0	ND	mg/Kg	5039
Chromium	SW6010B	3/26/2009	5	1	5.0	49	mg/Kg	5039
Cobalt	SW6010B	3/26/2009	5	1	5.0	15	mg/Kg	5039
Copper	SW6010B	3/26/2009	5	1	5.0	46	mg/Kg	5039
Lead	SW6010B	3/26/2009	1	1	1.0	590	mg/Kg	5039
Molybdenum	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Nickel	SW6010B	3/26/2009	5	1	5.0	46	mg/Kg	5039
Selenium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Silver	SW6010B	3/26/2009	1	1	1.0	1.9	mg/Kg	5039
Thallium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Vanadium	SW6010B	3/26/2009	5	1	5.0	45	mg/Kg	5039
Zinc	SW6010B	3/26/2009	5	1	5.0	100	mg/Kg	5039
Mercury	SW7471A	3/26/2009	0.1	1	0.10	ND	mg/Kg	5044
Benzene	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
Diisopropyl ether (DIPE)	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
Ethyl tert-butyl ether (ETBE)	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
Ethylbenzene	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
Methyl tert-butyl ether (MTBE)	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
t-Butyl alcohol (t-Butanol)	SW8260B	3/25/2009	50	1	50	ND	µg/Kg	U19069
tert-Amyl methyl ether (TAME)	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
Toluene	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
Xylenes, Total	SW8260B	3/25/2009	15	1	15	ND	µg/Kg	U19069
Surr: 4-Bromofluorobenzene	SW8260B	3/25/2009	0	1	55.8-141	100	%REC	U19069
Surr: Dibromofluoromethane	SW8260B	3/25/2009	0	1	59.8-148	92.9	%REC	U19069
Surr: Toluene-d8	SW8260B	3/25/2009	0	1	55.2-133	85.1	%REC	U19069
TPH (Gasoline)	SW8260B(TPH)	3/25/2009	100	1	100	ND	µg/Kg	G19069
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	3/25/2009	0	1	56.9-133	68.0	%REC	G19069
pH	SW9045C	3/25/2009	0.05	1	0.0500	8.24	pH Units	R19059

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 4/1/2009

Client Sample ID: N-1-4 @ 1.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 12:20:00 AM

Lab Sample ID: 0903138-024
Date Prepared: 3/25/2009-3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Arsenic	SW6010B	3/26/2009	1.7	1	1.7	5.6	mg/Kg	5039
Barium	SW6010B	3/26/2009	5	1	5.0	110	mg/Kg	5039
Beryllium	SW6010B	3/26/2009	2	1	2.0	ND	mg/Kg	5039
Cadmium	SW6010B	3/26/2009	1	1	1.0	ND	mg/Kg	5039
Chromium	SW6010B	3/26/2009	5	1	5.0	50	mg/Kg	5039
Cobalt	SW6010B	3/26/2009	5	1	5.0	15	mg/Kg	5039
Copper	SW6010B	3/26/2009	5	1	5.0	32	mg/Kg	5039
Lead	SW6010B	3/26/2009	1	1	1.0	54	mg/Kg	5039
Molybdenum	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Nickel	SW6010B	3/26/2009	5	1	5.0	44	mg/Kg	5039
Selenium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Silver	SW6010B	3/26/2009	1	1	1.0	2.8	mg/Kg	5039
Thallium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Vanadium	SW6010B	3/26/2009	5	1	5.0	59	mg/Kg	5039
Zinc	SW6010B	3/26/2009	5	1	5.0	48	mg/Kg	5039
Mercury	SW7471A	3/26/2009	0.1	1	0.10	ND	mg/Kg	5044
Benzene	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
Diisopropyl ether (DIPE)	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
Ethyl tert-butyl ether (ETBE)	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
Ethylbenzene	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
Methyl tert-butyl ether (MTBE)	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
t-Butyl alcohol (t-Butanol)	SW8260B	3/25/2009	50	1	50	ND	µg/Kg	U19069
tert-Amyl methyl ether (TAME)	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
Toluene	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
Xylenes, Total	SW8260B	3/25/2009	15	1	15	ND	µg/Kg	U19069
Surr: 4-Bromofluorobenzene	SW8260B	3/25/2009	0	1	55.8-141	90.2	%REC	U19069
Surr: Dibromofluoromethane	SW8260B	3/25/2009	0	1	59.8-148	93.5	%REC	U19069
Surr: Toluene-d8	SW8260B	3/25/2009	0	1	55.2-133	83.9	%REC	U19069
TPH (Gasoline)	SW8260B(TPH)	3/25/2009	100	1	100	ND	µg/Kg	G19069
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	3/25/2009	0	1	56.9-133	74.0	%REC	G19069
pH	SW9045C	3/25/2009	0.05	1	0.0500	8.31	pH Units	R19059

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 4/1/2009

Client Sample ID: N-1-4 @ 2.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 12:20:00 AM

Lab Sample ID: 0903138-025
Date Prepared: 3/25/2009-3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Arsenic	SW6010B	3/26/2009	1.7	1	1.7	5.7	mg/Kg	5039
Barium	SW6010B	3/26/2009	5	1	5.0	170	mg/Kg	5039
Beryllium	SW6010B	3/26/2009	2	1	2.0	ND	mg/Kg	5039
Cadmium	SW6010B	3/26/2009	1	1	1.0	ND	mg/Kg	5039
Chromium	SW6010B	3/26/2009	5	1	5.0	56	mg/Kg	5039
Cobalt	SW6010B	3/26/2009	5	1	5.0	12	mg/Kg	5039
Copper	SW6010B	3/26/2009	5	1	5.0	41	mg/Kg	5039
Lead	SW6010B	3/26/2009	1	1	1.0	400	mg/Kg	5039
Molybdenum	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Nickel	SW6010B	3/26/2009	5	1	5.0	43	mg/Kg	5039
Selenium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Silver	SW6010B	3/26/2009	1	1	1.0	1.0	mg/Kg	5039
Thallium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Vanadium	SW6010B	3/26/2009	5	1	5.0	42	mg/Kg	5039
Zinc	SW6010B	3/26/2009	5	1	5.0	120	mg/Kg	5039
Mercury	SW7471A	3/26/2009	0.1	1	0.10	ND	mg/Kg	5044
Benzene	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
Diisopropyl ether (DIPE)	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
Ethyl tert-butyl ether (ETBE)	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
Ethylbenzene	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
Methyl tert-butyl ether (MTBE)	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
t-Butyl alcohol (t-Butanol)	SW8260B	3/25/2009	50	1	50	ND	µg/Kg	U19069
tert-Amyl methyl ether (TAME)	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
Toluene	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
Xylenes, Total	SW8260B	3/25/2009	15	1	15	ND	µg/Kg	U19069
Surr: 4-Bromofluorobenzene	SW8260B	3/25/2009	0	1	55.8-141	99.0	%REC	U19069
Surr: Dibromofluoromethane	SW8260B	3/25/2009	0	1	59.8-148	90.0	%REC	U19069
Surr: Toluene-d8	SW8260B	3/25/2009	0	1	55.2-133	87.2	%REC	U19069
TPH (Gasoline)	SW8260B(TPH)	3/25/2009	100	1	100	ND	µg/Kg	G19069
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	3/25/2009	0	1	56.9-133	58.0	%REC	G19069
pH	SW9045C	3/25/2009	0.05	1	0.0500	7.94	pH Units	R19059

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 4/1/2009

Client Sample ID: N-1-4 @ 2.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 12:20:00 AM

Lab Sample ID: 0903138-026
Date Prepared: 3/25/2009-3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Arsenic	SW6010B	3/26/2009	1.7	1	1.7	6.5	mg/Kg	5039
Barium	SW6010B	3/26/2009	5	1	5.0	140	mg/Kg	5039
Beryllium	SW6010B	3/26/2009	2	1	2.0	ND	mg/Kg	5039
Cadmium	SW6010B	3/26/2009	1	1	1.0	ND	mg/Kg	5039
Chromium	SW6010B	3/26/2009	5	1	5.0	49	mg/Kg	5039
Cobalt	SW6010B	3/26/2009	5	1	5.0	14	mg/Kg	5039
Copper	SW6010B	3/26/2009	5	1	5.0	45	mg/Kg	5039
Lead	SW6010B	3/26/2009	1	1	1.0	630	mg/Kg	5039
Molybdenum	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Nickel	SW6010B	3/26/2009	5	1	5.0	46	mg/Kg	5039
Selenium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Silver	SW6010B	3/26/2009	1	1	1.0	2.1	mg/Kg	5039
Thallium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Vanadium	SW6010B	3/26/2009	5	1	5.0	48	mg/Kg	5039
Zinc	SW6010B	3/26/2009	5	1	5.0	120	mg/Kg	5039
Mercury	SW7471A	3/26/2009	0.1	1	0.10	ND	mg/Kg	5044
Benzene	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
Diisopropyl ether (DIPE)	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
Ethyl tert-butyl ether (ETBE)	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
Ethylbenzene	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
Methyl tert-butyl ether (MTBE)	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
t-Butyl alcohol (t-Butanol)	SW8260B	3/25/2009	50	1	50	ND	µg/Kg	U19069
tert-Amyl methyl ether (TAME)	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
Toluene	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
Xylenes, Total	SW8260B	3/25/2009	15	1	15	ND	µg/Kg	U19069
Surr: 4-Bromofluorobenzene	SW8260B	3/25/2009	0	1	55.8-141	99.1	%REC	U19069
Surr: Dibromofluoromethane	SW8260B	3/25/2009	0	1	59.8-148	90.4	%REC	U19069
Surr: Toluene-d8	SW8260B	3/25/2009	0	1	55.2-133	84.8	%REC	U19069
TPH (Gasoline)	SW8260B(TPH)	3/25/2009	100	1	100	ND	µg/Kg	G19069
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	3/25/2009	0	1	56.9-133	62.0	%REC	G19069
pH	SW9045C	3/25/2009	0.05	1	0.0500	8.06	pH Units	R19059

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 4/1/2009

Client Sample ID: S-1-9 @ 0.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:10:00 AM

Lab Sample ID: 0903138-027
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	2600	mg/Kg	5039

Client Sample ID: S-1-9 @ 1.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:10:00 AM

Lab Sample ID: 0903138-028
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	12	mg/Kg	5039

Client Sample ID: S-1-9 @ 1.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:10:00 AM

Lab Sample ID: 0903138-029
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	7.1	mg/Kg	5039

Client Sample ID: S-1-9 @ 2.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:10:00 AM

Lab Sample ID: 0903138-030
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	6.5	mg/Kg	5042

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 4/1/2009

Client Sample ID: S-1-9 @ 3.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:10:00 AM

Lab Sample ID: 0903138-031
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	5.2	mg/Kg	5042

Client Sample ID: S-1-10 @ 0.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:25:00 AM

Lab Sample ID: 0903138-032
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	710	mg/Kg	5042

Client Sample ID: S-1-10 @ 1.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:25:00 AM

Lab Sample ID: 0903138-033
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	13	mg/Kg	5042

Client Sample ID: S-1-10 @ 1.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:25:00 AM

Lab Sample ID: 0903138-034
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	6.8	mg/Kg	5042

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 4/1/2009

Client Sample ID: S-1-10 @ 2.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:25:00 AM

Lab Sample ID: 0903138-035
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	4.8	mg/Kg	5042

Client Sample ID: S-1-10 @ 3.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:25:00 AM

Lab Sample ID: 0903138-036
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	5.5	mg/Kg	5042

Client Sample ID: S-1-10 @ 0.5-D
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:28:00 AM

Lab Sample ID: 0903138-037
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	150	mg/Kg	5042

Client Sample ID: S-1-10 @ 1.0-D
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:28:00 AM

Lab Sample ID: 0903138-038
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	25	mg/Kg	5042

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 4/1/2009

Client Sample ID: S-1-10 @ 1.5-D
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:28:00 AM

Lab Sample ID: 0903138-039
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	6.0	mg/Kg	5042

Client Sample ID: S-1-10 @ 2.0-D
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:28:00 AM

Lab Sample ID: 0903138-040
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	5.8	mg/Kg	5042

Client Sample ID: S-1-10 @ 3.0-D
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:28:00 AM

Lab Sample ID: 0903138-041
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	9.5	mg/Kg	5042

Client Sample ID: S-1-11 @ 0.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:55:00 AM

Lab Sample ID: 0903138-042
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	86	mg/Kg	5042

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 4/1/2009

Client Sample ID: S-1-11 @ 1.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:55:00 AM

Lab Sample ID: 0903138-043
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	1.0	mg/Kg	5042

Client Sample ID: S-1-11 @ 1.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:55:00 AM

Lab Sample ID: 0903138-044
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	1.0	mg/Kg	5042

Client Sample ID: S-1-11 @ 2.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:55:00 AM

Lab Sample ID: 0903138-045
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	7.7	mg/Kg	5042

Client Sample ID: S-1-11 @ 3.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:55:00 AM

Lab Sample ID: 0903138-046
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	5.2	mg/Kg	5042

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 4/1/2009

Client Sample ID: S-1-12 @ 0.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 2:10:00 AM

Lab Sample ID: 0903138-047
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	290	mg/Kg	5042

Client Sample ID: S-1-12 @ 1.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 2:10:00 AM

Lab Sample ID: 0903138-048
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	900	mg/Kg	5042

Client Sample ID: S-1-12 @ 1.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 2:10:00 AM

Lab Sample ID: 0903138-049
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	12	mg/Kg	5043

Client Sample ID: S-1-12 @ 2.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 2:10:00 AM

Lab Sample ID: 0903138-050
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	7.0	mg/Kg	5043

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 4/1/2009

Client Sample ID: S-1-12 @ 3.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 2:10:00 AM

Lab Sample ID: 0903138-051
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	5.4	mg/Kg	5043

Client Sample ID: S-1-13 @ 0.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 2:30:00 AM

Lab Sample ID: 0903138-052
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	420	mg/Kg	5043

Client Sample ID: S-1-13 @ 1.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 2:30:00 AM

Lab Sample ID: 0903138-053
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	59	mg/Kg	5043

Client Sample ID: S-1-13 @ 1.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 2:30:00 AM

Lab Sample ID: 0903138-054
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	7.7	mg/Kg	5043

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 4/1/2009

Client Sample ID: S-1-13 @ 2.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 2:30:00 AM

Lab Sample ID: 0903138-055
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	3.0	mg/Kg	5043

Client Sample ID: S-1-13 @ 3.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 2:30:00 AM

Lab Sample ID: 0903138-056
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	2.4	mg/Kg	5043

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 4/1/2009

Client Sample ID: S-1-14 @ 0.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 2:45:00 AM

Lab Sample ID: 0903138-057
Date Prepared: 3/25/2009-3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Arsenic	SW6010B	3/26/2009	1.7	1	1.7	2.4	mg/Kg	5043
Barium	SW6010B	3/26/2009	5	1	5.0	160	mg/Kg	5043
Beryllium	SW6010B	3/26/2009	2	1	2.0	ND	mg/Kg	5043
Cadmium	SW6010B	3/26/2009	1	1	1.0	ND	mg/Kg	5043
Chromium	SW6010B	3/26/2009	5	1	5.0	56	mg/Kg	5043
Cobalt	SW6010B	3/26/2009	5	1	5.0	16	mg/Kg	5043
Copper	SW6010B	3/26/2009	5	1	5.0	51	mg/Kg	5043
Lead	SW6010B	3/26/2009	1	1	1.0	28	mg/Kg	5043
Molybdenum	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Nickel	SW6010B	3/26/2009	5	1	5.0	120	mg/Kg	5043
Selenium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Silver	SW6010B	3/26/2009	1	1	1.0	ND	mg/Kg	5043
Thallium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Vanadium	SW6010B	3/26/2009	5	1	5.0	34	mg/Kg	5043
Zinc	SW6010B	3/26/2009	5	1	5.0	99	mg/Kg	5043
Mercury	SW7471A	3/26/2009	0.1	1	0.10	0.31	mg/Kg	5044
TPH (Diesel)	SW8015B	3/28/2009	2	10	20.0	ND	mg/Kg	R19060
TPH (Motor Oil)	SW8015B	3/28/2009	4	10	40.0	730	mg/Kg	R19060
Surr: Pentacosane	SW8015B	3/28/2009	0	10	59.7-129	102	%REC	R19060

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

4,4´-DDD	SW8081A	3/30/2009	0.47	20	9.40	ND	µg/Kg	R19073
4,4´-DDE	SW8081A	3/30/2009	0.476	20	9.52	ND	µg/Kg	R19073
4,4´-DDT	SW8081A	3/30/2009	0.809	20	16.2	ND	µg/Kg	R19073
Aldrin	SW8081A	3/30/2009	0.44	20	8.80	ND	µg/Kg	R19073
alpha-BHC	SW8081A	3/30/2009	0.439	20	8.78	ND	µg/Kg	R19073
alpha-Chlordane	SW8081A	3/30/2009	0.358	20	7.16	ND	µg/Kg	R19073
beta-BHC	SW8081A	3/30/2009	0.364	20	7.28	ND	µg/Kg	R19073
Chlordane	SW8081A	3/30/2009	10	20	200	ND	µg/Kg	R19073
delta-BHC	SW8081A	3/30/2009	0.49	20	9.80	ND	µg/Kg	R19073
Dieldrin	SW8081A	3/30/2009	0.427	20	8.54	ND	µg/Kg	R19073
Endosulfan I	SW8081A	3/30/2009	0.59	20	11.8	ND	µg/Kg	R19073
Endosulfan II	SW8081A	3/30/2009	1.526	20	30.5	ND	µg/Kg	R19073
Endosulfan sulfate	SW8081A	3/30/2009	0.489	20	9.78	ND	µg/Kg	R19073
Endrin	SW8081A	3/30/2009	0.569	20	11.4	ND	µg/Kg	R19073
Endrin aldehyde	SW8081A	3/30/2009	1.028	20	20.6	ND	µg/Kg	R19073
Endrin ketone	SW8081A	3/30/2009	0.401	20	8.02	ND	µg/Kg	R19073
gamma-BHC	SW8081A	3/30/2009	0.396	20	7.92	ND	µg/Kg	R19073
gamma-Chlordane	SW8081A	3/30/2009	0.42	20	8.40	ND	µg/Kg	R19073
Heptachlor	SW8081A	3/30/2009	1.1	20	22.0	ND	µg/Kg	R19073
Heptachlor epoxide	SW8081A	3/30/2009	0.316	20	6.32	ND	µg/Kg	R19073
Methoxychlor	SW8081A	3/30/2009	0.616	20	12.3	ND	µg/Kg	R19073
Toxaphene	SW8081A	3/30/2009	10	20	200	ND	µg/Kg	R19073
Surr: Decachlorobiphenyl	SW8081A	3/30/2009		20	54.6-127	142	%REC	R19073
Surr: Tetrachloro-m-xylene	SW8081A	3/30/2009		20	54-122	114	%REC	R19073

Note: Reporting limits increased due to the nature of the sample matrix (dark color extract). Compounds reported to the MDL. Surrogate recovery of DCBP is bias high possibly due to dilution made on sample; recovery of second surrogate supports data quality.

Aroclor 1016	SW8082	3/31/2009	0.1	5	0.500	ND	mg/Kg	R19084
Aroclor 1221	SW8082	3/31/2009	0.2	5	1.00	ND	mg/Kg	R19084
Aroclor 1232	SW8082	3/31/2009	0.1	5	0.500	ND	mg/Kg	R19084
Aroclor 1242	SW8082	3/31/2009	0.1	5	0.500	ND	mg/Kg	R19084
Aroclor 1248	SW8082	3/31/2009	0.1	5	0.500	ND	mg/Kg	R19084
Aroclor 1254	SW8082	3/31/2009	0.1	5	0.500	ND	mg/Kg	R19084
Aroclor 1260	SW8082	3/31/2009	0.1	5	0.500	ND	mg/Kg	R19084
Surr: Decachlorobiphenyl	SW8082	3/31/2009	0	5	63.7-126	108	%REC	R19084
Surr: Tetrachloro-m-xylene	SW8082	3/31/2009	0	5	51.7-128	108	%REC	R19084

Note: Reporting limits increased due to the nature of the sample matrix (dark color extract).

pH	SW9045C	3/25/2009	0.05	1	0.0500	8.31	pH Units	R19059

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 4/1/2009

Client Sample ID: S-1-14 @ 1.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 2:45:00 AM

Lab Sample ID: 0903138-058
Date Prepared: 3/25/2009-3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Arsenic	SW6010B	3/26/2009	1.7	1	1.7	ND	mg/Kg	5043
Barium	SW6010B	3/26/2009	5	1	5.0	130	mg/Kg	5043
Beryllium	SW6010B	3/26/2009	2	1	2.0	ND	mg/Kg	5043
Cadmium	SW6010B	3/26/2009	1	1	1.0	ND	mg/Kg	5043
Chromium	SW6010B	3/26/2009	5	1	5.0	79	mg/Kg	5043
Cobalt	SW6010B	3/26/2009	5	1	5.0	13	mg/Kg	5043
Copper	SW6010B	3/26/2009	5	1	5.0	52	mg/Kg	5043
Lead	SW6010B	3/26/2009	1	1	1.0	320	mg/Kg	5043
Molybdenum	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Nickel	SW6010B	3/26/2009	5	1	5.0	100	mg/Kg	5043
Selenium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Silver	SW6010B	3/26/2009	1	1	1.0	1.6	mg/Kg	5043
Thallium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Vanadium	SW6010B	3/26/2009	5	1	5.0	37	mg/Kg	5043
Zinc	SW6010B	3/26/2009	5	1	5.0	170	mg/Kg	5043
Mercury	SW7471A	3/26/2009	0.1	1	0.10	ND	mg/Kg	5044
Benzene	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
Diisopropyl ether (DIPE)	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
Ethyl tert-butyl ether (ETBE)	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
Ethylbenzene	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
Methyl tert-butyl ether (MTBE)	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
t-Butyl alcohol (t-Butanol)	SW8260B	3/25/2009	50	1	50	ND	µg/Kg	U19069
tert-Amyl methyl ether (TAME)	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
Toluene	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
Xylenes, Total	SW8260B	3/25/2009	15	1	15	ND	µg/Kg	U19069
Surr: 4-Bromofluorobenzene	SW8260B	3/25/2009	0	1	55.8-141	102	%REC	U19069
Surr: Dibromofluoromethane	SW8260B	3/25/2009	0	1	59.8-148	93.7	%REC	U19069
Surr: Toluene-d8	SW8260B	3/25/2009	0	1	55.2-133	88.9	%REC	U19069
TPH (Gasoline)	SW8260B(TPH)	3/25/2009	100	1	100	ND	µg/Kg	G19069
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	3/25/2009	0	1	56.9-133	58.0	%REC	G19069
pH	SW9045C	3/25/2009	0.05	1	0.0500	8.86	pH Units	R19059

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 4/1/2009

Client Sample ID: S-1-14 @ 1.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 2:45:00 AM

Lab Sample ID: 0903138-059
Date Prepared: 3/25/2009-3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Arsenic	SW6010B	3/26/2009	1.7	1	1.7	ND	mg/Kg	5043
Barium	SW6010B	3/26/2009	5	1	5.0	20	mg/Kg	5043
Beryllium	SW6010B	3/26/2009	2	1	2.0	ND	mg/Kg	5043
Cadmium	SW6010B	3/26/2009	1	1	1.0	ND	mg/Kg	5043
Chromium	SW6010B	3/26/2009	5	1	5.0	39	mg/Kg	5043
Cobalt	SW6010B	3/26/2009	5	1	5.0	26	mg/Kg	5043
Copper	SW6010B	3/26/2009	5	1	5.0	45	mg/Kg	5043
Lead	SW6010B	3/26/2009	1	1	1.0	2.8	mg/Kg	5043
Molybdenum	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Nickel	SW6010B	3/26/2009	5	1	5.0	37	mg/Kg	5043
Selenium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Silver	SW6010B	3/26/2009	1	1	1.0	1.8	mg/Kg	5043
Thallium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Vanadium	SW6010B	3/26/2009	5	1	5.0	66	mg/Kg	5043
Zinc	SW6010B	3/26/2009	5	1	5.0	52	mg/Kg	5043
Mercury	SW7471A	3/26/2009	0.1	1	0.10	ND	mg/Kg	5044
Benzene	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
Diisopropyl ether (DIPE)	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
Ethyl tert-butyl ether (ETBE)	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
Ethylbenzene	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
Methyl tert-butyl ether (MTBE)	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
t-Butyl alcohol (t-Butanol)	SW8260B	3/25/2009	50	1	50	ND	µg/Kg	U19069
tert-Amyl methyl ether (TAME)	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
Toluene	SW8260B	3/25/2009	10	1	10	ND	µg/Kg	U19069
Xylenes, Total	SW8260B	3/25/2009	15	1	15	ND	µg/Kg	U19069
Surr: 4-Bromofluorobenzene	SW8260B	3/25/2009	0	1	55.8-141	83.7	%REC	U19069
Surr: Dibromofluoromethane	SW8260B	3/25/2009	0	1	59.8-148	90.8	%REC	U19069
Surr: Toluene-d8	SW8260B	3/25/2009	0	1	55.2-133	83.2	%REC	U19069
TPH (Gasoline)	SW8260B(TPH)	3/25/2009	100	1	100	ND	µg/Kg	G19069
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	3/25/2009	0	1	56.9-133	80.0	%REC	G19069
pH	SW9045C	3/25/2009	0.05	1	0.0500	8.13	pH Units	R19059

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 4/1/2009

Client Sample ID: S-1-14 @ 2.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 2:45:00 AM

Lab Sample ID: 0903138-060
Date Prepared: 3/25/2009-3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Arsenic	SW6010B	3/26/2009	1.7	1	1.7	2.8	mg/Kg	5043
Barium	SW6010B	3/26/2009	5	1	5.0	110	mg/Kg	5043
Beryllium	SW6010B	3/26/2009	2	1	2.0	ND	mg/Kg	5043
Cadmium	SW6010B	3/26/2009	1	1	1.0	ND	mg/Kg	5043
Chromium	SW6010B	3/26/2009	5	1	5.0	40	mg/Kg	5043
Cobalt	SW6010B	3/26/2009	5	1	5.0	8.0	mg/Kg	5043
Copper	SW6010B	3/26/2009	5	1	5.0	12	mg/Kg	5043
Lead	SW6010B	3/26/2009	1	1	1.0	4.4	mg/Kg	5043
Molybdenum	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Nickel	SW6010B	3/26/2009	5	1	5.0	39	mg/Kg	5043
Selenium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Silver	SW6010B	3/26/2009	1	1	1.0	ND	mg/Kg	5043
Thallium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Vanadium	SW6010B	3/26/2009	5	1	5.0	26	mg/Kg	5043
Zinc	SW6010B	3/26/2009	5	1	5.0	41	mg/Kg	5043
Mercury	SW7471A	3/26/2009	0.1	1	0.10	ND	mg/Kg	5044
Benzene	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	R19078
Diisopropyl ether (DIPE)	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	R19078
Ethyl tert-butyl ether (ETBE)	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	R19078
Ethylbenzene	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	R19078
Methyl tert-butyl ether (MTBE)	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	R19078
t-Butyl alcohol (t-Butanol)	SW8260B	3/27/2009	50	1	50	ND	µg/Kg	R19078
tert-Amyl methyl ether (TAME)	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	R19078
Toluene	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	R19078
Xylenes, Total	SW8260B	3/27/2009	15	1	15	ND	µg/Kg	R19078
Surr: 4-Bromofluorobenzene	SW8260B	3/27/2009	0	1	55.8-141	89.3	%REC	R19078
Surr: Dibromofluoromethane	SW8260B	3/27/2009	0	1	59.8-148	118	%REC	R19078
Surr: Toluene-d8	SW8260B	3/27/2009	0	1	55.2-133	83.9	%REC	R19078
TPH (Gasoline)	SW8260B(TPH)	3/27/2009	100	1	100	ND	µg/Kg	G19078
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	3/27/2009	0	1	56.9-133	80.0	%REC	G19078
pH	SW9045C	3/25/2009	0.05	1	0.0500	8.37	pH Units	R19059

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 4/1/2009

Client Sample ID: S-1-14 @ 3.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 2:45:00 AM

Lab Sample ID: 0903138-061
Date Prepared: 3/25/2009-3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	3/26/2009	5	1	5.0	5.3	mg/Kg	5043
Arsenic	SW6010B	3/26/2009	1.7	1	1.7	2.3	mg/Kg	5043
Barium	SW6010B	3/26/2009	5	1	5.0	93	mg/Kg	5043
Beryllium	SW6010B	3/26/2009	2	1	2.0	ND	mg/Kg	5043
Cadmium	SW6010B	3/26/2009	1	1	1.0	ND	mg/Kg	5043
Chromium	SW6010B	3/26/2009	5	1	5.0	66	mg/Kg	5043
Cobalt	SW6010B	3/26/2009	5	1	5.0	16	mg/Kg	5043
Copper	SW6010B	3/26/2009	5	1	5.0	32	mg/Kg	5043
Lead	SW6010B	3/26/2009	1	1	1.0	7.4	mg/Kg	5043
Molybdenum	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Nickel	SW6010B	3/26/2009	5	1	5.0	54	mg/Kg	5043
Selenium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Silver	SW6010B	3/26/2009	1	1	1.0	2.8	mg/Kg	5043
Thallium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Vanadium	SW6010B	3/26/2009	5	1	5.0	66	mg/Kg	5043
Zinc	SW6010B	3/26/2009	5	1	5.0	42	mg/Kg	5043
Mercury	SW7471A	3/26/2009	0.1	1	0.10	ND	mg/Kg	5044
Benzene	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	R19078
Diisopropyl ether (DIPE)	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	R19078
Ethyl tert-butyl ether (ETBE)	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	R19078
Ethylbenzene	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	R19078
Methyl tert-butyl ether (MTBE)	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	R19078
t-Butyl alcohol (t-Butanol)	SW8260B	3/27/2009	50	1	50	ND	µg/Kg	R19078
tert-Amyl methyl ether (TAME)	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	R19078
Toluene	SW8260B	3/27/2009	10	1	10	ND	µg/Kg	R19078
Xylenes, Total	SW8260B	3/27/2009	15	1	15	ND	µg/Kg	R19078
Surr: 4-Bromofluorobenzene	SW8260B	3/27/2009	0	1	55.8-141	91.1	%REC	R19078
Surr: Dibromofluoromethane	SW8260B	3/27/2009	0	1	59.8-148	102	%REC	R19078
Surr: Toluene-d8	SW8260B	3/27/2009	0	1	55.2-133	85.5	%REC	R19078
TPH (Gasoline)	SW8260B(TPH)	3/27/2009	100	1	100	ND	µg/Kg	G19078
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	3/27/2009	0	1	56.9-133	74.0	%REC	G19078
pH	SW9045C	3/25/2009	0.05	1	0.0500	8.56	pH Units	R19059

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 4/1/2009

Client Sample ID: S-1-15 @ 0.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 3:05:00 AM

Lab Sample ID: 0903138-062
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	470	mg/Kg	5043

Client Sample ID: S-1-15 @ 1.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 3:05:00 AM

Lab Sample ID: 0903138-063
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	420	mg/Kg	5043

Client Sample ID: S-1-15 @ 1.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 3:05:00 AM

Lab Sample ID: 0903138-064
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	49	mg/Kg	5043

Client Sample ID: S-1-15 @ 2.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 3:05:00 AM

Lab Sample ID: 0903138-065
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	68	mg/Kg	5043

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 4/1/2009

Client Sample ID: S-1-15 @ 3.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 3:05:00 AM

Lab Sample ID: 0903138-066
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	7.9	mg/Kg	5043

Client Sample ID: S-1-16 @ 0.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 3:18:00 AM

Lab Sample ID: 0903138-067
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	260	mg/Kg	5043

Client Sample ID: S-1-16 @ 1.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 3:18:00 AM

Lab Sample ID: 0903138-068
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	280	mg/Kg	5045

Client Sample ID: S-1-16 @ 1.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 3:18:00 AM

Lab Sample ID: 0903138-069
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	280	mg/Kg	5045

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 4/1/2009

Client Sample ID: S-1-16 @ 2.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 3:18:00 AM

Lab Sample ID: 0903138-070
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	5.6	mg/Kg	5045

Client Sample ID: S-1-16 @ 3.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 3:18:00 AM

Lab Sample ID: 0903138-071
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	5.1	mg/Kg	5045

Client Sample ID: S-1-17 @ 0.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 3:18:00 AM

Lab Sample ID: 0903138-072
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	640	mg/Kg	5045

Client Sample ID: S-1-17 @ 1.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 3:18:00 AM

Lab Sample ID: 0903138-073
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	920	mg/Kg	5045

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 4/1/2009

Client Sample ID: S-1-17 @ 1.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 3:18:00 AM

Lab Sample ID: 0903138-074
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	2.8	mg/Kg	5045

Client Sample ID: S-1-17 @ 2.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 3:18:00 AM

Lab Sample ID: 0903138-075
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	3.0	mg/Kg	5045

Client Sample ID: S-1-17 @ 3.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 3:18:00 AM

Lab Sample ID: 0903138-076
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	6.9	mg/Kg	5045

Client Sample ID: N-1-10 @ 0.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 9:45:00 PM

Lab Sample ID: 0903138-077
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	22	mg/Kg	5045

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 4/1/2009

Client Sample ID: N-1-10 @ 1.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 9:45:00 PM

Lab Sample ID: 0903138-078
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	290	mg/Kg	5045

Client Sample ID: N-1-10 @ 1.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 9:45:00 PM

Lab Sample ID: 0903138-079
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	7.4	mg/Kg	5045

Client Sample ID: N-1-10 @ 2.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 9:45:00 PM

Lab Sample ID: 0903138-080
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	5.6	mg/Kg	5045

Client Sample ID: N-1-10 @ 3.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 9:45:00 PM

Lab Sample ID: 0903138-081
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	12	mg/Kg	5045

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 4/1/2009

Client Sample ID: N-1-9 @ 0.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 10:00:00 PM

Lab Sample ID: 0903138-082
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	1400	mg/Kg	5045

Client Sample ID: N-1-9 @ 1.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 10:00:00 PM

Lab Sample ID: 0903138-083
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	24	mg/Kg	5045

Client Sample ID: N-1-9 @ 1.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 10:00:00 PM

Lab Sample ID: 0903138-084
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	8.7	mg/Kg	5045

Client Sample ID: N-1-9 @ 2.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 10:00:00 PM

Lab Sample ID: 0903138-085
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	5.4	mg/Kg	5045

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for:	Patrick Walz	**Date Received:**	3/24/2009
	URS Corporation, San Jose	**Date Reported:**	4/1/2009

Client Sample ID:	N-1-9 @ 3.0	**Lab Sample ID:**	0903138-086
Sample Location:	Hwy 101-Aux lanes	**Date Prepared:**	3/26/2009
Sample Matrix:	SOIL		
Date/Time Sampled	3/23/2009 10:00:00 PM		

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	120	mg/Kg	5045

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Definitions, legends and Notes

Note	Description
ug/kg	Microgram per kilogram (ppb, part per billion).
ug/L	Microgram per liter (ppb, part per billion).
mg/kg	Milligram per kilogram (ppm, part per million).
mg/L	Milligram per liter (ppm, part per million).
LCS/LCSD	Laboratory control sample/laboratory control sample duplicate.
MDL	Method detection limit.
MRL	Modified reporting limit. When sample is subject to dilution, reporting limit times dilution factor yields MRL.
MS/MSD	Matrix spike/matrix spike duplicate.
N/A	Not applicable.
ND	Not detected at or above detection limit.
NR	Not reported.
QC	Quality Control.
RL	Reporting limit.
% RPD	Percent relative difference.
a	pH was measured immediately upon the receipt of the sample, but it was still done outside the holding time.
sub	Analyzed by subcontracting laboratory, Lab Certificate #

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

EMSL Analytical, Inc
2235 Polvorosa Ave , Suite 230, San Leandro, CA 94577
Phone: (510) 895-3675 Fax: (510) 895-3680 Email: milpitaslab@emsl.com

Attn: **Nutan Kabir**
Torrent Laboratory, Inc.
483 Sinclair Frontage Rd.
Milpitas, CA 95035

Fax: (408) 263-8293 Phone: (408) 263-5258
Project: **0903131, 0903138**

Customer ID:	TORR80
Customer PO:	0903131,0903138
Received:	03/25/09 9:00 AM
EMSL Order:	090902214
EMSL Proj:	
Analysis Date:	3/29/2009
Report Date:	3/30/2009

Qualitative asbestos analysis of soils using the EPA 600/R-93/116 method

Sample	Location	Appearance	Result	Notes
0903131-006A *090902214-0001*	N-1-20@ 0.5		None Detected	
0903131-007A *090902214-0002*	1.0		None Detected	
0903131-008A *090902214-0003*	1.5		Chrysotile	
0903131-009A *090902214-0004*	2.0		None Detected	
0903131-010A *090902214-0005*	3.0		None Detected	
0903131-031A *090902214-0006*	N-1-15@ 0.5		Chrysotile	
0903131-032A *090902214-0007*	1.0		Chrysotile	
0903131-033A *090902214-0008*	1.5		None Detected	
0903131-034A *090902214-0009*	2.0		None Detected	

Analyst(s)

Nathee Dummai (30)

Baojia Ke, Laboratory Manager
or other approved signatory

EMSL recommends that soil samples reported as "ND" be tested by the EPA Screening Method/Qualitative. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. The above test must not be used by the client to claim product endorsement by NVLAP nor any agency of the United States Government. Unless otherwise noted, the results in this report have not been blank corrected.Samples received in good condition unless otherwise noted.

EMSL Analytical, Inc
2235 Polvorosa Ave , Suite 230, San Leandro, CA 94577
Phone: (510) 895-3675 Fax: (510) 895-3680 Email: milpitaslab@emsl.com

Attn: **Nutan Kabir**
Torrent Laboratory, Inc.
483 Sinclair Frontage Rd.
Milpitas, CA 95035

Fax: (408) 263-8293 Phone: (408) 263-5258
Project: **0903131, 0903138**

Customer ID:	TORR80
Customer PO:	0903131,0903138
Received:	03/25/09 9:00 AM
EMSL Order:	090902214
EMSL Proj:	
Analysis Date:	3/29/2009
Report Date:	3/30/2009

Qualitative asbestos analysis of soils using the EPA 600/R-93/116 method

Sample	Location	Appearance	Result	Notes
0903131-035A *090902214-0010*	N-1-15 @ 3.0		**None Detected**	
0903131-061A *090902214-0011*	N-1-11 @ 6.5		**None Detected**	
0903131-062A *090902214-0012*	1.0		**None Detected**	
0903131-063A *090902214-0013*	1.5		**None Detected**	
0903131-064A *090902214-0014*	2.0		**None Detected**	
0903131-065A *090902214-0015*	3.0		**None Detected**	
0903138-007A *090902214-0016*	N-1-7 @ 6.5		**Chrysotile**	
0903138-008A *090902214-0017*	1.0		**None Detected**	
0903138-009A *090902214-0018*	1.5		**None Detected**	

Analyst(s)

Nathee Dummai (30)

Baojia Ke, Laboratory Manager
or other approved signatory

EMSL recommends that soil samples reported as "ND" be tested by the EPA Screening Method/Qualitative. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. The above test must not be used by the client to claim product endorsement by NVLAP nor any agency of the United States Government. Unless otherwise noted, the results in this report have not been blank corrected.Samples received in good condition unless otherwise noted.

EMSL Analytical, Inc
2235 Polvorosa Ave , Suite 230, San Leandro, CA 94577
Phone: (510) 895-3675 Fax: (510) 895-3680 Email: milpitaslab@emsl.com

Attn: **Nutan Kabir**
Torrent Laboratory, Inc.
483 Sinclair Frontage Rd.
Milpitas, CA 95035

Fax: (408) 263-8293 Phone: (408) 263-5258
Project: **0903131, 0903138**

Customer ID: TORR80
Customer PO: 0903131,0903138
Received: 03/25/09 9:00 AM
EMSL Order: 090902214

EMSL Proj:
Analysis Date: 3/29/2009
Report Date: 3/30/2009

Qualitative asbestos analysis of soils using the EPA 600/R-93/116 method

Sample	Location	Appearance	Result	Notes
0903138-010A *090902214-0019*	N-1-7@ 2.0		None Detected	
0903138-011A *090902214-0020*	↓ 3.0		None Detected	
0903138-032A *090902214-0021*	S-1-10@ 0.5		None Detected	
0903138-033A *090902214-0022*	1.0		None Detected	
0903138-034A *090902214-0023*	1.5		None Detected	
0903138-035A *090902214-0024*	2.0		None Detected	
0903138-036A *090902214-0025*	3.0		None Detected	
0903138-062A *090902214-0026*	S-1-15@ 0.5		None Detected	
0903138-063A *090902214-0027*	↓ 1.0		None Detected	

Analyst(s)

Nathee Dummai (30)

Baojia Ke, Laboratory Manager
or other approved signatory

EMSL recommends that soil samples reported as "ND" be tested by the EPA Screening Method/Qualitative. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. The above test must not be used by the client to claim product endorsement by NVLAP nor any agency of the United States Government. Unless otherwise noted, the results in this report have not been blank corrected.Samples received in good condition unless otherwise noted.

EMSL Analytical, Inc
2235 Polvorosa Ave , Suite 230, San Leandro, CA 94577
Phone: (510) 895-3675 Fax: (510) 895-3680 Email: milpitaslab@emsl.com

Attn: **Nutan Kabir**
Torrent Laboratory, Inc.
483 Sinclair Frontage Rd.
Milpitas, CA 95035

Fax: (408) 263-8293 Phone: (408) 263-5258
Project: **0903131, 0903138**

Customer ID:	TORR80
Customer PO:	0903131,0903138
Received:	03/25/09 9:00 AM
EMSL Order:	090902214
EMSL Proj:	
Analysis Date:	3/29/2009
Report Date:	3/30/2009

Qualitative asbestos analysis of soils using the EPA 600/R-93/116 method

Sample	Location	Appearance	Result	Notes
0903138-064A *090902214-0028*	S-1-150 1.5		**None Detected**	
0903138-065A *090902214-0029*	2.0		**None Detected**	
0903138-066A *090902214-0030*	3.0		**None Detected**	

Analyst(s)

Nathee Dummai (30)

Baojia Ke, Laboratory Manager
or other approved signatory

EMSL recommends that soil samples reported as "ND" be tested by the EPA Screening Method/Qualitative. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. The above test must not be used by the client to claim product endorsement by NVLAP nor any agency of the United States Government. Unless otherwise noted, the results in this report have not been blank corrected.Samples received in good condition unless otherwise noted.

PLMQual w/Types-1

THIS IS THE LAST PAGE OF THE REPORT.

Torrent Laboratory, Inc.

Date: *01-Apr-09*

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5038

Sample ID	MB-5038	SampType:	MBLK	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/25/2009	RunNo:	19036
Client ID:	ZZZZZ	Batch ID:	5038	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/25/2009	SeqNo:	274611

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	1.0									

Sample ID	LCS-5038	SampType:	LCS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/25/2009	RunNo:	19036
Client ID:	ZZZZZ	Batch ID:	5038	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/25/2009	SeqNo:	274609

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	49.35	1.0	50	0.35	98.0	67.9	118				

Sample ID	LCSD-5038	SampType:	LCSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/25/2009	RunNo:	19036
Client ID:	ZZZZZ	Batch ID:	5038	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/25/2009	SeqNo:	274610

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	48.70	1.0	50	0.35	96.7	67.9	118	49.35	1.33	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5039

Sample ID	MB-5039	SampType:	MBLK	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/25/2009	RunNo:	19055
Client ID:	ZZZZZ	Batch ID:	5039	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/26/2009	SeqNo:	274861

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	5.0									
Arsenic	ND	1.7									
Barium	ND	5.0									
Beryllium	ND	2.0									
Cadmium	ND	1.0									
Chromium	ND	5.0									
Cobalt	ND	5.0									
Copper	ND	5.0									
Lead	ND	1.0									
Molybdenum	ND	5.0									
Nickel	ND	5.0									
Selenium	ND	5.0									
Silver	ND	1.0									
Thallium	ND	5.0									
Vanadium	ND	5.0									
Zinc	ND	5.0									

Sample ID	LCS-5039	SampType:	LCS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/25/2009	RunNo:	19055
Client ID:	ZZZZZ	Batch ID:	5039	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/26/2009	SeqNo:	274859

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	52.25	5.0	50	0	104	30.7	130				
Arsenic	55.80	1.7	50	0	112	71	121				
Barium	52.25	5.0	50	0.2	104	70.2	130				
Beryllium	55.05	2.0	50	0	110	73.3	115				
Cadmium	49.05	1.0	50	0	98.1	68.7	110				
Chromium	52.80	5.0	50	0.1	105	76	116				
Cobalt	51.55	5.0	50	0	103	57.4	122				
Copper	52.20	5.0	50	0.7	103	74.8	119				
Lead	54.25	1.0	50	0.4	108	67.9	118				
Molybdenum	54.50	5.0	50	0	109	62.9	123				

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5039

Sample ID	LCS-5039	SampType:	LCS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/25/2009	RunNo:	19055
Client ID:	ZZZZZ	Batch ID:	5039	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/26/2009	SeqNo:	274859

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	51.35	5.0	50	0.1	103	61.5	122				
Selenium	49.75	5.0	50	0	99.5	62	111				
Silver	50.65	1.0	50	0	101	81.1	109				
Thallium	50.95	5.0	50	0.15	102	39.2	125				
Vanadium	52.35	5.0	50	0	105	65.8	122				
Zinc	54.40	5.0	50	0.75	107	59.9	122				

Sample ID	LCSD-5039	SampType:	LCSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/25/2009	RunNo:	19055
Client ID:	ZZZZZ	Batch ID:	5039	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/26/2009	SeqNo:	274860

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	51.30	5.0	50	0	103	30.7	130	52.25	1.83	30	
Arsenic	54.70	1.7	50	0	109	71	121	55.8	1.99	30	
Barium	52.90	5.0	50	0.2	105	70.2	130	52.25	1.24	30	
Beryllium	53.35	2.0	50	0	107	73.3	115	55.05	3.14	30	
Cadmium	49.55	1.0	50	0	99.1	68.7	110	49.05	1.01	30	
Chromium	53.45	5.0	50	0.1	107	76	116	52.8	1.22	30	
Cobalt	52.05	5.0	50	0	104	57.4	122	51.55	0.965	30	
Copper	52.95	5.0	50	0.7	104	74.8	119	52.2	1.43	30	
Lead	53.60	1.0	50	0.4	106	67.9	118	54.25	1.21	30	
Molybdenum	53.75	5.0	50	0	108	62.9	123	54.5	1.39	30	
Nickel	51.85	5.0	50	0.1	104	61.5	122	51.35	0.969	30	
Selenium	49.10	5.0	50	0	98.2	62	111	49.75	1.32	30	
Silver	51.25	1.0	50	0	103	81.1	109	50.65	1.18	30	
Thallium	50.30	5.0	50	0.15	100	39.2	125	50.95	1.28	30	
Vanadium	53.15	5.0	50	0	106	65.8	122	52.35	1.52	30	
Zinc	54.80	5.0	50	0.75	108	59.9	122	54.4	0.733	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5039

Sample ID **0903138-011AMS** SampType: **MS** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **3/25/2009** RunNo: **19055**
Client ID: **N-1-7 @ 3.0** Batch ID: **5039** TestNo: **SW6010B (SW3050B)** Analysis Date: **3/26/2009** SeqNo: **274838**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	21.50	5.0	50	1.65	39.7	30.7	130				
Arsenic	55.05	1.7	50	5.1	99.9	71	121				
Barium	209.4	5.0	50	154.3	110	56.2	127				
Beryllium	49.80	2.0	50	0	99.6	73.3	115				
Cadmium	48.95	1.0	50	0.5	96.9	68.7	110				
Chromium	85.20	5.0	50	36.55	97.3	76	116				
Cobalt	58.55	5.0	50	10.45	96.2	57.4	122				
Copper	78.80	5.0	50	22.95	112	74.8	119				
Lead	54.45	1.0	50	7.65	93.6	60.5	113				
Molybdenum	46.75	5.0	50	0.95	91.6	62.9	123				
Nickel	92.85	5.0	50	42.4	101	61.5	122				
Selenium	45.40	5.0	50	0	90.8	62	111				
Silver	51.50	1.0	50	0.75	102	81.1	109				
Thallium	39.70	5.0	50	0	79.4	39.2	125				
Vanadium	88.80	5.0	50	38.5	101	65.8	122				
Zinc	113.4	5.0	50	57.95	111	59.9	122				

Sample ID **0903138-011AMSD** SampType: **MSD** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **3/25/2009** RunNo: **19055**
Client ID: **N-1-7 @ 3.0** Batch ID: **5039** TestNo: **SW6010B (SW3050B)** Analysis Date: **3/26/2009** SeqNo: **274839**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	21.95	5.0	50	1.65	40.6	30.7	130	21.5	2.07	30	
Arsenic	55.55	1.7	50	5.1	101	71	121	55.05	0.904	30	
Barium	209.4	5.0	50	154.3	110	56.2	127	209.4	0.0478	30	
Beryllium	46.95	2.0	50	0	93.9	73.3	115	49.8	5.89	30	
Cadmium	46.15	1.0	50	0.5	91.3	68.7	110	48.95	5.89	30	
Chromium	82.85	5.0	50	36.55	92.6	76	116	85.2	2.80	30	
Cobalt	55.45	5.0	50	10.45	90.0	57.4	122	58.55	5.44	30	
Copper	74.35	5.0	50	22.95	103	74.8	119	78.8	5.81	30	
Lead	54.35	1.0	50	7.65	93.4	60.5	113	54.45	0.184	30	
Molybdenum	46.75	5.0	50	0.95	91.6	62.9	123	46.75	0	30	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5039

Sample ID	0903138-011AMSD	SampType:	MSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/25/2009	RunNo:	19055
Client ID:	N-1-7 @ 3.0	Batch ID:	5039	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/26/2009	SeqNo:	274839

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	85.15	5.0	50	42.4	85.5	61.5	122	92.85	8.65	30	
Selenium	44.20	5.0	50	0	88.4	62	111	45.4	2.68	30	
Silver	48.95	1.0	50	0.75	96.4	81.1	109	51.5	5.08	30	
Thallium	39.10	5.0	50	0	78.2	39.2	125	39.7	1.52	30	
Vanadium	85.30	5.0	50	38.5	93.6	65.8	122	88.8	4.02	30	
Zinc	105.2	5.0	50	57.95	94.4	59.9	122	113.4	7.51	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5040

Sample ID	MB-5040	SampType:	MBLK	TestCode:	6010B_W	Units:	mg/L	Prep Date:	3/25/2009	RunNo:	19051
Client ID:	ZZZZZ	Batch ID:	5040	TestNo:	SW6010B	(E200.7/SW3		Analysis Date:	3/26/2009	SeqNo:	274797

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	0.010									
Arsenic	ND	0.010									
Barium	ND	0.010									
Beryllium	ND	0.0050									
Cadmium	ND	0.0050									
Chromium	ND	0.0050									
Cobalt	ND	0.0050									
Copper	ND	0.010									
Lead	ND	0.015									
Molybdenum	ND	0.0050									
Nickel	ND	0.010									
Selenium	ND	0.020									
Silver	ND	0.0050									
Thallium	ND	0.010									
Vanadium	ND	0.010									
Zinc	ND	0.010									

Sample ID	LCS-5040	SampType:	LCS	TestCode:	6010B_W	Units:	mg/L	Prep Date:	3/25/2009	RunNo:	19051
Client ID:	ZZZZZ	Batch ID:	5040	TestNo:	SW6010B	(E200.7/SW3		Analysis Date:	3/26/2009	SeqNo:	274795

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	1.053	0.010	1	0	105	80	120				
Arsenic	1.057	0.010	1	0	106	80	120				
Barium	0.9820	0.010	1	0	98.2	80	120				
Beryllium	0.9610	0.0050	1	0	96.1	80	120				
Cadmium	0.9790	0.0050	1	0	97.9	80	120				
Chromium	0.9770	0.0050	1	0	97.7	80	120				
Cobalt	0.9840	0.0050	1	0	98.4	80	120				
Copper	0.9790	0.010	1	0	97.9	80	120				
Lead	0.9900	0.015	1	0	99.0	80	120				
Molybdenum	0.9860	0.0050	1	0	98.6	80	120				

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5040

Sample ID	LCS-5040	SampType:	LCS	TestCode:	6010B_W	Units:	mg/L	Prep Date:	3/25/2009	RunNo:	19051
Client ID:	ZZZZZ	Batch ID:	5040	TestNo:	SW6010B	(E200.7/SW3		Analysis Date:	3/26/2009	SeqNo:	274795

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	0.9810	0.010	1	0	98.1	80	120				
Selenium	0.9950	0.020	1	0	99.5	80	120				
Silver	0.9750	0.0050	1	0.002	97.3	80	120				
Thallium	0.9840	0.010	1	0	98.4	80	120				
Vanadium	0.9740	0.010	1	0	97.4	80	120				
Zinc	0.9750	0.010	1	0.002	97.3	80	120				

Sample ID	LCSD-5040	SampType:	LCSD	TestCode:	6010B_W	Units:	mg/L	Prep Date:	3/25/2009	RunNo:	19051
Client ID:	ZZZZZ	Batch ID:	5040	TestNo:	SW6010B	(E200.7/SW3		Analysis Date:	3/26/2009	SeqNo:	274796

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	1.058	0.010	1	0	106	80	120	1.053	0.474	20	
Arsenic	1.061	0.010	1	0	106	80	120	1.057	0.378	20	
Barium	0.9800	0.010	1	0	98.0	80	120	0.982	0.204	20	
Beryllium	0.9790	0.0050	1	0	97.9	80	120	0.961	1.86	20	
Cadmium	0.9770	0.0050	1	0	97.7	80	120	0.979	0.204	20	
Chromium	0.9720	0.0050	1	0	97.2	80	120	0.977	0.513	20	
Cobalt	0.9800	0.0050	1	0	98.0	80	120	0.984	0.407	20	
Copper	0.9840	0.010	1	0	98.4	80	120	0.979	0.509	20	
Lead	0.9960	0.015	1	0	99.6	80	120	0.99	0.604	20	
Molybdenum	0.9930	0.0050	1	0	99.3	80	120	0.986	0.707	20	
Nickel	0.9740	0.010	1	0	97.4	80	120	0.981	0.716	20	
Selenium	0.9950	0.020	1	0	99.5	80	120	0.995	0	20	
Silver	0.9780	0.0050	1	0.002	97.6	80	120	0.975	0.307	20	
Thallium	0.9890	0.010	1	0	98.9	80	120	0.984	0.507	20	
Vanadium	0.9790	0.010	1	0	97.9	80	120	0.974	0.512	20	
Zinc	0.9700	0.010	1	0.002	96.8	80	120	0.975	0.514	20	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5040

Sample ID	0903138-006AMS	SampType:	MS	TestCode:	6010B_W	Units:	mg/L	Prep Date:	3/25/2009	RunNo:	19051
Client ID:	N-1-8-GW	Batch ID:	5040	TestNo:	SW6010B	(E200.7/SW3		Analysis Date:	3/26/2009	SeqNo:	274792

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	1.050	0.010	1	0	105	75	125				
Arsenic	1.096	0.010	1	0.005	109	75	125				
Barium	1.109	0.010	1	0.223	88.6	75	125				
Beryllium	0.9570	0.0050	1	0	95.7	75	125				
Cadmium	0.9190	0.0050	1	0.001	91.8	75	125				
Chromium	0.9070	0.0050	1	0.005	90.2	75	125				
Cobalt	0.8920	0.0050	1	0.006	88.6	75	125				
Copper	0.9560	0.010	1	0.02	93.6	75	125				
Lead	0.9450	0.015	1	0.025	92.0	75	125				
Molybdenum	1.057	0.0050	1	0.086	97.1	75	125				
Nickel	0.8880	0.010	1	0.015	87.3	75	125				
Selenium	1.000	0.020	1	0	100	75	125				
Silver	0.9280	0.0050	1	0.002	92.6	75	125				
Thallium	0.8790	0.010	1	0	87.9	75	125				
Vanadium	0.9580	0.010	1	0.028	93.0	75	125				
Zinc	0.9260	0.010	1	0.035	89.1	75	125				

Sample ID	0903138-006AMSD	SampType:	MSD	TestCode:	6010B_W	Units:	mg/L	Prep Date:	3/25/2009	RunNo:	19051
Client ID:	N-1-8-GW	Batch ID:	5040	TestNo:	SW6010B	(E200.7/SW3		Analysis Date:	3/26/2009	SeqNo:	274793

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	1.055	0.010	1	0	106	75	125	1.05	0.475	30	
Arsenic	1.097	0.010	1	0.005	109	75	125	1.096	0.0912	30	
Barium	1.160	0.010	1	0.223	93.7	75	125	1.109	4.50	30	
Beryllium	0.9590	0.0050	1	0	95.9	75	125	0.957	0.209	30	
Cadmium	0.9520	0.0050	1	0.001	95.1	75	125	0.919	3.53	30	
Chromium	0.9470	0.0050	1	0.005	94.2	75	125	0.907	4.31	30	
Cobalt	0.9180	0.0050	1	0.006	91.2	75	125	0.892	2.87	30	
Copper	0.9930	0.010	1	0.02	97.3	75	125	0.956	3.80	30	
Lead	0.9500	0.015	1	0.025	92.5	75	125	0.945	0.528	30	
Molybdenum	1.057	0.0050	1	0.086	97.1	75	125	1.057	0	30	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5040

Sample ID	0903138-006AMSD	SampType:	MSD	TestCode:	6010B_W	Units:	mg/L	Prep Date:	3/25/2009	RunNo:	19051
Client ID:	N-1-8-GW	Batch ID:	5040	TestNo:	SW6010B		(E200.7/SW3	Analysis Date:	3/26/2009	SeqNo:	274793

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	0.9240	0.010	1	0.015	90.9	75	125	0.888	3.97	30	
Selenium	1.000	0.020	1	0	100	75	125	1	0	30	
Silver	0.9680	0.0050	1	0.002	96.6	75	125	0.928	4.22	30	
Thallium	0.8840	0.010	1	0	88.4	75	125	0.879	0.567	30	
Vanadium	0.9940	0.010	1	0.028	96.6	75	125	0.958	3.69	30	
Zinc	0.9700	0.010	1	0.035	93.5	75	125	0.926	4.64	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5041

Sample ID	MB-5041	SampType:	MBLK	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	3/25/2009	RunNo:	19062
Client ID:	ZZZZZ	Batch ID:	5041	TestNo:	SW7470A	(SW7470A)		Analysis Date:	3/26/2009	SeqNo:	275067

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.00020									

Sample ID	LCS-5041	SampType:	LCS	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	3/25/2009	RunNo:	19062
Client ID:	ZZZZZ	Batch ID:	5041	TestNo:	SW7470A	(SW7470A)		Analysis Date:	3/26/2009	SeqNo:	275065

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.01671	0.00020	0.015	0	111	80	120				

Sample ID	LCSD-5041	SampType:	LCSD	TestCode:	HG_W_7470	Units:	mg/L	Prep Date:	3/25/2009	RunNo:	19062
Client ID:	ZZZZZ	Batch ID:	5041	TestNo:	SW7470A	(SW7470A)		Analysis Date:	3/26/2009	SeqNo:	275066

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	0.01689	0.00020	0.015	0	113	80	120	0.01671	1.07	20	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5042

Sample ID	MB-5042	SampType:	MBLK	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/25/2009	RunNo:	19057
Client ID:	ZZZZZ	Batch ID:	5042	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/26/2009	SeqNo:	274934

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	1.0									

Sample ID	LCS-5042	SampType:	LCS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/25/2009	RunNo:	19057
Client ID:	ZZZZZ	Batch ID:	5042	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/26/2009	SeqNo:	274932

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	47.70	1.0	50	0.6	94.2	67.9	118				

Sample ID	LCSD-5042	SampType:	LCSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/25/2009	RunNo:	19057
Client ID:	ZZZZZ	Batch ID:	5042	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/26/2009	SeqNo:	274933

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	47.75	1.0	50	0.6	94.3	67.9	118	47.7	0.105	30	

Sample ID	0903138-030AMS	SampType:	MS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/25/2009	RunNo:	19057
Client ID:	S-1-9 @ 2.0	Batch ID:	5042	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/26/2009	SeqNo:	274911

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	47.10	1.0	50	6.5	81.2	60.5	113				

Sample ID	0903138-030AMSD	SampType:	MSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/25/2009	RunNo:	19057
Client ID:	S-1-9 @ 2.0	Batch ID:	5042	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/26/2009	SeqNo:	274912

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	47.80	1.0	50	6.5	82.6	60.5	113	47.8	0	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5043

Sample ID	MB-5043	SampType:	MBLK	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/25/2009	RunNo:	19067
Client ID:	ZZZZZ	Batch ID:	5043	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/26/2009	SeqNo:	275171

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	5.0									
Arsenic	ND	1.7									
Barium	ND	5.0									
Beryllium	ND	2.0									
Cadmium	ND	1.0									
Chromium	ND	5.0									
Cobalt	ND	5.0									
Copper	ND	5.0									
Lead	ND	1.0									
Molybdenum	ND	5.0									
Nickel	ND	5.0									
Selenium	ND	5.0									
Silver	ND	1.0									
Thallium	ND	5.0									
Vanadium	ND	5.0									
Zinc	ND	5.0									

Sample ID	LCS-5043	SampType:	LCS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/25/2009	RunNo:	19067
Client ID:	ZZZZZ	Batch ID:	5043	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/26/2009	SeqNo:	275169

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	48.80	5.0	50	0	97.6	30.7	130				
Arsenic	49.95	1.7	50	0	99.9	71	121				
Barium	50.45	5.0	50	0.15	101	70.2	130				
Beryllium	47.60	2.0	50	0	95.2	73.3	115				
Cadmium	48.15	1.0	50	0	96.3	68.7	110				
Chromium	50.70	5.0	50	0.1	101	76	116				
Cobalt	49.70	5.0	50	0	99.4	57.4	122				
Copper	52.65	5.0	50	0.7	104	74.8	119				
Lead	49.10	1.0	50	0.45	97.3	67.9	118				
Molybdenum	49.95	5.0	50	0	99.9	62.9	123				

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5043

Sample ID	LCS-5043	SampType:	LCS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/25/2009	RunNo:	19067
Client ID:	ZZZZZ	Batch ID:	5043	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/26/2009	SeqNo:	275169

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	49.50	5.0	50	0	99.0	61.5	122				
Selenium	45.80	5.0	50	0	91.6	62	111				
Silver	49.75	1.0	50	0	99.5	81.1	109				
Thallium	47.00	5.0	50	0	94.0	39.2	125				
Vanadium	50.85	5.0	50	0	102	65.8	122				
Zinc	49.35	5.0	50	1	96.7	59.9	122				

Sample ID	LCSD-5043	SampType:	LCSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/25/2009	RunNo:	19067
Client ID:	ZZZZZ	Batch ID:	5043	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/26/2009	SeqNo:	275170

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	52.25	5.0	50	0	104	30.7	130	48.8	6.83	30	
Arsenic	53.80	1.7	50	0	108	71	121	49.95	7.42	30	
Barium	53.50	5.0	50	0.15	107	70.2	130	50.45	5.87	30	
Beryllium	51.75	2.0	50	0	104	73.3	115	47.6	8.35	30	
Cadmium	50.85	1.0	50	0	102	68.7	110	48.15	5.45	30	
Chromium	53.80	5.0	50	0.1	107	76	116	50.7	5.93	30	
Cobalt	52.80	5.0	50	0	106	57.4	122	49.7	6.05	30	
Copper	55.05	5.0	50	0.7	109	74.8	119	52.65	4.46	30	
Lead	52.55	1.0	50	0.45	104	67.9	118	49.1	6.79	30	
Molybdenum	53.45	5.0	50	0	107	62.9	123	49.95	6.77	30	
Nickel	52.40	5.0	50	0	105	61.5	122	49.5	5.69	30	
Selenium	49.70	5.0	50	0	99.4	62	111	45.8	8.17	30	
Silver	52.45	1.0	50	0	105	81.1	109	49.75	5.28	30	
Thallium	50.40	5.0	50	0	101	39.2	125	47	6.98	30	
Vanadium	54.10	5.0	50	0	108	65.8	122	50.85	6.19	30	
Zinc	52.35	5.0	50	1	103	59.9	122	49.35	5.90	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5043

Sample ID **0903138-049AMS** SampType: **MS** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **3/25/2009** RunNo: **19067**
Client ID: **S-1-12 @ 1.5** Batch ID: **5043** TestNo: **SW6010B (SW3050B)** Analysis Date: **3/26/2009** SeqNo: **275148**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	29.85	5.0	50	0.8	58.1	30.7	130				
Arsenic	50.70	1.7	50	2.55	96.3	71	121				
Barium	NR	5.0	50	500.5	472	56.2	127				NR
Beryllium	46.50	2.0	50	0	93.0	73.3	115				
Cadmium	45.95	1.0	50	0.15	91.6	68.7	110				
Chromium	74.65	5.0	50	22.8	104	76	116				
Cobalt	65.85	5.0	50	18.25	95.2	57.4	122				
Copper	148.7	5.0	50	97.3	103	74.8	119				
Lead	62.25	1.0	50	12.2	100	60.5	113				
Molybdenum	47.45	5.0	50	0.75	93.4	62.9	123				
Nickel	104.6	5.0	50	56	97.2	61.5	122				
Selenium	41.85	5.0	50	0.75	82.2	62	111				
Silver	48.20	1.0	50	0.2	96.0	81.1	109				
Thallium	40.75	5.0	50	0	81.5	39.2	125				
Vanadium	76.10	5.0	50	23.8	105	65.8	122				
Zinc	105.2	5.0	50	60.8	88.7	59.9	122				

Sample ID **0903138-049AMSD** SampType: **MSD** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **3/25/2009** RunNo: **19067**
Client ID: **S-1-12 @ 1.5** Batch ID: **5043** TestNo: **SW6010B (SW3050B)** Analysis Date: **3/26/2009** SeqNo: **275149**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	30.25	5.0	50	0.8	58.9	30.7	130	29.85	1.33	30	
Arsenic	51.35	1.7	50	2.55	97.6	71	121	50.7	1.27	30	
Barium	NR	5.0	50	500.5	370	56.2	127	736.5	7.17	30	NR
Beryllium	45.90	2.0	50	0	91.8	73.3	115	46.5	1.30	30	
Cadmium	46.90	1.0	50	0.15	93.5	68.7	110	45.95	2.05	30	
Chromium	75.15	5.0	50	22.8	105	76	116	74.65	0.668	30	
Cobalt	70.35	5.0	50	18.25	104	57.4	122	65.85	6.61	30	
Copper	156.8	5.0	50	97.3	119	74.8	119	148.7	5.30	30	S
Lead	65.10	1.0	50	12.2	106	60.5	113	62.25	4.48	30	
Molybdenum	47.50	5.0	50	0.75	93.5	62.9	123	47.45	0.105	30	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5043

Sample ID	0903138-049AMSD	SampType:	MSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/25/2009	RunNo:	19067
Client ID:	S-1-12 @ 1.5	Batch ID:	5043	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/26/2009	SeqNo:	275149

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	109.8	5.0	50	56	108	61.5	122	104.6	4.90	30	
Selenium	43.60	5.0	50	0.75	85.7	62	111	41.85	4.10	30	
Silver	50.20	1.0	50	0.2	100	81.1	109	48.2	4.07	30	
Thallium	41.00	5.0	50	0	82.0	39.2	125	40.75	0.612	30	
Vanadium	77.35	5.0	50	23.8	107	65.8	122	76.1	1.63	30	
Zinc	110.0	5.0	50	60.8	98.5	59.9	122	105.2	4.55	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5044

Sample ID	MB-5044	SampType:	MBLK	TestCode:	HG_CTS	Units:	mg/Kg	Prep Date:	3/26/2009	RunNo:	19063
Client ID:	ZZZZZ	Batch ID:	5044	TestNo:	SW7471A	(SW7471APR		Analysis Date:	3/26/2009	SeqNo:	275088

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.10									

Sample ID	LCS-5044	SampType:	LCS	TestCode:	HG_CTS	Units:	mg/Kg	Prep Date:	3/26/2009	RunNo:	19063
Client ID:	ZZZZZ	Batch ID:	5044	TestNo:	SW7471A	(SW7471APR		Analysis Date:	3/26/2009	SeqNo:	275086

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.400	0.10	1.25	0	112	80.5	133				

Sample ID	LCSD-5044	SampType:	LCSD	TestCode:	HG_CTS	Units:	mg/Kg	Prep Date:	3/26/2009	RunNo:	19063
Client ID:	ZZZZZ	Batch ID:	5044	TestNo:	SW7471A	(SW7471APR		Analysis Date:	3/26/2009	SeqNo:	275087

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.433	0.10	1.25	0	115	80.5	133	1.4	2.35	30	

Sample ID	0903138-022AMS	SampType:	MS	TestCode:	HG_CTS	Units:	mg/Kg	Prep Date:	3/26/2009	RunNo:	19063
Client ID:	N-1-4 @ 0.5	Batch ID:	5044	TestNo:	SW7471A	(SW7471APR		Analysis Date:	3/26/2009	SeqNo:	275070

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.496	0.10	1.25	0.1517	108	80.5	133				

Sample ID	0903138-022AMSD	SampType:	MSD	TestCode:	HG_CTS	Units:	mg/Kg	Prep Date:	3/26/2009	RunNo:	19063
Client ID:	N-1-4 @ 0.5	Batch ID:	5044	TestNo:	SW7471A	(SW7471APR		Analysis Date:	3/26/2009	SeqNo:	275071

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.574	0.10	1.25	0.1517	114	80.5	133	1.496	5.10	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5045

Sample ID	MB-5045	SampType:	MBLK	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/26/2009	RunNo:	19066
Client ID:	ZZZZZ	Batch ID:	5045	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/27/2009	SeqNo:	275145

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	1.0									

Sample ID	LCS-5045	SampType:	LCS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/26/2009	RunNo:	19066
Client ID:	ZZZZZ	Batch ID:	5045	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/27/2009	SeqNo:	275143

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	48.90	1.0	50	0.3	97.2	67.9	118				

Sample ID	LCSD-5045	SampType:	LCSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/26/2009	RunNo:	19066
Client ID:	ZZZZZ	Batch ID:	5045	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/27/2009	SeqNo:	275144

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	48.10	1.0	50	0.3	95.6	67.9	118	48.9	1.65	30	

Sample ID	0903138-068AMS	SampType:	MS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/26/2009	RunNo:	19066
Client ID:	S-1-16 @ 1.0	Batch ID:	5045	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/27/2009	SeqNo:	275122

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	NR	1.0	50	283.7	78.4	60.5	113				NR

Sample ID	0903138-068AMSD	SampType:	MSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/26/2009	RunNo:	19066
Client ID:	S-1-16 @ 1.0	Batch ID:	5045	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/27/2009	SeqNo:	275123

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	NR	1.0	50	283.7	40.4	60.5	113	322.9	6.06	30	NR

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: G19053

Sample ID	MB-G19053	SampType:	MBLK	TestCode:	TPH_GAS_W	Units:	µg/L	Prep Date:	3/25/2009	RunNo:	19053
Client ID:	ZZZZZ	Batch ID:	G19053	TestNo:	SW8260B(TP			Analysis Date:	3/26/2009	SeqNo:	274811

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	ND	50									
Surr: 4-Bromofllurobenzene	8.100	0	11.36	0	71.3	58.4	133				

Sample ID	LCS-G19053	SampType:	LCS	TestCode:	TPH_GAS_W	Units:	µg/L	Prep Date:	3/25/2009	RunNo:	19053
Client ID:	ZZZZZ	Batch ID:	G19053	TestNo:	SW8260B(TP			Analysis Date:	3/25/2009	SeqNo:	274813

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	215.9	50	227	0	95.1	52.4	127				
Surr: 4-Bromofllurobenzene	8.300	0	11.36	0	73.1	58.4	133				

Sample ID	LCSD-G19053	SampType:	LCSD	TestCode:	TPH_GAS_W	Units:	µg/L	Prep Date:	3/25/2009	RunNo:	19053
Client ID:	ZZZZZ	Batch ID:	G19053	TestNo:	SW8260B(TP			Analysis Date:	3/25/2009	SeqNo:	274814

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	195.1	50	227	0	85.9	52.4	127	215.9	10.1	20	
Surr: 4-Bromofllurobenzene	8.400	0	11.36	0	73.9	58.4	133	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: G19069

Sample ID	MB_G19069	SampType:	MBLK	TestCode:	TPH_GAS_S	Units:	µg/Kg	Prep Date:	3/25/2009	RunNo:	19069
Client ID:	ZZZZZ	Batch ID:	G19069	TestNo:	SW8260B(TP			Analysis Date:	3/25/2009	SeqNo:	275251

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	ND	100									
Surr: 4-Bromofllurobenzene	45.00	0	50	0	90.0	56.9	133				

Sample ID	LCS_G19069	SampType:	LCS	TestCode:	TPH_GAS_S	Units:	µg/Kg	Prep Date:	3/25/2009	RunNo:	19069
Client ID:	ZZZZZ	Batch ID:	G19069	TestNo:	SW8260B(TP			Analysis Date:	3/25/2009	SeqNo:	275252

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	1101	100	1000	0	110	48.2	132				
Surr: 4-Bromofllurobenzene	45.00	0	50	0	90.0	56.9	133				

Sample ID	LCSD_G19069	SampType:	LCSD	TestCode:	TPH_GAS_S	Units:	µg/Kg	Prep Date:	3/26/2009	RunNo:	19069
Client ID:	ZZZZZ	Batch ID:	G19069	TestNo:	SW8260B(TP			Analysis Date:	3/26/2009	SeqNo:	275253

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	1042	100	1000	0	104	48.2	132	1101	5.51	30	
Surr: 4-Bromofllurobenzene	40.00	0	50	0	80.0	56.9	133	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: G19078

Sample ID **MB_G19078** SampType: **MBLK** TestCode: **TPH_GAS_S** Units: **µg/Kg** Prep Date: **3/27/2009** RunNo: **19078**
Client ID: **ZZZZZ** Batch ID: **G19078** TestNo: **SW8260B(TP** Analysis Date: **3/27/2009** SeqNo: **275437**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	ND	100									
Surr: 4-Bromofllurobenzene	43.00	0	50	0	86.0	56.9	133				

Sample ID **LCS_G19078** SampType: **LCS** TestCode: **TPH_GAS_S** Units: **µg/Kg** Prep Date: **3/27/2009** RunNo: **19078**
Client ID: **ZZZZZ** Batch ID: **G19078** TestNo: **SW8260B(TP** Analysis Date: **3/27/2009** SeqNo: **275438**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	941.0	100	1000	0	94.1	48.2	132				
Surr: 4-Bromofllurobenzene	42.00	0	50	0	84.0	56.9	133				

Sample ID **LCSD_G19078** SampType: **LCSD** TestCode: **TPH_GAS_S** Units: **µg/Kg** Prep Date: **3/27/2009** RunNo: **19078**
Client ID: **ZZZZZ** Batch ID: **G19078** TestNo: **SW8260B(TP** Analysis Date: **3/27/2009** SeqNo: **275439**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	923.0	100	1000	0	92.3	48.2	132	941	1.93	30	
Surr: 4-Bromofllurobenzene	44.00	0	50	0	88.0	56.9	133	0	0	0	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: R19060

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
SD090326A-MB	**MBLK**	**TPHDO_S**	**mg/Kg**	**3/26/2009**	**19060**
Client ID: **ZZZZZ**	Batch ID: **R19060**	TestNo: **SW8015B**		Analysis Date: **3/26/2009**	SeqNo: **275019**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	ND	2.00									
TPH (Motor Oil)	ND	4.00									
Surr: Pentacosane	3.858	0	3.3	0	117	59.7	129				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
SD090330A-MB	**MBLK**	**TPHDO_S**	**mg/Kg**	**3/30/2009**	**19060**
Client ID: **ZZZZZ**	Batch ID: **R19060**	TestNo: **SW8015B**		Analysis Date: **3/30/2009**	SeqNo: **275704**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	ND	2.00									
TPH (Motor Oil)	ND	4.00									
Surr: Pentacosane	3.300	0	3.3	0	100	59.7	129				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
SD090326A-LCS	**LCS**	**TPHDO_S**	**mg/Kg**	**3/26/2009**	**19060**
Client ID: **ZZZZZ**	Batch ID: **R19060**	TestNo: **SW8015B**		Analysis Date: **3/26/2009**	SeqNo: **275020**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	27.16	2.00	33.33	0	81.5	52.7	115				
Surr: Pentacosane	3.070	0	3.3	0	93.0	59.7	129				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
SD090326A-LCSD	**LCSD**	**TPHDO_S**	**mg/Kg**	**3/26/2009**	**19060**
Client ID: **ZZZZZ**	Batch ID: **R19060**	TestNo: **SW8015B**		Analysis Date: **3/26/2009**	SeqNo: **275021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	29.28	2.00	33.33	0	87.9	52.7	115	27.16	7.53	30	
Surr: Pentacosane	3.420	0	3.3	0	104	59.7	129	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: R19073

Sample ID	SP090327B-MB	SampType:	MBLK	TestCode:	8081S	Units:	µg/Kg	Prep Date:	3/27/2009	RunNo:	19073
Client ID:	ZZZZZ	Batch ID:	R19073	TestNo:	SW8081A			Analysis Date:	3/28/2009	SeqNo:	275321

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDD	ND	2.00									
4,4´-DDE	ND	2.00									
4,4´-DDT	ND	2.00									
Aldrin	ND	2.00									
alpha-BHC	ND	2.00									
alpha-Chlordane	ND	2.00									
beta-BHC	ND	2.00									
Chlordane	ND	20.0									
delta-BHC	ND	2.00									
Dieldrin	ND	2.00									
Endosulfan I	ND	2.00									
Endosulfan II	ND	2.00									
Endosulfan sulfate	ND	2.00									
Endrin	ND	2.00									
Endrin aldehyde	ND	2.00									
Endrin ketone	ND	2.00									
gamma-BHC	ND	2.00									
gamma-Chlordane	ND	2.00									
Heptachlor	ND	2.00									
Heptachlor epoxide	ND	2.00									
Methoxychlor	ND	5.00									
Toxaphene	ND	100									
Surr: Decachlorobiphenyl	43.53	0	50	0	87.1	57	126				
Surr: Tetrachloro-m-xylene	42.52	0	50	0	85.0	55.7	122				

Sample ID	SP090327B-LCS	SampType:	LCS	TestCode:	8081S	Units:	µg/Kg	Prep Date:	3/27/2009	RunNo:	19073
Client ID:	ZZZZZ	Batch ID:	R19073	TestNo:	SW8081A			Analysis Date:	3/28/2009	SeqNo:	275322

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDT	17.89	2.00	20	0	89.5	52.8	134				
Aldrin	17.74	2.00	20	0	88.7	53	123				

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: R19073

Sample ID	SP090327B-LCS	SampType:	LCS	TestCode:	8081S	Units:	µg/Kg	Prep Date:	3/27/2009	RunNo:	19073
Client ID:	ZZZZZ	Batch ID:	R19073	TestNo:	SW8081A			Analysis Date:	3/28/2009	SeqNo:	275322

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dieldrin	18.10	2.00	20	0	90.5	44	130				
Endrin	16.97	2.00	20	0	84.9	44.1	121				
gamma-BHC	16.31	2.00	20	0	81.5	56.9	120				
Heptachlor	16.65	2.00	20	0	83.3	63.6	117				
Surr: Decachlorobiphenyl	58.34	0	70	0	83.3	57	126				
Surr: Tetrachloro-m-xylene	58.13	0	70	0	83.0	55.7	122				

Sample ID	SP090327B-LCSD	SampType:	LCSD	TestCode:	8081S	Units:	µg/Kg	Prep Date:	3/27/2009	RunNo:	19073
Client ID:	ZZZZZ	Batch ID:	R19073	TestNo:	SW8081A			Analysis Date:	3/28/2009	SeqNo:	275323

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDT	14.41	2.00	20	0	72.0	52.8	134	17.89	21.6	30	
Aldrin	14.61	2.00	20	0	73.0	53	123	17.74	19.4	30	
Dieldrin	14.93	2.00	20	0	74.7	44	130	18.1	19.2	30	
Endrin	14.03	2.00	20	0	70.1	44.1	121	16.97	19.0	30	
gamma-BHC	13.64	2.00	20	0	68.2	56.9	120	16.31	17.8	30	
Heptachlor	14.13	2.00	20	0	70.6	63.6	117	16.65	16.4	30	
Surr: Decachlorobiphenyl	48.60	0	70	0	69.4	57	126	0	0	0	
Surr: Tetrachloro-m-xylene	49.53	0	70	0	70.8	55.7	122	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: R19075

Sample ID	WP090327A-MB	SampType:	MBLK	TestCode:	8081W	Units:	µg/L	Prep Date:	3/27/2009	RunNo:	19075
Client ID:	ZZZZZ	Batch ID:	R19075	TestNo:	SW8081A			Analysis Date:	3/27/2009	SeqNo:	275366

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDD	ND	0.0200									
4,4´-DDE	ND	0.0200									
4,4´-DDT	ND	0.0200									
Aldrin	ND	0.0200									
alpha-BHC	ND	0.0200									
alpha-Chlordane	ND	0.0200									
beta-BHC	ND	0.0200									
Chlordane	ND	0.250									
delta-BHC	ND	0.0200									
Dieldrin	ND	0.0200									
Endosulfan I	ND	0.0200									
Endosulfan II	ND	0.0200									
Endosulfan sulfate	ND	0.0200									
Endrin	ND	0.0200									
Endrin aldehyde	ND	0.0200									
Endrin ketone	ND	0.0200									
gamma-BHC	ND	0.0200									
gamma-Chlordane	ND	0.0200									
Heptachlor	ND	0.0200									
Heptachlor epoxide	ND	0.0200									
Methoxychlor	ND	0.0500									
Toxaphene	ND	1.00									
Surr: Decachlorobiphenyl	0.1985	0	0.25	0	79.4	52	116				
Surr: Tetrachloro-m-xylene	0.1382	0	0.25	0	55.3	40.3	118				

Sample ID	WP090327A-LCS	SampType:	LCS	TestCode:	8081W	Units:	µg/L	Prep Date:	3/27/2009	RunNo:	19075
Client ID:	ZZZZZ	Batch ID:	R19075	TestNo:	SW8081A			Analysis Date:	3/28/2009	SeqNo:	275390

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDT	0.07535	0.0200	0.1	0	75.4	58.4	126				
Aldrin	0.05703	0.0200	0.1	0	57.0	55.3	101				

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: R19075

Sample ID	WP090327A-LCS	SampType:	LCS	TestCode:	8081W	Units:	µg/L	Prep Date:	3/27/2009	RunNo:	19075
Client ID:	ZZZZZ	Batch ID:	R19075	TestNo:	SW8081A			Analysis Date:	3/28/2009	SeqNo:	275390

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dieldrin	0.06883	0.0200	0.1	0	68.8	60.3	116				
Endrin	0.06695	0.0200	0.1	0	67.0	60.4	134				
gamma-BHC	0.06167	0.0200	0.1	0	61.7	61.6	135				
Heptachlor	0.06480	0.0200	0.1	0	64.8	60	97.8				
Surr: Decachlorobiphenyl	0.2212	0	0.35	0	63.2	52	116				
Surr: Tetrachloro-m-xylene	0.1554	0	0.35	0	44.4	40.3	118				

Sample ID	WP090327A-LCSD	SampType:	LCSD	TestCode:	8081W	Units:	µg/L	Prep Date:	3/27/2009	RunNo:	19075
Client ID:	ZZZZZ	Batch ID:	R19075	TestNo:	SW8081A			Analysis Date:	3/28/2009	SeqNo:	275391

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDT	0.09525	0.0200	0.1	0	95.2	58.4	126	0.07535	23.3	35	
Aldrin	0.06702	0.0200	0.1	0	67.0	55.3	101	0.05703	16.1	35	
Dieldrin	0.08987	0.0200	0.1	0	89.9	60.3	116	0.06883	26.5	35	
Endrin	0.08715	0.0200	0.1	0	87.2	60.4	134	0.06695	26.2	35	
gamma-BHC	0.07110	0.0200	0.1	0	71.1	61.6	135	0.06167	14.2	35	
Heptachlor	0.07485	0.0200	0.1	0	74.8	60	97.8	0.0648	14.4	35	
Surr: Decachlorobiphenyl	0.3166	0	0.35	0	90.4	52	116	0	0	0	
Surr: Tetrachloro-m-xylene	0.1818	0	0.35	0	51.9	40.3	118	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: R19084

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
SQ090327A-MB	**MBLK**	**8082S**	**mg/Kg**	**3/27/2009**	**19084**
Client ID: **ZZZZZ**	Batch ID: **R19084**	TestNo: **SW8082**		Analysis Date: **3/28/2009**	SeqNo: **275502**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	0.0230									
Aroclor 1221	ND	0.0920									
Aroclor 1232	ND	0.0460									
Aroclor 1242	ND	0.0430									
Aroclor 1248	ND	0.0360									
Aroclor 1254	ND	0.0240									
Aroclor 1260	ND	0.0270									
Surr: Decachlorobiphenyl	0.04472	0	0.05	0	89.4	55.1	113				
Surr: Tetrachloro-m-xylene	0.04397	0	0.05	0	87.9	51.7	128				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
SQ090327A-LCS	**LCS**	**8082S**	**mg/Kg**	**3/27/2009**	**19084**
Client ID: **ZZZZZ**	Batch ID: **R19084**	TestNo: **SW8082**		Analysis Date: **3/28/2009**	SeqNo: **275503**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	0.8610	0.100	1	0	86.1	55.6	135				
Aroclor 1260	0.5035	0.100	0.5	0	101	65.6	132				
Surr: Decachlorobiphenyl	0.05204	0	0.05	0	104	55.1	113				
Surr: Tetrachloro-m-xylene	0.05232	0	0.05	0	105	51.7	128				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
SQ090327A-LCSD	**LCSD**	**8082S**	**mg/Kg**	**3/27/2009**	**19084**
Client ID: **ZZZZZ**	Batch ID: **R19084**	TestNo: **SW8082**		Analysis Date: **3/28/2009**	SeqNo: **275504**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	0.8186	0.100	1	0	81.9	55.6	135	0.861	5.04	30	
Aroclor 1260	0.4812	0.100	0.5	0	96.2	65.6	132	0.5035	4.52	30	
Surr: Decachlorobiphenyl	0.04821	0	0.05	0	96.4	55.1	113	0	0	0	
Surr: Tetrachloro-m-xylene	0.04768	0	0.05	0	95.4	51.7	128	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: R19089

Sample ID **WQ090328A-MB** SampType: **MBLK** TestCode: **8082W** Units: **µg/L** Prep Date: **3/28/2009** RunNo: **19089**
Client ID: **ZZZZZ** Batch ID: **R19089** TestNo: **SW8082** Analysis Date: **3/28/2009** SeqNo: **275620**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	10.0									
Aroclor 1221	ND	10.0									
Aroclor 1232	ND	10.0									
Aroclor 1242	ND	10.0									
Aroclor 1248	ND	10.0									
Aroclor 1254	ND	10.0									
Aroclor 1260	ND	10.0									
Surr: Decachlorobiphenyl	4.860	0	5	0	97.2	64.8	121				
Surr: Tetrachloro-m-xylene	4.790	0	5	0	95.8	64.7	115				

Sample ID **WQ090328A-LCS** SampType: **LCS** TestCode: **8082W** Units: **µg/L** Prep Date: **3/28/2009** RunNo: **19089**
Client ID: **ZZZZZ** Batch ID: **R19089** TestNo: **SW8082** Analysis Date: **3/28/2009** SeqNo: **275621**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	59.10	10.0	50	0	118	69.7	139				
Aroclor 1260	59.90	10.0	50	0	120	71.3	131				
Surr: Decachlorobiphenyl	4.990	0	5	0	99.8	64.8	121				
Surr: Tetrachloro-m-xylene	5.050	0	5	0	101	64.7	115				

Sample ID **WQ090328A-LCSD** SampType: **LCSD** TestCode: **8082W** Units: **µg/L** Prep Date: **3/28/2009** RunNo: **19089**
Client ID: **ZZZZZ** Batch ID: **R19089** TestNo: **SW8082** Analysis Date: **3/28/2009** SeqNo: **275629**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	59.50	10.0	50	0	119	69.7	139	59.1	0.675	30	
Aroclor 1260	60.50	10.0	50	0	121	71.3	131	59.9	0.997	30	
Surr: Decachlorobiphenyl	5.050	0	5	0	101	64.8	121	0	0		
Surr: Tetrachloro-m-xylene	5.040	0	5	0	101	64.7	115	0	0		

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: R19094

Sample ID	WD090330A-MB	SampType:	MBLK	TestCode:	TPHDO_W	Units:	mg/L	Prep Date:	3/30/2009	RunNo:	19094
Client ID:	ZZZZZ	Batch ID:	R19094	TestNo:	SW8015B			Analysis Date:	3/30/2009	SeqNo:	275719

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	ND	0.100									
TPH (Motor Oil)	ND	0.200									
Surr: Pentacosane	0.1020	0	0.1	0	102	57.9	125				

Sample ID	WD090330A-LCS	SampType:	LCS	TestCode:	TPHDO_W	Units:	mg/L	Prep Date:	3/30/2009	RunNo:	19094
Client ID:	ZZZZZ	Batch ID:	R19094	TestNo:	SW8015B			Analysis Date:	3/30/2009	SeqNo:	275720

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	0.7080	0.100	1	0	70.8	50.3	125				
Surr: Pentacosane	0.1030	0	0.1	0	103	57.9	125				

Sample ID	WD090330A-LCSD	SampType:	LCSD	TestCode:	TPHDO_W	Units:	mg/L	Prep Date:	3/30/2009	RunNo:	19094
Client ID:	ZZZZZ	Batch ID:	R19094	TestNo:	SW8015B			Analysis Date:	3/30/2009	SeqNo:	275721

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	0.6750	0.100	1	0	67.5	50.3	125	0.708	4.77	30	
Surr: Pentacosane	0.09900	0	0.1	0	99.0	57.9	125	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: U19053

Sample ID **MB-U19053** SampType: **MBLK** TestCode: **8260B_W_PE** Units: **µg/L** Prep Date: **3/25/2009** RunNo: **19053**
Client ID: **ZZZZZ** Batch ID: **U19053** TestNo: **SW8260B** Analysis Date: **3/25/2009** SeqNo: **275912**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.500									
Toluene	ND	0.500									
Ethylbenzene	ND	0.500									
Methyl tert-butyl ether (MTBE)	ND	0.500									
Diisopropyl ether (DIPE)	ND	0.500									
Ethyl tert-butyl ether (ETBE)	ND	0.500									
tert-Amyl methyl ether (TAME)	ND	0.500									
t-Butyl alcohol (t-Butanol)	ND	10.0									
Xylenes, Total	ND	1.50									
Surr: Dibromofluoromethane	10.28	0	11.36	0	90.5	61.2	131				
Surr: 4-Bromofluorobenzene	11.57	0	11.36	0	102	64.1	120				
Surr: Toluene-d8	9.210	0	11.36	0	81.1	75.1	127				

Sample ID **LCS-U19053** SampType: **LCS** TestCode: **8260B_W_PE** Units: **µg/L** Prep Date: **3/25/2009** RunNo: **19053**
Client ID: **ZZZZZ** Batch ID: **U19053** TestNo: **SW8260B** Analysis Date: **3/25/2009** SeqNo: **275913**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	17.95	0.500	17.04	0	105	66.9	140				
Toluene	19.92	0.500	17.04	0	117	76.6	123				
Surr: Dibromofluoromethane	9.770	0	11.36	0	86.0	61.2	131				
Surr: 4-Bromofluorobenzene	13.37	0	11.36	0	118	64.1	120				
Surr: Toluene-d8	12.27	0	11.36	0	108	75.1	127				

Sample ID **LCSD-U19053** SampType: **LCSD** TestCode: **8260B_W_PE** Units: **µg/L** Prep Date: **3/25/2009** RunNo: **19053**
Client ID: **ZZZZZ** Batch ID: **U19053** TestNo: **SW8260B** Analysis Date: **3/25/2009** SeqNo: **275914**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	16.98	0.500	17.04	0	99.6	66.9	140	17.95	5.55	20	
Toluene	19.34	0.500	17.04	0	113	76.6	123	19.92	2.95	20	
Surr: Dibromofluoromethane	10.37	0	11.36	0	91.3	61.2	131	0	0	0	
Surr: 4-Bromofluorobenzene	12.27	0	11.36	0	108	64.1	120	0	0	0	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: U19053

Sample ID	LCSD-U19053	SampType:	LCSD	TestCode:	8260B_W_PE	Units:	µg/L	Prep Date:	3/25/2009	RunNo:	19053
Client ID:	ZZZZZ	Batch ID:	U19053	TestNo:	SW8260B			Analysis Date:	3/25/2009	SeqNo:	275914

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Toluene-d8	12.51	0	11.36	0	110	75.1	127	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: U19069

Sample ID **MB_U19069** SampType: **MBLK** TestCode: **8260B_S_PE** Units: **µg/Kg** Prep Date: **3/25/2009** RunNo: **19069**
Client ID: **ZZZZZ** Batch ID: **U19069** TestNo: **SW8260B** Analysis Date: **3/25/2009** SeqNo: **275915**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	10									
Diisopropyl ether (DIPE)	ND	10									
Ethyl tert-butyl ether (ETBE)	ND	10									
Ethylbenzene	ND	10									
Methyl tert-butyl ether (MTBE)	ND	10									
t-Butyl alcohol (t-Butanol)	ND	50									
tert-Amyl methyl ether (TAME)	ND	10									
Toluene	ND	10									
Xylenes, Total	ND	15									
Surr: 4-Bromofluorobenzene	43.36	0	50	0	86.7	55.8	141				
Surr: Dibromofluoromethane	45.59	0	50	0	91.2	59.8	148				
Surr: Toluene-d8	41.98	0	50	0	84.0	55.2	133				

Sample ID **LCS_U19069** SampType: **LCS** TestCode: **8260B_S_PE** Units: **µg/Kg** Prep Date: **3/25/2009** RunNo: **19069**
Client ID: **ZZZZZ** Batch ID: **U19069** TestNo: **SW8260B** Analysis Date: **3/25/2009** SeqNo: **275916**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	48.48	10	50	0	97.0	66.5	135				
Toluene	41.46	10	50	0	82.9	56.8	134				
Surr: 4-Bromofluorobenzene	44.98	0	50	0	90.0	55.8	141				
Surr: Dibromofluoromethane	46.41	0	50	0	92.8	59.8	148				
Surr: Toluene-d8	40.44	0	50	0	80.9	55.2	133				

Sample ID **LCSD_U19069** SampType: **LCSD** TestCode: **8260B_S_PE** Units: **µg/Kg** Prep Date: **3/25/2009** RunNo: **19069**
Client ID: **ZZZZZ** Batch ID: **U19069** TestNo: **SW8260B** Analysis Date: **3/25/2009** SeqNo: **275917**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	49.69	10	50	0	99.4	66.5	135	49.69	0	30	
Toluene	39.52	10	50	0	79.0	56.8	134	39.52	0	30	
Surr: 4-Bromofluorobenzene	41.27	0	50	0	82.5	55.8	141	0	0	0	
Surr: Dibromofluoromethane	45.84	0	50	0	91.7	59.8	148	0	0	0	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: U19069

Sample ID **LCSD_U19069** SampType: **LCSD** TestCode: **8260B_S_PE** Units: **µg/Kg** Prep Date: **3/25/2009** RunNo: **19069**
Client ID: **ZZZZZ** Batch ID: **U19069** TestNo: **SW8260B** Analysis Date: **3/25/2009** SeqNo: **275917**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Toluene-d8	39.93	0	50	0	79.9	55.2	133	0	0	0	

Sample ID **0903138-023A MS** SampType: **MS** TestCode: **8260B_S_PE** Units: **µg/Kg** Prep Date: **3/25/2009** RunNo: **19069**
Client ID: **N-1-4 @ 1.0** Batch ID: **U19069** TestNo: **SW8260B** Analysis Date: **3/25/2009** SeqNo: **275218**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	52.26	10	50	0	105	66.5	135				
Toluene	43.77	10	50	0	87.5	56.8	134				
Surr: 4-Bromofluorobenzene	47.20	0	50	0	94.4	55.8	141				
Surr: Dibromofluoromethane	46.20	0	50	0	92.4	59.8	148				
Surr: Toluene-d8	42.70	0	50	0	85.4	55.2	133				

Sample ID **0903138-023A MSD** SampType: **MSD** TestCode: **8260B_S_PE** Units: **µg/Kg** Prep Date: **3/25/2009** RunNo: **19069**
Client ID: **N-1-4 @ 1.0** Batch ID: **U19069** TestNo: **SW8260B** Analysis Date: **3/25/2009** SeqNo: **275219**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	50.51	10	50	0	101	66.5	135	52.26	3.41	30	
Toluene	44.67	10	50	0	89.3	56.8	134	43.77	2.04	30	
Surr: 4-Bromofluorobenzene	47.42	0	50	0	94.8	55.8	141	0	0	0	
Surr: Dibromofluoromethane	46.41	0	50	0	92.8	59.8	148	0	0	0	
Surr: Toluene-d8	42.73	0	50	0	85.5	55.2	133	0	0	0	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: U19078

Sample ID **MB_U19078** SampType: **MBLK** TestCode: **8260B_S_PE** Units: **µg/Kg** Prep Date: **3/27/2009** RunNo: **19078**
Client ID: **ZZZZZ** Batch ID: **U19078** TestNo: **SW8260B** Analysis Date: **3/27/2009** SeqNo: **275925**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	10									
Diisopropyl ether (DIPE)	ND	10									
Ethyl tert-butyl ether (ETBE)	ND	10									
Ethylbenzene	ND	10									
Methyl tert-butyl ether (MTBE)	ND	10									
t-Butyl alcohol (t-Butanol)	ND	50									
tert-Amyl methyl ether (TAME)	ND	10									
Toluene	ND	10									
Xylenes, Total	ND	15									
Surr: 4-Bromofluorobenzene	45.99	0	50	0	92.0	55.8	141				
Surr: Dibromofluoromethane	45.01	0	50	0	90.0	59.8	148				
Surr: Toluene-d8	42.83	0	50	0	85.7	55.2	133				

Sample ID **LCS_U19078** SampType: **LCS** TestCode: **8260B_S_PE** Units: **µg/Kg** Prep Date: **3/27/2009** RunNo: **19078**
Client ID: **ZZZZZ** Batch ID: **U19078** TestNo: **SW8260B** Analysis Date: **3/27/2009** SeqNo: **275926**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	56.40	10	50	0	113	66.5	135				
Toluene	47.21	10	50	0	94.4	56.8	134				
Surr: 4-Bromofluorobenzene	46.06	0	50	0	92.1	55.8	141				
Surr: Dibromofluoromethane	46.18	0	50	0	92.4	59.8	148				
Surr: Toluene-d8	41.62	0	50	0	83.2	55.2	133				

Sample ID **LCSD_U19078** SampType: **LCSD** TestCode: **8260B_S_PE** Units: **µg/Kg** Prep Date: **3/27/2009** RunNo: **19078**
Client ID: **ZZZZZ** Batch ID: **U19078** TestNo: **SW8260B** Analysis Date: **3/27/2009** SeqNo: **275927**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	57.21	10	50	0	114	66.5	135	56.4	1.43	30	
Toluene	47.25	10	50	0	94.5	56.8	134	47.21	0.0847	30	
Surr: 4-Bromofluorobenzene	45.50	0	50	0	91.0	55.8	141	0	0	0	
Surr: Dibromofluoromethane	41.70	0	50	0	83.4	59.8	148	0	0	0	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: U19078

Sample ID	LCSD_U19078	SampType:	LCSD	TestCode:	8260B_S_PE	Units:	µg/Kg	Prep Date:	3/27/2009	RunNo:	19078
Client ID:	ZZZZZ	Batch ID:	U19078	TestNo:	SW8260B			Analysis Date:	3/27/2009	SeqNo:	275927

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Toluene-d8	41.40	0	50	0	82.8	55.2	133	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903138

Company Name: UNS San Jose
Location of Sampling: Hwy 101 — Auto lanes
Address:
Purpose:
City: State: Zip Code:
Special Instructions / Comments:
Telephone: FAX:
REPORT TO: Patrick Walz SAMPLER: Eduardo Ortiz
P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Work Days ☐ 3 Work Days ☐ Noon - Nxt Day ☐ 7 Work Days ☐ 2 Work Days ☐ 2 - 8 Hours ☒ 5 Work Days ☐ 1 Work Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☒ Ground Water ☒ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

LAB ID	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	EPA 8260B - Full List ☒ / EPA 8260B - 8010 List ☐	THP gas ☒ / BTEX ☒ / Oxygenates ☒ / MTBE ☐	THP Diesel ☒ / Si-Gel ☐ / Motor Oil ☒	Pesticide - 8081 ☒	PCB - 8082 ☒	Metals ☒ / CAM - 17 + pH / 7 Metals ☐ / LUFT 5 ☐	8270 Full List ☐ / PAHs Only ☐	Lead		REMARKS
001A	N-1-8 @ 0.5	03/23/09 2220	S	1	sleeve								X		
002A	N-1-8 @ 1.0	03/23/09 2220	S	1	↓								X		
003A	N-1-8 @ 1.5	03/23/09 2220	S	1									X		
004A	N-1-8 @ 2.0	03/23/09 2220	S	1									X		
005A	N-1-8 @ 3.0	03/23/09 2220	S	1	↓								X		
006A	N-1-8 - GW	2245	GW	2	1 liter			X							
~~007A~~	N-1-8 - GW	2245	↓	1	1 liter				X	X					
~~008A~~	N-1-8 - GW	2245		3	voa		X								
~~009A~~	N-1-8 - GW	2245	↓	1	250ml						X				
006A															

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/24/09	10:10 Am.	D. G. Khodasara	NAVIN	3/24/09	10:10 Am
2								

Were Samples Received in Good Condition? ☑ Yes ☐ NO Samples on Ice? ☑ Yes ☐ NO Method of Shipment Drop-off Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Page 1 of 9

Log In By: [signature] Date: 3/25 Log In Reviewed By: Date: Temp. 6°C

TORRENT LAB

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903138

Company Name: NTS San Jose
Location of Sampling: Hwy 101 – Alex Lomas
Address:
Purpose:
City: State: Zip Code:
Special Instructions / Comments:
Telephone: FAX:
REPORT TO: Patrick Walz SAMPLER: Eduardo Ortega P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Work Days ☐ 3 Work Days ☐ Noon - Nxt Day ☐ 7 Work Days ☐ 2 Work Days ☐ 2 - 8 Hours ☒ 5 Work Days ☐ 1 Work Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☒ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

LAB ID	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	EPA 8260B - Full List / EPA 8260B - 8010 List	THP gas / BTEX / Oxygenates / MTBE	THP Diesel / Si-Gel / Motor Oil	Pesticide - 8081	PCB - 8082	Metals / CAM - 17 / LUFT 5 / 7 Metals	8270 Full List / PAHs Only	Lead	Arsenic	REMARKS
007A	N-1-7@0.5	03/23/09 2325	S	1	sleeve								X	X	
008A	N-1-7@1.0	03/23/09 2325	S	1									X	X	
009A	N-1-7@1.5	03/23/09 2325	S	1									X	X	
010A	N-1-7@2.0	03/23/09 2325	S	1									X	X	
011A	N-1-7@3.0	03/23/09 2325	S	1									X	X	
012A	N-1-6@0.5	03/23/09 2345											X		
013A	N-1-6@1.0	03/23/09 2345											X		
014A	N-1-6@1.5	03/23/09 2345											X		
015A	N-1-6@2.0	03/23/09 2345											X		
016A	N-1-6@3.0	03/23/09 2345											X		

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/23/09	10:10 AM	[signature]	NAVIN	3/24/09	10:10 AM
2								

Were Samples Received in Good Condition? ☑ Yes ☐ NO Samples on Ice? ☑ Yes ☐ NO Method of Shipment Drop-off Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Log In By: Date: Log In Reviewed By: Date:

TORRENT LAB

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903138

Company Name: URS San Jose
Location of Sampling: Hwy 101 – Auto Lane
Address:
Purpose:
City: State: Zip Code:
Special Instructions / Comments:
Telephone: FAX:
REPORT TO: Patrick Walz SAMPLER: Eduardo Ortega P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Work Days ☐ 3 Work Days ☐ Noon - Nxt Day ☐ 7 Work Days ☐ 2 Work Days ☐ 2 - 8 Hours ☒ 5 Work Days ☐ 1 Work Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☒ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

LAB ID	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	EPA 8260B - Full List / EPA 8260B - 8010 List	BTEX / THP gas / Oxygenates / MTBE	THP Diesel / Si-Gel / Motor Oil	Pesticide - 8081	PCB - 8082	Metals / CAM - 17 / LUFT 5 / 7 Metals	8270 Full List / PAHs Only	Lead	pH	REMARKS
017A	N-1-5@0.5	03/24/09 0000	S	1	sleeve								X		
018A	N-1-5@1.0	03/24/09 0000											X		
019A	N-1-5@1.5	03/24/09 0000											X		
020A	N-1-5@2.0	03/24/09 0000											X		
021A	N-1-5@3.0	03/24/09 0000											X		
022A	N-1-4@0.5	03/24/09 0020	S	1	8oz jar			X	X	X	X			X	pH per P. Walz 3/24/09
023A	N-1-4@1.0	03/24/09 0020		1	8oz jar		X				X			X	
024A	N-1-4@1.5	03/24/09 0020		1			X				X			X	
025A	N-1-4@2.0	03/24/09 0020		1			X				X			X	
026A	N-1-4@2.5	03/24/09 0020		1			X				X			X	

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/24/09	10:10 AM	M. G. Chodasara	NAVIN	3/24/09	10:10 AM
2								

Were Samples Received in Good Condition? ☒ Yes ☐ NO Samples on Ice? ☒ Yes ☐ NO Method of Shipment Drop-off Sample seals intact? ☐ Yes ☐ NO ☒ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Page 3 of 9

Log In By: Date: Log In Reviewed By: Date:

TORRENT LAB

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903138

Company Name: UNS San Jose
Location of Sampling: Hwy 101 - Aux Lanes
Address:
Purpose:
City: State: Zip Code:
Special Instructions / Comments:
Telephone: FAX:
REPORT TO: Patricia Vida SAMPLER: Eduardo Ortega
P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Work Days ☐ 3 Work Days ☐ Noon - Nxt Day ☐ 7 Work Days ☐ 2 Work Days ☐ 2 - 8 Hours ☒ 5 Work Days ☐ 1 Work Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☒ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

LAB ID	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	EPA 8260B - Full List / EPA 8260B - 8010 List	THP gas / BTEX / Oxygenates / MTBE	THP Diesel / Motor Oil / Si-Gel	Pesticide - 8081	PCB - 8082	Metals / CAM - 17 / LUFT 5 / 7 Metals	8270 Full List / PAHs Only	Lead	Asbestos	REMARKS
027A	S-1-9 @ 0.5	03/24/09 0110	S	1	sleeve								X		
028A	S-1-9 @ 1.0	03/24/09 0110	S	1									X		
029A	S-1-9 @ 1.5	03/24/09 0110	S	1									X		
030A	S-1-9 @ 2.0	03/24/09 0110	S	1									X		
031A	S-1-9 @ 3.0	03/24/09 0110	S	1									X		
032A	S-1-10 @ 0.5	03/24/09 0125	S										X	X	
033A	S-1-10 @ 1.0												X	X	
034A	S-1-10 @ 1.5												X	X	
035A	S-1-10 @ 2.0												X	X	
036A	S-1-10 @ 3.0												X	X	

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/24/07	10:10 AM	D. L. Ghodasara	NAVIN	3/24/09	10:10 AM
2								

Were Samples Received in Good Condition? ☑ Yes ☐ NO Samples on Ice? ☑ Yes ☐ NO Method of Shipment Drop-off Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Page 4 of 9

Log In By: Date: Log In Reviewed By: Date:

TORRENT LAB

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903138

Company Name: UTS San Jose
Location of Sampling: Hwy 101 - Ave Lang
Address:
Purpose:
City: State: Zip Code:
Special Instructions / Comments:
Telephone: FAX:
REPORT TO: Patrick Walz SAMPLER: Eduardo Ortega P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Work Days ☐ 3 Work Days ☐ Noon - Nxt Day ☐ 7 Work Days ☐ 2 Work Days ☐ 2 - 8 Hours ☑ 5 Work Days ☐ 1 Work Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☑ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

LAB ID	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	EPA 8260B - Full List / EPA 8260B - 8010 List	THP gas / BTEX / Oxygenates / MTBE	THP Diesel / Motor Oil / Si-Gel	Pesticide - 8081	PCB - 8082	Metals / CAM - 17 / LUFT 5 / 7 Metals	8270 Full List / PAHs Only	Lead		REMARKS
037A	S-1-10 @ 0.5-D	03/24/09 0128	S	1	sleeve								X		
038A	S-1-10@1.0-D												X		
039A	S-1-10@1.5-D												X		
040A	S-1-10@2.0-D												X		
041A	S-1-10@3.0-D												X		
042A	S-1-11@0.5	03/24/09 0155	S										X		
043A	S-1-11@1.0												X		
044A	S-1-11@1.5												X		
045A	S-1-11@2.0												X		
046A	S-1-11@3.0												X		

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/24/09	10:10 AM	N. G. Ghodasara	NAVIN	3/24/09	10:10 AM
2								

Were Samples Received in Good Condition? ☑ Yes ☐ NO Samples on Ice? ☑ Yes ☐ NO Method of Shipment Drop-off Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Page 5 of 9

Log In By: Date: Log In Reviewed By: Date:

TORRENT LAB

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903138

Company Name: UTS San Jose
Location of Sampling: Hwy 101 – Auto Lanes
Address:
Purpose:
City: State: Zip Code:
Special Instructions / Comments:
Telephone: FAX:
REPORT TO: Patrick Walz SAMPLER: Eduardo Ortega
P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Work Days ☐ 3 Work Days ☐ Noon - Nxt Day ☐ 7 Work Days ☐ 2 Work Days ☐ 2 - 8 Hours ☒ 5 Work Days ☐ 1 Work Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☒ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

LAB ID	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	EPA 8260B - Full List / EPA 8260B - 8010 List	THP gas / BTEX / Oxygenates / MTBE	THP Diesel / Motor Oil / Si-Gel	Pesticide - 8081	PCB - 8082	Metals / CAM - 17 / LUFT 5 / 7 Metals	8270 Full List / PAHs Only	Lead		REMARKS
047A	S-1-12@0.5	03/24/09 0210	S	1	sleeve								X		
048A	S-1-12@1.0	03/24/09 0210		1									X		
049A	S-1-12@1.5			1									X		
050A	S-1-12@2.0			1									X		
051A	S-1-12@3.0			1									X		
052A	S-1-13@0.5	03/24/09 0230	S	1									X		
053A	S-1-13@1.0			1									X		
054A	S-1-13@1.5			1									X		
055A	S-1-13@2.0			1									X		
056A	S-1-13@3.0			1									X		

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/24/09	10:10 Am	D. G. Ghodasara	NAVIN	3/24/09	10:10 Am
2								

Were Samples Received in Good Condition? ☒ Yes ☐ NO Samples on Ice? ☒ Yes ☐ NO Method of Shipment Drop-off Sample seals intact? ☐ Yes ☐ NO ☒ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Page 6 of 9

Log In By: Date: Log In Reviewed By: Date:

TORRENT LAB

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903138

Company Name: UPS San Jose
Location of Sampling: Hwy 101 + Aux Lanes
Address:
Purpose:
City: State: Zip Code:
Special Instructions / Comments:
Telephone: FAX:
REPORT TO: Patrick Walz SAMPLER: Eduardo Ortiss
P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Work Days ☐ 3 Work Days ☐ Noon - Nxt Day ☐ 7 Work Days ☐ 2 Work Days ☐ 2 - 8 Hours ☒ 5 Work Days ☐ 1 Work Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☒ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

LAB ID	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	EPA 8260B - Full List / EPA 8260B - 8010 List	THP gas / BTEX / Oxygenates / MTBE	THP Diesel / Si-Gel / Motor Oil	Pesticide - 8081	PCB - 8082	Metals / CAM - 17 + pH / LUFT 5 / 7 Metals	8270 Full List / PAHs Only	Cr+6	As Sector	REMARKS
057A	S-1-14@0.5	03/24/09 0245	S	1	sleeve			X	X	X	X				
058A	S-1-14@1.0	03/24/09 0245	S	1			X				X				
059A	S-1-14@1.5	03/24/09 0245		1			X				X				
060A	S-1-14@2.0			1			X				X				
061A	S-1-14@3.0			1			X				X				
062A	S-1-15@0.5	03/24/09 0305		1									X	X	
063A	S-1-15@1.0			1									X	X	
064A	S-1-15@1.5			1									X	X	
065A	S-1-15@2.0			1									X	X	
066A	S-1-15@3.0			1									X	X	

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/24/09	10:10 AM	M. G. Ghodasara	NAVIN	3/24/09	10:10 AM
2								

Were Samples Received in Good Condition? ☑ Yes ☐ NO Samples on Ice? ☑ Yes ☐ NO Method of Shipment Drop-off Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Page 7 of 9

Log In By: Date: Log In Reviewed By: Date:

TORRENT LAB

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903138

Company Name: URS San Jose
Location of Sampling: Hwy 101 — Aux Lanes
Address:
Purpose:
City: State: Zip Code:
Special Instructions / Comments:
Telephone: FAX:
REPORT TO: Patrick Walz SAMPLER: Eduardo Ortega P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Work Days ☐ 3 Work Days ☐ Noon - Nxt Day ☐ 7 Work Days ☐ 2 Work Days ☐ 2 - 8 Hours ☒ 5 Work Days ☐ 1 Work Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☒ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

LAB ID	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	EPA 8260B - Full List / EPA 8260B - 8010 List	THP gas / BTEX / Oxygenates / MTBE	THP Diesel / Si-Gel / Motor Oil	Pesticide - 8081	PCB - 8082	Metals / CAM - 17 / LUFT 5 / 7 Metals	8270 Full List / PAHs Only	Lead		REMARKS
067A	S-1-16@0.5	03/24/09 0318	S	1	sleeve								X		
068A	S-1-16@1.0			1									X		
069A	S-1-16@1.5			1									X		
070A	S-1-16@2.0			1									X		
071A	S-1-16@3.0			1									X		
072A	S-1-17@0.5	03/24/09		1	sleeve								X		
073A	S-1-17@1.0			1									X		
074A	S-1-17@1.5												X		
075A	S-1-17@2.0			1									X		
076A	S-1-17@3.0			1									X		

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/24/09	10:10 AM	D. G. Ghodasara	NAVIN	3/24/09	10:10 AM
2								

Were Samples Received in Good Condition? ☒ Yes ☐ NO Samples on Ice? ☒ Yes ☐ NO Method of Shipment Drop-off Sample seals intact? ☐ Yes ☐ NO ☒ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Log In By: Date: Log In Reviewed By: Date:

TORRENT LAB

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903138

Company Name: URS San Jose
Location of Sampling: 101 - Aux Lanes
Address:
Purpose:
City: State: Zip Code:
Special Instructions / Comments:
Telephone: FAX:
REPORT TO: Patrick Walz SAMPLER: Edmundo Ortiz
P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Work Days ☐ 3 Work Days ☐ Noon - Nxt Day ☐ 7 Work Days ☐ 2 Work Days ☐ 2 - 8 Hours ☒ 5 Work Days ☐ 1 Work Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☒ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

LAB ID	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	EPA 8260B - Full List / EPA 8260B - 8010 List	THP gas / BTEX / Oxygenates / MTBE	THP Diesel / Si-Gel / Motor Oil	Pesticide - 8081	PCB - 8082	Metals / CAM - 17 / LUFT 5 / 7 Metals	8270 Full List / PAHs Only	Lead		REMARKS
077A	N-1-10 @ 0.5	03/23/09 2145	S	1	sleeve								X		
078A	N-1-10 @ 1.0	03/23/09 2145	S	1									X		
079A	N-1-10 @ 1.5	03/23/09 2145	S	1									X		
080A	N-1-10 @ 2.0	03/23/09 2145	S	1									X		
081A	N-1-10 @ 3.0	03/23/09 2145	S	1									X		
082A	N-1-9 @ 0.5	03/23/09 2200											X		
083A	N-1-9 @ 1.0	03/23/09 2200											X		
084A	N-1-9 @ 1.5	03/23/09 2200											X		
085A	N-1-9 @ 2.0	03/23/09 2200											X		
086A	N-1-9 @ 3.0	03/23/09 2200											X		

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/23/09	10:10 AM	[signature]	NAVIN	3/24/09	10:10 AM
2								

Were Samples Received in Good Condition? ☑ Yes ☐ NO Samples on Ice? ☑ Yes ☐ NO Method of Shipment Drop-off Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Page 9 of 9

Log In By: Date: Log In Reviewed By: Date:

TORRENT LAB

Torrent Laboratory, Inc. **Date:** *18-Jun-09*

CLIENT: URS Corporation, San Jose
Project: Hwy 101-Aux Lane
Lab Order: 0903138

CASE NARRATIVE

Analytical Comments for Asbestos, PLM Note: Analysis performed by NVLAP Certified sub-contract laboratory. (Certification # 101048-3).

Analytical Comment for METHOD 6010B_S, 0903138-049A MS/MSD, QC Batch ID 19067, Note:The % recoveries in the MS/MSD for Barium are not recoverable. The sample concentration is greater than 4X the spike concentration. No corrective action is required.

Analytical Comment for METHOD 6010B_S, 0903138-049A MS/MSD, QC Batch ID 19067, Note:The % recovery in the MSD for Copper is outside of laboratory control limits but within % RPD limits and % recovery limits for the LCS/LCSD. No corrective action is required.

Analytical Comment for METHOD 6010B_S, 0903138-068A MS/MSD, QC Batch ID 19066, Note:The % recoveries in the MS/MSD for Lead are not recoverable. The sample concentration is greater than 4X the spike concentration. No corrective action is required.

REVISIONS:

Per client request, STLC, DI STLC and TCLP analysis was added to specified samples. Due to insufficient sample mass available, no TCLP was performed on requested sample -023 (N-1-4 @ 1.0). Due to limited sample available for all samples, STLC, DI STLC and TCLP was performed using only 25 g of homogenized sample.

Note: Extraction of 25 g sample / 250g 0.2M Sodium Citrate Solution was performed according to DI wet extraction procedure (WET) which was rotated in a rotary shaker for 48 hours.

Extraction started on 05/15/2009 @ 6.00 PM and ended on 05/17/2009 @ 6:00 PM
and
Extraction started on 05/17/2009 @ 4.00 PM and ended on 05/19/2009 @ 4:00 PM

Note: Extraction of 25 g sample / 250g 0.2M Sodium Citrate Solution was performed according to wet extraction procedure (WET) which was rotated in a rotary shaker for 48 hours.

Extraction started on 05/15/2009 @ 6.00 PM and ended on 05/17/2009 @ 6:00 PM

and

Extraction started on 05/17/2009 @ 4.00 PM and ended on 05/19/2009 @ 4:00 PM

Note: Extraction of 25 g sample / 500g TCLP Fluid #1 was performed according to Toxicity Characteristic Leaching Procedure (TCLP) which was rotated in a rotary shaker for 18 hours.

Extraction started on 06/09/2009 @ 5.35 PM and ended on 06/10/2009 @ 11:35 AM

and

Extraction started on 06/10/2009 @ 3:30 PM and ended on 06/11/2009 @ 9:30 AM

TORRENT LABORATORY, INC.

483 Sinclair Frontage Road • Milpitas, CA • Phone: (408) 263-5258 • Fax: (408) 263-8293

Visit us at www.torrentlab.com email: analysis@torrentlab.com

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: N-1-8 @ 0.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 10:20:00 PM

Lab Sample ID: 0903138-001
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/25/2009	1	1	1.0	6.0	mg/Kg	5038

Client Sample ID: N-1-8 @ 1.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 10:20:00 PM

Lab Sample ID: 0903138-002
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/25/2009	1	1	1.0	1.2	mg/Kg	5038

Client Sample ID: N-1-8 @ 1.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 10:20:00 PM

Lab Sample ID: 0903138-003
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/25/2009	1	1	1.0	1.2	mg/Kg	5038

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: N-1-8 @ 2.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 10:20:00 PM

Lab Sample ID: 0903138-004
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/25/2009	1	1	1.0	4.4	mg/Kg	5038

Client Sample ID: N-1-8 @ 3.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 10:20:00 PM

Lab Sample ID: 0903138-005
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/25/2009	1	1	1.0	5.8	mg/Kg	5038

Client Sample ID: N-1-8-GW
Sample Location: Hwy 101-Aux lanes
Sample Matrix: GROUNDWATER
Date/Time Sampled 3/23/2009 10:45:00 PM

Lab Sample ID: 0903138-006
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	3/26/2009	0.01	1	0.010	ND	mg/L	5040
Arsenic	SW6010B	3/26/2009	0.01	1	0.010	ND	mg/L	5040
Barium	SW6010B	3/26/2009	0.01	1	0.010	0.22	mg/L	5040
Beryllium	SW6010B	3/26/2009	0.005	1	0.0050	ND	mg/L	5040
Cadmium	SW6010B	3/26/2009	0.005	1	0.0050	ND	mg/L	5040
Chromium	SW6010B	3/26/2009	0.005	1	0.0050	0.0050	mg/L	5040
Cobalt	SW6010B	3/26/2009	0.005	1	0.0050	0.0060	mg/L	5040
Copper	SW6010B	3/26/2009	0.01	1	0.010	0.020	mg/L	5040
Lead	SW6010B	3/26/2009	0.015	1	0.015	0.025	mg/L	5040
Molybdenum	SW6010B	3/26/2009	0.005	1	0.0050	0.086	mg/L	5040
Nickel	SW6010B	3/26/2009	0.01	1	0.010	0.015	mg/L	5040
Selenium	SW6010B	3/26/2009	0.01	1	0.010	ND	mg/L	5040
Silver	SW6010B	3/26/2009	0.005	1	0.0050	ND	mg/L	5040
Thallium	SW6010B	3/26/2009	0.01	1	0.010	ND	mg/L	5040
Vanadium	SW6010B	3/26/2009	0.01	1	0.010	0.028	mg/L	5040
Zinc	SW6010B	3/26/2009	0.005	1	0.0050	0.035	mg/L	5040

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: N-1-7 @ 0.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 11:25:00 PM

Lab Sample ID: 0903138-007
Date Prepared: 5/28/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/29/2009	0.1	1	0.10	ND	mg/L	5232
Lead (STLC)	6010B (STLC)	5/29/2009	0.1	1	0.10	37	mg/L	5202
Lead (TCLP)	6010B (TCLP)	6/13/2009	0.1	1	0.10	0.15	mg/L	5281
Lead	SW6010B	3/25/2009	1	1	1.0	590	mg/Kg	5038

Client Sample ID: N-1-7 @ 1.0
Sample Location: Hwy 101-Aux lanesHwy 101-Au
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 11:23:00 PM

Lab Sample ID: 0903138-008
Date Prepared: 5/28/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/29/2009	0.1	1	0.10	ND	mg/L	5232
Lead (STLC)	6010B (STLC)	5/29/2009	0.1	1	0.10	39	mg/L	5202
Lead (TCLP)	6010B (TCLP)	6/13/2009	0.1	1	0.10	0.61	mg/L	5281
Lead	SW6010B	3/25/2009	1	1	1.0	1000	mg/Kg	5038

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: N-1-7 @ 1.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 11:25:00 PM

Lab Sample ID: 0903138-009
Date Prepared: 5/28/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/29/2009	0.1	1	0.10	0.93	mg/L	5232
Lead (STLC)	6010B (STLC)	5/29/2009	0.1	1	0.10	16	mg/L	5202
Lead (TCLP)	6010B (TCLP)	6/13/2009	0.1	1	0.10	ND	mg/L	5281
Lead	SW6010B	3/25/2009	1	1	1.0	130	mg/Kg	5038

Client Sample ID: N-1-7 @ 2.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 11:25:00 PM

Lab Sample ID: 0903138-010
Date Prepared: 5/28/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/29/2009	0.1	1	0.10	0.75	mg/L	5232
Lead (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	4.4	mg/L	5235
Lead	SW6010B	3/25/2009	1	1	1.0	94	mg/Kg	5038

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: N-1-7 @ 3.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 11:25:00 PM

Lab Sample ID: 0903138-011
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	7.6	mg/Kg	5039

Client Sample ID: N-1-6 @ 0.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 11:45:00 PM

Lab Sample ID: 0903138-012
Date Prepared: 5/28/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/29/2009	0.1	1	0.10	0.60	mg/L	5232
Lead (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	23	mg/L	5235
Lead (TCLP)	6010B (TCLP)	6/13/2009	0.1	1	0.10	ND	mg/L	5281
Lead	SW6010B	3/26/2009	1	1	1.0	400	mg/Kg	5039

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: N-1-6 @ 1.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 11:45:00 PM

Lab Sample ID: 0903138-013
Date Prepared: 5/28/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/29/2009	0.1	1	0.10	43	mg/L	5232
Lead (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	54	mg/L	5235
Lead (TCLP)	6010B (TCLP)	6/13/2009	0.1	1	0.10	2.0	mg/L	5281
Lead	SW6010B	3/26/2009	1	1	1.0	840	mg/Kg	5039

Client Sample ID: N-1-6 @ 1.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 11:45:00 PM

Lab Sample ID: 0903138-014
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	12	mg/Kg	5039

Client Sample ID: N-1-6 @ 2.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 11:45:00 PM

Lab Sample ID: 0903138-015
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	7.4	mg/Kg	5039

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: N-1-6 @ 3.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 11:45:00 PM

Lab Sample ID: 0903138-016
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	6.0	mg/Kg	5039

Client Sample ID: N-1-5 @ 0.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009

Lab Sample ID: 0903138-017
Date Prepared: 5/28/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/29/2009	0.1	1	0.10	ND	mg/L	5232
Lead (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	0.10	mg/L	5235
Lead	SW6010B	3/26/2009	1	1	1.0	85	mg/Kg	5039

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: N-1-5 @ 1.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009

Lab Sample ID: 0903138-018
Date Prepared: 5/28/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/29/2009	0.1	1	0.10	ND	mg/L	5232
Lead (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	2.6	mg/L	5235
Lead (TCLP)	6010B (TCLP)	6/13/2009	0.1	1	0.10	0.68	mg/L	5281
Lead	SW6010B	3/26/2009	1	1	1.0	230	mg/Kg	5039

Client Sample ID: N-1-5 @ 1.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009

Lab Sample ID: 0903138-019
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	1.4	mg/Kg	5039

Client Sample ID: N-1-5 @ 2.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009

Lab Sample ID: 0903138-020
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	7.2	mg/Kg	5039

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: N-1-5 @ 3.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009

Lab Sample ID: 0903138-021
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	4.2	mg/Kg	5039

Client Sample ID: N-1-4 @ 0.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 12:20:00 AM

Lab Sample ID: 0903138-022
Date Prepared: 5/28/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/29/2009	0.1	1	0.10	8.8	mg/L	5232
Lead (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	54	mg/L	5235
Lead (TCLP)	6010B (TCLP)	6/13/2009	0.1	1	0.10	0.21	mg/L	5281
Antimony	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Arsenic	SW6010B	3/26/2009	1.7	1	1.7	4.4	mg/Kg	5039
Barium	SW6010B	3/26/2009	5	1	5.0	220	mg/Kg	5039
Beryllium	SW6010B	3/26/2009	2	1	2.0	ND	mg/Kg	5039
Cadmium	SW6010B	3/26/2009	1	1	1.0	1.6	mg/Kg	5039
Chromium	SW6010B	3/26/2009	5	1	5.0	49	mg/Kg	5039
Cobalt	SW6010B	3/26/2009	5	1	5.0	10	mg/Kg	5039
Copper	SW6010B	3/26/2009	5	1	5.0	90	mg/Kg	5039
Lead	SW6010B	3/26/2009	1	1	1.0	1100	mg/Kg	5039
Molybdenum	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Nickel	SW6010B	3/26/2009	5	1	5.0	50	mg/Kg	5039
Selenium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Silver	SW6010B	3/26/2009	1	1	1.0	1.7	mg/Kg	5039
Thallium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Vanadium	SW6010B	3/26/2009	5	1	5.0	33	mg/Kg	5039
Zinc	SW6010B	3/26/2009	5	1	5.0	390	mg/Kg	5039

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: N-1-4 @ 1.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 12:20:00 AM

Lab Sample ID: 0903138-023
Date Prepared: 5/28/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/29/2009	0.1	1	0.10	19	mg/L	5232
Lead (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	46	mg/L	5235
Antimony	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Arsenic	SW6010B	3/26/2009	1.7	1	1.7	5.8	mg/Kg	5039
Barium	SW6010B	3/26/2009	5	1	5.0	190	mg/Kg	5039
Beryllium	SW6010B	3/26/2009	2	1	2.0	ND	mg/Kg	5039
Cadmium	SW6010B	3/26/2009	1	1	1.0	ND	mg/Kg	5039
Chromium	SW6010B	3/26/2009	5	1	5.0	49	mg/Kg	5039
Cobalt	SW6010B	3/26/2009	5	1	5.0	15	mg/Kg	5039
Copper	SW6010B	3/26/2009	5	1	5.0	46	mg/Kg	5039
Lead	SW6010B	3/26/2009	1	1	1.0	590	mg/Kg	5039
Molybdenum	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Nickel	SW6010B	3/26/2009	5	1	5.0	46	mg/Kg	5039
Selenium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Silver	SW6010B	3/26/2009	1	1	1.0	1.9	mg/Kg	5039
Thallium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Vanadium	SW6010B	3/26/2009	5	1	5.0	45	mg/Kg	5039
Zinc	SW6010B	3/26/2009	5	1	5.0	100	mg/Kg	5039

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: N-1-4 @ 1.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 12:20:00 AM

Lab Sample ID: 0903138-024
Date Prepared: 5/28/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/29/2009	0.1	1	0.10	1.8	mg/L	5232
Chromium (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	ND	mg/L	5235
Lead (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	1.9	mg/L	5235
Antimony	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Arsenic	SW6010B	3/26/2009	1.7	1	1.7	5.6	mg/Kg	5039
Barium	SW6010B	3/26/2009	5	1	5.0	110	mg/Kg	5039
Beryllium	SW6010B	3/26/2009	2	1	2.0	ND	mg/Kg	5039
Cadmium	SW6010B	3/26/2009	1	1	1.0	ND	mg/Kg	5039
Chromium	SW6010B	3/26/2009	5	1	5.0	50	mg/Kg	5039
Cobalt	SW6010B	3/26/2009	5	1	5.0	15	mg/Kg	5039
Copper	SW6010B	3/26/2009	5	1	5.0	32	mg/Kg	5039
Lead	SW6010B	3/26/2009	1	1	1.0	54	mg/Kg	5039
Molybdenum	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Nickel	SW6010B	3/26/2009	5	1	5.0	44	mg/Kg	5039
Selenium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Silver	SW6010B	3/26/2009	1	1	1.0	2.8	mg/Kg	5039
Thallium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Vanadium	SW6010B	3/26/2009	5	1	5.0	59	mg/Kg	5039
Zinc	SW6010B	3/26/2009	5	1	5.0	48	mg/Kg	5039

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: N-1-4 @ 2.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 12:20:00 AM

Lab Sample ID: 0903138-025
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	ND	mg/L	5237
Chromium (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	0.17	mg/L	5235
Lead (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	13	mg/L	5235
Lead (TCLP)	6010B (TCLP)	6/13/2009	0.1	1	0.10	0.21	mg/L	5281
Antimony	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Arsenic	SW6010B	3/26/2009	1.7	1	1.7	5.7	mg/Kg	5039
Barium	SW6010B	3/26/2009	5	1	5.0	170	mg/Kg	5039
Beryllium	SW6010B	3/26/2009	2	1	2.0	ND	mg/Kg	5039
Cadmium	SW6010B	3/26/2009	1	1	1.0	ND	mg/Kg	5039
Chromium	SW6010B	3/26/2009	5	1	5.0	56	mg/Kg	5039
Cobalt	SW6010B	3/26/2009	5	1	5.0	12	mg/Kg	5039
Copper	SW6010B	3/26/2009	5	1	5.0	41	mg/Kg	5039
Lead	SW6010B	3/26/2009	1	1	1.0	400	mg/Kg	5039
Molybdenum	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Nickel	SW6010B	3/26/2009	5	1	5.0	43	mg/Kg	5039
Selenium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Silver	SW6010B	3/26/2009	1	1	1.0	1.0	mg/Kg	5039
Thallium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Vanadium	SW6010B	3/26/2009	5	1	5.0	42	mg/Kg	5039
Zinc	SW6010B	3/26/2009	5	1	5.0	120	mg/Kg	5039

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: N-1-4 @ 2.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 12:20:00 AM

Lab Sample ID: 0903138-026
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	4.1	mg/L	5237
Lead (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	16	mg/L	5235
Lead (TCLP)	6010B (TCLP)	6/13/2009	0.1	1	0.10	0.33	mg/L	5281
Antimony	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Arsenic	SW6010B	3/26/2009	1.7	1	1.7	6.5	mg/Kg	5039
Barium	SW6010B	3/26/2009	5	1	5.0	140	mg/Kg	5039
Beryllium	SW6010B	3/26/2009	2	1	2.0	ND	mg/Kg	5039
Cadmium	SW6010B	3/26/2009	1	1	1.0	ND	mg/Kg	5039
Chromium	SW6010B	3/26/2009	5	1	5.0	49	mg/Kg	5039
Cobalt	SW6010B	3/26/2009	5	1	5.0	14	mg/Kg	5039
Copper	SW6010B	3/26/2009	5	1	5.0	45	mg/Kg	5039
Lead	SW6010B	3/26/2009	1	1	1.0	630	mg/Kg	5039
Molybdenum	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Nickel	SW6010B	3/26/2009	5	1	5.0	46	mg/Kg	5039
Selenium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Silver	SW6010B	3/26/2009	1	1	1.0	2.1	mg/Kg	5039
Thallium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5039
Vanadium	SW6010B	3/26/2009	5	1	5.0	48	mg/Kg	5039
Zinc	SW6010B	3/26/2009	5	1	5.0	120	mg/Kg	5039

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-9 @ 0.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:10:00 AM

Lab Sample ID: 0903138-027
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	43	mg/L	5237
Lead (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	2.7	mg/L	5235
Lead (TCLP)	6010B (TCLP)	6/13/2009	0.1	1	0.10	0.26	mg/L	5281
Lead	SW6010B	3/26/2009	1	1	1.0	2600	mg/Kg	5039

Client Sample ID: S-1-9 @ 1.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:10:00 AM

Lab Sample ID: 0903138-028
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	12	mg/Kg	5039

Client Sample ID: S-1-9 @ 1.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:10:00 AM

Lab Sample ID: 0903138-029
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	7.1	mg/Kg	5039

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-9 @ 2.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:10:00 AM

Lab Sample ID: 0903138-030
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	6.5	mg/Kg	5042

Client Sample ID: S-1-9 @ 3.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:10:00 AM

Lab Sample ID: 0903138-031
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	5.2	mg/Kg	5042

Client Sample ID: S-1-10 @ 0.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:25:00 AM

Lab Sample ID: 0903138-032
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	8.6	mg/L	5237
Lead (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	37	mg/L	5235
Lead (TCLP)	6010B (TCLP)	6/13/2009	0.1	1	0.10	0.91	mg/L	5281
Lead	SW6010B	3/26/2009	1	1	1.0	710	mg/Kg	5042

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-10 @ 1.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:25:00 AM

Lab Sample ID: 0903138-033
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	13	mg/Kg	5042

Client Sample ID: S-1-10 @ 1.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:25:00 AM

Lab Sample ID: 0903138-034
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	6.8	mg/Kg	5042

Client Sample ID: S-1-10 @ 2.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:25:00 AM

Lab Sample ID: 0903138-035
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	4.8	mg/Kg	5042

Client Sample ID: S-1-10 @ 3.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:25:00 AM

Lab Sample ID: 0903138-036
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	5.5	mg/Kg	5042

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-10 @ 0.5-D
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:28:00 AM

Lab Sample ID: 0903138-037
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	8.3	mg/L	5237
Lead (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	52	mg/L	5235
Lead (TCLP)	6010B (TCLP)	6/13/2009	0.1	1	0.10	0.20	mg/L	5281
Lead	SW6010B	3/26/2009	1	1	1.0	150	mg/Kg	5042

Client Sample ID: S-1-10 @ 1.0-D
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:28:00 AM

Lab Sample ID: 0903138-038
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	25	mg/Kg	5042

Client Sample ID: S-1-10 @ 1.5-D
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:28:00 AM

Lab Sample ID: 0903138-039
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	6.0	mg/Kg	5042

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-10 @ 2.0-D
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:28:00 AM

Lab Sample ID: 0903138-040
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	5.8	mg/Kg	5042

Client Sample ID: S-1-10 @ 3.0-D
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:28:00 AM

Lab Sample ID: 0903138-041
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	9.5	mg/Kg	5042

Client Sample ID: S-1-11 @ 0.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:55:00 AM

Lab Sample ID: 0903138-042
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	8.9	mg/L	5237
Lead (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	56	mg/L	5235
Lead	SW6010B	3/26/2009	1	1	1.0	86	mg/Kg	5042

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-11 @ 1.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:55:00 AM

Lab Sample ID: 0903138-043
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	1.0	mg/Kg	5042

Client Sample ID: S-1-11 @ 1.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:55:00 AM

Lab Sample ID: 0903138-044
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	1.0	mg/Kg	5042

Client Sample ID: S-1-11 @ 2.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:55:00 AM

Lab Sample ID: 0903138-045
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	7.7	mg/Kg	5042

Client Sample ID: S-1-11 @ 3.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 1:55:00 AM

Lab Sample ID: 0903138-046
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	5.2	mg/Kg	5042

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-12 @ 0.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 2:10:00 AM

Lab Sample ID: 0903138-047
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	10	mg/L	5237
Lead (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	23	mg/L	5235
Lead (TCLP)	6010B (TCLP)	6/13/2009	0.1	1	0.10	1.0	mg/L	5281
Lead	SW6010B	3/26/2009	1	1	1.0	290	mg/Kg	5042

Client Sample ID: S-1-12 @ 1.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 2:10:00 AM

Lab Sample ID: 0903138-048
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	5.4	mg/L	5237
Lead (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	60	mg/L	5235
Lead (TCLP)	6010B (TCLP)	6/13/2009	0.1	1	0.10	ND	mg/L	5281
Lead	SW6010B	3/26/2009	1	1	1.0	900	mg/Kg	5042

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-12 @ 1.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 2:10:00 AM

Lab Sample ID: 0903138-049
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	12	mg/Kg	5043

Client Sample ID: S-1-12 @ 2.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 2:10:00 AM

Lab Sample ID: 0903138-050
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	7.0	mg/Kg	5043

Client Sample ID: S-1-12 @ 3.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 2:10:00 AM

Lab Sample ID: 0903138-051
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	5.4	mg/Kg	5043

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-13 @ 0.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 2:30:00 AM

Lab Sample ID: 0903138-052
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	2.4	mg/L	5237
Lead (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	10	mg/L	5236
Lead (TCLP)	6010B (TCLP)	6/13/2009	0.1	1	0.10	ND	mg/L	5281
Lead	SW6010B	3/26/2009	1	1	1.0	420	mg/Kg	5043

Client Sample ID: S-1-13 @ 1.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 2:30:00 AM

Lab Sample ID: 0903138-053
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	3.8	mg/L	5237
Lead (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	66	mg/L	5236
Lead	SW6010B	3/26/2009	1	1	1.0	59	mg/Kg	5043

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-13 @ 1.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 2:30:00 AM

Lab Sample ID: 0903138-054
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	7.7	mg/Kg	5043

Client Sample ID: S-1-13 @ 2.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 2:30:00 AM

Lab Sample ID: 0903138-055
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	3.0	mg/Kg	5043

Client Sample ID: S-1-13 @ 3.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 2:30:00 AM

Lab Sample ID: 0903138-056
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	2.4	mg/Kg	5043

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-14 @ 0.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 2:45:00 AM

Lab Sample ID: 0903138-057
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Chromium (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	0.37	mg/L	5236
Antimony	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Arsenic	SW6010B	3/26/2009	1.7	1	1.7	2.4	mg/Kg	5043
Barium	SW6010B	3/26/2009	5	1	5.0	160	mg/Kg	5043
Beryllium	SW6010B	3/26/2009	2	1	2.0	ND	mg/Kg	5043
Cadmium	SW6010B	3/26/2009	1	1	1.0	ND	mg/Kg	5043
Chromium	SW6010B	3/26/2009	5	1	5.0	56	mg/Kg	5043
Cobalt	SW6010B	3/26/2009	5	1	5.0	16	mg/Kg	5043
Copper	SW6010B	3/26/2009	5	1	5.0	51	mg/Kg	5043
Lead	SW6010B	3/26/2009	1	1	1.0	28	mg/Kg	5043
Molybdenum	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Nickel	SW6010B	3/26/2009	5	1	5.0	120	mg/Kg	5043
Selenium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Silver	SW6010B	3/26/2009	1	1	1.0	ND	mg/Kg	5043
Thallium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Vanadium	SW6010B	3/26/2009	5	1	5.0	34	mg/Kg	5043
Zinc	SW6010B	3/26/2009	5	1	5.0	99	mg/Kg	5043

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-14 @ 1.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 2:45:00 AM

Lab Sample ID: 0903138-058
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	44	mg/L	5237
Chromium (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	0.38	mg/L	5236
Lead (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	5.8	mg/L	5236
Lead (TCLP)	6010B (TCLP)	6/13/2009	0.1	1	0.10	0.39	mg/L	5281
Antimony	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Arsenic	SW6010B	3/26/2009	1.7	1	1.7	ND	mg/Kg	5043
Barium	SW6010B	3/26/2009	5	1	5.0	130	mg/Kg	5043
Beryllium	SW6010B	3/26/2009	2	1	2.0	ND	mg/Kg	5043
Cadmium	SW6010B	3/26/2009	1	1	1.0	ND	mg/Kg	5043
Chromium	SW6010B	3/26/2009	5	1	5.0	79	mg/Kg	5043
Cobalt	SW6010B	3/26/2009	5	1	5.0	13	mg/Kg	5043
Copper	SW6010B	3/26/2009	5	1	5.0	52	mg/Kg	5043
Lead	SW6010B	3/26/2009	1	1	1.0	320	mg/Kg	5043
Molybdenum	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Nickel	SW6010B	3/26/2009	5	1	5.0	100	mg/Kg	5043
Selenium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Silver	SW6010B	3/26/2009	1	1	1.0	1.6	mg/Kg	5043
Thallium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Vanadium	SW6010B	3/26/2009	5	1	5.0	37	mg/Kg	5043
Zinc	SW6010B	3/26/2009	5	1	5.0	170	mg/Kg	5043

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-14 @ 1.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 2:45:00 AM

Lab Sample ID: 0903138-059
Date Prepared: 3/25/2009-3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Arsenic	SW6010B	3/26/2009	1.7	1	1.7	ND	mg/Kg	5043
Barium	SW6010B	3/26/2009	5	1	5.0	20	mg/Kg	5043
Beryllium	SW6010B	3/26/2009	2	1	2.0	ND	mg/Kg	5043
Cadmium	SW6010B	3/26/2009	1	1	1.0	ND	mg/Kg	5043
Chromium	SW6010B	3/26/2009	5	1	5.0	39	mg/Kg	5043
Cobalt	SW6010B	3/26/2009	5	1	5.0	26	mg/Kg	5043
Copper	SW6010B	3/26/2009	5	1	5.0	45	mg/Kg	5043
Lead	SW6010B	3/26/2009	1	1	1.0	2.8	mg/Kg	5043
Molybdenum	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Nickel	SW6010B	3/26/2009	5	1	5.0	37	mg/Kg	5043
Selenium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Silver	SW6010B	3/26/2009	1	1	1.0	1.8	mg/Kg	5043
Thallium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Vanadium	SW6010B	3/26/2009	5	1	5.0	66	mg/Kg	5043
Zinc	SW6010B	3/26/2009	5	1	5.0	52	mg/Kg	5043

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-14 @ 2.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 2:45:00 AM

Lab Sample ID: 0903138-060
Date Prepared: 3/25/2009-3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Arsenic	SW6010B	3/26/2009	1.7	1	1.7	2.8	mg/Kg	5043
Barium	SW6010B	3/26/2009	5	1	5.0	110	mg/Kg	5043
Beryllium	SW6010B	3/26/2009	2	1	2.0	ND	mg/Kg	5043
Cadmium	SW6010B	3/26/2009	1	1	1.0	ND	mg/Kg	5043
Chromium	SW6010B	3/26/2009	5	1	5.0	40	mg/Kg	5043
Cobalt	SW6010B	3/26/2009	5	1	5.0	8.0	mg/Kg	5043
Copper	SW6010B	3/26/2009	5	1	5.0	12	mg/Kg	5043
Lead	SW6010B	3/26/2009	1	1	1.0	4.4	mg/Kg	5043
Molybdenum	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Nickel	SW6010B	3/26/2009	5	1	5.0	39	mg/Kg	5043
Selenium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Silver	SW6010B	3/26/2009	1	1	1.0	ND	mg/Kg	5043
Thallium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Vanadium	SW6010B	3/26/2009	5	1	5.0	26	mg/Kg	5043
Zinc	SW6010B	3/26/2009	5	1	5.0	41	mg/Kg	5043

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-14 @ 3.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 2:45:00 AM

Lab Sample ID: 0903138-061
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Chromium (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	0.10	mg/L	5236
Antimony	SW6010B	3/26/2009	5	1	5.0	5.3	mg/Kg	5043
Arsenic	SW6010B	3/26/2009	1.7	1	1.7	2.3	mg/Kg	5043
Barium	SW6010B	3/26/2009	5	1	5.0	93	mg/Kg	5043
Beryllium	SW6010B	3/26/2009	2	1	2.0	ND	mg/Kg	5043
Cadmium	SW6010B	3/26/2009	1	1	1.0	ND	mg/Kg	5043
Chromium	SW6010B	3/26/2009	5	1	5.0	66	mg/Kg	5043
Cobalt	SW6010B	3/26/2009	5	1	5.0	16	mg/Kg	5043
Copper	SW6010B	3/26/2009	5	1	5.0	32	mg/Kg	5043
Lead	SW6010B	3/26/2009	1	1	1.0	7.4	mg/Kg	5043
Molybdenum	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Nickel	SW6010B	3/26/2009	5	1	5.0	54	mg/Kg	5043
Selenium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Silver	SW6010B	3/26/2009	1	1	1.0	2.8	mg/Kg	5043
Thallium	SW6010B	3/26/2009	5	1	5.0	ND	mg/Kg	5043
Vanadium	SW6010B	3/26/2009	5	1	5.0	66	mg/Kg	5043
Zinc	SW6010B	3/26/2009	5	1	5.0	42	mg/Kg	5043

Client Sample ID: S-1-15 @ 0.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 3:05:00 AM

Lab Sample ID: 0903138-062
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	12	mg/L	5237
Lead (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	38	mg/L	5236
Lead (TCLP)	6010B (TCLP)	6/13/2009	0.1	1	0.10	0.22	mg/L	5281
Lead	SW6010B	3/26/2009	1	1	1.0	470	mg/Kg	5043

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-15 @ 1.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 3:05:00 AM

Lab Sample ID: 0903138-063
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	5.1	mg/L	5237
Lead (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	28	mg/L	5236
Lead (TCLP)	6010B (TCLP)	6/13/2009	0.1	1	0.10	ND	mg/L	5281
Lead	SW6010B	3/26/2009	1	1	1.0	420	mg/Kg	5043

Client Sample ID: S-1-15 @ 1.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 3:05:00 AM

Lab Sample ID: 0903138-064
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	49	mg/Kg	5043

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-15 @ 2.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 3:05:00 AM

Lab Sample ID: 0903138-065
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	0.33	mg/L	5237
Lead (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	1.6	mg/L	5236
Lead	SW6010B	3/26/2009	1	1	1.0	68	mg/Kg	5043

Client Sample ID: S-1-15 @ 3.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 3:05:00 AM

Lab Sample ID: 0903138-066
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/26/2009	1	1	1.0	7.9	mg/Kg	5043

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-16 @ 0.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 3:18:00 AM

Lab Sample ID: 0903138-067
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	1.4	mg/L	5237
Lead (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	17	mg/L	5236
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	ND	mg/L	5282
Lead	SW6010B	3/26/2009	1	1	1.0	260	mg/Kg	5043

Client Sample ID: S-1-16 @ 1.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 3:18:00 AM

Lab Sample ID: 0903138-068
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	3.9	mg/L	5237
Lead (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	41	mg/L	5236
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	0.15	mg/L	5282
Lead	SW6010B	3/27/2009	1	1	1.0	280	mg/Kg	5045

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-16 @ 1.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 3:18:00 AM

Lab Sample ID: 0903138-069
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	6.1	mg/L	5237
Lead (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	4.8	mg/L	5236
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	ND	mg/L	5282
Lead	SW6010B	3/27/2009	1	1	1.0	280	mg/Kg	5045

Client Sample ID: S-1-16 @ 2.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 3:18:00 AM

Lab Sample ID: 0903138-070
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	5.6	mg/Kg	5045

Client Sample ID: S-1-16 @ 3.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 3:18:00 AM

Lab Sample ID: 0903138-071
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	5.1	mg/Kg	5045

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-17 @ 0.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 3:18:00 AM

Lab Sample ID: 0903138-072
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	15	mg/L	5237
Lead (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	24	mg/L	5236
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	ND	mg/L	5282
Lead	SW6010B	3/27/2009	1	1	1.0	640	mg/Kg	5045

Client Sample ID: S-1-17 @ 1.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 3:18:00 AM

Lab Sample ID: 0903138-073
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	34	mg/L	5237
Lead (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	44	mg/L	5236
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	ND	mg/L	5282
Lead	SW6010B	3/27/2009	1	1	1.0	920	mg/Kg	5045

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: S-1-17 @ 1.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 3:18:00 AM

Lab Sample ID: 0903138-074
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	2.8	mg/Kg	5045

Client Sample ID: S-1-17 @ 2.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 3:18:00 AM

Lab Sample ID: 0903138-075
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	3.0	mg/Kg	5045

Client Sample ID: S-1-17 @ 3.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 3:18:00 AM

Lab Sample ID: 0903138-076
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	6.9	mg/Kg	5045

Client Sample ID: N-1-10 @ 0.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 9:45:00 PM

Lab Sample ID: 0903138-077
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	22	mg/Kg	5045

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: N-1-10 @ 1.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 9:45:00 PM

Lab Sample ID: 0903138-078
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	1.1	mg/L	5238
Lead (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	ND	mg/L	5236
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	ND	mg/L	5282
Lead	SW6010B	3/27/2009	1	1	1.0	290	mg/Kg	5045

Client Sample ID: N-1-10 @ 1.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 9:45:00 PM

Lab Sample ID: 0903138-079
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	7.4	mg/Kg	5045

Client Sample ID: N-1-10 @ 2.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 9:45:00 PM

Lab Sample ID: 0903138-080
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	5.6	mg/Kg	5045

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: N-1-10 @ 3.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 9:45:00 PM

Lab Sample ID: 0903138-081
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	12	mg/Kg	5045

Client Sample ID: N-1-9 @ 0.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 10:00:00 PM

Lab Sample ID: 0903138-082
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	15	mg/L	5238
Lead (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	67	mg/L	5236
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	0.30	mg/L	5282
Lead	SW6010B	3/27/2009	1	1	1.0	1400	mg/Kg	5045

Client Sample ID: N-1-9 @ 1.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 10:00:00 PM

Lab Sample ID: 0903138-083
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	24	mg/Kg	5045

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: N-1-9 @ 1.5
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 10:00:00 PM

Lab Sample ID: 0903138-084
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	8.7	mg/Kg	5045

Client Sample ID: N-1-9 @ 2.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 10:00:00 PM

Lab Sample ID: 0903138-085
Date Prepared: 3/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/27/2009	1	1	1.0	5.4	mg/Kg	5045

Client Sample ID: N-1-9 @ 3.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 10:00:00 PM

Lab Sample ID: 0903138-086
Date Prepared: 5/30/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	6/1/2009	0.1	1	0.10	1.0	mg/L	5238
Lead (STLC)	6010B (STLC)	5/30/2009	0.1	1	0.10	2.3	mg/L	5236
Lead (TCLP)	6010B (TCLP)	6/14/2009	0.1	1	0.10	ND	mg/L	5282
Lead	SW6010B	3/27/2009	1	1	1.0	120	mg/Kg	5045

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Definitions, legends and Notes

Note	Description
ug/kg	Microgram per kilogram (ppb, part per billion).
ug/L	Microgram per liter (ppb, part per billion).
mg/kg	Milligram per kilogram (ppm, part per million).
mg/L	Milligram per liter (ppm, part per million).
LCS/LCSD	Laboratory control sample/laboratory control sample duplicate.
MDL	Method detection limit.
MRL	Modified reporting limit. When sample is subject to dilution, reporting limit times dilution factor yields MRL.
MS/MSD	Matrix spike/matrix spike duplicate.
N/A	Not applicable.
ND	Not detected at or above detection limit.
NR	Not reported.
QC	Quality Control.
RL	Reporting limit.
% RPD	Percent relative difference.
a	pH was measured immediately upon the receipt of the sample, but it was still done outside the holding time.
sub	Analyzed by subcontracting laboratory, Lab Certificate #

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5202

Sample ID: **MB-5202** SampType: **MBLK** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **5/28/2009** RunNo: **19710**
Client ID: **ZZZZZ** Batch ID: **5202** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **5/29/2009** SeqNo: **284977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (STLC)	ND	0.10									

Sample ID: **LCS-5202** SampType: **LCS** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **5/28/2009** RunNo: **19710**
Client ID: **ZZZZZ** Batch ID: **5202** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **5/29/2009** SeqNo: **284975**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (STLC)	8.910	0.10	10	0.01	89.0	75	125				

Sample ID: **LCSD-5202** SampType: **LCSD** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **5/28/2009** RunNo: **19710**
Client ID: **ZZZZZ** Batch ID: **5202** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **5/29/2009** SeqNo: **284976**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (STLC)	8.940	0.10	10	0.01	89.3	75	125	8.91	0.336	30	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5232

Sample ID: **MB-5232** SampType: **MBLK** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **5/28/2009** RunNo: **19709**
Client ID: **ZZZZZ** Batch ID: **5232** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **5/29/2009** SeqNo: **284952**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	ND	0.10									

Sample ID: **LCS-5232** SampType: **LCS** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **5/28/2009** RunNo: **19709**
Client ID: **ZZZZZ** Batch ID: **5232** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **5/29/2009** SeqNo: **284950**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	10.27	0.10	10	0.01	103	75	125				

Sample ID: **LCSD-5232** SampType: **LCSD** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **5/28/2009** RunNo: **19709**
Client ID: **ZZZZZ** Batch ID: **5232** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **5/29/2009** SeqNo: **284951**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	10.22	0.10	10	0.01	102	75	125	10.27	0.488	30	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5235

Sample ID: **MB-5235** SampType: **MBLK** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **5/30/2009** RunNo: **19717**
Client ID: **ZZZZZ** Batch ID: **5235** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **5/30/2009** SeqNo: **285061**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	ND	0.10									
Lead (STLC)	ND	0.10									

Sample ID: **LCS-5235** SampType: **LCS** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **5/30/2009** RunNo: **19717**
Client ID: **ZZZZZ** Batch ID: **5235** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **5/30/2009** SeqNo: **285059**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	9.530	0.10	10	0.01	95.2	75	125				
Lead (STLC)	9.100	0.10	10	0.01	90.9	75	125				

Sample ID: **LCSD-5235** SampType: **LCSD** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **5/30/2009** RunNo: **19717**
Client ID: **ZZZZZ** Batch ID: **5235** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **5/30/2009** SeqNo: **285060**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	9.730	0.10	10	0.01	97.2	75	125	9.53	2.08	30	
Lead (STLC)	9.300	0.10	10	0.01	92.9	75	125	9.1	2.17	30	

Sample ID: **0903138-010AMS** SampType: **MS** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **5/30/2009** RunNo: **19717**
Client ID: **N-1-7 @ 2.0** Batch ID: **5235** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **5/30/2009** SeqNo: **285039**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	9.150	0.10	10	0.14	90.1	75	125				
Lead (STLC)	13.17	0.10	10	4.39	87.8	75	125				

Sample ID: **0903138-010AMSD** SampType: **MSD** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **5/30/2009** RunNo: **19717**
Client ID: **N-1-7 @ 2.0** Batch ID: **5235** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **5/30/2009** SeqNo: **285040**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	8.970	0.10	10	0.14	88.3	75	125	9.15	1.99	30	
Lead (STLC)	13.19	0.10	10	4.39	88.0	75	125	13.17	0.152	30	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5236

Sample ID: **MB-5236** SampType: **MBLK** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **5/30/2009** RunNo: **19718**
Client ID: **ZZZZZ** Batch ID: **5236** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **5/30/2009** SeqNo: **285079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	ND	0.10									
Lead (STLC)	ND	0.10									

Sample ID: **LCS-5236** SampType: **LCS** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **5/30/2009** RunNo: **19718**
Client ID: **ZZZZZ** Batch ID: **5236** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **5/30/2009** SeqNo: **285077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	9.170	0.10	10	0.01	91.6	75	125				
Lead (STLC)	9.250	0.10	10	0	92.5	75	125				

Sample ID: **LCSD-5236** SampType: **LCSD** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **5/30/2009** RunNo: **19718**
Client ID: **ZZZZZ** Batch ID: **5236** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **5/30/2009** SeqNo: **285078**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	9.250	0.10	10	0.01	92.4	75	125	9.17	0.869	30	
Lead (STLC)	9.330	0.10	10	0	93.3	75	125	9.25	0.861	30	

Sample ID: **0903138-052AMS** SampType: **MS** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **5/30/2009** RunNo: **19718**
Client ID: **S-1-13 @ 0.5** Batch ID: **5236** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **5/30/2009** SeqNo: **285075**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	9.030	0.10	10	0.47	85.6	75	125				
Lead (STLC)	19.50	0.10	10	10.13	93.7	75	125				

Sample ID: **0903138-052AMSD** SampType: **MSD** TestCode: **6010B (STLC)** Units: **mg/L** Prep Date: **5/30/2009** RunNo: **19718**
Client ID: **S-1-13 @ 0.5** Batch ID: **5236** TestNo: **6010B (STLC) (SW3010A)** Analysis Date: **5/30/2009** SeqNo: **285076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	9.690	0.10	10	0.47	92.2	75	125	9.03	7.05	30	
Lead (STLC)	19.41	0.10	10	10.13	92.8	75	125	19.5	0.463	30	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5237

Sample ID: **MB-5237** SampType: **MBLK** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **5/30/2009** RunNo: **19721**
Client ID: **ZZZZZ** Batch ID: **5237** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/1/2009** SeqNo: **285216**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	ND	0.10									

Sample ID: **LCS-5237** SampType: **LCS** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **5/30/2009** RunNo: **19721**
Client ID: **ZZZZZ** Batch ID: **5237** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/1/2009** SeqNo: **285214**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	9.920	0.10	10	0.02	99.0	75	125				

Sample ID: **LCSD-5237** SampType: **LCSD** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **5/30/2009** RunNo: **19721**
Client ID: **ZZZZZ** Batch ID: **5237** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/1/2009** SeqNo: **285215**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	9.630	0.10	10	0.02	96.1	75	125	9.92	2.97	30	

Sample ID: **0903138-025AMS** SampType: **MS** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **5/30/2009** RunNo: **19721**
Client ID: **N-1-4 @ 2.0** Batch ID: **5237** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/1/2009** SeqNo: **285194**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	9.810	0.10	10	0.09	97.2	75	125				

Sample ID: **0903138-025AMSD** SampType: **MSD** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **5/30/2009** RunNo: **19721**
Client ID: **N-1-4 @ 2.0** Batch ID: **5237** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/1/2009** SeqNo: **285195**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	9.870	0.10	10	0.09	97.8	75	125	9.81	0.610	30	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5238

Sample ID: **MB-5238** SampType: **MBLK** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **5/30/2009** RunNo: **19722**
Client ID: **ZZZZZ** Batch ID: **5238** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/1/2009** SeqNo: **285240**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	ND	0.10									

Sample ID: **LCS-5238** SampType: **LCS** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **5/30/2009** RunNo: **19722**
Client ID: **ZZZZZ** Batch ID: **5238** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/1/2009** SeqNo: **285238**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	9.720	0.10	10	0.02	97.0	75	125				

Sample ID: **LCSD-5238** SampType: **LCSD** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **5/30/2009** RunNo: **19722**
Client ID: **ZZZZZ** Batch ID: **5238** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/1/2009** SeqNo: **285239**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	9.830	0.10	10	0.02	98.1	75	125	9.72	1.13	30	

Sample ID: **0903138-078AMS** SampType: **MS** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **5/30/2009** RunNo: **19722**
Client ID: **N-1-10 @ 1.0** Batch ID: **5238** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/1/2009** SeqNo: **285219**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	10.27	0.10	10	1.12	91.5	75	125				

Sample ID: **0903138-078AMSD** SampType: **MSD** TestCode: **6010B (DI-ST** Units: **mg/L** Prep Date: **5/30/2009** RunNo: **19722**
Client ID: **N-1-10 @ 1.0** Batch ID: **5238** TestNo: **6010B (DI-ST (SW3010A)** Analysis Date: **6/1/2009** SeqNo: **285220**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	10.28	0.10	10	1.12	91.6	75	125	10.27	0.0973	30	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5281

Sample ID: **MB-5281** SampType: **MBLK** TestCode: **6010B (TCLP)** Units: **mg/L** Prep Date: **6/12/2009** RunNo: **19872**
Client ID: **ZZZZZ** Batch ID: **5281** TestNo: **6010B (TCLP) (SW3010A)** Analysis Date: **6/13/2009** SeqNo: **287452**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	ND	0.10									

Sample ID: **LCS-5281** SampType: **LCS** TestCode: **6010B (TCLP)** Units: **mg/L** Prep Date: **6/12/2009** RunNo: **19872**
Client ID: **ZZZZZ** Batch ID: **5281** TestNo: **6010B (TCLP) (SW3010A)** Analysis Date: **6/13/2009** SeqNo: **287450**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	9.930	0.10	10	0	99.3	75	125				

Sample ID: **LCSD-5281** SampType: **LCSD** TestCode: **6010B (TCLP)** Units: **mg/L** Prep Date: **6/12/2009** RunNo: **19872**
Client ID: **ZZZZZ** Batch ID: **5281** TestNo: **6010B (TCLP) (SW3010A)** Analysis Date: **6/13/2009** SeqNo: **287451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	9.800	0.10	10	0	98.0	75	125	9.93	1.32	30	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903138
Project: Hwy 101-Aux Lane

ANALYTICAL QC SUMMARY REPORT

BatchID: 5282

Sample ID: **MB-5282** SampType: **MBLK** TestCode: **6010B (TCLP)** Units: **mg/L** Prep Date: **6/14/2009** RunNo: **19874**
Client ID: **ZZZZZ** Batch ID: **5282** TestNo: **6010B (TCLP) (SW3010A)** Analysis Date: **6/14/2009** SeqNo: **287493**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	ND	0.10									

Sample ID: **LCS-5282** SampType: **LCS** TestCode: **6010B (TCLP)** Units: **mg/L** Prep Date: **6/14/2009** RunNo: **19874**
Client ID: **ZZZZZ** Batch ID: **5282** TestNo: **6010B (TCLP) (SW3010A)** Analysis Date: **6/14/2009** SeqNo: **287491**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	10.37	0.10	10	0	104	75	125				

Sample ID: **LCSD-5282** SampType: **LCSD** TestCode: **6010B (TCLP)** Units: **mg/L** Prep Date: **6/14/2009** RunNo: **19874**
Client ID: **ZZZZZ** Batch ID: **5282** TestNo: **6010B (TCLP) (SW3010A)** Analysis Date: **6/14/2009** SeqNo: **287492**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	11.13	0.10	10	0	111	75	125	10.37	7.07	30	

Sample ID: **0903138-067AMS** SampType: **MS** TestCode: **6010B (TCLP)** Units: **mg/L** Prep Date: **6/14/2009** RunNo: **19874**
Client ID: **S-1-16 @ 0.5** Batch ID: **5282** TestNo: **6010B (TCLP) (SW3010A)** Analysis Date: **6/14/2009** SeqNo: **287471**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	9.440	0.10	10	0	94.4	75	125				

Sample ID: **0903138-067AMSD** SampType: **MSD** TestCode: **6010B (TCLP)** Units: **mg/L** Prep Date: **6/14/2009** RunNo: **19874**
Client ID: **S-1-16 @ 0.5** Batch ID: **5282** TestNo: **6010B (TCLP) (SW3010A)** Analysis Date: **6/14/2009** SeqNo: **287472**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	8.810	0.10	10	0	88.1	75	125	9.44	6.90	30	

Qualifiers:
3 Recovery of the MS and/or MSD was out of control due t
4 The MS/MSD RPD was out of control due to matrix inter
Q Spike recovery and RPD control limits do not apply result
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

TORRENT LABORATORY, INC.

483 Sinclair Frontage Road • Milpitas, CA • Phone: (408) 263-5258 • Fax: (408) 263-8293

Visit us at www.torrentlab.com email: analysis@torrentlab.com

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/24/2009
Date Reported: 6/18/2009

Client Sample ID: N-1-4 @ 2.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 12:20:00 AM

Lab Sample ID: 0903138-025
Date Prepared: 5/14/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Chromium, Hexavalent	SW7199	5/14/2009	0.02	1	0.020	ND	mg/Kg	R19588

Client Sample ID: S-1-14 @ 3.0
Sample Location: Hwy 101-Aux lanes
Sample Matrix: SOIL
Date/Time Sampled 3/24/2009 2:45:00 AM

Lab Sample ID: 0903138-061
Date Prepared: 5/14/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Chromium, Hexavalent	SW7199	5/14/2009	0.02	1	0.020	ND	mg/Kg	R19588

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Definitions, legends and Notes

Note	Description
ug/kg	Microgram per kilogram (ppb, part per billion).
ug/L	Microgram per liter (ppb, part per billion).
mg/kg	Milligram per kilogram (ppm, part per million).
mg/L	Milligram per liter (ppm, part per million).
LCS/LCSD	Laboratory control sample/laboratory control sample duplicate.
MDL	Method detection limit.
MRL	Modified reporting limit. When sample is subject to dilution, reporting limit times dilution factor yields MRL.
MS/MSD	Matrix spike/matrix spike duplicate.
N/A	Not applicable.
ND	Not detected at or above detection limit.
NR	Not reported.
QC	Quality Control.
RL	Reporting limit.
% RPD	Percent relative difference.
a	pH was measured immediately upon the receipt of the sample, but it was still done outside the holding time.
sub	Analyzed by subcontracting laboratory, Lab Certificate #

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

EMSL Analytical, Inc
2235 Polvorosa Ave , Suite 230, San Leandro, CA 94577
Phone: (510) 895-3675 Fax: (510) 895-3680 Email: milpitaslab@emsl.com

Attn: **Nutan Kabir**
Torrent Laboratory, Inc.
483 Sinclair Frontage Rd.
Milpitas, CA 95035

Fax: (408) 263-8293 Phone: (408) 263-5258
Project: **0903131, 0903138**

Customer ID: TORR80
Customer PO: 0903131,0903138
Received: 03/25/09 9:00 AM
EMSL Order: 090902214

EMSL Proj:
Analysis Date: 6/2/2009

PLM Analysis of Bulk Samples for Asbestos via EPA 600/R-93/116 Method with CARB 435 Prep (Milling) Level A for 0.25% Target Analytical Sensitivity

			Non-Asbestos		Asbestos	
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**	
0903131-008A *090902214-0003*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**<0.25% Chrysotile**	
0903131-031A *090902214-0006*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**<0.25% Chrysotile**	
0903131-032A *090902214-0007*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**<0.25% Chrysotile**	
0903138-007A *090902214-0016*		Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**<0.25% Chrysotile**	

Analyst(s)
Jorge Leon (4)

Baojia Ke, Laboratory Manager
or other approved signatory

This report relates only to the samples listed above and may not be reproduced except in full, without EMSL's written approval. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. EMSL is not responsible for sample collection activities or method limitations. Some samples may contain asbestos fibers below the resolution limit of PLM. EMSL recommends that samples reported as none detected or less than the limit of detection undergo additional analysis via TEM.Samples received in good condition unless otherwise noted.

THIS IS THE LAST PAGE OF THE REPORT.

Torrent
LABORATORY, INC.

June 16, 2009

Patrick Walz
URS Corporation, San Jose
55 South Market St., Suite 1500
San Jose, CA 95113

TEL: (408) 297-9585
FAX (408) 297-6962

RE: Hwy 101 Aux Lanes

Order No.: 0903131

Dear Patrick Walz:

Torrent Laboratory, Inc. received 65 samples on 3/23/2009 for the analyses presented in the following report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.
Reported data is applicable for only the samples received as part of the order number referenced above.

Torrent Laboratory, Inc, is certified by the State of California, ELAP #1991. If you have any questions regarding these tests results, please feel free to contact the Project Management Team at (408)263-5258;ext: 204.

Sincerely,

Laboratory Director 6/16/09
Date

Patti Sandrock
QA Officer

Torrent Laboratory, Inc. **Date:** *16-Jun-09*

CLIENT: URS Corporation, San Jose
Project: Hwy 101 Aux Lanes
Lab Order: 0903131

CASE NARRATIVE

Analytical Comments for Asbestos, PLM Note: Analysis performed by NVLAP Certified sub-contract laboratory. (Certification # 101048-3).

Analytical Comment for METHOD 6010B_S, 0903131-018A MS/MSD, QC Batch ID 19029, Note:The % recoveries in the MS/MSD for Barium and Chromium are outside of laboratory control limits but within % RPD limits and % recovery limits for the LCS/LCSD. A post digestion spike on the parent sample was anlayzed and all parameters were recovered within control limits indicating probably non-homogenity of the samples. No corrective action is required.

Analytical Comment for METHOD 6010B_S, 0903131-037A MS/MSD, QC Batch ID 19034, Note:The % recoveries in the MS for Barium, Copper, Nickel and Zinc and in the MSD for Barium, Chromium, Copper, Nickel and Zinc are outside of laboratory control limits but within % RPD limits and % recovery limits for the LCS/LCSD. A post digestion spike on the parent sample was anlayzed and all parameters were recovered within control limits indicating probably non-homogenity of the samples. No corrective action is required.

Analytical Comment for METHOD 6010B_S, 0903131-037A MS/MSD, QC Batch ID 19034, Note:The % recoveries in the MS/MSD for Lead are not recoverable. The sample concentration is greater than 4X the spike concentration. No corrective action is required.

Analytical Comment for METHOD 6010B_S, 0903131-56A MS/MSD, QC Batch ID 19036, Note:The % recoveries and % RPD in the MS/MSD for Lead are outside of laboratory control limits but are within % recovery limits and % RPD limits for the LCS/LCSD.

Per Client request pH analyzed and reported for samples 011A to 015A.

Note: although pH was measured upon requests, the samples were received outside of the recommended holding time (7 days from collection).

Rev1 4/16/09

Per clienr request, STLC, DI STLC and TCLP analysis was added to specified samples. Due to insufficient sample mass available, no TCLP was performed on requested sample -001 (N-2-1@0.5). Due to limited smaple available for all samples, STLC, DI STLC and TCLP was performed using only 25 g of homogenized sample.

CASE NARRATIVE

Note: Extraction of 25 g sample / 250g 0.2M Sodium Citrate Solution was performed according to DI wet extraction procedure (WET) which was rotated in a rotary shaker for 48 hours.

Extraction started on 05/15/2009 @ 6.00 PM and ended on 05/17/2009 @ 6:00 PM

Note: Extraction of 25 g sample / 250g 0.2M Sodium Citrate Solution was performed according to DI wet extraction procedure (WET) which was rotated in a rotary shaker for 48 hours.

Extraction started on 05/15/2009 @ 6.00 PM and ended on 05/17/2009 @ 6:00 PM

Note: Extraction of 25 g sample / 500g TCLP Fluid #1 was performed according to Toxicity Characteristic Leaching Procedure (TCLP) which was rotated in a rotary shaker for 18 hours.

Extraction started on 06/09/2009 @ 5.35 PM and ended on 06/10/2009 @ 11:35 AM

TORRENT LABORATORY, INC.

483 Sinclair Frontage Road • Milpitas, CA • Phone: (408) 263-5258 • Fax: (408) 263-8293

Visit us at www.torrentlab.com email: analysis@torrentlab.com

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/23/2009
Date Reported: 6/16/2009

Client Sample ID: N-2-1@0.5
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/22/2009 10:45:00 PM

Lab Sample ID: 0903131-001
Date Prepared: 5/20/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/21/2009	0.1	1	0.10	ND	mg/L	5203
Lead (STLC)	6010B (STLC)	5/21/2009	0.1	1	0.10	28	mg/L	5201
Lead	SW6010B	3/24/2009	1	1	1.0	540	mg/Kg	5032

Client Sample ID: N-2-1@1.0
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/22/2009 10:45:00 PM

Lab Sample ID: 0903131-002
Date Prepared: 3/23/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/24/2009	1	1	1.0	29	mg/Kg	5032

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/23/2009
Date Reported: 6/16/2009

Client Sample ID: N-2-1@1.5
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/22/2009 10:45:00 PM

Lab Sample ID: 0903131-003
Date Prepared: 5/20/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/21/2009	0.1	1	0.10	ND	mg/L	5203
Lead (STLC)	6010B (STLC)	5/21/2009	0.1	1	0.10	0.21	mg/L	5201
Lead (TCLP)	6010B (TCLP)	6/11/2009	0.1	1	0.10	ND	mg/L	5276
Lead	SW6010B	3/24/2009	1	1	1.0	190	mg/Kg	5032

Client Sample ID: N-2-1@2.0
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/22/2009 10:45:00 PM

Lab Sample ID: 0903131-004
Date Prepared: 3/23/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/24/2009	1	1	1.0	5.5	mg/Kg	5032

Client Sample ID: N-2-1@3.0
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/22/2009 10:45:00 PM

Lab Sample ID: 0903131-005
Date Prepared: 3/23/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/24/2009	1	1	1.0	5.0	mg/Kg	5032

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/23/2009
Date Reported: 6/16/2009

Client Sample ID: N-1-20@0.5
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/22/2009 11:20:00 PM

Lab Sample ID: 0903131-006
Date Prepared: 5/20/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/21/2009	0.1	1	0.10	3.3	mg/L	5203
Lead (STLC)	6010B (STLC)	5/21/2009	0.1	1	0.10	190	mg/L	5201
Lead (TCLP)	6010B (TCLP)	6/11/2009	0.1	1	0.10	2.4	mg/L	5276
Lead	SW6010B	3/24/2009	1	1	1.0	640	mg/Kg	5032

Client Sample ID: N-1-20@1.0
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/22/2009 11:20:00 PM

Lab Sample ID: 0903131-007
Date Prepared: 5/20/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/21/2009	0.1	1	0.10	ND	mg/L	5203
Lead (STLC)	6010B (STLC)	5/21/2009	0.1	1	0.10	94	mg/L	5201
Lead (TCLP)	6010B (TCLP)	6/11/2009	0.1	1	0.10	0.64	mg/L	5276
Lead	SW6010B	3/24/2009	1	1	1.0	1200	mg/Kg	5032

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/23/2009
Date Reported: 6/16/2009

Client Sample ID: N-1-20@1.5
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/22/2009 11:20:00 PM

Lab Sample ID: 0903131-008
Date Prepared: 5/20/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/21/2009	0.1	1	0.10	ND	mg/L	5203
Lead (STLC)	6010B (STLC)	5/21/2009	0.1	1	0.10	63	mg/L	5201
Lead (TCLP)	6010B (TCLP)	6/11/2009	0.1	1	0.10	1.8	mg/L	5276
Lead	SW6010B	3/24/2009	1	1	1.0	2300	mg/Kg	5032

Client Sample ID: N-1-20@2.0
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/22/2009 11:20:00 PM

Lab Sample ID: 0903131-009
Date Prepared: 5/20/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/21/2009	0.1	1	0.10	ND	mg/L	5203
Lead (STLC)	6010B (STLC)	5/21/2009	0.1	1	0.10	9.3	mg/L	5201
Lead (TCLP)	6010B (TCLP)	6/11/2009	0.1	1	0.10	ND	mg/L	5276
Lead	SW6010B	3/24/2009	1	1	1.0	120	mg/Kg	5032

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for:	Patrick Walz	**Date Received:**	3/23/2009
	URS Corporation, San Jose	**Date Reported:**	6/16/2009

Client Sample ID:	N-1-20@3.0	**Lab Sample ID:**	0903131-010
Sample Location:	Hwy 101 Aux Lanes	**Date Prepared:**	3/23/2009
Sample Matrix:	SOIL		
Date/Time Sampled	3/22/2009 11:20:00 PM		

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/24/2009	1	1	1.0	22	mg/Kg	5032

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/23/2009
Date Reported: 6/16/2009

Client Sample ID: N-2-2@0.5
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/22/2009 9:15:00 PM

Lab Sample ID: 0903131-011
Date Prepared: 3/23/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	3/24/2009	5	1	5.0	ND	mg/Kg	5032
Arsenic	SW6010B	3/24/2009	1.7	1	1.7	1.8	mg/Kg	5032
Barium	SW6010B	3/24/2009	5	1	5.0	190	mg/Kg	5032
Beryllium	SW6010B	3/24/2009	2	1	2.0	ND	mg/Kg	5032
Cadmium	SW6010B	3/24/2009	1	1	1.0	ND	mg/Kg	5032
Chromium	SW6010B	3/24/2009	5	1	5.0	46	mg/Kg	5032
Cobalt	SW6010B	3/24/2009	5	1	5.0	11	mg/Kg	5032
Copper	SW6010B	3/24/2009	5	1	5.0	43	mg/Kg	5032
Lead	SW6010B	3/24/2009	1	1	1.0	30	mg/Kg	5032
Molybdenum	SW6010B	3/24/2009	5	1	5.0	ND	mg/Kg	5032
Nickel	SW6010B	3/24/2009	5	1	5.0	46	mg/Kg	5032
Selenium	SW6010B	3/24/2009	5	1	5.0	ND	mg/Kg	5032
Silver	SW6010B	3/24/2009	1	1	1.0	1.6	mg/Kg	5032
Thallium	SW6010B	3/24/2009	5	1	5.0	ND	mg/Kg	5032
Vanadium	SW6010B	3/24/2009	5	1	5.0	37	mg/Kg	5032
Zinc	SW6010B	3/24/2009	5	1	5.0	54	mg/Kg	5032
Mercury	SW7471A	3/24/2009	0.1	1	0.10	0.11	mg/Kg	5033
TPH (Diesel)	SW8015B	3/26/2009	2	1	2.00	ND	mg/Kg	R19060
TPH (Motor Oil)	SW8015B	3/26/2009	4	1	4.00	16.8	mg/Kg	R19060
Surr: Pentacosane	SW8015B	3/26/2009	0	1	59.7-129	87.5	%REC	R19060

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

4,4´-DDD	SW8081A	3/28/2009	2	1	2.00	ND	µg/Kg	R19073
4,4´-DDE	SW8081A	3/28/2009	2	1	2.00	ND	µg/Kg	R19073
4,4´-DDT	SW8081A	3/28/2009	2	1	2.00	ND	µg/Kg	R19073
Aldrin	SW8081A	3/28/2009	2	1	2.00	ND	µg/Kg	R19073
alpha-BHC	SW8081A	3/28/2009	2	1	2.00	ND	µg/Kg	R19073
alpha-Chlordane	SW8081A	3/28/2009	2	1	2.00	ND	µg/Kg	R19073
beta-BHC	SW8081A	3/28/2009	2	1	2.00	ND	µg/Kg	R19073
Chlordane	SW8081A	3/28/2009	20	1	20.0	ND	µg/Kg	R19073
delta-BHC	SW8081A	3/28/2009	2	1	2.00	ND	µg/Kg	R19073
Dieldrin	SW8081A	3/28/2009	2	1	2.00	ND	µg/Kg	R19073
Endosulfan I	SW8081A	3/28/2009	2	1	2.00	ND	µg/Kg	R19073
Endosulfan II	SW8081A	3/28/2009	2	1	2.00	ND	µg/Kg	R19073
Endosulfan sulfate	SW8081A	3/28/2009	2	1	2.00	ND	µg/Kg	R19073
Endrin	SW8081A	3/28/2009	2	1	2.00	ND	µg/Kg	R19073
Endrin aldehyde	SW8081A	3/28/2009	2	1	2.00	ND	µg/Kg	R19073
Endrin ketone	SW8081A	3/28/2009	2	1	2.00	ND	µg/Kg	R19073
gamma-BHC	SW8081A	3/28/2009	2	1	2.00	ND	µg/Kg	R19073
gamma-Chlordane	SW8081A	3/28/2009	2	1	2.00	ND	µg/Kg	R19073
Heptachlor	SW8081A	3/28/2009	2	1	2.00	ND	µg/Kg	R19073
Heptachlor epoxide	SW8081A	3/28/2009	2	1	2.00	ND	µg/Kg	R19073
Methoxychlor	SW8081A	3/28/2009	5	1	5.00	ND	µg/Kg	R19073
Toxaphene	SW8081A	3/28/2009	100	1	100	ND	µg/Kg	R19073
Surr: Decachlorobiphenyl	SW8081A	3/28/2009	0	1	54.6-127	87.5	%REC	R19073
Surr: Tetrachloro-m-xylene	SW8081A	3/28/2009	0	1	54-122	85.0	%REC	R19073
Aroclor 1016	SW8082	3/28/2009	0.1	1	0.100	ND	mg/Kg	R19084
Aroclor 1221	SW8082	3/28/2009	0.2	1	0.200	ND	mg/Kg	R19084
Aroclor 1232	SW8082	3/28/2009	0.1	1	0.100	ND	mg/Kg	R19084
Aroclor 1242	SW8082	3/28/2009	0.1	1	0.100	ND	mg/Kg	R19084
Aroclor 1248	SW8082	3/28/2009	0.1	1	0.100	ND	mg/Kg	R19084
Aroclor 1254	SW8082	3/28/2009	0.1	1	0.100	ND	mg/Kg	R19084
Aroclor 1260	SW8082	3/28/2009	0.1	1	0.100	ND	mg/Kg	R19084
Surr: Decachlorobiphenyl	SW8082	3/28/2009	0	1	63.7-126	92.2	%REC	R19084
Surr: Tetrachloro-m-xylene	SW8082	3/28/2009	0	1	51.7-128	92.7	%REC	R19084
pH	SW9045C	4/15/2009	0.05	1	0.0500	8.40	pH Units	R19257

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/23/2009
Date Reported: 6/16/2009

Client Sample ID: N-2-2@1.0
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/22/2009 9:15:00 PM

Lab Sample ID: 0903131-012
Date Prepared: 3/23/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	3/24/2009	5	1	5.0	ND	mg/Kg	5032
Arsenic	SW6010B	3/24/2009	1.7	1	1.7	4.9	mg/Kg	5032
Barium	SW6010B	3/24/2009	5	1	5.0	140	mg/Kg	5032
Beryllium	SW6010B	3/24/2009	2	1	2.0	ND	mg/Kg	5032
Cadmium	SW6010B	3/24/2009	1	1	1.0	ND	mg/Kg	5032
Chromium	SW6010B	3/24/2009	5	1	5.0	30	mg/Kg	5032
Cobalt	SW6010B	3/24/2009	5	1	5.0	7.7	mg/Kg	5032
Copper	SW6010B	3/24/2009	5	1	5.0	69	mg/Kg	5032
Lead	SW6010B	3/24/2009	1	1	1.0	38	mg/Kg	5032
Molybdenum	SW6010B	3/24/2009	5	1	5.0	ND	mg/Kg	5032
Nickel	SW6010B	3/24/2009	5	1	5.0	40	mg/Kg	5032
Selenium	SW6010B	3/24/2009	5	1	5.0	ND	mg/Kg	5032
Silver	SW6010B	3/24/2009	1	1	1.0	ND	mg/Kg	5032
Thallium	SW6010B	3/24/2009	5	1	5.0	ND	mg/Kg	5032
Vanadium	SW6010B	3/24/2009	5	1	5.0	26	mg/Kg	5032
Zinc	SW6010B	3/24/2009	5	1	5.0	50	mg/Kg	5032
Mercury	SW7471A	3/24/2009	0.1	1	0.10	ND	mg/Kg	5033
Benzene	SW8260B	3/23/2009	10	1	10	ND	µg/Kg	R19021
Diisopropyl ether (DIPE)	SW8260B	3/23/2009	10	1	10	ND	µg/Kg	R19021
Ethyl tert-butyl ether (ETBE)	SW8260B	3/23/2009	10	1	10	ND	µg/Kg	R19021
Ethylbenzene	SW8260B	3/23/2009	10	1	10	ND	µg/Kg	R19021
Methyl tert-butyl ether (MTBE)	SW8260B	3/23/2009	10	1	10	ND	µg/Kg	R19021
t-Butyl alcohol (t-Butanol)	SW8260B	3/23/2009	50	1	50	ND	µg/Kg	R19021
tert-Amyl methyl ether (TAME)	SW8260B	3/23/2009	10	1	10	ND	µg/Kg	R19021
Toluene	SW8260B	3/23/2009	10	1	10	ND	µg/Kg	R19021
Xylenes, Total	SW8260B	3/23/2009	15	1	15	ND	µg/Kg	R19021
Surr: 4-Bromofluorobenzene	SW8260B	3/23/2009	0	1	55.8-141	95.1	%REC	R19021
Surr: Dibromofluoromethane	SW8260B	3/23/2009	0	1	59.8-148	95.5	%REC	R19021
Surr: Toluene-d8	SW8260B	3/23/2009	0	1	55.2-133	92.9	%REC	R19021
TPH (Gasoline)	SW8260B(TPH)	3/23/2009	100	1	100	ND	µg/Kg	G19021
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	3/23/2009	0	1	56.9-133	84.0	%REC	G19021
pH	SW9045C	4/15/2009	0.05	1	0.0500	8.28	pH Units	R19257

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/23/2009
Date Reported: 6/16/2009

Client Sample ID: N-2-2@1.5
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/22/2009 9:15:00 PM

Lab Sample ID: 0903131-013
Date Prepared: 3/23/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	3/24/2009	5	1	5.0	ND	mg/Kg	5032
Arsenic	SW6010B	3/24/2009	1.7	1	1.7	36	mg/Kg	5032
Barium	SW6010B	3/24/2009	5	1	5.0	270	mg/Kg	5032
Beryllium	SW6010B	3/24/2009	2	1	2.0	ND	mg/Kg	5032
Cadmium	SW6010B	3/24/2009	1	1	1.0	1.2	mg/Kg	5032
Chromium	SW6010B	3/24/2009	5	1	5.0	35	mg/Kg	5032
Cobalt	SW6010B	3/24/2009	5	1	5.0	13	mg/Kg	5032
Copper	SW6010B	3/24/2009	5	1	5.0	52	mg/Kg	5032
Lead	SW6010B	3/24/2009	1	1	1.0	35	mg/Kg	5032
Molybdenum	SW6010B	3/24/2009	5	1	5.0	ND	mg/Kg	5032
Nickel	SW6010B	3/24/2009	5	1	5.0	51	mg/Kg	5032
Selenium	SW6010B	3/24/2009	5	1	5.0	ND	mg/Kg	5032
Silver	SW6010B	3/24/2009	1	1	1.0	ND	mg/Kg	5032
Thallium	SW6010B	3/24/2009	5	1	5.0	ND	mg/Kg	5032
Vanadium	SW6010B	3/24/2009	5	1	5.0	34	mg/Kg	5032
Zinc	SW6010B	3/24/2009	5	1	5.0	54	mg/Kg	5032
Mercury	SW7471A	3/24/2009	0.1	1	0.10	ND	mg/Kg	5033
Benzene	SW8260B	3/23/2009	10	1	10	ND	µg/Kg	R19021
Diisopropyl ether (DIPE)	SW8260B	3/23/2009	10	1	10	ND	µg/Kg	R19021
Ethyl tert-butyl ether (ETBE)	SW8260B	3/23/2009	10	1	10	ND	µg/Kg	R19021
Ethylbenzene	SW8260B	3/23/2009	10	1	10	ND	µg/Kg	R19021
Methyl tert-butyl ether (MTBE)	SW8260B	3/23/2009	10	1	10	ND	µg/Kg	R19021
t-Butyl alcohol (t-Butanol)	SW8260B	3/23/2009	50	1	50	ND	µg/Kg	R19021
tert-Amyl methyl ether (TAME)	SW8260B	3/23/2009	10	1	10	ND	µg/Kg	R19021
Toluene	SW8260B	3/23/2009	10	1	10	ND	µg/Kg	R19021
Xylenes, Total	SW8260B	3/23/2009	15	1	15	ND	µg/Kg	R19021
Surr: 4-Bromofluorobenzene	SW8260B	3/23/2009	0	1	55.8-141	89.3	%REC	R19021
Surr: Dibromofluoromethane	SW8260B	3/23/2009	0	1	59.8-148	96.6	%REC	R19021
Surr: Toluene-d8	SW8260B	3/23/2009	0	1	55.2-133	93.1	%REC	R19021
TPH (Gasoline)	SW8260B(TPH)	3/23/2009	100	1	100	ND	µg/Kg	G19021
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	3/23/2009	0	1	56.9-133	76.0	%REC	G19021
pH	SW9045C	4/15/2009	0.05	1	0.0500	8.22	pH Units	R19257

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/23/2009
Date Reported: 6/16/2009

Client Sample ID: N-2-2@2.0
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/22/2009 9:15:00 PM

Lab Sample ID: 0903131-014
Date Prepared: 3/23/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	3/24/2009	5	1	5.0	ND	mg/Kg	5032
Arsenic	SW6010B	3/24/2009	1.7	1	1.7	5.4	mg/Kg	5032
Barium	SW6010B	3/24/2009	5	1	5.0	150	mg/Kg	5032
Beryllium	SW6010B	3/24/2009	2	1	2.0	ND	mg/Kg	5032
Cadmium	SW6010B	3/24/2009	1	1	1.0	ND	mg/Kg	5032
Chromium	SW6010B	3/24/2009	5	1	5.0	42	mg/Kg	5032
Cobalt	SW6010B	3/24/2009	5	1	5.0	11	mg/Kg	5032
Copper	SW6010B	3/24/2009	5	1	5.0	60	mg/Kg	5032
Lead	SW6010B	3/24/2009	1	1	1.0	43	mg/Kg	5032
Molybdenum	SW6010B	3/24/2009	5	1	5.0	ND	mg/Kg	5032
Nickel	SW6010B	3/24/2009	5	1	5.0	53	mg/Kg	5032
Selenium	SW6010B	3/24/2009	5	1	5.0	ND	mg/Kg	5032
Silver	SW6010B	3/24/2009	1	1	1.0	ND	mg/Kg	5032
Thallium	SW6010B	3/24/2009	5	1	5.0	ND	mg/Kg	5032
Vanadium	SW6010B	3/24/2009	5	1	5.0	37	mg/Kg	5032
Zinc	SW6010B	3/24/2009	5	1	5.0	62	mg/Kg	5032
Mercury	SW7471A	3/24/2009	0.1	1	0.10	0.63	mg/Kg	5033
Benzene	SW8260B	3/23/2009	10	1	10	ND	µg/Kg	R19021
Diisopropyl ether (DIPE)	SW8260B	3/23/2009	10	1	10	ND	µg/Kg	R19021
Ethyl tert-butyl ether (ETBE)	SW8260B	3/23/2009	10	1	10	ND	µg/Kg	R19021
Ethylbenzene	SW8260B	3/23/2009	10	1	10	ND	µg/Kg	R19021
Methyl tert-butyl ether (MTBE)	SW8260B	3/23/2009	10	1	10	ND	µg/Kg	R19021
t-Butyl alcohol (t-Butanol)	SW8260B	3/23/2009	50	1	50	ND	µg/Kg	R19021
tert-Amyl methyl ether (TAME)	SW8260B	3/23/2009	10	1	10	ND	µg/Kg	R19021
Toluene	SW8260B	3/23/2009	10	1	10	ND	µg/Kg	R19021
Xylenes, Total	SW8260B	3/23/2009	15	1	15	ND	µg/Kg	R19021
Surr: 4-Bromofluorobenzene	SW8260B	3/23/2009	0	1	55.8-141	102	%REC	R19021
Surr: Dibromofluoromethane	SW8260B	3/23/2009	0	1	59.8-148	96.5	%REC	R19021
Surr: Toluene-d8	SW8260B	3/23/2009	0	1	55.2-133	102	%REC	R19021
TPH (Gasoline)	SW8260B(TPH)	3/23/2009	100	1	100	ND	µg/Kg	G19021
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	3/23/2009	0	1	56.9-133	72.0	%REC	G19021
pH	SW9045C	4/15/2009	0.05	1	0.0500	8.08	pH Units	R19257

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/23/2009
Date Reported: 6/16/2009

Client Sample ID: N-2-2@3.0
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/22/2009 9:15:00 PM

Lab Sample ID: 0903131-015
Date Prepared: 5/20/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Chromium (STLC)	6010B (STLC)	5/21/2009	0.1	1	0.10	0.13	mg/L	5201
Antimony	SW6010B	3/24/2009	5	1	5.0	ND	mg/Kg	5032
Arsenic	SW6010B	3/24/2009	1.7	1	1.7	2.6	mg/Kg	5032
Barium	SW6010B	3/24/2009	5	1	5.0	170	mg/Kg	5032
Beryllium	SW6010B	3/24/2009	2	1	2.0	ND	mg/Kg	5032
Cadmium	SW6010B	3/24/2009	1	1	1.0	ND	mg/Kg	5032
Chromium	SW6010B	3/24/2009	5	1	5.0	56	mg/Kg	5032
Cobalt	SW6010B	3/24/2009	5	1	5.0	11	mg/Kg	5032
Copper	SW6010B	3/24/2009	5	1	5.0	28	mg/Kg	5032
Lead	SW6010B	3/24/2009	1	1	1.0	18	mg/Kg	5032
Molybdenum	SW6010B	3/24/2009	5	1	5.0	ND	mg/Kg	5032
Nickel	SW6010B	3/24/2009	5	1	5.0	48	mg/Kg	5032
Selenium	SW6010B	3/24/2009	5	1	5.0	ND	mg/Kg	5032
Silver	SW6010B	3/24/2009	1	1	1.0	2.2	mg/Kg	5032
Thallium	SW6010B	3/24/2009	5	1	5.0	ND	mg/Kg	5032
Vanadium	SW6010B	3/24/2009	5	1	5.0	41	mg/Kg	5032
Zinc	SW6010B	3/24/2009	5	1	5.0	46	mg/Kg	5032
Mercury	SW7471A	3/24/2009	0.1	1	0.10	ND	mg/Kg	5033
Benzene	SW8260B	3/23/2009	10	1	10	ND	µg/Kg	R19021
Diisopropyl ether (DIPE)	SW8260B	3/23/2009	10	1	10	ND	µg/Kg	R19021
Ethyl tert-butyl ether (ETBE)	SW8260B	3/23/2009	10	1	10	ND	µg/Kg	R19021
Ethylbenzene	SW8260B	3/23/2009	10	1	10	ND	µg/Kg	R19021
Methyl tert-butyl ether (MTBE)	SW8260B	3/23/2009	10	1	10	ND	µg/Kg	R19021
t-Butyl alcohol (t-Butanol)	SW8260B	3/23/2009	50	1	50	ND	µg/Kg	R19021
tert-Amyl methyl ether (TAME)	SW8260B	3/23/2009	10	1	10	ND	µg/Kg	R19021
Toluene	SW8260B	3/23/2009	10	1	10	ND	µg/Kg	R19021
Xylenes, Total	SW8260B	3/23/2009	15	1	15	ND	µg/Kg	R19021
Surr: 4-Bromofluorobenzene	SW8260B	3/23/2009	0	1	55.8-141	89.9	%REC	R19021
Surr: Dibromofluoromethane	SW8260B	3/23/2009	0	1	59.8-148	107	%REC	R19021
Surr: Toluene-d8	SW8260B	3/23/2009	0	1	55.2-133	109	%REC	R19021
TPH (Gasoline)	SW8260B(TPH)	3/23/2009	100	1	100	ND	µg/Kg	G19021
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	3/23/2009	0	1	56.9-133	40.0	%REC	G19021

Note: S- Outlying surrogate recovery observed. A dulpicate analysis was performed with similar result indicated a matrix effect.

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

pH	SW9045C	4/15/2009	0.05	1	0.0500	8.46	pH Units	R19257

Client Sample ID: N-2-4@0.5
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/22/2009 10:20:00 PM

Lab Sample ID: 0903131-016
Date Prepared: 5/20/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/21/2009	0.1	1	0.10	0.34	mg/L	5203
Lead (STLC)	6010B (STLC)	5/21/2009	0.1	1	0.10	110	mg/L	5201
Lead (TCLP)	6010B (TCLP)	6/11/2009	0.1	1	0.10	0.41	mg/L	5276
Lead	SW6010B	3/24/2009	1	1	1.0	2600	mg/Kg	5032

Client Sample ID: N-2-4@1.0
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/22/2009 10:20:00 PM

Lab Sample ID: 0903131-017
Date Prepared: 5/20/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/21/2009	0.1	1	0.10	ND	mg/L	5203
Lead (STLC)	6010B (STLC)	5/21/2009	0.1	1	0.10	4.4	mg/L	5201
Lead (TCLP)	6010B (TCLP)	6/11/2009	0.1	1	0.10	ND	mg/L	5276
Lead	SW6010B	3/24/2009	1	1	1.0	100	mg/Kg	5032

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/23/2009
Date Reported: 6/16/2009

Client Sample ID: N-2-4@1.5
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/22/2009 10:20:00 PM

Lab Sample ID: 0903131-018
Date Prepared: 5/20/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/21/2009	0.1	1	0.10	ND	mg/L	5203
Lead (STLC)	6010B (STLC)	5/21/2009	0.1	1	0.10	2.3	mg/L	5201
Lead	SW6010B	3/24/2009	1	1	1.0	78	mg/Kg	5036

Client Sample ID: N-2-4@2.0
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/22/2009 10:20:00 PM

Lab Sample ID: 0903131-019
Date Prepared: 5/20/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/21/2009	0.1	1	0.10	ND	mg/L	5203
Lead (STLC)	6010B (STLC)	5/21/2009	0.1	1	0.10	0.24	mg/L	5201
Lead	SW6010B	3/24/2009	1	1	1.0	62	mg/Kg	5036

Client Sample ID: N-2-4@3.0
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/22/2009 10:20:00 PM

Lab Sample ID: 0903131-020
Date Prepared: 3/24/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/24/2009	1	1	1.0	4.6	mg/Kg	5036

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/23/2009
Date Reported: 6/16/2009

Client Sample ID: N-1-13@0.5
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 3:00:00 AM

Lab Sample ID: 0903131-021
Date Prepared: 5/20/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/21/2009	0.1	1	0.10	ND	mg/L	5203
Lead (STLC)	6010B (STLC)	5/21/2009	0.1	1	0.10	22	mg/L	5201
Lead (TCLP)	6010B (TCLP)	6/11/2009	0.1	1	0.10	ND	mg/L	5276
Lead	SW6010B	3/24/2009	1	1	1.0	840	mg/Kg	5036

Client Sample ID: N-1-13@1.0
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 3:00:00 AM

Lab Sample ID: 0903131-022
Date Prepared: 5/20/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/21/2009	0.1	1	0.10	1.7	mg/L	5203
Lead (STLC)	6010B (STLC)	5/21/2009	0.1	1	0.10	13	mg/L	5201
Lead (TCLP)	6010B (TCLP)	6/11/2009	0.1	1	0.10	0.54	mg/L	5276
Lead	SW6010B	3/24/2009	1	1	1.0	620	mg/Kg	5036

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/23/2009
Date Reported: 6/16/2009

Client Sample ID: N-1-13@1.5
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 3:00:00 AM

Lab Sample ID: 0903131-023
Date Prepared: 5/20/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/21/2009	0.1	1	0.10	0.31	mg/L	5203
Lead (STLC)	6010B (STLC)	5/29/2009	0.1	1	0.10	14	mg/L	5202
Lead (TCLP)	6010B (TCLP)	6/13/2009	0.1	1	0.10	ND	mg/L	5281
Lead	SW6010B	3/24/2009	1	1	1.0	440	mg/Kg	5036

Client Sample ID: N-1-13@2.0
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 3:00:00 AM

Lab Sample ID: 0903131-024
Date Prepared: 3/24/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/24/2009	1	1	1.0	10	mg/Kg	5036

Client Sample ID: N-1-13@3.0
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 3:00:00 AM

Lab Sample ID: 0903131-025
Date Prepared: 3/24/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/24/2009	1	1	1.0	4.8	mg/Kg	5036

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/23/2009
Date Reported: 6/16/2009

Client Sample ID: N-1-12@0.5
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 2:35:00 AM

Lab Sample ID: 0903131-026
Date Prepared: 5/20/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/21/2009	0.1	1	0.10	ND	mg/L	5203
Lead (STLC)	6010B (STLC)	5/29/2009	0.1	1	0.10	44	mg/L	5202
Lead (TCLP)	6010B (TCLP)	6/11/2009	0.1	1	0.10	0.13	mg/L	5276
Lead	SW6010B	3/24/2009	1	1	1.0	610	mg/Kg	5036

Client Sample ID: N-1-12@1.0
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 2:35:00 AM

Lab Sample ID: 0903131-027
Date Prepared: 3/24/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/24/2009	1	1	1.0	73	mg/Kg	5036

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/23/2009
Date Reported: 6/16/2009

Client Sample ID: N-1-12@1.5
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 2:35:00 AM

Lab Sample ID: 0903131-028
Date Prepared: 5/20/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/21/2009	0.1	1	0.10	ND	mg/L	5203
Lead (STLC)	6010B (STLC)	5/29/2009	0.1	1	0.10	3.0	mg/L	5202
Lead	SW6010B	3/24/2009	1	1	1.0	84	mg/Kg	5036

Client Sample ID: N-1-12@2.0
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 2:35:00 AM

Lab Sample ID: 0903131-029
Date Prepared: 3/24/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/24/2009	1	1	1.0	7.0	mg/Kg	5036

Client Sample ID: N-1-12@3.0
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 2:35:00 AM

Lab Sample ID: 0903131-030
Date Prepared: 3/24/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/24/2009	1	1	1.0	13	mg/Kg	5036

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/23/2009
Date Reported: 6/16/2009

Client Sample ID: N-1-15@0.5
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 1:35:00 AM

Lab Sample ID: 0903131-031
Date Prepared: 3/24/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/24/2009	1	1	1.0	2.6	mg/Kg	5036

Client Sample ID: N-1-15@1.0
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 1:35:00 AM

Lab Sample ID: 0903131-032
Date Prepared: 5/20/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/21/2009	0.1	1	0.10	ND	mg/L	5203
Lead (STLC)	6010B (STLC)	5/29/2009	0.1	1	0.10	130	mg/L	5202
Lead (TCLP)	6010B (TCLP)	6/11/2009	0.1	1	0.10	ND	mg/L	5276
Lead	SW6010B	3/24/2009	1	1	1.0	180	mg/Kg	5036

Client Sample ID: N-1-15@1.5
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 1:35:00 AM

Lab Sample ID: 0903131-033
Date Prepared: 3/24/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/24/2009	1	1	1.0	7.8	mg/Kg	5036

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/23/2009
Date Reported: 6/16/2009

Client Sample ID: N-1-15@2.0
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 1:35:00 AM

Lab Sample ID: 0903131-034
Date Prepared: 3/24/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/24/2009	1	1	1.0	8.1	mg/Kg	5036

Client Sample ID: N-1-15@3.0
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 1:35:00 AM

Lab Sample ID: 0903131-035
Date Prepared: 3/24/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/24/2009	1	1	1.0	8.9	mg/Kg	5036

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/23/2009
Date Reported: 6/16/2009

Client Sample ID: N-1-14@0.5
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 2:10:00 AM

Lab Sample ID: 0903131-036
Date Prepared: 3/23/2009-3/24/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	3/24/2009	5	1	5.0	ND	mg/Kg	5036
Arsenic	SW6010B	3/24/2009	1.7	1	1.7	ND	mg/Kg	5036
Barium	SW6010B	3/24/2009	5	1	5.0	140	mg/Kg	5036
Beryllium	SW6010B	3/24/2009	2	1	2.0	ND	mg/Kg	5036
Cadmium	SW6010B	3/24/2009	1	1	1.0	ND	mg/Kg	5036
Chromium	SW6010B	3/24/2009	5	1	5.0	21	mg/Kg	5036
Cobalt	SW6010B	3/24/2009	5	1	5.0	7.0	mg/Kg	5036
Copper	SW6010B	3/24/2009	5	1	5.0	39	mg/Kg	5036
Lead	SW6010B	3/24/2009	1	1	1.0	20	mg/Kg	5036
Molybdenum	SW6010B	3/24/2009	5	1	5.0	ND	mg/Kg	5036
Nickel	SW6010B	3/24/2009	5	1	5.0	33	mg/Kg	5036
Selenium	SW6010B	3/24/2009	5	1	5.0	ND	mg/Kg	5036
Silver	SW6010B	3/24/2009	1	1	1.0	1.5	mg/Kg	5036
Thallium	SW6010B	3/24/2009	5	1	5.0	ND	mg/Kg	5036
Vanadium	SW6010B	3/24/2009	5	1	5.0	25	mg/Kg	5036
Zinc	SW6010B	3/24/2009	5	1	5.0	73	mg/Kg	5036
Mercury	SW7471A	3/24/2009	0.1	1	0.10	ND	mg/Kg	5033
TPH (Diesel)	SW8015B	3/26/2009	2	100	200	ND	mg/Kg	R19060
TPH (Motor Oil)	SW8015B	3/26/2009	4	100	400	2880	mg/Kg	R19060
Surr: Pentacosane	SW8015B	3/26/2009	0	100	59.7-129	D	%REC	R19060

Note: D - Surrogate diluted out.

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

4,4´-DDD	SW8081A	3/28/2009	0.47	40	18.8	ND	µg/Kg	R19073
4,4´-DDE	SW8081A	3/28/2009	0.476	40	19.0	ND	µg/Kg	R19073
4,4´-DDT	SW8081A	3/28/2009	0.809	40	32.4	ND	µg/Kg	R19073
Aldrin	SW8081A	3/28/2009	0.44	40	17.6	ND	µg/Kg	R19073
alpha-BHC	SW8081A	3/28/2009	0.439	40	17.6	ND	µg/Kg	R19073
alpha-Chlordane	SW8081A	3/28/2009	0.358	40	14.3	ND	µg/Kg	R19073
beta-BHC	SW8081A	3/28/2009	0.364	40	14.6	ND	µg/Kg	R19073
Chlordane	SW8081A	3/28/2009	10	40	400	ND	µg/Kg	R19073
delta-BHC	SW8081A	3/28/2009	0.49	40	19.6	ND	µg/Kg	R19073
Dieldrin	SW8081A	3/28/2009	0.427	40	17.1	ND	µg/Kg	R19073
Endosulfan I	SW8081A	3/28/2009	0.59	40	23.6	ND	µg/Kg	R19073
Endosulfan II	SW8081A	3/28/2009	1.526	40	61.0	ND	µg/Kg	R19073
Endosulfan sulfate	SW8081A	3/28/2009	0.489	40	19.6	ND	µg/Kg	R19073
Endrin	SW8081A	3/28/2009	0.569	40	22.8	ND	µg/Kg	R19073
Endrin aldehyde	SW8081A	3/28/2009	1.028	40	41.1	ND	µg/Kg	R19073
Endrin ketone	SW8081A	3/28/2009	0.401	40	16.0	ND	µg/Kg	R19073
gamma-BHC	SW8081A	3/28/2009	0.396	40	15.8	ND	µg/Kg	R19073
gamma-Chlordane	SW8081A	3/28/2009	0.42	40	16.8	ND	µg/Kg	R19073
Heptachlor	SW8081A	3/28/2009	1.1	40	44.0	ND	µg/Kg	R19073
Heptachlor epoxide	SW8081A	3/28/2009	0.316	40	12.6	ND	µg/Kg	R19073
Methoxychlor	SW8081A	3/28/2009	0.616	40	24.6	ND	µg/Kg	R19073
Toxaphene	SW8081A	3/28/2009	10	40	400	ND	µg/Kg	R19073
Surr: Decachlorobiphenyl	SW8081A	3/28/2009		40	54.6-127	139	%REC	R19073
Surr: Tetrachloro-m-xylene	SW8081A	3/28/2009		40	54-122	107	%REC	R19073

Note: Reporting limits increased due to the nature of the sample matrix (dark color extract). Compounds reported to the MDL. Surrogate recovery of DCBP is bias high possibly due to dilution made on sample; recovery of second surrogate supports data quality.

Aroclor 1016	SW8082	3/28/2009	0.023	10	0.230	ND	mg/Kg	R19084
Aroclor 1221	SW8082	3/28/2009	0.092	10	0.920	ND	mg/Kg	R19084
Aroclor 1232	SW8082	3/28/2009	0.046	10	0.460	ND	mg/Kg	R19084
Aroclor 1242	SW8082	3/28/2009	0.043	10	0.430	ND	mg/Kg	R19084
Aroclor 1248	SW8082	3/28/2009	0.036	10	0.360	ND	mg/Kg	R19084
Aroclor 1254	SW8082	3/28/2009	0.024	10	0.240	ND	mg/Kg	R19084
Aroclor 1260	SW8082	3/28/2009	0.027	10	0.270	ND	mg/Kg	R19084
Surr: Decachlorobiphenyl	SW8082	3/28/2009	0	10	63.7-126	114	%REC	R19084
Surr: Tetrachloro-m-xylene	SW8082	3/28/2009	0	10	51.7-128	124	%REC	R19084

Note: Reporting limits increased due to the nature of the sample matrix (dark color extract). Compounds reported to the MDL.

pH	SW9045C	3/25/2009	0.05	1	0.0500	7.98	pH Units	R19059

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/23/2009
Date Reported: 6/16/2009

Client Sample ID: N-1-14@1.0
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 2:10:00 AM

Lab Sample ID: 0903131-037
Date Prepared: 5/20/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/21/2009	0.1	1	0.10	ND	mg/L	5203
Chromium (STLC)	6010B (STLC)	5/29/2009	0.1	1	0.10	0.92	mg/L	5202
Lead (STLC)	6010B (STLC)	5/29/2009	0.1	1	0.10	14	mg/L	5202
Lead (TCLP)	6010B (TCLP)	6/11/2009	0.1	1	0.10	ND	mg/L	5276
Antimony	SW6010B	3/25/2009	5	1	5.0	ND	mg/Kg	5037
Arsenic	SW6010B	3/25/2009	1.7	1	1.7	ND	mg/Kg	5037
Barium	SW6010B	3/25/2009	5	1	5.0	170	mg/Kg	5037
Beryllium	SW6010B	3/25/2009	2	1	2.0	ND	mg/Kg	5037
Cadmium	SW6010B	3/25/2009	1	1	1.0	1.0	mg/Kg	5037
Chromium	SW6010B	3/25/2009	5	1	5.0	94	mg/Kg	5037
Cobalt	SW6010B	3/25/2009	5	1	5.0	15	mg/Kg	5037
Copper	SW6010B	3/25/2009	5	1	5.0	74	mg/Kg	5037
Lead	SW6010B	3/25/2009	1	1	1.0	760	mg/Kg	5037
Molybdenum	SW6010B	3/25/2009	5	1	5.0	ND	mg/Kg	5037
Nickel	SW6010B	3/25/2009	5	1	5.0	180	mg/Kg	5037
Selenium	SW6010B	3/25/2009	5	1	5.0	ND	mg/Kg	5037
Silver	SW6010B	3/25/2009	1	1	1.0	2.2	mg/Kg	5037
Thallium	SW6010B	3/25/2009	5	1	5.0	ND	mg/Kg	5037
Vanadium	SW6010B	3/25/2009	5	1	5.0	32	mg/Kg	5037
Zinc	SW6010B	3/25/2009	5	1	5.0	180	mg/Kg	5037
Mercury	SW7471A	3/24/2009	0.1	1	0.10	ND	mg/Kg	5033

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Benzene	SW8260B	3/24/2009	10	1	10	ND	µg/Kg	R19048
Diisopropyl ether (DIPE)	SW8260B	3/24/2009	10	1	10	ND	µg/Kg	R19048
Ethyl tert-butyl ether (ETBE)	SW8260B	3/24/2009	10	1	10	ND	µg/Kg	R19048
Ethylbenzene	SW8260B	3/24/2009	10	1	10	ND	µg/Kg	R19048
Methyl tert-butyl ether (MTBE)	SW8260B	3/24/2009	10	1	10	ND	µg/Kg	R19048
t-Butyl alcohol (t-Butanol)	SW8260B	3/24/2009	50	1	50	ND	µg/Kg	R19048
tert-Amyl methyl ether (TAME)	SW8260B	3/24/2009	10	1	10	ND	µg/Kg	R19048
Toluene	SW8260B	3/24/2009	10	1	10	ND	µg/Kg	R19048
Xylenes, Total	SW8260B	3/24/2009	15	1	15	ND	µg/Kg	R19048
Surr: 4-Bromofluorobenzene	SW8260B	3/24/2009	0	1	55.8-141	80.7	%REC	R19048
Surr: Dibromofluoromethane	SW8260B	3/24/2009	0	1	59.8-148	93.1	%REC	R19048
Surr: Toluene-d8	SW8260B	3/24/2009	0	1	55.2-133	81.6	%REC	R19048
TPH (Gasoline)	SW8260B(TPH)	3/24/2009	100	1	100	ND	µg/Kg	G19048
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	3/24/2009	0	1	56.9-133	74.0	%REC	G19048
pH	SW9045C	3/25/2009	0.05	1	0.0500	8.27	pH Units	R19059

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/23/2009
Date Reported: 6/16/2009

Client Sample ID: N-1-14@1.5
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 2:10:00 AM

Lab Sample ID: 0903131-038
Date Prepared: 5/20/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/21/2009	0.1	1	0.10	ND	mg/L	5203
Chromium (STLC)	6010B (STLC)	5/29/2009	0.1	1	0.10	0.11	mg/L	5202
Lead (STLC)	6010B (STLC)	5/29/2009	0.1	1	0.10	0.71	mg/L	5202
Lead (TCLP)	6010B (TCLP)	6/11/2009	0.1	1	0.10	ND	mg/L	5276
Antimony	SW6010B	3/25/2009	5	1	5.0	ND	mg/Kg	5037
Arsenic	SW6010B	3/25/2009	1.7	1	1.7	ND	mg/Kg	5037
Barium	SW6010B	3/25/2009	5	1	5.0	69	mg/Kg	5037
Beryllium	SW6010B	3/25/2009	2	1	2.0	ND	mg/Kg	5037
Cadmium	SW6010B	3/25/2009	1	1	1.0	ND	mg/Kg	5037
Chromium	SW6010B	3/25/2009	5	1	5.0	59	mg/Kg	5037
Cobalt	SW6010B	3/25/2009	5	1	5.0	20	mg/Kg	5037
Copper	SW6010B	3/25/2009	5	1	5.0	42	mg/Kg	5037
Lead	SW6010B	3/25/2009	1	1	1.0	160	mg/Kg	5037
Molybdenum	SW6010B	3/25/2009	5	1	5.0	ND	mg/Kg	5037
Nickel	SW6010B	3/25/2009	5	1	5.0	52	mg/Kg	5037
Selenium	SW6010B	3/25/2009	5	1	5.0	ND	mg/Kg	5037
Silver	SW6010B	3/25/2009	1	1	1.0	1.8	mg/Kg	5037
Thallium	SW6010B	3/25/2009	5	1	5.0	ND	mg/Kg	5037
Vanadium	SW6010B	3/25/2009	5	1	5.0	51	mg/Kg	5037
Zinc	SW6010B	3/25/2009	5	1	5.0	73	mg/Kg	5037
Mercury	SW7471A	3/24/2009	0.1	1	0.10	ND	mg/Kg	5033

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Benzene	SW8260B	3/24/2009	10	1	10	ND	µg/Kg	R19048
Diisopropyl ether (DIPE)	SW8260B	3/24/2009	10	1	10	ND	µg/Kg	R19048
Ethyl tert-butyl ether (ETBE)	SW8260B	3/24/2009	10	1	10	ND	µg/Kg	R19048
Ethylbenzene	SW8260B	3/24/2009	10	1	10	ND	µg/Kg	R19048
Methyl tert-butyl ether (MTBE)	SW8260B	3/24/2009	10	1	10	ND	µg/Kg	R19048
t-Butyl alcohol (t-Butanol)	SW8260B	3/24/2009	50	1	50	ND	µg/Kg	R19048
tert-Amyl methyl ether (TAME)	SW8260B	3/24/2009	10	1	10	ND	µg/Kg	R19048
Toluene	SW8260B	3/24/2009	10	1	10	ND	µg/Kg	R19048
Xylenes, Total	SW8260B	3/24/2009	15	1	15	ND	µg/Kg	R19048
Surr: 4-Bromofluorobenzene	SW8260B	3/24/2009	0	1	55.8-141	89.9	%REC	R19048
Surr: Dibromofluoromethane	SW8260B	3/24/2009	0	1	59.8-148	92.1	%REC	R19048
Surr: Toluene-d8	SW8260B	3/24/2009	0	1	55.2-133	81.7	%REC	R19048
TPH (Gasoline)	SW8260B(TPH)	3/24/2009	100	1	100	ND	µg/Kg	G19048
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	3/24/2009	0	1	56.9-133	82.0	%REC	G19048
pH	SW9045C	3/25/2009	0.05	1	0.0500	8.26	pH Units	R19059

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/23/2009
Date Reported: 6/16/2009

Client Sample ID: N-1-14@2.0
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 2:10:00 AM

Lab Sample ID: 0903131-039
Date Prepared: 5/28/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Chromium (STLC)	6010B (STLC)	5/29/2009	0.1	1	0.10	ND	mg/L	5202
Antimony	SW6010B	3/25/2009	5	1	5.0	ND	mg/Kg	5037
Arsenic	SW6010B	3/25/2009	1.7	1	1.7	ND	mg/Kg	5037
Barium	SW6010B	3/25/2009	5	1	5.0	68	mg/Kg	5037
Beryllium	SW6010B	3/25/2009	2	1	2.0	ND	mg/Kg	5037
Cadmium	SW6010B	3/25/2009	1	1	1.0	ND	mg/Kg	5037
Chromium	SW6010B	3/25/2009	5	1	5.0	60	mg/Kg	5037
Cobalt	SW6010B	3/25/2009	5	1	5.0	20	mg/Kg	5037
Copper	SW6010B	3/25/2009	5	1	5.0	49	mg/Kg	5037
Lead	SW6010B	3/25/2009	1	1	1.0	ND	mg/Kg	5037
Molybdenum	SW6010B	3/25/2009	5	1	5.0	ND	mg/Kg	5037
Nickel	SW6010B	3/25/2009	5	1	5.0	40	mg/Kg	5037
Selenium	SW6010B	3/25/2009	5	1	5.0	ND	mg/Kg	5037
Silver	SW6010B	3/25/2009	1	1	1.0	1.6	mg/Kg	5037
Thallium	SW6010B	3/25/2009	5	1	5.0	ND	mg/Kg	5037
Vanadium	SW6010B	3/25/2009	5	1	5.0	51	mg/Kg	5037
Zinc	SW6010B	3/25/2009	5	1	5.0	36	mg/Kg	5037
Mercury	SW7471A	3/24/2009	0.1	1	0.10	ND	mg/Kg	5033
Benzene	SW8260B	3/24/2009	10	1	10	ND	µg/Kg	R19048
Diisopropyl ether (DIPE)	SW8260B	3/24/2009	10	1	10	ND	µg/Kg	R19048
Ethyl tert-butyl ether (ETBE)	SW8260B	3/24/2009	10	1	10	ND	µg/Kg	R19048
Ethylbenzene	SW8260B	3/24/2009	10	1	10	ND	µg/Kg	R19048
Methyl tert-butyl ether (MTBE)	SW8260B	3/24/2009	10	1	10	ND	µg/Kg	R19048
t-Butyl alcohol (t-Butanol)	SW8260B	3/24/2009	50	1	50	ND	µg/Kg	R19048
tert-Amyl methyl ether (TAME)	SW8260B	3/24/2009	10	1	10	ND	µg/Kg	R19048
Toluene	SW8260B	3/24/2009	10	1	10	ND	µg/Kg	R19048
Xylenes, Total	SW8260B	3/24/2009	15	1	15	ND	µg/Kg	R19048
Surr: 4-Bromofluorobenzene	SW8260B	3/24/2009	0	1	55.8-141	83.6	%REC	R19048
Surr: Dibromofluoromethane	SW8260B	3/24/2009	0	1	59.8-148	96.5	%REC	R19048
Surr: Toluene-d8	SW8260B	3/24/2009	0	1	55.2-133	85.1	%REC	R19048
TPH (Gasoline)	SW8260B(TPH)	3/24/2009	100	1	100	ND	µg/Kg	G19048
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	3/24/2009	0	1	56.9-133	80.0	%REC	G19048

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

pH	SW9045C	3/25/2009	0.05	1	0.0500	8.57	pH Units	R19059

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/23/2009
Date Reported: 6/16/2009

Client Sample ID: N-1-14@3.0
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 2:10:00 AM

Lab Sample ID: 0903131-040
Date Prepared: 3/23/2009-3/24/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	3/25/2009	5	1	5.0	ND	mg/Kg	5037
Arsenic	SW6010B	3/25/2009	1.7	1	1.7	6.1	mg/Kg	5037
Barium	SW6010B	3/25/2009	5	1	5.0	120	mg/Kg	5037
Beryllium	SW6010B	3/25/2009	2	1	2.0	ND	mg/Kg	5037
Cadmium	SW6010B	3/25/2009	1	1	1.0	ND	mg/Kg	5037
Chromium	SW6010B	3/25/2009	5	1	5.0	24	mg/Kg	5037
Cobalt	SW6010B	3/25/2009	5	1	5.0	8.2	mg/Kg	5037
Copper	SW6010B	3/25/2009	5	1	5.0	18	mg/Kg	5037
Lead	SW6010B	3/25/2009	1	1	1.0	15	mg/Kg	5037
Molybdenum	SW6010B	3/25/2009	5	1	5.0	ND	mg/Kg	5037
Nickel	SW6010B	3/25/2009	5	1	5.0	32	mg/Kg	5037
Selenium	SW6010B	3/25/2009	5	1	5.0	ND	mg/Kg	5037
Silver	SW6010B	3/25/2009	1	1	1.0	ND	mg/Kg	5037
Thallium	SW6010B	3/25/2009	5	1	5.0	ND	mg/Kg	5037
Vanadium	SW6010B	3/25/2009	5	1	5.0	27	mg/Kg	5037
Zinc	SW6010B	3/25/2009	5	1	5.0	46	mg/Kg	5037
Mercury	SW7471A	3/24/2009	0.1	1	0.10	ND	mg/Kg	5033
Benzene	SW8260B	3/24/2009	10	1	10	ND	µg/Kg	R19048
Diisopropyl ether (DIPE)	SW8260B	3/24/2009	10	1	10	ND	µg/Kg	R19048
Ethyl tert-butyl ether (ETBE)	SW8260B	3/24/2009	10	1	10	ND	µg/Kg	R19048
Ethylbenzene	SW8260B	3/24/2009	10	1	10	ND	µg/Kg	R19048
Methyl tert-butyl ether (MTBE)	SW8260B	3/24/2009	10	1	10	ND	µg/Kg	R19048
t-Butyl alcohol (t-Butanol)	SW8260B	3/24/2009	50	1	50	ND	µg/Kg	R19048
tert-Amyl methyl ether (TAME)	SW8260B	3/24/2009	10	1	10	ND	µg/Kg	R19048
Toluene	SW8260B	3/24/2009	10	1	10	ND	µg/Kg	R19048
Xylenes, Total	SW8260B	3/24/2009	15	1	15	ND	µg/Kg	R19048
Surr: 4-Bromofluorobenzene	SW8260B	3/24/2009	0	1	55.8-141	89.0	%REC	R19048
Surr: Dibromofluoromethane	SW8260B	3/24/2009	0	1	59.8-148	96.5	%REC	R19048
Surr: Toluene-d8	SW8260B	3/24/2009	0	1	55.2-133	82.3	%REC	R19048
TPH (Gasoline)	SW8260B(TPH)	3/24/2009	100	1	100	ND	µg/Kg	G19048
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	3/24/2009	0	1	56.9-133	76.0	%REC	G19048
pH	SW9045C	3/25/2009	0.05	1	0.0500	7.96	pH Units	R19059

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/23/2009
Date Reported: 6/16/2009

Client Sample ID: N-1-17@0.5
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 12:20:00 AM

Lab Sample ID: 0903131-041
Date Prepared: 5/20/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/21/2009	0.1	1	0.10	ND	mg/L	5203
Lead (STLC)	6010B (STLC)	5/29/2009	0.1	1	0.10	11	mg/L	5202
Lead (TCLP)	6010B (TCLP)	6/11/2009	0.1	1	0.10	ND	mg/L	5276
Lead	SW6010B	3/25/2009	1	1	1.0	190	mg/Kg	5037

Client Sample ID: N-1-17@1.0
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 12:20:00 AM

Lab Sample ID: 0903131-042
Date Prepared: 5/28/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/29/2009	0.1	1	0.10	ND	mg/L	5232
Lead (STLC)	6010B (STLC)	5/29/2009	0.1	1	0.10	87	mg/L	5202
Lead (TCLP)	6010B (TCLP)	6/11/2009	0.1	1	0.10	0.25	mg/L	5276
Lead	SW6010B	3/25/2009	1	1	1.0	2100	mg/Kg	5037

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/23/2009
Date Reported: 6/16/2009

Client Sample ID: N-1-17@1.5
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 12:20:00 AM

Lab Sample ID: 0903131-043
Date Prepared: 5/28/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/29/2009	0.1	1	0.10	ND	mg/L	5232
Lead (STLC)	6010B (STLC)	5/29/2009	0.1	1	0.10	140	mg/L	5202
Lead (TCLP)	6010B (TCLP)	6/11/2009	0.1	1	0.10	1.6	mg/L	5276
Lead	SW6010B	3/25/2009	1	1	1.0	2400	mg/Kg	5037

Client Sample ID: N-1-17@2.0
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 12:20:00 AM

Lab Sample ID: 0903131-044
Date Prepared: 3/24/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/25/2009	1	1	1.0	5.6	mg/Kg	5037

Client Sample ID: N-1-17@3.0
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 12:20:00 AM

Lab Sample ID: 0903131-045
Date Prepared: 3/24/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/25/2009	1	1	1.0	3.1	mg/Kg	5037

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/23/2009
Date Reported: 6/16/2009

Client Sample ID: N-1-16@0.5
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 12:55:00 AM

Lab Sample ID: 0903131-046
Date Prepared: 5/28/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/29/2009	0.1	1	0.10	ND	mg/L	5232
Lead (STLC)	6010B (STLC)	5/29/2009	0.1	1	0.10	15	mg/L	5202
Lead (TCLP)	6010B (TCLP)	6/11/2009	0.1	1	0.10	ND	mg/L	5276
Lead	SW6010B	3/25/2009	1	1	1.0	370	mg/Kg	5037

Client Sample ID: N-1-16@1.0
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 12:55:00 AM

Lab Sample ID: 0903131-047
Date Prepared: 5/28/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/29/2009	0.1	1	0.10	ND	mg/L	5232
Lead (STLC)	6010B (STLC)	5/29/2009	0.1	1	0.10	32	mg/L	5202
Lead (TCLP)	6010B (TCLP)	6/11/2009	0.1	1	0.10	2.1	mg/L	5276
Lead	SW6010B	3/25/2009	1	1	1.0	320	mg/Kg	5037

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/23/2009
Date Reported: 6/16/2009

Client Sample ID: N-1-16@1.5
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 12:55:00 AM

Lab Sample ID: 0903131-048
Date Prepared: 5/28/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/29/2009	0.1	1	0.10	ND	mg/L	5232
Lead (STLC)	6010B (STLC)	5/29/2009	0.1	1	0.10	60	mg/L	5202
Lead (TCLP)	6010B (TCLP)	6/11/2009	0.1	1	0.10	ND	mg/L	5276
Lead	SW6010B	3/25/2009	1	1	1.0	1200	mg/Kg	5037

Client Sample ID: N-1-16@2.0
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 12:55:00 AM

Lab Sample ID: 0903131-049
Date Prepared: 5/28/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/29/2009	0.1	1	0.10	8.0	mg/L	5232
Lead (STLC)	6010B (STLC)	5/29/2009	0.1	1	0.10	30	mg/L	5202
Lead	SW6010B	3/25/2009	1	1	1.0	73	mg/Kg	5037

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/23/2009
Date Reported: 6/16/2009

Client Sample ID: N-1-16@3.0
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 12:55:00 AM

Lab Sample ID: 0903131-050
Date Prepared: 3/24/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/25/2009	1	1	1.0	18	mg/Kg	5037

Client Sample ID: N-1-19@0.5
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/22/2009 11:40:00 PM

Lab Sample ID: 0903131-051
Date Prepared: 3/24/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/25/2009	1	1	1.0	18	mg/Kg	5037

Client Sample ID: N-1-19@1.0
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/22/2009 11:40:00 PM

Lab Sample ID: 0903131-052
Date Prepared: 3/24/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/25/2009	1	1	1.0	3.5	mg/Kg	5037

Client Sample ID: N-1-19@1.5
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/22/2009 11:40:00 PM

Lab Sample ID: 0903131-053
Date Prepared: 3/24/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/25/2009	1	1	1.0	3.2	mg/Kg	5037

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/23/2009
Date Reported: 6/16/2009

Client Sample ID: N-1-19@2.0
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/22/2009 11:40:00 PM

Lab Sample ID: 0903131-054
Date Prepared: 3/24/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/25/2009	1	1	1.0	5.4	mg/Kg	5037

Client Sample ID: N-1-19@3.0
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/22/2009 11:40:00 PM

Lab Sample ID: 0903131-055
Date Prepared: 3/24/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/25/2009	1	1	1.0	2.4	mg/Kg	5037

Client Sample ID: N-1-19@0.5-D
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/22/2009 11:40:00 PM

Lab Sample ID: 0903131-056
Date Prepared: 5/28/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/29/2009	0.1	1	0.10	ND	mg/L	5232
Lead (STLC)	6010B (STLC)	5/29/2009	0.1	1	0.10	0.16	mg/L	5202
Lead (TCLP)	6010B (TCLP)	6/11/2009	0.1	1	0.10	ND	mg/L	5276
Lead	SW6010B	3/25/2009	1	1	1.0	160	mg/Kg	5038

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/23/2009
Date Reported: 6/16/2009

Client Sample ID: N-1-19@1.0-D
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/22/2009 11:40:00 PM

Lab Sample ID: 0903131-057
Date Prepared: 5/28/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead (DI-STLC)	6010B (DI-STLC)	5/29/2009	0.1	1	0.10	ND	mg/L	5232
Lead (STLC)	6010B (STLC)	5/29/2009	0.1	1	0.10	0.13	mg/L	5202
Lead	SW6010B	3/25/2009	1	1	1.0	50	mg/Kg	5038

Client Sample ID: N-1-19@1.5-D
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/22/2009 11:40:00 PM

Lab Sample ID: 0903131-058
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/25/2009	1	1	1.0	13	mg/Kg	5038

Client Sample ID: N-1-19@2.0-D
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/22/2009 11:40:00 PM

Lab Sample ID: 0903131-059
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/25/2009	1	1	1.0	6.4	mg/Kg	5038

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/23/2009
Date Reported: 6/16/2009

Client Sample ID: N-1-19@3.0-D
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/22/2009 11:40:00 PM

Lab Sample ID: 0903131-060
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/25/2009	1	1	1.0	3.6	mg/Kg	5038

Client Sample ID: N-1-11@0.5
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 3:30:00 AM

Lab Sample ID: 0903131-061
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/25/2009	1	1	1.0	30	mg/Kg	5038

Client Sample ID: N-1-11@1.0
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 3:30:00 AM

Lab Sample ID: 0903131-062
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/25/2009	1	1	1.0	7.1	mg/Kg	5038

Client Sample ID: N-1-11@1.5
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 3:30:00 AM

Lab Sample ID: 0903131-063
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/25/2009	1	1	1.0	4.6	mg/Kg	5038

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 3/23/2009
Date Reported: 6/16/2009

Client Sample ID: N-1-11@2.0
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 3:30:00 AM

Lab Sample ID: 0903131-064
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/25/2009	1	1	1.0	6.4	mg/Kg	5038

Client Sample ID: N-1-11@3.0
Sample Location: Hwy 101 Aux Lanes
Sample Matrix: SOIL
Date/Time Sampled 3/23/2009 3:30:00 AM

Lab Sample ID: 0903131-065
Date Prepared: 3/25/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	3/25/2009	1	1	1.0	4.1	mg/Kg	5038

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Definitions, legends and Notes

Note	Description
ug/kg	Microgram per kilogram (ppb, part per billion).
ug/L	Microgram per liter (ppb, part per billion).
mg/kg	Milligram per kilogram (ppm, part per million).
mg/L	Milligram per liter (ppm, part per million).
LCS/LCSD	Laboratory control sample/laboratory control sample duplicate.
MDL	Method detection limit.
MRL	Modified reporting limit. When sample is subject to dilution, reporting limit times dilution factor yields MRL.
MS/MSD	Matrix spike/matrix spike duplicate.
N/A	Not applicable.
ND	Not detected at or above detection limit.
NR	Not reported.
QC	Quality Control.
RL	Reporting limit.
% RPD	Percent relative difference.
a	pH was measured immediately upon the receipt of the sample, but it was still done outside the holding time.
sub	Analyzed by subcontracting laboratory, Lab Certificate #

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Torrent Laboratory, Inc.

Date: *16-Jun-09*

CLIENT: URS Corporation, San Jose
Work Order: 0903131
Project: Hwy 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5032

Sample ID **MB-5032** SampType: **MBLK** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **3/23/2009** RunNo: **19023**
Client ID: **ZZZZZ** Batch ID: **5032** TestNo: **SW6010B (SW3050B)** Analysis Date: **3/24/2009** SeqNo: **274275**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	5.0									
Arsenic	ND	1.7									
Barium	ND	5.0									
Beryllium	ND	2.0									
Cadmium	ND	1.0									
Chromium	ND	5.0									
Cobalt	ND	5.0									
Copper	ND	5.0									
Lead	ND	1.0									
Molybdenum	ND	5.0									
Nickel	ND	5.0									
Selenium	ND	5.0									
Silver	ND	1.0									
Thallium	ND	5.0									
Vanadium	ND	5.0									
Zinc	ND	5.0									

Sample ID **LCS-5032** SampType: **LCS** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **3/23/2009** RunNo: **19023**
Client ID: **ZZZZZ** Batch ID: **5032** TestNo: **SW6010B (SW3050B)** Analysis Date: **3/24/2009** SeqNo: **274273**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	53.50	5.0	50	1.1	105	30.7	130				
Arsenic	50.90	1.7	50	0	102	71	121				
Barium	49.25	5.0	50	0.15	98.2	70.2	130				
Beryllium	47.45	2.0	50	0	94.9	73.3	115				
Cadmium	46.65	1.0	50	0	93.3	68.7	110				
Chromium	49.75	5.0	50	0.1	99.3	76	116				
Cobalt	48.95	5.0	50	0	97.9	57.4	122				
Copper	50.20	5.0	50	0.3	99.8	74.8	119				

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903131
Project: Hwy 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5032

Sample ID	LCS-5032	SampType:	LCS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/23/2009	RunNo:	19023
Client ID:	ZZZZZ	Batch ID:	5032	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/24/2009	SeqNo:	274273

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	50.35	1.0	50	0.35	100	67.9	118				
Molybdenum	50.60	5.0	50	0	101	62.9	123				
Nickel	48.70	5.0	50	0	97.4	61.5	122				
Selenium	46.50	5.0	50	0	93.0	62	111				
Silver	48.35	1.0	50	0.2	96.3	81.1	109				
Thallium	48.35	5.0	50	0	96.7	39.2	125				
Vanadium	49.50	5.0	50	0	99.0	65.8	122				
Zinc	50.15	5.0	50	1.05	98.2	59.9	122				

Sample ID	LCSD-5032	SampType:	LCSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/23/2009	RunNo:	19023
Client ID:	ZZZZZ	Batch ID:	5032	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/24/2009	SeqNo:	274274

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	51.35	5.0	50	1.1	101	30.7	130	53.5	4.10	30	
Arsenic	50.00	1.7	50	0	100	71	121	50.9	1.78	30	
Barium	48.35	5.0	50	0.15	96.4	70.2	130	49.25	1.84	30	
Beryllium	49.40	2.0	50	0	98.8	73.3	115	47.45	4.03	30	
Cadmium	45.80	1.0	50	0	91.6	68.7	110	46.65	1.84	30	
Chromium	48.80	5.0	50	0.1	97.4	76	116	49.75	1.93	30	
Cobalt	47.80	5.0	50	0	95.6	57.4	122	48.95	2.38	30	
Copper	48.90	5.0	50	0.3	97.2	74.8	119	50.2	2.62	30	
Lead	49.45	1.0	50	0.35	98.2	67.9	118	50.35	1.80	30	
Molybdenum	49.40	5.0	50	0	98.8	62.9	123	50.6	2.40	30	
Nickel	47.90	5.0	50	0	95.8	61.5	122	48.7	1.66	30	
Selenium	45.30	5.0	50	0	90.6	62	111	46.5	2.61	30	
Silver	47.10	1.0	50	0.2	93.8	81.1	109	48.35	2.62	30	
Thallium	47.65	5.0	50	0	95.3	39.2	125	48.35	1.46	30	
Vanadium	48.15	5.0	50	0	96.3	65.8	122	49.5	2.76	30	
Zinc	49.40	5.0	50	1.05	96.7	59.9	122	50.15	1.51	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903131
Project: Hwy 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5033

Sample ID	MB-5033	SampType:	MBLK	TestCode:	HG_CTS	Units:	mg/Kg	Prep Date:	3/23/2009	RunNo:	19031
Client ID:	ZZZZZ	Batch ID:	5033	TestNo:	SW7471A	(SW7471APR		Analysis Date:	3/24/2009	SeqNo:	274470

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.10									

Sample ID	LCS-5033	SampType:	LCS	TestCode:	HG_CTS	Units:	mg/Kg	Prep Date:	3/23/2009	RunNo:	19031
Client ID:	ZZZZZ	Batch ID:	5033	TestNo:	SW7471A	(SW7471APR		Analysis Date:	3/24/2009	SeqNo:	274468

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.239	0.10	1.25	0	99.1	80.5	133				

Sample ID	LCSD-5033	SampType:	LCSD	TestCode:	HG_CTS	Units:	mg/Kg	Prep Date:	3/23/2009	RunNo:	19031
Client ID:	ZZZZZ	Batch ID:	5033	TestNo:	SW7471A	(SW7471APR		Analysis Date:	3/24/2009	SeqNo:	274469

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.432	0.10	1.25	0	115	80.5	133	1.239	14.5	30	

Sample ID	0903131-011AMS	SampType:	MS	TestCode:	HG_CTS	Units:	mg/Kg	Prep Date:	3/23/2009	RunNo:	19031
Client ID:	N-2-2@0.5	Batch ID:	5033	TestNo:	SW7471A	(SW7471APR		Analysis Date:	3/24/2009	SeqNo:	274457

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.298	0.10	1.25	0.1058	95.4	80.5	133				

Sample ID	0903131-011AMSD	SampType:	MSD	TestCode:	HG_CTS	Units:	mg/Kg	Prep Date:	3/23/2009	RunNo:	19031
Client ID:	N-2-2@0.5	Batch ID:	5033	TestNo:	SW7471A	(SW7471APR		Analysis Date:	3/24/2009	SeqNo:	274458

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.294	0.10	1.25	0.1058	95.1	80.5	133	1.298	0.321	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903131
Project: Hwy 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5036

Sample ID	MB-5036	SampType:	MBLK	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/24/2009	RunNo:	19029
Client ID:	ZZZZZ	Batch ID:	5036	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/24/2009	SeqNo:	274427

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	5.0									
Arsenic	ND	1.7									
Barium	ND	5.0									
Beryllium	ND	2.0									
Cadmium	ND	1.0									
Chromium	ND	5.0									
Cobalt	ND	5.0									
Copper	ND	5.0									
Lead	ND	1.0									
Molybdenum	ND	5.0									
Nickel	ND	5.0									
Selenium	ND	5.0									
Silver	ND	1.0									
Thallium	ND	5.0									
Vanadium	ND	5.0									
Zinc	ND	5.0									

Sample ID	LCS-5036	SampType:	LCS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/24/2009	RunNo:	19029
Client ID:	ZZZZZ	Batch ID:	5036	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/24/2009	SeqNo:	274425

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	50.45	5.0	50	0	101	30.7	130				
Arsenic	49.80	1.7	50	0	99.6	71	121				
Barium	48.90	5.0	50	0.15	97.5	70.2	130				
Beryllium	52.25	2.0	50	0	104	73.3	115				
Cadmium	47.00	1.0	50	0	94.0	68.7	110				
Chromium	49.25	5.0	50	0.1	98.3	76	116				
Cobalt	47.95	5.0	50	0	95.9	57.4	122				
Copper	49.45	5.0	50	0.4	98.1	74.8	119				
Lead	48.45	1.0	50	0.5	95.9	67.9	118				
Molybdenum	49.55	5.0	50	0	99.1	62.9	123				

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903131
Project: Hwy 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5036

Sample ID	LCS-5036	SampType:	LCS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/24/2009	RunNo:	19029
Client ID:	ZZZZZ	Batch ID:	5036	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/24/2009	SeqNo:	274425

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	47.60	5.0	50	0	95.2	61.5	122				
Selenium	45.20	5.0	50	0	90.4	62	111				
Silver	47.95	1.0	50	0	95.9	81.1	109				
Thallium	47.00	5.0	50	0	94.0	39.2	125				
Vanadium	49.05	5.0	50	0	98.1	65.8	122				
Zinc	47.25	5.0	50	0.85	92.8	59.9	122				

Sample ID	LCSD-5036	SampType:	LCSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/24/2009	RunNo:	19029
Client ID:	ZZZZZ	Batch ID:	5036	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/24/2009	SeqNo:	274426

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	50.00	5.0	50	0	100	30.7	130	50.45	0.896	30	
Arsenic	49.55	1.7	50	0	99.1	71	121	49.8	0.503	30	
Barium	48.35	5.0	50	0.15	96.4	70.2	130	48.9	1.13	30	
Beryllium	52.45	2.0	50	0	105	73.3	115	52.25	0.382	30	
Cadmium	46.40	1.0	50	0	92.8	68.7	110	47	1.28	30	
Chromium	48.60	5.0	50	0.1	97.0	76	116	49.25	1.33	30	
Cobalt	47.40	5.0	50	0	94.8	57.4	122	47.95	1.15	30	
Copper	48.70	5.0	50	0.4	96.6	74.8	119	49.45	1.53	30	
Lead	48.40	1.0	50	0.5	95.8	67.9	118	48.45	0.103	30	
Molybdenum	49.40	5.0	50	0	98.8	62.9	123	49.55	0.303	30	
Nickel	46.80	5.0	50	0	93.6	61.5	122	47.6	1.69	30	
Selenium	44.85	5.0	50	0	89.7	62	111	45.2	0.777	30	
Silver	47.25	1.0	50	0	94.5	81.1	109	47.95	1.47	30	
Thallium	47.10	5.0	50	0	94.2	39.2	125	47	0.213	30	
Vanadium	48.35	5.0	50	0	96.7	65.8	122	49.05	1.44	30	
Zinc	46.40	5.0	50	0.85	91.1	59.9	122	47.25	1.82	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903131
Project: Hwy 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5036

Sample ID **0903131-018AMS** SampType: **MS** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **3/24/2009** RunNo: **19029**
Client ID: **N-2-4@1.5** Batch ID: **5036** TestNo: **SW6010B (SW3050B)** Analysis Date: **3/24/2009** SeqNo: **274404**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	26.50	5.0	50	2	49.0	30.7	130				
Arsenic	48.10	1.7	50	2.65	90.9	71	121				
Barium	164.0	5.0	50	171.8	-15.7	56.2	127				S
Beryllium	43.90	2.0	50	0	87.8	73.3	115				
Cadmium	42.95	1.0	50	0.35	85.2	68.7	110				
Chromium	76.60	5.0	50	39.1	75.0	76	116				S
Cobalt	48.95	5.0	50	9.85	78.2	57.4	122				
Copper	69.30	5.0	50	24.2	90.2	74.8	119				
Lead	127.6	1.0	50	77.75	99.6	60.5	113				
Molybdenum	42.55	5.0	50	0.3	84.5	62.9	123				
Nickel	76.90	5.0	50	35.15	83.5	61.5	122				
Selenium	40.25	5.0	50	0	80.5	62	111				
Silver	46.10	1.0	50	1.35	89.5	81.1	109				
Thallium	34.70	5.0	50	0	69.4	39.2	125				
Vanadium	85.25	5.0	50	37.7	95.1	65.8	122				
Zinc	87.65	5.0	50	46.5	82.3	59.9	122				

Sample ID **0903131-018AMSD** SampType: **MSD** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **3/24/2009** RunNo: **19029**
Client ID: **N-2-4@1.5** Batch ID: **5036** TestNo: **SW6010B (SW3050B)** Analysis Date: **3/24/2009** SeqNo: **274405**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	26.50	5.0	50	2	49.0	30.7	130	26.5	0	30	
Arsenic	47.90	1.7	50	2.65	90.5	71	121	48.1	0.417	30	
Barium	169.0	5.0	50	171.8	-5.70	56.2	127	164	3.00	30	S
Beryllium	47.75	2.0	50	0	95.5	73.3	115	43.9	8.40	30	
Cadmium	43.40	1.0	50	0.35	86.1	68.7	110	42.95	1.04	30	
Chromium	75.70	5.0	50	39.1	73.2	76	116	76.6	1.18	30	S
Cobalt	50.15	5.0	50	9.85	80.6	57.4	122	48.95	2.42	30	
Copper	71.30	5.0	50	24.2	94.2	74.8	119	69.3	2.84	30	
Lead	125.0	1.0	50	77.75	94.6	60.5	113	127.6	1.98	30	
Molybdenum	43.15	5.0	50	0.3	85.7	62.9	123	42.55	1.40	30	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903131
Project: Hwy 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5036

Sample ID	0903131-018AMSD	SampType:	MSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/24/2009	RunNo:	19029
Client ID:	N-2-4@1.5	Batch ID:	5036	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/24/2009	SeqNo:	274405

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	74.30	5.0	50	35.15	78.3	61.5	122	76.9	3.44	30	
Selenium	44.05	5.0	50	0	88.1	62	111	40.25	9.02	30	
Silver	46.25	1.0	50	1.35	89.8	81.1	109	46.1	0.325	30	
Thallium	35.30	5.0	50	0	70.6	39.2	125	34.7	1.71	30	
Vanadium	86.85	5.0	50	37.7	98.3	65.8	122	85.25	1.86	30	
Zinc	87.25	5.0	50	46.5	81.5	59.9	122	87.65	0.457	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903131
Project: Hwy 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5037

Sample ID	MB-5037	SampType:	MBLK	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/24/2009	RunNo:	19034
Client ID:	ZZZZZ	Batch ID:	5037	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/25/2009	SeqNo:	274571

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	5.0									
Arsenic	ND	1.7									
Barium	ND	5.0									
Beryllium	ND	2.0									
Cadmium	ND	1.0									
Chromium	ND	5.0									
Cobalt	ND	5.0									
Copper	ND	5.0									
Lead	ND	1.0									
Molybdenum	ND	5.0									
Nickel	ND	5.0									
Selenium	ND	5.0									
Silver	ND	1.0									
Thallium	ND	5.0									
Vanadium	ND	5.0									
Zinc	ND	5.0									

Sample ID	LCS-5037	SampType:	LCS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/24/2009	RunNo:	19034
Client ID:	ZZZZZ	Batch ID:	5037	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/25/2009	SeqNo:	274569

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	49.80	5.0	50	0	99.6	30.7	130				
Arsenic	49.45	1.7	50	0	98.9	71	121				
Barium	49.25	5.0	50	0.2	98.1	70.2	130				
Beryllium	49.30	2.0	50	0.1	98.4	73.3	115				
Cadmium	47.25	1.0	50	0.1	94.3	68.7	110				
Chromium	49.70	5.0	50	0.15	99.1	76	116				
Cobalt	48.50	5.0	50	0	97.0	57.4	122				
Copper	50.05	5.0	50	0.8	98.5	74.8	119				
Lead	50.25	1.0	50	0.4	99.7	67.9	118				
Molybdenum	51.15	5.0	50	0.1	102	62.9	123				

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903131
Project: Hwy 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5037

Sample ID	LCS-5037	SampType:	LCS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/24/2009	RunNo:	19034
Client ID:	ZZZZZ	Batch ID:	5037	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/25/2009	SeqNo:	274569

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	48.45	5.0	50	0.2	96.5	61.5	122				
Selenium	46.75	5.0	50	0	93.5	62	111				
Silver	47.85	1.0	50	0	95.7	81.1	109				
Thallium	49.00	5.0	50	0	98.0	39.2	125				
Vanadium	49.35	5.0	50	0	98.7	65.8	122				
Zinc	47.95	5.0	50	2.45	91.0	59.9	122				

Sample ID	LCSD-5037	SampType:	LCSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/24/2009	RunNo:	19034
Client ID:	ZZZZZ	Batch ID:	5037	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/25/2009	SeqNo:	274570

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	48.00	5.0	50	0	96.0	30.7	130	49.8	3.68	30	
Arsenic	47.95	1.7	50	0	95.9	71	121	49.45	3.08	30	
Barium	47.40	5.0	50	0.2	94.4	70.2	130	49.25	3.83	30	
Beryllium	47.50	2.0	50	0.1	94.8	73.3	115	49.3	3.72	30	
Cadmium	45.00	1.0	50	0.1	89.8	68.7	110	47.25	4.88	30	
Chromium	47.95	5.0	50	0.15	95.6	76	116	49.7	3.58	30	
Cobalt	46.60	5.0	50	0	93.2	57.4	122	48.5	4.00	30	
Copper	48.05	5.0	50	0.8	94.5	74.8	119	50.05	4.08	30	
Lead	48.90	1.0	50	0.4	97.0	67.9	118	50.25	2.72	30	
Molybdenum	49.60	5.0	50	0.1	99.0	62.9	123	51.15	3.08	30	
Nickel	46.55	5.0	50	0.2	92.7	61.5	122	48.45	4.00	30	
Selenium	45.15	5.0	50	0	90.3	62	111	46.75	3.48	30	
Silver	46.10	1.0	50	0	92.2	81.1	109	47.85	3.73	30	
Thallium	47.15	5.0	50	0	94.3	39.2	125	49	3.85	30	
Vanadium	47.30	5.0	50	0	94.6	65.8	122	49.35	4.24	30	
Zinc	46.35	5.0	50	2.45	87.8	59.9	122	47.95	3.39	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903131
Project: Hwy 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5037

Sample ID **0903131-037AMS** SampType: **MS** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **3/24/2009** RunNo: **19034**
Client ID: **N-1-14@1.0** Batch ID: **5037** TestNo: **SW6010B (SW3050B)** Analysis Date: **3/25/2009** SeqNo: **274548**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	26.50	5.0	50	4.3	44.4	30.7	130				
Arsenic	44.55	1.7	50	1.65	85.8	71	121				
Barium	191.3	5.0	50	166.2	50.2	56.2	127				S
Beryllium	40.40	2.0	50	0	80.8	73.3	115				
Cadmium	42.75	1.0	50	1.05	83.4	68.7	110				
Chromium	143.4	5.0	50	93.95	99.0	76	116				
Cobalt	56.15	5.0	50	15.15	82.0	57.4	122				
Copper	99.85	5.0	50	73.7	52.3	74.8	119				S
Lead	NR	1.0	50	759.5	-33.0	60.5	113				NR
Molybdenum	43.35	5.0	50	1.5	83.7	62.9	123				
Nickel	261.6	5.0	50	175.8	171	61.5	122				S
Selenium	42.35	5.0	50	0	84.7	62	111				
Silver	48.70	1.0	50	2.2	93.0	81.1	109				
Thallium	32.70	5.0	50	0	65.4	39.2	125				
Vanadium	75.35	5.0	50	32.3	86.1	65.8	122				
Zinc	243.4	5.0	50	179.4	128	59.9	122				S

Sample ID **0903131-037AMSD** SampType: **MSD** TestCode: **6010B_S** Units: **mg/Kg** Prep Date: **3/24/2009** RunNo: **19034**
Client ID: **N-1-14@1.0** Batch ID: **5037** TestNo: **SW6010B (SW3050B)** Analysis Date: **3/25/2009** SeqNo: **274549**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	26.65	5.0	50	4.3	44.7	30.7	130	26.5	0.564	30	
Arsenic	42.50	1.7	50	1.65	81.7	71	121	44.55	4.71	30	
Barium	164.6	5.0	50	166.2	-3.10	56.2	127	191.3	15.0	30	S
Beryllium	41.35	2.0	50	0	82.7	73.3	115	40.4	2.32	30	
Cadmium	41.20	1.0	50	1.05	80.3	68.7	110	42.75	3.69	30	
Chromium	119.4	5.0	50	93.95	51.0	76	116	143.4	18.3	30	S
Cobalt	51.70	5.0	50	15.15	73.1	57.4	122	56.15	8.25	30	
Copper	89.40	5.0	50	73.7	31.4	74.8	119	99.85	11.0	30	S
Lead	NR	1.0	50	759.5	-152	60.5	113	743	8.34	30	NR
Molybdenum	41.20	5.0	50	1.5	79.4	62.9	123	43.35	5.09	30	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903131
Project: Hwy 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5037

Sample ID	0903131-037AMSD	SampType:	MSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/24/2009	RunNo:	19034
Client ID:	N-1-14@1.0	Batch ID:	5037	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/25/2009	SeqNo:	274549

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	245.2	5.0	50	175.8	139	61.5	122	261.6	6.47	30	S
Selenium	41.40	5.0	50	0	82.8	62	111	42.35	2.27	30	
Silver	47.60	1.0	50	2.2	90.8	81.1	109	48.7	2.28	30	
Thallium	32.60	5.0	50	0	65.2	39.2	125	32.7	0.306	30	
Vanadium	72.55	5.0	50	32.3	80.5	65.8	122	75.35	3.79	30	
Zinc	192.6	5.0	50	179.4	26.2	59.9	122	243.4	23.3	30	S

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903131
Project: Hwy 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5038

Sample ID	MB-5038	SampType:	MBLK	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/25/2009	RunNo:	19036
Client ID:	ZZZZZ	Batch ID:	5038	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/25/2009	SeqNo:	274611

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	1.0									

Sample ID	LCS-5038	SampType:	LCS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/25/2009	RunNo:	19036
Client ID:	ZZZZZ	Batch ID:	5038	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/25/2009	SeqNo:	274609

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	49.35	1.0	50	0.35	98.0	67.9	118				

Sample ID	LCSD-5038	SampType:	LCSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/25/2009	RunNo:	19036
Client ID:	ZZZZZ	Batch ID:	5038	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/25/2009	SeqNo:	274610

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	48.70	1.0	50	0.35	96.7	67.9	118	49.35	1.33	30	

Sample ID	0903131-056AMS	SampType:	MS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/25/2009	RunNo:	19036
Client ID:	N-1-19@0.5-D	Batch ID:	5038	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/25/2009	SeqNo:	274587

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	744.0	1.0	50	164.4	1160	60.5	113				S

Sample ID	0903131-056AMSD	SampType:	MSD	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	3/25/2009	RunNo:	19036
Client ID:	N-1-19@0.5-D	Batch ID:	5038	TestNo:	SW6010B	(SW3050B)		Analysis Date:	3/25/2009	SeqNo:	274588

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	200.8	1.0	50	164.4	72.8	60.5	113	744	115	30	R

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903131
Project: Hwy 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5201

Sample ID **MB-5201** SampType: **MBLK** TestCode: **6010B (STLC** Units: **mg/L** Prep Date: **5/20/2009** RunNo: **19620**
Client ID: **ZZZZZ** Batch ID: **5201** TestNo: **6010B (STLC (SW3010A)** Analysis Date: **5/21/2009** SeqNo: **283826**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	ND	0.10									
Lead (STLC)	ND	0.10									

Sample ID **LCS-5201** SampType: **LCS** TestCode: **6010B (STLC** Units: **mg/L** Prep Date: **5/20/2009** RunNo: **19620**
Client ID: **ZZZZZ** Batch ID: **5201** TestNo: **6010B (STLC (SW3010A)** Analysis Date: **5/21/2009** SeqNo: **283824**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	9.480	0.10	10	0.01	94.7	75	125				
Lead (STLC)	9.010	0.10	10	0.01	90.0	75	125				

Sample ID **LCSD-5201** SampType: **LCSD** TestCode: **6010B (STLC** Units: **mg/L** Prep Date: **5/20/2009** RunNo: **19620**
Client ID: **ZZZZZ** Batch ID: **5201** TestNo: **6010B (STLC (SW3010A)** Analysis Date: **5/21/2009** SeqNo: **283825**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	9.510	0.10	10	0.01	95.0	75	125	9.48	0.316	30	
Lead (STLC)	8.710	0.10	10	0.01	87.0	75	125	9.01	3.39	30	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903131
Project: Hwy 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5202

Sample ID **MB-5202** SampType: **MBLK** TestCode: **6010B (STLC** Units: **mg/L** Prep Date: **5/28/2009** RunNo: **19710**
Client ID: **ZZZZZ** Batch ID: **5202** TestNo: **6010B (STLC (SW3010A)** Analysis Date: **5/29/2009** SeqNo: **284977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	ND	0.10									
Lead (STLC)	ND	0.10									

Sample ID **LCS-5202** SampType: **LCS** TestCode: **6010B (STLC** Units: **mg/L** Prep Date: **5/28/2009** RunNo: **19710**
Client ID: **ZZZZZ** Batch ID: **5202** TestNo: **6010B (STLC (SW3010A)** Analysis Date: **5/29/2009** SeqNo: **284975**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	9.750	0.10	10	0.01	97.4	75	125				
Lead (STLC)	8.910	0.10	10	0.01	89.0	75	125				

Sample ID **LCSD-5202** SampType: **LCSD** TestCode: **6010B (STLC** Units: **mg/L** Prep Date: **5/28/2009** RunNo: **19710**
Client ID: **ZZZZZ** Batch ID: **5202** TestNo: **6010B (STLC (SW3010A)** Analysis Date: **5/29/2009** SeqNo: **284976**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	9.180	0.10	10	0.01	91.7	75	125	9.75	6.02	30	
Lead (STLC)	8.940	0.10	10	0.01	89.3	75	125	8.91	0.336	30	

Sample ID **0903131-023AMS** SampType: **MS** TestCode: **6010B (STLC** Units: **mg/L** Prep Date: **5/28/2009** RunNo: **19710**
Client ID: **N-1-13@1.5** Batch ID: **5202** TestNo: **6010B (STLC (SW3010A)** Analysis Date: **5/29/2009** SeqNo: **284955**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	9.130	0.10	10	0.16	89.7	75	125				
Lead (STLC)	21.87	0.10	10	13.87	80.0	75	125				

Sample ID **0903131-023AMSD** SampType: **MSD** TestCode: **6010B (STLC** Units: **mg/L** Prep Date: **5/28/2009** RunNo: **19710**
Client ID: **N-1-13@1.5** Batch ID: **5202** TestNo: **6010B (STLC (SW3010A)** Analysis Date: **5/29/2009** SeqNo: **284956**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium (STLC)	9.020	0.10	10	0.16	88.6	75	125	9.13	1.21	30	
Lead (STLC)	21.58	0.10	10	13.87	77.1	75	125	21.87	1.33	30	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903131
Project: Hwy 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5203

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-5203	**MBLK**	**6010B (DI-ST**	**mg/L**	**5/20/2009**	**19641**
Client ID: **ZZZZZ**	Batch ID: **5203**	TestNo: **6010B (DI-ST (SW3010A)**		Analysis Date: **5/21/2009**	SeqNo: **284074**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	ND	0.10									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCS-5203	**LCS**	**6010B (DI-ST**	**mg/L**	**5/20/2009**	**19641**
Client ID: **ZZZZZ**	Batch ID: **5203**	TestNo: **6010B (DI-ST (SW3010A)**		Analysis Date: **5/21/2009**	SeqNo: **284072**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	10.30	0.10	10	0	103	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCSD-5203	**LCSD**	**6010B (DI-ST**	**mg/L**	**5/20/2009**	**19641**
Client ID: **ZZZZZ**	Batch ID: **5203**	TestNo: **6010B (DI-ST (SW3010A)**		Analysis Date: **5/21/2009**	SeqNo: **284073**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	10.36	0.10	10	0	104	75	125	10.3	0.581	30	

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
0903131-001AMS	**MS**	**6010B (DI-ST**	**mg/L**	**5/20/2009**	**19641**
Client ID: **N-2-1@0.5**	Batch ID: **5203**	TestNo: **6010B (DI-ST (SW3010A)**		Analysis Date: **5/21/2009**	SeqNo: **284052**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	10.33	0.10	10	0	103	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
0903131-001AMSD	**MSD**	**6010B (DI-ST**	**mg/L**	**5/20/2009**	**19641**
Client ID: **N-2-1@0.5**	Batch ID: **5203**	TestNo: **6010B (DI-ST (SW3010A)**		Analysis Date: **5/21/2009**	SeqNo: **284053**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	10.13	0.10	10	0	101	75	125	10.33	1.96	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903131
Project: Hwy 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5232

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-5232	**MBLK**	**6010B (DI-ST**	**mg/L**	**5/28/2009**	**19709**
Client ID: **ZZZZZ**	Batch ID: **5232**	TestNo: **6010B (DI-ST (SW3010A)**		Analysis Date: **5/29/2009**	SeqNo: **284952**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	ND	0.10									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCS-5232	**LCS**	**6010B (DI-ST**	**mg/L**	**5/28/2009**	**19709**
Client ID: **ZZZZZ**	Batch ID: **5232**	TestNo: **6010B (DI-ST (SW3010A)**		Analysis Date: **5/29/2009**	SeqNo: **284950**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	10.27	0.10	10	0.01	103	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCSD-5232	**LCSD**	**6010B (DI-ST**	**mg/L**	**5/28/2009**	**19709**
Client ID: **ZZZZZ**	Batch ID: **5232**	TestNo: **6010B (DI-ST (SW3010A)**		Analysis Date: **5/29/2009**	SeqNo: **284951**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	10.22	0.10	10	0.01	102	75	125	10.27	0.488	30	

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
0903131-042AMS	**MS**	**6010B (DI-ST**	**mg/L**	**5/28/2009**	**19709**
Client ID: **N-1-17@1.0**	Batch ID: **5232**	TestNo: **6010B (DI-ST (SW3010A)**		Analysis Date: **5/29/2009**	SeqNo: **284930**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	10.16	0.10	10	0.01	102	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
0903131-042AMSD	**MSD**	**6010B (DI-ST**	**mg/L**	**5/28/2009**	**19709**
Client ID: **N-1-17@1.0**	Batch ID: **5232**	TestNo: **6010B (DI-ST (SW3010A)**		Analysis Date: **5/29/2009**	SeqNo: **284931**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (DI-STLC)	10.29	0.10	10	0.01	103	75	125	10.16	1.27	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903131
Project: Hwy 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5276

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-5276	**MBLK**	**6010B (TCLP**	**mg/L**	**6/10/2009**	**19852**
Client ID: **ZZZZZ**	Batch ID: **5276**	TestNo: **6010B (TCLP (SW3010A)**		Analysis Date: **6/11/2009**	SeqNo: **287119**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	ND	0.10									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCS-5276	**LCS**	**6010B (TCLP**	**mg/L**	**6/10/2009**	**19852**
Client ID: **ZZZZZ**	Batch ID: **5276**	TestNo: **6010B (TCLP (SW3010A)**		Analysis Date: **6/11/2009**	SeqNo: **287117**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	10.24	0.10	10	0	102	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCSD-5276	**LCSD**	**6010B (TCLP**	**mg/L**	**6/10/2009**	**19852**
Client ID: **ZZZZZ**	Batch ID: **5276**	TestNo: **6010B (TCLP (SW3010A)**		Analysis Date: **6/11/2009**	SeqNo: **287118**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	10.10	0.10	10	0	101	75	125	10.24	1.38	30	

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
0903131-003AMS	**MS**	**6010B (TCLP**	**mg/L**	**6/10/2009**	**19852**
Client ID: **N-2-1@1.5**	Batch ID: **5276**	TestNo: **6010B (TCLP (SW3010A)**		Analysis Date: **6/11/2009**	SeqNo: **287096**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	9.830	0.10	10	0	98.3	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
0903131-003AMSD	**MSD**	**6010B (TCLP**	**mg/L**	**6/10/2009**	**19852**
Client ID: **N-2-1@1.5**	Batch ID: **5276**	TestNo: **6010B (TCLP (SW3010A)**		Analysis Date: **6/11/2009**	SeqNo: **287097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	9.760	0.10	10	0	97.6	75	125	9.83	0.715	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903131
Project: Hwy 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: 5281

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-5281	**MBLK**	**6010B (TCLP**	**mg/L**	**6/12/2009**	**19872**
Client ID: **ZZZZZ**	Batch ID: **5281**	TestNo: **6010B (TCLP (SW3010A)**		Analysis Date: **6/13/2009**	SeqNo: **287452**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	ND	0.10									

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCS-5281	**LCS**	**6010B (TCLP**	**mg/L**	**6/12/2009**	**19872**
Client ID: **ZZZZZ**	Batch ID: **5281**	TestNo: **6010B (TCLP (SW3010A)**		Analysis Date: **6/13/2009**	SeqNo: **287450**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	9.930	0.10	10	0	99.3	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCSD-5281	**LCSD**	**6010B (TCLP**	**mg/L**	**6/12/2009**	**19872**
Client ID: **ZZZZZ**	Batch ID: **5281**	TestNo: **6010B (TCLP (SW3010A)**		Analysis Date: **6/13/2009**	SeqNo: **287451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	9.800	0.10	10	0	98.0	75	125	9.93	1.32	30	

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
0903131-023AMS	**MS**	**6010B (TCLP**	**mg/L**	**6/12/2009**	**19872**
Client ID: **N-1-13@1.5**	Batch ID: **5281**	TestNo: **6010B (TCLP (SW3010A)**		Analysis Date: **6/13/2009**	SeqNo: **287430**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	10.84	0.10	10	0.04	108	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
0903131-023AMSD	**MSD**	**6010B (TCLP**	**mg/L**	**6/12/2009**	**19872**
Client ID: **N-1-13@1.5**	Batch ID: **5281**	TestNo: **6010B (TCLP (SW3010A)**		Analysis Date: **6/13/2009**	SeqNo: **287431**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead (TCLP)	9.540	0.10	10	0.04	95.0	75	125	10.84	12.8	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903131
Project: Hwy 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: G19021

Sample ID	MB_G19021	SampType:	MBLK	TestCode:	TPH_GAS_S	Units:	µg/Kg	Prep Date:	3/23/2009	RunNo:	19021
Client ID:	ZZZZZ	Batch ID:	G19021	TestNo:	SW8260B(TP			Analysis Date:	3/23/2009	SeqNo:	274201

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	ND	100									
Surr: 4-Bromofllurobenzene	51.00	0	50	0	102	56.9	133				

Sample ID	LCS_G19021	SampType:	LCS	TestCode:	TPH_GAS_S	Units:	µg/Kg	Prep Date:	3/23/2009	RunNo:	19021
Client ID:	ZZZZZ	Batch ID:	G19021	TestNo:	SW8260B(TP			Analysis Date:	3/23/2009	SeqNo:	274202

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	1166	100	1000	0	117	48.2	132				
Surr: 4-Bromofllurobenzene	53.00	0	50	0	106	56.9	133				

Sample ID	LCSD_G19021	SampType:	LCSD	TestCode:	TPH_GAS_S	Units:	µg/Kg	Prep Date:	3/23/2009	RunNo:	19021
Client ID:	ZZZZZ	Batch ID:	G19021	TestNo:	SW8260B(TP			Analysis Date:	3/23/2009	SeqNo:	274203

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	1155	100	1000	0	116	48.2	132	1166	0.948	30	
Surr: 4-Bromofllurobenzene	46.00	0	50	0	92.0	56.9	133	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903131
Project: Hwy 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: G19048

Sample ID	MB_G19048	SampType:	MBLK	TestCode:	TPH_GAS_S	Units:	µg/Kg	Prep Date:	3/24/2009	RunNo:	19048
Client ID:	ZZZZZ	Batch ID:	G19048	TestNo:	SW8260B(TP			Analysis Date:	3/24/2009	SeqNo:	274730

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	ND	100									
Surr: 4-Bromofllurobenzene	42.00	0	50	0	84.0	56.9	133				

Sample ID	LCS_G19048	SampType:	LCS	TestCode:	TPH_GAS_S	Units:	µg/Kg	Prep Date:	3/24/2009	RunNo:	19048
Client ID:	ZZZZZ	Batch ID:	G19048	TestNo:	SW8260B(TP			Analysis Date:	3/24/2009	SeqNo:	274731

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	1072	100	1000	0	107	48.2	132				
Surr: 4-Bromofllurobenzene	45.00	0	50	0	90.0	56.9	133				

Sample ID	LCSD_G19048	SampType:	LCSD	TestCode:	TPH_GAS_S	Units:	µg/Kg	Prep Date:	3/24/2009	RunNo:	19048
Client ID:	ZZZZZ	Batch ID:	G19048	TestNo:	SW8260B(TP			Analysis Date:	3/24/2009	SeqNo:	274732

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	1045	100	1000	0	104	48.2	132	1072	2.55	30	
Surr: 4-Bromofllurobenzene	43.00	0	50	0	86.0	56.9	133	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903131
Project: Hwy 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19021

Sample ID **MB_R19021** SampType: **MBLK** TestCode: **8260B_S_PE** Units: **µg/Kg** Prep Date: **3/23/2009** RunNo: **19021**
Client ID: **ZZZZZ** Batch ID: **R19021** TestNo: **SW8260B** Analysis Date: **3/23/2009** SeqNo: **274184**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	10									
Diisopropyl ether (DIPE)	ND	10									
Ethyl tert-butyl ether (ETBE)	ND	10									
Ethylbenzene	ND	10									
Methyl tert-butyl ether (MTBE)	ND	10									
t-Butyl alcohol (t-Butanol)	ND	50									
tert-Amyl methyl ether (TAME)	ND	10									
Toluene	ND	10									
Xylenes, Total	ND	15									
Surr: 4-Bromofluorobenzene	41.76	0	50	0	83.5	55.8	141				
Surr: Dibromofluoromethane	47.09	0	50	0	94.2	59.8	148				
Surr: Toluene-d8	47.29	0	50	0	94.6	55.2	133				

Sample ID **LCS_R19021** SampType: **LCS** TestCode: **8260B_S_PE** Units: **µg/Kg** Prep Date: **3/23/2009** RunNo: **19021**
Client ID: **ZZZZZ** Batch ID: **R19021** TestNo: **SW8260B** Analysis Date: **3/23/2009** SeqNo: **274185**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	42.87	10	50	0	85.7	66.5	135				
Toluene	39.60	10	50	0	79.2	56.8	134				
Surr: 4-Bromofluorobenzene	37.05	0	50	0	74.1	55.8	141				
Surr: Dibromofluoromethane	45.44	0	50	0	90.9	59.8	148				
Surr: Toluene-d8	43.63	0	50	0	87.3	55.2	133				

Sample ID **LCSD_R19021** SampType: **LCSD** TestCode: **8260B_S_PE** Units: **µg/Kg** Prep Date: **3/23/2009** RunNo: **19021**
Client ID: **ZZZZZ** Batch ID: **R19021** TestNo: **SW8260B** Analysis Date: **3/23/2009** SeqNo: **274194**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	40.85	10	50	0	81.7	66.5	135	42.87	4.83	30	
Toluene	37.09	10	50	0	74.2	56.8	134	39.6	6.55	30	
Surr: 4-Bromofluorobenzene	38.73	0	50	0	77.5	55.8	141	0	0	0	
Surr: Dibromofluoromethane	48.74	0	50	0	97.5	59.8	148	0	0	0	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903131
Project: Hwy 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19021

Sample ID **LCSD_R19021** SampType: **LCSD** TestCode: **8260B_S_PE** Units: **µg/Kg** Prep Date: **3/23/2009** RunNo: **19021**
Client ID: **ZZZZZ** Batch ID: **R19021** TestNo: **SW8260B** Analysis Date: **3/23/2009** SeqNo: **274194**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Toluene-d8	44.29	0	50	0	88.6	55.2	133	0	0	0	

Sample ID **0903131-012A ms** SampType: **MS** TestCode: **8260B_S_PE** Units: **µg/Kg** Prep Date: **3/23/2009** RunNo: **19021**
Client ID: **N-2-2@1.0** Batch ID: **R19021** TestNo: **SW8260B** Analysis Date: **3/23/2009** SeqNo: **274196**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	34.75	10	50	0	69.5	66.5	135				
Toluene	32.68	10	50	0	65.4	56.8	134				
Surr: 4-Bromofluorobenzene	46.87	0	50	0	93.7	55.8	141				
Surr: Dibromofluoromethane	52.38	0	50	0	105	59.8	148				
Surr: Toluene-d8	47.60	0	50	0	95.2	55.2	133				

Sample ID **0903131-012A msd** SampType: **MSD** TestCode: **8260B_S_PE** Units: **µg/Kg** Prep Date: **3/23/2009** RunNo: **19021**
Client ID: **N-2-2@1.0** Batch ID: **R19021** TestNo: **SW8260B** Analysis Date: **3/23/2009** SeqNo: **274197**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	40.55	10	50	0	81.1	66.5	135	34.75	15.4	30	
Toluene	40.96	10	50	0	81.9	56.8	134	32.68	22.5	30	
Surr: 4-Bromofluorobenzene	46.93	0	50	0	93.9	55.8	141	0	0	0	
Surr: Dibromofluoromethane	50.20	0	50	0	100	59.8	148	0	0	0	
Surr: Toluene-d8	50.68	0	50	0	101	55.2	133	0	0	0	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903131
Project: Hwy 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19048

Sample ID **MB_R19048** SampType: **MBLK** TestCode: **8260B_S_PE** Units: **µg/Kg** Prep Date: **3/24/2009** RunNo: **19048**
Client ID: **ZZZZZ** Batch ID: **R19048** TestNo: **SW8260B** Analysis Date: **3/24/2009** SeqNo: **275834**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	10									
Diisopropyl ether (DIPE)	ND	10									
Ethyl tert-butyl ether (ETBE)	ND	10									
Ethylbenzene	ND	10									
Methyl tert-butyl ether (MTBE)	ND	10									
t-Butyl alcohol (t-Butanol)	ND	50									
tert-Amyl methyl ether (TAME)	ND	10									
Toluene	ND	10									
Xylenes, Total	ND	15									
Surr: 4-Bromofluorobenzene	41.45	0	50	0	82.9	55.8	141				
Surr: Dibromofluoromethane	46.48	0	50	0	93.0	59.8	148				
Surr: Toluene-d8	43.24	0	50	0	86.5	55.2	133				

Sample ID **LCS_R19048** SampType: **LCS** TestCode: **8260B_S_PE** Units: **µg/Kg** Prep Date: **3/24/2009** RunNo: **19048**
Client ID: **ZZZZZ** Batch ID: **R19048** TestNo: **SW8260B** Analysis Date: **3/24/2009** SeqNo: **275835**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	45.22	10	50	0	90.4	66.5	135				
Toluene	38.07	10	50	0	76.1	56.8	134				
Surr: 4-Bromofluorobenzene	43.55	0	50	0	87.1	55.8	141				
Surr: Dibromofluoromethane	49.49	0	50	0	99.0	59.8	148				
Surr: Toluene-d8	42.67	0	50	0	85.3	55.2	133				

Sample ID **LCSD_R19048** SampType: **LCSD** TestCode: **8260B_S_PE** Units: **µg/Kg** Prep Date: **3/24/2009** RunNo: **19048**
Client ID: **ZZZZZ** Batch ID: **R19048** TestNo: **SW8260B** Analysis Date: **3/24/2009** SeqNo: **275836**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	43.61	10	50	0	87.2	66.5	135	45.22	3.62	30	
Toluene	39.71	10	50	0	79.4	56.8	134	38.07	4.22	30	
Surr: 4-Bromofluorobenzene	37.84	0	50	0	75.7	55.8	141	0	0	0	
Surr: Dibromofluoromethane	46.39	0	50	0	92.8	59.8	148	0	0	0	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903131
Project: Hwy 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19048

Sample ID	LCSD_R19048	SampType:	LCSD	TestCode:	8260B_S_PE	Units:	µg/Kg	Prep Date:	3/24/2009	RunNo:	19048
Client ID:	ZZZZZ	Batch ID:	R19048	TestNo:	SW8260B			Analysis Date:	3/24/2009	SeqNo:	275836

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Toluene-d8	43.44	0	50	0	86.9	55.2	133	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903131
Project: Hwy 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19060

Sample ID **SD090326A-MB** SampType: **MBLK** TestCode: **TPHDO_S** Units: **mg/Kg** Prep Date: **3/26/2009** RunNo: **19060**
Client ID: **ZZZZZ** Batch ID: **R19060** TestNo: **SW8015B** Analysis Date: **3/26/2009** SeqNo: **275019**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	ND	2.00									
TPH (Motor Oil)	ND	4.00									
Surr: Pentacosane	3.858	0	3.3	0	117	59.7	129				

Sample ID **SD090330A-MB** SampType: **MBLK** TestCode: **TPHDO_S** Units: **mg/Kg** Prep Date: **3/30/2009** RunNo: **19060**
Client ID: **ZZZZZ** Batch ID: **R19060** TestNo: **SW8015B** Analysis Date: **3/30/2009** SeqNo: **275704**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	ND	2.00									
TPH (Motor Oil)	ND	4.00									
Surr: Pentacosane	3.300	0	3.3	0	100	59.7	129				

Sample ID **SD090326A-LCS** SampType: **LCS** TestCode: **TPHDO_S** Units: **mg/Kg** Prep Date: **3/26/2009** RunNo: **19060**
Client ID: **ZZZZZ** Batch ID: **R19060** TestNo: **SW8015B** Analysis Date: **3/26/2009** SeqNo: **275020**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	27.16	2.00	33.33	0	81.5	52.7	115				
Surr: Pentacosane	3.070	0	3.3	0	93.0	59.7	129				

Sample ID **SD090326A-LCSD** SampType: **LCSD** TestCode: **TPHDO_S** Units: **mg/Kg** Prep Date: **3/26/2009** RunNo: **19060**
Client ID: **ZZZZZ** Batch ID: **R19060** TestNo: **SW8015B** Analysis Date: **3/26/2009** SeqNo: **275021**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	29.28	2.00	33.33	0	87.9	52.7	115	27.16	7.53	30	
Surr: Pentacosane	3.420	0	3.3	0	104	59.7	129	0	0	0	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903131
Project: Hwy 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19073

Sample ID	SP090327B-MB	SampType:	MBLK	TestCode:	8081S	Units:	µg/Kg	Prep Date:	3/27/2009	RunNo:	19073
Client ID:	ZZZZZ	Batch ID:	R19073	TestNo:	SW8081A			Analysis Date:	3/28/2009	SeqNo:	275321

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDD	ND	2.00									
4,4´-DDE	ND	2.00									
4,4´-DDT	ND	2.00									
Aldrin	ND	2.00									
alpha-BHC	ND	2.00									
alpha-Chlordane	ND	2.00									
beta-BHC	ND	2.00									
Chlordane	ND	20.0									
delta-BHC	ND	2.00									
Dieldrin	ND	2.00									
Endosulfan I	ND	2.00									
Endosulfan II	ND	2.00									
Endosulfan sulfate	ND	2.00									
Endrin	ND	2.00									
Endrin aldehyde	ND	2.00									
Endrin ketone	ND	2.00									
gamma-BHC	ND	2.00									
gamma-Chlordane	ND	2.00									
Heptachlor	ND	2.00									
Heptachlor epoxide	ND	2.00									
Methoxychlor	ND	5.00									
Toxaphene	ND	100									
Surr: Decachlorobiphenyl	43.53	0	50	0	87.1	57	126				
Surr: Tetrachloro-m-xylene	42.52	0	50	0	85.0	55.7	122				

Sample ID	SP090327B-LCS	SampType:	LCS	TestCode:	8081S	Units:	µg/Kg	Prep Date:	3/27/2009	RunNo:	19073
Client ID:	ZZZZZ	Batch ID:	R19073	TestNo:	SW8081A			Analysis Date:	3/28/2009	SeqNo:	275322

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDT	17.89	2.00	20	0	89.5	52.8	134				
Aldrin	17.74	2.00	20	0	88.7	53	123				

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903131
Project: Hwy 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19073

Sample ID	SP090327B-LCS	SampType:	LCS	TestCode:	8081S	Units:	µg/Kg	Prep Date:	3/27/2009	RunNo:	19073
Client ID:	ZZZZZ	Batch ID:	R19073	TestNo:	SW8081A			Analysis Date:	3/28/2009	SeqNo:	275322

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dieldrin	18.10	2.00	20	0	90.5	44	130				
Endrin	16.97	2.00	20	0	84.9	44.1	121				
gamma-BHC	16.31	2.00	20	0	81.5	56.9	120				
Heptachlor	16.65	2.00	20	0	83.3	63.6	117				
Surr: Decachlorobiphenyl	58.34	0	70	0	83.3	57	126				
Surr: Tetrachloro-m-xylene	58.13	0	70	0	83.0	55.7	122				

Sample ID	SP090327B-LCSD	SampType:	LCSD	TestCode:	8081S	Units:	µg/Kg	Prep Date:	3/27/2009	RunNo:	19073
Client ID:	ZZZZZ	Batch ID:	R19073	TestNo:	SW8081A			Analysis Date:	3/28/2009	SeqNo:	275323

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDT	14.41	2.00	20	0	72.0	52.8	134	17.89	21.6	30	
Aldrin	14.61	2.00	20	0	73.0	53	123	17.74	19.4	30	
Dieldrin	14.93	2.00	20	0	74.7	44	130	18.1	19.2	30	
Endrin	14.03	2.00	20	0	70.1	44.1	121	16.97	19.0	30	
gamma-BHC	13.64	2.00	20	0	68.2	56.9	120	16.31	17.8	30	
Heptachlor	14.13	2.00	20	0	70.6	63.6	117	16.65	16.4	30	
Surr: Decachlorobiphenyl	48.60	0	70	0	69.4	57	126	0	0	0	
Surr: Tetrachloro-m-xylene	49.53	0	70	0	70.8	55.7	122	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0903131
Project: Hwy 101 Aux Lanes

ANALYTICAL QC SUMMARY REPORT

BatchID: R19084

Sample ID **SQ090327A-MB** SampType: **MBLK** TestCode: **8082S** Units: **mg/Kg** Prep Date: **3/27/2009** RunNo: **19084**
Client ID: **ZZZZZ** Batch ID: **R19084** TestNo: **SW8082** Analysis Date: **3/28/2009** SeqNo: **275502**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	0.0230									
Aroclor 1221	ND	0.0920									
Aroclor 1232	ND	0.0460									
Aroclor 1242	ND	0.0430									
Aroclor 1248	ND	0.0360									
Aroclor 1254	ND	0.0240									
Aroclor 1260	ND	0.0270									
Surr: Decachlorobiphenyl	0.04472	0	0.05	0	89.4	55.1	113				
Surr: Tetrachloro-m-xylene	0.04397	0	0.05	0	87.9	51.7	128				

Sample ID **SQ090327A-LCS** SampType: **LCS** TestCode: **8082S** Units: **mg/Kg** Prep Date: **3/27/2009** RunNo: **19084**
Client ID: **ZZZZZ** Batch ID: **R19084** TestNo: **SW8082** Analysis Date: **3/28/2009** SeqNo: **275503**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	0.8610	0.100	1	0	86.1	55.6	135				
Aroclor 1260	0.5035	0.100	0.5	0	101	65.6	132				
Surr: Decachlorobiphenyl	0.05204	0	0.05	0	104	55.1	113				
Surr: Tetrachloro-m-xylene	0.05232	0	0.05	0	105	51.7	128				

Sample ID **SQ090327A-LCSD** SampType: **LCSD** TestCode: **8082S** Units: **mg/Kg** Prep Date: **3/27/2009** RunNo: **19084**
Client ID: **ZZZZZ** Batch ID: **R19084** TestNo: **SW8082** Analysis Date: **3/28/2009** SeqNo: **275504**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	0.8186	0.100	1	0	81.9	55.6	135	0.861	5.04	30	
Aroclor 1260	0.4812	0.100	0.5	0	96.2	65.6	132	0.5035	4.52	30	
Surr: Decachlorobiphenyl	0.04821	0	0.05	0	96.4	55.1	113	0	0	0	
Surr: Tetrachloro-m-xylene	0.04768	0	0.05	0	95.4	51.7	128	0	0	0	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

Torrent Laboratory, Inc.

WORK ORDER Summary

24-Mar-09

Work Order 0903131

Client ID: URS CORPORATION

Project: **QC Level:**

Comments: 5 day TAT! Recv'd 65 soil samples. Asbestos subbed to EMSL.

Sample ID	Client Sample ID	Collection Date	Date Received	Date Due	Matrix	Test Code	Hld	MS	SEL	Sub	Storage
0903131-001A	N-2-1@0.5	3/22/2009 10:45:00 PM	3/23/2009	3/27/2009	Soil	3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-002A	N-2-1@1.0			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-003A	N-2-1@1.5			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-004A	N-2-1@2.0			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-005A	N-2-1@3.0			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-006A	N-1-20@0.5	3/22/2009 11:20:00 PM		3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
				3/27/2009		ASBESTOS_PLM SUB	☐	☐	☐	☑	SR
0903131-007A	N-1-20@1.0			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
				3/27/2009		ASBESTOS_PLM SUB	☐	☐	☐	☑	SR
0903131-008A	N-1-20@1.5			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
				3/27/2009		ASBESTOS_PLM SUB	☐	☐	☐	☑	SR
0903131-009A	N-1-20@2.0			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
				3/27/2009		ASBESTOS_PLM SUB	☐	☐	☐	☑	SR
0903131-010A	N-1-20@3.0			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
				3/27/2009		ASBESTOS_PLM SUB	☐	☐	☐	☑	SR
0903131-011A	N-2-2@0.5	3/22/2009 9:15:00 PM		3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR

WORK ORDER Summary

24-Mar-09

Work Order 0903131

Client ID: URS CORPORATION

Project: **QC Level:**

Comments: 5 day TAT! Recv'd 65 soil samples. Asbestos subbed to EMSL.

Sample ID	Client Sample ID	Collection Date	Date Received	Date Due	Matrix	Test Code	Hld	MS	SEL	Sub	Storage
0903131-011A	N-2-2@0.5	3/22/2009 9:15:00 PM	3/23/2009	3/27/2009	Soil	7471_PREP	☐	☐	☐	☐	SR
				3/27/2009		8081S	☐	☐	☐	☐	SR
				3/27/2009		8082S	☐	☐	☐	☐	SR
				3/27/2009		HG_CTS	☐	☐	☐	☐	SR
				3/27/2009		TPHDO_S	☐	☐	☐	☐	SR
0903131-012A	N-2-2@1.0			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
				3/27/2009		7471_PREP	☐	☐	☐	☐	SR
				3/27/2009		8260B_S_PETROLEUM	☐	☐	☑	☐	SR
				3/27/2009		HG_CTS	☐	☐	☐	☐	SR
				3/27/2009		TPH_GAS_S_GCMS	☐	☐	☐	☐	SR
0903131-013A	N-2-2@1.5			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
				3/27/2009		7471_PREP	☐	☐	☐	☐	SR
				3/27/2009		8260B_S_PETROLEUM	☐	☐	☑	☐	SR
				3/27/2009		HG_CTS	☐	☐	☐	☐	SR
				3/27/2009		TPH_GAS_S_GCMS	☐	☐	☐	☐	SR
0903131-014A	N-2-2@2.0			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
				3/27/2009		7471_PREP	☐	☐	☐	☐	SR
				3/27/2009		8260B_S_PETROLEUM	☐	☐	☑	☐	SR
				3/27/2009		HG_CTS	☐	☐	☐	☐	SR
				3/27/2009		TPH_GAS_S_GCMS	☐	☐	☐	☐	SR
0903131-015A	N-2-2@3.0			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
				3/27/2009		7471_PREP	☐	☐	☐	☐	SR
				3/27/2009		8260B_S_PETROLEUM	☐	☐	☑	☐	SR
				3/27/2009		HG_CTS	☐	☐	☐	☐	SR

WORK ORDER Summary

24-Mar-09

Work Order 0903131

Client ID: URS CORPORATION

Project: **QC Level:**

Comments: 5 day TAT! Recv'd 65 soil samples. Asbestos subbed to EMSL.

Sample ID	Client Sample ID	Collection Date	Date Received	Date Due	Matrix	Test Code	Hld	MS	SEL	Sub	Storage
0903131-015A	N-2-2@3.0	3/22/2009 9:15:00 PM	3/23/2009	3/27/2009	Soil	TPH_GAS_S_GC_MS	☐	☐	☐	☐	SR
0903131-016A	N-2-4@0.5	3/22/2009 10:20:00 PM		3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-017A	N-2-4@1.0			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-018A	N-2-4@1.5			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-019A	N-2-4@2.0			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-020A	N-2-4@3.0			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-021A	N-1-13@0.5	3/23/2009 3:00:00 AM		3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-022A	N-1-13@1.0			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-023A	N-1-13@1.5			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-024A	N-1-13@2.0			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-025A	N-1-13@3.0			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-026A	N-1-12@0.5	3/23/2009 2:35:00 AM		3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-027A	N-1-12@1.0			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-028A	N-1-12@1.5			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-029A	N-1-12@2.0			3/27/2009		3050B_S	☐	☐	☐	☐	SR

WORK ORDER Summary

24-Mar-09

Work Order 0903131

Client ID: URS CORPORATION

Project: **QC Level:**

Comments: 5 day TAT! Recv'd 65 soil samples. Asbestos subbed to EMSL.

Sample ID	Client Sample ID	Collection Date	Date Received	Date Due	Matrix	Test Code	Hld	MS	SEL	Sub	Storage
0903131-029A	N-1-12@2.0	3/23/2009 2:35:00 AM	3/23/2009	3/27/2009	Soil	6010B_S	☐	☐	☑	☐	SR
0903131-030A	N-1-12@3.0			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-031A	N-1-15@0.5	3/23/2009 1:35:00 AM		3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
				3/27/2009		ASBESTOS_PLM SUB	☐	☐	☐	☑	SR
0903131-032A	N-1-15@1.0			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
				3/27/2009		ASBESTOS_PLM SUB	☐	☐	☐	☑	SR
0903131-033A	N-1-15@1.5			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
				3/27/2009		ASBESTOS_PLM SUB	☐	☐	☐	☑	SR
0903131-034A	N-1-15@2.0			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
				3/27/2009		ASBESTOS_PLM SUB	☐	☐	☐	☑	SR
0903131-035A	N-1-15@3.0			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
				3/27/2009		ASBESTOS_PLM SUB	☐	☐	☐	☑	SR
0903131-036A	N-1-14@0.5	3/23/2009 2:10:00 AM		3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
				3/27/2009		7471_PREP	☐	☐	☐	☐	SR
				3/27/2009		8081S	☐	☐	☐	☐	SR
				3/27/2009		8082S	☐	☐	☐	☐	SR
				3/27/2009		HG_CTS	☐	☐	☐	☐	SR
				3/27/2009		PH_S	☐	☐	☐	☐	SR
				3/27/2009		TPHDO_S	☐	☐	☐	☐	SR
0903131-037A	N-1-14@1.0			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR

WORK ORDER Summary

24-Mar-09

Work Order 0903131

Client ID: URS CORPORATION

Project: **QC Level:**

Comments: 5 day TAT! Recv'd 65 soil samples. Asbestos subbed to EMSL.

Sample ID	Client Sample ID	Collection Date	Date Received	Date Due	Matrix	Test Code	Hld	MS	SEL	Sub	Storage
0903131-037A	N-1-14@1.0	3/23/2009 2:10:00 AM	3/23/2009	3/27/2009	Soil	7471_PREP	☐	☐	☐	☐	SR
				3/27/2009		8260B_S_PETROLEUM	☐	☐	☑	☐	SR
				3/27/2009		HG_CTS	☐	☐	☐	☐	SR
				3/27/2009		PH_S	☐	☐	☐	☐	SR
				3/27/2009		TPH_GAS_S_GC_MS	☐	☐	☐	☐	SR
0903131-038A	N-1-14@1.5			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
				3/27/2009		7471_PREP	☐	☐	☐	☐	SR
				3/27/2009		8260B_S_PETROLEUM	☐	☐	☑	☐	SR
				3/27/2009		HG_CTS	☐	☐	☐	☐	SR
				3/27/2009		PH_S	☐	☐	☐	☐	SR
				3/27/2009		TPH_GAS_S_GC_MS	☐	☐	☐	☐	SR
0903131-039A	N-1-14@2.0			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
				3/27/2009		7471_PREP	☐	☐	☐	☐	SR
				3/27/2009		8260B_S_PETROLEUM	☐	☐	☑	☐	SR
				3/27/2009		HG_CTS	☐	☐	☐	☐	SR
				3/27/2009		PH_S	☐	☐	☐	☐	SR
				3/27/2009		TPH_GAS_S_GC_MS	☐	☐	☐	☐	SR
0903131-040A	N-1-14@3.0			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
				3/27/2009		7471_PREP	☐	☐	☐	☐	SR
				3/27/2009		8260B_S_PETROLEUM	☐	☐	☑	☐	SR
				3/27/2009		HG_CTS	☐	☐	☐	☐	SR
				3/27/2009		PH_S	☐	☐	☐	☐	SR
				3/27/2009		TPH_GAS_S_GC_MS	☐	☐	☐	☐	SR
0903131-041A	N-1-17@0.5	3/23/2009 12:20:00 AM		3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR

WORK ORDER Summary

24-Mar-09

Work Order 0903131

Client ID: URS CORPORATION

Project: **QC Level:**

Comments: 5 day TAT! Recv'd 65 soil samples. Asbestos subbed to EMSL.

Sample ID	Client Sample ID	Collection Date	Date Received	Date Due	Matrix	Test Code	Hld	MS	SEL	Sub	Storage
0903131-042A	N-1-17@1.0	3/23/2009 12:20:00 AM	3/23/2009	3/27/2009	Soil	3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-043A	N-1-17@1.5			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-044A	N-1-17@2.0			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-045A	N-1-17@3.0			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-046A	N-1-16@0.5	3/23/2009 12:55:00 AM		3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-047A	N-1-16@1.0			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-048A	N-1-16@1.5			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-049A	N-1-16@2.0			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-050A	N-1-16@3.0			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-051A	N-1-19@0.5	3/22/2009 11:40:00 PM		3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-052A	N-1-19@1.0			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-053A	N-1-19@1.5			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-054A	N-1-19@2.0			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-055A	N-1-19@3.0			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR

WORK ORDER Summary

24-Mar-09

Work Order 0903131

Client ID: URS CORPORATION

Project: **QC Level:**

Comments: 5 day TAT! Recv'd 65 soil samples. Asbestos subbed to EMSL.

Sample ID	Client Sample ID	Collection Date	Date Received	Date Due	Matrix	Test Code	Hld	MS	SEL	Sub	Storage
0903131-056A	N-1-19@0.5-D	3/22/2009 11:40:00 PM	3/23/2009	3/27/2009	Soil	3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-057A	N-1-19@1.0-D			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-058A	N-1-19@1.5-D			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-059A	N-1-19@2.0-D			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-060A	N-1-19@3.0-D			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
0903131-061A	N-1-11@0.5	3/23/2009 3:30:00 AM		3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
				3/27/2009		ASBESTOS_PLM SUB	☐	☐	☐	☑	SR
0903131-062A	N-1-11@1.0			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
				3/27/2009		ASBESTOS_PLM SUB	☐	☐	☐	☑	SR
0903131-063A	N-1-11@1.5			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
				3/27/2009		ASBESTOS_PLM SUB	☐	☐	☐	☑	SR
0903131-064A	N-1-11@2.0			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
				3/27/2009		ASBESTOS_PLM SUB	☐	☐	☐	☑	SR
0903131-065A	N-1-11@3.0			3/27/2009		3050B_S	☐	☐	☐	☐	SR
				3/27/2009		6010B_S	☐	☐	☑	☐	SR
				3/27/2009		ASBESTOS_PLM SUB	☐	☐	☐	☑	SR

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903131

Company Name: UTS San Jose
Location of Sampling: Hwy 101 - Auto-lanes
Address:
Purpose:
City: State: Zip Code:
Special Instructions / Comments:
Telephone: FAX:
REPORT TO: Patrick Walz SAMPLER: Eduardo Ortiz
P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Work Days ☐ 3 Work Days ☐ Noon - Nxt Day ☐ 7 Work Days ☐ 2 Work Days ☐ 2 - 8 Hours ☒ 5 Work Days ☐ 1 Work Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☒ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

LAB ID	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	EPA 8260B - Full List / EPA 8260B - 8010 List	THP gas ☒ / BTEX / Oxygenates / MTBE	THP Diesel / Motor Oil / Si-Gel	Pesticide - 8081	PCB - 8082	Metals / CAM - 17 / LUFT 5 / 7 Metals	8270 Full List / PAHs Only	Lead	As, Soil, Gas, PCM	REMARKS
001A	N-2-1@0.5	03/22/09 2245	S	1	4 oz Jar								X		
002A	N-2-1@1.0	03/22/09 2245	↓	1	↓								X		
003A	N-2-1@1.5	03/22/09 2245	↓	↓	↓								X		
004A	N-2-1@2.0	03/22/09 2245	↓	↓	↓								X		
005A	N-2-1@3.0	03/22/09 2245	↓	↓	↓								X		
006A	N-1-20@0.5	03/22/09 2320	S	1	8 oz Jar								X	X	
007A	N-1-20@1.0	↓	↓	1	↓								X	X	
008A	N-1-20@1.5	↓	↓	1	↓								X	X	
009A	N-1-20@2.0	↓	↓	1	↓								X	X	
010A	N-1-20@3.0	↓	↓	1	↓								X	X	

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/23/09		D. G. Bhadasara	NAVIN	3/23/09	9:30 Am
2								

Were Samples Received in Good Condition? ☑ Yes ☐ NO Samples on Ice? ☑ Yes ☐ NO Method of Shipment Drop-off Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Log In By: Date: Log In Reviewed By: Date:

TORRENT LAB

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903131

Company Name: URS San Jose
Location of Sampling: Hwy - 101 - Ave - Lanes
Address:
Purpose:
City: State: Zip Code:
Special Instructions / Comments:
Telephone: FAX:
REPORT TO: Patrick Walz SAMPLER: Eduardo Ortega
P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Work Days ☐ 3 Work Days ☐ Noon - Nxt Day ☐ 7 Work Days ☐ 2 Work Days ☐ 2 - 8 Hours ☑ 5 Work Days ☐ 1 Work Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☑ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

LAB ID	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	EPA 8260B - Full List / EPA 8260B - 8010 List	THP gas / BTEX / Oxygenates / MTBE	THP Diesel / Si-Gel / Motor Oil	Pesticide - 8081	PCB - 8082	Metals / CAM - 17 / LUFT 5 / 7 Metals	8270 Full List / PAHs Only	Lead		REMARKS
011A	N-2-2@0.5	03/22/09 21:15	S	1	8 oz Jar			X	X	X	X				
012A	N-2-2@1.0		S	1			X				X				
013A	N-2-2@1.5		S	1			X				X				
014A	N-2-2@2.0		S	1			X				X				
015A	N-2-2@3.0		S	1			X				X				
016A	N-2-4@0.5	03/22/09 2220	S	1	sleeve								X		
017A	N-2-4@1.0		S	1									X		
018A	N-2-4@1.5		S	1									X		
019A	N-2-4@2.0		S	1									X		
020A	N-2-4@3.0		S	1									X		

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/23/09		[signature]		3/23/09	9:30 AM
2								

Were Samples Received in Good Condition? ☑ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment _____ Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date:

TORRENT LAB

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903131

Company Name: URS San Jose
Location of Sampling: Hwy 101 - Aux - lanes
Address:
Purpose:
City: State: Zip Code:
Special Instructions / Comments:
Telephone: FAX:
REPORT TO: Patrick Walz SAMPLER: Eduardo Ortez
P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Work Days ☐ 3 Work Days ☐ Noon - Nxt Day ☐ 7 Work Days ☐ 2 Work Days ☐ 2 - 8 Hours ☒ 5 Work Days ☐ 1 Work Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☒ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

LAB ID	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	EPA 8260B - Full List / EPA 8260B - 8010 List	THP gas / BTEX / Oxygenates / MTBE	THP Diesel / Si-Gel / Motor Oil	Pesticide - 8081	PCB - 8082	Metals / CAM - 17 / LUFT 5 / 7 Metals	8270 Full List / PAHs Only	Lead		REMARKS
021A	N-1-13@0.5	03/23/09 0300	S	1	sleeve								X		
022A	N-1-13@1.0	03/23/09 0300	S	1									X		
023A	N-1-13@1.5	03/23/09 0300		1									X		
024A	N-1-13@2.0	03/23/09 0300		1									X		
025A	N-1-13@3.0	03/23/09 0300		1									X		
026A	N-1-12@0.5	03/23/09 0235	S	1									X		
027A	N-1-12@1.0	03/23/09 0235		1									X		
028A	N-1-12@1.5	03/23/09 0235		1									X		
029A	N-1-12@2.0	03/23/09 0235		1									X		
030A	N-1-12@3.0	03/23/09 0235		1									X		

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/23/09		[signature]	NAVIN	3/23/09	9:30 AM
2								

Were Samples Received in Good Condition? ☐ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment _____ Sample seals intact? ☐ Yes ☐ NO ☒ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date: _____

TORRENT LAB

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903131

Company Name: URS San Jose
Address:
City: State: Zip Code:
Telephone: FAX:
REPORT TO: Patrick Walz SAMPLER: Eduardo Ortiz

Location of Sampling: Hwy 101 – Aux – Lanes
Purpose:
Special Instructions / Comments:
P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Work Days ☐ 3 Work Days ☐ Noon - Nxt Day ☐ 7 Work Days ☐ 2 Work Days ☐ 2 - 8 Hours ☒ 5 Work Days ☐ 1 Work Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☒ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

LAB ID	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	EPA 8260B - Full List / EPA 8260B - 8010 List	THP gas / BTEX / Oxygenates / MTBE	THP Diesel / Si-Gel / Motor Oil	Pesticide - 8081	PCB - 8082	Metals / CAM - 17 + pH / LUFT 5 / 7 Metals	8270 Full List / PAHs Only	Lead	TPH	REMARKS
031A	N-1-15@0.5	03/23/09 0135	S	1	sleeve								X	X	
032A	N-1-15@1.0	03/23/09 0135	↓	1	↓								X	X	
033A	N-1-15@1.5	03/23/09 0135	↓	1	↓								X	X	
034A	N-1-15@2.0	03/23/09 0135	↓	1	↓								X	X	
035A	N-1-15@3.0	03/23/09 0135	↓	1	↓								X	X	
036A	N-1-14@0.5	03/23/09 0210	↓	↓	↓			X	X	X	X				
037A	N-1-14@1.0	03/23/09 0210	↓	↓	↓		X				X				
038A	N-1-14@1.5	03/23/09 0210	↓	↓	↓		X				X				
039A	N-1-14@2.0	03/23/09 0210	↓	↓	↓		X				X				
040A	N-1-14@3.0	03/23/09 0210	↓	↓	↓		X				X				

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/23/09		[signature]	NAVIN	3/23/09	9:30 am
2								

Were Samples Received in Good Condition? ☐ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment _____ Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Page 4 of 7

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date: _____

TORRENT LAB

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903131

Company Name: UTS San Jose
Location of Sampling: Hwy 101 – Aux-Lanes
Address:
Purpose:
City: State: Zip Code:
Special Instructions / Comments:
Telephone: FAX:
REPORT TO: Patrick Walz SAMPLER: Eduardo Ortega
P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Work Days ☐ 3 Work Days ☐ Noon - Nxt Day ☐ 7 Work Days ☐ 2 Work Days ☐ 2 - 8 Hours ☒ 5 Work Days ☐ 1 Work Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☒ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

LAB ID	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	EPA 8260B - Full List / EPA 8260B - 8010 List	THP gas / Oxygenates / BTEX / MTBE	THP Diesel / Motor Oil / Si-Gel	Pesticide - 8081	PCB - 8082	Metals / CAM - 17 / LUFT 5 / 7 Metals	8270 Full List / PAHs Only	Lead		REMARKS
041A	N-1-17@0.5	03/23/09 0020	S	1	sleeve								X		
042A	N-1-17@1.0	↓	S	1	sleeve								X		
043A	N-1-17@1.5	↓	S	1	sleeve								X		
044A	N-1-17@2.0	↓	S	1	sleeve								X		
045A	N-1-17@3.0	↓	S	1	sleeve								X		
046A	N-1-16@0.5	03/23/09 0055	S	1	sleeve								X		
047A	N-1-16@1.0	↓	↓	1	↓								X		
048A	N-1-16@1.5	↓	↓	1	↓								X		
049A	N-1-16@2.0	↓	↓	1	↓								X		
050A	N-1-16@3.0	↓	↓	1	↓								X		

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/23/09		D. G. Ghadasara	NAVIN	3/23/09	9:30 AM
2								

Were Samples Received in Good Condition? ☐ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment _____ Sample seals intact? ☐ Yes ☐ NO ☒ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Page 5 of 7

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date: _____

TORRENT LAB

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903131

Company Name: URS San Jose
Location of Sampling: Hwy 101 Aux Lanes
Address:
Purpose:
City: State: Zip Code:
Special Instructions / Comments:
Telephone: FAX:
REPORT TO: Patrick Wadz SAMPLER: Eduardo Ortega
P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Work Days ☐ 3 Work Days ☐ Noon - Nxt Day ☐ 7 Work Days ☐ 2 Work Days ☐ 2 - 8 Hours ☒ 5 Work Days ☐ 1 Work Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☒ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

LAB ID	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	EPA 8260B - Full List / EPA 8260B - 8010 List	THP gas / BTEX / Oxygenates / MTBE	THP Diesel / Si-Gel / Motor Oil	Pesticide - 8081	PCB - 8082	Metals / CAM - 17 / LUFT 5 / 7 Metals	8270 Full List / PAHs Only	Lead		REMARKS
051A	N-1-19@0.5	03/22/09 23:40	S	1	sleeve								X		
052A	N-1-19@1.0	↓	↓	1	s ↓								X		
053A	N-1-19@1.5			1									X		
054A	N-1-19@2.0			1									X		
055A	N-1-19@3.0			1									X		
056A	N-1-19@0.5-D		S	1									X		
057A	N-1-19@1.0-D			1									X		
058A	N-1-19@1.5-D			1									X		
059A	N-1-19@2.0-D			1									X		
060A	N-1-19@3.0-D			1									X		

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/23/09		[signature]	NAVIN	3/23/09	9:30 AM
2								

Were Samples Received in Good Condition? ☐ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment _____ Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Page 6 of 7

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date: _____

TORRENT LAB

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0903131

Company Name: URS San Jose
Location of Sampling: Hwy 101 – Aux-Lanes
Address:
Purpose:
City: State: Zip Code:
Special Instructions / Comments:
Telephone: FAX:
REPORT TO: Patrick Walz SAMPLER: Eduardo Ortega
P.O. #: EMAIL:

TURNAROUND TIME: ☐ 10 Work Days ☐ 3 Work Days ☐ Noon - Nxt Day ☐ 7 Work Days ☐ 2 Work Days ☐ 2 - 8 Hours ☒ 5 Work Days ☐ 1 Work Day ☐ Other

SAMPLE TYPE: ☐ Storm Water ☐ Air ☐ Waste Water ☐ Other ☐ Ground Water ☒ Soil

REPORT FORMAT: ☐ QC Level IV ☐ EDF ☐ Excel / EDD

ANALYSIS REQUESTED

LAB ID	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	EPA 8260B - Full List / EPA 8260B - 8010 List	THP gas / BTEX / Oxygenates / MTBE	THP Diesel / Si-Gel / Motor Oil	Pesticide - 8081	PCB - 8082	Metals / CAM - 17 / LUFT 5 / 7 Metals	8270 Full List / PAHs Only	lead	asbestos	REMARKS
061A	N-1-11@0.5	03/23/09 0330	S	1	sleeve								X	X	
062A	N-1-11@1.0	03/23/09 0330	S	1	sleeve								X	X	
063A	N-1-11@1.5	03/23/09 0330	S	1	sleeve								X	X	
064A	N-1-11@2.0	03/23/09 0330	S	1									X	X	
065A	N-1-11@3.0	03/23/09 0330	S	1									X	X	

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]		03/23/09		D. Y. Ghodasara	NAVIN	3/23/09	9:30 AM
2								

Were Samples Received in Good Condition? ☐ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment _____ Sample seals intact? ☐ Yes ☐ NO ☒ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Page 7 of 7

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date: _____

TORRENT LAB

Torrent
LABORATORY, INC.

