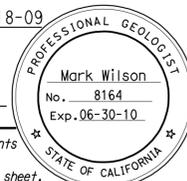


# FOR PLAN VIEW, SEE "LOG OF TEST BORINGS" 1 OF 8

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBd, La Paz	62, 95S1	142.2/142.6: 142.6/142.9	201	271

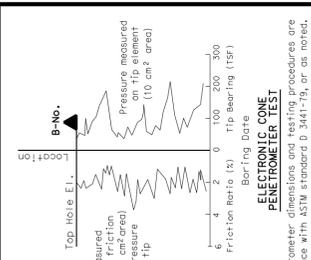


2-18-09  
PROFESSIONAL GEOLOGIST

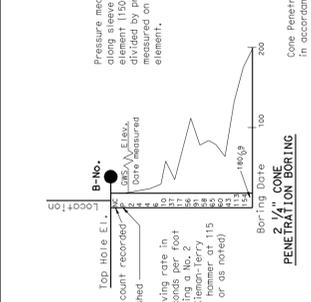
6-14-10  
PLANS APPROVAL DATE

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.

**LEGEND OF BORING OPERATIONS**



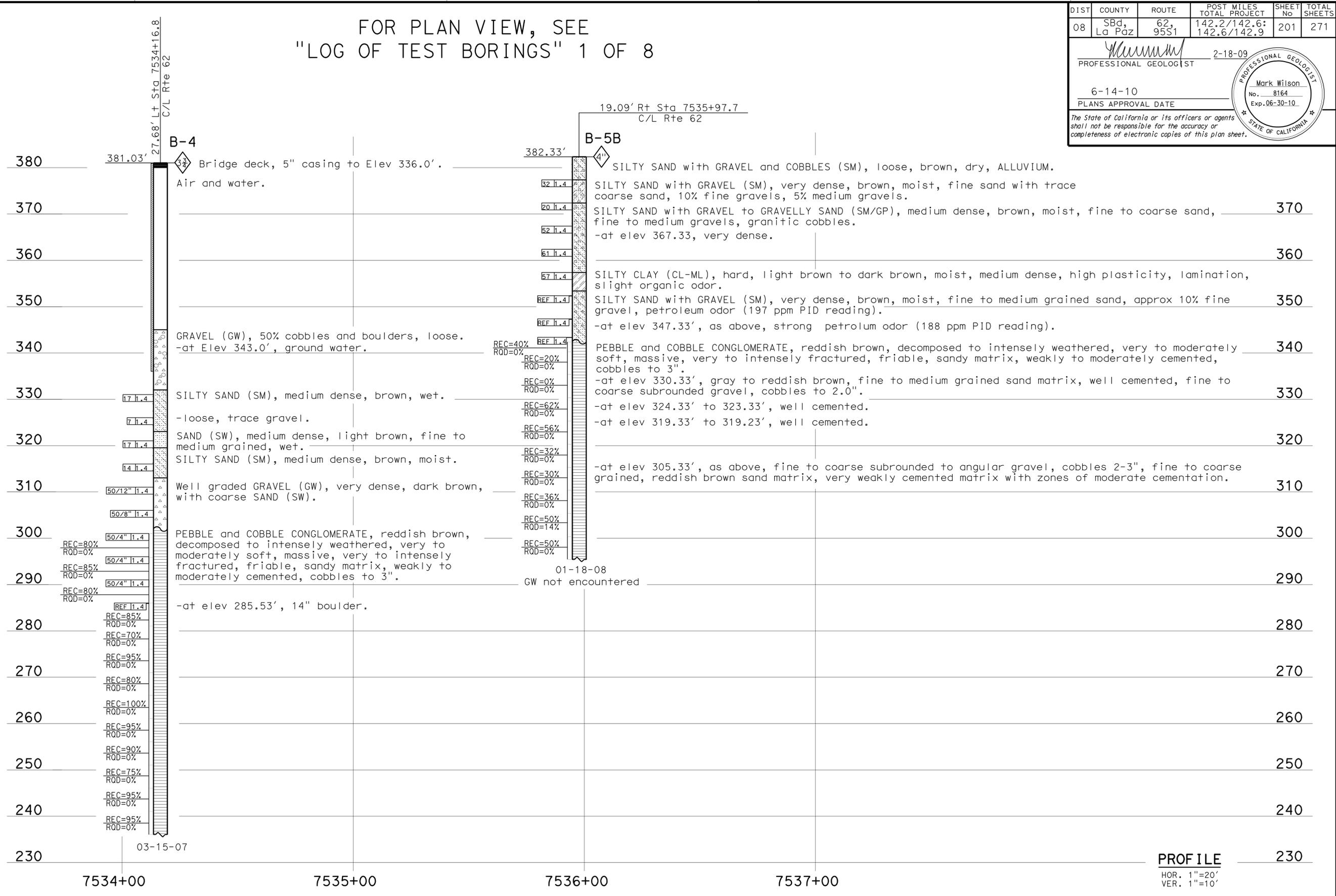
**LEGEND OF EARTH MATERIALS**



**CONSISTENCY CLASSIFICATION FOR SOILS**

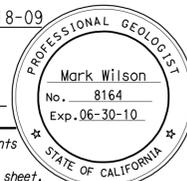
According to the Standard Penetration Test	
SPT Blow Count (Blows/foot)	Consistency
0-4	Very Loose
5-10	Loose
11-30	Medium Dense
31-50	Dense
51-70	Very Dense
>70	Extremely Dense

NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.



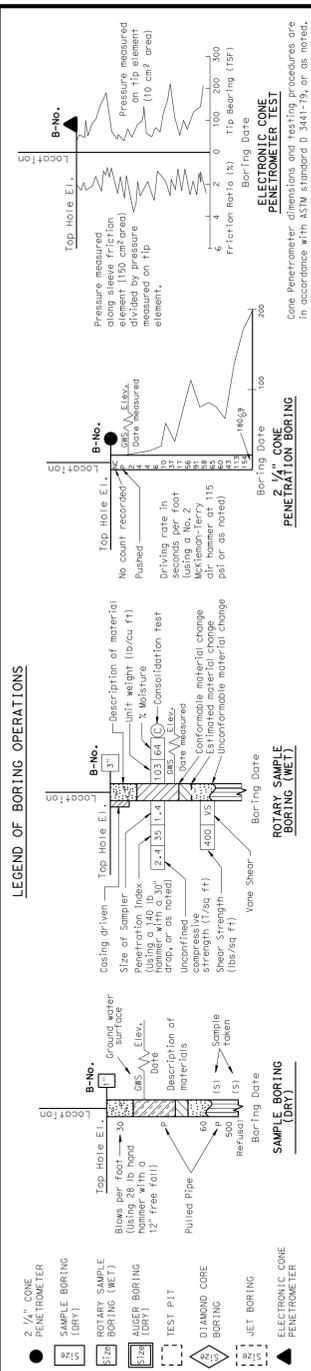
<b>ENGINEERING SERVICES</b>	<b>GEOTECHNICAL SERVICES</b>	FIELD INVESTIGATION BY: <b>M. Wilson</b>	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION
DRAWN BY: <b>W. Tang 11/2008</b>	CHECKED BY: <b>M. Wilson</b>	BRIDGE NO.: <b>54-1272</b>	POST MILE: <b>142.3</b>
<b>COLORADO RIVER BRIDGE (REPLACE)</b>			<b>LOG OF TEST BORINGS 5 OF 8</b>

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBD, La Paz	62, 95S1	142.2/142.6: 142.6/142.9	202	271


  
 2-18-09  
 PROFESSIONAL GEOLOGIST  
 6-14-10  
 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.*

FOR PLAN VIEW, SEE  
"LOG OF TEST BORINGS" 1 OF 8

LEGEND OF BORING OPERATIONS



**LEGEND OF BORING OPERATIONS**

- 2 1/4" CONE PENETROMETER
- DRY SAMPLE BORING
- WET SAMPLE BORING (WE)
- PIPER BORING
- TEST PIT
- DIAMOND CORE BORING
- JET BORING
- ELECTRONIC CONE PENETROMETER

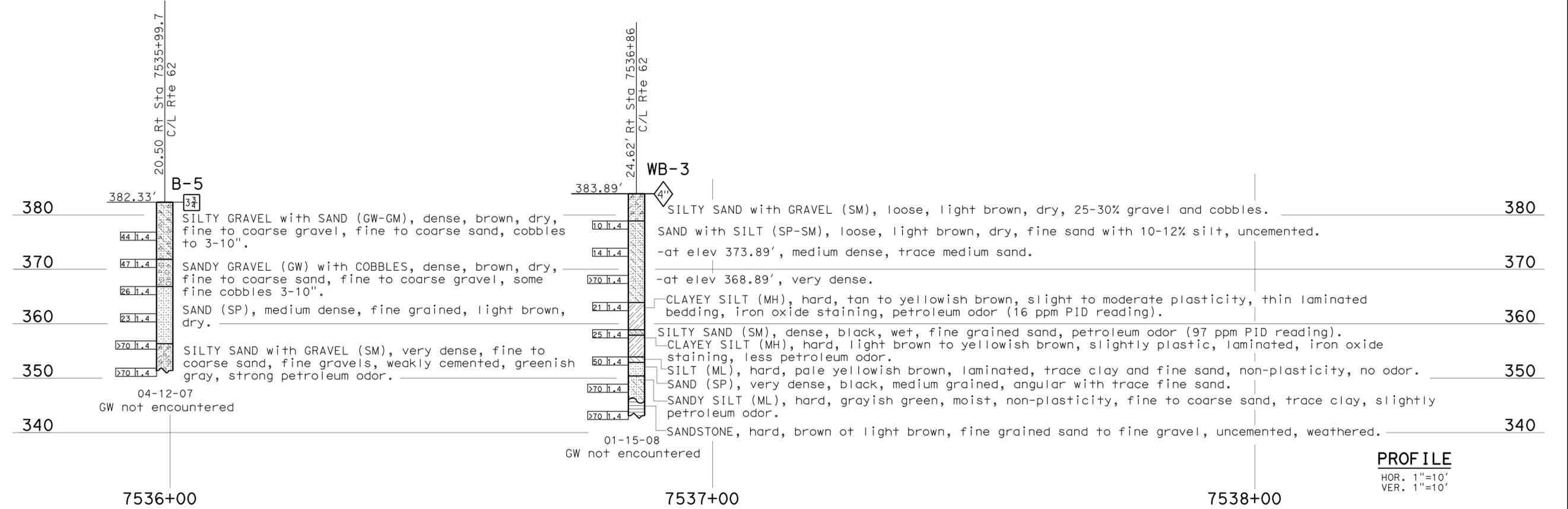
**LEGEND OF EARTH MATERIALS**

- CLAYEY SILT
- PEAT and/or ORGANIC MATTER
- COBBLES and/or BOULDERS
- IGNEOUS ROCK
- SEDIMENTARY ROCK
- METAMORPHIC
- GRAVEL
- SAND
- SILT
- CLAY
- SANDY CLAY or CLAYEY SAND
- SANDY SILT or SILTY SAND
- SILTY CLAY

**CONSISTENCY CLASSIFICATION FOR SOILS**

According to the Standard Penetration Test	
SPT No./Blows/ft	Consistency
0-4	Very Loose
5-10	Loose
11-30	Medium Dense
31-50	Dense
51-70	Very Dense
71-100	Very Hard

NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.



<b>ENGINEERING SERVICES</b>	<b>GEOTECHNICAL SERVICES</b>	FIELD INVESTIGATION BY: M. Wilson	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	<b>DIVISION OF ENGINEERING SERVICES</b> STRUCTURE DESIGN DESIGN BRANCH	BRIDGE NO. 54-1272 POST MILE 142.3	<b>COLORADO RIVER BRIDGE (REPLACE)</b> <b>LOG OF TEST BORINGS 6 OF 8</b>
DRAWN BY W. Tang 11/2008	CHECKED BY M. Wilson					

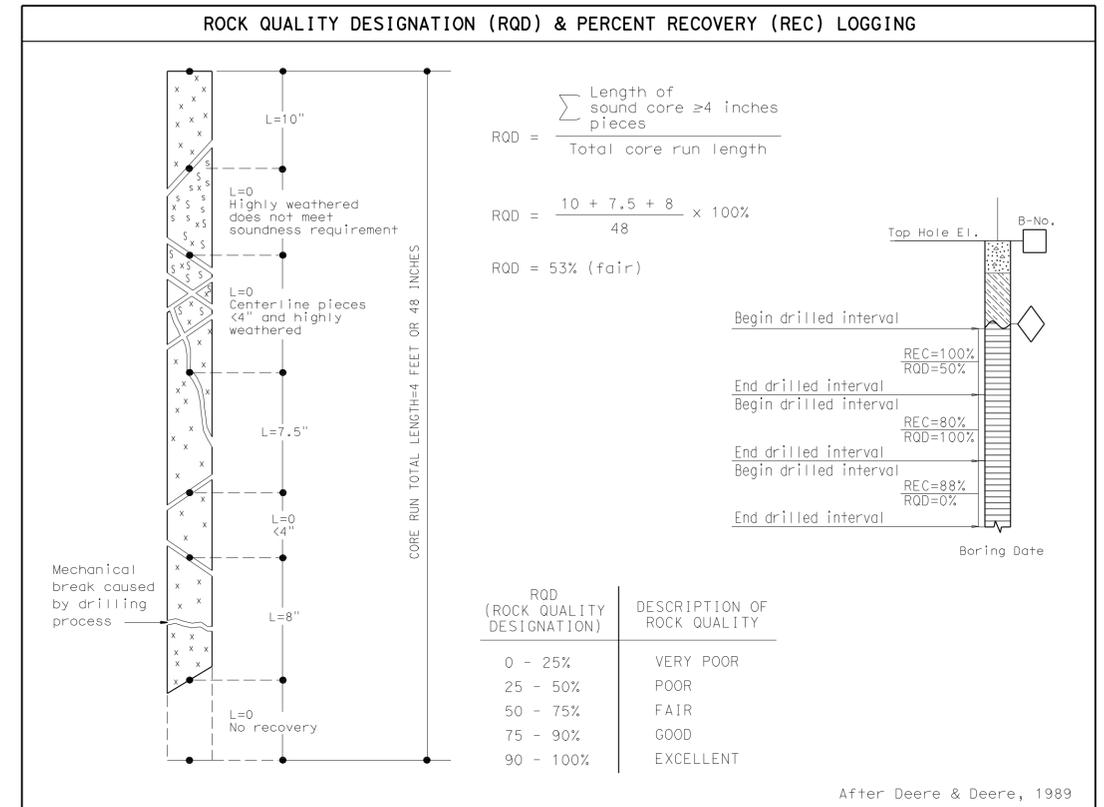
WEATHERING DESCRIPTORS							
Descriptors		Diagnostic features				General characteristics (strength, excavation, etc.) <sup>§</sup>	
		Chemical weathering-Discoloration and/or oxidation		Mechanical weathering-Grain boundary conditions (disaggregation) primarily for granitics and some coarse-grained sediments	Texture and solutioning		
Alphanumeric descriptor	Descriptive term	Body of rock	Fracture surfaces †		Texture	Solutioning	
W1	Fresh	No discoloration, not oxidized.	No discoloration or oxidation.	No separation, intact (tight).	No change.	No solutioning.	Hammer rings when crystalline rocks are struck. Almost always rock excavation except for naturally weak or weakly cemented rocks such as siltstones or shales.
W2	Slightly weathered to fresh <sup>o</sup>						
W3	Slightly weathered	Discoloration or oxidation is limited to surface of, or short distance from, fractures; some feldspar crystals are dull.	Minor to complete discoloration or oxidation of most surfaces.	No visible separation, intact (tight).	Preserved.	Minor leaching of some soluble minerals may be noted.	Hammer rings when crystalline rocks are struck. Body of rock not weakened. With few exceptions, such as siltstones or shales, classified as rock excavation.
W4	Moderately to slightly weathered <sup>o</sup>						
W5	Moderately weathered	Discoloration or oxidation extends from fractures usually throughout; Fe-Mg minerals are "rusty," feldspar crystals are "cloudy."	All fracture surfaces are discolored or oxidized.	Partial separation of boundaries visible.	Generally preserved.	Soluble minerals may be mostly leached.	Hammer does not ring when rock is struck. Body of rock is slightly weakened. Depending on fracturing, usually is rock excavation except in naturally weak rocks such as siltstones or shales.
W6	Intensely to moderately weathered <sup>o</sup>						
W7	Intensely weathered	Discoloration or oxidation throughout; all feldspars and Fe-Mg minerals are altered to some extent; or chemical alteration produces in-situ disaggregation, see grain boundary conditions.	All fracture surfaces are discolored or oxidized, surfaces friable.	Partial separation, rock is friable; in semi-arid conditions granitics are disaggregated.	Texture altered by chemical disintegration (hydration, argillation).	Leaching of soluble minerals may be complete.	Dull sound when struck with hammer, usually can be broken with moderate to heavy manual pressure or by light hammer blow without reference to planes of weakness such as incipient or hairline fractures, or veinlets. Rock is significantly weakened. Usually common excavation.
W8	Very intensely weathered						
W9	Decomposed	Discolored or oxidized throughout, but resistant minerals such as quartz may be unaltered; all feldspars and Fe-Mg minerals are completely altered to clay.		Complete separation of grain boundaries (disaggregated).	Resembles a soil, partial or complete remnant rock structure may be preserved; leaching of soluble minerals usually complete.		Can be granulated by hand. Always common excavation. Resistant minerals such as quartz may be present as "stringers" or "dikes."

Note: This chart and its horizontal categories are more readily applied to rocks with feldspars and mafic minerals. Weathering in various sedimentary rocks, particularly limestones and poorly indurated sediments, will not always fit the categories established. This chart and weathering categories may have to be modified for particular site conditions or alteration such as hydrothermal effects; however, the basic framework and similar descriptors are to be used.

<sup>o</sup> Combination descriptors are permissible where equal distribution of both weathering characteristics are present over significant intervals or where characteristics present are "in between" the diagnostic feature. However, dual descriptors should not be used where significant, identifiable zones can be delineated. When given as a range, only two adjacent terms may be combined. "Decomposed to slightly weathered," or "moderately weathered to fresh" are not acceptable.

† Does not include directional weathering along shears or faults and their associated features. For example, a shear zone that carried weathering to great depths into a fresh rock mass would not require the rock mass to be classified as weathered.

§ These are generalizations and should not be used as diagnostic features for weathering or excavation classification. These characteristics vary to a large extent based on naturally weak materials or cementation and type of excavation.



### FRACTURE DENSITY

Modified from United States Bureau of Reclamation, Engineering Geology Field Manual.

**FRACTURE DENSITY-** Based on the spacing of all natural fractures in an exposure or core recovery lengths in boreholes; excludes mechanical breaks, shears, and shear zones; however, shear-disturbed zones (fracturing outside the shear) are included. Descriptors for fracture density apply to all rock exposures such as tunnel walls, dozer trenches, outcrops, or foundation cut slopes and inverts, as well as boreholes. Descriptive criteria presented below are based on borehole cores where lengths are measured along the core axis, for other exposures the criteria is distance measured between fractures (size of blocks).

**UNFRACTURED (FD0):** No fractures.

**VERY SLIGHTLY FRACTURED (FD1):** Core recovered mostly in lengths greater than 3 ft.

**SLIGHTLY TO VERY SLIGHTLY FRACTURED (FD2)\***

**SLIGHTLY FRACTURED (FD3):** Core recovered mostly in lengths from 1 to 3 ft. with few scattered lengths less than 1 ft or greater than 3 ft.

**MODERATELY TO SLIGHTLY FRACTURED (FD4)\***

**MODERATELY FRACTURED (FD5):** Core recovered mostly in 0.3 to 1.0 ft lengths with most lengths about 0.6 ft.

**INTENSELY TO MODERATELY FRACTURED (FD6)\***

**INTENSELY FRACTURED (FD7):** Lengths average from 0.1 to 0.3 ft with scattered fragmented intervals. Core recovered mostly in lengths less than 0.3 ft.

**VERY INTENSELY TO INTENSELY FRACTURED (FD8)\***

**VERY INTENSELY FRACTURED (FD9):** Core recovered mostly as chips and fragments with a few scattered short core lengths.

\* Combinations of fracture densities (e.g. very intensely to intensely fractured, or moderately to slightly fractured) are used where equal distribution of both fracture density characteristics are present over a significant interval or exposure, or where characteristics are "in between" the descriptor definitions.

### ROCK HARDNESS DESCRIPTORS

Alphanumeric Descriptor	Descriptor	Criteria
H1	Extremely hard	Core, fragment, or exposure cannot be scratched with knife or sharp pick; can only be chipped with repeated heavy hammer blows.
H2	Very hard	Cannot be scratched with knife or sharp pick. Core or fragment breaks with repeated heavy hammer blows.
H3	Hard	Can be scratched with knife or sharp pick with difficulty (heavy pressure). Heavy hammer blow required to break specimen.
H4	Moderately hard	Can be scratched with knife or sharp pick with light or moderate pressure. Core or fragment breaks with moderate hammer blow.
H5	Moderately soft	Can be grooved 1/16 inch deep by knife or sharp pick with moderate or heavy pressure. Core or fragment breaks with light hammer blow or heavy manual pressure.
H6	Soft	Can be grooved or gouged easily by knife or sharp pick with light pressure, can be scratched with fingernail. Breaks with light to moderate manual pressure.
H7	Very soft	Can be readily indented, grooved or gouged with fingernail, or carved with a knife. Breaks with light manual pressure.

Any bedrock unit softer than H7, very soft, is to be described using ASTM D-2488 consistency descriptors.

Note: Although "sharp pick" is included in these definitions, descriptions of ability to be scratched, grooved or gouged by a knife is the preferred criteria.

Modified from United States Bureau of Reclamation, Engineering Geology Field Manual.

### BEDDING, FOLIATION, OR FLOW TEXTURE DESCRIPTORS

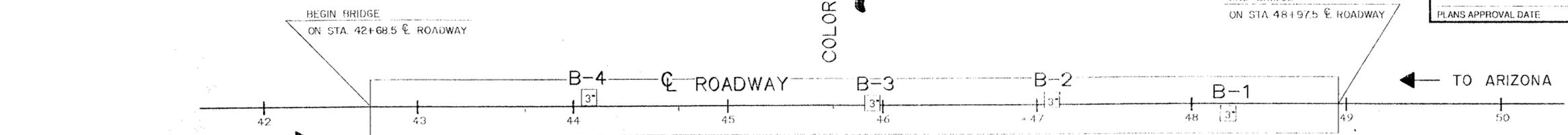
Descriptors	Thickness / Spacing
Massive	Greater than 10 ft
Very thickly (bedded, foliated, or banded)	3 to 10 ft
Thickly	1 to 3 ft
Moderately	0.3 to 1 ft
Thinly	0.1 to 0.3 ft
Very thinly	0.03 (3/8 in) to 0.1 ft
Laminated (intensely foliated or banded)	Less than 0.03 ft (3/8 in)

Modified from United States Bureau of Reclamation, Engineering Geology Field Manual.

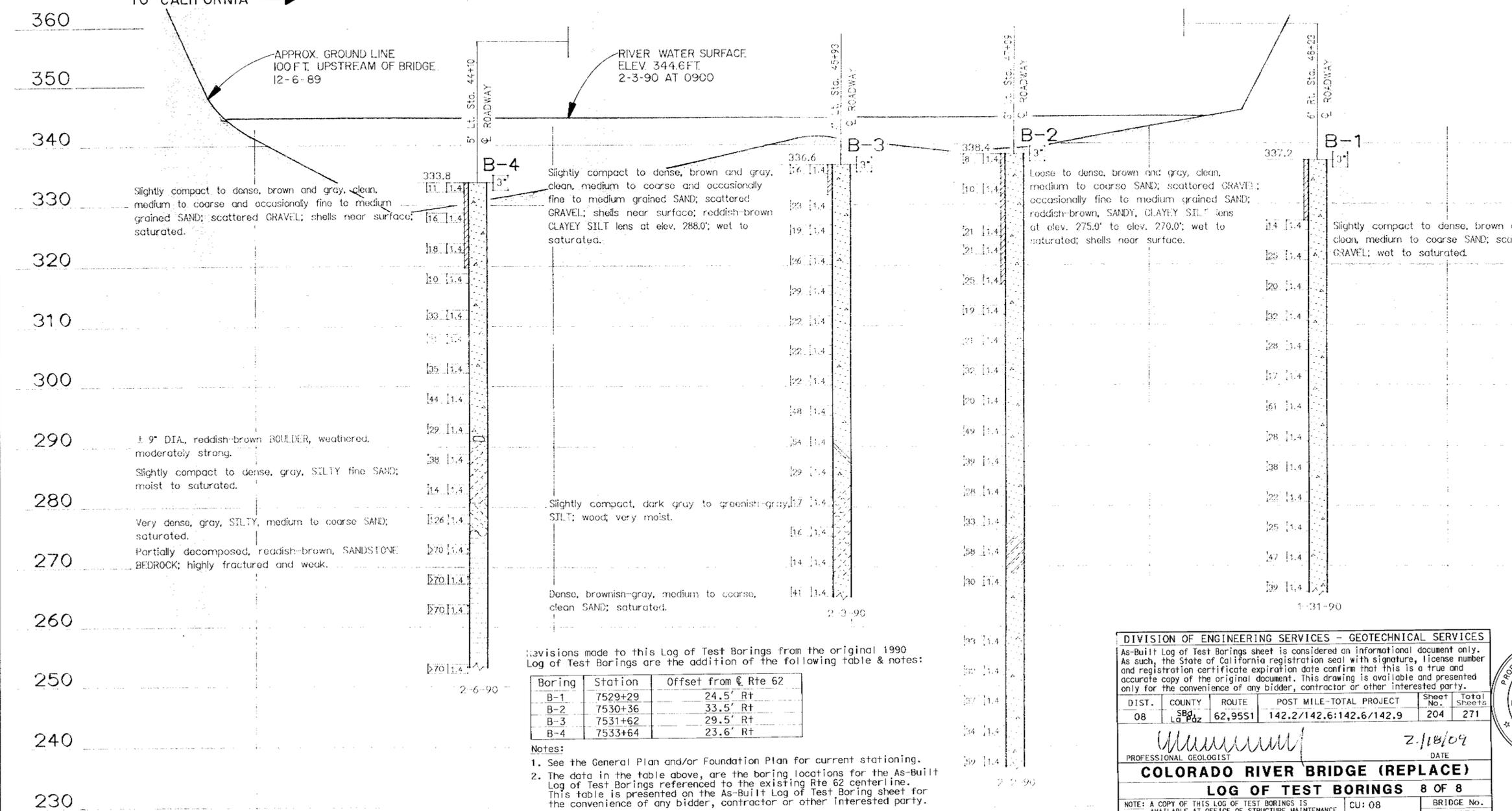
**BENCH MARK**

BM ELEV. 372.85  
West paving notch of Colorado River Bridge,  
Bridge No. 54-1000.

COLORADO RIVER



PLAN 360  
1"=40'



Revisions made to this Log of Test Borings from the original 1990 Log of Test Borings are the addition of the following table & notes:

Boring	Station	Offset from C. Rte 62
B-1	7529+29	24.5' Rt
B-2	7530+36	33.5' Rt
B-3	7531+62	29.5' Rt
B-4	7533+64	23.6' Rt

- Notes:
- See the General Plan and/or Foundation Plan for current stationing.
  - The data in the table above, are the boring locations for the As-Built Log of Test Borings referenced to the existing Rte 62 centerline. This table is presented on the As-Built Log of Test Boring sheet for the convenience of any bidder, contractor or other interested party.

**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	POST MILE-TOTAL PROJECT	Sheet No.	Total Sheets
08	SBd	62, 95S1	142.2/142.6/142.6/142.9	204	271

Mark Wilson  
PROFESSIONAL GEOLOGIST  
No. 8164  
Exp. 06-30-10

2/18/09  
DATE

**COLORADO RIVER BRIDGE (REPLACE)**  
**LOG OF TEST BORINGS 8 OF 8**

NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA

CU: 08	BRIDGE NO.
EA: 378701	54-1000
Sheet of	50 of 50

To accompany plans dated 6-14-10



PROFILE  
Hor. 1"=40'  
Ver. 1"=10'

**LEGEND OF BORING OPERATIONS**

**2 1/4" CONE PENETROMETER**  
ELECTRONIC CONE PENETROMETER

**2 1/4" CONE PENETROMETER**  
PENETRATION TEST

**ROTARY SAMPLE BORING (WET)**

**ROTARY SAMPLE BORING (DRY)**

**LEGEND OF EARTH MATERIALS**

**CONSISTENCY CLASSIFICATION FOR SOILS**

NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

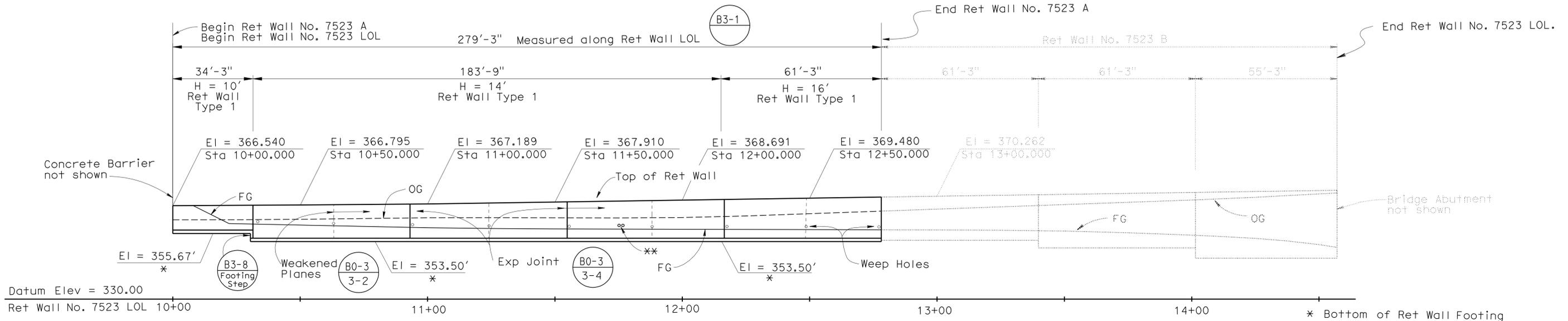
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBd, a Pdz	62, 95S1	142.2/142.6: 142.6/142.9	205	271

David Soon 6-24-09  
 REGISTERED CIVIL ENGINEER DATE  
 6-14-10  
 PLANS APPROVAL DATE  
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REGISTERED PROFESSIONAL ENGINEER  
 David Soon  
 No. 51862  
 Exp. 6-30-10  
 CIVIL  
 STATE OF CALIFORNIA

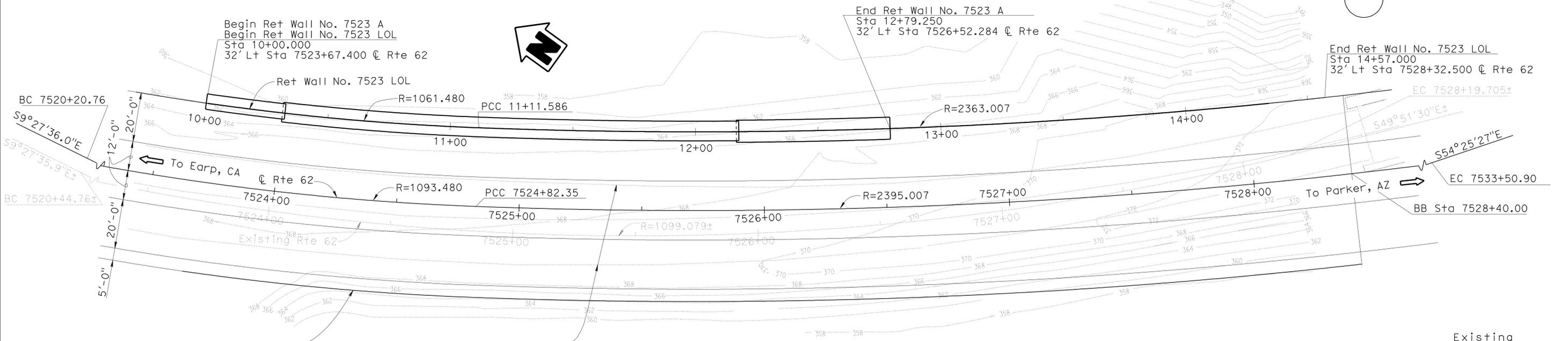
**QUANTITIES:**

STRUCTURE EXCAVATION (RETAINING WALL)	1,454	CY
STRUCTURE BACKFILL (RETAINING WALL)	1,300	CY
STRUCTURAL CONCRETE, RETAINING WALL	1,330	CY
BAR REINFORCING STEEL (RETAINING WALL)	42,400	LB
TUBULAR BICYCLE RAILING	280	LF
CONCRETE BARRIER (TYPE 80A MODIFIED)	280	LF



**DEVELOPED MIRROR ELEVATION**  
SCALE: 1" = 20'

\* Bottom of Ret Wall Footing  
 \*\* 2-12" dia bridge drainage pipe. Approx location 32' Lt Sta 7525+50 @ Rte 62, See Road Plans.  
 See B3-9 for opening reinforcement



**PLAN**  
SCALE: 1" = 20'

**NOTE:**  
 1. For "TYPICAL SECTION", "INDEX TO PLANS", "STANDARD PLANS LIST", see "GENERAL PLAN No. 2", sheet.

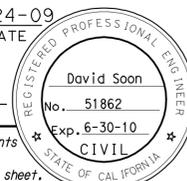
Rte 62	Rte 62	Existing Rte 62
$\Delta = 24^\circ 11' 10"$	$\Delta = 20^\circ 46' 42"$	$\Delta = 40^\circ 23' 53.4"$ ±
R = 1093.480'	R = 2395.007'	R = 1099.079'±
T = 234.280'	T = 439.099'	T = 404.363'±
L = 461.585'	L = 868.551'	L = 774.940'±

 DESIGN ENGINEER	DESIGN BY David Soon	CHECKED Rakesh Deo	Service Load Design	Live Loading: 2' Live Load Surcharge
	DETAILS BY Jingrong Zhou/Y. Feng	CHECKED Rakesh Deo	LAYOUT BY David Soon	CHECKED Rakesh Deo
	QUANTITIES BY Eduardo Ortega Jr.	CHECKED Bruno Jenko	SPECIFICATIONS BY Kevin Ellingson	PLANS AND SPECS COMPARED Kevin Ellingson

**STATE OF CALIFORNIA**  
 DEPARTMENT OF TRANSPORTATION  
**DIVISION OF ENGINEERING SERVICES**  
 STRUCTURE DESIGN  
**DESIGN BRANCH 7**

**RETAINING WALL NO. 7523 A**  
**GENERAL PLAN NO. 1**

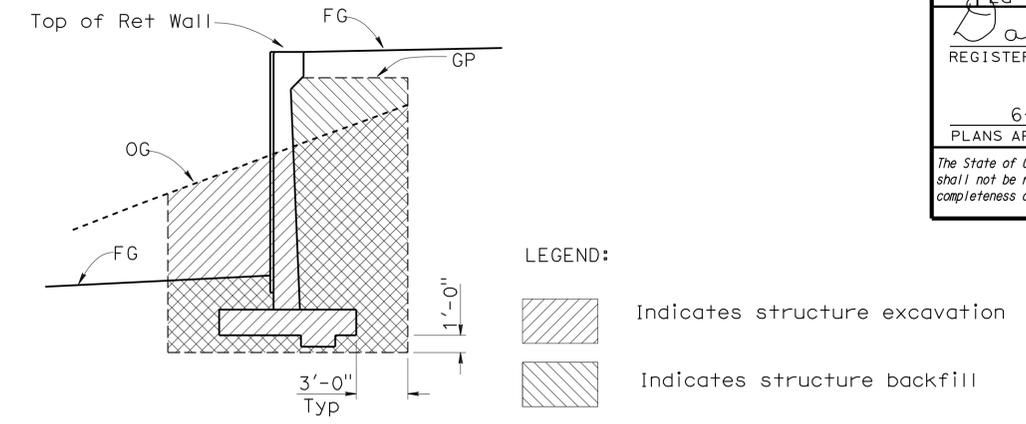
BRIDGE NO. \_\_\_\_\_  
 POST MILE 142.3

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBd, a PGZ	62, 95S1	142.2/142.6: 142.6/142.9	206	271
David Soon 6-24-09 REGISTERED CIVIL ENGINEER DATE					
6-14-10 PLANS APPROVAL DATE					
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### INDEX TO PLANS

SHEET No.	TITLE
1.	GENERAL PLAN No. 1
2.	GENERAL PLAN No. 2
3.	CONCRETE BARRIER TYPE 80A MODIFIED LAYOUT
4.	CONCRETE BARRIER TYPE 80A MODIFIED DETAILS No. 1
5.	CONCRETE BARRIER TYPE 80A MODIFIED DETAILS No. 2
6.	CONCRETE BARRIER TYPE 80A MODIFIED DETAILS No. 3
7.	TUBULAR BICYCLE RAILING
8.	LOG OF TEST BORINGS 1 OF 2
9.	LOG OF TEST BORINGS 2 OF 2

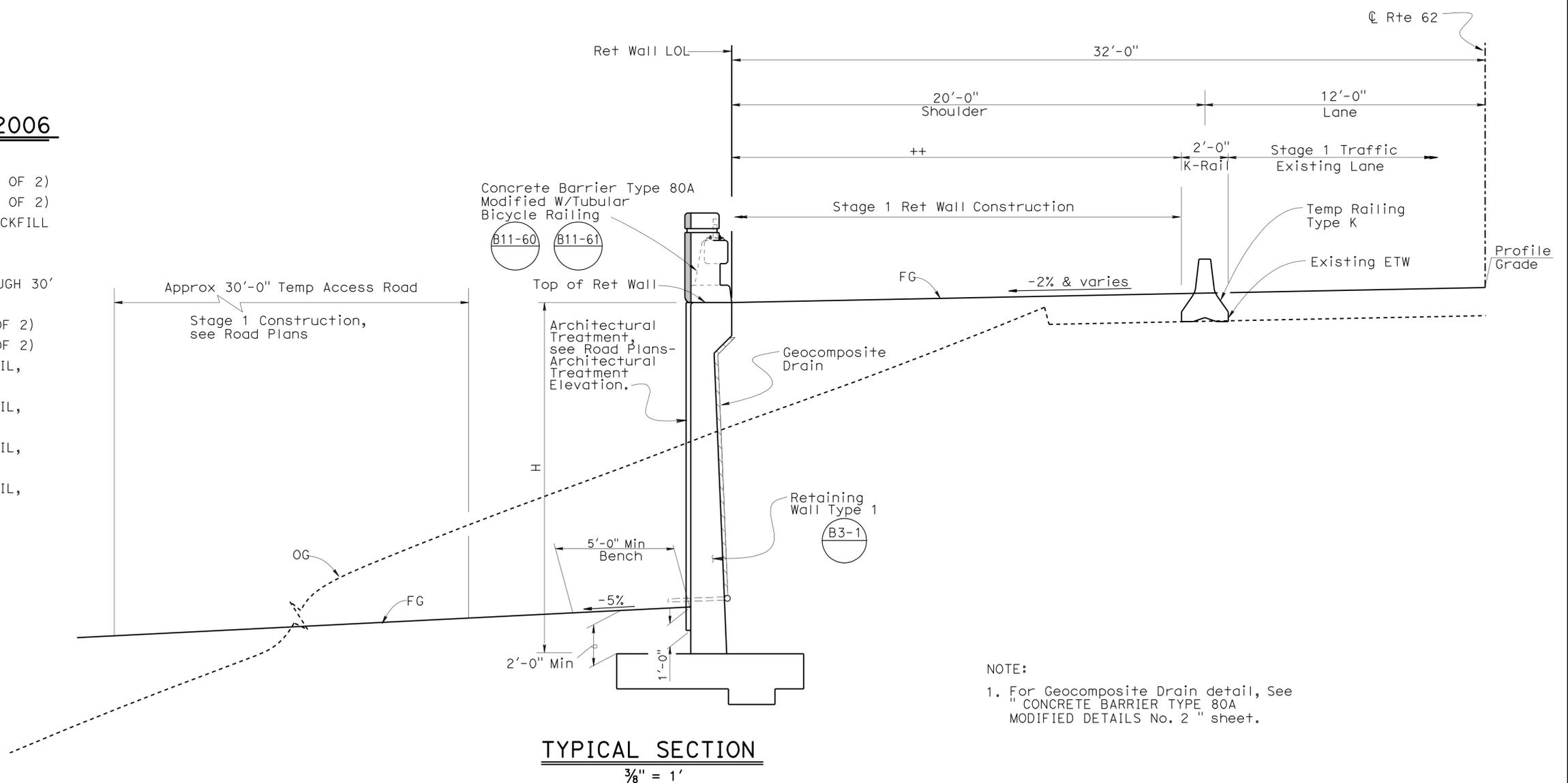
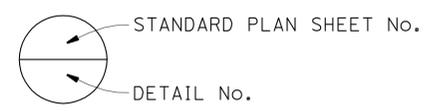
Ret Wall Station	++	Design H	Ret Wall Type
10+00	19'-0"	10'	Type 1
10+50	19'-0"	14'	Type 1
11+00	19'-0"	14'	Type 1
11+50	19'-0"	14'	Type 1
12+00	19'-0"	16'	Type 1
12+50	19'-0"	16'	Type 1
13+00	19'-0"	17'	Tieback



**LIMITS OF EXCAVATION AND BACKFILL**  
 $\frac{3}{8}'' = 1'$

### STANDARD PLANS DATED MAY 2006

A10A	ACRONYMS AND ABBREVIATIONS (SHEET 1 OF 2)
A10B	ACRONYMS AND ABBREVIATIONS (SHEET 2 OF 2)
A62B	LIMITS OF PAYMENT FOR EXCAVATION BACKFILL - BRIDGE SURCHARGE AND WALL
B0-3	BRIDGE DETAILS
B3-1	RETAINING WALL TYPE 1 - H = 4' THROUGH 30'
B3-8	RETAINING WALL DETAILS No. 1
RSP B11-60	CONCRETE BARRIER TYPE 80 (SHEET 1 OF 2)
RSP B11-61	CONCRETE BARRIER TYPE 80 (SHEET 2 OF 2)
RSP ES-9A	ELECTRICAL SYSTEMS (ELECTRICAL DETAIL, STRUCTURE INSTALLATIONS)
ES-9B	ELECTRICAL SYSTEMS (ELECTRICAL DETAIL, STRUCTURE INSTALLATIONS)
RSP ES-9C	ELECTRICAL SYSTEMS (ELECTRICAL DETAIL, STRUCTURE INSTALLATIONS)
ES-9D	ELECTRICAL SYSTEMS (ELECTRICAL DETAIL, STRUCTURE INSTALLATIONS)



**TYPICAL SECTION**  
 $\frac{3}{8}'' = 1'$

DESIGN	BY David Soon	CHECKED Rakesh Deo
DETAILS	BY Yingjue Feng	CHECKED Rakesh Deo
QUANTITIES	BY Eduardo Ortega Jr.	CHECKED Bruno Jenko

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
 STRUCTURE DESIGN  
 DESIGN BRANCH 7

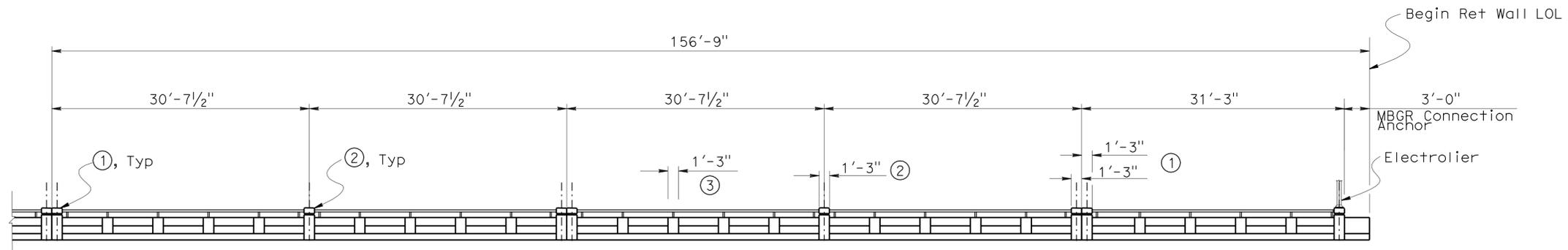
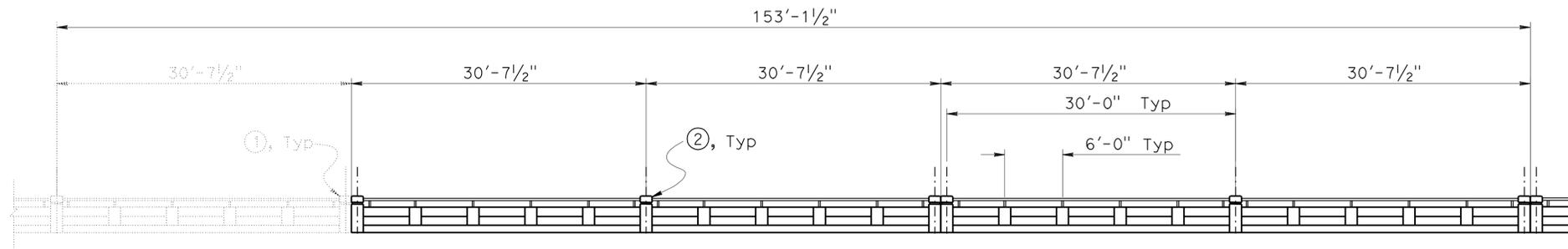
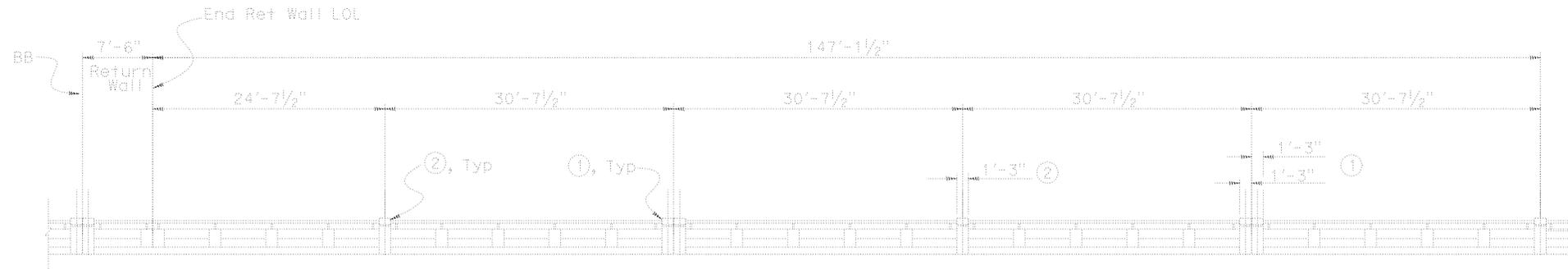
BRIDGE NO.	
POST MILE	142.3

RETAINING WALL NO. 7523 A  
 GENERAL PLAN NO. 2

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBd, a PGZ	62, 95S1	142.2/142.6 142.6/142.9	207	271

David Soon 6-24-09  
 REGISTERED CIVIL ENGINEER DATE  
 6-14-10  
 PLANS APPROVAL DATE  
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REGISTERED PROFESSIONAL ENGINEER  
 David Soon  
 No. 51862  
 Exp. 6-30-10  
 CIVIL  
 STATE OF CALIFORNIA



**LEGEND:**

- ① Double Pylon & Ret Wall Exp. Joint.
- ② Pylon.
- ③ Concrete Barrier Type 80 post.

**DEVELOPED ELEVATION  
CONCRETE BARRIER LAYOUT**

SCALE: 1/8" = 1'-0"

**NOTES:**

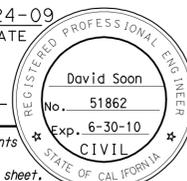
1. For Concrete Barrier Type 80 details, see B11-60 and B11-61.
2. For Pylon and Double Pylon details, see "CONCRETE BARRIER TYPE 80A MODIFIED DETAILS No. 1" and "CONCRETE BARRIER TYPE 80A MODIFIED DETAILS No. 2" sheets.
3. For MBGR Connection Anchor details, see "CONCRETE BARRIER TYPE 80A MODIFIED DETAILS No. 3" sheet.
4. For Tubular Bicycle Railing details, see "TUBULAR BICYCLE RAILING" sheet.

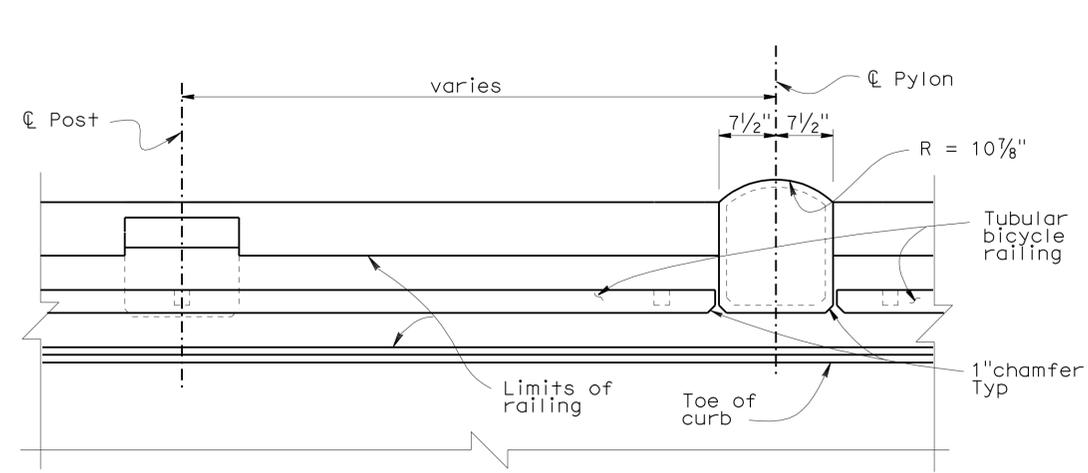
DESIGN	BY David Soon	CHECKED Rakesh Deo
DETAILS	BY Yingjue Feng	CHECKED Rakesh Deo
QUANTITIES	BY Eduardo Ortega Jr.	CHECKED Bruno Jenko

<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	
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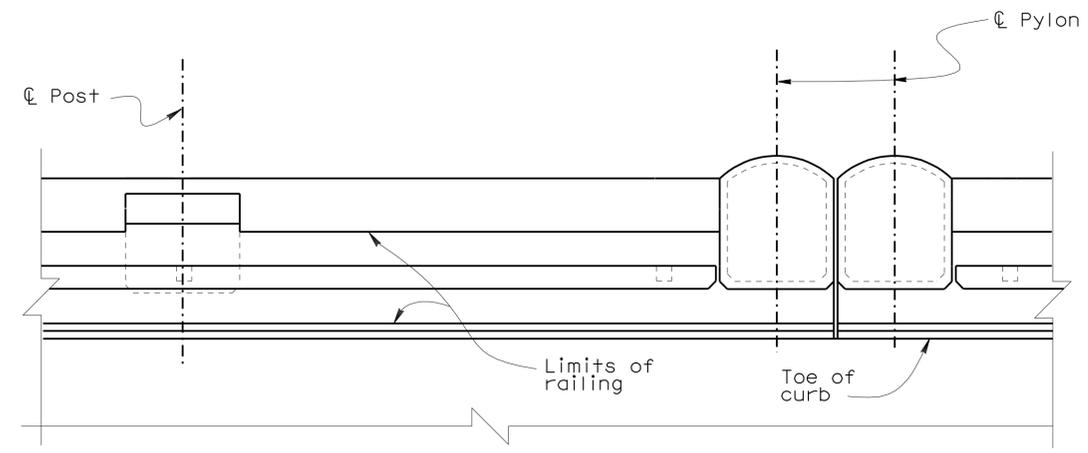
DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 7</b>	
BRIDGE NO.	
POST MILE	142.3

<b>RETAINING WALL NO. 7523 A</b> <b>CONCRETE BARRIER TYPE 80A</b> <b>MODIFIED LAYOUT</b>	
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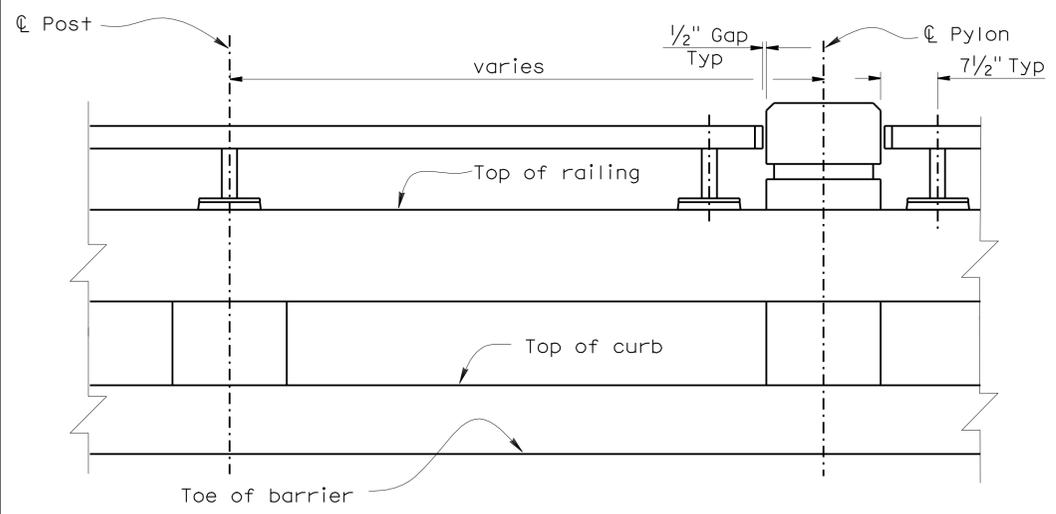
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBD, a Pqz	62, 95S1	142.2/142.6 142.6/142.9	208	271
David Soon 6-24-09 REGISTERED CIVIL ENGINEER DATE					
6-14-10					
PLANS APPROVAL DATE					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.					



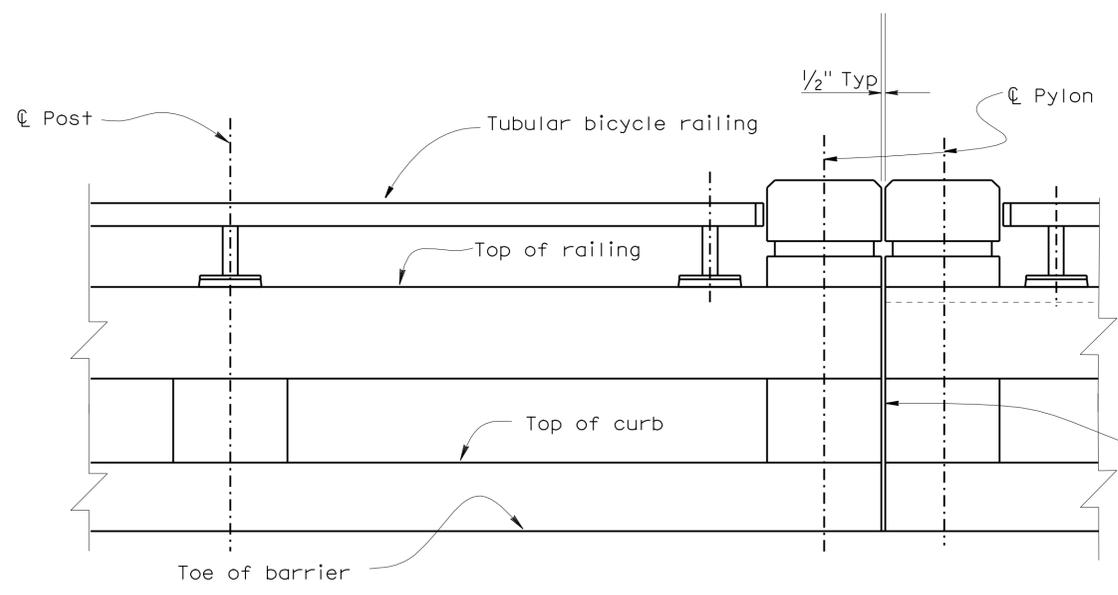
PLAN AT PYLON



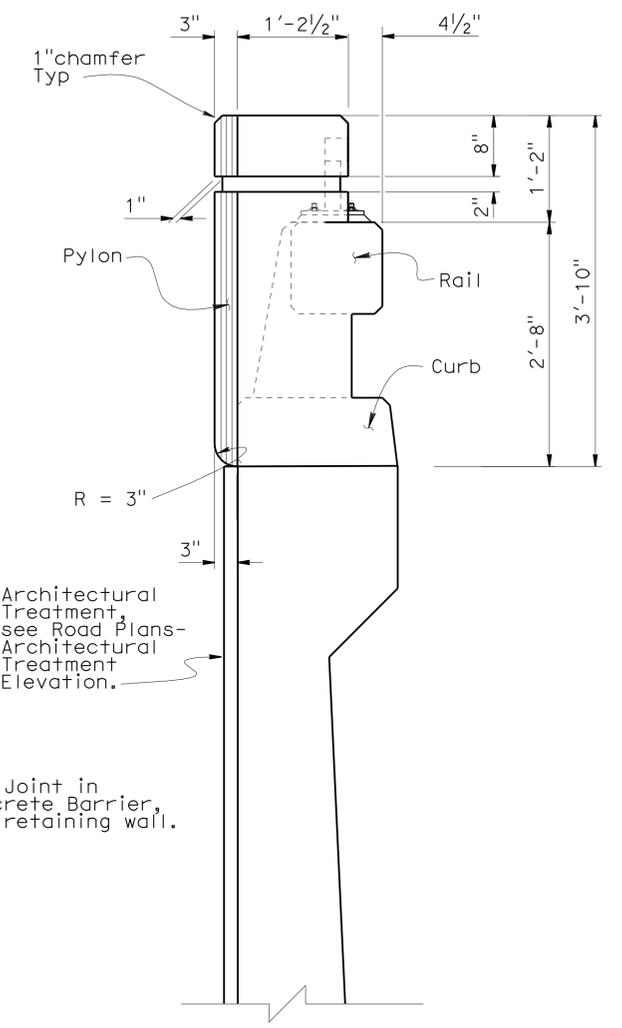
PLAN AT DOUBLE PYLON



ELEVATION AT PYLON



ELEVATION AT DOUBLE PYLON



TYPICAL SECTION AT PYLON

- NOTES:
- For Concrete Barrier layout, see "CONCRETE BARRIER TYPE 80A MODIFIED LAYOUT" sheet.
  - For Concrete Barrier Type 80 details, see B11-60 and B11-61.
  - For Concrete Barrier details not shown, see "CONCRETE BARRIER TYPE 80A MODIFIED DETAILS No. 2" and "CONCRETE BARRIER TYPE 80A MODIFIED DETAILS No. 3" sheets.
  - For Tubular Bicycle Railing details, see "TUBULAR BICYCLE RAILING" sheet.

CONCRETE BARRIER TYPE 80A MODIFIED DETAIL

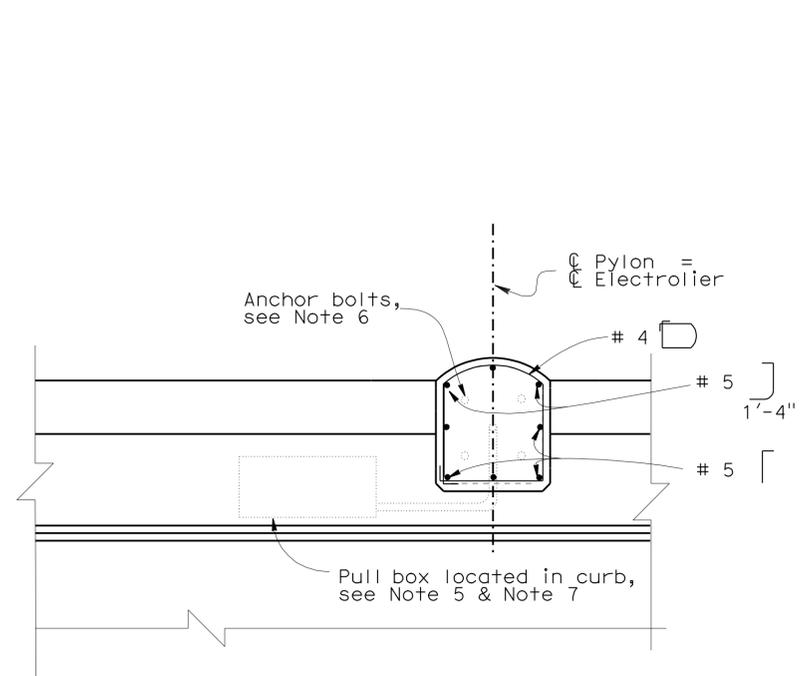
SCALE: 1" = 1'-0"

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)	DESIGN	BY David Soon	CHECKED Rakesh Deo	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH <b>7</b>	BRIDGE NO.	
	DETAILS	BY Yingjue Feng	CHECKED Rakesh Deo			POST MILE	142.3
	QUANTITIES	BY Eduardo Ortega Jr.	CHECKED Bruno Jenko				

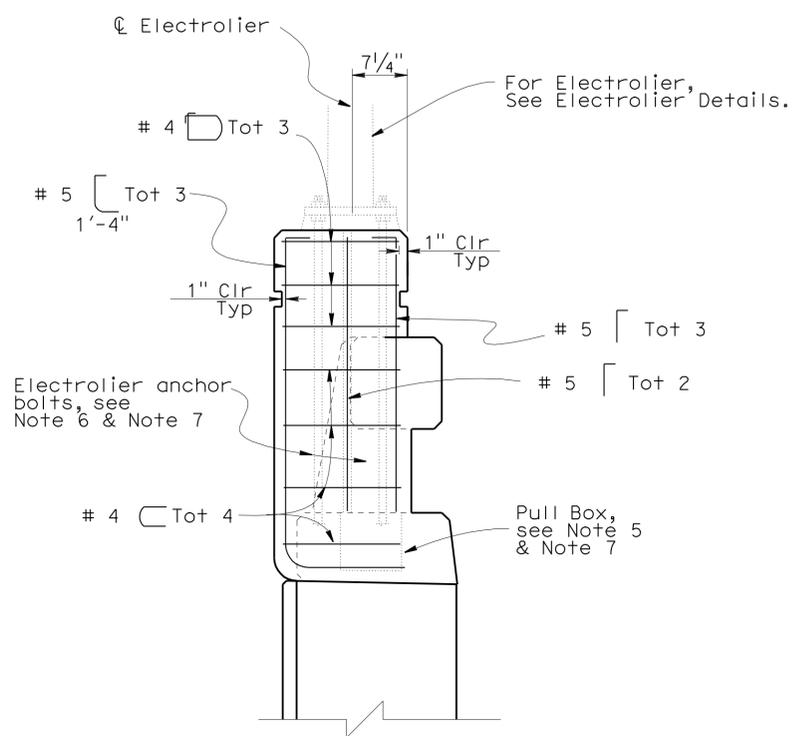
RETAINING WALL NO. 7523 A	
CONCRETE BARRIER TYPE 80A MODIFIED DETAILS NO. 1	

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0	1	2	3	CU 08 EA 378701	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 11-19-08 11-20-08 12-11-08 1-2-09 2-12-09 2-26-09 4-13-09 6-16-09	SHEET 4 OF 9
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBd, a Pdz	62, 95S1	142.2/142.6: 142.6/142.9	209	271
David Soon 6-24-09 REGISTERED CIVIL ENGINEER DATE					
6-14-10 PLANS APPROVAL DATE					
<i>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.</i>					



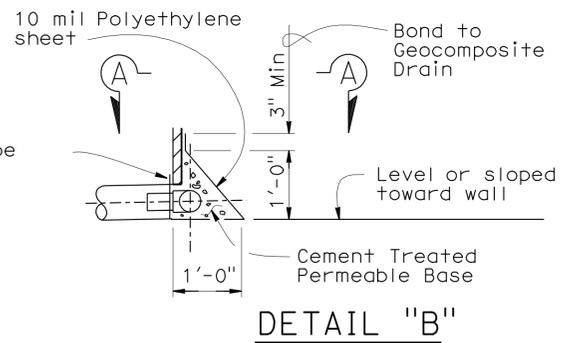
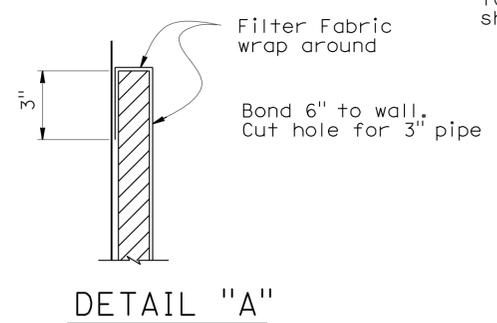
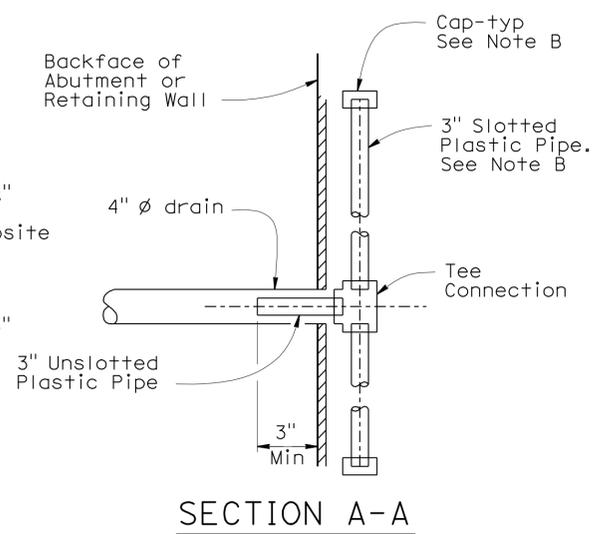
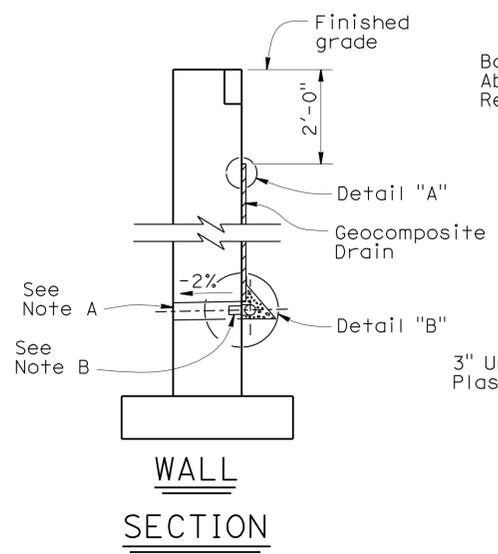
**PLAN**  
Bicycle Railing not shown



**TYPICAL SECTION**  
Bicycle Railing not shown

**PYLON DETAIL**  
SCALE: 1" = 1'-0"

- NOTES:
- For Concrete Barrier layout, see "CONCRETE BARRIER TYPE 80A MODIFIED LAYOUT" sheet.
  - For Concrete Barrier Type 80 details, see B11-60 and B11-61.
  - For Concrete Barrier details not shown, see "CONCRETE BARRIER TYPE 80A MODIFIED DETAILS NO. 1" and "CONCRETE BARRIER TYPE 80A MODIFIED DETAILS NO. 3" sheets.
  - For Tubular Bicycle Railing details, see "TUBULAR BICYCLE RAILING" sheet.
  - For electrical details see ES9A, ES9B, ES9C & ES9D.
  - For anchor bolts size and placement, see Electrolier Details.
  - Pull Box and anchor bolts only at electrolier locations.
  - Concrete Barrier Type 80 post and longitudinal reinforcement continuous through pylon. This reinforcement is not shown.



**WEEP HOLE AND GEOCOMPOSITE DRAIN**

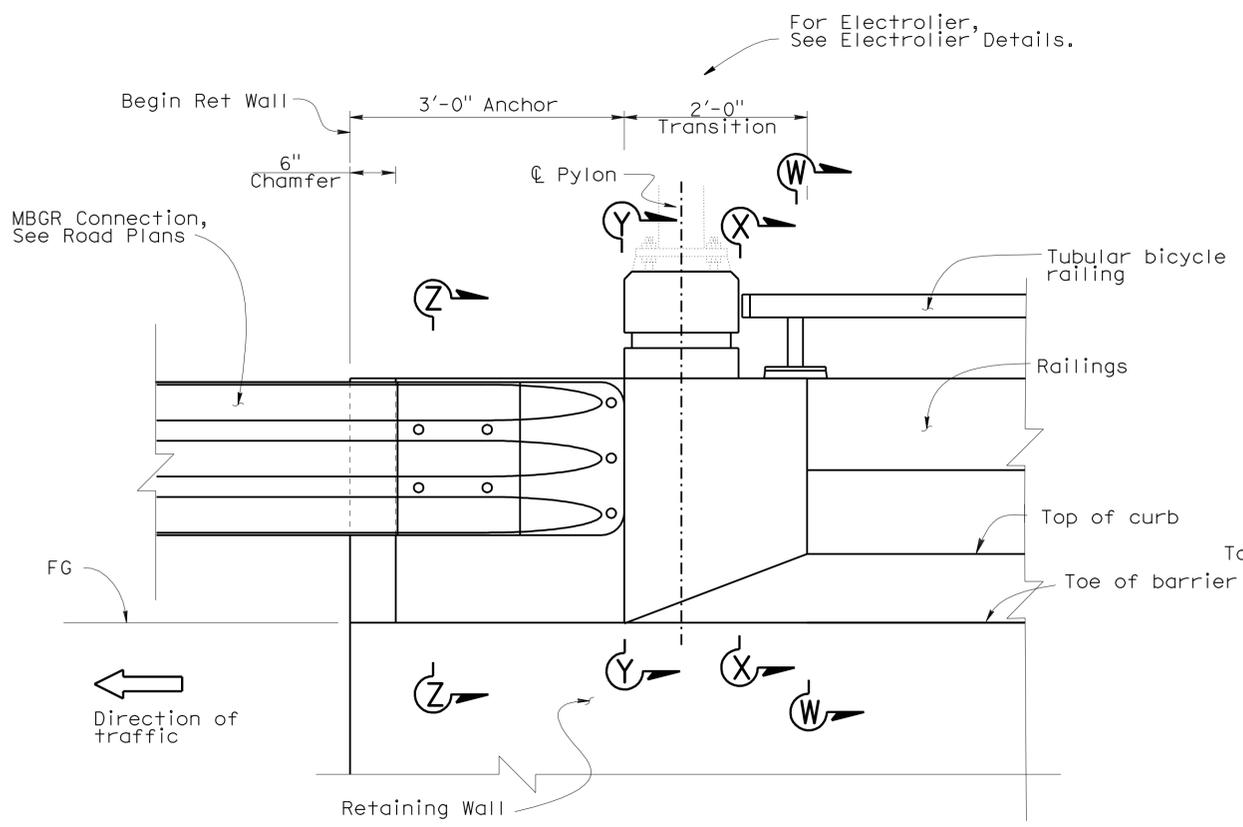
- NOTES:
- 4" ø drains at intermediate sag points and at 25' max center to center (9' c-c for Type 3 and 9'-3" c-c for Type 4 retaining walls). For walls adjacent to sidewalks or curbs, provide 4" cast iron or asbestos cement pipe under the sidewalk to discharge through curb face. Exposed wall drains shall be located 3"± above finished grade.
  - Geocomposite drain, cement treated permeable base, and 3"ø slotted plastic pipe continuous behind retaining wall or abutment. Cap ends of pipe. Provide "Tee" connection at each 4" ø drain.
  - Connect the low end of plastic pipe to the main outlet pipe as applicable.

