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THE STANDARD PLANS LIST APPLICABLE TO THIS CONTRACT IS INCLUDED IN THE NOTICE TO BIDDERS AND SPECIAL PROVISIONS BOOK

STATE OF CALIFORNIA **ACNHP-P330(009)E**  
**DEPARTMENT OF TRANSPORTATION**  
**PROJECT PLANS FOR CONSTRUCTION ON**  
**STATE HIGHWAY**  
**IN SAN BERNARDINO COUNTY**  
**NEAR HIGHLAND**  
**FROM 0.3 MILE NORTH OF ROUTE 210**  
**TO ROUTE 18**

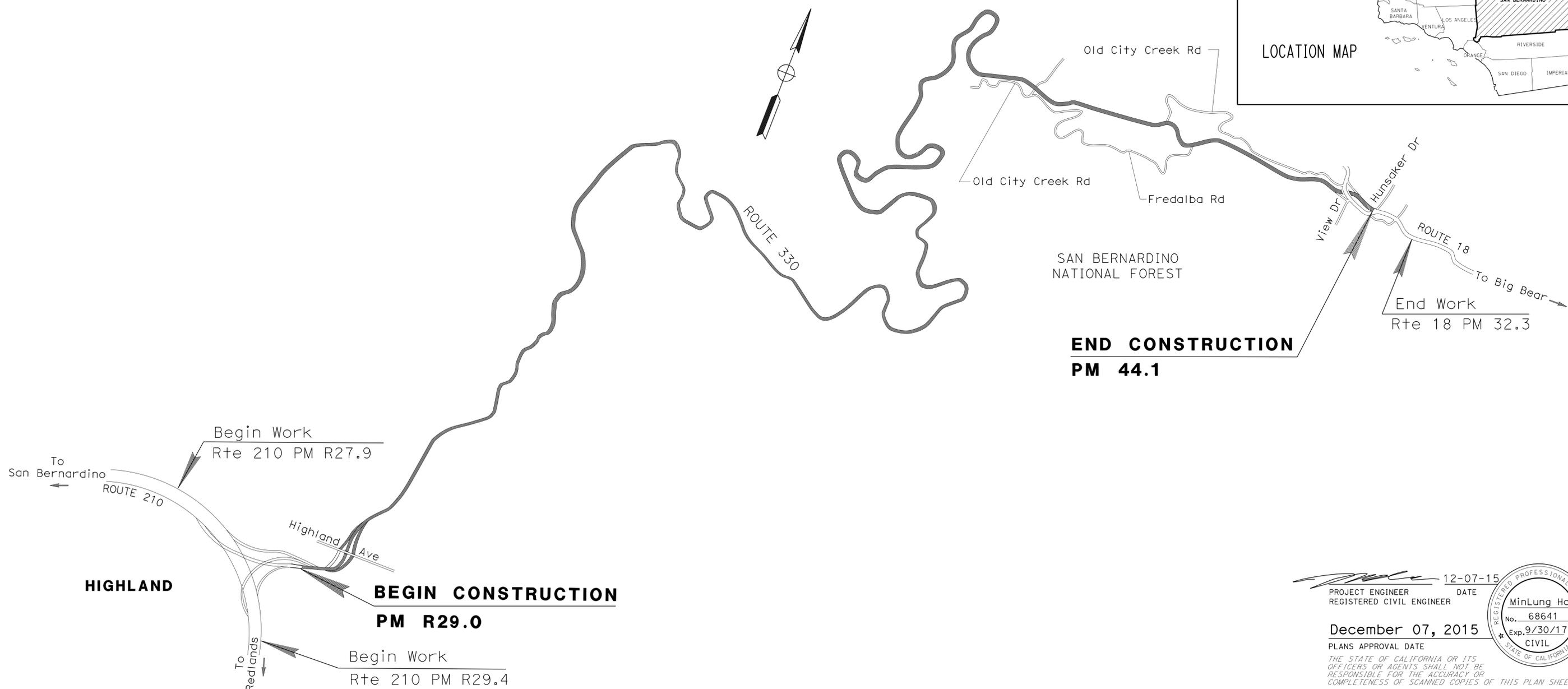
TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	330	R29.0/44.1	1	34



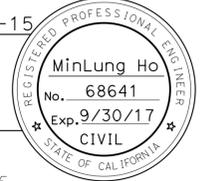


LOCATION MAP



PROJECT MANAGER  
**MIKE RISTIC**  
 DESIGN MANAGER  
**MINLUNG HO**

 12-07-15  
 PROJECT ENGINEER DATE  
 REGISTERED CIVIL ENGINEER  
**December 07, 2015**  
 PLANS APPROVAL DATE  
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



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

NO SCALE

LAST REVISION 12-07-15  
 DATE PLOTTED => 04-DEC-2015  
 TIME PLOTTED => 12:55

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	330	R29.0/44.1	2	34

REGISTERED CIVIL ENGINEER	DATE	12/07/15
MinLung Ho No. 68641 Exp. 9/30/17 CIVIL		
PLANS APPROVAL DATE		

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

**NOTES:**

1. DIMENSIONS OF THE STRUCTURAL SECTIONS ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.

2. ALL WORK WITHIN STATE RIGHT OF WAY.

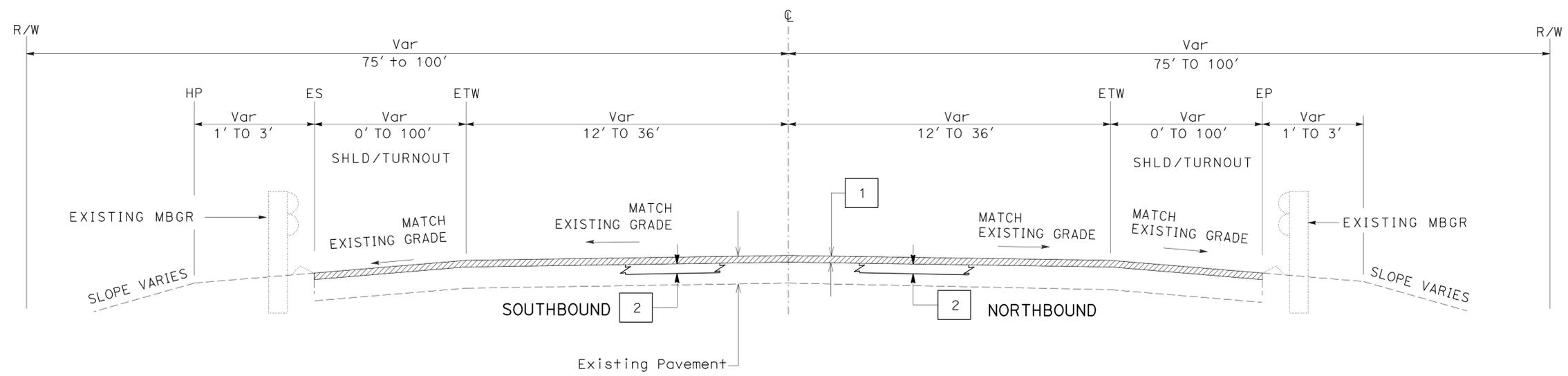
**LEGEND:**

 0.1' COLDPLANE AND PLACE 0.1' RUBBERIZED HOT MIX ASPHALT (TYPE-G) OVERLAY

**STRUCTURAL SECTION NOTES:**

1 0.1' COLDPLANE AND PLACE 0.1' RUBBERIZED HOT MIX ASPHALT (TYPE-G) OVERLAY

2 REPLACE ASPHALT CONCRETE SURFACING 0.4' MAX (TYPE A)(SEE C-2)



**ROUTE 330**  
FROM PM R29.02 TO PM 44.1

**TYPICAL CROSS SECTIONS**

NO SCALE

**X-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR
<b>Caltrans</b> MAINTENANCE ENGINEERING	KUANG H. CHEN	CHECKED BY	MINLUNG HO
			KUANG H. CHEN
			DATE REVISED

LAST REVISION DATE PLOTTED => 04-DEC-2015 12-07-15 TIME PLOTTED => 12:55





Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	330	R29.0/44.1	5	34

12/07/15  
 REGISTERED CIVIL ENGINEER DATE

12/07/15  
 PLANS APPROVAL DATE

MinLung Ho  
 No. 68641  
 Exp. 9/30/17  
 CIVIL

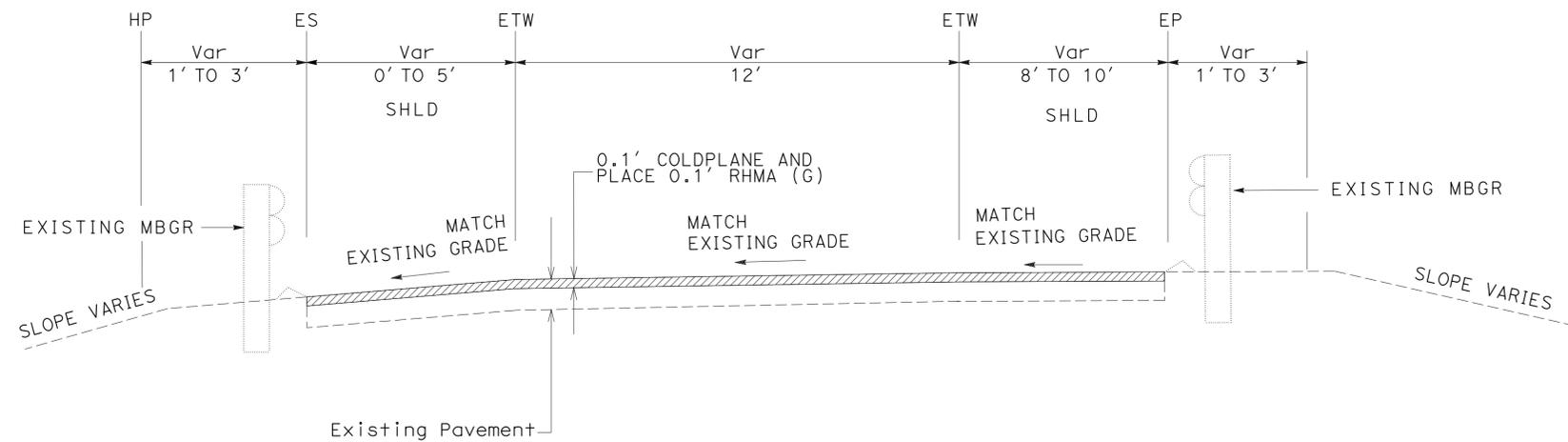
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

**NOTES:**

- DIMENSIONS OF THE STRUCTURAL SECTIONS ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
- NO COLDPLANE AND OVERLAY WILL BE PERFORMED ON LOCATIONS OF EXISTING CONCRETE PAVEMENT AND DRAINAGE INLET.
- ALL WORK WITHIN STATE RIGHT OF WAY.

**LEGEND:**

 0.1' COLDPLANE AND PLACE 0.1' RUBBERIZED HOT MIX ASPHALT (TYPE-G) OVERLAY



**HIGHLAND RAMP**  
 NB ON TO HIGHLAND AVE.  
 FROM PM R29.605 TO PM R29.778  
 (LENGTH = 1192')

**TYPICAL CROSS SECTIONS**

NO SCALE

**X-4**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR	REVISOR
KUANG H. CHEN	MINLUNG HO
CHECKED BY	DATE REVISED
	KUANG H. CHEN
CALCULATED/DESIGNED BY	

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	330	R29.0/44.1	6	34

REGISTERED CIVIL ENGINEER	DATE	12/07/15
12/07/15 PLANS APPROVAL DATE		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.		

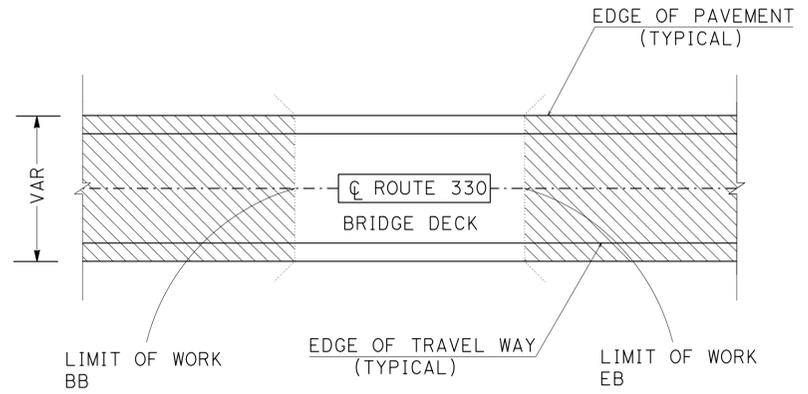
REGISTERED PROFESSIONAL ENGINEER  
 MinLung Ho  
 No. 68641  
 Exp. 9/30/17  
 CIVIL  
 STATE OF CALIFORNIA

**NOTES:**

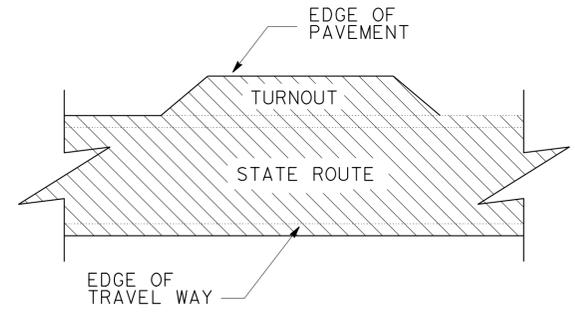
1. ALL WORK WITHIN STATE RIGHT OF WAY.
2. EXACT LIMITS SHALL BE DETERMINED BY THE ENGINEER.
3. ALL COLD PLANING SHALL BE PERFORMED BEFORE APPLYING RHMA OVERLAY.
4. THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.
5. NO WORK WITHIN BRIDGE DECK AND APPROACH SLABS.

**LEGEND:**

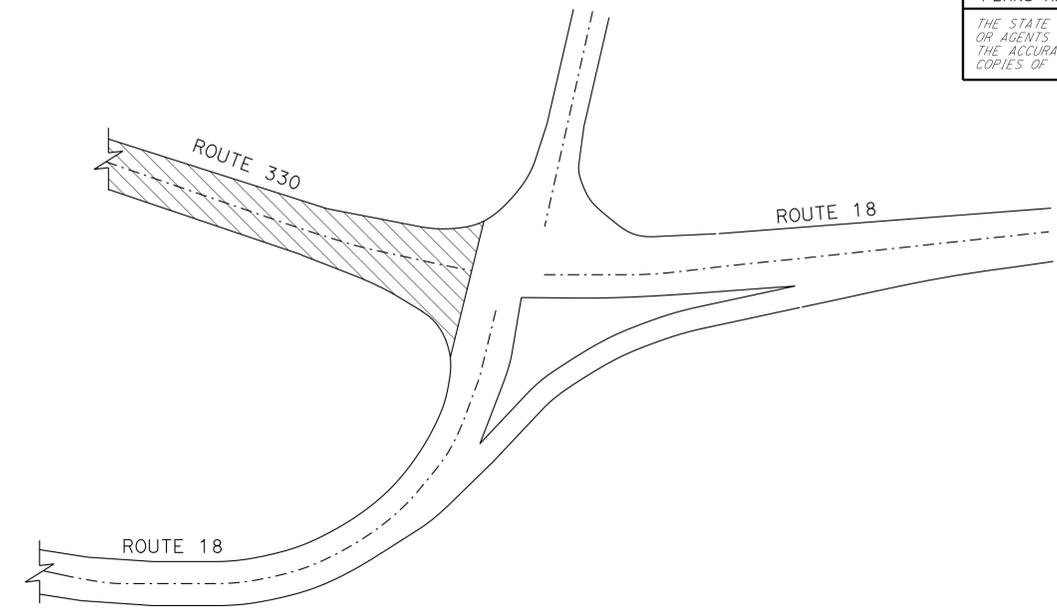
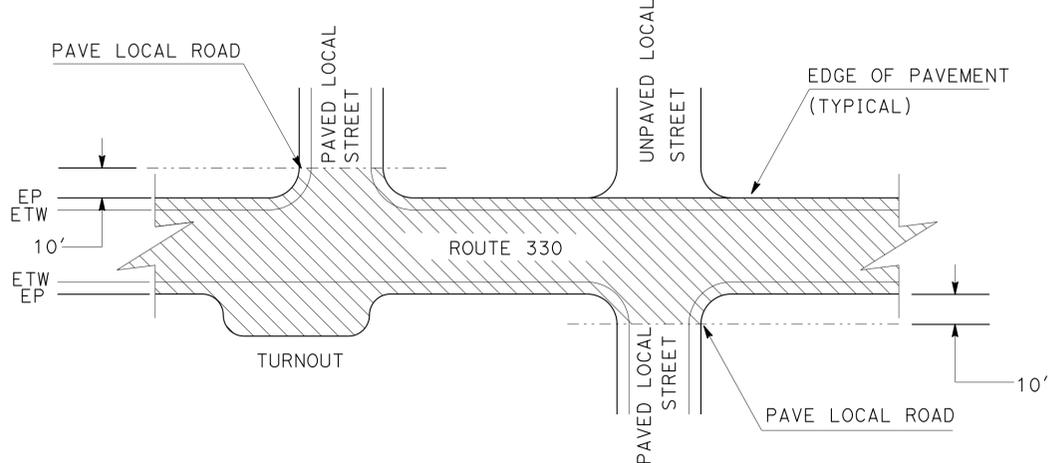
- LIMITS OF WORK
- COLD PLANE ASPHALT CONCRETE PAVEMENT, AND PLACE RHMA (TYPE G)



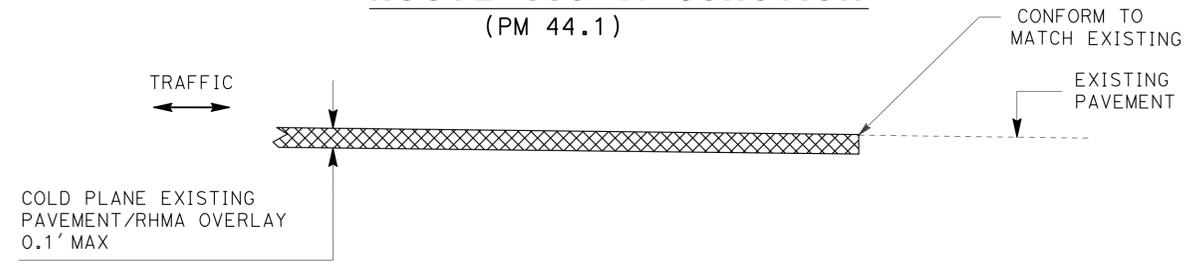
**LIMITS OF WORK (BRIDGE)**



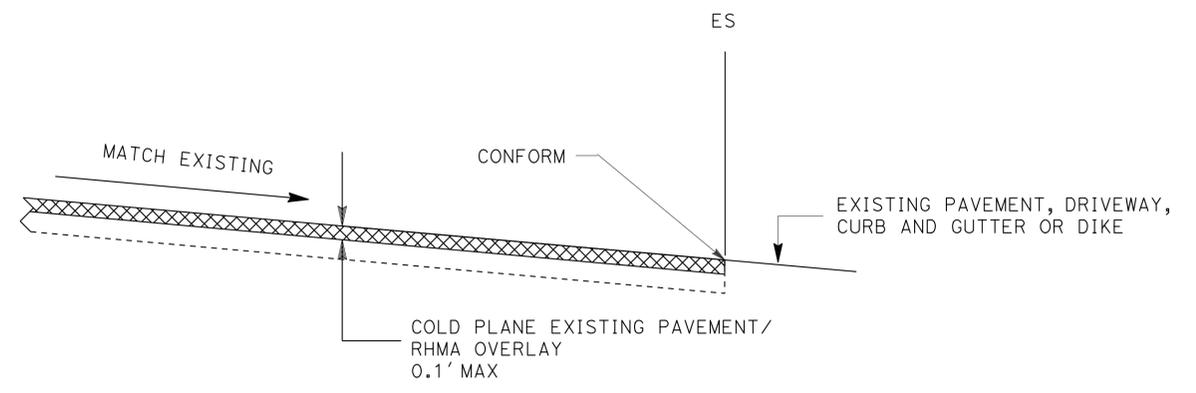
**LIMITS OF WORK (LOCAL STREETS)**



**ROUTE 330/18 JUNCTION (PM 44.1)**



**TRANSVERSE PAVEMENT CONFORM AT BEGIN AND END OF COLD PLANE/OVERLAY**



**EDGE OF PAVEMENT CONFORM DETAIL (Typ)**

**CONSTRUCTION DETAILS**

NO SCALE

**C-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** MAINTENANCE ENGINEERING  
 FUNCTIONAL SUPERVISOR: KUANG H. CHEN  
 MINLUNG HO  
 REVISED BY: KUANG H. CHEN  
 CALCULATED/DESIGNED BY: [blank]  
 CHECKED BY: [blank]

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** MAINTENANCE ENGINEERING

REVISOR  
 REVISION  
 DATE

MINLUNG HO  
 KUANG H. CHEN

CALCULATED-DESIGNED BY  
 CHECKED BY

FUNCTIONAL SUPERVISOR  
 KUANG H. CHEN

**NOTES:**

1. ALL WORK WITHIN STATE RIGHT OF WAY.
2. EXACT LIMITS AND LOCALIZED DIG-OUTS LOCATION SHALL BE DETERMINED BY THE ENGINEER.

**LEGEND:**

-  0.1' COLD PLANE AND PLACE 0.1' RHMA (TYPE-G) OVERLAY
-  0.4' REPLACE ASPHALT CONCRETE SURFACING (HMA-A)

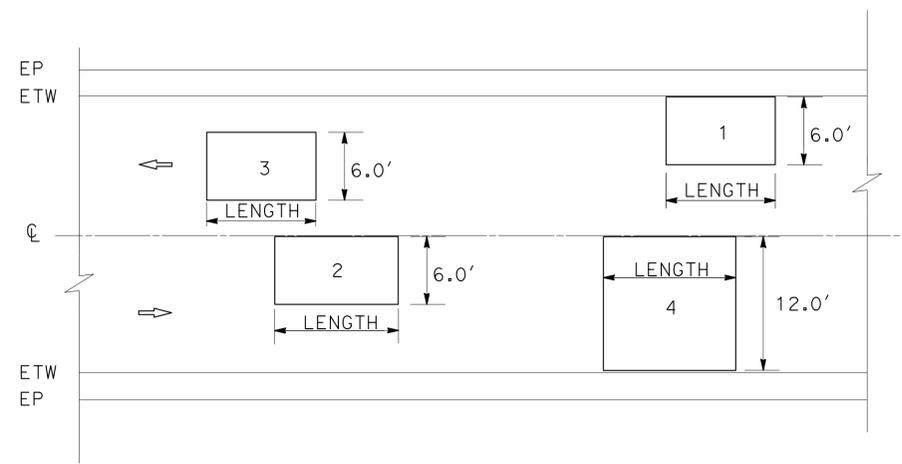
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	330	R29.0/44.1	7	34

12/07/15  
 REGISTERED CIVIL ENGINEER DATE

12/07/15  
 PLANS APPROVAL DATE

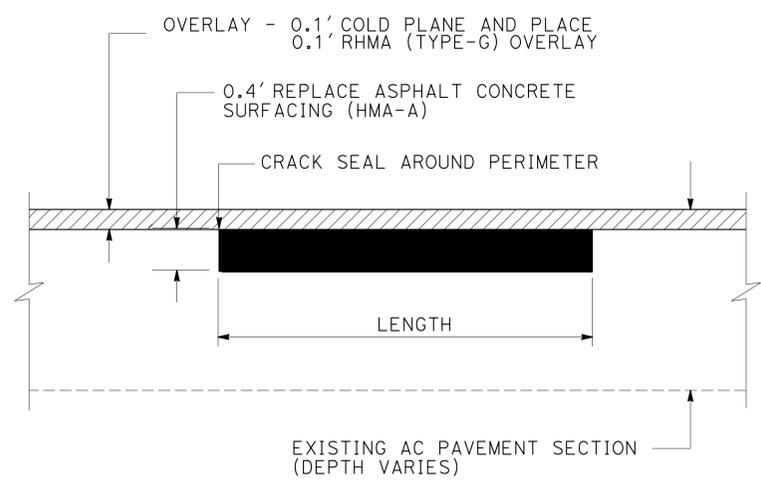
MinLung Ho  
 No. 68641  
 Exp. 9/30/17  
 CIVIL

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



**REPLACE ASPHALT SURFACING (LAYOUT)**

- CASE 1: RIGHT WHEEL TRACK (R)
- CASE 2: LEFT WHEEL TRACK (L)
- CASE 3: CENTER OF TRAVEL WAY (C)
- CASE 4: ENTIRE LANE WIDTH (E)



**REPLACE ASPHALT SURFACING (PROFILE)**

FOR REPLACE ASPHALT CONCRETE SURFACING  
 LOCATIONS AND DIMENSIONS SEE SHEET Q-1

**CONSTRUCTION DETAILS**  
 NO SCALE  
**C-2**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	330	R29.0/44.1	8	34

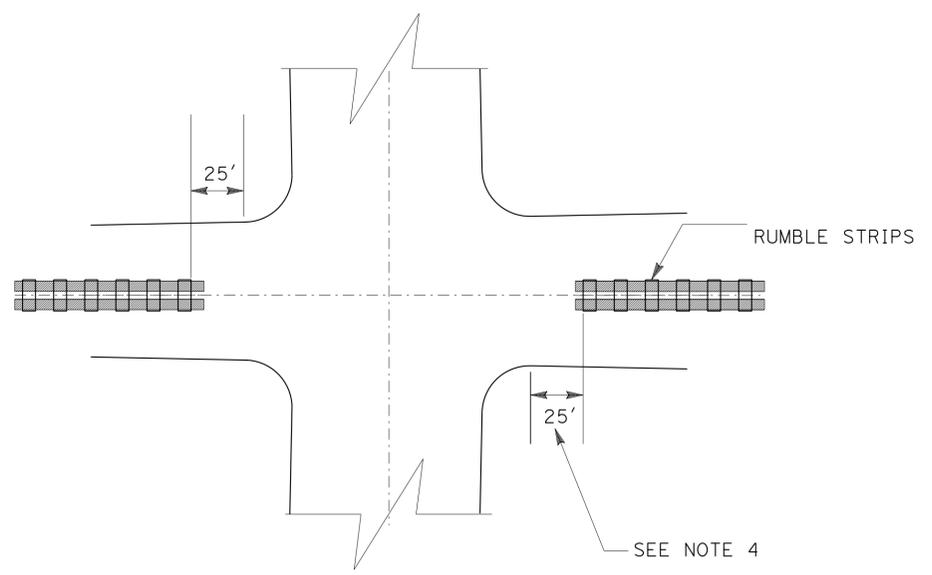
REGISTERED CIVIL ENGINEER	DATE	12/07/15
MinLung Ho No. 68641 Exp. 9/30/17 CIVIL		
PLANS APPROVAL DATE		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>		