May 05, 2009

Patrick Walz
URS Corporation, San Jose
55 South Market St., Suite 1500
San Jose, CA 95113

TEL: (408) 297-9585
FAX (408) 297-6962

RE: 101- Aux lanes/Drums

Order No.: 0904168

Dear Patrick Walz:

Torrent Laboratory, Inc. received 3 samples on 4/28/2009 for the analyses presented in the following report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.
Reported data is applicable for only the samples received as part of the order number referenced above.

Torrent Laboratory, Inc, is certified by the State of California, ELAP #1991. If you have any questions regarding these tests results, please feel free to contact the Project Management Team at (408)263-5258;ext: 204.

Sincerely,

Laboratory Director

5/6/09
Date

Patti Sandrock
QA Officer

TORRENT LABORATORY, INC.

483 Sinclair Frontage Road • Milpitas, CA • Phone: (408) 263-5258 • Fax: (408) 263-8293

Visit us at www.torrentlab.com email: analysis@torrentlab.com

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/28/2009
Date Reported: 5/5/2009

Client Sample ID: D-1
Sample Location: 101- Aux lanes/Drums
Sample Matrix: SOIL
Date/Time Sampled 4/28/2009

Lab Sample ID: 0904168-001
Date Prepared: 4/28/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	4/30/2009	5	1	5.0	ND	mg/Kg	5141
Arsenic	SW6010B	4/30/2009	1.7	1	1.7	ND	mg/Kg	5141
Barium	SW6010B	4/30/2009	5	1	5.0	39	mg/Kg	5141
Beryllium	SW6010B	4/30/2009	2	1	2.0	ND	mg/Kg	5141
Cadmium	SW6010B	4/30/2009	1	1	1.0	ND	mg/Kg	5141
Chromium	SW6010B	4/30/2009	5	1	5.0	13	mg/Kg	5141
Cobalt	SW6010B	4/30/2009	5	1	5.0	ND	mg/Kg	5141
Copper	SW6010B	4/30/2009	5	1	5.0	9.1	mg/Kg	5141
Lead	SW6010B	4/30/2009	1	1	1.0	4.1	mg/Kg	5141
Molybdenum	SW6010B	4/30/2009	5	1	5.0	ND	mg/Kg	5141
Nickel	SW6010B	4/30/2009	5	1	5.0	16	mg/Kg	5141
Selenium	SW6010B	4/30/2009	5	1	5.0	ND	mg/Kg	5141
Silver	SW6010B	4/30/2009	1	1	1.0	ND	mg/Kg	5141
Thallium	SW6010B	4/30/2009	5	1	5.0	ND	mg/Kg	5141
Vanadium	SW6010B	4/30/2009	5	1	5.0	16	mg/Kg	5141
Zinc	SW6010B	4/30/2009	5	1	5.0	19	mg/Kg	5141
Mercury	SW7471A	4/30/2009	0.1	1	0.10	ND	mg/Kg	5140

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/28/2009
Date Reported: 5/5/2009

Client Sample ID: D-1
Sample Location: 101- Aux lanes/Drums
Sample Matrix: SOIL
Date/Time Sampled 4/28/2009

Lab Sample ID: 0904168-001
Date Prepared: 4/28/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
4,4´-DDD	SW8081A	4/30/2009	2	1	2.00	ND	µg/Kg	R19403
4,4´-DDE	SW8081A	4/30/2009	2	1	2.00	ND	µg/Kg	R19403
4,4´-DDT	SW8081A	4/30/2009	2	1	2.00	ND	µg/Kg	R19403
Aldrin	SW8081A	4/30/2009	2	1	2.00	ND	µg/Kg	R19403
alpha-BHC	SW8081A	4/30/2009	2	1	2.00	ND	µg/Kg	R19403
alpha-Chlordane	SW8081A	4/30/2009	2	1	2.00	ND	µg/Kg	R19403
beta-BHC	SW8081A	4/30/2009	2	1	2.00	ND	µg/Kg	R19403
Chlordane	SW8081A	4/30/2009	20	1	20.0	ND	µg/Kg	R19403
delta-BHC	SW8081A	4/30/2009	2	1	2.00	ND	µg/Kg	R19403
Dieldrin	SW8081A	4/30/2009	2	1	2.00	ND	µg/Kg	R19403
Endosulfan I	SW8081A	4/30/2009	2	1	2.00	ND	µg/Kg	R19403
Endosulfan II	SW8081A	4/30/2009	2	1	2.00	ND	µg/Kg	R19403
Endosulfan sulfate	SW8081A	4/30/2009	2	1	2.00	ND	µg/Kg	R19403
Endrin	SW8081A	4/30/2009	2	1	2.00	ND	µg/Kg	R19403
Endrin aldehyde	SW8081A	4/30/2009	2	1	2.00	ND	µg/Kg	R19403
Endrin ketone	SW8081A	4/30/2009	2	1	2.00	ND	µg/Kg	R19403
gamma-BHC	SW8081A	4/30/2009	2	1	2.00	ND	µg/Kg	R19403
gamma-Chlordane	SW8081A	4/30/2009	2	1	2.00	ND	µg/Kg	R19403
Heptachlor	SW8081A	4/30/2009	2	1	2.00	ND	µg/Kg	R19403
Heptachlor epoxide	SW8081A	4/30/2009	2	1	2.00	ND	µg/Kg	R19403
Methoxychlor	SW8081A	4/30/2009	5	1	5.00	ND	µg/Kg	R19403
Toxaphene	SW8081A	4/30/2009	100	1	100	ND	µg/Kg	R19403
Surr: Decachlorobiphenyl	SW8081A	4/30/2009	0	1	54.6-127	87.2	%REC	R19403
Surr: Tetrachloro-m-xylene	SW8081A	4/30/2009	0	1	54-122	79.0	%REC	R19403
Aroclor 1016	SW8082	4/30/2009	0.1	1	0.10	ND	mg/Kg	R19440
Aroclor 1221	SW8082	4/30/2009	0.2	1	0.20	ND	mg/Kg	R19440
Aroclor 1232	SW8082	4/30/2009	0.1	1	0.10	ND	mg/Kg	R19440
Aroclor 1242	SW8082	4/30/2009	0.1	1	0.10	ND	mg/Kg	R19440
Aroclor 1248	SW8082	4/30/2009	0.1	1	0.10	ND	mg/Kg	R19440
Aroclor 1254	SW8082	4/30/2009	0.1	1	0.10	ND	mg/Kg	R19440
Aroclor 1260	SW8082	4/30/2009	0.1	1	0.10	ND	mg/Kg	R19440
Surr: Decachlorobiphenyl	SW8082	4/30/2009	0	1	63.7-126	80.8	%REC	R19440
Surr: Tetrachloro-m-xylene	SW8082	4/30/2009	0	1	51.7-128	68.9	%REC	R19440

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/28/2009
Date Reported: 5/5/2009

Client Sample ID: D-1
Sample Location: 101- Aux lanes/Drums
Sample Matrix: SOIL
Date/Time Sampled 4/28/2009

Lab Sample ID: 0904168-001
Date Prepared: 4/28/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
1,2,4-Trichlorobenzene	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
1,2-Dichlorobenzene	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
1,3-Dichlorobenzene	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
1,4-Dichlorobenzene	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
2,4,5-Trichlorophenol	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
2,4,6-Trichlorophenol	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
2,4-Dichlorophenol	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
2,4-Dimethylphenol	SW8270C	4/29/2009	0.66	1	0.66	ND	mg/Kg	R19405
2,4-Dinitrophenol	SW8270C	4/29/2009	1.7	1	1.7	ND	mg/Kg	R19405
2,4-Dinitrotoluene	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
2,6-Dinitrotoluene	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
2-Chloronaphthalene	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
2-Chlorophenol	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
2-Methylnaphthalene	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
2-Methylphenol	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
2-Nitroaniline	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
2-Nitrophenol	SW8270C	4/29/2009	0.66	1	0.66	ND	mg/Kg	R19405
3,3´-Dichlorobenzidine	SW8270C	4/29/2009	1.7	1	1.7	ND	mg/Kg	R19405
3-Methylphenol	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
3-Nitroaniline	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
4,6-Dinitro-2-methylphenol	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
4-Bromophenyl phenyl ether	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
4-Chloro-3-methylphenol	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
4-Chloroaniline	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
4-Chlorophenyl phenyl ether	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
4-Methylphenol	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
4-Nitroaniline	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
4-Nitrophenol	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
Acenaphthene	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
Acenaphthylene	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
Aniline	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
Anthracene	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
Benz(a)anthracene	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
Benzidine	SW8270C	4/29/2009	3.3	1	3.3	ND	mg/Kg	R19405
Benzo(g,h,i)perylene	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
Benzo[a]pyrene	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
Benzo[b]fluoranthene	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
Benzo[k]fluoranthene	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
Benzoic acid	SW8270C	4/29/2009	6.66	1	6.7	ND	mg/Kg	R19405
Benzyl alcohol	SW8270C	4/29/2009	6.66	1	6.7	ND	mg/Kg	R19405
Bis(2-chloroethoxy)methane	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
Bis(2-chloroethyl)ether	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
Bis(2-chloroisopropyl)ether	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/28/2009
Date Reported: 5/5/2009

Client Sample ID: D-1
Sample Location: 101- Aux lanes/Drums
Sample Matrix: SOIL
Date/Time Sampled 4/28/2009

Lab Sample ID: 0904168-001
Date Prepared: 4/28/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Bis(2-ethylhexyl)phthalate	SW8270C	4/29/2009	3.3	1	3.3	ND	mg/Kg	R19405
Butyl benzyl phthalate	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
Chrysene	SW8270C	4/29/2009	0.66	1	0.66	ND	mg/Kg	R19405
Dibenz(a,h)anthracene	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
Dibenzofuran	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
Diethyl phthalate	SW8270C	4/29/2009	3.3	1	3.3	ND	mg/Kg	R19405
Dimethyl phthalate	SW8270C	4/29/2009	3.3	1	3.3	ND	mg/Kg	R19405
Di-n-butyl phthalate	SW8270C	4/29/2009	3.3	1	3.3	ND	mg/Kg	R19405
Di-n-octyl phthalate	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
Fluoranthene	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
Fluorene	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
Hexachlorobenzene	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
Hexachlorobutadiene	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
Hexachlorocyclopentadiene	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
Hexachloroethane	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
Indeno(1,2,3-cd)pyrene	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
Isophorone	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
Naphthalene	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
Nitrobenzene	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
N-Nitrosodimethylamine	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
N-Nitrosodi-n-propylamine	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
N-Nitrosodiphenylamine	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
Pentachlorophenol	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
Phenanthrene	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
Phenol	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
Pyrene	SW8270C	4/29/2009	0.33	1	0.33	ND	mg/Kg	R19405
Surr: 2,4,6-Tribromophenol	SW8270C	4/29/2009	0	1	16.5-114	2.64	%REC	R19405
Surr: 2-Fluorobiphenyl	SW8270C	4/29/2009	0	1	24.1-85.6	57.6	%REC	R19405
Surr: 2-Fluorophenol	SW8270C	4/29/2009	0	1	30.3-76.6	3.51	%REC	R19405
Surr: Nitrobenzene-d5	SW8270C	4/29/2009	0	1	29.4-78.2	55.6	%REC	R19405
Surr: Phenol-d6	SW8270C	4/29/2009	0	1	28.7-84.7	20.0	%REC	R19405
Surr: p-Terphenyl-d14	SW8270C	4/29/2009	0	1	37.9-127	88.7	%REC	R19405

Note: Surrogate recoveries fall outside the control limit possibly due to matrix interference.

pH	SW9045C	4/30/2009	0.05	1	0.0500	12.64	pH Units	R19447

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/28/2009
Date Reported: 5/5/2009

Client Sample ID: D-2
Sample Location: 101- Aux lanes/Drums
Sample Matrix: SOIL
Date/Time Sampled 4/28/2009

Lab Sample ID: 0904168-002
Date Prepared: 4/28/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	4/30/2009	5	1	5.0	ND	mg/Kg	5141
Arsenic	SW6010B	4/30/2009	1.7	1	1.7	1.8	mg/Kg	5141
Barium	SW6010B	4/30/2009	5	1	5.0	37	mg/Kg	5141
Beryllium	SW6010B	4/30/2009	2	1	2.0	ND	mg/Kg	5141
Cadmium	SW6010B	4/30/2009	1	1	1.0	ND	mg/Kg	5141
Chromium	SW6010B	4/30/2009	5	1	5.0	11	mg/Kg	5141
Cobalt	SW6010B	4/30/2009	5	1	5.0	ND	mg/Kg	5141
Copper	SW6010B	4/30/2009	5	1	5.0	6.8	mg/Kg	5141
Lead	SW6010B	4/30/2009	1	1	1.0	2.9	mg/Kg	5141
Molybdenum	SW6010B	4/30/2009	5	1	5.0	ND	mg/Kg	5141
Nickel	SW6010B	4/30/2009	5	1	5.0	13	mg/Kg	5141
Selenium	SW6010B	4/30/2009	5	1	5.0	ND	mg/Kg	5141
Silver	SW6010B	4/30/2009	1	1	1.0	1.0	mg/Kg	5141
Thallium	SW6010B	4/30/2009	5	1	5.0	ND	mg/Kg	5141
Vanadium	SW6010B	4/30/2009	5	1	5.0	16	mg/Kg	5141
Zinc	SW6010B	4/30/2009	5	1	5.0	19	mg/Kg	5141
Mercury	SW7471A	4/30/2009	0.1	1	0.10	ND	mg/Kg	5140
TPH (Diesel)	SW8015B	5/1/2009	2	1	2.0	ND	mg/Kg	R19412
TPH (Motor Oil)	SW8015B	5/1/2009	4	1	4.0	ND	mg/Kg	R19412
Surr: Pentacosane	SW8015B	5/1/2009	0	1	59.7-129	88.0	%REC	R19412

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/28/2009
Date Reported: 5/5/2009

Client Sample ID: D-2
Sample Location: 101- Aux lanes/Drums
Sample Matrix: SOIL
Date/Time Sampled 4/28/2009

Lab Sample ID: 0904168-002
Date Prepared: 4/28/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
1,1,1,2-Tetrachloroethane	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
1,1,1-Trichloroethane	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
1,1,2,2-Tetrachloroethane	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
1,1,2-Trichloroethane	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
1,1-Dichloroethane	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
1,1-Dichloroethene	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
1,1-Dichloropropene	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
1,2,3-Trichlorobenzene	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
1,2,3-Trichloropropane	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
1,2,4-Trichlorobenzene	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
1,2,4-Trimethylbenzene	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
1,2-Dibromo-3-chloropropane	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
1,2-Dibromoethane (EDB)	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
1,2-Dichlorobenzene	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
1,2-Dichloroethane (EDC)	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
1,2-Dichloropropane	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
1,3,5-Trimethylbenzene	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
1,3-Dichlorobenzene	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
1,4-Dichlorobenzene	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
2,2-Dichloropropane	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
2-Chloroethyl vinyl ether	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
2-Chlorotoluene	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
4-Chlorotoluene	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
4-Isopropyltoluene	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
Benzene	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
Bromobenzene	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
Bromochloromethane	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
Bromodichloromethane	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
Bromoform	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
Bromomethane	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
Carbon tetrachloride	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
Chlorobenzene	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
Chloroform	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
Chloromethane	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
cis-1,2-Dichloroethene	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
cis-1,3-Dichloropropene	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
Dibromochloromethane	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
Dibromomethane	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
Dichlorodifluoromethane	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
Ethyl tert-butyl ether (ETBE)	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
Ethylbenzene	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
Freon-113	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
Hexachlorobutadiene	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/28/2009
Date Reported: 5/5/2009

Client Sample ID: D-2
Sample Location: 101- Aux lanes/Drums
Sample Matrix: SOIL
Date/Time Sampled 4/28/2009

Lab Sample ID: 0904168-002
Date Prepared: 4/28/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Isopropyl Ether	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
Isopropylbenzene	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
Methyl tert-butyl ether (MTBE)	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
Methylene chloride	SW8260B	5/5/2009	50	1	50	ND	µg/Kg	R19461
Naphthalene	SW8260B	5/5/2009	20	1	20	ND	µg/Kg	R19461
n-Butylbenzene	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
n-Propylbenzene	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
sec-Butylbenzene	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
Styrene	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
t-Butyl alcohol (t-Butanol)	SW8260B	5/5/2009	50	1	50	ND	µg/Kg	R19461
tert-Amyl methyl ether (TAME)	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
tert-Butylbenzene	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
Tetrachloroethene	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
Toluene	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
trans-1,2-Dichloroethene	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
trans-1,3-Dichloropropene	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
Trichloroethene	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
Trichlorofluoromethane	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
Vinyl chloride	SW8260B	5/5/2009	10	1	10	ND	µg/Kg	R19461
Xylenes, Total	SW8260B	5/5/2009	15	1	15	ND	µg/Kg	R19461
Surr: 4-Bromofluorobenzene	SW8260B	5/5/2009	0	1	55.8-141	80.7	%REC	R19461
Surr: Dibromofluoromethane	SW8260B	5/5/2009	0	1	59.8-148	0	%REC	R19461
Surr: Toluene-d8	SW8260B	5/5/2009	0	1	55.2-133	86.9	%REC	R19461

Note: S-surrogate recovery out of limits, matrix effect suspected.

pH	SW9045C	4/30/2009	0.05	1	0.0500	12.87	pH Units	R19447

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Patrick Walz
URS Corporation, San Jose

Date Received: 4/28/2009
Date Reported: 5/5/2009

Client Sample ID: D-3
Sample Location: 101- Aux lanes/Drums
Sample Matrix: SOIL
Date/Time Sampled 4/28/2009

Lab Sample ID: 0904168-003
Date Prepared: 4/29/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Antimony	SW6010B	4/30/2009	5	1	5.0	ND	mg/Kg	5141
Arsenic	SW6010B	4/30/2009	1.7	1	1.7	ND	mg/Kg	5141
Barium	SW6010B	4/30/2009	5	1	5.0	37	mg/Kg	5141
Beryllium	SW6010B	4/30/2009	2	1	2.0	ND	mg/Kg	5141
Cadmium	SW6010B	4/30/2009	1	1	1.0	ND	mg/Kg	5141
Chromium	SW6010B	4/30/2009	5	1	5.0	19	mg/Kg	5141
Cobalt	SW6010B	4/30/2009	5	1	5.0	ND	mg/Kg	5141
Copper	SW6010B	4/30/2009	5	1	5.0	7.8	mg/Kg	5141
Lead	SW6010B	4/30/2009	1	1	1.0	3.0	mg/Kg	5141
Molybdenum	SW6010B	4/30/2009	5	1	5.0	ND	mg/Kg	5141
Nickel	SW6010B	4/30/2009	5	1	5.0	16	mg/Kg	5141
Selenium	SW6010B	4/30/2009	5	1	5.0	ND	mg/Kg	5141
Silver	SW6010B	4/30/2009	1	1	1.0	1.2	mg/Kg	5141
Thallium	SW6010B	4/30/2009	5	1	5.0	ND	mg/Kg	5141
Vanadium	SW6010B	4/30/2009	5	1	5.0	16	mg/Kg	5141
Zinc	SW6010B	4/30/2009	5	1	5.0	12	mg/Kg	5141
Mercury	SW7471A	4/30/2009	0.1	1	0.10	ND	mg/Kg	5140
TPH (Gasoline)	SW8260B(TPH)	5/5/2009	100	1	100	310x	µg/Kg	G19461
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	5/5/2009	0	1	56.9-133	126	%REC	G19461

Note: x - Sample chromatogram does not resemble gasoline standard pattern. TPH value due to presence of heavy end unidentified compounds within the C5-C12 range quantified as Gasoline.

pH	SW9045C	4/30/2009	0.05	1	0.0500	12.42	pH Units	R19447

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Definitions, legends and Notes

Note	Description
ug/kg	Microgram per kilogram (ppb, part per billion).
ug/L	Microgram per liter (ppb, part per billion).
mg/kg	Milligram per kilogram (ppm, part per million).
mg/L	Milligram per liter (ppm, part per million).
LCS/LCSD	Laboratory control sample/laboratory control sample duplicate.
MDL	Method detection limit.
MRL	Modified reporting limit. When sample is subject to dilution, reporting limit times dilution factor yields MRL.
MS/MSD	Matrix spike/matrix spike duplicate.
N/A	Not applicable.
ND	Not detected at or above detection limit.
NR	Not reported.
QC	Quality Control.
RL	Reporting limit.
% RPD	Percent relative difference.
a	pH was measured immediately upon the receipt of the sample, but it was still done outside the holding time.
sub	Analyzed by subcontracting laboratory, Lab Certificate #

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Torrent Laboratory, Inc.

Date: *05-May-09*

CLIENT: URS Corporation, San Jose
Work Order: 0904168
Project: 101- Aux lanes/Drums

ANALYTICAL QC SUMMARY REPORT

BatchID: 5140

Sample ID **MB-5140** SampType: **MBLK** TestCode: **HG_CTS** Units: **mg/Kg** Prep Date: **4/29/2009** RunNo: **19408**
Client ID: **ZZZZZ** Batch ID: **5140** TestNo: **SW7471A** **(SW7471APR** Analysis Date: **4/30/2009** SeqNo: **280391**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	ND	0.10									

Sample ID **LCS-5140** SampType: **LCS** TestCode: **HG_CTS** Units: **mg/Kg** Prep Date: **4/29/2009** RunNo: **19408**
Client ID: **ZZZZZ** Batch ID: **5140** TestNo: **SW7471A** **(SW7471APR** Analysis Date: **4/30/2009** SeqNo: **280389**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.292	0.10	1.25	0	103	80.5	133				

Sample ID **LCSD-5140** SampType: **LCSD** TestCode: **HG_CTS** Units: **mg/Kg** Prep Date: **4/29/2009** RunNo: **19408**
Client ID: **ZZZZZ** Batch ID: **5140** TestNo: **SW7471A** **(SW7471APR** Analysis Date: **4/30/2009** SeqNo: **280390**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury	1.182	0.10	1.25	0	94.6	80.5	133	1.292	8.89	30	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904168
Project: 101- Aux lanes/Drums

ANALYTICAL QC SUMMARY REPORT

BatchID: 5141

Sample ID	MB-5141	SampType:	MBLK	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	4/29/2009	RunNo:	19416
Client ID:	ZZZZZ	Batch ID:	5141	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/30/2009	SeqNo:	280513

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	ND	5.0									
Arsenic	ND	1.7									
Barium	ND	5.0									
Beryllium	ND	2.0									
Cadmium	ND	1.0									
Chromium	ND	5.0									
Cobalt	ND	5.0									
Copper	ND	5.0									
Lead	ND	1.0									
Molybdenum	ND	5.0									
Nickel	ND	5.0									
Selenium	ND	5.0									
Silver	ND	1.0									
Thallium	ND	5.0									
Vanadium	ND	5.0									
Zinc	ND	5.0									

Sample ID	LCS-5141	SampType:	LCS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	4/29/2009	RunNo:	19416
Client ID:	ZZZZZ	Batch ID:	5141	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/30/2009	SeqNo:	280511

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	48.90	5.0	50	0	97.8	30.7	130				
Arsenic	49.45	1.7	50	0	98.9	71	121				
Barium	46.70	5.0	50	0.15	93.1	70.2	130				
Beryllium	46.80	2.0	50	0	93.6	73.3	115				
Cadmium	44.40	1.0	50	0.1	88.6	68.7	110				
Chromium	46.45	5.0	50	0.15	92.6	76	116				
Cobalt	45.95	5.0	50	0	91.9	57.4	122				
Copper	46.75	5.0	50	0.6	92.3	74.8	119				
Lead	48.75	1.0	50	0.35	96.8	67.9	118				
Molybdenum	49.90	5.0	50	0	99.8	62.9	123				

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904168
Project: 101- Aux lanes/Drums

ANALYTICAL QC SUMMARY REPORT

BatchID: 5141

Sample ID	LCS-5141	SampType:	LCS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	4/29/2009	RunNo:	19416
Client ID:	ZZZZZ	Batch ID:	5141	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/30/2009	SeqNo:	280511

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nickel	45.70	5.0	50	0.1	91.2	61.5	122				
Selenium	45.55	5.0	50	0	91.1	62	111				
Silver	45.50	1.0	50	0	91.0	81.1	109				
Thallium	47.50	5.0	50	0	95.0	39.2	125				
Vanadium	46.70	5.0	50	0	93.4	65.8	122				
Zinc	45.80	5.0	50	0.8	90.0	59.9	122				

Sample ID	LCSD-5141	SampType:	LCS	TestCode:	6010B_S	Units:	mg/Kg	Prep Date:	4/29/2009	RunNo:	19416
Client ID:	ZZZZZ	Batch ID:	5141	TestNo:	SW6010B	(SW3050B)		Analysis Date:	4/30/2009	SeqNo:	280512

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony	49.15	5.0	50	0	98.3	30.7	130	48.9	0.510		
Arsenic	49.75	1.7	50	0	99.5	71	121	49.45	0.605		
Barium	50.10	5.0	50	0.15	99.9	70.2	130	46.7	7.02		
Beryllium	44.70	2.0	50	0	89.4	73.3	115	46.8	4.59		
Cadmium	47.55	1.0	50	0.1	94.9	68.7	110	44.4	6.85		
Chromium	49.90	5.0	50	0.15	99.5	76	116	46.45	7.16		
Cobalt	49.20	5.0	50	0	98.4	57.4	122	45.95	6.83		
Copper	50.25	5.0	50	0.6	99.3	74.8	119	46.75	7.22		
Lead	49.25	1.0	50	0.35	97.8	67.9	118	48.75	1.02		
Molybdenum	50.45	5.0	50	0	101	62.9	123	49.9	1.10		
Nickel	48.95	5.0	50	0.1	97.7	61.5	122	45.7	6.87		
Selenium	45.45	5.0	50	0	90.9	62	111	45.55	0.220		
Silver	48.70	1.0	50	0	97.4	81.1	109	45.5	6.79		
Thallium	48.20	5.0	50	0	96.4	39.2	125	47.5	1.46		
Vanadium	50.15	5.0	50	0	100	65.8	122	46.7	7.12		
Zinc	49.45	5.0	50	0.8	97.3	59.9	122	45.8	7.66		

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904168
Project: 101- Aux lanes/Drums

ANALYTICAL QC SUMMARY REPORT

BatchID: G19461

Sample ID	MB-G19461	SampType:	MBLK	TestCode:	TPH_GAS_S	Units:	µg/Kg	Prep Date:	5/4/2009	RunNo:	19461
Client ID:	ZZZZZ	Batch ID:	G19461	TestNo:	SW8260B(TP			Analysis Date:	5/4/2009	SeqNo:	281186

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	ND	100									
Surr: 4-Bromofllurobenzene	62.00	0	50	0	124	56.9	133				

Sample ID	LCS-G19461	SampType:	LCS	TestCode:	TPH_GAS_S	Units:	µg/Kg	Prep Date:	5/4/2009	RunNo:	19461
Client ID:	ZZZZZ	Batch ID:	G19461	TestNo:	SW8260B(TP			Analysis Date:	5/4/2009	SeqNo:	281182

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	1065	100	1000	0	106	48.2	132				
Surr: 4-Bromofllurobenzene	62.00	0	50	0	124	56.9	133				

Sample ID	LCSD-G19461	SampType:	LCSD	TestCode:	TPH_GAS_S	Units:	µg/Kg	Prep Date:	5/4/2009	RunNo:	19461
Client ID:	ZZZZZ	Batch ID:	G19461	TestNo:	SW8260B(TP			Analysis Date:	5/4/2009	SeqNo:	281183

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	1064	100	1000	0	106	48.2	132	1065	0.0939	30	
Surr: 4-Bromofllurobenzene	62.00	0	50	0	124	56.9	133	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904168
Project: 101- Aux lanes/Drums

ANALYTICAL QC SUMMARY REPORT

BatchID: R19403

Sample ID	SP090428B-MB	SampType:	MBLK	TestCode:	8081S	Units:	µg/Kg	Prep Date:	4/28/2009	RunNo:	19403
Client ID:	ZZZZZ	Batch ID:	R19403	TestNo:	SW8081A			Analysis Date:	4/29/2009	SeqNo:	280275

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDD	ND	0.470									
4,4´-DDE	ND	0.476									
4,4´-DDT	ND	0.809									
Aldrin	ND	0.440									
alpha-BHC	ND	0.439									
alpha-Chlordane	ND	0.358									
beta-BHC	ND	0.364									
Chlordane	ND	10.0									
delta-BHC	ND	0.490									
Dieldrin	ND	0.427									
Endosulfan I	ND	0.590									
Endosulfan II	ND	1.53									
Endosulfan sulfate	ND	0.489									
Endrin	ND	0.569									
Endrin aldehyde	ND	1.03									
Endrin ketone	ND	0.401									
gamma-BHC	ND	0.396									
gamma-Chlordane	ND	0.420									
Heptachlor	ND	1.10									
Heptachlor epoxide	ND	0.316									
Methoxychlor	ND	0.616									
Toxaphene	ND	10.0									
Surr: Decachlorobiphenyl	48.88	0	50	0	97.8	57	126				
Surr: Tetrachloro-m-xylene	48.74	0	50	0	97.5	55.7	122				

Sample ID	SP090429A-MB	SampType:	MBLK	TestCode:	8081S	Units:	µg/Kg	Prep Date:	4/29/2009	RunNo:	19403
Client ID:	ZZZZZ	Batch ID:	R19403	TestNo:	SW8081A			Analysis Date:	4/29/2009	SeqNo:	280433

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDD	ND	0.470									
4,4´-DDE	ND	0.476									

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904168
Project: 101- Aux lanes/Drums

ANALYTICAL QC SUMMARY REPORT

BatchID: R19403

Sample ID **SP090429A-MB** SampType: **MBLK** TestCode: **8081S** Units: **µg/Kg** Prep Date: **4/29/2009** RunNo: **19403**
Client ID: **ZZZZZ** Batch ID: **R19403** TestNo: **SW8081A** Analysis Date: **4/29/2009** SeqNo: **280433**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDT	ND	0.809									
Aldrin	ND	0.440									
alpha-BHC	ND	0.439									
alpha-Chlordane	ND	0.358									
beta-BHC	ND	0.364									
Chlordane	ND	10.0									
delta-BHC	ND	0.490									
Dieldrin	ND	0.427									
Endosulfan I	ND	0.590									
Endosulfan II	ND	1.53									
Endosulfan sulfate	ND	0.489									
Endrin	ND	0.569									
Endrin aldehyde	ND	1.03									
Endrin ketone	ND	0.401									
gamma-BHC	ND	0.396									
gamma-Chlordane	ND	0.420									
Heptachlor	ND	1.10									
Heptachlor epoxide	ND	0.316									
Methoxychlor	ND	0.616									
Toxaphene	ND	10.0									
Surr: Decachlorobiphenyl	47.34	0	50	0	94.7	57	126				
Surr: Tetrachloro-m-xylene	48.26	0	50	0	96.5	55.7	122				

Sample ID **SP090428B-LCS** SampType: **LCS** TestCode: **8081S** Units: **µg/Kg** Prep Date: **4/28/2009** RunNo: **19403**
Client ID: **ZZZZZ** Batch ID: **R19403** TestNo: **SW8081A** Analysis Date: **4/29/2009** SeqNo: **280276**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDT	19.71	0.809	20	0	98.5	52.8	134				
Aldrin	18.75	0.440	20	0	93.7	53	123				
Dieldrin	19.83	0.427	20	0	99.2	44	130				
Endrin	19.10	0.569	20	0	95.5	44.1	121				

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904168
Project: 101- Aux lanes/Drums

ANALYTICAL QC SUMMARY REPORT

BatchID: R19403

Sample ID	SP090428B-LCS	SampType:	LCS	TestCode:	8081S	Units:	µg/Kg	Prep Date:	4/28/2009	RunNo:	19403
Client ID:	ZZZZZ	Batch ID:	R19403	TestNo:	SW8081A			Analysis Date:	4/29/2009	SeqNo:	280276

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
gamma-BHC	18.11	0.396	20	0	90.6	56.9	120				
Heptachlor	19.78	1.10	20	0	98.9	63.6	117				
Surr: Decachlorobiphenyl	62.85	0	70	0	89.8	57	126				
Surr: Tetrachloro-m-xylene	64.87	0	70	0	92.7	55.7	122				

Sample ID	SP090428B-LCSD	SampType:	LCSD	TestCode:	8081S	Units:	µg/Kg	Prep Date:	4/28/2009	RunNo:	19403
Client ID:	ZZZZZ	Batch ID:	R19403	TestNo:	SW8081A			Analysis Date:	4/29/2009	SeqNo:	280277

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
4,4´-DDT	20.51	0.809	20	0	103	52.8	134	19.71	3.99	30	
Aldrin	18.79	0.440	20	0	94.0	53	123	18.75	0.230	30	
Dieldrin	20.66	0.427	20	0	103	44	130	19.83	4.07	30	
Endrin	19.78	0.569	20	0	98.9	44.1	121	19.1	3.48	30	
gamma-BHC	18.06	0.396	20	0	90.3	56.9	120	18.11	0.269	30	
Heptachlor	19.56	1.10	20	0	97.8	63.6	117	19.78	1.14	30	
Surr: Decachlorobiphenyl	65.37	0	70	0	93.4	57	126	0	0	0	
Surr: Tetrachloro-m-xylene	66.24	0	70	0	94.6	55.7	122	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904168
Project: 101- Aux lanes/Drums

ANALYTICAL QC SUMMARY REPORT

BatchID: R19405

Sample ID	SS090428A-MB	SampType:	MBLK	TestCode:	8270S	Units:	mg/Kg	Prep Date:	4/28/2009	RunNo:	19405
Client ID:	ZZZZZ	Batch ID:	R19405	TestNo:	SW8270C			Analysis Date:	4/28/2009	SeqNo:	280327

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	ND	0.330									
1,2-Dichlorobenzene	ND	0.330									
1,3-Dichlorobenzene	ND	0.330									
1,4-Dichlorobenzene	ND	0.330									
2,4,5-Trichlorophenol	ND	0.330									
2,4,6-Trichlorophenol	ND	0.330									
2,4-Dichlorophenol	ND	0.330									
2,4-Dimethylphenol	ND	0.660									
2,4-Dinitrophenol	ND	1.70									
2,4-Dinitrotoluene	ND	0.330									
2,6-Dinitrotoluene	ND	0.330									
2-Chloronaphthalene	ND	0.330									
2-Chlorophenol	ND	0.330									
2-Methylnaphthalene	ND	0.330									
2-Methylphenol	ND	0.330									
2-Nitroaniline	ND	0.330									
2-Nitrophenol	ND	0.660									
3,3´-Dichlorobenzidine	ND	1.70									
3-Methylphenol	ND	0.330									
3-Nitroaniline	ND	0.330									
4,6-Dinitro-2-methylphenol	ND	0.330									
4-Bromophenyl phenyl ether	ND	0.330									
4-Chloro-3-methylphenol	ND	0.330									
4-Chloroaniline	ND	0.330									
4-Chlorophenyl phenyl ether	ND	0.330									
4-Methylphenol	ND	0.330									
4-Nitroaniline	ND	0.330									
4-Nitrophenol	ND	0.330									
Acenaphthene	ND	0.330									
Acenaphthylene	ND	0.330									
Aniline	ND	0.330									

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904168
Project: 101- Aux lanes/Drums

ANALYTICAL QC SUMMARY REPORT

BatchID: R19405

Sample ID	SS090428A-MB	SampType:	MBLK	TestCode:	8270S	Units:	mg/Kg	Prep Date:	4/28/2009	RunNo:	19405
Client ID:	ZZZZZ	Batch ID:	R19405	TestNo:	SW8270C			Analysis Date:	4/28/2009	SeqNo:	280327

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Anthracene	ND	0.330									
Benz(a)anthracene	ND	0.330									
Benzidine	ND	3.30									
Benzo(g,h,i)perylene	ND	0.330									
Benzo[a]pyrene	ND	0.330									
Benzo[b]fluoranthene	ND	0.330									
Benzo[k]fluoranthene	ND	0.330									
Benzoic acid	ND	6.66									
Benzyl alcohol	ND	6.66									
Bis(2-chloroethoxy)methane	ND	0.330									
Bis(2-chloroethyl)ether	ND	0.330									
Bis(2-chloroisopropyl)ether	ND	0.330									
Bis(2-ethylhexyl)phthalate	ND	3.30									
Butyl benzyl phthalate	ND	0.330									
Chrysene	ND	0.660									
Dibenz(a,h)anthracene	ND	0.330									
Dibenzofuran	ND	0.330									
Diethyl phthalate	ND	3.30									
Dimethyl phthalate	ND	3.30									
Di-n-butyl phthalate	ND	3.30									
Di-n-octyl phthalate	ND	0.330									
Fluoranthene	ND	0.330									
Fluorene	ND	0.330									
Hexachlorobenzene	ND	0.330									
Hexachlorobutadiene	ND	0.330									
Hexachlorocyclopentadiene	ND	0.330									
Hexachloroethane	ND	0.330									
Indeno(1,2,3-cd)pyrene	ND	0.330									
Isophorone	ND	0.330									
Naphthalene	ND	0.330									
Nitrobenzene	ND	0.330									

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904168
Project: 101- Aux lanes/Drums

ANALYTICAL QC SUMMARY REPORT

BatchID: R19405

Sample ID **SS090428A-MB** SampType: **MBLK** TestCode: **8270S** Units: **mg/Kg** Prep Date: **4/28/2009** RunNo: **19405**
Client ID: **ZZZZZ** Batch ID: **R19405** TestNo: **SW8270C** Analysis Date: **4/28/2009** SeqNo: **280327**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
N-Nitrosodimethylamine	ND	0.330									
N-Nitrosodi-n-propylamine	ND	0.330									
N-Nitrosodiphenylamine	ND	0.330									
Pentachlorophenol	ND	0.330									
Phenanthrene	ND	0.330									
Phenol	ND	0.330									
Pyrene	ND	0.330									
Surr: 2,4,6-Tribromophenol	1.301	0	2.5	0	52.0	16.5	114				
Surr: 2-Fluorobiphenyl	0.5934	0	0.833	0	71.2	24.1	85.6				
Surr: 2-Fluorophenol	1.435	0	2.5	0	57.4	30.3	76.6				
Surr: Nitrobenzene-d5	0.5448	0	0.833	0	65.4	29.4	78.2				
Surr: Phenol-d6	1.729	0	2.5	0	69.1	28.7	84.7				
Surr: p-Terphenyl-d14	0.8271	0	0.833	0	99.3	37.9	127				

Sample ID **SS090428A-LCS** SampType: **LCS** TestCode: **8270S** Units: **mg/Kg** Prep Date: **4/28/2009** RunNo: **19405**
Client ID: **ZZZZZ** Batch ID: **R19405** TestNo: **SW8270C** Analysis Date: **4/28/2009** SeqNo: **280328**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	0.3971	0.330	0.8333	0	47.6	31.7	85.1				
1,4-Dichlorobenzene	0.3982	0.330	0.8333	0	47.8	38.8	77.2				
2,4-Dinitrotoluene	0.6912	0.330	0.8333	0	82.9	30.8	124				
2-Chlorophenol	0.8155	0.330	1.667	0	48.9	25.3	88.7				
4-Chloro-3-methylphenol	0.9427	0.330	1.667	0	56.6	24.9	97.2				
4-Nitrophenol	1.215	0.330	1.667	0	72.9	11.1	126				
Acenaphthene	0.4411	0.330	0.8333	0	52.9	29.1	94.8				
N-Nitrosodi-n-propylamine	0.8516	0.330	1.667	0	51.1	15.5	116				
Pentachlorophenol	1.271	0.330	1.667	0	76.3	19.9	133				
Phenol	0.8767	0.330	1.667	0	52.6	16	98.6				
Pyrene	0.7564	0.330	0.8333	0	90.8	34.2	127				
Surr: 2,4,6-Tribromophenol	1.566	0	2.5	0	62.6	16.5	114				
Surr: 2-Fluorobiphenyl	0.4418	0	0.8333	0	53.0	24.1	85.6				

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904168
Project: 101- Aux lanes/Drums

ANALYTICAL QC SUMMARY REPORT

BatchID: R19405

Sample ID	SS090428A-LCS	SampType:	LCS	TestCode:	8270S	Units:	mg/Kg	Prep Date:	4/28/2009	RunNo:	19405
Client ID:	ZZZZZ	Batch ID:	R19405	TestNo:	SW8270C			Analysis Date:	4/28/2009	SeqNo:	280328

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 2-Fluorophenol	1.199	0	2.5	0	48.0	30.3	76.6				
Surr: Nitrobenzene-d5	0.4433	0	0.8333	0	53.2	29.4	78.2				
Surr: Phenol-d6	1.386	0	2.5	0	55.4	28.7	84.7				
Surr: p-Terphenyl-d14	0.7306	0	0.8333	0	87.7	37.9	127				

Sample ID	SS090428A-LCSD	SampType:	LCSD	TestCode:	8270S	Units:	mg/Kg	Prep Date:	4/28/2009	RunNo:	19405
Client ID:	ZZZZZ	Batch ID:	R19405	TestNo:	SW8270C			Analysis Date:	4/28/2009	SeqNo:	280329

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	0.3680	0.330	0.8333	0	44.2	31.7	85.1	0.3971	7.60	35	
1,4-Dichlorobenzene	0.3862	0.330	0.8333	0	46.3	38.8	77.2	0.3982	3.07	32	
2,4-Dinitrotoluene	0.7634	0.330	0.8333	0	91.6	30.8	124	0.6912	9.92	30	
2-Chlorophenol	0.8024	0.330	1.667	0	48.1	25.3	88.7	0.8155	1.62	35	
4-Chloro-3-methylphenol	0.9098	0.330	1.667	0	54.6	24.9	97.2	0.9427	3.55	37	
4-Nitrophenol	1.446	0.330	1.667	0	86.7	11.1	126	1.215	17.4	47	
Acenaphthene	0.4279	0.330	0.8333	0	51.4	29.1	94.8	0.4411	3.04	30	
Phenol	0.8504	0.330	1.667	0	51.0	16	98.6	0.8767	3.05	35	
Surr: 2,4,6-Tribromophenol	1.678	0	2.5	0	67.1	16.5	114	0	0	0	
Surr: 2-Fluorobiphenyl	0.4018	0	0.8333	0	48.2	24.1	85.6	0	0	0	
Surr: 2-Fluorophenol	1.171	0	2.5	0	46.9	30.3	76.6	0	0	0	
Surr: Nitrobenzene-d5	0.4099	0	0.8333	0	49.2	29.4	78.2	0	0	0	
Surr: Phenol-d6	1.321	0	2.5	0	52.8	28.7	84.7	0	0	0	
Surr: p-Terphenyl-d14	0.7656	0	0.8333	0	91.9	37.9	127	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904168
Project: 101- Aux lanes/Drums

ANALYTICAL QC SUMMARY REPORT

BatchID: R19412

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
SD090428A-MB	**MBLK**	**TPHDO_S**	**mg/Kg**	**4/28/2009**	**19412**
Client ID: **ZZZZZ**	Batch ID: **R19412**	TestNo: **SW8015B**		Analysis Date: **4/29/2009**	SeqNo: **280450**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	ND	2.00									
TPH (Motor Oil)	ND	4.00									
Surr: Pentacosane	3.350	0	3.3	0	102	59.7	129				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
SD090428A-LCS	**LCS**	**TPHDO_S**	**mg/Kg**	**4/28/2009**	**19412**
Client ID: **ZZZZZ**	Batch ID: **R19412**	TestNo: **SW8015B**		Analysis Date: **4/29/2009**	SeqNo: **280451**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	32.88	2.00	33.33	0	98.7	52.7	115				
Surr: Pentacosane	3.557	0	3.3	0	108	59.7	129				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
SD090428A-LCSD	**LCSD**	**TPHDO_S**	**mg/Kg**	**4/28/2009**	**19412**
Client ID: **ZZZZZ**	Batch ID: **R19412**	TestNo: **SW8015B**		Analysis Date: **4/29/2009**	SeqNo: **280452**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	33.21	2.00	33.33	0	99.6	52.7	115	32.88	0.977	30	
Surr: Pentacosane	3.657	0	3.3	0	111	59.7	129	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904168
Project: 101- Aux lanes/Drums

ANALYTICAL QC SUMMARY REPORT

BatchID: R19440

Sample ID **SP090429A-MB** SampType: **MBLK** TestCode: **8082S** Units: **mg/Kg** Prep Date: **4/29/2009** RunNo: **19440**
Client ID: **ZZZZZ** Batch ID: **R19440** TestNo: **SW8082** Analysis Date: **4/29/2009** SeqNo: **280934**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	0.10									
Aroclor 1221	ND	0.20									
Aroclor 1232	ND	0.10									
Aroclor 1242	ND	0.10									
Aroclor 1248	ND	0.10									
Aroclor 1254	ND	0.10									
Aroclor 1260	ND	0.10									
Surr: Decachlorobiphenyl	0.04921	0	0.05	0	98.4	55.1	113				
Surr: Tetrachloro-m-xylene	0.04827	0	0.05	0	96.5	51.7	128				

Sample ID **SP090429A-LCS** SampType: **LCS** TestCode: **8082S** Units: **mg/Kg** Prep Date: **4/29/2009** RunNo: **19440**
Client ID: **ZZZZZ** Batch ID: **R19440** TestNo: **SW8082** Analysis Date: **4/29/2009** SeqNo: **280935**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	0.7180	0.10	1	0	71.8	55.6	135				
Aroclor 1260	0.3660	0.10	0.5	0	73.2	65.6	132				
Surr: Decachlorobiphenyl	0.03736	0	0.05	0	74.7	55.1	113				
Surr: Tetrachloro-m-xylene	0.04112	0	0.05	0	82.2	51.7	128				

Sample ID **SP090429A-LCSD** SampType: **LCSD** TestCode: **8082S** Units: **mg/Kg** Prep Date: **4/29/2009** RunNo: **19440**
Client ID: **ZZZZZ** Batch ID: **R19440** TestNo: **SW8082** Analysis Date: **4/29/2009** SeqNo: **280936**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	0.7857	0.10	1	0	78.6	55.6	135	0.718	9.00	30	
Aroclor 1260	0.4174	0.10	0.5	0	83.5	65.6	132	0.366	13.1	30	
Surr: Decachlorobiphenyl	0.04363	0	0.05	0	87.3	55.1	113	0	0	0	
Surr: Tetrachloro-m-xylene	0.04188	0	0.05	0	83.8	51.7	128	0	0	0	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904168
Project: 101- Aux lanes/Drums

ANALYTICAL QC SUMMARY REPORT

BatchID: R19461

Sample ID	MB-R19461	SampType:	MBLK	TestCode:	8260B_S	Units:	µg/Kg	Prep Date:	5/4/2009	RunNo:	19461
Client ID:	ZZZZZ	Batch ID:	R19461	TestNo:	SW8260B			Analysis Date:	5/4/2009	SeqNo:	281192

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	10									
1,1,1-Trichloroethane	ND	10									
1,1,2,2-Tetrachloroethane	ND	10									
1,1,2-Trichloroethane	ND	10									
1,1-Dichloroethane	ND	10									
1,1-Dichloroethene	ND	10									
1,1-Dichloropropene	ND	10									
1,2,3-Trichlorobenzene	ND	10									
1,2,3-Trichloropropane	ND	10									
1,2,4-Trichlorobenzene	ND	10									
1,2,4-Trimethylbenzene	ND	10									
1,2-Dibromo-3-chloropropane	ND	10									
1,2-Dibromoethane (EDB)	ND	10									
1,2-Dichlorobenzene	ND	10									
1,2-Dichloroethane (EDC)	ND	10									
1,2-Dichloropropane	ND	10									
1,3,5-Trimethylbenzene	ND	10									
1,3-Dichlorobenzene	ND	10									
1,3-Dichloropropene	ND	10									
1,4-Dichlorobenzene	ND	10									
2,2-Dichloropropane	ND	10									
2-Chloroethyl vinyl ether	ND	10									
2-Chlorotoluene	ND	10									
4-Chlorotoluene	ND	10									
4-Isopropyltoluene	ND	10									
Benzene	ND	10									
Bromobenzene	ND	10									
Bromochloromethane	ND	10									
Bromodichloromethane	ND	10									
Bromoform	ND	10									
Bromomethane	ND	10									

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904168
Project: 101- Aux lanes/Drums

ANALYTICAL QC SUMMARY REPORT

BatchID: R19461

Sample ID	MB-R19461	SampType:	MBLK	TestCode:	8260B_S	Units:	µg/Kg	Prep Date:	5/4/2009	RunNo:	19461
Client ID:	ZZZZZ	Batch ID:	R19461	TestNo:	SW8260B			Analysis Date:	5/4/2009	SeqNo:	281192

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon tetrachloride	ND	10									
Chlorobenzene	ND	10									
Chloroform	ND	10									
Chloromethane	ND	10									
cis-1,2-Dichloroethene	ND	10									
cis-1,3-Dichloropropene	ND	10									
Dibromochloromethane	ND	10									
Dibromomethane	ND	10									
Dichlorodifluoromethane	ND	10									
Ethyl tert-butyl ether (ETBE)	ND	10									
Ethylbenzene	ND	10									
Freon-113	ND	10									
Hexachlorobutadiene	ND	10									
Isopropyl Ether	ND	10									
Isopropylbenzene	ND	10									
Methyl tert-butyl ether (MTBE)	ND	10									
Methylene chloride	ND	50									
Naphthalene	ND	20									
n-Butylbenzene	ND	10									
n-Propylbenzene	ND	10									
sec-Butylbenzene	ND	10									
Styrene	ND	10									
t-Butyl alcohol (t-Butanol)	ND	50									
tert-Amyl methyl ether (TAME)	ND	10									
tert-Butylbenzene	ND	10									
Tetrachloroethene	ND	10									
Toluene	ND	10									
trans-1,2-Dichloroethene	ND	10									
trans-1,3-Dichloropropene	ND	10									
Trichloroethene	ND	10									
Trichlorofluoromethane	ND	10									

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: URS Corporation, San Jose
Work Order: 0904168
Project: 101- Aux lanes/Drums

ANALYTICAL QC SUMMARY REPORT

BatchID: R19461

Sample ID	MB-R19461	SampType:	MBLK	TestCode:	8260B_S	Units:	µg/Kg	Prep Date:	5/4/2009	RunNo:	19461
Client ID:	ZZZZZ	Batch ID:	R19461	TestNo:	SW8260B			Analysis Date:	5/4/2009	SeqNo:	281192

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vinyl chloride	ND	10									
Xylenes, Total	ND	15									
Surr: 4-Bromofluorobenzene	38.23	0	50	0	76.5	55.8	141				
Surr: Dibromofluoromethane	49.19	0	50	0	98.4	59.8	148				
Surr: Toluene-d8	41.78	0	50	0	83.6	55.2	133				

Sample ID	LCS-R19461	SampType:	LCS	TestCode:	8260B_S	Units:	µg/Kg	Prep Date:	5/4/2009	RunNo:	19461
Client ID:	ZZZZZ	Batch ID:	R19461	TestNo:	SW8260B			Analysis Date:	5/4/2009	SeqNo:	281193

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	55.76	10	50	0	112	53.7	139				
Benzene	49.34	10	50	0	98.7	66.5	135				
Chlorobenzene	44.18	10	50	0	88.4	57.5	150				
Toluene	37.42	10	50	0	74.8	56.8	134				
Trichloroethene	49.72	10	50	0	99.4	57.4	134				
Surr: 4-Bromofluorobenzene	36.81	0	50	0	73.6	55.8	141				
Surr: Dibromofluoromethane	40.64	0	50	0	81.3	59.8	148				
Surr: Toluene-d8	40.36	0	50	0	80.7	55.2	133				

Sample ID	LCSD-R19461	SampType:	LCSD	TestCode:	8260B_S	Units:	µg/Kg	Prep Date:	5/4/2009	RunNo:	19461
Client ID:	ZZZZZ	Batch ID:	R19461	TestNo:	SW8260B			Analysis Date:	5/4/2009	SeqNo:	281194

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	59.08	10	50	0	118	53.7	139	55.76	5.78	30	
Benzene	51.15	10	50	0	102	66.5	135	49.34	3.60	30	
Chlorobenzene	42.06	10	50	0	84.1	57.5	150	44.18	4.92	30	
Toluene	37.41	10	50	0	74.8	56.8	134	37.42	0.0267	30	
Trichloroethene	43.01	10	50	0	86.0	57.4	134	49.72	14.5	30	
Surr: 4-Bromofluorobenzene	36.23	0	50	0	72.5	55.8	141	0	0	0	
Surr: Dibromofluoromethane	50.33	0	50	0	101	59.8	148	0	0	0	
Surr: Toluene-d8	41.50	0	50	0	83.0	55.2	133	0	0	0	

Qualifiers:
E Value above quantitation range
ND Not Detected at the Reporting Limit
H Holding times for preparation or analysis exceeded
R RPD outside accepted recovery limits
J Analyte detected below quantitation limits
S Spike Recovery outside accepted recovery limits

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0904168

Company Name: URS San Jose	Location of Sampling: 101 - Ave Lanes / Drums
Address:	Purpose:
City: State: Zip Code:	Special Instructions / Comments:
Telephone: FAX:	
REPORT TO: Patrick Wolf SAMPLER: Eduardo G.	P.O. #: EMAIL:

TURNAROUND TIME:
- [ ] 10 Work Days
- [ ] 3 Work Days
- [ ] Noon - Nxt Day
- [ ] 7 Work Days
- [ ] 2 Work Days
- [ ] 2 - 8 Hours
- [x] 5 Work Days
- [ ] 1 Work Day
- [ ] Other

SAMPLE TYPE:
- [ ] Storm Water
- [ ] Air
- [ ] Waste Water
- [ ] Other
- [ ] Ground Water
- [x] Soil

REPORT FORMAT:
- [ ] QC Level IV
- [ ] EDF
- [ ] Excel / EDD

ANALYSIS REQUESTED

LAB ID	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	CAM 17+pH	OCP	PCBs	VOCs	SVOCs	TPH-d+mo	TPH-g			REMARKS
001A	D-1	04/28/09	S	1	8oz	X	X	X		X					
002A	D-2	|	S	1	8oz	X			X		X				
003A	D-3	|	S	1	8oz	X						X			

TORRENT LAB

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]	Eduardo G.	04/28/09	3:00pm	[signature]		4/28/09	3:00pm
2								

Were Samples Received in Good Condition? [x] Yes [ ] NO Samples on Ice? [ ] Yes [x] NO Method of Shipment Drop off Sample seals intact? [ ] Yes [ ] NO [x] N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Page 1 of 1

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date: _____

Appendix F

KELLCO-MACS

A Creative Joint Venture For Better Environmental Solutions

Sample Acquisition As Directed By the Client
Limited Asbestos and Lead Paint Inspection Report

Date:	May 8, 2009
KELLCO-MACS Job #:	0904-24
Client:	Mr. Patrick Walz URS Corporation 55 South Market Street Suite #1500 San Jose, CA 95113
Location:	Adobe Creek Bridge, Matadero Creek Bridge & Permanente Creek Bridge Mountain View, CA 94043
Date of Inspection:	April 27, 2009 & April 28, 2009
Inspectors:	Derrik Quach SST #02-3214, DHS Lead #2280 Philip Bradley CAC #01-2966, DHS Lead #4403
Description Of The Inspected Area:	The inspection was conducted on three bridges located in Mountain View, CA. The sampling was at the direction of the client. The bridges are concrete with concrete beams and pipe with insulation running under them.

Background

This is a limited asbestos and lead inspection on three bridges located in Mountain View, CA. The sampling was at the direction of the client.

Synopsis

Asbestos was **NOT** found in the tested materials.

Lead paint was found in the following tested materials:

- Flaking Paint – Matadero Creek Bridge East Side
- Paint on Concrete Barrier Wall & Trail South Wall – Adobe Creek Bridge

3137 Diablo Avenue • Hayward, CA 94545-2701• (510) 786-9751 • fax (510) 786-9625
http://www.kellcomacs.com email: mailbox3137@kellcomacs.com

About the Inspection

The inspection performed was both visual and tactile. Samples were taken of suspect materials located at the exterior of the survey area.

The inspection was limited to those materials readily discerned by the client in a reasonable inspection by a competent inspector. If future work uncovers any non-sampled materials, these should be submitted for asbestos and/or lead paint analysis.

The following numbering convention was used for this inspection:

LETTER	STANDS FOR	EXAMPLE	MEANING
XX	Building DESIGNATION based on information provided on drawings provided to us prior to inspection	ACB MCB PCB	Adobe Creek Bridge Matadero Creek Bridge Permanente Creek Bridge
Y & *Optional Z*	Building SYSTEM (W: wall; F: Flooring; C: Ceiling; T: TSI; M: Misc)	W	Wall Sample
xx	Sample number and layer	01 01a	Adobe Creek Bridge – Wall Sample – First Sample & Layer Adobe Creek Bridge – Wall Sample – First Sample & Second Layer

- ***Asbestos Findings***

Asbestos samples were analyzed in the KELLCO-MACS laboratory, by Polarized Light Microscopy, the EPA's recommended method. Copies of the full laboratory reports are attached. These valuable reports can be utilized as future reference to determine if a particular material was tested.

Photographs of sampled materials are included. Sample locations are noted on the attached not-to-scale drawing.

The determination of a material to be Asbestos Containing Material (ACM) was made either by direct sampling or by homogeneity with at least one positive sample of the same material.

Materials that tested **positive** for asbestos are: **NONE**

Tested materials that were **none detected** for asbestos are:

Lab Sample #	Field Sample #	Field Description
L189105-1	PCB-W-01	NB 101 @ 4' Above Water - Concrete
L189105-2	PCB-W-02	NB 101 - N End - Cork
L189105-3	PCB-W-03	NB 101 - N End - Concrete
L189105-4	PCB-W-04	NB 101 - S End 10' Away From Tunnel - Concrete
L189105-5	PCB-W-05	NB 101 - S End Pipe - Insulation
L189105-6	PCB-W-06	NB 101 - N End Pipe - Insulation
L189105-7	PCB-W-07	NB 101 - S End Patch - Concrete
L189105-8	PCB-W-08	NB 101 - Hydro E Side - Concrete
L189105-9	PCB-W-09	NB 101 - 3' Pipe - Concrete
L189105-10	PCB-W-10	NB 101 - Barrier Wall N End - Concrete
L189105-11	PCB-W-11	NB 101 - Barrier Wall S End - Concrete
L189105-12	PCB-W-12	NB 101 - Upper Tunnel S End - Concrete
L189105-13	PCB-W-13	SB 101 - S End Upper Tunnel - Concrete
L189105-14	PCB-W-14	SB 101 - N End Upper Tunnel - Concrete / Patch
L189105-15	PCB-W-14a	SB 101 - N End Upper Tunnel - Concrete / Patch - Black patch
L189105-16	PCB-W-15	SB 101 - S End - Concrete
L189105-17	PCB-W-16	SB 101 - S End - Concrete
L189105-18	PCB-P-17	SB 101 - S End Pipe - Concrete
L189108-1	ACB-W-01	NB 101 - S End 2nd Beam - Concrete
L189108-2	ACB-W-02	NB 101 - S End Trail - Concrete
L189108-3	ACB-W-03	NB 101 - S End Joint - Concrete
L189108-4	ACB-W-04	NB 101 - S End Expansion Joint - Cork
L189108-5	ACB-P-05	NB 101 - S End Pipe - Insulation
L189108-6	ACB-W-06	NB 101 - S End Mastic
L189108-7	ACB-W-07	SB 101 - S End Trail - Paint
L189108-8	ACB-W-08	SB 101 - S End Barrier Wall - Concrete
L189108-9	ACB-W-09	SB 101 - S End Last Beam - Concrete
L189108-10	ACB-P-10	SB 101 - S End Pipe - Insulation
L189108-11	ACB-W-11	SB 101 - S End Expansion Joint - Cork
L189108-12	ACB-W-12	NB 101 - N End 1st Beam - Concrete
L189108-13	ACB-W-13	NB 101 - N End Expansion Joint - Cork
L189108-14	ACB-W-14	NB 101 - N End Joint - Concrete
L189108-15	ACB-W-15	NB 101 - N End 1st Beam - Concrete
L189150-1	MCB-01	NE Side Of Bridge - Concrete - Bottom
L189150-2	MCB-02	NE Side Of Bridge - Expansion Joint - N. Side & Underneath Bridge
L189150-3	MCB-03	NE Side Of Bridge - Concrete - Top Of Concrete Fence Between Bridges
L189150-4	MCB-04	NW Side Of Bridge - Concrete - Top of Concrete Fence For Hwy 101

Lab Sample #	Field Sample #	Field Description
L189150-5	MCB-05	NW Side Of Bridge - Concrete - Top Of Concrete Between Bridges
L189150-6	MCB-06	NW Side Of Bridge - Concrete - Under Bridge, N. Side
L189150-7	MCB-07	NW Side Of Bridge - Expansion Joint - Under Bridge, NE Area
L189150-8	MCB-08	NW Side Of Bridge - Concrete - Top Of Concrete Embankment
L189150-9	MCB-09	NW Side Of Bridge - Expansion Joint - S. Joints From W. Side
L189150-10	MCB-10	Middle Wall, E End - Concrete E. Side, Between Bridges
L189150-11	MCB-11	S. Embankment Wall - Concrete - W. Side Top Between Bridges
L189150-12	MCB-12	S. Side - Concrete - Wall Between Bridges, Middle
L189150-13	MCB-13	W. Side Between Bridges - Concrete - S. Wall Between Bridges, Middle
L189150-14	MCB-14	W. Side Between Bridges - Concrete - Embankment Between Bridges, Middle
L189150-15	MCB-15	W. Side Between Bridges - Concrete - Middle Wall Between Bridges, W. End

- ***Paint Findings***

Lead samples were analyzed by Atomic Absorption in the KELLCO-MACS laboratory. OSHA requires protection of workers from exposure to any lead. Paint should be considered as containing lead if it is the same color as any positive tested material, unless it has specifically been tested and shown to be **none detected** for lead.

The following materials tested **positive** for lead:

Lab Sample #	Field Sample #	Field Description	PPM	Wt %
P189107-1	ACB-Pb-01	NB 101 - Barriers Wall S End - Paint On Concrete	113	0.0113
P189107-2	ACB-Pb-02	SB 101 - Trail S Wall - Paint On Concrete	138	0.0138
P189151-2	MCB-Pb-02	E. Side Of Bridge - Concrete - Flaking Paint, NE End Of Wall	108	0.0108

Paint of the same color as the above samples should be considered positive unless proven otherwise by direct sampling with results of "None Detected."

The following are materials for which the lead was **none detected**:

Lab Sample #	Field Sample #	Field Description
P189106-1	PCB-Pb-01	Hydro Cap. NB 101 - Paint On Metal
P189106-2	PCB-Pb-02	NB 101 - N Wall Of Bridge - Paint On Concrete
P189106-3	PCB-Pb-03	NB 101 - N Wall Of Creek - Paint On Concrete

Lab Sample #	Field Sample #	Field Description
P189151-1	MCB-Pb-01	E. Side Of Bridge - Concrete - Paint On N. Embankment, 2nd Tier

Although there are some materials that are negative for lead paint, for the purposes of demolition it is recommended that all painted materials be considered as lead containing.

Regulatory Requirements

The Environmental Protection Agency (EPA) defines Asbestos Containing Material as any material that contains greater than 1% asbestos.

Removal or disturbance of any amount of lead paint requires adherence to the Cal-OSHA and DHS regulations, including proper training and certification for workers and supervisors

The OSHA lead (1532) regulations require that a Negative Initial Determination for lead exposure be made with paint that contains greater than 0.06% (600 ppm) of lead. Paint with less than 0.06% lead should still be treated within the OSHA guidelines, but with reasonable work practices should not generate OSHA action levels of lead exposure.

Building components with intact lead paint and no other hazardous materials can be disposed of as non-hazardous construction waste. Paint chips and debris must be disposed of as lead containing hazardous waste.

Comment Regarding All Lead Containing Materials:

Lead is a known health hazard. Lead containing materials in good condition do not necessarily need to be removed if they are not disturbed; they should however be respected.

Painted surfaces that contain lead should be made known to contractors who may disturb them during their work. OSHA guidelines for workers in contact with lead paint apply if ANY detectable lead is found.

Anyone coming in contact with leaded paint should be advised not to disturb it without taking precautionary measures appropriate to avoid lead contamination or lead exposure.

Areas Needing Immediate Corrective Action

Chipping and peeling lead paint should be removed prior to renovation and must be removed prior to demolition of the survey site.

Analytical Procedures

- ***POLARIZED LIGHT MICROSCOPY (PLM)***

  Bulk samples were analyzed in accordance with U.S. EPA "Test Method for Determination of Asbestos in Bulk Building Materials, 1993," with inclusion of area percent estimates of the sample components. The use of the McCrone Color Dispersion Staining Technique supplements the analysis when considered useful by the analyst. The samples are prepared with refractive immersion oil and are examined under Polarized Light Microscopy (PLM). The accuracy of the visual estimate method is 1%.

  As per the standard "...The accuracy in the determination of the presence or absence of asbestos of greater than 1 area percent asbestos is greater than 99%." ASTM Committee D22.05, 1/18/88, Standard *Method of Testing for Asbestos Containing Materials by Polarized Light Microscopy*. If the sample matrix is reduced to minimize non-asbestos components, the detection limit can be mathematically enhanced, based on the amount of material remaining after matrix reduction. This method is called gravimetric reduction. This method involves ashing and chemical dissolution of the sample.

- ***ATOMIC ABSORPTION FOR LEAD***

  Paint samples were collected for atomic absorption (AA) analysis. The detection limit for each sample depends upon many factors including the sensitivity of the instrument and the sample size. In the KELLCO-MACS laboratory utilizing flame AA, the detection limit is normally .01% or 100 parts per million (ppm).

KELLCO-MACS Qualifications

KELLCO-MACS is a creative joint venture offering hazardous materials and AIHA laboratory analyses. Our credentials include:

- The KELLCO-MACS asbestos inspector is licensed with the State of California Department of Occupational Safety and Health (CAL-OSHA).

- The KELLCO-MACS lead inspector is licensed by the Department of Health Services (DHS).

- The laboratory accreditations include:

  - **NVLAP PLM** for Asbestos: NIST National Voluntary Laboratory Accreditation Program certificate of accreditation for bulk **asbestos** analysis by polarized light microscopy (Accreditation #101948-1).
  - **AIHA** Accreditation for **Industrial Hygiene** Analytical Laboratory for PCM, and AA for lead (Accreditation #101786).
  - **AIHA Analyst Proficiency (NIOSH PAT)** (Accreditation # 11172)
  - **AIHA ELLAP** Accreditation for Lead: Accreditation for the **Environmental Lead** Laboratory recognized by the EPA as meeting the requirements of the National Lead Laboratory Accreditation Program established under Title X (Lab ID #11109).

- **ELAP PLM** for Asbestos: California Department of Health Services, Environmental Laboratory Accreditation Program, certificate for bulk asbestos analysis (Certificate #2027)
- **USDA Soil** permit #39484

The following supporting documents are attached to this report:

- Laboratory analytical reports
- Photographs of sample locations
- Floor plan or sketch showing sample locations

Please call KELLCO if there are any questions and/or clarifications regarding this report. We look forward to working with you in the future.

Sincerely,

KELLCO-MACS

Tim C. Cannard CAC #94-1395, DHS Lead #764
Senior Project Manager

ASBESTOS
ANALYTICAL REPORT

MACS Lab, Inc.
3137 Diablo Ave
Hayward, CA 94545-2701

510-786-9751

Bulk Asbestos Analysis

Report

Method: EPA-600/M4-82-02

KELLCO Services
3137 Diablo Ave

Hayward CA 94545

Person to contact: Tim Cannard
Contact phone: 510-786-9751
FAX phone: 510-786-9625
Sampled by: P. Bradley
Sampled on: April 27, 2009
Analyzed on: April 29, 2009 at: 13:54
Corresponding invoice number: 189150

Analyst: Miriam Cooper MC (signature)

Laboratory manager: (signature)

Job Number: 0904-24

Job Description: Matadero Creek Bridge - 832 Alta Street, Mountain View, CA 94043

Lab Sample Number	Client Sample Number and Description	Asbestos detected?	Fibers present	Remarks
L189150-1	MCB-01 NE Side Of Bridge - Concrete - Bottom	**N.D**	< 1% Cellulose	Gray concrete. Balance of sample is unspecified non-fibrous material.
L189150-2	MCB-02 N. de Of Bridge - Expansion Joint - N. Side & Underneath Bridge	**N.D**	1% Cellulose	Black expansion joint. Balance of sample is unspecified non-fibrous material.
L189150-3	MCB-03 NE Side Of Bridge - Concrete - Top Of Concrete Fence Between Bridges	**N.D**	No Fibers	Gray concrete. Balance of sample is unspecified non-fibrous material.
L189150-4	MCB-04 NW Side Of Bridge - Concrete - Top of Concrete Fence For Hwy 101	**N.D**	< 1% Cellulose	Gray concrete. Balance of sample is unspecified non-fibrous material.
L189150-5	MCB-05 NW Side Of Bridge - Concrete - Top Of Concrete Between Bridges	**N.D**	< 1% Cellulose	Gray concrete. Balance of sample is unspecified non-fibrous material.
L189150-6	MCB-06 NW Side Of Bridge - Concrete - Under Bridge, N. Side	**N.D**	No Fibers	Gray concrete. Balance of sample is unspecified non-fibrous material.

* /sotile, Amosite, Crocidolite, Tremolite, Actinolite, and Anthophyllite are asbestos fibers. N.D.=None Detected PC =Point Counted

This report shall not be reproduced except in full without written approval of MACS Lab, Inc. This report relates only to the items tested. Samples will be destroyed after one month. Test per 40 Code of Federal Reg. Chap I (1-1-87) Part 763, Subpart F, Appendix A or current EPA method. Percentages are approximate. MACS Lab is an accredited laboratory of the National Voluntary Laboratory Accreditation Program (NVLAP) and is Lab Code 101948-0. No product endorsement by NVLAP or any agency of the U.S. Government may be claimed as a result of this analysis. Calif Dept of Health ELAP #2027. This method is not reliable for analysis of tile or other materials when fiber size is less than 10μ. TEM analysis should be used. Method Detection limit for asbestos is 1% per CA law. See QC page attached to this page for blank and retest data .

NVLAP®
NVLAP Lab Code 101948-0

MACS Lab, Inc.
3137 Diablo Ave
Hayward, CA 94545-2701

510-786-9751

Bulk Asbestos Analysis

Report

Sample Number	Client Sample Number and Description	Asbestos detected?	Fibers present	Remarks
L189150-7	MCB-07 NW Side Of Bridge - Expansion Joint - Under Bridge, NE Area	**N.D**	1% Cellulose	Black expansion joint. Balance of sample is unspecified non-fibrous material.
L189150-8	MCB-08 NW Side Of Bridge - Concrete - Top Of Concrete Embankment	**N.D**	No Fibers	Gray concrete. Balance of sample is unspecified non-fibrous material.
L189150-9	MCB-09 NW Side Of Bridge - Expansion Joint - S. Joints From W. Side	**N.D**	1% Cellulose	Black expansion joint. Balance of sample is unspecified non-fibrous material.
L189150-10	MCB-10 Middle Wall, E. End - Concrete E. Side, Between Bridges	**N.D**	No Fibers	Gray concrete. Balance of sample is unspecified non-fibrous material.
L189150-11	MCB-11 S. Embankment Wall - Concrete - W. Side Top Between Bridges	**N.D**	No Fibers	Gray concrete. Balance of sample is unspecified non-fibrous material.
L189150-12	MCB-12 S. Side - Concrete - Wall Between Bridges, Middle	**N.D**	1% Cellulose	Gray concrete. Balance of sample is unspecified non-fibrous material.
L189150-13	MCB-13 W. Side Between Bridges - Concrete - S. Wall Between Bridges, Middle	**N.D**	No Fibers	Gray concrete. Balance of sample is unspecified non-fibrous material.
L189150-14	MCB-14 W. Side Between Bridges - Concrete - Embankment Between Bridges, Middle	**N.D**	1% Cellulose	Gray concrete. Balance of sample is unspecified non-fibrous material.
L189150-15	MCB-15 W. Side Between Bridges - Concrete - Middle Wall Between Bridges, W. End	**N.D**	No Fibers	Gray concrete. Balance of sample is unspecified non-fibrous material.

* Chrysotile, Amosite, Crocidolite, Tremolite, Actinolite, and Anthophyllite are asbestos fibers. N.D.=None Detected PC =Point Counted

This report shall not be reproduced except in full without written approval of MACS Lab, Inc. This report relates only to the items tested. Samples will be destroyed after one month. Test per 40 Code of Federal Reg. Chap I (1-1-87) Part 763, Subpart F, Appendix A or current EPA method. Percentages are approximate. MACS Lab is an accredited laboratory of the National Voluntary Laboratory Accreditation Program (NVLAP) and is Lab Code 101948-0. No product endorsement by NVLAP or any agency of the U.S. Government may be claimed as a result of this analysis. Calif Dept of Health ELAP #2027. This method is not reliable for analysis of tile or other materials when fiber size is less than 10μ. TEM analysis should be used. Method Detection limit for asbestos is 1% per CA law. See QC page attached to this page for blank and retest data .

NVLAP®
NVLAP Lab Code 101948-0

MACS Lab, Inc.
3137 Diablo Ave
Hayward, CA 94545-2701

510-786-9751

Bulk Asbestos Analysis

QA Report

Method: EPA-600

KELLCO Services
3137 Diablo Ave

Hayward CA 94545

Laboratory manager: _____
(signature)

Lab Sample Number	Client Sample Number and Description	Asbestos detected?	Fibers present	Remarks
Blank sample		**N.D.** PC*	No fibers	
L189150-3	MCB-03 N[illegible]de Of Bridge - Concrete - Top Of Concrete Fence Between Bridges	**N.D**	No Fibers	Concrete. Balance of sample is unspecified non-fibrous material.
L189150-8	MCB-08 NW Side Of Bridge - Concrete - Top Of Concrete Embankment	**N.D**	No Fibers	Concrete. Balance of sample is unspecified non-fibrous material.
L189150-12	MCB-12 S. Side - Concrete - Wall Between Bridges, Middle	**N.D**	< 1% Cellulose	Concrete. Balance of sample is unspecified non-fibrous material.

End of report.

* [illegible]ysotile, Amosite, Crocidolite, Tremolite, Actinolite, and Anthophyllite are asbestos fibers. N.D.=None Detected PC =Point Counted

This report shall not be reproduced except in full without written approval of MACS Lab, Inc. This report relates only to the items tested. Samples will be destroyed after one month. Test per 40 Code of Federal Reg. Chap I (1-1-87) Part 763, Subpart F, Appendix A or current EPA method. Percentages are approximate. MACS Lab is an accredited laboratory of the National Voluntary Laboratory Accreditation Program (NVLAP) and is Lab Code 101948-0. No product endorsement by NVLAP or any agency of the U.S. Government may be claimed as a result of this analysis. Calif Dept of Health ELAP #2027. This method is not reliable for analysis of tile or other materials when fiber size is less than 10μ. TEM analysis should be used. Method Detection limit for asbestos is 1% per CA law. See QC page attached to this page for blank and retest data .

NVLAP®
* NVLAP Lab Code 101948-0

CLIENT	JOBSITE
URS Corporation 55 South Market Street 1500 San Jose CA 95113	Google Culvent Bridge, Adobe Creek Bridg 832 Alta Street Mountian View CA. 94043

KELLCO-MACS JOB#: **0904-24** LAB LOGIN # L18915

COLLECTED BY: P. Bradley

COLLECTED DATE 4/27/09

TURN AROUND TIME: (Normal) 4 8 24 48 5-DAY

RESULTS NEEDED BY

CIRCLE TYPE OF BULK ANALYSIS

(PLM) LEAD PAINT LEAD WIPE NON VIABLE MOLD VIABLE MOLD eCOLI OTHER

SAMPLES REC'D _____ ANALYZE TO FIRST POSITIVE YES NO

REPORT RESULTS TO PROJECT MANAGER: Tim Cannard

NOTES & COMMENTS:

CHAIN OF CUSTODY & SAMPLE SUBMITAL FORM PAGE 1 OF 2

KELLCO-MACS JOB#: **0904-24**
Google Culvent Bridge, Adobe Creek Bridge & M

FIELD NUMBER	LOCATION (bldg, rm#, area)	COLOR	MATERIAL or SUBSTRATE (ft w/ size, mastic, tjc, etc.)	NOTES: Like condition, damage, quantity, inside what, beneath what? direction in building (N,S,E,W) etc.)
~~MCB~~ MCB-01	NE Side of bridge	Grey	Concrete	Bottom
-02	" " " "	Brown	Expansion Joint	N. Side & underneath bridge
-03	" " " "	Grey	Concrete	Top of Concrete fence ~~of Hwy 101~~ Between bridges
-04	NW " " "	"	"	Top of concrete fence for Hwy 101
-05	" " " "	"	"	" " " between bridges
-06	" " " "	"	"	Under bridge, N. Side
-07	" " " "	Brown	Expansion Joint	" " , NE Area
-08	" " " "	Grey	Concrete	Top of concrete embankment
-09	" " " "	Brown	Expansion Joint	5 Joints from W. Side

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
P. Bradley	4/27/09	12:05 P	Danielle Griffin	4-28-09	12:10

L189150

CHAIN OF CUSTODY & SAMPLE SUBMITAL FORM PAGE 2 OF 2

KELLCO-MACS JOB#: **0904-24**
Google Culvent Bridge, Adobe Creek Bridge & M

FIELD NUMBER	LOCATION (bldg, rm#, area)	COLOR	MATERIAL or SUBSTRATE (ft w/ size, mastic, tjc, etc.)	NOTES: Like condition, damage, quantity, inside what, beneath what? direction in building (N,S,E,W) etc.)
MCB-10	Middle wall, E End	Grey	Concrete	E. Side, ~~of~~ between bridges
-11	S. Embankment wall	"	"	W. Side, top " "
-12	S. Side	"	"	Wall between bridges, middle
-13	W. Side between bridges	"	"	S. " " " , middle
-14	" " " "	"	"	Embankment between Bridges, middle
-15	" " " "	"	"	Middle Wall between " , W. end

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
P. Bradley	4/27/09	12:05 P	Danielle Griffin	4-28-09	12:10

MACS Lab, Inc.
3137 Diablo Ave
Hayward, CA 94545-2701

510-786-9751

Bulk Asbestos Analysis

Report

Method: EPA-600/M4-82-02

KELLCO Services
3137 Diablo Ave

Hayward CA 94545

Person to contact: Tim Cannard
Contact phone: 510-786-9751
FAX phone: 510-786-9625
Sampled by: Tim Cannard
Sampled on: April 27, 2009
Analyzed on: April 29, 2009 at: 10:02
Corresponding invoice number: 189105

Analyst: Miriam Cooper MC (signature)

Laboratory manager: (signature)

Job Number: 0904-24

Job Description: Permanente Creek Bridge - 832 Alta Street, Mountain View, CA 94043

Lab Sample Number	Client Sample Number and Description	Asbestos detected?	Fibers present	Remarks
L189105-1	PCB-W-01 NB 101 @ 4' Above Water - Concrete	**N.D**	2% Cellulose	Gray concrete. Balance of sample is unspecified non-fibrous material.
L189105-2	PCB-W-02 N[illegible]01 - N End - Cork	**N.D**	4% Cellulose	Black cork. Balance of sample is unspecified non-fibrous material.
L189105-3	PCB-W-03 NB 101 - N End - Concrete	**N.D**	< 1% Cellulose	Gray concrete. Balance of sample is unspecified non-fibrous material.
L189105-4	PCB-W-04 NB 101 - S End 10' Away From Tunnel - Concrete	**N.D**	1% Cellulose	Gray concrete. Balance of sample is unspecified non-fibrous material.
L189105-5	PCB-W-05 NB 101 - S End Pipe - Insulation	**N.D**	20% Cellulose 10% Fiberglass	Black insulation. Balance of sample is unspecified non-fibrous material.
L189105-6	PCB-W-06 NB 101 - N End Pipe - Insulation	**N.D**	30% Fiberglass 10% Cellulose	Black insulation. Balance of sample is unspecified non-fibrous material.

[illegible]ysotile, Amosite, Crocidolite, Tremolite, Actinolite, and Anthophyllite are asbestos fibers. N.D.=None Detected PC =Point Counted

This report shall not be reproduced except in full without written approval of MACS Lab, Inc. This report relates only to the items tested. Samples will be destroyed after one month. Test per 40 Code of Federal Reg. Chap I (1-1-87) Part 763, Subpart F, Appendix A or current EPA method. Percentages are approximate. MACS Lab is an accredited laboratory of the National Voluntary Laboratory Accreditation Program (NVLAP) and is Lab Code 101948-0. No product endorsement by NVLAP or any agency of the U.S. Government may be claimed as a result of this analysis. Calif Dept of Health ELAP #2027. This method is not reliable for analysis of tile or other materials when fiber size is less than 10μ. TEM analysis should be used. Method Detection limit for asbestos is 1% per CA law. See QC page attached to this page for blank and retest data .

NVLAP®
NVLAP Lab Code 101948-0

MACS Lab, Inc.
3137 Diablo Ave
Hayward, CA 94545-2701

510-786-9751

Bulk Asbestos Analysis

Report

Sample Number	Client Sample Number and Description	Asbestos detected?	Fibers present	Remarks
L189105-7	PCB-W-07 NB 101 - S End Patch - Concrete	**N.D**	5% Cellulose	Gray concrete. Balance of sample is unspecified non-fibrous material.
L189105-8	PCB-W-08 NB 101 - Hydro E Side - Concrete	**N.D**	5% Cellulose	Gray concrete. Balance of sample is unspecified non-fibrous material.
L189105-9	PCB-W-09 NB 101 - 3' Pipe - Concrete	**N.D**	< 1% Cellulose	Gray concrete. Balance of sample is unspecified non-fibrous material.
L189105-10	PCB-W-10 NB 101 - Barrier Wall N End - Concrete	**N.D**	10% Cellulose	Gray concrete. Balance of sample is unspecified non-fibrous material.
L189105-11	PCB-W-11 NB 101 - Barrier Wall S End - Concrete	**N.D**	5% Cellulose	Gray concrete. Balance of sample is unspecified non-fibrous material.
L189105-12	PCB-W-12 NB 101 - Upper Tunnel S End - Concrete	**N.D**	< 1% Cellulose	Gray concrete. Balance of sample is unspecified non-fibrous material.
L189105-13	PCB-W-13 SB 101 - S End Upper Tunnel - Concrete	**N.D**	3% Cellulose	Gray concrete. Balance of sample is unspecified non-fibrous material.
L189105-14	PCB-W-14 SB 101 - N End Upper Tunnel - Concrete	**N.D**	1% Cellulose	Gray concrete. Balance of sample is unspecified non-fibrous material.
L189105-15	14a SB 101 - N End Upper Tunnel - Concrete / Black Patch	**N.D**	2% Cellulose	Black patch. Balance of sample is unspecified non-fibrous material.

ysotile, Amosite, Crocidolite, Tremolite, Actinolite, and Anthophyllite are asbestos fibers. N.D.=None Detected PC =Point Counted

This report shall not be reproduced except in full without written approval of MACS Lab, Inc. This report relates only to the items tested. Samples will be destroyed after one month. Test per 40 Code of Federal Reg. Chap I (1-1-87) Part 763, Subpart F, Appendix A or current EPA method. Percentages are approximate. MACS Lab is an accredited laboratory of the National Voluntary Laboratory Accreditation Program (NVLAP) and is Lab Code 101948-0. No product endorsement by NVLAP or any agency of the U.S. Government may be claimed as a result of this analysis. Calif Dept of Health ELAP #2027. This method is not reliable for analysis of tile or other materials when fiber size is less than 10μ. TEM analysis should be used. Method Detection limit for asbestos is 1% per CA law. See QC page attached to this page for blank and retest data .

NVLAP®
NVLAP Lab Code 101948-0

MACS Lab, Inc.
3137 Diablo Ave
Hayward, CA 94545-2701

510-786-9751

Bulk Asbestos Analysis

Report

Sample Number	Client Sample Number and Description	Asbestos detected?	Fibers present	Remarks
L189105-16	PCB-W-15 SB 101 - S End - Concrete	**N.D**	< 1% Cellulose	Gray concrete. Balance of sample is unspecified non-fibrous material.
L189105-17	PCB-W-16 SB 101 - S End - Concrete	**N.D**	2% Cellulose	Gray concrete. Balance of sample is unspecified non-fibrous material.
L189105-18	PCB-P-17 SB 101 - S End Pipe - Concrete	**N.D**	< 1% Cellulose	Gray concrete. Balance of sample is unspecified non-fibrous material.

* Chrysotile, Amosite, Crocidolite, Tremolite, Actinolite, and Anthophyllite are asbestos fibers. N.D.=None Detected PC =Point Counted

This report shall not be reproduced except in full without written approval of MACS Lab, Inc. This report relates only to the items tested. Samples will be destroyed after one month. Test per 40 Code of Federal Reg. Chap I (1-1-87) Part 763, Subpart F, Appendix A or current EPA method. Percentages are approximate. MACS Lab is an accredited laboratory of the National Voluntary Laboratory Accreditation Program (NVLAP) and is Lab Code 101948-0. No product endorsement by NVLAP or any agency of the U.S. Government may be claimed as a result of this analysis. Calif Dept of Health ELAP #2027. This method is not reliable for analysis of tile or other materials when fiber size is less than 10μ. TEM analysis should be used. Method Detection limit for asbestos is 1% per CA law. See QC page attached to this page for blank and retest data .

NVLAP®
NVLAP Lab Code 101948-0

MACS Lab, Inc.
3137 Diablo Ave
Hayward, CA 94545-2701

510-786-9751

Bulk Asbestos Analysis

QA Report

Method: EPA-600

KELLCO Services
3137 Diablo Ave

Hayward CA 94545

Laboratory manager: _____
(signature)

Lab Sample Number	Client Sample Number and Description	Asbestos detected?	Fibers present	Remarks
Blank sample		**N.D.** PC*	No fibers	
L189105-4	PCB-W-04	**N.D**	< 1% Cellulose	Concrete. Balance of sample is unspecified non-fibrous material.
N[illegible]01 - S End 10' Away From Tunnel - Concrete				
L189105-5	PCB-W-05	**N.D**	18% Cellulose 8% Fiberglass	Insulation. Balance of sample is unspecified non-fibrous material.
NB 101 - S End Pipe - Insulation				
L189105-6	PCB-W-06	**N.D**	25% Fiberglass 15% Cellulose	balance of sample unspecified non-fibrous material.isInsulation.
NB 101 - N End Pipe - Insulation				

End of report.

*. [illegible]ysotile, Amosite, Crocidolite, Tremolite, Actinolite, and Anthophyllite are asbestos fibers. N.D.=None Detected PC =Point Counted

This report shall not be reproduced except in full without written approval of MACS Lab, Inc. This report relates only to the items tested. Samples will be destroyed after one month. Test per 40 Code of Federal Reg. Chap I (1-1-87) Part 763, Subpart F, Appendix A or current EPA method. Percentages are approximate. MACS Lab is an accredited laboratory of the National Voluntary Laboratory Accreditation Program (NVLAP) and is Lab Code 101948-0. No product endorsement by NVLAP or any agency of the U.S. Government may be claimed as a result of this analysis. Calif Dept of Health ELAP #2027. This method is not reliable for analysis of tile or other materials when fiber size is less than 10μ. TEM analysis should be used. Method Detection limit for asbestos is 1% per CA law. See QC page attached to this page for blank and retest data .

NVLAP®
NVLAP Lab Code 101948-0

CLIENT	JOBSITE
URS Corporation 55 South Market Street 1500 San Jose CA 95113	Google Culvent Bridge, Adobe Creek Bridg 832 Alta Street Mountian View CA. 94043

KELLCO-MACS JOB#: **0904-24** LAB LOGIN # L189105

COLLECTED BY: Derrik / Phil

COLLECTED DATE 4/27/09

TURN AROUND TIME: Normal 4 8 24 48 5-DAY

RESULTS NEEDED BY

CIRCLE TYPE OF BULK ANALYSIS

PLM LEAD PAINT LEAD WIPE NON VIABLE MOLD VIABLE MOLD eCOLI OTHER

SAMPLES REC'D 17 ANALYZE TO FIRST POSITIVE YES NO

REPORT RESULTS TO PROJECT MANAGER: Tim Cannard

NOTES & COMMENTS:

CHAIN OF CUSTODY & SAMPLE SUBMITAL FORM PAGE____ OF ____

KELLCO-MACS JOB#: **0904-24**
Google Culvent Bridge, Adobe Creek Bridge & M

FIELD NUMBER	LOCATION (bldg, rm#, area)	COLOR	MATERIAL or SUBSTRATE (ft w/ size, mastic, tjc, etc.)	NOTES: Like condition, damage, quantity, inside what, beneath what? direction in building (N,S,E,W) etc.)
PCB-W-01	NB 101 @ 4' above water	grey	concrete	at south end
W-02	NB 101 · N End	brown	cork	
W-03	NB 101 · N End	grey	concrete	
W-04	" " - S End 10' away from tunnel	grey	concrete	
W-05	" " - S End Pipe	blk	insulation	
W-06	" " - N End Pipe	blk	" "	
W-07	" " - S End patch	grey	concrete	
W-08	" " Hydro E side	grey	concrete	
W-09	" " · 3' pipe	grey	concrete	

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
[illegible]	4·27·09		Danielle Griffin	4-28-09	8:00

L189105

CHAIN OF CUSTODY & SAMPLE SUBMITAL FORM PAGE_____ OF _____

KELLCO-MACS JOB#: **0904-24**
Google Culvent Bridge, Adobe Creek Bridge & M

FIELD NUMBER	LOCATION (bldg, rm#, area)	COLOR	MATERIAL or SUBSTRATE (ft w/ size, mastic, tjc, etc.)	NOTES: Like condition, damage, quantity, inside what, beneath what? direction in building (N,S,E,W) etc.)
PCB-W-10	NB 101. Barrier Wall N. End	grey	concrete	
W-11	NB 101. Barrier wall. S end	grey	concrete	
W-12	NB 101. upper tunnel S end	grey	concrete	
W-~~13~~ 14	SB101- N end. upper tunnel	grey	concrete / patch	
W-~~14~~ 13	SB 101 - S. end. upper tunnel	grey	concrete	
W-15	SB 101- S. end	grey	Concrete	
W-16	SB 101- S. end	grey	concrete	
P-17	" - S. end Pipe	grey	concrete	

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
[illegible]	4/27/09		Danielle Griffin	4-28-09	8:00

MACS Lab, Inc.
3137 Diablo Ave
Hayward, CA 94545-2701

510-786-9751

Bulk Asbestos Analysis

Report

Method: EPA-600/M4-82-02

KELLCO Services
3137 Diablo Ave

Hayward CA 94545

Person to contact: Tim Cannard
Contact phone: 510-786-9751
FAX phone: 510-786-9625
Sampled by: Derrik/Phil
Sampled on: April 27, 2009
Analyzed on: April 29, 2009 at: 11:37
Corresponding invoice number: 189108

Analyst: Miriam Cooper MC (signature)

Laboratory manager: (signature)

Job Number: 0904-24

Job Description: Adobe Creek Bridge - 832 Alta Street, Mountain View, CA 94043

Lab Sample Number	Client Sample Number and Description	Asbestos detected?	Fibers present	Remarks
L189108-1	ACB-W-01 NB 101 - S End 2nd Beam - Concrete	**N.D**	< 1% Cellulose	Gray concrete. Balance of sample is unspecified non-fibrous material.
L189108-2	ACB-W-02 N[illegible]01 - S End Trail - Concrete	**N.D**	No Fibers	Gray concrete. Balance of sample is unspecified non-fibrous material.
L189108-3	ACB-W-03 NB 101 - S End Joint - Concrete	**N.D**	< 1% Cellulose	Gray concrete. Balance of sample is unspecified non-fibrous material.
L189108-4	ACB-W-04 NB 101 - S End Expension Joint - Cork	**N.D**	2% Cellulose	Black cork. Balance of sample is unspecified non-fibrous material.
L189108-5	ACB-P-05 NB 101 - S End Pipe - Insulation	**N.D**	8% Cellulose	Black insulation. Balance of sample is unspecified non-fibrous material.
L189108-6	ACB-W-06 NB 101 - S End Mastic	**N.D**	< 1% Cellulose	Black mastic. Balance of sample is organic binders and unspecified non-fibrous material.

[illegible]ysotile, Amosite, Crocidolite, Tremolite, Actinolite, and Anthophyllite are asbestos fibers. N.D.=None Detected PC =Point Counted

This report shall not be reproduced except in full without written approval of MACS Lab, Inc. This report relates only to the items tested. Samples will be destroyed after one month. Test per 40 Code of Federal Reg. Chap I (1-1-87) Part 763, Subpart F, Appendix A or current EPA method. Percentages are approximate. MACS Lab is an accredited laboratory of the National Voluntary Laboratory Accreditation Program (NVLAP) and is Lab Code 101948-0. No product endorsement by NVLAP or any agency of the U.S. Government may be claimed as a result of this analysis. Calif Dept of Health ELAP #2027. This method is not reliable for analysis of tile or other materials when fiber size is less than 10μ. TEM analysis should be used. Method Detection limit for asbestos is 1% per CA law. See QC page attached to this page for blank and retest data .

NVLAP
NVLAP Lab Code 101948-0

MACS Lab, Inc.
3137 Diablo Ave
Hayward, CA 94545-2701

510-786-9751

Bulk Asbestos Analysis Report

Sample Number	Client Sample Number and Description	Asbestos detected?	Fibers present	Remarks
L189108-7	ACB-W-07 SB 101 - S End Trail - Paint	**N.D**	< 1% Cellulose	Brown paint. Balance of sample is unspecified non-fibrous material.
L189108-8	ACB-W-08 SB 101 - S End Barrier Wall - Concrete	**N.D**	< 1% Cellulose	Gray concrete. Balance of sample is unspecified non-fibrous material.
L189108-9	ACB-W-09 SB 101 - S End Last Beam - Concrete	**N.D**	No Fibers	Gray concrete. Balance of sample is unspecified non-fibrous material.
L189108-10	ACB-P-10 SB 101 - S End Pipe - Insulation	**N.D**	2% Cellulose	Black insulation. Balance of sample is unspecified non-fibrous material.
L189108-11	ACB-W-11 SB 101 - S End Expension Joint - Cork	**N.D**	2% Cellulose	Black cork. Balance of sample is unspecified non-fibrous material.
L189108-12	ACB-W-12 NB 101 - N End 1st Beam - Concrete	**N.D**	5% Cellulose	Gray concrete. Balance of sample is unspecified non-fibrous material.
L189108-13	ACB-W-13 NB 101 - N End Expension Joint - Cork	**N.D**	2% Cellulose	Brown cork. Balance of sample is unspecified non-fibrous material.
L189108-14	ACB-W-14 NB 101 - N End Jont - Concrete	**N.D**	8% Cellulose	Gray concrete. Balance of sample is unspecified non-fibrous material.
L189108-15	ACB-W-15 NB 101 - N End 1st Beam - Concrete	**N.D**	2% Cellulose	Gray concrete. Balance of sample is unspecified non-fibrous material.

* ysotile, Amosite, Crocidolite, Tremolite, Actinolite, and Anthophyllite are asbestos fibers. N.D.=None Detected PC =Point Counted

This report shall not be reproduced except in full without written approval of MACS Lab, Inc. This report relates only to the items tested. Samples will be destroyed after one month. Test per 40 Code of Federal Reg. Chap I (1-1-87) Part 763, Subpart F, Appendix A or current EPA method. Percentages are approximate. MACS Lab is an accredited laboratory of the National Voluntary Laboratory Accreditation Program (NVLAP) and is Lab Code 101948-0. No product endorsement by NVLAP or any agency of the U.S. Government may be claimed as a result of this analysis. Calif Dept of Health ELAP #2027. This method is not reliable for analysis of tile or other materials when fiber size is less than 10μ. TEM analysis should be used. Method Detection limit for asbestos is 1% per CA law. See QC page attached to this page for blank and retest data .

NVLAP®
NVLAP Lab Code 101948-0

MACS Lab, Inc.
3137 Diablo Ave
Hayward, CA 94545-2701

510-786-9751

Bulk Asbestos Analysis

QA Report

Method: EPA-600

KELLCO Services
3137 Diablo Ave

Hayward CA 94545

Laboratory manager: _____
(signature)

Lab Sample Number	Client Sample Number and Description	Asbestos detected?	Fibers present	Remarks
Blank sample		**N.D.**	No fibers	
		PC*		
L189108-11	ACB-W-11	**N.D**	< 1% Cellulose	Cork. Balance of sample is unspecified non-fibrous material.
SL 1 - S End Expension Joint - Cork				

End of report.

* sotile, Amosite, Crocidolite, Tremolite, Actinolite, and Anthophyllite are asbestos fibers. N.D.=None Detected PC =Point Counted

This report shall not be reproduced except in full without written approval of MACS Lab, Inc. This report relates only to the items tested. Samples will be destroyed after one month. Test per 40 Code of Federal Reg. Chap I (1-1-87) Part 763, Subpart F, Appendix A or current EPA method. Percentages are approximate. MACS Lab is an accredited laboratory of the National Voluntary Laboratory Accreditation Program (NVLAP) and is Lab Code 101948-0. No product endorsement by NVLAP or any agency of the U.S. Government may be claimed as a result of this analysis. Calif Dept of Health ELAP #2027. This method is not reliable for analysis of tile or other materials when fiber size is less than 10μ. TEM analysis should be used. Method Detection limit for asbestos is 1% per CA law. See QC page attached to this page for blank and retest data .

NVLAP®
NVLAP Lab Code 101948-0

CLIENT	JOBSITE
URS Corporation 55 South Market Street 1500 San Jose CA 95113	Google Culvent Bridge, Adobe Creek Bridg 832 Alta Street Mountian View CA. 94043

KELLCO-MACS JOB#: **0904-24** LAB LOGIN # ~~[illegible]~~ 89108

COLLECTED BY: Derrik / Phil

COLLECTED DATE 4/27/09

TURN AROUND TIME: Normal 4 8 24 48 5-DAY

RESULTS NEEDED BY

CIRCLE TYPE OF BULK ANALYSIS

PLM LEAD PAINT LEAD WIPE NON VIABLE MOLD VIABLE MOLD eCOLI OTHER _____

SAMPLES REC'D _____ ANALYZE TO FIRST POSITIVE YES NO

REPORT RESULTS TO PROJECT MANAGER: Tim Cannard

NOTES & COMMENTS: _____

CHAIN OF CUSTODY & SAMPLE SUBMITAL FORM PAGE_____ OF ____

KELLCO-MACS JOB#: **0904-24**
Google Culvent Bridge, Adobe Creek Bridge & M

FIELD NUMBER	LOCATION (bldg, rm#, area)	COLOR	MATERIAL or SUBSTRATE (ft w/ size, mastic, tjc, etc.)	NOTES: Like condition, damage, quantity, inside what, beneath what? direction in building (N,S,E,W) etc.)
ACB-W-01	NB 101 - S end 2nd Beam	grey	Concrete	
-W-02	" - S end trail	grey	concrete	
W-03	" - S end Joint	grey	concrete	joint bet two Beam
W-04	" - S end Expension joint	brown	cork	
P-05	" - S end pipe	blk	insulation	
W-06	" - S end	blk	mastic	
W-07	SB 101 - Send trail	grey	Paint	
W-08	SB 101 - S. End Barrier wall	grey	Cont concrete	

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
Michelle [illegible]	4/28/09	8:20am	Danielle Giffi	4-28-09	8:00

~~P189101~~ L189108

CHAIN OF CUSTODY & SAMPLE SUBMITAL FORM PAGE_____ OF ____

KELLCO-MACS JOB#: **0904-24**
Google Culvent Bridge, Adobe Creek Bridge & M

FIELD NUMBER	LOCATION (bldg, rm#, area)	COLOR	MATERIAL or SUBSTRATE (ft w/ size, mastic, tjc, etc.)	NOTES: Like condition, damage, quantity, inside what, beneath what? direction in building (N,S,E,W) etc.)
ACB-W-09	SB 101 · S end last beam	grey	concrete	
P-10	SB 101 · S end Pipe	blk	insulation	
W-11	SB 101 · S end expension joint	brown	cork	
W-12	NB 101 · N end 1st beam	grey	concrete	
W-13	NB · 101 · N end expension joint	brown	cork	
W-14	NB 101 · N end joint	grey	concrete	
W-15	NB 101 · N end 1st beam	grey	concrete	

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
[signature]	4/27/09		Danielle Griffin	4-28-09	8:00

LEAD
ANALYTICAL REPORT

MACS Lab, Inc.
3137 Diablo Ave
Hayward, CA 94545-2701

510-786-9751

Analysis Report
Lead in Paint
USEPA 7000/7420

KELLCO Services
3137 Diablo Ave

Hayward CA 94545

Person to contact: Tim Cannard
Contact phone: 510-786-9751
FAX phone: 510-786-9625
Samples received on: April 28, 2009
Samples analyzed on: April 28, 2009 at: 12:57
Report printed on: April 28, 2009 at: 12:57
Corresponding invoice number: 189106

Bias: 3.2% Precision: -1.4%

Duy Nguyen
Analyst: _____
DN (signature)

Breeann Cambra
Laboratory manager: _____
(signature)

Job Number: 0904-24

Job Description: Permanente Creek Bridge - 832 Alta Street, Mountain View, CA 94043

Lab Sample Number	Client Sample Number and Description	Calib #	Rcvd OK	Ac-cptd	Report'g Limit ppm	Lead %	Lead ppm	Lead mg/cm^2
P189106-1	PCB-Pb-01 Hydro Cap. NB 101 - Paint On Metal	13000	☑	☑	241	< 0.0241	< 241	N/A
P189106-2	PCB-Pb-02 NB 101 - N Wall Of Bridge - Paint On Concrete	13000	☑	☑	106	< 0.0106	< 106	N/A
P189106-3	PCB-Pb-03 NB 101 - N Wall Of Creek - Paint On Concrete	13000	☑	☑	70.5	< 0.0071	< 71	N/A

AIHA ACCREDITED LABORATORY

This report may not be reproduced except in full and with the permission of MACS Lab, Inc. This report relates only to the item(s) tested. For QC data refer to Calibration Number QA Report. MACS Lab is accredited by the American Industrial Hygiene Association (AIHA) for the analysis of lead in paint and soil (laboratory ID #11172). Some paint samples submitted contain substrate material that can't be removed from the paint layer. This may cause erroneous results. Proper field sampling techniques must be used. Analysis is performed on a flame Atomic Absorption Spectrometer. PPM= parts per million & 10,000 ppm = 1% Note: 1 mg/kg = 1 ppm NOTICE: FOR XRF Confirmation: When the actual sampled area is provided to the laboratory, the results can be calculated in mg/cm2 exactly like an XRF instrument result. Otherwise NO XRF comparison can ever be made because the lab analyzes only a portion of a normal sample and the area of a scrape can't be known after the fact. Without the area N/A is reported. Results are not blank corrected.

MACS Lab, Inc.
3137 Diablo Ave
Hayward, CA 94545-2701

Quality Control Report

Calibration # AA-13000

Element Lead Matrix: Paint Method Detection Limit 0.25 µg/ml

Date of Analysis April 28, 2009 Analyst DN

		Measured Value	Target Value	Acceptance Criterion	
Standard value	0.0 µg/ml	0.00000 units	N/A		
Standard value	0.8 µg/ml	0.01400 units	N/A		
Standard value	2.0 µg/ml	0.03550 units	N/A		
Standard value	5.0 µg/ml	0.08870 units	N/A		
Standard value	10.0 µg/ml	0.18380 units	N/A		
Slope		54.4212 µg/ml/unit	N/A		
Intercept		0.055273 µg/ml	N/A		
Correlation coefficient		0.999844	1	≥ 0.99800	Acceptable
0.25 µg/ml Reference		0.311 µg/ml	0.25	≥0.06	Acceptable
Glassware rinse water		< 0.250 µg/ml	0		
1st Matrix Blank		< 0.250 µg/ml	0	≤ 0.25	Acceptable
Method Blank Beginning		3.852 µg	0	≤ 12.5	Acceptable
CCV Beginning		4.899 µg/ml	5.0000	± 10.0%	Acceptable
ICV Beginning		0.648 µg/ml	0.6000	± 10.0%	Acceptable
LCS Before sample 1		9.949 µg/ml	10.0899	± 10.0%	Acceptable
CCV Before sample 11		N/A µg/ml	5.0000	± 10.0%	
CCB Before sample 11		N/A µg/ml	0	≤ 0.25	
Method Blank Before sample 11		N/A µg	0	≤ 12.5	
CCV Before sample 21		N/A µg/ml	5.0000	± 10.0%	
CCB Before sample 21		N/A µg/ml	0	≤ 0.25	
2nd Matrix Blank		N/A µg/ml	0	≤ 0.25	
Method Blank Before sample 21		N/A µg	0	≤ 12.5	
CCV Before sample 31		N/A µg/ml	5.0000	± 10.0%	
CCB Before sample 31		N/A µg/ml	0	≤ 0.25	
Method Blank Before sample 31		N/A µg	0	≤ 12.5	
CCV After		4.823 µg/ml	5.0000	± 10.0%	Acceptable
CCB After		< 0.250 µg/ml	0	≤ 0.25	Acceptable
Method Blank After		0.859 µg	0	≤ 12.5	Acceptable
LCS After		9.895 µg/ml	10.0899	± 10.0%	Acceptable
RLVS		0.278 µg/ml	0.2500	± 25.0%	Acceptable
Spike of sample	188887 - 1	466.0 µg	500.0	± 25.0%	Acceptable
Spike of sample	0 - 0	N/A µg	0.0	± 25.0%	
Spiked Duplicate	188887 - 1	455.7 µg	500.0	± 25.0%	Acceptable
Spiked Duplicate	0 - 0	N/A µg	0.0	± 25.0%	
Duplicate of sample	188887 1	≤ 1453 ppm	≤ 105	± 25.0%	Acceptable
Duplicate of sample	0 - 0	N/A ppm		± 25.0%	

Note:
MDL= Minimum Detection Limit of the method (absolute)
ICV= Initial Calibration Verification
CCV= Continuing Calibration Verification
CCB= Continuing Calibration Blank
N/A = Not Applicable
LCS= Laboratory Control Sample - NIST SRM-1579
RL=Reporting Limit Verification Sample

Duplicate analyses are measurements of the variable of interest (in this case lead) performed identically on two subsamples of the same sample. The results from duplicate analyses are used to evaluate analytical or measurement precision but not the precision of sampling. Spiked samples are prepared by adding a known mass of the target analyte (in this case lead) to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. Spiked samples are used to determine the effect of the matrix on a method's recovery efficiency. The Method Blank is used to detect contamination from the laboratory. Accuracy is the degree of agreement between an observed value and an accepted reference value such as the LCS NIST SRM-1579 sample. Precision is the degree to which a set of observations or measurements of the same property conform to themselves. NEVER depend upon the laboratory to "fix-up" a poorly taken sample.

MACS Lab, Inc.
3137 Diablo Ave
Hayward, CA 94545-2701

510-786-9751

AA Analysis Data Report

NOTICE:
Instrument reading is in absorbance units
For solids (paint and soil):
Weight is in grams
Paint area (if present) is in sq cm
For air:
LPM= Liters per minute supplied by client
Minutes = duration of sample
m^3 (on report) means cubic meter
For wipe:
Area = Wipe area supplied by client in sq ft
ft^2 (on report) means square foot

Client:
KELLCO Services

Submission ID Number: **189106**

Lead laboratory manager or designee: _____ (signature)

Samples received on: April 28, 2009

Samples analyzed on: April 28, 2009 at: 12:57

I verify that I have checked the records and the data entered here is accurate and matches the written records.

Sample #	Weight, LPM, or area	Solution vol ml	Instr. reading	Paint area or minutes
1	0.0518	50	0.00020	0
2	0.1184	50	0.00250	0
3	0.1773	50	0.00240	0

This report shows the data associated with the individual samples. This includes the MACS Lab, Inc. sample number, the sample weight digested, LPM, area wiped, dilution (solution volume), instrument reading in absorbance, paint area, time in minutes. By using the data on this page, and the slope and intercept found on the calibration curve page of this report one can calculate the concentration of analyte in the original sample. Be sure to use the calibration curve data for the sample tested (see sample results page for Calib. Number). In the case of paint and soil matrices multiply the slope times the absorbance and add the intercept. Multiply this number by the dilution and then divide by the weight. The result will be expressed in PPM. In the case of dust samples multiply the slope times the absorbance and add the intercept. Multiply this number times the dilution and adjust for the area wiped if it is not 1 sq ft. For air samples multiply the slope times the absorbance and add the intercept. Multiply this number by the dilution. This will be the number of μg of lead on the filter. Divide this number by the liters of air used and compute the concentration in cubic meters. A cubic meter contains 1000 liters. Note: in all cases if the concentration calculated by multiplying the slope times the absorbance and adding the intercept is below the MDL (method detection limit) value for that matrix substitute the MDL for the value calculated. This will be the Reporting Limit in PPM. (note: the MDL is shown only to 2 significant figures on this report which will result is slight differences between our and your calculations for this number).

The slope and intercept can be calculated using the absorbance and concentration (see the Quality Control Report) of the standards used in the analysis. This can be done by using linear regression analysis.

μg means micrograms or millionth of a gram.

CLIENT	JOBSITE
URS Corporation 55 South Market Street 1500 San Jose CA 95113	Google Culvent Bridge, Adobe Creek Bridg 832 Alta Street Mountian View CA. 94043

KELLCO-MACS JOB#: **0904-24** LAB LOGIN # P189104

COLLECTED BY: Derrik / Phil

COLLECTED DATE 4/27/09

TURN AROUND TIME: Normal 4 8 24 48 5-DAY

RESULTS NEEDED BY

CIRCLE TYPE OF BULK ANALYSIS

PLM LEAD PAINT LEAD WIPE NON VIABLE MOLD VIABLE MOLD eCOLI OTHER

SAMPLES REC'D 3 ANALYZE TO FIRST POSITIVE YES NO

REPORT RESULTS TO PROJECT MANAGER: Tim Cannard

NOTES & COMMENTS:

CHAIN OF CUSTODY & SAMPLE SUBMITAL FORM PAGE____ OF ____

KELLCO-MACS JOB#: **0904-24**
Google Culvent Bridge, Adobe Creek Bridge & M

FIELD NUMBER	LOCATION (bldg, rm#, area)	COLOR	MATERIAL or SUBSTRATE (ft w/ size, mastic, tjc, etc.)	NOTES: Like condition, damage, quantity, inside what, beneath what? direction in building (N,S,E,W) etc.)
PCB - Pb - 01	Hydro Cap. NB 101	blk	paint on metal	
Pb - 02	NB 101 - N Wall of bridge	Cream	paint on concrete	
Pb - 03	NB 101 - N Wall of Creek	grey	paint on concrete	

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
[signature]	4/27/09		Danielle Griffin	4-28-09	8:00

MACS Lab, Inc.
3137 Diablo Ave
Hayward, CA 94545-2701

510-786-9751

Analysis Report
Lead in Paint
USEPA 7000/7420

KELLCO Services
3137 Diablo Ave

Hayward CA 94545

Person to contact: Tim Cannard
Contact phone: 510-786-9751
FAX phone: 510-786-9625
Samples received on: April 28, 2009
Samples analyzed on: April 28, 2009 at: 12:55
Report printed on: April 28, 2009 at: 12:55
Corresponding invoice number: 189107

Bias: 3.2% Precision: -1.4%

Duy Nguyen
Analyst: _____
DN (signature)

Breeann Cambra
Laboratory manager: _____
(signature)

Job Number: 0904-24

Job Description: Adobe Creek Bridge - 832 Alta Street, Mountain View, CA 94043

Lab Sample Number	Client Sample Number and Description	Calib #	Rcvd OK	Ac-cptd	Report'g Limit ppm	Lead %	Lead ppm	Lead mg/cm^2
P189107-1	ACB-Pb-01 NB 101 - Barriers Wall S End - Paint On Concrete	13000	☑	☑	106	0.0113	113	N/A
P189107-2	ACB-Pb-02 SB 101 - Trail S Wall - Paint On Concrete	13000	☑	☑	105	0.0138	138	N/A

AIHA ACCREDITED LABORATORY

This report may not be reproduced except in full and with the permission of MACS Lab, Inc. This report relates only to the item(s) tested. For QC data refer to Calibration Number QA Report. MACS Lab is accredited by the American Industrial Hygiene Association (AIHA) for the analysis of lead in paint and soil (laboratory ID #11172). Some paint samples submitted contain substrate material that can't be removed from the paint layer. This may cause erroneous results. Proper field sampling techniques must be used. Analysis is performed on a flame Atomic Absorption Spectrometer. PPM= parts per million & 10,000 ppm = 1% Note: 1 mg/kg = 1 ppm NOTICE: FOR XRF Confirmation: When the actual sampled area is provided to the laboratory, the results can be calculated in mg/cm2 exactly like an XRF instrument result. Otherwise NO XRF comparison can ever be made because the lab analyzes only a portion of a normal sample and the area of a scrape can't be known after the fact. Without the area N/A is reported. Results are not blank corrected.

MACS Lab, Inc.
3137 Diablo Ave
Hayward, CA 94545-2701

Quality Control Report

Calibration # AA-13000

Element Lead Matrix: Paint Method Detection Limit 0.25 µg/ml

Date of Analysis April 28, 2009 Analyst DN

		Measured Value	Target Value	Acceptance Criterion	
Standard value	0.0 µg/ml	0.00000 units	N/A		
Standard value	0.8 µg/ml	0.01400 units	N/A		
Standard value	2.0 µg/ml	0.03550 units	N/A		
Standard value	5.0 µg/ml	0.08870 units	N/A		
Standard value	10.0 µg/ml	0.18380 units	N/A		
Slope		54.4212 µg/ml/unit	N/A		
Intercept		0.055273 µg/ml	N/A		
Correlation coefficient		0.999844	1	≥ 0.99800	Acceptable
0.25 µg/ml Reference		0.311 µg/ml	0.25	≥0.06	Acceptable
Glassware rinse water		< 0.250 µg/ml	0		
1st Matrix Blank		< 0.250 µg/ml	0	≤ 0.25	Acceptable
Method Blank Beginning		3.852 µg	0	≤ 12.5	Acceptable
CCV Beginning		4.899 µg/ml	5.0000	± 10.0%	Acceptable
ICV Beginning		0.648 µg/ml	0.6000	± 10.0%	Acceptable
LCS Before sample 1		9.949 µg/ml	10.0899	± 10.0%	Acceptable
CCV Before sample 11		N/A µg/ml	5.0000	± 10.0%	
CCB Before sample 11		N/A µg/ml	0	≤ 0.25	
Method Blank Before sample 11		N/A µg	0	≤ 12.5	
CCV Before sample 21		N/A µg/ml	5.0000	± 10.0%	
CCB Before sample 21		N/A µg/ml	0	≤ 0.25	
2nd Matrix Blank		N/A µg/ml	0	≤ 0.25	
Method Blank Before sample 21		N/A µg	0	≤ 12.5	
CCV Before sample 31		N/A µg/ml	5.0000	± 10.0%	
CCB Before sample 31		N/A µg/ml	0	≤ 0.25	
Method Blank Before sample 31		N/A µg	0	≤ 12.5	
CCV After		4.823 µg/ml	5.0000	± 10.0%	Acceptable
CCB After		< 0.250 µg/ml	0	≤ 0.25	Acceptable
Method Blank After		0.859 µg	0	≤ 12.5	Acceptable
LCS After		9.895 µg/ml	10.0899	± 10.0%	Acceptable
RLVS		0.278 µg/ml	0.2500	± 25.0%	Acceptable
Spike of sample	188887 - 1	466.0 µg	500.0	± 25.0%	Acceptable
Spike of sample	0 - 0	N/A µg	0.0	± 25.0%	
Spiked Duplicate	188887 - 1	455.7 µg	500.0	± 25.0%	Acceptable
Spiked Duplicate	0 - 0	N/A µg	0.0	± 25.0%	
Duplicate of sample	188887 1	≤ 1453 ppm	≤ 105	± 25.0%	Acceptable
Duplicate of sample	0 - 0	N/A ppm		± 25.0%	

Note:
MDL= Minimum Detection Limit of the method (absolute)
ICV= Initial Calibration Verification
CCV= Continuing Calibration Verification
CCB= Continuing Calibration Blank
N/A = Not Applicable
LCS= Laboratory Control Sample - NIST SRM-1579
RLVS=Reporting Limit Verification Sample

Duplicate analyses are measurements of the variable of interest (in this case lead) performed identically on two subsamples of the same sample. The results from duplicate analyses are used to evaluate analytical or measurement precision but not the precision of sampling. Spiked samples are prepared by adding a known mass of the target analyte (in this case lead) to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. Spiked samples are used to determine the effect of the matrix on a method's recovery efficiency. The Method Blank is used to detect contamination from the laboratory. Accuracy is the degree of agreement between an observed value and an accepted reference value such as the LCS NIST SRM-1579 sample. Precision is the degree to which a set of observations or measurements of the same property conform to themselves. NEVER depend upon the laboratory to "fix-up" a poorly taken sample.

MACS Lab, Inc.
3137 Diablo Ave
Hayward, CA 94545-2701

510-786-9751

AA Analysis Data Report

NOTICE:
Instrument reading is in absorbance units
For solids (paint and soil):
Weight is in grams
Paint area (if present) is in sq cm
For air:
LPM= Liters per minute supplied by client
Minutes = duration of sample
m^3 (on report) means cubic meter
For wipe:
Area = Wipe area supplied by client in sq ft
ft^2 (on report) means square foot

Client:
KELLCO Services

Submission ID Number: **189107**

Samples received on: April 28, 2009

Samples analyzed on: April 28, 2009 at: 12:55

Lead laboratory manager or designee: _____ (signature)

I verify that I have checked the records and the data entered here is accurate and matches the written records.

Sample #	Weight, LPM, or area	Solution vol ml	Instr. reading	Paint area or minutes
1	0.1181	50	0.00390	0
2	0.1187	50	0.00500	0

This report shows the data associated with the individual samples. This includes the MACS Lab, Inc. sample number, the sample weight digested, LPM, area wiped, dilution (solution volume), instrument reading in absorbance, paint area, time in minutes. By using the data on this page, and the slope and intercept found on the calibration curve page of this report one can calculate the concentration of analyte in the original sample. Be sure to use the calibration curve data for the sample tested (see sample results page for Calib. Number). In the case of paint and soil matrices multiply the slope times the absorbance and add the intercept. Multiply this number by the dilution and then divide by the weight. The result will be expressed in PPM. In the case of dust samples multiply the slope times the absorbance and add the intercept. Multiply this number times the dilution and adjust for the area wiped if it is not 1 sq ft. For air samples multiply the slope times the absorbance and add the intercept. Multiply this number by the dilution. This will be the number of μg of lead on the filter. Divide this number by the liters of air used and compute the concentration in cubic meters. A cubic meter contains 1000 liters. Note: in all cases if the concentration calculated by multiplying the slope times the absorbance and adding the intercept is below the MDL (method detection limit) value for that matrix substitute the MDL for the value calculated. This will be the Reporting Limit in PPM. (note: the MDL is shown only to 2 significant figures on this report which will result is slight differences between our and your calculations for this number).

The slope and intercept can be calculated using the absorbance and concentration (see the Quality Control Report) of the standards used in the analysis. This can be done by using linear regression analysis.

μg means micrograms or millionth of a gram.

CLIENT	JOBSITE
URS Corporation 55 South Market Street 1500 San Jose CA 95113	Google Culvent Bridge, Adobe Creek Bridg 832 Alta Street Mountian View CA. 94043

KELLCO-MACS JOB#: **0904-24** LAB LOGIN # P189101

COLLECTED BY: Derrik / Phil

COLLECTED DATE 4/27/09

TURN AROUND TIME: Normal 4 8 24 48 5-DAY

RESULTS NEEDED BY

CIRCLE TYPE OF BULK ANALYSIS

PLM LEAD PAINT LEAD WIPE NON VIABLE MOLD VIABLE MOLD eCOLI OTHER

SAMPLES REC'D 2 ANALYZE TO FIRST POSITIVE YES NO

REPORT RESULTS TO PROJECT MANAGER: Tim Cannard

NOTES & COMMENTS: Adobe Creek Bridg

CHAIN OF CUSTODY & SAMPLE SUBMITAL FORM PAGE____ OF ____

KELLCO-MACS JOB#: **0904-24**
Google Culvent Bridge, Adobe Creek Bridge & M

FIELD NUMBER	LOCATION (bldg, rm#, area)	COLOR	MATERIAL or SUBSTRATE (ft w/ size, mastic, tjc, etc.)	NOTES: Like condition, damage, quantity, inside what, beneath what? direction in building (N,S,E,W) etc.)
ACB-Pb-01	NB101 - Barriers wall S. end	grey	paint on concrete	
Pb-02	SB101 - Trail. S. wall	orange/grey/blk	paint on concrete	

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
[signature]	4/27/09		Danielle Griffin	4-28-09	8:00

MACS Lab, Inc.
3137 Diablo Ave
Hayward, CA 94545-2701

510-786-9751

Analysis Report
Lead in Paint
USEPA 7000/7420

KELLCO Services
3137 Diablo Ave

Hayward CA 94545

Person to contact: Tim Cannard
Contact phone: 510-786-9751
FAX phone: 510-786-9625
Samples received on: April 28, 2009
Samples analyzed on: April 29, 2009 at: 11:53
Report printed on: April 29, 2009 at: 11:53
Corresponding invoice number: 189151

Bias: 3.2% Precision: -1.4%

Duy Nguyen
Analyst: _____
DN (signature)

Breeann Cambra
Laboratory manager: _____
(signature)

Job Number: 0904-24

Job Description: Matadero Creek Bridge - 832 Alta Street, Mountain View, CA 94043

Lab Sample Number	Client Sample Number and Description	Calib #	Rcvd OK	Ac-cptd	Report'g Limit ppm	Lead %	Lead ppm	Lead mg/cm^2
P189151-1	MCB-Pb-01 E. Side Of Bridge - Concrete - Paint On N. Embankment, 2nd Tier	13004	☑	☑	49.6	< 0.0050	< 50	N/A
P189151-2	MCB-Pb-02 E. Side Of Bridge - Concrete - Flaking Paint, NE End Of Wall	13004	☑	☑	103	0.0108	108	N/A

AIHA ACCREDITED LABORATORY

This report may not be reproduced except in full and with the permission of MACS Lab, Inc. This report relates only to the item(s) tested. For QC data refer to Calibration Number QA Report. MACS Lab is accredited by the American Industrial Hygiene Association (AIHA) for the analysis of lead in paint and soil (laboratory ID #11172). Some paint samples submitted contain substrate material that can't be removed from the paint layer. This may cause erroneous results. Proper field sampling techniques must be used. Analysis is performed on a flame Atomic Absorption Spectrometer. PPM= parts per million & 10,000 ppm = 1% Note: 1 mg/kg = 1 ppm NOTICE: FOR XRF Confirmation: When the actual sampled area is provided to the laboratory, the results can be calculated in mg/cm2 exactly like an XRF instrument result. Otherwise NO XRF comparison can ever be made because the lab analyzes only a portion of a normal sample and the area of a scrape can't be known after the fact. Without the area N/A is reported. Results are not blank corrected.

MACS Lab, Inc.
3137 Diablo Ave
Hayward, CA 94545-2701

Quality Control Report

Calibration # AA-13004

Element Lead Matrix: Paint Method Detection Limit 0.25 µg/ml

Date of Analysis April 29, 2009 Analyst DN

		Measured Value	Target Value	Acceptance Criterion	
Standard value	0.0 µg/ml	0.00000 units	N/A		
Standard value	0.8 µg/ml	0.01540 units	N/A		
Standard value	2.0 µg/ml	0.03710 units	N/A		
Standard value	5.0 µg/ml	0.09100 units	N/A		
Standard value	10.0 µg/ml	0.18400 units	N/A		
Slope		54.5138 µg/ml/unit	N/A		
Intercept		-0.010652 µg/ml	N/A		
Correlation coefficient		0.999970	1	≥ 0.99800	Acceptable
0.25 µg/ml Reference		0.240 µg/ml	0.25	≥0.06	Acceptable
Glassware rinse water		< 0.250 µg/ml	0		
1st Matrix Blank		< 0.250 µg/ml	0	≤ 0.25	Acceptable
Method Blank Beginning		1.375 µg	0	≤ 12.5	Acceptable
CCV Beginning		4.841 µg/ml	5.0000	± 10.0%	Acceptable
ICV Beginning		0.638 µg/ml	0.6000	± 10.0%	Acceptable
LCS Before sample 1		9.965 µg/ml	10.0899	± 10.0%	Acceptable
CCV Before sample 11		4.759 µg/ml	5.0000	± 10.0%	Acceptable
CCB Before sample 11		< 0.250 µg/ml	0	≤ 0.25	Acceptable
Method Blank Before sample 11		-0.533 µg	0	≤ 12.5	Acceptable
CCV Before sample 21		N/A µg/ml	5.0000	± 10.0%	
CCB Before sample 21		N/A µg/ml	0	≤ 0.25	
2nd Matrix Blank		N/A µg/ml	0	≤ 0.25	
Method Blank Before sample 21		N/A µg	0	≤ 12.5	
CCV Before sample 31		N/A µg/ml	5.0000	± 10.0%	
CCB Before sample 31		N/A µg/ml	0	≤ 0.25	
Method Blank Before sample 31		N/A µg	0	≤ 12.5	
CCV After		4.721 µg/ml	5.0000	± 10.0%	Acceptable
CCB After		< 0.250 µg/ml	0	≤ 0.25	Acceptable
Method Blank After		0.285 µg	0	≤ 12.5	Acceptable
LCS After		9.813 µg/ml	10.0899	± 10.0%	Acceptable
RLVS		0.267 µg/ml	0.2500	± 25.0%	Acceptable
Spike of sample	188887 - 1	454.7 µg	500.0	± 25.0%	Acceptable
Spike of sample	0 - 0	N/A µg	0.0	± 25.0%	
Spiked Duplicate	188887 - 1	458.5 µg	500.0	± 25.0%	Acceptable
Spiked Duplicate	0 - 0	N/A µg	0.0	± 25.0%	
Duplicate of sample	188887 1	≤ 100 ppm	≤ 105	± 25.0%	Acceptable
Duplicate of sample	0 - 0	N/A ppm		± 25.0%	

Note:
MDL= Minimum Detection Limit of the method (absolute)
ICV= Initial Calibration Verification
CCV= Continuing Calibration Verification
CCB= Continuing Calibration Blank
N/A = Not Applicable
LCS= Laboratory Control Sample - NIST SRM-1579
RLVS=Reporting Limit Verification Sample

Duplicate analyses are measurements of the variable of interest (in this case lead) performed identically on two subsamples of the same sample. The results from duplicate analyses are used to evaluate analytical or measurement precision but not the precision of sampling. Spiked samples are prepared by adding a known mass of the target analyte (in this case lead) to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. Spiked samples are used to determine the effect of the matrix on a method's recovery efficiency. The Method Blank is used to detect contamination from the laboratory. Accuracy is the degree of agreement between an observed value and an accepted reference value such as the LCS NIST SRM-1579 sample. Precision is the degree to which a set of observations or measurements of the same property conform to themselves. NEVER depend upon the laboratory to "fix-up" a poorly taken sample.

MACS Lab, Inc.
3137 Diablo Ave
Hayward, CA 94545-2701

510-786-9751

AA Analysis Data Report

NOTICE:
Instrument reading is in absorbance units
For solids (paint and soil):
Weight is in grams
Paint area (if present) is in sq cm
For air:
LPM= Liters per minute supplied by client
Minutes = duration of sample
m^3 (on report) means cubic meter
For wipe:
Area = Wipe area supplied by client in sq ft
ft^2 (on report) means square foot

Client:
KELLCO Services

Submission ID Number: **189151**

Lead laboratory manager or designee: _____ (signature)

Samples received on: April 28, 2009

Samples analyzed on: April 29, 2009 at: 11:53

I verify that I have checked the records and the data entered here is accurate and matches the written records.

Sample #	Weight, LPM, or area	Solution vol ml	Instr. reading	Paint area or minutes
1	0.2522	50	0.00430	0
2	0.1211	50	0.00500	0

This report shows the data associated with the individual samples. This includes the MACS Lab, Inc. sample number, the sample weight digested, LPM, area wiped, dilution (solution volume), instrument reading in absorbance, paint area, time in minutes. By using the data on this page, and the slope and intercept found on the calibration curve page of this report one can calculate the concentration of analyte in the original sample. Be sure to use the calibration curve data for the sample tested (see sample results page for Calib. Number). In the case of paint and soil matrices multiply the slope times the absorbance and add the intercept. Multiply this number by the dilution and then divide by the weight. The result will be expressed in PPM. In the case of dust samples multiply the slope times the absorbance and add the intercept. Multiply this number times the dilution and adjust for the area wiped if it is not 1 sq ft. For air samples multiply the slope times the absorbance and add the intercept. Multiply this number by the dilution. This will be the number of μg of lead on the filter. Divide this number by the liters of air used and compute the concentration in cubic meters. A cubic meter contains 1000 liters. Note: in all cases if the concentration calculated by multiplying the slope times the absorbance and adding the intercept is below the MDL (method detection limit) value for that matrix substitute the MDL for the value calculated. This will be the Reporting Limit in PPM. (note: the MDL is shown only to 2 significant figures on this report which will result is slight differences between our and your calculations for this number).

The slope and intercept can be calculated using the absorbance and concentration (see the Quality Control Report) of the standards used in the analysis. This can be done by using linear regression analysis.

μg means micrograms or millionth of a gram.

CLIENT	JOBSITE
URS Corporation 55 South Market Street 1500 San Jose CA 95113	Google Culvent Bridge, Adobe Creek Bridg 832 Alta Street Mountian View CA. 94043

KELLCO-MACS JOB#: **0904-24** LAB LOGIN # P18915

COLLECTED BY: P. Bradley

COLLECTED DATE 4/28/09

TURN AROUND TIME: (Normal) 4 8 24 48 5-DAY

RESULTS NEEDED BY

CIRCLE TYPE OF BULK ANALYSIS

PLM (**LEAD PAINT**) **LEAD WIPE** **NON VIABLE MOLD** **VIABLE MOLD** **eCOLI** **OTHER**

SAMPLES REC'D _____ ANALYZE TO FIRST POSITIVE YES NO

REPORT RESULTS TO PROJECT MANAGER: Tim Cannard

NOTES & COMMENTS:

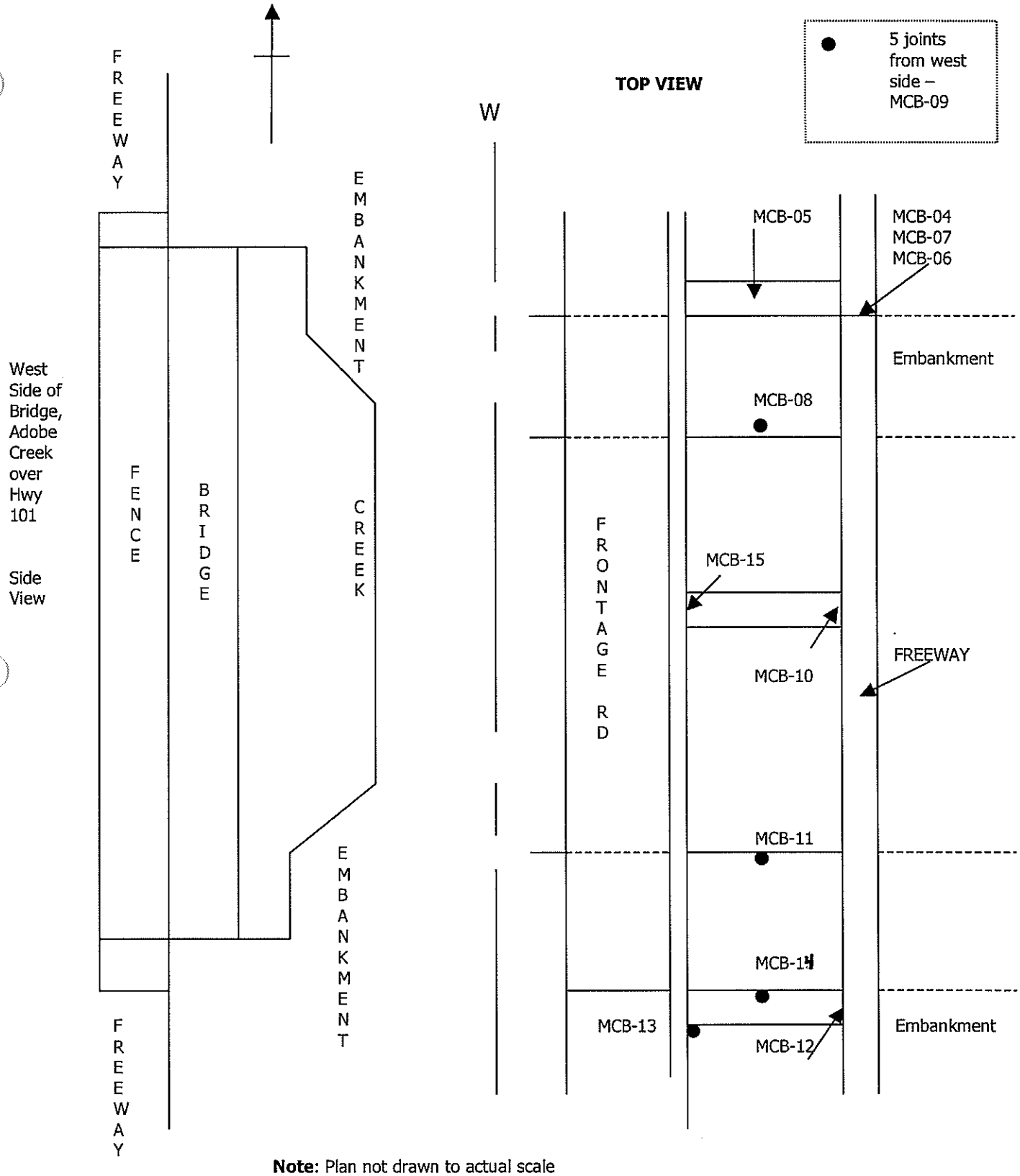
CHAIN OF CUSTODY & SAMPLE SUBMITAL FORM PAGE 1 OF 1

KELLCO-MACS JOB#: **0904-24**
Google Culvent Bridge, Adobe Creek Bridge & M

FIELD NUMBER	LOCATION (bldg, rm#, area)	COLOR	MATERIAL or SUBSTRATE (ft w/ size, mastic, tjc, etc.)	NOTES: Like condition, damage, quantity, inside what, beneath what? direction in building (N,S,E,W) etc.)
MCB- Pb-01	E. Side of Bridge,	White, Grey Blue,	Concrete	Paint on N. embankment, 2nd Tier
-02	" " " "	Gray	"	Flaking paint, NE end of wall

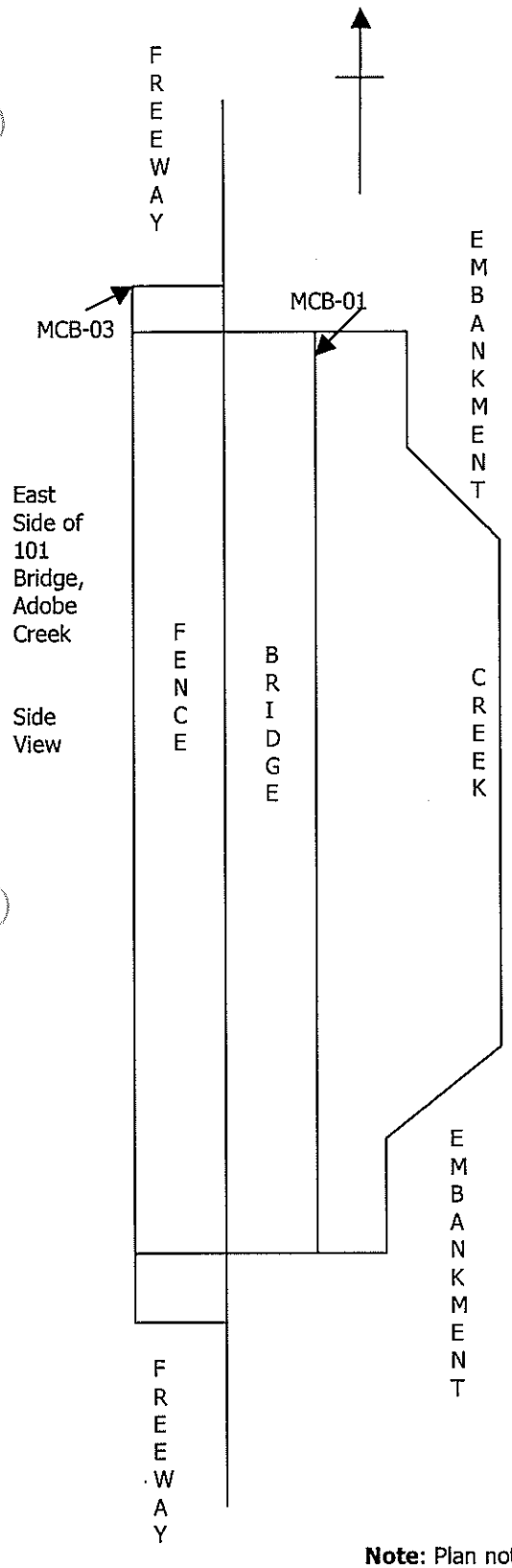
RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
P. Bradley	4/28/09	12:00 N	Danielle Griffin	4-28-09	12:10

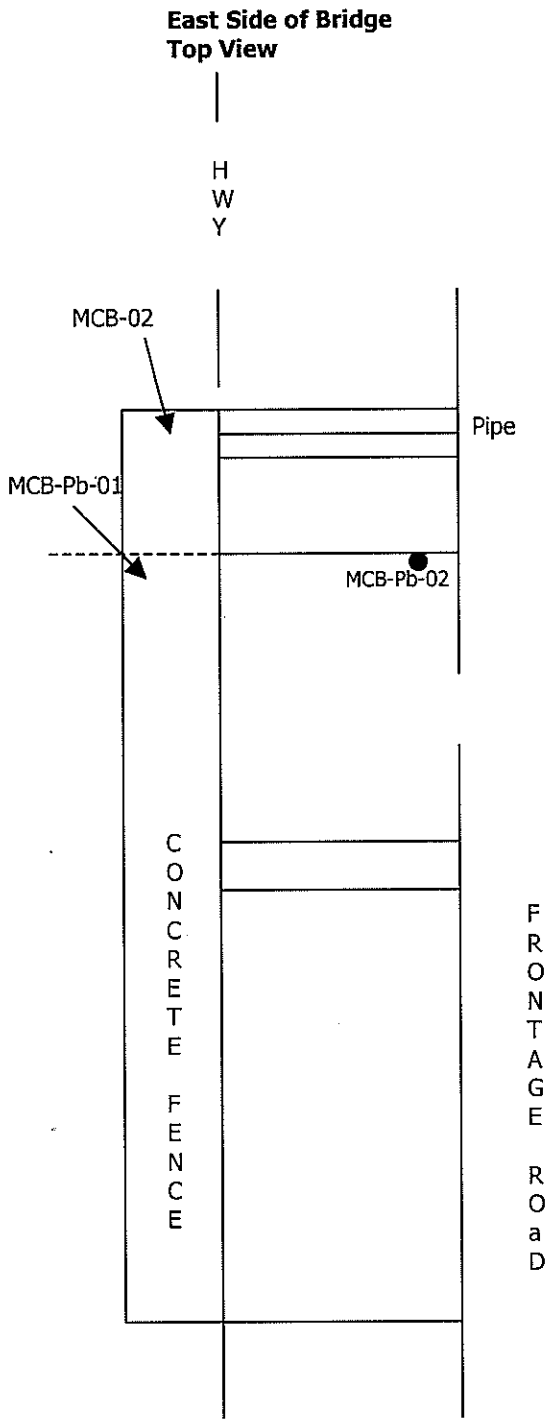
SITE MAP



Note: Plan not drawn to actual scale

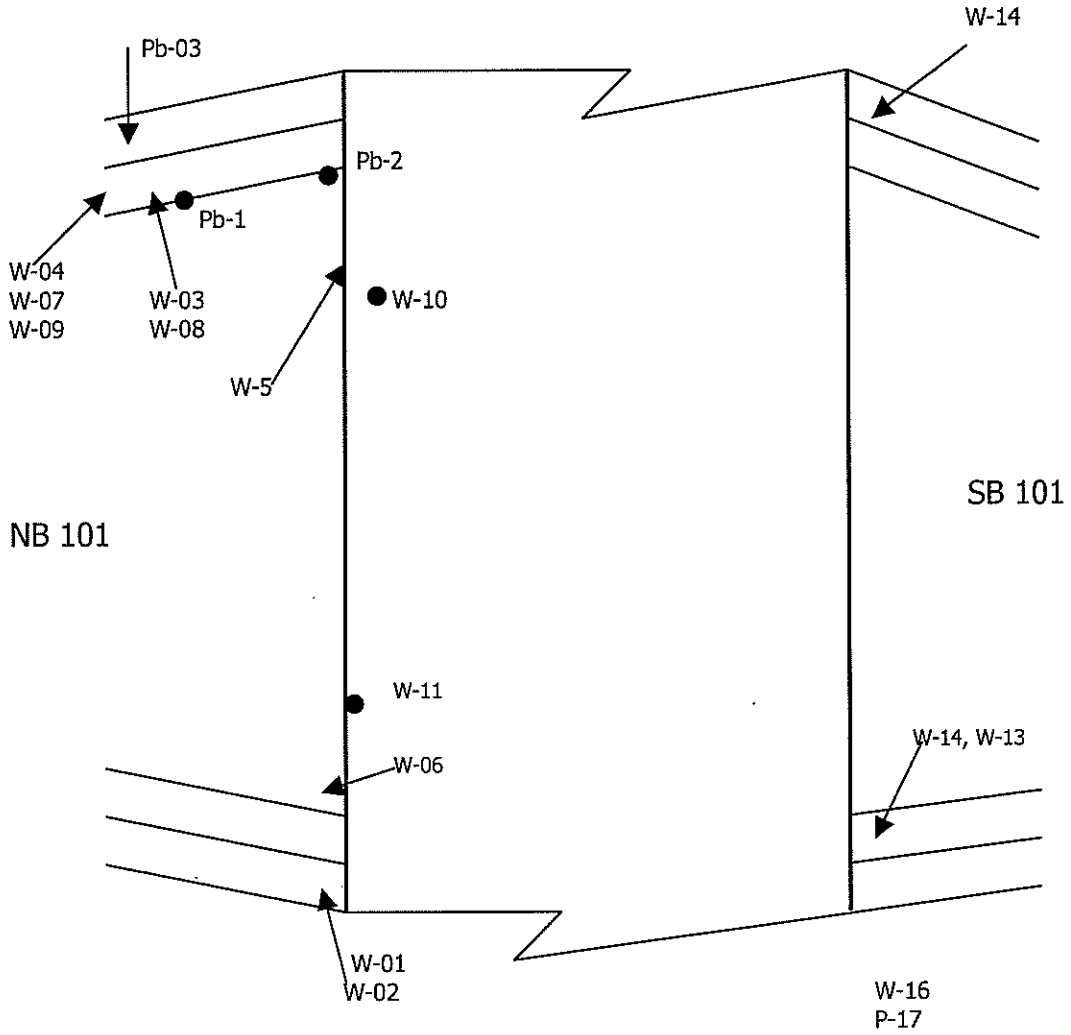
KELLCO-MACS	Building Drawing/Sample Location Map	May 13, 2009
	3137 Diablo Ave., Hayward, CA (510)786-9751 Fax (510) 786-9625	Job #: 0904-24
Client: URS	Job Site: Matadero Creek Bridge Google Culvent Bridge	Drawn By: KELLCO-MACS





Note: Plan not drawn to actual scale

KELLCO-MACS	Building Drawing/Sample Location Map	May 13, 2009
	3137 Diablo Ave., Hayward, CA (510)786-9751 Fax (510) 786-9625	Job #: 0904-24
Client: URS	Job Site: Matadero Creek Bridge	Drawn By: KELLCO-MACS

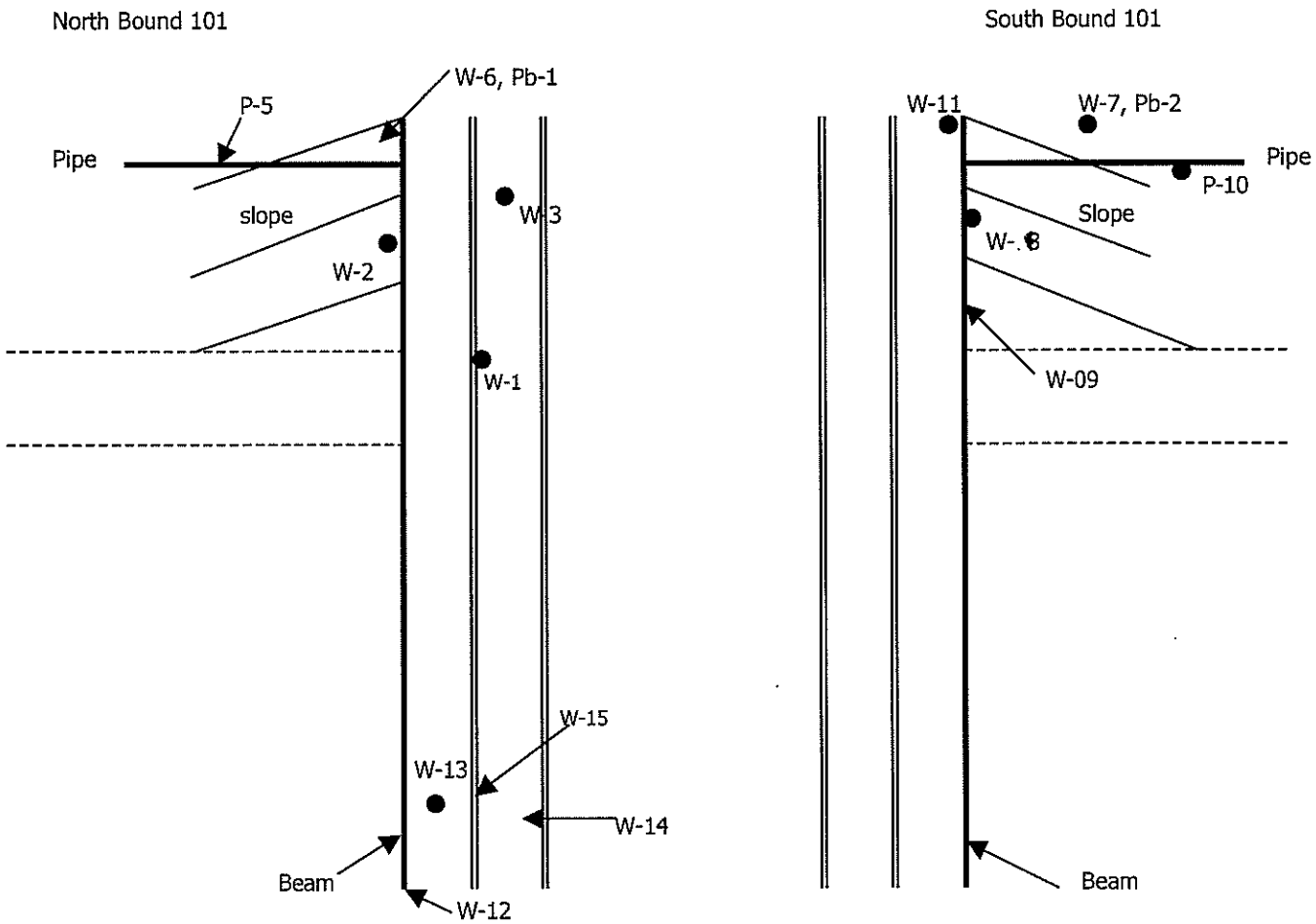


Legends:

● Sample Location

Note: Plan not drawn to actual scale

KELLCO-MACS	Building Drawing/Sample Location Map	May 13, 2009
	3137 Diablo Ave., Hayward, CA (510)786-9751 Fax (510) 786-9625	Job #: 0904-24
Client: URS	Job Site: Permanente Creek Bridge	Drawn By: KELLCO-MACS



Legends:

● Sample Location

Note: Plan not drawn to actual scale

KELLCO-MACS	Building Drawing/Sample Location Map	May 13, 2009
	3137 Diablo Ave., Hayward, CA (510)786-9751 Fax (510) 786-9625	Job #: 0904-24
Client: URS	Job Site: Adobe Creek Bridge	Drawn By: KELLCO-MACS

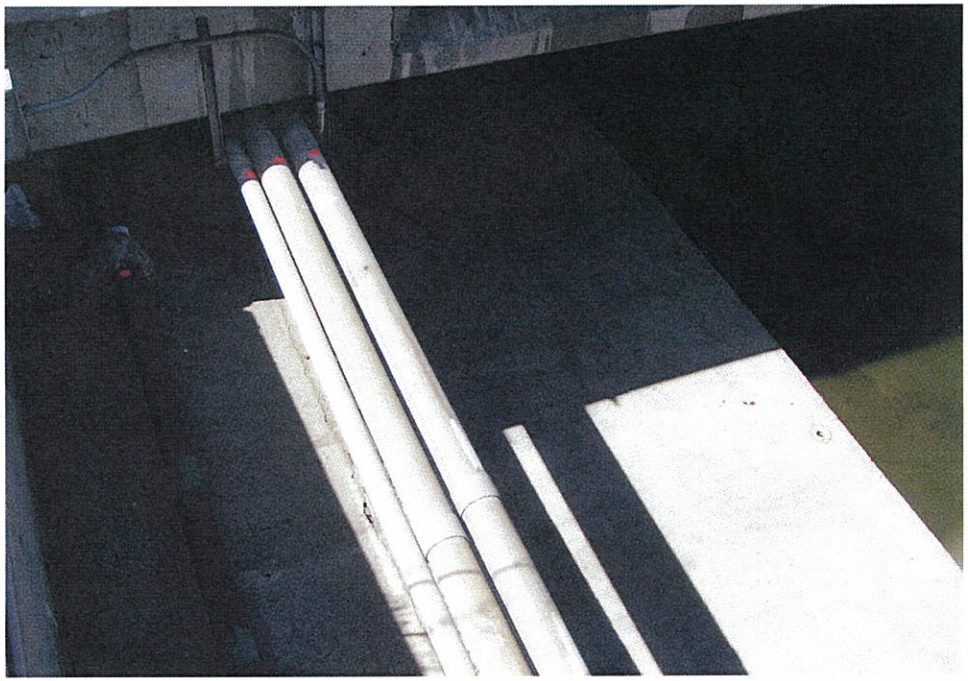
PHOTOGRAPHS

3803
3801

3803
3801

Stanford
University
NEXT EXIT

PERMANENTE
CREEK TRAIL

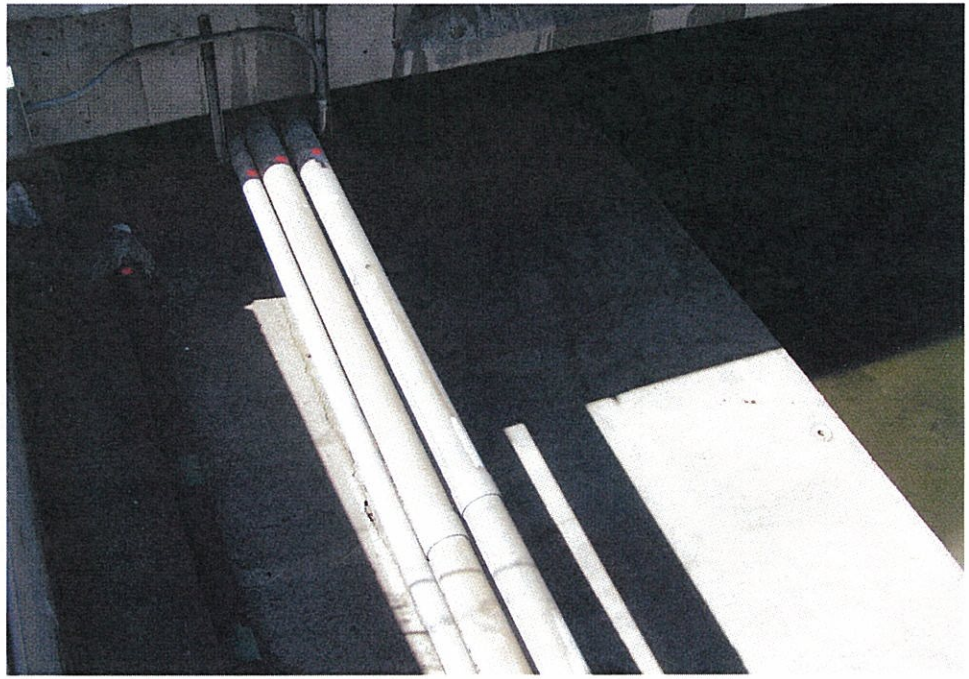


3E03
3E01

3E03
3E01

Stanford
University
NEXT EXIT

PERMANENTE
CREEK TRAIL



04-SCL-101, PM49.0/52.2
EA#04-4A3301
NOVEMBER 23, 2009

FOUNDATION REPORT

ADOBE CREEK BRIDGE (WIDEN) (BRIDGE NO. 37-0174) PALO ALTO, CALIFORNIA

Prepared for
Santa Clara Valley Transportation Authority
3331 North First Street
San Jose, CA 95134

URS

55 South Market Street, Suite 1500
San Jose, California 95113

November 23, 2009
Project 28649951

File No.04-SCL-101-PM 49.0/52.2
EA 4A3301

Mr. Lam Trinh
Project Coordinator
Valley Transportation Authority (VTA)
3331 North First Street
San Jose, CA 95134

Subject: **Foundation Report**
Adobe Creek Bridge (Widen), Bridge No. 37-0174
U.S. 101 Auxiliary Lane
Mountain View and Palo Alto, California

Dear Mr. Trinh:

URS has completed the accompanying Foundation Report for the Adobe Creek Bridge (widen) in City of Palo Alto, California. The report was prepared in accordance with Caltrans Guidelines for Foundation Investigation Reports, Version 2.0, dated March 2006. We also prepared a Geotechnical Design and Materials Report (GDMR) for U.S. 101 Auxiliary Lane project between State Route 85 and Embarcadero Road in the Cities of Mountain View and Palo Alto.

The Foundation Report presents our engineering opinions and recommendations regarding the geotechnical factors influencing the design and construction of the proposed bridge (widen). The opinions and recommendations have been based upon the results of our field investigation, laboratory testing, engineering judgment and local experience. Mr. Selvendran Manoharan, P.E., performed the engineering analysis and assisted with the preparation of this report. Mr. Mark Schmoll, C.E.G, prepared the site geology and geologic hazards portion of this report. Mr.Paul Boddie, G.E., provided review, consultation and management oversight for the project.

If any questions should arise, or if we can be of further service, please contact the undersigned at (408) 297-9585.

Sincerely,

Stephen Huang, G.E. 2150
Geotechnical Task Leader

REGISTERED PROFESSIONAL ENGINEER
S. STEPHEN HUANG
No. GE 002150
Exp. 3/31/2010
GEOTECHNICAL
STATE OF CALIFORNIA

URS Corporation
55 South Market Street, Suite 1500
San Jose, CA 95113
Tel: 408.297.9585
Fax: 408-297.6962
www.urscorp.com

TABLE OF CONTENTS

Section 1 Introduction 1-1

1.1 General 1-1
1.2 Scope of Investigation 1-1
1.3 Caltrans Review Comments 1-2

Section 2 Available Information 2-1

2.1 Proposed Improvements 2-1

Section 3 Site Geology and Subsurface Conditions 3-1

3.1 Geologic Setting 3-1
3.1.1 Regional Geology 3-1
3.1.2 Regional Tectonic Setting and Seismicity 3-1
3.1.3 Local Geology 3-4
3.2 Site and Subsurface Conditions 3-5
3.2.1 Site Topography 3-5
3.2.2 Field Exploration 3-5
3.2.3 Laboratory Testing 3-6
3.2.4 Soil Conditions 3-6
3.2.5 Groundwater 3-6
3.3 Geologic Hazards 3-7
3.3.1 Surface Fault Displacement and Ground Shaking 3-7
3.3.2 Landslide and Slope Failure 3-7
3.3.3 Scour 3-7
3.3.4 Flooding 3-7
3.3.5 Subsidence and Seismic Compaction 3-8
3.3.6 Liquefaction Potential 3-8
3.4 Geological Profiles and Engineering Parameters 3-9

Section 4 Corrosion and Scour Evaluation 4-1

4.1 Corrosion Evaluation 4-1
4.2 summary 4-1
4.3 Conclusions 4-2

Section 5 Seismic Data and Evaluation 5-1

5.1 Seismic Design Methodology and Resources 5-1
5.2 Peak Bedrock Acceleration 5-1
5.3 Fault Type, Near-Field, and Spectral Acceleration Increases 5-1
5.4 Soil Profile Type 5-2
5.5 Design Acceleration Response Spectra 5-2

Section 6 As-Built 6-1

TABLE OF CONTENTS

Section 7 Discussion and Recommendations 7-1

7.1 Discussion 7-1
7.2 existing Pile Design Capacity 7-1
7.2.1 Axial Pile Capacity Analysis 7-1
7.2.2 Lateral Load Capacity Analysis 7-1
7.2.3 Pile Capacity Based on Structural Strength of Pile. 7-2
7.3 pile installation 7-2
7.4 Approach Embankment Settlement 7-2
7.5 Slope Stability 7-2
7.6 Approach Fill Earthwork 7-3
7.7 Abutment Excavation 7-3

Section 8 Construction Considerations 8-1

8.1 Construction Dewatering 8-1

Section 9 Limitations 9-1

Section 10 References 10-1

LIST OF FIGURES

Figure 1-1: Project Vicinity Map
Figure 2-1: General Plan-1
Figure 2-2: General Plan-2
Figure 2-3: Foundation Plan
Figure 3-1: Site and Boring Location Plan
Figure 3-2: Generalized Soil Profile

LIST OF TABLES

Table 4-1: Soil Corrosion Test Results Summary
Table 5-1: Seismic Source Parameters
Table 5-2: Spectral Acceleration Increase for Near-Field Effects
Table 5-3: Spectral Acceleration Values
Table 6-1: As-Built Pile Data Table for Adobe Creek Bridge
Table 7-1: RSTC Pile Lateral Capacity Analysis Summary

LIST OF APPENDICES

Appendix A: Caltrans Review Comments
Appendix B: Field Exploration and Laboratory Testing
Appendix C: Log of Test Borings
Appendix D: Bridge Design Hydraulic Study Report – Executive Summary
Appendix E: Liquefaction Analysis and Seismic Compaction Calculations

TABLE OF CONTENTS

Appendix F: Soil Corrosion Investigation Report
Appendix G: As-built Plans for Adobe Creek Bridge
Appendix H: Laterally Loaded Pile Analysis, LPILE Output

1.1 GENERAL

The proposed project is located on U.S. 101 in the Cities of Mountain View and Palo Alto, Santa Clara County, California. The project limits extend from State Route (SR) 85 on the south to Embarcadero Road on the north (PM 49.0/52.2), a distance of approximately 3.2 miles (Figure 1-1). Within project limits, the U.S. 101 has three mixed-flow lanes and one high occupancy vehicle (HOV) lane in each traffic direction. Full-access interchanges are located at SR 85, Shoreline Boulevard, Rengstorff Avenue/Amphitheatre Parkway, Oregon Expressway, and Embarcadero Road. Partial access interchanges are located at Old Middlefield Way, Charleston Road, and San Antonio Road. There is also a direct HOV connector ramp to and from northbound US 101 and SR 85.

The purpose of the overall project is to relieve existing and future traffic congestion on weaving sections and at ramp termini, and provide for improved local access over this segment of the U.S. 101 corridor.

The project will construct an auxiliary lane on U.S.101 in each direction between SR 85 and Embarcadero Road. The exception will be between San Antonio Road and Rengstorff Avenue in the southbound direction, where no auxiliary lane is proposed because it would create weaving conflicts with traffic entering the freeway from Charleston Road. The new auxiliary lanes will be constructed adjacent to the existing outside lanes. On-ramps at a few interchanges will be widened for the purpose of increasing storage capacity. At most locations, there is sufficient room within the existing Caltrans right-of-way to accommodate the construction of the auxiliary lanes. There are areas where minor amounts of additional right-of-way would be required.

The auxiliary lanes will require the widening (1) of the existing U.S.101 bridges over Adobe Creek and Matadero Creek and (2) of the existing U.S.101 box culvert at Permanente Creek.

The subject of this Draft Foundation Report (FR) is the widening of the Adobe Creek Bridge (Bridge No. 37-0174) located in Palo Alto, California. Figure 1-1 shows the location of the bridge site relative to the Auxiliary lane project alignment.

1.2 SCOPE OF INVESTIGATION

The geotechnical services performed for the Adobe Creek Bridge (widen) were as follows:

- Reviewed existing plans
- Geotechnical field investigation including one exploratory boring, R-09-004, and one cone penetration test (CPT), CPT-09-003
- Laboratory testing to estimate pertinent engineering properties
- Design recommendations and opinions were developed for the following topics:
  - Existing pile capacity
  - Resistance to lateral loads
  - Approach fill settlement, if any
  - Abutment grading and approach fill construction, if any
  - Earthquake information consistent with Caltrans Response Spectra Design Techniques
  - Assessment of the potential for earthquake induced liquefaction, settlement, and lateral spreading

- Corrosion testing and analysis
- Address construction issues, including:
  - Construction dewatering

Review related to environmental and hazardous waste issues and the results of evaluations are presented in a separate report, titled "Site Investigation Report."

1.3 CALTRANS REVIEW COMMENTS

We reviewed comments prepared by Caltrans for the Adobe Creek Bridge widening for the Preliminary Foundation Report dated August 2008, and for the Foundation Report (35% submittal) dated June 11, 2009. Our responses to these comments are incorporated into this report. Copies of the review comments and our responses are presented in Appendix A.

2.1 PROPOSED IMPROVEMENTS

The proposed improvement of U.S. 101 from Shoreline Boulevard to Oregon Expressway, in the Cities of Mountain View and Palo Alto, will include new auxiliary lanes in each direction and associated ramp improvements. Adobe Creek flows in a trapezoidal, engineered channel with concrete lined left and right banks. Immediately upstream of U.S.101 crossing Adobe Creek turns approximately 90 degrees and has its confluence point with Barron Creek. As part of the proposed highway widening, Adobe Creek Bridge on U.S. 101 will include widening both sides of the structure by approximately 11 feet in the northbound and southbound directions, and closing the gaps between the U.S. 101 bridges and the adjacent frontage road bridges. The proposed structure type is a single-span precast, prestressed rectangular girder with a cast-in-place concrete deck. No new foundation is planned for the bridge widening as the loads will be transferred to the existing Raymond step tapered concrete piles. The bridge is to begin at 'C' Line Station 109+47.58 and end at 'C' Line Station 110+12.42; the deck will be positioned at Elevation 13.75 feet. The bridge will have a overall length of 64.8 feet with a clear width of 156 feet between concrete barriers. The advanced planning study drawings of profile, elevation, and typical section of the planned improvements at the Adobe Creek crossing are shown on Figures 2-1, 2-2 and 2-3.

As noted on Figure 2-3, Bench Mark 44 is located nearby. Horizontal survey control is based on the California coordinate system, Zone 3, U.S. survey feet, North American Datum of 1983 (NAD83), Epach 2007.00. Vertical control is the National Geodetic Vertical Datum of 1988 (NGVD88).

3.1 GEOLOGIC SETTING

3.1.1 Regional Geology

The project site is located about 1¼ to 2 miles southwest of the edge of San Francisco Bay within the northern portion of Santa Clara Valley, an alluvial basin located between the Santa Cruz Mountains to the southwest and the Diablo Range to the northeast. The Santa Clara Valley is located within the central portion of the Coast Ranges geomorphic province of California. Northwest-southeast-trending valleys and ridges characterize the regional morphology of the Coast Ranges province. These topographic features are controlled by folds and faults that resulted from the collision of the Farallon and North American plates and subsequent predominantly strike-slip faulting along the San Andreas fault system between the Pacific and North American plates.

Regional geologic mapping shows the project location to be underlain by Holocene fine-grained alluvium deposits extending from the southern end at Permanente Creek northward to about the San Antonio Road overcrossing (Helley and LaJoie, 1979). North of this point to the end of the project at Oregon Expressway the roadway is mapped as being underlain by Holocene Bay Mud. This section of the project extends northeast of the original 1850 shoreline of the San Francisco Bay (Helley and LaJoie, 1979). The fine-grained alluvium deposits are described as plastic, poorly-sorted organic silt and clay that interfingers with the Bay Mud. The Bay Mud is described as water-saturated estuarine organic clay and silty clay with a few lenses of well-sorted sand, and shelly and peaty layers. More recent mapping by Witter and others (2006) shows similar conditions. However, the fine-grained alluvium deposits are referred to as Holocene alluvial fan deposits, fine-grained facies, and Witter maps the Bay Mud as being overlain by artificial fill along the roadway alignment north of about the San Antonio Road overcrossing. The nearest bedrock consists of Tertiary sedimentary rocks and volcanic basalt mapped about three miles southwest of the site in the Los Altos Hills.

3.1.2 Regional Tectonic Setting and Seismicity

The Santa Clara Valley is located between the active San Andreas fault to the west, and the Hayward and Calaveras faults to the east. Each of these faults has produced damaging earthquakes during historic time. The valley margins are marked by belts of active thrust faults; the Foothills fault system to the southwest and the East Valley thrusts to the northeast (Fenton and Hitchcock, 2002).

The Foothills fault system is a series of southwest-dipping thrust faults located along the range front of the Santa Cruz Mountains (Bürgmann et al., 1994). The Monte Vista-Shannon, Cascade, and Sargent faults are the main active faults in the Foothills thrust system. The Monte Vista-Shannon fault zone is approximately 27 miles long and dips at a moderate angle to the southwest, merging with the San Andreas fault at depth. The Cascade fault is approximately 22 miles long. The Sargent fault is approximately 35 miles long and merges with the San Andreas fault near Loma Prieta.

The East Valley thrusts are a series of northeast-dipping thrust faults that mark the junction between the southern end of the Hayward fault and the southern and central segments of the

Calaveras fault. These faults, which include the Quimby, Piercy, Evergreen, Silver Creek, Coyote Creek, Berryessa, Crosley, and Warm Springs faults, are relatively short, less than 19 miles long, and appear to merge with the Calaveras faults at relatively shallow depths (Jones et al., 1994). Recent geologic and geomorphic investigations along both the Foothills and East Valley thrust systems indicate that they are active and may be capable of generating damaging earthquakes (Hitchcock and Kelson, 1999; Fenton and Hitchcock, 2002).

The closest active faults to the project alignment are the Cascade, Monte Vista-Shannon, Silver Creek, San Andreas and Hayward faults (Caltrans Deterministic PGA Map, 2007). The Caltrans Seismic Map (Mualchin, 1996) divides the Monte Vista fault into west and east branches. In the 2007 Caltrans Deterministic PGA Map the Monte Vista East fault has been renamed as Cascade fault. The California Geological Survey (2000) has produced maps showing Alquist-Priolo Earthquake Fault Zones along faults with known Holocene activity that pose a potential surface faulting hazard. The San Andreas and Hayward faults are included as Alquist-Priolo (A-P) zoned faults, however the Monte Vista-Shannon and Cascade faults are not.

The closest fault to the site is the Cascade fault, located about 2.7 miles southwest of the southern end of the project site. The Monte Vista-Shannon fault is located about 4 miles (6.5 km) at its closest point at the southern end of the project. Silver Creek fault generally parallels U.S.101 in the project area and is located about 6 miles northeast of the site. The San Andreas fault generally parallels U.S. 101 and is located about 7.5 miles southwest of the site. The Hayward fault also generally parallels the U.S. 101 road alignment and is located about 10.8 miles northeast of the site.

The following is a brief description of the nearby active faults.

3.1.2.1 Foothills Thrust Belt (Monte Vista-Shannon and Cascade Faults)

The southwestern margin of the Santa Clara Valley is bounded by the rugged, young southern Santa Cruz Mountains. Late Cenozoic uplift of the mountains has occurred, in part, along a series of northwest-striking reverse faults, known as either the Loma Prieta domain (Aydin and Page, 1984) or Foothills thrust belt (Bürgmann *et al.*, 1994), bordering the northeastern margin of the range front. Bounded by the main trace of the San Andreas fault to the west, this sequence of southwest-dipping thrusts, associated with a restraining left bend in the San Andreas fault, has been responsible for the uplift of the Santa Cruz Mountains (Bürgmann *et al.*, 1994). These faults offset the Pliocene and Pleistocene Santa Clara Formation, and locally offset and deform overlying Quaternary sediments and geomorphic surfaces within the range-front communities of Palo Alto, Los Altos Hills, Cupertino, Saratoga, and Los Gatos, located along the southwestern margin of the Santa Clara Valley (Hitchcock and Kelson 1999; Hitchcock *et al.* 1994). The up-dip projection of the blind Loma Prieta fault, which is interpreted to have been the source of the 1989 **M** 6.9 Loma Prieta earthquake (Bürgmann *et al.*, 1994), coincides with the Foothills thrust belt.

The Monte Vista-Shannon fault is one of the primary range-front faults and probably the most extensively studied fault in the Foothills thrust belt. The exposed fault strikes northwest and places Franciscan, Miocene, Santa Clara Formation, and Pleistocene alluvium over Pleistocene and older strata. To the north it intersects the San Andreas, via the Hermit fault, between Woodside and Redwood City. Limited exploratory trenching indicates that the Monte Vista-Shannon fault has had late Quaternary and possibly Holocene displacement. Recent geomorphic

mapping by Hitchcock *et al.* (1994) shows that late Pleistocene fluvial terraces flanking Stevens Creek are deformed. The style of late Quaternary deformation affecting these terrace surfaces is consistent with reverse faulting on the Monte Vista fault. Hitchcock and Kelson (1999) estimated an average late Pleistocene slip rate of 0.17 ± 0.09 mm/yr for the Monte Vista-Shannon fault.

The Cascade fault traverses the coalescent alluvial-fan complex underlying the Santa Clara Valley approximately 1 to 4 miles northeast of the Santa Cruz Mountains range front. Hitchcock et al. (1994) show a strong correlation between the mapped trace of the Cascade fault and fault-related geomorphic features, including vegetation lineaments, closed depressions, linear drainages, stream profile convexities, and high-sinuosity stream reaches. These features are developed in late Pleistocene (and possibly Holocene) displacement along the Cascade fault. Between Los Altos Hills and Los Gatos, most of the major streams show longitudinal profile convexities where they cross mapped trace of the Cascade fault. In general, the crests of the convexities coincide with the zone of lineaments. These relations indicate late Pleistocene uplift along this section of the Cascade fault (Hitchcock et al., 1994). Although this provides little or no information on the sense of slip and the amount and direction of the fault dip, it is likely that the Cascade fault is a southwest dipping, northeast vergent reverse fault similar to, but perpaps having a shallower dip in the near surface than the Monte Vista-Shannon fault (Fenton and Hitchcock, 2001).

3.1.2.2 Silver Creek Fault Zone

The Silver Creek fault is mapped as steep, east dipping oblique reverse fault with an exposed well documented southern fault section and an inferred northern section buried beneath late Quatenary sediments of Santa Clara Valley. The southern section extends approximately 19 miles from the Anderson Reservoir, northeast of Morgan Hill, where it splays from the Coyote Creek fault to the mouth of the Silver Creek Valley, southwest of the town of Evergreen. Northern section is approximately 25 miles long beneath Santa Clara Valley, extending from Silver Creek Valley to Alameda Creek in Fremont (Fenton and Hitchcock, 2001).

3.1.2.3 San Andreas Fault Zone

The dominant active fault structure in this region is the San Andreas fault. The fault extends from the Gulf of California, Mexico, to Point Delgada on the Mendocino Coast in northern California, a total distance of 750 miles. The San Andreas fault accommodates the majority of the motion between the Pacific and North American plates. This fault is the largest active fault in California and is responsible for the largest known earthquake in Northern California, the 1906 **M** 7.9 San Francisco earthquake (Wallace, 1990). Movement on the San Andreas fault is right-lateral strike-slip, with a total offset of some 350 miles (Irwin, 1990). In Northern California, the San Andreas fault is clearly delineated, striking northwest, approximately parallel to the vector of plate motion between the Pacific and North American plates. Over most of its length, the San Andreas fault is a relatively simple, linear fault trace. Immediately south of San Francisco Bay, however, the fault splits into a number of branch faults or splays, including the Calaveras and Hayward faults. In the Bay Area, the main trace of the San Andreas fault forms a linear depression along the Peninsula, occupied by the Crystal Springs and San Andreas Lake reservoirs. Geomorphic evidence for Holocene faulting includes fault scarps in Holocene

deposits, right-laterally offset streams, shutter ridges, and closed linear depressions (Wallace, 1990). The 1906 earthquake resulted from rupture of the fault from San Juan Bautista north to Point Delgada, a distance of approximately 300 miles. The average amount of slip on the fault during this earthquake was 16.5 feet in the area to the north of the Golden Gate and 8 feet in the Santa Cruz Mountains (WGNCEP, 1996).

Based on differences in geomorphic expression, fault geometry, paleoseismic chronology, slip rate, seismicity, and historic fault ruptures, the San Andreas fault is divided into a number of fault segments. Each of these segments is capable of rupturing either independently or in conjunction with adjacent segments. In the Bay Area, these segments include the Santa Cruz Mountains, the Peninsula, and the North Coast segments. These fault segments have calculated maximum earthquakes of **M** 7.2, 7.3, and 7.7, respectively. The North Coast segment may also be subdivided into two shorter segments with a boundary at Point Arena. These northern and southern North Coast segments are capable of generating earthquakes of **M** 7.5 and 7.7, respectively.

South of the Golden Gate, the fault slip rate is 17 ± 7 mm/yr (Hall *et al.*, 1999). North of the Golden Gate, the slip rate increases to 24 ± 5 mm/yr (Niemi and Hall, 1992). WGCEP (1999) assigns a recurrence interval of 361 years to a **M** 8.0 1906-type event on the San Andreas fault, with a 21 percent probability of a **M** 6.7 or larger earthquake on the San Andreas in northern California in the time period 2000 to 2030. Recent investigations indicate that the repeat time for large earthquakes on the North Coast segment may be less than 250 years.

3.1.2.4 Hayward Fault

The Hayward fault extends for 60 miles from the area of Mount Misery, east of San Jose, to Point Pinole on San Pablo Bay. At Point Pinole, the Hayward fault runs into San Pablo Bay. The northern continuation of this fault system is the Rodgers Creek fault. The two faults are separated by a 3-mile-wide right step beneath San Pablo Bay. Systematic right-lateral geomorphic offsets and creep offset of cultural features have been well documented along the entire length of the fault (Lienkaemper, 1992). The last major earthquake on the Hayward fault, in October 1868, occurred along the southern segment of the fault. This **M** 6.8 event caused toppling of buildings in Hayward and other localities within about 3 miles of the fault. The surface rupture associated with this earthquake is thought to have extended for approximately19 miles, from Warm Springs to San Leandro, with a maximum reported displacement of 3 feet. The Hayward fault is considered the most likely source of the next major earthquake in the Bay Area (WGCEP, 1999). As well as undergoing displacement earthquake ruptures, the Hayward fault also moves by aseismic creep. Measurements along the fault over the last two decades show that the creep rate is 5 to 9 mm/yr (Lienkaemper and Galehouse, 1997).

3.1.3 Local Geology

Exploration completed for the Adobe Creek Bridge (Widen) and the Log of Test Borings (LOTB) for the original Adobe Creek Bridge (Bridge No. 37-0174) were reviewed. The original investigation by Caltrans for the Adobe Creek Bridge was conducted in 1957. Those borings were drilled into the alluvial fan deposits – fine grained facies, as mapped by Witter et al, (2006). Except for the fill material (up to about 5 feet in thickness), the borings typically encountered fine-grained alluvium consisting of interbedded lean and fat clay, silt, sandy clay and well-

graded sand with occasional interbeds of poorly graded sand with silt. In general, the consistency of the clay alluvium is medium stiff to hard and the sand interbeds are medium dense to dense.

3.2 SITE AND SUBSURFACE CONDITIONS

3.2.1 Site Topography

The proposed auxiliary lanes and other improvements to U.S. 101 will extend between about Embarcadero Road on the north in Palo Alto to State Route 85 on the south in Mountain View. U.S. 101 is at-grade through this section, with bridge structures across Matadero Creek and Adobe Creek.

U.S. 101 follows the southwestern margins of San Francisco Bay and the topography along the existing roadway is relatively flat, ranging from approximately Elevation 20 feet at the southeast end near Permanente Creek, to a low of about Elevation 5 feet near the Oregon Expressway overcrossing at the northwest end (USGS Mountain View Quadrangle). The channelized Matadero Creek and Adobe Creek are at or near sea level and are subject to tidal inundation.

Development along the project is extensive, consisting of residential housing, mostly on the southwest side, commercial retail and office business buildings, and tidal wetlands fronting the northeast section of the freeway between about Oregon Expressway and Adobe Creek.

3.2.2 Field Exploration

The Log of Test Boring completed for the original Adobe Creek Bridge (Bridge No. 37-0174) was reviewed. The original investigation by Caltrans for Adobe Creek Bridge was conducted in 1957 and included three 2½ inch cone penetration borings (B-1 through B-3) and one 2½ inch rotary wash boring (B-4). The borings were advanced into the alluvial fan deposits, fine-grained facies as mapped by Witter et al, (2006), and extended to a maximum depth of 87 feet (to about Elevation -83 feet). The approximate locations of these explorations are shown on the Site and Boring Location Plan, Figure 3-1. Logs of borings performed for median widening of the bridges circa 1989 and HOV lane widening of the bridges circa 1998 were not available.

To supplement available data, URS performed one exploratory boring, R-09-004, and one cone penetration test, CPT-09-003, to terminal depths of approximately 101.5 and 100 feet, respectively. The field exploration was performed on March 22 and 23, 2009. The locations of the boring and CPT are shown on the Site and Boring Location Plan, Figure 3-1, as well as on the LOTBs.

A representative of URS supervised the drilling operations and soil sampling. Visual classifications of the soils encountered were made from cuttings and soil samples. The soil samples collected from the boring were labeled and sealed immediately to preserve their natural moisture content. At completion of the exploration, samples were delivered to the laboratory for further examination and testing. The boring and CPT were backfilled with a mixture of cement and bentonite in accordance with the requirements of the Santa Clara Valley Water Distict. A detailed discussion of the field exploration program is presented in Appendix B.

The Unified Soil Classification System and the guidelines summarizing soil consistency and relative density are presented on the Log of Test Borings (LOTB) legend. Descriptions of the soils encountered in the borings are presented on LOTB, presented in Appendix C. The logging method used in preparing the LOTB is consistent with Caltrans Soil and Rock Logging, Classification and Presentation Manual, dated June 2007. These logs also illustrate the notation used for the size of samplers and the methods of advancing them.

3.2.3 Laboratory Testing

The water content, dry density, Plasticity Index (PI), grain size distribution (PA), consolidation, and Unconfined Compressive Strength (UC) were determined for selected samples to estimate the strength and compressibility of the underlying soils. The locations of these tests, together with the resistance to penetration of the samplers are shown at the corresponding locations on the LOTB. The laboratory test results are provided in tabular form and/or graphically in Appendix B.

3.2.4 Soil Conditions

3.2.4.1 Fill

The rotary wash boring log performed in March 2009 encountered 5 feet of fill material consisting of sandy lean and lean clay.

3.2.4.2 Native

Boring R-09-004 revealed the native soil underlying the fill is predominantly fine grained consisting of medium stiff to hard lean and fat clay. Two layers of medium dense sand approximately 9½ and 4½ feet thick were encountered at depths of about 17½ and 29 feet below ground surface (bgs) respectively. The sand was underlain by stiff lean clay to a depth of about 33½ feet, and medium stiff fat clay to a depth of about 45½ feet. An approximately 1-foot thick poorly graded sand layer was encountered at 45½ feet. Below 46½ feet, the boring encountered stiff lean clay to a depth of about 51 feet, which in turn is underlain by medium stiff to very stiff lean and fat clay to a depth of about 101 feet, the terminal depth of the boring. The native soils encountered in the CPT can generally be characterized as clay with interbeds of sandy silt and sand of similar thickness to those encountered in Boring R-09-004. Based on Boring R-09-004 and CPT-09-003, a generalized soil profile is presented in Figure 3-2.

3.2.5 Groundwater

Boring R-09-004 was advanced to a depth of 9 feet, using an auger. No free groundwater was observed at that time. The drilling method then was switched to rotary wash, thereby precluding a reliable groundwater measurement. During the cone penetration tests of CPT-09-003, a pore pressure dissipation test was conducted to estimate the groundwater level at the site. The dissipation test result (Appendix B) suggests groundwater is at approximately Elevation -9 ft. However, free groundwater was reportedly encountered in two of the explorations performed in 1957 (B-2 and B-3) at a somewhat shallower depth of about Elevation 0 feet (datum unspecified

1956). The groundwater level is likely subject to some tidal fluctuation and is expected to be around Elevation 2 to 4 feet, similar to the surface water level in Adobe Creek.

Considering the previous measurements and expected tidal fluctuation, we believe a design groundwater level at Elevation 4 feet would be reasonable for the site.

3.3 GEOLOGIC HAZARDS

3.3.1 Surface Fault Displacement and Ground Shaking

The project alignment does not cross any known active faults or mapped A-P zoned faults. The Santa Clara County geologic hazard maps (2002) do not show the road alignment crossing any fault hazard rupture zones. Surface rupture due to faulting along the alignment, therefore, is not expected to occur. However, the short distance to the Monte Vista, San Andreas and Hayward faults does create a high risk for ground shaking from fault movement. The intensity of the ground shaking is dependent upon the size of the earthquake, the distance of the epicenter from the site, the direction that the earthquake propagates along the fault, and the site geologic conditions. Section 3.1.2 "Regional Tectonic Setting and Seismicity" discusses the anticipated seismic shaking from these faults.

3.3.2 Landslide and Slope Failure

U.S 101 is on relatively flat ground along the project alignment and is not subject to landsliding. The project site is not within a landslide hazard zone on hazard maps published by Santa Clara County (2002), nor on the CGS Earthquake-Induced Landslide hazard zone map (2001). Therefore, landsliding is not a potential hazard.

3.3.3 Scour

Caltrans February 2006 Bridge Inspection Report describes the Adobe Creek Channel as trapezoidal with concrete lined side slopes and an earth bottom. The report also states that no scour problems are suspected.

Based on the project hydraulic analysis (WRECO, 2009), we understand that a total scour depth of 2.5 feet is expected at the creek bottom and around the piers. The executive summary section of WRECO's Draft Bridge Hydraulic Study Report, dated May 18, 2009, is presented in Appendix D.

3.3.4 Flooding

The project alignment south of the San Antonio Road overcrossing to Permanente Creek is located outside of the 100-year flood zone as shown on the FEMA flood hazard zone maps (SCVWD, 2008). The alignment north of the San Antonio Road overcrossing to the Oregon Expressway, which includes the Adobe Creek crossing at U.S. 101, is within the 100-year flood zone.

3.3.5 Subsidence and Seismic Compaction

Subsidence typically occurs as a result of subsurface fluid extraction (e.g. groundwater petroleum) or compression of soft, geologically young sediments such as Bay Mud. Settlement can occur quickly when soil is loaded by a structure or by the placement of fill, or it can also occur gradually when soil pore pressures, increased by vertical loading, gradually dissipate over time. This second type is termed consolidation settlement. However, compressible young Bay Mud soils are not encountered in the previous explorations and those for this study; therefore, the risk of subsidence at this site is low.

Compaction settlement, or seismic densification, occurs when loose granular soils increase in density as a result of earthquake shaking. The soil densification can result in differential settlement because of variations in soil composition, thickness, and initial density. As previously mentioned, disturbed water wells and ground settlement in the project area have been documented as a result of ground shaking during the Loma Prieta earthquake and the 1906 San Francisco earthquake (Knudsen, et al, 2000).

For design, we estimated the potential post-earthquake settlement at CPT-09-003 and R-09-004, due to seismic compaction. In our analyses we used a peak ground acceleration (PGA) of 0.5g and a design earthquake moment magnitude (**M**) of 8.0. At Boring R-09-004, the soils above the groundwater table are primarily sandy lean clay; therefore, seismic compaction is not expected. Seismic compaction also is unlikely for the soils encountered at CPT-09-003.

3.3.6 Liquefaction Potential

Liquefaction is a phenomenon whereby sediments temporarily lose shear strength and collapse. This condition is caused by cyclic loading during earthquake shaking that generates high porewater pressures within the sediments. Loose, cohesionless, granular soil below the water table and within about 50 feet of the ground surface is most susceptible to liquefaction. Liquefaction can result in loss of foundation support and settlement of overlying structures, ground subsidence and translation due to lateral spreading, lurch cracking, and differential settlement of the affected deposits. Lateral spreading occurs when a layer liquefies at depth and causes horizontal movement or displacement of the overlying mass toward a free face such as a stream bank or excavation, or toward an open body of water.

Liquefaction hazard maps have been prepared for the project area including: Santa Clara County Liquefaction Hazard Zone maps (2002), the California Geological Survey Liquefaction hazard zone map for Mountain View Quadrangle (CGS, 2001), and the liquefaction hazard map for Palo Alto/Stanford, Scenario:1906 San Francisco Earthquake (ABAG, 2001). All of these maps show the U.S. 101 alignment to be within a liquefaction hazard zone ranging from “moderate” to “very high” susceptibility. In a regional study of the nine-county San Francisco Bay region for the U.S. Geological Survey, Witter et al. (2006) mapped the liquefaction susceptibility of the site soils along the project alignment related primarily to the mapped geologic units. The alluvial fan deposits, fine-grained facies, mapped from the south end of the project at Permanente Creek to about Adobe Creek, are shown as having a “moderate” liquefaction susceptibility. The artificial fill over the Bay Mud soils between about Adobe Creek and the north end of the project are shown as having a “very high” liquefaction susceptibility. Several historic ground failures from both the Loma Prieta earthquake and the 1906 San Francisco earthquake have been recorded in

the Bay Mud tidal flats between the U.S. 101 and the San Francisco Bay margin including disturbed water wells, ground settlement and miscellaneous effects (Knudsen, et al, 2000).

Based on a review of the boring and CPT completed for this study, potentially liquefiable sands were encountered in CPT location at depths of approximately 18 and 40 feet and in rotary wash boring at depths of approximately 18 feet. We estimated post-liquefaction settlement at CPT-09-003 using the computer program LIQUEFY PRO for a peak ground acceleration (PGA) of 0.5g and design earthquake moment magnitude, **M**, of 8.0. Based on that analysis, we estimate that total post-liquefaction settlement on the order of 2½ inches could occur. In addition, we analyzed post-liquefaction settlement of the medium dense sand layers encountered in Boring R-09-004 for the same PGA and design earthquake, correcting the measured driving resistance (blow counts) in the field for hammer type, sampler size, overburden pressure, rod length, and fines content; the magnitude of settlement at this boring location is estimated to be 2½ inches. Copies of these calculations are included in Appendix E. Since ground surface settlement of CPT and boring could exceed ½ inch, downdrag on piles is a design consideration at this location.

3.4 GEOLOGICAL PROFILES AND ENGINEERING PARAMETERS

The generalized soil profile presented on Figure 3-2 illustrates the layering of the various soil strata and corresponding geotechnical parameters. It should be noted that this profile was developed based on extrapolation of available data from the borings drilled for this investigation and, therefore, may differ from actual conditions. Soil parameters tabulated on Figure 3-2 were selected based on laboratory test results as well as engineering judgment and local experience.

The undrained shear strength, relative density, dry unit weight and moisture content are the engineering soil parameters used in our foundation design and analysis. Atterberg limits tests and particle analyses were performed for classification of soils. In general, unconfined compression tests were performed on cohesive soil samples to estimate the undrained shear strength. Some disturbance occurs while sampling cohesive soils; therefore unconfined compressive strengths in localized areas can be lower than the insitu field conditions. Consequently, engineering judgment and local experience were applied in our interpretation of the laboratory test results. The relative density of cohesionless soils was estimated from vertical effective stress and Standard Penetration Resistance, N blows per 1 foot based on correlations developed by Gibbs and Holtz (DM7.1 – 87, 1986). Where non-standard sampler sizes were used, such as the modified California sampler (2½ inch outside diameter), a correction factor was applied to the observed blows per 1 foot to estimate the Standard Penetration Resistance, N values.

4.1 CORROSION EVALUATION

An assessment of the potential for corrosion of various buried foundation and pipe structures was performed by V&A Consulting Engineers (V&A). The results of their investigation are presented in Appendix F.

The following paragraphs include their summary and conclusions.

4.2 SUMMARY

The objective of this investigation is to measure various soil parameters and evaluate the results with respect to possible levels of corrosion at proposed Adobe Creek Bridge (widen) site. Corrosivity was determined for materials of the project structure, if any, to depths ranging from 0 to 80 feet below grade.

The California Department of Transportation, Division of Engineering Services, Materials Engineering and Testing Services, Corrosion Technology Branch has published "Corrosion Guidelines" (Guidelines) to define corrosive soil. The Guidelines consider soil to be corrosive to structural elements (steel reinforced concrete) if one or more of the following conditions exist for water or soil samples:

1) The chloride concentration is 500 ppm (mg/kg) or greater,
2) The sulfate concentration is 2,000 mg/kg or greater, or
3) The pH is 5.5 or less.

A wide variety of soluble salts are typically found in soils. Two soils having the same resistivity may have significantly different corrosion characteristics, depending on the specific ions available. The major constituents that accelerate corrosion are chlorides, sulfates and the acidity (pH) of the soil. Chloride ions tend to break down otherwise protective surface deposits, and can result in corrosion of reinforcing steel in concrete structures. Sulfates in soil can be highly aggressive to Portland cement concrete by combining chemically with certain constituents of the concrete, principally tricalcium aluminate. The reaction is accompanied by expansion and eventual disruption of the concrete matrix. High concentrations of bicarbonates tend to decrease soil resistivities. Although bicarbonates are not aggressive to concrete, lower resistivity environments can promote corrosion activity.

Acidity, as indicated by the pH value, is another measure of corrosivity. The lower the pH (the more acidic the environment), the higher will be the corrosivity with respect to buried metallic and concrete structures. As pH increases above 7 (the neutral value), conditions become increasingly more alkaline and passive to buried structures.

Evaluation of the in-situ soil environment was made in terms of potential damage to structures due to corrosion. Soil resistivity measurements were conducted in the field during the initial stages of the work. In addition, soil samples collected by URS during the geotechnical investigation were forwarded to Cooper Testing Laboratory in Palo Alto, California for chemical analysis. The soil samples were analyzed for minimum resistivity, pH, water soluble chloride ion concentration, and water soluble sulfate ion concentration in accordance with the Guidelines.

The results are summarized in the following table.

Table 4-1: Soil Corrosion Test Results Summary

Sample ID	Minimum Resistivity (ohm-cm)	pH	Chloride Content (mg/kg)*	Sulfate Content (mg/kg)*
R-09-004, 4-3	527	10.3	235	203
Adobe Creek Water	916	7.7	187	21

*The chloride and sulfate results for water sample is in mg/L

As shown above, the pH of the soil sample analyzed was 10.3 with water soluble chloride and sulfate ion concentrations of 235 mg/kg and 203 mg/kg. The minimum resistivity of the soil sample was 527 ohm-cm.

As shown above, the pH of the water sample analyzed was 7.7 with water soluble chloride and sulfate ion concentrations of 187 mg/L and 21 mg/L. The minimum resistivity of the water sample was 916 ohm-cm. The bridge structure is not located within 1,000 feet (300 meters) of salt or brackish water.

4.3 CONCLUSIONS

Soil samples were obtained for corrosion analysis at Boring Location R-09-004. As shown in the preceding Table 4-1, the soil boring and stream water chemical analyses resulted in the pH values higher than 5.5, soluble chloride concentrations less than 500 mg/kg and soluble sulfate concentrations less than 2,000 mg/kg. Therefore, according to the Guidelines, the soil at the site is considered non-corrosive.

5.1 SEISMIC DESIGN METHODOLOGY AND RESOURCES

The seismic design methodology adopted for this project is based on the following current Caltrans standards:

- 2007 Caltrans Deterministic PGA Map
- Seismic Design Criteria (SDC), Version 1.4, June 2006
- Guidelines for Foundation Investigations and Reports, v 2.0, dated March 2006

5.2 PEAK BEDROCK ACCELERATION

The active faults closest to the U.S. 101 Adobe Creek Bridge are the Hayward, Cascade, and San Andreas faults. The Hayward, Cascade, and San Andreas faults are designated with Maximum Credible Earthquake (MCE) magnitudes of 7.5, 6.9, and 8.0, respectively, on the 2007 Caltrans fault database. The Cascade and San Andreas faults are expected to contribute the same level of ground shaking at the site (0.5g) while the Hayward fault should produce lower shaking (0.4g). The MCE, therefore, is the earthquake on the San Andreas Fault since it could potentially release the highest energy (**M**=8.0) and results in the strongest shaking at the site. The distance from the Adobe Creek Bridge to the San Andreas fault is approximately 7.5 miles.

Table 5-1: Seismic Source Parameters

Fault	Type	MCE	Distance (miles)	Near Field Effects?
Cascade	Reverse	6.9	2.7	N
San Andreas	strike-slip	8.0	7.5	Y
Hayward	strike-slip	7.5	10.7	Y

5.3 FAULT TYPE, NEAR-FIELD, AND SPECTRAL ACCELERATION INCREASES

The 2007 Caltrans fault database indicates that the controlling fault (San Andreas) has strike-slip displacement. Therefore, in accordance with Caltrans design procedures referenced above, an increase in design spectral accelerations is not required for fault type. However, since the project site is less than 9.5 miles from the nearest active fault, design spectral accelerations should be modified to account for near-fault effects as follows:

Table 5-2: Spectral Acceleration Increase for Near Field Effects

Period (sec)	Increase in Spectral Acceleration (%)
< 0.5	0
0.5 – 1.0	0 – 20 (determined by linear interpolation)
≥1	20

At the time of this study, no bridge structures with fundamental period of vibration greater than 1.5 seconds are anticipated; therefore, no adjustments are required for long period effects.

5.4 SOIL PROFILE TYPE

The Adobe Creek Bridge crossing is located near the boundary of fine-grained Holocene alluvial fan deposits and Holocene San Francisco Bay Mud (Kleinfleder, 2000), which could be potentially classified as Soil Profile Type D or E. Borings completed for the original Adobe Creek Bridge, Matadero Creek Bridge, and the State Route 85/U.S. 101 interchange improvement project adjacent to the south end of the project (about 1.8 miles away) were reviewed. The borings typically encountered fine-grained alluvium consisting of interbedded lean and fat clay, silt, sandy clay and clayey sand with occasional interbeds of silty sand and well-graded sand with gravel. In general, the clay alluvium was reported as stiff to very stiff and the silty and clayey sand interbeds were medium dense to dense.

Boring R-09-004 drilled for this study revealed a similar soil profile consisting of medium stiff to hard cohesive soils and medium dense to dense granular alluvial deposits that extend to a depth of at least 100 feet. The regional geology suggests the soils become stiffer and denser with increasing depth.

Based on the exploration findings, and consistent with SDC Table B.1, we believe the project site can be classified as Soil Profile Type D.

5.5 DESIGN ACCELERATION RESPONSE SPECTRA

At the time of this report, Caltrans is still finalizing the new ARS curves which will be based on the New Generation Attenuation relationships. Meanwhile, Caltrans accepts design response spectrum based on 2006 SDC (Version 1.4). Therefore, the design seismic response spectrum for the site can be estimated with spectral acceleration values generated by:

- Soil Profile Type D
- Maximum Credible Earthquake (MCE) **M** 8.0
- Peak bedrock acceleration 0.5 g
- No ARS increase for fault-type or long period structure
- ARS increase for near-field effect

The Design Acceleration Response Spectra (ARS) corresponding to Soil Profile Type D, magnitude of controlling event **M** 8.0, and a PBA of 0.5 g were obtained from SDC Figure B.9 and modified to account for near field effects as described above. Spectral values are provided in Table 5-3.

Table 5-3: Spectral Acceleration Values
(PBA = 0.5 g, M = 8.0, Soil Type D)

Period	Soil Profile Type D	
	Sa (g)	Sa* (g)
0.010	0.50	0.50
0.020	0.50	0.50
0.030	0.51	0.51
0.050	0.67	0.67
0.075	0.84	0.84
0.100	0.99	0.99
0.120	1.06	1.06
0.150	1.15	1.15
0.170	1.19	1.19
0.200	1.23	1.23
0.240	1.26	1.26
0.300	1.29	1.29
0.400	1.28	1.28
0.500	1.23	1.23
0.750	1.06	1.17
1.000	0.88	1.06
1.500	0.61	0.73
2.000	0.44	0.53
3.000	0.26	0.31
4.000	0.17	0.21

*Modified for near-field effects

Adobe Creek Bridge was first constructed in 1960 as two single-span precast, prestressed "T" girder bridges (left and right). The bridge span is approximately 65 feet long. In 1988, the median gap between the left and right bridges was filled with precast prestressed rectangular girders with concrete deck, supported on seat type abutments. Neither contract nor as-built plans were available for the 1988 construction.

Based on the as-built data from Caltrans (Contract Number 60-4TC1) dated May 9, 1960, the abutments on the northwest (Abut 1) and southeast (Abut 2) ends are supported on 45-ton Raymond step tapered concrete (RSTC) piles (106 total piles). Pertinent available as-built plans for the bridge are provided in Appendix G. The table below presents a summary of the pile type and as-built tip elevations based on driving records for four piles (Nos. 10, 15, 91, and 96).

Table 6-1: As-Built Pile Data Table, Adobe Creek Bridge

Location	Pile Type	Pile Tip Elevation (feet)	
		Northbound	Southbound
Abut 1	RSTC	-55 to -59	-63 to -79
Abut 2	RSTC	-55 to -59	-63 to -81

7.1 DISCUSSION

The proposed bridge is underlain predominantly by medium to very stiff lean and fat clay and medium dense to very dense sand. The principal geotechnical issues at the site are:

- Capability of the existing RSTC piles to carry the loads imposed by the proposed widening, and
- Post-liquefaction settlement of potentially liquefiable soils encountered near the bridge.

As outlined in the Type Selection Report, dated June 5, 2009, the current improvement strategy of Adobe Creek Bridge is to utilize existing pile foundation to support the widened section. Therefore, no pile data table is presented in the report. The following Section 7.2 presents our recommendations/conclusions about the existing RSTC piles axial and lateral capacity.

7.2 EXISTING PILE DESIGN CAPACITY

7.2.1 Axial Pile Capacity Analysis

As mentioned in Section 7.1 "Discussion" the existing pile foundation will also support the widened section. As shown on the as-built drawings, existing RSTC piles have a minimum tip diameter of 8 inches with butt diameter of 15½ inches. Because potentially liquefiable soils were encountered in the explorations, downdrag force is anticipated to Elevation -17 feet associated with post-liquefaction settlement. Gross pile capacity estimated using the pile driving formula for the four piles (Nos. 10, 15, 91, and 96) shown on the as-built drawings ranges from 50 to 75 tons. We estimated the existing pile capacity (net) to be in the order of 45 tons using the new subsurface data obtained in 2009. The above estimate neglects all the vertical supporting capacity of soils located above Elevation -17 feet. Based on our experience in the Santa Clara Valley, long term pile capacity increases considerably upon driving due to the consolidation or densification of the soils around the pile; which is caused by the stress induced by pile driving. Based on our review of the subsurface conditions encountered in the current borings, 1957 as-built borings, 1957 as-built pile driving records, and our experience in the project area, in our opinion, the existing RSTC piles are capable of supporting 45 tons vertical compression load.

7.2.2 Lateral Load Capacity Analysis

The pile foundations are capable of resisting lateral loads. Resistance to lateral loads can be developed by bending of the pile and by pile-soil interaction. The magnitude of the lateral load resistance that can develop depends upon several factors such as the pile size, the physical properties of the surrounding soils, and the structural design of the pile. Lateral load capacity of the RSTC piles was calculated using LPILE 4.0 (Reese et al., October 2000) to assist in estimating the lateral load resistance. Based on our discussion with the Structural Engineer, it is our understanding that lateral loads were estimated to be in the order of 5 kips. Table 7-1 presents a summary of the lateral deflection of the RSTC piles. We have also included the estimated lateral load for a pile head deflection of ¼ inch in Table 7-1.

Table 7-1: RSTC Pile Lateral Capacity Analysis Summary

Pile Head Boundary	Pile Type	Axial Load (kips)	Lateral Load (kips)	Pile Head Deflection (in)
Fixed	RSTC	90	5.0	0.01
	RSTC	90	19.5	0.25
Free	RSTC	90	5.0	0.05
	RSTC	90	9.5	0.25

Output files for laterally loaded piles at abutments are presented in Appendix H and include deflection versus depth, bending moment versus depth, shear versus depth, and total stress versus depth.

7.2.3 Pile Capacity Based on Structural Strength of Pile.

The pile capacity conclusions presented in the two previous sections 7.2.1 and 7.2.2 are based on the supporting strength of soil and as determined by pile driving formula. We assume the Structural Engineer will estimate the pile capacity as determined by the structural strength of the pile.

7.3 PILE INSTALLATION

No new piles are planned for the proposed bridge widening.

7.4 APPROACH EMBANKMENT SETTLEMENT

As discussed in Section 3.3.5, compressible young Bay Mud soils encountered in the northern portion of the project alignment are susceptible to consolidation settlement. Consolidation settlement can occur gradually when soil pore pressures, increased by vertical loading (e.g. placement of fill), gradually dissipate over time. However, at this bridge site, no Bay Mud has been encountered in the explorations; therefore, the risk of subsidence is relatively low. In addition, there is no new fill needed to raise the grade at this location. Therefore, it is unlikely that an increase in vertical loading or dissipation of soil pore pressures in the compressible soils would occur.

7.5 SLOPE STABILITY

Based on topographic data, it is estimated that the existing concrete lined channel banks along Adobe Creek at the proposed bridge (widen) are inclined at about 1½:1 (horizontal:vertical).

The soils beneath the channel lining consist primarily of medium stiff to hard lean clay with thin interbeds of clayey sand. It is estimated that the channel banks have a factor of safety of 1.5 or more for short term undrained loading conditions. For long term drained loading, we believe the risk of localized shallow slipouts is relatively low, as the channel banks are lined with concrete. The long term global stability is also estimated to have a factor of safety greater than 1.5.

7.6 APPROACH FILL EARTHWORK

All earthwork should be completed in accordance with the applicable sections of the Caltrans Standard Specifications and as described in URS' companion Geotechnical Design and Materials Report for the US 101 Auxiliary lanes project that is planned to be submitted at the end o f June 2009.

7.7 ABUTMENT EXCAVATION

Existing abutment walls in the proposed widening area will be modified as shown in Figure 2-1 during construction and no excavations or new foundations are planned at this time.

8.1 CONSTRUCTION DEWATERING

No subsurface excavations are anticipated at the bridge site at this time. Free groundwater was recorded in two of the as-built borings performed closer to the creek during early study (1957) at about Elevation 0 feet. Based on the exploration findings, groundwater is not anticipated in any excavation that doesn't extend below existing footing Elevation of 5 feet.

The recommendations presented in this Foundation Report are based on information obtained from new explorations made at widely separated locations, site reconnaissance, review of available historic data, and upon local experience and engineering judgment. As-built drawings pertinent to the geotechnical investigation are included, for convenience of reference.

The recommendations presented in this report are based on the assumption that the soil and geologic conditions do not deviate substantially from those encountered in the previous and new explorations. If any variations are encountered during construction, URS should be contacted so that supplementary recommendations can be made.

If the planned construction is changed from that presently conceived, URS should be retained to review the changes and make modifications to the original recommendations represented in this report in order to meet the project needs.

The Geotechnical Engineer should review the final specifications and drawings to verify that these documents are consistent with the intent of the geotechnical recommendations. Geotechnical issues may arise which are not apparent at this time. URS should be retained during construction to review the soil conditions encountered and the construction procedures. All earthwork should be completed under the direct observation of a representative of our firm.

Specific review and investigation for environmental issues and subsurface environmental contamination were beyond the scope of the geotechnical services.

The elevations shown on the new LOTBs are based on interpolation from spot and contour elevations shown on available topographic maps.

The opinions and recommendations presented in this Foundation Report were developed with the standard of care commonly used as state of the practice in the profession. No other warranties are included, either express or implied, as to the professional advice provided in this report.

ABAG, 2007, Floodplain and Liquefaction Maps, abag.ca.gov/bayarea/eqmaps/

Aydin, A., and Page, B.M., 1984, Diverse Pliocene-Quaternary tectonics in a transform environment, San Francisco Bay region, California; Geological Society of America Bulletin, v. 95, p. 1,303-1,317.

Bortugno, E.J., McJunkin, R.D. and Wagner, D.L., 1991, Map showing recency of faulting, San Francisco-San Jose Quadrangle, California, California Division of Mines ad Geology, Geologic Map of the San Francisco-San Jose Quadrangle, 1:250,000.

Brabb, E.E. and Dibblee, T.W., 1974, Geologic map of Santa Clara County, California, U.S. Geological Survey Special Report 107, scale 1:62,500.

Bürgmann, R., Arrowsmith, R. and Dumitru, T., 1994, Rise and fall of the southern Santa Cruz Mountains, California, from fission tracks, geomorphology, and geodesy, Journal of Geophysical Research, v. 99B, p. 20,181-20,202.

California Department of Transportation, 1960, As-Built Log of Test Borings, Bridge 37-0040 R/L, Matadero Creek, Contract No. 60-4TC1.

California Geological Survey, 2000, Digital images of official maps of the Alquist-Priolo earthquake fault zones of California, central coast region, California Geologic Survey, CD-2000-004.

California Geological Survey, 2001, Seismic hazard zones, Mountain View quadrangle, gmw.consrv.ca.gov/shmp/index.htm.

Fenton, C. H., and Hitchcock, C.S, 2001, Recent Geomorphic and Paleoseismic Investigations of Thrust Faults in Santa Clara Valley, California in Engineering Geology Practice in Northern California, Association of Engineering Geologists Special Publication 12, Edited by H. Ferriz and R. Anderson, pp. 239 – 257.

Fenton, C.H. and Hitchcock, C.S., 2002, Recent geomorphic and paleoseismic investigations of thrust faults in Santa Clara Valley, California, in Engineering Geology Practice in Northern California, Ferriz, H. (ed.) California Division of Mines and Geology, p. 71-89.

Hall, N.T., Wright, R.H., and Clahan, K.B., 1999, Paleoseismic studies of the San Francisco Peninsula Segment of the San Andreas Fault Zone near Woodside, California: Journal. Geophys. Res., vol. 104, no. B10, pp. 23,215-23,236.

Helley, E.J. and LaJoie, K.R., 1979, Flatland deposits of the San Francisco Bay region, California – their geology and engineering properties, and importance to comprehensive planning. U.S. Geological Survey Professional Paper 943,p. 27-34, plate 3, scale 1:125,000.

Hitchcock, C.S., Kelson, K.I. and Thompson, S.C., 1994, Geomorphic investigations of deformation along the northeastern margin of the Santa Cruz Mountains, William Lettis & Associates, Inc., Final Technical Report, U.S. Geological Survey National Earthquake Hazards Reduction Program Award No. 1434-92-G-2220, 33 p.

Hitchcock, C.S. and Kelson, K.I., 1999, Growth of late Quaternary folds in southwest Santa Clara Valley, San Francisco Bay Area, California: Implications of triggered slip for seismic hazard and earthquake recurrence, Geology, v. 27, p. 387-390.

Irwin, W.P., 1990, Geology and plate tectonic development, in The San Andreas Fault System, California, Wallace, R.E. (ed.), U.S. Geological Survey Professional Paper 1515, p. 61-80

Jennings, C.W., 1994, Fault activity map of California and adjacent areas, California Division of Mines and Geology, California Geologic Data Map Series, Map No. 6, scale1:750,000.

Jones, D.L., Graymer, R., Wang, C., McEvilly, T.V. and Lomax, A., 1994, Neogene transpressive evolution of the California Coast Ranges, Tectonics, v. 13, p. 561-574.

Kleinfelder (2000), Log of Test Borings for Route 85/101 Interchange, July and August.

Knudsen, K.L., Sowers, J.M., Witter, R.M., Wentworth, C.M., and Helley, E.J., 2000, Preliminary maps of Quaternary deposits and liquefaction susceptibility, nine county San Francisco Bay region, California, U.S. Geological Survey Open-File Report 00-444, 60 pages plus two maps.

Lienkaemper, J.J. 1992, Map of recently active traces of the Hayward fault, Alameda and Contra Costa Counties, California, U.S. Geological Survey Miscellaneous Field Studies Map MF-2196, 13 p.

Lienkaemper, J.J. and Galehouse, J.S., 1997, Revised long-term creep rates on the Hayward fault, Alameda and Contra Costa Counties, California, U.S. Geological Survey Open-File Report 97-690, 18 p.

Mualchin, L., 1996, California Seismic Hazard Map 1996, California Department of Transportation, Office of Earthquake Engineering.

Niemi, T. M. and Hall, N.T., 1992, Late Holocene slip rate and recurrence of great earthquakes on the San Andreas fault in northern California: Geology, v. 20, p. 195-198.

Santa Clara County, 2002 and 2003 (rev.), Geologic Hazards Zones [Fault Rupture Hazard Zones; Liquefaction Hazard Zones; Combined Landslide, Compressible Soils, and Dike Failure Flooding Hazard Zones] map sheets 1, 2 and 10; revised August 14, 2003 and subsequent web updates at www.sccplanning.org

Santa Clara Valley Water District, 2008. FEMA flood hazard maps, www.valleywater.org/Water/Watersheds

Wallace, R.E., 1990, The San Andreas Fault System, California: U.S. Geological Survey Professional Paper 1515, 283 p.

Witter, R.C., Knudsen, K.L., Sowers, J.M., Wentworth, C.M., Koehler, R.D., and Randolph, C.E., 2006, Maps of Quaternary deposits and liquefaction susceptibility in the central San Francisco Bay region, California, in cooperation with the California Geological Survey: A digital database, U.S. Geological Survey, Open-File Report 2006-1037.

Working Group on California Earthquake Probabilities, 1996, Database of potential sources for earthquakes larger than magnitude 6 in northern California: U.S. Geological Survey Open-File Report 96-705.

Working Group on California Earthquake Probabilities, [Michael, A.J., and others], 1999, Understanding earthquakes in the San Francisco Bay Region: major quake likely to strike between 2000 and 2030: U.S. Geological Survey Fact Sheet 152-99.

Working Group for California Earthquake Probabilities, 2003, Earthquake probabilities in the San Francisco Bay region: 2003-2031, US Geological Survey Open-File Report 03-214, 234 p.

INDEX OF PLANS

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI	101	49.0/52.2		

STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION

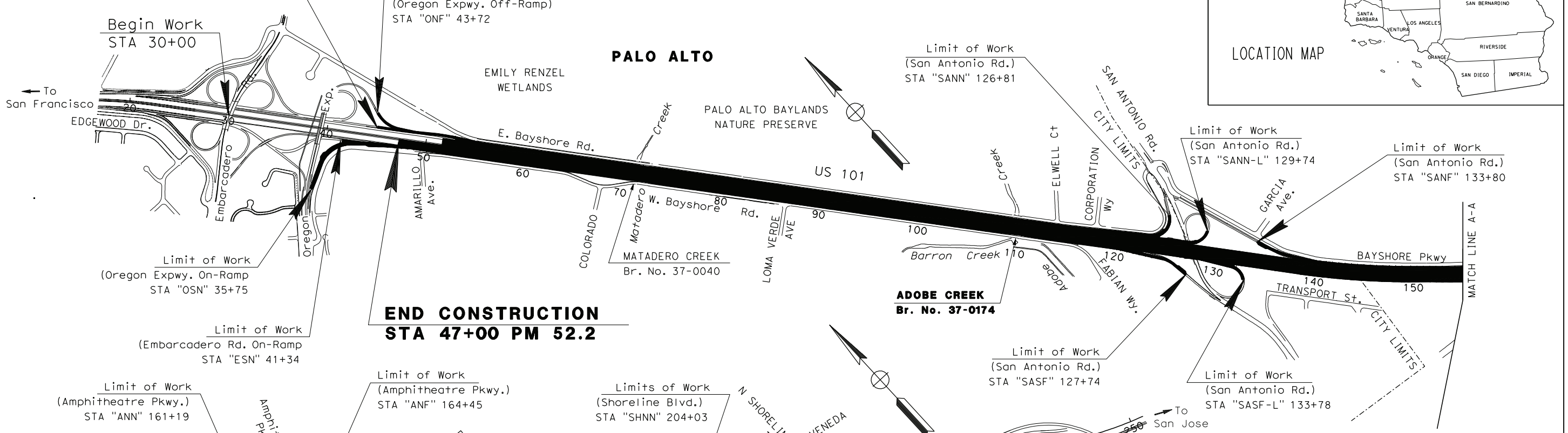
PROJECT PLANS FOR CONSTRUCTION ON

STATE HIGHWAY

IN SANTA CLARA COUNTY
IN PALO ALTO AND MOUNTAIN VIEW
FROM OREGON EXPRESSWAY OVER CROSSING TO
0.1 MILE NORTH OF SHORELINE BOULEVARD OVERCROSSING

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006

LOCATION MAP



PROJECT VICINITY MAP
FIGURE 1-1

THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO CONTRACTORS."

PROJECT ENGINEER DATE
REGISTERED CIVIL ENGINEER

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
55 S. MARKET STREET, SUITE 1500
SAN JOSE, CA 95113

SANTA CLARA VALLEY
TRANSPORTATION AUTHORITY
3331 N. FIRST STREET
SAN JOSE, CA 95134

CONTRACT No. 04-4A3304

DATE PLOTTED => 11/12/2009
TIME PLOTTED => 8:29:36 AM

LAST REVISION 00-00-00

APPROVED AS TO IMPACT ON STATE FACILITIES AND CONFORMANCE WITH APPLICABLE STATE STANDARDS AND PRACTICES AND THAT TECHNICAL OVERSIGHT WAS PERFORMED.

CONSULTANT DESIGN ENGINEER | CALTRANS DESIGN OVERSIGHT APPROVAL | REGISTRATION No. | LICENSE Exp DATE | DATE SIGNED

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	48.97/52.17		

REGISTERED CIVIL ENGINEER DATE

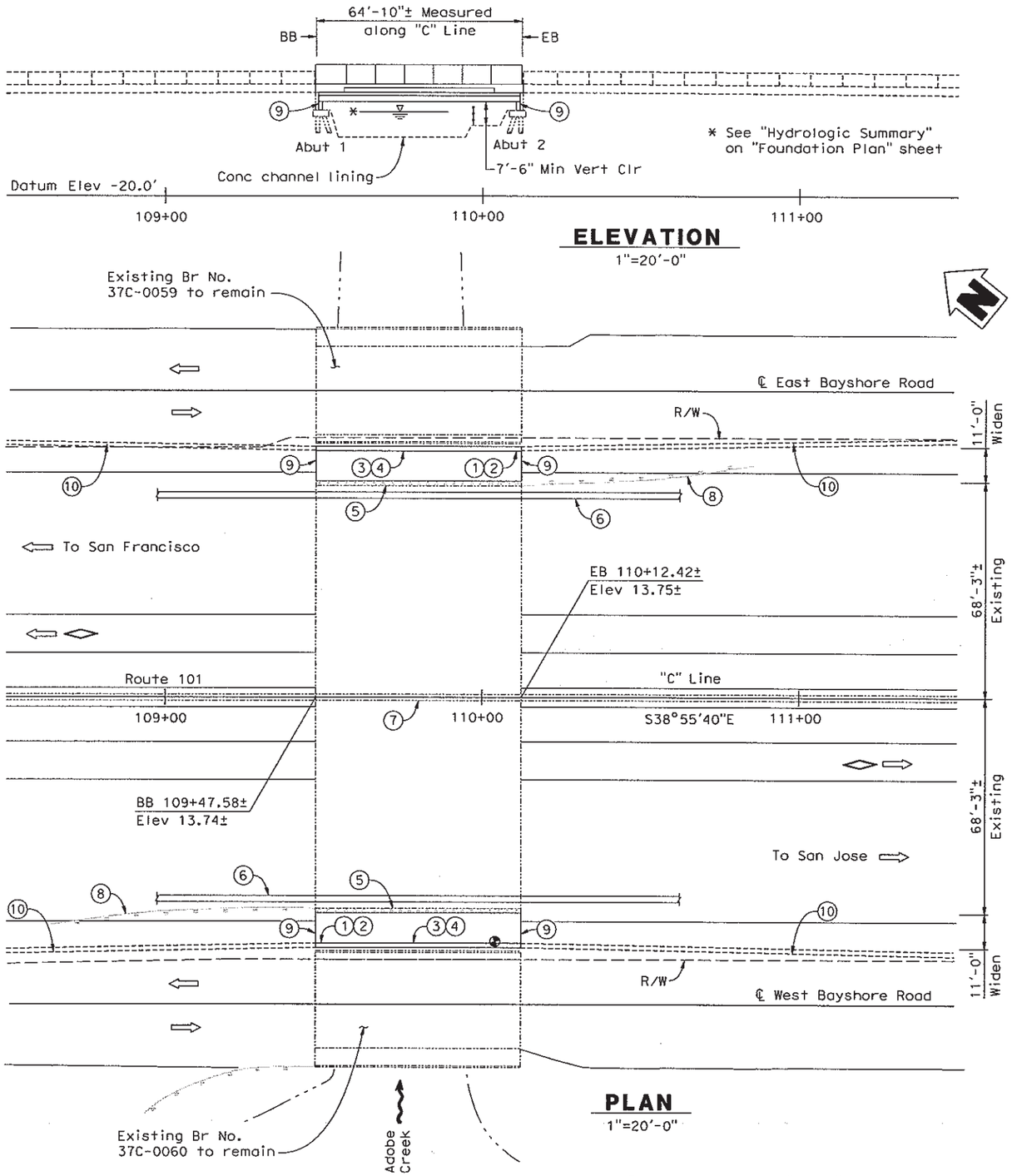
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Anthony Dubovik II No. C36372 Exp. 06/30/10 CIVIL STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

VALLEY TRANSPORTATION AUTHORITY
3331 N FIRST STREET
SAN JOSE, CA 95134

URS CORPORATION
1380 LEAD HILL BLVD, SUITE 100
ROSEVILLE, CA 95661-2997



NOTES:

1. Paint Bridge Number 37-0174
2. Paint Bridge Name and Year Completed
3. Concrete Barrier (Type 736)
4. Chain Link Railing (Type 7)
5. Remove existing Concrete Barrier (Type 27R)
6. Temporary Railing (Type K), see "Road Plans"
7. Existing Concrete Barrier (Type 50A Modified)
8. Remove existing MBGR, see "Road Plans"
9. Modify existing abutment wall
10. Concrete Barrier (Type 60C) with Chain Link Fence, see "Road Plans"

LEGEND:

- Indicates existing structure
- Indicates bridge removal (portion)
- Indicates direction of traffic
- Point of minimum vertical clearance
- Indicates direction of flow

FIGURE 2-1

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

Note: For "Index To Plans" and "General Notes" see "index To Plans" sheet.

DESIGN OVERSIGHT	DESIGN	BY S. Landis	CHECKED	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE
	DETAILS	BY L. Davis	CHECKED	LAYOUT	BY A. Dubovik II — CHECKED
SIGN OFF DATE	QUANTITIES	BY	CHECKED	SPECIFICATIONS	BY — PLANS AND SPECS COMPARED

DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

CU 04
EA 4A3301

BRIDGE NO. 37-0174
POST MILES 50.66

ADOBE CREEK BRIDGE (WIDEN)

GENERAL PLAN No. 1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY) 6-18-09 10-29-09

SHEET 1 OF 14

FILE => U:\Adobe\37-0174-g-gp01.dgn

USERNAME => Lynette_Davis PLOTTED => 10/29/2009 TIME PLOTTED => 1:26:44 PM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	48.97/52.17		

REGISTERED CIVIL ENGINEER DATE

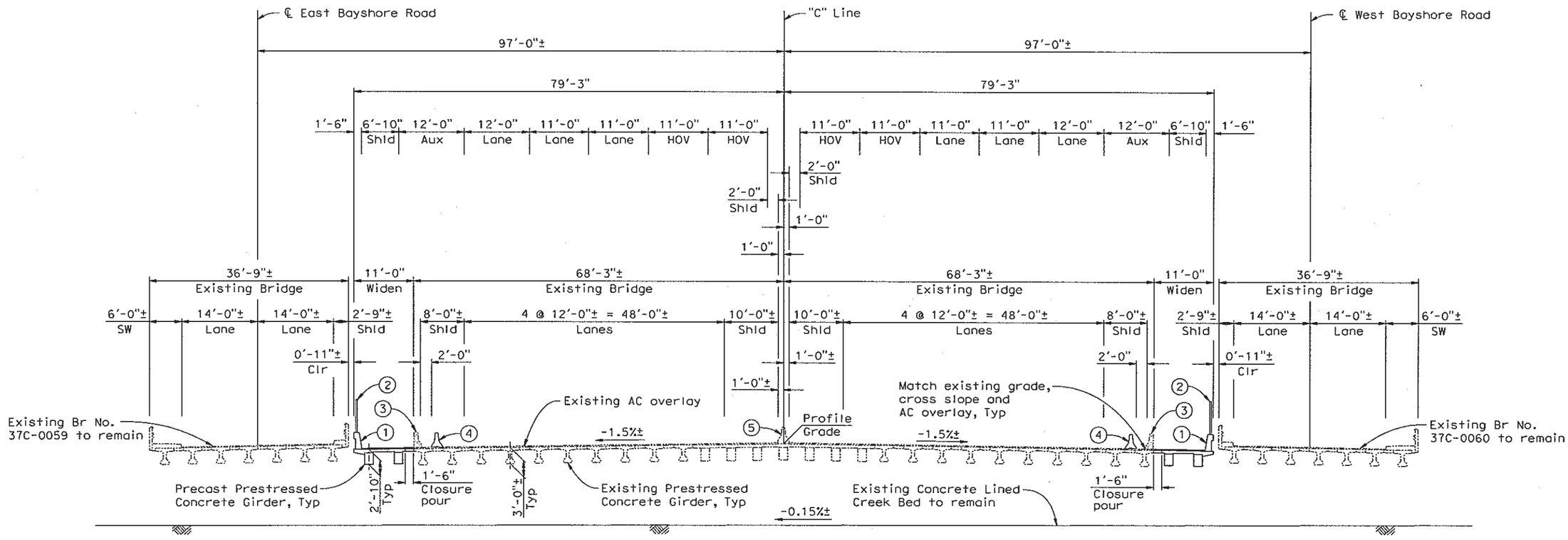
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Anthony Dubovik II No. C36372 Exp. 06/30/10 CIVIL STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

VALLEY TRANSPORTATION AUTHORITY
3331 N FIRST STREET
SAN JOSE, CA 95134

URS CORPORATION
1380 LEAD HILL BLVD, SUITE 100
ROSEVILLE, CA 95661-2997



TYPICAL SECTION

1"=10'-0"

NOTES:

1. Concrete Barrier (Type 736)
2. Chain Link Railing (Type 7)
3. Remove existing Concrete Barrier (Type 27R)
4. Temporary Railing (Type K), see "Road Plans"
5. Existing Concrete Barrier (Type 50A Modified)

LEGEND:

Indicates existing structure

Indicates bridge removal (portion)

FIGURE 2-2

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN OVERSIGHT	DESIGN	BY S. Landis	CHECKED
SIGN OFF DATE	DETAILS	BY L. Davis	CHECKED
	QUANTITIES	BY	CHECKED

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 37-0174
POST MILE 50.66

ADOBE CREEK BRIDGE (WIDEN)
GENERAL PLAN No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04
EA 4A3301

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY) 6-16-09 10-29-09

SHEET 2 OF 14

FILE => u:\Adobe\37-0174-a-ap02.dgn

USERNAME => Lynette_Davis PLOTTED => 10/29/2009 TIME PLOTTED => 1:26:45 PM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	48.97/52.17		

REGISTERED CIVIL ENGINEER DATE

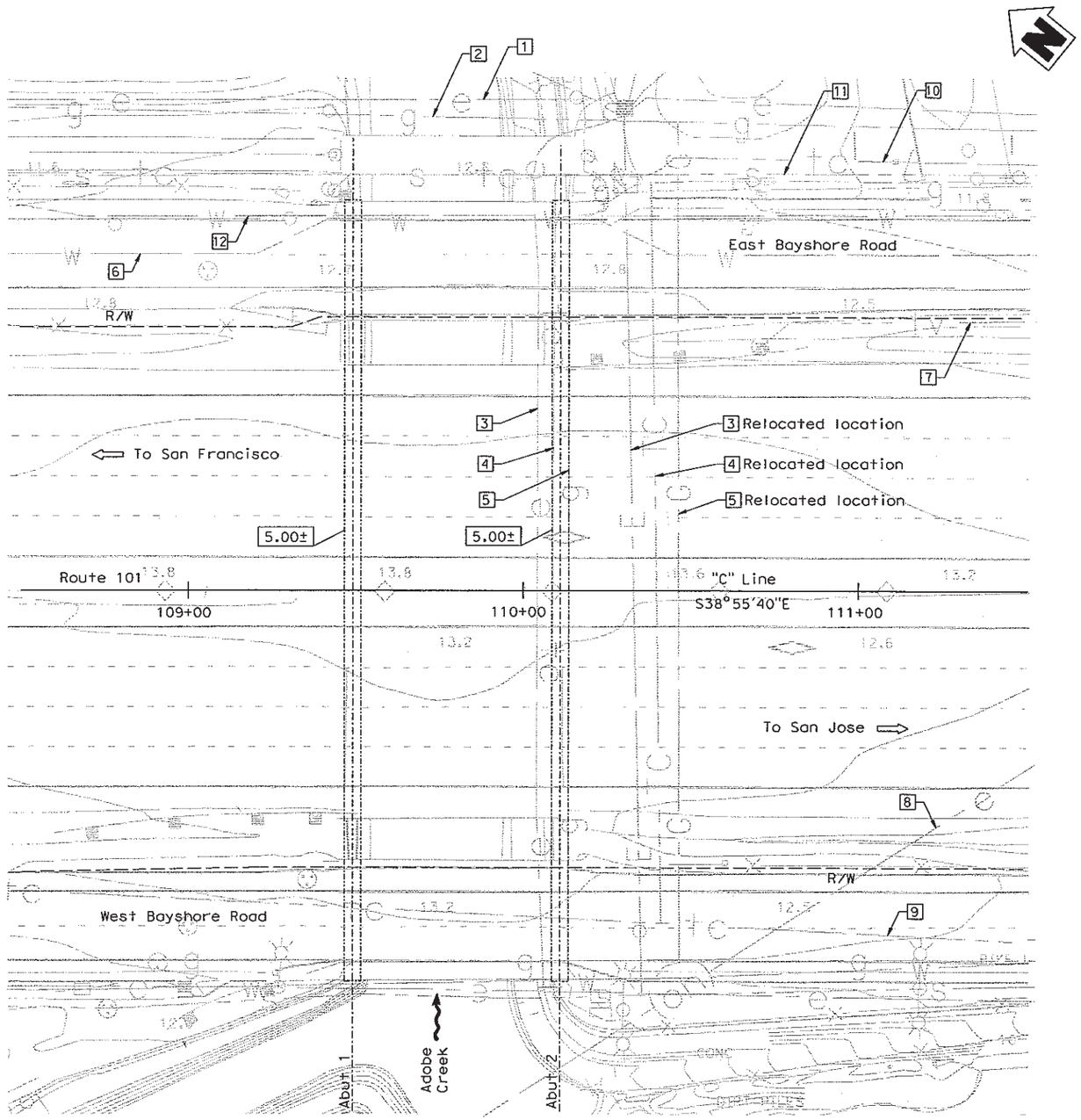
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Anthony Dubovik II No. C36372 Exp. 06/30/10 CIVIL STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

VALLEY TRANSPORTATION AUTHORITY
3331 N FIRST STREET
SAN JOSE, CA 95134

URS CORPORATION
1380 LEAD HILL BLVD, SUITE 100
ROSEVILLE, CA 95661-2997



PLAN

1"=20'-0"

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

LEGEND:

- Indicates existing structure
- Indicates direction of traffic
- Indicates direction of flow
- Indicates bottom of footing elevation

HYDROLOGIC SUMMARY

Drainage Area: 13.50 Square Miles

	Design Flood	Base Flood
Frequency (years)	50	100
Discharge (cubic feet/second)	1780	1780
Water Surface (elevation at bridge)	11.20	11.30

BENCH MARK

BENCH MARK	N	E	ELEV	DESCRIPTION
44	1985636.542	6094153.352	7.541	Mag nail & shiner - NB shoulder of US101 Approximately 0.5 miles south east from Embarcadero Road Overcrossing

SURVEY CONTROL
Horizontal control for this survey is based on the California Coordinate System, Zone II, US Survey feet, North American Datum of 1983 (NAD83), Epoch 2007.00.
Vertical control is the National American Vertical Datum of 1988 (NAVD88).

EXISTING UTILITIES

UTILITY	OWNER	DISPOSITION
1 15 kV Underground Electrical Conduit	City of Palo Alto	Protect in place
2 34" Steel Transmission Gas Line	PG&E	Protect in place
3 2-5" Underground 15 kV Electrical conduit	City of Palo Alto	To be relocated by CPA
4 3" Communication Line	City of Palo Alto	To be relocated by CPA
5 4" BMP Gas Line	City of Palo Alto	To be relocated by CPA
6 CMV Reclaimed Water Line	City of Palo Alto	Protect in place
7 Aerial Cable TV Line	Comcast	To be relocated by CPA & Comcast
8 60 kV Overhead Electrical Transmission Line	PG&E	Protect in place
9 2-4" HDPE Communication Line	Netlink	Protect in place
10 Underground Telecommunication	MCI	Protect in place
11 14" Asbestos Conduit Pipe Sanitary Sewer	City of Palo Alto	Protect in place
12 10" Asbestos Concrete Pipe Water Line	City of Palo Alto	Protect in place

FIGURE 2-3

GEOTECHNICAL PROFESSIONAL APPROVAL DATE

DESIGN OVERSIGHT

SIGN OFF DATE

SCALE:	VERT.DATUM	HORZ.DATUM
PHOTOGRAMMETRY AS OF:	ALIGNMENT TIES	
SURVEYED BY	DRAFTED BY	
FIELD CHECKED BY	CHECKED BY	

DESIGN	BY S. Landis	CHECKED
DETAILS	BY L. Davis	CHECKED
QUANTITIES	BY	CHECKED

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 37-0174
POST MILE 50.66

ADOBE CREEK BRIDGE (WIDEN)

FOUNDATION PLAN

FOUNDATION PLAN SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04
EA 4A3301

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY) 6-18-09 10-29-09

SHEET 4 OF 14

FILE => u:\Adobe\37-0174-e-fp101.dgn

USERNAME => Lynette_Dawne PLOTTED => 10/29/2009 TIME PLOTTED => 1:26:47 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	49.0/52.2		

REGISTERED CIVIL ENGINEER DATE

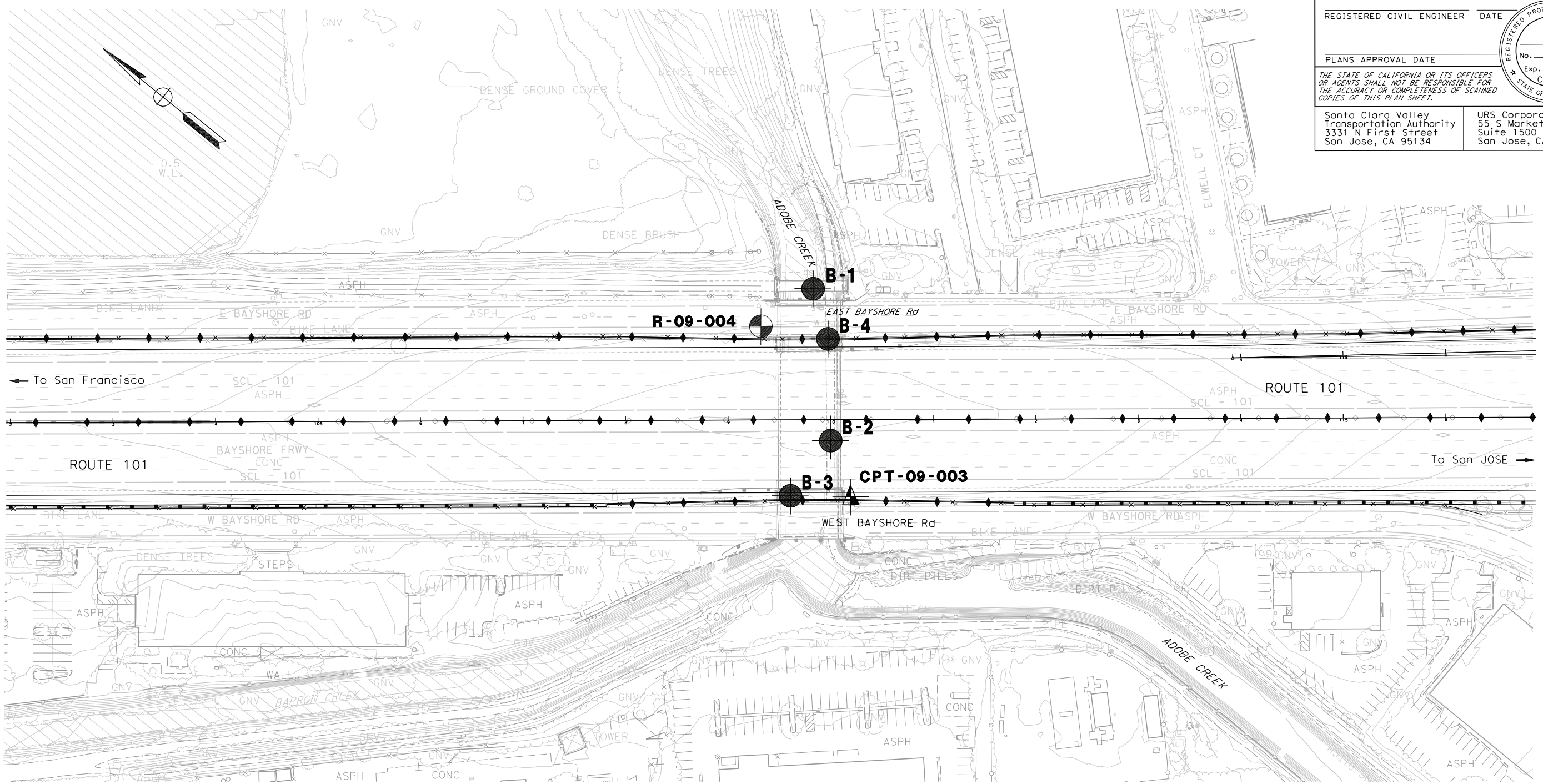
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

Santa Clara Valley Transportation Authority
3331 N First Street
San Jose, CA 95134

URS Corporation
55 S Market Street
Suite 1500
San Jose, CA, 95113



Borings for this study

CPT for this study

As-built Borings and Penetrometers

ADOBE CREEK BRIDGE (WIDEN)
BORINGS LOCATION PLAN
FIGURE 3-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 11/12/2009
TIME PLOTTED => 8:35:15 AM

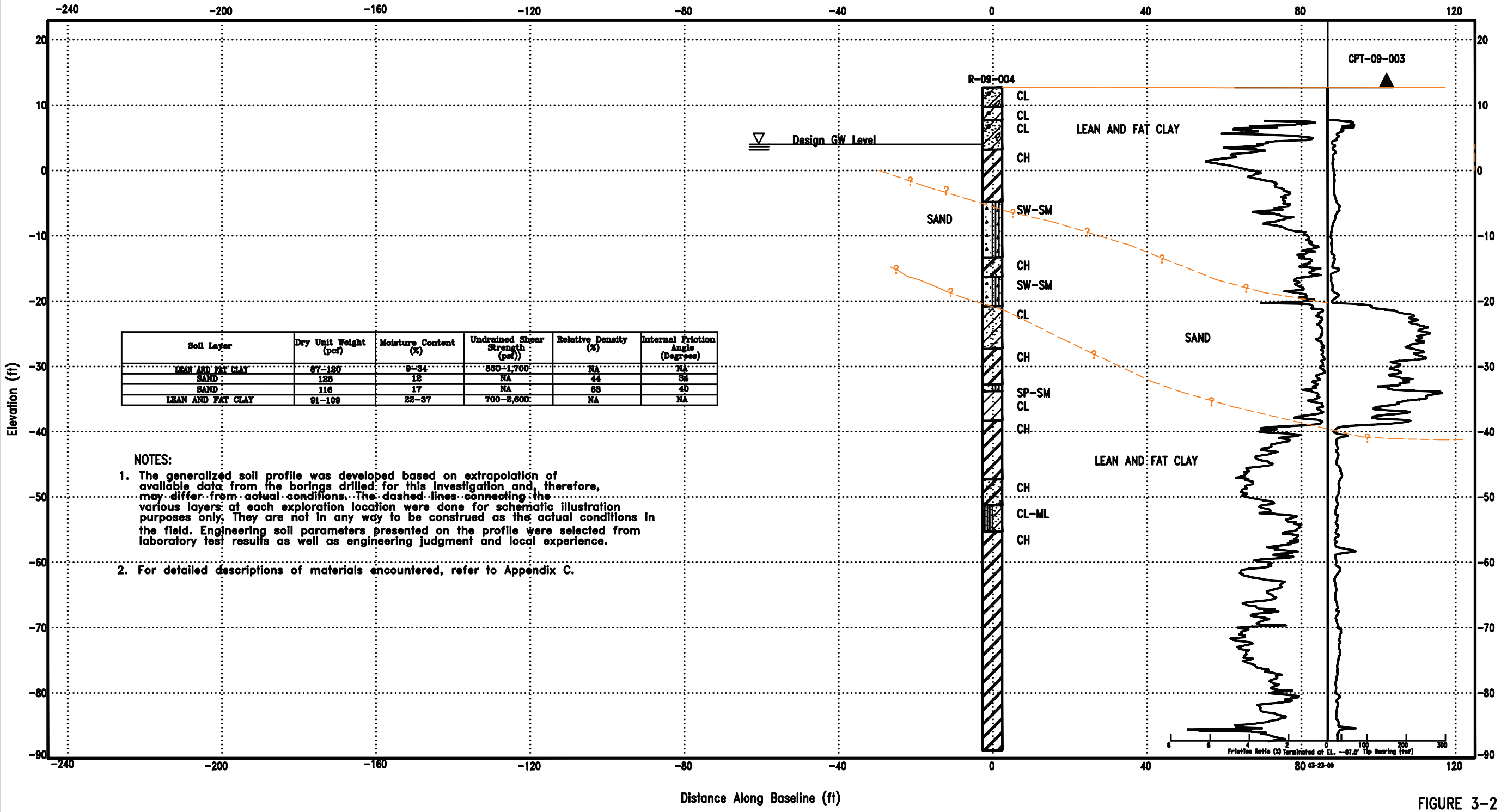
BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => madhu_thummaluru
DGN FILE => ...\Adobe\Site plan and Boring.dgn

CU 04235

EA 4A3301



Soil Layer	Dry Unit Weight (pcf)	Moisture Content (%)	Undrained Shear Strength (psf))	Relative Density (%)	Internal Friction Angle (Degrees)
LEAN AND FAT CLAY	87-120	9-34	650-1,700	NA	NA
SAND	126	12	NA	44	34
SAND	116	17	NA	63	40
LEAN AND FAT CLAY	91-109	22-37	700-2,600	NA	NA

NOTES:

1. The generalized soil profile was developed based on extrapolation of available data from the borings drilled for this investigation and, therefore, may differ from actual conditions. The dashed lines connecting the various layers at each exploration location were done for schematic illustration purposes only. They are not in any way to be construed as the actual conditions in the field. Engineering soil parameters presented on the profile were selected from laboratory test results as well as engineering judgment and local experience.

2. For detailed descriptions of materials encountered, refer to Appendix C.

FIGURE 3-2

URS Corporation – San Jose

Project No. 28649951

LITHOLOGY GRAPHICS

USCS Lean Clay with gravel
USCS Sandy Lean Clay with gravel
USCS Sandy Fat Clay
USCS Lean to Fat Clay (borderline CL/CH)
USCS Lean Clay
USCS Silty Sand
USCS Fat Clay
USCS Well-graded Sand with silt
USCS Fat Clay with sand
USCS Lean Clay with sand
USCS Poorly Graded Sand with silt
USCS Sandy Silty Clay

GENERALIZED SOIL PROFILE
ADOBE CREEK BRIDGE (WIDEN)
US 101 AUXILIARY LANES
SANTA CLARA, CALIFORNIA

SIMPLE FENCE - B SIZE 28649951-101_AUX-VTA.GPJ CT SACTO 110207.GDT 6/2/09

GEOTECHNICAL CONSULTANT SUBMITTAL REVIEW

DIVISION OF ENGINEERING SERVICES
GEOTECHNICAL SERVICES

[X] MR. EARL SEABERG, CHIEF, OSFP
[ ] MR. VONG TOAN, CHIEF, OSCM
Attention: Emil Vergara

DATE: September 29, 2008

FILE: 04 (District) SCL (County) 101 (Route) 49.0/52.2 (MP)

SUB CONSULTANT: URS
PRIME CONSULTANT: SCVTA
GENERAL PLAN DATED:
Report Date: 08/29/2008
Contract No.:
FDN PLAN DATED:

Structure Name: Adobe Creek Bridge
EA Number: 4A3300
Bridge Number: 37-0174

Submittal (*Check One*): [ ] 1st [ ] 2nd [ ] 3rd [ ] 4th [X] Other: APS

The following comments for the above referenced project are based on:

- Foundation Report dated August 20, 2008 for the proposed Adobe Creek Bride (37-0174) widening.

Adobe Creek Bridge (37-0174) Report

Section 2.3.1 – Page 3

- It is referred to three 2.5 inch penetration borings. This should be changed to Cone Penetration borings.
- It is referred to Figure 4 for the As Built boring logs. Figure 4 does not show these borings.

Section 3.3 – Page 3

- For California Seismic Hazard Map, a new version of 2008 is available now. The report should refer to this version rather than 1996. Any other sections referring to this map should be updated as well.

Section 3.3 – Page 12

- 14-inch Class 140 driven piles are recommended. Include the possible alternatives.

[ ] Special Funded Project (OSFP) [ ] Local Assistance Project (OSFP) [ ] OSCM Project

Approval: _____

OSFP/OSCM

Mohammad Zabolzadeh
Office of Geotechnical Design - West

cc: OGDx, Lab File Room (Sacramento) DES Specifications and Estimates (JStayton-4 copies) Structure Construction R.E. Pending File

Office of Special Funded Projects
Comment & Response Form

General Project Information	Review Phase		Reviewer Information
Dist: 04 EA: 4A3300 **Project Name: Adobe Creek Brdg.** **OSFP Liaison: Emil Vergara** **Phone: (916) 227-8360** **e-mail: emil_vergara@dot.ca.gov**	☐ PSR/PDS (Review No. _) ☐ APS/PSR (Review No. _) ☐ APS/PR (Review No. _) ☐ Type Selection	☐ 65% PS&E Unchecked Details ☐ PS&E (Review No. _) ☐ Construction Support ☒ Other: Draft Foundation	**Reviewer Name: M.Zabolzadeh** **Functional Unit: /M.Gaffeney OGDW** **Cost Center: 327** **Phone Number: (510) 286-4831** **e-mail: mohammad_zabolzadeh@dot.ca.gov** **Date of Review: 7-31-09**
	Structure Information (Use when necessary to document comments by individual structure) **Structure Name: Adobe Creek Bridge** **Br No: 37-0174**		

Consultant Information (to be filled in by Consultant)

Consultant Structure Lead (First and Last Name)	Structure Consultant Firm	Phone Number	e-mail	Response Date
_____	_____	_____	_____	_____

#	Doc. (See Note 1)	Page, Section, or SSP	Review Comments	Consultant Responses	✓
1	DFR	N/A	Draft Foundation Report (DFR) prepared by URS Consultants dated June 11, 2009. Second round review.	No comment.	
2	DFR	Page 3-2 Section3.1.2 Regional Tectonic Setting and Seismicity	The report states, *"…the closest fault to the site is the West branch of the Monte Visa Fault, located about 2.7 miles (4.5 km) southwest of the southern end of the project."* Figure 3.1 Active Faults in the Site Region shows the closest fault at approximately 5.5 miles from the site. URS is using the 1996 Caltrans Seismic Hazard Map (CSHM), which shows the Monte Vista/East Fault as the nearest active fault, and is located 3.5 miles southwest of the site. However, the 1996 map has been updated to the 2008 CSHM, which is based on the United States (USGS) and California Geological Survery (CGS) maps. The new CSHM has new faults added to the database.	Will revise Sections 3 and 5 of the Foundation Report based on the 2007 Caltrans Deterministic PGA Map.	

[1] Email correspondence from Hossain Salimi to Matthew Gaffney 7/16/2009.

Note 1: Abbreviations for Typical Documents (if Abbr. is not below, type in the document type)					
P=Structure Plans	SP=Special Provisions	FR=Foundation Rpt	DC=Design Calcs	TS=Type Sel. Report	QCC=Quant. Check Calcs
RP=Road Plans	E=Estimate	H=Hydraulics Rpt	CC=Check Calcs	QC=Quant. Calcs	

✓= Comment Resolved (for Reviewer's use)

			According to the new CSHM map, the Monte Vista/East has been renamed as the Cascade Fault (Mmax = 6.9, Reverse). The Department is still finalizing the new ARS curves, which will be based on the New Generation Attenuation Relationships. In the meantime, the consultant can go ahead and use the 2001 Seismic Design Criteria (SDC) ARS curves with the new governing fault(s) and distances as the input.[1]		
3	DFR	P 3-7 Section 3.3.5 Subsidence and Seismic Compaction	The report reads *"…compressible young Bay Mud soils are not encountered in the previous explorations and those for this study; therefore, the risk of subsidence at this site is low."* According to the boring log advance on March 23, 2009, between approximately 9 and 17 feet below ground surface stiff Fat Clay was encountered. The boring log states that *"…at15 ft…"* below ground surface the clay *"becomes stiff…"* this infers that the soil above was soft. Explain if the designation of stiff concluded with a pocket penetrometer or by blow counts. Verify if this is soft clay and is a compressible or non-compressible Bay Mud.	LOTB for Adobe Creek states that Fat Clay was medium stiff from 9.5 feet to 15 feet below ground surface and it becomes stiff at 15 feet. Soil consistency was based on unconfined compressive strength test results (UC=3,900 psf), which falls in the range of 2,000 to 4,000 psf (stiff). Consistency of clay deposits encountered below groundwater ranges from medium stiff to very stiff. Furthermore, no new fills are planned for the proposed bridge widening. Therefore, we believe the risk of subsidence at the site is low.	
4	DFR	P 7-1	Foundation Design Data, Foundation Design Loads, and Pile Data tables should be included in the report.	The current improvement strategy of Adobe Creek bridge is to utilize existing pile foundation to support the widened section. Therefore, no Foundation Design Data, Foundation Design Loads, and Pile Data tables are presented in the report.	
5	DFR	Fig 3-4	Soil profile shows the use of internal friction angle of 40^0 between the elevations of -5 and -22. Based on the LOTB for boring R-09-004 (Fig 3-3d), the SPT blow count is as low as 5 blows per foot. Internal friction angle of 40^0 appears to be too high.	Friction angle in the sand layer encountered in CPT-09-003 ranged from 36^0 to 42^0. Friction angle for sand with N=22 blows/ft (Elevation -7 ft) estimated using the formula in FHWA, NHI 2002 (adapted from Hatanakanta & Uchida, 1996) is $38^{0.}$ SPT blow counts	

Note 1: Abbreviations for Typical Documents (if Abbr. is not below, type in the document type)					
P=Structure Plans	SP=Special Provisions	FR=Foundation Rpt	DC=Design Calcs	TS=Type Sel. Report	QCC=Quant. Check Calcs
RP=Road Plans	E=Estimate	H=Hydraulics Rpt	CC=Check Calcs	QC=Quant. Calcs	

✓= Comment Resolved (for Reviewer's use)

			Revise, or explain your reasoning.	for the 2nd 6 inches of penetration is 4 blows (Elevation -14 ft). Last 6 inches of penetration was in the clay layer encountered below the sand layer with a blow count of Friction angle was calculated using N = 8 blows/ft to be 32^0. Therefore, friction angle for the sand layer will be revised to 34^0.	
6	DFR	N/A	C3-Not Approved, resubmit is required	Will comply and resubmit.	

Note 1: Abbreviations for Typical Documents (if Abbr. is not below, type in the document type)					
P=Structure Plans	SP=Special Provisions	FR=Foundation Rpt	DC=Design Calcs	TS=Type Sel. Report	QCC=Quant. Check Calcs
RP=Road Plans	E=Estimate	H=Hydraulics Rpt	CC=Check Calcs	QC=Quant. Calcs	

✓= Comment Resolved
(for Reviewer's use)

Office of Special Funded Projects
Comment & Response Form

General Project Information	Review Phase		Reviewer Information
Dist: 04 EA: 4A3301 **Project Name: Adobe Creek Bridge** **OSFP Liaison: Emil Vergara** **Phone: 916-227-8360** **e-mail: emil_vergara@dot.ca.gov**	☐ PSR/PDS (Review No.) ☐ APS/PSR (Review No.) ☐ APS/PR (Review No.) ☐ Type Selection	☐ 65% PS&E Unchecked Details ☐ PS&E (Review No.) ☐ Construction Support ☒ Other: Final Foundation Report	**Reviewer Name: M. Zabolzadeh** **Functional Unit: OGDW** **Cost Center: 327** **Phone Number: (510) 286-4831** **e-mail: mohammad zabolzadeh@dot.ca.gov** **Date of Review: 1/29/2010**
	Structure Information (Use when necessary to document comments by individual structure) **Structure Name: Adobe Creek Bridge** **Br No: 37-0174**		

Consultant Information (to be filled in by Consultant)

Consultant Structure Lead (First and Last Name)	Structure Consultant Firm	Phone Number	e-mail	Response Date

#	Doc. (See Note 1)	Page, Section, or SSP	Review Comments	Consultant Responses	✓
1	FR	N/A	Foundation Report (FR) prepared by URS Consultants dated November 23, 2009. Final review.		
2	FR	N/A	All our previous comments have been incorporated into the report. We do not have any more comment.		
3	FR	N/A	C1 – Approved as Submitted		

Note 1: Abbreviations for Typical Documents (if Abbr. is not below, type in the document type)					
P=Structure Plans	SP=Special Provisions	FR=Foundation Rpt	DC=Design Calcs	TS=Type Sel. Report	QCC=Quant. Check Calcs
RP=Road Plans	E=Estimate	H=Hydraulics Rpt	CC=Check Calcs	QC=Quant. Calcs	

✓= Comment Resolved
(for Reviewer's use)

FIELD EXPLORATION PROGRAM

The geotechnical field investigation consisted of one boring and one cone penetration test (CPT), extending to depths of 101.5 and 100 feet below the existing ground surface, respectively. The explorations were performed on March 22 and 23, 2009, by Pitcher Drilling CO, East Palo Alto, California (rotary wash boring), and Gregg Drilling and Testing, Inc. of Martinez, California (CPT).

The boring and CPT locations were carefully selected to obtain supplemental subsurface information to provide geotechnical design recommendations for the proposed structure while avoiding underground utilities and subsurface obstructions. Layout of the explorations was performed by representatives of URS, and exploration locations were checked for conflict with underground utilities by contacting Underground Service Alert (USA) Network. USA, in turn, alerted the various municipalities and utility companies that a subsurface investigation was to be conducted near their utilities.

After underground utility clearance, URS obtained permits from the Santa Clara Valley Water District, and coordinated with appropriate personnel to accommodate the required inspection during and following exploration at each location.

Rotary Wash Boring (R-09-004)

The rotary wash boring was drilled to provide the necessary information to evaluate the subsurface stratigraphy and to allow acquisition of high-quality soil samples for laboratory testing. The boring was drilled and sampled at the location indicated on the Site and Boring Location Plan, Figure 3-1. The boring was advanced to a depth of 101.5 feet below existing ground surface using a truck-mounted drill rig under the supervision of a URS engineer who maintained a record of all field activities, classified the soils encountered using the Unified Soil Classification System (USCS), and prepared a log of the boring.

The drilling operation proceeded carefully, with particular attention to potential interference with utilities or other buried structures. During drilling, both disturbed and undisturbed samples were obtained for identification and laboratory testing. Soil samples were generally obtained at 5-foot intervals and at changes in strata. Samples were obtained using an unlined split spoon sampler (SPT), having an outside diameter of 2 inches, and lined Modified California (MC) sampler, having an outside diameter of 2½ inches. A 140-pound hammer falling through a distance of 30 inches was used to drive the samplers. The blow count recorded on the boring logs adjacent to the sample depth is the number of blows required to drive the sampler for the final 1 foot of a maximum 18 inch drive. The Shelby Tube Sampler was used to obtain a relatively undisturbed sample of the clay fill. The Shelby Tube Sampler is a 3-inch diameter, 2.5 feet long steel thin-walled tube that is hydraulically pushed into the soil below the base of the borehole.

One of the objectives of the field investigation was to obtain high-quality undisturbed samples for laboratory testing. Effort was made to minimize sample disturbance during sample handling and transportation. After careful withdrawal from the ground, the sample was placed upright and the ends of the sample were cleaned of disturbed soil. If possible, pocket penetrometer tests were performed on the bottom end of cohesive soil samples. Both ends of the samples were covered with plastic caps, and carefully transported to URS' laboratory in San Jose.

Disposal of Cuttings

All drill cuttings and fluids generated during drilling of rotary wash boring were collected in drums for disposal in accordance with applicable local, state, and federal regulations.

Cone Penetration Test (CPT-09-003)

We also performed one CPT at the location shown on the Site and Boring Location Plan, Figure 3-1. The CPT was advanced to a depth of 100 feet below existing ground surface under the supervision of a URS representative.

The Cone Penetration Test (CPT) consists of pushing a cone-tipped probe into the soil while simultaneously recording the cone tip resistance and side friction resistance to penetration. The CPT was conducted in general accordance with ASTM specifications (ASTM D3441-79) using an electric cone penetrometer. The CPT equipment consists of a cone assembly mounted at the end of a series of hollow rods. A set of hydraulic rams is used to push the cone and rods into the soil while a continuous record of come and friction resistance versus depth is obtained in both analog and digital form at the ground surface. A specially designed all-wheel drive truck is used to transport and house the test equipment and to provide a 178 kN reaction to the thrust of the hydraulic rams.

The cone penetrometer assembly consists of a conical tip and a cylindrical friction sleeve. The conical tip has a 60-degree apex angle and a projected cross-sectional area of 15 cm^2. The cylindrical friction sleeve has a surface area of 225 cm^2. Both the conical tip and the cylindrical friction sleeve have outer diameters of 4.37 cm. The interior of the cone penetrometer is instrumented with strain gauges that allow simultaneous measurement of cone tip and friction sleeve resistance during penetration. Continuous electric signals from the strain gauges are transmitted by a cable in the sounding rods to analog and digital data recorders in the CPT truck.

Data obtained during a CPT consists of continuous stratigraphic information with close vertical resolution. Stratigraphic interpretation is based on relationships between cone tip resistance and friction resistance. The calculated friction ratio (CPT friction sleeve resistance divided by cone tip resistance) is used as an indicator of soil type. Granular soils typically have low friction ratios and high cone resistance, while cohesive or organic soils have high friction ratios and low cone resistance. These stratigraphic material categories form the basis for all subsequent calculations that utilize the CPT data. Soil interpretation presented on the CPT logs from this investigation was based on recent correlations developed by Robertson, 1986, presented on Figure B-1.

LABORATORY TESTING PROGRAM

A laboratory testing program was carried out to determine the index and engineering properties of the major subsurface strata encountered at the site. The laboratory testing program included conventional tests to confirm the existing information on the engineering characteristics of the major strata and to refine some of the engineering parameters. These tests were performed at the URS' laboratory.

This appendix briefly describes the testing program and procedures for the different types of tests, and then presents detailed test results.

Index Tests

Index tests were performed on both cohesive and cohesionless soil samples to aid in soil classification and in correlation with other engineering parameters. Index tests included Atterberg Limits, gradation analyses, moisture content and dry density determinations. Atterberg Limits tests were performed in accordance with ASTM D 4318. Particle analyses were performed in accordance with ASTM D 422. The moisture content tests were performed in accordance with ASTM D 2216. Dry density was determined in accordance with ASTM D 2937. The locations of these tests are indicated on the Logs of Test Borings adjacent to the appropriate sample depths. The results are summarized in Table B-1.

A plasticity chart graphically presenting the results of the Atterberg Limits tests is included on Figure B-2. Grain size distribution curves are presented graphically on Figure B-3.

Unconfined Compression Tests

Unconfined compression tests were performed on select cohesive soil samples to assist in determining shear strength parameters. These tests were performed in accordance with ASTM D 2166. The locations of these tests are indicated on the Logs of Test Borings adjacent to the appropriate sample depths. The results are summarized in Table B-1.

TABLE B-1
SUMMARY OF LABORATORY TEST RESULTS

Boring or Sample No.	Date Sampled	Station	Line	Distance from Line (feet)	Depth (feet)	Sieve Analysis Results (Percent Passing)												R-value	Atterberg Limits			Unconfined Compressive Strength (psf)	In-Place Conditions	
						%<1.5-in	%<1-in	%<3/4-in	%<1/2-in	%<3/8-in	%<#4	%<#8	%<#16	%<#30	%<#50	%<#100	%<#200		Liquid Limit	Plastic Limit	Plasticity Index		Water Content (%)	Dry Unit Weight (pcf)
R-09-004	23-Mar-09	109+32.5	"C"	Lt. 91.5	5																	1,740	9.1	120
R-09-004	23-Mar-09	109+32.5	"C"	Lt. 91.5	15																	3,390	33.8	87
R-09-004	23-Mar-09	109+32.5	"C"	Lt. 91.5	20	100	100	100	97	92	75	57	38	26	18	13	10						12.2	126
R-09-004	23-Mar-09	109+32.5	"C"	Lt. 91.5	30	100	100	100	100	100	98	87	64	44	24	12	9						16.7	116
R-09-004	23-Mar-09	109+32.5	"C"	Lt. 91.5	35																	2,510	26.1	97
R-09-004	23-Mar-09	109+32.5	"C"	Lt. 91.5	40																	1,450	36.8	89
R-09-004	23-Mar-09	109+32.5	"C"	Lt. 91.5	50																	2,460	31.1	91
R-09-004	23-Mar-09	109+32.5	"C"	Lt. 91.5	51																	1,860	31.0	90
R-09-004	23-Mar-09	109+32.5	"C"	Lt. 91.5	55														54	23	31	2,820	30.6	91
R-09-004	23-Mar-09	109+32.5	"C"	Lt. 91.5	60																	4,680	26.1	99
R-09-004	23-Mar-09	109+32.5	"C"	Lt. 91.5	65																	2,360	22.2	102
R-09-004	23-Mar-09	109+32.5	"C"	Lt. 91.5	70																	3,690	22.3	103
R-09-004	23-Mar-09	109+32.5	"C"	Lt. 91.5	75														55	24	31	3,280	28.9	94
R-09-004	23-Mar-09	109+32.5	"C"	Lt. 91.5	80																	1,500	30.8	91
R-09-004	23-Mar-09	109+32.5	"C"	Lt. 91.5	85																	2,490	29.2	92
R-09-004	23-Mar-09	109+32.5	"C"	Lt. 91.5	90																	2,830	27.2	94
R-09-004	23-Mar-09	109+32.5	"C"	Lt. 91.5	95	100	100	100	100	100	100	100	99.96	99.71	98.19	95.11	93.25					4,360	31.5	109

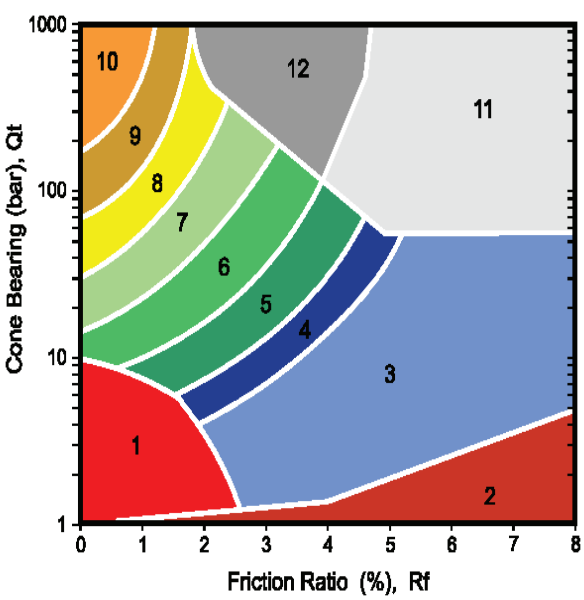
Cone Penetration Test Data & Interpretation

The Cone Penetration Test (CPT) data collected from your site are presented in graphical form in the attached report. The plots include interpreted Soil Behavior Type (SBT) based on the charts described by Robertson (1990). Typical plots display SBT based on the non-normalized charts of Robertson et al (1986). For CPT soundings extending greater than 50 feet, we recommend the use of the normalized charts of Robertson (1990) which can be displayed as SBTn, upon request. The report also includes spreadsheet output of computer calculations of basic interpretation in terms of SBT and SBTn and various geotechnical parameters using current published correlations based on the comprehensive review by Lunne, Robertson and Powell (1997), as well as recent updates by Professor Robertson. The interpretations are presented only as a guide for geotechnical use and should be carefully reviewed. Gregg Drilling & Testing Inc. do not warranty the correctness or the applicability of any of the geotechnical parameters interpreted by the software and do not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used in the software.

Some interpretation methods require input of the groundwater level to calculate vertical effective stress. An estimate of the in-situ groundwater level has been made based on field observations and/or CPT results, but should be verified by the user.

A summary of locations and depths is available in Table 1. Note that all penetration depths referenced in the data are with respect to the existing ground surface.

Note that it is not always possible to clearly identify a soil type based solely on q_t, f_s, and u_2. In these situations, experience, judgment, and an assessment of the pore pressure dissipation data should be used to infer the correct soil behavior type.



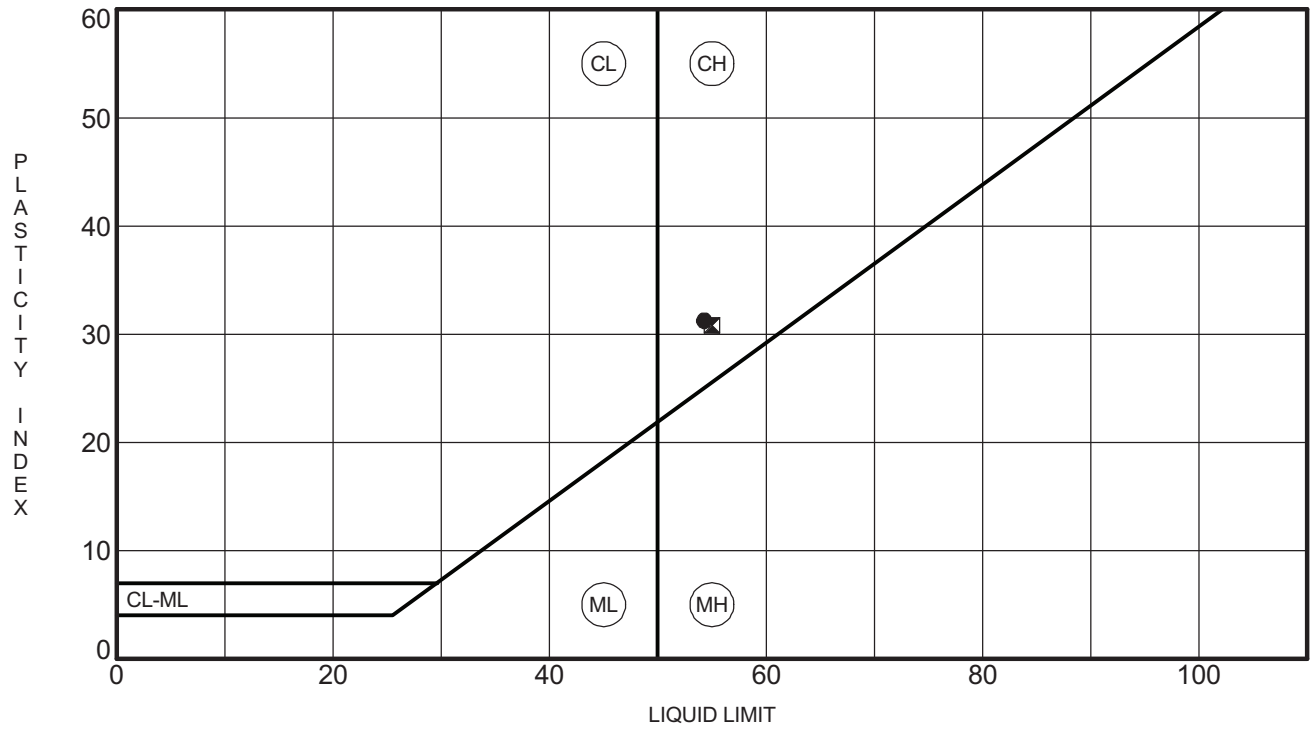
(After Robertson, et al., 1986)

ZONE		SBT
1		Sensitive, fine grained
2		Organic materials
3		Clay
4		Silty clay to clay
5		Clayey silt to silty clay
6		Sandy silt to clayey silt
7		Silty sand to sandy silt
8		Sand to silty sand
9		Sand
10		Gravely sand to sand
11		Very stiff fine grained*
12		Sand to clayey sand*

*over consolidated or cemented

Figure SBT

FIGURE B-1



	Specimen Identification		LL	PL	PI	Fines	Classification
●	**R-09-004**	**55.0**	**54**	**23**	**31**		**Fat CLAY (CH)**
⊠	**R-09-004**	**75.0**	**55**	**24**	**31**		**Fat CLAY (CH)**

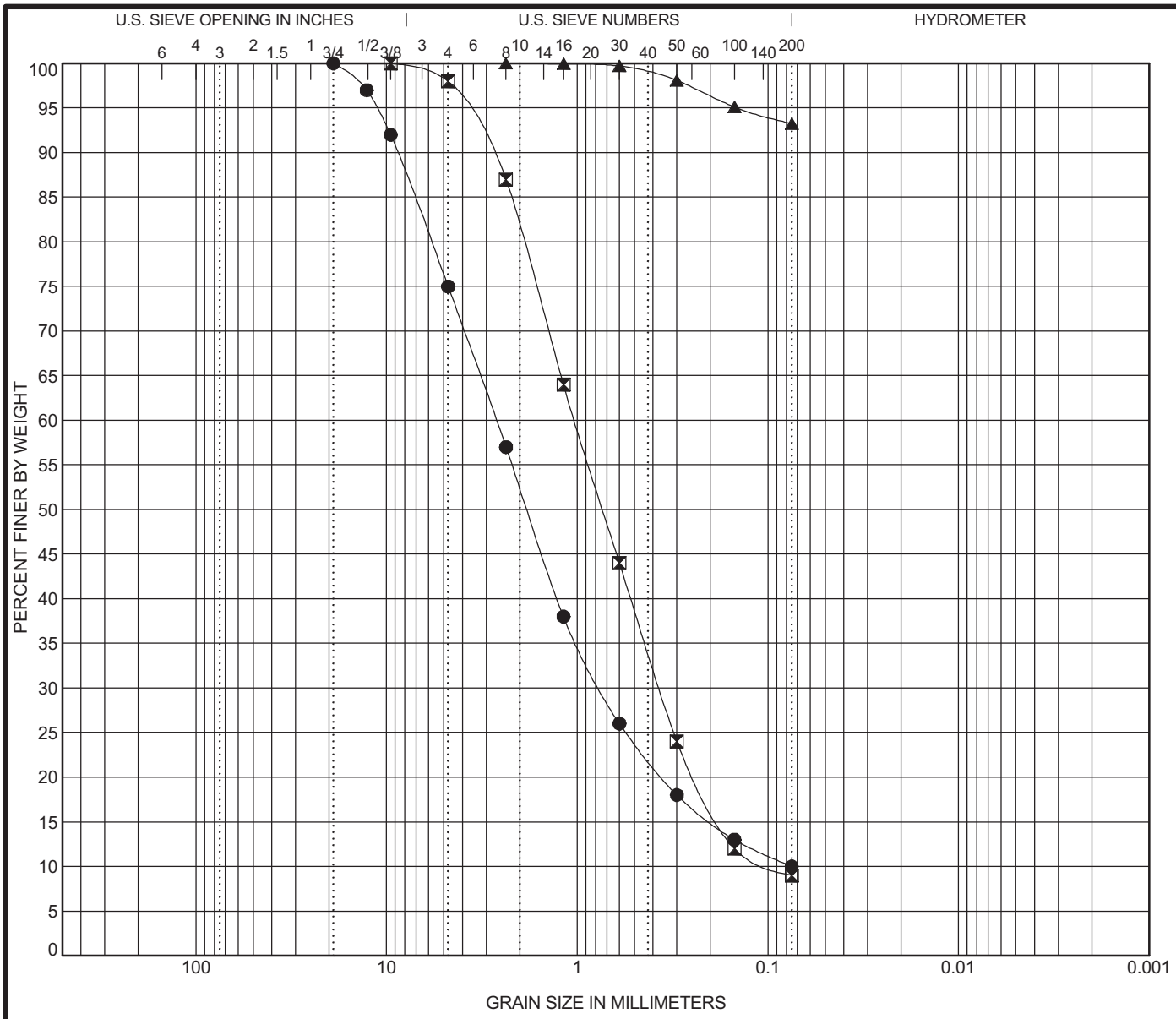
URS

55 S. Market St, Ste 1500
San Jose, CA 95113

ATTERBERG LIMITS' RESULTS

Project Name: 101 Auxillary Lane (URS 28649951)
Location: 04 Santa Clara 101
Number: 4A-330

FIGURE B-2



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Specimen Identification		Classification	LL	PL	PI	Cc	Cu
●	R-09-004	20.0	**Well-graded SAND (SW-SC) with clay and gravel**				**2.84**	**35.36**
⊠	R-09-004	30.0	**Well-graded SAND (SW-SM) with silt**				**1.40**	**10.91**
▲	R-09-004	95.0	**Fat CLAY (CH)**					

	Specimen Identification		D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	R-09-004	20.0	**19**	**2.652**	**0.752**	**0.075**	**25.0**	**65.0**	**10.0**	
⊠	R-09-004	30.0	**9.5**	**1.031**	**0.369**	**0.094**	**2.0**	**89.0**	**9.0**	
▲	R-09-004	95.0	**2.36**				**0.0**	**6.8**	**93.3**	

URS

55 S. Market St, Ste 1500
San Jose, CA 95113

GRAIN SIZE DISTRIBUTION

Project Name: 101 Auxillary Lane (URS 28649951)
Location: 04 Santa Clara 101
Number: 4A-330

FIGURE B-3

URS GRAIN SIZE 28649951-101 AUX-VTA.GPJ CT SACTO 061407.GDT 6/9/09

Cone Penetration Testing Procedure (CPT)

Gregg Drilling carries out all Cone Penetration Tests (CPT) using an integrated electronic cone system, *Figure CPT*. The soundings were conducted using a 20 ton capacity cone with a tip area of 15 cm^2 and a friction sleeve area of 225 cm^2. The cone is designed with an equal end area friction sleeve and a tip end area ratio of 0.80.

The cone takes measurements of cone bearing (q_c), sleeve friction (f_s) and penetration pore water pressure (u_2) at 5-cm intervals during penetration to provide a nearly continuous hydrogeologic log. CPT data reduction and interpretation is performed in real time facilitating on-site decision making. The above mentioned parameters are stored on disk for further analysis and reference. All CPT soundings are performed in accordance with revised (2002) ASTM standards (D 5778-95).

The cone also contains a porous filter element located directly behind the cone tip (u_2), *Figure CPT.* It consists of porous plastic and is 5.0mm thick. The filter element is used to obtain penetration pore pressure as the cone is advanced as well as Pore Pressure Dissipation Tests (PPDT's) during appropriate pauses in penetration. It should be noted that prior to penetration, the element is fully saturated with silicon oil under vacuum pressure to ensure accurate and fast dissipation.

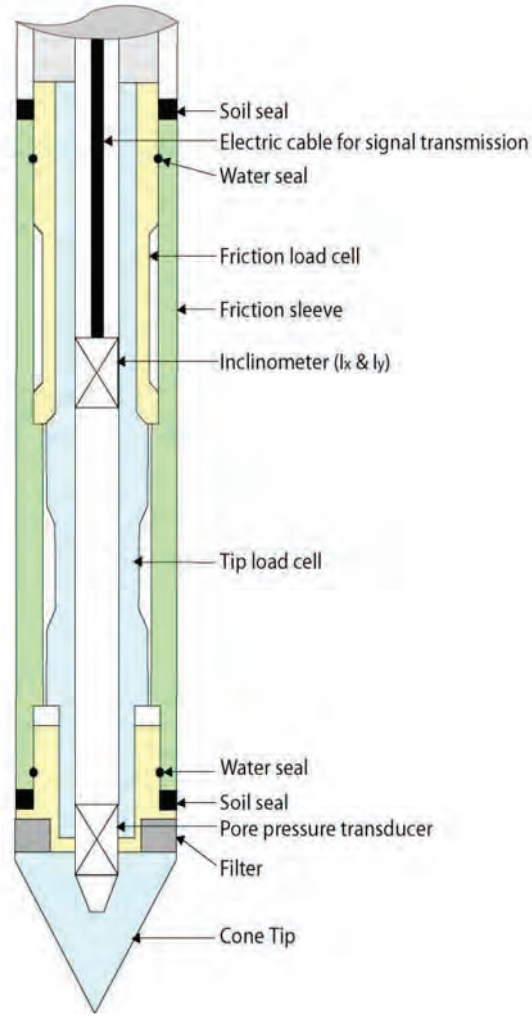


Figure CPT

When the soundings are complete, the test holes are grouted using a Gregg support rig. The grouting procedures generally consist of pushing a hollow CPT rod with a "knock out" plug to the termination depth of the test hole. Grout is then pumped under pressure as the tremie pipe is pulled from the hole. Disruption or further contamination to the site is therefore minimized.

Pore Pressure Dissipation Tests (PPDT)

Pore Pressure Dissipation Tests (PPDT's) conducted at various intervals measured hydrostatic water pressures and determined the approximate depth of the ground water table. A PPDT is conducted when the cone is halted at specific intervals determined by the field representative. The variation of the penetration pore pressure (u) with time is measured behind the tip of the cone and recorded by a computer system.

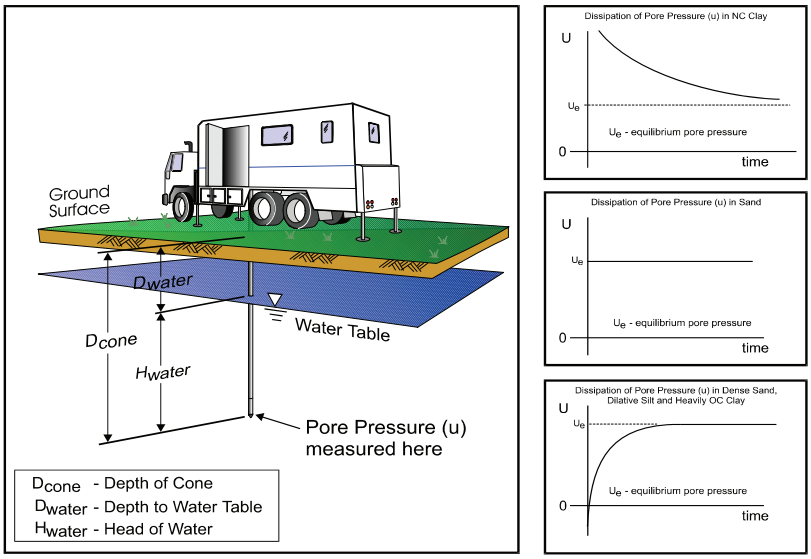
Pore pressure dissipation data can be interpreted to provide estimates of:

- Equilibrium piezometric pressure
- Phreatic Surface
- In situ horizontal coefficient of consolidation (c_h)
- In situ horizontal coefficient of permeability (k_h)

In order to correctly interpret the equilibrium piezometric pressure and/or the phreatic surface, the pore pressure must be monitored until such time as there is no variation in pore pressure with time, *Figure PPDT*. This time is commonly referred to as t_{100}, the point at which 100% of the excess pore pressure has dissipated.

A complete reference on pore pressure dissipation tests is presented by Robertson et al. 1992.

A summary of the pore pressure dissipation tests is summarized in Table 1.



Water Table Calculation

$$D_{water} = D_{cone} - H_{water}$$

where $H_{water} = U_e$ (depth units)

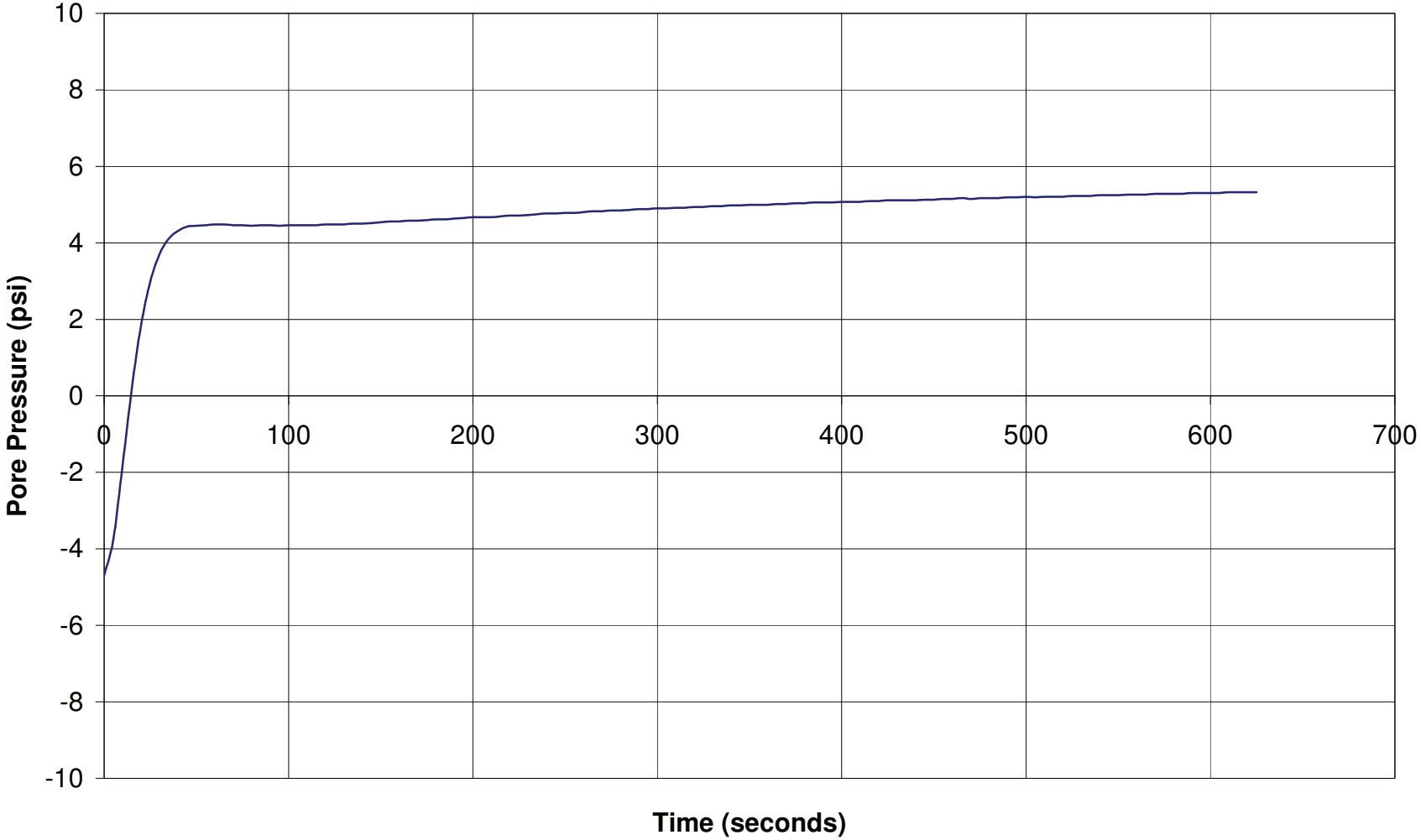
Useful Conversion Factors:
1psi = 0.704m = 2.31 feet (water)
1tsf = 0.958 bar = 13.9 psi
1m = 3.28 feet

Figure PPDT

GREGG DRILLING & TESTING

Pore Pressure Dissipation Test

Sounding: CPT-09-003
Depth: 34.121
Site: 101 AUX LANE
Engineer: C.RAMBO



DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	49.0/52.2		

GEOTECHNICAL PROFESSIONAL DATE

PLANS APPROVAL DATE

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

REGISTERED PROFESSIONAL ENGINEER Stephen Huang No. C 42289 EXP. 03/31/10 CIVIL STATE OF CALIFORNIA

SANTA CLARA VALLEY TRANSPORTATION AUTHORITY
3331 N FIRST STREET
SAN JOSE, CA 95134

URS Corporation
55 S Market Street
SUITE #1500
San Jose, CA 95113

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (JUNE 2007)

CEMENTATION

Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

CONSISTENCY OF COHESIVE SOILS

Description	Unconfined Compressive Strength (tsf)	Pocket Penetrometer Measurement (tsf)	Torvane Measurement (tsf)	Field Approximation
Very Soft	< 0.25	< 0.25	< 0.12	Easily penetrated several inches by fist
Soft	0.25 to 0.50	0.25 to 0.50	0.12 to 0.25	Easily penetrated several inches by thumb
Medium Stiff	0.50 to 1.0	0.50 to 1.0	0.25 to 0.50	Penetrated several inches by thumb with moderate effort
Stiff	1 to 2	1 to 2	0.50 to 1.0	Readily indented by thumb but penetrated only with great effort
Very Stiff	2 to 4	2 to 4	1.0 to 2.0	Readily indented by thumbnail
Hard	> 4.0	> 4.0	> 2.0	Indented by thumbnail with difficulty

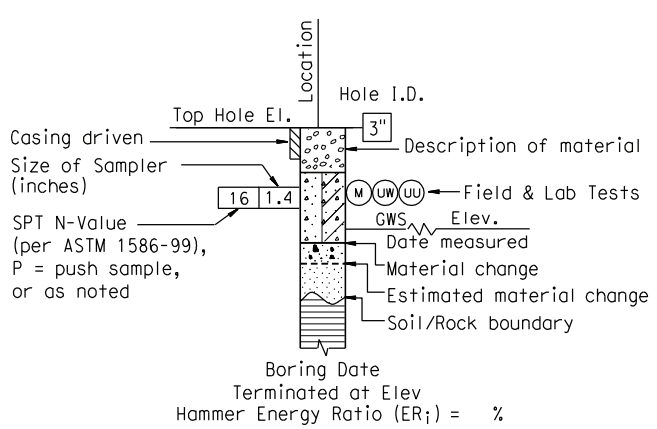
BOREHOLE IDENTIFICATION

Symbol	Hole Type	Description
Size	A	Auger Boring
Size	R P	Rotary drilled boring Rotary percussion boring (air)
Size	R	Rotary drilled diamond core
Size	HD HA	Hand driven (1-inch soil tube) Hand Auger
●	D	Dynamic Cone Penetration Boring
▲	CPT	Cone Penetration Test (ASTM D 5778-95)
⬚	O	Other

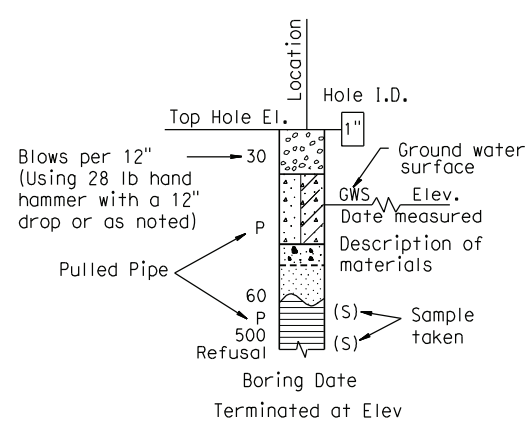
Note: Size in inches.

PLASTICITY OF FINE-GRAINED SOILS

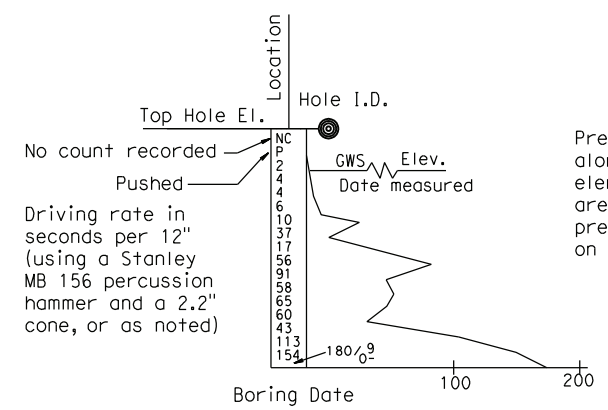
Description	Criteria
Nonplastic	A 1/8-inch thread cannot be rolled at any water content.
Low	The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.



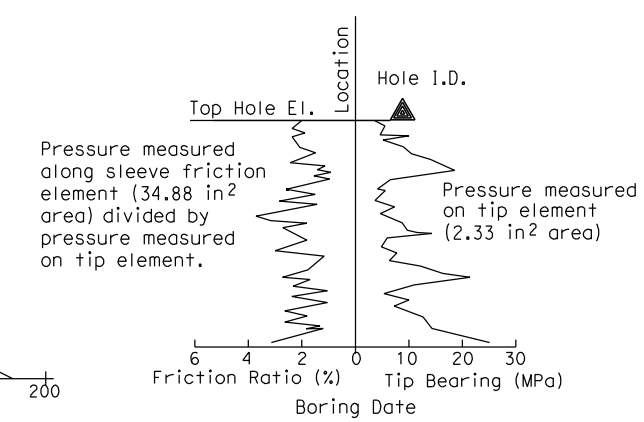
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) SOUNDING

DESIGN OVERSIGHT	DRAWN BY	A. CHEUNG	M. SELVENDRAN FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	PROJECT ENGINEER
SIGN OFF DATE	CHECKED BY	S. HUANG	DATE: 03/23/09		

BRIDGE NO. 37-0174
POST MILES 50.66

ADOBE CREEK BRIDGE (WIDEN)
LOG OF TEST BORINGS (1 OF 5)

OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04235
EA 4A3301

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES | SHEET | OF

FILE => ...\37-0174-z-1tb01.dgn

USERNAME => madhu_thurdas DATE PLOTTED => 11/12/2009 TIME PLOTTED => 8:47:27 AM

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (JUNE 2007)

GROUP SYMBOLS AND NAMES

Graphic/Symbol	Group Names
GW	Well-graded GRAVEL Well-graded GRAVEL with SAND
GP	Poorly graded GRAVEL Poorly graded GRAVEL with SAND
GW-GM	Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND
GW-GC	Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)
GP-GM	Poorly graded GRAVEL with SILT Poorly graded GRAVEL with SILT and SAND
GP-GC	Poorly graded GRAVEL with CLAY (or SILTY CLAY) Poorly graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)
GM	SILTY GRAVEL SILTY GRAVEL with SAND
GC	CLAYEY GRAVEL CLAYEY GRAVEL with SAND
GC-GM	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND
SW	Well-graded SAND Well-graded SAND with GRAVEL
SP	Poorly graded SAND Poorly graded SAND with GRAVEL
SW-SM	Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL
SW-SC	Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)
SP-SM	Poorly graded SAND with SILT Poorly graded SAND with SILT and GRAVEL
SP-SC	Poorly graded SAND with CLAY (or SILTY CLAY) Poorly graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)
SM	SILTY SAND SILTY SAND with GRAVEL
SC	CLAYEY SAND CLAYEY SAND with GRAVEL
SC-SM	SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL
PT	PEAT
	COBBLES COBBLES and BOULDERS BOULDERS

Graphic/Symbol	Group Names
CL	Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
CL-ML	SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
ML	SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
OL	ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
OL	ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
CH	Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
MH	Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
OH	ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
OH	ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY ORGANIC elastic SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
OL/OH	ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND

FIELD AND LABORATORY TESTING

- (C) Consolidation (ASTM D 2435)
- (CL) Collapse Potential (ASTM D 5333)
- (CP) Compaction Curve (CTM 216)
- (CR) Corrosivity Testing (CTM 643, CTM 422, CTM 417)
- (CU) Consolidated Undrained Triaxial (ASTM D 4767)
- (DS) Direct Shear (ASTM D 3080)
- (EI) Expansion Index (ASTM D 4829)
- (M) Moisture Content (ASTM D 2216)
- (OC) Organic Content-% (ASTM D 2974)
- (P) Permeability (CTM 220)
- (PA) Particle Size Analysis (ASTM D 422)
- (PI) Plasticity Index (AASHTO T 90) Liquid Limit (AASHTO T 89)
- (PL) Point Load Index (ASTM D 5731)
- (PM) Pressure Meter
- (PP) Pocket Penetrometer
- (R) R-Value (CTM 301)
- (SE) Sand Equivalent (CTM 217)
- (SG) Specific Gravity (AASHTO T 100)
- (SL) Shrinkage Limit (ASTM D 427)
- (SW) Swell Potential (ASTM D 4546)
- (TV) Pocket Torvane
- (UC) Unconfined Compression-Soil (ASTM D 2166) Unconfined Compression-Rock (ASTM D 2938)
- (UU) Unconsolidated Undrained Triaxial (ASTM D 2850)
- (UW) Unit Weight (ASTM D 4767)
- (VS) Vane Shear (AASHTO T 223)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	49.0/52.2		

GEOTECHNICAL PROFESSIONAL DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Stephen Huang No. C 42289 Exp. 03/31/10 CIVIL STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

SANTA CLARA VALLEY TRANSPORTATION AUTHORITY
3331 N FIRST STREET
SAN JOSE, CA 95134

URS Corporation
55 S Market Street
SUITE #1500
San Jose, CA 95113

APPARENT DENSITY OF COHESIONLESS SOILS

Description	SPT N_{60} (Blows / 12 inches)
Very loose	0 - 4
Loose	5 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	> 50

MOISTURE

Description	Criteria
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

PERCENT OR PROPORTION OF SOILS

Description	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

PARTICLE SIZE

Description		Size
Boulder		> 12"
Cobble		3" to 12"
Gravel	Coarse	3/4" to 3"
	Fine	No. 4 to 3/4"
Sand	Coarse	No. 10 to No. 4
	Medium	No. 40 to No. 10
	Fine	No. 200 to No. 40

DESIGN OVERSIGHT

SIGN OFF DATE

DRAWN BY A. CHEUNG

CHECKED BY S. HUANG

M. SELVENDRAN
FIELD INVESTIGATION BY:
DATE: 03/23/09

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

PROJECT ENGINEER

BRIDGE NO. 37-0174
POST MILES 50.66

ADOBE CREEK BRIDGE (WIDEN)
LOG OF TEST BORINGS (2 OF 5)

CU 04235
EA 4A3301

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES | SHEET | OF

OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

FILE => ...\37-0174-z-11tb02.dgn

USERNAME => mcadhu_thu(0ACEUR) PLOTTED => 11/12/2009 TIME PLOTTED => 8:51:04 AM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	49.0/52.2		

GEOTECHNICAL PROFESSIONAL DATE

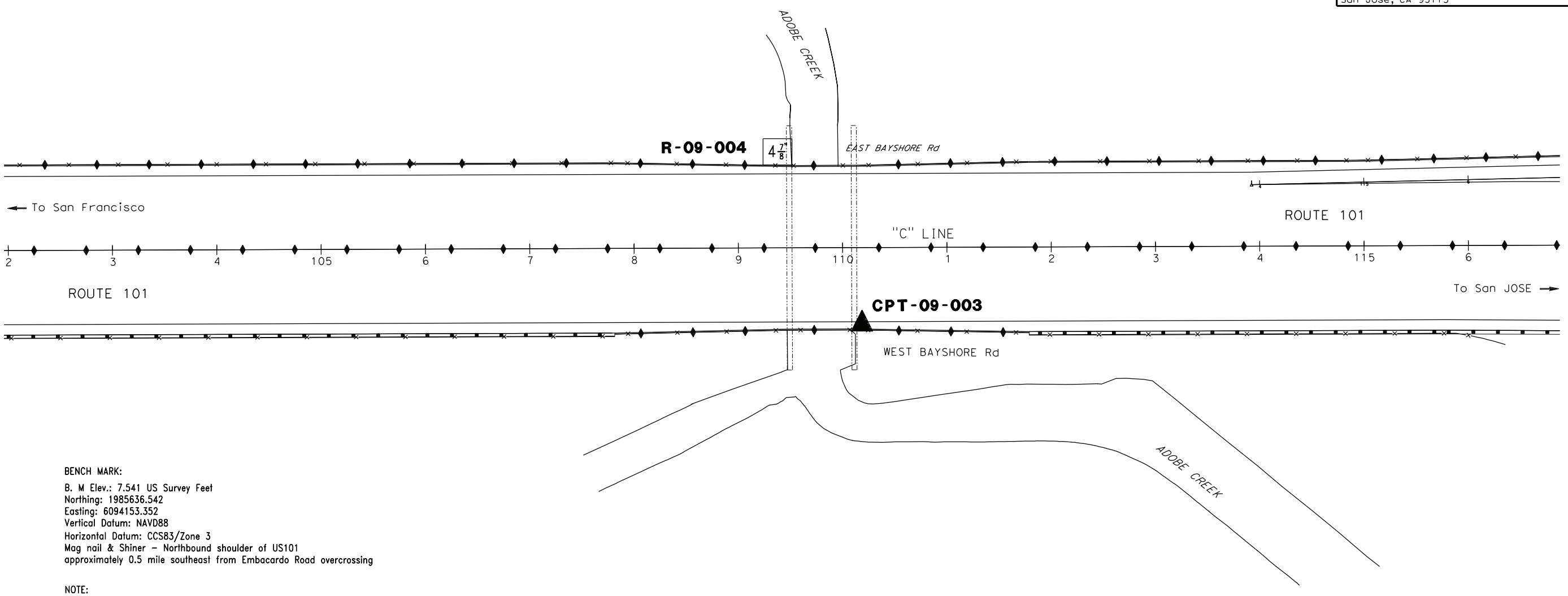
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Stephen Huang No. C 42289 Exp. 03/31/10 CIVIL STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

SANTA CLARA VALLEY TRANSPORTATION AUTHORITY
3331 N FIRST STREET
SAN JOSE, CA 95134

URS Corporation
55 S Market Street
SUITE #1500
San Jose, CA 95113



BENCH MARK:

B. M Elev.: 7.541 US Survey Feet
Northing: 1985636.542
Easting: 6094153.352
Vertical Datum: NAVD88
Horizontal Datum: CCS83/Zone 3
Mag nail & Shiner – Northbound shoulder of US101
approximately 0.5 mile southeast from Embacardo Road overcrossing

NOTE:

1. This LOTB sheet was prepared in accordance with the caltrans soil and Rock logging, Classification, and Presentation Manual (June 2007)
2. Groundwater depth was not measured; dry to 9 feet before switching auger to rotarywash method.
3. Design groundwater level at Elev. 4 ft.

SCALE 1":50'

DESIGN OVERSIGHT

SIGN OFF DATE

DRAWN BY A. CHEUNG

CHECKED BY S. HUANG

M. SELVENDRAN
FIELD INVESTIGATION BY:
DATE: 03/23/09

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

PROJECT ENGINEER

BRIDGE NO. 37-0174
POST MILES 50.66

ADOBE CREEK BRIDGE (WIDEN)
LOG OF TEST BORINGS (3 OF 5)

OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

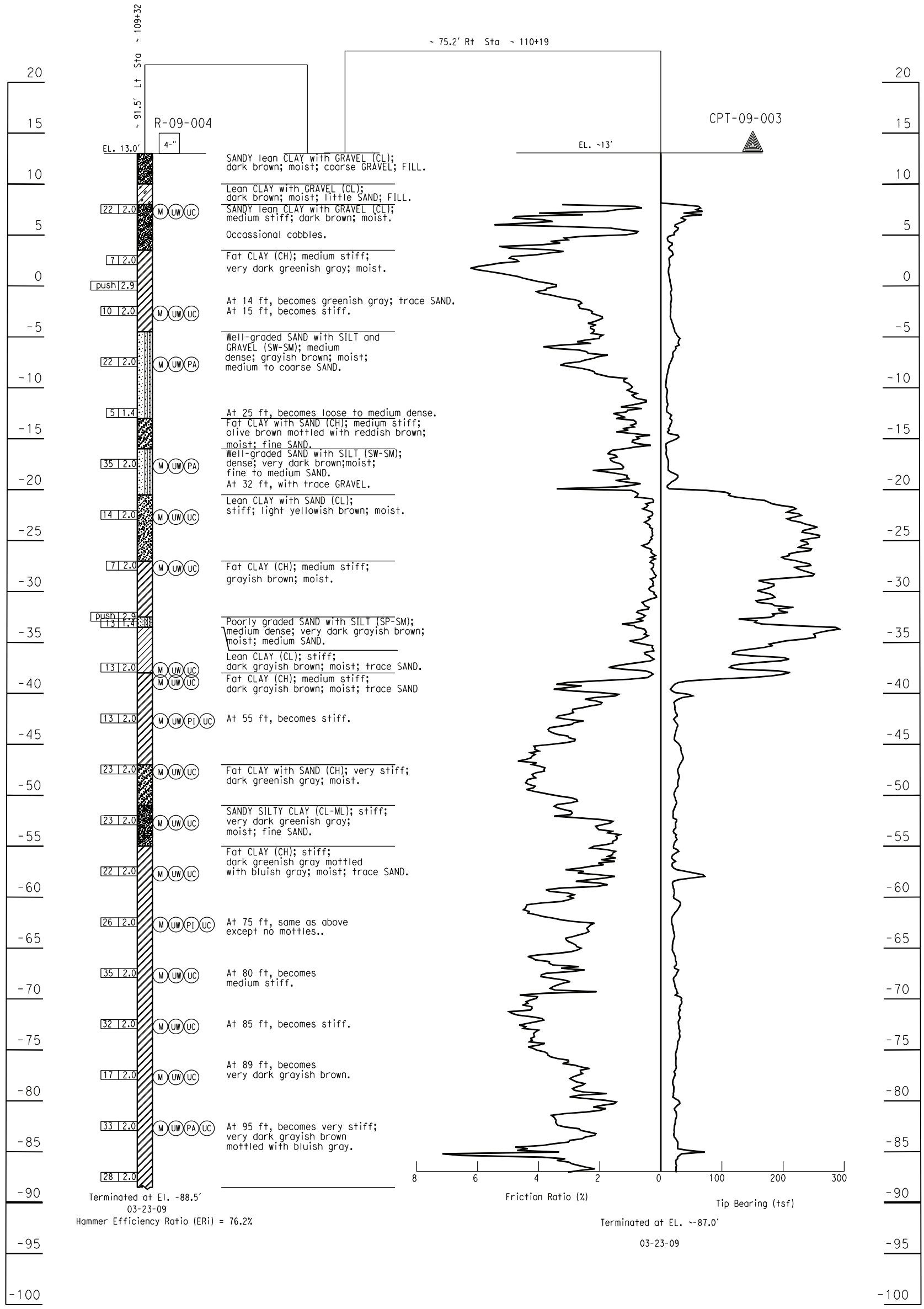
CU 04235
EA 4A3301

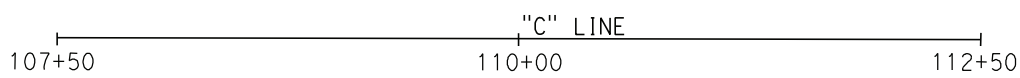
DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES | SHEET | OF

FILE => ...\37-0174-z-11tb03.dgn

USERNAME => madhu_thu\DATE/TIME PLOTTED => 11/12/2009 TIME PLOTTED => 8:52:40 AM





BENCH MARK:

B. M Elev.: 7.541 US Survey Feet
Northing: 1985636.542
Easting: 6094153.352
Vertical Datum: NAVD88
Horizontal Datum: CCS83/Zone 3
Mag nail & Shiner - Northbound shoulder of US101
approximately 0.5 mile southeast from Embacardo Road overcrossing

NOTE:

1. This LOTB sheet was prepared in accordance with the caltrans soil and Rock logging, Classification, and Presentation Manual (June 2007)
2. Groundwater depth was not measured; dry to 9 feet before switching auger to rotarywash method.
3. Design groundwater level at Elev. 4 ft.