DESIGN BY David Soon CHECKED Rakesh Deo DETAILS BY Yingjue Feng CHECKED Rakesh Deo QUANTITIES BY Eduardo Ortega Jr. CHECKED Bruno Jenko			STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 7	BRIDGE NO. POST MILE 142.3	RETAINING WALL NO. 7523 A CONCRETE BARRIER TYPE 80A MODIFIED DETAILS NO. 2																				
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)			ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	CU 08 EA 378701	DISREGARD PRINTS BEARING EARLIER REVISION DATES	<table border="1"> <tr> <th colspan="2">REVISION DATES</th> <th>SHEET</th> <th>OF</th> </tr> <tr> <td>11-18-08</td> <td>11-29-08</td> <td>5</td> <td>9</td> </tr> <tr> <td>12-18-08</td> <td>1-2-09</td> <td></td> <td></td> </tr> <tr> <td>2-12-09</td> <td>2-26-09</td> <td></td> <td></td> </tr> <tr> <td>4-12-09</td> <td>6-16-09</td> <td></td> <td></td> </tr> </table>	REVISION DATES		SHEET	OF	11-18-08	11-29-08	5	9	12-18-08	1-2-09			2-12-09	2-26-09			4-12-09	6-16-09		
REVISION DATES		SHEET	OF																							
11-18-08	11-29-08	5	9																							
12-18-08	1-2-09																									
2-12-09	2-26-09																									
4-12-09	6-16-09																									

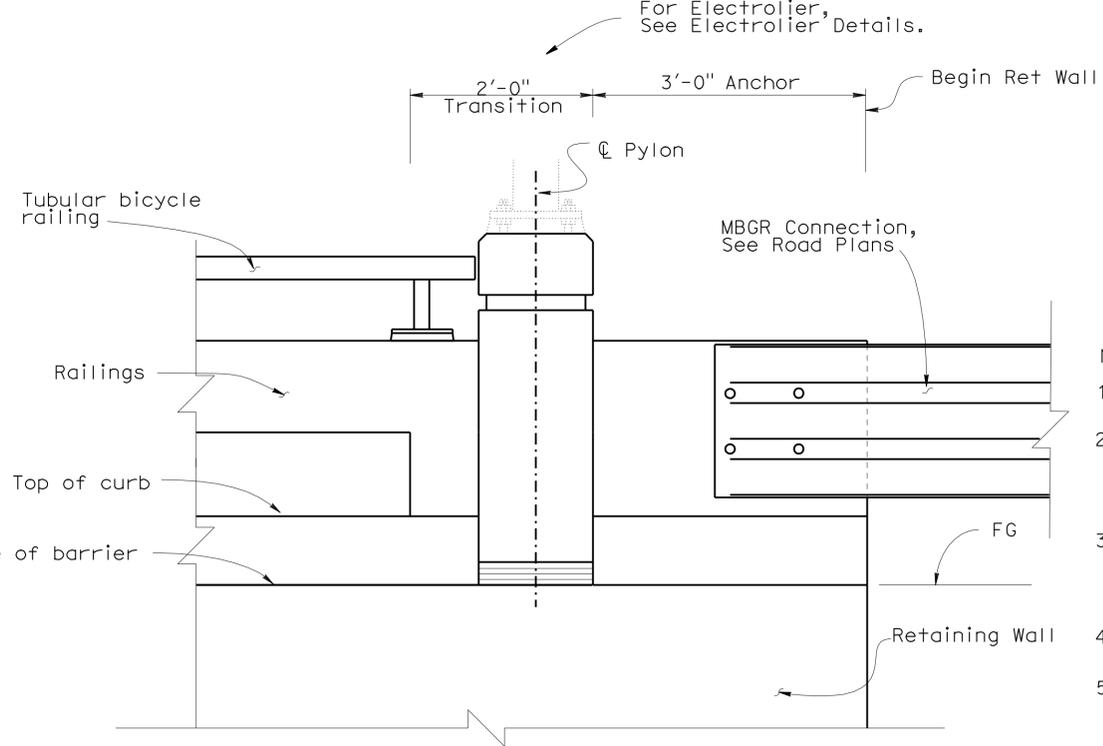
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USERNAME => hrlengard DATE PLOTTED => 17-JUN-2010 TIME PLOTTED => 09:57

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBD, La Paz	62, 95S1	142.2/142.6: 142.6/142.9	210	271
David Soon 12-10-09				REGISTERED CIVIL ENGINEER	DATE
6-14-10				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.				David Soon No. 51862 Exp. 6-30-10 CIVIL	

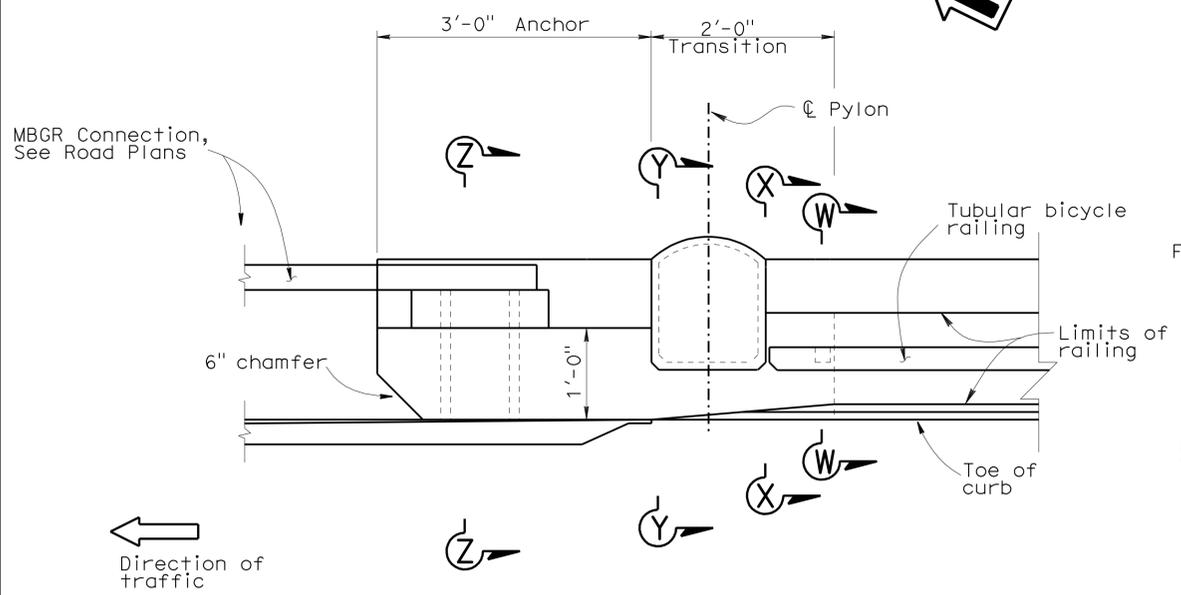


**ELEVATION - MBGR CONNECTION ANCHOR FRONT OF BARRIER**  
1" = 1'-0"

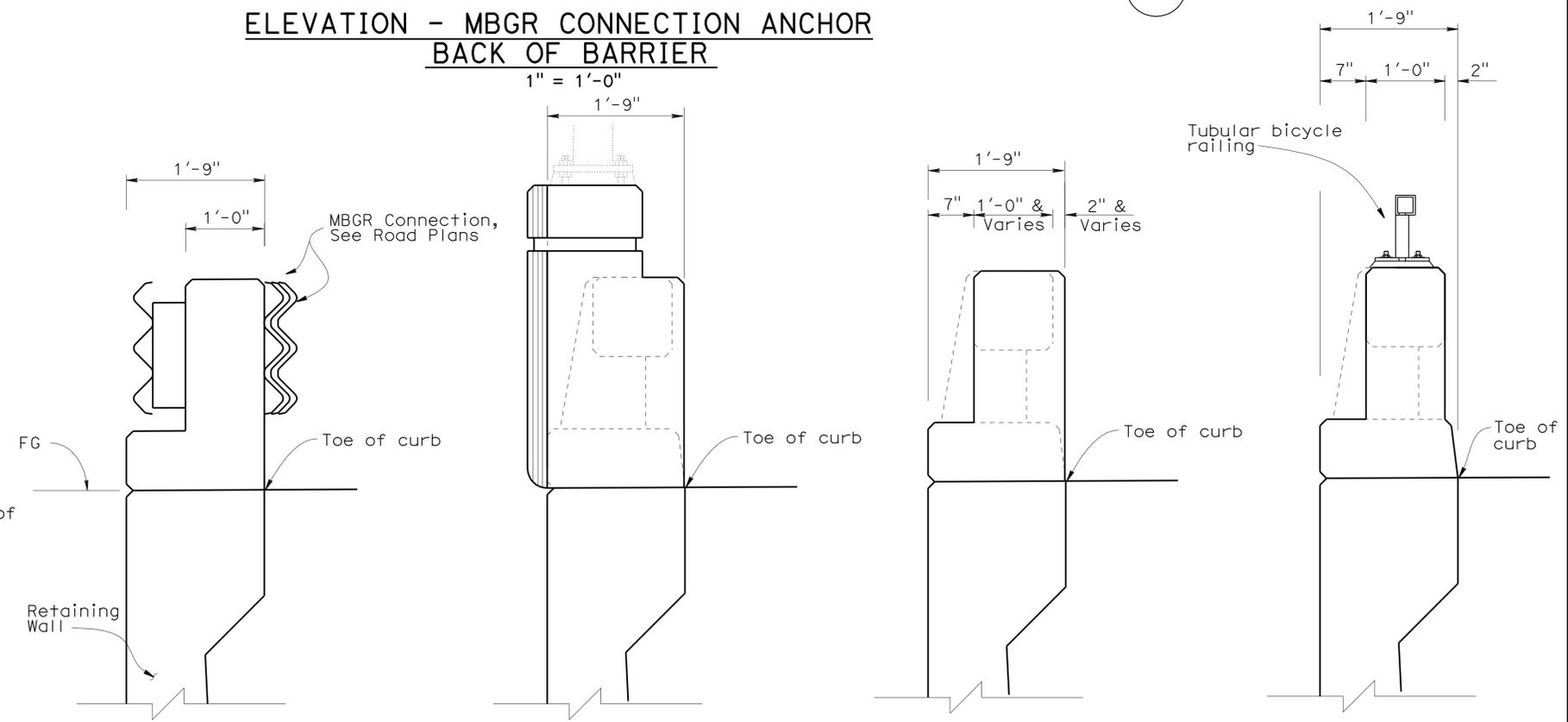


**ELEVATION - MBGR CONNECTION ANCHOR BACK OF BARRIER**  
1" = 1'-0"

- NOTES:
1. For Concrete Barrier layout, see "CONCRETE BARRIER TYPE 80A MODIFIED LAYOUT" sheet.
  2. For Concrete Barrier Type 80 details, see B11-60 and B11-61.
  3. For Concrete Barrier details not shown, see "CONCRETE BARRIER TYPE 80A MODIFIED DETAILS No. 1" and "CONCRETE BARRIER TYPE 80A MODIFIED DETAILS No. 2" sheets.
  4. For Tubular Bicycle Railing details, see "TUBULAR BICYCLE RAILING" sheet.
  5. For MBGR Connection Anchor reinforcement, see B11-60.



**PLAN - MBGR CONNECTION ANCHOR**  
1" = 1'-0"



**SECTION Z-Z**  
1" = 1'-0"

**SECTION Y-Y**  
1" = 1'-0"

**SECTION X-X**  
1" = 1'-0"

**SECTION W-W**  
1" = 1'-0"

DESIGN	BY David Soon	CHECKED Rakesh Deo
DETAILS	BY Yingjue Feng	CHECKED Rakesh Deo
QUANTITIES	BY Eduardo Ortega Jr.	CHECKED Bruno Jenko

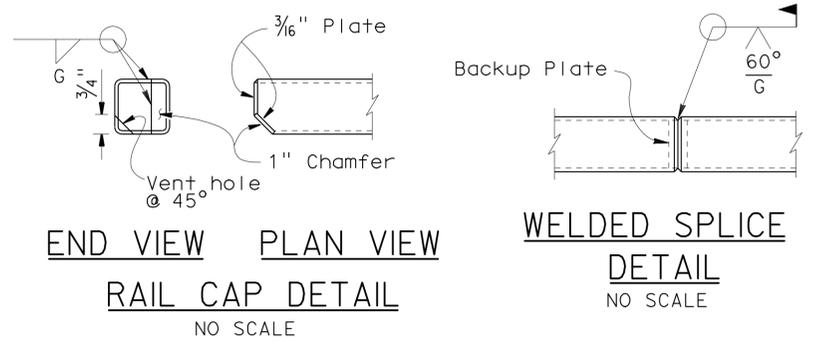
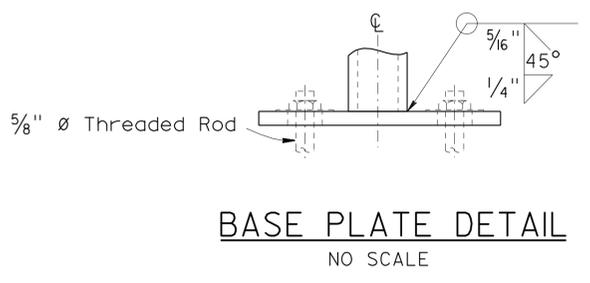
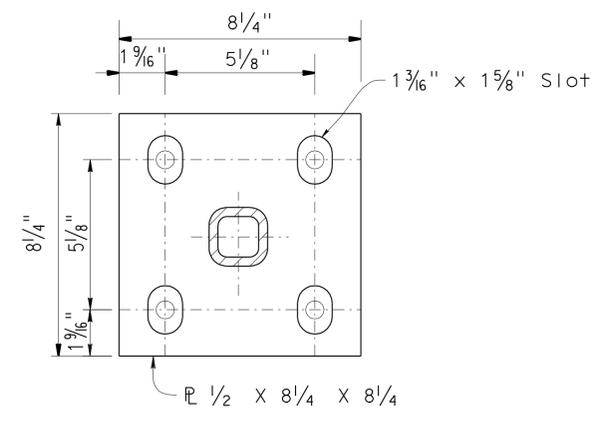
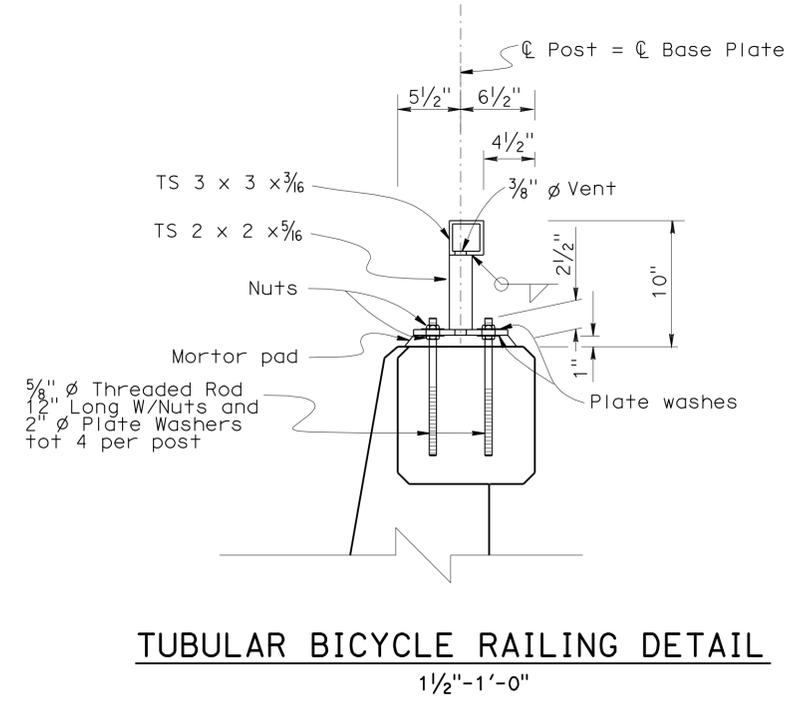
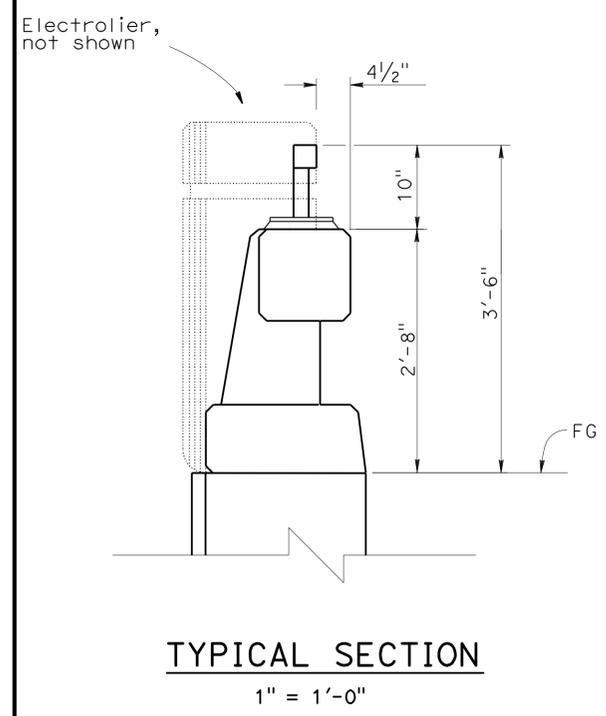
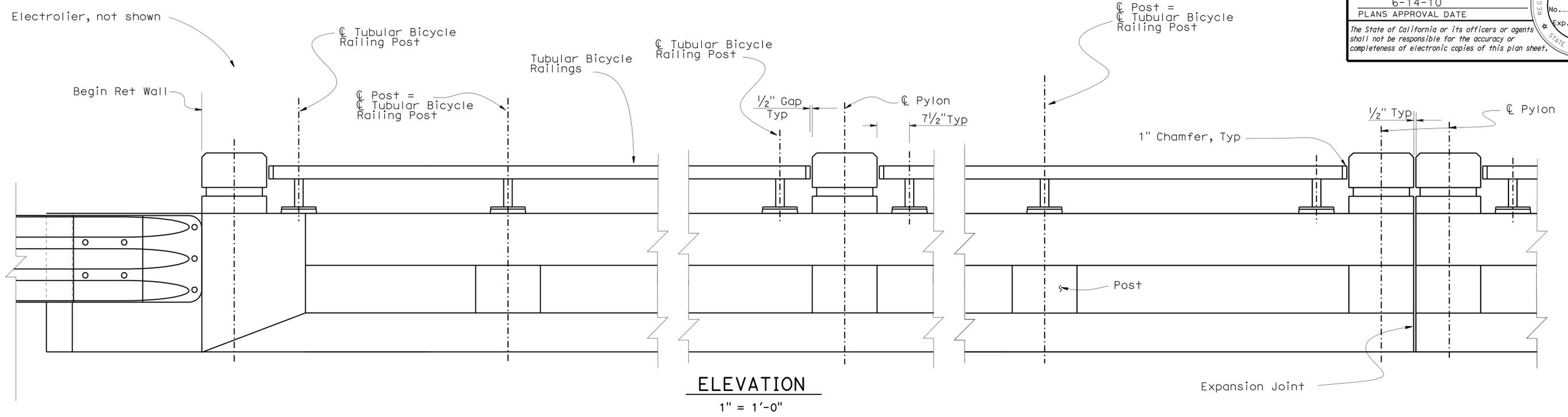
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
DESIGN BRANCH 7

BRIDGE NO.  
POST MILE  
142.3

RETAINING WALL NO. 7523 A  
CONCRETE BARRIER TYPE 80A  
MODIFIED DETAILS NO. 3

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBd, La Pdz	62, 95S1	142.2/142.6: 142.6/142.9	211	271
David Soon 12-10-09				REGISTERED CIVIL ENGINEER	DATE
6-14-10				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.					



- NOTES:
- Galvanize rail assembly after fabrication.
  - Post shall be normal to railing.
  - Top rail tube shall be continuous over not less than two posts except a short post spacing is permitted near deck or wall joints, electro-liers, or other rail discontinuities as noted.
  - For Concrete Barrier layout, see "CONCRETE BARRIER TYPE 80A MODIFIED LAYOUT" sheet.
  - For Concrete Barrier Type 80 details, see B11-60 and B11-61.
  - For Concrete Barrier details not shown, see "CONCRETE BARRIER TYPE 80A MODIFIED DETAILS No. 1", "CONCRETE BARRIER TYPE 80A MODIFIED DETAILS No. 2", and "CONCRETE BARRIER TYPE 80A MODIFIED DETAILS No. 3" sheets.

DESIGN	BY	David Soon	CHECKED	Rakesh Deo	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 7	BRIDGE NO.	RETAINING WALL NO. 7523 A TUBULAR BICYCLE RAILING	
	DETAILS	BY	Yingjue Feng	CHECKED			Rakesh Deo		POST MILE
	QUANTITIES	BY	Eduardo Ortega Jr.	CHECKED			Bruno Jenko		142.3
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)						CU 08 EA 378701	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 7 OF 9

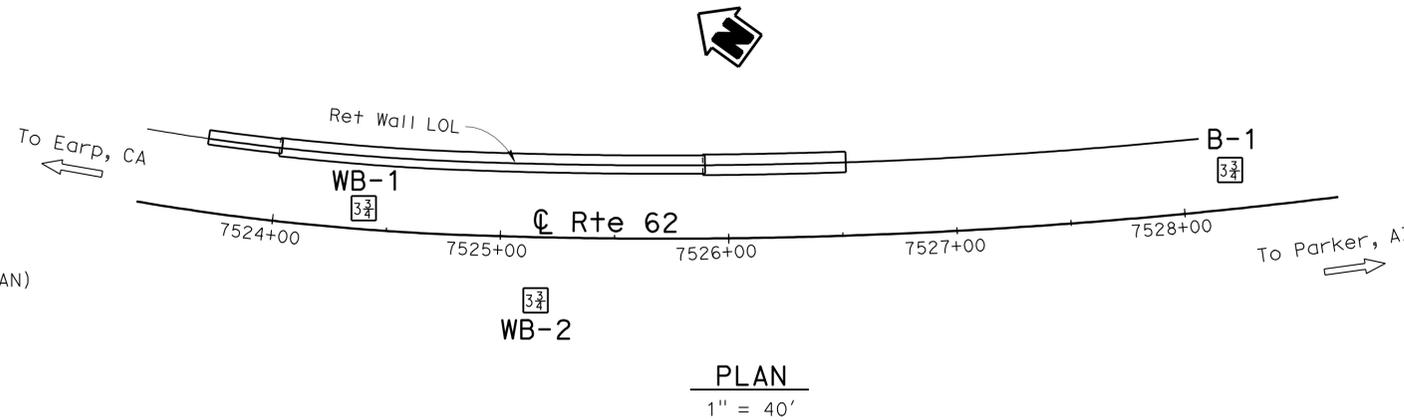
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBd, La Paz	62, 95S1	142.2/142.6: 142.6/142.9	212	271

2-23-09  
PROFESSIONAL GEOLOGIST

6-14-10  
PLANS APPROVAL DATE

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PROFESSIONAL GEOLOGIST  
 Mark Wilson  
 No. 8164  
 Exp. 06-30-10  
 STATE OF CALIFORNIA



### BENCH MARK

#### SURVEY CONTROL

PHOTO PT 62-2-93 (NOT SHOWN ON PLAN)  
 Fnd "PK" NAIL ON YELLOW STRIPE  
 IN TURN POCKET TO RV PARK  
 11.807' Rt + C PROPOSED RTE 62  
 Sta 7523+99.516  
 N 1901612.719  
 E 7680552.001  
 Elev 367.781'

#### SPAN 1964

Fnd 3/2" STD. USC&GS BRASS DISK STAMPED  
 "SPAN 1964" FLUSH IN SIDEWALK  
 48.365' Lt + C PROPOSED RTE 62  
 Sta. 7531+78.111  
 N 1901070.086  
 E 7681099.470  
 Elev 378.998'

PLAN  
1" = 40'

#### NOTES:

- Groundwater was encountered, but not measured in some borings, due to the immediate backfilling of the boring. The Contractor should anticipate encountering ground water during the excavation and construction of all foundation supports. De-watering of the footing excavations may be required. Groundwater surface elevations are subject to seasonal fluctuations and will be encountered at higher or lower elevations depending on conditions at time of construction.
- Soil colors were determined by using Munsell Soil Color Charts (1994, Revised Edition). Rock colors were determined using USGS rock color charts (1995, revised text).
- Test borings utilized a CME automatic hammer to advance the sampler. Penetration Index values shown on the LOTB sheets were actual readings recorded in the field. Soil consistencies shown on the LOTB sheets are based on these Penetration Index Values.
- The size of cobbles or boulders noted in the borings does not preclude the fact that there may be larger cobbles or boulders to be found at the site.
- The borings were drilled using a 94 mm cased wire line system.

#### LEGEND OF BORING OPERATIONS

**2 1/4" CONE PENETROMETER**  
**DRY BORING**  
**WET BORING**  
**DIAMOND CORE BORING**  
**JET BORING**  
**ELECTRONIC CONE PENETROMETER**

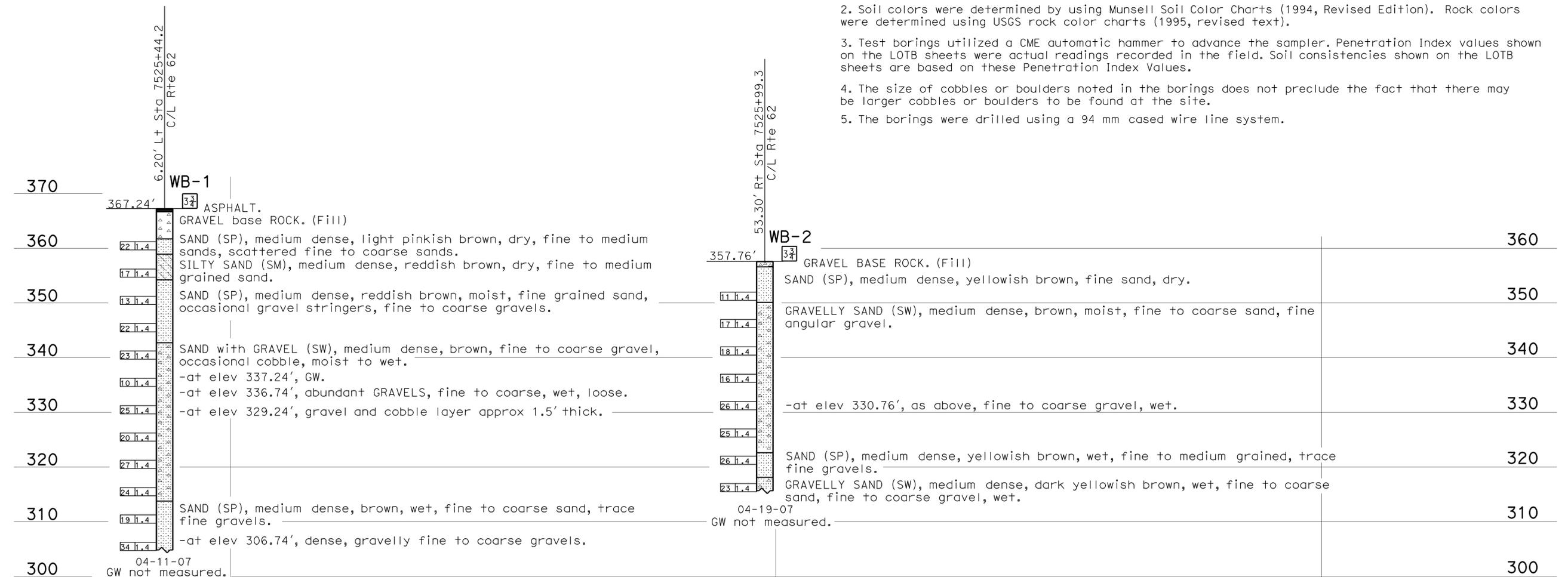
**LEGEND OF EARTH MATERIALS**  
 GRAVEL  
 SAND  
 SILT  
 CLAY  
 SANDY CLAY or CLAYEY SAND  
 SILTY SAND or SILTY CLAY  
 CLAYEY SILT  
 PEAT and/or ORGANIC MATTER  
 COBBLES and/or BOULDERS  
 (GENEISS) ROCK  
 SEDIMENTARY ROCK  
 METAMORPHIC

**CONSISTENCY CLASSIFICATION FOR SOILS**  
 According to the Standard Penetration Test  
 SPT No./Blows (100k/foot)  
 0-4 Very Loose  
 5-10 Loose  
 11-30 Medium Dense  
 31-50 Dense  
 51-60 Very Dense  
 61-80 Hard  
 81-100 Very Hard

**LEGEND OF BORING OPERATIONS (CONT.)**  
 Casing driven  
 Size of Sampler  
 Penetration Index  
 Blow per foot  
 12" Free Fall  
 Pulled Pipe  
 Vane Shear  
 Description of material  
 Unit weight (lb/cu ft)  
 % Moisture  
 Consolidation test  
 Conformance material change  
 Unconformable material change  
 Inconformable material change

**LEGEND OF BORING OPERATIONS (CONT.)**  
 Top Hole El.  
 Location  
 Boring Date  
 Penetration Index  
 Blow per foot  
 12" Free Fall  
 Pulled Pipe  
 Vane Shear  
 Description of material  
 Unit weight (lb/cu ft)  
 % Moisture  
 Consolidation test  
 Conformance material change  
 Unconformable material change

**LEGEND OF BORING OPERATIONS (CONT.)**  
 Top Hole El.  
 Location  
 Boring Date  
 Penetration Index  
 Blow per foot  
 12" Free Fall  
 Pulled Pipe  
 Vane Shear  
 Description of material  
 Unit weight (lb/cu ft)  
 % Moisture  
 Consolidation test  
 Conformance material change  
 Unconformable material change



<b>ENGINEERING SERVICES</b>	<b>GEOTECHNICAL SERVICES</b>	FIELD INVESTIGATION BY: M. Wilson	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	<b>DIVISION OF ENGINEERING SERVICES</b> STRUCTURE DESIGN DESIGN BRANCH	BRIDGE NO. 142.3	<b>RETAINING WALL NO. 7523 A</b>
DRAWN BY W. Tang, 11/08; I.G.-Remmen, 2/09	CHECKED BY M. Wilson					<b>LOG OF TEST BORINGS 1 OF 2</b>

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBd, La Paz	62, 95S1	142.2/142.6: 142.6/142.9	213	271

2-23-09  
 PROFESSIONAL GEOLOGIST  
 Mark Wilson  
 No. 8164  
 Exp. 06-30-10  
 STATE OF CALIFORNIA

6-14-10  
PLANS APPROVAL DATE

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## FOR PLAN VIEW, SEE "LOG OF TEST BORINGS" 1 OF 2

### LEGEND OF BORING OPERATIONS

**2 1/4" CONE PENETROMETER SAMPLE BORING (DRY)**

**3" POSTHOLE SAMPLE BORING (WET)**

**4" AUGER BORING (WET)**

**TEST PIT**

**DIAMOND CORE BORING**

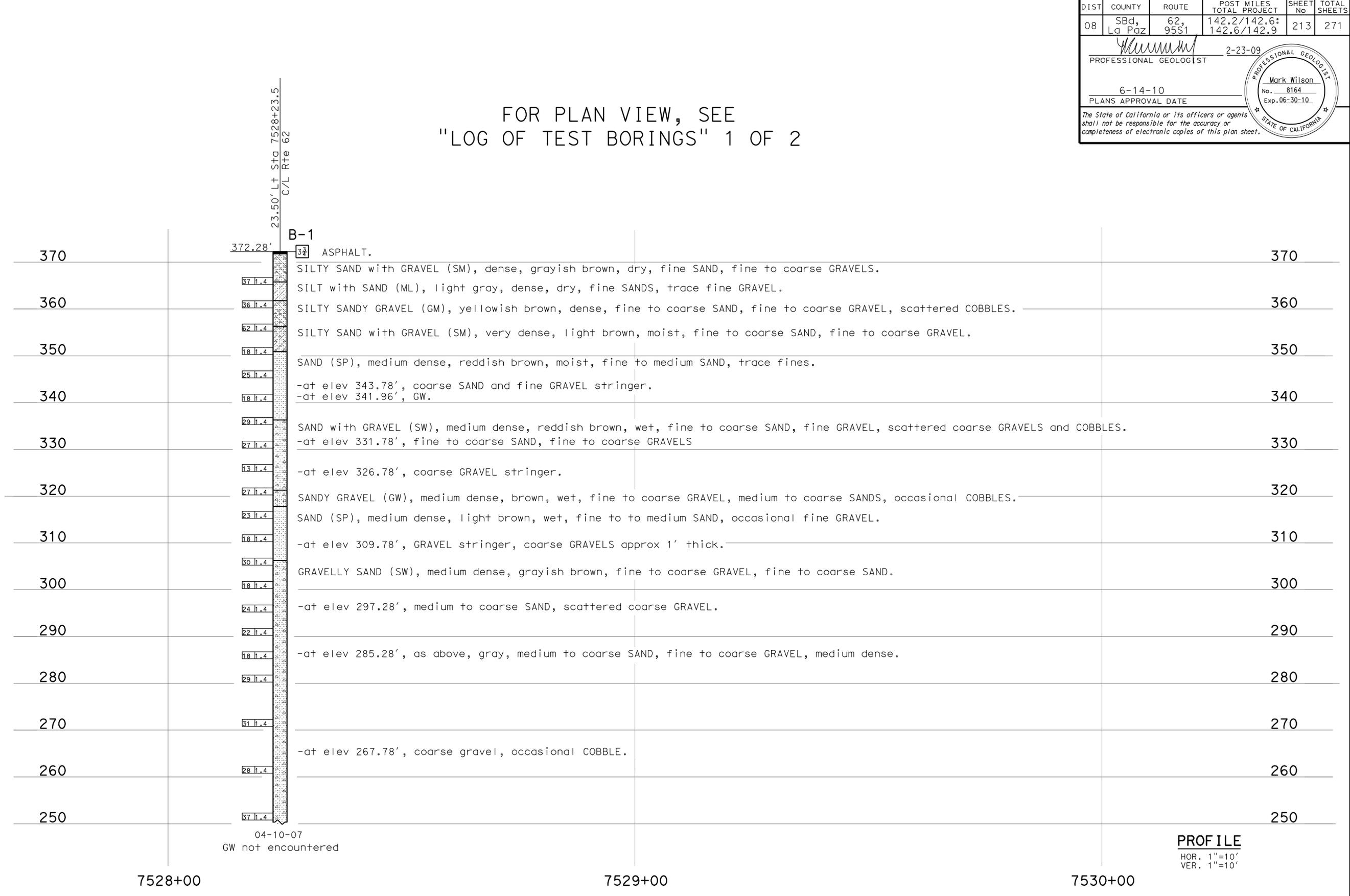
**JET BORING**

**ELECTRONIC CONE PENETROMETER**

**LEGEND OF EARTH MATERIALS**

**CONSISTENCY CLASSIFICATION FOR SOILS**

NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.



<b>ENGINEERING SERVICES</b>		<b>GEOTECHNICAL SERVICES</b>		FIELD INVESTIGATION BY:	<b>STATE OF CALIFORNIA</b>	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN	BRIDGE NO.	<b>RETAINING WALL NO. 7523 A</b>
DRAWN BY	W. Tang, 11/08; I.G.-Remmen, 2/09			M. Wilson	DEPARTMENT OF TRANSPORTATION	DESIGN BRANCH	POST MILE	
CHECKED BY	M. Wilson						142.3	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBG, a Paz	62, 95S1	142.2/142.6 142.6/142.9	214	271

David Soon 6-24-09  
 REGISTERED CIVIL ENGINEER DATE

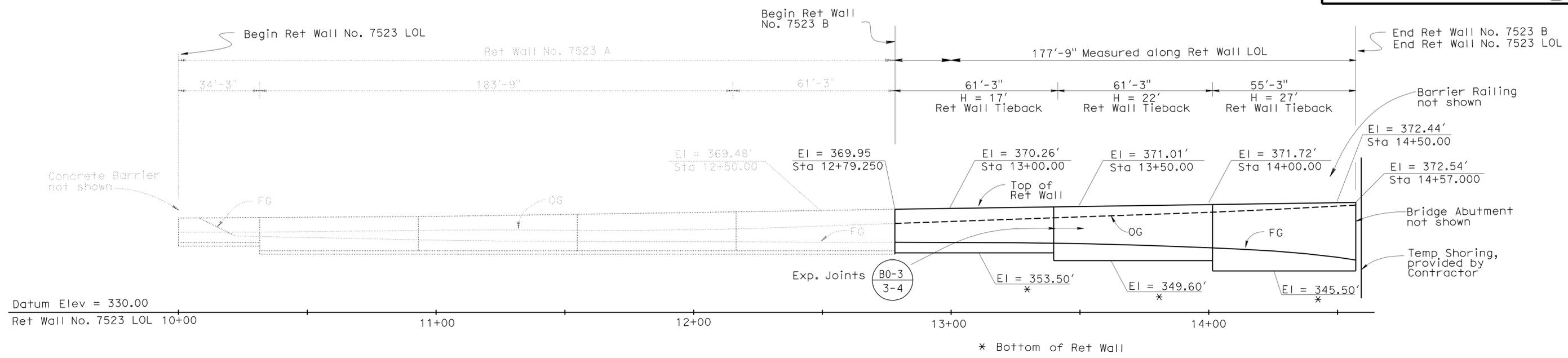
6-14-10  
 PLANS APPROVAL DATE

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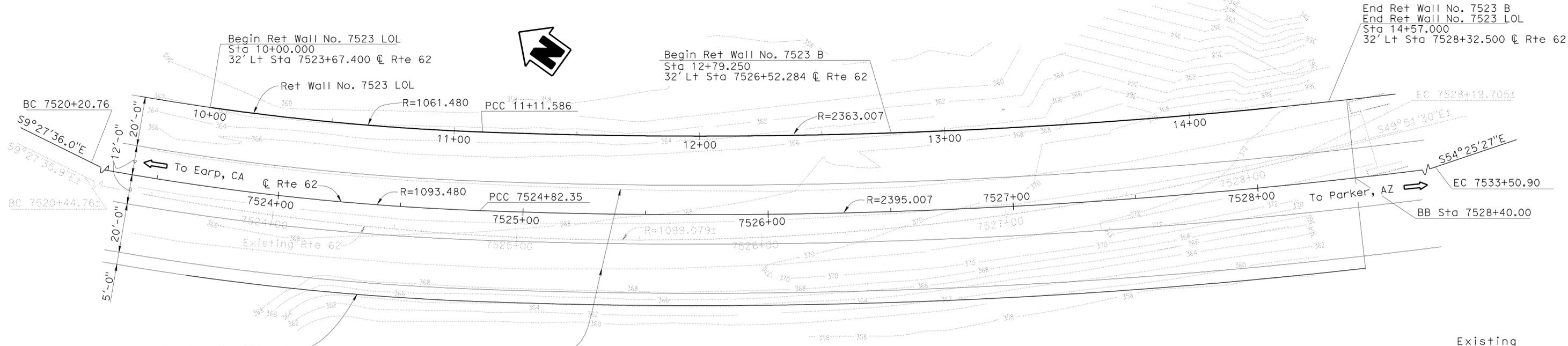
REGISTERED PROFESSIONAL ENGINEER  
 David Soon  
 No. 51862  
 Exp. 6-30-10  
 CIVIL  
 STATE OF CALIFORNIA

QUANTITIES

STRUCTURE EXCAVATION (TIEBACK WALL)	335	CY
STRUCTURE BACKFILL (TIEBACK WALL)	48	CY
TIEBACK ANCHOR	103	EA
STRUCTURAL CONCRETE, RETAINING WALL	118	CY
BAR REINFORCING STEEL (RETAINING WALL)	60,000	LB
SHOTCRETE	131	CY
TUBULAR BICYCLE RAILING	178	LF
CONCRETE BARRIER (TYPE 80A MODIFIED)	178	LF



**DEVELOPED MIRROR ELEVATION**  
1" = 20'



**PLAN**  
1" = 20'

Notes:

- For "TYPICAL SECTION", "INDEX TO PLANS", "STANDARD PLANS LIST", see "GENERAL PLAN NO. 2", sheet.

Rte 62	Rte 62	Existing Rte 62
Δ = 24°11'10"	Δ = 20°46'42"	Δ = 40°23'53.4"±
R = 1093.480'	R = 2395.007'	R = 1099.079'±
T = 234.280'	T = 439.099'	T = 404.363'±
L = 461.585'	L = 868.551'	L = 774.940'±

DESIGN	BY David Soon	CHECKED Rakesh Deo	Service Load Design	Live Loading: 2' Live Load Surcharge
DETAILS	BY Yingjue Feng	CHECKED Rakesh Deo	LAYOUT	BY David Soon
QUANTITIES	BY Rakesh Deo	CHECKED Dhvani Desai	SPECIFICATIONS	BY Kevin Ellingson

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
 STRUCTURE DESIGN  
 DESIGN BRANCH 7

BRIDGE NO. 54E0031  
 POST MILE 142.3

RETAINING WALL NO. 7523 B  
 GENERAL PLAN NO. 1

CU 08  
 EA 378701

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES: 10-29-08, 02-17-09, 2-26-09, 4-14-09, 6-14-09, 6-29-09, 10-14-09, 12-22-09

SHEET 1 OF 12

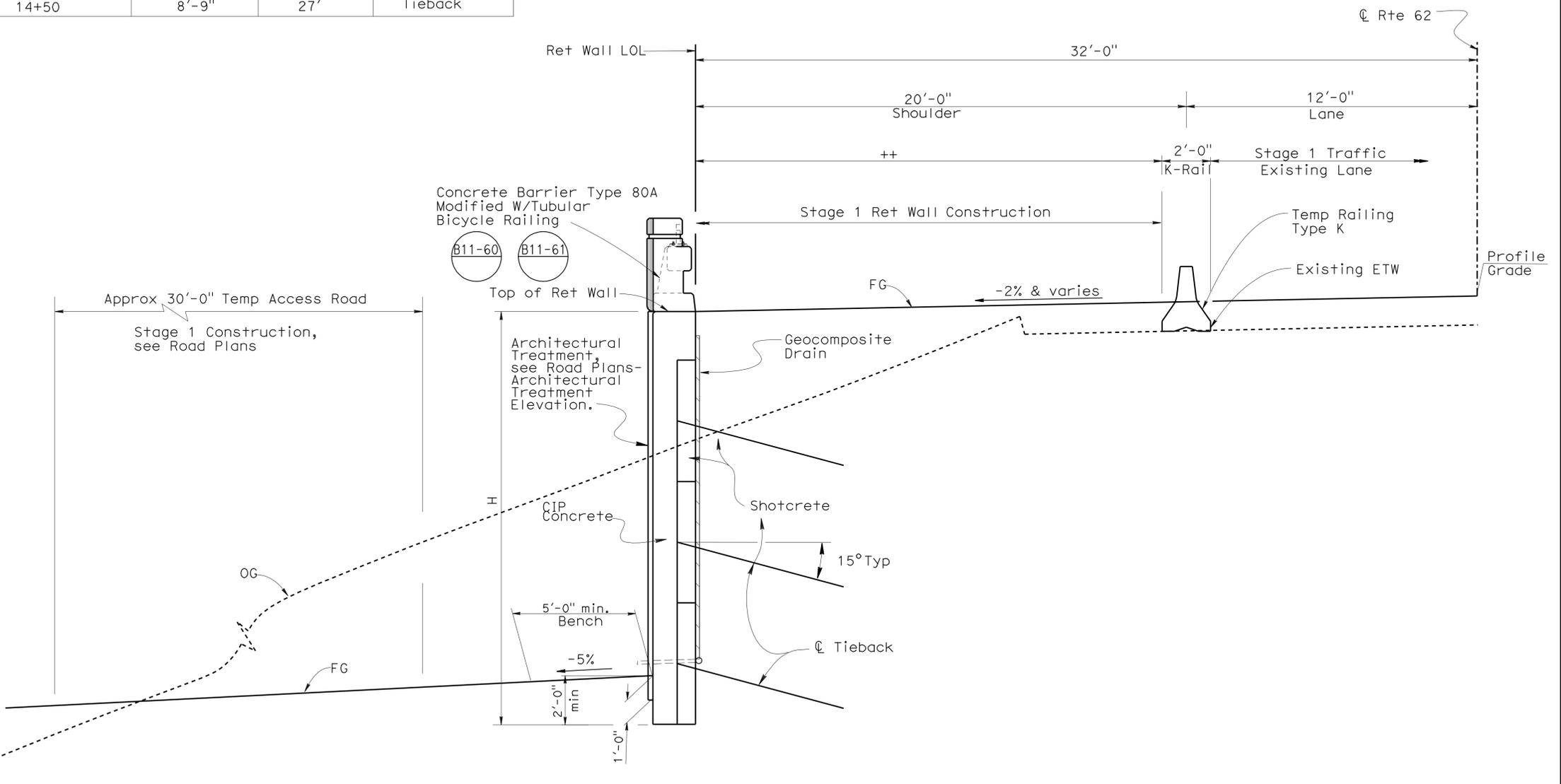
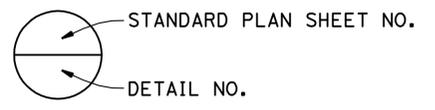
### INDEX TO PLANS

SHEET NO.	TITLE
1.	GENERAL PLAN NO. 1
2.	GENERAL PLAN NO. 2
3.	RETAINING WALL LAYOUT
4.	RETAINING WALL DETAILS NO. 1
5.	RETAINING WALL DETAILS NO. 2
6.	DRAINAGE DETAILS
7.	CONCRETE BARRIER TYPE 80A MODIFIED LAYOUT
8.	CONCRETE BARRIER TYPE 80A MODIFIED DETAILS NO. 1
9.	CONCRETE BARRIER TYPE 80A MODIFIED DETAILS NO. 2
10.	TUBULAR BICYCLE RAILING
11.	LOG OF TEST BORINGS 1 OF 2
12.	LOG OF TEST BORINGS 2 OF 2

Ret Wall Station	++	Design H	Ret Wall Type
12+50	19'-0"	16'	Type 1
13+00	19'-0"	17'	Tieback
13+50	17'-0"	22'	Tieback
14+00	12'-3"	22'	Tieback
14+50	8'-9"	27'	Tieback

### STANDARD PLANS DATED MAY 2006

A10A	ACRONYMS AND ABBREVIATIONS (SHEET 1 OF 2)
A10B	ACRONYMS AND ABBREVIATIONS (SHEET 2 OF 2)
A62B	LIMITS OF PAYMENT FOR EXCAVATION BACKFILL - BRIDGE SURCHARGE AND WALL
BO-3	BRIDGE DETAILS
RSP B11-60	CONCRETE BARRIER TYPE 80 (SHEET 1 OF 2)
B11-61	CONCRETE BARRIER TYPE 80 (SHEET 2 OF 2)
RSP ES-9A	ELECTRICAL SYSTEMS (ELECTRICAL DETAIL, STRUCTURE INSTALLATIONS)
ES-9B	ELECTRICAL SYSTEMS (ELECTRICAL DETAIL, STRUCTURE INSTALLATIONS)
RSP ES-9C	ELECTRICAL SYSTEMS (ELECTRICAL DETAIL, STRUCTURE INSTALLATIONS)
ES-9D	ELECTRICAL SYSTEMS (ELECTRICAL DETAIL, STRUCTURE INSTALLATIONS)



**TYPICAL SECTION**  
3/8" = 1'

DESIGN	BY David Soon/Rakesh Deo	CHECKED Dhvani Desai
DETAILS	BY Yingjue Feng	CHECKED Dhvani Desai
QUANTITIES	BY Rakesh Deo	CHECKED Dhvani Desai

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
DESIGN BRANCH 7

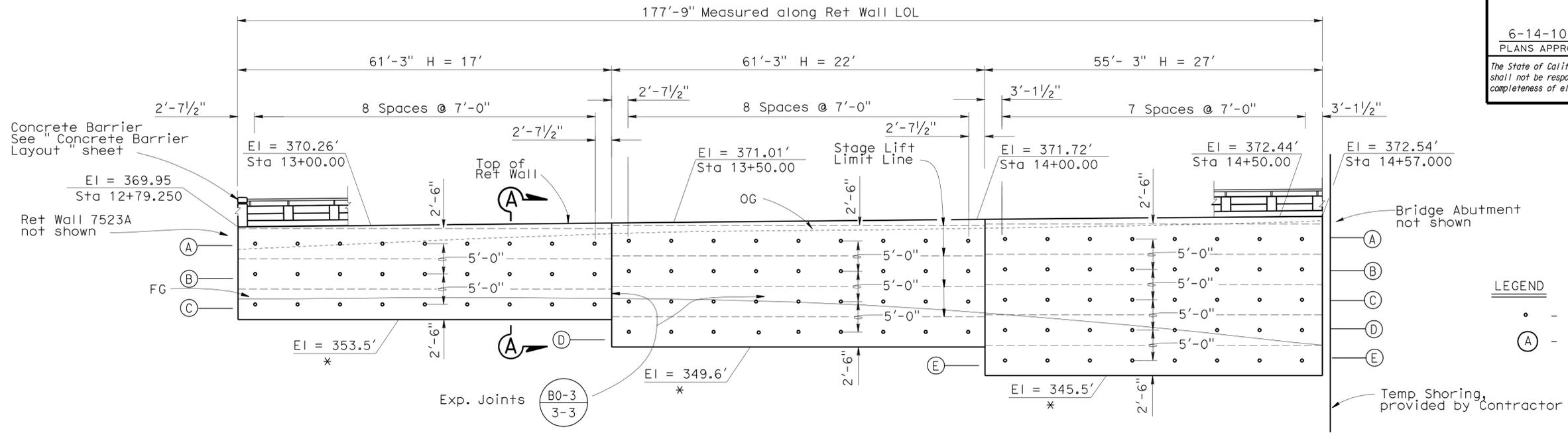
BRIDGE NO.	54E0031
POST MILE	142.3

RETAINING WALL NO. 7523 B  
GENERAL PLAN NO. 2

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBd, a Páz	62, 95S1	142.2/142.6 142.6/142.9	216	271

David Soon 6-24-09  
 REGISTERED CIVIL ENGINEER DATE  
 6-14-10  
 PLANS APPROVAL DATE  
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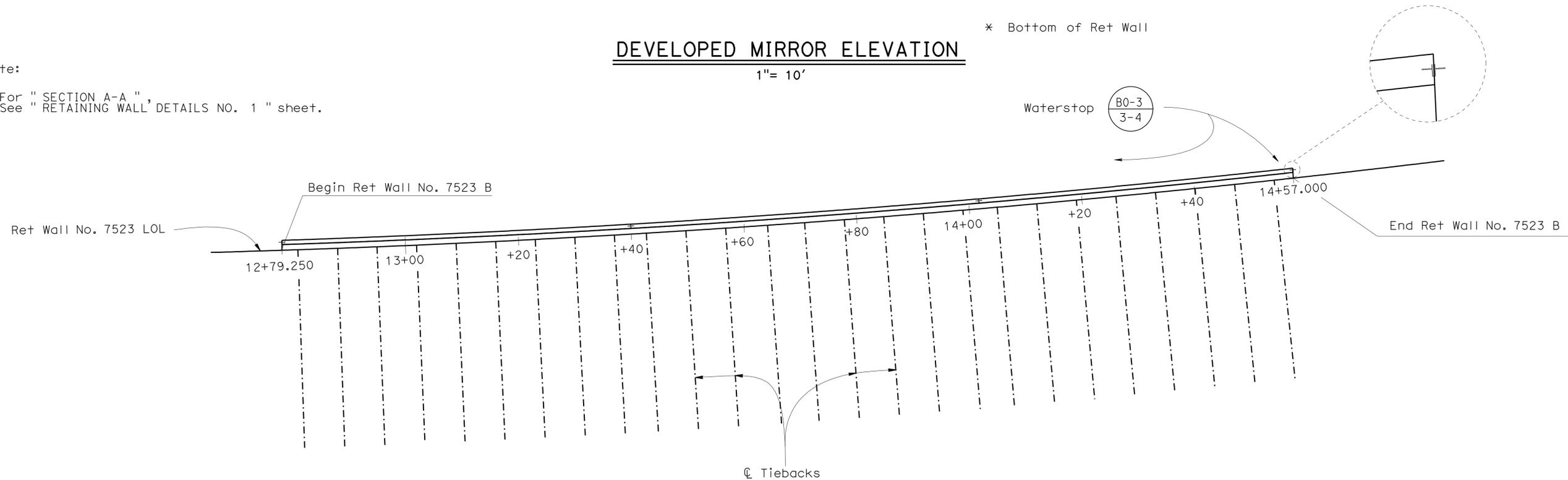
REGISTERED PROFESSIONAL ENGINEER  
 David Soon  
 No. 51862  
 Exp. 6-30-10  
 CIVIL  
 STATE OF CALIFORNIA



**DEVELOPED MIRROR ELEVATION**

1" = 10'

Note:  
 1. For " SECTION A-A ",  
 See " RETAINING WALL DETAILS NO. 1 " sheet.



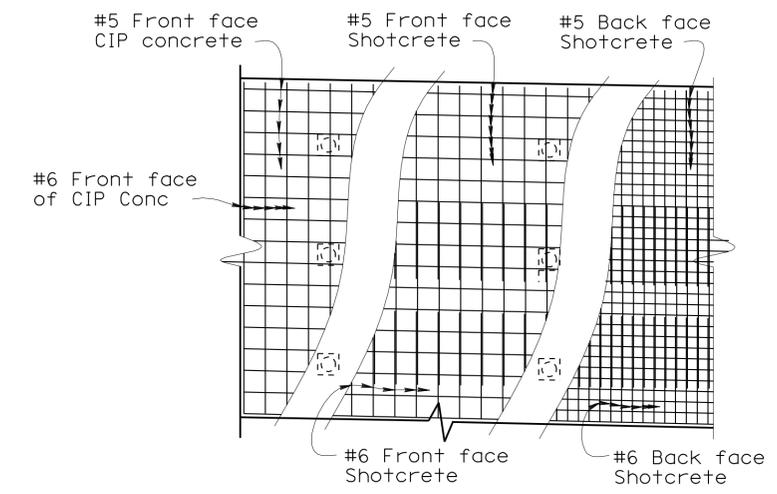
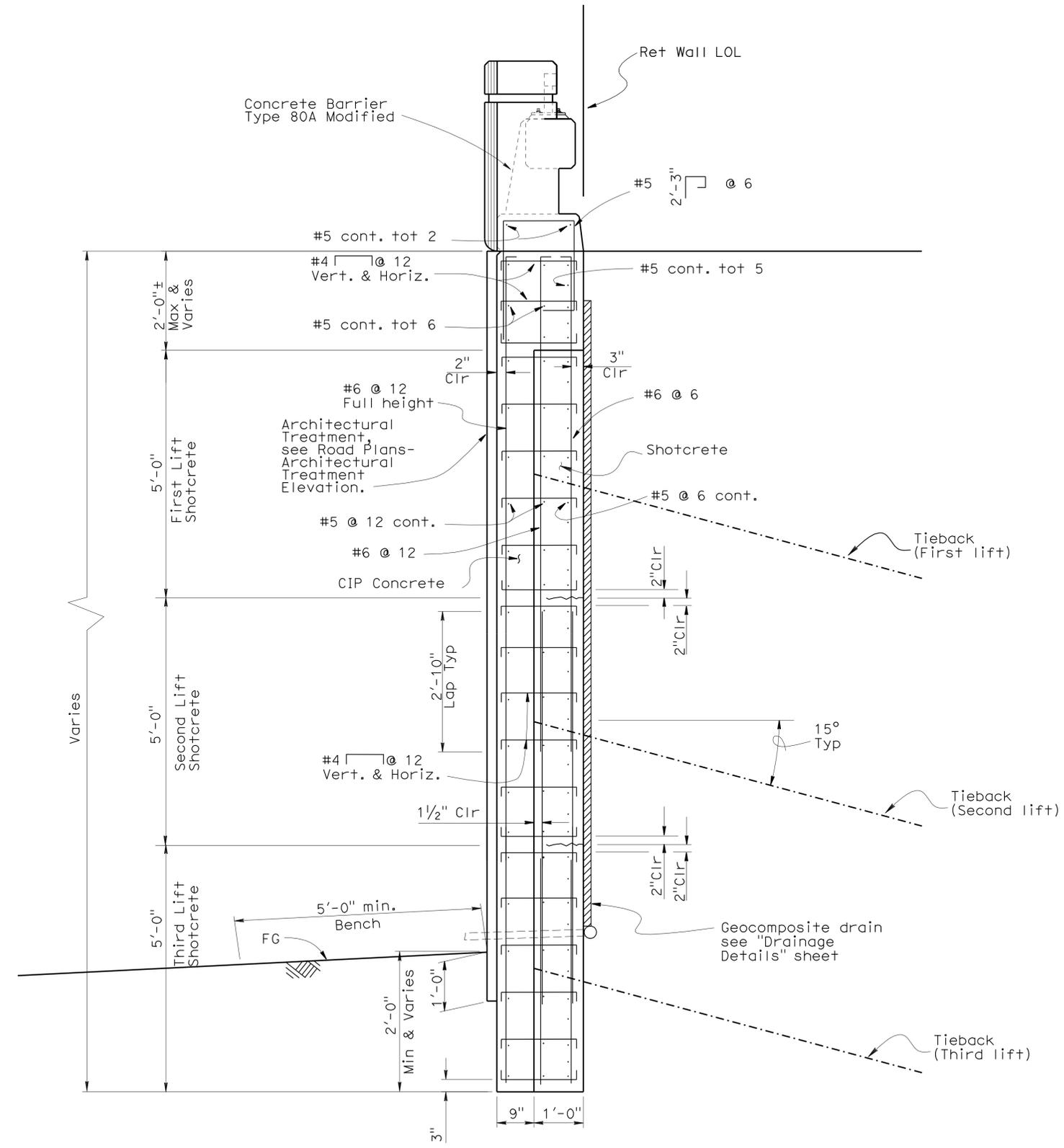
**PLAN**

1" = 10'

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)	DESIGN	BY Rakesh Deo	CHECKED Dhvani Desai	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 7	BRIDGE NO.	RETAINING WALL NO. 7523 B		
	DETAILS	BY Yingjue Feng	CHECKED Dhvani Desai			54E0031	RETAINING WALL LAYOUT		
	QUANTITIES	BY Rakesh Deo	CHECKED Dhvani Desai			142.3			
				CU 08 EA 378701	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES			SHEET 3 OF 12

USERNAME => hrlengard DATE PLOTTED => 17-JUN-2010 TIME PLOTTED => 09:58

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBd, a Páz	62, 95S1	142.2/142.6: 142.6/142.9	217	271
David Soon 6-24-09 REGISTERED CIVIL ENGINEER DATE					
6-14-10 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.					



**PART ELEVATION**  
No scale

- Notes:
- Maintain 6" min clearance between reinforcement and  $\phi$  of tieback.
  - CIP concrete to be placed after completion of all shotcrete lifts.
  - Tiebacks shall be constructed and locked off one at a time. Start at the top and work down.
  - For Stage lift limit line, see "RETAINING WALL LAYOUT" sheet.
  - Typical section for H = 17' shown, all others similar.

**SECTION A-A**  
 $\frac{3}{4}" = 1'-0"$

DESIGN	BY Rakesh Deo	CHECKED Dhvani Desai
DETAILS	BY Yingjue Feng	CHECKED Dhvani Desai
QUANTITIES	BY Rakesh Deo	CHECKED Dhvani Desai

**STATE OF CALIFORNIA**  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
**DESIGN BRANCH 7**

BRIDGE NO.  
54E0031  
POST MILE  
142.3

**RETAINING WALL NO. 7523 B**  
**RETAINING WALL DETAILS NO. 1**

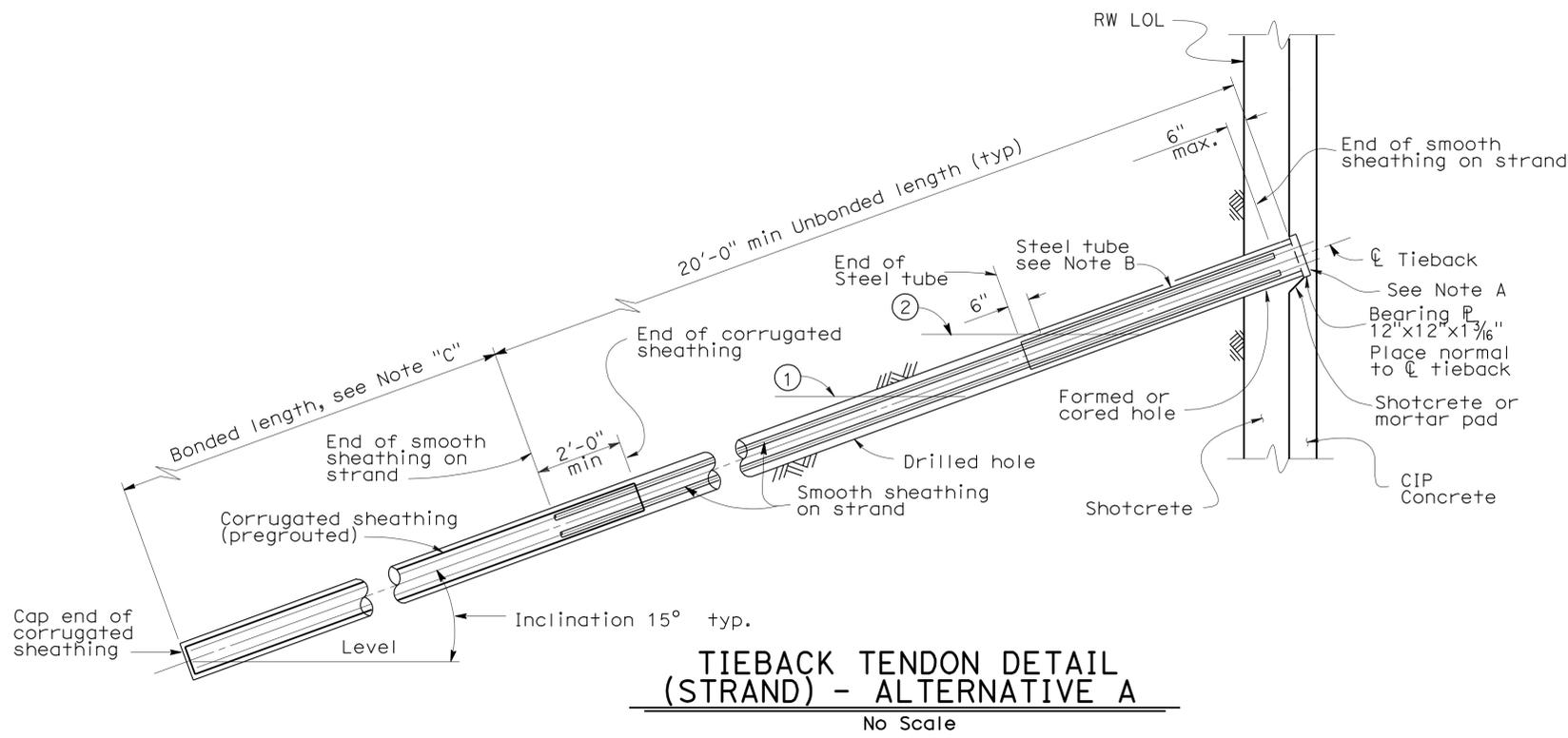
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
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David Soon 6-24-09  
REGISTERED CIVIL ENGINEER DATE

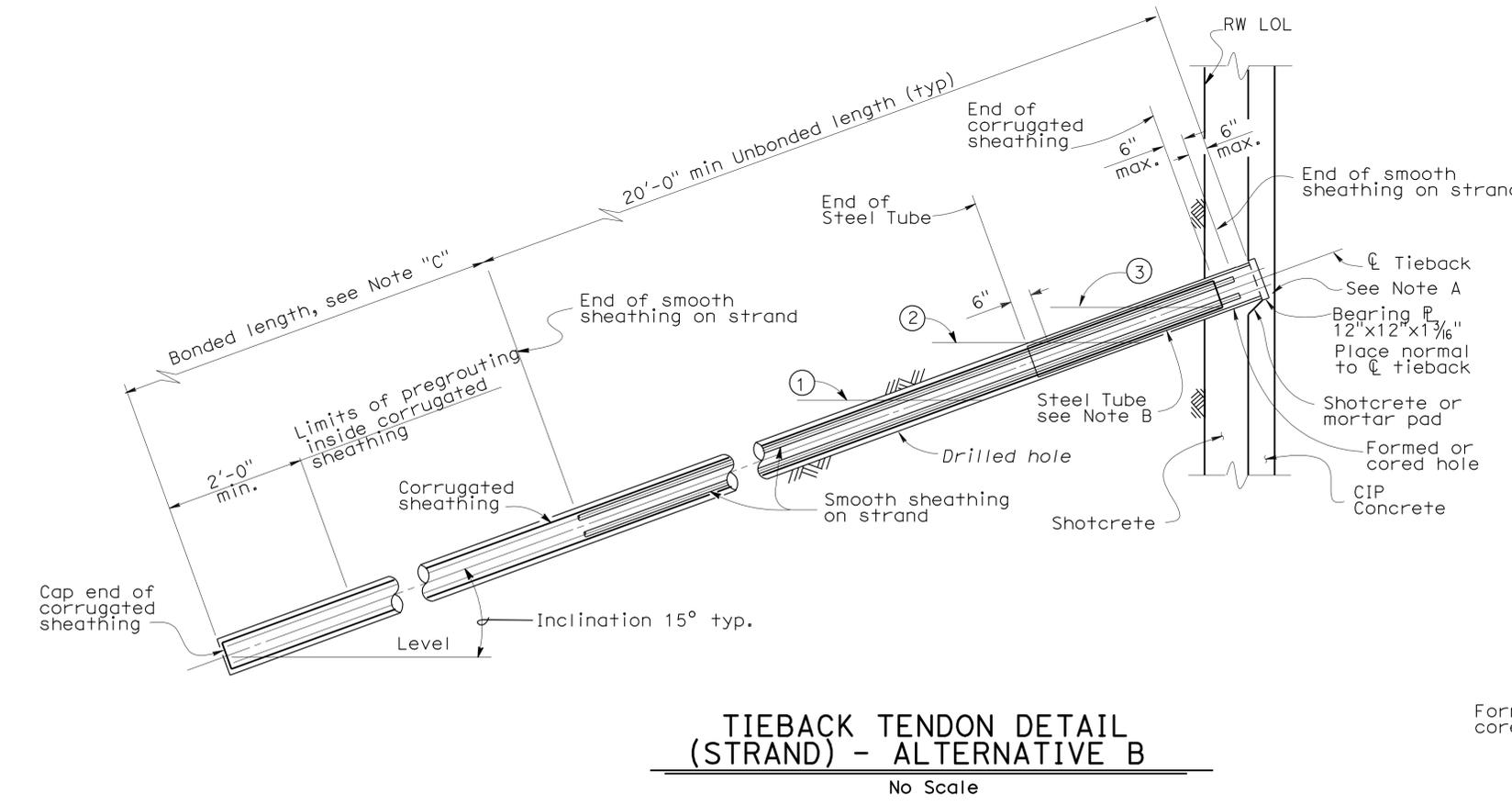
6-14-10  
PLANS APPROVAL DATE

David Soon  
No. 51862  
Exp. 6-30-10  
CIVIL  
STATE OF CALIFORNIA

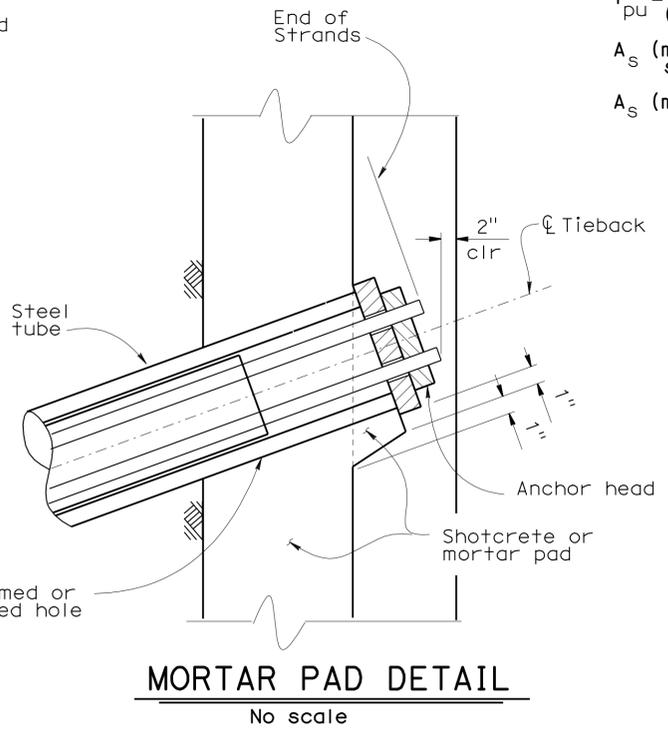
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**TIEBACK TENDON DETAIL (STRAND) - ALTERNATIVE A**  
No Scale



**TIEBACK TENDON DETAIL (STRAND) - ALTERNATIVE B**  
No Scale



**MORTAR PAD DETAIL**  
No scale

Notes:

- ① Level of initial grouting
- ② Level of secondary grouting
- ③ Level of initial grout inside corrugated sheathing
- ④ For location of tiebacks, see "RETAINING WALL LAYOUT" sheet.
- A 2" min concrete cover over tieback anchorage and tendon.
- B Steel tube shall be welded to bearing plate (min. length = 2'-0", min thickness = 3/16") For Alternative B, inside diameter of steel tube to be 1/2" greater than outside diameter of corrugated sheathing. Galvanize assembly after fabrication.
- C Bonded length shall be determined by the Contractor.

**GENERAL NOTES WORKING STRESS DESIGN**

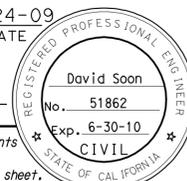
DESIGN: Caltrans Bridge Design Specifications April 2000 (1996 AASHTO With Interims and Revisions by Caltrans).