**NOTES:**

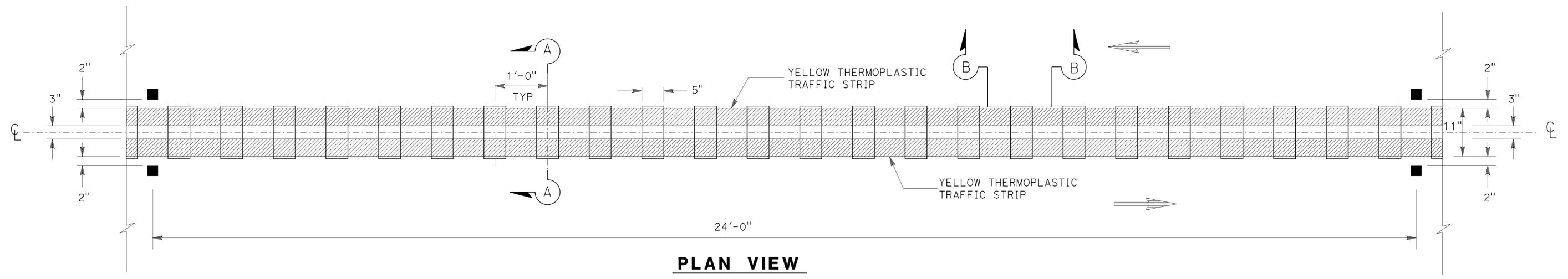
1. ALL WORK WITHIN STATE RIGHT OF WAY.
2. EXACT LIMITS SHALL BE DETERMINED BY THE ENGINEER.
3. EXISTING UTILITY FACILITIES HAVE NOT BEEN PLOTTED ON THESE PLAN SHEETS
4. RUMBLE STRIPS SHOULD NOT BE PLACED WITHIN 25 FEET FROM THE END CURB RADIUS OR AS DIRECTED BY ENGINEER

**LEGEND:**

- Type D, TWO-WAY YELLOW RECESSED RETROREFLECTIVE
- ▨ 4" YELLOW THERMOPLASTIC TRAFFIC STRIPE  
- TO BE STRIPED AFTER RUMBLE STRIP IS CONSTRUCTED.
- ▭ CENTERLINE RUMBLE STRIP (AC, GROUND-IN)
- ➔ DIRECTION OF TRAVEL

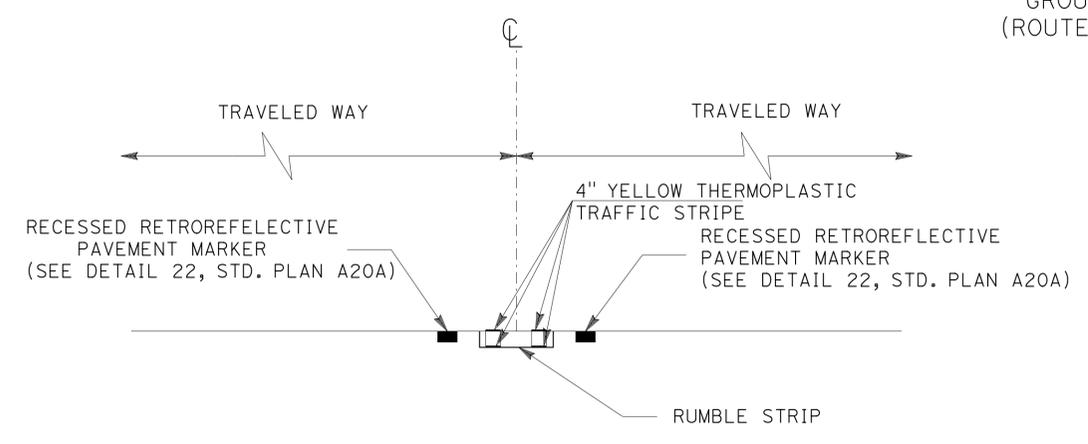


**TYPICAL INTERSECTION**



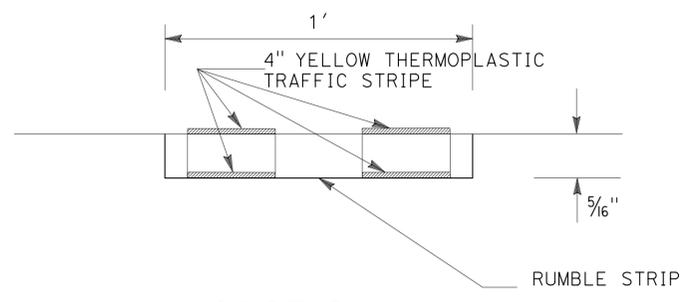
**PLAN VIEW**

ASPHALT CONCRETE SURFACING  
GROUND-IN INDENTATIONS  
(ROUTE 330, PM T30.2/43.5)

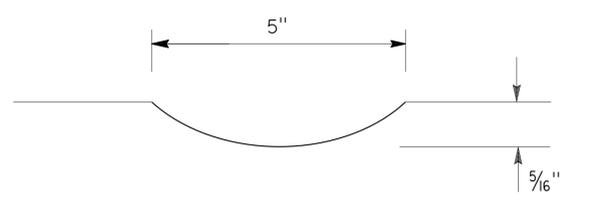


**CROSS SECTION**

TYPICAL CENTERLINE RUMBLE STRIP(GROUND-IN)



**SECTION A-A**



**SECTION B-B**

**CONSTRUCTION DETAILS**

NO SCALE

**C-3**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** MAINTENANCE ENGINEERING  
 FUNCTIONAL SUPERVISOR: KUANG H. CHEN  
 CALCULATED/DESIGNED BY: KUANG H. CHEN  
 CHECKED BY: KUANG H. CHEN  
 REVISIONS: MINLUNG HO, KUANG H. CHEN  
 REVISOR: MINLUNG HO, KUANG H. CHEN  
 DATE: 12/07/15



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 TRAFFIC DESIGN  
 FUNCTIONAL SUPERVISOR: MARIO L. AMANCIO  
 DEAN TO: PATTI BARTOLI  
 REVISIONS: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

**NOTE:**  
REFER TO STANDARD PLAN T14 FOR RAMP CLOSURE

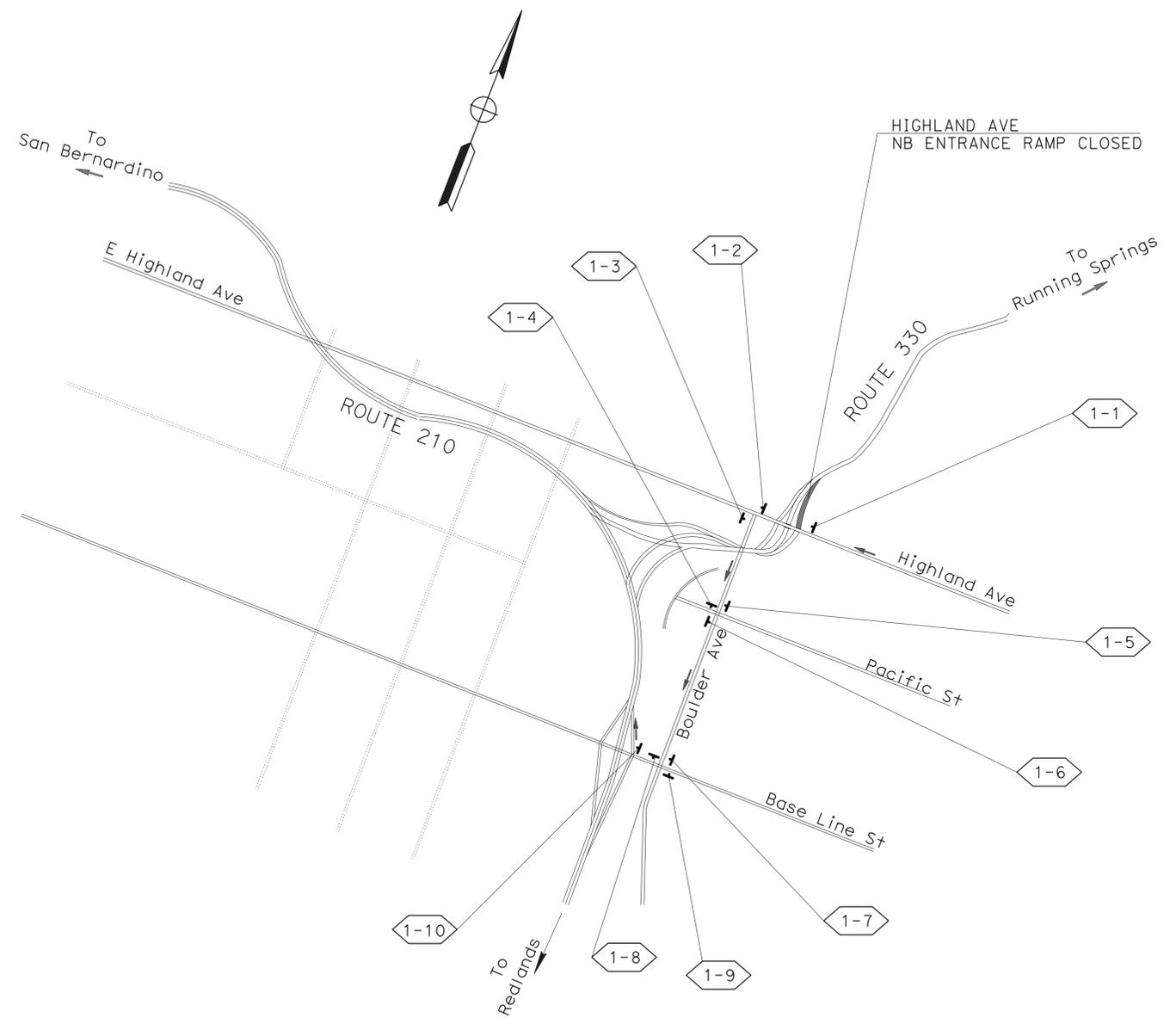
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	330	R29.0/44.1	10	34

REGISTERED CIVIL ENGINEER: *Dean D To*  
 DATE: 12/07/15  
 PLANS APPROVAL DATE: 12/07/15  
 No. 81698  
 Exp 3/31/16  
 CIVIL  
 STATE OF CALIFORNIA

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

**CONSTRUCTION AREA SIGNS**

SIGN	SIGN CODE	PANEL SIZE (in)	SIGN MESSAGE	NO. OF POST AND SIZE
1-1	G28-2(CA)(330)	28 X 25	STATE SHIELD	1 - 6" X 6"
	M3-1	30 X 15	NORTH	
	SC3-1(CA)	48 X 18	DETOUR WITH UP ARROW	
1-2	G28-2(CA)(330)	28 X 25	STATE SHIELD	1 - 6" X 6"
	M3-1	30 X 15	NORTH	
	M4-10L	48 X 18	DETOUR WITH HORIZ. ARROW	
1-3	G28-2(CA)(330)	28 X 25	STATE SHIELD	1 - 6" X 6"
	M3-1	30 X 15	NORTH	
	M4-10R	48 X 18	DETOUR WITH HORIZ. ARROW	
1-4	G28-2(CA)(330)	28 X 25	STATE SHIELD	1 - 6" X 6"
	M3-1	30 X 15	NORTH	
	SC3-1(CA)	48 X 18	DETOUR WITH UP ARROW	
1-5	G28-2(CA)(330)	28 X 25	STATE SHIELD	1 - 6" X 6"
	M3-1	30 X 15	NORTH	
	M4-10L	48 X 18	DETOUR WITH HORIZ. ARROW	
1-6	G28-2(CA)(330)	28 X 25	STATE SHIELD	1 - 6" X 6"
	M3-1	30 X 15	NORTH	
	M4-10R	48 X 18	DETOUR WITH HORIZ. ARROW	
1-7	G28-2(CA)(330)	28 X 25	STATE SHIELD	1 - 6" X 6"
	M3-1	30 X 15	NORTH	
	M4-10L	48 X 18	DETOUR WITH HORIZ. ARROW	
1-8	G28-2(CA)(330)	28 X 25	STATE SHIELD	1 - 6" X 6"
	M3-1	30 X 15	NORTH	
	M4-10R	48 X 18	DETOUR WITH HORIZ. ARROW	
1-9	G28-2(CA)(330)	28 X 25	STATE SHIELD	1 - 6" X 6"
	M3-1	30 X 15	NORTH	
	M4-10L	48 X 18	DETOUR WITH HORIZ. ARROW	
1-10	G28-2(CA)(330)	28 X 25	STATE SHIELD	1 - 6" X 6"
	M3-1	30 X 15	NORTH	
	M6-2	21 x 15	ARROW SYMBOL	



**HIGHLAND AVENUE NORTHBOUND ENTRANCE RAMP DETOUR**

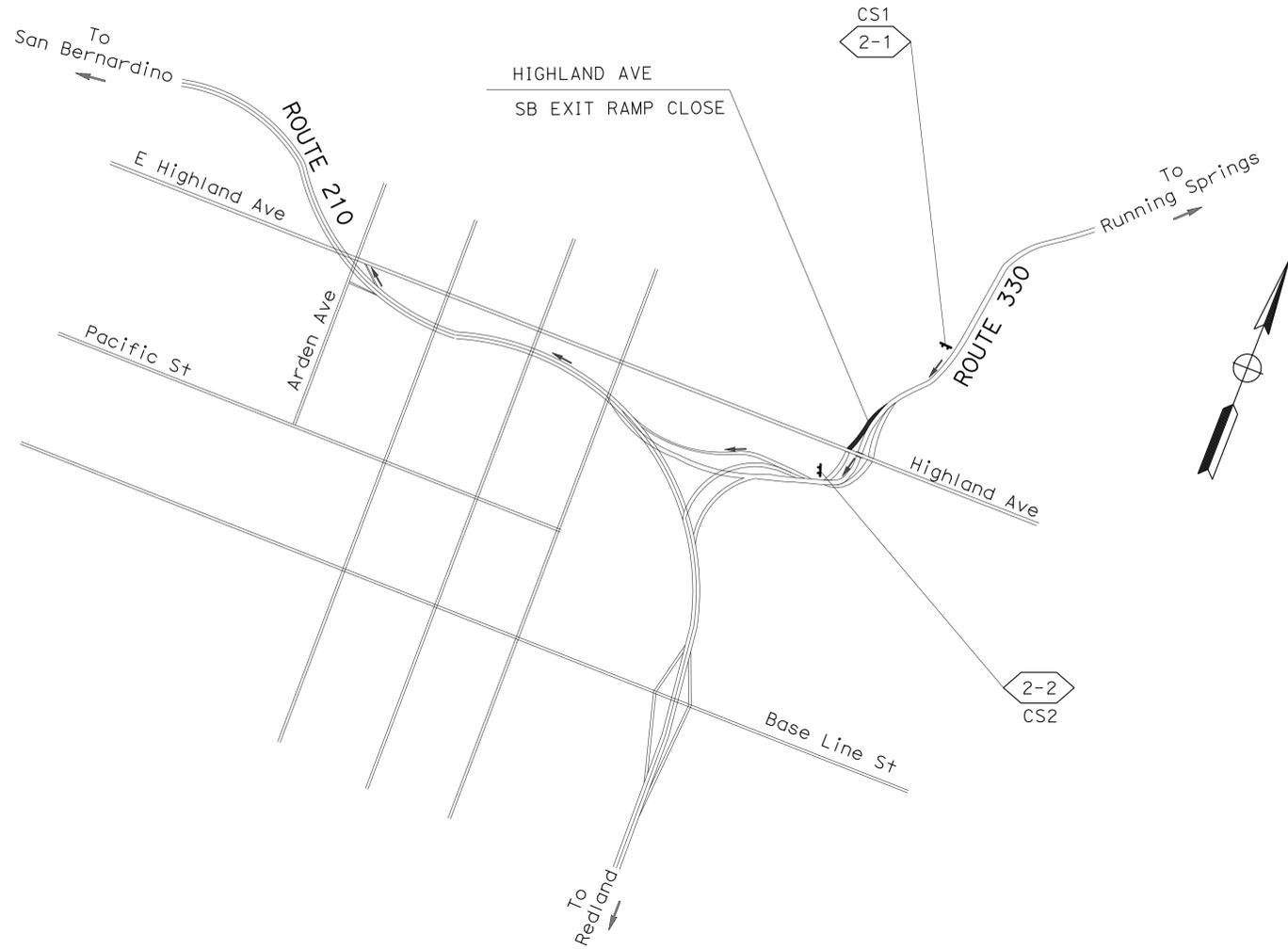
**MOTORIST INFORMATION PLAN**

NO SCALE **MI-1**

APPROVED FOR MOTORIST INFORMATION WORK ONLY

LAST REVISION | DATE PLOTTED => 04-DEC-2015  
 12-07-15 TIME PLOTTED => 12:55

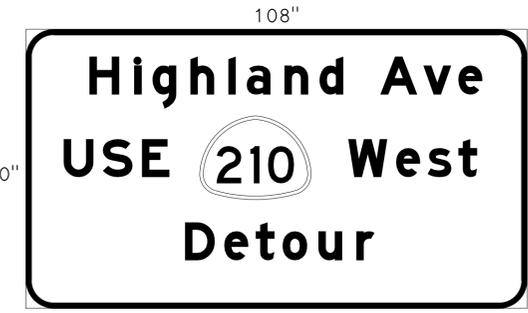
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	330	R29.0/44.1	11	34
Dean D To REGISTERED CIVIL ENGINEER		12/07/15 DATE			
12/07/15 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



**HIGHLAND AVE SB EXIT RAMP DETOUR**



CS1  
LETTER SIZE: 8D  
BLACK ON ORANGE



CS2  
LETTER SIZE: 8D  
BLACK ON ORANGE

**CONSTRUCTION AREA SIGN**

SIGN	SIGN CODE	PANEL SIZE (in)	SIGN MESSAGE	NO. OF POST AND SIZE
	CS1	96 X 48	HIGHLAND EXIT CLOSED DETOUR AHEAD	2 - 6" X 6"
	CS2	108 X 60	HIGHLAND AVE USE <b>(210)</b> WEST DETOUR	2 - 6" X 8"

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 TRAFFIC DESIGN  
 FUNCTIONAL SUPERVISOR: MARIO L. AMANCIO  
 DEAN TO: PATTI BARTOLI  
 REVISIONS: (table with columns: REVISED BY, DATE REVISED)  
 CALCULATED/DESIGNED BY: (blank)  
 CHECKED BY: (blank)

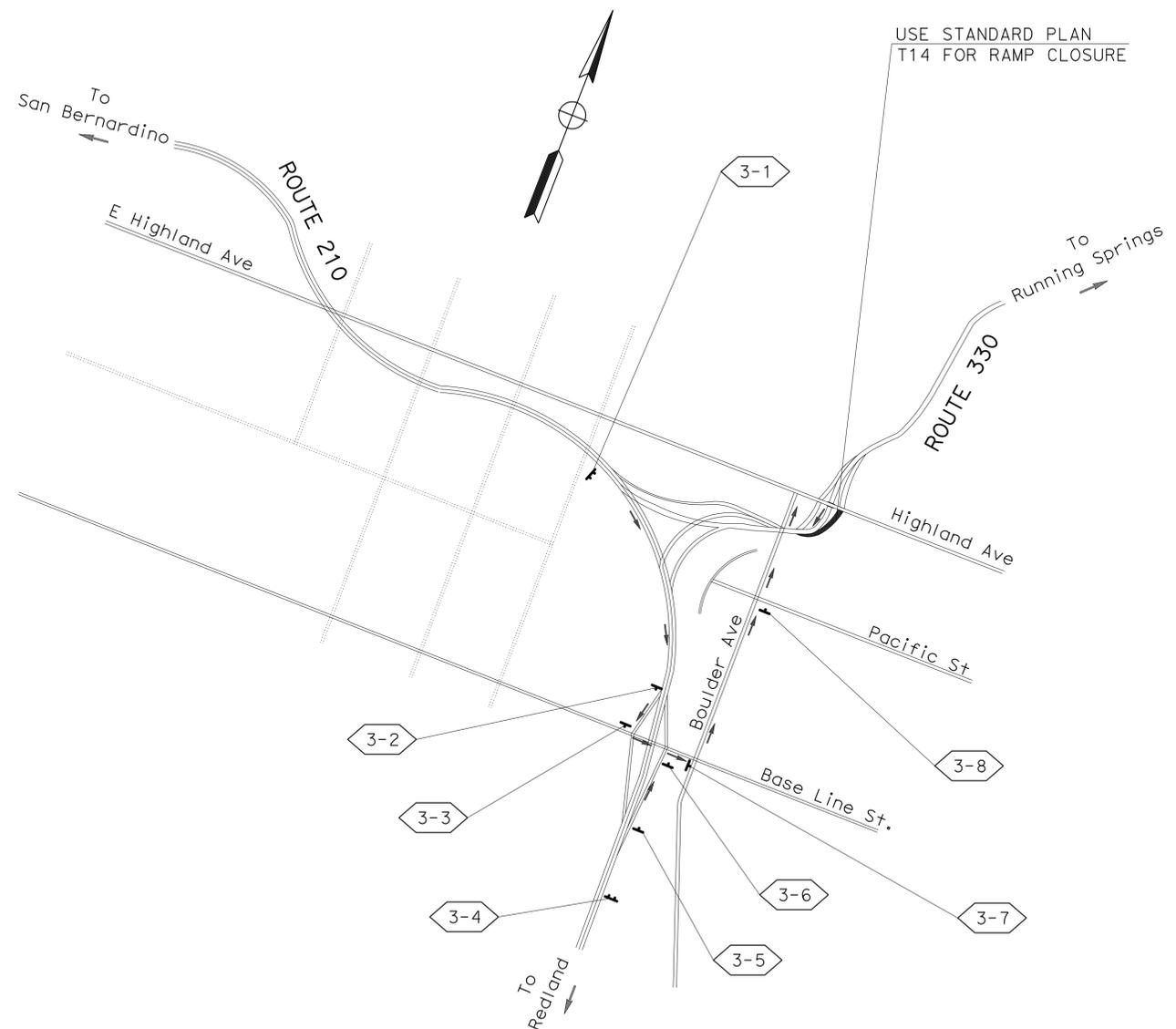
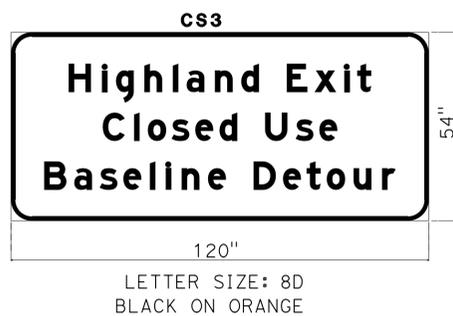
APPROVED FOR MOTORIST INFORMATION WORK ONLY

**MOTORIST INFORMATION PLAN**  
NO SCALE  
**MI-2**

LAST REVISION | DATE PLOTTED => 04-DEC-2015  
 12-07-15 | TIME PLOTTED => 12:55

### CONSTRUCTION AREA SIGNS

SIGN	SIGN CODE	PANEL SIZE (in)	SIGN MESSAGE	NO. OF POSTS AND SIZE
3-1	CS3	120 X 54	HIGHLAND EXIT CLOSED USE BASELINE DETOUR	2 - 6" X 8"
3-2	D3(Hi)	96 X 24	HIGHLAND AVE	1 - 6" X 6"
	M4-8	30 X 15	DETOUR	
	M6-2	21 X 15	ARROW SYMBOL	
3-3	D3(Hi)	96 X 24	HIGHLAND AVE	1 - 6" X 6"
	M4-10L	48 X 18	DETOUR WITH HORIZ. ARROW	
3-4	CS2	120 X 54	HIGHLAND EXIT CLOSED USE BASELINE DETOUR	1 - 6" X 8"
	D3(Hi)	96 X 24	HIGHLAND AVE	
3-5	M4-8	30 X 15	DETOUR	1 - 6" X 6"
	M6-2	21 X 15	ARROW SYMBOL	
	D3(Hi)	120 X 54	HIGHLAND AVE	
3-6	M4-10R	48 X 18	DETOUR WITH HORIZ. ARROW	1 - 6" X 6"
3-7	M4-10L	48 X 18	DETOUR WITH HORIZ. ARROW	1 - 4" X 6"
3-8	SC3-1(CA)	48 X 18	DETOUR WITH STRAIGHT ARROW	1 - 4" X 6"



### HIGHLAND AVENUE NB EXIT RAMP DETOUR

## MOTORIST INFORMATION PLAN

NO SCALE

### MI-3

APPROVED FOR MOTORIST INFORMATION WORK ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	330	R29.0/44.1	13	34