PROFILE
HOR. 1"=50'
VER. 1"=5'

GEOTECHNICAL PROFESSIONAL DATE

PLANS APPROVAL DATE

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

REGISTERED PROFESSIONAL ENGINEER
Stephen Huang
No. C 42289
Exp. 03/31/10
CIVIL
STATE OF CALIFORNIA

SANTA CLARA VALLEY TRANSPORTATION AUTHORITY
3331 N FIRST STREET
SAN JOSE, CA 95134

URS Corporation
55 S Market Street
SUITE #1500
San Jose, CA 95113

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	49.0/52.2		

DESIGN OVERSIGHT
SIGN OFF DATE
CHECKED BY S. HUANG
DRAWN BY A. CHEUNG
FIELD INVESTIGATION BY: M. SELVENDRAN
DATE: 03/23/09

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

PROJECT ENGINEER

BRIDGE NO. 37-0174
POST MILES 50.66

ADOBE CREEK BRIDGE (WIDEN)
LOG OF TEST BORINGS (4 OF 5)

CU 04235
EA 4A3301

OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES SHEET OF

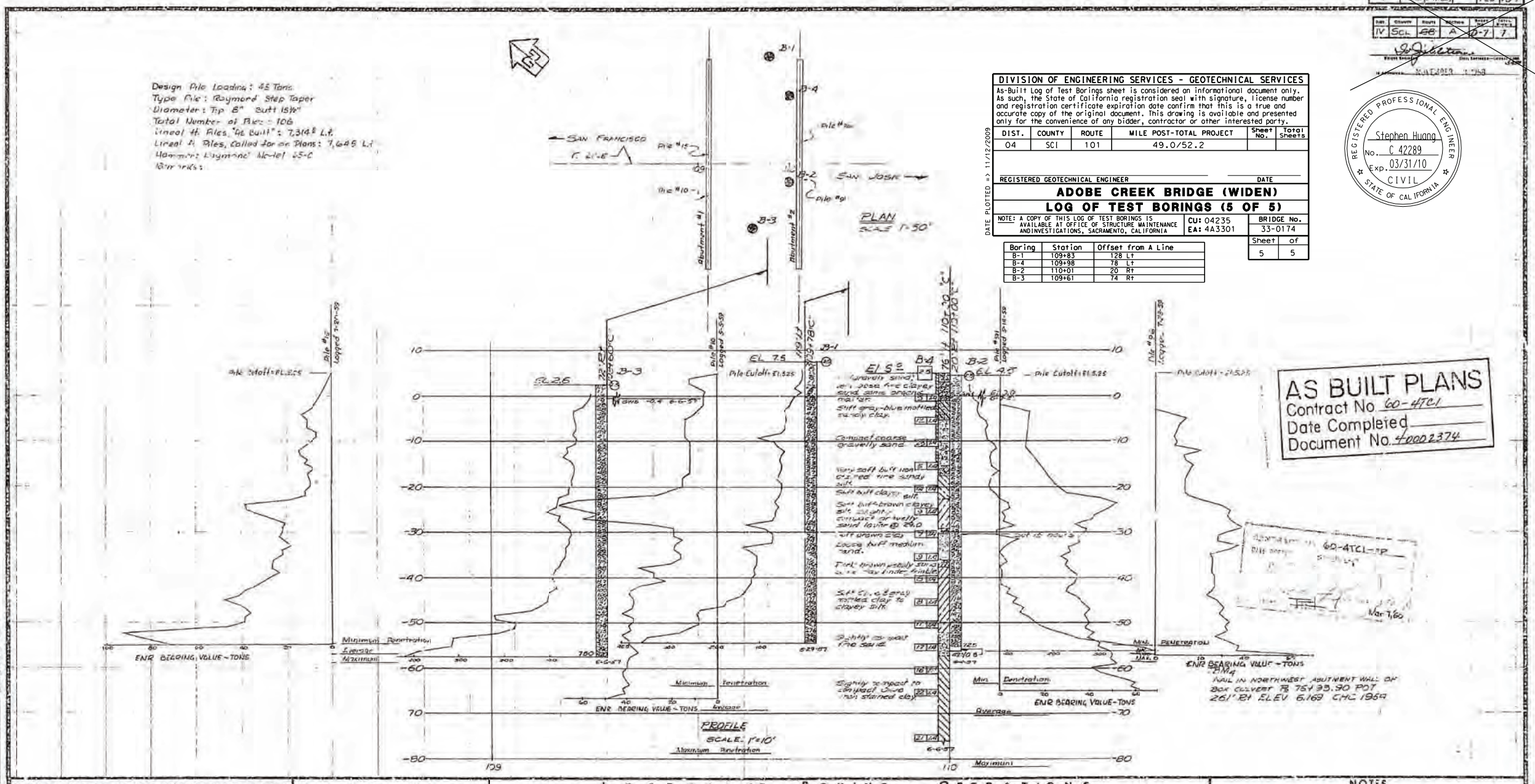
FILE => ...\37-0174-z-ltb04.dgn

USERNAME => madhu_thumati DATE PLOTTED => 11/12/2009 TIME PLOTTED => 8:54:05 AM

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FUNDS YEAR	SHEET NO.	TOTAL SHEETS
7	CAL	U-1(163)		123	154

DIST.	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
IV	SCL	88	A	0-7	7

Design Pile Loading: 45 Tons
Type Pile: Raymond Step Taper
Diameter: Tip 8" Butt 15¼"
Total Number of Piles - 106
Lineal ft. Piles "As Built": 7,314.8 L.f.
Lineal ft. Piles, Called for on Plans: 7,648 L.f.
Hammer: Raymond Model 25-C
Remarks:



DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES

As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.

DIST.	COUNTY	ROUTE	MILE POST-TOTAL PROJECT	Sheet No.	Total Sheets
04	SCI	101	49.0/52.2		

REGISTERED GEOTECHNICAL ENGINEER — DATE

ADOBE CREEK BRIDGE (WIDEN)

LOG OF TEST BORINGS (5 OF 5)

NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA

CU: 04235
EA: 4A3301

BRIDGE No. 33-0174

Sheet 5 of 5

DATE PLOTTED => 11/12/2009

Boring	Station	Offset from A Line
B-1	109+83	128 Lt
B-4	109+98	78 Lt
B-2	110+01	20 Rt
B-3	109+61	74 Rt

REGISTERED PROFESSIONAL ENGINEER
Stephen Huang
No. C 42289
Exp. 03/31/10
CIVIL
STATE OF CALIFORNIA

AS BUILT PLANS
Contract No. 60-4TC1
Date Completed
Document No. 40002374

60-4TC1-TP

BRIDGE DEPARTMENT

FIELD STUDY — BY: Paul 6-57
DRAWN — BY: Richard 6-57
CHECKED — BY: Robert 6-57
Approval Recommended by: [signature]

CLASSIFICATION OF MATERIAL BASED ON STANDARD GRADE SIZE LIMITS

DIAGRAM SHOWING THE LIMITS FOR ESTIMATES OF GRADE SIZE DISTRIBUTION USED IN DETERMINATION OF CLASS NAMES. IF GRAVEL IS PRESENT IN APPRECIABLE AMOUNTS THE TERM "GRAVELLY" MAY BE ADDED TO THE CLASS NAME, VIZ. "GRAVELLY SAND." THE TERMS "COARSE," "MEDIUM" AND "FINE" WHEN USED TO DESCRIBE SAND, SILT AND GRAVEL REFER TO STANDARD GRADE SIZE LIMITS.

SILT PERCENTAGES

LEGEND OF EARTH MATERIALS

- GRAVEL
- SAND
- SILT
- CLAY
- SANDY CLAY OR CLAYEY SAND
- SANDY SILT OR SILTY SAND
- SILTY CLAY OR CLAYEY SILT
- PEAT AND/OR ORGANIC MATTER
- FILL MATERIAL
- IGNEOUS ROCK
- SEDIMENTARY ROCK
- METAMORPHIC ROCK

LEGEND OF BORING OPERATIONS

- PLAN OF ANY BORING
- PENETROMETER
- 2½" CONE PENETROMETER
- SAMPLER BORING (DRY)
- ROTARY BORING (WET)
- AUGER BORING (DRY)
- JET BORING
- CORE BORING
- TEST PIT

1" SOIL TUBE — ROTARY BORING — PENETRATION BORING

NOTES

The contractor's attention is directed to Section 2, Article (c) of the Standard Specifications and to the Special Provisions accompanying this set of plans.

Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

ADOBE CREEK

LOG OF TEST BORINGS

SCALE: As Shown | BRIDGE 37-174 R/L | FILE E-37 | DRAWING C-545R-7

PREL. DRAWING NO. P-5453 | 69 | | | | | M0645B-3

T-34

I HEREBY CERTIFY THAT THIS IS A TRUE AND ACCURATE COPY OF THE ABOVE DOCUMENT FROM MY DISTRIBUTION AT A TOTAL OF [illegible] DATE IN SACRAMENTO, CALIFORNIA PURSUANT TO AUTHORIZATION BY THE DIRECTOR OF PUBLIC WORKS.

DATE: [illegible] SIGNATURE: [illegible]

04-SCL-101
EA 4A3301

US 101 Auxiliary Lanes Project
Santa Clara County, California

Draft Bridge Design Hydraulic Study Report
Matadero Creek Bridge and Adobe Creek Bridge
35% PS&E Submittal

Prepared for:

VTA and Caltrans

Prepared by:

WRECO

May 2009

Executive Summary

The United States Highway 101 (US 101) Auxiliary Lanes Project (the Project) is located in northern Santa Clara County, California. The Project proposes construction of auxiliary lanes in each direction of US 101 between Shoreline Boulevard in the City of Mountain View and Oregon Expressway in the City of Palo Alto.

There are two US 101 bridge crossings identified within the Project limits: Matadero Creek Bridge and Adobe Creek Bridge. The widening of the existing bridges is proposed to accommodate the proposed auxiliary lanes. The purpose of this report is to analyze the impacts of the project widening and changes to water surface elevation and scour depth, as well as provide possible scour countermeasures within the Project limits.

The existing US 101 bridges over Matadero Creek and Adobe Creek are a two-span bridge and single-span bridge, respectively, with four lanes in each direction. Two frontage roads running along the US 101 northbound and southbound lanes also cross over Matadero and Adobe creeks. The frontage road bridges over Matadero Creek are both two-span bridges, supported by an extended pier, which also supports the US 101 bridge over Matadero Creek. The frontage road bridges over Adobe Creek are both single-span bridges. The left and right banks of Matadero and Adobe creeks underneath US 101 are concrete lined. The Project proposes the US 101 bridge widening to accommodate proposed auxiliary lanes, which would fill up the open space between the existing US 101 bridge and frontage road bridges for both Matadero and Adobe creeks.

Hydraulic analyses were performed on the proposed US 101 bridges using the Hydraulic Engineering Circular–River Analysis System (HEC-RAS). Per Federal Highway Administration (FHWA) and Caltrans design criteria, the hydraulic design of the bridges requires that the bridge designs pass the 1% probability flood (100-year flood, Q_{100}), the 2% probability flood (50- year flood or Q_{50}) plus 2 ft of freeboard, or the flood of record—which ever is greater—without causing objectionable backwater or excessive flow velocities, or encroaching on through-traffic lanes. The existing and proposed US 101 bridges over Matadero Creek and Adobe Creek do not meet the California Department of Transportation (Caltrans) freeboard criteria of 2 ft over the 50-year storm event, which was higher than the 100-year water surface elevation. The 50-year and 100-year water surface elevations of Matadero Creek and Adobe Creek at the US 101 crossing are controlled by the water surface elevation in San Francisco Bay. The US 101 bridge widening would not have a significant impact on the 50- and 100-year water surface elevations. Either bridge will be overtopped during the 100-year flood event. The bridge decks will be under pressure. Caltrans and local agencies would need to monitor the debris accumulation and potential impacts because of flooding near the bridge sites.

Freeboard Criteria Summary

	Existing Soffit Elevation (ft, NAVD)	Proposed Soffit Elevation (ft, NAVD)	Caltrans Freeboard Criteria* (ft, NAVD)	Satisify Caltrans Freeboard Criteria? (Y/N)
Matadero Creek	9.9	9.6	13.0	N
Adobe Creek	9.7	9.5	13.5	N

*Caltrans Freeboard Criteria is design 50-year WSE plus 2 ft.

The table below summarizes the estimated total scour depths, according to the procedures from the HEC-18 Manual.

Scour Analyses Summary

		Scour Depth (ft)			
		Long-Term	Contraction	Pier/ Abutment	Total Depth
Matadero Creek	Left Overbank	-	-	-	0
	Main Channel	-	0.7	3.6	4.3
	Right Overbank	-	-	-	0
Adobe Creek	Left Overbank	-	-	-	0
	Main Channel	-	2.5	-	2.5
	Right Overbank	-	-	-	0

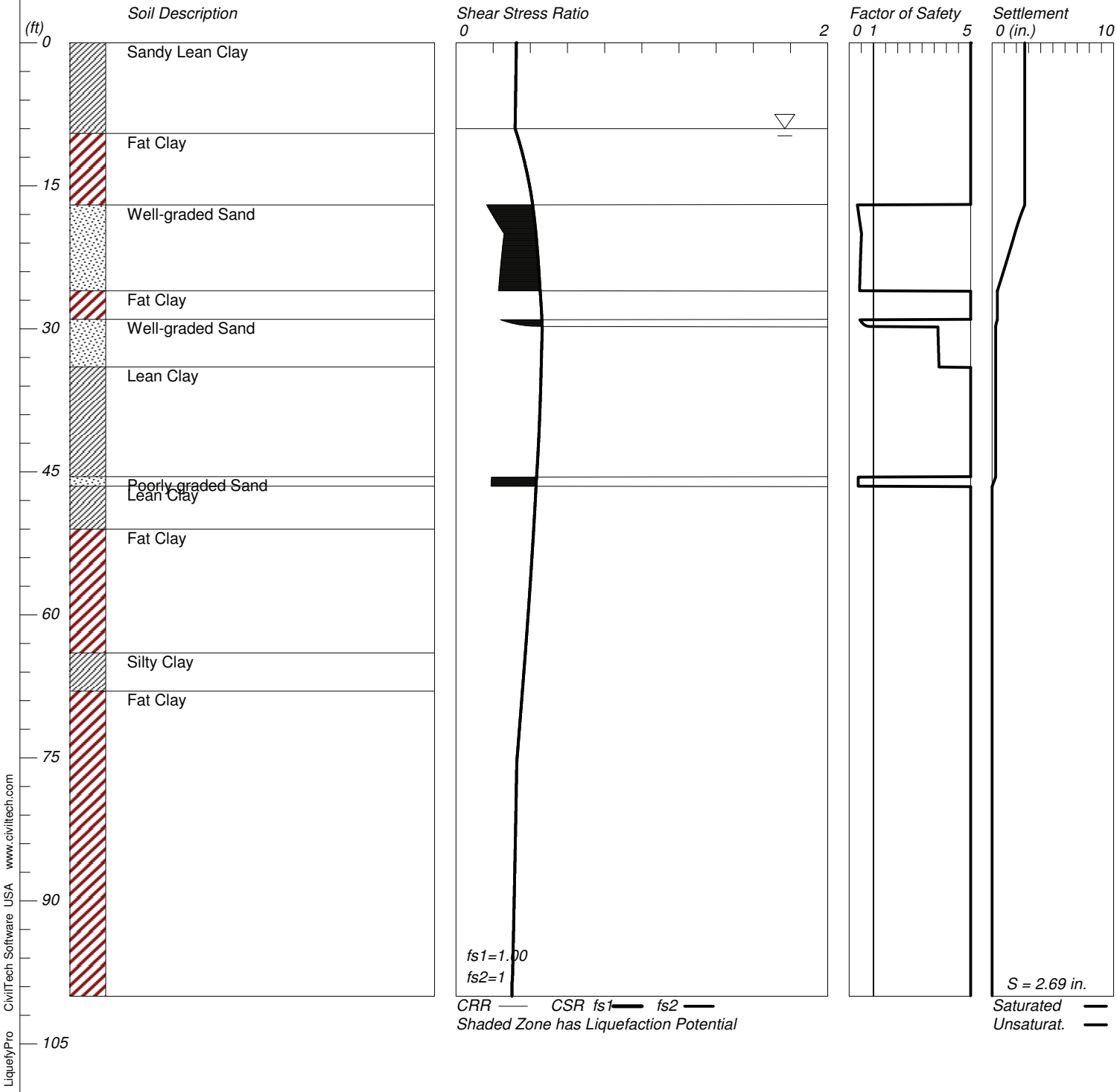
Scour analysis was performed based on the procedures in the Hydraulic Engineering Circular No. 18 (HEC-18), *Evaluating Scour at Bridges*, by the FHWA. Field investigations show that the existing left and right banks of Matadero Creek and Adobe Creek are concrete lined. Therefore, scour analysis at the bridge abutments were not computed. However, the channel bottom scouring during the 100-year storm event is expected at the creek bottom and around the piers.

LIQUEFACTION ANALYSIS

US 101 Auxiliary Lanes

Hole No.=R-09-004 Water Depth=9 ft Surface Elev.=13

Magnitude=8.0
Acceleration=0.5g



URS

Adobe Creek, Santa Clara, California

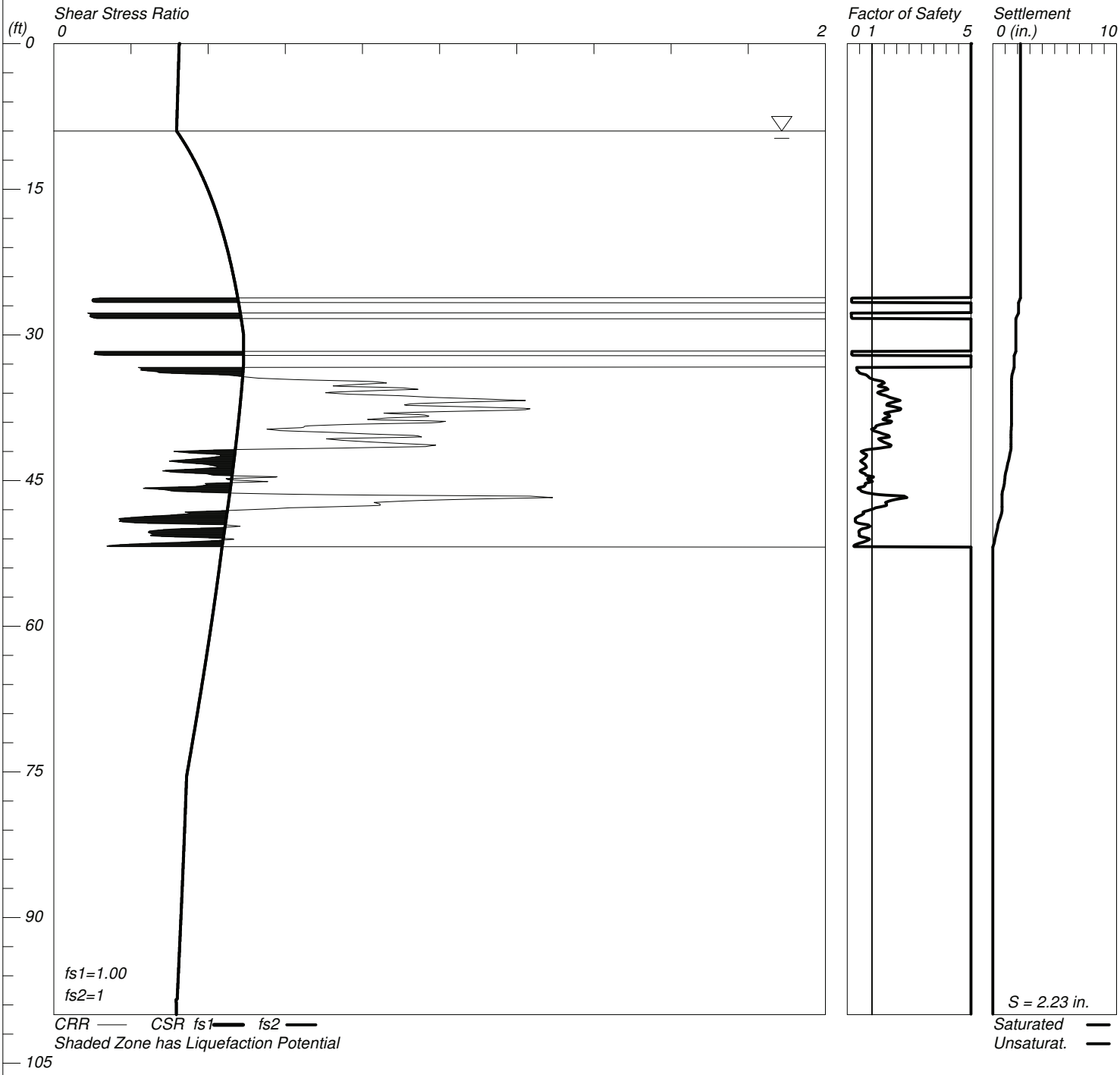
Figure E-1

LIQUEFACTION ANALYSIS

US 101 Auxiliary Lane

Hole No.=CPT-09-003 Water Depth=9 ft Surface Elev.=13

Magnitude=8
Acceleration=0.5g



LiquefyPro CivilTech Software USA www.civiltech.com

URS

Adobe Creek, Santa Clara, California

Figure E-2

US 101 AUXILIARY LANES PROJECT

IN PALO ALTO & MOUNTAIN VIEW
FROM OREGON EXPRESSWAY TO SHORELINE BOULEVARD

Proposed

ADOBE CREEK BRIDGE WIDENING FOUNDATION INVESTIGATION

Prepared for:

URS Corporation
55 South Market Street, Suite 1500
San Jose, CA 95113

Prepared By:

V&A
155 Grand Avenue, Suite 700
Oakland, CA 94612

August 2009

09-0244 US 101 Auxiliary Lanes Project –Adobe Creek Bridge Foundation Report.doc

TABLE OF CONTENTS

DESCRIPTION **PAGE NO.**

INTRODUCTION 1

CONCLUSIONS 1

RECOMMENDATIONS 2

- **Buried Reinforced Concrete Structures and Cast-in-Place Piles** 2
- **Prestressed Concrete Piles** 2
- **Steel Piles** 2

TEST METHODS 2

- **Field Soil Resistivity** 3
- **Laboratory Soil Analysis** 7

TEST RESULTS 8

FIGURES

Figure 1 Project Site Map for Adobe Creek Bridge Widening Foundation Investigation 4
Figure 2 In-Situ Soil Resistivity Test and Boring Locations 5
Figure 3 Wenner Four Electrode Method for Soil Resistivity Measurement 6
Figure 4 Soil Resistivity Measurement Using the Soil Box Method 8

TABLES

Table 1 Field Soil Resistivity Data, Site 1 9
Table 2 Field Soil Resistivity Data, Site 2 9
Table 3 Laboratory Soil Resistivity and Chemical Data 9

APPENDICES

Appendix 1 Soil and Water Sample Minimum Resistivities and Chemical Analyses 10

INTRODUCTION

V&A was retained by URS Corporation to perform a corrosion survey on US 101, from Oregon Expressway to Shoreline Boulevard (SR 85) from Palo Alto to Mountain View, CA. The objective of this investigation is to measure various soil parameters and evaluate the results with respect to possible levels of corrosion at the site. The soil was tested at depths ranging from 0 to 24.4 meters below existing grade. This report provides recommendations for corrosion control of structural foundation materials under consideration for the proposed widening of Adobe Creek Bridge on US 101 in Palo Alto. The materials being considered as part of this investigation include buried reinforced concrete, prestressed concrete piles and steel piles.

The investigation was conducted in accordance with California Department of Transportation's Division of Engineering Services, Materials Engineering and Testing Services Corrosion Technology Branch "Corrosion Guidelines" (Guidelines) dated September 2003. These Guidelines consider representative soil or water samples to be corrosive to structural elements if one or more of the following conditions exist:

1) **The chloride concentration is 500 ppm or greater**
2) **The sulfate concentration is 2000 ppm or greater**
3) **The pH is 5.5 or less.**

Evaluation of the soil environment was made in terms of potential corrosion damage to concrete and metal structures. Soil resistivity measurements were conducted in the field during the initial stages of the work. In addition, a soil sample taken during the geotechnical investigation was provided to V&A for laboratory testing. The soil sample was analyzed for minimum (saturated) resistivity, as well as for pH, chloride and sulfate ion concentrations. All of these affect the corrosion rate of buried structures.

The minimum (saturated) resistivity of soil sample selected from the boring at the Adobe Creek Bridge measured 527 ohm-cm. The soil pH measured 10.3 and the water-soluble chloride concentration measured 235 mg/kg. The water-soluble sulfate concentration measured 203 mg/kg. The pH, chloride and sulfate ion concentrations all indicate the sampled soils, is *non-corrosive*, as defined by the Guidelines.

A water sample taken from the stream at the existing Adobe Creek site was also analyzed for resistivity, pH, soluble chloride and soluble sulfate. The water resistivity measured 916 ohm-cm and the pH measured 7.7. The soluble chloride measured 187 mg/L, while the soluble sulfate measured 21 mg/L. The pH, chloride and sulfate ion concentrations all indicate the sampled water is *non-corrosive*, as defined by the Guidelines is *non-corrosive* to metallic or concrete structures.

CONCLUSIONS

- The soil boring chemical analyses and the stream water analysis all gave pH values higher than 5.5, soluble chloride concentrations less than 500 mg/kg and soluble sulfate concentrations less than 2,000 mg/kg. According to the Guidelines, the soil and water are considered *non-corrosive*.
- This structure is not within 300 meters (1,000 feet) of salt or brackish water.

RECOMMENDATIONS

The test data and a review of the project requirements were used to make recommendations for each structural foundation material alternative listed below.

Buried Reinforced Concrete Structures and Cast-in-Place Piles

Buried concrete structures should be constructed of durable concrete as described in ACI Standards 201.2R and 222R. These recommendations include, but are not limited to, the following for installations in *non-corrosive* soil:

- The water/cement ratio should not exceed 0.50.
- A minimum concrete cover of 5.1 centimeters should be applied over all steel reinforcement.
- Sand and water used in concrete mixtures should contain a maximum of 100 ppm of water-soluble chloride ions and water-soluble sulfate ions. They should also have a pH in the range of 6.5 to 8.0. Potable water should be used in concrete mixtures.
- Type I-P (MS) modified or Type II modified cement should be used.

Prestressed Concrete Piles

Prestressed concrete piles should be constructed of durable concrete as described in ACI Standards 201.2R and 222R. These recommendations include, but are not limited to, the following:

- The water/cement ratio should not exceed 0.50.
- A minimum concrete cover of 5.1 centimeters should be applied over all steel reinforcement.
- Sand and water used in concrete mixtures should contain a maximum of 100 ppm of water-soluble chloride ions and water-soluble sulfate ions. They should also have a pH in the range of 6.5 to 8.0. Potable water should be used in concrete mixtures.
- Type I-P (MS) modified or Type II modified cement should be used.

Steel Piles

According to the CALTRANS Guidelines the soil tested at this site is considered *non-corrosive*, therefore no corrosion mitigation is required.

TEST METHODS

When predicting potential corrosion problems associated with a particular type of structure prior to installation, it is necessary to investigate the soil conditions the structure will encounter. Since corrosion is an electrochemical process accompanied by current flow, the electrochemical characteristics of a soil are of primary importance. Test methods utilized during this investigation reflect the most practical methods of evaluating corrosivity.

Resistivity is a measure of the ability of a soil to conduct an electric current. The higher the resistivity the more difficult it is for the soil to conduct current. Resistivity is primarily dependent on the soluble chemical and moisture content of the soil. Soils with high dissolved ion contents generally have low resistivity. As moisture is added to a soil, its resistivity will decrease as more ions are taken into solution. The soil resistivity decreases until the maximum solubility of the dissolved ions is reached. Increasing the moisture

content beyond this point increases the soil resistivity by diluting the solution. Since corrosion rate depends on current flow through the soil, corrosivity normally increases as soil resistivity decreases.

Soils can contain a wide variety of soluble salts. Therefore, soils with similar resistivities can have significantly different corrosion characteristics, depending on the ions present. In most soils, the principle agents of corrosion are the chloride and sulfate ions, as well as pH. Chloride ions break down the protective surface films on metals and can corrode reinforcing steel in concrete structures. Sulfates attack the Portland cement in concretes. This is an expansive reaction that disrupts the concrete matrix and softens the surface. A high bicarbonate ion concentration lowers soil resistivity and facilitates other forms of corrosion; however, bicarbonate is not corrosive to metals. Soil pH is another measure of corrosivity. Acid (low pH) soils are corrosive to buried metallic and concrete structures. Neutral (pH 7) and alkaline (pH greater than 7) soils are passive to metal surfaces; therefore, corrosion rates become negligible.

Field Soil Resistivity

Field (in-situ) soil resistivity was measured at 2 locations along the US 101 Auxiliary Lanes project at the Adobe Creek Bridge location. At the Adobe Creek Bridge one resistivity station was set up at each side of the US 101. Figure 1 is the project site map. Figure 2 shows the soil resistivity test sites and the soil boring location.

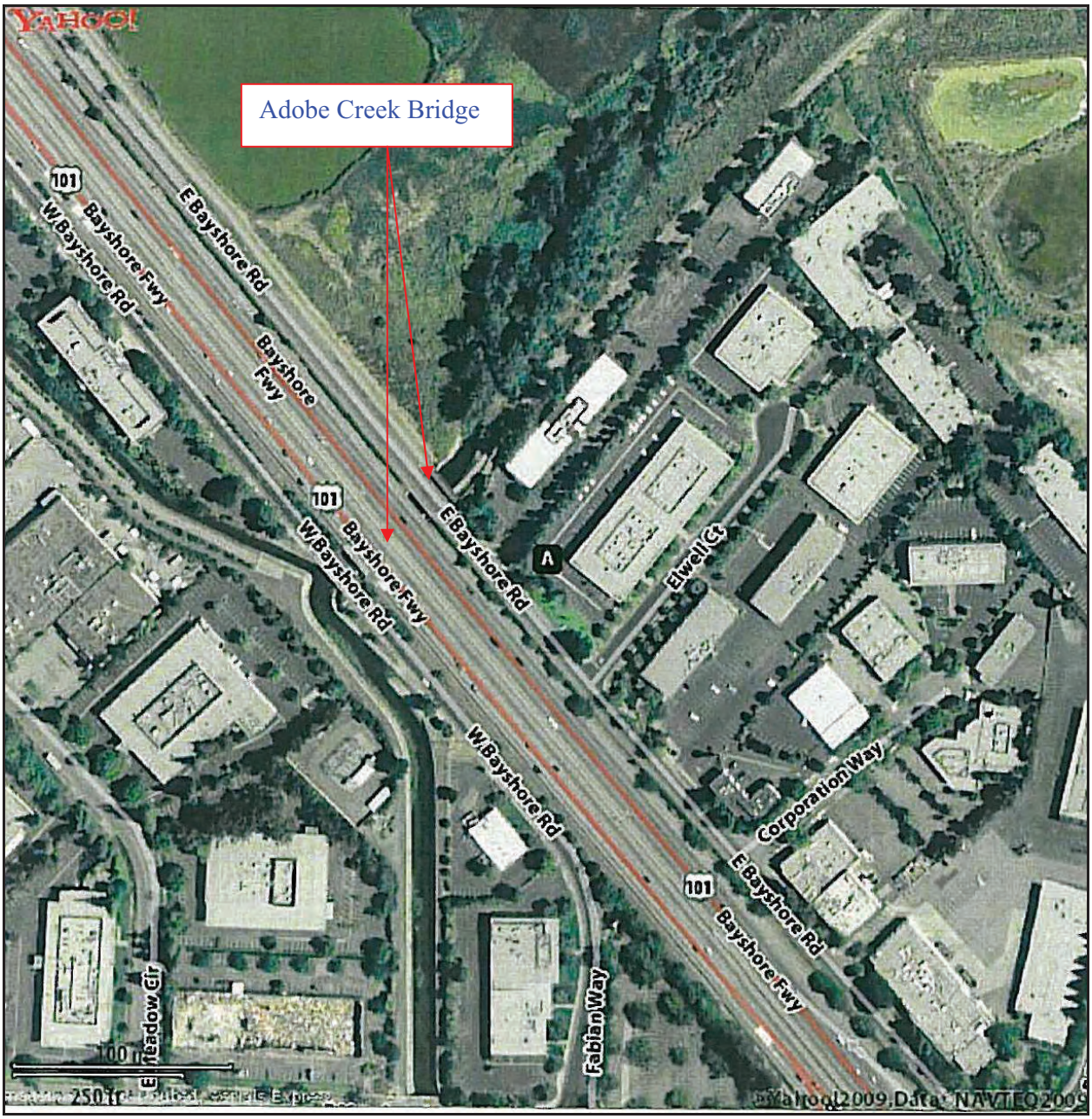


Figure 1. Project Site Map for Adobe Creek Bridge Widening Foundation Investigation, Palo Alto, CA.

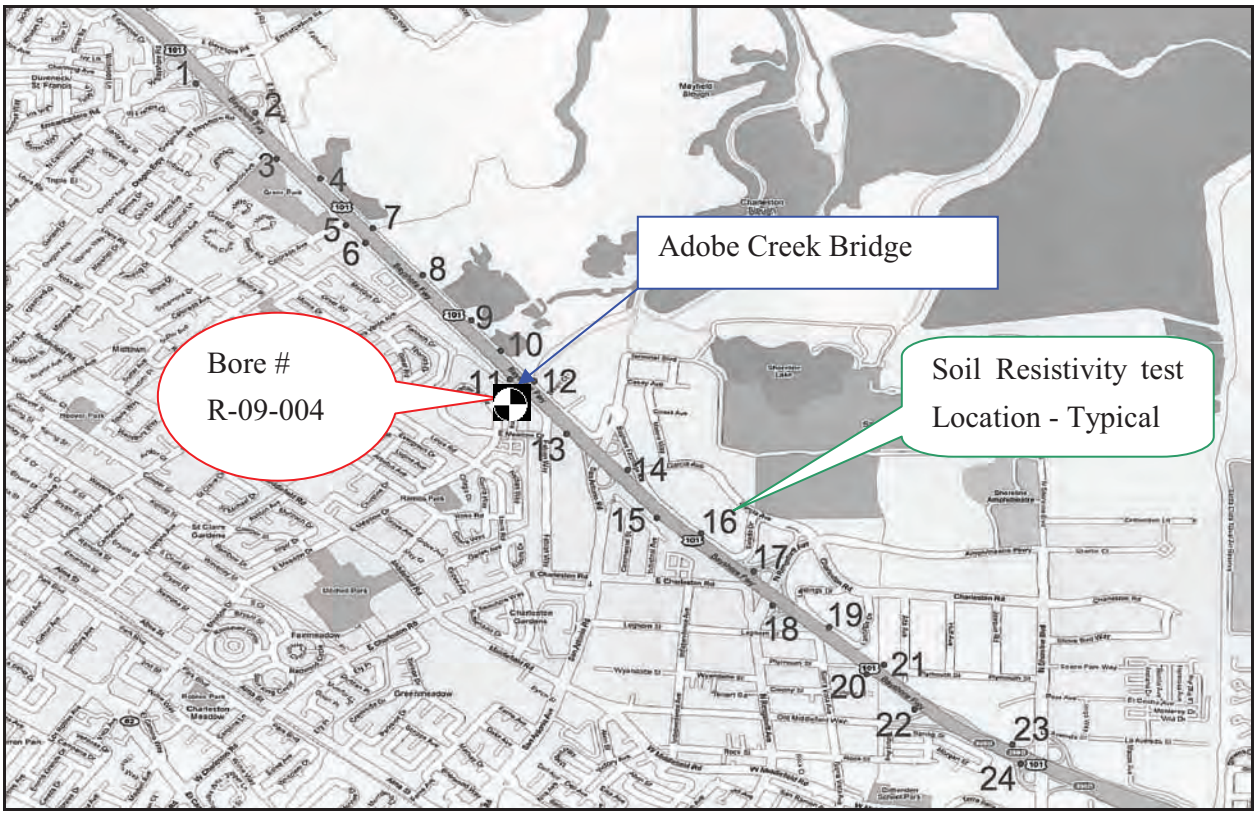


Figure 2. In-Situ Soil Resistivity Test and Boring Locations

In-situ soil resistivity measurements were conducted by the Wenner Electrode Method, utilizing an AEMC Soil Resistance Meter, Model 4500. The Wenner Electrode Method uses four equally spaced metal pins, driven into the ground in a straight line, as electrodes (see Figure 3).

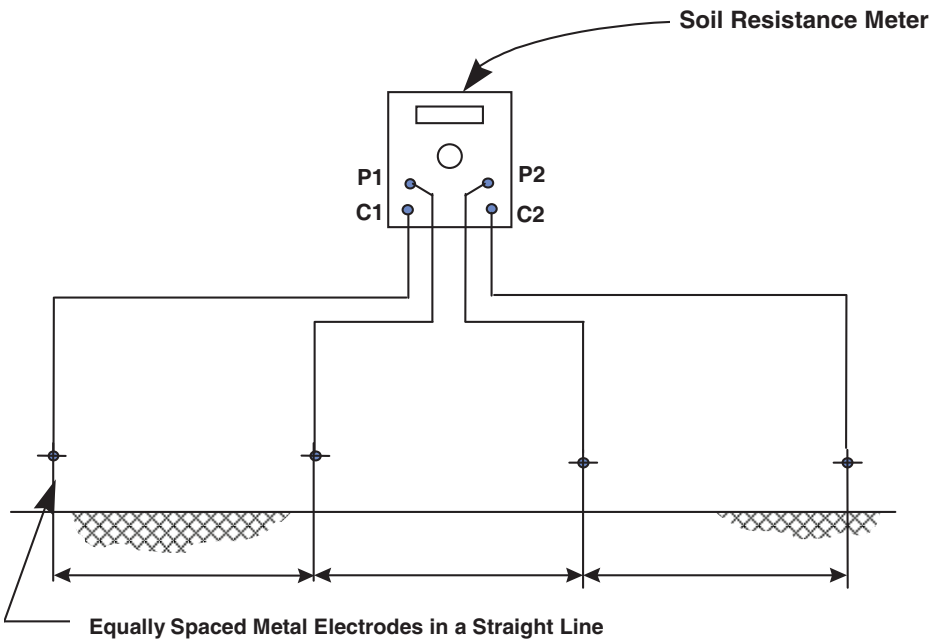


Figure 3. Wenner Four Electrode Method for Soil Resistivity Measurement

An alternating current from the Soil Resistance Meter causes a current to flow through the soil between the outside electrodes, C1 and C2. Due to the resistance of the soil, the current creates a voltage gradient, which is proportional to the average resistance of the soil mass to a depth equal to the distance between electrodes. The voltage drop is measured across electrodes P1 and P2. Resistivity of the soil is then computed from the instrument reading according to the following formula:

$$\rho = 2\pi AR$$

where: ρ = soil resistivity in ohm-cm
A = the distance between probes in cm
R = soil resistance in ohms (instrument reading)
$\pi = 3.1416$

Soil resistance is measured with electrodes spaced 0.8, 1.5, 2.3, 3, 4.6, 9.1, 13.7, 18.3 and 24.4 meters (2.5, 5, 7.5, 10, 15, 30, 45, 60 and 80 feet) apart. The resistivity values obtained represent the average resistivity of the soil to a depth equal to the electrode spacing. An additional method of calculating the soil resistivity using the data from the Wenner Method is the Barnes-Layer resistivity calculation. The Barnes

Layer calculation is used to determine the resistivity of the soil for each soil layer. While the Wenner Method at 3 meters will consider all 3 meters of soil below the surface, the Barnes-Layer method will only consider the resistivity of the layer of soil between 1.5m and 3m below the surface. This method assumes the soil layers are a uniform thickness and parallel to the surface, which may not always be true.

The Barnes-Layer method uses the following parameters to calculate layer resistivities:

$$\rho_{b-a} = KR_{b-a}$$

and

$$\frac{1}{R_{b-a}} = \frac{1}{R_a} - \frac{1}{R_b}$$

where:

ρ_{b-a}	=	Soil resistivity of layer depth b-a (ohm-cm)
a	=	Soil depth to top of layer (cm)
b	=	Soil depth to bottom of layer (cm)
R_a	=	Soil resistance read at depth a (ohms)
R_b	=	Soil resistance read at depth b (ohms)
R_{b-a}	=	Resistance of soil layer from a to b (ohms)
K	=	Layer constant (cm)
	=	$2\pi(b-a)$

Laboratory Soil Analysis

To supplement the field resistivity test data, a soil sample was obtained from soil boring R-09-004 for laboratory soil resistivity analysis. A soil box was used in accordance with California Test Method 643. This apparatus is shown in Figure 4.

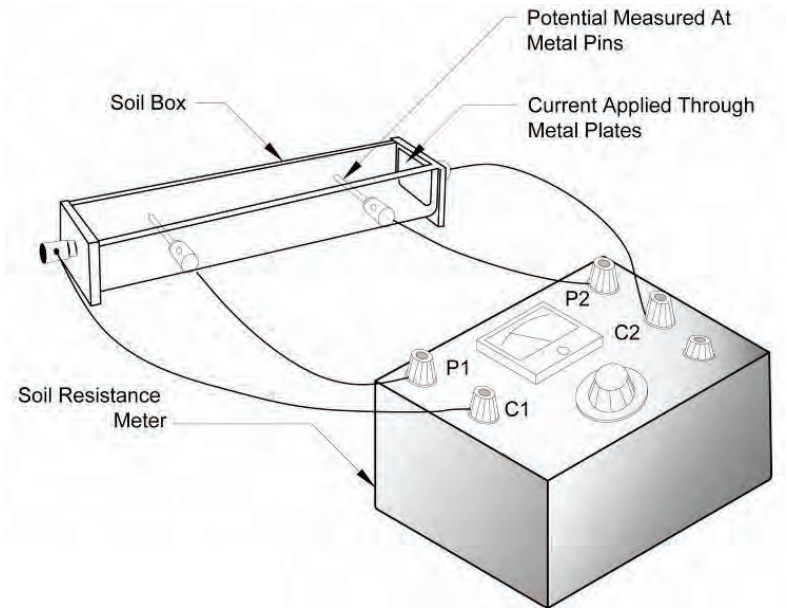


Figure 4. Soil Resistivity Measurement Using the Soil Box Method

This apparatus consists of a small plastic box with metal end plates for passing current through a tightly packed soil sample. Current is passed through the sample, causing a voltage drop across the sample. The soil resistivity is measured with a soil resistance meter, similar to the AEMC Model 4500.

Soil resistivity is first measured in the "as-received" state. Distilled water is then added to the soil sample in 10-mL increments. The resistivity is measured after each addition. As the soil sample becomes more saturated, the soil resistivity decreases until the minimum soil resistivity is reached.

Soil boring samples from this study were forwarded to Cooper Testing Labs, Inc., in Palo Alto, CA, for minimum resistivity measurement, pH analysis and analysis of water-soluble chloride and sulfate ion concentrations. The analytical procedures followed California Test Methods 417, 422 and 643.

TEST RESULTS

Table 1 and Table 2 list the field soil resistivity measurements from the Adobe Creek Bridge and the calculated Barnes-Layer resistivities. Table 3 lists the minimum resistivities and chemical analyses for the soil boring samples, as well as a water sample taken from the Adobe Creek Bridge site.

Table 1. Field Soil Resistivity Data, Site 1

Site	Survey Station	Depth (meters)	Resistivity (ohm-cm)	Layer (meters)	Layer Resistivity (ohm-cm)
Adobe Creek Bridge, US 101, South Bound	109+00	0.8	9,863	0 - 0.8	9,863
		1.5	4,194	0.8 - 1.5	2,663
		2.3	1,343	1.5 - 2.3	569
		3	1,009	2.3 - 3	578
		4.6	612	3 - 4.6	342
		9.1	770	4.6 - 9.1	1,038
		13.7	1,043	9.1 - 13.7	3,583
		18.3	1,230	13.7 - 18.3	2,657
		24.4	1,471	18.3 - 24.4	3,577

Table 2. Field Soil Resistivity Data, Site 2

Site	Survey Station	Depth (meters)	Resistivity (ohm-cm)	Layer (meters)	Layer Resistivity (ohm-cm)
Adobe Creek Bridge, US 101, North Bound	110+00	0.8	8,235	0 - 0.8	8,235
		1.5	5,946	0.8 - 1.5	4,653
		2.3	3,706	1.5 - 2.3	2,113
		3	3,313	2.3 - 3	2,514
		4.6	3,464	3 - 4.6	3,813
		9.1	2,172	4.6 - 9.1	1,582
		13.7	2,086	9.1 - 13.7	1,932
		18.3	2,367	13.7 - 18.3	3,978
		24.4	2,053	18.3 - 24.4	1,468

Table 3. Laboratory Soil Resistivity and Chemical Data

Item No.	Boring No.	Station	Sample No.	Depth (meters)	Minimum Soil Resistivity (ohm-cm)*	Chemical Data		
						pH	Sulfate (mg/kg)**	Chloride (mg/kg)**
1	R-09-004	109+32	4	4.6	527	10.3	203	235
AdobeCreek	N/A	109+50	Water	N/A	916	7.7	21 mg/L	187 mg/L

* Water resistivity in ohm-cm.

**The chloride and sulfate results for the Adobe Creek water sample is in mg/L.

Appendix 1. Soil Sample Minimum Resistivities and Chemical Analysis

COOPER Testing Laboratory

Corrosivity Test Summary

CTL # 632-007 Date: 7/21/2009 Tested By: PJ Checked: PJ
Client: V&A Project: URS Caltrans 101 Auxilliary Lanes Proj. No: 09-0244
Remarks: Due to a very small sample size, the ph and resistivity tests for all soil samples, except for A-09-173-3-3 101, included +#8 material which is an expecption to the test specification.

Sample Location or ID			Resistivity @ 15.5 °C (Ohm-cm)			Chloride	Sulfate		pH	ORP	Moisture	Soil Visual Description
Boring	Sample, No.	Depth, ft.	As Rec.	Minimum	Saturated	mg/kg	mg/kg	%		(Redox)	As Received	
						Dry Wt.	Dry Wt.	Dry Wt.		mv	%	
			ASTM G57	Cal 643	ASTM G57	Cal 422-mod.	Cal 417-mod.	Cal 417-mod.	Cal 643	SM 2580B	ASTM D2216	
-	#2- Adobe Creek	-	-	916	-	187 mg/L	21 mg/L	0.0021	7.7	-	-	Water
-	#3- Matadero	-	-	1133	-	174 mg/L	12 mg/L	0.0012	7.6	-	-	Water
-	R-09-001 4-X	15	-	421	-	256	181	0.0181	10.2	-	23.7	Gray Sandy CLAY
-	R-09-004 4-3	15	-	527	-	235	203	0.0203	10.3	-	3.2	Gray CLAY w/ Sand & CaCO3
-	R-09-005 2-3	8 - 10	-	3850	-	6	<5	<0.0005	8.6	-	3.0	Greenish Brown Clayey SAND w/ Gravel
-	A-09-111-2-4 101	3.5	-	1531	-	4	<5	<0.0005	9.1	-	4.7	Brown Sandy CLAY
-	A-09-131-2-4 101	3.5	-	3609	-	<2	<5	<0.0005	8.9	-	3.5	Greenish Brown Clayey SAND w/ Gravel
-	A-09-173-3-3 101	7 - 10	-	2949	-	9	108	0.0108	9.0	-	3.4	Gray Clayey SAND
-	A-09-180-2-4 101	5 - 7	-	11098	-	<2	<5	<0.0005	8.8	-	2.4	Brown Silty SAND w/ Gravel
-	A-09-183-4-3 101	15	-	3933	-	<2	<5	<0.0005	10.2	-	3.3	Greenish Brown Silty SAND

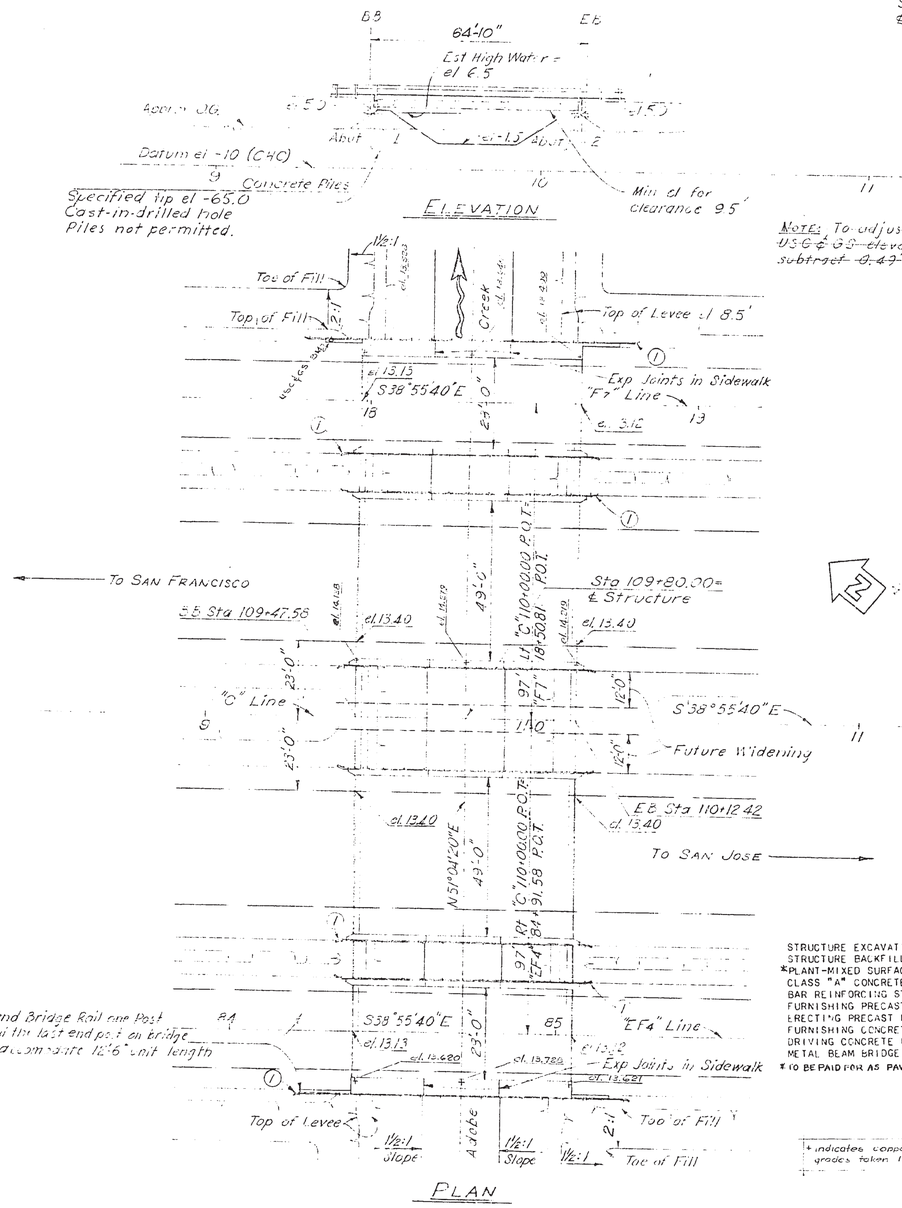
FED. ROAD DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	CALIF.	0-191(53)		117	154

DIST.	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
IV	SCl	~~82~~	A	D-1	7

ASSISTANT STATE HIGHWAY ENGINEER — CIVIL ENGINEER LICENSE DATE

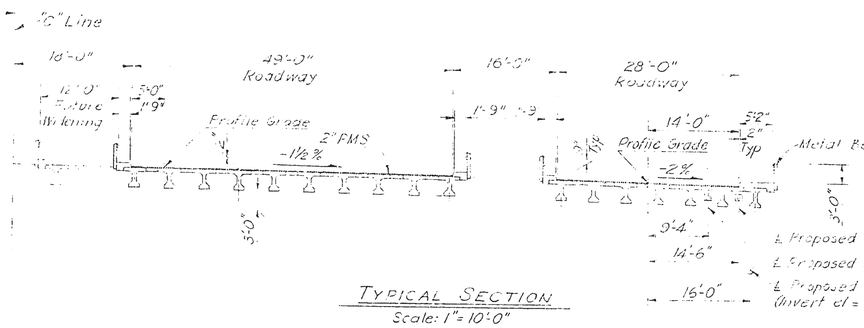
DATE APPROVED

STATE HIGHWAY ENGINEER — CIVIL ENGINEER—LICENSE DATE



Symmetrical about ℄ Structure

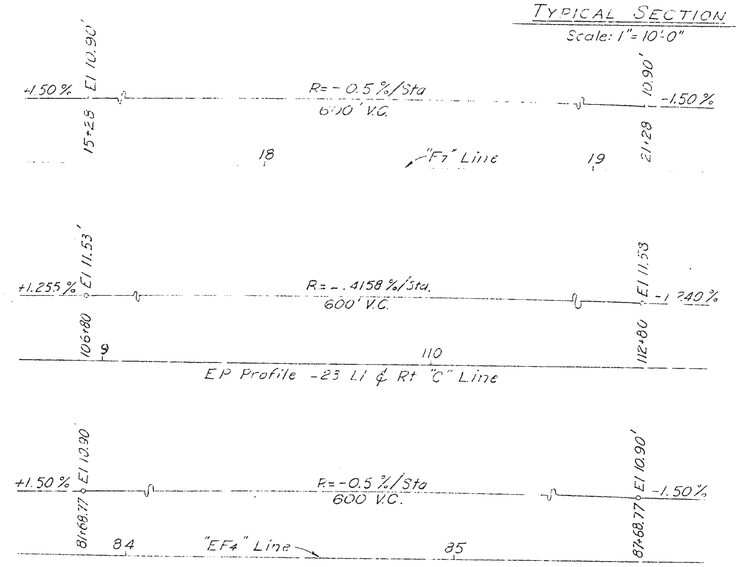
NOTE: To adjust to U.S.C.&G.S. elevations subtract -0.49'



TYPICAL SECTION

Scale: 1" = 10'-0"

Note: Girders are Prestressed



PROFILE GRADES

APPROXIMATE QUANTITIES

STRUCTURE EXCAVATION	450 C.Y.
STRUCTURE BACKFILL	225 C.Y.
*PLANT-MIXED SURFACING	125 TONS
CLASS "A" CONCRETE (BRIDGES)(510 C.Y.)	LUMP SUM
BAR REINFORCING STEEL (BRIDGES)(58,000 LBS.)	LUMP SUM
FURNISHING PRECAST PREST. CONC. GIRDERS (63' LONG)	34
ERECTING PRECAST PRESTRESSED CONCRETE GIRDERS	34
FURNISHING CONCRETE PILING	7,045 L.F.
DRIVING CONCRETE PILES	106
METAL BEAM BRIDGE RAILING	678 L.F.

* TO BE PAID FOR AS PAVING ASPHALT AND MINERAL AGGREGATE

+ indicates copper nail grades taken 1-21-66

① Paint Bridge No. & Year. Paint Stream Name.

L.L.: H20-S16-44 and Alternative

INDEX TO PLANS

SHEET No.	TITLE
D-1	General Plan
D-2	Foundation Plan
D-3	Abutment Layout & Details
D-4	Typical Section & Girder Details
D-5	Prestressed Girder Layout
D-6	Metal Beam Bridge Railing
D-7	Log of Test Borings

GENERAL DETAILS

Sheets prefixed with "G" are grouped together as "General Details" and apply to several structures.

G-2 Pile Details

Note: See Bridge # 37-150 for "G" sheets

AS BUILT PLANS
Contract No. 60-4TC1
Date Completed
Document No. 40002374

CONTRACT No. 60-4TC1
DATE ACCEPTED 5-27-66
AS BUILT

For General Notes, see Foundation Plan

BRIDGE DEPARTMENT
... DESIGN SECTION ...
Project Designer: W. Chaney
Chief Designer: Carl E. Lindseth

DESIGN	By R. O'Halloran 12-57	Checked G.W. Jameson 2-58	
DETAILS	By J.H. Stone 12-57	Checked G.W. Jameson 2-58	
QUANTITIES	By J.H. Stone	Checked R. O'Halloran 2-58	
SPECIFICATIONS	By	Plans and Notes Compared	
Approval Recommended by	Engineer of Design	Civil Eng. License No. 6729	

60-4TC1

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

ADOBE CREEK BRIDGE

LOCATED 1.9 MILES SOUTH OF THE SAN MATEO COUNTY LINE IN SANTA CLARA COUNTY

GENERAL PLAN

Except as Noted SCALE 1" = 20'-0"	BRIDGE 37-174 R/L	FILE	DRAWING 1-1-58-1

PREL. DRAWING No. P-5458 | Y K | 5 | 11 | 18 | 73

Pm T-32

I HEREBY CERTIFY THAT THIS IS A TRUE AND ACCURATE COPY OF THE ABOVE DOCUMENT TAKEN UNDER MY DIRECTION AND CONTROL ON THIS DATE IN SACRAMENTO, CALIFORNIA PURSUANT TO AUTHORIZATION BY THE DIRECTOR OF PUBLIC WORKS.

DATE 9/23/72 SIGNATURE [illegible] TITLE [illegible]

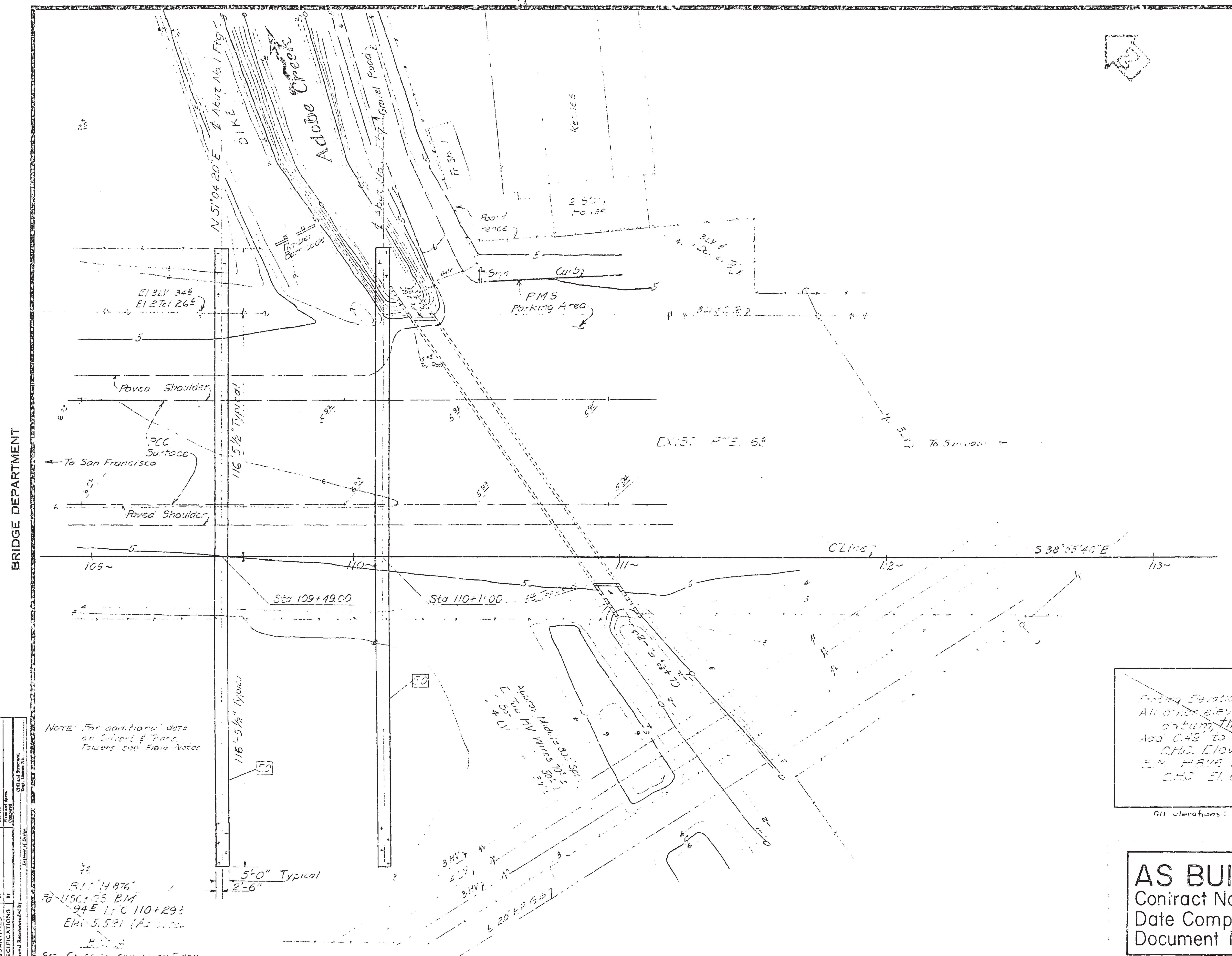
MICROFILM - STATE OF CALIFORNIA - DEPARTMENT OF PUBLIC WORKS - MICROFILM

FED. ROAD DIV No.	STATE	PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
7	CALIF.	U-31(35)		118	154

DIST.	COUNTY	ROUTE	SECTION	SHEET No.	TOTAL SHEETS
IV	SCl	68	A	D-2	7

BRIDGE ENGINEER — CIVIL ENGINEER—LICENSE No. 3434

DATE APPROVED



BM "H 876"
Fd USC&GS B.M.
94± Lt C 110+29±
Elev 5.591 (Fd datum)

B.M.
Set Chiseled square on S corner of E pedestal of Trans. Tower 300' Rt C 107+53±
Elev 4.61

LEVEL DATUM USC&GS
FOR ALINEMENT TIES SEE PR-5458-1
CONTOURS AS OF 4-5-57
SITE PLAN TO SUPPLEMENT DISTRICT DATA.
SURVEY BY LBF DATE 4-57
DRAWN BY JFH DATE
TRACED BY LGC DATE 6-7-57

Submitted by — Chief Designer
DESIGN By — Checked
DETAILS By — Checked
QUANTITIES By — Checked
SPECIFICATIONS By — Plans and Specs. Compared
Approval Recommended by — Engineer of Design — Civil and Structural Engr. License No.

BY DATE
SURVEY
DRAWN
TRACED

GENERAL NOTES

SPECIFICATIONS

DESIGN: AASHO Dated 1953 with revisions and as supplemented by Bridge Planning and Design Manual

CONSTRUCTION: Standard Specifications, Division of Highways, Dated August 1954 and the Special Provisions

LIVE LOADING: H20-S16-44 & Alternative

UNIT STRESSES

REINFORCED CONCRETE: fs = 20,000 psi
n = 10
fc = 1200 psi (Except as Noted)
fc = 1000 psi (Roadway Slab on Girders)

PILE LOADING: 45 tons Type Concrete

REINFORCEMENT: Embedment is clear to outside of bar and is 2" to main reinforcement except as noted. Backing for hooks is four diameters, except as noted. Where reinforcing bars are spliced they shall have a 20 diameter lap unless otherwise called for on the plans.

[5.0] Indicates bottom of Footing Elevation

For pile layout, see Abutment Layout and Details Sheet.

~~Footing Elevations: C.H.C. Datum~~
~~All other elevations - USC&GS datum, this sheet only.~~
~~Add 0.49' to USC&GS for C.H.C. Elevations.~~
~~B.M. H876 USC&GS El 5.591 = CHC El 6.081~~

All elevations: C.H.C. Datum

AS BUILT PLANS
Contract No. 60-4TC1
Date Completed
Document No. 40002374

CONTRACT No. 4-...
DATE ACCEPTED 5-9-60
AS BUILT
RESIDENT ENGINEER
REVISIONS BY

BRIDGE DEPARTMENT
DESIGN SECTION
Project Designer W. O. Chesney
Chief Designer
DESIGN: O. O'Halloran 1-58 — 2-58
DETAILS: E. Jones 1/58 — 2-58
QUANTITIES
SPECIFICATIONS
Approval Recommended by — 6729

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

ADOBE CREEK

FOUNDATION PLAN

SCALE 1" = 20' | BRIDGE 37-174 R/L | FILE | DRAWING B-5458-2

5453 | 3 | 12 | 19 | 26 | FR-5458-2 R1

I HEREBY CERTIFY THAT THIS IS A TRUE AND ACCURATE COPY OF THE ABOVE DOCUMENT TAKEN UNDER MY DIRECTION AND CONTROL ON THIS DATE IN SACRAMENTO, CALIFORNIA PURSUANT TO AUTHORIZATION BY THE DIRECTOR OF PUBLIC WORKS.

DATE 9/23/71 SIGNATURE ____ TITLE ____

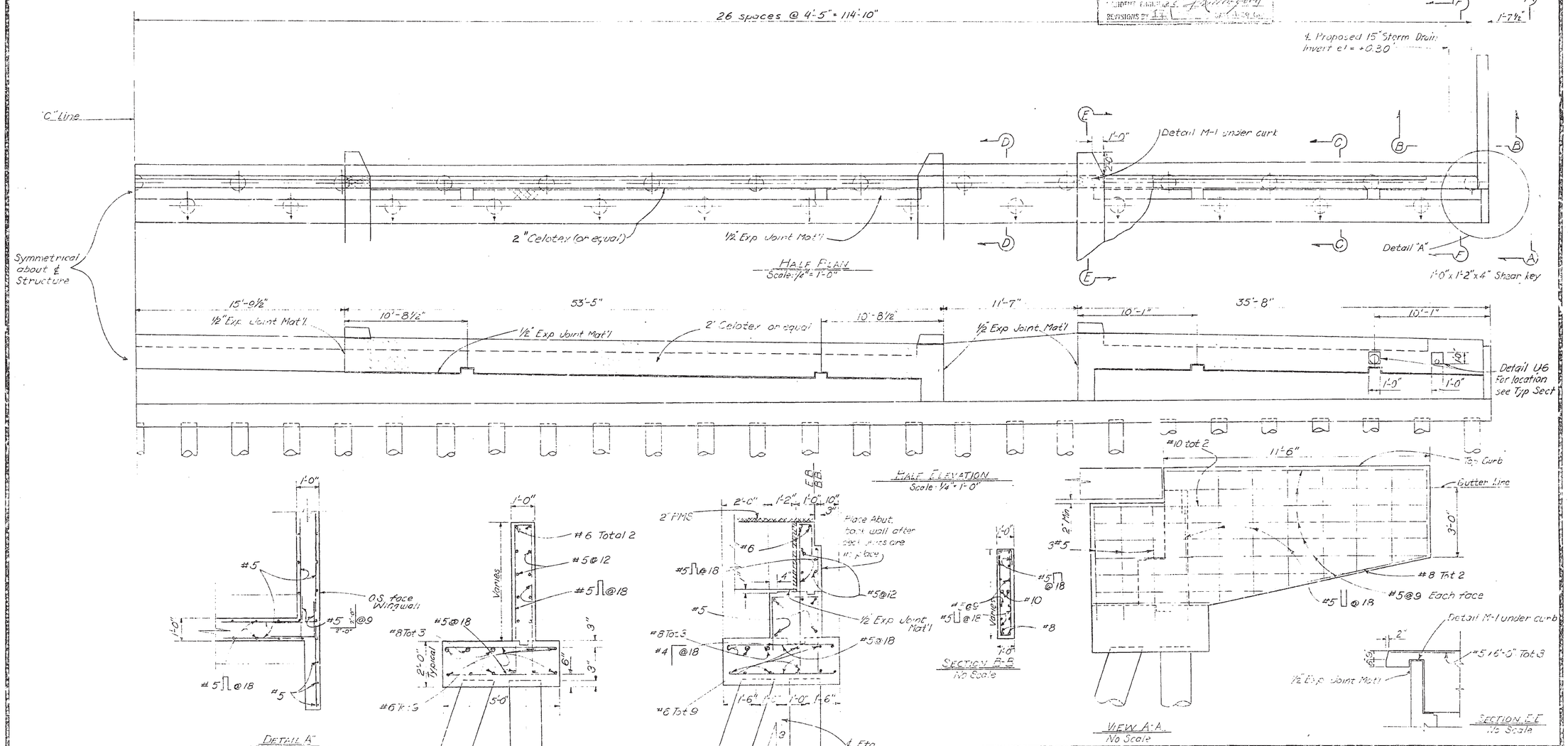
SCALE 1" = 50' — MICROFILM - STATE OF CALIFORNIA - DEPARTMENT OF PUBLIC WORKS - MICROFILM — SCALE 1" = 20'
SCALE 1" = 10' or 1" = 100' — SCALE 1" = 40'

FED. ROAD FUN. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	CALIF.	U-181(35)		119	159

DIST.	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
IV	SCl	66	A	D-3	7

Date Approved NOVEMBER 9 1959

CONTRACT No. 60-47C1
DATE ACCEPTED 5-9-60
AS BUILT
RESIDENT ENGINEER
REVISIONS BY



BRIDGE DEPARTMENT
... DESIGN SECTION ...
Project Designer W. O. Chauncey
Chief Designer Owen H. Degenkolb

DESIGN	By W. O. Williams 1-58	Chkd. W. O. Chauncey 2-58	
DETAILS	By E. W. Jones 1-58	Chkd. W. O. Chauncey 2-58	
QUANTITIES	By T. H. Stoll 2-58	Chkd. W. O. Chauncey 2-58	
SPECIFICATIONS	By	Chkd.	
Approval Recommended by	Bridge Engr.	Registered Civil Engr. No. 5729	

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

ADOBE CREEK BRIDGE

ABUTMENT LAYOUT & DETAILS

SCALE As Shown | BRIDGE 37-174 R/L | FILE | DRAWING C-2458-3

PREL. DRAWING No. P-5453

AS BUILT PLANS
Contract No. 60-47C1
Date Completed
Document No. 40002374

I HEREBY CERTIFY THAT THIS IS A TRUE AND ACCURATE COPY OF THE ABOVE DOCUMENT TAKEN UNDER MY DIRECTION AND CONTROL ON THIS DATE IN SACRAMENTO, CALIFORNIA PURSUANT TO AUTHORIZATION BY THE DIRECTOR OF PUBLIC WORKS.

DATE 6/23/71 SIGNATURE [illegible] TITLE [illegible]

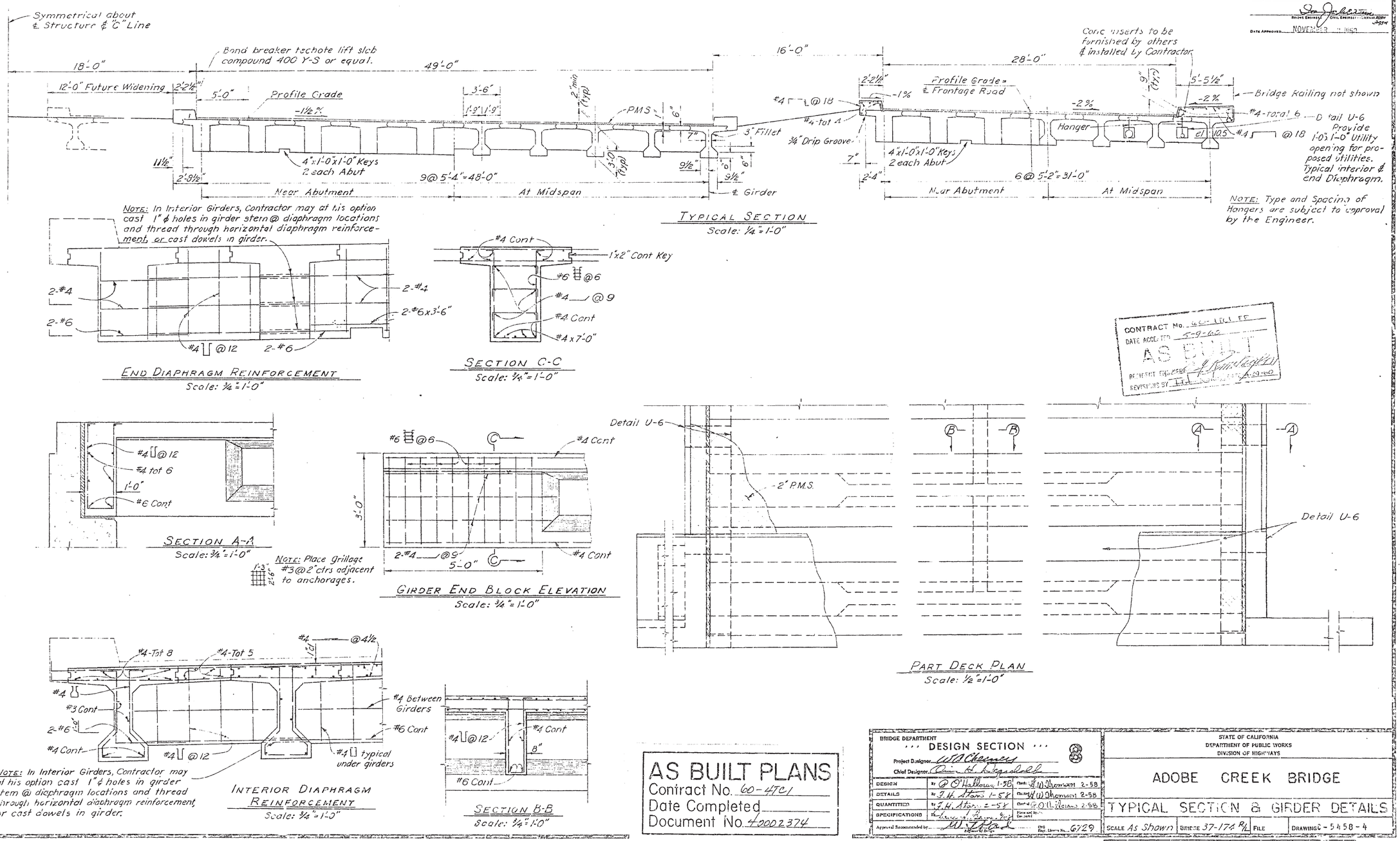
MICROFILM - STATE OF CALIFORNIA - DEPARTMENT OF PUBLIC WORKS - MICROFILM

FED. ROAD SYS. No.	STATE	PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
7	CALIF.	U-191(35)		120	154

DIST.	COUNTY	ROUTE	SECTION	SHEET No.	TOTAL SHEETS
IV	SCV	685	A	D-A	7

BRIDGE ENGINEER CIVIL ENGINEER

DATE APPROVED NOVEMBER 1963



CONTRACT No. 60-47C1
DATE ACCEPTED 5-9-66
AS BUILT
RESIDENT ENGINEER
REVISIONS BY
DATE 4-29-66

AS BUILT PLANS
Contract No. 60-47C1
Date Completed
Document No. 40002374

BRIDGE DEPARTMENT
··· DESIGN SECTION ···
Project Designer
Chief Designer

DESIGN	By O'Halloran 1-58	Check H. W. Thomson 2-58	
DETAILS	By J. H. Atanacio 1-58	Check H. W. Thomson 2-58	
QUANTITIES	By J. H. Atanacio 1-58	Check O. H. Williams 2-58	
SPECIFICATIONS	By	Plans and Spec. Coordinator	
Approval Recommended by		Chief Bridge Engineer No. 6729	

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

ADOBE CREEK BRIDGE

TYPICAL SECTION & GIRDER DETAILS

SCALE As Shown	BRIDGE 37-174 R/L	FILE	DRAWING C-5458-4

PREL. DRAWING No. P-5458

I HEREBY CERTIFY THAT THIS IS A TRUE AND ACCURATE COPY OF THE ABOVE DOCUMENT TAKEN UNDER MY DIRECTION AND CONTROL ON THIS DATE IN SACRAMENTO, CALIFORNIA PURSUANT TO AUTHORIZATION BY THE DIRECTOR OF PUBLIC WORKS.

DATE 4/24/71 SIGNATURE TITLE

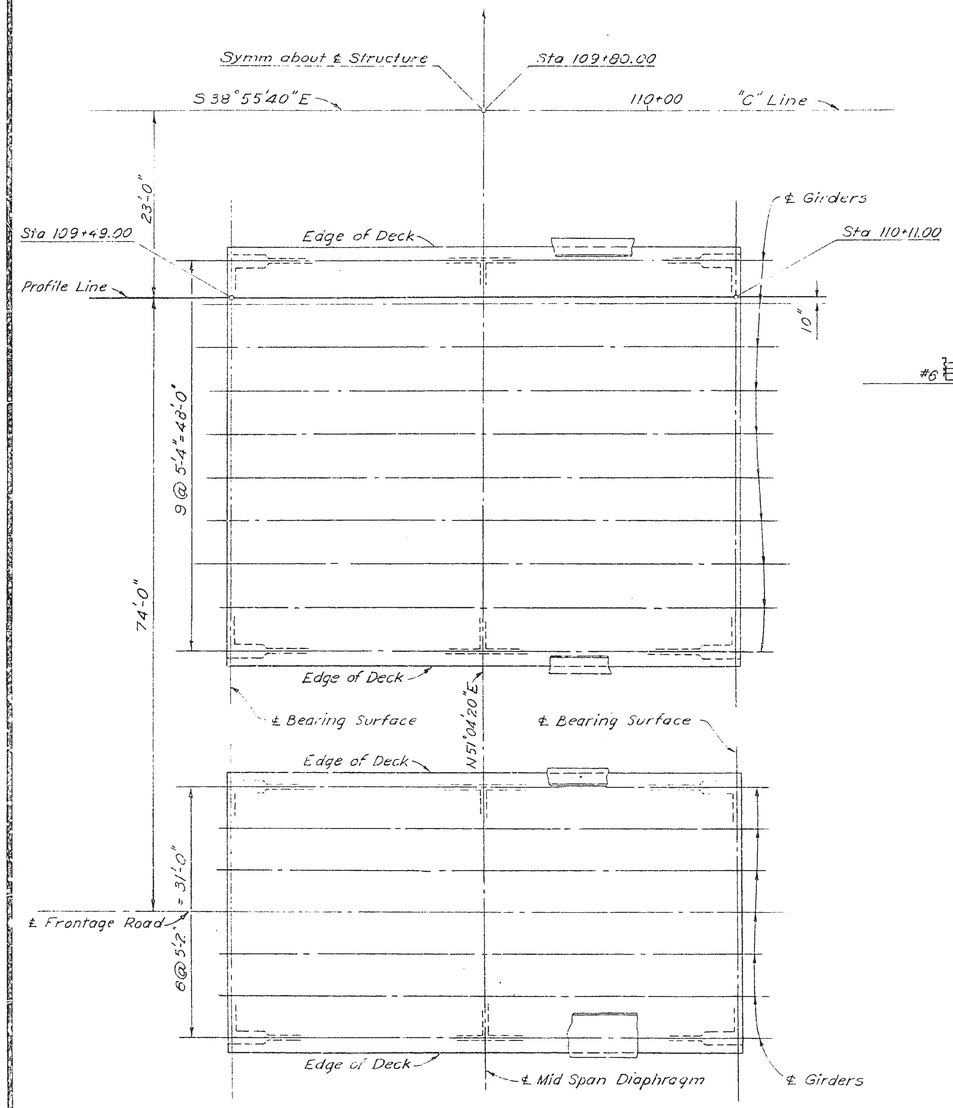
MICROFILM - STATE OF CALIFORNIA - DEPARTMENT OF PUBLIC WORKS - MICROFILM

FED. ROAD DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	CALIF.	U-181(35)		121	154

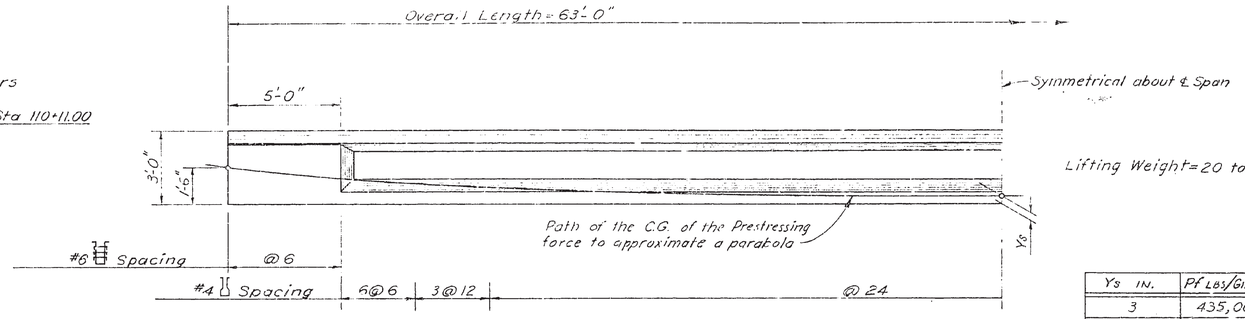
DIST.	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
IV	SCV	68	A	D-5	7

PRIME CONSULT. CIVIL ENGINEER—LICENSE NO. C-

DATE APPROVED NOV. 1958



HALF DECK PLAN
Scale: 1/8" = 1'-0"



GIRDER ELEVATION
Scale: 3/8" = 1'-0"

Ys IN.	Pf LBS/GIRDER
3	435,000
4	453,000
5	472,000

PRESTRESSING NOTES

PF = WORKING FORCE (THE FORCE REMAINING AFTER ALL LOSSES, INCLUDING THOSE DUE TO CREEP AND SHRINKAGE OF CONCRETE AND CREEP OF STEEL HAVE OCCURRED). SEE NOTE ON GIRDER ELEVATION AND TABLE ABOVE.

THE LOSS IN STRESS IN THE POST-TENSIONED PRESTRESSING STEEL DUE TO SHRINKAGE AND CREEP AND SEQUENCE STRESSING SHALL BE ASSUMED TO BE 24,000 P.S.I.

IN ADDITION TO THE 24,000 P.S.I. LOSS NOTED ABOVE, PROVISION SHALL BE MADE FOR LOSSES DUE TO FRICTION, ANCHORAGE TAKEUP, AND ANY OTHER LOSSES PECULIAR TO THE SYSTEM OF PRESTRESSING USED.

CONCRETE: F'C = 4,500 P.S.I. @ 28 DAYS

PRESTRESSING STEEL: SEE SPECIAL PROVISIONS.

CONTRACT No. 60-47C1-EP
DATE ADDENDUM 5-9-60
AS BUILT
REVISIONS 3/29/62

NOTE: Contractor shall furnish for approval, detail of additional Reinforcement required in end block for system of prestressing used.

Camber required in Girder Forms: None

AS BUILT PLANS
Contract No. 60-47C1
Date Completed
Document No. 40002374

BRIDGE DEPARTMENT
... DESIGN SECTION ...
Project Designer W. A. Chesney
Chief Designer Eric N. Degerlund

DESIGN	By G. O. Hallorsen 1-58	Checked H. W. Ohrmann 2-58
DETAILS	By J. K. Tsao 1-58	Checked H. W. Ohrmann 2-58
QUANTITIES	By J. H. Hsiao 2-58	Checked G. O. Hallorsen 2-58
SPECIFICATIONS	By Dave Lapham 2-58	Plans Engr. Concurred
Approval Recommended by Engineering Geologist		Chief Engr. License No. 6729

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

ADOBE CREEK BRIDGE

PRESTRESSED GIRDER LAYOUT

SCALE As Shown | BRIDGE 37-174 R/L | FILE | DRAWING C-5458-5

PREL. DRAWING No. P-5458 | 7 | 15 | 24 | 29

I HEREBY CERTIFY THAT THIS IS A TRUE AND ACCURATE COPY OF THE ABOVE DOCUMENT TAKEN UNDER MY DIRECTION AND CONTROL ON THIS DATE IN SACRAMENTO, CALIFORNIA PURSUANT TO AUTHORIZATION BY THE DIRECTOR OF PUBLIC WORKS.

DATE 9/23/74 SIGNATURE [illegible] TITLE [illegible]

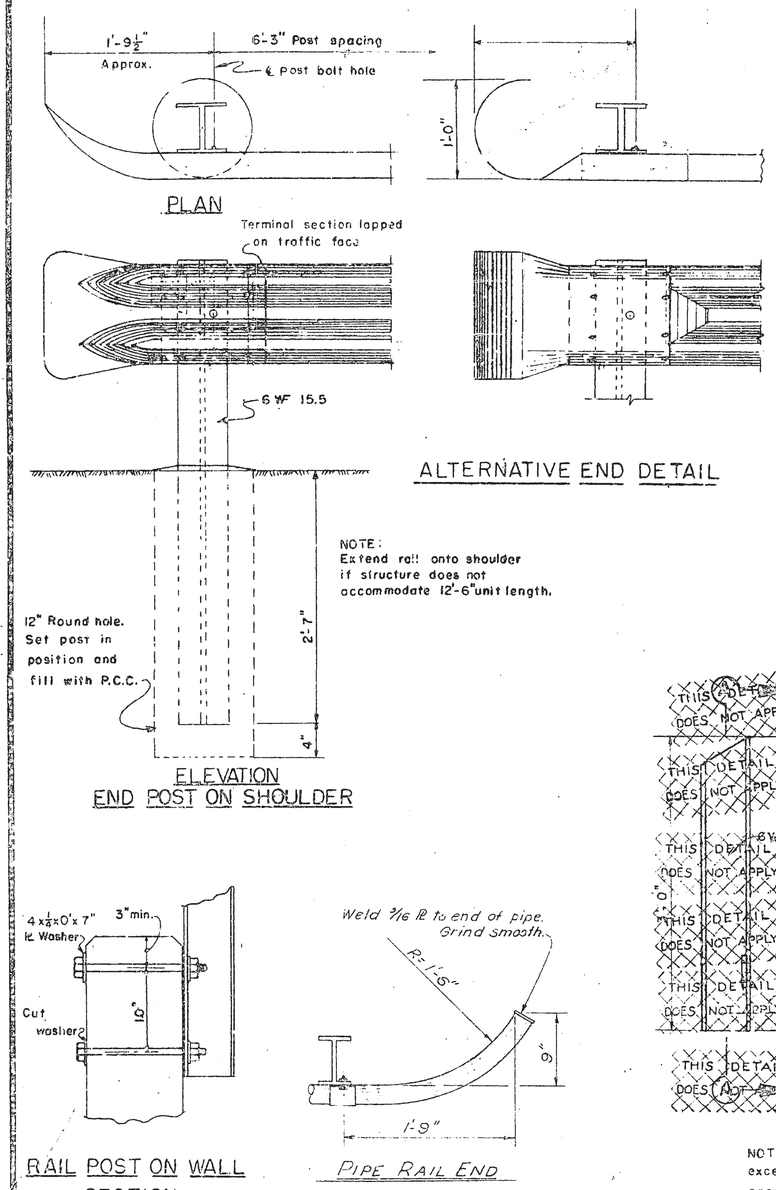
SCALE 1" = 50' MICROFILM - STATE OF CALIFORNIA - DEPARTMENT OF PUBLIC WORKS - MICROFILM
SCALE 1" = 20' MICROFILM - STATE OF CALIFORNIA - DEPARTMENT OF PUBLIC WORKS - MICROFILM
SCALE 1" = 10' or 1" = 100' MICROFILM - STATE OF CALIFORNIA - DEPARTMENT OF PUBLIC WORKS - MICROFILM
SCALE 1" = 40' MICROFILM - STATE OF CALIFORNIA - DEPARTMENT OF PUBLIC WORKS - MICROFILM

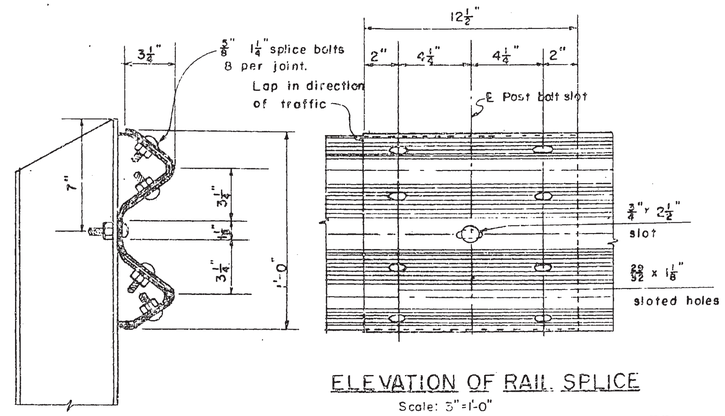
PROJ. ROAD FED. No.	STATE	PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
7	CALIF.	D-181(2)		122	154

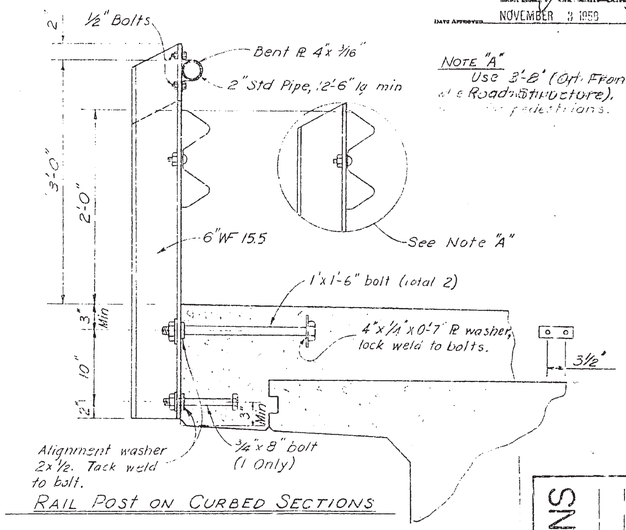
DIST.	COUNTY	ROUTE	SECTION	SHEET No.	TOTAL SHEETS
IV	SCl	68	A	D-6	7

DATE APPROVED NOVEMBER 3 1959

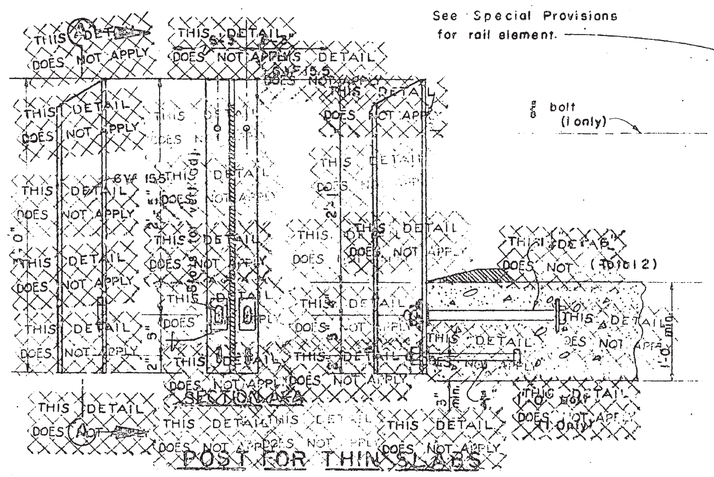
NOTE: At rail splice nearest expansion joint in bridge deck, slot holes in movable section of rail to allow same amount of movement as is provided in bridge deck. Place $\frac{1}{16}$" asbestos sheet packing between rail elements. Adjust bolts to provide sliding fit and set threads.

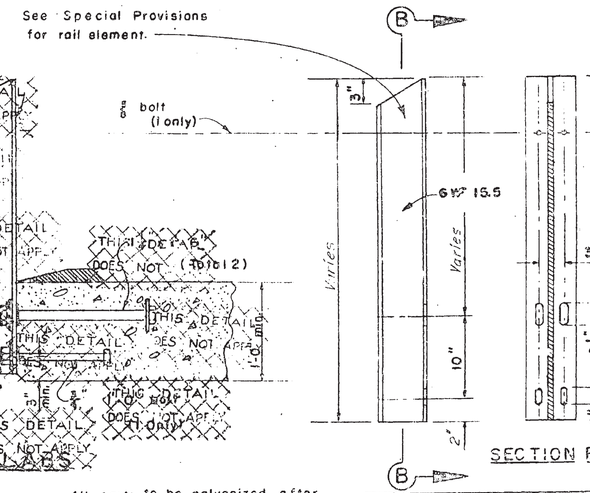


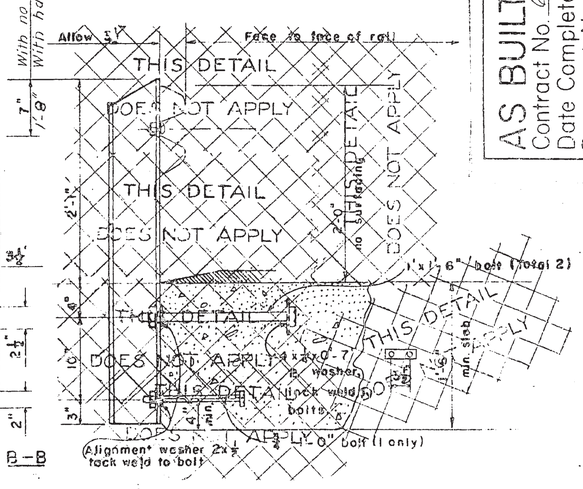




CONTRACT No. 60-4FC1-FY
DATE APPROVED 5-9-60
AS BUILT
REVISED BY
DATE







AS BUILT PLANS
Contract No. 60-4FC1
Date Completed
Document No. 4000237A

NOTES: Dimensions of all posts are similar except as noted. ~~Use 3½" posts whenever possible.~~ All anchor bolt to have hex nuts. Provide lock washers for top anchor bolts. Weld 4 x ¼ pads on WF posts when using 1¼" anchor bolts. Contractor to provide suitable metal chime to align posts. Space posts to clear expansion joints by 1'-0" min. to ℄ post.

All parts to be galvanized after fabrication. Railings on retaining walls to be placed after walls are backfilled. Bend bolts if necessary to maintain minimum clearance on superelevated slabs.

BRIDGE DEPARTMENT
DESIGN SECTION
Project Designer W. A. Cheney
Chief Designer Alan H. Dysenholt

DESIGN	By G. W. Hallman 1-58	Checked H. W. Shannon 2-58	
DETAILS	By J. H. Kim 1-58	Checked H. W. Shannon 2-58	
QUANTITIES	By J. H. Kim 2-58	Checked H. W. Shannon 2-58	
SPECIFICATIONS	By	Plans and Bids Compared	
Approval Recommended by	Bridge Engineer	Reg. Civil Engr. No. 6729	

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

ADOBE CREEK BRIDGE

METAL BEAM BRIDGE RAILING

SCALE ½" = 1'-0" Except as shown | BRIDGE 37-174R/L | FILE | DRAWING XS-9-62 C-5458-6

PREL. DRAWING No. P-5458 | 8 | 16 | 23

I HEREBY CERTIFY THAT THIS IS A TRUE AND ACCURATE COPY OF THE ABOVE DOCUMENT TAKEN UNDER MY DIRECTION AND CONTROL ON THIS DATE IN SACRAMENTO, CALIFORNIA PURSUANT TO AUTHORIZATION BY THE DIRECTOR OF PUBLIC WORKS.

DATE SIGNATURE TITLE

MICROFILM - STATE OF CALIFORNIA - DEPARTMENT OF PUBLIC WORKS - MICROFILM

FED. ROAD DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	CAL.	U-181(13)		123	154

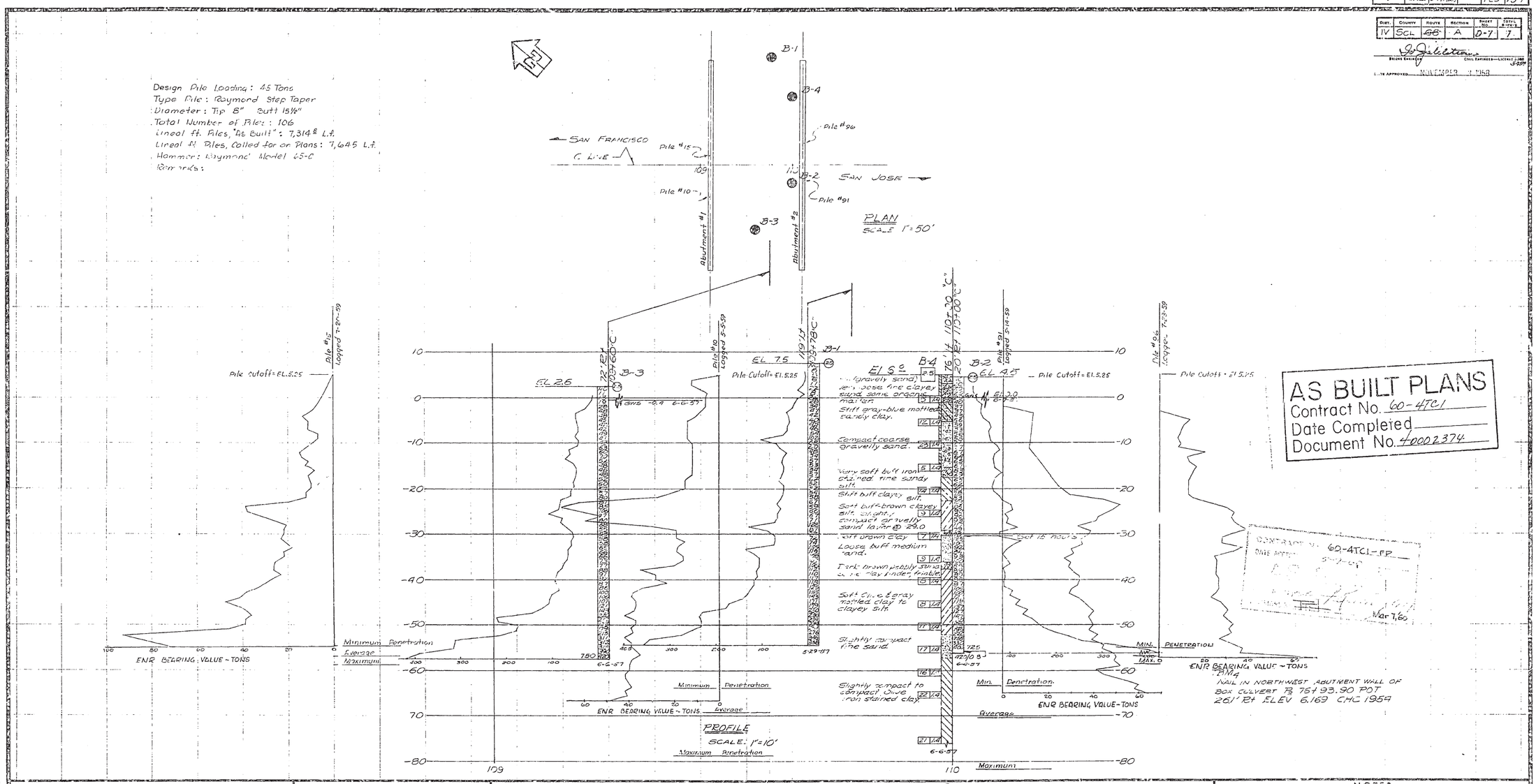
DIST.	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
IV	SCL	68	A	D-7	7

BRIDGE ENGINEER — CIVIL ENGINEER—LICENSE 2388 — 3-1-57

DATE APPROVED NOVEMBER 7, 1958

BRIDGE DEPARTMENT

Design Pile Loading: 45 Tons
Type Pile: Raymond Step Taper
Diameter: Tip 8" Butt 15½"
Total Number of Piles: 106
Lineal ft. Piles, "As Built": 7,314.8 L.f.
Lineal ft. Piles, Called for on Plans: 7,645 L.f.
Hammer: Raymond Model 45-C
Remarks:



FIELD STUDY — DRAWN — CHECKED — Approval Recommended by — Bridge Engineer

Classification of Material Based on Standard Grade Size Limits

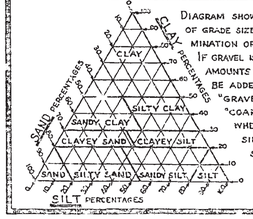


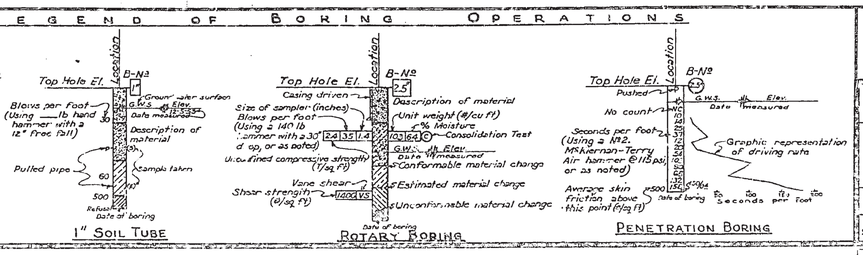
Diagram showing the basis for estimates of grade size distribution used in determination of class names. If gravel is present in appreciable amounts the term "gravelly" may be added to the class name, viz. "gravelly sand". The terms "coarse", "medium" and "fine" when used to describe sand, silt and gravel refer to standard grade size limits.

Legend of Earth Materials

- Gravel
- Sand
- Silt
- Clay
- Sandy Clay or Clayey Sand
- Sandy Silt or Silty Sand
- Silty Clay or Clayey Silt
- Peat and/or Organic Matter
- Fill Material
- Igneous Rock
- Sedimentary Rock
- Metamorphic Rock

Legend of Boring Operations

- Plan of any boring
- Penetrometer
- 2½" Cone Penetrometer
- Sampler boring (dry)
- Rotary boring (wet)
- Auger boring (dry)
- Jet boring
- Core boring
- Test pit



Notes

The contractor's attention is directed to Section 2, Article (c) of the Standard Specifications and to the Special Provisions accompanying this set of plans.

Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

ADOBE CREEK

LOG OF TEST BORINGS

SCALE As Shown	BRIDGE 37-174 R/L	FILE E-37	DRAWING C-5458-7

PREL. DRAWING NO. P-5453 | 29 | | | | | MC9558-3

T-34

I HEREBY CERTIFY THAT THIS IS A TRUE AND ACCURATE COPY OF THE ABOVE DOCUMENT DRAWN UNDER MY DIRECTION AND CONTROL ON THIS DATE IN SACRAMENTO, CALIFORNIA PURSUANT TO AUTHORIZATION BY THE DIRECTOR OF PUBLIC WORKS.

DATE ____ SIGNATURE ____ TITLE ____

MICROFILM - STATE OF CALIFORNIA - DEPARTMENT OF PUBLIC WORKS - MICROFILM

==========

LPILE Plus for Windows, Version 4.0

Analysis of Individual Piles and Drilled Shafts
Subjected to Lateral Loading Using the p-y Method

(c) Copyright ENSOFT, Inc., 1985-2001
All Rights Reserved

==========

This program is licensed to:

IT - San Jose
URS Corporation

Path to file locations: X:\101-Aux-VTA\440_geotech\Analysis\Pile\Lateral\Adobe\
Name of input data file: Adobe Creek Bridge_Abutments_fixed.lpd
Name of output file: Adobe Creek Bridge_Abutments_fixed.lpo
Name of plot output file: Adobe Creek Bridge_Abutments_fixed.lpp
Name of runtime file: Adobe Creek Bridge_Abutments_fixed.lpr

Time and Date of Analysis

Date: November 10, 2009 Time: 15:27:38

Problem Title

---

101 Auxillary_Adobe Creek Bridge_Fixed

Program Options

Units Used in Computations - US Customary Units, inches, pounds

Basic Program Options:

Analysis Type 1:
- Computation of Lateral Pile Response Using User-specified Constant EI

Computation Options:
- Only internally-generated p-y curves used in analysis
- Analysis does not use p-y multipliers (individual pile or shaft action only)
- Analysis assumes no shear resistance at pile tip
- Analysis for fixed-length pile or shaft only
- No computation of foundation stiffness matrix elements

- Output pile response for full length of pile
- Analysis assumes no soil movements acting on pile
- No additional p-y curves to be computed at user-specified depths

Solution Control Parameters:
- Number of pile increments = 140
- Maximum number of iterations allowed = 100
- Deflection tolerance for convergence = 1.0000E-05 in
- Maximum allowable deflection = 1.0000E+02 in

Printing Options:
- Values of pile-head deflection, bending moment, shear force, and soil reaction are printed for full length of pile.
- Printing Increment (spacing of output points) = 1

Pile Structural Properties and Geometry

Pile Length = 840.00 in
Depth of ground surface below top of pile = -36.00 in
Slope angle of ground surface = 26.60 deg.

Structural properties of pile defined using 10 points

Point	Depth X in	Pile Diameter in	Moment of Inertia in**4	Pile Area Sq.in	Modulus of Elasticity lbs/Sq.in
1	0.0000	15.500	2833.3300	188.6900	2050000.000
2	108.0000	14.536	2191.3600	165.9400	2050000.000
3	216.0000	13.571	1665.2100	144.6600	2050000.000
4	252.0000	13.250	1512.9800	137.8900	2050000.000
5	312.0000	12.714	1282.7400	126.9600	2050000.000
6	444.0000	11.536	869.2500	104.5100	2050000.000
7	516.0000	10.893	691.0800	93.1900	2050000.000
8	672.0000	9.60714000	418.1600	72.4900	2050000.000
9	720.0000	9.07143000	332.4100	64.6300	2050000.000
10	840.0000	8.00000000	201.0600	50.2600	2050000.000

Soil and Rock Layering Information

The soil profile is modelled using 10 layers

Layer 1 is stiff clay without free water
Distance from top of pile to top of layer = -36.000 in
Distance from top of pile to bottom of layer = .000 in
p-y subgrade modulus k for top of soil layer = 72.000 lbs/in**3
p-y subgrade modulus k for bottom of layer = 72.000 lbs/in**3

Layer 2 is stiff clay without free water
Distance from top of pile to top of layer = .000 in
Distance from top of pile to bottom of layer = 108.000 in

```
p-y subgrade modulus k for top of soil layer =      380.000 lbs/in**3
p-y subgrade modulus k for bottom of layer   =      380.000 lbs/in**3

Layer  3 is sand, p-y criteria by Reese et al., 1974
Distance from top of pile to top of layer    =      108.000 in
Distance from top of pile to bottom of layer =      216.000 in
p-y subgrade modulus k for top of soil layer =       60.000 lbs/in**3
p-y subgrade modulus k for bottom of layer   =       60.000 lbs/in**3

Layer  4 is stiff clay without free water
Distance from top of pile to top of layer    =      216.000 in
Distance from top of pile to bottom of layer =      252.000 in
p-y subgrade modulus k for top of soil layer =      100.000 lbs/in**3
p-y subgrade modulus k for bottom of layer   =      100.000 lbs/in**3

Layer  5 is sand, p-y criteria by Reese et al., 1974
Distance from top of pile to top of layer    =      252.000 in
Distance from top of pile to bottom of layer =      312.000 in
p-y subgrade modulus k for top of soil layer =      125.000 lbs/in**3
p-y subgrade modulus k for bottom of layer   =      125.000 lbs/in**3

Layer  6 is stiff clay without free water
Distance from top of pile to top of layer    =      312.000 in
Distance from top of pile to bottom of layer =      444.000 in
p-y subgrade modulus k for top of soil layer =      100.000 lbs/in**3
p-y subgrade modulus k for bottom of layer   =      100.000 lbs/in**3

Layer  7 is stiff clay without free water
Distance from top of pile to top of layer    =      444.000 in
Distance from top of pile to bottom of layer =      516.000 in
p-y subgrade modulus k for top of soil layer =      600.000 lbs/in**3
p-y subgrade modulus k for bottom of layer   =      600.000 lbs/in**3

Layer  8 is stiff clay without free water
Distance from top of pile to top of layer    =      516.000 in
Distance from top of pile to bottom of layer =      672.000 in
p-y subgrade modulus k for top of soil layer =      180.000 lbs/in**3
p-y subgrade modulus k for bottom of layer   =      180.000 lbs/in**3

Layer  9 is stiff clay without free water
Distance from top of pile to top of layer    =      672.000 in
Distance from top of pile to bottom of layer =      720.000 in
p-y subgrade modulus k for top of soil layer =      180.000 lbs/in**3
p-y subgrade modulus k for bottom of layer   =      180.000 lbs/in**3

Layer 10 is stiff clay with water-induced erosion
Distance from top of pile to top of layer    =      720.000 in
Distance from top of pile to bottom of layer =      900.000 in
p-y subgrade modulus k for top of soil layer =      380.000 lbs/in**3
p-y subgrade modulus k for bottom of layer   =      380.000 lbs/in**3


(Depth of lowest layer extends   60.00 in below pile tip)

--------------------------------------------------------------------------------
                    Effective Unit Weight of Soil vs. Depth
```

Distribution of effective unit weight of soil with depth
is defined using 20 points

Point No.	Depth X in	Eff. Unit Weight lbs/in**3
1	-36.00	.07523
2	.00	.07523
3	.00	.03135
4	108.00	.03135
5	108.00	.04490
6	216.00	.04490
7	216.00	.03044
8	252.00	.03044
9	252.00	.04201
10	312.00	.04201
11	312.00	.03330
12	444.00	.03330
13	444.00	.03330
14	516.00	.03330
15	516.00	.03330
16	672.00	.03330
17	672.00	.03560
18	720.00	.03560
19	720.00	.03330
20	900.00	.03330

Shear Strength of Soils

Distribution of shear strength parameters with depth
defined using 20 points

Point No.	Depth X in	Cohesion c lbs/in**2	Angle of Friction Deg.	E50 or k_rm	RQD %
1	-36.000	6.11000	.00	.01000	.0
2	.000	6.11000	.00	.01000	.0
3	.000	11.81000	.00	.00800	.0
4	108.000	11.81000	.00	.00800	.0
5	108.000	.00000	38.00	------	------
6	216.000	.00000	38.00	------	------
7	216.000	6.94400	.00	.01000	.0
8	252.000	6.94400	.00	.01000	.0
9	252.000	.00000	38.00	------	------
10	312.000	.00000	38.00	------	------
11	312.000	6.94400	.00	.01000	.0
12	444.000	6.94400	.00	.01000	.0
13	444.000	16.66600	.00	.00600	.0
14	516.000	16.66600	.00	.00600	.0
15	516.000	8.33300	.00	.00800	.0
16	672.000	8.33300	.00	.00800	.0

17	672.000	8.19400	.00	.00800	.0
18	720.000	8.19400	.00	.00800	.0
19	720.000	11.80500	.00	.00700	.0
20	900.000	11.80500	.00	.00700	.0

Notes:

(1) Cohesion = uniaxial compressive strength for rock materials.
(2) Values of E50 are reported for clay strata.
(3) Default values will be generated for E50 when input values are 0.
(4) RQD and k_rm are reported only for weak rock strata.

Static loading criteria was used for computation of p-y curves

---

Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 2

Load Case Number 1

Pile-head boundary conditions are Shear and Slope (BC Type 2)
Shear force at pile head = 5000.000 lbs
Slope at pile head = .000 in/in
Axial load at pile head = 90000.000 lbs

(Zero slope for this load indicates fixed-head condition)

Load Case Number 2

Pile-head boundary conditions are Shear and Slope (BC Type 2)
Shear force at pile head = 19500.000 lbs
Slope at pile head = .000 in/in
Axial load at pile head = 90000.000 lbs

(Zero slope for this load indicates fixed-head condition)

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 1

Pile-head boundary conditions are Shear and Slope (BC Type 2)
Specified shear force at pile head = 5000.000 lbs
Specified slope at pile head = 0.000E+00 in/in
Specified axial load at pile head = 90000.000 lbs

(Zero slope for this load indicates fixed-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res p lbs/in

0.000	.012413	-1.113E+05	5000.0000	-1.012E-18	781.5055	-41.1314
6.000	.012064	-82043.3066	4554.6619	-1.012E-04	706.6774	-87.2826
12.000	.011199	-55848.0492	4078.6191	-1.737E-04	639.0722	-91.4303
18.000	.009980	-32912.3262	3521.2816	-2.209E-04	579.3419	-94.3488
24.000	.008548	-13354.0809	2950.1597	-2.458E-04	528.0364	-96.0252
30.000	.007030	2755.1030	2372.8250	-2.516E-04	501.4039	-96.4198
36.000	.005529	15391.5354	1797.1511	-2.415E-04	541.5402	-95.4715
42.000	.004132	24581.7061	1231.4437	-2.189E-04	572.3885	-93.0976
48.000	.002902	30405.3247	684.5861	-1.876E-04	593.9024	-89.1882
54.000	.001881	32999.3078	166.2467	-1.509E-04	606.2000	-83.5916
60.000	.001091	32563.2343	-312.7615	-1.124E-04	609.5899	-76.0778
66.000	5.32E-04	29367.5786	-739.6843	-7.557E-05	604.6063	-66.2297
72.000	1.85E-04	23768.6373	-1097.2929	-4.350E-05	592.0681	-52.9731
78.000	1.04E-05	16247.0462	-1342.0744	-1.901E-05	573.2158	-28.6207
84.000	-4.35E-05	7684.2731	-1170.9151	-4.156E-06	550.6101	85.6738
90.000	-3.95E-05	2200.5535	-662.2724	2.063E-06	537.2842	83.8738
96.000	-1.87E-05	-265.2236	-201.8872	3.293E-06	535.0850	69.5880
102.000	-3.63E-11	-225.6485	7.3284	2.973E-06	539.0041	.1505
108.000	1.69E-05	-180.4939	7.4016	1.511E-06	1794.2793	-.1261
114.000	1.81E-05	-138.4612	6.5988	1.034E-07	546.7202	-.1415
120.000	1.82E-05	-101.4199	5.7290	-5.990E-08	550.5475	-.1485
126.000	1.74E-05	-69.6482	4.8385	-1.779E-07	554.4479	-.1484
132.000	1.61E-05	-43.1661	3.9655	-2.568E-07	558.4232	-.1426
138.000	1.43E-05	-21.7845	3.1404	-3.029E-07	562.4744	-.1324
144.000	1.24E-05	-5.1538	2.3854	-3.222E-07	566.6023	-.1192
150.000	1.05E-05	7.1880	1.7149	-3.207E-07	570.8582	-.1042
156.000	8.57E-06	15.7715	1.1368	-3.036E-07	575.2020	-.088470
162.000	6.82E-06	21.1575	.6528	-2.757E-07	579.6006	-.072854
168.000	5.26E-06	23.9033	.2600	-2.412E-07	584.0571	-.058104
174.000	3.92E-06	24.5375	-.048617	-2.036E-07	588.5747	-.044754
180.000	2.82E-06	23.5398	-.2823	-1.657E-07	593.1565	-.033152
186.000	1.94E-06	21.3285	-.4522	-1.298E-07	597.8057	-.023475
192.000	1.26E-06	18.2534	-.5699	-9.753E-08	602.5250	-.015745
198.000	7.66E-07	14.5953	-.6466	-7.036E-08	607.3173	-.009839
204.000	4.17E-07	10.5699	-.6927	-4.920E-08	612.1850	-.005506
210.000	1.76E-07	6.3365	-.7163	-3.475E-08	617.1307	-.002383
216.000	-5.47E-15	2.0115	-.5294	-1.464E-08	1790.7284	.064705
222.000	-3.19E-15	8.450E-08	-.1676	4.561E-16	627.0393	.055874
228.000	-1.07E-21	-2.932E-07	-7.018E-09	2.658E-16	632.0077	1.863E-08
234.000	4.68E-22	-1.811E-13	2.443E-08	8.887E-23	637.0554	-8.145E-09
240.000	0.000	4.164E-14	1.509E-14	-3.897E-23	642.1844	-7.344E-15
246.000	0.000	7.088E-21	-3.470E-15	0.0000	647.3966	1.157E-15
252.000	0.000	4.821E-21	-3.477E-22	0.0000	1790.6884	1.211E-23
258.000	0.000	2.951E-21	-2.749E-22	0.0000	657.9092	1.215E-23
264.000	0.000	1.516E-21	-2.048E-22	0.0000	663.2082	1.123E-23
270.000	0.000	4.840E-22	-1.419E-22	0.0000	668.5932	9.741E-24
276.000	0.000	-1.982E-22	-8.869E-23	0.0000	674.0664	7.984E-24
282.000	0.000	-5.928E-22	-4.615E-23	0.0000	679.6300	6.193E-24
288.000	0.000	-7.637E-22	-1.401E-23	0.0000	685.2861	4.522E-24
294.000	0.000	-7.710E-22	8.736E-24	0.0000	691.0372	3.059E-24
300.000	0.000	-6.672E-22	2.342E-23	0.0000	696.8857	1.834E-24
306.000	0.000	-4.967E-22	3.141E-23	0.0000	702.8340	8.314E-25
312.000	0.000	-2.955E-22	4.158E-23	0.0000	1790.6884	2.558E-24
318.000	0.000	0.0000	2.463E-23	0.0000	714.6286	-8.210E-24
324.000	0.000	0.0000	0.0000	0.0000	720.4663	0.0000
330.000	0.000	0.0000	0.0000	0.0000	726.4002	0.0000

336.000	0.000	0.0000	0.0000	0.0000	732.4327	0.0000
342.000	0.000	0.0000	0.0000	0.0000	738.5662	0.0000
348.000	0.000	0.0000	0.0000	0.0000	744.8033	0.0000
354.000	0.000	0.0000	0.0000	0.0000	751.1466	0.0000
360.000	0.000	0.0000	0.0000	0.0000	757.5989	0.0000
366.000	0.000	0.0000	0.0000	0.0000	764.1631	0.0000
372.000	0.000	0.0000	0.0000	0.0000	770.8419	0.0000
378.000	0.000	0.0000	0.0000	0.0000	777.6386	0.0000
384.000	0.000	0.0000	0.0000	0.0000	784.5561	0.0000
390.000	0.000	0.0000	0.0000	0.0000	791.5979	0.0000
396.000	0.000	0.0000	0.0000	0.0000	798.7672	0.0000
402.000	0.000	0.0000	0.0000	0.0000	806.0675	0.0000
408.000	0.000	0.0000	0.0000	0.0000	813.5025	0.0000
414.000	0.000	0.0000	0.0000	0.0000	821.0759	0.0000
420.000	0.000	0.0000	0.0000	0.0000	828.7917	0.0000
426.000	0.000	0.0000	0.0000	0.0000	836.6539	0.0000
432.000	0.000	0.0000	0.0000	0.0000	844.6667	0.0000
438.000	0.000	0.0000	0.0000	0.0000	852.8344	0.0000
444.000	0.000	0.0000	0.0000	0.0000	1790.6884	0.0000
450.000	0.000	0.0000	0.0000	0.0000	869.0055	0.0000
456.000	0.000	0.0000	0.0000	0.0000	876.9935	0.0000
462.000	0.000	0.0000	0.0000	0.0000	885.1298	0.0000
468.000	0.000	0.0000	0.0000	0.0000	893.4185	0.0000
474.000	0.000	0.0000	0.0000	0.0000	901.8639	0.0000
480.000	0.000	0.0000	0.0000	0.0000	910.4704	0.0000
486.000	0.000	0.0000	0.0000	0.0000	919.2428	0.0000
492.000	0.000	0.0000	0.0000	0.0000	928.1859	0.0000
498.000	0.000	0.0000	0.0000	0.0000	937.3047	0.0000
504.000	0.000	0.0000	0.0000	0.0000	946.6045	0.0000
510.000	0.000	0.0000	0.0000	0.0000	956.0907	0.0000
516.000	0.000	0.0000	0.0000	0.0000	1790.6884	0.0000
522.000	0.000	0.0000	0.0000	0.0000	974.0908	0.0000
528.000	0.000	0.0000	0.0000	0.0000	982.5575	0.0000
534.000	0.000	0.0000	0.0000	0.0000	991.1726	0.0000
540.000	0.000	0.0000	0.0000	0.0000	999.9402	0.0000
546.000	0.000	0.0000	0.0000	0.0000	1008.8642	0.0000
552.000	0.000	0.0000	0.0000	0.0000	1017.9490	0.0000
558.000	0.000	0.0000	0.0000	0.0000	1027.1988	0.0000
564.000	0.000	0.0000	0.0000	0.0000	1036.6183	0.0000
570.000	0.000	0.0000	0.0000	0.0000	1046.2122	0.0000
576.000	0.000	0.0000	0.0000	0.0000	1055.9853	0.0000
582.000	0.000	0.0000	0.0000	0.0000	1065.9427	0.0000
588.000	0.000	0.0000	0.0000	0.0000	1076.0897	0.0000
594.000	0.000	0.0000	0.0000	0.0000	1086.4317	0.0000
600.000	0.000	0.0000	0.0000	0.0000	1096.9744	0.0000
606.000	0.000	0.0000	0.0000	0.0000	1107.7238	0.0000
612.000	0.000	0.0000	0.0000	0.0000	1118.6859	0.0000
618.000	0.000	0.0000	0.0000	0.0000	1129.8671	0.0000
624.000	0.000	0.0000	0.0000	0.0000	1141.2741	0.0000
630.000	0.000	0.0000	0.0000	0.0000	1152.9138	0.0000
636.000	0.000	0.0000	0.0000	0.0000	1164.7934	0.0000
642.000	0.000	0.0000	0.0000	0.0000	1176.9203	0.0000
648.000	0.000	0.0000	0.0000	0.0000	1189.3024	0.0000
654.000	0.000	0.0000	0.0000	0.0000	1201.9478	0.0000
660.000	0.000	0.0000	0.0000	0.0000	1214.8650	0.0000
666.000	0.000	0.0000	0.0000	0.0000	1228.0628	0.0000
672.000	0.000	0.0000	0.0000	0.0000	1790.6884	0.0000

678.000	0.000	0.0000	0.0000	0.0000	1258.6092	0.0000
684.000	0.000	0.0000	0.0000	0.0000	1276.1432	0.0000
690.000	0.000	0.0000	0.0000	0.0000	1294.1726	0.0000
696.000	0.000	0.0000	0.0000	0.0000	1312.7188	0.0000
702.000	0.000	0.0000	0.0000	0.0000	1331.8042	0.0000
708.000	0.000	0.0000	0.0000	0.0000	1351.4528	0.0000
714.000	0.000	0.0000	0.0000	0.0000	1371.6898	0.0000
720.000	0.000	0.0000	0.0000	0.0000	1790.6884	0.0000
726.000	0.000	0.0000	0.0000	0.0000	1408.1973	0.0000
732.000	0.000	0.0000	0.0000	0.0000	1424.2084	0.0000
738.000	0.000	0.0000	0.0000	0.0000	1440.5878	0.0000
744.000	0.000	0.0000	0.0000	0.0000	1457.3483	0.0000
750.000	0.000	0.0000	0.0000	0.0000	1474.5034	0.0000
756.000	0.000	0.0000	0.0000	0.0000	1492.0672	0.0000
762.000	0.000	0.0000	0.0000	0.0000	1510.0544	0.0000
768.000	0.000	0.0000	0.0000	0.0000	1528.4807	0.0000
774.000	0.000	0.0000	0.0000	0.0000	1547.3622	0.0000
780.000	0.000	0.0000	0.0000	0.0000	1566.7160	0.0000
786.000	0.000	0.0000	0.0000	0.0000	1586.5601	0.0000
792.000	0.000	0.0000	0.0000	0.0000	1606.9133	0.0000
798.000	0.000	0.0000	0.0000	0.0000	1627.7955	0.0000
804.000	0.000	0.0000	0.0000	0.0000	1649.2276	0.0000
810.000	0.000	0.0000	0.0000	0.0000	1671.2316	0.0000
816.000	0.000	0.0000	0.0000	0.0000	1693.8307	0.0000
822.000	0.000	0.0000	0.0000	0.0000	1717.0493	0.0000
828.000	0.000	0.0000	0.0000	0.0000	1740.9134	0.0000
834.000	0.000	0.0000	0.0000	0.0000	1765.4501	0.0000
840.000	0.000	0.0000	0.0000	0.0000	1790.6884	0.0000

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 1:

```
Pile-head deflection             =      .01241327 in
Computed slope at pile head      =   -1.01192E-18
Maximum bending moment           =    -111334.389 lbs-in
Maximum shear force              =       5000.000 lbs
Depth of maximum bending moment  =          0.000 in
Depth of maximum shear force     =          0.000 in
Number of iterations             =             17
Number of zero deflection points =             47
```

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 2

```
Pile-head boundary conditions are Shear and Slope (BC Type 2)
Specified shear force at pile head  =       19500.000 lbs
Specified slope at pile head        =       0.000E+00 in/in
Specified axial load at pile head   =       90000.000 lbs
```

(Zero slope for this load indicates fixed-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res p lbs/in
0.000	.257763	-7.684E+05	19500.0000	1.850E-17	2578.7549	-87.7685
6.000	.255351	-6.528E+05	18090.4470	-7.434E-04	2282.1809	-187.1408
12.000	.248842	-5.435E+05	17518.5836	-.001373	1997.8968	-198.4220
18.000	.238878	-4.410E+05	16297.5382	-.001897	1727.5014	-208.5931
24.000	.226072	-3.459E+05	15018.8166	-.002322	1472.5394	-217.6474
30.000	.211010	-2.583E+05	13689.2090	-.002653	1234.4978	-225.5551
36.000	.194238	-1.787E+05	12315.7368	-.002895	1014.8007	-232.2690
42.000	.176269	-1.074E+05	10905.7475	-.003056	814.8010	-237.7275
48.000	.157569	-44561.9098	9467.0069	-.003142	635.7703	-241.8527
54.000	.138563	9597.3846	8007.8078	-.003162	536.2560	-244.5470
60.000	.119623	54946.9507	6537.1163	-.003124	677.2119	-245.6835
66.000	.101073	91416.8448	5064.7915	-.003037	794.1173	-245.0914
72.000	.083181	1.190E+05	3601.9391	-.002910	886.1892	-242.5261
78.000	.066157	1.378E+05	2161.5214	-.002752	952.8355	-237.6132
84.000	.050155	1.479E+05	759.4965	-.002574	993.7082	-229.7284
90.000	.035265	1.497E+05	-582.7959	-.002386	1008.7893	-217.7024
96.000	.021519	1.435E+05	-1832.6138	-.002198	998.5472	-198.9036
102.000	.008887	1.301E+05	-2923.3285	-.002020	964.2756	-164.6680
108.000	-.002720	1.106E+05	-3356.6096	-.001129	3991.0276	20.2409
114.000	-.004666	90999.9225	-3186.6608	-2.628E-04	851.0191	36.4087
120.000	-.005874	72643.9892	-2933.6001	-1.514E-04	795.9141	47.9449
126.000	-.006483	55960.2430	-2624.0060	-6.264E-05	745.4063	55.2531
132.000	-.006625	41223.5666	-2281.6946	5.372E-06	700.5729	58.8507
138.000	-.006419	28574.1064	-1927.1670	5.490E-05	662.0682	59.3252
144.000	-.005967	18038.2714	-1577.3068	8.844E-05	630.1763	57.2949
150.000	-.005357	9550.9105	-1245.3012	1.086E-04	604.8700	53.3737
156.000	-.004664	2977.4037	-940.7531	1.178E-04	585.8738	48.1424
162.000	-.003943	-1865.3813	-669.9468	1.186E-04	586.3211	42.1264
168.000	-.003240	-5190.0884	-436.2299	1.132E-04	603.0998	35.7793
174.000	-.002585	-7222.4216	-240.4728	1.036E-04	615.4180	29.4731
180.000	-.001997	-8187.6193	-81.5749	9.141E-05	623.9679	23.4929
186.000	-.001488	-8300.0427	43.0137	7.819E-05	629.4314	18.0367
192.000	-.001059	-7755.9039	136.7782	6.512E-05	632.4524	13.2181
198.000	-7.06E-04	-6729.0337	203.6495	5.313E-05	633.6175	9.0723
204.000	-4.21E-04	-5369.4938	247.5543	4.296E-05	633.4485	5.5627
210.000	-1.91E-04	-3804.7743	272.0115	3.511E-05	632.4023	2.5897
216.000	6.73E-09	-2143.2757	270.2069	1.623E-05	1833.3279	-3.1913
222.000	3.76E-06	-579.8152	187.4151	1.084E-07	629.4292	-24.4060
228.000	1.31E-06	105.5880	58.1186	-3.133E-07	632.4480	-18.6928
234.000	1.46E-09	117.9461	-8.7838	-1.090E-07	637.5531	-3.6080
240.000	-9.53E-10	.2997	-9.8300	-1.216E-10	642.1857	3.2593
246.000	-5.09E-16	-.013235	-.025731	1.463E-10	647.3967	.008806
252.000	8.02E-10	-.009182	6.262E-04	6.690E-11	1790.6886	-2.043E-05
258.000	8.03E-10	-.005793	5.018E-04	-5.629E-12	657.9092	-2.104E-05
264.000	7.35E-10	-.003155	3.792E-04	-1.447E-11	663.2082	-1.981E-05
270.000	6.29E-10	-.001227	2.675E-04	-1.886E-11	668.5932	-1.743E-05
276.000	5.09E-10	7.540E-05	1.718E-04	-2.002E-11	674.0664	-1.447E-05
282.000	3.89E-10	8.563E-04	9.429E-05	-1.905E-11	679.6300	-1.136E-05
288.000	2.80E-10	.001227	3.504E-05	-1.685E-11	685.2862	-8.388E-06
294.000	1.87E-10	.001295	-7.326E-06	-1.414E-11	691.0373	-5.735E-06

300.000	1.10E-10	.001155	-3.495E-05	-1.146E-11	696.8857	-3.471E-06
306.000	4.92E-11	8.881E-04	-5.011E-05	-9.196E-12	702.8340	-1.585E-06
312.000	5.50E-19	5.633E-04	-7.438E-05	-4.100E-12	1790.6884	-6.503E-06
318.000	-9.38E-19	1.746E-10	-4.694E-05	-4.585E-20	714.6286	1.565E-05
324.000	-5.14E-25	-6.652E-11	-1.455E-11	7.818E-20	720.4663	8.544E-12
330.000	1.11E-25	-5.146E-17	5.543E-12	0.0000	726.4002	-1.848E-12
336.000	0.000	7.666E-18	4.287E-18	0.0000	732.4327	-1.855E-18
342.000	0.000	9.352E-24	-6.389E-19	0.0000	738.5662	2.130E-19
348.000	0.000	-8.616E-25	-7.793E-25	0.0000	744.8033	3.076E-25
354.000	0.000	0.0000	0.0000	0.0000	751.1466	0.0000
360.000	0.000	0.0000	0.0000	0.0000	757.5989	0.0000
366.000	0.000	0.0000	0.0000	0.0000	764.1631	0.0000
372.000	0.000	0.0000	0.0000	0.0000	770.8419	0.0000
378.000	0.000	0.0000	0.0000	0.0000	777.6386	0.0000
384.000	0.000	0.0000	0.0000	0.0000	784.5561	0.0000
390.000	0.000	0.0000	0.0000	0.0000	791.5979	0.0000
396.000	0.000	0.0000	0.0000	0.0000	798.7672	0.0000
402.000	0.000	0.0000	0.0000	0.0000	806.0675	0.0000
408.000	0.000	0.0000	0.0000	0.0000	813.5025	0.0000
414.000	0.000	0.0000	0.0000	0.0000	821.0759	0.0000
420.000	0.000	0.0000	0.0000	0.0000	828.7917	0.0000
426.000	0.000	0.0000	0.0000	0.0000	836.6539	0.0000
432.000	0.000	0.0000	0.0000	0.0000	844.6667	0.0000
438.000	0.000	0.0000	0.0000	0.0000	852.8344	0.0000
444.000	0.000	0.0000	0.0000	0.0000	1790.6884	0.0000
450.000	0.000	0.0000	0.0000	0.0000	869.0055	0.0000
456.000	0.000	0.0000	0.0000	0.0000	876.9935	0.0000
462.000	0.000	0.0000	0.0000	0.0000	885.1298	0.0000
468.000	0.000	0.0000	0.0000	0.0000	893.4185	0.0000
474.000	0.000	0.0000	0.0000	0.0000	901.8639	0.0000
480.000	0.000	0.0000	0.0000	0.0000	910.4704	0.0000
486.000	0.000	0.0000	0.0000	0.0000	919.2428	0.0000
492.000	0.000	0.0000	0.0000	0.0000	928.1859	0.0000
498.000	0.000	0.0000	0.0000	0.0000	937.3047	0.0000
504.000	0.000	0.0000	0.0000	0.0000	946.6045	0.0000
510.000	0.000	0.0000	0.0000	0.0000	956.0907	0.0000
516.000	0.000	0.0000	0.0000	0.0000	1790.6884	0.0000
522.000	0.000	0.0000	0.0000	0.0000	974.0908	0.0000
528.000	0.000	0.0000	0.0000	0.0000	982.5575	0.0000
534.000	0.000	0.0000	0.0000	0.0000	991.1726	0.0000
540.000	0.000	0.0000	0.0000	0.0000	999.9402	0.0000
546.000	0.000	0.0000	0.0000	0.0000	1008.8642	0.0000
552.000	0.000	0.0000	0.0000	0.0000	1017.9490	0.0000
558.000	0.000	0.0000	0.0000	0.0000	1027.1988	0.0000
564.000	0.000	0.0000	0.0000	0.0000	1036.6183	0.0000
570.000	0.000	0.0000	0.0000	0.0000	1046.2122	0.0000
576.000	0.000	0.0000	0.0000	0.0000	1055.9853	0.0000
582.000	0.000	0.0000	0.0000	0.0000	1065.9427	0.0000
588.000	0.000	0.0000	0.0000	0.0000	1076.0897	0.0000
594.000	0.000	0.0000	0.0000	0.0000	1086.4317	0.0000
600.000	0.000	0.0000	0.0000	0.0000	1096.9744	0.0000
606.000	0.000	0.0000	0.0000	0.0000	1107.7238	0.0000
612.000	0.000	0.0000	0.0000	0.0000	1118.6859	0.0000
618.000	0.000	0.0000	0.0000	0.0000	1129.8671	0.0000
624.000	0.000	0.0000	0.0000	0.0000	1141.2741	0.0000
630.000	0.000	0.0000	0.0000	0.0000	1152.9138	0.0000
636.000	0.000	0.0000	0.0000	0.0000	1164.7934	0.0000

642.000	0.000	0.0000	0.0000	0.0000	1176.9203	0.0000
648.000	0.000	0.0000	0.0000	0.0000	1189.3024	0.0000
654.000	0.000	0.0000	0.0000	0.0000	1201.9478	0.0000
660.000	0.000	0.0000	0.0000	0.0000	1214.8650	0.0000
666.000	0.000	0.0000	0.0000	0.0000	1228.0628	0.0000
672.000	0.000	0.0000	0.0000	0.0000	1790.6884	0.0000
678.000	0.000	0.0000	0.0000	0.0000	1258.6092	0.0000
684.000	0.000	0.0000	0.0000	0.0000	1276.1432	0.0000
690.000	0.000	0.0000	0.0000	0.0000	1294.1726	0.0000
696.000	0.000	0.0000	0.0000	0.0000	1312.7188	0.0000
702.000	0.000	0.0000	0.0000	0.0000	1331.8042	0.0000
708.000	0.000	0.0000	0.0000	0.0000	1351.4528	0.0000
714.000	0.000	0.0000	0.0000	0.0000	1371.6898	0.0000
720.000	0.000	0.0000	0.0000	0.0000	1790.6884	0.0000
726.000	0.000	0.0000	0.0000	0.0000	1408.1973	0.0000
732.000	0.000	0.0000	0.0000	0.0000	1424.2084	0.0000
738.000	0.000	0.0000	0.0000	0.0000	1440.5878	0.0000
744.000	0.000	0.0000	0.0000	0.0000	1457.3483	0.0000
750.000	0.000	0.0000	0.0000	0.0000	1474.5034	0.0000
756.000	0.000	0.0000	0.0000	0.0000	1492.0672	0.0000
762.000	0.000	0.0000	0.0000	0.0000	1510.0544	0.0000
768.000	0.000	0.0000	0.0000	0.0000	1528.4807	0.0000
774.000	0.000	0.0000	0.0000	0.0000	1547.3622	0.0000
780.000	0.000	0.0000	0.0000	0.0000	1566.7160	0.0000
786.000	0.000	0.0000	0.0000	0.0000	1586.5601	0.0000
792.000	0.000	0.0000	0.0000	0.0000	1606.9133	0.0000
798.000	0.000	0.0000	0.0000	0.0000	1627.7955	0.0000
804.000	0.000	0.0000	0.0000	0.0000	1649.2276	0.0000
810.000	0.000	0.0000	0.0000	0.0000	1671.2316	0.0000
816.000	0.000	0.0000	0.0000	0.0000	1693.8307	0.0000
822.000	0.000	0.0000	0.0000	0.0000	1717.0493	0.0000
828.000	0.000	0.0000	0.0000	0.0000	1740.9134	0.0000
834.000	0.000	0.0000	0.0000	0.0000	1765.4501	0.0000
840.000	0.000	0.0000	0.0000	0.0000	1790.6884	0.0000

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 2:

```
Pile-head deflection             =      .25776290 in
Computed slope at pile head      =    1.85037E-17
Maximum bending moment           =    -768392.535 lbs-in
Maximum shear force              =      19500.000 lbs
Depth of maximum bending moment  =          0.000 in
Depth of maximum shear force     =          0.000 in
Number of iterations             =             27
Number of zero deflection points =             46
```

Summary of Pile-head Response

Definition of symbols for pile-head boundary conditions:

y = pile-head displacment, in
M = pile-head moment, lbs-in
V = pile-head shear force, lbs
S = pile-head slope, radians
R = rotational stiffness of pile-head, in-lbs/rad

BC Type	Boundary Condition 1	Boundary Condition 2	Axial Load lbs	Pile Head Deflection in	Maximum Moment in-lbs	Maximum Shear lbs
2	V= 5000.000	S= 0.000	90000.0000	.012413	-1.113E+05	5000.0000
2	V= 19500.000	S= 0.000	90000.0000	.2578	-7.684E+05	19500.0000

The analysis ended normally.

==========

LPILE Plus for Windows, Version 4.0

Analysis of Individual Piles and Drilled Shafts
Subjected to Lateral Loading Using the p-y Method

(c) Copyright ENSOFT, Inc., 1985-2001
All Rights Reserved

==========

This program is licensed to:

IT - San Jose
URS Corporation

Path to file locations: X:\101-Aux-VTA\440_geotech\Analysis\Pile\Lateral\Adobe\
Name of input data file: Adobe Creek Bridge_Abutments_free.lpd
Name of output file: Adobe Creek Bridge_Abutments_free.lpo
Name of plot output file: Adobe Creek Bridge_Abutments_free.lpp
Name of runtime file: Adobe Creek Bridge_Abutments_free.lpr

Time and Date of Analysis

Date: November 10, 2009 Time: 15:30: 7

Problem Title

---

101 Auxillary_Adobe Creek Bridge_Fixed

Program Options

Units Used in Computations - US Customary Units, inches, pounds

Basic Program Options:

Analysis Type 1:
- Computation of Lateral Pile Response Using User-specified Constant EI

Computation Options:
- Only internally-generated p-y curves used in analysis
- Analysis does not use p-y multipliers (individual pile or shaft action only)
- Analysis assumes no shear resistance at pile tip
- Analysis for fixed-length pile or shaft only
- No computation of foundation stiffness matrix elements

- Output pile response for full length of pile
- Analysis assumes no soil movements acting on pile
- No additional p-y curves to be computed at user-specified depths

Solution Control Parameters:
- Number of pile increments = 140
- Maximum number of iterations allowed = 100
- Deflection tolerance for convergence = 1.0000E-05 in
- Maximum allowable deflection = 1.0000E+02 in

Printing Options:
- Values of pile-head deflection, bending moment, shear force, and soil reaction are printed for full length of pile.
- Printing Increment (spacing of output points) = 1

Pile Structural Properties and Geometry

Pile Length = 840.00 in
Depth of ground surface below top of pile = -36.00 in
Slope angle of ground surface = 26.60 deg.

Structural properties of pile defined using 10 points

Point	Depth X in	Pile Diameter in	Moment of Inertia in**4	Pile Area Sq.in	Modulus of Elasticity lbs/Sq.in
1	0.0000	15.500	2833.3300	188.6900	2050000.000
2	108.0000	14.536	2191.3600	165.9400	2050000.000
3	216.0000	13.571	1665.2100	144.6600	2050000.000
4	252.0000	13.250	1512.9800	137.8900	2050000.000
5	312.0000	12.714	1282.7400	126.9600	2050000.000
6	444.0000	11.536	869.2500	104.5100	2050000.000
7	516.0000	10.893	691.0800	93.1900	2050000.000
8	672.0000	9.60714000	418.1600	72.4900	2050000.000
9	720.0000	9.07143000	332.4100	64.6300	2050000.000
10	840.0000	8.00000000	201.0600	50.2600	2050000.000

Soil and Rock Layering Information

The soil profile is modelled using 10 layers

Layer 1 is stiff clay without free water
Distance from top of pile to top of layer = -36.000 in
Distance from top of pile to bottom of layer = .000 in
p-y subgrade modulus k for top of soil layer = 72.000 lbs/in**3
p-y subgrade modulus k for bottom of layer = 72.000 lbs/in**3

Layer 2 is stiff clay without free water
Distance from top of pile to top of layer = .000 in
Distance from top of pile to bottom of layer = 108.000 in

```
p-y subgrade modulus k for top of soil layer =      380.000 lbs/in**3
p-y subgrade modulus k for bottom of layer   =      380.000 lbs/in**3

Layer  3 is sand, p-y criteria by Reese et al., 1974
Distance from top of pile to top of layer    =      108.000 in
Distance from top of pile to bottom of layer =      216.000 in
p-y subgrade modulus k for top of soil layer =       60.000 lbs/in**3
p-y subgrade modulus k for bottom of layer   =       60.000 lbs/in**3

Layer  4 is stiff clay without free water
Distance from top of pile to top of layer    =      216.000 in
Distance from top of pile to bottom of layer =      252.000 in
p-y subgrade modulus k for top of soil layer =      100.000 lbs/in**3
p-y subgrade modulus k for bottom of layer   =      100.000 lbs/in**3

Layer  5 is sand, p-y criteria by Reese et al., 1974
Distance from top of pile to top of layer    =      252.000 in
Distance from top of pile to bottom of layer =      312.000 in
p-y subgrade modulus k for top of soil layer =      125.000 lbs/in**3
p-y subgrade modulus k for bottom of layer   =      125.000 lbs/in**3

Layer  6 is stiff clay without free water
Distance from top of pile to top of layer    =      312.000 in
Distance from top of pile to bottom of layer =      444.000 in
p-y subgrade modulus k for top of soil layer =      100.000 lbs/in**3
p-y subgrade modulus k for bottom of layer   =      100.000 lbs/in**3

Layer  7 is stiff clay without free water
Distance from top of pile to top of layer    =      444.000 in
Distance from top of pile to bottom of layer =      516.000 in
p-y subgrade modulus k for top of soil layer =      600.000 lbs/in**3
p-y subgrade modulus k for bottom of layer   =      600.000 lbs/in**3

Layer  8 is stiff clay without free water
Distance from top of pile to top of layer    =      516.000 in
Distance from top of pile to bottom of layer =      672.000 in
p-y subgrade modulus k for top of soil layer =      180.000 lbs/in**3
p-y subgrade modulus k for bottom of layer   =      180.000 lbs/in**3

Layer  9 is stiff clay without free water
Distance from top of pile to top of layer    =      672.000 in
Distance from top of pile to bottom of layer =      720.000 in
p-y subgrade modulus k for top of soil layer =      180.000 lbs/in**3
p-y subgrade modulus k for bottom of layer   =      180.000 lbs/in**3

Layer 10 is stiff clay with water-induced erosion
Distance from top of pile to top of layer    =      720.000 in
Distance from top of pile to bottom of layer =      900.000 in
p-y subgrade modulus k for top of soil layer =      380.000 lbs/in**3
p-y subgrade modulus k for bottom of layer   =      380.000 lbs/in**3


(Depth of lowest layer extends   60.00 in below pile tip)

--------------------------------------------------------------------------------
                    Effective Unit Weight of Soil vs. Depth
```

Distribution of effective unit weight of soil with depth
is defined using 20 points

Point No.	Depth X in	Eff. Unit Weight lbs/in**3
1	-36.00	.07523
2	.00	.07523
3	.00	.03135
4	108.00	.03135
5	108.00	.04490
6	216.00	.04490
7	216.00	.03044
8	252.00	.03044
9	252.00	.04201
10	312.00	.04201
11	312.00	.03330
12	444.00	.03330
13	444.00	.03330
14	516.00	.03330
15	516.00	.03330
16	672.00	.03330
17	672.00	.03560
18	720.00	.03560
19	720.00	.03330
20	900.00	.03330

Shear Strength of Soils

Distribution of shear strength parameters with depth
defined using 20 points

Point No.	Depth X in	Cohesion c lbs/in**2	Angle of Friction Deg.	E50 or k_rm	RQD %
1	-36.000	6.11000	.00	.01000	.0
2	.000	6.11000	.00	.01000	.0
3	.000	11.81000	.00	.00800	.0
4	108.000	11.81000	.00	.00800	.0
5	108.000	.00000	38.00	------	------
6	216.000	.00000	38.00	------	------
7	216.000	6.94400	.00	.01000	.0
8	252.000	6.94400	.00	.01000	.0
9	252.000	.00000	38.00	------	------
10	312.000	.00000	38.00	------	------
11	312.000	6.94400	.00	.01000	.0
12	444.000	6.94400	.00	.01000	.0
13	444.000	16.66600	.00	.00600	.0
14	516.000	16.66600	.00	.00600	.0
15	516.000	8.33300	.00	.00800	.0
16	672.000	8.33300	.00	.00800	.0

17	672.000	8.19400	.00	.00800	.0
18	720.000	8.19400	.00	.00800	.0
19	720.000	11.80500	.00	.00700	.0
20	900.000	11.80500	.00	.00700	.0

Notes:

(1) Cohesion = uniaxial compressive strength for rock materials.
(2) Values of E50 are reported for clay strata.
(3) Default values will be generated for E50 when input values are 0.
(4) RQD and k_rm are reported only for weak rock strata.

Static loading criteria was used for computation of p-y curves

---

Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 2

Load Case Number 1

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Shear force at pile head = 5000.000 lbs
Bending moment at pile head = .000 in-lbs
Axial load at pile head = 90000.000 lbs

(Zero moment at pile head for this load indicates a free-head condition)

Load Case Number 2

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Shear force at pile head = 9500.000 lbs
Bending moment at pile head = .000 in-lbs
Axial load at pile head = 90000.000 lbs

(Zero moment at pile head for this load indicates a free-head condition)

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 1

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Specified shear force at pile head = 5000.000 lbs
Specified bending moment at pile head = .000 in-lbs
Specified axial load at pile head = 90000.000 lbs

(Zero moment for this load indicates free-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res p lbs/in

0.000	.054945	-5.527E-09	5000.0000	-.001237	476.9728	-59.6433
6.000	.047523	29594.3388	4511.1883	-.001221	561.8871	-122.9308
12.000	.040288	54746.4495	3705.8451	-.001177	636.0026	-125.8801
18.000	.033400	75335.5500	2945.4897	-.001107	698.6856	-127.5717
24.000	.026998	91288.3963	2178.8776	-.001017	749.4091	-127.9657
30.000	.021192	1.026E+05	1413.9866	-9.112E-04	787.7612	-126.9980
36.000	.016064	1.092E+05	659.2413	-7.936E-04	813.4579	-124.5838
42.000	.011668	1.113E+05	-76.3519	-6.695E-04	826.3587	-120.6139
48.000	.008029	1.090E+05	-783.0312	-5.438E-04	826.4848	-114.9458
54.000	.005142	1.025E+05	-1450.0062	-4.215E-04	814.0434	-107.3792
60.000	.002972	92102.2832	-2064.9297	-3.073E-04	789.4595	-97.5953
66.000	.001455	78092.5497	-2612.6055	-2.061E-04	753.4222	-84.9633
72.000	4.99E-04	60973.5763	-3070.3323	-1.222E-04	706.9701	-67.6124
78.000	-1.13E-05	41380.4934	-3094.5886	-5.951E-05	651.7209	59.5269
84.000	-2.15E-04	23902.7811	-2529.7205	-1.897E-05	601.8570	128.7624
90.000	-2.39E-04	11044.3307	-1747.3524	3.053E-06	565.5592	132.0269
96.000	-1.78E-04	2931.2551	-983.3376	1.198E-05	543.7115	122.6447
102.000	-9.51E-05	-768.6600	-300.1317	1.337E-05	540.7827	105.0906
108.000	-1.79E-05	-684.7667	15.5718	7.882E-06	1804.3116	.1439
114.000	-5.52E-07	-590.3112	16.0173	2.499E-06	548.2334	.004626
120.000	1.20E-05	-495.2575	15.7155	1.759E-06	551.8796	-.1052
126.000	2.06E-05	-403.6257	14.8385	1.139E-06	555.5890	-.1871
132.000	2.57E-05	-318.4255	13.5477	6.334E-07	559.3733	-.2432
138.000	2.82E-05	-241.7370	11.9887	2.358E-07	563.2417	-.2765
144.000	2.85E-05	-174.8161	10.2877	-6.412E-08	567.2004	-.2905
150.000	2.74E-05	-118.2155	8.5502	-2.781E-07	571.2539	-.2887
156.000	2.52E-05	-71.9131	6.8602	-4.189E-07	575.4043	-.2747
162.000	2.24E-05	-35.4404	5.2809	-4.996E-07	579.6526	-.2518
168.000	1.92E-05	-8.0034	3.8560	-5.327E-07	583.9985	-.2231
174.000	1.60E-05	11.4072	2.6126	-5.299E-07	588.5257	-.1913
180.000	1.28E-05	23.9202	1.5631	-5.019E-07	593.1580	-.1585
186.000	9.95E-06	30.7062	.7085	-4.581E-07	597.8415	-.1263
192.000	7.35E-06	32.9173	.041611	-4.063E-07	602.5818	-.095968
198.000	5.07E-06	31.6444	-.4505	-3.528E-07	607.3841	-.068079
204.000	3.11E-06	27.8920	-.7835	-3.027E-07	612.2538	-.042919
210.000	1.44E-06	22.5691	-.9734	-2.596E-07	617.1960	-.020366
216.000	1.49E-13	16.4919	-1.8916	-1.200E-07	1791.0165	-.2857
222.000	-3.89E-13	8.644E-05	-1.3743	-1.239E-14	627.0393	.4581
228.000	-2.51E-19	-3.572E-05	-7.201E-06	3.238E-14	632.0077	4.385E-06
234.000	5.70E-20	-3.303E-11	2.977E-06	2.092E-20	637.0554	-9.922E-07
240.000	0.000	5.073E-12	2.752E-12	-4.748E-21	642.1844	-1.199E-12
246.000	0.000	1.122E-18	-4.228E-13	0.0000	647.3966	1.409E-13
252.000	0.000	7.589E-19	-5.561E-20	0.0000	1790.6884	1.971E-21
258.000	0.000	4.606E-19	-4.378E-20	0.0000	657.9092	1.972E-21
264.000	0.000	2.327E-19	-3.242E-20	0.0000	663.2082	1.815E-21
270.000	0.000	6.999E-20	-2.228E-20	0.0000	668.5932	1.565E-21
276.000	0.000	-3.651E-20	-1.376E-20	0.0000	674.0664	1.274E-21
282.000	0.000	-9.709E-20	-6.998E-21	0.0000	679.6300	9.806E-22
288.000	0.000	-1.223E-19	-1.927E-21	0.0000	685.2861	7.100E-22
294.000	0.000	-1.217E-19	1.632E-21	0.0000	691.0372	4.761E-22
300.000	0.000	-1.039E-19	3.909E-21	0.0000	696.8857	2.831E-22
306.000	0.000	-7.582E-20	5.141E-21	0.0000	702.8340	1.275E-22
312.000	0.000	-4.302E-20	6.346E-21	0.0000	1790.6884	2.744E-22
318.000	0.000	0.0000	3.585E-21	0.0000	714.6286	-1.195E-21
324.000	0.000	0.0000	0.0000	0.0000	720.4663	0.0000
330.000	0.000	0.0000	0.0000	0.0000	726.4002	0.0000

336.000	0.000	0.0000	0.0000	0.0000	732.4327	0.0000
342.000	0.000	0.0000	0.0000	0.0000	738.5662	0.0000
348.000	0.000	0.0000	0.0000	0.0000	744.8033	0.0000
354.000	0.000	0.0000	0.0000	0.0000	751.1466	0.0000
360.000	0.000	0.0000	0.0000	0.0000	757.5989	0.0000
366.000	0.000	0.0000	0.0000	0.0000	764.1631	0.0000
372.000	0.000	0.0000	0.0000	0.0000	770.8419	0.0000
378.000	0.000	0.0000	0.0000	0.0000	777.6386	0.0000
384.000	0.000	0.0000	0.0000	0.0000	784.5561	0.0000
390.000	0.000	0.0000	0.0000	0.0000	791.5979	0.0000
396.000	0.000	0.0000	0.0000	0.0000	798.7672	0.0000
402.000	0.000	0.0000	0.0000	0.0000	806.0675	0.0000
408.000	0.000	0.0000	0.0000	0.0000	813.5025	0.0000
414.000	0.000	0.0000	0.0000	0.0000	821.0759	0.0000
420.000	0.000	0.0000	0.0000	0.0000	828.7917	0.0000
426.000	0.000	0.0000	0.0000	0.0000	836.6539	0.0000
432.000	0.000	0.0000	0.0000	0.0000	844.6667	0.0000
438.000	0.000	0.0000	0.0000	0.0000	852.8344	0.0000
444.000	0.000	0.0000	0.0000	0.0000	1790.6884	0.0000
450.000	0.000	0.0000	0.0000	0.0000	869.0055	0.0000
456.000	0.000	0.0000	0.0000	0.0000	876.9935	0.0000
462.000	0.000	0.0000	0.0000	0.0000	885.1298	0.0000
468.000	0.000	0.0000	0.0000	0.0000	893.4185	0.0000
474.000	0.000	0.0000	0.0000	0.0000	901.8639	0.0000
480.000	0.000	0.0000	0.0000	0.0000	910.4704	0.0000
486.000	0.000	0.0000	0.0000	0.0000	919.2428	0.0000
492.000	0.000	0.0000	0.0000	0.0000	928.1859	0.0000
498.000	0.000	0.0000	0.0000	0.0000	937.3047	0.0000
504.000	0.000	0.0000	0.0000	0.0000	946.6045	0.0000
510.000	0.000	0.0000	0.0000	0.0000	956.0907	0.0000
516.000	0.000	0.0000	0.0000	0.0000	1790.6884	0.0000
522.000	0.000	0.0000	0.0000	0.0000	974.0908	0.0000
528.000	0.000	0.0000	0.0000	0.0000	982.5575	0.0000
534.000	0.000	0.0000	0.0000	0.0000	991.1726	0.0000
540.000	0.000	0.0000	0.0000	0.0000	999.9402	0.0000
546.000	0.000	0.0000	0.0000	0.0000	1008.8642	0.0000
552.000	0.000	0.0000	0.0000	0.0000	1017.9490	0.0000
558.000	0.000	0.0000	0.0000	0.0000	1027.1988	0.0000
564.000	0.000	0.0000	0.0000	0.0000	1036.6183	0.0000
570.000	0.000	0.0000	0.0000	0.0000	1046.2122	0.0000
576.000	0.000	0.0000	0.0000	0.0000	1055.9853	0.0000
582.000	0.000	0.0000	0.0000	0.0000	1065.9427	0.0000
588.000	0.000	0.0000	0.0000	0.0000	1076.0897	0.0000
594.000	0.000	0.0000	0.0000	0.0000	1086.4317	0.0000
600.000	0.000	0.0000	0.0000	0.0000	1096.9744	0.0000
606.000	0.000	0.0000	0.0000	0.0000	1107.7238	0.0000
612.000	0.000	0.0000	0.0000	0.0000	1118.6859	0.0000
618.000	0.000	0.0000	0.0000	0.0000	1129.8671	0.0000
624.000	0.000	0.0000	0.0000	0.0000	1141.2741	0.0000
630.000	0.000	0.0000	0.0000	0.0000	1152.9138	0.0000
636.000	0.000	0.0000	0.0000	0.0000	1164.7934	0.0000
642.000	0.000	0.0000	0.0000	0.0000	1176.9203	0.0000
648.000	0.000	0.0000	0.0000	0.0000	1189.3024	0.0000
654.000	0.000	0.0000	0.0000	0.0000	1201.9478	0.0000
660.000	0.000	0.0000	0.0000	0.0000	1214.8650	0.0000
666.000	0.000	0.0000	0.0000	0.0000	1228.0628	0.0000
672.000	0.000	0.0000	0.0000	0.0000	1790.6884	0.0000

678.000	0.000	0.0000	0.0000	0.0000	1258.6092	0.0000
684.000	0.000	0.0000	0.0000	0.0000	1276.1432	0.0000
690.000	0.000	0.0000	0.0000	0.0000	1294.1726	0.0000
696.000	0.000	0.0000	0.0000	0.0000	1312.7188	0.0000
702.000	0.000	0.0000	0.0000	0.0000	1331.8042	0.0000
708.000	0.000	0.0000	0.0000	0.0000	1351.4528	0.0000
714.000	0.000	0.0000	0.0000	0.0000	1371.6898	0.0000
720.000	0.000	0.0000	0.0000	0.0000	1790.6884	0.0000
726.000	0.000	0.0000	0.0000	0.0000	1408.1973	0.0000
732.000	0.000	0.0000	0.0000	0.0000	1424.2084	0.0000
738.000	0.000	0.0000	0.0000	0.0000	1440.5878	0.0000
744.000	0.000	0.0000	0.0000	0.0000	1457.3483	0.0000
750.000	0.000	0.0000	0.0000	0.0000	1474.5034	0.0000
756.000	0.000	0.0000	0.0000	0.0000	1492.0672	0.0000
762.000	0.000	0.0000	0.0000	0.0000	1510.0544	0.0000
768.000	0.000	0.0000	0.0000	0.0000	1528.4807	0.0000
774.000	0.000	0.0000	0.0000	0.0000	1547.3622	0.0000
780.000	0.000	0.0000	0.0000	0.0000	1566.7160	0.0000
786.000	0.000	0.0000	0.0000	0.0000	1586.5601	0.0000
792.000	0.000	0.0000	0.0000	0.0000	1606.9133	0.0000
798.000	0.000	0.0000	0.0000	0.0000	1627.7955	0.0000
804.000	0.000	0.0000	0.0000	0.0000	1649.2276	0.0000
810.000	0.000	0.0000	0.0000	0.0000	1671.2316	0.0000
816.000	0.000	0.0000	0.0000	0.0000	1693.8307	0.0000
822.000	0.000	0.0000	0.0000	0.0000	1717.0493	0.0000
828.000	0.000	0.0000	0.0000	0.0000	1740.9134	0.0000
834.000	0.000	0.0000	0.0000	0.0000	1765.4501	0.0000
840.000	0.000	0.0000	0.0000	0.0000	1790.6884	0.0000

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 1:

```
Pile-head deflection             =      .05494450 in
Computed slope at pile head      =     -.00123688
Maximum bending moment           =     111348.860 lbs-in
Maximum shear force              =       5000.000 lbs
Depth of maximum bending moment  =         42.000 in
Depth of maximum shear force     =          0.000 in
Number of iterations             =             23
Number of zero deflection points =             47
```

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 2

```
Pile-head boundary conditions are Shear and Moment (BC Type 1)
Specified shear force at pile head    =        9500.000 lbs
Specified bending moment at pile head =            .000 in-lbs
Specified axial load at pile head     =       90000.000 lbs
```

(Zero moment for this load indicates free-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res p lbs/in
0.000	.247584	3.537E-08	9500.0000	-.004223	476.9728	-86.8889
6.000	.222244	57716.6150	8814.2424	-.004193	639.5213	-180.7557
12.000	.197266	1.089E+05	7593.1126	-.004105	786.8854	-187.2289
18.000	.172981	1.533E+05	6454.1571	-.003965	917.9219	-192.4229
24.000	.149682	1.906E+05	5287.8987	-.003779	1031.5774	-196.3299
30.000	.127628	2.208E+05	4102.1656	-.003554	1126.8931	-198.9145
36.000	.107035	2.437E+05	2905.0598	-.003296	1203.0132	-200.1208
42.000	.088075	2.592E+05	1705.0799	-.003013	1259.1959	-199.8725
48.000	.070877	2.674E+05	511.2568	-.002713	1294.8272	-198.0685
54.000	.055522	2.683E+05	-666.6577	-.002403	1309.4382	-194.5697
60.000	.042042	2.620E+05	-1817.8804	-.002092	1302.7282	-189.1712
66.000	.030420	2.487E+05	-2930.0187	-.001788	1274.5961	-181.5415
72.000	.020587	2.288E+05	-3987.8587	-.001500	1225.1882	-171.0718
78.000	.012425	2.025E+05	-4970.3891	-.001235	1154.9805	-156.4383
84.000	.005763	1.705E+05	-5841.0494	-.001003	1064.9482	-133.7818
90.000	3.84E-04	1.335E+05	-6454.0818	-8.115E-04	957.0391	-70.5623
96.000	-.003975	93888.1947	-5869.1136	-6.658E-04	838.0223	265.5517
102.000	-.007606	63780.1911	-4137.9320	-5.632E-04	747.1775	311.5088
108.000	-.010733	44841.2405	-2945.1972	-1.949E-04	2682.7851	86.0695
114.000	-.009944	28648.3039	-2437.0201	1.509E-04	642.2009	83.3229
120.000	-.008923	15434.0495	-1953.1270	1.809E-04	602.4083	77.9748
126.000	-.007774	5015.4520	-1506.9978	1.949E-04	571.3460	70.7349
132.000	-.006583	-2860.4559	-1107.9770	1.964E-04	568.1481	62.2720
138.000	-.005417	-8492.3936	-761.5925	1.883E-04	592.0209	53.1896
144.000	-.004324	-12202.9444	-469.9949	1.734E-04	609.6044	44.0096
150.000	-.003336	-14319.5813	-232.4777	1.540E-04	621.8646	35.1627
156.000	-.002476	-15158.9681	-46.0356	1.321E-04	629.7679	26.9846
162.000	-.001751	-15014.6692	94.0724	1.094E-04	634.2378	19.7181
168.000	-.001163	-14148.2139	193.7823	8.707E-05	636.1198	13.5186
174.000	-7.06E-04	-12783.3150	259.7273	6.616E-05	636.1565	8.4631
180.000	-3.70E-04	-11102.9388	298.7967	4.733E-05	634.9703	4.5600
186.000	-1.39E-04	-9248.8682	317.7555	3.103E-05	633.0560	1.7596
192.000	2.77E-06	-7323.3828	322.9256	1.754E-05	630.7795	-.036224
198.000	7.19E-05	-5392.7068	319.9207	7.026E-06	628.3832	-.9654
204.000	8.71E-05	-3491.9232	313.4245	-4.407E-07	625.9985	-1.2000
210.000	6.67E-05	-1631.1369	306.9973	-4.814E-06	623.6632	-.9424
216.000	2.93E-05	197.2433	221.6522	-4.787E-06	1794.6125	-27.5059
222.000	9.21E-06	1033.8595	47.5767	-2.429E-06	631.3006	-30.5192
228.000	1.70E-07	770.7872	-77.6807	-8.077E-07	635.2218	-11.2332
234.000	-4.84E-07	102.5639	-67.7558	-1.454E-08	637.4882	14.5415
240.000	-4.76E-09	-42.2671	-8.5490	4.035E-08	642.3649	5.1941
246.000	1.43E-11	-.067261	3.5185	7.323E-10	647.3969	-1.1716
252.000	4.02E-09	-.046200	.003242	3.320E-10	1790.6893	-1.093E-04
258.000	4.00E-09	-.028711	.002579	-3.245E-11	657.9093	-1.116E-04
264.000	3.63E-09	-.015211	.001932	-7.582E-11	663.2082	-1.042E-04
270.000	3.09E-09	-.005447	.001347	-9.652E-11	668.5932	-9.087E-05
276.000	2.48E-09	.001052	8.498E-04	-1.010E-10	674.0664	-7.472E-05
282.000	1.88E-09	.004860	4.515E-04	-9.478E-11	679.6300	-5.805E-05
288.000	1.34E-09	.006573	1.502E-04	-8.270E-11	685.2862	-4.241E-05
294.000	8.85E-10	.006751	-6.312E-05	-6.840E-11	691.0373	-2.869E-05

300.000	5.18E-10	.005889	-2.007E-04	-5.460E-11	696.8857	-1.719E-05
306.000	2.30E-10	.004401	-2.757E-04	-4.318E-11	702.8340	-7.785E-06
312.000	1.96E-18	.002628	-3.685E-04	-1.913E-11	1790.6885	-2.315E-05
318.000	-4.38E-18	7.709E-10	-2.190E-04	-1.632E-19	714.6286	7.299E-05
324.000	-2.32E-24	-3.103E-10	-6.421E-11	3.647E-19	720.4663	3.864E-11
330.000	5.20E-25	-2.349E-16	2.586E-11	1.937E-25	726.4002	-8.619E-12
336.000	0.000	3.576E-17	1.957E-17	0.0000	732.4327	-8.511E-18
342.000	0.000	4.304E-23	-2.980E-18	0.0000	738.5662	9.933E-19
348.000	0.000	-4.019E-24	-3.586E-24	0.0000	744.8033	1.419E-24
354.000	0.000	0.0000	3.349E-25	0.0000	751.1466	-1.116E-25
360.000	0.000	0.0000	0.0000	0.0000	757.5989	0.0000
366.000	0.000	0.0000	0.0000	0.0000	764.1631	0.0000
372.000	0.000	0.0000	0.0000	0.0000	770.8419	0.0000
378.000	0.000	0.0000	0.0000	0.0000	777.6386	0.0000
384.000	0.000	0.0000	0.0000	0.0000	784.5561	0.0000
390.000	0.000	0.0000	0.0000	0.0000	791.5979	0.0000
396.000	0.000	0.0000	0.0000	0.0000	798.7672	0.0000
402.000	0.000	0.0000	0.0000	0.0000	806.0675	0.0000
408.000	0.000	0.0000	0.0000	0.0000	813.5025	0.0000
414.000	0.000	0.0000	0.0000	0.0000	821.0759	0.0000
420.000	0.000	0.0000	0.0000	0.0000	828.7917	0.0000
426.000	0.000	0.0000	0.0000	0.0000	836.6539	0.0000
432.000	0.000	0.0000	0.0000	0.0000	844.6667	0.0000
438.000	0.000	0.0000	0.0000	0.0000	852.8344	0.0000
444.000	0.000	0.0000	0.0000	0.0000	1790.6884	0.0000
450.000	0.000	0.0000	0.0000	0.0000	869.0055	0.0000
456.000	0.000	0.0000	0.0000	0.0000	876.9935	0.0000
462.000	0.000	0.0000	0.0000	0.0000	885.1298	0.0000
468.000	0.000	0.0000	0.0000	0.0000	893.4185	0.0000
474.000	0.000	0.0000	0.0000	0.0000	901.8639	0.0000
480.000	0.000	0.0000	0.0000	0.0000	910.4704	0.0000
486.000	0.000	0.0000	0.0000	0.0000	919.2428	0.0000
492.000	0.000	0.0000	0.0000	0.0000	928.1859	0.0000
498.000	0.000	0.0000	0.0000	0.0000	937.3047	0.0000
504.000	0.000	0.0000	0.0000	0.0000	946.6045	0.0000
510.000	0.000	0.0000	0.0000	0.0000	956.0907	0.0000
516.000	0.000	0.0000	0.0000	0.0000	1790.6884	0.0000
522.000	0.000	0.0000	0.0000	0.0000	974.0908	0.0000
528.000	0.000	0.0000	0.0000	0.0000	982.5575	0.0000
534.000	0.000	0.0000	0.0000	0.0000	991.1726	0.0000
540.000	0.000	0.0000	0.0000	0.0000	999.9402	0.0000
546.000	0.000	0.0000	0.0000	0.0000	1008.8642	0.0000
552.000	0.000	0.0000	0.0000	0.0000	1017.9490	0.0000
558.000	0.000	0.0000	0.0000	0.0000	1027.1988	0.0000
564.000	0.000	0.0000	0.0000	0.0000	1036.6183	0.0000
570.000	0.000	0.0000	0.0000	0.0000	1046.2122	0.0000
576.000	0.000	0.0000	0.0000	0.0000	1055.9853	0.0000
582.000	0.000	0.0000	0.0000	0.0000	1065.9427	0.0000
588.000	0.000	0.0000	0.0000	0.0000	1076.0897	0.0000
594.000	0.000	0.0000	0.0000	0.0000	1086.4317	0.0000
600.000	0.000	0.0000	0.0000	0.0000	1096.9744	0.0000
606.000	0.000	0.0000	0.0000	0.0000	1107.7238	0.0000
612.000	0.000	0.0000	0.0000	0.0000	1118.6859	0.0000
618.000	0.000	0.0000	0.0000	0.0000	1129.8671	0.0000
624.000	0.000	0.0000	0.0000	0.0000	1141.2741	0.0000
630.000	0.000	0.0000	0.0000	0.0000	1152.9138	0.0000
636.000	0.000	0.0000	0.0000	0.0000	1164.7934	0.0000

642.000	0.000	0.0000	0.0000	0.0000	1176.9203	0.0000
648.000	0.000	0.0000	0.0000	0.0000	1189.3024	0.0000
654.000	0.000	0.0000	0.0000	0.0000	1201.9478	0.0000
660.000	0.000	0.0000	0.0000	0.0000	1214.8650	0.0000
666.000	0.000	0.0000	0.0000	0.0000	1228.0628	0.0000
672.000	0.000	0.0000	0.0000	0.0000	1790.6884	0.0000
678.000	0.000	0.0000	0.0000	0.0000	1258.6092	0.0000
684.000	0.000	0.0000	0.0000	0.0000	1276.1432	0.0000
690.000	0.000	0.0000	0.0000	0.0000	1294.1726	0.0000
696.000	0.000	0.0000	0.0000	0.0000	1312.7188	0.0000
702.000	0.000	0.0000	0.0000	0.0000	1331.8042	0.0000
708.000	0.000	0.0000	0.0000	0.0000	1351.4528	0.0000
714.000	0.000	0.0000	0.0000	0.0000	1371.6898	0.0000
720.000	0.000	0.0000	0.0000	0.0000	1790.6884	0.0000
726.000	0.000	0.0000	0.0000	0.0000	1408.1973	0.0000
732.000	0.000	0.0000	0.0000	0.0000	1424.2084	0.0000
738.000	0.000	0.0000	0.0000	0.0000	1440.5878	0.0000
744.000	0.000	0.0000	0.0000	0.0000	1457.3483	0.0000
750.000	0.000	0.0000	0.0000	0.0000	1474.5034	0.0000
756.000	0.000	0.0000	0.0000	0.0000	1492.0672	0.0000
762.000	0.000	0.0000	0.0000	0.0000	1510.0544	0.0000
768.000	0.000	0.0000	0.0000	0.0000	1528.4807	0.0000
774.000	0.000	0.0000	0.0000	0.0000	1547.3622	0.0000
780.000	0.000	0.0000	0.0000	0.0000	1566.7160	0.0000
786.000	0.000	0.0000	0.0000	0.0000	1586.5601	0.0000
792.000	0.000	0.0000	0.0000	0.0000	1606.9133	0.0000
798.000	0.000	0.0000	0.0000	0.0000	1627.7955	0.0000
804.000	0.000	0.0000	0.0000	0.0000	1649.2276	0.0000
810.000	0.000	0.0000	0.0000	0.0000	1671.2316	0.0000
816.000	0.000	0.0000	0.0000	0.0000	1693.8307	0.0000
822.000	0.000	0.0000	0.0000	0.0000	1717.0493	0.0000
828.000	0.000	0.0000	0.0000	0.0000	1740.9134	0.0000
834.000	0.000	0.0000	0.0000	0.0000	1765.4501	0.0000
840.000	0.000	0.0000	0.0000	0.0000	1790.6884	0.0000

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 2:

```
Pile-head deflection             =      .24758429 in
Computed slope at pile head      =     -.00422336
Maximum bending moment           =     268289.572 lbs-in
Maximum shear force              =       9500.000 lbs
Depth of maximum bending moment  =         54.000 in
Depth of maximum shear force     =          0.000 in
Number of iterations             =             32
Number of zero deflection points =             46
```

Summary of Pile-head Response

Definition of symbols for pile-head boundary conditions:

y = pile-head displacment, in
M = pile-head moment, lbs-in
V = pile-head shear force, lbs
S = pile-head slope, radians
R = rotational stiffness of pile-head, in-lbs/rad

BC Type	Boundary Condition 1	Boundary Condition 2	Axial Load lbs	Pile Head Deflection in	Maximum Moment in-lbs	Maximum Shear lbs
1	V= 5000.000	M= 0.000	90000.0000	.054945	1.113E+05	5000.0000
1	V= 9500.000	M= 0.000	90000.0000	.2476	2.683E+05	9500.0000

The analysis ended normally.

04-SCL-101, PM49.0/52.2
EA#04-4A3301
NOVEMBER 23, 2009

FOUNDATION REPORT

MATADERO CREEK BRIDGE (WIDEN) (BRIDGE NO. 37-0040) PALO ALTO, CALIFORNIA

Prepared for
Santa Clara Valley Transportation Authority
3331 North First Street
San Jose, CA 95134

URS

55 South Market Street, Suite 1500
San Jose, California 95113

November 23, 2009 File No.04-SCL-101-PM 49.0/52.2
Project 28649951 EA 4A3301

Mr. Lam Trinh
Project Coordinator
Valley Transportation Authority (VTA)
3331 North First Street
San Jose, CA 95134

Subject: **Foundation Report**
Matadero Creek Bridge (Widen), Bridge No. 37-0040
U.S. 101 Auxiliary Lane
Mountain View and Palo Alto, California

Dear Mr. Trinh:

URS has completed the accompanying Foundation Report for the Matadero Creek Bridge (widen) in City of Palo Alto, California. The report was prepared in accordance with Caltrans Guidelines for Foundation Investigation Reports, Version 2.0, dated March 2006. We also prepared a Geotechnical Design and Materials Report (GDMR) for U.S. 101 Auxiliary Lane project between State Route 85 and Embarcadero Road in the Cities of Mountain View and Palo Alto.

The Foundation Report presents our engineering opinions and recommendations regarding the geotechnical factors influencing the design and construction of the proposed bridge (widen). The opinions and recommendations have been based upon the results of our field investigation, laboratory testing, engineering judgment and local experience. Mr. Selvendran Manoharan, P.E., performed the engineering analysis and assisted with the preparation of this report. Mr. Mark Schmoll, C.E.G, prepared the site geology and geologic hazards portion of this report. Mr. Paul Boddie, G.E., provided review, consultation and management oversight for the project.

If any questions should arise, or if we can be of further service, please contact the undersigned at (408) 297-9585.

Sincerely,

Stephen Huang, G.E. 2150
Geotechnical Task Leader

REGISTERED PROFESSIONAL ENGINEER
S. STEPHEN HUANG
No. GE 002150
Exp. 3/31/2010
GEOTECHNICAL
STATE OF CALIFORNIA

URS Corporation
55 South Market Street, Suite 1500
San Jose, CA 95113
Tel: 408.297.9585
Fax: 408-297.6962
www.urscorp.com

TABLE OF CONTENTS

Section 1 Introduction 1-1

1.1 General 1-1
1.2 Scope of Investigation 1-1
1.3 Caltrans Review Comments 1-2

Section 2 Available Information 2-1

2.1 proposed improvements 2-1

Section 3 Site Geology and Subsurface Conditions 3-1

3.1 Geologic Setting 3-1
3.1.1 Regional Geology 3-1
3.1.2 Regional Tectonic Setting and Seismicity 3-1
3.1.3 Local Geology 3-4
3.2 Site and Subsurface Conditions 3-5
3.2.1 Site Topography 3-5
3.2.2 Field Exploration 3-5
3.2.3 Laboratory Testing 3-6
3.2.4 Soil Conditions 3-6
3.2.5 Groundwater 3-6
3.3 Geologic Hazards 3-7
3.3.1 Surface Fault Displacement and Ground Shaking 3-7
3.3.2 Landslide and Slope Failure 3-7
3.3.3 Scour 3-7
3.3.4 Flooding 3-7
3.3.5 Subsidence and Seismic Compaction 3-7
3.3.6 Liquefaction Potential 3-8
3.4 Geological Profiles and Engineering Parameters 3-9

Section 4 Corrosion and Scour Evaluation 4-1

4.1 Corrosion Evaluation 4-1
4.2 summary 4-1
4.3 Conclusions 4-2

Section 5 Seismic Data and Evaluation 5-1

5.1 Seismic Design Methodology and Resources 5-1
5.2 Peak Bedrock Acceleration 5-1
5.3 Fault Type, Near-Field, and Spectral Acceleration Increases 5-1
5.4 Soil Profile Type 5-2
5.5 Design Acceleration Response Spectra 5-2

Section 6 As-Built 6-1

TABLE OF CONTENTS

Section 7 Discussion and Recommendations 7-1

7.1 Discussion 7-1
7.2 Pile Design Capacity and Tip Elevation 7-1
7.2.1 Axial Pile Capacity Analysis 7-1
7.2.2 Lateral Load Capacity 7-3
7.3 CISS pile installation 7-4
7.4 Approach Embankment Settlement 7-4
7.5 Slope Stability 7-4
7.6 Approach Fill Earthwork 7-4
7.7 Abutment Excavation 7-5

Section 8 Construction Considerations 8-1

8.1 Temporary Construction Excavation 8-1
8.2 Construction Dewatering 8-1
8.3 Effects of Construction Work on Adjacent Structures 8-1

Section 9 Limitations 9-1

Section 10 References 10-1

TABLE OF CONTENTS

LIST OF FIGURES

Figure 1-1: Project Vicinity Map
Figure 2-1: General Plan-1
Figure 2-2: General Plan-2
Figure 2-3: Foundation Plan
Figure 3-1: Site and Boring Location Plan
Figure 3-2: Generalized Soil Profile

LIST OF TABLES

Table 4-1: Soil Corrosion Test Results Summary
Table 5-1: Seismic Source Parameters
Table 5-2: Spectral Acceleration Increase for Near-Field Effects
Table 5-3: Spectral Acceleration Values
Table 6-1: As-Built Pile Data Table for Matadero Creek Bridge
Table 7-1: Foundation Design Data for Matadero Creek Bridge (Widen)
Table 7-2: Foundation Design Loads for Matadero Creek Bridge (Widen)
Table 7-3: Pile Data Table for Matadero Creek Bridge (widen)

LIST OF APPENDICES

Appendix A: Caltrans Review Comments
Appendix B: Field Exploration and Laboratory Testing
Appendix C: Log of Test Borings
Appendix D: Bridge Design Hydraulic Study Report – Executive Summary
Appendix E: Liquefaction Analysis and Seismic Compaction Calculations
Appendix F: Soil Corrosion Investigation Report
Appendix G: As-built Plans for Matadero Creek Bridge
Appendix H: Axial Pile Capacity Analysis
Appendix I: Laterally Loaded Pile Analysis, LPILE output

1.1 GENERAL

The proposed project is located on U.S. 101 in the Cities of Mountain View and Palo Alto, Santa Clara County, California. The project limits extend from State Route (SR) 85 on the south to Embarcadero Road on the north (PM 49.0/52.2), a distance of approximately 3.2 miles (Figure 1-1). Within project limits, the U.S. 101 has three mixed-flow lanes and one high occupancy vehicle (HOV) lane in each traffic direction. Full-access interchanges are located at SR 85, Shoreline Boulevard, Rengstorff Avenue/Amphitheatre Parkway, Oregon Expressway, and Embarcadero Road. Partial access interchanges are located at Old Middlefield Way, Charleston Road, and San Antonio Road. There is also a direct HOV connector ramp to and from northbound U.S.101 and SR 85.

The purpose of the overall project is to relieve existing and future traffic congestion on weaving sections and at ramp termini, and provide for improved local access over this segment of the U.S. 101 corridor.

The project will construct an auxiliary lane on U.S.101 in each direction between SR 85 and Embarcadero Road. The exception will be between San Antonio Road and Rengstorff Avenue in the southbound direction, where no auxiliary lane is proposed because it would create weaving conflicts with traffic entering the freeway from Charleston Road. The new auxiliary lanes will be constructed adjacent to the existing outside lanes. On-ramps at a few interchanges will be widened for the purpose of increasing storage capacity. At most locations, there is sufficient room within the existing Caltrans right-of-way to accommodate the construction of the auxiliary lanes. There are areas where minor amounts of additional right-of-way would be required.

The auxiliary lanes will require the widening (1) of the existing U.S.101 bridges over Adobe Creek and Matadero Creek and (2) of the existing U.S.101 box culvert at Permanente Creek.

The subject of this foundation report (FR) is the widening of the Matadero Creek Bridge (Bridge No. 37-0040) located in Palo Alto, California. Figure 1-1 shows the location of the project site relative to the Auxiliary Lane Project alignment.

1.2 SCOPE OF INVESTIGATION

The geotechnical services performed for the Matadero Creek Bridge (widen) were as follows:

- Reviewed existing plans
- Geotechnical field investigation including one exploratory boring, R-09-001, and one cone penetration test (CPT), CPT-09-002
- Laboratory testing to estimate pertinent engineering properties
- Design recommendations and opinions were developed for the following topics:
  - CISS pile design recommendations
  - Resistance to lateral loads
  - Approach fill settlement, if any
  - Abutment grading and approach fill construction
  - Earthquake information consistent with Caltrans Response Spectra Design Techniques
  - Assessment of the potential for earthquake induced liquefaction, settlement, and lateral spreading
  - Corrosion testing and analysis

- Address construction issues, including:
  - Earthwork for abutments and new bridge approaches
  - Construction dewatering

Review related to environmental and hazardous waste issues and the results of evaluations are presented in a separate report, titled "Site Investigation Report.".

1.3 CALTRANS REVIEW COMMENTS

We reviewed comments prepared by Caltrans for the Matadero Creek Bridge widening for the Preliminary Foundation Report dated August 2008, and for the Foundation Report (35% submittal) dated June 11, 2009. Our responses to these comments are incorporated into this report. Copies of the review comments and our responses are presented in Appendix A. Subsequent to receiving C1 approval of the revised Foundation Report (November 11, 2009) on January 25, 2010, the Design Team Structural Engineer adjusted foundation loading conditions at the supports. These adjustments were incorporated in the updated pile analyses and corresponding changes in the pile data table presented in Section 7.

2.1 PROPOSED IMPROVEMENTS

The proposed improvement of U.S. 101 from Shoreline Boulevard to Oregon Expressway, in the Cities of Mountain View and Palo Alto, will include new auxiliary lanes in each direction and associated ramp improvements. As part of the proposed highway widening, Matadero Creek Bridge on U.S. 101 will include widening both sides of the structure by approximately 12 feet in the northbound and southbound directions and closing the gaps between the U.S. 101 bridges and the adjacent frontage road bridges. Existing abutment walls and pile caps in the proposed widening area will be removed and replaced with new pile foundations. Excavation for the new abutment and bent pile caps requires the removal of the top 7 feet of the existing abutment piles and 2.5 feet of existing bent piles, respectively. The proposed structure type is a two-span precast, prestressed concrete voided slab. The advanced planning study drawings of profile, elevation, and typical section of the planned improvements at the Matadero Creek crossing are shown on Figures 2-1, 2-2 and 2-3.

The bridge is to begin at 'C' Line Station 71+69.25 and end at 'C' Line Station 72+50.75; the bridge deck will be positioned at Elevation 12.54 feet. The bridge will have a overall length of 81.5 feet with a clear width of 155 feet between concrete barriers. We understand that 24-inch diameter cast-in-steel shell (CISS) piles are currently proposed to support new bridge foundation elements.

As noted on Figure 2-3, Bench Mark CT22 is located nearby. Horizontal survey control is based on the California coordinate system, Zone 3, U.S. survey feet, North American Datum of 1983 (NAD83), Epach 2007.00. Vertical control is the North American Vertical Datum of 1988 (NAVD88).

3.1 GEOLOGIC SETTING

3.1.1 Regional Geology

The project site is located about 1¼ to 2 miles southwest of the edge of San Francisco Bay within the northern portion of Santa Clara Valley, an alluvial basin located between the Santa Cruz Mountains to the southwest and the Diablo Range to the northeast. The Santa Clara Valley is located within the central portion of the Coast Ranges geomorphic province of California. Northwest-southeast-trending valleys and ridges characterize the regional morphology of the Coast Ranges province. These topographic features are controlled by folds and faults that resulted from the collision of the Farallon and North American plates and subsequent predominantly strike-slip faulting along the San Andreas fault system between the Pacific and North American plates.

Regional geologic mapping shows the project location to be underlain by Holocene fine-grained alluvium deposits extending from the southern end at Permanente Creek northward to about the San Antonio Road overcrossing (Helley and LaJoie, 1979). North of this point to the end of the project at Oregon Expressway the roadway is mapped as being underlain by Holocene Bay Mud. This section of the project extends northeast of the original 1850 shoreline of the San Francisco Bay (Helley and LaJoie, 1979). The fine-grained alluvium deposits are described as plastic, poorly-sorted organic silt and clay that interfingers with the Bay Mud. The Bay Mud is described as water-saturated estuarine organic clay and silty clay with a few lenses of well-sorted sand, and shelly and peaty layers. More recent mapping by Witter and others (2006) shows similar conditions. However, the fine-grained alluvium is referred to as Holocene alluvial fan deposits, fine-grained facies, and Witter maps the Bay Mud as being overlain by artificial fill along the roadway alignment north of about the San Antonio Road overcrossing. The nearest bedrock consists of Tertiary sedimentary rocks and volcanic basalt mapped about three miles southwest of the site in the Los Altos Hills.

3.1.2 Regional Tectonic Setting and Seismicity

The Santa Clara Valley is located between the active San Andreas fault to the west, and the Hayward and Calaveras faults. Each of these faults has produced damaging earthquakes during historic time. The valley margins are marked by belts of active thrust faults; the Foothills fault system to the southwest and the East Valley thrusts to the northeast (Fenton and Hitchcock, 2002).

The Foothills fault system is a series of southwest-dipping thrust faults located along the range front of the Santa Cruz Mountains (Bürgmann et al., 1994). The Monte Vista-Shannon, Cascade, and Sargent faults are the main active faults in the Foothills thrust system. The Monte Vista-Shannon fault zone is approximately 27 miles long and dips at a moderate angle to the southwest, merging with the San Andreas fault at depth. The Cascade fault is approximately 22 miles long. The Sargent fault is approximately 35 miles long and merges with the San Andreas fault near Loma Prieta.

The East Valley thrusts are a series of northeast-dipping thrust faults that mark the junction between the southern end of the Hayward fault and the southern and central segments of the Calaveras fault. These faults, which include the Quimby, Piercy, Evergreen, Silver Creek,

Coyote Creek, Berryessa, Crosley, and Warm Springs faults, are relatively short, less than 19 miles long, and appear to merge with the Calaveras faults at relatively shallow depths (Jones et al., 1994). Recent geologic and geomorphic investigations along both the Foothills and East Valley thrust systems indicate that they are active and may be capable of generating damaging earthquakes (Hitchcock and Kelson, 1999; Fenton and Hitchcock, 2002).

The closest active faults to the project alignment are the Cascade, Monte Vista-Shannon, Silver Creek, San Andreas and Hayward faults (Caltrans Deterministic PGA Map, 2007). The Caltrans Seismic Map (Mualchin, 1996) divides the Monte Vista fault into west and east branches. In the 2007 Caltrans Deterministic PGA Map the Monte Vista East fault has been renamed as Cascade fault. The California Geological Survey (2000) has produced maps showing Alquist-Priolo Earthquake Fault Zones along faults with known Holocene activity that pose a potential surface faulting hazard. The San Andreas and Hayward faults are included as Alquist-Priolo (A-P) zoned faults, however the Monte Vista-Shannon and Cascade faults are not.

The closest fault to the site is the Cascade fault, located about 4.5 km (2.7 miles) southwest of the southern end of the project site. The Monte Vista-Shannon fault is located about 6.5 km (4 miles) at its closest point at the southern end of the project. Silver Creek fault generally parallels U.S.101 in the project areas and is located about 6 miles northeast of the site. The San Andreas fault generally parallels U.S. 101 and is located about 12 km (7.5 miles) southwest of the site. The Hayward fault also generally parallels the U.S. 101 road alignment and is located about 17.5 km (10.8 miles) northeast of the site.

The following is a brief description of the nearby active faults.

3.1.2.1 Foothills Thrust Belt (Monte Vista-Shannon and Cascade Faults)

The southwestern margin of the Santa Clara Valley is bounded by the rugged, young southern Santa Cruz Mountains. Late Cenozoic uplift of the mountains has occurred, in part, along a series of northwest-striking reverse faults, known as either the Loma Prieta domain (Aydin and Page, 1984) or Foothills thrust belt (Bürgmann *et al.*, 1994), bordering the northeastern margin of the range front. Bounded by the main trace of the San Andreas fault to the west, this sequence of southwest-dipping thrusts, associated with a restraining left bend in the San Andreas fault, has been responsible for the uplift of the Santa Cruz Mountains (Bürgmann *et al.*, 1994). These faults offset the Pliocene and Pleistocene Santa Clara Formation, and locally offset and deform overlying Quaternary sediments and geomorphic surfaces within the range-front communities of Palo Alto, Los Altos Hills, Cupertino, Saratoga, and Los Gatos, located along the southwestern margin of the Santa Clara Valley (Hitchcock and Kelson 1999; Hitchcock *et al.* 1994). The up-dip projection of the blind Loma Prieta fault, which is interpreted to have been the source of the 1989 **M** 6.9 Loma Prieta earthquake (Bürgmann *et al.*, 1994), coincides with the Foothills thrust belt.

The Monte Vista-Shannon fault is one of the primary range-front faults and probably the most extensively studied fault in the Foothills thrust belt. The exposed fault strikes northwest and places Franciscan, Miocene, Santa Clara Formation, and Pleistocene alluvium over Pleistocene and older strata. To the north end it intersects the San Andreas, via the Hermit fault, between Woodside and Redwood City. Limited exploratory trenching indicates that the Monte Vista-Shannon fault has had late Quaternary and possibly Holocene displacement. Recent geomorphic mapping by Hitchcock *et al.* (1994) shows that late Pleistocene fluvial terraces flanking Stevens

Creek are deformed. The style of late Quaternary deformation affecting these terrace surfaces is consistent with reverse faulting on the Monte Vista fault. Hitchcock and Kelson (1999) estimated an average late Pleistocene slip rate of 0.17 ± 0.09 mm/yr for the Monte Vista-Shannon fault.

The Cascade fault traverses the coalescent alluvial-fan complex underlying the Santa Clara Valley approximately 1 to 4 miles northeast of the Santa Cruz Mountains range front. Hitchcock et al. (1994) show a strong correlation between the mapped trace of the Cascade fault and fault-related geomorphic features, including vegetation lineaments, closed depressions, linear drainages, stream profile convexities, and high-sinuosity stream reaches. These features are developed in late Pleistocene (and possibly Holocene) displacement along the Cascade fault. Between Los Altos Hills and Los Gatos, most of the major streams show longitudinal profile convexities where they cross mapped trace of the Cascade fault. In general, the crests of the convexities coincide with the zone of lineaments. These relations indicate late Pleistocene uplift along this section of the Cascade fault (Hitchcock et al., 1994). Although this provides little or no information on the sense of slip and the amount and direction of the fault dip, it is likely that the Cascade fault is a southwest dipping, northeast vergent reverse fault similar to, but perhaps having a shallower dip in the near surface than the Monte Vista-Shannon fault (Fenton and Hitchcock, 2001).

3.1.2.2 Silver Creek Fault Zone

The Silver Creek fault is mapped as steep, east dipping oblique reverse fault with an exposed well documented southern fault section and an inferred northern section buried beneath late Quatenary sediments of Santa Clara Valley. The southern section extends approximately 19 miles from the Anderson Reservoir, northeast of Morgan Hill, where it splays from the Coyote Creek fault to the mouth of the Silver Creek Valley, southwest of the town of Evergreen. Northern section is approximately 25 miles long beneath Santa Clara Valley, extending from Silver Creek Valley to Alameda Creek in Fremont (Fenton and Hitchcock, 2001).

3.1.2.3 San Andreas Fault Zone

The dominant active fault structure in this region is the San Andreas fault. The fault extends from the Gulf of California, Mexico, to Point Delgada on the Mendocino Coast in northern California, a total distance of 750 miles. The San Andreas fault accommodates the majority of the motion between the Pacific and North American plates. This fault is the largest active fault in California and is responsible for the largest known earthquake in Northern California, the 1906 **M** 7.9 San Francisco earthquake (Wallace, 1990). Movement on the San Andreas fault is right-lateral strike-slip, with a total offset of some 350 miles (Irwin, 1990). In Northern California, the San Andreas fault is clearly delineated, striking northwest, approximately parallel to the vector of plate motion between the Pacific and North American plates. Over most of its length, the San Andreas fault is a relatively simple, linear fault trace. Immediately south of San Francisco Bay, however, the fault splits into a number of branch faults or splays, including the Calaveras and Hayward faults. In the Bay Area, the main trace of the San Andreas fault forms a linear depression along the Peninsula, occupied by the Crystal Springs and San Andreas Lake reservoirs. Geomorphic evidence for Holocene faulting includes fault scarps in Holocene deposits, right-laterally offset streams, shutter ridges, and closed linear depressions (Wallace, 1990). The 1906 earthquake resulted from rupture of the fault from San Juan Bautista north to

Point Delgada, a distance of approximately 300 miles. The average amount of slip on the fault during this earthquake was 16.5 feet in the area to the north of the Golden Gate and 8 feet in the Santa Cruz Mountains (WGNCEP, 1996).

Based on differences in geomorphic expression, fault geometry, paleoseismic chronology, slip rate, seismicity, and historic fault ruptures, the San Andreas fault is divided into a number of fault segments. Each of these segments is capable of rupturing either independently or in conjunction with adjacent segments. In the Bay Area, these segments include the Santa Cruz Mountains, the Peninsula, and the North Coast segments. These fault segments have calculated maximum earthquakes of **M** 7.2, 7.3, and 7.7, respectively. The North Coast segment may also be subdivided into two shorter segments with a boundary at Point Arena. These northern and southern North Coast segments are capable of generating earthquakes of **M** 7.5 and 7.7, respectively.

South of the Golden Gate, the fault slip rate is 17 ± 7 mm/yr (Hall *et al.*, 1999). North of the Golden Gate, the slip rate increases to 24 ± 5 mm/yr (Niemi and Hall, 1992). WGCEP (1999) assigns a recurrence interval of 361 years to a **M** 8.0 1906-type event on the San Andreas fault, with a 21 percent probability of a **M** 6.7 or larger earthquake on the San Andreas in northern California in the time period 2000 to 2030. Recent investigations indicate that the repeat time for large earthquakes on the North Coast segment may be less than 250 years.

3.1.2.4 Hayward Fault

The Hayward fault extends for 60 miles from the area of Mount Misery, east of San Jose, to Point Pinole on San Pablo Bay. At Point Pinole, the Hayward fault runs into San Pablo Bay. The northern continuation of this fault system is the Rodgers Creek fault. The two faults are separated by a 3-mile-wide right step beneath San Pablo Bay. Systematic right-lateral geomorphic offsets and creep offset of cultural features have been well documented along the entire length of the fault (Lienkaemper, 1992). The last major earthquake on the Hayward fault, in October 1868, occurred along the southern segment of the fault. This **M** 6.8 event caused toppling of buildings in Hayward and other localities within about 3 miles of the fault. The surface rupture associated with this earthquake is thought to have extended for approximately19 miles, from Warm Springs to San Leandro, with a maximum reported displacement of 3 feet. The Hayward fault is considered the most likely source of the next major earthquake in the Bay Area (WGCEP, 1999). As well as undergoing displacement earthquake ruptures, the Hayward fault also moves by aseismic creep. Measurements along the fault over the last two decades show that the creep rate is 5 to 9 mm/yr (Lienkaemper and Galehouse, 1997).

3.1.3 Local Geology

Exploration completed for the Matadero Creek Bridge (Widen) and the Log of Test Borings (LOTB) for the original Matadero Creek Bridge (Bridge No. 37-0040) were reviewed. The original investigation by Caltrans for the Matadero Creek Bridge was conducted in 1957. These borings were drilled into the alluvial fan deposits – fine grained facies as mapped by Witter et al, (2006). Except for the fill material up to about 6 to 8 feet in thickness, the borings typically encountered fine-grained alluvium consisting of interbedded lean and fat clay, silt, sandy clay and clayey sand with occasional interbeds of silty sand and well-graded sand with gravel. In general, the clay alluvium was medium stiff to very stiff and the silty and clayey sand interbeds are medium dense to very dense, although 10 feet of very dense, well-graded sand were

encountered in Boring R-09-001. Boring B-2 from the 1957 Matadero Creek Bridge study encountered, from 6 to 9 feet in depth, very soft, blue clay which appeared to be Bay Mud as mapped near the north end of the current project alignment.

3.2 SITE AND SUBSURFACE CONDITIONS

3.2.1 Site Topography

The proposed auxiliary lanes and other improvements to U.S. 101 will extend between about Embarcadero Road on the north in Palo Alto to State Route 85 on the south in Mountain View. U.S. 101 is at-grade through this section, with bridge structures across Matadero Creek and Adobe Creek.

U.S. 101 follows the southwestern margins of San Francisco Bay and the topography along the existing roadway is relatively flat, ranging from approximately Elevation 20 feet at the southeast end near Permanente Creek, to a low of about Elevation 5 feet near the Oregon Expressway overcrossing at the northwest end (USGS Mountain View Quadrangle). The channelized Matadero Creek and Adobe Creek are at or near sea level and are subject to tidal inundation.

Development along the project is extensive, consisting of residential housing, mostly on the southwest side, commercial retail and office business buildings, and tidal wetlands fronting the northeast section of the freeway between about Oregon Expressway and Adobe Creek.

3.2.2 Field Exploration

The Log of Test Borings completed for the original Matadero Creek Bridge (Bridge No. 37-0040) was reviewed. The original investigation by Caltrans for Matadero Creek Bridge was conducted in 1957 and included two cone penetration borings (B-1 and B-3) and two rotary wash borings (B-2 and B-4). The borings were advanced into the alluvial fan deposits, fine-grained facies as mapped by Witter et al, (2006), and extended to a maximum depth of 87 feet (to about Elevation -83 feet). The approximate locations of these explorations are shown on the Site and Boring Location Plan, Figure 3-1. Logs of borings performed for median widening of the bridges circa 1989 were not available.

To supplement available data, URS performed one exploratory boring, R-09-001, and one cone penetration test, CPT-09-002, to terminal depths of approximately 101.5 and 100 feet, respectively. The field exploration was performed on March 22 through 24, 2009. The locations of the boring and CPT are shown on the Site and Boring Location Plan, Figure 3-1.

A representative of URS supervised the drilling operations and soil sampling. Visual classifications of the soils encountered were made from cuttings and soil samples. The soil samples collected from the boring were labeled and sealed immediately to preserve their natural moisture content. At completion of the exploration, samples were delivered to the laboratory for further examination and testing. The boring and CPT were backfilled with a mixture of cement and bentonite in accordance with the requirements of the Santa Clara Valley Water Distict. A detailed discussion of the field exploration program is presented in Appendix B.

The Unified Soil Classification System and the guidelines summarizing soil consistency and relative density are presented on the Log of Test Borings (LOTB) legend. Descriptions of the soils encountered in the borings are presented in LOTB presented in Appendix C. The logging

method used in preparing the LOTB is consistent with Caltrans Soil and Rock Logging, Classification and Presentation Manual, dated June 2007. These logs also illustrate the notation used for the size of samplers and the methods of advancing them.

3.2.3 Laboratory Testing

The water content, dry density, Plasticity Index (PI), grain size distribution (PA), consolidation, and Unconfined Compressive Strength (UC) were determined for selected samples to estimate the strength and compressibility of the underlying soils. The locations of these tests, together with the resistance to penetration of the samplers are shown at the corresponding locations on the LOTB. The laboratory test results are provided in tabular form and/or graphically in Appendix B.

3.2.4 Soil Conditions

3.2.4.1 Fill

The rotary wash boring performed in March 2009 encountered 8 feet of fill material consisting of medium to stiff sandy lean clay.

3.2.4.2 Native

Boring R-09-001 revealed the native soil underlying the fill is predominantly fine grained, consisting of medium stiff to hard lean and fat clay. A layer of medium dense clayey sand approximately 2½ feet thick was encountered at a depth of about 8 to 10½ feet below ground surface (bgs). The sand was underlain by stiff to hard lean clay to a depth of about 35 feet, underlain by medium stiff fat clay to a depth of about 45 feet. An approximately 1-foot thick clayey sand interbed was encountered at 29 feet. Below 45 feet, the boring encountered very dense well-graded sand to a depth of about 55 feet. The sand was, in turn, underlain by medium stiff to very stiff lean and fat clay to a depth of 101.5 feet, the terminal depth of the boring. The native soils encountered in the CPT can generally be characterized as clay and silty clay with interbedded sandy silt and sand corresponding to similar layers encountered in Boring R-09-001. Based on Boring R-09-001 and CPT-09-002, a generalized soil profile is presented in Figure 3-2.

3.2.5 Groundwater

Boring R-09-001 was advanced to a depth of 7½ feet using an auger. No free groundwater was observed at that time. The drilling method was then switched to rotary wash, thereby precluding a reliable groundwater measurement. However, free groundwater was encountered in nearby hollow-stem auger borings A-09-183 and A-09-184 at a depth of about 13.5 and 12 feet, respectively (Elevation 3.5 and 0 feet). These two borings were drilled approximately 150 feet on either side of the bridge site for proposed sign structures near Matadero Creek.

Free groundwater was reportedly encountered in one of the borings performed in 1957 (Boring B-2) at a depth of about 7 feet (Elevation -2.0 feet: datum unspecified 1956). The groundwater level is likely subject to some tidal fluctuation and is expected to be around Elevation 2 to 4 feet, similar to the surface water level in Matadero Creek

Considering the previous measurements and expected tidal fluctuation, we believe a design groundwater level at Elevation 4 feet would be reasonable for the site.

3.3 GEOLOGIC HAZARDS

3.3.1 Surface Fault Displacement and Ground Shaking

The project alignment does not cross any known active faults or mapped A-P zoned faults. The Santa Clara County geologic hazard maps (2002) do not show the road alignment crossing any fault hazard rupture zones. Surface rupture due to faulting along the alignment, therefore, is not expected to occur. However, the short distance to the Monte Vista, San Andreas and Hayward faults does create a high risk for ground shaking from fault movement. The intensity of the ground shaking is dependent upon the size of the earthquake, the distance of the epicenter from the site, the direction that the earthquake propagates along the fault, and the site geologic conditions. Section 3.1.2 "Regional Tectonic Setting and Seismicity" discusses the anticipated seismic shaking from these faults.

3.3.2 Landslide and Slope Failure

U.S 101 is on relatively flat ground along the project alignment and is not subject to landsliding. The project site is not within a landslide hazard zone on hazard maps published by Santa Clara County (2002), nor on the CGS Earthquake-Induced Landslide hazard zone map (2001). Therefore, landsliding is not a potential hazard.

3.3.3 Scour

Caltrans February 2006 Bridge Inspection Report describes the Matadero Creek Channel as trapezoidal with concrete lined side slopes and an earth bottom. Based on the project hydraulic analysis (WRECO, 2009), we understand that total scour of 4.3 feet is expected at the creek bottom and around the piers. The executive summary section of the Draft Bridge Hydraulic Study Report by WRECO, dated May 18, 2009, is presented in Appendix D.

3.3.4 Flooding

The project alignment south of the San Antonio Road overcrossing at Permanente Creek is located outside of the 100-year flood zone as shown on the FEMA flood hazard zone maps (SCVWD, 2008). The alignment north of the San Antonio Road overcrossing to the Oregon Expressway, which includes the Matadero Creek crossing, is within the 100-year flood zone.

3.3.5 Subsidence and Seismic Compaction

Subsidence typically occurs as a result of subsurface fluid extraction (e.g. groundwater or petroleum) or compression of soft, geologically young sediments such as Bay Mud. Settlement can occur quickly when soil is loaded by a structure or by the placement of fill, or it can also occur gradually when soil pore pressures, increased by vertical loading, gradually dissipate over time. This second type is termed consolidation settlement. The soft, young Bay Mud soils underlying the northern portion of the project are susceptible to subsidence and consolidation settlement.

Compaction settlement, or seismic densification, occurs when loose granular soils increase in density as a result of earthquake shaking. The soil densification can result in differential settlement because of variations in soil composition, thickness, and initial density. As previously

mentioned, disturbed water wells and ground settlement in the project area have been documented as a result of ground shaking during the Loma Prieta earthquake and the 1906 San Francisco earthquake (Knudsen, et al, 2000).

For design, we estimated the potential post-earthquake settlement at CPT-09-002 and R-09-001, due to seismic compaction. In our analyses we used a peak ground acceleration (PGA) of 0.5g and a design earthquake moment magnitude (**M**) of 8.0. At Boring R-09-001, the soils above the groundwater table are primarily sandy lean clay; therefore, seismic compaction is not expected. Seismic compaction also is unlikely for the soils encountered at CPT-09-002.

3.3.6 Liquefaction Potential

Liquefaction is a phenomenon whereby sediments temporarily lose shear strength and collapse. This condition is caused by cyclic loading during earthquake shaking that generates high porewater pressures within the sediments. Loose, cohesionless, granular soil below the water table and within about 50 feet of the ground surface is most susceptible to liquefaction. Liquefaction can result in loss of foundation support and settlement of overlying structures, ground subsidence and translation due to lateral spreading, lurch cracking, and differential settlement of the affected deposits. Lateral spreading occurs when a layer liquefies at depth and causes horizontal movement or displacement of the overlying mass toward a free face such as a stream bank or excavation, or toward an open body of water.

Liquefaction hazard maps have been prepared for the project area including: Santa Clara County Liquefaction Hazard Zone maps (2002), the California Geological Survey Liquefaction hazard zone map for Mountain View Quadrangle (CGS, 2001), and the liquefaction hazard map for Palo Alto/Stanford, Scenario:1906 San Francisco Earthquake (ABAG, 2001). All of these maps show the U.S. 101 alignment to be within a liquefaction hazard zone ranging from “moderate” to “very high” susceptibilty. In a regional study of the nine-county San Francisco Bay region for the U.S. Geological Survey, Witter et al. (2006) mapped the liquefaction susceptibility of the site soils along the project alignment related primarily to the mapped geologic units. The alluvial fan deposits, fine-grained facies, mapped from the south end of the project at Permanente Creek to about Adobe Creek, are shown as having a “moderate” liquefaction susceptibility. The artificial fill over the Bay Mud soils between about Adobe Creek and the north end of the project are shown as having a “very high” liquefaction susceptibility. Several historic ground failures from both the Loma Prieta earthquake and the 1906 San Francisco earthquake have been recorded in the Bay Mud tidal flats between the U.S. 101 and the San Francisco Bay margin including disturbed water wells, ground settlement and miscellaneous effects (Knudsen, et al, 2000).

Based on a review of the boring and CPT completed for this study, potentially liquefiable sands were encountered at depths of approximately 9, 13 and 30 feet. We estimated the post-liquefaction settlement at CPT-09-002 using the computer program LIQUEFY PRO for a peak ground acceleration (PGA) of 0.5g and design earthquake moment magnitude, **M** 8.0. Based on that analysis, we estimate that total post-liquefaction settlement on the order of 1½ inches could occur. In addition, we analyzed post-liquefaction settlement of the medium dense sand layers encountered in Boring R-09-001 for the same PGA and design earthquake, adjusting the measured driving resistance (blow counts) in the field for hammer type, sampler size, overburden pressure, rod length, and fines content; the magnitude of settlement at this boring location is estimated to be slightly less than ½ inch. Copies of these calculations are included in Appendix

E. Since ground surface settlement at CPT-09-002 could exceed ½ inch, downdrag on the CISS is a design concern at this location.

3.4 GEOLOGICAL PROFILES AND ENGINEERING PARAMETERS

The generalized soil profile presented on Figure 3-2 illustrates the layering of the various soil strata and summarizing the corresponding geotechnical parameters. It should be noted that this profile was developed based on extrapolation of available data from the borings drilled for this investigation and, therefore, may differ from actual conditions. Soil parameters tabulated on Figure 3-2 were selected based on laboratory test results as well as engineering judgment and local experience.

The undrained shear strength, relative density, dry unit weight and moisture content are the engineering soil parameters used in our foundation design and analysis. Atterberg limits tests and particle analyses were performed for classification of soils. In general, unconfined compression tests were performed on cohesive soil samples to estimate the undrained shear strength. Some disturbance occurs while sampling cohesive soils; therefore unconfined compressive strengths in localized areas can be lower than the insitu field conditions. Consequently, engineering judgment and local experience were applied in our interpretation of the laboratory test results. The relative density of cohesionless soils was estimated from vertical effective stress and Standard Penetration Resistance, N blows per 1 foot based on correlations developed by Gibbs and Holtz (DM7.1 – 87, 1986). Where non-standard sampler sizes were used, such as the modified California sampler (2½ inch outside diameter), a correction factor was applied to the observed blows per 1 foot to estimate the Standard Penetration Resistance, N values.

4.1 CORROSION EVALUATION

An assessment of the potential for corrosion of various buried foundation and pipe structures was performed by V&A Consulting Engineers (V&A). The results of their investigation are presented in Appendix F.

The following paragraphs include their summary and conclusions.

4.2 SUMMARY

The objective of this investigation is to measure various soil parameters and evaluate the results with respect to possible levels of corrosion at the proposed Matadero Creek Bridge (widen) site. Corrosivity was determined for materials of the project structure, if any, to depths ranging from 0 to 80 feet below grade.

The California Department of Transportation, Division of Engineering Services, Materials Engineering and Testing Services, Corrosion Technology Branch has published "Corrosion Guidelines" (Guidelines) to define corrosive soil. The Guidelines consider soil to be corrosive to structural elements (steel reinforced concrete) if one or more of the following conditions exist for water or soil samples:

1) The chloride concentration is 500 ppm (mg/kg) or greater,
2) The sulfate concentration is 2,000 mg/kg or greater, or
3) The pH is 5.5 or less.

A wide variety of soluble salts are typically found in soils. Two soils having the same resistivity may have significantly different corrosion characteristics, depending on the specific ions available. The major constituents that accelerate corrosion are chlorides, sulfates and the acidity (pH) of the soil. Chloride ions tend to break down otherwise protective surface deposits, and can result in corrosion of reinforcing steel in concrete structures. Sulfates in soil can be highly aggressive to Portland cement concrete by combining chemically with certain constituents of the concrete, principally tricalcium aluminate. The reaction is accompanied by expansion and eventual disruption of the concrete matrix. High concentrations of bicarbonates tend to decrease soil resistivities. Although bicarbonates are not aggressive to concrete, lower resistivity environments can promote corrosion activity.

Acidity, as indicated by the pH value, is another measure of corrosivity. The lower the pH (the more acidic the environment), the higher will be the corrosivity with respect to buried metallic and concrete structures. As pH increases above 7 (the neutral value), conditions become increasingly more alkaline and passive to buried structures.

Evaluation of the in-situ soil environment was made in terms of potential damage to structures due to corrosion. Soil resistivity measurements were conducted in the field during the initial stages of the work. In addition, soil samples collected by URS during the geotechnical investigation were forwarded to Cooper Testing Laboratory in Palo Alto, California for chemical analysis. The soil samples were analyzed for minimum resistivity, pH, water soluble chloride ion concentration, and water soluble sulfate ion concentration in accordance with the Guidelines.

The results are summarized in the following table.

Table 4-1: Soil Corrosion Test Results Summary

Sample ID	Minimum Resistivity (ohm-cm)	pH	Chloride Content (mg/kg)*	Sulfate Content (mg/kg)*
R-09-001, 4-3	421	10.2	256	181
Matadero Creek Water	1,133	7.6	174	12

*The chloride and sulfate results for water sample is in mg/L

As shown above, the pH of the soil sample analyzed was 10.2 with water soluble chloride and sulfate ion concentrations of 256 mg/kg and 181 mg/kg. The minimum resistivity of the soil sample was 421 ohm-cm.

As shown above, the pH of the water sample analyzed was 7.6 with water soluble chloride and sulfate ion concentrations of 174 mg/L and 12 mg/L. The minimum resistivity of the water sample was 1,133 ohm-cm. The bridge structure is not located within 1,000 feet (300 meters) of salt or brackish water.

4.3 CONCLUSIONS

Soil samples were obtained for corrosion analysis at Boring Location R-09-001. A water sample was obtained from Matadero Creek. As shown in the preceding Table 4-1, the soil and water chemical analyses resulted in the pH values higher than 5.5, soluble chloride concentrations less than 500 mg/kg and soluble sulfate concentrations less than 2,000 mg/kg. Therefore, according to the Guidelines, the soil at the site is considered non-corrosive.

5.1 SEISMIC DESIGN METHODOLOGY AND RESOURCES

The seismic design methodology adopted for this project is based on the following current Caltrans standards:

- 2007 Caltrans Deterministic PGA Map
- Seismic Design Criteria (SDC), Version 1.4, June 2006
- Guidelines for Foundation Investigations and Reports, v 2.0, dated March 2006

5.2 PEAK BEDROCK ACCELERATION

The active faults closest to the U.S. 101 Matadero Creek Bridge are the Hayward, Cascade, and San Andreas faults. The Hayward, Cascade, and San Andreas faults are designated with Maximum Credible Earthquake (MCE) magnitudes of 7.5, 6.9, and 8.0, respectively, on the 2007 Caltrans fault database. The Cascade and San Andreas faults are expected to contribute the same level of ground shaking at the site (0.5g) while the Hayward fault should produce lower shaking (0.4g). The MCE, therefore, is the earthquake on the San Andreas Fault since it could potentially release the highest energy (**M**=8.0) and results in the strongest shaking at the site. The distance from the Matadero Creek Bridge to the San Andreas fault is approximately 7.5 miles.

Table 5-1: Seismic Source Parameters

Fault	Type	MCE	Distance (miles)	Near Field Effects?
Cascade	Reverse	6.9	2.7	N
San Andreas	strike-slip	8.0	7.5	Y
Hayward	strike-slip	7.5	10.7	Y

5.3 FAULT TYPE, NEAR-FIELD, AND SPECTRAL ACCELERATION INCREASES

The 2007 Caltrans fault database indicates that the controlling fault (San Andreas) has strike-slip displacement. Therefore, in accordance with Caltrans design procedures referenced above, an increase in design spectral accelerations is not required for fault type. However, since the project site is less than 9.5 miles from the nearest active fault, design spectral accelerations should be modified to account for near-fault effects as follows:

Table 5-2: Spectral Acceleration Increase for Near Field Effects

Period (sec)	Increase in Spectral Acceleration (%)
< 0.5	0
0.5 – 1.0	0 – 20 (determined by linear interpolation)
≥1	20

At the time of this study, no bridge structures with fundamental period of vibration greater than 1.5 seconds are anticipated; therefore, no adjustments are required for long period effects.

5.4 SOIL PROFILE TYPE

The Matadero Creek Bridge crossing is located near the boundary of fine-grained Holocene alluvial fan deposits and Holocene San Francisco Bay Mud (Kleinfleder, 2000), which could be potentially classified as Soil Profile Type D or E. Borings completed for the original Adobe Creek Bridge, Matadero Creek Bridge, and the State Route 85/U.S. 101 interchange improvement project adjacent to the south end of the project (about 1.8 miles away) were reviewed. The borings typically encountered fine-grained alluvium consisting of interbedded lean and fat clay, silt, sandy clay and clayey sand with occasional interbeds of silty sand and well-graded sand with gravel. In general, the clay alluvium was reported as stiff to very stiff and the silty and clayey sand interbeds were medium dense to dense.

Boring R-09-001 drilled for this study revealed a similar soil profile consisting of medium stiff to hard cohesive soils and medium dense to very dense granular alluvial deposits that extend to a depth of at least 100 feet. The regional geology suggests the soils become stiffer and denser with increasing depth.

Based on the exploratory findings, and consistent with SDC Table B.1, we believe the project site can be classified as Soil Profile Type D.

5.5 DESIGN ACCELERATION RESPONSE SPECTRA

At the time of this report, Caltrans is still finalizing the new ARS curves which will be based on the New Generation Attenuation relationships. Meanwhile, Caltrans accepts design response spectrum based on 2006 SDC (Version 1.4). Therefore, the design seismic response spectrum for the site can be estimated with spectral acceleration values generated by:

- Soil Profile Type D
- Maximum Credible Earthquake (MCE) **M** 8.0
- Peak bedrock acceleration 0.5 g
- No ARS increase for fault-type or long period structure
- ARS increase for near-field effect

The Design Acceleration Response Spectra (ARS) corresponding to Soil Profile Type D, magnitude of controlling event **M** 8.0, and a PBA of 0.5 g were obtained from SDC Figure B.9 and modified to account for near field effects as described above. Spectral values are provided in Table 5-3.

Table 5-3: Spectral Acceleration Values
(PBA = 0.5 g, M = 8.0, Soil Type D)

Period	Soil Profile Type D	
	Sa (g)	Sa* (g)
0.010	0.50	0.50
0.020	0.50	0.50
0.030	0.51	0.51
0.050	0.67	0.67
0.075	0.84	0.84
0.100	0.99	0.99
0.120	1.06	1.06
0.150	1.15	1.15
0.170	1.19	1.19
0.200	1.23	1.23
0.240	1.26	1.26
0.300	1.29	1.29
0.400	1.28	1.28
0.500	1.23	1.23
0.750	1.06	1.17
1.000	0.88	1.06
1.500	0.61	0.73
2.000	0.44	0.53
3.000	0.26	0.31
4.000	0.17	0.21

*Modified for near-field effects

Matadero Creek Bridge was first constructed in 1960 as two-span precast, prestressed slab bridges (left and right). The bridge span is approximately 80 feet long. In 1989, the median gap between the left and right bridges was filled with similar precast prestressed hollow cored slab units, supported on seat type abutments and a center pier wall. Neither contract nor as-built plans were available for the 1989 widening.

Based on the as-built data from Caltrans (Contract Number 60-4TC1) dated May 9, 1960, the abutments and bent (Pier 2) are supported on 45-ton Raymond step tapered concrete (RSTC) piles (130 total piles). Pertinent available as-built plans for the bridge are provided in Appendix G. The table below presents a summary of the pile type and as-built tip elevations based on driving records for four piles (Nos. 9, 18, 51, 85, and 125).

Table 6-1: As-Built Pile Data Table, Matadero Creek Bridge

Location	Pile Type	Pile Tip Elevation (feet)	
		Northbound	Southbound
Abut 1	RSTC	-54 to -60	-66 to -81
Pier 2	RSTC	-66 to -67	-79 to -80
Abut 3	RSTC	-54 to -60	No data provided

7.1 DISCUSSION

The proposed bridge is underlain predominantly by medium to very stiff lean and fat clay and medium dense to very dense sand and clayey sand. The principal geotechnical issues at the site are:

- Selection of the type and depth of foundation that will be compatible with the underlying soils,
- Construction issues associated with the proximity of proposed new piles to existing piles,
- Post-liquefaction settlement of potentially liquefiable soils encountered near the bridge.

We understand that the project Structural Engineer has elected to use 24-inch diameter Cast-in-Steel-Shell (CISS) piles at both abutments and center pier.

Because pockets of potentially liquefiable soils were encountered in the explorations, we have included the estimated average downdrag force down to approximately Elevation -17 feet associated with post-liquefaction settlement in the design pile tip elevations presented in Section 7.2.1. The inclusion of potential downdrag force to the pile design capacity is consistent with Caltrans' Guidelines for Structure Foundation Reports, dated March 2006. The maximum downdrag force is estimated to be approximately 41 tons at Abutments 1 and 3, and approximately 20 tons at the bents.

The following sections present the geotechnical design parameters for CISS piles that are consistent with the Load and Resistant Factor Design (LRFD) design procedure adopted by Caltrans.

7.2 PILE DESIGN CAPACITY AND TIP ELEVATION

7.2.1 Axial Pile Capacity Analysis

We understand that the Structural Engineer has elected to use 24-inch CISS piles for support of the abutments and pier of proposed Matadero Creek Bridge widen primarily due to the high shear demand on the piles. Current Caltrans practice is to design abutments in accordance with Working Stress Design (WSD) methodology and bents/piers in accordance with LRFD. Table 7-1 presents a summary of the foundation design data provided by the Structural Engineer.

Table 7-1: Foundation Design Data for Matadero Creek Bridge (Widen)

Location	Design Method	Pile Type	Finished Grade Elevation (ft)	Cut-off Elevation (ft)	Pile Cap Size (ft)		Permissible Settlement under Service Load (in)	No. of Piles per Support
					B	L		
Abut 1	LRFD	CISS NPS[1] 24x0.5	3.25	-1.00	10.0	13.16	1	4
Pier 2	LRFD	CISS NPS 24x0.5	-3.50	-7.75	10.0	13.16	1	4
Abut 3	LRFD	CISS NPS 24x0.5	3.25	-1.00	10.0	13.16	1	4

[1]NPS: Nominal Pipe Size

The design loading conditions and nominal resistance are developed in accordance with the LRFD approach. Table 7-2 presents the foundation design loads.

Table 7-2: Foundation Design Loads for Matadero Creek Bridge (Widen)

Location	Service Limit State (kips)	Strength Limit State (kips)		Extreme Limit State (kips)	
		Compression	Tension	Compression	Tension
	Per Support	Max per Pile	Max per Pile	Max per Pile	Max per Pile
Abut 1	340	104	0	248	116
Pier 2	364	143	0	241	98
Abut 3	340	104	0	248	114

The specified tip elevations presented in the following "Pile Data Table" (Table 7-3) are based on frictional resistance developed in the subgrade soils that underlie the site.

Table 7-3: Pile Data Table for Matadero Creek Bridge (Widen)

Location	Pile Type	Nominal Resistance (kips)		Design Tip Elevation (ft)	Specified Tip Elevation (ft)	Nominal Driving Resistance (kips)*
		Compression	Tension			
Abut 1	CISS NPS 24x0.5	250	120	-67.0 (a) -25.0 (b) -21.0 (c)	-67.0	330
Pier 2	CISS NPS 24x0.5	250	100	-65.0 (a) -32.0 (b) -32.0 (c)	-65.0	290
Abut 3	CISS NPS 24x0.5	250	120	-67.0 (a) -25.0 (b) -21.0 (c)	-67.0	330

* Nominal driving resistance is the sum of nominal resistance and downdrag
Design tip elevation is controlled by the following demands:
(a) Compression, (b) Tension,and (c) Lateral

The results of our axial pile capacity analysis, which from the basis for the recommended design tip elevations provided above, are presented in Appendix H. No group reduction factor needs to be applied to single pile compression load capacities presented above, provided a center-to-center spacing of at least three pile diameters is used.

7.2.2 Lateral Load Capacity

The driven pile foundations are capable of resisting lateral loads. Resistance to lateral loads can be developed by bending of the pile and by pile-soil interaction. The magnitude of the lateral load resistance that can develop depends upon several factors such as the pile size, the physical properties of the surrounding soils, the structural design of the pile, and the direction of loading. Lateral load capacity of CISS piles at bents was estimated assuming that all soils in the potential scour zone are absent. We used LPILE 5.0 (Reese et al., October 2000) to assist in estimating the lateral load resistance of 24-inch CISS piles. Output files for analysis of piles at the abutments and bents are presented in Appendix I and include bending moment versus depth, and shear versus depth. Charts showing estimated load versus deflection for free and fixed head conditions at top of pile are included in Appendix I as Figures I-1 and I-2.

We recommend that a group efficiency factor of 0.6 be applied to the lateral capacity of individual piles in trailing rows for a minimum center-to-center spacing of at least three times the pile diameter in the loaded direction.

If additional lateral capacity is needed beyond the lateral load capacity of the piles, passive resistance against the abutment walls can be utilized. For abutments, Caltrans limits the soil resistance at the back wall to a 5.5 feet wall height and a maximum uniform soil pressure of 5,000 pounds per square foot (psf). For wall heights less than 5.5 feet, the average unit pressure should be reduced linearly in proportion to the height. The uniform soil pressure of 5,000 psf is an ultimate value, and should be used with appropriate load resistance factors for the service limit state consistent with the LRFD approach.

7.3 CISS PILE INSTALLATION

All piles should be installed under the direct observation of the Geotechnical Engineer and in accordance with Section 49 of the Caltrans Standard Specifications, "Piling." Specific additions and modifications to these requirements are discussed below. However, jetting should not be permitted.

The Contractor should submit evidence of compatibility of the proposed pile hammer with the pile type and soil conditions at the site. The Contractor's hammer submittal should include, as a minimum, a dynamic analysis of the pile driving system that is based on wave equation analysis using computer programs such as WEAP. Acceptance criteria for driven piles should follow Caltrans Standard Specifications Section 49-1.08, Pile Driving Acceptance Criteria, as well as Special Provisions 49-228, Redriving. Driven piles reaching refusal within 10 feet of the specified tip elevation and meeting the acceptance criteria may be cut-off above the tip elevation required by the compression loads. This assumes that the design lateral load and tension load tip elevations have been reached (see Pile Data Table 7-3). Preliminarily, we recommend that the refusal criteria be two times the minimum required blowcount as determined using the pile nominal resistance formula outlined in Section 49-1.08 of the Standard Specifications. However, refusal criteria should be defined later based on the pile driving system proposed by the Contractor and evaluated by WEAP analysis.

7.4 APPROACH EMBANKMENT SETTLEMENT

As discussed in Section 3.3.5, the soft, young Bay Mud soils underlying the northern portion of the project are susceptible to consolidation settlement. Consolidation settlement can occur gradually when soil pore pressures, increased by vertical loading (e.g. placement of fill), gradually dissipate over time. According to available plans, there is no new fill needed to raise the grade at this location. Therefore, it is unlikely that an increase in vertical loading or dissipation of soil porewater pressures in the compressible soils would occur. For this reason, we anticipate consolidation settlement also is unlikely for the proposed improvements to the existing bridge structure.

7.5 SLOPE STABILITY

Based on topographic data, it is estimated that the existing concrete lined channel banks along Matadero Creek at the proposed bridge (widen) are inclined at about 1½:1 (horizontal:vertical). The soils beneath the lining consist primarily of medium stiff to hard lean clay with thin interbeds of clayey sand. It is estimated that the channel banks have a factor of safety of 1.5 or more for short term undrained loading conditions. For long term drained loading, we believe the risk of localized shallow slipouts is relatively low, as the channel banks are lined with concrete. Furthermore, no evidence of slope instability was noted in Caltrans February 2006 Bridge Inspection Report. The long term global stability is also estimated to have a factor of safety greater than 1.5.

7.6 APPROACH FILL EARTHWORK

All earthworks should be completed in accordance with the applicable sections of the Caltrans Standard Specifications and as described in URS' companion Geotechnical Design and Materials Report for the U.S.101 Auxiliary lanes project.

7.7 ABUTMENT EXCAVATION

Footing and pile cap areas should be excavated to bring those areas to their finish subgrade elevations. As the proposed abutment pile cap elevation is approximately 7 feet below the adjacent existing pile cap, excavation should be performed with caution not to expose any of the existing abutment piles; temporary shoring will be required at these locations. All loose soil should be removed prior to footing construction. Based on available groundwater information, we recommend the type of excavation be classified as a "Structure Excavation Type A" in accordance with Section 11 of Bridge Design Aids, March 2005. Refer to the following Section 8.2, "Construction Dewatering," for the need of dewatering during pile cap excavation.

8.1 TEMPORARY CONSTRUCTION EXCAVATION

We anticipate that excavation into the native soils for construction of the abutments could result in temporary near vertical unsupported soil faces as high as about 14 feet. Safety standards set by OSHA limit the height of unshored vertical excavations to 5 feet if construction personnel will be working in the excavations. The set of guidelines published by OSHA (Department of Labor, Occupational Safety and Health Administration, 1989), classifies soils in detail as Type A, B or C. In general, Type A soils are stronger and more cohesive, Type B soils are intermediate, and Type C soils are weaker or more granular. Based on the soil type, depth, duration the excavation is open, and sequence of soils exposed in the excavation, OSHA recommends maximum allowable slopes. For example, for excavations 20 feet or less in depth through homogeneous soils, they state that maximum allowable slopes (horizontal to vertical) should be ¾:1, 1:1, and 1½:1 for Type A, B, and C soils, respectively. Based on the strengths of the soils encountered in our boring, the existing fills and the native sand strata encountered between Elevation 3½ and 8 feet are considered to be OSHA Type C, whereas the native medium stiff to stiff clay soils are considered to be Type B.

The guidelines provided by OSHA are for trench excavations; they state that there is uncertainty as to when and to what degree an employer must slope, shore, or otherwise protect employees in a "non-trench" excavation. In consideration of these factors, we recommend that temporary cut slopes in the existing embankment fills not exceed 1½:1 during construction.

For locations where excavation with sloping sides is not viable because of space limitations or in areas where temporary slopes steeper than 1½:1 are planned, shoring will be required. The Contractor should retain an experienced Registered Civil Engineer to design the shoring system.

8.2 CONSTRUCTION DEWATERING

Bottom of pile cap at the center pier is planned at Elevation -8.0 feet and Abutments 1 and 3 are planned at Elevation -1.25 feet. Free groundwater was encountered in one of the borings performed closer to the creek during this investigation at a depth of about 13½ feet (Elevation 3½ feet). Based on these exploratory findings, it is anticipated that groundwater could be encountered during pile cap excavation at the abutments and center pier. Where groundwater is encountered during construction, the excavation should be dewatered so that all work can be done in the dry. Furthermore, a temporary cofferdam may have to be installed to divert creek flow around the excavations.

8.3 EFFECTS OF CONSTRUCTION WORK ON ADJACENT STRUCTURES

Based on the drawings, proposed pile cap elevations at abutments are 7 feet below the adjacent existing pile cap. As the new excavations are located in close proximity to the existing abutment pile cap, shoring could be required to minimize exposure of existing pile foundations. We recommend the following precautionary measures for the protection of the existing structure.

- The specifications should be clearly written so that the Contractor is made aware of the potential undermining of the soils beneath the existing abutment pile caps.
- The Contractor should retain a registered Structural Engineer to make a precondition survey of the structures. This should include photographs.

- Before construction commences, the Contractor should submit a written plan describing his/her construction method and method of protecting the existing abutment piles/pile caps. This plan should be submitted to URS for review prior to construction.
- Contractor should retain a registered Geotechnical Engineer to observe the excavation for the abutment and bent pile caps.

The recommendations presented in this Foundation Report are based on information obtained from new explorations made at widely separated locations, site reconnaissance, review of available historic data, and upon local experience and engineering judgment. As-built drawings pertinent to the geotechnical investigation are included, for convenience of reference.

The recommendations presented in this report are based on the assumption that the soil and geologic conditions do not deviate substantially from those encountered in the previous and new explorations. If any variations are encountered during construction, URS should be contacted so that supplementary recommendations can be made.

If the planned construction is changed from that presently conceived, URS should be retained to review the changes and make modifications to the original recommendations represented in this report in order to meet the project needs.

The Geotechnical Engineer should review the final specifications and drawings to verify that these documents are consistent with the intent of the geotechnical recommendations. Geotechnical issues may arise which are not apparent at this time. URS should be retained during construction to review the soil conditions encountered and the construction procedures. All earthwork and CISS pile installation and testing should be completed under the direct observation of a representative of our firm.

Specific review and investigation for environmental issues and subsurface environmental contamination were beyond the scope of the geotechnical services.

The elevations shown on the new LOTBs are based on interpolation from spot and contour elevations shown on available topographic maps.

The opinions and recommendations presented in this Foundation Report were developed with the standard of care commonly used as state of the practice in the profession. No other warranties are included, either express or implied, as to the professional advice provided in this report.

ABAG, 2007, Floodplain and Liquefaction Maps, abag.ca.gov/bayarea/eqmaps/

Aydin, A., and Page, B.M., 1984, Diverse Pliocene-Quaternary tectonics in a transform environment, San Francisco Bay region, California; Geological Society of America Bulletin, v. 95, p. 1,303-1,317.

Bortugno, E.J., McJunkin, R.D. and Wagner, D.L., 1991, Map showing recency of faulting, San Francisco-San Jose Quadrangle, California, California Division of Mines ad Geology, Geologic Map of the San Francisco-San Jose Quadrangle, 1:250,000.

Brabb, E.E. and Dibblee, T.W., 1974, Geologic map of Santa Clara County, California, U.S. Geological Survey Special Report 107, scale 1:62,500.

Bürgmann, R., Arrowsmith, R. and Dumitru, T., 1994, Rise and fall of the southern Santa Cruz Mountains, California, from fission tracks, geomorphology, and geodesy, Journal of Geophysical Research, v. 99B, p. 20,181-20,202.

California Department of Transportation, 1960, As-Built Log of Test Borings, Bridge 37-0040 R/L, Matadero Creek, Contract No. 60-4TC1.

California Geological Survey, 2000, Digital images of official maps of the Alquist-Priolo earthquake fault zones of California, central coast region, California Geologic Survey, CD-2000-004.

California Geological Survey, 2001, Seismic hazard zones, Mountain View quadrangle, gmw.consrv.ca.gov/shmp/index.htm.

Fenton, C.H., and Hitchcock, C.S. 2001, Recent Geomorphic and Paleoseismic Investigations of Thrust Faults in Santa Clara Valley, California in Engineering Geology Practive in Northern California, Association of Engineering Geologists Special Publication 12, Edited by H. Ferriz and R. Anderson, pp 239 – 257.

Fenton, C.H. and Hitchcock, C.S., 2002, Recent geomorphic and paleoseismic investigations of thrust faults in Santa Clara Valley, California, in Engineering Geology Practice in Northern California, Ferriz, H. (ed.) California Division of Mines and Geology, p. 71-89.

Hall, N.T., Wright, R.H., and Clahan, K.B., 1999, Paleoseismic studies of the San Francisco Peninsula Segment of the San Andreas Fault Zone near Woodside, California: Journal. Geophys. Res., vol. 104, no. B10, pp. 23,215-23,236.

Helley, E.J. and LaJoie, K.R., 1979, Flatland deposits of the San Francisco Bay region, California – their geology and engineering properties, and importance to comprehensive planning. U.S. Geological Survey Professional Paper 943,p. 27-34, plate 3, scale 1:125,000.

Hitchcock, C.S., Kelson, K.I. and Thompson, S.C., 1994, Geomorphic investigations of deformation along the northeastern margin of the Santa Cruz Mountains, William Lettis & Associates, Inc., Final Technical Report, U.S. Geological Survey National Earthquake Hazards Reduction Program Award No. 1434-92-G-2220, 33 p.

Hitchcock, C.S. and Kelson, K.I., 1999, Growth of late Quaternary folds in southwest Santa Clara Valley, San Francisco Bay Area, California: Implications of triggered slip for seismic hazard and earthquake recurrence, Geology, v. 27, p. 387-390.

Irwin, W.P., 1990, Geology and plate tectonic development, in The San Andreas Fault System, California, Wallace, R.E. (ed.), U.S. Geological Survey Professional Paper 1515, p. 61-80

Jennings, C.W., 1994, Fault activity map of California and adjacent areas, California Division of Mines and Geology, California Geologic Data Map Series, Map No. 6, scale1:750,000.

Jones, D.L., Graymer, R., Wang, C., McEvilly, T.V. and Lomax, A., 1994, Neogene transpressive evolution of the California Coast Ranges, Tectonics, v. 13, p. 561-574.

Kleinfelder (2000), Log of Test Borings for Route 85/101 Interchange, July and August.

Knudsen, K.L., Sowers, J.M., Witter, R.M., Wentworth, C.M., and Helley, E.J., 2000, Preliminary maps of Quaternary deposits and liquefaction susceptibility, nine county San Francisco Bay region, California, U.S. Geological Survey Open-File Report 00-444, 60 pages plus two maps.

Lienkaemper, J.J. 1992, Map of recently active traces of the Hayward fault, Alameda and Contra Costa Counties, California, U.S. Geological Survey Miscellaneous Field Studies Map MF-2196, 13 p.

Lienkaemper, J.J. and Galehouse, J.S., 1997, Revised long-term creep rates on the Hayward fault, Alameda and Contra Costa Counties, California, U.S. Geological Survey Open-File Report 97-690, 18 p.

Merriam, M. and Shantz, T., 2007, Caltrans Deterministic PGA Map, California Department of Transportation. http://dap3.dot.ca.gov/shake_stable/references/Deterministic_PGA_Map_8-12-09.pdf

Niemi, T. M. and Hall, N.T., 1992, Late Holocene slip rate and recurrence of great earthquakes on the San Andreas fault in northern California: Geology, v. 20, p. 195-198.

Santa Clara County, 2002 and 2003 (rev.), Geologic Hazards Zones [Fault Rupture Hazard Zones; Liquefaction Hazard Zones; Combined Landslide, Compressible Soils, and Dike Failure Flooding Hazard Zones] map sheets 1, 2 and 10; revised August 14, 2003 and subsequent web updates at www.sccplanning.org

Santa Clara Valley Water District, 2008. FEMA flood hazard maps, www.valleywater.org/Water/Watersheds

Wallace, R.E., 1990, The San Andreas Fault System, California: U.S. Geological Survey Professional Paper 1515, 283 p.

Witter, R.C., Knudsen, K.L., Sowers, J.M., Wentworth, C.M., Koehler, R.D., and Randolph, C.E., 2006, Maps of Quaternary deposits and liquefaction susceptibility in the central San Francisco Bay region, California, in cooperation with the California Geological Survey: A digital database, U.S. Geological Survey, Open-File Report 2006-1037.

Working Group on California Earthquake Probabilities, 1996, Database of potential sources for earthquakes larger than magnitude 6 in northern California: U.S. Geological Survey Open-File Report 96-705.

Working Group on California Earthquake Probabilities, [Michael, A.J., and others], 1999, Understanding earthquakes in the San Francisco Bay Region: major quake likely to strike between 2000 and 2030: U.S. Geological Survey Fact Sheet 152-99.

Working Group for California Earthquake Probabilities, 2003, Earthquake probabilities in the San Francisco Bay region: 2003-2031, US Geological Survey Open-File Report 03-214, 234 p.

INDEX OF PLANS

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI	101	49.0/52.2		

STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION

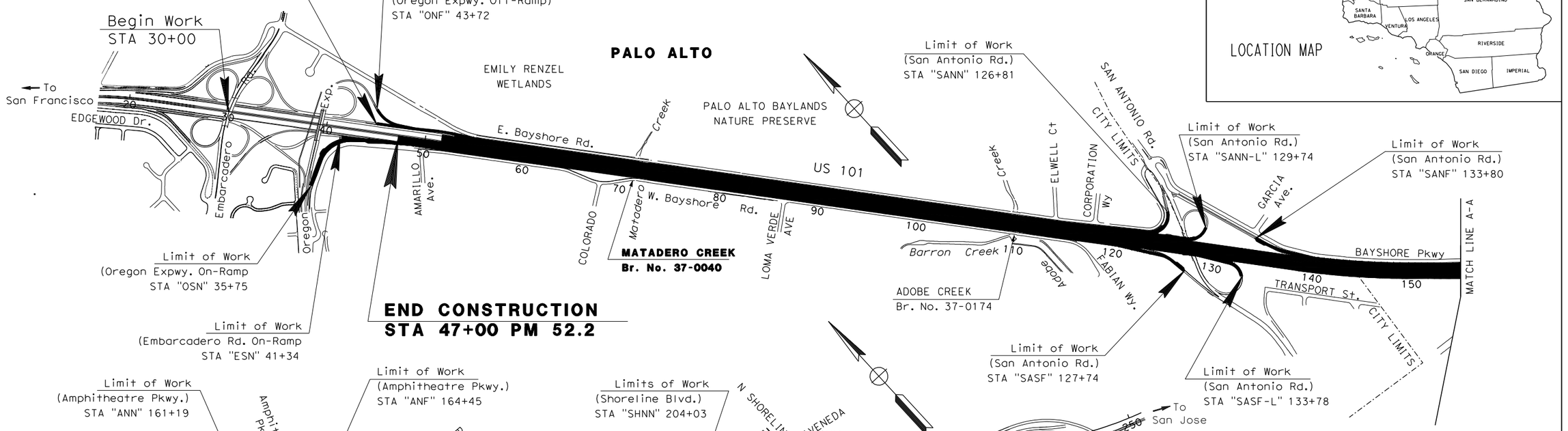
PROJECT PLANS FOR CONSTRUCTION ON

STATE HIGHWAY

IN SANTA CLARA COUNTY
IN PALO ALTO AND MOUNTAIN VIEW
FROM OREGON EXPRESSWAY OVER CROSSING TO
0.1 MILE NORTH OF SHORELINE BOULEVARD OVERCROSSING

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006

LOCATION MAP



PROJECT VICINITY MAP
FIGURE 1-1

THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO CONTRACTORS."

PROJECT ENGINEER DATE
REGISTERED CIVIL ENGINEER

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
55 S. MARKET STREET, SUITE 1500
SAN JOSE, CA 95113

SANTA CLARA VALLEY
TRANSPORTATION AUTHORITY
3331 N. FIRST STREET
SAN JOSE, CA 95134

CONTRACT No. 04-4A3304

APPROVED AS TO IMPACT ON STATE FACILITIES AND CONFORMANCE WITH APPLICABLE STATE STANDARDS AND PRACTICES AND THAT TECHNICAL OVERSIGHT WAS PERFORMED.

CONSULTANT DESIGN ENGINEER | CALTRANS DESIGN OVERSIGHT APPROVAL | REGISTRATION No. | LICENSE Exp DATE | DATE SIGNED

DATE PLOTTED => 11/12/2009
TIME PLOTTED => 11:52:29 AM
LAST REVISION 00-00-00

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	48.97/52.17		

REGISTERED CIVIL ENGINEER DATE

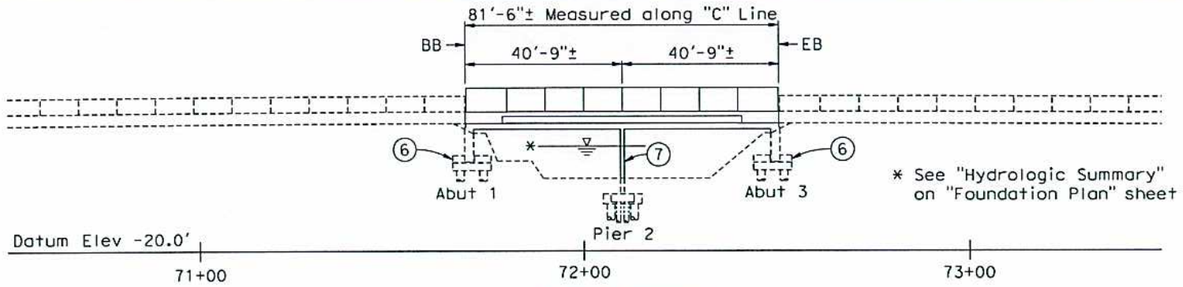
PLANS APPROVAL DATE

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

REGISTERED PROFESSIONAL ENGINEER Anthony Dubovik II No. C36372 Exp. 06/30/10 CIVIL STATE OF CALIFORNIA

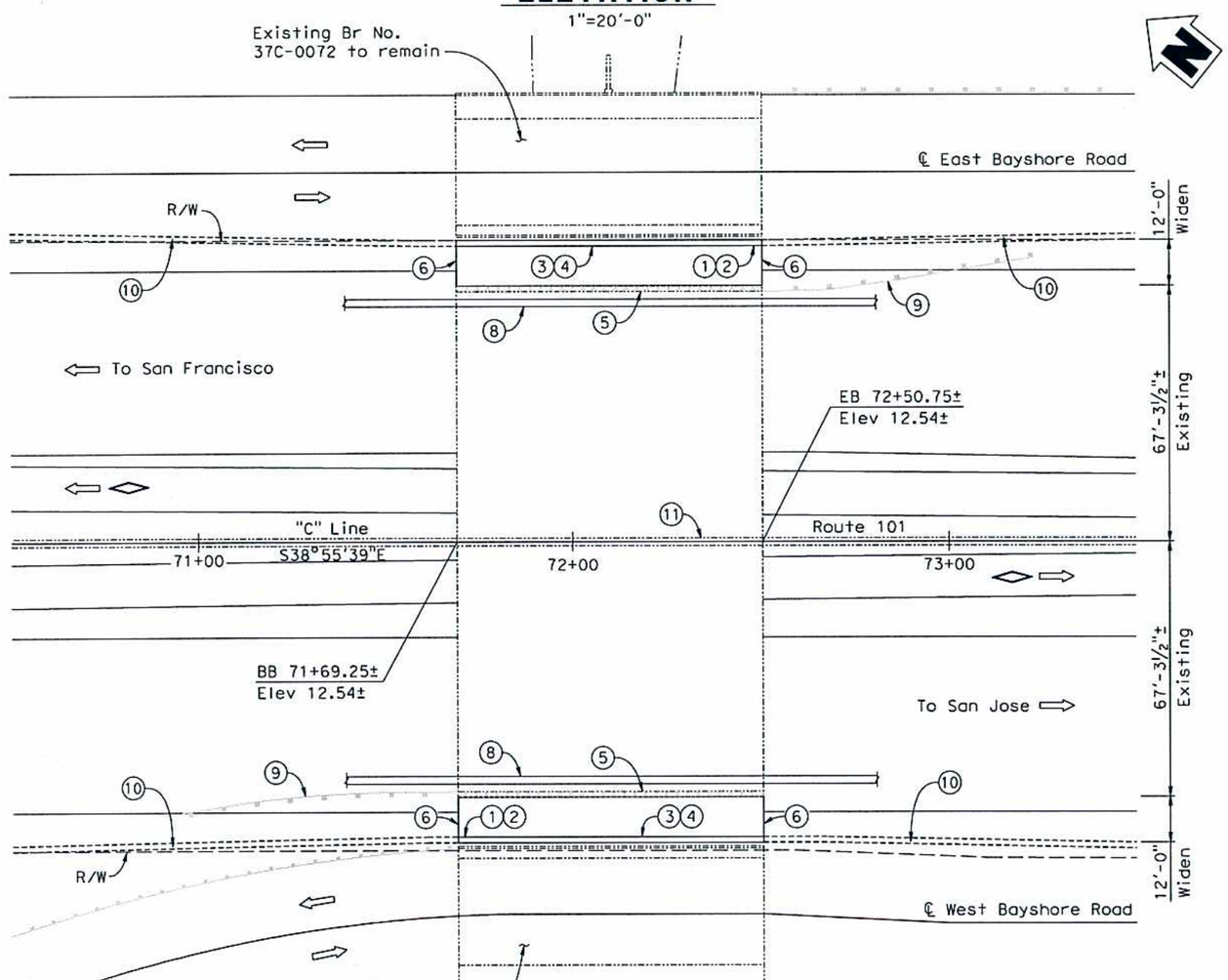
VALLEY TRANSPORTATION AUTHORITY
3331 N FIRST STREET
SAN JOSE, CA 95134

URS CORPORATION
1380 LEAD HILL BLVD, SUITE 100
ROSEVILLE, CA 95661-2997



ELEVATION

1"=20'-0"



PLAN

1"=20'-0"

NOTES:

1. Paint Bridge Number 37-0040
2. Paint Bridge Name and Year Completed
3. Concrete Barrier (Type 736)
4. Chain Link Railing (Type 7)
5. Remove existing Concrete Barrier (Type 27R)
6. Replace existing Abutment Wall
7. Replace existing Pier Wall
8. Temporary Railing (Type K), See "Road Plans"
9. Remove existing MBGR, see "Road Plans"
10. Concrete Barrier (Type 60C) with Chain Link Fence, see "Road Plans"
11. Existing Concrete Barrier (Type 50A Modified)

LEGEND:

- Indicates existing structure
- Indicates bridge removal (portion)
- Indicates direction of traffic
- Indicates direction of flow

FIGURE 2-1

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

Note: For "Index To Plans" and "General Notes" see "index To Plans" sheet.

DESIGN OVERSIGHT	DESIGN	BY A. Dubovik II	CHECKED	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE
	DETAILS	BY R. Lim	CHECKED	LAYOUT	BY A. Dubovik II — CHECKED
SIGN OFF DATE	QUANTITIES	BY	CHECKED	SPECIFICATIONS	BY — PLANS AND SPECS COMPARED

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 37-0040
POST MILES 51.37

MATADERO CREEK (WIDEN)
GENERAL PLAN No. 1

DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04
EA 4A3301

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY) 6-18-09 11-05-09

SHEET 1 OF 17

FILE => U:\Matadero\37-0040-g-gp01.dgn

USERNAME => Lynette_Q DATE PLOTTED => 11/5/2009 TIME PLOTTED => 8:07:45 AM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	48.97/52.17		

REGISTERED CIVIL ENGINEER DATE

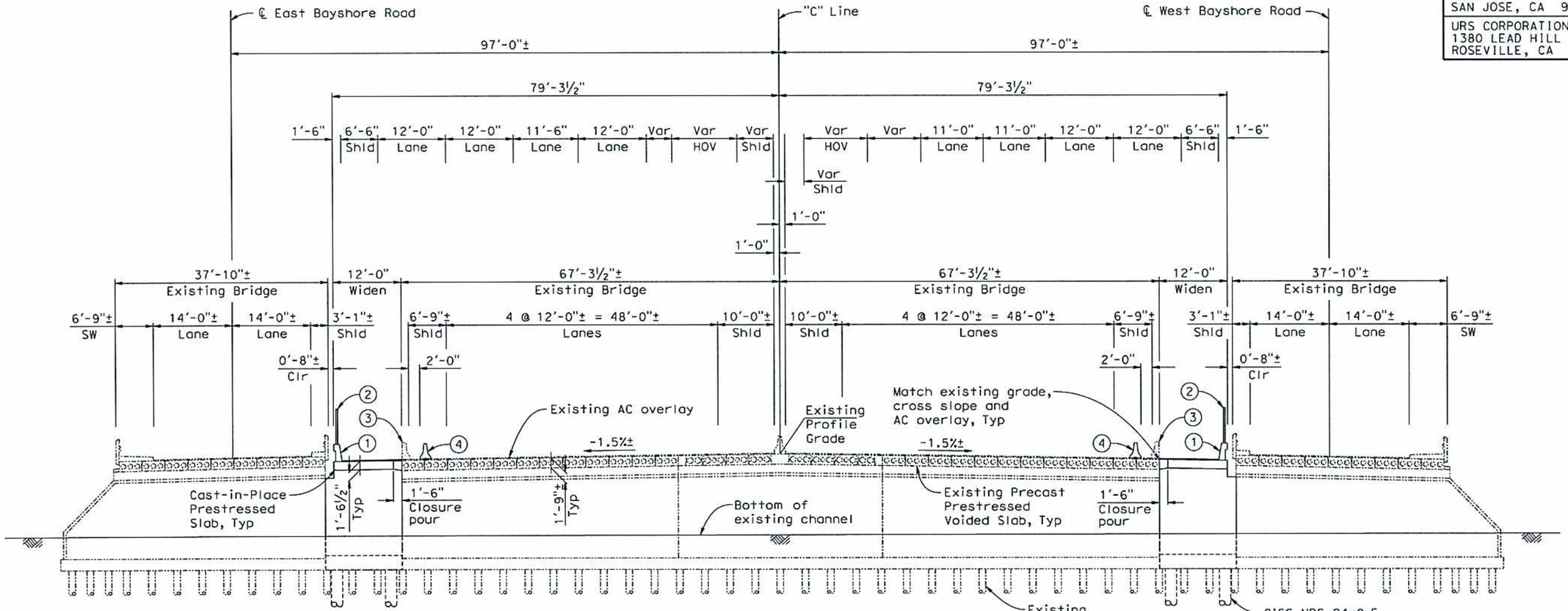
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Anthony Dubovik II No. C36372 Exp. 06/30/10 CIVIL STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

VALLEY TRANSPORTATION AUTHORITY
3331 N FIRST STREET
SAN JOSE, CA 95134

URS CORPORATION
1380 LEAD HILL BLVD, SUITE 100
ROSEVILLE, CA 95661-2997



TYPICAL SECTION

1"=10'-0"

NOTES:

1. Concrete Barrier (Type 736)
2. Chain Link railing (Type 7)
3. Remove existing Concrete Barrier (Type 27R)
4. Temporary Railing (Type K), see "Road Plans"

LEGEND:

- Indicates existing structure
- Indicates bridge removal (portion)

FIGURE 2-2

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN OVERSIGHT

SIGN OFF DATE

	BY	CHECKED
DESIGN	A. Dubovik II	
DETAILS	L. Davis	
QUANTITIES		

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 37-0040
POST MILE 51.37

MATADERO CREEK (WIDEN)
GENERAL PLAN No. 2

DESIGN DETAIL SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04
EA 4A3301

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY) 5-14-09 11-05-09

SHEET 2 OF 17

FILE => u:\matadero\37-0040-a-pp02.dgn

USERNAME => Lynette_Dauine PLOTTED => 11/4/2009 TIME PLOTTED => 2:03:04 PM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101			

Anthony T. Dubovik
REGISTERED CIVIL ENGINEER DATE

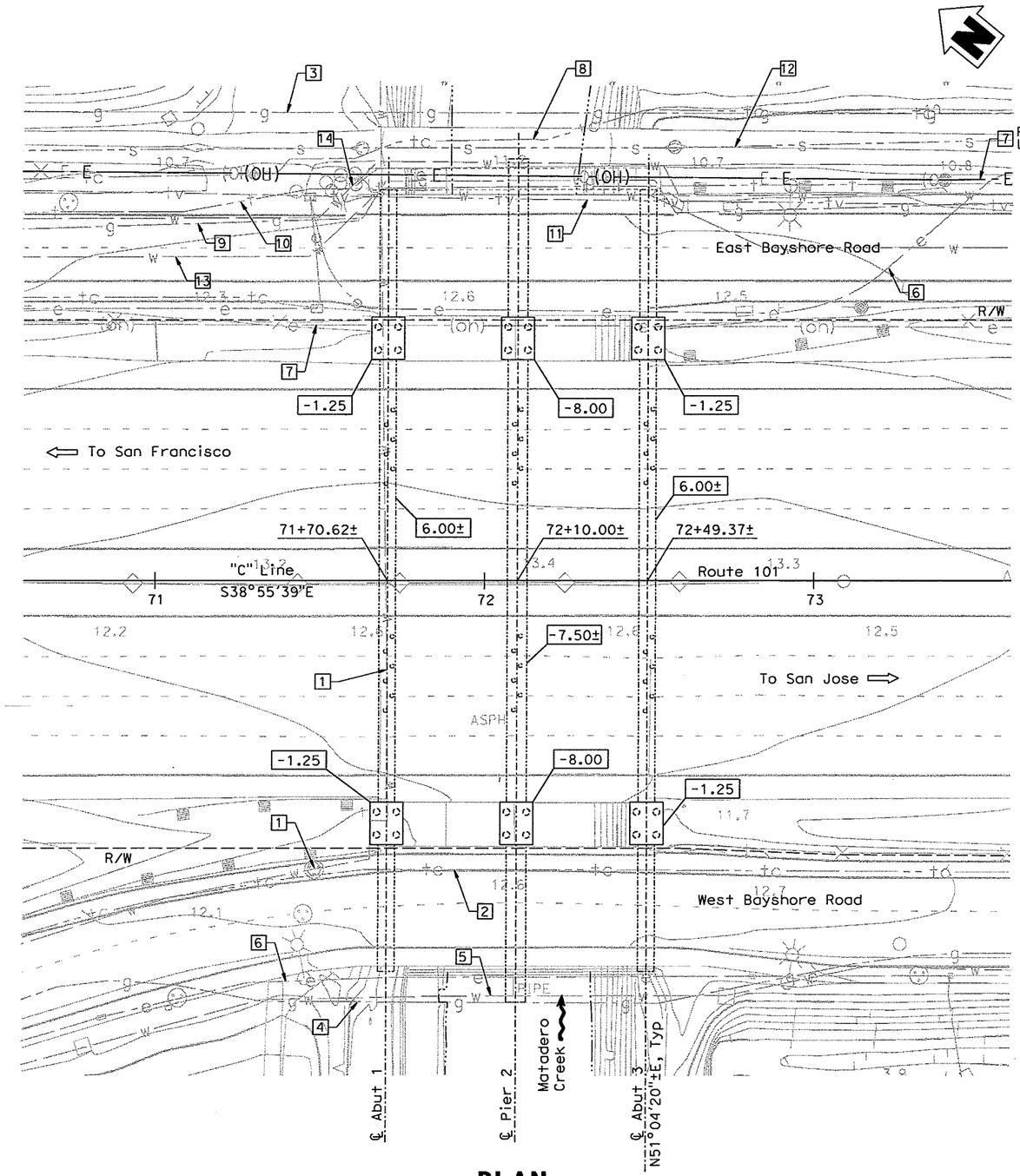
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Anthony Dubovik II No. C36372 Exp. 06/30/10 CIVIL STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

VALLEY TRANSPORTATION AUTHORITY
3331 N FIRST STREET
SAN JOSE, CA 95134

URS CORPORATION
1380 LEAD HILL BLVD, SUITE 100
ROSEVILLE, CA 95661-2997



PLAN

1"=20'-0"

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

GEOTECHNICAL PROFESSIONAL APPROVAL DATE

LEGEND:

- Indicates existing structure
- Indicates direction of traffic
- Indicates direction of flow
- Indicates bottom of footing elevation

HYDROLOGIC SUMMARY

Drainage Area: 13.60 Square Miles

	Design Flood	Base Flood
Frequency (years)	50	100
Discharge (cubic feet/second)	2720	3100
Water Surface (elevation at bridge)	11.00	10.70

FIGURE 2-3

BENCH MARK

BENCH MARK	N	E	ELEV	DESCRIPTION
CT22	1986818.326	6093027.893	10.871	Rebar w/Red Cap - dirt shoulder of southbound US101 approximately 0.55 mi southeast of the Oregon Expressway overcrossing

SURVEY CONTROL
Horizontal control for this survey is based on the California Coordinate System, Zone III, US Survey feet, North American Datum of 1983 (NAD83), Epach 1991.35.
Vertical control is the National American Vertical Datum of 1988 (NAVD88).

PILE DATA TABLE

Location	Pile Type	Nominal Resistance (kips)		Design Tip Elevation (ft)	Specified Tip Elevation (ft)	Nominal Driving Resistance (kips)
		Compression	Tension			
Abut 1	CISS NPS 24x0.5	250	120	-67(A) -25(B) -21(C)	-67	330
Pier 2	CISS NPS 24x0.5	250	100	-65(A) -32(B) -32(C)	-65	290
Abut 3	CISS NPS 24x0.5	250	120	-67(A) -25(B) -21(C)	-67	330

Pile Data Notes:
1. Design tip elevation are controlled by: (A) Compression, (B) Tension, (C) Lateral Loads.
2. Nominal driving resistance is the sum of nominal resistance and downdrag.

EXISTING UTILITIES

	UTILITY	OWNER	DISPOSITION
1	8" Polyvinyl Choride Reclaimed Water Line	City of Palo Alto	To be temporarily relocated by City of Palo Alto
2	2-4" High Density Polyethylene Communication Line	Nextlink	Protect in place
3	34" Transmission Gas Line	PG&E	Protect in place
4	4" Polyethylene Pipe Gas Line	City of Palo Alto	Protect in place
5	8" Asbestos Concrete Pipe Water Line	City of Palo Alto	Protect in place
6	15 kV Underground Electrical Line	City of Palo Alto	Protect in place
7	115 kV Overhead Electrical Transmission Line	PG&E	To be relocated by PG&E
8	Underground Telecom Line	MCI	Protect in place
9	4" Acrylonitrite Butadiene Styrene Gas Line	City of Palo Alto	Protect in place
10	Underground Telephone Line	AT&T	Protect in place
11	Underground CATV	Comcast	Protect in place
12	18" Vitrified Concrete Pipe Sanitary Sewer	City of Palo Alto	Protect in place
13	30" Reclaimed Water Line	City of Palo Alto	Protect in place
14	10" Asbestos Concrete Pipe Water Line	City of Palo Alto	Protect in place

DESIGN OVERSIGHT

SIGN OFF DATE

SCALE: As Shown	VERT.DATUM NAVD 1988	HORZ.DATUM NAD 1983	
PHOTOGRAMMETRY AS OF:		ALIGNMENT TIES	
SURVEYED	BY Radman	DRAFTED	BY URS
FIELD CHECKED	BY URS	CHECKED	BY URS

DESIGN	BY A. Dubovik II	CHECKED	J. Hueser
DETAILS	BY L. Davis	CHECKED	J. Hueser
QUANTITIES	BY J. Hueser	CHECKED	M. Jackson

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 37-0040
POST MILE 51.37

MATADERO CREEK (WIDEN)

FOUNDATION PLAN

FOUNDATION PLAN SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04235
EA 4A3301

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY) 6-18-09 11-20-09 3-22-10

SHEET 4 OF 18

FILE => P:\28649986 US101 - Mountain View\02 - Bridge\4. CADD\Matadero\37-0040-e-fp101.dgn

USERNAME => raymond_l DATE PLOTTED => 3/19/2010 TIME PLOTTED => 10:54:16 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	49.0/52.2		

REGISTERED CIVIL ENGINEER DATE

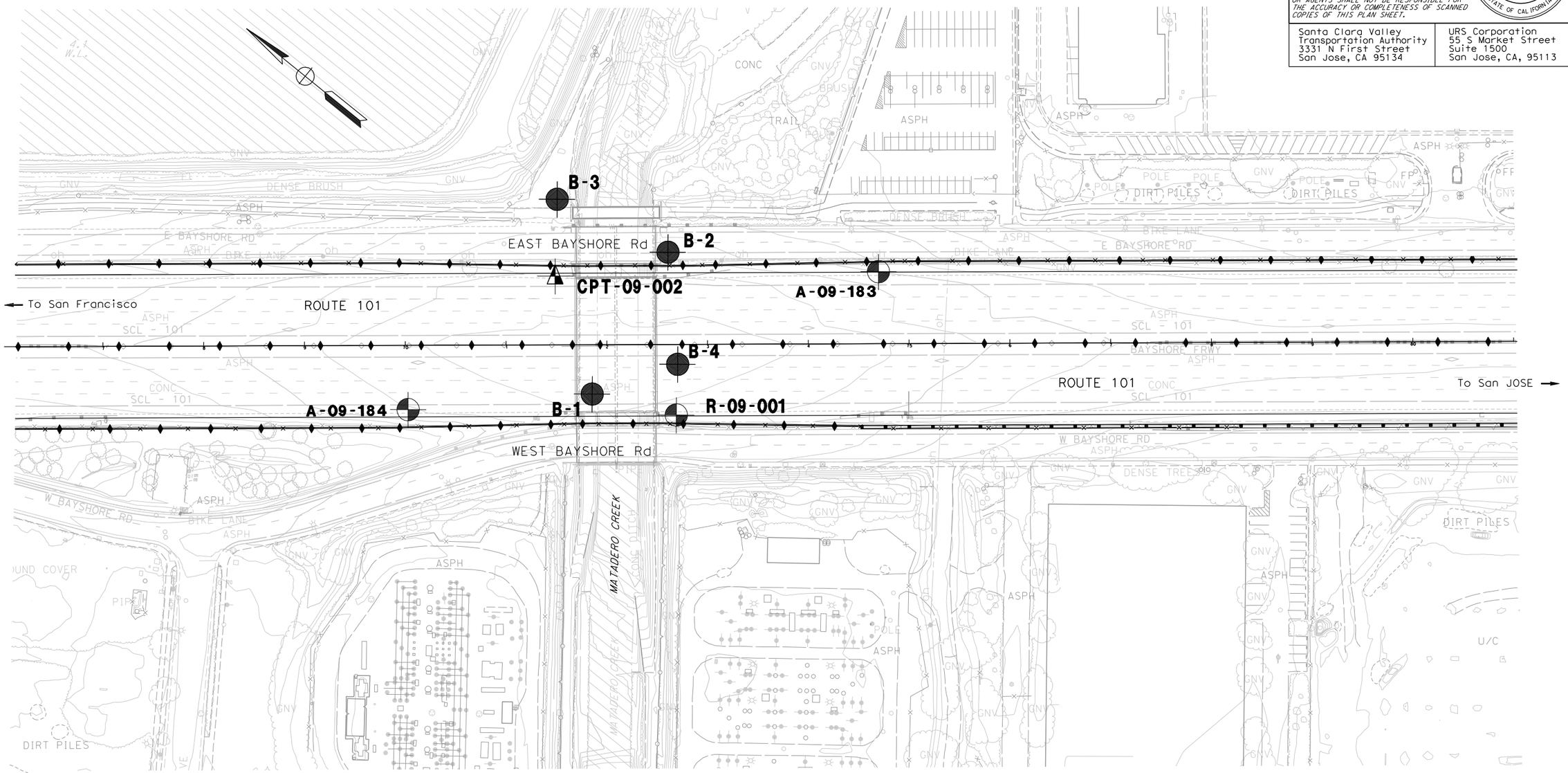
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

Santa Clara Valley Transportation Authority
3331 N First Street
San Jose, CA 95134

URS Corporation
55 S Market Street
Suite 1500
San Jose, CA, 95113



Borings for this study

CPT for this study

As-built Borings and Penetrometers

MATADERO CREEK BRIDGE (WIDEN)
BORING LOCATION PLAN
FIGURE 3-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 11/12/2009
TIME PLOTTED => 11:54:29 AM

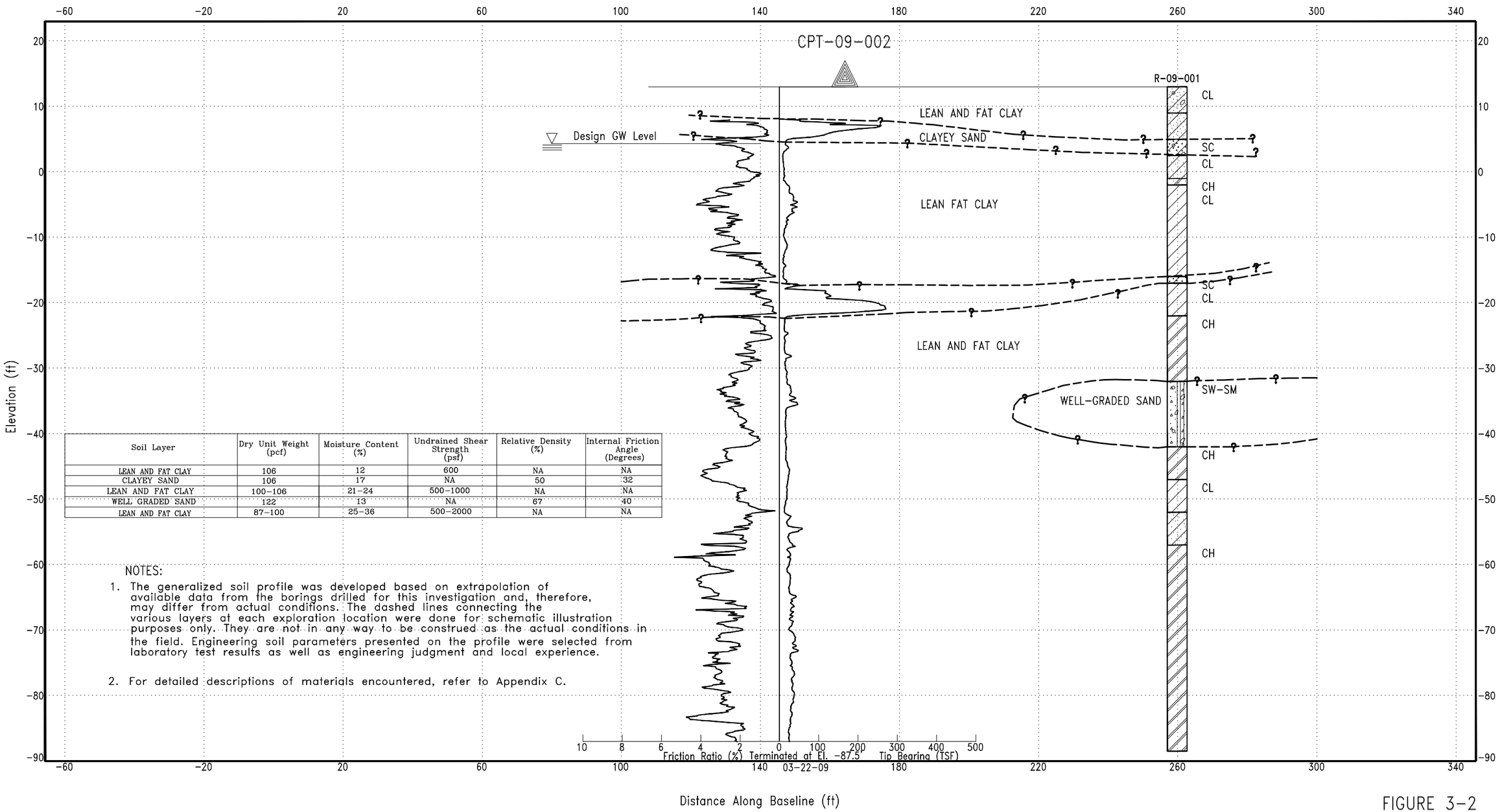
BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => madhu_thummaluru
DGN FILE => ...\Site plane and bor loc.dgn

CU 04235

EA 4A3301



Soil Layer	Dry Unit Weight (pcf)	Moisture Content (%)	Undrained Shear Strength (psf)	Relative Density (%)	Internal Friction Angle (Degrees)
LEAN AND FAT CLAY	106	12	600	NA	NA
CLAYEY SAND	106	17	NA	50	32
LEAN AND FAT CLAY	100–106	21–24	500–1000	NA	NA
WELL GRADED SAND	122	13	NA	67	40
LEAN AND FAT CLAY	87–100	25–36	500–2000	NA	NA

NOTES:

1. The generalized soil profile was developed based on extrapolation of available data from the borings drilled for this investigation and, therefore, may differ from actual conditions. The dashed lines connecting the various layers at each exploration location were done for schematic illustration purposes only. They are not in any way to be construed as the actual conditions in the field. Engineering soil parameters presented on the profile were selected from laboratory test results as well as engineering judgment and local experience.

2. For detailed descriptions of materials encountered, refer to Appendix C.

FIGURE 3-2

URS Corporation – San Jose

Project No. 28649951

LITHOLOGY GRAPHICS

Asphalt
USCS Silty Gravel with sand
USCS Silty Sand
USCS Fat Clay
USCS Lean Clay
USCS Lean Clay with gravel
USCS Sandy Lean Clay with gravel
USCS Sandy Fat Clay
USCS Lean to Fat Clay (borderline CL/CH)
USCS Sandy Lean Clay
USCS Clayey Sand with gravel
USCS Lean Clay with sand
USCS Fat Clay with sand
USCS Clayey Sand
USCS Well-graded Sand with silt and gravel

GENERALIZED SOIL PROFILE
MATADERO CREEK BRIDGE (WIDEN)
US 101 AUXILIARY LANES
SANTA CLARA, CALIFORNIA

SIMPLE FENCE - B SIZE 28649951-101_AUX-VTA.GPJ CT SACTO 110207.GDT 6/2/09

GEOTECHNICAL CONSULTANT SUBMITTAL REVIEW

DIVISION OF ENGINEERING SERVICES
GEOTECHNICAL SERVICES

[X] MR. EARL SEABERG, CHIEF, OSFP
[ ] MR. VONG TOAN, CHIEF, OSCM
Attention: Emil Vergara

DATE: September 29, 2008

FILE: 04 (District) SCL (County) 101 (Route) 49.0/52.2 (MP)

SUB CONSULTANT: URS
Report Date: 08/29/2008
Matadero Creek Bridge (Structure Name)
PRIME CONSULTANT: SCVTA
Contract No.:
GENERAL PLAN DATED:
FDN PLAN DATED:
4A3300 (EA Number)
37-0040 (Bridge Number)

Submittal (*Check One*): [ ] 1st [ ] 2nd [ ] 3rd [ ] 4th [X] Other: APS

The following comments for the above referenced project are based on:

- Foundation Report dated August 20, 2008 for the proposed Matadero Creek Bride (37-0040) widening.

<u>Matadero Bridge (37-0040) Report</u>

Section 2.3.1 – Page 3

- It is referred to Figure 4 for the As Built boring logs. Figure 4 does not show these borings.

Section 3.3 – Page 3

- For California Seismic Hazard Map, a new version of 2008 is available now. The report should refer to this version rather than 1996. Any other sections referring to this map should be updated as well.

Section 3.3 – Page 12

- 14-inch Class 140 driven piles are recommended. Include the possible alternatives.

[ ] Special Funded Project (OSFP) [ ] Local Assistance Project (OSFP) [ ] OSCM Project

Approval: _____
OSFP/OSCM

Mohammad Zabolzadeh
Office of Geotechnical Design - West

cc: OGDx, Lab File Room (Sacramento) DES Specifications and Estimates (JStayton-4 copies) Structure Construction R.E. Pending File

Office of Special Funded Projects
Comment & Response Form

General Project Information	Review Phase		Reviewer Information
Dist: 04 EA: 4A3300 **Project Name: AMatadero Creek Bridge** **OSFP Liaison: Emil Vergara** **Phone: (916) 227-8360** **e-mail: emil_vergara@dot.ca.gov**	☐ PSR/PDS (Review No. _) ☐ APS/PSR (Review No. _) ☐ APS/PR (Review No. _) ☐ Type Selection	☐ 65% PS&E Unchecked Details ☐ PS&E (Review No. _) ☐ Construction Support ☒ Other: Draft Foundation	**Reviewer Name: M.Zabolzadeh** **Functional Unit: OGDW** **Cost Center: 327** **Phone Number: (510) 286-4831** **e-mail: mohammad_zabolzadeh@dot.ca.gov** **Date of Review: 08-3-2009**
	Structure Information (Use when necessary to document comments by individual structure) **Structure Name: Matadero Creek Bridge** **Br No: 37-0040**		

Consultant Information (to be filled in by Consultant)

Consultant Structure Lead (First and Last Name)	Structure Consultant Firm	Phone Number	e-mail	Response Date
_____	_____	_____	_____	_____

#	Doc. (See Note 1)	Page, Section, or SSP	Review Comments	Consultant Responses	✓
1	DFR	N/A	Draft Foundation Report (DFR) prepared by URS Consultants dated June 11, 2009. Second round review.	No comment	
2	DFR	Page 3-2 Section3.1.2 Regional Tectonic Setting and Seismicity	The report states, *"…the closest fault to the site is the West branch of the Monte Visa Fault, located about 2.7 miles (4.5 km) southwest of the southern end of the project."* Distances should be present in Standard not Metric, as in Adobe Creek Foundation Report. Figure 3.1 Active Faults in the Site Region shows the closest fault at approximately 5.5 miles from the site. URS is using the 1996 Caltrans Seismic Hazard Map (CSHM), which shows the Monte Vista/East Fault as the nearest active fault, and is located 3.5 miles southwest of the site. However, the 1996 map has been updated to the 2008 CSHM, which is based on the United States (USGS) and	Will revise all distances to English units and Sections 3 and 5 of the Foundation Report will be updated based on the 2007 Caltrans Deterministic PGA Map.	

[1] Email correspondence from Hossain Salimi to Matthew Gaffney 7/16/2009.

Note 1: Abbreviations for Typical Documents (if Abbr. is not below, type in the document type)					
P=Structure Plans	SP=Special Provisions	FR=Foundation Rpt	DC=Design Calcs	TS=Type Sel. Report	QCC=Quant. Check Calcs
RP=Road Plans	E=Estimate	H=Hydraulics Rpt	CC=Check Calcs	QC=Quant. Calcs	

✓= Comment Resolved (for Reviewer's use)

			California Geological Survery (CGS) maps. The new CSHM has new faults added to the database. According to the new CSHM map, the Monte Vista/East has been renamed as the Cascade Fault (Mmax = 6.9, Reverse). The Department is still finalizing the new ARS curves, which will be based on the New Generation Attenuation Relationships. In the meantime, the consultant can go ahead and use the 2001 Seismic Design Criteria (SDC) ARS curves with the new governing fault(s) and distances as the input.[1]		
3	DFR	P 3-5 3.2.4.2 Native	The report reads that boring R-09-001 has *"…A layer of medium dense sand approximately 2½feet thick was encountered at a depth of about 8 to 10½ feet below surface…"* The description of the sand layer does not match with the one shown for boring R-09-001	Will revise the soil description on Section 3.2.4.2 as medium dense clayey sand.	
4	DFR	P 7-2	Foundation Design Data, Foundation Design Loads, and Pile Data tables should be included in the report.	Will include the Foundation Design Data, Foundation Loads in the next submittal.	
5	DFR	P 7-2	Specified tip elevation shown Pile Data Table on this page are different from the one shown on Figure 2-3 (plan sheet 3). Check Discrepancy.	Will revise the tip elevations on Figure 2-3 to match the Pile Data Table in the Foundation Report.	
6	DFR	Fig 3-4	For the Clayey Sand layer, the internal friction angle is shown to be 36^0. Based on the LOTB sheet (R-09-001, the SPT blow count shown to be 11. The internal friction angle of 36^0 appears to be too high.	Internal friction angle value will be reduced to 32^0.	
7	DFR	Appendix E	Spreadsheet calculation for Pier 2 should be included.	Will include the spreadsheet in next submittal.	
6	DFR	N/A	C3-Not Approved, resubmit is required	Will concur and resubmit.	

Note 1: Abbreviations for Typical Documents (if Abbr. is not below, type in the document type)					
P=Structure Plans	SP=Special Provisions	FR=Foundation Rpt	DC=Design Calcs	TS=Type Sel. Report	QCC=Quant. Check Calcs
RP=Road Plans	E=Estimate	H=Hydraulics Rpt	CC=Check Calcs	QC=Quant. Calcs	

✓= Comment Resolved
(for Reviewer's use)

Office of Special Funded Projects
Comment & Response Form

General Project Information	Review Phase		Reviewer Information
Dist: 04 EA: 4A3301 **Project Name: Matadero Creek Bridge** **OSFP Liaison: Emil Vergara** **Phone: 916-227-8360** **e-mail: emil_vergara@dot.ca.gov**	☐ PSR/PDS (Review No. _) ☐ APS/PSR (Review No. _) ☐ APS/PR (Review No. _) ☐ Type Selection	☐ 65% PS&E Unchecked Details ☐ PS&E (Review No. _) ☐ Construction Support ☒ Other: Final Foundation Report	**Reviewer Name: M. Zabolzadeh** **Functional Unit: OGDW** **Cost Center: 327** **Phone Number: (510) 286-4831** **e-mail: mohammad zabolzadeh@dot.ca.gov** **Date of Review: 1/25/2010**
	Structure Information (Use when necessary to document comments by individual structure) **Structure Name: Matadero Creek Bridge** **Br No: 37-0040**		

Consultant Information (to be filled in by Consultant)

Consultant Structure Lead (First and Last Name)	Structure Consultant Firm	Phone Number	e-mail	Response Date

#	Doc. (See Note 1)	Page, Section, or SSP	Review Comments	Consultant Responses	✓
1	FR	N/A	Foundation Report (FR) prepared by URS Consultants dated November 23, 2009. Final review.		
2	FR	N/A	All our previous comments have been incorporated into the report. We do not have any more comment.		
3	FR	N/A	C1 – Approved as Submitted		

Note 1: Abbreviations for Typical Documents (if Abbr. is not below, type in the document type)					
P=Structure Plans	SP=Special Provisions	FR=Foundation Rpt	DC=Design Calcs	TS=Type Sel. Report	QCC=Quant. Check Calcs
RP=Road Plans	E=Estimate	H=Hydraulics Rpt	CC=Check Calcs	QC=Quant. Calcs	

✓= Comment Resolved
(for Reviewer's use)

FIELD EXPLORATION PROGRAM

The geotechnical field investigation consisted of one boring and one cone penetration test (CPT), extending to depths of 101.5 and 100 feet below the existing ground surface, respectively. The explorations were performed on March 22 through 24, 2009, by Pitcher Drilling CO, East Palo Alto, California (rotary wash boring), and Gregg Drilling and Testing, Inc. of Martinez, California (CPT).

The boring and CPT locations were carefully selected to obtain supplemental subsurface information to provide geotechnical design recommendations for the proposed structure while avoiding underground utilities and subsurface obstructions. Layout of the explorations was performed by representatives of URS, and exploration locations were checked for conflict with underground utilities by contacting Underground Service Alert (USA) Network. USA, in turn, alerted the various municipalities and utility companies that a subsurface investigation was to be conducted near their utilities.

After underground utility clearance, URS obtained permits from the Santa Clara Valley Water District, and coordinated with appropriate personnel to accommodate the required inspection during and following exploration at each location.

Rotary Wash Boring (R-09-001)

The rotary wash boring was drilled to provide the necessary information to evaluate the subsurface stratigraphy and to allow acquisition of high-quality soil samples for laboratory testing. The boring was drilled and sampled at the location indicated on the Site and Boring Location Plan, Figure 3-1. The boring was advanced to a depth of 101.5 feet below existing ground surface using a truck-mounted drill rig under the supervision of a URS engineer who maintained a record of all field activities, classified the soils encountered using the Unified Soil Classification System (USCS), and prepared a log of the boring.

The drilling operation proceeded carefully, with particular attention to potential interference with utilities or other buried structures. During drilling, both disturbed and undisturbed samples were obtained for identification and laboratory testing. Soil samples were generally obtained at 5-foot intervals and at changes in strata. Samples were obtained using an unlined split spoon sampler (SPT), having an outside diameter of 2 inches, and lined Modified California (MC) sampler, having an outside diameter of 2½ inches. A 140-pound hammer falling through a distance of 30 inches was used to drive the samplers. The blow count recorded on the boring logs adjacent to the sample depth is the number of blows required to drive the sampler for the final 1 foot of a maximum 18 inch drive. The Shelby Tube Sampler was used to obtain a relatively undisturbed sample of the clay fill. The Shelby Tube Sampler is a 3-inch diameter, 2.5 feet long steel thin-walled tube that is hydraulically pushed into the soil below the base of the borehole.

One of the objectives of the field investigation was to obtain high-quality undisturbed samples for laboratory testing. Effort was made to minimize sample disturbance during sample handling and transportation. After careful withdrawal from the ground, the sample was placed upright and the ends of the sample were cleaned of disturbed soil. If possible, pocket penetrometer tests were performed on the bottom end of cohesive soil samples. Both ends of the samples were covered with plastic caps, and carefully transported to URS' laboratory in San Jose.

Disposal of Cuttings

All drill cuttings and fluids generated during drilling of rotary wash boring were collected in drums for disposal in accordance with applicable local, state, and federal regulations.

Cone Penetration Test (CPT-09-002)

We also performed one CPT at the location shown on the Site and Boring Location Plan, Figure 3-1. The CPT was advanced to a depth of 100 feet below existing ground surface under the supervision of a URS representative.

The Cone Penetration Test (CPT) consists of pushing a cone-tipped probe into the soil while simultaneously recording the cone tip resistance and side friction resistance to penetration. The CPT was conducted in general accordance with ASTM specifications (ASTM D3441-79) using an electric cone penetrometer. The CPT equipment consists of a cone assembly mounted at the end of a series of hollow rods. A set of hydraulic rams is used to push the cone and rods into the soil while a continuous record of come and friction resistance versus depth is obtained in both analog and digital form at the ground surface. A specially designed all-wheel drive truck is used to transport and house the test equipment and to provide a 178 kN reaction to the thrust of the hydraulic rams.

The cone penetrometer assembly consists of a conical tip and a cylindrical friction sleeve. The conical tip has a 60-degree apex angle and a projected cross-sectional area of 15 cm^2. The cylindrical friction sleeve has a surface area of 225 cm^2. Both the conical tip and the cylindrical friction sleeve have outer diameters of 4.37 centimeters. The interior of the cone penetrometer is instrumented with strain gauges that allow simultaneous measurement of cone tip and friction sleeve resistance during penetration. Continuous electric signals from the strain gauges are transmitted by a cable in the sounding rods to analog and digital data recorders in the CPT truck.

Data obtained during a CPT consists of continuous stratigraphic information with close vertical resolution. Stratigraphic interpretation is based on relationships between cone tip resistance and friction resistance. The calculated friction ratio (CPT friction sleeve resistance divided by cone tip resistance) is used as an indicator of soil type. Granular soils typically have low friction ratios and high cone resistance, while cohesive or organic soils have high friction ratios and low cone resistance. These stratigraphic material categories form the basis for all subsequent calculations that utilize the CPT data. Soil interpretation presented on the CPT logs from this investigation was based on recent correlations developed by Robertson, 1986, presented on Figure B-1.

LABORATORY TESTING PROGRAM

A laboratory testing program was carried out to determine the index and engineering properties of the major subsurface strata encountered at the site. The laboratory testing program included conventional tests to confirm the existing information on the engineering characteristics of the major strata and to refine some of the engineering parameters. These tests were performed at the URS' laboratory.

This appendix briefly describes the testing program and procedures for the different types of tests, and then presents detailed test results.

Index Tests

Index tests were performed on both cohesive and cohesionless soil samples to aid in soil classification and in correlation with other engineering parameters. Index tests included Atterberg Limits, gradation analyses, moisture content and dry density determinations. Atterberg Limits tests were performed in accordance with ASTM D 4318. Particle analyses were performed in accordance with ASTM D 422. The moisture content tests were performed in accordance with ASTM D 2216. Dry density was determined in accordance with ASTM D 2937. The locations of these tests are indicated on the Logs of Test Borings adjacent to the appropriate sample depths. The results are summarized in Table B-1.

A plasticity chart graphically presenting the results of the Atterberg Limits tests is included on Figure B-2.

Unconfined Compression Tests

Unconfined compression tests were performed on select cohesive soil samples to assist in determining shear strength parameters. These tests were performed in accordance with ASTM D 2166. The locations of these tests are indicated on the Logs of Test Borings adjacent to the appropriate sample depths. The results are summarized in Table B-1.

TABLE B-1
SUMMARY OF LABORATORY TEST RESULTS

Boring or Sample No.	Date Sampled	Station	Line	Distance from Line (feet)	Depth (feet)	Atterberg Limits			Unconfined Compressive Strength (psf)	In-Place Conditions	
						Liquid Limit	Plastic Limit	Plasticity Index		Water Content (%)	Dry Unit Weight (pcf)
R-09-001	24-Mar-09	72+60.3	"C"	Rt. 96.8	5				1,230	12.3	106
R-09-001	24-Mar-09	72+60.3	"C"	Rt. 96.8	9					16.6	106
R-09-001	24-Mar-09	72+60.3	"C"	Rt. 96.8	12.5				1,780	20.5	109
R-09-001	24-Mar-09	72+60.3	"C"	Rt. 96.8	20				2,040	20.8	106
R-09-001	24-Mar-09	72+60.3	"C"	Rt. 96.8	25	37	16	21	1,070	24.4	100
R-09-001	24-Mar-09	72+60.3	"C"	Rt. 96.8	30				2,240	26.2	97
R-09-001	24-Mar-09	72+60.3	"C"	Rt. 96.8	35				1,140	29.7	92
R-09-001	24-Mar-09	72+60.3	"C"	Rt. 96.8	40	33	12	21			
R-09-001	24-Mar-09	72+60.3	"C"	Rt. 96.8	45					13.0	122
R-09-001	24-Mar-09	72+60.3	"C"	Rt. 96.8	55				1,700	34.0	87
R-09-001	24-Mar-09	72+60.3	"C"	Rt. 96.8	60	45	20	25		35.7	
R-09-001	24-Mar-09	72+60.3	"C"	Rt. 96.8	65				2,180	24.8	100
R-09-001	24-Mar-09	72+60.3	"C"	Rt. 96.8	70	49	24	25	2,960	27.4	96
R-09-001	24-Mar-09	72+60.3	"C"	Rt. 96.8	75				4,190	29.4	93
R-09-001	24-Mar-09	72+60.3	"C"	Rt. 96.8	85				2,420	28.3	94
R-09-001	24-Mar-09	72+60.3	"C"	Rt. 96.8	90				3,250	28.2	94
R-09-001	24-Mar-09	72+60.3	"C"	Rt. 96.8	100				3,150	25.9	96

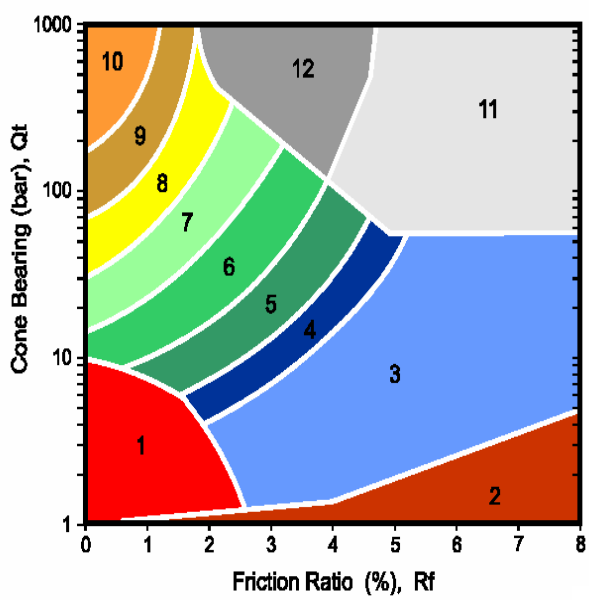
Cone Penetration Test Data & Interpretation

The Cone Penetration Test (CPT) data collected from your site are presented in graphical form in the attached report. The plots include interpreted Soil Behavior Type (SBT) based on the charts described by Robertson (1990). Typical plots display SBT based on the non-normalized charts of Robertson et al (1986). For CPT soundings extending greater than 50 feet, we recommend the use of the normalized charts of Robertson (1990) which can be displayed as SBTn, upon request. The report also includes spreadsheet output of computer calculations of basic interpretation in terms of SBT and SBTn and various geotechnical parameters using current published correlations based on the comprehensive review by Lunne, Robertson and Powell (1997), as well as recent updates by Professor Robertson. The interpretations are presented only as a guide for geotechnical use and should be carefully reviewed. Gregg Drilling & Testing Inc. do not warranty the correctness or the applicability of any of the geotechnical parameters interpreted by the software and do not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used in the software.

Some interpretation methods require input of the groundwater level to calculate vertical effective stress. An estimate of the in-situ groundwater level has been made based on field observations and/or CPT results, but should be verified by the user.

A summary of locations and depths is available in Table 1. Note that all penetration depths referenced in the data are with respect to the existing ground surface.

Note that it is not always possible to clearly identify a soil type based solely on q_t, f_s, and u_2. In these situations, experience, judgment, and an assessment of the pore pressure dissipation data should be used to infer the correct soil behavior type.



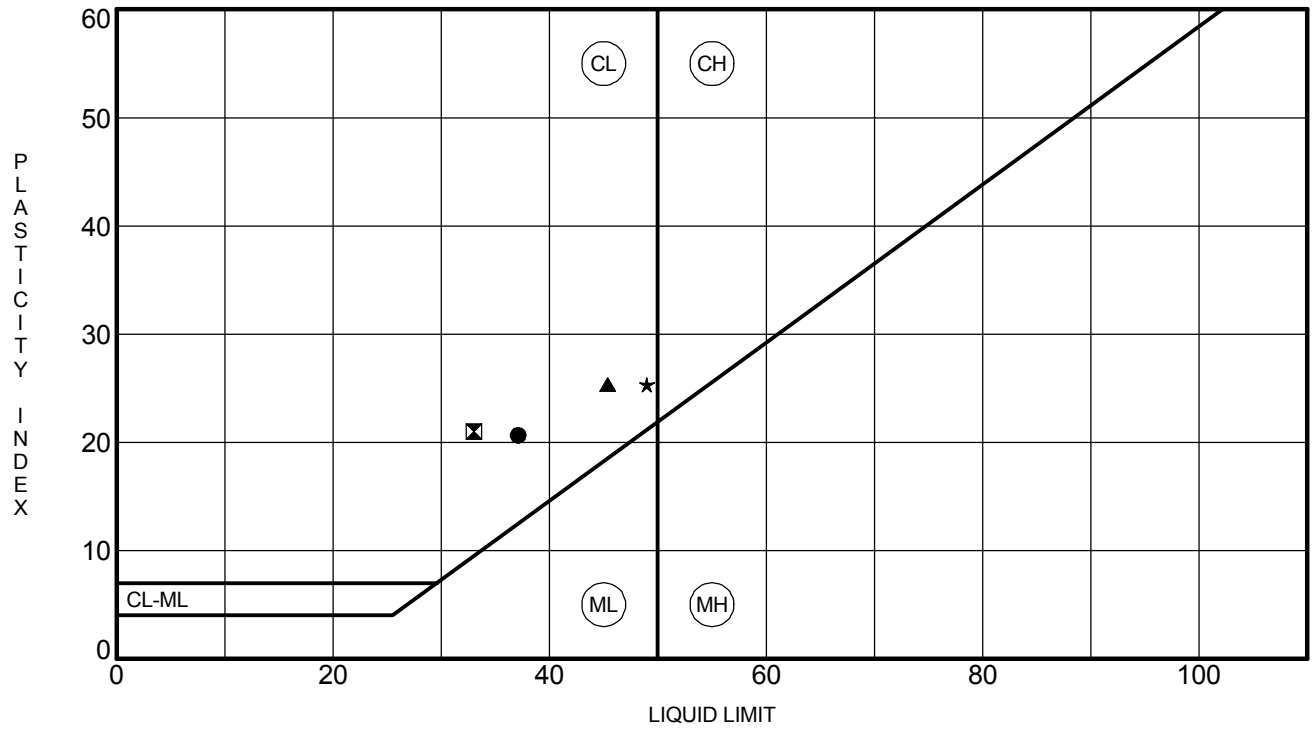
(After Robertson, et al., 1986)

ZONE		SBT
1		Sensitive, fine grained
2		Organic materials
3		Clay
4		Silty clay to clay
5		Clayey silt to silty clay
6		Sandy silt to clayey silt
7		Silty sand to sandy silt
8		Sand to silty sand
9		Sand
10		Gravely sand to sand
11		Very stiff fine grained*
12		Sand to clayey sand*

*over consolidated or cemented

Figure SBT

FIGURE B-1



	Specimen Identification		LL	PL	PI	Fines	Classification
●	**R-09-001**	**25.0**	**37**	**16**	**21**		**Lean CLAY (CL)**
⊠	**R-09-001**	**40.0**	**33**	**12**	**21**		**Lean CLAY (CL)**
▲	**R-09-001**	**60.0**	**45**	**20**	**25**		**Lean CLAY (CL)**
★	**R-09-001**	**70.0**	**49**	**24**	**25**		**Lean to fat CLAY (CL/CH)**

URS

55 S. Market St, Ste 1500
San Jose, CA 95113

ATTERBERG LIMITS' RESULTS

Project Name: 101 Auxillary Lane (URS 28649951)
Location: 04 Santa Clara 101

FIGURE B-2

URS ATTERBERG LIMITS 28649951-101 AUX-VTA.GPJ CT SACTO 061407.GDT 6/3/09

Cone Penetration Testing Procedure (CPT)

Gregg Drilling carries out all Cone Penetration Tests (CPT) using an integrated electronic cone system, *Figure CPT*. The soundings were conducted using a 20 ton capacity cone with a tip area of 15 cm^2 and a friction sleeve area of 225 cm^2. The cone is designed with an equal end area friction sleeve and a tip end area ratio of 0.80.

The cone takes measurements of cone bearing (q_c), sleeve friction (f_s) and penetration pore water pressure (u_2) at 5-cm intervals during penetration to provide a nearly continuous hydrogeologic log. CPT data reduction and interpretation is performed in real time facilitating on-site decision making. The above mentioned parameters are stored on disk for further analysis and reference. All CPT soundings are performed in accordance with revised (2002) ASTM standards (D 5778-95).

The cone also contains a porous filter element located directly behind the cone tip (u_2), *Figure CPT.* It consists of porous plastic and is 5.0mm thick. The filter element is used to obtain penetration pore pressure as the cone is advanced as well as Pore Pressure Dissipation Tests (PPDT's) during appropriate pauses in penetration. It should be noted that prior to penetration, the element is fully saturated with silicon oil under vacuum pressure to ensure accurate and fast dissipation.

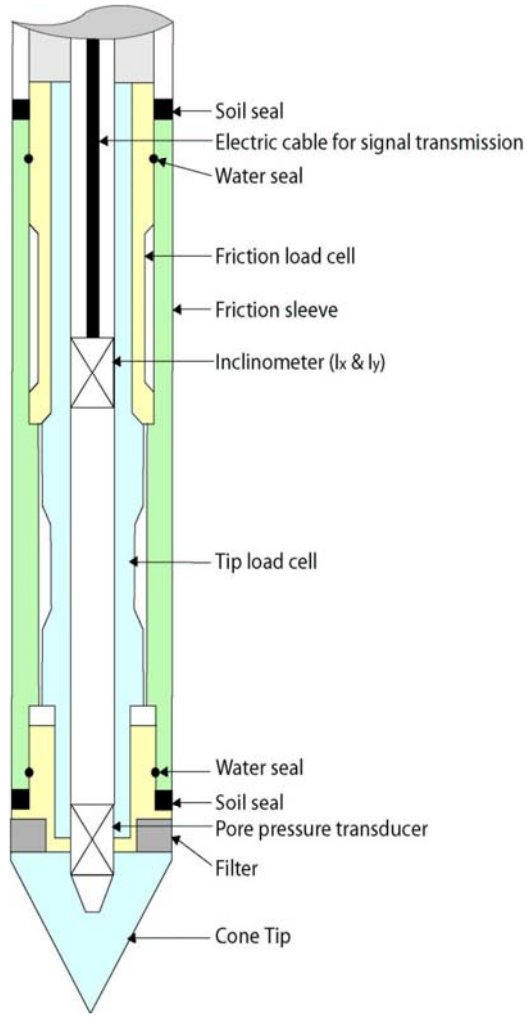


Figure CPT

When the soundings are complete, the test holes are grouted using a Gregg support rig. The grouting procedures generally consist of pushing a hollow CPT rod with a "knock out" plug to the termination depth of the test hole. Grout is then pumped under pressure as the tremie pipe is pulled from the hole. Disruption or further contamination to the site is therefore minimized.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	49.0/52.2		

GEOTECHNICAL PROFESSIONAL DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Stephen Huang No. C 42289 Exp. 03/31/10 CIVIL STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

URS Corporation
55 S Market Street
SUITE #1500
San Jose, CA 95113

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (JUNE 2007)

CEMENTATION

Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

CONSISTENCY OF COHESIVE SOILS

Description	Unconfined Compressive Strength (tsf)	Pocket Penetrometer Measurement (tsf)	Torvane Measurement (tsf)	Field Approximation
Very Soft	< 0.25	< 0.25	< 0.12	Easily penetrated several inches by fist
Soft	0.25 to 0.50	0.25 to 0.50	0.12 to 0.25	Easily penetrated several inches by thumb
Medium Stiff	0.50 to 1.0	0.50 to 1.0	0.25 to 0.50	Penetrated several inches by thumb with moderate effort
Stiff	1 to 2	1 to 2	0.50 to 1.0	Readily indented by thumb but penetrated only with great effort
Very Stiff	2 to 4	2 to 4	1.0 to 2.0	Readily indented by thumbnail
Hard	> 4.0	> 4.0	> 2.0	Indented by thumbnail with difficulty

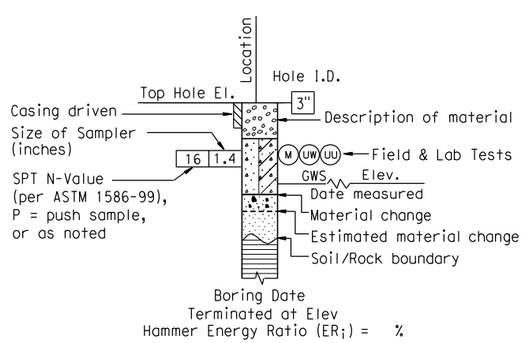
BOREHOLE IDENTIFICATION

Symbol	Hole Type	Description
Size	A	Auger Boring
Size	R P	Rotary drilled boring Rotary percussion boring (air)
Size	R	Rotary drilled diamond core
Size	HD HA	Hand driven (1-inch soil tube) Hand Auger
●	D	Dynamic Cone Penetration Boring
▲	CPT	Cone Penetration Test (ASTM D 5778-95)
⬚	O	Other

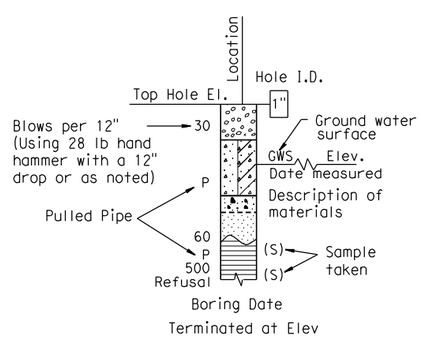
Note: Size in inches.

PLASTICITY OF FINE-GRAINED SOILS

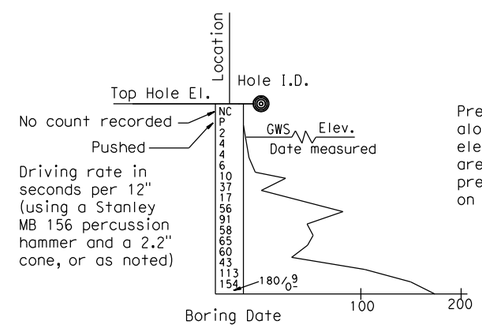
Description	Criteria
Nonplastic	A 1/8-inch thread cannot be rolled at any water content.
Low	The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.