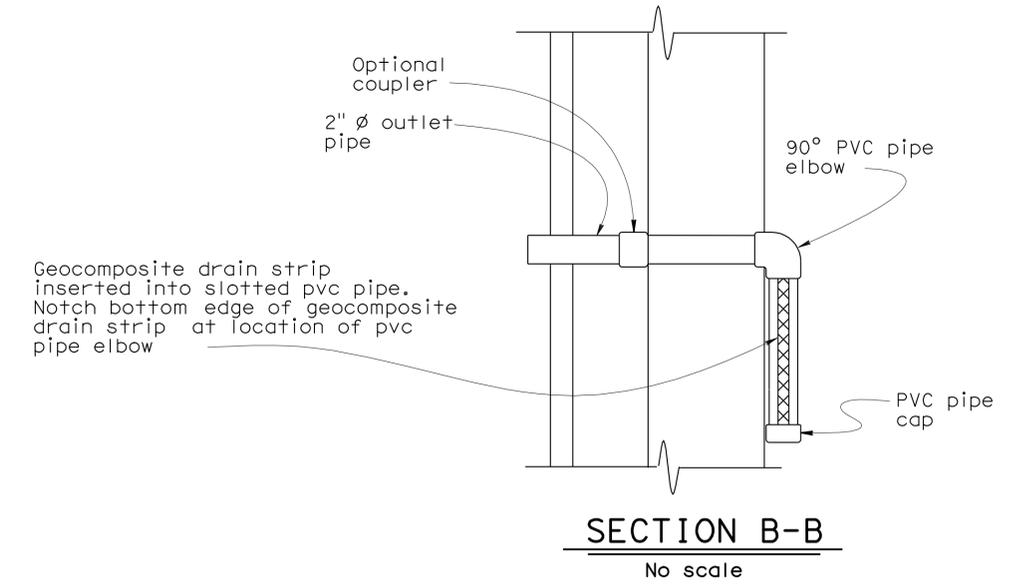
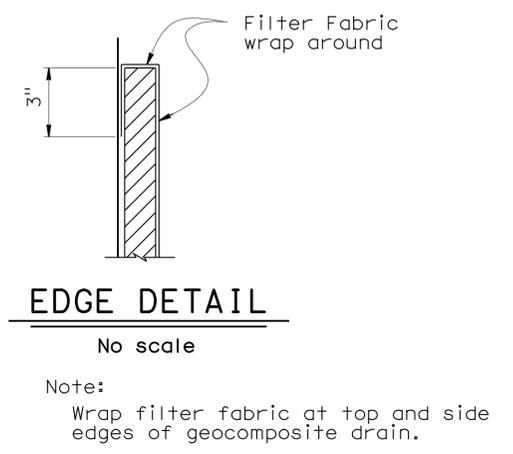
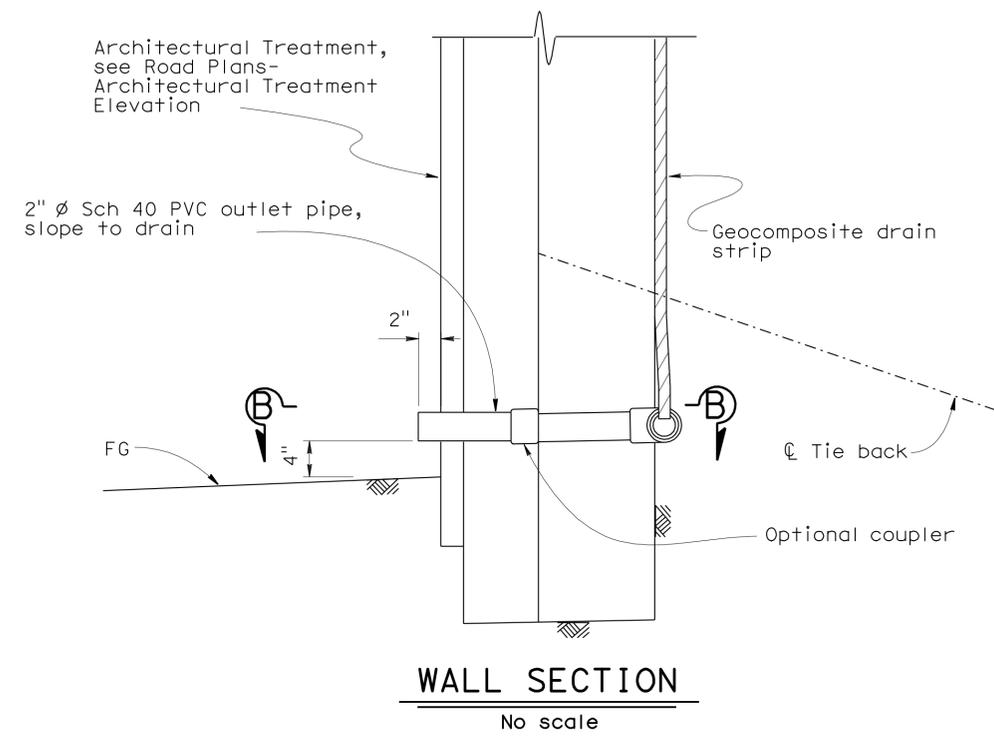
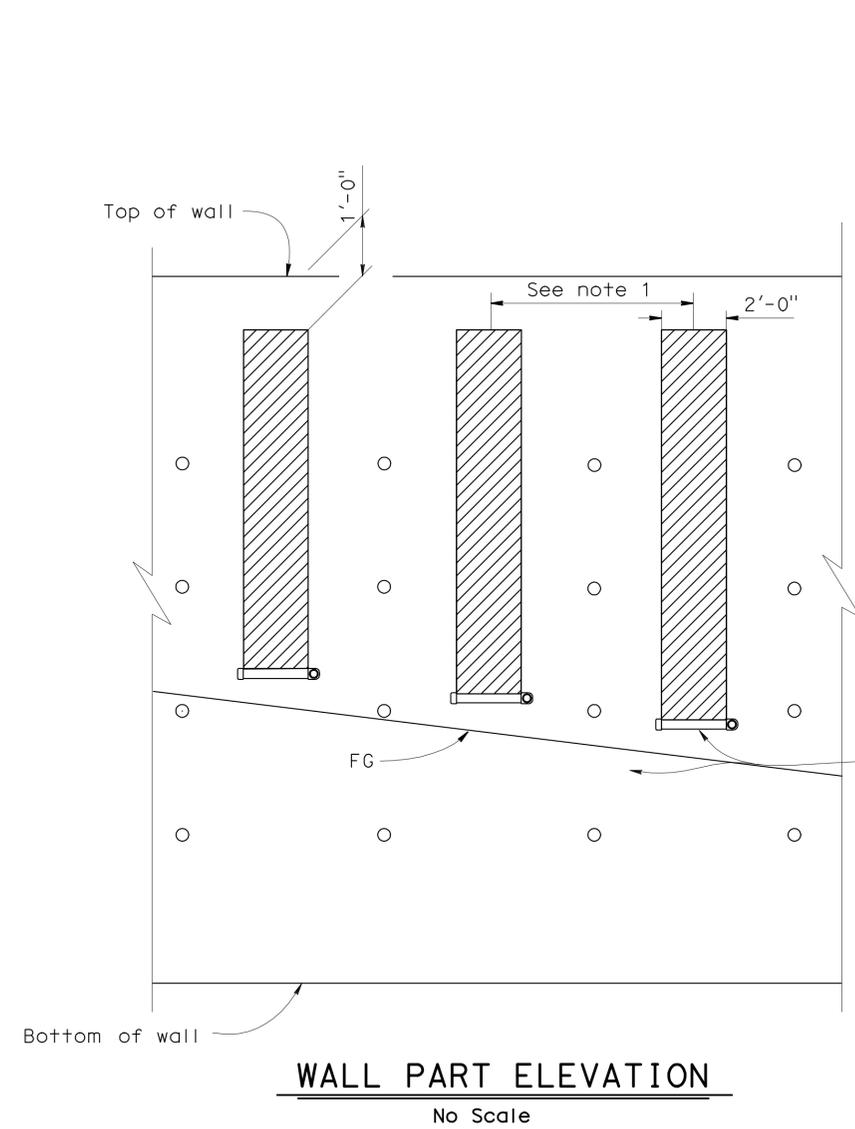
SOIL PARAMETERS: (For determination of design lateral earth pressure on wall).  
 $\phi = 30^\circ$   $\gamma = 125$  pcf

REINFORCED CONCRETE:  $f_y = 60$  ksi (Yield strength of reinforcement)  
 $f'_c = 4$  ksi (Concrete compressive strength at 28 days).

PRESTRESSING STEEL: (TIEBACKS)  
Strands - ASTM designation: A416  
T = Design force per Tieback - see table  
 $f_{pu}$  = Minimum tensile strength of prestressing steel (Kips per square inch)  
 $A_s$  (min.) = Minimum cross sectional area of prestressing steel in Tieback tendon. (in<sup>2</sup>)  
 $A_s$  (min.) =  $\frac{1.5 T}{0.75 f_{pu}}$

Location	"T" Force (Kips)
A, B	99
C, D, E	46

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	Sbd, a Páz	62, 95S1	142.2/142.6: 142.6/142.9	219	271
David Soon 6-24-09				REGISTERED CIVIL ENGINEER	DATE
6-14-10				PLANS APPROVAL DATE	
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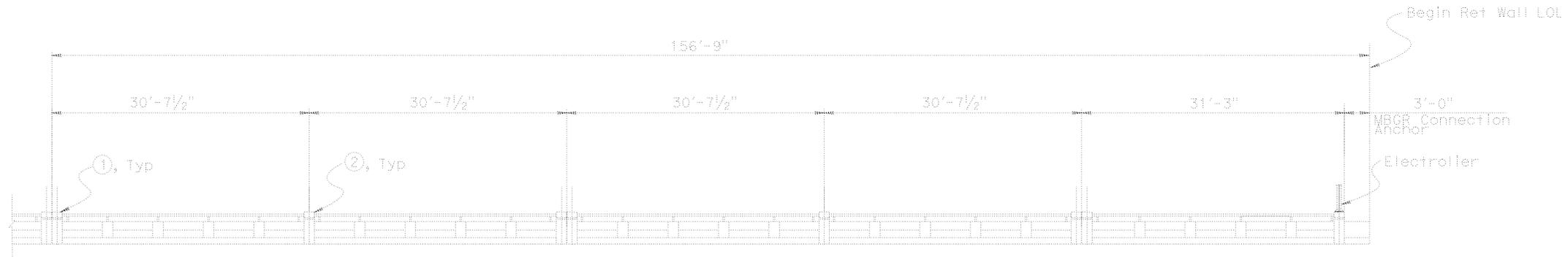
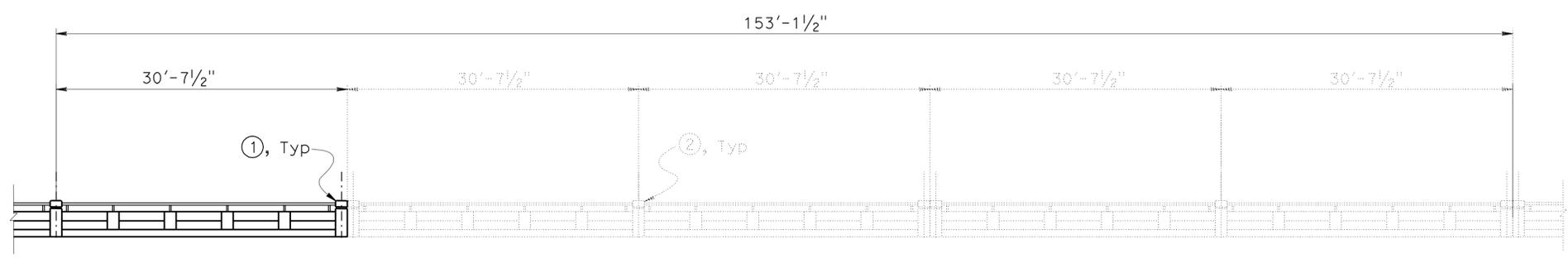
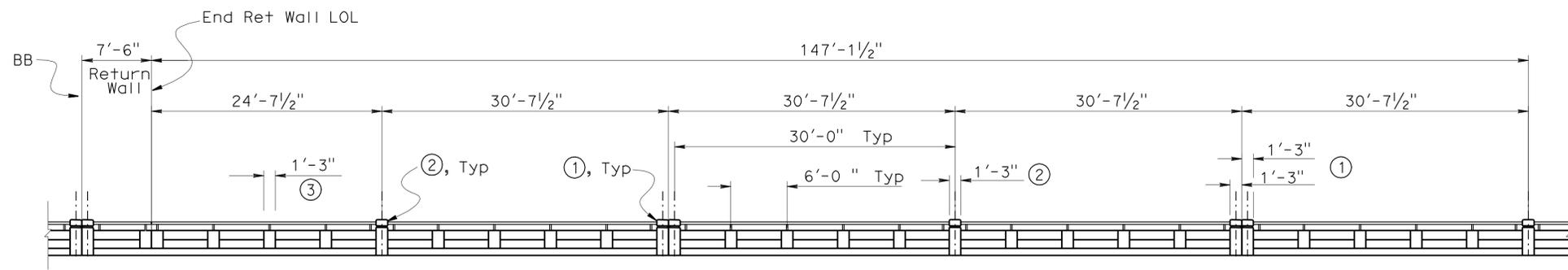


- Notes:
- Center geocomposite vertical drain between tiebacks.
- Indicates tieback locations.

DESIGN	BY	Rakesh Deo	CHECKED	Dhvani Desai	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH <b>7</b>	BRIDGE NO.	54E0031	RETAINING WALL NO. 7523 B DRAINAGE DETAILS							
	DETAILS	BY	Yingjue Feng	CHECKED			Dhvani Desai	POST MILE		142.3						
	QUANTITIES	BY	Rakesh Deo	CHECKED			Dhvani Desai	CU 08 EA 378701		DISREGARD PRINTS BEARING EARLIER REVISION DATES	<table border="1"> <tr> <td>12-09-08</td> <td>12-12-08</td> <td>12-17-08</td> <td>12-18-08</td> <td>12-22-08</td> <td>12-29-08</td> <td>02-17-09</td> <td>2-26-09</td> <td>6-17-09</td> </tr> </table>	12-09-08	12-12-08	12-17-08	12-18-08	12-22-08
12-09-08	12-12-08	12-17-08	12-18-08	12-22-08	12-29-08	02-17-09	2-26-09	6-17-09								
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)					ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0 1 2 3			SHEET 6 OF 12							

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBd, a Paz	62, 95S1	142.2/142.6 142.6/142.9	220	271

David Soon 6-24-09  
 REGISTERED CIVIL ENGINEER DATE  
 6-14-10  
 PLANS APPROVAL DATE  
 David Soon  
 No. 51862  
 Exp. 6-30-10  
 CIVIL  
 STATE OF CALIFORNIA  
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- ① Double Pylon & Ret Wall Exp. Joint.
- ② Pylon.
- ③ Concrete Barrier Type 80 post.

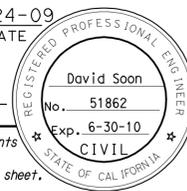
**DEVELOPED ELEVATION  
 CONCRETE BARRIER LAYOUT**  
 1/8"=1'-0"

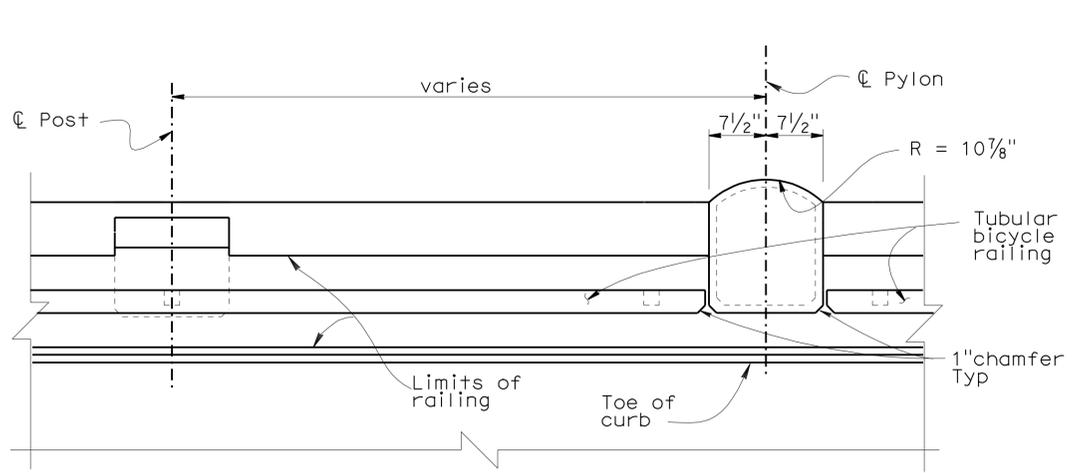
**Notes:**

1. For Concrete Barrier Type 80 details, see **B11-60** and **B11-61**.
2. For Pylon and Double Pylon details, see "CONCRETE BARRIER TYPE 80A MODIFIED DETAILS NO. 1" and "CONCRETE BARRIER TYPE 80A MODIFIED DETAILS NO. 2" sheets.
3. For Tubular Bicycle Railing details, see "TUBULAR BICYCLE RAILING" sheet.

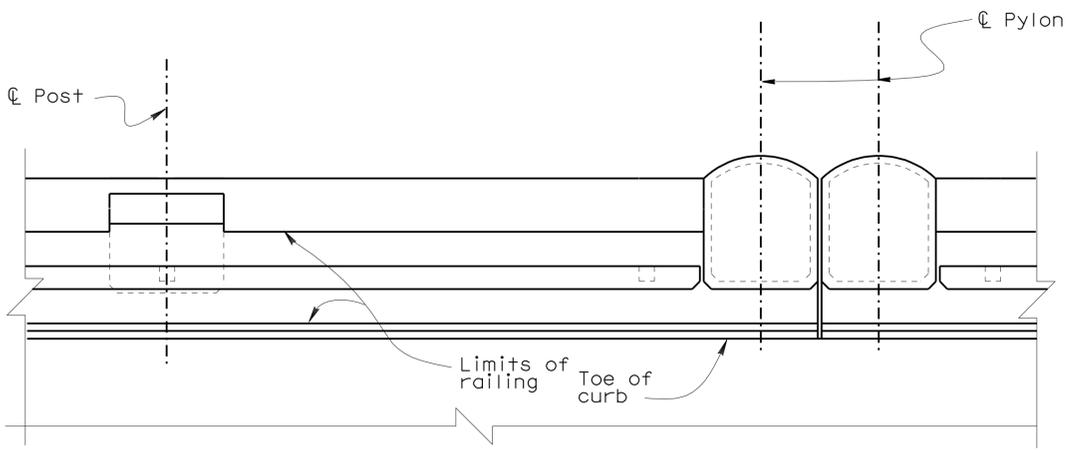
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)		DESIGN BY David Soon	CHECKED Dhvani Desai	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 7</b>	BRIDGE NO. 54E0031	<b>RETAINING WALL NO. 7523 B</b>  <b>CONCRETE BARRIER TYPE 80A MODIFIED LAYOUT</b>	
	DETAILS BY Yingjue Feng	CHECKED Dhvani Desai	POST MILE 142.3					
	QUANTITIES BY Rakesh Deo	CHECKED Dhvani Desai						
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS				0 1 2 3	CU 08 EA 378701	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 10-29-08 11-10-08 11-17-08 11-25-08 12-22-08 12-29-08 02-17-09 2-26-09 6-16-09	SHEET 7 OF 12

USERNAME => hrlengard DATE PLOTTED => 17-JUN-2010 TIME PLOTTED => 09:58

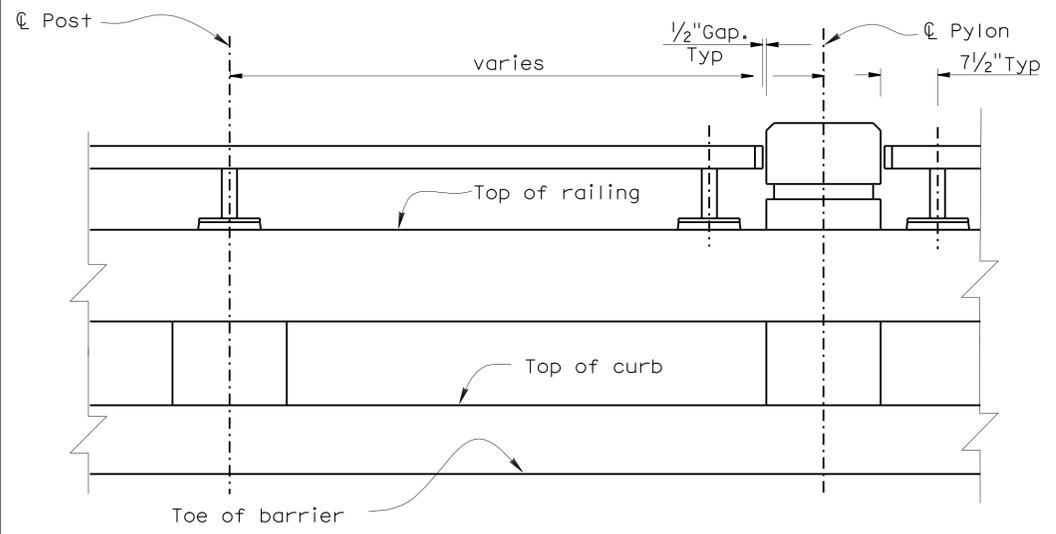
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBd, a Pdz	62, 95S1	142.2/142.6 142.6/142.9	221	271
David Soon 6-24-09 REGISTERED CIVIL ENGINEER DATE					
6-14-10				PLANS APPROVAL DATE	
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.					



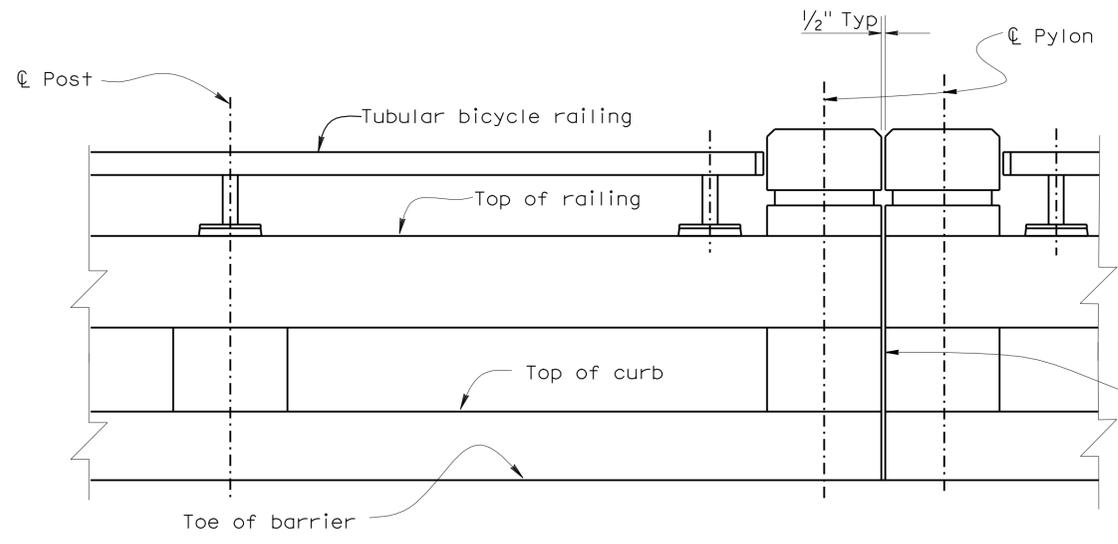
PLAN AT PYLON



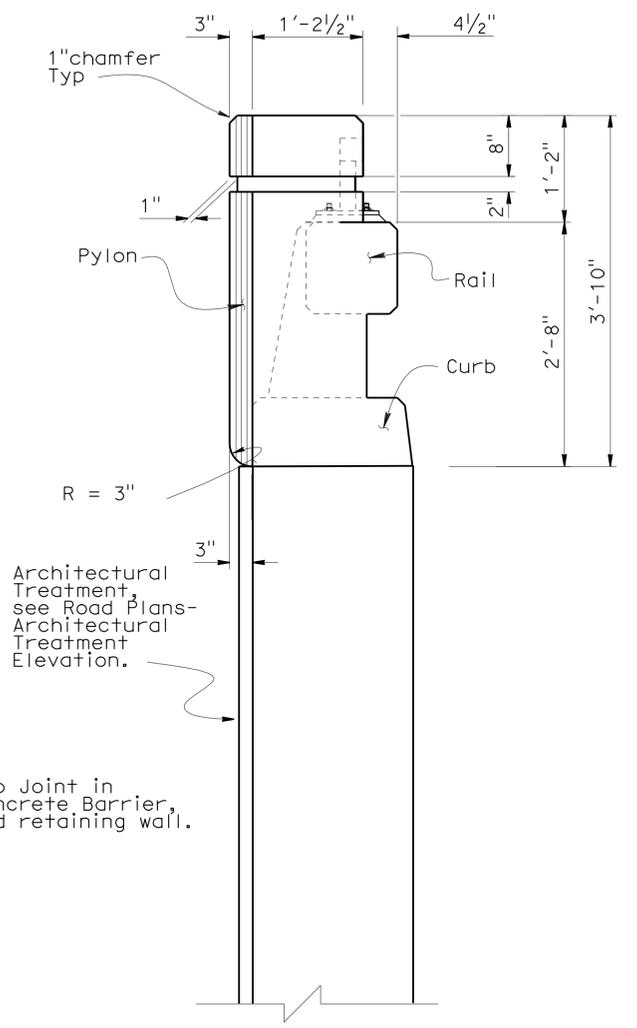
PLAN AT DOUBLE PYLON



ELEVATION AT PYLON



ELEVATION AT DOUBLE PYLON



TYPICAL SECTION AT PYLON

Notes:

- For Concrete Barrier layout, see "CONCRETE BARRIER TYPE 80A MODIFIED LAYOUT" sheet.
- For Concrete Barrier Type 80 details, see  and .
- For Concrete Barrier details not shown, see "CONCRETE BARRIER TYPE 80A MODIFIED DETAILS NO. 2" sheet.
- For Tubular Bicycle Railing details, see "TUBULAR BICYCLE RAILING" sheet.

CONCRETE BARRIER TYPE 80A MODIFIED DETAIL

1" = 1'-0"

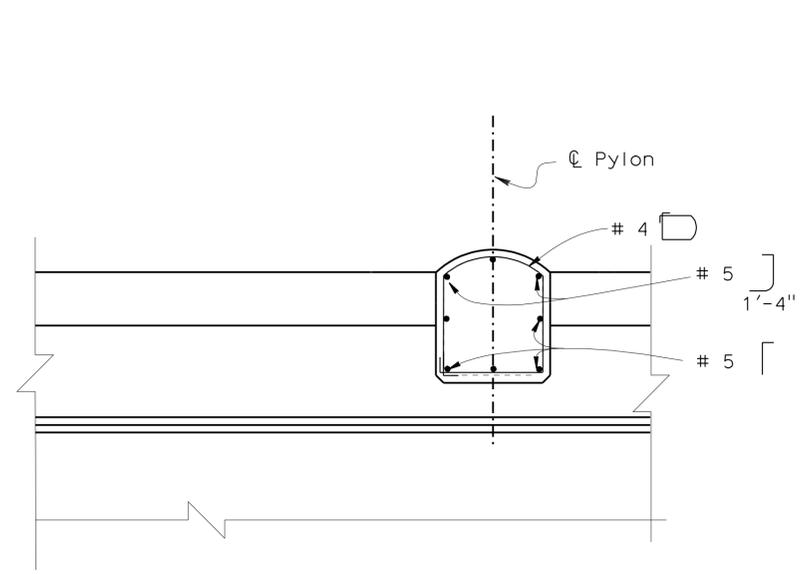
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)	DESIGN	BY David Soon	CHECKED Dhvani Desai	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 7	BRIDGE NO.	54E0031
	DETAILS	BY Yingjue Feng	CHECKED Dhvani Desai			POST MILE	142.3
	QUANTITIES	BY Rakesh Deo	CHECKED Dhvani Desai				

RETAINING WALL NO. 7523 B	
CONCRETE BARRIER TYPE 80A MODIFIED DETAILS NO. 1	

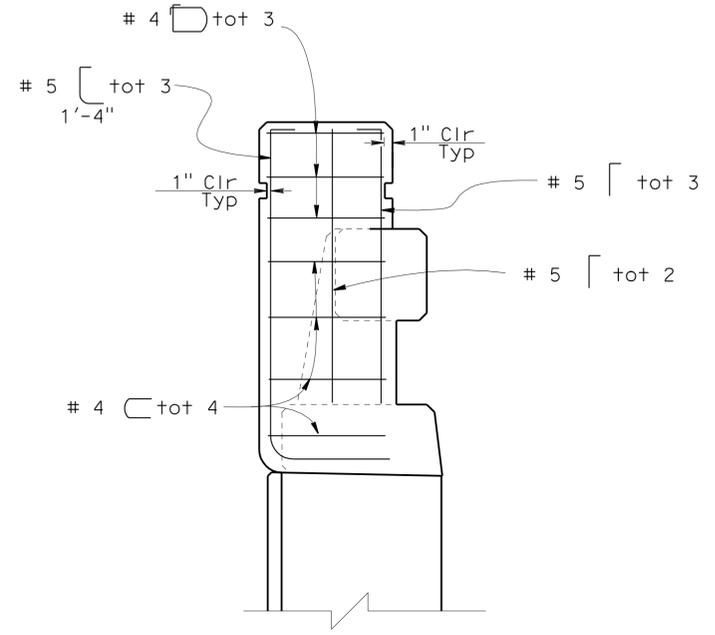
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0	1	2	3	CU 08 EA 378701	DISREGARD PRINTS BEARING EARLIER REVISION DATES	<table border="1"> <tr> <th colspan="8">REVISION DATES</th> </tr> <tr> <td>11-19-08</td> <td>11-28-08</td> <td>12-15-08</td> <td>12-18-08</td> <td>1-2-09</td> <td>02-17-09</td> <td>7-28-09</td> <td>4-11-09</td> <td>6-16-09</td> </tr> </table>	REVISION DATES								11-19-08	11-28-08	12-15-08	12-18-08	1-2-09	02-17-09	7-28-09	4-11-09	6-16-09	SHEET 8 OF 12
REVISION DATES																									
11-19-08	11-28-08	12-15-08	12-18-08	1-2-09	02-17-09	7-28-09	4-11-09	6-16-09																	

USERNAME => hrlengard DATE PLOTTED => 17-JUN-2010 TIME PLOTTED => 09:58

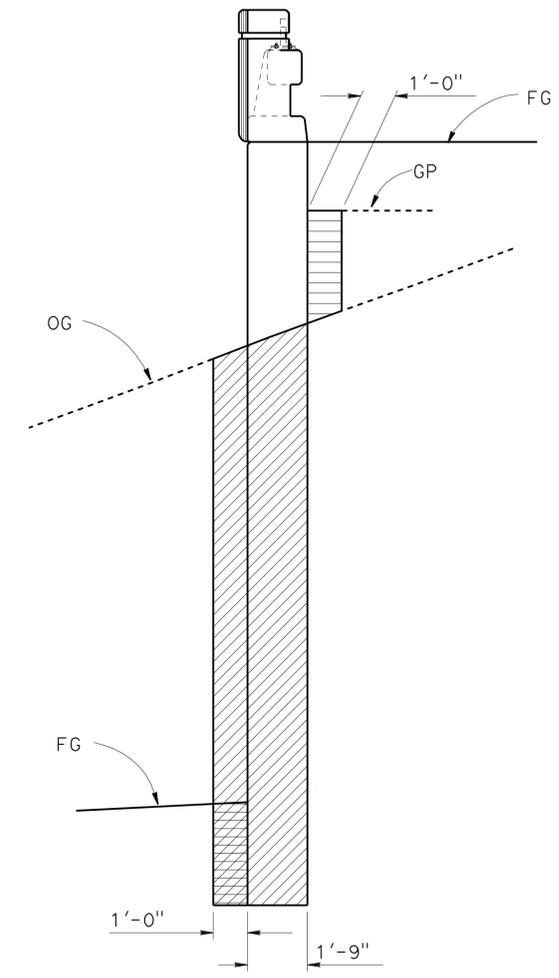
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBd, a Pdz	62, 95S1	142.2/142.6: 142.6/142.9	222	271
David Soon 6-24-09 REGISTERED CIVIL ENGINEER DATE					
6-14-10 PLANS APPROVAL DATE					
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**PLAN**  
Bicycle Railing not shown



**TYPICAL SECTION**  
Bicycle Railing not shown



Indicates structure excavation  
 Indicates structure backfill

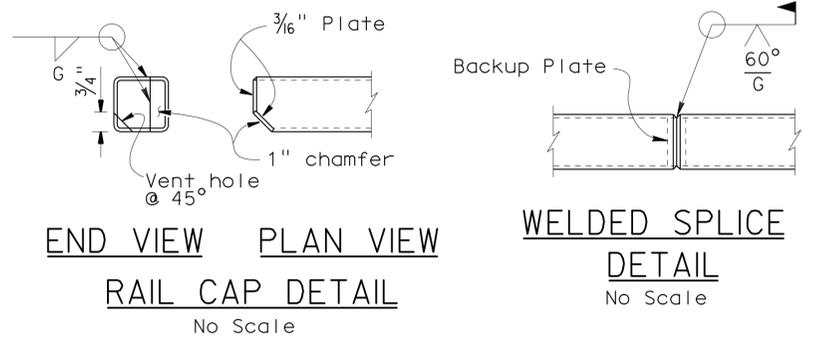
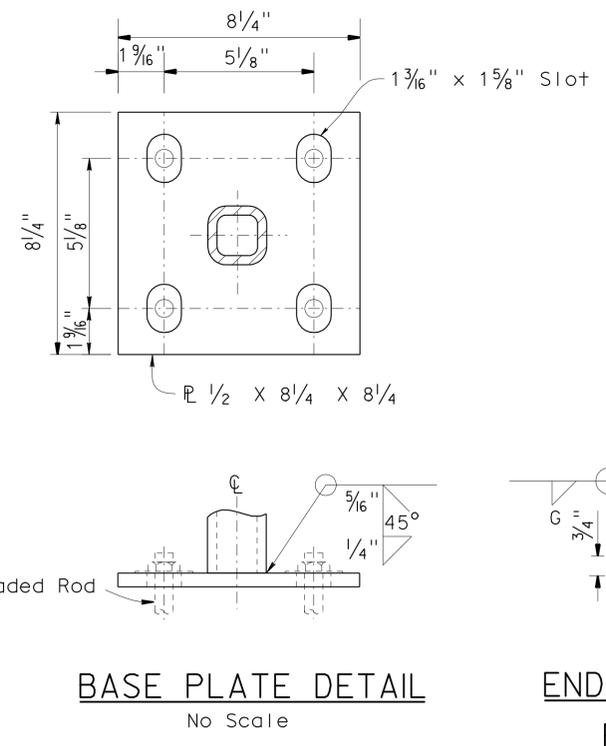
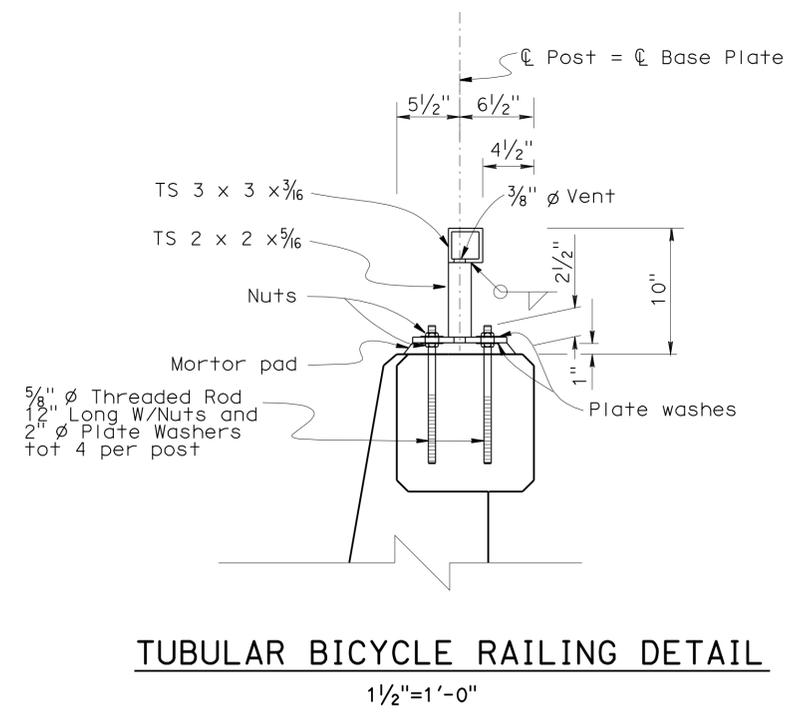
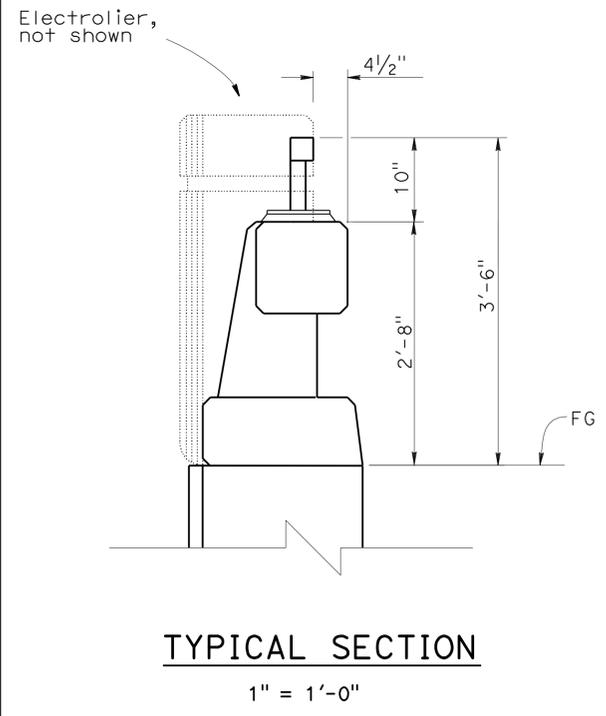
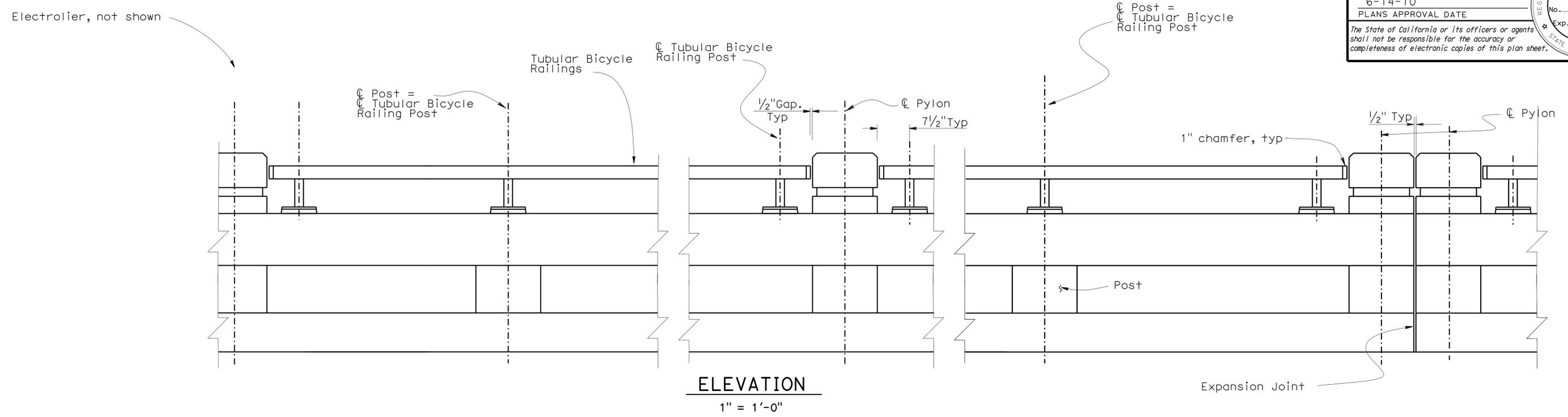
**EXCAVATION AND BACKFILL LIMITS**  
No scale

- Notes:
- For Concrete Barrier layout, see "CONCRETE BARRIER TYPE 80A MODIFIED LAYOUT" sheet.
  - For Concrete Barrier Type 80 details, see and .
  - For Concrete Barrier details not shown, see "CONCRETE BARRIER TYPE 80A MODIFIED DETAILS NO. 1" sheet.
  - For Tubular Bicycle Railing details, see "TUBULAR BICYCLE RAILING" sheet.
  - Concrete Barrier Type 80 post and longitudinal reinforcement continuous through pylon. This reinforcement is not shown.

**PYLON DETAIL**  
1" = 1'-0"

DESIGN BY David Soon CHECKED Dhvani Desai				<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 7</b>	BRIDGE NO. 54E0031	<b>RETAINING WALL NO. 7523 B</b> <b>CONCRETE BARRIER TYPE 80A</b> <b>MODIFIED DETAILS NO. 2</b>	
DETAILS BY Yingjue Feng CHECKED Dhvani Desai						POST MILE 142.3		
QUANTITIES BY Rakesh Deo CHECKED Dhvani Desai								
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3	CU 08 EA 378701	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 11-19-08 11-24-08 11-25-08 12-2-08 12-15-08 12-18-08 1-2-09 02-17-09 2-26-09 6-16-09	SHEET 9 OF 12

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBd, a Pdz	62, 95S1	142.2/142.6 142.6/142.9	223	271
David Soon 12-10-09 REGISTERED CIVIL ENGINEER DATE					
6-14-10 PLANS APPROVAL DATE					
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- NOTES:
- Galvanize rail assembly after fabrication.
  - Post shall be normal to railing.
  - Top rail tube shall be continuous over not less than two posts except a short post spacing is permitted near deck or wall joints, electro-liers, or other rail discontinuities as noted.
  - For Concrete Barrier layout, see "CONCRETE BARRIER TYPE 80A MODIFIED LAYOUT" sheet.
  - For Concrete Barrier Type 80 details, see B11-60 and B11-61.
  - For Concrete Barrier details not shown, see "CONCRETE BARRIER TYPE 80A MODIFIED DETAILS NO. 1", and "CONCRETE BARRIER TYPE 80A MODIFIED DETAILS NO. 2" sheets.

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)	DESIGN	BY David Soon	CHECKED Rakesh Deo	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 7	BRIDGE NO.	RETAINING WALL NO. 7523 B TUBULAR BICYCLE RAILING	
	DETAILS	BY Yingjue Feng	CHECKED Rakesh Deo			54E0031		
	QUANTITIES	BY Eduardo Ortega Jr.	CHECKED Bruno Jenko			142.3		
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS					CU 08 EA 378701	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 10 OF 12

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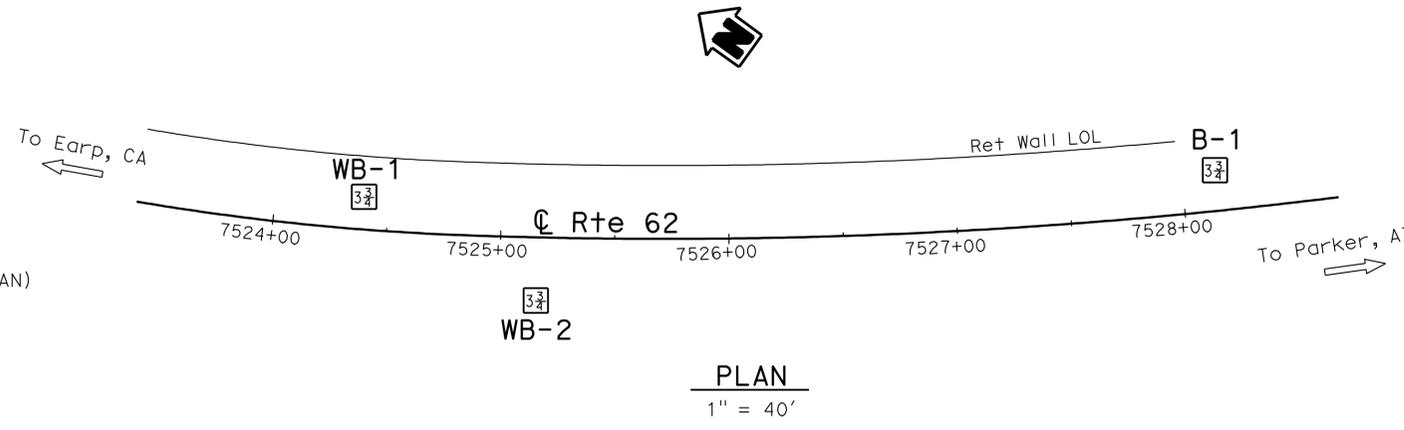
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBG, La Paz	62, 95S1	142.2/142.6 142.6/142.9	224	271

2-23-09  
PROFESSIONAL GEOLOGIST

Mark Wilson  
No. 8164  
Exp. 06-30-10  
STATE OF CALIFORNIA

6-14-10  
PLANS APPROVAL DATE

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**BENCH MARK**

**SURVEY CONTROL**

PHOTO PT 62-2-93 (NOT SHOWN ON PLAN)  
 Fnd "PK" NAIL ON YELLOW STRIPE  
 IN TURN POCKET TO RV PARK  
 11.807' Rt C PROPOSED RTE 62  
 Sta 7523+99.516  
 N 1901612.719  
 E 7680552.001  
 Elev 367.781'

**SPAN 1964**

Fnd 3/2" STD. USC&GS BRASS DISK STAMPED  
 "SPAN 1964" FLUSH IN SIDEWALK  
 48.365' Lt C PROPOSED RTE 62  
 Sta. 7531+78.111  
 N 1901070.086  
 E 7681099.470  
 Elev 378.998'

**PLAN**  
1" = 40'

**NOTES:**

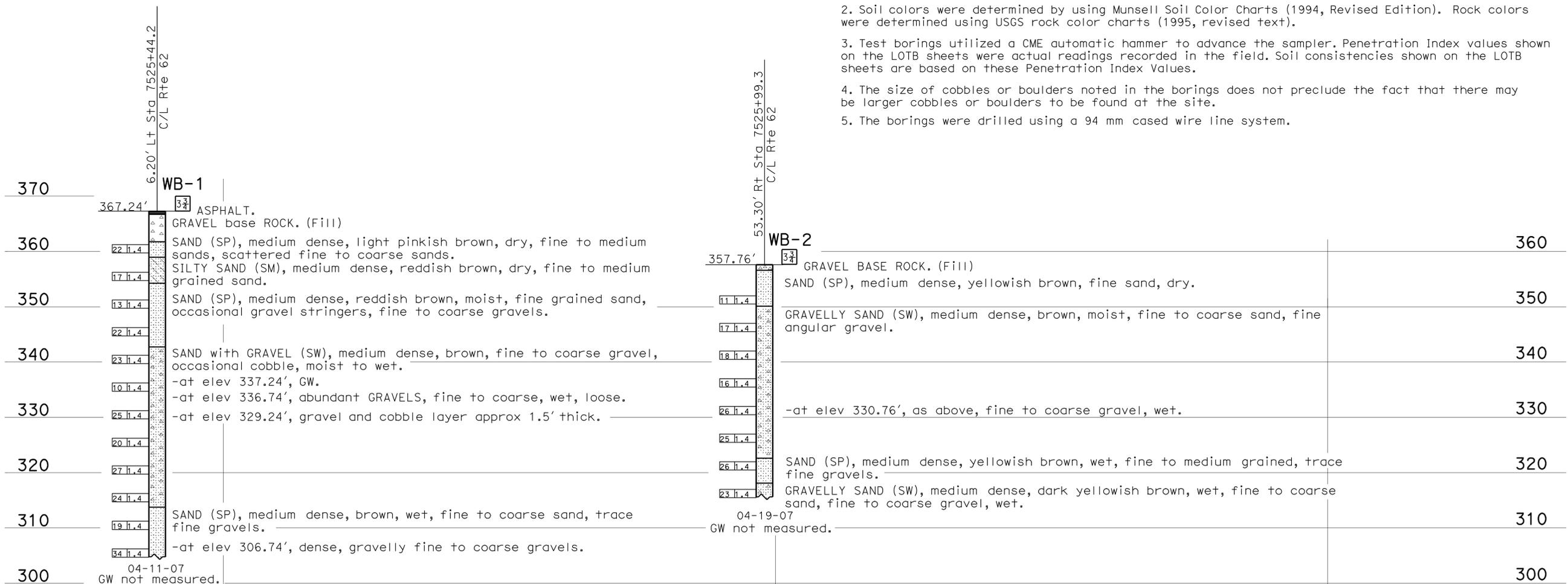
1. Groundwater was encountered, but not measured in some borings, due to the immediate backfilling of the boring. The Contractor should anticipate encountering ground water during the excavation and construction of all foundation supports. De-watering of the footing excavations may be required. Groundwater surface elevations are subject to seasonal fluctuations and will be encountered at higher or lower elevations depending on conditions at time of construction.
2. Soil colors were determined by using Munsell Soil Color Charts (1994, Revised Edition). Rock colors were determined using USGS rock color charts (1995, revised text).
3. Test borings utilized a CME automatic hammer to advance the sampler. Penetration Index values shown on the LOTB sheets were actual readings recorded in the field. Soil consistencies shown on the LOTB sheets are based on these Penetration Index Values.
4. The size of cobbles or boulders noted in the borings does not preclude the fact that there may be larger cobbles or boulders to be found at the site.
5. The borings were drilled using a 94 mm cased wire line system.

**LEGEND OF BORING OPERATIONS**

**2 1/4" CORE PENETROMETER**  
 81S BOREHOLE SAMPLER BORING (DRY)  
 82S AUGER BORING (WET)  
 83S TEST PIT  
 84S DIAMOND CORE BORING  
 85S JET BORING  
 86S ELECTRONIC CORE PENETROMETER

**LEGEND OF EARTH MATERIALS**  
 GRAVEL  
 SAND  
 SILT  
 CLAY  
 SANDY CLAY or CLAYEY SAND  
 CLAYEY SILT or SILTY CLAY  
 SILTY SAND  
 SILTY CLAY

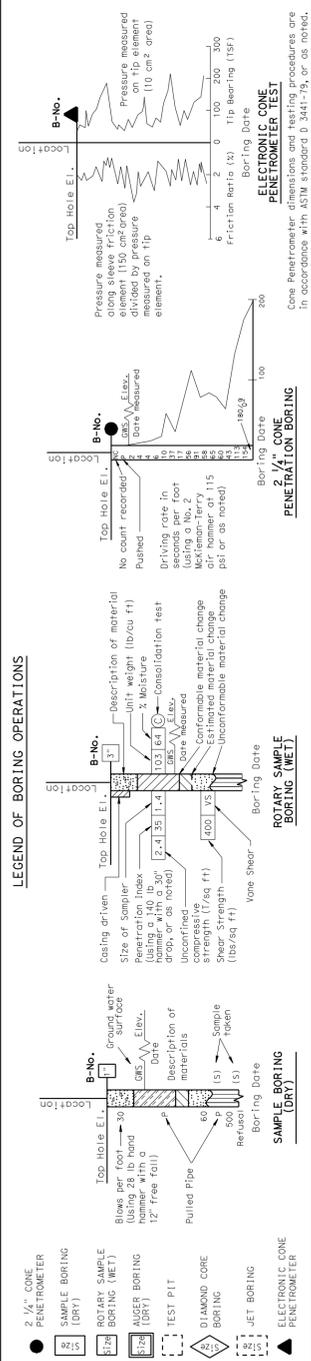
**LEGEND OF BORING OPERATIONS (CONT.)**  
 Casing driven  
 Size of Sampler  
 Penetration Index  
 Penetration Index number with "a" or "b" drop, or as noted  
 Unclassified  
 Shear Strength (lbf/sq ft)  
 Vane Shear  
 Top Hole Elevation  
 Location  
 Boring Date  
 Sample Taken  
 Description of materials  
 Date  
 Groundwater surface  
 Elevation  
 Description of materials  
 Date  
 Sample Taken



7525+50	7526+00	7526+50	<b>PROFILE</b> HOR. 1"=5' VER. 1"=10'
---------	---------	---------	---

<b>ENGINEERING SERVICES</b>	<b>GEOTECHNICAL SERVICES</b>	FIELD INVESTIGATION BY: <b>M. Wilson</b>	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	<b>DIVISION OF ENGINEERING SERVICES</b> STRUCTURE DESIGN DESIGN BRANCH	BRIDGE NO. 54E0031 POST MILE 142.3	<b>RETAINING WALL NO. 7523 B</b> <b>LOG OF TEST BORINGS 1 OF 2</b>
DRAWN BY W. Tang, 11/08; I.G.-Remmen, 2/09	CHECKED BY M. Wilson					REVISION DATES (PRELIMINARY STAGE ONLY)

## FOR PLAN VIEW, SEE "LOG OF TEST BORINGS" 1 OF 2



LEGEND OF EARTH MATERIALS	
	GRAVEL
	SAND
	SILT
	CLAY
	SILTY CLAY or CLAYEY SAND
	SILTY SAND or SANDY SILT
	SILTY CLAY
	CLAYEY SILT
	ORGANIC MATTER
	BOULDERS
	IGNEOUS ROCK
	SEDIMENTARY ROCK
	METAMORPHIC ROCK

NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.



DEPTH (ft)	DESCRIPTION	ELEVATION (ft)
370	ASPHALT.	372.28'
360	SILT with SAND (ML), light gray, dense, dry, fine SANDS, trace fine GRAVEL.	366.1.4
350	SILTY SANDY GRAVEL (GM), yellowish brown, dense, fine to coarse SAND, fine to coarse GRAVEL, scattered COBBLES.	356.1.4
340	SAND (SP), medium dense, reddish brown, moist, fine to medium SAND, trace fines.	348.1.4
330	SAND with GRAVEL (SW), medium dense, reddish brown, wet, fine to coarse SAND, fine GRAVEL, scattered coarse GRAVELS and COBBLES.	337.1.4
320	SANDY GRAVEL (GW), medium dense, brown, wet, fine to coarse GRAVEL, medium to coarse SANDS, occasional COBBLES.	327.1.4
310	SAND (SP), medium dense, light brown, wet, fine to to medium SAND, occasional fine GRAVEL.	318.1.4
300	GRAVELLY SAND (SW), medium dense, grayish brown, fine to coarse GRAVEL, fine to coarse SAND.	308.1.4
290	SAND (SP), medium dense, light brown, wet, fine to to medium SAND, occasional fine GRAVEL.	298.1.4
280	SAND (SP), medium dense, light brown, wet, fine to to medium SAND, occasional fine GRAVEL.	288.1.4
270	SAND (SP), medium dense, light brown, wet, fine to to medium SAND, occasional fine GRAVEL.	278.1.4
260	SAND (SP), medium dense, light brown, wet, fine to to medium SAND, occasional fine GRAVEL.	268.1.4
250	SAND (SP), medium dense, light brown, wet, fine to to medium SAND, occasional fine GRAVEL.	257.1.4

<b>ENGINEERING SERVICES</b> DRAWN BY: W. Tang, 11/08; I.G-Remmen, 2/09 CHECKED BY: M. Wilson	<b>GEOTECHNICAL SERVICES</b> FIELD INVESTIGATION BY: M. Wilson	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	<b>DIVISION OF ENGINEERING SERVICES</b> STRUCTURE DESIGN DESIGN BRANCH
--	--	--	--

BRIDGE NO. 54E0031	<b>RETAINING WALL NO. 7523 B</b>
POST MILE 142.3	<b>LOG OF TEST BORINGS 2 OF 2</b>

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	Sbd La Paz	62, 95S1	142.2/142.6 142.6/142.9	226	271

David Soon 6-24-09  
 REGISTERED CIVIL ENGINEER DATE

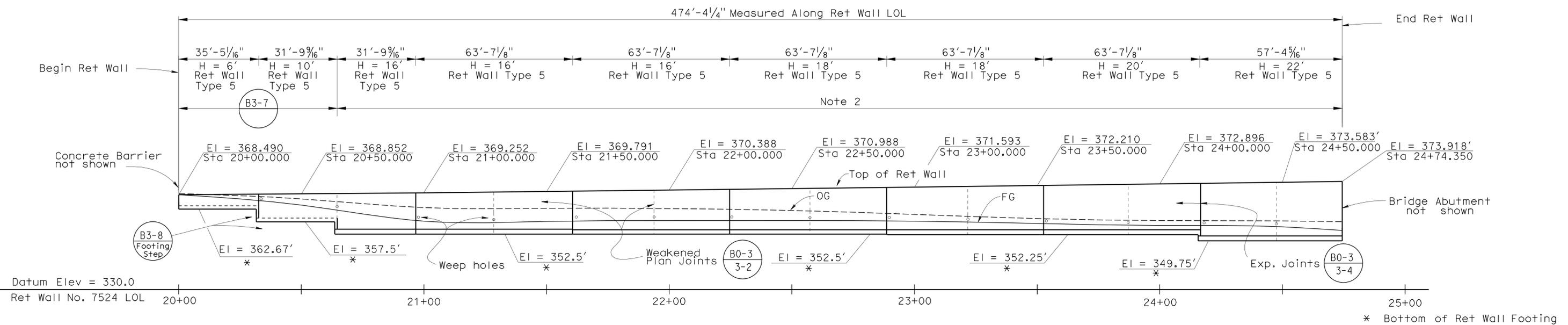
6-14-10  
 PLANS APPROVAL DATE

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David Soon  
 No. 51862  
 Exp. 6-30-10  
 CIVIL  
 STATE OF CALIFORNIA

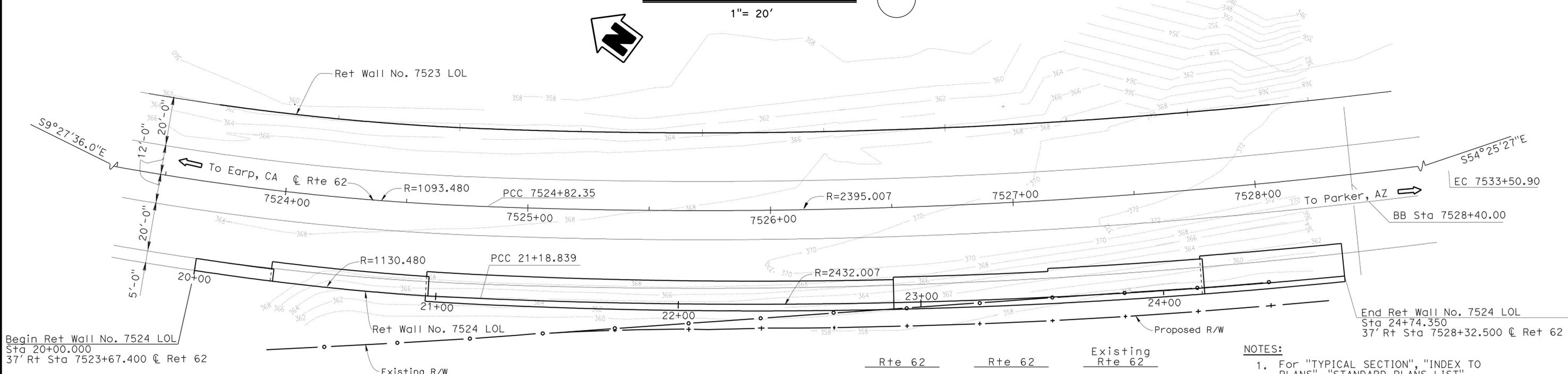
QUANTITIES

STRUCTURE EXCAVATION (RETAINING WALL)	3,800	CY
STRUCTURE BACKFILL (RETAINING WALL)	4,500	CY
STRUCTURAL CONCRETE, RETAINING WALL	830	CY
BAR REINFORCING STEEL (RETAINING WALL)	94,000	LB
TUBULAR HANDRAILING	475	LF
CONCRETE BARRIER (TYPE 80SWA MODIFIED)	475	LF



**DEVELOPED ELEVATION**

1" = 20'



Rte 62	Rte 62	Existing Rte 62
Δ = 24°11'10"	Δ = 20°46'42"	Δ = 40°23'53.4"±
R = 1093.480'	R = 2395.007'	R = 1099.079'±
T = 234.280'	T = 439.099'	T = 404.363'±
L = 461.585'	L = 868.551'	L = 774.940'±

- NOTES:
- For "TYPICAL SECTION", "INDEX TO PLANS", "STANDARD PLANS LIST", see "GENERAL PLAN NO. 2", sheet.
  - See "RETAINING WALL TYPE 5SWB" sheet for details.

 DESIGN ENGINEER	DESIGN BY David Soon	CHECKED Rakesh Deo	Service Load Design	Live Loading: 2' Live Load Surcharge	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 7</b>	BRIDGE NO. 54E0032	<b>RETAINING WALL NO. 7524</b> <b>GENERAL PLAN NO. 1</b>
	DETAILS BY Jinrong Zhou/ Y. Feng	CHECKED Rakesh Deo	LAYOUT BY David Soon	CHECKED Rakesh Deo			POST MILE 142.3	
	QUANTITIES BY Eduardo Ortega Jr.	CHECKED Gerald Dickerson	SPECIFICATIONS BY Kevin Ellingson	PLANS AND SPECS COMPARED Kevin Ellingson			REVISION DATES	

STRUCTURES DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 10/25/05) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3 CU 08 EA 378701 DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES: 11-2-09, 1-2-09, 10-11-09, 2-26-09, 4-14-09, 5-14-09, 10-28-09, 10-28-09

SHEET 1 OF 9

USERNAME => fmgp11m DATE PLOTTED => 17-JUN-2010 TIME PLOTTED => 10:59

FILE => rw7524-a-gp01.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBG, a Paz	62, 95S1	142.2/142.6 142.6/142.9	227	271

David Soon 6-24-09  
 REGISTERED CIVIL ENGINEER DATE  
 6-14-10  
 PLANS APPROVAL DATE  
 No. 51862  
 Exp. 6-30-10  
 CIVIL  
 STATE OF CALIFORNIA

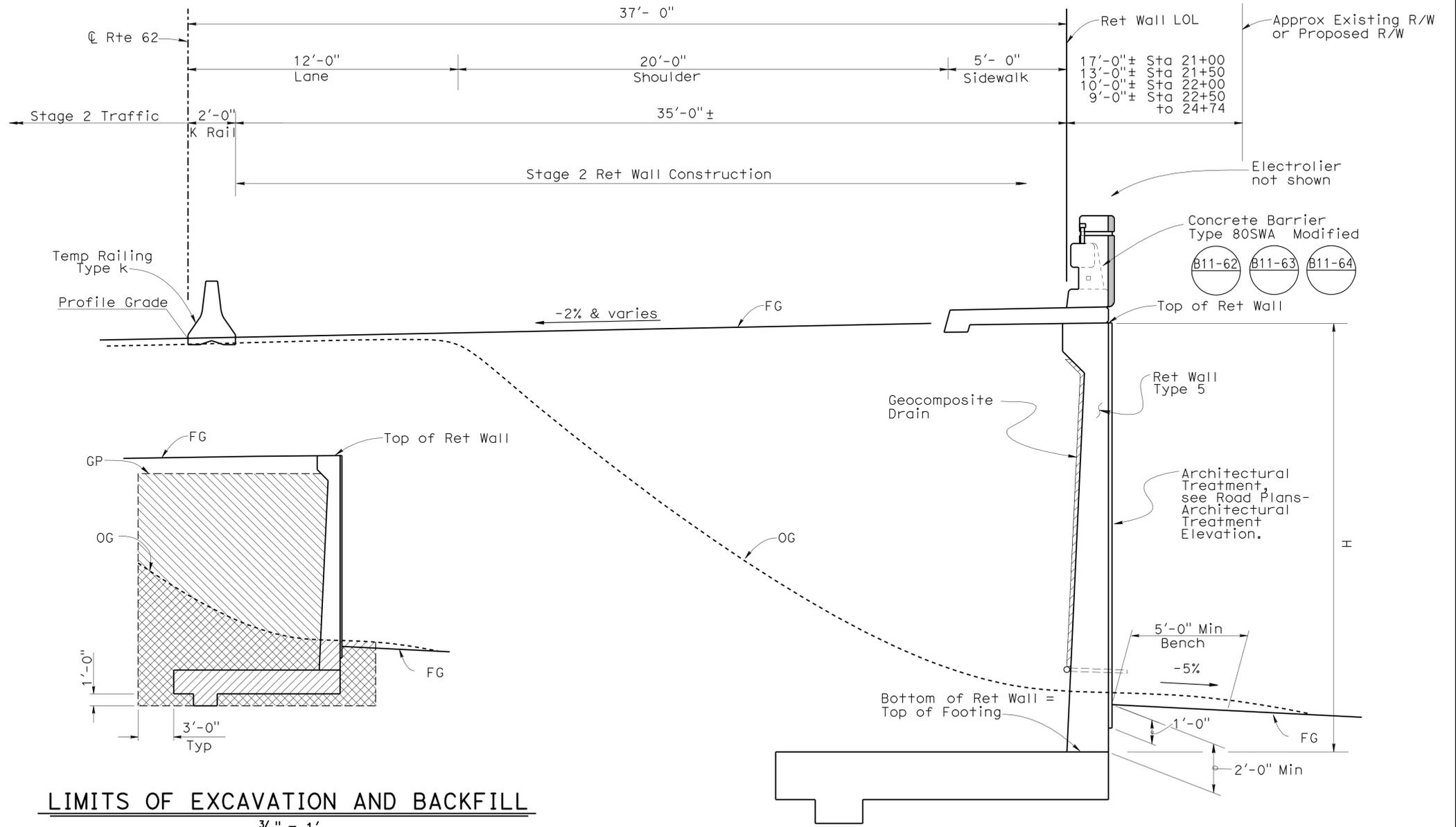
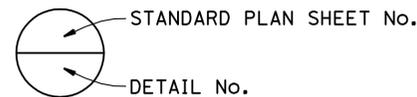
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## INDEX TO PLANS

SHEET No.	TITLE
1.	GENERAL PLAN NO. 1
2.	GENERAL PLAN NO. 2
3.	RETAINING WALL TYPE 5SWB
4.	CONCRETE BARRIER TYPE 80SWA MODIFIED LAYOUT
5.	CONCRETE BARRIER TYPE 80SWA MODIFIED DETAILS NO. 1
6.	CONCRETE BARRIER TYPE 80SWA MODIFIED DETAILS NO. 2
7.	CONCRETE BARRIER TYPE 80SWA MODIFIED DETAILS NO. 3
8.	LOG OF TEST BORINGS 1 OF 2
9.	LOG OF TEST BORINGS 2 OF 2

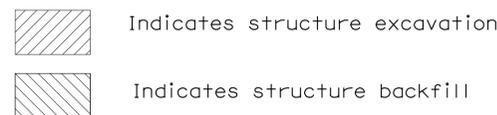
## STANDARD PLANS DATED MAY 2006

A10A	ACRONYMS AND ABBREVIATIONS (SHEET 1 OF 2)
A10B	ACRONYMS AND ABBREVIATIONS (SHEET 2 OF 2)
A62B	LIMITS OF PAYMENT FOR EXCAVATION BACKFILL - BRIDGE SURCHARGE AND WALL
B0-3	BRIDGE DETAILS
B3-7	RETAINING WALL TYPE 5
B3-8	RETAINING WALL DETAILS NO. 1
RSP B11-62	CONCRETE BARRIER TYPE 80SW (SHEET 1 OF 3)
RSP B11-63	CONCRETE BARRIER TYPE 80SW (SHEET 2 OF 3)
RSP B11-64	CONCRETE BARRIER TYPE 80SW (SHEET 3 OF 3)
RSP ES-9A	ELECTRICAL SYSTEMS (ELECTRICAL DETAIL, STRUCTURE INSTALLATIONS)
ES-9B	ELECTRICAL SYSTEMS (ELECTRICAL DETAIL, STRUCTURE INSTALLATIONS)
RSP ES-9C	ELECTRICAL SYSTEMS (ELECTRICAL DETAIL, STRUCTURE INSTALLATIONS)
ES-9D	ELECTRICAL SYSTEMS (ELECTRICAL DETAIL, STRUCTURE INSTALLATIONS)



## LIMITS OF EXCAVATION AND BACKFILL

3/16" = 1'



## TYPICAL SECTION

3/8" = 1'

DESIGN	BY David Soon	CHECKED Rakesh Deo
DETAILS	BY Jinrong Zhou/ Y. Feng	CHECKED Rakesh Deo
QUANTITIES	BY Eduardo Ortega Jr.	CHECKED Gerald Dickerson

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
 STRUCTURE DESIGN  
 DESIGN BRANCH 7

BRIDGE NO.  
 54E0032  
 POST MILE  
 142.3

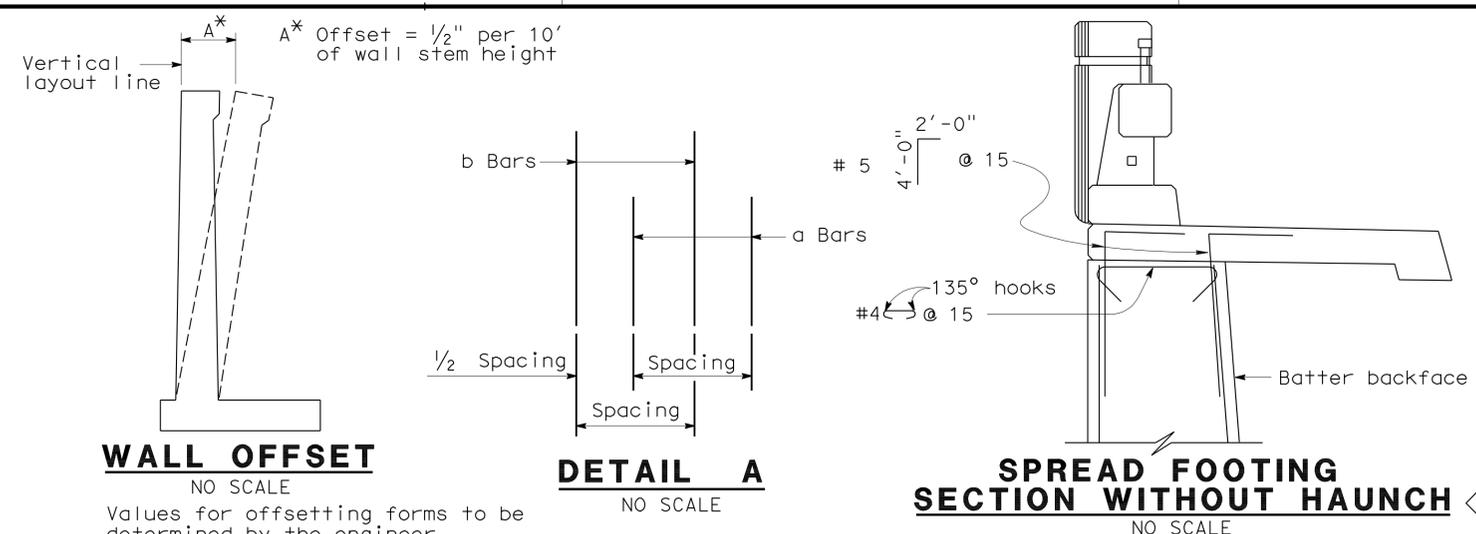
RETAINING WALL NO. 7524  
 GENERAL PLAN NO. 2

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBd, La Paz	62, 95S1	142.2/142.6: 142.6/142.9	228	271

David Soon 6-24-09  
REGISTERED ENGINEER - CIVIL

6-14-10  
PLANS APPROVAL DATE

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**DESIGN DATA** ◊

**DESIGN:** LOAD FACTOR DESIGN (LFD)  
**CONCRETE:** REINFORCED CONCRETE,  $f_c = 3600$  psi  
 $f_y = 60000$  psi

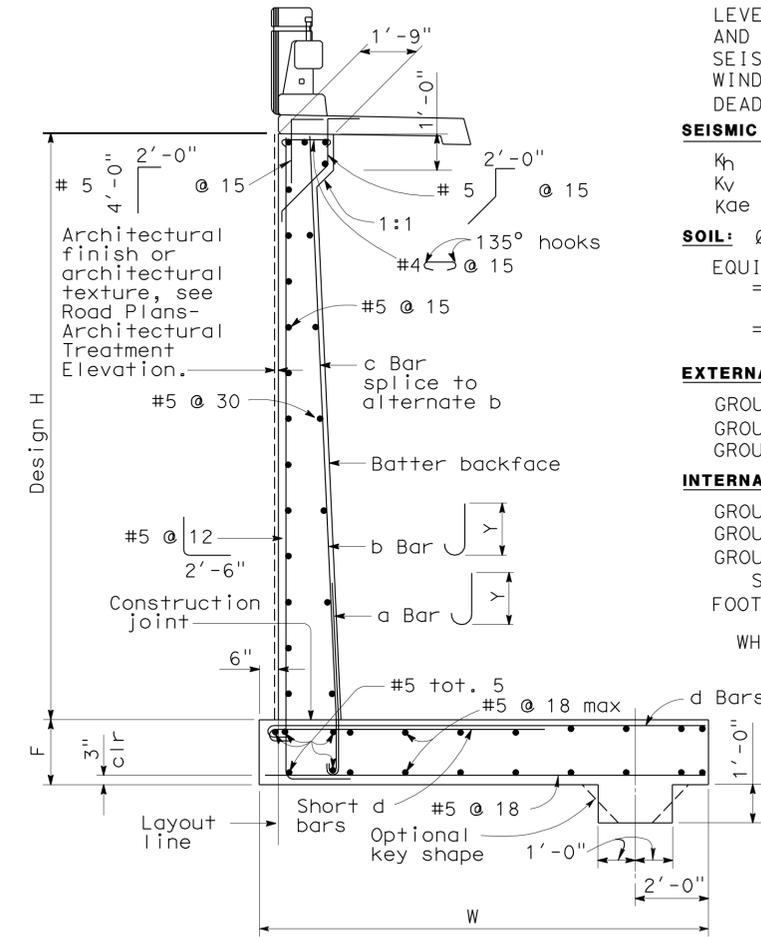
**LOADING CASE:**  
 LEVEL GROUND WITH 240 psf SURCHARGE AND 16' SOUNDWALL.  
 SEISMIC LOAD = 0.3 DEAD LOAD  
 WIND LOAD = 30 psf  
 DEAD LOAD OF BARRIER = 372 lb/lf

**SEISMIC LOAD: SOIL**  
 $K_h = 0.3g$   
 $K_v = 0.0$   
 $K_{ae}$ : MONOBE-OKABE METHOD  
**SOIL:**  $\phi = 34^\circ \gamma = 120$  pcf  
 EQUIVALENT FLUID PRESSURE:  
 = 36 pcf MAX. FOR DETERMINATION OF TOE PRESSURE  
 = 27 pcf MAX. FOR DETERMINATION OF HEEL PRESSURE

**EXTERNAL STABILITY:**  
 GROUP 1 : D+E = SC  
 GROUP 2 : D+E+SC+W  
 GROUP 3 : D = PYM

**INTERNAL STABILITY ( LFD ):**  
 GROUP A :  $\beta D + 1.7E + 1.7SC$   
 GROUP B :  $\beta D + 1.7E + 1.7SC + W$   
 GROUP C :  
 STEM :  $1.0D + 1.0E + 1.0EQD + 1.0EQE$   
 FOOTING : D+PYM

WHERE :  $\beta = 1.0$  OR  $1.3$  WHICHEVER CONTROLS DESIGN  
 D = DEAD LOAD  
 E = LATERAL EARTH PRESSURE  
 SC = SURCHARGE  
 W = WIND LOAD  
 EQD = SEISMIC DEAD LOAD  
 EQE = SEISMIC LATERAL EARTH PRESSURE  
 PYM = PROBABLE YIELD MOMENT (1.3\* NOMINAL YIELD MOMENT OF STEM)



**SPREAD FOOTING SECTION** ◊  
NO SCALE

**GENERAL NOTES:** ◊

- CONT = CONTINUOUS  
 \* = a AND b [SHORT d & d] BARS ARE BUNDLED TOGETHER.  
 \*\* = ALTERNATE a AND b BARS AS SHOWN IN DETAIL A.  
 = ALTERNATE SHORT d AND d BARS.
- FOR RETAINING WALL ARCHITECTURAL FINISH OR TEXTURE SEE DETAILS ELSEWHERE IN PROJECT PLANS.
  - FOR DETAILS NOT SHOWN AND DRAINAGE NOTES SEE (B3-8)
  - FOOTING COVER, 2'-0" MINIMUM.