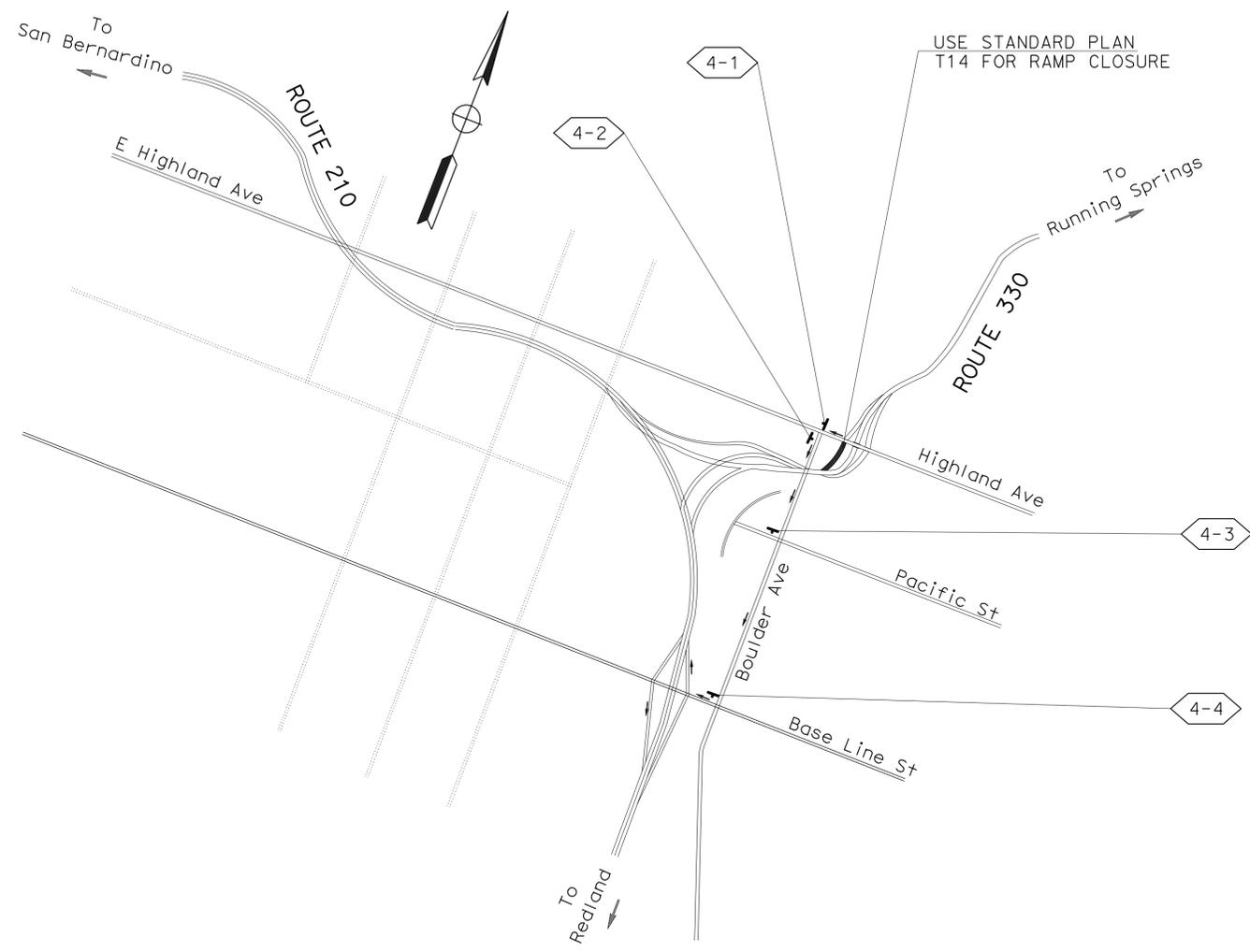
Dean D To 12/07/15  
 REGISTERED CIVIL ENGINEER DATE  
 12/07/15  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 Dean D To  
 No. 81698  
 Exp 3/31/16  
 CIVIL  
 STATE OF CALIFORNIA

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

### CONSTRUCTION AREA SIGNS

SIGN	SIGN CODE	PANEL SIZE (in)	SIGN MESSAGE	NO. OF POST AND SIZE
4-1	G28-2(CA)(210)	28 X 25	STATE SHIELD	1 - 6" X 6"
	M3-1	30 X 15	NORTH	
	M4-10L	48 X 18	DETOUR WITH HORIZ. ARROW	
4-2	G28-2(CA)(210)	28 X 25	STATE SHIELD	1 - 6" X 6"
	M3-1	30 X 15	NORTH	
	M4-10R	48 X 18	DETOUR WITH HORIZ. ARROW	
4-3	SC3-1(CA)	48 X 18	DETOUR WITH STRAIGHT ARROW	1 - 4" X 6"
4-4	M4-10R	48 X 18	DETOUR WITH HORIZ. ARROW	1 - 4" X 6"



### HIGHLAND AVE SB ENTRANCE RAMP DETOUR

## MOTORIST INFORMATION PLAN

NO SCALE **MI-4**

APPROVED FOR MOTORIST INFORMATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 TRAFFIC DESIGN  
 DEAN TO  
 PATTI BARTOLI  
 DEAN TO  
 PATTI BARTOLI  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 FUNCTIONAL SUPERVISOR  
 MARIO L. AMANCIO  
 REVISOR  
 DATE REVISOR  
 DATE REVISOR

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	330	R29.0/44.1	14	34

12/07/15  
 REGISTERED CIVIL ENGINEER DATE  
 12/07/15  
 PLANS APPROVAL DATE

Dean D To  
 No. 81698  
 Exp 3/31/16  
 CIVIL

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

**PAVEMENT DELINEATION QUANTITIES**

POSTMILE LIMITS	DETAIL No. OR PAVEMENT MARKING	THERMOPLASTIC TRAFFIC STRIPE (SPRAYABLE)			THERMOPLASTIC TRAFFIC STRIPE (RECESSED)	RETROREFLECTIVE PAVEMENT MARKER (RECESSED)				NON-REFLECTIVE PAVEMENT MARKER (RECESSED)	THERMOPLASTIC PAVEMENT MARKING SQFT	
		4" YELLOW	4" WHITE	8" WHITE	4" WHITE	TYPE C	TYPE D	TYPE G	TYPE H	TYPE A		
		LF	LF	LF	LF	EA	EA	EA	EA	EA		
R29.02-44.1	8											
	12		20736					433				
	13M		6653					140		560		
	19	5280					111		221			
	22	114356					4767					
	25A	4800										
	27B				173184							
	29	47768					996					
	37			1200		82			10			
	38			4100				173				
	38B			300				28				
	12" WHITE											360
	TYPE I (24') ARROW											62
	TYPE II ARROW											180
	TYPE III ARROW											126
	TYPE IV ARROW											15
	TYPE V ARROW											66
	TYPE VI ARROW											630
	"SIGNAL"											64
	"AHEAD"											66
12" WHITE DIAGONAL											720	
12" WHITE ISLAND											650	
SUBTOTAL		172204	27389	5600	173184	82	5874	774	231	560	3039	
TOTAL		205193			173184	6961				560	2939	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 TRAFFIC DESIGN  
 FUNCTIONAL SUPERVISOR: MARIO L. AMANCIO  
 DEAN TO: DEAN TO  
 PATTI BARTOLI  
 CALCULATED/DESIGNED BY: [blank]  
 CHECKED BY: [blank]  
 REVISED BY: [blank]  
 DATE REVISED: [blank]

**PAVEMENT DELINEATION QUANTITIES  
PDQ-1**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	330	R29.0/44.1	15	34

12/07/15  
REGISTERED CIVIL ENGINEER DATE

12/07/15  
PLANS APPROVAL DATE

MinLung Ho  
No. 68641  
Exp. 9/30/17  
CIVIL

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### PAVEMENT QUANTITIES

BEGIN PM	END PM	LOCATION	(N) WIDTH (FT)	RUBBERIZED HOT MIX ASPHALT TYPE G (TON)	TACK COAT (TON)	COLD PLANE ASPHALT CONCRETE PAVEMENT (SQYD)	(N) REMARK
R29.02	44.1	MAINLINE	12-24	16,907	63	250,484	TURNOUTS ON NB AT PM 37.6, PM 42.4, AND PM 43.2 ARE OVERLAY ONLY WITHOUT COLD PLANE.
		TURNOUT/SHLD/ MEDIAN/INTERSECT	VAR	7,231	27	96,125	
		HIGHLAND RAMP	VAR	602	2	8,911	
		TOTAL		24,740	92	355,520	

(N)-NOT A SEPARATE PAY ITEM. FOR INFORMATION ONLY.

### REPLACE ASPHALT CONCRETE SURFACING

PM	DIRECTION	WHEEL TRACK	(N) LENGTH (FT)	(N) NUMBER OF LOCATION	REPLACE ASPHALT CONCRETE SURFACING (CY)
R29.02/44.1	NB	E	9,103	25	1,632
R29.02/44.1	SB	L, R, E	3,960	26	568
TOTAL			13,063	51	2,200

(N)-NOT A SEPARATE PAY ITEM. FOR INFORMATION ONLY.

### SURVEY MONUMENT QUANTITIES

LOCATION	SURVEY MONUMENT (TYPE D) (EA)
R29.02/44.1	50

### RUMBLE STRIP QUANTITY

LOCATION (PM)	CENTERLINE RUMBLE STRIP (AC, GROUND-IN) (STA)
T30.2/43.5	703

## SUMMARY OF QUANTITIES

Q-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** MAINTENANCE ENGINEERING  
 FUNCTIONAL SUPERVISOR  
 KUANG H. CHEN  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 MINLUNG HO  
 KUANG H. CHEN  
 REVISED BY  
 DATE REVISED

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**® ELECTRICAL DESIGN B

FUNCTIONAL SUPERVISOR  
 FERDINAND DE LA CRUZ

CALCULATED/DESIGNED BY  
 CHECKED BY

WALEED ABOUL-HOSN  
 FERDINAND DE LA CRUZ

REVISOR BY  
 DATE REVISED

WA  
 05/14

**NOTES:**

1. ALL DISTANCES ARE APPROXIMATE. PRIOR TO CONSTRUCTION, THE CONTRACTOR MUST VERIFY ALL LOOP LOCATIONS.
2. NEW DETECTOR LOOPS MUST BE INSTALLED AT LOCATION OF EXISTING LOOPS.
3. NEW INDUCTIVE LOOP DETECTORS MUST BE SPLICED TO EXISTING dlc.
4. EXISTING LOOPS THAT ARE TO BE REPLACED MUST BE **AB**
5. CONTRACTOR MUST COORDINATE WITH TRAFFIC OPERATIONS AT 909-383-5947 TO VERIFY COUNT LOOP DETECTOR OPERATION.
6. THE CONTRACTOR MUST NOTIFY THE ENGINEER THREE WORKING DAYS PRIOR TO INSTALLING INDUCTIVE LOOP DETECTORS.
7. LABEL CONDUCTOR ENDS AS PER STANDARD PLAN ES-13B.

**LEGEND:**

- 1** INSTALL TYPE 334L CONTROLLER CABINET.

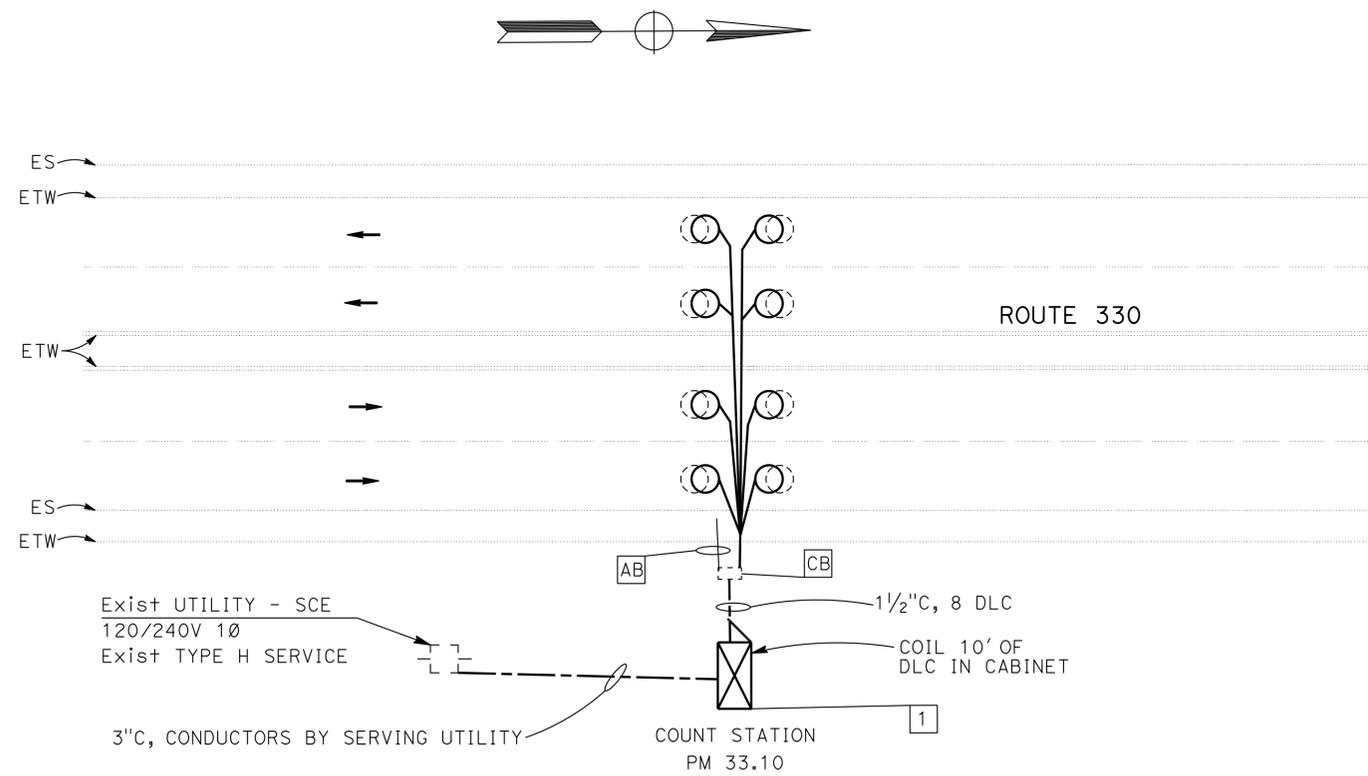
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	330	R29.0/44.1	16	34

*Ferdinand De La Cruz* 12/07/15  
 REGISTERED ELECTRICAL ENGINEER DATE

12/07/15  
 PLANS APPROVAL DATE

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

REGISTERED PROFESSIONAL ENGINEER  
**FERDINAND DE LA CRUZ**  
 No. E17215  
 Exp. 6-30-16  
 ELECTRICAL  
 STATE OF CALIFORNIA



**MODIFY TRAFFIC MONITORING STATION**

APPROVED FOR ELECTRICAL WORK ONLY

NO SCALE

**E-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**® ELECTRICAL DESIGN B

FUNCTIONAL SUPERVISOR  
 FERDINAND DE LA CRUZ

CALCULATED-DESIGNED BY  
 CHECKED BY

WALEED ABOUL-HOSN  
 FERDINAND DE LA CRUZ

REVISED BY  
 DATE REVISED

WA  
 05/14

**NOTE:**  
 THE QUANTITIES SHOWN ON THIS TABLE ARE NOT SEPARATE PAY ITEMS, FOR INFORMATION ONLY. FOR COMPLETE ELECTRICAL WORK, SEE ELECTRICAL PLAN SHEET E-1.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	330	R29.0/44.1	17	34

 12/07/15  
 REGISTERED ELECTRICAL ENGINEER DATE

12/07/15  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 FERDINAND DE LA CRUZ  
 No. E17215  
 Exp. 6-30-16  
 ELECTRICAL  
 STATE OF CALIFORNIA

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

**MODIFY TRAFFIC MONITORING STATION**

SHEET No.	1 1/2" C TYPE 3	3" C TYPE 3	DETECTOR LOOP	DLC	TYPE 334 CABINET
	LF	LF	EA	LF	EA
E-1	50	75	8	240	1

**ELECTRICAL QUANTITIES**  
**E-2**

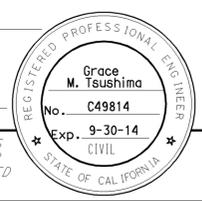
APPROVED FOR ELECTRICAL WORK ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	330	R29.0/44.1	18	34

*Grace M. Tsushima*  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

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



TO ACCOMPANY PLANS DATED 12-07-15

**UNIT OF MEASUREMENT SYMBOLS:**

Some of the symbols used in the project plan quantity tables and in the Bid Item List are:

SYMBOL USED	DEFINITIONS
ACRE	ACRE
CF	CUBIC FOOT
CY	CUBIC YARD
EA	EACH
GAL	GALLON
LB	POUND
LF	LINEAR FOOT
SQFT	SQUARE FOOT
SQYD	SQUARE YARD
STA	100 FEET
TAB	TABLET
TON	2,000 POUNDS

Some of the symbols used in the plans other than in the project plan quantity tables are:

SYMBOL USED	DEFINITIONS
ksi	KIPS PER SQUARE INCH
ksf	KIPS PER SQUARE FOOT
psi	POUNDS PER SQUARE INCH
psf	POUNDS PER SQUARE FOOT
lb/ft <sup>3</sup> , pcf	POUNDS PER CUBIC FOOT
tsf	TONS PER SQUARE FOOT
mph, MPH *	MILES PER HOUR
∅	NOMINAL DIAMETER
oz	OUNCE
lb	POUND
kíp	1,000 POUNDS
cal	CALORIE
ft	FOOT OR FEET
gal	GALLON

\* For use on a sign panel only

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**ABBREVIATIONS  
(SHEET 2 OF 2)**

NO SCALE

RSP A10B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN A10B  
DATED MAY 20, 2011 - PAGE 2 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A10B**

Maint	MAINTENANCE
Max	MAXIMUM
MB	METAL BEAM
MBB	METAL BEAM BARRIER
MBGR	METAL BEAM GUARD RAILING
Med	MEDIAN
MGS	MIDWEST GUARDRAIL SYSTEM
MH	MANHOLE
Min	MINIMUM
Misc	MISCELLANEOUS
Misc I & S	MISCELLANEOUS IRON AND STEEL
Mkr	MARKER
Mod	MODIFIED, MODIFY
Mon	MONUMENT
MP	METAL PLATE
MPGR	METAL PLATE GUARD RAILING
MR	MOVEMENT RATING
MSE	MECHANICALLY STABILIZED EMBANKMENT
Mt	MOUNTAIN, MOUNT
MtI	MATERIAL
MVP	MAINTENANCE VEHICLE PULLOUT
N	NORTH
NB	NORTHBOUND
No.	NUMBER (MUST HAVE PERIOD)
Nos.	NUMBERS (MUST HAVE PERIOD)
NPS	NOMINAL PIPE SIZE
NS	NEAR SIDE
NSP	NEW STANDARD PLAN
NTS	NOT TO SCALE
Obir	OBLITERATE
OC	OVERCROSSING
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OG	ORIGINAL GROUND
OGAC	OPEN GRADED ASPHALT CONCRETE
OGFC	OPEN GRADED FRICTION COURSE
OH	OVERHEAD
OHWM	ORDINARY HIGH WATER MARK
O-O	OUT TO OUT
Opp	OPPOSITE
OSD	OVERSIDE DRAIN
p	PAGE
PAP	PERFORATED ALUMINUM PIPE
PB	PULL BOX
PC	POINT OF CURVATURE, PRECAST
PCC	POINT OF COMPOUND CURVE, PORTLAND CEMENT CONCRETE
PCMS	PORTABLE CHANGEABLE MESSAGE SIGN
PCP	PERFORATED CONCRETE PIPE, PRESTRESSED CONCRETE PIPE
PCVC	POINT OF COMPOUND VERTICAL CURVE
PEC	PERMIT TO ENTER AND CONSTRUCT
Ped	PEDESTRIAN
Ped OC	PEDESTRIAN OVERCROSSING
Ped UC	PEDESTRIAN UNDERCROSSING
Perm MtI	PERMEABLE MATERIAL

PG	PROFILE GRADE
PI	POINT OF INTERSECTION
PJP	PARTIAL JOINT PENETRATION
Pkwy	PARKWAY
PL, PL	PLATE
P/L	PROPERTY LINE
PM	POST MILE, TIME FROM NOON TO MIDNIGHT
PN	PAVING NOTCH
POC	POINT OF HORIZONTAL CURVE
POT	POINT OF TANGENT
POVC	POINT OF VERTICAL CURVE
PP	PIPE PILE, PLASTIC PIPE, POWER POLE
PPL	PREFORMED PERMEABLE LINER
PPP	PERFORATED PLASTIC PIPE
PRC	POINT OF REVERSE CURVE
PRF	PAVEMENT REINFORCING FABRIC
PRVC	POINT OF REVERSE VERTICAL CURVE
PS&E	PLANS, SPECIFICATIONS AND ESTIMATES
PS, P/S	PRESTRESSED
PSP	PERFORATED STEEL PIPE
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
Pvmt	PAVEMENT
Qty	QUANTITY
R	RADIUS
R & D	REMOVE AND DISPOSE
R & S	REMOVE AND SALVAGE
R/C	RATE OF CHANGE
RCA	REINFORCED CONCRETE ARCH
RCB	REINFORCED CONCRETE BOX
RCP	REINFORCED CONCRETE PIPE
RCPA	REINFORCED CONCRETE PIPE ARCH
Rd	ROAD
Reinf	REINFORCED, REINFORCEMENT, REINFORCING
Rel	RELOCATE
Repl	REPLACEMENT
Ret	RETAINING
Rev	REVISED, REVISION
Rdwy	ROADWAY
RHMA	RUBBERIZED HOT MIX ASPHALT
Riv	RIVER
RM	ROAD-MIXED
RP	RADIUS POINT, REFERENCE POINT
RR	RAILROAD
RSP	ROCK SLOPE PROTECTION, REVISED STANDARD PLAN
Rt	RIGHT
Rte	ROUTE
RW	REDWOOD, RETAINING WALL
R/W	RIGHT OF WAY
Rwy	RAILWAY

**Q**

**R**

**P continued**

S	SOUTH, SUPPLEMENT
SAE	STRUCTURE APPROACH EMBANKMENT
Salv	SALVAGE
SAPP	STRUCTURAL ALUMINUM PLATE PIPE
SB	SOUTHBOUND
SC	SAND CUSHION
SCSP	SLOTTED CORRUGATED STEEL PIPE
SD	STORM DRAIN
Sec	SECOND, SECTION
Sep	SEPARATION
SG	SUBGRADE
Shld	SHOULDER
Sht	SHEET
Sim	SIMILAR
∫	STATION LINE
SM	SELECTED MATERIAL
Spec	SPECIAL, SPECIFICATIONS
SPP	SLOTTED PLASTIC PIPE
SS	SLOPE STAKE
SSBM	STRAP AND SADDLE BRACKET METHOD
SSD	STRUCTURAL SECTION DRAIN
SSPA	STRUCTURAL STEEL PLATE ARCH
SSPP	STRUCTURAL STEEL PLATE PIPE
SSPPA	STRUCTURAL STEEL PLATE PIPE ARCH
SSRP	STEEL SPIRAL RIB PIPE
St	STREET
Sta	STATION
STBB	SINGLE THRIE BEAM BARRIER
Std	STANDARD
Str	STRUCTURE
Surf	SURFACING
SW	SIDEWALK, SOUND WALL
Swr	SEWER
Sym	SYMMETRICAL
S4S	SURFACE 4 SIDES
T	SEMI-TANGENT
Tan	TANGENT
TBB	THRIE BEAM BARRIER
Tbr	TIMBER
TC	TOP OF CURB
TCB	TRAFFIC CONTROL BOX
TCE	TEMPORARY CONSTRUCTION EASEMENT
TeI	TELEPHONE
Temp	TEMPORARY
TG	TOP OF GRADE
Tot	TOTAL
TP	TELEPHONE POLE
TPB	TREATED PERMEABLE BASE
TPM	TREATED PERMEABLE MATERIAL
Trans	TRANSITION

**T**

TS	TRANSVERSE, TRAFFIC SIGNAL, TUBULAR STEEL
Typ	TYPICAL
UC	UNDERCROSSING
UD	UNDERDRAIN
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
UP	UNDERPASS
V	VALVE, DESIGN SPEED
Var	VARIABLE, VARIES
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
Vert	VERTICAL
Via	VIADUCT
Vol	VOLUME
W	WEST, WIDTH
WB	WESTBOUND
WH	WEEP HOLE
WM	WIRE MESH
WS	WATER SURFACE
WSP	WELDED STEEL PIPE
Wt	WEIGHT
WV	WATER VALVE
WW	WINGWALL
WWLOL	WINGWALL LAYOUT LINE
X Sec	CROSS SECTION
Xing	CROSSING
Yr	YEAR
Yrs	YEARS

**X**

**Y**

**T continued**

**U**

**V**

**W**

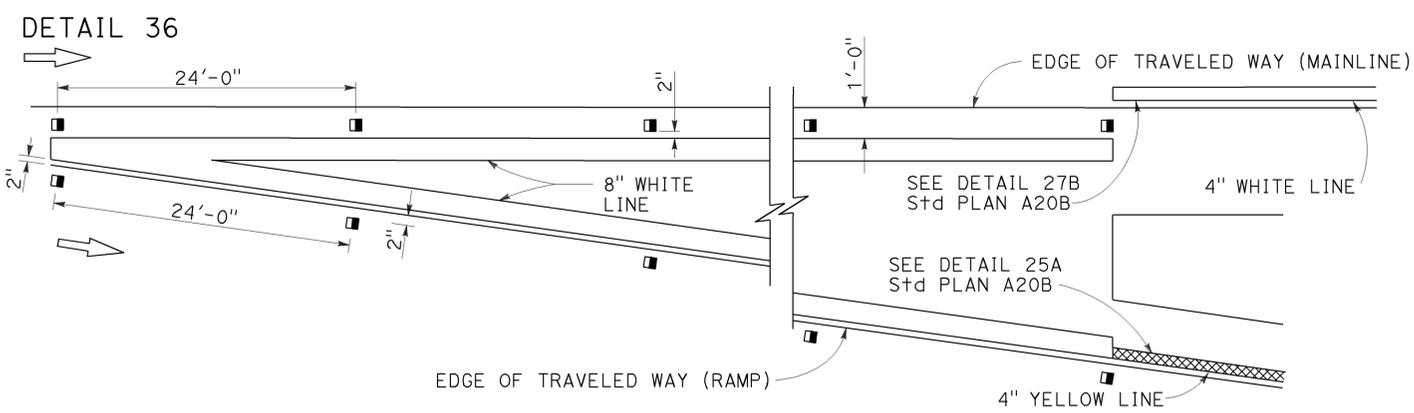
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	330	R29.0/44.1	19	34

REGISTERED CIVIL ENGINEER  
 Roberta L. McLaughlin  
 No. C40375  
 Exp. 3-31-15  
 CIVIL  
 STATE OF CALIFORNIA