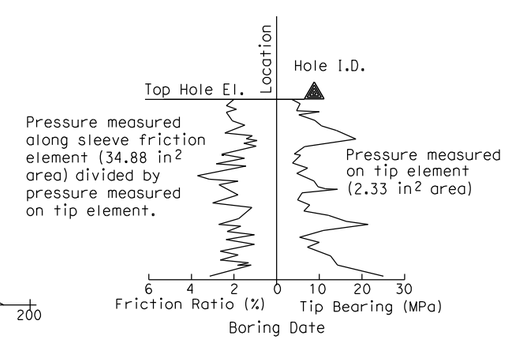
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) SOUNDING

DESIGN OVERSIGHT	DRAWN BY	A. CHEUNG	M. SELVENDRAN FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	PROJECT ENGINEER
SIGN OFF DATE	CHECKED BY	S. HUANG	DATE: 3/22/09 AND 3/24/09		

BRIDGE NO. 37-0040
POST MILES 51.37

MATADERO CREEK BRIDGE (WIDEN)
LOG OF TEST BORINGS (1 OF 5)

OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04235
EA 4A3301

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES | SHEET | OF

FILE => ...\37-0040-z-1tb01.dgn

USERNAME => andrew_cheung PLOTTED => 10/28/2009 TIME PLOTTED => 12:34:05 PM

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (JUNE 2007)

GROUP SYMBOLS AND NAMES

Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
GW	Well-graded GRAVEL Well-graded GRAVEL with SAND	CL	Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
GP	Poorly graded GRAVEL Poorly graded GRAVEL with SAND		
GW-GM	Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND	CL-ML	SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
GW-GC	Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GP-GM	Poorly graded GRAVEL with SILT Poorly graded GRAVEL with SILT and SAND	ML	SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
GP-GC	Poorly graded GRAVEL with CLAY (or SILTY CLAY) Poorly graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GM	SILTY GRAVEL SILTY GRAVEL with SAND	OL	ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
GC	CLAYEY GRAVEL CLAYEY GRAVEL with SAND		
GC-GM	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND	OL	ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
SW	Well-graded SAND Well-graded SAND with GRAVEL		
SP	Poorly graded SAND Poorly graded SAND with GRAVEL	CH	Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
SW-SM	Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL		
SW-SC	Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	MH	Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
SP-SM	Poorly graded SAND with SILT Poorly graded SAND with SILT and GRAVEL		
SP-SC	Poorly graded SAND with CLAY (or SILTY CLAY) Poorly graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	OH	ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
SM	SILTY SAND SILTY SAND with GRAVEL		
SC	CLAYEY SAND CLAYEY SAND with GRAVEL	OH	ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY ORGANIC elastic SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
SC-SM	SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL		
PT	PEAT	OL/OH	ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND
	COBBLES COBBLES and BOULDERS BOULDERS		

FIELD AND LABORATORY TESTING

- (C) Consolidation (ASTM D 2435)
- (CL) Collapse Potential (ASTM D 5333)
- (CP) Compaction Curve (CTM 216)
- (CR) Corrosivity Testing (CTM 643, CTM 422, CTM 417)
- (CU) Consolidated Undrained Triaxial (ASTM D 4767)
- (DS) Direct Shear (ASTM D 3080)
- (EI) Expansion Index (ASTM D 4829)
- (M) Moisture Content (ASTM D 2216)
- (OC) Organic Content-% (ASTM D 2974)
- (P) Permeability (CTM 220)
- (PA) Particle Size Analysis (ASTM D 422)
- (PI) Plasticity Index (AASHTO T 90) Liquid Limit (AASHTO T 89)
- (PL) Point Load Index (ASTM D 5731)
- (PM) Pressure Meter
- (PP) Pocket Penetrometer
- (R) R-Value (CTM 301)
- (SE) Sand Equivalent (CTM 217)
- (SG) Specific Gravity (AASHTO T 100)
- (SL) Shrinkage Limit (ASTM D 427)
- (SW) Swell Potential (ASTM D 4546)
- (TV) Pocket Torvane
- (UC) Unconfined Compression-Soil (ASTM D 2166) Unconfined Compression-Rock (ASTM D 2938)
- (UU) Unconsolidated Undrained Triaxial (ASTM D 2850)
- (UW) Unit Weight (ASTM D 4767)
- (VS) Vane Shear (AASHTO T 223)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	49.0/52.2		

GEOTECHNICAL PROFESSIONAL DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Stephen Huang No. C 42289 Exp. 03/31/10 CIVIL STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

Santa Clara Valley Transportation Authority
3331 N First Street
San Jose, CA 95134

URS Corporation
55 S Market Street
SUITE #1500
San Jose, CA 95113

APPARENT DENSITY OF COHESIONLESS SOILS

Description	SPT N_{60} (Blows / 12 inches)
Very loose	0 - 4
Loose	5 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	> 50

MOISTURE

Description	Criteria
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

PERCENT OR PROPORTION OF SOILS

Description	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

PARTICLE SIZE

Description		Size
Boulder		> 12"
Cobble		3" to 12"
Gravel	Coarse	3/4" to 3"
	Fine	No. 4 to 3/4"
Sand	Coarse	No. 10 to No. 4
	Medium	No. 40 to No. 10
	Fine	No. 200 to No. 40

DESIGN OVERSIGHT

SIGN OFF DATE

DRAWN BY A. CHEUNG

CHECKED BY S. HUANG

M. SELVENDRAN
FIELD INVESTIGATION BY:
DATE: 3/22/09 AND 3/24/09

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

PROJECT ENGINEER

BRIDGE NO. 37-0040
POST MILES 51.37

MATADERO CREEK BRIDGE (WIDEN)
LOG OF TEST BORINGS (2 OF 5)

OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04235
EA 4A3301

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES SHEET OF

FILE => ...\37-0040-z-1tb02.dgn

USERNAME => andrew_cheung PLOTTED => 10/28/2009 TIME PLOTTED => 12:34:19 PM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	49.0/52.2		

GEOTECHNICAL PROFESSIONAL DATE

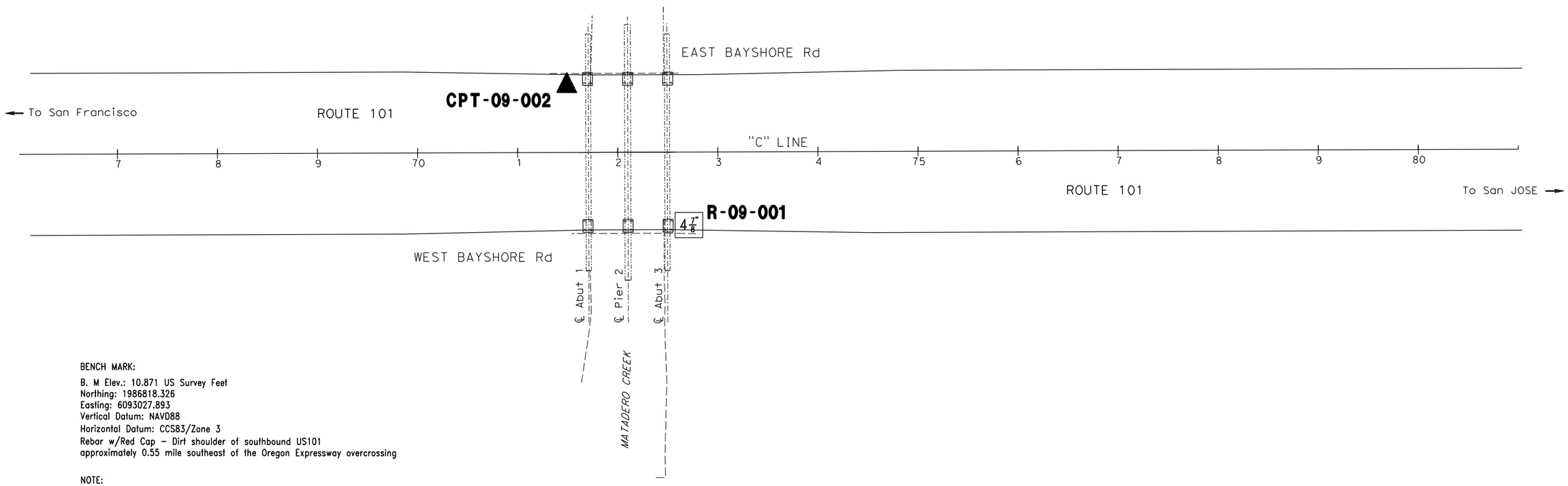
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Stephen Huang
No. C 42289
Exp. 03/31/10
CIVIL
STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

URS Corporation
55 S Market Street
SUITE #1500
San Jose, CA 95113



BENCH MARK:

B. M Elev.: 10.871 US Survey Feet
Northing: 1986818.326
Easting: 6093027.893
Vertical Datum: NAVD88
Horizontal Datum: CCS83/Zone 3
Rebar w/Red Cap – Dirt shoulder of southbound US101
approximately 0.55 mile southeast of the Oregon Expressway overcrossing

NOTE:

1. This LOTB sheet was prepared in accordance with the caltrans soil and Rock logging, Classification, and Presentation Manual (June 2007)
2. Groundwater depth was not measured; dry to 7½ feet before switching auger to rotarywash method.
3. Design groundwater level at Elev. 4 ft.

SCALE
1" = 50'

DESIGN OVERSIGHT

SIGN OFF DATE

DRAWN BY A. CHEUNG

CHECKED BY S. HUANG

M. SELVENDRAN
FIELD INVESTIGATION BY:
DATE: 3/22/09 AND 3/24/09

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

PROJECT ENGINEER

BRIDGE NO. 37-0040
POST MILES 51.37

MATADERO CREEK BRIDGE (WIDEN)
LOG OF TEST BORINGS (3 OF 5)

OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04235
EA 4A3301

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES | SHEET | OF

FILE => ...\37-0040-z-1tb03.dgn

USERNAME => andrew_chang DATE PLOTTED => 10/28/2009 TIME PLOTTED => 2:19:46 PM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	49.0/52.2		

GEOTECHNICAL PROFESSIONAL DATE

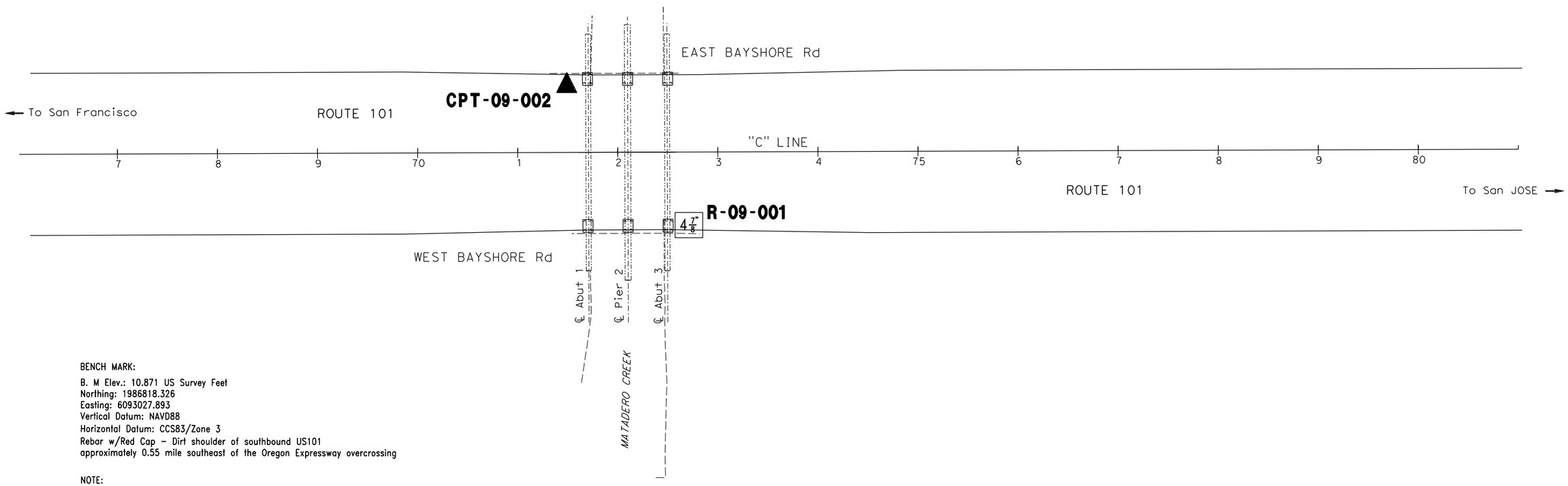
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Stephen Huang
No. C 42289
Exp. 03/31/10
CIVIL
STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

URS Corporation
55 S Market Street
SUITE #1500
San Jose, CA 95113



BENCH MARK:

B. M Elev.: 10.871 US Survey Feet
Northing: 1986818.326
Easting: 6093027.893
Vertical Datum: NAVD88
Horizontal Datum: CCS83/Zone 3
Rebar w/Red Cap – Dirt shoulder of southbound US101
approximately 0.55 mile southeast of the Oregon Expressway overcrossing

NOTE:

1. This LOTB sheet was prepared in accordance with the caltrans soil and Rock logging, Classification, and Presentation Manual (June 2007)
2. Groundwater depth was not measured; dry to 7½ feet before switching auger to rotarywash method.
3. Design groundwater level at Elev. 4 ft.

SCALE
1" = 50'

DESIGN OVERSIGHT

SIGN OFF DATE

DRAWN BY A. CHEUNG

CHECKED BY S. HUANG

M. SELVENDRAN
FIELD INVESTIGATION BY:
DATE: 3/22/09 AND 3/24/09

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

PROJECT ENGINEER

BRIDGE NO. 37-0040
POST MILES 51.37

MATADERO CREEK BRIDGE (WIDEN)
LOG OF TEST BORINGS (3 OF 5)

OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04235
EA 4A3301

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES | SHEET | OF

FILE => ...\37-0040-z-1tb03.dgn

USERNAME => andrew_chang DATE PLOTTED => 10/28/2009 TIME PLOTTED => 2:19:53 PM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	49.0/52.2		

GEOTECHNICAL PROFESSIONAL DATE

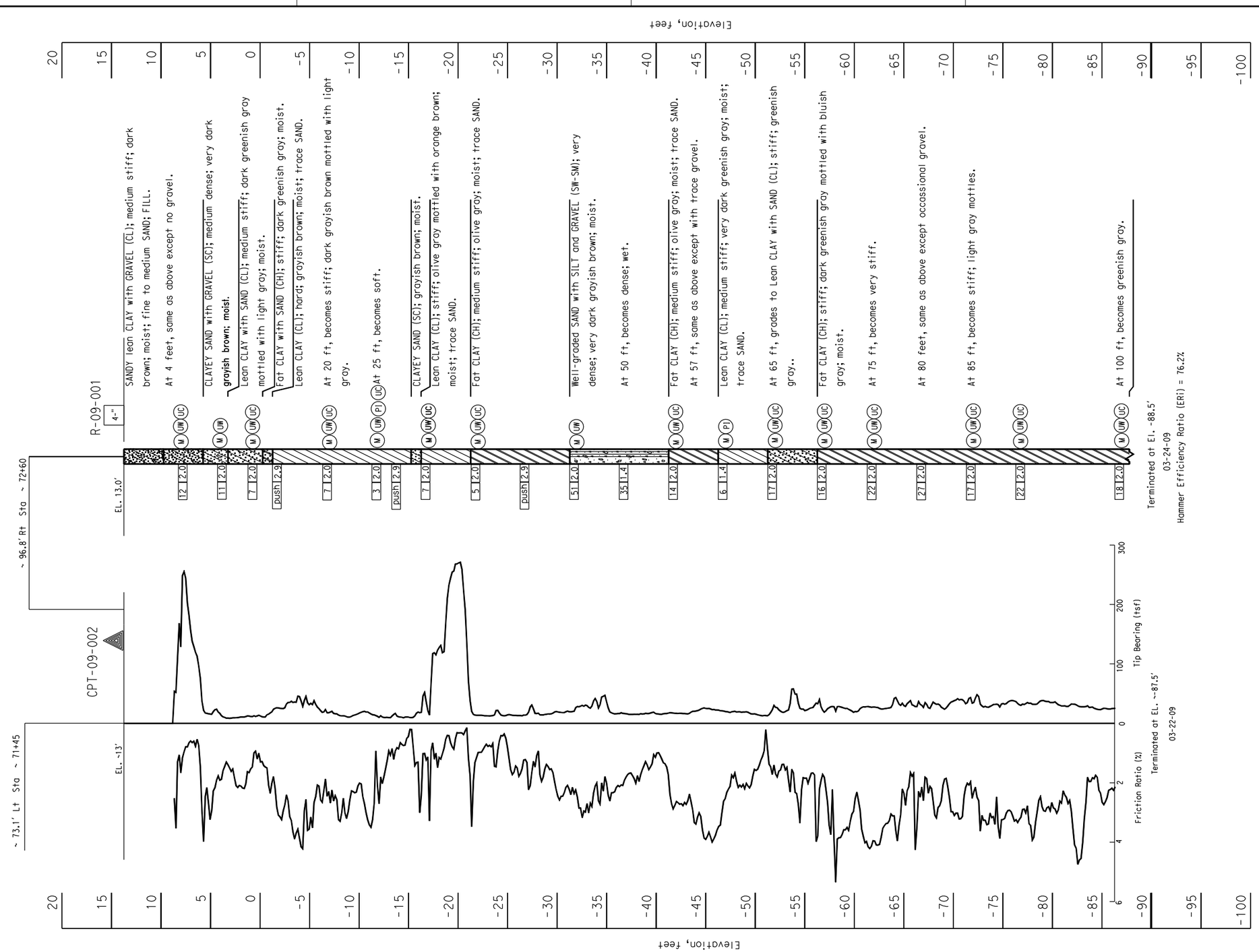
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Stephen Huang No. C 42289 Exp. 03/31/10 CIVIL STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

URS Corporation
55 S Market Street
SUITE #1500
San Jose, CA 95113



BENCH MARK:
B. M Elev.: 10.871 US Survey Feet
Northing: 1986818.326
Easting: 6093027.893
Vertical Datum: NAVD88
Horizontal Datum: CCS83/Zone 3
Rebar w/Red Cap - Dirt shoulder of southbound US101
approximately 0.55 mile southeast of the Oregon Expressway overcrossing

NOTE:
1. This LOTB sheet was prepared in accordance with the caltrans soil and Rock logging, Classification, and Presentation Manual (June 2007)
2. Groundwater depth was not measured; dry to 7½ feet before switching auger to rotarywash method.
3. Design groundwater level at Elev. 4 ft.

PROFILE
HOR. 1"=50'
VER. 1"=5'

DESIGN OVERSIGHT	DRAWN BY	A. CHEUNG	M. SELVENDRAN FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	PROJECT ENGINEER
SIGN OFF DATE	CHECKED BY	S. HUANG	DATE: 3/22/09 AND 3/24/09		

BRIDGE NO. 37-0040
POST MILES 51.37

MATADERO CREEK BRIDGE (WIDEN)
LOG OF TEST BORINGS (4 OF 5)

OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04235
EA 4A3301

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES | SHEET | OF

FILE => ...\37-0040-z-1tb04.dgn

USERNAME => andrew_cheung PLOTTED => 10/28/2009 TIME PLOTTED => 12:34:47 PM

COUNTY	ROUTE	POST MILE	EA	SHEET NO.	TOTAL SHEETS
SCI	101	49.0/52.2	4A3301	5	5

DISTRICT	COUNTY	ROUTE	BRIDGE NO.	SHEET NO.	TOTAL SHEETS
04	SCI	101	37-0040	5	5

DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES

As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.

DIST.	COUNTY	ROUTE	MILE POST-TOTAL PROJECT	Sheet No.	Total Sheets
04	SCI	101	49.0/52.2		

REGISTERED GEOTECHNICAL ENGINEER — DATE: X/XX/09

MATADERO CREEK BRIDGE (WIDEN)

LOG OF TEST BORINGS (5 OF 5)

NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA

CU: 04235 EA: 4A3301 — BRIDGE No. 37-0040 — Sheet 5 of 5

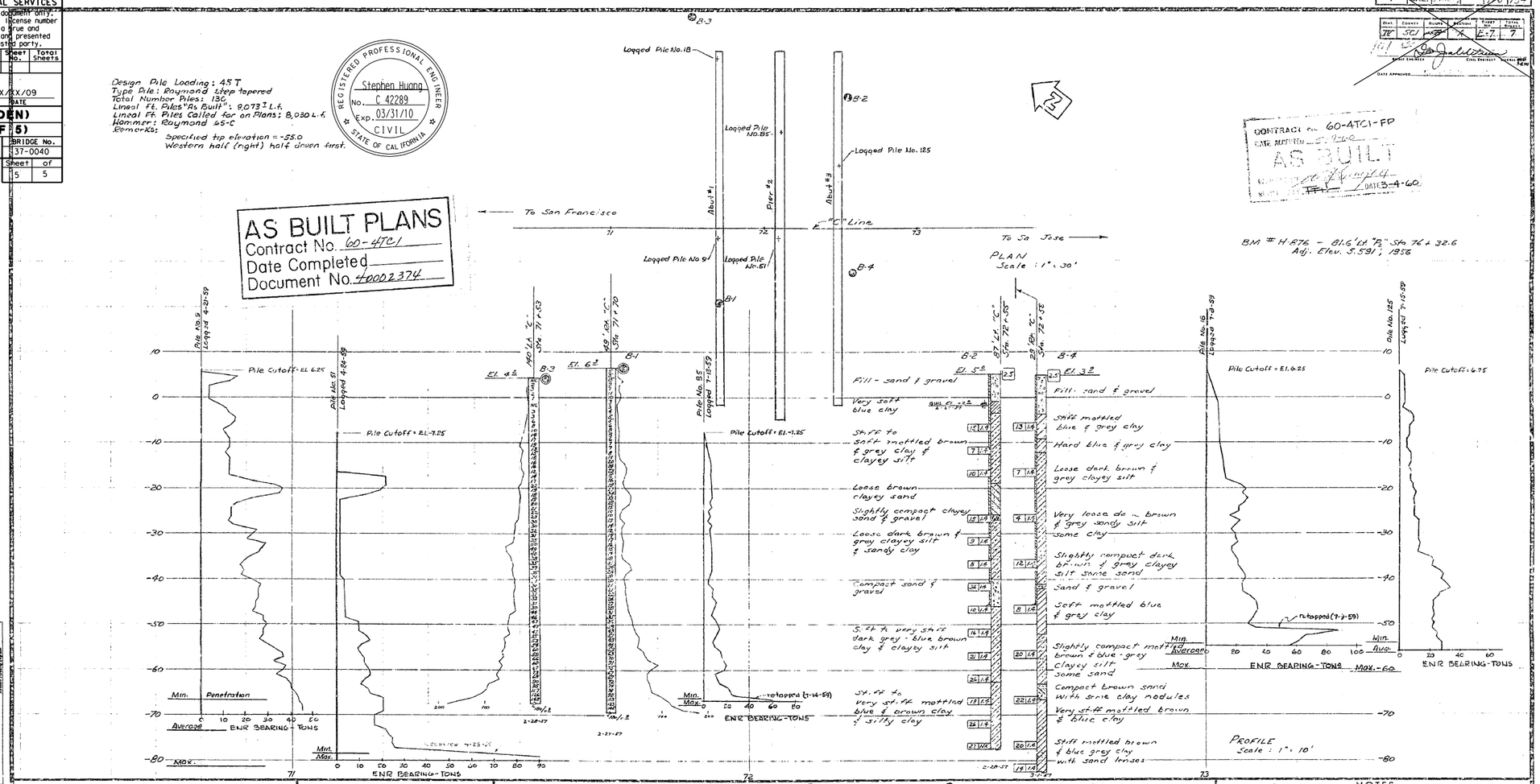
Boring	Station	Offset from A Line
B-3	71+51	144 Lt
B-1	71+86	43 Rt
B-2	72+62	92 Lt
B-4	72+70	19 Rt

Design Pile Loading: 45 T
Type Pile: Raymond Step Tapered
Total Number Piles: 130
Lineal ft. Piles "As Built": 9,073 L.f.
Lineal ft. Piles Called for on Plans: 8,030 L.f.
Hammer: Raymond 65-C
Remarks: Specified tip elevation = -55.0
Western half (right) half driven first.

REGISTERED PROFESSIONAL ENGINEER — Stephen Huang — No. C 42289 — Exp. 03/31/10 — CIVIL — STATE OF CALIFORNIA

AS BUILT PLANS
Contract No. 60-4TC1
Date Completed
Document No. 40002374

CONTRACT No. 60-4TC1-FP
AS BUILT
DATE 3-4-60



BRIDGE DEPARTMENT

FIELD STUDY: V. Wheatley 4-25-57
DRAWN: V. Wheatley 4-25-57
CHECKED: R. Bayona 10-8-57
Approval Recommended by: Geotechnical Engineer

CLASSIFICATION OF MATERIAL BASED ON STANDARD GRADE SIZE LIMITS

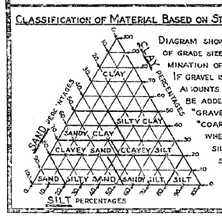


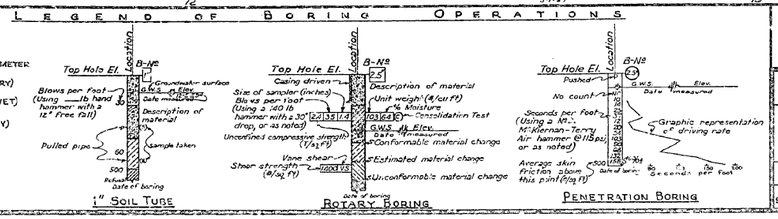
DIAGRAM SHOWING THE BASIS FOR ESTIMATES OF GRADE SIZE DISTRIBUTION USED IN DETERMINATION OF CLASS NAMES. IF GRAVEL IS PRESENT IN APPRECIABLE AMOUNTS THE TERM "GRAVELLY" MAY BE ADDED TO THE CLASS NAME, VIZ. "GRAVELLY SAND". THE TERMS "COARSE", "MEDIUM" AND "FINE" WHEN USED TO DESCRIBE SAND, SILT AND GRAVEL REFER TO STANDARD GRADE SIZE LIMITS.

LEGEND OF EARTH MATERIALS

- GRAVEL
- SAND
- SILT
- CLAY
- SANDY CLAY OR CLAYEY SAND
- SANDY SILT OR SILTY SAND
- SILTY CLAY OR CLAYEY SILT
- PEAT AND/OR ORGANIC MATTER
- FILL MATERIAL
- IGNEOUS ROCK
- SEDIMENTARY ROCK
- METAMORPHIC ROCK

LEGEND OF BORING OPERATIONS

- PLAN OF ANY BORING
- PENETROMETER
- 2½" CONE PENETROMETER
- SAMPLER BORING (DRY)
- ROTARY BORING (WET)
- AUGER BORING (DRY)
- JET BORING
- CORE BORING
- TEST PIT



NOTES

The contractor's attention is directed to Section 2, Article (c) of the Standard Specifications and to the Special Provisions accompanying this set of plans.

Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

MATADERO CREEK BRIDGE

LOG OF TEST BORINGS

SCALE As Noted | BRIDGE 37-40 R/L | FILE E-37 | DRAWING C-5430-7

PREL. DRAWING No. E-5430 17 21

I HEREBY CERTIFY THAT THIS IS A TRUE AND ACCURATE COPY OF THE ABOVE DOCUMENT TAKEN UNDER MY DIRECTION AND CONTROL ON THIS DATE IN SACRAMENTO, CALIFORNIA PURSUANT TO AUTHORIZATION BY THE DIRECTOR OF PUBLIC WORKS.

DATE 8/23/21 SIGNATURE [illegible] TITLE [illegible]

MICROFILM - STATE OF CALIFORNIA - DEPARTMENT OF PUBLIC WORKS - MICROFILM

04-SCL-101
EA 4A3301

US 101 Auxiliary Lanes Project
Santa Clara County, California

Draft Bridge Design Hydraulic Study Report
Matadero Creek Bridge and Adobe Creek Bridge
35% PS&E Submittal

Prepared for:

VTA and Caltrans

Prepared by:

WRECO

May 2009

Executive Summary

The United States Highway 101 (US 101) Auxiliary Lanes Project (the Project) is located in northern Santa Clara County, California. The Project proposes construction of auxiliary lanes in each direction of US 101 between Shoreline Boulevard in the City of Mountain View and Oregon Expressway in the City of Palo Alto.

There are two US 101 bridge crossings identified within the Project limits: Matadero Creek Bridge and Adobe Creek Bridge. The widening of the existing bridges is proposed to accommodate the proposed auxiliary lanes. The purpose of this report is to analyze the impacts of the project widening and changes to water surface elevation and scour depth, as well as provide possible scour countermeasures within the Project limits.

The existing US 101 bridges over Matadero Creek and Adobe Creek are a two-span bridge and single-span bridge, respectively, with four lanes in each direction. Two frontage roads running along the US 101 northbound and southbound lanes also cross over Matadero and Adobe creeks. The frontage road bridges over Matadero Creek are both two-span bridges, supported by an extended pier, which also supports the US 101 bridge over Matadero Creek. The frontage road bridges over Adobe Creek are both single-span bridges. The left and right banks of Matadero and Adobe creeks underneath US 101 are concrete lined. The Project proposes the US 101 bridge widening to accommodate proposed auxiliary lanes, which would fill up the open space between the existing US 101 bridge and frontage road bridges for both Matadero and Adobe creeks.

Hydraulic analyses were performed on the proposed US 101 bridges using the Hydraulic Engineering Circular–River Analysis System (HEC-RAS). Per Federal Highway Administration (FHWA) and Caltrans design criteria, the hydraulic design of the bridges requires that the bridge designs pass the 1% probability flood (100-year flood, Q_{100}), the 2% probability flood (50- year flood or Q_{50}) plus 2 ft of freeboard, or the flood of record—which ever is greater—without causing objectionable backwater or excessive flow velocities, or encroaching on through-traffic lanes. The existing and proposed US 101 bridges over Matadero Creek and Adobe Creek do not meet the California Department of Transportation (Caltrans) freeboard criteria of 2 ft over the 50-year storm event, which was higher than the 100-year water surface elevation. The 50-year and 100-year water surface elevations of Matadero Creek and Adobe Creek at the US 101 crossing are controlled by the water surface elevation in San Francisco Bay. The US 101 bridge widening would not have a significant impact on the 50- and 100-year water surface elevations. Either bridge will be overtopped during the 100-year flood event. The bridge decks will be under pressure. Caltrans and local agencies would need to monitor the debris accumulation and potential impacts because of flooding near the bridge sites.

Freeboard Criteria Summary

	Existing Soffit Elevation (ft, NAVD)	Proposed Soffit Elevation (ft, NAVD)	Caltrans Freeboard Criteria* (ft, NAVD)	Satisify Caltrans Freeboard Criteria? (Y/N)
Matadero Creek	9.9	9.6	13.0	N
Adobe Creek	9.7	9.5	13.5	N

*Caltrans Freeboard Criteria is design 50-year WSE plus 2 ft.

The table below summarizes the estimated total scour depths, according to the procedures from the HEC-18 Manual.

Scour Analyses Summary

		Scour Depth (ft)			
		Long-Term	Contraction	Pier/ Abutment	Total Depth
Matadero Creek	Left Overbank	-	-	-	0
	Main Channel	-	0.7	3.6	4.3
	Right Overbank	-	-	-	0
Adobe Creek	Left Overbank	-	-	-	0
	Main Channel	-	2.5	-	2.5
	Right Overbank	-	-	-	0

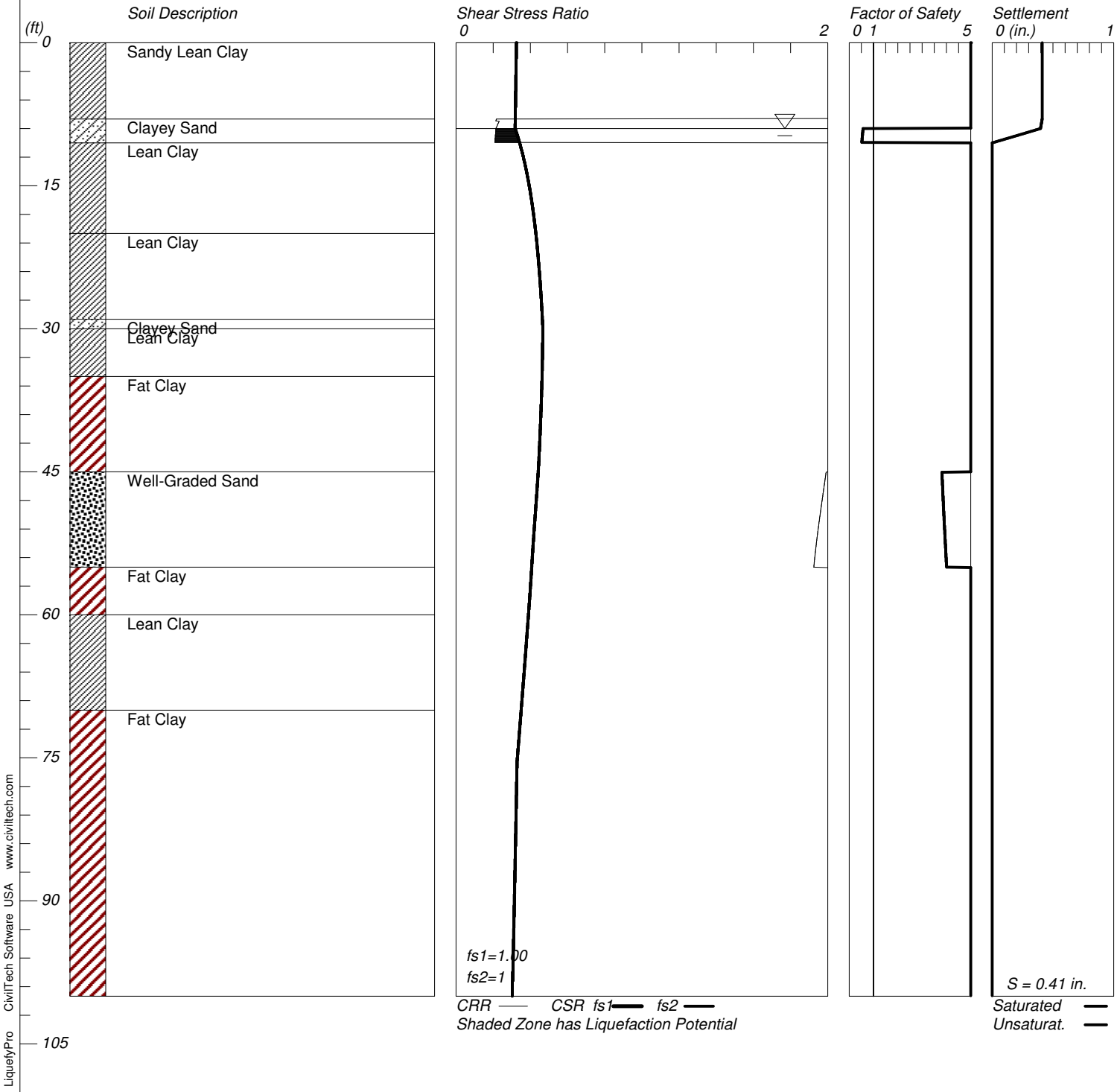
Scour analysis was performed based on the procedures in the Hydraulic Engineering Circular No. 18 (HEC-18), *Evaluating Scour at Bridges*, by the FHWA. Field investigations show that the existing left and right banks of Matadero Creek and Adobe Creek are concrete lined. Therefore, scour analysis at the bridge abutments were not computed. However, the channel bottom scouring during the 100-year storm event is expected at the creek bottom and around the piers.

LIQUEFACTION ANALYSIS

101 Auxiliary Lanes

Hole No.=R-09-001 Water Depth=9 ft Surface Elev.=13

Magnitude=8.0
Acceleration=0.5g



URS

Matadero Creek

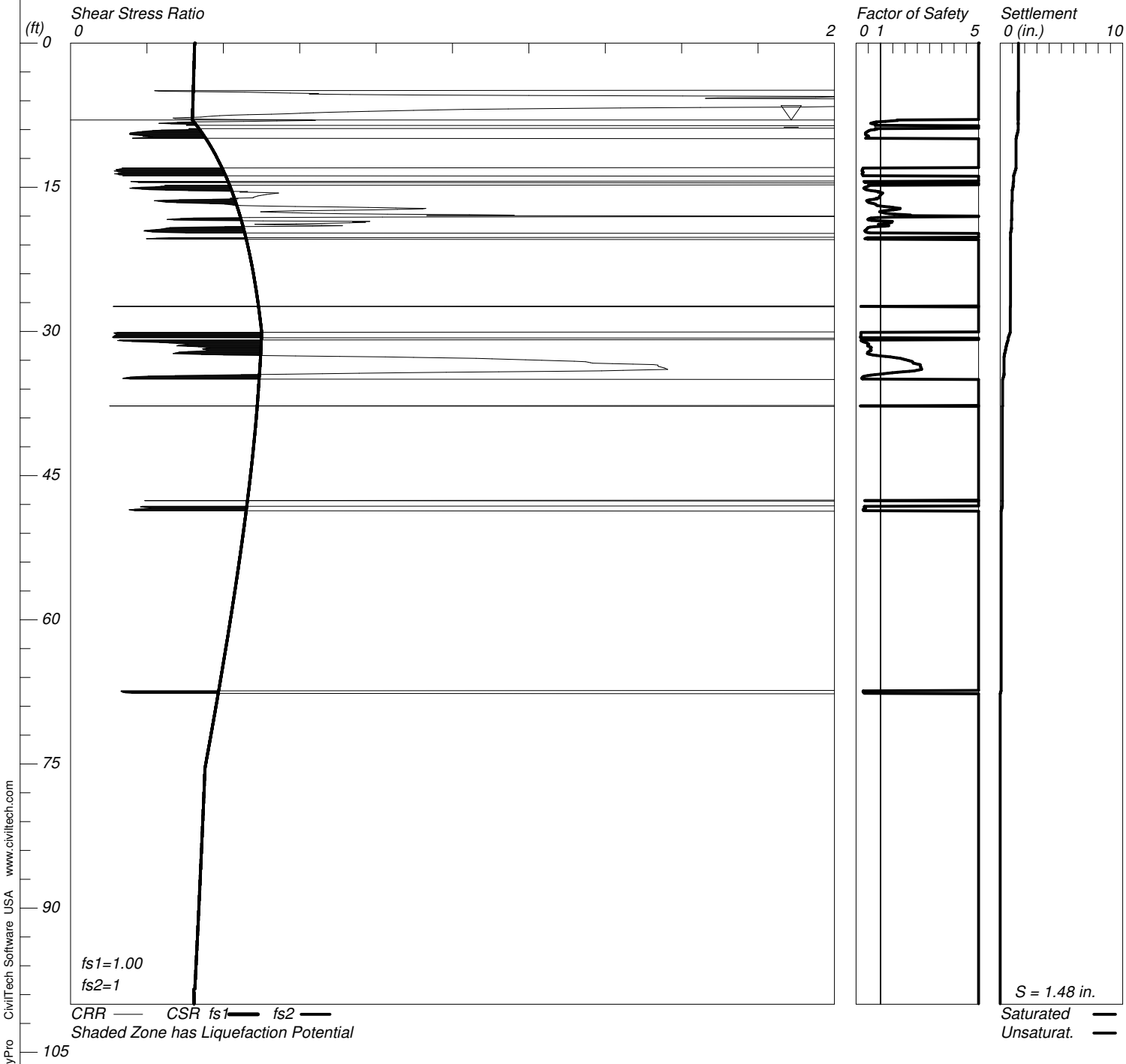
Figure E-1

LIQUEFACTION ANALYSIS

U.S. 101 Auxiliary Lanes

Hole No.=CPT-09-002 Water Depth=8 ft Surface Elev.=12

Magnitude=8.0
Acceleration=0.5g



URS

Matadero Creek

Figure E-2

US 101 AUXILIARY LANES PROJECT

IN PALO ALTO & MOUNTAIN VIEW
FROM OREGON EXPRESSWAY TO SHORELINE BOULEVARD

Proposed

MATADERO CREEK BRIDGE WIDENING FOUNDATION INVESTIGATION

Prepared for:

URS Corporation
55 South Market Street, Suite 1500
San Jose, CA 95113

Prepared By:

V&A
155 Grand Avenue, Suite 700
Oakland, CA 94612

August 2009

09-0244 US 101 Auxiliary Lanes Project –Matadero Creek Bridge Foundation Report.doc

TABLE OF CONTENTS

DESCRIPTION **PAGE NO.**

INTRODUCTION 1

CONCLUSIONS 1

RECOMMENDATIONS 2

- **Buried Reinforced Concrete Structures and Cast-in-Place Piles** 2
- **Prestressed Concrete Piles** 2
- **Steel Piles** 2

TEST METHODS 2

- **Field Soil Resistivity** 3
- **Laboratory Soil Analysis** 7

TEST RESULTS 8

FIGURES

Figure 1 Project Site Map for Matadero Creek Bridge Widening Foundation Investigation 4
Figure 2 In-Situ Soil Resistivity Test and Boring Locations 5
Figure 3 Wenner Four Electrode Method for Soil Resistivity Measurement 6
Figure 4 Soil Resistivity Measurement Using the Soil Box Method 8

TABLES

Table 1 Field Soil Resistivity Data, Site 1 9
Table 2 Field Soil Resistivity Data, Site 2 9
Table 3 Laboratory Soil Resistivity and Chemical Data 9

APPENDICES

Appendix 1 Soil and Water Sample Minimum Resistivities and Chemical Analyses 10

INTRODUCTION

V&A was retained by URS Corporation to perform a corrosion survey on US 101, from Oregon Expressway in Palo Alto to Shoreline Boulevard (SR 85) in Mountain View, CA. The objective of this investigation is to measure various soil parameters and evaluate the results with respect to possible levels of corrosion at the site. The soil was tested at depths ranging from 0 to 24.4 meters below existing grade. This report provides recommendations for corrosion control of structural foundation materials under consideration for the proposed widening of Matadero Creek Bridge on US 101 in Palo Alto. The materials being considered as part of this investigation include buried reinforced concrete, prestressed concrete piles and steel piles.

The investigation was conducted in accordance with California Department of Transportation's Division of Engineering Services, Materials Engineering and Testing Services Corrosion Technology Branch "Corrosion Guidelines" (Guidelines) dated September 2003. These Guidelines consider representative soil or water samples to be corrosive to structural elements if one or more of the following conditions exist:

1) **The chloride concentration is 500 ppm or greater**
2) **The sulfate concentration is 2000 ppm or greater**
3) **The pH is 5.5 or less.**

Evaluation of the soil environment was made in terms of potential corrosion damage to concrete and metal structures. Soil resistivity measurements were conducted in the field during the initial stages of the work. In addition, a soil sample taken during the geotechnical investigation was provided to V&A for laboratory testing. The soil sample was analyzed for minimum (saturated) resistivity, as well as for pH, chloride and sulfate ion concentrations. All of these affect the corrosion rate of buried structures.

The minimum (saturated) resistivity of soil sample selected from the boring No. R-09-001at the Matadero Creek Bridge measured 421 ohm-cm. The soil pH measured 10.2 and the water-soluble chloride concentrations measured 256 mg/kg. The water-soluble sulfate concentrations measured 181 mg/kg. The pH, chloride and sulfate ion concentrations all indicate the sampled soils are *non-corrosive*, as defined by the Guidelines.

A water sample taken from the stream at the existing Matadero Creek site was also analyzed for resistivity, pH, soluble chloride and soluble sulfate. The water resistivity ranged was measured at 1,133 ohm-cm and the pH measured 7.6. The soluble chloride measured at 174 mg/L, while the soluble sulfate measured 12 mg/L. The pH, chloride and sulfate ion concentrations all indicate the sampled water are *non-corrosive*, as defined by the Guidelines are *non-corrosive* to metallic or concrete structures.

CONCLUSIONS

- The soil boring chemical analyses and the stream water analysis all gave pH values higher than 5.5, soluble chloride concentrations less than 500 mg/kg and soluble sulfate concentrations less than 2,000 mg/kg. According to the Guidelines, the soil and water are considered *non-corrosive*.
- This structure is not within 300 meters (1,000 feet) of salt or brackish water.

RECOMMENDATIONS

The test data and a review of the project requirements were used to make recommendations for each structural foundation material alternative listed below.

Buried Reinforced Concrete Structures and Cast-in-Place Piles

Buried concrete structures should be constructed of durable concrete as described in ACI Standards 201.2R and 222R. These recommendations include, but are not limited to, the following for installations in *non-corrosive* soil:

- The water/cement ratio should not exceed 0.50.
- A minimum concrete cover of 5.1 centimeters should be applied over all steel reinforcement.
- Sand and water used in concrete mixtures should contain a maximum of 100 ppm of water-soluble chloride ions and water-soluble sulfate ions. They should also have a pH in the range of 6.5 to 8.0. Potable water should be used in concrete mixtures.
- Type I-P (MS) modified or Type II modified cement should be used.

Prestressed Concrete Piles

Prestressed concrete piles should be constructed of durable concrete as described in ACI Standards 201.2R and 222R. These recommendations include, but are not limited to, the following:

- The water/cement ratio should not exceed 0.50.
- A minimum concrete cover of 5.1 centimeters should be applied over all steel reinforcement.
- Sand and water used in concrete mixtures should contain a maximum of 100 ppm of water-soluble chloride ions and water-soluble sulfate ions. They should also have a pH in the range of 6.5 to 8.0. Potable water should be used in concrete mixtures.
- Type I-P (MS) modified or Type II modified cement should be used.

Steel Piles

According to the CALTRANS Guidelines the soil tested at this site is considered *non-corrosive*, therefore no corrosion mitigation is required.

TEST METHODS

When predicting potential corrosion problems associated with a particular type of structure prior to installation, it is necessary to investigate the soil conditions the structure will encounter. Since corrosion is an electrochemical process accompanied by current flow, the electrochemical characteristics of a soil are of primary importance. Test methods utilized during this investigation reflect the most practical methods of evaluating corrosivity.

Resistivity is a measure of the ability of a soil to conduct an electric current. The higher the resistivity the more difficult it is for the soil to conduct current. Resistivity is primarily dependent on the soluble chemical and moisture content of the soil. Soils with high dissolved ion contents generally have low resistivity. As moisture is added to a soil, its resistivity will decrease as more ions are taken into solution. The soil

resistivity decreases until the maximum solubility of the dissolved ions is reached. Increasing the moisture content beyond this point increases the soil resistivity by diluting the solution. Since corrosion rate depends on current flow through the soil, corrosivity normally increases as soil resistivity decreases.

Soils can contain a wide variety of soluble salts. Therefore, soils with similar resistivities can have significantly different corrosion characteristics, depending on the ions present. In most soils, the principle agents of corrosion are the chloride and sulfate ions, as well as pH. Chloride ions break down the protective surface films on metals and can corrode reinforcing steel in concrete structures. Sulfates attack the Portland cement in concretes. This is an expansive reaction that disrupts the concrete matrix and softens the surface. A high bicarbonate ion concentration lowers soil resistivity and facilitates other forms of corrosion; however, bicarbonate is not corrosive to metals. Soil pH is another measure of corrosivity. Acid (low pH) soils are corrosive to buried metallic and concrete structures. Neutral (pH 7) and alkaline (pH greater than 7) soils are passive to metal surfaces; therefore, corrosion rates become negligible.

Field Soil Resistivity

Field (in-situ) soil resistivity was measured at 2 locations along the US 101 Auxiliary Lanes project at the Matadero Creek Bridge location. At the Matadero Creek Bridge one resistivity station was set up at each side of the US 101. Figure 1 is the project site map. Figure 2 shows the soil resistivity test locations and the soil boring location.

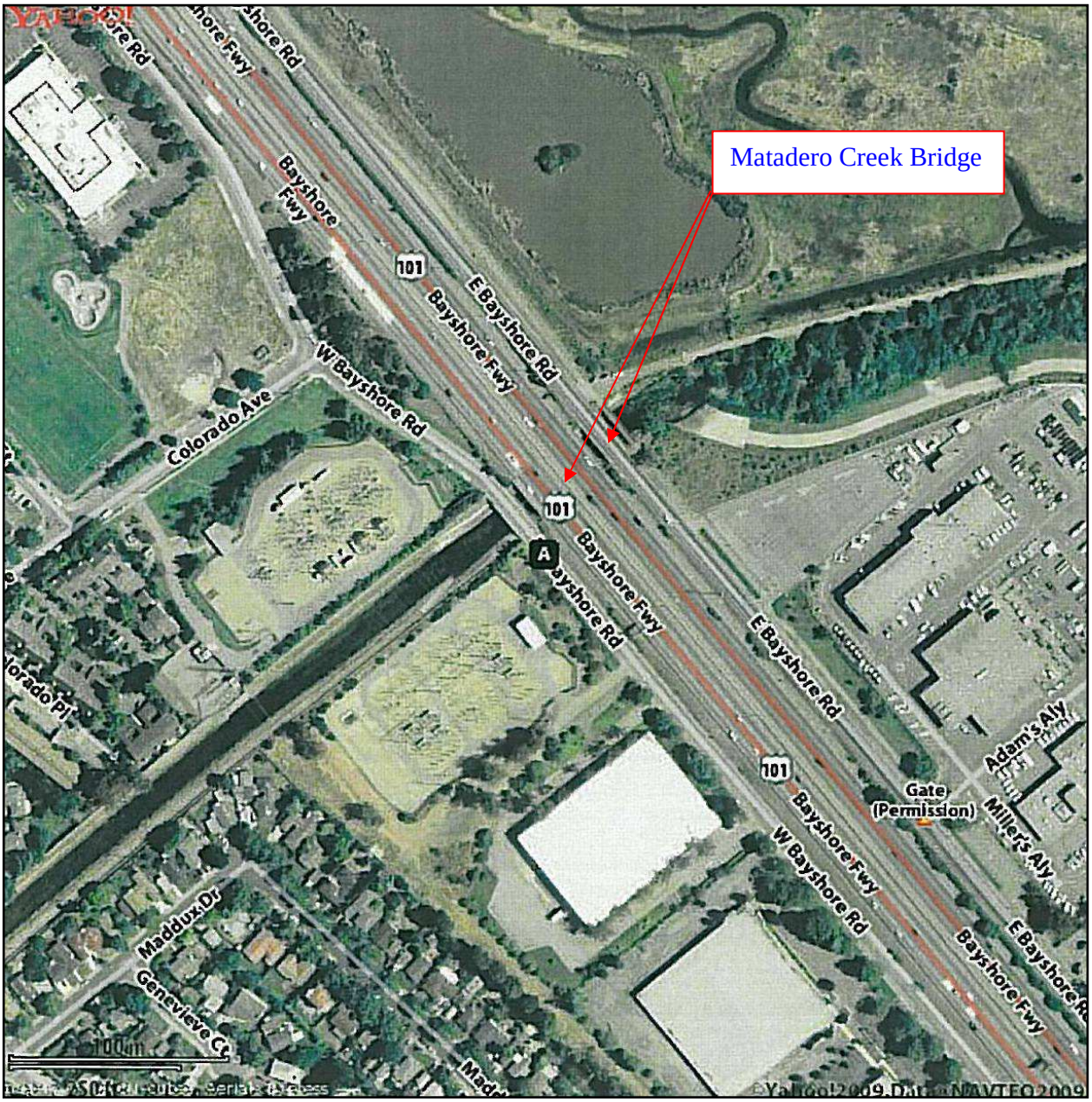


Figure 1. Project Site Map for Matadero Creek Bridge Widening Foundation Investigation, Palo Alto, CA.

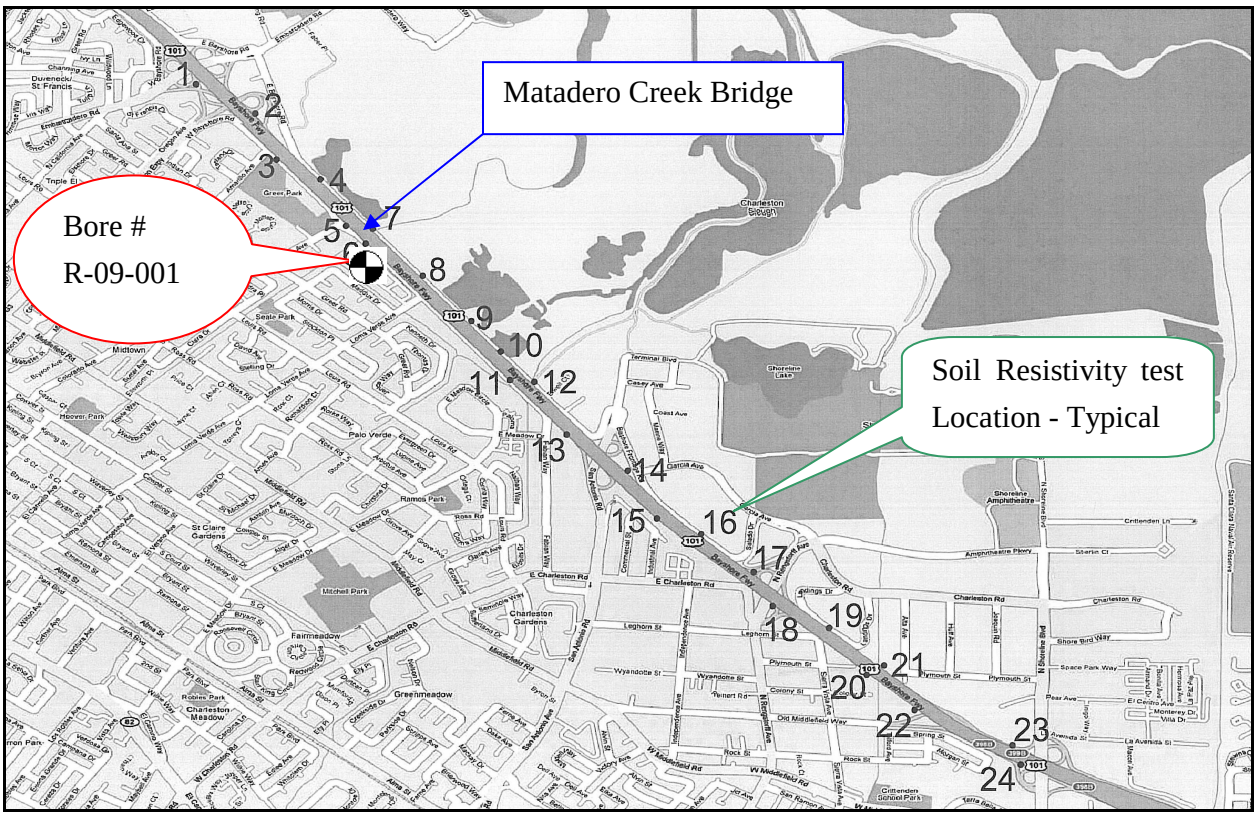


Figure 2. In-Situ Soil Resistivity Test and Boring Locations

In-situ soil resistivity measurements were conducted by the Wenner Electrode Method, using an AEMC Soil Resistance Meter, Model 4500. The Wenner Electrode Method uses four equally spaced metal pins, driven into the ground in a straight line, as electrodes (see Figure 3).

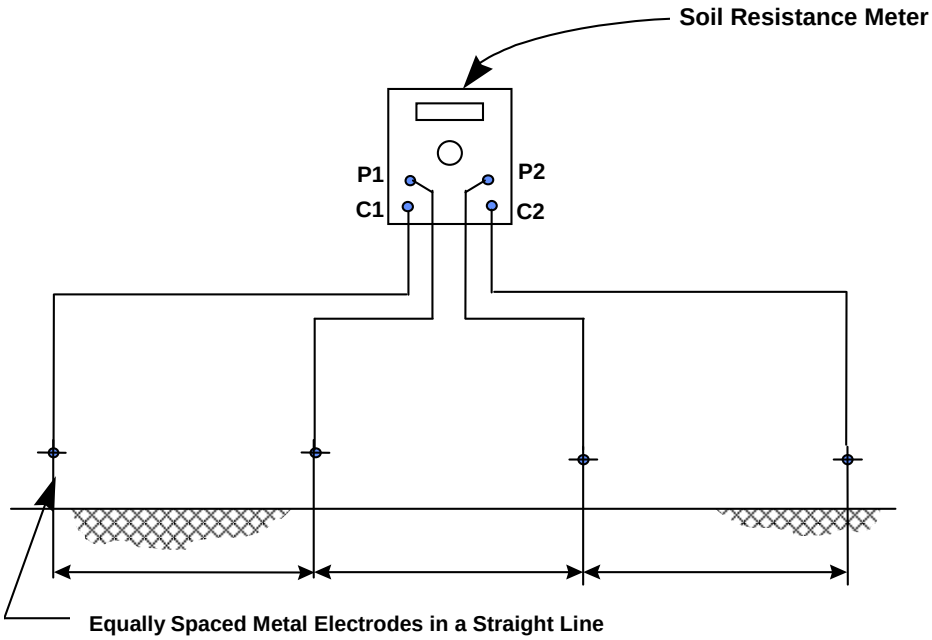


Figure 3. Wenner Four Electrode Method for Soil Resistivity Measurement

An alternating current from the soil resistance meter causes a current to flow through the soil between the outside electrodes, C1 and C2. Due to the resistance of the soil, the current creates a voltage gradient, which is proportional to the average resistance of the soil mass to a depth equal to the distance between electrodes. The voltage drop is measured across electrodes P1 and P2. Resistivity of the soil is then computed from the instrument reading according to the following formula:

$$\rho = 2\pi AR$$

where: ρ = soil resistivity in ohm-cm
A = the distance between probes in cm
R = soil resistance in ohms (instrument reading)
π = 3.1416

Soil resistance is measured with electrodes spaced 0.8, 1.5, 2.3, 3, 4.6, 9.1, 13.7, 18.3 and 24.4 meters (2.5, 5, 7.5, 10, 15, 30, 45, 60 and 80 feet) apart. The resistivity values obtained represent the average resistivity of the soil to a depth equal to the electrode spacing. An additional method of calculating the soil resistivity using the data from the Wenner Method is the Barnes-Layer resistivity calculation. The Barnes Layer calculation is used to determine the resistivity of the soil for each soil layer. While the Wenner Method at 3 meters will consider all 3 meters of soil below the surface, the Barnes-Layer method will only

consider the resistivity of the layer of soil between 1.5m and 3m below the surface. This method assumes the soil layers are a uniform thickness and parallel to the surface, which may not always be true.

The Barnes-Layer method uses the following parameters to calculate layer resistivities:

$$\rho_{b-a} = KR_{b-a}$$

and

$$\frac{1}{R_{b-a}} = \frac{1}{R_a} - \frac{1}{R_b}$$

where:

ρ_{b-a}	=	Soil resistivity of layer depth b-a (ohm-cm)
a	=	Soil depth to top of layer (cm)
b	=	Soil depth to bottom of layer (cm)
R_a	=	Soil resistance read at depth a (ohms)
R_b	=	Soil resistance read at depth b (ohms)
R_{b-a}	=	Resistance of soil layer from a to b (ohms)
K	=	Layer constant (cm)
	=	$2\pi(b-a)$

Laboratory Soil Analysis

To supplement the field resistivity test data, a soil sample was obtained from soil boring R-09-001 for laboratory soil resistivity analysis. A soil box was used in accordance with California Test Method 643. This apparatus is shown in Figure 4.

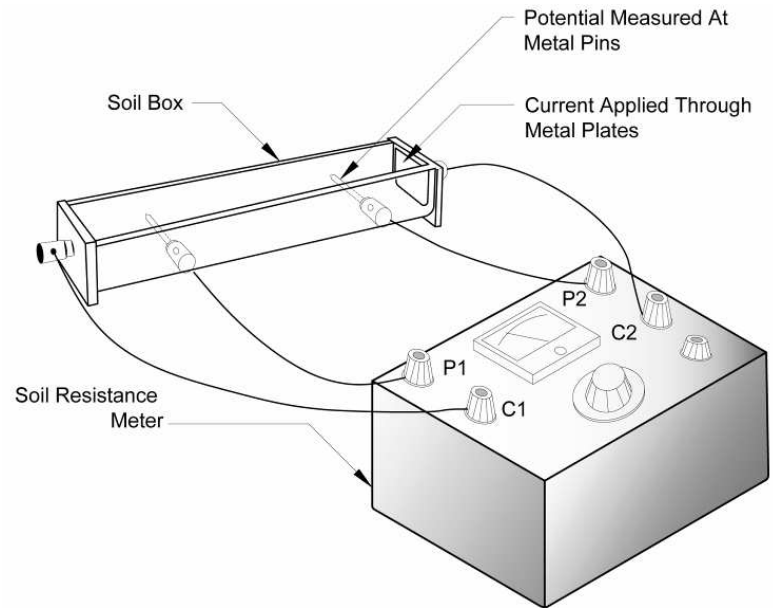


Figure 4. Soil Resistivity Measurement Using the Soil Box Method

This apparatus consists of a small plastic box with metal end plates for passing current through a tightly packed soil sample. Current is passed through the sample, causing a voltage drop across the sample. The soil resistivity is measured with a soil resistance meter, similar to the AEMC Model 4500.

Soil resistivity is first measured in the "as-received" state. Distilled water is then added to the soil sample in 10-mL increments. The resistivity is measured after each addition. As the soil sample becomes more saturated, the soil resistivity decreases until the minimum soil resistivity is reached.

Soil boring sample from this study were forwarded to Cooper Testing Labs, Inc., in Palo Alto, CA, for minimum resistivity measurement, pH analysis and analysis of water soluble chloride and sulfate ion concentrations. The analytical procedures followed California Test Methods 417, 422 and 643.

TEST RESULTS

Table 1 and Table 2 list the field soil resistivity measurements from the Matadero Creek Bridge and the calculated Barnes-Layer resistivities. Table 3 lists the minimum resistivities and chemical analyses for the soil boring samples, as well as a water sample taken from the Matadero Creek Bridge and Adobe Creek Bridge sites.

Table 1. Field Soil Resistivity Data, Site 1

Site	Survey Station	Depth (meters)	Resistivity (ohm-cm)	Layer (meters)	Layer Resistivity (ohm-cm)
Matadero Creek Bridge, US 101, South Bound	73+00	0.8	14,459	0 - 0.8	14,459
		1.5	4,970	0.8 - 1.5	3,001
		2.3	2,557	1.5 - 2.3	1,297
		3	3,141	2.3 - 3	9,983
		4.6	3,304	3 - 4.6	3,686
		9.1	3,907	4.6 - 9.1	4,780
		13.7	3,016	9.1 - 13.7	2,072
		18.3	1,092	13.7 - 18.3	375
		24.4	628	18.3 - 24.4	276

Table 2. Field Soil Resistivity Data, Site 2

Site	Survey Station	Depth (meters)	Resistivity (ohm-cm)	Layer (meters)	Layer Resistivity (ohm-cm)
Matadero Creek Bridge, US 101, North Bound	71+50	0.8	11,634	0 - 0.8	11,634
		1.5	6,167	0.8 - 1.5	4,195
		2.3	3,016	1.5 - 2.3	1,492
		3	2,495	2.3 - 3	1,644
		4.6	2,103	3 - 4.6	1,600
		9.1	1,109	4.6 - 9.1	753
		13.7	1,232	9.1 - 13.7	1,586
		18.3	1,482	13.7 - 18.3	3,785
		24.4	1,593	18.3 - 24.4	2,055

Table 3. Laboratory Soil Resistivity and Chemical Data

Item No.	Boring No.	Station	Sample No.	Depth (meters)	Minimum Soil Resistivity (ohm-cm)*	Chemical Data		
						pH	Sulfate (mg/kg)**	Chloride (mg/kg)**
1	R-09-001	72+60	4	4.6	421	10.2	181	256
Matadero Creek	N/A	72+00	Water	N/A	1,133	7.6	12 mg/L	174 mg/L

* Water resistivity in ohm-cm.

** The chloride and sulfate results for the Matadero Creek water sample is in mg/L.

Appendix 1. Soil Sample Minimum Resistivities and Chemical Analysis

COOPER Testing Laboratory

Corrosivity Test Summary

CTL # 632-007 Date: 7/21/2009 Tested By: PJ Checked: PJ
Client: V&A Project: URS Caltrans 101 Auxilliary Lanes Proj. No: 09-0244
Remarks: Due to a very small sample size, the ph and resistivity tests for all soil samples, except for A-09-173-3-3 101, included +#8 material which is an expecption to the test specification.

Sample Location or ID			Resistivity @ 15.5 °C (Ohm-cm)			Chloride	Sulfate		pH	ORP	Moisture	Soil Visual Description
Boring	Sample, No.	Depth, ft.	As Rec.	Minimum	Saturated	mg/kg Dry Wt.	mg/kg Dry Wt.	% Dry Wt.		(Redox) mv	As Received %	
			ASTM G57	Cal 643	ASTM G57	Cal 422-mod.	Cal 417-mod.	Cal 417-mod.	Cal 643	SM 2580B	ASTM D2216	
-	#2- Adobe Creek	-	-	916	-	187 mg/L	21 mg/L	0.0021	7.7	-	-	Water
-	#3- Matadero	-	-	1133	-	174 mg/L	12 mg/L	0.0012	7.6	-	-	Water
-	R-09-001 4-X	15	-	421	-	256	181	0.0181	10.2	-	23.7	Gray Sandy CLAY
-	R-09-004 4-3	15	-	527	-	235	203	0.0203	10.3	-	3.2	Gray CLAY w/ Sand & CaCO3
-	R-09-005 2-3	8 - 10	-	3850	-	6	<5	<0.0005	8.6	-	3.0	Greenish Brown Clayey SAND w/ Gravel
-	A-09-111-2-4 101	3.5	-	1531	-	4	<5	<0.0005	9.1	-	4.7	Brown Sandy CLAY
-	A-09-131-2-4 101	3.5	-	3609	-	<2	<5	<0.0005	8.9	-	3.5	Greenish Brown Clayey SAND w/ Gravel
-	A-09-173-3-3 101	7 - 10	-	2949	-	9	108	0.0108	9.0	-	3.4	Gray Clayey SAND
-	A-09-180-2-4 101	5 - 7	-	11098	-	<2	<5	<0.0005	8.8	-	2.4	Brown Silty SAND w/ Gravel
-	A-09-183-4-3 101	15	-	3933	-	<2	<5	<0.0005	10.2	-	3.3	Greenish Brown Silty SAND

FED. ROAD DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	CALIF.	U-181(38)		110	154

DIST.	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
IV	SCl	~~68~~	A	E-1	7

Rev. 5.1.4

AS-BUILT

AS STATE HIGHWAY ENGINEER — CIVIL ENGINEER LICENSE 1414

DATE APPROVED NOVEMBER 3, 1959

STATE HIGHWAY ENGINEER — CIVIL ENGINEER—LICENSE 2086

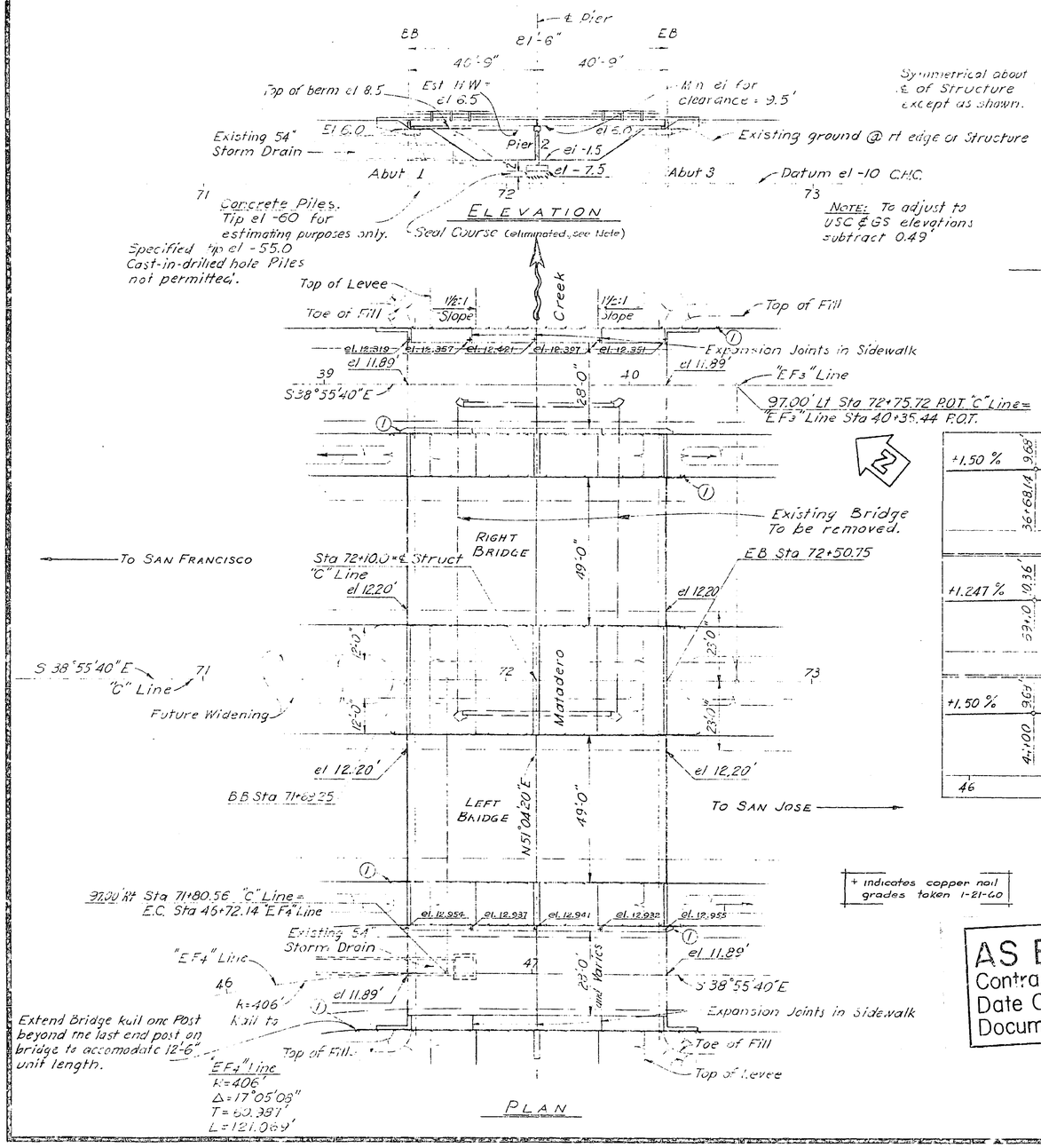
CONTRACT NO. 60-4TC1-FP

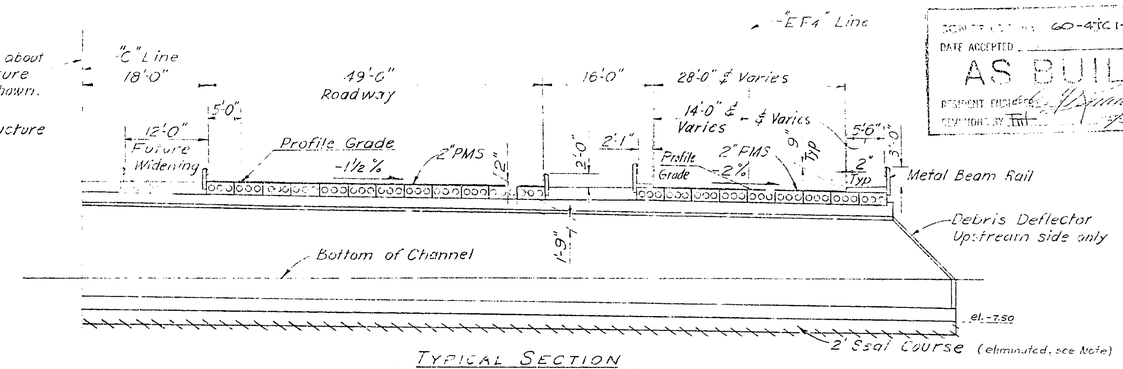
DATE ACCEPTED

AS BUILT

RESIDENT ENGINEER

SUPERVISING INSPECTOR

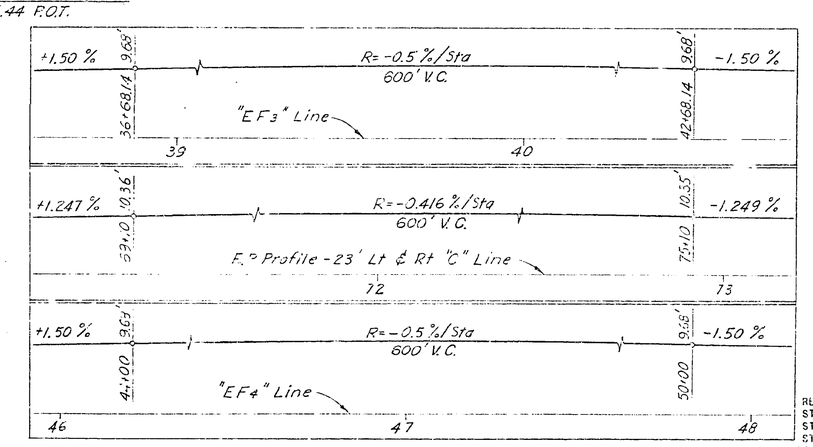




TYPICAL SECTION

Scale: 1"=10'-0"

Note: All Deck Units Prestressed



PROFILE GRADES

NOTE: Seal course to be placed only when ordered by the Engineer. Seal thickness shown for estimating purposes only. The thickness to be used will be determined in the field by the Engineer. When seal is not used, the bottom of the reinforced footing shall be placed at the elevation shown for bottom of seal.

+ indicates copper nail grades taken 1-21-60

AS BUILT PLANS
Contract No. 60-4TC1
Date Completed
Document No. 40002374

Point Sr No. & Year. Paint Matadero Cr.

L.L.: H20-S16-44 & Alternative

INDEX TO PLANS

SHEET NO	TITLE
E-1	General Plan
E-2	Foundation Plan
E-3	Abutment Layout & Details
E-4	Pier Layout & Details
E-5	Deck Unit Details
E-6	Metal Beam Bridge Railing
E-7	Log of Test Borings

GENERAL DETAILS

Sheets prefixed with "G" are grouped together as "General Details" and apply to several structures

G-2 Pile Details

Note: See Bridge #37-150 for "G" sheets

APPROXIMATE QUANTITIES

REMOVING EXISTING BRIDGE	LUMP SUM
STRUCTURE EXCAVATION, TYPE "A"	445 C.Y.
STRUCTURE EXCAVATION	545 C.Y.
STRUCTURE BACKFILL	520 C.Y.
*PLANT-MIXED SURFACING	160 TONS
CLASS "A" CONCRETE (FOOTING BLOCK)	225 C.Y.
CLASS "A" CONCRETE (BRIDGES)(520 C.Y.)	LUMP SUM
BAR REINFORCING STEEL (BRIDGES)(56,000 LBS.)	LUMP SUM
FURNISHING PRECAST PRESTRESSED CONCRETE DECK UNITS	84
ERECTING PRECAST PRESTRESSED CONCRETE DECK UNITS	84
FURNISHING CONCRETE PILING	8,030 L.F.
DRIVING CONCRETE PILES	130
METAL BEAM BRIDGE RAILING	778 L.F.

* TO BE PAID FOR AS PAVING ASPHALT AND MINERAL AGGREGATE

For General Notes, see Foundation Plan

BRIDGE DEPARTMENT
... DESIGN SECTION ...

Project Designer: L. L. Chenney
Chief Designer: Chas. H. Dieguez

DESIGN	By O. H. Olsen 11-57	Checked R. H. Chang 4/58	
DETAILS	By J. R. Stone 11-57	Checked R. H. Chang 4/58	
QUANTITIES	By J. R. Stone 3-58	Checked R. W. Wolcott 3-58	
SPECIFICATIONS	By	Plans and Specs. Engineer	
Approval Recommended by	Engineer of Design	Reg. License No. 6729	

60-4TC1

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

MATADERO CREEK BRIDGE

LOCATED 1.2 MILES SOUTH OF THE SAN MATEO COUNTY LINE IN SANTA CLARA COUNTY

GENERAL PLAN

SCALE	BRIDGE	FILE	DRAWING
Except as Noted 1"=20'-0"	37-40 R/L		C-5430-1

PREL. DRAWING No. P-5430

Bm T-34

I HEREBY CERTIFY THAT THIS IS A TRUE AND ACCURATE COPY OF THE ABOVE DOCUMENT TAKEN UNDER MY DIRECTION AND CONTROL ON THIS DATE IN SACRAMENTO, CALIFORNIA PURSUANT TO AUTHORIZATION BY THE DIRECTOR OF PUBLIC WORKS.

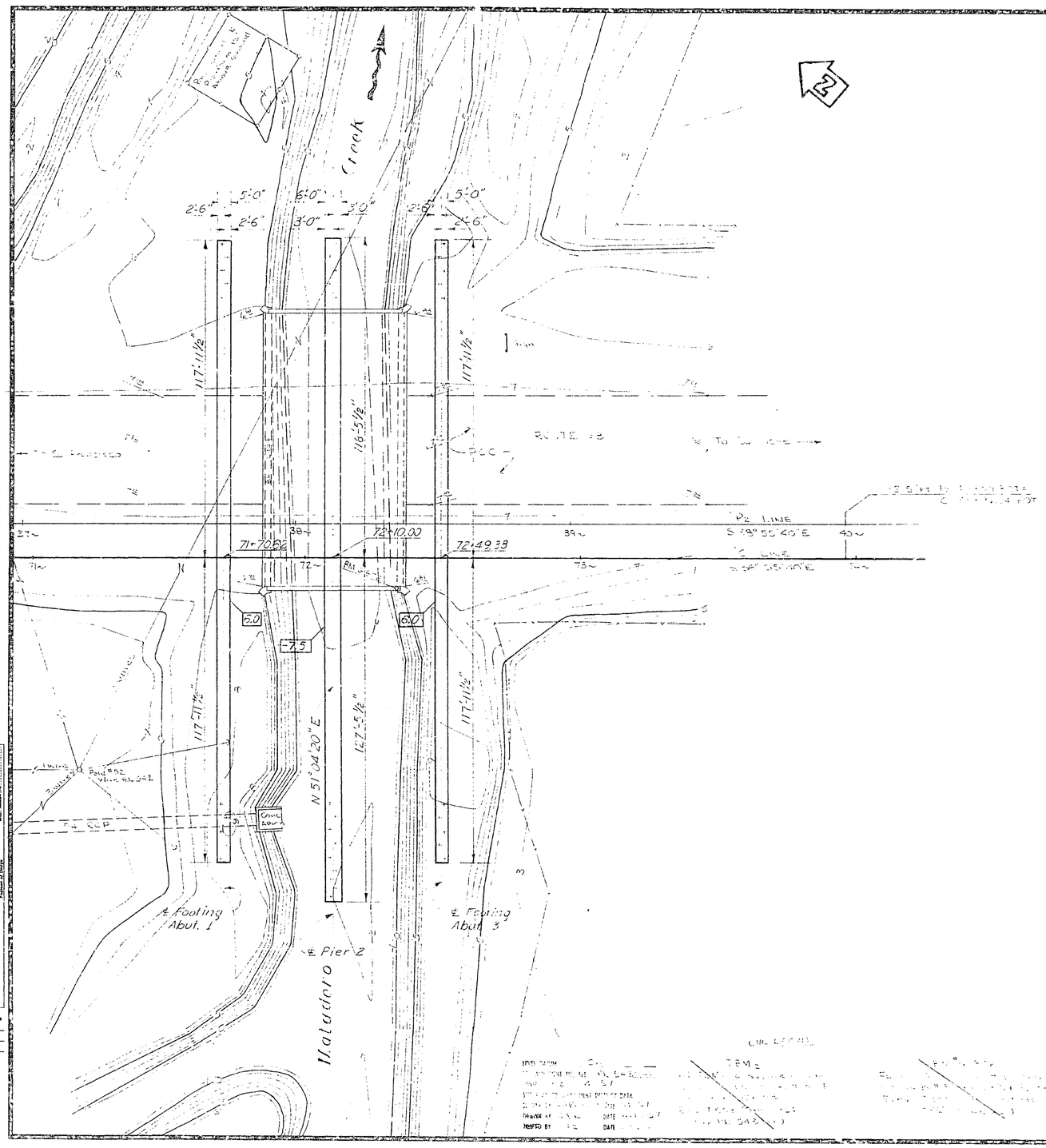
DATE 9/23/71 SIGNATURE [illegible] TITLE [illegible]

MICROFILM - STATE OF CALIFORNIA - DEPARTMENT OF PUBLIC WORKS - MICROFILM
SCALE 1"=50' SCALE 1"=30' SCALE 1"=20' SCALE 1"=20
SCALE 1"=10' or 1"=100' SCALE 1"=10' or 1"=100' SCALE 1"=40' SCALE 1"=40

FED. ROAD DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	CALIF.	U-1813		111	154

DIST.	COUNTY	ROUTE	SECTION	PROJ. NO.	TOTAL SHEETS
10				E-2	7

BRIDGE DEPARTMENT



GENERAL NOTES

SPECIFICATIONS:

Design: A.A.S.H.O. Dated 1953 With revisions and as supplemented by Bridge Planning and Design Manual.

Construction: Standard Specifications, Division of Highways, dated August 1954 and the Special Provisions.

LIVE LOADING: 420-S16-44 and Alternative.

UNIT STRESSES:

Reinforced Concrete: f_s = 20,000 p.s.i. n=10
f_c = 1,200 p.s.i. (Except as noted)
f_c = 1,000 p.s.i. (Roadway slab on girders.

PILE LOADING:

45 tons Type; Concrete

REINFORCEMENT:

Embedment is clear to outside of bar and is 2" to main reinforcement, except as noted. Backing for hooks is four diameters, except as noted.

Where reinforcing bars are spliced they shall have a 20 diameter lap unless otherwise called for on the plans.

0.0 Indicates bottom of Footing Elevation.

For Pile Layout see Abutment Sheet, and Pier Sheet.

Abutments and Piers parallel.

AS BUILT PLANS
Contract No. 60-47C1
Date Completed
Document No. 40002374

DATE ACCEPTED 60-47C1-FP 5-9-60
AS BUILT
RESIDENT ENGINEER
REVISIONS BY
DATE 4-9-60

Submitted by:
DESIGN By
CHECKED By
DETAILS By
CHECKED By
QUANTITIES By
CHECKED By
SPECIFICATIONS By
Approved & Recommended by
Date of Plans
Did all Revised Plans Pass Through Design?
BY DATE
SURVEY
DRAWN
TRACED

BRIDGE DEPARTMENT
DESIGN SECTION
Project Designer
Checked by
DESIGN
DETAILS
QUANTITIES
SPECIFICATIONS
Approved & Recommended by
Date 6-23-

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

MATADERO CREEK BRIDGE

FOUNDATION PLAN

SCALE 1"=30' | BRIDGE 31-40 R/L | FILE E-31 | DRAWING C-5430-2

PREL. DRAWING NO. P-5430 2 11 M 26

I HEREBY CERTIFY THAT THIS IS A TRUE AND ACCURATE COPY OF THE ABOVE DOCUMENT TAKEN UNDER MY DIRECTION AND CONTROL ON THIS DATE IN SACRAMENTO, CALIFORNIA PURSUANT TO AUTHORIZATION BY THE DIRECTOR OF PUBLIC WORKS.

DATE 9/23/71 SIGNATURE TITLE

SCALE 1"=50' MICROFILM - STATE OF CALIFORNIA - DEPARTMENT OF PUBLIC WORKS - MICROFILM SCALE 1"=20'
SCALE 1"=10' or 1"=100' MICROFILM - STATE OF CALIFORNIA - DEPARTMENT OF PUBLIC WORKS - MICROFILM SCALE 1"=40'

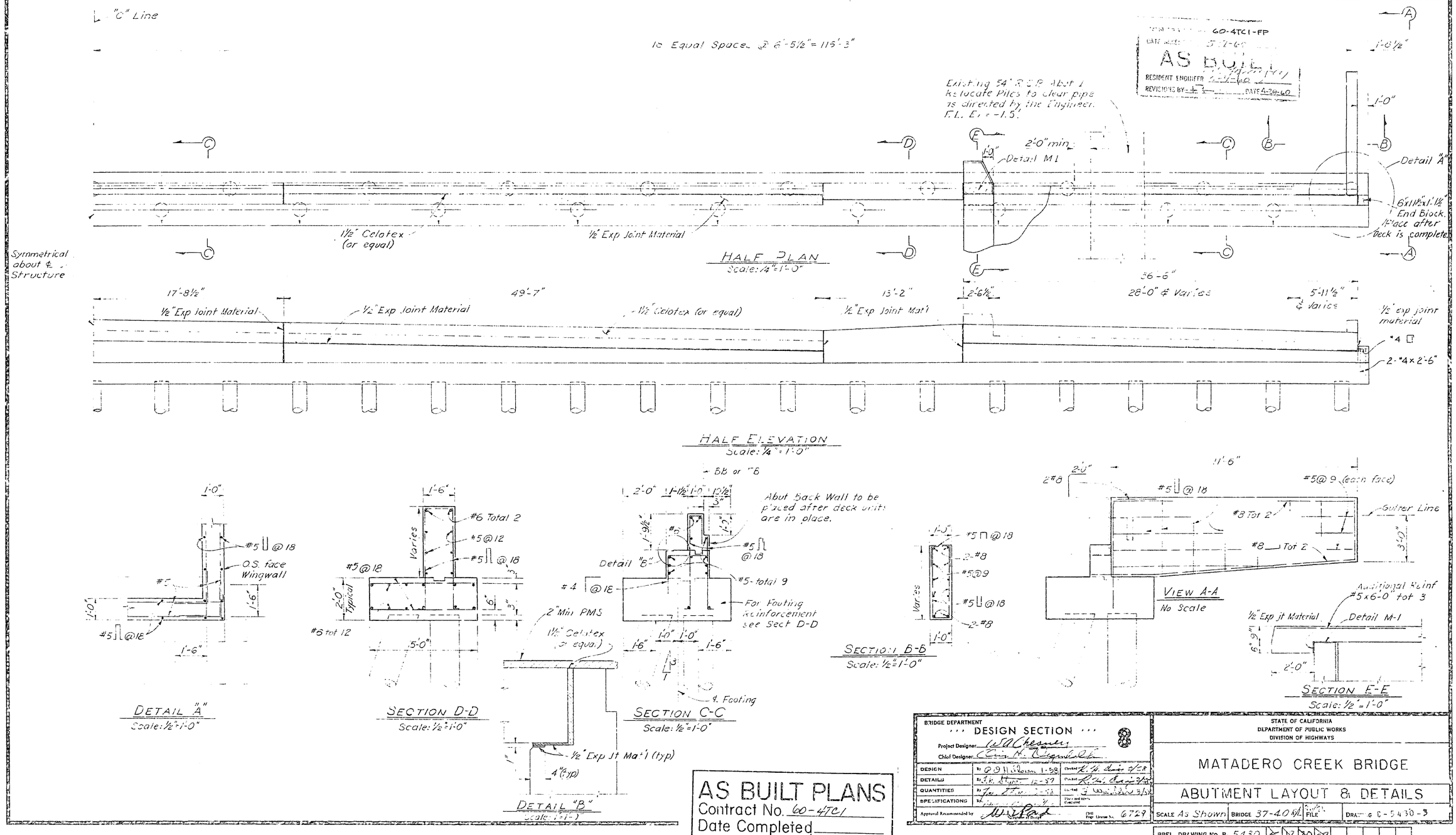
FED. ROAD DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	CALIF.	U-181(3)		112	154

DIST.	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
IV	SCl	~~68~~	A	E-2	7

BRIDGE ENGINEER — CIVIL ENGINEER - LICENSE NO. 24174

DATE APPROVED

60-47C1-FP
DATE 5-12-60
AS BUILT
RESIDENT ENGINEER
REVISIONS BY DATE 4-20-60



AS BUILT PLANS
Contract No. 60-47C1
Date Completed
Document No. 40002374

BRIDGE DEPARTMENT
... DESIGN SECTION ...
Project Designer: W. A. Chesnutt
Chief Designer: Chas. H. Ringwald

DESIGN	By O. H. Olsen 1-58	Checked	
DETAILS	By J. K. Hunter 12-59	Checked	
QUANTITIES	By	Checked	
SPECIFICATIONS	By	Checked	
Approval Recommended by		Registered Civil Engineer	Reg. License No. 6729

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

MATADERO CREEK BRIDGE

ABUTMENT LAYOUT & DETAILS

SCALE As Shown | BRIDGE 37-40 R/L | FILE | DRAWING C-5430-3

PREL. DRAWING No. P-5430 | 3 | 12 | 30 | 24

I HEREBY CERTIFY THAT THIS IS A TRUE AND ACCURATE COPY OF THE ABOVE DOCUMENT TAKEN UNDER MY DIRECTION AND CONTROL ON THIS DATE IN SACRAMENTO, CALIFORNIA PURSUANT TO AUTHORIZATION BY THE DIRECTOR OF PUBLIC WORKS.

DATE 9/23/71 SIGNATURE TITLE

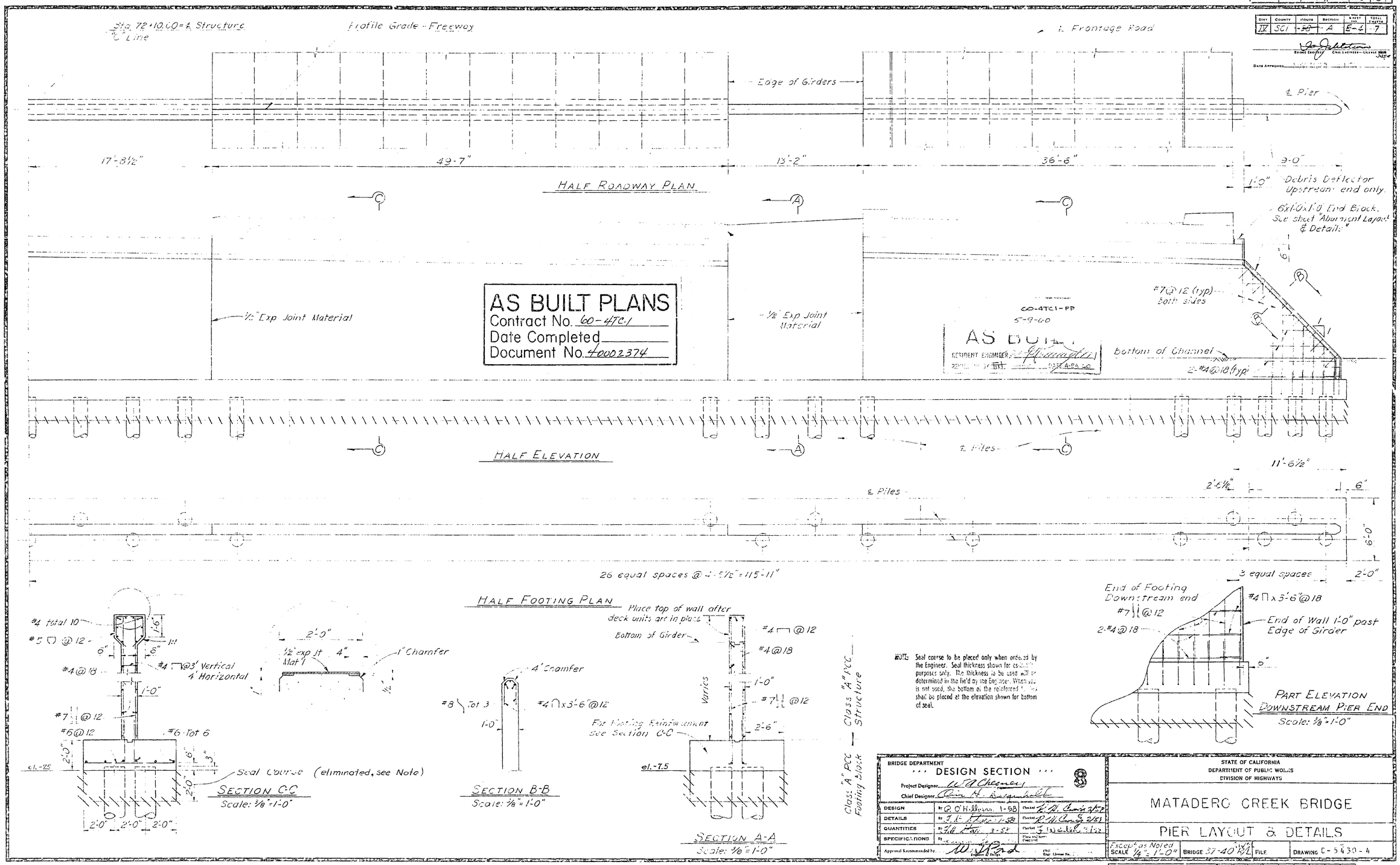
MICROFILM - STATE OF CALIFORNIA - DEPARTMENT OF PUBLIC WORKS - MICROFILM

FED. ROAD DIV. No.	STATE	PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
7	CALIF.	11-181(35)		113	154

DIST	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
IV	SCl	~~280~~	A	E-4	7

BRIDGE ENGINEER — CIVIL ENGINEER — LICENSE NO.

DATE APPROVED



AS BUILT PLANS
Contract No. 60-4TC-1
Date Completed
Document No. 40002374

BRIDGE DEPARTMENT
··· DESIGN SECTION ···
Project Designer W. A. Chesney
Chief Designer Alan H. Grunsfeld

DESIGN	By G. O'H. Bourn 1-58	Checked R. A. Cronin 2/59
DETAILS	By J. K. Hyatt 1-58	Checked R. A. Cronin 2/59
QUANTITIES	By J. H. Fox 3-59	Checked J. W. Wolski 3/59
SPECIFICATIONS	By	Plans and Specs Completed
Approval Recommended by		Chief Engineer No.

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

MATADERO CREEK BRIDGE

PIER LAYOUT & DETAILS

SCALE	BRIDGE	FILE	DRAWING
Except as Noted ¼"=1'-0"	37-40 R/L		C-5430-4

PREL. DRAWING No. P-5430 | 8 | 13 | 24 | 26

I HEREBY CERTIFY THAT THIS IS A TRUE AND ACCURATE COPY OF THE ABOVE DOCUMENT TAKEN UNDER MY DIRECTION AND CONTROL ON THIS DATE IN SACRAMENTO, CALIFORNIA PURSUANT TO AUTHORIZATION BY THE DIRECTOR OF PUBLIC WORKS.

DATE 9/23/71 SIGNATURE [illegible] TITLE AHG II

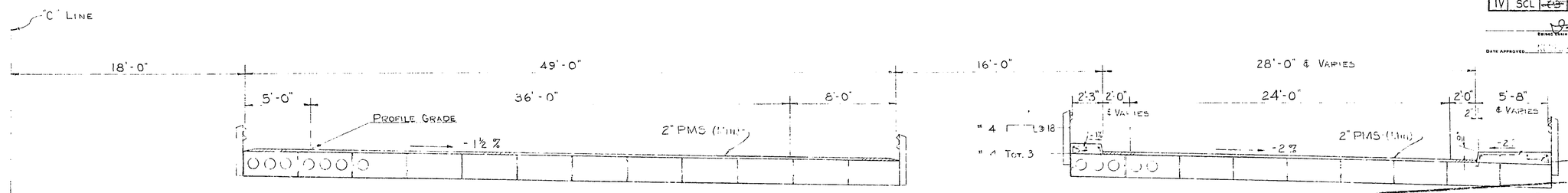
SCALE 1"=50' MICROFILM - STATE OF CALIFORNIA - DEPARTMENT OF PUBLIC WORKS - MICROFILM
SCALE 1"=10' or 1"=100' MICROFILM - STATE OF CALIFORNIA - DEPARTMENT OF PUBLIC WORKS - MICROFILM
SCALE 1"=20' MICROFILM - STATE OF CALIFORNIA - DEPARTMENT OF PUBLIC WORKS - MICROFILM
SCALE 1"=40' MICROFILM - STATE OF CALIFORNIA - DEPARTMENT OF PUBLIC WORKS - MICROFILM

FED. ROAD DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	CALIF.	U-1821(35)		114	154

DIST.	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
IV	SCL	~~238~~	A	E-5	7

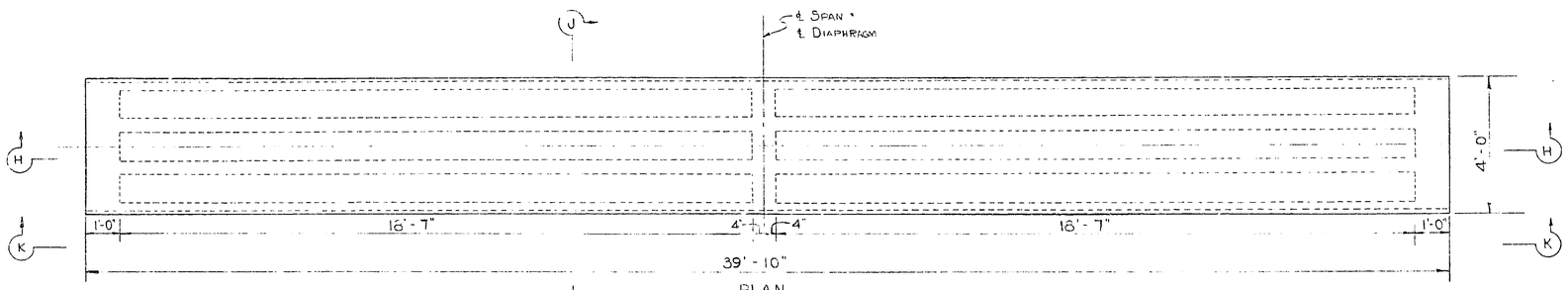
BRIDGE DESIGNER — CIVIL ENGINEER — LICENSE NO. C-2379

DATE APPROVED

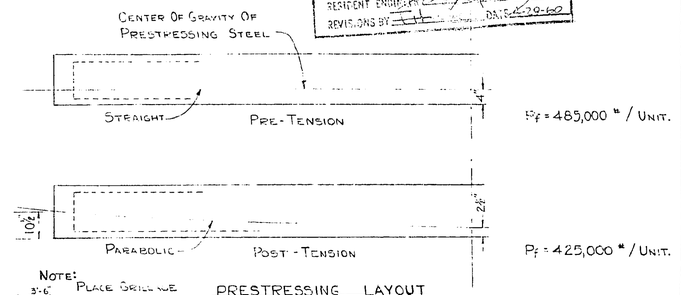


TYPICAL SECTION (LEFT SIDE SIMILAR, RIGHT SIDE SHOWN)
SCALE ¼" = 1'-0"

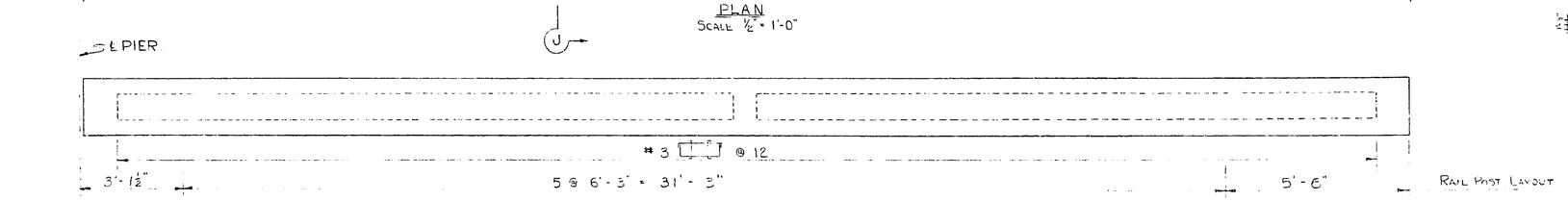
CONTRACT No. 60-4TC1-FP
DATE ACCEPTED 5-9-61
AS BUILT
RESIDENT ENGINEER
REVISIONS BY DATE 4-19-60



PLAN
SCALE ½" = 1'-0"



PRESTRESSING LAYOUT
No SCALE



ELEVATION K-K
SCALE ½" = 1'-0"

PRESTRESSING NOTES

P_f = WORKING FORCE (THE TOTAL FORCE PER GIRDER UNIT REMAINING AFTER ALL LOSSES, INCLUDING THOSE DUE TO CREEP AND SHRINKAGE OF CONCRETE AND CREEP OF STEEL HAVE OCCURRED.)

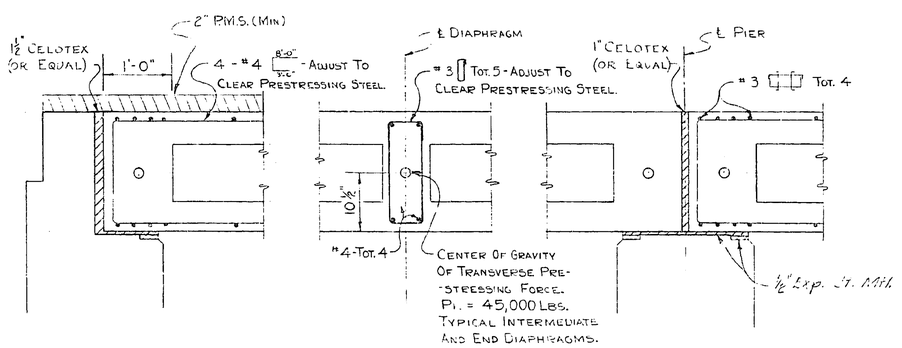
THE LOSS IN STRESS IN THE POST-TENSIONED PRE-STRESSING STEEL DUE TO SHRINKAGE AND CREEP AND SEQUENCE STRESSING SHALL BE ASSUMED TO BE 24,000 P.S.I. LOSS IN STRESS FOR PRE-TENSIONING SHALL BE ASSUMED TO BE 30,000 P.S.I.
IN ADDITION TO THE 24,000 P.S.I. LOSS NOTED ABOVE, PROVISION SHALL BE MADE FOR LOSSES DUE TO FRICTION, ANCHORAGE TAKEUP, AND ANY OTHER LOSSES PECULIAR TO THE SYSTEM OF PRESTRESSING USED.

CONCRETE: F'c = 4500 P.S.I. @ 28 DAYS.
¾" MAXIMUM SIZE AGGREGATE.

PRESTRESSING STEEL: SEE SPECIAL PROVISIONS.

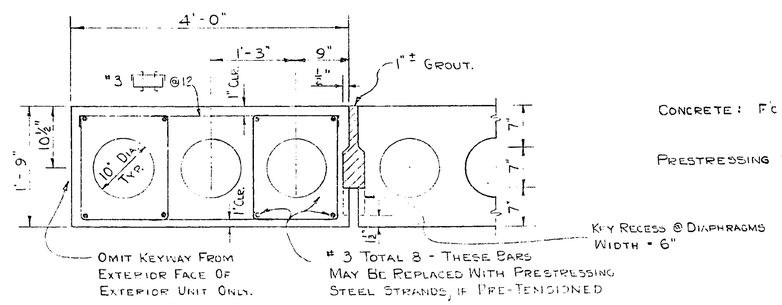
LIFTING WEIGHT OF UNIT = 16 TONS.

CAMBER: NONE REQUIRED IN GIRDER FORMS.



AT ABUTMENTS — AT DIAPHRAGM — AT PIER

SECTION H-H
SCALE 1" = 1'-0"



NOTE: OPENING MAY BE FORMED BY SONOVOID OR EQUAL OR BY CONCRETE PIPE WITH 10" I.D. AND 1" WALL THICKNESS.

SECTION J-J
SCALE 1" = 1'-0"

AS BUILT PLANS
Contract No. 60-4TC1
Date Completed
Document No. 40002374

BRIDGE DEPARTMENT
... DESIGN SECTION ...

Project Designer W. R. Chesnes
Chief Designer

DESIGN	By G. O. Williams 1-58	Checked R. H. Lane 2/58
DETAILS	By G. O. Williams 1-58	Checked R. H. Lane 2/58
QUANTITIES	By R. H. Lane 3-58	Checked J. W. Liska 3/58
SPECIFICATIONS	By	Plans and Specs. Compared

Approval Recommended by W. H. Rand, Engr. of Design — Civil Engr. Reg. No. 6729

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

MATADERO CREEK BRIDGE

DECK UNIT DETAILS

SCALE	BRIDGE	FILE	DRAWING
As Noted	37-40 R/L 30/35		B-5430-5

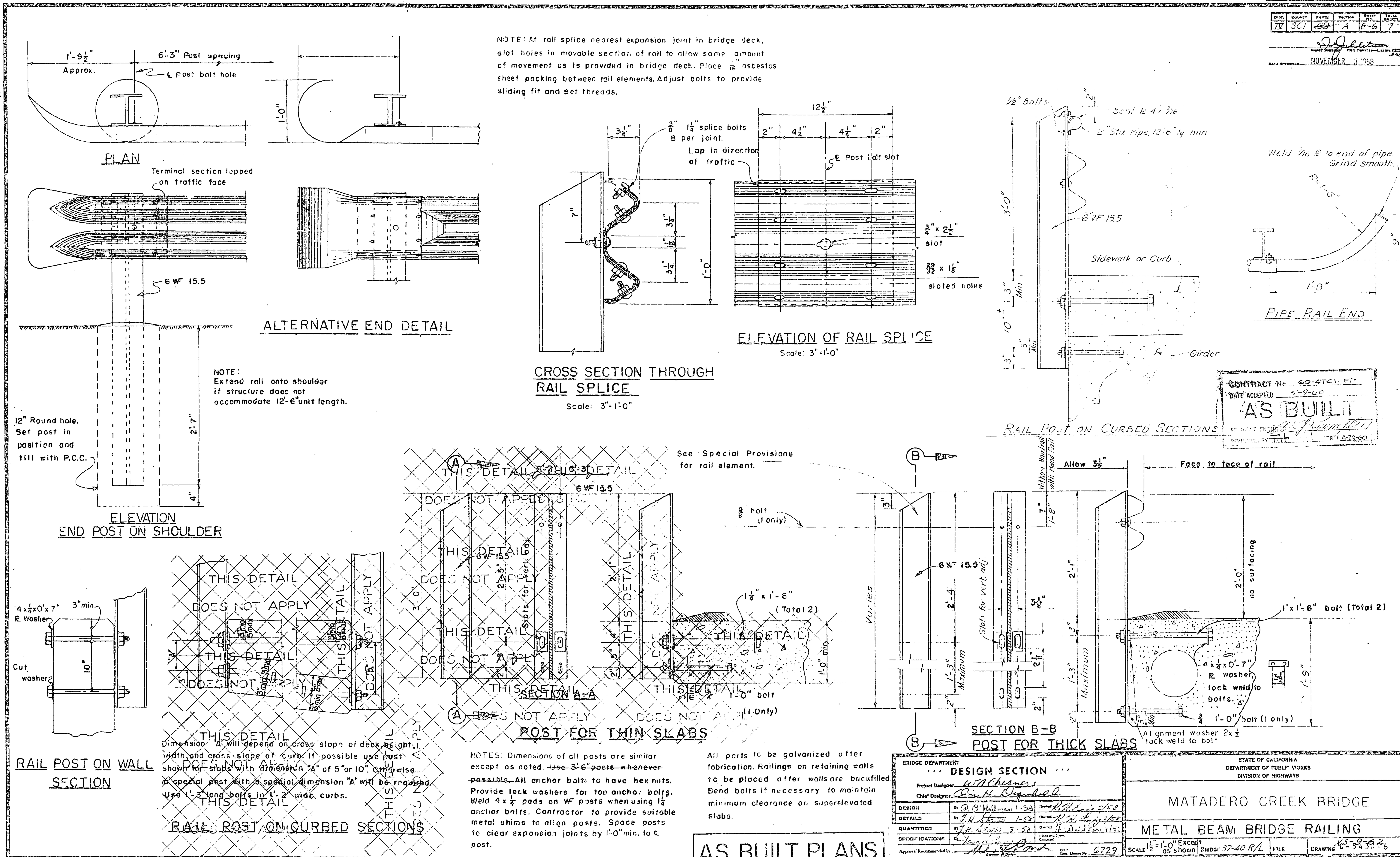
PREL. DRAWING No. B-5430 | R | 14 | 22 | 29

I HEREBY CERTIFY THAT THIS IS A TRUE AND ACCURATE COPY OF THE ABOVE DOCUMENT TAKEN UNDER MY DIRECTION AND CONTROL ON THIS DATE IN SACRAMENTO, CALIFORNIA PURSUANT TO AUTHORIZATION BY THE DIRECTOR OF PUBLIC WORKS.

DATE 4/23/71 SIGNATURE TITLE

MICROFILM - STATE OF CALIFORNIA - DEPARTMENT OF PUBLIC WORKS - MICROFILM

FED. ROAD DIV. No.	STATE	PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
7	CALIF.	U-181(35)		115	154



AS BUILT PLANS
Contract No. 60-4TC1
Date Completed
Document No. 40002374

I HEREBY CERTIFY THAT THIS IS A TRUE AND ACCURATE COPY OF THE ABOVE DOCUMENT TAKEN UNDER MY DIRECTION AND CONTROL ON THIS DATE IN SACRAMENTO, CALIFORNIA PURSUANT TO AUTHORIZATION BY THE DIRECTOR OF PUBLIC WORKS.

DATE 9/23/7? SIGNATURE [signature] TITLE [illegible]

MICROFILM - STATE OF CALIFORNIA - DEPARTMENT OF PUBLIC WORKS - MICROFILM
SCALE 1"=50' SCALE 1"=10' or 1"=100' SCALE 1"=20' SCALE 1"=40'

FED. ROAD DIV. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	CAL.	[illegible]		116	154

DIST.	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
IV	SCl	~~55~~	A	E-7	7

BRIDGE ENGINEER — CIVIL ENGINEER — LICENSE

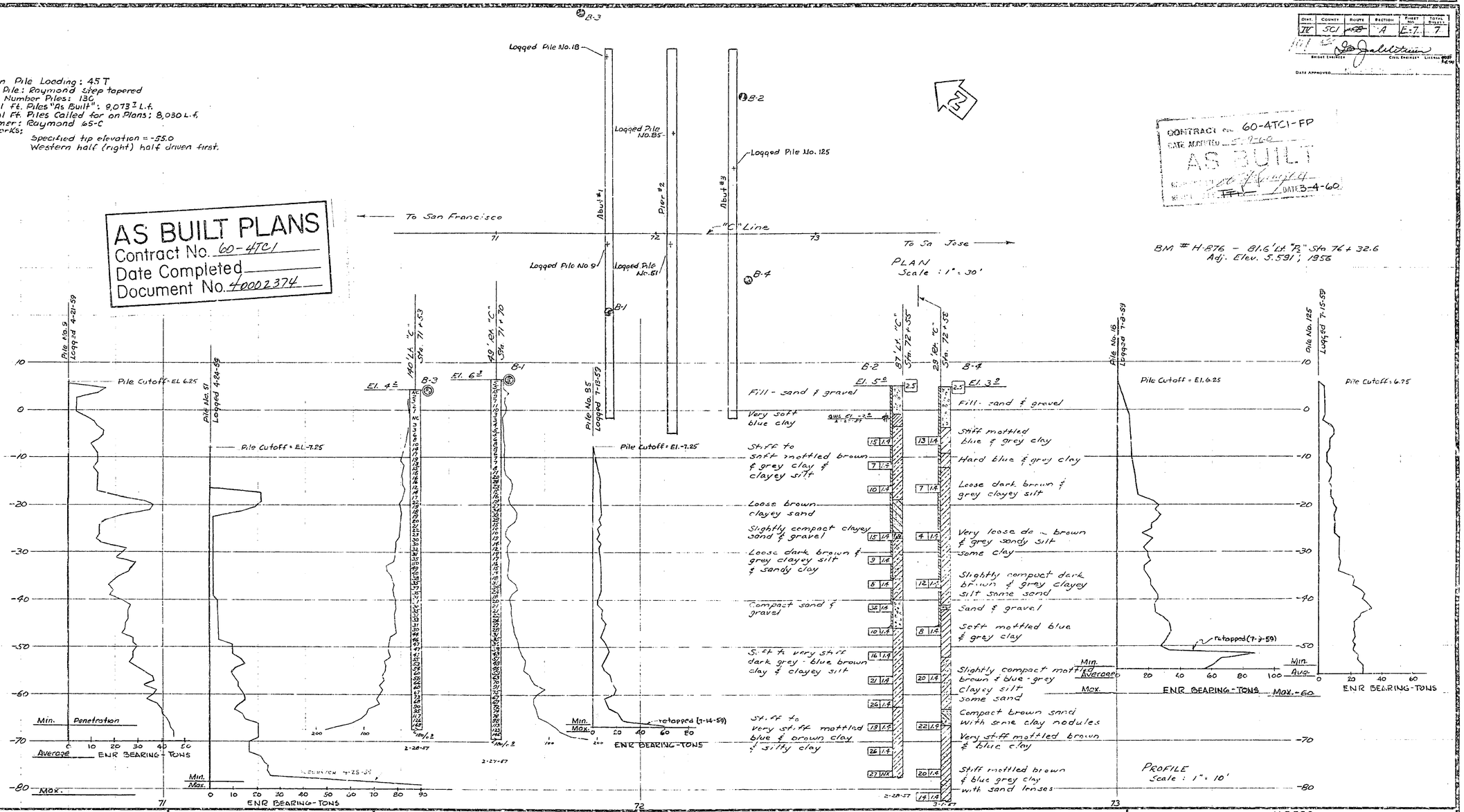
DATE APPROVED

BRIDGE DEPARTMENT

Design Pile Loading: 45 T
Type Pile: Raymond Step tapered
Total Number Piles: 130
Lineal ft. Piles "As Built": 9,073 L.f.
Lineal ft. Piles Called for on Plans: 8,030 L.f.
Hammer: Raymond 65-C
Remarks:
Specified tip elevation = -55.0
Western half (right) half driven first.

CONTRACT No. 60-4TC1-FP
DATE ACCEPTED 3-4-60
AS BUILT
DATE 3-4-60

AS BUILT PLANS
Contract No. 60-4TC1
Date Completed
Document No. 40002374



FIELD STUDY — DRAWN — CHECKED — Approval Recommended by

CLASSIFICATION OF MATERIAL BASED ON STANDARD GRADE SIZE LIMITS

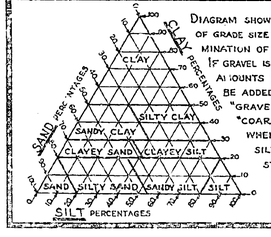


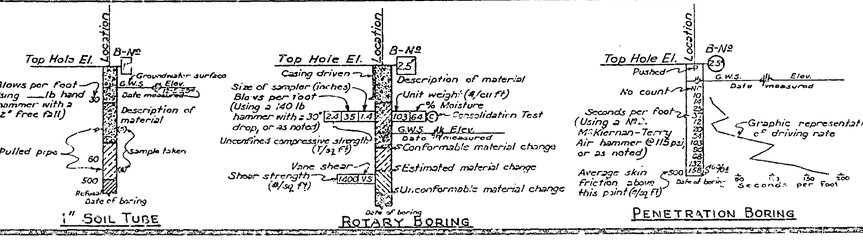
DIAGRAM SHOWING THE BASIS FOR ESTIMATES OF GRADE SIZE DISTRIBUTION USED IN DETERMINATION OF CLASS NAMES.
IF GRAVEL IS PRESENT IN APPRECIABLE AMOUNTS THE TERM "GRAVELLY" MAY BE ADDED TO THE CLASS NAME, VIZ. "GRAVELLY SANDY CLAY". THE TERMS "COARSE", "MEDIUM" AND "FINE" WHEN USED TO DESCRIBE SAND, SILT AND GRAVEL REFER TO STANDARD GRADE SIZE LIMITS.

LEGEND OF EARTH MATERIALS

- GRAVEL
- SAND
- SILT
- CLAY
- SANDY CLAY OR CLAYEY SAND
- SANDY SILT OR SILTY SAND
- SILTY CLAY OR CLAYEY SILT
- PEAT AND/OR ORGANIC MATTER
- FILL MATERIAL
- IGNEOUS ROCK
- SEDIMENTARY ROCK
- METAMORPHIC ROCK

LEGEND OF BORING OPERATIONS

- PLAN OF ANY BORING
- PENETROMETER
- 2¼" CONE PENETROMETER
- SAMPLER BORING (DRY)
- ROTARY BORING (WET)
- AUGER BORING (DRY)
- JET BORING
- CORE BORING
- TEST PIT



NOTES

The contractor's attention is directed to Section 2, Article (c) of the Standard Specifications and to the Special Provisions accompanying this set of plans.
Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

MATADERO CREEK BRIDGE

LOG OF TEST BORINGS

SCALE	BRIDGE	FILE	DRAWING
As Noted	37 40 R/L	E-37	C-5430-7

PREL. DRAWING No. P-5430 17 24

I HEREBY CERTIFY THAT THIS IS A TRUE AND ACCURATE COPY OF THE ABOVE DOCUMENT TAKEN UNDER MY DIRECTION AND CONTROL ON THIS DATE IN SACRAMENTO, CALIFORNIA PURSUANT TO AUTHORIZATION BY THE DIRECTOR OF PUBLIC WORKS.

DATE 9/23/21 SIGNATURE [illegible] TITLE [illegible]

MICROFILM - STATE OF CALIFORNIA - DEPARTMENT OF PUBLIC WORKS - MICROFILM

US 101 Auxiliary Lane - Matadero Creek Bridge

11/12/2009

Pile Design Spreadsheet

Abutment 1 & 3

NAVFAC Design Method For a Single Pile

Project Name:	US 101 Auxiliary Lane
Project Number:	28649951
Bridge Name:	Matadero Creek Bridge
Boring Surface El. (m)	4.0
Boring Surface El. (ft)	13.0
Design GWS El. (ft)	4.0
Unit Weight of Water (pcf)	62.4
Depth with no strength	
Convert. Factor	3.281
Bottom of Pile Cap El. (m)	-0.38
Bottom of Pile Cap El. (ft)	-1.25

Nominal axial compress. Capacity (ult.)	252	ton	(including downdrag)
Nominal axial compress. Capacity (ult.)	2243	kN	
Pile Diameter	24	inch	
Pile Diameter	610	mm	
Pile Diameter	2.00	ft	
Crit depth ratio	20	-	
Crit depth	40.0	ft	
Crit. Depth. Elev	-27.0	ft	
Crit. Depth. Elev	-8.2	m	
Crit. Eff. Vert. Str.	3021	psf	

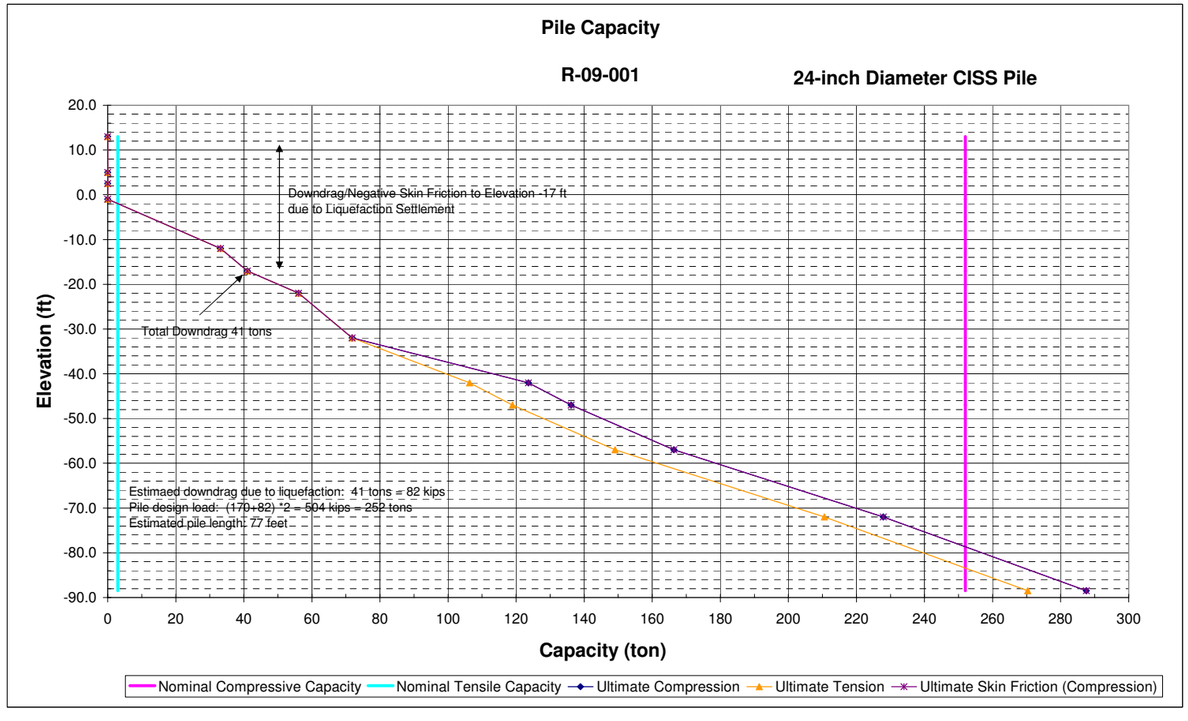
Pile Shape	Circular	(Square, Circular or Octogonal)			
Pile Surface Area	1.92	sq. m/m	Pile Tip Area	0.29	sq. m
Pile Surface Area	6.28	sq. ft/ft	Pile Tip Area	3.14	sq. ft.

Skin Resistance (Friction) of Pile in Granular Material:

Type (Steel=S,Concrete=C,Timber=T)		S	
Earth Press. Coefficient *	(Comp.)	1.5	
Earth Press. Coefficient *	(Tens)	1.0	
Minimum Adhesion		500	psf

* Note: Appropriate tension/compresion ratios for skin friction for granular soils applied is 0.65 and 1.0 for cohesive soil.

Layer No.	Layer Elevation Top (m)	Top (feet)	Bot. (m)	Bot. (feet)	Lateral Resists?	Cohesion c (kPa)	Cohesion c (psf)	Adhesion Ratio c_a/c	Adhesion c_a (psf)	Friction Angle ϕ (deg)	Friction Angle δ (deg)	Layer Thickness (feet)	Internal Depth to Layer Top (feet)	Effective Vert. Stress (Bot. Lay.) (psf)	Design Effective Vert. Stress (Bot. Lay.) (psf)	delta Lat. Res. Cohesive (ton)	delta Friction (comp) (ton)	delta Friction (tensile) (ton)	Nq (granular) (-)	z/B (-)	Nc (cohesive) (-)	Soil Type G= gran. C=cohes.	Bearing Capacity (B.C.) (ton)	Include B.C.?	Elevation to midlayer (ft)	Compression Cumulative Axial Res. (skin) (ton)	Compression Cumulative Axial Res. (skin) (kN)	Compression Cumulative Axial Res. (Tot) (ton)	Compression Cumulative Axial Res. (Tot) (kN)	Compression Nominal Axial Capacity (ton)	Compression Nominal Axial Capacity (kN)	Tension Cumulative Axial Res. (Skin) (ton)	Tension Cumulative Axial Res. (Skin) (kN)	Tension Nominal Axial Capacity (ton)	Tension Nominal Axial Capacity (kN)
			3.96	13.0										0	0					0.0	6.25	c	0	n	13.0	0	0	0	0	252	2243	0	0	3	27
1	3.96	13.0	1.52	5.0	N	29	600	1.00	0	0	0	8.0	0.0	952	952	0.0	0.0	0.0	0	2.0	8.40	c	8	n	9.0	0.0	0	0.0	0	252	2243	0.0	0	3	27
2	1.52	5.0	0.76	2.5	N	0	0	0.00	0	32	20	2.5	8.0	1125	1125	0.0	0.0	0.0	29	4.6	9.00	g	51	n	3.8	0.0	0	0.0	0	252	2243	0.0	0	3	27
3	0.76	2.5	-0.3	-1.0	N	43	900	1.00	0	0	0	3.5	10.5	1405	1405	0.0	0.0	0.0	0	6.1	9.00	c	13	n	0.8	0.0	0	0.0	0	252	2243	0.0	0	3	27
4	-0.3	-1.0	-3.66	-12.0	Y	48	1000	0.96	960	0	0	11.0	14.0	2127	2127	33.2	0.0	0.0	0	9.8	9.00	c	14	n	-6.5	33.2	295	33.2	295	252	2243	33.2	295	3	27
5	-3.66	-12.0	-5.18	-17.0	Y	24	500	1.00	500	0	0	5.0	25.0	2435	2435	7.9	0.0	0.0	0	13.8	9.00	c	7	n	-14.5	41.0	365	41.0	365	252	2243	41.0	365	3	27
6	-5.18	-17.0	-6.71	-22.0	Y	48	1000	0.96	960	0	0	5.0	30.0	2733	2733	15.1	0.0	0.0	0	16.3	9.00	c	14	n	-19.5	56.1	499	56.1	499	252	2243	56.1	499	3	27
7	-6.71	-22.0	-9.75	-32.0	Y	24	500	1.00	500	0	0	10.0	35.0	3309	3021	15.7	0.0	0.0	0	20.0	9.00	c	7	n	-27.0	71.8	639	71.8	639	252	2243	71.8	639	3	27
8	-9.75	-32.0	-12.8	-42.0	Y	0	0	0.00	0	40	20	10.0	45.0	4035	3021	0.0	51.8	34.5	145	25.0	9.00	g	688	n	-37.0	123.6	1100	123.6	1100	252	2243	106.4	946	3	27
9	-12.8	-42.0	-14.32	-47.0	Y	38	800	1.00	800	0	0	5.0	55.0	4303	3021	12.6	0.0	0.0	0	28.8	9.00	c	11	n	-44.5	136.2	1212	136.2	1212	252	2243	118.9	1058	3	27
10	-14.32	-47.0	-17.37	-57.0	Y	48	1000	0.96	960	0	0	10.0	60.0	4490	3021	30.2	0.0	0.0	0	32.5	9.00	c	14	n	-52.0	166.4	1481	166.4	1481	252	2243	149.1	1326	3	27
11	-17.37	-57.0	-21.94	-72.0	Y	72	1500	0.87	1305	0	0	15.0	70.0	4490	3021	61.5	0.0	0.0	0	38.8	9.00	c	21	n	-64.5	227.8	2028	227.8	2028	252	2243	210.6	1873	3	27
12	-21.94	-72.0	-26.97	-88.5	Y	57	1200	0.96	1152	0	0	16.5	85.0	4490	3021	59.7	0.0	0.0	0	46.6	9.00	c	17	n	-80.3	287.6	2559	287.6	2559	252	2243	270.3	2405	3	27
Bottom	-26.97	-88.5																																	



US 101 Auxiliary Lane - Matadero Creek Bridge

11/12/2009

Pile Design Spreadsheet

Bent 2

NAVFAC Design Method For a Single Pile

Project Name:	US 101 Auxiliary Lane
Project Number:	28649951
Bridge Name:	Matadero Creek Bridge
Boring Surface El. (m)	-0.5
Boring Surface El. (ft)	-1.5
Design GWS El. (ft)	4.0
Unit Weight of Water (pcf)	62.4
Depth with no strength	
Convert. Factor	3.281
Bottom of Pile Cap El. (m)	-2.44
Bottom of Pile Cap El. (ft)	-8.00
Bottom of Scour El. (ft)	-6

Nominal axial compress. Capacity (ult.)	120	ton	(50+15*2)
Nominal axial compress. Capacity (ult.)	1068	kN	
Pile Diameter	24	inch	
Pile Diameter	610	mm	
Pile Diameter	2.00	ft	
Crit depth ratio	20	-	
Crit depth	40.0	ft	
Crit. Depth. Elev	-41.5	ft	
Crit. Depth. Elev	-12.6	m	
Crit. Eff. Vert. Str.	2533	psf	

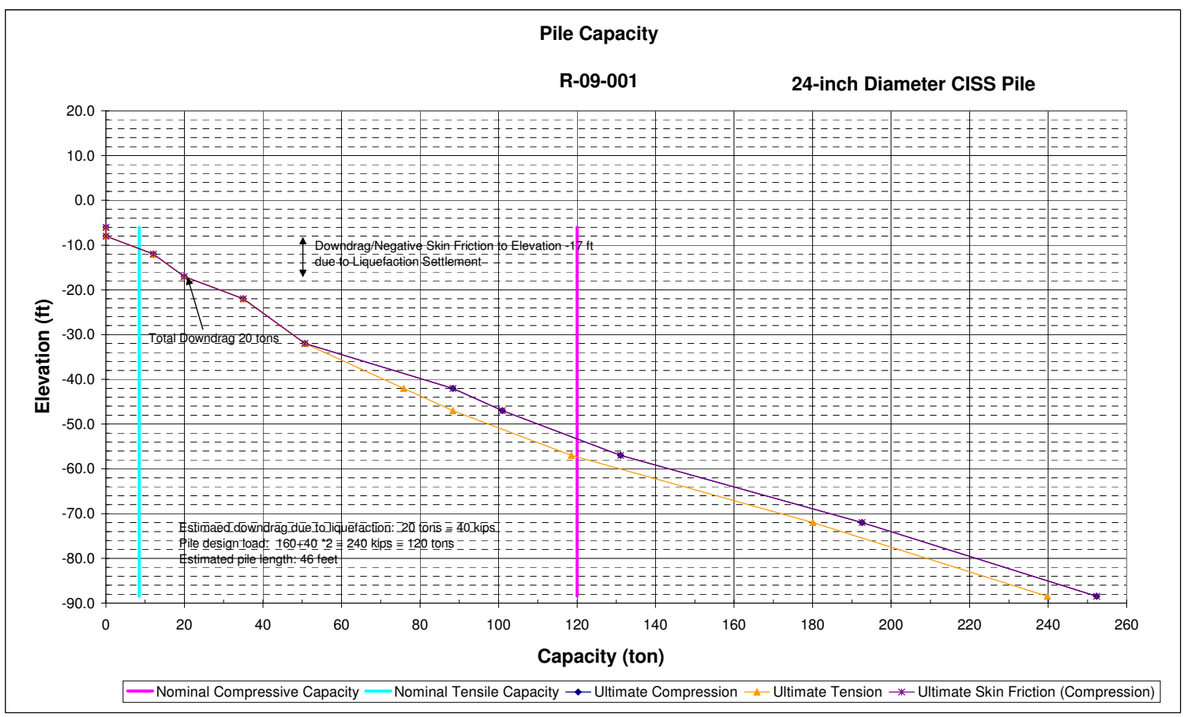
Pile Shape	Circular	(Square, Circular or Octogonal)			
Pile Surface Area	1.92	sq. m/m	Pile Tip Area	0.29	sq. m
Pile Surface Area	6.28	sq. ft/ft	Pile Tip Area	3.14	sq. ft.

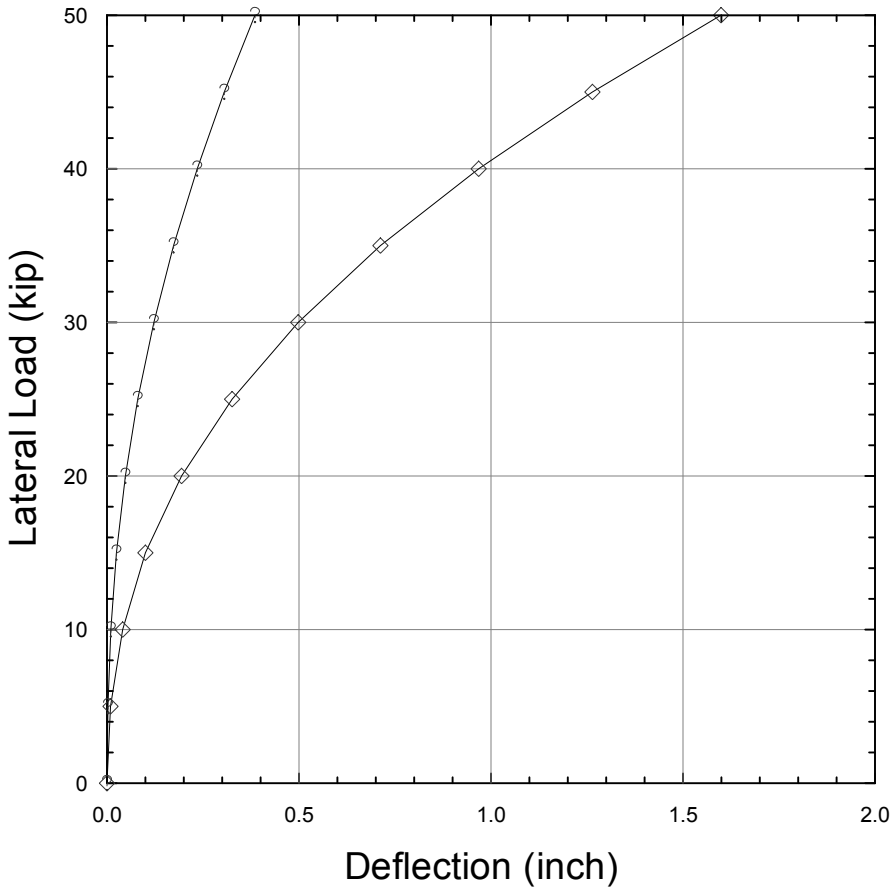
Skin Resistance (Friction) of Pile in Granular Material:

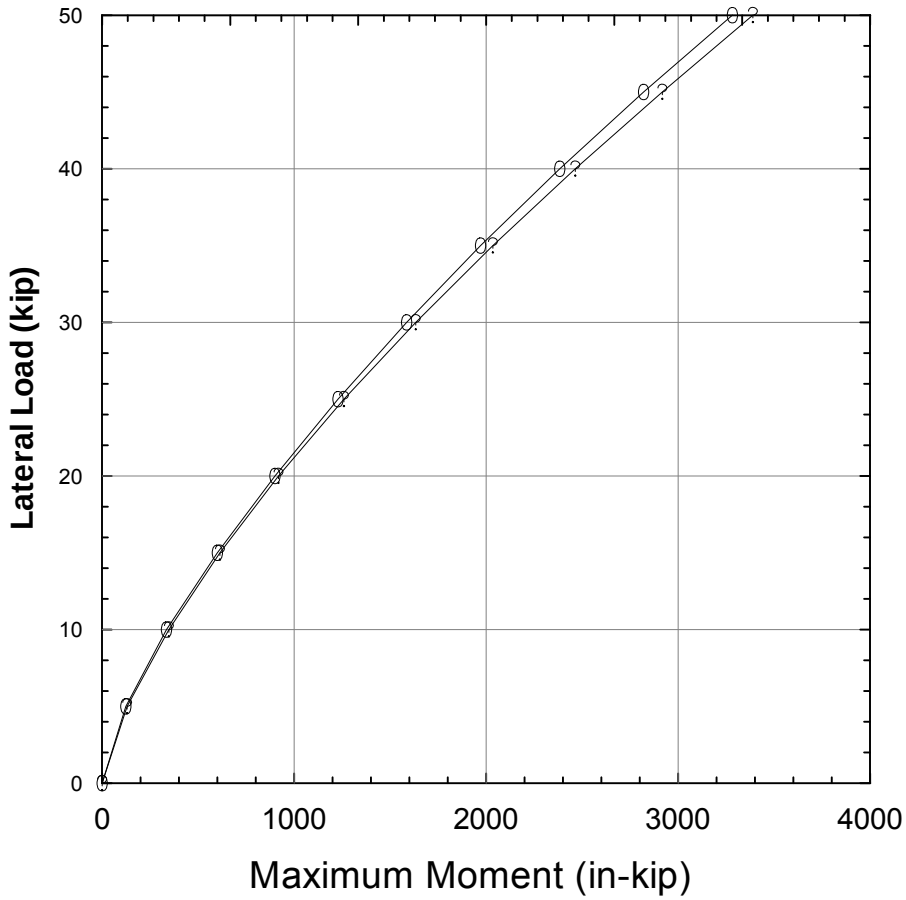
Type (Steel=S,Concrete=C,Timber=T)		S	
Earth Press. Coefficient *	(Comp.)	1.5	
Earth Press. Coefficient *	(Tens)	1.0	
Minimum Adhesion		500	psf

* Note: Appropriate tension/compresion ratios for skin friction for granular soils applied is 0.65 and 1.0 for cohesive soil.

Layer No.	Layer Elevation Top (m)	Top (feet)	Bot. (m)	Bot. (feet)	Lateral Resists?	Cohesion c (kPa)	Cohesion c (psf)	Adhesion Ratio c_a/c	Adhesion c_a (psf)	Friction Angle ϕ (deg)	Friction Angle δ (deg)	Layer Thickness (feet)	Internal Depth to Layer Top (feet)	Effective Vert. Stress (Bot. Lay.) (psf)	Design Effective Vert. Stress (Bot. Lay.) (psf)	delta Lat. Res. Cohesive (ton)	delta Lat. Res. Friction (comp) (ton)	delta Lat. Res. Friction (tensile) (ton)	Nq (granular) (-)	z/B (-)	Nc (cohesive) (-)	Soil Type G= gran. C=cohes.	Bearing Capacity (B.C.) (ton)	Include B.C.?	Elevation to midlayer (ft)	Compression Cumulative Axial Res. (skin) (ton)	Compression Cumulative Axial Res. (skin) (kN)	Compression Cumulative Axial Res. (Tot) (ton)	Compression Cumulative Axial Res. (Tot) (kN)	Compression Nominal Axial Capacity (ton)	Compression Nominal Axial Capacity (kN)	Tension Cumulative Axial Res. (Skin) (ton)	Tension Cumulative Axial Res. (Skin) (kN)	Tension Nominal Axial Capacity (ton)	Tension Nominal Axial Capacity (kN)
			-1.83	-6.0										0	0					0.0	6.25	c	0	n	-6.0	0	0	0	0	120	1068	0	0	8.5	76
1	-1.83	-6.0	-2.44	-8.0	N	48	1000	0.96	0	0	0	2.0	4.5	394	394	0.0	0.0	0.0	0	2.8	8.70	c	14	n	-7.0	0.0	0	0.0	0	120	1068	0.0	0	8.5	76
2	-2.44	-8.0	-3.66	-12.0	Y	48	1000	0.96	960	0	0	4.0	6.5	656	656	12.1	0.0	0.0	0	4.3	9.00	c	14	n	-10.0	12.1	107	12.1	107	120	1068	12.1	107	8.5	76
3	-3.66	-12.0	-5.18	-17.0	Y	24	500	1.00	500	0	0	5.0	10.5	984	984	7.9	0.0	0.0	0	6.5	9.00	c	7	n	-14.5	19.9	177	19.9	177	120	1068	19.9	177	8.5	76
4	-5.18	-17.0	-6.71	-22.0	Y	48	1000	0.96	960	0	0	5.0	15.5	1285	1285	15.1	0.0	0.0	0	9.0	9.00	c	14	n	-19.5	35.0	311	35.0	311	120	1068	35.0	311	8.5	76
5	-6.71	-22.0	-9.75	-32.0	Y	24	500	1.00	500	0	0	10.0	20.5	1862	1862	15.7	0.0	0.0	0	12.8	9.00	c	7	n	-27.0	50.7	451	50.7	451	120	1068	50.7	451	8.5	76
6	-9.75	-32.0	-12.8	-42.0	Y	0	0	0.00	0	40	20	10.0	30.5	2533	2533	0.0	37.7	25.1	145	17.8	9.00	g	577	n	-37.0	88.4	787	88.4	787	120	1068	75.8	675	8.5	76
7	-12.8	-42.0	-14.32	-47.0	Y	38	800	1.00	800	0	0	5.0	40.5	2826	2533	12.6	0.0	0.0	0	21.5	9.00	c	11	n	-44.5	101.0	899	101.0	899	120	1068	88.4	786	8.5	76
8	-14.32	-47.0	-17.37	-57.0	Y	48	1000	0.96	960	0	0	10.0	45.5	3450	2533	30.2	0.0	0.0	0	25.3	9.00	c	14	n	-52.0	131.1	1167	131.1	1167	120	1068	118.6	1055	8.5	76
9	-17.37	-57.0	-21.94	-72.0	Y	72	1500	0.87	1305	0	0	15.0	55.5	3913	2533	61.5	0.0	0.0	0	31.5	9.00	c	21	n	-64.5	192.6	1714	192.6	1714	120	1068	180.1	1602	8.5	76
10	-21.94	-72.0	-26.97	-88.5	Y	57	1200	0.96	1152	0	0	16.5	70.5	3913	2533	59.7	0.0	0.0	0	39.4	9.00	c	17	n	-80.3	252.3	2246	252.3	2246	120	1068	239.8	2133	8.5	76
Bottom	-26.97	-88.5																																	





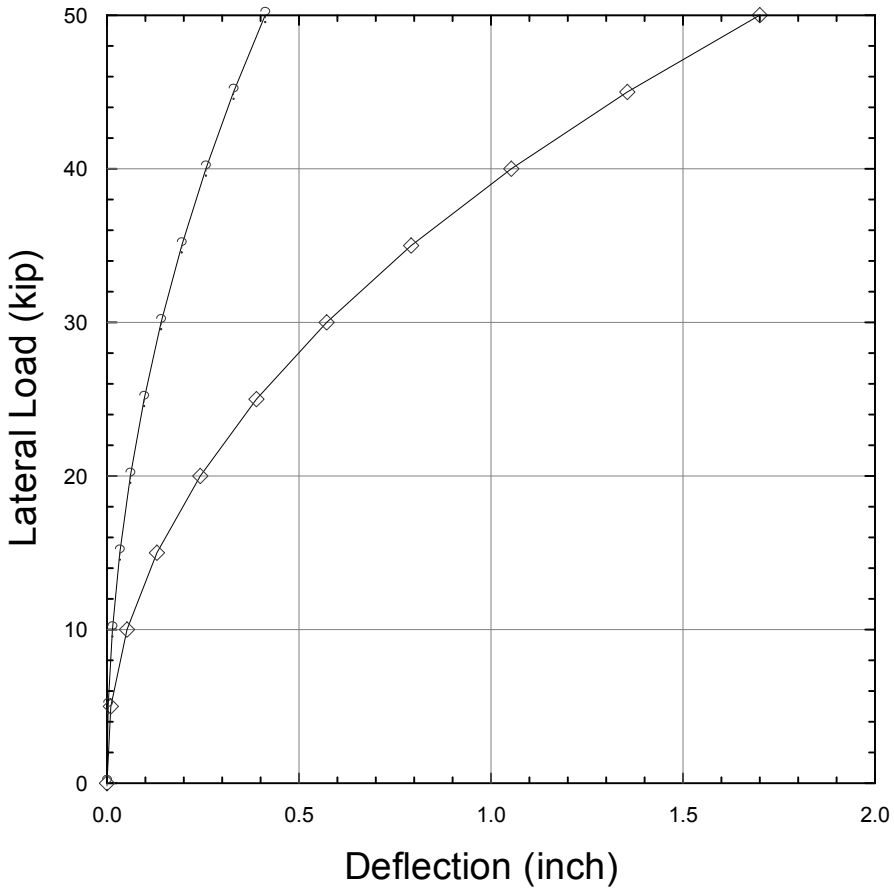


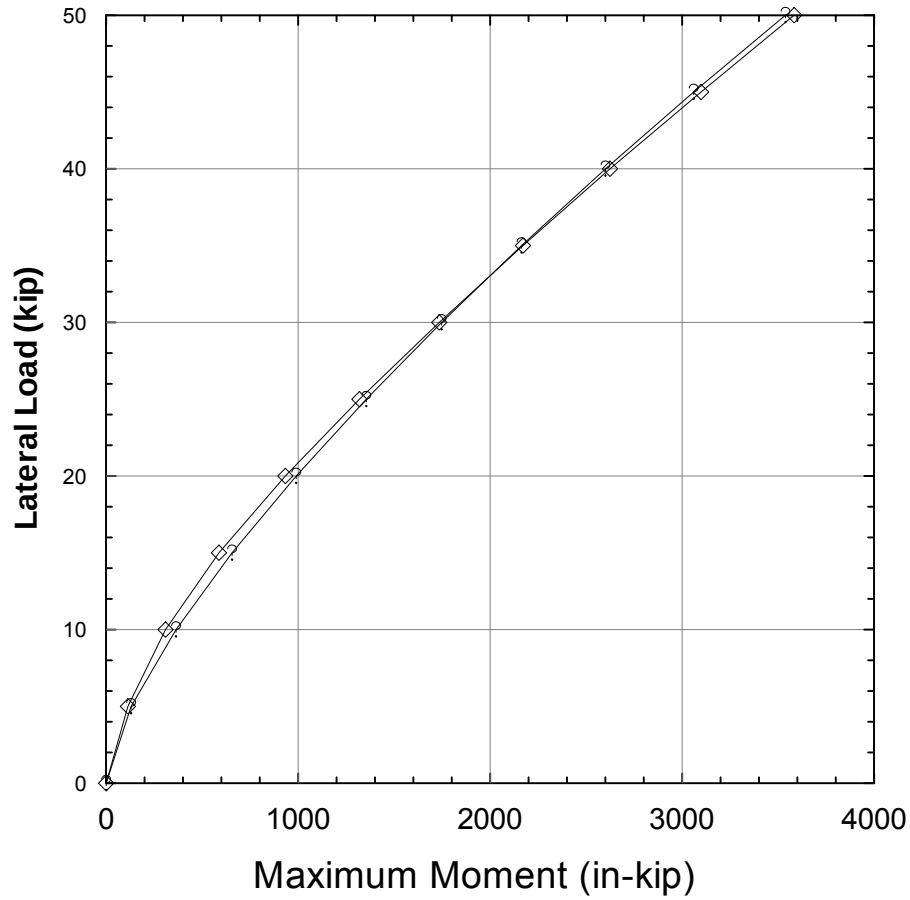
Legend
Free Head
Fixed Head

Notes:
Length of Pile: 66 feet
Axial Load on Pile: 125 kips

Project No. 28649951	US 101 Auxiliary Lane Palo Alto, California	**Matadero Creek Bridge (Widen)** **Abutment Pile Lateral Resistance** **CISS- 24 inch Diameter**	Figure I-1
	URS		

X:/101-Aux-VTA/440_geotech/analysis/Pile/Lateral/Matadero Creek/Matadero_Abutment_24 dia_CISS





Legend
Free Head
Fixed Head

Notes:
Length of Pile: 59 feet
Axial Load on Pile: 241 kips

Project No. 28649951	US 101 Auxiliary Lane Palo Alto, California	**Matadero Creek Bridge (Widen)** **Bent Pile Lateral Resistance** **CISS- 24 inch Diameter**	Figure I-2
	URS		

X:/101-Aux-VTA/440_geotech/analysis/Pile/Lateral/Matadero Creek/Matadero_Bent

```
================================================================================

                LPILE Plus for Windows, Version 5.0 (5.0.41)

               Analysis of Individual Piles and Drilled Shafts
              Subjected to Lateral Loading Using the p-y Method

                       (c) 1985-2009 by Ensoft, Inc.
                            All Rights Reserved

================================================================================


This program is licensed to:

Madhu Thummaluru
URS Corporation

Path to file locations:      X:\101-Aux-VTA\440_geotech\Analysis\Pile\Lateral\Matadero Creek\
Name of input data file:     Abutment_fixed_24 inch CISS.lpd
Name of output file:         Abutment_fixed_24 inch CISS.lpo
Name of plot output file:    Abutment_fixed_24 inch CISS.lpp
Name of runtime file:        Abutment_fixed_24 inch CISS.lpr


--------------------------------------------------------------------------------
                           Time and Date of Analysis
--------------------------------------------------------------------------------

               Date:  March 17, 2010     Time:  19:58:55


--------------------------------------------------------------------------------
                                 Problem Title
--------------------------------------------------------------------------------

101 Auxillary_Matadero Creek_Abutment_Fixed


--------------------------------------------------------------------------------
                                 Program Options
--------------------------------------------------------------------------------

Units Used in Computations - US Customary Units: Inches, Pounds

Basic Program Options:

Analysis Type 1:
- Computation of Lateral Pile Response Using User-specified Constant EI

Computation Options:
- Only internally-generated p-y curves used in analysis
- Analysis does not use p-y multipliers (individual pile or shaft action only)
- Analysis assumes no shear resistance at pile tip
- Analysis includes automatic computation of pile-top deflection vs.
  pile embedment length
- No computation of foundation stiffness matrix elements
- Output pile response for full length of pile
- Analysis assumes no soil movements acting on pile
- No additional p-y curves to be computed at user-specified depths

Solution Control Parameters:
- Number of pile increments            =          132
- Maximum number of iterations allowed =          100
- Deflection tolerance for convergence =   1.0000E-05 in
- Maximum allowable deflection         =   1.0000E+02 in

Printing Options:
- Values of pile-head deflection, bending moment, shear force, and
  soil reaction are printed for full length of pile.
```

- Printing Increment (spacing of output points) = 1

Pile Structural Properties and Geometry

Pile Length = 792.00 in

Depth of ground surface below top of pile = -108.00 in

Slope angle of ground surface = 33.70 deg.

Structural properties of pile defined using 2 points

Point	Depth X in	Pile Diameter in	Moment of Inertia in**4	Pile Area Sq.in	Modulus of Elasticity lbs/Sq.in
1	0.0000	24.00000000	16286.0000	452.4000	3600000.
2	792.0000	24.00000000	16286.0000	452.4000	3600000.

Soil and Rock Layering Information

The soil profile is modelled using 10 layers

Layer 1 is stiff clay without free water
Distance from top of pile to top of layer = -108.000 in
Distance from top of pile to bottom of layer = 1.000 in

Layer 2 is stiff clay without free water
Distance from top of pile to top of layer = 1.000 in
Distance from top of pile to bottom of layer = 126.000 in

Layer 3 is soft clay, p-y criteria by Matlock, 1970
Distance from top of pile to top of layer = 126.000 in
Distance from top of pile to bottom of layer = 186.000 in

Layer 4 is stiff clay without free water
Distance from top of pile to top of layer = 186.000 in
Distance from top of pile to bottom of layer = 246.000 in

Layer 5 is soft clay, p-y criteria by Matlock, 1970
Distance from top of pile to top of layer = 246.000 in
Distance from top of pile to bottom of layer = 366.000 in

Layer 6 is sand, p-y criteria by Reese et al., 1974
Distance from top of pile to top of layer = 366.000 in
Distance from top of pile to bottom of layer = 486.000 in
p-y subgrade modulus k for top of soil layer = 125.000 lbs/in**3
p-y subgrade modulus k for bottom of layer = 125.000 lbs/in**3

Layer 7 is stiff clay without free water
Distance from top of pile to top of layer = 486.000 in
Distance from top of pile to bottom of layer = 546.000 in

Layer 8 is stiff clay without free water
Distance from top of pile to top of layer = 546.000 in
Distance from top of pile to bottom of layer = 666.000 in

Layer 9 is stiff clay without free water
Distance from top of pile to top of layer = 666.000 in
Distance from top of pile to bottom of layer = 846.000 in

Layer 10 is stiff clay without free water
Distance from top of pile to top of layer = 846.000 in
Distance from top of pile to bottom of layer = 1044.000 in

(Depth of lowest layer extends 252.00 in below pile tip)

Effective Unit Weight of Soil vs. Depth

Effective unit weight of soil with depth defined using 20 points

Point No.	Depth X in	Eff. Unit Weight lbs/in**3
1	-108.00	0.06000
2	1.00	0.06000
3	1.00	0.03620
4	126.00	0.03620
5	126.00	0.03620
6	186.00	0.03620
7	186.00	0.03330
8	246.00	0.03330
9	246.00	0.03330
10	366.00	0.03330
11	366.00	0.04200
12	486.00	0.04200
13	486.00	0.03040
14	546.00	0.03040
15	546.00	0.03620
16	666.00	0.03620
17	666.00	0.03330
18	846.00	0.03330
19	846.00	0.03330
20	1044.00	0.03330

Shear Strength of Soils

Shear strength parameters with depth defined using 20 points

Point No.	Depth X in	Cohesion c lbs/in**2	Angle of Friction Deg.	E50 or k_rm	RQD %
1	-108.000	8.25000	0.00	0.01000	0.0
2	1.000	8.25000	0.00	0.01000	0.0
3	1.000	6.94000	0.00	0.01000	0.0
4	126.000	6.94000	0.00	0.01000	0.0
5	126.000	3.47000	0.00	0.01500	0.0
6	186.000	3.47000	0.00	0.01500	0.0
7	186.000	6.94000	0.00	0.01000	0.0
8	246.000	6.94000	0.00	0.01000	0.0
9	246.000	3.47000	0.00	0.01500	0.0
10	366.000	3.47000	0.00	0.01500	0.0
11	366.000	0.00000	38.00	------	------
12	486.000	0.00000	38.00	------	------
13	486.000	5.56000	0.00	0.01200	0.0
14	546.000	5.56000	0.00	0.01200	0.0
15	546.000	6.94000	0.00	0.01000	0.0
16	666.000	6.94000	0.00	0.01000	0.0
17	666.000	10.42000	0.00	0.00800	0.0
18	846.000	10.42000	0.00	0.00800	0.0
19	846.000	8.33000	0.00	0.00900	0.0
20	1044.000	8.33000	0.00	0.00900	0.0

Notes:

(1) Cohesion = uniaxial compressive strength for rock materials.

(2) Values of E50 are reported for clay strata.
(3) Default values will be generated for E50 when input values are 0.
(4) RQD and k_rm are reported only for weak rock strata.

Loading Type

Static loading criteria was used for computation of p-y curves.

Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 10

Load Case Number 1

Pile-head boundary conditions are Shear and Slope (BC Type 2)
Shear force at pile head = 5000.000 lbs
Slope at pile head = 0.000 in/in
Axial load at pile head = 125000.000 lbs

(Zero slope for this load indicates fixed-head condition)

Load Case Number 2

Pile-head boundary conditions are Shear and Slope (BC Type 2)
Shear force at pile head = 10000.000 lbs
Slope at pile head = 0.000 in/in
Axial load at pile head = 125000.000 lbs

(Zero slope for this load indicates fixed-head condition)

Load Case Number 3

Pile-head boundary conditions are Shear and Slope (BC Type 2)
Shear force at pile head = 15000.000 lbs
Slope at pile head = 0.000 in/in
Axial load at pile head = 125000.000 lbs

(Zero slope for this load indicates fixed-head condition)

Load Case Number 4

Pile-head boundary conditions are Shear and Slope (BC Type 2)
Shear force at pile head = 20000.000 lbs
Slope at pile head = 0.000 in/in
Axial load at pile head = 125000.000 lbs

(Zero slope for this load indicates fixed-head condition)

Load Case Number 5

Pile-head boundary conditions are Shear and Slope (BC Type 2)
Shear force at pile head = 25000.000 lbs
Slope at pile head = 0.000 in/in
Axial load at pile head = 125000.000 lbs

(Zero slope for this load indicates fixed-head condition)

Load Case Number 6

Pile-head boundary conditions are Shear and Slope (BC Type 2)
Shear force at pile head = 30000.000 lbs

```
Slope at pile head          =           0.000 in/in
Axial load at pile head     =      125000.000 lbs

(Zero slope for this load indicates fixed-head condition)

Load Case Number  7

Pile-head boundary conditions are Shear and Slope (BC Type 2)
Shear force at pile head    =       35000.000 lbs
Slope at pile head          =           0.000 in/in
Axial load at pile head     =      125000.000 lbs

(Zero slope for this load indicates fixed-head condition)

Load Case Number  8

Pile-head boundary conditions are Shear and Slope (BC Type 2)
Shear force at pile head    =       40000.000 lbs
Slope at pile head          =           0.000 in/in
Axial load at pile head     =      125000.000 lbs

(Zero slope for this load indicates fixed-head condition)

Load Case Number  9

Pile-head boundary conditions are Shear and Slope (BC Type 2)
Shear force at pile head    =       45000.000 lbs
Slope at pile head          =           0.000 in/in
Axial load at pile head     =      125000.000 lbs

(Zero slope for this load indicates fixed-head condition)

Load Case Number 10

Pile-head boundary conditions are Shear and Slope (BC Type 2)
Shear force at pile head    =       50000.000 lbs
Slope at pile head          =           0.000 in/in
Axial load at pile head     =      125000.000 lbs

(Zero slope for this load indicates fixed-head condition)



--------------------------------------------------------------------------------
             Computed Values of Load Distribution and Deflection
                 for Lateral Loading for Load Case Number  1
--------------------------------------------------------------------------------

Pile-head boundary conditions are Shear and Slope (BC Type 2)
Specified shear force at pile head  =        5000.000 lbs
Specified slope at pile head        =       0.000E+00 in/in
Specified axial load at pile head   =      125000.000 lbs

(Zero slope for this load indicates fixed-head conditions)

  Depth   Deflect.    Moment      Shear       Slope      Total       Soil Res.     Es*h
    X        y          M           V           S        Stress          p          F/L
    in       in        lbs-in       lbs        Rad.    lbs/in**2    lbs/in       lbs/in
-------- --------- ----------- ----------- ----------- ----------- ----------- -----------
   0.000  0.002285    -130192.   5000.0000 -7.2280E-20    372.2332    -89.0448     116916.
   6.000  0.002245    -101789.   4510.7742 -1.1870E-05    351.3056    -74.0305     197866.
  12.000  0.002142 -76044.5803   4063.3723 -2.0970E-05    332.3360    -75.1035     210335.
  18.000  0.001993 -52997.5634   3611.0928 -2.7573E-05    315.3543    -75.6564     227740.
  24.000  0.001812 -32670.1081   3156.9674 -3.1956E-05    300.3764    -75.7188     250790.
  30.000  0.001610 -15066.0208   2703.8826 -3.4399E-05    287.4052    -75.3095     280698.
  36.000  0.001399   -171.9182   2254.6348 -3.5178E-05    276.4308    -74.4398     319315.
  42.000  0.001188  12042.3641   1811.9691 -3.4571E-05    285.1773    -73.1154     369389.
  48.000  0.000984  21623.5677   1378.6124 -3.2848E-05    292.2370    -71.3368     435030.
  54.000  0.000793  28634.9859    957.3045 -3.0277E-05    297.4032    -69.0991     522530.
  60.000  0.000621  33156.6374    550.8390 -2.7115E-05    300.7349    -66.3894     641890.
```

66.000	0.000468	35285.7263	165.6540	-2.3613E-05	302.3037	-62.0056	794846.
72.000	0.000337	35179.9043	-157.1625	-2.0007E-05	302.2257	-45.5999	811352.
78.000	0.000228	33429.7871	-388.3254	-1.6497E-05	300.9362	-31.4544	827852.
84.000	0.000139	30544.7438	-541.4789	-1.3223E-05	298.8104	-19.5967	844347.
90.000	6.93E-05	26951.8751	-630.0949	-1.0281E-05	296.1631	-9.9420	860837.
96.000	1.59E-05	22999.0264	-666.8884	-7.7251E-06	293.2505	-2.3225	877322.
102.000	-2.34E-05	18960.8014	-655.4162	-5.5781E-06	290.2750	6.1466	1575672.
108.000	-5.11E-05	15142.3996	-596.7550	-3.8330E-06	287.4615	13.4071	1575672.
114.000	-6.94E-05	11805.4910	-501.8562	-2.4541E-06	285.0028	18.2258	1575672.
120.000	-8.05E-05	9123.8065	-383.7558	-1.3832E-06	283.0268	21.1410	1575672.
126.000	-8.60E-05	7202.4961	-294.2942	-5.4783E-07	281.6112	8.6796	605547.
132.000	-8.71E-05	5593.0982	-251.7154	1.0691E-07	280.4253	5.5133	379894.
138.000	-8.47E-05	4181.7504	-219.0836	6.0707E-07	279.3854	5.3640	379894.
144.000	-7.98E-05	2963.1850	-187.8354	9.7267E-07	278.4875	5.0521	379894.
150.000	-7.30E-05	1926.2666	-158.8043	1.2229E-06	277.7235	4.6250	379894.
156.000	-6.51E-05	1055.6988	-132.5606	1.3754E-06	277.0820	4.1230	379894.
162.000	-5.65E-05	333.4765	-109.4520	1.4465E-06	276.5499	3.5799	379894.
168.000	-4.78E-05	-259.8946	-89.6405	1.4503E-06	276.4957	3.0239	379894.
174.000	-3.91E-05	-744.3851	-73.1348	1.3989E-06	276.8526	2.4780	379894.
180.000	-3.10E-05	-1139.6105	-59.8177	1.3025E-06	277.1439	1.9610	379894.
186.000	-2.35E-05	-1464.1510	-40.7983	1.1693E-06	277.3830	4.3787	1117634.
192.000	-1.69E-05	-1630.9443	-14.3152	1.0109E-06	277.5059	4.4489	1575672.
198.000	-1.14E-05	-1637.4502	7.9944	8.4366E-07	277.5107	2.9876	1575672.
204.000	-6.82E-06	-1536.2767	22.3281	6.8126E-07	277.4361	1.7903	1575672.
210.000	-3.20E-06	-1370.5344	30.2212	5.3252E-07	277.3140	0.8407213	1575672.
216.000	-4.27E-07	-1174.4210	33.0798	4.0230E-07	277.1695	0.1121406	1575672.
222.000	1.63E-06	-974.1803	32.4555	2.9236E-07	277.0220	-0.3202302	1181502.
228.000	3.08E-06	-785.3932	29.6496	2.0232E-07	276.8829	-0.6150907	1197728.
234.000	4.05E-06	-618.6890	25.3435	1.3048E-07	276.7600	-0.8202477	1213951.
240.000	4.65E-06	-481.4663	20.0245	7.4185E-08	276.6589	-0.9527751	1230172.
246.000	4.94E-06	-378.5065	15.8388	3.0182E-08	276.5831	-0.4424502	536918.
252.000	5.01E-06	-291.4459	13.5634	-4.0989E-09	276.5189	-0.3160166	378522.
258.000	4.90E-06	-215.7395	11.6855	-3.0051E-08	276.4631	-0.3099397	379894.
264.000	4.65E-06	-151.1744	9.8727	-4.8825E-08	276.4155	-0.2943298	379894.
270.000	4.31E-06	-97.1936	8.1712	-6.1534E-08	276.3758	-0.2728427	379894.
276.000	3.91E-06	-53.0276	6.6100	-6.9221E-08	276.3432	-0.2475769	379894.
282.000	3.48E-06	-17.7703	5.2065	-7.2843E-08	276.3172	-0.2202496	379894.
288.000	3.04E-06	9.5593	3.9690	-7.3263E-08	276.3112	-0.1922314	379894.
294.000	2.60E-06	29.9679	2.8986	-7.1241E-08	276.3262	-0.1645848	379894.
300.000	2.18E-06	44.4491	1.9905	-6.7433E-08	276.3369	-0.1381033	379894.
306.000	1.79E-06	53.9552	1.2362	-6.2398E-08	276.3439	-0.1133499	379894.
312.000	1.43E-06	59.3766	0.6240237	-5.6599E-08	276.3479	-0.0906941	379894.
318.000	1.11E-06	61.5284	0.1409013	-5.0412E-08	276.3495	-0.0703467	379894.
324.000	8.27E-07	61.1430	-0.2273130	-4.4135E-08	276.3492	-0.0523914	379894.
330.000	5.81E-07	58.8668	-0.4949266	-3.7995E-08	276.3475	-0.0368132	379894.
336.000	3.72E-07	55.2609	-0.6759366	-3.2155E-08	276.3449	-0.0235235	379894.
342.000	1.96E-07	50.8038	-0.7836540	-2.6728E-08	276.3416	-0.0123823	379894.
348.000	5.08E-08	45.8971	-0.8304492	-2.1780E-08	276.3380	-0.0032161	379894.
354.000	-6.58E-08	40.8711	-0.8276008	-1.7340E-08	276.3343	0.0041656	379894.
360.000	-1.57E-07	35.9919	-0.7852286	-1.3407E-08	276.3307	0.0099584	379894.
366.000	-2.27E-07	31.4685	-0.7392015	-9.9549E-09	276.3273	0.0053840	142513.
372.000	-2.77E-07	27.1364	-0.7027074	-6.9562E-09	276.3242	0.0067807	147013.
378.000	-3.10E-07	23.0464	-0.6588696	-4.3884E-09	276.3211	0.0078319	151513.
384.000	-3.29E-07	19.2366	-0.6096786	-2.2248E-09	276.3183	0.0085651	156013.
390.000	-3.37E-07	15.7336	-0.5569492	-4.3545E-10	276.3157	0.0090113	160513.
396.000	-3.35E-07	12.5539	-0.5023064	1.0120E-09	276.3134	0.0092030	165013.
402.000	-3.25E-07	9.7044	-0.4471771	2.1509E-09	276.3113	0.0091735	169513.
408.000	-3.09E-07	7.1845	-0.3927876	3.0151E-09	276.3094	0.0089563	174013.
414.000	-2.89E-07	4.9865	-0.3401664	3.6379E-09	276.3078	0.0085841	178513.
420.000	-2.65E-07	3.0971	-0.2901502	4.0515E-09	276.3064	0.0080880	183013.
426.000	-2.40E-07	1.4986	-0.2433938	4.2866E-09	276.3053	0.0074974	187513.
432.000	-2.14E-07	0.1698954	-0.2003828	4.3720E-09	276.3043	0.0068396	192013.
438.000	-1.87E-07	-0.9125747	-0.1614471	4.3340E-09	276.3048	0.0061390	196513.
444.000	-1.62E-07	-1.7740	-0.1267768	4.1965E-09	276.3055	0.0054178	201013.
450.000	-1.37E-07	-2.4402	-0.0964378	3.9809E-09	276.3060	0.0046953	205513.
456.000	-1.14E-07	-2.9372	-0.0703872	3.7058E-09	276.3063	0.0039883	210013.
462.000	-9.26E-08	-3.2904	-0.0484894	3.3871E-09	276.3066	0.0033110	214513.
468.000	-7.33E-08	-3.5241	-0.0305298	3.0384E-09	276.3068	0.0026755	219013.
474.000	-5.61E-08	-3.6613	-0.0162281	2.6707E-09	276.3069	0.0020917	223513.
480.000	-4.12E-08	-3.7229	-0.0052504	2.2929E-09	276.3069	0.0015676	228013.

486.000	-2.86E-08	-3.7278	0.0167206	1.9117E-09	276.3069	0.0057561	1206107.
492.000	-1.83E-08	-3.5251	0.0450303	1.5405E-09	276.3068	0.0036805	1206107.
498.000	-1.01E-08	-3.1897	0.0621917	1.1970E-09	276.3065	0.0020400	1206107.
504.000	-3.95E-09	-2.7806	0.0706912	8.9146E-10	276.3062	0.0007932	1206107.
510.000	5.49E-10	-2.3427	0.0727396	6.2930E-10	276.3059	-0.0001104	1206107.
516.000	3.61E-09	-1.9087	0.0702339	4.1176E-10	276.3056	-0.0007248	1206107.
522.000	5.49E-09	-1.5006	0.0647484	2.3732E-10	276.3053	-0.0011037	1206107.
528.000	6.45E-09	-1.1321	0.0575456	1.0261E-10	276.3050	-0.0012973	1206107.
534.000	6.72E-09	-0.8101633	0.0496002	3.2285E-12	276.3048	-0.0013512	1206107.
540.000	6.49E-09	-0.5368545	0.0416315	-6.5697E-11	276.3046	-0.0013051	1206107.
546.000	5.93E-09	-0.3104871	0.0336057	-1.0905E-10	276.3044	-0.0013702	1385601.
552.000	5.18E-09	-0.1334231	0.0254112	-1.3177E-10	276.3043	-0.0013613	1575672.
558.000	4.35E-09	-0.0053553	0.0178986	-1.3887E-10	276.3042	-0.0011429	1575672.
564.000	3.52E-09	0.0815679	0.0116988	-1.3497E-10	276.3042	-0.0009237	1575672.
570.000	2.73E-09	0.1352329	0.0067751	-1.2388E-10	276.3043	-0.0007176	1575672.
576.000	2.03E-09	0.1630548	0.0030225	-1.0861E-10	276.3043	-0.0005333	1575672.
582.000	1.43E-09	0.1716656	0.0002967	-9.1486E-11	276.3043	-0.0003753	1575672.
588.000	9.33E-10	0.1667526	-0.0015641	-7.4170E-11	276.3043	-0.0002450	1575672.
594.000	5.39E-10	0.1530071	-0.0027238	-5.7808E-11	276.3043	-0.0001416	1575672.
600.000	2.39E-10	0.1341537	-0.0033369	-4.3114E-11	276.3043	-6.2815E-05	1575672.
606.000	2.17E-11	0.1130285	-0.0035425	-3.0466E-11	276.3042	-5.6967E-06	1575672.
612.000	-1.26E-10	0.0916897	-0.0034600	-1.9991E-11	276.3042	3.3195E-05	1575672.
618.000	-2.18E-10	0.0715388	-0.0031885	-1.1639E-11	276.3042	5.7302E-05	1575672.
624.000	-2.66E-10	0.0534453	-0.0028070	-5.2437E-12	276.3042	6.9874E-05	1575672.
630.000	-2.81E-10	0.0378632	-0.0023759	-5.7157E-13	276.3042	7.3827E-05	1575672.
636.000	-2.73E-10	0.0249360	-0.0019393	2.6418E-12	276.3042	7.1675E-05	1575672.
642.000	-2.49E-10	0.0145871	-0.0015278	4.6641E-12	276.3042	6.5502E-05	1575672.
648.000	-2.17E-10	0.0065952	-0.0011604	5.7480E-12	276.3042	5.6977E-05	1575672.
654.000	-1.80E-10	0.0006539	-0.0008473	6.1189E-12	276.3042	4.7388E-05	1575672.
660.000	-1.44E-10	-0.0035814	-0.0005920	5.9691E-12	276.3042	3.7694E-05	1575672.
666.000	-1.09E-10	-0.0064595	-0.0003689	5.4553E-12	276.3042	3.6696E-05	2023324.
672.000	-7.81E-11	-0.0080160	-0.0001611	4.7147E-12	276.3042	3.2549E-05	2501506.
678.000	-5.22E-11	-0.0084002	1.8554E-06	3.8747E-12	276.3042	2.1781E-05	2501506.
684.000	-3.16E-11	-0.0079996	0.0001067	3.0355E-12	276.3042	1.3164E-05	2501506.
690.000	-1.58E-11	-0.0071245	0.0001660	2.2616E-12	276.3042	6.5945E-06	2501506.
696.000	-4.43E-12	-0.0060114	0.0001913	1.5895E-12	276.3042	1.8490E-06	2501506.
702.000	3.26E-12	-0.0048313	0.0001928	1.0347E-12	276.3042	-1.3577E-06	2501506.
708.000	7.98E-12	-0.0036997	0.0001787	5.9816E-13	276.3042	-3.3275E-06	2501506.
714.000	1.04E-11	-0.0026876	0.0001557	2.7133E-13	276.3042	-4.3502E-06	2501506.
720.000	1.12E-11	-0.0018319	0.0001286	4.0070E-14	276.3042	-4.6850E-06	2501506.
726.000	1.09E-11	-0.0011447	0.0001009	-1.1224E-13	276.3042	-4.5507E-06	2501506.
732.000	9.89E-12	-0.0006213	7.4847E-05	-2.0261E-13	276.3042	-4.1234E-06	2501506.
738.000	8.48E-12	-0.0002463	5.1865E-05	-2.4700E-13	276.3042	-3.5371E-06	2501506.
744.000	6.93E-12	1.4415E-06	3.2591E-05	-2.5953E-13	276.3042	-2.8877E-06	2501506.
750.000	5.37E-12	0.0001452	1.7212E-05	-2.5203E-13	276.3042	-2.2386E-06	2501506.
756.000	3.90E-12	0.0002084	5.6163E-06	-2.3393E-13	276.3042	-1.6268E-06	2501506.
762.000	2.56E-12	0.0002130	-2.4688E-06	-2.1238E-13	276.3042	-1.0682E-06	2501506.
768.000	1.35E-12	0.0001791	-7.3662E-06	-1.9232E-13	276.3042	-5.6425E-07	2501506.
774.000	2.54E-13	0.0001248	-9.3772E-06	-1.7677E-13	276.3042	-1.0608E-07	2501506.
780.000	-7.68E-13	6.6801E-05	-8.7351E-06	-1.6696E-13	276.3042	3.2012E-07	2501506.
786.000	-1.75E-12	2.0275E-05	-5.5871E-06	-1.6250E-13	276.3042	7.2922E-07	2501506.
792.000	-2.72E-12	0.0000	0.0000	-1.6147E-13	276.3042	1.1331E-06	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 1:

```
Pile-head deflection             =     0.00228484 in
Computed slope at pile head      =  -7.228014E-20
Maximum bending moment           =  -130191.67565 lbs-in
Maximum shear force              =     5000.00000 lbs
Depth of maximum bending moment  =        0.00000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =              5
Number of zero deflection points =              7
```

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 2

Pile-head boundary conditions are Shear and Slope (BC Type 2)
Specified shear force at pile head = 10000.000 lbs
Specified slope at pile head = 0.000E+00 in/in
Specified axial load at pile head = 125000.000 lbs

(Zero slope for this load indicates fixed-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	0.010075	-347136.	10000.0000	-5.7824E-19	532.0843	-129.1102	38444.1617
6.000	0.009969	-289447.	9290.0821	-3.2573E-05	489.5771	-107.5291	64720.8879
12.000	0.009684	-235606.	8638.7687	-5.9439E-05	449.9058	-109.5753	67888.6649
18.000	0.009255	-185693.	7976.6584	-8.0997E-05	413.1278	-111.1281	72041.8498
24.000	0.008712	-139765.	7306.6617	-9.7650E-05	379.2871	-112.2041	77272.8322
30.000	0.008083	-97866.1347	6631.6109	-0.0001098	348.4148	-112.8128	83735.6559
36.000	0.007395	-60020.9877	5954.2970	-0.0001179	320.5294	-112.9584	91654.8599
42.000	0.006669	-26237.7379	5277.4996	-0.0001223	295.6369	-112.6407	101344.
48.000	0.005927	3492.4606	4604.0113	-0.0001235	278.8775	-111.8554	113234.
54.000	0.005187	29195.5961	3936.6613	-0.0001218	297.8163	-110.5946	127923.
60.000	0.004465	50915.0861	3278.3398	-0.0001177	313.8199	-108.8459	146251.
66.000	0.003775	68712.2152	2632.0261	-0.0001116	326.9333	-106.5920	169421.
72.000	0.003127	82666.7579	2000.8246	-0.0001038	337.2154	-103.8085	199211.
78.000	0.002529	92877.8502	1388.0167	-9.4845E-05	344.7393	-100.4608	238341.
84.000	0.001988	99465.2254	797.1399	-8.5003E-05	349.5930	-96.4982	291176.
90.000	0.001509	102571.	232.1186	-7.4665E-05	351.8815	-91.8422	365185.
96.000	0.001092	102363.	-302.4962	-6.4178E-05	351.7279	-86.3627	474315.
102.000	0.000739	99037.3456	-801.0463	-5.3873E-05	349.2778	-79.8206	648221.
108.000	0.000446	92830.9008	-1243.4987	-4.4055E-05	344.7047	-67.6635	910282.
114.000	0.000210	84181.4446	-1543.8739	-3.4998E-05	338.3315	-32.4615	926757.
120.000	2.60E-05	74356.9115	-1653.5295	-2.6886E-05	331.0925	-4.0903	943228.
126.000	-0.000112	64379.4191	-1631.7485	-1.9787E-05	323.7408	11.3507	605547.
132.000	-0.000211	54805.6094	-1557.5374	-1.3688E-05	316.6865	13.3864	379894.
138.000	-0.000277	45709.5026	-1464.8149	-8.5450E-06	309.9843	17.5211	379894.
144.000	-0.000314	37240.6477	-1352.6152	-4.3006E-06	303.7442	19.8788	379894.
150.000	-0.000328	29484.5710	-1230.6129	-8.8634E-07	298.0292	20.7887	379894.
156.000	-0.000325	22474.6227	-1106.5902	1.7723E-06	292.8641	20.5522	379894.
162.000	-0.000307	16202.8297	-986.6074	3.7514E-06	288.2429	19.4420	379894.
168.000	-0.000280	10629.7069	-875.1754	5.1244E-06	284.1364	17.7019	379894.
174.000	-0.000246	5693.0382	-775.4238	5.9596E-06	280.4990	15.5486	379894.
180.000	-0.000208	1315.6817	-689.2564	6.3182E-06	277.2736	13.1739	379894.
186.000	-0.000170	-2587.5154	-554.8736	6.2532E-06	278.2107	31.6203	1117634.
192.000	-0.000133	-5352.1814	-355.2077	5.8469E-06	280.2478	34.9349	1575672.
198.000	-9.96E-05	-6858.7784	-171.9418	5.2221E-06	281.3579	26.1537	1575672.
204.000	-7.04E-05	-7423.3166	-38.0457	4.4913E-06	281.7739	18.4784	1575672.
210.000	-4.57E-05	-7322.0633	53.3898	3.7368E-06	281.6993	12.0001	1575672.
216.000	-2.55E-05	-6788.2444	109.4976	3.0148E-06	281.3059	6.7025	1575672.
222.000	-9.52E-06	-6012.6146	137.1036	2.3598E-06	280.7344	2.4995	1575672.
228.000	2.79E-06	-5146.5411	142.9879	1.7888E-06	280.0963	-0.5380772	1155156.
234.000	1.19E-05	-4299.4433	134.3759	1.3054E-06	279.4721	-2.3326	1171420.
240.000	1.85E-05	-3535.9883	116.4159	9.0451E-07	278.9096	-3.6541	1187680.
246.000	2.28E-05	-2903.8096	99.3323	5.7499E-07	278.4438	-2.0404	536918.
252.000	2.54E-05	-2344.8632	88.4114	3.0642E-07	278.0319	-1.5999	378522.
258.000	2.65E-05	-1843.3327	78.5822	9.2118E-08	277.6624	-1.6765	379894.
264.000	2.65E-05	-1402.0150	68.5257	-7.3943E-08	277.3372	-1.6757	379894.
270.000	2.56E-05	-1020.9138	58.6377	-1.9792E-07	277.0564	-1.6203	379894.
276.000	2.41E-05	-698.0662	49.2008	-2.8588E-07	276.8185	-1.5253	379894.
282.000	2.22E-05	-430.0756	40.4155	-3.4360E-07	276.6210	-1.4031	379894.
288.000	2.00E-05	-212.5643	32.4135	-3.7649E-07	276.4608	-1.2642	379894.
294.000	1.76E-05	-40.5489	25.2696	-3.8944E-07	276.3340	-1.1171	379894.
300.000	1.53E-05	91.2551	19.0134	-3.8684E-07	276.3714	-0.9683366	379894.
306.000	1.30E-05	188.1919	13.6389	-3.7255E-07	276.4428	-0.8231506	379894.

312.000	1.08E-05	255.4809	9.1136	-3.4984E-07	276.4924	-0.6852810	379894.
318.000	8.80E-06	298.0802	5.3857	-3.2152E-07	276.5238	-0.5573439	379894.
324.000	6.97E-06	320.5922	2.3907	-2.8986E-07	276.5404	-0.4409953	379894.
330.000	5.32E-06	327.2038	0.0564143	-2.5671E-07	276.5452	-0.3371105	379894.
336.000	3.88E-06	321.6542	-1.6928	-2.2351E-07	276.5412	-0.2459465	379894.
342.000	2.64E-06	307.2260	-2.9325	-1.9133E-07	276.5305	-0.1672877	379894.
348.000	1.59E-06	286.7517	-3.7360	-1.6094E-07	276.5154	-0.1005729	379894.
354.000	7.11E-07	262.6349	-4.1728	-1.3283E-07	276.4977	-0.0450064	379894.
360.000	-5.52E-09	236.8776	-4.3067	-1.0727E-07	276.4787	0.0003497	379894.
366.000	-5.76E-07	211.1148	-4.2652	-8.4347E-08	276.4597	0.0134960	140481.
372.000	-1.02E-06	185.8216	-4.1510	-6.4036E-08	276.4411	0.0245909	144981.
378.000	-1.34E-06	161.3994	-3.9767	-4.6270E-08	276.4231	0.0335051	149481.
384.000	-1.57E-06	138.1711	-3.7550	-3.0941E-08	276.4060	0.0403667	153981.
390.000	-1.72E-06	116.3853	-3.4980	-1.7916E-08	276.3899	0.0453295	158481.
396.000	-1.79E-06	96.2224	-3.2163	-7.0368E-09	276.3751	0.0485659	162981.
402.000	-1.80E-06	77.8005	-2.9198	1.8677E-09	276.3615	0.0502608	167481.
408.000	-1.77E-06	61.1821	-2.6172	8.9793E-09	276.3492	0.0506053	171981.
414.000	-1.69E-06	46.3807	-2.3160	1.4483E-08	276.3383	0.0497923	176481.
420.000	-1.59E-06	33.3683	-2.0226	1.8564E-08	276.3287	0.0480113	180981.
426.000	-1.47E-06	22.0818	-1.7422	2.1401E-08	276.3204	0.0454451	185481.
432.000	-1.33E-06	12.4296	-1.4791	2.3167E-08	276.3133	0.0422672	189981.
438.000	-1.19E-06	4.2980	-1.2364	2.4023E-08	276.3073	0.0386392	194481.
444.000	-1.05E-06	-2.4429	-1.0163	2.4118E-08	276.3060	0.0347094	198981.
450.000	-9.03E-07	-7.9340	-0.8203553	2.3587E-08	276.3100	0.0306123	203481.
456.000	-7.64E-07	-12.3225	-0.6491143	2.2550E-08	276.3132	0.0264681	207981.
462.000	-6.32E-07	-15.7572	-0.5025605	2.1114E-08	276.3158	0.0223832	212481.
468.000	-5.10E-07	-18.3849	-0.3800579	1.9367E-08	276.3177	0.0184510	216981.
474.000	-4.00E-07	-20.3469	-0.2804471	1.7385E-08	276.3191	0.0147527	221481.
480.000	-3.02E-07	-21.7763	-0.2021120	1.5229E-08	276.3202	0.0113591	225981.
486.000	-2.17E-07	-22.7951	-0.0372304	1.2949E-08	276.3210	0.0436015	1206107.
492.000	-1.46E-07	-22.2425	0.1817464	1.0644E-08	276.3205	0.0293908	1206107.
498.000	-8.92E-08	-20.6301	0.3236955	8.4504E-09	276.3194	0.0179256	1206107.
504.000	-4.48E-08	-18.3709	0.4044923	6.4547E-09	276.3177	0.0090067	1206107.
510.000	-1.17E-08	-15.7859	0.4385784	4.7070E-09	276.3158	0.0023553	1206107.
516.000	1.17E-08	-13.1150	0.4386017	3.2282E-09	276.3138	-0.0023476	1206107.
522.000	2.70E-08	-10.5275	0.4152639	2.0184E-09	276.3119	-0.0054317	1206107.
528.000	3.59E-08	-8.1348	0.3773195	1.0635E-09	276.3101	-0.0072164	1206107.
534.000	3.98E-08	-6.0013	0.3316792	3.4015E-10	276.3086	-0.0079970	1206107.
540.000	4.00E-08	-4.1552	0.2835772	-1.7954E-10	276.3072	-0.0080369	1206107.
546.000	3.76E-08	-2.5981	0.2333975	-5.2510E-10	276.3061	-0.0086896	1385601.
552.000	3.37E-08	-1.3536	0.1807943	-7.2730E-10	276.3052	-0.0088448	1575672.
558.000	2.89E-08	-0.4274852	0.1314910	-8.1844E-10	276.3045	-0.0075897	1575672.
564.000	2.39E-08	0.2254772	0.0899253	-8.2878E-10	276.3043	-0.0062656	1575672.
570.000	1.90E-08	0.6528610	0.0561948	-7.8384E-10	276.3046	-0.0049779	1575672.
576.000	1.45E-08	0.9009908	0.0298748	-7.0433E-10	276.3048	-0.0037955	1575672.
582.000	1.05E-08	1.0124	0.0102135	-6.0642E-10	276.3049	-0.0027583	1575672.
588.000	7.18E-09	1.0245	-0.0037147	-5.0220E-10	276.3049	-0.0018844	1575672.
594.000	4.48E-09	0.9685921	-0.0128951	-4.0021E-10	276.3049	-0.0011757	1575672.
600.000	2.37E-09	0.8703216	-0.0182919	-3.0612E-10	276.3048	-0.0006232	1575672.
606.000	8.04E-10	0.7495488	-0.0207946	-2.2323E-10	276.3047	-0.0002110	1575672.
612.000	-3.06E-10	0.6211212	-0.0211869	-1.5310E-10	276.3046	8.0275E-05	1575672.
618.000	-1.03E-09	0.4955360	-0.0201318	-9.5959E-11	276.3045	0.0002714	1575672.
624.000	-1.46E-09	0.3796840	-0.0181695	-5.1175E-11	276.3044	0.0003827	1575672.
630.000	-1.65E-09	0.2775793	-0.0157233	-1.7544E-11	276.3044	0.0004327	1575672.
636.000	-1.67E-09	0.1910304	-0.0131114	6.4342E-12	276.3043	0.0004380	1575672.
642.000	-1.57E-09	0.1202334	-0.0105602	2.2361E-11	276.3042	0.0004124	1575672.
648.000	-1.40E-09	0.0642744	-0.0082204	3.1802E-11	276.3042	0.0003675	1575672.
654.000	-1.19E-09	0.0215403	-0.0061814	3.6193E-11	276.3042	0.0003122	1575672.
660.000	-9.65E-10	-0.0099561	-0.0044844	3.6786E-11	276.3042	0.0002534	1575672.
666.000	-7.47E-10	-0.0323281	-0.0029680	3.4622E-11	276.3042	0.0002520	2023324.
672.000	-5.50E-10	-0.0456242	-0.0015245	3.0634E-11	276.3042	0.0002291	2501506.
678.000	-3.80E-10	-0.0506679	-0.0003620	2.5707E-11	276.3042	0.0001583	2501506.
684.000	-2.41E-10	-0.0500073	0.0004146	2.0555E-11	276.3042	0.0001005	2501506.
690.000	-1.33E-10	-0.0457239	0.0008827	1.5657E-11	276.3042	5.5508E-05	2501506.
696.000	-5.32E-11	-0.0394387	0.0011158	1.1299E-11	276.3042	2.2195E-05	2501506.
702.000	2.45E-12	-0.0323514	0.0011793	7.6256E-12	276.3042	-1.0212E-06	2501506.
708.000	3.83E-11	-0.0252985	0.0011284	4.6757E-12	276.3042	-1.5956E-05	2501506.
714.000	5.86E-11	-0.0188180	0.0010073	2.4183E-12	276.3042	-2.4414E-05	2501506.
720.000	6.73E-11	-0.0132149	0.0008499	7.7926E-13	276.3042	-2.8055E-05	2501506.
726.000	6.79E-11	-0.0086208	0.0006808	-3.3805E-13	276.3042	-2.8312E-05	2501506.

732.000	6.32E-11	-0.0050453	0.0005167	-1.0373E-12	276.3042	-2.6363E-05	2501506.
738.000	5.55E-11	-0.0024185	0.0003683	-1.4192E-12	276.3042	-2.3123E-05	2501506.
744.000	4.62E-11	-0.0006239	0.0002411	-1.5749E-12	276.3042	-1.9263E-05	2501506.
750.000	3.66E-11	0.0004772	0.0001376	-1.5824E-12	276.3042	-1.5243E-05	2501506.
756.000	2.72E-11	0.0010296	5.7830E-05	-1.5053E-12	276.3042	-1.1346E-05	2501506.
762.000	1.85E-11	0.0011734	6.5556E-07	-1.3926E-12	276.3042	-7.7121E-06	2501506.
768.000	1.05E-11	0.0010396	-3.5617E-05	-1.2794E-12	276.3042	-4.3787E-06	2501506.
774.000	3.15E-12	0.0007480	-5.2687E-05	-1.1879E-12	276.3042	-1.3114E-06	2501506.
780.000	-3.75E-12	0.0004091	-5.1928E-05	-1.1287E-12	276.3042	1.5644E-06	2501506.
786.000	-1.04E-11	0.0001265	-3.4229E-05	-1.1013E-12	276.3042	4.3355E-06	2501506.
792.000	-1.70E-11	0.0000	0.0000	-1.0948E-12	276.3042	7.0742E-06	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 2:

```
Pile-head deflection             =     0.01007515 in
Computed slope at pile head      =  -5.782412E-19
Maximum bending moment           =  -347136.27227 lbs-in
Maximum shear force              =    10000.00000 lbs
Depth of maximum bending moment  =        0.00000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             14
Number of zero deflection points =              7
```

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 3

Pile-head boundary conditions are Shear and Slope (BC Type 2)
Specified shear force at pile head = 15000.000 lbs
Specified slope at pile head = 0.000E+00 in/in
Specified axial load at pile head = 125000.000 lbs

(Zero slope for this load indicates fixed-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	0.024717	-612679.	15000.0000	-3.7586E-18	727.7438	-161.5274	19605.5031
6.000	0.024529	-525563.	14111.5334	-5.8242E-05	663.5542	-134.6281	32931.7838
12.000	0.024018	-443253.	13295.2696	-0.0001078	602.9060	-137.4598	34339.5800
18.000	0.023235	-365858.	12463.3980	-0.0001492	545.8789	-139.8307	36109.0129
24.000	0.022227	-293469.	11618.6479	-0.0001830	492.5403	-141.7527	38264.7596
30.000	0.021039	-226160.	10763.6908	-0.0002095	442.9452	-143.2330	40847.2461
36.000	0.019713	-163990.	9901.1649	-0.0002295	397.1367	-144.2756	43913.6449
42.000	0.018285	-107001.	9033.6939	-0.0002434	355.1460	-144.8814	47540.4229
48.000	0.016792	-55220.5282	8163.9011	-0.0002517	316.9923	-145.0495	51827.5510
54.000	0.015265	-8657.1392	7294.4218	-0.0002549	282.6830	-144.7769	56904.7635
60.000	0.013733	32694.9451	6427.9135	-0.0002537	300.3947	-144.0592	62940.5752
66.000	0.012221	68858.3891	5567.0648	-0.0002485	327.0410	-142.8904	70155.2125
72.000	0.010751	99872.4949	4714.6048	-0.0002399	349.8931	-141.2630	78839.3106
78.000	0.009342	125793.	3873.3121	-0.0002283	368.9925	-139.1679	89381.3761
84.000	0.008011	146695.	3046.0253	-0.0002144	384.3931	-136.5943	102309.
90.000	0.006769	162667.	2235.6565	-0.0001986	396.1622	-133.5286	118352.
96.000	0.005628	173820.	1445.2085	-0.0001813	404.3801	-129.9540	138545.
102.000	0.004593	180282.	677.8011	-0.0001632	409.1411	-125.8484	164391.
108.000	0.003669	182199.	-63.2885	-0.0001447	410.5536	-121.1814	198157.
114.000	0.002857	179739.	-774.5582	-0.0001262	408.7414	-115.9085	243409.
120.000	0.002155	173093.	-1452.1617	-0.0001081	403.8445	-109.9594	306099.
126.000	0.001560	162476.	-1925.7031	-9.0933E-05	396.0210	-47.8878	184196.
132.000	0.001064	150121.	-2158.6553	-7.4937E-05	386.9180	-29.7630	167808.

138.000	0.000661	136684.	-2325.4240	-6.0262E-05	377.0171	-25.8266	234558.
144.000	0.000341	122307.	-2453.1064	-4.7010E-05	366.4233	-16.7342	294413.
150.000	9.65E-05	107317.	-2517.7477	-3.5260E-05	355.3788	-4.8129	299163.
156.000	-8.21E-05	92146.6337	-2516.5942	-2.5054E-05	344.2005	5.1974	379894.
162.000	-0.000204	77155.8756	-2462.2301	-1.6391E-05	333.1549	12.9240	379894.
168.000	-0.000279	62624.4593	-2370.5051	-9.2385E-06	322.4477	17.6510	379894.
174.000	-0.000315	48723.6717	-2257.7223	-3.5410E-06	312.2052	19.9433	379894.
180.000	-0.000321	35537.1032	-2136.8683	7.7055E-07	302.4889	20.3414	379894.
186.000	-0.000306	23080.0963	-1904.9943	3.7699E-06	293.3102	56.9500	1117634.
192.000	-0.000276	12671.5171	-1516.6782	5.5993E-06	285.6409	72.4887	1575672.
198.000	-0.000239	4871.5588	-1111.2788	6.4969E-06	279.8937	62.6444	1575672.
204.000	-0.000198	-673.5736	-767.3016	6.7117E-06	276.8005	52.0146	1575672.
210.000	-0.000158	-4346.1277	-486.7774	6.4549E-06	279.5065	41.4934	1575672.
216.000	-0.000121	-6524.5845	-267.2779	5.8987E-06	281.1117	31.6731	1575672.
222.000	-8.72E-05	-7562.3108	-103.5445	5.1778E-06	281.8763	22.9048	1575672.
228.000	-5.85E-05	-7774.8852	11.2375	4.3931E-06	282.0329	15.3559	1575672.
234.000	-3.45E-05	-7434.0508	84.4873	3.6148E-06	281.7818	9.0607	1575672.
240.000	-1.51E-05	-6766.4597	123.5624	2.8882E-06	281.2899	3.9643	1575672.
246.000	1.56E-07	-5955.6345	135.4133	2.2372E-06	280.6924	-0.0139823	536918.
252.000	1.18E-05	-5144.8555	133.1473	1.6692E-06	280.0950	-0.7413518	378522.
258.000	2.02E-05	-4360.3703	127.0888	1.1829E-06	279.5170	-1.2782	379894.
264.000	2.59E-05	-3621.5645	118.3260	7.7445E-07	278.9726	-1.6428	379894.
270.000	2.95E-05	-2941.6205	107.7979	4.3862E-07	278.4716	-1.8666	379894.
276.000	3.12E-05	-2328.6478	96.2700	1.6895E-07	278.0200	-1.9760	379894.
282.000	3.15E-05	-1786.6336	84.3571	-4.1626E-08	277.6206	-1.9949	379894.
288.000	3.07E-05	-1316.3003	72.5390	-2.0040E-07	277.2740	-1.9444	379894.
294.000	2.91E-05	-915.8647	61.1777	-3.1462E-07	276.9790	-1.8427	379894.
300.000	2.69E-05	-581.6955	50.5336	-3.9124E-07	276.7328	-1.7054	379894.
306.000	2.44E-05	-308.8748	40.7812	-4.3681E-07	276.5317	-1.5454	379894.
312.000	2.17E-05	-91.6656	32.0245	-4.5731E-07	276.3717	-1.3735	379894.
318.000	1.89E-05	76.1054	24.3102	-4.5811E-07	276.3602	-1.1980	379894.
324.000	1.62E-05	200.7438	17.6400	-4.4394E-07	276.4521	-1.0254	379894.
330.000	1.36E-05	288.4519	11.9818	-4.1891E-07	276.5167	-0.8606664	379894.
336.000	1.12E-05	345.1538	7.2784	-3.8649E-07	276.5585	-0.7071328	379894.
342.000	8.96E-06	376.3725	3.4560	-3.4957E-07	276.5815	-0.5670180	379894.
348.000	6.97E-06	387.1496	0.4302935	-3.1050E-07	276.5894	-0.4415355	379894.
354.000	5.23E-06	382.0017	-1.8876	-2.7114E-07	276.5856	-0.3311044	379894.
360.000	3.72E-06	364.9048	-3.5875	-2.3292E-07	276.5730	-0.2355245	379894.
366.000	2.43E-06	339.3010	-4.4655	-1.9689E-07	276.5542	-0.0571480	140855.
372.000	1.36E-06	311.6138	-4.7356	-1.6358E-07	276.5338	-0.0328782	145355.
378.000	4.71E-07	282.7190	-4.8696	-1.3317E-07	276.5125	-0.0117715	149855.
384.000	-2.41E-07	253.3788	-4.8863	-1.0574E-07	276.4909	0.0061981	154355.
390.000	-7.98E-07	224.2423	-4.8043	-8.1303E-08	276.4694	0.0211168	158855.
396.000	-1.22E-06	195.8488	-4.6416	-5.9807E-08	276.4485	0.0331218	163355.
402.000	-1.52E-06	168.6326	-4.4151	-4.1157E-08	276.4284	0.0423910	167855.
408.000	-1.71E-06	142.9296	-4.1405	-2.5215E-08	276.4095	0.0491339	172355.
414.000	-1.82E-06	118.9844	-3.8324	-1.1813E-08	276.3918	0.0535827	176855.
420.000	-1.85E-06	96.9591	-3.5037	-7.6341E-10	276.3756	0.0559843	181355.
426.000	-1.83E-06	76.9417	-3.1659	8.1349E-09	276.3608	0.0565932	185855.
432.000	-1.75E-06	58.9558	-2.8291	1.5089E-08	276.3476	0.0556655	190355.
438.000	-1.65E-06	42.9693	-2.5018	2.0304E-08	276.3358	0.0534536	194855.
444.000	-1.51E-06	28.9039	-2.1908	2.3982E-08	276.3255	0.0502020	199355.
450.000	-1.36E-06	16.6435	-1.9018	2.6312E-08	276.3164	0.0461449	203855.
456.000	-1.20E-06	6.0431	-1.6388	2.7473E-08	276.3086	0.0415038	208355.
462.000	-1.03E-06	-3.0637	-1.4049	2.7625E-08	276.3064	0.0364866	212855.
468.000	-8.64E-07	-10.8567	-1.2015	2.6913E-08	276.3122	0.0312875	217355.
474.000	-7.06E-07	-17.5226	-1.0294	2.5461E-08	276.3171	0.0260877	221855.
480.000	-5.58E-07	-23.2479	-0.8879821	2.3375E-08	276.3213	0.0210565	226355.
486.000	-4.25E-07	-28.2134	-0.5684943	2.0742E-08	276.3249	0.0854394	1206107.
492.000	-3.09E-07	-30.1009	-0.1256843	1.7758E-08	276.3263	0.0621639	1206107.
498.000	-2.12E-07	-29.7483	0.1886187	1.4695E-08	276.3261	0.0426038	1206107.
504.000	-1.33E-07	-27.8596	0.3965764	1.1748E-08	276.3247	0.0267155	1206107.
510.000	-7.10E-08	-25.0070	0.5195202	9.0426E-09	276.3226	0.0142658	1206107.
516.000	-2.44E-08	-21.6389	0.5770262	6.6558E-09	276.3201	0.0049028	1206107.
522.000	8.90E-09	-18.0926	0.5863668	4.6228E-09	276.3175	-0.0017893	1206107.
528.000	3.11E-08	-14.6094	0.5622542	2.9494E-09	276.3149	-0.0062483	1206107.
534.000	4.43E-08	-11.3500	0.5167975	1.6211E-09	276.3125	-0.0089040	1206107.
540.000	5.05E-08	-8.4103	0.4596094	6.1002E-10	276.3104	-0.0101587	1206107.
546.000	5.16E-08	-5.8356	0.3933745	-1.1893E-10	276.3085	-0.0119195	1385601.
552.000	4.91E-08	-3.6896	0.3189257	-6.0632E-10	276.3069	-0.0128967	1575672.

558.000	4.43E-08	-2.0076	0.2453039	-8.9784E-10	276.3056	-0.0116439	1575672.
564.000	3.83E-08	-0.7446180	0.1801703	-1.0387E-09	276.3047	-0.0100673	1575672.
570.000	3.19E-08	0.1559994	0.1248562	-1.0688E-09	276.3043	-0.0083707	1575672.
576.000	2.55E-08	0.7552601	0.0796466	-1.0222E-09	276.3047	-0.0066992	1575672.
582.000	1.96E-08	1.1133	0.0441004	-9.2655E-10	276.3050	-0.0051495	1575672.
588.000	1.44E-08	1.2859	0.0173139	-8.0379E-10	276.3051	-0.0037793	1575672.
594.000	9.96E-09	1.3223	-0.0018737	-6.7033E-10	276.3051	-0.0026165	1575672.
600.000	6.35E-09	1.2644	-0.0147238	-5.3798E-10	276.3051	-0.0016669	1575672.
606.000	3.51E-09	1.1464	-0.0224880	-4.1462E-10	276.3050	-0.0009212	1575672.
612.000	1.37E-09	0.9951430	-0.0263322	-3.0504E-10	276.3049	-0.0003603	1575672.
618.000	-1.53E-10	0.8308553	-0.0272926	-2.1161E-10	276.3048	4.0141E-05	1575672.
624.000	-1.17E-09	0.6679488	-0.0262525	-1.3492E-10	276.3046	0.0003066	1575672.
630.000	-1.77E-09	0.5160280	-0.0239368	-7.4334E-11	276.3045	0.0004653	1575672.
636.000	-2.06E-09	0.3808187	-0.0209184	-2.8444E-11	276.3044	0.0005408	1575672.
642.000	-2.11E-09	0.2650501	-0.0176310	4.6043E-12	276.3044	0.0005549	1575672.
648.000	-2.00E-09	0.1692393	-0.0143872	2.6826E-11	276.3043	0.0005263	1575672.
654.000	-1.79E-09	0.0923632	-0.0113970	4.0212E-11	276.3042	0.0004704	1575672.
660.000	-1.52E-09	0.0324146	-0.0087870	4.6597E-11	276.3042	0.0003996	1575672.
666.000	-1.23E-09	-0.0131509	-0.0063417	4.7583E-11	276.3042	0.0004155	2023324.
672.000	-9.51E-10	-0.0437577	-0.0039062	4.4671E-11	276.3042	0.0003963	2501506.
678.000	-6.96E-10	-0.0600928	-0.0018466	3.9357E-11	276.3042	0.0002902	2501506.
684.000	-4.78E-10	-0.0659763	-0.0003777	3.2906E-11	276.3042	0.0001994	2501506.
690.000	-3.01E-10	-0.0646749	0.0005973	2.6221E-11	276.3042	0.0001256	2501506.
696.000	-1.64E-10	-0.0588481	0.0011788	1.9900E-11	276.3042	6.8255E-05	2501506.
702.000	-6.24E-11	-0.0505596	0.0014615	1.4302E-11	276.3042	2.6007E-05	2501506.
708.000	7.91E-12	-0.0413310	0.0015297	9.6001E-12	276.3042	-3.2980E-06	2501506.
714.000	5.28E-11	-0.0322179	0.0014537	5.8367E-12	276.3042	-2.2022E-05	2501506.
720.000	7.80E-11	-0.0238952	0.0012902	2.9655E-12	276.3042	-3.2499E-05	2501506.
726.000	8.84E-11	-0.0167406	0.0010821	8.8618E-13	276.3042	-3.6859E-05	2501506.
732.000	8.86E-11	-0.0109116	0.0008607	-5.2874E-13	276.3042	-3.6933E-05	2501506.
738.000	8.21E-11	-0.0064113	0.0006473	-1.4151E-12	276.3042	-3.4213E-05	2501506.
744.000	7.16E-11	-0.0031422	0.0004551	-1.9040E-12	276.3042	-2.9853E-05	2501506.
750.000	5.92E-11	-0.0009476	0.0002914	-2.1132E-12	276.3042	-2.4688E-05	2501506.
756.000	4.62E-11	0.0003583	0.0001595	-2.1434E-12	276.3042	-1.9280E-05	2501506.
762.000	3.35E-11	0.0009701	5.9811E-05	-2.0754E-12	276.3042	-1.3964E-05	2501506.
768.000	2.13E-11	0.0010791	-8.7718E-06	-1.9706E-12	276.3042	-8.8967E-06	2501506.
774.000	9.85E-12	0.0008678	-4.7778E-05	-1.8709E-12	276.3042	-4.1054E-06	2501506.
780.000	-1.11E-12	0.0005086	-5.8703E-05	-1.8005E-12	276.3042	4.6368E-07	2501506.
786.000	-1.18E-11	0.0001661	-4.2605E-05	-1.7660E-12	276.3042	4.9026E-06	2501506.
792.000	-2.23E-11	0.0000	0.0000	-1.7575E-12	276.3042	9.2990E-06	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 3:

```
Pile-head deflection             =     0.02471664 in
Computed slope at pile head      =  -3.758568E-18
Maximum bending moment           =  -612678.88088 lbs-in
Maximum shear force              =    15000.00000 lbs
Depth of maximum bending moment  =        0.00000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             19
Number of zero deflection points =              7
```

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 4

```
Pile-head boundary conditions are Shear and Slope (BC Type 2)
Specified shear force at pile head  =       20000.000 lbs
Specified slope at pile head        =       0.000E+00 in/in
Specified axial load at pile head   =      125000.000 lbs
```

(Zero slope for this load indicates fixed-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	0.047936	-917859.	20000.0000	4.6259E-18	952.6094	-190.5999	11928.3862
6.000	0.047654	-801254.	18951.4156	-8.7965E-05	866.6918	-158.9282	20010.1682
12.000	0.046880	-690310.	17987.2495	-0.0001643	784.9447	-162.4605	20792.5179
18.000	0.045683	-585161.	17003.1807	-0.0002296	707.4679	-165.5624	21745.0403
24.000	0.044126	-485927.	16001.7640	-0.0002844	634.3497	-168.2432	22876.8108
30.000	0.042271	-392713.	14985.5090	-0.0003293	565.6668	-170.5085	24202.4642
36.000	0.040174	-305607.	13956.8973	-0.0003650	501.4846	-172.3620	25742.2799
42.000	0.037890	-224683.	12918.3947	-0.0003922	441.8571	-173.8055	27522.6731
48.000	0.035468	-149998.	11872.4600	-0.0004114	386.8273	-174.8394	29577.0702
54.000	0.032954	-81596.4285	10821.5524	-0.0004232	336.4268	-175.4632	31947.1991
60.000	0.030389	-19504.9165	9768.1360	-0.0004284	290.6759	-175.6756	34684.8680
66.000	0.027813	36263.7702	8714.6840	-0.0004275	303.0244	-175.4751	37854.3610
72.000	0.025259	85712.5710	7663.6803	-0.0004213	339.4597	-174.8595	41535.6361
78.000	0.022758	128860.	6617.6217	-0.0004103	371.2519	-173.8267	45828.6050
84.000	0.020336	165739.	5579.0182	-0.0003952	398.4258	-172.3745	50858.8971
90.000	0.018015	196401.	4550.3934	-0.0003767	421.0181	-170.5005	56785.7079
96.000	0.015815	220909.	3534.2848	-0.0003553	439.0765	-168.2024	63812.6433
102.000	0.013751	239345.	2533.2442	-0.0003318	452.6608	-165.4778	72202.9846
108.000	0.011834	251806.	1549.8405	-0.0003067	461.8421	-162.3234	82301.6954
114.000	0.010071	258403.	586.6659	-0.0002806	466.7033	-158.7348	94568.1277
120.000	0.008467	259267.	-353.6509	-0.0002541	467.3394	-154.7042	109627.
126.000	0.007022	254541.	-1054.8024	-0.0002278	463.8572	-79.0130	67509.6937
132.000	0.005734	246951.	-1448.2191	-0.0002021	458.2646	-52.1259	54545.2108
138.000	0.004597	237465.	-1752.2987	-0.0001773	451.2755	-49.2339	64259.8277
144.000	0.003606	226189.	-2038.4603	-0.0001536	442.9669	-46.1533	76794.7359
150.000	0.002754	213234.	-2305.5306	-0.0001311	433.4213	-42.8702	93405.5777
156.000	0.002033	198719.	-2552.2265	-0.0001100	422.7264	-39.3618	116193.
162.000	0.001433	182772.	-2777.0757	-9.0517E-05	410.9762	-35.5879	148970.
168.000	0.000946	165530.	-2978.2551	-7.2695E-05	398.2717	-31.4719	199531.
174.000	0.000561	147142.	-3153.2146	-5.6695E-05	384.7230	-26.8480	287130.
180.000	0.000266	127777.	-3276.7110	-4.2628E-05	370.4538	-14.3175	322915.
186.000	4.95E-05	107886.	-3338.4844	-3.0570E-05	355.7976	-6.2737	760611.
192.000	-0.000101	87760.7979	-3277.8864	-2.0559E-05	340.9689	26.4730	1575672.
198.000	-0.000197	68582.0445	-3043.0945	-1.2559E-05	326.8374	51.7910	1575672.
204.000	-0.000252	51262.5025	-2689.5712	-6.4265E-06	314.0759	66.0501	1575672.
210.000	-0.000274	36316.8297	-2275.2914	-1.9452E-06	303.0635	72.0431	1575672.
216.000	-0.000275	23961.9229	-1842.6217	1.1392E-06	293.9600	72.1801	1575672.
222.000	-0.000261	14203.6603	-1420.7219	3.0921E-06	286.7698	68.4532	1575672.
228.000	-0.000238	6908.6221	-1028.0546	4.1724E-06	281.3946	62.4359	1575672.
234.000	-0.000211	1860.7468	-674.8329	4.6211E-06	277.6752	55.3046	1575672.
240.000	-0.000182	-1196.3040	-365.2989	4.6551E-06	277.1856	47.8733	1575672.
246.000	-0.000155	-2529.8231	-174.8297	4.4644E-06	278.1682	15.6164	605547.
252.000	-0.000129	-3300.9568	-103.5297	4.1661E-06	278.7364	8.1502	379894.
258.000	-0.000105	-3778.4283	-59.1837	3.8038E-06	279.0882	6.6318	379894.
264.000	-8.31E-05	-4016.8667	-23.5080	3.4049E-06	279.2639	5.2602	379894.
270.000	-6.39E-05	-4065.6313	4.4066	2.9914E-06	279.2998	4.0447	379894.
276.000	-4.72E-05	-3968.4741	25.5028	2.5803E-06	279.2282	2.9873	379894.
282.000	-3.29E-05	-3763.4680	40.7176	2.1846E-06	279.0772	2.0843	379894.
288.000	-2.10E-05	-3483.1400	50.9528	1.8138E-06	278.8706	1.3275	379894.
294.000	-1.12E-05	-3154.7555	57.0535	1.4742E-06	278.6287	0.7061147	379894.
300.000	-3.28E-06	-2800.7088	59.7941	1.1695E-06	278.3678	0.2074026	379894.
306.000	2.88E-06	-2438.9806	59.8690	9.0135E-07	278.1013	-0.1824253	379894.
312.000	7.54E-06	-2083.6325	57.8895	6.6993E-07	277.8394	-0.4774320	379894.
318.000	1.09E-05	-1745.3120	54.3829	4.7401E-07	277.5902	-0.6914324	379894.
324.000	1.32E-05	-1431.7492	49.7958	3.1144E-07	277.3591	-0.8375797	379894.
330.000	1.47E-05	-1148.2293	44.4989	1.7943E-07	277.1502	-0.9280643	379894.
336.000	1.54E-05	-898.0316	38.7930	7.4726E-08	276.9659	-0.9739087	379894.
342.000	1.56E-05	-682.8257	32.9167	-6.1648E-09	276.8073	-0.9848399	379894.
348.000	1.53E-05	-503.0216	27.0545	-6.6843E-08	276.6748	-0.9692247	379894.
354.000	1.48E-05	-358.0710	21.3447	-1.1090E-07	276.5680	-0.9340533	379894.
360.000	1.40E-05	-246.7188	15.8877	-1.4185E-07	276.4859	-0.8849611	379894.
366.000	1.31E-05	-167.2063	12.3182	-1.6303E-07	276.4274	-0.3048582	140164.
372.000	1.20E-05	-98.6559	10.5342	-1.7663E-07	276.3768	-0.2898235	144664.
378.000	1.09E-05	-40.5315	8.8495	-1.8376E-07	276.3340	-0.2717386	149164.

384.000	9.82E-06	7.8133	7.2801	-1.8543E-07	276.3099	-0.2513811	153664.
390.000	8.71E-06	47.1079	5.8375	-1.8262E-07	276.3389	-0.2294777	158164.
396.000	7.62E-06	78.1376	4.5290	-1.7621E-07	276.3617	-0.2066931	162664.
402.000	6.59E-06	101.7204	3.3581	-1.6701E-07	276.3791	-0.1836234	167164.
408.000	5.62E-06	118.6850	2.3248	-1.5573E-07	276.3916	-0.1607908	171664.
414.000	4.72E-06	129.8520	1.4265	-1.4301E-07	276.3998	-0.1386415	176164.
420.000	3.90E-06	136.0179	0.6579670	-1.2941E-07	276.4044	-0.1175462	180664.
426.000	3.17E-06	137.9417	0.0119257	-1.1539E-07	276.4058	-0.0978009	185164.
432.000	2.52E-06	136.3341	-0.5203702	-1.0136E-07	276.4046	-0.0796310	189664.
438.000	1.95E-06	131.8493	-0.9488488	-8.7634E-08	276.4013	-0.0631951	194164.
444.000	1.47E-06	125.0793	-1.2842	-7.4487E-08	276.3963	-0.0485904	198664.
450.000	1.06E-06	116.5505	-1.5376	-6.2123E-08	276.3900	-0.0358582	203164.
456.000	7.22E-07	106.7219	-1.7201	-5.0699E-08	276.3828	-0.0249902	207664.
462.000	4.51E-07	95.9854	-1.8429	-4.0326E-08	276.3749	-0.0159339	212164.
468.000	2.38E-07	84.6680	-1.9165	-3.1083E-08	276.3665	-0.0085987	216664.
474.000	7.76E-08	73.0345	-1.9508	-2.3013E-08	276.3580	-0.0028611	221164.
480.000	-3.80E-08	61.2923	-1.9551	-1.6140E-08	276.3493	0.0014306	225664.
486.000	-1.16E-07	49.5970	-1.8809	-1.0466E-08	276.3407	0.0233302	1206107.
492.000	-1.64E-07	38.7378	-1.7122	-5.9459E-09	276.3327	0.0328922	1206107.
498.000	-1.87E-07	29.0597	-1.5005	-2.4768E-09	276.3256	0.0376729	1206107.
504.000	-1.93E-07	20.7356	-1.2709	7.1177E-11	276.3194	0.0388668	1206107.
510.000	-1.87E-07	13.8091	-1.0418	1.8388E-09	276.3143	0.0375012	1206107.
516.000	-1.71E-07	8.2316	-0.8259717	2.9666E-09	276.3102	0.0344312	1206107.
522.000	-1.51E-07	3.8930	-0.6316423	3.5870E-09	276.3070	0.0303452	1206107.
528.000	-1.28E-07	0.6465169	-0.4632707	3.8193E-09	276.3046	0.0257787	1206107.
534.000	-1.05E-07	-1.6720	-0.3225376	3.7668E-09	276.3054	0.0211323	1206107.
540.000	-8.30E-08	-3.2296	-0.2090635	3.5160E-09	276.3065	0.0166924	1206107.
546.000	-6.29E-08	-4.1860	-0.1153850	3.1365E-09	276.3072	0.0145338	1385601.
552.000	-4.54E-08	-4.6189	-0.0360152	2.6860E-09	276.3076	0.0119228	1575672.
558.000	-3.07E-08	-4.6222	0.0239422	2.2131E-09	276.3076	0.0080630	1575672.
564.000	-1.88E-08	-4.3349	0.0629765	1.7548E-09	276.3073	0.0049485	1575672.
570.000	-9.65E-09	-3.8691	0.0854207	1.3350E-09	276.3070	0.0025329	1575672.
576.000	-2.82E-09	-3.3119	0.0952435	9.6758E-10	276.3066	0.0007413	1575672.
582.000	1.97E-09	-2.7277	0.0959188	6.5854E-10	276.3062	-0.0005162	1575672.
588.000	5.08E-09	-2.1618	0.0903682	4.0836E-10	276.3057	-0.0013340	1575672.
594.000	6.87E-09	-1.6439	0.0809570	2.1362E-10	276.3054	-0.0018031	1575672.
600.000	7.64E-09	-1.1907	0.0695262	6.8583E-11	276.3050	-0.0020072	1575672.
606.000	7.69E-09	-0.8096528	0.0574470	-3.3772E-11	276.3048	-0.0020192	1575672.
612.000	7.24E-09	-0.5012604	0.0456871	-1.0085E-10	276.3045	-0.0019007	1575672.
618.000	6.48E-09	-0.2612561	0.0348807	-1.3987E-10	276.3043	-0.0017014	1575672.
624.000	5.56E-09	-0.0824827	0.0253965	-1.5745E-10	276.3042	-0.0014600	1575672.
630.000	4.59E-09	0.0437380	0.0174009	-1.5944E-10	276.3042	-0.0012052	1575672.
636.000	3.65E-09	0.1265673	0.0109126	-1.5072E-10	276.3042	-0.0009575	1575672.
642.000	2.78E-09	0.1749158	0.0058493	-1.3530E-10	276.3043	-0.0007302	1575672.
648.000	2.02E-09	0.1969622	0.0020651	-1.1627E-10	276.3043	-0.0005312	1575672.
654.000	1.39E-09	0.1998716	-0.0006199	-9.5963E-11	276.3043	-0.0003638	1575672.
660.000	8.71E-10	0.1896674	-0.0023977	-7.6031E-11	276.3043	-0.0002288	1575672.
666.000	4.73E-10	0.1712135	-0.0035626	-5.7565E-11	276.3043	-0.0001595	2023324.
672.000	1.80E-10	0.1470030	-0.0042667	-4.1282E-11	276.3043	-7.5164E-05	2501506.
678.000	-2.23E-11	0.1200754	-0.0044643	-2.7616E-11	276.3042	9.2872E-06	2501506.
684.000	-1.51E-10	0.0934728	-0.0042474	-1.6689E-11	276.3042	6.2999E-05	2501506.
690.000	-2.23E-10	0.0691311	-0.0037801	-8.3687E-12	276.3042	9.2782E-05	2501506.
696.000	-2.52E-10	0.0481242	-0.0031871	-2.3689E-12	276.3042	0.0001049	2501506.
702.000	-2.51E-10	0.0308888	-0.0025586	1.6741E-12	276.3042	0.0001046	2501506.
708.000	-2.31E-10	0.0174179	-0.0019553	4.1458E-12	276.3042	9.6493E-05	2501506.
714.000	-2.01E-10	0.0074194	-0.0014141	5.4167E-12	276.3042	8.3892E-05	2501506.
720.000	-1.66E-10	0.0004405	-0.0009543	5.8189E-12	276.3042	6.9393E-05	2501506.
726.000	-1.31E-10	-0.0040403	-0.0005817	5.6347E-12	276.3042	5.4780E-05	2501506.
732.000	-9.88E-11	-0.0065488	-0.0002938	5.0929E-12	276.3042	4.1202E-05	2501506.
738.000	-7.03E-11	-0.0075734	-8.2281E-05	4.3703E-12	276.3042	2.9300E-05	2501506.
744.000	-4.64E-11	-0.0075427	6.3632E-05	3.5968E-12	276.3042	1.9337E-05	2501506.
750.000	-2.71E-11	-0.0068152	0.0001556	2.8621E-12	276.3042	1.1305E-05	2501506.
756.000	-1.20E-11	-0.0056803	0.0002045	2.2228E-12	276.3042	5.0180E-06	2501506.
762.000	-4.43E-13	-0.0043642	0.0002201	1.7088E-12	276.3042	1.8484E-07	2501506.
768.000	8.47E-12	-0.0030411	0.0002101	1.3299E-12	276.3042	-3.5311E-06	2501506.
774.000	1.55E-11	-0.0018450	0.0001801	1.0799E-12	276.3042	-6.4686E-06	2501506.
780.000	2.14E-11	-0.0008816	0.0001339	9.4035E-13	276.3042	-8.9337E-06	2501506.
786.000	2.68E-11	-0.0002397	7.3573E-05	8.8298E-13	276.3042	-1.1173E-05	2501506.
792.000	3.20E-11	0.0000	0.0000	8.7072E-13	276.3042	-1.3351E-05	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 4:

```
Pile-head deflection             =     0.04793604 in
Computed slope at pile head      =   4.625929E-18
Maximum bending moment           =  -917858.86999 lbs-in
Maximum shear force              =    20000.00000 lbs
Depth of maximum bending moment  =        0.00000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             21
Number of zero deflection points =              6
```

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 5

Pile-head boundary conditions are Shear and Slope (BC Type 2)
Specified shear force at pile head = 25000.000 lbs
Specified slope at pile head = 0.000E+00 in/in
Specified axial load at pile head = 125000.000 lbs

(Zero slope for this load indicates fixed-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	0.080238	-1259268.	25000.0000	1.2721E-17	1204.1693	-216.7782	8105.0483
6.000	0.079852	-1113121.	23807.2515	-0.0001214	1096.4845	-180.8047	13585.5514
12.000	0.078782	-973399.	22709.9696	-0.0002282	993.5326	-184.9560	14086.2483
18.000	0.077114	-840259.	21589.0065	-0.0003210	895.4319	-188.6984	14682.0893
24.000	0.074930	-713849.	20446.7952	-0.0004005	802.2890	-192.0387	15377.4489
30.000	0.072308	-594297.	19285.7358	-0.0004674	714.1997	-194.9811	16179.2267
36.000	0.069321	-481719.	18108.2077	-0.0005225	631.2489	-197.5282	17096.8334
42.000	0.066038	-376215.	16916.5792	-0.0005664	553.5104	-199.6813	18142.3318
48.000	0.062524	-277871.	15713.2137	-0.0005998	481.0473	-201.4405	19330.7149
54.000	0.058840	-186757.	14500.4757	-0.0006236	413.9119	-202.8055	20680.3246
60.000	0.055041	-102929.	13280.7338	-0.0006384	352.1456	-203.7752	22213.4251
66.000	0.051179	-26430.2348	12056.3636	-0.0006451	295.7787	-204.3482	23956.9598
72.000	0.047300	42714.4878	10829.7496	-0.0006442	307.7774	-204.5231	25943.5357
78.000	0.043448	104493.	9603.2858	-0.0006367	353.2977	-204.2981	28212.7002
84.000	0.039660	158909.	8379.3770	-0.0006232	393.3929	-203.6715	30812.6003
90.000	0.035970	205980.	7160.4387	-0.0006045	428.0766	-202.6413	33802.1594
96.000	0.032405	245741.	5948.8983	-0.0005814	457.3733	-201.2055	37253.9641
102.000	0.028992	278239.	4747.1963	-0.0005546	481.3190	-199.3618	41258.1570
108.000	0.025750	303539.	3557.7892	-0.0005249	499.9608	-197.1072	45927.7918
114.000	0.022694	321720.	2383.1556	-0.0004929	513.3569	-194.4373	51406.3897
120.000	0.019836	332876.	1225.8071	-0.0004594	521.5773	-191.3455	57878.9351
126.000	0.017182	337119.	332.4417	-0.0004251	524.7032	-106.4429	37170.6094
132.000	0.014735	337503.	-201.0206	-0.0003906	524.9865	-71.3778	29064.9645
138.000	0.012495	335292.	-621.2179	-0.0003561	523.3574	-68.6880	32983.2338
144.000	0.010461	330583.	-1024.6845	-0.0003221	519.8873	-65.8009	37739.9465
150.000	0.008630	323479.	-1410.2178	-0.0002886	514.6532	-62.7102	43597.5607
156.000	0.006998	314093.	-1776.5696	-0.0002560	507.7372	-59.4071	50934.3779
162.000	0.005559	302544.	-2122.4274	-0.0002244	499.2277	-55.8789	60315.2793
168.000	0.004305	288961.	-2446.3844	-0.0001942	489.2189	-52.1068	72621.8150
174.000	0.003229	273479.	-2746.8899	-0.0001654	477.8115	-48.0617	89310.2918
180.000	0.002321	256246.	-3022.1621	-0.0001383	465.1138	-43.6957	112978.
186.000	0.001570	237421.	-3398.8374	-0.0001130	451.2425	-81.8627	312920.
192.000	0.000965	215630.	-3939.8021	-8.9825E-05	435.1863	-98.4588	612494.
198.000	0.000492	190278.	-4488.7899	-6.9055E-05	416.5063	-84.5371	1031450.
204.000	0.000136	161868.	-4814.7895	-5.1036E-05	395.5730	-24.1294	1065753.

210.000	-0.000121	132577.	-4792.1040	-3.5970E-05	373.9905	31.6913	1575672.
216.000	-0.000296	104416.	-4463.9933	-2.3843E-05	353.2412	77.6789	1575672.
222.000	-0.000407	79044.5509	-3910.4682	-1.4456E-05	334.5465	106.8294	1575672.
228.000	-0.000469	57512.4803	-3220.2778	-7.4683E-06	318.6810	123.2340	1575672.
234.000	-0.000496	40412.4194	-2469.1830	-2.4576E-06	306.0812	127.1310	1536587.
240.000	-0.000499	27885.9710	-1705.9253	1.0371E-06	296.8514	127.2883	1531274.
246.000	-0.000484	19939.7599	-1178.3021	3.4843E-06	290.9964	48.5861	602345.
252.000	-0.000457	13741.1194	-945.7487	5.2077E-06	286.4290	28.9317	379894.
258.000	-0.000421	8582.9639	-778.8952	6.3500E-06	282.6283	26.6862	379894.
264.000	-0.000381	4384.8519	-626.5157	7.0135E-06	279.5350	24.1070	379894.
270.000	-0.000337	1054.2556	-490.1226	7.2919E-06	277.0810	21.3574	379894.
276.000	-0.000293	-1507.5565	-370.3503	7.2687E-06	277.4150	18.5667	379894.
282.000	-0.000250	-3400.8504	-267.1459	7.0175E-06	278.8100	15.8347	379894.
288.000	-0.000209	-4723.8333	-179.9370	6.6018E-06	279.7848	13.2349	379894.
294.000	-0.000171	-5569.9968	-107.7759	6.0751E-06	280.4083	10.8188	379894.
300.000	-0.000136	-6026.2571	-49.4622	5.4817E-06	280.7445	8.6192	379894.
306.000	-0.000105	-6171.7651	-3.6431	4.8575E-06	280.8517	6.6538	379894.
312.000	-7.78E-05	-6077.2611	31.1038	4.2308E-06	280.7821	4.9285	379894.
318.000	-5.43E-05	-5804.8659	56.2072	3.6228E-06	280.5814	3.4394	379894.
324.000	-3.44E-05	-5408.2083	73.0531	3.0490E-06	280.2891	2.1759	379894.
330.000	-1.77E-05	-4932.8023	82.9491	2.5199E-06	279.9388	1.1228	379894.
336.000	-4.13E-06	-4416.5986	87.1014	2.0415E-06	279.5584	0.2613528	379894.
342.000	6.77E-06	-3890.6472	86.6005	1.6164E-06	279.1709	-0.4283405	379894.
348.000	1.53E-05	-3379.8174	82.4151	1.2444E-06	278.7945	-0.9667755	379894.
354.000	2.17E-05	-2903.5322	75.3934	9.2288E-07	278.4436	-1.3738	379894.
360.000	2.63E-05	-2476.4813	66.2680	6.4759E-07	278.1289	-1.6680	379894.
366.000	2.95E-05	-2109.2872	59.2180	4.1294E-07	277.8583	-0.6820438	138867.
372.000	3.13E-05	-1766.4848	54.9282	2.1462E-07	277.6058	-0.7478741	143367.
378.000	3.20E-05	-1450.4702	50.3155	5.0015E-08	277.3729	-0.7897184	147867.
384.000	3.19E-05	-1162.7742	45.5161	-8.3701E-08	277.1609	-0.8100638	152367.
390.000	3.10E-05	-904.1512	40.6514	-1.8946E-07	276.9704	-0.8115249	156867.
396.000	2.96E-05	-674.6737	35.8265	-2.7025E-07	276.8013	-0.7967661	161367.
402.000	2.78E-05	-473.8280	31.1309	-3.2902E-07	276.6533	-0.7684336	165867.
408.000	2.57E-05	-300.6096	26.6383	-3.6864E-07	276.5257	-0.7290969	170367.
414.000	2.34E-05	-153.6156	22.4074	-3.9189E-07	276.4173	-0.6812014	174867.
420.000	2.10E-05	-31.1330	18.4827	-4.0134E-07	276.3271	-0.6270298	179367.
426.000	1.86E-05	68.7789	14.8956	-3.9941E-07	276.3548	-0.5686747	183867.
432.000	1.62E-05	148.2132	11.6655	-3.8831E-07	276.4134	-0.5080191	188367.
438.000	1.39E-05	209.3475	8.8013	-3.7001E-07	276.4584	-0.4467258	192867.
444.000	1.17E-05	254.3835	6.3024	-3.4629E-07	276.4916	-0.3862344	197367.
450.000	9.74E-06	285.4956	4.1604	-3.1866E-07	276.5145	-0.3277645	201867.
456.000	7.92E-06	304.7863	2.3601	-2.8846E-07	276.5287	-0.2723245	206367.
462.000	6.28E-06	314.2498	0.8809800	-2.5678E-07	276.5357	-0.2207253	210867.
468.000	4.84E-06	315.7432	-0.3019850	-2.2455E-07	276.5368	-0.1735964	215367.
474.000	3.59E-06	310.9628	-1.2170	-1.9248E-07	276.5333	-0.1314056	219867.
480.000	2.53E-06	301.4280	-1.8946	-1.6114E-07	276.5263	-0.0944794	224367.
486.000	1.65E-06	288.4688	-3.1745	-1.3096E-07	276.5167	-0.3321302	1206107.
492.000	9.55E-07	263.5307	-4.7468	-1.0271E-07	276.4983	-0.1919835	1206107.
498.000	4.20E-07	231.6611	-5.5759	-7.7375E-08	276.4749	-0.0843643	1206107.
504.000	2.66E-08	196.7365	-5.8450	-5.5454E-08	276.4491	-0.0053391	1206107.
510.000	-2.46E-07	161.6046	-5.7128	-3.7118E-08	276.4232	0.0494031	1206107.
516.000	-4.19E-07	128.2388	-5.3120	-2.2287E-08	276.3986	0.0841983	1206107.
522.000	-5.13E-07	97.8944	-4.7499	-1.0717E-08	276.3763	0.1031651	1206107.
528.000	-5.47E-07	71.2563	-4.1102	-2.0613E-09	276.3567	0.1100488	1206107.
534.000	-5.38E-07	48.5746	-3.4557	4.0703E-09	276.3399	0.1081374	1206107.
540.000	-4.99E-07	29.7820	-2.8306	8.0797E-09	276.3261	0.1002304	1206107.
546.000	-4.41E-07	14.5955	-2.2244	1.0350E-08	276.3149	0.1018400	1385601.
552.000	-3.74E-07	3.0741	-1.6239	1.1255E-08	276.3064	0.0983243	1575672.
558.000	-3.06E-07	-4.9079	-1.0879	1.1161E-08	276.3078	0.0803429	1575672.
564.000	-2.40E-07	-9.9971	-0.6573850	1.0398E-08	276.3115	0.0631529	1575672.
570.000	-1.81E-07	-12.8121	-0.3252012	9.2310E-09	276.3136	0.0475750	1575672.
576.000	-1.30E-07	-13.9134	-0.0802874	7.8635E-09	276.3144	0.0340630	1575672.
582.000	-8.68E-08	-13.7873	0.0902851	6.4461E-09	276.3143	0.0227945	1575672.
588.000	-5.24E-08	-12.8396	0.1999163	5.0836E-09	276.3136	0.0137492	1575672.
594.000	-2.58E-08	-11.3959	0.2614871	3.8435E-09	276.3126	0.0067744	1575672.
600.000	-6.23E-09	-9.7075	0.2867214	2.7637E-09	276.3113	0.0016371	1575672.
606.000	7.37E-09	-7.9594	0.2858280	1.8597E-09	276.3100	-0.0019349	1575672.
612.000	1.61E-08	-6.2804	0.2673533	1.1310E-09	276.3088	-0.0042233	1575672.
618.000	2.09E-08	-4.7529	0.2381859	5.6647E-10	276.3077	-0.0054991	1575672.
624.000	2.29E-08	-3.4230	0.2036632	1.4812E-10	276.3067	-0.0060085	1575672.

630.000	2.27E-08	-2.3092	0.1677401	-1.4519E-10	276.3059	-0.0059659	1575672.
636.000	2.11E-08	-1.4099	0.1331896	-3.3549E-10	276.3052	-0.0055509	1575672.
642.000	1.87E-08	-0.7103794	0.1018109	-4.4398E-10	276.3047	-0.0049086	1575672.
648.000	1.58E-08	-0.1875089	0.0746297	-4.8993E-10	276.3043	-0.0041518	1575672.
654.000	1.28E-08	0.1859116	0.0520802	-4.9001E-10	276.3043	-0.0033647	1575672.
660.000	9.93E-09	0.4381883	0.0341633	-4.5807E-10	276.3045	-0.0026076	1575672.
666.000	7.32E-09	0.5965577	0.0189396	-4.0513E-10	276.3046	-0.0024670	2023324.
672.000	5.07E-09	0.6660706	0.0051999	-3.4052E-10	276.3046	-0.0021129	2501506.
678.000	3.23E-09	0.6594672	-0.0051780	-2.7269E-10	276.3046	-0.0013464	2501506.
684.000	1.80E-09	0.6043439	-0.0114630	-2.0803E-10	276.3046	-0.0007486	2501506.
690.000	7.33E-10	0.5222236	-0.0146257	-1.5038E-10	276.3045	-0.0003056	2501506.
696.000	-8.95E-12	0.4290613	-0.0155313	-1.0171E-10	276.3045	3.7314E-06	2501506.
702.000	-4.87E-10	0.3360005	-0.0149104	-6.2559E-11	276.3044	0.0002032	2501506.
708.000	-7.60E-10	0.2502302	-0.0133506	-3.2562E-11	276.3043	0.0003167	2501506.
714.000	-8.78E-10	0.1758423	-0.0113020	-1.0760E-11	276.3043	0.0003661	2501506.
720.000	-8.89E-10	0.1146218	-0.0090920	4.1023E-12	276.3042	0.0003705	2501506.
726.000	-8.29E-10	0.0667323	-0.0069435	1.3382E-11	276.3042	0.0003456	2501506.
732.000	-7.28E-10	0.0312798	-0.0049959	1.8397E-11	276.3042	0.0003036	2501506.
738.000	-6.08E-10	0.0067543	-0.0033244	2.0343E-11	276.3042	0.0002536	2501506.
744.000	-4.84E-10	-0.0086430	-0.0019582	2.0247E-11	276.3042	0.0002018	2501506.
750.000	-3.65E-10	-0.0167742	-0.0008959	1.8946E-11	276.3042	0.0001523	2501506.
756.000	-2.57E-10	-0.0194220	-0.0001179	1.7094E-11	276.3042	0.0001070	2501506.
762.000	-1.60E-10	-0.0182151	0.0004034	1.5168E-11	276.3042	6.6758E-05	2501506.
768.000	-7.47E-11	-0.0146036	0.0006971	1.3489E-11	276.3042	3.1146E-05	2501506.
774.000	1.74E-12	-0.0098697	0.0007884	1.2237E-11	276.3042	-7.2663E-07	2501506.
780.000	7.21E-11	-0.0051612	0.0006960	1.1467E-11	276.3042	-3.0073E-05	2501506.
786.000	1.39E-10	-0.0015349	0.0004315	1.1125E-11	276.3042	-5.8098E-05	2501506.
792.000	2.06E-10	0.0000	0.0000	1.1046E-11	276.3042	-8.5731E-05	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 5:

```
Pile-head deflection             =     0.08023821 in
Computed slope at pile head      =   1.272131E-17
Maximum bending moment           =      -1259268. lbs-in
Maximum shear force              =    25000.00000 lbs
Depth of maximum bending moment  =        0.00000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             23
Number of zero deflection points =              6
```

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 6

Pile-head boundary conditions are Shear and Slope (BC Type 2)
Specified shear force at pile head = 30000.000 lbs
Specified slope at pile head = 0.000E+00 in/in
Specified axial load at pile head = 125000.000 lbs

(Zero slope for this load indicates fixed-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	0.122170	-1632799.	30000.0000	-6.9389E-18	1479.3982	-240.7990	5913.0287
6.000	0.121669	-1457071.	28674.9768	-0.0001581	1349.9165	-200.8754	9905.9847
12.000	0.120273	-1288462.	27455.5874	-0.0002986	1225.6807	-205.5878	10256.0438
18.000	0.118086	-1127156.	26209.1020	-0.0004222	1106.8255	-209.9073	10665.4793
24.000	0.115207	-973320.	24937.8632	-0.0005297	993.4745	-213.8389	11136.7868
30.000	0.111730	-827107.	23644.1897	-0.0006218	885.7407	-217.3855	11673.8006

36.000	0.107745	-688657.	22330.3871	-0.0006994	783.7265	-220.5487	12281.6746
42.000	0.103338	-558093.	20998.7548	-0.0007632	687.5236	-223.3288	12966.9341
48.000	0.098587	-435527.	19651.5917	-0.0008140	597.2131	-225.7256	13737.5913
54.000	0.093570	-321053.	18291.2005	-0.0008527	512.8656	-227.7381	14603.3219
60.000	0.088355	-214753.	16919.8909	-0.0008801	434.5408	-229.3651	15575.7091
66.000	0.083008	-116694.	15539.9817	-0.0008971	362.2880	-230.6047	16668.5619
72.000	0.077590	-26928.0803	14153.8030	-0.0009044	296.1456	-231.4549	17898.3270
78.000	0.072155	54507.9071	12763.6971	-0.0009030	316.4672	-231.9137	19284.6139
84.000	0.066754	127591.	11372.0204	-0.0008937	370.3168	-231.9786	20850.8683
90.000	0.061431	192313.	9981.1437	-0.0008773	418.0058	-231.6470	22625.2401
96.000	0.056226	248681.	8593.4548	-0.0008548	459.5392	-230.9160	24641.7140
102.000	0.051173	296716.	7211.3608	-0.0008269	494.9334	-229.7820	26941.6038
108.000	0.046303	336457.	5837.2920	-0.0007945	524.2156	-228.2409	29575.5621
114.000	0.041640	367956.	4473.7088	-0.0007584	547.4245	-226.2869	32606.3424
120.000	0.037202	391279.	3123.1118	-0.0007196	564.6102	-223.9121	36112.6924
126.000	0.033005	406512.	2054.4386	-0.0006787	575.8342	-132.3123	24053.1849
132.000	0.029057	416951.	1388.9886	-0.0006366	583.5256	-89.5044	18481.6663
138.000	0.025366	424135.	859.5723	-0.0005936	588.8192	-86.9677	20571.4443
144.000	0.021934	428156.	346.0264	-0.0005500	591.7819	-84.2142	23036.2778
150.000	0.018766	429112.	-150.3281	-0.0005061	592.4866	-81.2373	25973.8070
156.000	0.015861	427111.	-628.1268	-0.0004623	591.0121	-78.0289	29517.0388
162.000	0.013219	422268.	-1085.9479	-0.0004188	587.4437	-74.5782	33851.6836
168.000	0.010835	414708.	-1522.2951	-0.0003760	581.8731	-70.8709	39244.8091
174.000	0.008707	404565.	-1935.5692	-0.0003341	574.3992	-66.8872	46094.5665
180.000	0.006826	391982.	-2324.0272	-0.0002933	565.1281	-62.5988	55021.8548
186.000	0.005187	377116.	-2842.8639	-0.0002540	554.1744	-110.3467	127650.
192.000	0.003779	358249.	-3589.3312	-0.0002163	540.2724	-138.4757	219881.
198.000	0.002591	334369.	-4388.7669	-0.0001809	522.6769	-128.0029	296463.
204.000	0.001608	305855.	-5118.9476	-0.0001481	501.6671	-115.3907	430600.
210.000	0.000813	273164.	-5761.5549	-0.0001185	477.5791	-98.8118	729305.
216.000	0.000186	236894.	-6159.9836	-9.2413E-05	450.8547	-33.9978	1098364.
222.000	-0.000296	199382.	-6028.7551	-7.0089E-05	423.2150	77.7407	1575672.
228.000	-0.000655	164654.	-5386.8513	-5.1462E-05	397.6262	136.2273	1247216.
234.000	-0.000914	134817.	-4534.0285	-3.6138E-05	375.6416	148.0470	972319.
240.000	-0.001089	110300.	-3625.7712	-2.3596E-05	357.5765	154.7054	852364.
246.000	-0.001197	91343.5986	-2964.5805	-1.3278E-05	343.6088	65.6915	329357.
252.000	-0.001248	74745.0155	-2642.1131	-4.7795E-06	331.3785	41.7976	200894.
258.000	-0.001254	59645.4107	-2391.1325	2.0970E-06	320.2526	41.8626	200287.
264.000	-0.001223	46048.2799	-2140.9943	7.5053E-06	310.2339	41.5168	203650.
270.000	-0.001164	33942.2213	-1893.9323	1.1598E-05	301.3138	40.8371	210498.
276.000	-0.001084	23303.6946	-1651.7811	1.4527E-05	293.4750	39.8799	220737.
282.000	-0.000990	14099.0569	-1416.0751	1.6441E-05	286.6928	38.6887	234552.
288.000	-0.000887	6286.1314	-1188.1145	1.7484E-05	280.9360	37.2981	252382.
294.000	-0.000780	-184.5435	-969.0112	1.7797E-05	276.4401	35.7363	274940.
300.000	-0.000673	-5368.6975	-759.7235	1.7512E-05	280.2600	34.0263	303288.
306.000	-0.000570	-9327.4943	-561.0852	1.6760E-05	283.1769	32.1865	338971.
312.000	-0.000472	-12126.8606	-374.8663	1.5663E-05	285.2396	29.8864	379894.
318.000	-0.000382	-13849.3840	-212.6909	1.4334E-05	286.5088	24.1720	379894.
324.000	-0.000300	-14700.6518	-83.1868	1.2873E-05	287.1360	18.9960	379894.
330.000	-0.000227	-14866.9348	16.9758	1.1360E-05	287.2585	14.3915	379894.
336.000	-0.000164	-14513.9815	91.2455	9.8563E-06	286.9985	10.3650	379894.
342.000	-0.000109	-13786.7727	143.0491	8.4082E-06	286.4627	6.9028	379894.
348.000	-6.28E-05	-12810.0044	175.6873	7.0473E-06	285.7429	3.9766	379894.
354.000	-2.45E-05	-11689.0960	192.2621	5.7937E-06	284.9170	1.5484	379894.
360.000	6.72E-06	-10511.5492	195.6310	4.6577E-06	284.0494	-0.4254039	379894.
366.000	3.14E-05	-9348.5101	192.1845	3.6415E-06	283.1924	-0.7234396	138070.
372.000	5.04E-05	-8210.7974	186.4202	2.7430E-06	282.3541	-1.1980	142570.
378.000	6.44E-05	-7115.5820	178.0940	1.9588E-06	281.5471	-1.5774	147070.
384.000	7.39E-05	-6076.6080	167.7595	1.2838E-06	280.7816	-1.8674	151570.
390.000	7.98E-05	-5104.3940	155.9332	7.1164E-07	280.0652	-2.0747	156070.
396.000	8.25E-05	-4206.4765	143.0888	2.3522E-07	279.4036	-2.2068	160570.
402.000	8.26E-05	-3387.6817	129.6524	-1.5337E-07	278.8003	-2.2720	165070.
408.000	8.06E-05	-2650.4178	116.0010	-4.6233E-07	278.2571	-2.2785	169570.
414.000	7.70E-05	-1994.9765	102.4608	-7.0003E-07	277.7741	-2.2349	174070.
420.000	7.22E-05	-1419.8379	89.3079	-8.7476E-07	277.3503	-2.1494	178570.
426.000	6.65E-05	-921.9698	76.7691	-9.9459E-07	276.9835	-2.0302	183070.
432.000	6.03E-05	-497.1163	65.0247	-1.0672E-06	276.6704	-1.8847	187570.
438.000	5.37E-05	-140.0721	54.2108	-1.0998E-06	276.4074	-1.7200	192070.
444.000	4.71E-05	155.0627	44.4227	-1.0990E-06	276.4184	-1.5427	196570.
450.000	4.05E-05	394.6483	35.7187	-1.0709E-06	276.5949	-1.3586	201070.

456.000	3.42E-05	585.2929	28.1236	-1.0208E-06	276.7354	-1.1730	205570.
462.000	2.83E-05	733.6630	21.6328	-9.5328E-07	276.8447	-0.9905806	210070.
468.000	2.28E-05	846.3158	16.2151	-8.7243E-07	276.9277	-0.8153109	214570.
474.000	1.78E-05	929.5526	11.8168	-7.8156E-07	276.9891	-0.6507731	219070.
480.000	1.34E-05	989.2901	8.3644	-6.8338E-07	277.0331	-0.5000410	223570.
486.000	9.62E-06	1030.9503	1.0610	-5.8000E-07	277.0638	-1.9344	1206107.
492.000	6.46E-06	1002.8919	-8.6378	-4.7593E-07	277.0431	-1.2985	1206107.
498.000	3.91E-06	928.0102	-14.8925	-3.7713E-07	276.9879	-0.7863733	1206107.
504.000	1.93E-06	824.7479	-18.4179	-2.8745E-07	276.9119	-0.3887833	1206107.
510.000	4.63E-07	707.4261	-19.8633	-2.0905E-07	276.8254	-0.0929917	1206107.
516.000	-5.74E-07	586.7022	-19.7958	-1.4283E-07	276.7365	0.1154824	1206107.
522.000	-1.25E-06	470.0908	-18.6947	-8.8753E-08	276.6505	0.2515399	1206107.
528.000	-1.64E-06	362.4986	-16.9514	-4.6151E-08	276.5713	0.3295743	1206107.
534.000	-1.81E-06	266.7434	-14.8741	-1.3953E-08	276.5007	0.3628655	1206107.
540.000	-1.81E-06	184.0308	-12.6958	9.1122E-09	276.4398	0.3632326	1206107.
546.000	-1.70E-06	114.3804	-10.4312	2.4382E-08	276.3884	0.3916156	1385601.
552.000	-1.51E-06	58.8195	-8.0633	3.3244E-08	276.3475	0.3976966	1575672.
558.000	-1.30E-06	17.5711	-5.8485	3.7153E-08	276.3171	0.3405727	1575672.
564.000	-1.07E-06	-11.4181	-3.9849	3.7468E-08	276.3126	0.2806154	1575672.
570.000	-8.47E-07	-30.3042	-2.4756	3.5333E-08	276.3265	0.2224994	1575672.
576.000	-6.45E-07	-41.1780	-1.3003	3.1675E-08	276.3345	0.1692699	1575672.
582.000	-4.67E-07	-45.9549	-0.4244171	2.7217E-08	276.3380	0.1226803	1575672.
588.000	-3.18E-07	-46.3118	0.1941268	2.2495E-08	276.3383	0.0835010	1575672.
594.000	-1.97E-07	-43.6591	0.5999980	1.7892E-08	276.3363	0.0517894	1575672.
600.000	-1.03E-07	-39.1387	0.8367200	1.3655E-08	276.3330	0.0271179	1575672.
606.000	-3.33E-08	-33.6390	0.9443464	9.9312E-09	276.3289	0.0087575	1575672.
612.000	1.59E-08	-27.8214	0.9580833	6.7863E-09	276.3247	-0.0041786	1575672.
618.000	4.81E-08	-22.1521	0.9076622	4.2292E-09	276.3205	-0.0126285	1575672.
624.000	6.67E-08	-16.9358	0.8172578	2.2292E-09	276.3166	-0.0175063	1575672.
630.000	7.48E-08	-12.3484	0.7057789	7.3072E-10	276.3133	-0.0196533	1575672.
636.000	7.54E-08	-8.4676	0.5873918	-3.3441E-10	276.3104	-0.0198091	1575672.
642.000	7.08E-08	-5.2992	0.4721662	-1.0388E-09	276.3081	-0.0185995	1575672.
648.000	6.30E-08	-2.8000	0.3667617	-1.4533E-09	276.3062	-0.0165354	1575672.
654.000	5.34E-08	-0.8958671	0.2750963	-1.6424E-09	276.3048	-0.0140198	1575672.
660.000	4.33E-08	0.5036211	0.1989579	-1.6624E-09	276.3045	-0.0113597	1575672.
666.000	3.34E-08	1.4941	0.1310523	-1.5602E-09	276.3053	-0.0112755	2023324.
672.000	2.45E-08	2.0786	0.0665399	-1.3774E-09	276.3057	-0.0102286	2501506.
678.000	1.69E-08	2.2947	0.0147066	-1.1536E-09	276.3058	-0.0070491	2501506.
684.000	1.07E-08	2.2568	-0.0198118	-9.2074E-10	276.3058	-0.0044570	2501506.
690.000	5.86E-09	2.0583	-0.0405108	-6.9994E-10	276.3057	-0.0024426	2501506.
696.000	2.29E-09	1.7717	-0.0507043	-5.0396E-10	276.3055	-0.0009552	2501506.
702.000	-1.89E-10	1.4506	-0.0533338	-3.3908E-10	276.3052	7.8696E-05	2501506.
708.000	-1.78E-09	1.1322	-0.0508740	-2.0692E-10	276.3050	0.0007412	2501506.
714.000	-2.67E-09	0.8404332	-0.0453085	-1.0598E-10	276.3048	0.0011139	2501506.
720.000	-3.05E-09	0.5886803	-0.0381523	-3.2858E-11	276.3046	0.0012715	2501506.
726.000	-3.07E-09	0.3826551	-0.0305029	1.6844E-11	276.3044	0.0012783	2501506.
732.000	-2.85E-09	0.2226200	-0.0231064	4.7816E-11	276.3043	0.0011872	2501506.
738.000	-2.49E-09	0.1053069	-0.0164275	6.4595E-11	276.3042	0.0010391	2501506.
744.000	-2.07E-09	0.0253931	-0.0107181	7.1283E-11	276.3042	0.0008640	2501506.
750.000	-1.64E-09	-0.0234176	-0.0060786	7.1384E-11	276.3042	0.0006825	2501506.
756.000	-1.22E-09	-0.0476578	-0.0025106	6.7747E-11	276.3042	0.0005069	2501506.
762.000	-8.24E-10	-0.0536460	4.0692E-05	6.2564E-11	276.3042	0.0003435	2501506.
768.000	-4.65E-10	-0.0472633	0.0016529	5.7400E-11	276.3042	0.0001939	2501506.
774.000	-1.35E-10	-0.0338969	0.0024037	5.3247E-11	276.3042	5.6352E-05	2501506.
780.000	1.74E-10	-0.0184993	0.0023552	5.0566E-11	276.3042	-7.2508E-05	2501506.
786.000	4.72E-10	-0.0057105	0.0015478	4.9327E-11	276.3042	-0.0001966	2501506.
792.000	7.66E-10	0.0000	0.0000	4.9035E-11	276.3042	-0.0003193	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 6:

```
Pile-head deflection             =     0.12217039 in
Computed slope at pile head      =  -6.938894E-18
Maximum bending moment           =      -1632799. lbs-in
Maximum shear force              =    30000.00000 lbs
Depth of maximum bending moment  =        0.00000 in
```

Depth of maximum shear force = 0.00000 in
Number of iterations = 24
Number of zero deflection points = 6

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 7

Pile-head boundary conditions are Shear and Slope (BC Type 2)
Specified shear force at pile head = 35000.000 lbs
Specified slope at pile head = 0.000E+00 in/in
Specified axial load at pile head = 125000.000 lbs

(Zero slope for this load indicates fixed-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	0.173744	-2035429.	35000.0000	1.1565E-17	1776.0676	-262.9567	4540.4205
6.000	0.173119	-1830084.	33552.9680	-0.0001978	1624.7635	-219.3873	7603.5795
12.000	0.171370	-1632497.	32220.9706	-0.0003750	1479.1753	-224.6118	7864.0853
18.000	0.168619	-1442870.	30858.7688	-0.0005323	1339.4529	-229.4554	8164.7379
24.000	0.164982	-1261393.	29468.6382	-0.0006707	1205.7353	-233.9214	8507.1435
30.000	0.160571	-1088240.	28052.8391	-0.0007909	1078.1513	-238.0116	8893.7031
36.000	0.155491	-923572.	26613.6246	-0.0008939	956.8193	-241.7265	9327.5987
42.000	0.149844	-767536.	25153.2473	-0.0009804	841.8470	-245.0659	9812.8176
48.000	0.143726	-620263.	23673.9633	-0.0010514	733.3320	-248.0287	10354.2113
54.000	0.137227	-481871.	22178.0369	-0.0011078	631.3610	-250.6134	10957.5860
60.000	0.130433	-352465.	20667.7426	-0.0011505	536.0105	-252.8180	11629.8282
66.000	0.123421	-232133.	19145.3683	-0.0011804	447.3462	-254.6401	12379.0688
72.000	0.116268	-120950.	17613.2164	-0.0011985	365.4234	-256.0772	13214.8937
78.000	0.109039	-18976.2837	16073.6064	-0.0012056	290.2864	-257.1262	14148.6111
84.000	0.101800	73742.0448	14528.8757	-0.0012028	330.6394	-257.7840	15193.5908
90.000	0.094605	157174.	12981.3820	-0.0011910	392.1149	-258.0472	16365.6980
96.000	0.087507	231305.	11433.5060	-0.0011711	446.7366	-257.9115	17683.8517
102.000	0.080552	296133.	9887.6542	-0.0011442	494.5038	-257.3724	19170.7539
108.000	0.073778	351673.	8346.2637	-0.0011110	535.4273	-256.4244	20853.8548
114.000	0.067219	397955.	6811.8097	-0.0010727	569.5290	-255.0603	22766.6558
120.000	0.060906	435024.	5286.8151	-0.0010300	596.8425	-253.2713	24950.5055
126.000	0.054859	462942.	4056.8208	-0.0009841	617.4132	-156.7269	17141.4075
132.000	0.049097	485182.	3266.8362	-0.0009356	633.8004	-106.6013	13027.5263
138.000	0.043632	503547.	2634.4350	-0.0008850	647.3324	-104.1991	14328.7403
144.000	0.038477	518123.	2017.1544	-0.0008327	658.0720	-101.5612	15837.2102
150.000	0.033640	529002.	1416.4290	-0.0007791	666.0883	-98.6806	17600.7045
156.000	0.029127	536288.	833.7405	-0.0007246	671.4571	-95.5489	19682.2355
162.000	0.024944	540094.	270.6274	-0.0006695	674.2611	-92.1554	22166.5765
168.000	0.021093	540540.	-271.2994	-0.0006142	674.5900	-88.4868	25170.4357
174.000	0.017574	537760.	-790.3369	-0.0005591	672.5412	-84.5257	28858.9417
180.000	0.014384	531895.	-1284.6602	-0.0005043	668.2198	-80.2488	33473.5862
186.000	0.011522	523100.	-1929.5151	-0.0004503	661.7397	-134.7028	70148.2094
192.000	0.008980	509416.	-2849.3682	-0.0003975	651.6569	-171.9149	114864.
198.000	0.006751	489504.	-3852.9562	-0.0003464	636.9851	-162.6145	144517.
204.000	0.004823	463700.	-4796.2929	-0.0002976	617.9721	-151.8311	188875.
210.000	0.003180	432395.	-5668.5298	-0.0002518	594.9054	-138.9145	262119.
216.000	0.001802	396056.	-6452.3438	-0.0002094	568.1295	-122.3568	407427.
222.000	0.000667	355281.	-7110.1332	-0.0001709	538.0855	-96.9064	871496.
228.000	-0.000249	310990.	-7204.3647	-0.0001368	505.4510	65.4958	1575672.
234.000	-0.000975	269034.	-6556.5707	-0.0001072	474.5362	150.4355	925738.
240.000	-0.001535	232472.	-5599.6037	-8.1509E-05	447.5966	168.5535	658650.
246.000	-0.001953	201961.	-4861.9405	-5.9279E-05	425.1148	77.3342	237571.
252.000	-0.002247	174218.	-4477.4261	-4.0031E-05	404.6730	50.8372	135759.
258.000	-0.002433	148292.	-4168.2862	-2.3528E-05	385.5699	52.2094	128727.
264.000	-0.002529	124234.	-3853.0008	-9.5837E-06	367.8433	52.8857	125463.
270.000	-0.002548	102070.	-3535.2800	1.9960E-06	351.5125	53.0212	124829.
276.000	-0.002505	81807.4819	-3218.0568	1.1405E-05	336.5823	52.7199	126266.

282.000	-0.002412	63436.4061	-2903.7290	1.8837E-05	323.0460	52.0561	129512.
288.000	-0.002279	46934.4794	-2594.3046	2.4484E-05	310.8868	51.0854	134486.
294.000	-0.002118	32268.0248	-2291.4948	2.8537E-05	300.0802	49.8512	141233.
300.000	-0.001937	19393.7367	-1996.7768	3.1180E-05	290.5940	48.3881	149909.
306.000	-0.001744	8259.9326	-1711.4387	3.2595E-05	282.3903	46.7246	160780.
312.000	-0.001546	-1192.4212	-1436.6127	3.2957E-05	277.1828	44.8841	174244.
318.000	-0.001348	-9028.8553	-1173.3006	3.2434E-05	282.9569	42.8866	190864.
324.000	-0.001156	-15320.6800	-922.3959	3.1188E-05	287.5929	40.7483	211433.
330.000	-0.000974	-20144.3883	-684.7029	2.9373E-05	291.1471	38.4827	237078.
336.000	-0.000804	-23581.1745	-460.9575	2.7136E-05	293.6795	36.0991	269441.
342.000	-0.000648	-25716.5825	-251.8524	2.4614E-05	295.2529	33.6026	310995.
348.000	-0.000509	-26640.3240	-58.0724	2.1935E-05	295.9335	30.9908	365669.
354.000	-0.000385	-26446.3536	108.0442	1.9218E-05	295.7906	24.3814	379894.
360.000	-0.000278	-25372.6213	233.9725	1.6567E-05	294.9994	17.5947	379894.
366.000	-0.000186	-23663.5335	299.5810	1.4057E-05	293.7401	4.2748	137692.
372.000	-0.000109	-21798.7360	320.1689	1.1731E-05	292.3661	2.5878	142192.
378.000	-4.55E-05	-19839.1032	331.2699	9.6007E-06	290.9222	1.1125	146692.
384.000	6.01E-06	-17837.8985	334.1529	7.6728E-06	289.4476	-0.1514589	151192.
390.000	4.66E-05	-15840.7772	330.0732	5.9495E-06	287.9761	-1.2085	155692.
396.000	7.74E-05	-13885.9445	320.2480	4.4284E-06	286.5357	-2.0666	160192.
402.000	9.97E-05	-12004.4436	305.8373	3.1037E-06	285.1494	-2.7370	164692.
408.000	0.000115	-10220.5523	287.9276	1.9664E-06	283.8350	-3.2329	169192.
414.000	0.000123	-8552.2623	267.5198	1.0059E-06	282.6057	-3.5696	173692.
420.000	0.000127	-7011.8233	245.5207	2.0947E-07	281.4707	-3.7634	178192.
426.000	0.000126	-5606.3280	222.7371	-4.3618E-07	280.4351	-3.8311	182692.
432.000	0.000121	-4338.3237	199.8732	-9.4504E-07	279.5008	-3.7902	187192.
438.000	0.000114	-3206.4325	177.5299	-1.3311E-06	278.6667	-3.6576	191692.
444.000	0.000106	-2205.9677	156.2069	-1.6080E-06	277.9296	-3.4501	196192.
450.000	9.52E-05	-1329.5371	136.3051	-1.7889E-06	277.2838	-3.1839	200692.
456.000	8.40E-05	-567.6232	118.1309	-1.8860E-06	276.7224	-2.8742	205192.
462.000	7.26E-05	90.8627	101.9013	-1.9104E-06	276.3711	-2.5357	209692.
468.000	6.11E-05	658.0575	87.7486	-1.8721E-06	276.7890	-2.1819	214192.
474.000	5.01E-05	1146.6540	75.7259	-1.7798E-06	277.1490	-1.8257	218692.
480.000	3.98E-05	1569.4380	65.8115	-1.6408E-06	277.4606	-1.4791	223192.
486.000	3.04E-05	1938.8535	43.0415	-1.4613E-06	277.7328	-6.1109	1206107.
492.000	2.22E-05	2088.1277	11.3044	-1.2552E-06	277.8427	-4.4681	1206107.
498.000	1.53E-05	2076.3891	-11.3492	-1.0421E-06	277.8341	-3.0831	1206107.
504.000	9.72E-06	1953.5000	-26.4615	-8.3590E-07	277.7436	-1.9543	1206107.
510.000	5.31E-06	1760.1048	-35.5246	-6.4588E-07	277.6011	-1.0667	1206107.
516.000	1.97E-06	1528.1731	-39.9137	-4.7763E-07	277.4302	-0.3963257	1206107.
522.000	-4.25E-07	1281.8564	-40.8464	-3.3384E-07	277.2487	0.0854331	1206107.
528.000	-2.03E-06	1038.5168	-39.3632	-2.1511E-07	277.0694	0.4089727	1206107.
534.000	-3.01E-06	809.8206	-36.3233	-1.2053E-07	276.9009	0.6043282	1206107.
540.000	-3.48E-06	602.8181	-32.4111	-4.8252E-08	276.7483	0.6997278	1206107.
546.000	-3.59E-06	420.9595	-27.8280	4.1337E-09	276.6143	0.8279802	1385601.
552.000	-3.43E-06	268.8758	-22.6407	3.9432E-08	276.5023	0.9011059	1575672.
558.000	-3.11E-06	149.2113	-17.4855	6.0825E-08	276.4141	0.8172965	1575672.
564.000	-2.70E-06	58.9581	-12.9054	7.1476E-08	276.3476	0.7094267	1575672.
570.000	-2.25E-06	-5.7603	-9.0009	7.4198E-08	276.3084	0.5920499	1575672.
576.000	-1.81E-06	-49.1645	-5.7980	7.1388E-08	276.3404	0.4756020	1575672.
582.000	-1.40E-06	-75.4432	-3.2699	6.5012E-08	276.3597	0.3670819	1575672.
588.000	-1.03E-06	-88.5012	-1.3565	5.6623E-08	276.3694	0.2707270	1575672.
594.000	-7.18E-07	-91.8063	0.0216028	4.7397E-08	276.3718	0.1886429	1575672.
600.000	-4.62E-07	-88.3131	0.9516196	3.8181E-08	276.3692	0.1213627	1575672.
606.000	-2.60E-07	-80.4441	1.5207	2.9545E-08	276.3634	0.0683229	1575672.
612.000	-1.08E-07	-70.1093	1.8104	2.1842E-08	276.3558	0.0282547	1575672.
618.000	1.94E-09	-58.7520	1.8936	1.5248E-08	276.3474	-0.0005083	1575672.
624.000	7.54E-08	-47.4084	1.8327	9.8161E-09	276.3391	-0.0197976	1575672.
630.000	1.20E-07	-36.7739	1.6790	5.5086E-09	276.3313	-0.0314423	1575672.
636.000	1.41E-07	-27.2685	1.4732	2.2316E-09	276.3242	-0.0371572	1575672.
642.000	1.47E-07	-19.0987	1.2463	-1.4091E-10	276.3182	-0.0384750	1575672.
648.000	1.40E-07	-12.3125	1.0208	-1.7482E-09	276.3132	-0.0367131	1575672.
654.000	1.26E-07	-6.8471	0.8117142	-2.7286E-09	276.3092	-0.0329659	1575672.
660.000	1.07E-07	-2.5679	0.6284731	-3.2103E-09	276.3060	-0.0281145	1575672.
666.000	8.70E-08	0.6994048	0.4561079	-3.3059E-09	276.3047	-0.0293406	2023324.
672.000	6.74E-08	2.9104	0.2838027	-3.1212E-09	276.3063	-0.0280945	2501506.
678.000	4.96E-08	4.1097	0.1375411	-2.7620E-09	276.3072	-0.0206593	2501506.
684.000	3.42E-08	4.5650	0.0327343	-2.3181E-09	276.3075	-0.0142762	2501506.
690.000	2.17E-08	4.5060	-0.0372796	-1.8540E-09	276.3075	-0.0090618	2501506.
696.000	1.20E-08	4.1204	-0.0794673	-1.4126E-09	276.3072	-0.0050008	2501506.

702.000	4.78E-09	3.5545	-0.1004537	-1.0198E-09	276.3068	-0.0019947	2501506.
708.000	-2.43E-10	2.9165	-0.1061332	-6.8873E-10	276.3063	0.0001015	2501506.
714.000	-3.48E-09	2.2820	-0.1014755	-4.2273E-10	276.3058	0.0014511	2501506.
720.000	-5.32E-09	1.6994	-0.0904730	-2.1901E-10	276.3054	0.0022164	2501506.
726.000	-6.11E-09	1.1966	-0.0761834	-7.0823E-11	276.3050	0.0025468	2501506.
732.000	-6.17E-09	0.7853548	-0.0608307	3.0591E-11	276.3047	0.0025708	2501506.
738.000	-5.74E-09	0.4665915	-0.0459372	9.4652E-11	276.3045	0.0023937	2501506.
744.000	-5.03E-09	0.2339666	-0.0324643	1.3050E-10	276.3043	0.0020972	2501506.
750.000	-4.18E-09	0.0768240	-0.0209501	1.4640E-10	276.3042	0.0017408	2501506.
756.000	-3.27E-09	-0.0176540	-0.0116332	1.4943E-10	276.3042	0.0013648	2501506.
762.000	-2.38E-09	-0.0629984	-0.0045591	1.4530E-10	276.3042	0.0009933	2501506.
768.000	-1.53E-09	-0.0725809	0.0003342	1.3836E-10	276.3042	0.0006378	2501506.
774.000	-7.22E-10	-0.0591956	0.0031508	1.3162E-10	276.3042	0.0003010	2501506.
780.000	4.96E-11	-0.0349693	0.0039918	1.2680E-10	276.3042	-2.0663E-05	2501506.
786.000	8.00E-10	-0.0114842	0.0029297	1.2443E-10	276.3042	-0.0003334	2501506.
792.000	1.54E-09	0.0000	0.0000	1.2384E-10	276.3042	-0.0006432	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 7:

```
Pile-head deflection             =     0.17374386 in
Computed slope at pile head      =   1.156482E-17
Maximum bending moment           =      -2035429. lbs-in
Maximum shear force              =    35000.00000 lbs
Depth of maximum bending moment  =        0.00000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             25
Number of zero deflection points =              6
```

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 8

```
Pile-head boundary conditions are Shear and Slope (BC Type 2)
Specified shear force at pile head  =       40000.000 lbs
Specified slope at pile head        =       0.000E+00 in/in
Specified axial load at pile head   =      125000.000 lbs
```

(Zero slope for this load indicates fixed-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	0.234927	-2464199.	40000.0000	1.1565E-17	2091.9980	-283.5565	3620.9894
6.000	0.234171	-2229209.	38439.5419	-0.0002402	1918.8501	-236.5962	6062.1442
12.000	0.232045	-2002564.	37002.8736	-0.0004567	1751.8521	-242.2932	6264.9754
18.000	0.228691	-1784489.	35533.1389	-0.0006505	1591.1678	-247.6183	6496.5958
24.000	0.224240	-1575191.	34032.5629	-0.0008224	1436.9509	-252.5737	6758.1288
30.000	0.218822	-1374865.	32503.3621	-0.0009733	1289.3447	-257.1600	7051.2095
36.000	0.212560	-1183691.	30947.7512	-0.0011042	1148.4820	-261.3770	7377.9756
42.000	0.205571	-1001835.	29367.9492	-0.0012161	1014.4857	-265.2237	7741.0819
48.000	0.197967	-829451.	27766.1829	-0.0013098	887.4680	-268.6984	8143.7339
54.000	0.189854	-666677.	26144.6908	-0.0013863	767.5309	-271.7989	8589.7413
60.000	0.181331	-513635.	24505.7259	-0.0014467	654.7657	-274.5227	9083.5916
66.000	0.172493	-370438.	22851.5576	-0.0014920	549.2535	-276.8667	9630.5456
72.000	0.163427	-237179.	21184.4743	-0.0015231	451.0644	-278.8277	10236.7608
78.000	0.154216	-113939.	19506.7849	-0.0015410	360.2581	-280.4021	10909.4458
84.000	0.144935	-785.8374	17820.8210	-0.0015469	276.8832	-281.5859	11657.0561
90.000	0.135653	102231.	16128.9391	-0.0015417	351.6308	-282.3747	12489.5420
96.000	0.126435	195074.	14433.5236	-0.0015265	420.0404	-282.7638	13418.6655
102.000	0.117335	277723.	12736.9903	-0.0015023	480.9384	-282.7473	14458.4086

108.000	0.108407	350171.	11041.7918	-0.0014702	534.3206	-282.3189	15625.5088
114.000	0.099693	412430.	9350.4238	-0.0014312	580.1943	-281.4705	16940.1697
120.000	0.091233	464523.	7665.4351	-0.0013863	618.5784	-280.1924	18427.0231
126.000	0.083058	506494.	6284.9669	-0.0013366	649.5038	-179.9636	13000.3286
132.000	0.075194	541948.	5376.4459	-0.0012829	675.6270	-122.8767	9804.7754
138.000	0.067663	572936.	4645.9937	-0.0012259	698.4601	-120.6074	10694.8785
144.000	0.060483	599538.	3929.9111	-0.0011659	718.0615	-118.0868	11714.3399
150.000	0.053672	621844.	3229.7278	-0.0011034	734.4968	-115.3076	12890.2900
156.000	0.047242	639950.	2547.0215	-0.0010388	747.8382	-112.2612	14257.7041
162.000	0.041206	653966.	1883.4269	-0.0009726	758.1656	-108.9371	15862.4178
168.000	0.035571	664010.	1240.6475	-0.0009052	765.5663	-105.3227	17765.6455
174.000	0.030343	670212.	620.4725	-0.0008369	770.1358	-101.4023	20050.9620
180.000	0.025528	672711.	24.7984	-0.0007682	771.9775	-97.1558	22835.4802
186.000	0.021125	671662.	-736.8920	-0.0006994	771.2041	-156.7411	44518.4892
192.000	0.017135	664918.	-1813.2438	-0.0006310	766.2350	-202.0429	70749.3588
198.000	0.013552	650849.	-3000.0220	-0.0005637	755.8689	-193.5498	85688.9487
204.000	0.010370	629763.	-4132.1918	-0.0004982	740.3320	-183.8401	106367.
210.000	0.007574	602010.	-5201.3879	-0.0004351	719.8829	-172.5586	136691.
216.000	0.005148	567999.	-6196.2058	-0.0003753	694.8225	-159.0474	185358.
222.000	0.003071	528219.	-7098.9265	-0.0003192	665.5111	-141.8595	277158.
228.000	0.001318	483291.	-7874.0812	-0.0002674	632.4069	-116.5254	530439.
234.000	-0.000138	434131.	-8114.8250	-0.0002205	596.1845	36.2775	1575672.
240.000	-0.001328	386244.	-7518.4242	-0.0001785	560.8998	162.5228	734411.
246.000	-0.002280	344178.	-6786.5674	-0.0001411	529.9042	81.4295	214264.
252.000	-0.003021	305017.	-6373.9406	-0.0001079	501.0493	56.1128	111431.
258.000	-0.003575	267852.	-6027.5441	-7.8603E-05	473.6655	59.3527	99605.9463
264.000	-0.003965	232804.	-5665.1813	-5.2986E-05	447.8409	61.4349	92974.2005
270.000	-0.004211	199949.	-5292.8271	-3.0842E-05	423.6328	62.6832	89311.8394
276.000	-0.004335	169336.	-4914.9025	-1.1946E-05	401.0761	63.2917	87606.0628
282.000	-0.004354	140989.	-4534.8635	3.9327E-06	380.1886	63.3880	87342.6991
288.000	-0.004288	114912.	-4155.5122	1.7027E-05	360.9747	63.0624	88249.5071
294.000	-0.004150	91096.8778	-3779.1795	2.7568E-05	343.4270	62.3818	90188.1214
300.000	-0.003957	69520.5013	-3407.8400	3.5787E-05	327.5289	61.3980	93104.0153
306.000	-0.003721	50149.1181	-3043.1886	4.1910E-05	313.2555	60.1524	97002.4597
312.000	-0.003454	32939.3734	-2686.6941	4.6161E-05	300.5748	58.6791	101938.
318.000	-0.003167	17839.5473	-2339.6371	4.8760E-05	289.4489	57.0066	108010.
324.000	-0.002869	4790.5892	-2003.1387	4.9918E-05	279.8340	55.1595	115368.
330.000	-0.002568	-6272.9931	-1678.1819	4.9842E-05	280.9263	53.1594	124217.
336.000	-0.002271	-15422.3564	-1365.6290	4.8732E-05	287.6678	51.0249	134832.
342.000	-0.001983	-22733.6385	-1066.2357	4.6779E-05	293.0550	48.7728	147577.
348.000	-0.001709	-28287.3534	-780.6644	4.4169E-05	297.1471	46.4176	162940.
354.000	-0.001453	-32167.8644	-509.4981	4.1075E-05	300.0064	43.9712	181584.
360.000	-0.001216	-34462.9431	-253.2564	3.7666E-05	301.6975	41.4427	204428.
366.000	-0.001001	-35263.4400	-60.2010	3.4098E-05	302.2873	22.9091	137327.
372.000	-0.000807	-35236.5018	65.7656	3.0491E-05	302.2674	19.0797	141827.
378.000	-0.000635	-34519.9883	169.4670	2.6921E-05	301.7395	15.4874	146327.
384.000	-0.000484	-33243.2802	252.4379	2.3454E-05	300.7988	12.1696	150827.
390.000	-0.000354	-31525.9140	316.4086	2.0140E-05	299.5334	9.1539	155327.
396.000	-0.000242	-29476.5872	363.2445	1.7018E-05	298.0234	6.4581	159827.
402.000	-0.000149	-27192.5071	394.8924	1.4119E-05	296.3404	4.0912	164327.
408.000	-7.30E-05	-24759.0568	413.3296	1.1460E-05	294.5474	2.0545	168827.
414.000	-1.19E-05	-22249.7427	420.5207	9.0549E-06	292.6984	0.3425122	173327.
420.000	3.56E-05	-19726.3903	418.3792	6.9071E-06	290.8391	-1.0564	177827.
426.000	7.10E-05	-17239.5526	408.7350	5.0156E-06	289.0068	-2.1584	182327.
432.000	9.58E-05	-14829.0937	393.3081	3.3747E-06	287.2307	-2.9839	186827.
438.000	0.000112	-12524.9172	373.6876	1.9750E-06	285.5329	-3.5563	191327.
444.000	0.000120	-10347.8048	351.3153	8.0464E-07	283.9287	-3.9012	195827.
450.000	0.000121	-8310.3400	327.4741	-1.5008E-07	282.4275	-4.0459	200327.
456.000	0.000118	-6417.8908	303.2794	-9.0370E-07	281.0330	-4.0190	204827.
462.000	0.000110	-4669.6322	279.6743	-1.4710E-06	279.7449	-3.8494	209327.
468.000	0.000100	-3059.5922	257.4268	-1.8665E-06	278.5586	-3.5665	213827.
474.000	8.79E-05	-1577.7105	237.1279	-2.1038E-06	277.4667	-3.1998	218327.
480.000	7.48E-05	-210.9019	219.1913	-2.1953E-06	276.4596	-2.7790	222827.
486.000	6.16E-05	1055.8782	173.7103	-2.1521E-06	277.0822	-12.3813	1206107.
492.000	4.90E-05	1876.8495	107.0138	-2.0020E-06	277.6871	-9.8508	1206107.
498.000	3.76E-05	2343.0467	54.8053	-1.7861E-06	278.0306	-7.5520	1206107.
504.000	2.76E-05	2537.1922	15.5223	-1.5364E-06	278.1736	-5.5424	1206107.
510.000	1.91E-05	2531.6182	-12.6425	-1.2770E-06	278.1695	-3.8459	1206107.
516.000	1.22E-05	2387.3981	-31.5658	-1.0253E-06	278.0633	-2.4619	1206107.
522.000	6.83E-06	2154.3667	-43.0692	-7.9293E-07	277.8916	-1.3726	1206107.

528.000	2.73E-06	1871.7573	-48.8344	-5.8692E-07	277.6833	-0.5491657	1206107.
534.000	-2.15E-07	1569.2343	-50.3523	-4.1085E-07	277.4604	0.0432092	1206107.
540.000	-2.20E-06	1268.1465	-48.8970	-2.6567E-07	277.2386	0.4418938	1206107.
546.000	-3.40E-06	982.8694	-45.2137	-1.5048E-07	277.0284	0.7858526	1385601.
552.000	-4.00E-06	725.8076	-39.7016	-6.3053E-08	276.8390	1.0515	1575672.
558.000	-4.16E-06	506.5449	-33.2700	4.5701E-12	276.6774	1.0924	1575672.
564.000	-4.00E-06	326.5681	-26.8384	4.2634E-08	276.5448	1.0515	1575672.
570.000	-3.65E-06	184.4206	-20.8098	6.8780E-08	276.4400	0.9580012	1575672.
576.000	-3.18E-06	76.7469	-15.4316	8.2144E-08	276.3607	0.8347568	1575672.
582.000	-2.66E-06	-0.8814741	-10.8299	8.6026E-08	276.3048	0.6991369	1575672.
588.000	-2.15E-06	-53.3408	-7.0415	8.3252E-08	276.3435	0.5636592	1575672.
594.000	-1.66E-06	-85.5043	-4.0402	7.6147E-08	276.3672	0.4367827	1575672.
600.000	-1.23E-06	-101.9371	-1.7587	6.6556E-08	276.3793	0.3236938	1575672.
606.000	-8.65E-07	-106.7091	-0.1065344	5.5880E-08	276.3828	0.2270423	1575672.
612.000	-5.62E-07	-103.2993	1.0174	4.5134E-08	276.3803	0.1475976	1575672.
618.000	-3.23E-07	-94.5682	1.7146	3.5009E-08	276.3738	0.0848099	1575672.
624.000	-1.42E-07	-82.7766	2.0809	2.5935E-08	276.3651	0.0372714	1575672.
630.000	-1.17E-08	-69.6368	2.2019	1.8136E-08	276.3555	0.0030806	1575672.
636.000	7.57E-08	-56.3809	2.1515	1.1688E-08	276.3457	-0.0198813	1575672.
642.000	1.29E-07	-43.8363	1.9906	6.5598E-09	276.3365	-0.0337517	1575672.
648.000	1.54E-07	-32.5034	1.7677	2.6536E-09	276.3281	-0.0405535	1575672.
654.000	1.60E-07	-22.6280	1.5197	-1.6738E-10	276.3208	-0.0421142	1575672.
660.000	1.52E-07	-14.2669	1.2733	-2.0552E-09	276.3147	-0.0400261	1575672.
666.000	1.36E-07	-7.3457	1.0159	-3.1611E-09	276.3096	-0.0457620	2023324.
672.000	1.14E-07	-2.0714	0.7354284	-3.6430E-09	276.3057	-0.0477294	2501506.
678.000	9.20E-08	1.4849	0.4771865	-3.6730E-09	276.3052	-0.0383513	2501506.
684.000	7.04E-08	3.6604	0.2740730	-3.4097E-09	276.3069	-0.0293533	2501506.
690.000	5.11E-08	4.7789	0.1221362	-2.9779E-09	276.3077	-0.0212923	2501506.
696.000	3.47E-08	5.1305	0.0148948	-2.4709E-09	276.3079	-0.0144548	2501506.
702.000	2.14E-08	4.9613	-0.0552615	-1.9545E-09	276.3078	-0.0089306	2501506.
708.000	1.12E-08	4.4703	-0.0960831	-1.4719E-09	276.3074	-0.0046766	2501506.
714.000	3.76E-09	3.8105	-0.1148134	-1.0481E-09	276.3070	-0.0015669	2501506.
720.000	-1.36E-09	3.0941	-0.1178121	-6.9484E-10	276.3064	0.0005673	2501506.
726.000	-4.58E-09	2.3978	-0.1103819	-4.1383E-10	276.3059	0.0019094	2501506.
732.000	-6.33E-09	1.7701	-0.0967405	-2.0056E-10	276.3055	0.0026377	2501506.
738.000	-6.99E-09	1.2373	-0.0800889	-4.6675E-11	276.3051	0.0029128	2501506.
744.000	-6.89E-09	0.8091362	-0.0627368	5.8036E-11	276.3048	0.0028712	2501506.
750.000	-6.29E-09	0.4843227	-0.0462557	1.2422E-10	276.3045	0.0026225	2501506.
756.000	-5.40E-09	0.2538810	-0.0316391	1.6199E-10	276.3043	0.0022497	2501506.
762.000	-4.35E-09	0.1044106	-0.0194538	1.8033E-10	276.3042	0.0018120	2501506.
768.000	-3.23E-09	0.0201647	-0.0099751	1.8670E-10	276.3042	0.0013476	2501506.
774.000	-2.11E-09	-0.0155703	-0.0032985	1.8694E-10	276.3042	0.0008779	2501506.
780.000	-9.89E-10	-0.0196980	0.0005723	1.8513E-10	276.3042	0.0004123	2501506.
786.000	1.16E-10	-0.0089805	0.0016645	1.8366E-10	276.3042	-4.8265E-05	2501506.
792.000	1.21E-09	0.0000	0.0000	1.8320E-10	276.3042	-0.0005066	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 8:

```
Pile-head deflection             =     0.23492736 in
Computed slope at pile head      =   1.156482E-17
Maximum bending moment           =      -2464199. lbs-in
Maximum shear force              =    40000.00000 lbs
Depth of maximum bending moment  =        0.00000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             25
Number of zero deflection points =              6
```

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 9

Pile-head boundary conditions are Shear and Slope (BC Type 2)
Specified shear force at pile head = 45000.000 lbs
Specified slope at pile head = 0.000E+00 in/in
Specified axial load at pile head = 125000.000 lbs

(Zero slope for this load indicates fixed-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	0.305445	-2916637.	45000.0000	-5.5511E-17	2425.3671	-302.7844	2973.8680
6.000	0.304550	-2651975.	43333.6725	-0.0002849	2230.3565	-252.6581	4977.6728
12.000	0.302026	-2396205.	41799.3185	-0.0005432	2041.8980	-258.7933	5141.1491
18.000	0.298031	-2149568.	40229.2482	-0.0007758	1860.1686	-264.5635	5326.2340
24.000	0.292716	-1912290.	38625.6483	-0.0009837	1685.3355	-269.9698	5533.7626
30.000	0.286226	-1684585.	36990.7028	-0.0011677	1517.5553	-275.0121	5764.9206
36.000	0.278703	-1466650.	35326.5985	-0.0013290	1356.9749	-279.6894	6021.2391
42.000	0.270279	-1258672.	33635.5307	-0.0014684	1203.7305	-283.9999	6304.6034
48.000	0.261082	-1060821.	31919.7064	-0.0015871	1057.9482	-287.9415	6617.2757
54.000	0.251233	-873255.	30181.3481	-0.0016861	919.7439	-291.5113	6961.9288
60.000	0.240849	-696116.	28422.6958	-0.0017664	789.2227	-294.7061	7341.6938
66.000	0.230037	-529533.	26646.0097	-0.0018291	666.4795	-297.5225	7760.2219
72.000	0.218899	-373620.	24853.5726	-0.0018753	551.5984	-299.9565	8221.7622
78.000	0.207533	-228477.	23047.6912	-0.0019061	444.6528	-302.0039	8731.2611
84.000	0.196026	-94188.7193	21230.6990	-0.0019226	345.7052	-303.6601	9294.4855
90.000	0.184461	29175.1802	19404.9585	-0.0019260	297.8013	-304.9200	9918.1795
96.000	0.172915	141560.	17572.8643	-0.0019172	380.6095	-305.7780	10610.2615
102.000	0.161455	242925.	15736.8471	-0.0018975	455.2987	-306.2277	11380.0776
108.000	0.150144	333248.	13899.3785	-0.0018681	521.8512	-306.2618	12238.7288
114.000	0.139038	412520.	12062.9779	-0.0018299	580.2609	-305.8717	13199.5010
120.000	0.128185	480749.	10230.2216	-0.0017842	630.5339	-305.0471	14278.4381
126.000	0.117627	537959.	8708.8025	-0.0017321	672.6880	-202.0926	10308.4393
132.000	0.107400	587853.	7687.3914	-0.0016745	709.4511	-138.3777	7730.5861
138.000	0.097534	632719.	6863.5443	-0.0016120	742.5103	-136.2380	8380.9622
144.000	0.088056	672633.	6053.3304	-0.0015452	771.9198	-133.8333	9119.1912
150.000	0.078991	707677.	5258.3611	-0.0014746	797.7413	-131.1564	9962.3483
156.000	0.070361	737945.	4480.2963	-0.0014006	820.0438	-128.1985	10932.0662
162.000	0.062184	763542.	3720.8522	-0.0013238	838.9039	-124.9495	12056.1401
168.000	0.054476	784581.	2981.8113	-0.0012446	854.4065	-121.3974	13370.8600
174.000	0.047249	801190.	2265.0358	-0.0011634	866.6445	-117.5277	14924.4870
180.000	0.040514	813507.	1572.4848	-0.0010808	875.7197	-113.3226	16782.5890
186.000	0.034279	821681.	701.8275	-0.0009971	881.7429	-176.8965	30962.7405
192.000	0.028549	823424.	-517.4630	-0.0009130	883.0273	-229.5337	48240.5049
198.000	0.023324	816841.	-1871.0761	-0.0008290	878.1766	-221.6707	57024.5999
204.000	0.018600	802215.	-3174.2958	-0.0007462	867.3996	-212.7359	68623.4214
210.000	0.014369	779869.	-4419.9952	-0.0006652	850.9343	-202.4973	84553.2109
216.000	0.010617	750173.	-5599.2080	-0.0005869	829.0535	-190.5737	107694.
222.000	0.007326	713559.	-6699.7403	-0.0005120	802.0751	-176.2704	144363.
228.000	0.004473	670544.	-7702.8415	-0.0004412	770.3807	-158.0967	212071.
234.000	0.002031	621787.	-8572.1284	-0.0003751	734.4546	-131.6656	388880.
240.000	-2.82E-05	568241.	-8944.8903	-0.0003142	695.0009	7.4116	1575672.
246.000	-0.001739	514919.	-8699.4699	-0.0002588	655.7116	74.3952	256684.
252.000	-0.003134	464236.	-8305.8883	-0.0002087	618.3666	56.7987	108755.
258.000	-0.004243	415562.	-7946.9747	-0.0001637	582.5020	62.8392	88857.8063
264.000	-0.005098	369118.	-7558.0494	-0.0001235	548.2808	66.8026	78629.7367
270.000	-0.005725	325050.	-7149.3220	-8.7989E-05	515.8106	69.4399	72772.3950
276.000	-0.006153	283458.	-6727.6130	-5.6853E-05	485.1641	71.1298	69356.8258
282.000	-0.006407	244404.	-6297.9354	-2.9843E-05	456.3882	72.0960	67511.2286
288.000	-0.006511	207927.	-5864.1941	-6.6976E-06	429.5110	72.4844	66790.5776
294.000	-0.006488	174044.	-5429.5505	1.2847E-05	404.5447	72.3968	66953.0430
300.000	-0.006357	142753.	-4996.6352	2.9057E-05	381.4890	71.9083	67866.5427
306.000	-0.006139	114041.	-4567.6814	4.2197E-05	360.3326	71.0763	69465.2731
312.000	-0.005851	87877.8964	-4144.6129	5.2529E-05	341.0552	69.9465	71728.2284
318.000	-0.005509	64226.4861	-3729.1062	6.0312E-05	323.6281	68.5558	74668.5826
324.000	-0.005127	43038.1539	-3322.6339	6.5801E-05	308.0159	66.9350	78329.1156
330.000	-0.004719	24256.1787	-2926.4977	6.9244E-05	294.1768	65.1104	82781.5402
336.000	-0.004296	7816.3154	-2541.8532	7.0885E-05	282.0634	63.1044	88128.8687
342.000	-0.003869	-6352.3878	-2169.7291	7.0960E-05	280.9848	60.9369	94510.7143
348.000	-0.003445	-18326.8736	-1811.0424	6.9697E-05	289.8079	58.6253	102112.

354.000	-0.003032	-28189.4427	-1466.6119	6.7317E-05	297.0750	56.1849	111176.
360.000	-0.002637	-36027.1921	-1137.1691	6.4031E-05	302.8500	53.6294	122026.
366.000	-0.002264	-41931.5192	-821.2371	6.0042E-05	307.2005	51.6813	136975.
372.000	-0.001916	-45972.1008	-530.6284	5.5544E-05	310.1777	45.1883	141475.
378.000	-0.001597	-48382.3763	-278.4808	5.0716E-05	311.9537	38.8609	145975.
384.000	-0.001308	-49389.9449	-63.4983	4.5713E-05	312.6961	32.7999	150475.
390.000	-0.001049	-49212.9261	116.1655	4.0668E-05	312.5657	27.0880	154975.
396.000	-0.000820	-48056.9611	262.8015	3.5691E-05	311.7139	21.7906	159475.
402.000	-0.000620	-46112.8443	379.0425	3.0872E-05	310.2814	16.9563	163975.
408.000	-0.000449	-43554.7598	467.7655	2.6284E-05	308.3966	12.6180	168475.
414.000	-0.000305	-40539.0845	532.0016	2.1981E-05	306.1745	8.7940	172975.
420.000	-0.000186	-37203.7124	574.8533	1.8003E-05	303.7169	5.4899	177475.
426.000	-8.90E-05	-33667.8499	599.4209	1.4377E-05	301.1116	2.6994	181975.
432.000	-1.31E-05	-30032.2264	608.7384	1.1117E-05	298.4328	0.4064567	186475.
438.000	4.44E-05	-26379.6654	605.7176	8.2308E-06	295.7415	-1.4134	190975.
444.000	8.57E-05	-22775.9615	593.1022	5.7155E-06	293.0861	-2.7917	195475.
450.000	0.000113	-19271.0122	573.4292	3.5641E-06	290.5036	-3.7659	199975.
456.000	0.000128	-15900.1570	548.9981	1.7644E-06	288.0199	-4.3778	204475.
462.000	0.000134	-12685.6820	521.8462	3.0169E-07	285.6513	-4.6728	208975.
468.000	0.000132	-9638.4555	493.7298	-8.4061E-07	283.4061	-4.6993	213475.
474.000	0.000124	-6759.6636	466.1091	-1.6797E-06	281.2849	-4.5076	217975.
480.000	0.000112	-4042.6273	440.1361	-2.2324E-06	279.2829	-4.1500	222475.
486.000	9.73E-05	-1474.6820	369.0160	-2.5147E-06	277.3907	-19.5567	1206107.
492.000	8.17E-05	389.3364	261.0481	-2.5703E-06	276.5910	-16.4326	1206107.
498.000	6.64E-05	1661.7505	171.6803	-2.4653E-06	277.5286	-13.3566	1206107.
504.000	5.22E-05	2453.1983	100.1532	-2.2548E-06	278.1117	-10.4858	1206107.
510.000	3.94E-05	2866.9705	44.9429	-1.9825E-06	278.4166	-7.9177	1206107.
516.000	2.84E-05	2995.4864	4.0794	-1.6826E-06	278.5113	-5.7035	1206107.
522.000	1.92E-05	2918.4476	-24.6079	-1.3799E-06	278.4546	-3.8590	1206107.
528.000	1.18E-05	2702.2612	-43.3091	-1.0923E-06	278.2953	-2.3747	1206107.
534.000	6.09E-06	2400.3772	-54.1053	-8.3125E-07	278.0728	-1.2240	1206107.
540.000	1.84E-06	2054.2443	-58.8861	-6.0331E-07	277.8178	-0.3695788	1206107.
546.000	-1.15E-06	1694.6489	-59.1977	-4.1149E-07	277.5528	0.2657264	1385601.
552.000	-3.10E-06	1344.4896	-55.9587	-2.5598E-07	277.2948	0.8139149	1575672.
558.000	-4.22E-06	1023.5280	-50.1904	-1.3481E-07	277.0583	1.1089	1575672.
564.000	-4.72E-06	742.4066	-43.1476	-4.4449E-08	276.8512	1.2387	1575672.
570.000	-4.76E-06	505.8231	-35.6846	1.9421E-08	276.6769	1.2489	1575672.
576.000	-4.48E-06	314.1622	-28.4052	6.1378E-08	276.5356	1.1775	1575672.
582.000	-4.02E-06	164.8688	-21.7060	8.5890E-08	276.4256	1.0555	1575672.
588.000	-3.45E-06	53.5609	-15.8189	9.7067E-08	276.3436	0.9068768	1575672.
594.000	-2.85E-06	-25.1036	-10.8494	9.8523E-08	276.3227	0.7496133	1575672.
600.000	-2.27E-06	-76.7800	-6.8114	9.3310E-08	276.3607	0.5963977	1575672.
606.000	-1.73E-06	-106.9803	-3.6555	8.3907E-08	276.3830	0.4555629	1575672.
612.000	-1.26E-06	-120.7721	-1.2929	7.2253E-08	276.3931	0.3319788	1575672.
618.000	-8.68E-07	-122.6033	0.3866561	5.9800E-08	276.3945	0.2278691	1575672.
624.000	-5.47E-07	-116.2219	1.5009	4.7579E-08	276.3898	0.1435292	1575672.
630.000	-2.97E-07	-104.6645	2.1652	3.6277E-08	276.3813	0.0779302	1575672.
636.000	-1.11E-07	-90.2935	2.4866	2.6301E-08	276.3707	0.0292083	1575672.
642.000	1.89E-08	-74.8642	2.5594	1.7850E-08	276.3593	-0.0049538	1575672.
648.000	1.03E-07	-59.6074	2.4634	1.0970E-08	276.3481	-0.0270440	1575672.
654.000	1.50E-07	-45.3197	2.2637	5.6005E-09	276.3375	-0.0395225	1575672.
660.000	1.70E-07	-32.4513	2.0111	1.6211E-09	276.3281	-0.0446932	1575672.
666.000	1.70E-07	-21.1893	1.7051	-1.1236E-09	276.3198	-0.0573110	2023324.
672.000	1.57E-07	-11.9889	1.3371	-2.8213E-09	276.3130	-0.0653326	2501506.
678.000	1.36E-07	-5.1396	0.9709053	-3.6977E-09	276.3079	-0.0567405	2501506.
684.000	1.12E-07	-0.3324953	0.6601858	-3.9777E-09	276.3044	-0.0468327	2501506.
690.000	8.84E-08	2.7886	0.4091683	-3.8521E-09	276.3062	-0.0368398	2501506.
696.000	6.61E-08	4.5833	0.2159668	-3.4749E-09	276.3075	-0.0275607	2501506.
702.000	4.67E-08	5.3854	0.0749195	-2.9648E-09	276.3081	-0.0194550	2501506.
708.000	3.05E-08	5.4868	-0.0216295	-2.4085E-09	276.3082	-0.0127280	2501506.
714.000	1.78E-08	5.1295	-0.0820299	-1.8652E-09	276.3079	-0.0074055	2501506.
720.000	8.15E-09	4.5052	-0.1144349	-1.3722E-09	276.3075	-0.0033962	2501506.
726.000	1.30E-09	3.7583	-0.1262440	-9.4940E-10	276.3069	-0.0005402	2501506.
732.000	-3.25E-09	2.9917	-0.1238036	-6.0401E-10	276.3064	0.0013537	2501506.
738.000	-5.95E-09	2.2736	-0.1122975	-3.3459E-10	276.3058	0.0024817	2501506.
744.000	-7.26E-09	1.6447	-0.0957696	-1.3410E-10	276.3054	0.0030276	2501506.
750.000	-7.56E-09	1.1246	-0.0772290	7.5996E-12	276.3050	0.0031526	2501506.
756.000	-7.17E-09	0.7178913	-0.0588024	1.0188E-10	276.3047	0.0029896	2501506.
762.000	-6.34E-09	0.4187859	-0.0419049	1.6004E-10	276.3045	0.0026429	2501506.
768.000	-5.25E-09	0.2147921	-0.0274095	1.9246E-10	276.3043	0.0021889	2501506.

774.000	-4.03E-09	0.0895836	-0.0158026	2.0803E-10	276.3042	0.0016800	2501506.
780.000	-2.75E-09	0.0248488	-0.0073181	2.1389E-10	276.3042	0.0011482	2501506.
786.000	-1.46E-09	0.0014456	-0.0020438	2.1523E-10	276.3042	0.0006099	2501506.
792.000	-1.71E-10	0.0000	0.0000	2.1531E-10	276.3042	7.1343E-05	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 9:

```
Pile-head deflection             =     0.30544506 in
Computed slope at pile head      =  -5.551115E-17
Maximum bending moment           =      -2916637. lbs-in
Maximum shear force              =    45000.00000 lbs
Depth of maximum bending moment  =        0.00000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             26
Number of zero deflection points =              6
```

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 10

```
Pile-head boundary conditions are Shear and Slope (BC Type 2)
Specified shear force at pile head  =       50000.000 lbs
Specified slope at pile head        =       0.000E+00 in/in
Specified axial load at pile head   =      125000.000 lbs
```

(Zero slope for this load indicates fixed-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	0.385549	-3389261.	50000.0000	2.3130E-17	2773.6108	-320.9380	2497.2532
6.000	0.384509	-3094908.	48233.7202	-0.0003318	2556.7228	-267.8219	4179.1813
12.000	0.381568	-2809959.	46607.1459	-0.0006339	2346.7639	-274.3695	4314.3502
18.000	0.376902	-2534671.	44942.3634	-0.0009074	2143.9240	-280.5580	4466.2805
24.000	0.370679	-2269289.	43241.5268	-0.0011532	1948.3829	-286.3876	4635.6170
30.000	0.363063	-2014043.	41506.7917	-0.0013724	1760.3100	-291.8575	4823.2552
36.000	0.354210	-1769149.	39740.3208	-0.0015660	1579.8651	-296.9661	5030.3379
42.000	0.344271	-1534810.	37944.2885	-0.0017350	1407.1973	-301.7113	5258.2614
48.000	0.333390	-1311215.	36120.8840	-0.0018807	1242.4459	-306.0902	5508.6911
54.000	0.321703	-1098539.	34272.3145	-0.0020040	1085.7397	-310.0996	5783.5841
60.000	0.309342	-896942.	32400.8078	-0.0021061	937.1969	-313.7360	6085.2215
66.000	0.296430	-706570.	30508.6142	-0.0021881	796.9256	-316.9952	6416.2499
72.000	0.283085	-527556.	28598.0090	-0.0022513	665.0229	-319.8732	6779.7338
78.000	0.269415	-360017.	26671.2939	-0.0022967	541.5752	-322.3652	7179.2212
84.000	0.255525	-204056.	24730.8001	-0.0023255	426.6582	-324.4661	7618.8260
90.000	0.241509	-59759.1571	22778.8899	-0.0023390	320.3364	-326.1706	8103.3304
96.000	0.227456	72799.6903	20817.9602	-0.0023384	329.9451	-327.4726	8638.3135
102.000	0.213448	193564.	18850.4462	-0.0023248	418.9277	-328.3654	9230.3155
108.000	0.199559	302492.	16878.8259	-0.0022994	499.1892	-328.8414	9887.0462
114.000	0.185856	399559.	14905.6263	-0.0022634	570.7108	-328.8918	10617.6569
120.000	0.172398	484755.	12933.4318	-0.0022182	633.4857	-328.5064	11433.0965
126.000	0.159237	558087.	11277.2248	-0.0021648	687.5192	-223.5626	8423.7568
132.000	0.146420	623329.	10146.2209	-0.0021044	735.5910	-153.4387	6287.6303
138.000	0.133985	682999.	9231.5551	-0.0020375	779.5575	-151.4499	6782.1179
144.000	0.121969	737164.	8329.6424	-0.0019649	819.4679	-149.1877	7338.9582
150.000	0.110406	785902.	7442.1449	-0.0018869	855.3794	-146.6448	7969.3828
156.000	0.099326	829300.	6570.7700	-0.0018043	887.3565	-143.8135	8687.3801
162.000	0.088755	867457.	5717.2754	-0.0017175	915.4720	-140.6847	9510.5774
168.000	0.078716	900483.	4883.4775	-0.0016270	939.8066	-137.2480	10461.4833
174.000	0.069231	928500.	4071.2601	-0.0015334	960.4497	-133.4912	11569.2713

180.000	0.060315	951639.	3282.5863	-0.0014372	977.4993	-129.4000	12872.4026
186.000	0.051984	970046.	2305.4526	-0.0013389	991.0626	-196.3112	22658.2792
192.000	0.044248	981312.	948.1582	-0.0012390	999.3638	-256.1203	34729.3754
198.000	0.037116	983283.	-567.1544	-0.0011385	1000.8157	-248.9840	40250.1213
204.000	0.030586	976214.	-2036.8640	-0.0010382	995.6074	-240.9192	47260.1974
210.000	0.024657	960398.	-3454.9651	-0.0009392	983.9533	-231.7811	56402.3491
216.000	0.019316	936164.	-4814.3674	-0.0008421	966.0967	-221.3530	68755.7094
222.000	0.014551	903889.	-6106.2921	-0.0007480	942.3157	-209.2886	86297.2445
228.000	0.010341	864010.	-7319.1059	-0.0006575	912.9319	-194.9827	113132.
234.000	0.006661	817046.	-8435.7190	-0.0005715	878.3272	-177.2217	159628.
240.000	0.003483	763639.	-9426.0767	-0.0004906	838.9753	-152.8976	263369.
246.000	0.000774	704669.	-10036.3460	-0.0004155	795.5245	-50.5255	391597.
252.000	-0.001502	643826.	-10054.7518	-0.0003465	750.6936	44.3903	177289.
258.000	-0.003383	584531.	-9746.8725	-0.0002836	707.0038	58.2361	103273.
264.000	-0.004906	527289.	-9374.3817	-0.0002267	664.8257	65.9275	80634.9605
270.000	-0.006104	472379.	-8963.8481	-0.0001756	624.3666	70.9171	69708.1167
276.000	-0.007012	419986.	-8528.2634	-0.0001299	585.7619	74.2778	63553.7052
282.000	-0.007663	370234.	-8075.9006	-8.9473E-05	549.1037	76.5098	59906.3062
288.000	-0.008086	323209.	-7612.6861	-5.3990E-05	514.4541	77.8950	57799.0783
294.000	-0.008311	278963.	-7143.1666	-2.3178E-05	481.8524	78.6115	56753.5429
300.000	-0.008364	237526.	-6670.9900	3.2503E-06	451.3201	78.7807	56512.4637
306.000	-0.008272	198906.	-6199.1766	2.5582E-05	422.8642	78.4904	56933.3130
312.000	-0.008057	163097.	-5730.2858	4.4105E-05	396.4791	77.8065	57940.1638
318.000	-0.007743	130077.	-5266.5241	5.9107E-05	372.1486	76.7807	59500.2234
324.000	-0.007348	99810.4250	-4809.8196	7.0870E-05	349.8474	75.4541	61612.0746
330.000	-0.006892	72252.6986	-4361.8750	7.9674E-05	329.5421	73.8608	64300.1448
336.000	-0.006392	47348.4147	-3924.2050	8.5794E-05	311.1918	72.0292	67612.9445
342.000	-0.005863	25033.5479	-3498.1660	8.9497E-05	294.7496	69.9838	71623.9887
348.000	-0.005318	5236.1770	-3084.9764	9.1046E-05	280.1623	67.7460	76435.0211
354.000	-0.004770	-12122.7386	-2685.7333	9.0694E-05	285.2365	65.3350	82181.5939
360.000	-0.004230	-27128.6636	-2301.4234	8.8685E-05	296.2933	62.7683	89041.3717
366.000	-0.003706	-39872.8475	-1860.3588	8.5257E-05	305.6836	84.2532	136412.
372.000	-0.003207	-49580.8550	-1381.6802	8.0680E-05	312.8368	75.3063	140912.
378.000	-0.002738	-56574.0294	-956.7163	7.5248E-05	317.9896	66.3483	145412.
384.000	-0.002304	-61174.3231	-585.0068	6.9223E-05	321.3792	57.5549	149912.
390.000	-0.001907	-63697.9450	-265.1110	6.2833E-05	323.2387	49.0770	154412.
396.000	-0.001550	-64449.9048	5.2408	5.6276E-05	323.7927	41.0402	158912.
402.000	-0.001232	-63719.4701	228.9966	4.9718E-05	323.2545	33.5450	163412.
408.000	-0.000953	-61776.5231	409.6357	4.3297E-05	321.8229	26.6680	167912.
414.000	-0.000712	-58868.7865	551.0282	3.7123E-05	319.6804	20.4628	172412.
420.000	-0.000507	-55219.8694	657.3035	3.1286E-05	316.9918	14.9623	176912.
426.000	-0.000337	-51028.0725	732.7299	2.5849E-05	313.9031	10.1799	181412.
432.000	-0.000197	-46465.8843	781.6059	2.0860E-05	310.5416	6.1122	185912.
438.000	-8.64E-05	-41680.0920	808.1647	1.6350E-05	307.0153	2.7408	190412.
444.000	-1.06E-06	-36792.4331	816.4902	1.2335E-05	303.4139	0.0344139	194912.
450.000	6.17E-05	-31900.7114	810.4463	8.8197E-06	299.8095	-2.0491	199412.
456.000	0.000105	-27080.3073	793.6164	5.8017E-06	296.2577	-3.5609	203912.
462.000	0.000131	-22386.0171	769.2542	3.2706E-06	292.7988	-4.5598	208412.
468.000	0.000144	-17854.1632	740.2423	1.2116E-06	289.4596	-5.1108	212912.
474.000	0.000146	-13504.9268	709.0592	-3.9302E-07	286.2550	-5.2836	217412.
480.000	0.000139	-9344.8630	677.7513	-1.5622E-06	283.1897	-5.1524	221912.
486.000	0.000127	-5369.5677	585.6664	-2.3151E-06	280.2606	-25.5426	1206107.
492.000	0.000112	-2313.3938	441.7818	-2.7083E-06	278.0087	-22.4189	1206107.
498.000	9.46E-05	-64.1235	317.4960	-2.8299E-06	276.3514	-19.0097	1206107.
504.000	7.76E-05	1500.8026	213.6892	-2.7564E-06	277.4100	-15.5926	1206107.
510.000	6.15E-05	2504.2811	129.8294	-2.5515E-06	278.1494	-12.3607	1206107.
516.000	4.70E-05	3062.5831	64.4338	-2.2666E-06	278.5608	-9.4379	1206107.
522.000	3.43E-05	3280.8862	15.4408	-1.9420E-06	278.7216	-6.8931	1206107.
528.000	2.36E-05	3250.7853	-19.4985	-1.6078E-06	278.6994	-4.7533	1206107.
534.000	1.50E-05	3049.3163	-42.8025	-1.2854E-06	278.5510	-3.0147	1206107.
540.000	8.22E-06	2739.0830	-56.8043	-9.8926E-07	278.3224	-1.6525	1206107.
546.000	3.13E-06	2369.1483	-63.9278	-7.2788E-07	278.0498	-0.7219452	1385601.
552.000	-5.14E-07	1973.0417	-65.6889	-5.0569E-07	277.7580	0.1349048	1575672.
558.000	-2.94E-06	1581.6403	-62.9663	-3.2381E-07	277.4696	0.7726351	1575672.
564.000	-4.40E-06	1217.9324	-57.1824	-1.8055E-07	277.2016	1.1553	1575672.
570.000	-5.11E-06	895.7227	-49.6915	-7.2402E-08	276.9642	1.3416	1575672.
576.000	-5.27E-06	621.7427	-41.5162	5.2451E-09	276.7623	1.3835	1575672.
582.000	-5.05E-06	397.5205	-33.3904	5.7400E-08	276.5971	1.3251	1575672.
588.000	-4.58E-06	220.9713	-25.8073	8.9047E-08	276.4670	1.2026	1575672.
594.000	-3.98E-06	87.6988	-19.0661	1.0484E-07	276.3688	1.0445	1575672.