**TABLE 1 : TABLE OF REINFORCING STEEL DIMENSION AND DATA**

		STEM WITH HAUNCH				STEM WITHOUT HAUNCH			
DESIGN H		16'	18'	20'	22'	16'	18'	20'	22'
W		12'-3"	13'-3"	14'-6"	15'-9"	12'-6"	13'-3"	14'-3"	16'-3"
F SPREAD FTG.		1'-9"	2'-0"	2'-0"	2'-3"	1'-6"	1'-6"	1'-9"	2'-3"
BATTER		1/2:12	1/2:12	1/2:12	1/2:12	0	0	0	0
STEM THICKNESS @ HAUNCH		1'-0"	1'-0"	1'-0"	1'-0"	1'-3"	1'-3"	1'-6"	2'-0"
a BARS		#8@18**	#9@18**	#10@18**	#8 @ 9*	#8@12**	#8 @ 9*	#9@12**	#9@12**
Y		7'-6"	8'-0"	9'-0"	9'-6"	6'-0"	6'-6"	8'-0"	8'-6"
b BARS		#8@18**	#9@18**	#10@18**	#8 @ 9*	#8@12**	#8 @ 9*	#9@12**	#9@12**
Y		13'-0"	15'-0"	17'-6"	19'-6"	8'-6"	11'-0"	11'-0"	11'-6"
c BARS		#6 @ 18	#6 @ 18	#6 @ 18	#6 @ 18	#6 @ 12	#7 @ 18	#7 @ 12	#7 @ 12
SHORT d BARS		#8@18**	#9@18**	#10@18**	#8 @ 9*	#8@12**	#8 @ 9*	#9@12**	#9@12**
X		7'-6"	8'-0"	8'-6"	9'-6"	7'-0"	8'-6"	9'-0"	10'-0"
d BARS		#8@18**	#9@18**	#10@18**	#8 @ 9*	#9@18**	#8 @ 9*	#9@12**	#9@12**
X		CONT	CONT	CONT	CONT	CONT	CONT	CONT	CONT
ULTIMATE BEARING CAPACITY REQUIRED k/sf		13.2	15	16.2	17.8	12.6	14.3	16.2	17.3

**TABLE 2 : TABLE OF REINFORCING STEEL DIMENSION AND DATA**

		STEM WITH HAUNCH				STEM WITHOUT HAUNCH			
DESIGN H		16'	18'	20'	22'	16'	18'	20'	22'
W		12'-6"	13'-3"	14'-3"	16'-3"	12'-6"	13'-3"	14'-3"	16'-3"
F SPREAD FTG.		1'-6"	1'-6"	1'-9"	2'-3"	1'-6"	1'-6"	1'-9"	2'-3"
BATTER		0	0	0	0	0	0	0	0
STEM THICKNESS @ HAUNCH		1'-3"	1'-3"	1'-6"	2'-0"	1'-3"	1'-3"	1'-6"	2'-0"
STEM THICKN @ TOP									
a BARS		#8@12**	#8 @ 9*	#9@12**	#9@12**	#8@12**	#8 @ 9*	#9@12**	#9@12**
Y		6'-0"	6'-6"	8'-0"	8'-6"	6'-0"	6'-6"	8'-0"	8'-6"
b BARS		#8@12**	#8 @ 9*	#9@12**	#9@12**	#8@12**	#8 @ 9*	#9@12**	#9@12**
Y		8'-6"	11'-0"	11'-0"	11'-6"	8'-6"	11'-0"	11'-0"	11'-6"
c BARS		#6 @ 12	#7 @ 18	#7 @ 12	#7 @ 12	#6 @ 12	#7 @ 18	#7 @ 12	#7 @ 12
SHORT d BARS		#8@12**	#8 @ 9*	#9@12**	#9@12**	#8@12**	#8 @ 9*	#9@12**	#9@12**
X		7'-0"	8'-6"	9'-0"	10'-0"	7'-0"	8'-6"	9'-0"	10'-0"
d BARS		#9@18**	#8 @ 9*	#9@12**	#9@12**	#9@18**	#8 @ 9*	#9@12**	#9@12**
X		CONT	CONT	CONT	CONT	CONT	CONT	CONT	CONT
ULTIMATE BEARING CAPACITY REQUIRED k/sf		12.6	14.3	16.2	17.3	12.6	14.3	16.2	17.3

**SPECIAL DETAIL**

**STANDARD DRAWING**

FILE NO. **xs14-350e**

APPROVED BY: G. WANG  
RESPONSIBLE TECHNICAL SPECIALIST

RELEASED BY: ROBERTO LACALLE  
RESPONSIBLE OFFICE CHIEF

APPROVAL DATE: 5-13-08

RELEASE DATE: 5-13-08

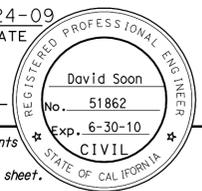
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 ◊ Deleted Text

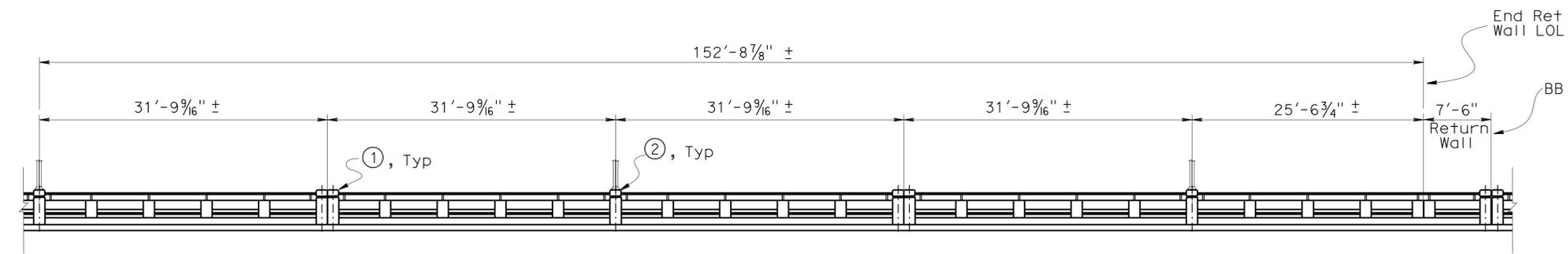
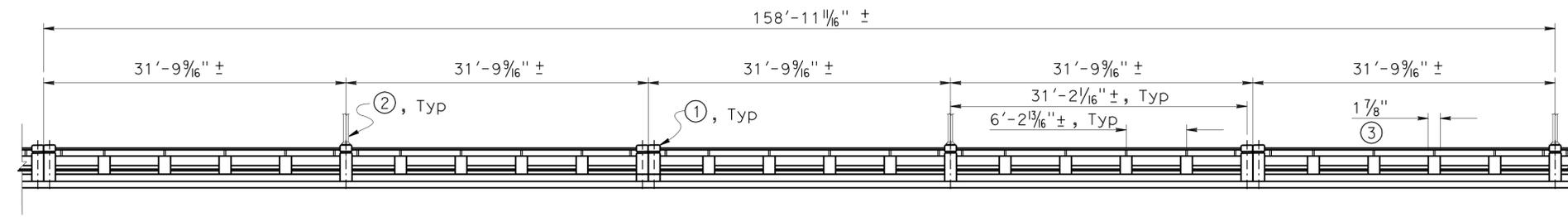
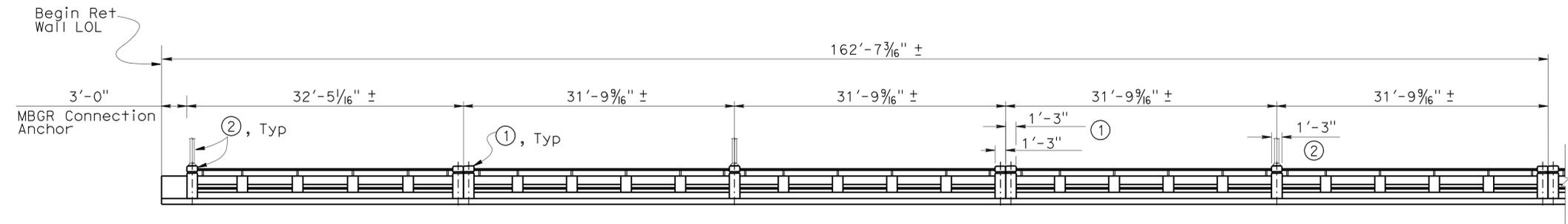
STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE NO. 54E0032  
 POST MILE 142.3

RETAINING WALL NO. 7524  
 RETAINING WALL TYPE 5SWB

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBG, a Paz	62, 95S1	142.2/142.6 142.6/142.9	229	271
David Soon 6-24-09				REGISTERED CIVIL ENGINEER DATE	
6-14-10				PLANS APPROVAL DATE	
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- ① Double Pylon & Ret Wall Exp. Joint.
- ② Pylon and Electrolier.
- ③ Concrete Barrier Type 80SW post.

**DEVELOPED ELEVATION  
CONCRETE BARRIER LAYOUT**

1/8"=1'-0"

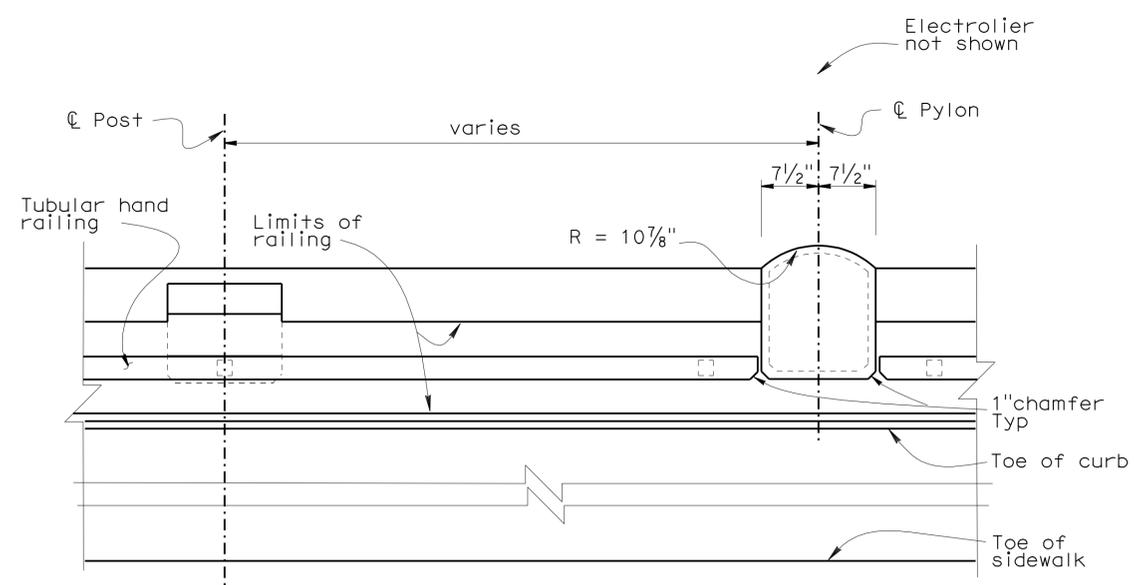
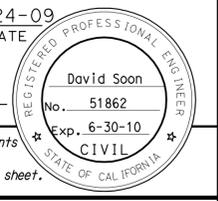
NOTES:

- For Concrete Barrier Type 80SW details, see **B11-62** , **B11-63** and **B11-64** .
- For Pylon and Double Pylon details, see "CONCRETE BARRIER TYPE 80SWA MODIFIED DETAILS No. 1" and "CONCRETE BARRIER TYPE 80SWA MODIFIED DETAILS No. 2" sheets.
- For MBGR Connection Anchor details, see "CONCRETE BARRIER TYPE 80SWA MODIFIED DETAILS No. 3" sheet.

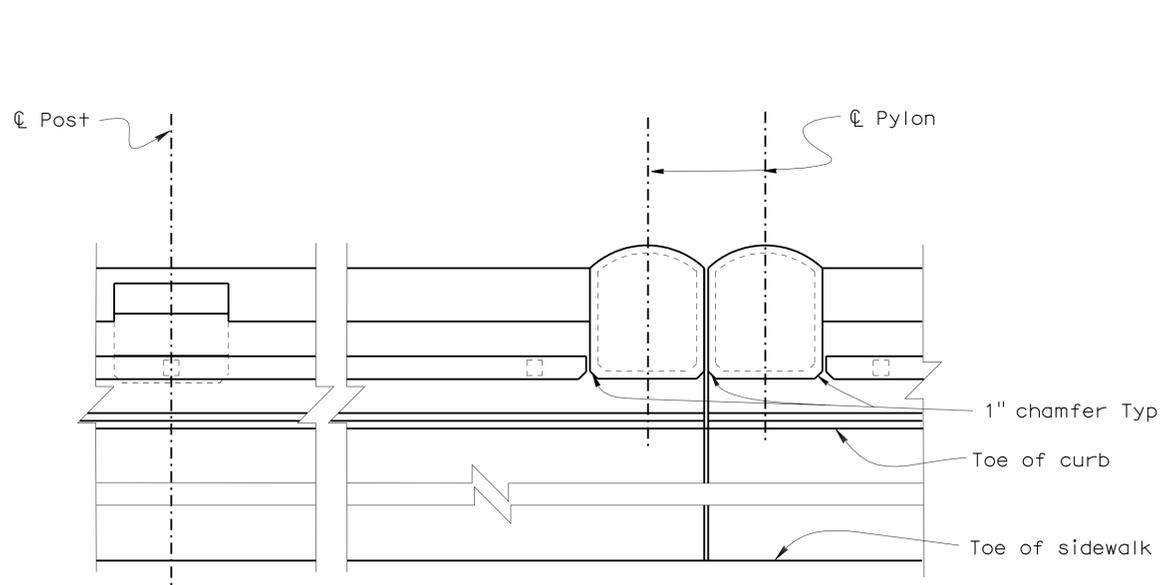
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)			ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH <b>7</b>	BRIDGE NO. 54E0032 POST MILE 142.3	<b>RETAINING WALL NO. 7524</b> <b>CONCRETE BARRIER TYPE 80SWA</b> <b>MODIFIED LAYOUT</b>		REVISION DATES 10-29-08 10-29-08 10-29-08 11-1-08 12-18-08 12-29-08 02-17-09 2-26-09 4-13-09	SHEET 4	OF 9
DESIGN BY David Soon CHECKED Rakesh Deo	DETAILS BY Yingjue Feng CHECKED Rakesh Deo	QUANTITIES BY Eduardo Ortega Jr. CHECKED Gerald Dickerson	CU 08 EA 378701 FILE => rw7524-s-bar-1a.dgn		DISREGARD PRINTS BEARING EARLIER REVISION DATES							

USERNAME => hmgp11n DATE PLOTTED => 17-JUN-2010 TIME PLOTTED => 11:00

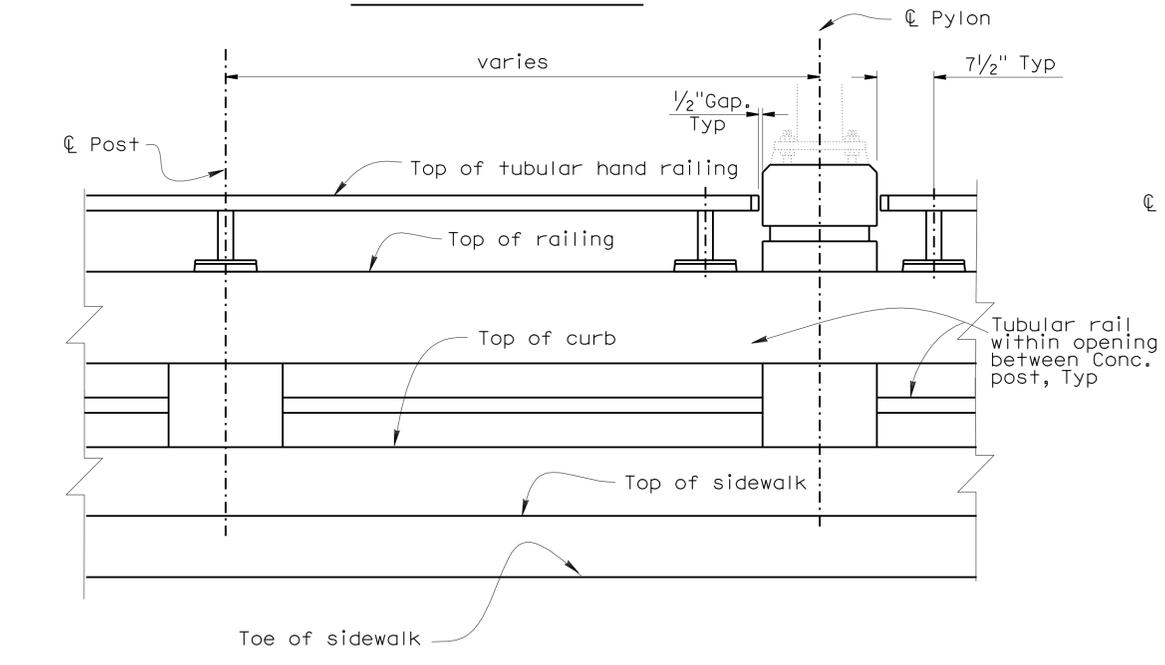
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBG, La Paz	62, 95S1	142.2/142.6 142.6/142.9	230	271
David Soon 6-24-09 REGISTERED CIVIL ENGINEER DATE					
6-14-10 PLANS APPROVAL DATE					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.					



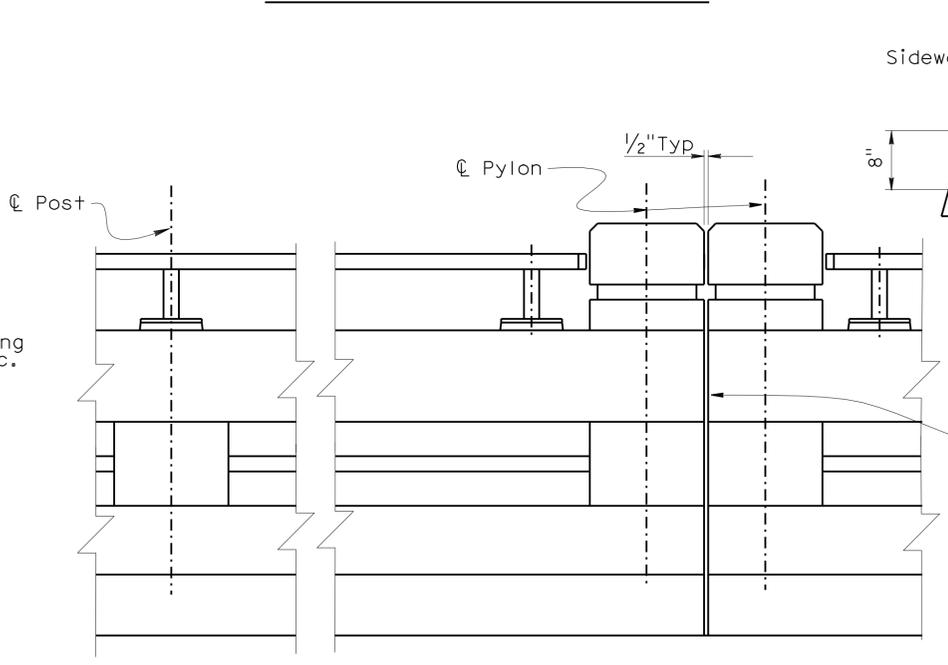
PLAN AT PYLON



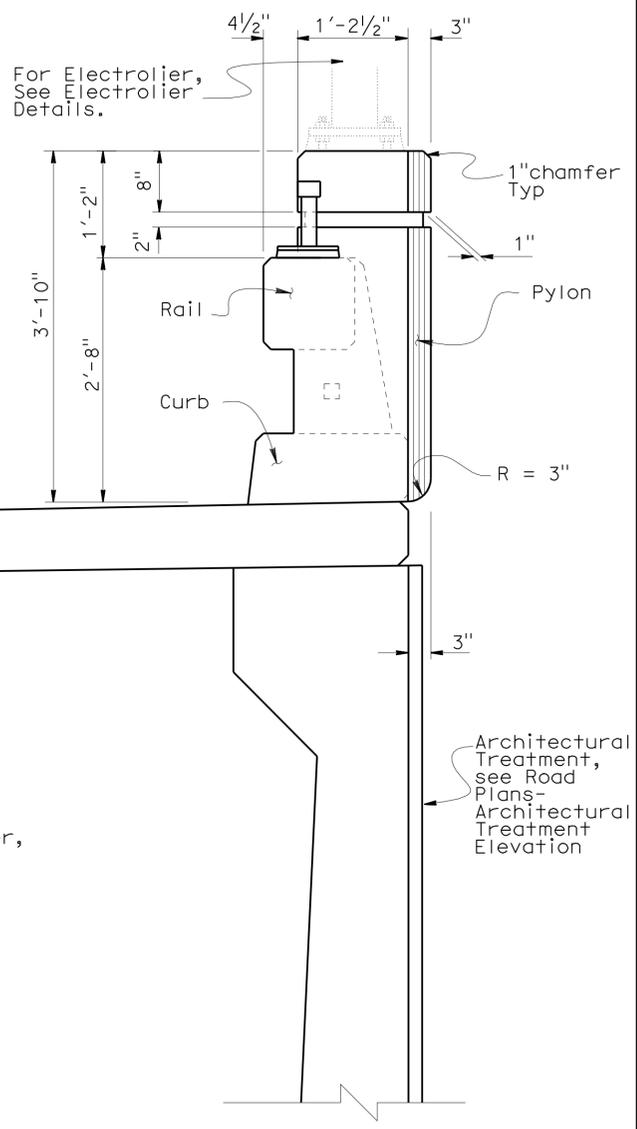
PLAN AT DOUBLE PYLON



ELEVATION AT PYLON



ELEVATION AT DOUBLE PYLON



TYPICAL SECTION AT PYLON

NOTES:

- For Concrete Barrier layout, see "CONCRETE BARRIER TYPE 80SWA MODIFIED LAYOUT" sheet.
- For Concrete Barrier Type 80SW details, see B11-62, B11-63 and B11-64.
- For Concrete Barrier details not shown, see "CONCRETE BARRIER TYPE 80SWA MODIFIED DETAILS NO. 2" and "CONCRETE BARRIER TYPE 80SWA MODIFIED DETAILS NO. 3" sheets.

CONCRETE BARRIER TYPE 80SWA MODIFIED DETAIL

1" = 1'-0"

DESIGN	BY	David Soon	CHECKED	Rakesh Deo	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 7	BRIDGE NO.	54E0032	
	DETAILS	BY	Yingjue Feng	CHECKED			Rakesh Deo	POST MILE	142.3
	QUANTITIES	BY	Eduardo Ortega Jr.	CHECKED			Gerald Dickerson		

RETAINING WALL NO. 7524	
CONCRETE BARRIER TYPE 80SWA MODIFIED DETAILS NO. 1	
REVISION DATES	SHEET 5 OF 9

USERNAME => hrm001.in DATE PLOTTED => 17-JUN-2010 TIME PLOTTED => 11:00

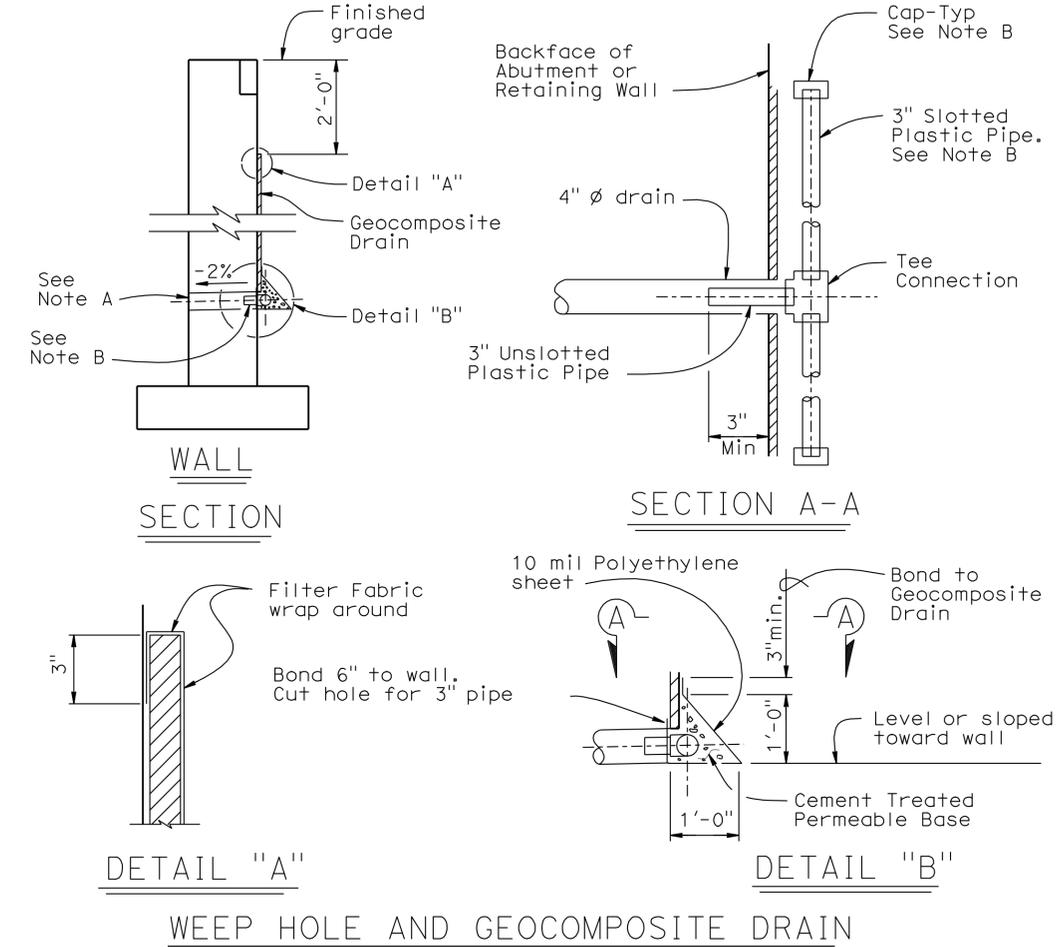
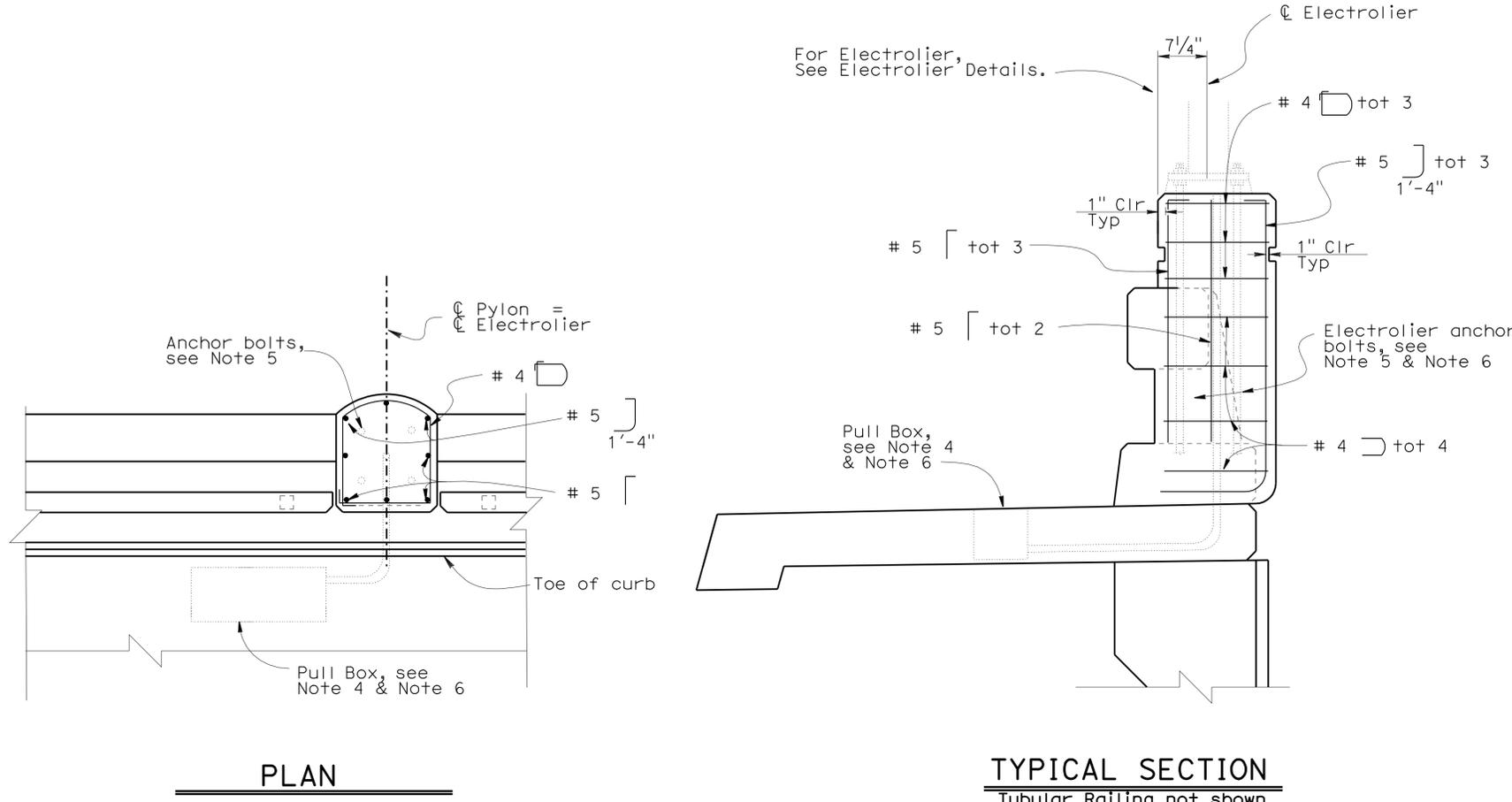
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBG, a Paz	62, 95S1	142.2/142.6 142.6/142.9	231	271

David Soon 6-24-09  
REGISTERED CIVIL ENGINEER DATE

6-14-10  
PLANS APPROVAL DATE

David Soon  
No. 51862  
Exp. 6-30-10  
CIVIL  
STATE OF CALIFORNIA

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- NOTES:
- For Concrete Barrier layout, see "CONCRETE BARRIER TYPE 80SWA MODIFIED LAYOUT" sheet.
  - For Concrete Barrier Type 80SW details, see B11-62, B11-63 and B11-64.
  - For Concrete Barrier details not shown, see "CONCRETE BARRIER TYPE 80SWA MODIFIED DETAILS NO. 1" and "CONCRETE BARRIER TYPE 80SWA MODIFIED DETAILS NO. 3" sheets.
  - For electrical details see ES9A, ES9B, ES9C & ES9D.
  - For anchor bolts size and placement, see Electrolier Details.
  - Pull Box and anchor bolts only at electrolier locations.
  - Concrete Barrier Type 80SW post and longitudinal reinforcement continuous through pylon. This reinforcement is not shown.

**PYLON DETAIL**  
1" = 1'-0"

- NOTES:
- 4" ø drains at intermediate sag points and at 25' max center to center (9' c-c for Type 3 and 9'-3" c-c for Type 4 retaining walls). For walls adjacent to sidewalks or curbs, provide 4" cast iron or asbestos cement pipe under the sidewalk to discharge through curb face. Exposed wall drains shall be located 3"± above finished grade.
  - Geocomposite drain, cement treated permeable base, and 3" ø slotted plastic pipe continuous behind retaining wall or abutment. Cap ends of pipe. Provide "Tee" connection at each 4" ø drain.
  - Connect the low end of plastic pipe to the main outlet pipe as applicable.

DESIGN BY David Soon			CHECKED Rakesh Deo	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 7	BRIDGE NO. 54E0032	RETAINING WALL NO. 7524 CONCRETE BARRIER TYPE 80SWA MODIFIED DETAILS NO. 2
DETAILS BY Yingjue Feng			CHECKED Rakesh Deo			POST MILE 142.3	
QUANTITIES BY Eduardo Ortega Jr.			CHECKED Gerald Dickerson				

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

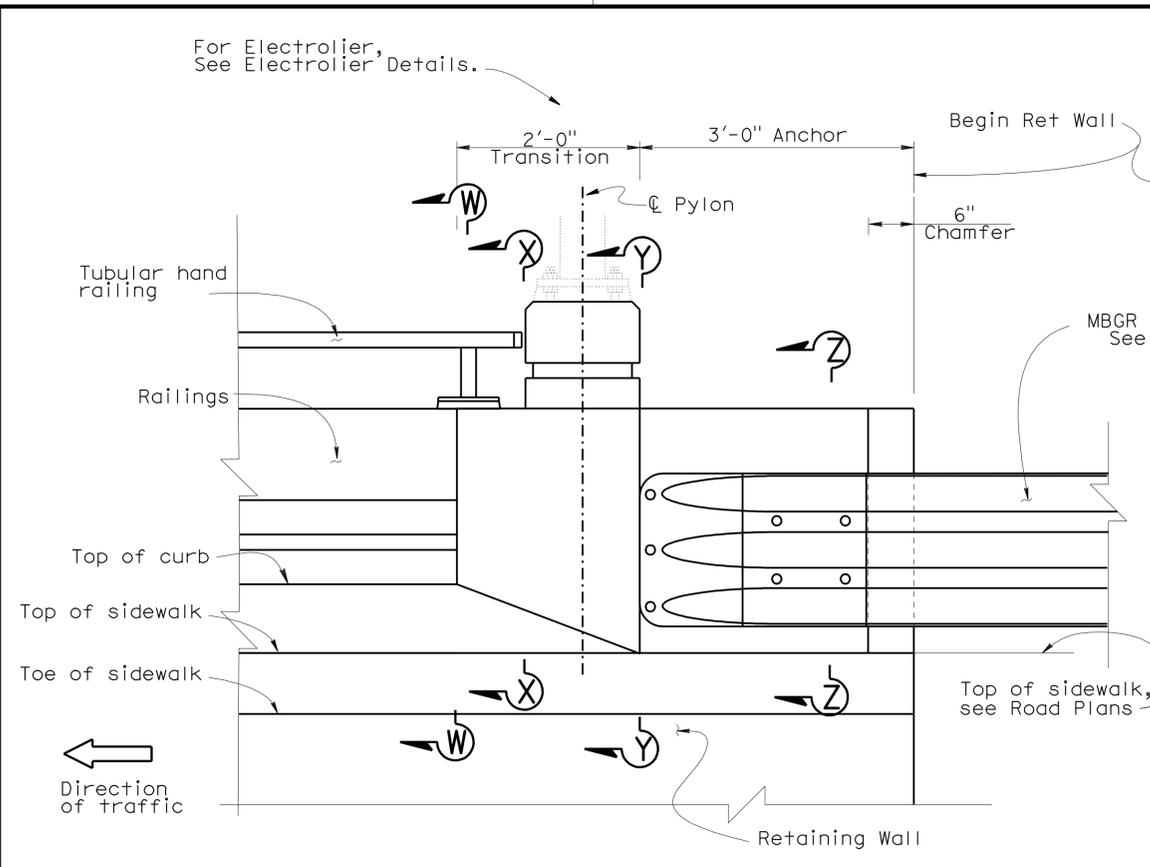
CU 08  
EA 378701

DISREGARD PRINTS BEARING EARLIER REVISION DATES

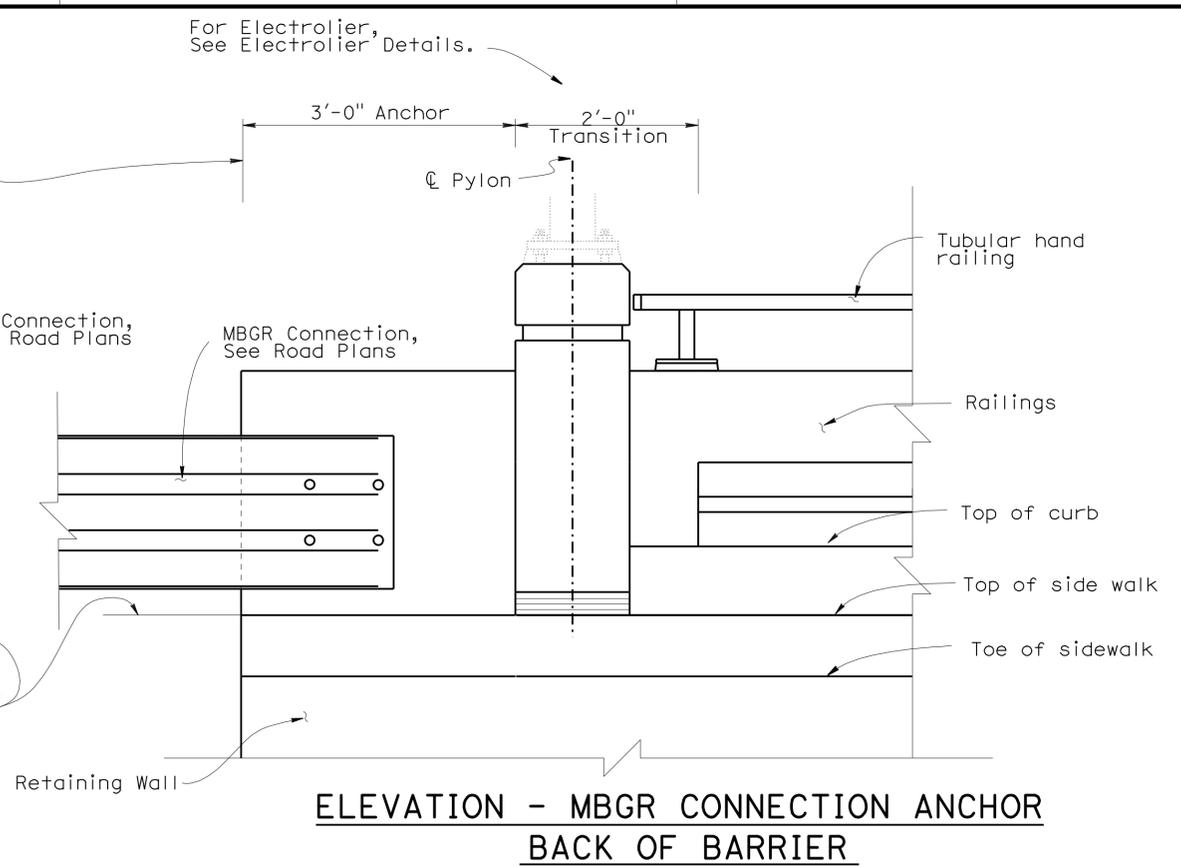
REVISION DATES	SHEET	OF
11-17-08	6	9

FILE => rw7524-t-bar-det02.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBG, La Paz	62, 95S1	142.2/142.6, 142.6/142.9	232	271
David Soon 12-10-09				REGISTERED CIVIL ENGINEER	DATE
6-14-10				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.					

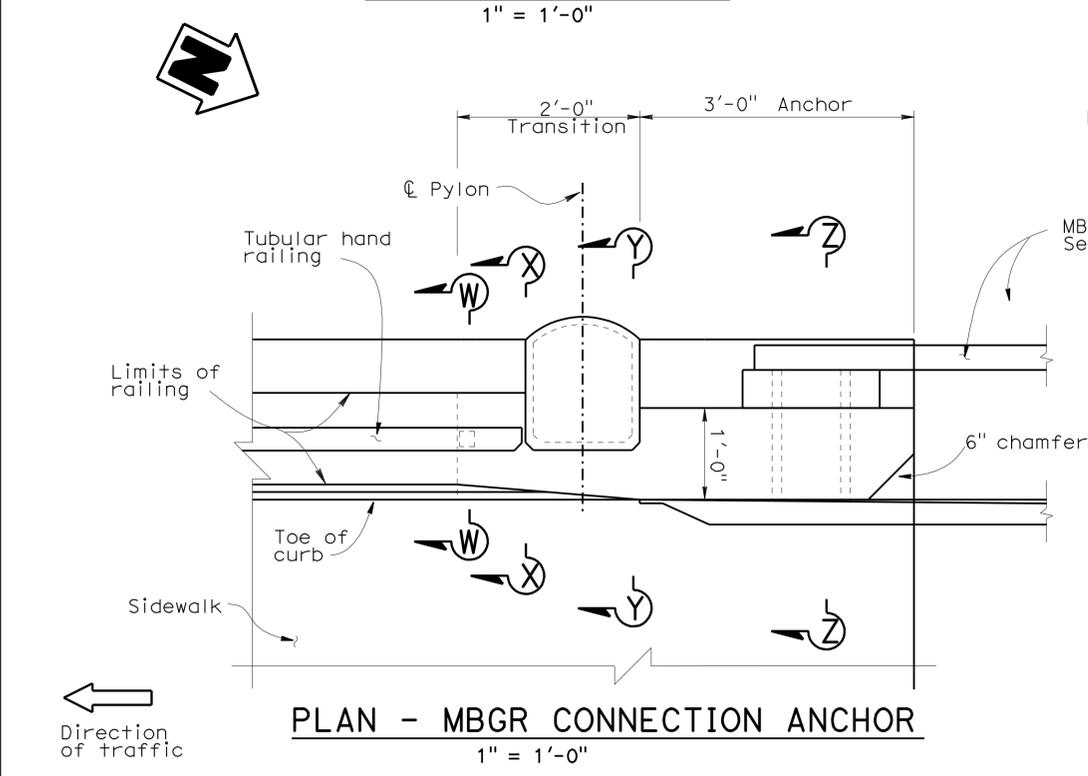


**ELEVATION - MBGR CONNECTION ANCHOR FRONT OF BARRIER**  
1" = 1'-0"

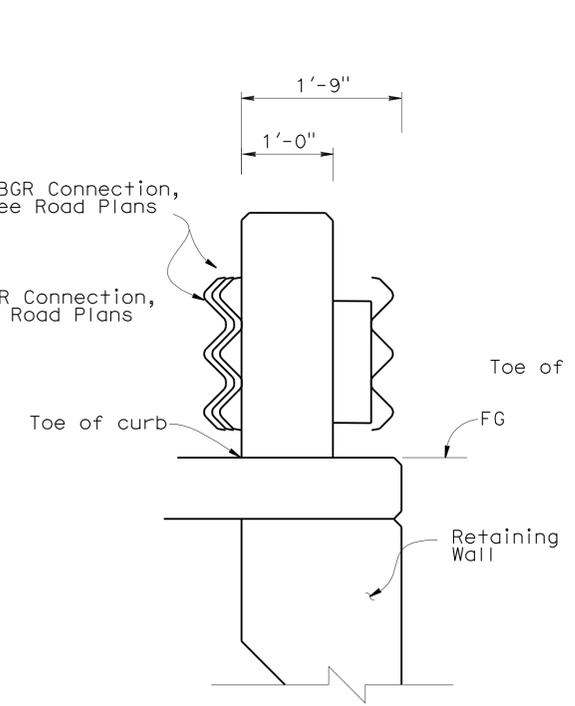


**ELEVATION - MBGR CONNECTION ANCHOR BACK OF BARRIER**  
1" = 1'-0"

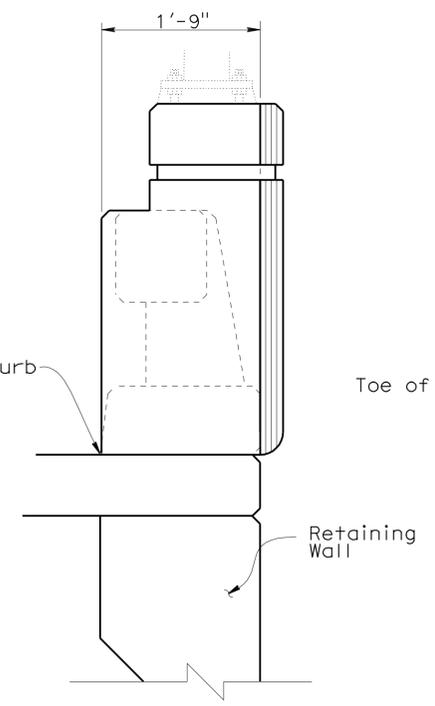
- NOTES:
1. For Concrete Barrier layout, see "CONCRETE BARRIER TYPE 80SWA MODIFIED LAYOUT" sheet.
  2. For Concrete Barrier Type 80SW details, see B11-62, B11-63 and B11-64.
  3. For Concrete Barrier details not shown, see "CONCRETE BARRIER TYPE 80SWA MODIFIED DETAILS NO. 1" and "CONCRETE BARRIER TYPE 80SWA MODIFIED DETAILS NO. 2" sheets.
  4. For MBGR Connection Anchor reinforcement, see B11-62.



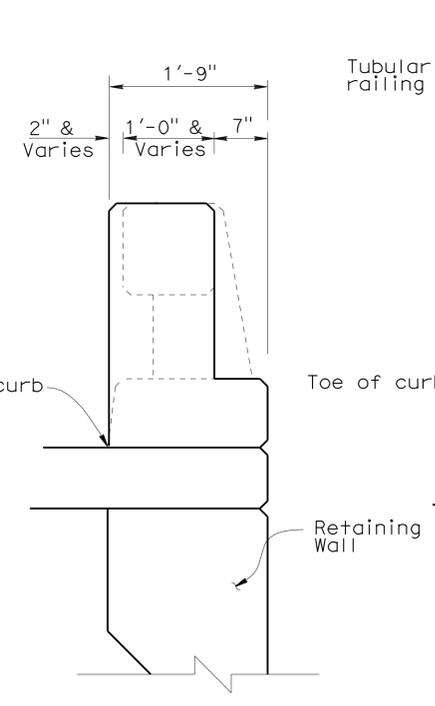
**PLAN - MBGR CONNECTION ANCHOR**  
1" = 1'-0"



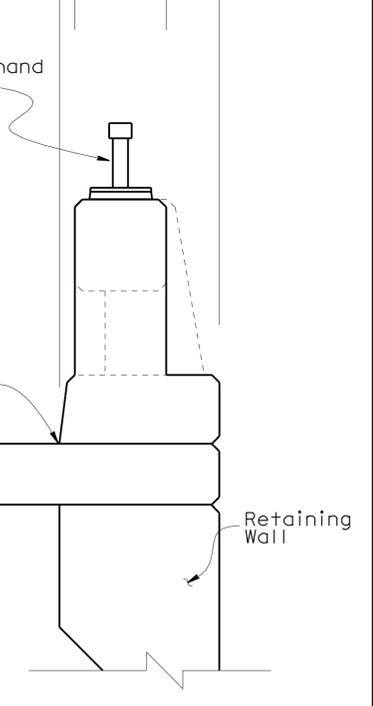
**SECTION Z-Z**  
1" = 1'-0"



**SECTION Y-Y**  
1" = 1'-0"



**SECTION X-X**  
1" = 1'-0"



**SECTION W-W**  
1" = 1'-0"

DESIGN	BY David Soon	CHECKED Rakesh Deo
DETAILS	BY Yingjue Feng	CHECKED Rakesh Deo
QUANTITIES	BY Eduardo Ortega Jr.	CHECKED Gerald Dickerson

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
DESIGN BRANCH **7**

BRIDGE NO.  
POST MILE  
142.3

RETAINING WALL NO. 7524

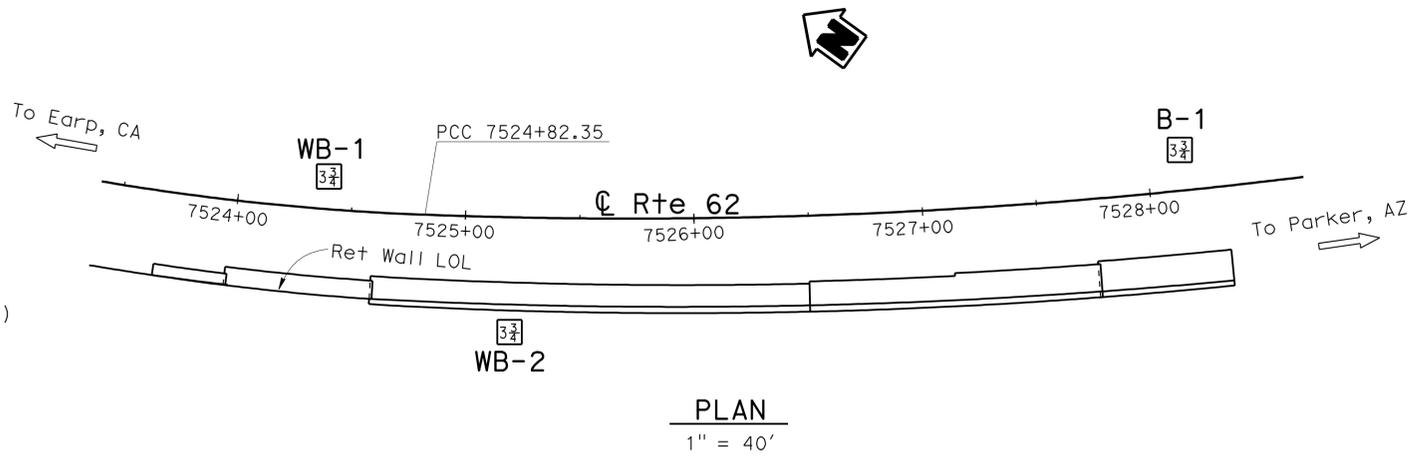
CONCRETE BARRIER TYPE 80SWA  
MODIFIED DETAILS NO. 3

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBG, La Paz	62, 95S1	142.2/142.6 142.6/142.9	233	271

2-23-09  
PROFESSIONAL GEOLOGIST  
Mark Wilson  
No. 8164  
Exp. 06-30-10

6-14-10  
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.



**BENCH MARK**

**SURVEY CONTROL**

PHOTO PT 62-2-93 (NOT SHOWN ON PLAN)  
 Fnd "PK" NAIL ON YELLOW STRIPE  
 IN TURN POCKET TO RV PARK  
 11.807' Rt + C PROPOSED RTE 62  
 Sta 7523+99.516  
 N 1901612.719  
 E 7680552.001  
 Elev 367.781'

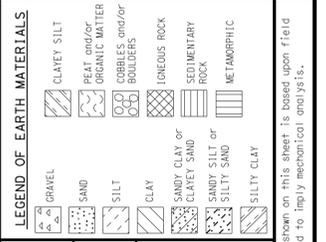
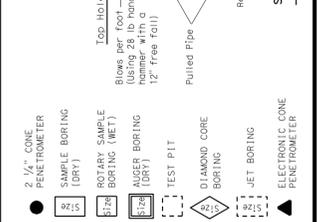
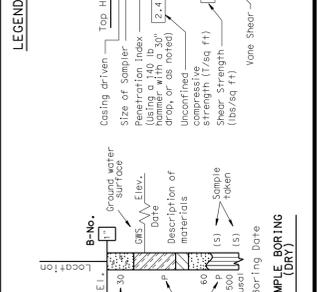
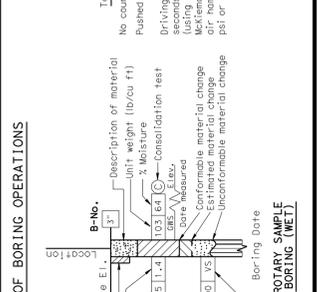
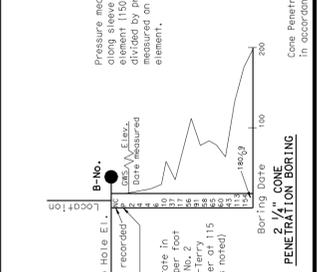
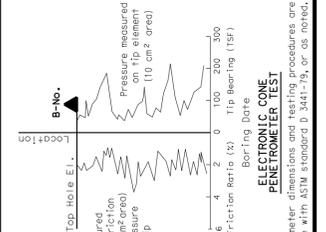
**SPAN 1964**

Fnd 3/2" STD. USC&GS BRASS DISK STAMPED  
 "SPAN 1964" FLUSH IN SIDEWALK  
 48.365' Lt + C PROPOSED RTE 62  
 Sta. 7531+78.111  
 N 1901070.086  
 E 7681099.470  
 Elev 378.998'

**PLAN**  
1" = 40'

**NOTES:**

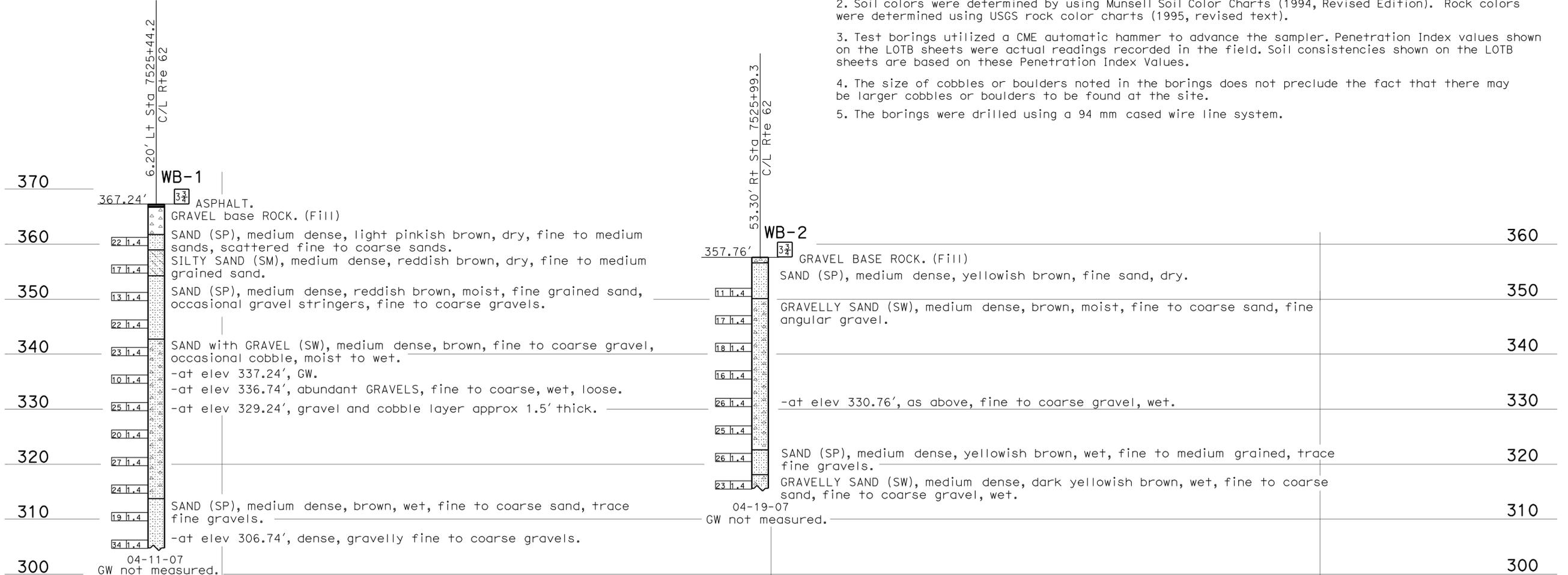
1. Groundwater was encountered, but not measured in some borings, due to the immediate backfilling of the boring. The Contractor should anticipate encountering ground water during the excavation and construction of all foundation supports. De-watering of the footing excavations may be required. Groundwater surface elevations are subject to seasonal fluctuations and will be encountered at higher or lower elevations depending on conditions at time of construction.
2. Soil colors were determined by using Munsell Soil Color Charts (1994, Revised Edition). Rock colors were determined using USGS rock color charts (1995, revised text).
3. Test borings utilized a CME automatic hammer to advance the sampler. Penetration Index values shown on the LOTB sheets were actual readings recorded in the field. Soil consistencies shown on the LOTB sheets are based on these Penetration Index Values.
4. The size of cobbles or boulders noted in the borings does not preclude the fact that there may be larger cobbles or boulders to be found at the site.
5. The borings were drilled using a 94 mm cased wire line system.



**CONSISTENCY CLASSIFICATION FOR SOILS**

According to the Standard Penetration Test

SPT N <sub>60</sub> (blows/foot)	Consistency
0-4	Very Loose
5-10	Loose
11-30	Medium Dense
31-50	Dense
51-60	Very Dense
>60	Hard



7525+50	7526+00	7526+50	<b>PROFILE</b> HOR. 1"=5' VER. 1"=10'
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<b>ENGINEERING SERVICES</b>	<b>GEOTECHNICAL SERVICES</b>	FIELD INVESTIGATION BY: M. Wilson	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	<b>DIVISION OF ENGINEERING SERVICES</b> STRUCTURE DESIGN DESIGN BRANCH	BRIDGE NO. 54E0032 POST MILE 142.3	<b>RETAINING WALL NO. 7524</b>
DRAWN BY W. Tang, 11/08; I.G.-Remmen, 2/09	CHECKED BY M. Wilson					<b>LOG OF TEST BORINGS 1 OF 2</b>

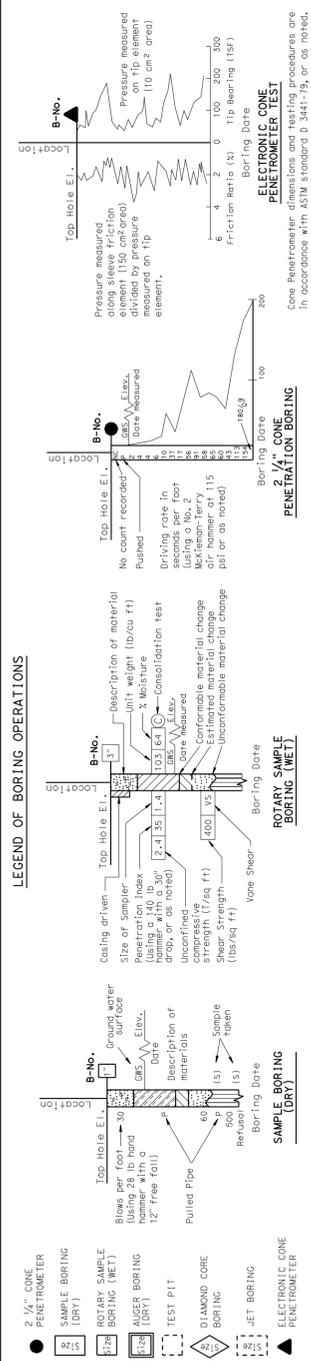
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBD, La Paz	62, 95S1	142.2/142.6: 142.6/142.9	234	271

2-23-09  
PROFESSIONAL GEOLOGIST

6-14-10  
PLANS APPROVAL DATE

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## FOR PLAN VIEW, SEE "LOG OF TEST BORINGS" 1 OF 2



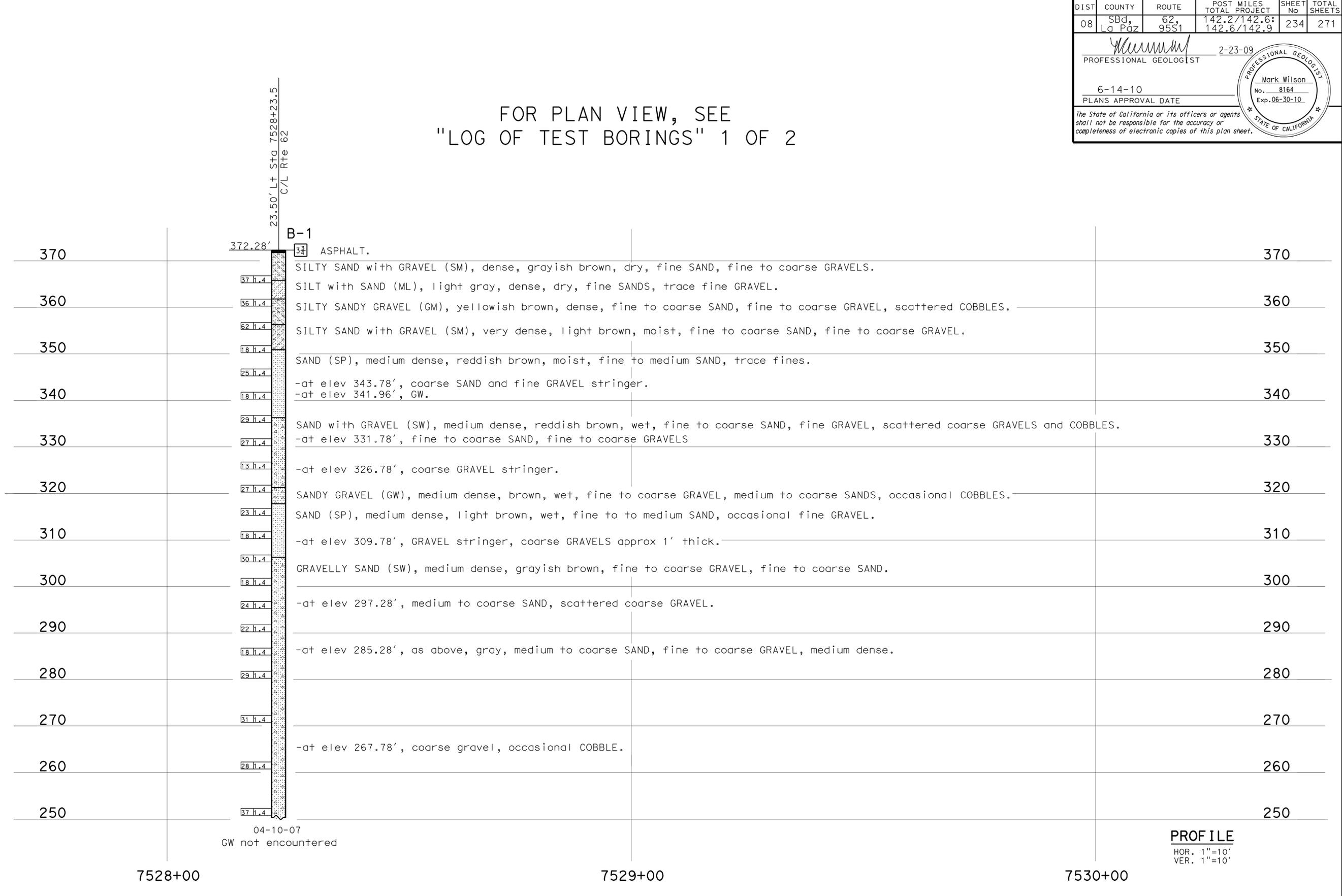
**LEGEND OF EARTH MATERIALS**

GRAVEL	CLAYEY SILT
SAND	PEAT and/or ORGANIC MATTER
SILT	COBBLES and/or BOULDERS
CLAY	GENEIOUS ROCK
SANDY CLAY or CLAYEY SAND	SEDIMENTARY ROCK
SANDY SILT or SILTY SAND	METAMORPHIC
SILTY CLAY	

**CONSISTENCY CLASSIFICATION FOR SOILS**

According to the Standard Penetration Test	
SPT Blow (Blows/foot)	Consistency
0-4	Very Loose
5-10	Loose
11-30	Medium Dense
31-50	Dense
>50	Very Dense
0-2	Very Soft
2-4	Soft
5-8	Medium stiff
9-15	Stiff
16-30	Very Stiff
31-60	Hard
>60	Very Hard

NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

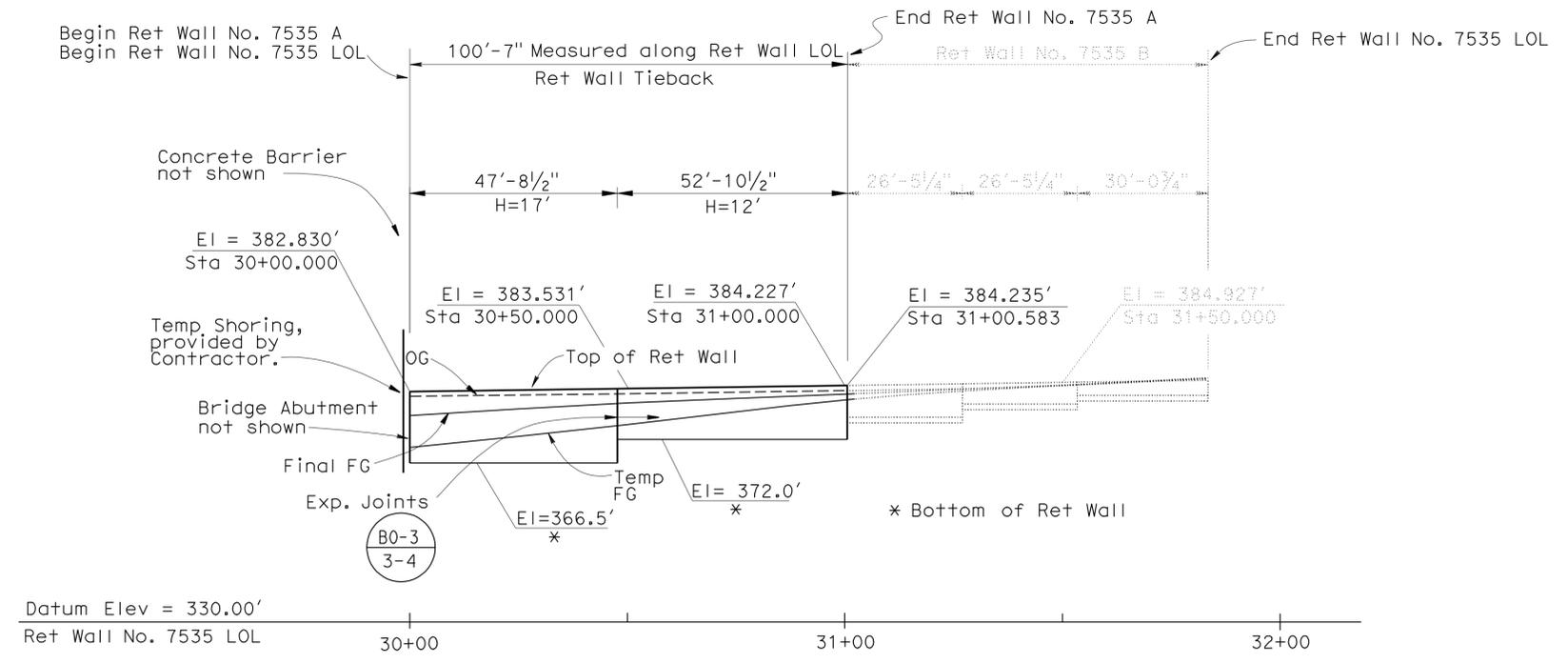


**PROFILE**  
HOR. 1"=10'  
VER. 1"=10'

<b>ENGINEERING SERVICES</b>	<b>GEOTECHNICAL SERVICES</b>	FIELD INVESTIGATION BY: <b>M. Wilson</b>	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH</b>	BRIDGE NO. 54E0032 POST MILE 142.3	<b>RETAINING WALL NO. 7524</b> <b>LOG OF TEST BORINGS 2 OF 2</b>
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBD, a Paz	62, 95S1	142.2/142.6: 142.6/142.9	235	271

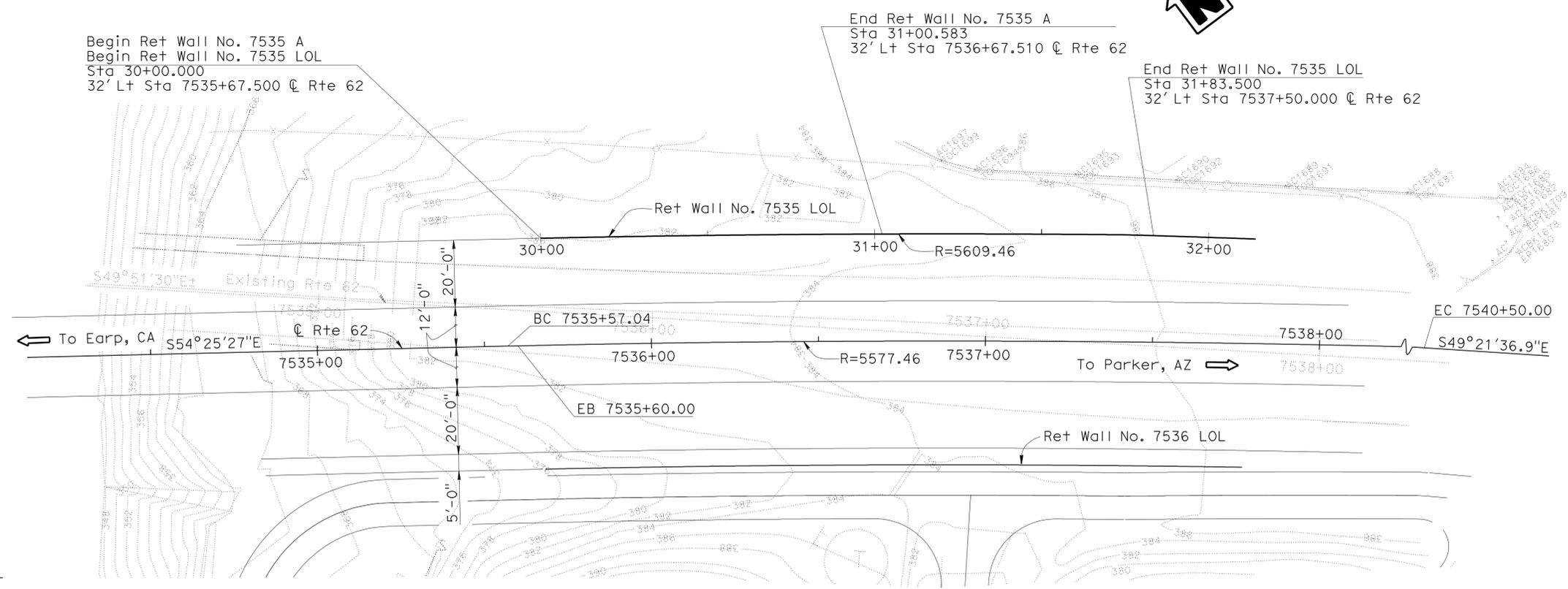
David Soon 6-24-09  
 REGISTERED CIVIL ENGINEER DATE  
 6-14-10  
 PLANS APPROVAL DATE  
 David Soon  
 No. 51862  
 Exp. 6-30-10  
 CIVIL  
 STATE OF CALIFORNIA  
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



QUANTITIES:

STRUCTURE EXCAVATION (TIEBACK WALL)	133	CY
STRUCTURE BACKFILL (TIEBACK WALL)	40	CY
TIEBACK ANCHOR	37	EA
STRUCTURAL CONCRETE, RETAINING WALL	47	CY
BAR REINFORCING STEEL (RETAINING WALL)	20,500	LB
SHOTCRETE	47	CY
TUBULAR BICYCLE RAILING	101	LF
CONCRETE BARRIER (TYPE 80A MODIFIED)	101	LF

**DEVELOPED MIRROR ELEVATION**  
1" = 20'



**PLAN**  
1" = 20'

Rte 62  
 $\Delta = 5^\circ 3' 51''$   
 $R = 5577.464'$   
 $T = 246.640'$   
 $L = 492.959'$

NOTE:  
 1. For "TYPICAL SECTION", "INDEX TO PLANS", "STANDARD PLANS LIST", see "GENERAL PLAN NO. 2", sheet.