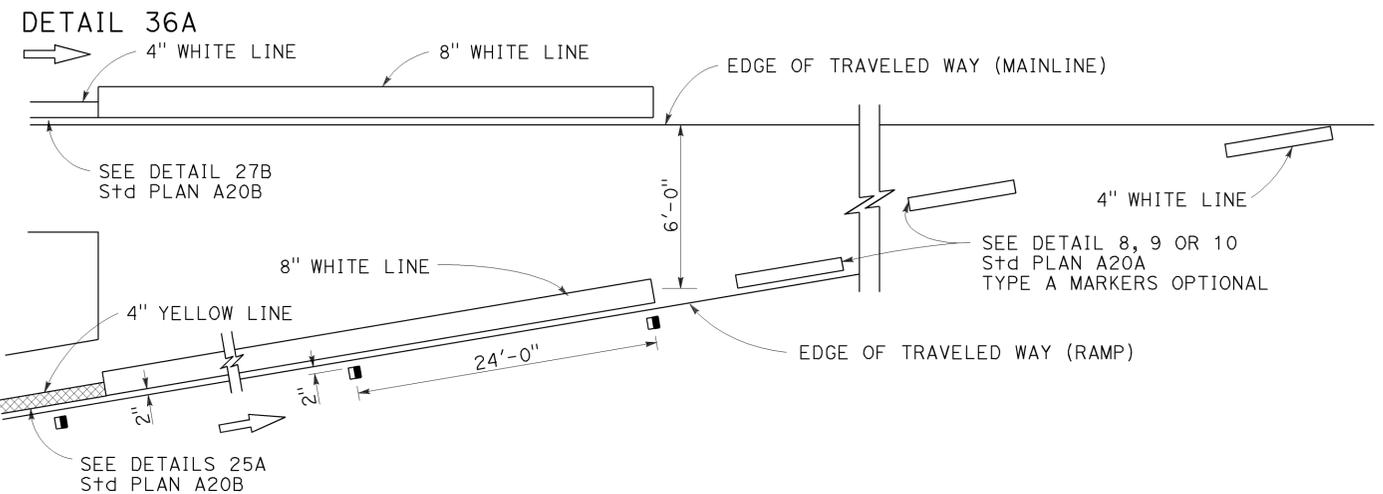
July 19, 2013  
 PLANS APPROVAL DATE

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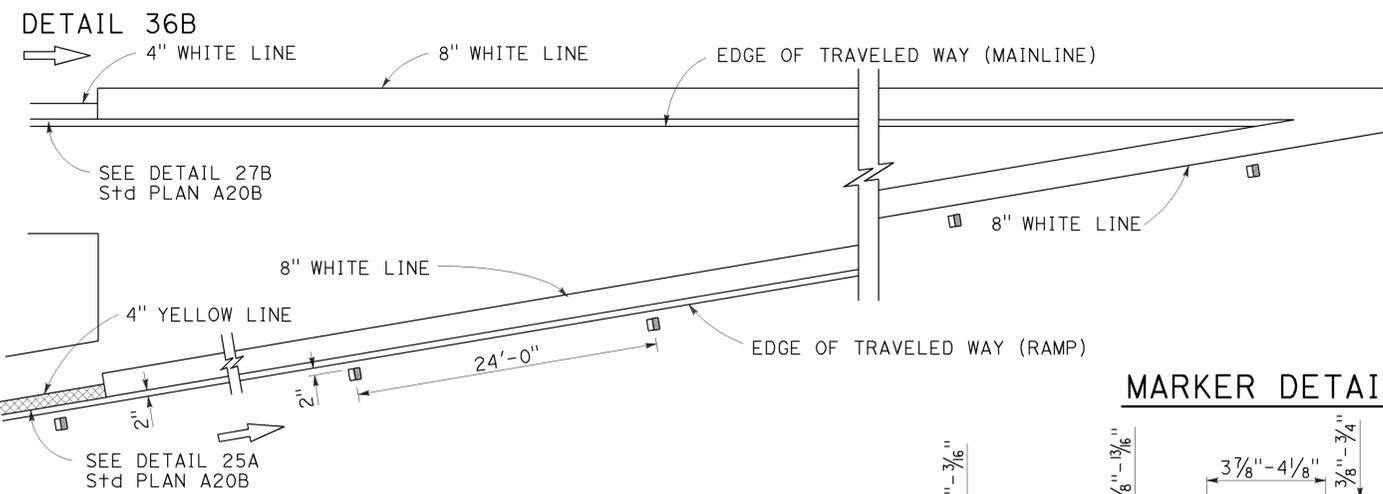
### EXIT RAMP NEUTRAL AREA (GORE) TREATMENT



### ENTRANCE RAMP NEUTRAL AREA (MERGE) TREATMENT



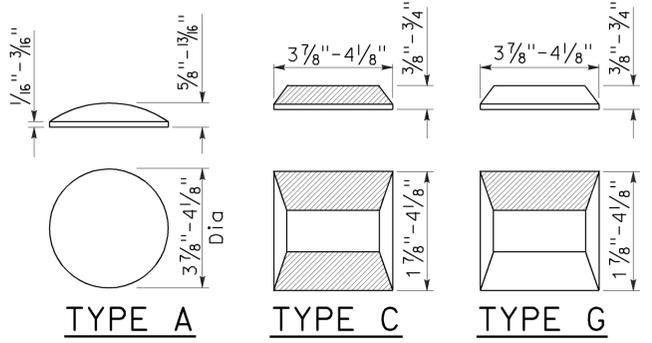
### ENTRANCE RAMP NEUTRAL AREA (ACCELERATION LANE) TREATMENT



### MARKER DETAILS

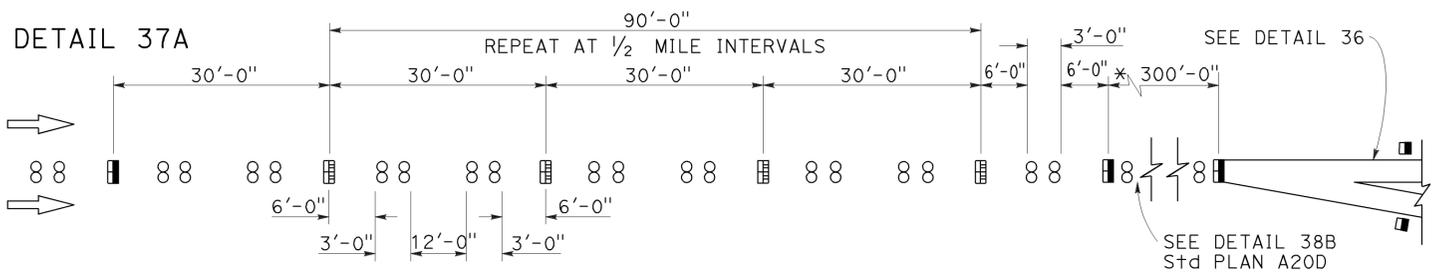
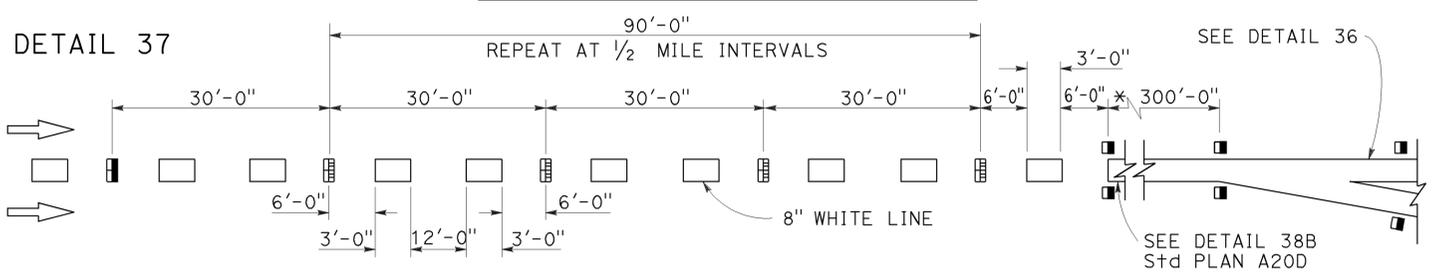
#### LEGEND:

- MARKERS
- TYPE A WHITE NON-REFLECTIVE
  - ◻ TYPE C RED-CLEAR RETROREFLECTIVE
  - TYPE G ONE-WAY CLEAR RETROREFLECTIVE



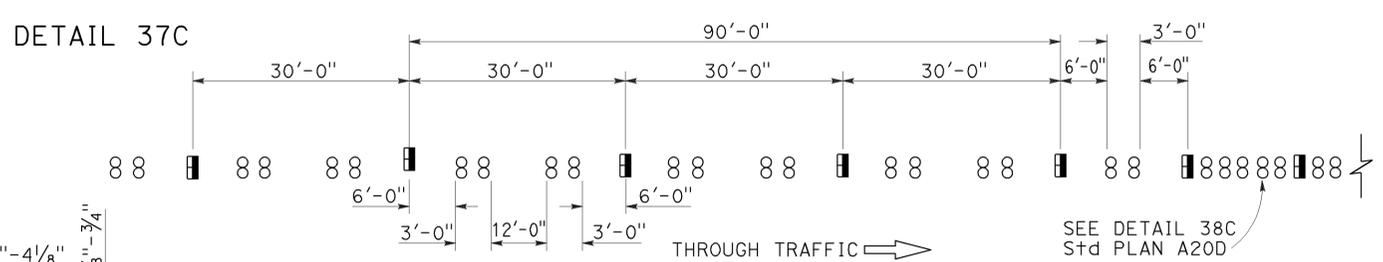
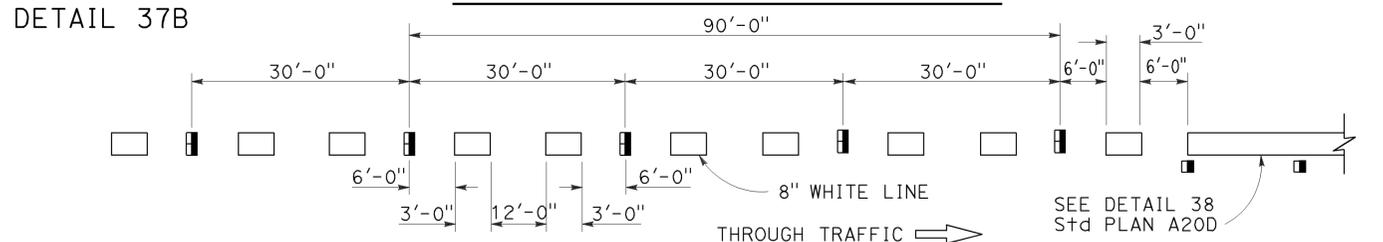
RETROREFLECTIVE FACE

### LANE DROP AT EXIT RAMPS



\* The solid channelizing line shown may be omitted on short auxiliary lanes where weaving length is critical.

### LANE DROP AT INTERSECTIONS

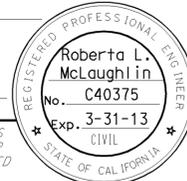


STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**PAVEMENT MARKERS  
 AND TRAFFIC LINE  
 TYPICAL DETAILS**  
 NO SCALE

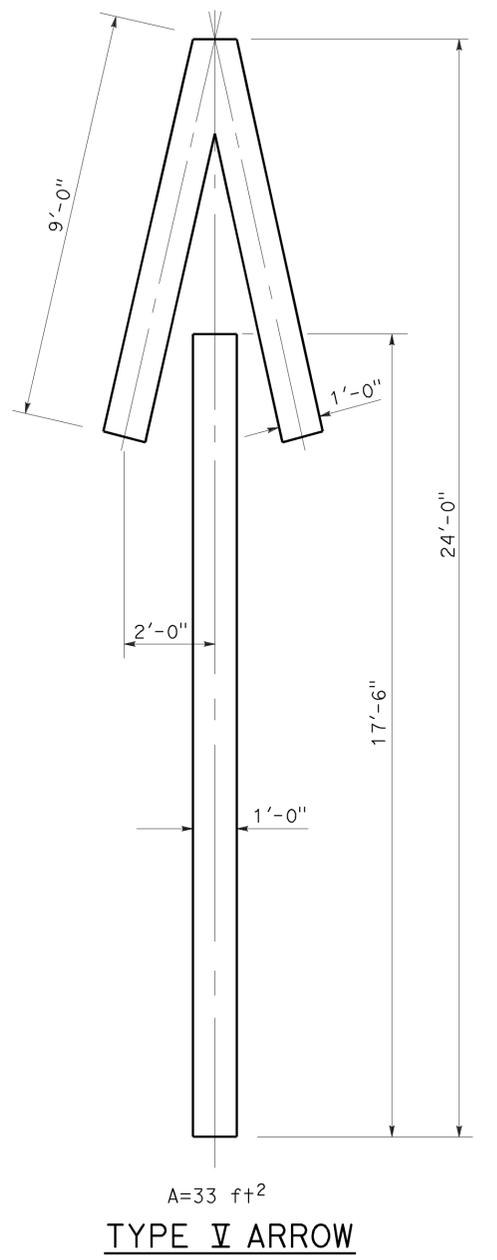
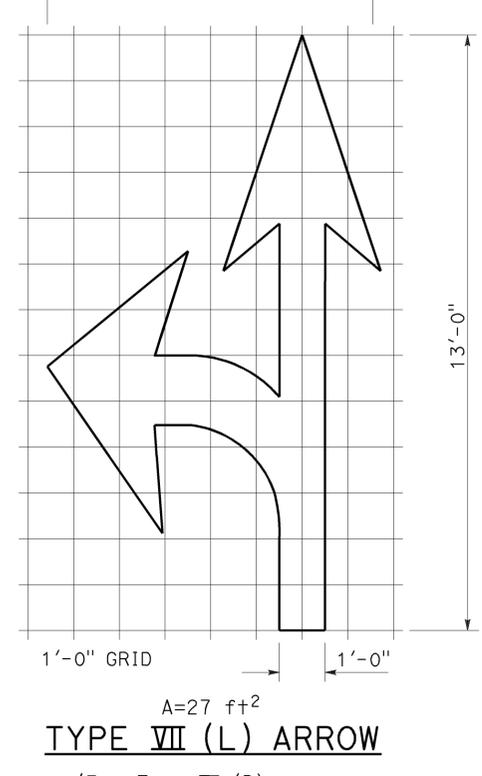
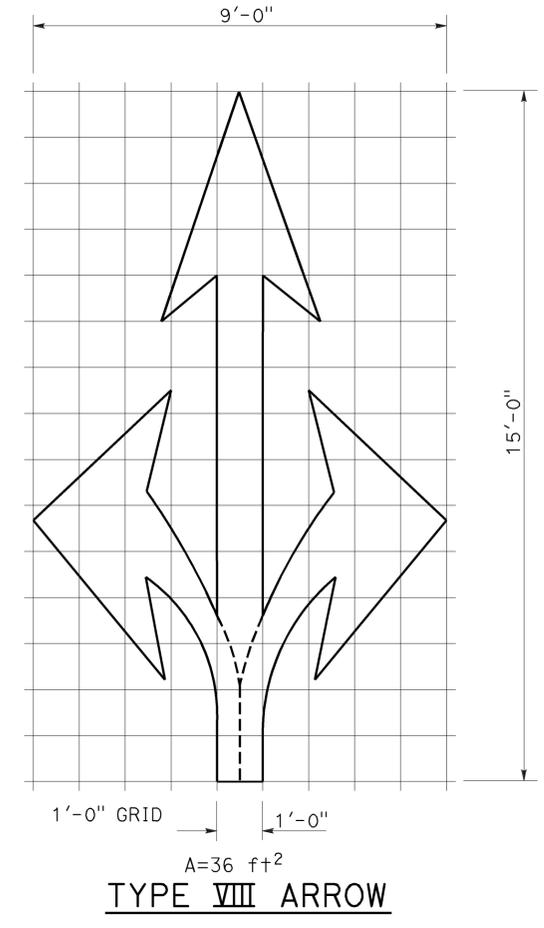
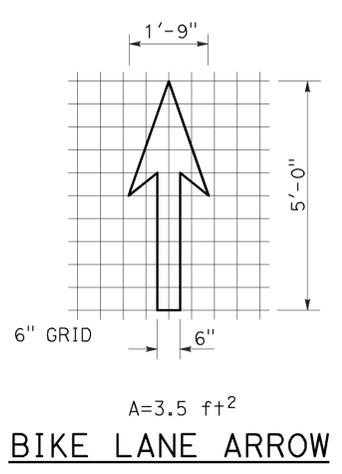
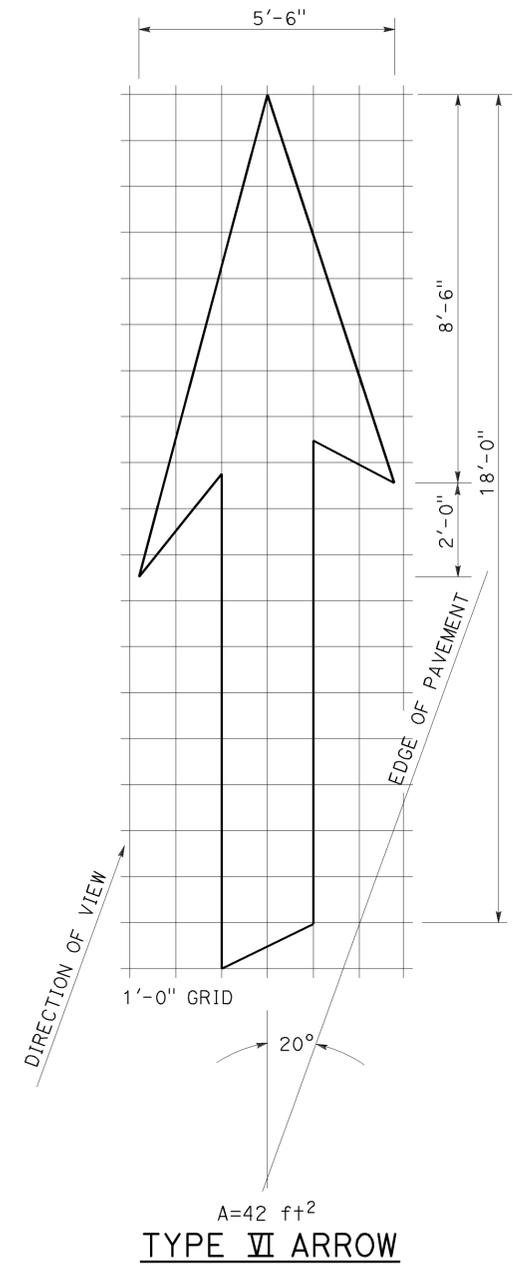
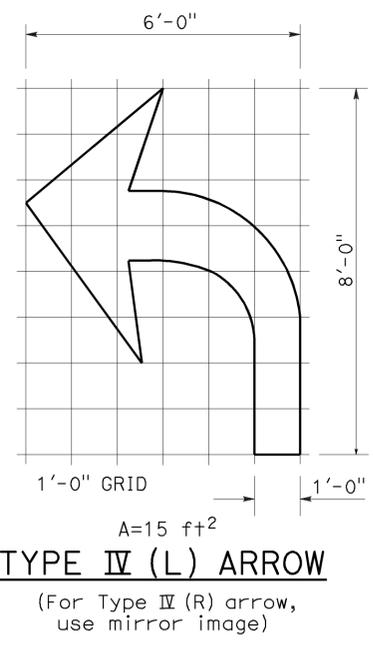
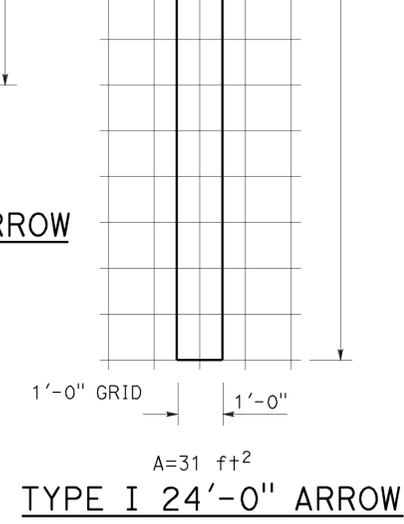
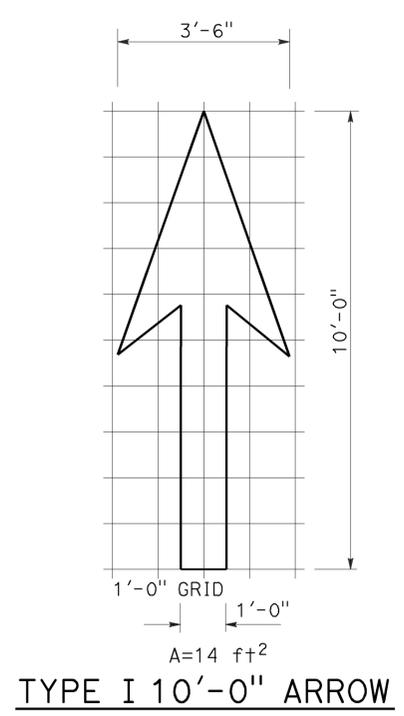
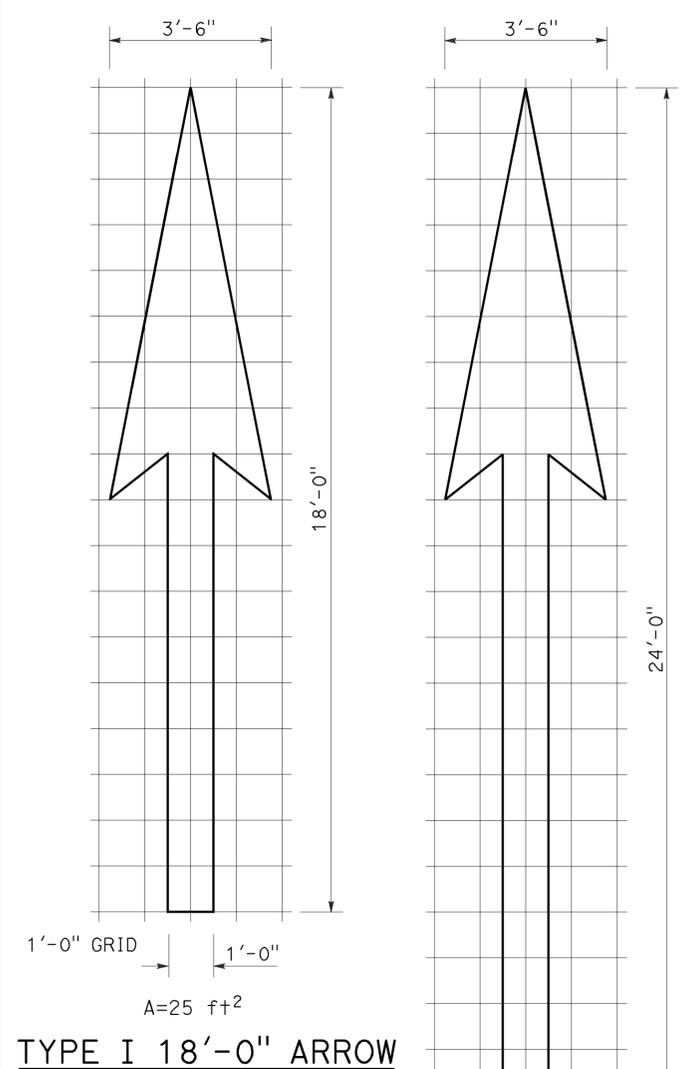
RSP A20C DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN A20C  
 DATED MAY 20, 2011 - PAGE 11 OF THE STANDARD PLANS BOOK DATED 2010.

### REVISED STANDARD PLAN RSP A20C

2010 REVISED STANDARD PLAN RSP A20C



TO ACCOMPANY PLANS DATED 12-07-15

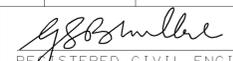


**NOTE:**  
Minor variations in dimensions may be accepted by the Engineer.

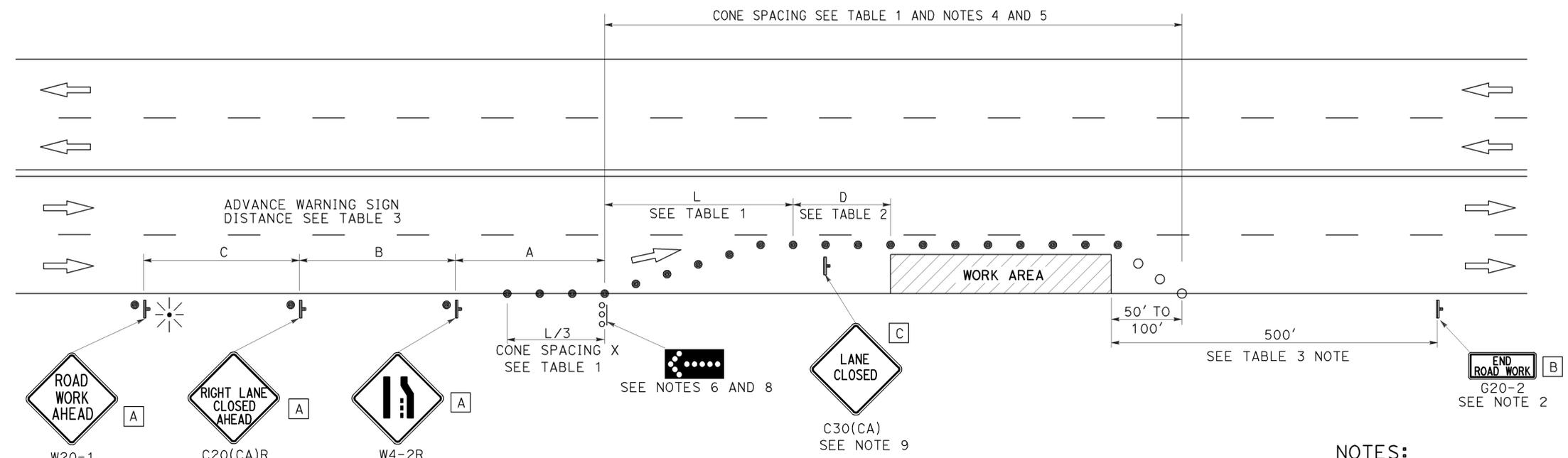
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**PAVEMENT MARKINGS  
ARROWS**  
NO SCALE

RSP A24A DATED APRIL 20, 2012 SUPERSEDES STANDARD PLAN A24A DATED MAY 20, 2011 - PAGE 13 OF THE STANDARD PLANS BOOK DATED 2010.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	330	R29.0/44.1	21	34

  
 REGISTERED CIVIL ENGINEER  
 April 19, 2013  
 PLANS APPROVAL DATE  
  
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 12-07-15



TYPICAL LANE CLOSURE

**NOTES:**

- See Revised Standard Plan RSP T9 for tables.
- Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as appropriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.
- Unless otherwise specified in the special provisions, all temporary warning signs shall have black legend on fluorescent orange background.
- California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

**NOTES:**

- Each advance warning sign shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
- A G20-2 "END ROAD WORK" sign, as appropriate, shall be placed at the end of the lane closure unless the end of work area is obvious, or ends within a larger project's limits.
- If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT \_\_\_\_\_ MILES", use a C20(CA) sign for the first advance warning sign.
- All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
- Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime closures only.
- Flashing arrow sign shall be either Type I or Type II.
- For approach speeds over 50 mph, use the "Traffic Control System for Lane Closure On Freeways And Expressways" plan for lane closure details and requirements.
- A minimum 1500' of sight distance shall be provided where possible for vehicles approaching the first flashing arrow sign. Lane closures shall not begin at the top of crest vertical curve or on a horizontal curve.
- Place a C30(CA) sign every 2000' throughout length of lane closure.
- Median lane closures shall conform to the details as shown except that C20(CA)L and W4-2L signs shall be used.
- At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closure unless, otherwise directed by the Engineer.