600.000	-3.32E-06	-7.9792	-13.3160	1.0892E-07	276.3100	0.8722118	1575672.
606.000	-2.67E-06	-72.2570	-8.5957	1.0481E-07	276.3574	0.7012324	1575672.
612.000	-2.06E-06	-111.2849	-4.8663	9.5423E-08	276.3862	0.5419045	1575672.
618.000	-1.53E-06	-130.7957	-2.0390	8.3036E-08	276.4005	0.4005213	1575672.
624.000	-1.07E-06	-135.8776	0.0032342	6.9391E-08	276.4043	0.2802289	1575672.
630.000	-6.92E-07	-130.8609	1.3895	5.5742E-08	276.4006	0.1818468	1575672.
636.000	-3.98E-07	-119.2877	2.2487	4.2942E-08	276.3921	0.1045661	1575672.
642.000	-1.77E-07	-103.9410	2.7020	3.1520E-08	276.3807	0.0465205	1575672.
648.000	-1.99E-08	-86.9115	2.8572	2.1754E-08	276.3682	0.0052354	1575672.
654.000	8.39E-08	-69.6869	2.8068	1.3742E-08	276.3555	-0.0220353	1575672.
660.000	1.45E-07	-53.2502	2.6265	7.4510E-09	276.3434	-0.0380689	1575672.
666.000	1.73E-07	-38.1798	2.3370	2.7726E-09	276.3323	-0.0584470	2023324.
672.000	1.78E-07	-25.2107	1.9387	-4.7098E-10	276.3227	-0.0743089	2501506.
678.000	1.68E-07	-14.9147	1.5061	-2.5241E-09	276.3151	-0.0699038	2501506.
684.000	1.48E-07	-7.1342	1.1113	-3.6524E-09	276.3094	-0.0616806	2501506.
690.000	1.24E-07	-1.5736	0.7713742	-4.0979E-09	276.3053	-0.0516310	2501506.
696.000	9.88E-08	2.1285	0.4929455	-4.0695E-09	276.3057	-0.0411786	2501506.
702.000	7.50E-08	4.3479	0.2755965	-3.7381E-09	276.3074	-0.0312711	2501506.
708.000	5.39E-08	5.4412	0.1143534	-3.2372E-09	276.3082	-0.0224766	2501506.
714.000	3.62E-08	5.7250	0.0016983	-2.6659E-09	276.3084	-0.0150751	2501506.
720.000	2.19E-08	5.4656	-0.0709444	-2.0933E-09	276.3082	-0.0091391	2501506.
726.000	1.10E-08	4.8768	-0.1121691	-1.5641E-09	276.3077	-0.0046024	2501506.
732.000	3.15E-09	4.1219	-0.1299185	-1.1036E-09	276.3072	-0.0013141	2501506.
738.000	-2.20E-09	3.3194	-0.1311036	-7.2286E-10	276.3066	0.0009190	2501506.
744.000	-5.52E-09	2.5498	-0.1214393	-4.2254E-10	276.3060	0.0023024	2501506.
750.000	-7.27E-09	1.8628	-0.1054332	-1.9675E-10	276.3055	0.0030330	2501506.
756.000	-7.88E-09	1.2849	-0.0864740	-3.5692E-11	276.3051	0.0032867	2501506.
762.000	-7.70E-09	0.8251547	-0.0669791	7.2275E-11	276.3048	0.0032116	2501506.
768.000	-7.02E-09	0.4810025	-0.0485689	1.3911E-10	276.3045	0.0029251	2501506.
774.000	-6.03E-09	0.2421187	-0.0322467	1.7611E-10	276.3043	0.0025156	2501506.
780.000	-4.90E-09	0.0937779	-0.0185677	1.9330E-10	276.3042	0.0020441	2501506.
786.000	-3.71E-09	0.0190162	-0.0077899	1.9907E-10	276.3042	0.0015485	2501506.
792.000	-2.51E-09	0.0000	0.0000	2.0004E-10	276.3042	0.0010481	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 10:

```
Pile-head deflection             =     0.38554923 in
Computed slope at pile head      =   2.312965E-17
Maximum bending moment           =      -3389261. lbs-in
Maximum shear force              =    50000.00000 lbs
Depth of maximum bending moment  =        0.00000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             28
Number of zero deflection points =              5
```

Summary of Pile Response(s)

Definition of Symbols for Pile-Head Loading Conditions:

```
Type 1 = Shear and Moment,          y = pile-head displacment in
Type 2 = Shear and Slope,           M = Pile-head Moment lbs-in
Type 3 = Shear and Rot. Stiffness,  V = Pile-head Shear Force lbs
Type 4 = Deflection and Moment,     S = Pile-head Slope, radians
Type 5 = Deflection and Slope,      R = Rot. Stiffness of Pile-head in-lbs/rad
```

Load Type	Pile-Head Condition 1	Pile-Head Condition 2	Axial Load lbs	Pile-Head Deflection in	Maximum Moment in-lbs	Maximum Shear lbs

```
  2  V=  5000.000 S=     0.000     125000.   0.0022848    -130192.   5000.0000
  2  V=    10000. S=     0.000     125000.   0.0100751    -347136.  10000.0000
  2  V=    15000. S=     0.000     125000.   0.0247166    -612679.  15000.0000
  2  V=    20000. S=     0.000     125000.   0.0479360    -917859.  20000.0000
  2  V=    25000. S=     0.000     125000.   0.0802382   -1259268.  25000.0000
  2  V=    30000. S=     0.000     125000.   0.1221704   -1632799.  30000.0000
  2  V=    35000. S=     0.000     125000.   0.1737439   -2035429.  35000.0000
  2  V=    40000. S=     0.000     125000.   0.2349274   -2464199.  40000.0000
  2  V=    45000. S=     0.000     125000.   0.3054451   -2916637.  45000.0000
  2  V=    50000. S=     0.000     125000.   0.3855492   -3389261.  50000.0000


-------------------------------------------------------------------------------
                      Pile-head Deflection vs. Pile Length
-------------------------------------------------------------------------------

Boundary Condition Type 2, Shear and Slope

Shear      =           5000. lbs
Slope      =         0.00000
Axial Load =         125000. lbs


   Pile       Pile Head       Maximum      Maximum
  Length      Deflection      Moment        Shear
    in           in           in-lbs         lbs
-----------  ------------  ------------  ------------
   792.000    0.00228484 -130191.67565    5000.00000
   752.400    0.00228541 -130258.21303    5000.00000
   712.800    0.00228596 -130387.64223    5000.00000
   673.200    0.00228775 -130520.30439    5000.00000
   633.600    0.00228837 -130604.35549    5000.00000
   594.000    0.00229094 -130748.49231    5000.00000
   554.400    0.00229026 -130811.36097    5000.00000
   514.800    0.00229167 -130935.06720    5000.00000
   475.200    0.00229465 -131075.22952    5000.00000
   435.600    0.00229425 -131144.19697    5000.00000


This analysis ended normally.
```

```
================================================================================

                LPILE Plus for Windows, Version 5.0 (5.0.41)

               Analysis of Individual Piles and Drilled Shafts
              Subjected to Lateral Loading Using the p-y Method

                       (c) 1985-2009 by Ensoft, Inc.
                            All Rights Reserved

================================================================================


This program is licensed to:

Madhu Thummaluru
URS Corporation

Path to file locations:      X:\101-Aux-VTA\440_geotech\Analysis\Pile\Lateral\Matadero Creek\
Name of input data file:     Abutment_free_24 inch CISS.lpd
Name of output file:         Abutment_free_24 inch CISS.lpo
Name of plot output file:    Abutment_free_24 inch CISS.lpp
Name of runtime file:        Abutment_free_24 inch CISS.lpr


--------------------------------------------------------------------------------
                           Time and Date of Analysis
--------------------------------------------------------------------------------

               Date:  March 17, 2010     Time:  19:57:48


--------------------------------------------------------------------------------
                                 Problem Title
--------------------------------------------------------------------------------

101 Auxillary_Matadero Creek_Abutment_Fixed


--------------------------------------------------------------------------------
                                 Program Options
--------------------------------------------------------------------------------

Units Used in Computations - US Customary Units: Inches, Pounds

Basic Program Options:

Analysis Type 1:
- Computation of Lateral Pile Response Using User-specified Constant EI

Computation Options:
- Only internally-generated p-y curves used in analysis
- Analysis does not use p-y multipliers (individual pile or shaft action only)
- Analysis assumes no shear resistance at pile tip
- Analysis includes automatic computation of pile-top deflection vs.
  pile embedment length
- No computation of foundation stiffness matrix elements
- Output pile response for full length of pile
- Analysis assumes no soil movements acting on pile
- No additional p-y curves to be computed at user-specified depths

Solution Control Parameters:
- Number of pile increments            =          132
- Maximum number of iterations allowed =          100
- Deflection tolerance for convergence =   1.0000E-05 in
- Maximum allowable deflection         =   1.0000E+02 in

Printing Options:
- Values of pile-head deflection, bending moment, shear force, and
  soil reaction are printed for full length of pile.
```

- Printing Increment (spacing of output points) = 1

Pile Structural Properties and Geometry

Pile Length = 792.00 in

Depth of ground surface below top of pile = -108.00 in

Slope angle of ground surface = 33.70 deg.

Structural properties of pile defined using 2 points

Point	Depth X in	Pile Diameter in	Moment of Inertia in**4	Pile Area Sq.in	Modulus of Elasticity lbs/Sq.in
1	0.0000	24.00000000	16286.0000	452.4000	3600000.
2	948.0000	24.00000000	16286.0000	452.4000	3600000.

Soil and Rock Layering Information

The soil profile is modelled using 10 layers

Layer 1 is stiff clay without free water
Distance from top of pile to top of layer = -108.000 in
Distance from top of pile to bottom of layer = 1.000 in

Layer 2 is stiff clay without free water
Distance from top of pile to top of layer = 1.000 in
Distance from top of pile to bottom of layer = 126.000 in

Layer 3 is soft clay, p-y criteria by Matlock, 1970
Distance from top of pile to top of layer = 126.000 in
Distance from top of pile to bottom of layer = 186.000 in

Layer 4 is stiff clay without free water
Distance from top of pile to top of layer = 186.000 in
Distance from top of pile to bottom of layer = 246.000 in

Layer 5 is soft clay, p-y criteria by Matlock, 1970
Distance from top of pile to top of layer = 246.000 in
Distance from top of pile to bottom of layer = 366.000 in

Layer 6 is sand, p-y criteria by Reese et al., 1974
Distance from top of pile to top of layer = 366.000 in
Distance from top of pile to bottom of layer = 486.000 in
p-y subgrade modulus k for top of soil layer = 125.000 lbs/in**3
p-y subgrade modulus k for bottom of layer = 125.000 lbs/in**3

Layer 7 is stiff clay without free water
Distance from top of pile to top of layer = 486.000 in
Distance from top of pile to bottom of layer = 546.000 in

Layer 8 is stiff clay without free water
Distance from top of pile to top of layer = 546.000 in
Distance from top of pile to bottom of layer = 666.000 in

Layer 9 is stiff clay without free water
Distance from top of pile to top of layer = 666.000 in
Distance from top of pile to bottom of layer = 846.000 in

Layer 10 is stiff clay without free water
Distance from top of pile to top of layer = 846.000 in
Distance from top of pile to bottom of layer = 1044.000 in

(Depth of lowest layer extends 252.00 in below pile tip)

Effective Unit Weight of Soil vs. Depth

Effective unit weight of soil with depth defined using 20 points

Point No.	Depth X in	Eff. Unit Weight lbs/in**3
1	-108.00	0.06000
2	1.00	0.06000
3	1.00	0.03620
4	126.00	0.03620
5	126.00	0.03620
6	186.00	0.03620
7	186.00	0.03330
8	246.00	0.03330
9	246.00	0.03330
10	366.00	0.03330
11	366.00	0.04200
12	486.00	0.04200
13	486.00	0.03040
14	546.00	0.03040
15	546.00	0.03620
16	666.00	0.03620
17	666.00	0.03330
18	846.00	0.03330
19	846.00	0.03330
20	1044.00	0.03330

Shear Strength of Soils

Shear strength parameters with depth defined using 20 points

Point No.	Depth X in	Cohesion c lbs/in**2	Angle of Friction Deg.	E50 or k_rm	RQD %
1	-108.000	8.25000	0.00	0.01000	0.0
2	1.000	8.25000	0.00	0.01000	0.0
3	1.000	6.94000	0.00	0.01000	0.0
4	126.000	6.94000	0.00	0.01000	0.0
5	126.000	3.47000	0.00	0.01500	0.0
6	186.000	3.47000	0.00	0.01500	0.0
7	186.000	6.94000	0.00	0.01000	0.0
8	246.000	6.94000	0.00	0.01000	0.0
9	246.000	3.47000	0.00	0.01500	0.0
10	366.000	3.47000	0.00	0.01500	0.0
11	366.000	0.00000	38.00	------	------
12	486.000	0.00000	38.00	------	------
13	486.000	5.56000	0.00	0.01200	0.0
14	546.000	5.56000	0.00	0.01200	0.0
15	546.000	6.94000	0.00	0.01000	0.0
16	666.000	6.94000	0.00	0.01000	0.0
17	666.000	10.42000	0.00	0.00800	0.0
18	846.000	10.42000	0.00	0.00800	0.0
19	846.000	8.33000	0.00	0.00900	0.0
20	1044.000	8.33000	0.00	0.00900	0.0

Notes:

(1) Cohesion = uniaxial compressive strength for rock materials.

(2) Values of E50 are reported for clay strata.
(3) Default values will be generated for E50 when input values are 0.
(4) RQD and k_rm are reported only for weak rock strata.

Loading Type

Static loading criteria was used for computation of p-y curves.

Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 10

Load Case Number 1

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Shear force at pile head = 5000.000 lbs
Bending moment at pile head = 0.000 in-lbs
Axial load at pile head = 169000.000 lbs

(Zero moment at pile head for this load indicates a free-head condition)

Load Case Number 2

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Shear force at pile head = 10000.000 lbs
Bending moment at pile head = 0.000 in-lbs
Axial load at pile head = 169000.000 lbs

(Zero moment at pile head for this load indicates a free-head condition)

Load Case Number 3

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Shear force at pile head = 15000.000 lbs
Bending moment at pile head = 0.000 in-lbs
Axial load at pile head = 169000.000 lbs

(Zero moment at pile head for this load indicates a free-head condition)

Load Case Number 4

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Shear force at pile head = 20000.000 lbs
Bending moment at pile head = 0.000 in-lbs
Axial load at pile head = 169000.000 lbs

(Zero moment at pile head for this load indicates a free-head condition)

Load Case Number 5

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Shear force at pile head = 25000.000 lbs
Bending moment at pile head = 0.000 in-lbs
Axial load at pile head = 169000.000 lbs

(Zero moment at pile head for this load indicates a free-head condition)

Load Case Number 6

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Shear force at pile head = 30000.000 lbs

```
Bending moment at pile head =           0.000 in-lbs
Axial load at pile head     =      169000.000 lbs

(Zero moment at pile head for this load indicates a free-head condition)

Load Case Number  7

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Shear force at pile head    =       35000.000 lbs
Bending moment at pile head =           0.000 in-lbs
Axial load at pile head     =      169000.000 lbs

(Zero moment at pile head for this load indicates a free-head condition)

Load Case Number  8

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Shear force at pile head    =       40000.000 lbs
Bending moment at pile head =           0.000 in-lbs
Axial load at pile head     =      169000.000 lbs

(Zero moment at pile head for this load indicates a free-head condition)

Load Case Number  9

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Shear force at pile head    =       45000.000 lbs
Bending moment at pile head =           0.000 in-lbs
Axial load at pile head     =      169000.000 lbs

(Zero moment at pile head for this load indicates a free-head condition)

Load Case Number 10

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Shear force at pile head    =       50000.000 lbs
Bending moment at pile head =           0.000 in-lbs
Axial load at pile head     =      169000.000 lbs

(Zero moment at pile head for this load indicates a free-head condition)



-------------------------------------------------------------------------------
             Computed Values of Load Distribution and Deflection
                 for Lateral Loading for Load Case Number  1
-------------------------------------------------------------------------------

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Specified shear force at pile head  =        5000.000 lbs
Specified moment at pile head       =           0.000 in-lbs
Specified axial load at pile head   =      169000.000 lbs

(Zero moment for this load indicates free-head conditions)
```

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	0.008871	2.8252E-09	5000.0000	-0.0001613	373.5632	-125.0653	42293.8104
6.000	0.007903	27912.3723	4320.4033	-0.0001599	394.1299	-101.4670	77029.9612
12.000	0.006953	52169.0379	3713.4025	-0.0001558	412.0029	-100.8666	87043.5017
18.000	0.006034	72789.0910	3111.2157	-0.0001494	427.1963	-99.8623	99295.0282
24.000	0.005160	89806.5476	2516.3071	-0.0001410	439.7353	-98.4406	114457.
30.000	0.004342	103271.	1931.2299	-0.0001312	449.6562	-96.5852	133476.
36.000	0.003586	113247.	1358.6451	-0.0001201	457.0071	-94.2764	157725.
42.000	0.002901	119818.	801.3495	-0.0001082	461.8487	-91.4888	189249.
48.000	0.002288	123083.	262.3165	-9.5737E-05	464.2543	-88.1889	231226.
54.000	0.001752	123160.	-255.2367	-8.3137E-05	464.3111	-84.3289	288839.
60.000	0.001291	120189.	-747.7327	-7.0685E-05	462.1217	-79.8365	371120.

66.000	0.000904	114331.	-1211.0153	-5.8685E-05	457.8054	-74.5911	495332.
72.000	0.000587	105775.	-1639.8866	-4.7422E-05	451.5017	-68.3660	699372.
78.000	0.000334	94748.1529	-1983.4268	-3.7162E-05	443.3764	-46.1474	827852.
84.000	0.000141	82049.7057	-2181.2177	-2.8115E-05	434.0198	-19.7829	844347.
90.000	-2.92E-06	68630.5587	-2238.2643	-2.0405E-05	424.1322	0.7673885	1575672.
96.000	-0.000104	55231.9159	-2153.8045	-1.4067E-05	414.2597	27.3859	1575672.
102.000	-0.000172	42813.4329	-1936.3523	-9.0504E-06	405.1094	45.0982	1575672.
108.000	-0.000213	32014.0422	-1633.3372	-5.2216E-06	397.1521	55.9068	1575672.
114.000	-0.000234	23223.9759	-1280.9569	-2.3951E-06	390.6753	61.5532	1575672.
120.000	-0.000242	16647.4162	-905.9330	-3.5497E-07	385.8295	63.4548	1575672.
126.000	-0.000239	12353.5002	-643.3123	1.1290E-06	382.6656	24.0855	605547.
132.000	-0.000228	8925.3785	-527.7325	2.2178E-06	380.1397	14.4412	379894.
138.000	-0.000212	6016.2125	-444.1336	2.9823E-06	377.9961	13.4251	379894.
144.000	-0.000192	3589.7274	-367.3325	3.4738E-06	376.2082	12.1752	379894.
150.000	-0.000170	1601.1779	-298.4495	3.7395E-06	374.7430	10.7858	379894.
156.000	-0.000147	0.7494322	-238.0902	3.8214E-06	373.5638	9.3340	379894.
162.000	-0.000124	-1263.6540	-186.4412	3.7568E-06	374.4943	7.8823	379894.
168.000	-0.000102	-2244.1643	-143.3554	3.5773E-06	375.2168	6.4797	379894.
174.000	-8.16E-05	-2991.1742	-108.4237	3.3094E-06	375.7672	5.1643	379894.
180.000	-6.26E-05	-3551.9598	-81.0353	2.9746E-06	376.1804	3.9652	379894.
186.000	-4.59E-05	-3969.6300	-43.5077	2.5898E-06	376.4882	8.5440	1117634.
192.000	-3.15E-05	-4079.3042	6.9794	2.1779E-06	376.5690	8.2850	1575672.
198.000	-1.97E-05	-3890.2939	47.3813	1.7701E-06	376.4297	5.1823	1575672.
204.000	-1.03E-05	-3514.3184	71.0485	1.3912E-06	376.1527	2.7068	1575672.
210.000	-3.04E-06	-3040.5328	81.5631	1.0558E-06	375.8036	0.7980462	1575672.
216.000	2.36E-06	-2537.7021	82.5566	7.7039E-07	375.4331	-0.4668981	1185744.
222.000	6.21E-06	-2051.4163	77.4263	5.3557E-07	375.0748	-1.2432	1201952.
228.000	8.79E-06	-1609.6720	68.3434	3.4824E-07	374.7493	-1.7845	1218157.
234.000	1.04E-05	-1232.0018	56.5808	2.0283E-07	374.4710	-2.1364	1234361.
240.000	1.12E-05	-931.1140	43.1538	9.2148E-08	374.2493	-2.3393	1250563.
246.000	1.15E-05	-714.3428	33.0514	7.9520E-09	374.0896	-1.0282	536918.
252.000	1.13E-05	-534.5138	27.8245	-5.5950E-08	373.9571	-0.7140694	378522.
258.000	1.08E-05	-380.3359	23.6272	-1.0276E-07	373.8435	-0.6850123	379894.
264.000	1.01E-05	-250.7789	19.6564	-1.3506E-07	373.7480	-0.6385803	379894.
270.000	9.20E-06	-144.1848	15.9935	-1.5527E-07	373.6695	-0.5823987	379894.
276.000	8.22E-06	-58.5421	12.6845	-1.6564E-07	373.6064	-0.5206116	379894.
282.000	7.21E-06	8.3647	9.7530	-1.6821E-07	373.5694	-0.4565485	379894.
288.000	6.20E-06	58.8348	7.2049	-1.6477E-07	373.6066	-0.3928106	379894.
294.000	5.23E-06	95.1577	5.0324	-1.5689E-07	373.6333	-0.3313601	379894.
300.000	4.32E-06	119.5417	3.2175	-1.4590E-07	373.6513	-0.2736090	379894.
306.000	3.48E-06	134.0634	1.7351	-1.3293E-07	373.6620	-0.2205054	379894.
312.000	2.73E-06	140.6330	0.5557854	-1.1887E-07	373.6668	-0.1726138	379894.
318.000	2.06E-06	140.9739	-0.3526253	-1.0446E-07	373.6671	-0.1301897	379894.
324.000	1.47E-06	136.6133	-1.0229	-9.0256E-08	373.6639	-0.0932463	379894.
330.000	9.73E-07	128.8817	-1.4875	-7.6671E-08	373.6582	-0.0616141	379894.
336.000	5.53E-07	118.9187	-1.7773	-6.3992E-08	373.6508	-0.0349924	379894.
342.000	2.05E-07	107.6835	-1.9213	-5.2397E-08	373.6426	-0.0129940	379894.
348.000	-7.61E-08	95.9694	-1.9458	-4.1976E-08	373.6339	0.0048179	379894.
354.000	-2.98E-07	84.4188	-1.8747	-3.2746E-08	373.6254	0.0188989	379894.
360.000	-4.69E-07	73.5398	-1.7289	-2.4663E-08	373.6174	0.0296978	379894.
366.000	-5.94E-07	63.7222	-1.5972	-1.7640E-08	373.6102	0.0142018	143346.
372.000	-6.81E-07	54.4093	-1.5043	-1.1595E-08	373.6033	0.0167736	147846.
378.000	-7.34E-07	45.6947	-1.3981	-6.4729E-09	373.5969	0.0186264	152346.
384.000	-7.58E-07	37.6458	-1.2827	-2.2084E-09	373.5910	0.0198251	156846.
390.000	-7.60E-07	30.3067	-1.1619	1.2686E-09	373.5855	0.0204394	161346.
396.000	-7.43E-07	23.7003	-1.0390	4.0321E-09	373.5807	0.0205419	165846.
402.000	-7.12E-07	17.8310	-0.9167206	6.1572E-09	373.5764	0.0202059	170346.
408.000	-6.69E-07	12.6872	-0.7975923	7.7188E-09	373.5726	0.0195036	174846.
414.000	-6.19E-07	8.2442	-0.6835673	8.7898E-09	373.5693	0.0185048	179346.
420.000	-5.64E-07	4.4666	-0.5762263	9.4402E-09	373.5665	0.0172756	183846.
426.000	-5.06E-07	1.3104	-0.4767676	9.7358E-09	373.5642	0.0158773	188346.
432.000	-4.47E-07	-1.2744	-0.3860368	9.7376E-09	373.5642	0.0143663	192846.
438.000	-3.89E-07	-3.3418	-0.3045600	9.5014E-09	373.5657	0.0127927	197346.
444.000	-3.33E-07	-4.9484	-0.2325787	9.0772E-09	373.5669	0.0112011	201846.
450.000	-2.80E-07	-6.1512	-0.1700854	8.5093E-09	373.5678	0.0096300	206346.
456.000	-2.31E-07	-7.0067	-0.1168586	7.8360E-09	373.5684	0.0081122	210846.
462.000	-1.86E-07	-7.5694	-0.0724965	7.0902E-09	373.5688	0.0066751	215346.
468.000	-1.46E-07	-7.8910	-0.0364479	6.2991E-09	373.5690	0.0053410	219846.
474.000	-1.10E-07	-8.0195	-0.0080415	5.4849E-09	373.5691	0.0041278	224346.
480.000	-7.99E-08	-7.9986	0.0134897	4.6653E-09	373.5691	0.0030493	228846.

486.000	-5.44E-08	-7.8671	0.0554505	3.8535E-09	373.5690	0.0109376	1206107.
492.000	-3.37E-08	-7.3410	0.1085897	3.0753E-09	373.5686	0.0067755	1206107.
498.000	-1.75E-08	-6.5703	0.1394742	2.3635E-09	373.5681	0.0035194	1206107.
504.000	-5.34E-09	-5.6721	0.1532549	1.7371E-09	373.5674	0.0010742	1206107.
510.000	3.34E-09	-4.7347	0.1544652	1.2045E-09	373.5667	-0.0006708	1206107.
516.000	9.11E-09	-3.8210	0.1469587	7.6676E-10	373.5660	-0.0018314	1206107.
522.000	1.25E-08	-2.9728	0.1339034	4.1913E-10	373.5654	-0.0025204	1206107.
528.000	1.41E-08	-2.2150	0.1178150	1.5368E-10	373.5649	-0.0028424	1206107.
534.000	1.44E-08	-1.5593	0.1006144	-3.9450E-11	373.5644	-0.0028911	1206107.
540.000	1.37E-08	-1.0076	0.0836994	-1.7079E-10	373.5640	-0.0027473	1206107.
546.000	1.23E-08	-0.5545845	0.0669135	-2.5073E-10	373.5636	-0.0028480	1385601.
552.000	1.07E-08	-0.2040851	0.0499726	-2.8955E-10	373.5634	-0.0027989	1575672.
558.000	8.86E-09	0.0456738	0.0345970	-2.9765E-10	373.5633	-0.0023263	1575672.
564.000	7.09E-09	0.2116828	0.0220355	-2.8448E-10	373.5634	-0.0018609	1575672.
570.000	5.44E-09	0.3106762	0.0121634	-2.5775E-10	373.5634	-0.0014297	1575672.
576.000	3.99E-09	0.3581664	0.0047282	-2.2353E-10	373.5635	-0.0010487	1575672.
582.000	2.76E-09	0.3678677	-0.0005938	-1.8638E-10	373.5635	-0.0007253	1575672.
588.000	1.76E-09	0.3514190	-0.0041537	-1.4958E-10	373.5635	-0.0004613	1575672.
594.000	9.67E-10	0.3183268	-0.0062995	-1.1531E-10	373.5635	-0.0002540	1575672.
600.000	3.73E-10	0.2760590	-0.0073552	-8.4892E-11	373.5634	-9.7941E-05	1575672.
606.000	-5.16E-11	0.2302366	-0.0076083	-5.8985E-11	373.5634	1.3563E-05	1575672.
612.000	-3.35E-10	0.1848786	-0.0073038	-3.7745E-11	373.5634	8.7942E-05	1575672.
618.000	-5.05E-10	0.1426673	-0.0066425	-2.0984E-11	373.5633	0.0001325	1575672.
624.000	-5.87E-10	0.1052115	-0.0057827	-8.3008E-12	373.5633	0.0001541	1575672.
630.000	-6.04E-10	0.0732914	-0.0048445	8.3291E-13	373.5633	0.0001587	1575672.
636.000	-5.77E-10	0.0470758	-0.0039142	6.9919E-12	373.5633	0.0001514	1575672.
642.000	-5.20E-10	0.0263074	-0.0030499	1.0747E-11	373.5632	0.0001366	1575672.
648.000	-4.48E-10	0.0104550	-0.0022873	1.2628E-11	373.5632	0.0001176	1575672.
654.000	-3.69E-10	-0.0011656	-0.0016440	1.3103E-11	373.5632	9.6839E-05	1575672.
660.000	-2.90E-10	-0.0092998	-0.0011246	1.2568E-11	373.5632	7.6287E-05	1575672.
666.000	-2.18E-10	-0.0146868	-0.0006753	1.1340E-11	373.5632	7.3494E-05	2023324.
672.000	-1.54E-10	-0.0174264	-0.0002617	9.6972E-12	373.5632	6.4375E-05	2501506.
678.000	-1.02E-10	-0.0178468	5.8473E-05	7.8923E-12	373.5632	4.2348E-05	2501506.
684.000	-5.97E-11	-0.0167408	0.0002602	6.1225E-12	373.5632	2.4889E-05	2501506.
690.000	-2.81E-11	-0.0147370	0.0003700	4.5119E-12	373.5632	1.1717E-05	2501506.
696.000	-5.56E-12	-0.0123099	0.0004121	3.1279E-12	373.5632	2.3165E-06	2501506.
702.000	9.43E-12	-0.0097981	0.0004073	1.9967E-12	373.5632	-3.9323E-06	2501506.
708.000	1.84E-11	-0.0074268	0.0003724	1.1153E-12	373.5632	-7.6729E-06	2501506.
714.000	2.28E-11	-0.0053311	0.0003209	4.6249E-13	373.5632	-9.5122E-06	2501506.
720.000	2.40E-11	-0.0035772	0.0002624	6.6724E-15	373.5632	-9.9867E-06	2501506.
726.000	2.29E-11	-0.0021824	0.0002038	-2.8804E-13	373.5632	-9.5455E-06	2501506.
732.000	2.05E-11	-0.0011311	0.0001495	-4.5758E-13	373.5632	-8.5457E-06	2501506.
738.000	1.74E-11	-0.0003873	0.0001021	-5.3528E-13	373.5632	-7.2562E-06	2501506.
744.000	1.41E-11	9.5353E-05	6.2741E-05	-5.5021E-13	373.5632	-5.8677E-06	2501506.
750.000	1.08E-11	0.0003667	3.1627E-05	-5.2657E-13	373.5632	-4.5035E-06	2501506.
756.000	7.76E-12	0.0004759	8.4166E-06	-4.8345E-13	373.5632	-3.2332E-06	2501506.
762.000	5.00E-12	0.0004687	-7.5375E-06	-4.3511E-13	373.5632	-2.0848E-06	2501506.
768.000	2.53E-12	0.0003864	-1.6961E-05	-3.9136E-13	373.5632	-1.0564E-06	2501506.
774.000	3.04E-13	0.0002660	-2.0511E-05	-3.5798E-13	373.5632	-1.2683E-07	2501506.
780.000	-1.76E-12	0.0001410	-1.8687E-05	-3.3716E-13	373.5632	7.3462E-07	2501506.
786.000	-3.74E-12	4.2410E-05	-1.1803E-05	-3.2777E-13	373.5632	1.5600E-06	2501506.
792.000	-5.70E-12	0.0000	0.0000	-3.2560E-13	373.5632	2.3745E-06	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 1:

```
Pile-head deflection             =     0.00887118 in
Computed slope at pile head      =    -0.00016129
Maximum bending moment           =   123160.06304 lbs-in
Maximum shear force              =     5000.00000 lbs
Depth of maximum bending moment  =    54.00000000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             14
Number of zero deflection points =              7
```

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 2

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Specified shear force at pile head = 10000.000 lbs
Specified moment at pile head = 0.000 in-lbs
Specified axial load at pile head = 169000.000 lbs

(Zero moment for this load indicates free-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	0.041060	-1.2431E-07	10000.0000	-0.0005721	373.5632	-183.3637	13397.2205
6.000	0.037628	57279.5381	9000.4634	-0.0005691	415.7685	-149.8151	23889.1118
12.000	0.034230	109160.	8100.4825	-0.0005606	453.9953	-150.1785	26323.7380
18.000	0.030900	155622.	7199.5021	-0.0005471	488.2303	-150.1483	29154.9211
24.000	0.027665	196663.	6299.9207	-0.0005291	518.4705	-149.7122	32469.1918
30.000	0.024551	232294.	5404.2158	-0.0005071	544.7244	-148.8561	36378.1681
36.000	0.021580	262542.	4514.9540	-0.0004818	567.0120	-147.5645	41027.8526
42.000	0.018770	287451.	3634.8033	-0.0004536	585.3653	-145.8191	46612.3051
48.000	0.016136	307080.	2766.5494	-0.0004232	599.8287	-143.5989	53394.2814
54.000	0.013691	321508.	1913.1178	-0.0003911	610.4594	-140.8783	61737.3532
60.000	0.011444	330830.	1077.6053	-0.0003577	617.3287	-137.6259	72157.7345
66.000	0.009399	335164.	263.3248	-0.0003236	620.5220	-133.8010	85411.6312
72.000	0.007561	334647.	-526.1257	-0.0002893	620.1406	-129.3492	102651.
78.000	0.005927	329438.	-1286.7553	-0.0002553	616.3024	-124.1940	125716.
84.000	0.004496	319723.	-2013.9986	-0.0002221	609.1447	-118.2204	157753.
90.000	0.003262	305720.	-2702.3881	-0.0001901	598.8266	-111.2427	204629.
96.000	0.002215	287680.	-3344.9003	-0.0001598	585.5344	-102.9280	278825.
102.000	0.001345	265905.	-3931.4266	-0.0001314	569.4899	-92.5808	413109.
108.000	0.000638	240770.	-4444.0296	-0.0001055	550.9693	-78.2869	736630.
114.000	7.85E-05	212791.	-4715.2749	-8.2302E-05	530.3537	-12.1282	926757.
120.000	-0.000350	184353.	-4475.9456	-6.1981E-05	509.4001	91.9046	1575672.
126.000	-0.000665	159205.	-4038.2742	-4.4401E-05	490.8702	53.9858	486907.
132.000	-0.000883	135984.	-3764.6368	-2.9297E-05	473.7602	37.2266	253018.
138.000	-0.001017	114089.	-3535.8753	-1.6501E-05	457.6273	39.0272	230291.
144.000	-0.001081	93587.0039	-3299.2977	-5.8746E-06	442.5209	39.8320	221126.
150.000	-0.001087	74509.2949	-3060.0601	2.7267E-06	428.4638	39.9139	220253.
156.000	-0.001048	56860.7530	-2822.0304	9.4487E-06	415.4599	39.4294	225725.
162.000	-0.000974	40625.7680	-2588.3087	1.4437E-05	403.4975	38.4779	237049.
168.000	-0.000875	25771.7707	-2361.4943	1.7834E-05	392.5526	37.1269	254634.
174.000	-0.000760	12251.6680	-2143.8379	1.9780E-05	382.5906	35.4252	279706.
180.000	-0.000637	5.6022	-1937.3294	2.0407E-05	373.5673	33.4109	314472.
186.000	-0.000515	-11037.6708	-1564.0478	1.9843E-05	381.6961	91.0163	1060337.
192.000	-0.000399	-18803.2119	-976.3729	1.8316E-05	387.4180	104.8753	1575672.
198.000	-0.000295	-22791.2902	-429.1523	1.6188E-05	390.3565	77.5316	1575672.
204.000	-0.000205	-23985.8675	-34.9689	1.3794E-05	391.2367	53.8629	1575672.
210.000	-0.000130	-23238.8919	228.8055	1.1378E-05	390.6863	34.0619	1575672.
216.000	-6.86E-05	-21263.2749	385.0162	9.1004E-06	389.2306	18.0083	1575672.
222.000	-2.05E-05	-18637.1537	455.1909	7.0588E-06	387.2956	5.3833	1575672.
228.000	1.61E-05	-15815.2995	461.9128	5.2959E-06	385.2164	-3.1427	1168870.
234.000	4.31E-05	-13104.9406	426.9739	3.8161E-06	383.2193	-8.5036	1185121.
240.000	6.19E-05	-10699.3514	364.2657	2.5981E-06	381.4468	-12.3991	1201369.
246.000	7.42E-05	-8739.0206	307.1410	1.6034E-06	380.0024	-6.6424	536918.
252.000	8.12E-05	-7016.9110	271.8521	7.9722E-07	378.7335	-5.1205	378522.
258.000	8.38E-05	-5478.4124	240.5738	1.5785E-07	377.5999	-5.3056	379894.
264.000	8.31E-05	-4130.3451	208.8801	-3.3382E-07	376.6066	-5.2590	379894.
270.000	7.98E-05	-2971.1742	177.9473	-6.9720E-07	375.7525	-5.0519	379894.
276.000	7.47E-05	-1993.5640	148.6036	-9.5124E-07	375.0321	-4.7293	379894.
282.000	6.84E-05	-1186.0018	121.4282	-1.1139E-06	374.4371	-4.3292	379894.
288.000	6.13E-05	-534.1671	96.7918	-1.2019E-06	373.9568	-3.8830	379894.
294.000	5.40E-05	-22.0632	74.8950	-1.2304E-06	373.5795	-3.4160	379894.
300.000	4.66E-05	367.0686	55.8029	-1.2128E-06	373.8337	-2.9481	379894.
306.000	3.94E-05	650.0307	39.4750	-1.1607E-06	374.0422	-2.4945	379894.

312.000	3.26E-05	843.1228	25.7929	-1.0843E-06	374.1845	-2.0662	379894.
318.000	2.64E-05	961.7441	14.5823	-9.9196E-07	374.2719	-1.6707	379894.
324.000	2.07E-05	1020.1215	5.6327	-8.9055E-07	374.3149	-1.3125	379894.
330.000	1.57E-05	1031.1422	-1.2870	-7.8559E-07	374.3230	-0.9940409	379894.
336.000	1.13E-05	1006.2704	-6.4161	-6.8134E-07	374.3047	-0.7156447	379894.
342.000	7.52E-06	955.5309	-9.9921	-5.8095E-07	374.2673	-0.4763697	379894.
348.000	4.33E-06	887.5430	-12.2440	-4.8665E-07	374.2172	-0.2742433	379894.
354.000	1.68E-06	809.5902	-13.3866	-3.9981E-07	374.1597	-0.1066222	379894.
360.000	-4.66E-07	727.7150	-13.6179	-3.2114E-07	374.0994	0.0295242	379894.
366.000	-2.17E-06	646.8272	-13.3761	-2.5081E-07	374.0398	0.0510759	141240.
372.000	-3.48E-06	567.7110	-12.9695	-1.8866E-07	373.9815	0.0844327	145740.
378.000	-4.43E-06	491.5754	-12.3832	-1.3446E-07	373.9254	0.1110202	150240.
384.000	-5.09E-06	419.3856	-11.6563	-8.7848E-08	373.8722	0.1312598	154740.
390.000	-5.49E-06	351.8776	-10.8256	-4.8384E-08	373.8225	0.1456488	159240.
396.000	-5.67E-06	289.5764	-9.9244	-1.5561E-08	373.7766	0.1547389	163740.
402.000	-5.67E-06	232.8158	-8.9829	1.1169E-08	373.7348	0.1591167	168240.
408.000	-5.54E-06	181.7592	-8.0274	3.2382E-08	373.6971	0.1593856	172740.
414.000	-5.29E-06	136.4217	-7.0808	4.8663E-08	373.6637	0.1561499	177240.
420.000	-4.95E-06	96.6914	-6.1623	6.0591E-08	373.6345	0.1500017	181740.
426.000	-4.56E-06	62.3511	-5.2878	6.8729E-08	373.6092	0.1415099	186240.
432.000	-4.13E-06	33.0987	-4.4696	7.3613E-08	373.5876	0.1312112	190740.
438.000	-3.68E-06	8.5665	-3.7172	7.5745E-08	373.5695	0.1196039	195240.
444.000	-3.22E-06	-11.6609	-3.0369	7.5587E-08	373.5718	0.1071437	199740.
450.000	-2.77E-06	-28.0299	-2.4328	7.3556E-08	373.5839	0.0942416	204240.
456.000	-2.34E-06	-41.0033	-1.9063	7.0023E-08	373.5934	0.0812633	208740.
462.000	-1.93E-06	-51.0469	-1.4569	6.5313E-08	373.6008	0.0685308	213240.
468.000	-1.55E-06	-58.6182	-1.0823	5.9702E-08	373.6064	0.0563244	217740.
474.000	-1.21E-06	-64.1557	-0.7786714	5.3420E-08	373.6105	0.0448868	222240.
480.000	-9.11E-07	-68.0706	-0.5407280	4.6654E-08	373.6134	0.0344277	226740.
486.000	-6.52E-07	-70.7390	-0.0442547	3.9551E-08	373.6153	0.1310634	1206107.
492.000	-4.36E-07	-68.6818	0.6121142	3.2417E-08	373.6138	0.0877262	1206107.
498.000	-2.63E-07	-63.4594	1.0339	2.5656E-08	373.6100	0.0528663	1206107.
504.000	-1.29E-07	-56.3272	1.2700	1.9526E-08	373.6047	0.0258393	1206107.
510.000	-2.87E-08	-48.2589	1.3648	1.4175E-08	373.5988	0.0057646	1206107.
516.000	4.16E-08	-39.9781	1.3571	9.6598E-09	373.5927	-0.0083534	1206107.
522.000	8.72E-08	-31.9938	1.2794	5.9771E-09	373.5868	-0.0175369	1206107.
528.000	1.13E-07	-24.6376	1.1585	3.0794E-09	373.5814	-0.0227715	1206107.
534.000	1.24E-07	-18.0986	1.0152	8.9263E-10	373.5766	-0.0249651	1206107.
540.000	1.24E-07	-12.4564	0.8655788	-6.7083E-10	373.5724	-0.0249247	1206107.
546.000	1.16E-07	-7.7103	0.7103404	-1.7027E-09	373.5689	-0.0268214	1385601.
552.000	1.04E-07	-3.9289	0.5482881	-2.2983E-09	373.5661	-0.0271960	1575672.
558.000	8.86E-08	-1.1261	0.3969262	-2.5569E-09	373.5640	-0.0232579	1575672.
564.000	7.29E-08	0.8394291	0.2697378	-2.5716E-09	373.5638	-0.0191382	1575672.
570.000	5.77E-08	2.1159	0.1668615	-2.4204E-09	373.5648	-0.0151539	1575672.
576.000	4.38E-08	2.8467	0.0868677	-2.1665E-09	373.5653	-0.0115107	1575672.
582.000	3.17E-08	3.1627	0.0273558	-1.8590E-09	373.5655	-0.0083266	1575672.
588.000	2.15E-08	3.1787	-0.0145813	-1.5345E-09	373.5656	-0.0056525	1575672.
594.000	1.33E-08	2.9909	-0.0420113	-1.2188E-09	373.5654	-0.0034909	1575672.
600.000	6.90E-09	2.6771	-0.0579188	-9.2878E-10	373.5652	-0.0018116	1575672.
606.000	2.15E-09	2.2977	-0.0650455	-6.7423E-10	373.5649	-0.0005640	1575672.
612.000	-1.19E-09	1.8979	-0.0657980	-4.5954E-10	373.5646	0.0003131	1575672.
618.000	-3.37E-09	1.5091	-0.0622061	-2.8521E-10	373.5643	0.0008842	1575672.
624.000	-4.61E-09	1.1520	-0.0559177	-1.4905E-10	373.5641	0.0012119	1575672.
630.000	-5.16E-09	0.8383776	-0.0482201	-4.7207E-11	373.5638	0.0013539	1575672.
636.000	-5.18E-09	0.5734315	-0.0400763	2.5034E-11	373.5636	0.0013607	1575672.
642.000	-4.86E-09	0.3574111	-0.0321692	7.2664E-11	373.5635	0.0012750	1575672.
648.000	-4.31E-09	0.1872543	-0.0249490	1.0053E-10	373.5634	0.0011317	1575672.
654.000	-3.65E-09	0.0578196	-0.0186792	1.1307E-10	373.5633	0.0009582	1575672.
660.000	-2.95E-09	-0.0371258	-0.0134785	1.1413E-10	373.5632	0.0007754	1575672.
666.000	-2.28E-09	-0.1041538	-0.0088466	1.0690E-10	373.5633	0.0007686	2023324.
672.000	-1.67E-09	-0.1435022	-0.0044525	9.4231E-11	373.5633	0.0006961	2501506.
678.000	-1.15E-09	-0.1577749	-0.0009278	7.8815E-11	373.5633	0.0004788	2501506.
684.000	-7.24E-10	-0.1547952	0.0014140	6.2821E-11	373.5633	0.0003018	2501506.
690.000	-3.95E-10	-0.1409339	0.0028129	4.7689E-11	373.5633	0.0001645	2501506.
696.000	-1.52E-10	-0.1211367	0.0034961	3.4280E-11	373.5633	6.3228E-05	2501506.
702.000	1.68E-11	-0.0990507	0.0036647	2.3013E-11	373.5633	-7.0176E-06	2501506.
708.000	1.24E-10	-0.0772070	0.0034879	1.3994E-11	373.5633	-5.1906E-05	2501506.
714.000	1.85E-10	-0.0572239	0.0031011	7.1153E-12	373.5633	-7.7030E-05	2501506.
720.000	2.10E-10	-0.0400080	0.0026075	2.1401E-12	373.5632	-8.7504E-05	2501506.
726.000	2.10E-10	-0.0259381	0.0020818	-1.2343E-12	373.5632	-8.7737E-05	2501506.

732.000	1.95E-10	-0.0150240	0.0015746	-3.3302E-12	373.5632	-8.1329E-05	2501506.
738.000	1.70E-10	-0.0070362	0.0011174	-4.4590E-12	373.5632	-7.1076E-05	2501506.
744.000	1.42E-10	-0.0016064	0.0007271	-4.9013E-12	373.5632	-5.9021E-05	2501506.
750.000	1.12E-10	0.0016988	0.0004104	-4.8965E-12	373.5632	-4.6554E-05	2501506.
756.000	8.28E-11	0.0033279	0.0001671	-4.6393E-12	373.5632	-3.4523E-05	2501506.
762.000	5.60E-11	0.0037138	-6.4682E-06	-4.2790E-12	373.5632	-2.3344E-05	2501506.
768.000	3.15E-11	0.0032590	-0.0001158	-3.9222E-12	373.5632	-1.3115E-05	2501506.
774.000	8.92E-12	0.0023316	-0.0001664	-3.6362E-12	373.5632	-3.7209E-06	2501506.
780.000	-1.22E-11	0.0012701	-0.0001623	-3.4519E-12	373.5632	5.0766E-06	2501506.
786.000	-3.25E-11	0.0003912	-0.0001064	-3.3669E-12	373.5632	1.3549E-05	2501506.
792.000	-5.26E-11	0.0000	0.0000	-3.3469E-12	373.5632	2.1921E-05	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 2:

```
Pile-head deflection             =     0.04106009 in
Computed slope at pile head      =    -0.00057208
Maximum bending moment           =   335164.27674 lbs-in
Maximum shear force              =    10000.00000 lbs
Depth of maximum bending moment  =    66.00000000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             19
Number of zero deflection points =              7
```

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 3

```
Pile-head boundary conditions are Shear and Moment (BC Type 1)
Specified shear force at pile head  =       15000.000 lbs
Specified moment at pile head       =           0.000 in-lbs
Specified axial load at pile head   =      169000.000 lbs
```

(Zero moment for this load indicates free-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	0.100249	2.4862E-07	15000.0000	-0.0011884	373.5632	-229.1892	6858.5888
6.000	0.093119	87079.6527	13748.7640	-0.0011840	437.7260	-187.8895	12106.4620
12.000	0.086042	167386.	12617.8565	-0.0011709	496.8983	-189.0797	13185.2351
18.000	0.079067	240869.	11480.9620	-0.0011501	551.0422	-189.8852	14409.3847
24.000	0.072241	307490.	10340.4206	-0.0011220	600.1309	-190.2953	15805.0577
30.000	0.065603	367229.	9198.6384	-0.0010875	644.1483	-190.2988	17404.4895
36.000	0.059191	420079.	8058.0918	-0.0010472	683.0898	-189.8834	19247.7817
42.000	0.053037	466050.	6921.3336	-0.0010018	716.9623	-189.0360	21385.3193
48.000	0.047169	505167.	5790.9999	-0.0009521	745.7849	-187.7419	23881.1101
54.000	0.041611	537473.	4669.8183	-0.0008988	769.5889	-185.9853	26817.4746
60.000	0.036384	563027.	3560.6190	-0.0008425	788.4183	-183.7478	30301.7675
66.000	0.031502	581909.	2466.3485	-0.0007839	802.3306	-181.0090	34476.2220
72.000	0.026977	594213.	1390.0884	-0.0007237	811.3970	-177.7444	39532.7435
78.000	0.022817	600058.	335.0805	-0.0006626	815.7031	-173.9249	45735.8154
84.000	0.019025	599578.	-695.2374	-0.0006012	815.3499	-169.5144	53459.2352
90.000	0.015602	592934.	-1697.1805	-0.0005402	810.4543	-164.4666	63247.5817
96.000	0.012543	580308.	-2666.7399	-0.0004802	801.1507	-158.7198	75924.5163
102.000	0.009840	561907.	-3599.4611	-0.0004217	787.5926	-152.1873	92796.3209
108.000	0.007482	537969.	-4490.2442	-0.0003654	769.9547	-144.7404	116067.
114.000	0.005455	508765.	-5332.9865	-0.0003119	748.4362	-136.1737	149787.
120.000	0.003740	474606.	-6119.8836	-0.0002616	723.2667	-126.1253	202364.
126.000	0.002316	435857.	-6662.0600	-0.0002150	694.7154	-54.6001	141461.
132.000	0.001160	395097.	-6917.7087	-0.0001725	664.6824	-30.6161	158395.

138.000	0.000246	353194.	-7045.2213	-0.0001342	633.8070	-11.8881	289663.
144.000	-0.000450	310827.	-6995.3379	-0.0001002	602.5894	28.5159	379894.
150.000	-0.000956	269453.	-6795.1607	-7.0507E-05	572.1043	38.2098	239774.
156.000	-0.001296	229428.	-6553.6190	-4.4980E-05	542.6122	42.3040	195782.
162.000	-0.001496	190901.	-6293.5769	-2.3472E-05	514.2248	44.3767	177993.
168.000	-0.001578	153952.	-6024.9106	-5.8267E-06	486.9998	45.1787	171768.
174.000	-0.001566	118614.	-5754.1847	8.1202E-06	460.9615	45.0632	172675.
180.000	-0.001481	84885.7028	-5486.2967	1.8533E-05	436.1095	44.2328	179239.
186.000	-0.001343	52740.9155	-5006.7230	2.5575E-05	412.4243	115.6251	516403.
192.000	-0.001174	24753.1599	-4187.0303	2.9540E-05	391.8021	157.6058	805627.
198.000	-0.000989	2436.6437	-3261.2133	3.0932E-05	375.3586	150.9999	916127.
204.000	-0.000803	-14444.1290	-2378.2427	3.0317E-05	384.2061	143.3236	1071436.
210.000	-0.000625	-26163.7521	-1544.3322	2.8239E-05	392.8414	134.6465	1292323.
216.000	-0.000464	-33033.3846	-775.0470	2.5210E-05	397.9032	121.7818	1575672.
222.000	-0.000323	-35515.4430	-155.5360	2.1703E-05	399.7320	84.7218	1575672.
228.000	-0.000203	-34943.8300	258.7956	1.8098E-05	399.3109	53.3887	1575672.
234.000	-0.000105	-32446.5977	502.0325	1.4649E-05	397.4708	27.6903	1575672.
240.000	-2.75E-05	-28949.1493	606.7747	1.1508E-05	394.8938	7.2238	1575672.
246.000	3.27E-05	-25188.6387	619.6808	8.7376E-06	392.1229	-2.9218	536918.
252.000	7.73E-05	-21530.6998	596.2773	6.3470E-06	389.4277	-4.8794	378522.
258.000	0.000109	-18046.1832	560.9701	4.3219E-06	386.8602	-6.8897	379894.
264.000	0.000129	-14807.8230	515.7587	2.6408E-06	384.4741	-8.1808	379894.
270.000	0.000141	-11862.4339	464.5280	1.2761E-06	382.3038	-8.8961	379894.
276.000	0.000145	-9236.0752	410.3885	1.9654E-07	380.3686	-9.1504	379894.
282.000	0.000143	-6938.1707	355.8010	-6.3108E-07	378.6755	-9.0455	379894.
288.000	0.000137	-4965.1834	302.6520	-1.2402E-06	377.2217	-8.6709	379894.
294.000	0.000128	-3303.8320	252.3297	-1.6633E-06	375.9976	-8.1032	379894.
300.000	0.000117	-1933.8536	205.7987	-1.9313E-06	374.9881	-7.4071	379894.
306.000	0.000105	-830.3313	163.6697	-2.0727E-06	374.1750	-6.6359	379894.
312.000	9.21E-05	34.3863	126.2652	-2.1134E-06	373.5886	-5.8323	379894.
318.000	7.94E-05	689.1375	93.6781	-2.0764E-06	374.0710	-5.0301	379894.
324.000	6.72E-05	1162.7340	65.8238	-1.9817E-06	374.4200	-4.2547	379894.
330.000	5.57E-05	1483.0420	42.4865	-1.8463E-06	374.6560	-3.5244	379894.
336.000	4.50E-05	1676.3164	23.3576	-1.6846E-06	374.7984	-2.8519	379894.
342.000	3.54E-05	1766.7492	8.0685	-1.5084E-06	374.8650	-2.2445	379894.
348.000	2.69E-05	1776.1973	-3.7823	-1.3272E-06	374.8720	-1.7058	379894.
354.000	1.95E-05	1724.0532	-12.6080	-1.1481E-06	374.8336	-1.2361	379894.
360.000	1.32E-05	1627.2298	-18.8168	-9.7657E-07	374.7622	-0.8334963	379894.
366.000	7.80E-06	1500.2317	-21.8680	-8.1655E-07	374.6686	-0.1835468	141113.
372.000	3.37E-06	1366.4702	-22.6636	-6.6986E-07	374.5701	-0.0816785	145613.
378.000	-2.34E-07	1229.6264	-22.8911	-5.3702E-07	374.4692	0.0058560	150113.
384.000	-3.08E-06	1092.8659	-22.6355	-4.1818E-07	374.3685	0.0793339	154613.
390.000	-5.25E-06	958.8480	-21.9797	-3.1320E-07	374.2697	0.1392835	159113.
396.000	-6.84E-06	829.7449	-21.0025	-2.2168E-07	374.1746	0.1864387	163613.
402.000	-7.91E-06	707.2674	-19.7781	-1.4303E-07	374.0844	0.2216961	168113.
408.000	-8.55E-06	592.6975	-18.3748	-7.6515E-08	373.9999	0.2460727	172613.
414.000	-8.83E-06	486.9248	-16.8546	-2.1272E-08	373.9220	0.2606682	177113.
420.000	-8.81E-06	390.4856	-15.2727	2.3624E-08	373.8509	0.2666295	181613.
426.000	-8.55E-06	303.6046	-13.6774	5.9140E-08	373.7869	0.2651206	186113.
432.000	-8.10E-06	226.2364	-12.1102	8.6251E-08	373.7299	0.2572970	190613.
438.000	-7.51E-06	158.1074	-10.6054	1.0592E-07	373.6797	0.2442840	195113.
444.000	-6.83E-06	98.7562	-9.1911	1.1906E-07	373.6360	0.2271607	199613.
450.000	-6.08E-06	47.5725	-7.8888	1.2655E-07	373.5983	0.2069485	204113.
456.000	-5.31E-06	3.8341	-6.7141	1.2918E-07	373.5660	0.1846037	208613.
462.000	-4.53E-06	-33.2590	-5.6773	1.2767E-07	373.5877	0.1610144	213113.
468.000	-3.78E-06	-64.5521	-4.7832	1.2267E-07	373.6108	0.1370014	217613.
474.000	-3.06E-06	-90.9065	-4.0323	1.1471E-07	373.6302	0.1133219	222113.
480.000	-2.40E-06	-113.1718	-3.4203	1.0427E-07	373.6466	0.0906764	226613.
486.000	-1.81E-06	-132.1611	-2.0567	9.1718E-08	373.6606	0.3638319	1206107.
492.000	-1.30E-06	-138.0387	-0.1811411	7.7892E-08	373.6649	0.2613670	1206107.
498.000	-8.75E-07	-134.4928	1.1308	6.3947E-08	373.6623	0.1759401	1206107.
504.000	-5.33E-07	-124.5990	1.9799	5.0689E-08	373.6550	0.1071137	1206107.
510.000	-2.67E-07	-110.8363	2.4623	3.8642E-08	373.6449	0.0536665	1206107.
516.000	-6.91E-08	-95.1300	2.6650	2.8103E-08	373.6333	0.0138998	1206107.
522.000	7.03E-08	-78.9135	2.6643	1.9198E-08	373.6214	-0.0141250	1206107.
528.000	1.61E-07	-63.1973	2.5247	1.1926E-08	373.6098	-0.0324096	1206107.
534.000	2.13E-07	-48.6412	2.2988	6.2036E-09	373.5991	-0.0428937	1206107.
540.000	2.36E-07	-35.6243	2.0280	1.8919E-09	373.5895	-0.0473741	1206107.
546.000	2.36E-07	-24.3092	1.7223	-1.1749E-09	373.5811	-0.0545199	1385601.
552.000	2.22E-07	-14.9543	1.3842	-3.1839E-09	373.5742	-0.0581876	1575672.

558.000	1.98E-07	-7.6926	1.0537	-4.3427E-09	373.5689	-0.0519651	1575672.
564.000	1.69E-07	-2.3008	0.7643230	-4.8541E-09	373.5649	-0.0445022	1575672.
570.000	1.40E-07	1.4892	0.5208115	-4.8956E-09	373.5643	-0.0366683	1575672.
576.000	1.11E-07	3.9589	0.3235831	-4.6168E-09	373.5661	-0.0290745	1575672.
582.000	8.42E-08	5.3815	0.1700024	-4.1389E-09	373.5672	-0.0221191	1575672.
588.000	6.10E-08	6.0073	0.0555510	-3.5561E-09	373.5676	-0.0160314	1575672.
594.000	4.16E-08	6.0553	-0.0252806	-2.9389E-09	373.5677	-0.0109124	1575672.
600.000	2.58E-08	5.7099	-0.0783276	-2.3369E-09	373.5674	-0.0067699	1575672.
606.000	1.35E-08	5.1202	-0.1092814	-1.7827E-09	373.5670	-0.0035481	1575672.
612.000	4.39E-09	4.4021	-0.1233811	-1.2955E-09	373.5665	-0.0011519	1575672.
618.000	-2.04E-09	3.6422	-0.1252332	-8.8388E-10	373.5659	0.0005345	1575672.
624.000	-6.22E-09	2.9011	-0.1187290	-5.4907E-10	373.5654	0.0016336	1575672.
630.000	-8.62E-09	2.2186	-0.1070340	-2.8710E-10	373.5649	0.0022648	1575672.
636.000	-9.67E-09	1.6173	-0.0926247	-9.0819E-11	373.5644	0.0025383	1575672.
642.000	-9.71E-09	1.1073	-0.0773569	4.8594E-11	373.5640	0.0025510	1575672.
648.000	-9.08E-09	0.6889306	-0.0625484	1.4050E-10	373.5637	0.0023852	1575672.
654.000	-8.03E-09	0.3563948	-0.0490683	1.9399E-10	373.5635	0.0021082	1575672.
660.000	-6.75E-09	0.0997182	-0.0374221	2.1733E-10	373.5633	0.0017738	1575672.
666.000	-5.42E-09	-0.0931112	-0.0266175	2.1767E-10	373.5633	0.0018277	2023324.
672.000	-4.14E-09	-0.2201329	-0.0159530	2.0164E-10	373.5634	0.0017271	2501506.
678.000	-3.00E-09	-0.2849562	-0.0070191	1.7579E-10	373.5634	0.0012509	2501506.
684.000	-2.03E-09	-0.3047185	-0.0007237	1.4562E-10	373.5634	0.0008476	2501506.
690.000	-1.25E-09	-0.2939357	0.0033861	1.1499E-10	373.5634	0.0005223	2501506.
696.000	-6.53E-10	-0.2643185	0.0057700	8.6424E-11	373.5634	0.0002723	2501506.
702.000	-2.16E-10	-0.2248709	0.0068568	6.1393E-11	373.5634	8.9949E-05	2501506.
708.000	8.36E-11	-0.1821618	0.0070221	4.0565E-11	373.5634	-3.4842E-05	2501506.
714.000	2.71E-10	-0.1406882	0.0065786	2.4046E-11	373.5633	-0.0001130	2501506.
720.000	3.72E-10	-0.1032679	0.0057741	1.1563E-11	373.5633	-0.0001551	2501506.
726.000	4.10E-10	-0.0714221	0.0047962	2.6240E-12	373.5633	-0.0001708	2501506.
732.000	4.04E-10	-0.0457194	0.0037788	-3.3700E-12	373.5633	-0.0001683	2501506.
738.000	3.69E-10	-0.0260697	0.0028120	-7.0434E-12	373.5632	-0.0001540	2501506.
744.000	3.19E-10	-0.0119608	0.0019510	-8.9893E-12	373.5632	-0.0001330	2501506.
750.000	2.61E-10	-0.0026399	0.0012248	-9.7364E-12	373.5632	-0.0001090	2501506.
756.000	2.02E-10	0.0027568	0.0006448	-9.7305E-12	373.5632	-8.4321E-05	2501506.
762.000	1.45E-10	0.0051176	0.0002109	-9.3275E-12	373.5632	-6.0333E-05	2501506.
768.000	9.03E-11	0.0053060	-8.3107E-05	-8.7942E-12	373.5632	-3.7655E-05	2501506.
774.000	3.92E-11	0.0041382	-0.0002451	-8.3109E-12	373.5632	-1.6336E-05	2501506.
780.000	-9.41E-12	0.0023819	-0.0002823	-7.9773E-12	373.5632	3.9246E-06	2501506.
786.000	-5.65E-11	0.0007666	-0.0001998	-7.8162E-12	373.5632	2.3575E-05	2501506.
792.000	-1.03E-10	0.0000	0.0000	-7.7770E-12	373.5632	4.3029E-05	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 3:

```
Pile-head deflection             =     0.10024913 in
Computed slope at pile head      =    -0.00118842
Maximum bending moment           =   600057.55665 lbs-in
Maximum shear force              =    15000.00000 lbs
Depth of maximum bending moment  =    78.00000000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             24
Number of zero deflection points =              7
```

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 4

```
Pile-head boundary conditions are Shear and Moment (BC Type 1)
Specified shear force at pile head  =       20000.000 lbs
Specified moment at pile head       =           0.000 in-lbs
Specified axial load at pile head   =      169000.000 lbs
```

(Zero moment for this load indicates free-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	0.193690	-9.0405E-08	20000.0000	-0.0020120	373.5632	-270.1978	4185.0116
6.000	0.181618	117177.	18523.3136	-0.0020060	459.9024	-222.0309	7335.1092
12.000	0.169618	226348.	17185.1165	-0.0019884	540.3430	-224.0348	7924.9322
18.000	0.157757	327431.	15836.0119	-0.0019601	614.8236	-225.6668	8582.8443
24.000	0.146097	420355.	14478.2556	-0.0019218	683.2931	-226.9186	9319.2547
30.000	0.134695	505067.	13114.1545	-0.0018745	745.7114	-227.7817	10146.5734
36.000	0.123603	581526.	11746.0682	-0.0018189	802.0488	-228.2471	11079.6849
42.000	0.112868	649709.	10376.4108	-0.0017559	852.2874	-228.3054	12136.5531
48.000	0.102533	709604.	9007.6533	-0.0016863	896.4203	-227.9471	13339.0071
54.000	0.092633	761220.	7642.3252	-0.0016111	934.4525	-227.1622	14713.7656
60.000	0.083200	804579.	6283.0176	-0.0015309	966.4008	-225.9403	16293.7914
66.000	0.074261	839721.	4932.3853	-0.0014468	992.2943	-224.2704	18120.1021
72.000	0.065838	866702.	3593.1513	-0.0013595	1012.1746	-222.1409	20244.2205
78.000	0.057948	885596.	2268.1104	-0.0012698	1026.0962	-219.5394	22731.5422
84.000	0.050600	896495.	960.1354	-0.0011786	1034.1266	-216.4523	25666.0373
90.000	0.043804	899508.	-327.8155	-0.0010867	1036.3469	-212.8647	29156.9395
96.000	0.037560	894765.	-1592.6883	-0.0009949	1032.8520	-208.7596	33348.4674
102.000	0.031865	882413.	-2831.3184	-0.0009040	1023.7511	-204.1171	38434.3111
108.000	0.026712	862622.	-4040.4101	-0.0008147	1009.1684	-198.9134	44679.8691
114.000	0.022088	835581.	-5216.5047	-0.0007278	989.2434	-193.1181	52457.6134
120.000	0.017978	801500.	-6355.9323	-0.0006440	964.1319	-186.6911	62305.8280
126.000	0.014360	760616.	-7216.7875	-0.0005641	934.0069	-100.2606	41891.4414
132.000	0.011209	716043.	-7713.0383	-0.0004885	901.1644	-65.1563	34877.2507
138.000	0.008498	669050.	-8089.7149	-0.0004177	866.5387	-60.4026	42649.4989
144.000	0.006197	619813.	-8436.7087	-0.0003517	830.2596	-55.2620	53505.9832
150.000	0.004277	568523.	-8751.3743	-0.0002909	792.4673	-49.6266	69620.7684
156.000	0.002706	515387.	-9030.1036	-0.0002355	753.3151	-43.2832	95974.3489
162.000	0.001451	460639.	-9267.1247	-0.0001855	712.9754	-35.7238	147677.
168.000	0.000480	404557.	-9449.4817	-0.0001412	671.6529	-25.0619	313414.
174.000	-0.000243	347532.	-9478.4234	-0.0001028	629.6346	15.4146	379894.
180.000	-0.000753	291025.	-9326.2839	-7.0083E-05	587.9987	35.2985	281150.
186.000	-0.001084	235758.	-8891.6540	-4.3128E-05	547.2768	109.5781	606267.
192.000	-0.001271	184412.	-8080.6647	-2.1629E-05	509.4436	160.7516	758952.
198.000	-0.001344	138834.	-7109.3322	-5.0887E-06	475.8603	163.0259	727794.
204.000	-0.001332	99110.5953	-6132.2634	7.0866E-06	446.5908	162.6637	732769.
210.000	-0.001259	65232.6342	-5163.0925	1.5496E-05	421.6285	160.3932	764407.
216.000	-0.001146	37122.0601	-4211.9053	2.0733E-05	400.9158	156.6692	820286.
222.000	-0.001010	14647.7240	-3286.4723	2.3382E-05	384.3561	151.8085	901686.
228.000	-0.000865	-2363.0261	-2392.8929	2.4011E-05	375.3044	146.0513	1012635.
234.000	-0.000722	-14115.6843	-1535.9727	2.3168E-05	383.9641	139.5888	1159961.
240.000	-0.000587	-20841.6826	-719.4971	2.1379E-05	388.9200	132.5698	1354219.
246.000	-0.000465	-22793.0055	-180.8500	1.9146E-05	390.3578	46.9792	605547.
252.000	-0.000358	-23050.7105	28.0148	1.6800E-05	390.5477	22.6423	379894.
258.000	-0.000264	-22490.8992	146.0660	1.4470E-05	390.1352	16.7081	379894.
264.000	-0.000184	-21327.2637	231.1347	1.2228E-05	389.2778	11.6482	379894.
270.000	-0.000117	-19742.0810	288.3315	1.0126E-05	388.1098	7.4174	379894.
276.000	-6.25E-05	-17887.8222	322.4464	8.2010E-06	386.7435	3.9542	379894.
282.000	-1.87E-05	-15889.3558	337.8683	6.4726E-06	385.2710	1.1864	379894.
288.000	1.52E-05	-13846.5297	338.5366	4.9511E-06	383.7657	-0.9636388	379894.
294.000	4.07E-05	-11836.9577	327.9195	3.6369E-06	382.2850	-2.5754	379894.
300.000	5.89E-05	-9918.8709	309.0126	2.5237E-06	380.8717	-3.7269	379894.
306.000	7.10E-05	-8133.9240	284.3533	1.6000E-06	379.5565	-4.4928	379894.
312.000	7.81E-05	-6509.8755	256.0471	8.5065E-07	378.3599	-4.9425	379894.
318.000	8.12E-05	-5063.0833	225.8020	2.5848E-07	377.2938	-5.1392	379894.
324.000	8.12E-05	-3800.7756	194.9677	-1.9508E-07	376.3637	-5.1389	379894.
330.000	7.88E-05	-2723.0752	164.5781	-5.2889E-07	375.5697	-4.9909	379894.
336.000	7.48E-05	-1824.7663	135.3939	-7.6160E-07	374.9078	-4.7371	379894.
342.000	6.97E-05	-1096.8033	107.9458	-9.1109E-07	374.3714	-4.4123	379894.
348.000	6.39E-05	-527.5690	82.5744	-9.9421E-07	373.9519	-4.0449	379894.
354.000	5.78E-05	-103.8946	59.4691	-1.0265E-06	373.6398	-3.6569	379894.
360.000	5.16E-05	188.1420	38.7036	-1.0222E-06	373.7018	-3.2649	379894.
366.000	4.55E-05	362.6221	25.7116	-9.9403E-07	373.8304	-1.0658	140569.
372.000	3.96E-05	498.6976	19.6393	-9.4995E-07	373.9307	-0.9583578	145069.
378.000	3.41E-05	600.2205	14.2148	-8.9372E-07	374.0055	-0.8498184	149569.

384.000	2.89E-05	671.0876	9.4381	-8.2867E-07	374.0577	-0.7424229	154069.
390.000	2.41E-05	715.1579	5.2963	-7.5774E-07	374.0902	-0.6381503	158569.
396.000	1.98E-05	736.1805	1.7659	-6.8348E-07	374.1057	-0.5386633	163069.
402.000	1.59E-05	737.7348	-1.1860	-6.0806E-07	374.1068	-0.4453104	167569.
408.000	1.25E-05	723.1815	-3.5994	-5.3331E-07	374.0961	-0.3591362	172069.
414.000	9.55E-06	695.6241	-5.5195	-4.6071E-07	374.0758	-0.2808967	176569.
420.000	6.99E-06	657.8824	-6.9954	-3.9145E-07	374.0480	-0.2110805	181069.
426.000	4.85E-06	612.4734	-8.0784	-3.2645E-07	374.0145	-0.1499320	185569.
432.000	3.08E-06	561.6033	-8.8206	-2.6637E-07	373.9770	-0.0974766	190069.
438.000	1.65E-06	507.1658	-9.2737	-2.1169E-07	373.9369	-0.0535478	194569.
444.000	5.37E-07	450.7480	-9.4878	-1.6267E-07	373.8953	-0.0178123	199069.
450.000	-3.01E-07	393.6421	-9.5106	-1.1946E-07	373.8533	0.0102045	203569.
456.000	-8.97E-07	336.8628	-9.3867	-8.2085E-08	373.8114	0.0310958	208069.
462.000	-1.29E-06	281.1679	-9.1568	-5.0461E-08	373.7704	0.0455529	212569.
468.000	-1.50E-06	227.0838	-8.8571	-2.4454E-08	373.7305	0.0543477	217069.
474.000	-1.58E-06	174.9326	-8.5191	-3.8835E-09	373.6921	0.0583182	221569.
480.000	-1.55E-06	124.8627	-8.1691	1.1457E-08	373.6552	0.0583570	226069.
486.000	-1.44E-06	76.8807	-7.1245	2.1780E-08	373.6199	0.2898179	1206107.
492.000	-1.29E-06	39.3242	-5.4787	2.7726E-08	373.5922	0.2588048	1206107.
498.000	-1.11E-06	11.0806	-4.0334	3.0305E-08	373.5714	0.2229379	1206107.
504.000	-9.24E-07	-9.1384	-2.8075	3.0404E-08	373.5700	0.1857033	1206107.
510.000	-7.44E-07	-22.6712	-1.8016	2.8776E-08	373.5799	0.1495967	1206107.
516.000	-5.78E-07	-30.8161	-1.0040	2.6040E-08	373.5859	0.1162883	1206107.
522.000	-4.32E-07	-34.7714	-0.3947377	2.2684E-08	373.5888	0.0867836	1206107.
528.000	-3.06E-07	-35.5990	0.0503256	1.9083E-08	373.5894	0.0615708	1206107.
534.000	-2.03E-07	-34.2062	0.3572935	1.5511E-08	373.5884	0.0407519	1206107.
540.000	-1.20E-07	-31.3429	0.5520143	1.2157E-08	373.5863	0.0241551	1206107.
546.000	-5.68E-08	-27.6067	0.6638618	9.1405E-09	373.5836	0.0131274	1385601.
552.000	-1.05E-08	-23.3951	0.7114988	6.5308E-09	373.5805	0.0027516	1575672.
558.000	2.15E-08	-19.0820	0.7027955	4.3573E-09	373.5773	-0.0056526	1575672.
564.000	4.18E-08	-14.9704	0.6528981	2.6149E-09	373.5742	-0.0109799	1575672.
570.000	5.29E-08	-11.2525	0.5782792	1.2731E-09	373.5715	-0.0138931	1575672.
576.000	5.71E-08	-8.0336	0.4916244	2.8627E-10	373.5691	-0.0149919	1575672.
582.000	5.63E-08	-5.3536	0.4022631	-3.9874E-10	373.5672	-0.0147952	1575672.
588.000	5.23E-08	-3.2056	0.3166716	-8.3670E-10	373.5656	-0.0137353	1575672.
594.000	4.63E-08	-1.5518	0.2389902	-1.0801E-09	373.5644	-0.0121585	1575672.
600.000	3.93E-08	-0.3355719	0.1715205	-1.1767E-09	373.5635	-0.0103314	1575672.
606.000	3.22E-08	0.5087964	0.1151755	-1.1679E-09	373.5636	-0.0084502	1575672.
612.000	2.53E-08	1.0489	0.0698714	-1.0881E-09	373.5640	-0.0066511	1575672.
618.000	1.91E-08	1.3495	0.0348547	-9.6542E-10	373.5642	-0.0050211	1575672.
624.000	1.37E-08	1.4691	0.0089651	-8.2120E-10	373.5643	-0.0036087	1575672.
630.000	9.27E-09	1.4587	-0.0091609	-6.7139E-10	373.5643	-0.0024332	1575672.
636.000	5.69E-09	1.3605	-0.0209395	-5.2713E-10	373.5642	-0.0014930	1575672.
642.000	2.94E-09	1.2085	-0.0277347	-3.9568E-10	373.5641	-0.0007721	1575672.
648.000	9.37E-10	1.0285	-0.0307891	-2.8121E-10	373.5640	-0.0002461	1575672.
654.000	-4.35E-10	0.8396026	-0.0311849	-1.8562E-10	373.5638	0.0001141	1575672.
660.000	-1.29E-09	0.6546917	-0.0298259	-1.0916E-10	373.5637	0.0003389	1575672.
666.000	-1.74E-09	0.4819130	-0.0270445	-5.0999E-11	373.5636	0.0005883	2023324.
672.000	-1.90E-09	0.3302613	-0.0229002	-9.4415E-12	373.5635	0.0007932	2501506.
678.000	-1.86E-09	0.2071295	-0.0181972	1.8056E-11	373.5634	0.0007745	2501506.
684.000	-1.69E-09	0.1118586	-0.0137651	3.4378E-11	373.5633	0.0007028	2501506.
690.000	-1.45E-09	0.0418780	-0.0098491	4.2245E-11	373.5632	0.0006025	2501506.
696.000	-1.18E-09	-0.0064162	-0.0065671	4.4059E-11	373.5632	0.0004915	2501506.
702.000	-9.16E-10	-0.0370165	-0.0039464	4.1837E-11	373.5632	0.0003821	2501506.
708.000	-6.77E-10	-0.0538577	-0.0019536	3.7187E-11	373.5633	0.0002822	2501506.
714.000	-4.70E-10	-0.0605351	-0.0005190	3.1334E-11	373.5633	0.0001960	2501506.
720.000	-3.01E-10	-0.0601488	0.0004454	2.5158E-11	373.5633	0.0001254	2501506.
726.000	-1.68E-10	-0.0552416	0.0010321	1.9254E-11	373.5633	7.0173E-05	2501506.
732.000	-6.97E-11	-0.0478024	0.0013299	1.3981E-11	373.5633	2.9080E-05	2501506.
738.000	-5.37E-13	-0.0393114	0.0014178	9.5239E-12	373.5632	2.2385E-07	2501506.
744.000	4.45E-11	-0.0308082	0.0013628	5.9360E-12	373.5632	-1.8569E-05	2501506.
750.000	7.07E-11	-0.0229703	0.0012186	3.1842E-12	373.5632	-2.9474E-05	2501506.
756.000	8.27E-11	-0.0161911	0.0010267	1.1804E-12	373.5632	-3.4499E-05	2501506.
762.000	8.49E-11	-0.0106522	0.0008171	-1.9313E-13	373.5632	-3.5380E-05	2501506.
768.000	8.04E-11	-0.0063858	0.0006103	-1.0649E-12	373.5632	-3.3533E-05	2501506.
774.000	7.21E-11	-0.0033260	0.0004196	-1.5619E-12	373.5632	-3.0052E-05	2501506.
780.000	6.17E-11	-0.0013477	0.0002523	-1.8010E-12	373.5632	-2.5719E-05	2501506.
786.000	5.05E-11	-0.0002951	0.0001120	-1.8851E-12	373.5632	-2.1041E-05	2501506.
792.000	3.91E-11	0.0000	0.0000	-1.9002E-12	373.5632	-1.6288E-05	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 4:

```
Pile-head deflection             =     0.19368967 in
Computed slope at pile head      =    -0.00201200
Maximum bending moment           =   899507.90686 lbs-in
Maximum shear force              =    20000.00000 lbs
Depth of maximum bending moment  =    90.00000000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             27
Number of zero deflection points =              6
```

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 5

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Specified shear force at pile head = 25000.000 lbs
Specified moment at pile head = 0.000 in-lbs
Specified axial load at pile head = 169000.000 lbs

(Zero moment for this load indicates free-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	0.325832	7.2324E-07	25000.0000	-0.0030537	373.5632	-307.7156	2833.1957
6.000	0.307510	147558.	23317.0423	-0.0030462	482.2880	-253.2703	4941.7011
12.000	0.289278	285982.	21789.1751	-0.0030240	584.2832	-256.0188	5310.1613
18.000	0.271222	415160.	20245.9108	-0.0029881	679.4655	-258.4026	5716.4154
24.000	0.253420	534993.	18689.4590	-0.0029395	767.7617	-260.4146	6165.5974
30.000	0.235947	645395.	17122.0733	-0.0028791	849.1093	-262.0473	6663.7020
36.000	0.218871	746297.	15546.0526	-0.0028079	923.4565	-263.2930	7217.7607
42.000	0.202253	837642.	13963.7419	-0.0027269	990.7625	-264.1439	7836.0614
48.000	0.186149	919392.	12377.5333	-0.0026370	1050.9979	-264.5923	8528.4215
54.000	0.170609	991520.	10789.8669	-0.0025392	1104.1444	-264.6299	9306.5331
60.000	0.155678	1054020.	9203.2313	-0.0024345	1150.1956	-264.2486	10184.4002
66.000	0.141395	1106896.	7620.1652	-0.0023239	1189.1568	-263.4401	11178.8983
72.000	0.127791	1150175.	6043.2582	-0.0022084	1221.0454	-262.1956	12310.4987
78.000	0.114894	1183894.	4475.1526	-0.0020890	1245.8911	-260.5063	13604.2124
84.000	0.102723	1208113.	2918.5454	-0.0019666	1263.7361	-258.3628	15090.8389
90.000	0.091294	1222905.	1376.1913	-0.0018422	1274.6354	-255.7552	16808.6361
96.000	0.080616	1228363.	-149.0931	-0.0017168	1278.6571	-252.6729	18805.5908
102.000	0.070693	1224598.	-1654.4234	-0.0015913	1275.8825	-249.1039	21142.5564
108.000	0.061521	1211737.	-3136.8385	-0.0014666	1266.4066	-245.0345	23897.6809
114.000	0.053093	1189930.	-4593.2876	-0.0013437	1250.3383	-240.4485	27172.8027
120.000	0.045396	1159343.	-6020.6104	-0.0012235	1227.8009	-235.3257	31102.9564
126.000	0.038411	1120164.	-7144.0920	-0.0011069	1198.9327	-139.1681	21738.8153
132.000	0.032114	1075859.	-7839.1990	-0.0009945	1166.2872	-92.5342	17288.8029
138.000	0.026477	1028110.	-8381.4478	-0.0008869	1131.1049	-88.2154	19990.7942
144.000	0.021471	977080.	-8896.9336	-0.0007843	1093.5041	-83.6132	23365.1143
150.000	0.017066	922938.	-9383.8788	-0.0006870	1053.6106	-78.7018	27670.0735
156.000	0.013227	865866.	-9840.3083	-0.0005955	1011.5589	-73.4414	33314.4951
162.000	0.009920	806062.	-10263.9380	-0.0005100	967.4929	-67.7685	40990.0685
168.000	0.007108	743733.	-10651.9692	-0.0004306	921.5677	-61.5752	51980.3742
174.000	0.004752	679111.	-11000.6737	-0.0003578	873.9523	-54.6596	69015.3555
180.000	0.002813	612451.	-11304.4054	-0.0002918	824.8350	-46.5843	99348.7182
186.000	0.001251	544050.	-11676.1635	-0.0002326	774.4352	-77.3351	370950.
192.000	2.24E-05	472809.	-11919.7483	-0.0001805	721.9425	-3.8599	1033117.
198.000	-0.000916	401379.	-11486.9931	-0.0001358	669.3112	148.1116	970461.
204.000	-0.001607	335240.	-10531.1391	-9.8126E-05	620.5780	170.5064	636456.

210.000	-0.002093	275205.	-9473.1619	-6.6890E-05	576.3420	182.1527	522119.
216.000	-0.002410	221698.	-8360.6310	-4.1465E-05	536.9168	188.6909	469754.
222.000	-0.002591	174961.	-7218.1486	-2.1168E-05	502.4797	192.1365	444965.
228.000	-0.002664	135123.	-6061.2872	-5.3014E-06	473.1259	193.4840	435759.
234.000	-0.002654	102236.	-4900.9040	6.8440E-06	448.8940	193.3104	436955.
240.000	-0.002582	76298.4026	-3745.0334	1.5979E-05	429.7821	191.9797	446124.
246.000	-0.002463	57263.6755	-2918.4231	2.2814E-05	415.7568	83.5571	203577.
252.000	-0.002308	41231.0600	-2513.8492	2.7853E-05	403.9435	51.3009	133353.
258.000	-0.002128	27040.9979	-2210.1467	3.1347E-05	393.4878	49.9333	140761.
264.000	-0.001932	14645.7279	-1915.3023	3.3480E-05	384.3546	48.3482	150146.
270.000	-0.001727	3989.4727	-1630.5450	3.4433E-05	376.5028	46.5709	161829.
276.000	-0.001519	-4990.6432	-1356.9647	3.4382E-05	377.2405	44.6225	176276.
282.000	-0.001314	-12363.8313	-1095.5367	3.3494E-05	382.6733	42.5202	194144.
288.000	-0.001117	-18205.0098	-847.1427	3.1930E-05	386.9772	40.2778	216370.
294.000	-0.000931	-22594.2980	-612.5926	2.9842E-05	390.2114	37.9056	244310.
300.000	-0.000759	-25616.6411	-392.6485	2.7375E-05	392.4383	35.4091	279986.
306.000	-0.000602	-27361.5974	-188.0577	2.4665E-05	393.7240	32.7878	326563.
312.000	-0.000463	-27923.3539	-1.7813	2.1836E-05	394.1380	29.3044	379894.
318.000	-0.000340	-27427.2558	150.7873	1.9004E-05	393.7724	21.5518	379894.
324.000	-0.000235	-26152.4451	260.0398	1.6262E-05	392.8331	14.8656	379894.
330.000	-0.000145	-24339.7573	332.2253	1.3678E-05	391.4975	9.1962	379894.
336.000	-7.06E-05	-22193.4814	373.2327	1.1297E-05	389.9160	4.4730	379894.
342.000	-9.68E-06	-19883.8753	388.4895	9.1443E-06	388.2142	0.6126017	379894.
348.000	3.91E-05	-17550.1522	382.9031	7.2288E-06	386.4947	-2.4747	379894.
354.000	7.71E-05	-15303.6986	360.8395	5.5477E-06	384.8394	-4.8798	379894.
360.000	0.000106	-13231.3289	326.1306	4.0876E-06	383.3124	-6.6898	379894.
366.000	0.000126	-11398.4207	297.2503	2.8274E-06	381.9619	-2.9369	139718.
372.000	0.000140	-9670.0590	278.3741	1.7493E-06	380.6884	-3.3552	144218.
378.000	0.000147	-8061.4796	257.3693	8.4202E-07	379.5032	-3.6464	148718.
384.000	0.000150	-6583.3347	234.9624	9.2662E-08	378.4140	-3.8226	153218.
390.000	0.000148	-5242.1190	211.8057	-5.1243E-07	377.4258	-3.8963	157718.
396.000	0.000144	-4040.6268	188.4742	-9.8742E-07	376.5405	-3.8808	162218.
402.000	0.000136	-2978.4258	165.4634	-1.3466E-06	375.7578	-3.7894	166718.
408.000	0.000127	-2052.3348	143.1900	-1.6040E-06	375.0754	-3.6350	171218.
414.000	0.000117	-1256.8925	121.9940	-1.7733E-06	374.4893	-3.4303	175718.
420.000	0.000106	-584.8099	102.1423	-1.8676E-06	373.9941	-3.1870	180218.
426.000	9.47E-05	-27.3970	83.8334	-1.8989E-06	373.5834	-2.9160	184718.
432.000	8.33E-05	425.0416	67.2028	-1.8785E-06	373.8764	-2.6275	189218.
438.000	7.22E-05	782.8460	52.3294	-1.8167E-06	374.1400	-2.3303	193718.
444.000	6.15E-05	1056.6785	39.2417	-1.7226E-06	374.3418	-2.0323	198218.
450.000	5.15E-05	1257.2400	27.9245	-1.6042E-06	374.4896	-1.7402	202718.
456.000	4.23E-05	1395.0254	18.3249	-1.4685E-06	374.5911	-1.4597	207218.
462.000	3.39E-05	1480.1171	10.3590	-1.3214E-06	374.6538	-1.1956	211718.
468.000	2.64E-05	1522.0136	3.9172	-1.1678E-06	374.6847	-0.9516826	216218.
474.000	1.99E-05	1529.4916	-1.1307	-1.0116E-06	374.6902	-0.7309334	220718.
480.000	1.43E-05	1510.4973	-4.9303	-8.5606E-07	374.6762	-0.5356273	225218.
486.000	9.60E-06	1472.0636	-12.3247	-7.0345E-07	374.6479	-1.9292	1206107.
492.000	5.83E-06	1364.0278	-21.6268	-5.5833E-07	374.5683	-1.1716	1206107.
498.000	2.90E-06	1213.6741	-26.8885	-4.2643E-07	374.4575	-0.5823366	1206107.
504.000	7.11E-07	1042.2303	-29.0643	-3.1100E-07	374.3312	-0.1429136	1206107.
510.000	-8.35E-07	865.5336	-28.9894	-2.1338E-07	374.2010	0.1678671	1206107.
516.000	-1.85E-06	694.7902	-27.3704	-1.3354E-07	374.0752	0.3718152	1206107.
522.000	-2.44E-06	537.3600	-24.7849	-7.0497E-08	373.9592	0.4900055	1206107.
528.000	-2.70E-06	397.5144	-21.6893	-2.2661E-08	373.8561	0.5418695	1206107.
534.000	-2.71E-06	277.1347	-18.4297	1.1860E-08	373.7674	0.5446683	1206107.
540.000	-2.55E-06	176.3344	-15.2559	3.5063E-08	373.6931	0.5132605	1206107.
546.000	-2.29E-06	93.9931	-12.1304	4.8896E-08	373.6325	0.5285585	1385601.
552.000	-1.97E-06	30.6702	-8.9954	5.5275E-08	373.5858	0.5164421	1575672.
558.000	-1.63E-06	-14.0640	-6.1655	5.6124E-08	373.5736	0.4268747	1575672.
564.000	-1.29E-06	-43.4292	-3.8661	5.3182E-08	373.5952	0.3395751	1575672.
570.000	-9.87E-07	-60.5652	-2.0696	4.7861E-08	373.6078	0.2592785	1575672.
576.000	-7.19E-07	-68.3609	-0.7254757	4.1264E-08	373.6136	0.1887480	1575672.
582.000	-4.92E-07	-69.3546	0.2284905	3.4218E-08	373.6143	0.1292407	1575672.
588.000	-3.08E-07	-65.6885	0.8589633	2.7308E-08	373.6116	0.0809169	1575672.
594.000	-1.64E-07	-59.1025	1.2313	2.0922E-08	373.6068	0.0431853	1575672.
600.000	-5.71E-08	-50.9556	1.4058	1.5291E-08	373.6008	0.0149841	1575672.
606.000	1.90E-08	-42.2641	1.4357	1.0521E-08	373.5944	-0.0050006	1575672.
612.000	6.92E-08	-33.7482	1.3662	6.6312E-09	373.5881	-0.0181702	1575672.
618.000	9.86E-08	-25.8830	1.2340	3.5800E-09	373.5823	-0.0258979	1575672.
624.000	1.12E-07	-18.9474	1.0680	1.2861E-09	373.5772	-0.0294519	1575672.

630.000	1.14E-07	-13.0700	0.8897545	-3.5223E-10	373.5728	-0.0299507	1575672.
636.000	1.08E-07	-8.2696	0.7148766	-1.4441E-09	373.5693	-0.0283419	1575672.
642.000	9.67E-08	-4.4886	0.5536518	-2.0970E-09	373.5665	-0.0253997	1575672.
648.000	8.28E-08	-1.6215	0.4122518	-2.4096E-09	373.5644	-0.0217337	1575672.
654.000	6.78E-08	0.4633171	0.2936323	-2.4689E-09	373.5636	-0.0178062	1575672.
660.000	5.31E-08	1.9071	0.1983537	-2.3476E-09	373.5646	-0.0139534	1575672.
666.000	3.96E-08	2.8483	0.1163984	-2.1043E-09	373.5653	-0.0133651	2023324.
672.000	2.79E-08	3.3081	0.0414297	-1.7892E-09	373.5657	-0.0116245	2501506.
678.000	1.82E-08	3.3491	-0.0161600	-1.4486E-09	373.5657	-0.0075721	2501506.
684.000	1.05E-08	3.1171	-0.0520076	-1.1177E-09	373.5655	-0.0043771	2501506.
690.000	4.75E-09	2.7273	-0.0710791	-8.1868E-10	373.5652	-0.0019801	2501506.
696.000	6.75E-10	2.2659	-0.0778631	-5.6319E-10	373.5649	-0.0002812	2501506.
702.000	-2.01E-09	1.7941	-0.0761942	-3.5545E-10	373.5645	0.0008375	2501506.
708.000	-3.59E-09	1.3522	-0.0691903	-1.9445E-10	373.5642	0.0014971	2501506.
714.000	-4.34E-09	0.9641789	-0.0592680	-7.5925E-11	373.5639	0.0018104	2501506.
720.000	-4.50E-09	0.6411853	-0.0482060	6.2198E-12	373.5637	0.0018769	2501506.
726.000	-4.27E-09	0.3856940	-0.0372374	5.8764E-11	373.5635	0.0017793	2501506.
732.000	-3.80E-09	0.1942169	-0.0271508	8.8437E-11	373.5634	0.0015829	2501506.
738.000	-3.21E-09	0.0597046	-0.0183916	1.0143E-10	373.5633	0.0013368	2501506.
744.000	-2.58E-09	-0.0266880	-0.0111547	1.0312E-10	373.5632	0.0010755	2501506.
750.000	-1.97E-09	-0.0743613	-0.0054656	9.7949E-11	373.5633	0.0008209	2501506.
756.000	-1.40E-09	-0.0924736	-0.0012465	8.9412E-11	373.5633	0.0005854	2501506.
762.000	-8.96E-10	-0.0895011	0.0016305	8.0101E-11	373.5633	0.0003736	2501506.
768.000	-4.43E-10	-0.0730700	0.0033053	7.1782E-11	373.5633	0.0001847	2501506.
774.000	-3.47E-11	-0.0499830	0.0039027	6.5486E-11	373.5633	1.4466E-05	2501506.
780.000	3.43E-10	-0.0263699	0.0035173	6.1579E-11	373.5632	-0.0001429	2501506.
786.000	7.04E-10	-0.0079003	0.0022076	5.9825E-11	373.5632	-0.0002936	2501506.
792.000	1.06E-09	0.0000	0.0000	5.9421E-11	373.5632	-0.0004423	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 5:

```
Pile-head deflection             =     0.32583233 in
Computed slope at pile head      =    -0.00305375
Maximum bending moment           =       1228363. lbs-in
Maximum shear force              =    25000.00000 lbs
Depth of maximum bending moment  =    96.00000000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             28
Number of zero deflection points =              6
```

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 6

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Specified shear force at pile head = 30000.000 lbs
Specified moment at pile head = 0.000 in-lbs
Specified axial load at pile head = 169000.000 lbs

(Zero moment for this load indicates free-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	0.498466	-3.6162E-07	30000.0000	-0.0043091	373.5632	-342.2215	2059.6468
6.000	0.472612	178209.	28127.3474	-0.0042999	504.8731	-281.9960	3580.0538
12.000	0.446867	346248.	26425.0986	-0.0042731	628.6892	-285.4202	3832.2848
18.000	0.421335	503976.	24703.3898	-0.0042296	744.9078	-288.4827	4108.1271
24.000	0.396112	651267.	22964.4119	-0.0041705	853.4356	-291.1766	4410.5222
30.000	0.371289	788007.	21210.3972	-0.0040968	954.1899	-293.4950	4742.8584

36.000	0.346950	914100.	19443.6203	-0.0040098	1047.0987	-295.4307	5109.0542
42.000	0.323172	1029462.	17666.3987	-0.0039103	1132.1011	-296.9765	5513.6602
48.000	0.300026	1134027.	15881.0943	-0.0037996	1209.1473	-298.1250	5961.9838
54.000	0.277577	1227741.	14090.1136	-0.0036788	1278.1987	-298.8686	6460.2427
60.000	0.255881	1310569.	12295.9087	-0.0035489	1339.2285	-299.1997	7015.7559
66.000	0.234990	1382489.	10500.9784	-0.0034111	1392.2215	-299.1104	7637.1837
72.000	0.214948	1443498.	8707.8691	-0.0032665	1437.1747	-298.5927	8334.8297
78.000	0.195792	1493608.	6919.1769	-0.0031162	1474.0971	-297.6381	9121.0261
84.000	0.177554	1532848.	5137.5491	-0.0029613	1503.0102	-296.2379	10010.6303
90.000	0.160257	1561264.	3365.6872	-0.0028030	1523.9481	-294.3827	11021.6718
96.000	0.143918	1578921.	1606.3513	-0.0026423	1536.9579	-292.0626	12176.2060
102.000	0.128549	1585899.	-137.6350	-0.0024804	1542.0998	-289.2662	13501.4590
108.000	0.114153	1582299.	-1863.3762	-0.0023183	1539.4474	-285.9809	15031.3884
114.000	0.100730	1568240.	-3567.8941	-0.0021571	1529.0881	-282.1917	16808.8545
120.000	0.088269	1543859.	-5248.1113	-0.0019978	1511.1235	-277.8807	18888.7113
126.000	0.076756	1509314.	-6607.6153	-0.0018416	1485.6699	-175.2874	13702.1938
132.000	0.066170	1468302.	-7486.7188	-0.0016892	1455.4512	-117.7471	10676.8247
138.000	0.056485	1422899.	-8180.6391	-0.0015413	1421.9969	-113.5596	12062.5928
144.000	0.047674	1373260.	-8848.5533	-0.0013982	1385.4215	-109.0785	13727.9579
150.000	0.039707	1319552.	-9488.6405	-0.0012604	1345.8477	-104.2839	15758.1632
156.000	0.032549	1261953.	-10098.9376	-0.0011283	1303.4068	-99.1484	18276.6590
162.000	0.026167	1200653.	-10677.2796	-0.0010023	1258.2395	-93.6322	21469.8244
168.000	0.020521	1135858.	-11221.2029	-0.0008828	1210.4966	-87.6756	25634.4806
174.000	0.015573	1067789.	-11727.7829	-0.0007700	1160.3413	-81.1845	31278.0601
180.000	0.011281	996686.	-12193.3381	-0.0006644	1107.9508	-74.0006	39357.8202
186.000	0.007601	922816.	-12779.5111	-0.0005662	1053.5211	-121.3904	95822.5298
192.000	0.004487	844480.	-13577.2730	-0.0004757	995.8010	-144.5302	193251.
198.000	0.001892	760854.	-14365.8045	-0.0003936	934.1824	-118.3136	375151.
204.000	-0.000236	672889.	-14535.0984	-0.0003202	869.3674	61.8823	1575672.
210.000	-0.001950	587082.	-13812.5637	-0.0002557	806.1423	178.9626	550549.
216.000	-0.003305	507657.	-12663.1147	-0.0001997	747.6195	204.1871	370730.
222.000	-0.004347	435530.	-11394.5194	-0.0001515	694.4742	218.6780	301823.
228.000	-0.005122	371230.	-10054.9761	-0.0001102	647.0961	227.8364	266878.
234.000	-0.005669	315093.	-8670.3887	-7.5071E-05	605.7332	233.6927	247319.
240.000	-0.006023	267337.	-7257.5411	-4.5269E-05	570.5451	237.2565	236346.
246.000	-0.006213	228095.	-6204.5356	-1.9918E-05	541.6300	113.7454	109852.
252.000	-0.006262	192923.	-5648.6549	1.6248E-06	515.7147	71.5482	68553.2700
258.000	-0.006193	160308.	-5220.1556	1.9699E-05	491.6825	71.2848	69061.6407
264.000	-0.006026	130241.	-4794.3902	3.4566E-05	469.5289	70.6370	70335.2340
270.000	-0.005778	102705.	-4373.5081	4.6486E-05	449.2391	69.6571	72328.9570
276.000	-0.005468	77665.0755	-3959.3761	5.5715E-05	430.7891	68.3869	75041.7381
282.000	-0.005110	55079.2585	-3553.6343	6.2507E-05	414.1472	66.8604	78508.7604
288.000	-0.004718	34894.6989	-3157.7367	6.7111E-05	399.2747	65.1055	82799.4488
294.000	-0.004304	17050.3167	-2772.9823	6.9769E-05	386.1264	63.1460	88019.7167
300.000	-0.003881	1477.4196	-2400.5392	7.0717E-05	374.6518	61.0017	94318.2102
306.000	-0.003456	-11899.5679	-2041.4639	7.0184E-05	382.3312	58.6900	101897.
312.000	-0.003038	-23162.4808	-1696.7183	6.8390E-05	390.6300	56.2252	111030.
318.000	-0.002635	-32398.8818	-1367.1838	6.5547E-05	397.4357	53.6196	122087.
324.000	-0.002252	-39701.6148	-1053.6763	6.1858E-05	402.8165	50.8829	135578.
330.000	-0.001893	-45168.4448	-756.9619	5.7515E-05	406.8446	48.0220	152220.
336.000	-0.001562	-48901.7974	-477.7750	5.2701E-05	409.5955	45.0403	173050.
342.000	-0.001260	-51008.6234	-216.8445	4.7589E-05	411.1479	41.9365	199626.
348.000	-0.000991	-51600.4417	25.0690	4.2339E-05	411.5839	38.7013	234417.
354.000	-0.000752	-50793.6588	247.1099	3.7099E-05	410.9895	35.3124	281603.
360.000	-0.000545	-48710.3603	448.2154	3.2008E-05	409.4544	31.7228	348997.
366.000	-0.000368	-45479.9855	569.0328	2.7188E-05	407.0742	8.5496	139286.
372.000	-0.000219	-41937.1047	610.4351	2.2715E-05	404.4637	5.2512	143786.
378.000	-9.57E-05	-38200.8305	633.2846	1.8615E-05	401.7107	2.3653	148286.
384.000	4.25E-06	-34375.4396	640.0558	1.4901E-05	398.8920	-0.1082913	152786.
390.000	8.31E-05	-30550.3801	633.1953	1.1579E-05	396.0736	-2.1786	157286.
396.000	0.000143	-26800.5784	615.0758	8.6443E-06	393.3107	-3.8613	161786.
402.000	0.000187	-23187.0017	587.9577	6.0865E-06	390.6481	-5.1781	166286.
408.000	0.000216	-19757.4296	553.9583	3.8891E-06	388.1211	-6.1551	170786.
414.000	0.000234	-16547.3898	515.0278	2.0315E-06	385.7558	-6.8218	175286.
420.000	0.000241	-13581.2159	472.9329	4.8981E-07	383.5703	-7.2099	179786.
426.000	0.000239	-10873.1885	429.2456	-7.6149E-07	381.5749	-7.3525	184286.
432.000	0.000231	-8428.7243	385.3381	-1.7491E-06	379.7737	-7.2833	188786.
438.000	0.000218	-6245.5838	342.3819	-2.5000E-06	378.1651	-7.0355	193286.
444.000	0.000201	-4315.0715	301.3508	-3.0404E-06	376.7427	-6.6416	197786.
450.000	0.000182	-2623.2080	263.0271	-3.3954E-06	375.4961	-6.1330	202286.

456.000	0.000161	-1151.8599	228.0095	-3.5886E-06	374.4119	-5.5395	206786.
462.000	0.000139	120.1840	196.7226	-3.6414E-06	373.6518	-4.8894	211286.
468.000	0.000117	1216.1961	169.4269	-3.5730E-06	374.4593	-4.2091	215786.
474.000	9.60E-05	2160.5531	146.2289	-3.4002E-06	375.1552	-3.5235	220286.
480.000	7.62E-05	2977.8383	127.0901	-3.1373E-06	375.7574	-2.8561	224786.
486.000	5.83E-05	3691.9964	83.3490	-2.7960E-06	376.2836	-11.7243	1206107.
492.000	4.27E-05	3983.6968	22.4364	-2.4032E-06	376.4985	-8.5799	1206107.
498.000	2.95E-05	3966.1075	-21.0848	-1.9964E-06	376.4856	-5.9272	1206107.
504.000	1.87E-05	3734.7275	-50.1586	-1.6024E-06	376.3151	-3.7640	1206107.
510.000	1.03E-05	3367.4545	-67.6363	-1.2390E-06	376.0445	-2.0619	1206107.
516.000	3.86E-06	2925.6051	-76.1478	-9.1699E-07	375.7189	-0.7753209	1206107.
522.000	-7.47E-07	2455.5406	-78.0234	-6.4164E-07	375.3725	0.1501100	1206107.
528.000	-3.84E-06	1990.6252	-75.2557	-4.1414E-07	375.0300	0.7724541	1206107.
534.000	-5.72E-06	1553.3116	-69.4911	-2.3280E-07	374.7077	1.1491	1206107.
540.000	-6.64E-06	1157.2043	-62.0418	-9.4104E-08	374.4159	1.3340	1206107.
546.000	-6.85E-06	809.0013	-53.2971	6.5039E-09	374.1593	1.5809	1385601.
552.000	-6.56E-06	517.6263	-43.3876	7.4386E-08	373.9446	1.7223	1575672.
558.000	-5.95E-06	288.1994	-33.5308	1.1562E-07	373.7756	1.5633	1575672.
564.000	-5.17E-06	115.0226	-24.7670	1.3625E-07	373.6480	1.3579	1575672.
570.000	-4.32E-06	-9.2811	-17.2914	1.4166E-07	373.5701	1.1340	1575672.
576.000	-3.47E-06	-92.7614	-11.1550	1.3644E-07	373.6316	0.9114937	1575672.
582.000	-2.68E-06	-143.4183	-6.3086	1.2436E-07	373.6689	0.7039874	1575672.
588.000	-1.98E-06	-168.7168	-2.6378	1.0838E-07	373.6875	0.5196073	1575672.
594.000	-1.38E-06	-175.2918	0.0083101	9.0781E-08	373.6924	0.3624329	1575672.
600.000	-8.89E-07	-168.8011	1.7962	7.3175E-08	373.6876	0.2335242	1575672.
606.000	-5.02E-07	-153.8861	2.8923	5.6663E-08	373.6766	0.1318348	1575672.
612.000	-2.09E-07	-134.2090	3.4526	4.1922E-08	373.6621	0.0549595	1575672.
618.000	1.05E-09	-112.5394	3.6167	2.9296E-08	373.6461	-0.0002746	1575672.
624.000	1.42E-07	-90.8680	3.5038	1.8888E-08	373.6302	-0.0373617	1575672.
630.000	2.28E-07	-70.5323	3.2123	1.0629E-08	373.6152	-0.0597963	1575672.
636.000	2.70E-07	-52.3418	2.8204	4.3418E-09	373.6018	-0.0708576	1575672.
642.000	2.80E-07	-36.6969	2.3873	-2.1421E-10	373.5903	-0.0734788	1575672.
648.000	2.67E-07	-23.6933	1.9564	-3.3043E-09	373.5807	-0.0701826	1575672.
654.000	2.40E-07	-13.2139	1.5566	-5.1928E-09	373.5730	-0.0630658	1575672.
660.000	2.05E-07	-5.0034	1.2060	-6.1249E-09	373.5669	-0.0538183	1575672.
666.000	1.67E-07	1.2701	0.8759123	-6.3160E-09	373.5642	-0.0561974	2023324.
672.000	1.29E-07	5.5203	0.5457941	-5.9685E-09	373.5673	-0.0538420	2501506.
678.000	9.50E-08	7.8317	0.2654134	-5.2853E-09	373.5690	-0.0396183	2501506.
684.000	6.57E-08	8.7160	0.0643602	-4.4386E-09	373.5696	-0.0273995	2501506.
690.000	4.18E-08	8.6130	-0.0700740	-3.5519E-09	373.5696	-0.0174119	2501506.
696.000	2.31E-08	7.8823	-0.1511978	-2.7078E-09	373.5690	-0.0096293	2501506.
702.000	9.27E-09	6.8041	-0.1916794	-1.9564E-09	373.5682	-0.0038646	2501506.
708.000	-3.80E-10	5.5861	-0.2027980	-1.3224E-09	373.5673	0.0001584	2501506.
714.000	-6.60E-09	4.3732	-0.1940691	-8.1276E-10	373.5664	0.0027512	2501506.
720.000	-1.01E-08	3.2590	-0.1731416	-4.2223E-10	373.5656	0.0042246	2501506.
726.000	-1.17E-08	2.2964	-0.1458769	-1.3797E-10	373.5649	0.0048636	2501506.
732.000	-1.18E-08	1.5087	-0.1165415	5.6736E-11	373.5643	0.0049148	2501506.
738.000	-1.10E-08	0.8977899	-0.0880576	1.7987E-10	373.5639	0.0045798	2501506.
744.000	-9.63E-09	0.4516517	-0.0622734	2.4892E-10	373.5636	0.0040149	2501506.
750.000	-8.00E-09	0.1500040	-0.0402254	2.7971E-10	373.5633	0.0033344	2501506.
756.000	-6.27E-09	-0.0316198	-0.0223755	2.8577E-10	373.5632	0.0026155	2501506.
762.000	-4.57E-09	-0.1190810	-0.0088146	2.7806E-10	373.5633	0.0019047	2501506.
768.000	-2.94E-09	-0.1379593	0.0005729	2.6490E-10	373.5633	0.0012244	2501506.
774.000	-1.39E-09	-0.1127440	0.0059844	2.5207E-10	373.5633	0.0005794	2501506.
780.000	8.80E-11	-0.0666576	0.0076126	2.4289E-10	373.5633	-3.6709E-05	2501506.
786.000	1.52E-09	-0.0218859	0.0055951	2.3836E-10	373.5632	-0.0006358	2501506.
792.000	2.95E-09	0.0000	0.0000	2.3724E-10	373.5632	-0.0012292	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 6:

```
Pile-head deflection             =     0.49846631 in
Computed slope at pile head      =    -0.00430906
Maximum bending moment           =       1585899. lbs-in
Maximum shear force              =    30000.00000 lbs
Depth of maximum bending moment  =      102.00000 in
```

Depth of maximum shear force = 0.00000 in
Number of iterations = 29
Number of zero deflection points = 6

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 7

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Specified shear force at pile head = 35000.000 lbs
Specified moment at pile head = 0.000 in-lbs
Specified axial load at pile head = 169000.000 lbs

(Zero moment for this load indicates free-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	0.712479	3.4354E-06	35000.0000	-0.0057710	373.5632	-374.1882	1575.5748
6.000	0.677853	209116.	32951.6283	-0.0057603	527.6463	-308.6024	2731.5867
12.000	0.643355	407102.	31087.8859	-0.0057288	673.5275	-312.6450	2915.7612
18.000	0.609107	593789.	29200.9725	-0.0056776	811.0844	-316.3261	3115.9642
24.000	0.575224	769027.	27293.0769	-0.0056079	940.2050	-319.6391	3334.0654
30.000	0.541813	932679.	25366.4280	-0.0055208	1060.7882	-322.5772	3572.1980
36.000	0.508975	1084621.	23423.2962	-0.0054176	1172.7434	-325.1334	3832.8057
42.000	0.476802	1224745.	21465.9939	-0.0052994	1275.9912	-327.3006	4118.6977
48.000	0.445382	1352960.	19496.8774	-0.0051675	1370.4635	-329.0715	4433.1167
54.000	0.414792	1469187.	17518.3469	-0.0050231	1456.1034	-330.4386	4779.8204
60.000	0.385105	1573367.	15532.8484	-0.0048674	1532.8658	-331.3942	5163.1826
66.000	0.356383	1665453.	13542.8747	-0.0047017	1600.7174	-331.9304	5588.3180
72.000	0.328684	1745416.	11550.9667	-0.0045272	1659.6369	-332.0390	6061.2376
78.000	0.302057	1813245.	9559.7156	-0.0043451	1709.6153	-331.7114	6589.0438
84.000	0.276544	1868945.	7571.7656	-0.0041567	1750.6562	-330.9386	7180.1783
90.000	0.252177	1912536.	5589.8165	-0.0039632	1782.7757	-329.7110	7844.7409
96.000	0.228986	1944060.	3616.6289	-0.0037658	1806.0032	-328.0181	8594.9019
102.000	0.206988	1963573.	1655.0297	-0.0035659	1820.3810	-325.8483	9445.4471
108.000	0.186195	1971152.	-292.0800	-0.0033645	1825.9653	-323.1883	10414.5046
114.000	0.166613	1966891.	-2221.7139	-0.0031630	1822.8261	-320.0230	11524.5351
120.000	0.148239	1950906.	-4130.7851	-0.0029626	1811.0475	-316.3341	12803.7064
126.000	0.131062	1923330.	-5708.3182	-0.0027643	1790.7288	-209.5103	9591.3328
132.000	0.115067	1888012.	-6761.6329	-0.0025693	1764.7056	-141.5946	7383.2598
138.000	0.100231	1847401.	-7598.8628	-0.0023782	1734.7821	-137.4820	8229.9425
144.000	0.086529	1801649.	-8410.4738	-0.0021915	1701.0705	-133.0550	9226.1873
150.000	0.073933	1750919.	-9194.5245	-0.0020097	1663.6917	-128.2952	10411.7178
156.000	0.062413	1695390.	-9948.9427	-0.0018333	1622.7760	-123.1776	11841.5938
162.000	0.051933	1635250.	-10671.4809	-0.0016629	1578.4632	-117.6685	13594.5979
168.000	0.042458	1570705.	-11359.6481	-0.0014989	1530.9041	-111.7206	15787.9882
174.000	0.033947	1501974.	-12010.6046	-0.0013416	1480.2615	-105.2649	18605.2357
180.000	0.026358	1429298.	-12620.9894	-0.0011916	1426.7118	-98.1967	22352.8236
186.000	0.019647	1352939.	-13377.3507	-0.0010493	1370.4480	-153.9238	47006.4980
192.000	0.013767	1270898.	-14412.9880	-0.0009150	1309.9978	-191.2887	83369.5392
198.000	0.008667	1181839.	-15506.1319	-0.0007895	1244.3764	-173.0926	119831.
204.000	0.004293	1086425.	-16467.8768	-0.0006735	1174.0731	-147.4890	206156.
210.000	0.000585	985590.	-17183.8687	-0.0005674	1099.7746	-91.1749	934551.
216.000	-0.002517	881370.	-16885.4412	-0.0004719	1022.9821	190.6508	454534.
222.000	-0.005077	783922.	-15631.6506	-0.0003867	951.1795	227.2794	268573.
228.000	-0.007157	694574.	-14206.8183	-0.0003110	885.3457	247.6647	207628.
234.000	-0.008810	614071.	-12681.1829	-0.0002441	826.0283	260.8805	177672.
240.000	-0.010086	542895.	-11088.9656	-0.0001849	773.5840	269.8587	160536.
246.000	-0.011029	481378.	-9866.2569	-0.0001325	728.2565	137.7109	74920.7396
252.000	-0.011676	424768.	-9188.9673	-8.6102E-05	686.5450	88.0523	45249.5840
258.000	-0.012062	371285.	-8657.7707	-4.5369E-05	647.1368	89.0133	44278.7750
264.000	-0.012220	320967.	-8122.5271	-9.9472E-06	610.0613	89.4013	43895.9726
270.000	-0.012181	273835.	-7586.4028	2.0488E-05	575.3326	89.3068	43989.4710
276.000	-0.011974	229889.	-7052.0873	4.6263E-05	542.9520	88.7984	44495.1563

282.000	-0.011626	189116.	-6521.9035	6.7703E-05	512.9093	87.9295	45379.2390
288.000	-0.011162	151489.	-5997.8848	8.5131E-05	485.1845	86.7434	46629.1887
294.000	-0.010604	116969.	-5481.8292	9.8868E-05	459.7491	85.2752	48249.0014
300.000	-0.009975	85506.2712	-4975.3400	0.0001092	436.5667	83.5545	50257.0019
306.000	-0.009294	57043.0185	-4479.8570	0.0001165	415.5942	81.6065	52685.3303
312.000	-0.008577	31511.6804	-3996.6794	0.0001211	396.7819	79.4527	55580.7429
318.000	-0.007841	8837.3695	-3526.9855	0.0001231	380.0749	77.1119	59006.6450
324.000	-0.007100	-11061.8291	-3071.8477	0.0001230	381.7139	74.6007	63046.4913
330.000	-0.006365	-28274.2556	-2632.2453	0.0001210	394.3965	71.9335	67808.9048
336.000	-0.005648	-42894.1434	-2209.0755	0.0001173	405.1689	69.1231	73435.1485
342.000	-0.004957	-55021.1468	-1803.1630	0.0001123	414.1044	66.1810	80110.0054
348.000	-0.004300	-64759.9247	-1415.2698	0.0001062	421.2802	63.1168	88077.8175
354.000	-0.003682	-72219.7791	-1046.1039	9.9202E-05	426.7769	59.9385	97666.6541
360.000	-0.003109	-77514.3518	-696.3306	9.1540E-05	430.6781	56.6525	109326.
366.000	-0.002584	-80761.3892	-347.4970	8.3441E-05	433.0706	59.6253	138462.
372.000	-0.002108	-81853.5344	-17.9460	7.5120E-05	433.8753	50.2250	142962.
378.000	-0.001682	-81129.0855	256.7675	6.6781E-05	433.3415	41.3462	147462.
384.000	-0.001307	-78907.7560	480.0777	5.8592E-05	431.7048	33.0906	151962.
390.000	-0.000979	-75486.9769	655.9540	5.0692E-05	429.1842	25.5348	156462.
396.000	-0.000698	-71139.1105	788.7531	4.3189E-05	425.9806	18.7315	160962.
402.000	-0.000461	-66109.5267	883.0818	3.6166E-05	422.2746	12.7114	165462.
408.000	-0.000264	-60615.4732	943.6714	2.9682E-05	418.2265	7.4851	169962.
414.000	-0.000105	-54845.6646	975.2651	2.3774E-05	413.9751	3.0461	174462.
420.000	2.10E-05	-48960.5051	982.5203	1.8462E-05	409.6387	-0.6277058	178962.
426.000	0.000117	-43092.8625	969.9242	1.3752E-05	405.3153	-3.5710	183462.
432.000	0.000186	-37349.3033	941.7245	9.6358E-06	401.0833	-5.8289	187962.
438.000	0.000232	-31811.7104	901.8720	6.0969E-06	397.0030	-7.4552	192462.
444.000	0.000259	-26539.2037	853.9771	3.1112E-06	393.1181	-8.5098	196962.
450.000	0.000270	-21570.2946	801.2756	6.4947E-07	389.4568	-9.0574	201462.
456.000	0.000267	-16925.2133	746.6050	-1.3203E-06	386.0342	-9.1661	205962.
462.000	0.000254	-12608.3567	692.3878	-2.8315E-06	382.8534	-8.9063	210462.
468.000	0.000233	-8610.8175	640.6209	-3.9173E-06	379.9079	-8.3494	214962.
474.000	0.000207	-4912.9613	592.8696	-4.6092E-06	377.1832	-7.5678	219462.
480.000	0.000178	-1487.0344	550.2634	-4.9367E-06	374.6589	-6.6343	223962.
486.000	0.000148	1700.2110	441.3145	-4.9258E-06	374.8160	-29.6820	1206107.
492.000	0.000119	3818.7291	280.7311	-4.6434E-06	376.3770	-23.8458	1206107.
498.000	9.19E-05	5078.4010	153.7505	-4.1882E-06	377.3051	-18.4810	1206107.
504.000	6.84E-05	5672.2282	57.0781	-3.6381E-06	377.7427	-13.7431	1206107.
510.000	4.83E-05	5770.7158	-13.2669	-3.0525E-06	377.8153	-9.7052	1206107.
516.000	3.17E-05	5519.2157	-61.5217	-2.4749E-06	377.6299	-6.3797	1206107.
522.000	1.86E-05	5037.4743	-91.8668	-1.9347E-06	377.2750	-3.7354	1206107.
528.000	8.52E-06	4420.7372	-108.2113	-1.4507E-06	376.8205	-1.7128	1206107.
534.000	1.17E-06	3741.8802	-114.0575	-1.0331E-06	376.3203	-0.2359077	1206107.
540.000	-3.88E-06	3054.1423	-112.4278	-6.8531E-07	375.8136	0.7791328	1206107.
546.000	-7.05E-06	2394.1363	-105.2061	-4.0653E-07	375.3273	1.6281	1385601.
552.000	-8.75E-06	1792.4938	-93.4248	-1.9230E-07	374.8840	2.2990	1575672.
558.000	-9.36E-06	1273.4283	-79.1555	-3.5423E-08	374.5015	2.4575	1575672.
564.000	-9.18E-06	842.6991	-64.5514	7.2857E-08	374.1841	2.4106	1575672.
570.000	-8.48E-06	498.6642	-50.6360	1.4149E-07	373.9306	2.2279	1575672.
576.000	-7.48E-06	234.7806	-38.0582	1.7902E-07	373.7362	1.9647	1575672.
582.000	-6.34E-06	41.6023	-27.1730	1.9316E-07	373.5939	1.6637	1575672.
588.000	-5.16E-06	-91.6870	-18.1139	1.9060E-07	373.6308	1.3560	1575672.
594.000	-4.05E-06	-176.1513	-10.8568	1.7690E-07	373.6930	1.0631	1575672.
600.000	-3.04E-06	-222.3274	-5.2721	1.5651E-07	373.7270	0.7985256	1575672.
606.000	-2.17E-06	-239.7336	-1.1669	1.3286E-07	373.7399	0.5698478	1575672.
612.000	-1.45E-06	-236.6003	1.6821	1.0849E-07	373.7376	0.3798271	1575672.
618.000	-8.68E-07	-219.7687	3.5054	8.5138E-08	373.7252	0.2279582	1575672.
624.000	-4.25E-07	-194.7077	4.5239	6.3930E-08	373.7067	0.1115271	1575672.
630.000	-1.01E-07	-165.6116	4.9379	4.5493E-08	373.6852	0.0264926	1575672.
636.000	1.21E-07	-135.5446	4.9219	3.0083E-08	373.6631	-0.0318370	1575672.
642.000	2.60E-07	-106.6097	4.6215	1.7693E-08	373.6418	-0.0683101	1575672.
648.000	3.34E-07	-80.1228	4.1538	8.1377E-09	373.6223	-0.0875923	1575672.
654.000	3.58E-07	-56.7810	3.6091	1.1325E-09	373.6051	-0.0939547	1575672.
660.000	3.47E-07	-36.8156	3.0538	-3.6567E-09	373.5903	-0.0911611	1575672.
666.000	3.14E-07	-20.1282	2.4627	-6.5705E-09	373.5780	-0.1058499	2023324.
672.000	2.68E-07	-7.2493	1.8096	-7.9713E-09	373.5686	-0.1118535	2501506.
678.000	2.18E-07	1.6036	1.2011	-8.2602E-09	373.5644	-0.0909852	2501506.
684.000	1.69E-07	7.1808	0.7165814	-7.8107E-09	373.5685	-0.0705274	2501506.
690.000	1.25E-07	10.2184	0.3492755	-6.9205E-09	373.5707	-0.0519079	2501506.
696.000	8.61E-08	11.3862	0.0858388	-5.8150E-09	373.5716	-0.0359043	2501506.

702.000	5.47E-08	11.2602	-0.0903206	-4.6562E-09	373.5715	-0.0228155	2501506.
708.000	3.02E-08	10.3118	-0.1965951	-3.5524E-09	373.5708	-0.0126093	2501506.
714.000	1.21E-08	8.9083	-0.2495519	-2.5689E-09	373.5698	-0.0050429	2501506.
720.000	-5.83E-10	7.3224	-0.2639518	-1.7384E-09	373.5686	0.0002430	2501506.
726.000	-8.77E-09	5.7444	-0.2522599	-1.0698E-09	373.5675	0.0036544	2501506.
732.000	-1.34E-08	4.2974	-0.2245113	-5.5597E-10	373.5664	0.0055952	2501506.
738.000	-1.54E-08	3.0514	-0.1884180	-1.7995E-10	373.5655	0.0064359	2501506.
744.000	-1.56E-08	2.0368	-0.1496239	8.0409E-11	373.5647	0.0064955	2501506.
750.000	-1.45E-08	1.2557	-0.1120367	2.4888E-10	373.5641	0.0060336	2501506.
756.000	-1.26E-08	0.6918133	-0.0781850	3.4854E-10	373.5637	0.0052503	2501506.
762.000	-1.03E-08	0.3168191	-0.0495645	4.0015E-10	373.5635	0.0042899	2501506.
768.000	-7.79E-09	0.0962278	-0.0269498	4.2128E-10	373.5633	0.0032484	2501506.
774.000	-5.23E-09	-0.0074326	-0.0106581	4.2583E-10	373.5632	0.0021822	2501506.
780.000	-2.68E-09	-0.0325330	-0.0007576	4.2378E-10	373.5632	0.0011179	2501506.
786.000	-1.49E-10	-0.0173839	0.0027823	4.2123E-10	373.5632	6.2025E-05	2501506.
792.000	2.37E-09	0.0000	0.0000	4.2034E-10	373.5632	-0.0009894	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 7:

```
Pile-head deflection             =     0.71247935 in
Computed slope at pile head      =    -0.00577104
Maximum bending moment           =       1971152. lbs-in
Maximum shear force              =    35000.00000 lbs
Depth of maximum bending moment  =      108.00000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             30
Number of zero deflection points =              6
```

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 8

```
Pile-head boundary conditions are Shear and Moment (BC Type 1)
Specified shear force at pile head  =       40000.000 lbs
Specified moment at pile head       =           0.000 in-lbs
Specified axial load at pile head   =      169000.000 lbs
```

(Zero moment for this load indicates free-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	0.968186	-1.8081E-06	40000.0000	-0.0074244	373.5632	-404.0044	1251.8397
6.000	0.923639	240256.	37787.7293	-0.0074121	550.5910	-333.4191	2165.9045
12.000	0.879241	468484.	35773.3585	-0.0073758	718.7562	-338.0378	2306.7934
18.000	0.835130	684495.	33732.3625	-0.0073168	877.9189	-342.2942	2459.2170
24.000	0.791439	888111.	31666.9340	-0.0072363	1027.9495	-346.1820	2624.4498
30.000	0.748294	1079173.	29579.3047	-0.0071357	1168.7295	-349.6945	2803.9355
36.000	0.705811	1257534.	27471.7470	-0.0070161	1300.1511	-352.8248	2999.3151
42.000	0.664100	1423063.	25346.5748	-0.0068790	1422.1175	-355.5659	3212.4608
48.000	0.623263	1575644.	23206.1454	-0.0067255	1534.5434	-357.9106	3445.5157
54.000	0.583394	1715176.	21052.8599	-0.0065571	1637.3549	-359.8513	3700.9431
60.000	0.544578	1841576.	18889.1649	-0.0063751	1730.4899	-361.3804	3981.5848
66.000	0.506892	1954775.	16717.5539	-0.0061809	1813.8983	-362.4900	4290.7337
72.000	0.470407	2054721.	14540.5686	-0.0059757	1887.5417	-363.1718	4632.2229
78.000	0.435184	2141380.	12360.8015	-0.0057610	1951.3947	-363.4172	5010.5361
84.000	0.401275	2214734.	10180.8982	-0.0055381	2005.4440	-363.2172	5430.9466
90.000	0.368726	2274782.	8003.5607	-0.0053084	2049.6892	-362.5620	5899.6927
96.000	0.337574	2321542.	5831.5520	-0.0050732	2084.1433	-361.4410	6424.2025
102.000	0.307848	2355049.	3667.7012	-0.0048339	2108.8324	-359.8426	7013.3857

108.000	0.279567	2375358.	1514.9118	-0.0045919	2123.7962	-357.7539	7678.0162
114.000	0.252746	2382541.	-623.8293	-0.0043484	2129.0887	-355.1598	8431.2432
120.000	0.227387	2376690.	-2745.4381	-0.0041049	2124.7781	-352.0431	9289.2847
126.000	0.203487	2357920.	-4529.3672	-0.0038626	2110.9476	-242.5999	7153.2820
132.000	0.181035	2330171.	-5751.2176	-0.0036227	2090.5015	-164.6835	5458.0613
138.000	0.160014	2296252.	-6727.3106	-0.0033860	2065.5090	-160.6808	6024.9972
144.000	0.140403	2256311.	-7678.4077	-0.0031531	2036.0787	-156.3516	6681.5423
150.000	0.122177	2210506.	-8602.5002	-0.0029245	2002.3285	-151.6793	7448.7991
156.000	0.105309	2159011.	-9497.4667	-0.0027009	1964.3858	-146.6429	8354.9943
162.000	0.089767	2102014.	-10361.0409	-0.0024829	1922.3883	-141.2151	9438.8276
168.000	0.075515	2039714.	-11190.7645	-0.0022710	1876.4842	-135.3594	10754.9585
174.000	0.062515	1972330.	-11983.9190	-0.0020657	1826.8336	-129.0255	12383.4566
180.000	0.050727	1900096.	-12737.4219	-0.0018675	1773.6097	-122.1422	14447.1066
186.000	0.040105	1823268.	-13655.7908	-0.0016770	1717.0005	-183.9808	27524.9518
192.000	0.030603	1739628.	-14908.4283	-0.0014947	1655.3718	-233.5650	45793.0851
198.000	0.022169	1647398.	-16265.7881	-0.0013214	1587.4145	-218.8882	59242.7219
204.000	0.014746	1547118.	-17524.7352	-0.0011579	1513.5250	-200.7608	81686.9209
210.000	0.008274	1439450.	-18656.3165	-0.0010051	1434.1919	-176.4329	127949.
216.000	0.002685	1325281.	-19591.3527	-0.0008636	1350.0687	-135.2458	302235.
222.000	-0.002090	1206105.	-19451.3842	-0.0007341	1262.2566	181.9020	522204.
228.000	-0.006124	1093353.	-18191.2021	-0.0006164	1179.1775	238.1587	233323.
234.000	-0.009487	989061.	-16679.5299	-0.0005099	1102.3321	265.7320	168055.
240.000	-0.012243	894233.	-15032.6158	-0.0004135	1032.4598	283.2394	138808.
246.000	-0.014450	809508.	-13730.8484	-0.0003263	970.0324	150.6831	62568.8861
252.000	-0.016159	730124.	-12984.4279	-0.0002476	911.5400	98.1238	36433.9042
258.000	-0.017420	654197.	-12388.2140	-0.0001767	855.5946	100.6142	34653.8354
264.000	-0.018280	581824.	-11779.6415	-0.0001135	802.2681	102.2433	33559.1178
270.000	-0.018782	513071.	-11163.3954	-5.7462E-05	751.6092	103.1720	32958.3230
276.000	-0.018970	447980.	-10543.3364	-8.2862E-06	703.6478	103.5143	32741.2395
282.000	-0.018882	386568.	-9922.7292	3.4417E-05	658.3979	103.3547	32842.8157
288.000	-0.018557	328837.	-9304.3900	7.1023E-05	615.8601	102.7583	33225.5039
294.000	-0.018029	274771.	-8690.7861	0.0001019	576.0229	101.7763	33870.0561
300.000	-0.017334	224341.	-8084.1070	0.0001274	538.8643	100.4501	34770.5968
306.000	-0.016500	177504.	-7486.3161	0.0001480	504.3532	98.8136	35932.0724
312.000	-0.015558	134205.	-6899.1899	0.0001640	472.4495	96.8952	37369.1685
318.000	-0.014533	94380.9478	-6324.3475	0.0001757	443.1059	94.7189	39106.2631
324.000	-0.013450	57956.7921	-5763.2744	0.0001835	416.2675	92.3054	41178.2401
330.000	-0.012331	24849.6167	-5217.3411	0.0001877	391.8731	89.6724	43632.1523
336.000	-0.011197	-5031.9322	-4687.8177	0.0001887	377.2709	86.8354	46529.8504
342.000	-0.010067	-31786.8833	-4175.8859	0.0001868	396.9847	83.8085	49951.8226
348.000	-0.008956	-55521.4302	-3682.6483	0.0001824	414.4730	80.6041	54002.6434
354.000	-0.007879	-76348.4690	-3209.1344	0.0001756	429.8190	77.2339	58818.6286
360.000	-0.006848	-94387.1651	-2756.3049	0.0001669	443.1104	73.7093	64578.5484
366.000	-0.005876	-109763.	-2129.5188	0.0001564	454.4395	135.2194	138070.
372.000	-0.004971	-120259.	-1369.4816	0.0001447	462.1733	118.1263	142570.
378.000	-0.004140	-126490.	-710.6445	0.0001320	466.7645	101.4860	147070.
384.000	-0.003387	-129054.	-149.5028	0.0001189	468.6540	85.5612	151570.
390.000	-0.002713	-128525.	318.8841	0.0001058	468.2641	70.5677	156070.
396.000	-0.002118	-125442.	700.6125	9.2774E-05	465.9925	56.6751	160570.
402.000	-0.001600	-120306.	1002.6639	8.0199E-05	462.2080	44.0087	165070.
408.000	-0.001155	-113573.	1232.6488	6.8232E-05	457.2469	32.6529	169570.
414.000	-0.000781	-105652.	1398.5693	5.7014E-05	451.4109	22.6539	174070.
420.000	-0.000471	-96905.4533	1508.6025	4.6650E-05	444.9660	14.0238	178570.
426.000	-0.000221	-87643.6844	1570.9083	3.7207E-05	438.1416	6.7448	183070.
432.000	-2.47E-05	-78130.0084	1593.4614	2.8724E-05	431.1317	0.7728860	187570.
438.000	0.000124	-68580.4010	1583.9066	2.1217E-05	424.0953	-3.9578	192070.
444.000	0.000230	-59166.1575	1549.4390	1.4681E-05	417.1586	-7.5314	196570.
450.000	0.000300	-50016.9051	1496.7040	9.0939E-06	410.4171	-10.0469	201070.
456.000	0.000339	-41224.1525	1431.7177	4.4252E-06	403.9384	-11.6151	205570.
462.000	0.000353	-32845.2666	1359.8047	6.3521E-07	397.7646	-12.3559	210070.
468.000	0.000347	-24907.7838	1285.5484	-2.3199E-06	391.9160	-12.3962	214570.
474.000	0.000325	-17413.9808	1212.7534	-4.4855E-06	386.3943	-11.8688	219070.
480.000	0.000293	-10345.6469	1144.4154	-5.9059E-06	381.1862	-10.9105	223570.
486.000	0.000254	-3669.0192	958.3894	-6.6230E-06	376.2667	-51.0981	1206107.
492.000	0.000213	1168.4573	676.4442	-6.7510E-06	374.4242	-42.8836	1206107.
498.000	0.000173	4462.0026	443.3534	-6.4629E-06	376.8510	-34.8133	1206107.
504.000	0.000136	6501.8051	257.0321	-5.9019E-06	378.3539	-27.2938	1206107.
510.000	0.000102	7558.3563	113.4204	-5.1824E-06	379.1324	-20.5768	1206107.
516.000	7.36E-05	7873.3593	7.3120	-4.3928E-06	379.3645	-14.7927	1206107.
522.000	4.96E-05	7655.0088	-67.0073	-3.5982E-06	379.2037	-9.9804	1206107.

528.000	3.04E-05	7076.5695	-115.2873	-2.8444E-06	378.7774	-6.1130	1206107.
534.000	1.55E-05	6277.3291	-142.9833	-2.1611E-06	378.1885	-3.1190	1206107.
540.000	4.48E-06	5365.1533	-155.0398	-1.5654E-06	377.5164	-0.8998394	1206107.
546.000	-3.27E-06	4420.0265	-155.4746	-1.0647E-06	376.8200	0.7548907	1385601.
552.000	-8.30E-06	3501.6172	-146.6708	-6.5937E-07	376.1433	2.1797	1575672.
558.000	-1.12E-05	2661.3143	-131.3226	-3.4402E-07	375.5242	2.9364	1575672.
564.000	-1.24E-05	1926.4440	-112.7219	-1.0927E-07	374.9827	3.2639	1575672.
570.000	-1.25E-05	1308.8727	-93.0882	5.6272E-08	374.5276	3.2807	1575672.
576.000	-1.18E-05	809.2714	-73.9865	1.6465E-07	374.1595	3.0865	1575672.
582.000	-1.05E-05	420.7009	-56.4414	2.2759E-07	373.8732	2.7618	1575672.
588.000	-9.02E-06	131.5129	-41.0480	2.5585E-07	373.6601	2.3693	1575672.
594.000	-7.45E-06	-72.3938	-28.0734	2.5887E-07	373.6166	1.9556	1575672.
600.000	-5.92E-06	-205.8924	-17.5461	2.4463E-07	373.7149	1.5535	1575672.
606.000	-4.51E-06	-283.4432	-9.3316	2.1959E-07	373.7721	1.1847	1575672.
612.000	-3.28E-06	-318.3172	-3.1932	1.8880E-07	373.7978	0.8614960	1575672.
618.000	-2.25E-06	-322.1442	1.1603	1.5603E-07	373.8006	0.5896695	1575672.
624.000	-1.41E-06	-304.7098	4.0387	1.2396E-07	373.7877	0.3697888	1575672.
630.000	-7.58E-07	-273.9313	5.7452	9.4347E-08	373.7651	0.1990426	1575672.
636.000	-2.76E-07	-235.9588	6.5597	6.8257E-08	373.7371	0.0724679	1575672.
642.000	6.11E-08	-195.3531	6.7289	4.6187E-08	373.7072	-0.0160585	1575672.
648.000	2.78E-07	-155.3051	6.4615	2.8245E-08	373.6777	-0.0730841	1575672.
654.000	4.00E-07	-117.8721	5.9271	1.4266E-08	373.6501	-0.1050668	1575672.
660.000	4.49E-07	-84.2092	5.2577	3.9262E-09	373.6253	-0.1180426	1575672.
666.000	4.47E-07	-54.7872	4.4512	-3.1861E-09	373.6036	-0.1508045	2023324.
672.000	4.11E-07	-30.7884	3.4844	-7.5648E-09	373.5859	-0.1714622	2501506.
678.000	3.56E-07	-12.9590	2.5242	-9.8033E-09	373.5728	-0.1485978	2501506.
684.000	2.94E-07	-0.4778532	1.7112	-1.0491E-08	373.5636	-0.1224160	2501506.
690.000	2.31E-07	7.5964	1.0556	-1.0127E-08	373.5688	-0.0961118	2501506.
696.000	1.72E-07	12.2098	0.5520018	-9.1132E-09	373.5722	-0.0717523	2501506.
702.000	1.21E-07	14.2389	0.1851895	-7.7598E-09	373.5737	-0.0505185	2501506.
708.000	7.90E-08	14.4478	-0.0651552	-6.2920E-09	373.5739	-0.0329298	2501506.
714.000	4.57E-08	13.4698	-0.2210635	-4.8635E-09	373.5731	-0.0190397	2501506.
720.000	2.06E-08	11.8049	-0.3039758	-3.5702E-09	373.5719	-0.0085978	2501506.
726.000	2.83E-09	9.8293	-0.3333030	-2.4632E-09	373.5705	-0.0011779	2501506.
732.000	-8.94E-09	7.8103	-0.3256599	-1.5606E-09	373.5690	0.0037256	2501506.
738.000	-1.59E-08	5.9246	-0.2945938	-8.5781E-10	373.5676	0.0066298	2501506.
744.000	-1.92E-08	4.2769	-0.2506529	-3.3581E-10	373.5664	0.0080172	2501506.
750.000	-1.99E-08	2.9174	-0.2016717	3.2313E-11	373.5654	0.0083098	2501506.
756.000	-1.88E-08	1.8568	-0.1531756	2.7660E-10	373.5646	0.0078556	2501506.
762.000	-1.66E-08	1.0787	-0.1088309	4.2681E-10	373.5640	0.0069260	2501506.
768.000	-1.37E-08	0.5499380	-0.0708923	5.1015E-10	373.5636	0.0057202	2501506.
774.000	-1.05E-08	0.2270027	-0.0406104	5.4990E-10	373.5634	0.0043737	2501506.
780.000	-7.12E-09	0.0614975	-0.0185821	5.6466E-10	373.5633	0.0029691	2501506.
786.000	-3.71E-09	0.0028724	-0.0050288	5.6796E-10	373.5632	0.0015487	2501506.
792.000	-3.06E-10	0.0000	0.0000	5.6810E-10	373.5632	0.0001276	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 8:

```
Pile-head deflection             =     0.96818568 in
Computed slope at pile head      =    -0.00742437
Maximum bending moment           =       2382541. lbs-in
Maximum shear force              =    40000.00000 lbs
Depth of maximum bending moment  =      114.00000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             33
Number of zero deflection points =              6
```

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 9

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Specified shear force at pile head = 45000.000 lbs
Specified moment at pile head = 0.000 in-lbs
Specified axial load at pile head = 169000.000 lbs

(Zero moment for this load indicates free-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	1.264	3.9778E-06	45000.0000	-0.0092574	373.5632	-431.8560	1024.9123
6.000	1.209	271614.	42634.6390	-0.0092435	573.6960	-356.5977	1770.4003
12.000	1.153	530361.	40479.5941	-0.0092025	764.3490	-361.7506	1882.2306
18.000	1.098	776031.	38294.7238	-0.0091356	945.3657	-366.5395	2002.7603
24.000	1.044	1008425.	36082.2304	-0.0090443	1116.6003	-370.9582	2132.9090
30.000	0.989571	1227360.	33844.3552	-0.0089299	1277.9178	-375.0002	2273.7125
36.000	0.936369	1432667.	31583.3795	-0.0087938	1429.1943	-378.6584	2426.3415
42.000	0.884046	1624194.	29301.6261	-0.0086374	1570.3169	-381.9260	2592.1233
48.000	0.832720	1801803.	27001.4610	-0.0084621	1701.1845	-384.7957	2772.5682
54.000	0.782501	1965373.	24685.2943	-0.0082693	1821.7073	-387.2599	2969.4005
60.000	0.733489	2114797.	22355.5820	-0.0080605	1931.8074	-389.3109	3184.5965
66.000	0.685775	2249987.	20014.8269	-0.0078372	2031.4190	-390.9408	3420.4302
72.000	0.639442	2370869.	17665.5810	-0.0076007	2120.4885	-392.1412	3679.5292
78.000	0.594566	2477388.	15310.4476	-0.0073527	2198.9749	-392.9033	3964.9437
84.000	0.551210	2569505.	12952.0834	-0.0070944	2266.8498	-393.2181	4280.2321
90.000	0.509433	2647200.	10593.2025	-0.0068275	2324.0977	-393.0755	4629.5678
96.000	0.469280	2710470.	8236.5804	-0.0065533	2370.7166	-392.4652	5017.8755
102.000	0.430793	2759330.	5885.0590	-0.0062735	2406.7177	-391.3753	5451.0039
108.000	0.393999	2793813.	3541.5540	-0.0059893	2432.1263	-389.7930	5935.9513
114.000	0.358921	2813975.	1209.0635	-0.0057024	2446.9818	-387.7038	6481.1602
120.000	0.325570	2819886.	-1109.3199	-0.0054141	2451.3378	-385.0907	7096.9116
126.000	0.293952	2811642.	-3087.3187	-0.0051259	2445.2634	-274.2422	5597.7027
132.000	0.264059	2793234.	-4470.3373	-0.0048391	2431.6995	-186.7640	4243.6860
138.000	0.235882	2767812.	-5579.2353	-0.0045546	2412.9680	-182.8687	4651.5333
144.000	0.209404	2735520.	-6663.7479	-0.0042730	2389.1741	-178.6355	5118.3988
150.000	0.184606	2696513.	-7721.8036	-0.0039950	2360.4326	-174.0497	5656.9081
156.000	0.161463	2650960.	-8751.2315	-0.0037214	2326.8681	-169.0929	6283.5139
162.000	0.139949	2599045.	-9749.7368	-0.0034528	2288.6155	-163.7421	7020.0888
168.000	0.120030	2540966.	-10714.8659	-0.0031898	2245.8208	-157.9676	7896.4054
174.000	0.101671	2476936.	-11643.9592	-0.0029330	2198.6417	-151.7302	8954.1516
180.000	0.084834	2407186.	-12534.0817	-0.0026831	2147.2483	-144.9773	10253.7459
186.000	0.069474	2331968.	-13602.2068	-0.0024406	2091.8253	-211.0644	18228.1660
192.000	0.055546	2248909.	-15048.6700	-0.0022062	2030.6253	-271.0900	29282.5273
198.000	0.043000	2155858.	-16636.8459	-0.0019808	1962.0624	-258.3019	36042.4560
204.000	0.031777	2053284.	-18141.4045	-0.0017654	1886.4830	-243.2176	45924.0088
210.000	0.021814	1941742.	-19545.4029	-0.0015610	1804.2951	-224.7819	61826.2378
216.000	0.013044	1821905.	-20821.7157	-0.0013684	1715.9962	-200.6557	92296.6343
222.000	0.005393	1694656.	-21913.6448	-0.0011885	1622.2354	-163.3207	181708.
228.000	-0.001218	1561352.	-21927.0833	-0.0010219	1524.0128	158.8411	782508.
234.000	-0.006870	1433604.	-20715.2163	-0.0008687	1429.8842	245.1146	214073.
240.000	-0.011642	1314531.	-19140.7848	-0.0007280	1342.1479	279.6959	144151.
246.000	-0.015606	1205391.	-17837.8872	-0.0005991	1261.7303	154.6033	59438.1470
252.000	-0.018831	1101691.	-17064.2975	-0.0004810	1185.3214	103.2600	32901.0916
258.000	-0.021379	1001595.	-16431.3480	-0.0003734	1111.5674	107.7232	30232.3880
264.000	-0.023312	905272.	-15775.5456	-0.0002759	1040.5943	110.8776	28537.3884
270.000	-0.024689	812848.	-15103.8525	-0.0001879	972.4930	113.0201	27466.2153
276.000	-0.025567	724407.	-14421.7575	-0.0001093	907.3276	114.3449	26833.8245
282.000	-0.026001	640008.	-13733.7600	-3.9464E-05	845.1399	114.9876	26534.9827
288.000	-0.026041	559682.	-13043.6552	2.1923E-05	785.9533	115.0473	26507.6828
294.000	-0.025738	483440.	-12354.7159	7.5298E-05	729.7758	114.5991	26715.6368
300.000	-0.025137	411273.	-11669.8141	0.0001211	676.6010	113.7015	27139.2818
306.000	-0.024285	343156.	-10991.5061	0.0001597	626.4109	112.4012	27770.9913
312.000	-0.023221	279051.	-10322.0945	0.0001915	579.1761	110.7361	28612.5690
318.000	-0.021986	218903.	-9663.6737	0.0002170	534.8573	108.7375	29674.1125
324.000	-0.020617	162647.	-9018.1653	0.0002365	493.4061	106.4319	30973.8126
330.000	-0.019148	110205.	-8387.3449	0.0002505	454.7657	103.8416	32538.4956
336.000	-0.017611	61490.6485	-7772.8626	0.0002593	418.8713	100.9859	34404.8645
342.000	-0.016037	16405.1286	-7176.2587	0.0002633	385.6510	97.8821	36621.4900
348.000	-0.014452	-25158.3382	-6598.9747	0.0002628	392.1006	94.5459	39251.6843

354.000	-0.012883	-63315.5417	-6042.3597	0.0002583	420.2160	90.9924	42377.4504
360.000	-0.011353	-98190.4485	-5507.6717	0.0002500	445.9128	87.2370	46104.7173
366.000	-0.009883	-129915.	-4565.5619	0.0002383	469.2881	226.7996	137692.
372.000	-0.008493	-153461.	-3281.3638	0.0002238	486.6374	201.2664	142192.
378.000	-0.007197	-169745.	-2149.7096	0.0002073	498.6363	175.9517	146692.
384.000	-0.006005	-179677.	-1167.8966	0.0001894	505.9548	151.3194	151192.
390.000	-0.004924	-184144.	-330.6517	0.0001708	509.2458	127.7623	155692.
396.000	-0.003955	-183992.	369.4408	0.0001520	509.1337	105.6019	160192.
402.000	-0.003100	-180019.	941.5164	0.0001333	506.2063	85.0900	164692.
408.000	-0.002355	-172964.	1396.0226	0.0001153	501.0081	66.4120	169192.
414.000	-0.001717	-163500.	1744.3327	9.8070E-05	494.0350	49.6913	173692.
420.000	-0.001178	-152231.	1998.3892	8.1915E-05	485.7313	34.9942	178192.
426.000	-0.000734	-139686.	2170.3795	6.6978E-05	476.4878	22.3359	182692.
432.000	-0.000375	-126322.	2272.4463	5.3366E-05	466.6410	11.6864	187192.
438.000	-9.32E-05	-112525.	2316.4349	4.1145E-05	456.4747	2.9765	191692.
444.000	0.000119	-98608.3405	2313.6754	3.0341E-05	446.2207	-3.8963	196192.
450.000	0.000271	-84822.0718	2274.7994	2.0956E-05	436.0626	-9.0623	200692.
456.000	0.000371	-71353.2453	2209.5878	1.2964E-05	426.1384	-12.6749	205192.
462.000	0.000427	-58333.3093	2126.8461	6.3284E-06	416.5449	-14.9057	209692.
468.000	0.000447	-45843.9264	2034.3036	9.9776E-07	407.3424	-15.9418	214192.
474.000	0.000438	-33923.6898	1938.5326	-3.0838E-06	398.5592	-15.9819	218692.
480.000	0.000410	-22575.2810	1844.8818	-5.9748E-06	390.1973	-15.2350	223192.
486.000	0.000367	-11772.9910	1577.9891	-7.7324E-06	382.2379	-73.7292	1206107.
492.000	0.000317	-3623.7302	1165.7719	-8.5202E-06	376.2333	-63.6765	1206107.
498.000	0.000265	2233.5508	815.2124	-8.5913E-06	375.2090	-53.1766	1206107.
504.000	0.000214	6176.2413	526.8253	-8.1610E-06	378.1141	-42.9524	1206107.
510.000	0.000167	8572.0047	297.4966	-7.4064E-06	379.8793	-33.4905	1206107.
516.000	0.000125	9761.2207	121.7652	-6.4683E-06	380.7556	-25.0866	1206107.
522.000	8.90E-05	10046.3048	-7.1575	-5.4548E-06	380.9656	-17.8876	1206107.
528.000	5.93E-05	9686.3927	-96.6061	-4.4451E-06	380.7004	-11.9286	1206107.
534.000	3.56E-05	8896.0465	-153.8873	-3.4942E-06	380.1181	-7.1652	1206107.
540.000	1.74E-05	7846.8317	-185.8820	-2.6375E-06	379.3450	-3.4998	1206107.
546.000	3.99E-06	6670.8113	-199.1484	-1.8947E-06	378.4785	-0.9223852	1385601.
552.000	-5.33E-06	5460.8928	-197.7197	-1.2739E-06	377.5870	1.3986	1575672.
558.000	-1.13E-05	4300.7582	-184.6270	-7.7441E-07	376.7321	2.9656	1575672.
564.000	-1.46E-05	3246.9389	-164.2130	-3.8821E-07	375.9557	3.8391	1575672.
570.000	-1.60E-05	2330.9891	-140.1289	-1.0279E-07	375.2808	4.1890	1575672.
576.000	-1.59E-05	1565.6005	-115.0730	9.6591E-08	374.7168	4.1630	1575672.
582.000	-1.48E-05	949.9177	-90.9302	2.2531E-07	374.2631	3.8846	1575672.
588.000	-1.31E-05	473.9813	-68.9175	2.9817E-07	373.9125	3.4530	1575672.
594.000	-1.12E-05	122.3033	-49.7236	3.2868E-07	373.6533	2.9450	1575672.
600.000	-9.20E-06	-123.3688	-33.6371	3.2862E-07	373.6541	2.4172	1575672.
606.000	-7.27E-06	-282.0083	-20.6574	3.0788E-07	373.7710	1.9094	1575672.
612.000	-5.51E-06	-371.8815	-10.5883	2.7442E-07	373.8372	1.4470	1575672.
618.000	-3.98E-06	-409.6248	-3.1137	2.3443E-07	373.8650	1.0446	1575672.
624.000	-2.70E-06	-409.7212	2.1446	1.9251E-07	373.8651	0.7082057	1575672.
630.000	-1.67E-06	-384.2796	5.5830	1.5188E-07	373.8464	0.4379114	1575672.
636.000	-8.74E-07	-343.0334	7.5855	1.1466E-07	373.8160	0.2295822	1575672.
642.000	-2.92E-07	-293.4865	8.5039	8.2094E-08	373.7795	0.0765672	1575672.
648.000	1.11E-07	-241.1529	8.6462	5.4737E-08	373.7409	-0.0291231	1575672.
654.000	3.65E-07	-189.8426	8.2711	3.2683E-08	373.7031	-0.0959274	1575672.
660.000	5.03E-07	-141.9660	7.5870	1.5705E-08	373.6678	-0.1321196	1575672.
666.000	5.54E-07	-98.8310	6.6304	3.3839E-09	373.6360	-0.1867339	2023324.
672.000	5.44E-07	-62.4081	5.3902	-4.8665E-09	373.6092	-0.2266803	2501506.
678.000	4.95E-07	-34.1393	4.0906	-9.8067E-09	373.5884	-0.2065186	2501506.
684.000	4.26E-07	-13.3016	2.9381	-1.2234E-08	373.5730	-0.1776173	2501506.
690.000	3.49E-07	1.1433	1.9694	-1.2856E-08	373.5641	-0.1453108	2501506.
696.000	2.72E-07	10.3569	1.1935	-1.2268E-08	373.5708	-0.1132970	2501506.
702.000	2.01E-07	15.4906	0.6018450	-1.0945E-08	373.5746	-0.0839346	2501506.
708.000	1.40E-07	17.6012	0.1744283	-9.2520E-09	373.5762	-0.0585377	2501506.
714.000	9.03E-08	17.6026	-0.1141247	-7.4507E-09	373.5762	-0.0376467	2501506.
720.000	5.10E-08	16.2468	-0.2908502	-5.7187E-09	373.5752	-0.0212618	2501506.
726.000	2.17E-08	14.1239	-0.3817442	-4.1646E-09	373.5736	-0.0090362	2501506.
732.000	1.02E-09	11.6743	-0.4101313	-2.8446E-09	373.5718	-0.0004262	2501506.
738.000	-1.25E-08	9.2081	-0.3958243	-1.7760E-09	373.5700	0.0051952	2501506.
744.000	-2.03E-08	6.9280	-0.3548607	-9.5036E-10	373.5683	0.0084593	2501506.
750.000	-2.39E-08	4.9517	-0.2996332	-3.4249E-10	373.5669	0.0099499	2501506.
756.000	-2.44E-08	3.3331	-0.2392651	8.1434E-11	373.5657	0.0101728	2501506.
762.000	-2.29E-08	2.0804	-0.1801193	3.5844E-10	373.5648	0.0095425	2501506.
768.000	-2.01E-08	1.1710	-0.1263533	5.2480E-10	373.5641	0.0083795	2501506.

774.000	-1.66E-08	0.5630862	-0.0804641	6.1353E-10	373.5636	0.0069169	2501506.
780.000	-1.27E-08	0.2041541	-0.0437834	6.5279E-10	373.5634	0.0053100	2501506.
786.000	-8.76E-09	0.0363620	-0.0169004	6.6510E-10	373.5632	0.0036509	2501506.
792.000	-4.76E-09	0.0000	0.0000	6.6696E-10	373.5632	0.0019825	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 9:

```
Pile-head deflection             =     1.26407682 in
Computed slope at pile head      =    -0.00925739
Maximum bending moment           =       2819886. lbs-in
Maximum shear force              =    45000.00000 lbs
Depth of maximum bending moment  =      120.00000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             34
Number of zero deflection points =              5
```

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 10

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Specified shear force at pile head = 50000.000 lbs
Specified moment at pile head = 0.000 in-lbs
Specified axial load at pile head = 169000.000 lbs

(Zero moment for this load indicates free-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	1.599	-1.0849E-06	50000.0000	-0.0112599	373.5632	-457.9877	859.2901
6.000	1.531	303174.	47491.0098	-0.0112443	596.9505	-378.3424	1482.3467
12.000	1.464	592696.	45204.0034	-0.0111985	810.2787	-383.9931	1573.7214
18.000	1.397	868332.	42884.1918	-0.0111237	1013.3758	-389.2775	1671.9025
24.000	1.331	1129865.	40533.7915	-0.0110215	1206.0807	-394.1893	1777.5835
30.000	1.265	1377089.	38155.0574	-0.0108932	1388.2429	-398.7220	1891.5424
36.000	1.200	1609817.	35750.2847	-0.0107404	1559.7234	-402.8689	2014.6539
42.000	1.136	1827874.	33321.8102	-0.0105645	1720.3944	-406.6227	2147.9054
48.000	1.073	2031104.	30872.0138	-0.0103670	1870.1396	-409.9761	2292.4148
54.000	1.011	2219363.	28403.3202	-0.0101495	2008.8545	-412.9217	2449.4519
60.000	0.951247	2392527.	25918.2000	-0.0099136	2136.4467	-415.4516	2620.4644
66.000	0.892501	2550486.	23419.1720	-0.0096606	2252.8357	-417.5577	2807.1090
72.000	0.835320	2693148.	20908.8042	-0.0093923	2357.9536	-419.2316	3011.2888
78.000	0.779793	2820439.	18389.7167	-0.0091102	2451.7451	-420.4643	3235.2000
84.000	0.725998	2932301.	15864.5843	-0.0088158	2534.1678	-421.2465	3481.3880
90.000	0.674003	3028693.	13336.1395	-0.0085108	2605.1924	-421.5684	3752.8186
96.000	0.623868	3109594.	10807.1768	-0.0081967	2664.8029	-421.4191	4052.9659
102.000	0.575642	3175002.	8280.5580	-0.0078752	2712.9972	-420.7871	4385.9244
108.000	0.529366	3224932.	5759.2181	-0.0075477	2749.7870	-419.6595	4756.5525
114.000	0.485070	3259419.	3246.1740	-0.0072159	2775.1983	-418.0219	5170.6581
120.000	0.442775	3278520.	744.5349	-0.0068813	2789.2721	-415.8578	5635.2432
126.000	0.402494	3282309.	-1416.6202	-0.0065456	2792.0642	-304.5272	4539.6046
132.000	0.364228	3274795.	-2953.8915	-0.0062101	2786.5275	-207.8966	3424.7236
138.000	0.327973	3259456.	-4189.8914	-0.0058758	2775.2257	-204.1034	3733.9111
144.000	0.293719	3236432.	-5402.0856	-0.0055434	2758.2607	-199.9614	4084.7533
150.000	0.261452	3205873.	-6588.3404	-0.0052137	2735.7442	-195.4569	4485.4947
156.000	0.231154	3167945.	-7746.4318	-0.0048876	2707.7978	-190.5736	4946.6696
162.000	0.202801	3122828.	-8874.0261	-0.0045657	2674.5541	-185.2912	5481.9655
168.000	0.176365	3070716.	-9968.6533	-0.0042488	2636.1566	-179.5845	6109.5178
174.000	0.151815	3011821.	-11027.6714	-0.0039376	2592.7607	-173.4215	6853.9119

180.000	0.129115	2946370.	-12048.2169	-0.0036327	2544.5343	-166.7603	7749.4035
186.000	0.108223	2874609.	-13255.8692	-0.0033348	2491.6592	-235.7904	13072.4528
192.000	0.089097	2794062.	-14878.4488	-0.0030448	2432.3098	-305.0694	20544.1451
198.000	0.071686	2702243.	-16674.1392	-0.0027635	2364.6545	-293.4940	24564.9852
204.000	0.055934	2599577.	-18395.0128	-0.0024922	2289.0074	-280.1305	30049.1931
210.000	0.041779	2486557.	-20028.6309	-0.0022320	2205.7308	-264.4089	37972.4901
216.000	0.029150	2363760.	-21557.7496	-0.0019838	2115.2505	-245.2974	50489.2359
222.000	0.017973	2231887.	-22955.4127	-0.0017487	2018.0827	-220.5903	73639.3237
228.000	0.008167	2091841.	-24168.4565	-0.0015274	1914.8929	-183.7576	135007.
234.000	-0.000356	1944963.	-24439.5016	-0.0013209	1806.6688	93.4093	1575672.
240.000	-0.007684	1801246.	-23402.8663	-0.0011292	1700.7737	252.1358	196886.
246.000	-0.013906	1666419.	-22200.1079	-0.0009517	1601.4291	148.7836	64196.6850
252.000	-0.019105	1536775.	-21442.4612	-0.0007878	1505.9037	103.7653	32588.7041
258.000	-0.023360	1410707.	-20798.2880	-0.0006370	1413.0132	110.9591	28500.1388
264.000	-0.026749	1288487.	-20117.1566	-0.0004989	1322.9581	116.0847	26038.9868
270.000	-0.029346	1170313.	-19409.7206	-0.0003731	1235.8838	119.7273	24478.7089
276.000	-0.031226	1056327.	-18683.8480	-0.0002591	1151.8958	122.2302	23486.4875
282.000	-0.032456	946632.	-17945.7113	-0.0001567	1071.0694	123.8153	22889.0129
288.000	-0.033106	841296.	-17200.3584	-6.5175E-05	993.4548	124.6356	22588.7339
294.000	-0.033238	740360.	-16452.0453	1.5756E-05	919.0821	124.8021	22528.5501
300.000	-0.032917	643840.	-15704.4453	8.6584E-05	847.9631	124.3980	22675.1640
306.000	-0.032199	551731.	-14960.7876	0.0001478	780.0948	123.4879	23010.6246
312.000	-0.031143	464011.	-14223.9547	0.0001997	715.4598	122.1230	23527.8648
318.000	-0.029803	380639.	-13496.5517	0.0002430	654.0288	120.3446	24228.3828
324.000	-0.028228	301559.	-12780.9575	0.0002779	595.7609	118.1868	25121.1995
330.000	-0.026468	226704.	-12079.3632	0.0003049	540.6050	115.6780	26222.6762
336.000	-0.024569	155989.	-11393.8013	0.0003245	488.5002	112.8427	27557.0066
342.000	-0.022575	89319.8944	-10726.1664	0.0003370	439.3767	109.7023	29157.3227
348.000	-0.020525	26591.1589	-10078.2304	0.0003430	393.1564	106.2764	31067.4298
354.000	-0.018459	-32314.3850	-9451.6493	0.0003427	397.3734	102.5840	33344.2175
360.000	-0.016413	-87523.5532	-8847.9643	0.0003365	438.0531	98.6444	36060.7657
366.000	-0.014421	-139172.	-7561.8580	0.0003249	476.1095	330.0577	137327.
372.000	-0.012514	-178925.	-5684.2868	0.0003087	505.4002	295.7993	141827.
378.000	-0.010717	-208010.	-4012.8091	0.0002889	526.8309	261.3600	146327.
384.000	-0.009048	-227664.	-2546.4219	0.0002666	541.3129	227.4358	150827.
390.000	-0.007518	-239107.	-1280.2349	0.0002427	549.7446	194.6266	155327.
396.000	-0.006135	-243519.	-206.0532	0.0002180	552.9953	163.4340	159827.
402.000	-0.004902	-242022.	687.0370	0.0001931	551.8922	134.2627	164327.
408.000	-0.003818	-235667.	1412.0945	0.0001687	547.2092	107.4231	168827.
414.000	-0.002878	-225419.	1983.7748	0.0001451	539.6586	83.1370	173327.
420.000	-0.002077	-212156.	2417.8158	0.0001227	529.8856	61.5433	177827.
426.000	-0.001405	-196654.	2730.5643	0.0001018	518.4638	42.7062	182327.
432.000	-0.000855	-179595.	2938.5493	8.2543E-05	505.8942	26.6222	186827.
438.000	-0.000415	-161559.	3058.1027	6.5086E-05	492.6046	13.2290	191327.
444.000	-7.39E-05	-143030.	3105.0299	4.9501E-05	478.9518	2.4134	195827.
450.000	0.000179	-124399.	3094.3259	3.5817E-05	465.2241	-5.9814	200327.
456.000	0.000356	-105971.	3039.9373	2.4029E-05	451.6455	-12.1482	204827.
462.000	0.000467	-87968.5708	2954.5628	1.4106E-05	438.3810	-16.3100	209327.
468.000	0.000525	-70544.5118	2849.4903	5.9946E-06	425.5425	-18.7142	213827.
474.000	0.000539	-53786.8448	2734.4612	-3.6727E-07	413.1949	-19.6288	218327.
480.000	0.000521	-37730.2322	2617.5602	-5.0501E-06	401.3640	-19.3382	222827.
486.000	0.000479	-22365.8811	2270.7839	-8.1251E-06	390.0431	-96.2538	1206107.
492.000	0.000423	-10464.3471	1726.8011	-9.8050E-06	381.2737	-85.0738	1206107.
498.000	0.000361	-1624.3828	1253.7736	-1.0424E-05	374.7601	-72.6021	1206107.
504.000	0.000298	4602.0750	856.1776	-1.0271E-05	376.9542	-59.9299	1206107.
510.000	0.000238	8670.5785	532.9106	-9.5921E-06	379.9520	-47.8258	1206107.
516.000	0.000183	11016.4548	279.0578	-8.5847E-06	381.6805	-36.7918	1206107.
522.000	0.000135	12036.6822	87.3294	-7.4051E-06	382.4322	-27.1176	1206107.
528.000	9.42E-05	12079.4251	-50.8110	-6.1711E-06	382.4637	-18.9292	1206107.
534.000	6.08E-05	11439.4649	-144.2934	-4.9677E-06	381.9921	-12.2316	1206107.
540.000	3.46E-05	10357.9790	-201.8265	-3.8523E-06	381.1953	-6.9461	1206107.
546.000	1.46E-05	9025.3599	-232.7938	-2.8605E-06	380.2134	-3.3764	1385601.
552.000	2.28E-07	7570.2549	-243.1028	-2.0113E-06	379.1412	-0.0599793	1575672.
558.000	-9.52E-06	6112.2050	-235.7862	-1.3112E-06	378.0669	2.4989	1575672.
564.000	-1.55E-05	4743.4800	-216.0732	-7.5575E-07	377.0584	4.0721	1575672.
570.000	-1.86E-05	3520.8591	-189.2154	-3.3287E-07	376.1575	4.8805	1575672.
576.000	-1.95E-05	2473.5703	-159.2106	-2.6144E-08	375.3858	5.1211	1575672.
582.000	-1.89E-05	1610.3848	-128.9587	1.8283E-07	374.7498	4.9629	1575672.
588.000	-1.73E-05	925.6956	-100.4352	3.1259E-07	374.2453	4.5450	1575672.
594.000	-1.51E-05	404.5291	-74.8669	3.8066E-07	373.8613	3.9778	1575672.

600.000	-1.27E-05	26.5206	-52.8975	4.0272E-07	373.5828	3.3454	1575672.
606.000	-1.03E-05	-231.0572	-34.7353	3.9225E-07	373.7335	2.7087	1575672.
612.000	-8.03E-06	-391.0984	-20.2815	3.6042E-07	373.8514	2.1093	1575672.
618.000	-5.99E-06	-475.1658	-9.2350	3.1609E-07	373.9133	1.5729	1575672.
624.000	-4.24E-06	-502.5599	-1.1769	2.6606E-07	373.9335	1.1131	1575672.
630.000	-2.80E-06	-489.8286	4.3658	2.1528E-07	373.9241	0.7344405	1575672.
636.000	-1.66E-06	-450.6065	7.8733	1.6716E-07	373.8952	0.4347193	1575672.
642.000	-7.91E-07	-395.6878	9.8004	1.2386E-07	373.8548	0.2076585	1575672.
648.000	-1.69E-07	-333.2524	10.5566	8.6558E-08	373.8088	0.0444024	1575672.
654.000	2.48E-07	-269.1839	10.4945	5.5733E-08	373.7616	-0.0651167	1575672.
660.000	5.00E-07	-207.4316	9.9054	3.1345E-08	373.7161	-0.1312298	1575672.
666.000	6.24E-07	-150.3821	8.8804	1.3036E-08	373.6740	-0.2104575	2023324.
672.000	6.56E-07	-100.8935	7.4283	1.7841E-10	373.6376	-0.2735565	2501506.
678.000	6.26E-07	-61.2424	5.8244	-8.1179E-09	373.6083	-0.2610885	2501506.
684.000	5.59E-07	-30.9842	4.3423	-1.2837E-08	373.5860	-0.2329427	2501506.
690.000	4.72E-07	-9.1086	3.0529	-1.4888E-08	373.5699	-0.1968649	2501506.
696.000	3.80E-07	5.6807	1.9869	-1.5064E-08	373.5674	-0.1584554	2501506.
702.000	2.91E-07	14.7651	1.1471	-1.4018E-08	373.5741	-0.1215002	2501506.
708.000	2.12E-07	19.4739	0.5175862	-1.2266E-08	373.5776	-0.0883247	2501506.
714.000	1.44E-07	21.0010	0.0722085	-1.0195E-08	373.5787	-0.0601345	2501506.
720.000	8.95E-08	20.3610	-0.2201567	-8.0783E-09	373.5782	-0.0373205	2501506.
726.000	4.73E-08	18.3755	-0.3912752	-6.0962E-09	373.5768	-0.0197189	2501506.
732.000	1.64E-08	15.6781	-0.4708961	-4.3537E-09	373.5748	-0.0068214	2501506.
738.000	-4.95E-09	12.7335	-0.4851726	-2.8999E-09	373.5726	0.0020626	2501506.
744.000	-1.84E-08	9.8619	-0.4559243	-1.7437E-09	373.5705	0.0076868	2501506.
750.000	-2.59E-08	7.2660	-0.4005046	-8.6730E-10	373.5686	0.0107864	2501506.
756.000	-2.88E-08	5.0576	-0.3320675	-2.3672E-10	373.5669	0.0120259	2501506.
762.000	-2.87E-08	3.2817	-0.2600775	1.8999E-10	373.5656	0.0119707	2501506.
768.000	-2.66E-08	1.9363	-0.1909389	4.5698E-10	373.5646	0.0110754	2501506.
774.000	-2.32E-08	0.9894599	-0.1286593	6.0669E-10	373.5639	0.0096844	2501506.
780.000	-1.93E-08	0.3911575	-0.0754855	6.7734E-10	373.5635	0.0080402	2501506.
786.000	-1.51E-08	0.0822600	-0.0324779	7.0156E-10	373.5633	0.0062957	2501506.
792.000	-1.09E-08	0.0000	0.0000	7.0577E-10	373.5632	0.0045302	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 10:

```
Pile-head deflection             =     1.59895139 in
Computed slope at pile head      =    -0.01125986
Maximum bending moment           =       3282309. lbs-in
Maximum shear force              =    50000.00000 lbs
Depth of maximum bending moment  =      126.00000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             31
Number of zero deflection points =              5
```

Summary of Pile Response(s)

Definition of Symbols for Pile-Head Loading Conditions:

```
Type 1 = Shear and Moment,          y = pile-head displacment in
Type 2 = Shear and Slope,           M = Pile-head Moment lbs-in
Type 3 = Shear and Rot. Stiffness,  V = Pile-head Shear Force lbs
Type 4 = Deflection and Moment,     S = Pile-head Slope, radians
Type 5 = Deflection and Slope,      R = Rot. Stiffness of Pile-head in-lbs/rad
```

Load Type	Pile-Head Condition 1	Pile-Head Condition 2	Axial Load lbs	Pile-Head Deflection in	Maximum Moment in-lbs	Maximum Shear lbs

```
  1  V=  5000.000 M=     0.000     169000.   0.0088712     123160.   5000.0000
  1  V=    10000. M=     0.000     169000.   0.0410601     335164.  10000.0000
  1  V=    15000. M=     0.000     169000.   0.1002491     600058.  15000.0000
  1  V=    20000. M=     0.000     169000.   0.1936897     899508.  20000.0000
  1  V=    25000. M=     0.000     169000.   0.3258323    1228363.  25000.0000
  1  V=    30000. M=     0.000     169000.   0.4984663    1585899.  30000.0000
  1  V=    35000. M=     0.000     169000.   0.7124793    1971152.  35000.0000
  1  V=    40000. M=     0.000     169000.   0.9681857    2382541.  40000.0000
  1  V=    45000. M=     0.000     169000.      1.2641    2819886.  45000.0000
  1  V=    50000. M=     0.000     169000.      1.5990    3282309.  50000.0000


-------------------------------------------------------------------------------
                      Pile-head Deflection vs. Pile Length
-------------------------------------------------------------------------------

Boundary Condition Type 1, Shear and Moment

Shear      =           5000. lbs
Moment     =              0. in-lbs
Axial Load =         169000. lbs


   Pile       Pile Head       Maximum      Maximum
  Length      Deflection      Moment        Shear
    in           in           in-lbs         lbs
-----------  ------------  ------------  ------------
   792.000    0.00887118  123160.06304    5000.00000
   752.400    0.00886109  123751.15291    5000.00000
   712.800    0.00888725  123534.20909    5000.00000
   673.200    0.00891214  123907.44963    5000.00000
   633.600    0.00891486  123980.78097    5000.00000
   594.000    0.00894174  124037.89693    5000.00000
   554.400    0.00893920  124334.98417    5000.00000
   514.800    0.00895721  124466.43706    5000.00000
   475.200    0.00898608  124521.79432    5000.00000
   435.600    0.00898729  124639.92546    5000.00000


This analysis ended normally.
```

```
================================================================================

                LPILE Plus for Windows, Version 5.0 (5.0.41)

               Analysis of Individual Piles and Drilled Shafts
              Subjected to Lateral Loading Using the p-y Method

                       (c) 1985-2009 by Ensoft, Inc.
                            All Rights Reserved

================================================================================


This program is licensed to:

Madhu Thummaluru
URS Corporation

Path to file locations:      X:\101-Aux-VTA\440_geotech\Analysis\Pile\Lateral\Matadero Creek\
Name of input data file:     Bent_fixed_24 inch CISS.lpd
Name of output file:         Bent_fixed_24 inch CISS.lpo
Name of plot output file:    Bent_fixed_24 inch CISS.lpp
Name of runtime file:        Bent_fixed_24 inch CISS.lpr


--------------------------------------------------------------------------------
                           Time and Date of Analysis
--------------------------------------------------------------------------------

               Date:  March 18, 2010     Time:   6:47:31


--------------------------------------------------------------------------------
                                 Problem Title
--------------------------------------------------------------------------------

101 Auxillary_Matadero Creek_Bent_Fixed


--------------------------------------------------------------------------------
                                 Program Options
--------------------------------------------------------------------------------

Units Used in Computations - US Customary Units: Inches, Pounds

Basic Program Options:

Analysis Type 1:
- Computation of Lateral Pile Response Using User-specified Constant EI

Computation Options:
- Only internally-generated p-y curves used in analysis
- Analysis does not use p-y multipliers (individual pile or shaft action only)
- Analysis assumes no shear resistance at pile tip
- Analysis includes automatic computation of pile-top deflection vs.
  pile embedment length
- No computation of foundation stiffness matrix elements
- Output pile response for full length of pile
- Analysis assumes no soil movements acting on pile
- No additional p-y curves to be computed at user-specified depths

Solution Control Parameters:
- Number of pile increments            =          118
- Maximum number of iterations allowed =          100
- Deflection tolerance for convergence =   1.0000E-05 in
- Maximum allowable deflection         =   1.0000E+02 in

Printing Options:
- Values of pile-head deflection, bending moment, shear force, and
  soil reaction are printed for full length of pile.
```

- Printing Increment (spacing of output points) = 1

Pile Structural Properties and Geometry

Pile Length = 708.00 in

Depth of ground surface below top of pile = -24.00 in

Slope angle of ground surface = 0.00 deg.

Structural properties of pile defined using 2 points

Point	Depth X in	Pile Diameter in	Moment of Inertia in**4	Pile Area Sq.in	Modulus of Elasticity lbs/Sq.in
1	0.0000	24.00000000	16286.0000	452.4000	3600000.
2	552.0000	24.00000000	16286.0000	452.4000	3600000.

Soil and Rock Layering Information

The soil profile is modelled using 9 layers

Layer 1 is stiff clay without free water
Distance from top of pile to top of layer = -24.000 in
Distance from top of pile to bottom of layer = 48.000 in

Layer 2 is soft clay, p-y criteria by Matlock, 1970
Distance from top of pile to top of layer = 48.000 in
Distance from top of pile to bottom of layer = 108.000 in

Layer 3 is stiff clay without free water
Distance from top of pile to top of layer = 108.000 in
Distance from top of pile to bottom of layer = 168.000 in

Layer 4 is soft clay, p-y criteria by Matlock, 1970
Distance from top of pile to top of layer = 168.000 in
Distance from top of pile to bottom of layer = 288.000 in

Layer 5 is sand, p-y criteria by Reese et al., 1974
Distance from top of pile to top of layer = 288.000 in
Distance from top of pile to bottom of layer = 408.000 in
p-y subgrade modulus k for top of soil layer = 125.000 lbs/in**3
p-y subgrade modulus k for bottom of layer = 125.000 lbs/in**3

Layer 6 is stiff clay without free water
Distance from top of pile to top of layer = 408.000 in
Distance from top of pile to bottom of layer = 468.000 in

Layer 7 is stiff clay without free water
Distance from top of pile to top of layer = 468.000 in
Distance from top of pile to bottom of layer = 588.000 in

Layer 8 is stiff clay without free water
Distance from top of pile to top of layer = 588.000 in
Distance from top of pile to bottom of layer = 768.000 in

Layer 9 is stiff clay without free water
Distance from top of pile to top of layer = 768.000 in
Distance from top of pile to bottom of layer = 966.000 in

(Depth of lowest layer extends 258.00 in below pile tip)

Effective Unit Weight of Soil vs. Depth

Effective unit weight of soil with depth defined using 18 points

Point No.	Depth X in	Eff. Unit Weight lbs/in**3
1	-24.00	0.03620
2	48.00	0.03620
3	48.00	0.03620
4	108.00	0.03620
5	108.00	0.03330
6	168.00	0.03330
7	168.00	0.03330
8	288.00	0.03330
9	288.00	0.04200
10	408.00	0.04200
11	408.00	0.03040
12	468.00	0.03040
13	468.00	0.03620
14	588.00	0.03620
15	588.00	0.03330
16	768.00	0.03330
17	768.00	0.03330
18	966.00	0.03330

Shear Strength of Soils

Shear strength parameters with depth defined using 18 points

Point No.	Depth X in	Cohesion c lbs/in**2	Angle of Friction Deg.	E50 or k_rm	RQD %
1	-24.000	6.94000	0.00	0.01000	0.0
2	48.000	6.94000	0.00	0.01000	0.0
3	48.000	3.47000	0.00	0.01500	0.0
4	108.000	3.47000	0.00	0.01500	0.0
5	108.000	6.94000	0.00	0.01000	0.0
6	168.000	6.94000	0.00	0.01000	0.0
7	168.000	3.47000	0.00	0.01500	0.0
8	288.000	3.47000	0.00	0.01500	0.0
9	288.000	0.00000	38.00	------	------
10	408.000	0.00000	38.00	------	------
11	408.000	5.56000	0.00	0.01200	0.0
12	468.000	5.56000	0.00	0.01200	0.0
13	468.000	6.94000	0.00	0.01000	0.0
14	588.000	6.94000	0.00	0.01000	0.0
15	588.000	10.42000	0.00	0.00800	0.0
16	768.000	10.42000	0.00	0.00800	0.0
17	768.000	8.33000	0.00	0.00900	0.0
18	966.000	8.33000	0.00	0.00900	0.0

Notes:

(1) Cohesion = uniaxial compressive strength for rock materials.
(2) Values of E50 are reported for clay strata.
(3) Default values will be generated for E50 when input values are 0.
(4) RQD and k_rm are reported only for weak rock strata.

```
                                Loading Type
--------------------------------------------------------------------------------

Static loading criteria was used for computation of p-y curves.



--------------------------------------------------------------------------------
              Pile-head Loading and Pile-head Fixity Conditions
--------------------------------------------------------------------------------

Number of loads specified = 10

Load Case Number  1

Pile-head boundary conditions are Shear and Slope (BC Type 2)
Shear force at pile head    =        5000.000 lbs
Slope at pile head          =           0.000 in/in
Axial load at pile head     =      241000.000 lbs

(Zero slope for this load indicates fixed-head condition)

Load Case Number  2

Pile-head boundary conditions are Shear and Slope (BC Type 2)
Shear force at pile head    =       10000.000 lbs
Slope at pile head          =           0.000 in/in
Axial load at pile head     =      241000.000 lbs

(Zero slope for this load indicates fixed-head condition)

Load Case Number  3

Pile-head boundary conditions are Shear and Slope (BC Type 2)
Shear force at pile head    =       15000.000 lbs
Slope at pile head          =           0.000 in/in
Axial load at pile head     =      241000.000 lbs

(Zero slope for this load indicates fixed-head condition)

Load Case Number  4

Pile-head boundary conditions are Shear and Slope (BC Type 2)
Shear force at pile head    =       20000.000 lbs
Slope at pile head          =           0.000 in/in
Axial load at pile head     =      241000.000 lbs

(Zero slope for this load indicates fixed-head condition)

Load Case Number  5

Pile-head boundary conditions are Shear and Slope (BC Type 2)
Shear force at pile head    =       25000.000 lbs
Slope at pile head          =           0.000 in/in
Axial load at pile head     =      241000.000 lbs

(Zero slope for this load indicates fixed-head condition)

Load Case Number  6

Pile-head boundary conditions are Shear and Slope (BC Type 2)
Shear force at pile head    =       30000.000 lbs
Slope at pile head          =           0.000 in/in
Axial load at pile head     =      241000.000 lbs

(Zero slope for this load indicates fixed-head condition)

Load Case Number  7

Pile-head boundary conditions are Shear and Slope (BC Type 2)
```

```
Shear force at pile head    =       35000.000 lbs
Slope at pile head          =           0.000 in/in
Axial load at pile head     =      241000.000 lbs

(Zero slope for this load indicates fixed-head condition)

Load Case Number  8

Pile-head boundary conditions are Shear and Slope (BC Type 2)
Shear force at pile head    =       40000.000 lbs
Slope at pile head          =           0.000 in/in
Axial load at pile head     =      241000.000 lbs

(Zero slope for this load indicates fixed-head condition)

Load Case Number  9

Pile-head boundary conditions are Shear and Slope (BC Type 2)
Shear force at pile head    =       45000.000 lbs
Slope at pile head          =           0.000 in/in
Axial load at pile head     =      241000.000 lbs

(Zero slope for this load indicates fixed-head condition)

Load Case Number 10

Pile-head boundary conditions are Shear and Slope (BC Type 2)
Shear force at pile head    =       50000.000 lbs
Slope at pile head          =           0.000 in/in
Axial load at pile head     =      241000.000 lbs

(Zero slope for this load indicates fixed-head condition)



--------------------------------------------------------------------------------
             Computed Values of Load Distribution and Deflection
                 for Lateral Loading for Load Case Number  1
--------------------------------------------------------------------------------

Pile-head boundary conditions are Shear and Slope (BC Type 2)
Specified shear force at pile head  =        5000.000 lbs
Specified slope at pile head        =       0.000E+00 in/in
Specified axial load at pile head   =      241000.000 lbs

(Zero slope for this load indicates fixed-head conditions)
```

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	0.002855	-129988.	5000.0000	-2.5298E-19	628.4937	-79.4352	83482.2774
6.000	0.002815	-101409.	4513.9836	-1.1840E-05	607.4353	-82.5703	176015.
12.000	0.002712	-75786.4216	4010.6856	-2.0907E-05	588.5561	-85.1957	188453.
18.000	0.002564	-53219.9914	3493.0690	-2.7508E-05	571.9285	-87.3432	204409.
24.000	0.002382	-33790.0392	2963.9293	-3.1960E-05	557.6119	-89.0368	224238.
30.000	0.002180	-17560.4102	2425.9305	-3.4588E-05	545.6534	-90.2962	248494.
36.000	0.001967	-4578.8451	1881.6289	-3.5721E-05	536.0882	-91.1377	277954.
42.000	0.001752	5122.4414	1333.4962	-3.5693E-05	536.4888	-91.5732	313679.
48.000	0.001539	11526.3332	939.4356	-3.4841E-05	541.2074	-39.7803	155088.
54.000	0.001334	16496.4286	742.4567	-3.3407E-05	544.8695	-25.8793	116442.
60.000	0.001138	20532.4273	588.6231	-3.1512E-05	547.8433	-25.3985	133897.
66.000	0.000955	23651.0403	438.1424	-2.9252E-05	550.1412	-24.7617	155513.
72.000	0.000787	25874.7314	291.9574	-2.6717E-05	551.7797	-23.9666	182694.
78.000	0.000635	27231.7962	151.0277	-2.4000E-05	552.7796	-23.0100	217505.
84.000	0.000499	27756.4722	16.3375	-2.1186E-05	553.1662	-21.8868	263113.
90.000	0.000381	27489.1175	-102.0385	-1.8360E-05	552.9692	-17.5719	277081.
96.000	0.000279	26585.1062	-194.4817	-1.5593E-05	552.3031	-13.2425	285000.
102.000	0.000193	25200.4314	-262.5336	-1.2943E-05	551.2828	-9.4415	292918.
108.000	0.000123	23472.1336	-341.4698	-1.0452E-05	550.0094	-16.8706	819790.

114.000	6.80E-05	21133.0224	-430.9327	-8.1700E-06	548.2858	-12.9504	1143242.
120.000	2.54E-05	18324.5682	-484.6659	-6.1510E-06	546.2165	-4.9606	1170173.
126.000	-5.84E-06	15334.8208	-496.0492	-4.4287E-06	544.0136	1.1661	1197105.
132.000	-2.77E-05	12384.7850	-475.5926	-3.0103E-06	541.8399	5.6528	1224035.
138.000	-4.20E-05	9636.4159	-432.3839	-1.8835E-06	539.8148	8.7501	1250965.
144.000	-5.03E-05	7201.6258	-373.9875	-1.0219E-06	538.0208	10.7153	1277895.
150.000	-5.42E-05	5151.5212	-306.4604	-3.8982E-07	536.5102	11.7937	1304824.
156.000	-5.50E-05	3525.2278	-234.4637	5.4158E-08	535.3119	12.2052	1331754.
162.000	-5.36E-05	2337.8002	-161.4481	3.5416E-07	534.4370	12.1333	1358682.
168.000	-5.07E-05	1586.8269	-110.8773	5.5498E-07	533.8836	4.7236	558577.
174.000	-4.69E-05	1005.6673	-87.7940	6.8763E-07	533.4554	2.9709	379894.
180.000	-4.25E-05	531.3105	-70.8111	7.6628E-07	533.1059	2.6901	379894.
186.000	-3.77E-05	153.7186	-55.5748	8.0133E-07	532.8277	2.3887	379894.
192.000	-3.29E-05	-137.9042	-42.1650	8.0214E-07	532.8160	2.0813	379894.
198.000	-2.81E-05	-354.5813	-30.5836	7.7694E-07	532.9757	1.7792	379894.
204.000	-2.35E-05	-507.1545	-20.7732	7.3285E-07	533.0881	1.4909	379894.
210.000	-1.93E-05	-605.9786	-12.6331	6.7589E-07	533.1609	1.2224	379894.
216.000	-1.54E-05	-660.7066	-6.0337	6.1107E-07	533.2012	0.9774121	379894.
222.000	-1.20E-05	-680.1501	-0.8271197	5.4246E-07	533.2156	0.7581116	379894.
228.000	-8.93E-06	-672.2009	3.1430	4.7327E-07	533.2097	0.5652536	379894.
234.000	-6.29E-06	-643.8031	6.0343	4.0593E-07	533.1888	0.3985290	379894.
240.000	-4.06E-06	-600.9629	8.0004	3.4224E-07	533.1572	0.2568338	379894.
246.000	-2.19E-06	-548.7879	9.1864	2.8340E-07	533.1188	0.1385025	379894.
252.000	-6.56E-07	-491.5455	9.7264	2.3017E-07	533.0766	0.0415066	379894.
258.000	5.75E-07	-432.7361	9.7418	1.8288E-07	533.0333	-0.0363793	379894.
264.000	1.54E-06	-375.1724	9.3404	1.4154E-07	532.9909	-0.0974415	379894.
270.000	2.27E-06	-321.0610	8.6163	1.0591E-07	532.9510	-0.1439180	379894.
276.000	2.81E-06	-272.0832	7.6508	7.5562E-08	532.9149	-0.1779124	379894.
282.000	3.18E-06	-229.4700	6.5131	4.9898E-08	532.8835	-0.2013290	379894.
288.000	3.41E-06	-194.0706	5.6961	2.8226E-08	532.8574	-0.0709865	124951.
294.000	3.52E-06	-161.1981	5.2554	1.0047E-08	532.8332	-0.0759114	129451.
300.000	3.53E-06	-131.0345	4.7913	-4.9058E-09	532.8110	-0.0787913	133951.
306.000	3.46E-06	-103.6880	4.3155	-1.6916E-08	532.7908	-0.0798307	138451.
312.000	3.33E-06	-79.2000	3.8382	-2.6274E-08	532.7728	-0.0792488	142951.
318.000	3.14E-06	-57.5533	3.3687	-3.3272E-08	532.7568	-0.0772718	147451.
324.000	2.93E-06	-38.6799	2.9145	-3.8196E-08	532.7429	-0.0741269	151951.
330.000	2.69E-06	-22.4693	2.4820	-4.1325E-08	532.7310	-0.0700367	156451.
336.000	2.43E-06	-8.7767	2.0762	-4.2924E-08	532.7209	-0.0652148	160951.
342.000	2.17E-06	2.5695	1.7010	-4.3241E-08	532.7163	-0.0598621	165451.
348.000	1.91E-06	11.7602	1.3589	-4.2508E-08	532.7231	-0.0541637	169951.
354.000	1.66E-06	18.9993	1.0516	-4.0934E-08	532.7284	-0.0482873	174451.
360.000	1.42E-06	24.4973	0.7795506	-3.8709E-08	532.7325	-0.0423817	178951.
366.000	1.20E-06	28.4659	0.5426769	-3.5998E-08	532.7354	-0.0365763	183451.
372.000	9.89E-07	31.1135	0.3400042	-3.2950E-08	532.7373	-0.0309813	187951.
378.000	8.01E-07	32.6412	0.1699957	-2.9688E-08	532.7385	-0.0256882	192451.
384.000	6.33E-07	33.2393	0.0306185	-2.6317E-08	532.7389	-0.0207708	196951.
390.000	4.85E-07	33.0847	-0.0805536	-2.2923E-08	532.7388	-0.0162865	201451.
396.000	3.58E-07	32.3390	-0.1662474	-1.9575E-08	532.7382	-0.0122780	205951.
402.000	2.50E-07	31.1464	-0.2294062	-1.6327E-08	532.7374	-0.0087749	210451.
408.000	1.62E-07	29.6333	-0.3532908	-1.3217E-08	532.7362	-0.0325200	1206107.
414.000	9.16E-08	26.9451	-0.5060745	-1.0322E-08	532.7343	-0.0184079	1206107.
420.000	3.79E-08	23.5903	-0.5841635	-7.7359E-09	532.7318	-0.0076217	1206107.
426.000	-1.26E-09	19.9575	-0.6062705	-5.5076E-09	532.7291	0.0002527	1206107.
432.000	-2.82E-08	16.3309	-0.5885207	-3.6508E-09	532.7264	0.0056638	1206107.
438.000	-4.51E-08	12.9058	-0.5443515	-2.1548E-09	532.7239	0.0090592	1206107.
444.000	-5.40E-08	9.8049	-0.4845888	-9.9271E-10	532.7216	0.0108617	1206107.
450.000	-5.70E-08	7.0936	-0.4176422	-1.2803E-10	532.7196	0.0114539	1206107.
456.000	-5.56E-08	4.7936	-0.3497691	4.8022E-10	532.7179	0.0111705	1206107.
462.000	-5.12E-08	2.8950	-0.2853712	8.7364E-10	532.7165	0.0102955	1206107.
468.000	-4.51E-08	1.3666	-0.2232492	1.0917E-09	532.7154	0.0104119	1385601.
474.000	-3.81E-08	0.2128695	-0.1619843	1.1725E-09	532.7146	0.0100098	1575672.
480.000	-3.10E-08	-0.5805714	-0.1075196	1.1537E-09	532.7148	0.0081451	1575672.
486.000	-2.43E-08	-1.0807	-0.0639622	1.0687E-09	532.7152	0.0063740	1575672.
492.000	-1.82E-08	-1.3512	-0.0305084	9.4427E-10	532.7154	0.0047772	1575672.
498.000	-1.29E-08	-1.4495	-0.0059817	8.0096E-10	532.7155	0.0033983	1575672.
504.000	-8.58E-09	-1.4253	0.0109728	6.5386E-10	532.7155	0.0022532	1575672.
510.000	-5.09E-09	-1.3198	0.0217456	5.1339E-10	532.7154	0.0013378	1575672.
516.000	-2.42E-09	-1.1658	0.0276649	3.8621E-10	532.7153	0.0006353	1575672.
522.000	-4.60E-10	-0.9888909	0.0299328	2.7595E-10	532.7151	0.0001207	1575672.
528.000	8.92E-10	-0.8074466	0.0295920	1.8404E-10	532.7150	-0.0002344	1575672.

534.000	1.75E-09	-0.6343197	0.0275112	1.1026E-10	532.7149	-0.0004592	1575672.
540.000	2.22E-09	-0.4776315	0.0243879	5.3368E-11	532.7148	-0.0005818	1575672.
546.000	2.39E-09	-0.3418189	0.0207601	1.1438E-11	532.7147	-0.0006274	1575672.
552.000	2.35E-09	-0.2285428	0.0170242	-1.7747E-11	532.7146	-0.0006179	1575672.
558.000	2.18E-09	-0.1374767	0.0134561	-3.6476E-11	532.7145	-0.0005715	1575672.
564.000	1.92E-09	-0.0669641	0.0102328	-4.6937E-11	532.7145	-0.0005029	1575672.
570.000	1.61E-09	-0.0145473	0.0074533	-5.1108E-11	532.7144	-0.0004236	1575672.
576.000	1.30E-09	0.0226228	0.0051569	-5.0694E-11	532.7144	-0.0003419	1575672.
582.000	1.00E-09	0.0474818	0.0033398	-4.7107E-11	532.7144	-0.0002638	1575672.
588.000	7.37E-10	0.0628362	0.0018031	-4.1462E-11	532.7145	-0.0002484	2023324.
594.000	5.07E-10	0.0692395	0.0004238	-3.4704E-11	532.7145	-0.0002114	2501506.
600.000	3.20E-10	0.0680219	-0.0006108	-2.7681E-11	532.7145	-0.0001335	2501506.
606.000	1.75E-10	0.0619897	-0.0012300	-2.1028E-11	532.7145	-7.2921E-05	2501506.
612.000	6.78E-11	0.0533233	-0.0015335	-1.5128E-11	532.7145	-2.8253E-05	2501506.
618.000	-6.63E-12	0.0436318	-0.0016099	-1.0167E-11	532.7144	2.7637E-06	2501506.
624.000	-5.42E-11	0.0340334	-0.0015338	-6.1927E-12	532.7144	2.2611E-05	2501506.
630.000	-8.09E-11	0.0252439	-0.0013647	-3.1595E-12	532.7144	3.3746E-05	2501506.
636.000	-9.21E-11	0.0176655	-0.0011483	-9.6391E-13	532.7144	3.8418E-05	2501506.
642.000	-9.25E-11	0.0114676	-0.0009173	5.2679E-13	532.7144	3.8568E-05	2501506.
648.000	-8.58E-11	0.0066564	-0.0006942	1.4542E-12	532.7144	3.5783E-05	2501506.
654.000	-7.51E-11	0.0031324	-0.0004930	1.9551E-12	532.7144	3.1293E-05	2501506.
660.000	-6.24E-11	0.0007345	-0.0003211	2.1529E-12	532.7144	2.6001E-05	2501506.
666.000	-4.92E-11	-0.0007275	-0.0001816	2.1533E-12	532.7144	2.0522E-05	2501506.
672.000	-3.65E-11	-0.0014505	-7.4318E-05	2.0418E-12	532.7144	1.5228E-05	2501506.
678.000	-2.47E-11	-0.0016252	2.2869E-06	1.8845E-12	532.7144	1.0306E-05	2501506.
684.000	-1.39E-11	-0.0014285	5.0608E-05	1.7282E-12	532.7144	5.8005E-06	2501506.
690.000	-3.98E-12	-0.0010229	7.2990E-05	1.6028E-12	532.7144	1.6602E-06	2501506.
696.000	5.32E-12	-0.0005573	7.1316E-05	1.5219E-12	532.7144	-2.2182E-06	2501506.
702.000	1.43E-11	-0.0001715	4.6799E-05	1.4846E-12	532.7144	-5.9539E-06	2501506.
708.000	2.31E-11	0.0000	0.0000	1.4758E-12	532.7144	-9.6458E-06	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 1:

```
Pile-head deflection             =     0.00285456 in
Computed slope at pile head      =  -2.529805E-19
Maximum bending moment           =  -129988.46680 lbs-in
Maximum shear force              =     5000.00000 lbs
Depth of maximum bending moment  =        0.00000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             10
Number of zero deflection points =              6
```

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 2

Pile-head boundary conditions are Shear and Slope (BC Type 2)
Specified shear force at pile head = 10000.000 lbs
Specified slope at pile head = 0.000E+00 in/in
Specified axial load at pile head = 241000.000 lbs

(Zero slope for this load indicates fixed-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	0.014042	-363873.	10000.0000	-1.0119E-18	800.8265	-118.1343	25239.0360
6.000	0.013930	-305972.	9276.6509	-3.4275E-05	758.1637	-122.9820	52970.8914
12.000	0.013631	-252454.	8525.5897	-6.2849E-05	718.7298	-127.3717	56067.4250
18.000	0.013176	-203483.	7749.5440	-8.6179E-05	682.6470	-131.3102	59795.3728

24.000	0.012596	-159210.	6951.2125	-0.0001047	650.0251	-134.8003	64208.8874
30.000	0.011919	-119766.	6133.2877	-0.0001190	620.9615	-137.8413	69388.4085
36.000	0.011168	-85266.4601	5298.4749	-0.0001295	595.5412	-140.4296	75443.9142
42.000	0.010365	-55809.7734	4449.5134	-0.0001367	573.8367	-142.5575	82521.9145
48.000	0.009528	-31476.8996	3803.0969	-0.0001412	555.9075	-72.9146	45917.9236
54.000	0.008671	-9764.2941	3439.7159	-0.0001433	539.9090	-48.2124	33361.8662
60.000	0.007808	10214.1105	3150.5865	-0.0001433	540.2405	-48.1641	37011.2328
66.000	0.006951	28457.0976	2862.4531	-0.0001413	553.6824	-47.8804	41326.7008
72.000	0.006112	44972.1783	2576.7546	-0.0001375	565.8512	-47.3524	46481.2207
78.000	0.005301	59775.9179	2294.9877	-0.0001322	576.7591	-46.5699	52710.4987
84.000	0.004526	72894.2942	2018.7126	-0.0001254	586.4251	-45.5218	60343.0468
90.000	0.003796	84363.1003	1749.5626	-0.0001173	594.8756	-44.1949	69848.8834
96.000	0.003118	94228.4062	1489.2556	-0.0001082	602.1447	-42.5741	81921.5808
102.000	0.002498	102547.	1239.6093	-9.8138E-05	608.2741	-40.6413	97622.9185
108.000	0.001941	109388.	838.4144	-8.7293E-05	613.3143	-93.0904	287832.
114.000	0.001450	112861.	196.9784	-7.5921E-05	615.8733	-120.7216	499422.
120.000	0.001029	111971.	-505.5019	-6.4417E-05	615.2178	-113.4385	661154.
126.000	0.000677	106981.	-1159.4577	-5.3213E-05	611.5410	-104.5468	926100.
132.000	0.000391	98211.2366	-1712.3366	-4.2714E-05	605.0793	-79.7462	1224035.
138.000	0.000165	86556.2836	-2054.6363	-3.3259E-05	596.4916	-34.3537	1250965.
144.000	-8.21E-06	73651.7872	-2152.4504	-2.5062E-05	586.9832	1.7491	1277895.
150.000	-0.000136	60799.3580	-2058.4939	-1.8182E-05	577.5132	29.5698	1304824.
156.000	-0.000226	49002.4433	-1819.0315	-1.2564E-05	568.8208	50.2510	1331754.
162.000	-0.000287	39007.3147	-1473.4868	-8.0604E-06	561.4561	64.9305	1358682.
168.000	-0.000323	31343.9123	-1188.4509	-4.4606E-06	555.8095	30.0815	558577.
174.000	-0.000340	24758.8044	-1033.5744	-1.5899E-06	550.9574	21.5440	379894.
180.000	-0.000342	18945.6171	-903.9422	6.4640E-07	546.6741	21.6667	379894.
186.000	-0.000333	13909.6284	-775.7834	2.3276E-06	542.9634	21.0529	379894.
192.000	-0.000314	9629.4853	-652.9299	3.5320E-06	539.8097	19.8983	379894.
198.000	-0.000290	6064.2551	-538.1272	4.3351E-06	537.1827	18.3693	379894.
204.000	-0.000262	3159.4222	-433.2056	4.8070E-06	535.0424	16.6046	379894.
210.000	-0.000232	851.8855	-339.2411	5.0123E-06	533.3421	14.7170	379894.
216.000	-0.000202	-925.9660	-256.7013	5.0085E-06	533.3967	12.7963	379894.
222.000	-0.000172	-2243.0143	-185.5776	4.8463E-06	534.3671	10.9116	379894.
228.000	-0.000144	-3166.9133	-125.5006	4.5695E-06	535.0479	9.1141	379894.
234.000	-0.000118	-3762.2361	-75.8391	4.2150E-06	535.4865	7.4397	379894.
240.000	-9.34E-05	-4089.1717	-35.7850	3.8132E-06	535.7274	5.9116	379894.
246.000	-7.17E-05	-4202.6837	-4.4226	3.3889E-06	535.8111	4.5425	379894.
252.000	-5.27E-05	-4152.0437	19.2152	2.9614E-06	535.7738	3.3368	379894.
258.000	-3.62E-05	-3980.6658	36.1028	2.5453E-06	535.6475	2.2924	379894.
264.000	-2.22E-05	-3726.1707	47.1888	2.1509E-06	535.4600	1.4029	379894.
270.000	-1.04E-05	-3420.6203	53.3721	1.7852E-06	535.2348	0.6581920	379894.
276.000	-7.34E-07	-3090.8689	55.4861	1.4521E-06	534.9919	0.0464816	379894.
282.000	7.03E-06	-2758.9867	54.2903	1.1527E-06	534.7473	-0.4450639	379894.
288.000	1.31E-05	-2442.7185	52.1368	8.8656E-07	534.5143	-0.2727795	124951.
294.000	1.77E-05	-2135.9089	50.1749	6.5228E-07	534.2882	-0.3811893	129451.
300.000	2.09E-05	-1842.5061	47.6298	4.4871E-07	534.0720	-0.4671738	133951.
306.000	2.31E-05	-1565.6489	44.6325	2.7432E-07	533.8680	-0.5319395	138451.
312.000	2.42E-05	-1307.7098	41.3057	1.2729E-07	533.6780	-0.5769908	142951.
318.000	2.46E-05	-1070.3488	37.7625	5.6105E-09	533.5031	-0.6040570	147451.
324.000	2.43E-05	-854.5755	34.1053	-9.2885E-08	533.3441	-0.6150225	151951.
330.000	2.35E-05	-660.8166	30.4246	-1.7043E-07	533.2013	-0.6118632	156451.
336.000	2.22E-05	-488.9870	26.7993	-2.2926E-07	533.0747	-0.5965898	160951.
342.000	2.07E-05	-338.5622	23.2959	-2.7160E-07	532.9639	-0.5711989	165451.
348.000	1.90E-05	-208.6505	19.9694	-2.9960E-07	532.8682	-0.5376312	169951.
354.000	1.71E-05	-98.0626	16.8633	-3.1530E-07	532.7867	-0.4977380	174451.
360.000	1.52E-05	-5.3788	14.0103	-3.2059E-07	532.7184	-0.4532565	178951.
366.000	1.33E-05	70.9885	11.4332	-3.1723E-07	532.7667	-0.4057911	183451.
372.000	1.14E-05	132.7369	9.1454	-3.0681E-07	532.8122	-0.3568034	187951.
378.000	9.59E-06	181.6208	7.1522	-2.9072E-07	532.8482	-0.3076074	192451.
384.000	7.90E-06	219.4038	5.4512	-2.7021E-07	532.8761	-0.2593720	196951.
390.000	6.35E-06	247.8170	4.0337	-2.4630E-07	532.8970	-0.2131269	201451.
396.000	4.95E-06	268.5210	2.8850	-2.1988E-07	532.9123	-0.1697740	205951.
402.000	3.71E-06	283.0734	1.9854	-1.9165E-07	532.9230	-0.1301018	210451.
408.000	2.65E-06	292.9002	-0.0007070	-1.6218E-07	532.9302	-0.5319378	1206107.
414.000	1.76E-06	283.5339	-2.6597	-1.3269E-07	532.9233	-0.3544060	1206107.
420.000	1.05E-06	261.3671	-4.3586	-1.0480E-07	532.9070	-0.2118707	1206107.
426.000	5.05E-07	231.5342	-5.2990	-7.9583E-08	532.8850	-0.1015959	1206107.
432.000	9.90E-08	198.0096	-5.6635	-5.7604E-08	532.8603	-0.0198994	1206107.
438.000	-1.86E-07	163.7393	-5.6111	-3.9094E-08	532.8351	0.0373569	1206107.

444.000	-3.70E-07	130.7897	-5.2758	-2.4023E-08	532.8108	0.0744029	1206107.
450.000	-4.74E-07	100.4992	-4.7667	-1.2188E-08	532.7885	0.0953055	1206107.
456.000	-5.16E-07	73.6248	-4.1694	-3.2785E-09	532.7687	0.1038035	1206107.
462.000	-5.13E-07	50.4765	-3.5483	3.0716E-09	532.7516	0.1032140	1206107.
468.000	-4.80E-07	31.0364	-2.9064	7.2425E-09	532.7373	0.1107397	1385601.
474.000	-4.27E-07	15.5783	-2.2382	9.6277E-09	532.7259	0.1120165	1575672.
480.000	-3.64E-07	4.1505	-1.6153	1.0637E-08	532.7175	0.0955905	1575672.
486.000	-2.99E-07	-3.8366	-1.0931	1.0653E-08	532.7172	0.0784951	1575672.
492.000	-2.36E-07	-8.9974	-0.6715493	9.9965E-09	532.7210	0.0620185	1575672.
498.000	-1.79E-07	-11.9241	-0.3445160	8.9260E-09	532.7232	0.0469926	1575672.
504.000	-1.29E-07	-13.1574	-0.1018694	7.6426E-09	532.7241	0.0338896	1575672.
510.000	-8.72E-08	-13.1687	0.0685237	6.2955E-09	532.7241	0.0229081	1575672.
516.000	-5.35E-08	-12.3533	0.1793986	4.9896E-09	532.7235	0.0140502	1575672.
522.000	-2.74E-08	-11.0303	0.2431014	3.7931E-09	532.7225	0.0071841	1575672.
528.000	-7.98E-09	-9.4471	0.2709442	2.7453E-09	532.7214	0.0020968	1575672.
534.000	5.59E-09	-7.7869	0.2728327	1.8635E-09	532.7201	-0.0014673	1575672.
540.000	1.44E-08	-6.1785	0.2571041	1.1489E-09	532.7190	-0.0037756	1575672.
546.000	1.94E-08	-4.7050	0.2305139	5.9198E-10	532.7179	-0.0050877	1575672.
552.000	2.15E-08	-3.4140	0.1983272	1.7654E-10	532.7169	-0.0056412	1575672.
558.000	2.15E-08	-2.3256	0.1644715	-1.1715E-10	532.7161	-0.0056441	1575672.
564.000	2.01E-08	-1.4400	0.1317233	-3.0983E-10	532.7155	-0.0052720	1575672.
570.000	1.78E-08	-0.7440151	0.1019043	-4.2158E-10	532.7150	-0.0046677	1575672.
576.000	1.50E-08	-0.2159430	0.0760710	-4.7070E-10	532.7146	-0.0039434	1575672.
582.000	1.21E-08	0.1701977	0.0546877	-4.7305E-10	532.7145	-0.0031843	1575672.
588.000	9.34E-09	0.4416770	0.0356861	-4.4174E-10	532.7147	-0.0031495	2023324.
594.000	6.82E-09	0.5997083	0.0177014	-3.8845E-10	532.7149	-0.0028454	2501506.
600.000	4.68E-09	0.6552169	0.0033139	-3.2424E-10	532.7149	-0.0019504	2501506.
606.000	2.93E-09	0.6404129	-0.0062071	-2.5794E-10	532.7149	-0.0012232	2501506.
612.000	1.58E-09	0.5814780	-0.0118566	-1.9542E-10	532.7148	-0.0006600	2501506.
618.000	5.89E-10	0.4986988	-0.0145731	-1.4015E-10	532.7148	-0.0002455	2501506.
624.000	-9.88E-11	0.4070062	-0.0151861	-9.3804E-11	532.7147	4.1205E-05	2501506.
630.000	-5.37E-10	0.3167368	-0.0143912	-5.6771E-11	532.7146	0.0002238	2501506.
636.000	-7.80E-10	0.2344758	-0.0127442	-2.8566E-11	532.7146	0.0003252	2501506.
642.000	-8.79E-10	0.1638885	-0.0106685	-8.1822E-12	532.7145	0.0003667	2501506.
648.000	-8.78E-10	0.1064772	-0.0084700	5.6521E-12	532.7145	0.0003662	2501506.
654.000	-8.12E-10	0.0622321	-0.0063563	1.4285E-11	532.7145	0.0003384	2501506.
660.000	-7.07E-10	0.0301602	-0.0044570	1.9012E-11	532.7144	0.0002947	2501506.
666.000	-5.84E-10	0.0086929	-0.0028431	2.1000E-11	532.7144	0.0002433	2501506.
672.000	-4.55E-10	-0.0040175	-0.0015443	2.1240E-11	532.7144	0.0001896	2501506.
678.000	-3.29E-10	-0.0099005	-0.0005644	2.0527E-11	532.7144	0.0001370	2501506.
684.000	-2.09E-10	-0.0108495	0.0001075	1.9466E-11	532.7144	8.6935E-05	2501506.
690.000	-9.51E-11	-0.0086671	0.0004872	1.8467E-11	532.7144	3.9631E-05	2501506.
696.000	1.31E-11	-0.0050568	0.0005897	1.7765E-11	532.7144	-5.4554E-06	2501506.
702.000	1.18E-10	-0.0016421	0.0004256	1.7422E-11	532.7144	-4.9247E-05	2501506.
708.000	2.22E-10	0.0000	0.0000	1.7338E-11	532.7144	-9.2618E-05	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 2:

```
Pile-head deflection             =     0.01404186 in
Computed slope at pile head      =  -1.011922E-18
Maximum bending moment           =  -363872.78738 lbs-in
Maximum shear force              =    10000.00000 lbs
Depth of maximum bending moment  =        0.00000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             15
Number of zero deflection points =              6
```

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 3

Pile-head boundary conditions are Shear and Slope (BC Type 2)
Specified shear force at pile head = 15000.000 lbs
Specified slope at pile head = 0.000E+00 in/in
Specified axial load at pile head = 241000.000 lbs

(Zero slope for this load indicates fixed-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	0.033482	-656429.	15000.0000	2.3130E-18	1016.3902	-146.7680	13150.6104
6.000	0.033280	-569022.	14101.1012	-6.2705E-05	951.9864	-152.8650	27559.7094
12.000	0.032729	-487034.	13166.9441	-0.0001167	891.5754	-158.5207	29060.4380
18.000	0.031879	-410681.	12200.1841	-0.0001627	835.3162	-163.7326	30816.2012
24.000	0.030777	-340161.	11203.4995	-0.0002011	783.3553	-168.4956	32848.2837
30.000	0.029466	-275657.	10179.6072	-0.0002326	735.8269	-172.8018	35186.6395
36.000	0.027986	-217333.	9131.2777	-0.0002578	692.8521	-176.6413	37870.9501
42.000	0.026372	-165336.	8061.3512	-0.0002774	654.5391	-180.0009	40952.6395
48.000	0.024657	-119795.	7221.0963	-0.0002920	620.9829	-100.0841	24354.5083
54.000	0.022868	-77838.8369	6721.0584	-0.0003021	590.0683	-66.5952	17472.9326
60.000	0.021031	-38268.5816	6320.2818	-0.0003081	560.9118	-66.9970	19113.3992
66.000	0.019171	-1104.5553	5917.9086	-0.0003101	533.5283	-67.1274	21008.6784
72.000	0.017311	33643.0481	5515.5990	-0.0003084	557.5036	-66.9758	23214.4192
78.000	0.015470	65974.5448	5115.0790	-0.0003033	581.3264	-66.5309	25803.0753
84.000	0.013671	95901.1669	4718.1446	-0.0002950	603.3772	-65.7806	28870.4373
90.000	0.011930	123445.	4326.6675	-0.0002838	623.6727	-64.7118	32545.3726
96.000	0.010265	148642.	3942.6013	-0.0002699	642.2381	-63.3102	37004.7025
102.000	0.008692	171537.	3567.9897	-0.0002535	659.1080	-61.5603	42496.5357
108.000	0.007223	192191.	2995.5979	-0.0002349	674.3263	-129.2370	107351.
114.000	0.005873	208164.	2094.4348	-0.0002144	686.0955	-171.1507	174853.
120.000	0.004650	217944.	1085.1848	-0.0001926	693.3020	-165.2659	213225.
126.000	0.003562	221743.	114.8469	-0.0001701	696.1010	-158.1800	266462.
132.000	0.002609	219814.	-808.6543	-0.0001475	694.6800	-149.6537	344127.
138.000	0.001792	212466.	-1675.3904	-0.0001254	689.2653	-139.2584	466336.
144.000	0.001105	200072.	-2471.4782	-0.0001043	680.1334	-126.1042	684945.
150.000	0.000540	183109.	-3173.1731	-8.4669E-05	667.6348	-107.7940	1196785.
156.000	8.86E-05	162239.	-3555.5642	-6.6998E-05	652.2568	-19.6697	1331754.
162.000	-0.000264	140636.	-3435.5243	-5.1501E-05	636.3394	59.6829	1358682.
168.000	-0.000529	121162.	-3118.1047	-3.8105E-05	621.9898	46.1236	522756.
174.000	-0.000721	103329.	-2875.3765	-2.6618E-05	608.8505	34.7858	289552.
180.000	-0.000849	86734.0987	-2660.7918	-1.6893E-05	596.6226	36.7424	259724.
186.000	-0.000924	71448.7209	-2437.1760	-8.7985E-06	585.3599	37.7962	245554.
192.000	-0.000954	57513.4322	-2209.1378	-2.1997E-06	575.0920	38.2166	240259.
198.000	-0.000950	44945.4292	-1980.0077	3.0430E-06	565.8315	38.1601	241030.
204.000	-0.000918	33744.5397	-1752.3416	7.0694E-06	557.5784	37.7286	246627.
210.000	-0.000865	23896.8852	-1528.1757	1.0019E-05	550.3223	36.9934	256574.
216.000	-0.000798	15377.4566	-1309.1720	1.2028E-05	544.0450	36.0079	270857.
222.000	-0.000721	8152.0352	-1096.7083	1.3232E-05	538.7211	34.8134	289809.
228.000	-0.000639	2178.6891	-891.9386	1.3761E-05	534.3197	33.4432	314092.
234.000	-0.000556	-2591.0245	-695.8358	1.3740E-05	534.6236	31.9244	344744.
240.000	-0.000474	-6211.0766	-510.0324	1.3290E-05	537.2909	30.0101	379894.
246.000	-0.000396	-8749.8467	-344.7556	1.2524E-05	539.1616	25.0822	379894.
252.000	-0.000324	-10384.3634	-208.0257	1.1545E-05	540.3659	20.4945	379894.
258.000	-0.000258	-11279.5432	-97.6110	1.0436E-05	541.0255	16.3104	379894.
264.000	-0.000198	-11585.8779	-10.9848	9.2665E-06	541.2512	12.5650	379894.
270.000	-0.000146	-11438.1597	54.5197	8.0884E-06	541.1424	9.2699	379894.
276.000	-0.000101	-10955.0329	101.5879	6.9425E-06	540.7864	6.4195	379894.
282.000	-6.31E-05	-10239.1825	132.8316	5.8580E-06	540.2589	3.9950	379894.
288.000	-3.11E-05	-9377.9953	146.7592	4.8543E-06	539.6244	0.6475033	124951.
294.000	-4.85E-06	-8492.1103	149.0154	3.9399E-06	538.9716	0.1045548	129451.
300.000	1.62E-05	-7601.2046	148.2450	3.1164E-06	538.3152	-0.3613521	133951.
306.000	3.26E-05	-6722.1828	144.9076	2.3835E-06	537.6675	-0.7511081	138451.
312.000	4.48E-05	-5869.2061	139.4531	1.7392E-06	537.0390	-1.0671	142951.
318.000	5.34E-05	-5053.7755	132.3134	1.1803E-06	536.4382	-1.3128	147451.
324.000	5.90E-05	-4284.8586	123.8961	7.0244E-07	535.8716	-1.4929	151951.
330.000	6.19E-05	-3569.0537	114.5790	3.0056E-07	535.3442	-1.6127	156451.
336.000	6.26E-05	-2910.7795	104.7064	-3.1003E-08	534.8592	-1.6781	160951.
342.000	6.15E-05	-2312.4869	94.5863	-2.9827E-07	534.4183	-1.6953	165451.
348.000	5.90E-05	-1774.8817	84.4887	-5.0742E-07	534.0222	-1.6706	169951.

354.000	5.54E-05	-1297.1545	74.6457	-6.6461E-07	533.6702	-1.6104	174451.
360.000	5.10E-05	-877.2114	65.2508	-7.7587E-07	533.3608	-1.5212	178951.
366.000	4.61E-05	-511.9009	56.4607	-8.4695E-07	533.0916	-1.4089	183451.
372.000	4.08E-05	-197.2337	48.3962	-8.8323E-07	532.8597	-1.2793	187951.
378.000	3.55E-05	71.4074	41.1442	-8.8967E-07	532.7670	-1.1380	192451.
384.000	3.02E-05	299.0691	34.7597	-8.7071E-07	532.9348	-0.9901324	196951.
390.000	2.50E-05	491.0417	29.2680	-8.3028E-07	533.0762	-0.8404325	201451.
396.000	2.02E-05	652.6861	24.6665	-7.7176E-07	533.1953	-0.6933832	205951.
402.000	1.58E-05	789.2721	20.9270	-6.9798E-07	533.2960	-0.5531444	210451.
408.000	1.18E-05	905.8282	12.1366	-6.1124E-07	533.3819	-2.3770	1206107.
414.000	8.44E-06	936.6788	-0.0813562	-5.1696E-07	533.4046	-1.6957	1206107.
420.000	5.62E-06	906.3470	-8.5582	-4.2266E-07	533.3822	-1.1300	1206107.
426.000	3.36E-06	835.2026	-13.9764	-3.3355E-07	533.3298	-0.6761202	1206107.
432.000	1.62E-06	739.5943	-16.9809	-2.5297E-07	533.2594	-0.3253733	1206107.
438.000	3.28E-07	632.1631	-18.1548	-1.8277E-07	533.1802	-0.0659142	1206107.
444.000	-5.75E-07	522.2655	-18.0060	-1.2370E-07	533.0992	0.1155170	1206107.
450.000	-1.16E-06	416.4492	-16.9620	-7.5671E-08	533.0213	0.2324851	1206107.
456.000	-1.48E-06	318.9407	-15.3704	-3.8042E-08	532.9494	0.2980510	1206107.
462.000	-1.61E-06	232.1148	-13.5035	-9.8450E-09	532.8854	0.3242500	1206107.
468.000	-1.60E-06	156.9277	-11.4216	1.0062E-08	532.8300	0.3696897	1385601.
474.000	-1.49E-06	95.0261	-9.1369	2.2954E-08	532.7844	0.3918959	1575672.
480.000	-1.33E-06	47.2187	-6.9170	3.0232E-08	532.7492	0.3480665	1575672.
486.000	-1.13E-06	11.9347	-4.9829	3.3259E-08	532.7232	0.2966232	1575672.
492.000	-9.26E-07	-12.6726	-3.3633	3.3221E-08	532.7237	0.2432553	1575672.
498.000	-7.31E-07	-28.5208	-2.0577	3.1114E-08	532.7354	0.1919310	1575672.
504.000	-5.53E-07	-37.4554	-1.0463	2.7738E-08	532.7420	0.1452056	1575672.
510.000	-3.98E-07	-41.1569	-0.2971455	2.3715E-08	532.7447	0.1045199	1575672.
516.000	-2.68E-07	-41.0897	0.2278263	1.9507E-08	532.7447	0.0704707	1575672.
522.000	-1.64E-07	-38.4794	0.5683804	1.5435E-08	532.7428	0.0430473	1575672.
528.000	-8.31E-08	-34.3138	0.7630084	1.1711E-08	532.7397	0.0218287	1575672.
534.000	-2.34E-08	-29.3572	0.8469239	8.4526E-09	532.7360	0.0061432	1575672.
540.000	1.83E-08	-24.1751	0.8509279	5.7135E-09	532.7322	-0.0048085	1575672.
546.000	4.52E-08	-19.1626	0.8009167	3.4959E-09	532.7285	-0.0118619	1575672.
552.000	6.03E-08	-14.5742	0.7178548	1.7697E-09	532.7252	-0.0158254	1575672.
558.000	6.64E-08	-10.5534	0.6180624	4.8391E-10	532.7222	-0.0174387	1575672.
564.000	6.61E-08	-7.1589	0.5136952	-4.2240E-10	532.7197	-0.0173504	1575672.
570.000	6.13E-08	-4.3879	0.4133213	-1.0132E-09	532.7176	-0.0161076	1575672.
576.000	5.39E-08	-2.1961	0.3225266	-1.3501E-09	532.7160	-0.0141573	1575672.
582.000	4.51E-08	-0.5136507	0.2444960	-1.4888E-09	532.7148	-0.0118529	1575672.
588.000	3.60E-08	0.7421642	0.1724728	-1.4771E-09	532.7150	-0.0121549	2023324.
594.000	2.74E-08	1.5603	0.1017257	-1.3593E-09	532.7156	-0.0114275	2501506.
600.000	1.97E-08	1.9668	0.0427622	-1.1788E-09	532.7159	-0.0082270	2501506.
606.000	1.33E-08	2.0768	0.0014912	-9.7189E-10	532.7159	-0.0055300	2501506.
612.000	8.07E-09	1.9875	-0.0251925	-7.6392E-10	532.7159	-0.0033646	2501506.
618.000	4.10E-09	1.7767	-0.0404106	-5.7131E-10	532.7157	-0.0017081	2501506.
624.000	1.21E-09	1.5042	-0.0470538	-4.0343E-10	532.7155	-0.0005064	2501506.
630.000	-7.44E-10	1.2133	-0.0476420	-2.6438E-10	532.7153	0.0003103	2501506.
636.000	-1.96E-09	0.9332945	-0.0442622	-1.5454E-10	532.7151	0.0008163	2501506.
642.000	-2.60E-09	0.6825694	-0.0385629	-7.1857E-11	532.7149	0.0010834	2501506.
648.000	-2.82E-09	0.4707471	-0.0317851	-1.2843E-11	532.7148	0.0011758	2501506.
654.000	-2.75E-09	0.3011848	-0.0248146	2.6656E-11	532.7146	0.0011477	2501506.
660.000	-2.50E-09	0.1728949	-0.0182441	5.0914E-11	532.7145	0.0010425	2501506.
666.000	-2.14E-09	0.0821080	-0.0124378	6.3962E-11	532.7145	0.0008930	2501506.
672.000	-1.73E-09	0.0234561	-0.0075915	6.9363E-11	532.7144	0.0007225	2501506.
678.000	-1.31E-09	-0.0091908	-0.0037863	7.0093E-11	532.7144	0.0005459	2501506.
684.000	-8.92E-10	-0.0221822	-0.0010331	6.8488E-11	532.7144	0.0003718	2501506.
690.000	-4.88E-10	-0.0217862	0.0006921	6.6238E-11	532.7144	0.0002033	2501506.
696.000	-9.69E-11	-0.0140682	0.0014232	6.4404E-11	532.7144	4.0392E-05	2501506.
702.000	2.85E-10	-0.0048940	0.0011876	6.3433E-11	532.7144	-0.0001189	2501506.
708.000	6.64E-10	0.0000	0.0000	6.3183E-11	532.7144	-0.0002770	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 3:

Pile-head deflection = 0.03348163 in
Computed slope at pile head = 2.312965E-18

```
Maximum bending moment           =  -656428.70632 lbs-in
Maximum shear force              =    15000.00000 lbs
Depth of maximum bending moment  =        0.00000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             17
Number of zero deflection points =              6
```

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 4

```
Pile-head boundary conditions are Shear and Slope (BC Type 2)
Specified shear force at pile head  =       20000.000 lbs
Specified slope at pile head        =       0.000E+00 in/in
Specified axial load at pile head   =      241000.000 lbs
```

(Zero slope for this load indicates fixed-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	0.060793	-990229.	20000.0000	1.1565E-18	1262.3438	-170.3519	8406.4537
6.000	0.060489	-873222.	18956.5223	-9.5350E-05	1176.1296	-177.4740	17603.8550
12.000	0.059649	-762475.	17871.6069	-0.0001790	1094.5280	-184.1645	18524.8006
18.000	0.058341	-658245.	16747.8657	-0.0002517	1017.7283	-190.4159	19583.1679
24.000	0.056628	-560772.	15587.9615	-0.0003141	945.9077	-196.2188	20790.2464
30.000	0.054571	-470281.	14394.6192	-0.0003669	879.2309	-201.5619	22161.3254
36.000	0.052226	-386976.	13170.6377	-0.0004107	817.8494	-206.4319	23716.1671
42.000	0.049642	-311045.	11918.9019	-0.0004465	761.9015	-210.8133	25479.8452
48.000	0.046868	-242658.	10914.5696	-0.0004748	711.5117	-123.9641	15869.7272
54.000	0.043945	-178697.	10294.3224	-0.0004964	664.3837	-82.7850	11303.0192
60.000	0.040912	-117690.	9795.0966	-0.0005115	619.4322	-83.6236	12263.9440
66.000	0.037807	-59676.7434	9291.7205	-0.0005206	576.6860	-84.1684	13357.7005
72.000	0.034665	-4684.2611	8785.9905	-0.0005239	536.1659	-84.4082	14609.8940
78.000	0.031520	47270.2174	8279.7715	-0.0005217	567.5445	-84.3314	16052.8888
84.000	0.028404	96181.7705	7775.0002	-0.0005144	603.5839	-83.9257	17728.0639
90.000	0.025348	142058.	7273.6875	-0.0005022	637.3867	-83.1785	19689.0054
96.000	0.022378	184918.	6777.9230	-0.0004854	668.9676	-82.0764	22006.0971
102.000	0.019522	224797.	6289.8778	-0.0004645	698.3512	-80.6054	24773.2388
108.000	0.016805	261740.	5569.3423	-0.0004396	725.5722	-159.5731	56975.1261
114.000	0.014247	292900.	4449.9909	-0.0004112	748.5318	-213.5440	89929.9499
120.000	0.011870	316329.	3182.8619	-0.0003800	765.7950	-208.8323	105559.
126.000	0.009687	332194.	1947.1665	-0.0003468	777.4843	-203.0661	125777.
132.000	0.007708	340698.	749.6133	-0.0003124	783.7509	-196.1182	152663.
138.000	0.005938	342092.	-402.1340	-0.0002775	784.7781	-187.7975	189758.
144.000	0.004378	336675.	-1498.9101	-0.0002427	780.7865	-177.7945	243656.
150.000	0.003025	324807.	-2528.9588	-0.0002089	772.0420	-165.5551	328368.
156.000	0.001871	306932.	-3475.4021	-0.0001766	758.8707	-149.9260	480692.
162.000	0.000906	283613.	-4308.4567	-0.0001464	741.6890	-127.7588	845931.
168.000	0.000115	255654.	-4723.8791	-0.0001188	721.0874	-10.7153	558577.
174.000	-0.000519	227270.	-4662.7688	-9.4052E-05	700.1737	31.0854	359377.
180.000	-0.001014	199972.	-4452.7289	-7.2191E-05	680.0599	38.9279	230450.
186.000	-0.001385	174046.	-4206.2706	-5.3053E-05	660.9568	43.2249	187218.
192.000	-0.001650	149651.	-3939.0967	-3.6490E-05	642.9813	45.8331	166650.
198.000	-0.001823	126883.	-3659.4301	-2.2340E-05	626.2052	47.3892	155958.
204.000	-0.001918	105802.	-3372.6503	-1.0434E-05	610.6724	48.2041	150776.
210.000	-0.001948	86440.9938	-3082.6619	-5.9675E-07	596.4067	48.4587	149230.
216.000	-0.001925	68811.7461	-2792.4747	7.3473E-06	583.4169	48.2704	150422.
222.000	-0.001860	52910.0486	-2504.4997	1.3576E-05	571.7001	47.7213	153924.
228.000	-0.001762	38718.4888	-2220.7180	1.8264E-05	561.2433	46.8726	159567.
234.000	-0.001641	26208.6123	-1942.7857	2.1586E-05	552.0257	45.7715	167353.
240.000	-0.001503	15342.6327	-1672.1020	2.3713E-05	544.0193	44.4564	177417.
246.000	-0.001356	6074.8116	-1409.8564	2.4808E-05	537.1905	42.9588	190018.
252.000	-0.001206	-1647.3901	-1157.0617	2.5035E-05	533.9283	41.3061	205545.
258.000	-0.001056	-7882.3294	-914.5786	2.4547E-05	538.5223	39.5216	224545.

264.000	-0.000911	-12693.3248	-683.1359	2.3495E-05	542.0672	37.6260	247761.
270.000	-0.000774	-16147.9065	-463.3469	2.2019E-05	544.6127	35.6370	276216.
276.000	-0.000647	-18317.1664	-255.7284	2.0255E-05	546.2110	33.5692	311327.
282.000	-0.000531	-19275.2252	-60.7234	1.8332E-05	546.9170	31.4325	355136.
288.000	-0.000427	-19098.8620	60.2496	1.6368E-05	546.7870	8.8918	124951.
294.000	-0.000335	-18599.5665	108.5843	1.4439E-05	546.4191	7.2197	129451.
300.000	-0.000254	-17837.6088	147.2355	1.2575E-05	545.8577	5.6640	133951.
306.000	-0.000184	-16869.1062	176.9468	1.0799E-05	545.1441	4.2397	138451.
312.000	-0.000124	-15745.4777	198.5375	9.1300E-06	544.3161	2.9572	142951.
318.000	-7.42E-05	-14513.0598	212.8778	7.5817E-06	543.4081	1.8229	147451.
324.000	-3.31E-05	-13212.8707	220.8643	6.1630E-06	542.4500	0.8393094	151951.
330.000	-2.20E-07	-11880.5111	223.3995	4.8790E-06	541.4683	0.0057382	156451.
336.000	2.54E-05	-10546.1869	221.3721	3.7314E-06	540.4852	-0.6815279	160951.
342.000	4.46E-05	-9234.8371	215.6415	2.7193E-06	539.5189	-1.2287	165451.
348.000	5.80E-05	-7966.3528	207.0238	1.8391E-06	538.5843	-1.6439	169951.
354.000	6.66E-05	-6755.8708	196.2805	1.0858E-06	537.6923	-1.9372	174451.
360.000	7.11E-05	-5614.1271	184.1102	4.5283E-07	536.8511	-2.1196	178951.
366.000	7.21E-05	-4547.8575	171.1417	-6.7144E-08	536.0654	-2.2033	183451.
372.000	7.03E-05	-3560.2320	157.9292	-4.8202E-07	535.3377	-2.2009	187951.
378.000	6.63E-05	-2651.3136	144.9489	-7.9986E-07	534.6680	-2.1258	192451.
384.000	6.07E-05	-1818.5321	132.5977	-1.0286E-06	534.0544	-1.9913	196951.
390.000	5.39E-05	-1057.1671	121.1914	-1.1757E-06	533.4934	-1.8108	201451.
396.000	4.66E-05	-360.8349	110.9650	-1.2483E-06	532.9803	-1.5980	205951.
402.000	3.90E-05	278.0235	102.0722	-1.2525E-06	532.9193	-1.3663	210451.
408.000	3.15E-05	867.6536	78.9626	-1.1939E-06	533.3537	-6.3369	1206107.
414.000	2.46E-05	1229.0270	45.1004	-1.0866E-06	533.6200	-4.9505	1206107.
420.000	1.85E-05	1412.0013	19.1017	-9.5147E-07	533.7548	-3.7158	1206107.
426.000	1.32E-05	1460.9992	-0.0115398	-8.0446E-07	533.7909	-2.6553	1206107.
432.000	8.83E-06	1414.1893	-13.3032	-6.5735E-07	533.7564	-1.7752	1206107.
438.000	5.32E-06	1303.2622	-21.8378	-5.1830E-07	533.6747	-1.0697	1206107.
444.000	2.61E-06	1153.6343	-26.6218	-3.9258E-07	533.5644	-0.5249762	1206107.
450.000	6.10E-07	984.9365	-28.5647	-2.8315E-07	533.4401	-0.1226784	1206107.
456.000	-7.86E-07	811.6765	-28.4586	-1.9122E-07	533.3125	0.1580489	1206107.
462.000	-1.68E-06	643.9862	-26.9687	-1.1674E-07	533.1889	0.3385911	1206107.
468.000	-2.19E-06	488.3898	-24.4377	-5.8796E-08	533.0743	0.5050749	1385601.
474.000	-2.39E-06	350.9039	-21.0396	-1.5850E-08	532.9730	0.6276256	1575672.
480.000	-2.38E-06	235.9606	-17.2838	1.4179E-08	532.8883	0.6243090	1575672.
486.000	-2.22E-06	143.4575	-13.6620	3.3593E-08	532.8201	0.5829437	1575672.
492.000	-1.97E-06	71.9191	-10.3579	4.4614E-08	532.7674	0.5184458	1575672.
498.000	-1.68E-06	19.0342	-7.4755	4.9268E-08	532.7284	0.4423510	1575672.
504.000	-1.38E-06	-17.9290	-5.0589	4.9324E-08	532.7276	0.3631870	1575672.
510.000	-1.09E-06	-41.8147	-3.1086	4.6267E-08	532.7452	0.2869139	1575672.
516.000	-8.28E-07	-55.3654	-1.5957	4.1294E-08	532.7552	0.2173835	1575672.
522.000	-5.97E-07	-61.0821	-0.4731665	3.5336E-08	532.7594	0.1567808	1575672.
528.000	-4.04E-07	-61.1456	0.3152586	2.9082E-08	532.7595	0.1060276	1575672.
534.000	-2.48E-07	-57.3831	0.8287436	2.3017E-08	532.7567	0.0651341	1575672.
540.000	-1.28E-07	-51.2672	1.1246	1.7457E-08	532.7522	0.0334936	1575672.
546.000	-3.85E-08	-43.9380	1.2555	1.2586E-08	532.7468	0.0101200	1575672.
552.000	2.35E-08	-36.2380	1.2673	8.4833E-09	532.7411	-0.0061686	1575672.
558.000	6.33E-08	-28.7547	1.1990	5.1577E-09	532.7356	-0.0166138	1575672.
564.000	8.54E-08	-21.8652	1.0819	2.5676E-09	532.7305	-0.0224224	1575672.
570.000	9.41E-08	-15.7797	0.9404835	6.4132E-10	532.7260	-0.0247051	1575672.
576.000	9.31E-08	-10.5813	0.7930381	-7.0754E-10	532.7222	-0.0244434	1575672.
582.000	8.56E-08	-6.2612	0.6522818	-1.5694E-09	532.7190	-0.0224754	1575672.
588.000	7.42E-08	-2.7494	0.5097442	-2.0304E-09	532.7164	-0.0250372	2023324.
594.000	6.12E-08	-0.1384405	0.3580628	-2.1782E-09	532.7145	-0.0255233	2501506.
600.000	4.81E-08	1.5537	0.2213224	-2.1058E-09	532.7156	-0.0200568	2501506.
606.000	3.59E-08	2.5235	0.1161874	-1.8971E-09	532.7163	-0.0149881	2501506.
612.000	2.53E-08	2.9534	0.0395268	-1.6169E-09	532.7166	-0.0105654	2501506.
618.000	1.65E-08	3.0025	-0.0128659	-1.3121E-09	532.7166	-0.0068988	2501506.
624.000	9.60E-09	2.8028	-0.0455647	-1.0151E-09	532.7165	-0.0040008	2501506.
630.000	4.37E-09	2.4587	-0.0630280	-7.4586E-10	532.7162	-0.0018203	2501506.
636.000	6.46E-10	2.0486	-0.0692966	-5.1523E-10	532.7159	-0.0002692	2501506.
642.000	-1.82E-09	1.6286	-0.0678322	-3.2707E-10	532.7156	0.0007574	2501506.
648.000	-3.28E-09	1.2356	-0.0614588	-1.8051E-10	532.7153	0.0013671	2501506.
654.000	-3.98E-09	0.8916211	-0.0523761	-7.1664E-11	532.7151	0.0016605	2501506.
660.000	-4.14E-09	0.6072907	-0.0422178	5.0332E-12	532.7149	0.0017256	2501506.
666.000	-3.92E-09	0.3849928	-0.0321350	5.5807E-11	532.7147	0.0016353	2501506.
672.000	-3.47E-09	0.2215087	-0.0228899	8.6841E-11	532.7146	0.0014464	2501506.
678.000	-2.88E-09	0.1100629	-0.0149481	1.0381E-10	532.7145	0.0012008	2501506.

684.000	-2.22E-09	0.0418308	-0.0085644	1.1158E-10	532.7144	0.0009271	2501506.
690.000	-1.54E-09	0.0069671	-0.0038554	1.1408E-10	532.7144	0.0006426	2501506.
696.000	-8.55E-10	-0.0047640	-0.0008586	1.1419E-10	532.7144	0.0003563	2501506.
702.000	-1.71E-10	-0.0036659	0.0004244	1.1376E-10	532.7144	7.1312E-05	2501506.
708.000	5.10E-10	0.0000	0.0000	1.1357E-10	532.7144	-0.0002128	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 4:

```
Pile-head deflection             =     0.06079326 in
Computed slope at pile head      =   1.156482E-18
Maximum bending moment           =  -990228.63726 lbs-in
Maximum shear force              =    20000.00000 lbs
Depth of maximum bending moment  =        0.00000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             20
Number of zero deflection points =              6
```

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 5

```
Pile-head boundary conditions are Shear and Slope (BC Type 2)
Specified shear force at pile head  =       25000.000 lbs
Specified slope at pile head        =       0.000E+00 in/in
Specified axial load at pile head   =      241000.000 lbs
```

(Zero slope for this load indicates fixed-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	0.096601	-1354918.	25000.0000	5.7824E-18	1531.0572	-191.2503	5939.4171
6.000	0.096185	-1208260.	23828.4068	-0.0001312	1422.9955	-199.2808	12431.1517
12.000	0.095027	-1068597.	22609.8936	-0.0002477	1320.0882	-206.8902	13063.0835
18.000	0.093213	-936225.	21347.0182	-0.0003502	1222.5522	-214.0682	13779.3455
24.000	0.090824	-811420.	20042.4045	-0.0004397	1130.5926	-220.8030	14586.6883
30.000	0.087937	-694445.	18698.7512	-0.0005167	1044.4014	-227.0814	15493.9789
36.000	0.084623	-585541.	17318.8400	-0.0005822	964.1580	-232.8890	16512.4340
42.000	0.080950	-484935.	15905.5452	-0.0006370	890.0284	-238.2093	17656.0179
48.000	0.076979	-392832.	14752.1636	-0.0006819	822.1646	-146.2512	11399.2719
54.000	0.072767	-305937.	14019.6097	-0.0007177	758.1375	-97.9334	8075.0732
60.000	0.068367	-222521.	13428.1281	-0.0007447	696.6747	-99.2271	8708.2913
66.000	0.063831	-142645.	12829.7992	-0.0007634	637.8197	-100.2158	9420.1380
72.000	0.059207	-66356.1071	12226.4851	-0.0007741	581.6075	-100.8889	10224.0634
78.000	0.054542	6311.0328	11620.1127	-0.0007772	537.3646	-101.2353	11136.6142
84.000	0.049881	75332.7691	11012.6744	-0.0007730	588.2218	-101.2442	12178.3122
90.000	0.045266	140699.	10406.2282	-0.0007619	636.3852	-100.9046	13374.8344
96.000	0.040738	202411.	9802.8975	-0.0007444	681.8567	-100.2057	14758.6100
102.000	0.036334	260486.	9204.8702	-0.0007207	724.6481	-99.1368	16371.0007
108.000	0.032090	314954.	8344.7998	-0.0006912	764.7814	-187.5533	35067.9431
114.000	0.028039	362623.	7023.4994	-0.0006566	799.9054	-252.8801	54113.2279
120.000	0.024211	401134.	5516.3166	-0.0006175	828.2819	-249.5142	61835.0259
126.000	0.020629	430604.	4032.0360	-0.0005749	849.9962	-245.2460	71329.7333
132.000	0.017312	451182.	2576.2532	-0.0005298	865.1581	-240.0149	83185.0659
138.000	0.014272	463051.	1154.9888	-0.0004830	873.9042	-233.7399	98268.0562
144.000	0.011516	466438.	-225.1570	-0.0004355	876.3997	-226.3087	117914.
150.000	0.009046	461609.	-1556.7509	-0.0003880	872.8414	-217.5559	144299.
156.000	0.006860	448879.	-2831.0846	-0.0003414	863.4618	-207.2220	181247.
162.000	0.004949	428623.	-4037.3425	-0.0002965	848.5365	-194.8640	236229.
168.000	0.003302	401289.	-4877.0374	-0.0002540	828.3956	-85.0343	154512.

174.000	0.001901	370833.	-5276.5225	-0.0002145	805.9553	-48.1274	151892.
180.000	0.000728	338591.	-5525.8739	-0.0001782	782.1979	-34.9898	288419.
186.000	-0.000237	305038.	-5585.7448	-0.0001453	757.4755	15.0328	379894.
192.000	-0.001015	271982.	-5423.7472	-0.0001158	733.1186	38.9664	230242.
198.000	-0.001626	240288.	-5169.9990	-8.9541E-05	709.7657	45.6163	168278.
204.000	-0.002090	210201.	-4884.3412	-6.6490E-05	687.5966	49.6029	142405.
210.000	-0.002424	181868.	-4579.1585	-4.6428E-05	666.7203	52.1246	129003.
216.000	-0.002647	155385.	-4261.7503	-2.9172E-05	647.2068	53.6781	121669.
222.000	-0.002774	130812.	-3937.1322	-1.4527E-05	629.1003	54.5279	117924.
228.000	-0.002821	108182.	-3609.0402	-2.2983E-06	612.4258	54.8361	116614.
234.000	-0.002802	87509.8146	-3280.3977	7.7150E-06	597.1942	54.7114	117156.
240.000	-0.002729	68794.6031	-2953.5667	1.5713E-05	583.4043	54.2323	119243.
246.000	-0.002613	52021.5727	-2630.4967	2.1895E-05	571.0454	53.4577	122730.
252.000	-0.002466	37165.3227	-2312.8201	2.6458E-05	560.0989	52.4345	127573.
258.000	-0.002296	24191.2135	-2001.9157	2.9598E-05	550.5392	51.2003	133803.
264.000	-0.002111	13056.7366	-1698.9538	3.1504E-05	542.3350	49.7870	141513.
270.000	-0.001918	3712.6591	-1404.9291	3.2362E-05	535.4500	48.2212	150858.
276.000	-0.001723	-3896.0033	-1120.6875	3.2353E-05	535.5851	46.5260	162058.
282.000	-0.001530	-9829.1547	-846.9484	3.1650E-05	539.9568	44.7204	175414.
288.000	-0.001343	-14150.9172	-628.8976	3.0423E-05	543.1412	27.9632	124951.
294.000	-0.001165	-17463.9097	-469.6308	2.8806E-05	545.5823	25.1257	129451.
300.000	-0.000997	-19869.7921	-327.4727	2.6895E-05	547.3551	22.2603	133951.
306.000	-0.000842	-21471.3627	-202.4160	2.4780E-05	548.5351	19.4252	138451.
312.000	-0.000700	-22370.4472	-94.1261	2.2537E-05	549.1976	16.6714	142951.
318.000	-0.000571	-22666.0522	-1.9863	2.0232E-05	549.4154	14.0419	147451.
324.000	-0.000457	-22452.7939	74.8567	1.7923E-05	549.2583	11.5724	151951.
330.000	-0.000356	-21819.6062	137.4462	1.5658E-05	548.7917	9.2907	156451.
336.000	-0.000269	-20848.7230	186.9709	1.3475E-05	548.0764	7.2175	160951.
342.000	-0.000195	-19614.9249	224.7225	1.1404E-05	547.1673	5.3664	165451.
348.000	-0.000132	-18185.0347	252.0558	9.4702E-06	546.1137	3.7447	169951.
354.000	-8.10E-05	-16617.6431	270.3524	7.6893E-06	544.9588	2.3541	174451.
360.000	-3.99E-05	-14963.0432	280.9879	6.0734E-06	543.7396	1.1910	178951.
366.000	-8.09E-06	-13263.3526	285.3027	4.6291E-06	542.4872	0.2472552	183451.
372.000	1.56E-05	-11552.7980	284.5770	3.3593E-06	541.2269	-0.4891645	187951.
378.000	3.22E-05	-9858.1438	280.0087	2.2637E-06	539.9782	-1.0336	192451.
384.000	4.28E-05	-8199.2406	272.6950	1.3397E-06	538.7559	-1.4043	196951.
390.000	4.83E-05	-6589.6777	263.6171	5.8301E-07	537.5699	-1.6217	201451.
396.000	4.98E-05	-5037.5219	253.6261	-1.1936E-08	536.4262	-1.7086	205951.
402.000	4.82E-05	-3546.1296	243.4329	-4.5115E-07	535.3273	-1.6892	210451.
408.000	4.44E-05	-2115.0221	211.6124	-7.4082E-07	534.2728	-8.9177	1206107.
414.000	3.93E-05	-1004.6383	161.1784	-9.0045E-07	533.4547	-7.8936	1206107.
420.000	3.36E-05	-178.2769	117.2607	-9.6098E-07	532.8458	-6.7456	1206107.
426.000	2.77E-05	405.2693	80.2973	-9.4937E-07	533.0130	-5.5756	1206107.
432.000	2.22E-05	788.0358	50.2040	-8.8831E-07	533.2951	-4.4555	1206107.
438.000	1.71E-05	1010.2867	26.5392	-7.9629E-07	533.4588	-3.4328	1206107.
444.000	1.26E-05	1108.8087	8.6368	-6.8786E-07	533.5314	-2.5347	1206107.
450.000	8.82E-06	1115.9171	-4.2879	-5.7402E-07	533.5367	-1.7735	1206107.
456.000	5.72E-06	1059.0142	-13.0585	-4.6273E-07	533.4947	-1.1500	1206107.
462.000	3.27E-06	960.5529	-18.4806	-3.5939E-07	533.4222	-0.6572961	1206107.
468.000	1.41E-06	838.2869	-21.4282	-2.6735E-07	533.3321	-0.3252414	1385601.
474.000	6.16E-08	704.1881	-22.4525	-1.8842E-07	533.2333	-0.0161881	1575672.
480.000	-8.53E-07	569.4024	-21.8292	-1.2326E-07	533.1340	0.2239301	1575672.
486.000	-1.42E-06	442.5939	-20.0407	-7.1473E-08	533.0405	0.3722321	1575672.
492.000	-1.71E-06	329.1202	-17.5765	-3.1985E-08	532.9569	0.4491658	1575672.
498.000	-1.80E-06	231.7678	-14.8100	-3.2854E-09	532.8852	0.4730288	1575672.
504.000	-1.75E-06	151.4101	-12.0123	1.6321E-08	532.8260	0.4595192	1575672.
510.000	-1.61E-06	87.5728	-9.3690	2.8550E-08	532.7789	0.4215948	1575672.
516.000	-1.41E-06	38.8999	-6.9955	3.5021E-08	532.7431	0.3695492	1575672.
522.000	-1.19E-06	3.5250	-4.9532	3.7192E-08	532.7170	0.3112309	1575672.
528.000	-9.61E-07	-20.6461	-3.2625	3.6316E-08	532.7296	0.2523443	1575672.
534.000	-7.49E-07	-35.7298	-1.9151	3.3431E-08	532.7407	0.1967869	1575672.
540.000	-5.60E-07	-43.7238	-0.8837510	2.9366E-08	532.7466	0.1469909	1575672.
546.000	-3.97E-07	-46.4197	-0.1300420	2.4753E-08	532.7486	0.1042454	1575672.
552.000	-2.63E-07	-45.3559	0.3896495	2.0057E-08	532.7478	0.0689851	1575672.
558.000	-1.56E-07	-41.8019	0.7197200	1.5597E-08	532.7452	0.0410384	1575672.
564.000	-7.55E-08	-36.7644	0.9023322	1.1577E-08	532.7415	0.0198323	1575672.
570.000	-1.73E-08	-31.0074	0.9754926	8.1095E-09	532.7373	0.0045545	1575672.
576.000	2.18E-08	-25.0819	0.9719857	5.2395E-09	532.7329	-0.0057234	1575672.
582.000	4.55E-08	-19.3588	0.9189450	2.9655E-09	532.7287	-0.0119568	1575672.
588.000	5.74E-08	-14.0632	0.8250253	1.2553E-09	532.7248	-0.0193497	2023324.

594.000	6.06E-08	-9.4621	0.6911878	5.1564E-11	532.7214	-0.0252628	2501506.
600.000	5.80E-08	-5.7691	0.5428572	-7.2779E-10	532.7187	-0.0241807	2501506.
606.000	5.19E-08	-2.9457	0.4054502	-1.1737E-09	532.7166	-0.0216217	2501506.
612.000	4.39E-08	-0.9002747	0.2856595	-1.3705E-09	532.7151	-0.0183086	2501506.
618.000	3.54E-08	0.4861770	0.1864390	-1.3917E-09	532.7148	-0.0147650	2501506.
624.000	2.72E-08	1.3410	0.1081064	-1.2982E-09	532.7154	-0.0113459	2501506.
630.000	1.98E-08	1.7872	0.0492588	-1.1381E-09	532.7157	-0.0082700	2501506.
636.000	1.36E-08	1.9354	0.0074934	-9.4766E-10	532.7158	-0.0056517	2501506.
642.000	8.46E-09	1.8799	-0.0200485	-7.5243E-10	532.7158	-0.0035289	2501506.
648.000	4.53E-09	1.6970	-0.0362971	-5.6941E-10	532.7157	-0.0018873	2501506.
654.000	1.63E-09	1.4460	-0.0439995	-4.0859E-10	532.7155	-0.0006801	2501506.
660.000	-3.76E-10	1.1702	-0.0455693	-2.7472E-10	532.7153	0.0001569	2501506.
666.000	-1.67E-09	0.8999147	-0.0430158	-1.6880E-10	532.7151	0.0006943	2501506.
672.000	-2.40E-09	0.6544950	-0.0379288	-8.9261E-11	532.7149	0.0010014	2501506.
678.000	-2.74E-09	0.4450277	-0.0315020	-3.3000E-11	532.7147	0.0011409	2501506.
684.000	-2.80E-09	0.2765662	-0.0245800	3.9227E-12	532.7146	0.0011665	2501506.
690.000	-2.69E-09	0.1500566	-0.0177168	2.5752E-11	532.7145	0.0011213	2501506.
696.000	-2.49E-09	0.0638900	-0.0112402	3.6700E-11	532.7145	0.0010376	2501506.
702.000	-2.25E-09	0.0150685	-0.0053143	4.0740E-11	532.7144	0.0009376	2501506.
708.000	-2.00E-09	0.0000	0.0000	4.1511E-11	532.7144	0.0008338	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 5:

```
Pile-head deflection             =     0.09660053 in
Computed slope at pile head      =   5.782412E-18
Maximum bending moment           =      -1354918. lbs-in
Maximum shear force              =    25000.00000 lbs
Depth of maximum bending moment  =        0.00000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             23
Number of zero deflection points =              5
```

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 6

Pile-head boundary conditions are Shear and Slope (BC Type 2)
Specified shear force at pile head = 30000.000 lbs
Specified slope at pile head = 0.000E+00 in/in
Specified axial load at pile head = 241000.000 lbs

(Zero slope for this load indicates fixed-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	0.141115	-1746710.	30000.0000	2.5443E-17	1819.7415	-210.2536	4469.8415
6.000	0.140579	-1570366.	28711.9095	-0.0001697	1689.8056	-219.1099	9351.7772
12.000	0.139078	-1401676.	27371.9151	-0.0003218	1565.5105	-227.5549	9817.0029
18.000	0.136717	-1240972.	25982.5209	-0.0004570	1447.0987	-235.5765	10338.5826
24.000	0.133594	-1088564.	24546.3079	-0.0005762	1334.8005	-243.1612	10920.9262
30.000	0.129802	-944750.	23065.9395	-0.0006803	1228.8336	-250.2949	11569.6811
36.000	0.125431	-809806.	21544.1674	-0.0007700	1129.4030	-256.9624	12291.8619
42.000	0.120562	-683993.	19983.8390	-0.0008465	1036.7003	-263.1470	13096.0619
48.000	0.115273	-567552.	18692.4436	-0.0009105	950.9031	-167.3181	8708.9855
54.000	0.109635	-457050.	17853.6813	-0.0009629	869.4824	-112.2694	6144.1512
60.000	0.103717	-350523.	17174.8329	-0.0010043	790.9898	-114.0134	6595.6258
66.000	0.097584	-248048.	16486.4562	-0.0010349	715.4833	-115.4455	7098.2156
72.000	0.091299	-149692.	15790.4546	-0.0010553	643.0121	-116.5551	7659.8216
78.000	0.084921	-55510.6517	15088.7933	-0.0010658	573.6163	-117.3320	8289.9609

84.000	0.078509	34455.3161	14383.4980	-0.0010668	558.1021	-117.7664	9000.1648
90.000	0.072119	120177.	13676.6532	-0.0010589	621.2640	-117.8485	9804.4912
96.000	0.065802	201638.	12970.4001	-0.0010425	681.2868	-117.5692	10720.1872
102.000	0.059610	278836.	12266.9329	-0.0010179	738.1690	-116.9199	11768.5466
108.000	0.053588	351784.	11276.5814	-0.0009856	791.9194	-213.1972	23870.6554
114.000	0.047783	417005.	9770.2450	-0.0009463	839.9762	-288.9149	36278.7297
120.000	0.042233	471764.	8043.2951	-0.0009008	880.3238	-286.7350	40736.1532
126.000	0.036973	516130.	6331.8621	-0.0008502	913.0141	-283.7426	46045.7334
132.000	0.032030	550205.	4640.9229	-0.0007957	938.1216	-279.9038	52432.4549
138.000	0.027425	574122.	2975.6806	-0.0007381	955.7444	-275.1770	60202.5510
144.000	0.023173	588048.	1341.6211	-0.0006787	966.0053	-269.5095	69783.3351
150.000	0.019281	592184.	-255.4020	-0.0006183	969.0532	-262.8315	81789.6089
156.000	0.015753	586771.	-1809.0327	-0.0005580	965.0646	-255.0454	97140.6624
162.000	0.012586	572090.	-3312.1938	-0.0004987	954.2467	-246.0083	117281.
168.000	0.009769	548467.	-4416.3102	-0.0004413	936.8409	-122.0305	74947.6733
174.000	0.007290	520370.	-5008.2449	-0.0003866	916.1384	-75.2810	61962.0820
180.000	0.005130	489486.	-5434.9817	-0.0003350	893.3822	-66.9646	78325.8100
186.000	0.003270	456119.	-5808.7999	-0.0002866	868.7963	-57.6415	105757.
192.000	0.001691	420609.	-6120.5650	-0.0002417	842.6317	-46.2802	164227.
198.000	0.000370	383371.	-6329.6297	-0.0002006	815.1936	-23.4080	379894.
204.000	-0.000716	345234.	-6295.8396	-0.0001633	787.0928	34.6714	290531.
210.000	-0.001590	308294.	-6056.0044	-0.0001299	759.8741	45.2736	170868.
216.000	-0.002274	272937.	-5767.1091	-0.0001001	733.8226	51.0248	134616.
222.000	-0.002791	239378.	-5450.1281	-7.3895E-05	709.0949	54.6355	117450.
228.000	-0.003161	207750.	-5115.3620	-5.1016E-05	685.7903	56.9532	108106.
234.000	-0.003403	178141.	-4769.3768	-3.1270E-05	663.9738	58.3752	102916.
240.000	-0.003536	150607.	-4416.8692	-1.4449E-05	643.6864	59.1273	100323.
246.000	-0.003577	125180.	-4061.4274	-3.3705E-07	624.9509	59.3533	99567.4593
252.000	-0.003540	101871.	-3705.9108	1.1281E-05	607.7762	59.1522	100251.
258.000	-0.003441	80676.7343	-3352.6639	2.0622E-05	592.1594	58.5967	102165.
264.000	-0.003293	61579.7037	-3003.6472	2.7901E-05	578.0881	57.7422	105215.
270.000	-0.003106	44552.2791	-2660.5229	3.3331E-05	565.5418	56.6326	109383.
276.000	-0.002893	29557.0342	-2324.7139	3.7123E-05	554.4929	55.3038	114706.
282.000	-0.002661	16548.3511	-1997.4455	3.9483E-05	544.9077	53.7857	121275.
288.000	-0.002419	5473.5051	-1684.9587	4.0609E-05	536.7475	50.3765	124951.
294.000	-0.002174	-3788.5956	-1393.1361	4.0696E-05	535.5060	46.8976	129451.
300.000	-0.001931	-11361.8204	-1123.1352	3.9920E-05	541.0861	43.1027	133951.
306.000	-0.001695	-17381.6674	-876.5146	3.8450E-05	545.5217	39.1042	138451.
312.000	-0.001469	-21991.1915	-654.1843	3.6435E-05	548.9182	35.0059	142951.
318.000	-0.001257	-25337.2484	-456.4622	3.4013E-05	551.3836	30.9014	147451.
324.000	-0.001061	-27567.1038	-283.1383	3.1306E-05	553.0267	26.8732	151951.
330.000	-0.000882	-28825.4450	-133.5431	2.8421E-05	553.9538	22.9919	156451.
336.000	-0.000720	-29251.8139	-6.6188	2.5449E-05	554.2680	19.3162	160951.
342.000	-0.000576	-28978.4694	99.0101	2.2469E-05	554.0666	15.8934	165451.
348.000	-0.000450	-28128.6739	184.9674	1.9547E-05	553.4404	12.7590	169951.
354.000	-0.000342	-26815.3915	253.0581	1.6736E-05	552.4728	9.9379	174451.
360.000	-0.000250	-25140.3764	305.2066	1.4077E-05	551.2386	7.4449	178951.
366.000	-0.000173	-23193.6242	343.3982	1.1604E-05	549.8042	5.2856	183451.
372.000	-0.000110	-21053.1574	369.6270	9.3401E-06	548.2270	3.4573	187951.
378.000	-6.08E-05	-18785.1113	385.8488	7.3016E-06	546.5558	1.9499	192451.
384.000	-2.28E-05	-16444.0881	393.9389	5.4990E-06	544.8309	0.7467711	196951.
390.000	5.20E-06	-14073.7478	395.6559	3.9374E-06	543.0844	-0.1744344	201451.
396.000	2.45E-05	-11707.6045	392.6098	2.6182E-06	541.3409	-0.8409335	205951.
402.000	3.66E-05	-9370.0023	386.2343	1.5397E-06	539.6185	-1.2842	210451.
408.000	4.30E-05	-7077.2462	356.4649	6.9813E-07	537.9291	-8.6389	1206107.
414.000	4.50E-05	-5094.4421	303.4160	7.5319E-08	536.4681	-9.0441	1206107.
420.000	4.39E-05	-3436.4723	249.8220	-3.6120E-07	535.2465	-8.8206	1206107.
426.000	4.07E-05	-2095.5340	198.8418	-6.4426E-07	534.2585	-8.1728	1206107.
432.000	3.61E-05	-1048.5075	152.5239	-8.0514E-07	533.4870	-7.2665	1206107.
438.000	3.10E-05	-262.9184	112.0326	-8.7224E-07	532.9081	-6.2307	1206107.
444.000	2.57E-05	298.4057	77.8533	-8.7043E-07	532.9343	-5.1624	1206107.
450.000	2.06E-05	673.8383	49.9730	-8.2068E-07	533.2109	-4.1310	1206107.
456.000	1.58E-05	900.4548	28.0316	-7.4012E-07	533.3779	-3.1828	1206107.
462.000	1.17E-05	1012.3583	11.4463	-6.4225E-07	533.4603	-2.3457	1206107.
468.000	8.13E-06	1039.6676	-1.2207	-5.3725E-07	533.4805	-1.8766	1385601.
474.000	5.22E-06	999.2641	-10.9647	-4.3292E-07	533.4507	-1.3714	1575672.
480.000	2.93E-06	909.3435	-17.3882	-3.3526E-07	533.3844	-0.7697937	1575672.
486.000	1.20E-06	791.5758	-20.6421	-2.4822E-07	533.2977	-0.3148538	1575672.
492.000	-4.74E-08	662.3563	-21.5493	-1.7383E-07	533.2025	0.0124444	1575672.
498.000	-8.87E-07	533.4867	-20.8132	-1.1264E-07	533.1075	0.2329375	1575672.

504.000	-1.40E-06	412.9239	-19.0121	-6.4212E-08	533.0187	0.3674059	1575672.
510.000	-1.66E-06	305.5266	-16.6041	-2.7449E-08	532.9395	0.4352902	1575672.
516.000	-1.73E-06	213.7546	-13.9365	-8.7844E-10	532.8719	0.4539083	1575672.
522.000	-1.67E-06	138.2916	-11.2606	1.7135E-08	532.8163	0.4380585	1575672.
528.000	-1.52E-06	78.5783	-8.7467	2.8232E-08	532.7723	0.3999091	1575672.
534.000	-1.33E-06	33.2501	-6.4997	3.3954E-08	532.7389	0.3490889	1575672.
540.000	-1.12E-06	0.4841609	-4.5737	3.5681E-08	532.7148	0.2929072	1575672.
546.000	-9.01E-07	-21.7372	-2.9850	3.4593E-08	532.7304	0.2366474	1575672.
552.000	-7.00E-07	-35.4360	-1.7234	3.1668E-08	532.7405	0.1838927	1575672.
558.000	-5.21E-07	-42.5095	-0.7611569	2.7679E-08	532.7457	0.1368521	1575672.
564.000	-3.68E-07	-44.6500	-0.0606022	2.3219E-08	532.7473	0.0966661	1575672.
570.000	-2.42E-07	-43.3038	0.4204362	1.8719E-08	532.7463	0.0636800	1575672.
576.000	-1.43E-07	-39.6589	0.7245058	1.4474E-08	532.7436	0.0376766	1575672.
582.000	-6.88E-08	-34.6516	0.8917401	1.0671E-08	532.7399	0.0180682	1575672.
588.000	-1.54E-08	-28.9888	0.9615363	7.4150E-09	532.7358	0.0051972	2023324.
594.000	2.02E-08	-23.1346	0.9518900	4.7479E-09	532.7315	-0.0084126	2501506.
600.000	4.16E-08	-17.5799	0.8746671	2.6646E-09	532.7274	-0.0173283	2501506.
606.000	5.22E-08	-12.6463	0.7574512	1.1180E-09	532.7237	-0.0217436	2501506.
612.000	5.50E-08	-8.4937	0.6234558	3.6251E-11	532.7207	-0.0229215	2501506.
618.000	5.26E-08	-5.1650	0.4889163	-6.6265E-10	532.7182	-0.0219250	2501506.
624.000	4.70E-08	-2.6248	0.3643225	-1.0612E-09	532.7163	-0.0196063	2501506.
630.000	3.99E-08	-0.7900411	0.2556568	-1.2360E-09	532.7150	-0.0166156	2501506.
636.000	3.22E-08	0.4466645	0.1655419	-1.2535E-09	532.7147	-0.0134227	2501506.
642.000	2.48E-08	1.2001	0.0942414	-1.1693E-09	532.7153	-0.0103441	2501506.
648.000	1.82E-08	1.5809	0.0404906	-1.0270E-09	532.7156	-0.0075728	2501506.
654.000	1.25E-08	1.6889	0.0021538	-8.5966E-10	532.7157	-0.0052062	2501506.
660.000	7.85E-09	1.6093	-0.0232803	-6.9090E-10	532.7156	-0.0032719	2501506.
666.000	4.20E-09	1.4116	-0.0383447	-5.3632E-10	532.7155	-0.0017496	2501506.
672.000	1.41E-09	1.1507	-0.0453595	-4.0521E-10	532.7153	-0.0005887	2501506.
678.000	-6.66E-10	0.8684368	-0.0462924	-3.0190E-10	532.7151	0.0002777	2501506.
684.000	-2.21E-09	0.5960533	-0.0426941	-2.2696E-10	532.7149	0.0009217	2501506.
690.000	-3.39E-09	0.3567644	-0.0356892	-1.7821E-10	532.7147	0.0014132	2501506.
696.000	-4.35E-09	0.1682977	-0.0260097	-1.5134E-10	532.7145	0.0018133	2501506.
702.000	-5.21E-09	0.0450857	-0.0140587	-1.4042E-10	532.7144	0.0021704	2501506.
708.000	-6.03E-09	0.0000	0.0000	-1.3812E-10	532.7144	0.0025159	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 6:

```
Pile-head deflection             =     0.14111481 in
Computed slope at pile head      =   2.544261E-17
Maximum bending moment           =      -1746710. lbs-in
Maximum shear force              =    30000.00000 lbs
Depth of maximum bending moment  =        0.00000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             24
Number of zero deflection points =              5
```

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 7

```
Pile-head boundary conditions are Shear and Slope (BC Type 2)
Specified shear force at pile head  =       35000.000 lbs
Specified slope at pile head        =       0.000E+00 in/in
Specified axial load at pile head   =      241000.000 lbs
```

(Zero slope for this load indicates fixed-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in

0.000	0.194618	-2162700.	35000.0000	9.2519E-18	2126.2549	-227.8467	3512.2126
6.000	0.193954	-1956641.	33604.0584	-0.0002108	1974.4248	-237.4672	7346.0828
12.000	0.192089	-1758842.	32151.6004	-0.0004009	1828.6804	-246.6855	7705.3621
18.000	0.189143	-1569663.	30645.0797	-0.0005712	1689.2877	-255.4881	8104.5860
24.000	0.185234	-1389449.	29087.0338	-0.0007226	1556.5009	-263.8606	8546.8218
30.000	0.180472	-1218528.	27480.0882	-0.0008561	1430.5617	-271.7880	9035.9149
36.000	0.174961	-1057212.	25826.9601	-0.0009725	1311.6991	-279.2547	9576.5663
42.000	0.168802	-905792.	24130.4639	-0.0010730	1200.1287	-286.2440	10174.4558
48.000	0.162086	-764543.	22709.3907	-0.0011584	1096.0524	-187.4470	6938.8125
54.000	0.154900	-629930.	21769.1185	-0.0012298	996.8649	-125.9770	4879.6667
60.000	0.147328	-499758.	21006.6976	-0.0012876	900.9503	-128.1633	5219.4991
66.000	0.139449	-374125.	20232.1104	-0.0013323	808.3810	-130.0324	5594.8279
72.000	0.131341	-253119.	19447.2896	-0.0013644	719.2200	-131.5745	6010.6859
78.000	0.123076	-136812.	18654.2271	-0.0013844	633.5216	-132.7797	6473.0347
84.000	0.114728	-25264.8974	17854.9719	-0.0013926	551.3303	-133.6387	6988.9672
90.000	0.106365	81475.0746	17051.6271	-0.0013898	592.7476	-134.1429	7566.9591
96.000	0.098051	183374.	16246.3468	-0.0013762	667.8296	-134.2839	8217.1836
102.000	0.089850	280411.	15441.3307	-0.0013525	739.3296	-134.0548	8951.9010
108.000	0.081821	372581.	14328.2086	-0.0013191	807.2431	-236.9860	17378.3305
114.000	0.074021	456165.	12650.3015	-0.0012767	868.8298	-322.3164	26126.3042
120.000	0.066501	528077.	10719.7762	-0.0012263	921.8169	-321.1920	28979.2271
126.000	0.059305	588348.	8798.2648	-0.0011692	966.2266	-319.3118	32305.1456
132.000	0.052471	637037.	6890.3667	-0.0011065	1002.1022	-316.6542	36209.0707
138.000	0.046028	674233.	5000.8200	-0.0010394	1029.5087	-313.1947	40826.9148
144.000	0.039998	700053.	3134.5245	-0.0009691	1048.5340	-308.9038	46337.4612
150.000	0.034399	714649.	1296.5772	-0.0008967	1059.2890	-303.7453	52980.4997
156.000	0.029238	718205.	-507.6736	-0.0008234	1061.9090	-297.6717	61085.3515
162.000	0.024519	710939.	-2272.5436	-0.0007502	1056.5547	-290.6184	71117.7925
168.000	0.020236	693104.	-3611.0259	-0.0006784	1043.4140	-155.5424	46119.6515
174.000	0.016378	669568.	-4373.4132	-0.0006087	1026.0718	-98.5867	36116.8122
180.000	0.012932	642384.	-4942.5405	-0.0005415	1006.0415	-91.1224	42279.0586
186.000	0.009880	611824.	-5465.8214	-0.0004774	983.5240	-83.3045	50591.8170
192.000	0.007203	578174.	-5940.6795	-0.0004165	958.7301	-74.9815	62455.7629
198.000	0.004882	541740.	-6363.2299	-0.0003592	931.8843	-65.8687	80952.1381
204.000	0.002893	502854.	-6726.8489	-0.0003057	903.2321	-55.3377	114752.
210.000	0.001214	461902.	-7017.1983	-0.0002563	873.0572	-41.4454	204914.
216.000	-0.000183	419389.	-7106.8302	-0.0002112	841.7326	11.5681	379894.
222.000	-0.001321	377231.	-6944.4382	-0.0001705	810.6692	42.5625	193255.
228.000	-0.002229	336549.	-6664.7088	-0.0001340	780.6936	50.6806	136449.
234.000	-0.002929	297642.	-6346.1010	-0.0001015	752.0256	55.5220	113736.
240.000	-0.003447	260689.	-6003.6709	-7.2944E-05	724.7980	58.6214	102048.
246.000	-0.003804	225809.	-5646.0513	-4.8050E-05	699.0969	60.5851	95552.0166
252.000	-0.004023	193076.	-5279.1126	-2.6616E-05	674.9782	61.7278	92055.4296
258.000	-0.004124	162536.	-4907.2139	-8.4202E-06	652.4759	62.2385	90556.7633
264.000	-0.004124	134214.	-4533.7706	6.7641E-06	631.6068	62.2426	90549.2203
270.000	-0.004043	108112.	-4161.5547	1.9164E-05	612.3742	61.8293	91767.7571
276.000	-0.003894	84219.4396	-3792.8712	2.9005E-05	594.7698	61.0652	94082.0662
282.000	-0.003694	62513.2135	-3429.6677	3.6513E-05	578.7760	60.0026	97446.6488
288.000	-0.003456	42957.8320	-3033.7313	4.1910E-05	564.3670	71.9761	124951.
294.000	-0.003192	25987.2345	-2611.2274	4.5438E-05	551.8626	68.8585	129451.
300.000	-0.002911	11491.6977	-2209.6889	4.7355E-05	541.1818	64.9877	133951.
306.000	-0.002623	-665.9836	-1833.1266	4.7909E-05	533.2051	60.5331	138451.
312.000	-0.002336	-10644.3749	-1484.5569	4.7331E-05	540.5575	55.6568	142951.
318.000	-0.002055	-18617.5469	-1166.0560	4.5833E-05	546.4324	50.5102	147451.
324.000	-0.001786	-24769.5963	-878.8291	4.3613E-05	550.9654	45.2321	151951.
330.000	-0.001532	-29289.6260	-623.2932	4.0847E-05	554.2959	39.9466	156451.
336.000	-0.001296	-32367.2444	-399.1662	3.7692E-05	556.5635	34.7624	160951.
342.000	-0.001080	-34188.6261	-205.5625	3.4287E-05	557.9056	29.7722	165451.
348.000	-0.000884	-34933.1510	-41.0894	3.0750E-05	558.4542	25.0522	169951.
354.000	-0.000711	-34770.6278	96.0562	2.7183E-05	558.3344	20.6630	174451.
360.000	-0.000558	-33859.0899	207.9953	2.3671E-05	557.6628	16.6500	178951.
366.000	-0.000427	-32343.1417	297.0772	2.0284E-05	556.5458	13.0440	183451.
372.000	-0.000315	-30352.8242	365.7970	1.7076E-05	555.0793	9.8626	187951.
378.000	-0.000222	-28002.9610	416.7190	1.4090E-05	553.3478	7.1114	192451.
384.000	-0.000146	-25392.9440	452.4078	1.1358E-05	551.4247	4.7849	196951.
390.000	-8.54E-05	-22606.9144	475.3661	8.9016E-06	549.3718	2.8679	201451.
396.000	-3.89E-05	-19714.2942	487.9807	6.7361E-06	547.2405	1.3369	205951.
402.000	-4.59E-06	-16770.6270	492.4740	4.8692E-06	545.0715	0.1608260	210451.
408.000	1.95E-05	-13818.6884	481.2082	3.3040E-06	542.8964	-3.9161	1206107.

414.000	3.51E-05	-11005.6834	448.3154	2.0338E-06	540.8237	-7.0482	1206107.
420.000	4.39E-05	-8444.7851	400.7051	1.0385E-06	538.9368	-8.8219	1206107.
426.000	4.75E-05	-6200.2258	345.5795	2.8913E-07	537.2829	-9.5533	1206107.
432.000	4.74E-05	-4298.6671	288.3616	-2.4808E-07	535.8818	-9.5194	1206107.
438.000	4.45E-05	-2739.1690	232.9390	-6.0820E-07	534.7327	-8.9548	1206107.
444.000	4.01E-05	-1501.6398	181.9178	-8.2520E-07	533.8209	-8.0522	1206107.
450.000	3.46E-05	-553.7692	136.8682	-9.3037E-07	533.1224	-6.9643	1206107.
456.000	2.89E-05	143.4690	98.5514	-9.5137E-07	532.8201	-5.8080	1206107.
462.000	2.32E-05	631.5984	67.1192	-9.1171E-07	533.1798	-4.6694	1206107.
468.000	1.80E-05	951.5362	40.6736	-8.3070E-07	533.4155	-4.1458	1385601.
474.000	1.33E-05	1122.0838	17.7891	-7.2459E-07	533.5412	-3.4823	1575672.
480.000	9.26E-06	1167.1014	0.0489294	-6.0746E-07	533.5744	-2.4311	1575672.
486.000	5.97E-06	1124.4277	-11.9483	-4.9021E-07	533.5429	-1.5680	1575672.
492.000	3.37E-06	1025.1390	-19.3112	-3.8022E-07	533.4698	-0.8862680	1575672.
498.000	1.41E-06	893.7931	-23.0795	-2.8203E-07	533.3730	-0.3698256	1575672.
504.000	-9.49E-09	749.0011	-24.1815	-1.9797E-07	533.2663	0.0024926	1575672.
510.000	-9.67E-07	604.1880	-23.4119	-1.2873E-07	533.1596	0.2540342	1575672.
516.000	-1.55E-06	468.4308	-21.4253	-7.3841E-08	533.0596	0.4081505	1575672.
522.000	-1.85E-06	347.2976	-18.7407	-3.2101E-08	532.9703	0.4867323	1575672.
528.000	-1.94E-06	243.6354	-15.7525	-1.8639E-09	532.8939	0.5093123	1575672.
534.000	-1.88E-06	158.2724	-12.7468	1.8701E-08	532.8310	0.4926060	1575672.
540.000	-1.71E-06	90.6198	-9.9178	3.1437E-08	532.7812	0.4503783	1575672.
546.000	-1.50E-06	39.1674	-7.3861	3.8078E-08	532.7433	0.3935382	1575672.
552.000	-1.26E-06	1.8766	-5.2143	4.0178E-08	532.7158	0.3303823	1575672.
558.000	-1.02E-06	-23.5207	-3.4224	3.9070E-08	532.7317	0.2669237	1575672.
564.000	-7.89E-07	-39.3053	-1.9999	3.5856E-08	532.7434	0.2072579	1575672.
570.000	-5.86E-07	-47.6228	-0.9163013	3.1408E-08	532.7495	0.1539301	1575672.
576.000	-4.12E-07	-50.3917	-0.1296664	2.6392E-08	532.7515	0.1082815	1575672.
582.000	-2.69E-07	-49.2551	0.4074537	2.1294E-08	532.7507	0.0707585	1575672.
588.000	-1.57E-07	-45.5639	0.7783594	1.6442E-08	532.7480	0.0528767	2023324.
594.000	-7.21E-08	-39.9623	1.0272	1.2066E-08	532.7439	0.0300760	2501506.
600.000	-1.20E-08	-33.2722	1.1325	8.3183E-09	532.7389	0.0050090	2501506.
606.000	2.77E-08	-26.3967	1.1129	5.2651E-09	532.7339	-0.0115404	2501506.
612.000	5.12E-08	-19.9328	1.0143	2.8945E-09	532.7291	-0.0213323	2501506.
618.000	6.24E-08	-14.2340	0.8721989	1.1462E-09	532.7249	-0.0260215	2501506.
624.000	6.49E-08	-9.4698	0.7129338	-6.6682E-11	532.7214	-0.0270668	2501506.
630.000	6.16E-08	-5.6786	0.5546696	-8.4180E-10	532.7186	-0.0256879	2501506.
636.000	5.48E-08	-2.8113	0.4090400	-1.2762E-09	532.7165	-0.0228553	2501506.
642.000	4.63E-08	-0.7664054	0.2825652	-1.4593E-09	532.7150	-0.0193030	2501506.
648.000	3.73E-08	0.5836989	0.1779929	-1.4686E-09	532.7148	-0.0155545	2501506.
654.000	2.87E-08	1.3738	0.0954633	-1.3685E-09	532.7154	-0.0119554	2501506.
660.000	2.09E-08	1.7332	0.0334733	-1.2095E-09	532.7157	-0.0087080	2501506.
666.000	1.42E-08	1.7789	-0.0103634	-1.0298E-09	532.7157	-0.0059043	2501506.
672.000	8.53E-09	1.6118	-0.0387441	-8.5628E-10	532.7156	-0.0035560	2501506.
678.000	3.89E-09	1.3165	-0.0542728	-7.0644E-10	532.7154	-0.0016203	2501506.
684.000	5.18E-11	0.9626040	-0.0591984	-5.8983E-10	532.7151	-2.1614E-05	2501506.
690.000	-3.19E-09	0.6078060	-0.0552714	-5.0947E-10	532.7149	0.0013306	2501506.
696.000	-6.06E-09	0.3008206	-0.0436977	-4.6298E-10	532.7146	0.0025273	2501506.
702.000	-8.75E-09	0.0847723	-0.0251752	-4.4325E-10	532.7145	0.0036469	2501506.
708.000	-1.14E-08	0.0000	0.0000	-4.3891E-10	532.7144	0.0047448	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 7:

```
Pile-head deflection             =     0.19461809 in
Computed slope at pile head      =   9.251859E-18
Maximum bending moment           =      -2162700. lbs-in
Maximum shear force              =    35000.00000 lbs
Depth of maximum bending moment  =        0.00000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             25
Number of zero deflection points =              5
```

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 8

Pile-head boundary conditions are Shear and Slope (BC Type 2)
Specified shear force at pile head = 40000.000 lbs
Specified slope at pile head = 0.000E+00 in/in
Specified axial load at pile head = 241000.000 lbs

(Zero slope for this load indicates fixed-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	0.257345	-2600971.	40000.0000	2.7756E-17	2449.1861	-244.3264	2848.2371
6.000	0.256546	-2365177.	38503.0337	-0.0002541	2275.4457	-254.6624	5955.9391
12.000	0.254296	-2138200.	36945.2328	-0.0004845	2108.2027	-264.6046	6243.2380
18.000	0.250732	-1920433.	35329.0043	-0.0006922	1947.7453	-274.1383	6560.1152
24.000	0.245989	-1712250.	33656.8444	-0.0008781	1794.3503	-283.2484	6908.8082
30.000	0.240195	-1514011.	31931.3411	-0.0010432	1648.2820	-291.9194	7292.0712
36.000	0.233471	-1326057.	30155.1768	-0.0011885	1509.7921	-300.1354	7713.2250
42.000	0.225933	-1148712.	28331.1319	-0.0013151	1379.1189	-307.8796	8176.2336
48.000	0.217689	-982280.	26787.0648	-0.0014242	1256.4872	-206.8094	5700.1315
54.000	0.208842	-823148.	25749.1310	-0.0015166	1139.2342	-139.1685	3998.2819
60.000	0.199490	-668905.	24906.2645	-0.0015929	1025.5830	-141.7870	4264.4737
66.000	0.189728	-519667.	24048.6505	-0.0016537	915.6199	-144.0844	4556.5644
72.000	0.179646	-375538.	23178.2444	-0.0016995	809.4221	-146.0510	4877.9650
78.000	0.169333	-236613.	22297.0594	-0.0017308	707.0575	-147.6774	5232.6619
84.000	0.158876	-102968.	21407.1636	-0.0017482	608.5843	-148.9546	5625.3298
90.000	0.148355	25329.2199	20510.6763	-0.0017522	551.3777	-149.8745	6061.4687
96.000	0.137849	148227.	19609.7641	-0.0017433	641.9326	-150.4296	6547.5694
102.000	0.127435	265688.	18706.6354	-0.0017221	728.4811	-150.6134	7091.3124
108.000	0.117184	377687.	17477.0570	-0.0016892	811.0055	-259.2461	13273.8481
114.000	0.107164	480298.	15638.6839	-0.0016453	886.6120	-353.5449	19794.5692
120.000	0.097440	570110.	13517.9404	-0.0015916	952.7880	-353.3696	21759.2628
126.000	0.088065	647116.	11400.4043	-0.0015293	1009.5284	-352.4758	24014.5911
132.000	0.079088	711337.	9290.4330	-0.0014598	1056.8486	-350.8480	26616.9075
138.000	0.070548	762823.	7192.4806	-0.0013843	1094.7846	-348.4695	29636.7503
144.000	0.062476	801651.	5111.1079	-0.0013043	1123.3940	-345.3214	33163.4502
150.000	0.054897	827928.	3050.9999	-0.0012209	1142.7561	-341.3812	37311.7113
156.000	0.047825	841794.	1016.9927	-0.0011355	1152.9725	-336.6212	42231.2807
162.000	0.041271	843416.	-985.8851	-0.0010492	1154.1679	-331.0048	48121.6474
168.000	0.035235	832997.	-2540.2419	-0.0009635	1146.4911	-187.1142	31863.2255
174.000	0.029709	815719.	-3462.2622	-0.0008791	1133.7602	-120.2259	24280.3133
180.000	0.024685	793993.	-4162.0215	-0.0007967	1117.7513	-113.0271	27472.2897
186.000	0.020149	768079.	-4817.9946	-0.0007168	1098.6576	-105.6306	31455.2588
192.000	0.016084	738250.	-5428.8514	-0.0006397	1076.6782	-97.9884	36554.3487
198.000	0.012472	704783.	-5992.8928	-0.0005659	1052.0192	-90.0254	43309.0925
204.000	0.009293	667971.	-6507.8216	-0.0004956	1024.8952	-81.6175	52695.5511
210.000	0.006524	628123.	-6970.3008	-0.0004293	995.5335	-72.5422	66712.5580
216.000	0.004141	585569.	-7374.9698	-0.0003672	964.1790	-62.3474	90332.3358
222.000	0.002118	540685.	-7711.6104	-0.0003096	931.1069	-49.8661	141287.
228.000	0.000426	493925.	-7942.1441	-0.0002567	896.6531	-26.9785	379894.
234.000	-0.000962	446122.	-7908.2017	-0.0002086	861.4298	38.2926	238786.
240.000	-0.002077	399630.	-7644.8051	-0.0001653	827.1735	49.5062	143045.
246.000	-0.002945	354862.	-7329.3940	-0.0001267	794.1870	55.6308	113321.
252.000	-0.003597	312044.	-6984.1120	-9.2545E-05	762.6373	59.4632	99200.0379
258.000	-0.004056	271320.	-6620.0332	-6.2695E-05	732.6310	61.8965	91562.1766
264.000	-0.004349	232785.	-6244.2846	-3.6900E-05	704.2369	63.3530	87405.6330
270.000	-0.004499	196495.	-5862.0040	-1.4935E-05	677.4980	64.0738	85453.9360
276.000	-0.004528	162484.	-5477.1426	3.4338E-06	652.4372	64.2133	85086.1022
282.000	-0.004458	130760.	-5092.8659	1.8439E-05	629.0620	63.8789	85981.5053
288.000	-0.004307	101316.	-4632.1573	3.0314E-05	607.3670	89.6906	124951.
294.000	-0.004094	75086.2258	-4098.1090	3.9340E-05	588.0401	88.3255	129451.
300.000	-0.003835	52024.9895	-3576.2976	4.5844E-05	571.0479	85.6117	133951.
306.000	-0.003544	32038.0741	-3074.1465	5.0145E-05	556.3210	81.7720	138451.
312.000	-0.003233	14990.2109	-2597.7489	5.2552E-05	543.7596	77.0272	142951.
318.000	-0.002913	713.1077	-2151.8972	5.3355E-05	533.2399	71.5900	147451.

324.000	-0.002593	-10986.8594	-1740.1412	5.2830E-05	540.8099	65.6620	151951.
330.000	-0.002279	-20321.3700	-1364.8675	5.1228E-05	547.6878	59.4293	156451.
336.000	-0.001978	-27513.4201	-1027.3971	4.8780E-05	552.9871	53.0609	160951.
342.000	-0.001694	-32791.2075	-728.0946	4.5694E-05	556.8759	46.7066	165451.
348.000	-0.001430	-36382.7034	-466.4856	4.2155E-05	559.5222	40.4964	169951.
354.000	-0.001188	-38510.9460	-241.3780	3.8323E-05	561.0904	34.5395	174451.
360.000	-0.000970	-39390.0680	-50.9838	3.4336E-05	561.7382	28.9252	178951.
366.000	-0.000776	-39222.0524	106.9619	3.0314E-05	561.6144	23.7233	183451.
372.000	-0.000606	-38194.1932	235.0866	2.6353E-05	560.8570	18.9849	187951.
378.000	-0.000460	-36477.2248	336.2734	2.2532E-05	559.5919	14.7440	192451.
384.000	-0.000336	-34224.0746	413.5615	1.8914E-05	557.9317	11.0187	196951.
390.000	-0.000233	-31569.1869	470.0565	1.5548E-05	555.9755	7.8130	201451.
396.000	-0.000149	-28628.3608	508.8498	1.2467E-05	553.8086	5.1181	205951.
402.000	-8.31E-05	-25499.0453	532.9477	9.6977E-06	551.5029	2.9145	210451.
408.000	-3.27E-05	-22261.0348	561.4320	7.2539E-06	549.1170	6.5803	1206107.
414.000	3.95E-06	-18782.8396	578.7882	5.1538E-06	546.5542	-0.7948769	1206107.
420.000	2.91E-05	-15330.4805	558.8486	3.4082E-06	544.0104	-5.8517	1206107.
426.000	4.49E-05	-12086.5134	514.2448	2.0053E-06	541.6201	-9.0163	1206107.
432.000	5.32E-05	-9165.3428	455.1291	9.1791E-07	539.4677	-10.6890	1206107.
438.000	5.59E-05	-6627.6193	389.3708	1.0980E-07	537.5978	-11.2304	1206107.
444.000	5.45E-05	-4493.2108	322.8179	-4.5924E-07	536.0251	-10.9538	1206107.
450.000	5.04E-05	-2752.4759	259.5884	-8.2999E-07	534.7425	-10.1227	1206107.
456.000	4.45E-05	-1375.7494	202.3652	-1.0412E-06	533.7281	-8.9517	1206107.
462.000	3.79E-05	-321.0819	152.6770	-1.1280E-06	532.9510	-7.6110	1206107.
468.000	3.10E-05	459.6370	108.3703	-1.1210E-06	533.0531	-7.1579	1385601.
474.000	2.44E-05	982.6038	67.6649	-1.0472E-06	533.4384	-6.4106	1575672.
480.000	1.84E-05	1274.6447	33.9138	-9.3166E-07	533.6536	-4.8398	1575672.
486.000	1.32E-05	1392.2637	8.9706	-7.9520E-07	533.7403	-3.4746	1575672.
492.000	8.89E-06	1384.5916	-8.4547	-6.5311E-07	533.7346	-2.3339	1575672.
498.000	5.39E-06	1292.6955	-19.7056	-5.1612E-07	533.6669	-1.4164	1575672.
504.000	2.69E-06	1149.6175	-26.0770	-3.9115E-07	533.5615	-0.7073971	1575672.
510.000	7.00E-07	980.9031	-28.7504	-2.8213E-07	533.4372	-0.1837635	1575672.
516.000	-6.92E-07	805.4281	-28.7566	-1.9073E-07	533.3079	0.1816993	1575672.
522.000	-1.59E-06	636.3750	-26.9597	-1.1695E-07	533.1833	0.4172867	1575672.
528.000	-2.10E-06	482.2501	-24.0570	-5.9714E-08	533.0697	0.5502586	1575672.
534.000	-2.31E-06	347.8631	-20.5899	-1.7239E-08	532.9707	0.6054676	1575672.
540.000	-2.30E-06	235.2215	-16.9597	1.2597E-08	532.8877	0.6045836	1575672.
546.000	-2.15E-06	144.3101	-13.4487	3.2017E-08	532.8207	0.5657701	1575672.
552.000	-1.92E-06	73.7451	-10.2403	4.3175E-08	532.7687	0.5036866	1575672.
558.000	-1.64E-06	21.3018	-7.4401	4.8038E-08	532.7301	0.4297117	1575672.
564.000	-1.34E-06	-15.6750	-5.0941	4.8326E-08	532.7260	0.3523018	1575672.
570.000	-1.06E-06	-39.9666	-3.2049	4.5479E-08	532.7439	0.2774196	1575672.
576.000	-7.96E-07	-54.2651	-1.7457	4.0657E-08	532.7544	0.2089820	1575672.
582.000	-5.68E-07	-61.0323	-0.6708517	3.4758E-08	532.7594	0.1492946	1575672.
588.000	-3.79E-07	-62.4159	0.1601392	2.8441E-08	532.7604	0.1277023	2023324.
594.000	-2.27E-07	-59.1929	0.8274265	2.2218E-08	532.7580	0.0947268	2501506.
600.000	-1.12E-07	-52.5510	1.2518	1.6501E-08	532.7531	0.0467239	2501506.
606.000	-2.92E-08	-44.2193	1.4285	1.1549E-08	532.7470	0.0121741	2501506.
612.000	2.65E-08	-35.4427	1.4318	7.4728E-09	532.7405	-0.0110558	2501506.
618.000	6.05E-08	-27.0590	1.3230	4.2747E-09	532.7343	-0.0252124	2501506.
624.000	7.78E-08	-19.5788	1.1501	1.8883E-09	532.7288	-0.0324420	2501506.
630.000	8.31E-08	-13.2637	0.9487544	2.0777E-10	532.7242	-0.0346595	2501506.
636.000	8.03E-08	-8.1944	0.7443314	-8.9022E-10	532.7204	-0.0334815	2501506.
642.000	7.25E-08	-4.3292	0.5532697	-1.5310E-09	532.7176	-0.0302057	2501506.
648.000	6.19E-08	-1.5507	0.3851873	-1.8319E-09	532.7156	-0.0258217	2501506.
654.000	5.05E-08	0.2983891	0.2445998	-1.8960E-09	532.7146	-0.0210408	2501506.
660.000	3.92E-08	1.3900	0.1324691	-1.8096E-09	532.7154	-0.0163362	2501506.
666.000	2.88E-08	1.8933	0.0474985	-1.6416E-09	532.7158	-0.0119874	2501506.
672.000	1.95E-08	1.9647	-0.0128336	-1.4442E-09	532.7159	-0.0081233	2501506.
678.000	1.14E-08	1.7434	-0.0514900	-1.2544E-09	532.7157	-0.0047622	2501506.
684.000	4.43E-09	1.3505	-0.0713184	-1.0961E-09	532.7154	-0.0018473	2501506.
690.000	-1.73E-09	0.8907737	-0.0746951	-9.8145E-10	532.7151	0.0007218	2501506.
696.000	-7.35E-09	0.4569486	-0.0633411	-9.1249E-10	532.7147	0.0030629	2501506.
702.000	-1.27E-08	0.1333189	-0.0382917	-8.8228E-10	532.7145	0.0052870	2501506.
708.000	-1.79E-08	0.0000	0.0000	-8.7546E-10	532.7144	0.0074769	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 8:

```
Pile-head deflection             =     0.25734486 in
Computed slope at pile head      =   2.775558E-17
Maximum bending moment           =      -2600971. lbs-in
Maximum shear force              =    40000.00000 lbs
Depth of maximum bending moment  =        0.00000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             26
Number of zero deflection points =              5
```

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 9

```
Pile-head boundary conditions are Shear and Slope (BC Type 2)
Specified shear force at pile head  =       45000.000 lbs
Specified slope at pile head        =       0.000E+00 in/in
Specified axial load at pile head   =      241000.000 lbs
```

(Zero slope for this load indicates fixed-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	0.329743	-3059592.	45000.0000	9.7145E-17	2787.1109	-259.9470	2364.9951
6.000	0.328804	-2794044.	43407.2758	-0.0002995	2591.4479	-270.9611	4944.4876
12.000	0.326149	-2537838.	41749.6250	-0.0005723	2402.6677	-281.5892	5180.2574
18.000	0.321936	-2291394.	40029.4099	-0.0008195	2221.0802	-291.8159	5438.6494
24.000	0.316315	-2055115.	38249.0861	-0.0010419	2046.9835	-301.6254	5721.3536
30.000	0.309433	-1829392.	36411.2038	-0.0012406	1880.6636	-311.0020	6030.4169
36.000	0.301428	-1614593.	34518.4095	-0.0014168	1722.3938	-319.9294	6368.2770
42.000	0.292431	-1411073.	32573.4479	-0.0015717	1572.4343	-328.3911	6737.8129
48.000	0.282568	-1219167.	30911.4863	-0.0017063	1431.0319	-225.5961	4790.2706
54.000	0.271956	-1035201.	29778.7784	-0.0018216	1295.4806	-151.9732	3352.8904
60.000	0.260709	-856553.	28857.8072	-0.0019184	1163.8477	-155.0172	3567.5966
66.000	0.248935	-683359.	27919.5434	-0.0019972	1036.2334	-157.7374	3801.8897
72.000	0.236742	-515743.	26965.9591	-0.0020586	912.7287	-160.1240	4058.1864
78.000	0.224233	-353814.	25999.0832	-0.0021031	793.4151	-162.1679	4339.2791
84.000	0.211506	-197672.	25020.9977	-0.0021313	678.3646	-163.8606	4648.4035
90.000	0.198657	-47398.7096	24033.8337	-0.0021438	567.6392	-165.1941	4989.3174
96.000	0.185780	96934.2556	23039.7673	-0.0021413	604.1384	-166.1614	5366.3949
102.000	0.172962	235271.	22041.0133	-0.0021243	706.0690	-166.7566	5784.7364
108.000	0.160289	367570.	20699.6565	-0.0020934	803.5506	-280.3623	10494.6587
114.000	0.147841	489721.	18709.0925	-0.0020496	893.5552	-383.1590	15550.1931
120.000	0.135694	598006.	16408.0082	-0.0019939	973.3429	-383.8692	16973.6170
126.000	0.123914	692384.	14104.7332	-0.0019279	1042.8829	-383.8892	18588.1775
132.000	0.112559	772838.	11803.4438	-0.0018529	1102.1644	-383.2073	20426.9584
138.000	0.101679	839384.	9508.3883	-0.0017704	1151.1967	-381.8112	22530.3611
144.000	0.091314	892059.	7223.8918	-0.0016818	1190.0096	-379.6876	24948.1665
150.000	0.081497	930934.	4954.3644	-0.0015885	1218.6538	-376.8215	27742.3595
156.000	0.072252	956106.	2704.3166	-0.0014920	1237.2009	-373.1945	30991.0929
162.000	0.063594	967701.	478.3818	-0.0013935	1245.7445	-368.7838	34794.4060
168.000	0.055529	965876.	-1281.2128	-0.0012946	1244.4002	-217.7478	23527.7940
174.000	0.048058	956070.	-2357.8441	-0.0011963	1237.1747	-141.1293	17619.7159
180.000	0.041174	941042.	-3183.3559	-0.0010992	1226.1014	-134.0413	19532.7012
186.000	0.034868	921049.	-3965.9288	-0.0010039	1211.3699	-126.8163	21822.0928
192.000	0.029128	896354.	-4704.6866	-0.0009109	1193.1741	-119.4363	24602.7048
198.000	0.023937	867227.	-5398.6183	-0.0008207	1171.7124	-111.8743	28041.7831
204.000	0.019280	833944.	-6046.5110	-0.0007336	1147.1886	-104.0899	32393.8377
210.000	0.015134	796790.	-6646.8434	-0.0006502	1119.8127	-96.0209	38068.5736
216.000	0.011477	756062.	-7197.6061	-0.0005707	1089.8030	-87.5667	45776.8044
222.000	0.008285	712070.	-7695.9700	-0.0004956	1057.3880	-78.5546	56887.7340
228.000	0.005530	665144.	-8137.5994	-0.0004251	1022.8117	-68.6552	74487.0180

234.000	0.003184	615648.	-8514.9225	-0.0003596	986.3417	-57.1192	107648.
240.000	0.001215	564005.	-8810.6287	-0.0002992	948.2894	-41.4496	204667.
246.000	-0.000407	510786.	-8857.6500	-0.0002442	909.0762	25.7759	379894.
252.000	-0.001716	458419.	-8640.9714	-0.0001946	870.4909	46.4503	162442.
258.000	-0.002743	407657.	-8338.6515	-0.0001503	833.0879	54.3230	118833.
264.000	-0.003520	358790.	-7998.5762	-0.0001111	797.0813	59.0355	100640.
270.000	-0.004076	311995.	-7635.4750	-7.6785E-05	762.6016	61.9983	91260.7731
276.000	-0.004441	267386.	-7258.0881	-4.7139E-05	729.7325	63.7974	86192.3735
282.000	-0.004642	225035.	-6872.4593	-2.1943E-05	698.5264	64.7456	83690.4458
288.000	-0.004704	184980.	-6384.3165	-9.6283E-07	669.0133	97.9687	124951.
294.000	-0.004653	148426.	-5789.2215	1.6097E-05	642.0787	100.3963	129451.
300.000	-0.004511	115463.	-5185.8942	2.9600E-05	617.7910	100.7128	133951.
306.000	-0.004298	86109.2020	-4586.2157	3.9914E-05	596.1622	99.1801	138451.
312.000	-0.004032	60313.0622	-4000.4712	4.7406E-05	577.1548	96.0681	142951.
318.000	-0.003729	37966.4480	-3437.3257	5.2435E-05	560.6892	91.6471	147451.
324.000	-0.003403	18913.5110	-2903.8405	5.5346E-05	546.6504	86.1813	151951.
330.000	-0.003065	2960.3018	-2405.5268	5.6465E-05	534.8956	79.9233	156451.
336.000	-0.002725	-10116.1075	-1946.4280	5.6099E-05	540.1683	73.1097	160951.
342.000	-0.002392	-20559.0715	-1529.2255	5.4529E-05	547.8629	65.9578	165451.
348.000	-0.002071	-28624.5122	-1155.3623	5.2013E-05	553.8058	58.6633	169951.
354.000	-0.001768	-34573.8390	-825.1770	4.8779E-05	558.1894	51.3985	174451.
360.000	-0.001486	-38667.7040	-538.0457	4.5031E-05	561.2059	44.3119	178951.
366.000	-0.001227	-41160.6176	-292.5253	4.0946E-05	563.0428	37.5282	183451.
372.000	-0.000994	-42296.4243	-86.4944	3.6676E-05	563.8797	31.1487	187951.
378.000	-0.000787	-42304.6175	82.7099	3.2347E-05	563.8857	25.2527	192451.
384.000	-0.000606	-41397.4526	218.1644	2.8064E-05	563.2173	19.8988	196951.
390.000	-0.000451	-39767.8062	323.2405	2.3911E-05	562.0165	15.1266	201451.
396.000	-0.000319	-37587.7171	401.4977	1.9953E-05	560.4101	10.9591	205951.
402.000	-0.000211	-35007.5378	456.5877	1.6238E-05	558.5090	7.4042	210451.
408.000	-0.000124	-32155.6253	553.8297	1.2802E-05	556.4076	25.0097	1206107.
414.000	-5.75E-05	-28398.6039	663.5214	9.7031E-06	553.6393	11.5542	1206107.
420.000	-7.98E-06	-24221.4295	702.9955	7.0106E-06	550.5615	1.6039	1206107.
426.000	2.66E-05	-19982.9320	691.7367	4.7487E-06	547.4384	-5.3568	1206107.
432.000	4.90E-05	-15934.3227	646.1132	2.9109E-06	544.4553	-9.8510	1206107.
438.000	6.16E-05	-12237.9914	579.4250	1.4693E-06	541.7317	-12.3784	1206107.
444.000	6.66E-05	-8985.4722	502.1038	3.8334E-07	539.3352	-13.3953	1206107.
450.000	6.62E-05	-6213.8539	422.0086	-3.9439E-07	537.2930	-13.3031	1206107.
456.000	6.19E-05	-3920.2278	344.7675	-9.1294E-07	535.6030	-12.4439	1206107.
462.000	5.52E-05	-2074.0033	274.1330	-1.2197E-06	534.2426	-11.1009	1206107.
468.000	4.73E-05	-627.1041	208.0826	-1.3579E-06	533.1765	-10.9159	1385601.
474.000	3.89E-05	426.9144	144.6651	-1.3681E-06	533.0290	-10.2232	1575672.
480.000	3.09E-05	1112.8337	89.6896	-1.2893E-06	533.5344	-8.1019	1575672.
486.000	2.35E-05	1506.9185	46.9035	-1.1553E-06	533.8248	-6.1601	1575672.
492.000	1.70E-05	1679.0165	15.0394	-9.9226E-07	533.9516	-4.4613	1575672.
498.000	1.15E-05	1690.2605	-7.4439	-8.1986E-07	533.9598	-3.0332	1575672.
504.000	7.15E-06	1592.0606	-22.1762	-6.5190E-07	533.8875	-1.8776	1575672.
510.000	3.73E-06	1426.0309	-30.7455	-4.9747E-07	533.7652	-0.9787888	1575672.
516.000	1.18E-06	1224.5538	-34.6116	-3.6185E-07	533.6167	-0.3099097	1575672.
522.000	-6.15E-07	1011.7387	-35.0568	-2.4742E-07	533.4599	0.1615099	1575672.
528.000	-1.79E-06	804.5883	-33.1629	-1.5448E-07	533.3073	0.4697865	1575672.
534.000	-2.47E-06	614.2311	-29.8085	-8.1879E-08	533.1670	0.6483232	1575672.
540.000	-2.77E-06	447.1226	-25.6801	-2.7571E-08	533.0439	0.7278151	1575672.
546.000	-2.80E-06	306.1494	-21.2910	1.0973E-08	532.9400	0.7352084	1575672.
552.000	-2.64E-06	191.5983	-17.0057	3.6442E-08	532.8556	0.6932350	1575672.
558.000	-2.36E-06	101.9753	-13.0649	5.1464E-08	532.7896	0.6203664	1575672.
564.000	-2.02E-06	34.6705	-9.6107	5.8456E-08	532.7400	0.5310543	1575672.
570.000	-1.66E-06	-13.5215	-6.7090	5.9538E-08	532.7244	0.4361515	1575672.
576.000	-1.31E-06	-46.0101	-4.3703	5.6492E-08	532.7483	0.3434291	1575672.
582.000	-9.83E-07	-66.1285	-2.5656	5.0754E-08	532.7631	0.2581258	1575672.
588.000	-6.99E-07	-76.9445	-1.0844	4.3433E-08	532.7711	0.2356145	2023324.
594.000	-4.62E-07	-79.2670	0.1999317	3.5440E-08	532.7728	0.1924989	2501506.
600.000	-2.73E-07	-74.6478	1.1194	2.7564E-08	532.7694	0.1139916	2501506.
606.000	-1.31E-07	-65.9138	1.6252	2.0372E-08	532.7630	0.0545939	2501506.
612.000	-2.90E-08	-55.2048	1.8252	1.4175E-08	532.7551	0.0120700	2501506.
618.000	3.91E-08	-44.0530	1.8124	9.0957E-09	532.7469	-0.0163217	2501506.
624.000	8.02E-08	-33.4823	1.6631	5.1283E-09	532.7391	-0.0334358	2501506.
630.000	1.01E-07	-24.1104	1.4369	2.1814E-09	532.7322	-0.0419786	2501506.
636.000	1.06E-07	-16.2461	1.1779	1.1637E-10	532.7264	-0.0443492	2501506.
642.000	1.02E-07	-9.9759	0.9171667	-1.2254E-09	532.7218	-0.0425608	2501506.
648.000	9.17E-08	-5.2365	0.6748285	-2.0038E-09	532.7183	-0.0382186	2501506.

