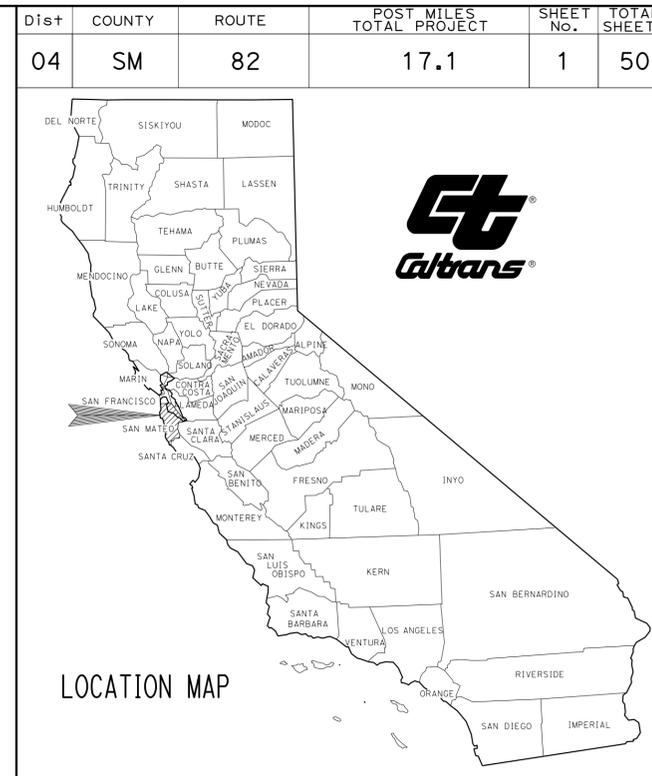


INDEX OF PLANS

SHEET No.	DESCRIPTION
1	TITLE SHEET AND LOCATION MAP
2	LAYOUT
3 - 4	CONSTRUCTION DETAILS
5	TEMPORARY WATER POLLUTION CONTROL PLAN
6 - 8	DRAINAGE PLAN AND DETAILS, PROFILE, AND QUANTITIES
9 - 11	UTILITY PLAN
12	CONSTRUCTION AREA SIGNS
13 - 15	PAVEMENT DELINEATION PLAN
16 - 18	SIGN PLAN, DETAILS AND QUANTITIES
19	SUMMARY OF QUANTITIES
20 - 25	ELECTRICAL PLANS
26 - 50	REVISED STANDARD PLANS STRUCTURE PLANS

STATE OF CALIFORNIA **ACHSNHP-P082(024)E**  
**DEPARTMENT OF TRANSPORTATION**  
**PROJECT PLANS FOR CONSTRUCTION ON**  
**STATE HIGHWAY**  
**IN SAN MATEO COUNTY**  
**IN MILLBRAE**  
**AT MILLWOOD DRIVE**

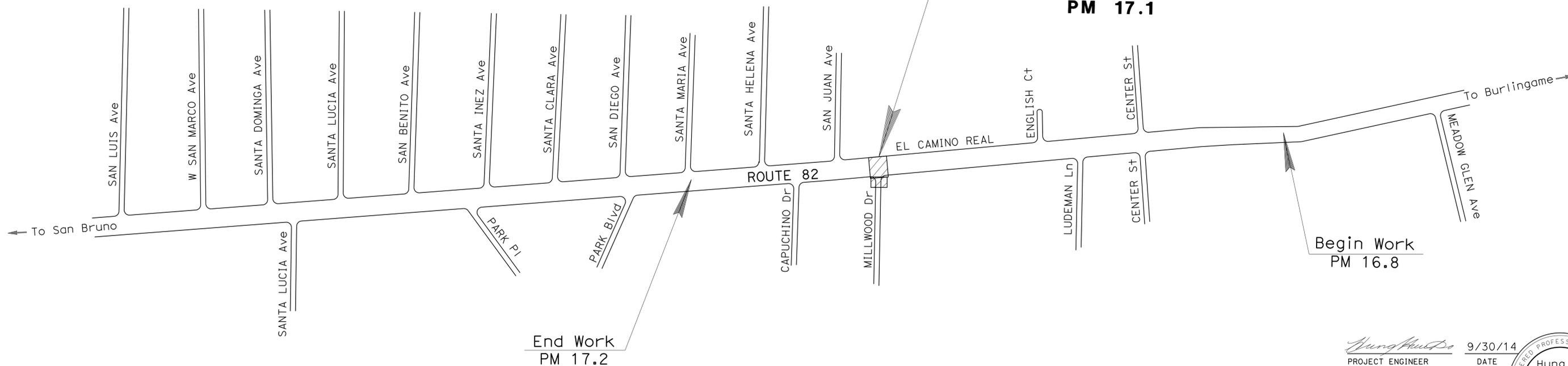
TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010



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

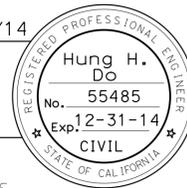


**LOCATION OF CONSTRUCTION**  
**PM 17.1**



PROJECT MANAGER <b>ALFRED LEE</b>	DESIGN MANAGER <b>GORDON JEONG</b>
--------------------------------------	---------------------------------------

*Hung H. Do* 9/30/14  
 PROJECT ENGINEER DATE  
 REGISTERED CIVIL ENGINEER  
**November 10, 2014**  
 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.



CONTRACT No.	<b>04-1G5404</b>
PROJECT ID	<b>0400020033</b>

NO SCALE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.1	2	50

<i>Hung H. Do</i>	9/30/14
REGISTERED CIVIL ENGINEER	DATE
Hung H. Do	
No. 55485	
Exp. 2-31-14	
CIVIL	

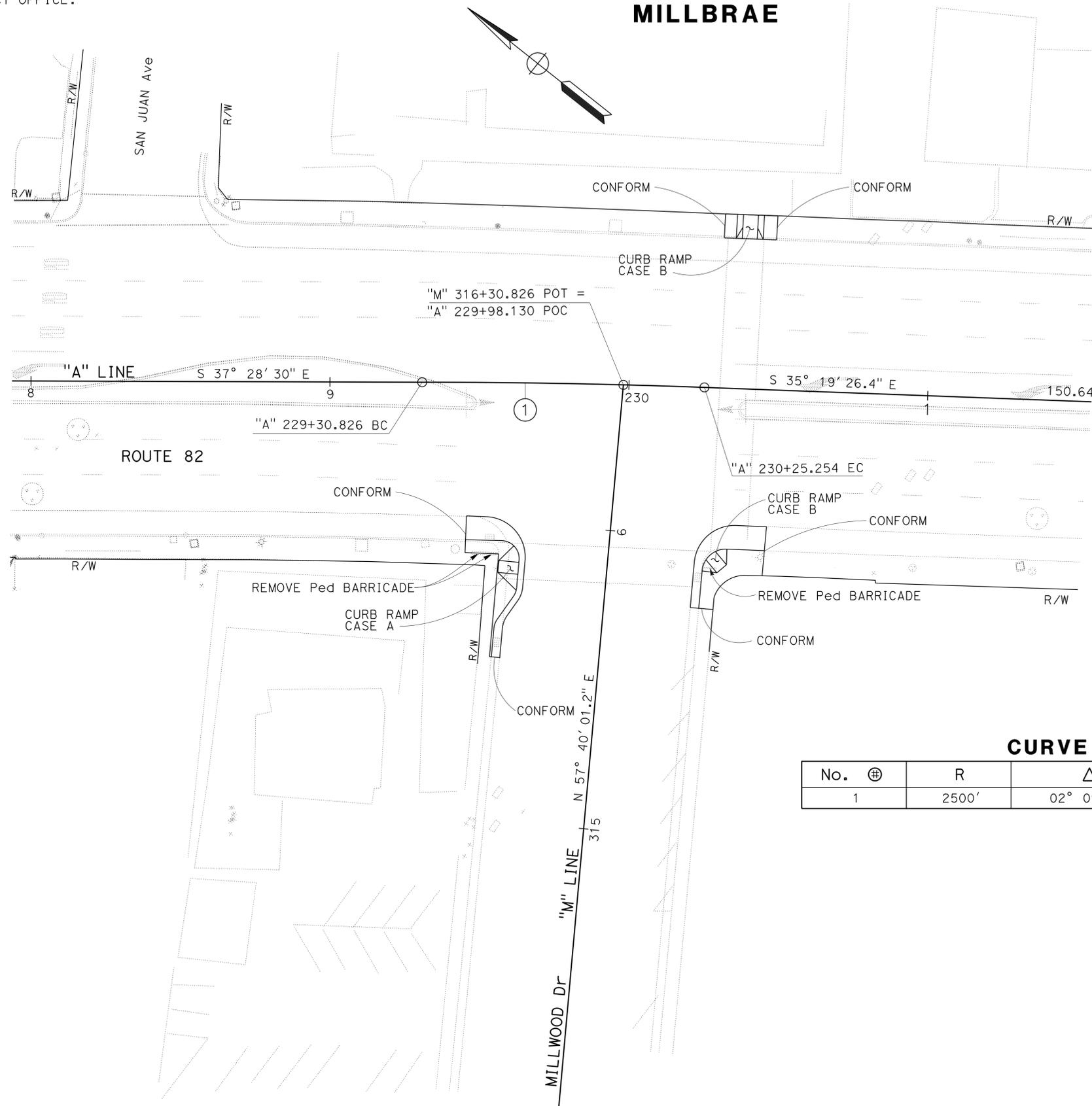
  

11-10-14  
PLANS APPROVAL DATE

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.

**NOTE:**

FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



**CURVE DATA**

No.	⊕	R	Δ	T	L
1		2500'	02° 09' 50"	47.22'	94.43'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
**DESIGN**  
 FUNCTIONAL SUPERVISOR: GORDON JEONG  
 CHECKED BY: MICHAEL PHAM  
 HUNG H DO  
 REVISIONS: 11/5/14  
 HD

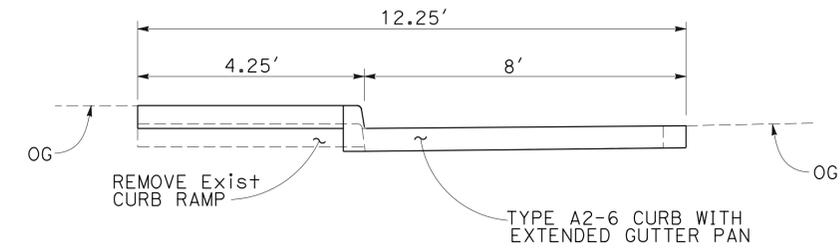
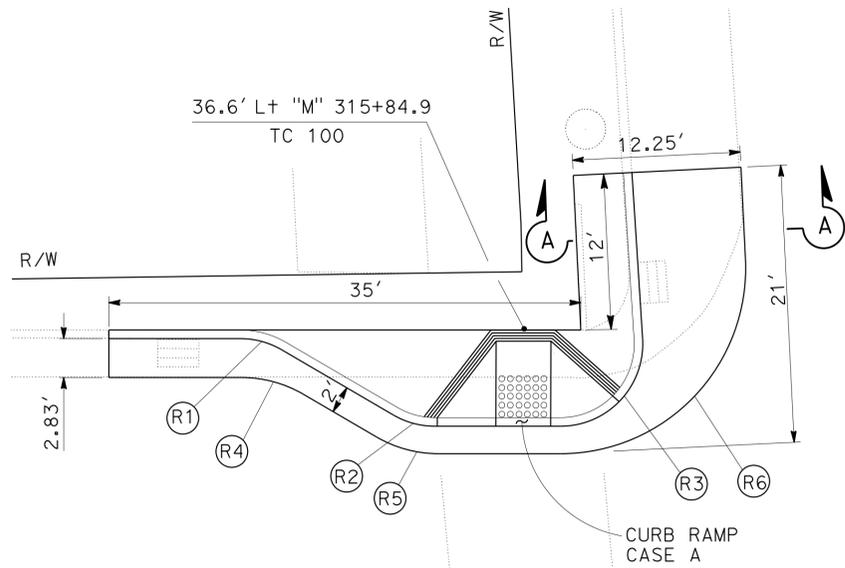
LAST REVISION: DATE PLOTTED => 17-FEB-2015  
 10-03-14 TIME PLOTTED => 12:37

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.1	3	50

Hung H. Do 9/30/14  
 REGISTERED CIVIL ENGINEER DATE  
 11-10-14  
 PLANS APPROVAL DATE

Hung H. Do  
 No. 55485  
 Exp. 2-31-14  
 CIVIL

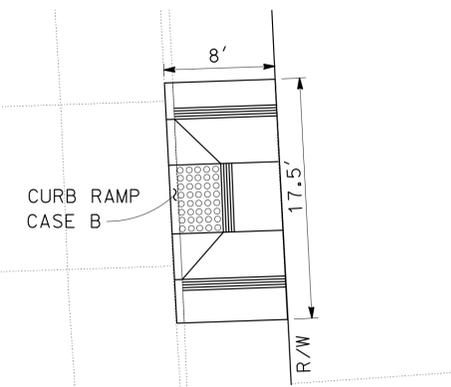
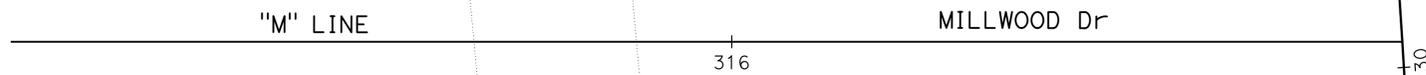
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



SECTION A-A  
FOR DETAILS NOT SHOWN, SEE Std PLAN A87A

**CURVE DATA**

No. #	BC		EC		R	Δ	T	L
	Sta/OFFSET	Elev	Sta/OFFSET	Elev				
R1	35.9' L+ "M" 315+64.2	99.7	35.1' L+ "M" 315+67.2	99.7	6'	30° 13' 20"	1.62'	3.16'
R2	30.3' L+ "M" 315+75.3	99.7	29.5' L+ "M" 315+78.4	99.75	6'	30° 13' 20"	1.62'	3.16'
R3	29.5' L+ "M" 315+87.5	99.75	35.9' L+ "M" 315+93.5	99.7	6'	93° 41' 25"	6.40'	9.81'
R4	33.1' L+ "M" 315+64.2	CONFORM	31.8' L+ "M" 315+68.7	CONFORM	9'	30° 13' 20"	2.43'	4.75'
R5	28.7' L+ "M" 315+74.1	CONFORM	27.5' L+ "M" 315+78.6	CONFORM	9'	30° 13' 20"	2.43'	4.75'
R6	27.5' L+ "M" 315+87.5	CONFORM	41.7' L+ "M" 316+01	CONFORM	13.5'	92° 47' 51"	14.18'	21.86'
R7	31.8' R+ "M" 315+89.4	99.4	39.4' R+ "M" 315+97.4	99.4	8'	87° 14' 58"	7.62'	12.18'
R8	28.9' R+ "M" 315+92.1	CONFORM	41.8' R+ "M" 316+05.6	CONFORM	13.5'	87° 14' 58"	12.87'	20.56'



**CONSTRUCTION DETAILS**  
NO SCALE

C-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 FUNCTIONAL SUPERVISOR: GORDON JEONG  
 CALCULATED/DESIGNED BY: MICHAEL PHAM  
 CHECKED BY: HUNG H DO  
 REVISED BY: HUNG H DO  
 DATE REVISED: 11/5/14  
 HD: 11/5/14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.1	4	50

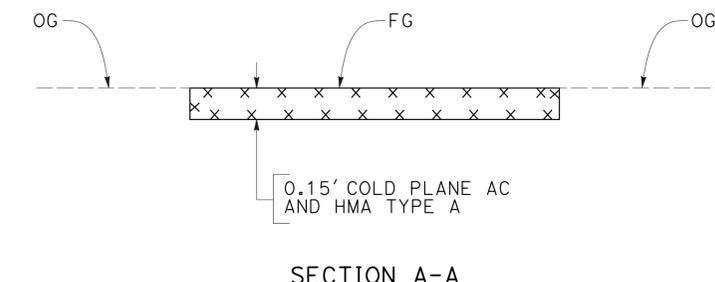
  

<i>Hung H. Do</i>	9/30/14
REGISTERED CIVIL ENGINEER	DATE
Hung H. Do	
No. 55485	
Exp. 2-31-14	
CIVIL	

11-10-14  
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.



**CONSTRUCTION DETAILS**  
NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN	FUNCTIONAL SUPERVISOR	GORDON JEONG	CALCULATED-DESIGNED BY	MICHAEL PHAM	REVISOR	MICHAEL PHAM	DATE	11/5/14
		CHECKED BY	HUNG H DO	DATE REVISION		DATE			

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** WATER QUALITY  
 FUNCTIONAL SUPERVISOR: KAMRAN NAKHJURI  
 CALCULATED/DESIGNED BY: GANGA TRIPATHI  
 CHECKED BY: KAMRAN NAKHJURI  
 REVISED BY: GT  
 DATE REVISED: 11/5/14

**NOTE:**  
 FOR ACCURATE RIGHT OF WAY DATA, CONTACT  
 RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

**LEGEND:**

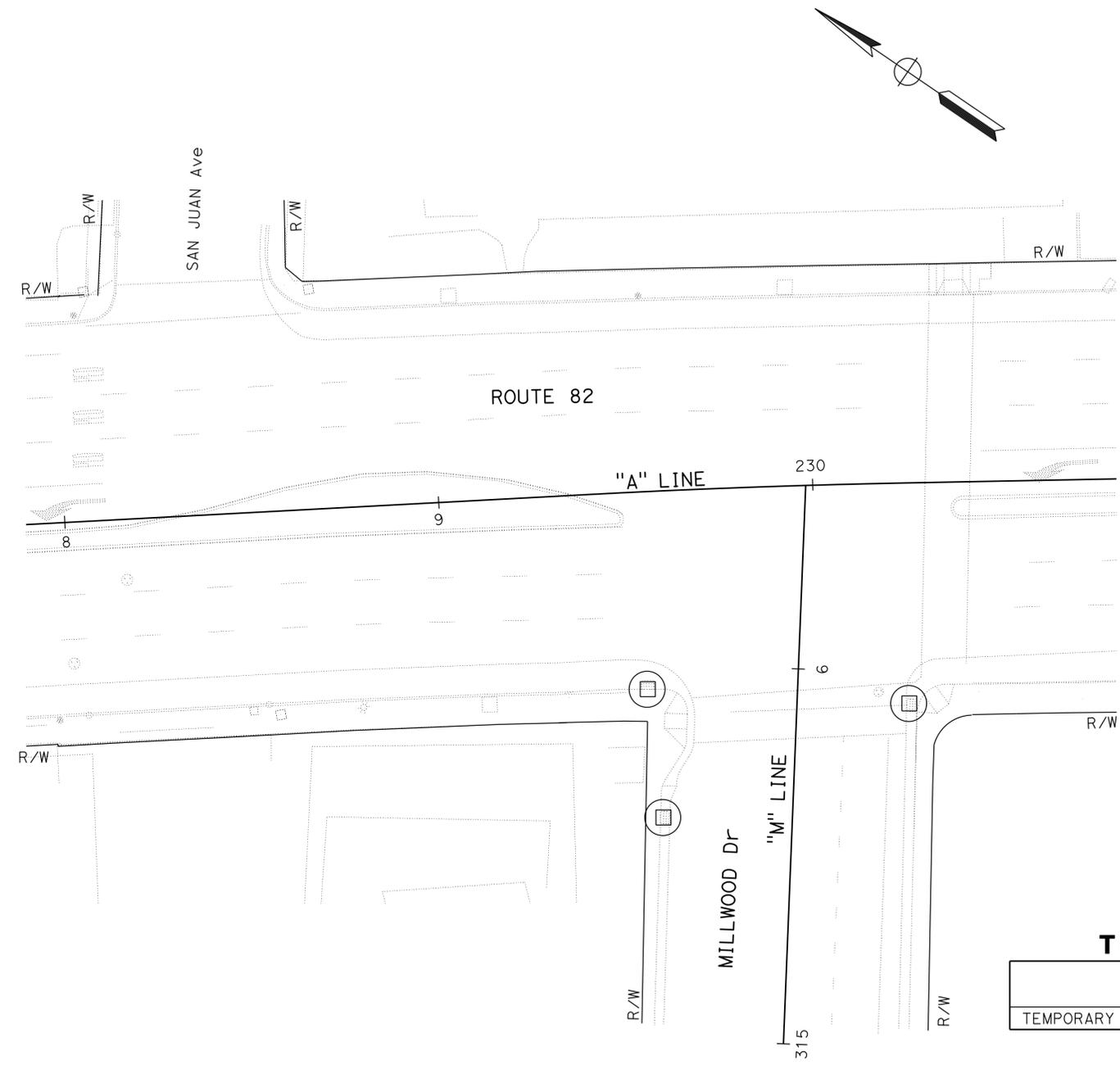
☐ TEMPORARY DRAINAGE INLET PROTECTION

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.1	5	50

9/25/14  
 REGISTERED CIVIL ENGINEER DATE  
 11-10-14  
 PLANS APPROVAL DATE

Ganga D. Tripathi  
 No. 78447  
 Exp 9-30-15  
 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.



**TEMPORARY WATER POLLUTION CONTROL QUANTITIES**

ITEM	UNIT	STATION	QUANTITY
TEMPORARY DRAINAGE INET PROTECTION	EA	AS SHOWN IN THE PLAN	3

**TEMPORARY WATER POLLUTION CONTROL PLAN**

SCALE: 1" = 20'

APPROVED FOR TEMPORARY WATER POLLUTION CONTROL WORK ONLY

**WPC-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN

FUNCTIONAL SUPERVISOR  
 GORDON JEONG

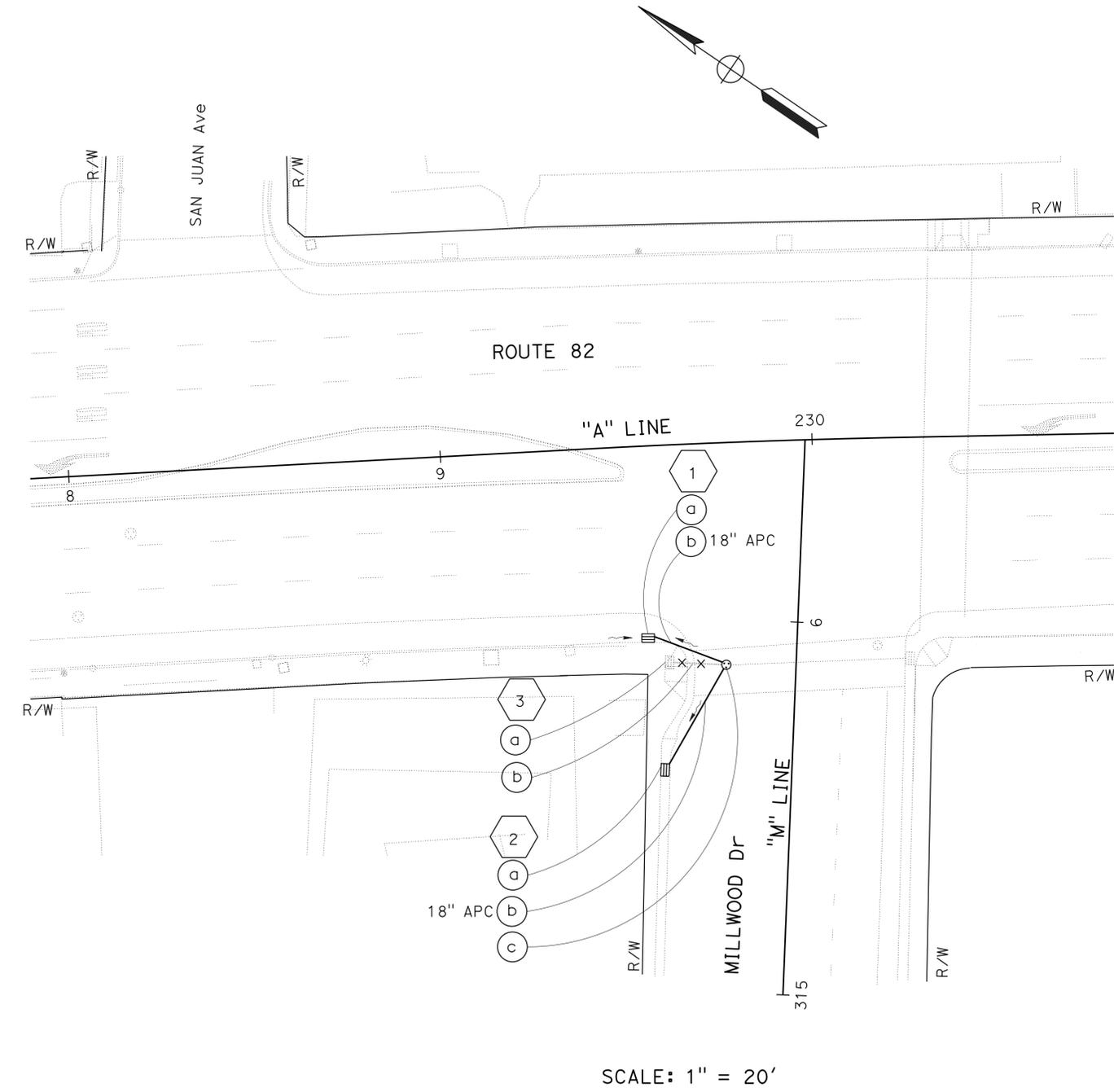
CALCULATED/DESIGNED BY  
 CHECKED BY

MICHAEL PHAM  
 HUNG H DO

REVISED BY  
 DATE REVISED

PL  
 11/5/14

**NOTE:**  
 FOR ACCURATE RIGHT OF WAY DATA, CONTACT  
 RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



SCALE: 1" = 20'

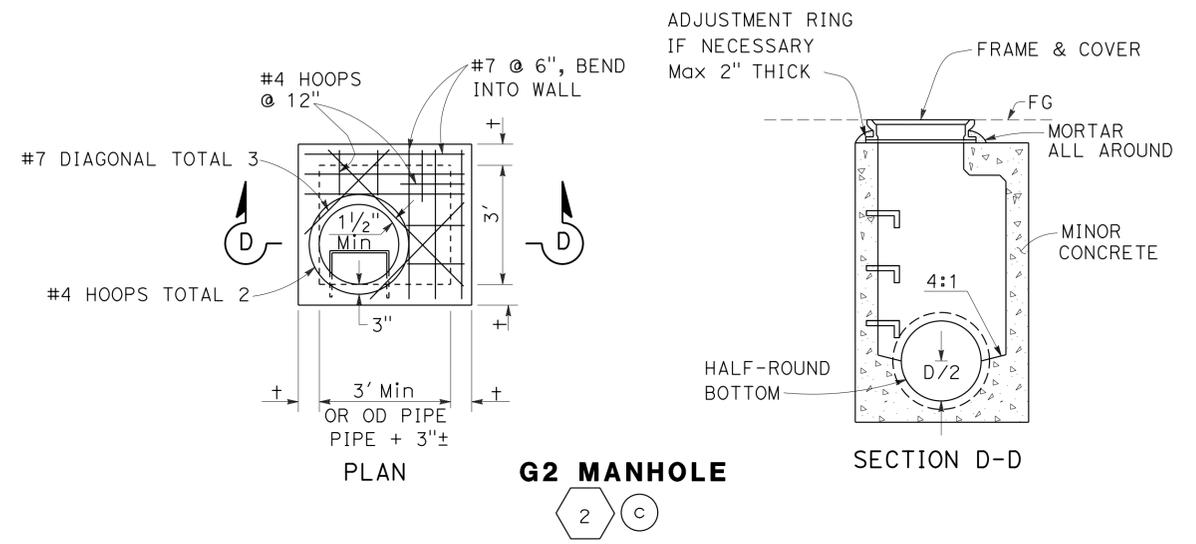
- NOTES:**
1. FOR INLET DETAILS NOT SHOWN, SEE STANDARD PLAN D73 TYPE G2.
  2. FOR FRAME AND COVER DETAILS, SEE STANDARD PLAN B7-11.
  3. PLACE STEPS AS REQUIRED, SEE STANDARD PLAN D74C.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.1	6	50

Hung H. Do 9/30/14  
 REGISTERED CIVIL ENGINEER DATE  
 11-10-14  
 PLANS APPROVAL DATE

Hung H. Do  
 No. 55485  
 Exp. 2-31-14  
 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.



**INLET**  
 ADJACENT TO CURB  
 NO SCALE

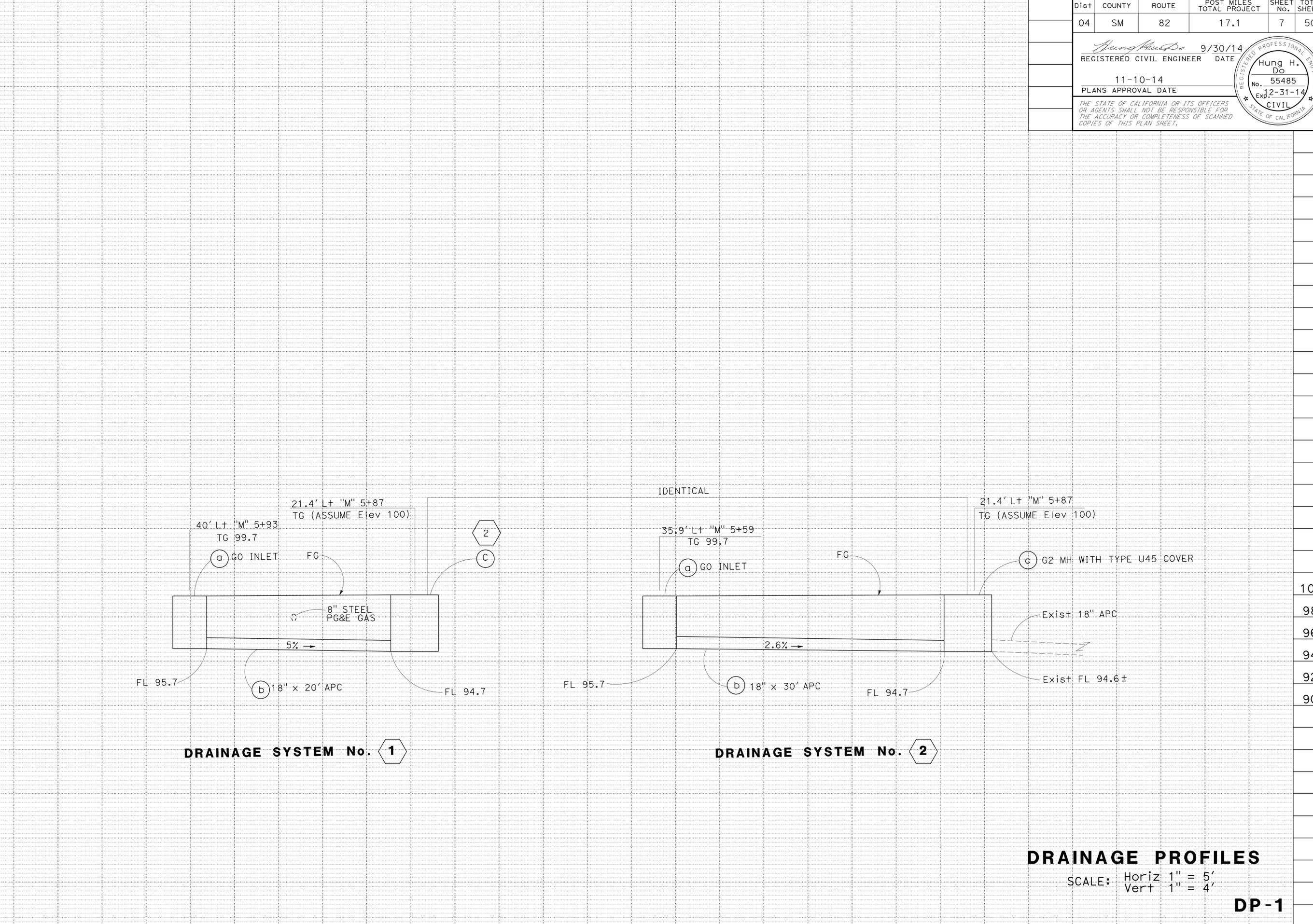
**DRAINAGE PLAN AND DETAILS**  
 SCALE: AS SHOWN

APPROVED FOR DRAINAGE WORK ONLY

**D-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN

FUNCTIONAL SUPERVISOR: GORDON JEONG  
 PL: 11/5/14  
 REVISIONS:



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.1	7	50
Hung H. Do REGISTERED CIVIL ENGINEER			9/30/14	DATE	
11-10-14 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.					