**LEGEND**

- TRAFFIC CONE
- TRAFFIC CONE (OPTIONAL TAPER)
- ⌋ TEMPORARY TRAFFIC CONTROL SIGN
-  FLASHING ARROW SIGN (FAS)
-  FAS SUPPORT OR TRAILER
-  PORTABLE FLASHING BEACON

**SIGN PANEL SIZE (Min)**

- A 48" x 48"
- B 36" x 18"
- C 30" x 30"

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**TRAFFIC CONTROL SYSTEM  
 FOR LANE CLOSURE ON  
 MULTILANE CONVENTIONAL  
 HIGHWAYS**

NO SCALE

RSP T11 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T11 DATED MAY 20, 2011 - PAGE 239 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP T11**

2010 REVISED STANDARD PLAN RSP T11

**NOTES:**

See Revised Standard Plan RSP T9 for tables.

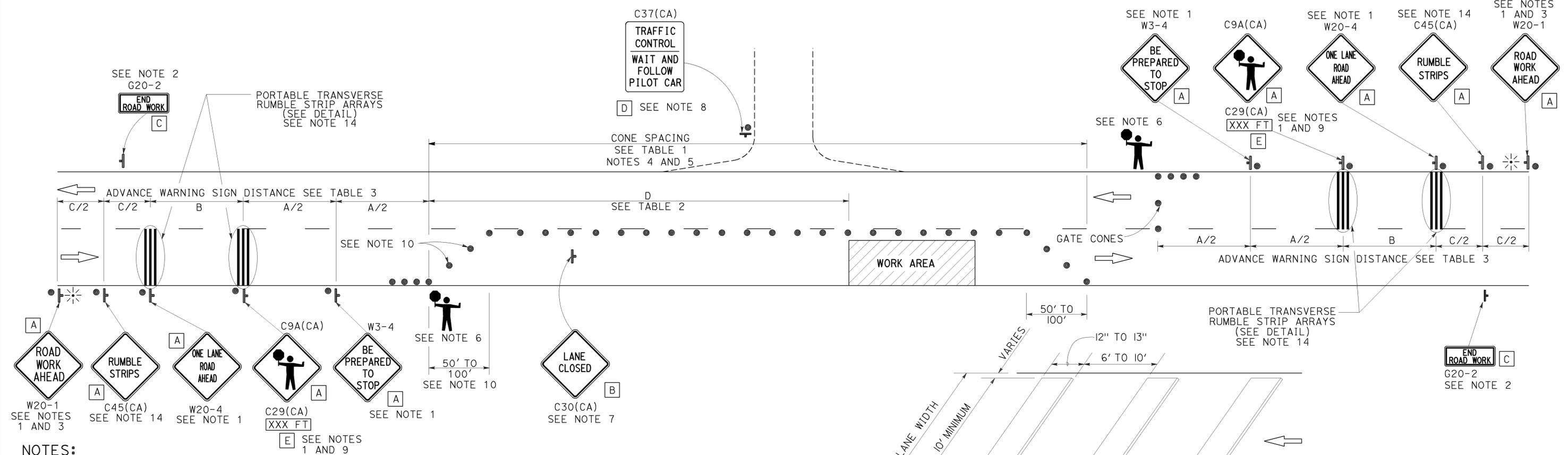
Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as appropriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.

Unless otherwise specified in the special provisions, all temporary warning signs shall have black legend on fluorescent orange background.

California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

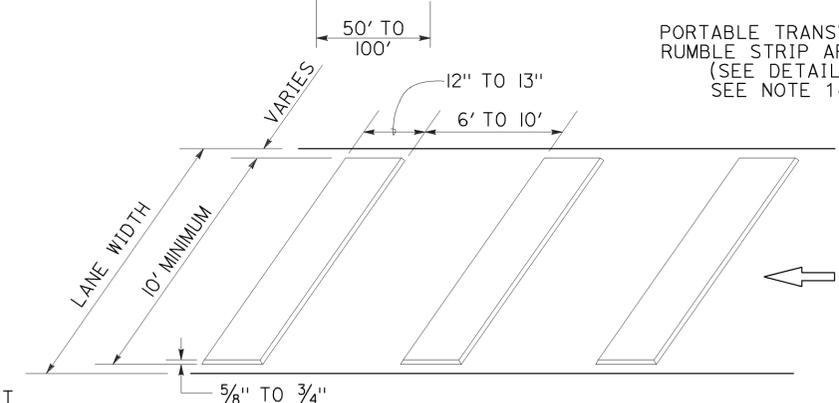
**TYPICAL LANE CLOSURE WITH REVERSIBLE CONTROL**

TO ACCOMPANY PLANS DATED 12-07-15



- NOTES:**
- Each advance warning sign in each direction of travel shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
  - A G20-2 "END ROAD WORK" sign, as appropriate, shall be placed at the end of the lane control unless the end of work area is obvious, or ends within a larger project's limits.
  - If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT \_\_\_\_\_ MILES", use a W20-4 sign for the first advance warning sign.
  - All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
  - Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime closures only.
  - Additional advance flaggers may be required. Flagger should stand in a conspicuous place, be visible to approaching traffic as well as approaching vehicles after the first vehicle has stopped. During the hours of darkness, the flagging-station and flagger shall be illuminated and clearly visible to approaching traffic. The illumination footprint of the lighting on the ground shall be at least 20' in diameter. Place a minimum of four cones at 50' intervals in advance of flagger station as shown.

- Place C30(CA) "LANE CLOSED" sign at 500' to 1000' intervals throughout extended work areas. They are optional if the work area is visible from the flagger station.
- When a pilot car is used, place a C37(CA) "TRAFFIC CONTROL-WAIT AND FOLLOW PILOT CAR" sign with black legend on white background at all intersections, driveways and alleys without a flagger within traffic control area. Signs shall be clean and visible at all times. Where traffic can not be effectively self-regulated, at least one flagger shall be used at each intersection within traffic control area.
- An optional C29(CA) sign may be placed below the C9A(CA) sign.
- Either traffic cones or barricades shall be placed on the taper. Barricades shall be Type I, II, or III.
- The color of the portable transverse rumble strips shall be black or orange. Use 2 arrays, each array shall consist of 3 rumble strips.
- Portable transverse rumble strips shall not be placed on sharp horizontal or vertical curves nor shall they be placed through pedestrian crossings.
- If the portable transverse rumble strips become out of alignment (skewed) by more than 6 inches, measured from one end to the other, they shall be readjusted to bring the placement back to the original location.
- Portable transverse rumble strips are not required if any one of the following conditions is satisfied:
  - Work duration occupies a location for four hours or less
  - Posted speed limit is below 45 MPH
  - Work is of emergency nature
  - Work zone is in snow or icy weather conditions



**PORTABLE TRANSVERSE RUMBLE STRIP ARRAY DETAIL**

**SIGN PANEL SIZE (Min)**

- A 48" x 48"
- B 30" x 30"
- C 36" x 18"
- D 36" x 42"
- E 20" x 7"

**LEGEND**

- TRAFFIC CONE
- ⊥ TEMPORARY TRAFFIC CONTROL SIGN
- ⚡ PORTABLE FLASHING BEACON
- 🚧 FLAGGER

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE ON TWO LANE CONVENTIONAL HIGHWAYS**

NO SCALE

RSP T13 DATED OCTOBER 17, 2014 SUPERSEDES RSP T13 DATED JULY 18, 2014 AND RSP T13 DATED APRIL 19, 2013 AND STANDARD PLAN T13 DATED MAY 20, 2011 - PAGE 241 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP T13

# TYPICAL RAMP CLOSURES

## SIGN PANEL SIZE (Min)

- A 48" x 48"
- B 48" x 30"
- C 36" x 36"
- D 48" x 36"

## LEGEND

- TRAFFIC CONE
- † TEMPORARY TRAFFIC CONTROL SIGN
- ‡ BARRICADES
- ⚡ PORTABLE FLASHING BEACON

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	330	R29.0/44.1	23	34

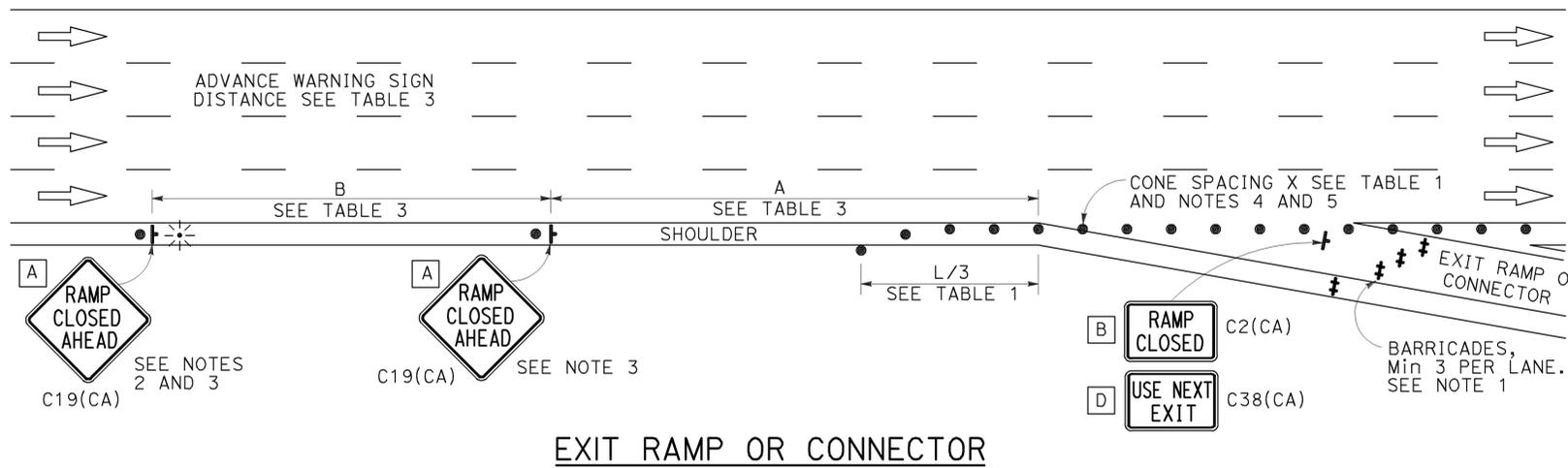
*Gurinderpal Bhullar*  
 REGISTERED CIVIL ENGINEER  
 April 19, 2013  
 PLANS APPROVAL DATE  
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER  
**Gurinderpal Bhullar**  
 No. C48815  
 Exp. 9-30-14  
 CIVIL  
 STATE OF CALIFORNIA

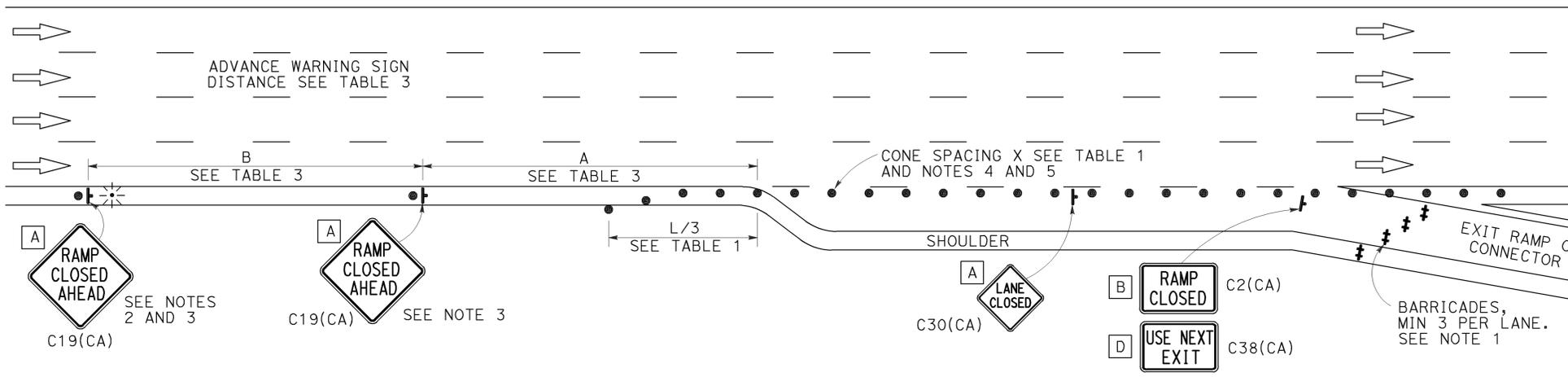
TO ACCOMPANY PLANS DATED 12-07-15

## NOTES:

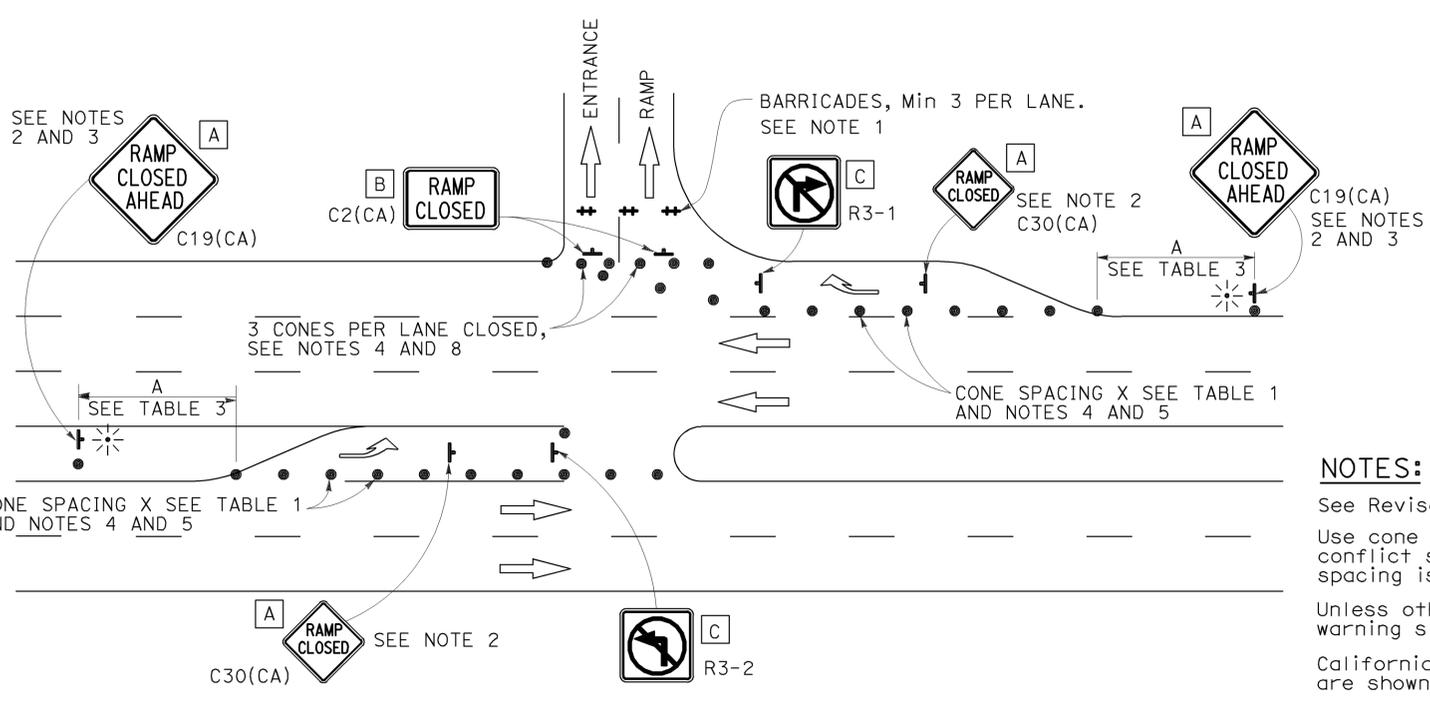
- Barricades shall be Type I, II, or III for closures lasting one week or less and Type III for closures lasting longer than one week.
- In addition to placing the C19(CA) "RAMP CLOSED AHEAD" and C30(CA) "RAMP CLOSED" signs, black on orange overlay plates with the word "CLOSED" may be mounted, as directed by the Engineer, on all guide signs that refer to the closed ramp. The letter size on the overlay shall be the same as the guide sign.
- Each advance C19(CA) "RAMP CLOSED AHEAD" sign shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. A flashing beacon shall be placed on top of the first C19(CA) sign during hours of darkness.
- All cones used for ramp closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
- Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime ramp closures only.
- At least one person shall be assigned to provide full time maintenance of traffic control devices, unless otherwise directed by the Engineer.
- The existing "EXIT" signs shall be covered during ramp closures.
- A minimum of 3 cones shall be placed transversely across each closed lane and shoulder.



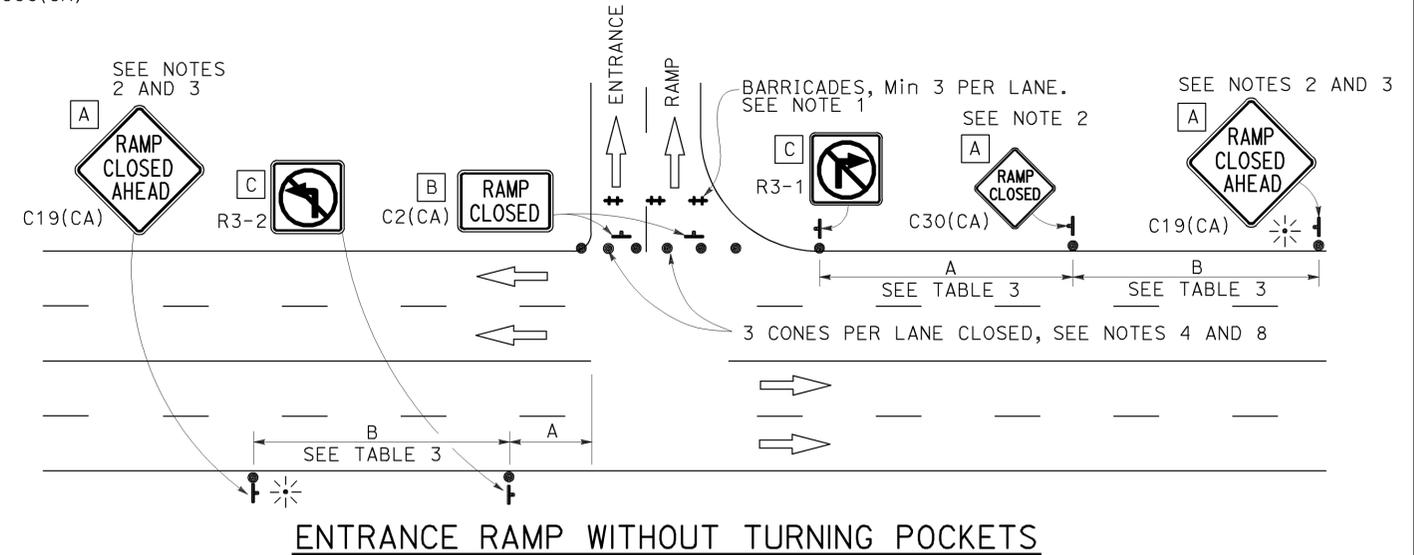
EXIT RAMP OR CONNECTOR



EXIT RAMP OR CONNECTOR WITH ADDITIONAL LANE



ENTRANCE RAMP WITH TURNING POCKETS



ENTRANCE RAMP WITHOUT TURNING POCKETS

## NOTES:

- See Revised Standard Plan RSP T9 for tables.
- Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as appropriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.
- Unless otherwise specified in the special provisions, all temporary warning signs shall have black legend on fluorescent orange background.
- California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**TRAFFIC CONTROL SYSTEM  
 FOR RAMP CLOSURE**  
 NO SCALE

RSP T14 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T14  
 DATED MAY 20, 2011 - PAGE 242 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP T14**

2010 REVISED STANDARD PLAN RSP T14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	330	R29.0/44.1	24	34

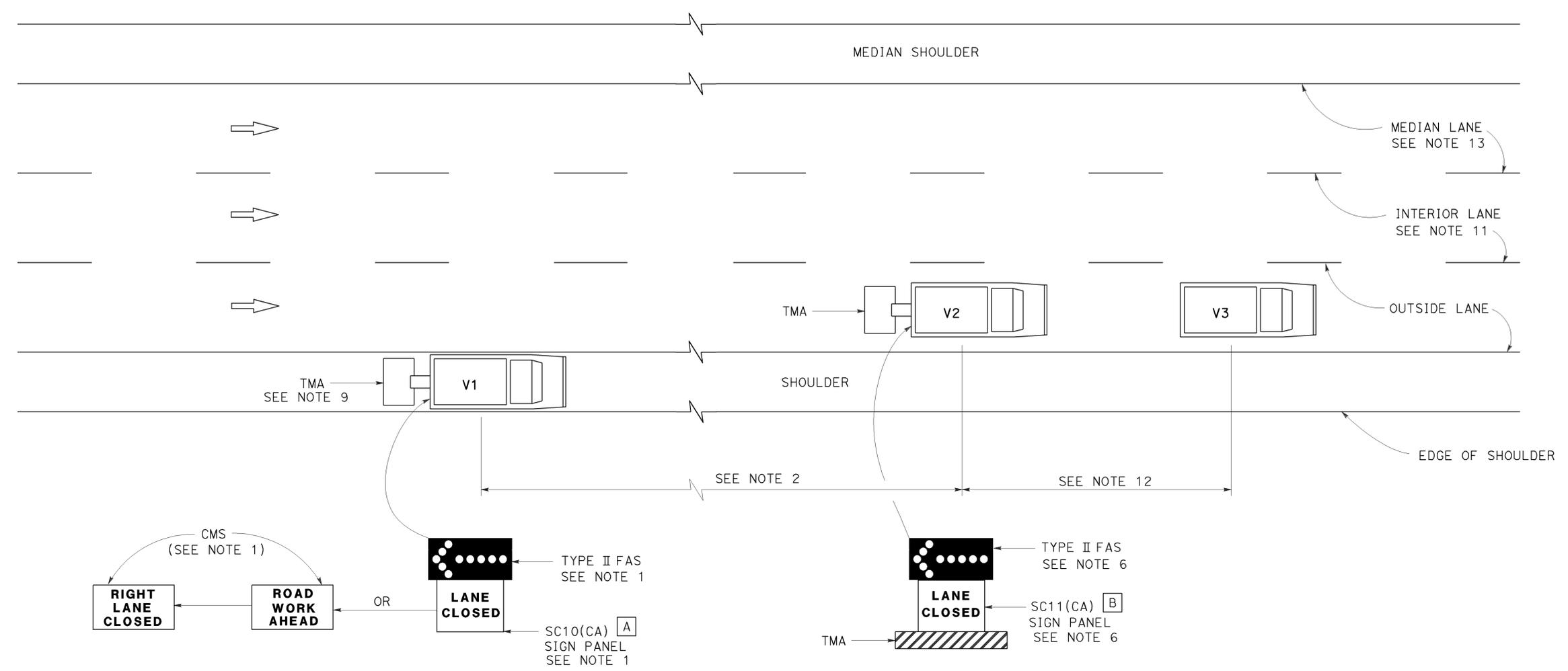
*Gurinderpal Bhullar*  
REGISTERED CIVIL ENGINEER

April 19, 2013  
PLANS APPROVAL DATE

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

REGISTERED PROFESSIONAL ENGINEER  
Gurinderpal Bhullar  
No. C48815  
Exp. 9-30-14  
CIVIL  
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 12-07-15



**MOVING LANE CLOSURE ON MEDIAN LANE OR OUTSIDE LANE OF MULTILANE HIGHWAYS**

**SIGN PANEL SIZE (Min)**

- A 66" x 36"
- B 54" x 42"

**LEGEND**

- V1 SIGN VEHICLE
- V2 SHADOW VEHICLE
- V3 WORK/APPLICATION VEHICLE
- FLASHING ARROW SIGN (FAS)
- CMS CHANGEABLE MESSAGE SIGN
- TMA TRUCK-MOUNTED ATTENUATOR

**NOTES:**

1. Either a changeable message sign or a SC10(CA) sign panel and a Type II flashing arrow sign shall be mounted on the rear of sign vehicle V1. The changeable message sign shall be sequenced to show the "ROAD WORK AHEAD" message first, followed by the "RIGHT LANE CLOSED" message. For median lane closure, the flashing arrow symbol shall be reversed with the arrowhead on the right and the changeable message sign shall show "LEFT LANE CLOSED".
2. If traffic queues develop, sign vehicle V1 should be positioned upstream from the end of queue. Sign vehicle V1 shall be positioned where highly visible when shoulders are not available.
3. A minimum sight distance of 1500' should be provided in advance of sign vehicle V1.
4. Sign vehicle V1 should remain at the beginning of horizontal or vertical curves until the other vehicles (V2 and V3) are far enough beyond the curve to resume the minimum sight distance of 1500'.
5. Vehicle-mounted sign panels shall have Type III or above retroreflective sheeting, black on white, or black on fluorescent orange, with 6" minimum series D letters per Caltrans sign specifications.
6. Shadow vehicle V2 shall be equipped with a truck-mounted attenuator. The sign panel shown and a Type II flashing arrow sign shall be mounted on the rear of shadow vehicle V2. For median lane closure the flashing arrow sign symbol shall be displayed with the arrowhead on the right.
7. All vehicles used for lane closures shall be equipped with two-way radios, and the vehicle operators shall maintain communication during the work or application operation.
8. All vehicles shall be equipped with flashing or rotating amber lights.
9. If sign vehicle V1 encroaches into the traffic lane due to insufficient shoulder width, sign vehicle V1 shall be equipped with a truck-mounted attenuator. Sign vehicle V1 shall stay as close to the edge of shoulder as practicable.
10. Where workers would be on foot in the work area, a stationary type lane closure (Revised Standard Plan T10, T11, etc., as applicable) shall be used instead of this plan.
11. For moving lane closure on interior lane of multilane highways, use Revised Standard Plan T16.
12. The spacing between work vehicle(s) and the shadow vehicles, and between each shadow vehicle should be minimized to deter road users from driving in between.
13. When the work/application vehicle V3 occupies the median lane, sign vehicle V1 should drive in the median shoulder and indicate left lane closed ahead.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**TRAFFIC CONTROL SYSTEM FOR MOVING LANE CLOSURE ON MULTILANE HIGHWAYS**