654.000	7.80E-08	-1.8722	0.4625650	-2.3675E-09	532.7158	-0.0325359	2501506.
660.000	6.33E-08	0.3210978	0.2858357	-2.4469E-09	532.7146	-0.0263739	2501506.
666.000	4.87E-08	1.5649	0.1458319	-2.3504E-09	532.7156	-0.0202941	2501506.
672.000	3.51E-08	2.0779	0.0411052	-2.1640E-09	532.7159	-0.0146149	2501506.
678.000	2.27E-08	2.0644	-0.0311422	-1.9520E-09	532.7159	-0.0094676	2501506.
684.000	1.16E-08	1.7098	-0.0740913	-1.7589E-09	532.7157	-0.0048488	2501506.
690.000	1.60E-09	1.1804	-0.0906408	-1.6110E-09	532.7153	-0.0006677	2501506.
696.000	-7.70E-09	0.6267863	-0.0830105	-1.5186E-09	532.7149	0.0032112	2501506.
702.000	-1.66E-08	0.1886740	-0.0525881	-1.4768E-09	532.7146	0.0069296	2501506.
708.000	-2.54E-08	0.0000	0.0000	-1.4672E-09	532.7144	0.0105998	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 9:

```
Pile-head deflection             =     0.32974316 in
Computed slope at pile head      =   9.714451E-17
Maximum bending moment           =      -3059592. lbs-in
Maximum shear force              =    45000.00000 lbs
Depth of maximum bending moment  =        0.00000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             27
Number of zero deflection points =              5
```

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 10

Pile-head boundary conditions are Shear and Slope (BC Type 2)
Specified shear force at pile head = 50000.000 lbs
Specified slope at pile head = 0.000E+00 in/in
Specified axial load at pile head = 241000.000 lbs

(Zero slope for this load indicates fixed-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	0.411923	-3537784.	50000.0000	-1.8504E-17	3139.4571	-274.8170	2001.4684
6.000	0.410837	-3242469.	48316.1198	-0.0003469	2921.8604	-286.4764	4183.7965
12.000	0.407760	-2956988.	46563.4200	-0.0006642	2711.5091	-297.7569	4381.3569
18.000	0.402867	-2681787.	44744.2216	-0.0009527	2508.7337	-308.6425	4596.6901
24.000	0.396328	-2417302.	42860.9426	-0.0012136	2313.8528	-319.1171	4831.1106
30.000	0.388304	-2163946.	40916.0977	-0.0014480	2127.1733	-329.1645	5086.1888
36.000	0.378951	-1922121.	38912.2990	-0.0016571	1948.9891	-338.7684	5363.7742
42.000	0.368419	-1692207.	36852.2577	-0.0018420	1779.5816	-347.9120	5666.0304
48.000	0.356847	-1474567.	35076.9816	-0.0020041	1619.2181	-243.8467	4100.0191
54.000	0.344370	-1265487.	33852.1971	-0.0021443	1465.1621	-164.4149	2864.6203
60.000	0.331116	-1062139.	32855.3267	-0.0022634	1315.3294	-167.8753	3041.9919
66.000	0.317209	-864677.	31838.6731	-0.0023620	1169.8339	-171.0093	3234.6325
72.000	0.302772	-673244.	30804.2228	-0.0024407	1028.7803	-173.8074	3444.3218
78.000	0.287921	-487968.	29754.0188	-0.0025001	892.2637	-176.2606	3673.0974
84.000	0.272771	-308966.	28690.1561	-0.0025409	760.3693	-178.3603	3923.2968
90.000	0.257431	-136338.	27614.7778	-0.0025636	633.1724	-180.0991	4197.6066
96.000	0.242007	29825.7688	26530.0706	-0.0025691	554.6909	-181.4700	4499.1194
102.000	0.226602	189452.	25438.2583	-0.0025579	672.3085	-182.4674	4831.3998
108.000	0.211313	342482.	23989.6080	-0.0025307	785.0653	-300.4160	8529.9883
114.000	0.196234	484646.	21854.5661	-0.0024883	889.8160	-411.2646	12574.7189
120.000	0.181453	611933.	19382.3960	-0.0024322	983.6047	-412.7921	13649.5669
126.000	0.167047	724269.	16903.0709	-0.0023639	1066.3771	-413.6496	14857.4522
132.000	0.153087	821606.	14420.6392	-0.0022848	1138.0980	-413.8276	16219.3538
138.000	0.139630	903924.	11939.2088	-0.0021965	1198.7522	-413.3159	17760.4359

144.000	0.126729	971229.	9462.9491	-0.0021005	1248.3443	-412.1040	19511.1035
150.000	0.114424	1023554.	6996.0958	-0.0019984	1286.8991	-410.1804	21508.4100
156.000	0.102748	1060962.	4542.9600	-0.0018918	1314.4620	-407.5315	23797.9708
162.000	0.091723	1083541.	2107.9436	-0.0017820	1331.0990	-404.1406	26436.6331
168.000	0.081363	1091411.	153.5776	-0.0016708	1336.8977	-247.3147	18237.8203
174.000	0.071674	1090216.	-1072.0889	-0.0015591	1336.0171	-161.2408	13497.8889
180.000	0.062654	1083055.	-2018.3268	-0.0014479	1330.7407	-154.1718	14764.1781
186.000	0.054299	1070183.	-2921.8117	-0.0013377	1321.2566	-146.9898	16242.3529
192.000	0.046601	1051862.	-3781.8429	-0.0012292	1307.7568	-139.6873	17985.1718
198.000	0.039549	1028356.	-4597.6634	-0.0011227	1290.4370	-132.2529	20064.2729
204.000	0.033128	999937.	-5368.4324	-0.0010189	1269.4969	-124.6701	22579.5886
210.000	0.027322	966881.	-6093.1856	-0.0009183	1245.1408	-116.9143	25675.1775
216.000	0.022109	929474.	-6770.7755	-0.0008213	1217.5780	-108.9490	29567.3662
222.000	0.017466	888007.	-7399.7774	-0.0007283	1187.0240	-100.7183	34598.3756
228.000	0.013369	842783.	-7978.3332	-0.0006397	1153.7014	-92.1336	41348.0440
234.000	0.009790	794117.	-8503.8709	-0.0005559	1117.8431	-83.0456	50896.1213
240.000	0.006698	742344.	-8972.5462	-0.0004773	1079.6953	-73.1794	65551.7994
246.000	0.004062	687827.	-9377.9243	-0.0004041	1039.5254	-61.9466	91498.7487
252.000	0.001848	630978.	-9706.7330	-0.0003367	997.6374	-47.6563	154692.
258.000	2.22E-05	572320.	-9853.9145	-0.0002751	954.4164	-1.4042	379894.
264.000	-0.001453	513527.	-9726.2973	-0.0002195	911.0957	43.9433	181501.
270.000	-0.002612	456239.	-9434.1245	-0.0001699	868.8847	53.4476	122766.
276.000	-0.003492	400808.	-9097.1434	-0.0001261	828.0417	58.8794	101180.
282.000	-0.004125	347438.	-8733.7686	-8.7768E-05	788.7169	62.2455	90542.5412
288.000	-0.004545	296257.	-8263.0965	-5.4830E-05	751.0052	94.6453	124951.
294.000	-0.004783	248439.	-7669.5928	-2.6959E-05	715.7718	103.1893	129451.
300.000	-0.004868	204300.	-7033.9705	-3.7930E-06	683.2485	108.6848	133951.
306.000	-0.004828	164043.	-6373.6748	1.5055E-05	653.5859	111.4138	138451.
312.000	-0.004688	127772.	-5704.3843	2.9986E-05	626.8607	111.6831	142951.
318.000	-0.004468	95503.3845	-5039.8954	4.1411E-05	603.0841	109.8132	147451.
324.000	-0.004191	67173.7040	-4392.0668	4.9735E-05	582.2100	106.1296	151951.
330.000	-0.003872	42654.7492	-3770.8166	5.5355E-05	564.1437	100.9538	156451.
336.000	-0.003526	21763.8190	-3184.1646	5.8651E-05	548.7506	94.5969	160951.
342.000	-0.003168	4275.1550	-2638.3133	5.9983E-05	535.8645	87.3536	165451.
348.000	-0.002807	-10069.4129	-2137.7584	5.9687E-05	540.1338	79.4981	169951.
354.000	-0.002452	-21550.5608	-1685.4228	5.8069E-05	548.5935	71.2805	174451.
360.000	-0.002110	-30462.4220	-1282.8062	5.5408E-05	555.1600	62.9250	178951.
366.000	-0.001787	-37104.4742	-930.1448	5.1950E-05	560.0541	54.6288	183451.
372.000	-0.001486	-41774.3996	-626.5737	4.7914E-05	563.4950	46.5616	187951.
378.000	-0.001212	-44761.9268	-370.2891	4.3486E-05	565.6963	38.8666	192451.
384.000	-0.000965	-46343.6312	-158.7035	3.8824E-05	566.8618	31.6619	196951.
390.000	-0.000746	-46778.6490	11.4077	3.4060E-05	567.1823	25.0418	201451.
396.000	-0.000556	-46305.2387	143.7720	2.9297E-05	566.8335	19.0796	205951.
402.000	-0.000394	-45138.1104	242.4998	2.4617E-05	565.9735	13.8297	210451.
408.000	-0.000260	-43466.4347	441.0482	2.0084E-05	564.7417	52.3531	1206107.
414.000	-0.000153	-39903.6142	690.5453	1.5818E-05	562.1166	30.8126	1206107.
420.000	-7.06E-05	-35225.6364	825.5749	1.1974E-05	558.6697	14.1973	1206107.
426.000	-9.60E-06	-30031.3432	873.9565	8.6344E-06	554.8424	1.9299	1206107.
432.000	3.30E-05	-24763.1289	859.8542	5.8306E-06	550.9606	-6.6307	1206107.
438.000	6.04E-05	-19729.9551	803.5577	3.5540E-06	547.2520	-12.1348	1206107.
444.000	7.56E-05	-15130.7142	721.5424	1.7702E-06	543.8632	-15.2036	1206107.
450.000	8.16E-05	-11076.5653	626.7168	4.2921E-07	540.8759	-16.4049	1206107.
456.000	8.08E-05	-7611.3534	528.7852	-5.2703E-07	538.3227	-16.2390	1206107.
462.000	7.53E-05	-4729.6182	434.6676	-1.1585E-06	536.1993	-15.1336	1206107.
468.000	6.69E-05	-2391.9923	342.9311	-1.5229E-06	534.4769	-15.4452	1385601.
474.000	5.70E-05	-610.0408	251.6809	-1.6765E-06	533.1639	-14.9715	1575672.
480.000	4.68E-05	633.0271	169.9244	-1.6753E-06	533.1808	-12.2807	1575672.
486.000	3.69E-05	1433.8970	104.0066	-1.5696E-06	533.7709	-9.6919	1575672.
492.000	2.79E-05	1885.6453	52.9276	-1.3997E-06	534.1038	-7.3344	1575672.
498.000	2.01E-05	2073.0761	15.0816	-1.1972E-06	534.2419	-5.2809	1575672.
504.000	1.36E-05	2070.0867	-11.4464	-9.8516E-07	534.2397	-3.5617	1575672.
510.000	8.29E-06	1938.5681	-28.6608	-7.8004E-07	534.1428	-2.1764	1575672.
516.000	4.20E-06	1728.4136	-38.5006	-5.9240E-07	533.9880	-1.1036	1575672.
522.000	1.18E-06	1478.2746	-42.7398	-4.2832E-07	533.8036	-0.3094913	1575672.
528.000	-9.38E-07	1216.7752	-42.9296	-2.9042E-07	533.6110	0.2462188	1575672.
534.000	-2.31E-06	963.9597	-40.3737	-1.7884E-07	533.4247	0.6057238	1575672.
540.000	-3.08E-06	732.8075	-36.1272	-9.2014E-08	533.2544	0.8097902	1575672.
546.000	-3.41E-06	530.6994	-31.0108	-2.7362E-08	533.1054	0.8956913	1575672.
552.000	-3.41E-06	360.7576	-25.6356	1.8253E-08	532.9802	0.8960170	1575672.
558.000	-3.19E-06	223.0190	-20.4331	4.8124E-08	532.8787	0.8381706	1575672.

564.000	-2.83E-06	115.4216	-15.6855	6.5441E-08	532.7995	0.7443623	1575672.
570.000	-2.41E-06	34.6041	-11.5566	7.3118E-08	532.7399	0.6319422	1575672.
576.000	-1.96E-06	-23.4686	-8.1189	7.3688E-08	532.7317	0.5139423	1575672.
582.000	-1.52E-06	-63.0358	-5.3779	6.9261E-08	532.7609	0.3997267	1575672.
588.000	-1.13E-06	-88.2036	-3.0397	6.1523E-08	532.7794	0.3796777	2023324.
594.000	-7.84E-07	-99.6900	-0.9202526	5.1908E-08	532.7879	0.3267991	2501506.
600.000	-5.03E-07	-99.3968	0.6892746	4.1721E-08	532.7877	0.2097099	2501506.
606.000	-2.83E-07	-91.5393	1.6726	3.1952E-08	532.7819	0.1180661	2501506.
612.000	-1.20E-07	-79.4180	2.1764	2.3204E-08	532.7729	0.0498560	2501506.
618.000	-4.74E-09	-65.4900	2.3319	1.5789E-08	532.7627	0.0019768	2501506.
624.000	6.99E-08	-51.4812	2.2504	9.8039E-09	532.7523	-0.0291371	2501506.
630.000	1.13E-07	-38.5137	2.0218	5.1989E-09	532.7428	-0.0470720	2501506.
636.000	1.32E-07	-27.2351	1.7151	1.8347E-09	532.7345	-0.0551475	2501506.
642.000	1.35E-07	-17.9378	1.3809	-4.7678E-10	532.7276	-0.0562508	2501506.
648.000	1.27E-07	-10.6629	1.0539	-1.9402E-09	532.7223	-0.0527621	2501506.
654.000	1.12E-07	-5.2858	0.7559490	-2.7563E-09	532.7183	-0.0465438	2501506.
660.000	9.35E-08	-1.5835	0.4994011	-3.1078E-09	532.7156	-0.0389722	2501506.
666.000	7.43E-08	0.7159924	0.2894983	-3.1522E-09	532.7149	-0.0309953	2501506.
672.000	5.57E-08	1.8996	0.1269072	-3.0184E-09	532.7158	-0.0232017	2501506.
678.000	3.81E-08	2.2476	0.0096188	-2.8062E-09	532.7161	-0.0158944	2501506.
684.000	2.20E-08	2.0231	-0.0655517	-2.5876E-09	532.7159	-0.0091625	2501506.
690.000	7.07E-09	1.4685	-0.1018844	-2.4090E-09	532.7155	-0.0029484	2501506.
696.000	-6.93E-09	0.8074669	-0.1020606	-2.2925E-09	532.7150	0.0028897	2501506.
702.000	-2.04E-08	0.2503726	-0.0678284	-2.2384E-09	532.7146	0.0085211	2501506.
708.000	-3.38E-08	0.0000	0.0000	-2.2256E-09	532.7144	0.0140884	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 10:

```
Pile-head deflection             =     0.41192310 in
Computed slope at pile head      =  -1.850372E-17
Maximum bending moment           =      -3537784. lbs-in
Maximum shear force              =    50000.00000 lbs
Depth of maximum bending moment  =        0.00000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             27
Number of zero deflection points =              5
```

Summary of Pile Response(s)

Definition of Symbols for Pile-Head Loading Conditions:

```
Type 1 = Shear and Moment,          y = pile-head displacment in
Type 2 = Shear and Slope,           M = Pile-head Moment lbs-in
Type 3 = Shear and Rot. Stiffness,  V = Pile-head Shear Force lbs
Type 4 = Deflection and Moment,     S = Pile-head Slope, radians
Type 5 = Deflection and Slope,      R = Rot. Stiffness of Pile-head in-lbs/rad
```

Load Type	Pile-Head Condition 1	Pile-Head Condition 2	Axial Load lbs	Pile-Head Deflection in	Maximum Moment in-lbs	Maximum Shear lbs
2	V= 5000.000	S= 0.000	241000.	0.0028546	-129988.	5000.0000
2	V= 10000.	S= 0.000	241000.	0.0140419	-363873.	10000.0000
2	V= 15000.	S= 0.000	241000.	0.0334816	-656429.	15000.0000
2	V= 20000.	S= 0.000	241000.	0.0607933	-990229.	20000.0000
2	V= 25000.	S= 0.000	241000.	0.0966005	-1354918.	25000.0000
2	V= 30000.	S= 0.000	241000.	0.1411148	-1746710.	30000.0000
2	V= 35000.	S= 0.000	241000.	0.1946181	-2162700.	35000.0000
2	V= 40000.	S= 0.000	241000.	0.2573449	-2600971.	40000.0000

```
  2  V=    45000. S=     0.000     241000.   0.3297432   -3059592.  45000.0000
  2  V=    50000. S=     0.000     241000.   0.4119231   -3537784.  50000.0000


-------------------------------------------------------------------------------
                     Pile-head Deflection vs. Pile Length
-------------------------------------------------------------------------------

Boundary Condition Type 2, Shear and Slope

Shear      =           5000. lbs
Slope      =         0.00000
Axial Load =         241000. lbs


   Pile       Pile Head       Maximum      Maximum
  Length      Deflection      Moment        Shear
    in           in           in-lbs         lbs
-----------  ------------  ------------  ------------
   708.000    0.00285456 -129988.46680    5000.00000
   672.600    0.00271918 -128946.87191    5000.00000
   637.200    0.00287848 -130030.21241    5000.00000
   601.800    0.00272271 -128912.32707    5000.00000
   566.400    0.00284290 -129933.48473    5000.00000
   531.000    0.00278740 -129575.41029    5000.00000
   495.600    0.00272372 -129078.31158    5000.00000
   460.200    0.00269898 -128931.57334    5000.00000
   424.800    0.00270511 -129023.43042    5000.00000
   389.400    0.00274641 -129301.10617    5000.00000


This analysis ended normally.
```

```
================================================================================

                LPILE Plus for Windows, Version 5.0 (5.0.41)

               Analysis of Individual Piles and Drilled Shafts
              Subjected to Lateral Loading Using the p-y Method

                       (c) 1985-2009 by Ensoft, Inc.
                            All Rights Reserved

================================================================================


This program is licensed to:

Madhu Thummaluru
URS Corporation

Path to file locations:      X:\101-Aux-VTA\440_geotech\Analysis\Pile\Lateral\Matadero Creek\
Name of input data file:     Bent_free_24 inch CISS.lpd
Name of output file:         Bent_free_24 inch CISS.lpo
Name of plot output file:    Bent_free_24 inch CISS.lpp
Name of runtime file:        Bent_free_24 inch CISS.lpr


--------------------------------------------------------------------------------
                           Time and Date of Analysis
--------------------------------------------------------------------------------

               Date:  March 18, 2010     Time:   6:55:16


--------------------------------------------------------------------------------
                                 Problem Title
--------------------------------------------------------------------------------

101 Auxillary_Matadero Creek_Bent_Fixed


--------------------------------------------------------------------------------
                                 Program Options
--------------------------------------------------------------------------------

Units Used in Computations - US Customary Units: Inches, Pounds

Basic Program Options:

Analysis Type 1:
- Computation of Lateral Pile Response Using User-specified Constant EI

Computation Options:
- Only internally-generated p-y curves used in analysis
- Analysis does not use p-y multipliers (individual pile or shaft action only)
- Analysis assumes no shear resistance at pile tip
- Analysis includes automatic computation of pile-top deflection vs.
  pile embedment length
- No computation of foundation stiffness matrix elements
- Output pile response for full length of pile
- Analysis assumes no soil movements acting on pile
- No additional p-y curves to be computed at user-specified depths

Solution Control Parameters:
- Number of pile increments            =          118
- Maximum number of iterations allowed =          100
- Deflection tolerance for convergence =   1.0000E-05 in
- Maximum allowable deflection         =   1.0000E+02 in

Printing Options:
- Values of pile-head deflection, bending moment, shear force, and
  soil reaction are printed for full length of pile.
```

- Printing Increment (spacing of output points) = 1

Pile Structural Properties and Geometry

Pile Length = 708.00 in

Depth of ground surface below top of pile = -24.00 in

Slope angle of ground surface = 0.00 deg.

Structural properties of pile defined using 2 points

Point	Depth X in	Pile Diameter in	Moment of Inertia in**4	Pile Area Sq.in	Modulus of Elasticity lbs/Sq.in
1	0.0000	24.00000000	16286.0000	452.4000	3600000.
2	552.0000	24.00000000	16286.0000	452.4000	3600000.

Soil and Rock Layering Information

The soil profile is modelled using 9 layers

Layer 1 is stiff clay without free water
Distance from top of pile to top of layer = -24.000 in
Distance from top of pile to bottom of layer = 48.000 in

Layer 2 is soft clay, p-y criteria by Matlock, 1970
Distance from top of pile to top of layer = 48.000 in
Distance from top of pile to bottom of layer = 108.000 in

Layer 3 is stiff clay without free water
Distance from top of pile to top of layer = 108.000 in
Distance from top of pile to bottom of layer = 168.000 in

Layer 4 is soft clay, p-y criteria by Matlock, 1970
Distance from top of pile to top of layer = 168.000 in
Distance from top of pile to bottom of layer = 288.000 in

Layer 5 is sand, p-y criteria by Reese et al., 1974
Distance from top of pile to top of layer = 288.000 in
Distance from top of pile to bottom of layer = 408.000 in
p-y subgrade modulus k for top of soil layer = 125.000 lbs/in**3
p-y subgrade modulus k for bottom of layer = 125.000 lbs/in**3

Layer 6 is stiff clay without free water
Distance from top of pile to top of layer = 408.000 in
Distance from top of pile to bottom of layer = 468.000 in

Layer 7 is stiff clay without free water
Distance from top of pile to top of layer = 468.000 in
Distance from top of pile to bottom of layer = 588.000 in

Layer 8 is stiff clay without free water
Distance from top of pile to top of layer = 588.000 in
Distance from top of pile to bottom of layer = 768.000 in

Layer 9 is stiff clay without free water
Distance from top of pile to top of layer = 768.000 in
Distance from top of pile to bottom of layer = 966.000 in

(Depth of lowest layer extends 258.00 in below pile tip)

Effective Unit Weight of Soil vs. Depth

Effective unit weight of soil with depth defined using 18 points

Point No.	Depth X in	Eff. Unit Weight lbs/in**3
1	-24.00	0.03620
2	48.00	0.03620
3	48.00	0.03620
4	108.00	0.03620
5	108.00	0.03330
6	168.00	0.03330
7	168.00	0.03330
8	288.00	0.03330
9	288.00	0.04200
10	408.00	0.04200
11	408.00	0.03040
12	468.00	0.03040
13	468.00	0.03620
14	588.00	0.03620
15	588.00	0.03330
16	768.00	0.03330
17	768.00	0.03330
18	966.00	0.03330

Shear Strength of Soils

Shear strength parameters with depth defined using 18 points

Point No.	Depth X in	Cohesion c lbs/in**2	Angle of Friction Deg.	E50 or k_rm	RQD %
1	-24.000	6.94000	0.00	0.01000	0.0
2	48.000	6.94000	0.00	0.01000	0.0
3	48.000	3.47000	0.00	0.01500	0.0
4	108.000	3.47000	0.00	0.01500	0.0
5	108.000	6.94000	0.00	0.01000	0.0
6	168.000	6.94000	0.00	0.01000	0.0
7	168.000	3.47000	0.00	0.01500	0.0
8	288.000	3.47000	0.00	0.01500	0.0
9	288.000	0.00000	38.00	------	------
10	408.000	0.00000	38.00	------	------
11	408.000	5.56000	0.00	0.01200	0.0
12	468.000	5.56000	0.00	0.01200	0.0
13	468.000	6.94000	0.00	0.01000	0.0
14	588.000	6.94000	0.00	0.01000	0.0
15	588.000	10.42000	0.00	0.00800	0.0
16	768.000	10.42000	0.00	0.00800	0.0
17	768.000	8.33000	0.00	0.00900	0.0
18	966.000	8.33000	0.00	0.00900	0.0

Notes:

(1) Cohesion = uniaxial compressive strength for rock materials.
(2) Values of E50 are reported for clay strata.
(3) Default values will be generated for E50 when input values are 0.
(4) RQD and k_rm are reported only for weak rock strata.

```
                                Loading Type
--------------------------------------------------------------------------------

Static loading criteria was used for computation of p-y curves.



--------------------------------------------------------------------------------
              Pile-head Loading and Pile-head Fixity Conditions
--------------------------------------------------------------------------------

Number of loads specified = 10

Load Case Number  1

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Shear force at pile head    =        5000.000 lbs
Bending moment at pile head =           0.000 in-lbs
Axial load at pile head     =      241000.000 lbs

(Zero moment at pile head for this load indicates a free-head condition)

Load Case Number  2

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Shear force at pile head    =       10000.000 lbs
Bending moment at pile head =           0.000 in-lbs
Axial load at pile head     =      241000.000 lbs

(Zero moment at pile head for this load indicates a free-head condition)

Load Case Number  3

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Shear force at pile head    =       15000.000 lbs
Bending moment at pile head =           0.000 in-lbs
Axial load at pile head     =      241000.000 lbs

(Zero moment at pile head for this load indicates a free-head condition)

Load Case Number  4

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Shear force at pile head    =       20000.000 lbs
Bending moment at pile head =           0.000 in-lbs
Axial load at pile head     =      241000.000 lbs

(Zero moment at pile head for this load indicates a free-head condition)

Load Case Number  5

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Shear force at pile head    =       25000.000 lbs
Bending moment at pile head =           0.000 in-lbs
Axial load at pile head     =      241000.000 lbs

(Zero moment at pile head for this load indicates a free-head condition)

Load Case Number  6

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Shear force at pile head    =       30000.000 lbs
Bending moment at pile head =           0.000 in-lbs
Axial load at pile head     =      241000.000 lbs

(Zero moment at pile head for this load indicates a free-head condition)

Load Case Number  7

Pile-head boundary conditions are Shear and Moment (BC Type 1)
```

```
Shear force at pile head    =       35000.000 lbs
Bending moment at pile head =           0.000 in-lbs
Axial load at pile head     =      241000.000 lbs

(Zero moment at pile head for this load indicates a free-head condition)

Load Case Number  8

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Shear force at pile head    =       40000.000 lbs
Bending moment at pile head =           0.000 in-lbs
Axial load at pile head     =      241000.000 lbs

(Zero moment at pile head for this load indicates a free-head condition)

Load Case Number  9

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Shear force at pile head    =       45000.000 lbs
Bending moment at pile head =           0.000 in-lbs
Axial load at pile head     =      241000.000 lbs

(Zero moment at pile head for this load indicates a free-head condition)

Load Case Number 10

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Shear force at pile head    =       50000.000 lbs
Bending moment at pile head =           0.000 in-lbs
Axial load at pile head     =      241000.000 lbs

(Zero moment at pile head for this load indicates a free-head condition)



-------------------------------------------------------------------------------
             Computed Values of Load Distribution and Deflection
                 for Lateral Loading for Load Case Number  1
-------------------------------------------------------------------------------

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Specified shear force at pile head  =        5000.000 lbs
Specified moment at pile head       =           0.000 in-lbs
Specified axial load at pile head   =      241000.000 lbs

(Zero moment for this load indicates free-head conditions)
```

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	0.010111	-3.1077E-08	5000.0000	-0.0001681	532.7144	-108.8301	32291.3917
6.000	0.009102	28284.0740	4341.7649	-0.0001666	553.5549	-110.5816	72891.8235
12.000	0.008111	52583.0243	3674.3679	-0.0001625	571.4591	-111.8840	82760.6701
18.000	0.007153	72846.3677	3000.5340	-0.0001561	586.3897	-112.7273	94560.8154
24.000	0.006239	89040.7499	2323.0453	-0.0001478	598.3222	-113.1023	108775.
30.000	0.005379	101150.	1644.7356	-0.0001380	607.2449	-113.0009	126037.
36.000	0.004582	109177.	968.4880	-0.0001273	613.1591	-112.4149	147198.
42.000	0.003852	113140.	297.2409	-0.0001159	616.0794	-111.3341	173416.
48.000	0.003191	113079.	-188.7153	-0.0001043	616.0342	-50.6513	95228.5884
54.000	0.002600	111177.	-437.5092	-9.2854E-05	614.6331	-32.2800	74489.5879
60.000	0.002077	108097.	-627.3110	-8.1634E-05	612.3637	-30.9873	89511.1733
66.000	0.001620	103886.	-808.7139	-7.0787E-05	609.2604	-29.4803	109154.
72.000	0.001228	98597.4527	-980.3903	-6.0426E-05	605.3639	-27.7452	135600.
78.000	0.000895	92295.7793	-1140.9035	-5.0658E-05	600.7206	-25.7592	172616.
84.000	0.000620	85053.1156	-1288.6280	-4.1584E-05	595.3840	-23.4823	227337.
90.000	0.000396	76952.5032	-1413.9877	-3.3294E-05	589.4153	-18.3043	277081.
96.000	0.000220	68181.5499	-1500.2827	-2.5868E-05	582.9526	-10.4607	285000.
102.000	8.60E-05	59023.9206	-1544.2533	-1.9359E-05	576.2050	-4.1961	292918.
108.000	-1.21E-05	49706.4962	-1551.8899	-1.3795E-05	569.3396	1.6506	819790.

114.000	-7.96E-05	40441.1383	-1501.4415	-9.1826E-06	562.5126	15.1655	1143242.
120.000	-0.000122	31715.7544	-1384.4054	-5.4904E-06	556.0835	23.8465	1170173.
126.000	-0.000145	23844.1517	-1225.7903	-2.6475E-06	550.2835	29.0252	1197105.
132.000	-0.000154	17013.9273	-1044.4387	-5.5682E-07	545.2508	31.4253	1224035.
138.000	-0.000152	11312.4975	-854.9900	8.9261E-07	541.0498	31.7242	1250965.
144.000	-0.000143	6751.4660	-668.2369	1.8169E-06	537.6891	30.5268	1277895.
150.000	-0.000130	3288.4004	-491.6107	2.3306E-06	535.1374	28.3486	1304824.
156.000	-0.000115	845.3968	-329.7479	2.5422E-06	533.3373	25.6057	1331754.
162.000	-9.98E-05	-675.9262	-185.0986	2.5508E-06	533.2125	22.6107	1358682.
168.000	-8.48E-05	-1383.1639	-93.5962	2.4455E-06	533.7336	7.8901	558577.
174.000	-7.05E-05	-1806.1526	-56.5337	2.2823E-06	534.0452	4.4640	379894.
180.000	-5.74E-05	-2068.1692	-32.2454	2.0840E-06	534.2383	3.6321	379894.
186.000	-4.55E-05	-2199.1239	-12.7073	1.8657E-06	534.3348	2.8806	379894.
192.000	-3.50E-05	-2226.0518	2.5783	1.6393E-06	534.3546	2.2146	379894.
198.000	-2.58E-05	-2172.9254	14.1273	1.4142E-06	534.3155	1.6351	379894.
204.000	-1.80E-05	-2060.6136	22.4530	1.1975E-06	534.2327	1.1401	379894.
210.000	-1.15E-05	-1906.9528	28.0490	9.9453E-07	534.1195	0.7252296	379894.
216.000	-6.07E-06	-1726.9016	31.3782	8.0859E-07	533.9868	0.3844838	379894.
222.000	-1.75E-06	-1532.7534	32.8642	6.4179E-07	533.8438	0.1108754	379894.
228.000	1.63E-06	-1334.3869	32.8874	4.9509E-07	533.6976	-0.1031435	379894.
234.000	4.19E-06	-1139.5360	31.7821	3.6850E-07	533.5541	-0.2652849	379894.
240.000	6.05E-06	-954.0668	29.8369	2.6137E-07	533.4174	-0.3831242	379894.
246.000	7.33E-06	-782.2489	27.2959	1.7253E-07	533.2908	-0.4638718	379894.
252.000	8.12E-06	-627.0146	24.3617	1.0042E-07	533.1764	-0.5142075	379894.
258.000	8.53E-06	-490.1990	21.1986	4.3250E-08	533.0756	-0.5401666	379894.
264.000	8.64E-06	-372.7569	17.9369	-9.0679E-10	532.9891	-0.5470681	379894.
270.000	8.52E-06	-274.9540	14.6772	-3.4049E-08	532.9170	-0.5394777	379894.
276.000	8.23E-06	-196.5317	11.4952	-5.8175E-08	532.8592	-0.5211978	379894.
282.000	7.82E-06	-136.8434	8.4458	-7.5233E-08	532.8152	-0.4952772	379894.
288.000	7.33E-06	-94.9648	6.5021	-8.7094E-08	532.7844	-0.1526257	124951.
294.000	6.78E-06	-58.5667	5.6055	-9.4950E-08	532.7576	-0.1462189	129451.
300.000	6.19E-06	-27.4238	4.7523	-9.9350E-08	532.7346	-0.1381818	133951.
306.000	5.59E-06	-1.2514	3.9512	-1.0082E-07	532.7153	-0.1288745	138451.
312.000	4.98E-06	20.2817	3.2086	-9.9844E-08	532.7294	-0.1186422	142951.
318.000	4.39E-06	37.5407	2.5293	-9.6885E-08	532.7421	-0.1078080	147451.
324.000	3.82E-06	50.9130	1.9158	-9.2359E-08	532.7519	-0.0966682	151951.
330.000	3.28E-06	60.7978	1.3694	-8.6643E-08	532.7592	-0.0854890	156451.
336.000	2.78E-06	67.5959	0.8893841	-8.0073E-08	532.7642	-0.0745034	160951.
342.000	2.32E-06	71.7019	0.4741423	-7.2946E-08	532.7672	-0.0639105	165451.
348.000	1.90E-06	73.4966	0.1207852	-6.5516E-08	532.7686	-0.0538752	169951.
354.000	1.53E-06	73.3408	-0.1744258	-5.8002E-08	532.7685	-0.0445285	174451.
360.000	1.21E-06	71.5712	-0.4159184	-5.0588E-08	532.7671	-0.0359691	178951.
366.000	9.24E-07	68.4961	-0.6086209	-4.3420E-08	532.7649	-0.0282651	183451.
372.000	6.85E-07	64.3933	-0.7577850	-3.6621E-08	532.7619	-0.0214563	187951.
378.000	4.85E-07	59.5086	-0.8688232	-3.0281E-08	532.7583	-0.0155564	192451.
384.000	3.22E-07	54.0550	-0.9471607	-2.4470E-08	532.7542	-0.0105561	196951.
390.000	1.91E-07	48.2134	-0.9981039	-1.9237E-08	532.7499	-0.0064250	201451.
396.000	9.07E-08	42.1334	-1.0267	-1.4614E-08	532.7455	-0.0031147	205951.
402.000	1.60E-08	35.9350	-1.0378	-1.0619E-08	532.7409	-0.0005610	210451.
408.000	-3.67E-08	29.7111	-1.0173	-7.2603E-09	532.7363	0.0073753	1206107.
414.000	-7.11E-08	23.7483	-0.9522862	-4.5249E-09	532.7319	0.0142984	1206107.
420.000	-9.10E-08	18.2968	-0.8545204	-2.3735E-09	532.7279	0.0182902	1206107.
426.000	-9.96E-08	13.5010	-0.7395786	-7.4642E-10	532.7244	0.0200237	1206107.
432.000	-9.99E-08	9.4240	-0.6192353	4.2662E-10	532.7214	0.0200907	1206107.
438.000	-9.45E-08	6.0689	-0.5019793	1.2194E-09	532.7189	0.0189946	1206107.
444.000	-8.53E-08	3.3967	-0.3935475	1.7037E-09	532.7169	0.0171493	1206107.
450.000	-7.40E-08	1.3414	-0.2974449	1.9462E-09	532.7154	0.0148849	1206107.
456.000	-6.20E-08	-0.1782464	-0.2154260	2.0057E-09	532.7145	0.0124548	1206107.
462.000	-5.00E-08	-1.2495	-0.1479215	1.9326E-09	532.7153	0.0100467	1206107.
468.000	-3.88E-08	-1.9589	-0.0909234	1.7685E-09	532.7159	0.0089526	1385601.
474.000	-2.88E-08	-2.3457	-0.0414091	1.5482E-09	532.7161	0.0075521	1575672.
480.000	-2.02E-08	-2.4603	-0.0028472	1.3023E-09	532.7162	0.0053018	1575672.
486.000	-1.31E-08	-2.3836	0.0234029	1.0544E-09	532.7162	0.0034482	1575672.
492.000	-7.54E-09	-2.1825	0.0396845	8.2078E-10	532.7160	0.0019790	1575672.
498.000	-3.28E-09	-1.9098	0.0482063	6.1138E-10	532.7158	0.0008617	1575672.
504.000	-1.99E-10	-1.6058	0.0509482	4.3150E-10	532.7156	5.2294E-05	1575672.
510.000	1.90E-09	-1.2997	0.0496107	2.8283E-10	532.7154	-0.0004981	1575672.
516.000	3.19E-09	-1.0113	0.0455993	1.6458E-10	532.7152	-0.0008390	1575672.
522.000	3.87E-09	-0.7529458	0.0400320	7.4307E-11	532.7150	-0.0010168	1575672.
528.000	4.09E-09	-0.5311079	0.0337621	8.6034E-12	532.7148	-0.0010732	1575672.

534.000	3.98E-09	-0.3478250	0.0274110	-3.6370E-11	532.7147	-0.0010439	1575672.
540.000	3.65E-09	-0.2020708	0.0214037	-6.4508E-11	532.7146	-0.0009585	1575672.
546.000	3.20E-09	-0.0907943	0.0160062	-7.9493E-11	532.7145	-0.0008406	1575672.
552.000	2.70E-09	-0.0097662	0.0113603	-8.4639E-11	532.7144	-0.0007080	1575672.
558.000	2.19E-09	0.0457742	0.0075146	-8.2796E-11	532.7144	-0.0005739	1575672.
564.000	1.70E-09	0.0806480	0.0044516	-7.6328E-11	532.7145	-0.0004471	1575672.
570.000	1.27E-09	0.0994140	0.0021102	-6.7114E-11	532.7145	-0.0003333	1575672.
576.000	8.97E-10	0.1061647	0.0004033	-5.6595E-11	532.7145	-0.0002356	1575672.
582.000	5.90E-10	0.1044177	-0.0007685	-4.5820E-11	532.7145	-0.0001550	1575672.
588.000	3.47E-10	0.0970753	-0.0015849	-3.5510E-11	532.7145	-0.0001171	2023324.
594.000	1.64E-10	0.0855017	-0.0021415	-2.6167E-11	532.7145	-6.8416E-05	2501506.
600.000	3.33E-11	0.0714525	-0.0023885	-1.8136E-11	532.7145	-1.3902E-05	2501506.
606.000	-5.35E-11	0.0568922	-0.0023632	-1.1569E-11	532.7145	2.2319E-05	2501506.
612.000	-1.05E-10	0.0431270	-0.0021644	-6.4511E-12	532.7144	4.3977E-05	2501506.
618.000	-1.31E-10	0.0309386	-0.0018686	-2.6612E-12	532.7144	5.4594E-05	2501506.
624.000	-1.37E-10	0.0207111	-0.0015330	-1.8362E-14	532.7144	5.7291E-05	2501506.
630.000	-1.31E-10	0.0125429	-0.0011971	1.6832E-12	532.7144	5.4686E-05	2501506.
636.000	-1.17E-10	0.0063416	-0.0008864	2.6495E-12	532.7144	4.8870E-05	2501506.
642.000	-9.94E-11	0.0018986	-0.0006155	3.0711E-12	532.7144	4.1431E-05	2501506.
648.000	-8.04E-11	-0.0010531	-0.0003907	3.1144E-12	532.7144	3.3505E-05	2501506.
654.000	-6.20E-11	-0.0027985	-0.0002126	2.9173E-12	532.7144	2.5849E-05	2501506.
660.000	-4.54E-11	-0.0036129	-7.8335E-05	2.5892E-12	532.7144	1.8910E-05	2501506.
666.000	-3.09E-11	-0.0037460	1.7080E-05	2.2127E-12	532.7144	1.2895E-05	2501506.
672.000	-1.88E-11	-0.0034143	7.9284E-05	1.8463E-12	532.7144	7.8396E-06	2501506.
678.000	-8.77E-12	-0.0027999	0.0001138	1.5283E-12	532.7144	3.6581E-06	2501506.
684.000	-4.64E-13	-0.0020534	0.0001253	1.2800E-12	532.7144	1.9336E-07	2501506.
690.000	6.59E-12	-0.0012997	0.0001177	1.1084E-12	532.7144	-2.7457E-06	2501506.
696.000	1.28E-11	-0.0006445	9.3382E-05	1.0089E-12	532.7144	-5.3521E-06	2501506.
702.000	1.87E-11	-0.0001820	5.3945E-05	9.6664E-13	532.7144	-7.7934E-06	2501506.
708.000	2.44E-11	0.0000	0.0000	9.5733E-13	532.7144	-1.0188E-05	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 1:

```
Pile-head deflection             =     0.01011075 in
Computed slope at pile head      =    -0.00016806
Maximum bending moment           =   113140.22231 lbs-in
Maximum shear force              =     5000.00000 lbs
Depth of maximum bending moment  =    42.00000000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             16
Number of zero deflection points =              6
```

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 2

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Specified shear force at pile head = 10000.000 lbs
Specified moment at pile head = 0.000 in-lbs
Specified axial load at pile head = 241000.000 lbs

(Zero moment for this load indicates free-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	0.052136	-1.1301E-07	10000.0000	-0.0006415	532.7144	-163.9320	9432.9110
6.000	0.048287	57976.8943	9004.9464	-0.0006386	575.4335	-167.7526	20844.4754
12.000	0.044473	109906.	7988.2974	-0.0006300	613.6964	-171.1304	23087.6346
18.000	0.040727	155658.	6952.7496	-0.0006164	647.4080	-174.0522	25641.7203

24.000	0.037077	195122.	5901.0793	-0.0005984	676.4858	-176.5046	28563.3048
30.000	0.033546	228202.	4836.1421	-0.0005768	700.8603	-178.4745	31921.9939
36.000	0.030155	254824.	3760.8763	-0.0005521	720.4758	-179.9475	35804.4123
42.000	0.026921	274929.	2678.3106	-0.0005250	735.2902	-180.9078	40319.8697
48.000	0.023856	288481.	1838.6572	-0.0004961	745.2759	-98.9767	24894.0516
54.000	0.020967	298428.	1347.6603	-0.0004661	752.6048	-64.6889	18511.3948
60.000	0.018262	306001.	961.8657	-0.0004352	758.1851	-63.9093	20997.1663
66.000	0.015745	311229.	581.5716	-0.0004036	762.0369	-62.8554	23952.2613
72.000	0.013419	314147.	208.4537	-0.0003716	764.1874	-61.5173	27505.7366
78.000	0.011286	314805.	-155.7489	-0.0003394	764.6718	-59.8836	31835.8955
84.000	0.009346	313260.	-509.2196	-0.0003073	763.5335	-57.9400	37195.7732
90.000	0.007599	309583.	-850.0463	-0.0002754	760.8241	-55.6688	43956.2295
96.000	0.006041	303856.	-1176.1916	-0.0002440	756.6043	-53.0462	52682.7840
102.000	0.004671	296174.	-1485.4478	-0.0002133	750.9442	-50.0392	64281.9877
108.000	0.003482	286647.	-1958.5424	-0.0001835	743.9246	-107.6590	185531.
114.000	0.002469	273202.	-2694.8492	-0.0001548	734.0179	-137.7766	334853.
120.000	0.001624	254757.	-3489.1869	-0.0001278	720.4268	-127.0026	469353.
126.000	0.000935	231702.	-4209.7643	-0.0001029	703.4391	-113.1898	726512.
132.000	0.000388	204538.	-4786.9879	-8.0614E-05	683.4236	-79.2180	1224035.
138.000	-3.26E-05	174491.	-5004.2655	-6.1220E-05	661.2846	6.7922	1250965.
144.000	-0.000346	144663.	-4762.6051	-4.4889E-05	639.3066	73.7613	1277895.
150.000	-0.000571	117470.	-4214.2411	-3.1476E-05	619.2695	109.0267	1145145.
156.000	-0.000724	94183.5223	-3532.9145	-2.0646E-05	602.1116	118.0822	978529.
162.000	-0.000819	75134.3999	-2805.9276	-1.1982E-05	588.0756	124.2468	910233.
168.000	-0.000868	60547.0444	-2269.8441	-5.0397E-06	577.3272	54.4477	376442.
174.000	-0.000879	47910.8460	-1994.9113	5.0997E-07	568.0165	37.1966	253764.
180.000	-0.000862	36606.6346	-1772.4855	4.8346E-06	559.6872	36.9453	257248.
186.000	-0.000821	26627.0385	-1552.5640	8.0702E-06	552.3340	36.3618	265589.
192.000	-0.000765	17952.5281	-1336.9556	1.0351E-05	545.9424	35.5076	278540.
198.000	-0.000697	10553.6353	-1127.1442	1.1810E-05	540.4906	34.4295	296276.
204.000	-0.000623	4392.6440	-924.3617	1.2575E-05	535.9510	33.1646	319328.
210.000	-0.000546	-575.0710	-729.6397	1.2770E-05	533.1381	31.7427	348598.
216.000	-0.000470	-4399.9627	-545.1542	1.2515E-05	535.9564	29.7524	379894.
222.000	-0.000396	-7153.1160	-380.6467	1.1924E-05	537.9850	25.0834	379894.
228.000	-0.000327	-9002.2081	-243.3191	1.1098E-05	539.3475	20.6925	379894.
234.000	-0.000263	-10105.0390	-131.2870	1.0120E-05	540.1601	16.6515	379894.
240.000	-0.000205	-10606.9194	-42.3221	9.0602E-06	540.5299	13.0034	379894.
246.000	-0.000154	-10639.1062	25.9914	7.9730E-06	540.5536	9.7677	379894.
252.000	-0.000110	-10318.0805	76.1315	6.9007E-06	540.3171	6.9456	379894.
258.000	-7.15E-05	-9745.4853	110.5424	5.8740E-06	539.8952	4.5247	379894.
264.000	-3.92E-05	-9008.5599	131.5642	4.9144E-06	539.3522	2.4826	379894.
270.000	-1.25E-05	-8180.9280	141.3842	4.0349E-06	538.7424	0.7907436	379894.
276.000	9.21E-06	-7323.6188	142.0072	3.2415E-06	538.1107	-0.5830520	379894.
282.000	2.64E-05	-6486.2157	135.2417	2.5349E-06	537.4936	-1.6721	379894.
288.000	3.96E-05	-5708.0492	127.7496	1.9109E-06	536.9203	-0.8252415	124951.
294.000	4.93E-05	-4958.7468	122.0803	1.3651E-06	536.3682	-1.0645	129451.
300.000	5.60E-05	-4247.0334	115.1356	8.9407E-07	535.8438	-1.2504	133951.
306.000	6.01E-05	-3579.7058	107.2261	4.9358E-07	535.3520	-1.3861	138451.
312.000	6.19E-05	-2961.7482	98.6412	1.5887E-07	534.8967	-1.4755	142951.
318.000	6.20E-05	-2396.4713	89.6454	-1.1531E-07	534.4802	-1.5231	147451.
324.000	6.05E-05	-1885.6697	80.4761	-3.3442E-07	534.1038	-1.5334	151951.
330.000	5.80E-05	-1429.7908	71.3418	-5.0407E-07	533.7679	-1.5114	156451.
336.000	5.45E-05	-1028.1100	62.4219	-6.2983E-07	533.4720	-1.4619	160951.
342.000	5.04E-05	-678.9070	53.8663	-7.1718E-07	533.2147	-1.3899	165451.
348.000	4.59E-05	-379.6403	45.7968	-7.7134E-07	532.9941	-1.2999	169951.
354.000	4.11E-05	-127.1146	38.3079	-7.9727E-07	532.8081	-1.1964	174451.
360.000	3.63E-05	82.3597	31.4684	-7.9956E-07	532.7751	-1.0834	178951.
366.000	3.16E-05	252.8189	25.3239	-7.8241E-07	532.9007	-0.9647538	183451.
372.000	2.69E-05	388.5095	19.8983	-7.4960E-07	533.0007	-0.8437952	187951.
378.000	2.26E-05	493.7659	15.1962	-7.0445E-07	533.0782	-0.7235629	192451.
384.000	1.85E-05	572.9011	11.2054	-6.4987E-07	533.1365	-0.6067153	196951.
390.000	1.48E-05	630.1097	7.8985	-5.8832E-07	533.1787	-0.4955658	201451.
396.000	1.14E-05	669.3847	5.2355	-5.2182E-07	533.2076	-0.3921118	205951.
402.000	8.50E-06	694.4446	3.1649	-4.5204E-07	533.2261	-0.2980696	210451.
408.000	6.00E-06	708.6713	-1.3470	-3.8024E-07	533.2366	-1.2059	1206107.
414.000	3.94E-06	679.3804	-7.3378	-3.0922E-07	533.2150	-0.7910312	1206107.
420.000	2.29E-06	621.5118	-11.0909	-2.4265E-07	533.1724	-0.4600095	1206107.
426.000	1.02E-06	546.9909	-13.0881	-1.8286E-07	533.1175	-0.2057008	1206107.
432.000	9.41E-08	464.9838	-13.7619	-1.3108E-07	533.0570	-0.0189072	1206107.
438.000	-5.50E-07	382.2273	-13.4871	-8.7730E-08	532.9960	0.1104937	1206107.

444.000	-9.59E-07	303.3920	-12.5775	-5.2648E-08	532.9380	0.1927162	1206107.
450.000	-1.18E-06	231.4495	-11.2869	-2.5281E-08	532.8850	0.2374912	1206107.
456.000	-1.26E-06	168.0225	-9.8133	-4.8401E-09	532.8382	0.2536984	1206107.
462.000	-1.24E-06	113.7038	-8.3047	9.5755E-09	532.7982	0.2491666	1206107.
468.000	-1.15E-06	68.3382	-6.7625	1.8890E-08	532.7648	0.2649185	1385601.
474.000	-1.01E-06	32.4996	-5.1698	2.4050E-08	532.7384	0.2659842	1575672.
480.000	-8.59E-07	6.2316	-3.6954	2.6032E-08	532.7190	0.2254690	1575672.
486.000	-7.00E-07	-11.9204	-2.4671	2.5741E-08	532.7232	0.1839488	1575672.
492.000	-5.50E-07	-23.4485	-1.4822	2.3931E-08	532.7317	0.1443509	1575672.
498.000	-4.13E-07	-29.7765	-0.7235862	2.1208E-08	532.7364	0.1085340	1575672.
504.000	-2.95E-07	-32.1928	-0.1654285	1.8037E-08	532.7381	0.0775186	1575672.
510.000	-1.97E-07	-31.8138	0.2222100	1.4762E-08	532.7379	0.0516943	1575672.
516.000	-1.18E-07	-29.5690	0.4702925	1.1621E-08	532.7362	0.0309999	1575672.
522.000	-5.74E-08	-26.2039	0.6085130	8.7668E-09	532.7337	0.0150736	1575672.
528.000	-1.28E-08	-22.2922	0.6638515	6.2853E-09	532.7308	0.0033726	1575672.
534.000	1.80E-08	-18.2558	0.6597682	4.2106E-09	532.7279	-0.0047337	1575672.
540.000	3.77E-08	-14.3872	0.6158781	2.5403E-09	532.7250	-0.0098963	1575672.
546.000	4.85E-08	-10.8726	0.5479724	1.2477E-09	532.7224	-0.0127389	1575672.
552.000	5.27E-08	-7.8151	0.4682704	2.9152E-10	532.7202	-0.0138284	1575672.
558.000	5.20E-08	-5.2542	0.3858124	-3.7722E-10	532.7183	-0.0136576	1575672.
564.000	4.81E-08	-3.1843	0.3069207	-8.0901E-10	532.7168	-0.0126396	1575672.
570.000	4.23E-08	-1.5689	0.2356774	-1.0522E-09	532.7156	-0.0111081	1575672.
576.000	3.55E-08	-0.3531030	0.1743819	-1.1506E-09	532.7147	-0.0093237	1575672.
582.000	2.85E-08	0.5270521	0.1239639	-1.1417E-09	532.7148	-0.0074823	1575672.
588.000	2.18E-08	1.1378	0.0794591	-1.0565E-09	532.7153	-0.0073526	2023324.
594.000	1.58E-08	1.4836	0.0376216	-9.2235E-10	532.7155	-0.0065932	2501506.
600.000	1.07E-08	1.5919	0.0044147	-7.6498E-10	532.7156	-0.0044758	2501506.
606.000	6.63E-09	1.5388	-0.0173107	-6.0479E-10	532.7155	-0.0027660	2501506.
612.000	3.48E-09	1.3859	-0.0299588	-4.5513E-10	532.7154	-0.0014501	2501506.
618.000	1.17E-09	1.1806	-0.0357758	-3.2381E-10	532.7153	-0.0004889	2501506.
624.000	-4.08E-10	0.9575405	-0.0367329	-2.1440E-10	532.7151	0.0001699	2501506.
630.000	-1.40E-09	0.7404412	-0.0344720	-1.2751E-10	532.7150	0.0005837	2501506.
636.000	-1.94E-09	0.5442453	-0.0302972	-6.1779E-11	532.7148	0.0008079	2501506.
642.000	-2.14E-09	0.3770529	-0.0251953	-1.4638E-11	532.7147	0.0008928	2501506.
648.000	-2.11E-09	0.2419446	-0.0198736	1.7036E-11	532.7146	0.0008811	2501506.
654.000	-1.94E-09	0.1385210	-0.0148075	3.6504E-11	532.7145	0.0008075	2501506.
660.000	-1.68E-09	0.0641484	-0.0102894	4.6874E-11	532.7145	0.0006985	2501506.
666.000	-1.37E-09	0.0149123	-0.0064748	5.0919E-11	532.7144	0.0005730	2501506.
672.000	-1.06E-09	-0.0136968	-0.0034245	5.0982E-11	532.7144	0.0004437	2501506.
678.000	-7.63E-10	-0.0263290	-0.0011393	4.8933E-11	532.7144	0.0003180	2501506.
684.000	-4.77E-10	-0.0275104	0.0004114	4.6179E-11	532.7144	0.0001989	2501506.
690.000	-2.09E-10	-0.0215261	0.0012690	4.3669E-11	532.7144	8.6939E-05	2501506.
696.000	4.69E-11	-0.0124088	0.0014712	4.1933E-11	532.7144	-1.9545E-05	2501506.
702.000	2.95E-10	-0.0039934	0.0010440	4.1094E-11	532.7144	-0.0001229	2501506.
708.000	5.40E-10	0.0000	0.0000	4.0889E-11	532.7144	-0.0002251	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 2:

```
Pile-head deflection             =     0.05213617 in
Computed slope at pile head      =    -0.00064154
Maximum bending moment           =   314804.86001 lbs-in
Maximum shear force              =    10000.00000 lbs
Depth of maximum bending moment  =    78.00000000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             20
Number of zero deflection points =              6
```

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 3

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Specified shear force at pile head = 15000.000 lbs
Specified moment at pile head = 0.000 in-lbs
Specified axial load at pile head = 241000.000 lbs

(Zero moment for this load indicates free-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	0.130184	2.2601E-07	15000.0000	-0.0013838	532.7144	-206.0616	4748.5502
6.000	0.121881	88291.8103	13747.5135	-0.0013792	597.7704	-211.4339	10408.5087
12.000	0.113633	168959.	12464.1628	-0.0013661	657.2083	-216.3497	11423.6015
18.000	0.105488	241812.	11152.7328	-0.0013451	710.8889	-220.7936	12558.3671
24.000	0.097492	306682.	9816.1016	-0.0013170	758.6864	-224.7501	13831.8736
30.000	0.089684	363414.	8457.2430	-0.0012827	800.4888	-228.2028	15267.0515
36.000	0.082100	411878.	7079.2309	-0.0012430	836.1983	-231.1346	16891.7387
42.000	0.074768	451960.	5685.2473	-0.0011988	865.7318	-233.5266	18740.1063
48.000	0.067714	483568.	4564.2720	-0.0011510	889.0215	-140.1318	12416.8496
54.000	0.060956	510060.	3866.9169	-0.0011001	908.5415	-92.3199	9087.1435
60.000	0.054512	533153.	3313.9185	-0.0010467	925.5569	-92.0129	10127.5907
66.000	0.048395	552854.	2763.7313	-0.0009912	940.0735	-91.3828	11329.5187
72.000	0.042618	569184.	2218.3289	-0.0009338	952.1058	-90.4180	12729.5108
78.000	0.037190	582175.	1679.7598	-0.0008748	961.6776	-89.1051	14375.5355
84.000	0.032120	591871.	1150.1582	-0.0008148	968.8223	-87.4288	16331.6840
90.000	0.027413	598333.	631.7591	-0.0007539	973.5834	-85.3709	18685.4838
96.000	0.023073	601632.	126.9191	-0.0006925	976.0148	-82.9091	21559.5946
102.000	0.019103	601858.	-361.8544	-0.0006309	976.1813	-80.0154	25131.3146
108.000	0.015503	599115.	-1070.9998	-0.0005694	974.1596	-156.3664	60518.0609
114.000	0.012270	590653.	-2157.1439	-0.0005086	967.9249	-205.6816	100577.
120.000	0.009400	574700.	-3365.0818	-0.0004489	956.1700	-196.9643	125721.
126.000	0.006883	551571.	-4515.1711	-0.0003913	939.1277	-186.3988	162488.
132.000	0.004704	521649.	-5594.2807	-0.0003364	917.0809	-173.3045	221030.
138.000	0.002846	485412.	-6582.8615	-0.0002849	890.3801	-156.2225	329316.
144.000	0.001286	443479.	-7444.1615	-0.0002373	859.4826	-130.8775	610530.
150.000	-1.59E-06	396768.	-7835.7543	-0.0001943	825.0650	0.3466030	1304824.
156.000	-0.001046	350012.	-7446.5630	-0.0001561	790.6133	129.3838	742331.
162.000	-0.001875	307861.	-6600.0558	-0.0001225	759.5555	152.7852	488908.
168.000	-0.002515	271165.	-5908.8648	-9.2828E-05	732.5169	77.6118	185140.
174.000	-0.002989	237223.	-5508.2929	-6.6815E-05	707.5074	55.9122	112238.
180.000	-0.003317	205259.	-5166.8896	-4.4173E-05	683.9552	57.8889	104713.
186.000	-0.003519	175348.	-4816.0960	-2.4698E-05	661.9162	59.0423	100668.
192.000	-0.003613	147537.	-4460.2695	-8.1767E-06	641.4242	59.5665	98909.4004
198.000	-0.003617	121849.	-4102.8058	5.6075E-06	622.4961	59.5881	98842.3667
204.000	-0.003546	98287.3553	-3746.4527	1.6872E-05	605.1354	59.1963	100160.
210.000	-0.003415	76842.5034	-3393.4938	2.5833E-05	589.3342	58.4567	102715.
216.000	-0.003236	57490.7218	-3045.8631	3.2706E-05	575.0753	57.4202	106461.
222.000	-0.003022	40197.5594	-2705.2213	3.7705E-05	562.3331	56.1271	111429.
228.000	-0.002784	24919.0231	-2373.0088	4.1037E-05	551.0755	54.6104	117710.
234.000	-0.002530	11602.7754	-2050.4834	4.2906E-05	541.2637	52.8980	125461.
240.000	-0.002269	189.1397	-1738.7489	4.3509E-05	532.8538	51.0135	134909.
246.000	-0.002008	-9388.0393	-1438.7768	4.3038E-05	539.6318	48.9772	146370.
252.000	-0.001752	-17200.6491	-1151.4238	4.1678E-05	545.3884	46.8071	160269.
258.000	-0.001508	-23325.6567	-877.4464	3.9604E-05	549.9014	44.5187	177184.
264.000	-0.001277	-27844.5406	-617.5156	3.6986E-05	553.2311	42.1249	197912.
270.000	-0.001064	-30842.8075	-372.2326	3.3983E-05	555.4403	39.6361	223573.
276.000	-0.000869	-32409.6107	-142.1483	3.0746E-05	556.5948	37.0587	255788.
282.000	-0.000695	-32637.5056	72.2070	2.7418E-05	556.7627	34.3931	297024.
288.000	-0.000540	-31622.4192	209.1396	2.4130E-05	556.0147	11.2511	124951.
294.000	-0.000405	-30197.6135	269.1194	2.0967E-05	554.9649	8.7421	129451.
300.000	-0.000289	-28453.6220	314.6794	1.7966E-05	553.6799	6.4445	133951.
306.000	-0.000190	-26473.4170	347.1388	1.5155E-05	552.2208	4.3753	138451.
312.000	-0.000107	-24331.7847	367.8987	1.2555E-05	550.6428	2.5447	142951.
318.000	-3.89E-05	-22094.9422	378.4042	1.0180E-05	548.9946	0.9571048	147451.
324.000	1.53E-05	-19820.3744	380.1094	8.0350E-06	547.3186	-0.3887107	151951.
330.000	5.75E-05	-17556.8672	374.4473	6.1224E-06	545.6508	-1.4986	156451.
336.000	8.88E-05	-15344.7126	362.8038	4.4389E-06	544.0208	-2.3826	160951.
342.000	0.000111	-13216.0591	346.4951	2.9775E-06	542.4524	-3.0537	165451.
348.000	0.000125	-11195.3823	326.7506	1.7284E-06	540.9635	-3.5278	169951.

354.000	0.000131	-9300.0508	304.6986	6.7966E-07	539.5670	-3.8228	174451.
360.000	0.000133	-7540.9646	281.3564	-1.8207E-07	538.2708	-3.9579	178951.
366.000	0.000129	-5923.2471	257.6230	-8.7102E-07	537.0788	-3.9532	183451.
372.000	0.000122	-4446.9698	234.2746	-1.4016E-06	535.9911	-3.8295	187951.
378.000	0.000112	-3107.8979	211.9629	-1.7882E-06	535.0044	-3.6077	192451.
384.000	0.000101	-1898.2430	191.2143	-2.0444E-06	534.1131	-3.3085	196951.
390.000	8.79E-05	-807.4145	172.4305	-2.1828E-06	533.3093	-2.9527	201451.
396.000	7.46E-05	177.2355	155.8905	-2.2151E-06	532.8450	-2.5606	205951.
402.000	6.14E-05	1069.6770	141.7517	-2.1513E-06	533.5026	-2.1523	210451.
408.000	4.88E-05	1884.4770	105.8755	-2.0001E-06	534.1029	-9.8064	1206107.
414.000	3.74E-05	2345.9673	53.9252	-1.7836E-06	534.4430	-7.5104	1206107.
420.000	2.74E-05	2536.7373	14.8824	-1.5338E-06	534.5836	-5.5039	1206107.
426.000	1.90E-05	2528.9919	-13.0608	-1.2746E-06	534.5778	-3.8105	1206107.
432.000	1.21E-05	2383.6936	-31.7803	-1.0232E-06	534.4708	-2.4293	1206107.
438.000	6.68E-06	2150.5879	-43.0951	-7.9120E-07	534.2990	-1.3423	1206107.
444.000	2.59E-06	1868.8412	-48.6842	-5.8553E-07	534.0914	-0.5207465	1206107.
450.000	-3.49E-07	1568.0710	-50.0360	-4.0967E-07	533.8698	0.0701354	1206107.
456.000	-2.33E-06	1269.5937	-48.4232	-2.6447E-07	533.6499	0.4674706	1206107.
462.000	-3.52E-06	987.7574	-44.8965	-1.4897E-07	533.4422	0.7081001	1206107.
468.000	-4.11E-06	731.2666	-39.9226	-6.1007E-08	533.2532	0.9498577	1385601.
474.000	-4.25E-06	508.8624	-33.7211	2.4490E-09	533.0894	1.1173	1575672.
480.000	-4.08E-06	326.6066	-27.1518	4.5199E-08	532.9551	1.0724	1575672.
486.000	-3.71E-06	182.9102	-21.0098	7.1270E-08	532.8492	0.9748865	1575672.
492.000	-3.23E-06	74.2827	-15.5416	8.4430E-08	532.7691	0.8478410	1575672.
498.000	-2.70E-06	-3.8336	-10.8717	8.8035E-08	532.7172	0.7088175	1575672.
504.000	-2.17E-06	-56.4318	-7.0340	8.4951E-08	532.7560	0.5704121	1575672.
510.000	-1.68E-06	-88.4869	-3.9994	7.7536E-08	532.7796	0.4411063	1575672.
516.000	-1.24E-06	-104.6491	-1.6979	6.7654E-08	532.7915	0.3260691	1575672.
522.000	-8.68E-07	-109.0573	-0.0359644	5.6719E-08	532.7948	0.2279065	1575672.
528.000	-5.61E-07	-105.2447	1.0897	4.5753E-08	532.7920	0.1473294	1575672.
534.000	-3.19E-07	-96.1127	1.7829	3.5450E-08	532.7852	0.0837231	1575672.
540.000	-1.36E-07	-83.9524	2.1409	2.6236E-08	532.7763	0.0356149	1575672.
546.000	-3.98E-09	-70.4976	2.2509	1.8333E-08	532.7664	0.0010441	1575672.
552.000	8.44E-08	-56.9947	2.1875	1.1809E-08	532.7564	-0.0221590	1575672.
558.000	1.38E-07	-44.2811	2.0126	6.6273E-09	532.7470	-0.0361717	1575672.
564.000	1.64E-07	-32.8632	1.7749	2.6800E-09	532.7386	-0.0430440	1575672.
570.000	1.70E-07	-22.9900	1.5119	-1.7797E-10	532.7314	-0.0446171	1575672.
576.000	1.62E-07	-14.7196	1.2506	-2.1075E-09	532.7253	-0.0424832	1575672.
582.000	1.45E-07	-7.9764	1.0092	-3.2688E-09	532.7203	-0.0379756	1575672.
588.000	1.23E-07	-2.5992	0.7713466	-3.8100E-09	532.7163	-0.0413248	2023324.
594.000	9.89E-08	1.2908	0.5236882	-3.8769E-09	532.7154	-0.0412280	2501506.
600.000	7.60E-08	3.6963	0.3049193	-3.6218E-09	532.7171	-0.0316950	2501506.
606.000	5.54E-08	4.9603	0.1405094	-3.1788E-09	532.7181	-0.0231083	2501506.
612.000	3.79E-08	5.3916	0.0238103	-2.6491E-09	532.7184	-0.0157914	2501506.
618.000	2.36E-08	5.2537	-0.0531283	-2.1044E-09	532.7183	-0.0098548	2501506.
624.000	1.26E-08	4.7602	-0.0984817	-1.5920E-09	532.7179	-0.0052630	2501506.
630.000	4.53E-09	4.0765	-0.1199405	-1.1399E-09	532.7174	-0.0018899	2501506.
636.000	-1.05E-09	3.3242	-0.1242912	-7.6117E-10	532.7169	0.0004397	2501506.
642.000	-4.60E-09	2.5872	-0.1172175	-4.5869E-10	532.7163	0.0019182	2501506.
648.000	-6.56E-09	1.9189	-0.1032593	-2.2812E-10	532.7158	0.0027345	2501506.
654.000	-7.34E-09	1.3487	-0.0858771	-6.0924E-11	532.7154	0.0030596	2501506.
660.000	-7.29E-09	0.8885381	-0.0675805	5.3554E-11	532.7151	0.0030393	2501506.
666.000	-6.70E-09	0.5376198	-0.0500877	1.2653E-10	532.7148	0.0027916	2501506.
672.000	-5.77E-09	0.2871202	-0.0344939	1.6873E-10	532.7146	0.0024063	2501506.
678.000	-4.67E-09	0.1232045	-0.0214327	1.8973E-10	532.7145	0.0019475	2501506.
684.000	-3.49E-09	0.0293791	-0.0112190	1.9753E-10	532.7144	0.0014571	2501506.
690.000	-2.30E-09	-0.0119953	-0.0039702	1.9842E-10	532.7144	0.0009592	2501506.
696.000	-1.11E-09	-0.0188368	0.0003006	1.9685E-10	532.7144	0.0004644	2501506.
702.000	6.14E-11	-0.0089579	0.0016168	1.9542E-10	532.7144	-2.5620E-05	2501506.
708.000	1.23E-09	0.0000	0.0000	1.9496E-10	532.7144	-0.0005133	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 3:

Pile-head deflection = 0.13018393 in
Computed slope at pile head = -0.00138376

```
Maximum bending moment           =   601858.41404 lbs-in
Maximum shear force              =    15000.00000 lbs
Depth of maximum bending moment  =      102.00000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             22
Number of zero deflection points =              6
```

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 4

```
Pile-head boundary conditions are Shear and Moment (BC Type 1)
Specified shear force at pile head  =       20000.000 lbs
Specified moment at pile head       =           0.000 in-lbs
Specified axial load at pile head   =      241000.000 lbs
```

(Zero moment for this load indicates free-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	0.243038	-4.5203E-07	20000.0000	-0.0023526	532.7144	-240.8585	2973.0935
6.000	0.228923	119066.	18534.8860	-0.0023465	620.4460	-247.5129	6487.2366
12.000	0.214881	229205.	17031.2578	-0.0023286	701.5990	-253.6965	7083.8326
18.000	0.200979	330176.	15491.9899	-0.0023000	775.9976	-259.3928	7743.8680
24.000	0.187281	421760.	13920.0571	-0.0022615	843.4796	-264.5848	8476.6359
30.000	0.173841	503757.	12318.5379	-0.0022142	903.8972	-269.2549	9293.1576
36.000	0.160710	575986.	10690.6191	-0.0021589	957.1177	-273.3846	10206.6120
42.000	0.147934	638288.	9039.6035	-0.0020968	1003.0236	-276.9539	11232.9045
48.000	0.135549	690525.	7678.9371	-0.0020288	1041.5135	-176.6015	7817.1852
54.000	0.123588	736303.	6798.6069	-0.0019558	1075.2436	-116.8419	5672.4937
60.000	0.112079	777765.	6097.0889	-0.0018783	1105.7941	-116.9974	6263.2961
66.000	0.101048	814900.	5395.7129	-0.0017968	1133.1563	-116.7945	6934.9982
72.000	0.090517	847710.	4696.6673	-0.0017118	1157.3316	-116.2207	7703.7794
78.000	0.080507	876210.	4002.2194	-0.0016235	1178.3316	-115.2620	8590.2253
84.000	0.071035	900432.	3314.7247	-0.0015326	1196.1787	-113.9029	9620.9157
90.000	0.062115	920419.	2636.6391	-0.0014395	1210.9062	-112.1256	10830.7503
96.000	0.053761	936234.	1970.5343	-0.0013445	1222.5591	-109.9093	12266.4480
102.000	0.045982	947954.	1319.1199	-0.0012481	1231.1945	-107.2288	13991.9760
108.000	0.038784	955673.	407.5003	-0.0011506	1236.8822	-196.6444	30421.2467
114.000	0.032174	956172.	-967.5883	-0.0010528	1237.2495	-261.7185	48807.1490
120.000	0.026150	947107.	-2515.8224	-0.0009554	1230.5703	-254.3595	58360.7218
126.000	0.020709	928745.	-4015.3270	-0.0008594	1217.0407	-245.4753	71122.7673
132.000	0.015837	901408.	-5455.9373	-0.0007658	1196.8983	-234.7281	88928.8158
138.000	0.011519	865488.	-6824.7748	-0.0006754	1170.4314	-221.5511	115402.
144.000	0.007732	821464.	-8104.0515	-0.0005891	1137.9932	-204.8744	158975.
150.000	0.004450	769943.	-9265.3989	-0.0005076	1100.0310	-182.2414	245714.
156.000	0.001641	711748.	-10247.2826	-0.0004318	1057.1508	-145.0532	530487.
162.000	-0.000732	648225.	-10321.1026	-0.0003622	1010.3453	120.4465	987482.
168.000	-0.002706	588942.	-9721.3132	-0.0002989	966.6640	79.4833	176221.
174.000	-0.004319	532433.	-9293.2964	-0.0002416	925.0269	63.1890	87781.6705
180.000	-0.005605	478121.	-8896.9369	-0.0001898	885.0079	68.9308	73789.5445
186.000	-0.006597	426219.	-8471.7932	-0.0001436	846.7652	72.7838	66194.9782
192.000	-0.007328	376875.	-8027.3031	-0.0001025	810.4066	75.3796	61720.8036
198.000	-0.007827	330188.	-7569.9975	-6.6300E-05	776.0065	77.0556	59069.2875
204.000	-0.008123	286226.	-7104.7778	-3.4759E-05	743.6144	78.0177	57624.4068
210.000	-0.008244	245031.	-6635.5154	-7.5751E-06	713.2605	78.4031	57061.4246
216.000	-0.008214	206622.	-6165.3778	1.5535E-05	684.9596	78.3094	57199.8249
222.000	-0.008058	171002.	-5697.0223	3.4858E-05	658.7134	77.8091	57939.2655
228.000	-0.007796	138157.	-5232.7208	5.0677E-05	634.5126	76.9581	59228.8850
234.000	-0.007450	108062.	-4774.4430	6.3276E-05	612.3380	75.8011	61051.7867
240.000	-0.007037	80680.7320	-4323.9158	7.2934E-05	592.1623	74.3746	63417.2190
246.000	-0.006574	55964.5483	-3882.6654	7.9926E-05	573.9507	72.7089	66357.1251
252.000	-0.006078	33857.6018	-3452.0496	8.4522E-05	557.6617	70.8298	69925.5406
258.000	-0.005560	14295.5165	-3033.2814	8.6986E-05	543.2478	68.7596	74200.2070

264.000	-0.005034	-2793.3376	-2627.4485	8.7574E-05	534.7726	66.5180	79286.2868
270.000	-0.004509	-17487.1295	-2235.5276	8.6536E-05	545.5994	64.1223	85322.4494
276.000	-0.003995	-29869.9316	-1858.3970	8.4113E-05	554.7234	61.5879	92490.0005
282.000	-0.003500	-40031.1491	-1496.8468	8.0536E-05	562.2105	58.9289	101026.
288.000	-0.003029	-48065.0042	-1130.8298	7.6029E-05	568.1301	63.0768	124951.
294.000	-0.002587	-53820.9813	-774.1246	7.0815E-05	572.3713	55.8249	129451.
300.000	-0.002179	-57559.2978	-460.7041	6.5116E-05	575.1258	48.6486	133951.
306.000	-0.001806	-59537.7458	-189.7321	5.9124E-05	576.5836	41.6754	138451.
312.000	-0.001470	-60007.0704	40.3347	5.3007E-05	576.9294	35.0135	142951.
318.000	-0.001170	-59207.0277	231.6328	4.6907E-05	576.3399	28.7525	147451.
324.000	-0.000907	-57363.1333	386.7785	4.0943E-05	574.9812	22.9627	151951.
330.000	-0.000679	-54684.0925	508.7560	3.5209E-05	573.0072	17.6965	156451.
336.000	-0.000484	-51359.8869	600.8119	2.9783E-05	570.5579	12.9888	160951.
342.000	-0.000321	-47560.4827	666.3559	2.4722E-05	567.7584	8.8591	165451.
348.000	-0.000188	-43435.1111	708.8700	2.0066E-05	564.7187	5.3122	169951.
354.000	-8.05E-05	-39112.0716	731.8273	1.5842E-05	561.5333	2.3402	174451.
360.000	2.56E-06	-34698.9982	738.6191	1.2065E-05	558.2816	-0.0762101	178951.
366.000	6.43E-05	-30283.5336	732.4934	8.7398E-06	555.0282	-1.9657	183451.
372.000	0.000107	-25934.3536	716.5001	5.8632E-06	551.8236	-3.3653	187951.
378.000	0.000135	-21702.4883	693.4473	3.4257E-06	548.7054	-4.3189	192451.
384.000	0.000149	-17622.8926	665.8629	1.4135E-06	545.6995	-4.8759	196951.
390.000	0.000152	-13716.2209	635.9641	-1.9011E-07	542.8209	-5.0904	201451.
396.000	0.000146	-9990.7733	605.6318	-1.4032E-06	540.0759	-5.0204	205951.
402.000	0.000135	-6444.5816	576.3890	-2.2441E-06	537.4630	-4.7272	210451.
408.000	0.000119	-3067.6156	490.2446	-2.7309E-06	534.9747	-23.9876	1206107.
414.000	0.000102	-553.7482	356.7683	-2.9162E-06	533.1224	-20.5045	1206107.
420.000	8.43E-05	1222.0379	244.3952	-2.8820E-06	533.6148	-16.9532	1206107.
426.000	6.74E-05	2387.3294	152.8779	-2.6973E-06	534.4735	-13.5526	1206107.
432.000	5.20E-05	3064.3736	80.8799	-2.4183E-06	534.9723	-10.4467	1206107.
438.000	3.84E-05	3364.8817	26.3824	-2.0893E-06	535.1938	-7.7191	1206107.
444.000	2.69E-05	3387.0044	-12.9953	-1.7439E-06	535.2101	-5.4068	1206107.
450.000	1.75E-05	3213.9817	-39.7532	-1.4061E-06	535.0826	-3.5125	1206107.
456.000	1.00E-05	2914.0325	-56.3357	-1.0925E-06	534.8616	-2.0150	1206107.
462.000	4.36E-06	2541.1131	-65.0119	-8.1340E-07	534.5868	-0.8770931	1206107.
468.000	2.63E-07	2136.2423	-67.8254	-5.7407E-07	534.2885	-0.0607324	1385601.
474.000	-2.53E-06	1728.8691	-66.0178	-3.7630E-07	533.9883	0.6632483	1575672.
480.000	-4.25E-06	1345.1169	-60.6777	-2.1901E-07	533.7055	1.1168	1575672.
486.000	-5.15E-06	1001.3698	-53.2671	-9.8939E-08	533.4523	1.3534	1575672.
492.000	-5.44E-06	706.1973	-44.9212	-1.1565E-08	533.2348	1.4286	1575672.
498.000	-5.29E-06	462.3488	-36.4659	4.8228E-08	533.0551	1.3899	1575672.
504.000	-4.86E-06	268.4667	-28.4666	8.5623E-08	532.9122	1.2766	1575672.
510.000	-4.26E-06	120.5021	-21.2767	1.0553E-07	532.8032	1.1200	1575672.
516.000	-3.59E-06	12.8408	-15.0845	1.1235E-07	532.7239	0.9440409	1575672.
522.000	-2.92E-06	-60.8370	-9.9545	1.0989E-07	532.7592	0.7659809	1575672.
528.000	-2.28E-06	-106.9304	-5.8633	1.0131E-07	532.7932	0.5977310	1575672.
534.000	-1.70E-06	-131.4898	-2.7300	8.9109E-08	532.8113	0.4467236	1575672.
540.000	-1.21E-06	-139.9476	-0.4390247	7.5220E-08	532.8175	0.3169189	1575672.
546.000	-7.98E-07	-136.9756	1.1408	6.1050E-08	532.8153	0.2096808	1575672.
552.000	-4.74E-07	-126.4348	2.1434	4.7571E-08	532.8076	0.1245300	1575672.
558.000	-2.28E-07	-111.3923	2.6963	3.5402E-08	532.7965	0.0597668	1575672.
564.000	-4.94E-08	-94.1817	2.9145	2.4883E-08	532.7838	0.0129657	1575672.
570.000	7.10E-08	-76.4903	2.8974	1.6150E-08	532.7708	-0.0186486	1575672.
576.000	1.44E-07	-59.4590	2.7277	9.1938E-09	532.7582	-0.0379289	1575672.
582.000	1.81E-07	-43.7843	2.4711	3.9109E-09	532.7467	-0.0476213	1575672.
588.000	1.91E-07	-29.8176	2.1346	1.4483E-10	532.7364	-0.0645308	2023324.
594.000	1.83E-07	-18.1695	1.7120	-2.3106E-09	532.7278	-0.0763273	2501506.
600.000	1.64E-07	-9.2665	1.2784	-3.7145E-09	532.7212	-0.0682217	2501506.
606.000	1.39E-07	-2.8181	0.9004890	-4.3328E-09	532.7165	-0.0577438	2501506.
612.000	1.12E-07	1.5519	0.5876239	-4.3976E-09	532.7156	-0.0465445	2501506.
618.000	8.57E-08	4.2461	0.3407627	-4.1009E-09	532.7175	-0.0357425	2501506.
624.000	6.24E-08	5.6529	0.1554525	-3.5944E-09	532.7186	-0.0260275	2501506.
630.000	4.26E-08	6.1219	0.0240909	-2.9919E-09	532.7189	-0.0177597	2501506.
636.000	2.65E-08	5.9507	-0.0623651	-2.3742E-09	532.7188	-0.0110590	2501506.
642.000	1.41E-08	5.3804	-0.1131870	-1.7944E-09	532.7184	-0.0058817	2501506.
648.000	4.99E-09	4.5976	-0.1370772	-1.2838E-09	532.7178	-0.0020817	2501506.
654.000	-1.30E-09	3.7392	-0.1416987	-8.5723E-10	532.7172	0.0005412	2501506.
660.000	-5.29E-09	2.8997	-0.1334539	-5.1752E-10	532.7165	0.0022070	2501506.
666.000	-7.51E-09	2.1392	-0.1174417	-2.5969E-10	532.7160	0.0031304	2501506.
672.000	-8.41E-09	1.4912	-0.0975318	-7.3924E-11	532.7155	0.0035062	2501506.
678.000	-8.40E-09	0.9690740	-0.0765124	5.1962E-11	532.7151	0.0035003	2501506.

684.000	-7.79E-09	0.5728577	-0.0562728	1.3086E-10	532.7148	0.0032462	2501506.
690.000	-6.83E-09	0.2934214	-0.0379974	1.7519E-10	532.7146	0.0028456	2501506.
696.000	-5.68E-09	0.1163820	-0.0223514	1.9616E-10	532.7145	0.0023698	2501506.
702.000	-4.47E-09	0.0246373	-0.0096495	2.0337E-10	532.7144	0.0018642	2501506.
708.000	-3.24E-09	0.0000	0.0000	2.0463E-10	532.7144	0.0013523	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 4:

```
Pile-head deflection             =     0.24303824 in
Computed slope at pile head      =    -0.00235255
Maximum bending moment           =   956171.52172 lbs-in
Maximum shear force              =    20000.00000 lbs
Depth of maximum bending moment  =      114.00000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             27
Number of zero deflection points =              5
```

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 5

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Specified shear force at pile head = 25000.000 lbs
Specified moment at pile head = 0.000 in-lbs
Specified axial load at pile head = 241000.000 lbs

(Zero moment for this load indicates free-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	0.388667	-1.9889E-06	25000.0000	-0.0035109	532.7144	-270.8541	2090.6392
6.000	0.367601	150201.	23351.5682	-0.0035032	643.3872	-278.6232	4547.6966
12.000	0.346628	290350.	21657.9702	-0.0034807	746.6529	-285.9094	4948.9842
18.000	0.325833	420163.	19922.1551	-0.0034443	842.3029	-292.6956	5389.7963
24.000	0.305296	539377.	18147.1759	-0.0033952	930.1432	-298.9641	5875.5605
30.000	0.285090	647748.	16336.1924	-0.0033345	1009.9943	-304.6970	6412.6466
36.000	0.265282	745055.	14492.4758	-0.0032632	1081.6925	-309.8752	7008.5837
42.000	0.245931	831095.	12619.4153	-0.0031826	1145.0897	-314.4783	7672.3434
48.000	0.227091	905692.	11046.7439	-0.0030937	1200.0545	-209.7455	5541.7104
54.000	0.208807	972603.	10000.0243	-0.0029976	1249.3569	-139.1611	3998.7502
60.000	0.191120	1034361.	9163.2131	-0.0028949	1294.8618	-139.7760	4388.1155
66.000	0.174068	1090934.	8323.8654	-0.0027862	1336.5463	-140.0066	4825.9277
72.000	0.157686	1142305.	7484.3248	-0.0026719	1374.3981	-139.8403	5320.9671
78.000	0.142005	1188473.	6647.0131	-0.0025526	1408.4159	-139.2636	5884.1566
84.000	0.127054	1229451.	5814.4372	-0.0024289	1438.6101	-138.2617	6529.2467
90.000	0.112859	1265271.	4989.1983	-0.0023012	1465.0027	-136.8180	7273.7772
96.000	0.099439	1295977.	4174.0028	-0.0021702	1487.6281	-134.9138	8140.4592
102.000	0.086816	1321635.	3371.6776	-0.0020363	1506.5335	-132.5279	9159.2040
108.000	0.075004	1342326.	2278.4338	-0.0018999	1521.7793	-231.8867	18549.8402
114.000	0.064017	1354471.	650.2979	-0.0017620	1530.7279	-310.8252	29132.1748
120.000	0.053861	1355225.	-1196.2870	-0.0016233	1531.2838	-304.7031	33943.2501
126.000	0.044537	1344810.	-3002.1534	-0.0014851	1523.6095	-297.2524	40045.4038
132.000	0.036039	1323494.	-4758.7339	-0.0013486	1507.9036	-288.2744	47993.3148
138.000	0.028354	1291605.	-6455.9843	-0.0012148	1484.4067	-277.4757	58716.7291
144.000	0.021462	1249536.	-8081.5895	-0.0010848	1453.4088	-264.3927	73915.4799
150.000	0.015337	1197763.	-9619.4371	-0.0009595	1415.2613	-248.2232	97109.1256
156.000	0.009947	1136877.	-11046.2296	-0.0008401	1370.3989	-227.3743	137149.
162.000	0.005256	1067638.	-12321.7939	-0.0007273	1319.3812	-197.8138	225826.
168.000	0.001220	991119.	-13098.4817	-0.0006219	1263.0000	-61.0821	300448.

174.000	-0.002208	912255.	-13130.2364	-0.0005245	1204.8904	50.4972	137250.
180.000	-0.005075	835073.	-12778.7067	-0.0004351	1148.0208	66.6793	78836.9977
186.000	-0.007429	760169.	-12351.5025	-0.0003535	1092.8289	75.7221	61155.2077
192.000	-0.009317	687878.	-11879.3482	-0.0002794	1039.5628	81.6627	52590.3311
198.000	-0.010782	618425.	-11377.1399	-0.0002126	988.3877	85.7400	47712.1696
204.000	-0.011868	551967.	-10854.3359	-0.0001527	939.4196	88.5280	44757.2705
210.000	-0.012614	488614.	-10317.7072	-9.9442E-05	892.7396	90.3483	42973.8630
216.000	-0.013061	428442.	-9772.4526	-5.2517E-05	848.4029	91.4033	41988.9627
222.000	-0.013245	371497.	-9222.7520	-1.1585E-05	806.4440	91.8303	41600.4519
228.000	-0.013200	317802.	-8672.0777	2.3685E-05	766.8804	91.7278	41694.2722
234.000	-0.012960	267363.	-8123.3848	5.3627E-05	729.7154	91.1698	42206.9853
240.000	-0.012557	220167.	-7579.2357	7.8574E-05	694.9396	90.2132	43107.3949
246.000	-0.012017	176185.	-7041.8846	9.8855E-05	662.5328	88.9038	44387.1634
252.000	-0.011370	135378.	-6513.3376	0.0001148	632.4650	87.2785	46056.1448
258.000	-0.010640	97693.1053	-5995.3961	0.0001267	604.6975	85.3686	48140.4815
264.000	-0.009850	63066.8941	-5489.6887	0.0001349	579.1839	83.2005	50682.5555
270.000	-0.009021	31426.5700	-4997.6940	0.0001398	555.8704	80.7977	53742.3818
276.000	-0.008172	2690.3116	-4520.7575	0.0001415	534.6967	78.1811	57400.2978
282.000	-0.007322	-23231.8237	-4060.1012	0.0001405	549.8323	75.3710	61760.9105
288.000	-0.006486	-46437.1666	-3428.7448	0.0001369	566.9307	135.0812	124951.
294.000	-0.005679	-64772.7154	-2655.9110	0.0001312	580.4408	122.5301	129451.
300.000	-0.004912	-78687.5960	-1959.3525	0.0001239	590.6937	109.6561	133951.
306.000	-0.004193	-88643.2136	-1340.1470	0.0001153	598.0293	96.7458	138451.
312.000	-0.003528	-95102.8656	-797.7489	0.0001059	602.7890	84.0536	142951.
318.000	-0.002922	-98522.5160	-330.1901	9.6011E-05	605.3087	71.7994	147451.
324.000	-0.002376	-99342.8100	65.7112	8.5886E-05	605.9131	60.1677	151951.
330.000	-0.001891	-97982.3647	394.1382	7.5789E-05	604.9107	49.3079	156451.
336.000	-0.001466	-94832.3341	660.0664	6.5923E-05	602.5896	39.3348	160951.
342.000	-0.001100	-90252.2172	869.0620	5.6453E-05	599.2149	30.3304	165451.
348.000	-0.000789	-84566.8511	1027.0912	4.7507E-05	595.0257	22.3460	169951.
354.000	-0.000530	-78064.5147	1140.3438	3.9186E-05	590.2346	15.4049	174451.
360.000	-0.000319	-70996.0509	1215.0726	3.1559E-05	585.0264	9.5047	178951.
366.000	-0.000151	-63574.9103	1257.4492	2.4673E-05	579.5583	4.6208	183451.
372.000	-2.26E-05	-55978.0145	1273.4362	1.8555E-05	573.9606	0.7082698	187951.
378.000	7.15E-05	-48347.3374	1268.6775	1.3217E-05	568.3381	-2.2945	192451.
384.000	0.000136	-40792.1085	1248.4018	8.6560E-06	562.7712	-4.4641	196951.
390.000	0.000175	-33391.5495	1217.3416	4.8601E-06	557.3183	-5.8893	201451.
396.000	0.000194	-26198.0652	1179.6637	1.8110E-06	552.0179	-6.6699	205951.
402.000	0.000197	-19240.8222	1138.9098	-5.1405E-07	546.8916	-6.9147	210451.
408.000	0.000188	-12529.6610	1004.7022	-2.1397E-06	541.9466	-37.8212	1206107.
414.000	0.000171	-7178.2072	787.8373	-3.1481E-06	538.0035	-34.4672	1206107.
420.000	0.000150	-3066.5094	593.7542	-3.6723E-06	534.9739	-30.2272	1206107.
426.000	0.000127	-42.5367	426.2465	-3.8314E-06	532.7458	-25.6087	1206107.
432.000	0.000104	2059.5290	286.4655	-3.7282E-06	534.2319	-20.9850	1206107.
438.000	8.27E-05	3405.8310	173.6642	-3.4486E-06	535.2239	-16.6154	1206107.
444.000	6.30E-05	4153.4731	85.8190	-3.0618E-06	535.7748	-12.6663	1206107.
450.000	4.59E-05	4444.5138	20.1307	-2.6218E-06	535.9893	-9.2298	1206107.
456.000	3.15E-05	4402.6236	-26.5845	-2.1691E-06	535.9584	-6.3419	1206107.
462.000	1.99E-05	4131.7729	-57.6025	-1.7324E-06	535.7588	-3.9974	1206107.
468.000	1.08E-05	3716.4033	-77.0493	-1.3308E-06	535.4528	-2.4848	1385601.
474.000	3.92E-06	3211.0301	-87.5888	-9.7638E-07	535.0804	-1.0283	1575672.
480.000	-9.57E-07	2668.1615	-89.9201	-6.7555E-07	534.6804	0.2512215	1575672.
486.000	-4.19E-06	2133.9420	-85.8649	-4.2983E-07	534.2868	1.1005	1575672.
492.000	-6.11E-06	1639.0262	-77.7459	-2.3677E-07	533.9221	1.6058	1575672.
498.000	-7.03E-06	1201.6754	-67.3886	-9.1417E-08	533.5998	1.8467	1575672.
504.000	-7.21E-06	830.6277	-56.1670	1.2573E-08	533.3264	1.8938	1575672.
510.000	-6.88E-06	527.6356	-45.0642	8.2074E-08	533.1032	1.8071	1575672.
516.000	-6.23E-06	289.6199	-34.7374	1.2389E-07	532.9278	1.6352	1575672.
522.000	-5.39E-06	110.4288	-25.5818	1.4436E-07	532.7958	1.4166	1575672.
528.000	-4.49E-06	-17.7795	-17.7911	1.4910E-07	532.7275	1.1803	1575672.
534.000	-3.61E-06	-103.4953	-11.4099	1.4290E-07	532.7907	0.9467706	1575672.
540.000	-2.78E-06	-155.1120	-6.3798	1.2966E-07	532.8287	0.7299562	1575672.
546.000	-2.05E-06	-180.4273	-2.5754	1.1250E-07	532.8474	0.5381537	1575672.
552.000	-1.43E-06	-186.3425	0.1653676	9.3728E-08	532.8517	0.3754451	1575672.
558.000	-9.24E-07	-178.7140	2.0201	7.5049E-08	532.8461	0.2427842	1575672.
564.000	-5.29E-07	-162.3188	3.1652	5.7598E-08	532.8340	0.1389410	1575672.
570.000	-2.33E-07	-140.8978	3.7659	4.2083E-08	532.8182	0.0612717	1575672.
576.000	-2.41E-08	-117.2501	3.9687	2.8874E-08	532.8008	0.0063222	1575672.
582.000	1.13E-07	-93.3575	3.8985	1.8098E-08	532.7832	-0.0297207	1575672.
588.000	1.93E-07	-70.5210	3.6139	9.7122E-09	532.7664	-0.0651164	2023324.

594.000	2.30E-07	-50.0182	3.1313	3.5444E-09	532.7513	-0.0957742	2501506.
600.000	2.36E-07	-32.9560	2.5492	-7.0133E-10	532.7387	-0.0982381	2501506.
606.000	2.21E-07	-19.4254	1.9777	-3.3816E-09	532.7287	-0.0922654	2501506.
612.000	1.95E-07	-9.2135	1.4570	-4.8470E-09	532.7212	-0.0813199	2501506.
618.000	1.63E-07	-1.9277	1.0090	-5.4171E-09	532.7158	-0.0680157	2501506.
624.000	1.30E-07	2.9097	0.6422619	-5.3669E-09	532.7166	-0.0542180	2501506.
630.000	9.87E-08	5.7949	0.3561121	-4.9215E-09	532.7187	-0.0411652	2501506.
636.000	7.10E-08	7.1973	0.1438285	-4.2567E-09	532.7197	-0.0295960	2501506.
642.000	4.77E-08	7.5332	-0.0045668	-3.5029E-09	532.7200	-0.0198692	2501506.
648.000	2.90E-08	7.1526	-0.1003868	-2.7515E-09	532.7197	-0.0120708	2501506.
654.000	1.46E-08	6.3365	-0.1549100	-2.0612E-09	532.7191	-0.0061036	2501506.
660.000	4.22E-09	5.2997	-0.1784960	-1.4658E-09	532.7183	-0.0017584	2501506.
666.000	-2.95E-09	4.1988	-0.1800814	-9.7980E-10	532.7175	0.0012300	2501506.
672.000	-7.54E-09	3.1415	-0.1669609	-6.0421E-10	532.7167	0.0031435	2501506.
678.000	-1.02E-08	2.1970	-0.1447718	-3.3104E-10	532.7160	0.0042528	2501506.
684.000	-1.15E-08	1.4052	-0.1176141	-1.4672E-10	532.7154	0.0047997	2501506.
690.000	-1.20E-08	0.7860602	-0.0882542	-3.4593E-11	532.7150	0.0049869	2501506.
696.000	-1.19E-08	0.3462905	-0.0583752	2.3348E-11	532.7147	0.0049728	2501506.
702.000	-1.17E-08	0.0854903	-0.0288466	4.5441E-11	532.7145	0.0048701	2501506.
708.000	-1.14E-08	0.0000	0.0000	4.9816E-11	532.7144	0.0047455	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 5:

```
Pile-head deflection             =     0.38866687 in
Computed slope at pile head      =    -0.00351092
Maximum bending moment           =       1355225. lbs-in
Maximum shear force              =    25000.00000 lbs
Depth of maximum bending moment  =      120.00000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             28
Number of zero deflection points =              5
```

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 6

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Specified shear force at pile head = 30000.000 lbs
Specified moment at pile head = 0.000 in-lbs
Specified axial load at pile head = 241000.000 lbs

(Zero moment for this load indicates free-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	0.571659	-2.1697E-06	30000.0000	-0.0048452	532.7144	-298.2791	1565.3333
6.000	0.542588	181637.	28183.8450	-0.0048359	666.5500	-307.1058	3396.0111
12.000	0.513628	352192.	26316.1957	-0.0048086	792.2195	-315.4439	3684.8898
18.000	0.484885	511338.	24400.0339	-0.0047644	909.4832	-323.2766	4000.2488
24.000	0.456455	658771.	22438.4436	-0.0047045	1018.1159	-330.5868	4345.4882
30.000	0.428430	794205.	20434.6123	-0.0046302	1117.9077	-337.3570	4724.5542
36.000	0.400893	917377.	18391.8350	-0.0045426	1208.6643	-343.5688	5142.0547
42.000	0.373919	1028044.	16313.5191	-0.0044431	1290.2073	-349.2032	5603.4070
48.000	0.347576	1125988.	14540.7607	-0.0043329	1362.3754	-241.7163	4172.6075
54.000	0.321924	1215064.	13333.3250	-0.0042131	1428.0090	-160.7623	2996.2729
60.000	0.297019	1298172.	12365.3290	-0.0040845	1489.2457	-161.9031	3270.5592
66.000	0.272911	1375260.	11391.6799	-0.0039477	1546.0462	-162.6466	3575.8197
72.000	0.249647	1446289.	10414.7946	-0.0038033	1598.3825	-162.9818	3917.0947
78.000	0.227271	1511237.	9437.1584	-0.0036520	1646.2378	-162.8969	4300.5074

84.000	0.205823	1570097.	8461.3288	-0.0034943	1689.6074	-162.3796	4733.5623
90.000	0.185340	1622878.	7489.9395	-0.0033309	1728.4985	-161.4168	5225.5461
96.000	0.165852	1669609.	6525.7064	-0.0031624	1762.9309	-159.9942	5788.0729
102.000	0.147390	1710333.	5571.4337	-0.0029895	1792.9373	-158.0967	6435.8390
108.000	0.129978	1745112.	4298.9950	-0.0028127	1818.5636	-266.0496	12281.2565
114.000	0.113638	1770055.	2424.5447	-0.0026328	1836.9424	-358.7672	18942.6349
120.000	0.098384	1781820.	285.5734	-0.0024511	1845.6116	-354.2233	21602.3846
126.000	0.084225	1780570.	-1822.8049	-0.0022688	1844.6905	-348.5695	24831.2898
132.000	0.071159	1766508.	-3893.6264	-0.0020873	1834.3291	-341.7043	28811.9165
138.000	0.059178	1739883.	-5919.2177	-0.0019079	1814.7111	-333.4928	33812.7827
144.000	0.048264	1700995.	-7890.9412	-0.0017318	1786.0572	-323.7484	40246.8374
150.000	0.038396	1650200.	-9798.7878	-0.0015603	1748.6301	-312.2005	48786.6937
156.000	0.029540	1587922.	-11630.6856	-0.0013946	1702.7417	-298.4321	60615.0757
162.000	0.021660	1514665.	-13371.2268	-0.0012359	1648.7640	-281.7482	78046.5160
168.000	0.014710	1431042.	-14636.0454	-0.0010852	1587.1476	-139.8580	57047.2372
174.000	0.008638	1342171.	-15294.5996	-0.0009433	1521.6652	-79.6601	55331.8296
180.000	0.003391	1250234.	-15708.6103	-0.0008106	1453.9235	-58.3435	103245.
186.000	-0.001089	1156012.	-15764.0108	-0.0006875	1384.4978	39.8767	219655.
192.000	-0.004859	1063054.	-15447.2088	-0.0005739	1316.0039	65.7240	81153.0965
198.000	-0.007977	972305.	-15017.4132	-0.0004698	1249.1374	77.5412	58326.9955
204.000	-0.010497	884204.	-14529.8579	-0.0003748	1184.2217	84.9773	48573.3706
210.000	-0.012474	799031.	-14004.8904	-0.0002887	1121.4638	90.0119	43295.3997
216.000	-0.013961	716980.	-13454.4863	-0.0002111	1061.0063	93.4561	40165.0888
222.000	-0.015007	638188.	-12886.9089	-0.0001418	1002.9497	95.7363	38276.0101
228.000	-0.015662	562747.	-12308.3717	-8.0304E-05	947.3630	97.1094	37202.2602
234.000	-0.015971	490719.	-11723.8096	-2.6400E-05	894.2908	97.7446	36721.0130
240.000	-0.015979	422138.	-11137.2928	2.0310E-05	843.7579	97.7610	36709.3517
246.000	-0.015727	357013.	-10552.2723	6.0178E-05	795.7721	97.2459	37099.7793
252.000	-0.015257	295337.	-9971.7360	9.3558E-05	750.3270	96.2663	37859.0924
258.000	-0.014604	237082.	-9398.3117	0.0001208	707.4032	94.8752	38977.8162
264.000	-0.013807	182207.	-8834.3386	0.0001423	666.9702	93.1159	40464.9502
270.000	-0.012897	130658.	-8281.9162	0.0001583	628.9873	91.0249	42345.6629
276.000	-0.011908	82366.7261	-7742.9375	0.0001692	593.4046	88.6346	44660.7700
282.000	-0.010867	37253.8175	-7219.1095	0.0001753	560.1641	85.9747	47467.3220
288.000	-0.009804	-4769.5149	-6348.6600	0.0001769	536.2287	204.1751	124951.
294.000	-0.008744	-39441.8361	-5170.1727	0.0001747	561.7763	188.6539	129451.
300.000	-0.007708	-67316.7788	-4087.9617	0.0001692	582.3154	172.0831	133951.
306.000	-0.006713	-88986.7692	-3106.9765	0.0001612	598.2825	154.9120	138451.
312.000	-0.005773	-105067.	-2229.5884	0.0001513	610.1307	137.5507	142951.
318.000	-0.004898	-116179.	-1455.8419	0.0001400	618.3188	120.3648	147451.
324.000	-0.004094	-122942.	-783.7308	0.0001277	623.3014	103.6722	151951.
330.000	-0.003365	-125954.	-209.4889	0.0001150	625.5207	87.7418	156451.
336.000	-0.002714	-125788.	272.1151	0.0001021	625.3988	72.7929	160951.
342.000	-0.002139	-122984.	667.4842	8.9393E-05	623.3323	58.9968	165451.
348.000	-0.001641	-118037.	983.9102	7.7060E-05	619.6874	46.4785	169951.
354.000	-0.001215	-111399.	1229.3045	6.5320E-05	614.7968	35.3196	174451.
360.000	-0.000857	-103474.	1411.9481	5.4326E-05	608.9571	25.5616	178951.
366.000	-0.000563	-94613.1947	1540.2618	4.4190E-05	602.4282	17.2096	183451.
372.000	-0.000327	-85118.7489	1622.5992	3.4993E-05	595.4324	10.2362	187951.
378.000	-0.000143	-75243.2041	1667.0629	2.6788E-05	588.1558	4.5850	192451.
384.000	-5.32E-06	-65191.4636	1681.3421	1.9602E-05	580.7494	0.1746929	196951.
390.000	9.23E-05	-55123.7871	1672.5719	1.3445E-05	573.3312	-3.0981	201451.
396.000	0.000156	-45159.4852	1647.2111	8.3140E-06	565.9892	-5.3555	205951.
402.000	0.000192	-35381.2980	1610.9370	4.1928E-06	558.7844	-6.7359	210451.
408.000	0.000206	-25840.3670	1466.2975	1.0602E-06	551.7543	-41.4773	1206107.
414.000	0.000205	-17788.7945	1218.3818	-1.1722E-06	545.8217	-41.1613	1206107.
420.000	0.000192	-11216.3951	978.9493	-2.6564E-06	540.9790	-38.6496	1206107.
426.000	0.000173	-6033.7206	758.7402	-3.5391E-06	537.1602	-34.7534	1206107.
432.000	0.000150	-2101.2774	564.1421	-3.9553E-06	534.2627	-30.1126	1206107.
438.000	0.000125	747.4240	398.1674	-4.0246E-06	533.2651	-25.2123	1206107.
444.000	0.000102	2688.3701	261.3172	-3.8488E-06	534.6953	-20.4044	1206107.
450.000	7.92E-05	3894.3609	152.3194	-3.5120E-06	535.5839	-15.9282	1206107.
456.000	5.94E-05	4526.3593	68.7364	-3.0811E-06	536.0496	-11.9328	1206107.
462.000	4.23E-05	4728.1086	7.4502	-2.6076E-06	536.1982	-8.4960	1206107.
468.000	2.81E-05	4623.3031	-37.4853	-2.1291E-06	536.1210	-6.4825	1385601.
474.000	1.67E-05	4284.4417	-70.1026	-1.6733E-06	535.8713	-4.3899	1575672.
480.000	7.99E-06	3786.9112	-89.5686	-1.2603E-06	535.5047	-2.0988	1575672.
486.000	1.59E-06	3213.2637	-97.1200	-9.0206E-07	535.0820	-0.4183677	1575672.
492.000	-2.83E-06	2624.0795	-96.1434	-6.0338E-07	534.6479	0.7439209	1575672.
498.000	-5.65E-06	2061.2881	-89.4624	-3.6363E-07	534.2332	1.4831	1575672.

504.000	-7.20E-06	1551.5824	-79.3436	-1.7877E-07	533.8577	1.8898	1575672.
510.000	-7.79E-06	1109.6817	-67.5348	-4.2592E-08	533.5321	2.0464	1575672.
516.000	-7.71E-06	741.2881	-55.3233	5.2119E-08	533.2606	2.0241	1575672.
522.000	-7.17E-06	445.6515	-43.6045	1.1285E-07	533.0428	1.8822	1575672.
528.000	-6.35E-06	217.7076	-32.9527	1.4680E-07	532.8748	1.6684	1575672.
534.000	-5.41E-06	49.7949	-23.6887	1.6048E-07	532.7511	1.4196	1575672.
540.000	-4.43E-06	-67.0204	-15.9419	1.5960E-07	532.7638	1.1627	1575672.
546.000	-3.49E-06	-141.9689	-9.7040	1.4891E-07	532.8190	0.9166115	1575672.
552.000	-2.64E-06	-183.8985	-4.8738	1.3224E-07	532.8499	0.6934255	1575672.
558.000	-1.90E-06	-200.8374	-1.2939	1.1255E-07	532.8624	0.4998931	1575672.
564.000	-1.29E-06	-199.7505	1.2220	9.2051E-08	532.8616	0.3387458	1575672.
570.000	-7.99E-07	-186.4393	2.8677	7.2290E-08	532.8518	0.2098083	1575672.
576.000	-4.22E-07	-165.5473	3.8299	5.4280E-08	532.8364	0.1109341	1575672.
582.000	-1.48E-07	-140.6372	4.2790	3.8613E-08	532.8180	0.0387545	1575672.
588.000	4.09E-08	-114.3111	4.3538	2.5567E-08	532.7986	-0.0138008	2023324.
594.000	1.59E-07	-88.4649	4.1133	1.5191E-08	532.7796	-0.0663873	2501506.
600.000	2.23E-07	-64.9956	3.6349	7.3391E-09	532.7623	-0.0930654	2501506.
606.000	2.47E-07	-44.8670	3.0464	1.7175E-09	532.7475	-0.1031048	2501506.
612.000	2.44E-07	-28.4436	2.4321	-2.0337E-09	532.7354	-0.1016583	2501506.
618.000	2.23E-07	-15.6756	1.8484	-4.2912E-09	532.7260	-0.0929303	2501506.
624.000	1.92E-07	-6.2508	1.3290	-5.4131E-09	532.7190	-0.0801894	2501506.
630.000	1.58E-07	0.2880683	0.8908886	-5.7182E-09	532.7146	-0.0658484	2501506.
636.000	1.24E-07	4.4564	0.5386003	-5.4755E-09	532.7177	-0.0515810	2501506.
642.000	9.22E-08	6.7671	0.2684936	-4.9012E-09	532.7194	-0.0384545	2501506.
648.000	6.49E-08	7.6925	0.0719489	-4.1613E-09	532.7201	-0.0270604	2501506.
654.000	4.23E-08	7.6425	-0.0621387	-3.3766E-09	532.7200	-0.0176355	2501506.
660.000	2.44E-08	6.9566	-0.1455464	-2.6296E-09	532.7195	-0.0101671	2501506.
666.000	1.07E-08	5.9036	-0.1894862	-1.9716E-09	532.7188	-0.0044795	2501506.
672.000	7.27E-10	4.6884	-0.2038346	-1.4296E-09	532.7179	-0.0003033	2501506.
678.000	-6.41E-09	3.4617	-0.1967261	-1.0126E-09	532.7170	0.0026728	2501506.
684.000	-1.14E-08	2.3307	-0.1744200	-7.1618E-10	532.7161	0.0047626	2501506.
690.000	-1.50E-08	1.3707	-0.1413648	-5.2678E-10	532.7154	0.0062558	2501506.
696.000	-1.77E-08	0.6358039	-0.1004031	-4.2411E-10	532.7149	0.0073981	2501506.
702.000	-2.01E-08	0.1671171	-0.0530760	-3.8302E-10	532.7145	0.0083776	2501506.
708.000	-2.23E-08	0.0000	0.0000	-3.7447E-10	532.7144	0.0093144	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 6:

```
Pile-head deflection             =     0.57165936 in
Computed slope at pile head      =    -0.00484522
Maximum bending moment           =       1781820. lbs-in
Maximum shear force              =    30000.00000 lbs
Depth of maximum bending moment  =      120.00000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             30
Number of zero deflection points =              5
```

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 7

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Specified shear force at pile head = 35000.000 lbs
Specified moment at pile head = 0.000 in-lbs
Specified axial load at pile head = 241000.000 lbs

(Zero moment for this load indicates free-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in

0.000	0.791978	-3.6162E-07	35000.0000	-0.0063558	532.7144	-323.6054	1225.8122
6.000	0.753843	213366.	33028.9287	-0.0063449	689.9284	-333.4184	2653.7493
12.000	0.715839	414697.	31000.4586	-0.0063127	838.2749	-342.7383	2872.7529
18.000	0.678090	603628.	28917.5984	-0.0062606	977.4848	-351.5485	3110.6342
24.000	0.640712	779813.	26783.4558	-0.0061898	1107.3037	-359.8324	3369.6806
30.000	0.603812	942930.	24601.2397	-0.0061017	1227.4927	-367.5730	3652.5229
36.000	0.567492	1092674.	22374.2623	-0.0059975	1337.8288	-374.7528	3962.2027
42.000	0.531842	1228766.	20105.9435	-0.0058787	1438.1050	-381.3535	4302.2576
48.000	0.496947	1350947.	18144.9643	-0.0057467	1528.1316	-272.3063	3287.7522
54.000	0.462881	1463125.	16783.6992	-0.0056028	1610.7877	-181.4488	2351.9925
60.000	0.429714	1568555.	15690.0154	-0.0054476	1688.4712	-183.1125	2556.7608
66.000	0.397510	1667160.	14587.5744	-0.0052821	1761.1264	-184.3678	2782.8441
72.000	0.366329	1758881.	13478.8572	-0.0051067	1828.7094	-185.2046	3033.4136
78.000	0.336229	1843675.	12366.4064	-0.0049224	1891.1878	-185.6124	3312.2537
84.000	0.307260	1921514.	11252.8278	-0.0047298	1948.5417	-185.5805	3623.9107
90.000	0.279471	1992387.	10140.7922	-0.0045295	2000.7635	-185.0980	3973.8871
96.000	0.252906	2056302.	9033.0377	-0.0043223	2047.8580	-184.1535	4368.8949
102.000	0.227604	2113284.	7932.3719	-0.0041090	2089.8436	-182.7351	4817.1917
108.000	0.203599	2163374.	6491.2633	-0.0038901	2126.7515	-297.6344	8771.2079
114.000	0.180922	2202429.	4389.3783	-0.0036667	2155.5285	-402.9939	13364.6673
120.000	0.159598	2226651.	1981.1286	-0.0034401	2173.3757	-399.7560	15028.6258
126.000	0.139641	2236152.	-404.7136	-0.0032118	2180.3761	-395.5248	16994.6695
132.000	0.121057	2231083.	-2762.0041	-0.0029832	2176.6412	-390.2387	19341.6073
138.000	0.103843	2211635.	-5084.1845	-0.0027558	2162.3115	-383.8214	22177.0886
144.000	0.087987	2178042.	-7364.1746	-0.0025312	2137.5595	-376.1753	25652.2134
150.000	0.073468	2130585.	-9594.2140	-0.0023108	2102.5917	-367.1712	29986.2408
156.000	0.060257	2069594.	-11765.6228	-0.0020958	2057.6520	-356.6318	35510.7980
162.000	0.048318	1995459.	-13868.4253	-0.0018878	2003.0267	-344.3024	42754.7395
168.000	0.037603	1908633.	-15474.9715	-0.0016881	1939.0509	-191.2130	30509.9955
174.000	0.028061	1814641.	-16402.4832	-0.0014976	1869.7949	-117.9575	25221.7697
180.000	0.019633	1716134.	-17070.5112	-0.0013169	1797.2121	-104.7185	32003.3923
186.000	0.012258	1613603.	-17653.1830	-0.0011465	1721.6645	-89.5054	43810.2505
192.000	0.005874	1507612.	-18131.8417	-0.0009868	1643.5667	-70.0475	71544.6757
198.000	0.000416	1398875.	-18421.0876	-0.0008381	1563.4464	-26.3678	379894.
204.000	-0.004183	1288982.	-18312.6022	-0.0007006	1482.4742	62.5296	89699.6033
210.000	-0.007990	1181150.	-17892.2321	-0.0005742	1403.0201	77.5938	58266.8409
216.000	-0.011073	1075936.	-17399.9193	-0.0004587	1325.4955	86.5105	46878.5123
222.000	-0.013494	973677.	-16863.1649	-0.0003538	1250.1483	92.4077	41087.7737
228.000	-0.015318	874601.	-16296.7509	-0.0002592	1177.1461	96.3970	37758.3082
234.000	-0.016605	778866.	-15710.4863	-0.0001746	1106.6056	99.0246	35781.6774
240.000	-0.017413	686580.	-15111.5921	-9.9626E-05	1038.6069	100.6068	34665.4363
246.000	-0.017800	597815.	-14505.7309	-3.3905E-05	973.2019	101.3469	34161.2952
252.000	-0.017820	512610.	-13897.5353	2.2913E-05	910.4202	101.3849	34135.9446
258.000	-0.017525	430978.	-13290.9121	7.1196E-05	850.2718	100.8228	34517.8314
264.000	-0.016966	352913.	-12689.2283	0.0001113	792.7509	99.7385	35272.6515
270.000	-0.016190	278386.	-12095.4316	0.0001436	737.8371	98.1938	36391.2754
276.000	-0.015243	207352.	-11512.1288	0.0001685	685.4976	96.2405	37883.6197
282.000	-0.014168	139753.	-10941.6355	0.0001862	635.6884	93.9240	39775.5170
288.000	-0.013008	75514.1246	-9864.5612	0.0001972	588.3554	265.1008	122280.
294.000	-0.011801	20807.7766	-8305.4207	0.0002022	548.0462	254.6127	129451.
300.000	-0.010582	-24735.5943	-6832.8614	0.0002020	550.9403	236.2404	133951.
306.000	-0.009378	-61770.6491	-5474.9713	0.0001975	578.2288	216.3896	138451.
312.000	-0.008211	-91006.5381	-4238.8944	0.0001897	599.7707	195.6361	142951.
318.000	-0.007101	-113186.	-3128.4670	0.0001793	616.1132	174.5064	147451.
324.000	-0.006060	-129067.	-2144.5342	0.0001669	627.8145	153.4712	151951.
330.000	-0.005098	-139403.	-1285.2974	0.0001531	635.4307	132.9411	156451.
336.000	-0.004222	-144933.	-546.6802	0.0001386	639.5053	113.2646	160951.
342.000	-0.003435	-146364.	77.2980	0.0001237	640.5597	94.7281	165451.
348.000	-0.002738	-144363.	594.1520	0.0001088	639.0854	77.5566	169951.
354.000	-0.002130	-139549.	1012.5714	9.4284E-05	635.5381	61.9165	174451.
360.000	-0.001607	-132485.	1342.0789	8.0365E-05	630.3332	47.9193	178951.
366.000	-0.001165	-123676.	1592.7119	6.7257E-05	623.8428	35.6250	183451.
372.000	-0.000800	-113567.	1774.7289	5.5118E-05	616.3939	25.0473	187951.
378.000	-0.000504	-102539.	1898.3446	4.4060E-05	608.2682	16.1579	192451.
384.000	-0.000271	-90914.2540	1973.4928	3.4161E-05	599.7027	8.8915	196951.
390.000	-9.38E-05	-78955.9203	2009.6174	2.5469E-05	590.8914	3.1500	201451.
396.000	3.48E-05	-66872.5015	2015.4888	1.8007E-05	581.9880	-1.1929	205951.
402.000	0.000122	-54822.1314	1999.0447	1.1780E-05	573.1090	-4.2885	210451.
408.000	0.000176	-42918.0335	1879.9723	6.7790E-06	564.3377	-35.4023	1206107.

414.000	0.000204	-32282.0685	1650.9759	2.9311E-06	556.5008	-40.9298	1206107.
420.000	0.000211	-23114.7990	1400.7685	9.6484E-08	549.7461	-42.4727	1206107.
426.000	0.000205	-15473.1260	1149.8628	-1.8780E-06	544.1155	-41.1625	1206107.
432.000	0.000189	-9311.0145	912.5476	-3.1462E-06	539.5750	-37.9425	1206107.
438.000	0.000167	-4513.4564	698.0002	-3.8536E-06	536.0401	-33.5733	1206107.
444.000	0.000143	-923.8681	511.3396	-4.1318E-06	533.3951	-28.6469	1206107.
450.000	0.000117	1634.5678	354.5793	-4.0954E-06	533.9188	-23.6065	1206107.
456.000	9.34E-05	3342.9268	227.4560	-3.8407E-06	535.1776	-18.7679	1206107.
462.000	7.13E-05	4375.1469	128.1267	-3.4458E-06	535.9381	-14.3419	1206107.
468.000	5.20E-05	4890.4119	49.0652	-2.9717E-06	536.3178	-12.0119	1385601.
474.000	3.57E-05	4972.5233	-15.0853	-2.4670E-06	536.3783	-9.3716	1575672.
480.000	2.24E-05	4716.5226	-60.8558	-1.9712E-06	536.1897	-5.8853	1575672.
486.000	1.20E-05	4247.9548	-87.9900	-1.5125E-06	535.8444	-3.1595	1575672.
492.000	4.26E-06	3665.0166	-100.8246	-1.1076E-06	535.4149	-1.1187	1575672.
498.000	-1.26E-06	3041.2627	-103.1875	-7.6450E-07	534.9553	0.3310924	1575672.
504.000	-4.91E-06	2428.9781	-98.3227	-4.8459E-07	534.5042	1.2905	1575672.
510.000	-7.08E-06	1862.7915	-88.8766	-2.6499E-07	534.0870	1.8582	1575672.
516.000	-8.09E-06	1363.2249	-76.9253	-9.9917E-08	533.7189	2.1256	1575672.
522.000	-8.27E-06	939.9765	-64.0294	1.7935E-08	533.4070	2.1731	1575672.
528.000	-7.88E-06	594.8201	-51.3031	9.6468E-08	533.1527	2.0690	1575672.
534.000	-7.12E-06	324.0609	-39.4887	1.4349E-07	532.9532	1.8691	1575672.
540.000	-6.16E-06	120.5406	-29.0309	1.6624E-07	532.8032	1.6169	1575672.
546.000	-5.12E-06	-24.7904	-20.1447	1.7114E-07	532.7327	1.3452	1575672.
552.000	-4.10E-06	-121.6901	-12.8763	1.6364E-07	532.8041	1.0776	1575672.
558.000	-3.16E-06	-179.7798	-7.1551	1.4821E-07	532.8469	0.8295259	1575672.
564.000	-2.32E-06	-207.9799	-2.8351	1.2837E-07	532.8677	0.6104837	1575672.
570.000	-1.62E-06	-214.1719	0.2713184	1.0677E-07	532.8722	0.4249783	1575672.
576.000	-1.04E-06	-205.0329	2.3683	8.5322E-08	532.8655	0.2740081	1575672.
582.000	-5.94E-07	-185.9993	3.6586	6.5313E-08	532.8515	0.1560995	1575672.
588.000	-2.60E-07	-161.3186	4.3896	4.7542E-08	532.8333	0.0875544	2023324.
594.000	-2.39E-08	-133.4620	4.6821	3.2458E-08	532.8128	0.0099696	2501506.
600.000	1.30E-07	-105.2268	4.5496	2.0245E-08	532.7919	-0.0541412	2501506.
606.000	2.19E-07	-78.9252	4.1133	1.0822E-08	532.7726	-0.0913143	2501506.
612.000	2.60E-07	-55.8991	3.5145	3.9230E-09	532.7556	-0.1082828	2501506.
618.000	2.66E-07	-36.7630	2.8568	-8.1839E-10	532.7415	-0.1109412	2501506.
624.000	2.50E-07	-21.6153	2.2114	-3.8055E-09	532.7303	-0.1041883	2501506.
630.000	2.20E-07	-10.2152	1.6231	-5.4343E-09	532.7219	-0.0919020	2501506.
636.000	1.85E-07	-2.1220	1.1164	-6.0655E-09	532.7160	-0.0770007	2501506.
642.000	1.48E-07	3.1994	0.7007510	-6.0104E-09	532.7168	-0.0615561	2501506.
648.000	1.13E-07	6.3044	0.3752910	-5.5241E-09	532.7191	-0.0469306	2501506.
654.000	8.14E-08	7.7189	0.1327425	-4.8066E-09	532.7201	-0.0339189	2501506.
660.000	5.49E-08	7.9112	-0.0376644	-4.0068E-09	532.7202	-0.0228833	2501506.
666.000	3.33E-08	7.2785	-0.1479333	-3.2295E-09	532.7198	-0.0138730	2501506.
672.000	1.61E-08	6.1453	-0.2097298	-2.5427E-09	532.7189	-0.0067259	2501506.
678.000	2.76E-09	4.7691	-0.2333635	-1.9842E-09	532.7179	-0.0011520	2501506.
684.000	-7.68E-09	3.3507	-0.2272165	-1.5687E-09	532.7169	0.0032010	2501506.
690.000	-1.61E-08	2.0470	-0.1975247	-1.2925E-09	532.7159	0.0066962	2501506.
696.000	-2.32E-08	0.9841511	-0.1484337	-1.1374E-09	532.7151	0.0096674	2501506.
702.000	-2.97E-08	0.2691349	-0.0822713	-1.0733E-09	532.7146	0.0123867	2501506.
708.000	-3.61E-08	0.0000	0.0000	-1.0595E-09	532.7144	0.0150371	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 7:

```
Pile-head deflection             =     0.79197781 in
Computed slope at pile head      =    -0.00635579
Maximum bending moment           =       2236152. lbs-in
Maximum shear force              =    35000.00000 lbs
Depth of maximum bending moment  =      126.00000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             28
Number of zero deflection points =              5
```

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 8

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Specified shear force at pile head = 40000.000 lbs
Specified moment at pile head = 0.000 in-lbs
Specified axial load at pile head = 241000.000 lbs

(Zero moment for this load indicates free-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	1.053	7.2324E-07	40000.0000	-0.0080419	532.7144	-347.4727	990.1525
6.000	1.005	245374.	37882.8995	-0.0080293	713.5132	-358.2274	2139.6629
12.000	0.956434	477816.	35702.7599	-0.0079923	884.7829	-368.4858	2311.6236
18.000	0.908626	696921.	33462.6075	-0.0079322	1046.2261	-378.2317	2497.6054
24.000	0.861247	902307.	31165.5649	-0.0078504	1197.5604	-387.4492	2699.2195
30.000	0.814422	1093611.	28814.8522	-0.0077482	1338.5189	-396.1217	2918.3038
36.000	0.768268	1270493.	26413.7890	-0.0076273	1468.8507	-404.2327	3156.9655
42.000	0.722894	1432635.	23965.7974	-0.0074890	1588.3214	-411.7645	3417.6318
48.000	0.678401	1579741.	21824.2790	-0.0073348	1696.7134	-302.0750	2671.6514
54.000	0.634877	1715738.	20313.2517	-0.0071662	1796.9204	-201.6008	1905.2599
60.000	0.592406	1844224.	19097.0602	-0.0069840	1891.5927	-203.7963	2064.0875
66.000	0.551068	1965101.	17868.9477	-0.0067891	1980.6580	-205.5745	2238.2843
72.000	0.510937	2078286.	16631.4462	-0.0065822	2064.0561	-206.9260	2429.9610
78.000	0.472081	2183714.	15387.1435	-0.0063641	2141.7386	-207.8416	2641.5988
84.000	0.434567	2281337.	14138.6834	-0.0061357	2213.6699	-208.3118	2876.1304
90.000	0.398453	2371123.	12888.7658	-0.0058976	2279.8267	-208.3274	3137.0420
96.000	0.363795	2453058.	11640.1470	-0.0056508	2340.1990	-207.8789	3428.5023
102.000	0.330644	2527146.	10395.6391	-0.0053959	2394.7896	-206.9571	3755.5277
108.000	0.299044	2593411.	8791.7941	-0.0051339	2443.6150	-327.6580	6574.1060
114.000	0.269037	2647495.	6473.7714	-0.0048658	2483.4661	-445.0163	9924.6571
120.000	0.240655	2685168.	3809.7822	-0.0045929	2511.2242	-442.9801	11044.3597
126.000	0.213922	2706495.	1160.7538	-0.0043170	2526.9391	-440.0294	12341.7670
132.000	0.188851	2711581.	-1467.7059	-0.0040398	2530.6867	-436.1239	13856.1305
138.000	0.165445	2700566.	-4069.7267	-0.0037628	2522.5701	-431.2164	15638.4409
144.000	0.143697	2673627.	-6639.1263	-0.0034878	2502.7206	-425.2501	17756.1348
150.000	0.123591	2630983.	-9169.3400	-0.0032164	2471.2996	-418.1544	20300.3035
156.000	0.105100	2572897.	-11653.3212	-0.0029501	2428.4997	-409.8393	23397.1455
162.000	0.088189	2499675.	-14083.3970	-0.0026906	2374.5480	-400.1860	27226.9708
168.000	0.072813	2411677.	-15998.9349	-0.0024393	2309.7084	-238.3267	19638.8616
174.000	0.058918	2314742.	-17167.0434	-0.0021974	2238.2841	-151.0428	15381.7869
180.000	0.046444	2212027.	-18038.7571	-0.0019658	2162.6008	-139.5285	18025.5494
186.000	0.035328	2103962.	-18839.4494	-0.0017450	2082.9752	-127.3690	21632.0464
192.000	0.025504	1991001.	-19564.3404	-0.0015354	1999.7417	-114.2614	26880.7999
198.000	0.016903	1873631.	-20205.9930	-0.0013377	1913.2602	-99.6228	35363.3623
204.000	0.009452	1752397.	-20751.0999	-0.0011521	1823.9318	-82.0795	52103.7412
210.000	0.003077	1627949.	-21166.7716	-0.0009792	1732.2351	-56.4777	110128.
216.000	-0.002298	1501228.	-21182.6044	-0.0008191	1638.8628	51.2001	133669.
222.000	-0.006752	1376127.	-20808.9472	-0.0006718	1546.6849	73.3523	65185.9682
228.000	-0.010360	1253463.	-20335.0589	-0.0005373	1456.3027	84.6104	49001.5183
234.000	-0.013199	1133660.	-19806.0495	-0.0004151	1368.0282	91.7260	41696.9384
240.000	-0.015342	1016991.	-19241.5389	-0.0003051	1282.0632	96.4442	37718.5101
246.000	-0.016860	903644.	-18653.6253	-0.0002068	1198.5456	99.5270	35418.9867
252.000	-0.017823	793746.	-18050.8793	-0.0001200	1117.5695	101.3883	34131.0745
258.000	-0.018299	687380.	-17439.8639	-4.4165E-05	1039.1962	102.2835	33536.7223
264.000	-0.018353	584595.	-16825.8606	2.0920E-05	963.4612	102.3843	33471.0770
270.000	-0.018048	485409.	-16213.2651	7.5671E-05	890.3782	101.8142	33847.2036
276.000	-0.017445	389817.	-15605.8194	0.0001205	819.9430	100.6676	34622.8842
282.000	-0.016603	297791.	-15006.7545	0.0001556	752.1356	99.0207	35784.4194
288.000	-0.015578	209286.	-13822.2679	0.0001816	686.9224	295.8082	113936.
294.000	-0.014424	131399.	-12026.2536	0.0001990	629.5329	302.8632	125984.
300.000	-0.013189	64395.3426	-10234.3007	0.0002090	580.1628	294.4544	133951.
306.000	-0.011915	7982.6865	-8526.0903	0.0002127	538.5963	274.9490	138451.
312.000	-0.010637	-38532.9854	-6940.9955	0.0002112	561.1066	253.4159	142951.
318.000	-0.009381	-75919.9826	-5489.1101	0.0002053	588.6545	230.5459	147451.

324.000	-0.008173	-104996.	-4176.5516	0.0001961	610.0786	206.9736	151951.
330.000	-0.007029	-126606.	-3005.8225	0.0001842	626.0011	183.2695	156451.
336.000	-0.005962	-141599.	-1976.2108	0.0001705	637.0485	159.9344	160951.
342.000	-0.004983	-150813.	-1084.2154	0.0001555	643.8380	137.3973	165451.
348.000	-0.004096	-155059.	-323.9813	0.0001399	646.9665	116.0140	169951.
354.000	-0.003304	-155105.	312.2670	0.0001240	647.0007	96.0687	174451.
360.000	-0.002608	-151670.	833.8023	0.0001083	644.4697	77.7764	178951.
366.000	-0.002004	-145413.	1250.9922	9.3106E-05	639.8590	61.2869	183451.
372.000	-0.001490	-136928.	1574.9212	7.8659E-05	633.6068	46.6894	187951.
378.000	-0.001061	-126742.	1817.0427	6.5167E-05	626.1013	34.0177	192451.
384.000	-0.000708	-115312.	1988.8630	5.2782E-05	617.6795	23.2557	196951.
390.000	-0.000427	-103028.	2101.6586	4.1610E-05	608.6283	14.3428	201451.
396.000	-0.000209	-90212.2295	2166.2252	3.1722E-05	599.1854	7.1794	205951.
402.000	-4.65E-05	-77124.8432	2192.6592	2.3159E-05	589.5422	1.6319	210451.
408.000	6.88E-05	-63967.2956	2156.0942	1.5940E-05	579.8474	-13.8202	1206107.
414.000	0.000145	-51297.8111	2027.3408	1.0042E-05	570.5121	-29.0975	1206107.
420.000	0.000189	-39668.2470	1825.9187	5.3872E-06	561.9431	-38.0432	1206107.
426.000	0.000209	-29402.3667	1585.5116	1.8529E-06	554.3789	-42.0925	1206107.
432.000	0.000211	-20647.4667	1331.6956	-7.0807E-07	547.9281	-42.5128	1206107.
438.000	0.000201	-13419.9714	1083.0038	-2.4513E-06	542.6026	-40.3845	1206107.
444.000	0.000182	-7644.3326	852.0508	-3.5291E-06	538.3470	-36.5998	1206107.
450.000	0.000159	-3185.1562	646.6365	-4.0832E-06	535.0613	-31.8716	1206107.
456.000	0.000133	127.1143	470.7711	-4.2397E-06	532.8081	-26.7502	1206107.
462.000	0.000108	2476.3582	325.5869	-4.1065E-06	534.5391	-21.6445	1206107.
468.000	8.38E-05	4046.0325	202.5993	-3.7727E-06	535.6956	-19.3513	1385601.
474.000	6.24E-05	4918.4606	95.3830	-3.3140E-06	536.3385	-16.3875	1575672.
480.000	4.40E-05	5200.2122	11.5340	-2.7963E-06	536.5461	-11.5622	1575672.
486.000	2.88E-05	5064.9557	-45.8788	-2.2710E-06	536.4464	-7.5754	1575672.
492.000	1.68E-05	4656.2343	-81.8213	-1.7736E-06	536.1453	-4.4054	1575672.
498.000	7.56E-06	4088.2295	-100.9961	-1.3262E-06	535.7267	-1.9862	1575672.
504.000	8.61E-07	3448.1167	-107.6333	-9.4054E-07	535.2551	-0.2262132	1575672.
510.000	-3.72E-06	2799.3500	-105.3787	-6.2086E-07	534.7771	0.9777580	1575672.
516.000	-6.59E-06	2185.3683	-97.2544	-3.6580E-07	534.3247	1.7303	1575672.
522.000	-8.11E-06	1633.3552	-85.6718	-1.7040E-07	533.9179	2.1305	1575672.
528.000	-8.63E-06	1157.7991	-72.4783	-2.7581E-08	533.5675	2.2673	1575672.
534.000	-8.44E-06	763.6953	-59.0240	7.0739E-08	533.2771	2.2174	1575672.
540.000	-7.78E-06	449.3062	-46.2385	1.3281E-07	533.0455	2.0444	1575672.
546.000	-6.85E-06	208.4491	-34.7086	1.6646E-07	532.8680	1.7989	1575672.
552.000	-5.79E-06	32.3220	-24.7524	1.7878E-07	532.7382	1.5198	1575672.
558.000	-4.70E-06	-89.0965	-16.4864	1.7588E-07	532.7801	1.2355	1575672.
564.000	-3.68E-06	-166.0236	-9.8832	1.6282E-07	532.8367	0.9655625	1575672.
570.000	-2.75E-06	-208.1659	-4.8194	1.4368E-07	532.8678	0.7223905	1575672.
576.000	-1.95E-06	-224.2714	-1.1138	1.2155E-07	532.8797	0.5127852	1575672.
582.000	-1.29E-06	-221.8833	1.4426	9.8721E-08	532.8779	0.3393438	1575672.
588.000	-7.68E-07	-207.2461	3.2375	7.6763E-08	532.8671	0.2589790	2023324.
594.000	-3.71E-07	-183.2550	4.4785	5.6782E-08	532.8494	0.1546886	2501506.
600.000	-8.66E-08	-153.6679	5.0509	3.9542E-08	532.8276	0.0361052	2501506.
606.000	1.03E-07	-122.7583	5.0298	2.5397E-08	532.8049	-0.0431395	2501506.
612.000	2.18E-07	-93.3836	4.6275	1.4338E-08	532.7832	-0.0909585	2501506.
618.000	2.76E-07	-67.2695	4.0100	6.1173E-09	532.7640	-0.1148715	2501506.
624.000	2.92E-07	-45.2809	3.3007	3.5828E-10	532.7478	-0.1215636	2501506.
630.000	2.80E-07	-27.6619	2.5860	-3.3741E-09	532.7348	-0.1166639	2501506.
636.000	2.51E-07	-14.2387	1.9220	-5.5181E-09	532.7249	-0.1046829	2501506.
642.000	2.14E-07	-4.5819	1.3408	-6.4811E-09	532.7178	-0.0890568	2501506.
648.000	1.73E-07	1.8695	0.8568388	-6.6199E-09	532.7158	-0.0722578	2501506.
654.000	1.34E-07	5.7193	0.4722537	-6.2316E-09	532.7186	-0.0559373	2501506.
660.000	9.85E-08	7.5545	0.1811990	-5.5524E-09	532.7200	-0.0410809	2501506.
666.000	6.75E-08	7.9098	-0.0265195	-4.7611E-09	532.7202	-0.0281586	2501506.
672.000	4.14E-08	7.2501	-0.1627782	-3.9854E-09	532.7198	-0.0172610	2501506.
678.000	1.97E-08	5.9679	-0.2392199	-3.3091E-09	532.7188	-0.0082195	2501506.
684.000	1.69E-09	4.3890	-0.2659958	-2.7791E-09	532.7176	-0.0007058	2501506.
690.000	-1.36E-08	2.7840	-0.2510600	-2.4121E-09	532.7165	0.0056844	2501506.
696.000	-2.73E-08	1.3833	-0.1999215	-2.1988E-09	532.7154	0.0113618	2501506.
702.000	-4.00E-08	0.3913306	-0.1157805	-2.1080E-09	532.7147	0.0166852	2501506.
708.000	-5.25E-08	0.0000	0.0000	-2.0880E-09	532.7144	0.0219083	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 8:

```
Pile-head deflection             =     1.05278550 in
Computed slope at pile head      =    -0.00804188
Maximum bending moment           =       2711581. lbs-in
Maximum shear force              =    40000.00000 lbs
Depth of maximum bending moment  =      132.00000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             32
Number of zero deflection points =              5
```

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 9

```
Pile-head boundary conditions are Shear and Moment (BC Type 1)
Specified shear force at pile head  =       45000.000 lbs
Specified moment at pile head       =           0.000 in-lbs
Specified axial load at pile head   =      241000.000 lbs
```

(Zero moment for this load indicates free-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	1.355	-2.8930E-06	45000.0000	-0.0099033	532.7144	-370.1025	819.3979
6.000	1.296	277658.	42744.4259	-0.0098891	737.3011	-381.7555	1767.9199
12.000	1.236	541532.	40420.4315	-0.0098471	931.7312	-392.9093	1906.7716
18.000	1.177	791181.	38031.0582	-0.0097790	1115.6800	-403.5484	2056.3968
24.000	1.119	1026186.	35579.4414	-0.0096860	1288.8380	-413.6572	2217.9762
30.000	1.061	1246146.	33068.8109	-0.0095697	1450.9115	-423.2197	2392.8475
36.000	1.004	1450687.	30502.4926	-0.0094317	1601.6229	-432.2198	2582.5333
42.000	0.948031	1639453.	27883.9107	-0.0092736	1740.7111	-440.6409	2788.7738
48.000	0.892893	1812113.	25568.8580	-0.0090970	1867.9322	-331.0433	2224.5209
54.000	0.838868	1972588.	23912.0657	-0.0089033	1986.1745	-221.2208	1582.2810
60.000	0.786054	2124806.	22576.5712	-0.0086936	2098.3336	-223.9440	1709.3795
66.000	0.734544	2268648.	21226.0147	-0.0084688	2204.3208	-226.2415	1848.0154
72.000	0.684428	2404010.	19862.9765	-0.0082297	2304.0593	-228.1046	1999.6670
78.000	0.635787	2530805.	18490.0889	-0.0079772	2397.4851	-229.5247	2166.0517
84.000	0.588701	2648962.	17110.0348	-0.0077122	2484.5465	-230.4934	2349.1733
90.000	0.543241	2758429.	15725.5474	-0.0074355	2565.2051	-231.0024	2551.3808
96.000	0.499475	2859172.	14339.4091	-0.0071481	2639.4354	-231.0437	2775.4402
102.000	0.457464	2951174.	12954.4494	-0.0068508	2707.2254	-230.6095	3024.6241
108.000	0.417266	3034437.	11194.2818	-0.0065445	2768.5764	-356.1130	5120.6651
114.000	0.378930	3104432.	8671.5503	-0.0062304	2820.1503	-484.7975	7676.3033
120.000	0.342501	3156514.	5765.6491	-0.0059100	2858.5261	-483.8362	8475.9282
126.000	0.308011	3190711.	2868.1101	-0.0055852	2883.7236	-482.0101	9389.4865
132.000	0.275479	3207084.	-15.7916	-0.0052578	2895.7874	-479.2905	10439.0701
138.000	0.244916	3205727.	-2880.5972	-0.0049297	2894.7879	-475.6448	11652.4219
144.000	0.216322	3186773.	-5720.6382	-0.0046026	2880.8221	-471.0356	13064.8293
150.000	0.189685	3150391.	-8530.0008	-0.0042784	2854.0141	-465.4186	14721.8418
156.000	0.164982	3096786.	-11302.4770	-0.0039587	2814.5170	-458.7401	16683.2760
162.000	0.142181	3026209.	-14031.4964	-0.0036454	2762.5138	-450.9330	19029.3029
168.000	0.121237	2938951.	-16231.7117	-0.0033402	2698.2192	-282.4721	13979.4537
174.000	0.102099	2841089.	-17623.3861	-0.0030444	2626.1114	-181.4194	10661.4093
180.000	0.084705	2736275.	-18679.0524	-0.0027590	2548.8815	-170.4694	12075.0996
186.000	0.068991	2624919.	-19668.0585	-0.0024847	2466.8313	-159.1993	13845.3128
192.000	0.054888	2507444.	-20588.2040	-0.0022221	2380.2721	-147.5158	16125.3845
198.000	0.042326	2384287.	-21436.5736	-0.0019718	2289.5265	-135.2740	19176.1611
204.000	0.031227	2255907.	-22209.0975	-0.0017343	2194.9327	-122.2339	23486.1412
210.000	0.021514	2122793.	-22899.6736	-0.0015103	2096.8505	-107.9581	30108.7266
216.000	0.013104	1985479.	-23498.0893	-0.0013001	1995.6732	-91.5138	41902.9834
222.000	0.005913	1844576.	-23983.2140	-0.0011041	1891.8519	-70.1944	71229.3946
228.000	-0.000145	1700873.	-24166.1759	-0.0009227	1785.9675	9.2071	379894.

234.000	-0.005159	1557250.	-23937.3539	-0.0007560	1680.1419	67.0669	77995.7254
240.000	-0.009217	1415811.	-23492.0109	-0.0006038	1575.9255	81.3808	52976.8599
246.000	-0.012405	1277092.	-22978.3093	-0.0004660	1473.7134	89.8531	43458.8492
252.000	-0.014809	1141419.	-22422.7930	-0.0003423	1373.7455	95.3190	38618.2517
258.000	-0.016513	1009009.	-21840.3101	-0.0002323	1276.1816	98.8419	35914.8244
264.000	-0.017596	880007.	-21240.9076	-0.0001356	1181.1295	100.9589	34424.7070
270.000	-0.018140	754510.	-20632.0676	-5.1959E-05	1088.6595	101.9878	33733.8019
276.000	-0.018220	632573.	-20019.6908	1.9016E-05	998.8125	102.1378	33634.8928
282.000	-0.017912	514219.	-19408.6015	7.7696E-05	911.6059	101.5586	34019.7913
288.000	-0.017288	399445.	-18158.4779	0.0001244	827.0371	315.1493	109379.
294.000	-0.016418	295957.	-16229.9936	0.0001600	750.7843	327.6788	119749.
300.000	-0.015367	204222.	-14236.1780	0.0001856	683.1913	336.9264	131550.
306.000	-0.014191	124586.	-12243.0345	0.0002024	624.5132	327.4547	138451.
312.000	-0.012938	56720.2649	-10335.9308	0.0002117	574.5076	308.2465	142951.
318.000	-0.011650	-57.2344	-8552.2824	0.0002146	532.7566	286.3030	147451.
324.000	-0.010362	-46527.8183	-6906.0874	0.0002122	566.9975	262.4287	151951.
330.000	-0.009103	-83544.0843	-5406.6981	0.0002056	594.2721	237.3678	156451.
336.000	-0.007895	-112003.	-4059.2124	0.0001956	615.2413	211.7942	160951.
342.000	-0.006756	-132820.	-2864.9145	0.0001831	630.5802	186.3052	165451.
348.000	-0.005699	-146911.	-1821.7462	0.0001687	640.9628	161.4176	169951.
354.000	-0.004731	-155169.	-924.7940	0.0001533	647.0476	137.5665	174451.
360.000	-0.003859	-158452.	-166.7763	0.0001372	649.4664	115.1061	178951.
366.000	-0.003085	-157567.	461.4788	0.0001211	648.8147	94.3123	183451.
372.000	-0.002407	-153264.	970.5771	0.0001052	645.6440	75.3871	187951.
378.000	-0.001823	-146225.	1372.1289	8.9834E-05	640.4570	58.4635	192451.
384.000	-0.001329	-137059.	1678.3528	7.5339E-05	633.7032	43.6112	196951.
390.000	-0.000919	-126302.	1901.7161	6.1863E-05	625.7776	30.8433	201451.
396.000	-0.000586	-114417.	2054.6133	4.9546E-05	617.0201	20.1225	205951.
402.000	-0.000324	-101790.	2149.0825	3.8483E-05	607.7164	11.3672	210451.
408.000	-0.000124	-88739.1708	2258.2254	2.8734E-05	598.1000	25.0137	1206107.
414.000	2.07E-05	-74774.5545	2320.7690	2.0367E-05	587.8105	-4.1659	1206107.
420.000	0.000120	-60948.8451	2235.9230	1.3422E-05	577.6233	-24.1161	1206107.
426.000	0.000182	-47982.2963	2053.9444	7.8485E-06	568.0692	-36.5434	1206107.
432.000	0.000214	-36324.2104	1815.1692	3.5346E-06	559.4792	-43.0483	1206107.
438.000	0.000224	-26210.4877	1550.8153	3.3480E-07	552.0271	-45.0697	1206107.
444.000	0.000218	-17715.3946	1284.0386	-1.9128E-06	545.7676	-43.8559	1206107.
450.000	0.000201	-10796.4923	1031.1044	-3.3717E-06	540.6696	-40.4555	1206107.
456.000	0.000178	-5332.3907	802.5703	-4.1970E-06	536.6435	-35.7225	1206107.
462.000	0.000151	-1153.5107	604.4087	-4.5289E-06	533.5644	-30.3313	1206107.
468.000	0.000123	1933.6114	427.9499	-4.4890E-06	534.1392	-28.4882	1385601.
474.000	9.70E-05	3994.8709	266.0487	-4.1856E-06	535.6579	-25.4788	1575672.
480.000	7.31E-05	5138.3009	131.9950	-3.7183E-06	536.5005	-19.2057	1575672.
486.000	5.24E-05	5589.5647	33.0944	-3.1694E-06	536.8330	-13.7612	1575672.
492.000	3.51E-05	5544.5998	-35.8427	-2.5997E-06	536.7998	-9.2179	1575672.
498.000	2.12E-05	5166.9700	-80.2026	-2.0516E-06	536.5216	-5.5687	1575672.
504.000	1.05E-05	4588.1019	-105.1669	-1.5524E-06	536.0951	-2.7527	1575672.
510.000	2.58E-06	3909.4572	-115.4546	-1.1176E-06	535.5950	-0.6765313	1575672.
516.000	-2.93E-06	3205.8790	-115.1764	-7.5352E-07	535.0766	0.7692451	1575672.
522.000	-6.47E-06	2529.5191	-107.7745	-4.6005E-07	534.5782	1.6981	1575672.
528.000	-8.45E-06	1913.9156	-96.0232	-2.3268E-07	534.1246	2.2190	1575672.
534.000	-9.26E-06	1377.9134	-82.0722	-6.4245E-08	533.7297	2.4313	1575672.
540.000	-9.22E-06	929.2355	-67.5137	5.3809E-08	533.3991	2.4215	1575672.
546.000	-8.61E-06	567.5932	-53.4640	1.3040E-07	533.1326	2.2618	1575672.
552.000	-7.66E-06	287.2906	-40.6470	1.7414E-07	532.9261	2.0105	1575672.
558.000	-6.52E-06	79.3250	-29.4765	1.9290E-07	532.7729	1.7130	1575672.
564.000	-5.34E-06	-66.9848	-20.1296	1.9353E-07	532.7638	1.4026	1575672.
570.000	-4.20E-06	-162.7896	-12.6124	1.8178E-07	532.8344	1.1031	1575672.
576.000	-3.16E-06	-218.8589	-6.8137	1.6225E-07	532.8757	0.8298021	1575672.
582.000	-2.25E-06	-245.0228	-2.5489	1.3851E-07	532.8950	0.5917986	1575672.
588.000	-1.50E-06	-249.8458	0.7416612	1.1319E-07	532.8985	0.5050439	2023324.
594.000	-8.95E-07	-236.4503	3.3765	8.8307E-08	532.8886	0.3732389	2501506.
600.000	-4.38E-07	-209.5831	5.0440	6.5484E-08	532.8688	0.1826050	2501506.
606.000	-1.09E-07	-176.1111	5.7287	4.5748E-08	532.8442	0.0456238	2501506.
612.000	1.11E-07	-140.9707	5.7268	2.9523E-08	532.8183	-0.0462733	2501506.
618.000	2.45E-07	-107.4752	5.2817	1.6811E-08	532.7936	-0.1020822	2501506.
624.000	3.13E-07	-77.6387	4.5843	7.3387E-09	532.7716	-0.1303778	2501506.
630.000	3.33E-07	-52.4844	3.7768	6.8052E-10	532.7531	-0.1387981	2501506.
636.000	3.21E-07	-32.3190	2.9591	-3.6588E-09	532.7382	-0.1337824	2501506.
642.000	2.89E-07	-16.9651	2.1962	-6.1806E-09	532.7269	-0.1204932	2501506.
648.000	2.47E-07	-5.9463	1.5262	-7.3529E-09	532.7188	-0.1028610	2501506.

654.000	2.01E-07	1.3703	0.9664715	-7.5871E-09	532.7154	-0.0837065	2501506.
660.000	1.56E-07	5.6733	0.5206434	-7.2267E-09	532.7186	-0.0649028	2501506.
666.000	1.14E-07	7.6389	0.1832804	-6.5455E-09	532.7200	-0.0475515	2501506.
672.000	7.71E-08	7.8916	-0.0558412	-5.7508E-09	532.7202	-0.0321557	2501506.
678.000	4.50E-08	6.9855	-0.2086488	-4.9896E-09	532.7196	-0.0187801	2501506.
684.000	1.73E-08	5.4022	-0.2865677	-4.3557E-09	532.7184	-0.0071928	2501506.
690.000	-7.22E-09	3.5592	-0.2991117	-3.8972E-09	532.7170	0.0030115	2501506.
696.000	-2.95E-08	1.8241	-0.2531630	-3.6217E-09	532.7158	0.0123047	2501506.
702.000	-5.07E-08	0.5317554	-0.1528560	-3.5012E-09	532.7148	0.0211309	2501506.
708.000	-7.15E-08	0.0000	0.0000	-3.4739E-09	532.7144	0.0298210	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 9:

```
Pile-head deflection             =     1.35502861 in
Computed slope at pile head      =    -0.00990327
Maximum bending moment           =       3207084. lbs-in
Maximum shear force              =    45000.00000 lbs
Depth of maximum bending moment  =      132.00000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             31
Number of zero deflection points =              5
```

Computed Values of Load Distribution and Deflection
for Lateral Loading for Load Case Number 10

Pile-head boundary conditions are Shear and Moment (BC Type 1)
Specified shear force at pile head = 50000.000 lbs
Specified moment at pile head = 0.000 in-lbs
Specified axial load at pile head = 241000.000 lbs

(Zero moment for this load indicates free-head conditions)

Depth X in	Deflect. y in	Moment M lbs-in	Shear V lbs	Slope S Rad.	Total Stress lbs/in**2	Soil Res. p lbs/in	Es*h F/L lbs/in
0.000	1.700	1.3742E-05	50000.0000	-0.0119396	532.7144	-391.7094	691.1434
6.000	1.629	310214.	47612.1996	-0.0119237	761.2891	-404.2240	1489.1936
12.000	1.557	605830.	45150.8163	-0.0118768	979.1075	-416.2371	1603.8088
18.000	1.486	886372.	42618.9055	-0.0118005	1185.8188	-427.7332	1726.9276
24.000	1.416	1151384.	40019.6140	-0.0116962	1381.0875	-438.6973	1859.4432
30.000	1.346	1400432.	37356.1808	-0.0115657	1564.5938	-449.1138	2002.3616
36.000	1.277	1633106.	34631.9378	-0.0114104	1736.0344	-458.9672	2156.8204
42.000	1.209	1849015.	31850.3115	-0.0112323	1895.1223	-468.2416	2324.1116
48.000	1.142	2047793.	29367.5633	-0.0110329	2041.5881	-359.3412	1887.9549
54.000	1.076	2233332.	27568.3579	-0.0108138	2178.2989	-240.3940	1339.9477
60.000	1.012	2409887.	26116.2551	-0.0105762	2308.3894	-243.6403	1444.1712
66.000	0.949518	2577314.	24645.9756	-0.0103210	2431.7544	-246.4529	1557.3340
72.000	0.888383	2735487.	23160.1464	-0.0100492	2548.3011	-248.8235	1680.5143
78.000	0.828928	2884298.	21661.4432	-0.0097616	2657.9492	-250.7442	1814.9522
84.000	0.771244	3023655.	20152.5893	-0.0094593	2760.6316	-252.2071	1962.0801
90.000	0.715416	3153485.	18636.3537	-0.0091432	2856.2943	-253.2047	2123.5580
96.000	0.661525	3273733.	17115.5499	-0.0088144	2944.8967	-253.7299	2301.3170
102.000	0.609644	3384363.	15593.0330	-0.0084737	3026.4118	-253.7758	2497.6124
108.000	0.559841	3485356.	13681.9067	-0.0081222	3100.8262	-383.2663	4107.5906
114.000	0.512178	3572035.	10963.9244	-0.0077610	3164.6941	-522.7278	6123.5860
120.000	0.466708	3639368.	7827.4911	-0.0073921	3214.3068	-522.7500	6720.4692
126.000	0.423474	3687343.	4693.4190	-0.0070172	3249.6562	-521.9407	7395.1360
132.000	0.382503	3715982.	1566.7639	-0.0066383	3270.7587	-520.2777	8161.1617
138.000	0.343814	3725342.	-1547.2789	-0.0062576	3277.6552	-517.7366	9035.1879

144.000	0.307412	3715512.	-4643.3599	-0.0058768	3270.4120	-514.2904	10037.8135
150.000	0.273292	3686618.	-7715.9556	-0.0054981	3249.1218	-509.9082	11194.8185
156.000	0.241435	3638821.	-10759.3416	-0.0051232	3213.9038	-504.5538	12538.8780
162.000	0.211813	3572322.	-13767.5552	-0.0047543	3164.9054	-498.1841	14112.0218
168.000	0.184384	3487360.	-16236.6306	-0.0043930	3102.3027	-324.8410	10570.5919
174.000	0.159096	3390187.	-17842.1375	-0.0040411	3030.7031	-210.3279	7932.0965
180.000	0.135891	3284941.	-19071.8018	-0.0036995	2953.1546	-199.5601	8811.2148
186.000	0.114702	3172024.	-20236.2730	-0.0033692	2869.9545	-188.5969	9865.4245
192.000	0.095461	3051849.	-21334.2637	-0.0030507	2781.4059	-177.3999	11150.1363
198.000	0.078094	2924836.	-22364.2072	-0.0027449	2687.8188	-165.9146	12747.3756
204.000	0.062522	2791417.	-23324.1335	-0.0024524	2589.5118	-154.0608	14784.5733
210.000	0.048665	2652038.	-24211.4663	-0.0021738	2486.8138	-141.7168	17472.5235
216.000	0.036436	2507166.	-25022.6725	-0.0019099	2380.0674	-128.6853	21190.7987
222.000	0.025747	2357290.	-25752.5903	-0.0016609	2269.6343	-114.6206	26711.0350
228.000	0.016505	2202938.	-26392.9494	-0.0014276	2155.9036	-98.8324	35928.4562
234.000	0.008616	2044703.	-26928.1884	-0.0012103	2039.3112	-79.5806	55420.9567
240.000	0.001982	1883300.	-27313.2505	-0.0010093	1920.3849	-48.7734	147665.
246.000	-0.003496	1719863.	-27282.8777	-0.0008249	1799.9595	58.8977	101095.
252.000	-0.007917	1558291.	-26874.1170	-0.0006572	1680.9088	77.3558	58625.4060
258.000	-0.011381	1399274.	-26380.1267	-0.0005058	1563.7402	87.3076	46026.1147
264.000	-0.013987	1243192.	-25837.6482	-0.0003706	1448.7349	93.5185	40117.1213
270.000	-0.015829	1090294.	-25264.7231	-0.0002512	1336.0747	97.4565	36941.4118
276.000	-0.017001	940742.	-24672.9349	-0.0001473	1225.8808	99.8063	35222.9576
282.000	-0.017596	794645.	-24070.6440	-5.8486E-05	1118.2317	100.9574	34424.6704
288.000	-0.017703	652064.	-22808.5780	1.5540E-05	1013.1740	319.7313	108364.
294.000	-0.017410	520897.	-20830.6781	7.5559E-05	916.5263	339.5687	117027.
300.000	-0.016796	401877.	-18745.0430	0.0001228	828.8292	355.6431	127042.
306.000	-0.015936	295601.	-16574.9093	0.0001585	750.5219	367.7349	138451.
312.000	-0.014895	202520.	-14407.0876	0.0001840	681.9370	354.8724	142951.
318.000	-0.013729	122184.	-12330.2958	0.0002006	622.7432	337.3916	147451.
324.000	-0.012488	53976.2885	-10369.3350	0.0002096	572.4857	316.2620	151951.
330.000	-0.011214	-2854.0543	-8543.3286	0.0002122	534.8174	292.4068	156451.
336.000	-0.009942	-49157.3292	-6866.0454	0.0002095	568.9350	266.6876	160951.
342.000	-0.008700	-85852.5774	-5346.3062	0.0002026	595.9731	239.8922	165451.
348.000	-0.007510	-113899.	-3988.4494	0.0001924	616.6385	212.7268	169951.
354.000	-0.006391	-134270.	-2792.8372	0.0001797	631.6488	185.8107	174451.
360.000	-0.005354	-147933.	-1756.3824	0.0001653	641.7156	159.6743	178951.
366.000	-0.004407	-155825.	-873.0806	0.0001497	647.5308	134.7596	183451.
372.000	-0.003557	-158843.	-134.5330	0.0001336	649.7544	111.4229	187951.
378.000	-0.002804	-157826.	469.5521	0.0001174	649.0051	89.9388	192451.
384.000	-0.002148	-153548.	950.8871	0.0001015	645.8528	70.5062	196951.
390.000	-0.001586	-146709.	1322.1712	8.6124E-05	640.8136	53.2551	201451.
396.000	-0.001114	-137931.	1596.6968	7.1560E-05	634.3458	38.2534	205951.
402.000	-0.000727	-127755.	1788.0014	5.7965E-05	626.8482	25.5148	210451.
408.000	-0.000419	-116642.	2117.1438	4.5459E-05	618.6599	84.1994	1206107.
414.000	-0.000182	-102481.	2479.4488	3.4247E-05	608.2254	36.5690	1206107.
420.000	-7.90E-06	-86987.9871	2593.9191	2.4552E-05	596.8097	1.5878	1206107.
426.000	0.000113	-71424.9582	2530.7132	1.6447E-05	585.3424	-22.6565	1206107.
432.000	0.000189	-56666.9922	2348.4896	9.8922E-06	574.4683	-38.0848	1206107.
438.000	0.000231	-43271.6917	2094.6794	4.7785E-06	564.5983	-46.5186	1206107.
444.000	0.000247	-31544.6592	1806.2888	9.5025E-07	555.9574	-49.6115	1206107.
450.000	0.000243	-21598.9738	1511.0217	-1.7690E-06	548.6292	-48.8109	1206107.
456.000	0.000226	-13407.2832	1228.5564	-3.5603E-06	542.5933	-45.3442	1206107.
462.000	0.000200	-6846.0008	971.8555	-4.5966E-06	537.7587	-40.2227	1206107.
468.000	0.000170	-1731.7243	733.1243	-5.0355E-06	533.9904	-39.3543	1385601.
474.000	0.000140	1966.0534	505.0248	-5.0235E-06	534.1631	-36.6788	1575672.
480.000	0.000110	4343.1017	308.2225	-4.7007E-06	535.9145	-28.9219	1575672.
486.000	8.33E-05	5678.3174	155.8605	-4.1879E-06	536.8984	-21.8654	1575672.
492.000	5.99E-05	6225.5397	43.0912	-3.5788E-06	537.3016	-15.7244	1575672.
498.000	4.03E-05	6205.7615	-35.8441	-2.9427E-06	537.2870	-10.5873	1575672.
504.000	2.46E-05	5803.9206	-86.9590	-2.3282E-06	536.9909	-6.4509	1575672.
510.000	1.24E-05	5168.9867	-116.0631	-1.7667E-06	536.5231	-3.2504	1575672.
516.000	3.36E-06	4416.2722	-128.4647	-1.2763E-06	535.9685	-0.8834190	1575672.
522.000	-2.94E-06	3631.1012	-128.8005	-8.6448E-07	535.3899	0.7714709	1575672.
528.000	-7.01E-06	2873.1658	-120.9636	-5.3166E-07	534.8314	1.8408	1575672.
534.000	-9.32E-06	2181.0757	-108.1003	-2.7304E-07	534.3215	2.4469	1575672.
540.000	-1.03E-05	1576.7520	-92.6556	-8.0760E-08	533.8762	2.7013	1575672.
546.000	-1.03E-05	1069.4417	-76.4475	5.4642E-08	533.5024	2.7014	1575672.
552.000	-9.63E-06	659.2245	-60.7559	1.4310E-07	533.2001	2.5291	1575672.
558.000	-8.57E-06	339.9574	-46.4171	1.9422E-07	532.9649	2.2505	1575672.

564.000	-7.30E-06	101.6573	-33.9146	2.1682E-07	532.7893	1.9170	1575672.
570.000	-5.97E-06	-67.6443	-23.4618	2.1856E-07	532.7643	1.5672	1575672.
576.000	-4.68E-06	-180.5164	-15.0753	2.0586E-07	532.8474	1.2283	1575672.
582.000	-3.50E-06	-249.1436	-8.6351	1.8388E-07	532.8980	0.9184684	1575672.
588.000	-2.47E-06	-284.6690	-3.3802	1.5656E-07	532.9242	0.8331597	2023324.
594.000	-1.62E-06	-290.1585	1.1439	1.2715E-07	532.9282	0.6748610	2501506.
600.000	-9.45E-07	-271.3102	4.3503	9.8419E-08	532.9143	0.3939374	2501506.
606.000	-4.38E-07	-238.2399	6.0795	7.2346E-08	532.8900	0.1824685	2501506.
612.000	-7.67E-08	-198.5655	6.7229	4.9995E-08	532.8607	0.0319885	2501506.
618.000	1.62E-07	-157.7101	6.6159	3.1765E-08	532.8306	-0.0676593	2501506.
624.000	3.04E-07	-119.2671	6.0321	1.7593E-08	532.8023	-0.1269336	2501506.
630.000	3.73E-07	-85.3761	5.1842	7.1214E-09	532.7773	-0.1556759	2501506.
636.000	3.90E-07	-57.0768	4.2295	-1.6771E-10	532.7565	-0.1625621	2501506.
642.000	3.71E-07	-34.6212	3.2773	-4.8598E-09	532.7399	-0.1548368	2501506.
648.000	3.32E-07	-17.7347	2.3981	-7.5388E-09	532.7275	-0.1382486	2501506.
654.000	2.81E-07	-5.8225	1.6320	-8.7442E-09	532.7187	-0.1171203	2501506.
660.000	2.27E-07	1.8742	0.9971053	-8.9462E-09	532.7158	-0.0945015	2501506.
666.000	1.74E-07	6.1686	0.4965135	-8.5346E-09	532.7190	-0.0723625	2501506.
672.000	1.24E-07	7.8571	0.1240184	-7.8170E-09	532.7202	-0.0518026	2501506.
678.000	7.98E-08	7.6795	-0.1311517	-7.0220E-09	532.7201	-0.0332541	2501506.
684.000	4.00E-08	6.3036	-0.2809286	-6.3065E-09	532.7191	-0.0166715	2501506.
690.000	4.08E-09	4.3266	-0.3360513	-5.7626E-09	532.7176	-0.0017027	2501506.
696.000	-2.92E-08	2.2876	-0.3046837	-5.4241E-09	532.7161	0.0121586	2501506.
702.000	-6.10E-08	0.6860437	-0.1919053	-5.2720E-09	532.7149	0.0254342	2501506.
708.000	-9.24E-08	0.0000	0.0000	-5.2369E-09	532.7144	0.0385342	1250753.

Output Verification:

Computed forces and moments are within specified convergence limits.

Output Summary for Load Case No. 10:

```
Pile-head deflection             =     1.70026678 in
Computed slope at pile head      =    -0.01193959
Maximum bending moment           =       3725342. lbs-in
Maximum shear force              =    50000.00000 lbs
Depth of maximum bending moment  =      138.00000 in
Depth of maximum shear force     =        0.00000 in
Number of iterations             =             33
Number of zero deflection points =              5
```

Summary of Pile Response(s)

Definition of Symbols for Pile-Head Loading Conditions:

```
Type 1 = Shear and Moment,          y = pile-head displacment in
Type 2 = Shear and Slope,           M = Pile-head Moment lbs-in
Type 3 = Shear and Rot. Stiffness,  V = Pile-head Shear Force lbs
Type 4 = Deflection and Moment,     S = Pile-head Slope, radians
Type 5 = Deflection and Slope,      R = Rot. Stiffness of Pile-head in-lbs/rad
```

Load Type	Pile-Head Condition 1	Pile-Head Condition 2	Axial Load lbs	Pile-Head Deflection in	Maximum Moment in-lbs	Maximum Shear lbs
1	V= 5000.000	M= 0.000	241000.	0.0101108	113140.	5000.0000
1	V= 10000.	M= 0.000	241000.	0.0521362	314805.	10000.0000
1	V= 15000.	M= 0.000	241000.	0.1301839	601858.	15000.0000
1	V= 20000.	M= 0.000	241000.	0.2430382	956172.	20000.0000
1	V= 25000.	M= 0.000	241000.	0.3886669	1355225.	25000.0000
1	V= 30000.	M= 0.000	241000.	0.5716594	1781820.	30000.0000
1	V= 35000.	M= 0.000	241000.	0.7919778	2236152.	35000.0000
1	V= 40000.	M= 0.000	241000.	1.0528	2711581.	40000.0000

```
  1  V=    45000. M=     0.000     241000.      1.3550    3207084.  45000.0000
  1  V=    50000. M=     0.000     241000.      1.7003    3725342.  50000.0000


-------------------------------------------------------------------------------
                     Pile-head Deflection vs. Pile Length
-------------------------------------------------------------------------------

Boundary Condition Type 1, Shear and Moment

Shear      =           5000. lbs
Moment     =              0. in-lbs
Axial Load =         241000. lbs
```

Pile Length in	Pile Head Deflection in	Maximum Moment in-lbs	Maximum Shear lbs
708.000	0.01011075	113140.22231	5000.00000
672.600	0.00976410	114710.85997	5000.00000
637.200	0.01017408	113250.63414	5000.00000
601.800	0.00977104	114700.91852	5000.00000
566.400	0.01008829	113494.65544	5000.00000
531.000	0.00995313	114087.83107	5000.00000
495.600	0.00979486	114581.18639	5000.00000
460.200	0.00972901	114745.13612	5000.00000
424.800	0.00975445	114647.53965	5000.00000
389.400	0.00986707	114317.94207	5000.00000

This analysis ended normally.

04-SCL-101, PM49.0/52.2
EA#04-4A3301
FEBRUARY 26, 2010

FOUNDATION REPORT

RETAINING WALL NO.1
(BRIDGE NO. 37E0058)
MOUNTAIN VIEW, CALIFORNIA

Prepared for
Santa Clara Valley Transportation Authority
3331 North First Street
San Jose, CA 95134

URS

100 West San Fernando Street, Suite 200
San Jose, California 95113

URS

February 26, 2010
Project 28649951

File No.04-SCL-101-PM 49.0/52.2
EA 4A3301

Mr. Lam Trinh
Project Coordinator
Valley Transportation Authority (VTA)
3331 North First Street
San Jose, CA 95134

Subject: **Foundation Report**
Retaining Wall No. 1, Bridge No. 37E0058
U.S. 101 Auxiliary Lanes Project
Mountain View and Palo Alto, California

Dear Mr. Trinh:

URS has completed the accompanying Foundation Report for the proposed retaining wall in Mountain View, California. The report was prepared in accordance with Caltrans Guidelines for Foundation Investigation Reports, Version 2.0, dated March 2006. We also prepared a Geotechnical Design and Materials Report (GDMR) dated August 10, 2009 for U.S. 101 Auxiliary Lanes project between State Route 85 and Embarcadero Road in the Cities of Mountain View and Palo Alto.

The Foundation Report presents our engineering opinions and recommendations regarding the geotechnical factors influencing the design and construction of the proposed retaining wall. The opinions and recommendations have been based upon the results of our field investigation, laboratory testing, engineering judgment and local experience. Mr. Madhu Thummaluru, P.E., performed the engineering analysis and assisted with the preparation of this report. Mr. Mark Schmoll, C.E.G, prepared the site geology and geologic hazards portion of this report. Mr. Paul Boddie, G.E., provided review, consultation and management oversight for the project.

Our responses to comments received from Caltrans on the Foundation Report (65% submittal) are incorporated into this report.

If any questions should arise, or if we can be of further service, please contact the undersigned at (408) 297-9585.

Sincerely,

REGISTERED PROFESSIONAL ENGINEER
S. STEPHEN HUANG
No. GE 002150
Exp. 3/31/2010
GEOTECHNICAL
STATE OF CALIFORNIA

Stephen Huang, G.E. 2150
Geotechnical Task Leader

URS Corporation
100 West San Fernando Street, Suite 200
San Jose, CA 95113
Tel: 408.297.9585
Fax: 408-297.6962
www.urscorp.com

TABLE OF CONTENTS

Section 1 Introduction 1-1

1.1 General 1-1
1.2 Scope of Investigation 1-1
1.3 Caltrans Review Comments 1-2

Section 2 Available Information 2-1

2.1 Retaining Wall No. 1 (RW 1) 2-1

Section 3 Site Geology and Subsurface Conditions 3-1

3.1 Geologic Setting 3-1
3.1.1 Regional Geology 3-1
3.1.2 Regional Tectonic Setting and Seismicity 3-1
3.1.3 Local Geology 3-4
3.2 Site and Subsurface Conditions 3-5
3.2.1 Site Topography 3-5
3.2.2 Field Exploration 3-5
3.2.3 Laboratory Testing 3-6
3.2.4 Soil Conditions 3-6
3.2.5 Groundwater 3-6
3.3 Geologic Hazards 3-6
3.3.1 Surface Fault Displacement and Ground Shaking 3-6
3.3.2 Landslide and Slope Failure 3-7
3.3.3 Scour 3-7
3.3.4 Flooding 3-7
3.3.5 Subsidence and Seismic Compaction 3-7
3.3.6 Liquefaction Potential 3-7
3.4 Soil Corrosion Evaluation 3-8
3.5 Engineering Parameters 3-9

Section 4 Seismic Data and Evaluation 4-1

4.1 Seismic Design Methodology and Resources 4-1
4.2 Peak Bedrock Acceleration 4-1
4.3 Fault Type, Near-Field, and Spectral Acceleration Increases 4-1
4.4 Site Soil Profile 4-2
4.5 Design Acceleration Response Spectra 4-2

Section 5 As-Built 5-1

Section 6 Discussion and Recommendations 6-1

6.1 Discussion 6-1
6.2 Geotechnical Design Parameters 6-1

TABLE OF CONTENTS

6.2.1 Lateral Earth Pressures 6-1
6.2.2 Bearing Capacity 6-1
6.2.3 Earthquake Loading 6-2
6.2.4 Resistance to Lateral Loads 6-2
6.2.5 Retaining Wall Drainage System 6-3
6.3 Retaining Wall Settlement 6-3
6.4 Global Stability 6-3
6.4.1 End of Construction Condition 6-3
6.4.2 Long Term Condition 6-4
6.4.3 Psuedo–Static Condition 6-4
6.5 Earthwork 6-4
6.5.1 General 6-4
6.5.2 Site Preparation 6-4
6.5.3 Subgrade preparation and Fill Placement 6-4
6.5.4 Footing Excavation 6-5

Section 7 Construction Considerations 7-1

7.1 Temporary Construction Excavation 7-1
7.2 Construction Dewatering 7-1
7.3 Effects of Construction Work on Adjacent Structures 7-1

Section 8 Limitations 8-1

Section 9 References 9-1

TABLE OF CONTENTS

LIST OF FIGURES

Figure 1-1: Project Vicinity Map
Figure 2-1: Retaining Wall – General Plan No. 1
Figure 2-2: Retaining Wall – General Plan No. 2
Figure 3-1: Site and Boring Location Plan

LIST OF TABLES

Table 3-1 Engineering Parameter for Foundation Design and Analysis
Table 4-1: Seismic Source Parameters
Table 4-2: Spectral Acceleration Increase for Near-Field Effects
Table 4-3: Spectral Acceleration Values
Table 6-1: Foundation Design Recommendations for RW 1 Spread Footing

LIST OF APPENDICES

Appendix A: Caltrans Review Comments
Appendix B: Field Exploration and Laboratory Testing
Appendix C: Log of Test Borings
Appendix D: Corrosion Investigation Report
Appendix E: Construction Drawings for U.S.101 NB off-ramp/U.S.101 Separation Bridge
Appendix F: Slope Stability Analysis

1.1 GENERAL

The proposed project is located on U.S.101 in the Cities of Mountain View and Palo Alto, Santa Clara County, California. The project limits extend from State Route (SR) 85 on the south to Embarcadero Road on the north (PM 49.0/52.2), a distance of approximately 3.2 miles. Within project limits, the U.S.101 has three mixed-flow lanes and one high occupancy vehicle (HOV) lane in each traffic direction. Full-access interchanges are located at SR 85, Shoreline Boulevard, Rengstorff Avenue/Amphitheatre Parkway, Oregon Expressway, and Embarcadero Road. Partial access interchanges are located at Old Middlefield Way, Charleston Road, and San Antonio Road. There is also a direct HOV connector ramp to and from northbound U.S.101 and SR 85.

The purpose of the overall project is to relieve existing and future traffic congestion on weaving sections and at ramp termini, and provide for improved local access over this segment of the U.S. 101 corridor.

The project will construct an auxiliary lane on U.S.101 in each direction between SR 85 and Embarcadero Road. The exception will be between San Antonio Road and Rengstorff Avenue in the southbound direction, where no auxiliary lane is proposed because it would create weaving conflicts with traffic entering the freeway from Charleston Road. The new auxiliary lanes will be constructed adjacent to the existing outside lanes. On-ramps at a few interchanges will be widened for the purpose of increasing storage capacity. At most locations, there is sufficient room within the existing Caltrans right-of-way to accommodate the construction of the auxiliary lanes. There are areas where minor amounts of additional right-of-way would be required.

The auxiliary lanes will require the construction of a new retaining wall near U.S. 101 northbound (NB) off-ramp/U.S.101 separation (Bridge No: 37-0573S) and widening (1) of the existing U.S.101 bridges over Adobe Creek and Matadero Creek and (2) of the existing U.S.101 box culvert at Permanente Creek.

The subject of this Foundation Report (FR) is the construction of proposed Retaining Wall No. 1 (RW 1) in Mountain View, California. Figure 1-1 shows the Auxiliary lane project alignment and approximate location of RW 1.

1.2 SCOPE OF INVESTIGATION

The geotechnical services performed for the RW 1 were as follows:

- Reviewed construction plans for existing bridge and available subsurface data
- Performed geotechnical exploratory boring, A-09-171
- Conducted laboratory testing to estimate pertinent engineering properties
- Developed design recommendations and opinions for the following topics:
  - Retaining wall feasibility and geotechnical design parameters;
  - Retaining wall drainage;
  - Earthquake information consistent with Caltrans Response Spectra Design Techniques
  - Assessment of the potential for earthquake induced liquefaction, settlement, and lateral spreading
  - Construction Considerations

Review of environmental and hazardous waste issues and the results of evaluations are presented in a separate report, titled “Site Investigation Report.”

1.3 CALTRANS REVIEW COMMENTS

We reviewed comments prepared by Caltrans for the Retaining Wall 1 Foundation Report, dated November 11, 2009. Our responses to these comments are incorporated into this report. Copies of the review comments and our responses are presented in Appendix A.

2.1 RETAINING WALL NO. 1 (RW 1)

RW 1 is planned along the south side of U.S. 101 at Old Middlefield Way overcrossing and is required as a result of roadway widening between "C" Stations 198+00 and 198+44. This wall is planned in the southbound direction of U.S.101 in front of existing Abutment 1 at U.S.101 NB off-ramp/U.S.101 separation (Bridge No: 35-0573S). Figures 2-1 and 2-2 present the profile, elevation, and typical section of the planned retaining wall. This wall is approximately 45 feet long, and the design height would vary from 8 to 12 feet. Because of the close proximity of this wall to Old Middlefield Way overcrossing bridge, the use of a Caltrans Standard wall is not feasible. This wall is 45 feet long and the design height would vary from 8 to 12 feet. We understand that a modified Caltrans Type 1A wall is currently planned at this location. Based on available topographic information, it appears that the proposed bottom of footing elevation is at or below the elevation at the toe of existing slope.

3.1 GEOLOGIC SETTING

3.1.1 Regional Geology

The project site is located about 1¼ to 2 miles southwest of the edge of San Francisco Bay within the northern portion of Santa Clara Valley, an alluvial basin located between the Santa Cruz Mountains to the southwest and the Diablo Range to the northeast. The Santa Clara Valley is located within the central portion of the Coast Ranges geomorphic province of California. Northwest-southeast-trending valleys and ridges characterize the regional morphology of the Coast Ranges province. These topographic features are controlled by folds and faults that resulted from the collision of the Farallon and North American plates and subsequent predominantly strike-slip faulting along the San Andreas fault system between the Pacific and North American plates.

Regional geologic mapping shows the project location to be underlain by Holocene fine-grained alluvium deposits extending from the southern end at Permanente Creek northward to about the San Antonio Road overcrossing (Helley and LaJoie, 1979). North of this point to the end of the project at Oregon Expressway the roadway is mapped as being underlain by Holocene Bay Mud. This section of the project extends northeast of the original 1850 shoreline of the San Francisco Bay (Helley and LaJoie, 1979). The fine-grained alluvium deposits are described as plastic, poorly-sorted organic silt and clay that interfingers with the Bay Mud. The Bay Mud is described as water-saturated estuarine organic clay and silty clay with a few lenses of well-sorted sand, and shelly and peaty layers. More recent mapping by Witter and others (2006) shows similar conditions. However, the fine-grained alluvium deposits are referred to as Holocene alluvial fan deposits, fine-grained facies, and Witter maps the Bay Mud as being overlain by artificial fill along the roadway alignment north of about the San Antonio Road overcrossing. The nearest bedrock consists of Tertiary sedimentary rocks and volcanic basalt mapped about three miles southwest of the site in the Los Altos Hills.

3.1.2 Regional Tectonic Setting and Seismicity

The Santa Clara Valley is located between the active San Andreas fault to the west, and the Hayward and Calaveras faults to the east. Each of these faults has produced damaging earthquakes during historic time. The valley margins are marked by belts of active thrust faults; the Foothills fault system to the southwest and the East Valley thrusts to the northeast (Fenton and Hitchcock, 2002).

The Foothills fault system is a series of southwest-dipping thrust faults located along the range front of the Santa Cruz Mountains (Bürgmann et al., 1994). The Monte Vista-Shannon, Cascade, and Sargent faults are the main active faults in the Foothills thrust system. The Monte Vista-Shannon fault zone is approximately 27 miles long and dips at a moderate angle to the southwest, merging with the San Andreas fault at depth. The Cascade fault is approximately 22 miles. The Sargent fault is approximately 35 miles long and merges with the San Andreas fault near Loma Prieta.

The East Valley thrusts are a series of northeast-dipping thrust faults that mark the junction between the southern end of the Hayward fault and the southern and central segments of the

Calaveras fault. These faults, which include the Quimby, Piercy, Evergreen, Silver Creek, Coyote Creek, Berryessa, Crosley, and Warm Springs faults, are relatively short, less than 19 miles long, and appear to merge with the Calaveras faults at relatively shallow depths (Jones et al., 1994). Recent geologic and geomorphic investigations along both the Foothills and East Valley thrust systems indicate that they are active and may be capable of generating damaging earthquakes (Hitchcock and Kelson, 1999; Fenton and Hitchcock, 2002).

The closest active faults to the project alignment are the Cascade, Monte Visa-Shannon, Silver Creek, San Andreas and Hayward faults (Caltrans Deterministic PGA Map, 2007). The Caltrans Seismic Map (Mualchin, 1996) divides the Monte Vista fault into west and east branches. In the 2007 Caltrans Deterministic PGA Map the Monte-Vista East fault has been renamed as Cascade fault. The California Geological Survey (2000) has produced maps showing Alquist-Priolo Earthquake Fault Zones along faults with known Holocene activity that pose a potential surface faulting hazard. The San Andreas and Hayward faults are included as Alquist-Priolo (A-P) zoned faults, however the Monte Vista-Shannon and Cascade faults are not.

The closest fault to the site is the Cascade fault, located about 2.7 miles southwest of the southern end of the project site. The Monte Vista-Shannon fault is located about 4 miles at its closest point at the southern end of the project. Silver Creek fault generally parallels U.S.101 in the project area and is located about 6 miles northeast of the site. The San Andreas fault generally parallels U.S. 101 and is located about 7.5 miles southwest of the site. The Hayward fault also generally parallels the U.S. 101 road alignment and is located about 10.8 miles northeast of the site.

The following is a brief description of the nearby active faults.

3.1.2.1 Foothills Thrust Belt (Monte Vista-Shannon and Cascade Faults)

The southwestern margin of the Santa Clara Valley is bounded by the rugged, young southern Santa Cruz Mountains. Late Cenozoic uplift of the mountains has occurred, in part, along a series of northwest-striking reverse faults, known as either the Loma Prieta domain (Aydin and Page, 1984) or Foothills thrust belt (Bürgmann *et al.*, 1994), bordering the northeastern margin of the range front. Bounded by the main trace of the San Andreas fault to the west, this sequence of southwest-dipping thrusts, associated with a restraining left bend in the San Andreas fault, has been responsible for the uplift of the Santa Cruz Mountains (Bürgmann *et al.*, 1994). These faults offset the Pliocene and Pleistocene Santa Clara Formation, and locally offset and deform overlying Quaternary sediments and geomorphic surfaces within the range-front communities of Palo Alto, Los Altos Hills, Cupertino, Saratoga, and Los Gatos, located along the southwestern margin of the Santa Clara Valley (Hitchcock and Kelson 1999; Hitchcock *et al.* 1994). The up-dip projection of the blind Loma Prieta fault, which is interpreted to have been the source of the 1989 **M** 6.9 Loma Prieta earthquake (Bürgmann *et al.*, 1994), coincides with the Foothills thrust belt.

The Monte Vista-Shannon fault is one of the primary range-front faults and probably the most extensively studied fault in the Foothills thrust belt. The exposed fault strikes northwest and places Franciscan, Miocene, Santa Clara Formation, and Pleistocene alluvium over Pleistocene and older strata. To the north it intersects the San Andreas, via the Hermit fault, between Woodside and Redwood City. Limited exploratory trenching indicates that the Monte Vista-Shannon fault has had late Quaternary and possibly Holocene displacement. Recent geomorphic

mapping by Hitchcock *et al.* (1994) shows that late Pleistocene fluvial terraces flanking Stevens Creek are deformed. The style of late Quaternary deformation affecting these terrace surfaces is consistent with reverse faulting on the Monte Vista-Shannon fault.

The Cascade fault traverses the coalescent alluvial-fan complex underlying the Santa Clara Valley approximately 2 to 6 km northeast of the Santa Cruz Mountains range front. Hitchcock et al. (1994) show a strong correlation between the mapped trace of the Cascade fault and fault-related geomorphic features, including vegetation lineaments, closed depressions, linear drainages, stream profile convexities, and high-sinuosity stream reaches. These features are developed in late Pleistocene (and possibly Holocene) displacement along the Cascade fault. Between Los Altos Hills and Los Gatos, most of the major streams show longitudinal profile convexities where they cross the mapped trace of the Cascade fault. In general, the crests of the convexities coincide with the zone of lineaments. These relations indicate late Pleistocene uplift along this section of the Cascade fault (Hitchcock et al., 1994). Although this provides little or no information on the sense of slip and the amount and direction of fault dip, it is likely that the Cascade fault is a southwest dipping, northeast vergent reverse fault similar to, but perhaps having a shallower dip in the near surface than the Monte Vista-Shannon and Berrocal faults (Fenton and Hitchcock, 2001).

3.1.2.2 Silver Creek Fault Zone

The Silver Creek fault is mapped as a steep, east dipping oblique reverse fault with an exposed, well documented southern fault section and an inferred northern section buried beneath late Quatenary sediments of Santa Clara Valley. The southern section extends approximately 19 miles from the Anderson Reservoir, northeast of Morgan Hill, where it splays from the Coyote Creek fault to the mouth of the Silver Creek Valley, southwest of the town of Evergreen. Northern section is approximately 25 miles long beneath Santa Clara Valley, extending from Silver Creek Valley to Alameda Creek in Fremont. (Fenton and Hitchcock, 2001).

3.1.2.3 San Andreas Fault Zone

The dominant active fault structure in this region is the San Andreas fault. The fault extends from the Gulf of California, Mexico, to Point Delgada on the Mendocino Coast in northern California, a total distance of 750 miles. The San Andreas fault accommodates the majority of the motion between the Pacific and North American plates. This fault is the largest active fault in California and is responsible for the largest known earthquake in Northern California, the 1906 **M** 7.9 San Francisco earthquake (Wallace, 1990). Movement on the San Andreas fault is right-lateral strike-slip, with a total offset of some 350 miles (Irwin, 1990). In Northern California, the San Andreas fault is clearly delineated, striking northwest, approximately parallel to the vector of plate motion between the Pacific and North American plates. Over most of its length, the San Andreas fault is a relatively simple, linear fault trace. Immediately south of San Francisco Bay, however, the fault splits into a number of branch faults or splays, including the Calaveras and Hayward faults. In the Bay Area, the main trace of the San Andreas fault forms a linear depression along the Peninsula, occupied by the Crystal Springs and San Andreas Lake reservoirs. Geomorphic evidence for Holocene faulting includes fault scarps in Holocene deposits, right-laterally offset streams, shutter ridges, and closed linear depressions (Wallace, 1990). The 1906 earthquake resulted from rupture of the fault from San Juan Bautista north to

Point Delgada, a distance of approximately 300 miles. The average amount of slip on the fault during this earthquake was 16.5 feet in the area to the north of the Golden Gate and 8 feet in the Santa Cruz Mountains (WGNCEP, 1996).

Based on differences in geomorphic expression, fault geometry, paleoseismic chronology, slip rate, seismicity, and historic fault ruptures, the San Andreas fault is divided into a number of fault segments. Each of these segments is capable of rupturing either independently or in conjunction with adjacent segments. In the Bay Area, these segments include the Santa Cruz Mountains, the Peninsula, and the North Coast segments. These fault segments have calculated maximum earthquakes of **M** 7.2, 7.3, and 7.7, respectively. The North Coast segment may also be subdivided into two shorter segments with a boundary at Point Arena. These northern and southern North Coast segments are capable of generating earthquakes of **M** 7.5 and 7.7, respectively.

South of the Golden Gate, the fault slip rate is 17 ± 7 mm/yr (Hall *et al.*, 1999). North of the Golden Gate, the slip rate increases to 24 ± 5 mm/yr (Niemi and Hall, 1992). WGCEP (1999) assigns a recurrence interval of 361 years to a **M** 8.0 1906-type event on the San Andreas fault, with a 21 percent probability of a **M** 6.7 or larger earthquake on the San Andreas in northern California in the time period 2000 to 2030. Recent investigations indicate that the repeat time for large earthquakes on the North Coast segment may be less than 250 years.

3.1.2.4 Hayward Fault

The Hayward fault extends for 60 miles from the area of Mount Misery, east of San Jose, to Point Pinole on San Pablo Bay. At Point Pinole, the Hayward fault runs into San Pablo Bay. The northern continuation of this fault system is the Rodgers Creek fault. The two faults are separated by a 3-mile-wide right step beneath San Pablo Bay. Systematic right-lateral geomorphic offsets and creep offset of cultural features have been well documented along the entire length of the fault (Lienkaemper, 1992). The last major earthquake on the Hayward fault, in October 1868, occurred along the southern segment of the fault. This **M** 6.8 event caused toppling of buildings in Hayward and other localities within about 3 miles of the fault. The surface rupture associated with this earthquake is thought to have extended for approximately19 miles, from Warm Springs to San Leandro, with a maximum reported displacement of 3 feet. The Hayward fault is considered the most likely source of the next major earthquake in the Bay Area (WGCEP, 1999). As well as undergoing displacement earthquake ruptures, the Hayward fault also moves by aseismic creep. Measurements along the fault over the last two decades show that the creep rate is 5 to 9 mm/yr (Lienkaemper and Galehouse, 1997).

3.1.3 Local Geology

Exploration completed for the retaining wall and the Log of Test Borings (LOTB) for the original Old Middlefield Way overcrossing (Bridge No. 37-154) in 1956 and the replacement bridge (Bridge No. 37-0573S) in 2000 were reviewed. Those borings were drilled into the alluvial fan deposits – fine grained facies, as mapped by Witter et al, (2006). Borings typically encountered fine-grained alluvium consisting of interbedded lean and fat clay with occasional interbeds of silty sand. In general, the consistency of the clay alluvium is soft to very stiff and the sand interbeds are dense to very dense.

3.2 SITE AND SUBSURFACE CONDITIONS

3.2.1 Site Topography

The proposed auxiliary lanes and other improvements to U.S. 101 will extend between about Embarcadero Road on the north in Palo Alto to State Route 85 on the south in Mountain View. U.S. 101 is at-grade through this section, with bridge structures across Matadero Creek and Adobe Creek.

U.S. 101 follows the southwestern margins of San Francisco Bay and the topography along the existing roadway is relatively flat, ranging from approximately Elevation 20 feet at the southeast end near Permanente Creek, to a low of about Elevation 5 feet near the Oregon Expressway overcrossing at the northwest end (USGS Mountain View Quadrangle). The channelized Matadero Creek and Adobe Creek are at or near sea level and are subject to tidal inundation.

Development along the project is extensive, consisting of residential housing, mostly on the southwest side, commercial retail and office business buildings, and tidal wetlands fronting the northeast section of the freeway between about Oregon Expressway and Adobe Creek.

3.2.2 Field Exploration

The Log of Test Boring completed for the original Old Middlefield Way off-ramp separation (Bridge No. 37-154) and the replacement bridge (Bridge No. 37-0573S) were reviewed. The original investigation by Caltrans for Old Middlefield Way off-ramp separation was conducted in 1956 and included two 2½ inch rotary wash borings (B-1 and B-2) and two 2½ inch penetration borings (B-3 and B-4). The borings were advanced into the alluvial fan deposits, fine-grained facies as mapped by Witter et al, (2006), and extended to a maximum depth of 95 feet (to about Elevation -71 feet). Logs of borings performed for the replacement of Old Middlefield Way off-ramp separation was conducted in 2000 and included two 5 inch rotary wash borings (B-1 and B-3) and two cone penetration tests (B-2 and B-3A). These borings were extended to a maximum depth of 101½ feet (Elevation -79.4 feet). The approximate locations of these explorations are shown on the Site and Boring Location Plan, Figure 3-1.

To supplement available data, URS performed one exploratory boring, A-09-171, to terminal depth of 40 feet (Elevation -16.5 feet). The field exploration was performed on April 1, 2009. The location of the boring along with the previous explorations is shown on the Site and Boring Location Plan, Figure 3-1, as well as on the LOTBs. The LOTB presents descriptions of the soils encountered.

A representative of URS supervised the drilling operations and soil sampling. Visual classifications of the soils encountered were made from cuttings and soil samples. The soil samples collected from the boring were labeled and sealed immediately to preserve their natural moisture content. At completion of the exploration, samples were delivered to the laboratory for further examination and testing. The boring was backfilled with a mixture of cement and bentonite in accordance with the requirements of the Santa Clara Valley Water Distict. A detailed discussion of the field exploration program is presented in Appendix B.

The Unified Soil Classification System and the guidelines summarizing soil consistency and relative density are presented on the Log of Test Borings (LOTB) legend in Appendix B. The

logging method used in preparing the LOTB is consistent with Caltrans Soil and Rock Logging, Classification and Presentation Manual, dated June 2007. These logs also illustrate the notation used for the size of samplers and the methods of advancing them.

3.2.3 Laboratory Testing

The water content, dry density, and Unconfined Compressive Strength (UC) were determined for selected samples to estimate the strength and compressibility of the underlying soils. The locations of these tests, together with the resistance to penetration of the samplers are shown at the corresponding locations on the LOTB. The laboratory test results are provided in tabular form in Appendix B.

3.2.4 Soil Conditions

A structural pavement section was encountered in Boring B-1 drilled in 2000. Boring A-09-171 revealed the native soils consisting of poorly graded sand with silt and gravel to a depth of approximately 2 feet bgs. Below this sand layer and below the structural pavement in Boring B-1 was medium stiff to very stiff fat clay to depths of 7 to 11 feet with unconfined compressive strength ranging from 1,880 to 3,100 pounds per square feet (psf). Below this surficial fat clay deposits are soft to very stiff lean clay to sandy lean clay with interbedded fat clay and silty sand layers to terminal depth of borings. The unconfined compressive strength of the lean clay to sandy lean clay layers ranges from 880 to 2,300 psf. The granular layers were generally classified silty sand and encountered in Boring B-1 at depths of 40 and 70 feet. These granular layers were generally dense to very dense with Standard Penetration Test blow counts ranging from 47 to 57 blows/foot.

3.2.5 Groundwater

Free groundwater was not encountered during drilling in Borings B-1and B-3 drilled in 2000 since the rotary wash method was used. However, free groundwater was encountered at a depth of approximately 15 feet bgs (Elevation 7.2 feet) in Boring B-24 performed for the mechanically stabilized earth wall located in close proximity to the existing bridge Abutment No.1. Free groundwater was reportedly encountered in three of the explorations performed in 1956 (B-1, B-2, and B-3) at about Elevation 13.5 feet (datum unspecified 1956). However, groundwater was encountered at a depth 10.5 feet bgs (Elevation 13.0 feet) in Boring A-09-171. The groundwater level is likely subject to some tidal fluctuation and is expected to be around Elevation 13.5 feet.

3.3 GEOLOGIC HAZARDS

3.3.1 Surface Fault Displacement and Ground Shaking

The project alignment does not cross any known active faults or mapped A-P zoned faults. The Santa Clara County geologic hazard maps (2002) do not show the road alignment crossing any fault hazard rupture zones. Surface rupture due to faulting along the alignment, therefore, is not expected to occur. However, the short distance to the Cascade, San Andreas and Hayward faults does create a high risk for ground shaking from fault movement. The intensity of the ground shaking is dependent upon the size of the earthquake, the distance of the epicenter from the site,

the direction that the earthquake propagates along the fault, and the site geologic conditions. Section 3.1.2 "Regional Tectonic Setting and Seismicity" discusses the anticipated seismic shaking from these faults.

3.3.2 Landslide and Slope Failure

U.S 101 is on relatively flat ground along the project alignment and is not subject to landsliding. The project site is not within a landslide hazard zone on hazard maps published by Santa Clara County (2002), nor on the CGS Earthquake-Induced Landslide hazard zone map (2001). Therefore, landsliding is not a potential hazard.

3.3.3 Scour

The nearest creek from the proposed retaining wall is approximately 1,000 feet away; therefore, scouring is unlikely.

3.3.4 Flooding

The RW 1 alignment is located outside of the 100-year flood zone as shown on the FEMA flood hazard zone maps (SCVWD, 2008).

3.3.5 Subsidence and Seismic Compaction

Subsidence typically occurs as a result of subsurface fluid extraction (e.g. groundwater petroleum) or compression of soft, geologically young sediments such as Bay Mud. The soft, young Bay Mud soils underlying the northern portions of the project are susceptible to subsidence and consolidation settlement. Settlement can occur quickly when soil is loaded by a structure or by the placement of fill, or it can also occur gradually when soil pore pressures, increased by vertical loading, gradually dissipate over time. This second type is termed consolidation settlement. We estimate the maximum consolidation settlement to be in the order of 1-inch at RW 1.

Compaction settlement, or seismic densification, occurs when loose granular soils increase in density as a result of earthquake shaking. The soil densification can result in differential settlement because of variations in soil composition, thickness, and initial density. As previously mentioned, disturbed water wells and ground settlement in the project area have been documented as a result of ground shaking during the Loma Prieta earthquake and the 1906 San Francisco earthquake (Knudsen, et al, 2000).

Soils above groundwater table in all borings are predominantly lean and fat clay; therefore, seismic compaction is not expected.

3.3.6 Liquefaction Potential

Liquefaction is a phenomenon whereby sediments temporarily lose shear strength and collapse. This condition is caused by cyclic loading during earthquake shaking that generates high porewater pressures within the sediments. Loose, cohesionless, granular soil below the water table and within about 50 feet of the ground surface is most susceptible to liquefaction.

Liquefaction can result in loss of foundation support and settlement of overlying structures, ground subsidence and translation due to lateral spreading, lurch cracking, and differential settlement of the affected deposits. Lateral spreading occurs when a layer liquefies at depth and causes horizontal movement or displacement of the overlying mass toward a free face such as a stream bank or excavation, or toward an open body of water.

Liquefaction hazard maps have been prepared for the project area including: Santa Clara County Liquefaction Hazard Zone maps (2002), the California Geological Survey Liquefaction hazard zone map for Mountain View Quadrangle (CGS, 2001), and the liquefaction hazard map for Palo Alto/Stanford, Scenario:1906 San Francisco Earthquake (ABAG, 2001). All of these maps show the U.S. 101 alignment to be within a liquefaction hazard zone ranging from "moderate" to "very high" susceptibility. In a regional study of the nine-county San Francisco Bay region for the U.S. Geological Survey, Witter et al. (2006) mapped the liquefaction susceptibility of the site soils along the project alignment related primarily to the mapped geologic units. The alluvial fan deposits, fine-grained facies, mapped from the south end of the project at Permanente Creek to about Adobe Creek, are shown as having a "moderate" liquefaction susceptibility. The artificial fill over the Bay Mud soils between about Adobe Creek and the north end of the project are shown as having a "very high" liquefaction susceptibility. Several historic ground failures from both the Loma Prieta earthquake and the 1906 San Francisco earthquake have been recorded in the Bay Mud tidal flats between the U.S. 101 and the San Francisco Bay margin including disturbed water wells, ground settlement and miscellaneous effects (Knudsen, et al, 2000).

Based on a review of the boring completed for this study and previous explorations, potentially liquefiable sands were not encountered at the proposed retaining wall location.

3.4 SOIL CORROSION EVALUATION

An assessment of the potential corrosion of various buried foundation and pipe structures was performed by V&A Consulting Engineers (V&A). The results of their investigation are presented in Appendix D. The corrosion report in Appendix D was prepared during the initial phases of the project with the assumption that the retaining wall would extend from Station 190+00 to 201+00. Corrosion test results performed for the U.S.101 NB off-ramp/U.S.101 separation bridge (Bridge No. 37-0573S) in 2000 were also reviewed.

The investigation was conducted in accordance with California Department of Transportation's Division of Engineering Services, Materials Engineering and Testing Services, Corrosion Technology Branch "Corrosion Guidelines" (Guidelines) dated September 2003. These Guidelines consider representative soil or water samples to be corrosive to structural elements if one or more of the following conditions exist:

1. The chloride concentration is 500 ppm (mg/kg) or greater,
2. The sulfate concentration is 2000 ppm (mg/kg) or greater,
3. The pH is 5.5 or less.

The soil was tested at depths ranging from 0 to 15 feet below existing grade. The soil was tested at depths ranging from 4 to 65 feet in the corrosion study done in 2000. Soil samples were selected from Boring A-09-173 located approximately 250 feet south of the wall location. The minimum (saturated) resistivity of the samples ranged from 810 ohm-cm to 2,490 ohm-cm. The soil pH ranged from 7.4 to 9 and the water soluble sulfate concentrations ranged from 108 mg/kg

to 140 mg/kg. The water soluble chloride concentration was 9 mg/kg for the samples tested during the current study and was reported as below the detection limit of 50 ppm. The pH, chloride and sulfate ion concentrations all indicate the sampled soils are non-corrosive, as defined by the Guidelines.

Buried concrete structures should be constructed of durable concrete as described in ACI Standards 201.2R and 222R. These recommendations include, but are not limited to, the following for installations in non-corrosive soil:

- The water/cement ratio should not exceed 0.50.
- A minimum concrete cover of 2 inches should be applied over all steel reinforcement.
- Sand and water used in concrete mixtures should contain a maximum of 100 ppm of water-soluble chloride ions and water-soluble sulfate ions. They should also have a pH in the range of 6.5 to 8.0. Potable water should be used in concrete mixtures.
- Type1-P (MS) modified or Type II modified cement should be used.

3.5 ENGINEERING PARAMETERS

The undrained shear strength, relative density, dry unit weight and moisture content are the engineering soil parameters used in our foundation design and analysis. In general, unconfined compression tests were performed on cohesive soil samples to estimate the undrained shear strength. Some disturbance occurs while sampling cohesive soils; therefore unconfined compressive strengths in localized areas can be lower than the insitu field conditions. Consequently, engineering judgment and local experience were applied in our interpretation of the laboratory test results. The engineering parameters used for the foundation design and analysis are provided in Table 3-1.

Table 3-1: Engineering Parameters for Foundation Design and Analysis

Elevation (ft)	Soil Layer	Moisture Content (%)	Dry Unit Weight (pcf)	Undrained Shear Strength (psf)
23.5 to 16.5	Fat Clay	35 – 37	77 – 85	900 – 2000
16.5 to 6.5	Lean Clay	20 – 25	98 – 104	500 – 600
6.5 to 1.5	Fat Clay	32	89	800
1.5 to -10.0	Sandy Lean Clay	19 – 26	98 – 113	400 - 700
-10.0 to -11.5	Fat Clay	31	92	1100
-11.5 to -16.5	Sandy Lean Clay	20	110	500

4.1 SEISMIC DESIGN METHODOLOGY AND RESOURCES

The seismic design methodology adopted for this project is based on the following current Caltrans standards:

- Development of the 2007 Caltrans Determnistic PGA Map and Caltrans ARS Online, July 2009
- Seismic Design Criteria (SDC), Version1.4, June 2006
- Guidelines for Foundation Investigations and Reports, Version 2.0, dated March 2006

4.2 PEAK BEDROCK ACCELERATION

The active faults closest to the U.S. 101 RW 1 are the Hayward, Cascade, and San Andreas faults. The Hayward, Cascade, and San Andreas faults are designated with Maximum Credible Earthquake (MCE) magnitudes of 7.5, 6.9, and 8.0, respectively, on the 2007 Caltrans fault database. The Cascade and San Andreas faults are expected to contribute the same level of ground shaking at the site (0.5g) while the Hayward fault should produce lower shaking (0.4g). The MCE, therefore, is the earthquake on the San Andreas Fault since it could potentially release the highest energy (**M**=8.0) and results in the strongest shaking at the site. The distance from the proposed retaining wall to the San Andreas fault is approximately 7.5 miles.

Table 4-1: Seismic Source Parameters

Fault	Type	MCE	Distance (miles)	Near Field Effects?
Cascade	Reverse	6.9	2.7	N
San Andreas	strike-slip	8.0	7.5	Y
Hayward	strike-slip	7.5	10.7	Y

4.3 FAULT TYPE, NEAR-FIELD, AND SPECTRAL ACCELERATION INCREASES

The 2007 Caltrans fault database indicates that the controlling fault (San Andreas) has strike-slip displacement. Therefore, in accordance with Caltrans design procedures referenced above, an increase in design spectral accelerations is not required for fault type. However, since the project site is less than 9.5 miles (15 km) from the nearest active fault, design spectral accelerations should be modified to account for near-fault effects as follows:

Table 4-2: Spectral Acceleration Increase for Near Field Effects

Period (sec)	Increase in Spectral Acceleration (%)
< 0.5	0
0.5 – 1.0	0 – 20 (determined by linear interpolation)
≥1	20

At the time of this study, no structures with fundamental period of vibration greater than 1.5 seconds are anticipated; therefore, no adjustments are required for long period effects.

4.4 SITE SOIL PROFILE

The one boring performed in 2009 reveal that the soil profile at the proposed retaining wall site consists of interbedded soft to very stiff clays to the maximum explored depth of 40 feet. Borings drilled in 1956 and 2000 also revealed a similar soil profile consisting of medium stiff to very stiff clay with few dense to very dense sand layers to a depth of at least 101½ feet. Based on our understanding of the site geology and the information from the above mentioned explorations, this site will be classified as a stiff soil site or Soil Profile Type D pursuant to the guidelines in Figure 12 in SDC.

4.5 DESIGN ACCELERATION RESPONSE SPECTRA

As Caltrans is finalizing the new ARS curves, which will be based on the New Generation Attenuation relationships, based on our discussions with Caltrans, the design response spectrum for the site was obtained from Caltrans SDC (Version 1.4). The design seismic response spectrum for the site can be estimated with spectral acceleration values generated by:

- Soil Profile Type D
- Maximum Credible Earthquake (MCE) **M** 8.0
- Peak bedrock acceleration 0.5 g
- No ARS increase for fault-type or long period structure
- ARS increase for near-field effect

The Design Acceleration Response Spectra (ARS) corresponding to Soil Profile Type D, magnitude of controlling event **M** 8.0, and a PBA of 0.5 g were obtained from SDC and modified to account for near field effects as described above. Spectral values are provided in Table 4-3.

Table 4-3: Spectral Acceleration Values
(PBA = 0.5 g, M = 8.0, Soil Type D)

Period	Soil Profile Type D	
	Sa (g)	Sa* (g)
0.010	0.50	0.50
0.020	0.50	0.50
0.030	0.51	0.51
0.050	0.67	0.67
0.075	0.84	0.84
0.100	0.99	0.99
0.120	1.06	1.06
0.150	1.15	1.15
0.170	1.19	1.19
0.200	1.23	1.23
0.240	1.26	1.26
0.300	1.29	1.29
0.400	1.28	1.28
0.500	1.23	1.23
0.750	1.06	1.17
1.000	0.88	1.06
1.500	0.61	0.73
2.000	0.44	0.53
3.000	0.26	0.31
4.000	0.17	0.21

*Modified for near-field effects

As shown on Figure 2-1, the proposed wall footings will be placed in close proximity to the existing abutment footing of U.S.101 NB off-ramp and U.S.101 separation bridge (Bridge No. 37-0573S); at one location, it will be as close as 2 inches. This three span bridge was constructed in 2005 with precast prestressed rectangular box girders with concrete deck, supported on seat type abutments. The bridge span is approximately 403.5 feet long. Construction plans dated August 1, 2002 are presented in Appendix E. As-built plans for the bridge are not available currently.

Based on the August 1, 2002 construction plans, the abutments and bents are supported on modified Class 900C concrete piles. Bottom of abutment 1 pile cap was specified at Elevation 24 feet, whereas the pile tip was specified at Elevation -19.7 feet.

6.1 DISCUSSION

RW 1 is planned along the south side of U.S. 101 at Old Middlefield Way overcrossing and is required as a result of roadway widening. The modified Caltrans Type 1A retaining wall is planned between the "C" Stations 198+00 and 198+44. This wall is 45 feet long, and the design height would vary from 8 to 12 feet. The principal geotechnical issues at the site are:

- Selection of the type of foundation that will be compatible with the underlying soils,
- Consolidation settlement of underlying cohesive soils, and
- Close proximity of the wall to the existing bridge abutment pile cap.

As shown on General plan of RW 1 (Figures 2-1 and 2-2), the wall design height is 12 feet from Station 198+00 to 198+32.5; wall height is 8 feet at remaining locations. RW 1 between Stations 198+10.16 to 198+24.38 will not have a footing; Oversized footings on either side of this location will support the wall. The wall is located as close as 2 inches to the edge of bridge abutment pile cap at one location between Stations 198+10.16 to 198+24.38. Bottom of the RW 1 in area without a footing is planned at approximately Elevation 22.17 feet, whereas the bottom of the footing at remaining locations is planned at Elevation 21 feet. Bottom of abutment 1 pile cap was specified at Elevation 24 feet. Therefore, excavation for the RW 1 will extend approximately 2 to 3 feet below the bottom of existing abutment pile cap.

The following sections present the geotechnical design parameters for the design of the retaining wall consistent with Caltrans design procedures.

6.2 GEOTECHNICAL DESIGN PARAMETERS

6.2.1 Lateral Earth Pressures

Retaining walls that are free to deflect at the top of the wall in response to lateral loads should be designed for active earth pressures. A vertical deflection behind the wall equal to the horizontal deflection of the wall should be expected. The magnitude of the horizontal deflection, and therefore the vertical movement behind the wall, is primarily related to the height and stiffness of the wall. For walls retaining level (horizontal) backfill consisting of native sandy materials, walls should be designed to resist an active earth pressure equal to an equivalent fluid pressure of 36 psf. For walls with a 2:1 (horizontal to vertical) sloped backfill should be designed to resist and active earth pressure equal to an equivalent fluid pressure of 46 psf. The unit weight of the backfill is assumed to be 130 pcf with a friction angle of 34 degrees.

6.2.2 Bearing Capacity

Based on our review of available subsurface information, in our opinion, the soils encountered below the anticipated bottom of the footings elevation in the vicinity of the retaining wall are capable of supporting the anticipated toe pressures. Table 6-1 presents a summary of the estimated soil bearing capacity at the maximum wall height location.

Table 6-1
Foundation Design Recommendations for RW 1 Spread Footing

Support Location[1]	Footing Size (ft)		Bottom of Footing Elevation (ft)	Minimum Footing Embedment Depth (ft)	WSD (LRFD Service-I Limit State Load Combination) [2]		LRFD[3]		
							Service	Strength ϕ_b = ?	Extreme Event ϕ_b = 1.00
	B	L			Permissible Gross Contact Stress[4] (ksf)	Allowable Gross Bearing Capacity (ksf)	Permissible Net Contact Stress (ksf)	Factored Gross Nominal Bearing Resistance (ksf)	Factored Gross Nominal Bearing Resistance (ksf)
198+00 to 198+10.16	7.17	10.16	21	2.66	3.0	2.7	N/A	N/A	N/A
198+24.38 to 198+32.5	7.17	8.12	21	2.66	3.0	2.7	N/A	N/A	N/A
198+32.5 to 198+44.69	7.17	12.19	21	2.66	3.0	2.7	N/A	N/A	N/A

1. Station numbers are along the RW Layout Line. No footing between stations 198+10.16 to 198+24.38
2. WSD = Working Stress Design
3. LRFD = Load and Resistance Factor Design
4. Permissible settlement is 1 inch.

6.2.3 Earthquake Loading

Walls will also experience increased loads during earthquake shaking. The additional force to simulate earthquake loads is dependent upon the magnitude of ground surface acceleration and the height of the wall. It is the Structural Engineer's option to check walls for seismic loads. To estimate the seismically induced force, we recommend that the magnitude of the dynamic lateral force developed during seismic loading be computed using the following equation:

$$\Delta P_{ae} = 12H^2$$

The units of the dynamic lateral force (ΔP_{ae}) are pounds per linear foot of wall. H is the wall height in units of feet. The dynamic lateral force should be assumed to act at 0.6H from the bottom of the wall and represent the resultant of a triangular pressure distribution.

6.2.4 Resistance to Lateral Loads

Resistance to lateral movement can be developed through frictional resistance between the bottom of the wall footing and the soil. For design purposes, a static coefficient of friction (ultimate) of 0.3 between concrete and the undisturbed soil can be assumed. However, the

maximum soil to concrete adhesion should not exceed 700 psf. Ultimate passive resistance should be estimated using an equivalent fluid pressure of 350 pcf acting against the face of the footing.

6.2.5 Retaining Wall Drainage System

The recommended lateral earth pressures provided in Section 7.2.1 are based on the assumption that no differential hydrostatic pressures will develop behind the retaining wall. The buildup of hydrostatic pressure behind the wall should be prevented by the inclusion of a positive drainage system. It is recommended that such a system consist of pervious backfill material to a width of at least 12 inches behind the wall in accordance with Caltrans Standard Plans (Bridge Detail 3-1). As an alternative to the pervious backfill material, a manufactured prefabricated drainage membrane, such as TCI Miradrain 6000, could be used on the wall face. Positive drainage for water collected in the backfill should be provided by means of perforated drain pipe leading to the free draining outlet or by weep holes extending through the walls.

6.3 RETAINING WALL SETTLEMENT

Consolidation settlement can occur gradually when soil pore pressures, increased by vertical loading (e.g. placement of fill), gradually dissipate over time. Fat clay was encountered to depths of 6 to 9 feet below the footing elevation. We estimate the maximum consolidation settlements to be in the order of 1 inch with differential settlement in the range of ½ inch.

6.4 GLOBAL STABILITY

The global stability of retaining wall was evaluated using a limit equilibrium method based on Spencer's procedure of slices as coded in the program SLOPE/W (Version4). In Spencer's procedure, all forces are assumed to have the same inclination, and all requirements for static equilibrium are satisfied. The solution used a grid of rotation centers and a range of radii to model circular and composite slip surfaces to find the lowest factor of safety. We performed the analyses using the maximum wall height, with and without footing, which in our opinion represents the critical section and a design groundwater level at Elevation 13.5 feet.

Caltrans requires minimum factors of safety of 1.3 for retaining walls under static loading conditions and 1.0 under seismic conditions (Bridge Design Specifications, Section 5.2.2.3, August 2004). The results for our analyses are summarized in the following paragraphs and include the following cases: (1) end of construction, (2) long term, and (3) pseudo-static condition. The graphical presentation of the slope stability analyses are presented in Appendix F as Figures F-1, F-2 and F-3.

6.4.1 End of Construction Condition

The end of construction case represents the condition immediately following construction when excess pore pressures have been induced by the placement of fill loads, and insufficient time has passed for dissipation to occur. For this reason, undrained conditions were assumed for impervious clay soils, whereas drained strengths were used for granular soils. Soil strength parameters from laboratory unconfined compressive strength tests were used for the fine grained soils and the estimated friction angle was used for the granular soils.

Based on our analysis, the computed minimum (critical) factor of safety for the end of construction condition is 1.5, which exceeds the minimum required value of 1.3.

6.4.2 Long Term Condition

For the long term condition, the soil strengths typically increase over time with pore pressure dissipation. Therefore, we used both cohesion and friction angle to determine the strength of fine grained soils. Friction angle only was used for determining strength of granular soils.

Based on our analysis, the computed minimum (critical) factor of safety for the long term condition is 1.6, which exceeds the minimum required value of 1.3.

6.4.3 Psuedo–Static Condition

For the earthquake (or pseudo static) loading, we used the same strengths presented for the end of construction condition. This is a conservative approach as soil strengths typically increase over time with pore pressure dissipation. To compute the factor of safety of the slope during earthquake loading, we applied a pseudo-static seismic coefficient of 0.17g to the center of the slice for the slip surface having the minimum computed static factor of safety. This pseudo-static seismic coefficient is equal to approximately one-third of the peak horizontal ground acceleration, 0.5g, anticipated at the site.

Based on our analysis, the computed minimum (critical) factor of safety for the pseudo-static condition is slightly above the minimum required value of 1.0.

6.5 EARTHWORK

6.5.1 General

All earthwork should be performed according to the current Standard Specifications of the State of California, Caltrans. Specifically, Section 16 “Clearing and Grubbing” and Section 19 “Earthwork” of these Specifications should be followed. Specific additions and modifications to those specification requirements are discussed in the following sections.

6.5.2 Site Preparation

Site preparation essentially consists of clearing and grubbing the site prior to construction of the retaining walls; these recommendations should be used in conjunction with the requirements presented in Section 16 of the Caltrans Standard Specifications.

All objectionable material within the retaining wall area should be removed prior to grading operations. Final stripping depths and general site preparation should be approved by the Geotechnical Engineer at the time of construction. The stripped material should not be reused as the retaining wall backfill.

6.5.3 Subgrade preparation and Fill Placement

Subgrade preparation prior to fill placement should consist of moisture conditioning the exposed subgrade and compacting to a minimum relative compaction of 95 percent in accordance with

the provisions of Section 19-5 of the Standard Specifications. All wall backfills should be placed in thin lifts and compacted to a minimum relative compaction of 95 percent (ASTM D1557 or Caltrans 216, using the dry unit weight basis) in accordance with Sections 19-3, 19-5, and 19-6 of the Standard Specifications. We recommend that the relative compaction be measured on the basis of dry density. It should not be necessary to scarify the native soils exposed in foundation excavations. However, all loose and/or disturbed materials should be removed.

6.5.4 Footing Excavation

Retaining wall footing limits should be excavated as required to bring the area to its finish subgrade elevations. All loose soil should be removed from the exposed subgrade prior to wall footing construction. In excavating for footings, take care not to disturb bottom of excavation. Trim bottoms to required lines and grades to leave solid base to receive concrete.

7.1 TEMPORARY CONSTRUCTION EXCAVATION

We anticipate that excavation into the native soils for construction of the retaining wall could result in temporary near vertical unsupported soil faces as high as about 14 feet. Safety standards set by OSHA limit the height of unshored vertical excavations to 5 feet if construction personnel will be working in the excavations. The set of guidelines published by OSHA (Department of Labor, Occupational Safety and Health Administration, 1989), classifies soils in detail as Type A, B or C. In general, Type A soils are stronger and more cohesive, Type B soils are intermediate, and Type C soils are weaker or more granular. Based on the soil type, depth, duration the excavation is open, and sequence of soils exposed in the excavation, OSHA recommends maximum allowable slopes. For example, for excavations 20 feet or less in depth through homogeneous soils, they state that maximum allowable slopes (horizontal to vertical) should be ¾:1, 1:1, and 1½:1 for Type A, B, and C soils, respectively. Based on the strengths of the soils encountered in our boring, the native alluvial soils are generally considered to be OSHA Type B. On this basis, we recommend that temporary slopes in these soils be cut at no steeper than 1:1 (horizontal:vertical).

We do not anticipate that groundwater will be encountered in footing excavations; therefore, we recommend footing excavations be classified as "Structure Excavation Type D" in accordance with Section 11 of Bridge Design Aids, March 2005.

As the proposed wall excavation will be close to the existing abutment foundation, a Geotechnical Engineer should be retained by Contractor to monitor the excavation.

7.2 CONSTRUCTION DEWATERING

The depth of groundwater is inferred to be about 7½ feet (Elevation 13.5 feet) below bottom of excavation. Therefore, groundwater is not anticipated during excavation of the wall. However, dewatering may become necessary during rainy season and normal sumping procedures with a sump may be required.

7.3 EFFECTS OF CONSTRUCTION WORK ON ADJACENT STRUCTURES

Retaining wall is located as close as 2 inches from the edge of the bridge abutment pile cap at one location between Stations 198+10.16 to 198+24.38. Based on the drawings, a clear spacing of approximately 4 inches would be available between the inner face of the retaining wall and the battered concrete pile supporting the abutment. Excavation for the retaining wall between the above mentioned stations extends approximately 2 feet below the existing abutment pile cap. Therefore, we believe that temporary shoring will be required between Stations 198+10.16 to 198+24.38 to prevent soil cave-in. We recommend the following precautionary measures for the protection of existing structure:

- The specifications should be clearly written so that the Contractor is made aware of the potential undermining of the soils beneath the abutment pile cap.
- The Contractor should retain a registered Structural Engineer to make a precondition survey of the structures. This should include photographs and video.

- Before construction commences, the Contractor should submit a written plan describing his/her construction method and method of protecting the existing abutment footing. This plan should be submitted to URS for review and prior to construction.
- Contractor should retain a registered Geotechnical Engineer to monitor the excavation for the retaining wall.

The opinions, conclusions, and recommendations presented herein are based on available subsurface information developed by others and a supplementary new boring. The recommendations presented in this report are based on the assumption that the soil and geologic conditions do not deviate substantially from those anticipated by the information contained in the logs of test borings. If any variations are encountered during construction, URS should be contacted so that supplementary recommendations can be made.

If the planned construction is changed from that presently conceived, URS should be retained to review the changes and make modifications to the original recommendations represented in this report in order to meet the project needs.

The Geotechnical Engineer should review the final specifications and drawings to verify that these documents are consistent with the intent of the geotechnical recommendations. Geotechnical issues may arise which are not apparent at this time. URS should be retained during construction to review the soil conditions encountered and the construction procedures. All retaining wall excavations should be completed under the direct observation of a representative of our firm.

Specific review and investigation for environmental issues and subsurface environmental contamination were beyond the scope of the geotechnical services.

The elevations shown on the new LOTBs are based on interpolation from spot and contour elevations shown on available topographic maps.

The opinions and recommendations presented in this Draft Foundation Report were developed with the standard of care commonly used as state of the practice in the profession. No other warranties are included, either express or implied, as to the professional advice provided in this report.

ABAG, 2007, Floodplain and Liquefaction Maps, abag.ca.gov/bayarea/eqmaps/

Aydin, A., and Page, B.M., 1984, Diverse Pliocene-Quaternary tectonics in a transform environment, San Francisco Bay region, California; Geological Society of America Bulletin, v. 95, p. 1,303-1,317.

Bortugno, E.J., McJunkin, R.D. and Wagner, D.L., 1991, Map showing recency of faulting, San Francisco-San Jose Quadrangle, California, California Division of Mines ad Geology, Geologic Map of the San Francisco-San Jose Quadrangle, 1:250,000.

Brabb, E.E. and Dibblee, T.W., 1974, Geologic map of Santa Clara County, California, U.S. Geological Survey Special Report 107, scale 1:62,500.

Bürgmann, R., Arrowsmith, R. and Dumitru, T., 1994, Rise and fall of the southern Santa Cruz Mountains, California, from fission tracks, geomorphology, and geodesy, Journal of Geophysical Research, v. 99B, p. 20,181-20,202.

California Department of Transportation, 1960, As-Built Log of Test Borings, Bridge 37-0040 R/L, Matadero Creek, Contract No. 60-4TC1.

California Geological Survey, 2000, Digital images of official maps of the Alquist-Priolo earthquake fault zones of California, central coast region, California Geologic Survey, CD-2000-004.

California Geological Survey, 2001, Seismic hazard zones, Mountain View quadrangle, gmw.consrv.ca.gov/shmp/index.htm.

Fenton, C.H. and Hitchcock, C.S., 2002, Recent geomorphic and paleoseismic investigations of thrust faults in Santa Clara Valley, California, in Engineering Geology Practice in Northern California, Ferriz, H. (ed.) California Division of Mines and Geology, p. 71-89.

Hall, N.T., Wright, R.H., and Clahan, K.B., 1999, Paleoseismic studies of the San Francisco Peninsula Segment of the San Andreas Fault Zone near Woodside, California: Journal. Geophys. Res., vol. 104, no. B10, pp. 23,215-23,236.

Helley, E.J. and LaJoie, K.R., 1979, Flatland deposits of the San Francisco Bay region, California – their geology and engineering properties, and importance to comprehensive planning. U.S. Geological Survey Professional Paper 943,p. 27-34, plate 3, scale 1:125,000.

Hitchcock, C.S., Kelson, K.I. and Thompson, S.C., 1994, Geomorphic investigations of deformation along the northeastern margin of the Santa Cruz Mountains, William Lettis & Associates, Inc., Final Technical Report, U.S. Geological Survey National Earthquake Hazards Reduction Program Award No. 1434-92-G-2220, 33 p.

Hitchcock, C.S. and Kelson, K.I., 1999, Growth of late Quaternary folds in southwest Santa Clara Valley, San Francisco Bay Area, California: Implications of triggered slip for seismic hazard and earthquake recurrence, Geology, v. 27, p. 387-390.

Irwin, W.P., 1990, Geology and plate tectonic development, in The San Andreas Fault System, California, Wallace, R.E. (ed.), U.S. Geological Survey Professional Paper 1515, p. 61-80

Jennings, C.W., 1994, Fault activity map of California and adjacent areas, California Division of Mines and Geology, California Geologic Data Map Series, Map No. 6, scale1:750,000.

Jones, D.L., Graymer, R., Wang, C., McEvilly, T.V. and Lomax, A., 1994, Neogene transpressive evolution of the California Coast Ranges, Tectonics, v. 13, p. 561-574.

Kleinfelder (2000), Log of Test Borings for Route 85/101 Interchange, July and August.

Knudsen, K.L., Sowers, J.M., Witter, R.M., Wentworth, C.M., and Helley, E.J., 2000, Preliminary maps of Quaternary deposits and liquefaction susceptibility, nine county San Francisco Bay region, California, U.S. Geological Survey Open-File Report 00-444, 60 pages plus two maps.

Lienkaemper, J.J. 1992, Map of recently active traces of the Hayward fault, Alameda and Contra Costa Counties, California, U.S. Geological Survey Miscellaneous Field Studies Map MF-2196, 13 p.

Lienkaemper, J.J. and Galehouse, J.S., 1997, Revised long-term creep rates on the Hayward fault, Alameda and Contra Costa Counties, California, U.S. Geological Survey Open-File Report 97-690, 18 p.

Merriam, M. and Shantz, T., 2007, Caltrans Deterministic PGA Map, California Department of Transportation.

http://dap3.dot.ca.gov/shake_stable/references/Deterministic_PGA_Map_8-12-09.pdf

Niemi, T. M. and Hall, N.T., 1992, Late Holocene slip rate and recurrence of great earthquakes on the San Andreas fault in northern California: Geology, v. 20, p. 195-198.

Santa Clara County, 2002 and 2003 (rev.), Geologic Hazards Zones [Fault Rupture Hazard Zones; Liquefaction Hazard Zones; Combined Landslide, Compressible Soils, and Dike Failure Flooding Hazard Zones] map sheets 1, 2 and 10; revised August 14, 2003 and subsequent web updates at www.sccplanning.org

Santa Clara Valley Water District, 2008. FEMA flood hazard maps, www.valleywater.org/Water/Watersheds

Wallace, R.E., 1990, The San Andreas Fault System, California: U.S. Geological Survey Professional Paper 1515, 283 p.

Witter, R.C., Knudsen, K.L., Sowers, J.M., Wentworth, C.M., Koehler, R.D., and Randolph, C.E., 2006, Maps of Quaternary deposits and liquefaction susceptibility in the central San Francisco Bay region, California, in cooperation with the California Geological Survey: A digital database, U.S. Geological Survey, Open-File Report 2006-1037.

Working Group on California Earthquake Probabilities, 1996, Database of potential sources for earthquakes larger than magnitude 6 in northern California: U.S. Geological Survey Open-File Report 96-705.

Working Group on California Earthquake Probabilities, [Michael, A.J., and others], 1999, Understanding earthquakes in the San Francisco Bay Region: major quake likely to strike between 2000 and 2030: U.S. Geological Survey Fact Sheet 152-99.

Working Group for California Earthquake Probabilities, 2003, Earthquake probabilities in the San Francisco Bay region: 2003-2031, US Geological Survey Open-File Report 03-214, 234 p.

INDEX OF PLANS

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCI	101	49.0/52.2		

STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON

STATE HIGHWAY

IN SANTA CLARA COUNTY
IN PALO ALTO AND MOUNTAIN VIEW
FROM OREGON EXPRESSWAY OVER CROSSING TO
0.1 MILE NORTH OF SHORELINE BOULEVARD OVERCROSSING

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006

LOCATION MAP

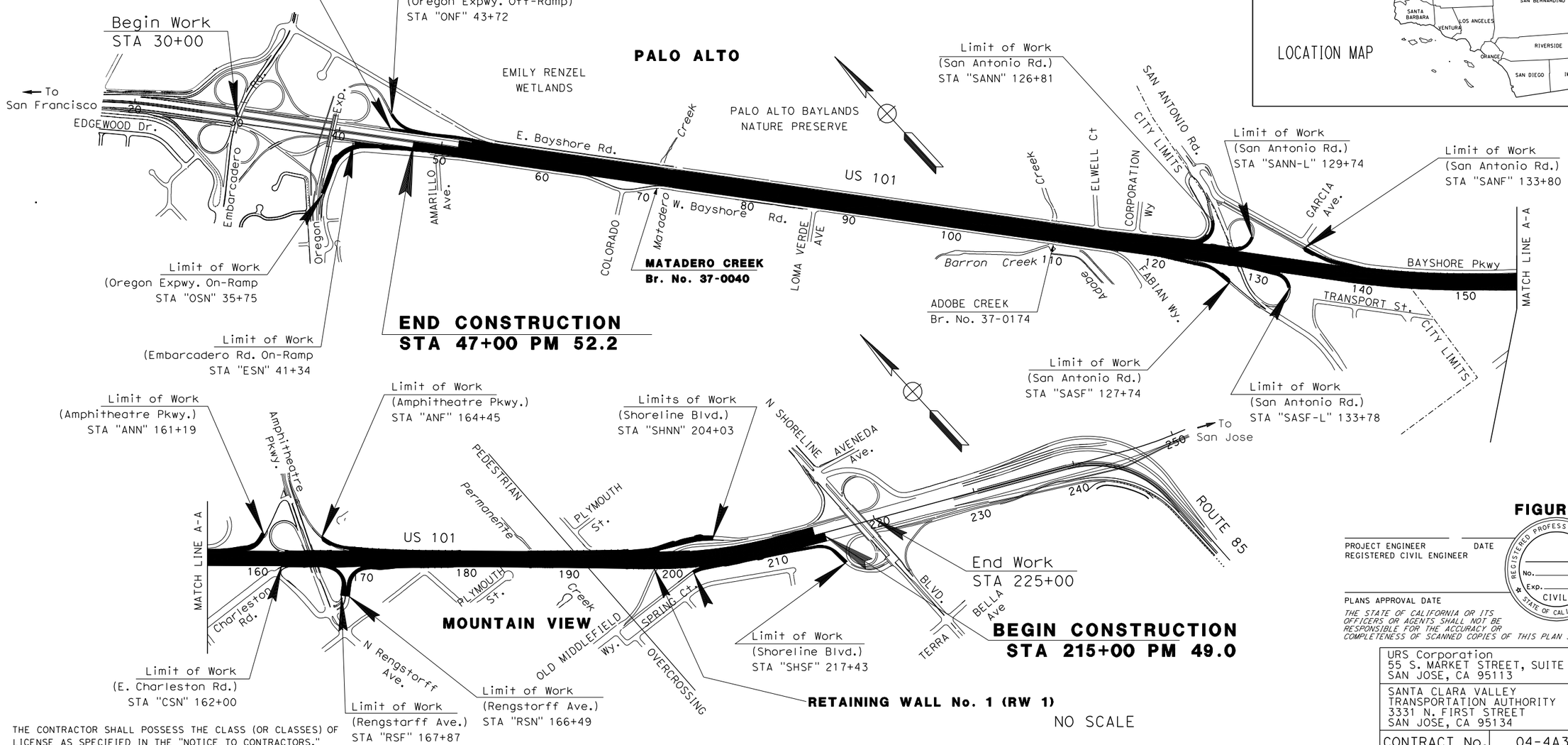


FIGURE 1-1

PROJECT ENGINEER DATE
REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

URS Corporation
55 S. MARKET STREET, SUITE 1500
SAN JOSE, CA 95113

SANTA CLARA VALLEY
TRANSPORTATION AUTHORITY
3331 N. FIRST STREET
SAN JOSE, CA 95134

CONTRACT No. 04-4A3304

LAST REVISION 00-00-00

DATE PLOTTED => 11/12/2009
TIME PLOTTED => 9:59:47 AM

APPROVED AS TO IMPACT ON STATE FACILITIES AND CONFORMANCE WITH APPLICABLE STATE STANDARDS AND PRACTICES AND THAT TECHNICAL OVERSIGHT WAS PERFORMED.

DATE SIGNED | LICENSE Exp DATE | REGISTRATION No. | CALTRANS DESIGN OVERSIGHT APPROVAL | CONSULTANT DESIGN ENGINEER

THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO CONTRACTORS."

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	48.97/52.17		

REGISTERED CIVIL ENGINEER DATE

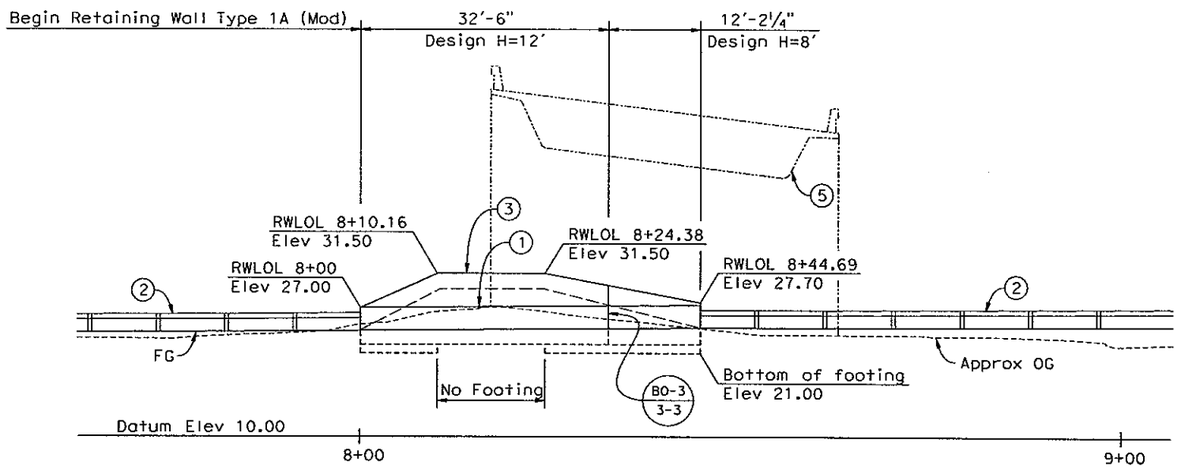
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER David W. Harnagel No. C36542 Exp. 06/30/10 CIVIL STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

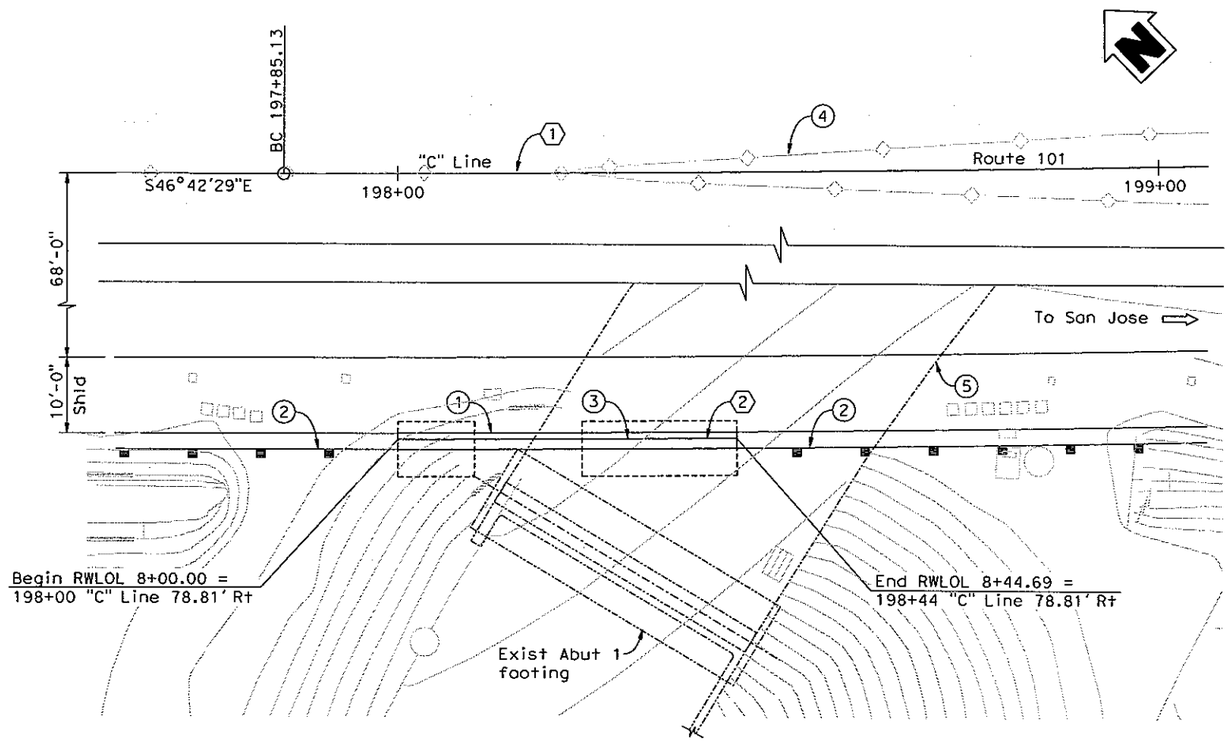
VALLEY TRANSPORTATION AUTHORITY
3331 N FIRST STREET
SAN JOSE, CA 95134

URS CORPORATION
1380 LEAD HILL BLVD, SUITE 100
ROSEVILLE, CA 95661-2997



MIRROR ELEVATION

1"=10'-0"



PLAN

1"=10'-0"

LEGEND:

..... Indicates existing structure

⇨ Indicates direction of traffic

NOTES:

1. Concrete Barrier (Type 60D)
2. MBGR, see "Road Plans"
3. Retaining Wall Type 1A (Mod)
4. Exist Median Barrier, see "Road Plans"
5. Existing Br. No. 37-0573S to remain

STANDARD PLANS DATED MAY 2006

A10A	ACRONYMS AND ABBREVIATIONS (SHEET 1 OF 2)
A10B	ACRONYMS AND ABBREVIATIONS (SHEET 2 OF 2)
A10C	SYMBOLS (SHEET 1 OF 2)
A10D	SYMBOLS (SHEET 2 OF 2)
A62C	LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL BRIDGE
A76A	CONCRETE BARRIER TYPE 60
B3-3	RETAINING WALL TYPE 1A
B3-8	RETAINING WALL DETAILS No. 1
B3-9	RETAINING WALL DETAILS No. 2

STANDARD PLAN SHEET No.

DETAIL No.

INDEX TO PLANS

SHEET NO.	TITLE
1	GENERAL PLAN No. 1
2	GENERAL PLAN No. 2
3	RETAINING WALL DETAILS
4	LOG OF TEST BORINGS 1 OF 5
5	LOG OF TEST BORINGS 2 OF 5
6	LOG OF TEST BORINGS 3 OF 5
7	LOG OF TEST BORINGS 4 OF 5
8	LOG OF TEST BORINGS 5 OF 5

① CURVE DATA

R = 5039.00
Δ = 15°30'22"
T = 686.05
L = 1363.72

② CURVE DATA

R = 5117.81
Δ = 0°30'01"
T = 24.34
L = 44.69

FIGURE 2-1

DESIGN OVERSIGHT	DESIGN	BY D. Harnagel	CHECKED	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE
	DETAILS	BY L. Davis	CHECKED	LAYOUT BY D. Harnagel	CHECKED
SIGN OFF DATE	QUANTITIES	BY	CHECKED	SPECIFICATIONS BY	PLANS AND SPECS COMPARED

DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

CU 04
EA 4A3301

BRIDGE NO.

POST MILES

RETAINING WALL No. 1

GENERAL PLAN No. 1

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY) 5-18-09 10-29-09

SHEET 1 OF 8

FILE => u:\old middlefield ret wall\RetWall-a-gp01.dgn

USERNAME => Lynette_Dolan PLOTTED => 10/29/2009 TIME PLOTTED => 1:26:43 PM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	48.97/52.17		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER David W. Harnagel No. C36542 Exp. 06/30/10 CIVIL STATE OF CALIFORNIA

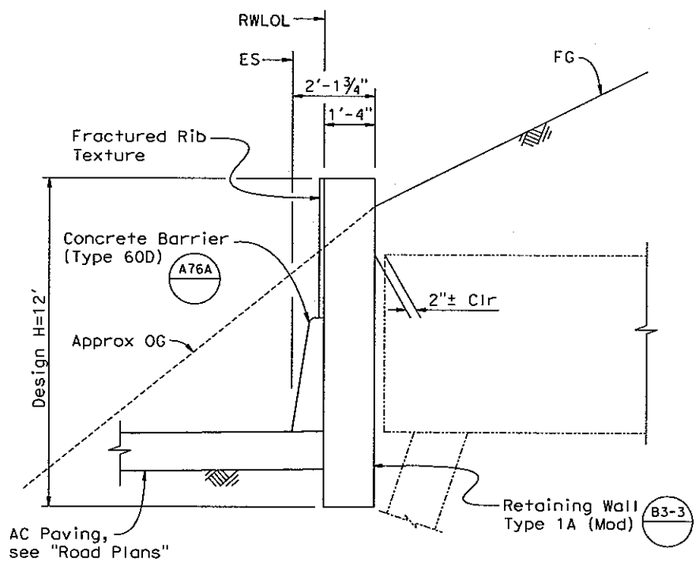
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

VALLEY TRANSPORTATION AUTHORITY
3331 N FIRST STREET
SAN JOSE, CA 95134

URS CORPORATION
1380 LEAD HILL BLVD, SUITE 100
ROSEVILLE, CA 95661-2997

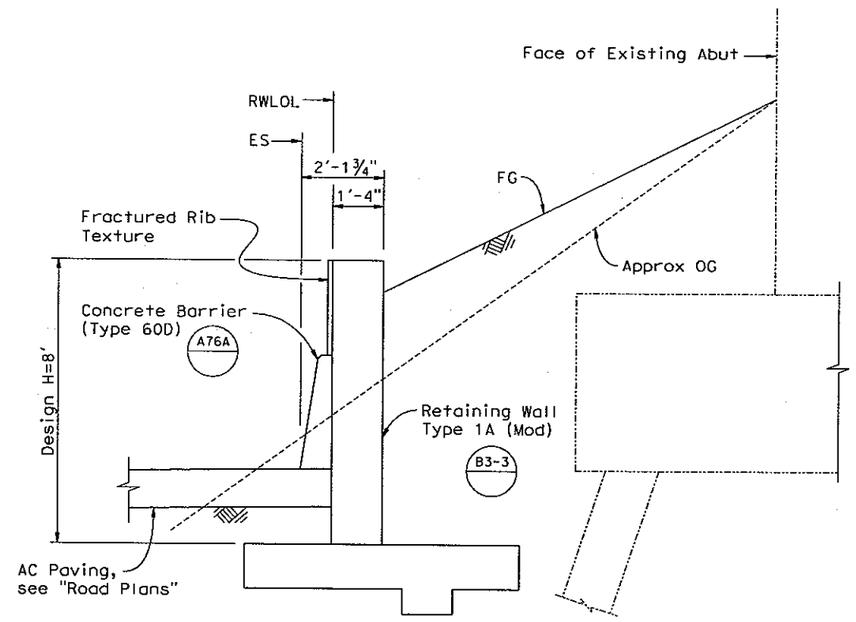
LEGEND:

---------- Indicates existing structure



SECTION AT NO FOOTING

½"=1'-0"



SECTION AT FOOTING

½"=1'-0"

FIGURE 2-2

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN OVERSIGHT

SIGN OFF DATE

DESIGN DETAIL SHEET (ENGLISH) (REV. 06-01-09)

	BY	CHECKED
DESIGN	D. Harnagel	
DETAILS	L. Davis	
QUANTITIES		

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

Walt LaFranchi
PROJECT ENGINEER

BRIDGE NO. 37-0174
POST MILE 50.66

RETAINING WALL No. 1
GENERAL PLAN No. 2

CU 04
EA 4A3301

DISREGARD PRINTS BEARING EARLIER REVISION DATES 10-29-09

REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET 2 OF 8

FILE => u:\old middlefield ret wall\RetWall-a-gp02.dgn

USERNAME => Lynette_D@ATE PLOTTED => 10/29/2009 TIME PLOTTED => 1:26:43 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	49.0/52.2		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

Santa Clara Valley Transportation Authority
3331 N First Street
San Jose, CA 95134

URS Corporation
55 S Market Street
Suite 1500
San Jose, CA, 95113

LEGEND

EXPLORATORY BORING (2009)

PREVIOUS EXPLORATORY BORING (2002)

PREVIOUS EXPLORATORY BORING (1952)

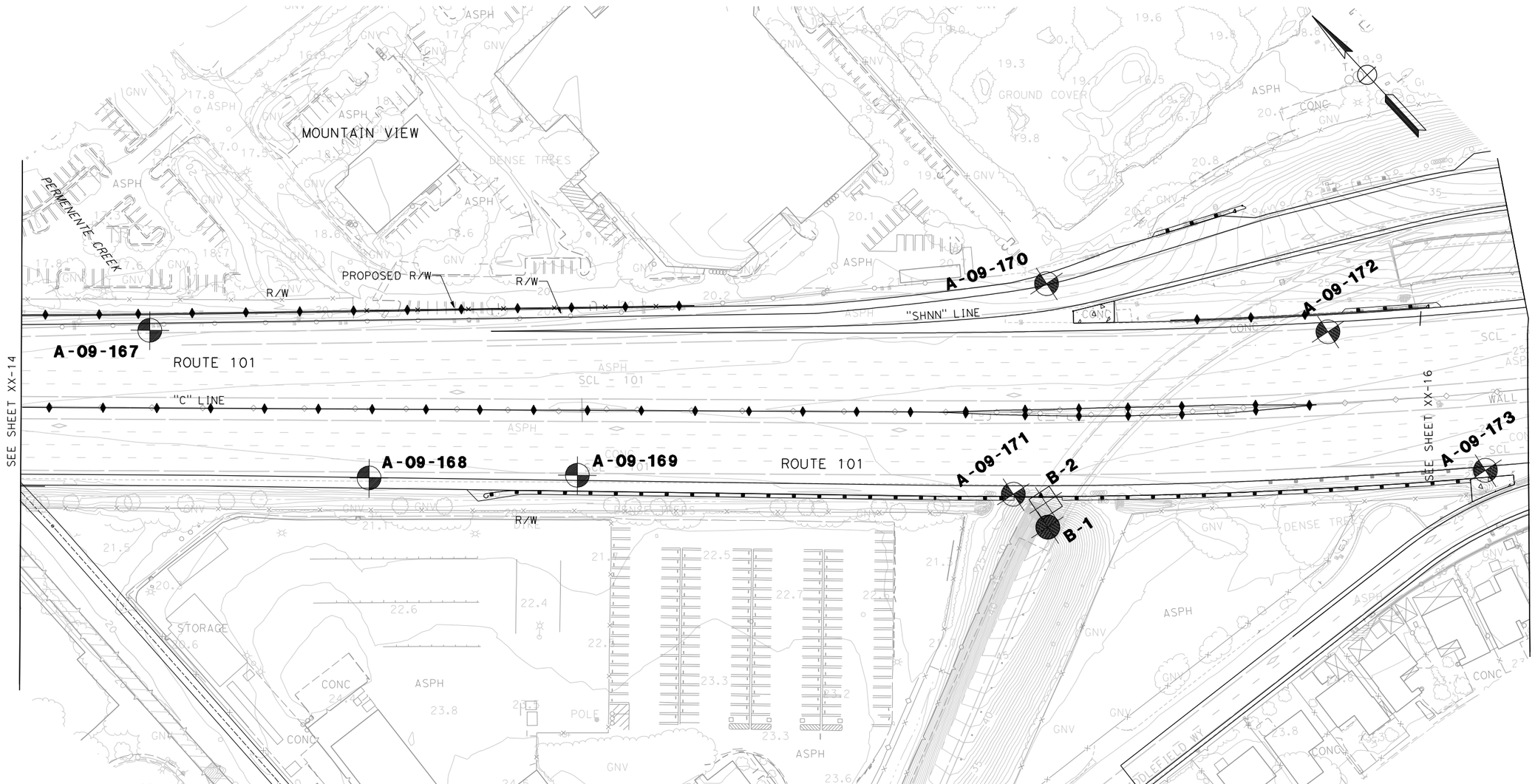


FIGURE 3-1

SCALE 1"=50'

FIELD EXPLORATION LOCATION PLAN

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY .
CHECKED BY .
CONSULTANT FUNCTIONAL SUPERVISOR .

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

LAST REVISION 00-00-00
DATE PLOTTED => 11/12/2009
TIME PLOTTED => 10:01:18 AM

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

Memorandum

Flex your power!
Be energy efficient!

To: MR. PAUL MAI
District Office Chief
Design South SCL "B"

Date: January 25, 2010

Attention: H. Nikzad
C. Pineda

File: 04-SCL-101 PM 49
04-4A3300
101 Auxiliary Lane

From: M. ZABOLZADEH
Associate M & R Engineer
Office of Geotechnical Design – West
Geotechnical Services
Division of Engineering Services

H. Nikoui
HOOSHMAND NIKOUI
Chief, Branch A
Office of Geotechnical Design – West
Geotechnical Services
Division of Engineering Services

Subject : Foundation Report for Retaining Wall #1

We have reviewed the submitted Foundation Report for the proposed Retaining Wall #1 for the above referenced project and we have the following comments:

- Page 1-1, Section 1.1 - For final report, remove the word "Draft".
- Page 3-6, Section 3.2.4 – Include unconfined compressive strength (Pocket Penetrometer), SPT blow counts, etc. along with the soil description.
- Page 3-8, 4-1 - The discussion of the corrosion assessment, should be moved to a proper section.
- Page 7-1, Section 7.2.2 – The estimated bearing capacity values should be discussed and compared with the toe pressure values specified in Caltrans Standard Plan sheet B3-1.
- Page 7-3, Section 7.4 – All the global stability results using SLOPE/W should be attached in an Appendix.

If you have any questions or need additional information, please call me at 510-286-4831 or Hooshmand Nikoui, Branch Chief at 510-286-4811.

c: TPokrywka, HNikoui, Mzabolzadeh, Daily File, Route File

MZabolzadeh/mm/4A3300 Review RTW #1

Office of Special Funded Projects
Comment & Response Form

General Project Information	Review Phase		Reviewer Information
Dist: 04 EA: 4A3301 **Project Name: Retaining Wall #1** **OSFP Liaison: Emil Vergara** **Phone: 916-227-8360** **e-mail: emil_vergara@dot.ca.gov**	☐ PSR/PDS (Review No. _) ☐ APS/PSR (Review No. _) ☐ APS/PR (Review No. _) ☐ Type Selection	☐ 65% PS&E Unchecked Details ☐ PS&E (Review No. _) ☐ Construction Support ☒ Other: Final Foundation Report	**Reviewer Name: M. Zabolzadeh** **Functional Unit: OGDW** **Cost Center: 327** **Phone Number: (510) 286-4831** **e-mail: mohammad zabolzadeh@dot.ca.gov** **Date of Review: 1/29/2010**
	Structure Information (Use when necessary to document comments by individual structure) **Structure Name: Retaining Wall #1** **Br No: 37E0058**		

Consultant Information (to be filled in by Consultant)

Consultant Structure Lead (First and Last Name)	Structure Consultant Firm	Phone Number	e-mail	Response Date
_____	_____	_____	_____	_____

#	Doc. (See Note 1)	Page, Section, or SSP	Review Comments	Consultant Responses	✓
1	FR	1-1, 1.1	For final report, remove the word "Draft".	Will remove the word "Draft" from Section 1.1.	
2	FR	3-6, 3.2.4	Include unconfined compressive strength (Pocket Penetrometer), SPT blow counts, etc. along with the soil description.	Will revise Section 3.2.4 to include the unconfined compressive strength and SPT blow counts.	
3	FR	3-8, 4-1	The discussion of the corrosion assessment should be moved to a proper section.	Will comply.	
4	FR	7-1, 7.2.2	The estimated bearing capacity values should be discussed and compared with the toe pressure values specified in Caltrans Standard Plan sheet B3-1.	RW#1 is designed as modified Type IA wall; therefore, the toe pressure specified in Caltrans Standard Plan sheet B3-3 is not applicable. The Team Structural Engineer will evaluate toe pressure to conform to those provided in Table 7-1 of the Foundation Report.	
5	FR	7-3, 7.4	All the global stability results using SLOP/W should be attached in an Appendix.	Will include the slope stability results in Appendix.	

Note 1: Abbreviations for Typical Documents (if Abbr. is not below, type in the document type)					
P=Structure Plans	SP=Special Provisions	FR=Foundation Rpt	DC=Design Calcs	TS=Type Sel. Report	QCC=Quant. Check Calcs
RP=Road Plans	E=Estimate	H=Hydraulics Rpt	CC=Check Calcs	QC=Quant. Calcs	

✓= Comment Resolved
(for Reviewer's use)

Office of Special Funded Projects
Comment & Response Form

General Project Information	Review Phase		Reviewer Information
Dist: 04 EA: 4A3301 **Project Name: Retaining Wall #1** **OSFP Liaison: Emil Vergara** **Phone: 916-227-8360** **e-mail: emil_vergara@dot.ca.gov**	☐ PSR/PDS (Review No.) ☐ APS/PSR (Review No.) ☐ APS/PR (Review No.) ☐ Type Selection	☐ 65% PS&E Unchecked Details ☐ PS&E (Review No.) ☐ Construction Support ☐ Other: Final Foundation Report	**Reviewer Name: M. Zabolzadeh** **Functional Unit: OGDW** **Cost Center: 327** **Phone Number: (510) 286-4831** **e-mail: mohammad zabolzadeh@dot.ca.gov** **Date of Review: 4/28/2010**
	Structure Information (Use when necessary to document comments by individual structure) **Structure Name: Retaining Wall #1** **Br No: 37E0058**		

Consultant Information (to be filled in by Consultant)

Consultant Structure Lead (First and Last Name)	Structure Consultant Firm	Phone Number	e-mail	Response Date

#	Doc. (See Note 1)	Page, Section, or SSP	Review Comments	Consultant Responses	✓
1	FR	N/A	Foundation Report (FR) prepared by URS Consultants dated November 23 2009.		
2	FR	N/A	All our previous comments have been incorporated into the report. We do not have any more comment.		
3	FR	N/A	C1 – Approved as Submitted		

Note 1: Abbreviations for Typical Documents (if Abbr. is not below, type in the document type)					
P=Structure Plans	SP=Special Provisions	FR=Foundation Rpt	DC=Design Calcs	TS=Type Sel. Report	QCC=Quant. Check Calcs
RP=Road Plans	E=Estimate	H=Hydraulics Rpt	CC=Check Calcs	QC=Quant. Calcs	

✓= Comment Resolved
(for Reviewer's use)

FIELD EXPLORATION PROGRAM

The geotechnical field investigation consisted of one boring extending to a depth of 40 feet below the existing ground surface. This exploration was performed on April 1, 2009, by Exploration Geoservices of San Jose, CA.

The boring location was carefully selected to obtain supplemental subsurface information to provide geotechnical design recommendations for the proposed structure while avoiding underground utilities and subsurface obstructions. Layout of the exploration was performed by representative of URS, and exploration location was checked for conflict with underground utilities by contacting Underground Service Alert (USA) Network. USA, in turn, alerted the various municipalities and utility companies that a subsurface investigation was to be conducted near their utilities.

After underground utility clearance, URS obtained permits from the Santa Clara Valley Water District, and coordinated with appropriate personnel to accommodate the required inspection during and following exploration.

Hollow Stem Auger Boring (A-09-171)

The hollow stem auger boring was drilled to provide the necessary information to evaluate the subsurface stratigraphy and to allow acquisition of soil samples for laboratory testing. The boring was drilled and sampled at the location indicated on the Site and Boring Location Plan, Figure 3-1. The boring was advanced to a depth of 40 feet below existing ground surface using a truck-mounted drill rig under the supervision of a URS engineer who maintained a record of all field activities, classified the soils encountered using the Unified Soil Classification System (USCS), and prepared a log of the boring.

The drilling operation proceeded carefully, with particular attention to potential interference with utilities or other buried structures. During drilling, samples were obtained for identification and laboratory testing. Soil samples were generally obtained at 5-foot intervals and at changes in strata. Samples were obtained using a lined Modified California (MC) sampler, having an outside diameter of 2½ inches. A 140-pound hammer falling through a distance of 30 inches was used to drive the samplers. The blow count recorded on the boring logs adjacent to the sample depth is the number of blows required to drive the sampler for the final 1 foot of a maximum 18 inch drive.

One of the objectives of the field investigation was to obtain high-quality undisturbed samples for laboratory testing. Effort was made to minimize sample disturbance during sample handling and transportation. After careful withdrawal from the ground, the sample was placed upright and the ends of the sample were cleaned of disturbed soil. Both ends of the samples were covered with plastic caps, and carefully transported to URS' laboratory in San Jose.

Disposal of Cuttings

All drill cuttings and fluids generated during drilling of boring was collected in drums for disposal in accordance with applicable local, state, and federal regulations.

LABORATORY TESTING PROGRAM

A laboratory testing program was carried out to determine the index and engineering properties of the major subsurface strata encountered at the site. The laboratory testing program included conventional tests to confirm the existing information on the engineering characteristics of the major strata and to refine some of the engineering parameters. These tests were performed at the URS' laboratory.

This appendix briefly describes the testing program and procedures for the different types of tests, and then presents detailed test results.

Index Tests

Index tests were performed on cohesive soil samples to aid in soil classification and in correlation with other engineering parameters. Index tests included moisture content and dry density determinations. The moisture content tests were performed in accordance with ASTM D 2216. Dry density was determined in accordance with ASTM D 2937. The locations of these tests are indicated on the Logs of Test Borings adjacent to the appropriate sample depths. The results are summarized in Table B-1.

Unconfined Compression Tests

Unconfined compression tests were performed on select cohesive soil samples to assist in determining shear strength parameters. These tests were performed in accordance with ASTM D 2166. The locations of these tests are indicated on the Logs of Test Borings adjacent to the appropriate sample depths. The results are summarized in Table B-1.

TABLE B-1
SUMMARY OF LABORATORY TEST RESULTS

Boring or Sample No.	Date Sampled	Station	Line	Distance from Line (feet)	Depth (feet)	Unconfined Compressive Strength (psf)	In-Place Conditions	
							Water Content (%)	Dry Unit Weight (pcf)
A-09-171	1-Apr-09	197+99.3	"C"	Rt. 75.9	1	1,870	37.1	77
A-09-171	1-Apr-09	197+99.3	"C"	Rt. 75.9	3.5	4,140	34.8	85
A-09-171	1-Apr-09	197+99.3	"C"	Rt. 75.9	8.5	1,270	25.4	98
A-09-171	1-Apr-09	197+99.3	"C"	Rt. 75.9	13.5	990	20.4	104
A-09-171	1-Apr-09	197+99.3	"C"	Rt. 75.9	18.5	1,660	32.4	89
A-09-171	1-Apr-09	197+99.3	"C"	Rt. 75.9	23.5	870	18.7	113
A-09-171	1-Apr-09	197+99.3	"C"	Rt. 75.9	28.5	1,400	26.4	98
A-09-171	1-Apr-09	197+99.3	"C"	Rt. 75.9	33.5	2,250	31.2	92
A-09-171	1-Apr-09	197+99.3	"C"	Rt. 75.9	38.5	1,040	20.5	110

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	49.0/52.2		

GEOTECHNICAL PROFESSIONAL DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Stephen Huang No. C 42289 Exp. 03/31/10 CIVIL STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

URS Corporation
55 S Market Street
SUITE #1500
San Jose, CA 95113

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (JUNE 2007)

CEMENTATION

Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

CONSISTENCY OF COHESIVE SOILS

Description	Unconfined Compressive Strength (tsf)	Pocket Penetrometer Measurement (tsf)	Torvane Measurement (tsf)	Field Approximation
Very Soft	< 0.25	< 0.25	< 0.12	Easily penetrated several inches by fist
Soft	0.25 to 0.50	0.25 to 0.50	0.12 to 0.25	Easily penetrated several inches by thumb
Medium Stiff	0.50 to 1.0	0.50 to 1.0	0.25 to 0.50	Penetrated several inches by thumb with moderate effort
Stiff	1 to 2	1 to 2	0.50 to 1.0	Readily indented by thumb but penetrated only with great effort
Very Stiff	2 to 4	2 to 4	1.0 to 2.0	Readily indented by thumbnail
Hard	> 4.0	> 4.0	> 2.0	Indented by thumbnail with difficulty

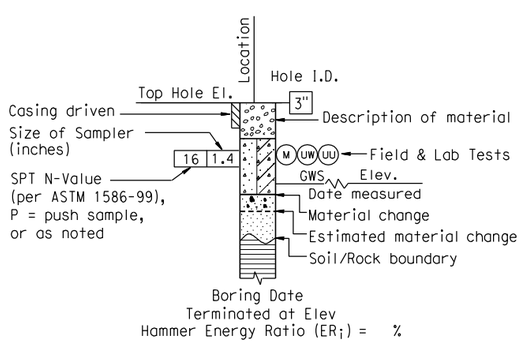
BOREHOLE IDENTIFICATION

Symbol	Hole Type	Description
Size	A	Auger Boring
Size	R P	Rotary drilled boring Rotary percussion boring (air)
Size	R	Rotary drilled diamond core
Size	HD HA	Hand driven (1-inch soil tube) Hand Auger
●	D	Dynamic Cone Penetration Boring
▲	CPT	Cone Penetration Test (ASTM D 5778-95)
⬚	O	Other

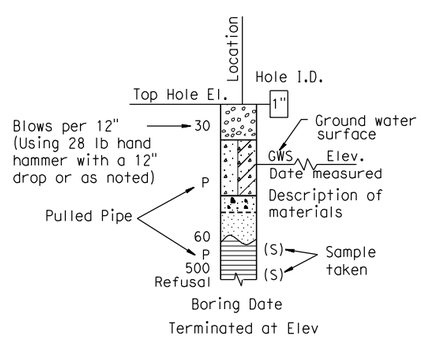
Note: Size in inches.

PLASTICITY OF FINE-GRAINED SOILS

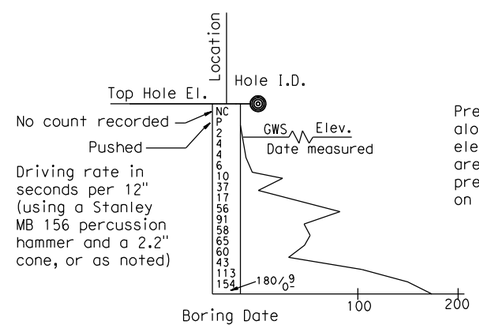
Description	Criteria
Nonplastic	A 1/8-inch thread cannot be rolled at any water content.
Low	The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit.
Medium	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump crumbles when drier than the plastic limit.
High	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump can be formed without crumbling when drier than the plastic limit.



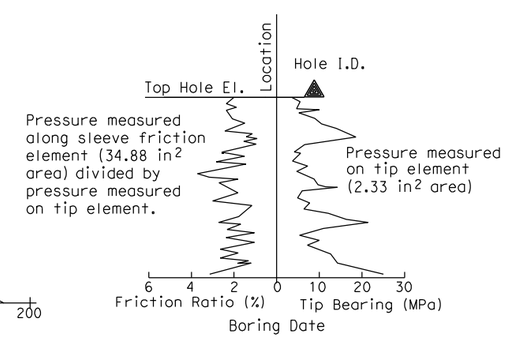
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) SOUNDING

DESIGN OVERSIGHT	DRAWN BY	A. CHEUNG	C. RAMBO FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	PROJECT ENGINEER
SIGN OFF DATE	CHECKED BY	M. THUMMALURU	DATE: 4/01/09		

BRIDGE NO. 37E0058
POST MILES

RETAINING WALL No. 1
LOG OF TEST BORINGS (1 OF 5)

OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04235
EA 4A3301

DISREGARD PRINTS BEARING EARLIER REVISION DATES → 10/27/09

REVISION DATES

SHEET 1 OF 5

FILE => ...\1of5_legend1.dgn

USERNAME => mdahu_thu PLOTTED => 2/26/2010 TIME PLOTTED => 10:44:11 AM

REFERENCE: CALTRANS SOIL & ROCK LOGGING, CLASSIFICATION, AND PRESENTATION MANUAL (JUNE 2007)

GROUP SYMBOLS AND NAMES

Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
GW	Well-graded GRAVEL Well-graded GRAVEL with SAND	CL	Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
GP	Poorly graded GRAVEL Poorly graded GRAVEL with SAND		
GW-GM	Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND	CL-ML	SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
GW-GC	Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GP-GM	Poorly graded GRAVEL with SILT Poorly graded GRAVEL with SILT and SAND	ML	SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
GP-GC	Poorly graded GRAVEL with CLAY (or SILTY CLAY) Poorly graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GM	SILTY GRAVEL SILTY GRAVEL with SAND	OL	ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
GC	CLAYEY GRAVEL CLAYEY GRAVEL with SAND		
GC-GM	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND	OL	ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
SW	Well-graded SAND Well-graded SAND with GRAVEL		
SP	Poorly graded SAND Poorly graded SAND with GRAVEL	CH	Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
SW-SM	Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL		
SW-SC	Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	MH	Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
SP-SM	Poorly graded SAND with SILT Poorly graded SAND with SILT and GRAVEL		
SP-SC	Poorly graded SAND with CLAY (or SILTY CLAY) Poorly graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	OH	ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
SM	SILTY SAND SILTY SAND with GRAVEL		
SC	CLAYEY SAND CLAYEY SAND with GRAVEL	OH	ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY ORGANIC elastic SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
SC-SM	SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL		
PT	PEAT	OL/OH	ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND
	COBBLES COBBLES and BOULDERS BOULDERS		

FIELD AND LABORATORY TESTING

- (C) Consolidation (ASTM D 2435)
- (CL) Collapse Potential (ASTM D 5333)
- (CP) Compaction Curve (CTM 216)
- (CR) Corrosivity Testing (CTM 643, CTM 422, CTM 417)
- (CU) Consolidated Undrained Triaxial (ASTM D 4767)
- (DS) Direct Shear (ASTM D 3080)
- (EI) Expansion Index (ASTM D 4829)
- (M) Moisture Content (ASTM D 2216)
- (OC) Organic Content-% (ASTM D 2974)
- (P) Permeability (CTM 220)
- (PA) Particle Size Analysis (ASTM D 422)
- (PI) Plasticity Index (AASHTO T 90) Liquid Limit (AASHTO T 89)
- (PL) Point Load Index (ASTM D 5731)
- (PM) Pressure Meter
- (PP) Pocket Penetrometer
- (R) R-Value (CTM 301)
- (SE) Sand Equivalent (CTM 217)
- (SG) Specific Gravity (AASHTO T 100)
- (SL) Shrinkage Limit (ASTM D 427)
- (SW) Swell Potential (ASTM D 4546)
- (TV) Pocket Torvane
- (UC) Unconfined Compression-Soil (ASTM D 2166) Unconfined Compression-Rock (ASTM D 2938)
- (UU) Unconsolidated Undrained Triaxial (ASTM D 2850)
- (UW) Unit Weight (ASTM D 4767)
- (VS) Vane Shear (AASHTO T 223)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	49.0/52.2		

GEOTECHNICAL PROFESSIONAL DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Stephen Huang No. C 42289 Exp. 03/31/10 CIVIL STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

Santa Clara Valley Transportation Authority
3331 N First Street
San Jose, CA 95134

URS Corporation
55 S Market Street
SUITE #1500
San Jose, CA 95113

APPARENT DENSITY OF COHESIONLESS SOILS

Description	SPT N_{60} (Blows / 12 inches)
Very loose	0 - 4
Loose	5 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	> 50

MOISTURE

Description	Criteria
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

PERCENT OR PROPORTION OF SOILS

Description	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

PARTICLE SIZE

Description		Size
Boulder		> 12"
Cobble		3" to 12"
Gravel	Coarse	3/4" to 3"
	Fine	No. 4 to 3/4"
Sand	Coarse	No. 10 to No. 4
	Medium	No. 40 to No. 10
	Fine	No. 200 to No. 40

DESIGN OVERSIGHT

SIGN OFF DATE

DRAWN BY A. CHEUNG

CHECKED BY M. THUMMALURU

C. RAMBO
FIELD INVESTIGATION BY:
DATE: 4/01/09

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

PROJECT ENGINEER

BRIDGE NO. 37E0058
POST MILES

RETAINING WALL No.1
LOG OF TEST BORINGS (2 OF 5)

OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04235
EA 4A3301

DISREGARD PRINTS BEARING EARLIER REVISION DATES 10/27/09

REVISION DATES

SHEET 2 OF 5

FILE => ...\2of5_legend2.dgn

USERNAME => mdahu_thum DGN FILE => LOG2.dgn PLOTTED => 2/26/2010 TIME PLOTTED => 10:44:28 AM

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCI	101	49.0/52.2		

GEOTECHNICAL PROFESSIONAL DATE

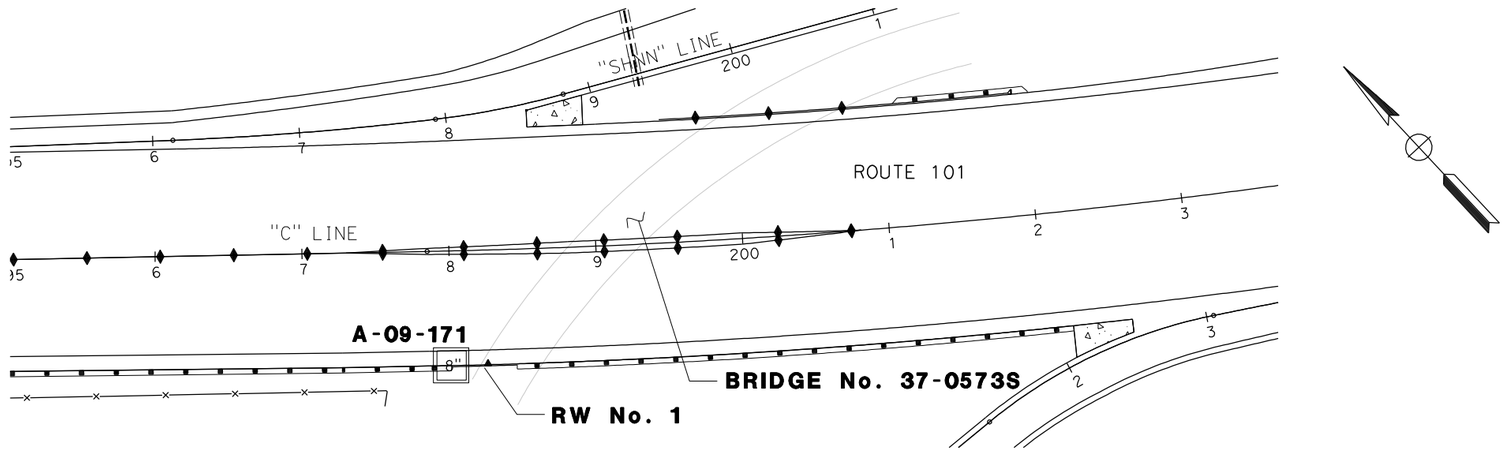
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Stephen Huang No. C 42289 Exp. 03/31/10 CIVIL STATE OF CALIFORNIA

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

URS Corporation
55 S Market Street
SUITE #1500
San Jose, CA 95113



PLAN
1"=50'

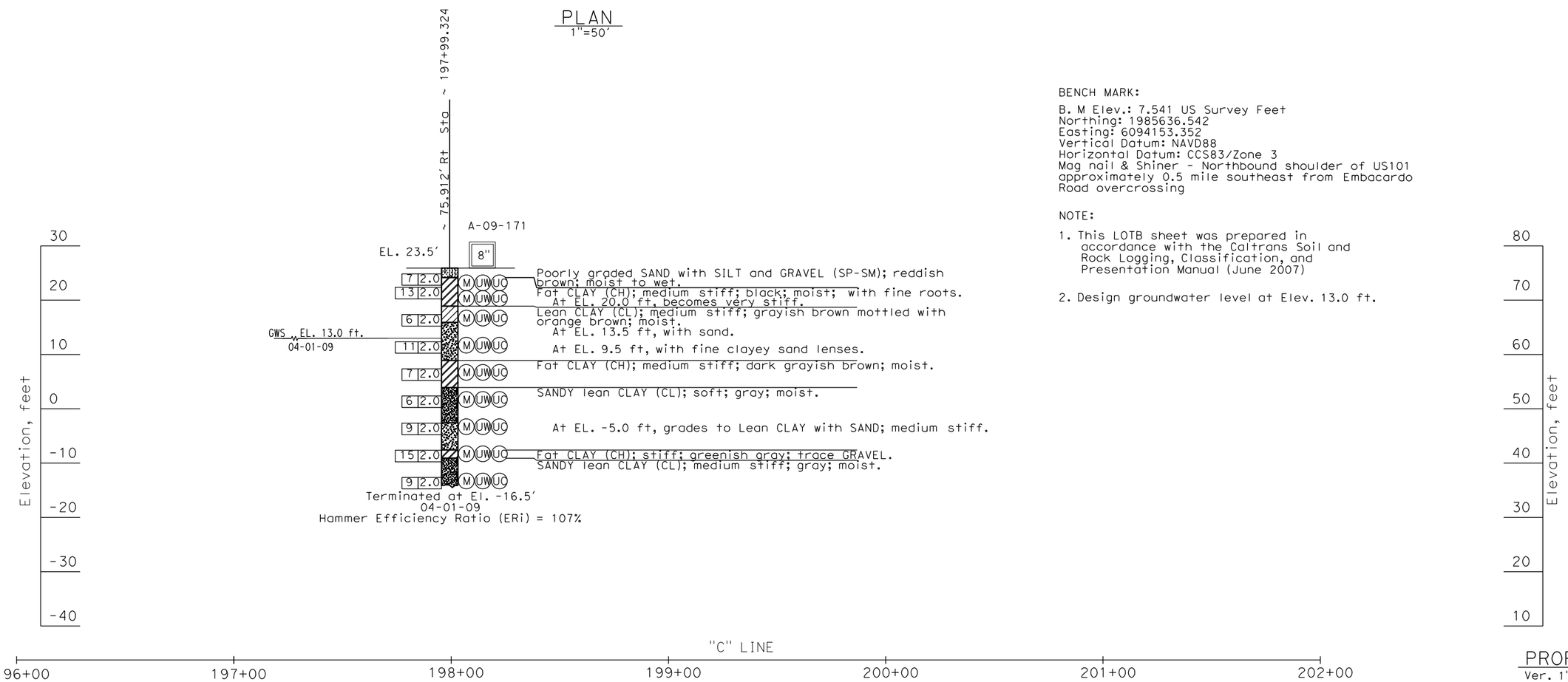
BENCH MARK:

B. M Elev.: 7.541 US Survey Feet
Northing: 1985636.542
Easting: 6094153.352
Vertical Datum: NAVD88
Horizontal Datum: CCS83/Zone 3
Mag nail & Shiner - Northbound shoulder of US101 approximately 0.5 mile southeast from Embacardo Road overcrossing

NOTE:

1. This LOTB sheet was prepared in accordance with the Caltrans Soil and Rock Logging, Classification, and Presentation Manual (June 2007)

2. Design groundwater level at Elev. 13.0 ft.



PROFILE
Ver. 1" = 10'
Hor. 1" = 25'

DESIGN OVERSIGHT	DRAWN BY	A. CHEUNG	C. RAMBO FIELD INVESTIGATION BY:	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	PROJECT ENGINEER
SIGN OFF DATE	CHECKED BY	M. THUMMALURU	DATE: 4/01/09		

BRIDGE NO. 37E0058
POST MILES

RETAINING WALL No.1
LOG OF TEST BORINGS (3 OF 5)

OGS GEOTECHNICAL LOG OF TEST BORINGS SHEET (ENGLISH) (REV. 06-01-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 04235
EA 4A3301

FILE => ...\LOTB3_of5.dgn

DISREGARD PRINTS BEARING EARLIER REVISION DATES → 10/27/09

REVISION DATES

SHEET 3 OF 5

USERNAME => madhu_thummaluru PLOTTED => 2/26/2010 TIME PLOTTED => 10:44:49 AM

DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES					
As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.					
DIST.	COUNTY	ROUTE	MILE POST-TOTAL PROJECT	Sheet No.	Total Sheets
04	SCI	101	49.0/52.2		
REGISTERED GEOTECHNICAL ENGINEER			DATE		

RETAINING WALL No. 1

LOG OF TEST BORINGS (4 OF 5)

NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA

CU: 04
EA: 443301

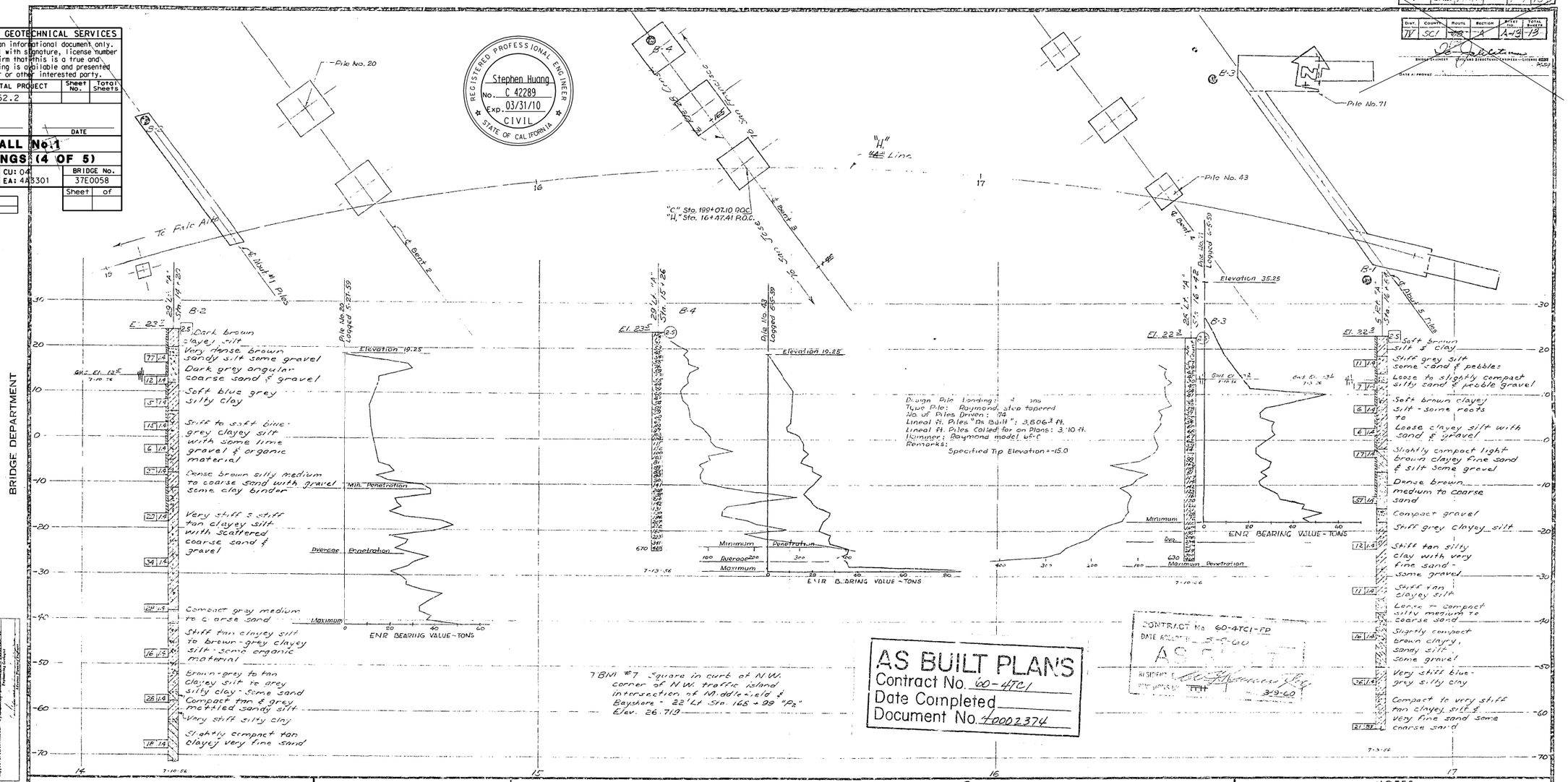
BRIDGE No. 37E0058

Sheet of

Boring	Station	Offset from A Line
B-2	198+29	84 Rt

DATE PLOTTED => 2/26/2010

REGISTERED PROFESSIONAL ENGINEER
Stephen Huang
No. C 42289
Exp. 03/31/10
CIVIL
STATE OF CALIFORNIA



7 BN #7 Square in curb at N.W. corner of N.W. traffic island intersection of Middlefield & Bayshore - 22' Lt. Sta. 165 + 99 "P2" Elev. 26.719

AS BUILT PLANS
Contract No. 60-4TC1
Date Completed
Document No. 40002374

CONTRACT No. 60-4TC1-FP
DATE ACCEPTED 3-9-60
AS BUILT
RESIDENT ENGINEER
DATE 3-9-60

FIELD STUDY	
DRAWN	
CHECKED	

Approval Recommended by

CLASSIFICATION OF MATERIAL BASED ON STANDARD GRADE SIZE LIMITS

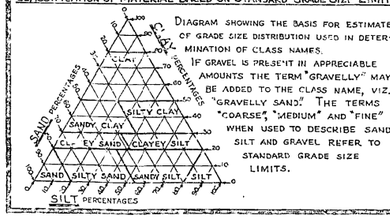


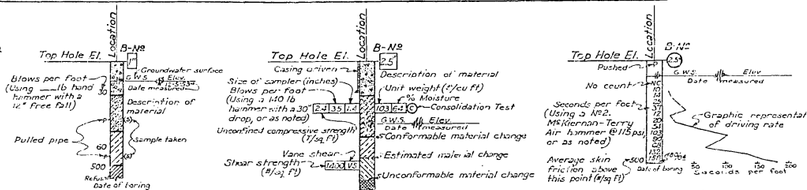
DIAGRAM SHOWING THE BASIS FOR ESTIMATES OF GRADE SIZE DISTRIBUTION USED IN DETERMINATION OF CLASS NAMES. IF GRAVEL IS PRESENT IN APPRECIABLE AMOUNTS THE TERM "GRAVELLY" MAY BE ADDED TO THE CLASS NAME, VIZ. "GRAVELLY SAND." THE TERMS "COARSE", "MEDIUM" AND "FINE" WHEN USED TO DESCRIBE SAND, SILT AND GRAVEL REFER TO STANDARD GRADE SIZE LIMITS.

LEGEND OF EARTH MATERIALS

- GRAVEL
- SAND
- SILT
- CLAY
- SANDY CLAY OR CLAYEY SAND
- SANDY SILT OR SILTY SAND
- SILTY CLAY OR CLAYEY SILT
- PEAT AND/OR ORGANIC MATTER
- FILL MATERIAL
- IGNEOUS ROCK
- SEDIMENTARY ROCK
- METAMORPHIC ROCK

LEGEND OF BORING OPERATIONS

- PLAN OF ANY BORING
- PENETROMETER
- 2 1/4" CONE PENETROMETER
- SAMPLER BORING (DRY)
- ROTARY BORING (WET)
- AUGER BORING (DRY)
- JET BORING
- CORE BORING
- TEST PIT



NOTES

The contractor's attention is directed to Section 2, Article (c) of the Standard Specifications and to the Special Provisions accompanying this set of plans.

Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

MIDDLEFIELD ROAD OVERCROSSING

LOG OF TEST BORINGS

SCALE 1" = 10'	BRIDGE 37-154	FILE E-37	DRAWING

FULL DRAWING NO. D-4238 | 34

I HEREBY CERTIFY THAT THIS IS A TRUE AND ACCURATE COPY OF THE ABOVE DOCUMENT TAKEN UNDER MY DIRECTION AND CONTROL ON THIS DATE IN SACRAMENTO, CALIFORNIA PURSUANT TO AUTHORIZATION BY THE DIRECTOR OF PUBLIC WORKS.

DATE 5/23/11 SIGNATURE TITLE

MICROFILM - STATE OF CALIFORNIA - DEPARTMENT OF PUBLIC WORKS - MICROFILM

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCL	101,85	76.9 / 79.2 R37.7 / R38.7	877	

REGISTERED CIVIL ENGINEER 8/1/02

PLANS APPROVAL DATE

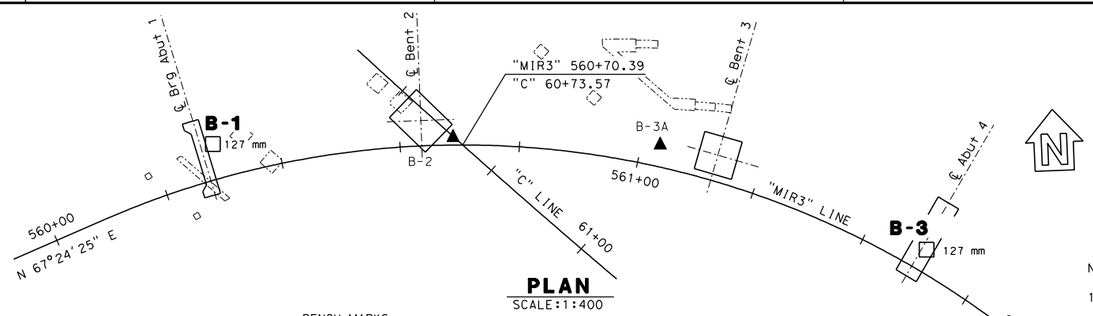
REGISTERED PROFESSIONAL ENGINEER CHALERM S. LIANG No. 35399 Exp. 9/30/03 CIVIL STATE OF CALIFORNIA

SANTA CLARA VALLEY
TRANSPORTATION AUTHORITY
3331 N. FIRST STREET
SAN JOSE, CA 95134

KLEINFELDER INC.
1362 RIDDER PARK DRIVE
SAN JOSE, CA 95131

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

REGISTERED PROFESSIONAL ENGINEER Stephen Huang No. C 42289 Exp. 03/31/10 CIVIL STATE OF CALIFORNIA



PLAN
SCALE: 1:400

BENCH MARKS:

PPC-003 ELEVATION = 7.465 N = 602486.033; E = 1861080.125

51 mm Brass disk with punch stamped "PPC-003" in the southeasterly sidewalk of La Avenida, 1.7 m southwest of face of curb, 24.4 m southwest of fire hydrant, 11.6 m northeast of light pole, and 5.2 m southeast of street lighting box. Located approximately 1,206 m from EB, "MIR3" line 561+52.000 at a bearing of S 80° 58' 41" E.

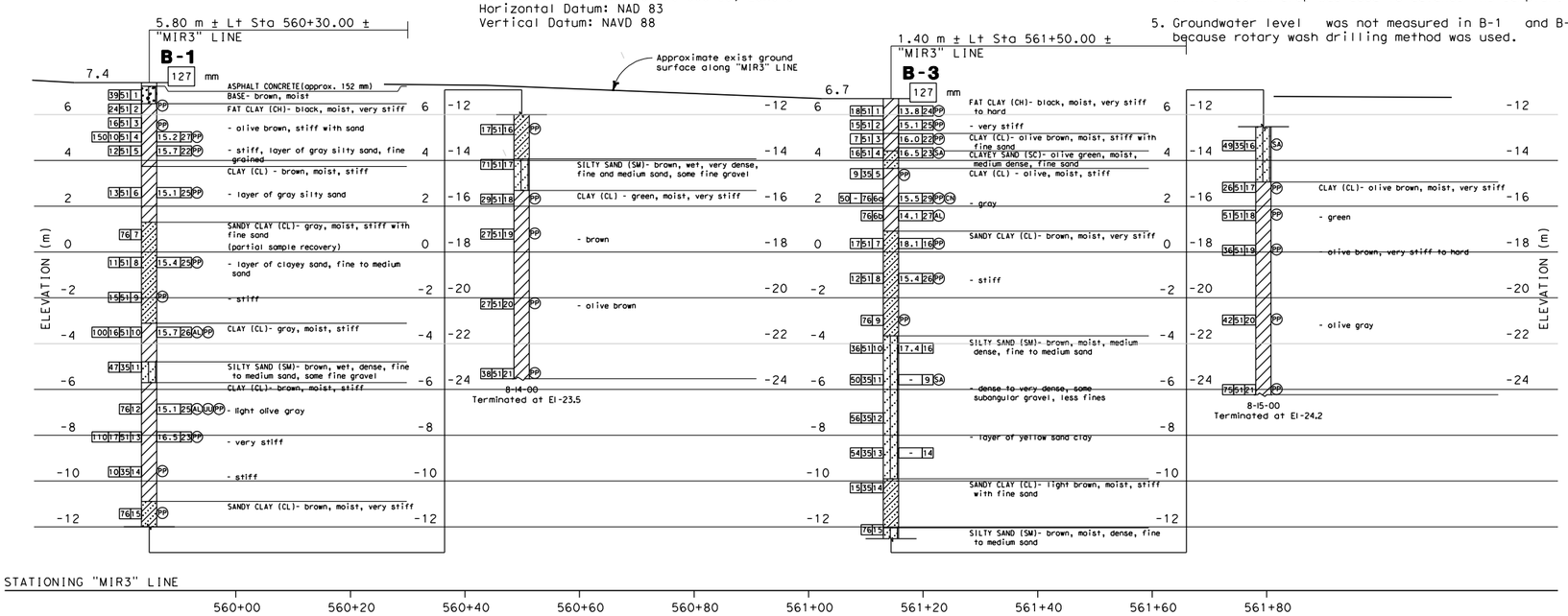
PPC-006 ELEVATION = 10.067 N = 602189.601; E = 1860527.180

51 mm Brass disk with punch stamped "PPC-006" in the easterly sidewalk of Linda Vista Avenue, 1.3 m west of face of curb, 19.8 m northwest of fire hydrant, and 22.9 m southwest of street light pole. Located approximately 802 m from EB, "MIR3" line 561+52.000 at a bearing of S 52° 44' 07" E.

Horizontal Coordinates are CCS 83, Zone 3
Horizontal Datum: NAD 83
Vertical Datum: NAVD 88

Notes:

1. 51 mm samples were taken using a modified California split-barrel sampler with an inside diameter (I.D.) of 51 mm and an outside diameter (O.D.) of 64 mm.
2. 35 mm samples were taken using a standard penetration split spoon sampler with an inside diameter (I.D.) of 35 mm and an outside diameter (O.D.) of 51 mm.
3. 76 mm samples were taken using a Shelby Tube sampler with an outside diameter (O.D.) of 76 mm.
4. A 623 N safety hammer on a rope and cathead system with a 760 mm drop was used to advance the sampler.
5. Groundwater level was not measured in B-1 and B-3 because rotary wash drilling method was used.



PROFILE
HORIZONTAL SCALE: 1:400
VERTICAL SCALE: 1:100

LEGEND OF BORING OPERATIONS

IN-SITU, LAB & FIELD TEST DESIGNATIONS

TYPES BORING

LEGEND OF EARTH MATERIALS (USCS) BASED ON ASTM D2487, D2488

CONSISTENCY CLASSIFICATION FOR SOILS According to the Standard Penetration Test (ASTM D-1586)

NOTE: Final classification of earth materials are based on field inspection and are confirmed or revised with laboratory test results as necessary.

DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES

As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.

DIST.	COUNTY	ROUTE	MILE POST-TOTAL PROJECT	Sheet No.	Total Sheets
04	SCl	101	49.0/52.2		

REGISTERED GEOTECHNICAL ENGINEER DATE

RETAINING WALL No.1
LOG OF TEST BORINGS (5 OF 5)

NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA

CU: 04
EA: 4A3301

BRIDGE No. 37E0058

Boring	Station	Offset from A Line
B-1	198+31	106 Rt

Sheet of

DATE PLOTTED => 2/26/2010 TIME PLOTTED => 10:48:16 AM

Emil Vergara
DESIGN OVERSIGHT
10/08/02
SIGN OFF DATE

DRAWN BY A. Sanchez
CHECKED BY Y. Awad

FIELD INVESTIGATION BY: M. Briseno

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

C. Liang
PROJECT ENGINEER

CU 04234
EA 438801

BRIDGE NO. 37-0573S
KP/PM 78.8

N 101 OFF-RAMP/ROUTE 101 SEPARATION

LOG OF TEST BORINGS (1 OF 2)

REVISION DATES (PRELIMINARY STAGE ONLY) 6/24/02 2/26/02 8/01/02

SHEET 24 OF 25

CIVIL LOG OF TEST BORINGS SHEET (METRIC) (REV. 2-7-00)

3 ADDENDUM 3 - 10/22/02

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

DISREGARD PRINTS BEARING EARLIER REVISION DATES

FILE => ...\LOTB5_OF5.dgn

DATE PLOTTED => 2/26/2010

USERNAME => madhu_thummaluru

US 101 AUXILIARY LANES PROJECT

IN PALO ALTO & MOUNTAIN VIEW
FROM OREGON EXPRESSWAY TO SHORELINE BOULEVARD

Proposed

RETAINING WALL FOUNDATION INVESTIGATION REPORT

Prepared for:

URS Corporation
55 South Market Street, Suite 1500
San Jose, CA 95113

Prepared By:

V&A
155 Grand Avenue, Suite 700
Oakland, CA 94612

August 2009

09-0244 US 101 Auxiliary Lanes Project –Proposed Retaining Wall Foundation Report.doc

TABLE OF CONTENTS

DESCRIPTION **PAGE NO.**

INTRODUCTION 1

CONCLUSIONS 1

RECOMMENDATIONS 2

- **Buried Reinforced Concrete Structures** 2
- **Prestressed Concrete Piles** 2
- **Steel Piles** 2

TEST METHODS 2

- **Field Soil Resistivity** 3
- **Laboratory Soil Analysis** 7

TEST RESULTS 8

FIGURES

Figure 1 Project Site Map for the Proposed Retaining Wall Foundation Investigation 4
Figure 2 In-Situ Soil Resistivity Test and Boring Locations 5
Figure 3 Wenner Four Electrode Method for Soil Resistivity Measurement 6
Figure 4 Soil Resistivity Measurement Using the Soil Box Method 8

TABLES

Table 1 Field Soil Resistivity Data 9
Table 2 Laboratory Soil Resistivity and Chemical Data 9

APPENDICES

Appendix 1 Soil and Water Sample Minimum Resistivities and Chemical Analysis 10

INTRODUCTION

V&A was retained by URS Corporation to perform a corrosion survey on US 101, from Oregon Expressway in Palo Alto to Shoreline Boulevard (SR 85) in Mountain View, CA. The objective of this investigation is to measure various soil parameters and evaluate the results with respect to possible levels of corrosion at the site. The soil was tested at depths ranging from 0 to 4.6 meters below existing grade. This report provides recommendations for corrosion control of structural foundation materials under consideration for the proposed retaining wall on US 101 in Mountain View. The materials being considered as part of this investigation include buried reinforced concrete, prestressed concrete piles and steel piles.

The investigation was conducted in accordance with California Department of Transportation's Division of Engineering Services, Materials Engineering and Testing Services Corrosion Technology Branch "Corrosion Guidelines" (Guidelines) dated September 2003. These Guidelines consider representative soil or water samples to be corrosive to structural elements if one or more of the following conditions exist:

1) **The chloride concentration is 500 ppm or greater**
2) **The sulfate concentration is 2000 ppm or greater**
3) **The pH is 5.5 or less.**

Evaluation of the soil environment was made in terms of potential corrosion damage to concrete and metal structures. Soil resistivity measurements were conducted in the field during the initial stages of the work. In addition, soil samples taken during a geotechnical investigation were provided to V&A for laboratory testing. The soil samples were analyzed for minimum (saturated) resistivity, as well as for pH, chloride and sulfate ion concentrations. All of these affect the corrosion rate of buried structures.

The minimum (saturated) resistivity of the soil sample selected from boring at Station 202+32 (Retaining Wall) was measured at 2,949 ohm-cm. The soil pH was measured to be 9.0. A water-soluble chloride concentration of 9 mg/kg and a water-soluble sulfate concentration of 108 mg/kg were also recorded during the chemical analysis. The minimum soil resistivity, pH, chloride and sulfate ion concentrations all indicate the sampled soils are *non-corrosive*, as defined by the Guidelines.

CONCLUSIONS

- The soil boring chemical analysis gave pH values higher than 5.5, soluble chloride concentrations less than 500 mg/kg and soluble sulfate concentrations less than 2,000 mg/kg. According to the CALTRANS Guidelines, the soil is considered *non-corrosive*.
- The minimum resistivity of 2,949 ohm-cm indicates the presence of *non-corrosive* soil according to the CALTRANS Guidelines.
- Corrosion mitigation is not required by the Guidelines for corrosive soil conditions at the proposed retaining wall location.
- This structure is not within 300 meters (1,000 feet) of salt or brackish water.

RECOMMENDATIONS

The test data and a review of the project requirements were used to make recommendations for each structural foundation material alternative listed below.

Buried Reinforced Concrete Structures

Buried concrete structures should be constructed of durable concrete as described in ACI Standards 201.2R and 222R. These recommendations include, but are not limited to, the following for installations in *non-corrosive* soil:

- The water/cement ratio should not exceed 0.50.
- A minimum concrete cover of 5.1 centimeters should be applied over all steel reinforcement.
- Sand and water used in concrete mixtures should contain a maximum of 100 ppm of water-soluble chloride ions and water-soluble sulfate ions. They should also have a pH in the range of 6.5 to 8.0. Potable water should be used in concrete mixtures.
- Type I-P (MS) modified or Type II modified cement should be used.

Prestressed Concrete Piles

Prestressed concrete piles should be constructed of durable concrete as described in ACI Standards 201.2R and 222R. These recommendations include, but are not limited to, the following:

- The water/cement ratio should not exceed 0.50.
- A minimum concrete cover of 5.1 centimeters should be applied over all steel reinforcement.
- Sand and water used in concrete mixtures should contain a maximum of 100 ppm of water-soluble chloride ions and water-soluble sulfate ions. They should also have a pH in the range of 6.5 to 8.0. Potable water should be used in concrete mixtures.
- Type I-P (MS) modified or Type II modified cement should be used.

Steel Piles

According to the CALTRANS Guidelines the soil tested at this site is considered *non-corrosive*, therefore no corrosion mitigation is required.

TEST METHODS

When predicting potential corrosion problems associated with a particular type of structure prior to installation, it is necessary to investigate the soil conditions the structure will encounter. Since corrosion is an electrochemical process accompanied by current flow, the electrochemical characteristics of a soil are of primary importance. Test methods utilized during this investigation reflect the most practical methods of evaluating corrosivity.

Resistivity is a measure of the ability of a soil to conduct an electric current. The higher the resistivity the more difficult it is for the soil to conduct current. Resistivity is primarily dependent on the soluble chemical and moisture content of the soil. Soils with high dissolved ion contents generally have low resistivity. As moisture is added to a soil, its resistivity will decrease as more ions are taken into solution. The soil

resistivity decreases until the maximum solubility of the dissolved ions is reached. Increasing the moisture content beyond this point increases the soil resistivity by diluting the solution. Since corrosion rate depends on current flow through the soil, corrosivity normally increases as soil resistivity decreases.

Soils can contain a wide variety of soluble salts. Therefore, soils with similar resistivities can have significantly different corrosion characteristics, depending on the ions present. In most soils, the principle agents of corrosion are the chloride and sulfate ions, as well as pH. Chloride ions break down the protective surface films on metals and can corrode reinforcing steel in concrete structures. Sulfates attack the Portland cement in concretes. This is an expansive reaction that disrupts the concrete matrix and softens the surface. A high bicarbonate ion concentration lowers soil resistivity and facilitates other forms of corrosion; however, bicarbonate is not corrosive to metals. Soil pH is another measure of corrosivity. Acid (low pH) soils are corrosive to buried metallic and concrete structures. Neutral (pH 7) and alkaline (pH greater than 7) soils are passive to metal surfaces; therefore, corrosion rates become negligible.

Field Soil Resistivity

Field (in-situ) soil resistivity was measured at location No. 22 along the US 101 Auxiliary Lanes project at the proposed retaining wall location. Figure 1 is the retaining wall location map. Figure 2 shows the soil resistivity test site and the soil boring locations.

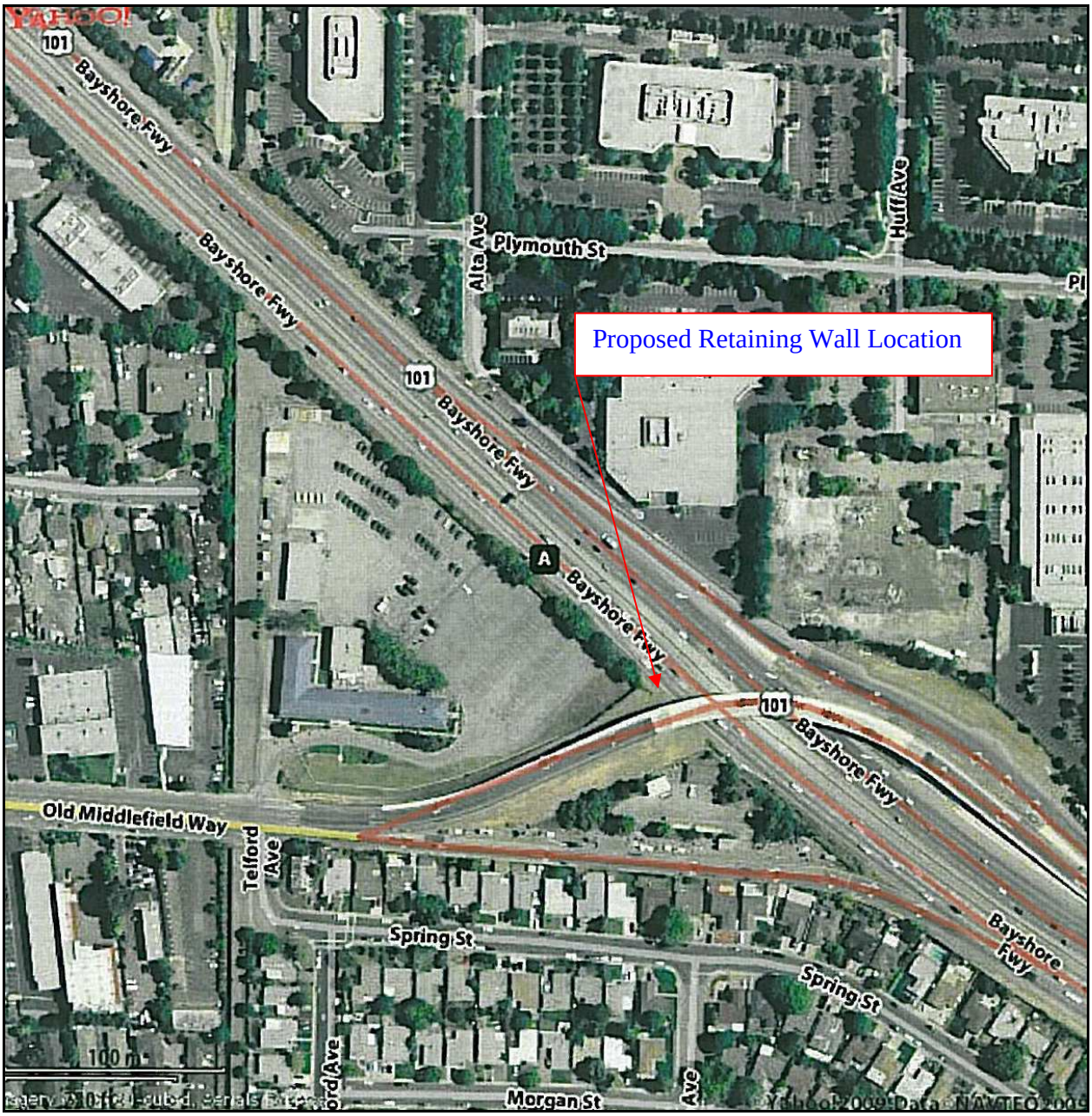


Figure 1 Project Site Map for the Proposed Retaining Wall Foundation Investigation, Mountain View, CA.