**DRAINAGE PROFILES**

SCALE: Horiz 1" = 5'  
 Vert 1" = 4'

**DP-1**

LAST REVISION: DATE PLOTTED => 17-FEB-2015  
 10-03-14 TIME PLOTTED => 12:37

FUNCTIONAL SUPERVISOR  
 GORDON JEONG

CALCULATED/DESIGNED BY  
 CHECKED BY

MICHAEL PHAM  
 HUNG H DO

REVISER BY  
 DATE REVISED

PL  
 11/5/14

**NOTES:**

1. THE EXACT LOCATION OF DRAINAGE INLET WILL BE DETERMINED BY THE ENGINEER.
2. APC - ALLOWABLE PIPE MATERIAL AND PROTECTION, USE RCP, CSP (0.064" THICK) OR PLASTIC PIPE (SMOOTH INTERIOR).

**LEGEND:**

S STANDARD JOINT  
 w/ WITH

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.1	8	50

Hung H. Do 9/30/14  
 REGISTERED CIVIL ENGINEER DATE

11-10-14  
 PLANS APPROVAL DATE

Hung H. Do  
 No. 55485  
 Exp. 2-31-14  
 CIVIL

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**DRAINAGE QUANTITIES**

DRAINAGE PLAN SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	REMOVE INLET	REMOVE CULVERT	18" ALTERNATIVE PIPE CULVERT	MISCELLANEOUS IRON AND STEEL	24-12X FRAME & GRATE (N)	MINOR CONCRETE (MINOR STRUCTURE)	DRAINAGE INLET MARKER	HEIGHT OF INLET (N)	MAXIMUM COVER (N)	PIPE JOINT CLASSIFICATION (N)	DESCRIPTION	STATION	DRAINAGE SYSTEM No.	
															EA	LF
D-1	1	a				239	1	1.49	1	4			GO INLET	40' Lt "M" 5+93	1	a
		b			20						3.8	S	18" APC			b
2	a					239	1	1.49	1	4			GO INLET	35.9' Lt "M" 5+59	2	a
		b			30						3.8	S	18" APC			b
		c			435		1.90			5.3			G2 MH w/ TYPE U45 COVER	21.4' Lt "M" 5+87		c
3	a	1											REMOVE INLET	35.9' Lt "M" 5+87	3	a
		b	13										REMOVE CULVERT			b
<b>SHEET TOTAL</b>			1	13	50	913	2	4.88	2							

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

**DRAINAGE QUANTITIES**

**DQ-1**

LAST REVISION DATE PLOTTED => 17-FEB-2015 10-03-14 TIME PLOTTED => 12:37

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN

FUNCTIONAL SUPERVISOR  
 GORDON JEONG

CALCULATED/DESIGNED BY  
 CHECKED BY

MICHAEL PHAM  
 HUNG H DO

REVISED BY  
 DATE REVISED

HD  
 11/5/14

**NOTE:**  
 FOR ACCURATE RIGHT OF WAY DATA, CONTACT  
 RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

**LEGEND:**

<b>UTILITIES</b>	<b>EXISTING UTILITIES</b>	<b>OWNERSHIP</b>
ELECTRIC	—e—	PG&E
GAS	---gs---	PG&E
CONDUIT	---t---	AT&T
WATER	—w—	CITY OF MILLBRAE
SEWER	---s---	CITY OF MILLBRAE

**ABBREVIATIONS:**

AT&T	AMERICAN TELEPHONE AND TELEGRAPH
PG&E	PACIFIC GAS AND ELECTRIC

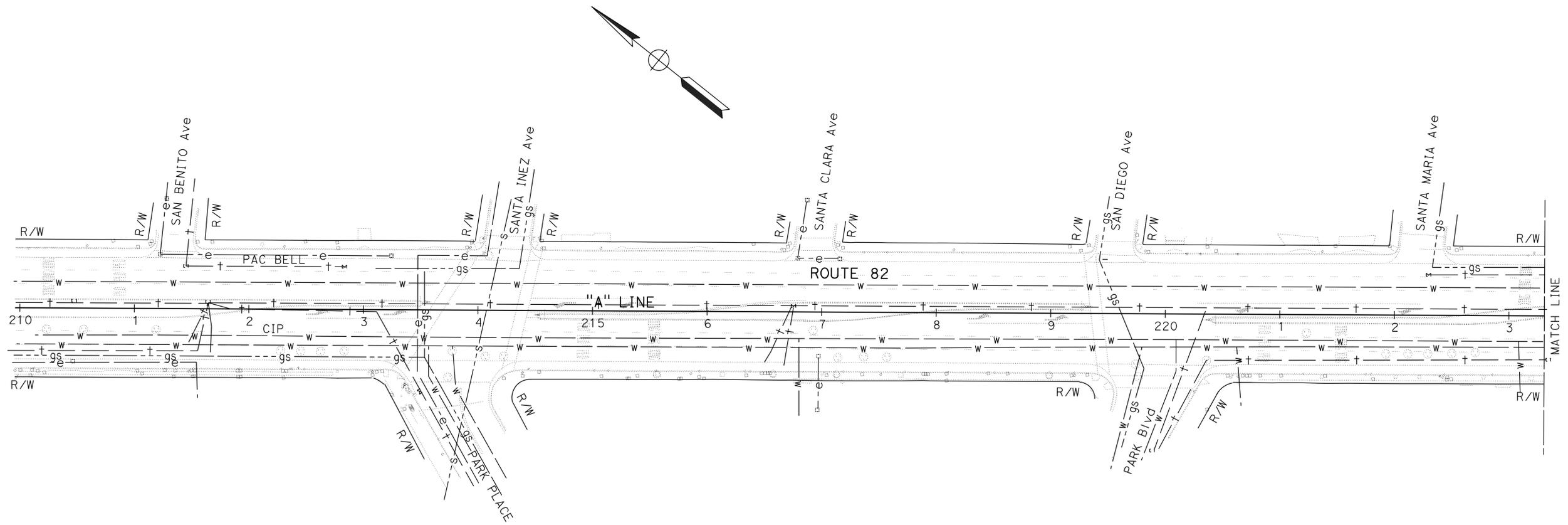
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.1	9	50

*Hung H. Do* 9/30/14  
 REGISTERED CIVIL ENGINEER DATE

11-10-14  
 PLANS APPROVAL DATE

**Hung H. Do**  
 No. 55485  
 Exp. 2-31-14  
 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.



APPROVED FOR UTILITY INFORMATION ONLY

**UTILITY PLAN**  
 SCALE: 1" = 50'

**U-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN

FUNCTIONAL SUPERVISOR: GORDON JEONG  
 CALCULATED/DESIGNED BY: MICHAEL PHAM  
 CHECKED BY: HUNG H DO  
 REVISIONS: 11/5/14  
 HD

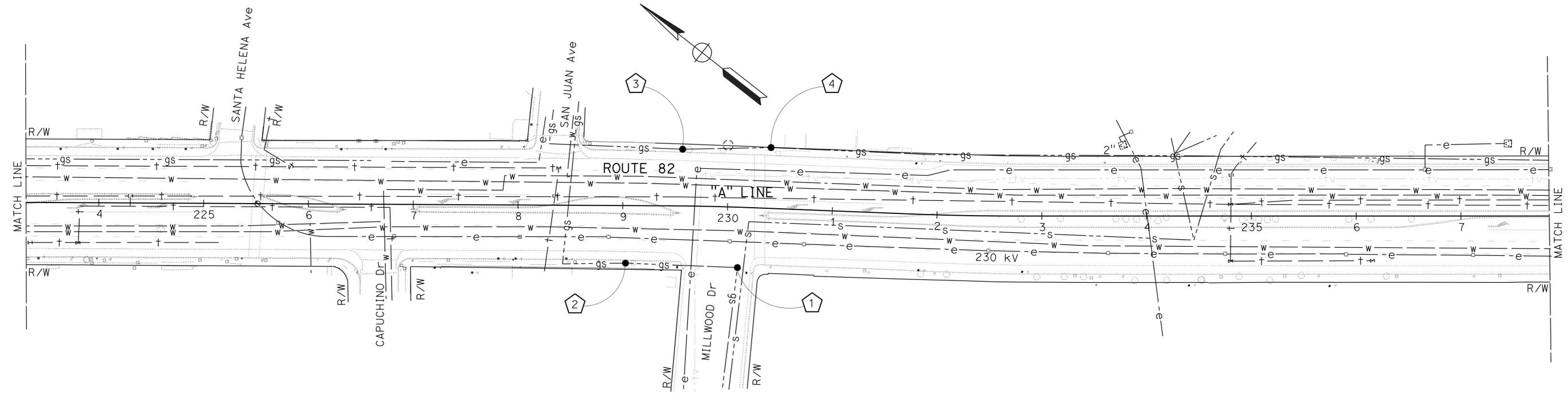
**NOTE:**  
 FOR ACCURATE RIGHT OF WAY DATA, CONTACT  
 RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.1	10	50

Hung H. Do 9/30/14  
 REGISTERED CIVIL ENGINEER DATE  
 11-10-14  
 PLANS APPROVAL DATE

Hung H. Do  
 No. 55485  
 Exp. 2-31-14  
 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.



**POSITIVE LOCATION INFORMATION**

No.	GAS (Dia)	HORIZONTAL DISTANCE FROM FACE OF CURB	DEPTH
1	8"	153"	49"
2	8"	28"	29"
3	2"	38"	39"
4	2"	53"	40"

APPROVED FOR UTILITY INFORMATION ONLY

FOR ABBREVIATIONS AND LEGEND, SEE SHEET U-1

**UTILITY PLAN**  
 SCALE: 1" = 50'

**U-2**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN

FUNCTIONAL SUPERVISOR  
 GORDON JEONG

CALCULATED/DESIGNED BY  
 CHECKED BY

MICHAEL PHAM  
 HUNG H DO

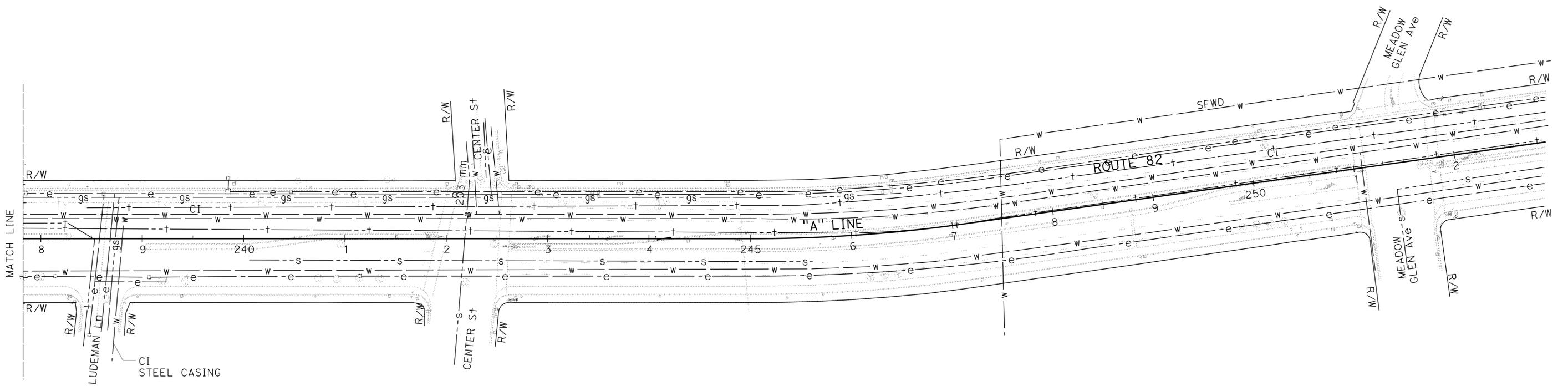
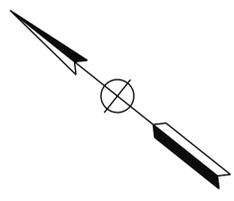
REVISED BY  
 DATE REVISED

HD  
 11/5/14

**NOTE:**  
 FOR ACCURATE RIGHT OF WAY DATA, CONTACT  
 RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.1	11	50

*Hung H. Do* 9/30/14  
 REGISTERED CIVIL ENGINEER DATE  
 11-10-14  
 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.



APPROVED FOR UTILITY INFORMATION ONLY

FOR ABBREVIATIONS  
 AND LEGEND, SEE SHEET U-1

**UTILITY PLAN**  
 SCALE: 1" = 50'

**U-3**

**NOTE:**

1. EXACT LOCATION AND POSITION OF CONSTRUCTION AREA SIGNS TO BE DETERMINED BY THE ENGINEER.

**LEGEND:**

No. CONSTRUCTION AREA SIGN NUMBER

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.1	12	50

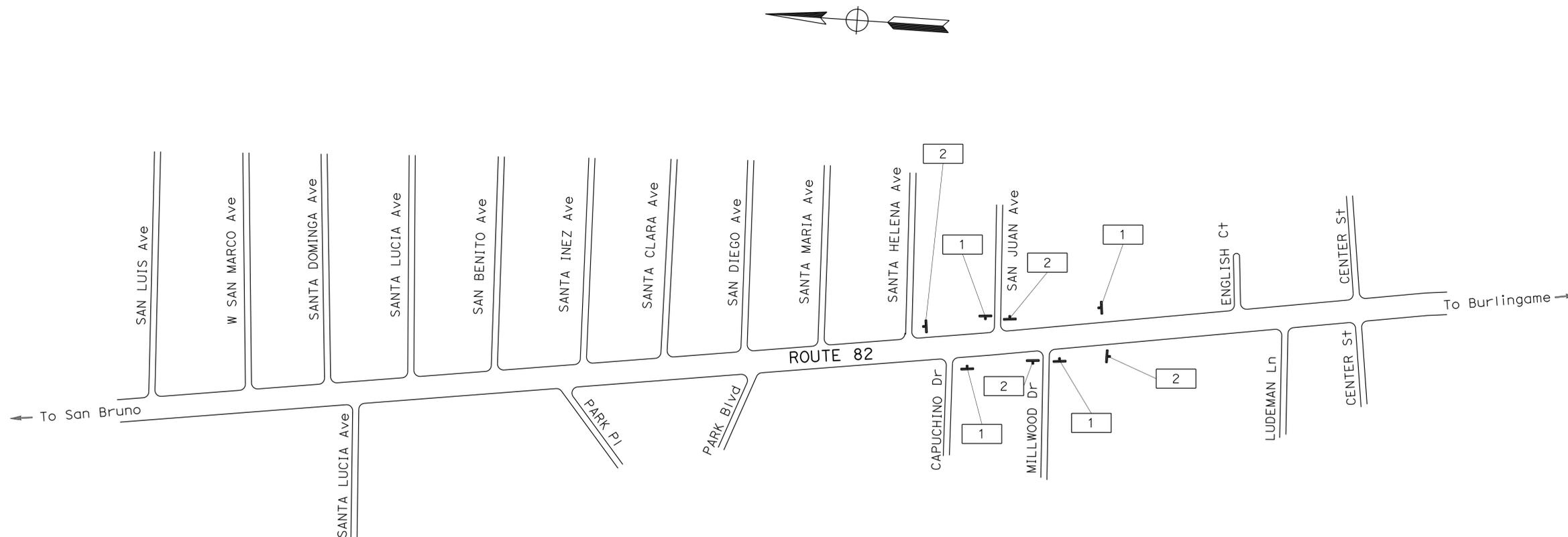
*Jerilyn L. Struven* 10/1/14  
 REGISTERED CIVIL ENGINEER DATE  
 11-10-14  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 No. 49964  
 Exp. 2-31-14  
 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.

**STATIONARY MOUNTED CONSTRUCTION AREA SIGNS**

SIGN No.	MUTCD CODE	PANEL SIZE	SIGN MESSAGE	NUMBER OF POSTS AND SIZE	NUMBER OF SIGNS
1	W20-1	48" x 36"	ROAD WORK AHEAD	(ONE) 4" x 6"	4
2	G20-2	36" x 18"	END ROAD WORK	(ONE) 4" x 4"	4



**CONSTRUCTION AREA SIGNS**  
 NO SCALE

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

**CS-1**

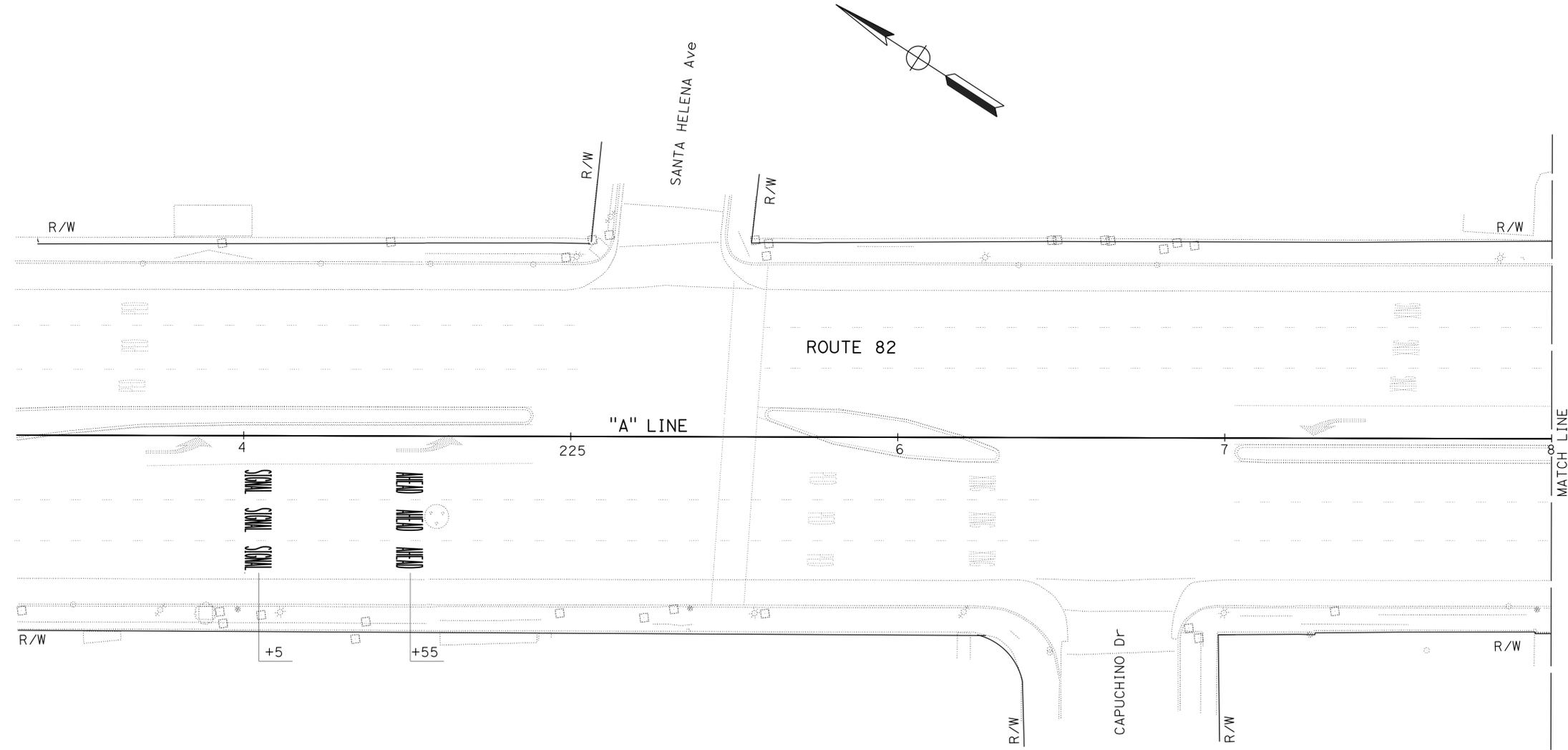
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 FUNCTIONAL SUPERVISOR: KATIE YIM  
 CALCULATED/DESIGNED BY: MICHAEL PHAM  
 CHECKED BY: ROBIN PON  
 REVISED BY: DATE  
 RP: 11/5/14

**NOTE:**  
 FOR ACCURATE RIGHT OF WAY DATA, CONTACT  
 RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.1	13	50

REGISTERED CIVIL ENGINEER: Robin B. Pon  
 No. 57558  
 Exp. 12-31-15  
 DATE: 10/1/14  
 PLANS APPROVAL DATE: 11-10-14

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 PLAN**  
 SCALE: 1" = 20'

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

**PD-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 FUNCTIONAL SUPERVISOR: KATIE YIM  
 CHECKED BY: ROBIN PON  
 DESIGNED BY: MICHAEL PHAM  
 DATE REVISED: 11/5/14  
 RP

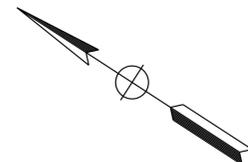
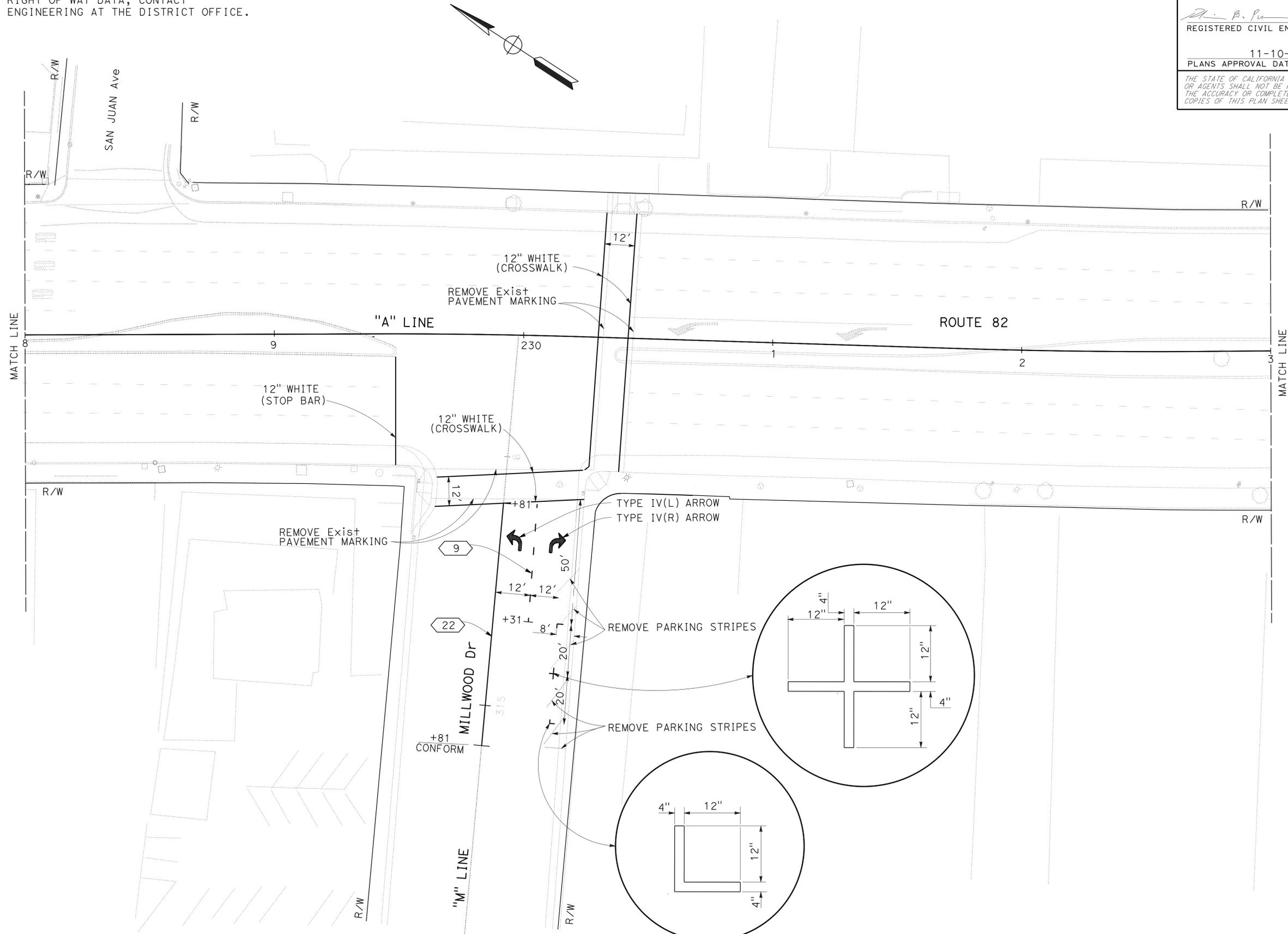
NOTE:  
 FOR ACCURATE RIGHT OF WAY DATA, CONTACT  
 RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.1	14	50

10/1/14  
 REGISTERED CIVIL ENGINEER DATE  
 11-10-14  
 PLANS APPROVAL DATE

Robin B. Pon  
 No. 57558  
 Exp. 12-31-15  
 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.



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

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

**PD-2**

LAST REVISION DATE PLOTTED => 17-FEB-2015 10-03-14 TIME PLOTTED => 12:37

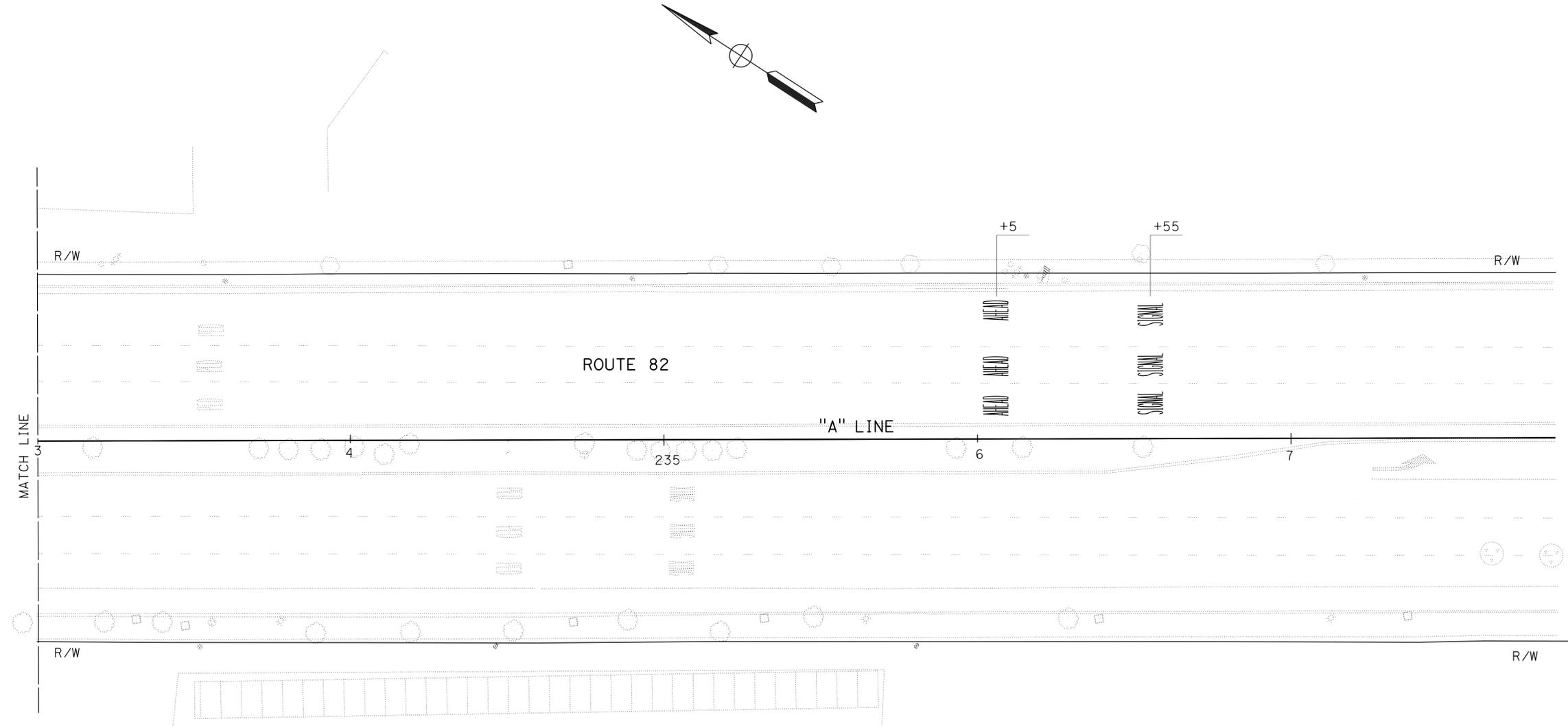
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 FUNCTIONAL SUPERVISOR: KATIE YIM  
 CALCULATED/DESIGNED BY: MICHAEL PHAM  
 CHECKED BY: ROBIN PON  
 REVISED BY: RP  
 DATE REVISED: 11/5/14

**NOTE:**  
 FOR ACCURATE RIGHT OF WAY DATA, CONTACT  
 RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.1	15	50

REGISTERED CIVIL ENGINEER: Robin B. Pon  
 DATE: 10/1/14  
 PLANS APPROVAL DATE: 11-10-14  
 No. 57558  
 Exp. 12-31-15  
 CIVIL  
 STATE OF CALIFORNIA

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

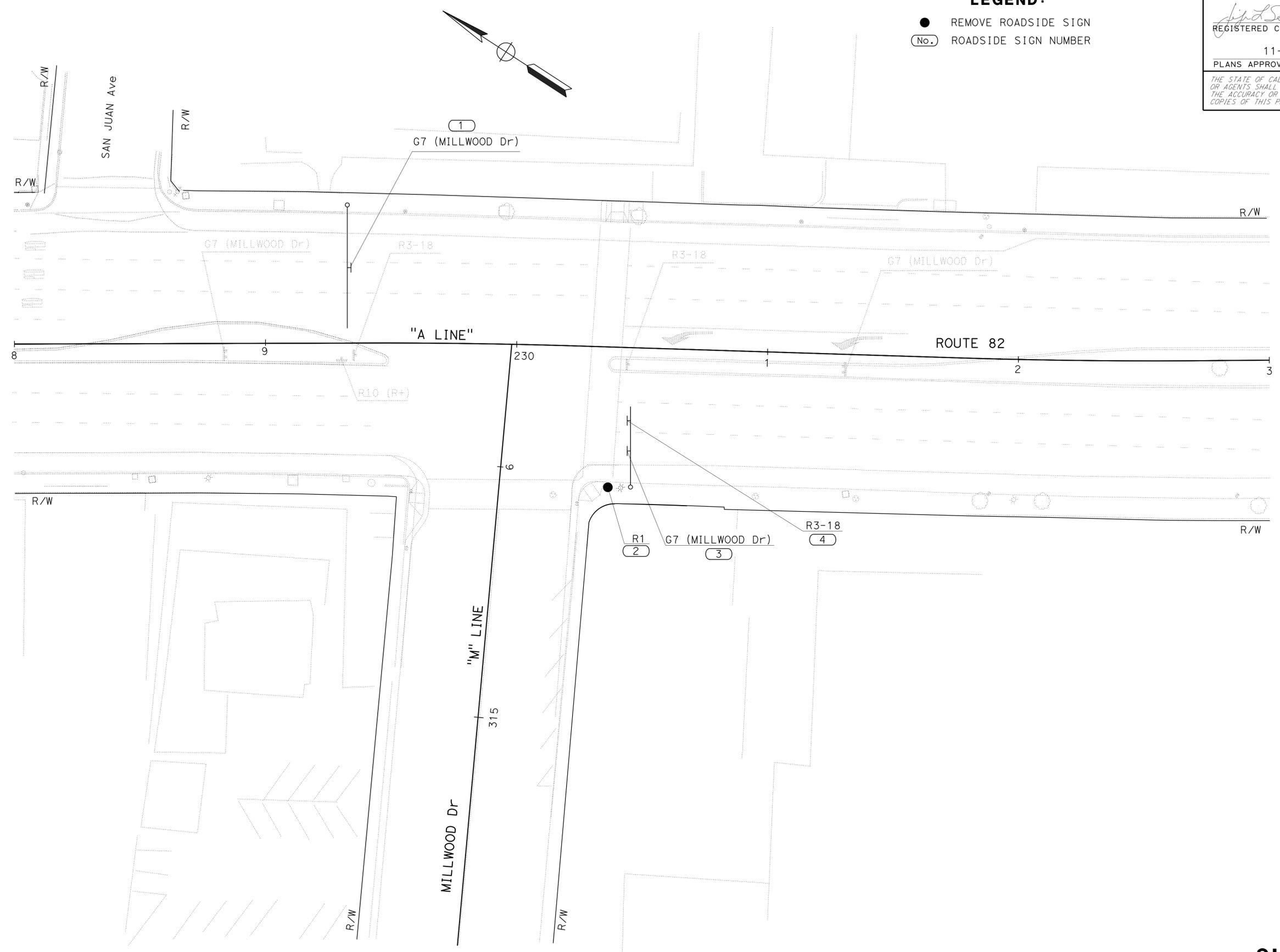
APPROVED FOR PAVEMENT DELINEATION WORK ONLY

**PD-3**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	STEPHEN LAU	REVISED BY	JS
<b>Caltrans</b>	ROLAND AU-YEUNG	CHECKED BY	JERILYN STRUVEN	DATE REVISED	11/5/14
<b>TRAFFIC</b>					