 DESIGN ENGINEER	DESIGN	BY David Soon	CHECKED Rakesh Deo	Service Load Design	Live Loading: 2' Live Load Surcharge	<b>STATE OF CALIFORNIA</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>DIVISION OF ENGINEERING SERVICES</b> <b>STRUCTURE DESIGN</b> <b>DESIGN BRANCH 7</b>	BRIDGE NO.	54E0033	<b>RETAINING WALL NO. 7535 A</b> <b>GENERAL PLAN NO. 1</b>	
	DETAILS	BY Yingjue Feng	CHECKED Rakesh Deo	LAYOUT	BY David Soon			CHECKED Rakesh Deo	POST MILE		142.3
	QUANTITIES	BY Rakesh Deo	CHECKED Dhvani Desai	SPECIFICATIONS	BY Kevin Ellingson			PLANS AND SPECS COMPARED	Kevin Ellingson		

STRUCTURES DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 10/25/05) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3 CU 08 EA 378701 DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
11-14-08 6-16-09 12-11-08 12-14-08 12-22-08 12-23-08 02-17-09 2-26-09 5-18-09	1	13

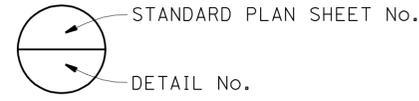
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBG, a Paz	62, 95S1	142.2/142.6: 142.6/142.9	236	271

David Soon 6-24-09  
 REGISTERED CIVIL ENGINEER DATE  
 6-14-10  
 PLANS APPROVAL DATE  
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**STANDARD PLANS DATED MAY 2006**

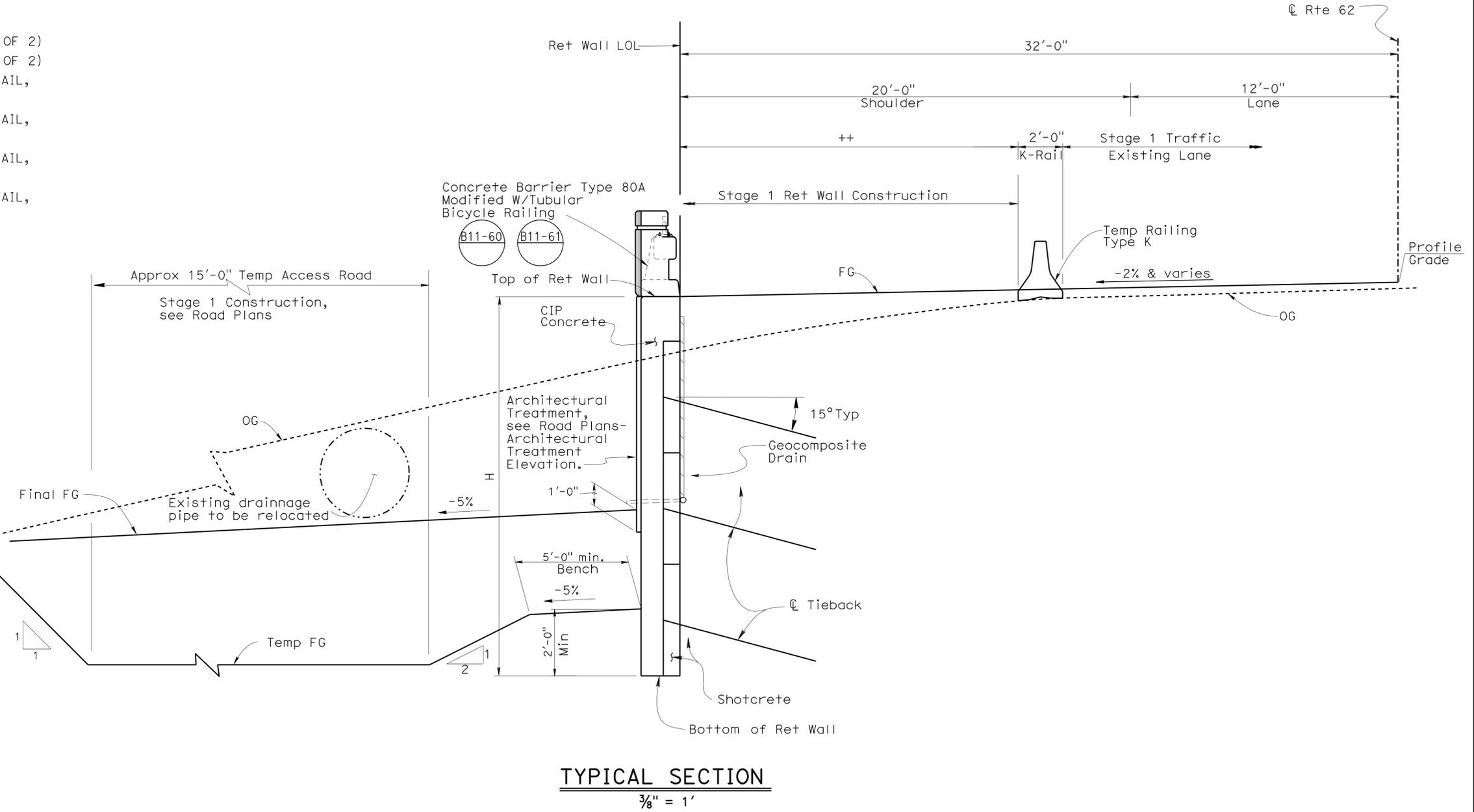
- A10A ACRONYMS AND ABBREVIATIONS (SHEET 1 OF 2)
- A10B ACRONYMS AND ABBREVIATIONS (SHEET 2 OF 2)
- A62B LIMITS OF PAYMENT FOR EXCAVATION BACKFILL - BRIDGE SURCHARGE AND WALL
- B0-3 BRIDGE DETAILS
- RSP B11-60 CONCRETE BARRIER TYPE 80 (SHEET 1 OF 2)
- B11-61 CONCRETE BARRIER TYPE 80 (SHEET 2 OF 2)
- RSP ES-9A ELECTRICAL SYSTEMS (ELECTRICAL DETAIL, STRUCTURE INSTALLATIONS)
- ES-9B ELECTRICAL SYSTEMS (ELECTRICAL DETAIL, STRUCTURE INSTALLATIONS)
- RSP ES-9C ELECTRICAL SYSTEMS (ELECTRICAL DETAIL, STRUCTURE INSTALLATIONS)
- ES-9D ELECTRICAL SYSTEMS (ELECTRICAL DETAIL, STRUCTURE INSTALLATIONS)



Ret Wall Station	++	Design H	Ret Wall Type
30+00	8'-0"±	17'	Tieback
30+50	9'-0"±	17' to 12'	Tieback
31+00	11'-0"±	12' to 8'	Tieback

**INDEX TO PLANS**

- | SHEET No. | TITLE  |
|-----------|--|
| 1.        | GENERAL PLAN No. 1                               |
| 2.        | GENERAL PLAN No. 2                               |
| 3.        | RETAINING WALL LAYOUT                            |
| 4.        | RETAINING WALL DETAILS No. 1                     |
| 5.        | RETAINING WALL DETAILS No. 2                     |
| 6.        | DRAINAGE DETAILS                                 |
| 7.        | CONCRETE BARRIER TYPE 80A MODIFIED LAYOUT        |
| 8.        | CONCRETE BARRIER TYPE 80A MODIFIED DETAILS No. 1 |
| 9.        | CONCRETE BARRIER TYPE 80A MODIFIED DETAILS No. 2 |
| 10.       | TUBULAR BICYCLE RAILING                          |
| 11.       | LOG OF TEST BORINGS 1 OF 3                       |
| 12.       | LOG OF TEST BORINGS 2 OF 3                       |
| 13.       | LOG OF TEST BORINGS 3 OF 3                       |



**TYPICAL SECTION**  
3/8" = 1'

DESIGN	BY David Soon	CHECKED Dhvani Desai
DETAILS	BY Yingjue Feng	CHECKED Dhvani Desai
QUANTITIES	BY Rakesh Deo	CHECKED Dhvani Desai

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
DESIGN BRANCH 7

BRIDGE NO.	54E0033
POST MILE	142.3

RETAINING WALL NO. 7535 A  
GENERAL PLAN NO. 2

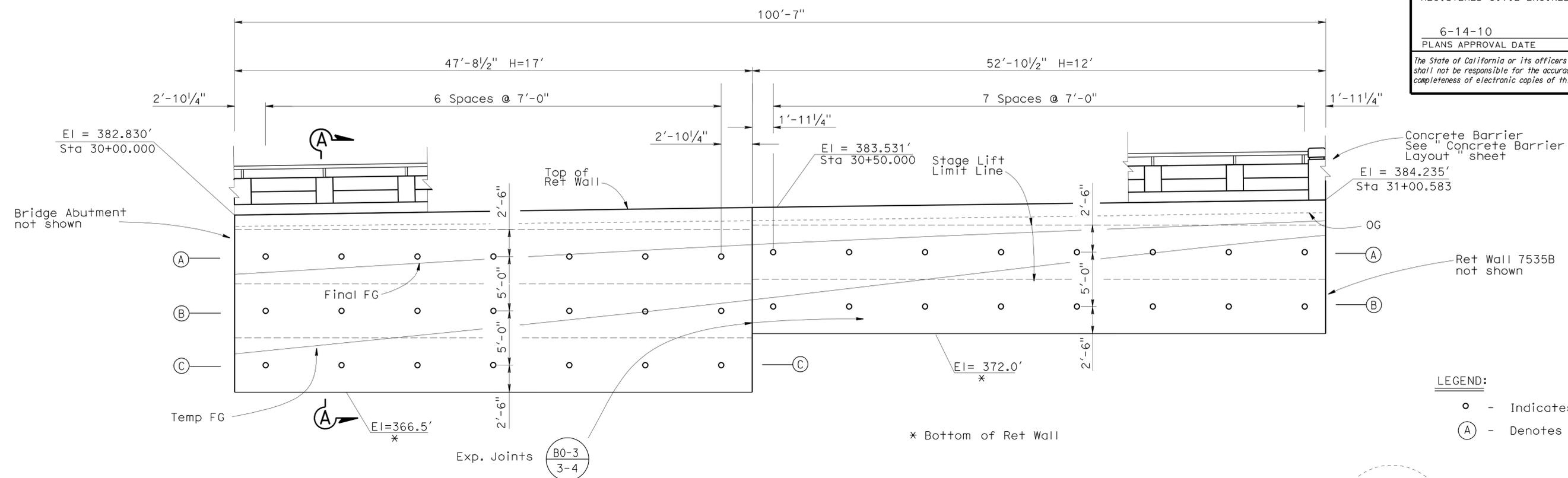
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBD, a Pdz	62, 95S1	142.2/142.6 142.6/142.9	237	271

David Soon 6-24-09  
REGISTERED CIVIL ENGINEER DATE

6-14-10  
PLANS APPROVAL DATE

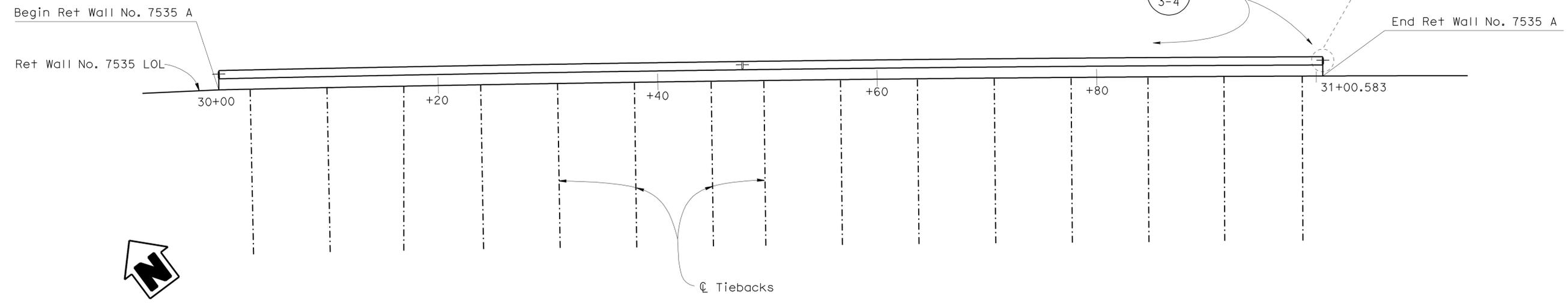
David Soon  
No. 51862  
Exp. 6-30-10  
CIVIL  
STATE OF CALIFORNIA

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NOTE:  
For " SECTION A-A " See " RETAINING WALL DETAILS No. 1 " sheet.

**DEVELOPED MIRROR ELEVATION**  
1" = 5'

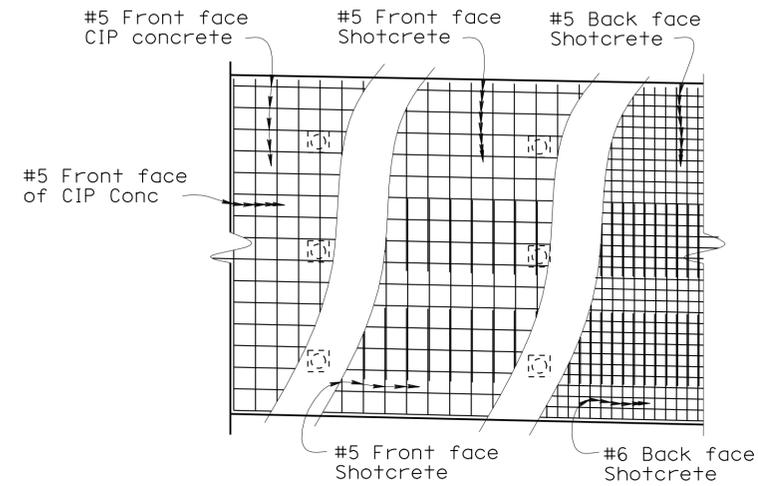
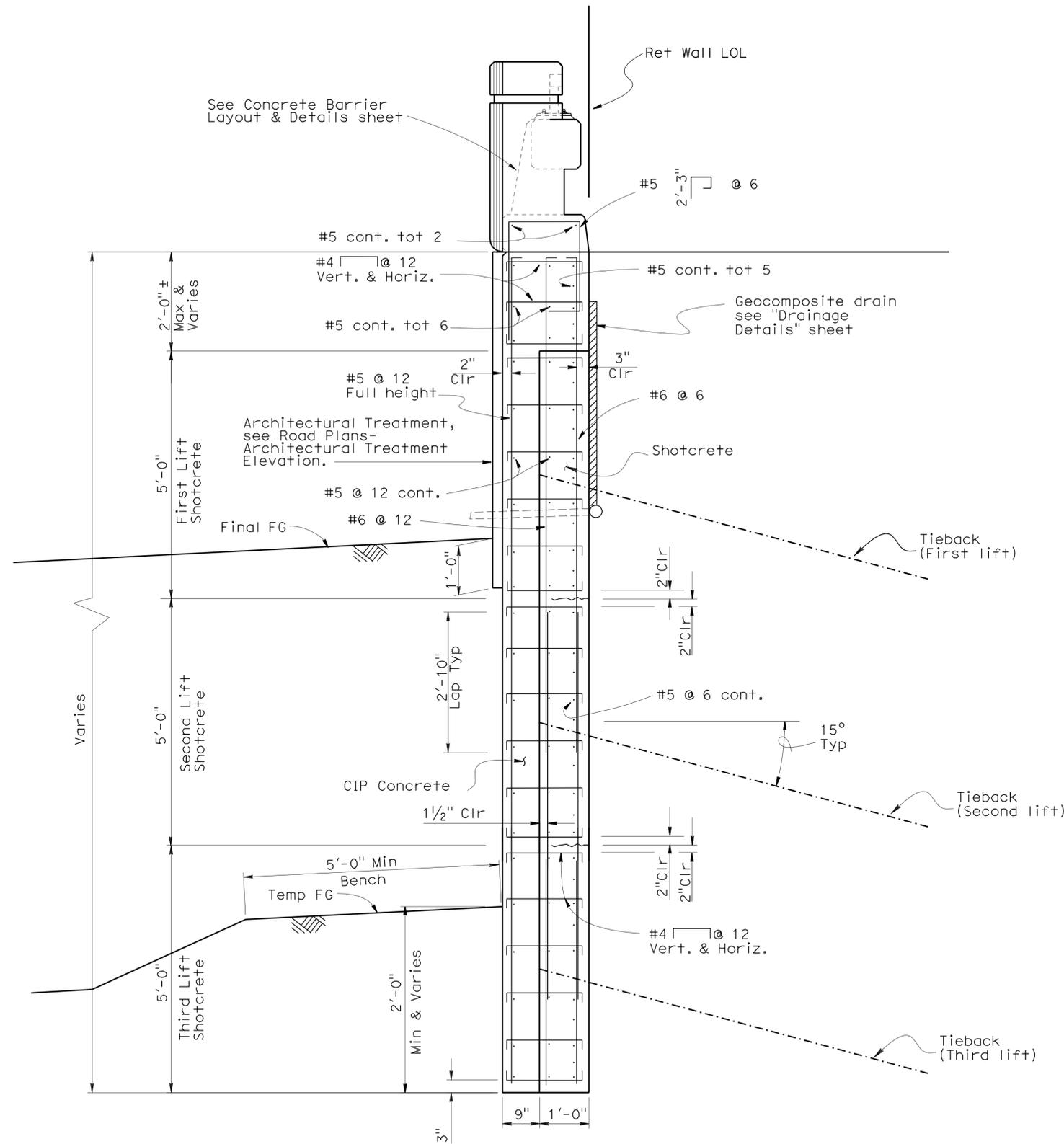


**PLAN**  
1" = 5'

DESIGN	BY	Rakesh Deo	CHECKED	Dhvani Desai	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH <b>7</b>	BRIDGE NO.	54E0033	RETAINING WALL NO. 7535 A RETAINING WALL LAYOUT	
	DETAILS	BY	Yingjue Feng	CHECKED			Dhvani Desai	POST MILE		142.3
	QUANTITIES	BY	Rakesh Deo	CHECKED			Dhvani Desai	CU 08 EA 378701		REVISION DATES
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)						ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0 1 2 3	DISREGARD PRINTS BEARING EARLIER REVISION DATES	SHEET 3 OF 13	

FILE => rw7535a-g-rw\_1a.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBD, a Paz	62, 95S1	142.2/142.6: 142.6/142.9	238	271
David Soon 6-24-09 REGISTERED CIVIL ENGINEER DATE					
6-14-10				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.					



**PART ELEVATION**  
No scale

NOTES:

- Maintain 6" min clearance between reinforcement and  $\phi$  of tieback.
- CIP concrete to be placed after completion of all shotcrete lifts.
- Tiebacks shall be constructed and locked off one at a time. Start at the top and work down.
- For Stage lift limit line, see "RETAINING WALL LAYOUT" sheet.
- Typical section for H = 17' shown, all others similar.

**SECTION A-A**  
 $\frac{3}{4}" = 1'-0"$

DESIGN	BY Rakesh Deo	CHECKED Dhvani Desai
DETAILS	BY Yingjue Feng	CHECKED Dhvani Desai
QUANTITIES	BY Rakesh Deo	CHECKED Dhvani Desai

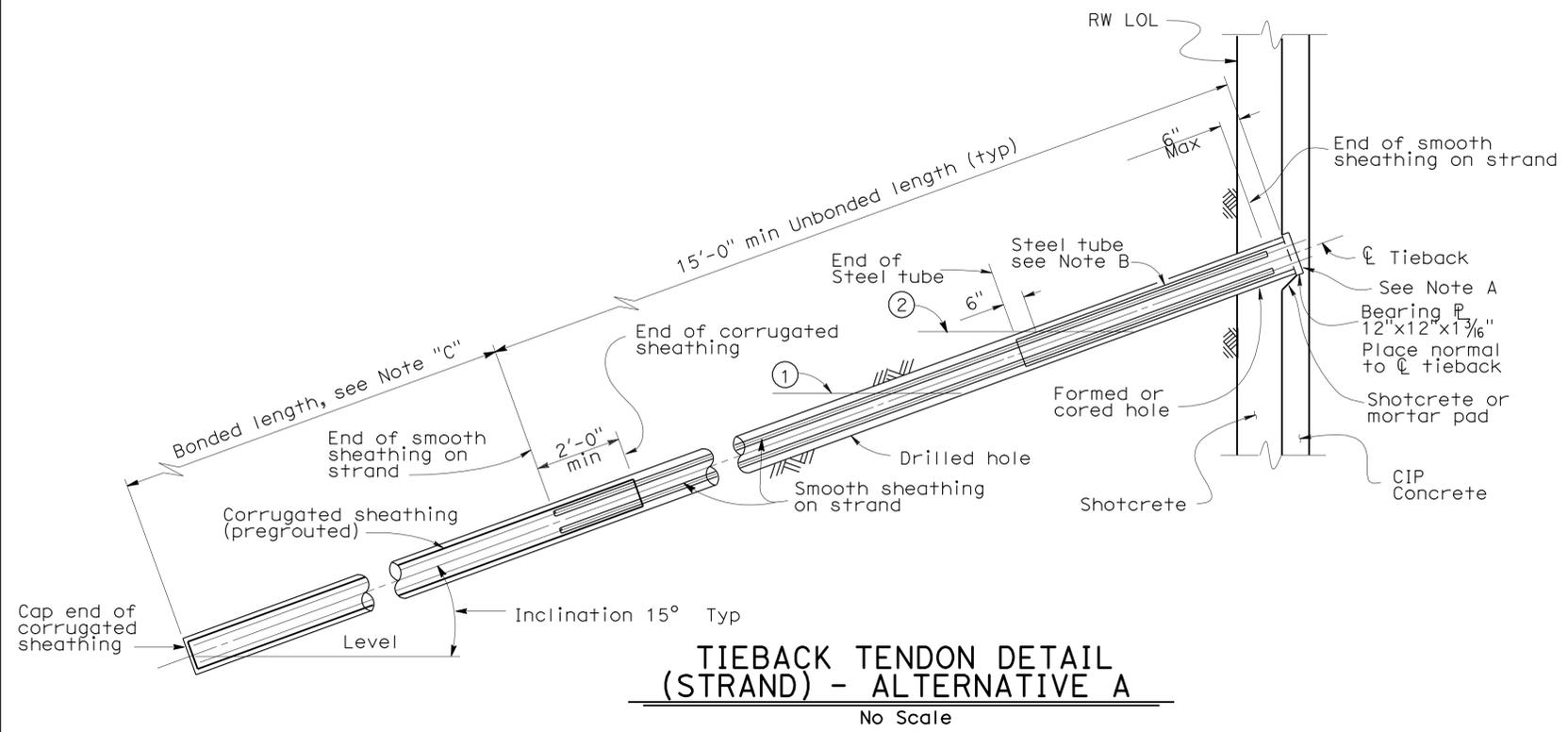
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
DESIGN BRANCH **7**

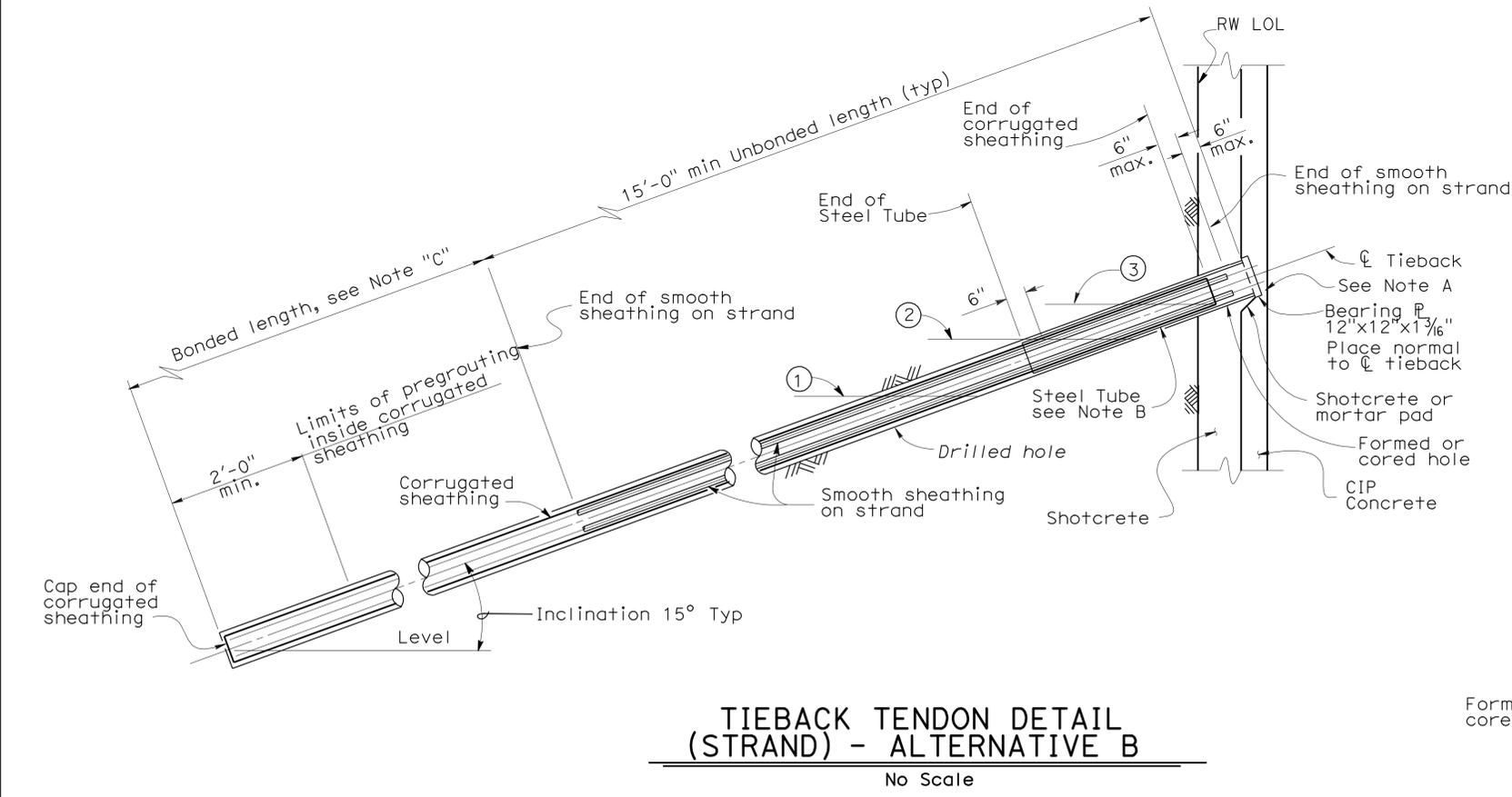
BRIDGE NO.	54E0033
POST MILE	142.3

RETAINING WALL NO. 7535 A  
RETAINING WALL DETAILS NO. 1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBD, a Paz	62, 95S1	142.2/142.6: 142.6/142.9	239	271
David Soon 6-24-09 REGISTERED CIVIL ENGINEER DATE					
6-14-10				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.					



**TIEBACK TENDON DETAIL (STRAND) - ALTERNATIVE A**  
No Scale



**TIEBACK TENDON DETAIL (STRAND) - ALTERNATIVE B**  
No Scale

NOTES:

- ① Level of initial grouting
  - ② Level of secondary grouting
  - ③ Level of initial grout inside corrugated sheathing
  - ④ For location of tiebacks, see "RETAINING Wall Layout" sheet.
- A 2" Min concrete cover over tieback anchorage and tendon.
- B Steel tube shall be welded to bearing plate (min. length = 2'-0", min thickness = 3/16") For Alternative B, inside diameter of steel tube to be 1/2" greater than outside diameter of corrugated sheathing. Galvanize assembly after fabrication.
- C Bonded length shall be determined by the Contractor.

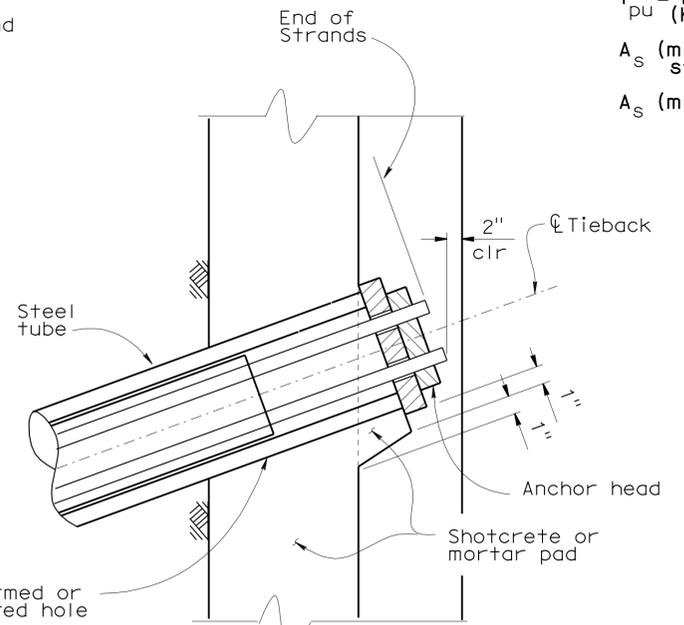
**GENERAL NOTES WORKING STRESS DESIGN**

DESIGN: Caltrans Bridge Design Specifications April 2000 ( 1996 AASHTO With Interims and Revisions by Caltrans).

SOIL PARAMETERS: (For determination of design lateral earth pressure on wall).  
 $\phi = 32^\circ$   $\gamma = 125$  pcf

REINFORCED CONCRETE:  $f_y = 60$  ksi (Yield strength of reinforcement)  
 $f'_c = 4$  ksi (Concrete compressive strength at 28 days).

PRESTRESSING STEEL: (TIEBACKS)  
 Strands - ASTM designation: A416  
 $T$  = Design force per Tieback - see table  
 $f_{pu}$  = Minimum tensile strength of prestressing steel (Kips per square inch)  
 $A_s$  (min.) = Minimum cross sectional area of prestressing steel in Tieback tendon. (in<sup>2</sup>)  
 $A_s$  (min.) =  $\frac{1.5 T}{0.75 f_{pu}}$



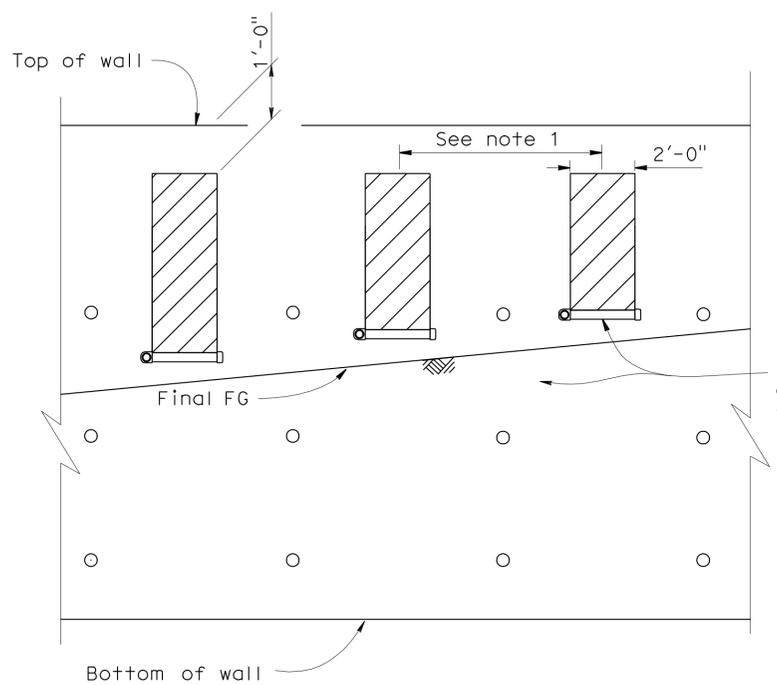
**MORTAR PAD DETAIL**  
No scale

Location	"T" Force (Kips)
A, B	89
C	30

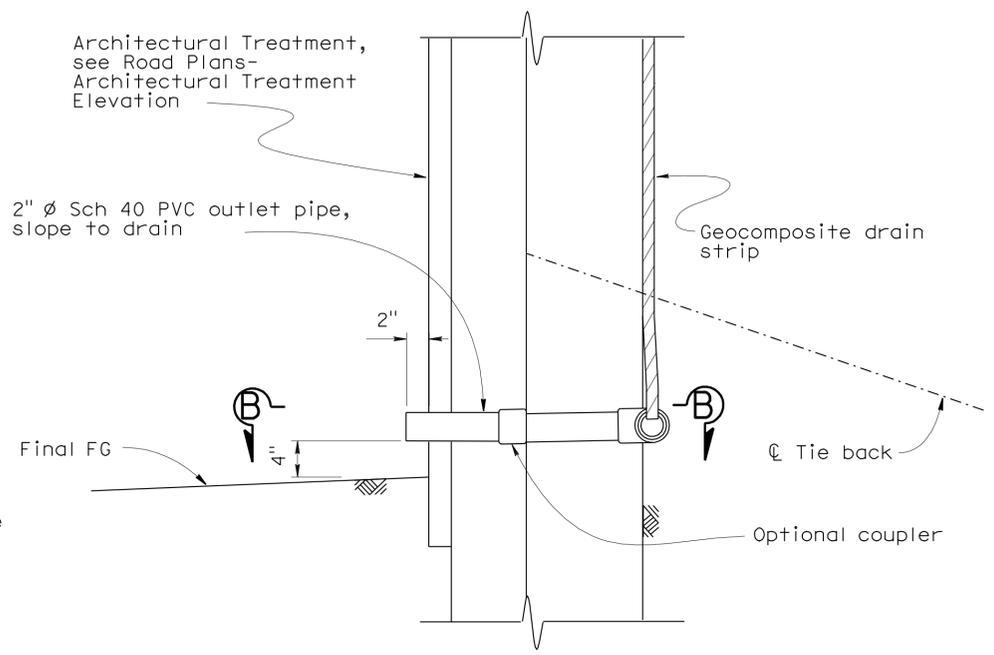
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)	DESIGN BY Rakesh Deo	CHECKED Dhvani Desai	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 7</b>	BRIDGE NO. 54E0033	<b>RETAINING WALL NO. 7535 A</b> <b>RETAINING WALL DETAILS NO. 2</b>
	DETAILS BY Yingjue Feng	CHECKED Dhvani Desai			POST MILE 142.3	
	QUANTITIES BY Rakesh Deo	CHECKED Dhvani Desai				
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			0 1 2 3	CU 08 EA 378701	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 10-14-08 10-24-08 02-11-09 2-28-09 4-13-09
						SHEET 5 OF 13

USERNAME => hrm001.in DATE PLOTTED => 17-JUN-2010 TIME PLOTTED => 11:01

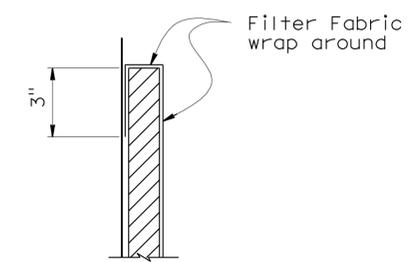
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBG, a Paz	62, 95S1	142.2/142.6: 142.6/142.9	240	271
David Soon 6-24-09 REGISTERED CIVIL ENGINEER DATE					
6-14-10 PLANS APPROVAL DATE					
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**WALL PART ELEVATION**  
No Scale

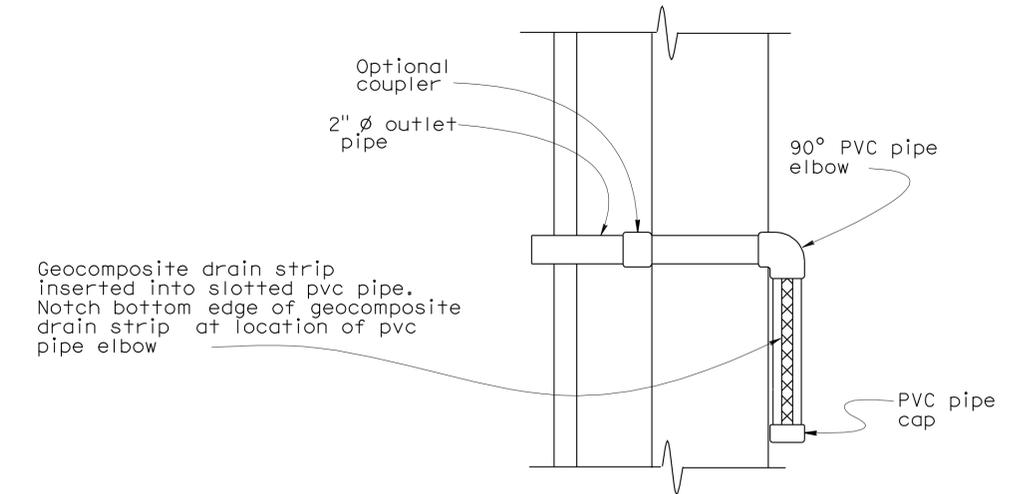


**WALL SECTION**  
No scale



**EDGE DETAIL**  
No scale

NOTE:  
Wrap filter fabric at top and side edges of geocomposite drain.



**SECTION B-B**  
No scale

- NOTES:
- Center geocomposite vertical drain between tiebacks.
- Indicates tieback locations.

DESIGN	BY Rakesh Deo	CHECKED Dhvani Desai
DETAILS	BY Yingjue Feng	CHECKED Dhvani Desai
QUANTITIES	BY Rakesh Deo	CHECKED Dhvani Desai

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

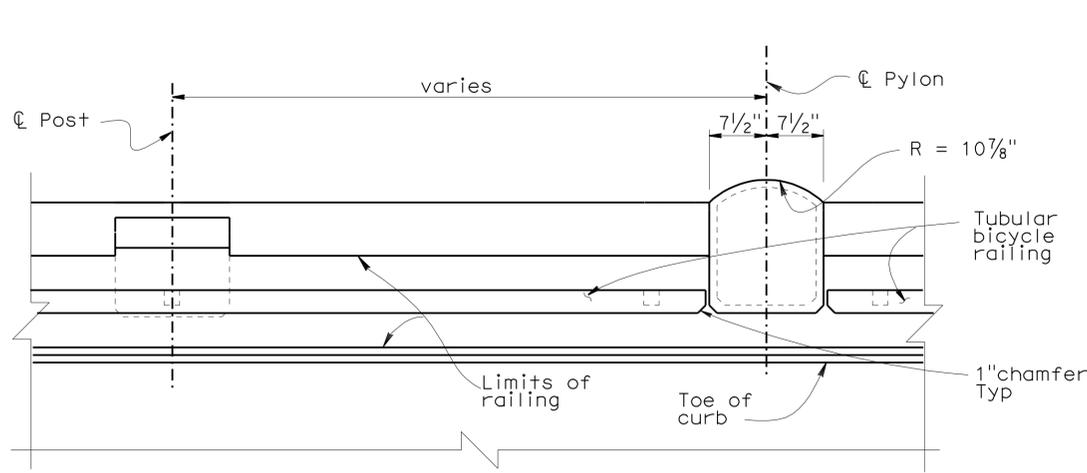
DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
DESIGN BRANCH 7

BRIDGE NO.	54E0033
POST MILE	142.3

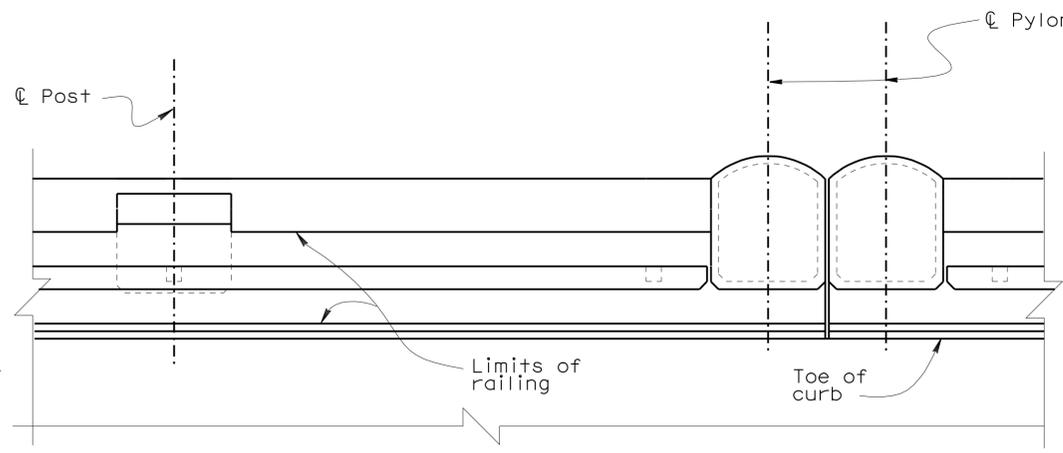
RETAINING WALL NO. 7535 A  
DRAINAGE DETAILS



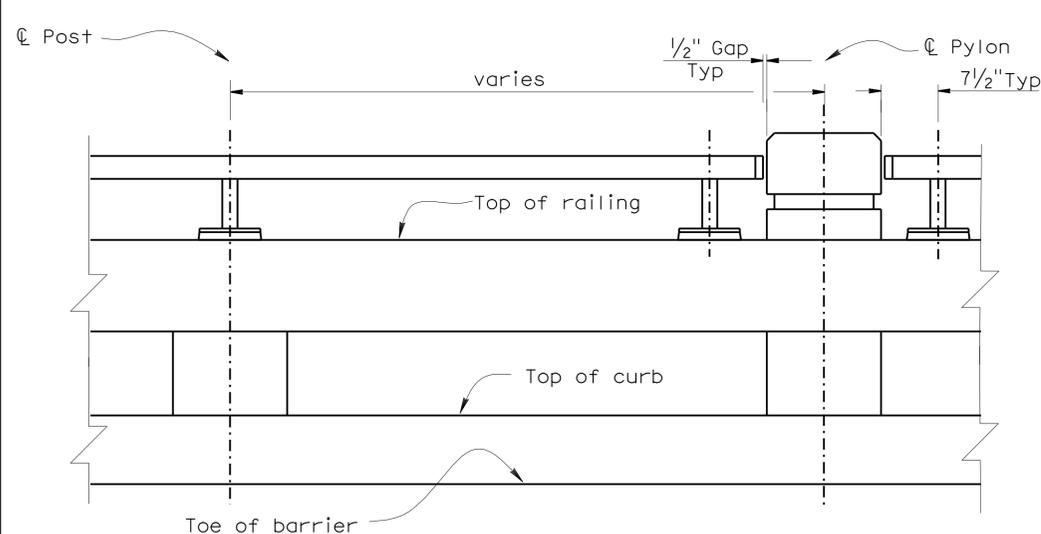
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David Soon 6-24-09 REGISTERED CIVIL ENGINEER DATE					
6-14-10 PLANS APPROVAL DATE					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.					



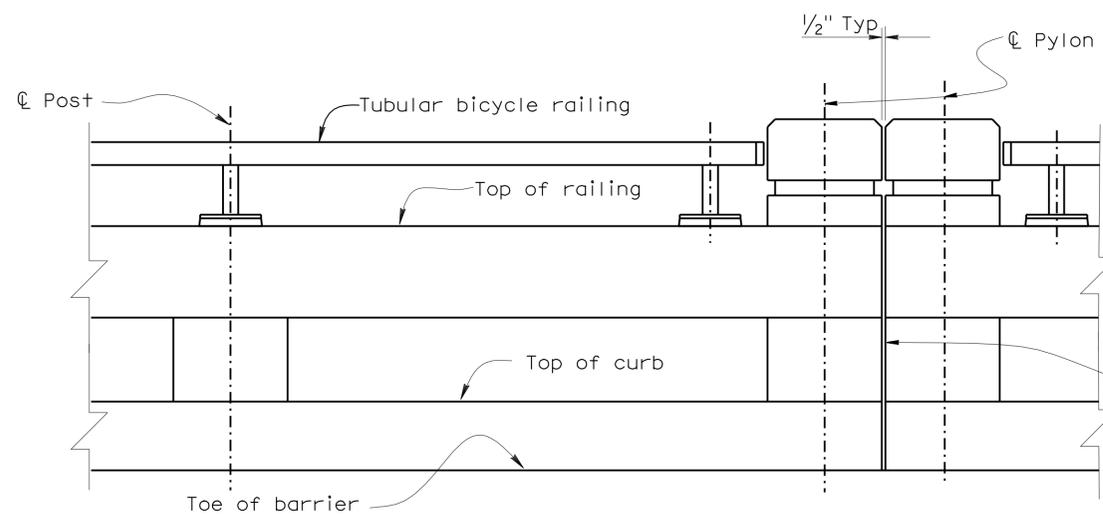
PLAN AT PYLON



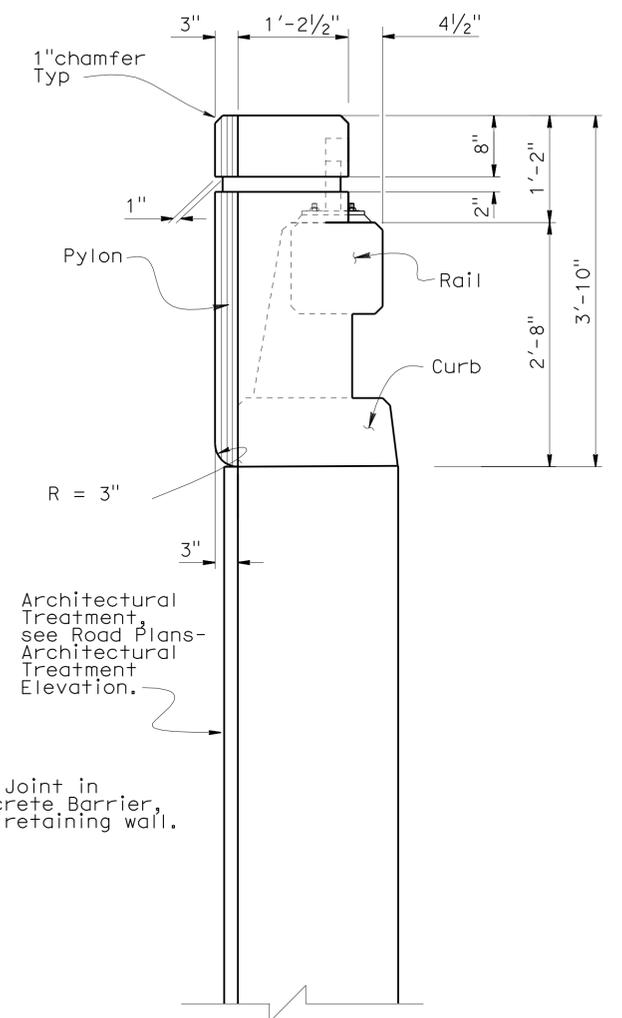
PLAN AT DOUBLE PYLON



ELEVATION AT PYLON



ELEVATION AT DOUBLE PYLON



TYPICAL SECTION AT PYLON

NOTES:

- For Concrete Barrier layout, see "CONCRETE BARRIER TYPE 80A MODIFIED LAYOUT" sheet.
- For Concrete Barrier Type 80 details, see **B11-60** and **B11-61**.
- For Concrete Barrier details not shown, see "CONCRETE BARRIER TYPE 80A MODIFIED DETAILS NO. 2" sheet.
- For Tubular Bicycle Railing details, see "TUBULAR BICYCLE RAILING" sheet.

CONCRETE BARRIER TYPE 80A MODIFIED DETAIL

1" = 1'-0"

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)	DESIGN	BY David Soon	CHECKED Rakesh Deo	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH <b>7</b>	BRIDGE NO.	54E0033
	DETAILS	BY Yingjue Feng	CHECKED Rakesh Deo			POST MILE	142.3
	QUANTITIES	BY Rakesh Deo	CHECKED Dhvani Desai				

RETAINING WALL NO. 7535 A	
CONCRETE BARRIER TYPE 80A MODIFIED DETAILS NO. 1	
REVISION DATES	SHEET OF
11-19-08 11-26-08 12-18-08 2-28-09 2-28-09 4-11-09 6-16-09	8 13

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

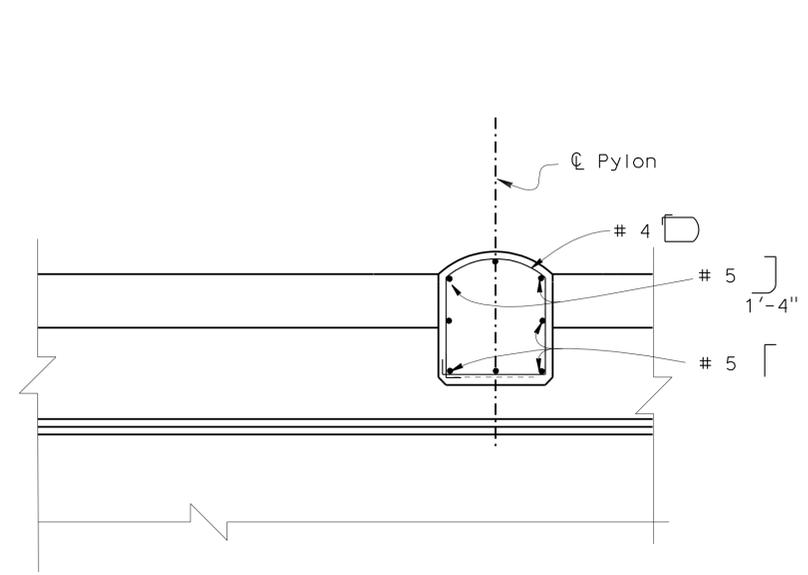
CU 08  
EA 378701

DISREGARD PRINTS BEARING EARLIER REVISION DATES

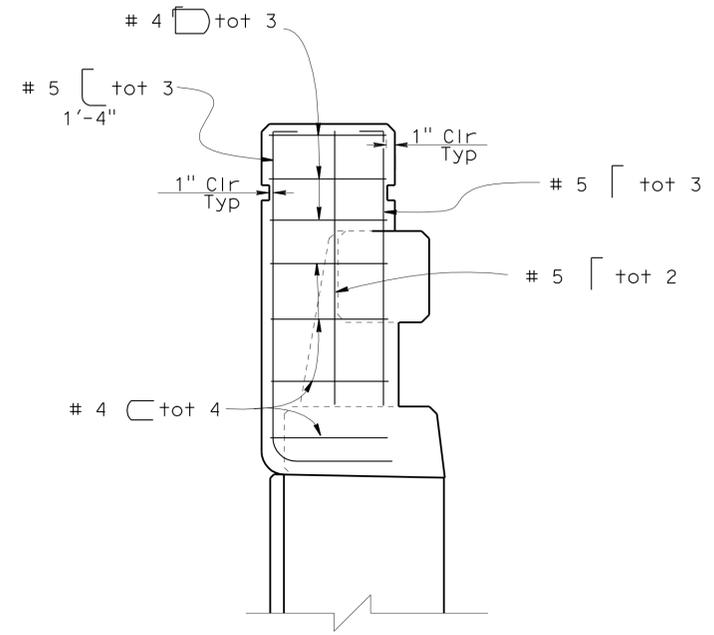
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USERNAME => hrmopt.in DATE PLOTTED => 17-JUN-2010 TIME PLOTTED => 11:02

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBG, a Paz	62, 95S1	142.2/142.6: 142.6/142.9	243	271
David Soon 6-24-09				REGISTERED CIVIL ENGINEER DATE	
6-14-10				PLANS APPROVAL DATE	
David Soon				No. 51862	
Exp. 6-30-10				CIVIL	
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.					

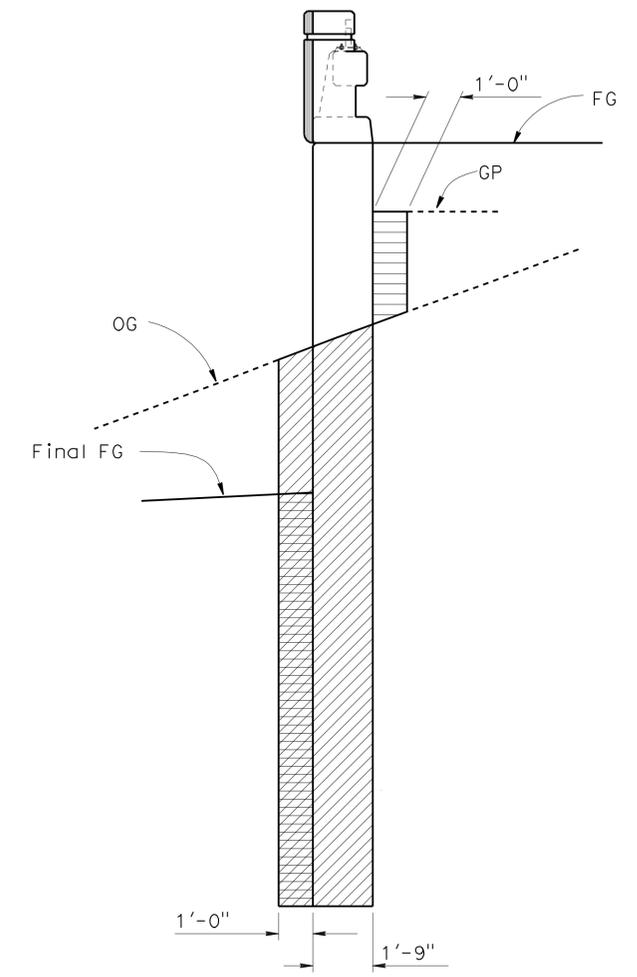


**PLAN**  
Bicycle Railing not shown



**TYPICAL SECTION**  
Bicycle Railing not shown

**PYLON DETAIL**  
1" = 1'-0"



LEGEND:  
 Indicates structure excavation  
 Indicates structure backfill

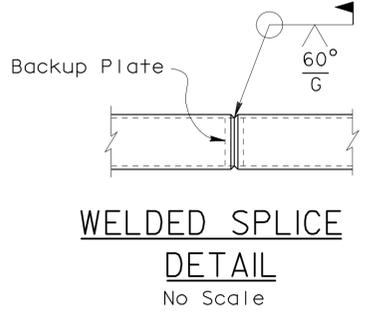
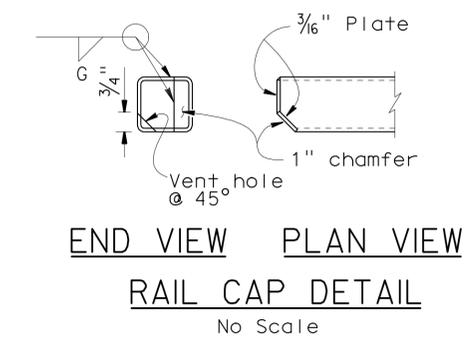
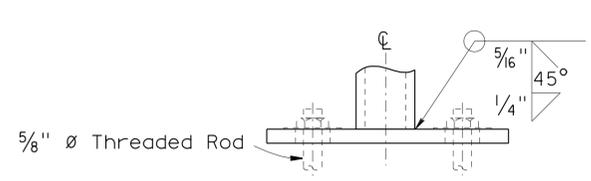
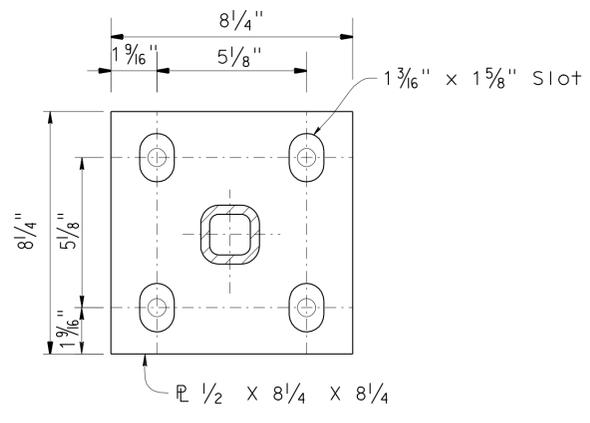
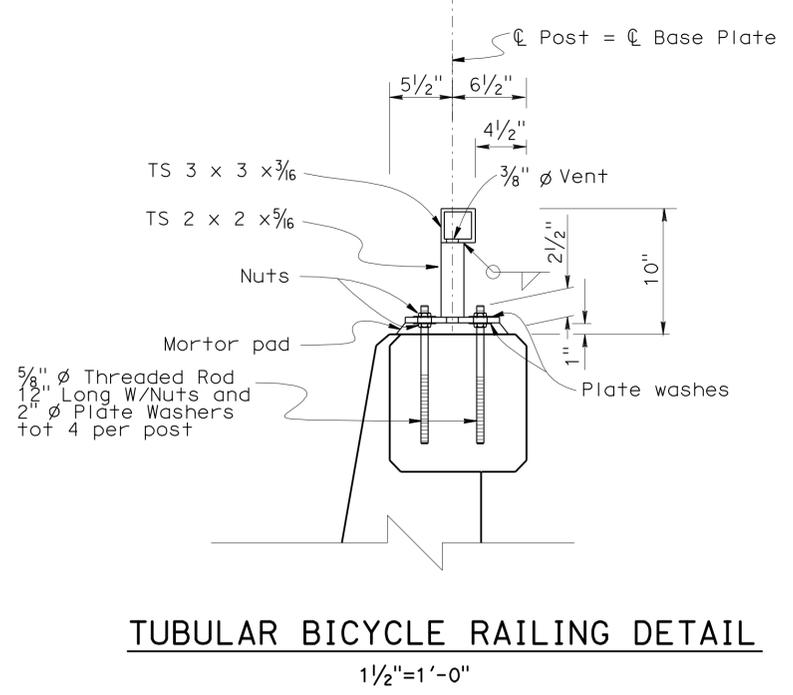
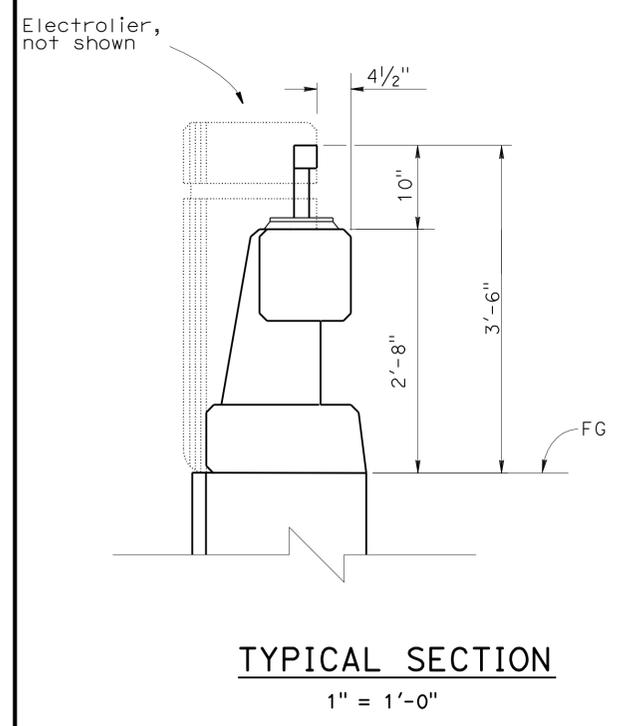
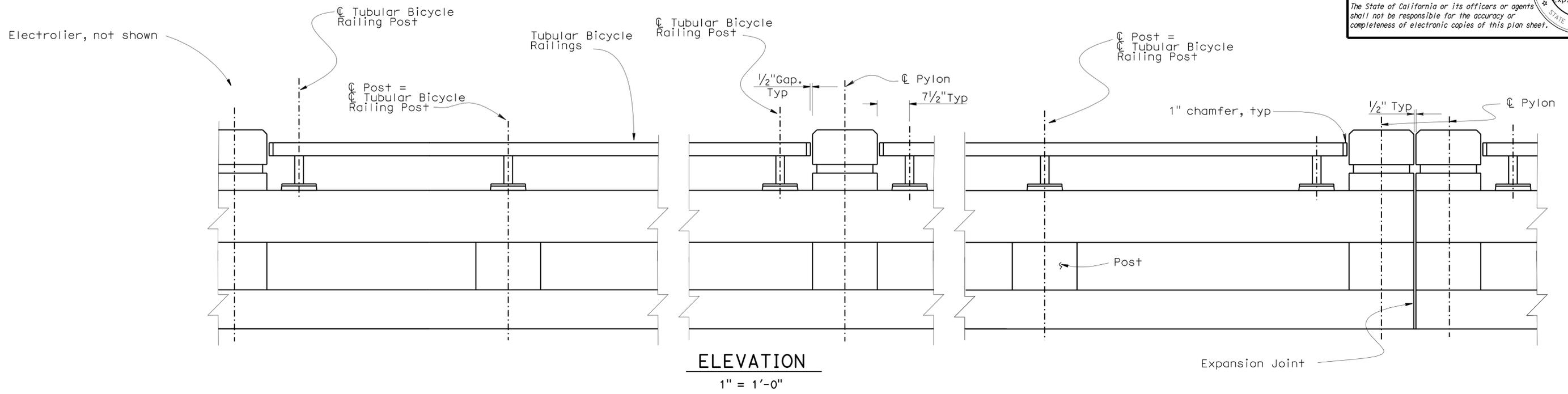
**EXCAVATION AND BACKFILL LIMITS**  
No scale

- NOTES:
- For Concrete Barrier layout, see "CONCRETE BARRIER TYPE 80A MODIFIED LAYOUT" sheet.
  - For Concrete Barrier Type 80 details, see  and .
  - For Concrete Barrier details not shown, see "CONCRETE BARRIER TYPE 80A MODIFIED DETAILS NO. 1" sheet.
  - For Tubular Bicycle Railing details, see "TUBULAR BICYCLE RAILING" sheet.
  - Concrete Barrier Type 80 post and longitudinal reinforcement continuous through pylon. This reinforcement is not shown.

DESIGN BY David Soon		CHECKED Rakesh Deo	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 7	BRIDGE NO. 54E0033	RETAINING WALL NO. 7535 A CONCRETE BARRIER TYPE 80A MODIFIED DETAILS NO. 2									
DETAILS BY Yingjue Feng		CHECKED Rakesh Deo			POST MILE 142.3										
QUANTITIES BY Rakesh Deo		CHECKED Dhvani Desai													
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)			ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	CU 08 EA 378701	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES									
			0 1 2 3			<table border="1"> <tr> <td>11-18-08</td> <td>11-20-08</td> <td>12-17-08</td> <td>12-18-08</td> <td>12-22-08</td> <td>1-3-09</td> <td>2-20-09</td> <td>4-17-09</td> <td>6-16-09</td> </tr> </table>	11-18-08	11-20-08	12-17-08	12-18-08	12-22-08	1-3-09	2-20-09	4-17-09	6-16-09
11-18-08	11-20-08	12-17-08	12-18-08	12-22-08	1-3-09	2-20-09	4-17-09	6-16-09							
						SHEET 9 OF 13									

USERNAME => hrmopt.in DATE PLOTTED => 17-JUN-2010 TIME PLOTTED => 11:02

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBG, a Paz	62, 95S1	142.2/142.6: 142.6/142.9	244	271
David Soon 12-10-09 REGISTERED CIVIL ENGINEER DATE					
6-14-10 PLANS APPROVAL DATE					
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- NOTES:
- Galvanize rail assembly after fabrication.
  - Post shall be normal to railing.
  - Top rail tube shall be continuous over not less than two posts except a short post spacing is permitted near deck or wall joints, electro-liers, or other rail discontinuities as noted.
  - For Concrete Barrier layout, see "CONCRETE BARRIER TYPE 80A MODIFIED LAYOUT" sheet.
  - For Concrete Barrier Type 80 details, see (B11-60) and (B11-61).
  - For Concrete Barrier details not shown, see "CONCRETE BARRIER TYPE 80A MODIFIED DETAILS No. 1", and "CONCRETE BARRIER TYPE 80A MODIFIED DETAILS No. 2" sheets.

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)	DESIGN	BY David Soon	CHECKED Rakesh Deo	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 7	BRIDGE NO.	RETAINING WALL NO. 7535 A TUBULAR BICYCLE RAILING
	DETAILS	BY Yingjue Feng	CHECKED Rakesh Deo			54E0033	
	QUANTITIES	BY Rakesh Deo	CHECKED Dhvani Desai			POST MILE 142.3	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS				CU 08 EA 378701	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 10 OF 13

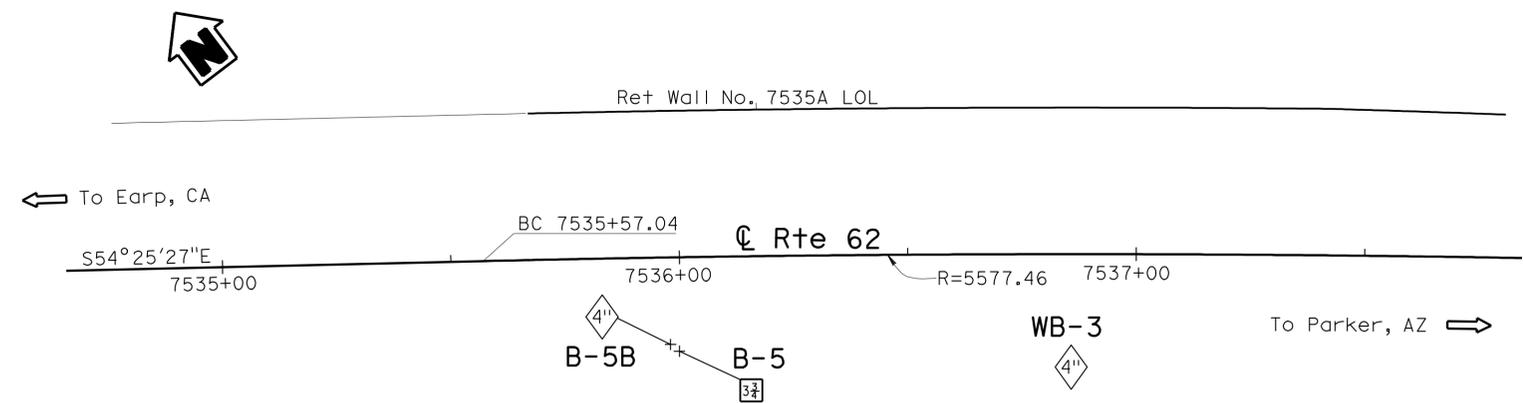
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBd, La Paz	62, 95S1	142.2/142.6: 142.6/142.9	245	271

2-23-09  
PROFESSIONAL GEOLOGIST

6-14-10  
PLANS APPROVAL DATE

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PROFESSIONAL GEOLOGIST  
 Mark Wilson  
 No. 8164  
 Exp. 06-30-10  
 STATE OF CALIFORNIA



**BENCH MARK**

**SURVEY CONTROL**  
 PHOTO PT 62-2-93 (NOT SHOWN ON PLAN)  
 Fnd "PK" NAIL ON YELLOW STRIPE  
 IN TURN POCKET TO RV PARK  
 11.807' Rt @ PROPOSED RTE 62  
 Sta. 7523+99.516  
 N 1901612.719  
 E 7680552.001  
 Elev 367.781'

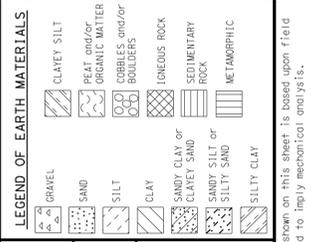
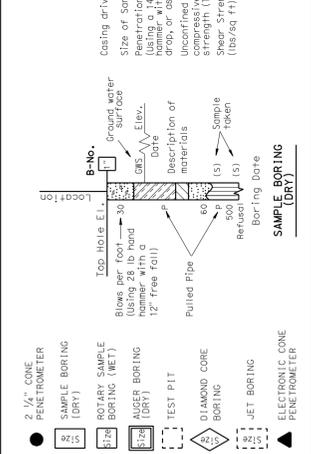
**SPAN 1964**  
 Fnd 3/2" STD. USC&GS BRASS DISK STAMPED  
 "SPAN 1964" FLUSH IN SIDEWALK  
 48.365' Lt @ PROPOSED RTE 62  
 Sta. 7531+78.111  
 N 1901070.086  
 E 7681099.470  
 Elev 378.998'

**PLAN**  
1" = 20'

**NOTES:**

1. Groundwater was encountered, but not measured in some borings, due to the immediate backfilling of the boring. The Contractor should anticipate encountering ground water during the excavation and construction of all foundation supports. De-watering of the footing excavations may be required. Groundwater surface elevations are subject to seasonal fluctuations and will be encountered at higher or lower elevations depending on conditions at time of construction.
2. The descriptions and classifications of rock and/or soil, including consistency and relative density descriptors, used by the field and/or office personnel for the exploration boreholes shown on this sheet are based on the "Soil and Rock Logging Classification Manual (Field Guide)". Engineering Service Center, Office of Structural Foundations, August 1996
3. Soil colors were determined by using Munsell Soil Color Charts (1994, Revised Edition). Rock colors were determined using USGS rock color charts (1995, revised text).
4. Test borings B-5b and WB-3 utilized a Safety hammer to advance the sampler. Penetration Index values shown on the LOTB sheets were actual readings recorded in the field. Soil consistencies shown on the LOTB sheets are based on these Penetration Index Values.
5. Test boring B-5 utilized a CME automatic hammer to advance the sampler. Penetration Index values shown on the LOTB sheets were actual readings recorded in the field. Soil consistencies shown on the LOTB sheets are based on these Penetration Index Values.
6. Penetration Index value designated "Ref" means sampler refusal.
7. REC = Percent Core Recovery. Percent Core Recovery is the "percentage ratio" between the length of the core recovered over the length of the core run on a given sample.
8. A noticeable petroleum odor was encountered in test borings.
9. Test borings B-5b and WB-3 were drilled and logged by URS.
10. The size of cobbles or boulders noted in the borings does not preclude the fact that there may be larger cobbles or boulders to be found at the site.
11. The borings were drilled using a 94 mm cased wire line system.

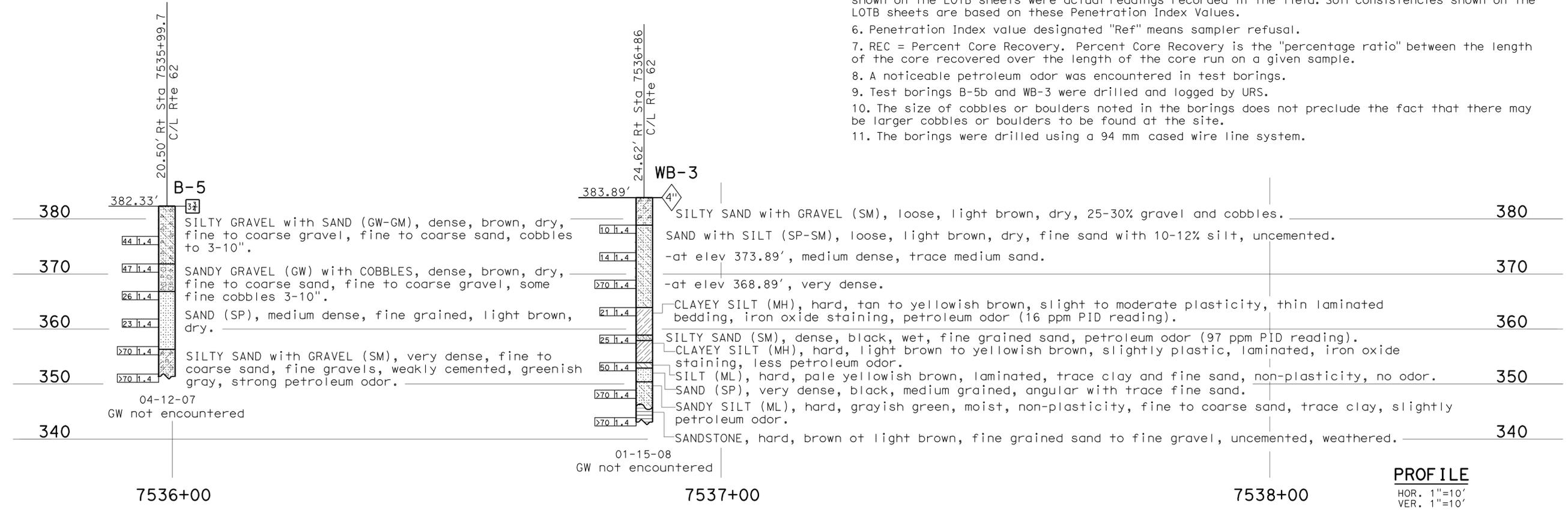
**LEGEND OF BORING OPERATIONS**



**CONSISTENCY CLASSIFICATION FOR SOILS**

According to the Standard Penetration Test	
SPT N <sub>60</sub> (Blows/foot)	Consistency
0-4	Very Loose
5-10	Loose
11-30	Medium Dense
31-50	Dense
51-60	Very Dense
>60	Hard

NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.