NO SCALE

RSP T15 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T15 DATED MAY 20, 2011 - PAGE 243 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP T15**

2010 REVISED STANDARD PLAN RSP T15

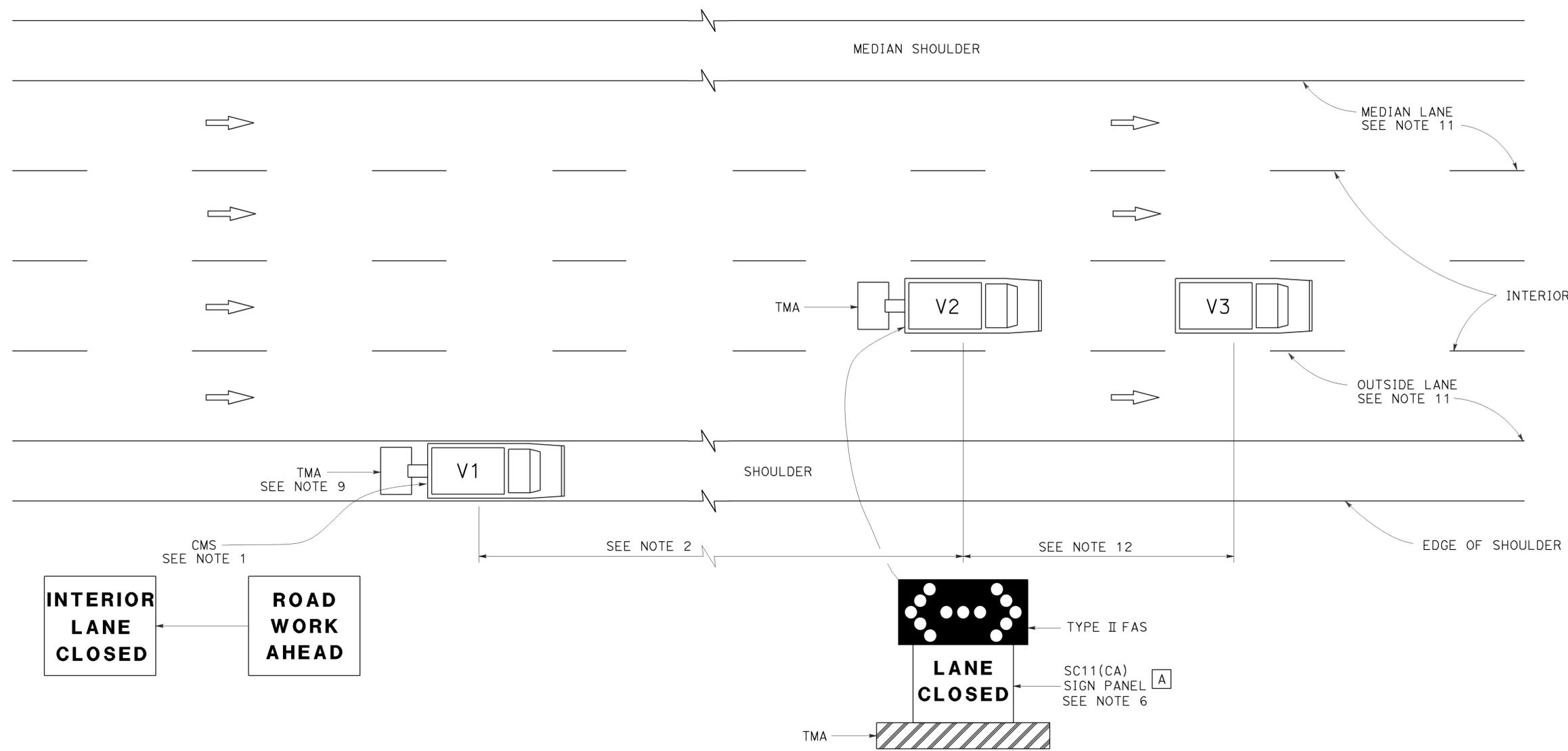
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	330	R29.0/44.1	25	34

*Gurinderpal Bhullar*  
REGISTERED CIVIL ENGINEER

April 19, 2013  
PLANS APPROVAL DATE

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TO ACCOMPANY PLANS DATED 12-07-15



SIGN PANEL SIZE (Min)  
[A] 54" x 42"

- LEGEND**
- V1 SIGN VEHICLE
  - V2 SHADOW VEHICLE
  - V3 WORK/APPLICATION VEHICLE
  - FLASHING ARROW SIGN (FAS) IN FLASHING DOUBLE ARROW MODE
  - CMS CHANGEABLE MESSAGE SIGN
  - TMA TRUCK-MOUNTED ATTENUATOR

**MOVING LANE CLOSURE ON INTERIOR LANE OF MULTILANE HIGHWAYS**

- NOTES:**
- A changeable message sign shall be mounted on the rear of sign vehicle V1. The changeable message sign shall be sequenced to show the "ROAD WORK AHEAD" message first, followed by the "INTERIOR LANE CLOSED" message. The message "CENTER LANE CLOSED" may be used in place of the "INTERIOR LANE CLOSED" message.
  - If traffic queues develop, sign vehicle V1 should be positioned upstream from the end of queue. Sign vehicle V1 shall be positioned where highly visible when shoulders are not available.
  - A minimum sight distance of 1500' should be provided in advance of sign vehicle V1.
  - Sign vehicle V1 should remain at the beginning of horizontal or vertical curves until the other vehicles (V2 and V3) are far enough beyond the curve to resume the minimum sight distance of 1500'.
  - Vehicle-mounted sign panels shall have Type III or above retroreflective sheeting, black on white, or black on fluorescent orange, with 6" minimum series D letters per Caltrans sign specifications.
  - Shadow vehicle V2 shall be equipped with a truck-mounted attenuator. The sign panel shown and a Type II flashing arrow sign shall be mounted on the rear of shadow vehicle V2.
  - All vehicles used for lane closures shall be equipped with two-way radios, and the vehicle operators shall maintain communication during the work or application operation.
  - All vehicles shall be equipped with flashing or rotating amber lights.
  - If sign vehicle V1 encroaches into the traffic lane due to insufficient shoulder width, sign vehicle V1 shall be equipped with a truck-mounted attenuator. Sign vehicle V1 shall stay as close to the edge of shoulder as practicable.
  - Where workers would be on foot in the work area, a stationary type lane closure (Revised Standard Plan T10, T11 etc., as applicable) shall be used instead of this plan.
  - For moving lane closure on median lane or outside lane of multilane highways, use Revised Standard Plan T15.
  - The spacing between work vehicle(s) and the shadow vehicles, and between each shadow vehicle should be minimized to deter road users from driving in between.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**TRAFFIC CONTROL SYSTEM FOR MOVING LANE CLOSURE ON MULTILANE HIGHWAYS**

NO SCALE

RSP T16 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T16 DATED MAY 20, 2011 - PAGE 244 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP T16**

2010 REVISED STANDARD PLAN RSP T16

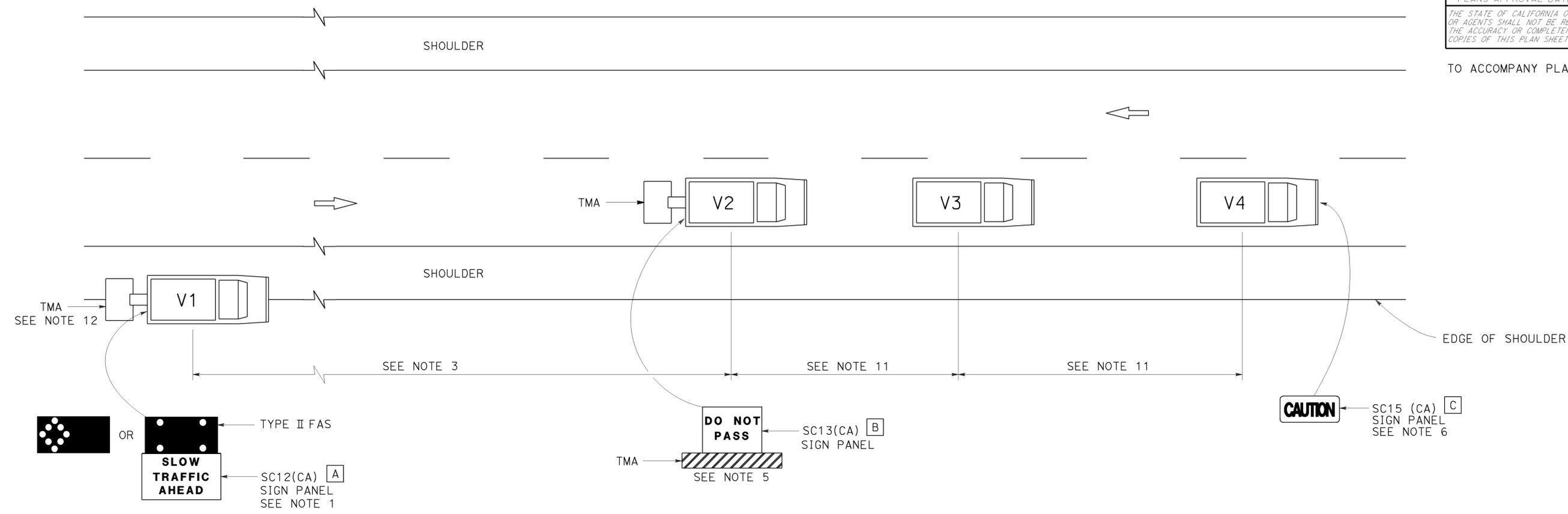
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	330	R29.0/44.1	26	34

*Gurinderpal Bhullar*  
REGISTERED CIVIL ENGINEER

April 19, 2013  
PLANS APPROVAL DATE

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TO ACCOMPANY PLANS DATED 12-07-15



**NOTES:**

1. Either a changeable message sign or a SC12(CA) "SLOW TRAFFIC AHEAD" sign shall be mounted on the rear of sign vehicle V1. The changeable message sign shall be sequenced to show the "CAUTION" message first, follow by the "SLOW TRAFFIC AHEAD" message. A Type II flashing arrow sign may be used with the SC12(CA) sign panel.
2. Sign vehicle V1 should be positioned where highly visible when shoulders are not available.
3. If traffic queues develop, sign vehicle V1 should be positioned upstream from the end of queue.
4. Vehicle-mounted sign panels shall have Type III or above retroreflective sheeting, black on white, or black on fluorescent orange, with 6" minimum series D letters per Caltrans sign specifications.
5. Shadow vehicle shall be equipped with a truck-mounted attenuator. The sign panel shown shall be mounted on the rear of shadow vehicle V2. The message "LANE CLOSED" may be used in place of the "DO NOT PASS" message.
6. The sign panel shown shall be mounted on the front of sign vehicle V4, facing opposing traffic.

7. All vehicles shall be equipped with flashing or rotating amber lights.
8. Sign vehicle V4 will not be required when the work and vehicles V2 and V3 are 2' or more from the centerline of the highway during the work or application operations.
9. All vehicles used for lane closures shall be equipped with two-way radios and the vehicle operators shall maintain communication during the work or application operation.
10. This plan shall not be used where workers would be on foot in the work area. Use a stationary type lane closure (Revised Standard Plan T13) for this condition.
11. Minimize spacing between vehicles V2 and V3 and vehicles V3 and V4 to deter road users from driving in between them.
12. If sign vehicle V1 encroaches into the traffic lane due to insufficient shoulder width, sign vehicle V1 shall be equipped with a truck-mounted attenuator. Sign vehicle V1 shall stay as close to the edge of shoulder as practicable.

**LEGEND**

- V1 SIGN VEHICLE
- V2 SHADOW VEHICLE
- V3 WORK/APPLICATION VEHICLE
- V4 SIGN VEHICLE
- TMA TRUCK-MOUNTED ATTENUATOR
- FLASHING ARROW SIGN (FAS) IN FLASHING CAUTION MODE
- FLASHING ARROW SIGN (FAS) IN ALTERNATING DIAMOND CAUTION

**SIGN PANEL SIZE (Min)**

- A 72" x 42"
- B 54" x 42"
- C 54" x 24"

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**TRAFFIC CONTROL SYSTEM  
FOR MOVING LANE CLOSURE  
ON TWO LANE HIGHWAYS**

NO SCALE

RSP T17 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T17  
DATED MAY 20, 2011 - PAGE 245 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP T17**

2010 REVISED STANDARD PLAN RSP T17

**LEGEND:**

<b>AB</b>	ABANDON. IF APPLIED TO CONDUIT, REMOVE CONDUCTORS
<b>BC</b>	INSTALL PULL BOX IN EXISTING CONDUIT RUN
<b>BP</b>	PEDESTRIAN BARRICADE, TYPE AS INDICATED ON PLAN
<b>CB</b>	INSTALL CONDUIT INTO EXISTING PULL BOX
<b>CC</b>	CONNECT NEW AND EXISTING CONDUIT. REMOVE EXISTING CONDUCTORS AND INSTALL CONDUCTORS AS INDICATED
<b>CF</b>	CONDUIT TO REMAIN FOR FUTURE USE. REMOVE CONDUCTORS. INSTALL PULL TAPE
<b>DH</b>	DETECTOR HANDHOLE
<b>FA</b>	FOUNDATION TO BE ABANDONED
<b>IS</b>	INSTALL SIGN ON SIGNAL MAST ARM
<b>NS</b>	NO SLIP BASE ON STANDARD
<b>PEC</b>	PHOTOELECTRIC CONTROL
<b>PEU</b>	PHOTOELECTRIC UNIT
<b>RC</b>	EQUIPMENT OR MATERIAL TO BE REMOVED AND BECOME THE PROPERTY OF THE CONTRACTOR
<b>RE</b>	REMOVE ELECTROLIER, FUSES AND BALLAST. TAPE ENDS OF CONDUCTORS
<b>RL</b>	RELOCATE EQUIPMENT
<b>RR</b>	REMOVE AND REUSE EQUIPMENT
<b>RS</b>	REMOVE AND SALVAGE EQUIPMENT
<b>SC</b>	SPLICE NEW TO EXISTING CONDUCTORS
<b>SD</b>	SERVICE DISCONNECT
<b>TSP</b>	TELEPHONE SERVICE POINT

**ABBREVIATIONS**

APS	ACCESSIBLE PEDESTRIAN SIGNAL	M/M	MULTIPLE TO MULTIPLE TRANSFORMER
BBS	BATTERY BACKUP SYSTEM	Mtg	MOUNTING
BC	BOLT CIRCLE	MV	MERCURY VAPOR LIGHTING FIXTURE
BPB	BICYCLE PUSH BUTTON	MVDS	MICROWAVE VEHICLE DETECTION SYSTEM
C	CONDUIT	N	NEUTRAL (GROUNDED CONDUCTOR)
CB	CIRCUIT BREAKER	NB	NEUTRAL BUS
CCTV	CLOSED CIRCUIT TELEVISION	NC	NORMALLY CLOSE
Ck+	CIRCUIT	NO	NORMALLY OPEN
CMS	CHANGEABLE MESSAGE SIGN	P	CIRCUIT BREAKER'S POLE
C+id	CALTRANS IDENTIFICATION	PB	PULL BOX
Comm	COMMUNICATION	PBA	PUSH BUTTON ASSEMBLY
DLC	LOOP DETECTOR LEAD-IN CABLE	PEC	PHOTOELECTRIC CONTROL
EMS	EXTINGUISHABLE MESSAGE SIGN	Ped	PEDESTRIAN
EVUC	EMERGENCY VEHICLE UNIT CABLE	PEU	PHOTOELECTRIC UNIT
EVUD	EMERGENCY VEHICLE UNIT DETECTOR	PT	CONDUIT WITH PULL TAPE
FB	FLASHING BEACON	RE	RELOCATED EQUIPMENT
FBCA	FLASHING BEACON CONTROL ASSEMBLY	RM	RAMP METERING
FBS	FLASHING BEACON WITH SLIP BASE	RWIS	ROADSIDE WEATHER INFORMATION SYSTEM
FO	FIBER OPTIC	SB	SLIP BASE
G	EQUIPMENT GROUNDING CONDUCTOR	SIC	SIGNAL INTERCONNECT CABLE
GB	GROUND BUS	Sig	SIGNAL
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	SMA	SIGNAL MAST ARM
HAR	HIGHWAY ADVISORY RADIO	SNS	STREET NAME SIGN
Hex	HEXAGONAL	SP	SERVICE POINT
HPS	HIGH PRESSURE SODIUM	TDC	TELEPHONE DEMARCATION CABINET
IISNS	INTERNALLY ILLUMINATED STREET NAME SIGN	TMS	TRAFFIC MONITORING STATION
ISL	INDUCTION SIGN LIGHTING	TOS	TRAFFIC OPERATIONS SYSTEM
LED	LIGHT EMITTING DIODE	Veh	VEHICLE
LMA	LUMINAIRE MAST ARM	VIVDS	VIDEO IMAGE VEHICLE DETECTION SYSTEM
LPS	LOW PRESSURE SODIUM	WIM	WEIGH-IN-MOTION
Ltg	LIGHTING	Xfmr	TRANSFORMER
Lum	LUMINAIRE		
M	METERED		
MAT	MAST ARM MOUNTING TOP ATTACHMENT		
MAS	MAST ARM MOUNTING SIDE ATTACHMENT		

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	330	R29.0/44.1	27	34

*Theresa Gabriel*  
REGISTERED ELECTRICAL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

Theresa  
Aziz Gabriel  
No. E15129  
Exp. 6-30-14  
ELECTRICAL  
STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 12-07-15

**SOFFIT AND WALL MOUNTED LUMINAIRES**

- PENDANT, 70 W HPS UNLESS OTHERWISE SPECIFIED
- FLUSH, 70 W HPS UNLESS OTHERWISE SPECIFIED
- WALL SURFACE, 70 W HPS UNLESS OTHERWISE SPECIFIED
- EXISTING SOFFIT OR WALL LUMINAIRE TO REMAIN UNMODIFIED
- EXISTING SOFFIT OR WALL LUMINAIRE TO BE MODIFIED AS SPECIFIED

**NOTE:**  
Arrow indicates "street side" of luminaire.

COMMONLY USED SYMBOLS FOR UNITED STATES CUSTOMARY UNITS OF MEASUREMENT:

SYMBOL USED	DEFINITIONS
$\Omega$	OHMS
min	MINUTE
s	SECOND
bps	BITS PER SECOND
Bps	BYTES PER SECOND
A	AMPERE
V	VOLT
V(dc)	VOLT (DIRECT CURRENT)
V(ac)	VOLT (ALTERNATING CURRENT)
FC	FOOT - CANDLE
W	WATTS
VA	VOLT-AMPERE
M	MEGA
k	KILO
m	MILLI
$\mu$	MICRO
P	PICO
HZ	HERTZ

**MISCELLANEOUS ELECTROLIERS**

NEW	EXISTING	
		LUMINAIRE ON WOOD POLE
		NON-STANDARD ELECTROLIER (SEE PROJECT NOTES OR PROJECT PLANS)
		CITY ELECTROLIER
		ELECTROLIER FOUNDATION (FUTURE INSTALLATION)

- NOTES:**
- HPS luminaires shall be 310 W HPS when installed on Type 21, 21D, 30, 31 and 32 Standards, unless otherwise specified. HPS luminaires shall be 200 W when installed on other type standards or poles, unless otherwise specified.
  - LED luminaires shall be 235 W when installed on Type 21, 21D, 30, 31 and 32 Standards, unless otherwise specified. LED luminaires shall be 165 W when installed on other type standards or poles, unless otherwise specified.
  - Luminaires shall be the cutoff type, ANSI Type III medium cutoff lighting distribution, unless otherwise specified.

**STANDARD ELECTROLIER**

NEW	EXISTING	STANDARD TYPE
		15
		15D
		15 STRUCTURE
		15D STRUCTURE
		21
		21D
		21 STRUCTURE
		21D STRUCTURE
		30
		31
		32

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS  
(LEGEND AND ABBREVIATIONS)**

NO SCALE

RSP ES-1A DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-1A DATED MAY 20, 2011 - PAGE 425 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP ES-1A**

2010 REVISED STANDARD PLAN RSP ES-1A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	330	R29.0/44.1	28	34

*Theresa Gabriel*  
REGISTERED ELECTRICAL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

Theresa Aziz Gabriel  
No. E15129  
Exp. 6-30-14  
ELECTRICAL  
STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 12-07-15

**CONDUIT**

**SIGNAL EQUIPMENT**

NEW	EXISTING	
---	---	LIGHTING CONDUIT, UNLESS OTHERWISE INDICATED OR NOTED
---	---	TRAFFIC SIGNAL CONDUIT
---C---	---c---	COMMUNICATION CONDUIT
---T---	---t---	TELEPHONE CONDUIT
---F---	---f---	FIRE ALARM CONDUIT
---FO---	---fo---	FIBER OPTIC CONDUIT
---	---	CONDUIT TERMINATION
		CONDUIT RISER ATTACHED TO THE STRUCTURE OR SERVICE POLE

NEW	EXISTING	
		PEDESTRIAN SIGNAL HEAD "C" INDICATES COUNTDOWN PEDESTRIAN HEAD
		PUSH BUTTON ASSEMBLY POST
		PEDESTRIAN BARRICADE
		VEHICLE SIGNAL HEAD (WITH BACKPLATE AND 3-SECTIONS: RED, YELLOW AND GREEN)
		VEHICLE SIGNAL HEAD WITH ANGLE VISOR
		MODIFICATIONS OF BASIC SYMBOL: "L" INDICATES ALL NON-ARROW SECTIONS LOUVERED "LG" INDICATES LOUVERED GREEN SECTION ONLY "PV" INDICATES ALL 12" SECTIONS PROGRAMMED VISIBILITY "8" INDICATES ALL 8" SECTIONS (ONLY WHEN SPECIFIED)

**SIGNAL EQUIPMENT Cont**

NEW	EXISTING	
		GUARD POST
		TYPE 1 STANDARD WITH RAMP METERING SIGN
		OPTICAL DETECTOR FOR THE EMERGENCY VEHICLE DETECTION SYSTEM

**SERVICE EQUIPMENT**

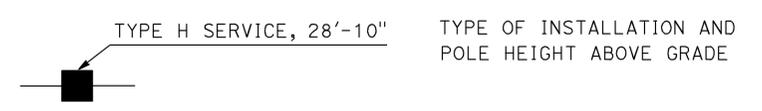
NEW	EXISTING	
---OH---	---oh---	OVERHEAD LINES
		WOOD POLE, "U" INDICATES UTILITY OWNED
		POLE GUY WITH ANCHOR
		UTILITY TRANSFORMER - GROUND MOUNTED
		SERVICE EQUIPMENT ENCLOSURE TYPE. DOOR INDICATES FRONT OF ENCLOSURE
		TELEPHONE DEMARCATION CABINET

		VEHICLE SIGNAL HEAD CONSISTING OF RED, YELLOW AND GREEN LEFT ARROW SECTIONS
		VEHICLE SIGNAL HEAD CONSISTING OF RED AND YELLOW SECTIONS WITH AN UP GREEN ARROW SECTION
		VEHICLE SIGNAL HEAD (5 SECTION) CONSISTING OF RED, YELLOW AND GREEN SECTIONS WITH YELLOW AND GREEN RIGHT ARROW SECTIONS
		TYPE 15TS STANDARD WITH VEHICLE SIGNAL HEAD AND LUMINAIRE
		TYPE 21TS STANDARD WITH VEHICLE SIGNAL HEAD AND LUMINAIRE
		STANDARD WITH LUMINAIRE AND SIGNAL MAST ARMS AND ATTACHED VEHICLE SIGNAL HEADS
		TYPE 1 STANDARD WITH ATTACHED VEHICLE SIGNAL HEADS
		STANDARD WITH A SIGNAL MAST ARM, ATTACHED VEHICLE SIGNAL HEADS AND INTERNALLY ILLUMINATED STREET NAME SIGN
		CONTROLLER ASSEMBLY. DOOR INDICATES FRONT OF CABINET

**NOTES:**

- All signal sections shall be 12" unless shown otherwise.
- Signal heads shall be provided with backplates unless shown otherwise.