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.1	16	50
			10/1/14	DATE	
			11-10-14	PLANS APPROVAL DATE	
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**LEGEND:**  
 ● REMOVE ROADSIDE SIGN  
 (No.) ROADSIDE SIGN NUMBER



Jerilyn L. Struven  
 REGISTERED CIVIL ENGINEER  
 No. 49964  
 Exp. 2-31-14  
 CIVIL  
 STATE OF CALIFORNIA

APPROVED FOR SIGN WORK ONLY

**SIGN PLAN**  
 NO SCALE

**S-1**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.1	17	50

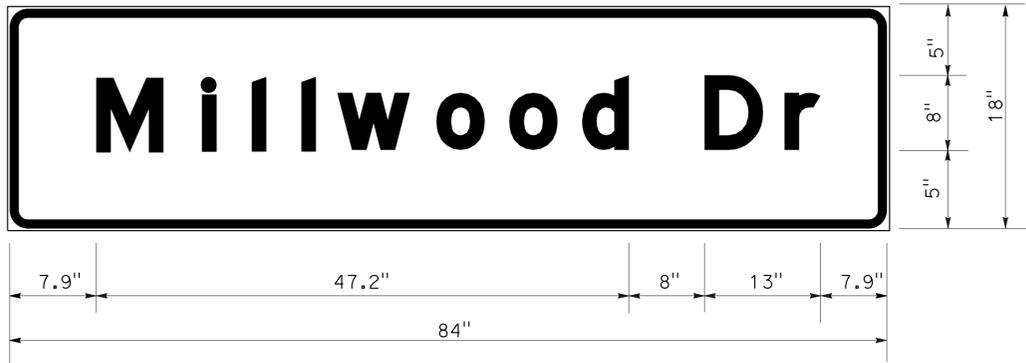
<i>Jerilyn L. Struven</i>	10/1/14
REGISTERED CIVIL ENGINEER	DATE
11-10-14	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER No. 49964 Exp. 2-31-14 CIVIL STATE OF CALIFORNIA
---

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	STEPHEN LAU	REVISED BY	JS
<b>Caltrans</b>	ROLAND AU-YEUNG	CHECKED BY	JERILYN STRUVEN	DATE REVISED	11/5/14
TRAFFIC					



3.0" RADIUS, 1.0" BORDER, WHITE ON GREEN;  
 "Millwood" E Mod 70% SPACING "Dr" E Mod;  
**G7** (1) & (3)  
 (BACK TO BACK)

**SIGN DETAILS**  
 NO SCALE

**SD-1**

LAST REVISION | DATE PLOTTED => 17-FEB-2015  
 10-03-14 | TIME PLOTTED => 12:37

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 FUNCTIONAL SUPERVISOR  
 ROLAND AU-YEUNG  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 JERILYN STRUVEN  
 REVISIONS  
 REVISION NO. DATE REVISION BY  
 1 11/5/14 JS

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.1	18	50

*Jerilyn L. Struven* 10/1/14  
 REGISTERED CIVIL ENGINEER DATE  
 11-10-14  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 No. 49964  
 Exp. 2-31-14  
 CIVIL  
 STATE OF CALIFORNIA

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### ROADSIDE SIGN INSTALLATION

SHEET No.	SIGN No.	SIGN CODE	PANEL SIZE	REMOVE ROADSIDE SIGN	REMARKS
				EA	
S-1	1	G7 (MILLWOOD Dr)	84" x 18"		* ON MAST ARM
	2	R1		1	
	3	G7 (MILLWOOD Dr)	84" x 18"		* ON MAST ARM
	4	R3-18	30" x 30"		* ON MAST ARM
TOTAL				1	

\* INSTALLATION PAID UNDER ELECTRICAL ITEM

### SIGN PANEL SUMMARY

SHEET No.	SIGN				SINGLE FACED	BACKGROUND		LEGEND		PROTECTIVE OVERLAY PREMIUM	FURNISHED SINGLE SHEET ALUMINUM (0.063") UNFRAMED SQFT
	SIGN No.	SIGN CODE	PANEL SIZE	PANEL AREA SQFT		SHEETING COLOR	RETROREFLECTIVE ASTM TYPE	SHEETING COLOR	RETROREFLECTIVE ASTM TYPE		
S-1	1	G7	84" x 18"	21.00	X	GREEN	XI	WHITE	XI	X	21.00
	3	G7	84" x 18"	21.00	X	GREEN	XI	WHITE	XI	X	21.00
	4	R3-18	30" x 30"	6.25	X	WHITE	III	RED/BLACK	III	X	6.25
TOTAL				48.25							48.25

### SIGN QUANTITIES

**SQ-1**

LAST REVISION DATE PLOTTED => 17-FEB-2015  
 10-03-14 TIME PLOTTED => 12:37

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.1	19	50

*Hung H. Do* 9/30/14  
 REGISTERED CIVIL ENGINEER DATE  
 11-10-14  
 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.

### TRAFFIC STRIPES, PAVEMENT MARKINGS AND PAVEMENT MARKERS

SHEET No.	STATION LIMITS	DETAIL No. OR PAVEMENT MARKING	THERMOPLASTIC TRAFFIC STRIPE		THERMOPLASTIC PAVEMENT MARKING	PAVEMENT MARKER (RETROREFLECTIVE)		REMOVE THERMOPLASTIC TRAFFIC STRIPE LF	REMOVE THERMOPLASTIC PAVEMENT MARKING SQFT
			4" YELLOW	4" WHITE		TYPE D	TYPE G		
			LF						
PD-1	"A" 224+05 TO 224+55	SIGNAL AHEAD (3 LANES)			189				
	"A" 229+45	12" WHITE (STOP BAR)			36				
	"A" 230+30 TO 230+42	12" WHITE (CROSSWALK)			200				200
	"M" 315+31 TO 315+81	9		48			2		
	"M" 315+81 TO 315+93	12" WHITE (CROSSWALK)			120				
	"M" 315+61	TYPE IV(L) ARROW			15				
	"M" 315+61	TYPE IV(R) ARROW			15				
	"M" 314+81 TO 315+81	22	200			10			
	"M" 314+81 TO 315+81	PARKING STRIPES		9					
	"M" 314+81 TO 315+81	PARKING STRIPES						84	
PD-3	"A" 236+05 TO 236+55	SIGNAL AHEAD (3 LANES)			189				
SUBTOTAL			200	57	764	10	2	84	200
TOTAL			257		764	12		84	200

### ROADWAY QUANTITIES SUMMARY

LOCATION	REMOVE CONCRETE	MINOR CONCRETE (CURB, SIDEWALK AND CURB RAMP)
	CY	
NW CORNER OF MILLWOOD DRIVE	4.7	7.9
SW CORNER OF MILLWOOD DRIVE	8.5	8.5
SE CORNER OF MILLWOOD DRIVE	2.6	2.6
TOTAL	15.8	19

## SUMMARY OF QUANTITIES

Q-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 FUNCTIONAL SUPERVISOR: GORDON JEONG  
 CALCULATED/DESIGNED BY: MICHAEL PHAM  
 CHECKED BY: HUNG H DO  
 REVISIONS: HD 11/5/14



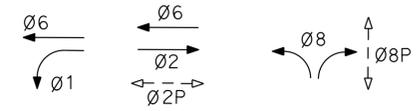
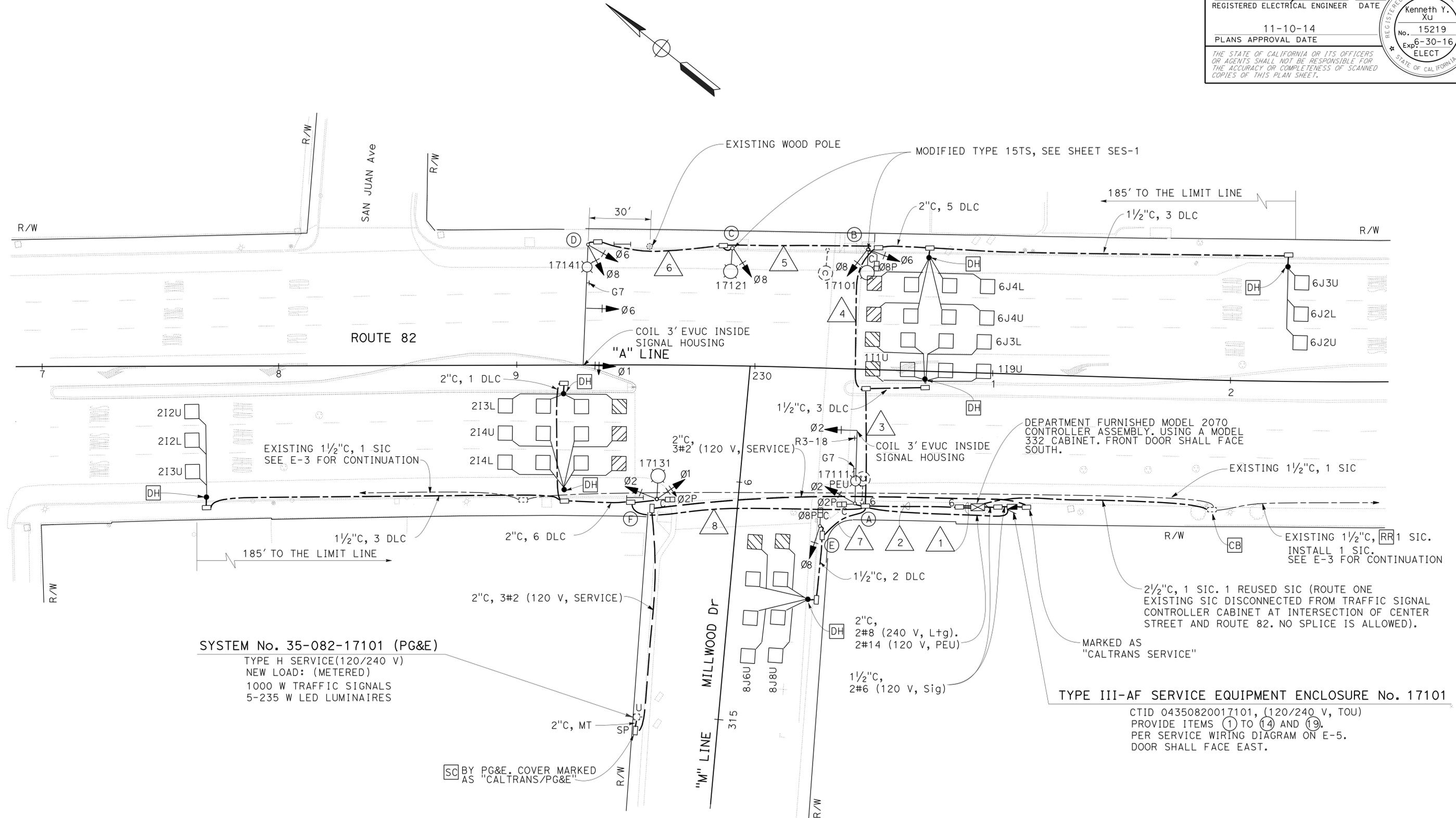
NOTE:  
FOR ACCURATE RIGHT OF WAY DATA, CONTACT  
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.1	20	50

Kenneth Y. Xu 9/30/14  
 REGISTERED ELECTRICAL ENGINEER DATE  
 11-10-14  
 PLANS APPROVAL DATE

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL  
 FUNCTIONAL SUPERVISOR: KENNETH Y. XU  
 CHECKED BY: KENNETH Y. XU  
 CALCULATED/DESIGNED BY: KENNETH Y. XU  
 REVISOR: DORIS YANG  
 DATE: 11/5/14



FACING DIAGRAM

**SIGNAL AND LIGHTING**  
SCALE: 1" = 20'

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.1	21	50

*Kenneth Y. Xu* 9/30/14  
 REGISTERED ELECTRICAL ENGINEER DATE

11-10-14  
 PLANS APPROVAL DATE

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CONDUCTOR SCHEDULE										
CONDUCTOR DESIGNATION	NUMBER OF CONDUCTORS									
	RUN NUMBER									
	1	2	3	4	5	6	7	8	9	10
No. 14 CONDUCTORS										
∅1	3	3	3	3	3	3				
∅2	3	3							3	
∅6	3	3	3	3	3	3				
∅8	3	3	3	3	3	3	3			
∅2P	2	2							2	
∅8P	2	2	2	2				2		
PPB (∅2P)	1	1							1	
PPB (∅8P)	1	1	1	1				1		
PPB NEUTRAL	1	1	1	1				1	1	
SPARES	6	6	3	3	3	3	3	3		
TOTAL No. 14	25	25	15	15	12	12	10	13		
No. 8 CONDUCTORS LIGHTING (240 V)										
SIGNAL NEUTRAL	2	2	1	1	1	1	1	1		
TOTAL No. 8	2	2	3	3	3	3	1	3		
@ EVUC	1	1	1	1	1	1				
DETECTOR CABLES (TYPE B)										
111U	1	1	1							
119U	1	1	1							
212U	1	1	1				1	1		
212L	1	1	1				1	1		
213U	1	1	1				1	1		
213L	1	1	1				1	1		
214U	1	1	1				1	1		
214L	1	1	1				1	1		
6J2U	1	1	1	1						
6J2L	1	1	1	1						
6J3U	1	1	1	1						
6J3L	1	1	1	1						
6J4U	1	1	1	1						
6J4L	1	1	1	1						
8J6U	1	1						1		
8J8U	1	1						1		
TOTAL DETECTOR CABLES	16	16	14	5			8	6		
CONDUIT SIZE	2-3	3 1/2	3	3	2	2	2 1/2	2 1/2		

@ - DEPARTMENT FURNISHED

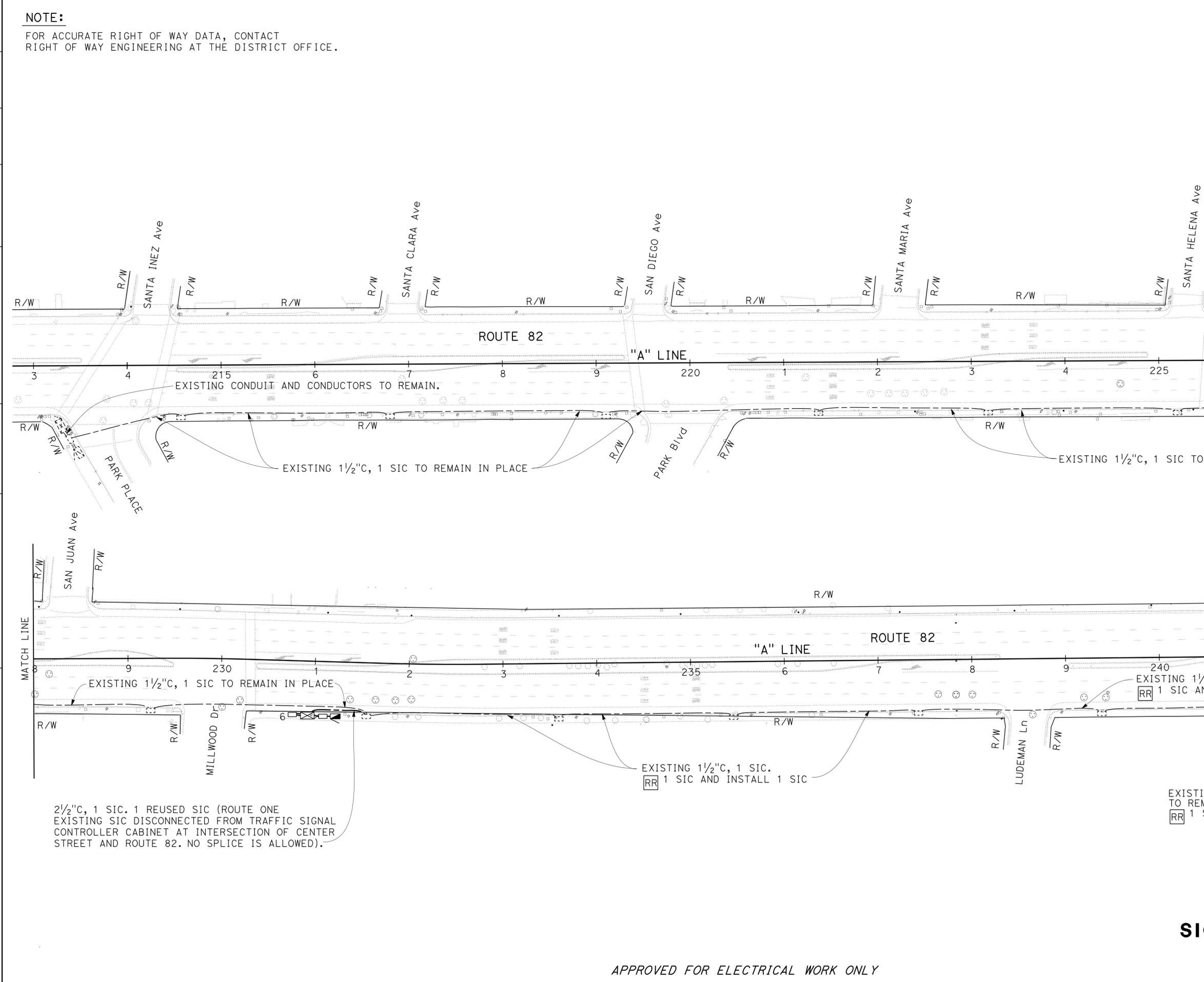
POLE AND EQUIPMENT SCHEDULE										
LOCATION	STANDARD			VEHICLE SIGNAL MOUNTING		PED SIGNAL MOUNTING	PPB ∅	ARROW	LED LUMINAIRE (WATTS)	SPECIAL REQUIREMENT
	TYPE	SMA	LMA	MAST ARM	POLE					
(A)	19A-4-100	30	15	MAS	SV-1-T	SP-1-T	2	←	235	APS AND LED PEDESTRIAN SIGNAL MODULE WITH COUNTDOWN
(B)	15-TS *		15		SV-2-TA	SP-1-T	8	←	235	APS AND LED PEDESTRIAN SIGNAL MODULE WITH COUNTDOWN
(C)	15-TS *		15		SV-1-T				235	
(D)	29-5-100	55	15	MAS	SV-2-TA				235	
(E)	1-B				TV-1-T	SP-1-T	8	→		APS AND LED PEDESTRIAN SIGNAL MODULE WITH COUNTDOWN
(F)	15TS		15		SV-2-TA	SP-1-T	2	→	235	APS AND LED PEDESTRIAN SIGNAL MODULE WITH COUNTDOWN

\* - SEE DETAILS ON SHEET SES-1

**SIGNAL AND LIGHTING**



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL



**NOTE:**  
 FOR ACCURATE RIGHT OF WAY DATA, CONTACT  
 RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.1	22	50

REGISTERED ELECTRICAL ENGINEER: *Kenneth Y. Xu* 9/30/14  
 DATE: 11-10-14  
 PLANS APPROVAL DATE: 11-10-14  
 No. 15219  
 Exp. 6-30-16  
 ELECT

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REVISOR: DORIS YANG  
 DATE: 11/5/14  
 CHECKED BY: KENNETH Y. XU

DESIGNER: KENNETH Y. XU

2 1/2" C, 1 SIC, 1 REUSED SIC (ROUTE ONE EXISTING SIC DISCONNECTED FROM TRAFFIC SIGNAL CONTROLLER CABINET AT INTERSECTION OF CENTER STREET AND ROUTE 82. NO SPLICE IS ALLOWED).

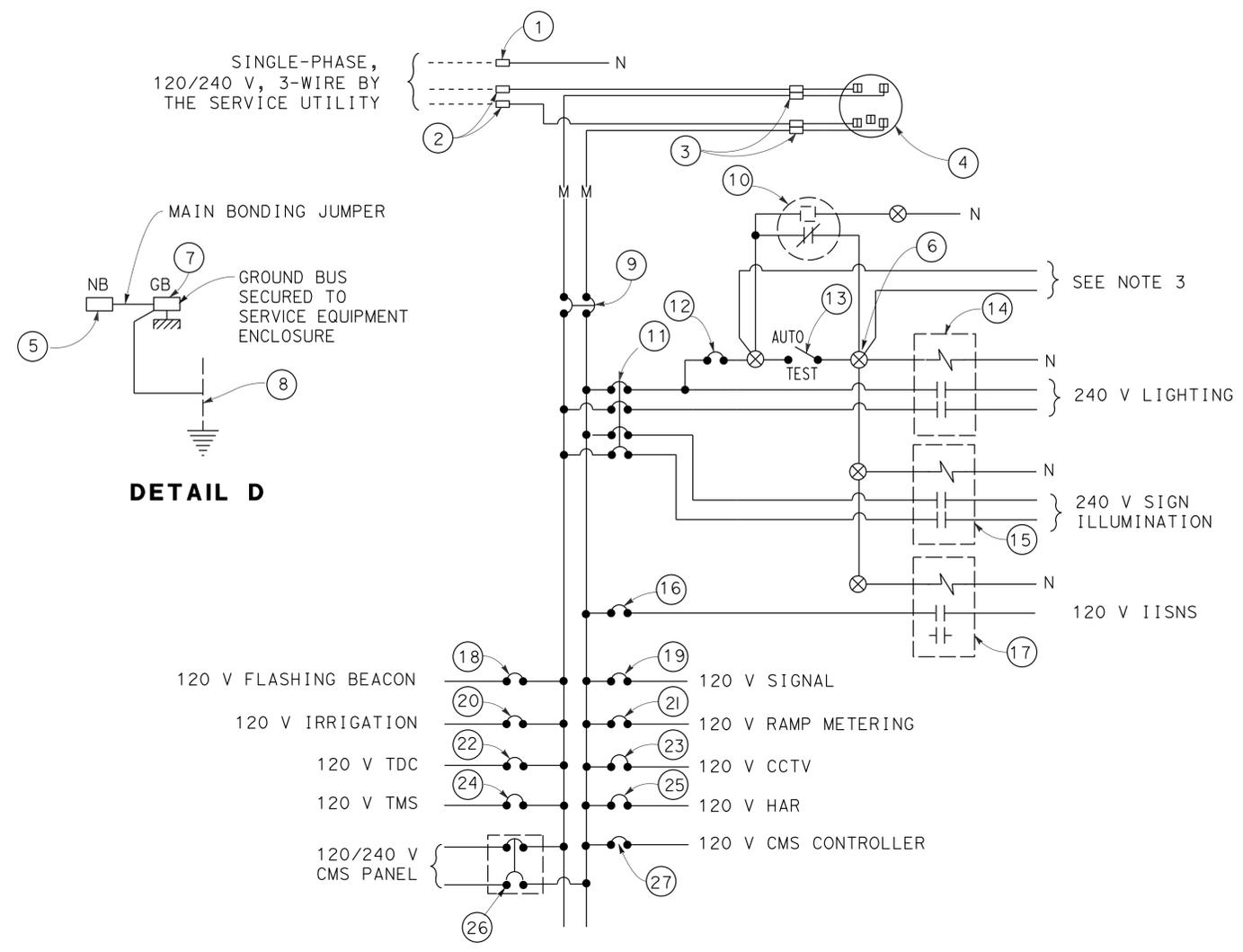
EXISTING CONDUIT AND CONDUCTORS TO REMAIN IN PLACE.  
 RR 1 SIC AND INSTALL 1 SIC

APPROVED FOR ELECTRICAL WORK ONLY

**SIGNAL AND LIGHTING**

SCALE: 1" = 50'

LAST REVISION DATE PLOTTED => 17-FEB-2015  
 10-03-14 TIME PLOTTED => 12:37



**120/ 240 V SERVICE WIRING DIAGRAM (TYPICAL)  
DETAIL C**

- NOTES: (FOR THIS SHEET ONLY)**
- VOLTAGE RATINGS OF SERVICE EQUIPMENT SHALL CONFORM TO THE SERVICE VOLTAGES INDICATED ON THE PLANS.
  - UNLESS OTHERWISE INDICATED ON THE PLANS, SERVICE EQUIPMENT ITEMS SHALL BE PROVIDED FOR EACH SERVICE EQUIPMENT ENCLOSURE AS SHOWN.
  - CONNECT TO REMOTE TEST SWITCH MOUNTED ON SIGN POST OR STRUCTURE WHEN REQUIRED.
  - ITEM No. ① AND ⑤ SHALL BE ISOLATED FROM THE CABINET.
  - METER SOCKETS SHALL MEET SERVICE UTILITY REQUIREMENTS.
  - THE LANDING LUG SHALL BE SUITABLE FOR MULTIPLE CONDUCTORS.
  - PHOTOELECTRIC CONTROL SHALL BE TYPE II.
  - SERVICE UTILITY WILL INSTALL THE TIME-OF-USE METER IF APPLICABLE.
  - UNLESS OTHERWISE NOTED, THE MAXIMUM NUMBER OF SINGLE-POLE CIRCUIT BREAKER SPACES IN THE ENCLOSURE IS FOURTEEN.
  - SEE STANDARD PLAN ES-2D FOR OTHER DETAILS.

**TYPE III-A SERVICE EQUIPMENT ENCLOSURE LEGEND (120/ 240 V)**

ITEM No.	COMPONENT	NAMEPLATE DESCRIPTION	ITEM No.	COMPONENT	NAMEPLATE DESCRIPTION
①	NEUTRAL LUG		⑬	30 A, 2P, NO CONTACTOR	
②	LANDING LUG		⑭	15 A, 120 V, 1P, CB	IISNS
③	TEST BYPASS FACILITY		⑮	30 A, 2P, NO CONTACTOR	
④	METER SOCKET AND SUPPORT		⑯	15 A, 120 V, 1P, CB	FLASHING BEACON
⑤	NEUTRAL BUS		⑰	50 A, 120 V, 1P, CB	SIGNALS
⑥	TERMINAL BLOCK		⑱	20 A, 120 V, 1P, CB	IRRIGATION
⑦	GROUND BUS		⑲	30 A, 120 V, 1P, CB	RAMP METERING
⑧	GROUNDING ELECTRODE		⑳	20 A, 120 V, 1P, CB	TELEPHONE DEMARCATION CABINET
⑨	100 A, 240 V, 2P, CB	MAIN BREAKER	㉑	30 A, 120 V, 1P, CB	CCTV
⑩	PHOTOELECTRIC UNIT (NOTE 7)		㉒	30 A, 120 V, 1P, CB	TMS
⑪	30 A, 240 V, 4P, CB	LIGHTING AND SIGN ILLUMINATION	㉓	30 A, 120 V, 1P, CB	HAR
⑫	15 A, 120 V, 1P, CB	LIGHTING AND SIGN ILLUMINATION CONTROL	㉔	30 A, 240 V, 2P, CB	CMS PANEL
⑬	15 A, 120 V, 1P, TEST SWITCH	TEST SWITCH	㉕	30 A, 120 V, 1P, CB	CMS CONTROLLER
⑭	60 A, 2P, NO CONTACTOR				

**ELECTRICAL DETAILS  
(SERVICE EQUIPMENT ENCLOSURE  
AND TYPICAL WIRING DIAGRAM,  
TYPE III-A SERIES)  
NO SCALE**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 ELECTRICAL  
 Kenneth Y. Xu  
 FUNCTIONAL SUPERVISOR  
 Kenneth Y. Xu  
 CHECKED BY  
 Kenneth Y. Xu  
 DORIS YANG  
 REVISED BY  
 Kenneth Y. Xu  
 DATE REVISIED  
 11/5/14  
 DY  
 11/5/14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.1	24	50

*Kenneth Y. Xu* 9/30/14  
 REGISTERED ELECTRICAL ENGINEER DATE

11-10-14  
 PLANS APPROVAL DATE

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL  
 FUNCTIONAL SUPERVISOR  
 KENNETH Y. XU  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 DORIS YANG  
 KENNETH Y. XU  
 REVISOR BY  
 DATE REVISED  
 DY  
 11/5/14

### TRAFFIC SIGNAL AND LIGHTING

SHEET No.	BORING	T&B CONDUIT	CONDUIT	CONDUIT TERMINATOR	CONDUCTOR	#5 PB	#6 PB	CB	DETECTOR LOOP TYPE A	DETECTOR LOOP TYPE D	DLC TYPE B	SIC CABLE
		LF			EA	LF	EA			LF		
E-1	200	800	700	30	10000	17	2	2	33	9	5000	1000

FOR INFORMATION ONLY

### TRAFFIC SIGNAL AND LIGHTING (CONTINUATION)

SHEET No.	TYPE 15TS STANDARD	MODIFIED TYPE 15TS STANDARD & FOUNDATION	TYPE 19A-4-100 STANDARD & FOUNDATION	TYPE 29-5-100 STANDARD & FOUNDATION	TYPE 1B STANDARD & FOUNDATION	VEHICLE SIGNAL MOUNTING	PED SIGNAL MOUNTING	PPB	LED LUMINAIRE	3-12" SIGNAL HEADS	WIRELESS MODEM	PEU	TYPE III SERVICE CABINET
		EA											
E-1	1	2	1	4	1	6	4	4	5	12	1	1	1

FOR INFORMATION ONLY

## ELECTRICAL QUANTITIES

**E - 5**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	SM	82	17.1	25	50

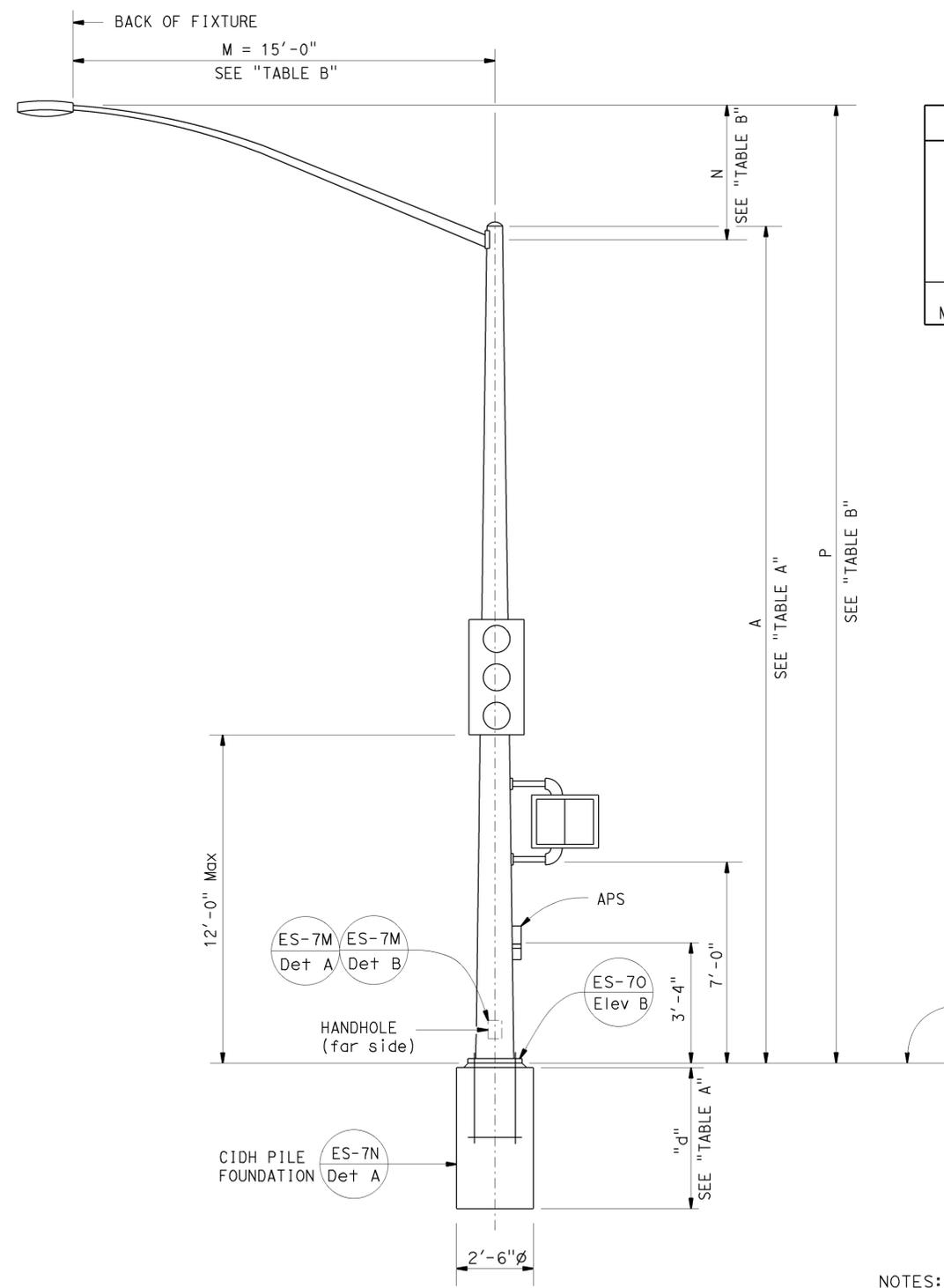
*Eliseo Lopez*  
REGISTERED CIVIL ENGINEER DATE 2/5/14

11-10-14  
PLANS APPROVAL DATE

No. C72910  
Exp. 12/31/14  
CIVIL  
STATE OF CALIFORNIA

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To get to the Caltrans web site, go to: <http://www.dot.ca.gov>



**ELEVATION  
TYPE 15TS MODIFIED**

See Note ①

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

TABLE A										
Pole Type	Pole Data				Base Plate Data				"d" 2'-6"Ø CIDH Pile	
	Height "A"	Min OD		Wall Thickness	"c"	Thickness	Anchor Bolts			
		BASE	TOP				SIZE	BC = BOLT CIRCLE	LEVEL GROUND	SLOPING GROUND
15TS MODIFIED	20'-0"	8"	5/8"	0.1793"	1'-1 1/2"	2"	1 1/2"Ø x 42"	1'-0"	7'-6"	9'-6"

TABLE B				
LUMINAIRE MAST ARM DATA				
Projected Length "M"	Rise "N"	Min OD at Pole	Nominal Thickness	Mounting Height "P"
15'-0"	4'-9"±	4 1/4"	0.1196	24'-3"

**NOTES:**

- ① For additional details and data for Type 15TS Standard, see Revised Standard Plan ES-7A.