<b>ENGINEERING SERVICES</b>	<b>GEOTECHNICAL SERVICES</b>	FIELD INVESTIGATION BY: M. Wilson	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	<b>DIVISION OF ENGINEERING SERVICES</b> STRUCTURE DESIGN DESIGN BRANCH
DRAWN BY: W. Tang 11/08; I.G-Remmen, 2/09	CHECKED BY: M. Wilson	BRIDGE NO.: 54-E0033	RETAINING WALL NO. 7535 A	
		POST MILE: 142.3	LOG OF TEST BORINGS 1 OF 3	

FOR PLAN VIEW, SEE  
"LOG OF TEST BORINGS" 1 OF 8

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBd, La Paz	62, 95S1	142.2/142.6: 142.6/142.9	246	271

2-23-09  
PROFESSIONAL GEOLOGIST  
Mark Wilson  
No. 8164  
Exp. 06-30-10

6-14-10  
PLANS APPROVAL DATE

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**LEGEND OF BORING OPERATIONS**

**LEGEND OF EARTH MATERIALS**

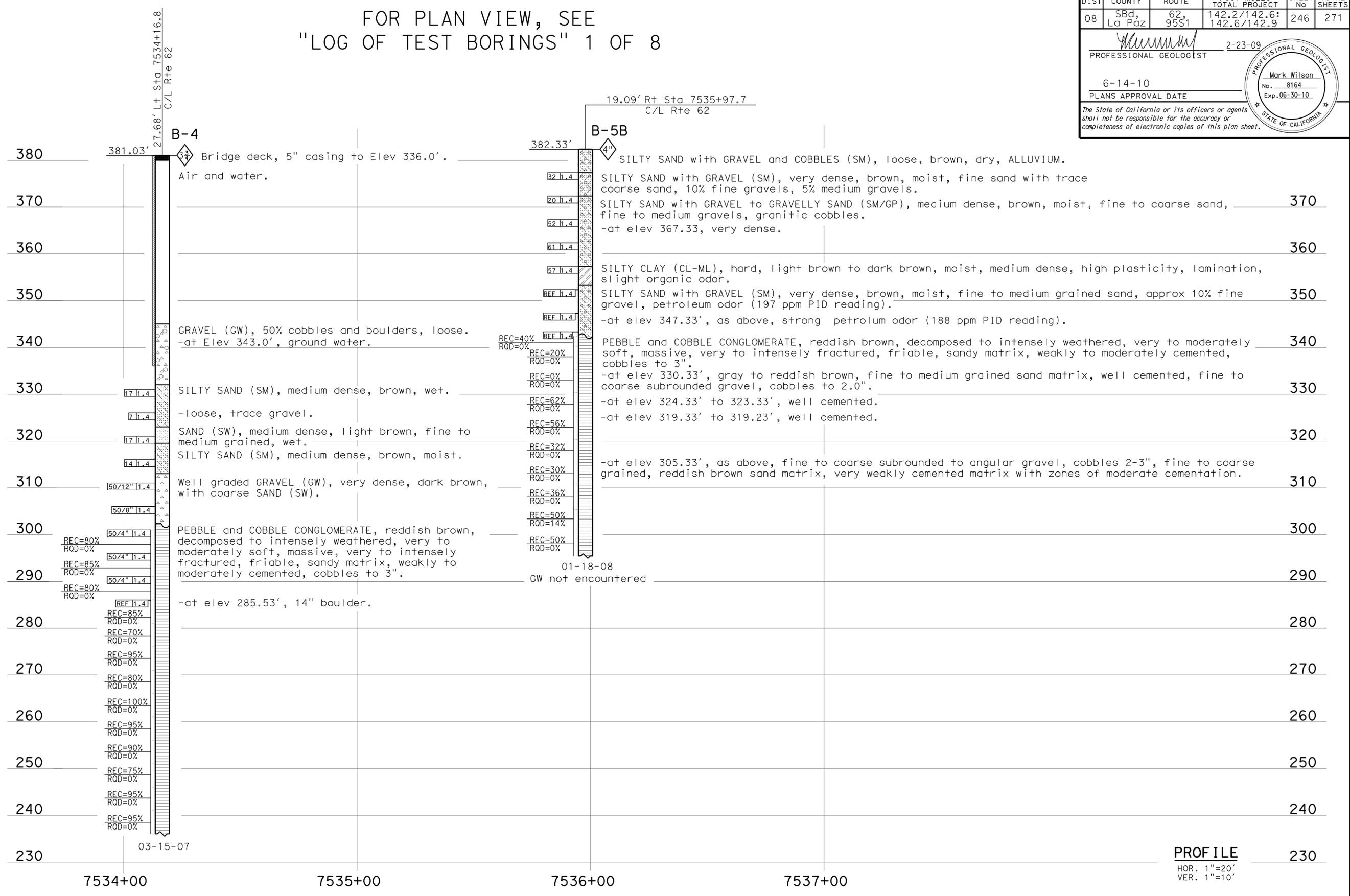
**CONSISTENCY CLASSIFICATION FOR SOILS**

**LEGEND OF BORING OPERATIONS**

**LEGEND OF EARTH MATERIALS**

**CONSISTENCY CLASSIFICATION FOR SOILS**

NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.



<b>ENGINEERING SERVICES</b>		<b>GEOTECHNICAL SERVICES</b>		FIELD INVESTIGATION BY:	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	BRIDGE NO. 54E0033 POST MILE 142.3	<b>RETAINING WALL NO. 7535 A</b> <b>LOG OF TEST BORINGS 2 OF 3</b>
DRAWN BY	W. Tang 11/2008			M. Wilson			
CHECKED BY	M. Wilson				CU 08 EA 378701	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES (PRELIMINARY STAGE ONLY)

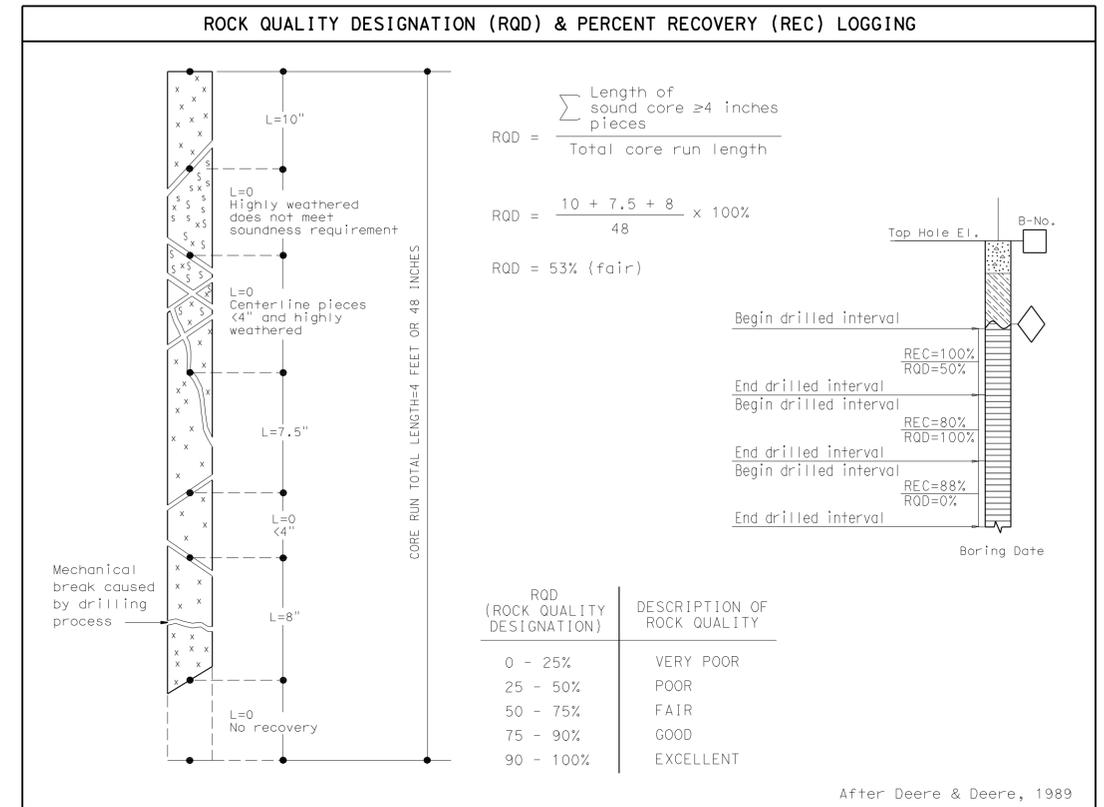
WEATHERING DESCRIPTORS							
Descriptors		Diagnostic features					General characteristics (strength, excavation, etc.) <sup>§</sup>
		Chemical weathering-Discoloration and/or oxidation		Mechanical weathering-Grain boundary conditions (disaggregation) primarily for granitics and some coarse-grained sediments	Texture and solutioning		
Alphanumeric descriptor	Descriptive term	Body of rock	Fracture surfaces †		Texture	Solutioning	
W1	Fresh	No discoloration, not oxidized.	No discoloration or oxidation.	No separation, intact (tight).	No change.	No solutioning.	Hammer rings when crystalline rocks are struck. Almost always rock excavation except for naturally weak or weakly cemented rocks such as siltstones or shales.
W2	Slightly weathered to fresh <sup>o</sup>						
W3	Slightly weathered	Discoloration or oxidation is limited to surface of, or short distance from, fractures; some feldspar crystals are dull.	Minor to complete discoloration or oxidation of most surfaces.	No visible separation, intact (tight).	Preserved.	Minor leaching of some soluble minerals may be noted.	Hammer rings when crystalline rocks are struck. Body of rock not weakened. With few exceptions, such as siltstones or shales, classified as rock excavation.
W4	Moderately to slightly weathered <sup>o</sup>						
W5	Moderately weathered	Discoloration or oxidation extends from fractures usually throughout; Fe-Mg minerals are "rusty," feldspar crystals are "cloudy."	All fracture surfaces are discolored or oxidized.	Partial separation of boundaries visible.	Generally preserved.	Soluble minerals may be mostly leached.	Hammer does not ring when rock is struck. Body of rock is slightly weakened. Depending on fracturing, usually is rock excavation except in naturally weak rocks such as siltstones or shales.
W6	Intensely to moderately weathered <sup>o</sup>						
W7	Intensely weathered	Discoloration or oxidation throughout; all feldspars and Fe-Mg minerals are altered to clay to some extent; or chemical alteration produces in-situ disaggregation, see grain boundary conditions.	All fracture surfaces are discolored or oxidized, surfaces friable.	Partial separation, rock is friable; in semiarid conditions granitics are disaggregated.	Texture altered by chemical disintegration (hydration, argillation).	Leaching of soluble minerals may be complete.	Dull sound when struck with hammer, usually can be broken with moderate to heavy manual pressure or by light hammer blow without reference to planes of weakness such as incipient or hairline fractures, or veinlets. Rock is significantly weakened. Usually common excavation.
W8	Very intensely weathered						
W9	Decomposed	Discolored or oxidized throughout, but resistant minerals such as quartz may be unaltered; all feldspars and Fe-Mg minerals are completely altered to clay.		Complete separation of grain boundaries (disaggregated).	Resembles a soil, partial or complete remnant rock structure may be preserved; leaching of soluble minerals usually complete.		Can be granulated by hand. Always common excavation. Resistant minerals such as quartz may be present as "stringers" or "dikes."

Note: This chart and its horizontal categories are more readily applied to rocks with feldspars and mafic minerals. Weathering in various sedimentary rocks, particularly limestones and poorly indurated sediments, will not always fit the categories established. This chart and weathering categories may have to be modified for particular site conditions or alteration such as hydrothermal effects; however, the basic framework and similar descriptors are to be used.

<sup>o</sup> Combination descriptors are permissible where equal distribution of both weathering characteristics are present over significant intervals or where characteristics present are "in between" the diagnostic feature. However, dual descriptors should not be used where significant, identifiable zones can be delineated. When given as a range, only two adjacent terms may be combined. "Decomposed to slightly weathered," or "moderately weathered to fresh" are not acceptable.

† Does not include directional weathering along shears or faults and their associated features. For example, a shear zone that carried weathering to great depths into a fresh rock mass would not require the rock mass to be classified as weathered.

§ These are generalizations and should not be used as diagnostic features for weathering or excavation classification. These characteristics vary to a large extent based on naturally weak materials or cementation and type of excavation.



### FRACTURE DENSITY

Modified from United States Bureau of Reclamation, Engineering Geology Field Manual.

**FRACTURE DENSITY-** Based on the spacing of all natural fractures in an exposure or core recovery lengths in boreholes; excludes mechanical breaks, shears, and shear zones; however, shear-disturbed zones (fracturing outside the shear) are included. Descriptors for fracture density apply to all rock exposures such as tunnel walls, dozer trenches, outcrops, or foundation cut slopes and inverts, as well as boreholes. Descriptive criteria presented below are based on borehole cores where lengths are measured along the core axis, for other exposures the criteria is distance measured between fractures (size of blocks).

**UNFRACTURED (FD0):** No fractures.

**VERY SLIGHTLY FRACTURED (FD1):** Core recovered mostly in lengths greater than 3 ft.

**SLIGHTLY TO VERY SLIGHTLY FRACTURED (FD2)\***

**SLIGHTLY FRACTURED (FD3):** Core recovered mostly in lengths from 1 to 3 ft. with few scattered lengths less than 1 ft or greater than 3 ft.

**MODERATELY TO SLIGHTLY FRACTURED (FD4)\***

**MODERATELY FRACTURED (FD5):** Core recovered mostly in 0.3 to 1.0 ft lengths with most lengths about 0.6 ft.

**INTENSELY TO MODERATELY FRACTURED (FD6)\***

**INTENSELY FRACTURED (FD7):** Lengths average from 0.1 to 0.3 ft with scattered fragmented intervals. Core recovered mostly in lengths less than 0.3 ft.

**VERY INTENSELY TO INTENSELY FRACTURED (FD8)\***

**VERY INTENSELY FRACTURED (FD9):** Core recovered mostly as chips and fragments with a few scattered short core lengths.

\* Combinations of fracture densities (e.g. very intensely to intensely fractured, or moderately to slightly fractured) are used where equal distribution of both fracture density characteristics are present over a significant interval or exposure, or where characteristics are "in between" the descriptor definitions.

### ROCK HARDNESS DESCRIPTORS

Alphanumeric Descriptor	Descriptor	Criteria
H1	Extremely hard	Core, fragment, or exposure cannot be scratched with knife or sharp pick; can only be chipped with repeated heavy hammer blows.
H2	Very hard	Cannot be scratched with knife or sharp pick. Core or fragment breaks with repeated heavy hammer blows.
H3	Hard	Can be scratched with knife or sharp pick with difficulty (heavy pressure). Heavy hammer blow required to break specimen.
H4	Moderately hard	Can be scratched with knife or sharp pick with light or moderate pressure. Core or fragment breaks with moderate hammer blow.
H5	Moderately soft	Can be grooved 1/16 inch deep by knife or sharp pick with moderate or heavy pressure. Core or fragment breaks with light hammer blow or heavy manual pressure.
H6	Soft	Can be grooved or gouged easily by knife or sharp pick with light pressure, can be scratched with fingernail. Breaks with light to moderate manual pressure.
H7	Very soft	Can be readily indented, grooved or gouged with fingernail, or carved with a knife. Breaks with light manual pressure.

Any bedrock unit softer than H7, very soft, is to be described using ASTM D-2488 consistency descriptors.

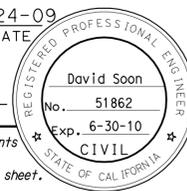
Note: Although "sharp pick" is included in these definitions, descriptions of ability to be scratched, grooved or gouged by a knife is the preferred criteria.

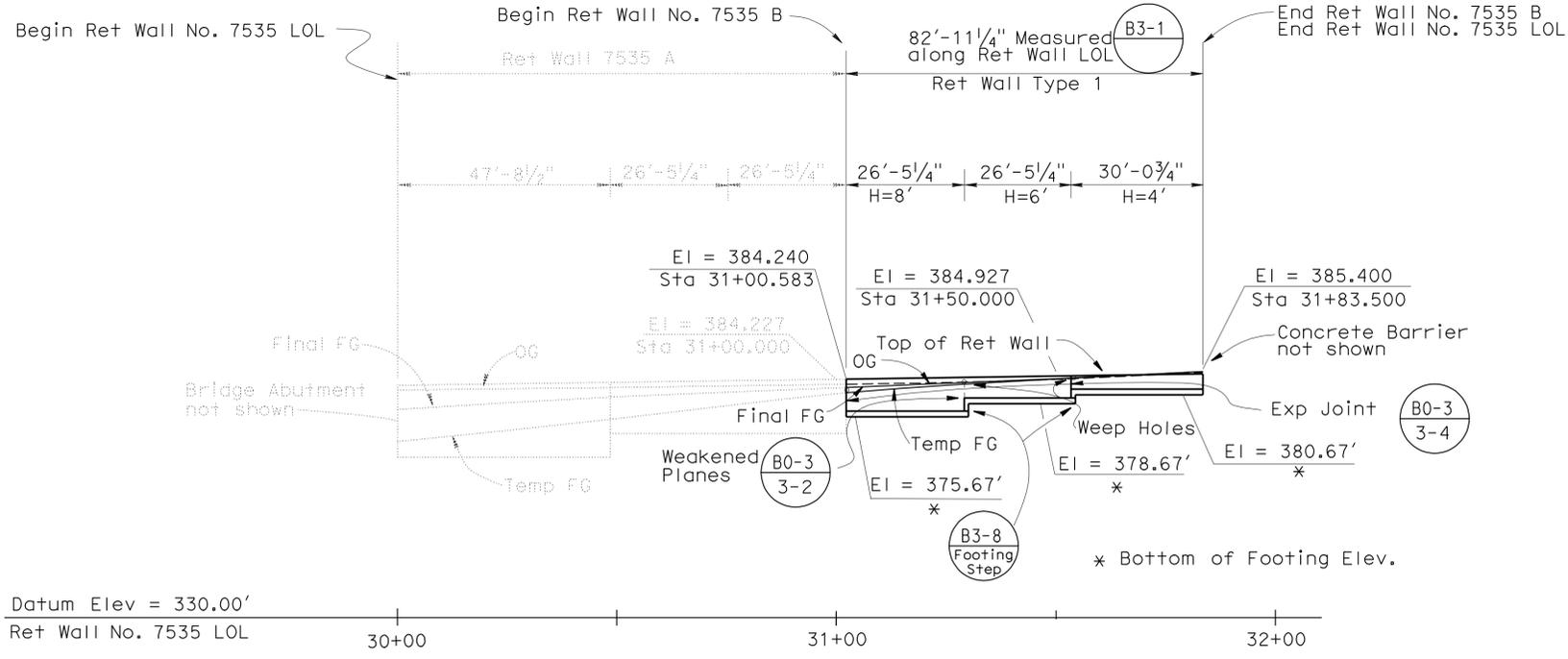
Modified from United States Bureau of Reclamation, Engineering Geology Field Manual.

### BEDDING, FOLIATION, OR FLOW TEXTURE DESCRIPTORS

Descriptors	Thickness / Spacing
Massive	Greater than 10 ft
Very thickly (bedded, foliated, or banded)	3 to 10 ft
Thickly	1 to 3 ft
Moderately	0.3 to 1 ft
Thinly	0.1 to 0.3 ft
Very thinly	0.03 (3/8 in) to 0.1 ft
Laminated (intensely foliated or banded)	Less than 0.03 ft (3/8 in)

Modified from United States Bureau of Reclamation, Engineering Geology Field Manual.

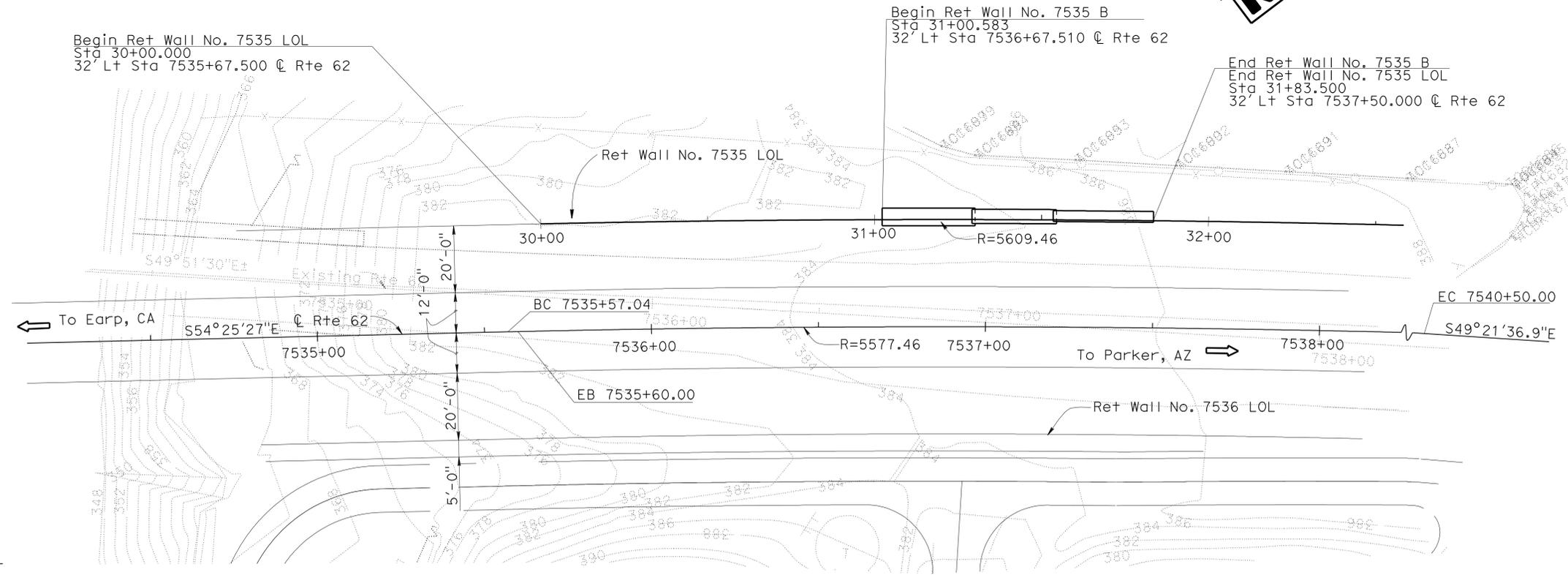
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08	SBd, a Paz	62, 95S1	142.2/142.6 142.6/142.9	248	271
David Soon 6-24-09 REGISTERED CIVIL ENGINEER DATE					
6-14-10				PLANS APPROVAL DATE	
<i>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</i>					



QUANTITIES:

STRUCTURE EXCAVATION (RETAINING WALL)	118	CY
STRUCTURE BACKFILL (RETAINING WALL)	80	CY
STRUCTURAL CONCRETE, (RETAINING WALL)	38	CY
BAR REINFORCING STEEL (RETAINING WALL)	2,850	LB
TUBULAR BICYCLE RAILING	83	LF
CONCRETE BARRIER (TYPE 80A MODIFIED)	83	LF

**DEVELOPED MIRROR ELEVATION**  
1 = 20'



**PLAN**  
1 = 20'

Rte 62  
 $\Delta = 5^\circ 3' 51''$   
 $R = 5577.464'$   
 $T = 246.640'$   
 $L = 492.959'$

**NOTE:**  
 1. For "TYPICAL SECTION", "INDEX TO PLANS", "STANDARD PLANS LIST", see "GENERAL PLAN No. 2", sheet.

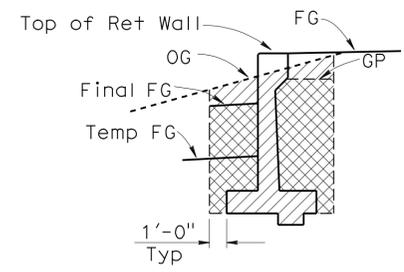
 DESIGN ENGINEER	DESIGN	BY David Soon	CHECKED Rakesh Deo	Service Load Design	Live Loading: 2' Live Load Surcharge	<b>STATE OF CALIFORNIA</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>DIVISION OF ENGINEERING SERVICES</b> <b>STRUCTURE DESIGN</b> <b>DESIGN BRANCH 7</b>	BRIDGE NO.	<b>RETAINING WALL NO. 7535 B</b> <b>GENERAL PLAN NO. 1</b>										
	DETAILS	BY Yingjue Feng	CHECKED Rakesh Deo	LAYOUT	BY David Soon			CHECKED Rakesh Deo		POST MILE									
	QUANTITIES	BY Eduardo Ortega Jr.	CHECKED Bruno Jenko	SPECIFICATIONS	BY Kevin Ellingson			PLANS AND SPECS COMPARED		KEVIN ELLINGSON	142.3								
STRUCTURES DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 10/25/05)						ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	CU 08 EA 378701	DISREGARD PRINTS BEARING EARLIER REVISION DATES	<table border="1"> <tr> <td>04-24-08</td> <td>6-16-09</td> <td>11-20-08</td> <td>12-01-08</td> <td>12-14-08</td> <td>12-22-08</td> <td>2-23-09</td> <td>2-26-09</td> <td>5-15-09</td> </tr> </table>	04-24-08	6-16-09	11-20-08	12-01-08	12-14-08	12-22-08	2-23-09	2-26-09	5-15-09	SHEET 1 OF 10
04-24-08	6-16-09	11-20-08	12-01-08	12-14-08	12-22-08	2-23-09	2-26-09	5-15-09											

USERNAME => HMOPT10 DATE PLOTTED => 17-JUN-2010 TIME PLOTTED => 11:03

### INDEX TO PLANS

SHEET No.	TITLE
1.	GENERAL PLAN No. 1
2.	GENERAL PLAN No. 2
3.	CONCRETE BARRIER TYPE 80A MODIFIED LAYOUT
4.	CONCRETE BARRIER TYPE 80A MODIFIED DETAILS No. 1
5.	CONCRETE BARRIER TYPE 80A MODIFIED DETAILS No. 2
6.	CONCRETE BARRIER TYPE 80A MODIFIED DETAILS No. 3
7.	TUBULAR BICYCLE RAILING
8.	LOG OF TEST BORINGS 1 OF 3
9.	LOG OF TEST BORINGS 2 OF 3
10.	LOG OF TEST BORINGS 3 OF 3

Ret Wall Station	++	Design H	Ret Wall Type
31+00	11'-0"±	8'	Type 1
31+50	11'-6"±	6' to 4'	Type 1
31+83.5	13'-6"±	4'	Type 1



LEGEND:

Indicates structure excavation

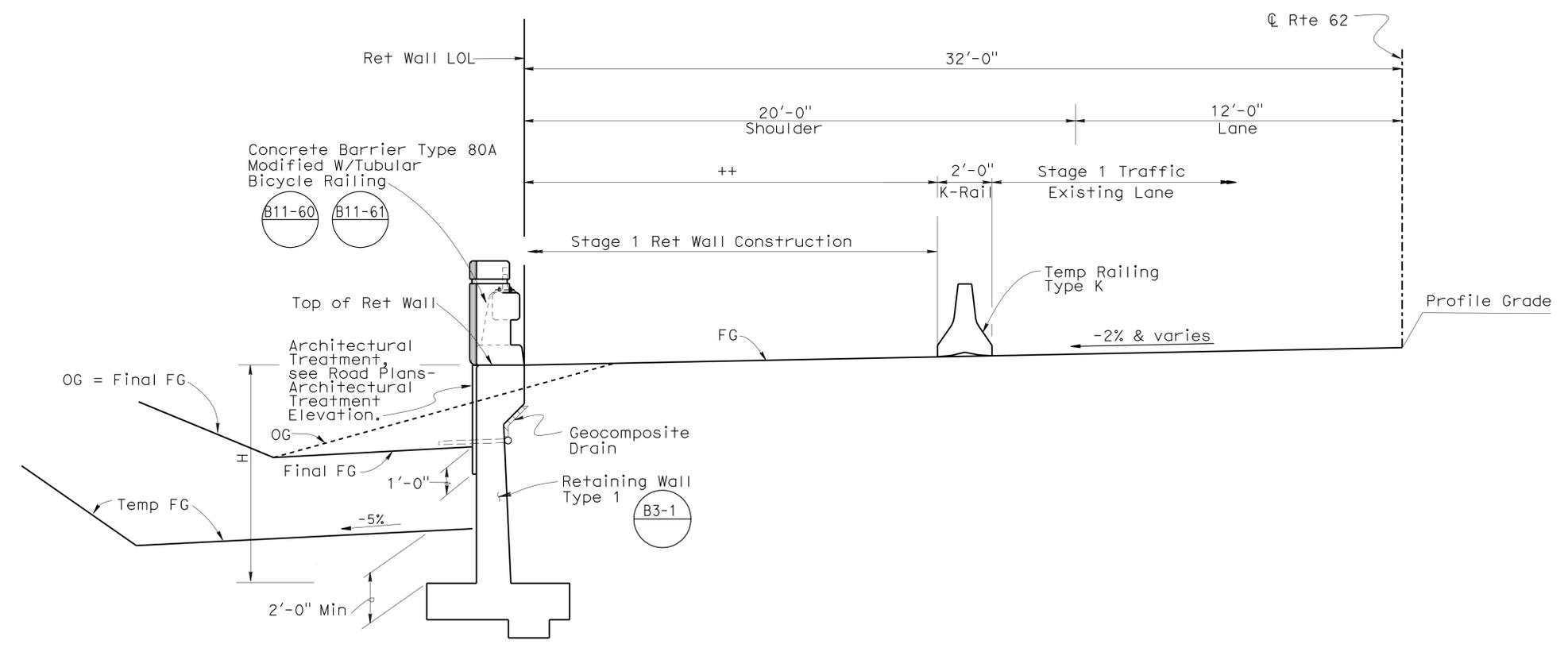
Indicates structure backfill

### LIMITS OF EXCAVATION AND BACKFILL

3/16" = 1'

### STANDARD PLANS DATED MAY 2006

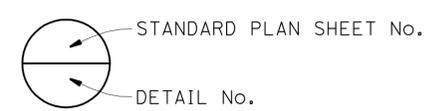
A10A	ACRONYMS AND ABBREVIATIONS (SHEET 1 OF 2)
A10B	ACRONYMS AND ABBREVIATIONS (SHEET 2 OF 2)
A62B	LIMITS OF PAYMENT FOR EXCAVATION BACKFILL - BRIDGE SURCHARGE AND WALL
A82B1	CRASH CUSHION (TYPE ADIEM)
B0-3	BRIDGE DETAILS
B3-1	RETAINING WALL TYPE 1 - H = 4' THROUGH 30'
B3-8	RETAINING WALL DETAILS NO. 1
RSP B11-60	CONCRETE BARRIER TYPE 80 (SHEET 1 OF 2)
RSP B11-61	CONCRETE BARRIER TYPE 80 (SHEET 2 OF 2)
RSP ES-9A	ELECTRICAL SYSTEMS (ELECTRICAL DETAIL, STRUCTURE INSTALLATIONS)
ES-9B	ELECTRICAL SYSTEMS (ELECTRICAL DETAIL, STRUCTURE INSTALLATIONS)
RSP ES-9C	ELECTRICAL SYSTEMS (ELECTRICAL DETAIL, STRUCTURE INSTALLATIONS)
ES-9D	ELECTRICAL SYSTEMS (ELECTRICAL DETAIL, STRUCTURE INSTALLATIONS)



### TYPICAL SECTION

3/8" = 1'

NOTE:  
1. For Geocomposite Drain detail, See " CONCRETE BARRIER TYPE 80A MODIFIED DETAIL No. 2 " sheet.



DESIGN	BY David Soon	CHECKED Rakesh Deo
DETAILS	BY Yingjue Feng	CHECKED Rakesh Deo
QUANTITIES	BY Eduardo Ortega Jr.	CHECKED Bruno Jenko

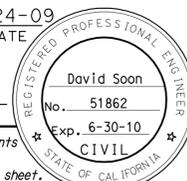
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

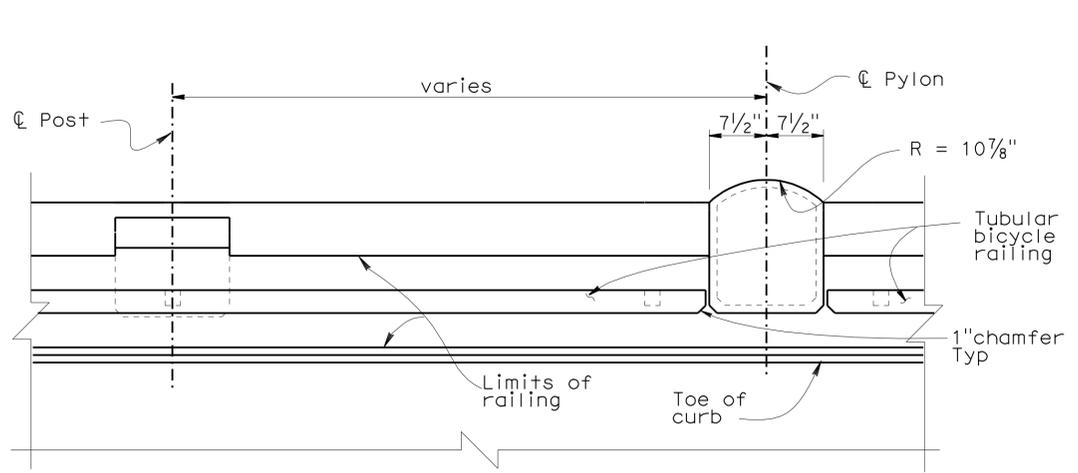
DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
DESIGN BRANCH 7

BRIDGE NO.
POST MILE
142.3

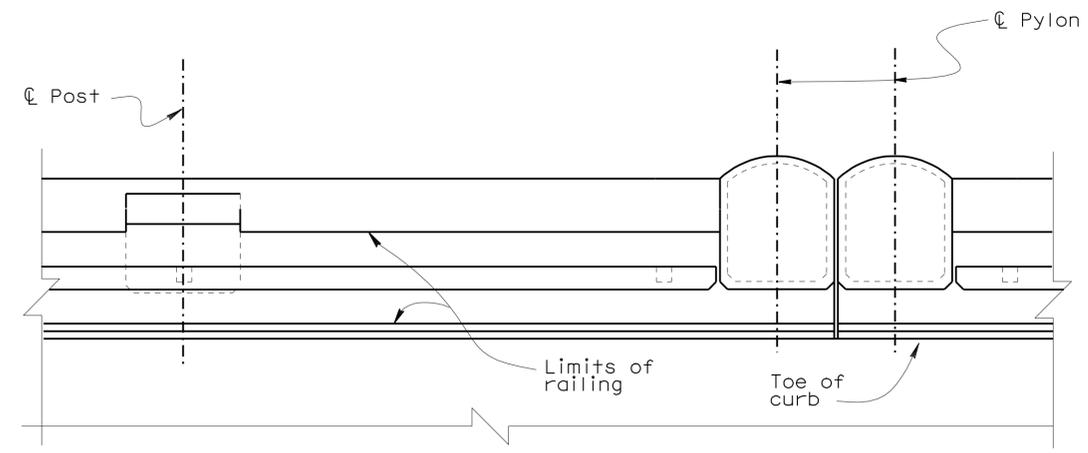
RETAINING WALL NO. 7535 B  
GENERAL PLAN NO. 2



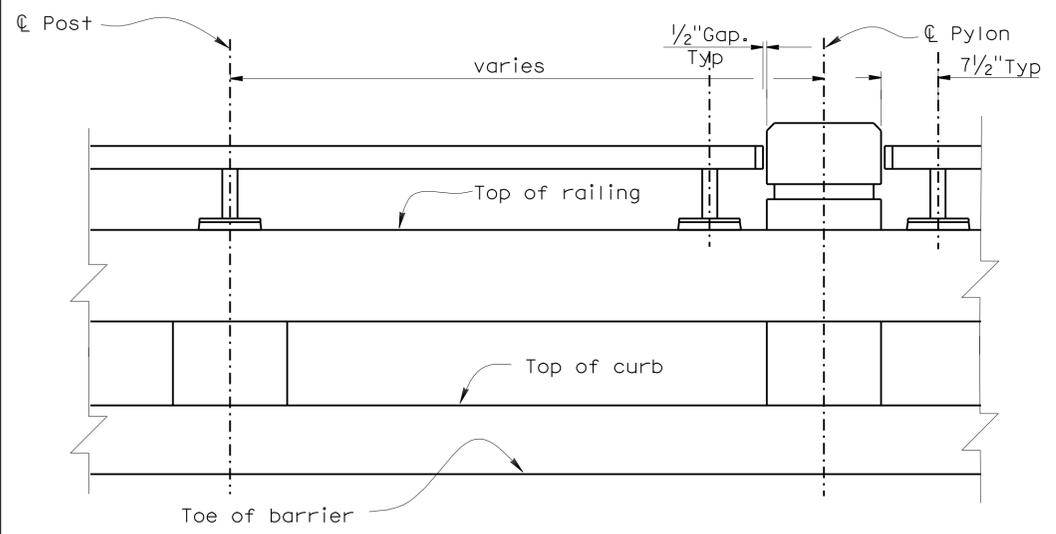
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David Soon 6-24-09				REGISTERED CIVIL ENGINEER DATE	
6-14-10				PLANS APPROVAL DATE	
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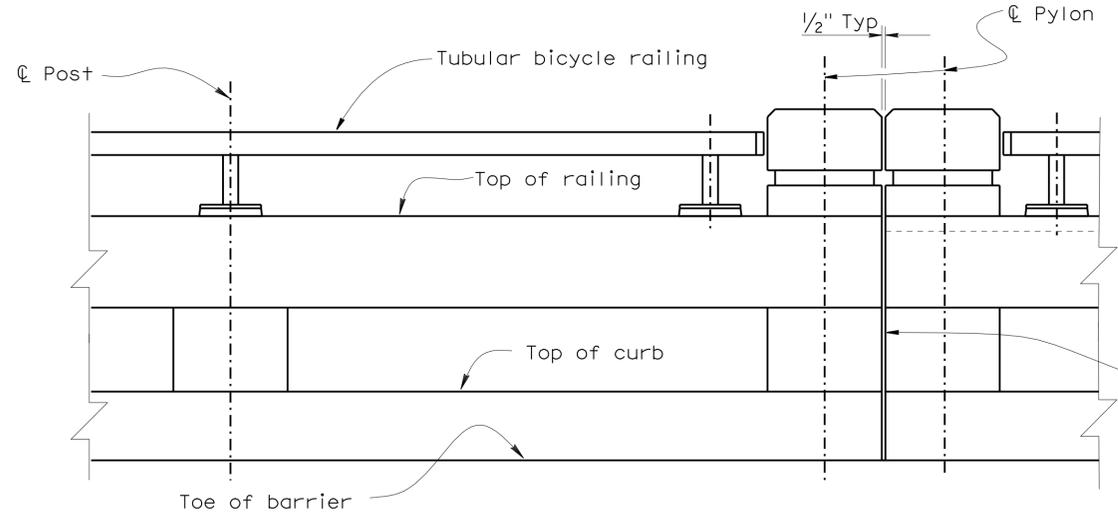
PLAN AT PYLON



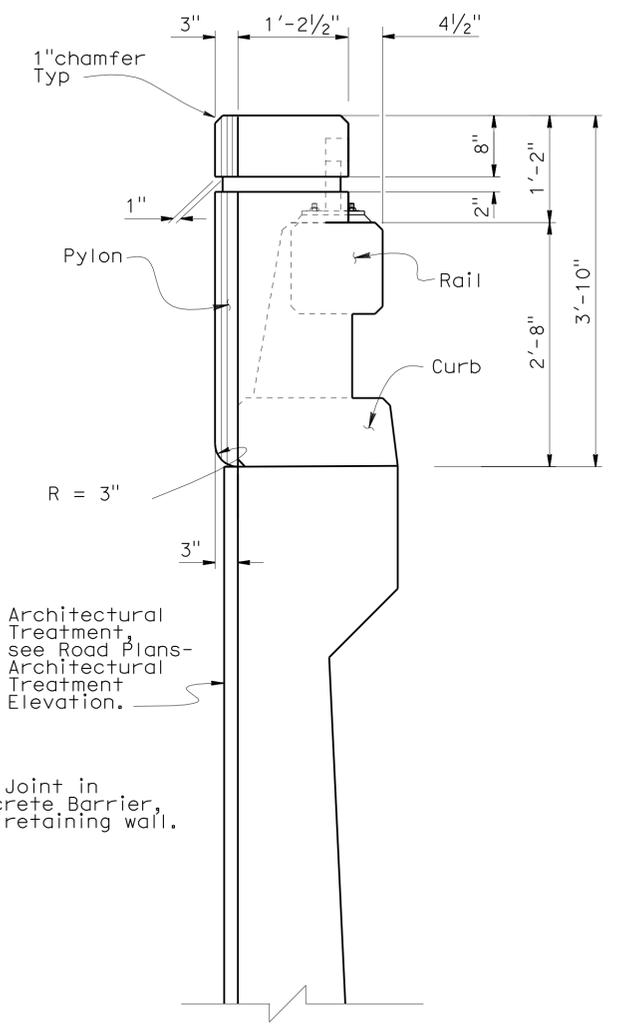
PLAN AT DOUBLE PYLON



ELEVATION AT PYLON



ELEVATION AT DOUBLE PYLON



TYPICAL SECTION AT PYLON

- NOTES:
- For Concrete Barrier layout, see "CONCRETE BARRIER TYPE 80A MODIFIED LAYOUT" sheet.
  - For Concrete Barrier Type 80 details, see **B11-60** and **B11-61**.
  - For Concrete Barrier details not shown, see "CONCRETE BARRIER TYPE 80A MODIFIED DETAILS NO. 2" and "CONCRETE BARRIER TYPE 80A MODIFIED DETAILS NO. 3" sheets.
  - For Tubular Bicycle Railing details, see "TUBULAR BICYCLE RAILING" sheet.

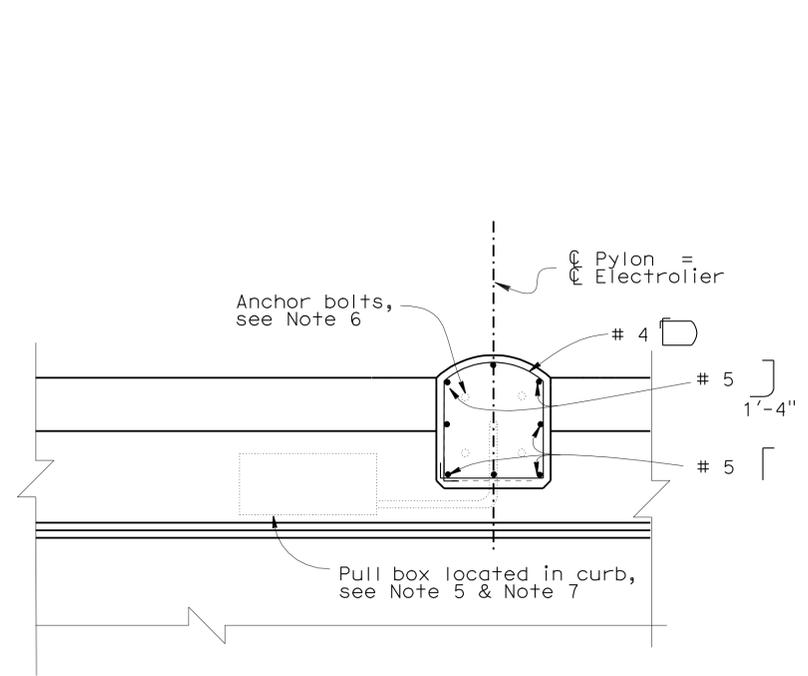
CONCRETE BARRIER TYPE 80A MODIFIED DETAIL

1" = 1'-0"

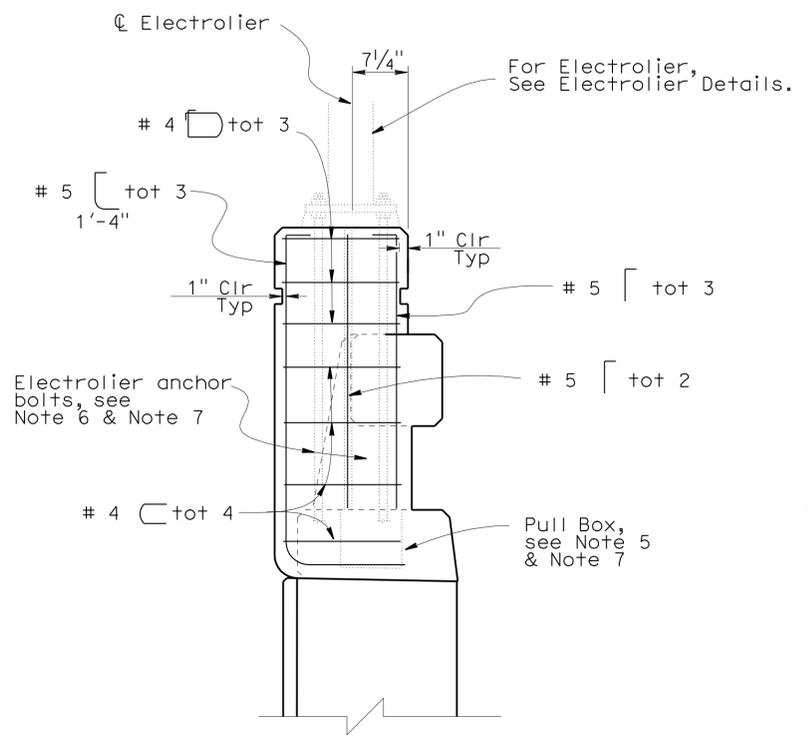
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)	DESIGN	BY David Soon	CHECKED Rakesh Deo	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH <b>7</b>	BRIDGE NO.	RETAINING WALL NO. 7535 B												
	DETAILS	BY Yingjue Feng	CHECKED Rakesh Deo			POST MILE		CONCRETE BARRIER TYPE 80A MODIFIED DETAILS NO. 1											
	QUANTITIES	BY Eduardo Ortega Jr.	CHECKED Bruno Jenko			142.3													
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS				CU 08 EA 378701	DISREGARD PRINTS BEARING EARLIER REVISION DATES		<table border="1"> <tr> <th colspan="6">REVISION DATES</th> </tr> <tr> <td>11-12-08</td> <td>11-20-08</td> <td>12-15-08</td> <td>2-23-09</td> <td>2-24-09</td> <td>6-16-09</td> </tr> </table>	REVISION DATES						11-12-08	11-20-08	12-15-08	2-23-09	2-24-09	6-16-09
REVISION DATES																			
11-12-08	11-20-08	12-15-08	2-23-09	2-24-09	6-16-09														

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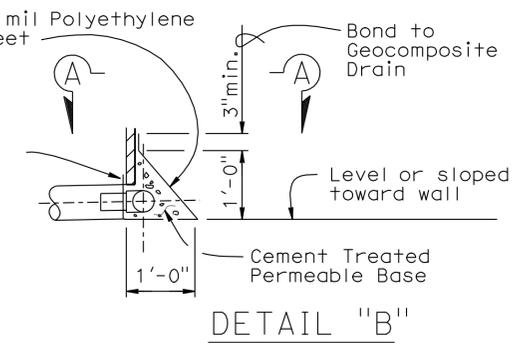
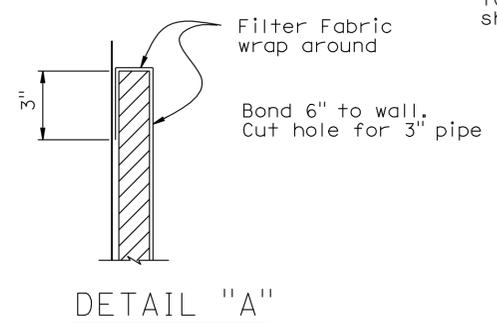
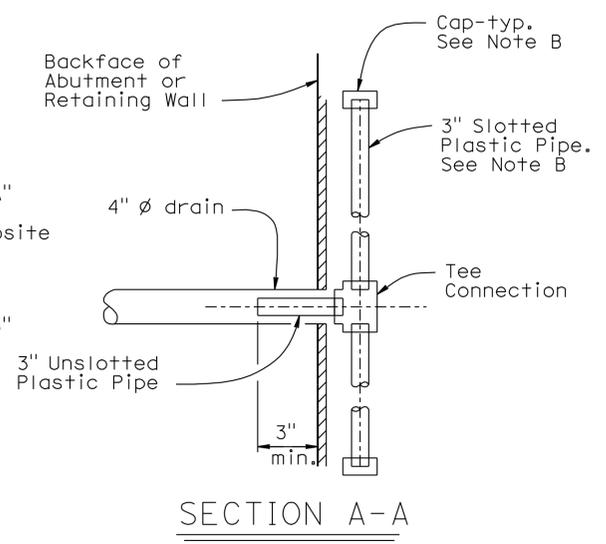
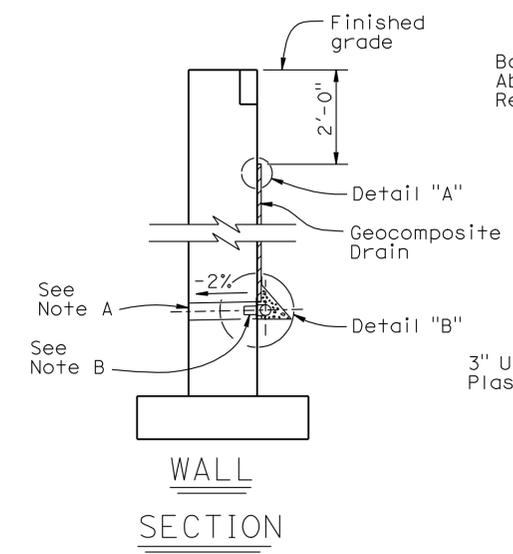
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBD, a Paz	62, 95S1	142.2/142.6 142.6/142.9	252	271
David Soon 6-24-09 REGISTERED CIVIL ENGINEER DATE					
6-14-10 PLANS APPROVAL DATE					
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**PLAN**  
Bicycle Railing not shown



**TYPICAL SECTION**  
Bicycle Railing not shown



**WEEP HOLE AND GEOCOMPOSITE DRAIN**

- NOTES:
- For Concrete Barrier layout, see "CONCRETE BARRIER TYPE 80A MODIFIED LAYOUT" sheet.
  - For Concrete Barrier Type 80 details, see B11-60 and B11-61.
  - For Concrete Barrier details not shown, see "CONCRETE BARRIER TYPE 80A MODIFIED DETAILS NO. 1" and "CONCRETE BARRIER TYPE 80A MODIFIED DETAILS NO. 3" sheets.
  - For Tubular Bicycle Railing details, see "TUBULAR BICYCLE RAILING" sheet.
  - For electrical details see ES9A, ES9B, ES9C & ES9D.
  - For anchor bolts size and placement, see Electrolier Details.
  - Pull Box and anchor bolts only at electrolier locations.
  - Concrete Barrier Type 80 post and longitudinal reinforcement continuous through pylon. This reinforcement is not shown.

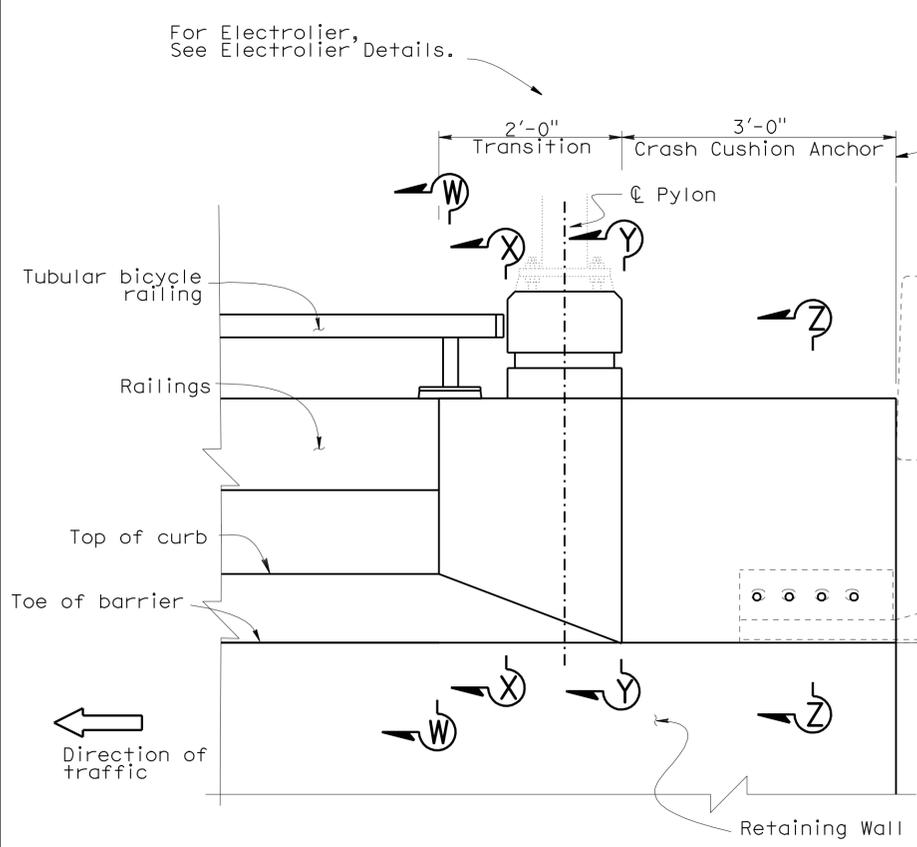
**PYLON DETAIL**  
1" = 1'-0"

- NOTES:
- 4" ⌀ drains at intermediate sag points and at 25' Max center to center (9' c-c for Type 3 and 9'-3" c-c for Type 4 retaining walls). For walls adjacent to sidewalks or curbs, provide 4" cast iron or asbestos cement pipe under the sidewalk to discharge through curb face. Exposed wall drains shall be located 3"± above finished grade.
  - Geocomposite drain, cement treated permeable base, and 3" ⌀ slotted plastic pipe continuous behind retaining wall or abutment. Cap ends of pipe. Provide "Tee" connection at each 4" ⌀ drain.
  - Connect the low end of plastic pipe to the main outlet pipe as applicable.

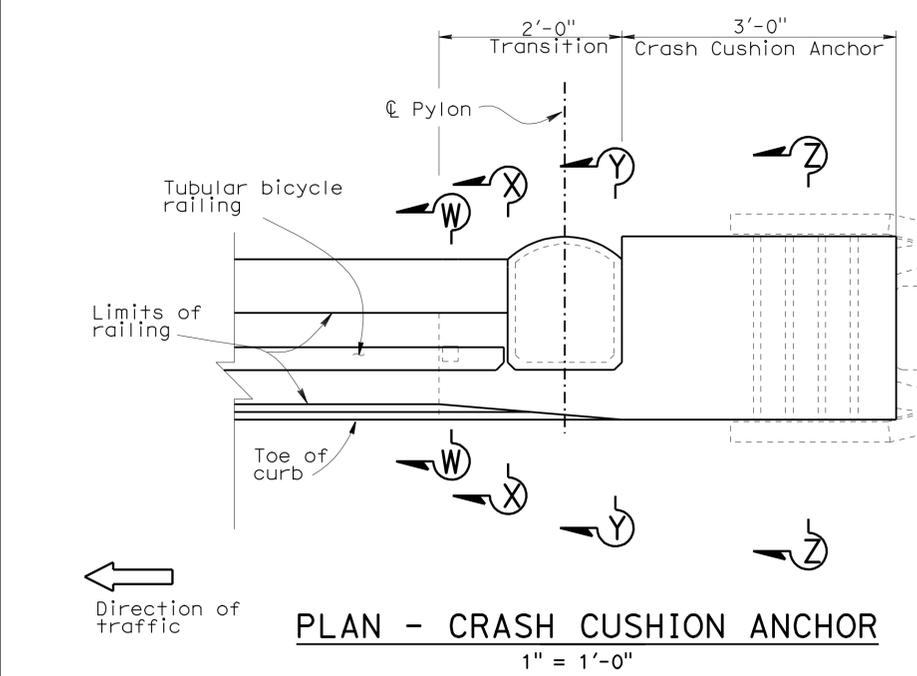
DESIGN BY David Soon			CHECKED Rakesh Deo	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 7	BRIDGE NO.	RETAINING WALL NO. 7535 B		
DETAILS BY Yingjue Feng			CHECKED Rakesh Deo			POST MILE			
QUANTITIES BY Eduardo Ortega Jr.			CHECKED Bruno Jenko			142.3			
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)							CU 08 EA 378701	REVISION DATES	SHEET 5 OF 10

TIME PLOTTED => 17-JUN-2010 11:03  
USERNAME => hrmopt.in DATE PLOTTED => 17-JUN-2010 11:03

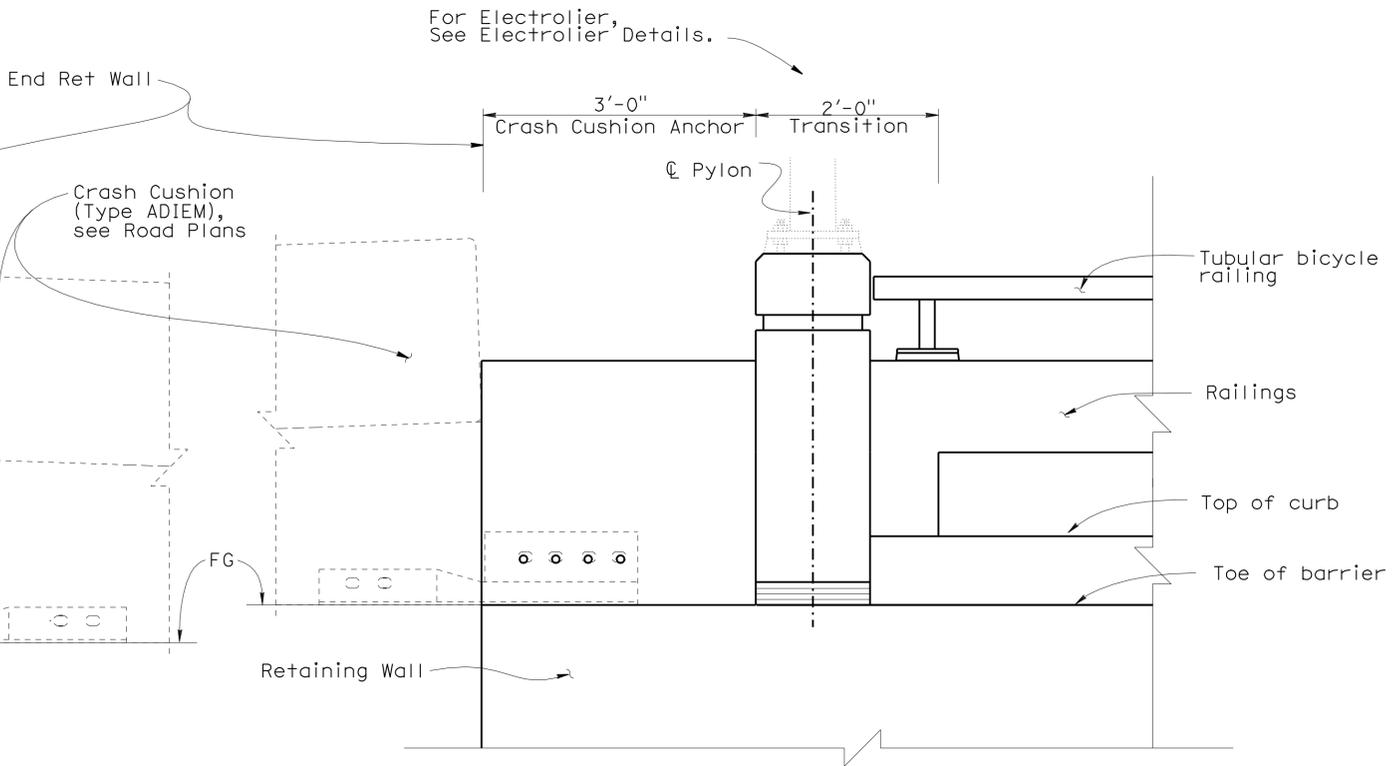
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David Soon 12-10-09 REGISTERED CIVIL ENGINEER DATE					
6-14-10 PLANS APPROVAL DATE					
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**ELEVATION - CRASH CUSHION ANCHOR FRONT OF BARRIER**  
1" = 1'-0"

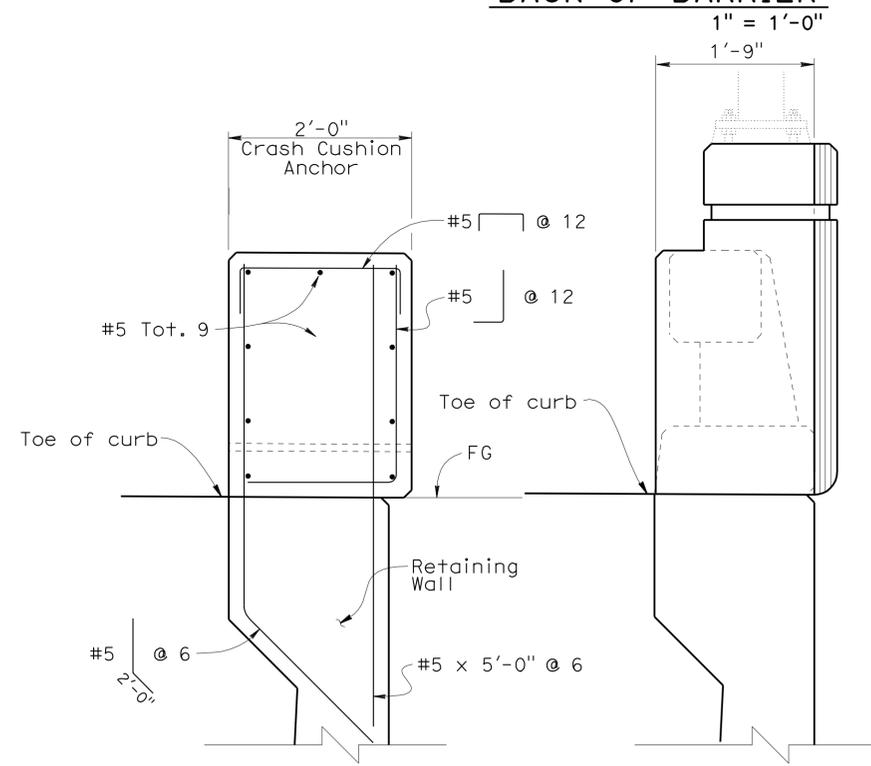


**PLAN - CRASH CUSHION ANCHOR**  
1" = 1'-0"

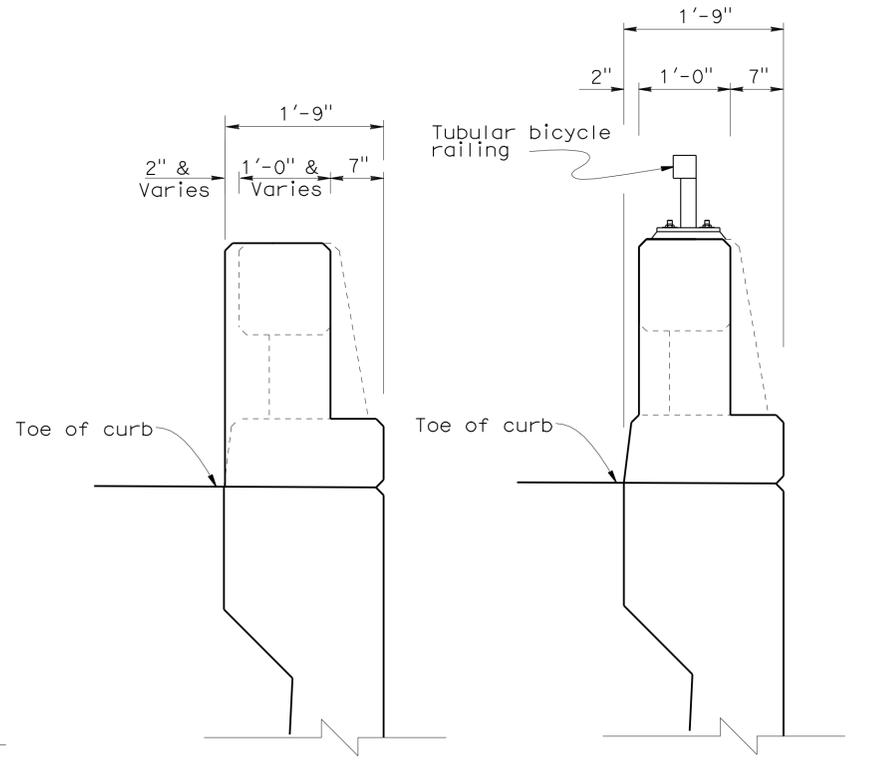


**ELEVATION - CRASH CUSHION ANCHOR BACK OF BARRIER**

- Notes:
1. For Concrete Barrier layout, see "CONCRETE BARRIER TYPE 80A MODIFIED LAYOUT" sheet.
  2. For Concrete Barrier Type 80 details, see B11-60 and B11-61.
  3. For Concrete Barrier details not shown, see "CONCRETE BARRIER TYPE 80A MODIFIED DETAILS NO. 1" and "CONCRETE BARRIER TYPE 80A MODIFIED DETAILS NO. 2" sheets.
  4. For Tubular Bicycle Railing details, see "TUBULAR BICYCLE RAILING" sheet.
  5. Extend all Concrete Barrier Type 80 reinforcement 2'-0" into Crash Cushion Anchor.



**SECTION Z-Z** 1" = 1'-0"  
**SECTION Y-Y** 1" = 1'-0"



**SECTION X-X** 1" = 1'-0"  
**SECTION W-W** 1" = 1'-0"

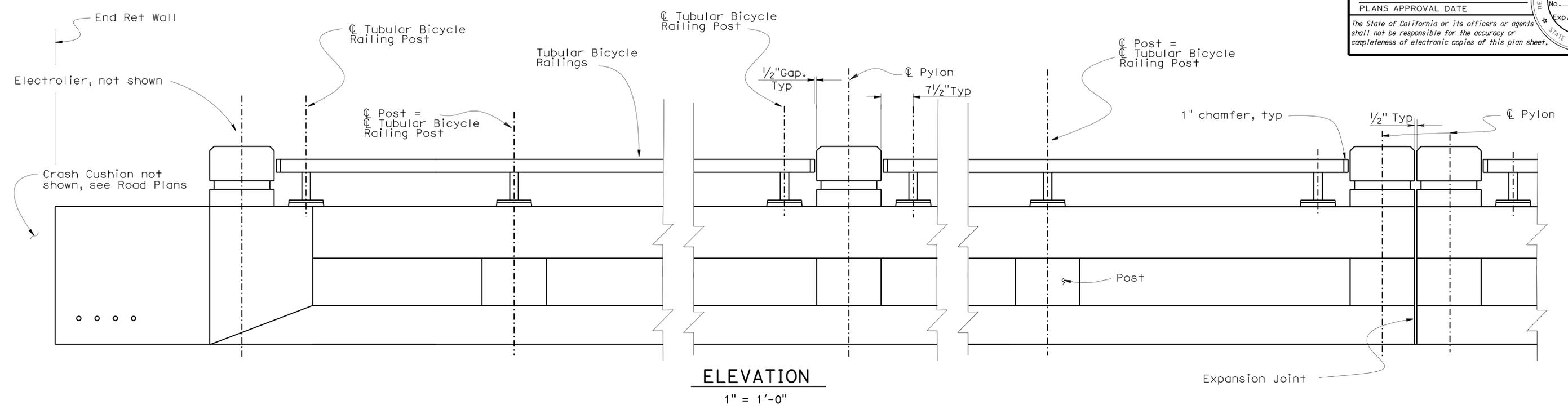
DESIGN	BY David Soon	CHECKED Rakesh Deo
DETAILS	BY Y Feng / G Dickerson	CHECKED Rakesh Deo
QUANTITIES	BY Eduardo Ortega Jr.	CHECKED Bruno Jenko

<b>STATE OF CALIFORNIA</b>	
<b>DEPARTMENT OF TRANSPORTATION</b>	

<b>DIVISION OF ENGINEERING SERVICES</b>		BRIDGE NO.
<b>STRUCTURE DESIGN</b>		
<b>DESIGN BRANCH 7</b>		POST MILE
		142.3

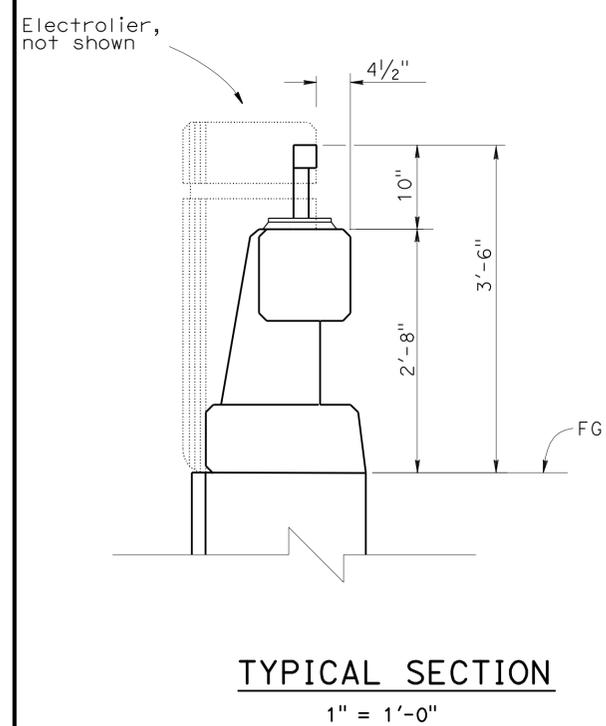
<b>RETAINING WALL NO. 7535 B</b>	
<b>CONCRETE BARRIER TYPE 80A MODIFIED DETAILS NO. 3</b>	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBd, a Paz	62, 95S1	142.2/142.6: 142.6/142.9	254	271
David Soon 12-10-09 REGISTERED CIVIL ENGINEER DATE					
6-14-10 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.					