**POLE-MOUNTED SERVICE DESIGNATION**



**FLASHING BEACON**

NEW	EXISTING	
		FLASHING BEACON (ONE VEHICLE SIGNAL HEAD WITH BACKPLATE AND VISOR) "R" INDICATES RED INDICATION, "Y" INDICATES YELLOW INDICATION
		FLASHING BEACON WITH TYPE 15-FBS STANDARD AND A SIGN.
		FLASHING BEACON WITH TYPES 9, 9A OR 9B SIGN UNLESS OTHERWISE SPECIFIED OR INDICATED

**ILLUMINATED OVERHEAD SIGN**

NEW	EXISTING	
		SINGLE POST, SINGLE ILLUMINATED SIGN, BALANCED BUTTERFLY
		SINGLE POST, DOUBLE ILLUMINATED SIGN, BALANCED BUTTERFLY
		SINGLE POST, SINGLE ILLUMINATED SIGN, FULL CANTILEVER
		DOUBLE POST, SINGLE ILLUMINATED SIGN
		SINGLE ILLUMINATED SIGN MOUNTED ON STRUCTURE
		DOUBLE POST, SINGLE ILLUMINATED SIGN WITH ELECTROLIER

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
(LEGEND AND ABBREVIATIONS)**

NO SCALE  
RSP ES-1B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-1B DATED MAY 20, 2011 - PAGE 426 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP ES-1B**

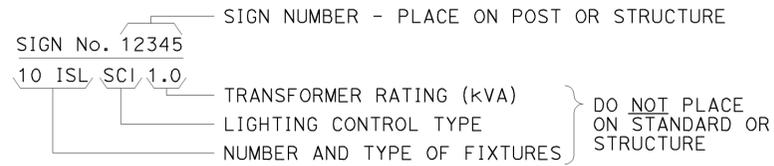
2010 REVISED STANDARD PLAN RSP ES-1B



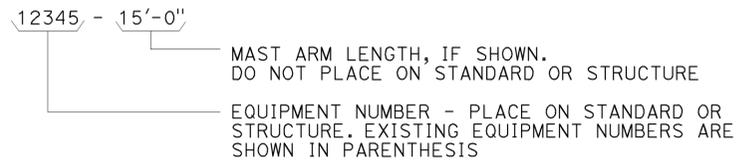
TO ACCOMPANY PLANS DATED 12-07-15

### EQUIPMENT IDENTIFICATION

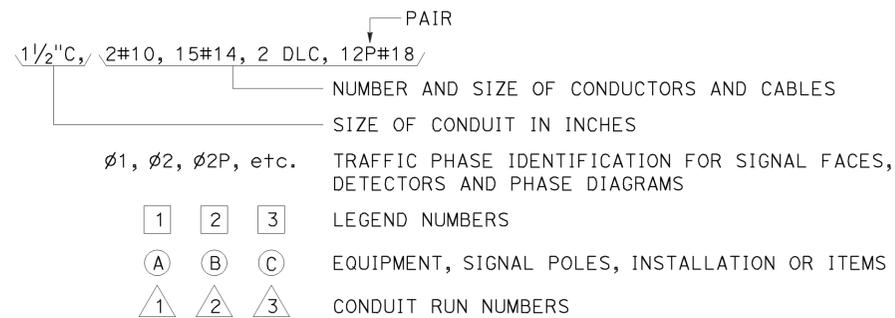
#### ILLUMINATED SIGN IDENTIFICATION NUMBER:



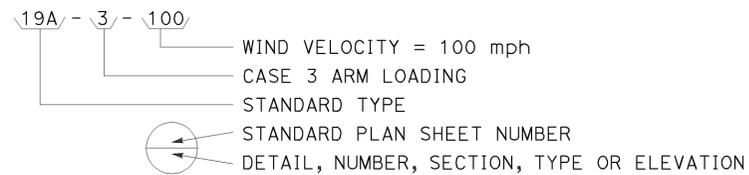
#### ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



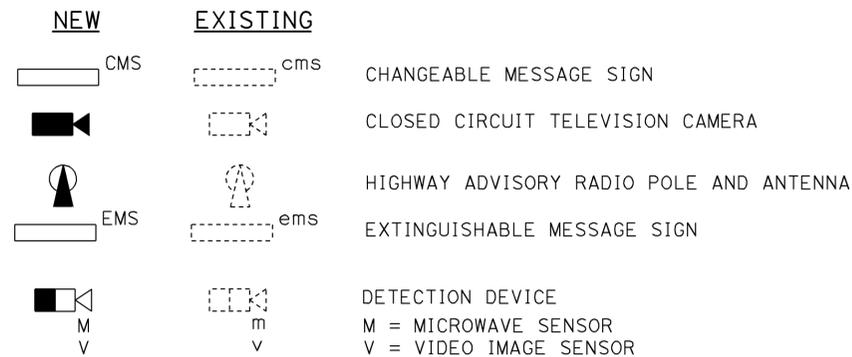
#### CONDUIT AND CONDUCTOR IDENTIFICATION:



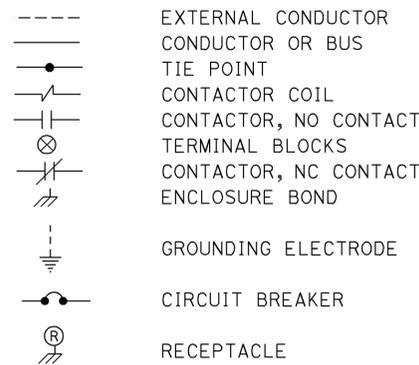
#### SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



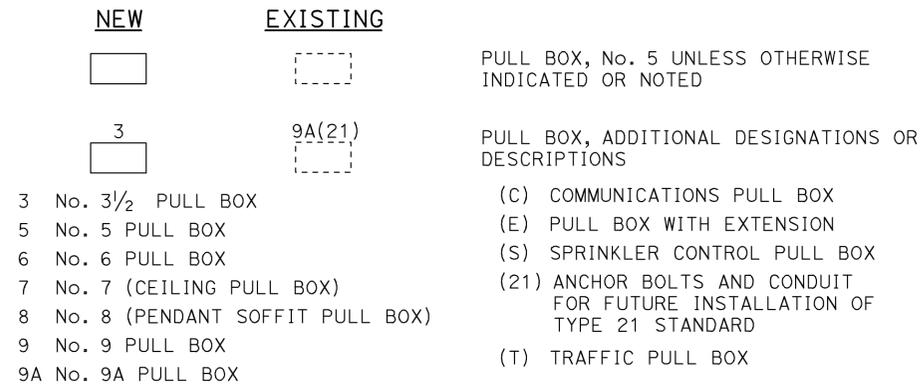
### MISCELLANEOUS EQUIPMENT



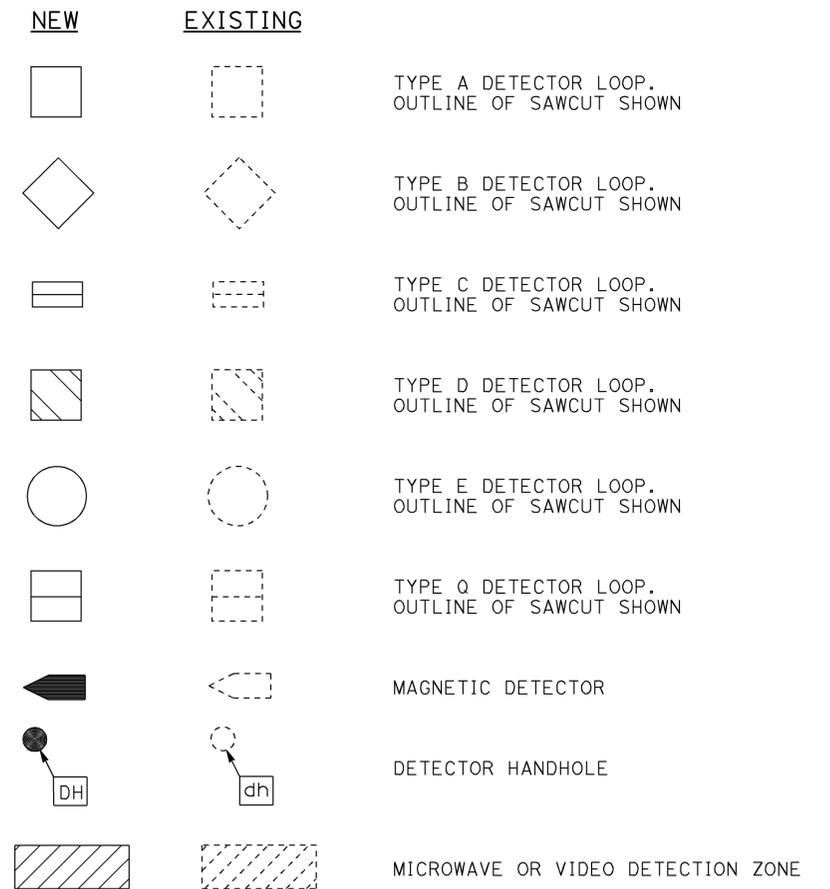
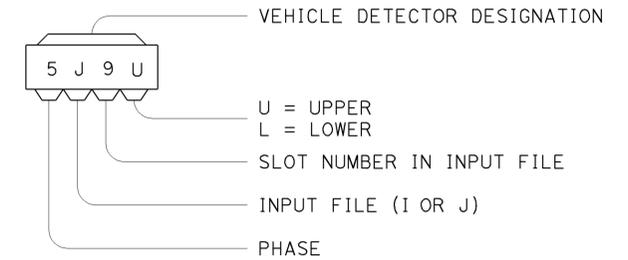
### WIRING DIAGRAM LEGEND



### PULL BOXES



### VEHICLE DETECTORS



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

## ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

NO SCALE

RSP ES-1C DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-1C DATED MAY 20, 2011 - PAGE 427 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-1C

2010 REVISED STANDARD PLAN RSP ES-1C

**NOTES:**

1. Foundation shall be located to provide 2'-0" minimum clearance between face of curb and any portion of cabinet.
2. Controller units, plug-mounted equipment, shelf-mounted equipment and wall-mounted equipment shall be located to permit safe and easy removal or replacement without removing any other piece of equipment.
3. Cabinet fan may be installed at an alternate location near the top of the cabinet when approved by the Engineer.
4. Where telephone interconnect is required, a minimum of 5" clear vertical space shall be provided inside the cabinet for the equipment.
5. Telephone interconnect conductors shall be enclosed in a 3/4" or larger conduit through the foundation. Type 4 conduit shall be used to separate telephone and power conductors in cabinets.

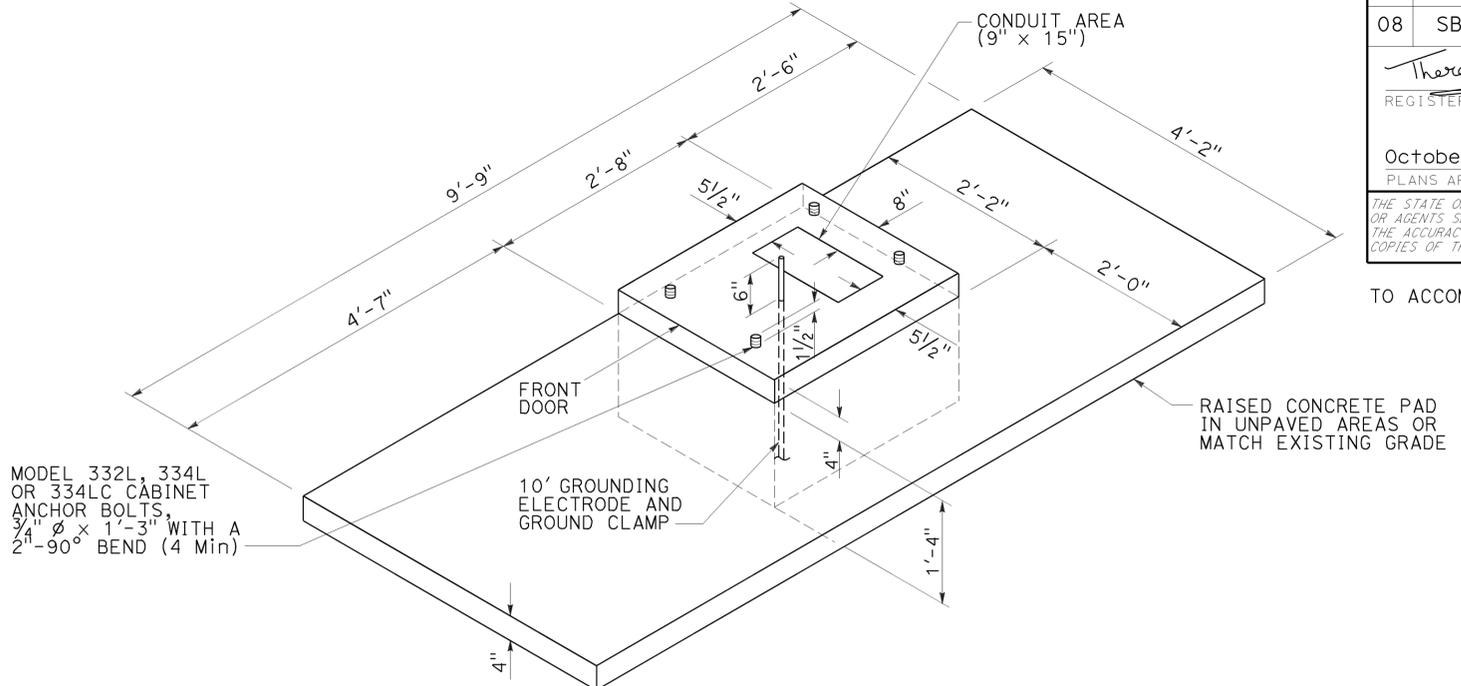
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	330	R29.0/44.1	30	34

*Theresa Gabriel*  
 REGISTERED ELECTRICAL ENGINEER  
 Theresa Aziz Gabriel  
 No. E15129  
 Exp. 6-30-16  
 ELECTRICAL  
 STATE OF CALIFORNIA

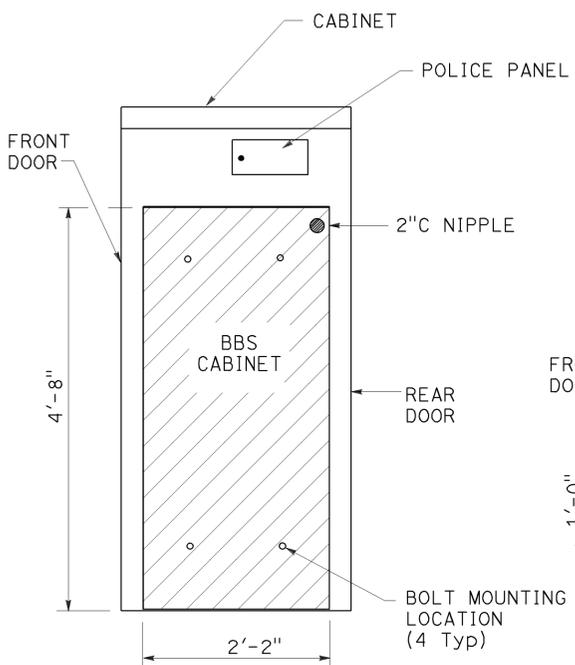
October 30, 2015  
 PLANS APPROVAL DATE

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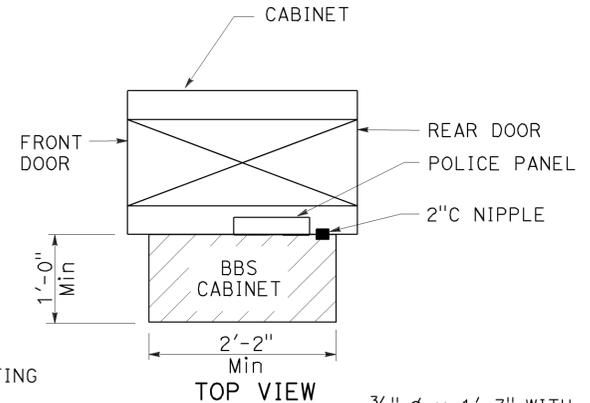
TO ACCOMPANY PLANS DATED 12-07-15



**FOUNDATION AND PAD DETAIL**  
Model 332L, 334L and 334LC

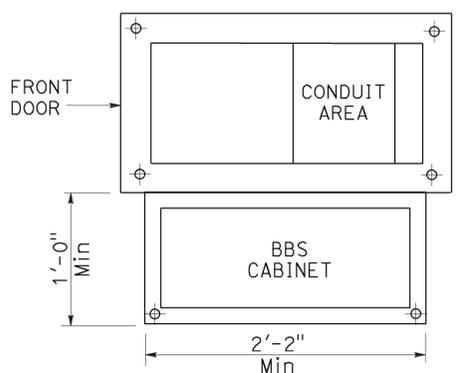


**SIDE VIEW**



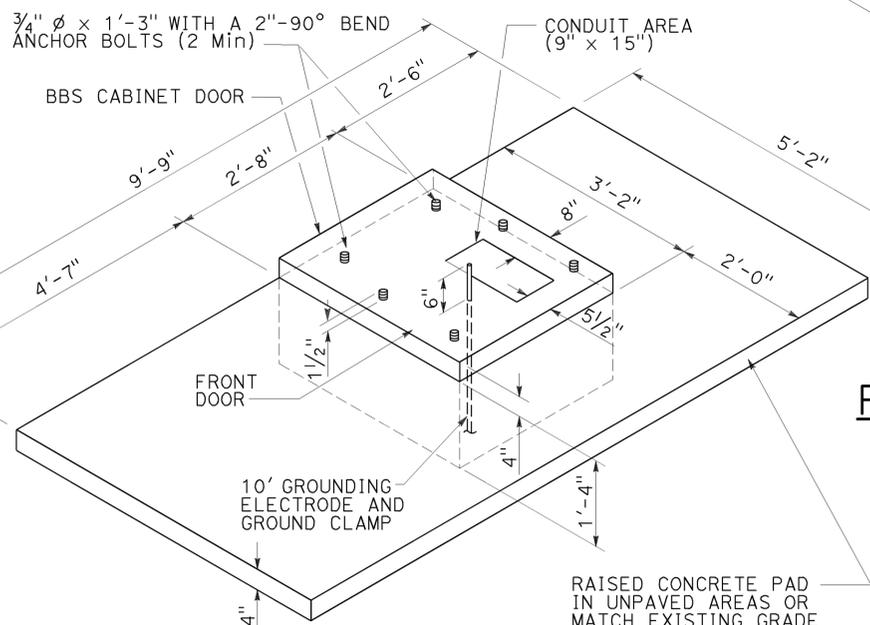
**TOP VIEW**

**BBS CABINET MOUNTED TO THE MODEL 332L CABINET**

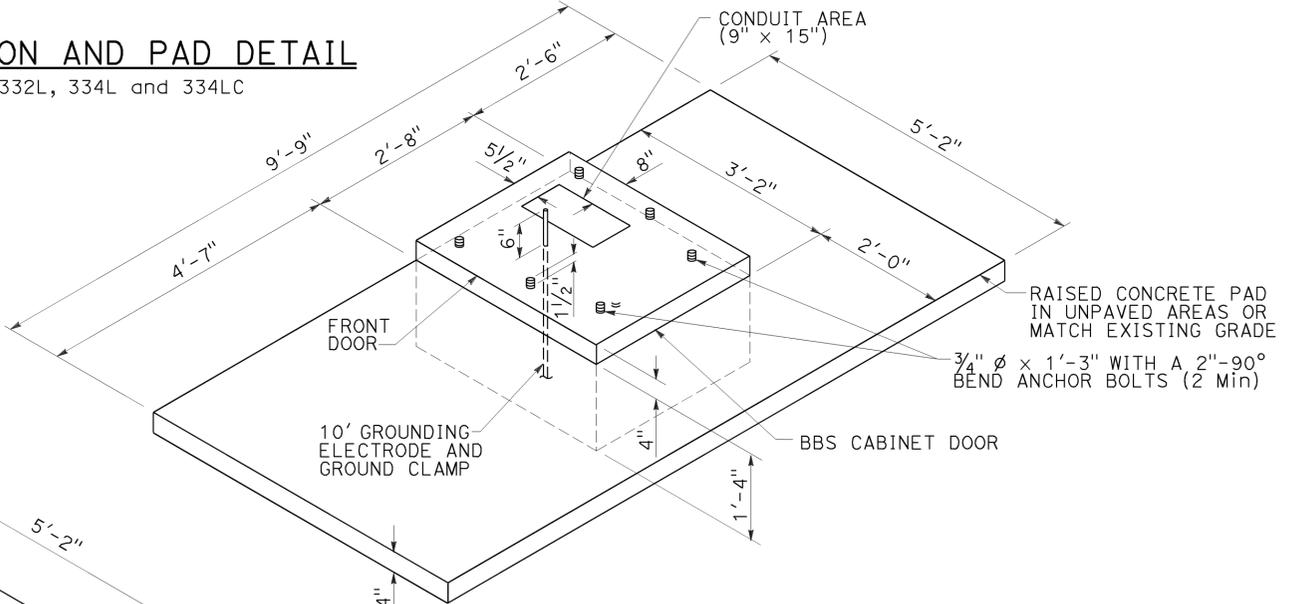


**BASE PLAN FOR BBS MOUNTED TO THE MODEL 332L CABINET**

(FOR DIMENSIONS AND DETAILS NOT SHOWN, SEE CABINET HOUSING DETAILS OF THE TRANSPORTATION ELECTRICAL EQUIPMENT SPECIFICATION (TEES))



**LEFT SIDE INSTALLATION DETAIL A**



**RIGHT SIDE INSTALLATION DETAIL B**

**MODIFIED MODEL 332L CABINET FOUNDATION DETAIL FOR BATTERY BACKUP SYSTEM**

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
 (CONTROLLER CABINET  
 FOUNDATION AND PAD DETAILS)**  
 NO SCALE

RSP ES-3C DATED OCTOBER 30, 2015 SUPERSEDES STANDARD PLAN ES-3C DATED MAY 20, 2011 - PAGE 437 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP ES-3C**

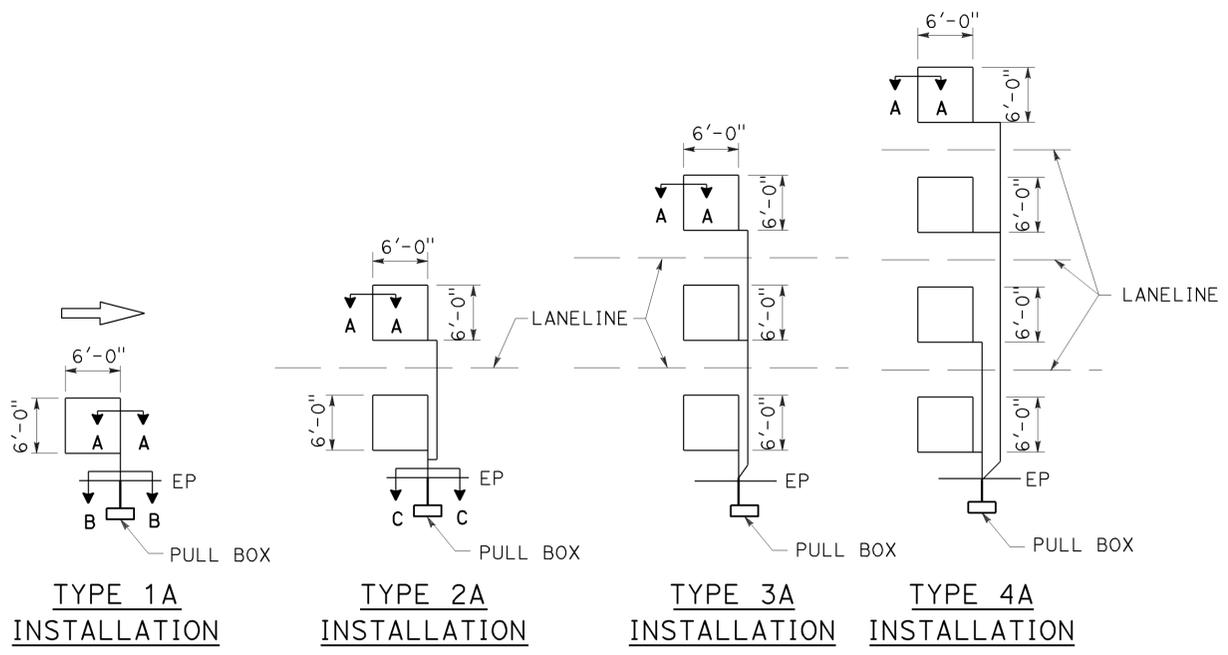
2010 REVISED STANDARD PLAN RSP ES-3C

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	330	R29.0/44.1	31	34

Theresa Gabriel  
 REGISTERED ELECTRICAL ENGINEER  
 October 30, 2015  
 PLANS APPROVAL DATE  
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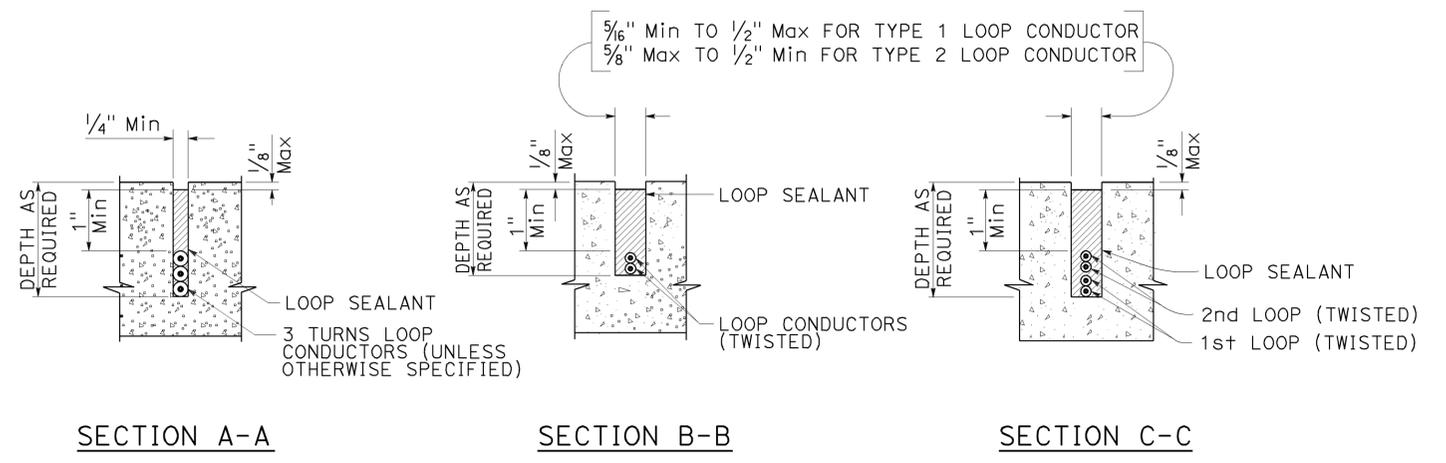


TO ACCOMPANY PLANS DATED 12-07-15

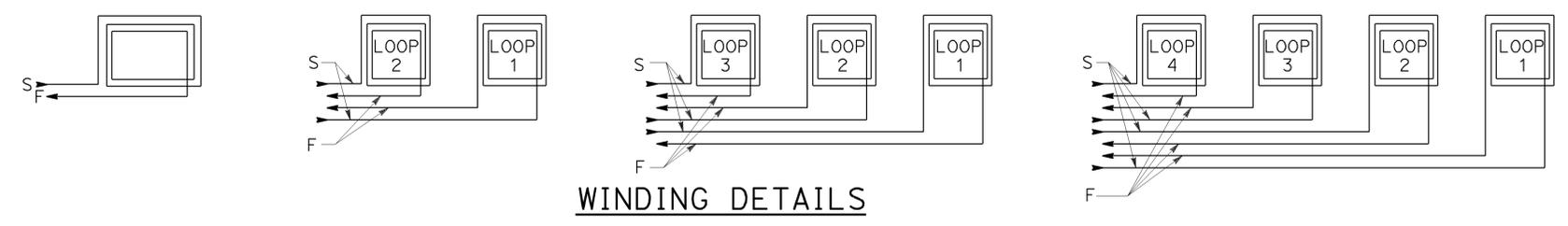


**SAWCUT DETAILS**

- Type A loop detector configurations illustrated
- 1A thru 4A = 1 Type A loop configuration in each lane.
  - 1B thru 4B = 1 Type B loop configuration in each lane.
  - 1C = 1 Type C loop configuration entering lanes as required.
  - 1D thru 4D = 1 Type D loop configuration in each lane.
  - 1E thru 4E = 1 Type E loop configuration in each lane.
  - 1Q thru 4Q = 1 Type Q loop configuration in each lane.
- Use Type A, B, C, D, E or Q loop detector configurations only when specified or shown on plans.