**GENERAL NOTES:**

**SPECIFICATIONS**

Design: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, Fifth Edition

**LOADING**

Wind Loadings: 100 MPH

**UNIT STRESSES**

Structural Steel: fy = 55,000 psi tapered steel tube  
fy = 50,000 psi unless otherwise noted.  
Anchor bolts: fy = 55,000 psi  
Reinforced Concrete: f'c = 3,600 psi  
fy = 60,000 psi

**NOTES:**

1. For pole locations, see "ELECTRICAL" Plans.
2. All steel shall be galvanized after fabrication.
3. During pole erection the post shall be raked as necessary with the use of leveling nuts to provide a plumb pole axis.
4. The foundation shall be treated as level ground condition if the slope inclination is flatter than 4H:1V.
5. Foundation design is based on AASHTO LTS-5 article 13.6 Broms' approximate procedure assuming a cohesionless material. The angle of internal friction used is 30 degrees and unit weight of soil used is 120 lbs/ft<sup>3</sup>.
6. For details not shown, see "2010 STANDARD PLANS" and "2010 REVISED STANDARD PLANS".

NO SCALE

BRANCH CHIEF <b>JEFFREY B WOODY</b>	DESIGN	BY A. GUTIERREZ	CHECKED E. LOPEZ	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES DESIGN AND TECHNICAL SERVICES <b>SPECIAL DESIGNS BRANCH</b>	BRIDGE NO.	<b>TYPE 15TS MODIFIED</b>		
	DETAILS	BY T. NGUYEN / J. GUO	CHECKED A. GUTIERREZ			N/A	<b>POLE DETAILS</b>		<b>SES-1</b>
	QUANTITIES	BY	CHECKED			17.1			

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.1	26	50

*Grace M. Tsushima*  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

Grace M. Tsushima  
No. C49814  
Exp. 9-30-14  
CIVIL  
STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 11-10-14

**UNIT OF MEASUREMENT SYMBOLS:**

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

**TABLE A**

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:

**TABLE B**

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

**M**

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

**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
SL	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

**S**

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

**T continued**

**U**

**V**

**W**

**X**

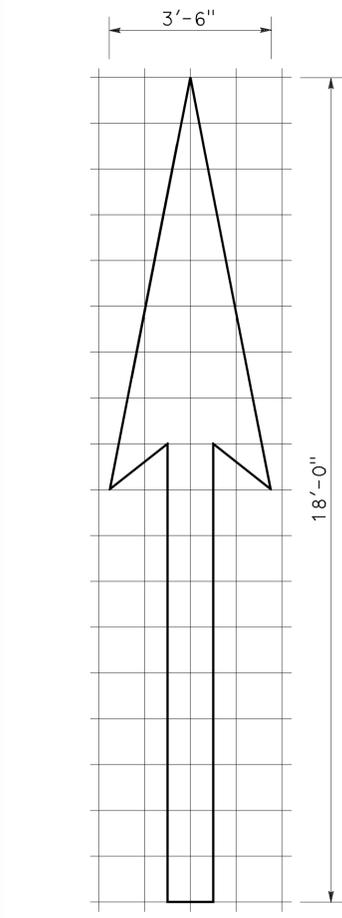
**Y**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.1	27	50

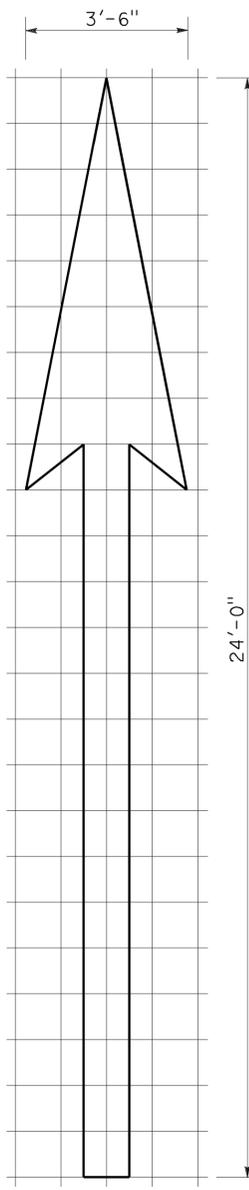
Roberto L. McLaughlin  
 REGISTERED CIVIL ENGINEER  
 April 20, 2012  
 PLANS APPROVAL DATE  
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER  
 Roberto L. McLaughlin  
 No. C40375  
 Exp. 3-31-13  
 CIVIL  
 STATE OF CALIFORNIA

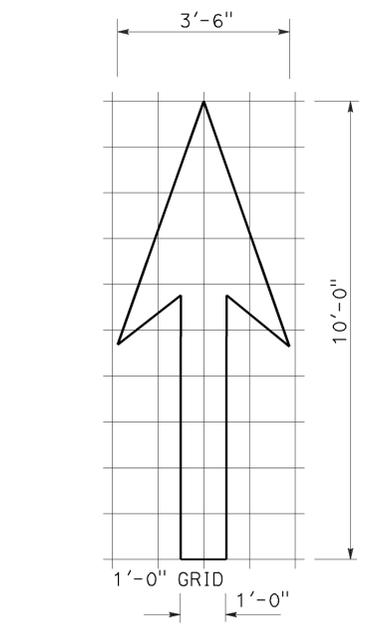
TO ACCOMPANY PLANS DATED 11-10-14



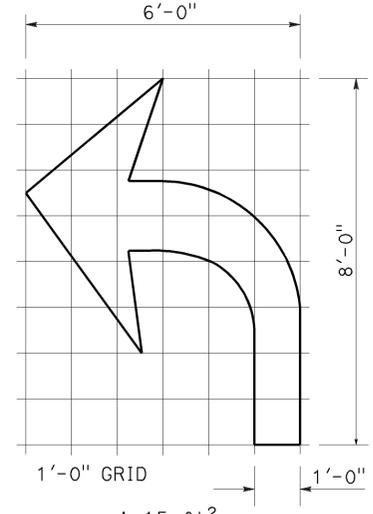
1'-0" GRID 1'-0"  
A=25 ft<sup>2</sup>  
**TYPE I 18'-0" ARROW**



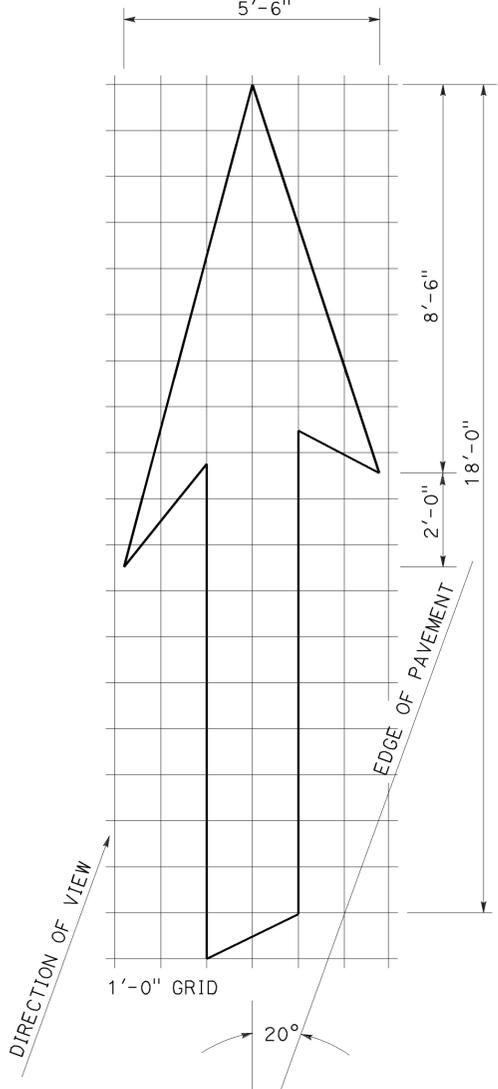
1'-0" GRID 1'-0"  
A=31 ft<sup>2</sup>  
**TYPE I 24'-0" ARROW**



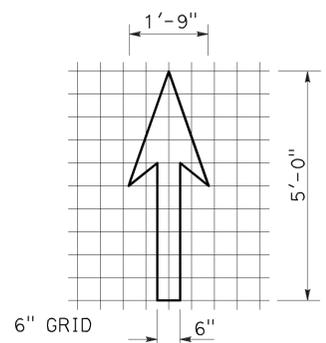
1'-0" GRID 1'-0"  
A=14 ft<sup>2</sup>  
**TYPE I 10'-0" ARROW**



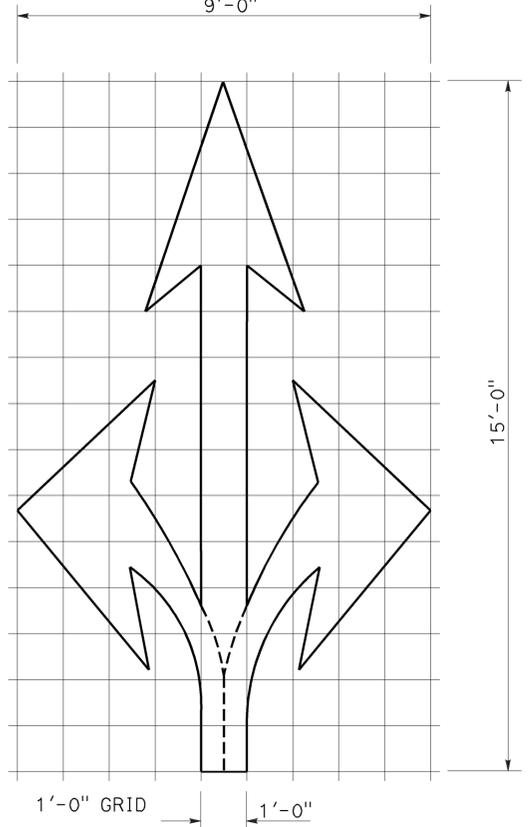
1'-0" GRID 1'-0"  
A=15 ft<sup>2</sup>  
**TYPE IV (L) ARROW**  
(For Type IV (R) arrow, use mirror image)



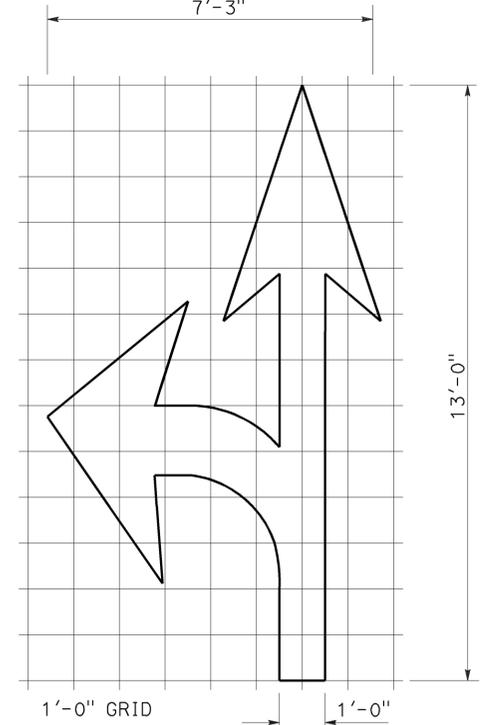
1'-0" GRID 20°  
A=42 ft<sup>2</sup>  
**TYPE VI ARROW**  
Right lane drop arrow  
(For left lane, use mirror image)



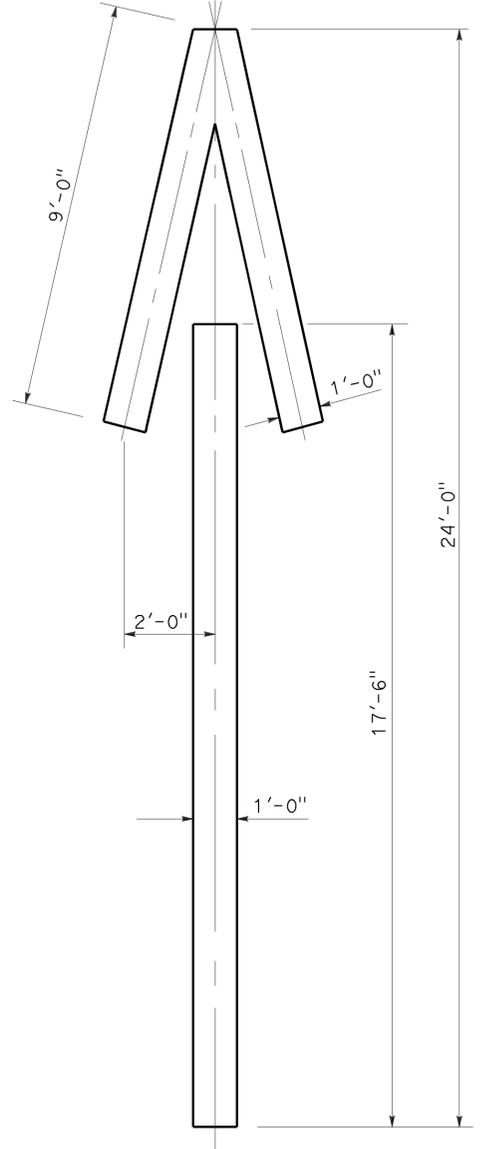
6" GRID 6"  
A=3.5 ft<sup>2</sup>  
**BIKE LANE ARROW**



1'-0" GRID 1'-0"  
A=36 ft<sup>2</sup>  
**TYPE VIII ARROW**



1'-0" GRID 1'-0"  
A=27 ft<sup>2</sup>  
**TYPE VII (L) ARROW**  
(For Type VII (R) arrow, use mirror image)



A=33 ft<sup>2</sup>  
**TYPE V ARROW**

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

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

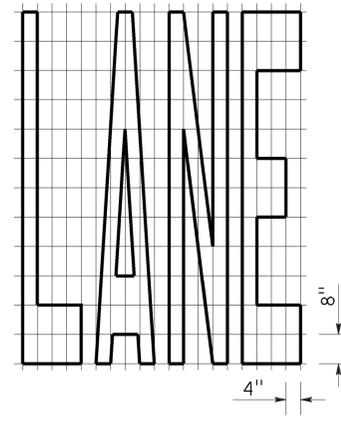
RSP A24A DATED APRIL 20, 2012 SUPERSEDES STANDARD PLAN A24A DATED MAY 20, 2011 - PAGE 13 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A24A**

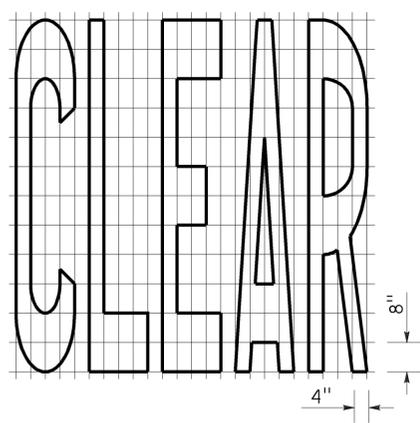
2010 REVISED STANDARD PLAN RSP A24A

TO ACCOMPANY PLANS DATED 11-10-14

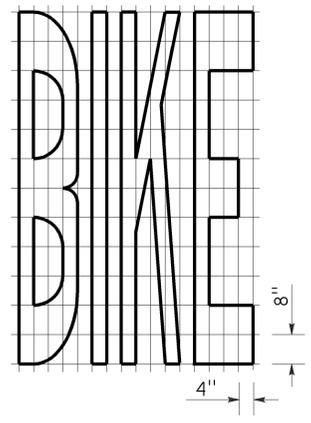
2010 REVISED STANDARD PLAN RSP A24E



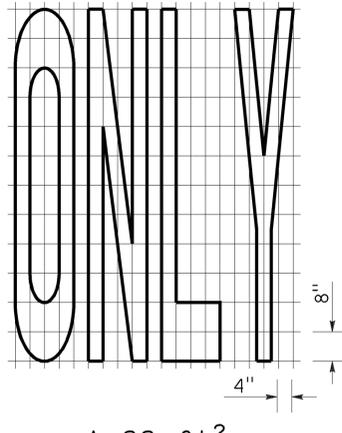
A=24 ft<sup>2</sup>



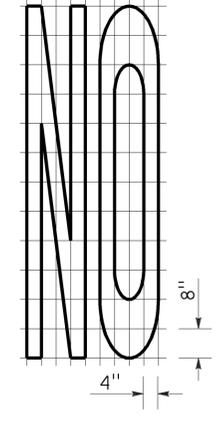
A=27 ft<sup>2</sup>



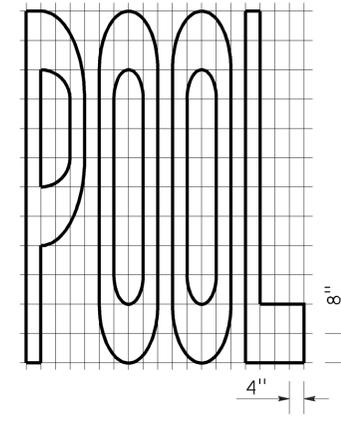
A=21 ft<sup>2</sup>



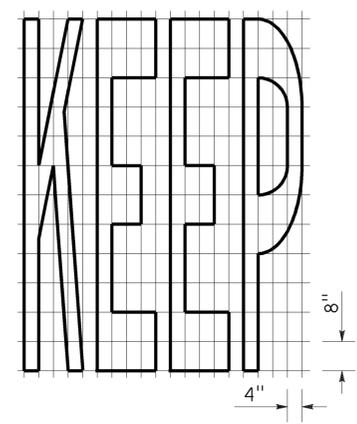
A=22 ft<sup>2</sup>



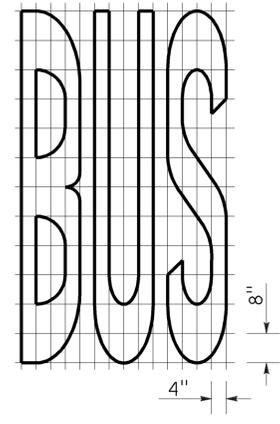
A=14 ft<sup>2</sup>



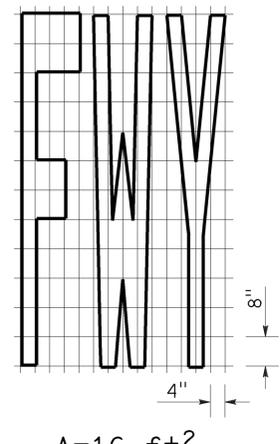
A=23 ft<sup>2</sup>



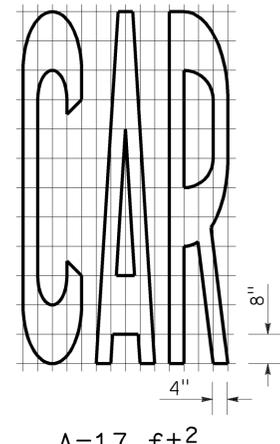
A=24 ft<sup>2</sup>



A=20 ft<sup>2</sup>

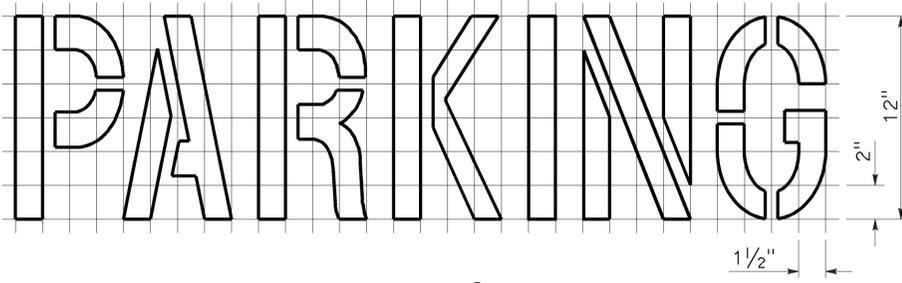
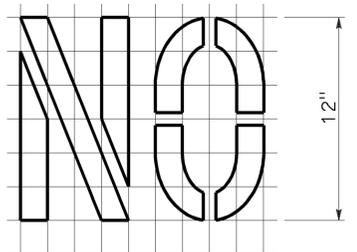


A=16 ft<sup>2</sup>

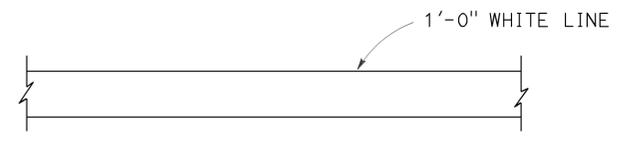


A=17 ft<sup>2</sup>

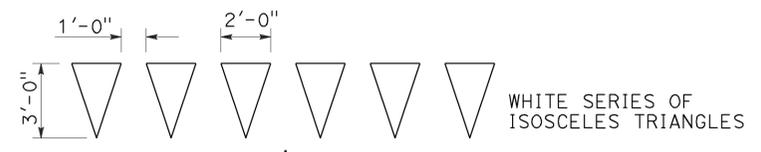
WORD MARKINGS			
ITEM	ft <sup>2</sup>	ITEM	ft <sup>2</sup>
LANE	24	NO	14
POOL	23	BIKE	21
CAR	17	BUS	20
CLEAR	27	ONLY	22
KEEP	24	FWY	16



A=2 ft<sup>2</sup>  
See Notes 6 and 7



LIMIT LINE (STOP LINE)



YIELD LINE

**NOTES:**

1. If a message consists of more than one word, it should read "UP", i.e., the first word should be nearest the driver.
2. The space between words should be at least four times the height of the characters for low speed roads, but not more than ten times the height of the characters. The space may be reduced appropriately where there is limited space because of local conditions.
3. Minor variations in dimensions may be accepted by the Engineer.
4. Portions of a letter, number or symbol may be separated by connecting segments not to exceed 2" in width.
5. The words "NO PARKING" pavement marking is to be used for parking facilities. For typical locations of markings, see Standard Plans A90A and A90B.
6. The words "NO PARKING", shall be painted in white letters no less than 1'-0" high on a contrasting background and located so that it is visible to traffic enforcement officials.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**PAVEMENT MARKINGS  
WORDS, LIMIT AND YIELD LINES**

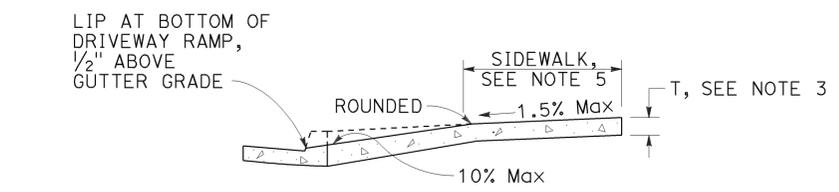
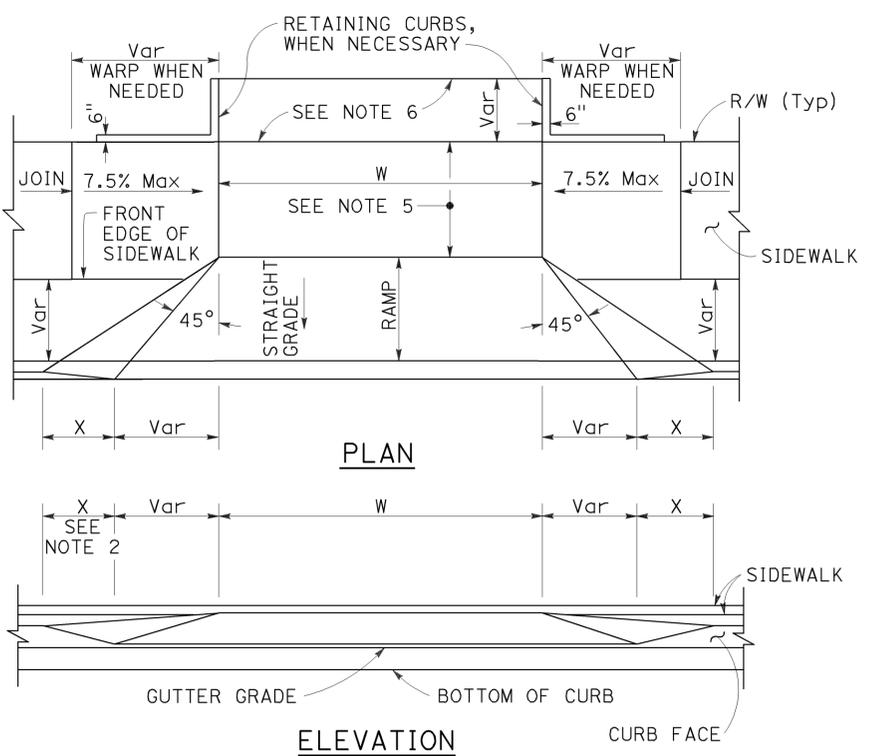
NO SCALE

RSP A24E DATED JULY 20, 2012 SUPERSEDES STANDARD PLAN A24E  
DATED MAY 20, 2011 - PAGE 17 OF THE STANDARD PLANS BOOK DATED 2010.

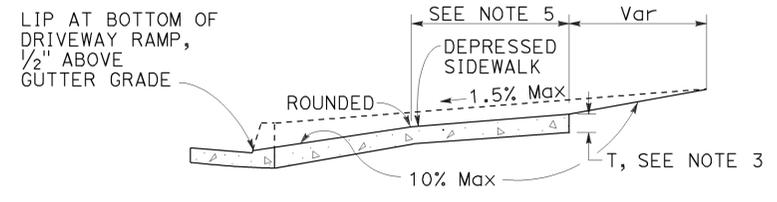
TO ACCOMPANY PLANS DATED 11-10-14

**CURB QUANTITIES**

TYPE	CUBIC YARDS PER LINEAR FOOT
A1-6	0.02585
A1-8	0.03084
A2-6	0.05903
A2-8	0.06379
A3-6	0.01036
A3-8	0.01435
B1-4	0.02185
B1-6	0.02930
B2-4	0.05515
B2-6	0.06171
B3-4	0.00641
B3-6	0.01074
B4	0.05709
D-4	0.04083
D-6	0.06804
E	0.06661



**CASE A**  
Typical driveway, sidewalk not depressed



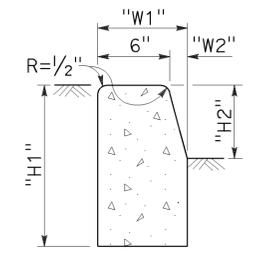
**CASE B**  
Driveway with depressed sidewalk

**SECTIONS**

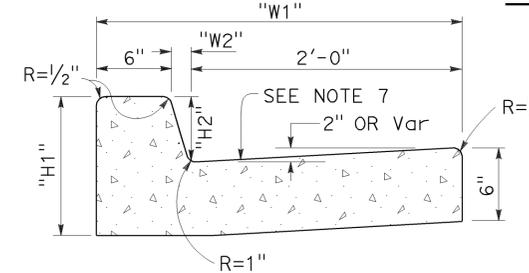
**TABLE A**

CURB TYPE	DIMENSIONS			
	"H1"	"H2"	"W1"	"W2"
A1-6	1'-2"	6"	7 1/2"	1 1/2"
A1-8	1'-4"	8"	8"	2"
A2-6	1'-0"	6"	2'-7 1/2"	1 1/2"
A2-8	1'-2"	8"	2'-8"	2"
A3-6	6"	5"	7 1/4"	1 1/4"
A3-8	8"	7"	7 3/4"	1 3/4"
B1-4	1'-0"	4"	7 1/2"	2 1/2"
B1-6	1'-2"	6"	9"	4"
B2-4	10"	4"	2'-7 1/2"	2 1/2"
B2-6	1'-0"	6"	2'-9"	4"
B3-4	4"	3"	7"	2"
B3-6	6"	5"	8 1/2"	3 1/2"
D-4	10"	4"	1'-6"	1'-1"
D-6	1'-0"	6"	2'-2"	1'-9"

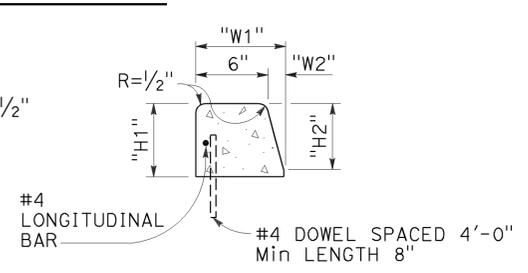
**DRIVEWAYS**



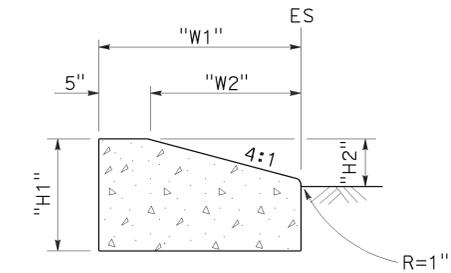
**TYPE A1 CURBS**  
See Table A



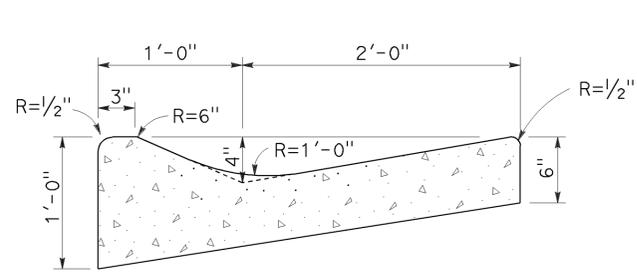
**TYPE A2 CURBS**  
See Table A



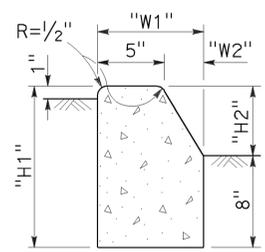
**TYPE A3 CURBS**  
Superimposed on existing pavement  
See Table A



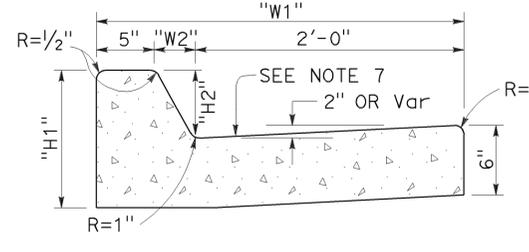
**TYPE D CURBS**  
See Table A



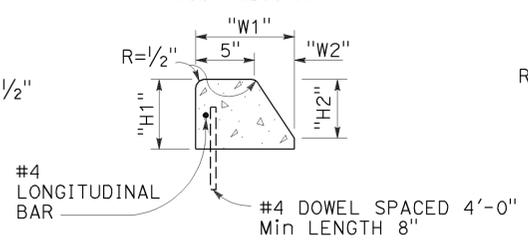
**TYPE E CURB**



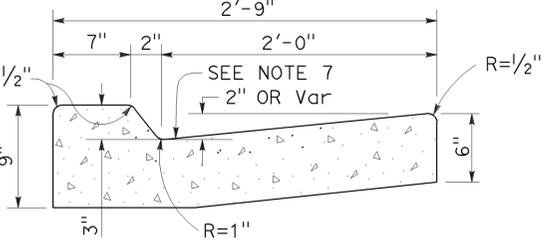
**TYPE B1 CURBS**  
See Table A



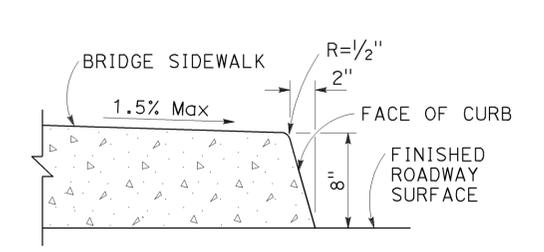
**TYPE B2 CURBS**  
See Table A



**TYPE B3 CURBS**  
Superimposed on existing pavement  
See Table A



**TYPE B4 CURBS**



**TYPE H CURB**  
On Bridges

**CURBS**

- NOTES:**
- Case A driveway section typically applies.
  - X=3'-0" except for curb heights over 10" where 4:1 slopes shall be used on curb slope.
  - Sidewalk and ramp thickness "T" at driveway shall be 4" for residential and 6" for commercial.
  - Difference in slope of the driveway ramp and the slope of a line between the gutter and a point on the roadway 5'-0" from gutter line shall not exceed 15%. Reduce driveway ramp slope, not gutter slope, where required.
  - Minimum width of clear passageway for sidewalk shall be 4'-2".
  - Retaining curbs and acquisition of construction easement may be necessary for narrow sidewalks or curb heights in excess of 6".
  - Across the pedestrian route at curb ramp locations, the gutter pan slope shall not exceed 1" of depth for each 2'-0" of width.