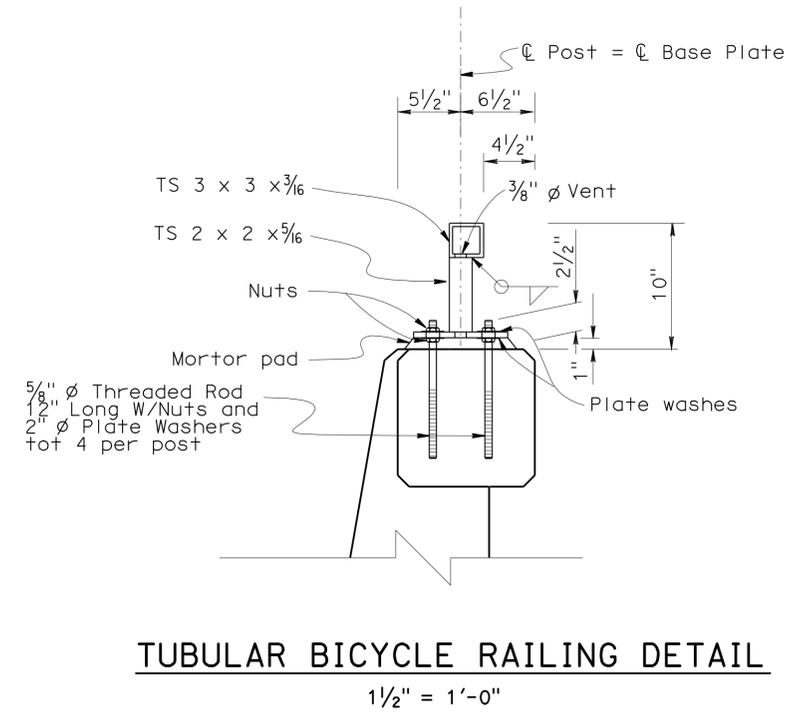


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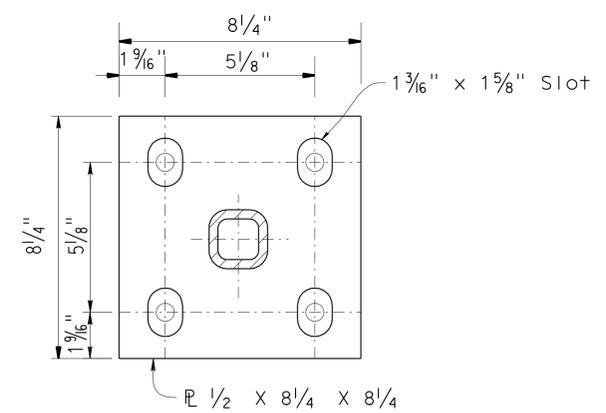
- Galvanize rail assembly after fabrication.
- Post shall be normal to railing.
- Top rail tube shall be continuous over not less than two posts except a short post spacing is permitted near deck or wall joints, electro-liers, or other rail discontinuities as noted.
- For Concrete Barrier layout, see "CONCRETE BARRIER TYPE 80A MODIFIED LAYOUT" sheet.
- For Concrete Barrier Type 80 details, see B11-60 and B11-61.
- For Concrete Barrier details not shown, see "CONCRETE BARRIER TYPE 80A MODIFIED DETAILS NO. 1", "CONCRETE BARRIER TYPE 80A MODIFIED DETAILS NO. 2", and "CONCRETE BARRIER TYPE 80A MODIFIED DETAILS NO. 3" sheets.



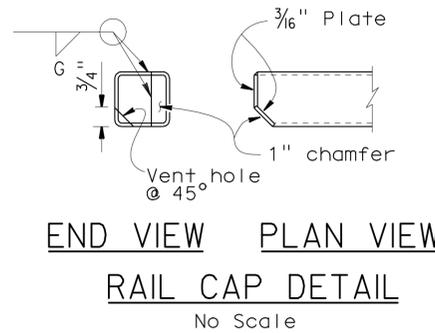
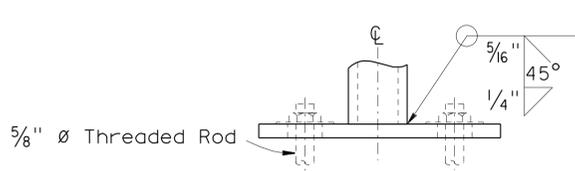
**TYPICAL SECTION**  
1" = 1'-0"



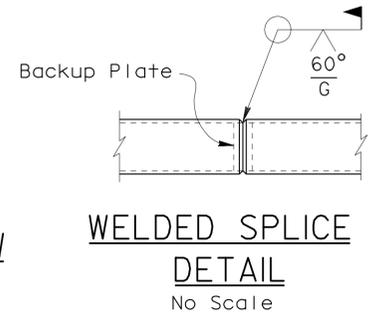
**TUBULAR BICYCLE RAILING DETAIL**  
1 1/2" = 1'-0"



**BASE PLATE DETAIL**  
No Scale



**END VIEW PLAN VIEW RAIL CAP DETAIL**  
No Scale



**WELDED SPLICE DETAIL**  
No Scale

DESIGN	BY David Soon	CHECKED Rakesh Deo
DETAILS	BY Yingjue Feng	CHECKED Rakesh Deo
QUANTITIES	BY Eduardo Ortega Jr.	CHECKED Bruno Jenko

<b>STATE OF CALIFORNIA</b>	
DEPARTMENT OF TRANSPORTATION	

<b>DIVISION OF ENGINEERING SERVICES</b>	
STRUCTURE DESIGN	
<b>DESIGN BRANCH 7</b>	

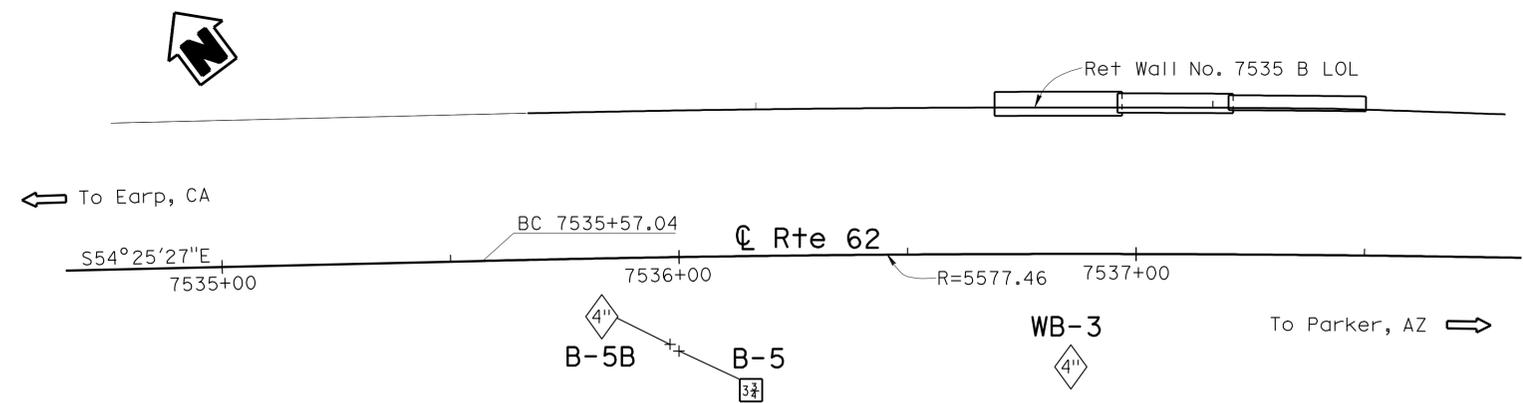
BRIDGE NO.	RETAINING WALL NO. 7535 B
POST MILE	TUBULAR BICYCLE RAILING
142.3	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBD, La Paz	62, 95S1	142.2/142.6; 142.6/142.9	255	271

PROFESSIONAL GEOLOGIST  
 Mark Wilson  
 No. 8164  
 Exp. 06-30-10  
 STATE OF CALIFORNIA

2-23-09  
 PLANS APPROVAL DATE

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**BENCH MARK**

**SURVEY CONTROL**  
 PHOTO PT 62-2-93 (NOT SHOWN ON PLAN)  
 Fnd "PK" NAIL ON YELLOW STRIPE IN TURN POCKET TO RV PARK  
 11.807' Rt @ PROPOSED RTE 62  
 Sta. 7523+99.516  
 N 1901612.719  
 E 7680552.001  
 Elev 367.781'

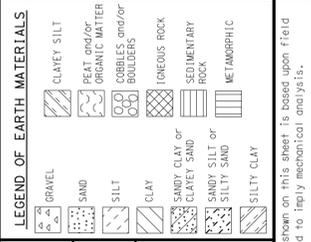
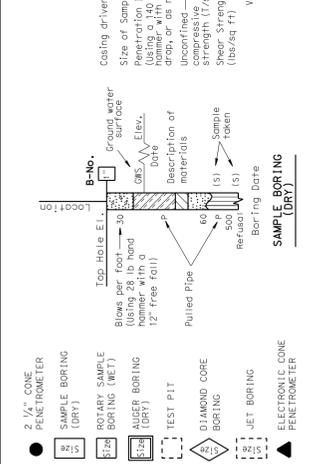
**SPAN 1964**  
 Fnd 3/2" STD. USC&GS BRASS DISK STAMPED "SPAN 1964" FLUSH IN SIDEWALK  
 48.365' Lt @ PROPOSED RTE 62  
 Sta. 7531+78.111  
 N 1901070.086  
 E 7681099.470  
 Elev 378.998'

**PLAN**  
 1" = 20'

**NOTES:**

1. Groundwater was encountered, but not measured in some borings, due to the immediate backfilling of the boring. The Contractor should anticipate encountering ground water during the excavation and construction of all foundation supports. De-watering of the footing excavations may be required. Groundwater surface elevations are subject to seasonal fluctuations and will be encountered at higher or lower elevations depending on conditions at time of construction.
2. The descriptions and classifications of rock and/or soil, including consistency and relative density descriptors, used by the field and/or office personnel for the exploration boreholes shown on this sheet are based on the "Soil and Rock Logging Classification Manual (Field Guide)". Engineering Service Center, Office of Structural Foundations, August 1996
3. Soil colors were determined by using Munsell Soil Color Charts (1994, Revised Edition). Rock colors were determined using USGS rock color charts (1995, revised text).
4. Test borings B-5b and WB-3 utilized a Safety hammer to advance the sampler. Penetration Index values shown on the LOTB sheets were actual readings recorded in the field. Soil consistencies shown on the LOTB sheets are based on these Penetration Index Values.
5. Test boring B-5 utilized a CME automatic hammer to advance the sampler. Penetration Index values shown on the LOTB sheets were actual readings recorded in the field. Soil consistencies shown on the LOTB sheets are based on these Penetration Index Values.
6. Penetration Index value designated "Ref" means sampler refusal.
7. REC = Percent Core Recovery. Percent Core Recovery is the "percentage ratio" between the length of the core recovered over the length of the core run on a given sample.
8. A noticeable petroleum odor was encountered in test borings.
9. Test borings B-5b and WB-3 were drilled and logged by URS.
10. The size of cobbles or boulders noted in the borings does not preclude the fact that there may be larger cobbles or boulders to be found at the site.
11. The borings were drilled using a 94 mm cased wire line system.

**LEGEND OF BORING OPERATIONS**

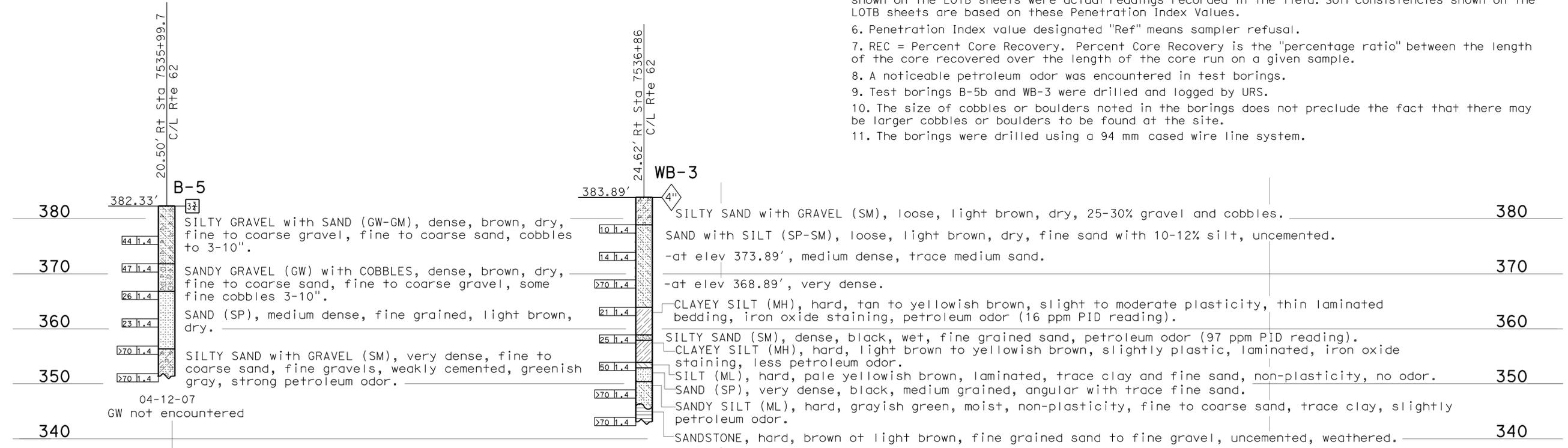


**CONSISTENCY CLASSIFICATION FOR SOILS**

According to the Standard Penetration Test

SPT N <sub>60</sub> (Blows/foot)	Consistency
0-4	Very Loose
5-10	Loose
11-30	Medium Dense
31-50	Dense
51-70	Very Dense
71-100	Stiff
101-150	Very Stiff
151-200	Hard
201-300	Very Hard

NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

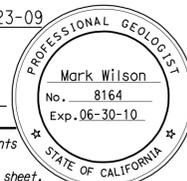


7536+00	7537+00	7538+00	<b>PROFILE</b> HOR. 1"=10' VER. 1"=10'
---------	---------	---------	--

<b>ENGINEERING SERVICES</b>	<b>GEOTECHNICAL SERVICES</b>	FIELD INVESTIGATION BY: M. Wilson	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	<b>DIVISION OF ENGINEERING SERVICES</b> STRUCTURE DESIGN DESIGN BRANCH	BRIDGE NO. POST MILE 142.3	<b>RETAINING WALL NO. 7535 B</b>
DRAWN BY W. Tang 11/08; I.G-Remmen, 2/09	CHECKED BY M. Wilson					<b>LOG OF TEST BORINGS 1 OF 3</b>

# FOR PLAN VIEW, SEE "LOG OF TEST BORINGS" 1 OF 3

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBd, La Paz	62, 95S1	142.2/142.6 142.6/142.9	256	271

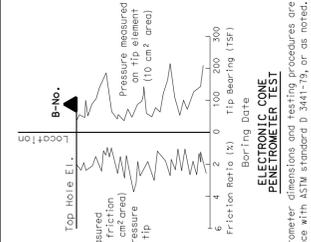


2-23-09  
PROFESSIONAL GEOLOGIST

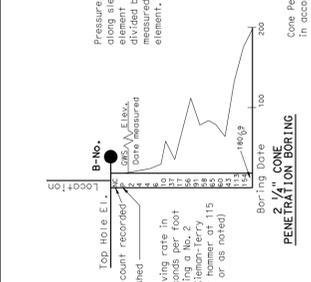
6-14-10  
PLANS APPROVAL DATE

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.

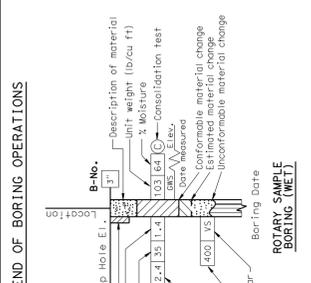
**LEGEND OF BORING OPERATIONS**



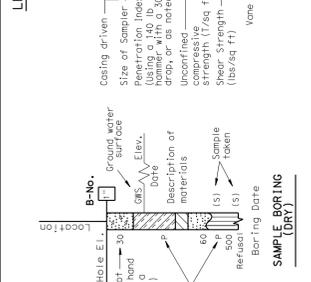
**LEGEND OF EARTH MATERIALS**



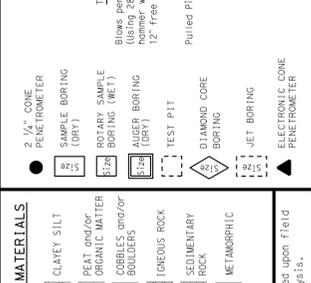
**CONSISTENCY CLASSIFICATION FOR SOILS**



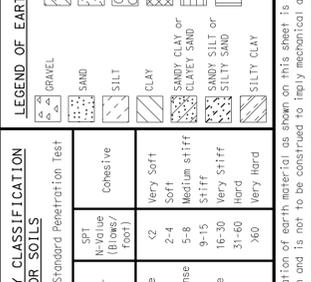
**LEGEND OF BORING OPERATIONS (continued)**



**LEGEND OF BORING OPERATIONS (continued)**

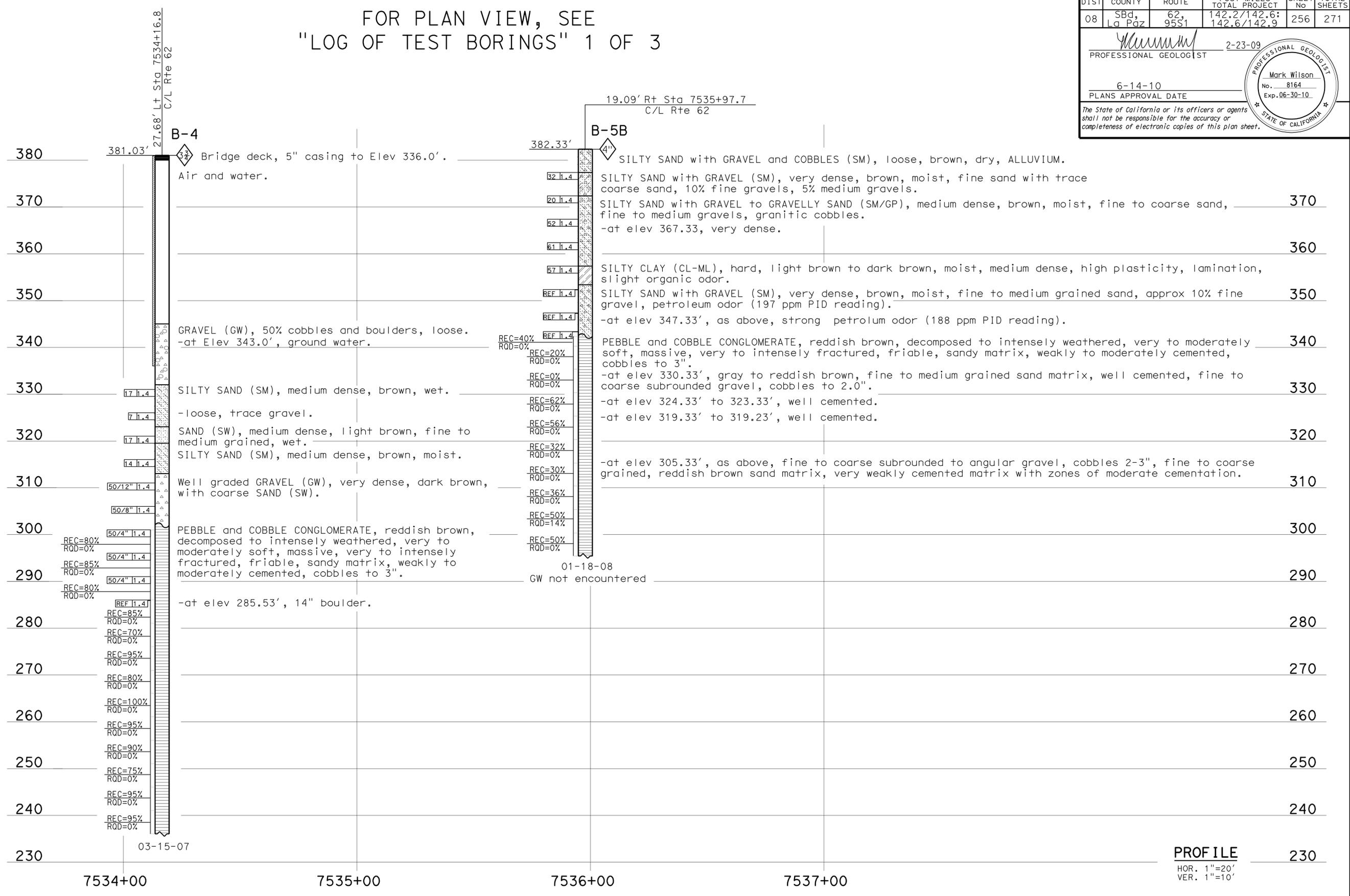


**LEGEND OF BORING OPERATIONS (continued)**



**LEGEND OF BORING OPERATIONS (continued)**





<b>ENGINEERING SERVICES</b>	<b>GEOTECHNICAL SERVICES</b>	FIELD INVESTIGATION BY: <b>M. Wilson</b>	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION
DRAWN BY: <b>W. Tang 11/2008</b>	CHECKED BY: <b>M. Wilson</b>	BRIDGE NO.: <b>RETAINING WALL NO. 7535 B</b>	POST MILE: <b>142.3</b>
		<b>LOG OF TEST BORINGS 2 OF 3</b>	

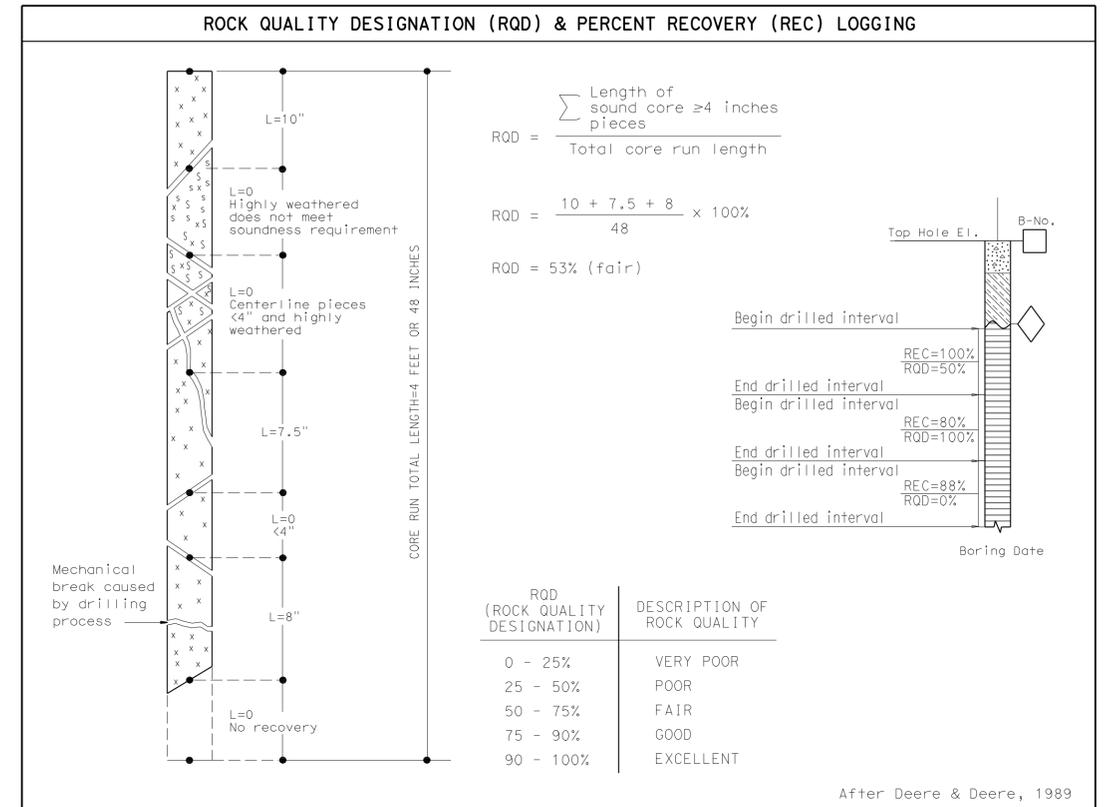
WEATHERING DESCRIPTORS							
Descriptors		Diagnostic features				General characteristics (strength, excavation, etc.) <sup>§</sup>	
		Chemical weathering-Discoloration and/or oxidation		Mechanical weathering-Grain boundary conditions (disaggregation) primarily for granitics and some coarse-grained sediments	Texture and solutioning		
Alphanumeric descriptor	Descriptive term	Body of rock	Fracture surfaces †		Texture	Solutioning	
W1	Fresh	No discoloration, not oxidized.	No discoloration or oxidation.	No separation, intact (tight).	No change.	No solutioning.	Hammer rings when crystalline rocks are struck. Almost always rock excavation except for naturally weak or weakly cemented rocks such as siltstones or shales.
W2	Slightly weathered to fresh <sup>o</sup>						
W3	Slightly weathered	Discoloration or oxidation is limited to surface of, or short distance from, fractures; some feldspar crystals are dull.	Minor to complete discoloration or oxidation of most surfaces.	No visible separation, intact (tight).	Preserved.	Minor leaching of some soluble minerals may be noted.	Hammer rings when crystalline rocks are struck. Body of rock not weakened. With few exceptions, such as siltstones or shales, classified as rock excavation.
W4	Moderately to slightly weathered <sup>o</sup>						
W5	Moderately weathered	Discoloration or oxidation extends from fractures usually throughout; Fe-Mg minerals are "rusty," feldspar crystals are "cloudy."	All fracture surfaces are discolored or oxidized.	Partial separation of boundaries visible.	Generally preserved.	Soluble minerals may be mostly leached.	Hammer does not ring when rock is struck. Body of rock is slightly weakened. Depending on fracturing, usually is rock excavation except in naturally weak rocks such as siltstones or shales.
W6	Intensely to moderately weathered <sup>o</sup>						
W7	Intensely weathered	Discoloration or oxidation throughout; all feldspars and Fe-Mg minerals are altered to some extent; or chemical alteration produces in-situ disaggregation, see grain boundary conditions.	All fracture surfaces are discolored or oxidized, surfaces friable.	Partial separation, rock is friable; in semi-arid conditions granitics are disaggregated.	Texture altered by chemical disintegration (hydration, argillation).	Leaching of soluble minerals may be complete.	Dull sound when struck with hammer, usually can be broken with moderate to heavy manual pressure or by light hammer blow without reference to planes of weakness such as incipient or hairline fractures, or veinlets. Rock is significantly weakened. Usually common excavation.
W8	Very intensely weathered						
W9	Decomposed	Discolored or oxidized throughout, but resistant minerals such as quartz may be unaltered; all feldspars and Fe-Mg minerals are completely altered to clay.		Complete separation of grain boundaries (disaggregated).	Resembles a soil, partial or complete remnant rock structure may be preserved; leaching of soluble minerals usually complete.		Can be granulated by hand. Always common excavation. Resistant minerals such as quartz may be present as "stringers" or "dikes."

Note: This chart and its horizontal categories are more readily applied to rocks with feldspars and mafic minerals. Weathering in various sedimentary rocks, particularly limestones and poorly indurated sediments, will not always fit the categories established. This chart and weathering categories may have to be modified for particular site conditions or alteration such as hydrothermal effects; however, the basic framework and similar descriptors are to be used.

<sup>o</sup> Combination descriptors are permissible where equal distribution of both weathering characteristics are present over significant intervals or where characteristics present are "in between" the diagnostic feature. However, dual descriptors should not be used where significant, identifiable zones can be delineated. When given as a range, only two adjacent terms may be combined. "Decomposed to slightly weathered," or "moderately weathered to fresh" are not acceptable.

† Does not include directional weathering along shears or faults and their associated features. For example, a shear zone that carried weathering to great depths into a fresh rock mass would not require the rock mass to be classified as weathered.

§ These are generalizations and should not be used as diagnostic features for weathering or excavation classification. These characteristics vary to a large extent based on naturally weak materials or cementation and type of excavation.



### FRACTURE DENSITY

Modified from United States Bureau of Reclamation, Engineering Geology Field Manual.

**FRACTURE DENSITY-** Based on the spacing of all natural fractures in an exposure or core recovery lengths in boreholes; excludes mechanical breaks, shears, and shear zones; however, shear-disturbed zones (fracturing outside the shear) are included. Descriptors for fracture density apply to all rock exposures such as tunnel walls, dozer trenches, outcrops, or foundation cut slopes and inverts, as well as boreholes. Descriptive criteria presented below are based on borehole cores where lengths are measured along the core axis, for other exposures the criteria is distance measured between fractures (size of blocks).

**UNFRACTURED (FD0):** No fractures.

**VERY SLIGHTLY FRACTURED (FD1):** Core recovered mostly in lengths greater than 3 ft.

**SLIGHTLY TO VERY SLIGHTLY FRACTURED (FD2)\***

**SLIGHTLY FRACTURED (FD3):** Core recovered mostly in lengths from 1 to 3 ft. with few scattered lengths less than 1 ft or greater than 3 ft.

**MODERATELY TO SLIGHTLY FRACTURED (FD4)\***

**MODERATELY FRACTURED (FD5):** Core recovered mostly in 0.3 to 1.0 ft lengths with most lengths about 0.6 ft.

**INTENSELY TO MODERATELY FRACTURED (FD6)\***

**INTENSELY FRACTURED (FD7):** Lengths average from 0.1 to 0.3 ft with scattered fragmented intervals. Core recovered mostly in lengths less than 0.3 ft.

**VERY INTENSELY TO INTENSELY FRACTURED (FD8)\***

**VERY INTENSELY FRACTURED (FD9):** Core recovered mostly as chips and fragments with a few scattered short core lengths.

\* Combinations of fracture densities (e.g. very intensely to intensely fractured, or moderately to slightly fractured) are used where equal distribution of both fracture density characteristics are present over a significant interval or exposure, or where characteristics are "in between" the descriptor definitions.

### ROCK HARDNESS DESCRIPTORS

Alphanumeric Descriptor	Descriptor	Criteria
H1	Extremely hard	Core, fragment, or exposure cannot be scratched with knife or sharp pick; can only be chipped with repeated heavy hammer blows.
H2	Very hard	Cannot be scratched with knife or sharp pick. Core or fragment breaks with repeated heavy hammer blows.
H3	Hard	Can be scratched with knife or sharp pick with difficulty (heavy pressure). Heavy hammer blow required to break specimen.
H4	Moderately hard	Can be scratched with knife or sharp pick with light or moderate pressure. Core or fragment breaks with moderate hammer blow.
H5	Moderately soft	Can be grooved 1/16 inch deep by knife or sharp pick with moderate or heavy pressure. Core or fragment breaks with light hammer blow or heavy manual pressure.
H6	Soft	Can be grooved or gouged easily by knife or sharp pick with light pressure, can be scratched with fingernail. Breaks with light to moderate manual pressure.
H7	Very soft	Can be readily indented, grooved or gouged with fingernail, or carved with a knife. Breaks with light manual pressure.

Any bedrock unit softer than H7, very soft, is to be described using ASTM D-2488 consistency descriptors.

Note: Although "sharp pick" is included in these definitions, descriptions of ability to be scratched, grooved or gouged by a knife is the preferred criteria.

Modified from United States Bureau of Reclamation, Engineering Geology Field Manual.

### BEDDING, FOLIATION, OR FLOW TEXTURE DESCRIPTORS

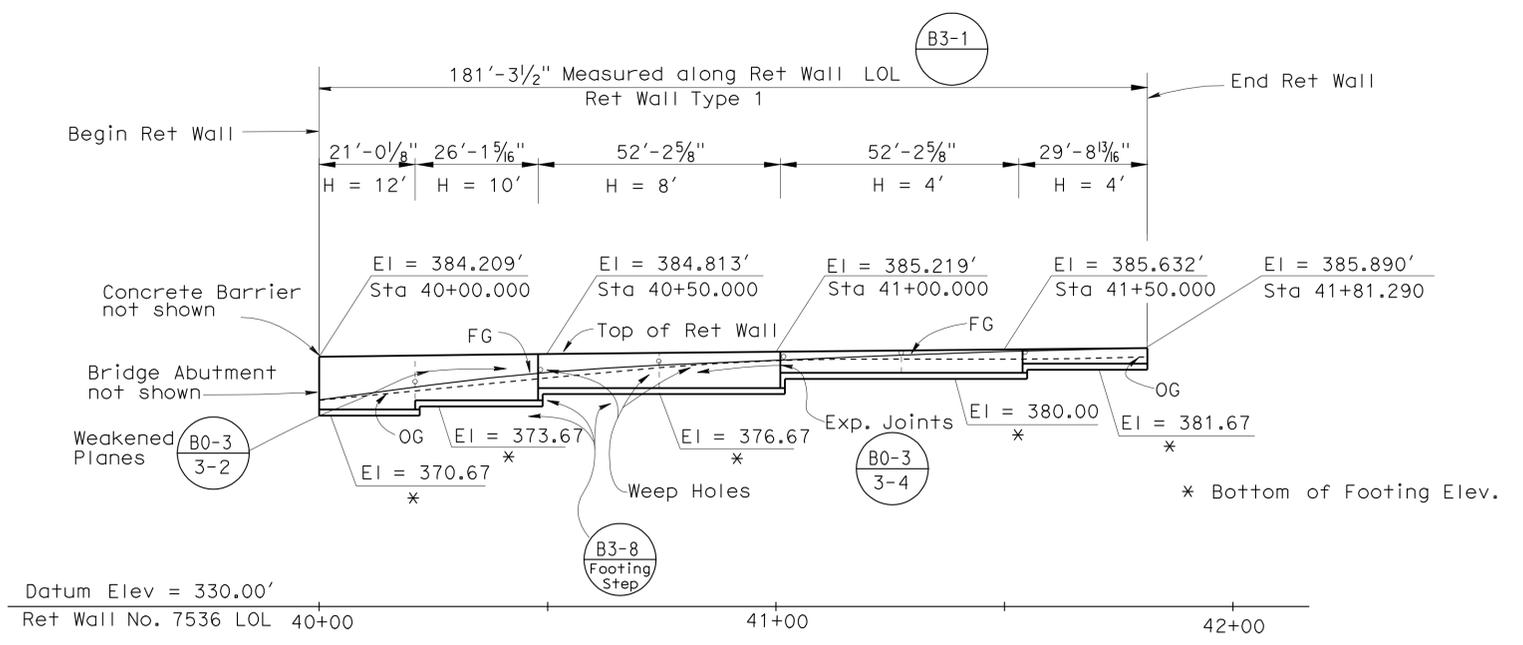
Descriptors	Thickness / Spacing
Massive	Greater than 10 ft
Very thickly (bedded, foliated, or banded)	3 to 10 ft
Thickly	1 to 3 ft
Moderately	0.3 to 1 ft
Thinly	0.1 to 0.3 ft
Very thinly	0.03 (3/8 in) to 0.1 ft
Laminated (intensely foliated or banded)	Less than 0.03 ft (3/8 in)

Modified from United States Bureau of Reclamation, Engineering Geology Field Manual.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBd, a Paz	62, 95S1	142.2/142.6: 142.6/142.9	258	271

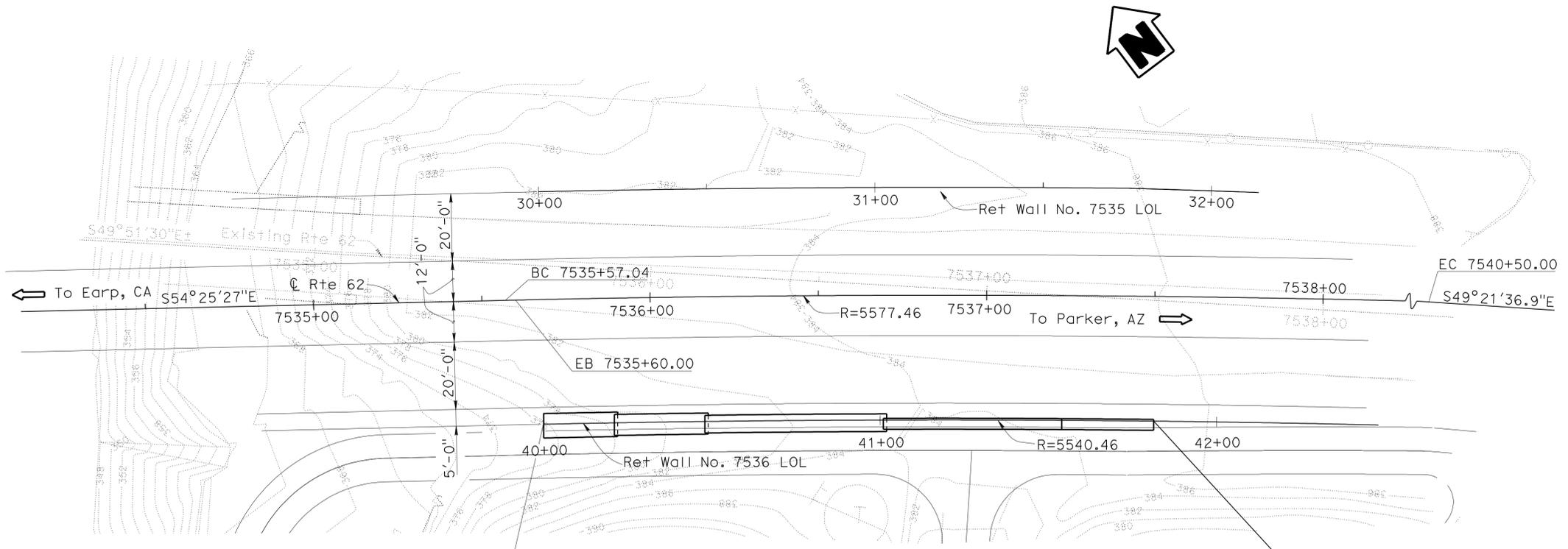
David Soon 6-24-09  
 REGISTERED CIVIL ENGINEER DATE  
 6-14-10  
 PLANS APPROVAL DATE  
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

REGISTERED PROFESSIONAL ENGINEER  
 David Soon  
 No. 51862  
 Exp. 6-30-10  
 CIVIL  
 STATE OF CALIFORNIA



**DEVELOPED ELEVATION** (B3-1)  
1" = 20'

QUANTITIES	
STRUCTURE EXCAVATION (RETAINING WALL)	245 CY
STRUCTURE BACKFILL (RETAINING WALL)	200 CY
STRUCTURAL CONCRETE, RETAINING WALL	110 CY
BAR REINFORCING STEEL (RETAINING WALL)	12,400 LB
TUBULAR HANDRAILING	182 LF
CONCRETE BARRIER (TYPE 80SWA MODIFIED)	182 LF



**PLAN**  
1" = 20'

Rte 62  
 $\Delta = 5^\circ 3' 51''$   
 $R = 5577.464'$   
 $T = 246.640'$   
 $L = 492.959'$

Begin Ret Wall No. 7536 LOL  
 Sta 40+00.000  
 37' Rt Sta 7535+67.500  $\angle$  Rte 62

End Ret Wall No. 7536 LOL  
 Sta 41+81.290  
 37' Rt 7537+50.000  $\angle$  Rte 62

Notes:  
 1. For "TYPICAL SECTION", "INDEX TO PLANS", "STANDARD PLANS LIST", see "GENERAL PLAN NO. 2", sheet.

 DESIGN ENGINEER	DESIGN	BY David Soon	CHECKED Rakesh Deo	Service Load Design	Live Loading: 2' Live Load Surcharge	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 7</b>	BRIDGE NO.	<b>RETAINING WALL NO. 7536</b> <b>GENERAL PLAN NO. 1</b>	
	DETAILS	BY Yingjue Feng	CHECKED Rakesh Deo	LAYOUT	BY David Soon			CHECKED Rakesh Deo		POST MILE
	QUANTITIES	BY Eduardo Ortega Jr.	CHECKED Gerald Dickerson	SPECIFICATIONS	BY Kevin Ellingson			PLANS AND SPECS COMPARED		Kevin Ellingson
STRUCTURES DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 10/25/05)						ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0 1 2 3	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 1 OF 9

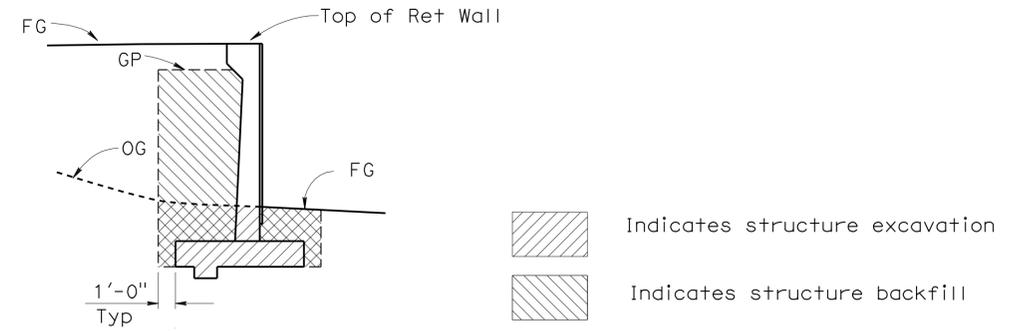
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBD, a Paz	62, 95S1	142.2/142.6: 142.6/142.9	259	271

David Soon 12-10-09  
 REGISTERED CIVIL ENGINEER DATE  
 6-14-10  
 PLANS APPROVAL DATE  
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### INDEX TO PLANS

SHEET NO.	TITLE
1.	GENERAL PLAN NO. 1
2.	GENERAL PLAN NO. 2
3.	CONCRETE BARRIER TYPE 80SWA MODIFIED LAYOUT
4.	CONCRETE BARRIER TYPE 80SWA MODIFIED DETAILS NO. 1
5.	CONCRETE BARRIER TYPE 80SWA MODIFIED DETAILS NO. 2
6.	CONCRETE BARRIER TYPE 80SWA MODIFIED DETAILS NO. 3
7.	LOG OF TEST BORINGS 1 OF 3
8.	LOG OF TEST BORINGS 2 OF 3
9.	LOG OF TEST BORINGS 3 OF 3

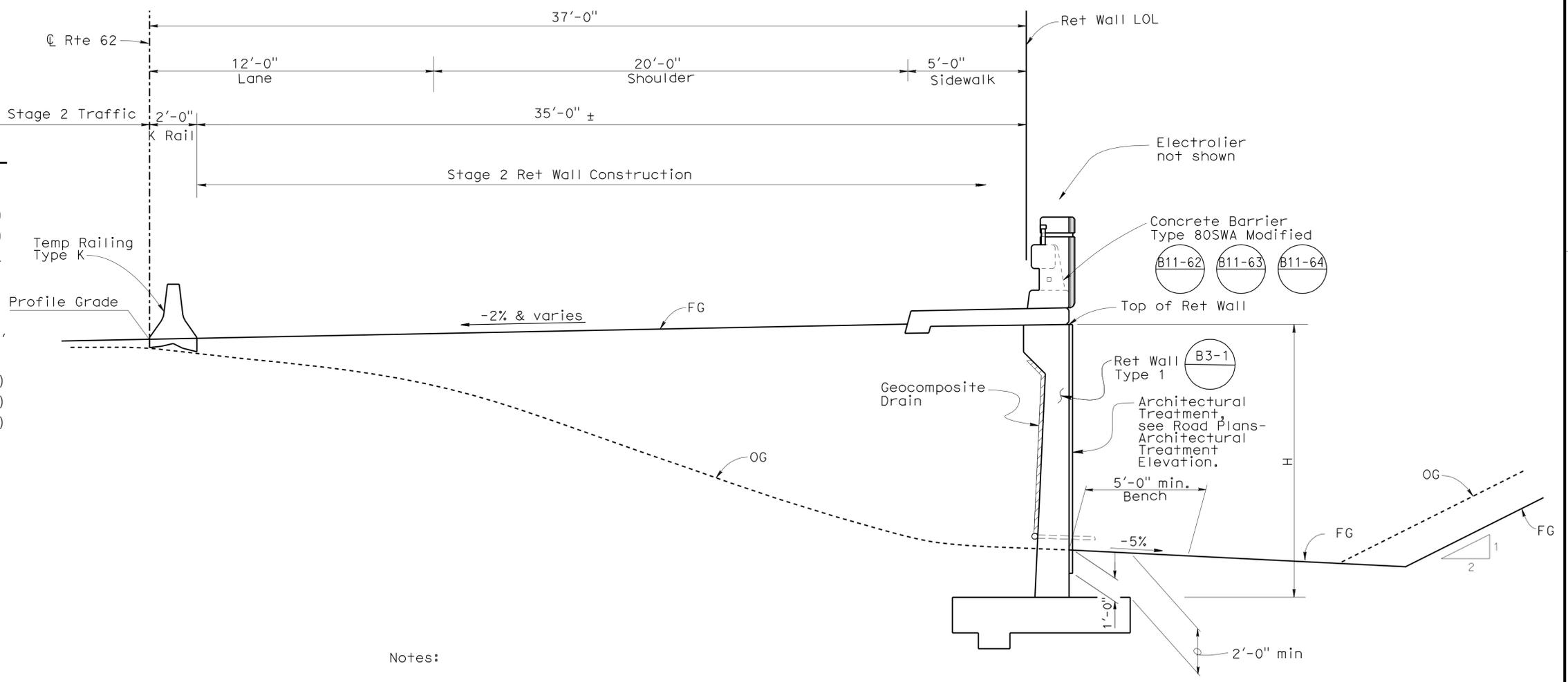


### LIMITS OF EXCAVATION AND BACKFILL

3/16" = 1'

### STANDARD PLANS DATED MAY 2006

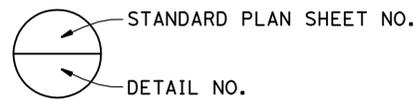
A10A	ACRONYMS AND ABBREVIATIONS (SHEET 1 OF 2)
A10B	ACRONYMS AND ABBREVIATIONS (SHEET 2 OF 2)
A62B	LIMITS OF PAYMENT FOR EXCAVATION BACKFILL - BRIDGE SURCHARGE AND WALL
A82B1	CRASH CUSHION (TYPE ADIEM)
B0-3	BRIDGE DETAILS
B3-1	RETAINING WALL TYPE 1 - H = 4' THROUGH 30'
B3-8	RETAINING WALL DETAILS NO. 1
RSP B11-62	CONCRETE BARRIER TYPE 80SW (SHEET 1 OF 3)
RSP B11-63	CONCRETE BARRIER TYPE 80SW (SHEET 2 OF 3)
RSP B11-64	CONCRETE BARRIER TYPE 80SW (SHEET 3 OF 3)
RSP ES-9A	ELECTRICAL SYSTEMS (ELECTRICAL DETAIL, STRUCTURE INSTALLATIONS)
ES-9B	ELECTRICAL SYSTEMS (ELECTRICAL DETAIL, STRUCTURE INSTALLATIONS)
RSP ES-9C	ELECTRICAL SYSTEMS (ELECTRICAL DETAIL, STRUCTURE INSTALLATIONS)
ES-9D	ELECTRICAL SYSTEMS (ELECTRICAL DETAIL, STRUCTURE INSTALLATIONS)



- Notes:
- For Geocomposite Drain detail, See "CONCRETE BARRIER TYPE 80SWA MODIFIED DETAILS NO. 2" sheet.

### TYPICAL SECTION

3/8" = 1'

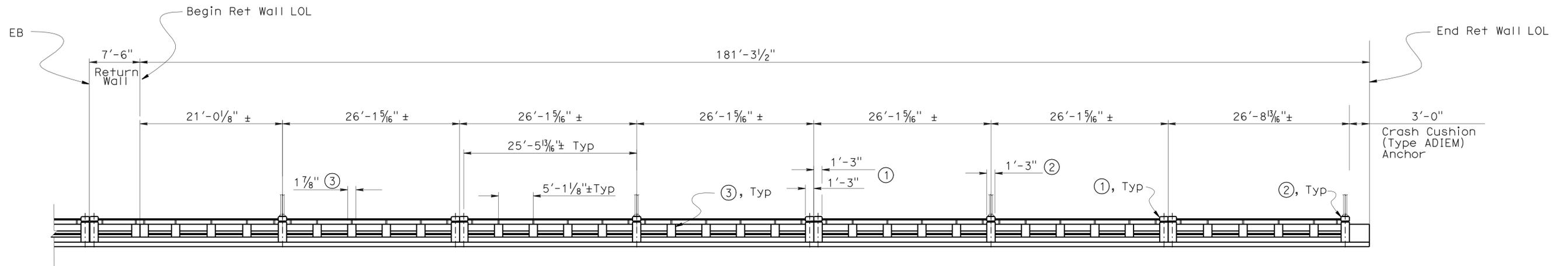


DESIGN	BY David Soon	CHECKED Rakesh Deo	<b>STATE OF CALIFORNIA</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>DIVISION OF ENGINEERING SERVICES</b> <b>STRUCTURE DESIGN</b> <b>DESIGN BRANCH 7</b>	BRIDGE NO.	<b>RETAINING WALL NO. 7536</b> <b>GENERAL PLAN NO. 2</b>
DETAILS	BY Yingjue Feng	CHECKED Rakesh Deo			POST MILE	
QUANTITIES	BY Eduardo Ortega Jr.	CHECKED Gerald Dickerson			142.3	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			CU 08 EA 378701	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 2 OF 9

USERNAME => trlenard DATE PLOTTED => 17-JUN-2010 TIME PLOTTED => 10:05

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBG, a Paz	62, 95S1	142.2/142.6 142.6/142.9	260	271

David Soon 12-10-09  
 REGISTERED CIVIL ENGINEER DATE  
 6-14-10  
 PLANS APPROVAL DATE  
 No. 51862  
 Exp. 6-30-10  
 CIVIL  
 STATE OF CALIFORNIA  
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- ① Double Pylon & Ret Wall Exp. Joint.
- ② Pylon and Electrolier.
- ③ Concrete Barrier Type 80SW post.

Notes:

1. For Concrete Barrier Type 80SW details, see  $\textcircled{B11-62}$  ,  $\textcircled{B11-63}$  and  $\textcircled{B11-64}$  .
2. For Pylon and Double Pylon details, see "CONCRETE BARRIER TYPE 80SWA MODIFIED DETAILS NO. 1" and "CONCRETE BARRIER TYPE 80SWA MODIFIED DETAILS NO. 2" sheets.
3. For Crash Cushion Anchor details, see "CONCRETE BARRIER TYPE 80SWA MODIFIED DETAILS NO. 3" sheet.

**DEVELOPED ELEVATION  
CONCRETE BARRIER LAYOUT**

1/8"=1'-0"

DESIGN	BY David Soon	CHECKED Rakesh Deo
DETAILS	BY Yingjue Feng	CHECKED Rakesh Deo
QUANTITIES	BY Eduardo Ortega Jr.	CHECKED Gerald Dickerson

**STATE OF CALIFORNIA**  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
**DESIGN BRANCH 7**

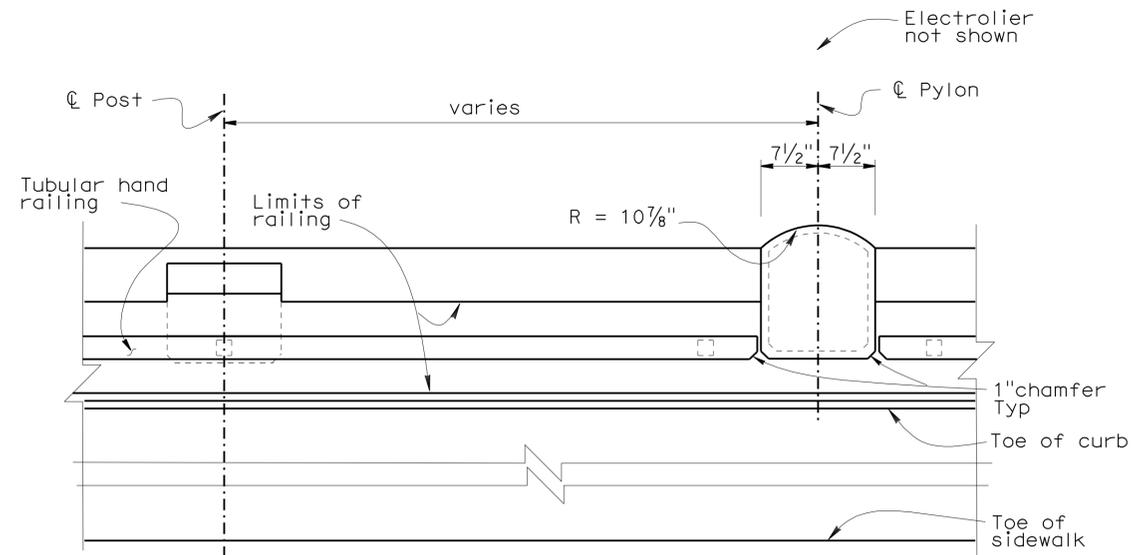
BRIDGE NO.	
POST MILE	142.3

**RETAINING WALL NO. 7536**  
**CONCRETE BARRIER TYPE 80SWA  
MODIFIED LAYOUT**

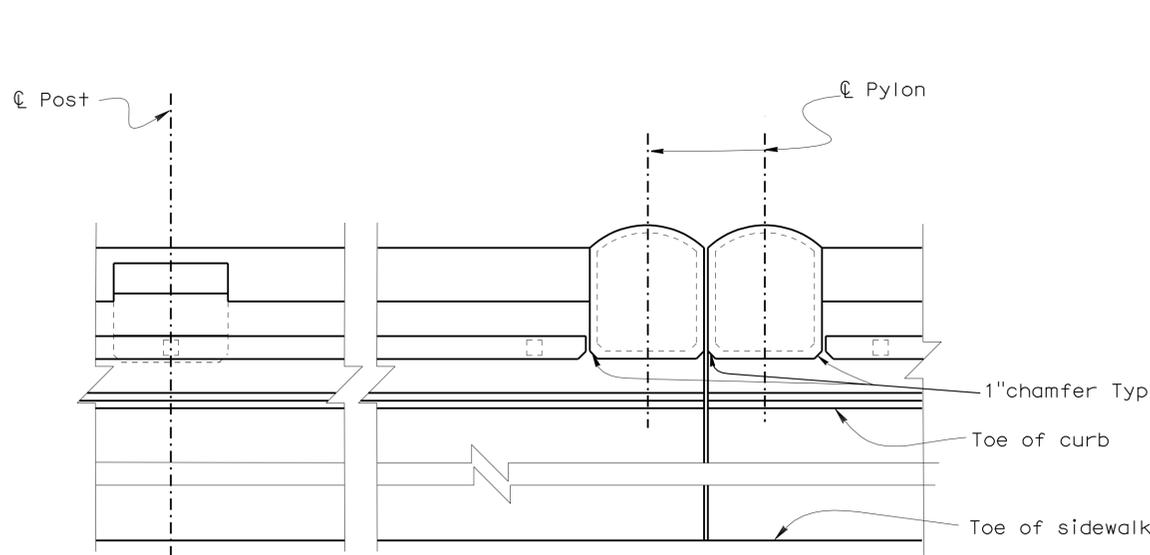


REVISION DATES									
10-29-08	10-29-08	10-29-08	10-29-08	11-17-08	12-14-08	12-29-08	2-24-09	2-26-09	12-2-09
									SHEET 3 OF 9

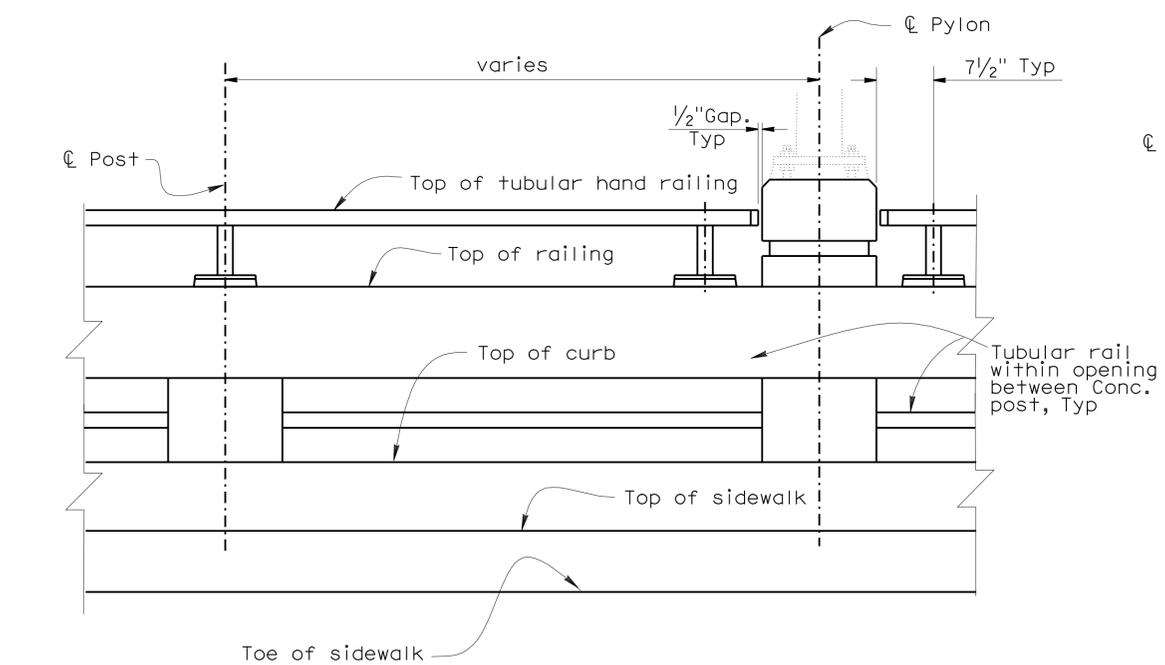
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBD, a Paz	62, 95S1	142.2/142.6 142.6/142.9	261	271
David Soon 6-24-09				REGISTERED CIVIL ENGINEER DATE	
6-14-10				PLANS APPROVAL DATE	
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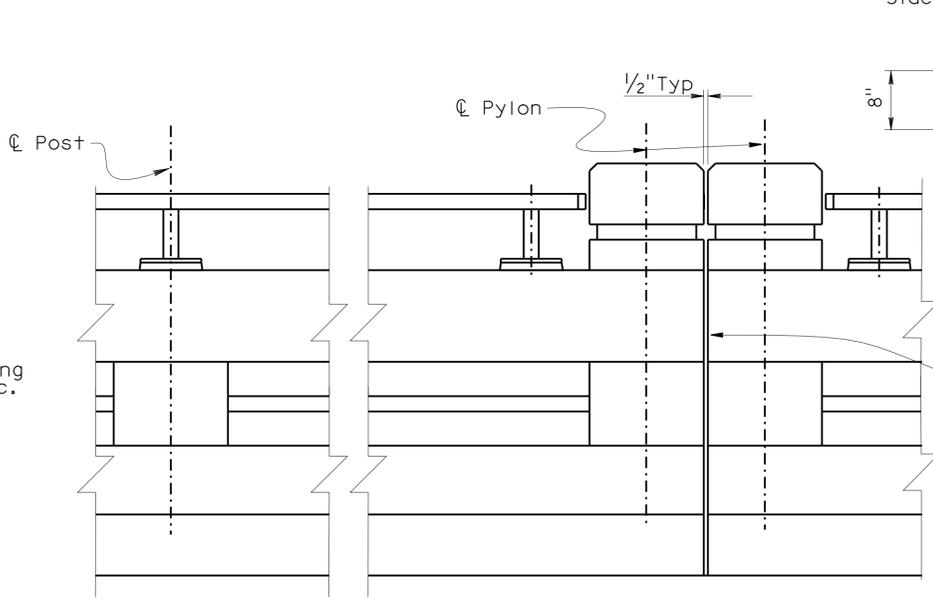
PLAN AT PYLON



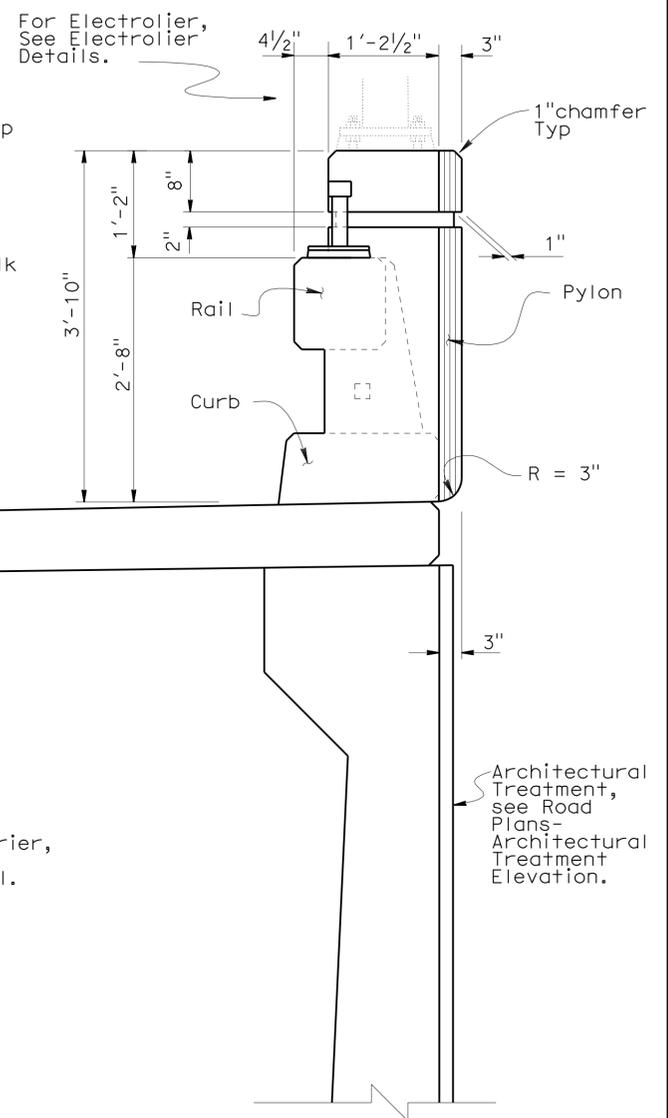
PLAN AT DOUBLE PYLON



ELEVATION AT PYLON



ELEVATION AT DOUBLE PYLON



TYPICAL SECTION AT PYLON

Notes:

1. For Concrete Barrier layout, see "CONCRETE BARRIER TYPE 80SWA MODIFIED LAYOUT" sheet.
2. For Concrete Barrier Type 80SW details, see  $\beta 11-62$ ,  $\beta 11-63$  and  $\beta 11-64$ .
3. For Concrete Barrier details not shown, see "CONCRETE BARRIER TYPE 80SWA MODIFIED DETAILS NO. 2" and "CONCRETE BARRIER TYPE 80SWA MODIFIED DETAILS NO. 3" sheets.

CONCRETE BARRIER TYPE 80SWA MODIFIED DETAIL

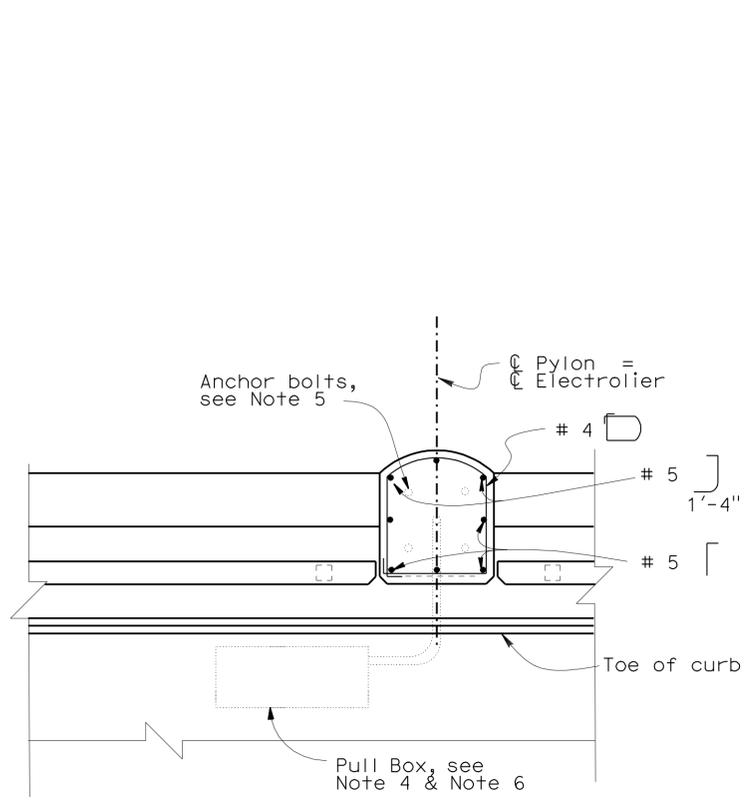
1" = 1'-0"

DESIGN	BY	David Soon	CHECKED	Rakesh Deo	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 7	BRIDGE NO.		
	DETAILS	BY	Yingjue Feng	CHECKED			Rakesh Deo	POST MILE	142.3
	QUANTITIES	BY	Eduardo Ortega Jr.	CHECKED			Gerald Dickerson		
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)						CU 08 EA 378701	DISREGARD PRINTS BEARING EARLIER REVISION DATES		
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS						0 1 2 3	REVISION DATES		
							10-29-08	11-3-08	
							11-26-08	12-19-08	
							2-24-09	2-28-09	
							4-15-09		
							SHEET	OF	
							4	9	

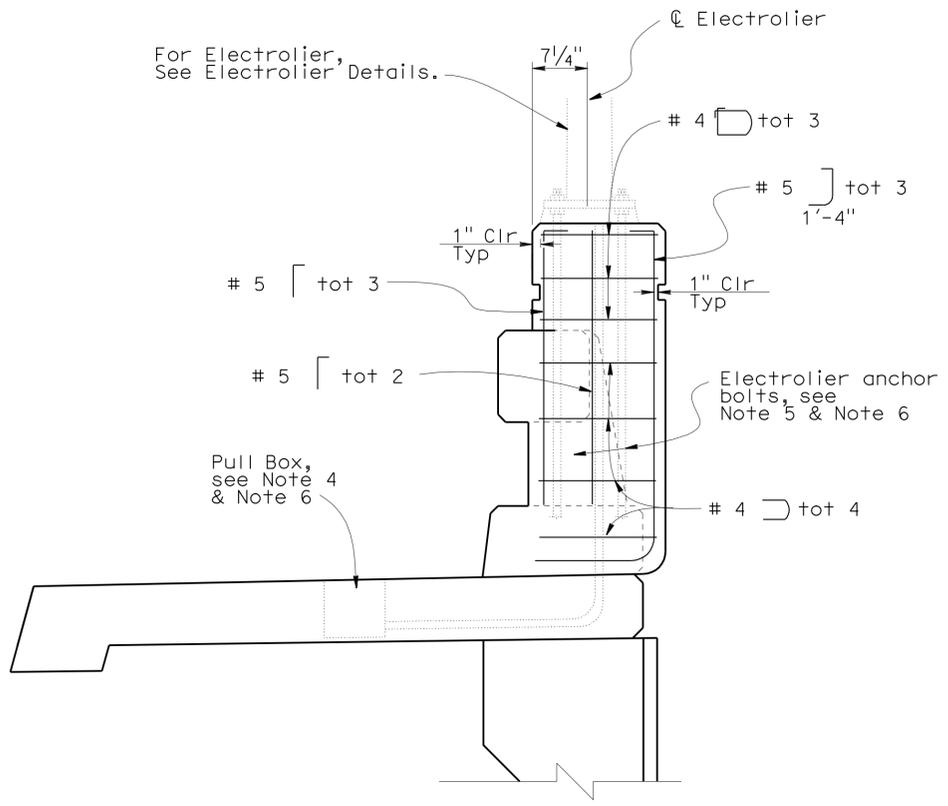
RETAINING WALL NO. 7536	
CONCRETE BARRIER TYPE 80SWA MODIFIED DETAILS NO. 1	

TIME PLOTTED => 10:05 USERNAME => r1lenard DATE PLOTTED => 17-JUN-2010

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBD, a Paz	62, 95S1	142.2/142.6 142.6/142.9	262	271
David Soon 6-24-09 REGISTERED CIVIL ENGINEER DATE					
6-14-10 PLANS APPROVAL DATE					
<i>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.</i>					



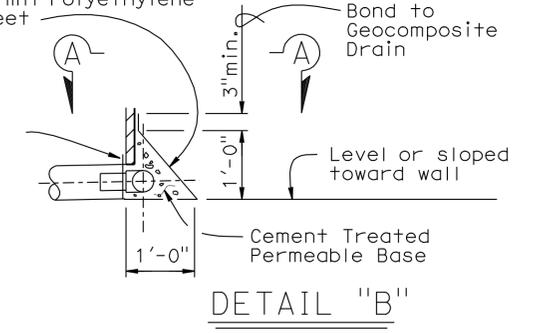
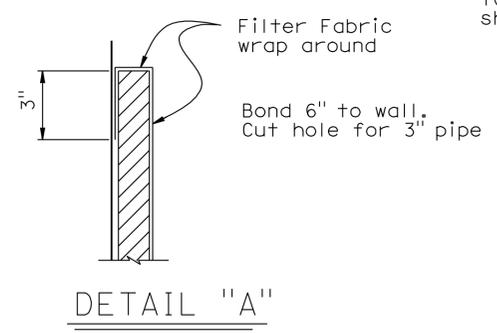
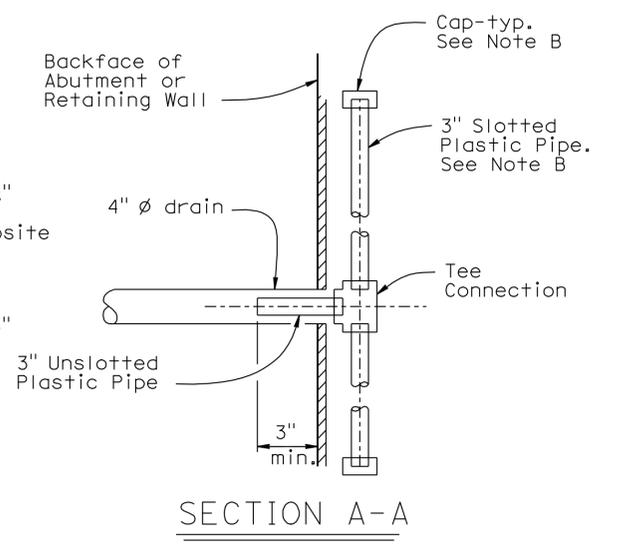
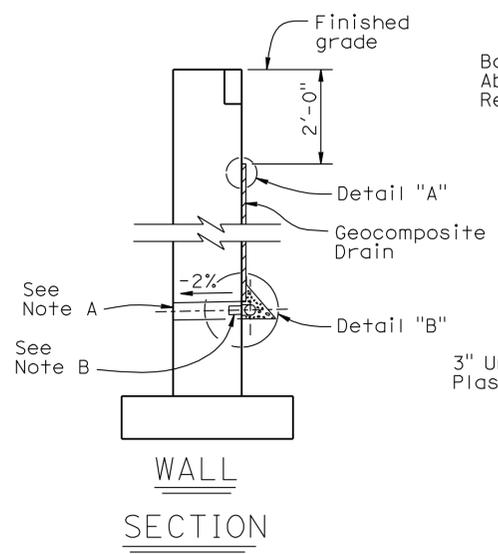
**PLAN**



**TYPICAL SECTION**  
Tubular Railing not shown

**PYLON DETAIL**  
1" = 1'-0"

- Notes:
- For Concrete Barrier layout, see "CONCRETE BARRIER TYPE 80SWA MODIFIED LAYOUT" sheet.
  - For Concrete Barrier Type 80SW details, see , and .
  - For Concrete Barrier details not shown, see "CONCRETE BARRIER TYPE 80SWA MODIFIED DETAILS NO. 1" and "CONCRETE BARRIER TYPE 80SWA MODIFIED DETAILS NO. 3" sheets.
  - For electrical details see , , & .
  - For anchor bolts size and placement, see Electrolier Details.
  - Pull Box and anchor bolts only at electrolier locations.
  - Concrete Barrier Type 80SW post and longitudinal reinforcement continuous through pylon. This reinforcement is not shown.