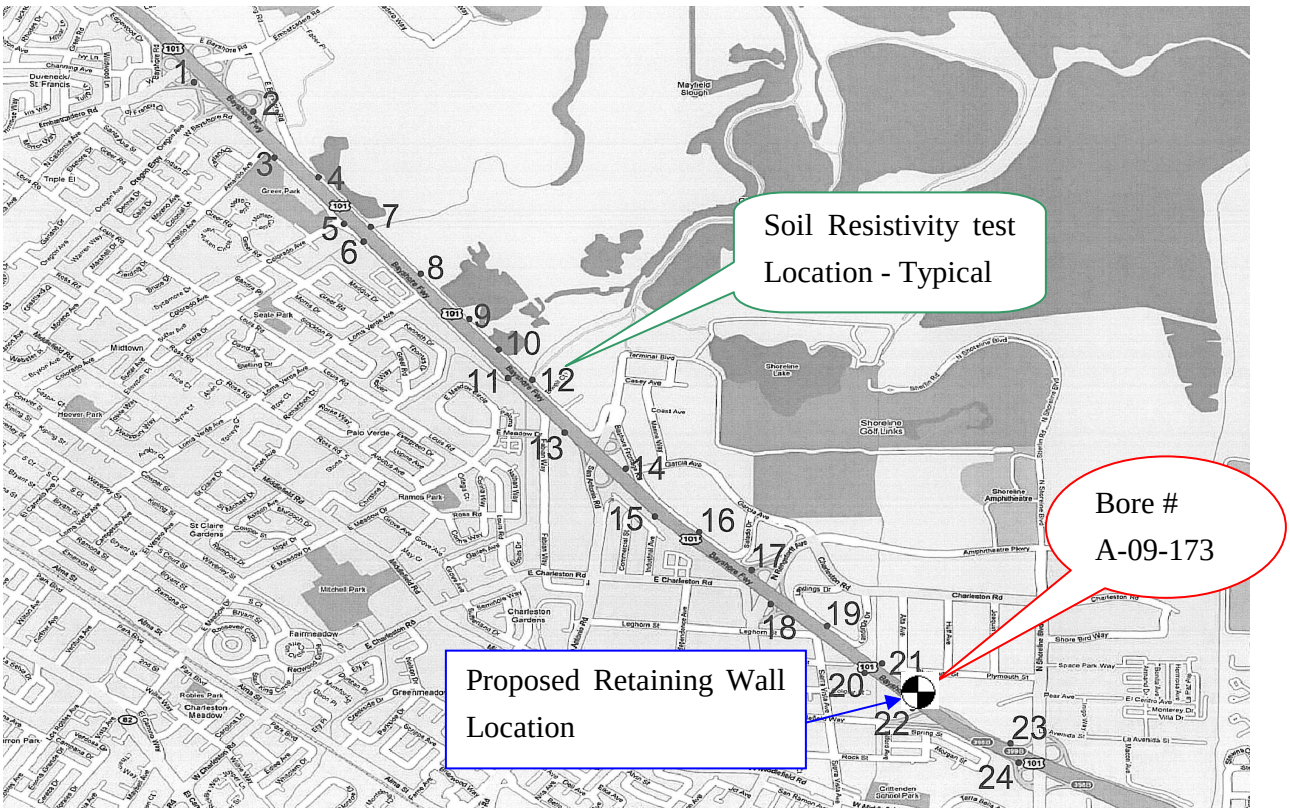


Figure 2 In-Situ Soil Resistivity Test and Boring Locations

In-situ soil resistivity measurements were conducted by the Wenner Electrode Method, using an AEMC Soil Resistance Meter, Model 4500. The Wenner Electrode Method uses four equally spaced metal pins, driven into the ground in a straight line, as electrodes (see Figure 3).

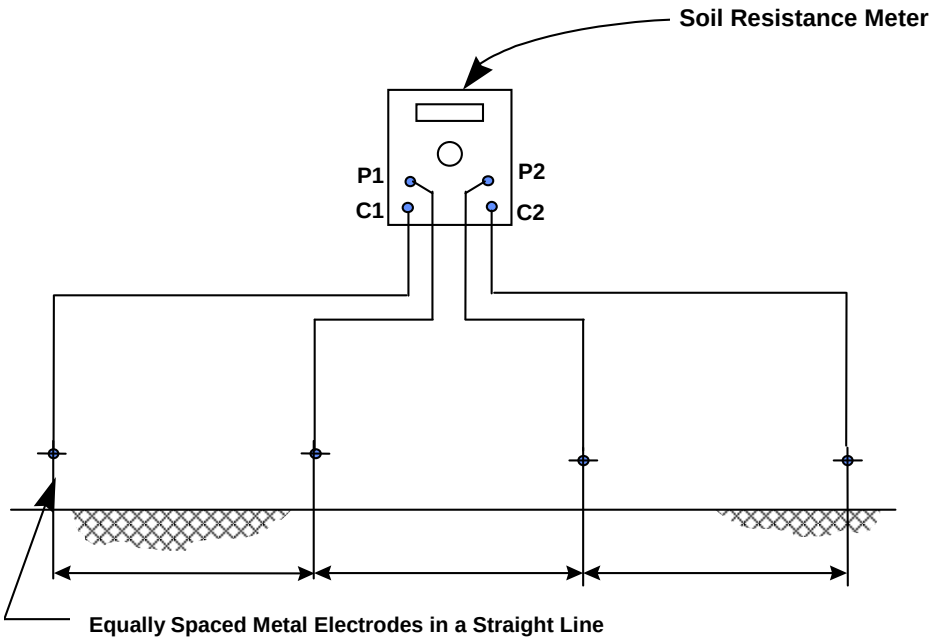


Figure 3 Wenner Four Electrode Method for Soil Resistivity Measurement

An alternating current from the soil resistance meter causes a current to flow through the soil between the outside electrodes, C1 and C2. Due to the resistance of the soil, the current creates a voltage gradient, which is proportional to the average resistance of the soil mass to a depth equal to the distance between electrodes. The voltage drop is then measured across electrodes P1 and P2. Resistivity of the soil is then computed from the instrument reading according to the following formula:

$$\rho = 2\pi AR$$

where: ρ = soil resistivity in ohm-cm
A = the distance between probes in cm
R = soil resistance in ohms (instrument reading)
π = 3.1416

Soil resistance is measured with electrodes spaced 0.8, 1.5, 2.3, 3 and 4.6 meters (2.5, 5, 7.5, 10, 15 feet) apart. Resistivity values obtained represent the average resistivity of the soil to a depth equal to the electrode spacing. An additional method of calculating the soil resistivity using the data from the Wenner Method is the Barnes-Layer resistivity calculation. The Barnes Layer calculation is used to determine the resistivity of the soil for each soil layer. While the Wenner Method at 3 meters will consider all 3 meters of soil below the surface, the Barnes-Layer method will only consider the resistivity of only the layer of only soil between 1.5m and 3m below the surface. This method assumes the soil layers are a uniform thickness and parallel to the surface, which may not always be true.

The Barnes-Layer method uses the following parameters to calculate layer resistivities:

$$\rho_{b-a} = KR_{b-a}$$

and

$$\frac{1}{R_{b-a}} = \frac{1}{R_a} - \frac{1}{R_b}$$

where:

ρ_{b-a}	=	Soil resistivity of layer depth b-a (ohm-cm)
a	=	Soil depth to top of layer (cm)
b	=	Soil depth to bottom of layer (cm)
R_a	=	Soil resistance read at depth a (ohms)
R_b	=	Soil resistance read at depth b (ohms)
R_{b-a}	=	Resistance of soil layer from a to b (ohms)
K	=	Layer constant (cm)
	=	$2\pi(b-a)$

Soil resistivities measured at the proposed retaining wall location and Barnes-Layer resistivities calculated from this data, are listed in Table 1.

Laboratory Soil Analysis

To supplement the field resistivity test data, a soil sample was obtained from soil boring A-09-173 for laboratory soil resistivity analysis. A soil box was used in accordance with California Test Method 643. This apparatus is shown in Figure 4.

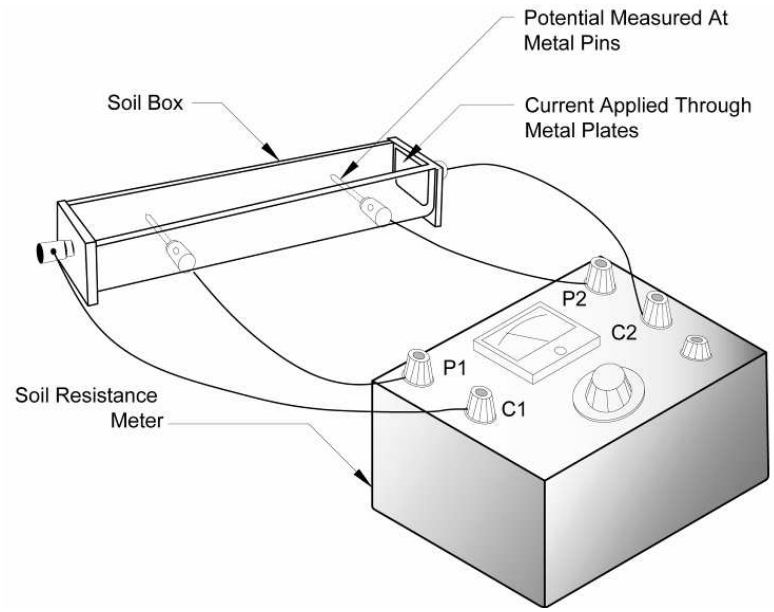


Figure 4 Soil Resistivity Measurement Using the Soil Box Method

This apparatus consists of a small plastic box with metal end plates for passing current through a tightly packed soil sample. Current is passed through the sample, causing a voltage drop across the sample. The soil resistivity is measured with a soil resistance meter, similar to the AEMC Model 4500.

Soil resistivity is first measured in the "as-received" state. Distilled water is then added to the soil sample in 10-mL increments. The resistivity is measured after each addition. As the soil sample becomes more saturated, the soil resistivity decreases until the minimum soil resistivity is reached.

Soil boring sample from this study was forwarded to Cooper Testing Labs, Inc., in Palo Alto, CA, for minimum resistivity measurement, pH analysis and analysis of water soluble chloride and sulfate ion concentrations. The analytical procedures followed California Test Methods 417, 422 and 643.

TEST RESULTS

Table 1 lists the field soil resistivity measurements from the proposed retaining wall site and the calculated Barnes-Layer resistivities. Table 2 lists the minimum resistivity and chemical analysis for the soil boring sample.

Table 1. Field Soil Resistivity Data

Site	Survey Station	Depth (meters)	Resistivity (ohm-cm)	Layer (meters)	Layer Resistivity (ohm-cm)
Proposed Retaining Wall	201+00	0.8	1,489	0 - 0.8	1,489
		1.5	1,587	0.8 - 1.5	1,698
		2.3	1,726	1.5 - 2.3	2,096
		3	1,848	2.3 - 3	2,343
		4.6	2,491	3 - 4.6	8,175

Table 2. Laboratory Soil Resistivity and Chemical Data

Item No.	Boring No.	Station	Sample No.	Depth (meters)	Minimum Soil Resistivity (ohm-cm)	Chemical Data		
						pH	Sulfate (mg/kg)	Chloride (mg/kg)
1	A-09-173	202+35	3	2.3 – 3	2,949	9	108	9

Based on the Guidelines, the analyzed soil sample is considered *non-corrosive* to buried metallic objects and reinforced concrete structures in regards to chloride and sulfate contents, pH and minimum soil resistivity.

Appendix 1. Soil Sample Minimum Resistivities and Chemical Analysis

COOPER TESTING LABORATORY

Corrosivity Test Summary

CTL # 632-007 Date: 7/21/2009 Tested By: PJ Checked: PJ
Client: V&A Project: URS Caltrans 101 Auxilliary Lanes Proj. No: 09-0244
Remarks: Due to a very small sample size, the ph and resistivity tests for all soil samples, except for A-09-173-3-3 101, included +#8 material which is an expecption to the test specification.

Sample Location or ID			Resistivity @ 15.5 °C (Ohm-cm)			Chloride	Sulfate		pH	ORP	Moisture	Soil Visual Description
Boring	Sample, No.	Depth, ft.	As Rec.	Minimum	Saturated	mg/kg Dry Wt.	mg/kg Dry Wt.	% Dry Wt.		(Redox) mv	As Received %	
			ASTM G57	Cal 643	ASTM G57	Cal 422-mod.	Cal 417-mod.	Cal 417-mod.	Cal 643	SM 2580B	ASTM D2216	
-	#2- Adobe Creek	-	-	916	-	187 mg/L	21 mg/L	0.0021	7.7	-	-	Water
-	#3- Matadero	-	-	1133	-	174 mg/L	12 mg/L	0.0012	7.6	-	-	Water
-	R-09-001 4-X	15	-	421	-	256	181	0.0181	10.2	-	23.7	Gray Sandy CLAY
-	R-09-004 4-3	15	-	527	-	235	203	0.0203	10.3	-	3.2	Gray CLAY w/ Sand & CaCO3
-	R-09-005 2-3	8 - 10	-	3850	-	6	<5	<0.0005	8.6	-	3.0	Greenish Brown Clayey SAND w/ Gravel
-	A-09-111-2-4 101	3.5	-	1531	-	4	<5	<0.0005	9.1	-	4.7	Brown Sandy CLAY
-	A-09-131-2-4 101	3.5	-	3609	-	<2	<5	<0.0005	8.9	-	3.5	Greenish Brown Clayey SAND w/ Gravel
-	A-09-173-3-3 101	7 - 10	-	2949	-	9	108	0.0108	9.0	-	3.4	Gray Clayey SAND
-	A-09-180-2-4 101	5 - 7	-	11098	-	<2	<5	<0.0005	8.8	-	2.4	Brown Silty SAND w/ Gravel
-	A-09-183-4-3 101	15	-	3933	-	<2	<5	<0.0005	10.2	-	3.3	Greenish Brown Silty SAND

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SCL	101.85	76.9, 79.2 R37.7, R38.7	854	

REGISTERED CIVIL ENGINEER 8/1/02

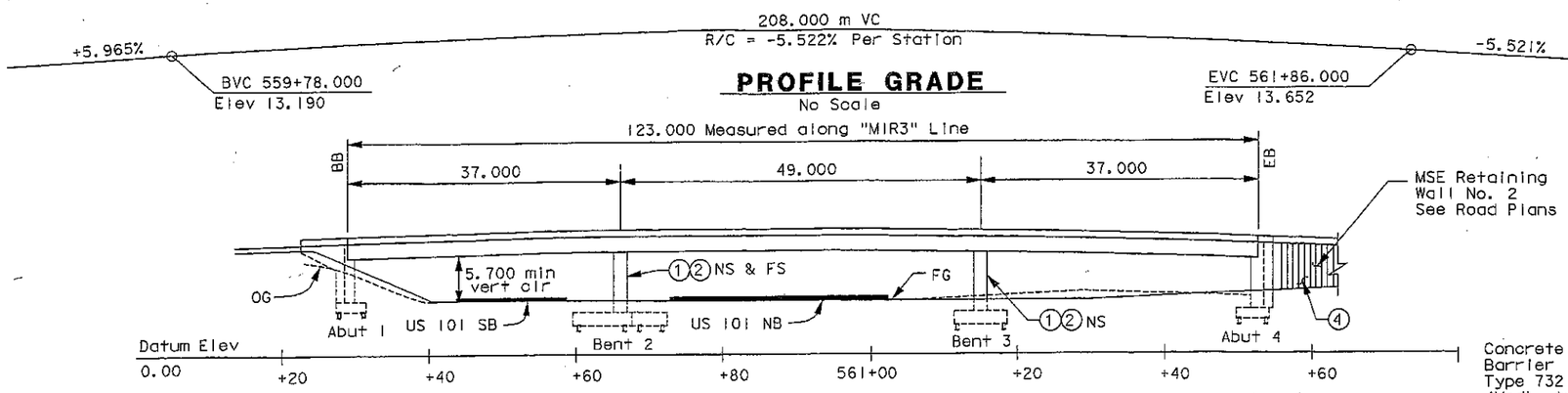
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER FELIX K. ADIKARA No. C 39375 Exp. 12/31/05 CIVIL STATE OF CALIFORNIA

SANTA CLARA VALLEY
TRANSPORTATION AUTHORITY
3331 N. First Street
San Jose, CA 95134

MANNA CONSULTANTS, INC.
255 North Market Street, Suite 220
San Jose, CA 95110

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

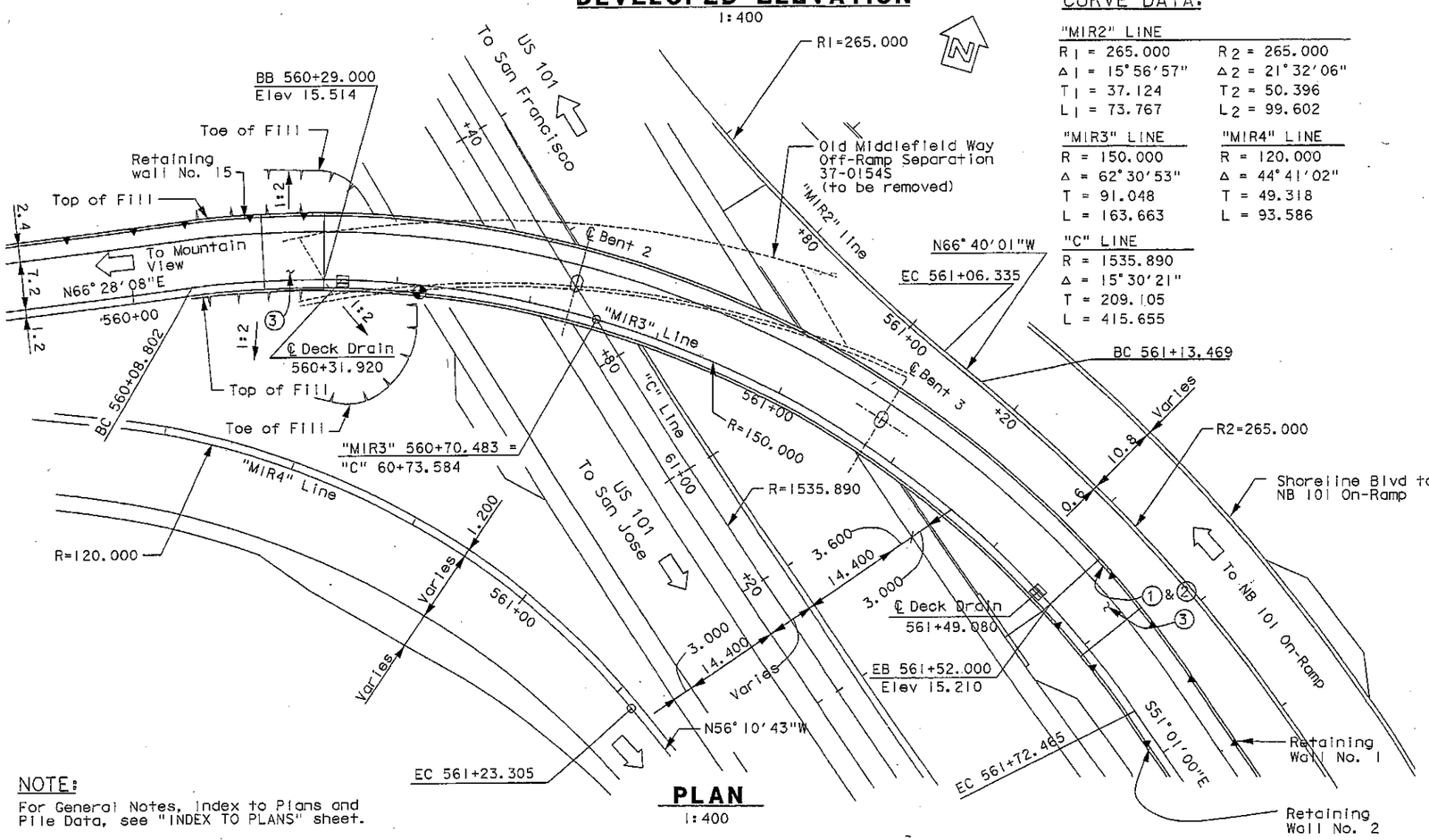


PROFILE GRADE

No Scale

DEVELOPED ELEVATION

1:400



PLAN

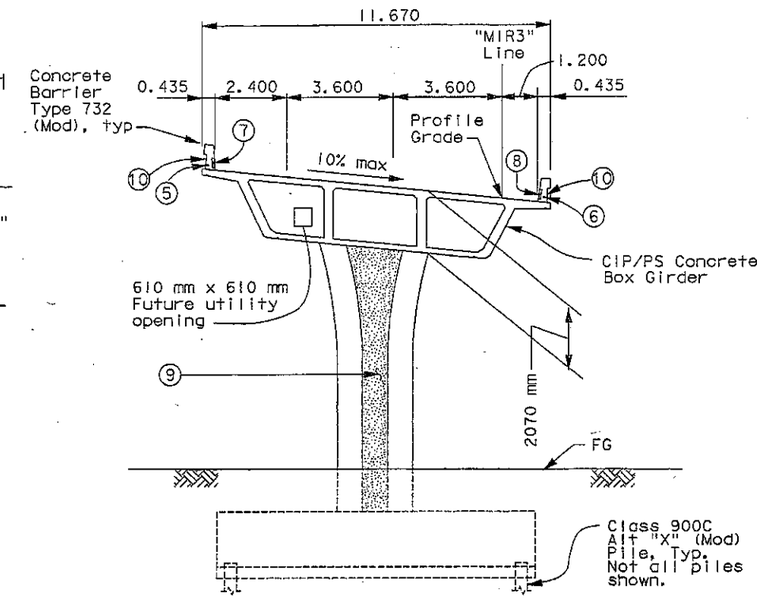
1:400

CURVE DATA:

"MIR2" LINE	
R_1 = 265.000	R_2 = 265.000
Δ_1 = 15°56'57"	Δ_2 = 21°32'06"
T_1 = 37.124	T_2 = 50.396
L_1 = 73.767	L_2 = 99.602

"MIR3" LINE	"MIR4" LINE
R = 150.000	R = 120.000
Δ = 62°30'53"	Δ = 44°41'02"
T = 91.048	T = 49.318
L = 163.663	L = 93.586

"C" LINE
R = 1535.890
Δ = 15°30'21"
T = 209.105
L = 415.655



TYPICAL SECTION

1:100

LEGEND:

1. Paint "North 101 Off-Ramp/ Route 101 Separation"
2. Paint Bridge No. "37-0573S"
3. Structure Approach Type N(9S)
4. Architectural Treatment, see "RETAINING WALL (MSE)" sheets
5. 53C Conduit, see Road Plans
6. 41C Conduit, see Road Plans
7. Type 9A Pull Box, see Road Plans
8. Type 9 Pull Box, see Road Plans
9. Architectural texture on both sides of column at each bent, see "ARCHITECTURAL DETAILS" sheet.
10. Architectural texture on barriers, see "ARCHITECTURAL DETAILS" sheet.

Point of minimum vertical clearance

Indicates Deck Drain Type D-2

Indicates direction of travel

NOTE:

For General Notes, Index to Plans and Pile Data, see "INDEX TO PLANS" sheet.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

3 ADDENDUM 3 – 10/22/02

DESIGN OVERSIGHT: Emil Vergara	DESIGN	BY M. Tolentin/M. Klein	CHECKED S. Ankeny	LOAD FACTOR DESIGN	LIVE LOADING: HS20-44 AND ALTERNATIVE AND PERMIT DESIGN LOAD		
SIGN OFF DATE 10/22/02	DETAILS	BY M. Tolentin/M. Klein	CHECKED C. Shenoy	LAYOUT	BY M. Tolentin	CHECKED C. Shenoy	
	QUANTITIES	BY M. Klein	CHECKED S. Ankeny	SPECIFICATIONS	BY V. Gouge	PLANS AND SPECS COMPARED	

DESIGN GENERAL PLAN SHEET (METRIC) (REV. 3/1/98)

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

F.K. Adikara
PROJECT ENGINEER

CU 04234
EA 438801

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

BRIDGE NO. 37-0573S
KP (MP) 78.9 (49.0)

N101 OFF-RAMP/ROUTE 101 SEPARATION

GENERAL PLAN

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY) 2/15/00 4/27/01 5/25/01 6/28/01 9/27/01 10/25/01 2/28/02 8/1/02

SHEET 1 OF 25

FILE => $REQUEST
TIME PLOTTED => $TIME$
$DATE$
USERNAME => $USER

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SCL	101.85	76.9, 79.2 R37.7, R38.7	855	

Caltrans Metric

REGISTERED CIVIL ENGINEER 8/1/02

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER FELIX K. ADIKARA No. C 39375 Exp. 12/31/05 CIVIL STATE OF CALIFORNIA

SANTA CLARA VALLEY
TRANSPORTATION AUTHORITY
3331 N. First Street
San Jose, CA 95134

MANNA CONSULTANTS, INC.
255 North Market Street, Suite 220
San Jose, CA 95110

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

GENERAL NOTES - LOAD FACTOR DESIGN

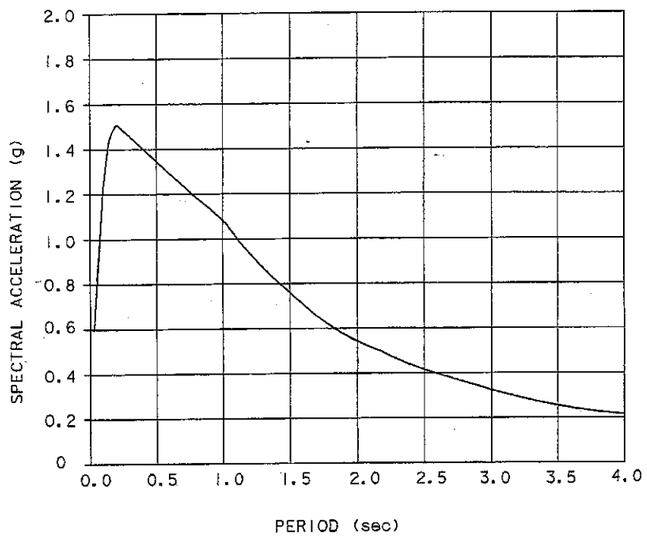
Design: Bridge Design Specifications (1983 AASHTO with Interims and Revisions by Caltrans)

Seismic Design: Caltrans Seismic Design Criteria (SDC), Version 1.1 July 1999

Dead Load: Includes 171 Kg/m2 for Future Wearing Surface

Live Loading: HS20-44 and alternative and permit design load

Seismic Loadings: Site Specific Acceleration Response Spectra Curve
Peak Rock Acceleration = 0.5 g



Reinforced Concrete:
f_y = 416 MPa
f'_c = 28 MPa
n = 8

Transverse Deck Slab (Working Stress Design)
f_s = 138 MPa
f_c = 8.3 MPa
n = 10

Prestressed Concrete: See "PRESTRESSING NOTES" on "GIRDER LAYOUT 2" sheet

Structural Steel: f_y = 250 MPa

STANDARD PLANS DATED JULY 1999

(And Revisions) * Revised Standard Plans

A10A	ABBREVIATIONS
A10B	SYMBOLS
A62C	LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL BRIDGE
B0-1	BRIDGE DETAILS
B0-3 *	BRIDGE DETAILS
B0-5	BRIDGE DETAILS
B0-13	BRIDGE DETAILS
B2-8	PILE DETAILS - CLASS 900 & CLASS 900C
B7-1	BOX GIRDER DETAILS
B7-6	DECK DRAINS TYPES D-1 AND D-2
B7-10	UTILITY OPENING BOX GIRDER
B8-5	CAST-IN-PLACE PRESTRESSED GIRDER DETAILS
B11-55 *	CONCRETE BARRIER TYPE 732
ES-6A *	LIGHTING STANDARDS-TYPES 15, 21 AND 22
ES-6B *	LIGHTING STANDARDS-TYPES 15 AND 21, BARRIER RAIL MOUNTED DETAILS
ES-9C	SIGNAL, LIGHTING AND ELECTRICAL SYSTEMS-ELECTRICAL DETAILS, STRUCTURE INSTALLATION
ES-9D	SIGNAL, LIGHTING AND ELECTRICAL SYSTEMS-ELECTRICAL DETAILS, STRUCTURE INSTALLATION

STANDARD PLAN SHEET NO.

DETAIL NO.

INDEX TO PLANS

SHEET NO.	TITLE
1	GENERAL PLAN
2	INDEX TO PLANS
3	DECK CONTOURS
4	FOUNDATION PLAN
5	ABUTMENT 1 LAYOUT
6	ABUTMENT 4 LAYOUT
7	ABUTMENT DETAILS 1
8	ABUTMENT DETAILS 2
9	BENT DETAILS 1
10	BENT DETAILS 2
11	BENT 2 FOOTING DETAILS
12	BENT 3 FOOTING DETAILS
13	TYPICAL SECTION
14	GIRDER LAYOUT 1
15	GIRDER LAYOUT 2
16	GIRDER REINFORCEMENT 1
17	GIRDER REINFORCEMENT 2
18	DECK DRAIN DETAILS
19	JOINT SEAL ASSEMBLY (MAXIMUM MOVEMENT RATING = 100 MM)
20	STRUCTURE APPROACH DRAINAGE DETAILS
21	STRUCTURE APPROACH TYPE N(9S)
22	ARCHITECTURAL DETAIL
23	LOG OF TEST BORING (AS-BUILT)
24	LOG OF TEST BORING (1 OF 2)
25	LOG OF TEST BORING (2 OF 2)

QUANTITIES

Bridge Removal	1	LS
Structure Excavation (Bridge)	218	M3
Structure Excavation (Type A)	608	M3
Structure Backfill (Bridge)	514	M3
Furnish Piling, Class 900C Alt "X" (Mod)	1938	M
Drive Piles, Class 900C Alt "X" (Mod)	127	EA
Prestressing, Cast-In-Place Concrete	1	LS
Seal Course Concrete	95	M
Structural Concrete (Bridge Footing)	419	M3
Structural Concrete (Bridge)	1161	M3
Structural Concrete, Approach Slab Type N(9S)	64	M3
Joint Seal Assembly (MR=80)	23	M
Bar Reinforcing Steel (Bridge)	217 884	KG
Miscellaneous Metals (Bridge)	1982	KG
Concrete Barrier (Type 732(Mod))	265	M

PILE DATA TABLE

Location	Pile Type	Design Loading (Service)	Nominal Resistance Compression	Nominal Resistance Tension	Design Tip Elevations	Specified Tip Elevations
Abut 1	Class 900C Alt "X" (Mod)	675 kN	1350 kN	0	-6 m (1) -5 m (3) -6 m (4)	-6 m
Bent 2	Class 900C Alt "X" (Mod)	725 kN	1450 kN	900 kN	-10 m (1) -10 m (2) -8 m (3) -10 m (4)	-10 m
Bent 3	Class 900C Alt "X" (Mod)	675 kN	1350 kN	750 kN	-10 m (1) -9 m (2) -8 m (3) -10 m (4)	-10 m
Abut 4	Class 900C Alt "X" (Mod)	850 kN	1700 kN	0	-13 m (1) -7 m (3) -13 m (4)	-13 m

Design tip elevations based on the following demands:
(1) Compression, (2) Tension, (3) Lateral loads, and (4) Liquefaction.

3 ADDENDUM 3 – 10/22/02

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

Emil Vergara
DESIGN OVERSIGHT
10/8/02
SIGN OFF DATE

	BY	CHECKED			
DESIGN	M. Tolentin/M. Klein	S. Ankeny	LOAD FACTOR DESIGN	LIVE LOADING: HS20-44 AND ALTERNATIVE AND PERMIT DESIGN LOAD	
DETAILS	M. Tolentin/M. Klein	C. Shenoy	LAYOUT	M. Tolentin	C. Shenoy
QUANTITIES	M. Klein	S. Ankeny	SPECIFICATIONS	V. Gouge	PLANS AND SPECS COMPARED

DESIGN GENERAL PLAN SHEET (METRIC) (REV. 3-14-99)

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

F.K. Adikara
PROJECT ENGINEER

CU 04234
EA 438801

BRIDGE NO. 37-0573S
KP (MP) 78.9 (49.0)

N101 OFF-RAMP/ROUTE 101 SEPARATION

INDEX TO PLANS

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY) 2/25/00 4/27/01 5/25/01 6/28/01 9/27/01 10/25/01 2/28/02 8/1/02

SHEET 2 OF 25

USERNAME => $USER $DATE$ TIME PLOTTED => $TIME$ FILE => $REQUEST

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SCL	101, 85	76.9, 79.2 R37.7, R38.7	857	

REGISTERED CIVIL ENGINEER 8/1/02

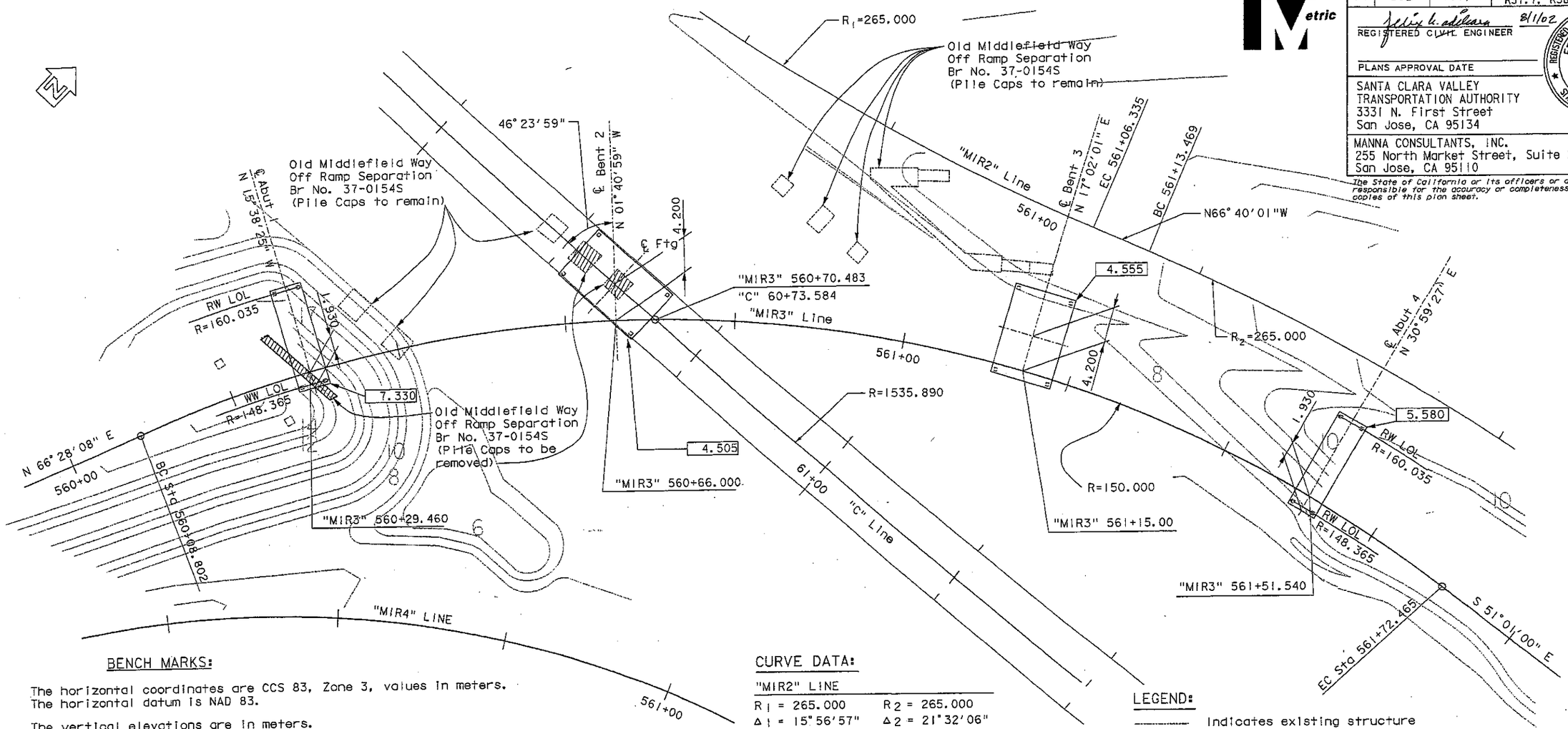
PLANS APPROVAL DATE

PROFESSIONAL ENGINEER FELIX K. ADIKARA No. C 39375 Exp. 12/31/05 CIVIL STATE OF CALIFORNIA

SANTA CLARA VALLEY TRANSPORTATION AUTHORITY
3331 N. First Street
San Jose, CA 95134

MANNA CONSULTANTS, INC.
255 North Market Street, Suite 220
San Jose, CA 95110

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



BENCH MARKS:

The horizontal coordinates are CCS 83, Zone 3, values in meters.
The horizontal datum is NAD 83.

The vertical elevations are in meters.
The vertical datum is NGVD 88.

B.M. No. PPC-003 El. 7.465

51 mm Brass disk with punch stamped "PPC-003" in the southeasterly sidewalk of La Avenida, 1.7 m southwest of face of curb, 24.4 m southwest of fire hydrant, 11.6 m northeast of light pole, and 5.2 m southeast of street lighting box. Located approximately 1206 m EB, "MIR3" line 561+52.000 at a bearing of S 80° 58' 41" E.

N = 602486.033; E = 1861080.125

B.M. No. PPC-006 El. 10.067

51 mm Brass disk with punch stamped "PPC-006" in the easterly sidewalk of Linda Vista Avenue, 1.3 m west of face of curb, 19.8 m northwest of fire hydrant, and 22.9 m southwest of street light pole. Located approximately 802 m from EB, "MIR3" line 561+52.000 at a bearing of S 52° 44' 07" E.

N = 602189.601; E = 1860527.180

CURVE DATA:

"MIR2" LINE

R1 = 265.000	R2 = 265.000
Δ1 = 15° 56' 57"	Δ2 = 21° 32' 06"
T1 = 37.124	T2 = 50.396
L1 = 73.767	L2 = 99.602

"MIR3" LINE	"MIR4" LINE
R = 150.000	R = 120.000
Δ = 62° 30' 53"	Δ = 44° 41' 02"
T = 91.048	T = 49.318
L = 163.663	L = 93.586

"C" LINE

R = 1535.890
Δ = 15° 30' 21"
T = 209.105
L = 415.655

LEGEND:

- Indicates existing structure
- Indicates new structure
- Indicates bottom of footing elevation.
- Indicates piles. Not all piles shown.
- Indicates existing pile caps to be removed.

NOTE:

See civil drawings for layout of utilities.

FOUNDATION PLAN

1 : 250

ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SHOWN

3 ADDENDUM 3 – 10/22/02

GEOTECHNICAL PROFESSIONAL APPROVAL DATE 8/1/02

DESIGN OVERSIGHT 10/8/02 SIGN OFF DATE

FOUNDATION PLAN SHEET METRIC NEW 5/4/99

SCALE:	VERT. DATUM	HORZ. DATUM
PHOTOGRAMMETRY AS OF: 08-12-99	ALIGNMENT TIES	
SURVEYED BY D. Aylsworth	DRAFTED BY	
FIELD CHECKED BY D. Aylsworth	CHECKED BY	

DESIGN	BY M. Tolentin/M. Klein	CHECKED	S. Ankeny
DETAILS	BY M. Tolentin/M. Klein	CHECKED	C. Shenoy
QUANTITIES	BY M. Klein	CHECKED	S. Ankeny

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

F.K. Adikara
PROJECT ENGINEER

CU 04234
EA 438801

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

BRIDGE NO. 37-0573S
KP (MP) 78.9 (49.0)

N101 OFF-RAMP/ROUTE 101 SEPARATION

FOUNDATION PLAN

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY) 12/15/00 4/27/01 5/31/01 6/25/01 9/21/01 10/31/01 2/28/02 8/1/02

SHEET 4 OF 25

FILE => $REQUEST
TIME PLOTTED => $TIME
DATE PLOTTED => $DATE
USERNAME => $USER

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SCL	101, 85	76.9, 79.2 R37.7, R38.7	858	

REGISTERED CIVIL ENGINEER 8/1/02

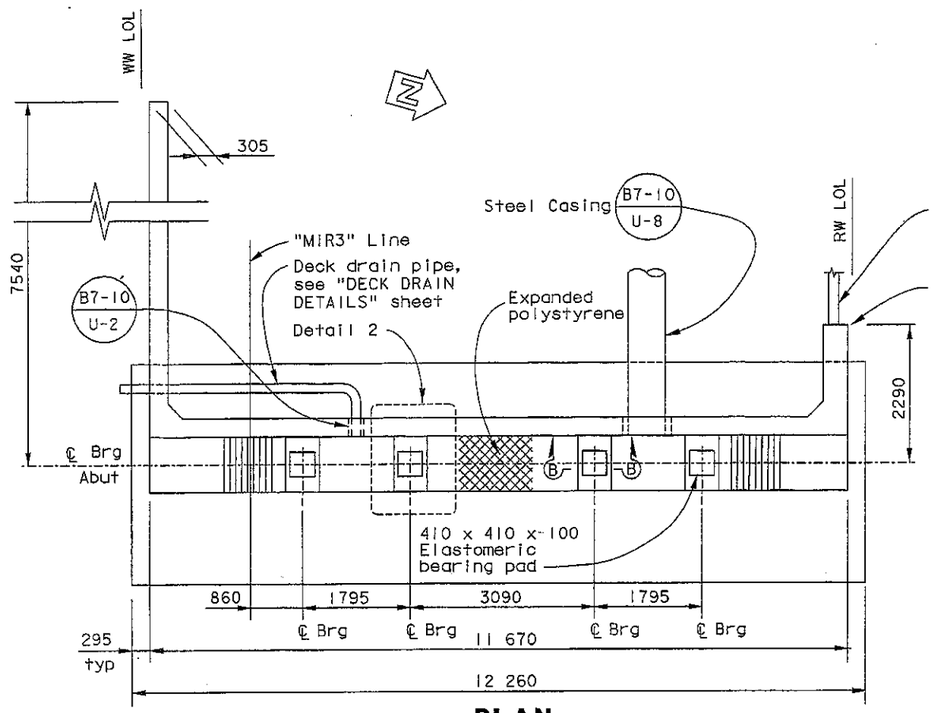
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER FELIX K. ADIKARA No. C 39375 Exp. 12/31/05 CIVIL STATE OF CALIFORNIA

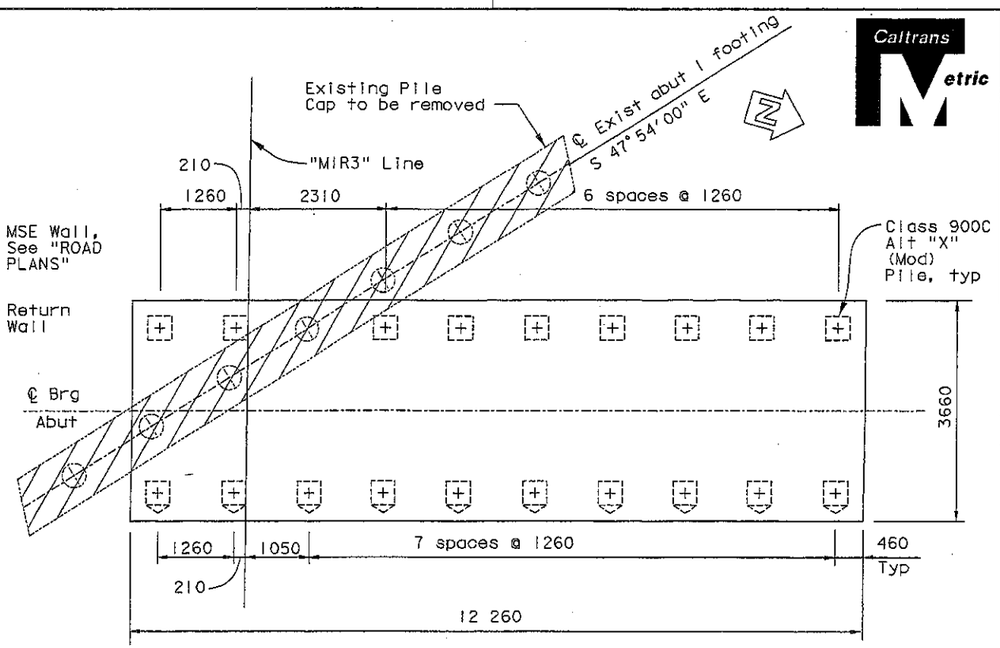
SANTA CLARA VALLEY TRANSPORTATION AUTHORITY
3331 N. First Street
San Jose, CA 95134

MANNA CONSULTANTS, INC.
255 North Market Street, Suite 220
San Jose, CA 95110

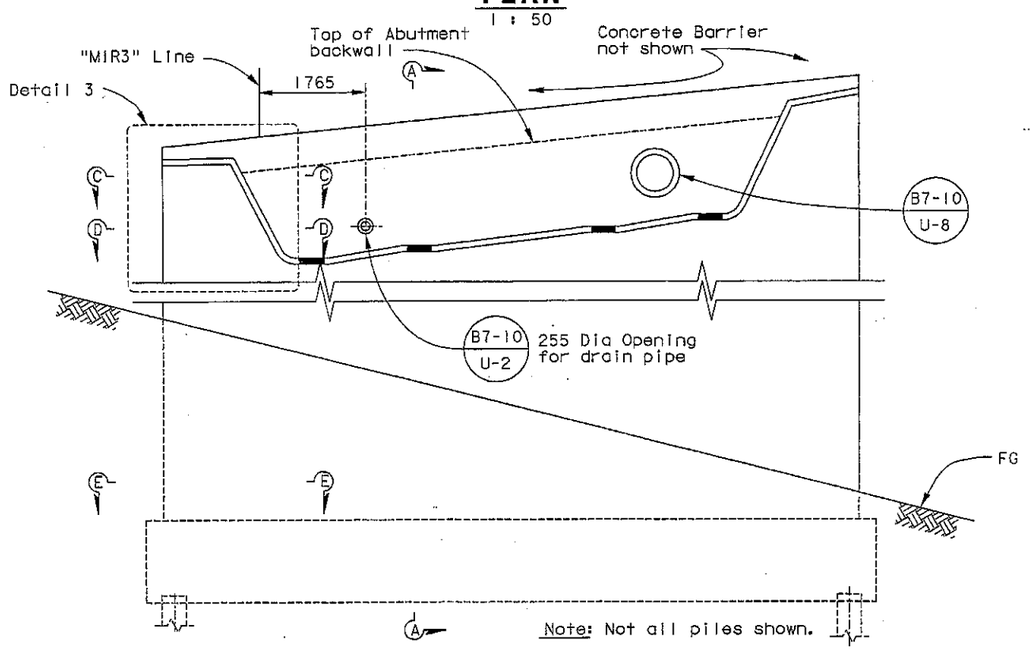
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



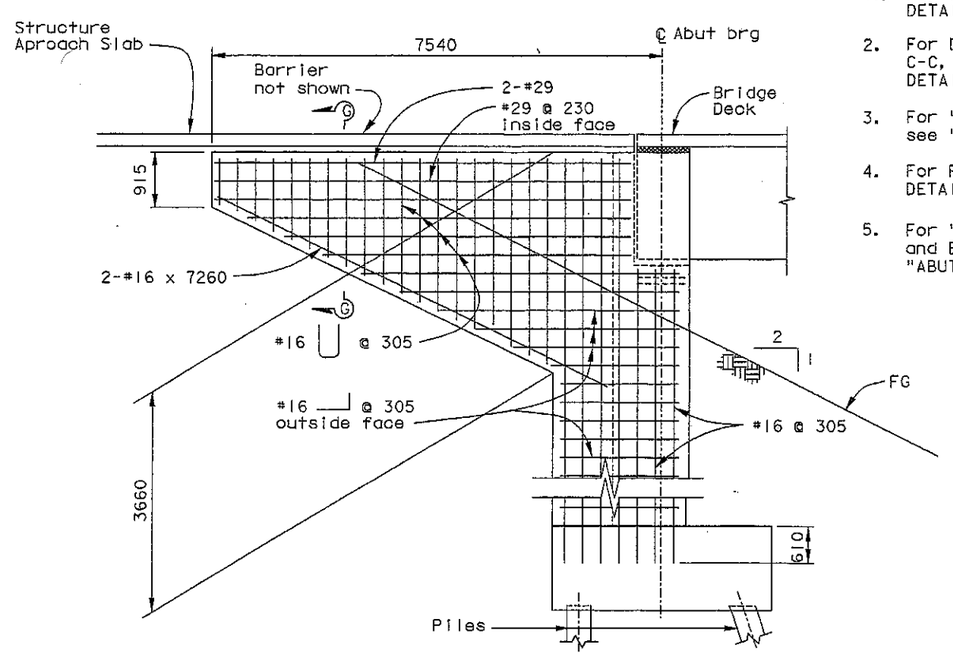
PLAN
1 : 50



PILE LAYOUT
1 : 50



ELEVATION
1 : 50



WINGWALL ELEVATION
1 : 50

LEGEND:

- Indicates existing structure
- Indicates new structure
- Indicates vertical pile
- Indicates 1:3 battered pile
- Indicates existing piles
- Indicates existing pile cap to be removed

NOTES:

1. For Section A-A, see "ABUTMENT DETAILS 1" sheet.
2. For Details 2 and 3 and Sections B-B, C-C, D-D, E-E and G-G, see "ABUTMENT DETAILS 2" sheet.
3. For "RETURN WALL ELEVATION", see "ABUTMENT 4 LAYOUT" sheet.
4. For Pile Details, see "ABUTMENT DETAILS 1" sheet.
5. For "Limits of Payment for Excavation and Backfill" at Abutment 1, see "ABUTMENT DETAILS 2" sheet.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

3 ADDENDUM 3 – 10/22/02

Emil Vergara	DESIGN	BY M. Tolentin/M. Klein	CHECKED S. Ankeny	LOAD FACTOR DESIGN	LIVE LOADING: HS20-44 AND ALTERNATIVE AND PERMIT DESIGN LOAD		
DESIGN OVERSIGHT	DETAILS	BY M. Tolentin/M. Klein	CHECKED C. Shenoy	LAYOUT	BY M. Tolentin	CHECKED C. Shenoy	PLANS AND SPECS COMPARED
SIGN OFF DATE 10/3/02	QUANTITIES	BY M. Klein	CHECKED S. Ankeny	SPECIFICATIONS	BY V. Gouge		

DESIGN GENERAL PLAN SHEET (METRIC) (REV. 3/1/99)

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

F.K. Adikara
PROJECT ENGINEER

CU 04234
EA 438801

BRIDGE NO. 37-0573S
KP (MP) 78.9 (49.0)

N101 OFF-RAMP/ROUTE 101 SEPARATION
ABUTMENT 1 LAYOUT

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY) 12/18/00 4/27/01 5/31/01 6/28/01 9/7/01 10/18/01 2/8/02 8/1/02

SHEET 5 OF 25

FILE => $REQUEST
TIME PLOTTED => $TIME$
$DATE$
USERNAME => $USER

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SCL	101.85	76.9, 79.2 R37.7, R38.7	860	

REGISTERED CIVIL ENGINEER 8/1/02

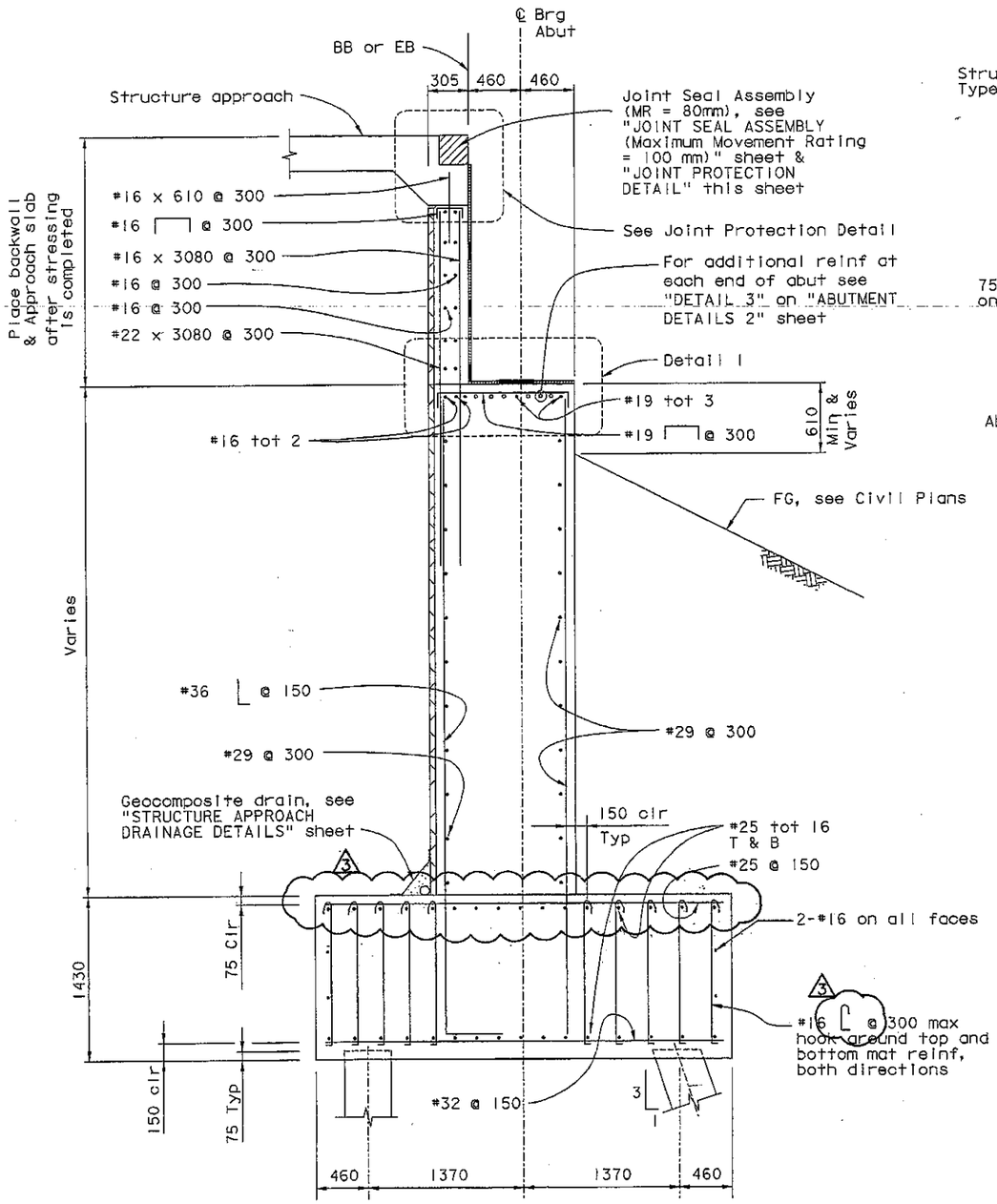
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER FELIX K. ADIKARA No. C 39375 Exp. 12/31/05 CIVIL STATE OF CALIFORNIA

SANTA CLARA VALLEY TRANSPORTATION AUTHORITY
3331 N. First Street
San Jose, CA 95134

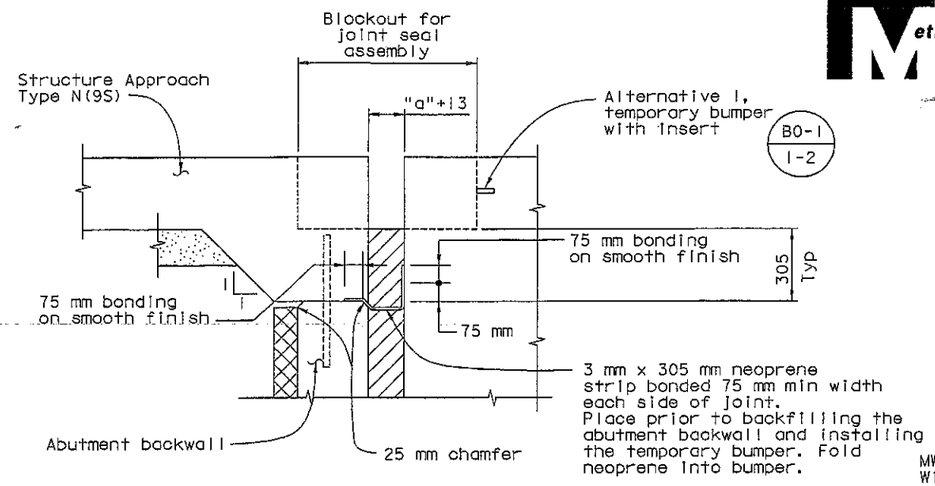
MANNA CONSULTANTS, INC.
255 North Market Street, Suite 220
San Jose, CA 95110

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



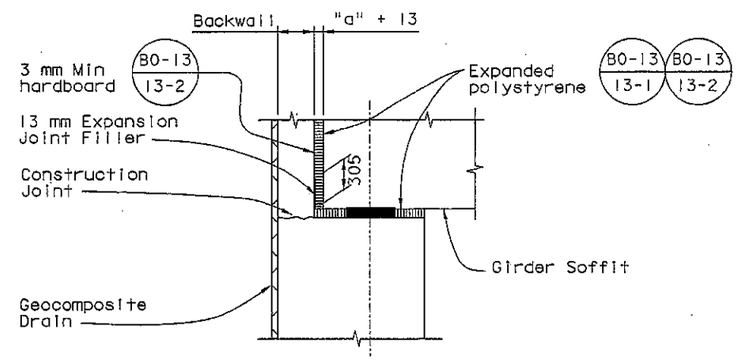
SECTION A-A

1:25



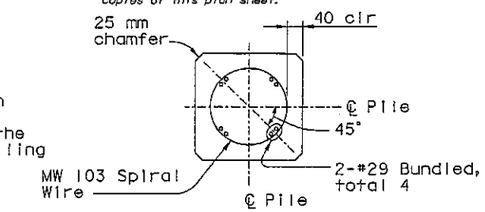
JOINT PROTECTION DETAIL

No Scale

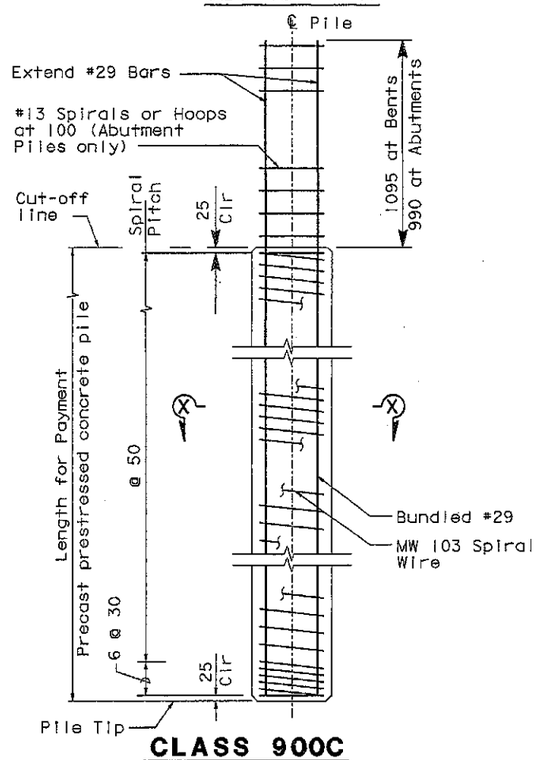


DETAIL 1

No Scale



SECTION X-X



CLASS 900C

ALTERNATIVE "X" (MOD)

B2-8

No Scale

PILE NOTES:

1. For pile tip elevation, see "INDEX TO PLANS" sheet.
2. No lap splices permitted in the longitudinal reinforcing.
3. For details and notes not shown, see Standard Plan B2-8.

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

3 ADDENDUM 3 – 10/22/02

Emil Vergara
DESIGN OVERSIGHT
10/8/02
SIGN OFF DATE

	BY	CHECKED		
DESIGN	M. Tolentin/M. Klein	S. Ankeny	LOAD FACTOR DESIGN	LIVE LOADING: HS20-44 AND ALTERNATIVE AND PERMIT DESIGN LOAD
DETAILS	M. Tolentin/M. Klein	C. Shenoy	LAYOUT	BY M. Tolentin / CHECKED C. Shenoy
QUANTITIES	M. Klein	S. Ankeny	SPECIFICATIONS	BY V. Gouge / PLANS AND SPECS COMPARED

DESIGN GENERAL PLAN SHEET (METRIC) (REV. 3/1/99)

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

F.K. Adikara
PROJECT ENGINEER

BRIDGE NO. 37-0573S
KP (MP) 78.9 (49.0)

N101 OFF-RAMP/ROUTE 101 SEPARATION

ABUTMENT DETAILS 1

CU 04234
EA 438801

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY): 12/18/00 4/27/01 6/25/01 6/28/01 9/7/01 10/15/01 2/8/02 8/1/02

SHEET 7 OF 25

USERNAME => $USER $DATE$ TIME PLOTTED => $TIME$ FILE => $REQUEST

GEOTECHNICAL SERVICES – ENGINEERING SERVICES

As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. It does not attest to the accuracy or validity of the information contained in the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.

DIST.	COUNTY	ROUTE	KILOMETER POST – TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SCL	101.85	76.9/79.2 R37.7/R38.7	876	

REGISTERED ENGINEER – CIVIL 8/1/02

MAIN STREET OVERCROSSING

LOG OF TEST BORINGS 1 OF 1

NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA

CU:04334 EA:038801 BRIDGE NO. 37-0573S

Caltrans Metric

04	SCL	101.85	TOTAL PROJECT R37.7 76.9 / R38.7 79.2 >>	NO. SHEETS 876

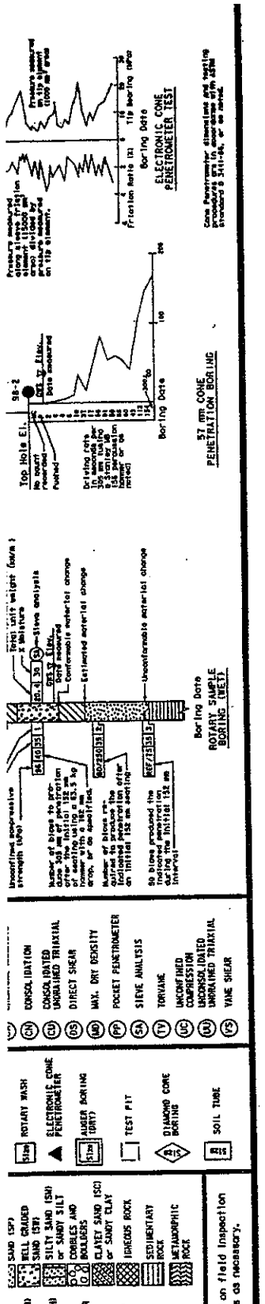
REGISTERED CIVIL ENGINEER 8/1/02

REGISTERED PROFESSIONAL ENGINEER CHALERM S. LIANG No. 35399 Exp. 9/30/03 CIVIL STATE OF CALIFORNIA

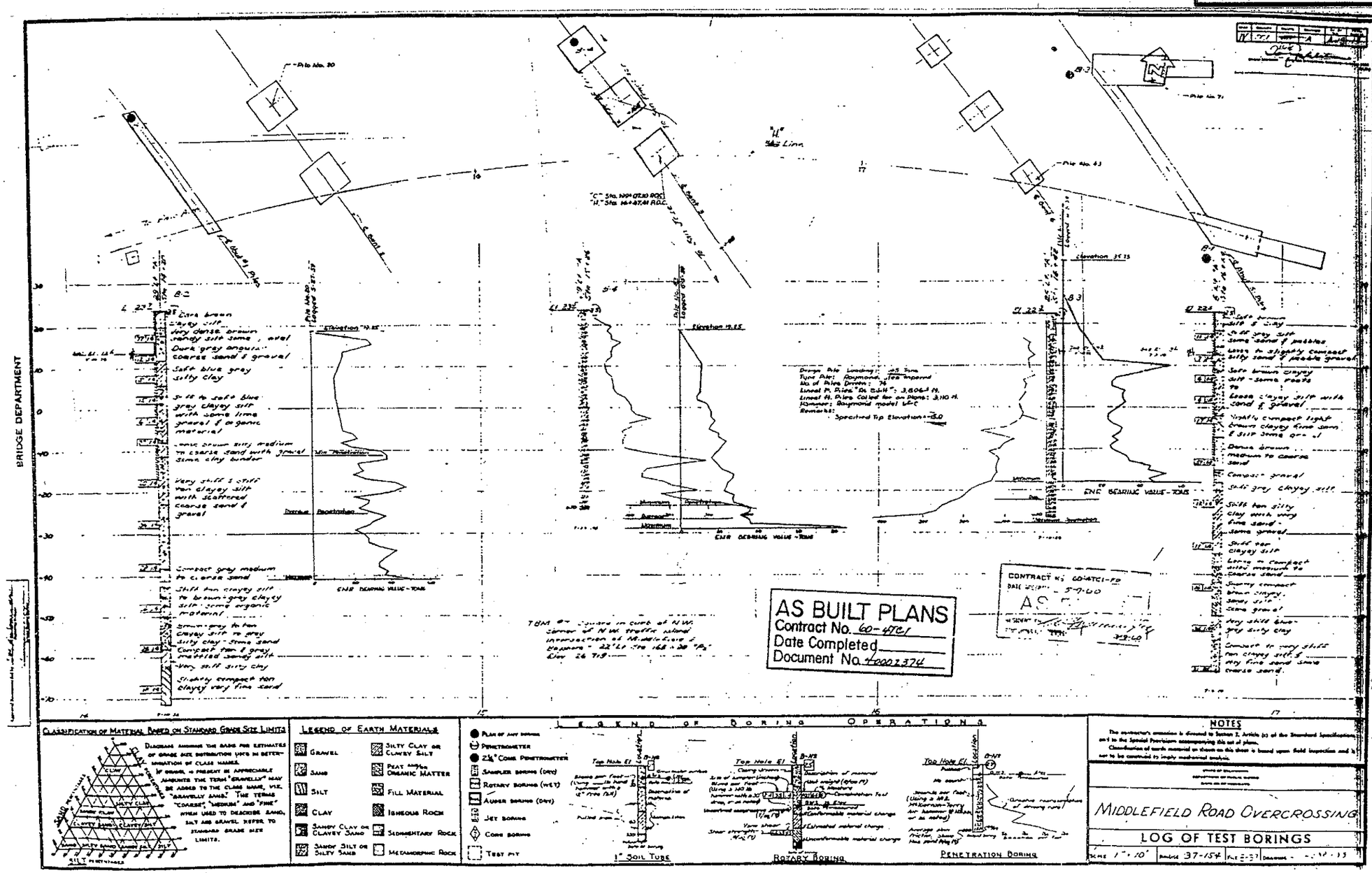
PLANS APPROVAL DATE

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

KLEINFELDER INC.
1362 RIDDER PARK DRIVE
SAN JOSE, CA 95131



NOTE: Visual classification of earth materials are based on field inspection and are confirmed or revised with laboratory test results as necessary.



CLASSIFICATION OF MATERIAL BASED ON STANDARD GRADE SIZE LIMITS

DIAGRAM AVAILABLE FOR ESTIMATES OF GRADE SIZE DISTRIBUTION UNDER DESIGNATION OF CLASS NAMES. IF GRAVEL IS PRESENT IN APPRECIABLE AMOUNTS THE TERM "GRAVELLY" MAY BE ADDED TO THE CLASS NAME, VIZ. "GRAVELLY SAND." THE TERMS "COARSE", "MEDIUM" AND "FINE" WHEN USED TO DESCRIBE SAND, SILT AND GRAVEL REFER TO STANDARD GRADE SIZE LIMITS.

LEGEND OF EARTH MATERIALS

Gravel; Sand; Silt; Clay; Sandy Clay or Clayey Sand; Sandy Silt or Silty Sand; Silty Clay or Clayey Silt; Peat and/or Organic Matter; Fill Material; Igneous Rock; Sedimentary Rock; Metamorphic Rock

LEGEND OF BORING OPERATIONS

Plan of any boring; Penetrometer; 2¼" Cone Penetrometer; Sampler boring (dry); Rotary boring (wet); Auger boring (dry); Jet boring; Core boring; Test pit

1" Soil Tube; Rotary Boring; Penetration Boring

NOTES

The contractor's attention is directed to Section 2, Article (c) of the Standard Specifications and to the Special Provisions accompanying this set of plans.
Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

MIDDLEFIELD ROAD OVERCROSSING

LOG OF TEST BORINGS

SCALE 1" = 10' | BRIDGE 37-1574 | FILE 5-57 | DRAWING - - - - - 13

Emil Vergara		DRAWN BY	
DESIGN OVERSIGHT		CHECKED BY	

FIELD INVESTIGATION BY:

PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

PROJECT ENGINEER

BRIDGE NO.

KILOMETER POST

N 101 OFF RAMP/ROUTE 101 SEPARATION

AS BUILT LOG OF TEST BORINGS

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SCL	101, 85	76.9 / 79.2 R37.7 / R38.7>>	877	

Caltrans Metric

REGISTERED CIVIL ENGINEER 8/1/02

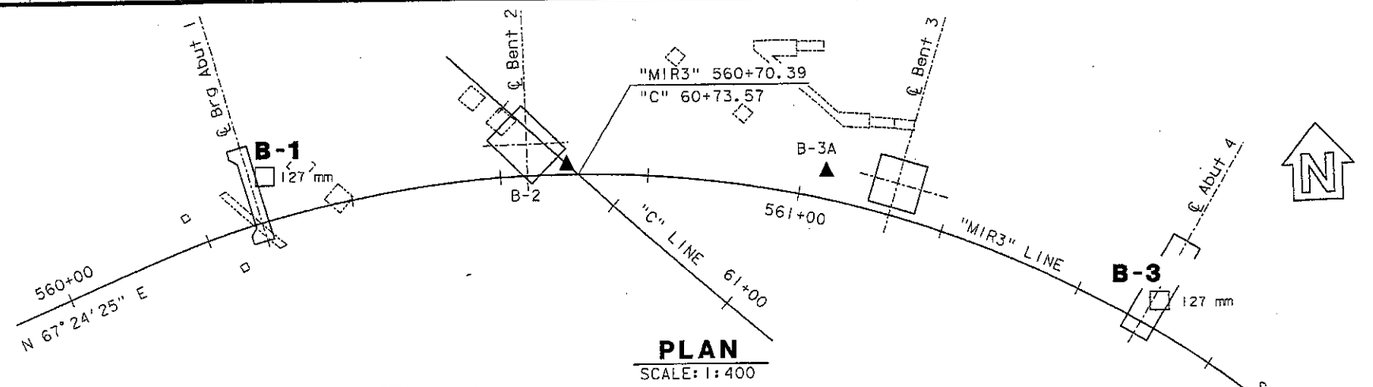
REGISTERED PROFESSIONAL ENGINEER CHALERM S. LIANG No. 35399 Exp. 9/30/03 CIVIL STATE OF CALIFORNIA

PLANS APPROVAL DATE

SANTA CLARA VALLEY TRANSPORTATION AUTHORITY
3331 N. FIRST STREET
SAN JOSE, CA 95134

KLEINFELDER INC.
1362 RIDDER PARK DRIVE
SAN JOSE, CA 95131

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



PLAN

SCALE: 1:400

BENCH MARKS:

PPC-003 ELEVATION = 7.465 N = 602486.033; E = 1861080.125

51mm Brass disk with punch stamped "PPC-003" in the southeasterly sidewalk of La Avenida, 1.7 m southwest of face of curb, 24.4 m southwest of fire hydrant, 11.6 m northeast of light pole, and 5.2 m southeast of street lighting box. Located approximately 1,206 m from EB, "MIR3" line 561+52.000 at a bearing of S 80° 58' 41" E.

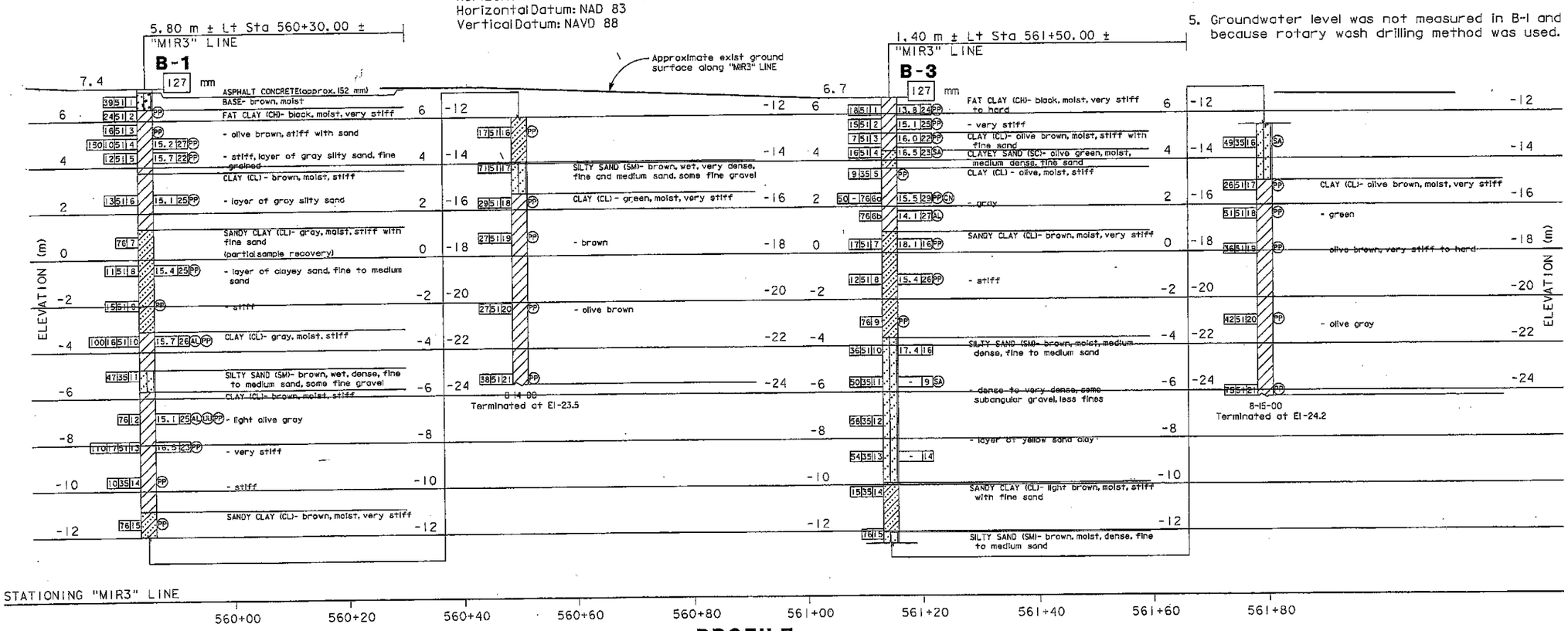
PPC-006 ELEVATION = 10.067 N = 602189.601; E = 1860527.180

51mm Brass disk with punch stamped "PPC-006" in the easterly sidewalk of Linda Vista Avenue, 1.3 m west of face of curb, 19.8 m northwest of fire hydrant, and 22.9 m southwest of street light pole. Located approximately 802 m from EB, "MIR3" line 561+52.000 at a bearing of S 52° 44' 07" E.

Horizontal Coordinates are CCS 83, Zone 3
Horizontal Datum: NAD 83
Vertical Datum: NAVD 88

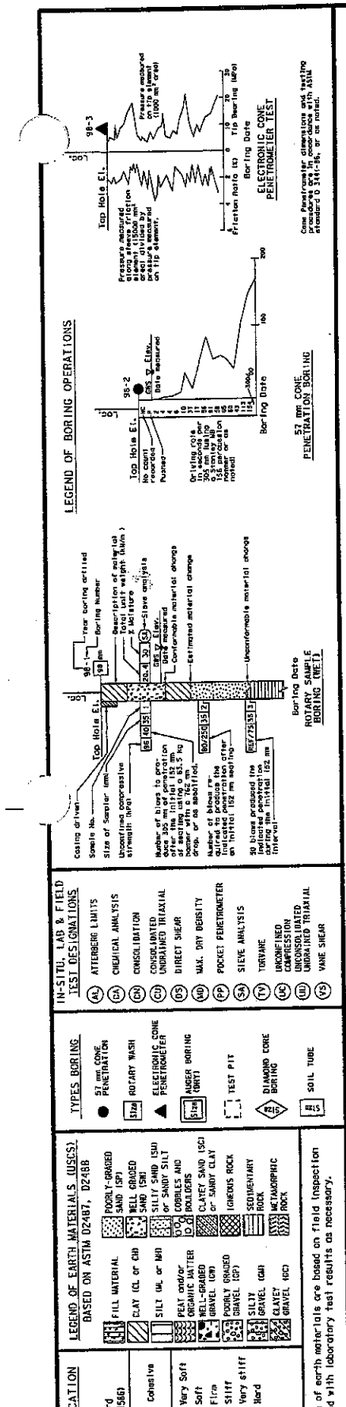
Notes:

1. 51mm samples were taken using a modified California split-barrel sampler with an inside diameter (I.D.) of 51mm and an outside diameter (O.D.) of 64 mm.
2. 35 mm samples were taken using a standard penetration split spoon sampler with an inside diameter (I.D.) of 35 mm and an outside diameter (O.D.) of 51mm.
3. 76 mm samples were taken using a Shelby Tube sampler with an outside diameter (O.D.) of 76 mm.
4. A 623 N safety hammer on a rope and cathead system with a 760 mm drop was used to advance the sampler.
5. Groundwater level was not measured in B-1 and B-3 because rotary wash drilling method was used.



PROFILE

HORIZONTAL SCALE: 1:400
VERTICAL SCALE: 1:100



3 ADDENDUM 3 — 10/22/02

Emil Verdugo DESIGN OVERSIGHT 10/8/02 SIGN OFF DATE	DRAWN BY A. Sanchez	FIELD INVESTIGATION BY: M. Briseno	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
	CHECKED BY Y. Awad		C. Liang PROJECT ENGINEER

BRIDGE NO. 37-0573S
KILOMETER POST 78.8

N 101 OFF RAMP/ROUTE 101 SEPARATION

LOG OF TEST BORINGS (1 OF 2)

CU 04234
EA 438801

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES (PRELIMINARY STAGE ONLY) 8/5/01 2/28/02 8/01/02

SHEET 24 OF 25

ORIGINAL SCALE IN MILLIMETERS

USERNAME => $USER DATE PLOTTED => $DATE TIME PLOTTED => $TIME

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SCL	101, 85	76.9 / 79.2 R37.7 / R38.7>>	878	

Caltrans Metric

REGISTERED CIVIL ENGINEER 8/1/02

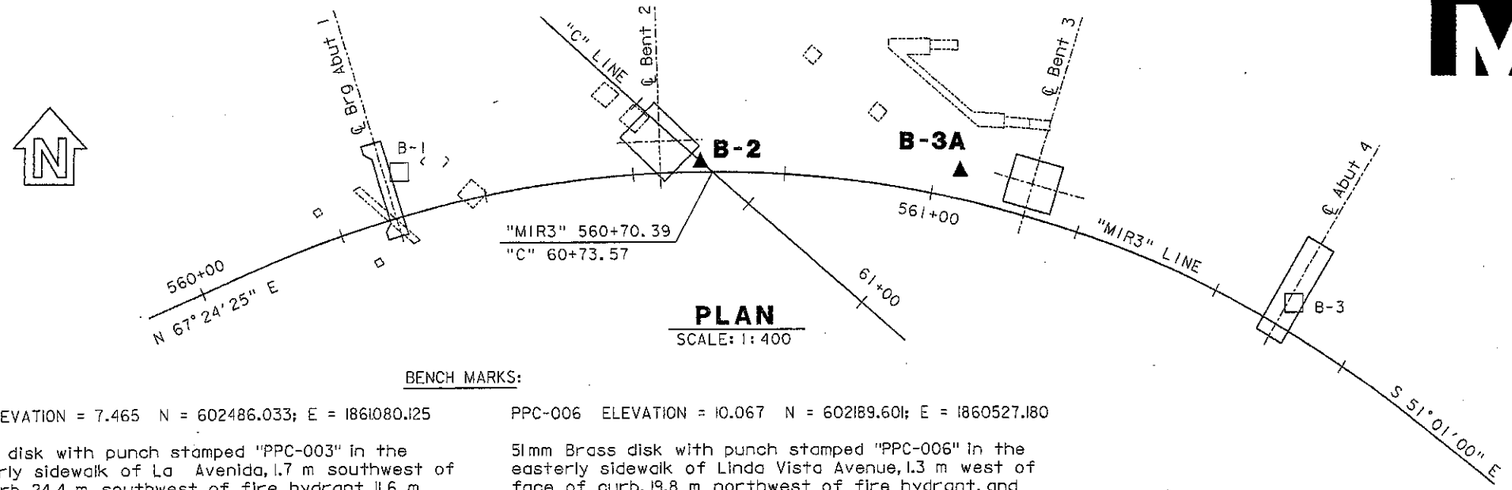
REGISTERED PROFESSIONAL ENGINEER CHALERM S. LIANG No. 35399 Exp. 9/30/03 CIVIL STATE OF CALIFORNIA

PLANS APPROVAL DATE

SANTA CLARA VALLEY
TRANSPORTATION AUTHORITY
3331 N. FIRST STREET
SAN JOSE, CA 95134

KLEINFELDER INC.
1362 RIDDER PARK DRIVE
SAN JOSE, CA 95131

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



PLAN
SCALE: 1:400

BENCH MARKS:

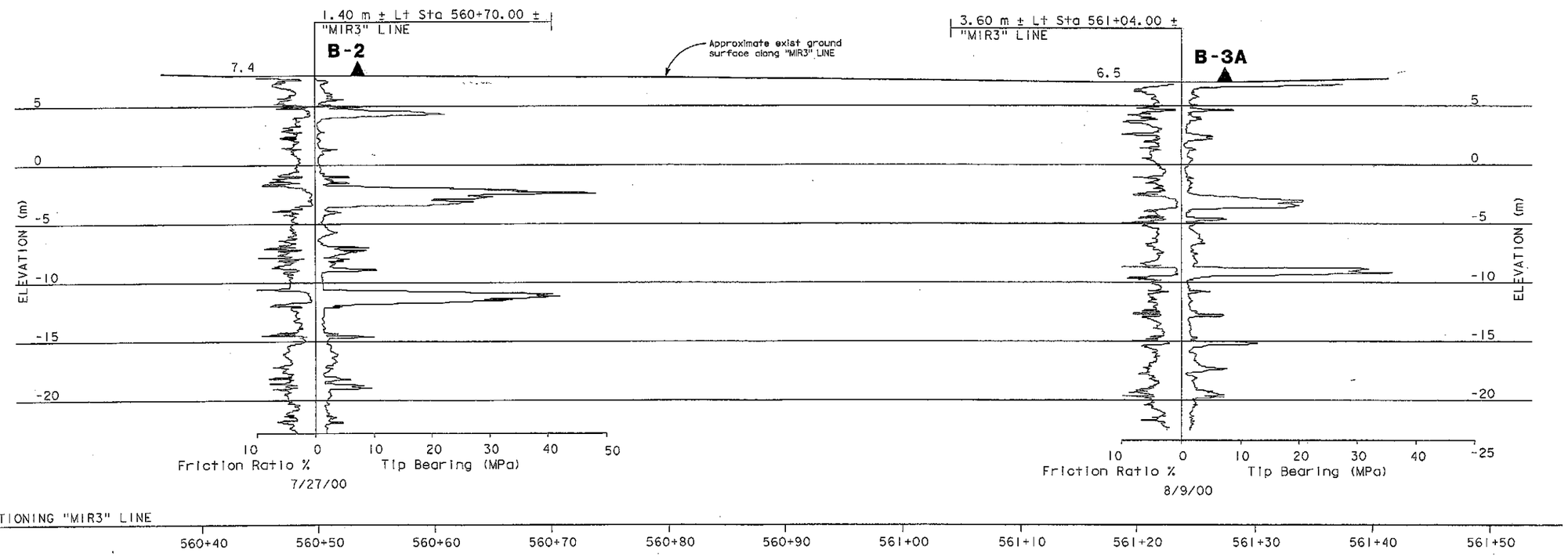
PPC-003 ELEVATION = 7.465 N = 602486.033; E = 1861080.125

51mm Brass disk with punch stamped "PPC-003" in the southeasterly sidewalk of La Avenida, 1.7 m southwest of face of curb, 24.4 m southwest of fire hydrant, 11.6 m northeast of light pole, and 5.2 m southeast of street lighting box. Located approximately 1,206 m from EB, "MIR3" line 561+52.000 at a bearing of S 80° 58' 41" E.

PPC-006 ELEVATION = 10.067 N = 602189.601; E = 1860527.180

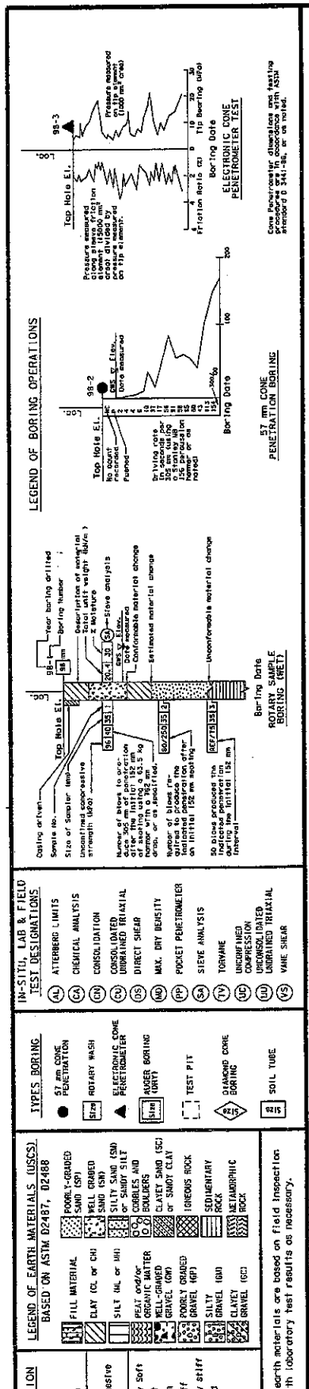
51mm Brass disk with punch stamped "PPC-006" in the easterly sidewalk of Linda Vista Avenue, 1.3 m west of face of curb, 19.8 m northwest of fire hydrant, and 22.9 m southwest of street light pole. Located approximately 802 m from EB, "MIR3" line 561+52.000 at a bearing of S 52° 44' 07" E.

Horizontal Coordinates are CCS 83, Zone 3
Horizontal Datum: NAD 83
Vertical Datum: NAVD 88



PROFILE
HORIZONTAL SCALE: 1:200
VERTICAL SCALE: 1:200

3 ADDENDUM 3 – 10/22/02



NOTE: Visual classification of earth materials are based on field inspection and are performed or revised with laboratory test results as necessary.

Emil Vergara DESIGN OVERSIGHT 10/8/02 SIGN OFF DATE	DRAWN BY A. Sanchez	FIELD INVESTIGATION BY: M. Briseno	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
	CHECKED BY Y. Awad		

C. Liang
PROJECT ENGINEER

BRIDGE NO. 37-0573S
KILOMETER POST 78.8

N 101 OFF RAMP/ROUTE 101 SEPARATION
LOG OF TEST BORINGS (2 OF 2)

CU 04234
EA 438801

SHEET 25 OF 25

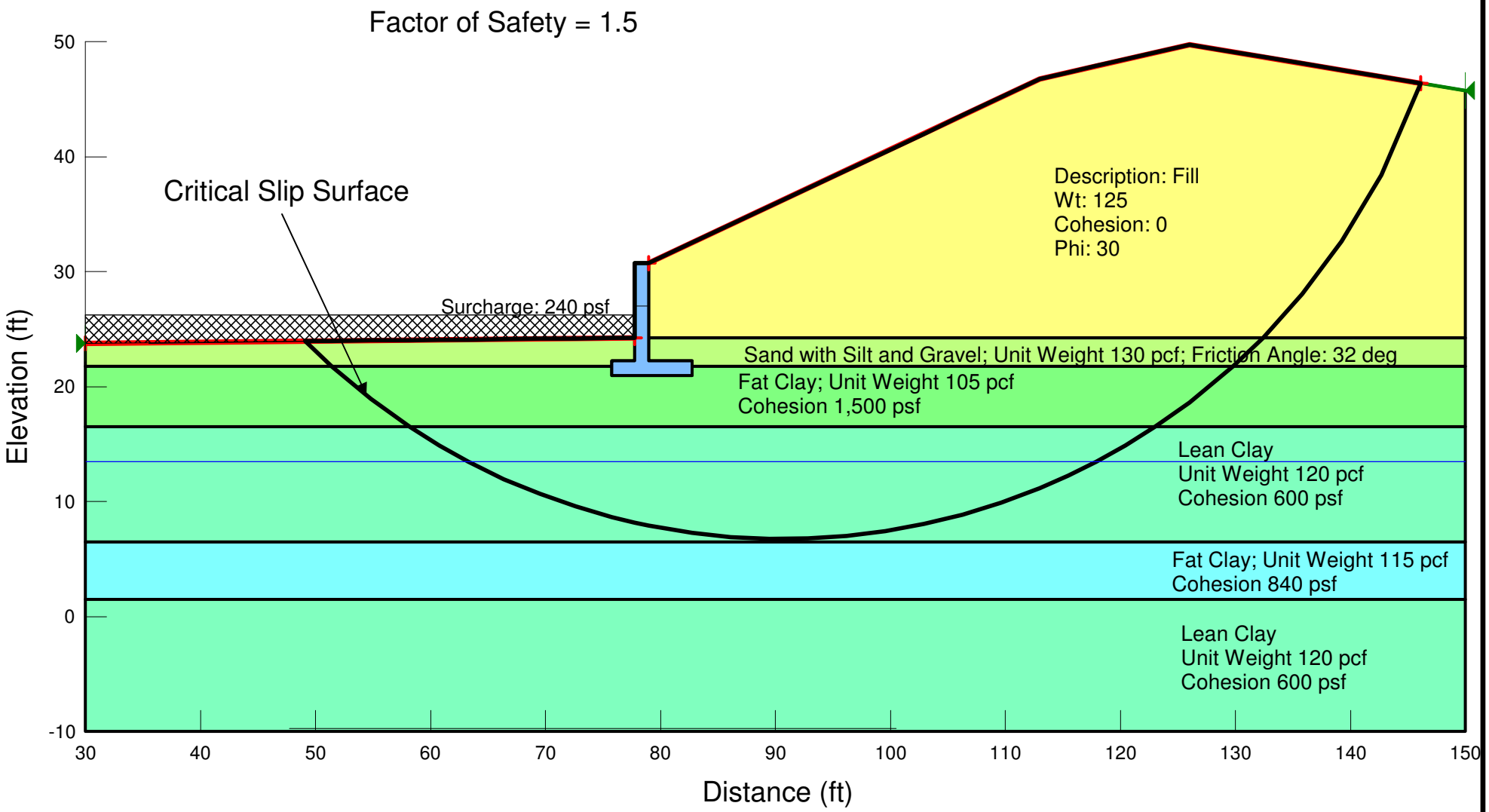
REVISION DATES (PRELIMINARY STAGE ONLY)

DISREGARD PRINTS BEARING EARLIER REVISION DATES

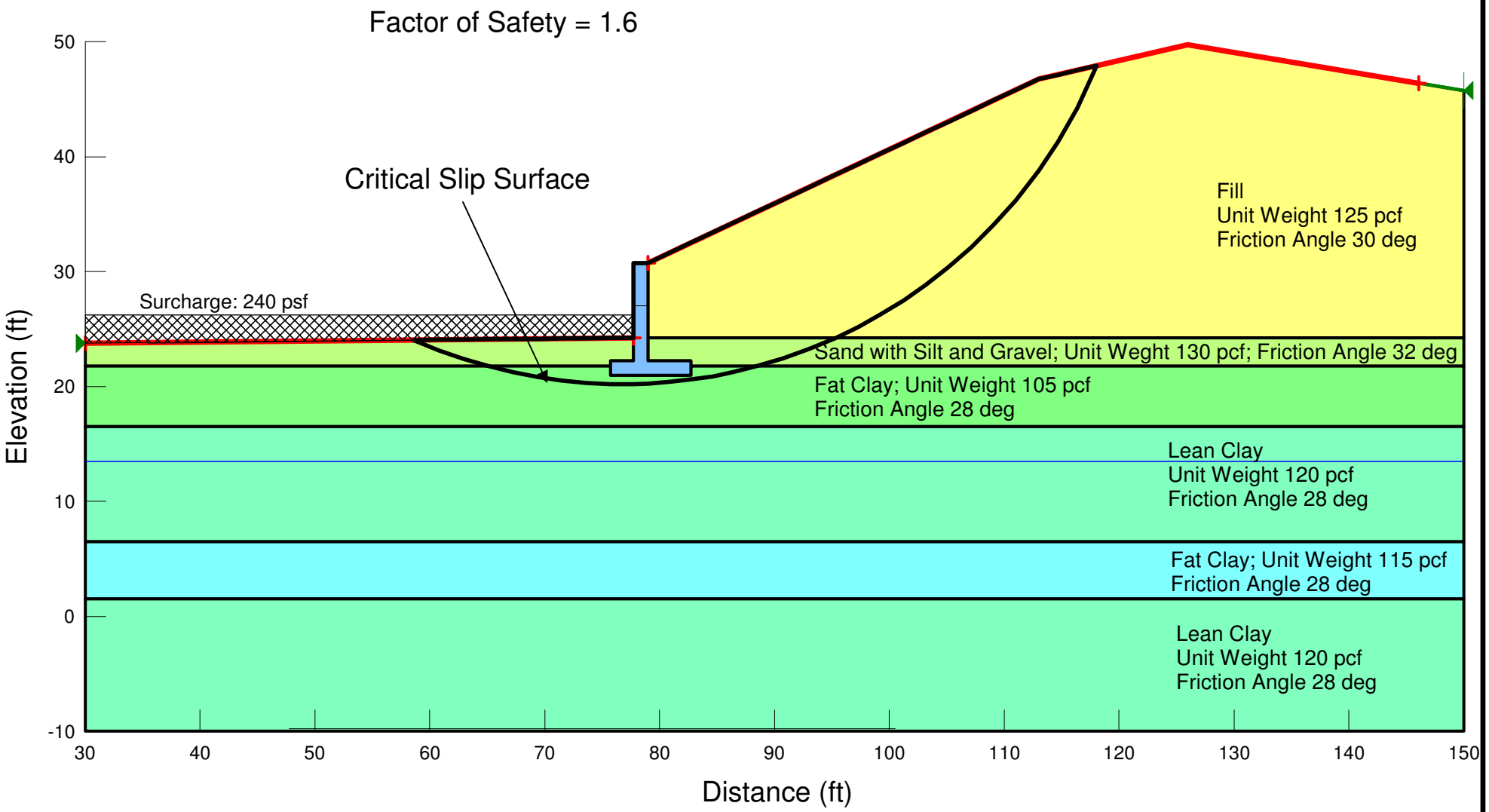
ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS 0 10 20 30 40 50 60 70 80 90 100

CIVIL LOG OF TEST BORINGS SHEET (METRIC) (REV. 2/1/00)

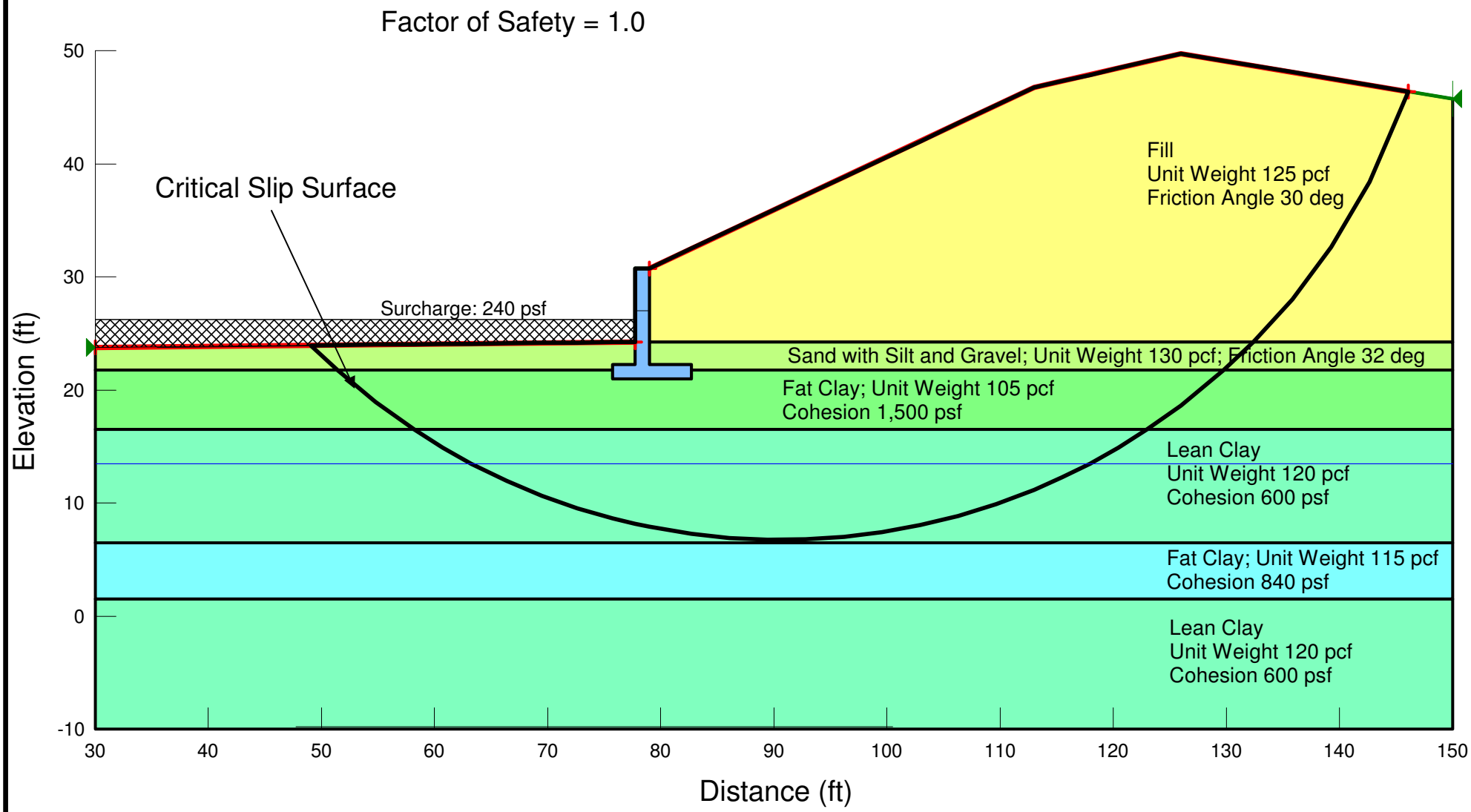
TIME PLOTTED => $TIME
DATE PLOTTED => $DATE
USERNAME => $USER



URS 55 South Market Street, Suite 1500 San Jose, CA 95113 PHONE: (408) 297-9585 FAX: (408) 297-6962	PROJECT No 28649951	CALCULATED BY M. Thummaluru	**U.S.101 Auxiliary Lanes Project** **Mountain View and Palo Alto, CA** SLOPE STABILITY ANALYSIS END OF CONSTRUCTION RETAINING WALL #1	**FIGURE** **F-1**
	Date February 12, 2010	CHECKED BY Stephen Huang		



URS 55 South Market Street, Suite 1500 San Jose, CA 95113 PHONE: (408) 297-9585 FAX: (408) 297-6962	PROJECT No 28649951	CALCULATED BY M. Thummaluru	**U.S.101 Auxiliary Lanes Project** **Mountain View and Palo Alto, CA** SLOPE STABILITY ANALYSIS LONG TERM CONDITION RETAINING WALL #1	**FIGURE** **F-2**
	Date February 12, 2009	CHECKED BY Stephen Huang		



URS
55 South Market Street,
Suite 1500
San Jose, CA 95113
PHONE: (408) 297-9585
FAX: (408) 297-6962

PROJECT No 28649951	CALCULATED BY M. Thummaluru	**U.S.101 Auxiliary Lanes Project**	**FIGURE**
Date February 12, 2009	CHECKED BY Stephen Huang	**Mountain View and Palo Alto, CA** SLOPE STABILITY ANALYSIS PSUEDO STATIC CONDITION RETAINING WALL #1	**F-3**

04-SCL-101
PM 48.6/52.2
EA 4A330

US 101 Auxiliary Lanes Project
Between Oregon Expressway and Shoreline Boulevard
Santa Clara County, California

CHECK PRINT/DOC REVIEW		
URS Corporation		
	NAME	DATE
DESIGNER/ORIGINATOR		12/03/08
CHECKED BY		12/03/08
VERIFIED BY		12/3/08
BACK-CHECKED BY		12/4/08

Final Location Hydraulic Study Report

Prepared for:

VTA and Caltrans

Prepared by:

WRECO

December 2008

04-SCL-101
PM 48.6/52.2
EA 4A330

US 101 Auxiliary Lanes Project
Between Oregon Expressway and Shoreline Boulevard
Santa Clara County, California

Final Location Hydraulic Study Report

Prepared for:

VTA and Caltrans

Prepared by:

WRECO

December 2008

04-SCL-101
PM 48.6/52.2
EA 4A330

US 101 Auxiliary Lanes Project
Between Oregon Expressway and Shoreline Boulevard
Santa Clara County, California

Final Location Hydraulic Study Report

Submitted to:
Valley Transportation Authority
California Department of Transportation

This report has been prepared by or under the supervision of the following Registered Engineer. The Registered Civil Engineer attests to the technical information contained herein and has judged the qualifications of any technical specialists providing engineering data upon which recommendations, conclusions, and decisions are based.

Han-Bin Liang, Ph.D., P.E.
Registered Civil Engineer

12/4/2008
Date

REGISTERED PROFESSIONAL ENGINEER
HAN-BIN LIANG
C 48404
EXP. 6/30/2010
CIVIL
STATE OF CALIFORNIA

December 2008

Table of Contents

Executive Summary iii
Acronyms v
1 General Description 1
1.1 Project Description 1
1.1.1 No-Build Alternative 1
1.1.2 Build Alternative 1
1.2 Need for Project 2
1.3 Project History 2
1.4 Creek, Stream, and River Crossings 2
1.5 Bridge Numbers 2
1.6 Geographical References 4
1.7 Traffic 4
1.8 Traffic Interruptions for Base Flood (Q_{100}) 5
1.9 Description of Creek Crossings 5
1.9.1 Matadero Creek 5
1.9.2 Adobe Creek 6
1.9.3 Permanente Creek 7
2 Hydrologic and Hydraulic Data 11
2.1 Hydrologic Stability 11
2.2 Federal Emergency Management Agency Data 11
2.3 Map of Floodplain 12
2.4 Santa Clara Valley Water District Data 15
2.5 Design Discharge for the Hydraulic Assessment 15
2.6 Hydraulic Assessment 16
2.6.1 Design Tool 16
2.6.2 Cross Sectional Data 16
2.6.3 Skew 17
2.6.4 Manning's 'n' 17
2.6.5 Expansion and Contraction Coefficient 17
2.6.6 Existing Condition 17
2.6.7 Proposed Bridge/Culvert Configuration 19
2.6.8 Proposed Condition 20
3 Project Evaluation 22
3.1 Risk Associated with Implementation of the Action 22
3.2 Impacts on Natural and Beneficial Floodplain Values 24
3.3 Support of Probable Incompatible Floodplain Development 25
3.4 Measures to Minimize Floodplain Impacts Associated with the Action 25
3.5 Measures to Restore and Preserve the Natural and Beneficial Floodplain Values Impacted by this Action 25
3.6 Practicability of Alternatives to any Significant Encroachments 26
3.7 Practicability of Alternatives to Any Longitudinal Encroachments 26
References 27

Figures

Figure 1: Project Location 8
Figure 2: Project Vicinity 9
Figure 3: Project Vicinity, Aerial View 10
Figure 4: FEMA FIRM superimposed to Google Earth Aerial Image 14

Tables

Table 1: General Specifications for Existing Adobe Creek Bridge 3
Table 2: General Specifications for Existing Matadero Creek Bridge 3
Table 3: General Specifications for Existing Permanente Creek Cross Culvert 3
Table 4: Traffic Volumes in Project Location 4
Table 5: Traffic Volume of Local Streets with US 101 Interchange, 1999 5
Table 6: Current and Projected Population Increase 11
Table 7: FEMA Flood Insurance Study Hydrologic Data 12
Table 8: Santa Clara Valley Water District Hydrologic Data 15
Table 9: Existing Conditions, Matadero Creek 18
Table 10: Existing Conditions, Adobe Creek 18
Table 11: Existing Conditions, Permanente Creek 18
Table 12: Flow Rates for the Proposed Condition 20
Table 13: Proposed Conditions, Matadero Creek 20
Table 14: Proposed Conditions, Adobe Creek 21
Table 15: Proposed Conditions, Permanente Creek 21
Table 16: Increase in Impervious Areas 24

Appendices

Appendix A Hydraulic Analysis, Existing Condition A-1
Appendix A.1 Matadero Creek, Existing Condition A-1
Appendix A.2 Adobe Creek, Existing Condition A-7
Appendix A.3 Permanente Creek, Existing Condition A-13
Appendix B Hydraulic Analysis, Proposed Conditions B-1
Appendix B.1 Matadero Creek, Proposed Condition B-2
Appendix B.2 Adobe Creek, Proposed Condition B-8
Appendix B.3 Permanente Creek, Proposed Condition B-14
Appendix C FEMA Floodplain Map C-1
Appendix D Project Photographs D-1
Appendix E Historic Flood Event Information E-1

Executive Summary

The purpose of the US Highway 101 Auxiliary Lanes Project (Project) is to improve highway traffic congestion caused by traffic weaving and merging on US Highway 101 (US 101), specifically between the Oregon Expressway and Shoreline Boulevard. The Project proposes adding a span of 3.2 miles of new auxiliary lanes along US 101, through the Cities of Palo Alto and Mountain View, in Santa Clara County, California. A No-Build Alternative and Build Alternative are considered for this Project.

Matadero Creek, Adobe Creek/Barron Creek, and Permanente Creek are located within the Project limits, and each creek crosses US 101 within the Project limits. The Matadero Creek Bridge is a two-span bridge with a center pier wall; the Adobe/Barron Creek Bridge is a clear span bridge, and the Permanente Creek culvert is a single 12 foot span by 12 foot high reinforced concrete box culvert. General drainage improvements would require culvert extensions and bridge widening to accommodate the widened highway. New longitudinal drainage systems would be proposed in front of the proposed retaining walls. All proposed drainage related improvements would not alter the existing drainage pattern.

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) for the Cities of Palo Alto and Mountain View shows that approximately two-thirds of the Project area is in the delineated 100-year (base) floodplains. As delineated on the FIRM, most of the areas in the vicinity of proposed Project are categorized as Zone AE floodplains. Zone AE floodplain is caused by the potential overtopping of the Bayfront levees during the extreme high tide event. The Matadero Creek and Adobe Creek/Barron Creek Crossing with US 101 are within the Zone AE floodplain. The existing US 101 median barriers comprise concrete barriers and thrie-beam barriers within the Zone AE floodplain area. However, to date, there is no recorded flooding in the area due to failed levees along the San Francisco Bay shoreline.

Other designated floodplains within the Project limits include Zone AH and Zone AO. The Zone AH floodplain is an area of shallow flooding less than 3 feet in depth during a 100-year storm event. In the Project area, the Zone AH floodplain is caused by overtopping flow from San Francisquito Creek during a 100-year storm event. Most of the existing floodplains for Zone AH are also within Zone AE.

Historically, US 101 have been flooded in this area due to capacity issues of San Francisquito Creek. The historic flooding event was recorded in February 1998, which was reported to closely resemble to the floodplain areas delineated in the FEMA FIRM. The overtopping flow from San Francisquito Creek flooded the US 101 travelway and ponded at the low point near the Oregon Expressway/US 101 Interchange. Per Caltrans' record, the southbound lanes were closed during the flood event. Matadero and Adobe/Barron Creeks did not experience overtopping during this flood event.

The Project would not involve modifying San Francisquito Creek, which is outside of the Project limits. The proposed modification of existing barriers in the flooded area would

be designed to prevent flow obstruction and maintain the existing flooding pattern, by using thrie-beam barriers along the southbound edge of shoulders. Overall, the proposed highway design modifications within the Zone AE and Zone AH floodplain areas are considered as transverse encroachment, and would have insignificant impact on the existing floodplains, and minimal impacts to the existing water surface elevation (WSE) of the creeks.

Within the Project limits, the US 101 cross culvert at Permanente Creek is outside of the tidal influence, but within the Zone AO floodplain. Zone AO is the floodplain caused by the shallow sheet flow from the overtopping of Permanente Creek during a 100-year storm event. Insufficient capacity of the concrete lined channel upstream of the US 101 cross culvert causes the creek to overflow, creating the floodplain area upstream of US 101. The existing cross culvert would be extended by 44 feet to accommodate the highway widening. The culvert extension and increase in impervious area would increase the WSE at the inlet face of the US 101 cross culvert by 0.20 ft, but it would not impact the WSE at the upstream of the 3ft drop structure, located at the immediately upstream of the US 101 cross culvert inlet face.

The North Rengstorff Avenue and Old Middlefield Way Interchange are within the Zone AO floodplain. However, these areas are only small sliver encroachments onto Caltrans' right-of-way; the proposed highway widening would only impact 0.4 percent of the existing floodplain areas. Thus the impact to the existing floodplain would be insignificant.

At the Project site, locations with natural and beneficial floodplain values are limited to the three creeks crossing US 101. Vegetation removal or geometric modifications at the creeks are not proposed for this Project. Bridge widening and associated work in the creeks would be performed as to minimize disturbed areas. The schedule of work in the creeks and mitigation measures for any unavoidable impacts would be done per regulatory agency requirements. With these minimization measures, the Project's impact to the natural and beneficial floodplains would be less than significant.

Acronyms

AADT	Annual Average Daily Traffic
ADT	Average Daily Traffic
C/CAG	City/County Association of Governments of San Mateo County
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FIS	Flood Insurance Study
HOV	High Occupancy Vehicle
MTC	Metropolitan Transportation Commission
NB	Northbound
RCB	Reinforced Box Culvert
RWQCB	Regional Water Quality Control Board
SB	Southbound
SCVWD	Santa Clara Valley Water District
SMCTA	San Mateo County Transit Authority
SR 85	State Route 85
US 101	United States Highway 101
USACE	US Army Corps of Engineers
VTA	Valley Transportation Authority
WSE	Water Surface Elevation

1 GENERAL DESCRIPTION

1.1 Project Description

The proposed project is located on United States Highway 101 (US 101) in the Cities of Mountain View and Palo Alto, Santa Clara County, California. The project limits extend from State Route 85 (SR 85) on the south to Embarcadero Road on the north, a distance of approximately 3.2 miles. Within the project limits, the US 101 has three mixed-flow lanes and one high occupancy vehicle (HOV) lane in each traffic direction. Full-access interchanges are located at SR 85, Shoreline Boulevard, Rengstorff Avenue/Amphitheatre Parkway, Oregon Expressway, and Embarcadero Road. Partial access interchanges are located at Old Middlefield Way, Charleston Road, and San Antonio Road. There is also a direct HOV connector ramp to and from northbound US 101 and SR 85. For the project, Valley Transportation Authority (VTA), in cooperation with Caltrans, proposes to construct northbound and southbound auxiliary lanes along the 3.2 mile segment of US 101.

At most locations, there is sufficient room within the existing Caltrans right-of-way to accommodate the construction of the auxiliary lanes. There are areas where minor amounts of additional right-of-way would be required. The proposed auxiliary lanes would also require the widening of the existing US 101 crossings over Permanente Creek, Adobe Creek, and Matadero Creek.

1.1.1 No-Build Alternative

Under the No Build Alternative, the US 101 facility between Oregon Expressway and Shoreline Boulevard would remain as is.

1.1.2 Build Alternative

The project would construct an auxiliary lane on US 101 in each direction between Shoreline Boulevard and Oregon Expressway. The exception would be between San Antonio Road and Shoreline Boulevard in the southbound direction, where no auxiliary lane is proposed because it would create weaving conflicts with traffic entering the freeway from Charleston Road. The new auxiliary lanes would be constructed adjacent to the existing outside lanes. At this time construction of the project is scheduled to begin in mid 2011. Most construction activities are anticipated to be completed over a 2-year period.

The project would install ramp meters at the northbound on-ramp to US 101 from Amphitheatre Parkway, as well as at the northbound on-ramp to US 101 from San Antonio Road. The existing southbound US 101 on-ramp from Oregon Expressway would be widened for the purpose of increasing storage capacity.

1.2 Need for Project

The primary purpose of the proposed project is to improve traffic operations on the freeway, thereby decreasing congestion and delay, as well as improving peak-period travel times. During the peak periods, significant traffic congestion occurs in both the northbound and southbound directions. The US 101 Auxiliary Lanes Project would improve existing and future traffic operations by providing more room for: 1) traffic entering and exiting the freeway at each interchange, 2) local traffic that uses the highway to only go from one interchange to the next, thus impacting the main thru lanes.

1.3 Project History

US 101 was originally adopted in 1929. The highway has been upgraded a number of times. In 1932 US 101 was upgraded to a four-lane highway and in 1958 it was upgraded to a six-lane highway. The last redevelopment of the highway was in 1991, when it became an eight-lane freeway, with the addition of the HOV Lane.

The City/County Association of Governments of San Mateo County (C/CAG), Santa Clara Valley Transportation Authority (VTA), and San Mateo County Transportation Authority (TA) recognized the need for the Project in the *2020 Peninsula Gateway Corridor Study* (2020 Gateway Study), which was the first step in approaching local traffic congestions (C/CAG, 2005).

1.4 Creek, Stream, and River Crossings

Three creeks have been identified within the Project limits: Permanente Creek, Adobe Creek/Barron Creek (Barron Creek is a tributary of Adobe Creek and its confluence point with the Adobe Creek is at the west side of US 101), and Matadero Creek. Project areas not included in the watershed of the three creeks drains to city storm drainage systems and discharges to the wetlands at San Francisco Bay.

1.5 Bridge Numbers

Caltrans has identified two bridges within the Project limits: Adobe Creek and Matadero Creek Bridges. The crossing at Permanente Creek passes under US 101 in a single Reinforced Concrete Box (RCB) culvert, and is not considered a bridge according to Caltrans criteria. Refer to Tables 1, 2, and 3 for the general structure specifications.

Table 1: General Specifications for Existing Adobe Creek Bridge	
Bridge Number	37-0174
Post Mile	50.66
Project Station	72+20 "C" Line
Bridge Length	19.8 feet
Bridge Width	137 feet
Number of Lanes	8
Structure	The bridge is supported by foundations at both abutments.
Alignment	The bridge is aligned to the creek flow direction with no skew angle.
Capacity	The flow would not overtop the bridge during the 100-year storm event. The bridge would not have the 2-foot freeboard during the 50-year storm event.

Table 2: General Specifications for Existing Matadero Creek Bridge	
Bridge Number	37-0040
Post Mile	51.37
Project Station	109+80 "C" Line
Bridge Length	24.8 feet
Bridge Width	134 feet
Number of Lanes	8
Structure	The bridge is supported by foundations at both abutments and the center pier.
Alignment	The bridge is aligned to the creek flow direction with no skew angle.
Capacity	The flow would not overtop the bridge during the 100-year storm event The bridge would not have the 2-foot freeboard during the 50-year storm event

Table 3: General Specifications for Existing Permanente Creek Cross Culvert	
Bridge Number	N/A
Post Mile	49.6
Project Station	186+50 "C" Line
Culvert Length	216 feet
Number of Lanes	8
Structure	Single 12 feet x 12 feet RCB Culvert
Alignment	The culvert is aligned to the creek flow direction with no skew angle. From the US 101 travelway, the skew angle is approximately 43.5^{o}.
Capacity	The culvert could pass flow with no flow overtopping at US 101 during a 100-year storm event

1.6 Geographical References

The following are the Geographical References:

- United States Geological Survey Topographic CD-ROM
- Federal Emergency Management Agency (FEMA) *Flood Insurance Study (FIS), City of Palo Alto*
- FEMA *FIS, City of Mountain View*
- Santa Clara Valley Water District *Watershed Stewardship Plan*

In general, areas surrounding US 101 between Oregon Expressway and Shoreline Boulevard are fully urbanized. Land use is mostly residential with scattered commercial and industrial complexes.

1.7 Traffic

Traffic data recorded by Caltrans in 2006 were obtained for the following interchanges within the Project limits:

- Old Middlefield Road Interchange
- Rengstorff Avenue
- San Antonio Road
- Embarcadero Road and Oregon Expressway

Table 4 summarizes peak hour and annual average daily traffic volumes for both the northbound (NB) and southbound (SB) lanes.

Table 4: Traffic Volumes in Project Location

Location Description	SB Peak Hour	SB AADT*	NB Peak Hour	NB AADT*
MOUNTAIN VIEW, MIDDLEFIELD ROAD INTERCHANGE	15,500	223,000	13,800	198,000
MOUNTAIN VIEW, RENGSTORFF AVENUE INTERCHANGE	13,800	198,000	13,200	190,000
PALO ALTO, SAN ANTONIO ROAD INTERCHANGE	13,200	190,000	14,600	210,000
PALO ALTO, EMBARCADERO ROAD/OREGON EXPRESSWAY INTERCHANGE	14,600	210,000	14,400	207,000

*AADT: Annual Average Daily Traffic

(Caltrans, 2006)

Additionally, average daily traffic (ADT) data were obtained for the following local streets:

- Embarcadero Road
- Oregon Expressway
- San Antonio Road

Table 5: Traffic Volume of Local Streets with US 101 Interchange, 1999

Location Description	ADT
Embarcadero Road	25,000
Oregon Expressway	43,400
San Antonio Road	37,100

(City of Palo Alto, 1999)

US 101 is a major highway used by emergency supply or evacuation, emergency vehicle access, school buses and mail delivery. However, practical detour routes are available and can be made available during the construction. Following is the summary of the assessment:

Emergency Supply or Evacuation Route	Yes
Emergency Vehicle Access	Yes
Practical Detour Route	Yes
School Bus or Mail Route	Yes

1.8 Traffic Interruptions for Base Flood (Q_{100})

FEMA Flood Insurance Rate Maps (FIRM) # 060348 0003E and 060347 0005E illustrate existing floodplains within the Project area. According to the FIRM, the base flood (Q_{100}) has the potential to inundate approximately two thirds of the Project site. See Section 2.3 for detailed descriptions of the existing floodplains. Zone AE, a 100-year floodplain caused by high-tide, covers northbound and southbound US 101 from the Embarcadero Road Interchange to the Rengstorff Avenue Interchange. Traffic interruption may also occur at the following five interchanges' as these streets would also be inundated during the 100-year storm event: Embarcadero Road, Oregon Expressway, San Antonio Road, Rengstorff Avenue, and Old Middlefield Way. The travelway at the US 101/Old Middlefield Way Interchange is outside of the 100-year floodplain but the interchange may be inaccessible during a storm event due to the anticipated sheet flow from Permanente Creek.

1.9 Description of Creek Crossings

1.9.1 Matadero Creek

Matadero Creek crosses US 101 approximately 3,200 ft southeast of the Oregon Expressway Interchange. The creek originates near the town of Los Altos Hills and Palo Alto Hills, flowing northeast through unincorporated areas of Santa Clara County and the City of Palo Alto. The watershed area of Matadero Creek is approximately 14 square miles. Eleven square miles are within mountainous areas, and three square miles are in gently sloping terrain. Within the City of Palo Alto, the watershed is almost fully urbanized. Overall, 76 percent of the watershed area is urbanized for residential, commercial, industrial, and institutional use. There is open space in the foothills, which covers approximately 24 percent of the watershed area. Forty to Sixty percent of the

fully urbanized area near the Project site is impervious. The impervious area is expected to increase in the future from probable developments (Tetra Tech, 2006).

Matadero Creek flows in a natural channel with steep slopes through the unincorporated areas of Santa Clara County. In the City of Palo Alto, Matadero Creek travels in a U-shaped concrete channel, with relatively flat slopes. This creek is a concrete lined channel at the US 101 crossing. The existing channel has enough capacity to provide protection from the 1 percent exceedance probability (i.e., the 100-year) interval storm at the Project site. At the downstream end of the Project site, Matadero Creek discharges into the Palo Alto Flood Basin, which eventually outfalls to the San Francisco Bay. This area is a straightened, earthen bed channel with a channel longitudinal slope of less than 0.1 percent.

The existing median barrier of US 101 at the vicinity of the Matadero Creek crossing is a mixture of thrie-beam barrier and concrete barrier. The US 101 travel way and frontage road are separated by narrow open space and a chain-linked fence. The existing US 101 barriers in the vicinity of Matadero Creek crossing does not obstruct the lateral movement of the storm runoff.

1.9.2 Adobe Creek

Adobe Creek crosses US 101 between the Matadero Creek crossing (approximately 3,700 northwest of the creek crossing) and the San Antonio Road Interchange (approximately 1,800 ft southeast of the creek crossing). Adobe Creek confluences with Barron Creek at the upstream face of the US 101 crossing. Adobe Creek originates in the highlands of the unincorporated areas of Santa Clara County and Palo Alto Hills. The watershed area of Adobe Creek is approximately 13.5 square miles; 10.4 square miles from Adobe Creek and 3.1 square miles from Barron Creek (FEMA, 1999a). Land use within the City of Palo Alto and City of Los Altos is fully urbanized. Open space is limited to the area in the foothills of the upstream watershed. Approximately 70 percent of the watershed area is urbanized and 30 percent is open space. Currently, the area surrounding the Project site is 40 to 60 percent impervious; future residential or commercial developments could increase impervious area (Tetra Tech, 2006).

Adobe Creek flows in a natural channel with moderate to steep slopes within the City of Los Altos and Town of Los Altos Hills. In the City of Palo Alto, Adobe Creek travels in a wide rectangular concrete channel with very flat slopes. The slope of the channel within the Project area is less than 0.1 percent. Historical flood events have indicated that Adobe Creek has the capacity to provide protection from the 1 percent exceedance probability (i.e. the 100-year) interval storm at the Project site. At the downstream end of its US 101 crossing, Adobe Creek discharges to Charleston Slough, which eventually outfalls to the San Francisco Bay.

The existing median barrier of US 101, in the vicinity of Adobe/Barron Creek crossing comprises thrie-beam barrier and concrete barrier. US 101 travel way and the frontage road are separated by narrow open space and chain-linked fence. The existing US 101

barriers in the vicinity of Adobe/Barron Creek crossing does not obstruct the lateral movement of the storm runoff.

1.9.3 Permanente Creek

Permanente Creek crosses US 101 between the North Rengstorff Avenue Interchange (approximately 2,200 northwest of the creek crossing) and the Shoreline Blvd Interchange (approximately 3,100 ft southeast of the creek crossing). The creek originates in the Santa Cruz Mountains, travels 19 miles north to the San Francisco Bay, and passing through unincorporated areas of Santa Clara County as well as the City of Cupertino, Town of Los Altos Hills, City of Los Altos, and City of Mountain View. At the downstream end of the Project site, Permanente Creek passes through a twin RCB culvert at Charleston Road, and a bridge at Amphitheatre Parkway, to discharge to Mountain View Slough; the creek eventually outfalls to the San Francisco Bay.

The watershed area of Permanente Creek is approximately 15.8 square miles at the US 101 crossing. The City of Mountain View and Los Altos is fully developed and covers approximately 55 percent of the watershed area. In addition to the urbanized area, approximately 8 percent of the area is used as non-urbanized development, such as a golf course and a mine. The remaining 37 percent is open space, predominantly located in the ridge foothills.

Permanente Creek crosses US 101 in a 216 ft long single 12 ft x12 ft (span x rise) Reinforced Concrete Box (RCB) culvert. Existing rectangular concrete lined channels upstream and downstream of the RCB culvert crossing have very flat slopes of 0.1 percent. The channel upstream of the US 101 cross culvert is a 12 ft x 9 ft (width x depth) concrete lined channel. There is a 3 ft drop at the immediately upstream of the US 101 cross culvert. The end of the transition from the concrete lined channel to the earthen channel takes place approximately 200 ft downstream from the cross culvert. No historic flooding has been recorded at the Permanente Creek at the US 101 crossing. Approximately 71 percent (13.89 miles) of the existing creek has the capacity to provide protection from the 1 percent exceedance probability (i.e. the 100-year) interval storm (Tetra Tech, 2006).

US 101 median barrier in the vicinity of the Permanente Creek crossing is a concrete barrier. There is no frontage road of US 101 in the vicinity of the Permanente Creek crossing. A chain-linked fence is commonly used as a barrier between US 101 and the adjacent area, in the vicinity of US 101/Permanente Creek crossing.

Figure 1: Project Location

Source: United States Geological Survey (USGS)

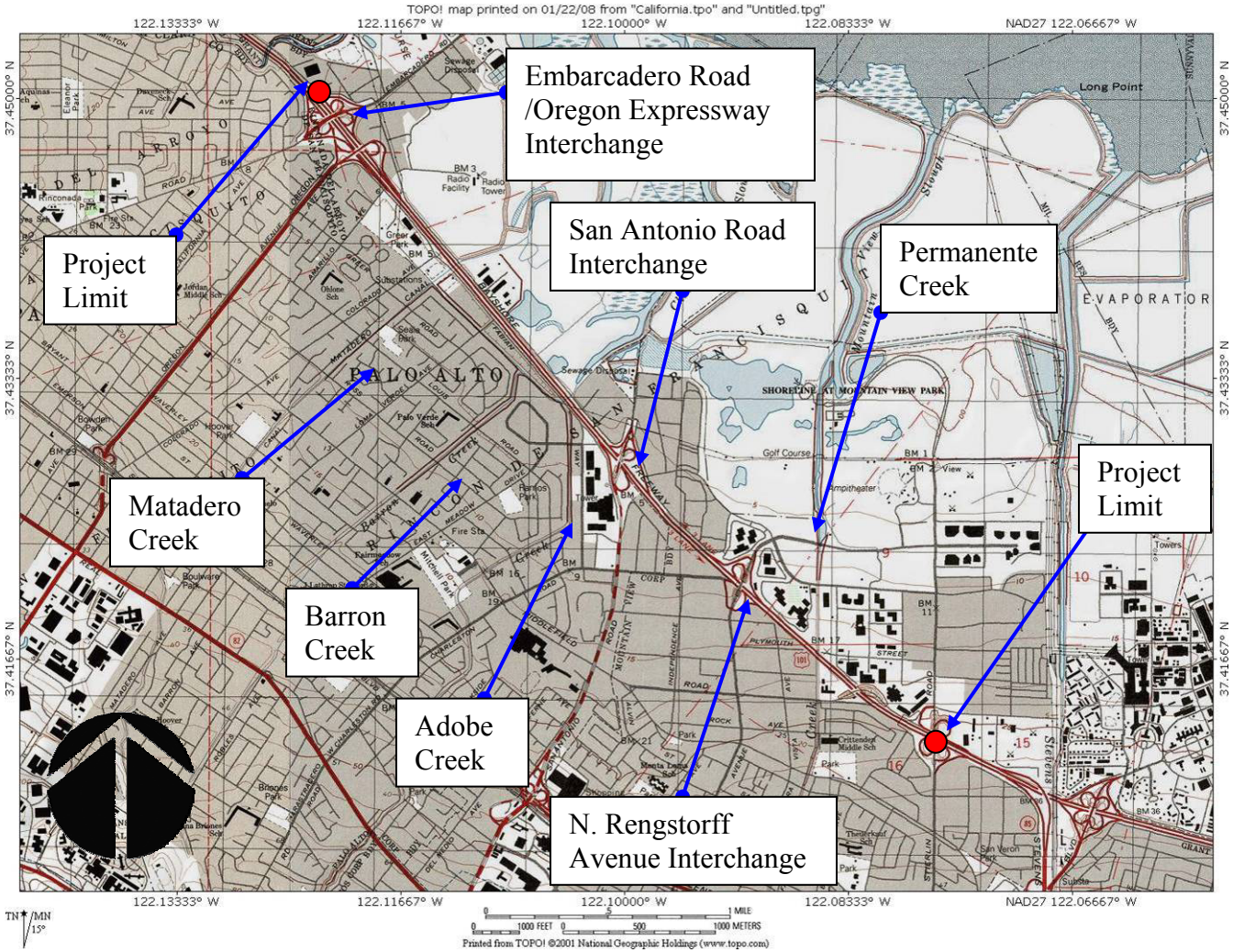


Figure 2: Project Vicinity

Source: United States Geological Survey

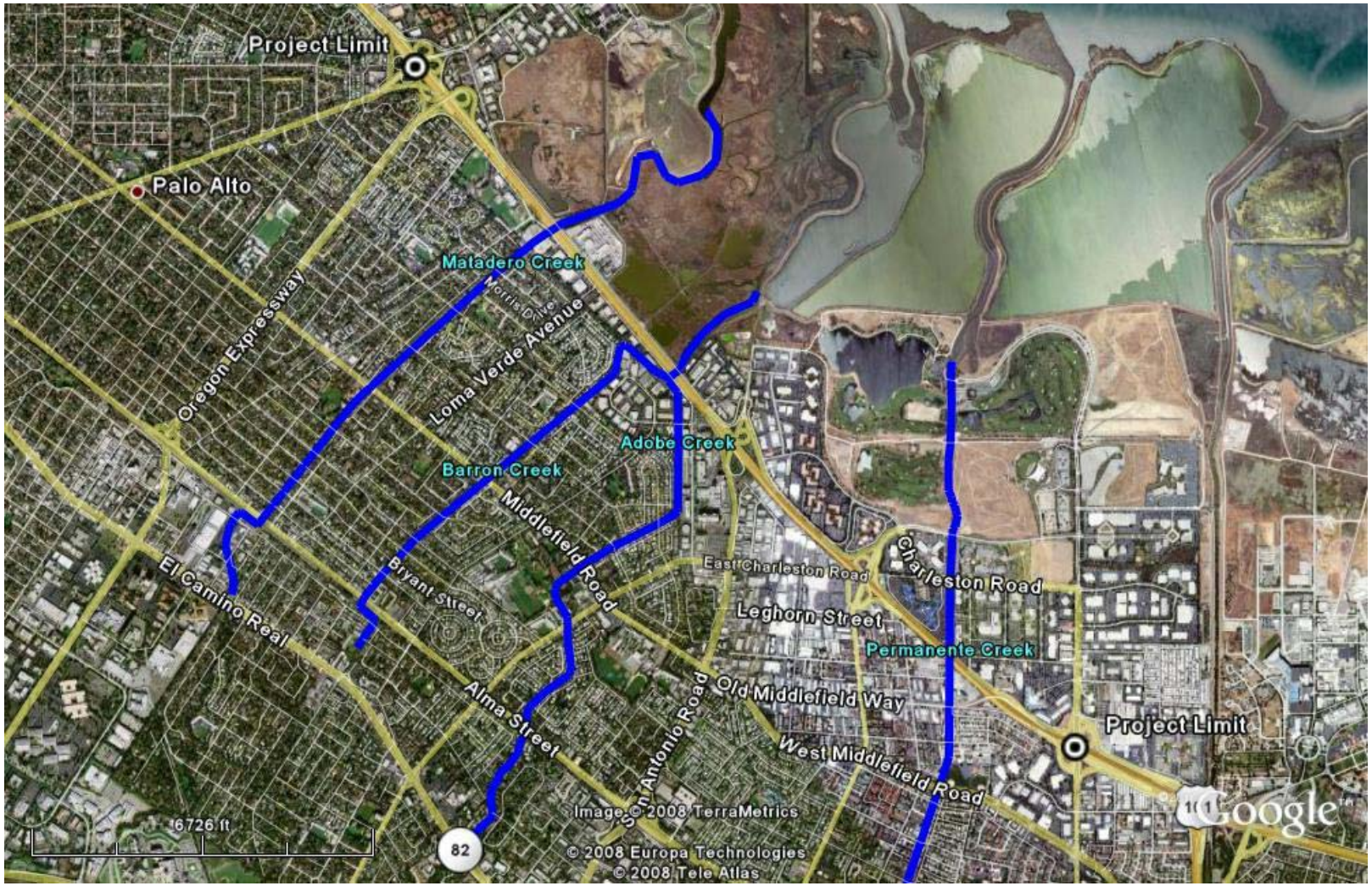


Figure 3: Project Vicinity, Aerial View

Source: Google Earth

2 HYDROLOGIC AND HYDRAULIC DATA

2.1 Hydrologic Stability

The watersheds of Matadero Creek, Adobe/Barron Creek, and Permanente Creek include unincorporated areas of Santa Clara County, the City of Palo Alto, the City of Mountain View, the City of Los Altos, and the Town of Los Altos Hills. A moderate population increase is expected in these areas. The population increased in the cities included in the watershed area by approximately 5 percent from 1990 to 2000 (US Census, 2002). See Table 6 for the detailed projected population increase for the City of Palo Alto and City of Mountain View.

Table 6: Current and Projected Population Increase

City	2005	2010	2015	2020	2025
Palo Alto	59,900	63,500	67,700	70,900	73,000
Mountain View	73,100	75,200	77,900	79,700	80,700

(Palo Alto, 2005; Mountain View, 2005)

Higher density housing development in the urbanized area, within the watershed, would probably see increase in the near future (Tetra Tech, 2006). However, it is assumed that future residential, commercial, and industrial developments would comply with city and county ordinances to mitigate the probable increase of surface runoff from these developments. For all three creeks that were studied at the Project location, there would be no significant flow rate increase in the future.

The three creek channels within the Project area have already been heavily modified over the years. Erosion potential has been minimal for all three creeks (Tetra Tech, 2006).

2.2 Federal Emergency Management Agency Data

The flows from Matadero Creek and Adobe Creek were provided in the FIS for the City of Palo Alto (FEMA, 1999a). The flow from Permanente Creek was provided in the FIS for the City of Mountain View (FEMA, 1997a). See Table 7 for the 100-, 50-, and 10-year flows of Matadero, Adobe, and Permanente Creek at the Project site.

Table 7: FEMA Flood Insurance Study Hydrologic Data

Flooding Source and Location	Drainage Area (mi^2)	Peak Discharge (cfs)		
		100-year	50-year	10-year
Matadero Creek				
At US 101	13.6	1,775*	1,775*	1,640
Adobe Creek				
At US 101	13.5	1,780*	1,780*	1,660
Permanente Creek				
Upstream of US 101	15.8	4,000**	2,250**	1,350
Downstream of US 101	15.8	1,400*	1,400*	1,350

*Reduced or constant flow value due to capacity restrictions
**Flow influenced by spill from adjoining watercourse

(FEMA, 1997a & 1999a)

2.3 Map of Floodplain

The FEMA Floodplain Insurance Rate Maps (FIRM) for the City of Palo Alto and the City of Mountain View show the 100-year floodplain at the Project site (see Figure 4). The FIRM indicates large floodplains cover US 101 and the surrounding area within the Project limits.

Zone AE is the 100-year floodplain determined by detailed hydraulic analyses. In the City of Palo Alto, Zone AE floodplain is caused by the potential overtopping of Bayfront Levees during the extreme high tide event. For the delineated floodplains, FEMA assumed that the existing levees would not provide adequate protection from extreme high tide events, associated with 100-year storm event, for the following reasons: 1) the levees lack adequate freeboard, and 2) the levees are not constructed to current engineering standards (City of Palo Alto, Department of Public Works). A high tide event during a 100-year storm event is set at 8 ft NGVD. Zone AE represents areas with elevation less than 8 ft NGVD, which is subject to the tidal flooding. The floodplain covers northbound and southbound US 101 from the Embarcadero Road Interchange to the North Rengstorff Avenue Interchange.

Zone AH is the area of shallow flooding, less than 3 feet in depth during a 100-year storm event. The overtopping flow from the San Francisquito Creek causes this type of flooding within the Project limits. The Zone AH floodplain adjacent to San Francisquito Creek begins at the Embarcadero Road/Oregon Expressway/US 101 Interchange through the Greer Park area (approximately Station 50+00 to 68+00). The Greer Park area is also subject to more severe tidal water flooding, thus this area is also included in the Zone AE floodplain.

Zone AO is the floodplain caused by the shallow sheet overtopped flow from Permanente Creek during a 100-year storm event. This overtopping is due to insufficient capacity of the concrete lined channel at the upstream of US 101. The Zone AO floodplain area, at the upstream of the US 101 cross culvert, is approximately 150 acres. In the vicinity of the Project site, floodplain areas adjacent to the US 101 southbound lanes are at the North

Rengstorff Avenue Interchange (approximately Station 170+00 to 176+00) and the Old Middlefield Road Interchange (approximately Station 201+00 to 210+50). Escape flow from Permanente Creek, traveling northwest, would then enter the City of Mountain View Storm Drain System.

Zone X is the area outside the 100-year floodplain, but could be inside the 500-year flood limits. Northbound and southbound US 101, from the North Rengstorff Avenue Interchange to the junction with SR 85, is classified as a Zone X floodplain.

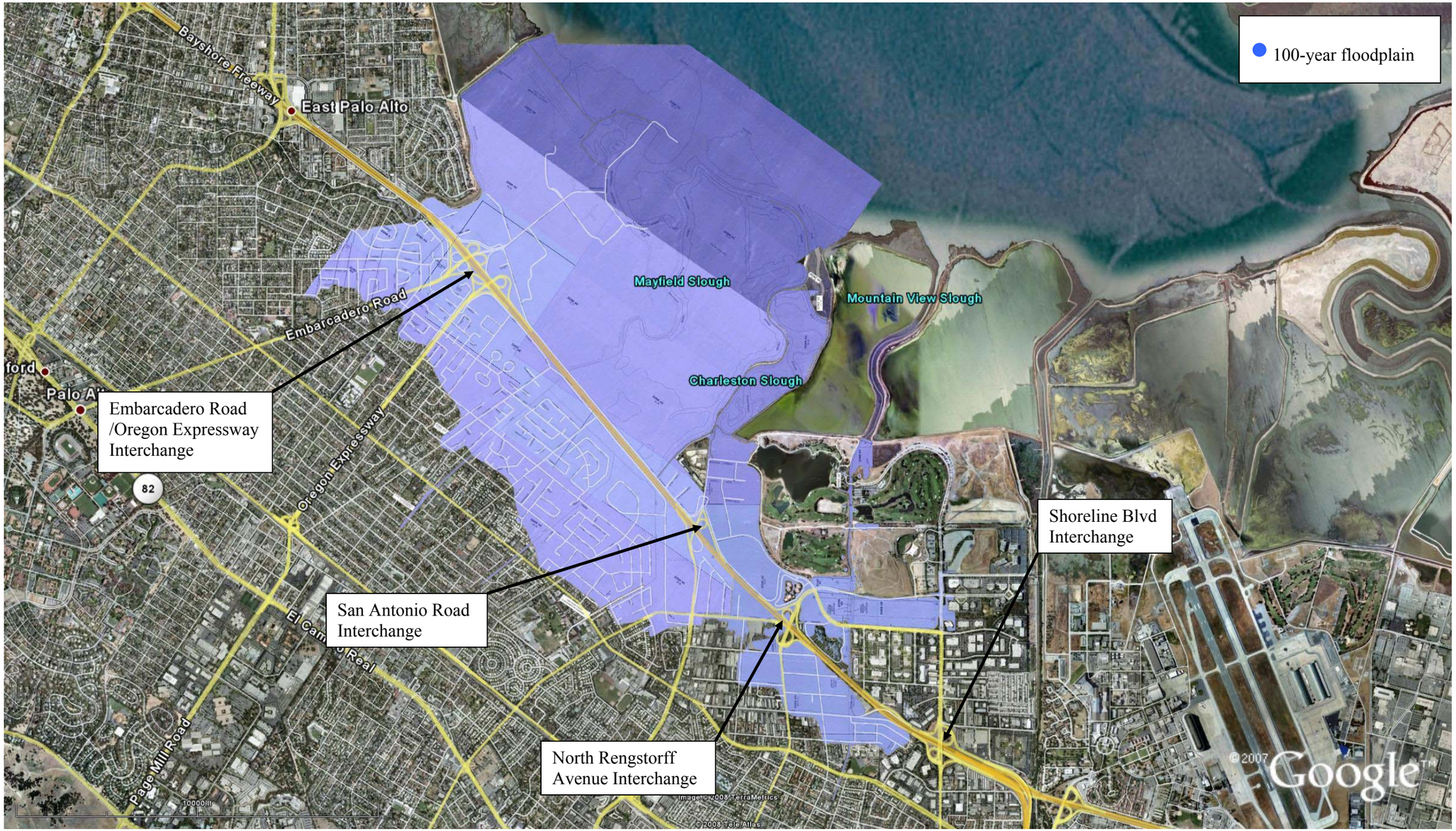


Figure 4: FEMA FIRM superimposed to Google Earth Aerial Image

Source: Google Earth and FEMA (1997b &1999b)

2.4 Santa Clara Valley Water District Data

Santa Clara Valley Water District conducted hydraulic analyses using HEC-2 and HEC-RAS hydraulic modeling software. The hydraulic analysis of Matadero Creek and Adobe Creek was last updated in October 1993 and July 1992, respectively. The most recent update date for the Permanente Creek model was not available. See Table 8 for the flow rates for Matadero, Adobe, and Permanente Creek that were used in their hydraulic model.

Table 8: Santa Clara Valley Water District Hydrologic Data

Flooding Source and Location	Peak Discharge (cfs)	
	100-year	10-year
Matadero Creek		
At US 101	1,750	1,640
Adobe Creek		
At US 101	1,780	1,660
Permanente Creek		
Upstream of US 101	N/A	N/A
Downstream of US 101	1,750	1,750

2.5 Design Discharge for the Hydraulic Assessment

Based on the available information, the peak discharge rates from the FEMA FIS were more recent than the peak discharge rates included in the Santa Clara Valley Water District (SCVWD) hydraulic models. In addition, SCVWD data did not provide peak discharge rates at the upstream of the US 101 Crossing with Permanente Creek. This hydraulic assessment focused on analyzing the flows upstream of US 101, in order to determine the hydraulic conditions and possible highway overtopping during the design 100-year storm event. For this reason, we have used the flow rates from FIS to perform the hydraulic assessment in this analysis. See Table 7 in Section 2.2 for the flow rates selected for the hydraulic analysis.

2.6 Hydraulic Assessment

2.6.1 Design Tool

The hydraulic analyses for the Matadero, Adobe/Barron, and Permanente Creek crossings at US 101 were performed with standard backwater calculations using the US Army Corps of Engineers (USACE) HEC-RAS, version 3.1.3, to provide flow characteristics.

Corpscon, version 6.01, from the USACE was used to convert elevations in NGVD datum to NAVD datum. According to Corpscon, the conversion factors of the elevations in NGVD datum to NAVD datum are 2.70 ft, 2.70 ft, and 2.703 ft at the crossings of Matadero Creek, Adobe Creek, and Permanente Creek with US 101, respectively.

2.6.2 Cross Sectional Data

Cross sectional data for the Matadero and Adobe Creek were provided by SCVWD. The Matadero Creek model had 78 cross sections which covered a 10,933 foot stretch starting from El Camino Real to the creek outfall. The Adobe Creek model had 98 cross sections, which covered a 12,245 foot stretch from El Camino Real to the creek outfall. The designs for Matadero Creek and Adobe Creek Bridges are different in the SCVWD model as compared to the design from the bridge as-built plans. WRECO has modified the bridge geometry in the model based on the bridge as-built plans.

The high-tide water surface elevations (WSEs) from the FIS were used for the downstream WSEs for the 100- and 10-year storm event, for Matadero and Adobe Creek models. These elevations corresponded to 8.0 and 7.5 ft NGVD, respectively (FEMA, 1997a). The FIS did not provide high-tide WSEs during a 50-year storm event, so the WSE was assumed to be 7.75 ft NGVD, which was an average of 10- and 100-year high-tide WSEs. The hydraulic models for Matadero and Adobe Creek were set in NGVD datum.

Cross sectional data for Permanente Creek was generated from the topography map provided by URS; the channel flow line elevation was provided in the as-builts, and the site visit was conducted by WRECO. The model has 11 cross sections covering a 2,124 foot stretch beginning at Rock Street to 300 ft downstream of the US 101 crossing. The hydraulic model was set in NAVD datum.

WSE given in the Permanente Creek flood profile in the City of Mountain View FIS was used as the downstream WSE for the design 100-year storm event. For the design 10-year storm event, downstream WSE was determined by using a channel slope of 0.0016. The downstream WSEs for the design 100-year and 10-year storm event were 15.7 ft and 15.17 ft, respectively.

2.6.3 Skew

Existing bridge and culvert structures at the creek crossings were aligned parallel to the direction of the flow. Therefore, no modifications were needed to address the issue of bridge/culvert skew angle in the HEC-RAS model.

2.6.4 Manning's 'n'

Manning's 'n' values were used in the hydraulic model to estimate energy loss in the flow due to friction.

For the Matadero Creek model of the existing condition, the Manning's 'n' values used were 0.035 on the all left and right banks. For the main channel, the Manning's 'n' values used were 0.015, 0.02, 0.023, and 0.025, at the concrete channel section upstream of the US 101 Bridge. A Manning's 'n' value of 0.045 was selected for the natural channel at the downstream of the US 101 Bridge.

For the Adobe Creek model of the existing condition, the Manning's 'n' values were 0.035 on the all left and right banks. For the main channel, the Manning's 'n' value used was between 0.015 and 0.025, at the concrete channel section upstream of the US 101 Bridge. A Manning's 'n' value of 0.030 was selected for the natural channel at the downstream of the US 101 Bridge.

For the Permanente Creek model of the existing condition, the Manning's 'n' values were 0.03 on the all left and right banks. A Manning's 'n' value of 0.05 was selected for the fully developed area within the floodplain. For the main channel, the Manning's 'n' value used was 0.020 at the U-shaped and trapezoidal concrete channel section.

These Manning's 'n' values for the Matadero Creek and Adobe Creek were provided in the hydraulic models from SCVWD. The Manning's 'n' values for the Permanente Creek was selected to best describe the existing and proposed conditions.

2.6.5 Expansion and Contraction Coefficient

The expansion and contraction coefficients used to represent the modified creek channels were 0.2 and 0.1, respectively. These values describe a creek with very little transitions between cross sections. For the natural channel, the expansion and contraction coefficients of 0.3 and 0.1, respectively, were used. These values describe a creek with moderate transitions between cross sections. The expansion and contraction coefficients used in the vicinity of the bridges and culverts were 0.5 and 0.3, respectively. These values were used because the bridge/culvert structures intruded into the channel.

2.6.6 Existing Condition

Table 9 and Table 10 summarize the estimated 100- and 50-year water surface profiles and average flow velocities of the existing condition for the Matadero Creek and Adobe Creek from the HEC-RAS hydraulic modeling. Table 11 summarizes the estimated 100- and 10-year water surface profiles and average flow velocities of the existing condition from the HEC-RAS hydraulic modeling for Permanente Creek.

Table 9: Existing Conditions, Matadero Creek

	Channel Bank Elevation (ft, NAVD)	Q100		Q50	
		WSE (ft, NAVD)	Velocity (ft/sec)	WSE (ft, NAVD)	Velocity (ft/sec)
Upstream of US 101 Bridge (Station 9450)	11.60	10.70	2.30	10.45	2.37
Inside Bridge, Upstream Face	11.60	10.70	2.34	10.45	2.41
Inside Bridge, Downstream Face	11.60	10.68	2.14	10.43	2.20
Downstream of US 101 Bridge (Station 9305)	11.60	10.68	2.10	10.43	2.16
Downstream End of the Study Limit (Station 8975)	7.70	10.70	0.80	10.45	0.82

Table 10: Existing Conditions, Adobe Creek

	Channel Bank Elevation (ft, NAVD)	Q100		Q50	
		WSE (ft, NAVD)	Velocity (ft/sec)	WSE (ft, NAVD)	Velocity (ft/sec)
Upstream of US 101 Bridge (Station 13290)	11.60	10.63	3.24	10.38	3.32
Inside Bridge, Upstream Face	11.60	10.63	3.24	10.38	3.33
Inside Bridge, Downstream Face	11.60	10.61	3.25	10.36	3.34
Downstream of US 101 Bridge (Station 12975)	11.60	10.61	3.24	10.36	3.32
Downstream End of the Study Limit (Station 12750)	10.60	10.70	1.36	10.45	1.40

Table 11: Existing Conditions, Permanente Creek

	Channel Bank Elevation (ft, NAVD)	Q100		Q10	
		WSE (ft, NAVD)	Velocity (ft/sec)	WSE (ft, NAVD)	Velocity (ft/sec)
Upstream of US 101 Cross Culvert (Station 12938*)	21.00	19.50	15.4	19.32	15.5
Inlet Face of US 101 Cross Culvert (Station 12911)	21.00	19.23	12.5	19.00	12.3
Outlet Face of US 101 Cross Culvert (Station 12695)	19.90	16.20	15.2	16.19	15.2
Downstream of US 101 Cross Culvert (Station 12671)	19.90	15.64	12.1	15.17	12.7

*Beginning of the 3ft drop

The water surface elevation (WSE) of Matadero and Adobe Creek at the US 101 crossing is controlled by the downstream WSE. The HEC-RAS model for these two creeks showed that WSEs remain constant up to the Louis Road crossing, located approximately 2,500 ft upstream of the US 101 crossing. At the existing US 101 crossings, the bridges can pass the 100-year flow without overtopping, however they would not provide 2 ft freeboard with the design 50-year flow. The available freeboard with the design 50-year freeboard for Matadero Creek and Adobe Creek is 1.77 ft and 1.84 ft, respectively.

The location of the US 101 cross culvert for Permanente Creek is upstream of the tidal influence. The FEMA FIRM indicated Zone AO floodplain at the upstream of US 101 cross culvert. Based on the topographic map, the escape flow will permanently leave the channel at the upstream of the US 101 crossing and flow westward towards North Rengstorff Avenue. At the upstream face of US 101 cross culvert, the design 100-year flow rate is reduced to 1,400 cfs. There is no overtopping at US 101 during the 100-year storm event.

2.6.7 Proposed Bridge/Culvert Configuration

The Project proposes to pave the existing open space between the frontage roads (East and West Bayshore Road) and US 101's right-of-way at the segment between Oregon Expressway Interchange and San Antonio Road Interchange. At Matadero Creek, the existing pier extending to support the frontage road bridge should also support widened highway structures. Highway widening would not require additional supporting structures, which would obstruct the flow. Geometric modifications in the HEC-RAS hydraulic model are not required for the Matadero Creek.

The proposed modifications of US 101 at the Adobe Creek crossing are equivalent to the modifications in Matadero Creek. There are three existing clear-span bridges: two on the parallel frontage roads and one on US 101 over Adobe Creek. Highway widening would not significantly modify existing geometry at Adobe Creek. Geometric modifications in the HEC-RAS hydraulic model were not required for the Adobe Creek.

In order to accommodate the proposed highway widening, the Permanente Creek cross culvert would need to be extended both upstream and downstream. According to URS's preliminary design, the culvert would be extended 22 ft in both downstream and upstream directions. We assumed the 3 ft drop structure at the immediately upstream of the US 101 cross culvert would also be shifted 22 ft upstream.

The proposed hydraulic models simulate the future condition of the creek. We used the rational method to determine increase in the flow rate from adding impervious areas within the Project area. Rainfall intensity was obtained using HYDRO and the runoff coefficient was set to 1.0. According to the FEMA flow rates in Table 7, upstream of all three crossings have capacity restrictions. In addition, the hydraulic analysis of the existing conditions showed WSEs of Adobe and Matadero Creek were controlled by the tidal elevation in the downstream area. For Permanente Creek, the cross culvert under Old Middlefield Road 800 ft upstream of US 101 cross culvert, also has a capacity

restriction. For this reason, the changes in the flow rate from the future city developments were not considered in this analysis; the future developments were also assumed to have an insignificant impact (see section 2.1). See Table 12 for the flow rates used for the hydraulic analysis of the proposed condition; these values were used for the preliminary analysis and will be updated in the final report.

Table 12: Flow Rates for the Proposed Condition

Flooding Source and Location	Drainage Area (mi^2)	Peak Discharge (cfs)		
		100-year	50-year	10-year
Matadero Creek				
At US 101	13.6	1,778	1,777	1,642
Adobe Creek				
At US 101	13.5	1,798	1,795	1,672
Permanente Creek				
Upstream of US 101	15.8	4,003	N/A	1,352
Downstream of US 101	15.8	1,478	N/A	1,352

2.6.8 Proposed Condition

Table 13 and Table 14 summarize the estimated 100- and 50-year water surface profiles and average flow velocities of the proposed condition from the HEC-RAS hydraulic modeling of Matadero Creek and Adobe Creek. Table 15 summarizes the estimated 100- and 10-year water surface profiles and the average flow velocities of the proposed condition from the HEC-RAS hydraulic modeling of Permanente Creek.

Table 13: Proposed Conditions, Matadero Creek

	Channel Bank Elevation (ft, NAVD)	Q100		Q50	
		WSE (ft, NAVD)	Velocity (ft/sec)	WSE (ft, NAVD)	Velocity (ft/sec)
Upstream of US 101 Bridge (Station 9540)	11.60	10.70	2.30	10.45	2.37
Inside Bridge, Upstream Face	11.60	10.70	2.34	10.45	2.41
Inside Bridge, Downstream Face	11.60	10.68	2.14	10.43	2.20
Downstream of US 101 Bridge (Station 9305)	10.80	10.68	2.10	10.43	2.16
Downstream End of the Study Limit (Station 8975)	7.70	10.70	0.80	10.45	0.82

Table 14: Proposed Conditions, Adobe Creek

	Channel Bank Elevation (ft, NAVD)	Q100		Q50	
		WSE (ft, NAVD)	Velocity (ft/sec)	WSE (ft, NAVD)	Velocity (ft/sec)
Upstream of US 101 Bridge (Station 13290)	11.60	10.63	3.27	10.38	3.35
Inside Bridge, Upstream Face	11.60	10.63	3.27	10.38	3.36
Inside Bridge, Downstream Face	11.60	10.61	3.28	10.36	3.36
Downstream of US 101 Bridge (Station 12975)	11.60	10.61	3.28	10.36	3.36
Downstream End of the Study Limit (Station 12750)	10.60	10.70	1.38	10.45	1.42

Table 15: Proposed Conditions, Permanente Creek

	Channel Bank Elevation (ft, NAVD)	Q100		Q10	
		WSE (ft, NAVD)	Velocity (ft/sec)	WSE (ft, NAVD)	Velocity (ft/sec)
Upstream of US 101 Cross Culvert (Station 12960*)	21.00	19.72	15.7	19.39	15.4
Inlet Face of US 101 Cross Culvert (Station 12933)	21.00	19.43	12.1	19.17	12.0
Outlet Face of US 101 Cross Culvert (Station 12673)	19.90	15.64	15.6	15.17	15.4
Downstream of US 101 Cross Culvert (Station 12671)	19.90	15.64	12.1	15.17	12.7

*Beginning of the 3ft drop

For the proposed widening of the Matadero Creek and Adobe Creek bridges, the estimated WSE did not change. The increase of flow rate due to the added impervious area from the proposed Project did not contribute to the rise of WSE. Bridge design modifications for these two creeks, due to highway widening, would have no significant impact to the existing floodplain.

The cross culvert extension at the Permanente Creek increases the WSE at the inlet face of the US 101 cross culvert by 0.20 ft. However, the impact of the WSE increase is very minimal. The 100-year flow is still contained in the main channel and will not overtop to US 101. In addition, the increase in WSE is less than 0.10 ft At the locations upstream of the extended cross culvert.

3 PROJECT EVALUATION

3.1 Risk Associated with Implementation of the Action

As defined by the Federal Highway Administration (FHWA), a significant encroachment is a highway encroachment and any action to promote base floodplain development that would involve one or more of the following construction or flood related impacts: 1) a significant potential for the interruption or termination of a transportation facility that is needed for emergency vehicles or provides a community's only evacuation route; 2) a significant risk; or 3) a significant adverse impact on the natural and beneficial floodplain values.

This Project would have minimal risk associated with widening US 101 and adding auxiliary lanes. The Project would maintain the route currently used by emergency vehicles and would improve traffic flow in the area with the addition of the auxiliary lane. The construction along US 101 would not require the closures of overcrossings. The construction of the auxiliary lanes could be staged to keep on-ramps, off-ramps and highway traffic open at all times. In addition, streets running parallel to US 101 would also be available for detour and emergency vehicle use (e.g. Middlefield Road, Central Expressway, and El Camino Real).

The majority of the delineated floodplains within the Project limits are caused by tidal effects (Zone AE). According to FIS, the high-tide impact boundary extends to Middlefield Road, which is approximately 3,000 ft upstream from the US 101 creek crossings within the Zone AE floodplain (see Appendix C). The existing US 101 median barriers are composed of concrete barriers and thrie-beam barriers within the Zone AE floodplain area (between the Embarcadero Road/Oregon Expressway Interchange and the North Rengstorff Avenue Interchange). Currently, US 101 and the frontage roads (East and West Bayshore Road) are separated by a chain-linked fence. No historic flooding from failed levees along the San Francisco Bay shoreline has been recorded.

As discussed in Section 2.3, the areas along US 101, between the Embarcadero Road/Oregon Expressway/US 101 Interchange and the Greer Park area is also classified as Zone AH floodplain. During the February 1998 storm event, the overtopping flow from San Francisquito Creek flooded the US 101 southbound travelway and ponded at the low point, near the Oregon Expressway/US 101 Interchange and Greer Park (Palo Alto Weekly, 1998b). The flood frequency of this event is estimated to be around a 70- to 80-year flood (City of Palo Alto, Department of Public Works). The flooded areas from the February 1998 event conformed very closely to the FEMA FIRM floodplain areas (see Appendix E) (Palo Alto Weekly, 1998c). The Project Team confirmed ponding at the US 101 southbound lanes by reviewing the video of the February 1998 flood event taken by the SCVWD. US 101 was subsequently closed between Willow Road and Embarcadero Road (Palo Alto Weekly, 1998a). The Project team and the Caltrans District 4 Hydraulics Branch discussed this issue on July 11, 2008; they agreed that the installation of a concrete barrier in the highway median and between US 101

northbound lanes and the frontage road (East Bayshore Road) would not have a significant impact on the existing floodplains. The proposed barrier between the US 101 southbound lanes and the frontage road (West Bayshore Road) should be a thrie-beam barrier to prevent significant impacts to the existing floodplains.

The FEMA FIRM indicates that the Zone AO floodplains exist adjacent to the US 101 southbound lanes, at the Rengstorff Avenue Interchange and the Old Middlefield Road Interchange. The proposed highway widening could influence this floodplain by filling the area (including existing roadside ditches) with the new widened roadway. This may cause the floodplains to move slightly upstream. However, this widening would only impact approximately 0.3 acres of floodplain, which is only 0.4 percent of the total floodplain area. Impacts from the proposed widening and filling of the existing ditches should be minimal to the floodplain.

In addition, the US 101 cross culvert of Permanente Creek is within the Zone AO floodplain. The proposed culvert extension and additional flow, from the added impervious area at Permanente Creek, would cause a slight increase of the WSE upstream of US 101 up to the 3ft drop structure. The WSE upstream of the drop structure would not be impacted from the proposed modifications.

The proposed highway improvements would increase the impervious area by 10.5 acres within the Project limits. Of the 10.6 acres, 4.9 acres would be in an area predicted to be inundated by tidal impact. Additional impervious area would not impact the existing tidal flood zones. The remaining 5.7 acres only increases the impervious area from 0.01 percent to 0.05 percent when compared to the overall watershed area (see Table 16). The proposed change from pervious to impervious area would have an insignificant impact to the watershed characteristics. Therefore, the increase in storm water runoff would be minimal and would have an insignificant impact to the existing floodplains.

Table 16: Increase in Impervious Areas

Receiving Water Body(1)	Added Impervious Area (ac)(2)	Watershed Area (ac)(5)	Percentage Increase in Area (percent)
Wetland via City of Palo Alto Storm Drain System: OF-021-6-65	0.1(4)	420	0.29
Wetland via City of Palo Alto Storm Drain System: OF-030-1-55	1.1(4)	420	0.29
Matadero Creek	0.5(4)	8,704	0.01
Wetland via City of Palo Alto Storm Drain System: OF-039-3-07(3)	1.5(4)	8,640	0.04
Wetland via City of Palo Alto Storm Drain System: OF-039-5-04(3)	1.7(4)	8,640	0.04
Wetland via City of Mountain View Storm Drain System: A2-003, A2-007, A2-015	4.8	880	0.55
Permanente Creek	0.9	10,112	0.01
Total (excluding area predicted to be inundated by tidal impact)	5.7	10,992	0.05
Total	10.6	28,756	0.04

(1) Source: City of Palo Alto, 2007 and City of Mountain View, 2003
(2) Data from URS
(3) Tributaries to Adobe/Barron Creek watershed
(4) Area predicted to be inundated by tidal impact
(5) Source: FEMA (1997 & 1999) and Oakland Museum of California

3.2 Impacts on Natural and Beneficial Floodplain Values

Natural and beneficial floodplain values include, but are not limited to: fish, wildlife, plants, open space, natural beauty, scientific study, outdoor recreation, agriculture, aquaculture, forestry, natural moderation of floods, water quality maintenance, and groundwater recharge (Regional Water Quality Control Board [RWQCB], 2007).

At the Project site, locations with natural and beneficial floodplain values are limited to Matadero Creek, Adobe Creek/Barron Creek, and Permanente Creek. Identified short-term impacts to the natural and beneficial floodplain values include: 1) temporary loss of vegetation from bridge widening operation and 2) potential disturbance of aquatic habitats from construction. The proposed Project would minimize impacts to the maximum extent practicable.

Based on preliminary calculations, temporary impacted areas were estimated to be 0.7 acres. In addition, vegetation at the temporary impacted areas was found to be minimal. For this auxiliary lane installation Project, there would be no significant long-term

impacts to the natural and beneficial floodplain values. The project impact to the creek is negligible; impacts on natural and beneficial floodplain values would also be minimal.

3.3 Support of Probable Incompatible Floodplain Development

As defined by FHWA, the support of incompatible base floodplain development would encourage, allow, serve, or otherwise facilitate incompatible base flood plain development, such as commercial development or urban spread (FHWA, 1994).

Construction of a US 101 auxiliary lane, from the Embarcadero Road Interchange to the Shoreline Blvd Interchange, would not support incompatible floodplain development. It would not create new access to developed or undeveloped land.

3.4 Measures to Minimize Floodplain Impacts Associated with the Action

There would be minimal floodplain impacts associated with this Project. The proposed Project would increase 0.5 acres and 0.9 acres of impervious area in the Matadero Creek and Permanente Creek watershed, respectively. The proposed flow rate increase in the two creeks would be negligible, in comparison to the existing design 100-year flow rate. The adjusted flow rate, after the proposed Project, would not change the existing flow characteristics; flow would be contained in the channel during a 100-year storm event. The remaining 9.2 acres of impervious area added to the watershed would outfall directly to wetlands or outfall to the San Francisco Bay, via city storm drainage systems. Again, increase of the impervious area should be an insignificant impact to the existing drainage systems, when compared to the overall watershed. In addition, the San Francisquito Creek Joint Powers Authority is discussing implementing flood protection measures at San Francisquito Creek. This may minimize flooding potential at the Project location.

The highway bridge widening at Matadero Creek and Adobe Creek crossing would not impact the floodplain; thus, mitigation measures are not required at these two creek crossings. In addition, cross culvert extension at Permanente Creek would not impact the floodplain. Therefore, mitigation measures are not required.

3.5 Measures to Restore and Preserve the Natural and Beneficial Floodplain Values Impacted by this Action

As mentioned earlier, locations with natural and beneficial floodplain values are limited to Matadero Creek, Adobe Creek/Barron Creek, and Permanente Creek. Identified potential impacts to the natural and beneficial floodplain include: 1) the temporal loss of vegetation from the bridge widening operation, and 2) the potential disturbance of aquatic habitats at the creeks. Most of the environmental impacts resulting from construction can be mitigated with standard measures, re-vegetation, best management practices (BMPs), and other activities that would meet the requirements that are part of the Project's permit conditions.

One of the environmental impacts requiring non-standard measure is the potential disturbance of aquatic habitats at the creeks. Special construction techniques should be considered and implemented when constructing the widened bridges. Construction should not allow use of heavy-duty equipment entering the creek bed, so as to minimize environmental impact to the creeks.

3.6 Practicability of Alternatives to any Significant Encroachments

As defined by the FHWA, risk is defined as the consequences associated with the probability of flooding attributable to an encroachment. This includes the potential for property loss and hazard to life during the service life of the bridge and roadway (FHWA, 1994). It is impracticable to look for alternatives to mitigate encroachments to the high-tide floodplain. This would require construction of a new levee or upsizing existing levees at the San Francisco Bay, which would be very costly and would involve acquiring additional construction permits.

The other design alternatives to reduce floodplain impact at the Permanente Creek is to install additional cross culverts running parallel to the existing cross culvert. Excavation at both the upstream and downstream face of the cross culvert would be necessary to accommodate the space needed for the new cross culvert, which would be installed using the jack-and-bore method. Due to the complexity of construction procedures for installing additional cross culverts, this alternative would require additional construction costs.

3.7 Practicability of Alternatives to Any Longitudinal Encroachments

As defined by FHWA, a longitudinal encroachment is an action within the limits of the base floodplain that is parallel to the direction of the flow (FHWA, 1994).

The flow direction of the tidal floodplain within the Project limit is perpendicular to the direction of the highway. It would not be considered as a longitudinal encroachment. The only longitudinal encroachment within Project limit is the Zone AO floodplain adjacent to the US 101 travelway at North Rengstorff Avenue Interchange. However, this only influences 0.2 percent of the floodplain area. The encroachment would have minimal impact to the existing floodplain. Thus alternatives are not considered for this longitudinal encroachment.

References

California Department of Transportation, Traffics Operation Division. Traffic and Vehicle Data Systems Unit. <http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/2006all.htm> (Last accessed: January 3, 2008).

California Regional Water Quality Control Board San Francisco Bay Region. (January 2007). *San Francisco Bay Basin (Region 2) Water Quality Control Plan* (Basin Plan).

City/County Association of Governments of San Mateo County (C/CAG), Santa Clara Valley Transportation Authority (VTA), and San Mateo County Transportation Authority (TA). (2005). *The 2020 Peninsula Gateway Corridor Study.* <http://www.ccag.ca.gov/gateway_Corridor_Study.html> (Last date accessed: August 8, 2008).

City of Mountain View, California. (November 2005). *Urban Water Management Plan*.

City of Mountain View, California, Department of Public Works. (August 2003). *Storm Drainage System*.

City of Palo Alto, California. (1999). *Major Street Traffic Flow Map, 24 Hour Counts* (ADT). <http://www.cityofpaloalto.org/civica/filebank/blobdload.asp?BlobID=7302> (Last accessed: January 3, 2008).

City of Palo Alto, California (May 2007). *City of Palo Alto Storm Drain System Maps*.

City of Palo Alto, California, Department of Planning and Community Environment (July 2005). *City of Palo Alto Community Profile*.

City of Palo Alto, California, Department of Public Works. *Floodplain Management* <http://www.cityofpaloalto.org/depts/pwd/flood_+_storm/flood_zones.asp> (Last accessed: July 21, 2008).

Federal Emergency Management Agency. (June 1999a) *Flood Insurance Study, City of Palo Alto.*

Federal Emergency Management Agency. (June 1999b) *Flood Insurance Rate Map, City of Palo Alto*. Community Panel Number 060348 0003E.

Federal Emergency Management Agency. (June 1997a) *Flood Insurance Study, City of Mountain View.*

Federal Emergency Management Agency. (June 1997b) *Flood Insurance Rate Map, City of Mountain View*. Community Panel Number 060347 0004E.

Federal Highway Administration. (December 7, 1994). *Federal-Aid Policy Guide* Transmittal 12. Subchapter G – Engineering and Traffic Operations – Part 650 – Bridges, Structures, and Hydraulics. Subpart A–Location and Hydraulic Design of Encroachment of Flood Plains. <http://www.fhwa.dot.gov/legsregs/directives/fapg/cfr0650a.htm > (Last accessed: January 3, 2008).

Oakland Museum of California. *Creek and Watershed Map of Palo Alto and Vicinity* <http://www.museumca.org/creeks/MapPA.html> (Last accessed: January 28, 2008)

Palo Alto Weekly. (February 4, 1998a). *Palo Alto Under Water.* <http://www.paloaltoonline.com/news_features/storm98/1998_02_03.flood2.html > (Last accessed: July 21, 2008).

Palo Alto Weekly (February 6, 1998b). *The Anatomy of a Flood* <http://www.paloaltoonline.com/news_features/storm98/1998_02_06.anatomy.html> (Last accessed: July 21, 2008).

Palo Alto Weekly (February 6, 1998c). *FEMA map proves nearly accurate* < <http://www.paloaltoonline.com/news_features/storm98/1998_02_11.femamap.html> (Last accessed: July 21, 2008).

Santa Clara Valley Water District (1998). *The Floods of 1998 San Francisquito Creek February 3, 1998.*

Tetra Tech Inc. (September 2006). *Lower Peninsula Watershed Stewardship Plans*. Prepared for Santa Clara Valley Water District.

US Census Bureau (February 12, 2002). *US Gazetteer: 2000 and 1990*. <http://www.census.gov/geo/www/gazetteer/gazette.html> (Last accessed: July 21, 2008).

Figure 804.7B
Floodplain Evaluation Report Summary

Dist.	4	Co.	Santa Clara	Rte.	101	P.M	52.2/48.6
Project No.	4A330K	Bridge No.	37 0174, 37 0040				
Limit:							
Embarcadero Road/Oregon Expressway Interchange to Shoreline Blvd Interchange in US 101 at the City of Palo Alto and City of Mountain View							
Floodplain Description:							
100-year floodplain caused by the high tide inundates freeway from Embarcadero Road/Oregon Expressway Interchange to North Rengstorff Avenue Interchange							

		Yes	No
1.	Is the proposed action a longitudinal encroachment of the base floodplain?		√
2.	Are the risks associated with the implementation of the proposed action significant?		√
3.	Will the proposed action support probable incompatible floodplain development?		√
4.	Are there any significant impacts on natural and beneficial floodplain values?		√
5.	Routine construction procedures are required to minimize impacts on the floodplain. Area there any special mitigation measures necessary to minimize impacts or restore and preserve natural and beneficial floodplain values? If yes, explain.		√
6.	Does the proposed action constitute a significant floodplain encroachment as defined in 23 CFR, Section 650.105(q).		√
7.	Are Location Hydraulic Studies that document the above answers on file? If not explain.	√	

Prepared By:

Signature – Hydraulic Engineer, WRECO — Date: 12/4/2008

Approved By:

Signature – Dist. Hydraulic Engineer — Date

Signature – Dist. Environmental Branch Chief — Date

Signature – Dis. Project Engineer — Date

Figure 804.7B
Floodplain Evaluation Report Summary

Dist.	4	Co.	Santa Clara	Rte.	101	P.M	52.2/48.6
Project No.	4A330K	Bridge No.	37 0174, 37 0040				
Limit:							
Embarcadero Road/Oregon Expressway Interchange to Shoreline Blvd Interchange in US 101 at the City of Palo Alto and City of Mountain View							
Floodplain Description:							
100-year floodplain caused by the overtopping flow from Permanente Creek sheet flowing parallel to the US 101 at local street and residential area.							

		Yes	No
1.	Is the proposed action a longitudinal encroachment of the base floodplain?	√	
2.	Are the risks associated with the implementation of the proposed action significant?		√
3.	Will the proposed action support probable incompatible floodplain development?		√
4.	Are there any significant impacts on natural and beneficial floodplain values?		√
5.	Routine construction procedures are required to minimize impacts on the floodplain. Area there any special mitigation measures necessary to minimize impacts or restore and preserve natural and beneficial floodplain values? If yes, explain.		√
6.	Does the proposed action constitute a significant floodplain encroachment as defined in 23 CFR, Section 650.105(q).		√
7.	Are Location Hydraulic Studies that document the above answers on file? If not explain.	√	

Prepared By:

Signature – Hydraulic Engineer, WRECO — Date: 12/4/2008

Approved By:

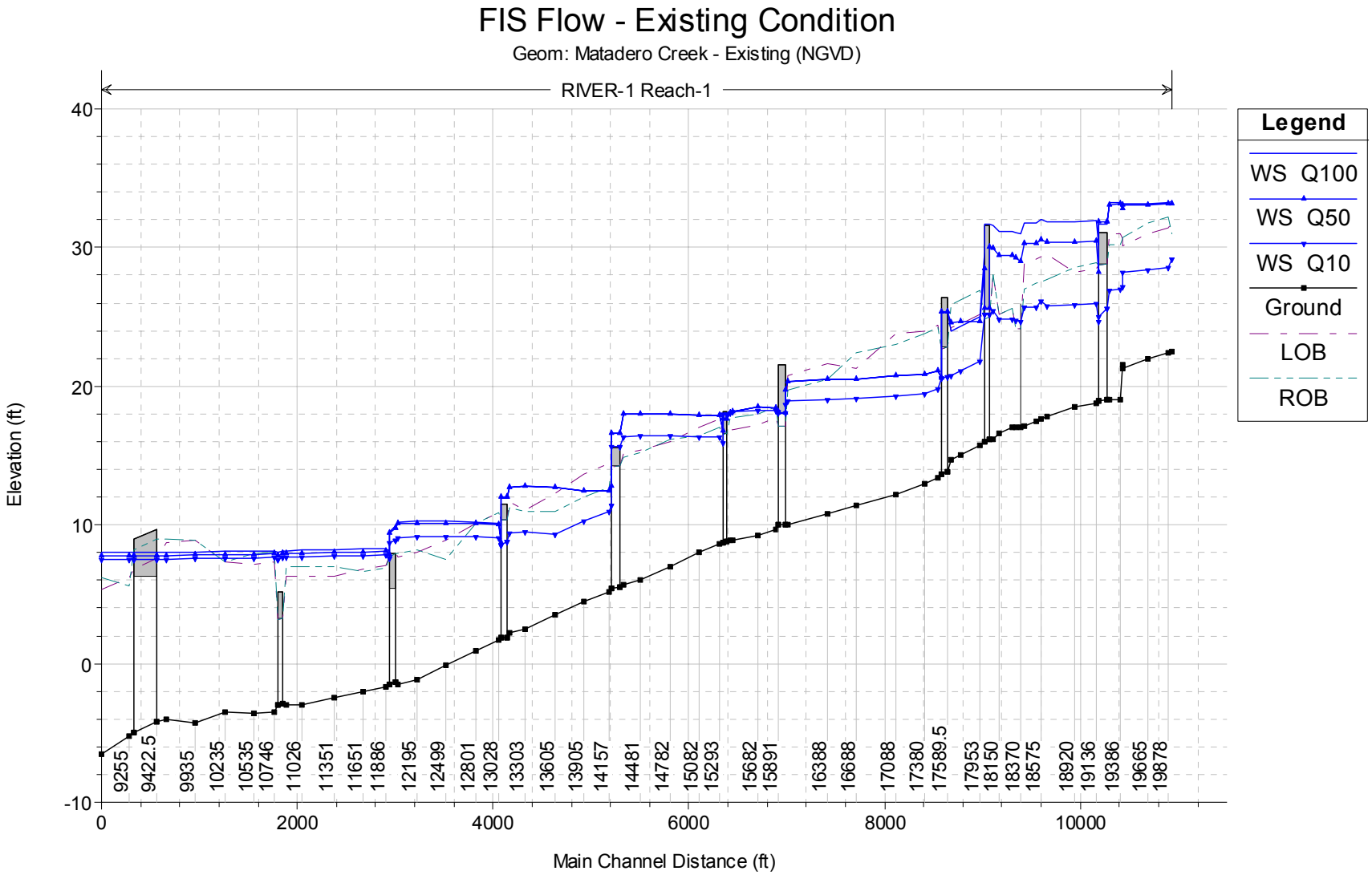
Signature – Dist. Hydraulic Engineer — Date

Signature – Dist. Environmental Branch Chief — Date

Signature – Dis. Project Engineer — Date

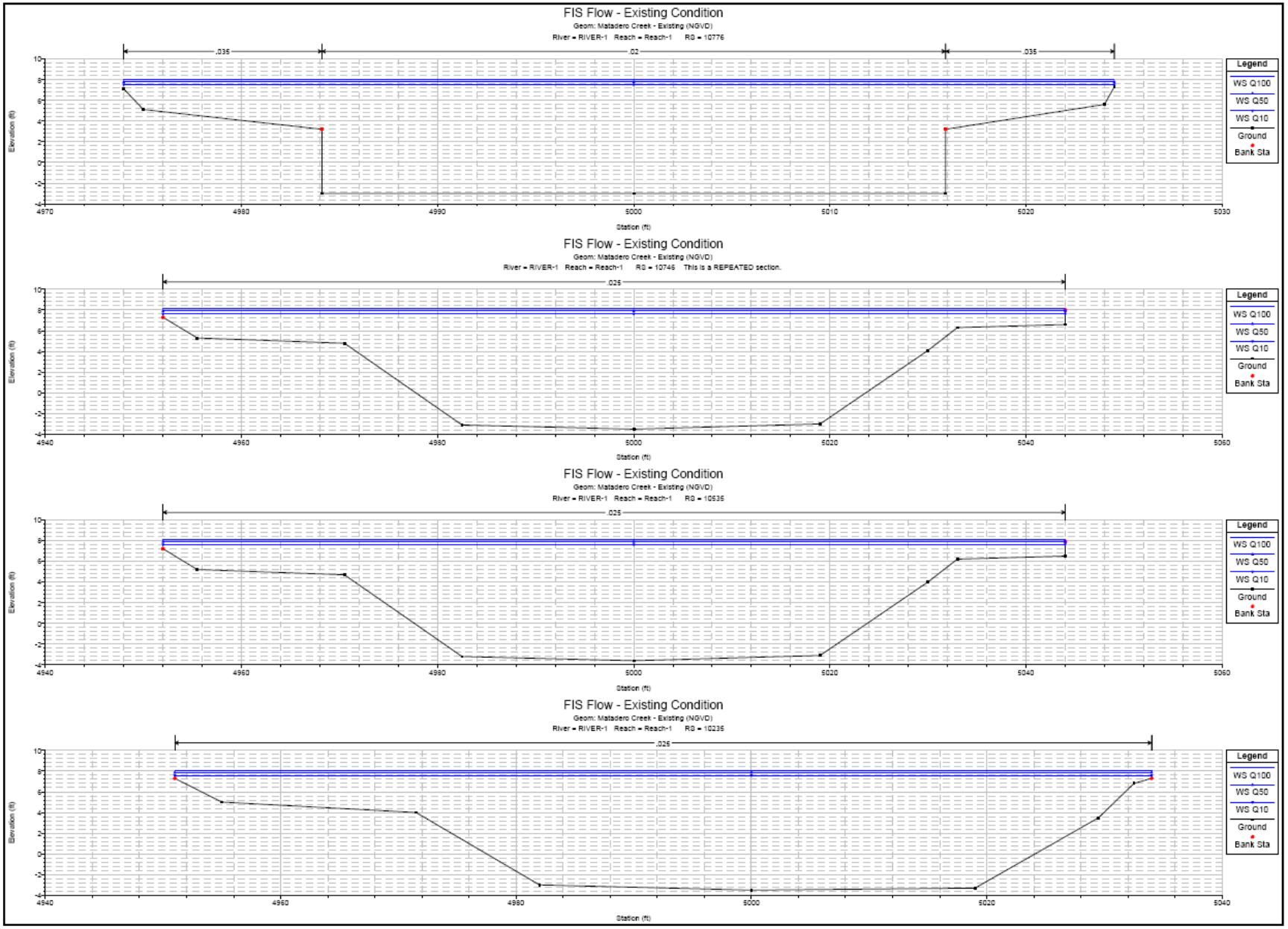
Appendix A Hydraulic Analysis, Existing Condition

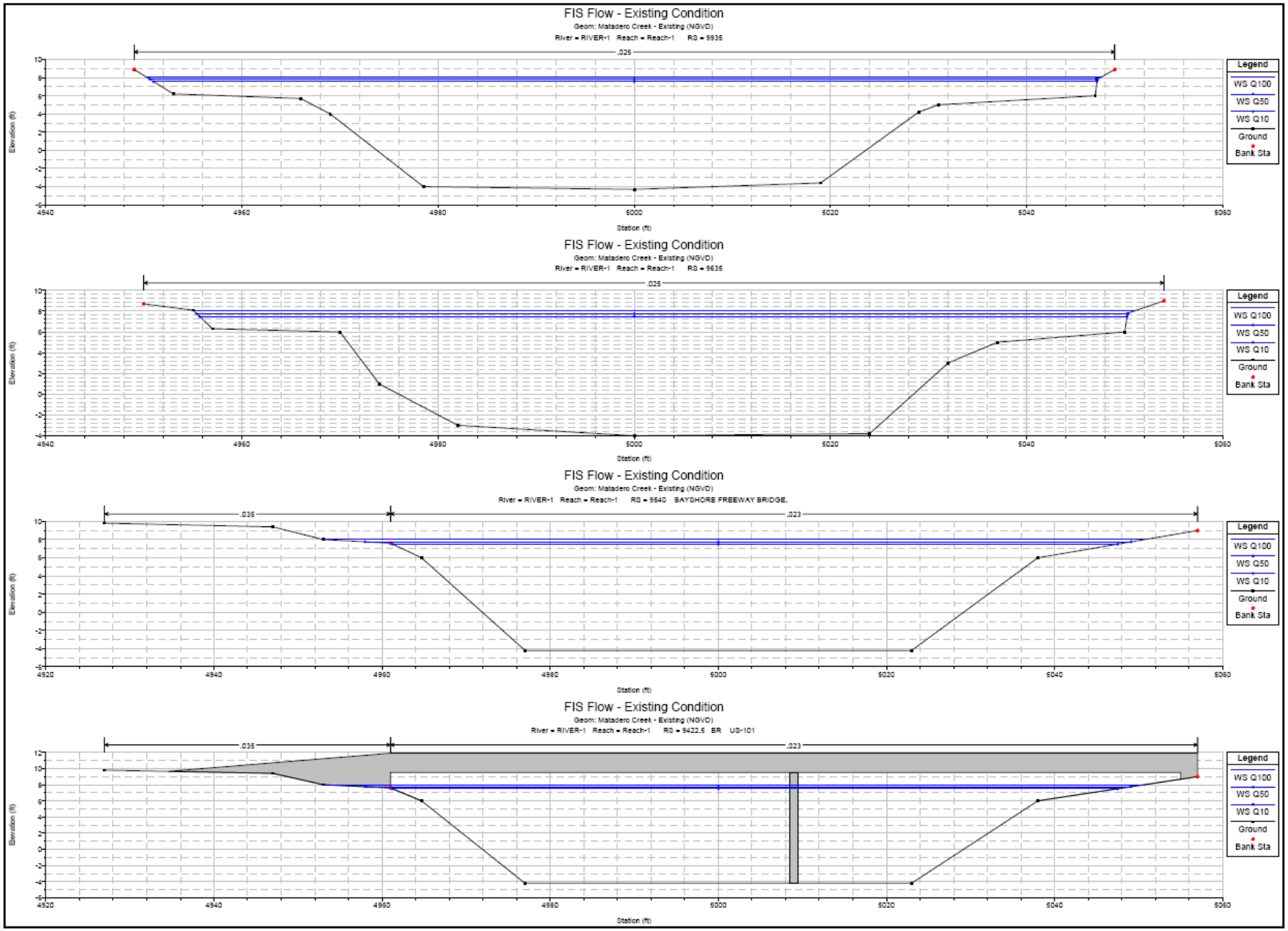
Appendix A.1 Matadero Creek, Existing Condition

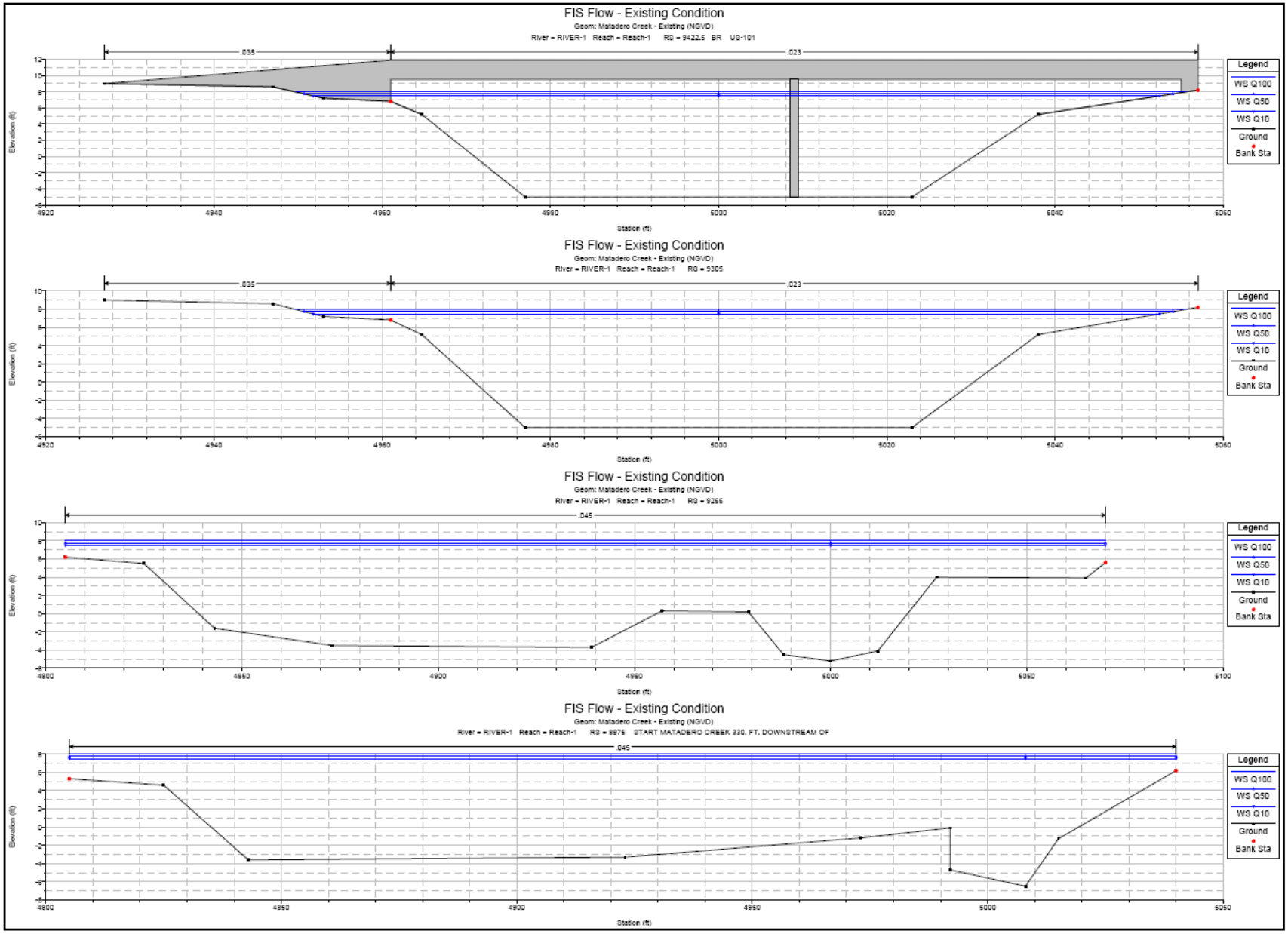

FIS Flow - Existing Condition
Geom: Matadero Creek - Existing (NGVD)
RIVER-1 Reach-1
Legend
WS Q100
WS Q50
WS Q10
Ground
LOB
ROB
Elevation (ft)
Main Channel Distance (ft)
40
30
20
10
0
-10
0
2000
4000
6000
8000
10000
9255
9422.5
9935
10235
10535
10746
11026
11351
11651
11886
12195
12499
12801
13028
13303
13605
13905
14157
14481
14782
15082
15293
15682
15891
16388
16688
17088
17380
17589.5
17953
18150
18370
18575
18920
19136
19386
19665
19878

HEC-RAS Plan: FIS-E001 Locations: User Defined

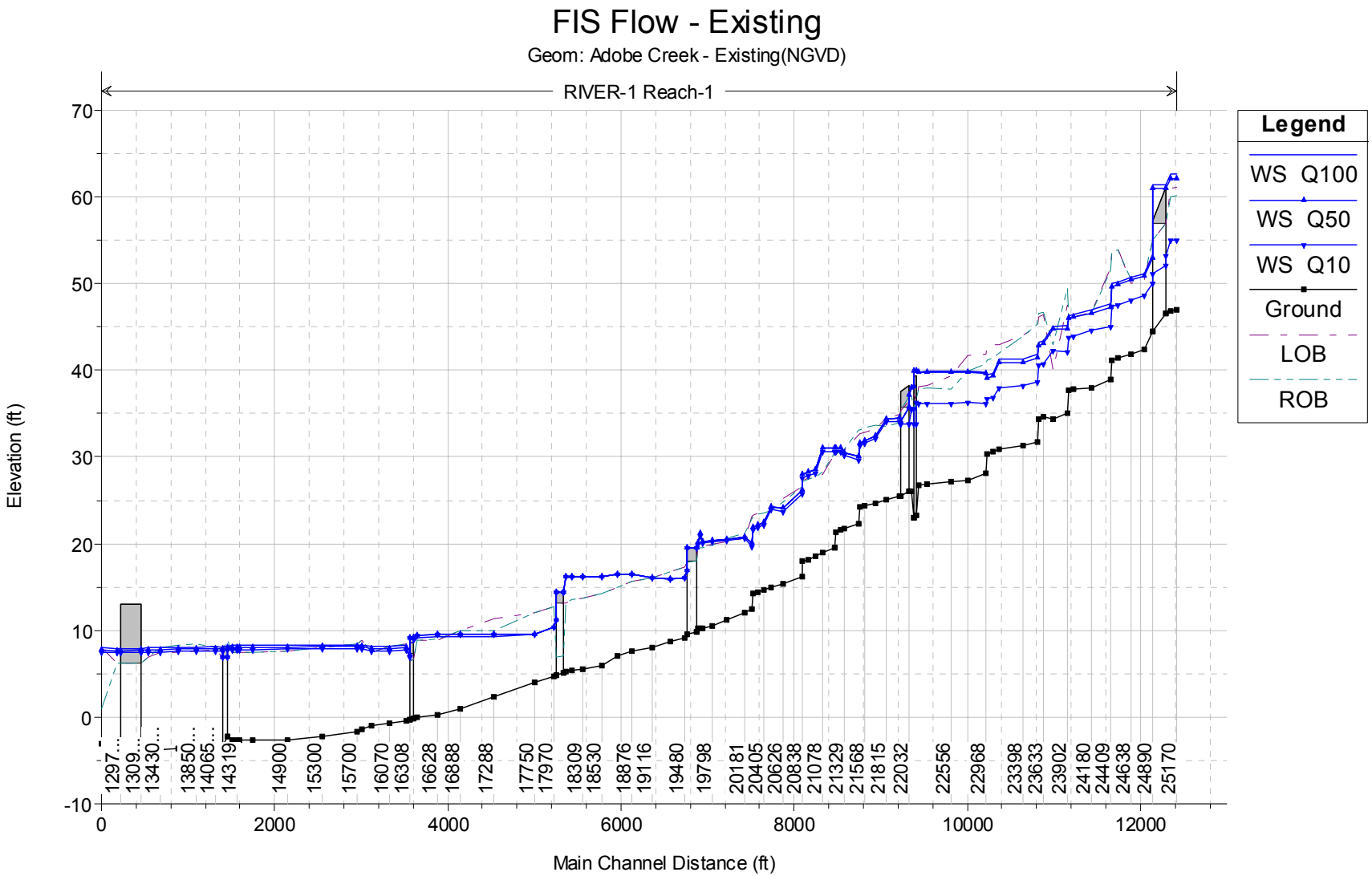
River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
RIVER-1	Reach-1	10776	Q100	1500.00	-3.00	8.01		8.25	0.000189	4.06	417.22	50.50	0.22
RIVER-1	Reach-1	10776	Q50	1500.00	-3.00	7.77		8.03	0.000205	4.16	404.99	50.50	0.22
RIVER-1	Reach-1	10776	Q10	1380.00	-3.00	7.53		7.76	0.000188	3.93	392.71	50.50	0.21
RIVER-1	Reach-1	10746	Q100	1500.00	-3.50	8.14		8.22	0.000114	2.25	667.64	92.00	0.15
RIVER-1	Reach-1	10746	Q50	1500.00	-3.50	7.90		7.99	0.000126	2.32	645.93	92.00	0.15
RIVER-1	Reach-1	10746	Q10	1380.00	-3.50	7.64		7.72	0.000120	2.22	622.13	92.00	0.15
RIVER-1	Reach-1	10535	Q100	1500.00	-3.60	8.12		8.19	0.000110	2.22	674.79	92.00	0.14
RIVER-1	Reach-1	10535	Q50	1500.00	-3.60	7.88		7.96	0.000122	2.30	652.85	92.00	0.15
RIVER-1	Reach-1	10535	Q10	1380.00	-3.60	7.62		7.69	0.000116	2.19	629.16	92.00	0.15
RIVER-1	Reach-1	10235	Q100	1500.00	-3.50	8.08		8.16	0.000103	2.26	662.67	83.00	0.14
RIVER-1	Reach-1	10235	Q50	1500.00	-3.50	7.84		7.92	0.000113	2.33	642.63	83.00	0.15
RIVER-1	Reach-1	10235	Q10	1380.00	-3.50	7.58		7.66	0.000106	2.22	621.48	83.00	0.14
RIVER-1	Reach-1	9935	Q100	1500.00	-4.30	8.06		8.13	0.000090	2.05	733.07	97.39	0.13
RIVER-1	Reach-1	9935	Q50	1500.00	-4.30	7.82		7.89	0.000099	2.11	709.40	96.63	0.14
RIVER-1	Reach-1	9935	Q10	1380.00	-4.30	7.57		7.63	0.000093	2.01	684.90	96.20	0.13
RIVER-1	Reach-1	9635	Q100	1775.00	-4.00	8.00		8.09	0.000126	2.44	728.56	95.81	0.16
RIVER-1	Reach-1	9635	Q50	1775.00	-4.00	7.75		7.85	0.000139	2.52	704.79	94.91	0.16
RIVER-1	Reach-1	9635	Q10	1640.00	-4.00	7.50		7.59	0.000132	2.41	681.10	94.59	0.16
RIVER-1	Reach-1	9540	Q100	1775.00	-4.20	8.00	-0.74	8.08	0.000080	2.30	773.83	97.68	0.14
RIVER-1	Reach-1	9540	Q50	1775.00	-4.20	7.75	-0.74	7.84	0.000086	2.37	750.31	91.13	0.14
RIVER-1	Reach-1	9540	Q10	1640.00	-4.20	7.50	-0.92	7.58	0.000079	2.25	728.30	86.29	0.14
RIVER-1	Reach-1	9422.5		Bridge									
RIVER-1	Reach-1	9305	Q100	1775.00	-5.00	7.98		8.05	0.000063	2.10	853.39	105.97	0.12
RIVER-1	Reach-1	9305	Q50	1775.00	-5.00	7.73		7.80	0.000068	2.16	827.15	103.31	0.13
RIVER-1	Reach-1	9305	Q10	1640.00	-5.00	7.48		7.55	0.000062	2.05	801.87	100.68	0.12
RIVER-1	Reach-1	9255	Q100	1775.00	-5.20	8.01		8.02	0.000034	0.78	2269.86	265.00	0.05
RIVER-1	Reach-1	9255	Q50	1775.00	-5.20	7.76		7.77	0.000037	0.81	2203.83	265.00	0.05
RIVER-1	Reach-1	9255	Q10	1640.00	-5.20	7.51		7.52	0.000035	0.77	2137.39	265.00	0.05
RIVER-1	Reach-1	8975	Q100	1775.00	-6.50	8.00	-1.79	8.01	0.000031	0.80	2228.50	235.00	0.05
RIVER-1	Reach-1	8975	Q50	1775.00	-6.50	7.75	-1.79	7.76	0.000034	0.82	2169.75	235.00	0.05
RIVER-1	Reach-1	8975	Q10	1640.00	-6.50	7.50	-1.90	7.51	0.000032	0.78	2111.00	235.00	0.05


FIS Flow - Existing Condition
Geom: Matadero Creek - Existing (NGVD)
River = RIVER-1 Reach = Reach-1 RS = 10776
.035
.02
.035
Elevation (ft)
Station (ft)
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
FIS Flow - Existing Condition
Geom: Matadero Creek - Existing (NGVD)
River = RIVER-1 Reach = Reach-1 RS = 10746 This is a REPEATED section.
.025
Elevation (ft)
Station (ft)
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
FIS Flow - Existing Condition
Geom: Matadero Creek - Existing (NGVD)
River = RIVER-1 Reach = Reach-1 RS = 10535
.025
Elevation (ft)
Station (ft)
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
FIS Flow - Existing Condition
Geom: Matadero Creek - Existing (NGVD)
River = RIVER-1 Reach = Reach-1 RS = 10235
.025
Elevation (ft)
Station (ft)
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta


FIS Flow - Existing Condition
Geom: Matadero Creek - Existing (NGVD)
River = RIVER-1 Reach = Reach-1 RS = 9936
.025
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)
FIS Flow - Existing Condition
Geom: Matadero Creek - Existing (NGVD)
River = RIVER-1 Reach = Reach-1 RS = 9636
.025
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)
FIS Flow - Existing Condition
Geom: Matadero Creek - Existing (NGVD)
River = RIVER-1 Reach = Reach-1 RS = 9540 BAYSHORE FREEWAY BRIDGE.
.035
.023
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)
FIS Flow - Existing Condition
Geom: Matadero Creek - Existing (NGVD)
River = RIVER-1 Reach = Reach-1 RS = 9422.5 BR US-101
.035
.023
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)

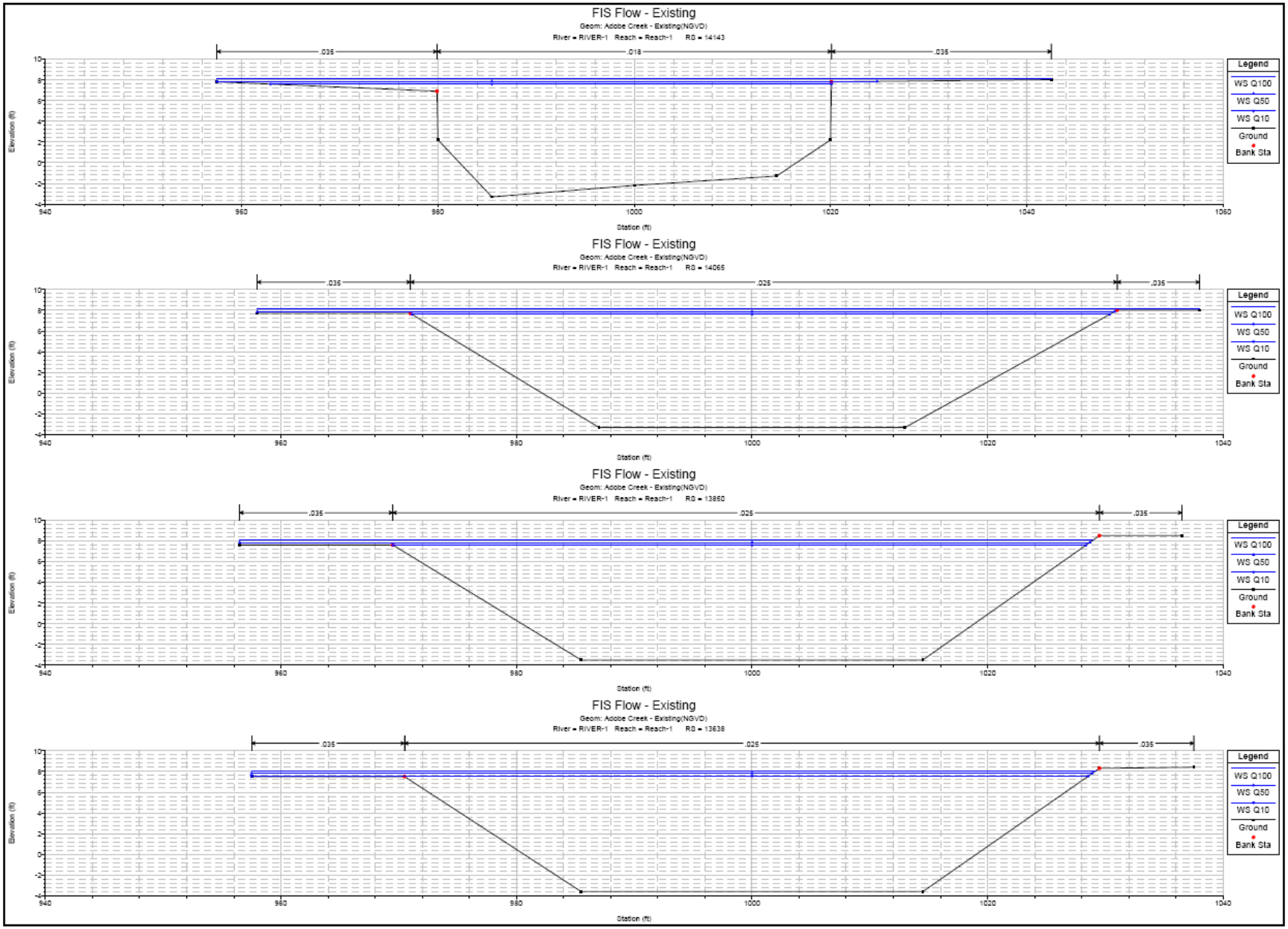

FIS Flow - Existing Condition
Geom: Matadero Creek - Existing (NGVD)
River = RIVER-1 Reach = Reach-1 RS = 9422.5 BR UG-101
.035
.023
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)
FIS Flow - Existing Condition
Geom: Matadero Creek - Existing (NGVD)
River = RIVER-1 Reach = Reach-1 RS = 9305
.035
.023
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)
FIS Flow - Existing Condition
Geom: Matadero Creek - Existing (NGVD)
River = RIVER-1 Reach = Reach-1 RS = 9255
.045
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)
FIS Flow - Existing Condition
Geom: Matadero Creek - Existing (NGVD)
River = RIVER-1 Reach = Reach-1 RS = 8975 START MATADERO CREEK 330. FT. DOWNSTREAM OF
.045
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)

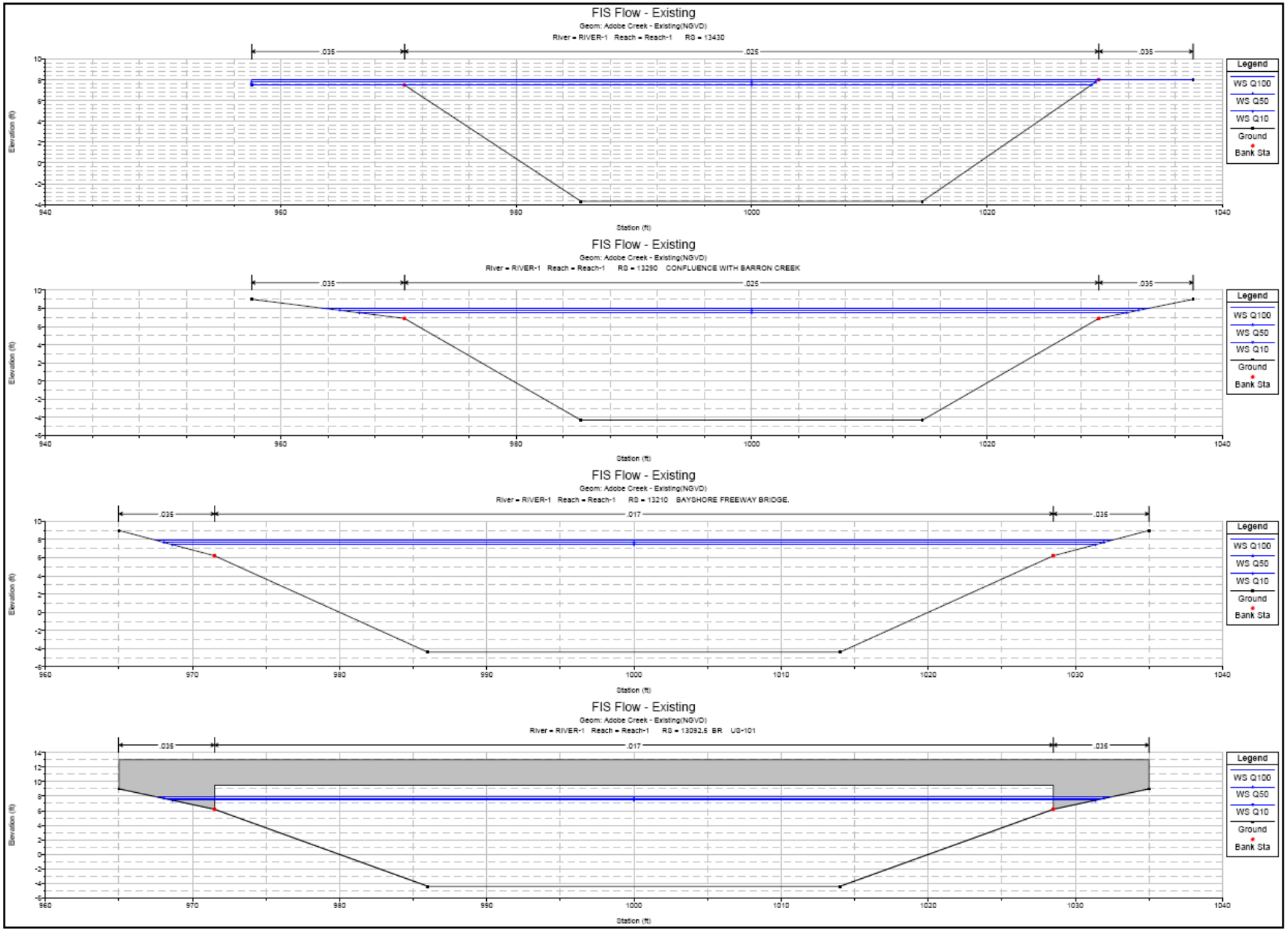
Appendix A.2 Adobe Creek, Existing Condition

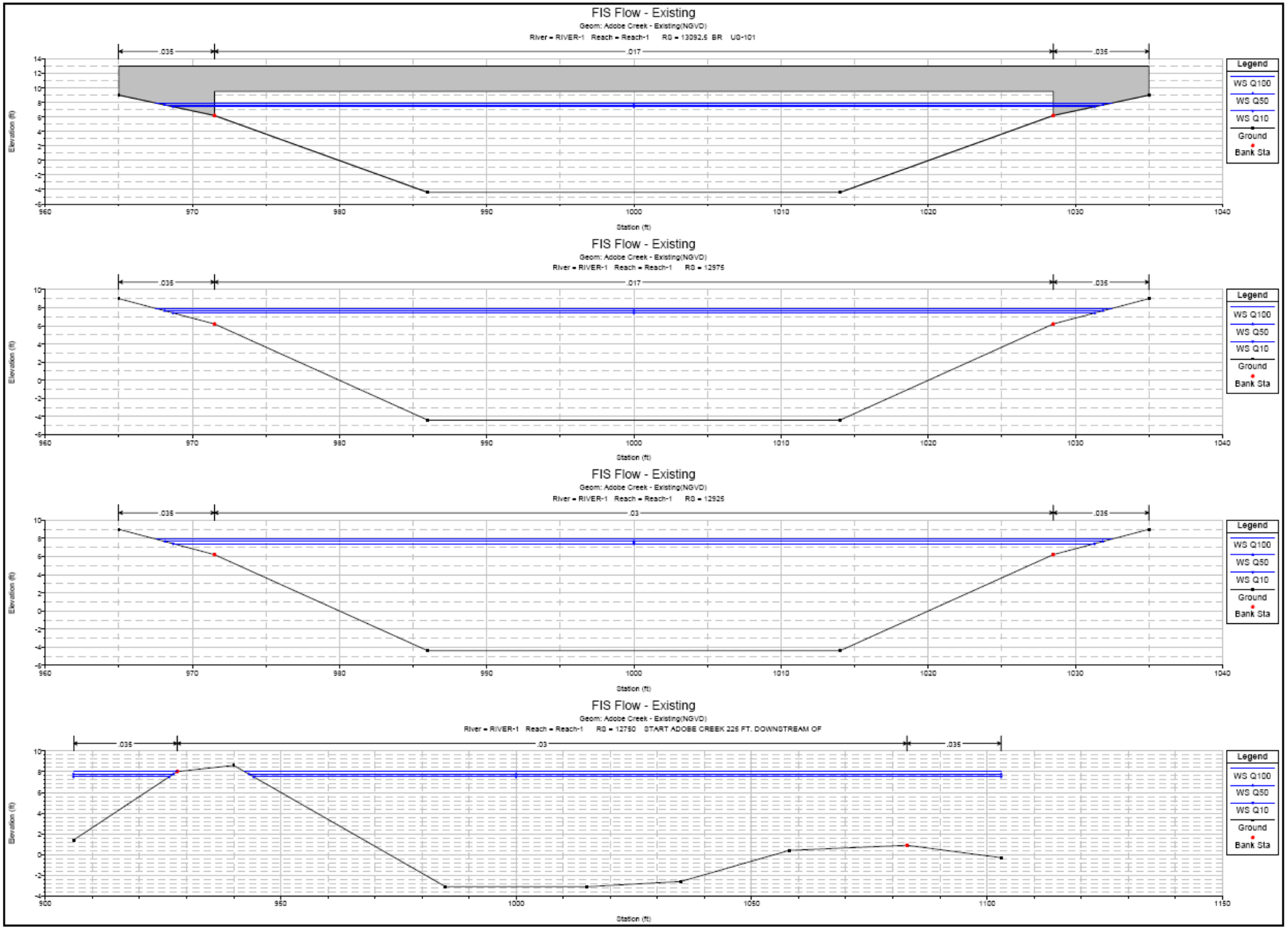

FIS Flow - Existing
Geom: Adobe Creek - Existing(NGVD)
RIVER-1 Reach-1
Legend
WS Q100
WS Q50
WS Q10
Ground
LOB
ROB
Elevation (ft)
Main Channel Distance (ft)
70
60
50
40
30
20
10
0
-10
0
2000
4000
6000
8000
10000
12000
1297...
1309...
13430...
13850...
14065...
14319
14900
15300
15700
16070
16308
16628
16888
17288
17750
17970
18309
18530
18876
19116
19480
19798
20181
20405
20626
20838
21078
21329
21568
21815
22032
22556
22968
23398
23633
23902
24180
24409
24638
24890
25170

HEC-RAS Plan: FIS-E001 Locations: User Defined

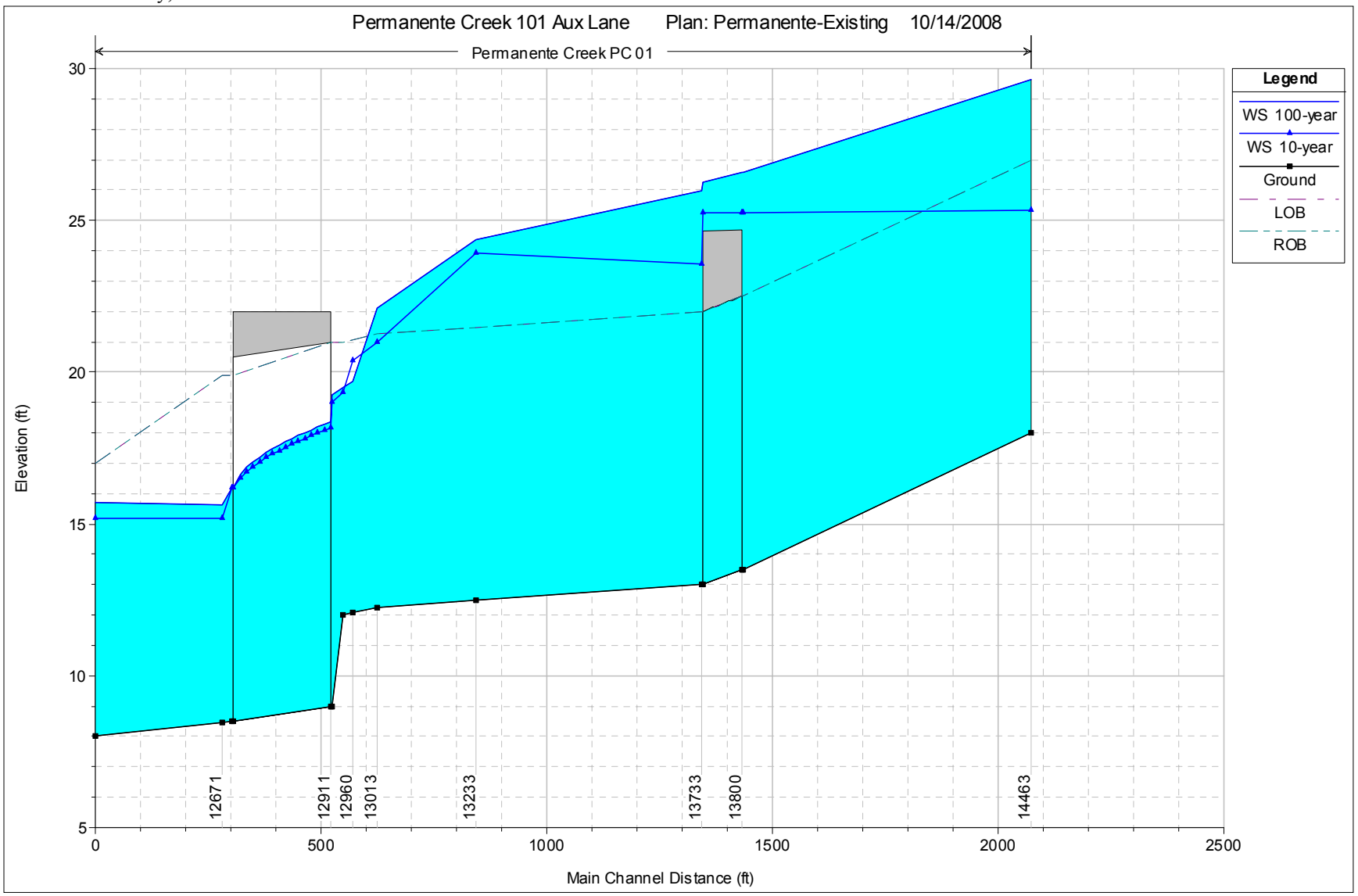
River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
RIVER-1	Reach-1	14143	Q100	1350.00	-3.30	8.08		8.27	0.000124	3.45	410.19	85.00	0.20
RIVER-1	Reach-1	14143	Q50	1350.00	-3.30	7.84		8.04	0.000135	3.54	391.18	67.25	0.20
RIVER-1	Reach-1	14143	Q10	1350.00	-3.30	7.58		7.79	0.000148	3.65	375.38	57.15	0.21
RIVER-1	Reach-1	14065	Q100	1350.00	-3.30	8.11		8.23	0.000145	2.72	501.02	80.00	0.17
RIVER-1	Reach-1	14065	Q50	1350.00	-3.30	7.87		7.99	0.000160	2.81	482.81	72.79	0.17
RIVER-1	Reach-1	14065	Q10	1350.00	-3.30	7.61		7.74	0.000176	2.90	465.13	59.25	0.18
RIVER-1	Reach-1	13850	Q100	1350.00	-3.50	8.09		8.19	0.000127	2.61	522.98	72.49	0.16
RIVER-1	Reach-1	13850	Q50	1350.00	-3.50	7.85		7.96	0.000138	2.69	505.54	72.18	0.16
RIVER-1	Reach-1	13850	Q10	1350.00	-3.50	7.59		7.71	0.000152	2.77	486.87	58.84	0.17
RIVER-1	Reach-1	13638	Q100	1350.00	-3.60	8.06		8.17	0.000126	2.61	522.87	71.70	0.16
RIVER-1	Reach-1	13638	Q50	1350.00	-3.60	7.82		7.93	0.000137	2.69	505.44	71.39	0.16
RIVER-1	Reach-1	13638	Q10	1350.00	-3.60	7.55		7.67	0.000151	2.78	486.57	71.06	0.17
RIVER-1	Reach-1	13430	Q100	1350.00	-3.70	8.04		8.14	0.000123	2.59	528.05	80.00	0.15
RIVER-1	Reach-1	13430	Q50	1350.00	-3.70	7.79		7.90	0.000134	2.66	510.06	71.73	0.16
RIVER-1	Reach-1	13430	Q10	1350.00	-3.70	7.52		7.64	0.000148	2.75	490.91	71.39	0.17
RIVER-1	Reach-1	13290	Q100	1350.00	-4.30	8.03		8.12	0.000096	2.41	566.10	70.33	0.14
RIVER-1	Reach-1	13290	Q50	1350.00	-4.30	7.79		7.88	0.000105	2.47	549.07	67.87	0.14
RIVER-1	Reach-1	13290	Q10	1350.00	-4.30	7.52		7.62	0.000116	2.55	531.23	65.19	0.15
RIVER-1	Reach-1	13210	Q100	1780.00	-4.40	7.93	0.21	8.09	0.000078	3.24	556.22	65.04	0.18
RIVER-1	Reach-1	13210	Q50	1780.00	-4.40	7.68	0.21	7.85	0.000085	3.32	539.97	63.87	0.19
RIVER-1	Reach-1	13210	Q10	1660.00	-4.40	7.44	0.01	7.60	0.000081	3.18	524.61	62.75	0.19
RIVER-1	Reach-1	13092.5		Bridge									
RIVER-1	Reach-1	12975	Q100	1780.00	-4.40	7.91		8.08	0.000078	3.24	554.94	64.95	0.18
RIVER-1	Reach-1	12975	Q50	1780.00	-4.40	7.66		7.83	0.000086	3.33	538.61	63.77	0.19
RIVER-1	Reach-1	12975	Q10	1660.00	-4.40	7.42		7.58	0.000081	3.19	523.35	62.65	0.19
RIVER-1	Reach-1	12925	Q100	1780.00	-4.40	7.91		8.07	0.000244	3.24	554.54	64.92	0.18
RIVER-1	Reach-1	12925	Q50	1780.00	-4.40	7.65		7.82	0.000268	3.33	538.17	63.74	0.19
RIVER-1	Reach-1	12925	Q10	1660.00	-4.40	7.41		7.57	0.000254	3.19	522.94	62.62	0.19
RIVER-1	Reach-1	12750	Q100	1780.00	-3.10	8.00	0.09	8.03	0.000045	1.36	1406.59	182.69	0.08
RIVER-1	Reach-1	12750	Q50	1780.00	-3.10	7.75	0.09	7.78	0.000049	1.41	1361.14	180.90	0.09
RIVER-1	Reach-1	12750	Q10	1660.00	-3.10	7.50	-0.04	7.53	0.000047	1.35	1316.14	179.10	0.08


FIS Flow - Existing
Geom: Adobe Creek - Existing(NGVD)
River = RIVER-1 Reach = Reach-1 RS = 14143
.035
.018
.035
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)
FIS Flow - Existing
Geom: Adobe Creek - Existing(NGVD)
River = RIVER-1 Reach = Reach-1 RS = 14065
.035
.025
.035
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)
FIS Flow - Existing
Geom: Adobe Creek - Existing(NGVD)
River = RIVER-1 Reach = Reach-1 RS = 13850
.035
.025
.035
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)
FIS Flow - Existing
Geom: Adobe Creek - Existing(NGVD)
River = RIVER-1 Reach = Reach-1 RS = 13638
.035
.025
.035
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)


FIS Flow - Existing
Geom: Adobe Creek - Existing(NGVD)
River = RIVER-1 Reach = Reach-1 RS = 13430
.035
.025
.035
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)
FIS Flow - Existing
Geom: Adobe Creek - Existing(NGVD)
River = RIVER-1 Reach = Reach-1 RS = 13290 CONFLUENCE WITH BARRON CREEK
.035
.025
.035
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)
FIS Flow - Existing
Geom: Adobe Creek - Existing(NGVD)
River = RIVER-1 Reach = Reach-1 RS = 13210 BAYSHORE FREEWAY BRIDGE.
.035
.017
.035
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)
FIS Flow - Existing
Geom: Adobe Creek - Existing(NGVD)
River = RIVER-1 Reach = Reach-1 RS = 13092.5 BR UG-101
.035
.017
.035
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)

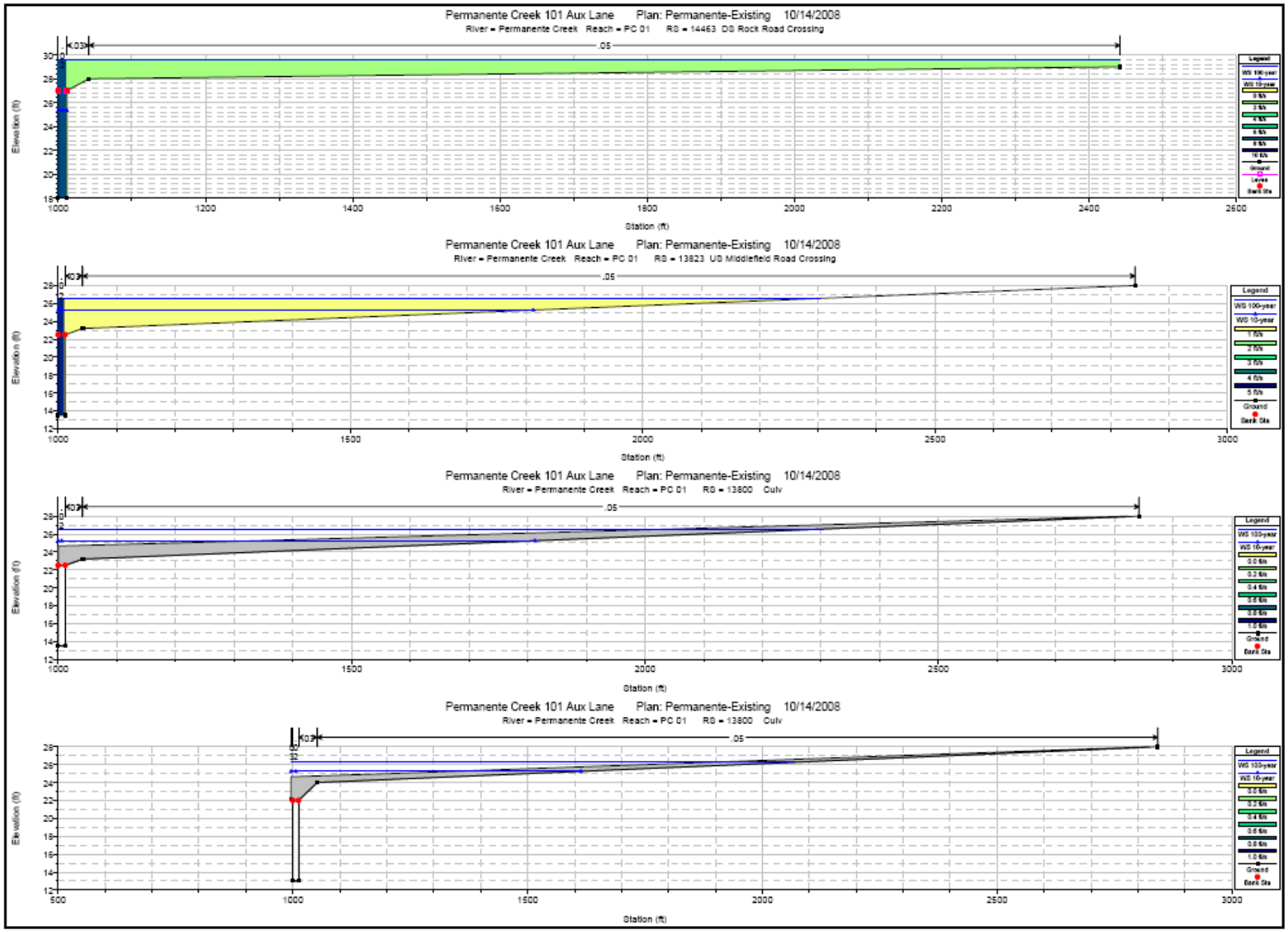

FIS Flow - Existing
Geom: Adobe Creek - Existing(NGVD)
River = RIVER-1 Reach = Reach-1 RS = 13092.5 BR UG-101
.035
.017
.035
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)
FIS Flow - Existing
Geom: Adobe Creek - Existing(NGVD)
River = RIVER-1 Reach = Reach-1 RS = 12975
.035
.017
.035
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)
FIS Flow - Existing
Geom: Adobe Creek - Existing(NGVD)
River = RIVER-1 Reach = Reach-1 RS = 12925
.035
.03
.035
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)
FIS Flow - Existing
Geom: Adobe Creek - Existing(NGVD)
River = RIVER-1 Reach = Reach-1 RS = 12750 START ADOBE CREEK 225 FT. DOWNSTREAM OF
.035
.03
.035
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)

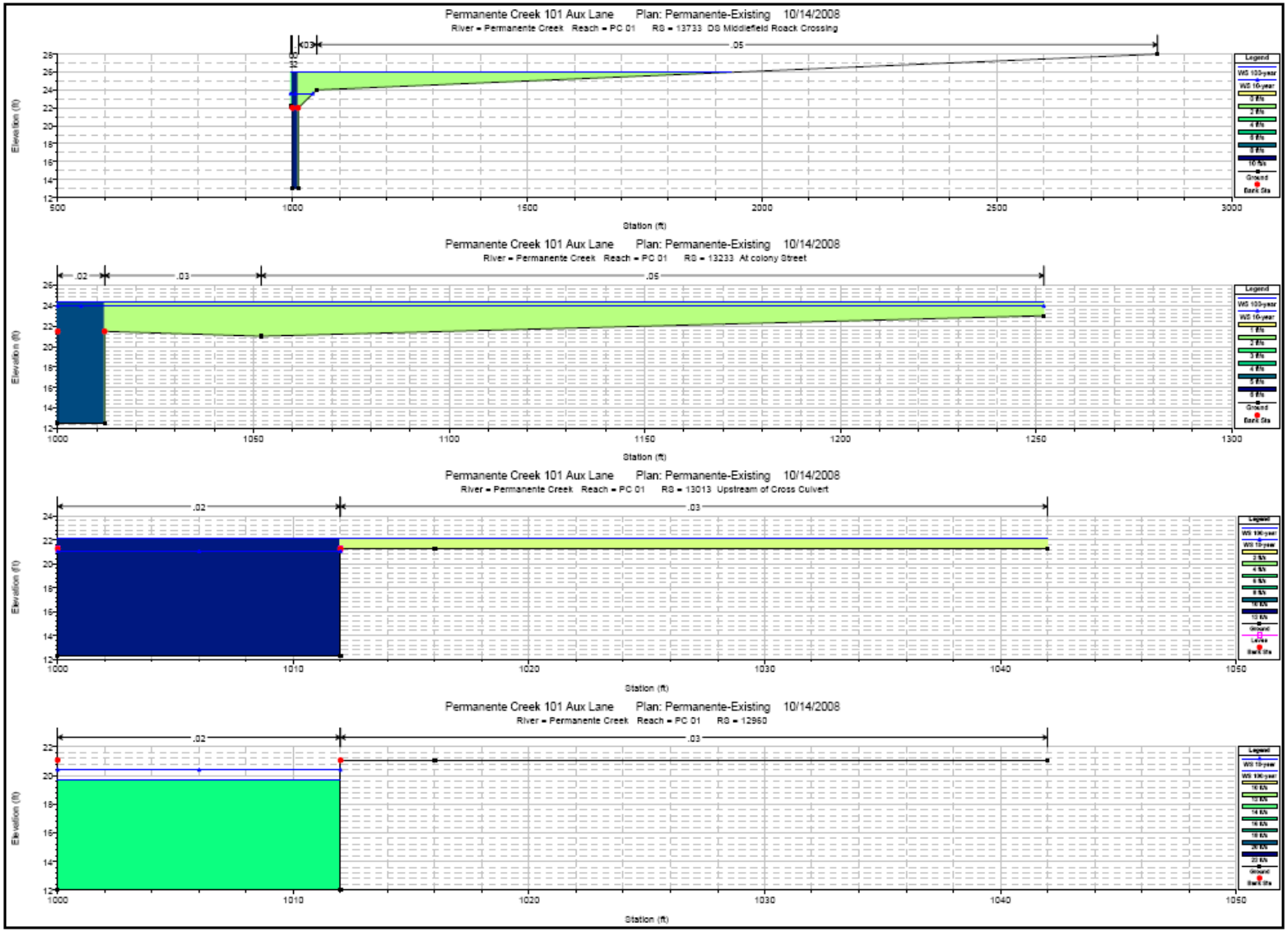
Appendix A.3 Permanente Creek, Existing Condition

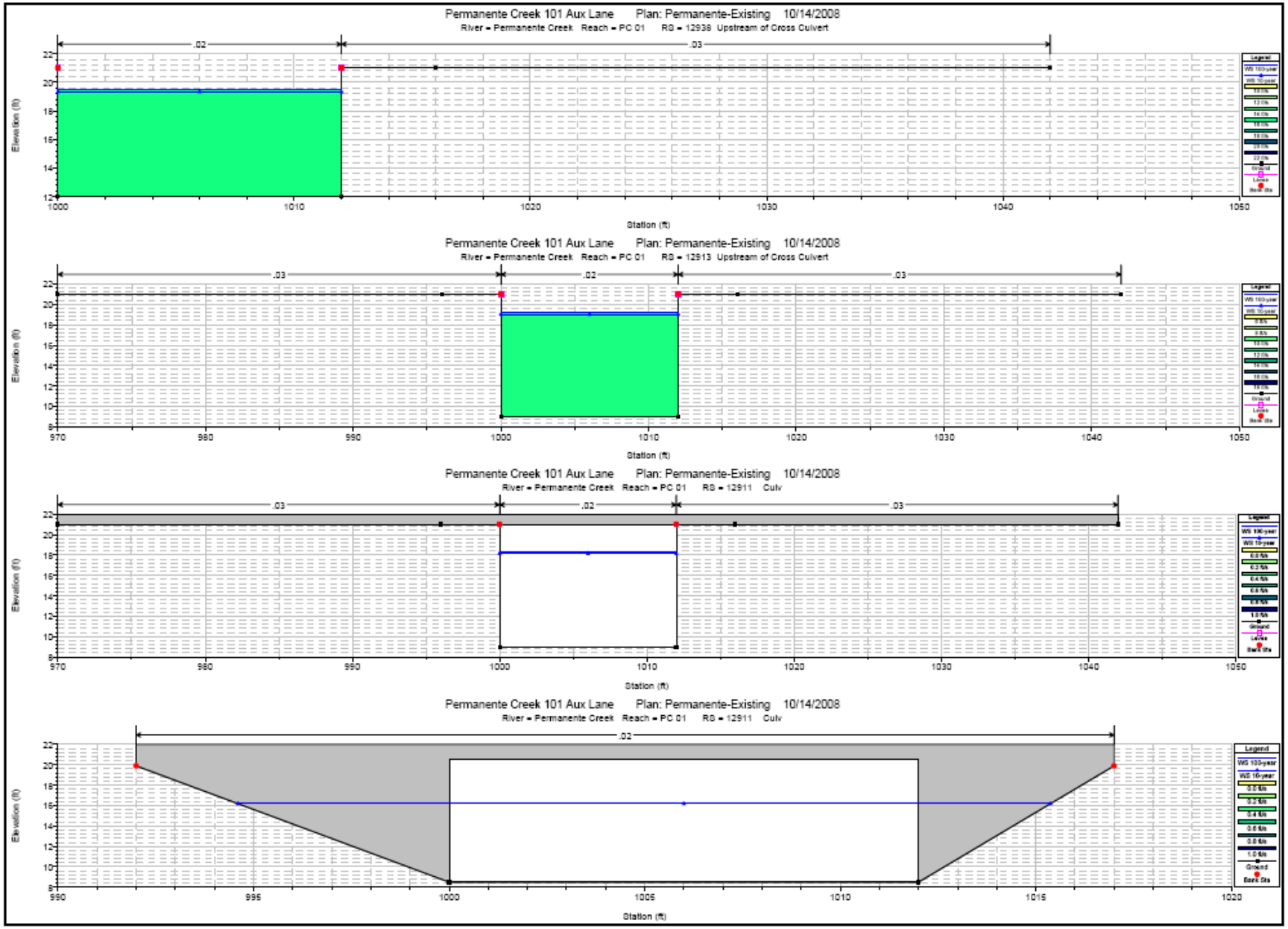

Permanente Creek 101 Aux Lane Plan: Permanente-Existing 10/14/2008
Permanente Creek PC 01
Legend
WS 100-year
WS 10-year
Ground
LOB
ROB
Elevation (ft)
Main Channel Distance (ft)
30
25
20
15
10
5
0
500
1000
1500
2000
2500
12671
12911
12960
13013
13233
13733
13800
14463

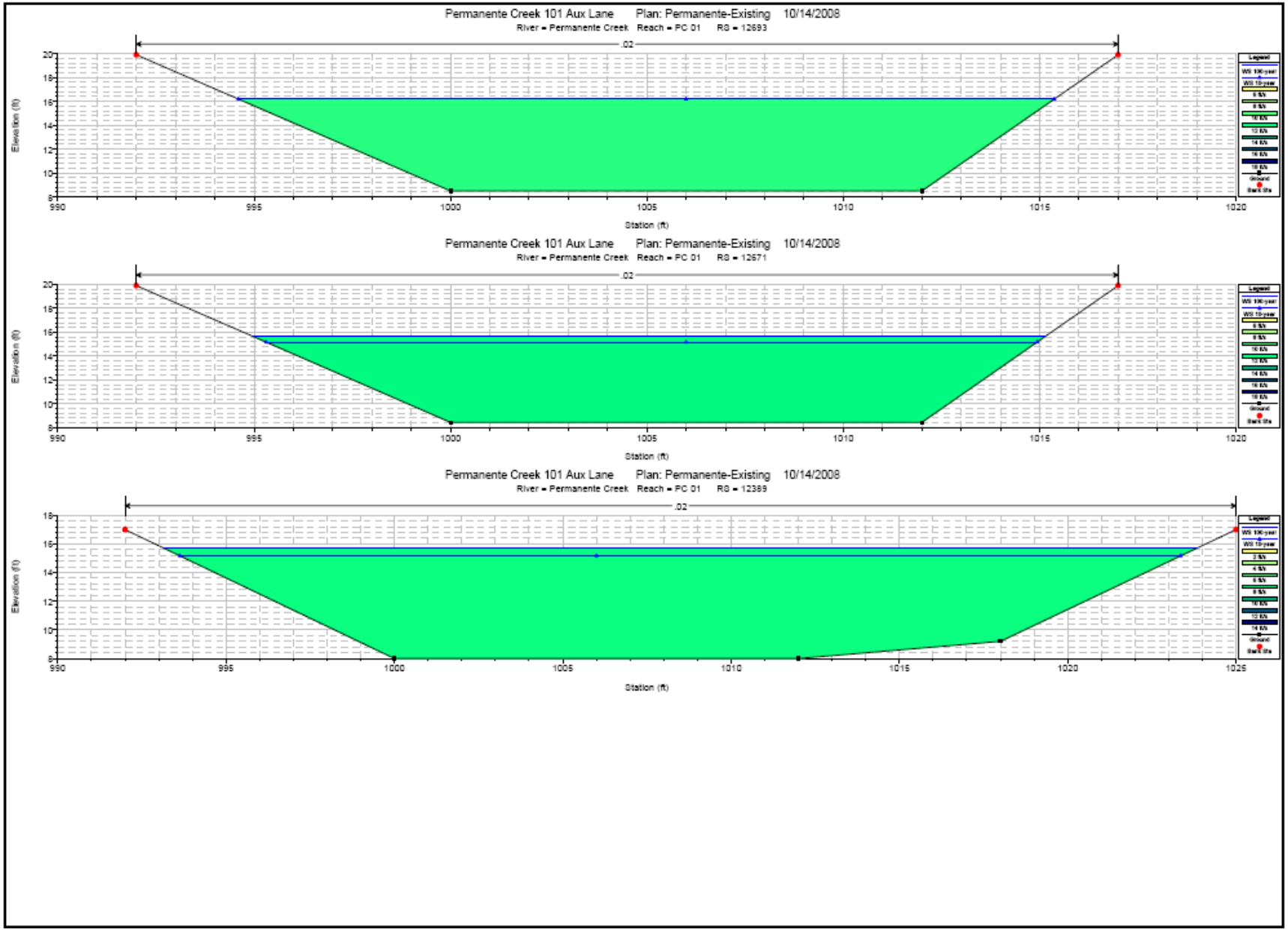
HEC-RAS Plan: P-EXT River: Permanente Creek Reach: PC 01

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
PC 01	14463	100-year	4000.00	18.00	29.62	29.62	29.99	0.002637	8.5	1772.79	1442.00	0.44
PC 01	14463	10-year	1350.00	18.00	25.32	25.32	28.99	0.008707	15.4	87.89	12.00	1.00
PC 01	14443		Lat Struct									
PC 01	13823	100-year	3110.00	13.50	26.57	25.47	26.66	0.000532	4.7	2393.33	1304.45	0.23
PC 01	13823	10-year	1350.00	13.50	25.25	20.82	25.41	0.000540	4.6	1004.77	812.51	0.23
PC 01	13800		Culvert									
PC 01	13733	100-year	3110.00	13.00	25.97	25.97	26.64	0.001786	9.4	1158.70	937.78	0.46
PC 01	13733	10-year	1350.00	13.00	23.56	20.32	25.07	0.002713	10.1	156.82	47.17	0.55
PC 01	13711		Lat Struct									
PC 01	13233	100-year	1770.00	12.48	24.37		24.58	0.000714	5.3	740.70	252.00	0.27
PC 01	13233	10-year	1350.00	12.48	23.92		24.11	0.000616	4.8	627.54	252.00	0.25
PC 01	13013	100-year	1440.00	12.25	22.13	19.90	24.09	0.005627	11.5	144.88	42.00	0.65
PC 01	13013	10-year	1350.00	12.25	21.00	19.57	23.57	0.005509	12.9	105.01	12.00	0.77
PC 01	12960	100-year	1440.00	12.07	19.71	19.71	23.54	0.008884	15.7	91.66	12.00	1.00
PC 01	12960	10-year	1350.00	12.07	20.37	19.39	23.22	0.006296	13.5	99.66	12.00	0.83
PC 01	12938	100-year	1400.00	12.00	19.50	19.50	23.26	0.008789	15.5	90.06	12.00	1.00
PC 01	12938	10-year	1350.00	12.00	19.32	19.32	22.99	0.008712	15.4	87.87	12.00	1.00
PC 01	12913	100-year	1400.00	9.00	19.23	16.51	21.25	0.003995	11.4	122.81	12.00	0.63
PC 01	12913	10-year	1350.00	9.00	19.00	16.32	20.97	0.003933	11.2	120.03	12.00	0.63
PC 01	12911		Culvert									
PC 01	12693	100-year	1400.00	8.50	16.20		18.11	0.003261	11.1	126.13	20.78	0.79
PC 01	12693	10-year	1350.00	8.50	16.19	15.06	17.97	0.003036	10.7	126.07	20.77	0.77
PC 01	12671	100-year	1400.00	8.45	15.64	15.16	17.92	0.004120	12.1	115.70	20.17	0.89
PC 01	12671	10-year	1350.00	8.45	15.17	15.01	17.68	0.004824	12.7	106.30	19.63	0.96
PC 01	12389	100-year	1400.00	8.00	15.70	13.52	16.64	0.001329	7.8	180.31	30.68	0.56


Permanente Creek 101 Aux Lane Plan: Permanente-Existing 10/14/2008
River = Permanente Creek Reach = PC 01 RS = 14463 DS Rock Road Crossing
Elevation (ft)
Station (ft)
Legend
Permanente Creek 101 Aux Lane Plan: Permanente-Existing 10/14/2008
River = Permanente Creek Reach = PC 01 RS = 13823 US Middlefield Road Crossing
Elevation (ft)
Station (ft)
Legend
Permanente Creek 101 Aux Lane Plan: Permanente-Existing 10/14/2008
River = Permanente Creek Reach = PC 01 RS = 13800 Culv
Elevation (ft)
Station (ft)
Legend
Permanente Creek 101 Aux Lane Plan: Permanente-Existing 10/14/2008
River = Permanente Creek Reach = PC 01 RS = 13800 Culv
Elevation (ft)
Station (ft)
Legend

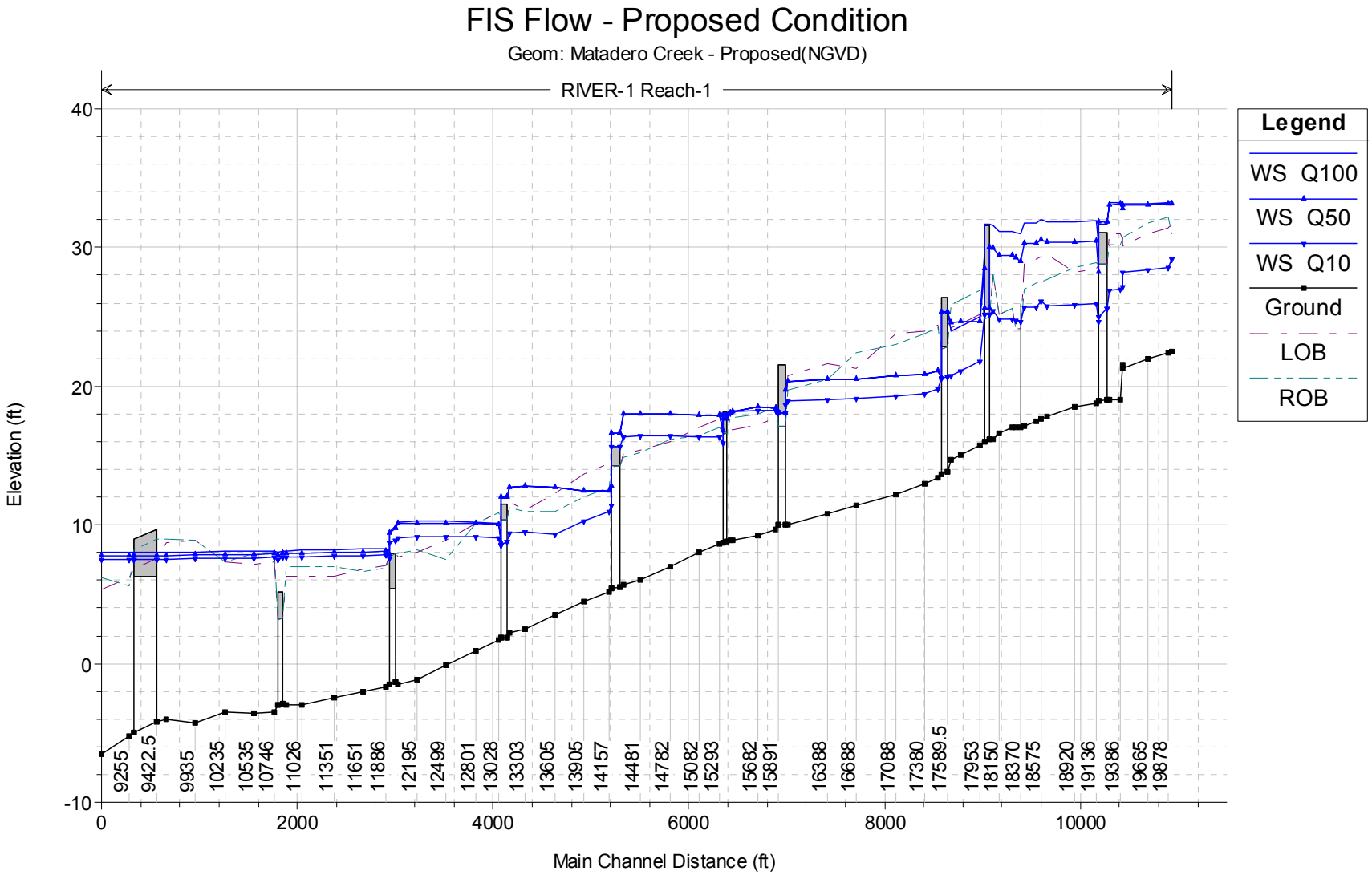

Permanente Creek 101 Aux Lane Plan: Permanente-Existing 10/14/2008
River = Permanente Creek Reach = PC 01 RS = 13733 DS Middlefield Roack Crossing
Elevation (ft)
Station (ft)
Legend
Permanente Creek 101 Aux Lane Plan: Permanente-Existing 10/14/2008
River = Permanente Creek Reach = PC 01 RS = 13233 At colony Street
Elevation (ft)
Station (ft)
Legend
Permanente Creek 101 Aux Lane Plan: Permanente-Existing 10/14/2008
River = Permanente Creek Reach = PC 01 RS = 13013 Upstream of Cross Culvert
Elevation (ft)
Station (ft)
Legend
Permanente Creek 101 Aux Lane Plan: Permanente-Existing 10/14/2008
River = Permanente Creek Reach = PC 01 RS = 12960
Elevation (ft)
Station (ft)
Legend


Permanente Creek 101 Aux Lane Plan: Permanente-Existing 10/14/2008
River = Permanente Creek Reach = PC 01 RS = 12938 Upstream of Cross Culvert
Permanente Creek 101 Aux Lane Plan: Permanente-Existing 10/14/2008
River = Permanente Creek Reach = PC 01 RS = 12913 Upstream of Cross Culvert
Permanente Creek 101 Aux Lane Plan: Permanente-Existing 10/14/2008
River = Permanente Creek Reach = PC 01 RS = 12911 Culv
Permanente Creek 101 Aux Lane Plan: Permanente-Existing 10/14/2008
River = Permanente Creek Reach = PC 01 RS = 12911 Culv
Elevation (ft)
Station (ft)


Permanente Creek 101 Aux Lane Plan: Permanente-Existing 10/14/2008
River = Permanente Creek Reach = PC 01 RS = 12693
.02
Elevation (ft)
Station (ft)
Permanente Creek 101 Aux Lane Plan: Permanente-Existing 10/14/2008
River = Permanente Creek Reach = PC 01 RS = 12671
.02
Elevation (ft)
Station (ft)
Permanente Creek 101 Aux Lane Plan: Permanente-Existing 10/14/2008
River = Permanente Creek Reach = PC 01 RS = 12389
.02
Elevation (ft)
Station (ft)

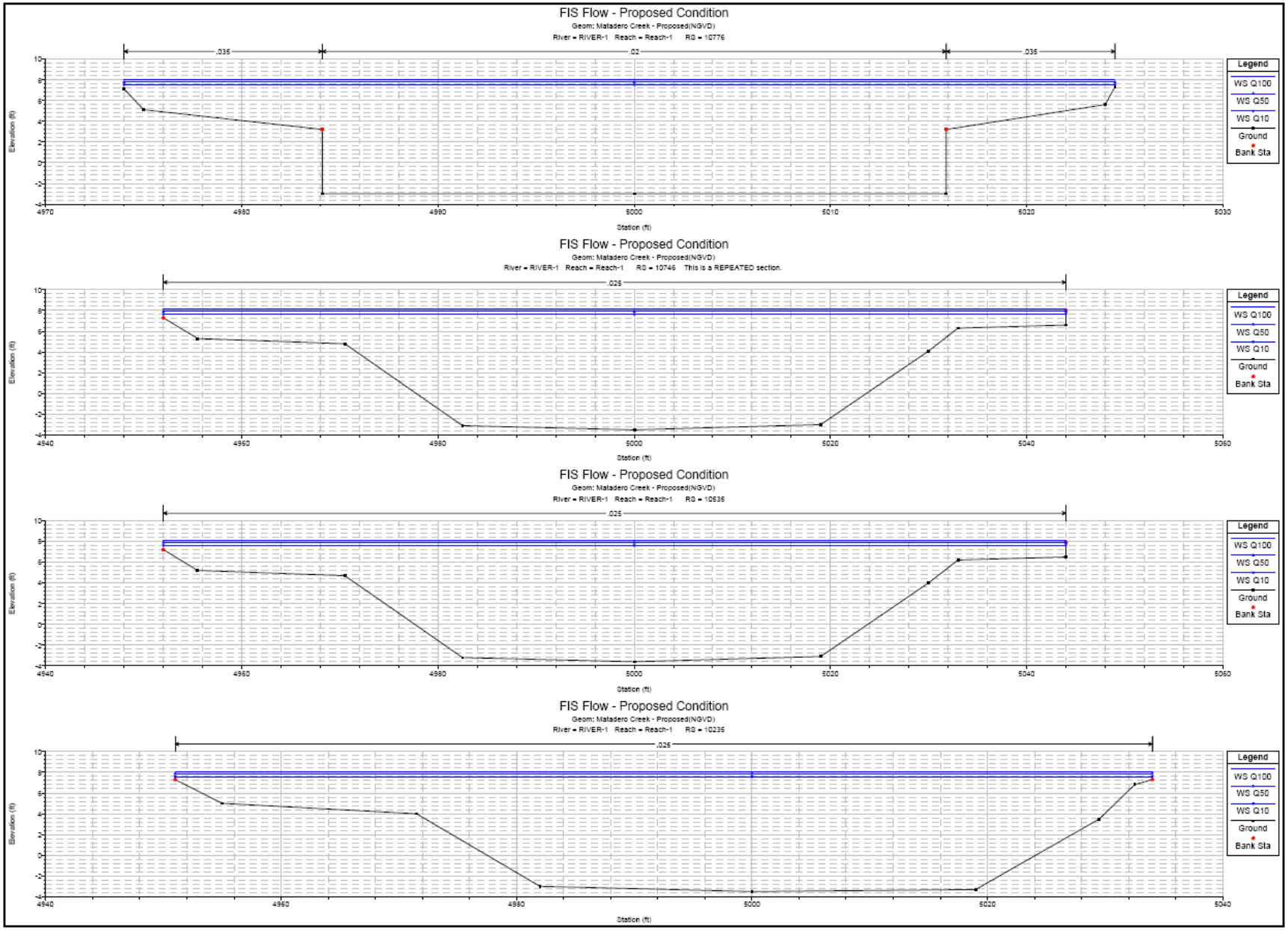
Appendix B Hydraulic Analysis, Proposed Conditions

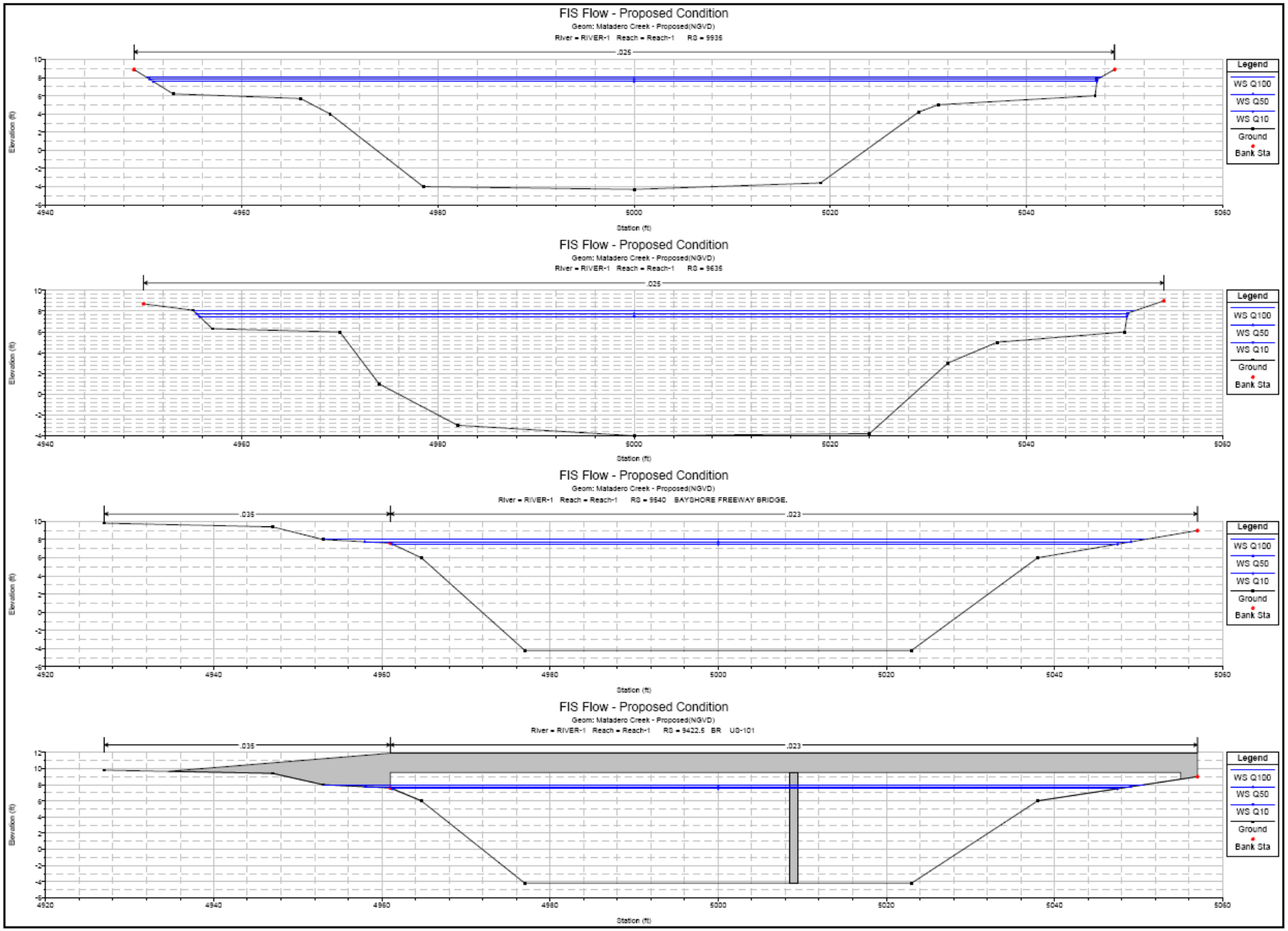
Appendix B.1 Matadero Creek, Proposed Condition

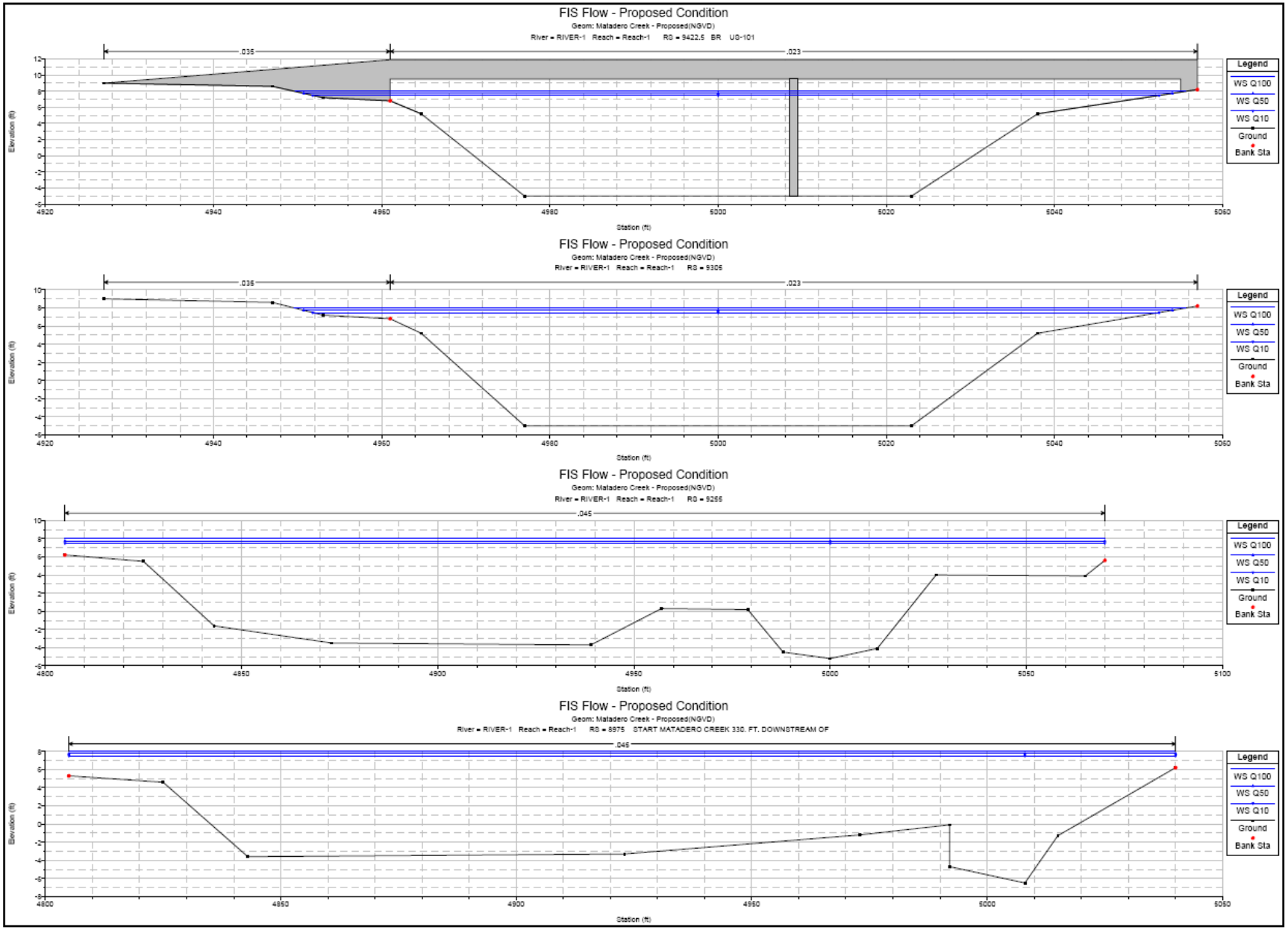

FIS Flow - Proposed Condition
Geom: Matadero Creek - Proposed(NGVD)
RIVER-1 Reach-1
Legend
WS Q100
WS Q50
WS Q10
Ground
LOB
ROB
Elevation (ft)
Main Channel Distance (ft)
40
30
20
10
0
-10
0
2000
4000
6000
8000
10000
9255
9422.5
9935
10235
10535
10746
11026
11351
11651
11886
12195
12499
12801
13028
13303
13605
13905
14157
14481
14782
15082
15293
15682
15891
16388
16688
17088
17380
17589.5
17953
18150
18370
18575
18920
19136
19386
19665
19878

HEC-RAS Plan: FIS-P001 Locations: User Defined

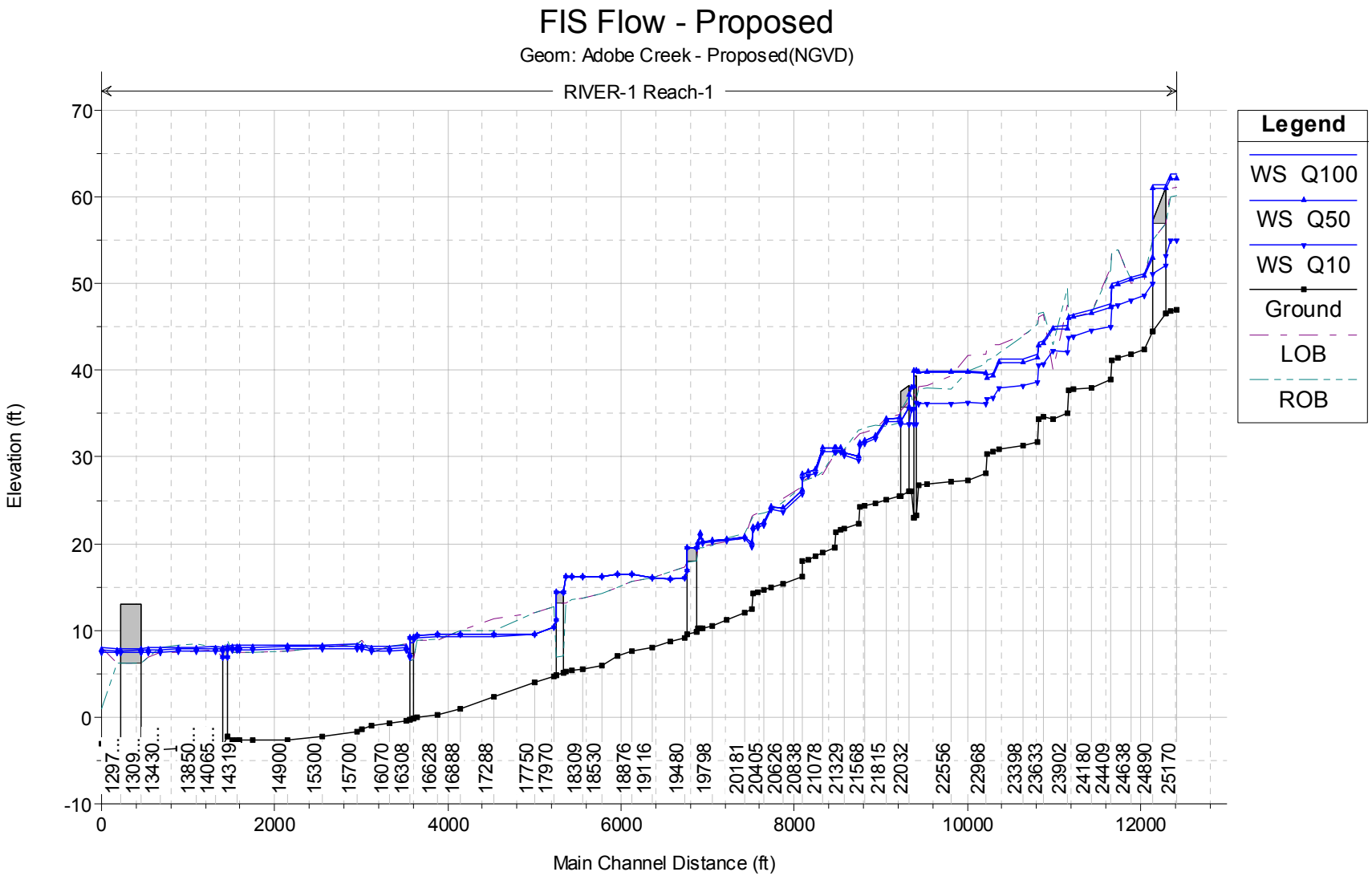
River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
RIVER-1	Reach-1	10776	Q100	1500.00	-3.00	7.82		8.07	0.000201	4.14	407.46	50.50	0.22
RIVER-1	Reach-1	10776	Q50	1500.00	-3.00	7.58		7.85	0.000219	4.25	395.29	50.50	0.23
RIVER-1	Reach-1	10776	Q10	1380.00	-3.00	7.33		7.57	0.000201	4.02	383.00	50.50	0.22
RIVER-1	Reach-1	10746	Q100	1500.00	-3.50	7.95		8.03	0.000124	2.31	650.30	92.00	0.15
RIVER-1	Reach-1	10746	Q50	1500.00	-3.50	7.72		7.80	0.000137	2.39	628.72	92.00	0.16
RIVER-1	Reach-1	10746	Q10	1380.00	-3.50	7.46		7.54	0.000131	2.28	604.87	92.00	0.16
RIVER-1	Reach-1	10535	Q100	1500.00	-3.60	7.93		8.01	0.000120	2.28	657.27	92.00	0.15
RIVER-1	Reach-1	10535	Q50	1500.00	-3.60	7.69		7.77	0.000133	2.36	635.44	92.00	0.16
RIVER-1	Reach-1	10535	Q10	1380.00	-3.60	7.43		7.51	0.000127	2.26	611.70	92.00	0.15
RIVER-1	Reach-1	10235	Q100	1500.00	-3.50	7.89		7.97	0.000111	2.32	646.67	83.00	0.15
RIVER-1	Reach-1	10235	Q50	1500.00	-3.50	7.65		7.74	0.000122	2.39	626.68	83.00	0.15
RIVER-1	Reach-1	10235	Q10	1380.00	-3.50	7.39		7.47	0.000115	2.28	605.50	83.00	0.15
RIVER-1	Reach-1	9935	Q100	1500.00	-4.30	7.87		7.94	0.000097	2.10	714.16	96.79	0.14
RIVER-1	Reach-1	9935	Q50	1500.00	-4.30	7.63		7.70	0.000108	2.17	690.67	96.29	0.14
RIVER-1	Reach-1	9935	Q10	1380.00	-4.30	7.37		7.44	0.000102	2.07	666.20	95.89	0.14
RIVER-1	Reach-1	9635	Q100	1778.00	-4.00	7.80		7.90	0.000136	2.51	709.53	94.98	0.16
RIVER-1	Reach-1	9635	Q50	1777.50	-4.00	7.55		7.66	0.000151	2.59	685.87	94.65	0.17
RIVER-1	Reach-1	9635	Q10	1642.00	-4.00	7.30		7.40	0.000144	2.48	662.23	94.33	0.16
RIVER-1	Reach-1	9540	Q100	1778.00	-4.20	7.80	-0.74	7.89	0.000085	2.36	754.88	92.44	0.14
RIVER-1	Reach-1	9540	Q50	1777.50	-4.20	7.55	-0.74	7.64	0.000091	2.43	732.65	86.72	0.15
RIVER-1	Reach-1	9540	Q10	1642.00	-4.20	7.30	-0.91	7.39	0.000083	2.31	711.28	84.57	0.14
RIVER-1	Reach-1	9422.5		Bridge									
RIVER-1	Reach-1	9305	Q100	1778.00	-5.00	7.78		7.85	0.000067	2.15	832.34	103.84	0.13
RIVER-1	Reach-1	9305	Q50	1777.50	-5.00	7.53		7.61	0.000072	2.21	806.64	101.18	0.13
RIVER-1	Reach-1	9305	Q10	1642.00	-5.00	7.28		7.35	0.000066	2.11	781.89	98.55	0.13
RIVER-1	Reach-1	9255	Q100	1778.00	-5.20	7.81		7.82	0.000036	0.80	2217.04	265.00	0.05
RIVER-1	Reach-1	9255	Q50	1777.50	-5.20	7.56		7.57	0.000040	0.83	2151.03	265.00	0.05
RIVER-1	Reach-1	9255	Q10	1642.00	-5.20	7.31		7.32	0.000038	0.79	2084.58	265.00	0.05
RIVER-1	Reach-1	8975	Q100	1778.00	-6.50	7.80	-1.78	7.81	0.000034	0.82	2181.50	235.00	0.05
RIVER-1	Reach-1	8975	Q50	1777.50	-6.50	7.55	-1.81	7.56	0.000037	0.84	2122.75	235.00	0.05
RIVER-1	Reach-1	8975	Q10	1642.00	-6.50	7.30	-1.91	7.31	0.000034	0.80	2064.00	235.00	0.05


FIS Flow - Proposed Condition
Geom: Matadero Creek - Proposed(NGVD)
River = RIVER-1 Reach = Reach-1 RS = 10776
.035
.02
.035
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)
FIS Flow - Proposed Condition
Geom: Matadero Creek - Proposed(NGVD)
River = RIVER-1 Reach = Reach-1 RS = 10746 This is a REPEATED section.
.025
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)
FIS Flow - Proposed Condition
Geom: Matadero Creek - Proposed(NGVD)
River = RIVER-1 Reach = Reach-1 RS = 10535
.025
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)
FIS Flow - Proposed Condition
Geom: Matadero Creek - Proposed(NGVD)
River = RIVER-1 Reach = Reach-1 RS = 10235
.025
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)


FIS Flow - Proposed Condition
Geom: Matadero Creek - Proposed(NGVD)
River = RIVER-1 Reach = Reach-1 RS = 9935
.025
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)
FIS Flow - Proposed Condition
Geom: Matadero Creek - Proposed(NGVD)
River = RIVER-1 Reach = Reach-1 RS = 9635
.025
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)
FIS Flow - Proposed Condition
Geom: Matadero Creek - Proposed(NGVD)
River = RIVER-1 Reach = Reach-1 RS = 9540 BAYSHORE FREEWAY BRIDGE.
.035
.023
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)
FIS Flow - Proposed Condition
Geom: Matadero Creek - Proposed(NGVD)
River = RIVER-1 Reach = Reach-1 RS = 9422.5 BR US-101
.035
.023
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)

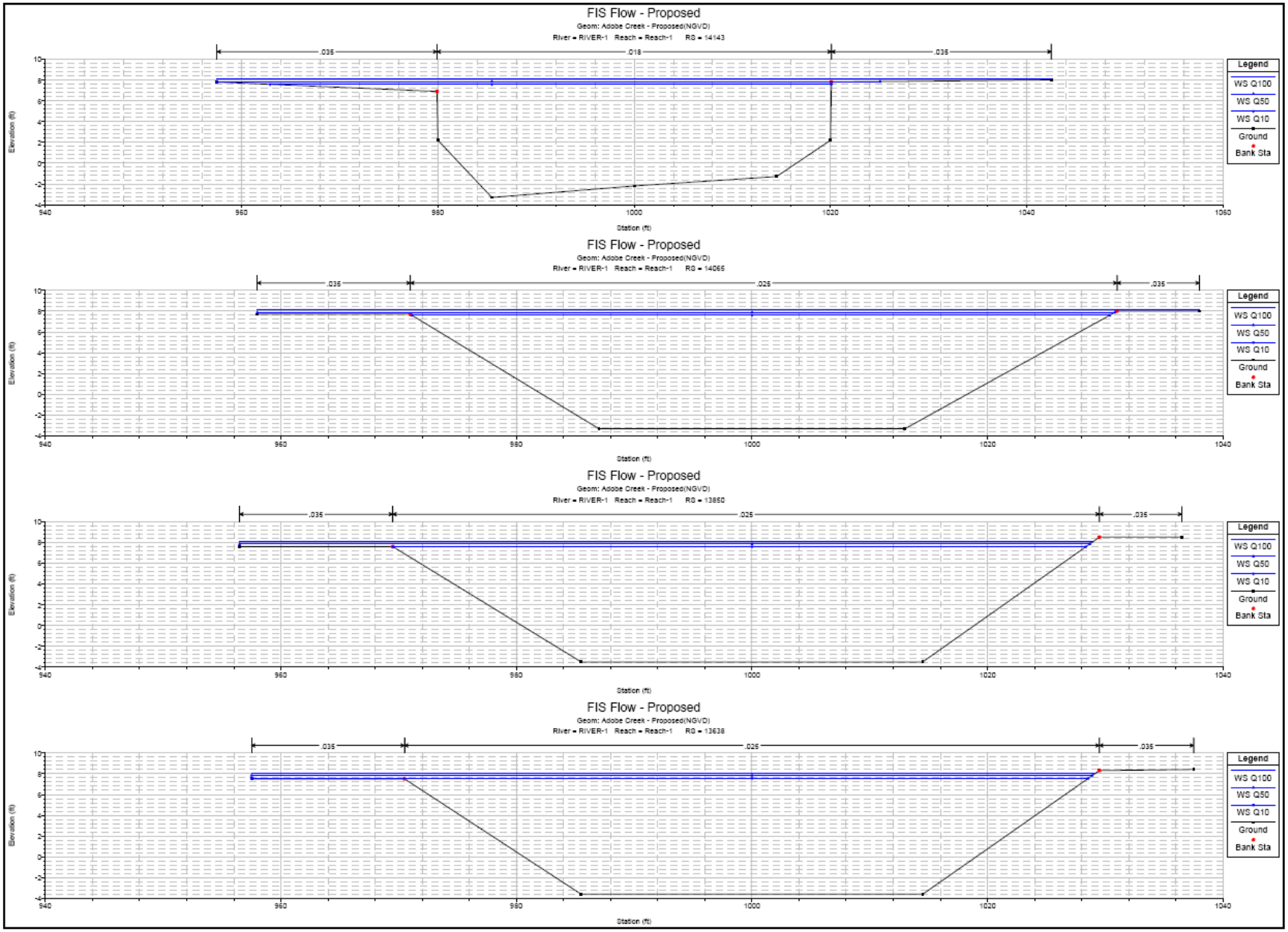

FIS Flow - Proposed Condition
Geom: Matadero Creek - Proposed(NGVD)
River = RIVER-1 Reach = Reach-1 RS = 9422.5 BR UG-101
.035
.023
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)
FIS Flow - Proposed Condition
Geom: Matadero Creek - Proposed(NGVD)
River = RIVER-1 Reach = Reach-1 RS = 9306
.035
.023
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)
FIS Flow - Proposed Condition
Geom: Matadero Creek - Proposed(NGVD)
River = RIVER-1 Reach = Reach-1 RS = 9255
.045
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)
FIS Flow - Proposed Condition
Geom: Matadero Creek - Proposed(NGVD)
River = RIVER-1 Reach = Reach-1 RS = 8975 START MATADERO CREEK 330. FT. DOWNSTREAM OF
.045
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)

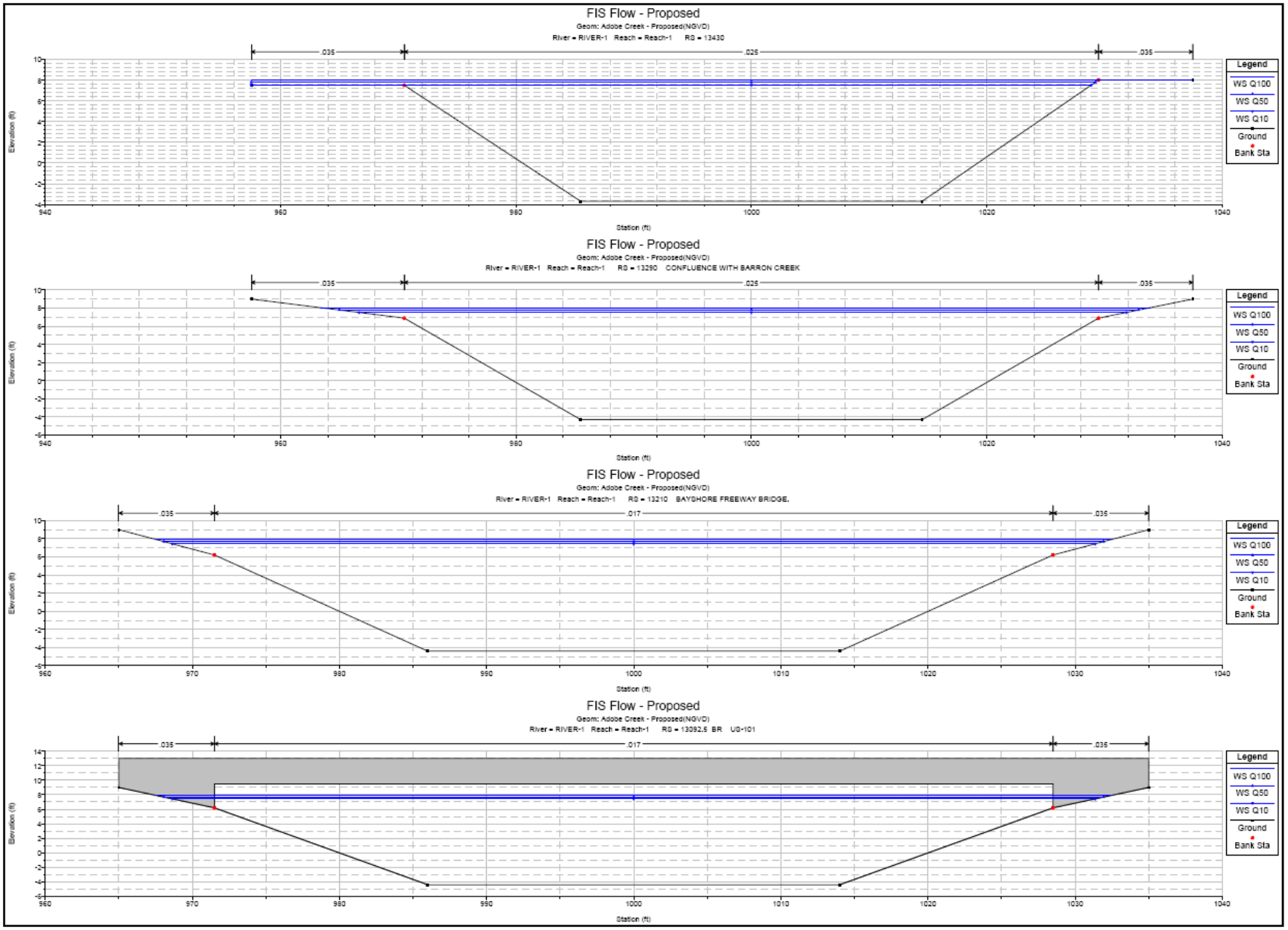
Appendix B.2 Adobe Creek, Proposed Condition

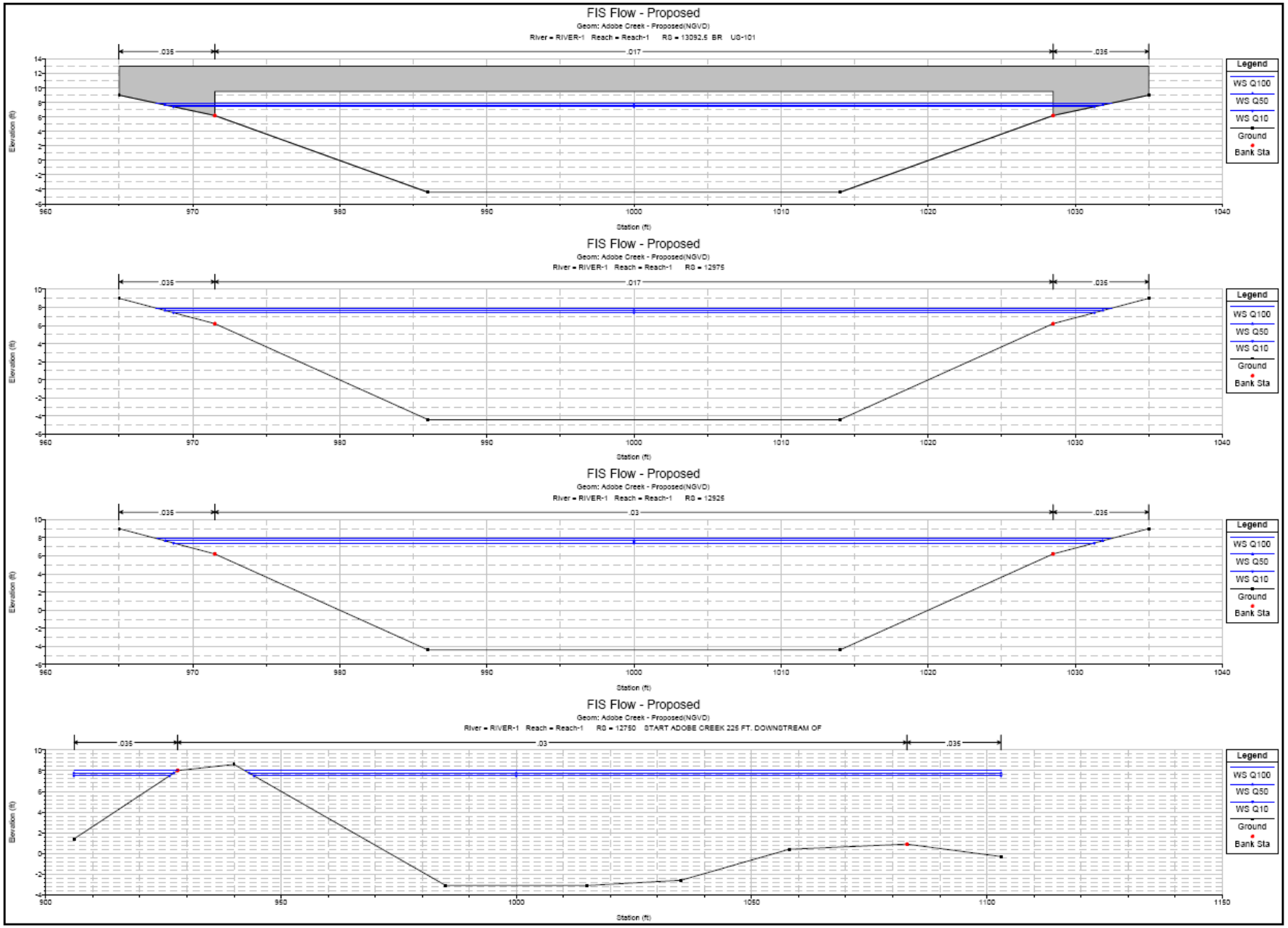

FIS Flow - Proposed
Geom: Adobe Creek - Proposed(NGVD)
RIVER-1 Reach-1
Legend
WS Q100
WS Q50
WS Q10
Ground
LOB
ROB
Elevation (ft)
Main Channel Distance (ft)
70
60
50
40
30
20
10
0
-10
0
2000
4000
6000
8000
10000
12000
1297...
1309...
13430...
13850...
14065...
14319
14900
15300
15700
16070
16308
16628
16888
17288
17750
17970
18309
18530
18876
19116
19480
19798
20181
20405
20626
20838
21078
21329
21568
21815
22032
22556
22968
23398
23633
23902
24180
24409
24638
24890
25170

HEC-RAS Plan: FIS-P001 Locations: User Defined

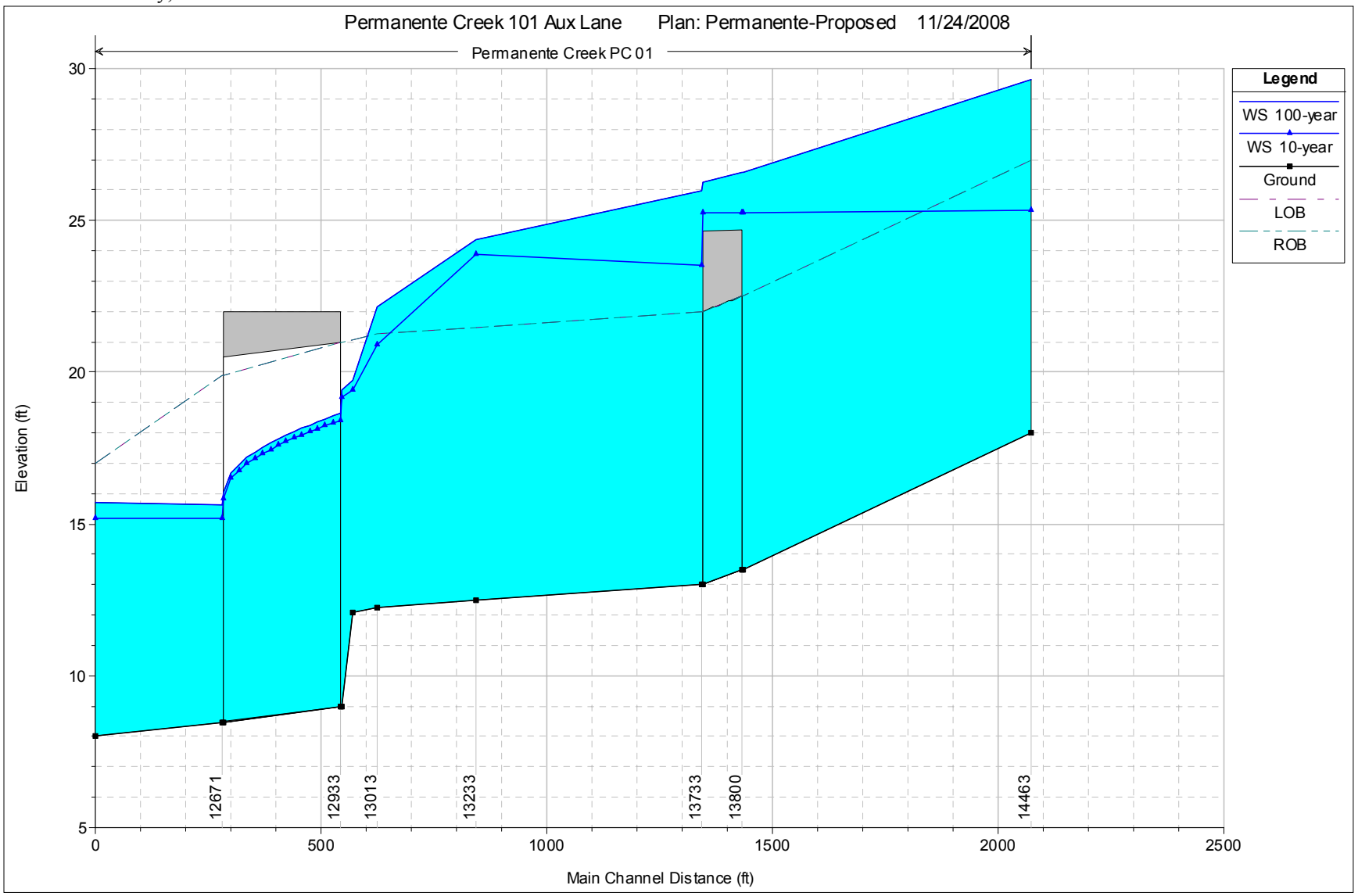
River	Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
RIVER-1	Reach-1	14143	Q100	1350.00	-3.30	7.89		8.08	0.000133	3.52	394.77	72.99	0.20
RIVER-1	Reach-1	14143	Q50	1350.00	-3.30	7.65		7.86	0.000145	3.62	379.59	58.95	0.21
RIVER-1	Reach-1	14143	Q10	1350.00	-3.30	7.39		7.61	0.000158	3.73	365.02	52.44	0.22
RIVER-1	Reach-1	14065	Q100	1350.00	-3.30	7.92		8.04	0.000156	2.79	486.52	72.88	0.17
RIVER-1	Reach-1	14065	Q50	1350.00	-3.30	7.68		7.81	0.000171	2.88	469.41	59.47	0.18
RIVER-1	Reach-1	14065	Q10	1350.00	-3.30	7.42		7.56	0.000188	2.97	454.01	58.68	0.19
RIVER-1	Reach-1	13850	Q100	1350.00	-3.50	7.90		8.01	0.000136	2.67	509.25	72.25	0.16
RIVER-1	Reach-1	13850	Q50	1350.00	-3.50	7.66		7.78	0.000148	2.75	491.92	71.95	0.17
RIVER-1	Reach-1	13850	Q10	1350.00	-3.50	7.40		7.52	0.000162	2.84	475.72	58.32	0.18
RIVER-1	Reach-1	13638	Q100	1350.00	-3.60	7.87		7.98	0.000135	2.67	509.15	71.46	0.16
RIVER-1	Reach-1	13638	Q50	1350.00	-3.60	7.63		7.74	0.000147	2.75	491.81	71.15	0.17
RIVER-1	Reach-1	13638	Q10	1350.00	-3.60	7.36		7.49	0.000162	2.84	474.75	57.63	0.17
RIVER-1	Reach-1	13430	Q100	1350.00	-3.70	7.84		7.95	0.000131	2.65	513.83	71.80	0.16
RIVER-1	Reach-1	13430	Q50	1350.00	-3.70	7.60		7.71	0.000144	2.73	496.23	71.48	0.17
RIVER-1	Reach-1	13430	Q10	1350.00	-3.70	7.33		7.45	0.000158	2.82	479.29	57.91	0.17
RIVER-1	Reach-1	13290	Q100	1350.00	-4.30	7.84		7.93	0.000103	2.46	552.66	68.40	0.14
RIVER-1	Reach-1	13290	Q50	1350.00	-4.30	7.59		7.69	0.000112	2.53	536.13	65.94	0.15
RIVER-1	Reach-1	13290	Q10	1350.00	-4.30	7.32		7.43	0.000124	2.61	518.71	63.24	0.16
RIVER-1	Reach-1	13210	Q100	1798.00	-4.40	7.73	0.24	7.90	0.000085	3.34	543.10	64.10	0.19
RIVER-1	Reach-1	13210	Q50	1795.00	-4.40	7.48	0.23	7.66	0.000093	3.43	527.11	62.93	0.20
RIVER-1	Reach-1	13210	Q10	1672.00	-4.40	7.24	0.03	7.40	0.000088	3.28	512.02	61.81	0.19
RIVER-1	Reach-1	13092.5		Bridge									
RIVER-1	Reach-1	12975	Q100	1798.00	-4.40	7.71		7.88	0.000086	3.35	541.73	64.00	0.19
RIVER-1	Reach-1	12975	Q50	1795.00	-4.40	7.45		7.64	0.000094	3.44	525.64	62.82	0.20
RIVER-1	Reach-1	12975	Q10	1672.00	-4.40	7.21		7.38	0.000089	3.29	510.66	61.71	0.19
RIVER-1	Reach-1	12925	Q100	1798.00	-4.40	7.70		7.87	0.000268	3.35	541.29	63.97	0.19
RIVER-1	Reach-1	12925	Q50	1795.00	-4.40	7.45		7.63	0.000293	3.44	525.16	62.79	0.20
RIVER-1	Reach-1	12925	Q10	1672.00	-4.40	7.21		7.37	0.000278	3.29	510.21	61.67	0.19
RIVER-1	Reach-1	12750	Q100	1798.00	-3.10	7.80	0.11	7.83	0.000050	1.41	1370.20	181.26	0.09
RIVER-1	Reach-1	12750	Q50	1795.00	-3.10	7.55	0.11	7.58	0.000054	1.45	1325.11	179.46	0.09
RIVER-1	Reach-1	12750	Q10	1672.00	-3.10	7.30	-0.03	7.33	0.000052	1.40	1280.47	177.67	0.09


FIS Flow - Proposed
Geom: Adobe Creek - Proposed(NGVD)
River = RIVER-1 Reach = Reach-1 RS = 14143
.035
.018
.035
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)
FIS Flow - Proposed
Geom: Adobe Creek - Proposed(NGVD)
River = RIVER-1 Reach = Reach-1 RS = 14065
.036
.025
.035
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)
FIS Flow - Proposed
Geom: Adobe Creek - Proposed(NGVD)
River = RIVER-1 Reach = Reach-1 RS = 13850
.035
.025
.035
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)
FIS Flow - Proposed
Geom: Adobe Creek - Proposed(NGVD)
River = RIVER-1 Reach = Reach-1 RS = 13638
.035
.025
.035
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)


FIS Flow - Proposed
Geom: Adobe Creek - Proposed(NGVD)
River = RIVER-1 Reach = Reach-1 RS = 13430
.035
.025
.035
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)
FIS Flow - Proposed
Geom: Adobe Creek - Proposed(NGVD)
River = RIVER-1 Reach = Reach-1 RS = 13290 CONFLUENCE WITH BARRON CREEK
.035
.025
.035
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)
FIS Flow - Proposed
Geom: Adobe Creek - Proposed(NGVD)
River = RIVER-1 Reach = Reach-1 RS = 13210 BAYSHORE FREEWAY BRIDGE.
.035
.017
.035
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)
FIS Flow - Proposed
Geom: Adobe Creek - Proposed(NGVD)
River = RIVER-1 Reach = Reach-1 RS = 13092.5 BR UG-101
.035
.017
.035
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)

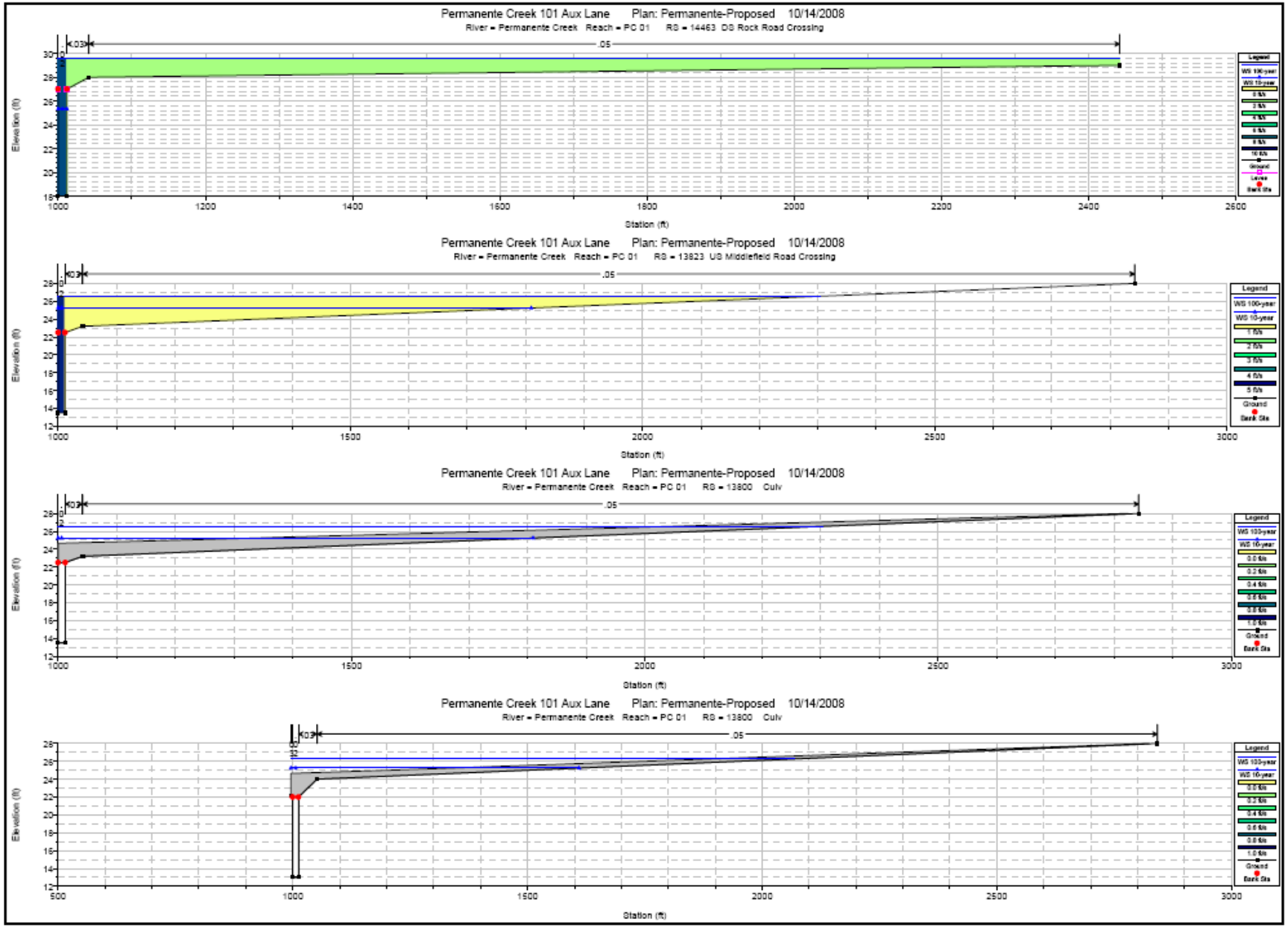

FIS Flow - Proposed
Geom: Adobe Creek - Proposed(NGVD)
River = RIVER-1 Reach = Reach-1 RS = 13092.5 BR UG-101
.035
.017
.035
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)
FIS Flow - Proposed
Geom: Adobe Creek - Proposed(NGVD)
River = RIVER-1 Reach = Reach-1 RS = 12975
.035
.017
.035
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)
FIS Flow - Proposed
Geom: Adobe Creek - Proposed(NGVD)
River = RIVER-1 Reach = Reach-1 RS = 12925
.035
.03
.035
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)
FIS Flow - Proposed
Geom: Adobe Creek - Proposed(NGVD)
River = RIVER-1 Reach = Reach-1 RS = 12750 START ADOBE CREEK 225 FT. DOWNSTREAM OF
.035
.03
.035
Legend
WS Q100
WS Q50
WS Q10
Ground
Bank Sta
Elevation (ft)
Station (ft)

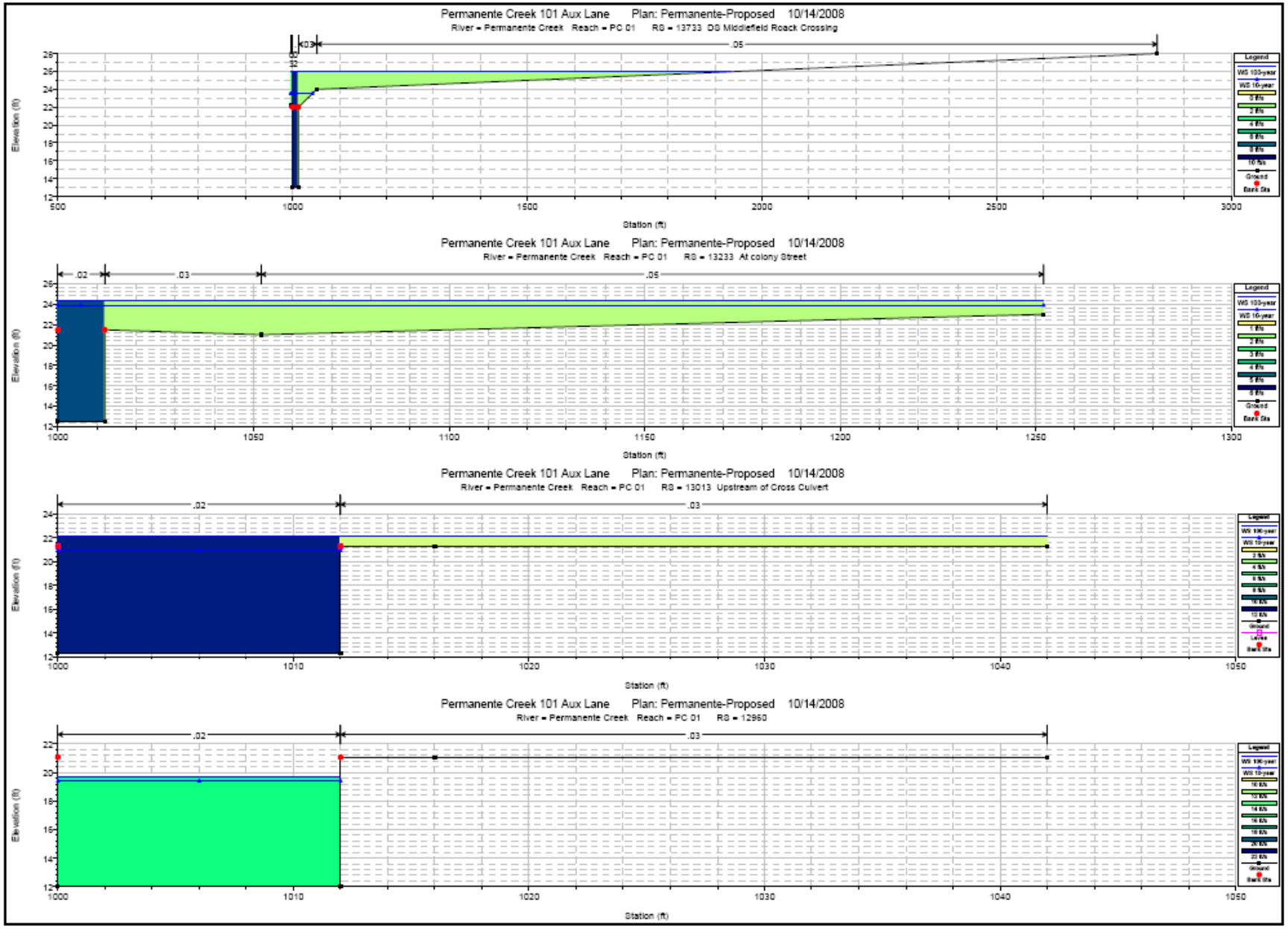
Appendix B.3 Permanente Creek, Proposed Condition

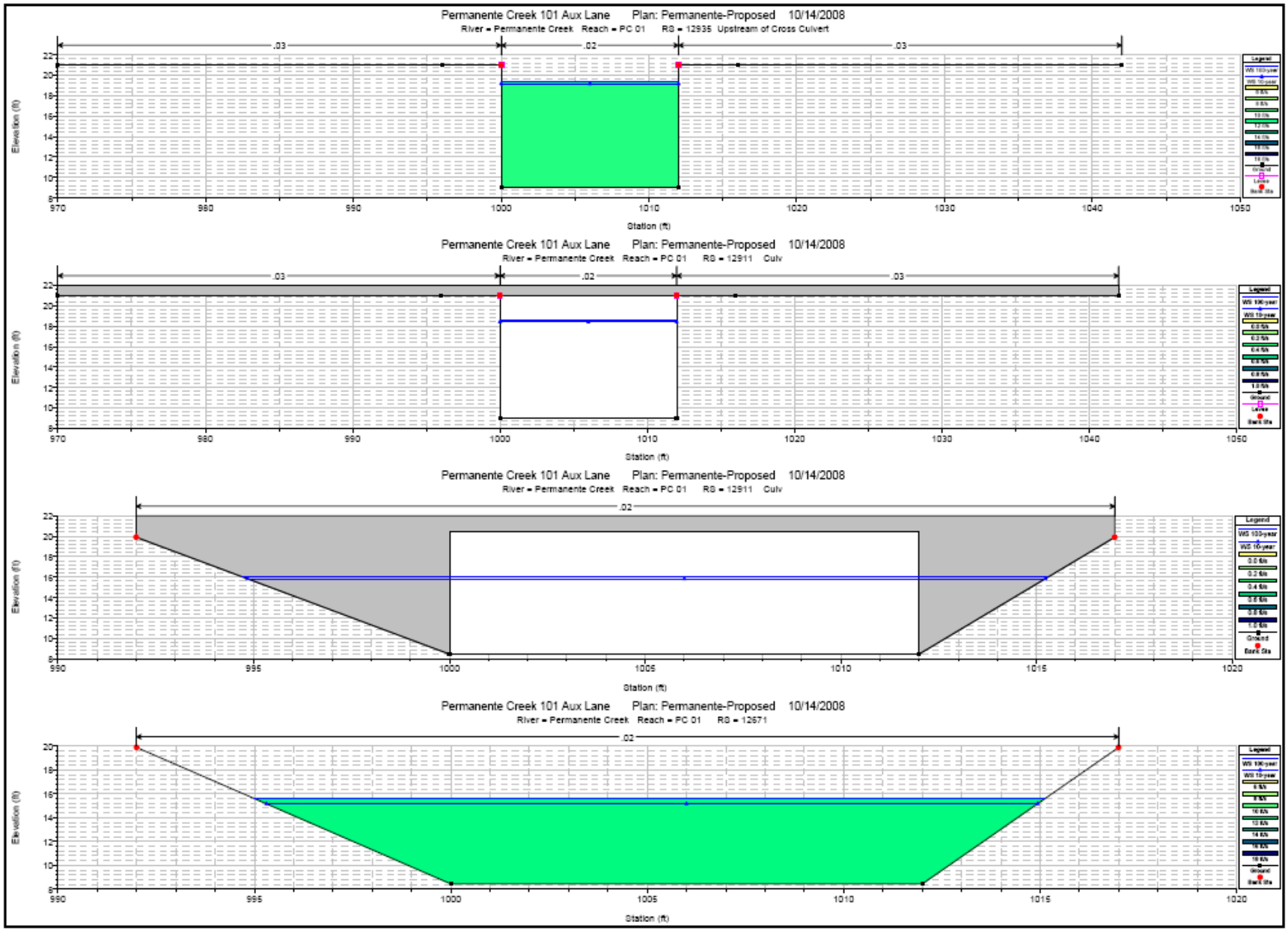

Permanente Creek 101 Aux Lane Plan: Permanente-Proposed 11/24/2008
Permanente Creek PC 01
Legend
WS 100-year
WS 10-year
Ground
LOB
ROB
Elevation (ft)
30
25
20
15
10
5
0
500
1000
1500
2000
2500
Main Channel Distance (ft)
12671
12933
13013
13233
13733
13800
14463

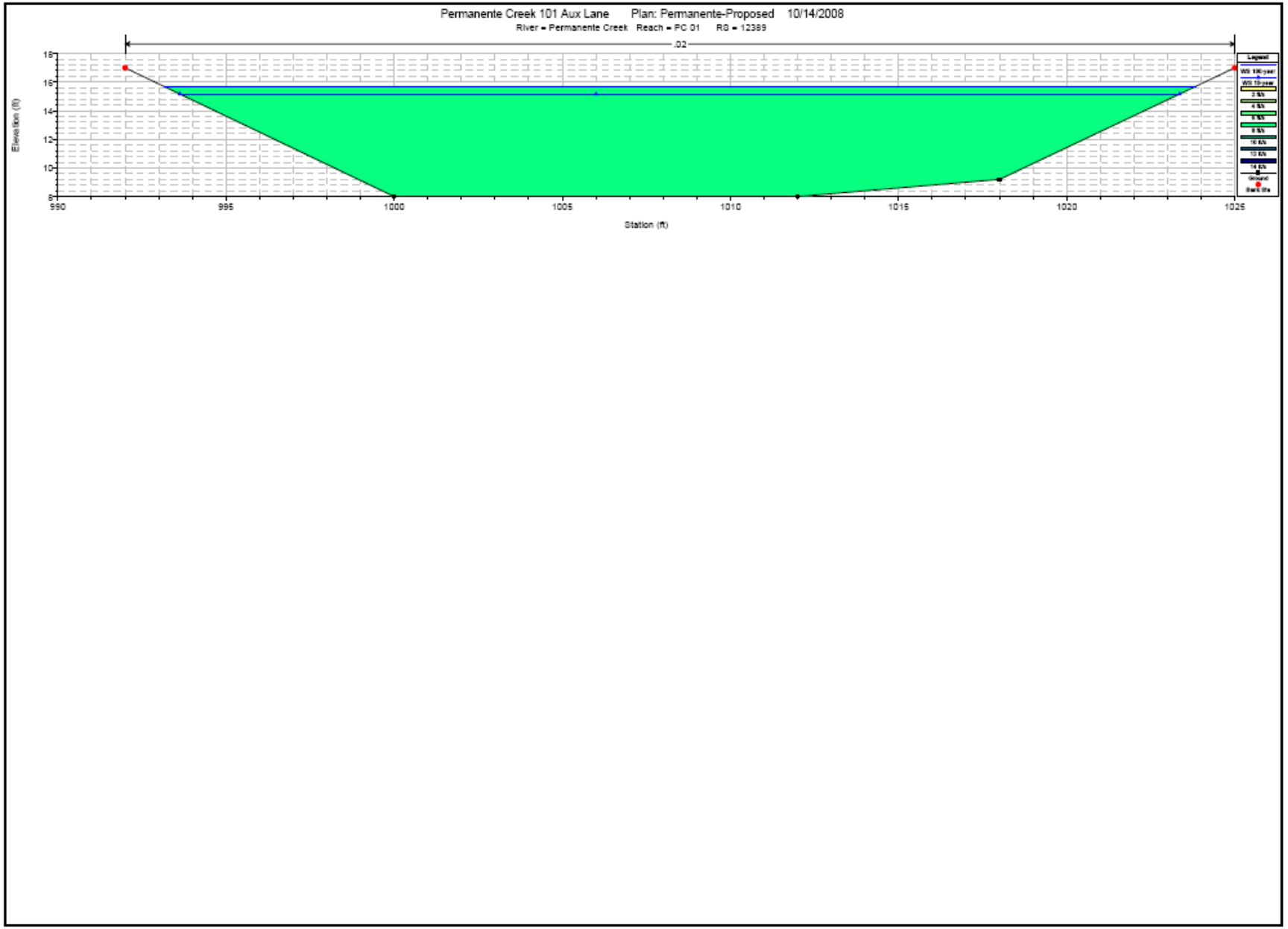
HEC-RAS Plan: P-Prop River: Permanente Creek Reach: PC 01

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
PC 01	14463	100-year	4000.00	18.00	29.62	29.62	29.99	0.002637	8.5	1772.79	1442.00	0.44
PC 01	14463	10-year	1350.00	18.00	25.32	25.32	28.99	0.008707	15.4	87.89	12.00	1.00
PC 01	14443		Lat Struct									
PC 01	13823	100-year	3110.00	13.50	26.57	25.47	26.66	0.000532	4.7	2393.24	1304.42	0.23
PC 01	13823	10-year	1350.00	13.50	25.25	20.82	25.41	0.000545	4.6	998.47	809.59	0.24
PC 01	13800		Culvert									
PC 01	13733	100-year	3110.00	13.00	25.97	25.97	26.64	0.001785	9.4	1159.14	937.99	0.46
PC 01	13733	10-year	1350.00	13.00	23.54	20.32	25.06	0.002742	10.1	155.74	46.71	0.55
PC 01	13711		Lat Struct									
PC 01	13233	100-year	1770.00	12.48	24.36		24.57	0.000714	5.3	740.56	252.00	0.27
PC 01	13233	10-year	1350.00	12.48	23.89		24.08	0.000633	4.9	619.81	252.00	0.25
PC 01	13013	100-year	1440.00	12.25	22.15	19.90	24.09	0.005562	11.5	145.88	42.00	0.64
PC 01	13013	10-year	1350.00	12.25	20.91	19.57	23.53	0.005661	13.0	103.89	12.00	0.78
PC 01	12960	100-year	1440.00	12.07	19.72	19.72	23.54	0.008859	15.7	91.76	12.00	1.00
PC 01	12960	10-year	1350.00	12.07	19.39	19.39	23.06	0.008710	15.4	87.87	12.00	1.00
PC 01	12935	100-year	1403.00	9.00	19.43	16.52	21.38	0.003828	11.2	125.14	12.00	0.61
PC 01	12935	10-year	1352.00	9.00	19.17	16.33	21.07	0.003786	11.1	122.01	12.00	0.61
PC 01	12933		Culvert									
PC 01	12671	100-year	1403.00	8.45	15.64	15.17	17.93	0.004138	12.1	115.69	20.17	0.89
PC 01	12671	10-year	1352.00	8.45	15.17	15.02	17.68	0.004838	12.7	106.30	19.63	0.96
PC 01	12389	100-year	1403.00	8.00	15.70	13.52	16.64	0.001335	7.8	180.31	30.68	0.57
PC 01	12389	10-year	1352.00	8.00	15.17	13.39	16.22	0.001604	8.2	164.30	29.73	0.62

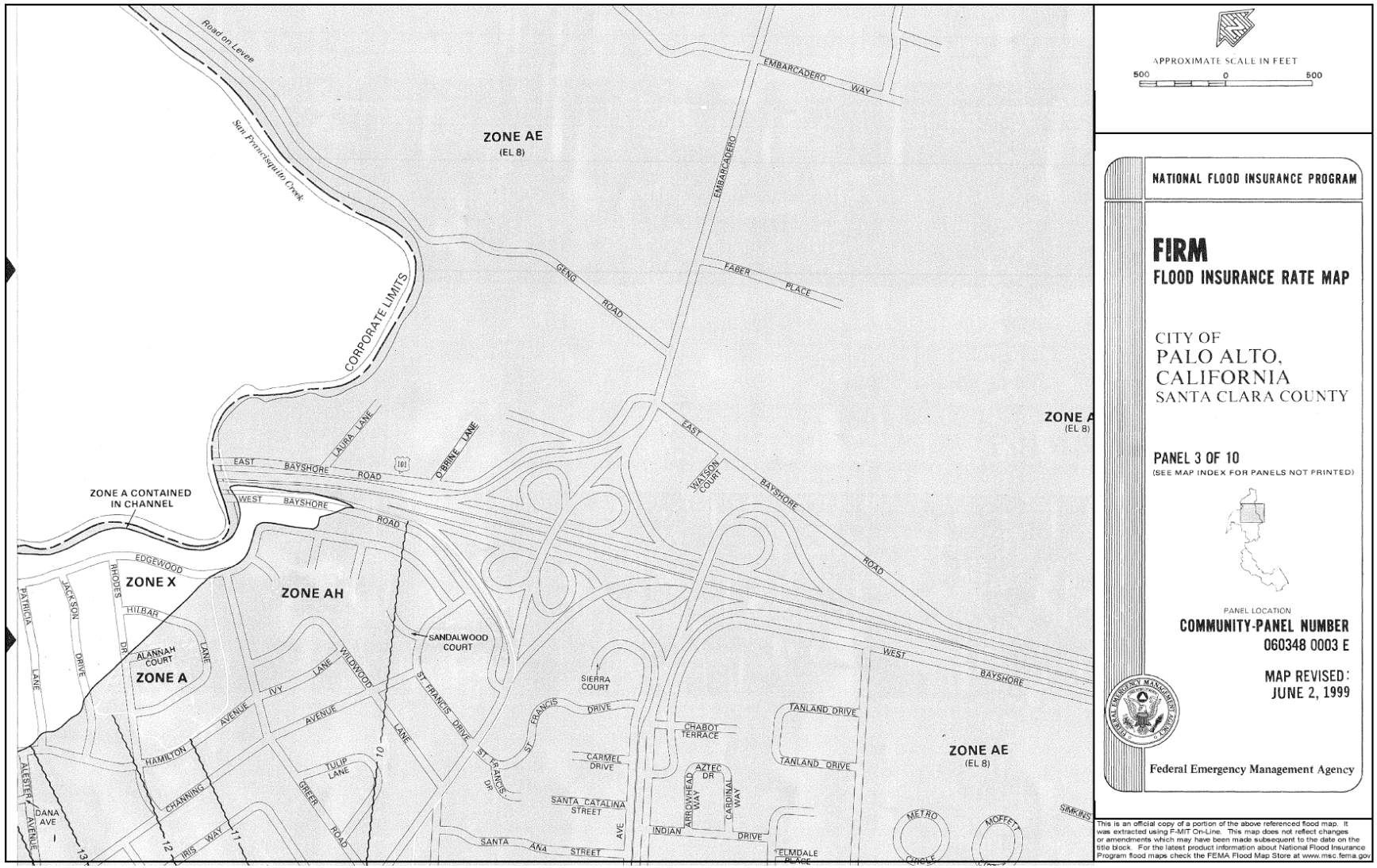

Permanente Creek 101 Aux Lane Plan: Permanente-Proposed 10/14/2008
River = Permanente Creek Reach = PC 01 RS = 14463 DS Rock Road Crossing
Permanente Creek 101 Aux Lane Plan: Permanente-Proposed 10/14/2008
River = Permanente Creek Reach = PC 01 RS = 13823 US Middlefield Road Crossing
Permanente Creek 101 Aux Lane Plan: Permanente-Proposed 10/14/2008
River = Permanente Creek Reach = PC 01 RS = 13800 Culv
Permanente Creek 101 Aux Lane Plan: Permanente-Proposed 10/14/2008
River = Permanente Creek Reach = PC 01 RS = 13800 Culv
Elevation (ft)
Station (ft)
Legend
WS 100-year
WS 10-year
Ground
Bank Sta

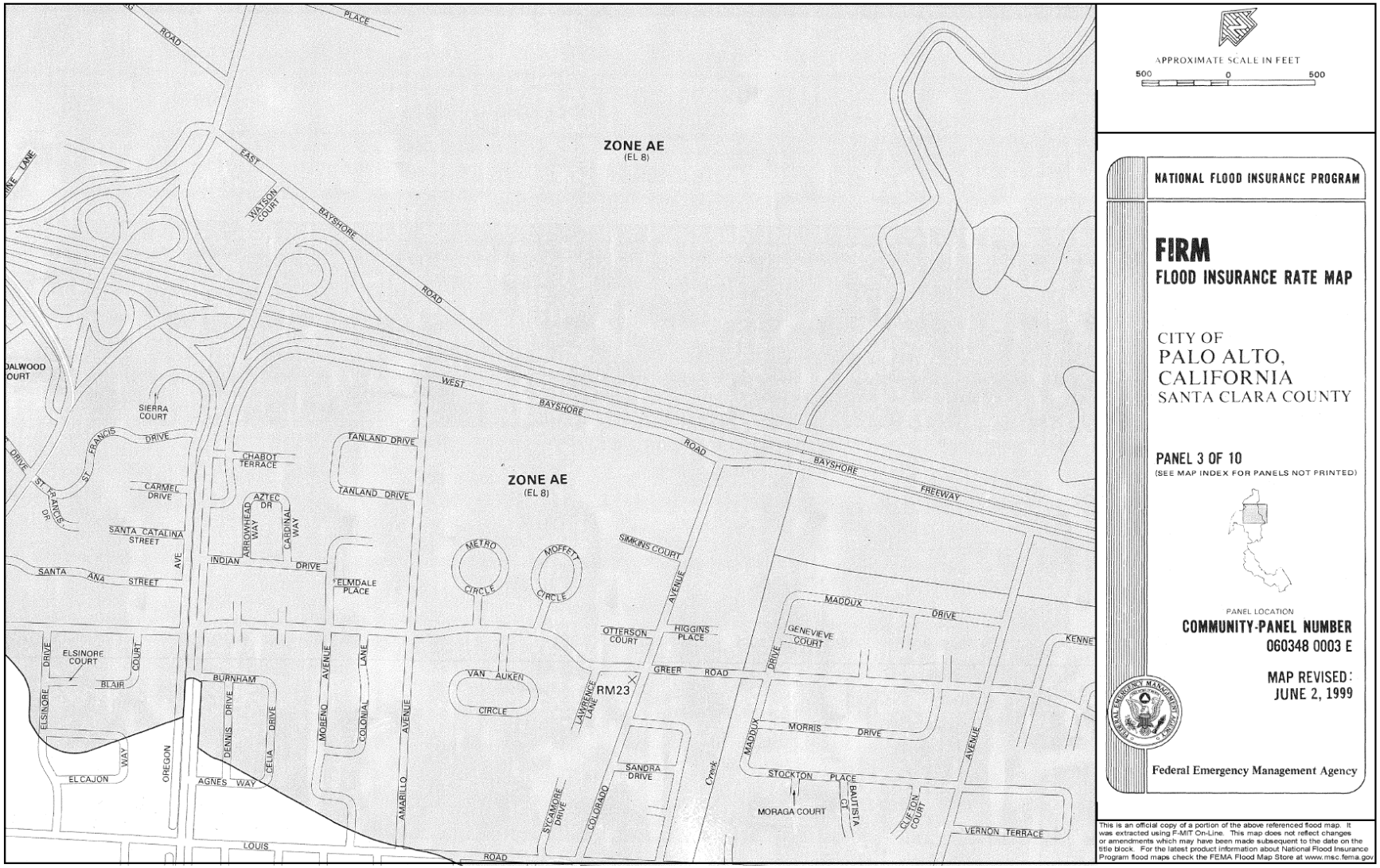

Permanente Creek 101 Aux Lane Plan: Permanente-Proposed 10/14/2008
River = Permanente Creek Reach = PC 01 RS = 13733 DS Middlefield Roack Crossing
Permanente Creek 101 Aux Lane Plan: Permanente-Proposed 10/14/2008
River = Permanente Creek Reach = PC 01 RS = 13233 At colony Street
Permanente Creek 101 Aux Lane Plan: Permanente-Proposed 10/14/2008
River = Permanente Creek Reach = PC 01 RS = 13013 Upstream of Cross Culvert
Permanente Creek 101 Aux Lane Plan: Permanente-Proposed 10/14/2008
River = Permanente Creek Reach = PC 01 RS = 12960
Elevation (ft)
Station (ft)
Legend
WS 100-year
WS 10-year
Ground
Bank Sta
Levee

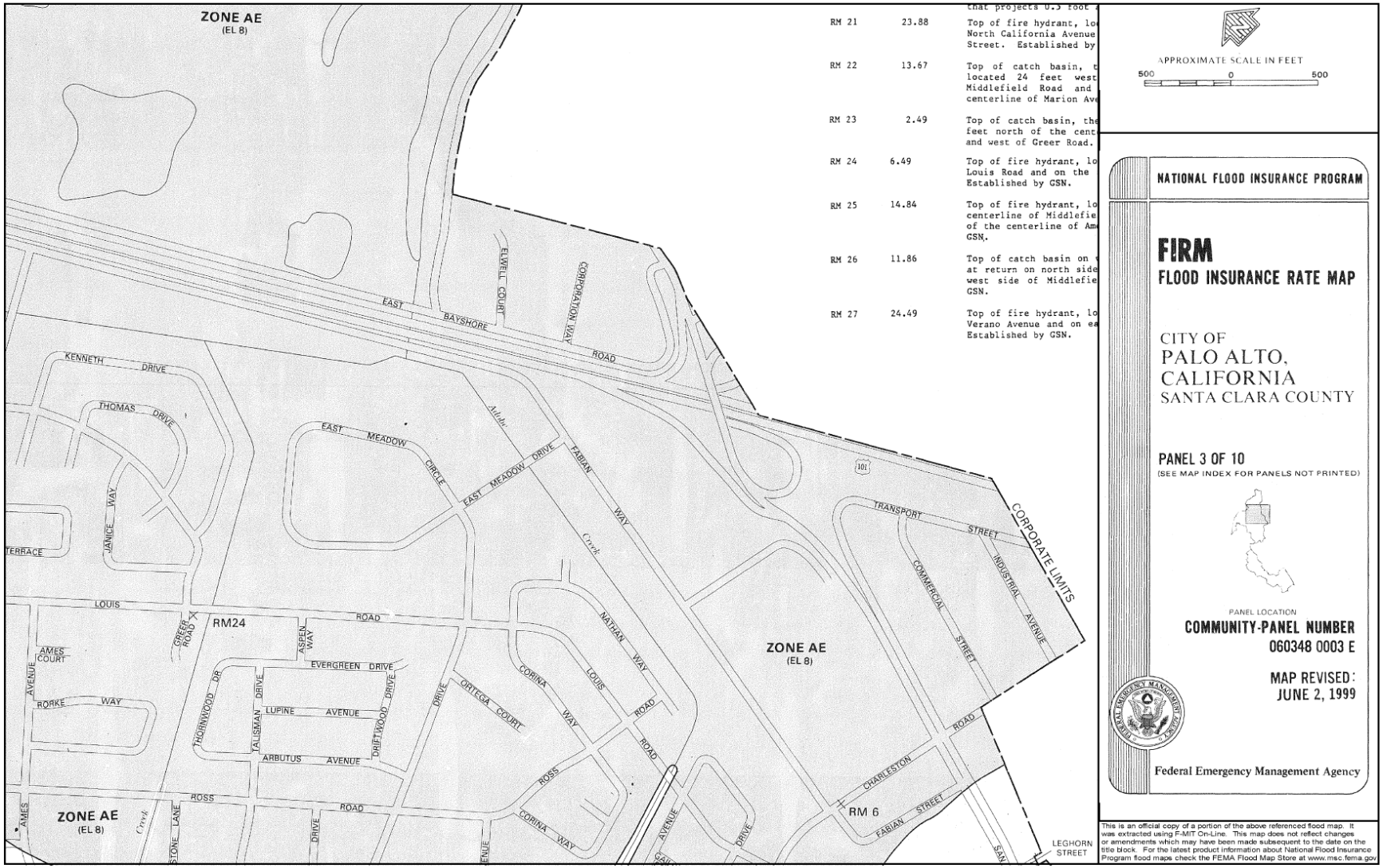

Permanente Creek 101 Aux Lane Plan: Permanente-Proposed 10/14/2008
River = Permanente Creek Reach = PC 01 RS = 12935 Upstream of Cross Culvert
Permanente Creek 101 Aux Lane Plan: Permanente-Proposed 10/14/2008
River = Permanente Creek Reach = PC 01 RS = 12911 Culv
Permanente Creek 101 Aux Lane Plan: Permanente-Proposed 10/14/2008
River = Permanente Creek Reach = PC 01 RS = 12911 Culv
Permanente Creek 101 Aux Lane Plan: Permanente-Proposed 10/14/2008
River = Permanente Creek Reach = PC 01 RS = 12671
Elevation (ft)
Station (ft)

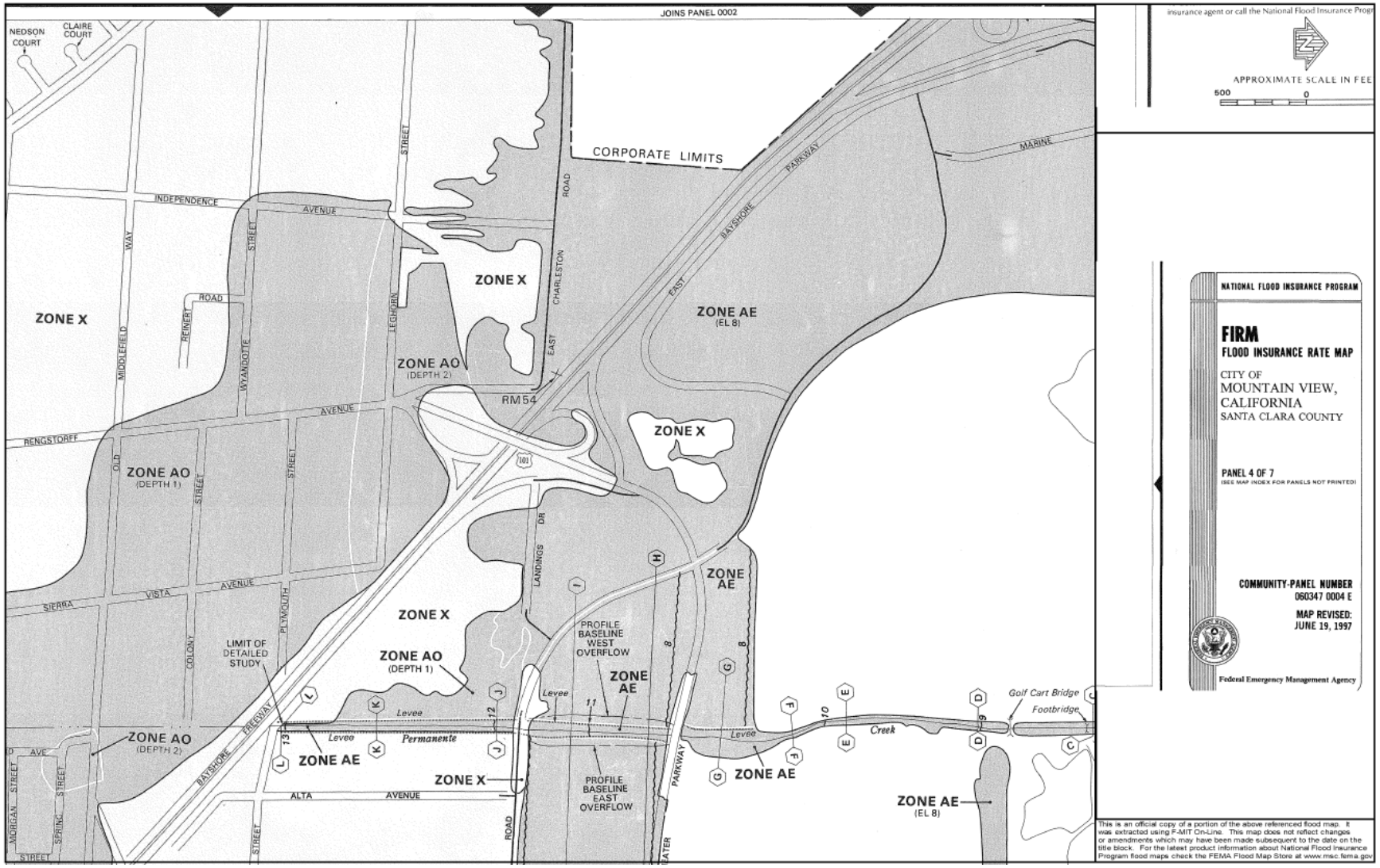

Permanente Creek 101 Aux Lane Plan: Permanente-Proposed 10/14/2008
River = Permanente Creek Reach = PC 01 RS = 12389
.02
Elevation (ft)
Station (ft)
990
995
1000
1005
1010
1015
1020
1025

Appendix C FEMA Floodplain Map


APPROXIMATE SCALE IN FEET
500 0 500
NATIONAL FLOOD INSURANCE PROGRAM
FIRM
FLOOD INSURANCE RATE MAP
CITY OF
PALO ALTO,
CALIFORNIA
SANTA CLARA COUNTY
PANEL 3 OF 10
(SEE MAP INDEX FOR PANELS NOT PRINTED)
PANEL LOCATION
COMMUNITY-PANEL NUMBER
060348 0003 E
MAP REVISED:
JUNE 2, 1999
Federal Emergency Management Agency
This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov
ZONE AE
(EL 8)
San Francisquito Creek
Road on Levee
CORPORATE LIMITS
ZONE A CONTAINED IN CHANNEL
ZONE X
ZONE AH
ZONE A
ZONE AE
(EL 8)
EMBARCADERO WAY
EMBARCADERO
GENG ROAD
FABER PLACE
EAST BAYSHORE ROAD
WEST BAYSHORE ROAD
LAURA LANE
O'BRINE LANE
WATSON COURT
EDGEWOOD
HILBAR
ALANNAH COURT
SANDALWOOD COURT
SIERRA COURT
ST FRANCIS DRIVE
CARMEL DRIVE
SANTA CATALINA STREET
CHABOT TERRACE
TANLAND DRIVE
AZTEC DR
ARROWHEAD WAY
CARDINAL WAY
INDIAN DRIVE
SANTA ANA STREET
ELMDALE PLACE
METRO CIRCLE
MOFFETT
SIMKINS
HAMILTON AVENUE
CHANNING
IVY LANE
WILDWOOD LANE
TULIP LANE
GREER ROAD
IRIS WAY
DANA AVE
ALESTER AVENUE
PATRICIA LANE
JACKSON DRIVE
RHODES DR
101


APPROXIMATE SCALE IN FEET
500 0 500
ZONE AE
(EL 8)
ZONE AE
(EL 8)
NATIONAL FLOOD INSURANCE PROGRAM
FIRM
FLOOD INSURANCE RATE MAP
CITY OF
PALO ALTO,
CALIFORNIA
SANTA CLARA COUNTY
PANEL 3 OF 10
(SEE MAP INDEX FOR PANELS NOT PRINTED)
PANEL LOCATION
COMMUNITY-PANEL NUMBER
060348 0003 E
MAP REVISED:
JUNE 2, 1999
Federal Emergency Management Agency
This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov
RM23
EAST BAYSHORE ROAD
WEST BAYSHORE ROAD
BAYSHORE FREEWAY
WATSON COURT
SIERRA COURT
ST. FRANCIS DRIVE
CHABOT TERRACE
TANLAND DRIVE
CARMEL DRIVE
AZTEC DR
ARROWHEAD WAY
CARDINAL WAY
SANTA CATALINA STREET
INDIAN DRIVE
SANTA ANA STREET
ELMDALE PLACE
METRO CIRCLE
MOFFETT CIRCLE
SIMKINS COURT
AVENUE
OTTERSON COURT
HIGHGINS PLACE
MADDUX DRIVE
GENEVIEVE COURT
GREER ROAD
ELSINORE COURT
BLAIR
BURNHAM
VAN AUKEN CIRCLE
LAWRENCE LANE
MORRIS DRIVE
SANDRA DRIVE
STOCKTON PLACE
MORAGA COURT
BAUTISTA CT
CLIFTON COURT
VERNON TERRACE
ELCAJON
OREGON
AGNES WAY
DENNIS DRIVE
CELIA DRIVE
MOBENO AVENUE
COLONIAL LANE
AMARILLO AVENUE
SYCAMORE DRIVE
COLORADO
Creek
LOUIS ROAD


ZONE AE
(EL 8)
RM 21 23.88 Top of fire hydrant, lo North California Avenue Street. Established by
RM 22 13.67 Top of catch basin, t located 24 feet west Middlefield Road and centerline of Marion Ave
RM 23 2.49 Top of catch basin, the feet north of the cent and west of Greer Road.
RM 24 6.49 Top of fire hydrant, lo Louis Road and on the Established by GSN.
RM 25 14.84 Top of fire hydrant, lo centerline of Middlefie of the centerline of Am GSN.
RM 26 11.86 Top of catch basin on at return on north side west side of Middlefie GSN.
RM 27 24.49 Top of fire hydrant, lo Verano Avenue and on ea Established by GSN.
APPROXIMATE SCALE IN FEET
500 0 500
NATIONAL FLOOD INSURANCE PROGRAM
FIRM
FLOOD INSURANCE RATE MAP
CITY OF
PALO ALTO,
CALIFORNIA
SANTA CLARA COUNTY
PANEL 3 OF 10
(SEE MAP INDEX FOR PANELS NOT PRINTED)
PANEL LOCATION
COMMUNITY-PANEL NUMBER
060348 0003 E
MAP REVISED:
JUNE 2, 1999
Federal Emergency Management Agency
This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov
EAST BAYSHORE ROAD
ELWELL COURT
CORPORATION WAY
KENNETH DRIVE
THOMAS DRIVE
EAST MEADOW CIRCLE
EAST MEADOW DRIVE
FABIAN WAY
JANICE WAY
TERRACE
LOUIS ROAD
RM24
GREER ROAD
ASPEN WAY
EVERGREEN DRIVE
AMES COURT
AVENUE
RORKE WAY
THORNWOOD DR
TALISMAN DRIVE
LUPINE AVENUE
DRIFTWOOD DRIVE
ARBUTUS AVENUE
ORTEGA COURT
CORINA WAY
NATHAN WAY
LOUIS ROAD
ROSS ROAD
ZONE AE
(EL 8)
ZONE AE
(EL 8)
101
TRANSPORT STREET
COMMERCIAL STREET
INDUSTRIAL AVENUE
CORPORATE LIMITS
CHARLESTON ROAD
FABIAN STREET
RM 6
LEGHORN STREET


JOINS PANEL 0002
NEDSON COURT
CLAIRE COURT
CORPORATE LIMITS
INDEPENDENCE AVENUE
ZONE X
ZONE AO (DEPTH 2)
ZONE AE (EL 8)
RM54
RENGSTORFF AVENUE
ZONE AO (DEPTH 1)
SIERRA VISTA AVENUE
LIMIT OF DETAILED STUDY
PROFILE BASELINE WEST OVERFLOW
PROFILE BASELINE EAST OVERFLOW
Levee
Permanente
Creek
Golf Cart Bridge
Footbridge
BAYSHORE FREEWAY
ALTA AVENUE
MARINE PARKWAY
LANDINGS DR
CHARLESTON ROAD
EAST BAYSHORE
APPROXIMATE SCALE IN FEE
NATIONAL FLOOD INSURANCE PROGRAM
FIRM
FLOOD INSURANCE RATE MAP
CITY OF
MOUNTAIN VIEW,
CALIFORNIA
SANTA CLARA COUNTY
PANEL 4 OF 7
COMMUNITY-PANEL NUMBER
060347 0004 E
MAP REVISED:
JUNE 19, 1997
Federal Emergency Management Agency

DETAILED STUDY
ZONE AO
(DEPTH 1)
OVERFLOW
ZONE AE
Levee
Permanente
Creek
RM71
LIMIT OF DETAILED STUDY
ZONE AO
(DEPTH 2)
ZONE AE
ZONE X
PROFILE BASELINE EAST OVERFLOW
ALTA AVENUE
TELFORD AVE
CAMP STREET
MORGAN COURT
HUFF AVE
JOAQUIN ROAD
SHORELINE BOULEVARD
RM56
RM 55
PRIVATE DRIVE
MACON AVENUE
ARMAND AVENUE
ZONE AE
(EL 8)
APPROXIMATE SCALE IN FEET
NATIONAL FLOOD INSURANCE PROGRAM
FIRM
FLOOD INSURANCE RATE MAP
CITY OF
MOUNTAIN VIEW,
CALIFORNIA
SANTA CLARA COUNTY
PANEL 4 OF 7
COMMUNITY-PANEL NUMBER
060347 0004 E
MAP REVISED:
JUNE 19, 1997
Federal Emergency Management Agency

Appendix D Project Photographs

Photo 1: (Left)
Matadero Creek, Upstream of the US 101 Bridge (facing southwest)

Photo 2: (Right)
Matadero Creek, Existing open space between US 101 southbound lane and West Bayshore Road (facing southeast)

Photo 3: (Left)
Matadero Creek, Downstream face of the East Bayshore Road bridge (facing southwest)

Photo 4: (Right)
Matadero Creek, Existing open space between US 101 northbound lane and East Bayshore Road (facing northwest)

Photo 5: (Left)
Adobe Creek, Upstream face of the bridge (facing southeast)

Photo 6: (Right)
Adobe Creek, Existing open space between US 101 southbound lane and West Bayshore Road (facing southeast))

Photo 7: (Left)
Adobe Creek, Downstream face of the bridge (facing southwest)

Photo 8: (Right)
Adobe Creek, Existing open space between US 101 northbound lane and Eat Bayshore Road (facing northwest)

Photo 9: (Left)
Permanente Creek, Inlet face of the US 101 cross culvert (facing northeast)

Photo 10: (Right)
Permanente Creek, Upstream of the US 101 cross culvert (facing south)

Photo 11: (Left)
Permanente Creek, Outlet face of the US 101 cross culvert (facing south)

Photo 12: (Right)
Permanente Creek, Downstream of the US 101 cross culvert (facing south)

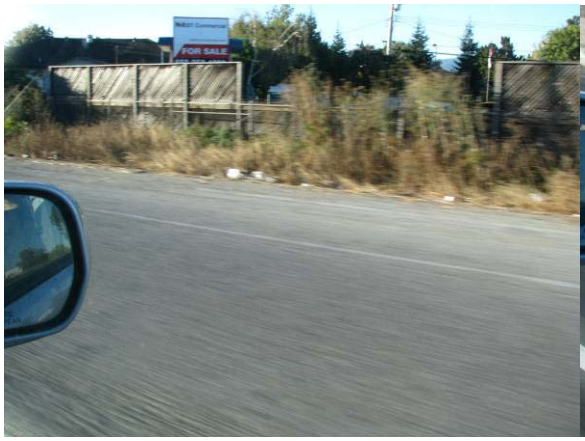


Photo 13: (Left)
Existing fence located adjacent to US 101 at North Rengstorff Avenue Interchange southbound onramp (facing south from US 101 southbound)

Photo 14: (Right)
Existing soundwall located adjacent to US 101 at Old Middlefield Road Interchange southbound onramp (facing south from US 101 northbound)

Photo 15
Existing treatment BMP at Shoreline Blvd (facing northeast from US 101 northbound)

Photo 16
Existing shoulder space at US 101, near San Antonio Road interchange (facing northeast from US 101 northbound)

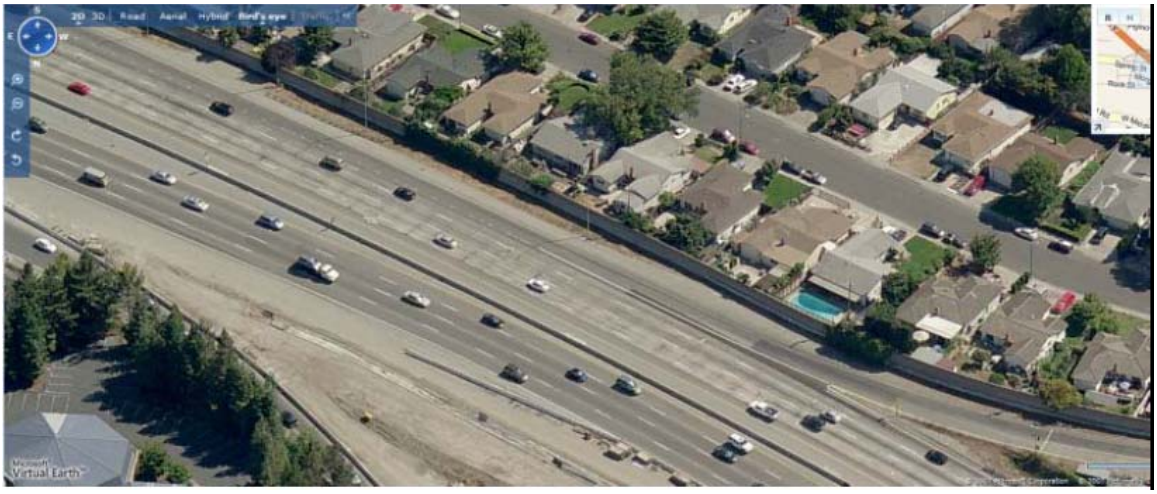
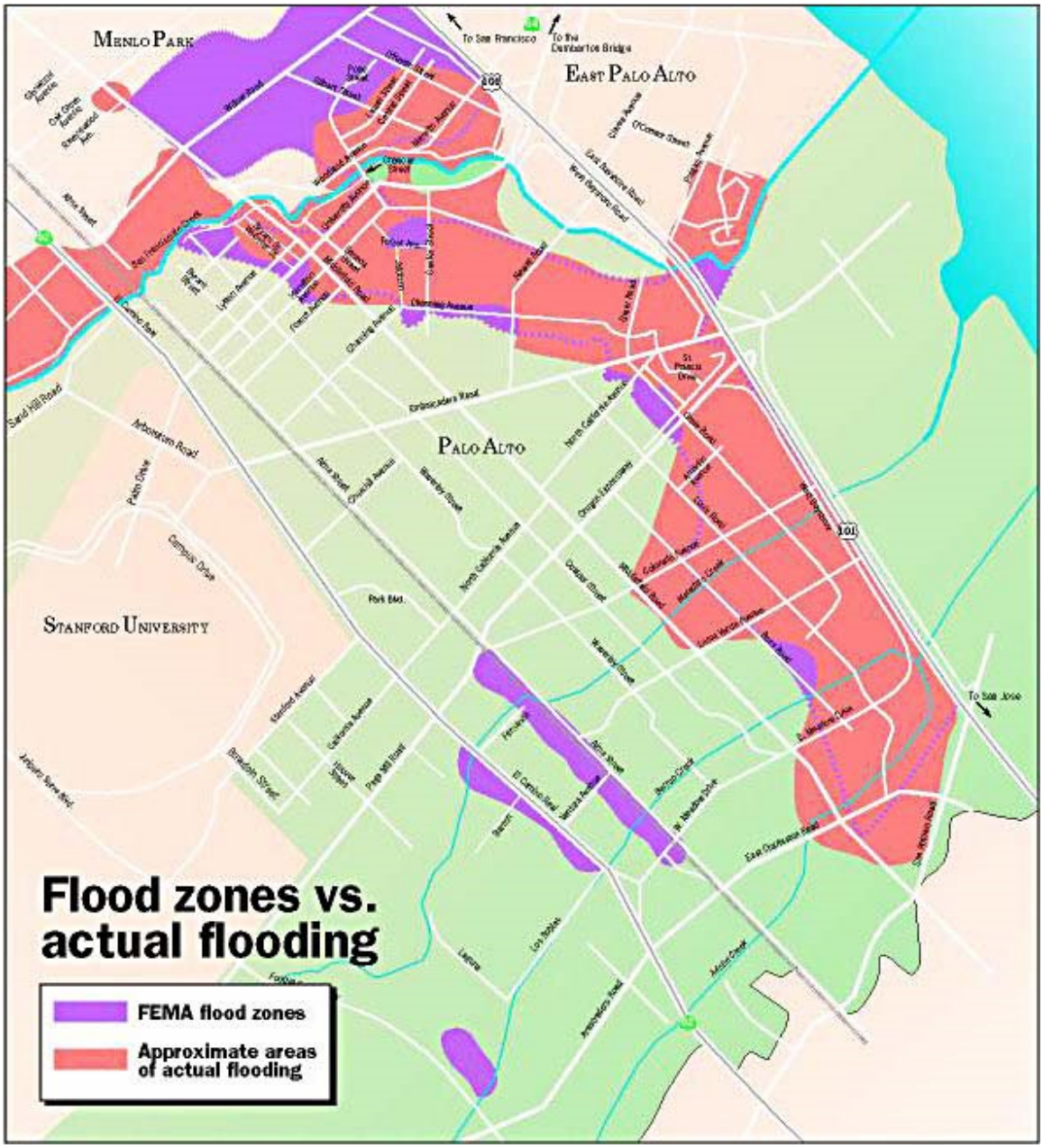


Photo 17
US 101 at Old Middlefield Road Interchange, Bird's Eye View facing south
(Microsoft Virtual Earth)

Photo 18
US 101 at slightly south of North Rengstorff Avenue Interchange, Bird's Eye View facing south
(Microsoft Virtual Earth)

Appendix E Historic Flood Event Information



Comparison of FEMA floodplain and Approximate Areas of Actual Flooding during February 1998 Storm Event

Source: Palo Alto Weekly (February 1998c)

City of Palo Alto
Public Works Engineering
Phone: 650/329-2151 FAX: 650/329-2240
Inspection: 650/496-6929

ENCROACHMENT PERMIT & TEMPORARY LEASE

PERMIT TYPE:

___ ENCROACHMENT PERMIT (Right-of-way or public utilities easement encroachments)
___ TEMPORARY LEASE (Encroachments on City-owned property)

PERMITTEE NAME AND ADDRESS:

Name: _____

_____

_____

Phone: _____/_____-_____

LOCATION OF ENCROACHMENT/LEASE:

_____

_____

_____

_____

DURATION:

__Temporary (_____ Days)

__Indefinite

ESTIMATED START DATE: _____

ENCROACHMENT PERMIT TYPE:

Residential (Single Family)

___ Standard: Architectural, structural, decks, spas, etc. in a Public Utilities Easement (PUE) or City right-of-way (ROW).