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**CURBS AND DRIVEWAYS**  
 NO SCALE

2010 REVISED STANDARD PLAN RSP A87A

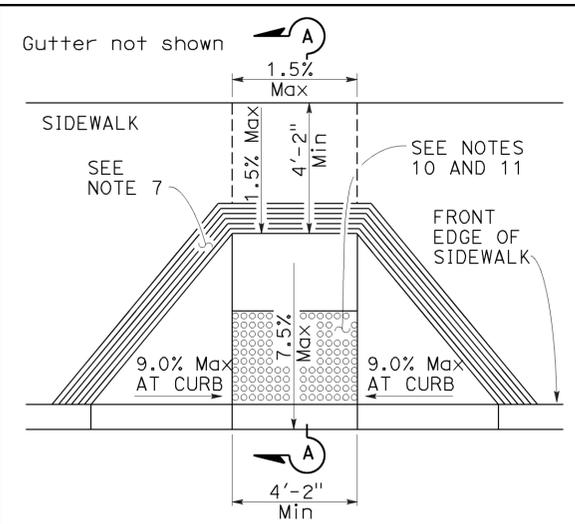
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.1	30	50

H. David Cordova  
REGISTERED CIVIL ENGINEER

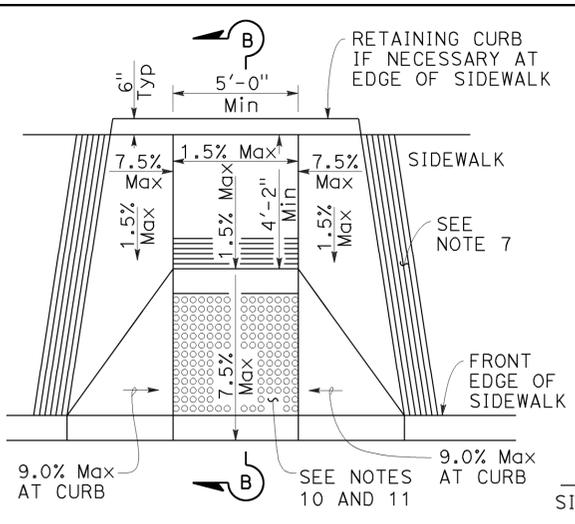
March 21, 2014  
PLANS APPROVAL DATE

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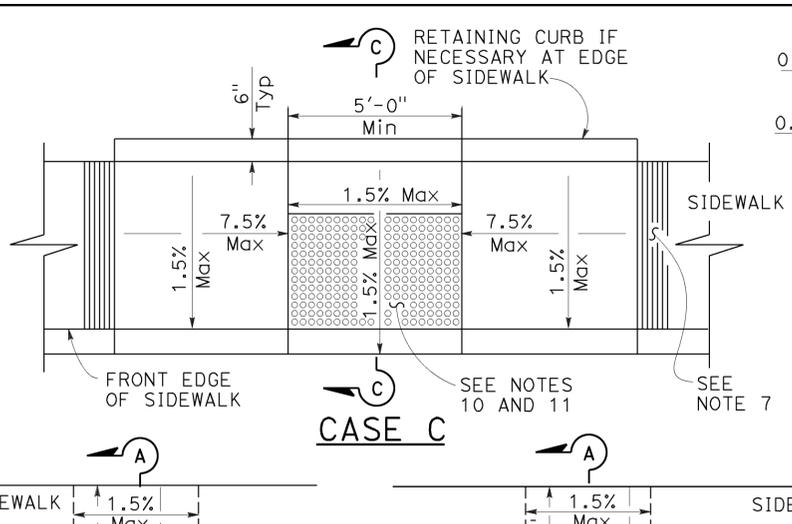
Hector David Cordova  
REGISTERED PROFESSIONAL ENGINEER  
No. C41957  
Exp. 3-31-14  
CIVIL  
STATE OF CALIFORNIA



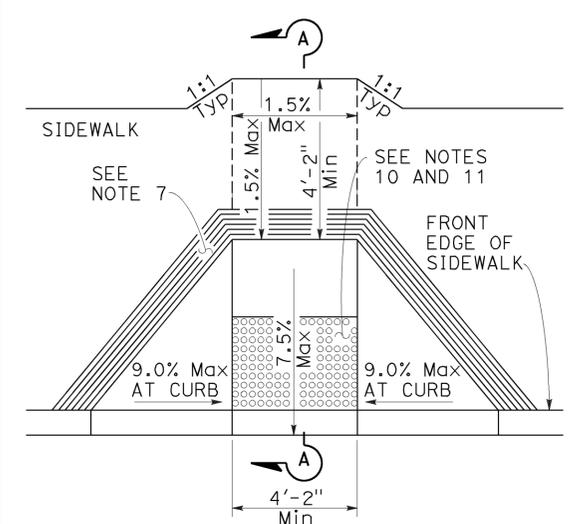
**CASE A**



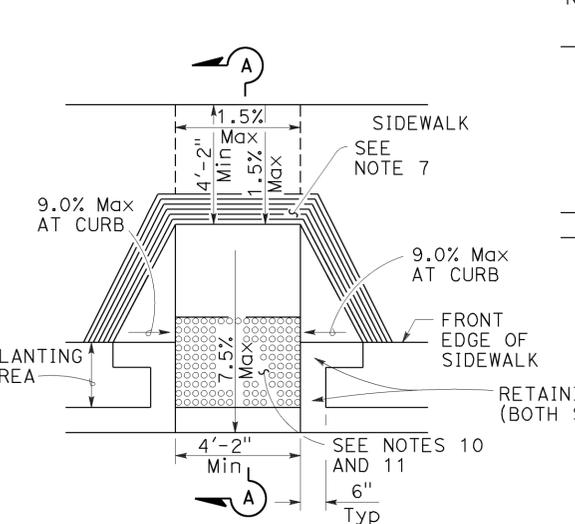
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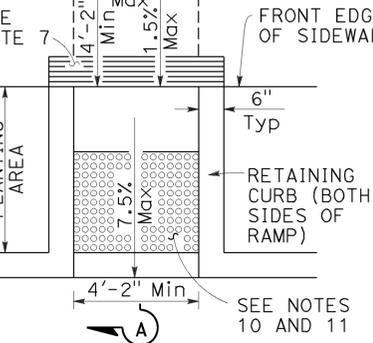
**CASE C**



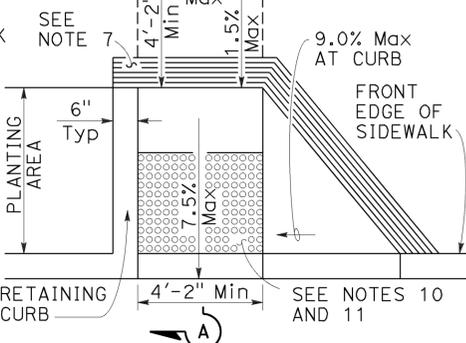
**CASE D**



**CASE E**

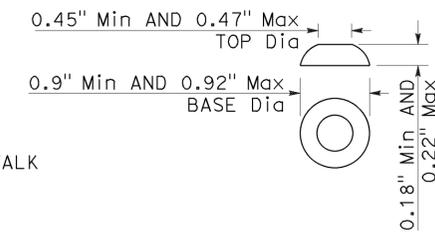


**CASE F**



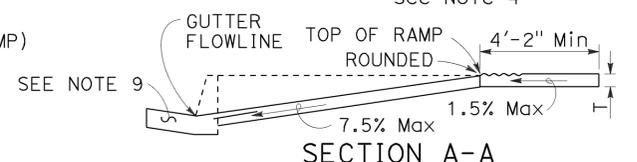
**CASE G**

**RAISED TRUNCATED DOME**

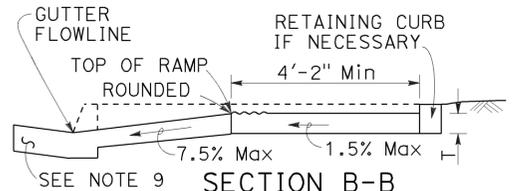


**NOTES:**

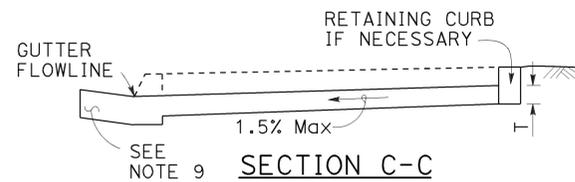
- As site conditions dictate, Case A through Case G curb ramps may be used for corner installations similar to those shown in Detail A and Detail B. The case of curb ramps used in Detail A do not have to be the same. Case A through Case G curb ramps also may be used at mid block locations, as site conditions dictate.
- If distance from curb to back of sidewalk is too short to accommodate ramp and 4'-2" platform (landing) as shown in Case A, the sidewalk may be depressed longitudinally as in Case B, or C or may be widened as in Case D.
- When ramp is located in center of curb return, crosswalk configuration must be similar to that shown for Detail B.
- As site conditions dictate, the retaining curb side and the flared side of the Case G ramp shall be constructed in reversed position.
- If located on a curve, the sides of the ramp need not be parallel, but the minimum width of the ramp shall be 4'-2".
- Side slope of ramp flares vary uniformly from a maximum of 9.0% at curb to conform with longitudinal sidewalk slope adjacent to top of the ramp, except in Case C and Case F.
- The curb ramp shall be outlined, as shown, with a 1'-0" wide border with 1/4" grooves approximately 3/4" on center. See grooving detail.
- Transitions from ramps and landing to walks, gutters or streets shall be flush (no lip) and free of abrupt changes.
- Counter slopes of adjoining gutters and road surfaces immediately adjacent to and within 24 inches of the curb ramp shall not be steeper than 1:20 (5.0%). Gutter pan slope shall not exceed 1" of depth for each 2'-0" of width.
- Curb ramps shall have a detectable warning surface that extends the full width and 3'-0" depth of the ramp. A 4'-0" wide detectable warning surface may be used on a 4'-2" wide curb ramp. Detectable Warning Surfaces shall conform to the requirements in the Standard Specifications.
- The edge of the detectable warning surface nearest the street shall be between 6" and 8" from the gutter flowline.
- Sidewalk and ramp thickness, "T", shall be 3 1/2" minimum.
- Utility pull boxes, manholes, vaults and all other utility facilities within the boundaries of the curb ramp will be relocated or adjusted to grade by the owner prior to, or in conjunction with, curb ramp construction.
- Detectable warning surface may have to be cut to allow removal of utility covers while maintaining full detectable warning width and depth.



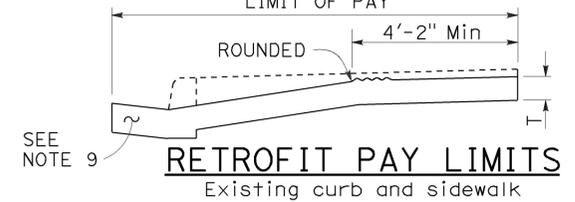
**SECTION A-A**



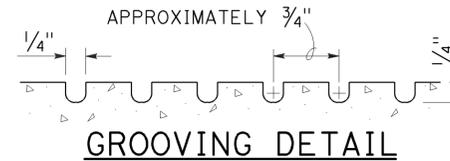
**SECTION B-B**



**SECTION C-C**



**RETROFIT PAY LIMITS**



**GROOVING DETAIL**

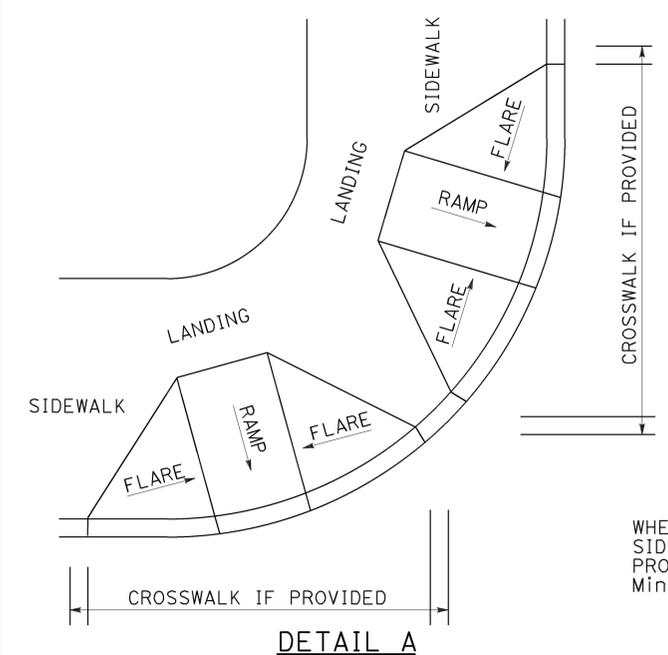


**RAISED TRUNCATED DOME PATTERN (IN-LINE) DETECTABLE WARNING SURFACE**

See Note 10

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**CURB RAMP DETAILS**  
NO SCALE

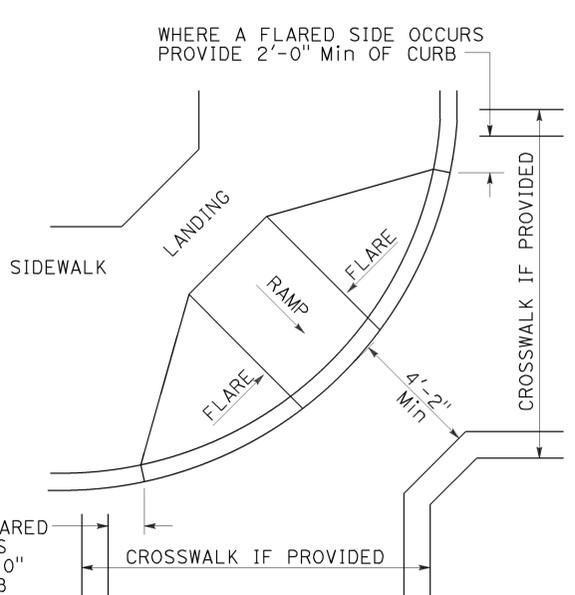
RSP A88A DATED MARCH 21, 2014 SUPERSEDES RSP A88A DATED JULY 19, 2013 AND STANDARD PLAN A88A DATED MAY 20, 2011 - PAGE 121 OF THE STANDARD PLANS BOOK DATED 2010.



**DETAIL A**

**TYPICAL TWO-RAMP CORNER INSTALLATION**

See Note 1



**DETAIL B**

**TYPICAL ONE-RAMP CORNER INSTALLATION**

See Notes 1 and 3

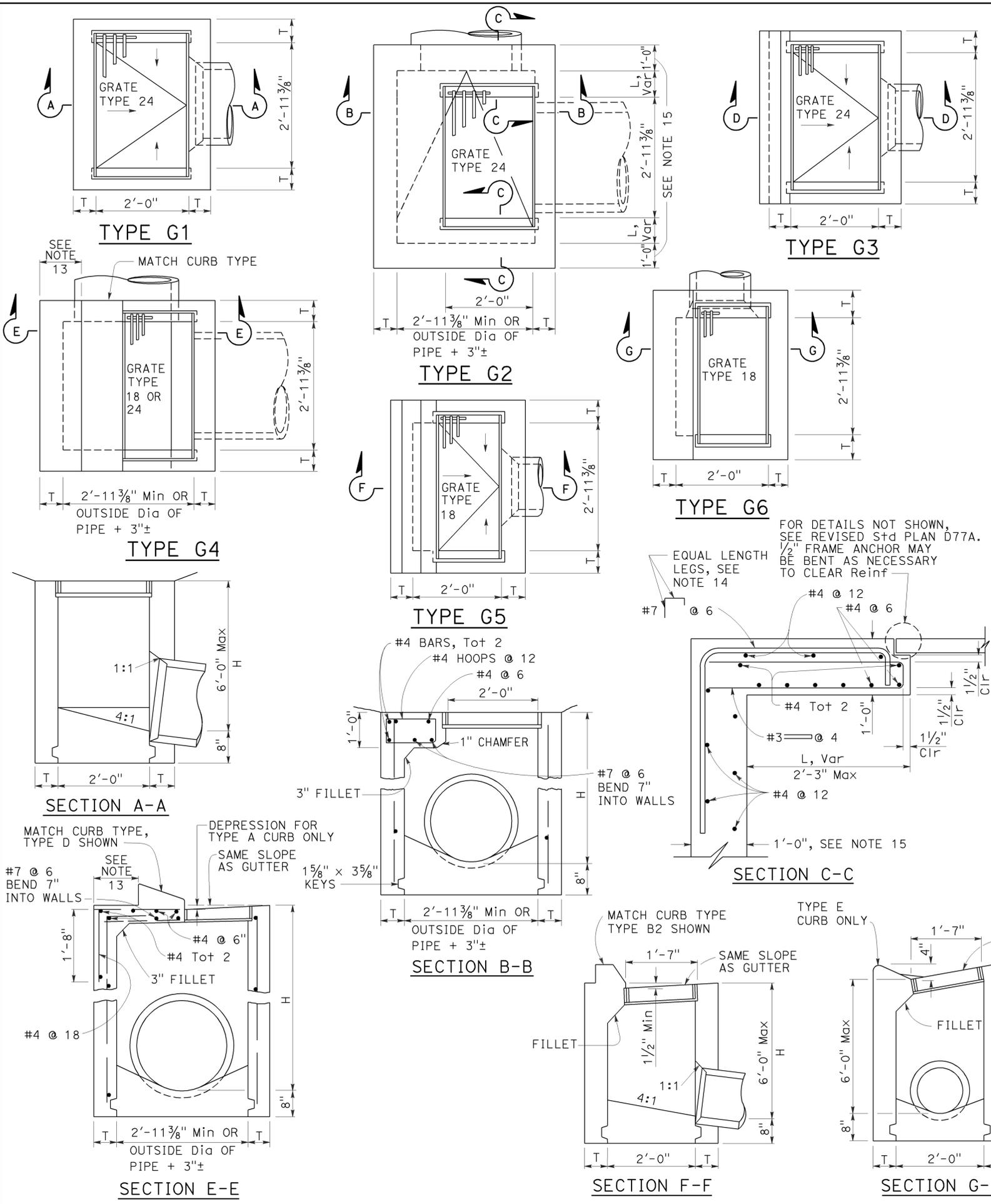
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.2	31	50

Glenn DeCou  
REGISTERED CIVIL ENGINEER

October 19, 2012  
PLANS APPROVAL DATE

Glenn DeCou  
No. C34547  
Exp. 9-30-13  
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.



**NOTES:**

- "H" is the difference in elevation between the outlet pipe flow line and the normal gutter grade line undepressed.
- For "T" wall thickness, see Table A below.
- Wall reinforcing not required when "H" is 8'-0" or less and the unsupported width or length is 7'-0" or less. Walls exceeding these limits shall be reinforced with #4 bars @ 1'-6" ± centers placed 1 1/2" clear to inside of box unless otherwise shown.
- Inlet bottom reinforcing not required. See Standard Plan D74C for alternative reinforced bottom and alternative half round bottom.
- Steps-None required where "H" is less than 2'-6". Where "H" is 2'-6" or more, install steps with lowest rung 1'-0" above the floor and highest rung not more than 6" below top of inlet. The distance between steps shall not exceed 1'-0" and shall be uniform throughout the length of the wall. Place steps in the wall without an opening. Steps inserts may be substituted for the bar steps. Step inserts shall comply with State Industrial Safety requirements. See Standard Plan D74C for step details.
- Details shown apply to both metal and concrete pipe.
- Pipe(s) can be placed in any wall.
- Curb section shall match adjacent curb.
- Basin floors shall have wood trowel finish and a minimum slope of 12:3 from all directions toward outlet pipe.
- Set inlet so that grate bars are parallel to direction of principal surface flow.
- See Revised Standard Plans D77A and D77B for grate and frame details and weights of miscellaneous iron and steel.
- See Standard Plan D78A for gutter depression details.
- This dimension will vary with different grates, curbs types, box width and wall thickness.
- Bar may be rotated as necessary to clear opening. Where "L" is 6" or less, bar may be omitted.
- Where "L" is 6" or less, wall thickness shall be as shown in Table A.
- Cast-in-place inlets to be formed around all pipes/stubs intersecting the inlet, and concrete poured in one continuous operation. Precast inlets shall have mortared connections conforming to details for Type GCP Inlet shown on Standard Plan D75B. See Standard Specifications for mortar composition.

**TABLE A**

TYPE	CONCRETE QUANTITIES			
	H=3'-0" TO 8'-0" (T=6")	H=8'-1" TO 20'-0" (T=8")	H=8'-1" (CY)	ADDITIONAL PCC PER FOOT (CY)
G-1	0.95	0.220	See Note A	SEE NOTE A
G-2*	1.31	0.255	3.50	0.357
G-3	1.03	0.220	See Note A	SEE NOTE A
G-4* (TYPE 24)	1.27	0.255	3.48	0.357
G-4* (TYPE 18)	1.30	0.255	3.50	0.357
G-5	1.02	0.220	SEE NOTE A	SEE NOTE A
G-6	1.04	0.220	SEE NOTE A	SEE NOTE A

TABLE BASED ON 8" FLOOR SLAB. NO DEDUCTIONS ARE TO BE MADE TO THESE QUANTITIES BECAUSE OF PIPE OPENINGS, DIFFERENT FLOOR ALTERNATIVES OR DIFFERENT CURB TYPES. \* QUANTITIES FOR TYPE G-2 AND G-4 INLETS BASED ON THE MINIMUM INTERIOR DIMENSIONS.

**NOTE A:**

Maximum allowable height 6'-0".

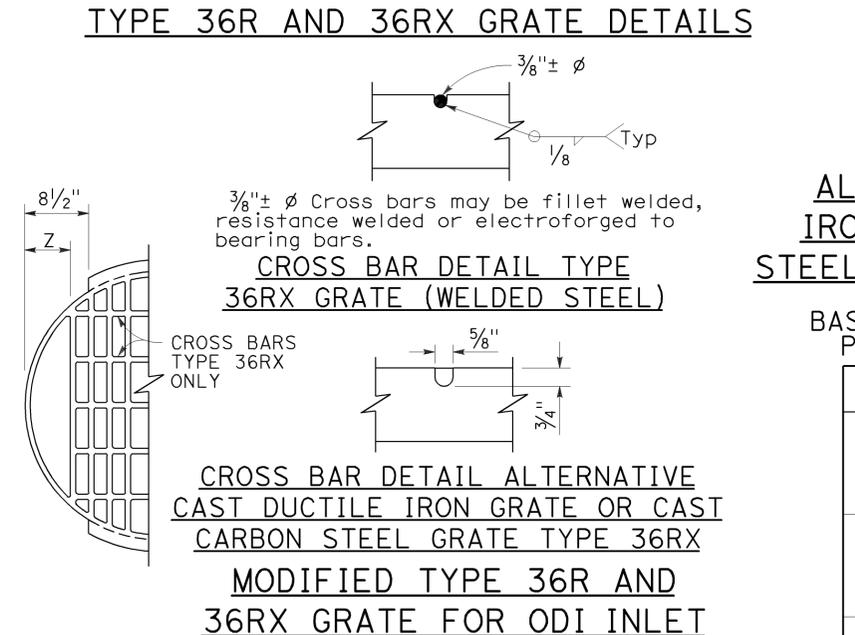
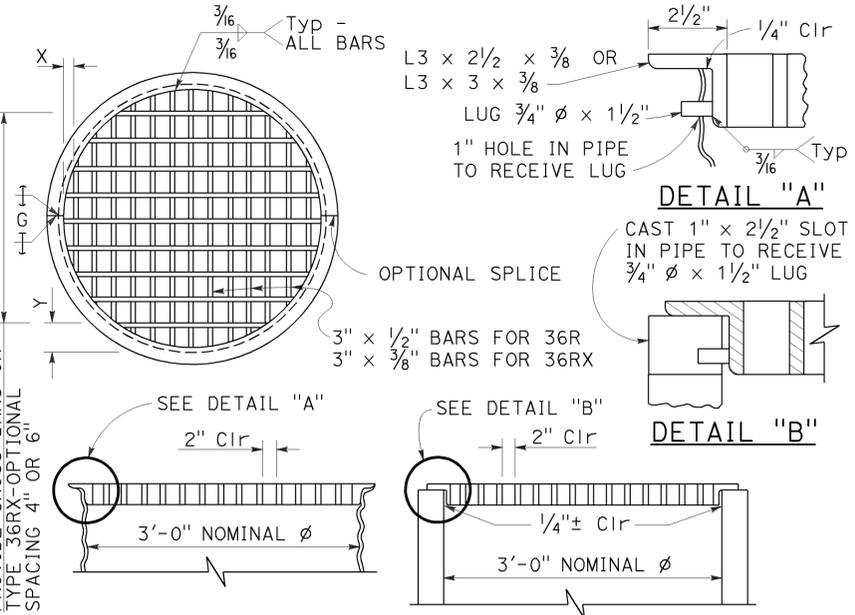
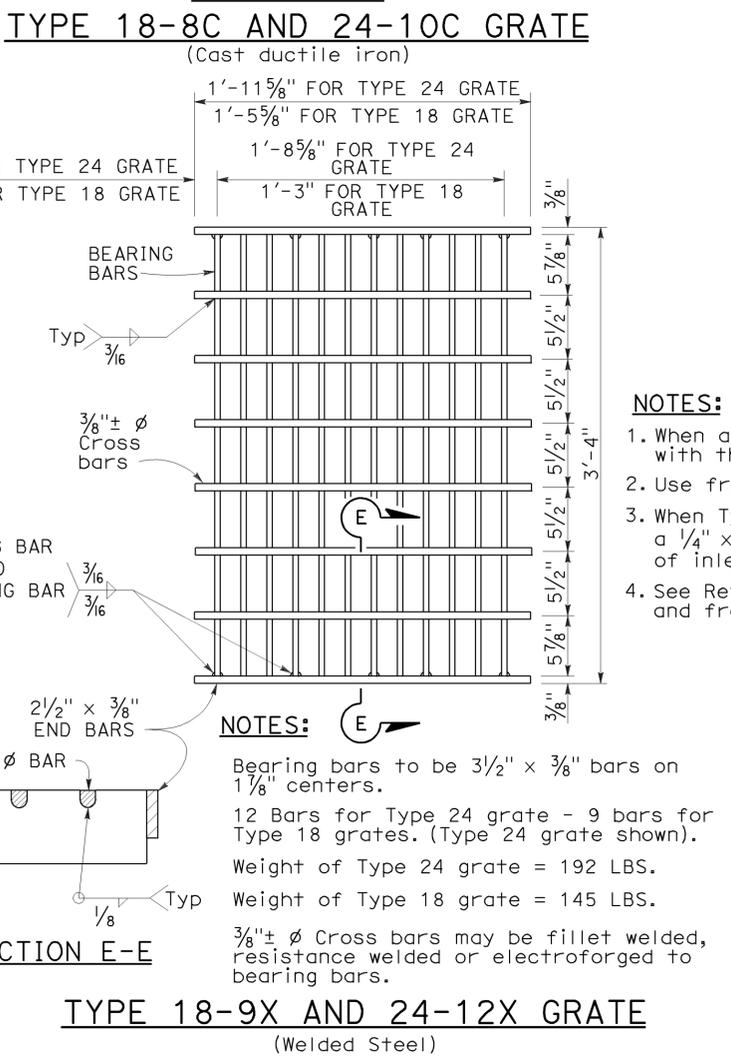
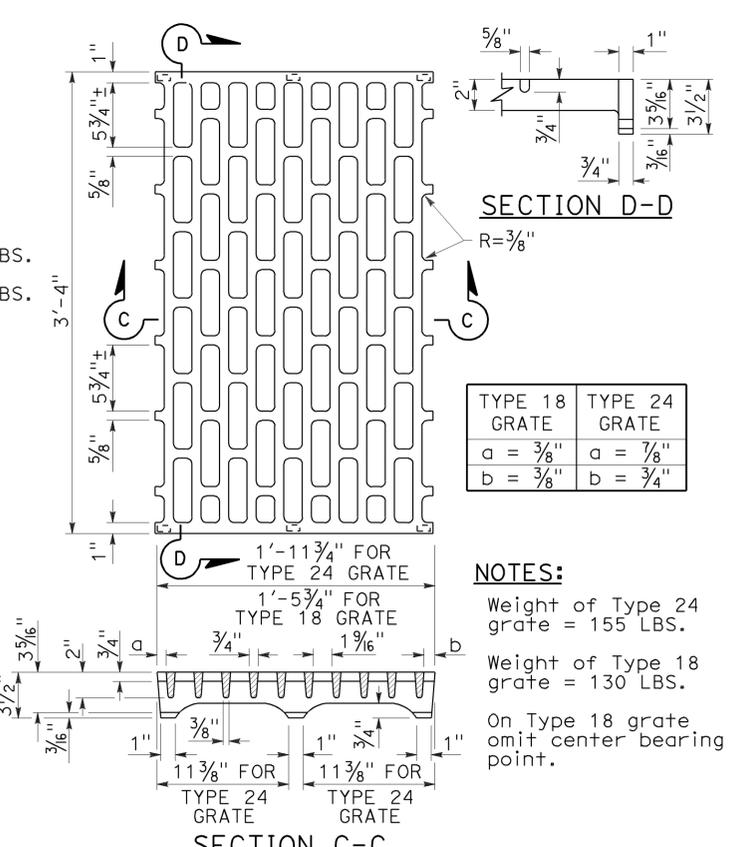
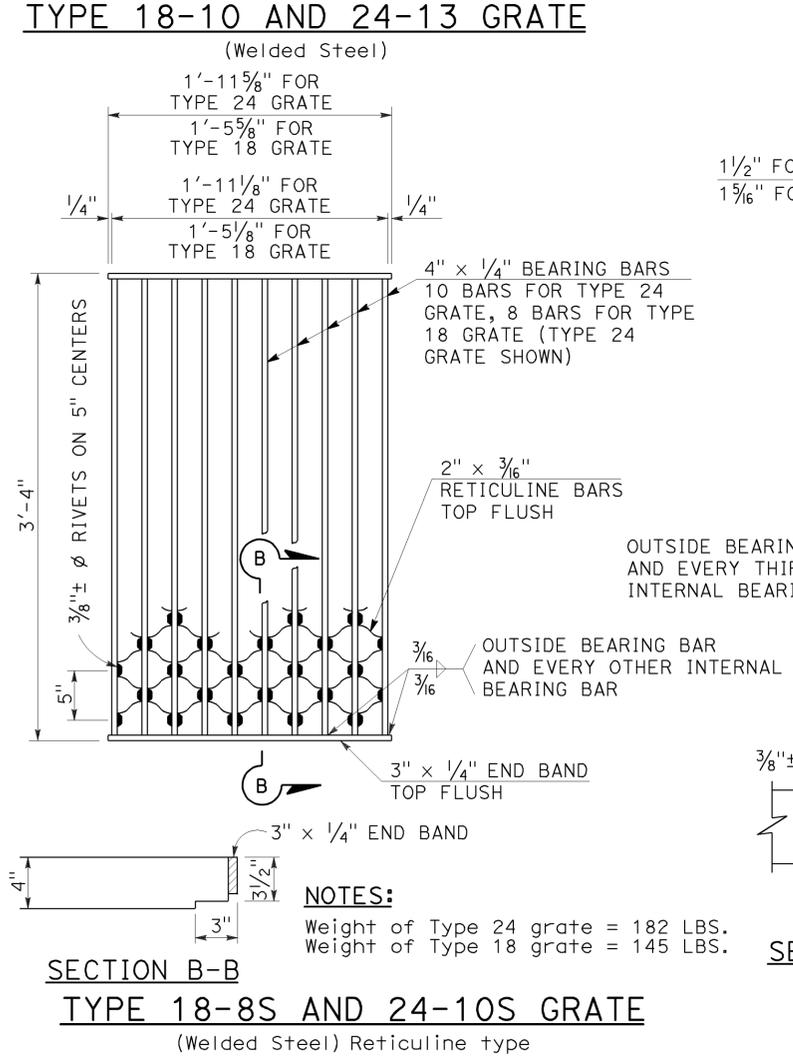
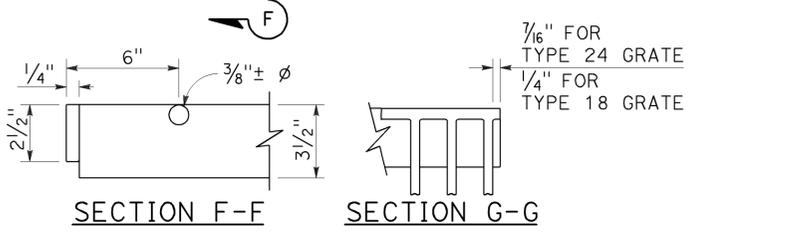
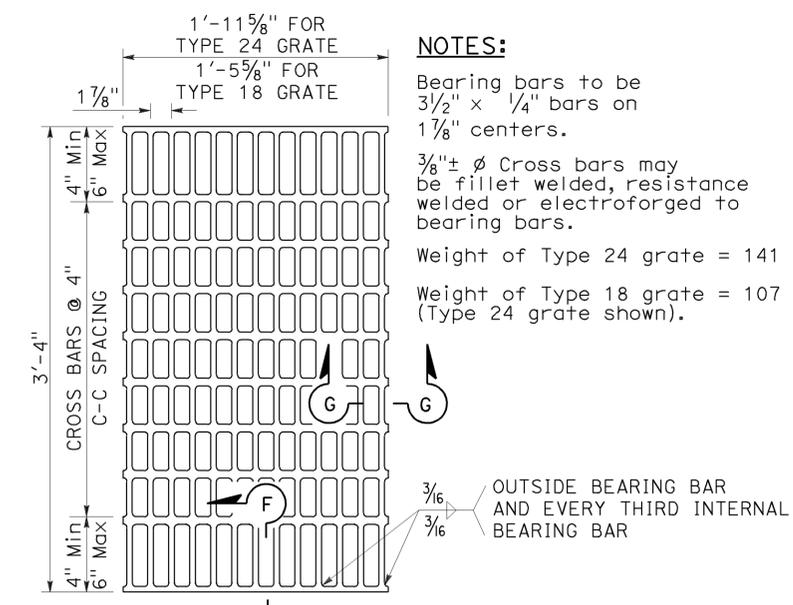
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**DRAINAGE INLETS**  
NO SCALE

RSP D73 DATED OCTOBER 19, 2012 SUPERSEDES STANDARD PLAN D73 DATED MAY 20, 2011 - PAGE 156 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP D73**

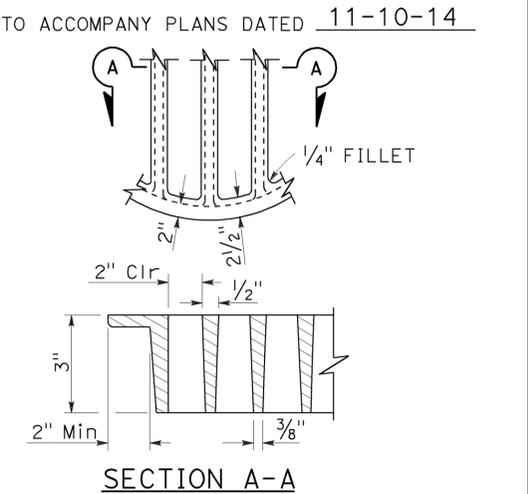
2010 REVISED STANDARD PLAN RSP D73



- NOTES:**
- When alternative grates are allowed - Final pay based on alternative with the lesser weight.
  - Use frame shown on Standard Plan D74A, D74B or RSP D77A as appropriate.
  - When Type 24-10S, 24-12X or 24-13 grates are used with GDO Inlets, a 1/4" x 3/2" x 3'-4 7/8" steel bar shall be welded across the center of inlet frame to separate the individual grates.
  - See Revised Standard Plan RSP D77A for connecting chain to welded grate and frame. When chain is required, do not use cast ductile iron grate.