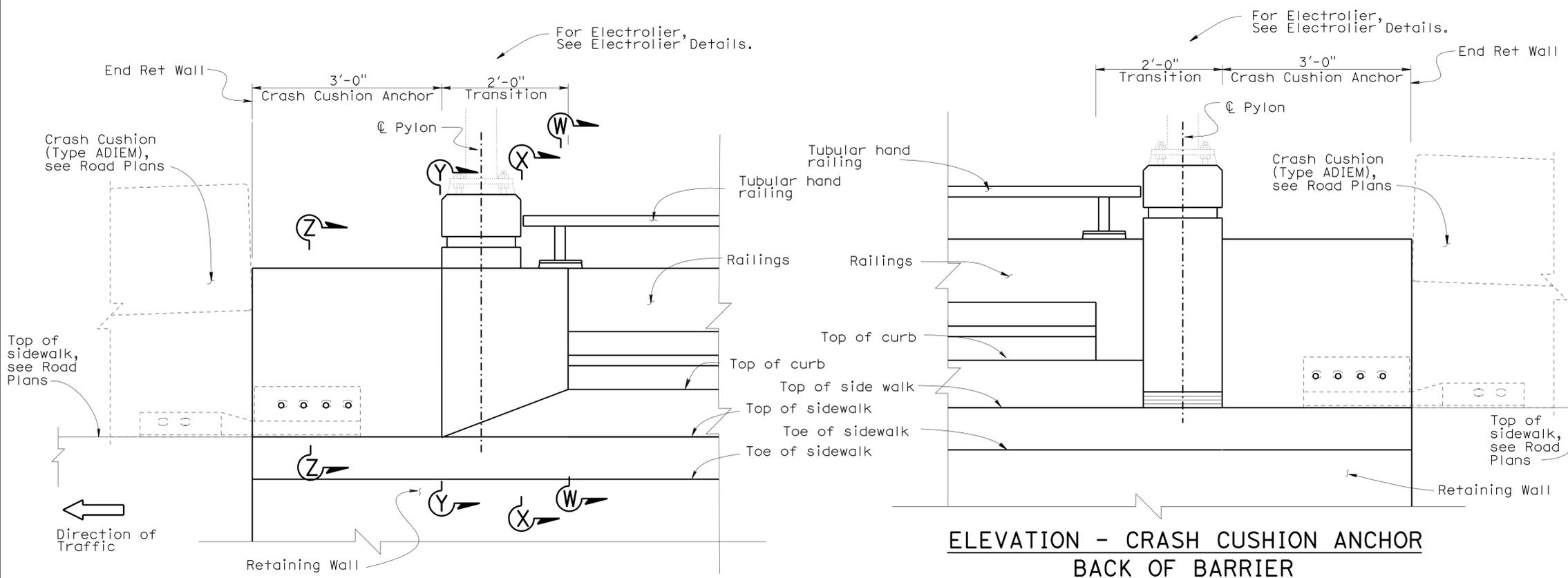


**WEEP HOLE AND GEOCOMPOSITE DRAIN**

- Notes:
- 4" Ø drains at intermediate sag points and at 25' max center to center (9' c-c for Type 3 and 9'-3" c-c for Type 4 retaining walls). For walls adjacent to sidewalks or curbs, provide 4" cast iron or asbestos cement pipe under the sidewalk to discharge through curb face. Exposed wall drains shall be located 3"± above finished grade.
  - Geocomposite drain, cement treated permeable base, and 3"Ø slotted plastic pipe continuous behind retaining wall or abutment. Cap ends of pipe. Provide "Tee" connection at each 4" Ø drain.
  - Connect the low end of plastic pipe to the main outlet pipe as applicable.

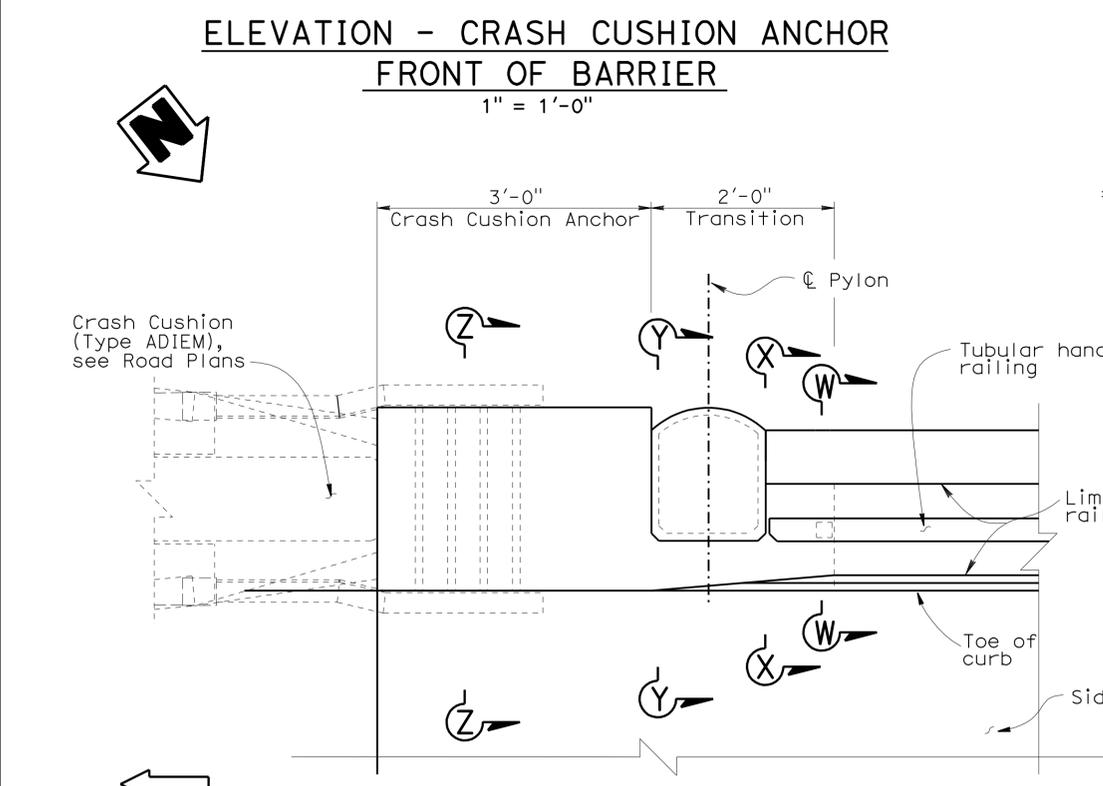
DESIGN BY David Soon CHECKED Rakesh Deo DETAILS BY Yingjue Feng CHECKED Rakesh Deo QUANTITIES BY Eduardo Ortega Jr. CHECKED Gerald Dickerson			STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH <b>7</b>	BRIDGE NO. POST MILE 142.3	RETAINING WALL NO. 7536 CONCRETE BARRIER TYPE 80SWA MODIFIED DETAILS NO. 2
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)			ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3	CU 08 EA 378701	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 11-28-08 12-14-08 12-23-08 1-2-09 2-24-09 2-28-09 4-18-09 6-16-09 SHEET 5 OF 9

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBD, a Paz	62, 95S1	142.2/142.6: 142.6/142.9	263	271
David Soon 12-10-09				REGISTERED CIVIL ENGINEER	DATE
6-14-10				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.				David Soon No. 51862 Exp. 6-30-10 CIVIL	

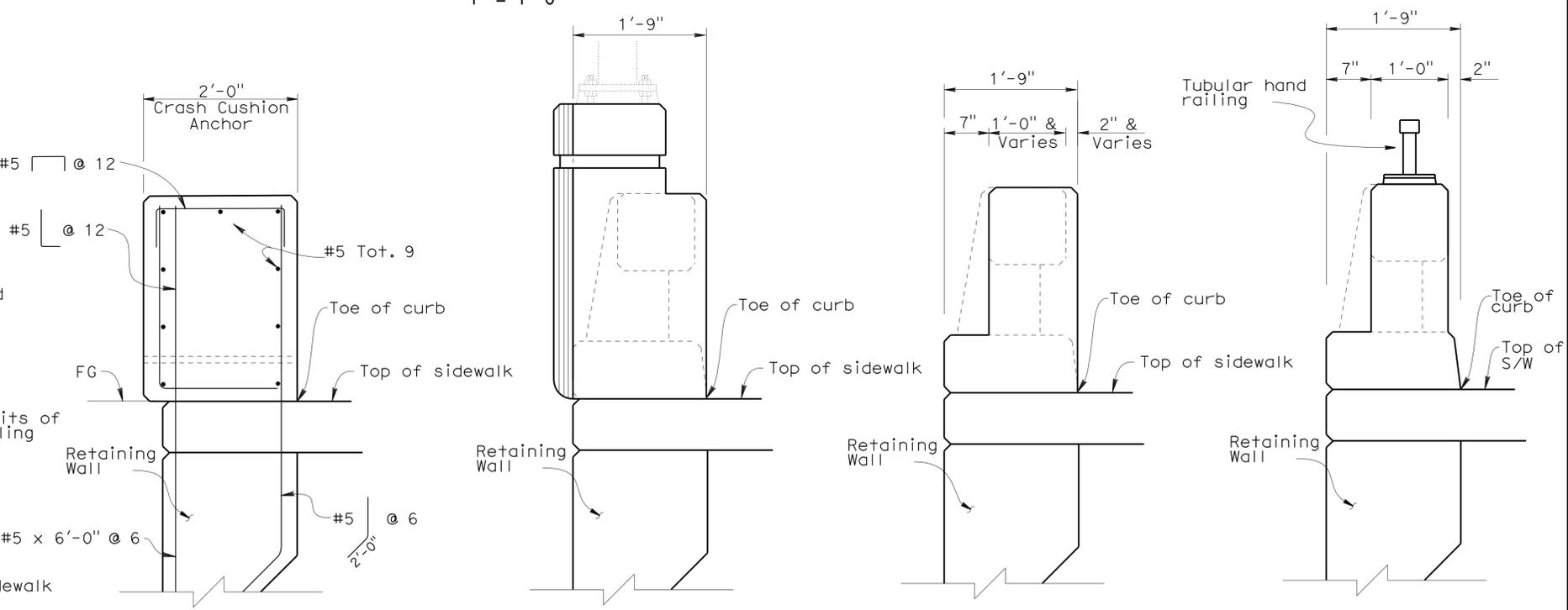


**ELEVATION - CRASH CUSHION ANCHOR  
BACK OF BARRIER**  
1" = 1'-0"

- Notes:
1. For Concrete Barrier layout, see "CONCRETE BARRIER TYPE 80SWA MODIFIED LAYOUT" sheet.
  2. For Concrete Barrier Type 80SW details, see **B11-62**, **B11-63** and **B11-64**.
  3. For Concrete Barrier details not shown, see "CONCRETE BARRIER TYPE 80SWA MODIFIED DETAILS NO. 1" and "CONCRETE BARRIER TYPE 80SWA MODIFIED DETAILS NO. 2" sheets.
  4. Extend all Concrete Barrier Type 80SW reinforcement 2'-0" into Crash Cushion Anchor.



**ELEVATION - CRASH CUSHION ANCHOR  
FRONT OF BARRIER**  
1" = 1'-0"

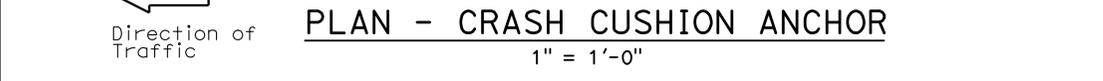


**SECTION Z-Z**  
1" = 1'-0"

**SECTION Y-Y**  
1" = 1'-0"

**SECTION X-X**  
1" = 1'-0"

**SECTION W-W**  
1" = 1'-0"



**PLAN - CRASH CUSHION ANCHOR**  
1" = 1'-0"



DESIGN BY David Soon			CHECKED Rakesh Deo	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 7</b>	BRIDGE NO.	<b>RETAINING WALL NO. 7536</b> <b>CONCRETE BARRIER TYPE 80SWA</b> <b>MODIFIED DETAILS NO. 3</b>							
DETAILS BY Y Feng / G Dickerson			CHECKED Rakesh Deo			POST MILE								
QUANTITIES BY Eduardo Ortega Jr.			CHECKED Gerald Dickerson			142.3								
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)					ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	CU 08 EA 378701	DISREGARD PRINTS BEARING EARLIER REVISION DATES	<table border="1"> <tr> <th>REVISION DATES</th> <th>SHEET</th> <th>OF</th> </tr> <tr> <td>11-18-08 11-26-08 12-14-08 12-23-08 2-24-09 2-26-09 4-18-09 6-16-09 12-3-09 12-8-09</td> <td>6</td> <td>9</td> </tr> </table>	REVISION DATES	SHEET	OF	11-18-08 11-26-08 12-14-08 12-23-08 2-24-09 2-26-09 4-18-09 6-16-09 12-3-09 12-8-09	6	9
REVISION DATES	SHEET	OF												
11-18-08 11-26-08 12-14-08 12-23-08 2-24-09 2-26-09 4-18-09 6-16-09 12-3-09 12-8-09	6	9												

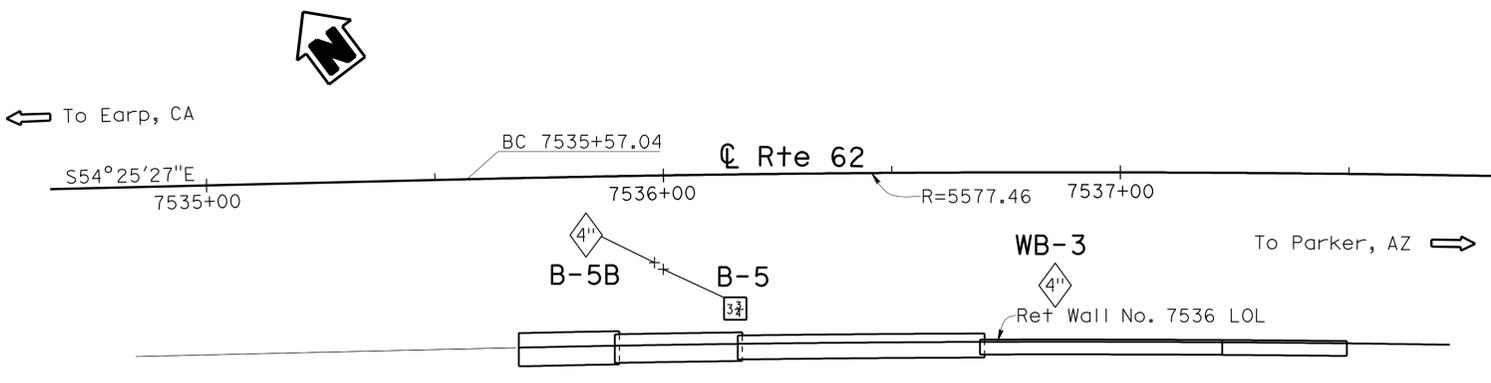
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	Sbd, La Paz	62, 95S1	142.2/142.6; 142.6/142.9	264	271

2-23-09  
PROFESSIONAL GEOLOGIST

6-14-10  
PLANS APPROVAL DATE

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PROFESSIONAL GEOLOGIST  
 Mark Wilson  
 No. 8164  
 Exp. 06-30-10  
 STATE OF CALIFORNIA



**PLAN**  
1" = 20'

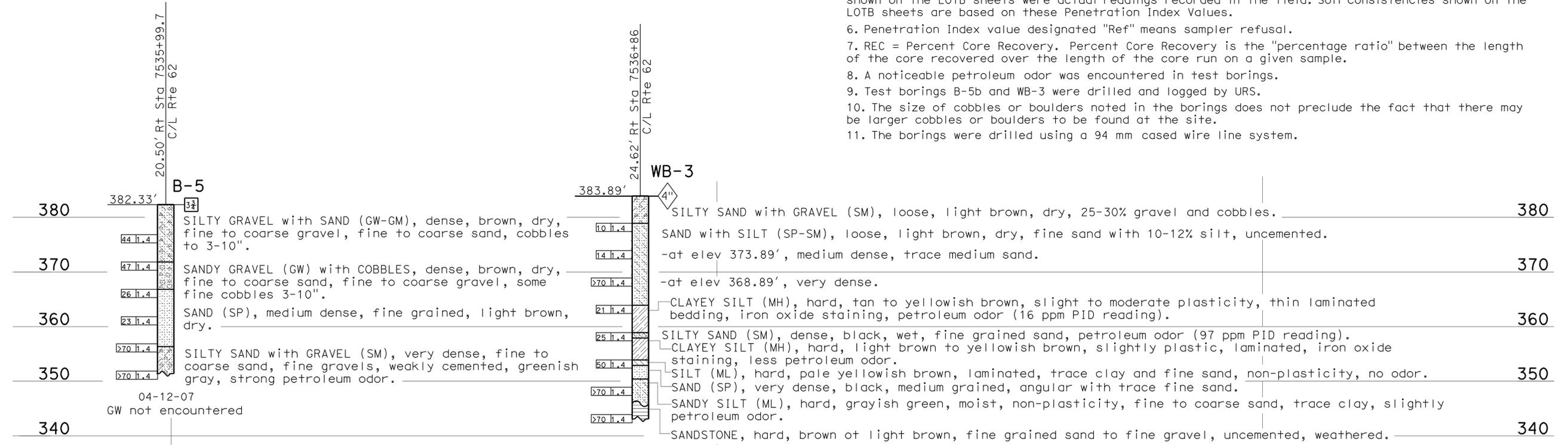
**NOTES:**

1. Groundwater was encountered, but not measured in some borings, due to the immediate backfilling of the boring. The Contractor should anticipate encountering ground water during the excavation and construction of all foundation supports. De-watering of the footing excavations may be required. Groundwater surface elevations are subject to seasonal fluctuations and will be encountered at higher or lower elevations depending on conditions at time of construction.
2. The descriptions and classifications of rock and/or soil, including consistency and relative density descriptors, used by the field and/or office personnel for the exploration boreholes shown on this sheet are based on the "Soil and Rock Logging Classification Manual (Field Guide)". Engineering Service Center, Office of Structural Foundations, August 1996
3. Soil colors were determined by using Munsell Soil Color Charts (1994, Revised Edition). Rock colors were determined using USGS rock color charts (1995, revised text).
4. Test borings B-5b and WB-3 utilized a Safety hammer to advance the sampler. Penetration Index values shown on the LOTB sheets were actual readings recorded in the field. Soil consistencies shown on the LOTB sheets are based on these Penetration Index Values.
5. Test boring B-5 utilized a CME automatic hammer to advance the sampler. Penetration Index values shown on the LOTB sheets were actual readings recorded in the field. Soil consistencies shown on the LOTB sheets are based on these Penetration Index Values.
6. Penetration Index value designated "Ref" means sampler refusal.
7. REC = Percent Core Recovery. Percent Core Recovery is the "percentage ratio" between the length of the core recovered over the length of the core run on a given sample.
8. A noticeable petroleum odor was encountered in test borings.
9. Test borings B-5b and WB-3 were drilled and logged by URS.
10. The size of cobbles or boulders noted in the borings does not preclude the fact that there may be larger cobbles or boulders to be found at the site.
11. The borings were drilled using a 94 mm cased wire line system.

**BENCH MARK**

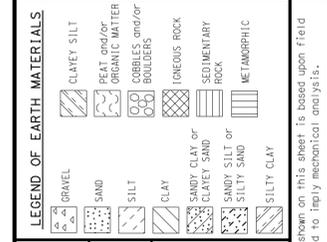
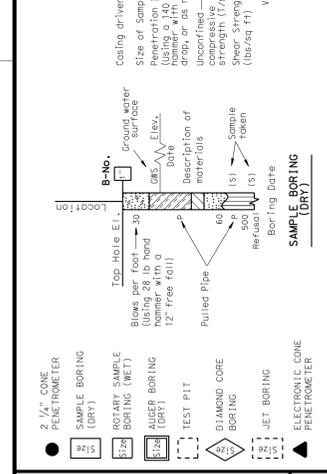
**SURVEY CONTROL**  
 PHOTO PT 62-2-93 (NOT SHOWN ON PLAN)  
 Fnd "PK" NAIL ON YELLOW STRIPE  
 IN TURN POCKET TO RV PARK  
 11.807' Rt @ PROPOSED RTE 62  
 Sta. 7523+99.516  
 N 1901612.719  
 E 7680552.001  
 Elev 367.781'

**SPAN 1964**  
 Fnd 3/2" STD. USC&GS BRASS DISK STAMPED  
 "SPAN 1964" FLUSH IN SIDEWALK  
 48.365' Lt @ PROPOSED RTE 62  
 Sta. 7531+78.111  
 N 1901070.086  
 E 7681099.470  
 Elev 378.998'



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

**LEGEND OF BORING OPERATIONS**



**CONSISTENCY CLASSIFICATION FOR SOILS**

According to the Standard Penetration Test

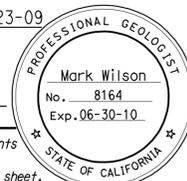
SPPT No./Blows (150cm/foot)	Consistency
0-4	Very Loose
5-10	Loose
11-30	Medium Dense
31-50	Dense
51-70	Very Dense
71-100	Very Hard

NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

<b>ENGINEERING SERVICES</b>	<b>GEOTECHNICAL SERVICES</b>	FIELD INVESTIGATION BY: M. Wilson	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	<b>DIVISION OF ENGINEERING SERVICES</b> STRUCTURE DESIGN DESIGN BRANCH	BRIDGE NO. 142.3	<b>RETAINING WALL NO. 7536</b>
DRAWN BY W. Tang 11/08; I.G-Remmen, 2/09	CHECKED BY M. Wilson					<b>LOG OF TEST BORINGS 1 OF 3</b>

# FOR PLAN VIEW, SEE "LOG OF TEST BORINGS" 1 OF 3

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBD, La Paz	62, 95S1	142.2/142.6: 142.6/142.9	265	271

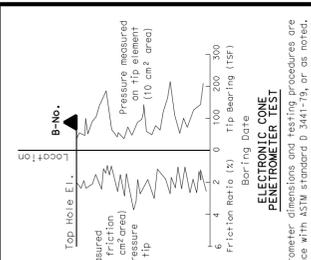


2-23-09  
PROFESSIONAL GEOLOGIST

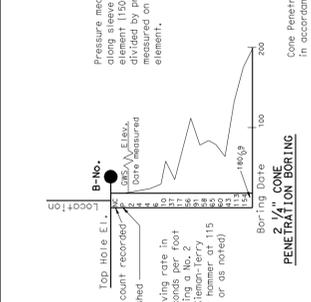
6-14-10  
PLANS APPROVAL DATE

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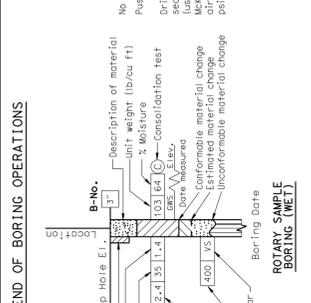
**LEGEND OF BORING OPERATIONS**



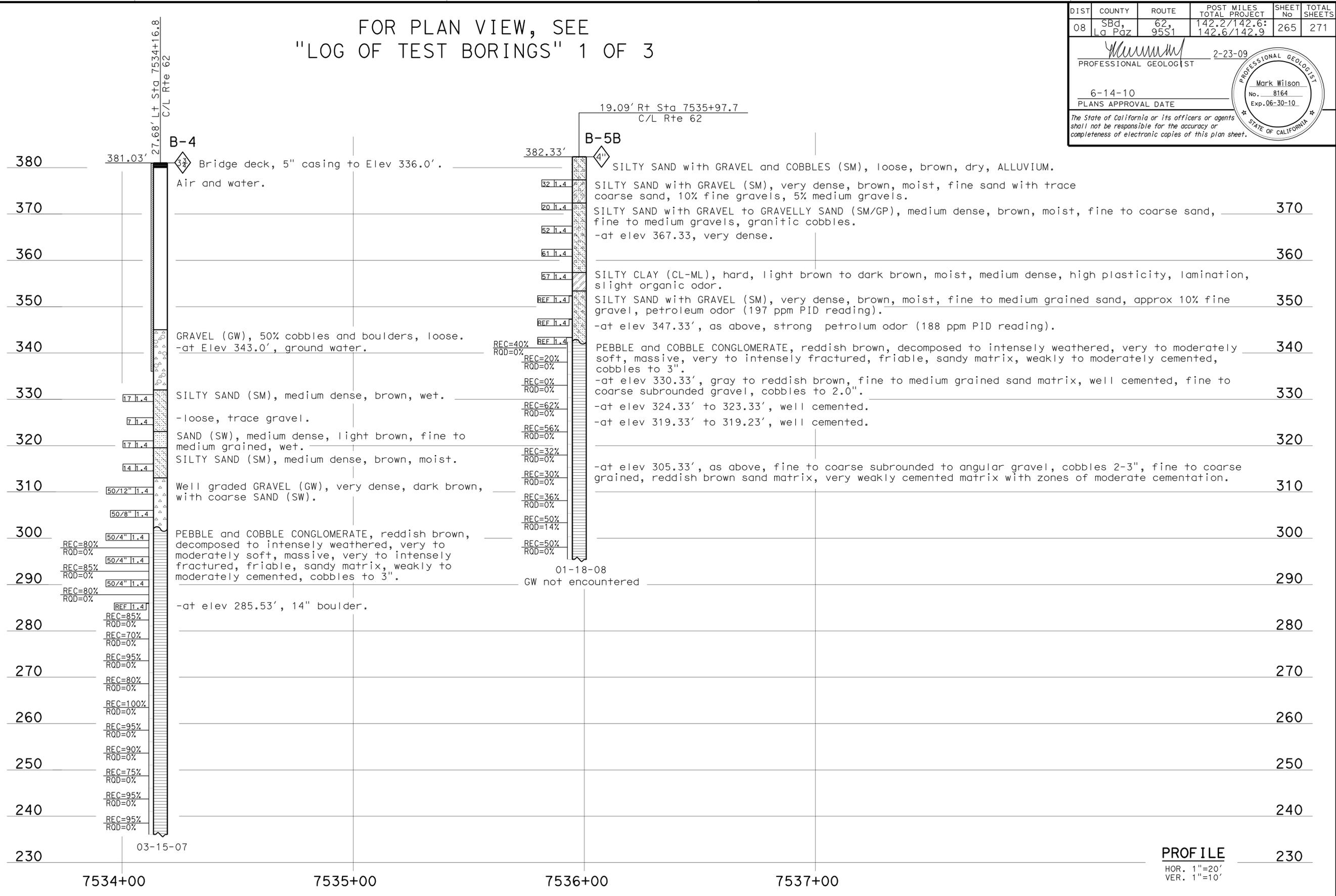
**LEGEND OF EARTH MATERIALS**



**CONSISTENCY CLASSIFICATION FOR SOILS**



NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.



<b>ENGINEERING SERVICES</b>	<b>GEOTECHNICAL SERVICES</b>	FIELD INVESTIGATION BY: M. Wilson	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH	BRIDGE NO. POST MILE 142.3	<b>RETAINING WALL NO. 7536</b> <b>LOG OF TEST BORINGS 2 OF 3</b>
DRAWN BY W. Tang 11/2008	CHECKED BY M. Wilson					SHEET 8 OF 9

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
08	SBD, La Paz	62, 95S1	142.2/142.6 142.6/142.9	266	271

2-23-09  
PROFESSIONAL GEOLOGIST

6-14-10  
PLANS APPROVAL DATE

Mark Wilson  
No. 8164  
Exp. 06-30-10  
PROFESSIONAL GEOLOGIST  
STATE OF CALIFORNIA

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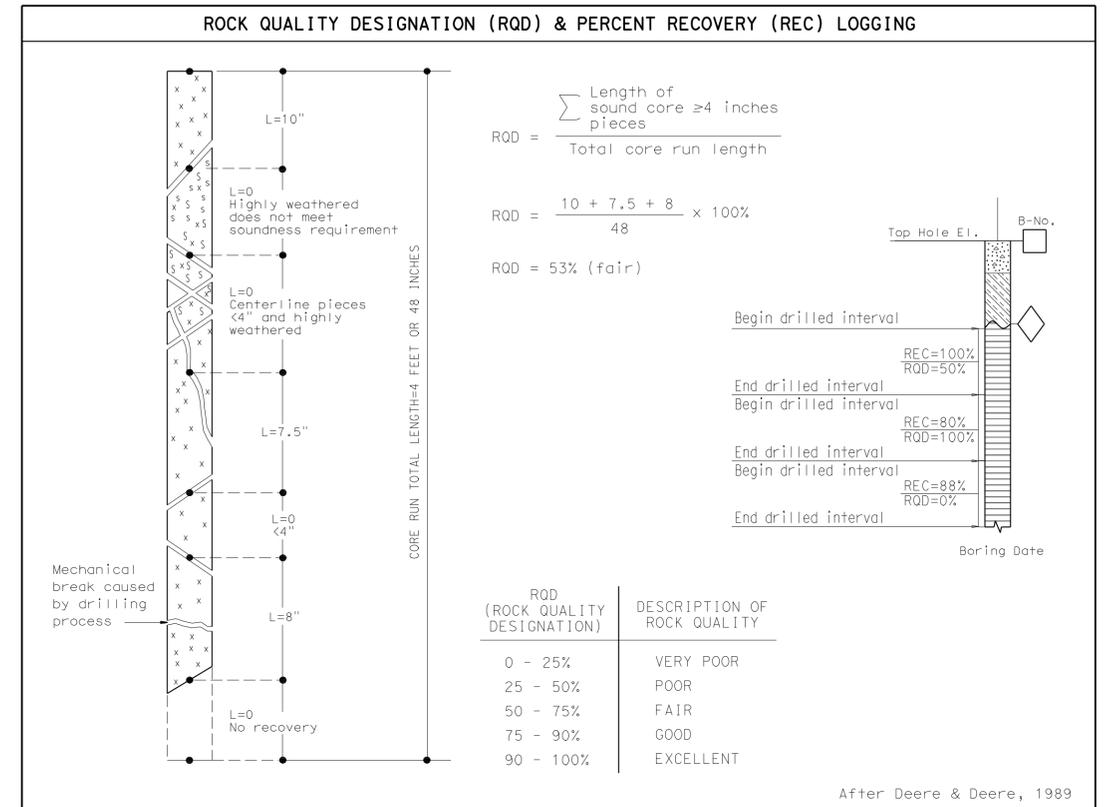
WEATHERING DESCRIPTORS							
Descriptors		Diagnostic features				General characteristics (strength, excavation, etc.) <sup>§</sup>	
		Chemical weathering-Discoloration and/or oxidation		Mechanical weathering-Grain boundary conditions (disaggregation) primarily for granitics and some coarse-grained sediments	Texture and solutioning		
Alphanumeric descriptor	Descriptive term	Body of rock	Fracture surfaces †		Texture	Solutioning	
W1	Fresh	No discoloration, not oxidized.	No discoloration or oxidation.	No separation, intact (tight).	No change.	No solutioning.	Hammer rings when crystalline rocks are struck. Almost always rock excavation except for naturally weak or weakly cemented rocks such as siltstones or shales.
W2	Slightly weathered to fresh <sup>o</sup>						
W3	Slightly weathered	Discoloration or oxidation is limited to surface of, or short distance from, fractures; some feldspar crystals are dull.	Minor to complete discoloration or oxidation of most surfaces.	No visible separation, intact (tight).	Preserved.	Minor leaching of some soluble minerals may be noted.	Hammer rings when crystalline rocks are struck. Body of rock not weakened. With few exceptions, such as siltstones or shales, classified as rock excavation.
W4	Moderately to slightly weathered <sup>o</sup>						
W5	Moderately weathered	Discoloration or oxidation extends from fractures usually throughout; Fe-Mg minerals are "rusty," feldspar crystals are "cloudy."	All fracture surfaces are discolored or oxidized.	Partial separation of boundaries visible.	Generally preserved.	Soluble minerals may be mostly leached.	Hammer does not ring when rock is struck. Body of rock is slightly weakened. Depending on fracturing, usually is rock excavation except in naturally weak rocks such as siltstones or shales.
W6	Intensely to moderately weathered <sup>o</sup>						
W7	Intensely weathered	Discoloration or oxidation throughout; all feldspars and Fe-Mg minerals are altered to some extent; or chemical alteration produces in-situ disaggregation, see grain boundary conditions.	All fracture surfaces are discolored or oxidized, surfaces friable.	Partial separation, rock is friable; in semi-arid conditions granitics are disaggregated.	Texture altered by chemical disintegration (hydration, argillation).	Leaching of soluble minerals may be complete.	Dull sound when struck with hammer, usually can be broken with moderate to heavy manual pressure or by light hammer blow without reference to planes of weakness such as incipient or hairline fractures, or veinlets. Rock is significantly weakened. Usually common excavation.
W8	Very intensely weathered						
W9	Decomposed	Discolored or oxidized throughout, but resistant minerals such as quartz may be unaltered; all feldspars and Fe-Mg minerals are completely altered to clay.		Complete separation of grain boundaries (disaggregated).	Resembles a soil, partial or complete remnant rock structure may be preserved; leaching of soluble minerals usually complete.		Can be granulated by hand. Always common excavation. Resistant minerals such as quartz may be present as "stringers" or "dikes."

Note: This chart and its horizontal categories are more readily applied to rocks with feldspars and mafic minerals. Weathering in various sedimentary rocks, particularly limestones and poorly indurated sediments, will not always fit the categories established. This chart and weathering categories may have to be modified for particular site conditions or alteration such as hydrothermal effects; however, the basic framework and similar descriptors are to be used.

<sup>o</sup> Combination descriptors are permissible where equal distribution of both weathering characteristics are present over significant intervals or where characteristics present are "in between" the diagnostic feature. However, dual descriptors should not be used where significant, identifiable zones can be delineated. When given as a range, only two adjacent terms may be combined. "Decomposed to slightly weathered," or "moderately weathered to fresh" are not acceptable.

† Does not include directional weathering along shears or faults and their associated features. For example, a shear zone that carried weathering to great depths into a fresh rock mass would not require the rock mass to be classified as weathered.

§ These are generalizations and should not be used as diagnostic features for weathering or excavation classification. These characteristics vary to a large extent based on naturally weak materials or cementation and type of excavation.



### FRACTURE DENSITY

Modified from United States Bureau of Reclamation, Engineering Geology Field Manual.

**FRACTURE DENSITY-** Based on the spacing of all natural fractures in an exposure or core recovery lengths in boreholes; excludes mechanical breaks, shears, and shear zones; however, shear-disturbed zones (fracturing outside the shear) are included. Descriptors for fracture density apply to all rock exposures such as tunnel walls, dozer trenches, outcrops, or foundation cut slopes and inverts, as well as boreholes. Descriptive criteria presented below are based on borehole cores where lengths are measured along the core axis, for other exposures the criteria is distance measured between fractures (size of blocks).

**UNFRACTURED (FD0):** No fractures.

**VERY SLIGHTLY FRACTURED (FD1):** Core recovered mostly in lengths greater than 3 ft.

**SLIGHTLY TO VERY SLIGHTLY FRACTURED (FD2)\***

**SLIGHTLY FRACTURED (FD3):** Core recovered mostly in lengths from 1 to 3 ft. with few scattered lengths less than 1 ft or greater than 3 ft.

**MODERATELY TO SLIGHTLY FRACTURED (FD4)\***

**MODERATELY FRACTURED (FD5):** Core recovered mostly in 0.3 to 1.0 ft lengths with most lengths about 0.6 ft.

**INTENSELY TO MODERATELY FRACTURED (FD6)\***

**INTENSELY FRACTURED (FD7):** Lengths average from 0.1 to 0.3 ft with scattered fragmented intervals. Core recovered mostly in lengths less than 0.3 ft.

**VERY INTENSELY TO INTENSELY FRACTURED (FD8)\***

**VERY INTENSELY FRACTURED (FD9):** Core recovered mostly as chips and fragments with a few scattered short core lengths.

\* Combinations of fracture densities (e.g. very intensely to intensely fractured, or moderately to slightly fractured) are used where equal distribution of both fracture density characteristics are present over a significant interval or exposure, or where characteristics are "in between" the descriptor definitions.

### ROCK HARDNESS DESCRIPTORS

Alphanumeric Descriptor	Descriptor	Criteria
H1	Extremely hard	Core, fragment, or exposure cannot be scratched with knife or sharp pick; can only be chipped with repeated heavy hammer blows.
H2	Very hard	Cannot be scratched with knife or sharp pick. Core or fragment breaks with repeated heavy hammer blows.
H3	Hard	Can be scratched with knife or sharp pick with difficulty (heavy pressure). Heavy hammer blow required to break specimen.
H4	Moderately hard	Can be scratched with knife or sharp pick with light or moderate pressure. Core or fragment breaks with moderate hammer blow.
H5	Moderately soft	Can be grooved 1/16 inch deep by knife or sharp pick with moderate or heavy pressure. Core or fragment breaks with light hammer blow or heavy manual pressure.
H6	Soft	Can be grooved or gouged easily by knife or sharp pick with light pressure, can be scratched with fingernail. Breaks with light to moderate manual pressure.
H7	Very soft	Can be readily indented, grooved or gouged with fingernail, or carved with a knife. Breaks with light manual pressure.

Any bedrock unit softer than H7, very soft, is to be described using ASTM D-2488 consistency descriptors.

Note: Although "sharp pick" is included in these definitions, descriptions of ability to be scratched, grooved or gouged by a knife is the preferred criteria.

Modified from United States Bureau of Reclamation, Engineering Geology Field Manual.

### BEDDING, FOLIATION, OR FLOW TEXTURE DESCRIPTORS

Descriptors	Thickness / Spacing
Massive	Greater than 10 ft
Very thickly (bedded, foliated, or banded)	3 to 10 ft
Thickly	1 to 3 ft
Moderately	0.3 to 1 ft
Thinly	0.1 to 0.3 ft
Very thinly	0.03 (3/8 in) to 0.1 ft
Laminated (intensely foliated or banded)	Less than 0.03 ft (3/8 in)

Modified from United States Bureau of Reclamation, Engineering Geology Field Manual.

<b>ENGINEERING SERVICES</b>	<b>GEOTECHNICAL SERVICES</b>	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	<b>DIVISION OF ENGINEERING SERVICES</b> STRUCTURE DESIGN <b>DESIGN BRANCH</b>	BRIDGE NO. POST MILE 142.3	<b>RETAINING WALL NO. 7536</b> <b>LOG OF TEST BORINGS 3 OF 3</b>
PREPARED BY I.G-Remmen, 2/09	CHECKED BY	CU 08 EA 378701	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES (PRELIMINARY STAGE ONLY)	SHEET 9 OF 9

TL 6051 (CADD 1/8/98) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3 USERNAME => trlenard rw7536-z-11b03.dgn

# INDEX OF SHEETS

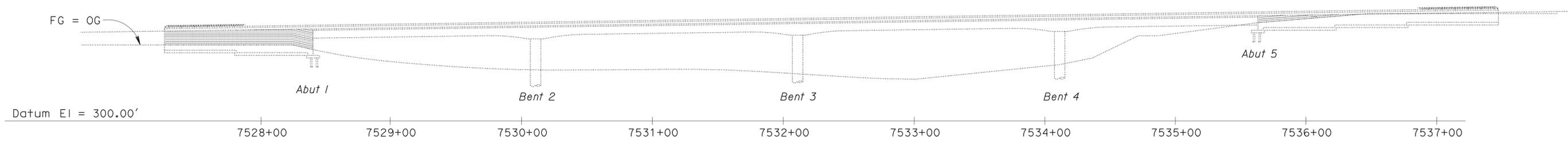
SHEET NO.	TITLE
GP	GENERAL PLAN
EE-0	LEGEND
EE-1	ELECTRICAL SITE PLAN
EE-2	CENTER CHANNEL NAVIGATIONAL LIGHT DETAILS
EE-3	PIER LIGHT DETAILS

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBd, La Paz	62, 95S1	142.2/142.6 142.6/142.9	267	271

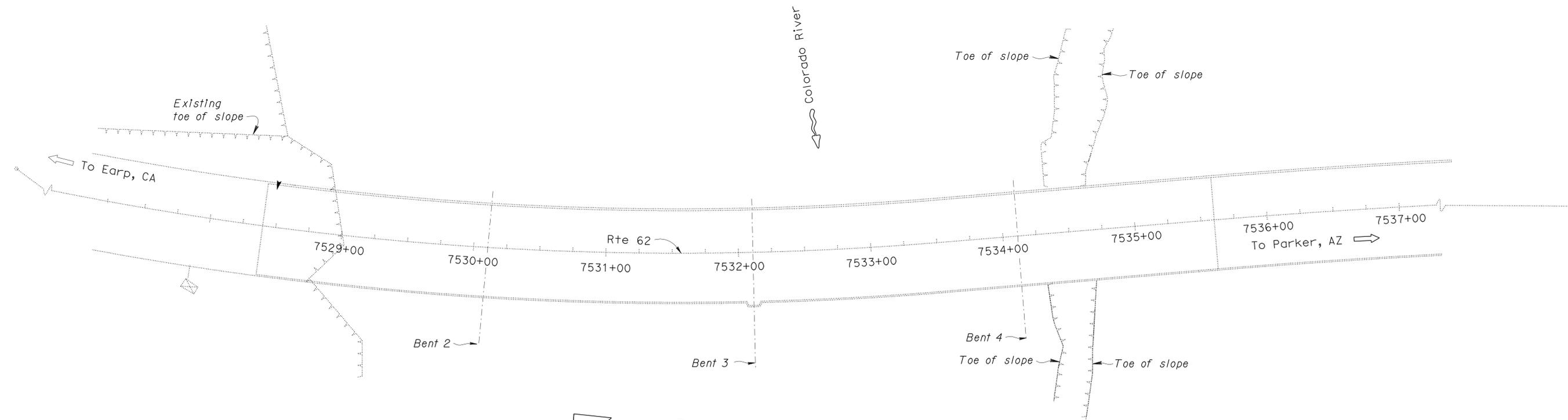
*Jaswinder K Sandhu*  
 REGISTERED ELECTRICAL ENGINEER DATE 6-26-09  
 No. 11803  
 Exp. 9-30-10  
 ELEC  
 STATE OF CALIFORNIA

6-14-10  
PLANS APPROVAL DATE

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**ELEVATION**  
SCALE 1" = 40'-0"



**PLAN**  
SCALE 1" = 40'-0"

DESIGN SUPERVISOR <i>Joseph Abdelsayed</i>	DESIGN BY <i>Joseph Abdelsayed</i>	CHECKED <i>J.S. Sandhu</i>
DESIGN ENGINEER <i>Jaswinder K Sandhu</i>	DETAILS BY <i>Joseph Abdelsayed</i>	CHECKED <i>J.S. Sandhu</i>
	QUANTITIES BY <i>Joseph Abdelsayed</i>	CHECKED <i>J.S. Sandhu</i>

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
ELECTRICAL-MECHANICAL-WATER AND WASTEWATER DESIGN

BRIDGE NO. 54-1272	<b>COLORADO RIVER BRIDGE (REPLACE)</b>
POST MILE 142.3	
<b>GENERAL PLAN</b>	

SHEET  
**GP**

17-JUN-2010 10:06

GRAPHIC SYMBOLS FOR ELECTRICAL WIRING AND LAYOUT DIAGRAMS

SYMBOL	DESCRIPTION
(S)	SURFACE INCANDESCENT, METAL HALIDE OR SODIUM VAPOR FIXTURE
(R)	RECESSED INCANDESCENT, METAL HALIDE, OR SODIUM VAPOR FIXTURE
(B)	BLANK OUTLET
(D)	DROP CORD
(J)	JUNCTION BOX
(X)	EXIT LIGHT
(OR)	SURFACE OR PENDANT INDIVIDUAL FLUORESCENT FIXTURE
(OR)	RECESSED INDIVIDUAL FLUORESCENT FIXTURE
(OR)	SURFACE OR PENDANT CONTINUOUS ROW FLUORESCENT FIXTURES

NOTE: A LOWER CASE LETTER NEAR GRAPHIC LIGHTING FIXTURE SYMBOL DENOTES THAT FIXTURE IS CONTROLLED BY A SIMILARLY MARKED SWITCH, AN ALPHA-NUMERIC SYMBOL NEAR GRAPHIC LIGHTING FIXTURE SYMBOL DENOTES FIXTURE TYPE, (I=INCANDESCENT, F=FLUORESCENT, MH=METAL HALIDE, H=HIGH PRESSURE SODIUM VAPOR), DESIGN TYPE, NUMBER OF LAMPS AND WATTAGE.  
EXAMPLE: (4) F 2 - 2 x 32

SYMBOL	DESCRIPTION
Sm	MOTION SENSOR SWITCH
ST	MANUAL MOTOR STARTING SWITCH, THERMAL OVERLOAD TYPE
Shp	MANUAL MOTOR STARTING SWITCH, WITHOUT OVERLOAD ELEMENT
Ts	TIMER SWITCH
(S)	SWITCH AND SINGLE RECEPTACLE
(S)	SWITCH AND DUPLEX RECEPTACLE
(H)	HAND DRYER NOZZLE
(H)	HAND DRYER
(R)	RADIO OUTLET
(T)	TELEPHONE OUTLET
(S)	SOUND SYSTEM LOUD SPEAKER OUTLET
(P)	PUSHBUTTON
(L)	PUSHBUTTON STATION, NC, WITH LOCKING DEVICE FOR OPEN
(M)	PUSHBUTTON STATION MOTOR CONTROL
(B)	BUZZER
(B)	BELL
(B)	COMBINATION BELL-BUZZER
(T)	THERMOSTAT
(PS)	PRESSURE SWITCH
(R)	CONTROL RELAY
(FS)	FLOW SWITCH
(PEC)	PHOTOELECTRIC CELL
(R)	RADIO OUTLET
(TV)	TELEVISION OUTLET
(M)	MICROPHONE OUTLET
(MC)	FLUSH-MOUNTED PANELBOARD AND CABINET
(MC)	SURFACE-MOUNTED PANELBOARD AND CABINET
(MC)	LIGHTING PANEL
(MC)	POWER PANEL
(MC)	COMBINATION LIGHTING AND POWER
(MC)	MOTOR CONTROLLER
(MC)	DISCONNECT SWITCH
(MC)	CONDUIT CONCEALED IN CEILING OR WALL
(MC)	CONDUIT CONCEALED IN FLOOR
(MC)	CONDUIT EXPOSED
(MC)	CROSS-LINES INDICATE NUMBER OF #12 AWG CONDUCTORS. LONGER CROSS-LINE INDICATES #12 AWG (G) FOR EQUIPMENT GROUNDING CONDUCTOR. NO CROSS-LINE INDICATES 2#12 WITH #12 (G) UNLESS OTHERWISE NOTED. ALL CONDUIT SHALL BE 1/2" UNLESS OTHERWISE NOTED.
(A1, A2)	HOMERUN TO PANELBOARD, ARROWS INDICATE NUMBER OF CIRCUITS, LETTER DENOTES PANELBOARD, NUMERAL DENOTES CIRCUIT.
(SM)	SURFACE METAL RACEWAY
(2) 16C, PVC, 2#12	CONDUCTOR INFO (PER CONDUIT)
(2) 16C, PVC, 2#12	CONDUIT TYPE
(2) 16C, PVC, 2#12	CONDUIT SIZE
(2) 16C, PVC, 2#12	NUMBER OF CONDUITS (NO NUMBER INDICATES ONE CONDUIT)
(MC)	CONDUIT, METALLIC UNDERGROUND
(PVC)	CONDUIT, POLYVINYL CHLORIDE, UNDERGROUND
(F)	CONDUIT, FLEXIBLE
(U)	CONDUIT, TURN UP
(D)	CONDUIT, TURN DOWN
(S)	CONDUIT SEAL, EXPLOSION-PROOF
(E)	CONDUIT, EXPANSION JOINT
(A)	ADAPTER, ONE TYPE CONDUIT TO ANOTHER POLE
(O)	POLE-TOP LUMINAIRE
(A)	POLE-ARM LUMINAIRE

SYMBOL	DESCRIPTION
(H)	HEAT DETECTOR
(S)	SMOKE DETECTOR
(P)	MANUAL PULL STATION
(AV)	AUDIO/VISUAL ALARM DEVICE
(G)	GLASS BREAK DISCRIMINATOR
(C)	MAGNETIC CONTACT SWITCH-PEDESTRIAN DOOR
(C)	MAGNETIC CONTACT SWITCH-VEHICLE DOOR
(K)	KEYPAD FOR ALARM SYSTEM
(W)	COMBINATION DETECTOR (MICROWAVE/PASSIVE INFRARED)
( )	PULL BOX-LETTER INDICATES TYPE OF PULL BOX (E-ELECTRICAL, T-TELEPHONE, R-RADIO)
(T)	PULL BOX (TRAFFIC RATED)-LETTER INDICATES TYPE OF PULL BOX (E-ELECTRICAL, T-TELEPHONE, R-RADIO)
(CHLF)	COMBINATION HEAT, LIGHT AND FAN UNIT
(A)	SECTION/ELEVATION LETTER
(EE-2)	SHEET NUMBER
(I)	DETAIL NUMBER
(EE-2)	SHEET NUMBER

REMODEL WORK

SYMBOL	DESCRIPTION
(-O-)	EXISTING FLUORESCENT FIXTURE-TO REMAIN
(-X-)	EXISTING FLUORESCENT FIXTURE-REMOVE
(-O-)	EXISTING INCANDESCENT FIXTURE-TO REMAIN
(-X-)	EXISTING INCANDESCENT FIXTURE-REMOVE
(-O-)	EXISTING OUTLET-TO REMAIN
(-X-)	EXISTING RECEPTACLE OUTLET-REMOVE
(-E-E-)	EXISTING CONDUIT AND CONDUCTORS-TO REMAIN UNLESS OTHERWISE NOTED
(-X-X-)	EXISTING CONDUIT AND CONDUCTORS-REMOVE
(S)	EXISTING SWITCH-TO REMAIN
(X)	EXISTING SWITCH-REMOVE
(J)	EXISTING JUNCTION BOX-TO REMAIN
(X)	EXISTING JUNCTION BOX-REMOVE

STANDARD NOTES

(AB)	ABANDON, IF APPLIED TO CONDUIT, REMOVE CONDUCTORS.
(BC)	INSTALL PULL BOX IN EXISTING CONDUIT RUN.
(CB)	INSTALL CONDUIT INTO EXISTING PULL BOX.
(CC)	CONNECT NEW AND EXISTING CONDUIT. REMOVE EXISTING CONDUCTORS AND INSTALL CONDUCTORS AS INDICATED.
(CF)	CONDUIT TO REMAIN FOR FUTURE USE. REMOVE CONDUCTORS, INSTALL PULL ROPE AND PLUG.
(FA)	REMOVE FOUNDATION ABOVE GRADE AND ABANDON FOUNDATION BELOW GRADE.
(RL)	RELOCATE EQUIPMENT.
(RLD)	RELOCATED EQUIPMENT.
(SC)	SPLICE NEW TO EXISTING CONDUCTORS.

GRAPHIC SYMBOLS FOR ELECTRICAL DIAGRAMS

SYMBOL	DESCRIPTION
( )	CIRCUIT BREAKER, SINGLE POLE
( )	CIRCUIT BREAKER, DOUBLE POLE
( )	CIRCUIT BREAKER, THREE POLE
(GFCI)	CIRCUIT BREAKER, WITH GROUND FAULT CIRCUIT INTERRUPTER
( )	CONTACT, NORMALLY OPEN
( )	CONTACT, NORMALLY CLOSED
( )	CONTACT, NORMALLY CLOSED, TIME DELAY CLOSING ON DE-ENERGIZING
( )	CONTACT, NORMALLY OPEN, TIME DELAY OPENING ON DE-ENERGIZING
( )	CONTACT, NORMALLY OPEN, TIME DELAY CLOSING ON ENERGIZING
( )	CONTACT, NORMALLY CLOSED, TIME DELAY OPENING ON ENERGIZING
( )	CONTACT, SINGLE POLE DOUBLE-THROW
( )	OPERATING COIL
( )	LIQUID LEVEL ACTUATED SWITCH, NORMALLY CLOSED
( )	LIQUID LEVEL ACTUATED SWITCH, NORMALLY OPEN
( )	PRESSURE ACTUATED SWITCH, NORMALLY CLOSED
( )	PRESSURE ACTUATED SWITCH, NORMALLY OPEN
( )	FLOW ACTUATED SWITCH, NORMALLY CLOSED
( )	FLOW ACTUATED SWITCH, NORMALLY OPEN
( )	TEMPERATURE ACTUATED SWITCH, NORMALLY CLOSED
( )	TEMPERATURE ACTUATED SWITCH, NORMALLY OPEN
( )	LIMIT SWITCH, NORMALLY CLOSED
( )	LIMIT SWITCH, NORMALLY OPEN
( )	PUSHBUTTON SWITCH, NORMALLY CLOSED
( )	PUSHBUTTON SWITCH, NORMALLY OPEN
( )	SWITCH, SINGLE-POLE
( )	SWITCH, SINGLE-POLE, DOUBLE-THROW
( )	SWITCH, DOUBLE-POLE
( )	SWITCH, DOUBLE-POLE, DOUBLE-THROW
( )	SWITCH, SINGLE-POLE, 3-POSITION
( )	THERMAL OVERLOAD
( )	FUSE
( )	RESISTOR
( )	VARIABLE RESISTOR
( )	TRANSFORMER WINDING
( )	GROUNDING ELECTRODE
( )	ENCLOSURE BOND
(A)	PILOT LIGHT (A=AMBER, G=GREEN, R=RED)
(G)	GENERATOR
(M)	MOTOR
(F)	FAN MOTOR

PROJECT NOTES

- SEPARATE GROUND (NEUTRAL) CONDUCTOR SHALL BE USED FOR EACH 120-VOLT CIRCUIT.
- HOMERUNS TO PANELBOARDS SHALL BE INSTALLED AS SHOWN ON THE PLANS. HOMERUNS SHALL NOT BE COMBINED.
- A SINGLE INSULATED EQUIPMENT GROUNDING CONDUCTOR (SIZED AS REQUIRED) SHALL BE INSTALLED IN EACH CONDUIT RUN.

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Sbd, La Paz	62, 95S1	142.2/142.6; 142.6/142.9	268	271

Jaswinder S Sandhu  
REGISTERED ELECTRICAL ENGINEER DATE 2-26-09

J. S. SANDHU  
No. 11803  
Exp. 9-30-10  
ELEC  
STATE OF CALIFORNIA

6-14-10  
PLANS APPROVAL DATE

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ABBREVIATIONS

A	AMPERES
A/C	AIR CONDITIONING UNIT
ACS	AIR COMPRESSOR STARTER
AI	ANALOG INPUT
AL	ALARM LIGHT
AO	ANALOG OUTPUT
AVC	AIR VOLUME CONTROLLER
BD	BUILDING DISCONNECT
BRK	BREAKER
C	CONDUIT
CC	CENTER CHANNEL
CB	NAVIGATIONAL LIGHT
CKT	CIRCUIT BREAKER
CR	CIRCUIT
CR	CONTROL RELAY
DI	DIGITAL INPUT
DO	DIGITAL OUTPUT
DP	DUPLEX PLUG RECEPTACLE
DS	DOOR SWITCH
(E)	EXISTING
F	FUSE
FL	FAILURE LIGHT
FLA	FLASHER
FLEX	FLEXIBLE CONDUIT
FLS	FLOW SWITCH
FR	FAILURE RESET
FS	FLOAT SWITCH
G	GROUND
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GRS	GALVANIZED RIGID STEEL
IR	INDUCTION RELAY
JB	JUNCTION BOX
L	LIGHT
LC	LIGHTING CONTACTOR
LCP	LIGHTING CONTROL PANEL
LD	LIGHT DISCONNECT
LL	LIQUID LEVEL RELAY
LLC	LIQUID LEVEL CONTROLLER
LP	LIGHT PANEL
LS	LIGHT SWITCH
LT	LIGHT TRANSFORMER
LTO	LIGHT TRANSFORMER OVERLOAD
MB	MAIN BREAKER
MC	METALLIC CONDUIT
MCP	MOTOR CIRCUIT PROTECTOR
MCC	MOTOR CONTROL CENTER
MSB	MAIN SWITCHBOARD
MT	EMPTY CONDUIT
(N)	NEW
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
OL	OVERLOAD
P	POLE
PB	PULL BOX
PB	PUSHBUTTON
PFR	PHASE FAILURE RELAY
PFRD	PHASE FAILURE RELAY DISCONNECT
PEC	PHOTOELECTRIC CELL
PL	PIER LIGHT
PS	PRESSURE SWITCH
PTS	POWER TRANSFER SWITCH
PVC	POLYVINYL CHLORIDE
RES	RESISTOR
RTB	RADIO TERMINAL BOARD
S	STARTER COIL
SD	SERVICE DISCONNECT
SFR	SEAL FAILURE RELAY
SS	SELECTOR SWITCH
ST	STARTER
SV	SOLENOID VALVE
T	TRANSFORMER
TB	TERMINAL BLOCK
TDR	TIME DELAY RELAY
TGLS	TOGGLE SWITCH
TM	TIME METER
TOT	TOTAL
TS	TIMER SWITCH
TSW	TEST SWITCH
TBT	TELEPHONE TERMINAL BOARD
TYP	TYPICAL
UPS	UNINTERRUPTIBLE POWER SUPPLY
WLS	WATER LEVEL SWITCH
WP	WEATHERPROOF

DESIGN	BY Joseph Abdelsayed	CHECKED J.S. Sandhu	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES ELECTRICAL-MECHANICAL-WATER AND WASTEWATER DESIGN	BRIDGE NO.	COLORADO RIVER BRIDGE (REPLACE)	SHEET EE-0	
	DETAILS	BY Joseph Abdelsayed			CHECKED J.S. Sandhu			54-1272
	QUANTITIES	BY Joseph Abdelsayed			CHECKED J.S. Sandhu			142.3

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3

CU 08-221  
EA 378701

DISREGARD PRINTS BEARING EARLIER REVISION DATES → 2/26/09

REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET OF

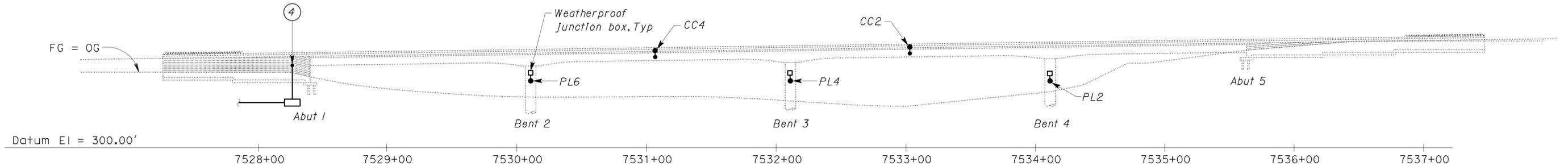
DOES SD Imperial Rev. 9/02

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DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBd, Lo PGZ	62, 95S1	142.2/142.6 142.6/142.9	269	271
J. S. SANDHU REGISTERED ELECTRICAL ENGINEER No. 11803 Exp. 9-30-10 ELEC STATE OF CALIFORNIA					DATE 6-26-09
6-14-10					PLANS APPROVAL DATE
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**General Notes:**

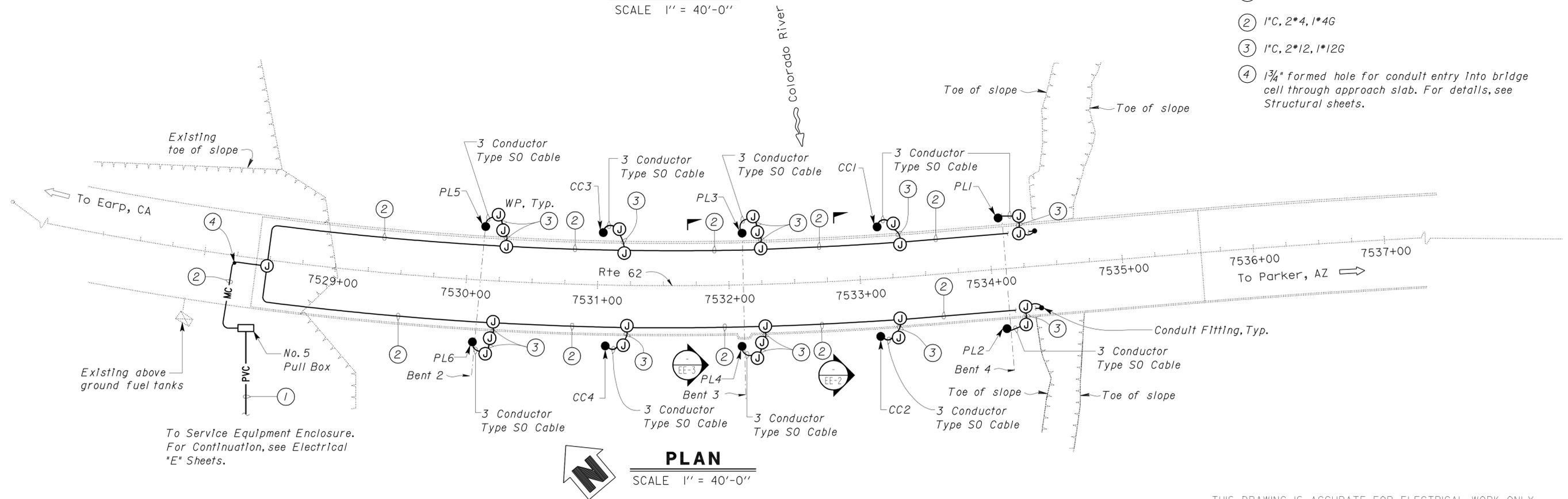
- A. Type I Conduit shall be supported at a distance not to exceed 5 feet on center.
- B. Type I Conduit buried in ground shall be wrapped with two layers of pipe wrapping tape. Pipe wrapping tape shall have a minimum thickness of 20 mills. Each individual layer shall be overlapped a minimum of 50%.
- C. Install conduit expansion fittings as required at every joint of the structure.



**ELEVATION**  
SCALE 1" = 40'-0"

**Notes:**

- ① 1/2" C, 2\*2, 1\*2G
- ② 1" C, 2\*4, 1\*4G
- ③ 1" C, 2\*12, 1\*12G
- ④ 1 3/4" formed hole for conduit entry into bridge cell through approach slab. For details, see Structural sheets.



**PLAN**  
SCALE 1" = 40'-0"

THIS DRAWING IS ACCURATE FOR ELECTRICAL WORK ONLY.

DESIGN	BY Joseph Abdelsayed	CHECKED J.S. Sandhu
DETAILS	BY Joseph Abdelsayed	CHECKED J.S. Sandhu
QUANTITIES	BY Joseph Abdelsayed	CHECKED J.S. Sandhu

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

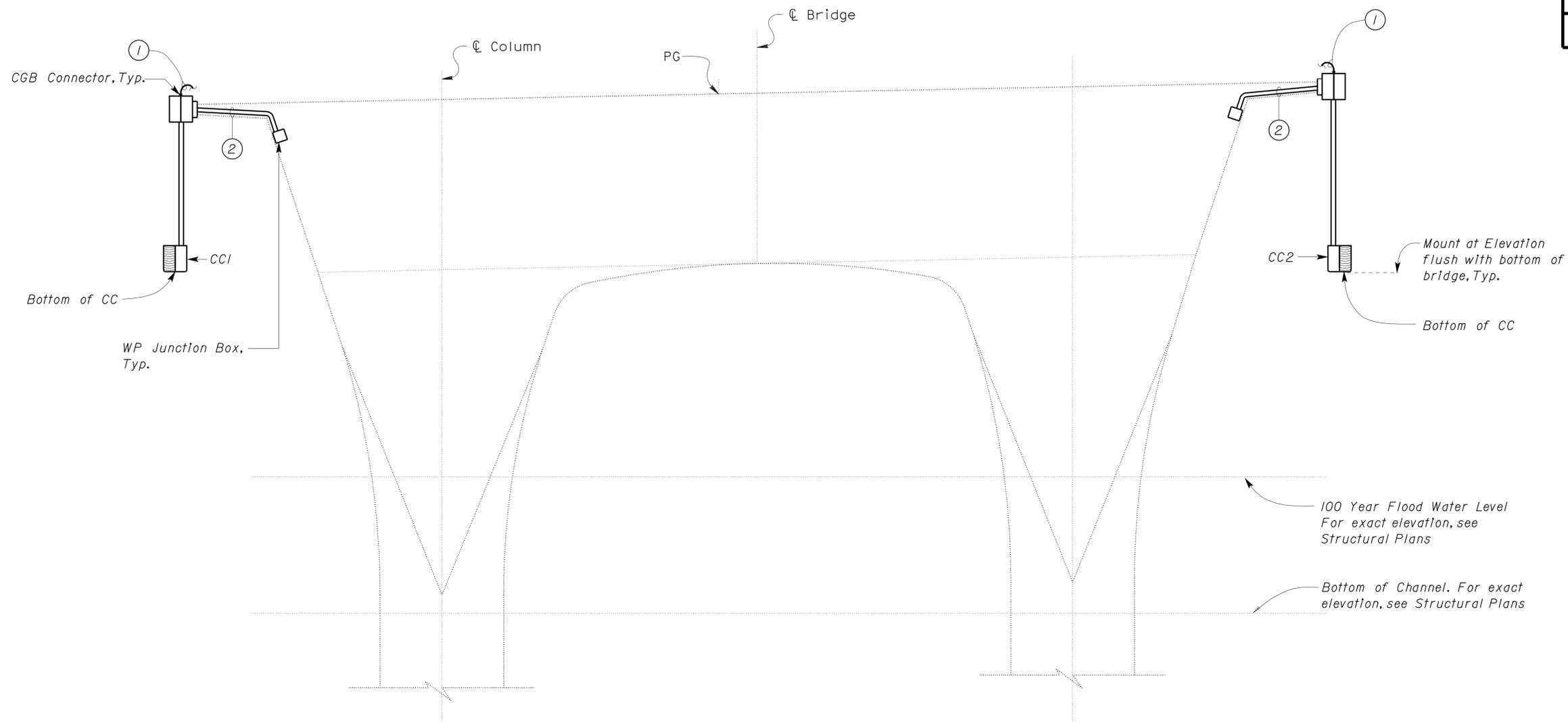
DIVISION OF ENGINEERING SERVICES  
ELECTRICAL-MECHANICAL-WATER AND WASTEWATER DESIGN

BRIDGE NO.	54-1272
POST MILE	142.3

**COLORADO RIVER BRIDGE (REPLACE)**  
SITE PLAN

SHEET **EE-1**

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBd, La Pdz	62, 95S1	142.2/142.6: 142.6/142.9	270	271
Jaswinder S Sandhu REGISTERED ELECTRICAL ENGINEER DATE 6-26-09					
6-14-10 PLANS APPROVAL DATE					
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**TYPICAL SECTION**  
SCALE 1/4" = 1'-0"

- Notes:
- ① 3 Conductor, heavy duty, Type SO cable to weatherproof junction box mounted adjacent to center channel navigational light.
  - ② 1" C, 2\*12, 1\*12G

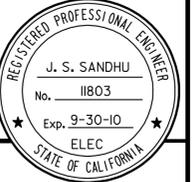
THIS DRAWING IS ACCURATE FOR ELECTRICAL WORK ONLY

DOES SD Imperial Rev. 9/02	DESIGN	BY Joseph Abdelsayed	CHECKED J.S. Sandhu	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES ELECTRICAL-MECHANICAL-WATER AND WASTEWATER DESIGN	BRIDGE NO.	54-1272	<b>COLORADO RIVER BRIDGE (REPLACE)</b> CENTER CHANNEL NAVIGATIONAL LIGHT DETAILS	SHEET OF <b>EE-2</b>
	DETAILS	BY Joseph Abdelsayed	CHECKED J.S. Sandhu			POST MILE	142.3		
	QUANTITIES	BY Joseph Abdelsayed	CHECKED J.S. Sandhu			CU 08-221 EA 378701	DISREGARD PRINTS BEARING EARLIER REVISION DATES →		

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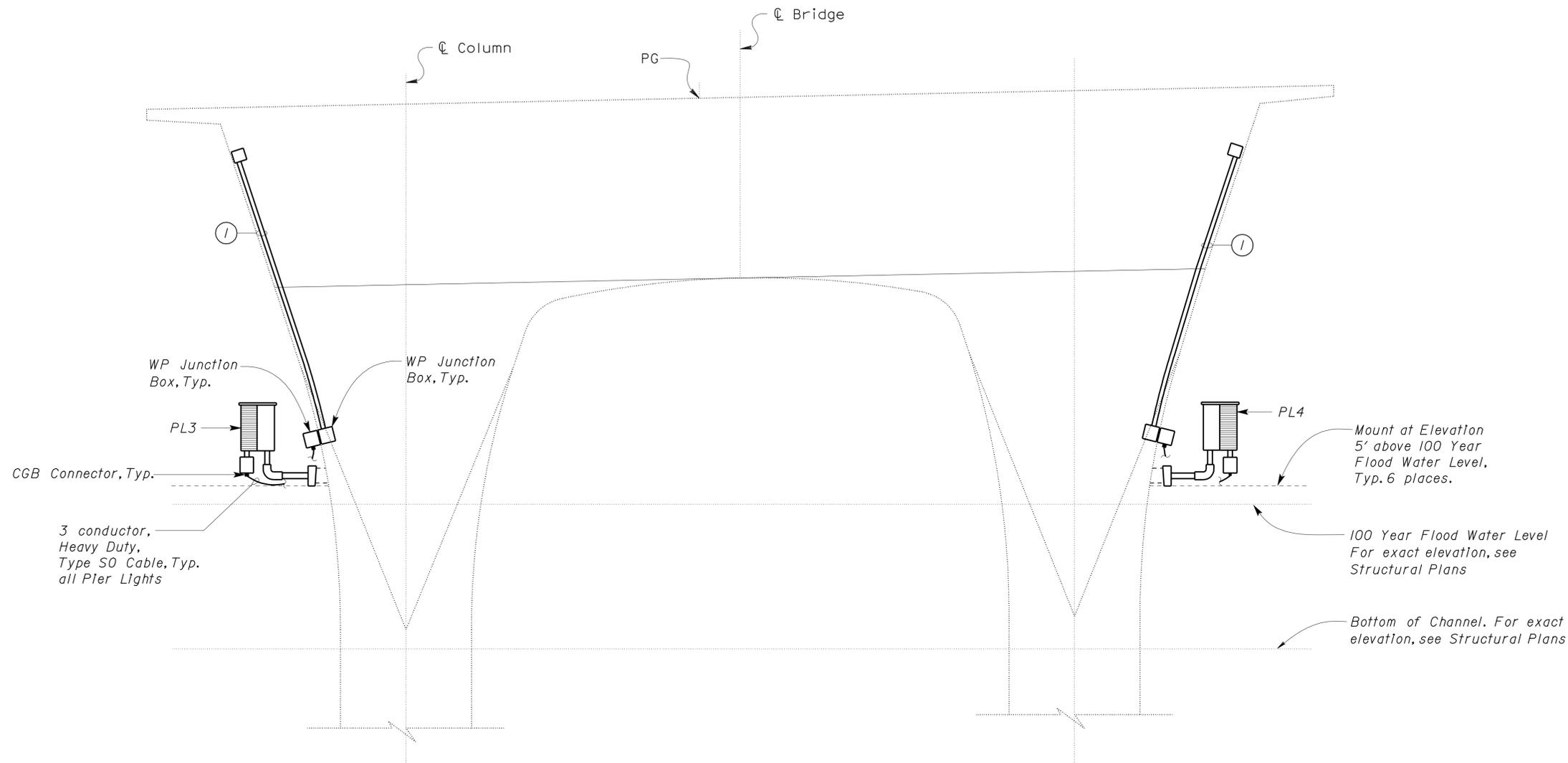
DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	SBd, La Paz	62, 95S1	142.2/142.6: 142.6/142.9	271	271

Jaswinder S Sandhu  
 REGISTERED ELECTRICAL ENGINEER DATE 6-26-09



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Notes:

- 1 1" C, 2\*12, 1\*12G

**TYPICAL SECTION**

SCALE 1/4" = 1'-0"

THIS DRAWING IS ACCURATE FOR ELECTRICAL WORK ONLY

DESIGN	BY	Joseph Abdelsayed	CHECKED	J.S. Sandhu	BRIDGE NO. 54-1272	POST MILE 142.3	SHEET <b>EE-3</b>	
	DETAILS	BY	Joseph Abdelsayed	CHECKED				J.S. Sandhu
	QUANTITIES	BY	Joseph Abdelsayed	CHECKED				J.S. Sandhu
STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION					DIVISION OF ENGINEERING SERVICES ELECTRICAL-MECHANICAL-WATER AND WASTEWATER DESIGN		<b>COLORADO RIVER BRIDGE (REPLACE)</b> PIER LIGHT DETAILS	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS					CU 08-221 EA 378701		REVISION DATES (PRELIMINARY STAGE ONLY)	
DOES SD Imperial Rev. 9/02					DISREGARD PRINTS BEARING EARLIER REVISION DATES		SHEET OF	

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