___ Dumpster or container (no insurance certificate is required).

___ Fence: Placement of a fence in a PUE or ROW (no insurance certificate is required)

Non-Residential (Commercial)

___ Standard: Awnings, lane or sidewalk closures, pedestrian protection structures, structural or architectural features, private structures, other long term encroachments in a PUE or ROW, lasting more than 5 days.

___ Short-Term: Sidewalk/street/alley encroachments, lane or sidewalk closures, unloading of materials, etc., lasting 5 days or less.

___ 1 Day: Sidewalk or lane closure lasting 1 day or less.

___ Minor: Placement of dumpster within downtown districts (additional fee for parking space rental, if applicable), and restaurant tables & chairs on sidewalk.

Pursuant to the provisions of Sec 12.12 * of the Palo Alto Municipal Code, permission is hereby requested to construct and maintain an encroachment, or to use City-owned property, at the above location and in the manner described below:

NATURE OF ENCROACHMENT OR USE: _____

_____

REASON FOR ENCROACHMENT/LEASE: _____

_____

--PW STAFF USE ONLY--

FEES:

Fee Paid $ _____

Parking $ _____

TOTAL $ _____

Date Paid:_____

INS CERT #: I-_____

REVIEWED AND RECOMMENDED FOR APPROVAL BY:

___ Transportation
___ Bldg Inspection
___ Planning
___ Real Estate
___ Light & Power
___ WGW

Permittee shall, at Permittee expense, remove said encroachment or any improvements constructed, and this permit/lease shall terminate within thirty (30) days after written notice from the City Engineer/Real Property Manager*. Permittee agrees that in the event of failure to remove such encroachment/improvement* within the time specified, the same may be removed, and the City's property or easement restored, by the City, and the cost thereof made a lien upon/against* Permittee/Lessee, pursuant to the provisions of Sec 12.12 of the Palo Alto Municipal Code.

Permittee, in consideration of the issuance of this permit/lease, agrees to maintain required evidence of liability insurance, for the life of the encroachment, that indemnifies and holds harmless the City of Palo Alto, its officers, agents, and employees from any liability of any nature whatsoever caused in whole or in part by reason of or in any manner connected with any and all operations, structures or conditions authorized or permitted by this permit/lease. The Permittee agrees and understands that this permit vests no estate.

Permittee shall be responsible for obtaining any and all permits which may be required by an Agency having jurisdiction over the property and/or proposed use. Notwithstanding the above, nothing contained herein shall obligate City to issue any permits or approvals required for construction.

Permittee hereby accepts this permit/lease* subject to all conditions set forth herein, and the attached Special Provisions and conditions, and agrees that all of said conditions and provisions shall be binding on Permittee, co-owners, heirs, assigns, transferees and successors in interest of every nature. This permit/lease* shall expire if work on the encroachment described within does not commence within sixty (60) days of the date of approval, or by the anticipated start date as indicated above, whichever is later.

X_____ _____ _____ _____

Permittee Authorized Representative **Date** APPROVED BY Issuance Date

For inspection call the Public Works Inspector @ (650) 496-6929 – Provide minimum one working day advance notice.

Permit No. ___ ___ ___ **ENC-**

Date _____

Work Satisfactorily Completed: Inspector _____

----PW Staff Use Only----

SPECIAL PROVISIONS

1. Permittee shall provide the City evidence of Personal Injury and Property Damage insurance in a form acceptable to the CPA Risk Manager, in the minimum amounts of $1,000,000 each for personal injury and property damage or else as indicated below. Said insurance shall name the City of Palo Alto, its officers and employees as an additional insured and shall be primary insurance with any City insurance being excess only. Said insurance shall be maintained so long as this permit/lease* remains in force, and evidence of said current insurance and subsequent renewals shall be submitted to the City of Palo Alto, Public Works Engineering Division.

   ___ ALTERNATE COVERAGE REQUIRED: $_____,000 personal injury and $_____,000 property damage

2. Encroachment, construction or use shall not extend beyond the area identified and specified as part of this permit/lease.
3. Encroachment shall not restrict visibility to any traffic control devices or signs.
4. No encroachment is permitted in exclusive bike lanes (where parking is not permitted); bus stops, or "no parking zones" unless specifically authorized within this permit.
5. Encroachment shall not block or cover access to any utility pole, manhole, vault, cleanout, valve, junction or meter box.
6. Permittee shall maintain encroaching or constructed facility and/or the property in a good and safe condition. Construction shall be in conformance with plans approved by the City.
7. Whenever construction, reconstruction or maintenance work to City facilities requires relocation or modification of the encroachment, construction or use, such relocation or modification work shall be done by Permittee at Permittee's sole expense.
8. Permittee shall assure adequate visibility of encroachment, construction or use during daytime and nighttime hours.
9. Permittee shall conform to all requirements of the Palo Alto Traffic Control Manual, as applicable.
10. The Permittee is required to maintain any underground facilities listed with Underground Service Alert (USA). When requested, the Permittee is responsible to mark out appropriately all underground facilities described in this permit.
11. Any public and/or private improvements damaged by the encroaching activities must be repaired or replaced in-kind to the satisfaction of the improvement owner and at Permittee expense.
12. All dumpsters used in this permitted encroachment are required to be ordered through the City's contracted collector for waste disposal services.
13. In addition to this permit, Permittee shall obtain the following permits:

    ___ Street Work Permit from Public Works Engineering (associated _____STR- _____).

    ___ Parking Permit from CPA Transportation Division.

    ___ Fence Permit from CPA Building Inspection Division.

    ___ Other special permit: _____

14. ___ See Attachment(s) A B C D E F _____ for additional permit conditions.
15. ___OTHER:_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Excavation Permit Application

City of Mountain View • Public Works Department • Land Development Section
Telephone (650) 903-6311 • FAX (650) 962-8503

An excavation permit is required from the City of Mountain View for work within the street right-of-way. The following information is needed to issue an excavation permit. If you need any assistance, please call the Land Development Section of the Public Works Department.

A. Application Form

Complete the attached excavation permit application form (see Page 13) and submit the application with the required materials (e.g., proof of payment of fees / business license, insurance w / endorsement, work / traffic control plans, etc.) to the Public Works Department Land Development Section. Please allow a minimum of 15 working days for the permit to be issued.

B. Plans of the Work (4 Sets)

Minor Projects: For services perpendicular to the street, the plans of the work must be legible and show:

- Location, size and pipe material of the proposed utility services.
- The location of the City mains in the street right-of-way if the proposed utilities are to connect to or cross over or under the City mains, except for the installation of a routine water or sewer service for a single-family home.
- Existing curbs, sidewalks and driveways that will be impacted by the proposed work.
- Existing trees, utility vaults, boxes and other structures within 10' of the proposed work.
- Location of existing traffic signal facilities (e.g., detector loops, conduits, etc.) that may be impacted by the proposed work.
- See attached sample plan.

Major Projects: For projects where underground utility lines are proposed to be installed parallel to the street, 24" by 36" size plans are to be prepared in accordance with Section R. (May require 8 sets.)

C. Traffic Control Plan (4 Sets)

1. A traffic control plan is required for all work that impacts traffic on an existing street. See attached examples. For routine work, such as for the installation of a water or sewer service at mid block, the attached examples may be used in lieu of a custom traffic control plan. For proposed utility line crossing a signalized intersection, the work must be completed in phases. Traffic control plans shall show the existing lane striping, traffic flow pattern with directional arrows, medians, delineators (cones), signs and other warning devices for each phase of the work.

2. Work on congested or signalized intersection may need to be completed in phases. Congested intersection may require the contractor to hire Police Officers or Community Service Officers to direct traffic. Work hours are typically restricted. In some cases, to minimize disruption, work may be required on Saturday or Sunday. See Section O.

D. Contractor's Insurance Certificate and Endorsement Naming the City as an Additional Insured

Provide an insurance certificate with the following:

- $1 million General Liability insurance.
- $1 million Automobile Liability insurance.
- $1 million Workers' Compensation.

Provide a Commercial General Liability Endorsement (CG 20 10 10 93 or CG 20 10 11 85) naming the City as additionally insured with the required three statements.

See the attached insurance requirements and examples. A fax of the certificate and

endorsement from the insurance company will be accepted, provided the insurance company concurrently mails the originals to the City.

E. Contractor's Licenses

Provide the following on the application:

- Contractor's State license number.
- Contractor's City business license number. (Please contact the Community Development Department at (605) 903-6313 for applications or information on obtaining a City business license.)

F. Excavation Permit Fees

Submit a check made out to the City of Mountain View for the excavation permit fees. The permit fees are based on the number of hours of inspection and are calculated from the itemized table listed in Section D on Page 15 of this application.

On large projects or where required by the City, plan check and inspection fee rates listed in Section E on Page 15 may be required instead of the hour excavation permit fee.

If the actual cost of inspection exceeds the inspection fee amount for large projects, the permittee shall pay the additional cost of inspection within 30 days of being invoiced by the City.

G. USA Identification Number

If the work is scheduled within the next two weeks, the contractor must provide the USA (underground service alert) identification number prior to issuance of the excavation permit. The telephone number of the USA regional notification center is (800) 642-2444 or (800) 227-2600.

H. Water Service Application

- A water service application is required for any new City water service, irrigation service, fire service, water meter and irrigation meter.
- The applicant may be required to pay water fees with the water service application.
- A separate permit, an approved backflow prevention device and a City meter are required for temporary construction water from fire hydrants and / or existing water services during construction. Contact the meter shop at (650) 903-6328 for further information.

I. Sewer Service Application

- A sewer service application is required for any new City sanitary sewer lateral.
- The applicant may be required to pay sewer fees with the sewer service application.

J. Storm Drainage Fee

For connections to the City storm drains and catch basins, the applicant will need to (1) request permission to connect to the storm drain (see Page 15 of application); and (2) pay the storm drainage fees, if the fees have not been paid in the past.

City-maintained storm drain lines in the public right-of-way shall be 12" minimum RCP.

K. SCVWD Exploratory Boring Permit

For soil borings that are 45' or more in depth, a copy of the Santa Clara Valley Water District exploratory boring permit is required.

L. Bonds

On large projects or when required by the City, a faithful performance bond may be required. The amount of the bond shall be equal to 100 percent of the approved construction estimate for the work. Use the enclosed faithful performance bond form for excavation permits.

The surety (bond company) must be listed as an acceptable surety on the most current Department of the Treasury's Listing of Approved Sureties on Federal Bonds, Department Circular 570. This list of approved sureties is available through the Internet at *www.fms.treas.gov/c570/index.html*.

The bond amount must be below the underwriting limitation amount listed on the Department of the Treasury's Listing of

Approved Sureties. The surety must be licensed to do business in California.

Additional bonds or different types of bonds may be required by a franchise or encroachment agreement / permit for the proposed work.

M. Encroachment Permit

An encroachment permit is required for private facilities located within the public right-of-way.

N. Street Construction Moratorium

Excavating within a street that was overlaid with AC or constructed within the last five years is prohibited, unless the City grants an exception.

O. Working Hours

1. Normal working hours are from 7:30 a.m. to 4:00 p.m., Monday through Friday, excluding holidays.

2. For congested street and intersections, it may be necessary to perform the work from 9:00 a.m. to 3:00 p.m., Monday through Friday, or on weekends from 9:00 a.m. to 3:00 p.m.

3. Night work is not allowed due to impact to adjacent residences and due to inspection availability and costs.

4. For work performed on weekends, the effect of construction noise on adjacent residences and organizations, such as churches, must be considered. For work next to a church, the work is typically prohibited on Sunday mornings. Work next to residences is limited from 9:00 a.m. to 3:00 p.m.

5. For work adjacent to a movie theater, school, Center for the Performing Arts, Shoreline Amphitheatre, etc., the work is typically prohibited during the operating hours of these facilities.

6. No work shall be performed in the downtown area on days when special events are held in the downtown area.

P. Phased Construction

1. Large project over 2,000' to 3,000' in length along a street will need to be constructed in phases. The contractor will need to complete the work in the first phase, including the finished pavement surfacing and any correction work, before beginning work on the next phase.

2. For work in the downtown area, work must be completed in one or two block phases.

Q. Schedules

For large projects, the proposed number of working days to complete all of the work must be specified. Unnecessarily long schedules will not be allowed. The contractor must complete all work in a timely manner. Liquidated damages will be assessed for exceeding the number of working days. Issuance of future permits will be withheld, until the entire work is completed.

R. 24" by 36" Civil Engineering Plans

For projects where underground utility lines are proposed to be installed parallel to the street, the following applies.

1. The plans are to be drawn on 24" by 36" size sheets at a scale of 1"=20' with 1.5" borders and minimum 0.12" text height.

   One-half scale review sets may be submitted on 11" by 17" sheets at a scale of 1"=40'. Add a scale bar on all plan sheets. Please note that the final set of plans submitted to the City for signature must be 24" by 36" in size at a scale of 1"=20' with 1.5" borders and minimum 0.12" text height.

2. The plans are to accurately show all surface and subsurface improvements on both sides of the street. This includes all utilities, such as underground electric lines, telephone lines, gas lines, fiber optic lines, storm drains, sewer laterals, water services,

etc. The utility owner, number of lines and size of lines are to be shown.

3. The permittee shall draw the existing improvements based on as-built plans, surface field survey, and other available information to accurately show all surface and underground improvements on the plans.

4. Plans not drawn to proper scale, schematic plans, poorly drawn plans or incomplete plans submitted for review will be rejected.

5. Interim plans (e.g., drafts, preliminary drawings, Building Department review documents or other work-in-progress documents) must include the name and license number of the licensed civil engineer in responsible charge. These interim plans must also include a notation indicating their status (e.g., "preliminary" or "for plan check only" or "not for construction"). Civil engineers may place their stamp on interim plans to satisfy the requirement of including their name and license number.

   All final plans submitted to the City must be stamped and signed by a State of California registered civil engineer. Each sheet must be signed and stamped by the registered civil engineer.

6. A City title block (signature block) is required on the first sheet of the plans. A City revision block is required on all sheets. Use the enclosed City standard signature block.

7. Plans must be prepared in accordance with these requirements, City Standard Design Criteria and City Standard Provisions.

8. After the Public Works Department has approved and signed the original plans, 10 black line copies and one (4 mil) 24" by 36" Xerox mylar set of the signed originals are to be submitted to the City prior to the approval of the excavation permit. The engineer retains the signed originals and will need to as-built the 24" by 36" plans prior to acceptance of the work. As-built plans shall be submitted to the City within 30 days after completion of the work.

9. The engineer will also need to submit the as-built plans on electronic media, such as disks or CDs in AutoCAD Release 14 format, and the sheets must be provided as individual PDF files.

The City has GIS topographic maps of the surface improvements drawn at a resolution of 1"=100' in AutoCAD format that are available for the engineer's use, provided that the City's topographic information is not sold to others or copyrighted. These files include the City's GIS coordinate system. The City does not warrant the accuracy of the information contained on the City's topographic maps, record drawings, maps and plans on file with the City.

Because the City's topographic maps were drawn at resolution 1"=100' scale, the applicant will need to regenerate objects, such as arcs, turn off layers that are not needed, draw in missing information and redraw inaccurate information.

S. Telecommunication Lines

1. Master Encroachment Agreement:

   For public utility companies, a master encroachment agreement is required for the use of the right-of-way. After the master encroachment agreement is fully signed and executed, an excavation permit is required for each construction project. An encroachment agreement application for telecommunication companies is available at this office.

2. Bond:

   A faithful performance bond equal to 100 percent of the cost of the work is required by the encroachment agreement. Use the enclosed faithful performance bond form for excavation permits. A cost estimate of the work for the excavation, boring, trenching, paving, vaults, substructures, traffic control/staging, etc., shall be submitted with the excavation

permit application. See Section L for bond requirements.

3. Fees:

Plan check fee and inspection fee are each: 7.5 percent for work under $50,000; $3,750 plus 4.5 percent for work between $50,001 and $500,000; and $24,000 plus 3.5 percent for work over $500,000. The hourly excavation permit inspection fee rate that is noted on Page 1 is not applicable for large projects.

If the actual cost of inspection exceeds the inspection fee amount, the permittee shall pay the additional cost of inspection within 30 days of being invoiced by the City.

4. Joint-Build Projects

a. The Encroachment Agreement between the City of Mountain View and a telecommunications company for the installation of network facilities within public right-of-way provides that the same company will cooperate in the planning, locating and constructing of its network facilities in utility joint trenches or common duct banks by directional boring methods with other similar utilities providers and to participate in cost sharing for the joint trench and ducts, when two or more telecommunications service providers are proposing network facilities in the same public right-of-way or when an underground project is being planned by City. See Paragraph 37, Participation With Other Utilities," of the Encroachment Agreement.

b. While the installation of a fiber optics network system typically requires joint-build per the Encroachment Agreement, criteria for joint-build of fiber optics services to customers are not always clear. These guidelines, as depicted in the attached Exhibit 1, are intended to clarify the conditions that will trigger consideration for joint-build services.

c. Joint-build will be required for the following conditions:

- Fiber optics network system expansion (see Example A in Exhibit 1).
- Major service serving more than one customer and containing more than one conduit (see Example B in Exhibit 1).
- Single service exceeding 300' in length (see Example C in Exhibit 1).
- Service running parallel to streets with heavy concentration of existing utilities (see Example D in Exhibit 1).
- Single customer served by multiple telecommunications providers (see Example E in Exhibit 1).

5. Conceptual Route Approval

a. Prior to performing detailed design work, submit a written request with an 8.5" by 11" map of the proposed route of the utility line to this office. Include the telecommunication company's name, contact name, address, and telephone number and fax number. The City will determine if the route is acceptable and will then send the proposed route to other utility companies to see if joint construction work is required. (The City will not allow subsequent conduits to be installed along the proposed route for a period up to five years.)

b. The route should avoid residential areas, unless the lines will directly serve the residences.

c. For lines passing through the City, the route should be located on arterial streets.

6. Alignment within the Street

   a. The proposed utility lines are to be a minimum 5' clearance from existing parallel water, sewer or storm lines.

   b. Utility lines should be installed as close to the edge of the right-of-way line as practicable. Where the area behind the curb is fully occupied, the utility lines should be installed in the pavement area as close to the curb as possible in order to help preserve the remaining right-of-way.

   c. Telecommunication lines are typically required to be 3' to 4' on centers from other underground telecommunication lines in order to help preserve space within the existing right-of-way.

   d. Telecommunication lines are to be installed parallel to the street centerline, where practicable, and shall not meander along the street. Street crossings shall be at right angles to the street.

7. Directional Bore Design and Construction

   a. Plan and Profile Sheets. Standard civil engineering plan/profile sheets are required for direction bores. The plan view is to be located on the top of the page and the profile below the plan view. All existing utilities must be shown on the plan and profile views.

   b. Alignment Review: Submit preliminary plans showing the existing surface and subsurface improvements in the plan view based on as-built plans and field reviews. Show all laterals and services in the street. Show the proposed horizontal and vertical alignment of the bore in plan and profile view.

   c. Excavation Pot Hole Permit. Obtain an excavation permit to pothole the underground lines and services along the approved alignment to verify location and depth. The entire route must be USA'ed. An air vacuum pothole excavator will be required.

   d. Profiles: Add the profiles to the directional bore plans based on the pothole excavation information. Verify the USA markings to what is shown on the plans for omissions. Submit directional bore plan and profiles to the City for review and approval. Profiles shall be drafted on the plans to scale under the direction of a civil engineer. All pothole excavation data, such as location, pipe diameter, type of pipe, depth of cover, and other relevant information shall be shown on the revised plans. Specify the boring entry angle (typically 8 to 20 degrees), exit angle, (typically 5 to 10 degrees), and maximum bending radius of the drill pipe (80' to 150' or more depending upon the diameter and wall thickness of the drill pipe) and bending radius of the pipe product on the plans.

   e. Vertical Clearance: Provide 3' minimum vertical clearance from all utilities. This ***also*** includes minor services, such as, water services, sewer laterals and gas services. For creek crossings and other deep crossings, provide a minimum of 5' clearance from utilities and structures.

   f. Minimum Cover: Minimum cover for directional boring shall be as follows:

Diameter	Minimum Cover
6" or less	4'
8" to 14"	6'
15" to 24"	10'
25" to 48"	15'

   g. Boring and Receiving Pits: Show the length, width, depth and location of the boring and receiving pits on the plan and profiles. The pits are to be located to minimize the construction impact to the adjacent properties. For example, the pits are not to be located in front of driveways, restaurants, bus

stops, fire hydrants, within street intersections, etc.

h. Conflicts with Trees: If trees are in the way of the directional bore, the utility line shall be deep bored underneath the tree roots rather than around the tree.

i. Excavation Permit to Bore: After the plans are approved, obtain an excavation permit to install the directional bore work.

j. Marking Drill Path: Before commencing construction, the entire drill path of the proposed bore shall be accurately surveyed and marked on the ground with traffic marking paint, or other approved method, and shall be approved by the City before commencing construction. The saw-cut line for the boring and receiving pits shall also be accurately marked on the ground.

k. Pilot Hole Accuracy: The pilot hole shall be drilled a minimum 5 percent horizontal and vertical accuracy based on the depth of the bore. For example, a 10' deep bore must be drilled within 0.5' of the horizontal alignment (drill path) and 0.5' of the vertical alignment. Pilot holes exceeding the 5 percent accuracy requirement shall be pulled back past the point of deviation and redrilled to comply with this accuracy requirement.

l. Location and Depth Markings: While boring, the location and depth of the bore must be accurately marked on the surface with traffic paint or other approved method.

m. Mud Fractures: In the event of a mud fracture or return loss (loss of circulation) occurs during pilot hole operations, the contractor shall cease progression of the drilling operations, notify the City, and assess damage to existing pipes and pavement.

8. Trench Design and Construction

a. For open trench construction, telecommunication lines are to have a minimum of 30" cover above the top of the conduits, at least 6" between the top of the conduits and the bottom of the street structural pavement section, and a maximum depth of 48".

b. For open trench construction, telecommunication lines are to have a minimum of 12" of vertical clearance from other utility lines and services. For shallow trenches, the proposed lines will typically need to go underneath the existing lines. The proposed lines shall not be installed within 6" below the street structural section.

c. A modified "T" trench cut design is required. See Standard Detail A-18 and standard construction notes on excavation, backfill and resurfacing.

d. Typical trench and pothole restoration details must be shown on the plans.

e. Control density fill (CDF) is typically required for use as backfill. The CDF specifications in Section 24-02.04 of the Standard Provisions specify a one- to two-sack cement mix. The use of CDF speeds up the work, minimizes the length of traffic disruptions, and does not require compaction tests.

f. The conduits must have a 2" minimum clearance from the sides and bottom of the trench in order to allow the CDF to flow to the bottom of the trench and around the conduits. The contractor must insert spacers on the sides and bottom of the trench. Conduit quad-ducts must have at least 1" spacing between other quad-ducts to allow CDF to flow around the quad-ducts.

g. The conduits must be secured to the bottom of the trench when CDF is used as backfill to prevent the floatation of the conduits in the CDF mix.

h. CDF cannot be used as temporary surfacing, as the CDF cannot hold up to vehicle traffic without spalling. Reduction of the thickness of the permanent AC is not allowed when CDF is used as aggregate base rock.

i. The typical sequence of trench and excavation work in the street includes: saw-cutting the existing AC pavement, excavating of the bottom portion (vertical portion) of the "T" trench, installing the conduits, backfilling the trench with CDF mixture up to the bottom of the existing AC, plating the trench, neatly installing AC around the edges of the plates, and opening up the travel lanes for the public.

   The CDF must be allowed to cure a minimum of 24 hours before the steel plates are removed. Within 48 hours, the steel plates must be removed and AC installed over the CDF backfill up to the finished grade. Cutback AC is not allowed as the lower portion of the AC will be used as permanent surfacing and as the Standard Provisions prohibit its use.

   The top 1.5" section of the AC (the top of the "T" trench) is removed by grinding. This includes the 1' wide band beyond the outside edge of the trench and manhole excavations, and the intervening pavement between the trench and lip of gutter (or edge of another trench) where the intervening pavement is 6' wide or less. A 1.5" thick AC overlay is then installed using an AC paving machine and steel rollers. Cutback AC is not allowed. If CDF is not used, the top of the "T" trench must be as thick as the existing AC pavement.

   If manholes are installed in the trench, the top of the manhole frame and cover must be installed 1.5" below the finished grade. The temporary AC is to be placed over the manholes to finished grade, temporarily covering the manholes. After the final pavement has been installed over the manholes, the manhole frames and covers are raised to grade.

9. <u>Separate Excavation Permit to Install Cables</u>

   For large projects, the excavation permit to install the conduits will not grant approval for the installation of any cables. A separate excavation permit must be obtained from the City to install cables within the underground conduits. Prior to obtaining a permit to install any cables, the lead utility company must complete all work to be performed under the initial excavation permit to install the conduits, including final restoration of the street and sidewalk. On joint build projects, the secondary utility companies will not be allowed to install cables until the restoration work is complete, except when the secondary utility company is only installing a service to a single site.

10. <u>Vaults</u>

    a. Vaults shall be placed in the sidewalk, street planter strip or public utility easements. Vaults shall not be placed in the street, unless they are converted to manhole with a circular frame and cover. Vaults shall not be placed within a driveway approach.

    b. Vaults shall be placed to minimize their impact on the adjacent property, such as placing the vault next to the side property line, or placing the vault away from main entrance features. For properties with small landscape areas or well-manicured landscaping, the vaults should be placed in the sidewalk to minimize their impact on the landscaping. Multiple vaults within a sidewalk area, fronting a single lot, will not be allowed.

    c. Very large vaults should be placed on private property (within a private easement) and not within the street or sidewalk area.

d. Vaults and bore pits are to be at least 15' from a street corner or end of curb return. Street corners or curb returns are heavily used during construction and maintenance, are highly visible areas and are often heavily congested with facilities.

e. Where the proposed vault conflicts with small diameter line, such as street light conduit lines, and where there is no other room behind the curb to install the vault, the small diameter lines are to be relocated around the proposed vault.

f. Where vaults are installed on an earthen or landscaped slope, the frame and cover shall be sloped to match the existing grade. Retaining walls shall not be installed in the slope.

g. Vaults shall be designed to withstand at least H20 vehicle loads.

h. A detail of the vault must be shown on the plans. Aggregate base rock is to be placed on the bottom of the vault to help drain the vault.

11. Manholes

a. Manholes shall not be allowed in the street, unless an exception is granted by the City. An exception will only be allowed if there is no room to place the manhole outside of the street pavement.

b. Manholes that are located in the street must have cast iron frames and covers.

c. Manholes that are located in sidewalks shall have a concrete polymer frame and cover that matches the color and texture of the sidewalk.

d. All manholes must be rated for a minimum H20 wheel load.

e. The utility company's name shall be permanently cast into or engraved on the covers.

f. A detail of the manhole must be shown on the plans. Aggregate base rock is to be placed on the bottom of the manhole to help drain the vault.

g. RPM extension rings are required on manholes as follows:

(1) Pavement areas: at least one 6" and one 3" RPM extension ring is required to facilitate leveling of the manhole frame and cover, and to lower the vault structure so that it is out of the pavement structural section. Additional 3" and/or 6" RPM extension rings shall be installed as necessary to keep the vault structure out of the pavement structural section and 6" below the pavement structural section.

(2) Sidewalk areas: at least one 6" RPM extension ring is required to facilitate leveling of the manhole frame and cover.

(3) Landscape areas: at least one 6" RPM extension rings is required.

T. Groundwater Monitoring Wells

In addition to an excavation permit, an encroachment agreement is required for any wells constructed within the public right-of-way. The applicant should make every effort to install the wells on private property rather than the City right-of-way. If the wells must be located in the street right-of-way, the wells are generally not permitted within the street pavement as the well boxes interfere with the City's street asphalt overlay program. Further, the City prefers the wells to be located outside of the sidewalk, if possible. It is strongly recommended that the City conceptually approve the location of the wells before the legal description of the encroachment area is prepared. Wells are to be placed at least 5' from

other utilities. The following items are required to prepare the encroachment agreement.

1. A determination of whether the City has an easement for street purposes or owns the right-of-way in fee in the area where wells are proposed to be installed.

2. If the City's street right-of-way is in the form of an easement where a new well is proposed to be installed, the applicant will need to obtain written permission from the adjacent property owner to install the well. According to the City Attorney's Office, a street easement does not give the City the right to permit installation of a well as a well is not considered to be typical street or utility usage.

3. The number of years the wells are anticipated to be in place. The life of the encroachment agreement can be specified to be 5, 10, 15 and 20 years.

4. Legal description of the encroachment area prepared by a registered land surveyor or civil engineer. For wells, a 10' by 10' square area is typically defined as the encroachment area.

5. Plat (8.5" by 11" drawing of the encroachment area prepared by a registered land surveyor or civil engineer). The plat is to include the street centerline, point of beginning of the legal description, bearings and distances, street curb and sidewalk if applicable.

6. Current deed or title report of the property that will be responsible for the well or property for which the wells are required. The legal description of the property in the deed or title report will be used in the encroachment agreement.

7. Statement as to who is the lead regulatory agency in charge of the groundwater investigations.

8. Statement as to who will own and maintain the wells. The well owner's legal name, identity (such as ABC, Inc., a California corporation) and address are required.

9. Well owner's insurance certificate and endorsement. (This is in addition to the contractor's insurance certificate required by the excavation permit.)

10. Encroachment permit fee.

11. Encroachment agreement which must be signed and notarized by the owner before the City can issue an excavation permit.

12. If the wells are located on City property, securities, such as bonds, are required.

The excavation permit requirements are indicated on Pages 1 and 2. The following is also required with the excavation permit application:

a. Well construction typical details.

b. Well construction permit from the Santa Clara Valley Water District.

U. Groundwater Extraction Systems

Groundwater extraction systems require an encroachment agreement in addition to an excavation permit. The items needed to prepare an encroachment agreement are the same as those listed in the preceding section on monitoring wells, except that the following is also required:

1. Cost estimate of the improvements within the street right-of-way.

2. For minor extraction systems, such as an extraction line that crosses a street, bonds or securities are not required. For major extraction systems, such as an extraction line that is located parallel to the street and for encroachments located on City property (not street right-of-way), the following three securities are required:

   a. Faithful performance bond equal to 100 percent of the cost of the work.

   b. Labor and materials bond equal to 100 percent of the cost of the work.

c. In lieu of a faithful performance bond and labor and materials bond, a single letter of credit or certificate of deposit equal to 150 percent of the cost of the work may be submitted.

d. Closure certificate of deposit equal to 100 percent of the cost to remove the extraction system. The cost to remove and/or abandon the extraction system shall not be less than 40 percent of the construction cost.

3. Plan check and inspection fees are based on a percentage of the work. These fees replace the hourly inspection fees noted in Section D on Page 15.

4. The plans for extraction systems with piping parallel to the street shall be drawn on 24" by 36" size sheets. After the City has approved and signed the plans, 10 copies and one Xerox Mylar copy of the originals are to be submitted prior to the approval of the excavation permit.

5. The owner of the extraction system will need to become a member of Underground Service Alert. The telephone number of the USA regional notification center is (800) 642-2444.

Blank Page

EXCAVATION PERMIT APPLICATION

City of Mountain View • Public Works Department • Land Development Section
500 Castro Street • P.O. Box 7540 • Mountain View, California, 94039-7540
Telephone (650) 903-6311 • FAX (650) 962-8503

Please see previous instructions for items to be submitted with this application.

INSURANCE CERTIFICATES WITH ADDITIONAL ENDORSEMENT MUST BE ATTACHED.

Excavation Permit No. _____

A. General Information (Please print or type)

Street Address: _____ Date: _____

Site location if different from address: _____

Description of the Work: _____

_____

_____

Work is scheduled to begin on _____ (date) and be completed by _____ (date).

For large projects, specify the number of working days to complete all work: _____

USA Identification No. (if work is scheduled to begin within the next two weeks): _____

Is this work related to a building permit? Y / N ____ If yes, date issued: _____ Building Permit No. _____

APPLICANT'S SIGNATURE: _____ Company Name: _____
(Print)

B. Permittee/Contractor's Information (if separate, provide both)

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Contact Person's Name: _____ Telephone No. _____

Emergency Telephone No. _____ Fax No. _____

State Contractor License No. _____ **City Business License No.** _____

E-Mail: _____

C. Owner's Information

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Contact Person's Name: _____ Telephone No. _____

E-Mail: _____ Fax No. _____

Blank Page

D. Hourly Plan Check and Inspection Fee Calculation Excavation Permit No. _____

Quantity	Item		Plan Check/Inspection Hours/Each		Total
_____	Water Service	x	6	=	_____
_____	Water Meter	x	4	=	_____
_____	Water Meter Manifold	x	4	=	_____
_____	Backflow Preventor	x	4	=	_____
_____	Fire Service	x	8	=	_____
_____	Abandonment of 2" or smaller water service	x	5	=	_____
_____	Abandonment of 4 or larger water service	x	6	=	_____
_____	Sanitary Sewer Lateral	x	7	=	_____
_____	Sanitary Sewer Manhole	x	7	=	_____
_____	Abandonment of Sanitary Sewer Lateral	x	4	=	_____
_____	Face of Curb Drain	x	5	=	_____
_____	Storm Lateral to Main	x	7	=	_____
_____	Storm Lateral to Back of Drainage Inlet	x	5	=	_____
_____	Storm Manhole	x	7	=	_____
_____	Monitoring or Extraction Well	x	5	=	_____
_____	Soil Boring, Soil Gas Probe	x	4	=	_____
_____	Private Street Utility Crossing	x	8	=	_____
_____	Utility Company (General Permit Work)	x	3	=	_____
_____	_____	x	____	=	_____
_____	_____	x	____	=	_____
	Total Hours (three-hour minimum)			=	_____

Finance Department
Date Fee Paid

Receipt No. _____

Fee = Total Hours _____ x $211.00 / hr = _____
Account No. 223595-41415 (PWEXLD) (50%) = _____
Account No. 223057-41415 (PWEXCI) (50%) = _____

Full Cost Recovery Permits (e.g., fiber-optic)
Fee = Total Hours _____ x $211.00 / hr = _____
Account No. 223595-41415 (PWFCLD) (50%) = _____
Account No. 223057-41415 (PWFCCI) (50%) = _____

Public Sidewalk Permit Fee (attach calculation sheet) = _____
Account No. 223057-42704 (PWSDWK)

E. Plan Check and Construction Inspection Fees (when required)

Plan check fee (based on construction cost estimate $_____) = _____
7.5% of Construction Cost (CC) under $50,000; $3,750 + 4.5% of CC between $50,001 and $500,000; and $24,000 + 3.5% of CC over $500,000 Account No. 223595-42703 (PWPC)

Construction inspection fee (based on construction cost estimate $_____) = _____
7.5% of Construction Cost (CC) under $50,000; $3,750 + 4.5% of CC between $50,001 and $500,000; and $24,000 + 3.5% of CC over $500,000 Account No. 223057-42706 (PWCONS)

F. Request to Connect to City Storm Drain (Code Section 35.31.6)

☐ Applicant must pay storm drainage fee. Fee = Net Sq. Ft. of Lot _____ x $0.24 = _____
Account No. 741200-43601 (PWSTRM)

G. Encroachment Permit Fee

_____ number of applications multiplied by $1,069 for residential; $1,955 for nonresidential; or $840 for temporary = _____
Account No. 223595-41414 (PWENCR)

_____ number of debris box permits at $114 each = _____
Account No. 223595-41414 (PWENDB)

TOTAL FEES DUE = _____

Insurance Requirements

August 27, 2001

City of Mountain View ◦ Public Works Department ◦ Land Development Engineering
Tele (650) 903-6311 ◦ FAX (650) 903-6499 ◦ www.ci.mtnview.ca.us

The following insurance requirements apply to permits and agreements used by Land Development Engineering of the Public Works Department. These insurance requirements do not apply to City contract construction projects, which have more stringent requirements. For excavation permits, the Permittee must provide the insurance. For agreements, the entity that signs the agreement must provide the insurance. Major construction projects require higher insurance coverage limits than the $1,000,000 noted above.

1. Workers' Compensation Insurance:

   APPLICANT shall obtain statutory Workers' Compensation insurance and Employer's Liability insurance in the amount of One Million Dollars ($1,000,000) per accident.

2. Commercial General Liability/Automobile Liability Insurance:

   APPLICANT shall obtain Commercial General Liability insurance, including operations, products and completed operations, and Automobile Liability insurance in the amount of One Million Dollars ($1,000,000) per occurrence. If a general aggregate limit is used, either the general aggregate limit shall apply separately to *this AGREEMENT/PERMIT* or the general aggregate limit shall be twice the required occurrence limit. *APPLICANT's* insurance coverage shall be written on an occurrence basis.

3. Acceptability of Insurers: Insurance is to be placed with insurers with a current *Best* rating of A: VII unless otherwise acceptable to CITY.

4. Verification of Coverage: Insurance, deductibles or self-insurance retentions shall be subject to CITY's approval. Original Certificates of Insurance with Endorsements shall be received and approved by CITY before work commences, and insurance must be in effect for the duration of *this AGREEMENT/PERMIT*. The absence of insurance or a reduction of stated limits shall cause all work on the project to cease. Any delays shall not increase costs to the CITY or increase the duration of the project.

5. Other Insurance Provisions

   a. The City of Mountain View, its officers, officials, employees and volunteers are to be covered as additional insured by Endorsement CG 20 10 10 93, for commercial general liability coverage.

   b. For any claims related to this project, *APPLICANT's* insurance coverage shall be primary.

   c. Each insurance policy required shall be endorsed that a thirty (30) day notice be given to CITY in the event of cancellation or modification to the stipulated insurance coverage.

   d. It shall be the responsibility of *APPLICANT* to ensure that all subcontractors comply with the same insurance requirements that are stated in this *AGREEMENT/PERMIT*.

Insurance Certificate Example

August 27, 2001

ACORD™ CERTIFICATE OF LIABILITY INSURANCE — DATE (MM/DD/YY)

PRODUCER
Name of Producer *(Insurance Agent)*
Address
Telephone No.

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURERS AFFORDING COVERAGE

INSURED
Name of Insured *(Permittee, Contr., Developer *)*
Address
** As required by permit, agreement, etc.*

INSURER A:	Name of Insurer *(Insurance Companies must*
INSURER B:	Name of Insurer *have a minimum Best's Rating*
INSURER C:	Name of Insurer *of A and a Financial*
INSURER D:	*Performance Rating of VII.)*
INSURER E:	

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
A	GENERAL LIABILITY [X] COMMERCIAL GENERAL LIABILITY [ ] CLAIMS MADE [X] OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: [ ] POLICY [X] PRO-JECT [ ] LOC	GL00000000 *(Gen. Liability Policy No.)*	Begin Date	Expiration Date	EACH OCCURRENCE FIRE DAMAGE (Any one fire) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ 1,000,000 $ $ $ 1,000,000 $ 2,000,000 $
B	AUTOMOBILE LIABILITY [X] ANY AUTO [ ] ALL OWNED AUTOS [ ] SCHEDULED AUTOS [ ] HIRED AUTOS [ ] NON-OWNED AUTOS	AL00000000 *(Auto Liability Policy No.)*	Begin Date	Expiration Date	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 1,000,000 $ $ $
	GARAGE LIABILITY [ ] ANY AUTO				AUTO ONLY - EA ACCIDENT OTHER THAN AUTO ONLY: EA ACC AGG	$ $ $
	EXCESS LIABILITY [ ] OCCUR [ ] CLAIMS MADE [ ] DEDUCTIBLE [ ] RETENTION $				EACH OCCURRENCE AGGREGATE	$ $ $ $ $ $
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY	WC0000000 *(Workers Comp. Policy No.)*	Begin Date	Expiration Date	[X] WC STATU-TORY LIMITS [ ] OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ 1,000,000 $ 1,000,000 $ 1,000,000
	OTHER					

Must be "occurrence"

Large projects may require higher coverage.

$1,000,000 general aggregate limit is required is if the limit is applied separately to the permit, agreement, etc. $2,000,000 general aggregate limit is required for insurance written on an occurrence basis.

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/EXCLUSIONS ADDED BY ENDORSEMENT/SPECIAL PROVISIONS

Job: City of Mountain View; All California Operations.

The certificate holder should be made out to the attention of the "Public Works Dept.-Land Development". This will help prevent your certificates from being sent to the wrong department within the City.

CERTIFICATE HOLDER | Y | ADDITIONAL INSURED; INSURER LETTER: A

City of Mountain View
P.O. Box 7540
Mountain View, CA 94039-7540
Attn: Public Works Dept - Land Development

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

© ACORD CORPORATION 1988

Commercial General Liability Endorsement Example

August 27, 2001

POLICY NUMBER: GL00000000 COMMERCIAL GENERAL LIABILITY

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED -- OWNERS, LESSEES OR CONTRACTORS (FORM B)

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART.

SCHEDULE

Name of Person or Organization:

City of Mountain View
PO Box 7540
Mountain View, CA 94039-7540
Attn: Public Works Dept. - Land Development

(If no entry appears above, the information required to complete this endorsement will be shown in the Declaration as applicable to this endorsement.)

WHO IS AN INSURED (Section II) is amended to include as an insured the person or organization shown in the Schedule, but only with respect to liability arising out of your ongoing operations performed for that insured.

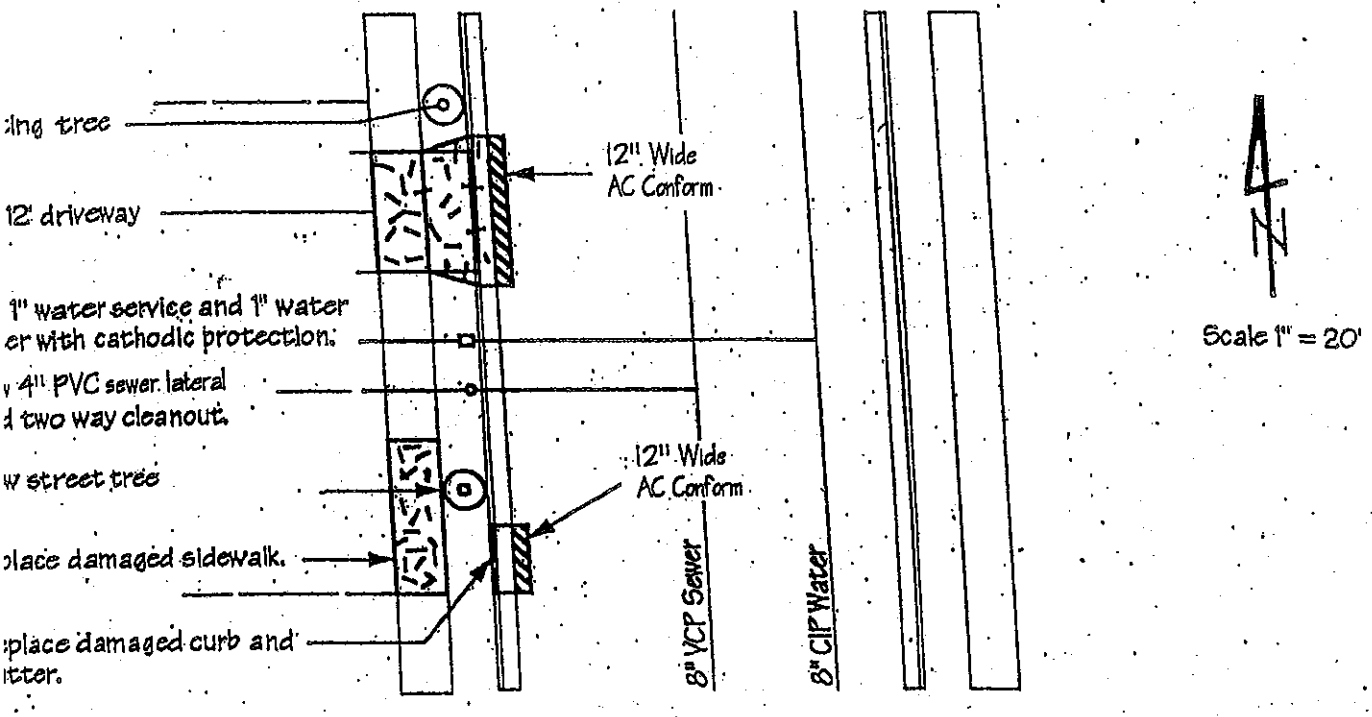
a. **The City of Mountain View, its officers, officials, employees and volunteers are to be covered as additional insureds.**

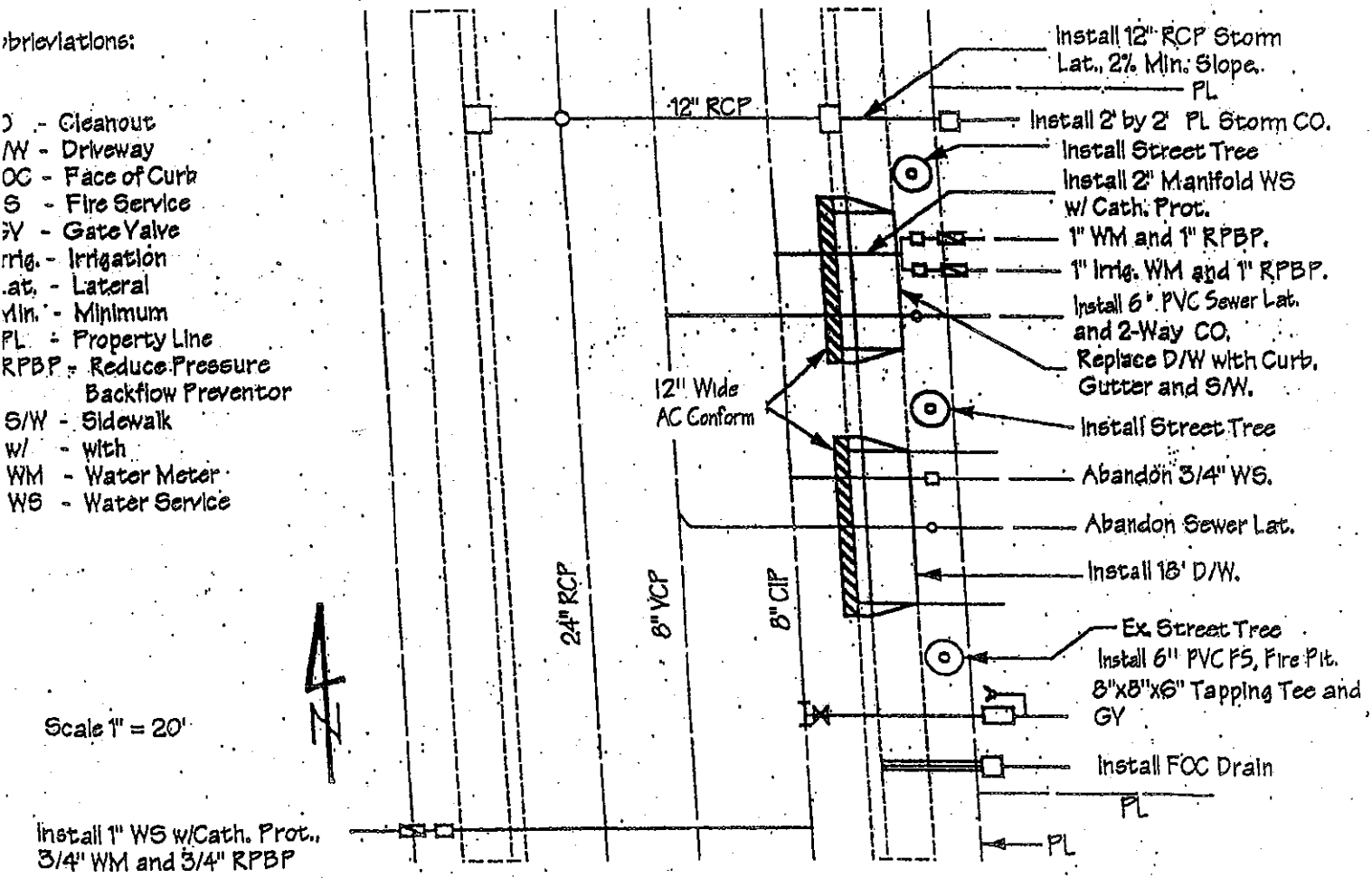
b. **For any claims related to this project, named insured's insurance coverage shall be primary.**

c. **Each insurance policy required shall be endorsed that a thirty (30) day notice be given to CITY in the event of cancellation or modification to the stipulated insurance coverage.**

SAMPLE EXCAVATION PERMIT PLANS

City of Mountain View
Public Works Department- Operations Section





4/22/94

SPECIFICATIONS FOR CONSTRUCTION SIGNS

	Standard Size	Acceptable Reduced Size	HEIGHT OF LETTERS	
			Standard	Reduced Size
	48" x 48" (1.2m x 1.2m)	36" x 36" (.9m x .9m)	8" (200mm)	5" (125mm)
	48" x 30" (1.2m x .75m)	36" x 24" (.9m x .6m)	8" (200mm)	5" (125mm)
	—	48" x 24" (1.2m x .6m)	6"-5"-4" (150-125-100mm)	5"-4"-3" (125-100-75mm)
	—	48" x 24" (1.2m x .6m)	4"-3" (100mm x 125mm)	3"-3" (75-125mm)
	24" x 24" (.6m x .6m)	—	6" (125mm)	—
	48" x 18" (1.2m x .5m)	—	6" (150mm)	—
	30" x 30" (.75m x .75m)	—	5" (125mm)	—
	30" x 18" (.75m x .5m)	—	5" (125mm)	—
	36" x 36" (.9m x .9m)	30" x 30" (.75m x .75m)	5"	4" (100mm)
	48" x 48" (1.2m x 1.2m)	36" x 36" (.9m x .9m)	—	—
	30" x 30" (.75m x .75m)	—	5" (125mm)	—
	48" x 48" (1.2m x 1.2m)	—	7" (180mm)	—
	60" x 24" (1.5m x .6m)	42" x 18" (1.1m x .5m)	6" (150mm)	5" (125mm)
	42" x 18" (1.1m x .5m)	—	5" (125mm)	—
	48" x 48" (1.2m x 1.2m)	36" x 36" (.9m x .9m)	7" (180mm)	5" (125mm)
7 (Front)	24" x 24" (.6m x .6m)	—	3" - 18" (75 x 250mm)	—
(Back)	24" x 24" (.6m x .6m)	—	4"-4"-3" (100-200-75mm)	—
1	48" x 48" (1.2m x 1.2m)	36" x 36" (.9m x .9m)	7" (180mm)	5" (125mm)
0 (RL or LL)	48" x 48" (1.2m x 1.2m)	36" x 36" (.9m x .9m)	6" (150mm)	5" (125mm)
1	48" x 48" (1.2m x 1.2m)	36" x 36" (.9m x .9m)	7" (180mm)	5" (125mm)
22B	30" x 30" (.75m x .75m)	—	—	—
23	30" x 30" (.75m x .75m)	—	5" (125mm)	4" (100mm)
24	30" x 30" (.75m x .75m)	—	4" (100mm)	—
25	30" x 30" (.75m x .75m)	—	5" (125mm)	4" (100mm)
27	24" x 24" (.6m x .6m)	—	4" (100mm)	—
28A	18" Diameter (.5m)	—	6" (150mm)	—
28B	18" Diameter (.5m)	—	6" (150mm)	—
29	36" x 9" (.9m x .2m)	24" x 7" (.6m x .2m)	7" (180mm)	5" (125mm)
30	36" x 36" (.9m x .9m)	30" x 30" (.75m x .75m)	6" (150mm)	5" (125mm)
36	48" x 48" (1.2m x 1.2m)	36" x 36" (.9m x .9m)	7" (180mm)	5" (125mm)

(Note: C1, C3, C9, C16, C18, C19, C20 and C21 signs may be used with the appropriate C29 sign.)

CONSTRUCTION SIGNS

C1

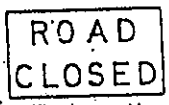
Use when traffic is diverted to a temporary roadway or route.

C3

Use where detour is provided. Use plate to show distance.

C3A

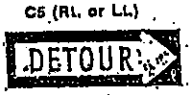
C2



Use where road is closed to through and local traffic.

C4

C5 (RL or LL)



Use only where traffic is diverted to an alternate route.

C5 (SL)

CONSTRUCTION SIGNS

C6

C7

C8

C9A

C10

C12

C13

C14

CONSTRUCTION SIGNS

C16

Use where two-way traffic must use the same lane. Provide flaggers. See C9A.

C17

FRONT

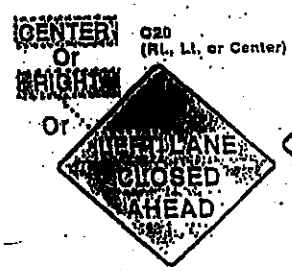
BACK

Placement and speed limit to be determined by Agency authorization.

C19

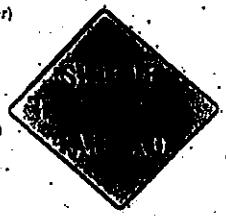
Use with C1 if detour is provided.

CONSTRUCTION SIGNS



C20 (RL, LL or Center)

C21



Not for use where two-way traffic must use the same lane. (See C16)

C22B

C23

Use for minor construction or maintenance.

C24

C25

CONSTRUCTION SIGNS

C27

C28B

C29

The 500 feet (150m), 1000 feet (300m), 1500 feet (450m) plate (C29) may be used to cover the word "AHEAD" on construction signs when a definite distance to the posted condition is desirable.

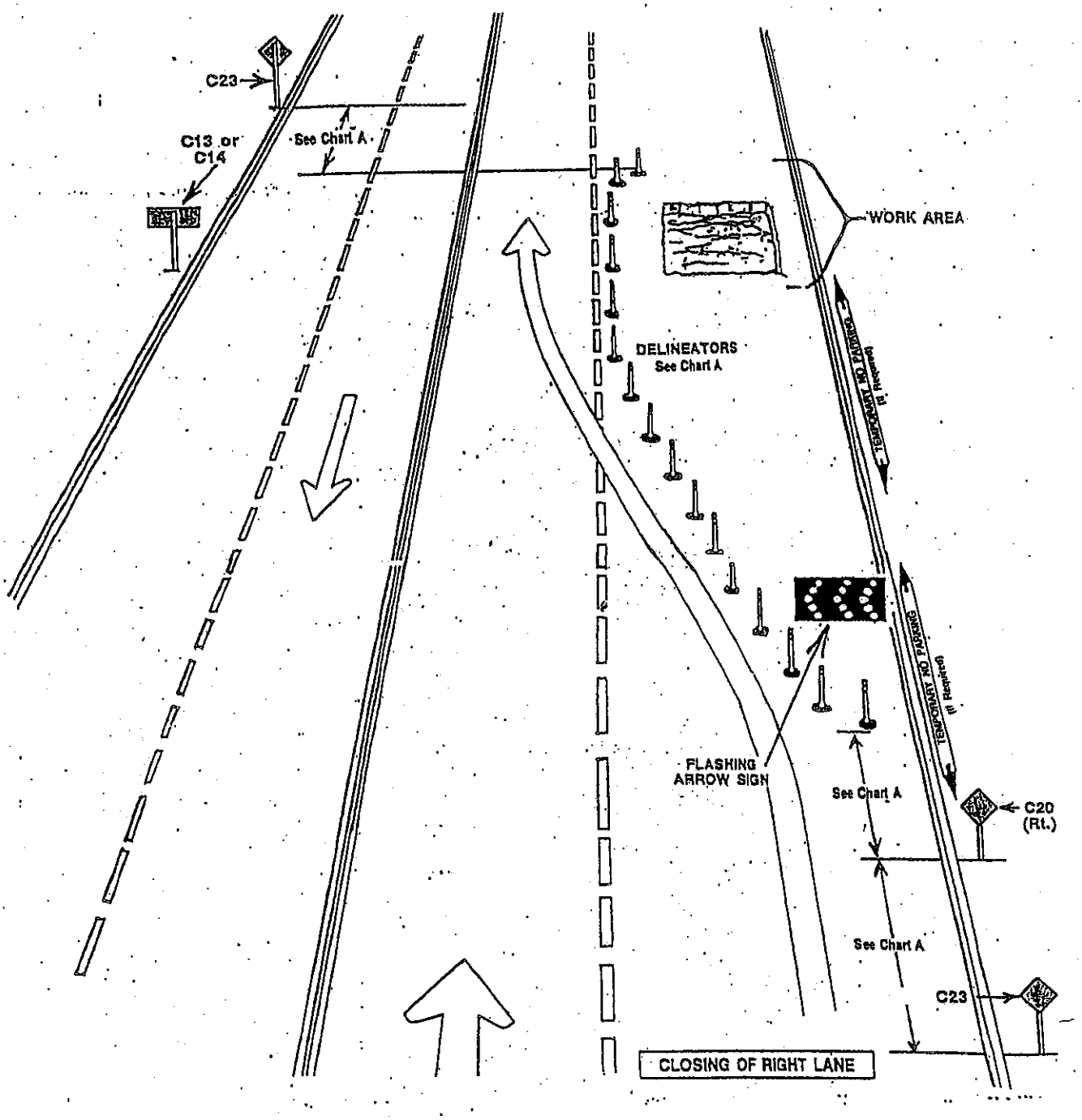
C30

Mount on barricade in head-on position at point of closure.

C36

8/8/08

TRAFFIC CONTROL PLAN EXAMPLE
FOUR LANE STREET -- CLOSING OF RIGHT LANE



— CHART A —
MINIMUM RECOMMENDED DELINEATOR AND SIGN PLACEMENT

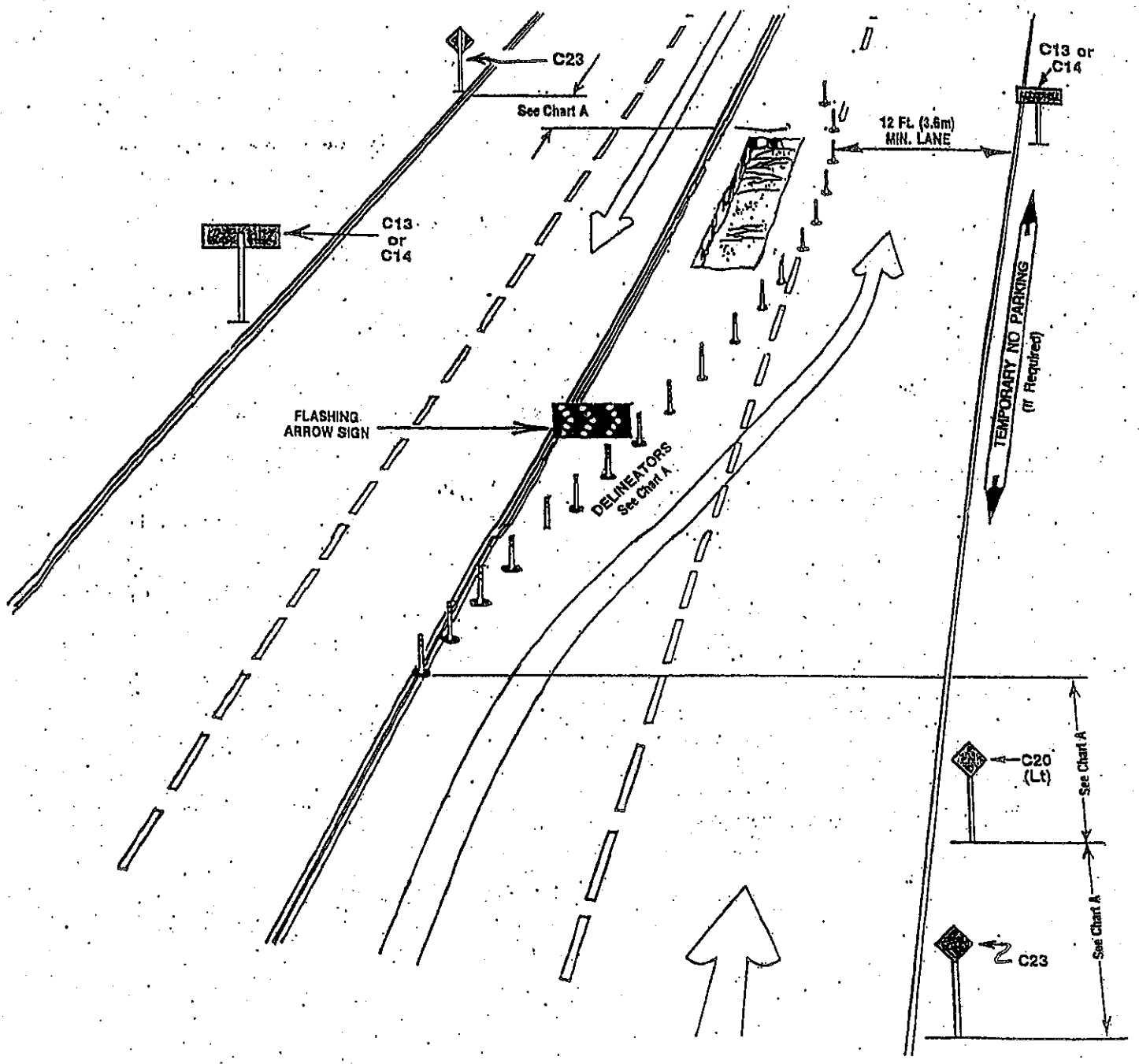
TRAFFIC SPEED	TAPER LENGTH (Each Lane)	DELINEATOR SPACING (Taper)	DELINEATOR SPACING (Tangent)	SIGN SPACING (Advance of Taper & Between Signs)
25 MPH (40 Km/h)	150 Ft. (50m)	25 Ft. (8m)	50 Ft. (15m)	150 Ft. (50m)
30 MPH (45 Km/h)	200 Ft. (60m)	30 Ft. (9m)	60 Ft. (18m)	200 Ft. (60m)
35 MPH (50 Km/h)	250 Ft. (75m)	35 Ft. (11m)	70 Ft. (21m)	250 Ft. (75m)
40 MPH (60 Km/h)	350 Ft. (110m)	40 Ft. (12m)	80 Ft. (24m)	350 Ft. (110m)
*45 MPH (70 Km/h)	550 Ft. (170m)	45 Ft. (14m)	90 Ft. (27m)	550 Ft. (170m)
*50 MPH (80 Km/h)	600 Ft. (180m)	50 Ft. (15m)	100 Ft. (30m)	600 Ft. (180m)
*55+MPH (85 Km/h)	1000 Ft. (300m)	50 Ft. (15m)	100 Ft. (30m)	1000 Ft. (300m)

*Notes: -See Section 8 for high speed situations.
-Distances shown in parentheses are approximate.

CLOSING OF RIGHT LANE

8/8/08

TRAFFIC CONTROL PLAN EXAMPLE
FOUR LANE STREET -- CLOSING OF CENTER OR LEFT LANE



— CHART A —
MINIMUM RECOMMENDED DELINEATOR AND SIGN PLACEMENT

TRAFFIC SPEED*	TAPER LENGTH (Each Lane)	DELINEATOR SPACING (Taper)	DELINEATOR SPACING (Tangent)	SIGN SPACING (Advance of Taper & Between Signs)
25 MPH (40 Km/h)	150 Ft. (50m)	25 Ft. (8m)	50 Ft. (15m)	150 Ft. (50m)
30 MPH (45 Km/h)	200 Ft. (60m)	30 Ft. (9m)	60 Ft. (18m)	200 Ft. (60m)
35 MPH (50 Km/h)	250 Ft. (75m)	35 Ft. (11m)	70 Ft. (21m)	250 Ft. (75m)
40 MPH (60 Km/h)	350 Ft. (110m)	40 Ft. (12m)	80 Ft. (24m)	350 Ft. (110m)
*45 MPH (70 Km/h)	550 Ft. (170m)	45 Ft. (14m)	90 Ft. (27m)	550 Ft. (170m)
*50 MPH (80 Km/h)	600 Ft. (180m)	50 Ft. (15m)	100 Ft. (30m)	600 Ft. (180m)
*55+MPH (85 Km/h)	1000 Ft. (300m)	50 Ft. (15m)	100 Ft. (30m)	1000 Ft. (300m)

*Notes: –See Section 8 for high speed situations.
–Distances shown in parentheses are approximate.

CLOSING OF LEFT LANE

AND

CLOSING OF CENTER OF STREET

Note: The closing of center of street may be accomplished by using the left lane closure in both directions of traffic.

8/8/08

TRAFFIC CONTROL PLAN EXAMPLE
TWO LANE STREET – WORK AREA IN PARKING OR SHOULDER

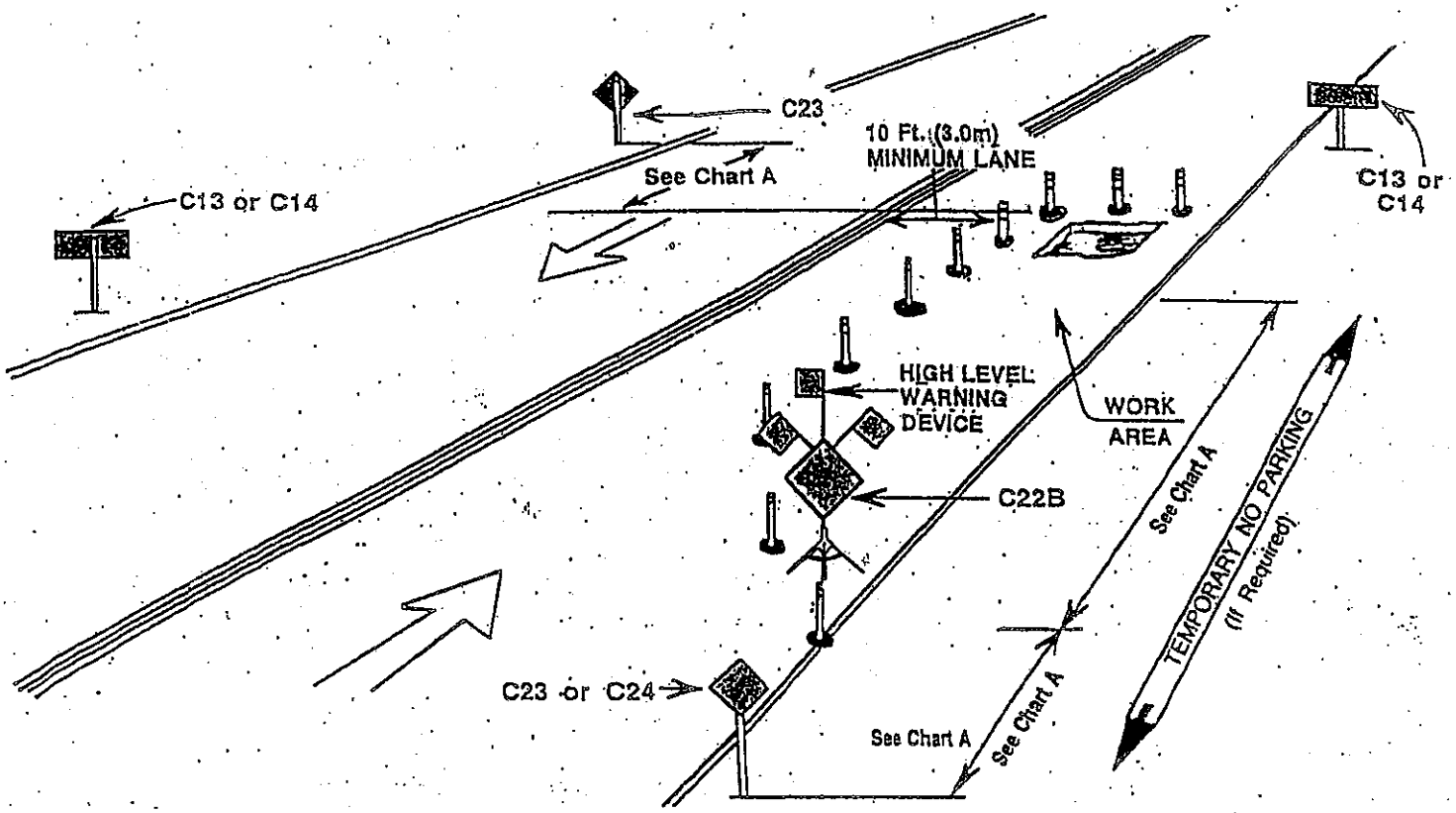


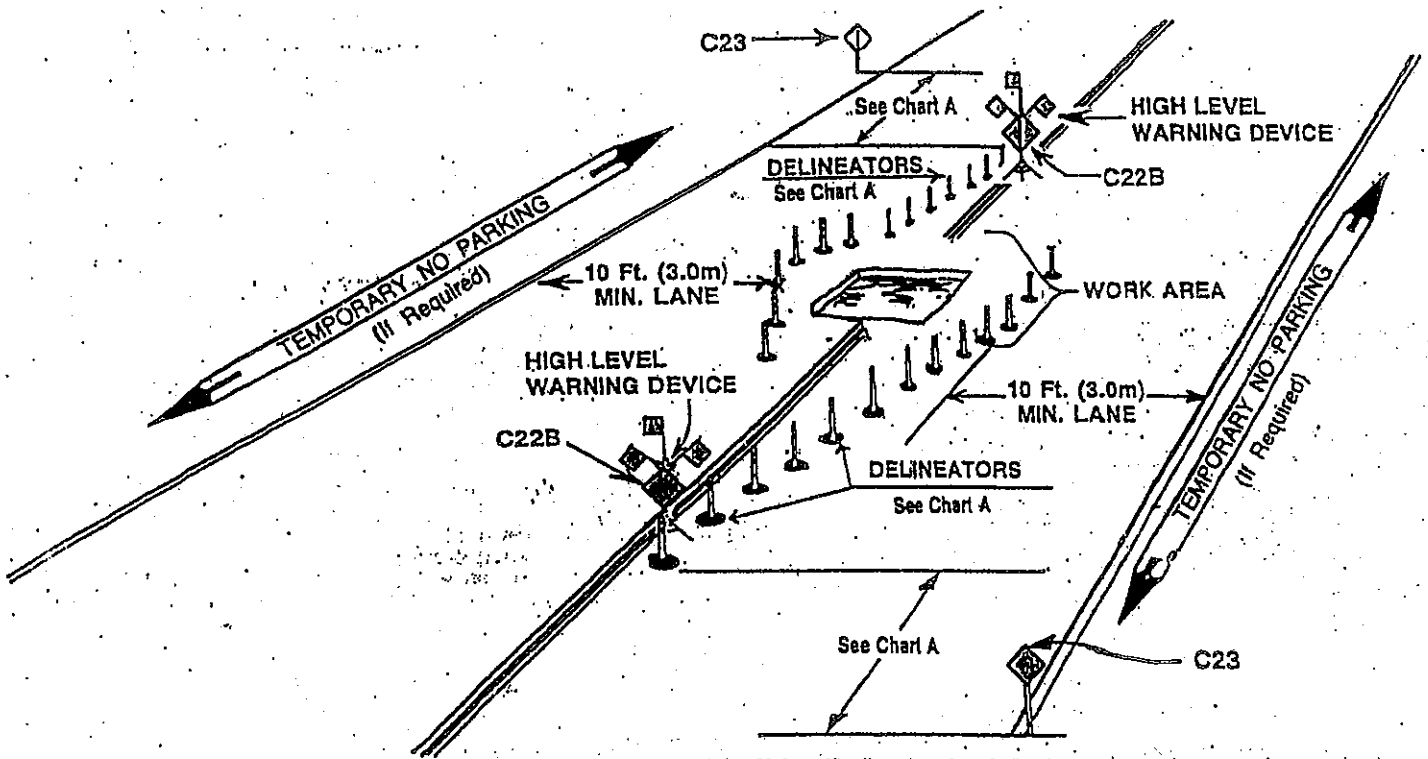
CHART B — PARKING LANE OR SHOULDER				
TRAFFIC SPEED	TAPER LENGTH (Each Lane)	DELINEATOR SPACING (Taper)	DELINEATOR SPACING (Tangent)	SIGN SPACING, (Advance of Taper & Between Signs)
25 MPH (40 Km/h)	50 Ft. (15m)	25 Ft. (8m)	50 Ft. (15m)	50 Ft. (15m)
30 MPH (45 Km/h)	66 Ft. (20m)	25 Ft. (8m)	50 Ft. (15m)	66 Ft. (20m)
35 MPH (50 Km/h)	83 Ft. (25m)	25 Ft. (8m)	50 Ft. (15m)	83 Ft. (25m)
40 MPH (60 Km/h)	116 Ft. (35m)	25 Ft. (8m)	50 Ft. (15m)	116 Ft. (35m)
*45 MPH (70 Km/h)	183 Ft. (56m)	25 Ft. (8m)	50 Ft. (15m)	183 Ft. (56m)
*50 MPH (80 Km/h)	200 Ft. (61m)	25 Ft. (8m)	50 Ft. (15m)	200 Ft. (61m)
*55+MPH (85 Km/h)	333 Ft. (100m)	25 Ft. (8m)	50 Ft. (15m)	333 Ft. (100m)

*Notes: –See Section B for high speed situations.
–Distances shown in parentheses are approximate.

WORK AREA IN PARKING LANE OR SHOULDER

8/8/08

TRAFFIC CONTROL PLAN EXAMPLE
TWO LANE STREET – WORK AREA IN CENTER OF LOW SPEED STREET



Note: This traffic diversion plan shall only be used when work is in progress.

— CHART A —
MINIMUM RECOMMENDED DELINEATOR AND SIGN PLACEMENT

TRAFFIC SPEED	TAPER LENGTH (Each Lane)	DELINEATOR SPACING (Taper)	DELINEATOR SPACING (Tangent)	*SIGN SPACING (Advance of Taper & Between Signs)
25 MPH (40 Km/h)	150 Ft. (50m)	25 Ft. (8m)	50 Ft. (15m)	150 Ft. (50m)
30 MPH (45 Km/h)	200 Ft. (60m)	30 Ft. (9m)	60 Ft. (18m)	200 Ft. (60m)
35 MPH (50 Km/h)	250 Ft. (75m)	35 Ft. (11m)	70 Ft. (21m)	250 Ft. (75m)
40 MPH (60 Km/h)	350 Ft. (110m)	40 Ft. (12m)	80 Ft. (24m)	350 Ft. (110m)

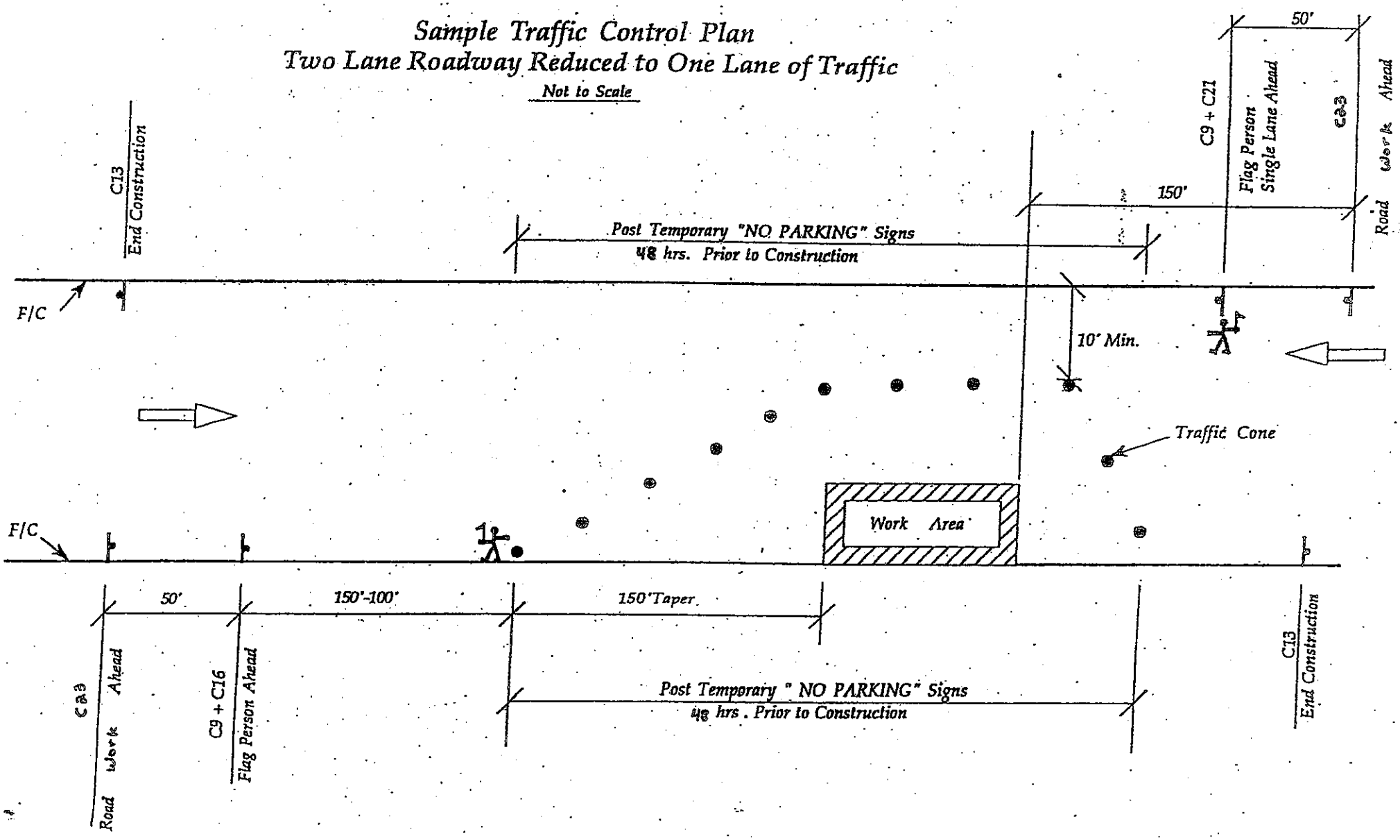
*Notes: –See Section 8 for high speed situations.
–Distances shown in parentheses are approximate.

WORK AREA IN CENTER OF LOW SPEED STREET

8/8/08

Sample Traffic Control Plan
Two Lane Roadway Reduced to One Lane of Traffic

Not to Scale



NOTES:

1- When a bicycle lane is delineated on the roadway, contractor shall provide a seperate bike lane through the construction zone.
2- Cone spacing is 20' Maximum.
3- This is generic sample of a construction zone, contractor shall provide their own traffic control plan based on specific project.
4- Use Caltrans manual of traffic controls for construction and maintenance work zones, as a reference for traffic control in construction areas.

8/10/94

Bond No. _____
Premium _____
Exc. Permit No. _____

CITY OF MOUNTAIN VIEW
FAITHFUL PERFORMANCE BOND FOR EXCAVATION PERMIT

KNOW ALL MEN BY THESE PRESENT;

That _____
_____ (hereinafter called "Principal") as Principal,
whose address is _____
_____
and _____
_____ (hereinafter called "Surety"),
whose address is _____
_____
incorporated under the laws of the State of _____, and duly authorized to do business in the State of California, as Surety, are held firmly bound unto the City of Mountain View, a California Charter City and municipal corporation of the State of California in the sum of _____
_____ DOLLARS, ($_____).
For payment whereof, well and truly to be made, said Principal and Surety bind themselves, their administrators, successors and assigns, jointly and severally, firmly by these presents.

The condition of the foregoing obligation is such that, whereas, the above bounden Principal has applied to the City of Mountain View for an excavation permit to perform certain work described as follows:

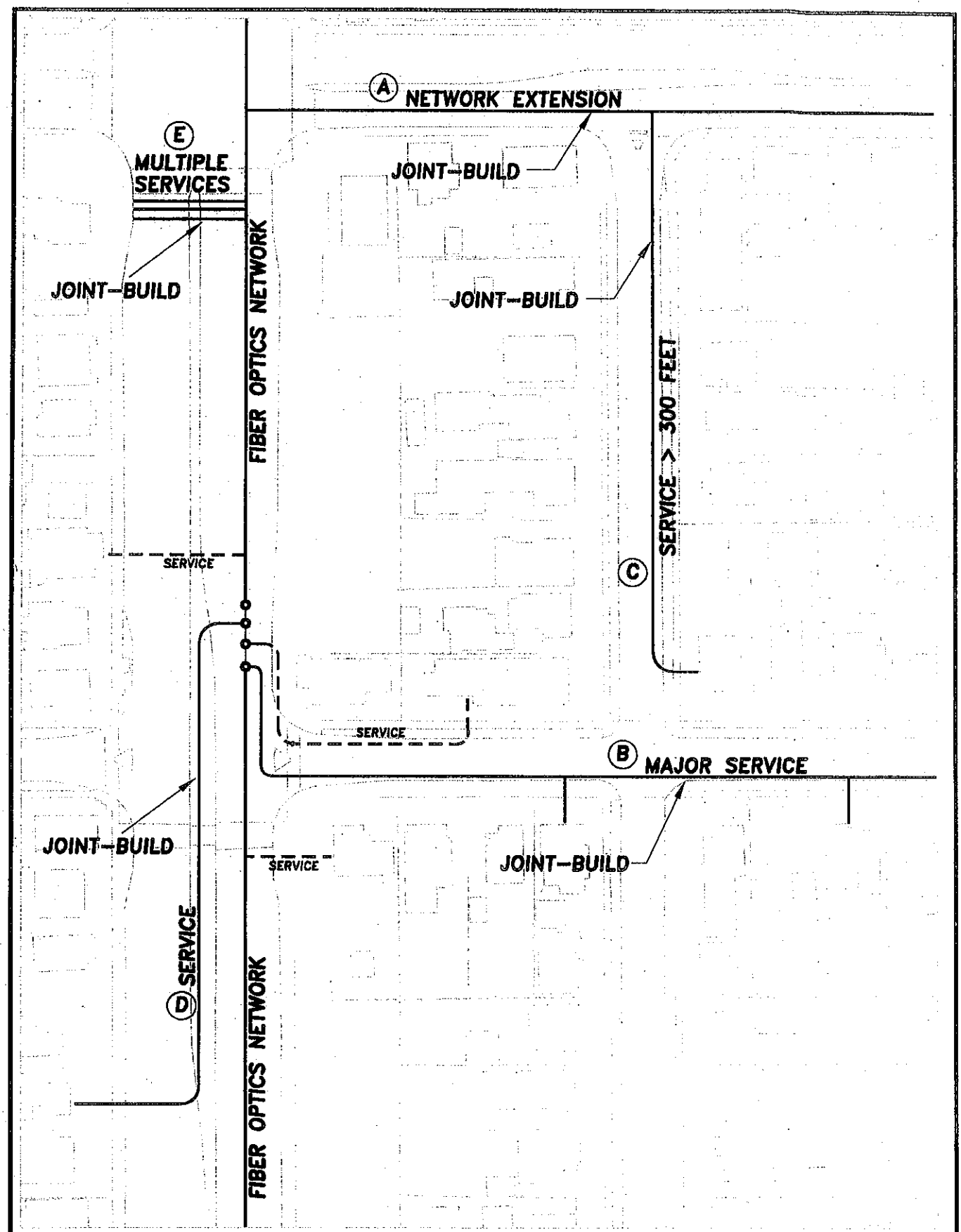
_____
_____
_____
_____

NOW, THEREFORE, if the above bounden Principal shall well and truly perform the work and maintain said improvements to the satisfaction of the City of Mountain View and shall comply with all provisions of the excavation permit and of Article III "Excavations" of Chapter 27 of the Mountain View City Code, then this obligation shall become null and void; otherwise to remain in full force and effect.

Signed and sealed this _____ day of _____, 19____.

"PRINCIPAL":	"SURETY":
_____	_____
_____	_____
_____	_____
By: _____	By: _____
Title: _____	Title: _____

Attachments: Notary of Principal
Notary of Surety
Power of Attorney of Surety



GUIDELINES FOR JOINT–BUILD FIBER OPTICS SERVICES

CITY OF MOUNTAIN VIEW

Notice of Changes to New and Re-development Requirements for Permanent Storm Water Treatment Measures (C.3 Requirements)

Why are storm water treatment controls required?
The State of California's San Francisco Bay Regional Water Quality Control Board issued a storm water discharge permit to the City of Mountain View, the 13 other cities in Santa Clara County, the County of Santa Clara, and the Santa Clara Valley Water District. The permit includes a number of requirements that are intended to reduce storm water pollution discharging into San Francisco Bay, including requirements for new and re-development projects to install permanent treatment control measures. The new and re-development runoff treatment requirements are known as the "C.3 requirements."

Which projects are required to comply with the C.3 requirements?
Beginning *August 15, 2006*, projects that create or replace 10,000 square feet or more of impervious surface must comply with the C.3 requirements (previously required for projects adding or replacing 1 acre or more of impervious surface). Impervious surfaces include building roof, parking lot, driveway, walkway, plaza, patio, and courtyard areas. Complete the "Impervious Surface Calculation Worksheet" on the back of this Notice to determine the impervious surface for a project.

What storm water treatment control measures should be installed on projects?
Landscape areas can be effective locations for storm water infiltration and treatment. The first step to designing storm water treatment measures for a project site is to evaluate the proposed landscape areas, which can be incorporated into the site's drainage as storm water treatment measures. Examples of storm water treatment measures that can be installed in landscape areas include vegetated swales, and bioretention areas.

If sufficient landscape area is not available to adequately treat runoff from a site, manufactured storm water treatment devices may be installed. Please note that all storm water treatment measures be sized to treat a specified amount of runoff.

Are there exemptions from this requirement?
Projects may be exempt from the C.3 requirements if 1) the project is below the 10,000 square foot impervious surface threshold; 2) the project is one single family home that includes appropriate storm water control measures; 3) the project is interior remodeling, routine maintenance or repair, and any other reconstruction work within a public street or road right-of-way.

Resources on the Web

- **C.3 Stormwater Handbook**, SCVURPPP 2004. http://www.eoainc.com/c3_handbook_final_may2004
- **Developments Protecting Water Quality: A Guidebook of Site Design Examples**, SCVURPPP, 2004. http://www.scvurppp-w2k.com/permit_c3_docs/SCVURPPP_Site_Design_Manual.pdf
- **Stormwater BMP Handbook – New Development and Redevelopment**, California Stormwater Quality Association, 2003. http://www.cabmphandbooks.org/Development.asp

STANDARD CONDITIONS FOR EXCAVATION PERMITS
August 8, 2001

City of Mountain View • Public Works Department • Land Development Section
500 Castro Street • Post Office Box 7540 • Mountain View, California 94039-7540
Telephone (650) 903-6311 • FAX (650) 962-8503

ADMINISTRATION

A. **Start Work In 30 Days**: Permittee shall begin work within 30 days following the issuance of the excavation permit and shall diligently prosecute the work to completion.

B. **Permit Expiration**: All excavation permits shall expire one year from the date of issue.

C. **Documents at Job Site**: A copy of this excavation permit, attachments, conditions, plans and Standard Provisions shall be available at the job site at all times the Permittee is doing the work mentioned above.

D. **Parties Authorized to Work**: No party other than the named Permittee or Permittee's authorized agent is allowed to work under this permit.

E. **Acceptance of City Requirements**: Permittee understands and agrees to acceptance of the provisions and all attachments to this permit for any work to be performed under this agreement. This permit is issued with the understanding that it does not establish a precedent.

F. **Hold Harmless**: Permittee hereby agrees to and shall hold City, its elective and appointive boards, commissions, officers, agents and employees harmless from any liability for damage or claims for damage for personal injury, including death, as well as from claims for property damage which may arise from Permittee or Permittee's contractors', subcontractors', agents' or employees' operations under this permit, whether such operations be by Permittee or by any of Permittee's contractors, subcontractors, or by any one or more persons directly or indirectly employed by, or acting as agent for Permittee or any of Permittee's contractors or subcontractors. Permittee agrees to and shall pay City's costs of defense (or, at the sole option of City, shall defend with counsel approved by the City Attorney) and indemnify City and its elective and appointive boards, commissions, officers, agents and employees from any suits or actions at law or in equity rising out of the execution, adoption or implementation of this permit (exclusive of any such actions brought by Permittee), such indemnification to include all costs of defense, judgments and any awards of attorneys' fees.

G. **Insurance**: The insurance certificate and endorsement naming the City as additional insured that is required by the excavation permit or by a franchise or ancillary agreement shall be maintained in full force during the term of the excavation permit. Where work is being done pursuant to a franchise or encroachment agreement, the utility company and contractor must provide and maintain an insurance certificate and endorsement.

H. **Permit Revocation**: All excavation permits shall be revocable at any time by the Public Works Director upon written notification.

I. **Site Restoration Upon Termination of Permit**: Upon written notice of cancellation or revocation of the excavation permit for any cause whatsoever, Permittee shall restore City right-of-way and structures to their condition prior to the issuance of the permit unless indicated otherwise by City. Should Permittee neglect to restore the site or structures to a satisfactory condition, the City may perform such work or have work performed, and Permittee agrees to reimburse the City for all costs of the work performed.

J. **Additional Conditions**: City may require additional conditions for changes in work and field conditions.

K. **Stoppage of Work Due to Permit Violations**: Violations of the conditions and requirements of the excavation permit may result in the stoppage of work until the violation is resolved between the Permittee and the City.

L. **Responsibility for Damage**: The Permittee shall be responsible for all damage caused by the Permittee's operations, including work performed by Permittee's contractor and subcontractor. Any damage to public and private facilities

caused by or as a result of the Permittee's operations shall be replaced by the Permittee at Permittee's own expense, including payment for additional City inspections.

GENERAL

1. **Standard Provisions and Standard Specifications**: All work shall be in accordance with the August 1999 Standard Provisions of the City of Mountain View and the latest edition of the State of California Standard Specifications and Standard Plans.

2. **Maintenance of Site Documents**: The Contractor shall keep and make available a copy of the approved plans and City Standard Provisions at the job site at all times when work is in progress. The Standard Provisions may be purchased at the City of Mountain View, Public Works Department counter, 500 Castro Street, P.O. Box 7540, Mountain View, CA, 94039-7540, telephone (650) 903-6311, fax (650) 903-6499. The Standard Provisions, which include the Standard Details, costs ten dollars at the counter or fifteen dollars by mail, as amended.

3. **Private Development Specifications**: For private developments, the City does not review or recognize private development project specifications.

CONTROL OF WORK

4. **Changes to Plans**: The following applies to plans approved by the Public Works Department. Major changes in the approved plans must be approved by the Assistant Public Works Director on the original signed plans per Section 5-02 of the Standard Provisions. Each change is to be delineated by marking the changed area of the plan with a numbered triangle or other acceptable method. The engineer must date and initial each revision in the revision block. The engineer shall submit a cover letter explaining the requested change and two copies of the revised sheets. After the City approves and initials the revision block, the engineer shall submit one 24" by 36" Xerox Mylar set (4 mil) and three black line copies of the signed revised sheets to the City. For minor changes, the Contractor may "red line" the proposed minor change on the plan and submit them to the City for review and approval. The Contractor is responsible for coordinating the changes with the engineer who prepared the plans and shall keep approved changes at the job site when work is in progress. All changes shall be shown on the as-built plans submitted to the City at the end of the job. The City shall have the sole discretion to determine what is a minor change. Relocation of a manhole from the sidewalk to a landscaped area or into the street is considered a minor change that requires approval from the Public Works Operations Section.

5. **As-Built Plans**: The following applies to plans approved by the Public Works Department. The Contractor shall keep complete and accurate record drawings of all new work, utility pothole data and existing conditions that have changed or are different than shown on the originally approved plans. Upon completion of the work, the Contractor's record drawings shall be submitted to the City inspector for review and comment. The engineer shall make the necessary revisions to the original drawings to show all field changes. The engineer shall verify final grading and shall sign the grading certificate, if applicable, when satisfied that the grading is per approved plans. Each sheet of the plans shall be stamped "as-built" or "record drawing" and signed by the engineer. The revised originals shall be submitted to the City for review and approval. Prior to the acceptance of the work by the City, the engineer shall provide one 24" by 36" Xerox Mylar set (4 mil) of the approved "as-built" plans to the City. The electronic file of the approved as-built drawings in AutoCAD Release 14 format shall also be submitted to the City.

6. **Construction Safety Orders for Excavations**: The Contractor shall conform to the rules and regulations of the Construction Safety Orders of the State Division of Occupational Safety and Health pertaining to excavation and trenches per Section 5-03 of the Standard Provisions. For deep trenches, the Contractor shall submit a copy of their annual or single project permit for trench and excavations from the State Department of Industrial Relations Division of Occupational Safety and Health located at 2010 North First Street, Suite 401, San Jose, CA, 95131, telephone (408) 452-7288.

7. **Normal Working Hours**: Normal working hours is defined as the time from 7:30 a.m. to 4:00 p.m., Monday through Friday, excluding legal holidays. The Contractor shall not work on the project outside the normal working hours, unless prior approval is obtained from the City or when specifically required by the City. Work outside normal working hours will only be allowed if a City inspector is available. The Contractor shall pay the City for the cost of overtime for City inspection performed outside of normal working hours per Section 5-09 of the Standard Provisions.

8. **Coordination With Other Agencies**: The Contractor shall be responsible coordinating inspection performed by other governmental agencies, as prescribed in their permits and approvals.

9. **Airborne Dust**: At all times during construction and until final completion and acceptance of the work, the Contractor shall prevent the formation of an airborne dust nuisance in such a manner that it will contain dust particles to the immediate surface of the work per Section 5-10 of the Standard Provisions. The Contractor shall perform such treatment within 2 hours after notification by the City that an airborne nuisance exists.

10. **Maintenance of Equipment**: All equipment and plant shall be maintained in good order per Section 5-13 of the Standard Provisions. Substandard or unsuitable paving equipment will not be allowed.

11. **Final Inspection**: The City will not perform the final inspection until the Contractor completes all work and final cleanup of the site per Sections 4-05 and 5-14 of the Standard Provisions.

12. **Maintenance of Work Site**: The Contractor shall keep the street and work site clean and free from rubbish and debris per Section 5-15 of the Standard Provisions. This provision requires preventing spillage on haul routes, cleaning up spillage, sweeping all streets of mud, dirt and debris that are a result of the Contractor's work, and keeping the work site in a clean and neat appearance. Any spillage on haul routes shall be immediately removed and cleaned up.

13. **Cleaning Site Upon Notice From City**: Regarding Section 5-15 of the Standard Provisions, when ordered by the City, the Contractor shall clean up the work site within 24 hours after receiving notice.

14. **Residential Occupancy Release**: For residential developments, no residential units will be released for occupancy unless the improvements to be constructed to City standards and/or to be accepted for maintenance by the City, including water meters and sanitary sewer cleanouts, are substantially complete per the City of Mountain View Standard Provisions for Public Works construction. For phased developments, portions of the units may be released for occupancy, at the City's sole discretion, provided that all public and private improvements, conditions of approval, and building code requirements that are necessary to support the units to be released for occupancy have been completed as determined by the City. When all of the improvements are complete and/or ready for acceptance for maintenance by the City Council, the remaining units may be released for occupancy, provided that all other conditions of approval and building codes requirements have been met. The Public Works Director shall make the determination of what public improvements are substantially complete.

15. **Non-Residential Occupancy Release**: For commercial and office developments, no buildings will be released for occupancy until the off-site improvements to be constructed to City Public Works standards and/or accepted for maintenance by the City are complete and ready for acceptance.

16. **Acceptance of Work, Bond Reduction and Release**: For improvements that are installed by a developer with an improvement agreement, the improvement securities may, at the discretion of the City, be reduced up to 25% of their values upon acceptance of the improvement by the City Council in accordance with the improvement agreement. After acceptance of the improvements by the City, completion of the one-year maintenance and guarantee provisions (or longer if stipulated in the conditions and agreement), and completion of all other obligations and requirements, the remaining improvement securities shall be released by the City in accordance with the improvement agreement. See Section 4-06 of the Standard Provisions regarding the one-year maintenance and guaranty period relating to street and utility improvements.

CONTROL OF MATERIAL

17. **Compaction Tests**: The Contractor shall hire a testing laboratory, approved by the City, to perform compaction tests of aggregate base, aggregate sub-base and sub-grade to the satisfaction of the City. The test results shall be submitted to the City prior to any AC or PCC paving. AC paving shall be tested with a nuclear gage. The Contractor shall be responsible for the cost of all testing.

18. **Concrete Material Tags**: Plant material tags for Portland Concrete Cement shall be submitted to the City per Section 6-01 of the Standard Provisions.

LEGAL RELATIONS AND RESPONSIBILITY

19. **State and City Licenses**: All Contractors and subcontractors shall be licensed in accordance with the laws of the State of California and shall have and maintain a valid City Business license, per Section 7-01.c and 8-01 of the Standard Provisions.

20. **Compliance With Environmental Documents**: The Contractor shall comply with the provisions of all permits, licenses or other authorizations applicable to the work with respect to the Environmental Quality Act per Section 7-02 of the Standard Provisions.

21. **Public Convenience and Access**: All work shall be planned and carried out so that there will be the least possible inconvenience to the traveling public, and traffic shall not be unreasonably delayed per Section 7-04 of the Standard Provisions. Driveway access shall be maintained to each property at all times.

22. **Maintain Traffic Control Devices**: The Contractor shall install and maintain fences, barriers, lights and signs that are necessary to give adequate warning to the public at all times per Section 7-05 of the Standard Provisions.

23. **Remove Material and Equipment at End of Day**: No material or equipment shall be stored in the public right-of-way after "normal working hours". See Sections 5-15 and 7-05 of the Standard Provisions. At the end of each day's work and at other times when construction operations are suspended for any reason, the Contractor shall remove all equipment and other obstructions from the pubic right-of-way.

24. **Hazardous Materials and Waste**: All work shall be conducted in a manner which prevents the release of hazardous materials or hazardous waste to the soil or groundwater, and minimizes the discharge of hazardous materials, hazardous wastes, polluted water and sediments to the storm drain system per Section 7-08.01 of the Standard Provisions.

25. **Coordination with Other Contractors**: Where two or more contractors are working in the same area, each shall conduct their operations in such a manor as not to cause any unnecessary delay or hindrance to the other per Section 7-09 of the Standard Provisions. Where conflicts cannot be avoided, the City will determine which contractors have construction priority over the other contractors and the terms of such construction priority.

26. **Noise Working Hour Restrictions**: In order to limit disturbing noises, construction work shall occur only between the hours of 7:30 a.m. and 4:00 p.m., Monday through Friday, excluding holidays. Work outside of these hours is prohibited, unless the City grants an exception. Exceptions will be considered only when, in the opinion of the Public Works Director, construction during the above period would inconvenience the public and neighboring residents more than working at other hours. Exceptions will not be granted merely to expedite the construction work.

NOTIFICATION

27. **Dangerous Situations, Call 911**: If any damage occurs to an underground facility that results in the escape of any flammable, toxic or corrosive gas or liquid or endangers life, health, or property, the Contractor shall immediately notify the utility owner and call the 911 emergency telephone number to notify local public safety officials.

28. **Provide Superintendent Information Before Start of Work**: The Contractor shall provide the name and telephone number of the authorized representative (superintendent) of the work to the City in writing prior to the start of work per Section 5-07 of the Standard Provisions. Public Works Construction Section: Tele. (650) 903-6311 and Fax (650) 903-6499.

29. **Call Public Works Inspectors Prior to Start of Work:** Contractor shall notify the Public Works Director at least two working days prior to commencing work, resuming suspended work, or resuming work after three days of no work so that inspection can be arranged per Sections 5-09 and 10-01.01 of the Standard Provisions. Public Works Construction Section: Tele. (650) 903-6311 and Fax (650) 903-6499.

30. **Road Detours, Notify Emergency Communication Center**: Contractor shall leave an emergency phone number with the City emergency communications center at (650) 903-6395 and keep the center informed daily regarding detours per Sections 10-01.02 and 10-01.03 of the Standard Provisions.

31. **Contact USA**: Contractor shall contact USA (Underground Service Alert) at (800) 642-2444 at least two working days but not more than 14 days prior to commencing excavation work to verify existing underground utilities, per Section 5-11.02 of the Standard Provisions and Chapter 3.1, Division 5, Title 1 of the Government Code.

32. **Notify Utility Owners**: Contractor shall notify all public or private utility owners forty-eight hours prior to commencement of work adjacent to the utility per Sections 5-11.02 and 10-01 of the Standard Provisions.

33. **Notify Adjacent Properties**: Contractor shall notify the adjacent residences and business in writing describing the nature of the work, schedule of the work, when parking will be prohibited (if any), and who to call at the Contractor's office if they have questions about the work. The notice must be approved by the City prior to its distribution. The Contractor must distribute the notice to the adjacent residences and business at least 7 days prior to the start of the construction work. For large projects, the work area, parking prohibition requirements and schedule shall be divided up into smaller, more manageable areas. In the event the parking prohibition schedule changes after the notification, Contractor shall post a new notice of the revised schedule at least 48 hours in advance of construction. For work requested by the property owner, a notice to the property owner is not required.

34. **No Parking Sign Notification**: Upon posting temporary no parking signs on a street, Contractor shall notify the Emergency Communications Center at 650-903-6395 of streets that have been posted with no parking signs.

35. **Street Closure Notification**: In the event of a street closure and detour that is three or more consecutive days in duration and is caused by the Contractor's operations, the Contractor shall notify the U.S. Postal Services customer services manager at (650) 967-5721 twenty four hours prior to the street closure.

STREET IMPROVEMENTS

36. **Grading Notes**: The City shall be provided with grading notes showing cuts and fills for all improvements to be inspected by the City.

37. **Place Utilities Before Base Rock**: All underground utilities shall be completed before placing of base rock, unless the City grants an exception.

38. **5 Days to Replace Concrete Improvements**: All existing curbs, gutters, sidewalks and driveways that are to be reconstructed shall be replaced within 5 days after their removal, unless the City grants an exception. See Section 22-04 of the Standard Provisions.

39. **Pedestrian Access**: Where practicable as determined by the City, the Contractor shall maintain pedestrian access along walkways, including public sidewalks, at all times. Sidewalk closures must be approved in advance by the City's Public Works Inspector. Walkways shall be reopened at the end of each working day. Well-compacted base rock may be used as a temporary walking surface.

40. **Inspection of Concrete Forms**: The City must approve concrete forms, before the pouring of concrete per Section 22-06 of the Standard Provisions. Concrete poured prior to inspection is subject to rejection and removal.

41. **"S" and "W" Curb Markings**: During concrete placement, the Contractor shall mark face of curb with a letter "S" for sewer laterals and a letter "W" for water services per Section 22-09.01 of the Standard Provisions.

42. **AC Gutter Conforms**: New gutter requires a hairline AC sawcut along the edge of the pavement or a 1' wide AC pavement conform per Section 22-09.01, as directed by City Inspector.

43. **Sidewalk Replacement**: Sidewalks shall be replaced by sawcutting along score marks, then removing and replacing the entire width of the sidewalk over 3" aggregate base and installing No. 4 dowels (9" maximum length) at 3' on centers, per Section 22 of the Standard Provisions. The dowels are to be drilled 3" into the existing curb and remaining sidewalk and epoxied in place.

EXCAVATIONS

44. **Utility Inspection Requirement**: All City appurtenances must be inspected by the City prior to backfilling any trenches or pouring any concrete.

45. **Excavations**: At the end of the each work day, all excavations within the street and travel way shall be: (1) backfilled and paved with temporary paving such that the finished surface is flush with the existing pavement, (2) adequately covered with steel plate bridging, or (3) backfilled and paved with permanent paving. If steel plate bridging is used, the steel plate bridging must be removed within 48 hours after its installation. Control Density Fill shall not be use as temporary AC paving.

46. **"T" Trench Cut**: A "T" trench cut is required per Detail A-18 of the Standard Provisions. Street pavement removed shall be replaced in kind or with a minimum section of 2.5"AC on 12" AB, which ever is greater, with respect to the permanent paving.

47. **Pipe Bedding and Backfill**: Uniformly graded sand shall not be used for pipe bedding or excavation backfill, as this material will fail upon re-excavation. Pipe bedding material shall conform to select (initial) backfill material, and subsequent trench backfill material shall be Class 2 aggregate base per Sections 24-02.01 and 24-04.03 and Detail A-18 of the Standard Provisions.

48. **Control Density Fill**: Controlled Density Fill (Section 24-02.04 of the Standard Provisions) may be used as subsequent backfill material only when specifically approved by the City. Controlled Density Fill shall not be used as pipe bedding material, unless an exception is granted by the City.

49. **Steel Plate Bridging**: Steel plate used for trench bridging must have a nonskid surface with a minimum coefficient of friction of 0.35 and must extend a minimum of 12 inches beyond the edge of a trench. Steel plate bridging shall be installed to operate with minimum noise. Where more than one plate is used, the plates shall be butted flush to each other and attached together by welding or other method approved by the City. For longitudinal placement, the approach plate(s) and ending plate(s) shall be attached to the roadway by a minimum of two dowels predrilled into the corners of the plate and drilled 2 inches into the pavement. When steel plates are removed, the dowel holes in the pavement shall be backfilled with either graded fines of asphalt concrete mix, concrete slurry or equivalent slurry approved by the City. Steel plate bridging shall be steel plate designed for HS20-44 truck loading per Caltrans Bridge Design Specification Manual.

Trench Width	Minimum Steel Plate Thickness
1.0'	1/2"
1.5'	3/4"
2.0'	7/8"
3.0'	1"
4.0'	1-1/4"

The trench shall be adequately shored to support the bridging and traffic loads. Temporary paving with hot asphalt concrete shall be used to feather the edges of the plates. Fine graded asphalt concrete shall be compacted to form ramps with a maximum slope of 8.5 percent and with a minimum 12 inch taper to cover all edges of the steel plates. The Contractor shall maintain the steel plates, shoring and asphalt concrete ramps in good order. The steel plates bridging shall be removed within 48 hours after their installation.

50. **Replacement of AC Between Excavation and Edge of Pavement**: On arterial streets, collector streets, streets that have been resurfaced with AC within the last five years, or when required by City, the Contractor shall remove and replace all intervening AC paving for trenches and excavations located within 6 feet of the edge of the pavement. On minor streets, the Contractor shall remove and replace all intervening AC paving for trenches and excavations located within 3 feet of the edge of the pavement pursuant to Section 24.03.01 of the Standard Provisions.

51. **Replacement of AC Between Two Excavations**: Where trenches or excavations are adjacent to each other, the intervening pavement located between the edges of the "T" trench shall be replaced if the width of the intervening pavement is less than 6'.

52. **Vault Excavation and Backfill**: Vault excavations shall not be backfilled with sand. The distance between the vault and side of the excavation shall be sufficiently wide to allow proper compaction of the aggregate base backfill material. Compaction tests of the backfill material are required, particularly on large vaults, except when Control Density Fill material is approved and used as backfill material. Uneven paving around new manholes located within the street or sidewalk will not be accepted. The grade of the paving surface around the manholes shall be flat, matching the existing grade, and shall be no worse then the existing grade of the street or sidewalk before manhole was installed.

53. **Vault Lids and Frames**: All boxes and vaults placed in the sidewalk area shall have a concrete type of finish (polymer lids and frames are acceptable). Boxes and vaults located within driveways shall be traffic rated boxes and lids for at least H20 traffic loads.

54. **Vaults, Utility Relocation**: Where proposed vaults conflict with minor lines, such as a street light conduit, the conflicting conduit may, at the discretion of the City, need to be relocated in lieu of relocating the vault.

55. **AC Paving Machine**: For excavations within paved areas that are more than 8 feet wide, the AC surfacing shall be installed with an AC paving machine.

56. **Cover Requirements**: A minimum cover of 30" within travelways and 18" within sidewalk areas as measured from the top of pipe to ground surface is required for the proposed excavation within the right-of-way. Provide additional cover to place the utility below the pavement structural section.

57. **Pavement Striping Damage**: Pavement striping damaged as a result of the Contractor's operations shall be replaced in kind by the Contractor.

SIGNS

58. **Street Name Signs**: Street name signs shall be installed on all public and private streets per Standard Detail A-13 and Section 29 of the Standard Provisions. Public street name signs shall have 4-inch white reflective, type B letters on blue reflective background on a 6-inch tall, 0.080-inch thick aluminum plate. Private street name signs shall have 4-inch white reflective, type B letters on a green reflective background on a 0.080-inch thick aluminum plate. Private street name signs shall include the phrase "Private St". Private street names must be approved in advance by the City Traffic Engineer.

WATER FOR CONSTRUCTION

59. **Construction Water Permit**: A permit for the use of City water is required per Section 30-01 of the Standard Provisions. Permits, backflow prevention devices and meters are issued at the Municipal Operations Center at 231 North Whisman Road. Contact the meter shop at (650) 903-6329 for further information.

STORM DRAINS

60. **Storm Line Video Taping**: In addition to other requirements specified in Section 31 of the Standard Provisions, the Contractor shall video tape new storm drains per Sections 31-03.07 of the Standard Provisions. The video taping requirements also requires the video tape and log sheets to be submitted to and approved by the City prior to the installation of the final lift of AC paving. Approval of the tapes and log sheets does not relieve the Contractor of his obligation to repair defective work and materials.

SANITARY SEWERS

61. **PVC Sanitary Sewer Laterals**: All new sanitary sewer laterals shall be constructed of PVC in accordance with Section 32-02.02 of the Standard Provisions, unless the City authorizes the use of VCP.

62. **Testing, Cleaning and Video Taping Sewer Lines**: The Contractor shall complete all testing of sanitary sewer pipes per Section 32 of the Standard Provisions. This provision requires the Contractor to perform exfiltration and infiltration testing, flush and clean the lines, video tape the new sanitary sewer pipes prior to the installation of the final lift of AC paving per Section 32-03.10 of the Standard Provisions, and perform other requirements as well. The video taping requirements also requires the video tape and log sheets to be submitted to and approved by the City prior to the installation of the final lift of AC paving. Approval of the tapes and log sheets does not relieve the Contractor of his obligation to repair defective work and materials.

WATER MAINS AND SERVICES

63. **Water Interruptions and Notifications**: Service in existing water mains can be interrupted only upon authorization of the City per Sections 33-03 and 33-03.09 of the Standard Provisions. The Contractor shall schedule a valve closure at least two working days in advance with the City construction inspectors, at (650) 903-6311. These provisions require the Contractor to notify all affected users in writing at least forty-eight hours in advance of service interruption using printed forms provided by the City. Manipulation of water valves shall only be done by Water Division personnel.

64. **PVC Water Mains and Services**: All 4-inch (100 mm) through 12-inch (300 mm) water mains and services shall be constructed of PVC in accordance with Sections 33-02.02 and 34-02.03 of the Standard Provisions, unless the City authorizes the use of DIP.

65. **Water Fittings**: New fittings on DIP and PVC water and fire mains and services shall be fusion epoxy-coated in lieu of the cement interior lining required in Sections 33-02.03, 33-02.04 and 34-02.03 of the Standard Provisions.

66. **Meter Boxes**: One-inch water meter boxes shall be used for water meters that are smaller than one-inch. See Section 34-02.08 of the Standard Provisions.

STREET LIGHTS

67. **Non-galvanized Streetlight Poles**: Electrolier standards (type-15 street light poles) shall not be galvanized. See Section 35-02.03 of the Standard Provisions.

68. **Post Top Streetlight Paint Color**: Post top (Type B) streetlights in the downtown area shall painted semi-gloss black (Tresco Satin Aqualloy Black # 1156) or as required by City.

TREES

69. **Tree Removal Permit**: A tree removal permit is required before any street tree can be removed, and a heritage tree removal permit is required before any heritage tree can be removed. For development related tree removals, contact the Community Development Department at (650) 903-6306. For non-development related tree removals, contact the Community Services Department, Forestry and Roadway Landscape Division, at (650) 903-6273.

CATHODIC PROTECTION

70. **Cathodic Protection of New Services and Mains**: All new copper and DIP water services, DIP fire services and DIP water mains shall be cathodically protected per Section 38 of the Standard Provisions and Standard Details D-18 through D-38.

TRAFFIC SIGNALS

71. **Work Near Traffic Signal, Notification**: The contractor shall notify the City Traffic Engineer two working day prior to doing any work near signalized intersection that is maintained by the City to determine if the signal needs to be switched from automatic to manual mode. This also applies to non-excavation work where the contractor's equipment effects the operation of the detector loops.

72. **Traffic Signal Loop Replacement**: Traffic signal detector loops that are damaged as a result of the Contractor's operations shall be replaced with new detector loops in accordance with Caltrans Standard Specifications and Provisions. The detector loop replacement work shall be performed by a local qualified contractor with experience in the installation of detector loops. (Peek Signal Maintenance Inc., St. Francis Electric, Mike Brown Electric or other City approved contractor.) Prior to the start of construction, the Contractor shall make arrangements with one or more of the above traffic signal contractors to replace the damaged detector loops.

73. **Traffic Signal Loop Replacement Within 72 Hours**: All damaged traffic signal detection loops shall be replaced within 72 hours of their damage, unless the City grants an exception. This requires permanent paving of trenches to be installed prior to replacement of the detector loops.

BUS STOPS

74. **Bus Stop Operations**: The Contractor's work shall not interfere with the operations of existing bus stops, unless the City and Valley Transportation Agency grant an exception. In order for an exception to be granted by the City, the Contractor must apply for the bus stop closure well in advance of the closure and show good cause at to why the closure of the bus stop is necessary. The Contractor may be required to construct a temporary bus stop or install appropriate detour signs.

GARBAGE COLLECTION ROUTES

75. **Garbage Route Operations**: For any work on or adjacent to garbage and recycling collection routes, the Contractor shall allow garbage trucks to safely pass through the Contractor's site at all times, unless an exception is granted by the City.

UNDERGROUND CONDUITS-TELECOMMUNICATIONS, ETC.

76. **Utility Company Name Required on Lids or Covers**: All utility company vaults and manholes must have the utility company's name on the lid or cover.

77. **As-built Depths and Location**: The actual depth and horizontal offsets of new utility conduits shall be shown on the as-built plans at intervals of 20 feet or less. All final profiles with existing pipe and depth information shall be shown on the "as-built" drawings. All pot-hole excavation location and data shall be shown on the as-built plans.

78. **One-Half Foot Placement Accuracy**: All conduits installed by trenching, directional boring and micro tunneling methods shall be installed within one-half foot of the horizontal alignment shown on the plans, unless the City approves an exception.

79. **Conduit Locator or Tracer Wire**: A tracer cable, wire or shielded cable shall be installed with conduits for fiber optic lines, and other similar non-traceable conduits, in such a manor that the exact location of the conduits can be determined by the utility owner using field locating equipment. For joint trench utility work, each company must have their own tracer cable, wire or shielded cable, so that each company can locate their own conduits. For plastic gas and ground water extraction system pipes, a tracer tape may be used in lieu of a tracer cable or wire, as a tracer cable or wire cannot be inserted in these types of pipe.

80. **Vault Surface Finishing and Traffic Rating**: All boxes and vaults placed in the sidewalk area shall have a concrete type of finish (polymer lids and frames are acceptable). Boxes and vaults located within driveways shall be traffic rated boxes and lids for at least H20 traffic loads.

81. **Replacement of Sidewalk Between Vaults**: Where large vaults or manholes are installed within an existing sidewalk and the distance between the vaults or manholes is less than 20 feet on center, all of the existing sidewalk located between the vaults or manholes shall be replaced.

MONITORING AND EXTRACTION WELLS

82. **SCVWD Requirements**: All well work shall comply with the Santa Clara Valley Water District's "Standards for the Construction and Destruction of Wells and other Deep Excavations in Santa Clara Valley."

83. **Well Clearance from Utilities**: Wells are to be located a minimum distance of 5' from all service laterals, mains and manholes.

84. **Removal of Drilling Wastes**: All drilling fluid and waste material shall be removed from the site and disposed of in a legal manner.

85. **Submittal of Reports**: A copy of all reports sent to the governing regulatory agency, such as the State Regional Water Quality Control Board or Santa Clara Valley Water District, for the subject exploratory borings, monitoring wells and extraction wells shall be sent to the Public Works Department.

SOIL BORINGS

86. **Removal of Boring Wastes**: All boring waste material shall be removed from the site and disposed of in a legal manner.

87. **Boring Sealing Requirements**: Exploratory borings shall be destroyed in accordance with the Santa Clara Valley Water District's Well Destruction Standards. All borings 45' deep or deeper require a permit from the Santa Clara Valley Water District.

88. **Borings Backfilled Within 24 Hours**: All exploratory borings, regardless of depth, must be backfilled within 24 hours of the completion of testing activities.

89. **Boring Sealing Mix Requirements**: All exploratory borings, regardless of depth, must be backfilled with acceptable sealing materials. Acceptable sealing materials include: (1) a 27-sack neat cement (27 sacks of cement per cubic yard for dry mix), where the neat cement mixture is composed of one bag of Portland cement to five to seven gallons of clean water and where up to 5 percent bentonite clay can be added to the cement mixture; (2) a 10-sack cement/sand slurry (10.4 sacks of cement per cubic yard for dry mix), where the cement/sand mixture is composed of not more than

two parts sand and one part of Portland cement to five to seven gallons of clean water; and (3) 20 percent, high solids bentonite slurry. The solid-form bentonite (pellets/chips) is not an acceptable sealing material in Santa Clara County.

90. **Boring Sealing, Use of Tremie Pipe**: Sealing materials must be placed using a Tremie pipe in borings greater than 30' in depth or in borings that contain water. If a driven probe boring is being destroyed, the probe tubing can be used as a Tremie pipe.

91. **Small Diameter Boring, Pavement Restoration**: For small diameter holes (3" and smaller) drilled within the AC pavement, the holes shall be backfilled with a cement grout mixture and capped with a 3" thick AC cold patch (cut-back asphalt) and leveled to match the existing surface.

SITE RESTORATION

92. **Minimize Damage to Landscape**: Existing landscape within the area of work shall be carefully removed and replaced with minimal damage.

93. **Site Restoration**: The Contractor shall return the private yards, sidewalks, planters, irrigation systems, and any other facilities, public or private, disturbed by the work to the same or better condition that existed prior to commencement of the work. The Contractor shall make a reasonable effort to restore each private yard disturbed by the work within one week after the work is completed on the same yard except where the City's inspector agrees that for construction reasons, the 1 week requirement may be extended.

California Regional Water Quality Control Board
San Francisco Bay Region

Linda S. Adams
Secretary for Environmental Protection

1515 Clay Street, Suite 1400, Oakland, California 94612
(510) 622-2300 • Fax (510) 622-2460
http://www.waterboards.ca.gov/sanfranciscobay

Edmund G. Brown, Jr.
Governor

May 20, 2011
CIWQS Place No. 744300 (BT)
401 Database Site No. 02-43-C0647

Sent via electronic mail: No hard copy to follow

California Department of Transportation
Attn: Mr. Paul Mai
Paul_Mai@dot.ca.gov
111 Grand Ave.
Oakland, CA 94612-3717

Subject: Water Quality Certification for the State Route 101 Auxiliary Lanes Project, State Route 85 to Embarcadero Road, Cities of Palo Alto and Mountain View, Santa Clara County

Department Project No.: EA 04-4A3301

Dear Mr. Mai:

We have reviewed and hereby issue water quality certification to the California Department of Transportation (Department) for the State Route 101 (SR 101) Auxiliary Lanes Project, State Route 85 to Embarcadero Road (Project). The Department has received Nationwide Permit No. 14, *Linear Transportation Projects* (File Number SPN·2007·00885 S), authorization from the U.S. Army Corps of Engineers (Corps), pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344). As such, the Department has applied to the Water Board for a Clean Water Act Section 401 water quality certification that the Project will not violate State water quality standards.

Project: The Department is proposing to construct north and southbound auxiliary lanes on SR 101 adjacent the existing outside lanes between Shoreline Boulevard and Oregon Expressway, except southbound between San Antonio and Old Middlefield Roads.

Permanente, Adobe, and Matadero Creeks all cross through the Project area. All three creeks are concrete-lined within the Project limits. Permanente Creek passes beneath SR 101 through a 12 foot by 12 foot concrete box culvert which will be extended by 20 feet on the northbound side of the roadway to accommodate widening. The existing parapet and wing-walls will be re-built at the end of the extended culvert. Because the existing culvert is offset from the channel at its outlet, the channel will need to be realigned at the end of the new culvert to match the alignment

of the existing creek channel. Permanente Creek will not be permanently impacted as a result of SR 101 widening on the southbound side.

There are existing frontage roads approximately 14 feet from the north and southbound lanes of SR 101 where it crosses Adobe and Matadero Creeks. SR 101 will be widened on both sides of the highway, resulting in closure of the existing gap at these locations. The Matadero Creek bridge widening work will involve replacement of the existing center support pier wall foundation and two bridge abutments. Placement of the piles, abutments, and foundation will be placed in the footprint of the existing structures and result in zero net fill to Matadero Creek. Widening over Adobe Creek will not require fill of the Creek.

Jurisdictional Wetlands and Waters Impacts: Project implementation will result in permanent impacts to Adobe Creek (22 linear feet, 0.033 acres) and Matadero Creek (23 linear feet, 0.045 acres) via shading from roadway widening over the creeks. The existing Permanente Creek box culvert will be extended approximately 20 linear feet downstream, new wingwalls will be built, and a portion of the channel will be realigned, resulting in 55 linear feet (0.045 acres) of permanent fill to Permanente Creek. Cumulative permanent impacts to jurisdictional waters from Project implementation are 100 linear feet (0.12 acres).

Project implementation will result in approximately 1,194 linear feet of (0.86 acres) temporary impacts due to diversion of creek flows around the work areas and dewatering of the creek channels.

Project implementation would result in approximately 18.3 acres of added and reworked impervious area. Stormwater runoff from impervious areas may contain hydrocarbons, metals, volatile organic compounds, trash, and sediment at levels that may significantly impact jurisdictional waters if left untreated.

Hydromodification impacts: Project implementation will not result in hydromodification impacts because the receiving waters are tidally influenced and/or hardened channels.

Jurisdictional Wetlands and Waters Mitigation: To mitigate for the permanent fill of approximately 100 linear feet (0.12 acres) of jurisdictional waters, the Department shall create a 0.14 acre seasonal wetland, 0.26 acres of oak woodland habitat restoration, and provide 1.0 acres of invasive plant control along the south side of Matadero Creek at the northwest corner of Interstate 280 and Page Mill Road, on land owned by the Department, in the town of Los Altos Hills. A biofiltration swale shall be constructed to treat stormwater from approximately 1.9 acres of impervious area before being diverted to the new seasonal wetland. Implementation of these mitigation activities shall occur prior to any permanent impacts to Matadero, Adobe, and Permanente Creeks.

Roadway Pollutant Mitigation: As mitigation for increased pollutant loads associated with impervious areas, the Department shall provide treatment of stormwater runoff from

approximately 18.9 acres of impervious area using 1 compost-amended biofiltration strip and 5 bioretention swales.

The following biofiltration strip and swales will mitigate water quality impacts resulting from Project implementation:

BMP	Northbound/ Southbound	From Post Mile	To Post Mile	Treated Impervious Area (acres)
Swale	northbound	51.90	51.92	2.20
Swale	northbound	50.35	50.36	6.64
Strip	northbound	50.16	50.30	1.26
Swale	northbound	49.57	49.61	3.93
Swale	southbound	49.53	49.55	3.45
Swale	southbound	48.93	48.96	1.42
				total: 18.9

California Wetlands Portal. It has been determined through regional, state, and national studies that tracking of mitigation/restoration projects must be improved to better assess the performance of these projects, following monitoring periods that last several years. In addition, to effectively carry out the State's No Net Loss Policy for wetlands, the State needs to closely track wetland losses, gains, and mitigation/restoration project success. Therefore, we require that the Department use the California Wetlands Standard Form to provide Project information related to impacts and mitigation/restoration measures (see Condition No. 9) of this Certification). An electronic copy of the form and instructions can be downloaded at: http://www.waterboards.ca.gov/sanfranciscobay/certs.shtml

Project information concerning impacts and mitigation/restoration will be made available at the web link: http://www.californiawetlands.net

CEQA Compliance: The Project was evaluated pursuant to the requirements of the California Environmental Quality Act (CEQA) in a Mitigated Negative Declaration. The Department filed a Notice of Determination on July 29, 2009, that the Project would not have a significant effect on the environment.

Certification: I hereby issue an order certifying that any discharge from the referenced project will comply with the applicable provisions of sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 303 (Water Quality Standards and Implementation Plans), 306 (National Standards of Performance), and 307 (Toxic and Pretreatment Effluent Standards) of the Clean Water Act, and with other applicable requirements of State law. This discharge is also regulated under State Water Resources Control Board Order No. 2003 - 0017 – DWQ, "General Waste Discharge Requirements for Dredge and Fill Discharges That Have Received

State Water Quality Certification" which requires compliance with all conditions of this Water Quality Certification. The following conditions are associated with this certification:

1. The Department shall adhere to the Standard conditions imposed by Nationwide Permit No. 14, issued to the Department by the Corps;

2. The Project shall be constructed in conformance with the Project Description described in this certification and certification application materials. Any change in the Project may require modification to the certification and shall be reported to the Water Board;

3. The Department shall install one compost-amended biofiltration strip and five biofiltration swales to treat stormwater contaminants from no less than 18.9 acres of impervious area. Swale and strips shall be installed by the completion of Project construction and be consistent with the information summarized above in "Roadway Pollutant Mitigation, and in Attachment A, *Bioretention Swale Cross Sections*;

4. Not later than thirty days prior to Project construction, the Department shall submit biofiltration soil mix specifications that will be used in all proposed swales. Project construction shall not commence until the soil specifications have been found acceptable by Water Board staff;

5. Construction within Adobe, Matadero, and Permanente Creeks shall not occur prior to April 15, 2012. Off-site mitigation at the Matadero Creek/Page Mill Road site shall be fully implemented by October 1, 2011. Failure to meet this deadline may result in a requirement for additional mitigation;

6. The Department shall submit a Final Mitigation and Monitoring Plan (MMP) for I-280/Matadero Creek mitigation activities. The MMP shall be found acceptable to Water Board staff before Project construction may commence. The MMP shall include:
    a. Soil specifications and design details for the proposed biofiltration swale;
    b. An invasive species plant control plan to control invasive plan species within a 1.0-acre area over a five year period;
    c. A detailed plan for creation of a 0.14-acre seasonal wetland;
    d. A planting plan for restoration of 0.26-acres of oak riparian habitat;
    e. A minimum 5-year monitoring plan that included success criteria for wetland creation and restoration of oak riparian habitat;
    f. A schedule for submittal to the Water Board of an as-built report, to be submitted no later than 60 days from mitigation implementation. The as-built report shall include photo-documentation of mitigation installation as well as documentation of photo-monitoring locations to be used for subsequent monitoring events;
    g. A schedule for submittal of Years 1, 3, and 5 annual reports; and
    h. A mitigation construction schedule.

7. No element of the off-site mitigation shall be considered successful until two full growing seasons have passed since the provision of supplemental irrigation ceased;

8. The off-site mitigation shall not be considered to satisfy the conditions of this certification until final mitigation success reports have been submitted to the Water Board and found acceptable by the Executive Officer;

9. The Department is required to use the California Wetlands Form to provide project information describing impacts and mitigation/restoration measures no later than June 30, 2011. An electronic copy of the form can be downloaded at: http://www.waterboards.ca.gov/sanfranciscobay/certs.shtml. The completed California Wetlands Form shall be submitted electronically to habitatdata@waterboards.ca.gov or shall be submitted as a hard copy to both: 1) The Water Board, 1515 Clay St., Suite 1400, Oakland, CA 94612, to the attention of California Wetlands Portal; and 2) San Francisco Estuary Institute, 7770 Pardee Lane, Oakland, CA 94621-1424, to the attention of Mike May.

10. Mitigation monitoring reports shall be submitted by November 15 of each year either by uploading them to the California Wetlands Portal website at http://www.californiawetlands.net/tracker/ba/list, via email, or via mail (see the address on the letterhead). To upload the reports, go to the above link, click on your project, click on Files & Links, and follow the steps. If the Department chooses to upload the Annual Report to the California Wetlands Portal, then the Department shall notify the Water Board project manager that the report has been uploaded;

11. Work within Adobe, Matadero, and Permanente Creeks shall only take place between April 15 and October 15. Diversion systems shall be removed within 48 hours once work in that creek is completed. Temporary fill of the creek channel within dewatered portions of the creek channel is prohibited without authorization from Water Board staff;

12. Erosion control measures shall be utilized throughout all phases of construction where sediment runoff from disturbed areas threatens to enter waters of the State, regardless of date. At no time shall silt-laden runoff be allowed to enter waters of the State;

13. Except as expressly allowed in this certification, no equipment shall be operated in areas of flowing or standing water; no fueling, cleaning or maintenance of vehicles or equipment shall take place within jurisdictional waters or within any areas where an accidental discharge to waters of the State may occur;

14. Except as expressly allowed in this Certification, the discharge, or creation of the potential for discharge, to waters of the State of any construction wastes and/or soil materials

including cement, fresh concrete, or washings thereof, silts, clay, sand, oil or petroleum products and other organic materials to waters of the State is prohibited;

15. This certification does not allow for the take, or incidental take, of any special status species. The Department shall use the appropriate protocols, as approved by the California Department of Fish and Game and the U.S. Fish and Wildlife Service, to ensure that Project activities do not impact the Beneficial Use of the Preservation of Rare and Endangered Species;

16. The Department shall maintain a copy of this water quality certification at the Project site so as to be available at all times to site operating personnel. It is the responsibility of the Department to assure that all personnel (employees, contractors, and subcontractors) are adequately informed and trained regarding the conditions of this certification;

17. This certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to Section 13330 of the California Water Code (CWC) and Section 3867 of Title 23 of the California Code of Regulations(23 CCR);

18. This certification action does not apply to any discharge from any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license, unless the pertinent certification application was filed pursuant to California Code of Regulations (CCR) Title 23, Subsection 3855(b) and that application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought; and,

19. Certification is conditioned upon total payment of the full fee required in State regulations (23 CCR Section 3833). Water Board staff received full payment of $1286.00 on January 31, 2011.

We anticipate your cooperation in implementing these conditions. However, please be advised that any violation of water quality certification conditions is a violation of State law and subject to administrative civil liability pursuant to California Water Code (CWC) section 13350. Failure to respond, inadequate response, late response, or failure to meet any condition of this certification may subject you to civil liability imposed by the Water Board to a maximum of $5,000 per day per violation or $10 for each gallon of waste discharged in violation of this certification.

Conditions 4, 6, 9, and 10 are requirements for information or reports. Any requirement for a report made as a condition to this action is a formal requirement pursuant to CWC section 13267, and failure or refusal to provide, or falsification of such required report is subject to civil liability as described in CWC section 13268.

We anticipate no further action on this request. Should new information come to our attention that indicates a water quality problem with this project, the Water Board may issue Waste Discharge Requirements pursuant to 23 CCR Section 3857.

If you have any question, please contact Brendan Thompson at (510) 622-2506, or via e-mail to BThompson@waterboards.ca.gov.

Sincerely,

Bruce H. Wolfe
Executive Officer

cc (via e-mail):
Mr. Bill Orme SWRCB-DWQ
Mr. Hal Durio, Regulatory Branch, USACE
Ms. Jane Hicks, Regulatory Branch, USACE
Ms. Holly Costa, Regulatory Branch, USACE
Mr. Cameron Johnson, USACE
Ms. Christina Jaworski, SCVTA
Mr. Dale Bowyer, Water Board
Mr. Cyrus Vafai, Caltrans
Mr. Hardeep Takhar, Caltrans
Mr. Jason Brush, USEPA
Ms. Andrea Meier, USACE
Ms. Jayshree Chauhan, Caltrans

Attachment A

Bioretention Swale Cross Sections

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/52.0		

REGISTERED CIVIL ENGINEER — DATE 11-15-10

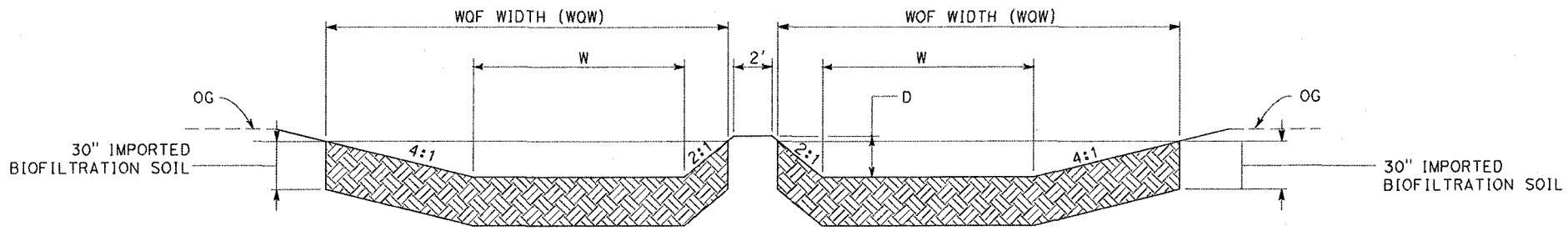
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — ANALETTE OCHOA — No. C 55279 — Exp. 12/31/10 — CIVIL — STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

WRECO
1243 ALPINE ROAD
SUITE 108
WALNUT CREEK, CA 94596

SANTA CLARA VALLEY
TRANSPORTATION AUTHORITY
3331 N FIRST STREET
SAN JOSE, CA 95134



TYPICAL DOUBLE BIOFILTRATION SWALE CROSS SECTION

BIOFILTRATION SWALE DETAIL

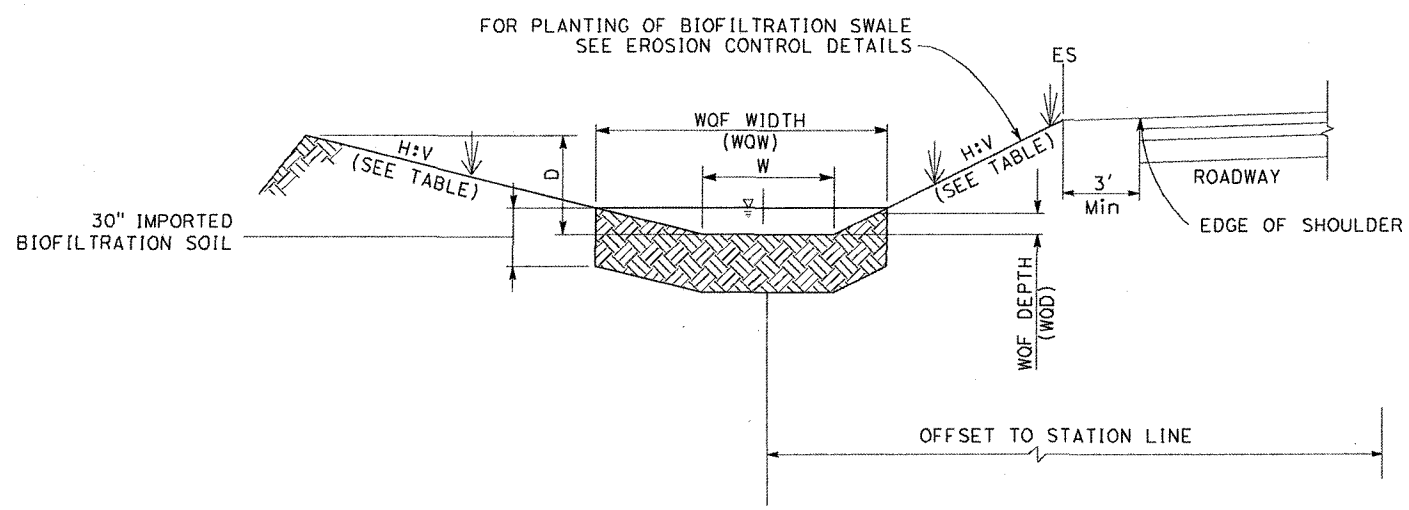
DRAINAGE ITEM	APPROXIMATE LOCATION	BEGIN FLOWLINE	END FLOWLINE	WIDTH(W) (Ft)	DEPTH(D) (Ft)	LEFT SIDE SLOPE (Ft)	RIGHT SIDE SLOPE (Ft)	WQW (Ft)	WQD (Ft)
3 a	51.74 Lt "C" 44+00.00 TO 50.06 Lt "C" 45+00.00	4.02	3.30	10	1.25	2	4	13.26	0.544
20 b	36.28 Lt "SANN-L" 125+75.01 TO 133.33 Lt "SANN-L" 125+51.59 40.05 Rt "SANN-L" 125+90.65 TO 137.11 Rt "SANN-L" 125+67.02	0.63	0.33	10	1.0	SEE TYPICAL CROSS SECTION	SEE TYPICAL CROSS SECTION	12.78	0.463
33 a	49.67 Lt "ANF" 165+10.00 TO 44.02 Lt "ANF" 166+90.00	8.22	7.85	10	2.0	2	4	12.63	0.438
38 q	101.04 Rt "C" 168+00.00 TO 97.80 Rt "C" 169+00.00	7.66	7.25	8.0	1.0	4	2	10.72	0.453
45 e	96.01 Rt "C" 199+50.00 TO 95.77 Rt "C" 200+83.31	19.02	19.42	5	1.0	2	2	6.68	0.420

NOTE:

IMPORTED BIOFILTRATION SOIL
TO BE PLACED PER WQW AND WQD.

ACRONYM:

WQF WATER QUALITY FLOW



TYPICAL BIOFILTRATION SWALE CROSS SECTION

DRAINAGE DETAILS

NO SCALE

DD-8

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — Caltrans

CONSULTANT FUNCTIONAL SUPERVISOR: HAN-BIN LIANG

CALCULATED-DESIGNED BY: CLAIRE COUGHLAN — CHECKED BY: ANALETTE OCHOA

REVISED BY: CC — DATE REVISED: 06/02/10

REVISED BY: CC — DATE REVISED: 11/05/10

LAST REVISION: 11-05-10 — DATE PLOTTED => 11/8/2010 — TIME PLOTTED => 4:59:43 PM

U.S. Route 101 Auxiliary Lanes Project (SR 85 to Embarcadero Road)
Pre-Construction Notification: Nationwide Permit #14: Linear Transportation Projects

Name, address, & telephone number(s) of prospective permittee

California Department of Transportation (Caltrans)
Attn: Mr. Kevin Melanephy
111 Grand Avenue
Oakland, CA 94612

P.O. Box 23660
Oakland, CA 94623-0660
(510) 622-8729

Location of proposed project

The project is located on US 101 between Embarcadero Rd. and the State Route 85 interchange, a distance of approximately 3.2 miles in the cities of Mountain View and Palo Alto in northwest Santa Clara County. The latitude is between 37.449° and 37.408° North and between longitude 121.122° and 121.070° West or T6S R2W on the *Mountain View* U.S.G.S. 7.5 Minute Quadrangle at elevations ranging between 4 to 40 feet above mean sea level.

Project Purpose and Need

The section of US 101 that is the subject for the proposed project currently experiences significant traffic congestion which is forecasted to grow with increased traffic demands. Additionally vehicle collision statistics on US 101 indicate relatively high collision rates (Kimley-Horn and Associates 2006). Caltrans proposes to improve traffic operations by constructing auxiliary lanes used for entering and exiting the freeway on both sides of US 101 between Shoreline Boulevard exit in Mountain View and the Oregon Expressway exit in Palo Alto. The auxiliary lanes will improve traffic operations on the freeway by allowing more room for traffic entering and exiting the freeway and allowing traffic that enters the freeway at one interchange to exit at the next interchange without impacting the main through lanes of the freeway.

Environmental Setting

The proposed project area comprises approximately 139 acres of mainly developed areas including frontage roads, landscaped cloverleaf interchanges, structures, lots and drainage ditches that lie within the Caltrans right of way and small portions of three private parcels. Adjacent land uses include commercial and residential buildings such as gas stations, retail stores, office and retail complexes, markets and city parks. The study area is also bisected by three different creeks, which include (from north to south) Matadero Creek, Adobe Creek, and Permanente Creek. All the creeks are channelized in concrete within the project area. The three creek systems change dramatically a short distance downstream of the project area from artificially channelized systems to watercourses that are much less altered and are influenced by the tidal regime of the bay. The topography along US 101 in the project area can be described as relatively flat, with the elevation ranging from approximately 20 feet at the south end of the project near Permanente Creek to approximately 5 feet near the Oregon Expressway.

Project Description

The project will construct an auxiliary lane on US 101 in each direction between Shoreline Boulevard and Oregon Expressway. The exception will be between San Antonio Road and

Rengstorff Avenue in the southbound direction, where no auxiliary lane is proposed because it would cause weaving conflicts with traffic entering the freeway from Charleston Road.

The new auxiliary lanes will be constructed adjacent to the existing outside lanes. At most locations there is sufficient room within the existing Caltrans right of way to accommodate the construction of the auxiliary lanes. The auxiliary lanes will require the widening of the existing U.S. 101 crossings over three creeks; Permanente Creek, Adobe Creek and Matadero Creek.

Permanente Creek crosses 101 approximately 2,200 feet south of Rengstorff Avenue interchange. The creek originates in the Santa Cruz Mountains and passes through Cupertino, Los Altos Hills, Los Altos, and Mountain; and eventually discharges into Mountain View slough which outfalls into San Francisco Bay. For the stream crossing at Permanente Creek the existing structure is a 12 foot by 12 foot reinforced concrete box culvert that is 216 feet long with a concrete channel on both upstream and downstream sections of the culvert. To accommodate the widening of US 101 and the auxiliary lanes for the proposed project the concrete box culvert will be extended by 20 feet on the northbound side of the freeway. The construction work will require diversion of the creek and work within the concrete channel creek bed. The existing parapet, wing walls and channel will be removed and a new headwall, wing walls and channel will be constructed at the end of the extended culvert. No extension of the culvert is required at the southbound section of the Permanente Creek crossing, for the widening of the highway.

Adobe Creek crosses US 101 approximately 1,800 feet north of the San Antonio Road interchange. The creek originates in the Palo Alto hills, flows through Palo Alto in a large rectangular concrete channel and discharges into Charleston slough which eventually outfalls to San Francisco Bay. A short distance from the US 101 crossing and just upstream of the West Bayshore Rd. bridge the tributary of Baron Creek confluences Adobe Creek. Adobe Creek is a paved concrete engineered channel at the US 101 crossing. The existing US 101 stream crossing at Adobe Creek is a single span bridge built in 1960 and widened in 1989. The bridge consists of precast girders with a concrete deck topped off with a layer of asphalt. About 14 feet on either side of the 101 bridge are bridges for the frontage roads that use abutments that were constructed continuously between the 101 bridge and the frontage road bridges. The proposed project will widen the existing highway structure on the outside of US 101 to close the gaps between the existing bridge and the bridges of the frontage roads on either side. The proposed construction work will be completed from the concrete deck and access to the creek bed will not be necessary.

Matadero Creek crosses U.S. 101 approximately 3,200 feet south of the Oregon Expressway interchange. The creek originates in the Town of Los Altos and in the Palo Alto hills. The creek flows through Palo Alto in a U-shaped concrete channel and discharges into the Palo Alto flood basin, which eventually outfalls to San Francisco bay. At the US 101 crossing Matadero Creek is a concrete paved trapezoidal engineered channel. The existing Matadero Creek Bridge consists of an existing two span structure. Abutments and the middle pier wall were constructed continuously for the 101 bridge and the two frontage road bridges (East Bayshore Rd. and West Bayshore Road) on either side. Currently there is approximately 14 feet between the decks of the US 101 bridge and the two frontage road bridge decks on either side. The proposed project would widen the existing highway bridge structures on the outside of US 101 to close the gaps between the 101 bridge structure and the frontage roads. Additionally the center support pier wall and the abutments will be evaluated for adequacy. Depending on the results of structural analysis, the wall foundation or the wall itself may need to be strengthened or replaced. Work on the wall foundation would necessitate diversion of the creek or surrounding the pier wall with a cofferdam. The top of the pier wall also needs to be modified to provide support for the new precast deck units. This construction work will require access in the creek bed.

Proposed Schedule of Work.
Construction is scheduled to occur between June 2011 and August 2013.

Impacts to Wetlands and Other Waters of the U.S.
There are no identified jurisdictional wetlands in the project study area and waters of the U.S. features are limited to four creeks that include Matadero Creek, Adobe Creek, Baron Creek and Permanente Creek. The aquatic and wetland habitat of the streams are of low quality because the creeks are channelized in concrete for the sections of the creeks that traverse the study area. The US 101 freeway has stream crossings at Matadero Creek, Adobe Creek and Permanente Creek. Baron Creek confluences with Adobe Creek on the west side of US 101 on the other side of the Bayshore Road bridge in the study area. Neither Adobe Creek nor Baron Creek are proposed to be impacted by dredge or fill material from the project as all the construction work is expected to occur from the concrete deck at the Adobe Creek stream crossing. All temporary staging areas will be in upland areas or existing developed areas. Instream work at Permanente Creek and Matadero Creek is proposed to occur during the drier summer months when the volume of flow in the creeks will be reduced.

Permanent Impacts at the Matadero Creek crossing include the extension of the center pier wall used to support the deck of the proposed bridge that will span the gaps between the existing US 101 freeway bridge and the Bayshore Road bridges. Construction of the center support pier, including the footings and piles will permanently impact approximately 0.004 acre of Waters of the U.S. 21 cubic yards of reinforced concrete will be used to construct the piles, footings and pier wall. To perform construction work at the Matadero Creek stream crossing access to the streambed will be necessary. This will necessitate diversion and dewatering of the creek and temporary impacts to Matadero Creek. Approximately 0.363 acre of the stream will be temporarily impacted by the project.

Temporary diversion of Matadero Creek during construction work will be achieved by the use of a cofferdam constructed with stacked sandbags to direct the flow of the creek to a 42 inch diameter plastic pipe that begins 200 feet upstream of the W. Bayshore Road Bridge and extends 15 feet downstream of the bike bridge. A second cofferdam will be constructed on the downstream side of the bridge. The temporary drainage design accounts for the tidal influence of San Francisco Bay and the potential for the flow to change to directions.

The extension of the Permanente Creek culvert on the northbound side of the existing culvert will permanently impact approximately 0.018 acre of Waters of the U.S. in Permanente Creek. The extended box culvert will require 34 cubic yards of concrete fill into Permanente Creek. The wing walls will require approximately 75 cubic yards of concrete fill, 9 cubic yards for the concrete channel and 31 cubic yards of fill material. Temporary diversion of the creek and construction work within the creek will temporarily impact approximately 0.019 acre of Waters of the U.S. in Permanente Creek.

Similarly to Matadero Creek, the temporary diversion of Permanente Creek will be achieved by use of cofferdams and plastic piping to redirect the flow of the stream. However, the creek will be diverted in two discrete locations, at both ends of the Permanente Creek culvert. A sand bag cofferdam or berm will be constructed on the upstream side and downstream side of each temporary diversion section. Water flowing from upstream runoff or from downstream tidal fluctuations will be diverted to the plastic piping. The plastic pipe will be approximately 18 inches in diameter.

A total of 0.404 acre of impacts to waters of the U.S. are currently proposed by the project. This includes 0.382 acre of temporary impacts and 0.022 acre of permanent impacts.

Permits

This project qualifies for authorization under the U.S. Army Corps of Engineers Nationwide Permits #14 for linear transportation projects. Also, a 401 Clean Water Certification permit must be obtained from the Regional Water Quality Control Board and streambed alteration agreement (1602) from the California Department of Fish and Game.

Special Status Species

Reconnaissance level surveys were conducted by qualified biologists for special status plant and animal species and their habitats within the project area. No special status plant or wildlife species were discovered at the site during the surveys. In addition habitat for the special status plant species that are known to occur in the area was not found at the project site based on an assessment of habitats, elevations and soil types. The highly disturbed nature of the project area would preclude the establishment of special status plant species.

Protocol level surveys for burrowing owls were conducted in August and September of 2007 and detected no burrowing owls. Due to small number of burrows and the heavy disturbance at the site the owls are presumed to be absent from the site. No federally endangered or threatened species or habitat for endangered or threatened species was discovered at the site during reconnaissance surveys. Two special status bird species, the Alameda song sparrow (*Melospiza melodia pusillila*) and the San Francisco common yellowthroat (*Geothlypis trichas sinuosa*) could potentially nest at the site and use it regularly. Both species are known to nest in salt and brackish marshes and yellowthroats may use freshwater marshes. The habitats near the Adobe Creek and Permanente bridges are currently inadequate for yellowthroats and lack the emergent vegetation needed for nesting. No yellowthroats were discovered during reconnaissance surveys of the project site. Song sparrows were observed during the 2008 breeding season immediately to the northeast of the Matadero bridge however due to the difficulty in distinguishing Alameda song sparrows from other song sparrows in the region it was impossible to tell if the observed birds were Alameda song sparrows. The project would impact a very small amount of potential nesting habitat for these species in a highly disturbed environment and therefore impacts to these species are not substantial. No special status wildlife species were discovered during the surveys and habitat was not present at the site for special status wildlife species.

Steelhead or other anadromous fish are blocked from migrating into the project area by a trash rack at the tidal gate to Mayfield Slough that is located downstream of Adobe and Matadero Creeks. Although historically the creeks may have been habitat for steelhead, recent sampling indicates that no steelhead are present. The National Marine Fisheries Service and the Department of Fish and Game consider steelhead and other anadromous salmonids as absent from Matadero, Adobe and Permanente Creeks.

Direct and Indirect Environmental Impacts

Most of the potential impacts to wildlife and plant species could occur in the construction phase of the project. Since no new access roads are needed, the project will not increase access to the site. Activities that could directly affect species include:

Stream Crossings. There are three stream crossings for Highway 101 in the project area, which include Matadero Creek, Adobe Creek and Permanente Creek. No construction work will occur within the channel of Adobe Creek. Construction work in the stream channels for Matadero Creek and Permanente Creek will be conducted when streams are at their driest

during the summer months to the greatest extent feasible in order to reduce the likelihood of sediment mobilization from storm events. Work areas near drainages will be protected through installation of construction fencing backed by silt fencing. Physical barriers including "Environmentally Sensitive Area" (ESA) fencing will be used to designate those areas outside of the construction impact area to protect sensitive areas.

Wildlife Movement. Construction activities may temporarily interfere with the movement of terrestrial species across the project area. Large, mobile species can readily move around the site through undisturbed lands adjacent to the project corridor. Highly motile species such as birds are not limited by the relatively minor topographical changes associated with construction. Ground dwelling species, such as amphibians, mammals and reptiles, will be most affected by construction activities, with respect to disruption of movement corridors.

Construction Noise and Other Human Disturbance. Depending on the location, long term future peak hour noise levels will remain unchanged from existing levels or will increase one to two decibels. The projected noise levels will however exceed the FHWA's noise abatement criteria at some areas and therefore noise abatement measures were considered including the construction and extension of sound walls. Proposed sound walls would abate noise near Greer Park and 4 residences just south of Rengstorff Avenue.

The operation of vehicles and equipment during construction will cause additional noise. The highest noise levels will occur during the operation of pile driving and demolition equipment. Noise is likely to cause a temporary annoyance for residences along Route 101. Impacts of the noise will be minimized by staging construction equipment and performing night time work away from residences, performing pile driving and demolition activities during the day time and by ensuring that construction vehicles are equipped with intake and exhaust mufflers in good condition.

Sedimentation. There is a potential for increased sedimentation from erosion caused by grading activities and other causes during and following the construction period. Storm water runoff has the potential to transport sediment to nearby streams and storm drains if storm water BMPs are not properly implemented. The project will also result in a small increase in the impervious area and thus may contribute to higher runoff velocities that may increase sedimentation. Stormwater BMPs will be designed to dissipate this increased energy and reduce the capacity of the storm water runoff to carry increased sediment loads. Construction activities are planned for the dry summer months when storms are less likely to occur.

Corps Authority Information

Section 10 Conditions: The waterways within the project area lack sufficient consistency of flow to be considered navigable and are not considered Traditional Navigable Waters (TNW) as it applies to Section 10 of the Rivers and Harbors Act.

Section 404 only Conditions: There are waters of the U.S. within the project area that include water below the ordinary high water mark in areas containing bed and banks. The waters of the U.S. are permanently and temporarily impacted by the project in some areas.

<u>How project complies with the General Terms of Nationwide Permit #14 (Linear Transportation Projects)</u>

1) **Navigation**: There are no navigable waters in the project area.

2) **Proper Maintenance**: Caltrans is responsible for maintaining and repairing the roadway.
3) **Erosion and Siltation Controls**: Typical measures to control erosion and siltation include the application of soil stabilizers such as hydroseeding, netting, erosion control mats, biofiltration strips and rock slope protection. During construction, other erosion control procedures will be used such as mulch on all disturbed areas, fiber rolls along slopes, silt fences at the boundaries of the construction site, stabilized construction entrances and exits equipped with tire washing capability, and check dams placed strategically to reduce flow velocity and to filter flows in defined drainage-ways.
4) **Aquatic Life Movements**: For the stream crossing at Matadero Creek and Permanente Creek there will be some work within the creek beds and diversion of the flows may be necessary. Work will occur during the drier summer months when stream flows are expected to be at lower levels. The creeks do not provide habitat for anadromous fish. Measures will be implemented to minimize impacts to aquatic life during the construction and movement of aquatic life is expected to be only minimally affected.
5) **Equipment**: Equipment access within the bed and banks of the creeks may be necessary for the Matadero Creek and Permanente Creek stream crossings. Both Matadero Creek and Permanente Creek are concrete lined channels and therefore equipment access and construction in these areas is not expected to have permanent impacts to the bed and banks of the streams. Efforts to minimize the amount of sediment, equipment fuels and liquids and other pollutants to the stream will be implemented. Existing vegetation and environmentally sensitive areas will be marked off with fencing and avoided to the greatest extent feasible.
6) **Regional and Case-by-Case Conditions**: None applicable.
7) **Wild and Scenic Rivers:** There are no Wild and Scenic Rivers or tributaries to Wild and Scenic Rivers within the project area.
8) **Tribal Rights:** Not Applicable.
9) **Water Quality Certification:** A 401 permit or waiver will be obtained before construction.
10) **Coastal Zone Management:** The San Francisco Bay Development and Conservation Commission (BCDC) reviewed the project and determined that the project is not in a coastal management zone or zone within their jurisdiction.
11) **Endangered Species:** Please see the list of federally listed species in Table 2. Based on searches in Rarefind (CNDDB database searches) for the Mountain View quadrangle and eight surrounding quadrangles and plant and wildlife surveys of the proposed project area, the project is not expected to substantially impact any special status or endangered wildlife or plant species.
12) **Historic Properties:** JRP Historical Consulting, LLC conducted a background and resource specific archival research of buildings and properties in the project area and established that no historic properties have been identified.
13) **Notification:** This Pre-Construction Notification for Nationwide Permit #14 is hereby submitted to the U.S. Army Corps of Engineers and fulfills this Notification general condition.
14) **Compliance Certification:** A signed certification will be provided to the U.S. Army Corps of Engineers upon completion of the work, if requested.
15) **Multiple Use of Nationwide Permits:** Not applicable.
16) **Water Supply Intakes:** The project will not discharge material within the proximity of a public water supply intake.

17) **Shellfish:** No project activity will occur in areas of concentrated shellfish production.
18) **Suitable Material:** No project discharge, dredge, or fill material will consist of unsuitable material.
19) **Mitigation:** Temporary and permanent impacts to aquatic habitats within Matadero, Adobe and Permanente Creeks will be avoided to the maximum extent possible by limiting the access area to the minimum necessary to perform the proposed work. All construction work within the banks of the creeks will occur during the dry season (April 15-October 15). Standard BMP's will be implemented including standard erosion control and slope stabilization measures, measures to prevent construction materials from being placed in areas where they could be washed by rainfall into waters of the U.S. and measures to ensure machinery is refueled at least 60 feet from any aquatic habitat.
20) **Spawning Areas:** The waterways within the project area are not accessible for anadromous fish due to obstructions downstream of the project site and thus the project is unlikely to affect spawning areas.
21) **Obstruction of High Flows:** The proposed construction for the project will occur during the summer dry season when flows are minimal. The completed bridges will not create an impoundment of water nor otherwise obstruct high water flows.
22) **Waterfowl Breeding Areas:** This project will comply with the Migratory Bird Act. It is not anticipated that discharges will occur in breeding areas for migratory waterfowl.
23) **Removal of Temporary Fills:** Not applicable.

How project complies with the terms of Nationwide Permit #14 (Linear Transportation Projects)

NWP #14 (Linear Transportation Projects)

This project includes the widening of an existing highway (linear transportation project), to ease traffic conditions. Mechanized land clearing will be kept to the minimum possible and preconstruction contours will be maintained to the greatest extent possible. Approximately 0.022 acre (270 cubic yards) of permanent fill and 0.382 acre (____ cubic yards) of temporary fill of U.S. Waters is anticipated for the project.

Special Conditions
An integral part of the project development and planning has been avoidance and/or minimization of potential impacts to sensitive species and habitats. Therefore, where feasible, the project footprint and access areas avoid sensitive habitat.

The following measures will be applied across the entire right-of-way to avoid and/or minimize any impacts to sensitive species and their habitat.

Avoidance and Minimization Measures for Plant Species
To avoid and minimize the potential effects of the project to plant species within the study area the clearing of vegetation for the project will be confined to the minimal area needed to conduct the construction activities. No special status plants were identified in the project area and thus no special status plants are expected to be impacted by the project.

General Avoidance and Minimization Measures for Wildlife
To avoid and minimize the potential effects of the project to migratory bird species that are protected in the Migratory Bird and Treaty Act (MBTA) and the California Fish and Game code the following conservation measures will be implemented:

- Vegetation that will be impacted by the project will be removed during the nonbreeding season (i.e., September 1st to February 14th), if feasible, to help preclude nesting. If it is not feasible to schedule vegetation removal during the nonbreeding season, then pre-construction surveys for nesting birds will be conducted by a qualified ornithologist to ensure that no nests will be disturbed during project implementation. This survey will be conducted no more than seven days prior to the initiation of construction activities. During this survey, the ornithologist will inspect all trees, shrubs, and other potential nesting habitats in and immediately adjacent to the impact areas for nests. If an active nest is found sufficiently close to work areas to be disturbed by these activities, the ornithologist, in consultation with CDFG, will determine the extent of a buffer zone to be established around the nest, typically 250 feet for raptors and 50 feet for other birds.

- At the Adobe Creek and Matadero Creek bridges, to avoid impacts to nesting swallows and black phoebes, old nests should be removed prior to February 15th, or after February 15th if a qualified ornithologist determines that the nests are not active. Maintaining bridges free from nesting birds may require the placement of netting or other structures over the underside of the bridges to prevent swallows and other birds from accessing suitable nesting substrate. Alternatively, nest starts may be removed on a regular basis (e.g., every other day) to prevent active nests from becoming established.

Roosting bat habitat is present on the Matadero Creek Bridge and the Adobe Creek Bridge. Bat roosting surveys were conducted by H. T. Harvey and Associate ecologists on August 22, 2007, November 8, 2007 and June 17, 2008. Matadero Creek Bridge contains roosting habitat for wintering Yuma myotis and Mexican free tailed bats. Because of the number of individuals using this roosting site, the relative rarity of this type of roost site in the landscape, and the presence of a least three species of bats makes the Matadero Creek bridge a regionally important roost site. Proposed conservation measures to avoid and minimize impacts to roosting bats include:

- If pile driving, jack hammering on the bridge abutments, intense lighting under the bridge or near the roost cavities, or other extreme disturbances will occur, the bats will be evicted from the roost during the non-breeding season preceding these extreme

disturbances. A qualified bat biologist will exclude the roosting bats using one-way doors fixed to roost entrances. Eviction of bats will occur at night, so that bats will have less potential for predation compared to daytime roost abandonment. Eviction will occur between September 1st and March 31st, outside the maternity season, but will not occur during long periods of inclement or cold weather (as determined by the bat biologist) when prey are not available or bats are in torpor. The one-way doors used to evict the bats will be inspected periodically and maintained from the time of installation through the completion of the extreme disturbance to ensure that they are functioning properly. The exclusion devices will be removed following the conclusion of the extreme disturbance, as determined by the bat biologist.

- To avoid the long-term abandonment of the colony and minimize the loss of evicted individuals, an appropriate bat condominium, as defined by a bat biologist, will be placed in a suitable, conspicuous location (e.g., the edge of a marsh or other open area) between 500 and 1,000 feet from the existing roost. The bat condominium will be installed one year before the commencement of construction (under both the extreme or minimal disturbance scenarios) and at least six months before bats are excluded from the existing roost (under the extreme disturbance scenario). The existing roost and the bat condominium will be visually checked by a qualified bat biologist within five days prior to exclusion to ascertain whether bats have occupied the condominium in advance of construction. The bridge roost and the condominium would also be checked visually at least once during the maternity season for up to three years after the completion of construction. Monitoring will cease prior to Year-3 if it is determined that one structure or the other has been occupied by bats during the maternity season.

- If construction can occur without extreme disturbances, the colony will not be excluded, since the exclusion could have more of an adverse effect on the bat colony than maintaining the bats' access to the colony and subjecting them to some increase in disturbance during construction. To inform the impact assessment of, and the development of impact minimization measures for, similar projects in the future, some minimal information on the increase in disturbance to which bats are subjected during construction and on the bats' response to that disturbance will be collected. A qualified biologist will determine the status of the colony (i.e., whether it is active, and the approximate numbers of bats) by a visual inspection of the bridge within five days prior to the initiation of construction. Baseline data on the vibration and sound levels at the bridge site will also be collected for a minimum of two days within five days of construction commencement. Following this pre-construction, baseline monitoring, the colony will then be monitored every night during construction using acoustic surveying methods, such as Anabat equipment, to determine the status of the colony (i.e., to determine if the colony abandons the roost). The majority of this construction monitoring will be done remotely with acoustic surveying equipment and will not require a surveyor to be present every night during construction. Monitoring equipment will also be used to sample construction-related increases in noise and vibration. Project implementation will not have to be modified based on the findings of this monitoring, even if the bats abandon the roost. However, these data will allow for a determination of whether or not the bats remained at the bridge during construction and/or changed their activity patterns in relation to varying levels of noise and vibration.

Project Mitigation Information

The impacts of the project to waters of the U.S. at Matadero Creek and Permanente Creek are minor due to the avoidance and minimization measures described above, the existing concrete channelization and the temporary nature of the impacts of the construction work. If

compensatory mitigation is required for the small area of waters of the U.S. impacted by the project then the compensation will include the purchase of mitigation credits at an offsite USFWS approved mitigation bank and will be mitigated at a 1:1 ratio.

Stormwater Best Management Practices (BMPs)

Treatment BMPs

Added and reworked impervious areas for this project are greater then 1 acre and therefore permanent treatment BMPs were considered for the purpose of avoiding and minimizing erosion, sedimentation and degradation to water quality that may occur over the long term. Biofiltration strips and biofiltration swales were selected as the most effective and feasible options and will be constructed at many locations throughout the project. Treatment BMPs are described in more detail in the Stormwater Data Report.

Construction BMPs

The project involves moving more then 1 acre of soil and thus a Stormwater Pollution Prevention Plan (SWPPP) will be prepared and would identify stormwater BMPs to reduce water quality impacts during construction. The following measures will be implemented for avoiding and minimizing impacts of the project to water quality.

For soil stabilization at the site, temporary covers would be placed over temporary stockpiles of disturbed soil, and temporary hydraulic mulch would be placed on any exposed disturbed soils that may susceptible from erosion from runoff or wind. For sediment control, temporary silt fences and fiber rolls will be used to minimize sediment transport to drainage inlets, drainage ditches or other receiving water bodies.

No debris, soil, silt, sand, bark, slash, sawdust, cement, concrete, washings, petroleum products or other organic or earthen material shall be allowed to enter into or placed where it may be washed by rainfall or runoff into any waterways.

Special or sensitive sites (e.g., riparian corridors and drainages) identified as places where construction equipment is not allowed, will be clearly marked on site before any construction or surface-disturbing activities begin. Construction personnel will be trained to recognize these markers and understand the equipment movement restrictions involved. Ecologically sensitive area (ESA) fencing will be maintained until final cleanup and restoration is completed, after which it will be removed.

Exiting site vegetation will be preserved to the extent feasible. Clearing and grubbing would be limited to the strip areas between the freeway and local streets or properties. Active paved construction areas will be swept and washed as needed.

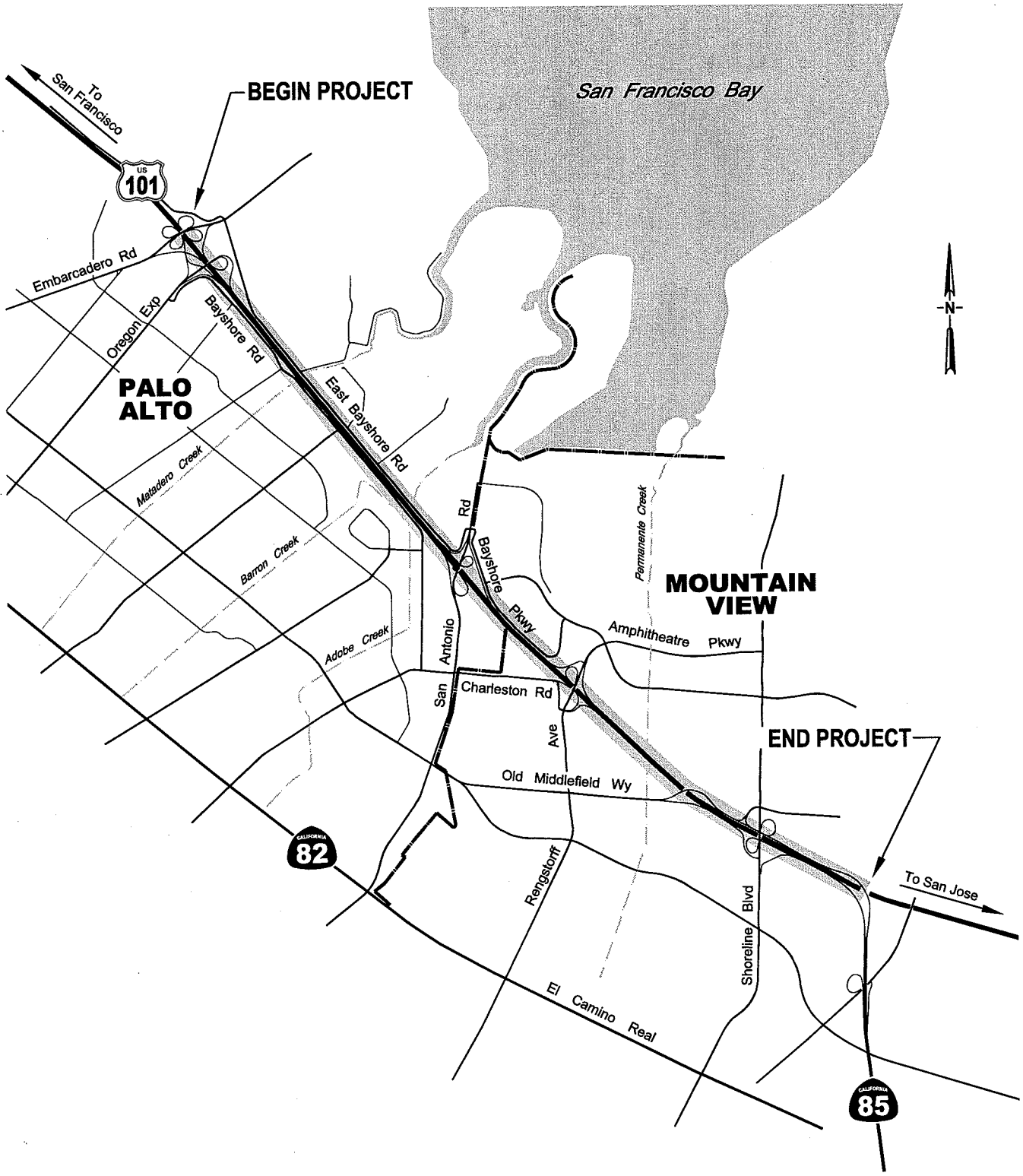
Table 1: Potential for Federally Threatened and Endangered Species to Occur in the Project Area.

Common Name	Scientific Name	Status	General Habitat Description	Habitat/ Species Present/ Absent	Rationale
Federal or State Endangered or Threatened Species					
Robust Spineflower	*Chorizanthe robusta var. robusta*	FE	Very sandy or gravelly maritime chaparral, cismontane woodland openings, coastal dunes and scrub	A	No suitably dry, well-drained, coarse, loose, mineral soils in area; determined to be absent.
Contra Costa Goldfields	*Lasthenia conjugens*	FE	Mesic, often alkaline cismontane woodland, playas, valley and foothill grassland, vernal pools	A	Species presumed extirpated from Santa Clara County, all marginally suitable habitat within BSA highly invaded and disturbed; determined to be absent.
California Seablite	*Suaeda californica*	FE	Marshes and swamps with coastal salt influences	A	All known populations in San Francisco Bay now extirpated, all areas within BSA with estuarine influence are highly disturbed, have scouring flows and sediment control; determined to be absent.
Vernal Pool Fairy Shrimp	*Branchinecta lynchi*	FT	Various vernal pool habitats: small, clear, sandstone rock pools to large, turbid, alkaline, grassland valley floor pools.	A	No suitable habitat present; determined to be absent.
Bay Checkerspot Butterfly	*Euphydryas editha bayensis*	FT	Serpentine grasslands in the San Francisco Bay Area where primary larval host plant (*Plantago erecta*) is present in high densities.	A	No suitable habitat present; determined to be absent.
Green Sturgeon	*Acipenser medirostris*	FT	Spawn in lower reaches of large rivers with swift currents and large cobble	A	No suitable habitat present; determined to be absent.
Tidewater Goby	*Eucyclogobius newberryi*	FE	Coastal lagoons, estuaries, and marshes with relatively low salinities	HP/SA	Extirpated from South San Francisco Bay; determined to be absent.
Delta Smelt	*Hypomesus transpacificus*	FT	Shallow, tidal water in Sacramento/San Joaquin River Delta	A	Outside known range; determined to be absent.

Common Name	Scientific Name	Status	General Habitat Description	Habitat/ Species Present/ Absent	Rationale
Steelhead (Central California Coastal DPS)	*Oncorhynchus mykiss*	FT	Cool streams that reach the ocean and that have shallow partially shaded, pools, riffles, and runs.	HP/SA	Tide gates prevent access to Matadero and Adobe Creeks; unsuitable conditions for spawning in these and Permanent Creek; determined to be absent from all creeks in BSA (Leidy 2005; Schane 2007).
Steelhead (Central Valley DPS)	*Oncorhynchus mykiss*	FT	Cool streams that reach the ocean and that have shallow partially shaded, pools, riffles, and runs. Sacramento and San Joaquin River tributaries, excludes San Francisco Bay and tributaries.	A	Outside of known range; determined to be absent.
Coho Salmon (Central CA coast ESU)	*Oncorhynchus kisutch*	FE	Cool streams that reach the ocean and that have shallow partially shaded, pools, riffles, and runs. San Francisco Bay tributaries.	HP/SA	Tide gates prevent access to Matadero and Adobe Creeks; determined to be absent from all creeks in BSA (Leidy 2005; Schane 2007).
Spring-run Chinook Salmon (Central Valley ESU)	*Oncorhynchus tshawytscha*	FT	Cool streams that reach the ocean and that have shallow partially shaded, pools, riffles, and runs. Sacramento River tributaries.	A	Outside of known range; determined to be absent.
Winter-run Chinook Salmon (Sacramento River ESU)	*Oncorhynchus tshawytscha*	FE	Cool streams that reach the ocean and that have shallow partially shaded, pools, riffles, and runs. Sacramento River tributaries.	A	Outside of known range; determined to be absent.
Alameda Whipsnake	*Masticophis lateralis euryxanthus*	FT	South-facing slopes and ravines; mosaic habitat of shrubs, oaks and grasslands	A	No suitable habitat present; determined to be absent.
San Francisco Garter Snake	*Thamnophis sirtalis tetrataenia*	FE, FP	Forages in quiet pools and adjacent lands primarily in San Mateo County.	A	Outside of known range; determined to be absent.
California Red-legged Frog	*Rana draytonii*	FT	Streams, freshwater pools and ponds with overhanging vegetation.	A	No suitable habitat present; extirpated from project vicinity due to urbanization; determined to be absent.
California Tiger Salamander	*Ambystoma californiense*	FT	Vernal or temporary pools in annual grasslands or open woodlands.	A	No suitable habitat present; determined to be absent.
California Least Tern	*Sterna antillarum browni*	FE	Breeds on bare or sparsely vegetated, flat substrates.	A	No suitable habitat present; determined to be absent.

Common Name	Scientific Name	Status	General Habitat Description	Habitat/ Species Present/ Absent	Rationale
Western Snowy Plover	*Charadrius alexandrinus nivosus*	FT	Sandy beaches, salt pond levees, shores of large alkali lakes.	A	No suitable habitat present; determined to be absent.
California Brown Pelican	*Pelecanus occidentalis californicus*	FE	Breed on islands without mammalian predators	A	No suitable habitat present; determined to be absent.
California Clapper Rail	*Rallus longirostris obsoletus*	FE	Salt-water and brackish marshes with tidal influence with associated pickleweed.	A	No suitable habitat present; determined to be absent.
Marbled Murrelet	*Brachyramphus marmoratus*	FT	Nests in old-growth forests, forages in coastal waters.	A	Outside known range. No suitable habitat present; determined to be absent.
Salt Marsh Harvest Mouse	*Reithrodontomys raviventris*	FE	Marshes with pickleweed or other salt-tolerant plants. Adjoining grasslands during high winter tides.	A	No suitable habitat present; determined to be absent.
San Joaquin Kit Fox	*Vulpes macrotis mutica*	FE	Annual grasslands or grassy open stages with scattered shrubbery vegetation	A	Outside known range; determined to be absent.

FE = Endangered Species per the Endangered Species Act
FT = Threatened Species per the Endangered Species Act
A = Absent
HP = Habitat Present
SA = Species Absent



ON ROUTE 101 BETWEEN THE EMBARCADERO ROAD INTERCHANGE AND THE ROUTE 85 INTERCHANGE

PROJECT LOCATION MAP
Attachment B

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS
1455 MARKET STREET
SAN FRANCISCO, CALIFORNIA 94103-1398

REPLY TO

DEC 29 2009

Regulatory Division

SUBJECT: File Number SPN-2007-00885 S

Ms. Christina Jaworski
Santa Clara Valley Transportation Authority
3331 North First Street
San Jose, California 95134-1927

Dear Ms. Jaworski:

This letter is written in response to your November 8, 2007, request to confirm the extent of Corps of Engineers jurisdiction in an approximately 139.4-acre study area for the Highway 101 Auxiliary Lanes Project from Embarcadero Road to State Route 85 near the City of Palo Alto, in Santa Clara County, California.

Enclosed is a map, dated October 2009, showing the extent and location of Corps of Engineers jurisdiction. We have based this jurisdictional delineation on the current conditions on the site as verified during a site visit performed by our staff on September 30, 2009. There are approximately 0.90 acres of waters of the U.S. in the study area, including Adobe Creek, Matadero Creek, and Permanente Creek. A change in those conditions may also change the extent of our jurisdiction. This jurisdictional delineation will expire in five years from the date of this letter. However, if there has been a change in circumstances that affects the extent of Corps jurisdiction, a revision may be completed before that date.

You are advised that the Corps has established an Administrative Appeal Process, as described in 33 C.F.R. Part 331 (65 Fed. Reg. 16,486; March 28, 2000), and outlined in the enclosed flowchart and "Notification of Administrative Appeal Options, Process, and Request for Appeal" form (NAO-RFA). If you do not intend to accept the approved jurisdictional determination, you may elect to provide new information to the District Engineer for reconsideration or submit a completed NAO-RFA form to the Division Engineer to initiate the appeal process. You will relinquish all rights to appeal, unless the Corps receives new information or a completed NAO-RFA form within sixty (60) days of the date of the NAO-RFA.

Should you have any questions regarding this matter, please call Andrea Meier of our Regulatory Division at 415-503-6798 or email her at andrea.j.meier@usace.army.mil. Please address all correspondence to the Regulatory Division and refer to the File Number at the head of this letter. If you would like to provide comments on our permit review process, please complete the Customer Survey Form available online at http://per2.nwp.usace.army.mil/survey.html.

Sincerely,

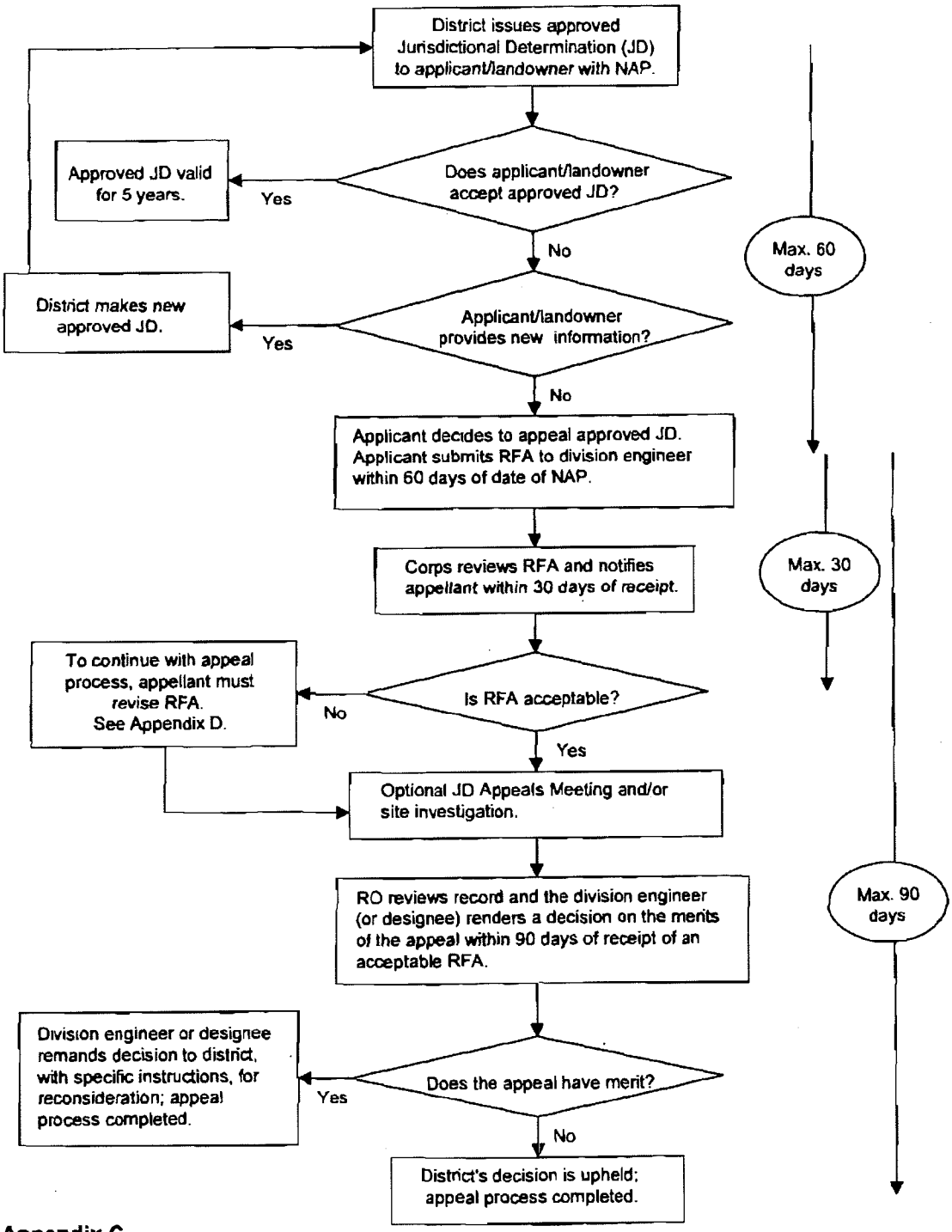
Jane M. Hicks
Chief, Regulatory Division

Enclosures

Copy furnished:

CA RWQCB, Oakland, CA

Administrative Appeal Process for Approved Jurisdictional Determinations



Appendix C

Applicant: California Department of Transportation	File Number: SPN-2007-00885 S	Date: Dec 14, 2009
Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	FINAL PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
X	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://usace.army.mil/inet/functions/cw/cecwo/reg or Corps Regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the DISTRICT Engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- OBJECT: If you object to the initial proffered permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this Notice and return the Notice to the DISTRICT Engineer. Your objections must be received by the DISTRICT Engineer within 60 days of the date of this Notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your Notice, the DISTRICT Engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the DISTRICT Engineer will send you a final proffered permit for your reconsideration, as indicated in Section B below.

B: FINAL PROFFERED PERMIT: You may accept or decline/appeal the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the DISTRICT Engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- APPEAL: If you choose to decline the final proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this Notice and sending the form to the DIVISION (not District) Engineer (address on reverse). This Notice must be received by the DIVISION (not District) Engineer within 60 days of the date of this Notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this Notice and sending the Notice to the DIVISION (not District) Engineer (address on reverse). This Notice must be received by the DIVISION (not District) Engineer within 60 days of the date of this Notice.

D: APPROVED JURISDICTIONAL DETERMINATION (JD): You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this Notice means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this Notice and sending the Notice to the DIVISION (not District) Engineer (address on reverse). This Notice must be received by the DIVISION Engineer within 60 days of the date of this Notice. JD appeals based on NEW information must be submitted to the DISTRICT Engineer within 60 days of the date of this Notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION (JD): You do not need to respond to the Corps regarding the preliminary JD. The preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps District for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT, FINAL PROFFERED PERMIT, PERMIT DENIAL, or JURISDICTIONAL DETERMINATION

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this Notice to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record; the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the Review Officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact the DISTRICT ENGINEER: U.S. Army Corps of Engineers, San Francisco Division 1455 Market Street, San Francisco, CA 94103-1398 Attn: Andrea Meier, Project Manager Tel.: (415) 503-6798 Fax: (415) 503-6690	If you only have questions regarding the appeal process you may also contact the DISTRICT ENGINEER: U.S. Army Corps of Engineers, South Pacific Division 1455 Market Street, San Francisco, CA 94103-1398 Attn: Cameron Johnson, Chief, South Section Tel.: (415) 503-6790 Fax: (415) 503-6693

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15-day notice of any site investigation, and will have the opportunity to participate in all site investigations.

Signature of Appellant or Agent	Date:	Telephone Number:

Applicant: California Department of Transportation	File Number: SPN-2007-00885 S	Date: Dec 14, 2009
Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	FINAL PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
X	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://usace.army.mil/inet/functions/cw/cecwo/reg or Corps Regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit doeument and return it to the DISTRICT Engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- OBJECT: If you object to the initial proffered permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this Notice and return the Notice to the DISTRICT Engineer. Your objections must be received by the DISTRICT Engineer within 60 days of the date of this Notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your Notice, the DISTRICT Engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the DISTRICT Engineer will send you a final proffered permit for your reconsideration, as indicated in Section B below.

B: FINAL PROFFERED PERMIT: You may accept or decline/appeal the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the DISTRICT Engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- APPEAL: If you choose to decline the final proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this Notice and sending the form to the DIVISION (not District) Engineer (address on reverse). This Notice must be received by the DIVISION (not District) Engineer within 60 days of the date of this Notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this Notice and sending the Notice to the DIVISION (not District) Engineer (address on reverse). This Notice must be received by the DIVISION (not District) Engineer within 60 days of the date of this Notice.

D: APPROVED JURISDICTIONAL DETERMINATION (JD): You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this Notice means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this Notice and sending the Notice to the DIVISION (not District) Engineer (address on reverse). This Notice must be received by the DIVISION Engineer within 60 days of the date of this Notice. JD appeals based on NEW information must be submitted to the DISTRICT Engineer within 60 days of the date of this Notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION (JD): You do not need to respond to the Corps regarding the preliminary JD. The preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps District for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT, FINAL PROFFERED PERMIT, PERMIT DENIAL, or JURISDICTIONAL DETERMINATION

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this Notice to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record; the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the Review Officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact the DISTRICT ENGINEER: U.S. Army Corps of Engineers, San Francisco Division 1455 Market Street, San Francisco, CA 94103-1398 Attn: Andrea Meier, Project Manager Tel.: (415) 503-6798 Fax: (415) 503-6690	If you only have questions regarding the appeal process you may also contact the DISTRICT ENGINEER: U.S. Army Corps of Engineers, South Pacific Division 1455 Market Street, San Francisco, CA 94103-1398 Attn: Cameron Johnson, Chief, South Section Tel.: (415) 503-6790 Fax: (415) 503-6693

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15-day notice of any site investigation, and will have the opportunity to participate in all site investigations.

_____ Signature of Appellant or Agent	Date:	Telephone Number:

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

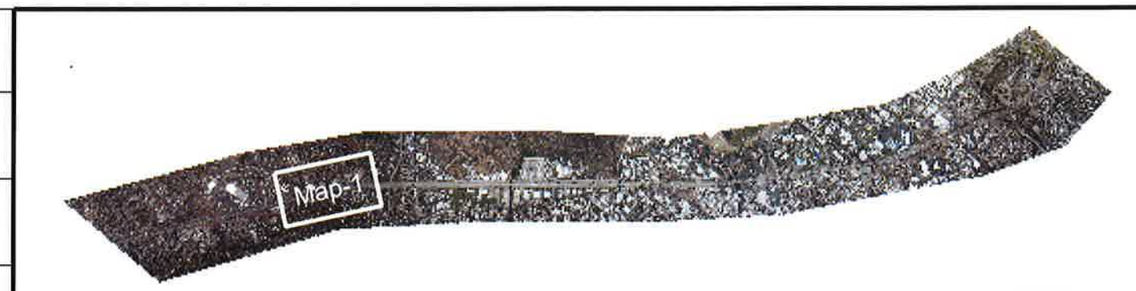
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

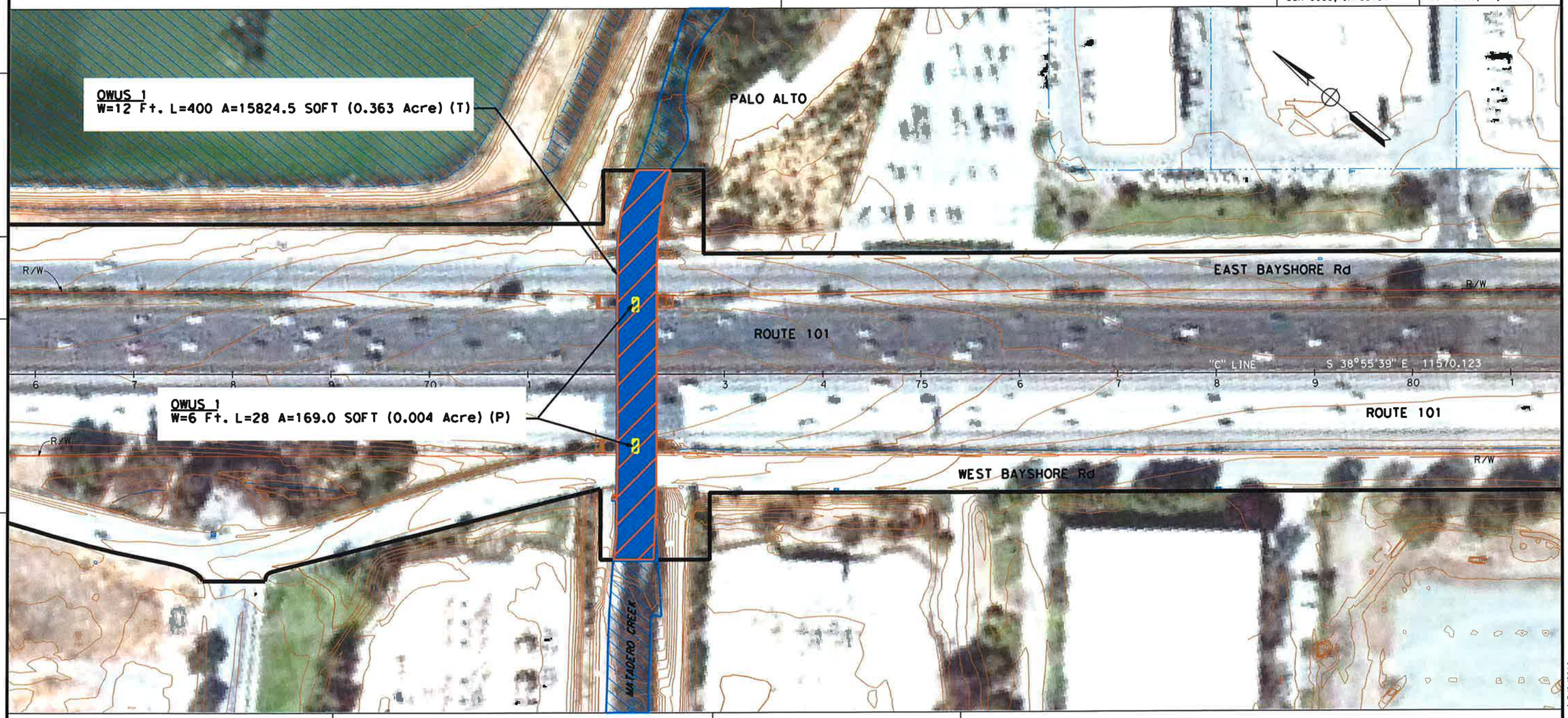
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

Santa Clara Valley Transportation Authority
3331 N First Street
San Jose, CA 95134

URS Corporation
55 S Market Street
Suite 1500
San Jose, CA, 95113

US 101 AUXILIARY LANES PROJECT
BEGIN CONSTRUCTION STA 215+00 PM 48.8
END CONSTRUCTION STA 47+28 PM 51.9





SHEET 1 SUBTOTAL:

OTHER WATER IMPACTS:
PERMANENT = 169.0 SQFT, 0.004 ACRE
TEMPORARY = 15824.5 SQFT, 0.363 ACRE

0 150 FEET

LEGEND:

- ENVIRONMENTAL STUDY LIMIT
- CONTOUR LINES
- PERMANENT IMPACTS
- TEMPORARY IMPACTS
- WATER OF THE US (CULVERTED)
- WATER OF THE US (OTHER WATERS)
- OHW ELEVATION = 9Ft.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY | CHECKED BY | REVISED BY | DATE REVISED

LAST REVISION 00-00-00 | DATE PLOTTED => 3/2/2010 | TIME PLOTTED => 9:42:00 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => ernie_garnica
DGN FILE => ...\Env-Plans\MadCreek01.dgn

CU 04235

EA 4A3301

MadCreek01.dgn 3/2/2010 9:42:00 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

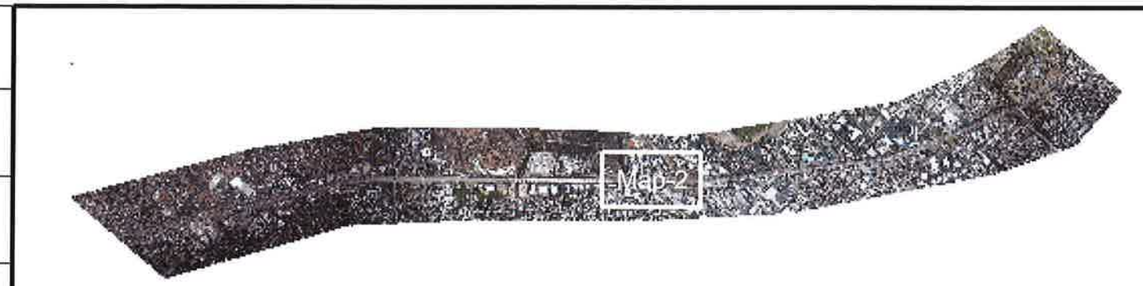
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

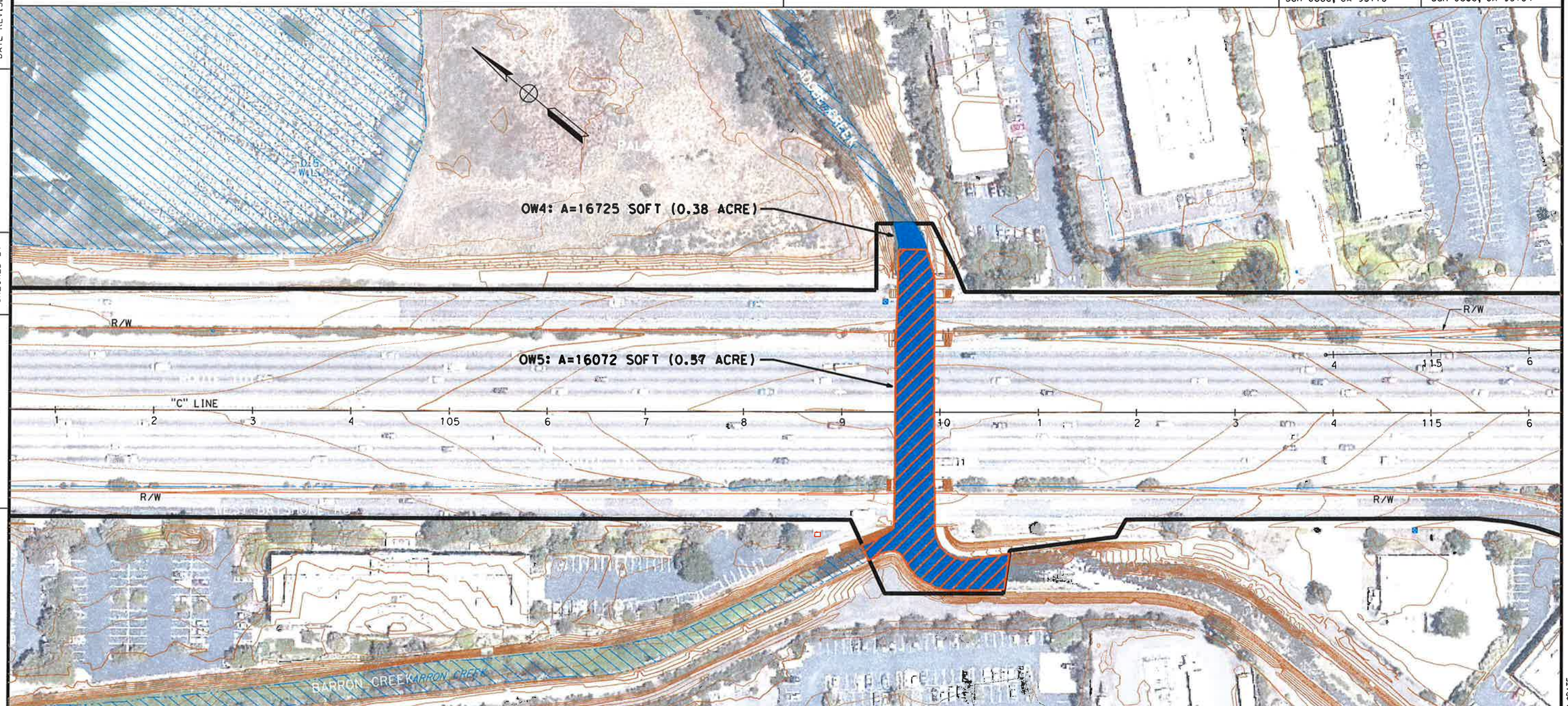
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

US 101 AUXILIARY LANES PROJECT
BEGIN CONSTRUCTION STA 215+00 PM 48.8
END CONSTRUCTION STA 47+28 PM 51.9





SHEET 2 SUBTOTAL:

OTHER WATER IMPACTS:
PERMANENT = 0 SQFT, 0 ACRE
TEMPORARY = 16072 SQFT, 0.37 ACRE

0 150 FEET

LEGEND:

- ENVIRONMENTAL STUDY LIMIT
- CONTOUR LINES
- PERMANENT IMPACTS
- TEMPORARY IMPACTS
- WATER OF THE US (CULVERTED)
- WATER OF THE US (OTHER WATERS)
- OHM ELEVATION = 3Ft.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => $DATE
TIME PLOTTED => $TIME

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => $USER
DGN FILE => $REQUEST

CU 04235

EA 4A3301

AdobeCreek01.dgn 3/9/2010 11:35:40 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

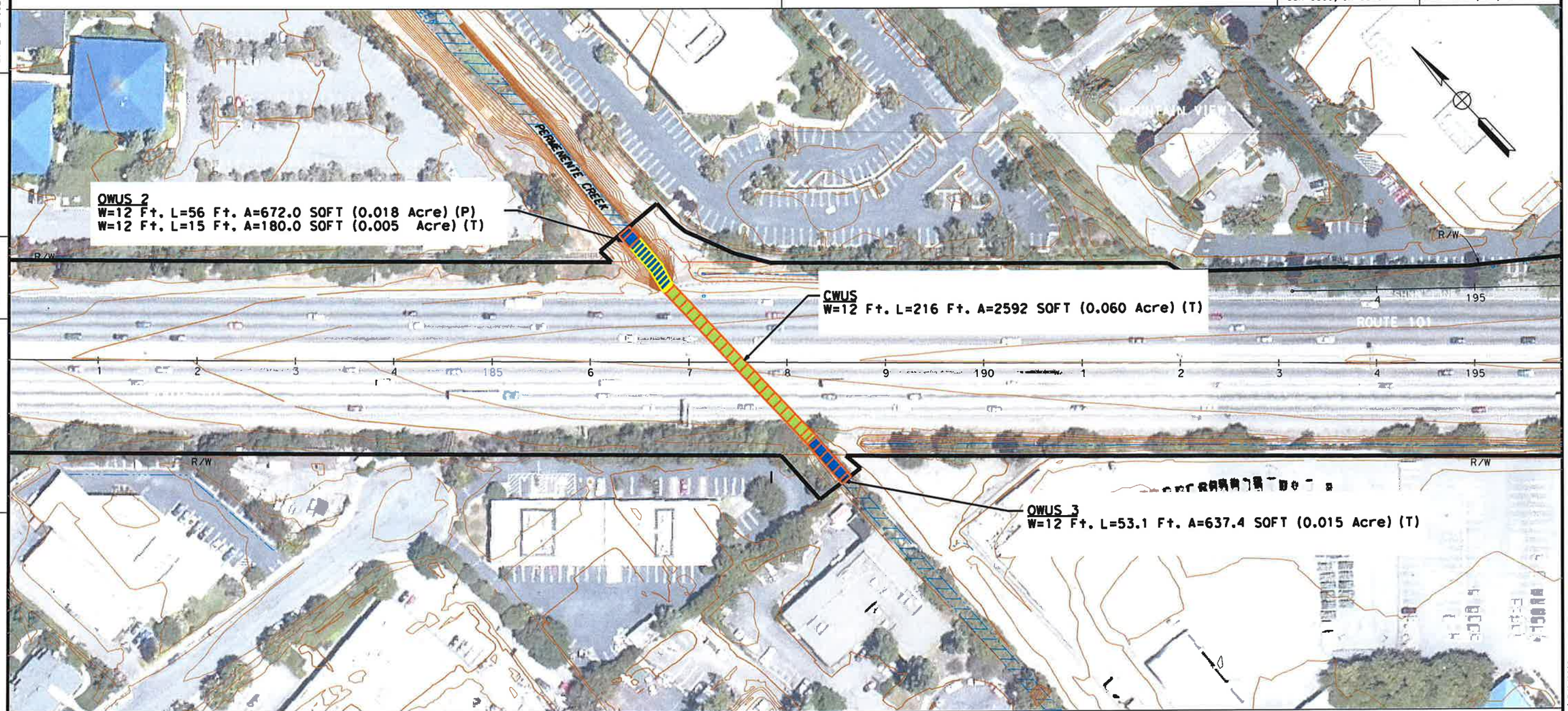
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

Santa Clara Valley Transportation Authority
3331 N First Street
San Jose, CA 95134

URS Corporation
55 S Market Street
Suite 1500
San Jose, CA, 95113

US 101 AUXILIARY LANES PROJECT
BEGIN CONSTRUCTION STA 215+00 PM 48.8
END CONSTRUCTION STA 47+28 PM 51.9



SHEET 3 SUBTOTAL:

OTHER WATER IMPACTS:
PERMANENT = 780.4 SQFT, 0.018 ACRE
TEMPORARY = 823.2 SQFT, 0.019 ACRE

CULVERTED WATER IMPACTS:
TEMPORARY = 2592 SQFT, 0.060 ACRE

0 150 FEET

LEGEND:

- ENVIRONMENTAL STUDY LIMIT
- CONTOUR LINES
- PERMANENT IMPACTS
- TEMPORARY IMPACTS
- WATER OF THE US (CULVERTED)
- WATER OF THE US (OTHER WATERS)
- OHM ELEVATION = 2Ft.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 3/2/2010
TIME PLOTTED => 9:41:17 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => ernie_garnica
DGN FILE => ...\Env-Plans\PerCreek01.dgn

CU 04235

EA 4A3301

PerCreek01.dgn 3/2/2010 9:41:17 AM

State of California – The Natural Resources Agency
DEPARTMENT OF FISH AND GAME
Bay Delta Region
7329 Silverado Trail
Napa, California 94558
(707) 944-5520
www.dfg.ca.gov

EDMUND G. BROWN, Jr, Governor

February 15, 2011

Mr. Paul Mai
California Department of Transportation
111 Grand Avenue
Oakland, CA 94612

Subject: Notification of Lake or Streambed Alteration No. 1600-2010-0373-R3
U.S. Highway 101 Auxiliary Lanes Project (State Route 85 to Embarcadero Road) impacting Matadero, Adobe, Barron, and Permanente Creeks, tributary to San Francisco Bay

Dear Mr. Mai:

The Department had until February 7, 2011 to submit a draft Lake or Streambed Alteration Agreement ("Agreement") to you or inform you that an Agreement is not required. The Department did not meet that date. As a result, by law, you may now complete the project described in your notification without an Agreement.

Please note that pursuant to Fish and Game Code section 1602(a)(4)(D), if you proceed with this project, it must be the same as described and conducted in the same manner as specified in the notification and any modifications to that notification received by the Department in writing prior to February 7, 2011. This includes completing the project within the proposed term and seasonal work period and implementing all avoidance and mitigation measures to protect fish and wildlife resources specified in the notification. If the term proposed in your notification has expired, you will need to re-notify the Department before you may begin your project. Beginning or completing a project that differs in any way from the one described in the notification may constitute a violation of Fish and Game Code section 1602.

Also note that while you are entitled to complete the project without an Agreement, you are still responsible for complying with other applicable local, state, and federal laws. These include, but are not limited to, the state and federal Endangered Species Acts and Fish and Game Code sections 5650 (water pollution) and 5901 (fish passage).

Finally, if you decide to proceed with your project without an Agreement, you must have a copy of this letter and your notification with all attachments available at all times at the work site. If you have any questions regarding this matter, please contact Dave Johnston, Environmental Scientist, at (831) 464-6870 or djohnston@dfg.ca.gov.

Sincerely,

Liam Davis
Habitat Conservation Supervisor
Bay Delta Region

cc: Dave Johnston
Lieutenant Nores
Warden Rodriguez

FOR DEPARTMENT USE ONLY				
Date Received	Amount Received	Amount Due	Date Complete	Notification No.
	$	$		

STATE OF CALIFORNIA

DEPARTMENT OF FISH AND GAME

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

Complete EACH field, unless otherwise indicated, following the enclosed instructions and submit ALL required enclosures. Attach additional pages, if necessary.

1. APPLICANT PROPOSING PROJECT

Name	Kevin Melanephy		
Business/Agency	California Department of Transportation (Caltrans)		
Street Address	111 Grand Avenue		
City, State, Zip	Oakland, CA 94612		
Telephone	(510) 286-4444	Fax	
Email	Kevin.Melanephy@dot.ca.gov		

2. CONTACT PERSON (*Complete only if different from applicant*)

Name			
Street Address			
City, State, Zip			
Telephone		Fax	
Email			

3. PROPERTY OWNER (*Complete only if different from applicant*)

Name			
Street Address			
City, State, Zip			
Telephone		Fax	
Email			

4. PROJECT NAME AND AGREEMENT TERM

A. Project Name	U.S. Highway 101 Auxiliary Lanes Project (State Route 85 to Embarcadero Road)			
B. Agreement Term Requested	☑ Regular (*5 years or less*) ☐ Long-term (*greater than 5 years*)			
C. Project Term		D. Seasonal Work Period		E. Number of Work Days
Beginning (*year*)	Ending (*year*)	Start Date (*month/day*)	End Date (*month/day*)	
2011	2013	04/16	10/14	905.00

5. AGREEMENT TYPE

Check the applicable box. If box B, C, D, or E is checked, complete the specified attachment.

A.	☑ Standard *(Most construction projects, excluding the categories listed below)*	
B.	☐ Gravel/Sand/Rock Extraction (*Attachment A*)	*Mine I.D. Number:* _____
C.	☐ Timber Harvesting (*Attachment B*)	THP *Number:* _____
D.	☐ Water Diversion/Extraction/Impoundment (*Attachment C*)	*SWRCB Number:* _____
E.	☐ Routine Maintenance (*Attachment D*)	
F.	☐ DFG Fisheries Restoration Grant Program (FRGP)	*FRGP Contract Number:* _____
G.	☐ Master	
H.	☐ Master Timber Harvesting	

6. FEES

Please see the current fee schedule to determine the appropriate notification fee. Itemize each project's estimated cost and corresponding fee. ***Note: The Department may not process this notification until the correct fee has been received.***

	A. Project	B. Project Cost	C. Project Fee
1	U.S. 101 Auxiliary Lanes Project (SR 85 to Embarcadero Road)	$3,900,000.00	$4,000.00
2			
3			
4			
5			
		D. Base Fee *(if applicable)*	
		E. TOTAL FEE ENCLOSED	$4,000.00

7. PRIOR NOTIFICATION OR ORDER

A. Has a notification previously been submitted to, or a Lake or Streambed Alteration Agreement previously been issued by, the Department for the project described in this notification?

☐ Yes (*Provide the information below*) ☑ No

Applicant: _____ Notification Number: _____ Date: _____

B. Is this notification being submitted in response to an order, notice, or other directive ("order") by a court or administrative agency (including the Department)?

☑ No ☐ Yes (*Enclose a copy of the order, notice, or other directive. If the directive is not in writing, identify the person who directed the applicant to submit this notification and the agency he or she represents, and describe the circumstances relating to the order.*)

☐ *Continued on additional page(s)*

8. PROJECT LOCATION

A. Address or description of project location.

(Include a map that marks the location of the project with a reference to the nearest city or town, and provide driving directions from a major road or highway)

The project is located on U.S. 101 between Embarcadero Rd. and the State Route 85 interchange, a distance of approximately 3.2 miles in the cities of Mountain View and Palo Alto in northwest Santa Clara County. The latitude is between 37.449° and 37.408° North and between longitude 121.122° and 121.070° West or T6S R2W on the Mountain View U.S.G.S. 7.5 Minute Quadrangle at elevations ranging between 4 to 40 feet above mean sea level. Project Location map provided.

For directions from Napa, take Highway 29 south towards Vallejo. Merge onto Highway 37 via the ramp to I-80 West towards San Francisco. After crossing the San Francisco Bay Bridge merge on to southbound U.S. 101. Travel approximately 30 miles on U.S. 101 until you reach the project site that begins at the junction of U.S. 101 and Embarcadero Road.

☐ *Continued on additional page(s)*

B. River, stream, or lake affected by the project.	Matadero Creek, Adobe Creek and Permanente Creek
C. What water body is the river, stream, or lake tributary to?	San Francisco Bay
D. Is the river or stream segment affected by the project listed in the state or federal Wild and Scenic Rivers Acts?	☐ Yes ☑ No ☐ Unknown
E. County	Santa Clara

F. USGS 7.5 Minute Quad Map Name	G. Township	H. Range	I. Section	J. ¼ Section
Mountain View	6S	2W	NA	NA

☐ *Continued on additional page(s)*

K. Meridian (*check one*) ☐ Humboldt ☑ Mt. Diablo ☐ San Bernardino

L. Assessor's Parcel Number(s)

☐ *Continued on additional page(s)*

M. Coordinates (*If available, provide at least latitude/longitude or UTM coordinates and check appropriate boxes*)

Latitude/Longitude	*Latitude:* 37.449	*Longitude:* -121.122	
	☐ Degrees/Minutes/Seconds	☑ Decimal Degrees	☐ Decimal Minutes
UTM	*Easting:*	*Northing:*	☐ Zone 10 ☐ Zone 11
Datum used for Latitude/Longitude or UTM	☐ NAD 27	☑ NAD 83 or WGS 84	

9. PROJECT CATEGORY AND WORK TYPE *(Check each box that applies)*

PROJECT CATEGORY	NEW CONSTRUCTION	REPLACE EXISTING STRUCTURE	REPAIR/MAINTAIN EXISTING STRUCTURE
Bank stabilization – bioengineering/recontouring	☐	☐	☐
Bank stabilization – rip-rap/retaining wall/gabion	☐	☐	☐
Boat dock/pier	☐	☐	☐
Boat ramp	☐	☐	☐
Bridge	☑	☐	☐
Channel clearing/vegetation management	☐	☐	☐
Culvert	☑	☐	☐
Debris basin	☐	☐	☐
Dam	☐	☐	☐
Diversion structure – weir or pump intake	☐	☐	☐
Filling of wetland, river, stream, or lake	☑	☐	☐
Geotechnical survey	☐	☐	☐
Habitat enhancement – revegetation/mitigation	☐	☐	☐
Levee	☐	☐	☐
Low water crossing	☐	☐	☐
Road/trail	☐	☐	☑
Sediment removal – pond, stream, or marina	☐	☐	☐
Storm drain outfall structure	☐	☐	☐
Temporary stream crossing	☐	☐	☐
Utility crossing : Horizontal Directional Drilling	☐	☐	☐
Jack/bore	☐	☐	☐
Open trench	☐	☐	☐
Other *(specify)*:	☐	☐	☐

10. PROJECT DESCRIPTION

A. Describe the project in detail. Photographs of the project location and immediate surrounding area should be included.

- Include any structures (e.g., rip-rap, culverts, or channel clearing) that will be placed, built, or completed in or near the stream, river, or lake.
- Specify the type and volume of materials that will be used.
- If water will be diverted or drafted, specify the purpose or use.

Enclose diagrams, drawings, plans, and/or maps that provide all of the following: site specific construction details; the dimensions of each structure and/or extent of each activity in the bed, channel, bank or floodplain; an overview of the entire project area (i.e., "bird's-eye view") showing the location of each structure and/or activity, significant area features, and where the equipment/machinery will enter and exit the project area.

The project will construct an auxiliary lane on U.S. highway 101 in each direction between Shoreline Boulevard and Oregon Expressway. The exception will be between San Antonio Road and Rengstorff Avenue in the southbound direction, where no auxiliary lane is proposed because it would cause weaving conflicts with traffic entering the freeway from Charleston Road.

The new auxiliary lanes will be constructed adjacent to the existing outside lanes. At most locations there is sufficient room within the existing Caltrans right of way to accommodate the construction of the auxiliary lanes. The auxiliary lanes will require the widening of the existing U.S. 101 crossings over three creeks; Permanente Creek, Adobe Creek and Matadero Creek.

For the stream crossing at Permanente Creek the existing structure is a 12 foot by 12 foot reinforced concrete box culvert that is 216 feet long with a concrete channel on both upstream and downstream sections of the culvert.. To accommodate the widening of US 101 and the auxiliary lanes for the proposed project the concrete box culvert will be extended by 20 feet on the northbound side of the 101 freeway. The construction work will require diversion of the creek and work within the creek bed. The existing parapet, wing walls and channel will be removed and a new headwall, wing walls and channel will be constructed at the end of the extended culvert. No extension of the culvert is required at the southbound section of the Permanente Creek crossing, for the widening of the highway.

At Adobe Creek the existing stream crossing is a single span bridge built in 1960 and widened in 1989. The bridge consists of precast girders with a concrete deck topped off with a layer of asphalt. About 14 feet on either side of the 101 bridge are bridges for the frontage roads that use abutments that were constructed continuously between the 101 bridge and the frontage road bridges. The proposed project will widen the existing highway structure on the outside of US 101 to close the gaps between the existing bridge and the bridges of the frontage roads on either side. The proposed construction work will be completed from the concrete deck and access to the creek bed will not be necessary.

☑ *Continued on additional page(s)*

B. Specify the equipment and machinery that will be used to complete the project.

Excavators, Loaders, graders, compactors, rubber tired backhoes, sweepers, center line painting machine, dump trucks, crane

☐ *Continued on additional page(s)*

C. Will water be present during the proposed work period (specified in box 4.D) in the stream, river, or lake (specified in box 8.B).	☑ Yes ☐ No (*Skip to box 11*)
D. Will the proposed project require work in the wetted portion of the channel?	☑ Yes (*Enclose a plan to divert water around work site*) ☐ No

11. PROJECT IMPACTS

A. Describe impacts to the bed, channel, and bank of the river, stream, or lake, and the associated riparian habitat. Specify the dimensions of the modifications in length (linear feet) and area (square feet or acres) and the type and volume of material (cubic yards) that will be moved, displaced, or otherwise disturbed, if applicable.

The impacts of the project to Matadero Creek, Adobe Creek and Permanente Creek are provided in the attachment.

☑ *Continued on additional page(s)*

B. Will the project affect any vegetation? ☑ Yes (*Complete the tables below*) ☐ No

Vegetation Type	Temporary Impact	Permanent Impact
Landscape Area Vegetation	Linear feet: _____ Total area: _____	Linear feet: _____ Total area: 10.29 acres
	Linear feet: _____ Total area: _____	Linear feet: _____ Total area: _____

Tree Species	Number of Trees to be Removed	Trunk Diameter (range)
Please see attachment		

☑ *Continued on additional page(s)*

C. Are any special status animal or plant species, or habitat that could support such species, known to be present on or near the project site?

☑ Yes *(List each species and/or describe the habitat below)* ☐ No ☐ Unknown

☑ *Continued on additional page(s)*

D. Identify the source(s) of information that supports a "yes" or "no" answer above in Box 11.C.

U.S. Highway 101 Auxiliary Lanes Project (SR 85 to Embarcadero Road) Initial Study/Mitigated Negative Declaration

☑ *Continued on additional page(s)*

E. Has a biological study been completed for the project site?

☑ Yes (*Enclose the biological study*) ☐ No

Note: A biological assessment or study may be required to evaluate potential project impacts on biological resources.

F. Has a hydrological study been completed for the project or project site?

☑ Yes (*Enclose the hydrological study*) ☐ No

Note: A hydrological study or other information on site hydraulics (e.g., flows, channel characteristics, and/or flood recurrence intervals) may be required to evaluate potential project impacts on hydrology.

12. MEASURES TO PROTECT FISH, WILDIFE, AND PLANT RESOURCES

A. Describe the techniques that will be used to prevent sediment from entering watercourses during and after construction.

Please see attached supplemental information packet.

☑ *Continued on additional page(s)*

B. Describe project avoidance and/or minimization measures to protect fish, wildlife, and plant resources.

General avoidance and minimization measures will be implemented as part of construction activities to minimize and avoid impacts to sensitive species and habitat, as well as common biological resources. Please see the attached supplement for these general conservation measures.

☑ *Continued on additional page(s)*

C. Describe any project mitigation and/or compensation measures to protect fish, wildlife, and plant resources.

The conservation measures described for Box 12B above are proposed for avoidance, minimization and mitigation of impacts to fish and wildlife species. No additional mitigation or compensation is proposed for fish and wildlife species. As specified in Box 11C, no special status species are expected to be significantly impacted by the proposed project.

☐ *Continued on additional page(s)*

13. PERMITS

List any local, state, and federal permits required for the project and check the corresponding box(es). Enclose a copy of each permit that has been issued.

A. 401 Clean Water Certification with San Francisco RWQCB ☑ Applied ☐ Issued

B. 404 Pre-construction Notification for NWP 14 with USACE ☑ Applied ☐ Issued

C. _____ ☐ Applied ☐ Issued

D. Unknown whether ☐ local, ☐ state, or ☐ federal permit is needed for the project. (*Check each box that applies*)

☐ *Continued on additional page(s)*

14. ENVIRONMENTAL REVIEW

A. Has a draft or final document been prepared for the project pursuant to the California Environmental Quality Act (CEQA), National Environmental Protection Act (NEPA), California Endangered Species Act (CESA) and/or federal Endangered Species Act (ESA)?

☑ Yes (*Check the box for each CEQA, NEPA, CESA, and ESA document that has been prepared and enclose a copy of each*)

☐ No (*Check the box for each CEQA, NEPA, CESA, and ESA document listed below that will be or is being prepared*)

☐ Notice of Exemption	☑ Mitigated Negative Declaration	☐ NEPA document (*type*): _____
☑ Initial Study	☐ Environmental Impact Report	☐ CESA document (*type*): _____
☐ Negative Declaration	☑ Notice of Determination (*Enclose*)	☐ ESA document (*type*): _____
☐ THP/ NTMP	☐ Mitigation, Monitoring, Reporting Plan	

B. State Clearinghouse Number (*if applicable*)	2009022092		
C. Has a CEQA lead agency been determined?	☑ Yes (*Complete boxes D, E, and F*)	☐ No (*Skip to box 14.G*)	
D. CEQA Lead Agency	Caltrans District 4		
E. Contact Person	Jared Goldfine	F. Telephone Number	(510) 286-6203

G. If the project described in this notification is part of a larger project or plan, briefly describe that larger project or plan.

☐ *Continued on additional page(s)*

H. Has an environmental filing fee (Fish and Game Code section 711.4) been paid?

☑ Yes (*Enclose proof of payment*) ☐ No (*Briefly explain below the reason a filing fee has not been paid*)

Note: If a filing fee is required, the Department may not finalize a Lake or Streambed Alteration Agreement until the filing fee is paid.

15. SITE INSPECTION

Check one box only.

☑ In the event the Department determines that a site inspection is necessary, I hereby authorize a Department representative to enter the property where the project described in this notification will take place at any reasonable time, and hereby certify that I am authorized to grant the Department such entry.

☐ I request the Department to first contact (*insert name*) _____ at (*insert telephone number*) _____ to schedule a date and time to enter the property where the project described in this notification will take place. I understand that this may delay the Department's determination as to whether a Lake or Streambed Alteration Agreement is required and/or the Department's issuance of a draft agreement pursuant to this notification.

16. DIGITAL FORMAT

Is any of the information included as part of the notification available in digital format (i.e., CD, DVD, etc.)?

☑ Yes (Please enclose the information via digital media with the completed notification form)

☐ No

17. SIGNATURE

I hereby certify that to the best of my knowledge the information in this notification is true and correct and that I am authorized to sign this notification as, or on behalf of, the applicant. I understand that if any information in this notification is found to be untrue or incorrect, the Department may suspend processing this notification or suspend or revoke any draft or final Lake or Streambed Alteration Agreement issued pursuant to this notification. I understand also that if any information in this notification is found to be untrue or incorrect and the project described in this notification has already begun, I and/or the applicant may be subject to civil or criminal prosecution. I understand that this notification applies only to the project(s) described herein and that I and/or the applicant may be subject to civil or criminal prosecution for undertaking any project not described herein unless the Department has been separately notified of that project in accordance with Fish and Game Code section 1602 or 1611.

Signature of Applicant or Applicant's Authorized Representative

Date

Kevin Melanephy - Caltrans District 4

Print Name

Box 10A

The stream crossing at Matadero Creek consists of an existing two span structure. Abutments and the middle pier wall were constructed continuously for the 101 bridge and the two frontage road bridges (East Bayshore Rd. and West Bayshore Road) on either side. Currently there is approximately 14 feet between the decks of the US 101 bridge and the two frontage road bridge decks on either side. The proposed project would widen the existing highway bridge structures on the outside of US 101 to close the gaps between the 101 bridge structure and the frontage roads. Additionally the center support pier wall and the abutments will be evaluated for adequacy. Depending on the results of structural analysis, the wall foundation or the wall itself may need to be strengthened or replaced. Work on the wall foundation would necessitate diversion of the creek or surrounding the pier wall with a cofferdam. The top of the pier wall also needs to be modified to provide support for the new precast deck units. This construction work will require access in the creek bed.

Box 11A

Matadero Creek crosses U.S. 101 approximately 3,200 feet south of the Oregon Expressway interchange. The creek originates in the Town of Los Altos and in the Palo Alto hills. The creek flows through Palo Alto in a U-shaped concrete channel and discharges into the Palo Alto flood basin, which eventually outfalls to San Francisco bay. At the US 101 crossing Matadero Creek is a concrete paved trapezoidal engineered channel. Permanent Impacts at the Matadero Creek crossing include the extension of the center pier wall used to support the deck of the proposed bridge that will span the gaps between the existing US 101 freeway bridge and the Bayshore Road bridges. Construction of the center support pier will permanently impact approximately 0.004 acre of Waters of the U.S. To perform construction work at the Matadero Creek stream crossing access to the streambed will be necessary. This will necessitate diversion and dewatering of the creek and temporary impacts to Matadero Creek. Approximately 0.363 acre of the stream will be temporarily impacted by the project.

Temporary diversion of Matadero Creek during construction work will be achieved by the use of a cofferdam constructed with stacked sandbags to direct the flow of the creek to a 42 inch diameter plastic pipe that begins 200 feet upstream of the W. Bayshore Road bridge and extends 15 feet downstream of the bike bridge. A second cofferdam will be constructed on the downstream side of the bridge. The temporary drainage design accounts for the tidal influence of San Francisco Bay and the potential for the flow to change to directions.

Adobe Creek crosses US 101 approximately 1,800 feet north of the San Antonio Road interchange. The creek originates in the Palo Alto hills, flows through Palo Alto in a large rectangular concrete channel and discharges into Charleston slough which eventually outfalls to San Francisco Bay. A short distance from the US 101 crossing and just upstream of the West Bayshore Rd. bridge the tributary of Baron Creek confluences Adobe Creek. Adobe Creek is a paved concrete trapezoidal engineered channel at the US 101 crossing.

Neither Adobe Creek or Baron Creek are proposed to be impacted by dredge or fill material from the project as all the construction work is expected to occur from the concrete deck at the Adobe Creek stream crossing.

Permanente Creek crosses 101 approximately 2,200 feet south of Rengstorff Avenue interchange. The creek originates in the Santa Cruz mountains and passes through Cupertino, Los Altos Hills, Los Altos, and Mountain; and eventually discharges into Mountain View slough which outfalls into San Francisco Bay. For the stream crossing at Permanente Creek the existing structure is a 12 foot by 12 foot reinforced concrete box culvert that is 216 feet long with a concrete channel on both upstream and downstream sections of the culvert. To accommodate the widening of US 101 and the auxiliary lanes for the proposed project the concrete box culvert will be extended by 20 feet in the northbound direction. The construction work will require diversion of the creek and work within the concrete channel creek bed. The existing parapet and wing walls will be removed and a new headwall, wing walls and channel will be constructed at the end of the extended culvert. The extension of the Permanente Creek culvert on the northbound side of the existing culvert will permanently impact approximately 0.018 acres of Waters of the U.S. in Permanente Creek. The extended box culvert will require 34 cubic yards of concrete fill into Permanente Creek. The wing walls will require approximately 75 cubic yards of concrete fill, 9 cubic yards for the concrete channel and 31 cubic yards of fill material. Temporary diversion of the creek and construction work within the creek will temporarily impact approximately 0.019 acre of Waters of the U.S. in Permanente Creek.

Similarly to Matadero Creek, the temporary diversion of Permanente Creek will be achieved by use of cofferdams and plastic piping to redirect the flow of the stream. However, the creek will be diverted in two discrete locations, at both ends of the Permanente Creek culvert. A sand bag cofferdam or berm will be constructed on the upstream side and downstream side of each temporary diversion section. Water flowing from upstream runoff or from downstream tidal fluctuations will be diverted to the plastic piping. The plastic pipe will be approximately 18 inches in diameter.

Box 11B

101 Auxiliary Lane Project -Trees to be Removed		
Species	**Number of Trees to be Removed**	**Trunk Diameter (Range)**
Acacia	5	≤ 10 inches
Acacia	1	> 10 inches, ≤ 20 inches
Chinese Elm	3	≤ 10 inches
Chinese Elm	1	> 10 inches, ≤ 20 inches
Elm	51	≤ 10 inches
Elm	34	> 10 inches, ≤ 20 inches

Eucalyptus	20	≤ 10 inches
Eucalyptus	22	> 10 inches, ≤ 20 inches
Eucalyptus	18	> 20 inches, ≤ 30 inches
Eucalyptus	2	> 30 inches, ≤ 40 inches
Eucalyptus	1	60 inches
Liquid Amber	6	≤ 10 inches
Maple	1	12 inches
Oak	18	≤ 10 inches
Oak	7	> 10 inches, ≤ 20 inches
Ornamental	17	≤ 10 inches
Ornamental	9	> 10 inches, ≤ 20 inches
Palm	1	5 inches
Palm	1	18 inches
Pine	8	≤ 10 inches
Pine	8	> 10 inches, ≤ 20 inches
Pine	5	> 20 inches, ≤ 30 inches
Pine	1	35 inches
Plum	2	≤ 10 inches
Pepper	1	11 inches
Pepper	3	≤ 10 inches
Pepper	6	> 10 inches, ≤ 20 inches
Pepper	8	> 20 inches, ≤ 30 inches
Redwood	3	≤ 10 inches
Redwood	7	> 10 inches, ≤ 20 inches
Spruce	1	≤ 10 inches
Sycamore	3	≤ 10 inches
Walnut	2	≤ 10 inches
Walnut	3	> 20 inches, ≤ 30 inches
TOTAL	**279**	

Box 11C

Reconnaissance level surveys were conducted by qualified biologists for special status plant and animal species and their habitats within the project area. No special status plant or wildlife species were discovered at the site during the surveys. In addition habitat for the special status plant species that are known to occur in the area was not found at the project site based on an assessment of habitats, elevations and soil types. The highly disturbed nature of the project area would preclude the establishment of special status plant species.

However, two special status bird species, the Alameda song sparrow (*Melospiza melodia pusillila*) and the San Francisco common yellowthroat (*Geothlypis trichas sinuosa*) could potentially nest at the site and use it regularly. Both species are considered species of special concern by CDFG and are known to nest in salt and brackish marshes. Yellowthroats may also use freshwater marshes. The habitats near the Adobe Creek and

Permanente bridges are currently inadequate for yellowthroats and lack the emergent vegetation needed for nesting. No yellowthroats were discovered during reconnaissance surveys of the project site. Song sparrows were observed during the 2008 breeding season immediately to the northeast of the Matadero bridge however due to the difficulty in distinguishing Alameda song sparrows from other song sparrows in the region it was impossible to tell if the observed birds were Alameda song sparrows. The project would impact a very small amount of potential nesting habitat for these species in a highly disturbed environment and therefore impacts to these species are not substantial.

Box 12A

The proposed project will result in a small increase in the impervious area (~ 10 acres) and thus may contribute to higher runoff velocities that may increase sedimentation. Adobe Creek and Matadero Creek are concrete lined and Permanente Creek crosses U.S. 101 in a concrete lined culvert. Therefore it is anticipated that channel erosion, gullying and scour of these channels would not be created by an increase in runoff. There is a potential for increased sedimentation from erosion caused by grading activities and other causes during and following the construction period. Storm water runoff has the potential to transport sediment to nearby streams and storm drains if storm water BMPs are not properly implemented. Stormwater BMPs will be designed to dissipate this increased energy and reduce the capacity of the storm water runoff to carry increased sediment loads. Construction activities are planned for the dry summer months when storms are less likely to occur.

Treatment BMPs

Added and reworked impervious areas for this project are greater then 1 acre and therefore permanent treatment BMPs were considered for the purpose of avoiding and minimizing erosion, sedimentation and degradation to water quality that may occur over the long term. Biofiltration strips and biofiltration swales were selected as the most effective and feasible options and will be constructed at many locations throughout the project. Treatment BMPs are described in more detail in the Stormwater Data Report.

Construction BMPs

The project involves moving more then 1 acre of soil and thus a Stormwater Pollution Prevention Plan (SWPPP) will be prepared and would identify stormwater BMPs to reduce water quality impacts during construction. The following measures will be implemented for avoiding and minimizing impacts of the project to water quality.

For soil stabilization at the site, temporary covers would be placed over temporary stockpiles of disturbed soil, and temporary hydraulic mulch would be placed on any exposed disturbed soils that may susceptible from erosion from runoff or wind. For sediment control, temporary silt fences and fiber rolls will be used to minimize sediment transport to drainage inlets, drainage ditches or other receiving water bodies.

No debris, soil, silt, sand, bark, slash, sawdust, cement, concrete, washings, petroleum products or other organic or earthen material shall be allowed to enter into or placed where it may be washed by rainfall or runoff into any waterways.

Special or sensitive sites (e.g., riparian corridors and drainages) identified as places where construction equipment is not allowed, will be clearly marked on site before any construction or surface-disturbing activities begin. Construction personnel will be trained to recognize these markers and understand the equipment movement restrictions involved. Ecologically sensitive area (ESA) fencing will be maintained until final cleanup and restoration is completed, after which it will be removed.

Exiting site vegetation will be preserved to the extent feasible. Clearing and grubbing would be limited to the strip areas between the freeway and local streets or properties. Active paved construction areas will be swept and washed as needed.

Box 12B

To avoid and minimize the potential effects of the project to migratory bird species that are protected in the Migratory Bird and Treaty Act (MBTA) and the California Fish and Game code the following conservation measures will be implemented:

- Vegetation that will be impacted by the project will be removed during the nonbreeding season (i.e., September 1st to February 14th), if feasible, to help preclude nesting. If it is not feasible to schedule vegetation removal during the nonbreeding season, then pre-construction surveys for nesting birds will be conducted by a qualified ornithologist to ensure that no nests will be disturbed during project implementation. This survey will be conducted no more than seven days prior to the initiation of construction activities. During this survey, the ornithologist will inspect all trees, shrubs, and other potential nesting habitats in and immediately adjacent to the impact areas for nests. If an active nest is found sufficiently close to work areas to be disturbed by these activities, the ornithologist, in consultation with CDFG, will determine the extent of a buffer zone to be established around the nest, typically 250 feet for raptors and 50 feet for other birds.

- At the Adobe Creek and Matadero Creek bridges, to avoid impacts to nesting swallows and black phoebes, old nests should be removed prior to February 15th, or after February 15th if a qualified ornithologist determines that the nests are not active. Maintaining bridges free from nesting birds may require the placement of netting or other structures over the underside of the bridges to prevent swallows and other birds from accessing suitable nesting substrate. Alternatively, nest starts may be removed on a regular basis (e.g., every other day) to prevent active nests from becoming established.

Roosting bat habitat is present on the Matadero Creek Bridge and the Adobe Creek Bridge. Bat roosting surveys were conducted by H. T. Harvey and Associate ecologists on August 22, 2007, November 8, 2007 and June 17, 2008. Matadero Creek Bridge

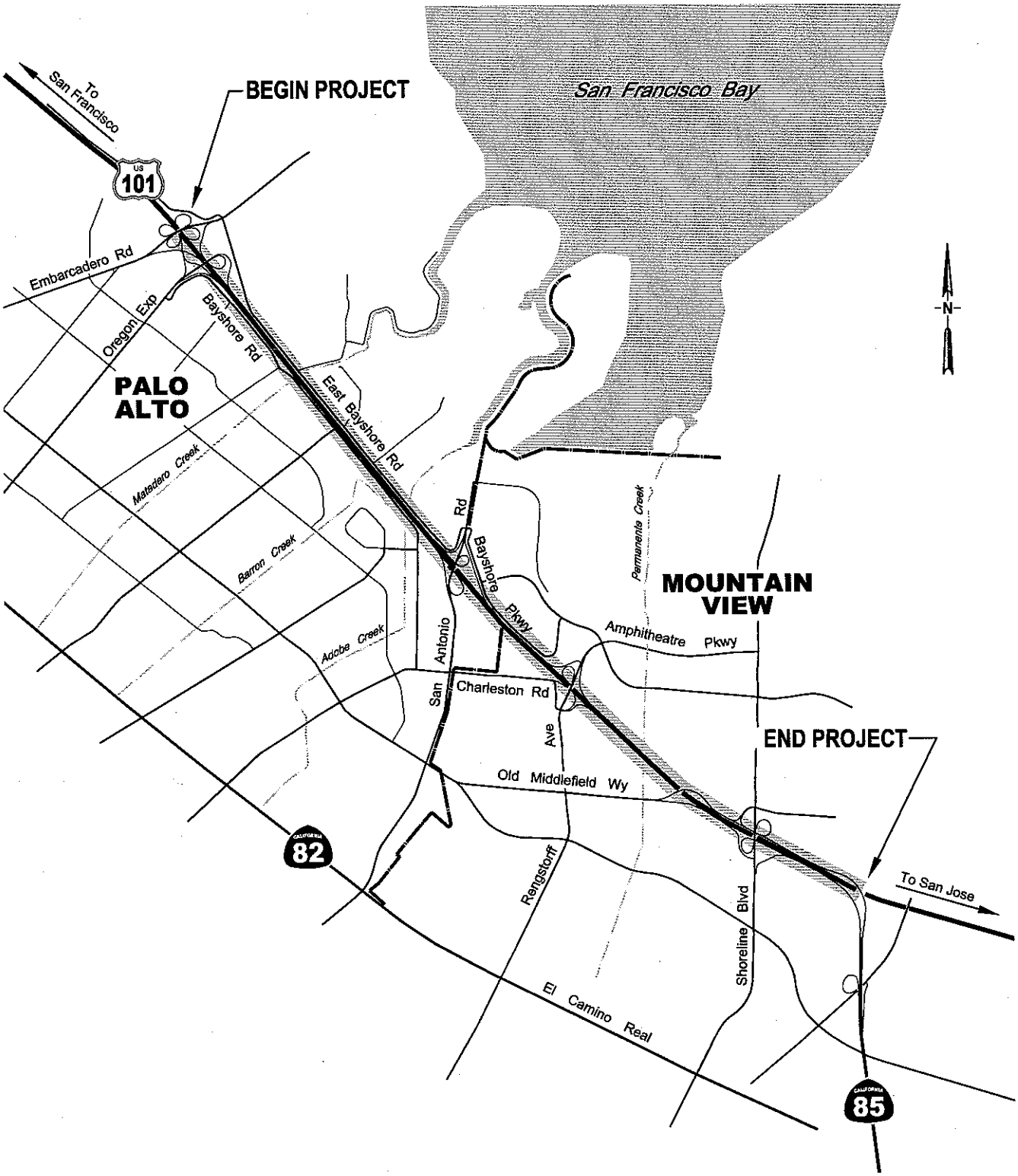
contains roosting habitat for wintering Yuma myotis and Mexican free tailed bats. Because of the number of individuals using this roosting site, the relative rarity of this type of roost site in the landscape, and the presence of a least three species of bats makes the Matadero Creek bridge a regionally important roost site. Proposed conservation measures to avoid and minimize impacts to roosting bats include:

- If pile driving, jack hammering on the bridge abutments, intense lighting under the bridge or near the roost cavities, or other extreme disturbances will occur, the bats will be evicted from the roost during the non-breeding season preceding these extreme disturbances. A qualified bat biologist will exclude the roosting bats using one-way doors fixed to roost entrances. Eviction of bats will occur at night, so that bats will have less potential for predation compared to daytime roost abandonment. Eviction will occur between September 1st and March 31st, outside the maternity season, but will not occur during long periods of inclement or cold weather (as determined by the bat biologist) when prey are not available or bats are in torpor. The one-way doors used to evict the bats will be inspected periodically and maintained from the time of installation through the completion of the extreme disturbance to ensure that they are functioning properly. The exclusion devices will be removed following the conclusion of the extreme disturbance, as determined by the bat biologist.

- To avoid the long-term abandonment of the colony and minimize the loss of evicted individuals, an appropriate bat condominium, as defined by a bat biologist, will be placed in a suitable, conspicuous location (e.g., the edge of a marsh or other open area) between 500 and 1,000 feet from the existing roost. The bat condominium will be installed one year before the commencement of construction (under both the extreme or minimal disturbance scenarios) and at least six months before bats are excluded from the existing roost (under the extreme disturbance scenario). The existing roost and the bat condominium will be visually checked by a qualified bat biologist within five days prior to exclusion to ascertain whether bats have occupied the condominium in advance of construction. The bridge roost and the condominium would also be checked visually at least once during the maternity season for up to three years after the completion of construction. Monitoring will cease prior to Year-3 if it is determined that one structure or the other has been occupied by bats during the maternity season.

- If construction can occur without extreme disturbances, the colony will not be excluded, since the exclusion could have more of an adverse effect on the bat colony than maintaining the bats' access to the colony and subjecting them to some increase in disturbance during construction. To inform the impact assessment of, and the development of impact minimization measures for, similar projects in the future, some minimal information on the increase in disturbance to which bats are subjected during construction and on the bats' response to that disturbance will be collected. A qualified biologist will determine the status of the colony (i.e., whether it is active, and the approximate numbers of bats) by a visual inspection of the bridge within five days prior to the initiation of construction. Baseline data on the vibration and sound levels at the bridge site will also be collected for a minimum of two days within five days of construction commencement. Following this pre-construction, baseline monitoring, the colony will then be monitored every night during construction using acoustic surveying methods, such as Anabat equipment, to determine the status of the colony (i.e., to

determine if the colony abandons the roost). The majority of this construction monitoring will be done remotely with acoustic surveying equipment and will not require a surveyor to be present every night during construction. Monitoring equipment will also be used to sample construction-related increases in noise and vibration. Project implementation will not have to be modified based on the findings of this monitoring, even if the bats abandon the roost. However, these data will allow for a determination of whether or not the bats remained at the bridge during construction and/or changed their activity patterns in relation to varying levels of noise and vibration.



ON ROUTE 101 BETWEEN THE EMBARCADERO ROAD INTERCHANGE AND THE ROUTE 85 INTERCHANGE

PROJECT LOCATION MAP
Attachment B

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS
1455 MARKET STREET
SAN FRANCISCO, CALIFORNIA 94103-1398

REPLY TO

DEC 29 2009

Regulatory Division

SUBJECT: File Number SPN-2007-00885 S

Ms. Christina Jaworski
Santa Clara Valley Transportation Authority
3331 North First Street
San Jose, California 95134-1927

Dear Ms. Jaworski:

This letter is written in response to your November 8, 2007, request to confirm the extent of Corps of Engineers jurisdiction in an approximately 139.4-acre study area for the Highway 101 Auxiliary Lanes Project from Embarcadero Road to State Route 85 near the City of Palo Alto, in Santa Clara County, California.

Enclosed is a map, dated October 2009, showing the extent and location of Corps of Engineers jurisdiction. We have based this jurisdictional delineation on the current conditions on the site as verified during a site visit performed by our staff on September 30, 2009. There are approximately 0.90 acres of waters of the U.S. in the study area, including Adobe Creek, Matadero Creek, and Permanente Creek. A change in those conditions may also change the extent of our jurisdiction. This jurisdictional delineation will expire in five years from the date of this letter. However, if there has been a change in circumstances that affects the extent of Corps jurisdiction, a revision may be completed before that date.

You are advised that the Corps has established an Administrative Appeal Process, as described in 33 C.F.R. Part 331 (65 Fed. Reg. 16,486; March 28, 2000), and outlined in the enclosed flowchart and "Notification of Administrative Appeal Options, Process, and Request for Appeal" form (NAO-RFA). If you do not intend to accept the approved jurisdictional determination, you may elect to provide new information to the District Engineer for reconsideration or submit a completed NAO-RFA form to the Division Engineer to initiate the appeal process. You will relinquish all rights to appeal, unless the Corps receives new information or a completed NAO-RFA form within sixty (60) days of the date of the NAO-RFA.

Should you have any questions regarding this matter, please call Andrea Meier of our Regulatory Division at 415-503-6798 or email her at andrea.j.meier@usace.army.mil. Please address all correspondence to the Regulatory Division and refer to the File Number at the head of this letter. If you would like to provide comments on our permit review process, please complete the Customer Survey Form available online at http://per2.nwp.usace.army.mil/survey.html.

Sincerely,

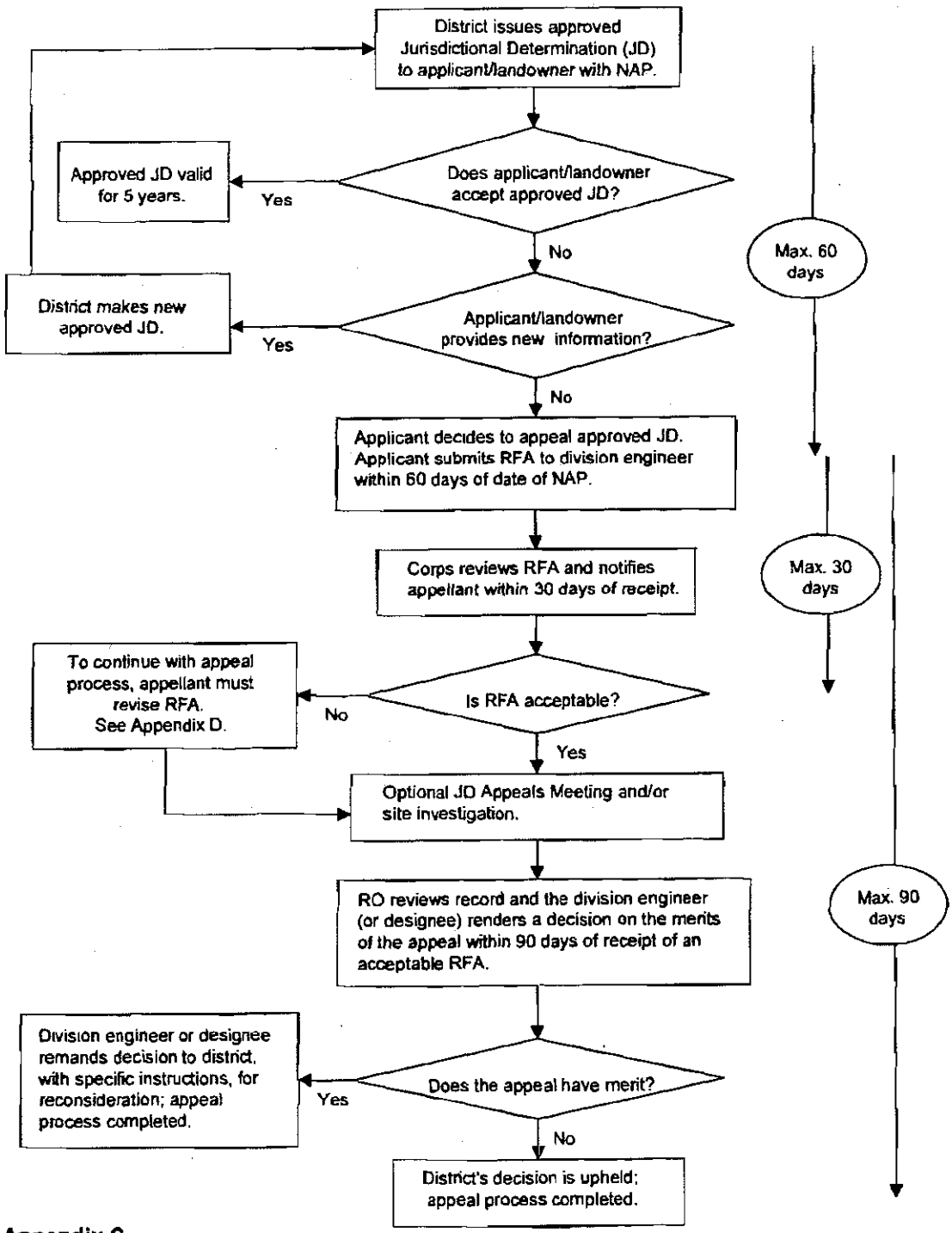
Jane M. Hicks
Chief, Regulatory Division

Enclosures

Copy furnished:

CA RWQCB, Oakland, CA

Administrative Appeal Process for Approved Jurisdictional Determinations



Appendix C

Applicant: California Department of Transportation	File Number: SPN-2007-00885 S	Date: Dec 14, 2009
Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	FINAL PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
X	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://usace.army.mil/inet/functions/cw/cecwo/reg or Corps Regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the DISTRICT Engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- OBJECT: If you object to the initial proffered permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this Notice and return the Notice to the DISTRICT Engineer. Your objections must be received by the DISTRICT Engineer within 60 days of the date of this Notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your Notice, the DISTRICT Engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the DISTRICT Engineer will send you a final proffered permit for your reconsideration, as indicated in Section B below.

B: FINAL PROFFERED PERMIT: You may accept or decline/appeal the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the DISTRICT Engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- APPEAL: If you choose to decline the final proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this Notice and sending the form to the DIVISION (not District) Engineer (address on reverse). This Notice must be received by the DIVISION (not District) Engineer within 60 days of the date of this Notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this Notice and sending the Notice to the DIVISION (not District) Engineer (address on reverse). This Notice must be received by the DIVISION (not District) Engineer within 60 days of the date of this Notice.

D: APPROVED JURISDICTIONAL DETERMINATION (JD): You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this Notice means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this Notice and sending the Notice to the DIVISION (not District) Engineer (address on reverse). This Notice must be received by the DIVISION Engineer within 60 days of the date of this Notice. JD appeals based on NEW information must be submitted to the DISTRICT Engineer within 60 days of the date of this Notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION (JD): You do not need to respond to the Corps regarding the preliminary JD. The preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps District for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT, FINAL PROFFERED PERMIT, PERMIT DENIAL, or JURISDICTIONAL DETERMINATION

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this Notice to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record; the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the Review Officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact the DISTRICT ENGINEER: U.S. Army Corps of Engineers, San Francisco Division 1455 Market Street, San Francisco, CA 94103-1398 Attn: Andrea Meier, Project Manager Tel.: (415) 503-6798 Fax: (415) 503-6690	If you only have questions regarding the appeal process you may also contact the DISTRICT ENGINEER: U.S. Army Corps of Engineers, South Pacific Division 1455 Market Street, San Francisco, CA 94103-1398 Attn: Cameron Johnson, Chief, South Section Tel.: (415) 503-6790 Fax: (415) 503-6693

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15-day notice of any site investigation, and will have the opportunity to participate in all site investigations.

Signature of Appellant or Agent	Date:	Telephone Number:

Applicant: California Department of Transportation	File Number: SPN-2007-00885 S	Date: Dec 14, 2009
Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	FINAL PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
X	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://usace.army.mil/inet/functions/cw/cecwo/reg or Corps Regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the DISTRICT Engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- OBJECT: If you object to the initial proffered permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this Notice and return the Notice to the DISTRICT Engineer. Your objections must be received by the DISTRICT Engineer within 60 days of the date of this Notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your Notice, the DISTRICT Engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the DISTRICT Engineer will send you a final proffered permit for your reconsideration, as indicated in Section B below.

B: FINAL PROFFERED PERMIT: You may accept or decline/appeal the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the DISTRICT Engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- APPEAL: If you choose to decline the final proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this Notice and sending the form to the DIVISION (not District) Engineer (address on reverse). This Notice must be received by the DIVISION (not District) Engineer within 60 days of the date of this Notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this Notice and sending the Notice to the DIVISION (not District) Engineer (address on reverse). This Notice must be received by the DIVISION (not District) Engineer within 60 days of the date of this Notice.

D: APPROVED JURISDICTIONAL DETERMINATION (JD): You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this Notice means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this Notice and sending the Notice to the DIVISION (not District) Engineer (address on reverse). This Notice must be received by the DIVISION Engineer within 60 days of the date of this Notice. JD appeals based on NEW information must be submitted to the DISTRICT Engineer within 60 days of the date of this Notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION (JD): You do not need to respond to the Corps regarding the preliminary JD. The preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps District for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT, FINAL PROFFERED PERMIT, PERMIT DENIAL, or JURISDICTIONAL DETERMINATION

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this Notice to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record; the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the Review Officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact the DISTRICT ENGINEER: U.S. Army Corps of Engineers, San Francisco Division 1455 Market Street, San Francisco, CA 94103-1398 Attn: Andrea Meier, Project Manager Tel.: (415) 503-6798 Fax: (415) 503-6690	If you only have questions regarding the appeal process you may also contact the DISTRICT ENGINEER: U.S. Army Corps of Engineers, South Pacific Division 1455 Market Street, San Francisco, CA 94103-1398 Attn: Cameron Johnson, Chief, South Section Tel.: (415) 503-6790 Fax: (415) 503-6693

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15-day notice of any site investigation, and will have the opportunity to participate in all site investigations.

_____ Signature of Appellant or Agent	Date:	Telephone Number:

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

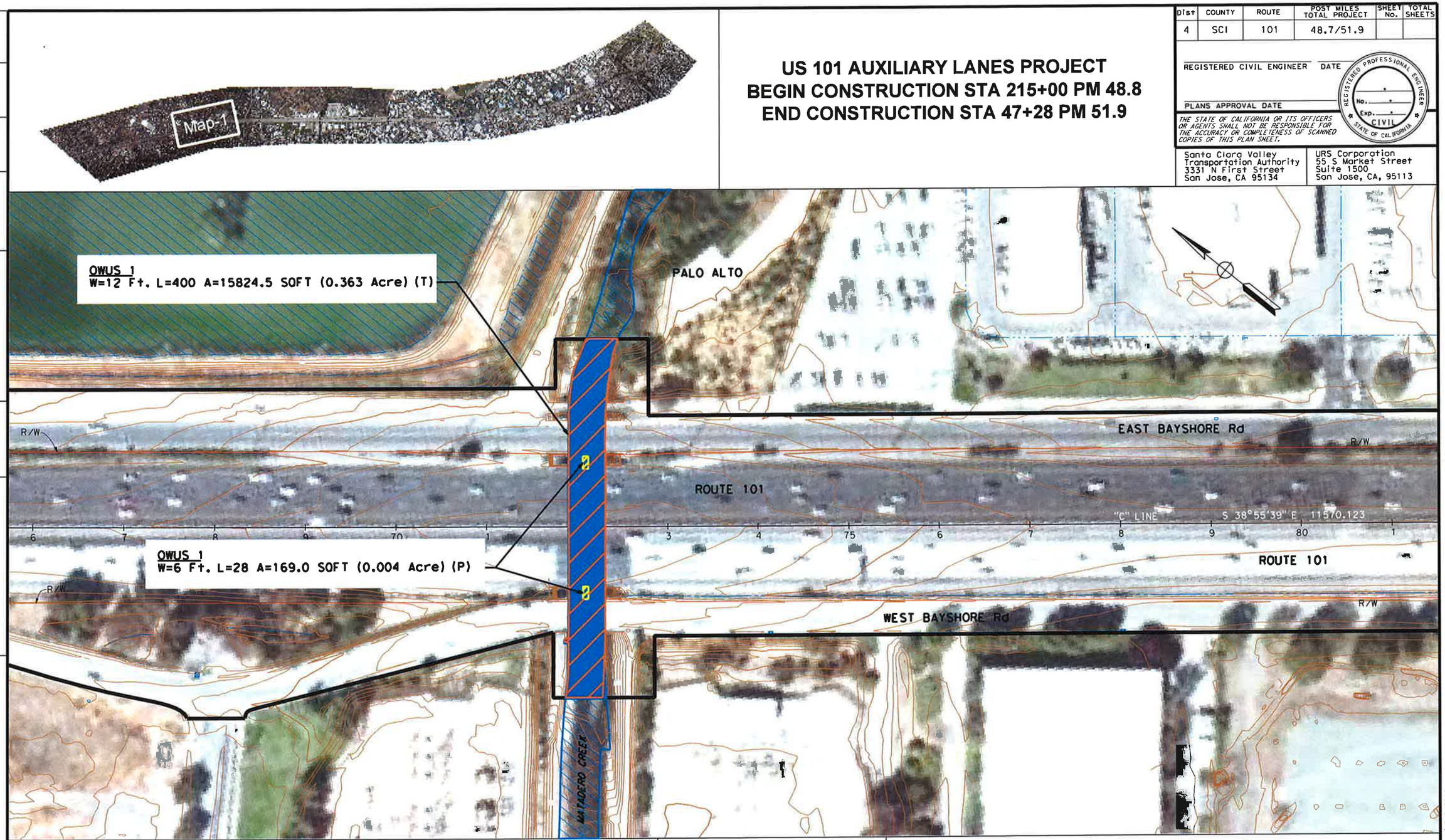
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

Santa Clara Valley Transportation Authority
3331 N First Street
San Jose, CA 95134

URS Corporation
55 S Market Street
Suite 1500
San Jose, CA, 95113

US 101 AUXILIARY LANES PROJECT
BEGIN CONSTRUCTION STA 215+00 PM 48.8
END CONSTRUCTION STA 47+28 PM 51.9



SHEET 1 SUBTOTAL:

OTHER WATER IMPACTS:
PERMANENT = 169.0 SQFT, 0.004 ACRE
TEMPORARY = 15824.5 SQFT, 0.363 ACRE

0 150 FEET

LEGEND:

- ENVIRONMENTAL STUDY LIMIT
- CONTOUR LINES
- PERMANENT IMPACTS
- TEMPORARY IMPACTS
- WATER OF THE US (CULVERTED)
- WATER OF THE US (OTHER WATERS)
- OHW ELEVATION = 9Ft.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

CONSULTANT FUNCTIONAL SUPERVISOR

CALCULATED-DESIGNED BY

CHECKED BY

REVISED BY

DATE REVISED

LAST REVISION 00-00-00

DATE PLOTTED => 3/2/2010
TIME PLOTTED => 9:42:00 AM

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => ernie_garnica
DGN FILE => ...\Env-Plans\MadCreek01.dgn

CU 04235

EA 4A3301

MadCreek01.dgn 3/2/2010 9:42:00 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

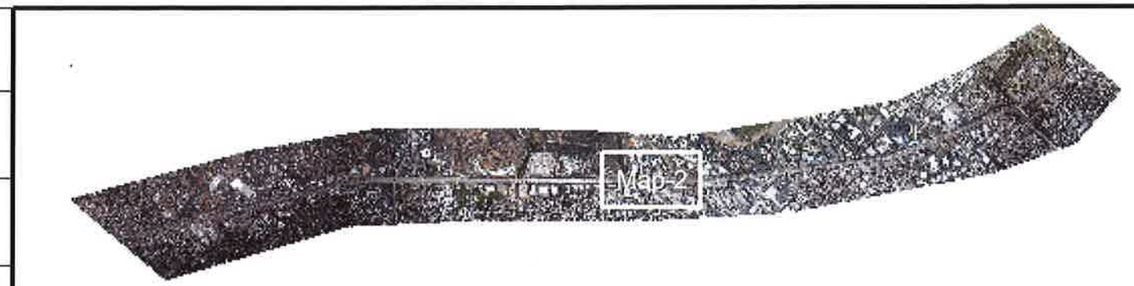
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

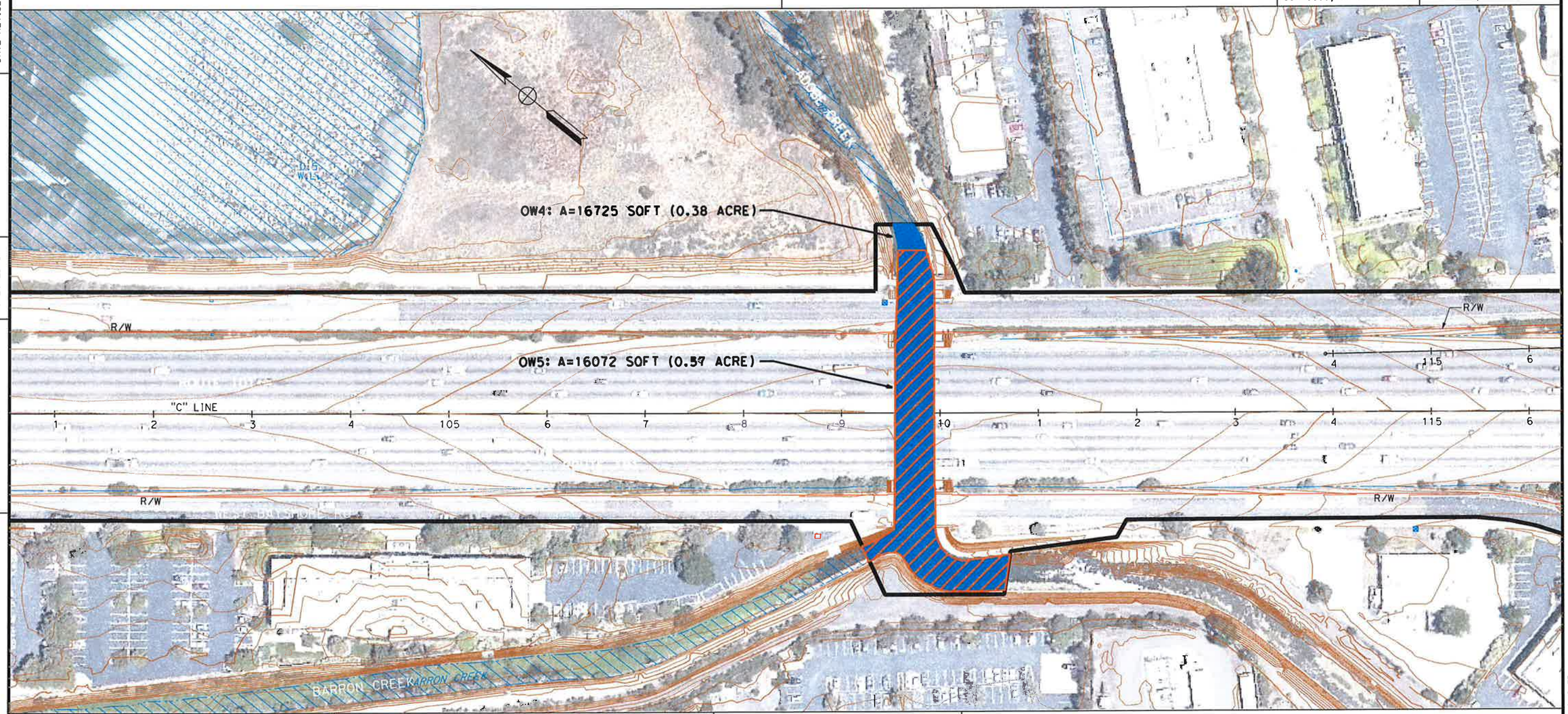
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

URS Corporation
100 San Fernando Street
Suite 200
San Jose, CA 95113

Santa Clara Valley
Transportation Authority
3331 N First Street
San Jose, CA 95134

US 101 AUXILIARY LANES PROJECT
BEGIN CONSTRUCTION STA 215+00 PM 48.8
END CONSTRUCTION STA 47+28 PM 51.9





SHEET 2 SUBTOTAL:

OTHER WATER IMPACTS:
PERMANENT = 0 SQFT, 0 ACRE
TEMPORARY = 16072 SQFT, 0.37 ACRE

0 150 FEET

LEGEND:

- ENVIRONMENTAL STUDY LIMIT
- CONTOUR LINES
- PERMANENT IMPACTS
- TEMPORARY IMPACTS
- WATER OF THE US (CULVERTED)
- WATER OF THE US (OTHER WATERS)
- OHM ELEVATION = 3Ft.

REVISED BY | DATE REVISED

CALCULATED-DESIGNED BY | CHECKED BY

CONSULTANT FUNCTIONAL SUPERVISOR

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

LAST REVISION 00-00-00 | DATE PLOTTED => $DATE | TIME PLOTTED => $TIME

BORDER LAST REVISED 4/11/2008

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

USERNAME => $USER
DGN FILE => $REQUEST

CU 04235

EA 4A3301

AdobeCreek01.dgn 3/9/2010 11:35:40 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
4	SCI	101	48.7/51.9		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

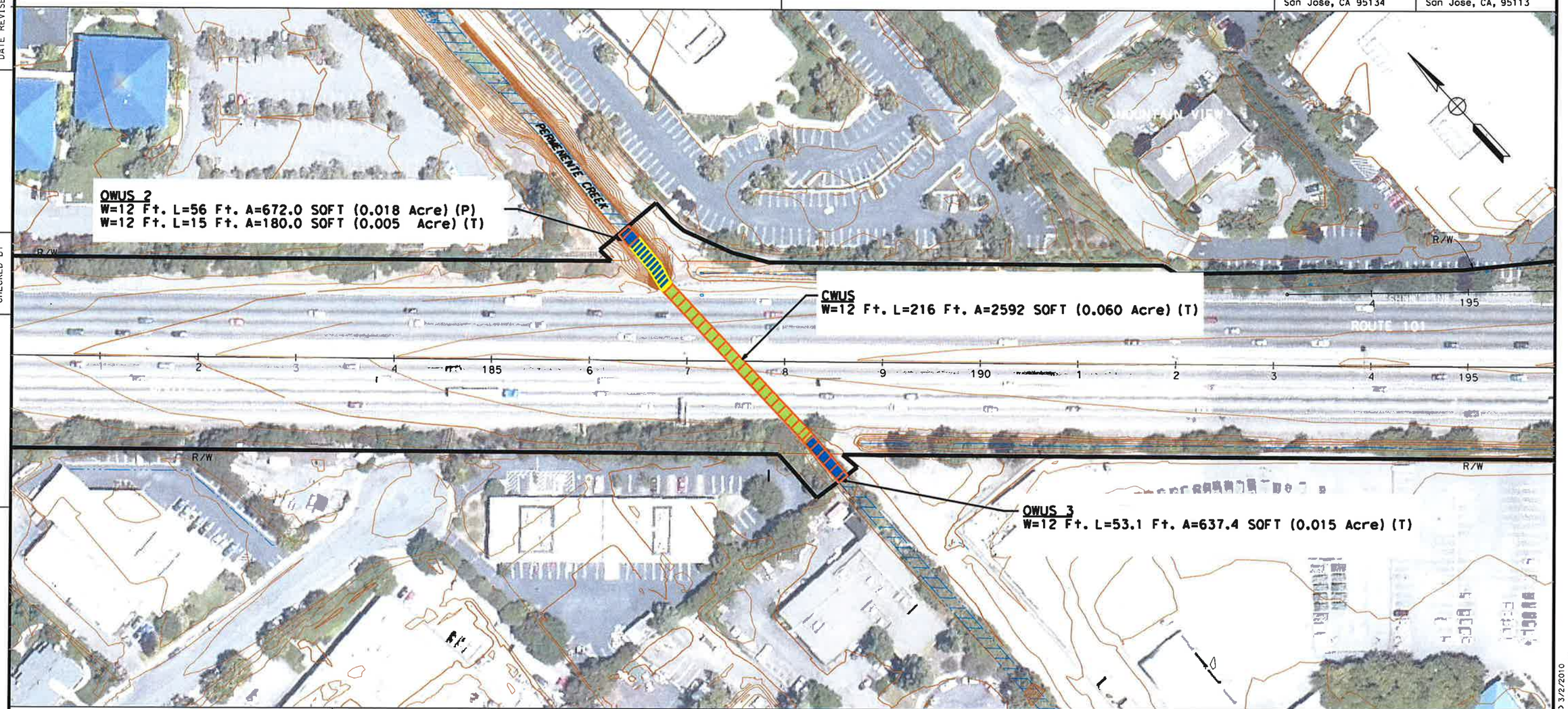
REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

Santa Clara Valley Transportation Authority
3331 N First Street
San Jose, CA 95134

URS Corporation
55 S Market Street
Suite 1500
San Jose, CA, 95113

US 101 AUXILIARY LANES PROJECT
BEGIN CONSTRUCTION STA 215+00 PM 48.8
END CONSTRUCTION STA 47+28 PM 51.9



SHEET 3 SUBTOTAL:

OTHER WATER IMPACTS:
PERMANENT = 780.4 SQFT, 0.018 ACRE
TEMPORARY = 823.2 SQFT, 0.019 ACRE

CULVERTED WATER IMPACTS:
TEMPORARY = 2592 SQFT, 0.060 ACRE

0 150 FEET

LEGEND:

- ENVIRONMENTAL STUDY LIMIT
- CONTOUR LINES
- PERMANENT IMPACTS
- TEMPORARY IMPACTS
- WATER OF THE US (CULVERTED)
- WATER OF THE US (OTHER WATERS)
- OHM ELEVATION = 2Ft.

REVISED BY | DATE REVISED | CALCULATED-DESIGNED BY | CHECKED BY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION | CONSULTANT FUNCTIONAL SUPERVISOR

LAST REVISION 00-00-00 | DATE PLOTTED => 3/2/2010 | TIME PLOTTED => 9:41:17 AM

BORDER LAST REVISED 4/11/2008 | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | USERNAME => ernie_garnica | DGN FILE => ...\Env-Plans\PerCreek01.dgn | CU 04235 | EA 4A3301

PerCreek01.dgn 3/2/2010 9:41:17 AM