**GRATE BAR SPACING TABLE**

TYPE	NO. OF BARS	CLEAR BAR SPACING	X	Y		Z
				4" SPACING	6" SPACING	
36R	13	2"	2 1/8"	-	-	-
36RX (STEEL)	15	2"	9/16"	3 3/4"	5 3/4"	-
36RX (CAST)	13	2"	2 1/8"	3 3/4"	5 3/4"	-
36R Mod	12	2"	2 1/8"	-	-	5"
36RX Mod (STEEL)	13	2"	9/16"	3 3/4"	5 3/4"	5 1/16"
36RX Mod (CAST)	12	2"	2 1/8"	3 3/4"	5 3/4"	5"



**BASIS FOR Misc IRON AND STEEL FINAL PAY WEIGHTS FOR DRAINAGE INLETS**

INLET TYPE	GRATE TYPE	No. OF GRATES	WEIGHT LB
GDO (SEE NOTE 4)	24-10C	2	391
	24-10S	2	456
	24-12X	2	473
	24-13	2	374
G0, G0L, G1, G2, G3, G4 (TYPE 24)	24-10C	1	202
	24-10S	1	229
	24-12X	1	239
	24-13	1	188
G4 (TYPE 18) G5, G6	18-8S	1	187
	18-9X	1	187
GT1, GT2	18-8S	2	374
	18-9X	2	374
	18-10	2	298
GT3, GT4	24-10C	2	404
	24-10S	2	458
	24-12X	2	478
ODI	24-13	2	376
	36RX (Mod)	1	196
GMP, GCP, GCPI	36RX	1	215
	36R (Mod)	1	220
GMP, GCP, GCPI	36R	1	236
TRASH RACK			22
GRATE CHAIN			3

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**GRATE DETAILS No. 2**  
NO SCALE

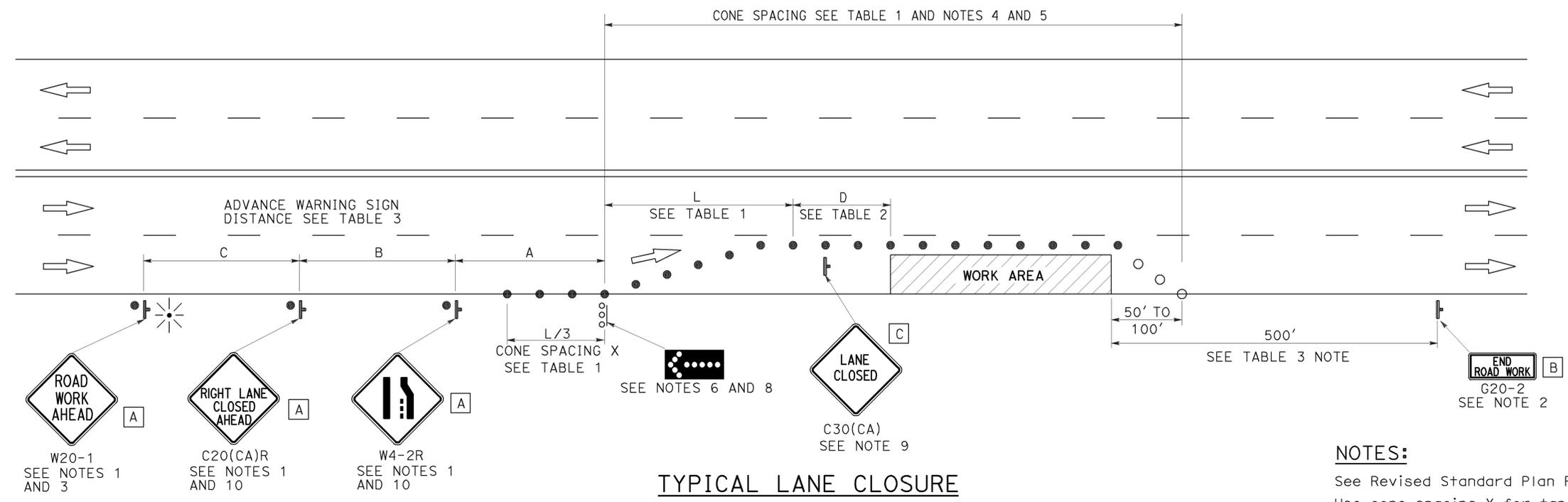
RSP D77B DATED APRIL 19, 2013 SUPERSEDES RSP D77B DATED JULY 20, 2012 AND STANDARD PLAN D77B DATED MAY 20, 2011 - PAGE 165 OF THE STANDARD PLANS BOOK DATED 2010.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.1	33	50

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 11-10-14



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

**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
04	SM	82	17.1	34	50

*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 11-10-14

**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
04	SM	82	17.1	35	50

*Theresa Gabriel*  
 REGISTERED ELECTRICAL ENGINEER  
 July 19, 2013  
 PLANS APPROVAL DATE  
 Theresa Aziz Gabriel  
 No. E15129  
 Exp. 6-30-14  
 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.

TO ACCOMPANY PLANS DATED 11-10-14

**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**

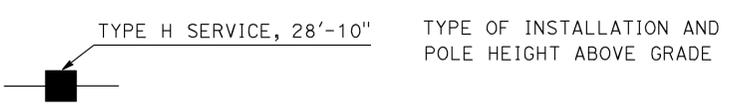
NEW	EXISTING	
---OH---	---oh---	OVERHEAD LINES
		WOOD POLE, "U" INDICATES UTILITY OWNED
		POLE GUY WITH ANCHOR
		UTILITY TRANSFORMER - GROUND MOUNTED
		SERVICE EQUIPMENT ENCLOSURE TYPE. DOOR INDICATES FRONT OF ENCLOSURE
		TELEPHONE DEMARCATION CABINET

		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**

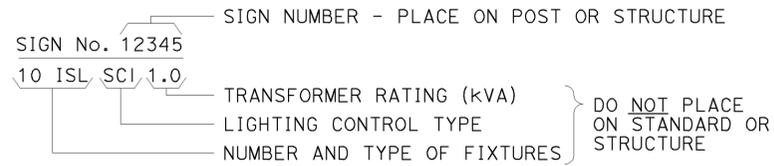
2010 REVISED STANDARD PLAN RSP ES-1B



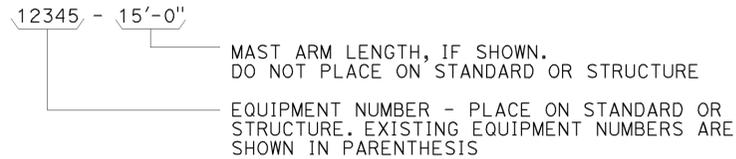
TO ACCOMPANY PLANS DATED 11-10-14

### EQUIPMENT IDENTIFICATION

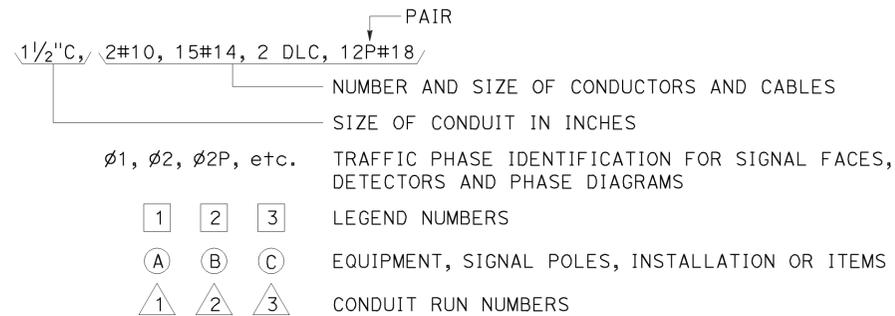
#### ILLUMINATED SIGN IDENTIFICATION NUMBER:



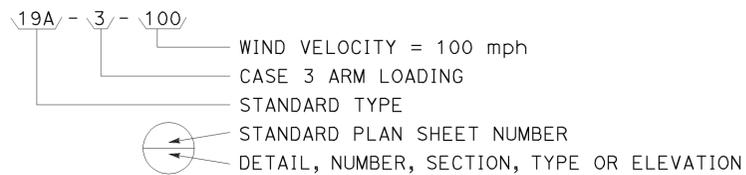
#### ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



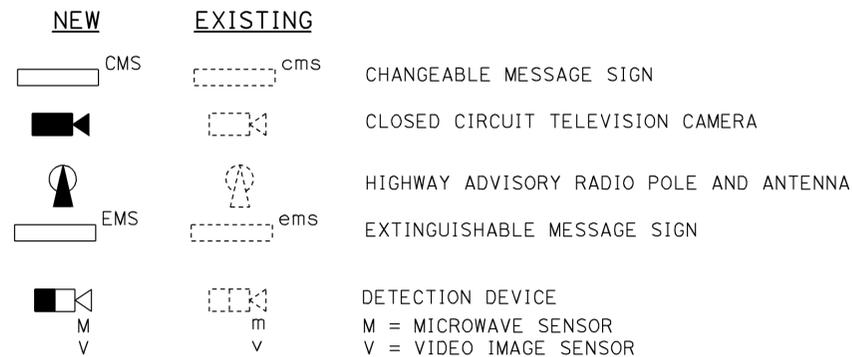
#### CONDUIT AND CONDUCTOR IDENTIFICATION:



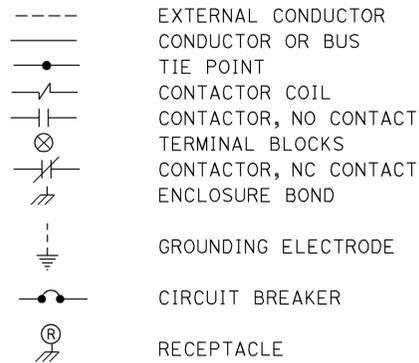
#### SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



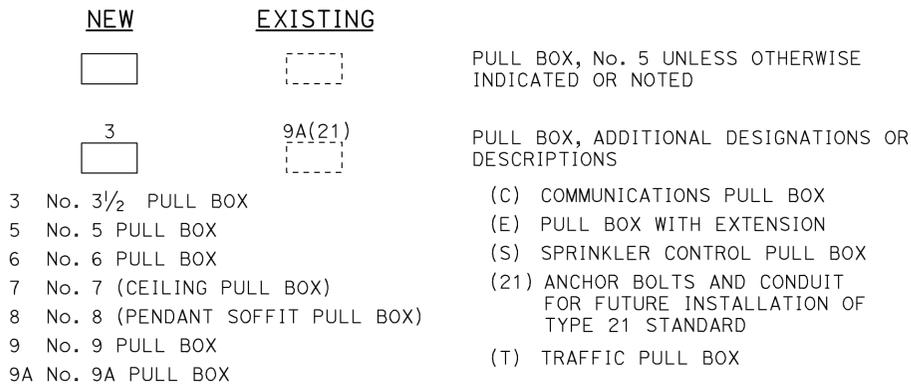
### MISCELLANEOUS EQUIPMENT



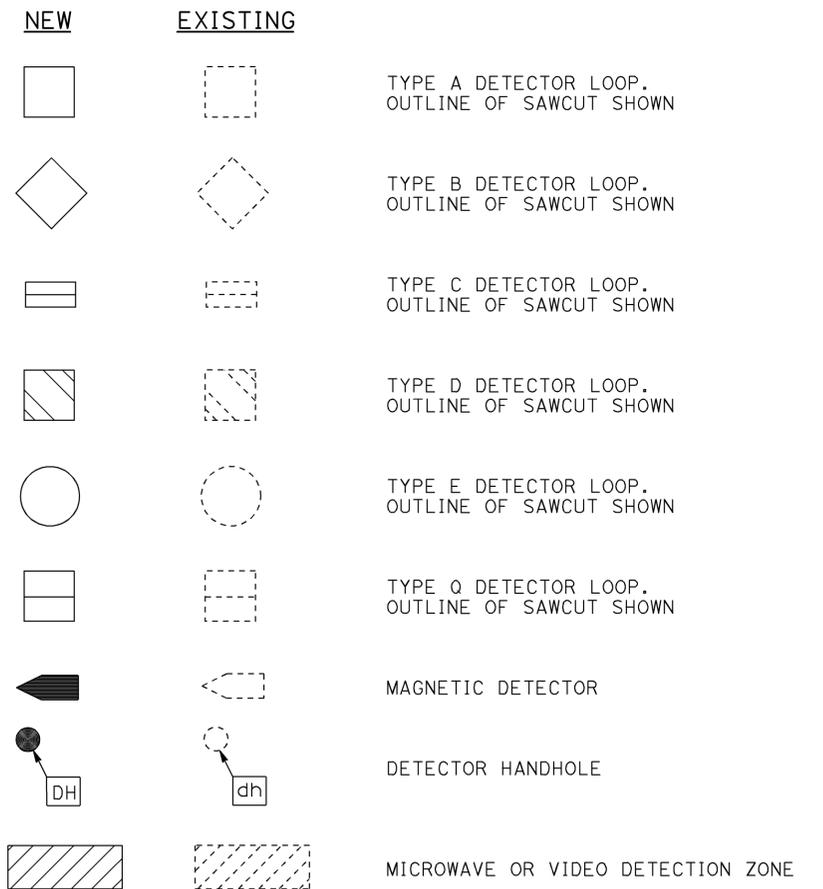
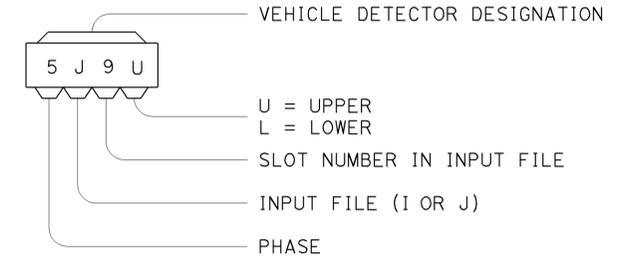
### WIRING DIAGRAM LEGEND



### PULL BOXES



### VEHICLE DETECTORS



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

## ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

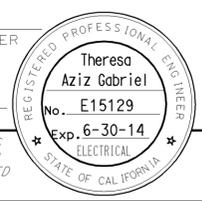
NO SCALE

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.1	37	50
<i>Theresa Gabriel</i> REGISTERED ELECTRICAL ENGINEER					
July 19, 2013 PLANS APPROVAL DATE					
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TO ACCOMPANY PLANS DATED 11-10-14

PLAN VIEW OF OTHER  
SIDE MOUNTINGS

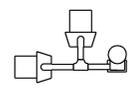
**ABBREVIATIONS:**

- SV SIDE MOUNTED VEHICLE SIGNALS
- T TERMINAL COMPARTMENT
- TV TOP MOUNTED VEHICLE SIGNALS
- 1, 2, 3, 4 NUMBER OF SIGNAL FACES  
(3 - SECTION, UNLESS OTHERWISE INDICATED)
- A, B, C, D CONFIGURATION OF SIGNALS

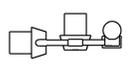
**NOTES:**

1. Mountings shall be oriented to provide maximum horizontal clearance to adjacent roadway.
2. Bracket arms shall be long enough to permit proper alignment of signals and backplate installation.
3. See Standard Plans ES-4D and ES-4E for attachment fitting details.

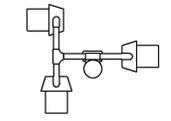
PLAN VIEW OF  
TOP MOUNTINGS



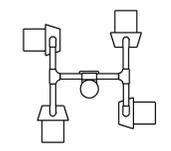
SV-2-TD



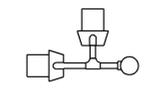
SV-2-TC



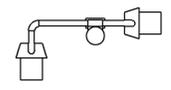
SV-3-TC



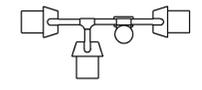
SV-4-TC



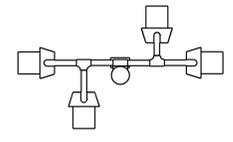
SV-2B



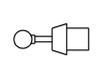
SV-2-TB



SV-3-TB



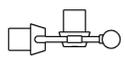
SV-4-TB



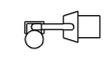
SV



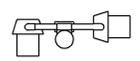
SV-1



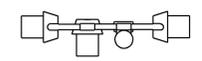
SV-2A



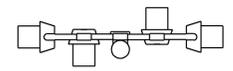
SV-1-T



SV-2-TA



SV-3-TA

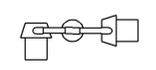


SV-4-TA

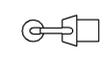
SIDE MOUNTINGS



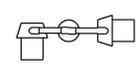
TV-1



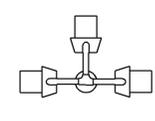
TV-2



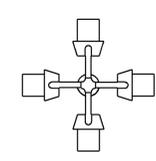
TV-1-T



TV-2-T



TV-3-T



TV-4-T

TOP MOUNTINGS

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
(VEHICULAR SIGNAL HEADS  
AND MOUNTINGS)**

NO SCALE

RSP ES-4A DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-4A  
DATED MAY 20, 2011 - PAGE 443 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP ES-4A**

2010 REVISED STANDARD PLAN RSP ES-4A

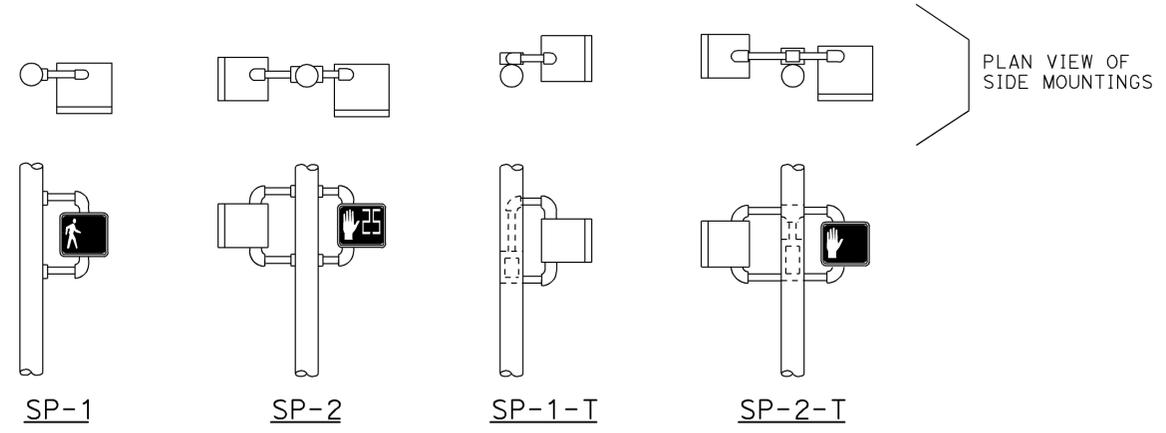
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.1	38	50

*Theresa Gabriel*  
 REGISTERED ELECTRICAL ENGINEER  
 July 19, 2013  
 PLANS APPROVAL DATE

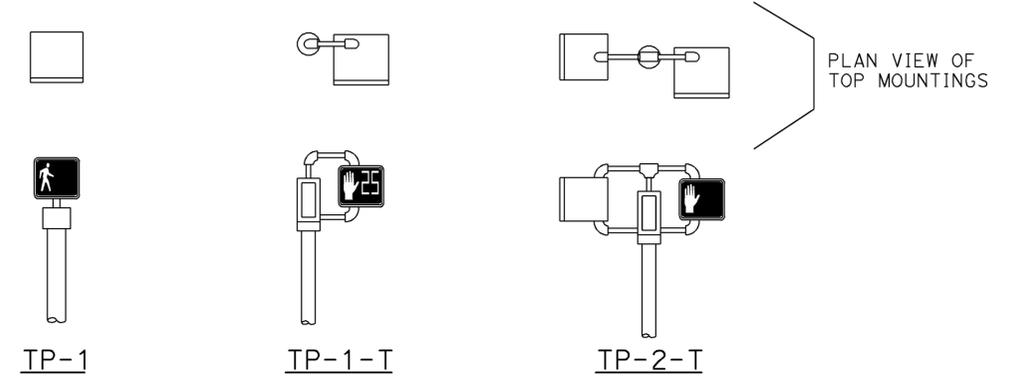
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

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

TO ACCOMPANY PLANS DATED 11-10-14



SIDE MOUNTINGS



TOP MOUNTINGS

PEDESTRIAN SIGNALS AND MOUNTINGS

DETAIL A

NOTES:

1. Mounting shall be oriented to provide maximum horizontal clearance to adjacent roadway.
2. Bracket arms shall be long enough to permit proper alignment of signals.
3. See Standard Plan ES-4D for attachment fittings details.

ABBREVIATIONS:

- 1, 2 NUMBER OF SIGNAL FACES
- SP SIDE MOUNTED PEDESTRIAN SIGNAL
- T TERMINAL COMPARTMENT
- TP TOP MOUNTED PEDESTRIAN SIGNAL



PERSON WALKING INTERVAL      FLASHING UPRaised HAND INTERVAL      STEADY UPRaised HAND INTERVAL

PEDESTRIAN SIGNAL MODULE WITH COUNTDOWN

DETAIL B



RAMP METERING SIGN

DETAIL D



PERSON WALKING INTERVAL

STEADY UPRaised HAND INTERVAL

PEDESTRIAN SIGNAL MODULE WITHOUT COUNTDOWN

DETAIL C

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
 (PEDESTRIAN SIGNAL AND  
 RAMP METERING SIGN)**

NO SCALE

RSP ES-4B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-4B  
 DATED MAY 20, 2011 - PAGE 444 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP ES-4B**

2010 REVISED STANDARD PLAN RSP ES-4B

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.1	39	50

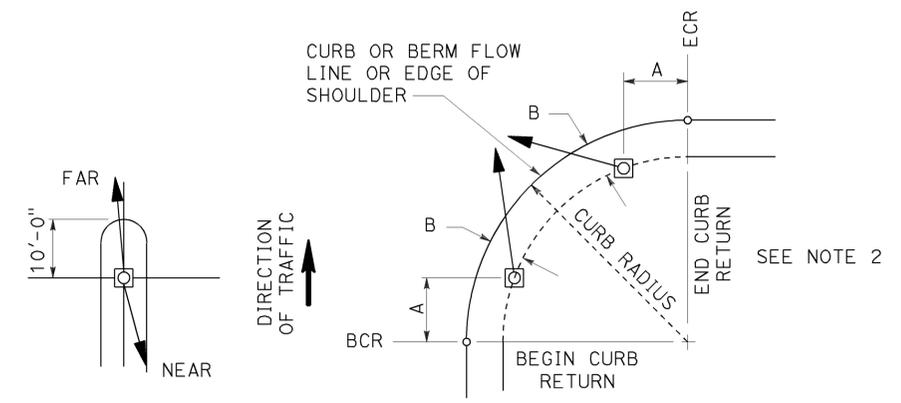
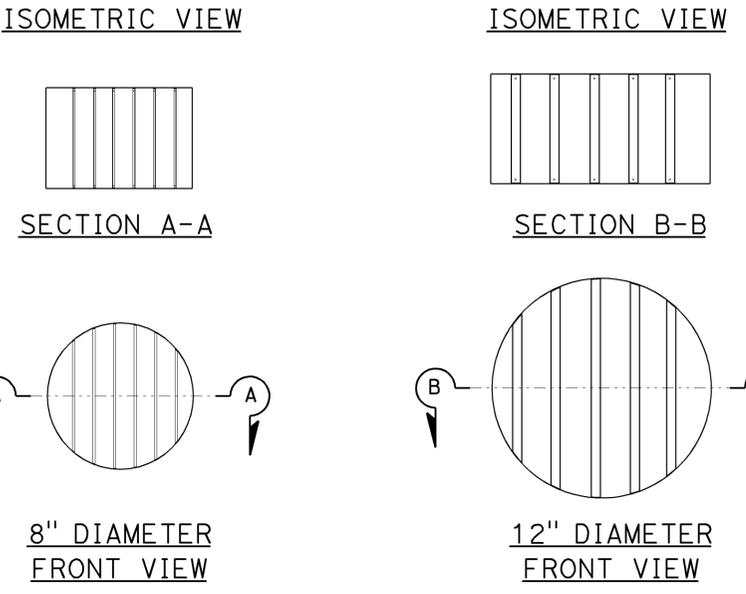
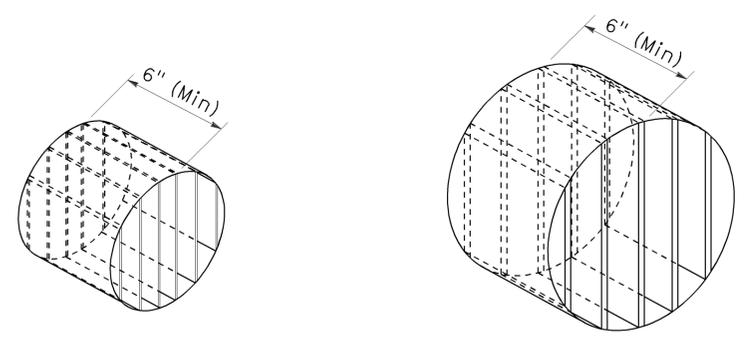
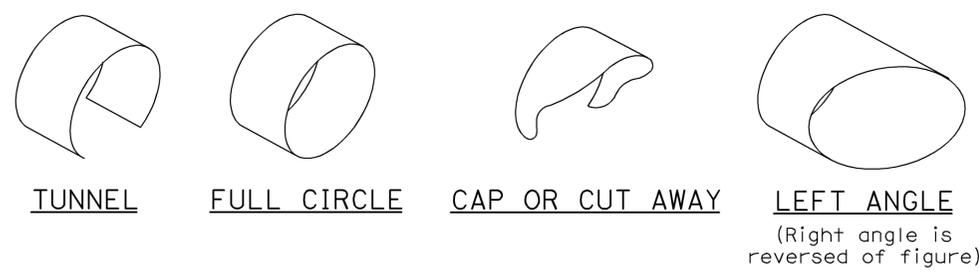
Theresa Gabriel  
REGISTERED ELECTRICAL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

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

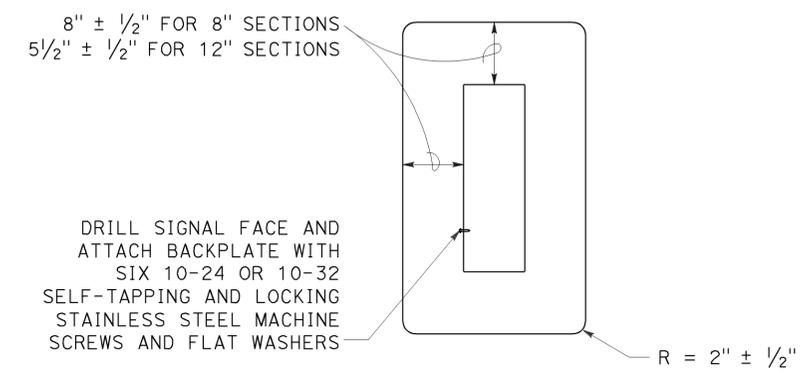
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TO ACCOMPANY PLANS DATED 11-10-14



- NOTES:**
1. Typical signal pole placement unless dimensioned on plans.
  2. For A and B dimensions, see Pole Schedule, or as directed by the Engineer.