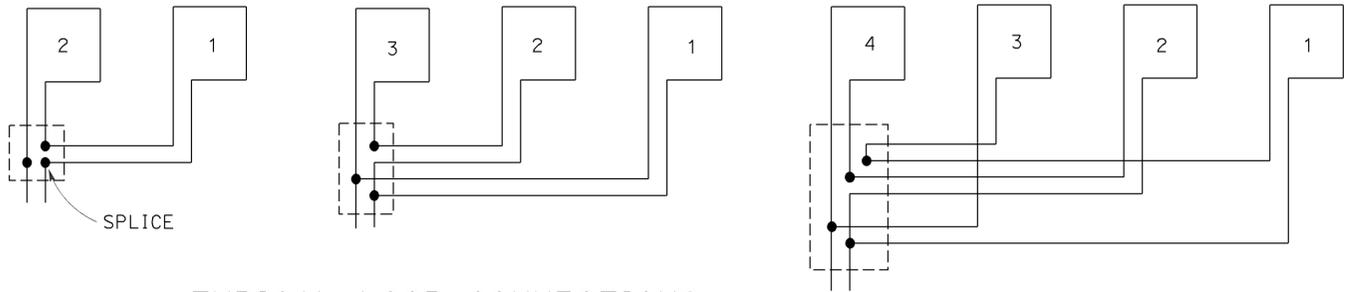


**SLOT DETAILS - TYPE 1 AND TYPE 2 LOOP CONDUCTOR**



**WINDING DETAILS**

**ABBREVIATIONS:**  
 S - START  
 F - FINISH



**TYPICAL LOOP CONNECTIONS**  
 Dashed lines represent the pull box

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
 (LOOP DETECTORS)**  
 NO SCALE

RSP ES-5A DATED OCTOBER 30, 2015 SUPERSEDES STANDARD PLAN ES-5A DATED MAY 20, 2011 - PAGE 448 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP ES-5A**

2010 REVISED STANDARD PLAN RSP ES-5A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	330	R29.0/44.1	32	34

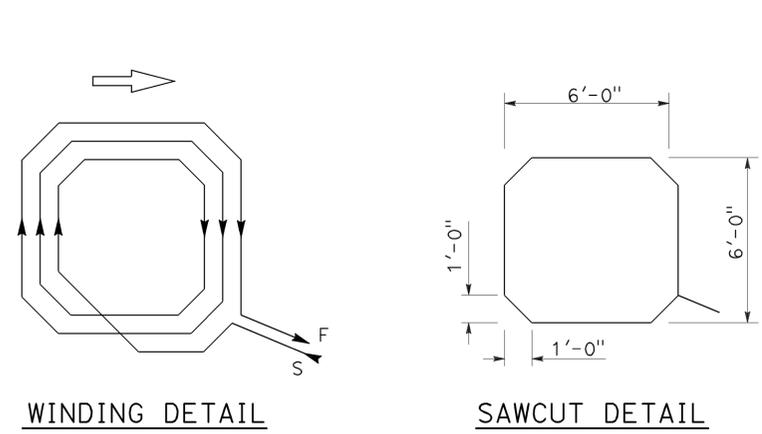
*Theresa Gabriel*  
REGISTERED ELECTRICAL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

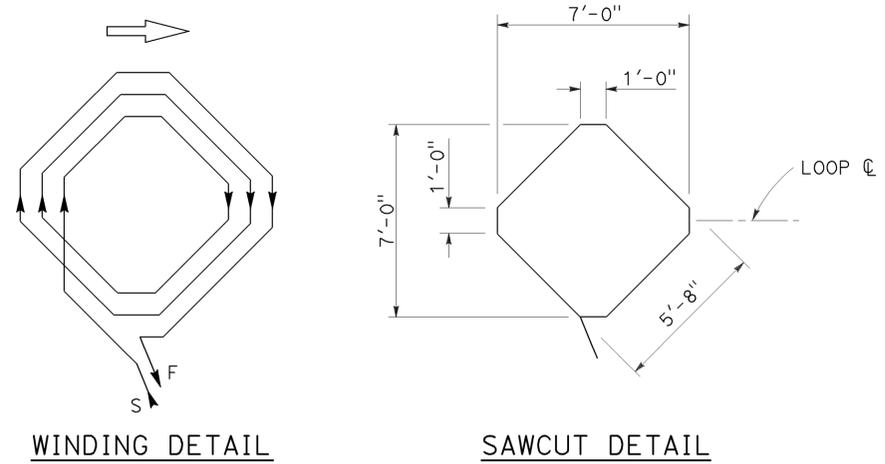
Theresa  
Aziz Gabriel  
No. E15129  
Exp. 6-30-14  
ELECTRICAL  
STATE OF CALIFORNIA

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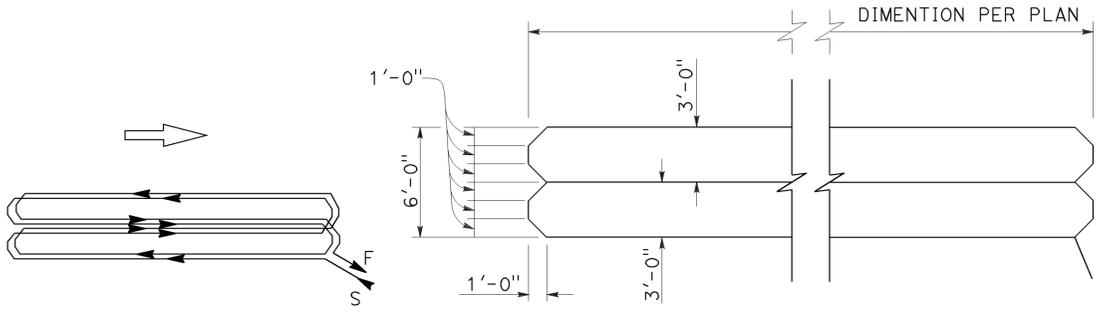
TO ACCOMPANY PLANS DATED 12-07-15



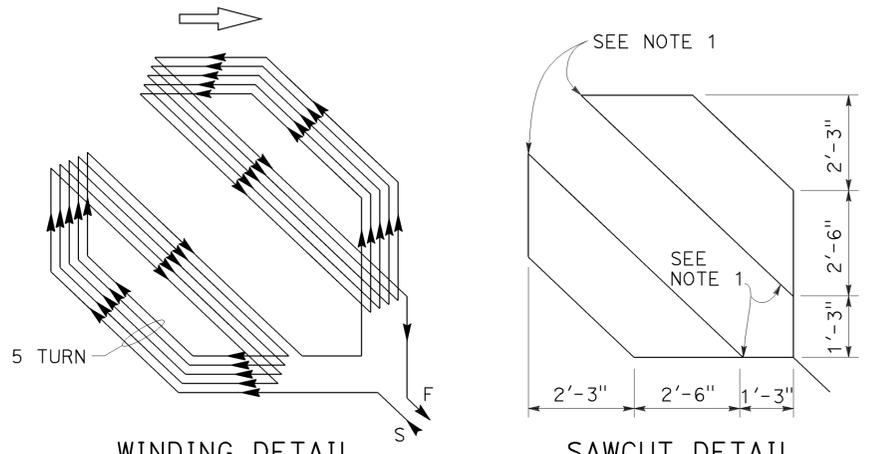
WINDING DETAIL  
SAWCUT DETAIL  
**TYPE A LOOP DETECTOR CONFIGURATION**



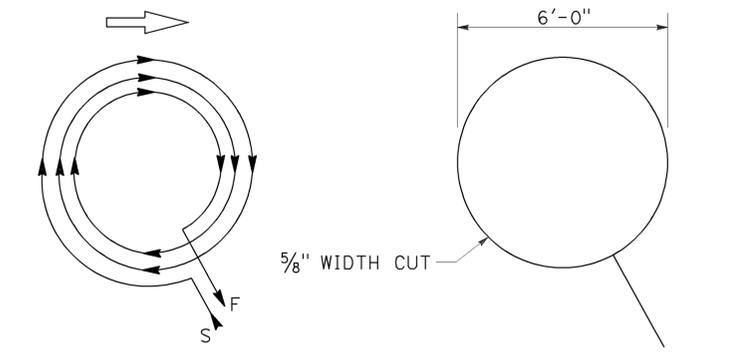
WINDING DETAIL  
SAWCUT DETAIL  
**TYPE B LOOP DETECTOR CONFIGURATION**



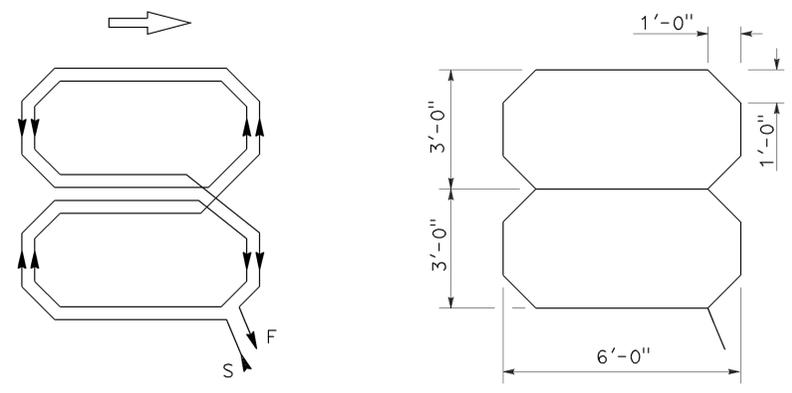
WINDING DETAIL  
SAWCUT DETAIL  
**TYPE C LOOP DETECTOR CONFIGURATION**



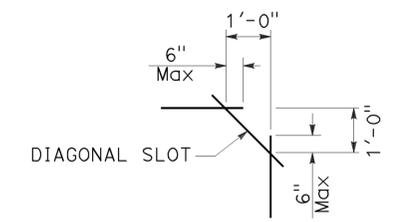
WINDING DETAIL  
SAWCUT DETAIL  
**TYPE D LOOP DETECTOR CONFIGURATION**



WINDING DETAIL  
SAWCUT DETAIL  
**TYPE E LOOP DETECTOR CONFIGURATION**



WINDING DETAIL  
SAWCUT DETAIL  
**TYPE Q LOOP DETECTOR CONFIGURATION**



**PLAN VIEW OF  
DIAGONAL SLOT  
AT CORNERS**

- NOTES:**
1. Round corners of acute angle sawcuts to prevent damage to conductors.
  2. Typical distance separating loops from edge to edge is 10' for Type A, B, D and E installation in single lane.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS  
(DETECTORS)**

NO SCALE

RSP ES-5B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-5B  
DATED MAY 20, 2011 - PAGE 449 OF THE STANDARD PLANS BOOK DATED 2010.

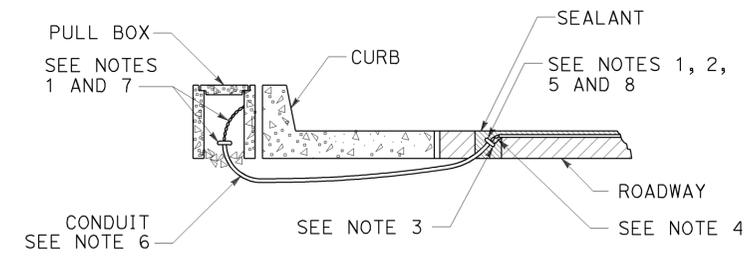
2010 REVISED STANDARD PLAN RSP ES-5B

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	330	R29.0/44.1	33	34

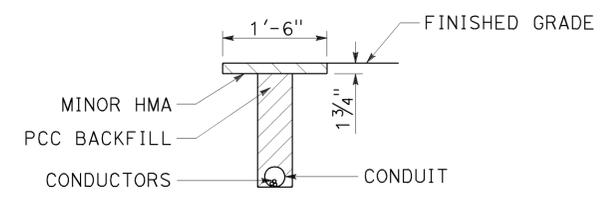
Theresa Gabriel  
 REGISTERED ELECTRICAL ENGINEER  
 July 19, 2013  
 PLANS APPROVAL DATE  
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TO ACCOMPANY PLANS DATED 12-07-15

2010 REVISED STANDARD PLAN RSP ES-5D

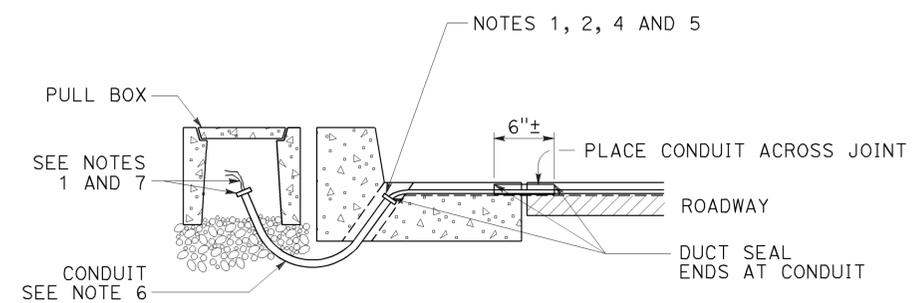


**TYPE A**  
**CURB TERMINATION DETAIL**

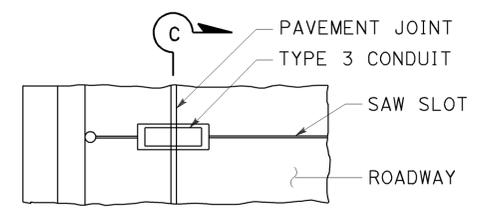


**"T" TRENCH**  
**DETAIL T**

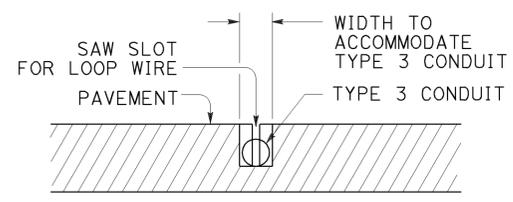
5/16" x 1 1/2" SCREW (BRASS, STAINLESS STEEL OR OTHER NON-CORRODING MATERIAL)



**CROSS SECTION**

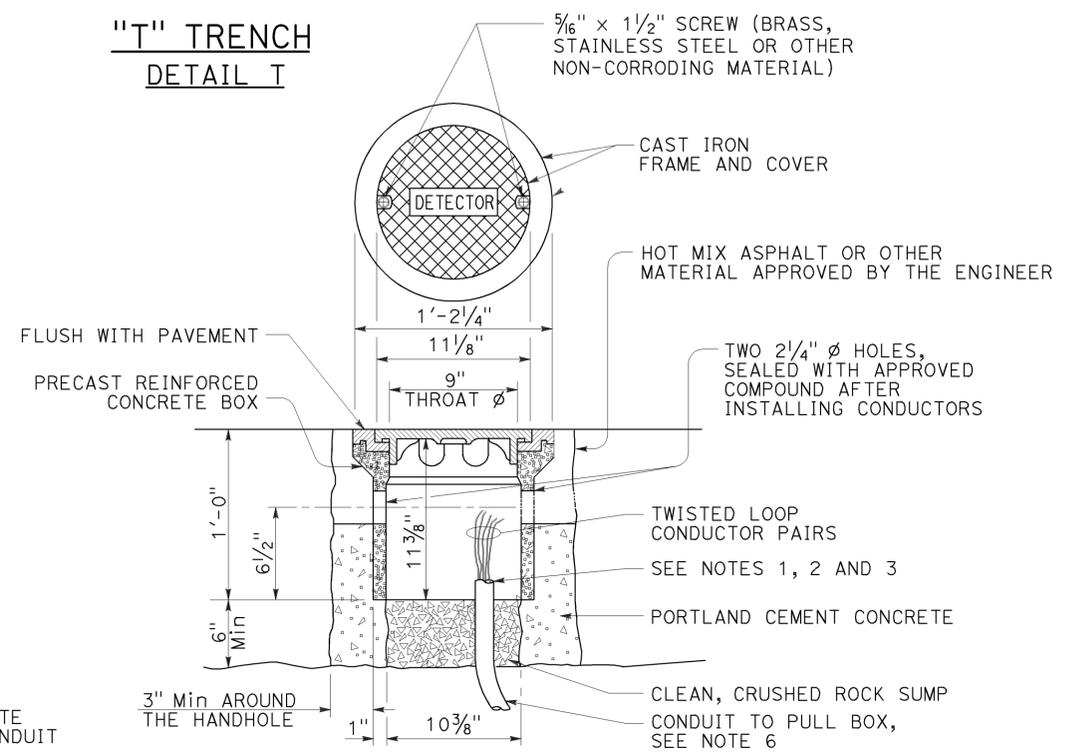


**PLAN VIEW**

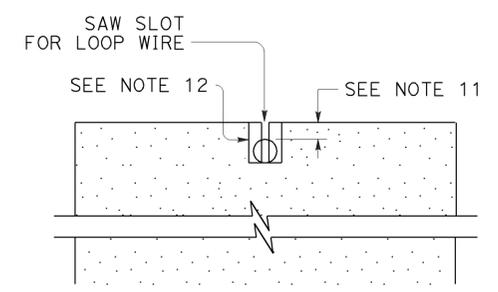


**SECTION C-C**

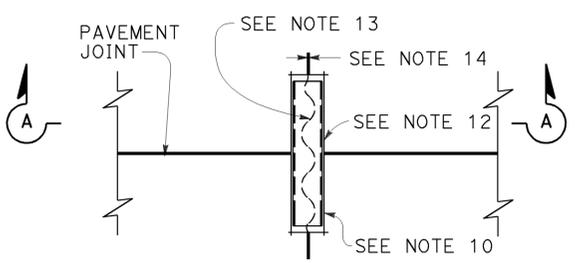
**TYPE B**  
**CURB TERMINATION DETAIL**



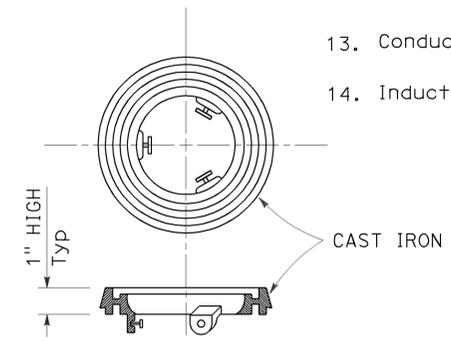
**DETECTOR HANDHOLE DETAIL**



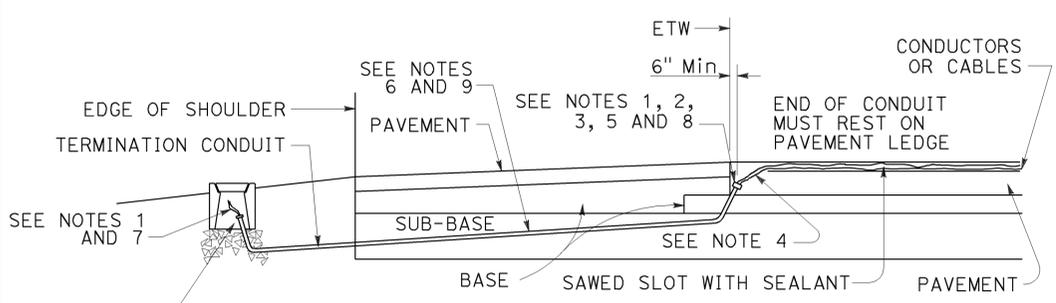
**SECTION A-A**



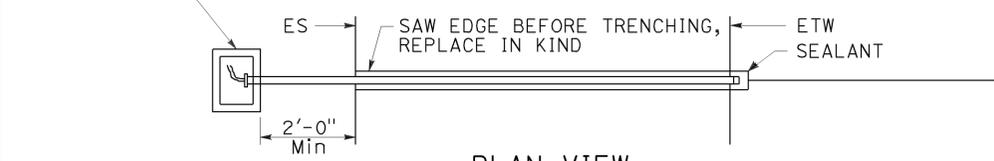
**PLAN VIEW**  
**TYPICAL LOOP LEAD-IN DETAIL**  
**AT PAVEMENT JOINT**



**LOCKING GRADE RING**



**CROSS SECTION**



**PLAN VIEW**  
**SHOULDER TERMINATION DETAILS**

**NOTES:**

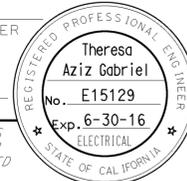
- Bushing shall be used at end of conduit.
- Tape detector conductors or cables 3" each side of bushings.
- Install duct seal compound to each end of termination conduit before installing sealant.
- Round all sharp edges where detector conductors or cables have to pass.
- End of conduit shall be 3/8" below roadway surface.
- Conduit size      Loop conductors  
   1"C minimum      1 to 2 pairs  
   1 1/2"C minimum    3 to 4 pairs  
   2"C minimum      5 or more pairs
- Splice detector conductors or cables to detector lead-in-cable.
- Location of detector handhole when shown on plans.
- When the shoulder and traveled way are paved with the same material and there is no joint between them, the conduit shall extend only 2'-0" into the shoulder pavement.
- 3/4"C, Type 3 conduit 6" long minimum, plug both ends with duct compound to keep out sealant.
- 1/2" Minimum between top of conduit and pavement surface.
- Sawcut shall not exceed 1" in width and 1/8" longer than conduit to be installed.
- Conductors with 1/2" minimum slack inside conduit.
- Inductive loop detector saw slot.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS**  
**(CURB TERMINATION**  
**AND HANDHOLE)**  
NO SCALE

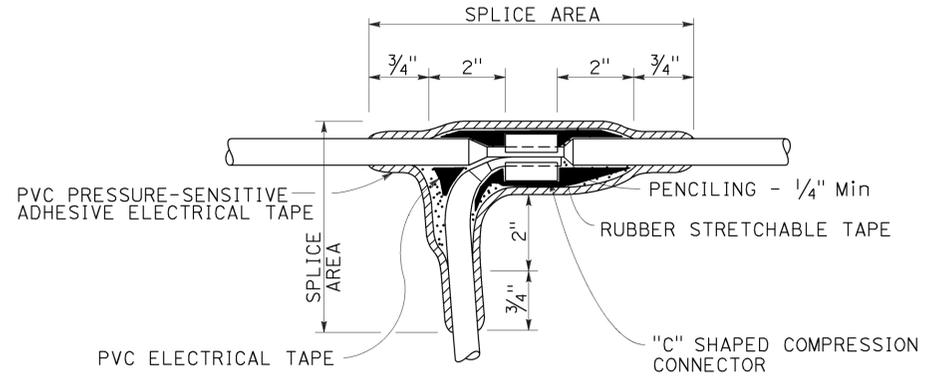
RSP ES-5D DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-5D DATED MAY 20, 2011 - PAGE 451 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP ES-5D**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	SBd	330	R29.0/44.1	34	34
<i>Theresa Gabriel</i> REGISTERED ELECTRICAL ENGINEER					
October 30, 2015 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

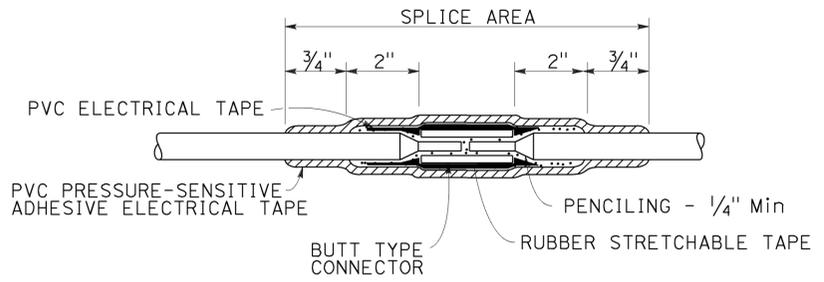


TO ACCOMPANY PLANS DATED 12-07-15



**TYPE C SPLICE**

See Note 3

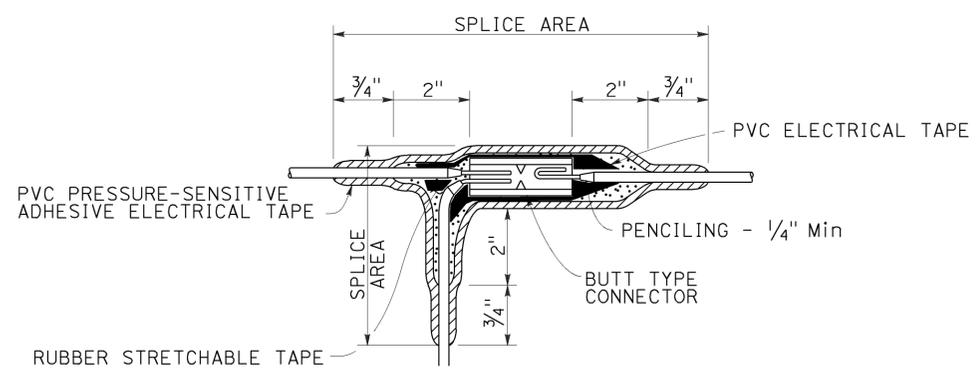


**TYPE S SPLICE**

See Note 4

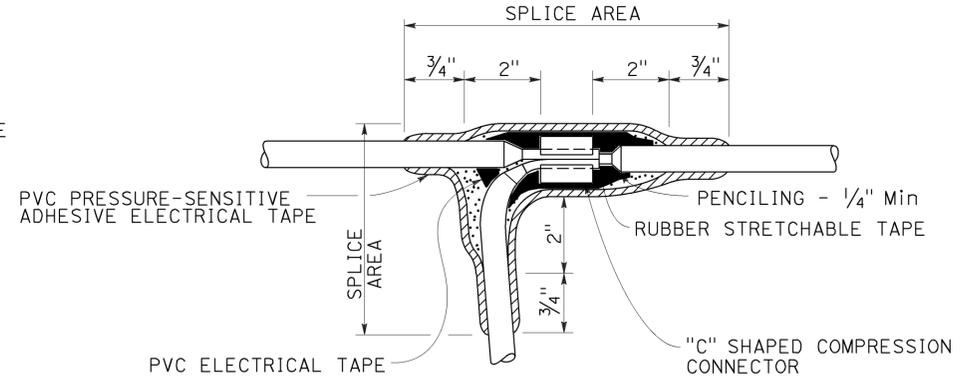
**NOTES:**

1. Dimensions are minimum.
2. Rubber tapes shall be rolled after application.
3. Between 1 free-end and 1 through conductor.
4. Between 2 free-end conductors.
5. Between 3 free-end conductors.



**TYPE ST SPLICE**

See Note 5



**TYPE T SPLICE**

See Note 5

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
(SPLICING DETAILS)**

NO SCALE

RSP ES-13A DATED OCTOBER 30, 2015 SUPERSEDES STANDARD PLAN ES-13A DATED  
MAY 20, 2011 - PAGE 491 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP ES-13A**

2010 REVISED STANDARD PLAN RSP ES-13A