**VISORS**



**8" AND 12" SECTIONS**

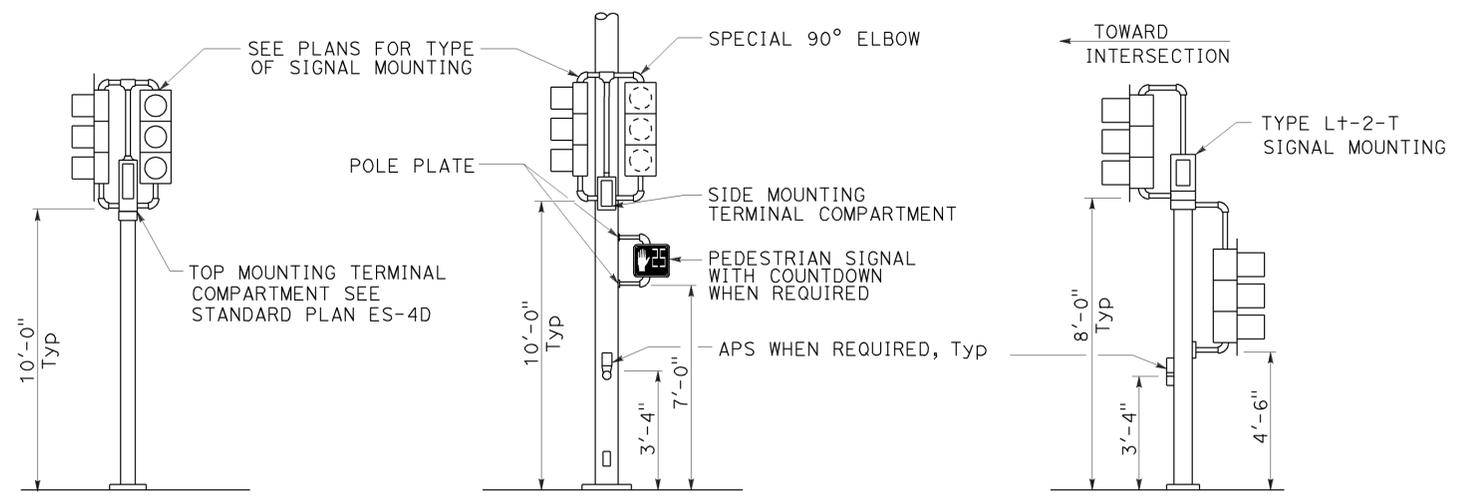
**BACKPLATE**

1/16" minimum thickness  
3001-14 aluminum or plastic when specified

**DIRECTIONAL LOUVER**

Directional louvers shall be oriented as directed by the Engineer and secured in place with one plated brass machine screw and nut.

**SIGNAL STANDARD PLACEMENT DIMENSIONS AND EQUIPMENT LOCATIONS**



**TOP MOUNTED SIGNALS (TV)**

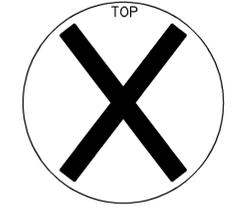
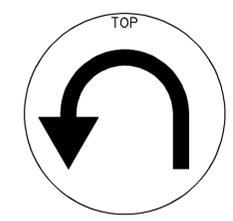
Type 1-A, 1-B, 1-C and 1-D standard as indicated on the plans

**SIDE MOUNTED SIGNALS (SV AND SP)**

Normally used on standards with luminaire or signal mast arm

**LEFT TURN LANE SIGNAL**

Type 1-A, 1-B, 1-C and 1-D standard as indicated on plans



**SIGNAL FACES**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS (VEHICULAR SIGNAL HEADS AND MOUNTINGS)**

NO SCALE

RSP ES-4C DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-04C DATED MAY 20, 2011 - PAGE 445 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP ES-4C**

2010 REVISED STANDARD PLAN RSP ES-4C

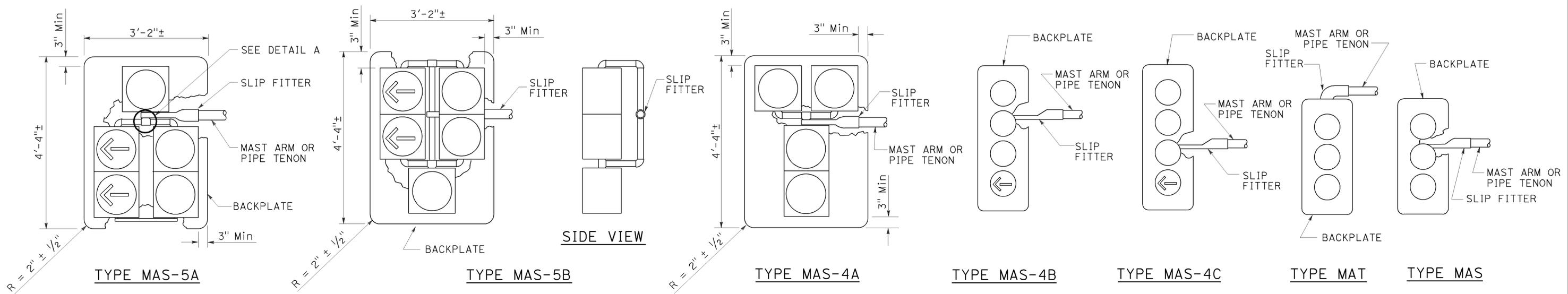
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.1	40	50

*Theresa Gabriel*  
 REGISTERED ELECTRICAL ENGINEER  
 July 19, 2013  
 PLANS APPROVAL DATE

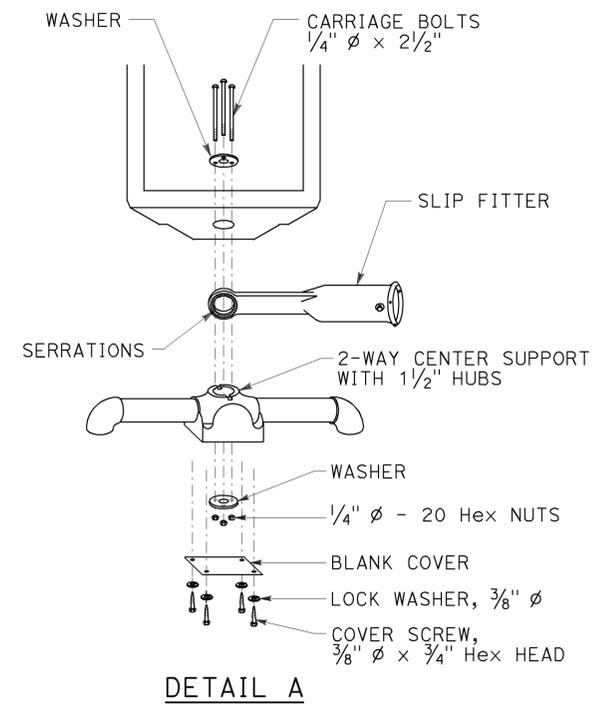
REGISTERED PROFESSIONAL ENGINEER  
 Theresa Aziz Gabriel  
 No. E15129  
 Exp. 6-30-14  
 ELECTRICAL  
 STATE OF CALIFORNIA

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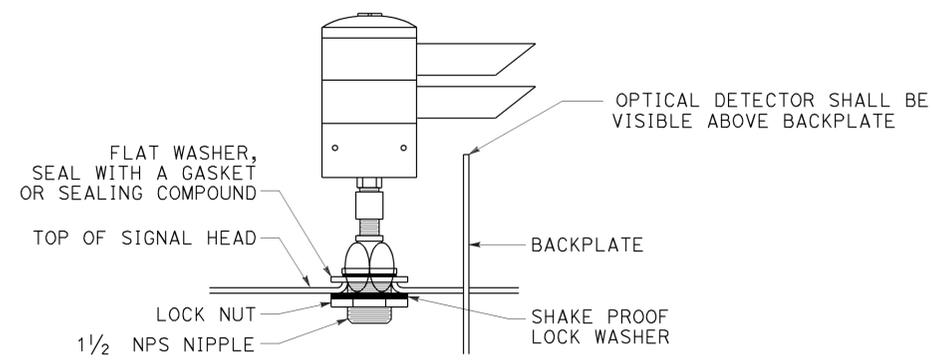
TO ACCOMPANY PLANS DATED 11-10-14



**MAST ARM MOUNTINGS**



**DETAIL A**



**DETAIL B**

**OPTICAL DETECTOR MOUNTING FOR EMERGENCY VEHICLE DETECTION SYSTEM**

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
 (VEHICULAR SIGNAL HEADS AND  
 OPTICAL DETECTOR MOUNTING)**

NO SCALE

RSP ES-4E DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-4E DATED MAY 20, 2011 - 447 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP ES-4E**

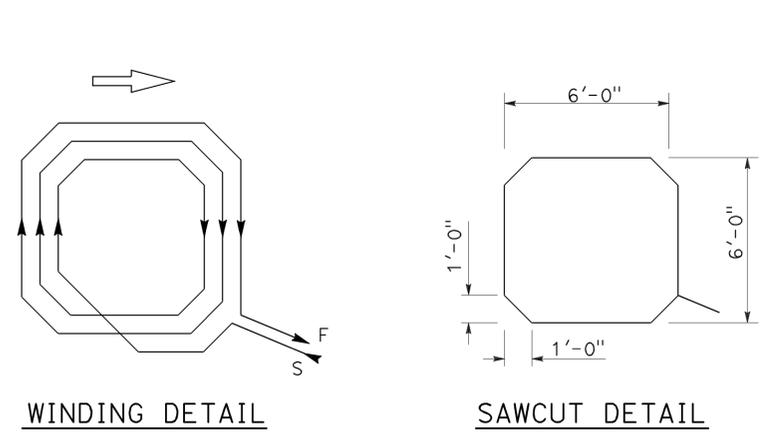
2010 REVISED STANDARD PLAN RSP ES-4E

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.1	41	50

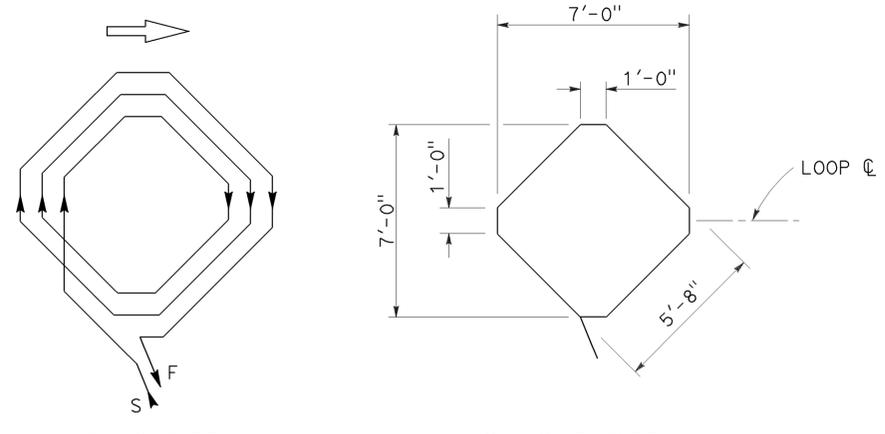
*Theresa Gabriel*  
 REGISTERED ELECTRICAL ENGINEER  
 July 19, 2013  
 PLANS APPROVAL DATE  
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

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

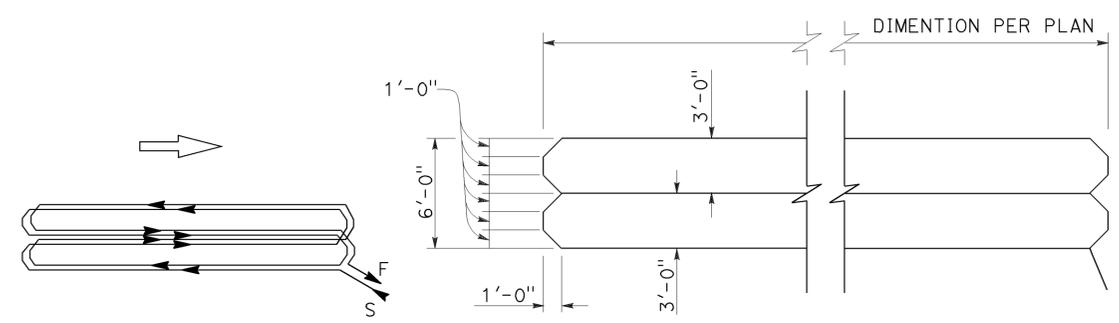
TO ACCOMPANY PLANS DATED 11-10-14



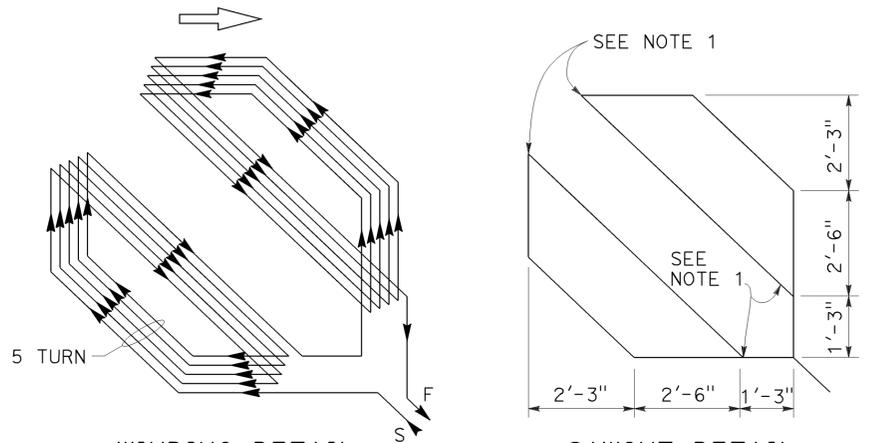
WINDING DETAIL  
SAWCUT DETAIL  
**TYPE A LOOP DETECTOR CONFIGURATION**



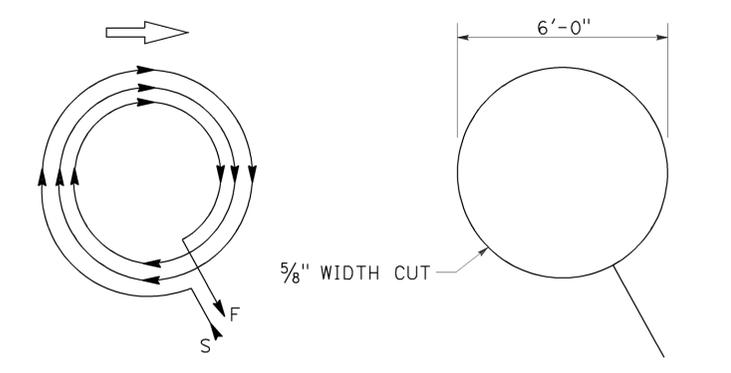
WINDING DETAIL  
SAWCUT DETAIL  
**TYPE B LOOP DETECTOR CONFIGURATION**



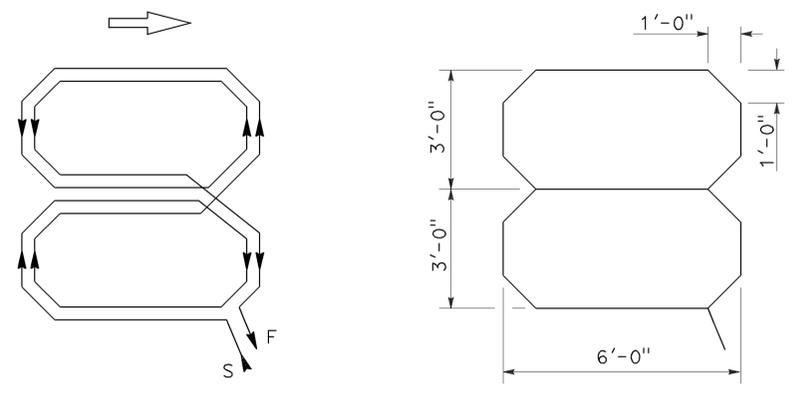
WINDING DETAIL  
SAWCUT DETAIL  
**TYPE C LOOP DETECTOR CONFIGURATION**



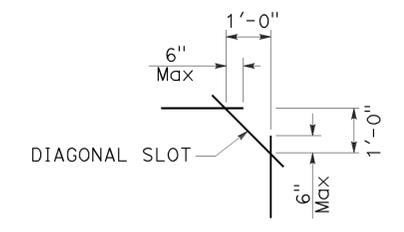
WINDING DETAIL  
SAWCUT DETAIL  
**TYPE D LOOP DETECTOR CONFIGURATION**



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**

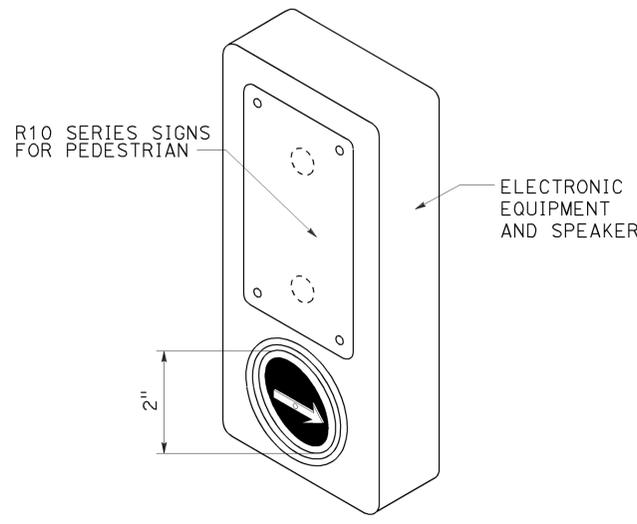
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.1	42	50

*Theresa Gabriel*  
 REGISTERED ELECTRICAL ENGINEER  
 July 19, 2013  
 PLANS APPROVAL DATE  
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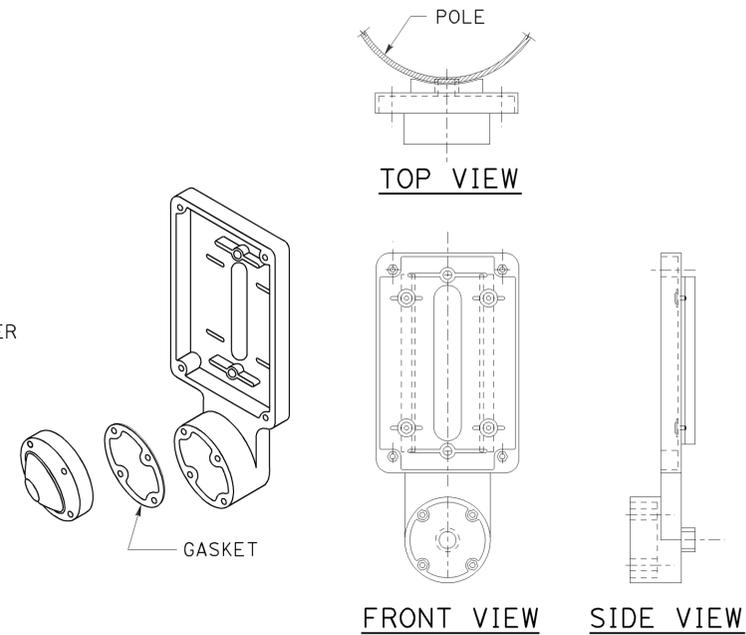
TO ACCOMPANY PLANS DATED 11-10-14

**NOTES:**

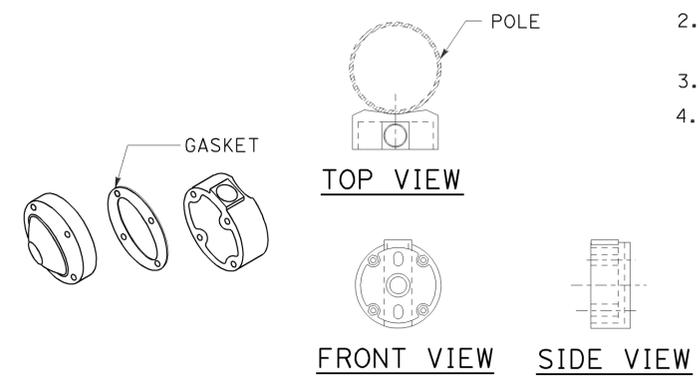
1. Back casting shape to fit curvature of pole.
2. Provide cover fitting for top of post, when PBA is mounted on push button assembly post.
3. Install push button on crosswalk side of standard.
4. Use R10 series regulatory signs and plaques for pedestrian and bicycle facilities.



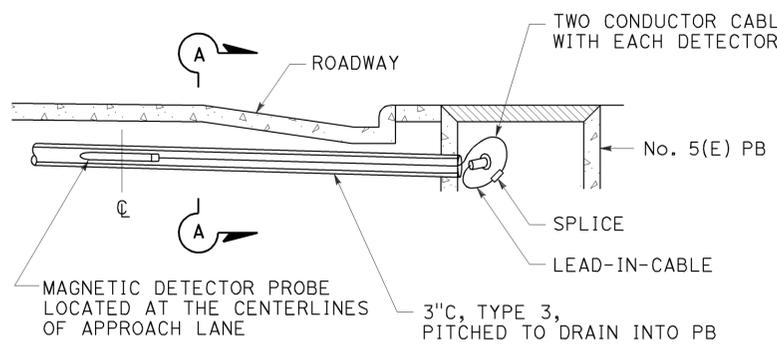
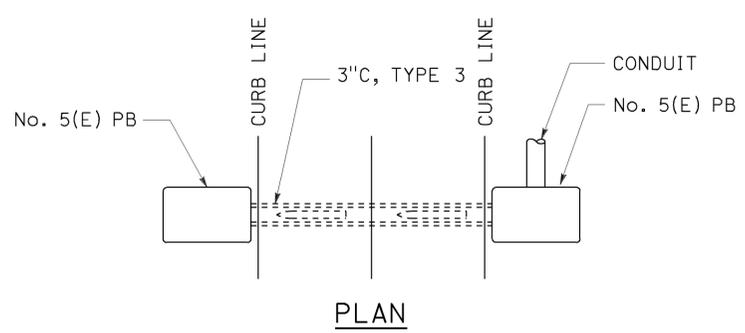
**ACCESSIBLE PEDESTRIAN SIGNAL**  
**DETAIL A**  
 (See note 1 to 4)



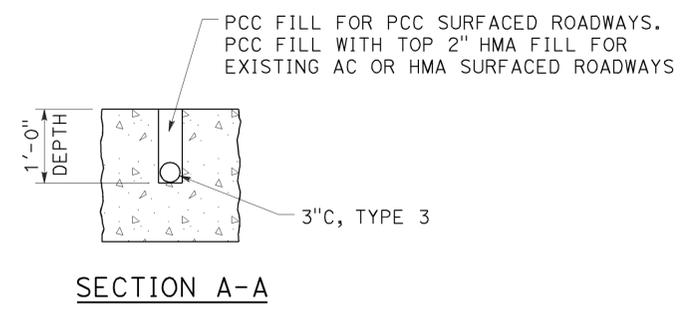
**TYPE B PUSH BUTTON ASSEMBLY**  
**DETAIL B**  
 (See note 1 to 4)



**TYPE C PUSH BUTTON ASSEMBLY**  
**DETAIL C**  
 (See note 1 to 4)



**MAGNETIC VEHICLE DETECTOR**  
**INSTALLATION DETAILS**  
**DETAIL D**



STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS**  
**(ACCESSIBLE PEDESTRIAN SIGNAL,**  
**PUSH BUTTON ASSEMBLIES AND**  
**MAGNETIC VEHICLE DETECTOR)**  
 NO SCALE

RSP ES-5C DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-5C  
 DATED MAY 20, 2011 - PAGE 450 OF THE STANDARD PLANS BOOK DATED 2010.

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

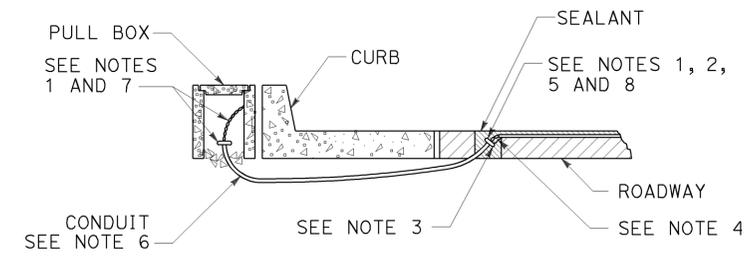
2010 REVISED STANDARD PLAN RSP ES-5C

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.1	43	50

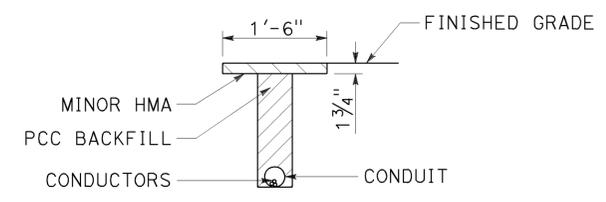
Theresa Gabriel  
 REGISTERED ELECTRICAL ENGINEER  
 July 19, 2013  
 PLANS APPROVAL DATE  
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 11-10-14

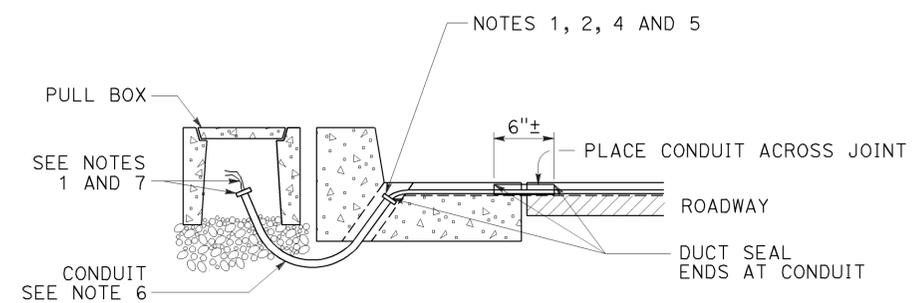
2010 REVISED STANDARD PLAN RSP ES-5D



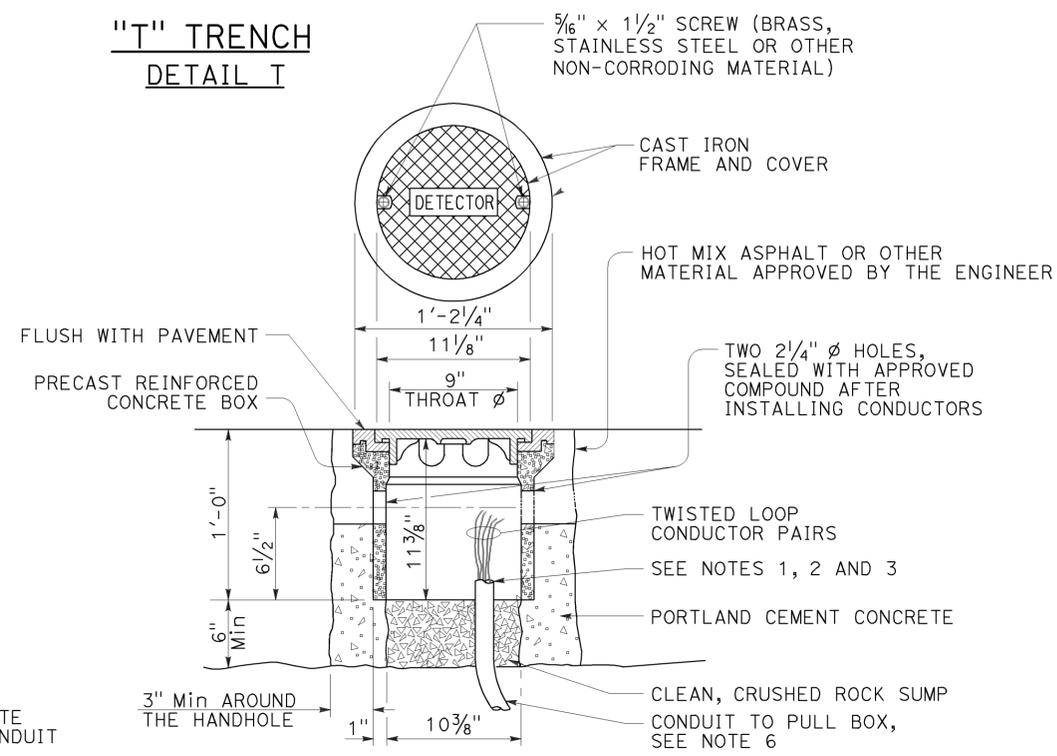
**TYPE A  
CURB TERMINATION DETAIL**



**"T" TRENCH  
DETAIL 1**



**CROSS SECTION**



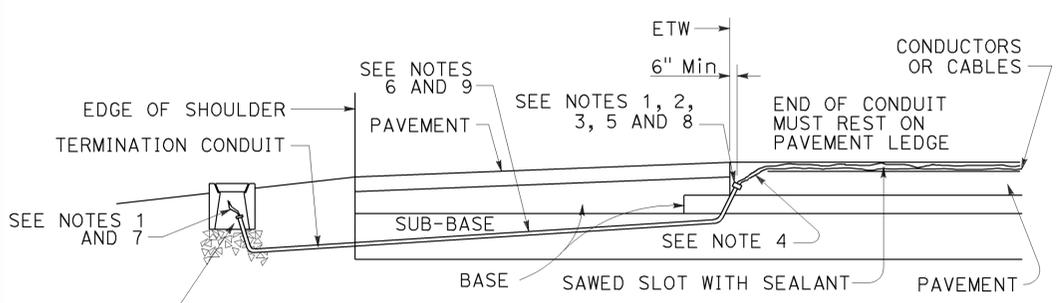
**DETECTOR HANDHOLE DETAIL**



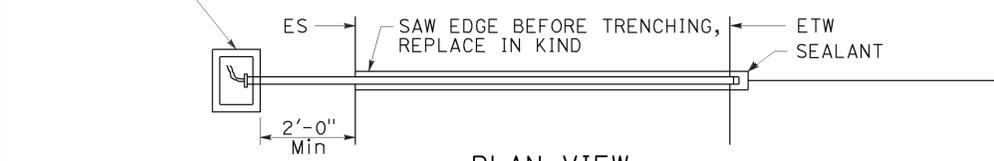
**PLAN VIEW**

**SECTION C-C**

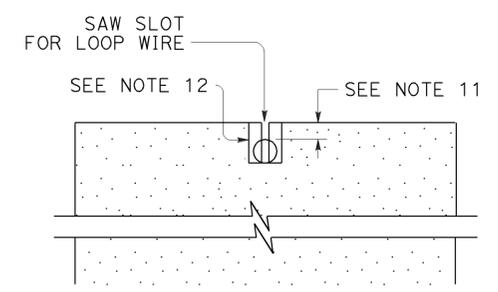
**TYPE B  
CURB TERMINATION DETAIL**



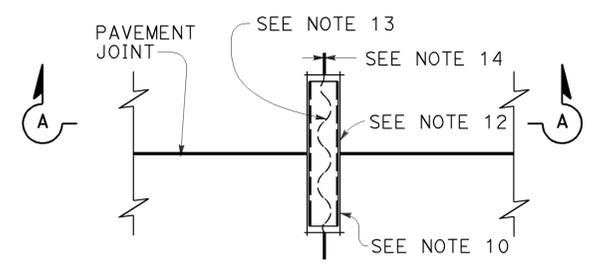
**CROSS SECTION**



**PLAN VIEW  
SHOULDER TERMINATION DETAILS**

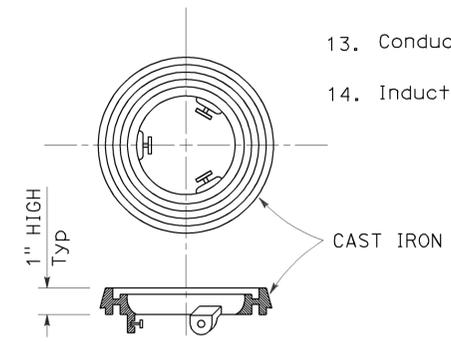


**SECTION A-A**



**PLAN VIEW**

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



**LOCKING GRADE RING**

**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

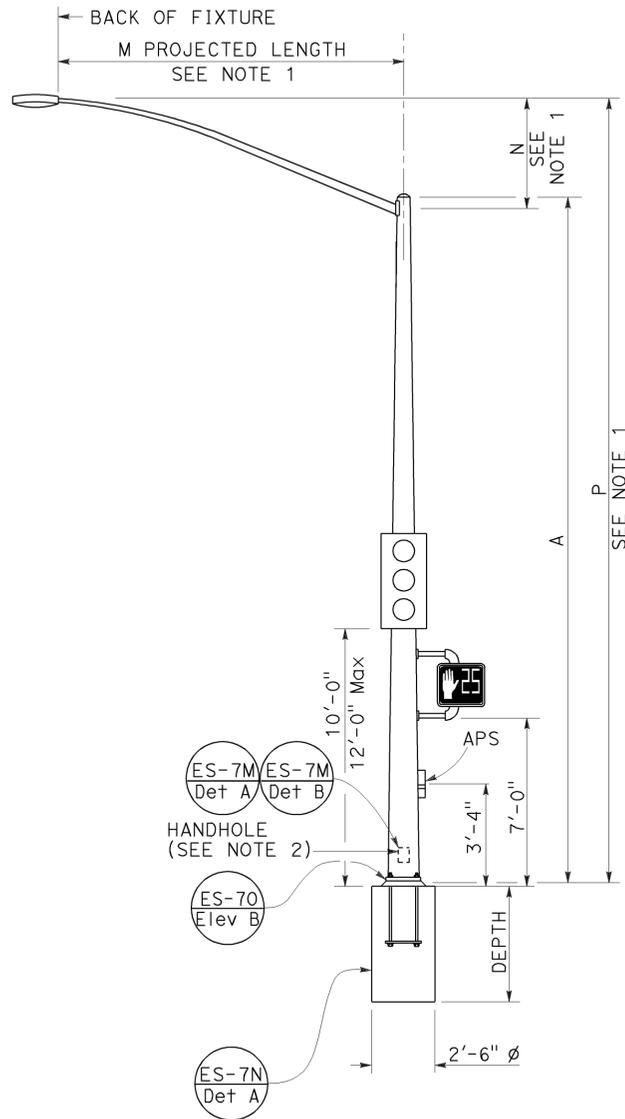
RSP ES-5D DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-5D  
 DATED MAY 20, 2011 - PAGE 451 OF THE STANDARD PLANS BOOK DATED 2010.

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

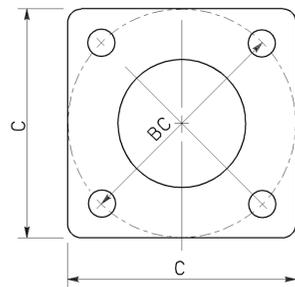
**NOTES:**

- For additional notes, details and data for Type 15TS and Type 21TS Standards, see Standard Plan ES-6A.
- Handhole shall be located on the downstream side of traffic.

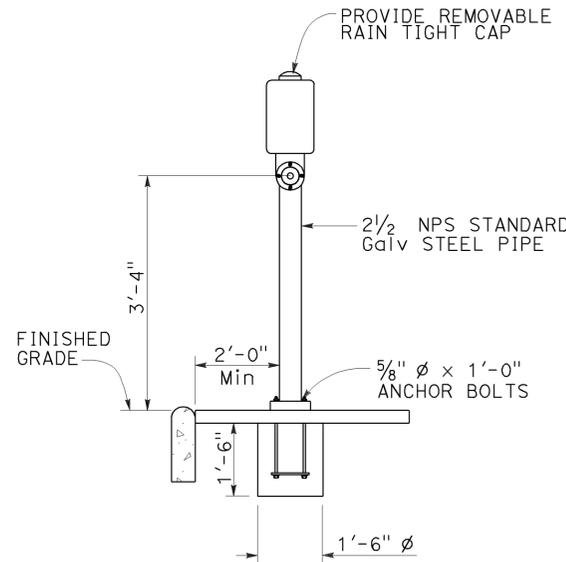
TO ACCOMPANY PLANS DATED 11-10-14



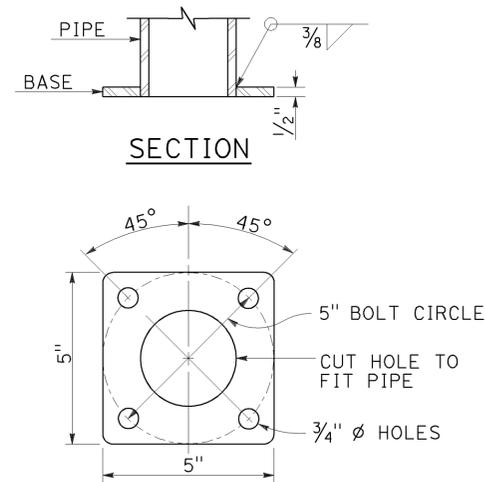
**TYPE 15TS AND 21TS STANDARD**  
**ELEVATION A**  
 (See Note 1)



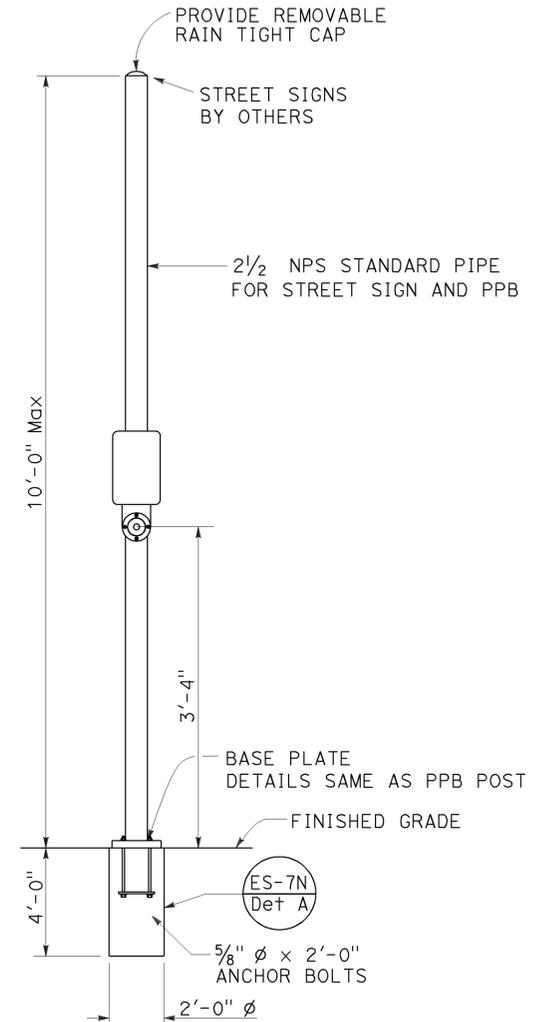
**BASE PLATE**  
**TYPE 15TS AND 21TS**  
**DETAIL A**



**PUSH BUTTON ASSEMBLY POST**  
**DETAIL B**



**BASE PLATE**  
**PBA POST**



**COMBINED STREET SIGN**  
**PUSH BUTTON ASSEMBLY POST**  
**DETAIL C**

POLE TYPE	POLE DATA			WALL THICKNESS	BASE PLATE DATA			CIDH DEPTH
	A HEIGHT	Min OD			C	BC = BOLT CIRCLE	ANCHOR BOLT SIZE	
		BASE	TOP					
15TS	30'-0"	8"	3 1/16"	0.1793"	1'-1 1/2"	1'-0"	1 1/2" diameter x 42"	7'-6"
21TS	35'-0"	9 3/8"	3 3/16"		1'-3"	1'-2"		2"

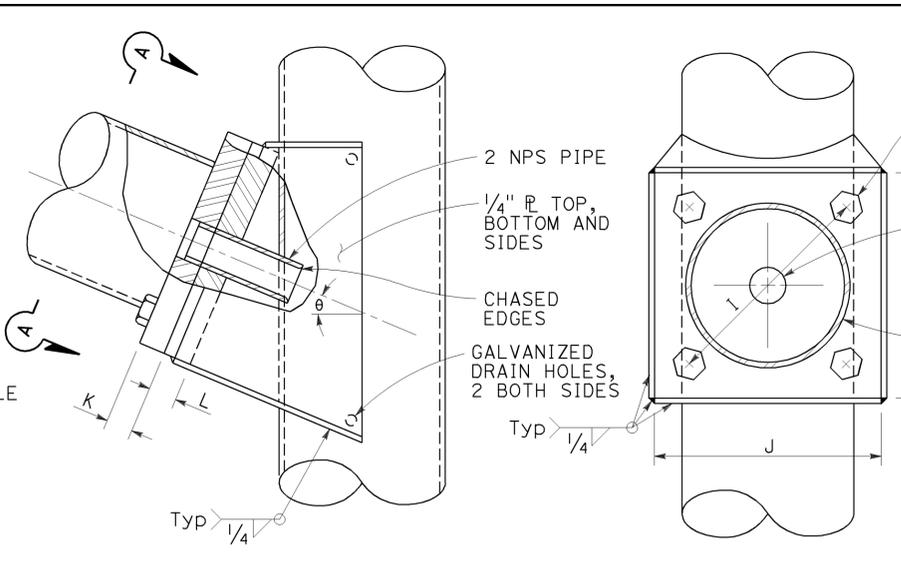
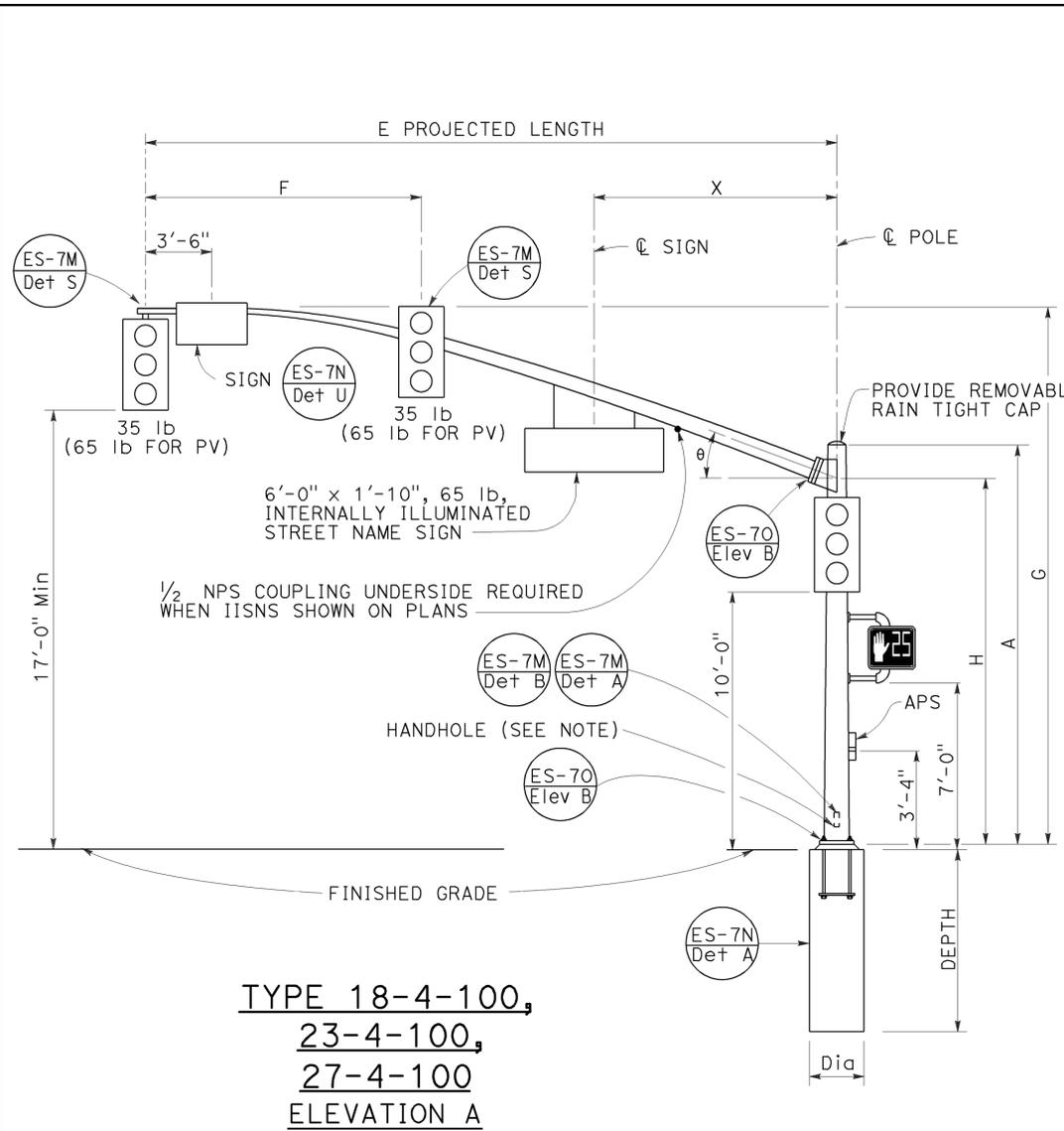
STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS**  
**(SIGNAL AND LIGHTING STANDARD, TYPE TS,**  
**AND PUSH BUTTON ASSEMBLY POST)**

NO SCALE

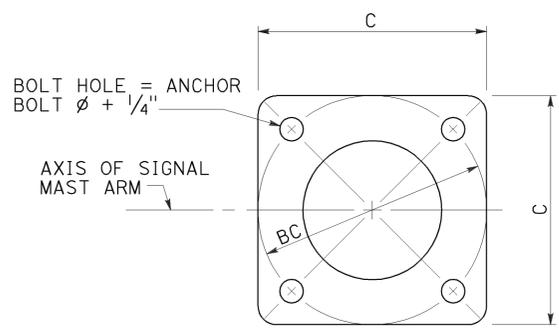
RSP ES-7A DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-7A DATED MAY 20, 2011 - PAGE 462 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP ES-7A**

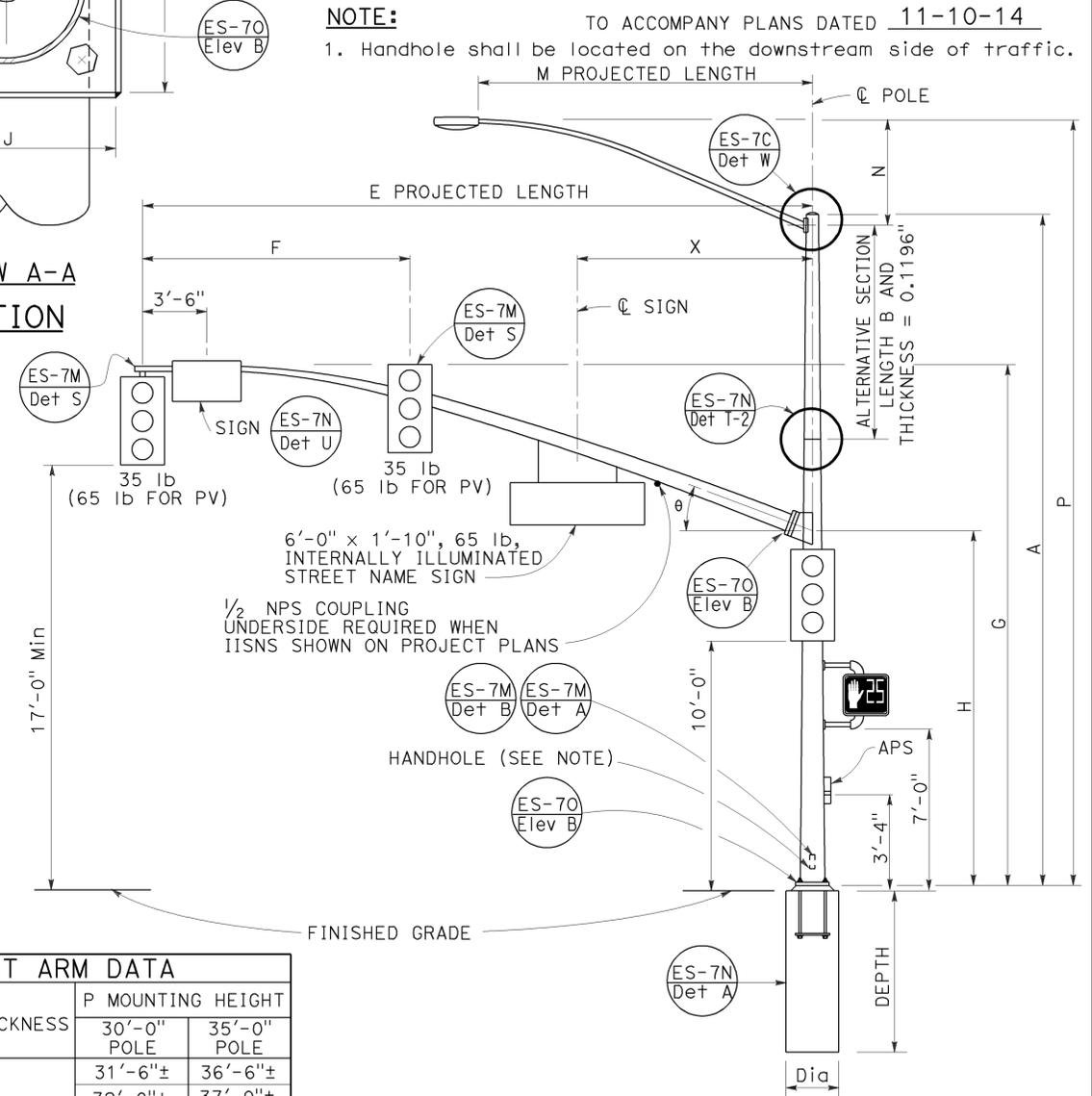
2010 REVISED STANDARD PLAN RSP ES-7A



ELEVATION C  
VIEW A-A  
SIGNAL MAST ARM CONNECTION  
DETAIL A



BASE PLATE  
DETAIL B



TYPE 19-4-100, 19A-4-100,  
24-4-100, 24A-4-100,  
26-4-100, 26A-4-100  
ELEVATION B

E PROJECTED LENGTH	F Min SPACING	G MOUNTING HEIGHT	H	Min OD AT POLE	THICKNESS	I BOLT CIRCLE	HS CAP SCREWS	J PLATE SIZE	K MAST ARM THICKNESS	L POLE R THICKNESS	θ	X Max
25'-0"	10'-0"	22'-8"±	16'-0"	7 3/8"	0.2391"	12"	1 1/4"-7NC-3"	1'-0"	1 1/4"	1 1/2"	23°	10'-6"
30'-0"	12'-0"	8"										
35'-0"	14'-0"	8 1/16"										
40'-0"	15'-0"	9 3/8"										
45'-0"	15'-0"	23'-8"±		10 1/4"		13 1/2"	1'-1 1/2"	1 1/2"	1 3/4"	15°	13'-0"	

M PROJECTED LENGTH	N RISE	Min OD AT POLE	THICKNESS	P MOUNTING HEIGHT	
				30'-0" POLE	35'-0" POLE
6'-0"	2'-0"±	3 1/4"	0.1196"	31'-6"±	36'-6"±
8'-0"	2'-6"±	3 1/2"		32'-0"±	37'-0"±
10'-0"	3'-3"±	3 7/8"		32'-9"±	37'-9"±
12'-0"	4'-3"±			33'-9"±	38'-9"±
15'-0"	4'-9"±	4 1/4"		34'-3"±	39'-3"±

POLE TYPE	LOAD CASE	WIND VELOCITY (mph)	POLE DATA			BASE PLATE DATA				LUMINAIRE MAST ARM	SIGNAL MAST ARM	CIDH PILE FOUNDATION						
			A HEIGHT	Min OD		THICKNESS	ALTERNATIVE SECTION					C	BC = BOLT CIRCLE	THICKNESS	ANCHOR BOLT SIZE	Dia	DEPTH	REINFORCED
				BASE	TOP		B LENGTH	BOTTOM	TOP									
18-4-100	4	100	17'-0"	12 1/8"	9 1/16"	NONE	1'-7"	1'-5 1/2"	3"	2" ø x 42"	NONE	25'-0", 30'-0"	3'-0"	11'-0"	YES			
19-4-100			30'-0"		7 1/16"	10'-0"										9 1/8"	7 1/16"	
19A-4-100			35'-0"		6 15/16"	15'-0"										6 5/16"		
23-4-100			17'-0"		9 9/16"	NONE												
24-4-100			30'-0"	7 1/16"	10'-0"	9 1/8"	7 1/16"											
24A-4-100			35'-0"	6 15/16"	15'-0"	6 5/16"												
26-4-100			30'-0"	8 3/16"	10'-0"	9 5/8"	8 3/16"											
26A-4-100			35'-0"	7 7/16"	15'-0"	7 7/16"												
27-4-100			17'-0"	10 1/16"	NONE													

INDICATES MAST ARM LENGTH TO BE USED UNLESS OTHERWISE NOTED ON PLANS.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS  
(SIGNAL AND LIGHTING STANDARD,  
CASE 4 SIGNAL MAST ARM LOADING,  
WIND VELOCITY=100 MPH AND SIGNAL  
MAST ARM LENGTHS 25' TO 45')**

NO SCALE

RSP ES-7F DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-7F  
DATED MAY 20, 2011 - PAGE 467 OF THE STANDARD PLANS BOOK DATED 2010.

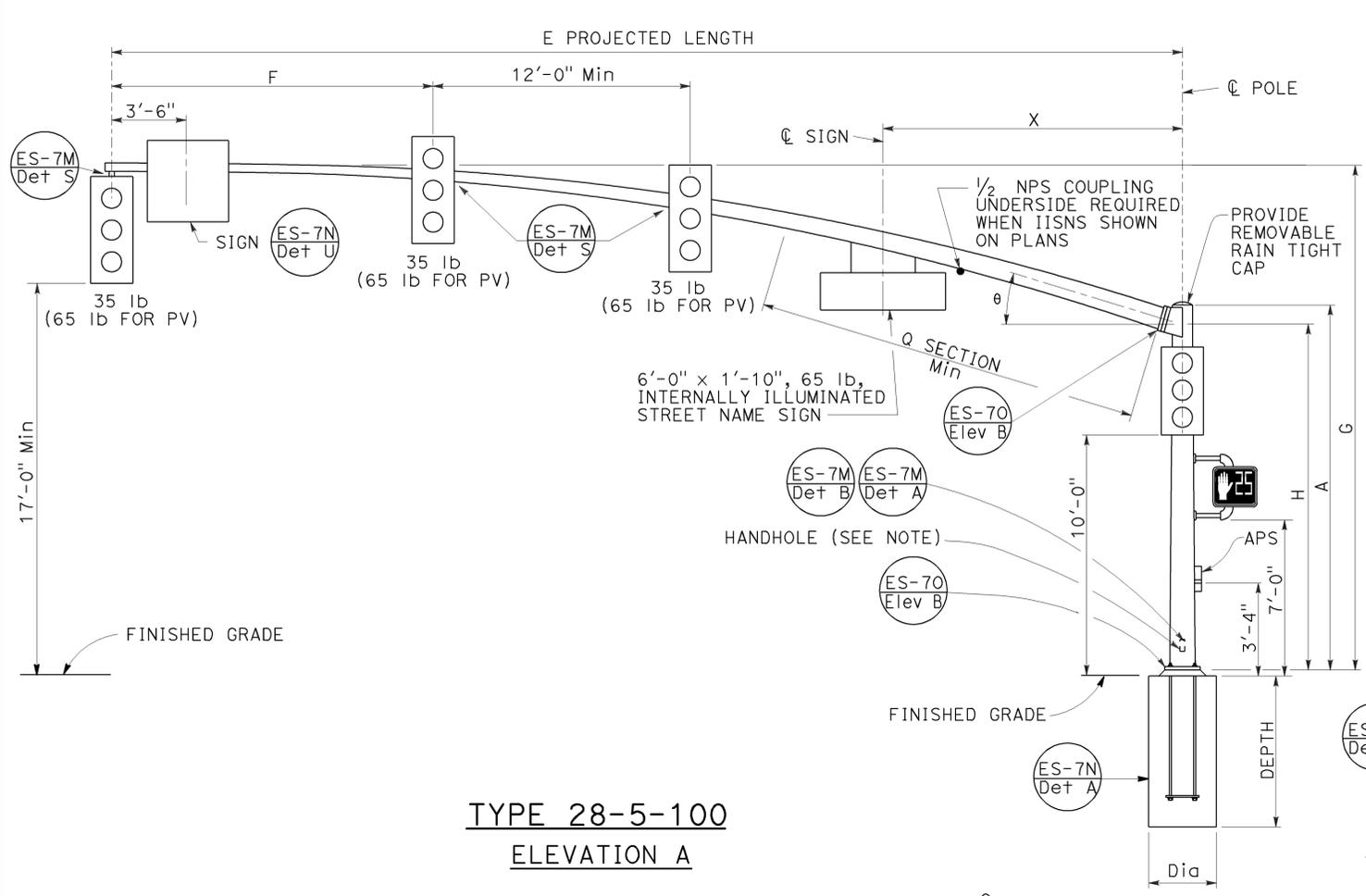
**REVISED STANDARD PLAN RSP ES-7F**

2010 REVISED STANDARD PLAN RSP ES-7F

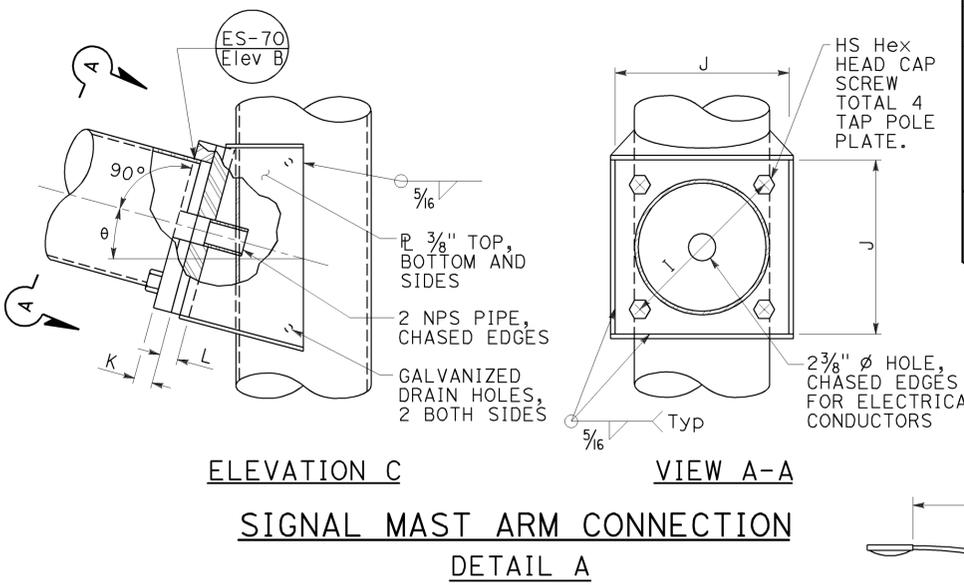
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.1	46	50

Stanley P. Johnson  
 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.

REGISTERED PROFESSIONAL ENGINEER  
 Stanley P. Johnson  
 No. C57793  
 Exp. 3-31-14  
 CIVIL  
 STATE OF CALIFORNIA



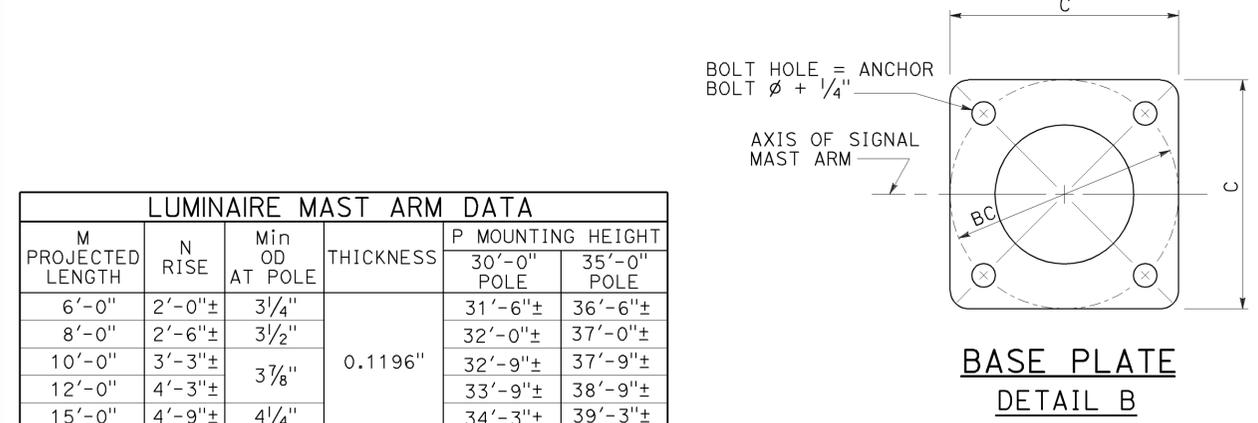
**TYPE 28-5-100**  
ELEVATION A



**ELEVATION C**  
**VIEW A-A**  
SIGNAL MAST ARM CONNECTION  
DETAIL A

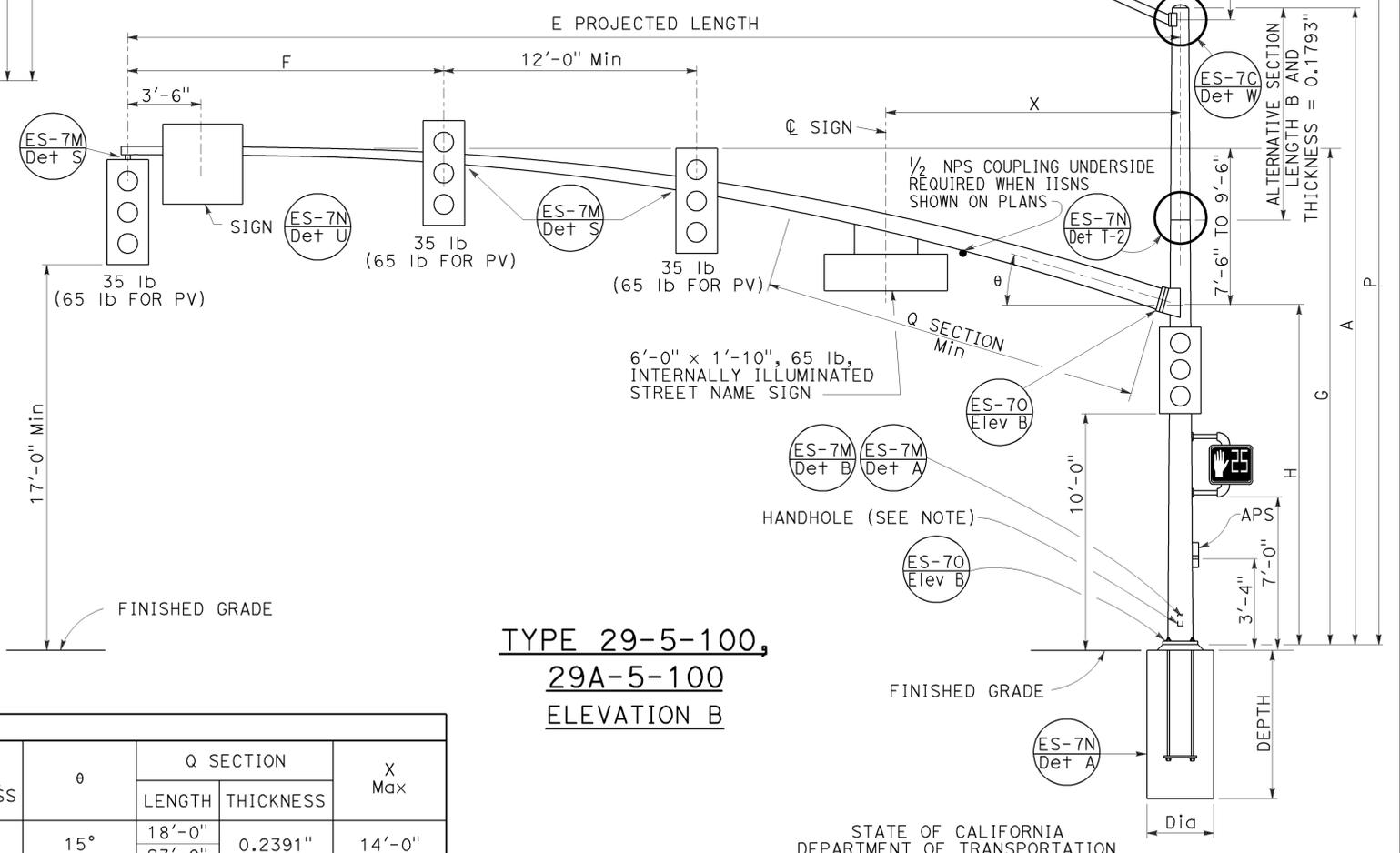
TO ACCOMPANY PLANS DATED 11-10-14

**NOTE:**  
Handhole shall be located on the downstream side of traffic.



**BASE PLATE**  
DETAIL B

M PROJECTED LENGTH	N RISE	Min OD AT POLE	THICKNESS	P MOUNTING HEIGHT	
				30'-0" POLE	35'-0" POLE
6'-0"	2'-0"±	3 3/4"	0.1196"	31'-6"±	36'-6"±
8'-0"	2'-6"±	3 1/2"		32'-0"±	37'-0"±
10'-0"	3'-3"±	3 7/8"		32'-9"±	37'-9"±
12'-0"	4'-3"±	3 7/8"		33'-9"±	38'-9"±
15'-0"	4'-9"±	4 1/4"		34'-3"±	39'-3"±



**TYPE 29-5-100,**  
**29A-5-100**  
ELEVATION B

E PROJECTED LENGTH	F Min SPACING	G MOUNTING HEIGHT	H	Min OD AT POLE	THICKNESS	I BOLT CIRCLE	HS CAP SCREWS	J PLATE SIZE	K MAST ARM P THICKNESS	L POLE P THICKNESS	θ	Q SECTION		X Max
												LENGTH	THICKNESS	
50'-0" 55'-0"	15'-0"	23'-7"± TO 25'-7"±	16'-0"	11 1/16" 1'-1/4"	0.1793"	16"	1 1/2"-6NC-3 1/4"	1'-4"	1 3/4"	1 3/4"	15°	18'-0" 23'-0"	0.2391"	14'-0"

POLE TYPE	LOAD CASE	WIND VELOCITY (mph)	POLE DATA				BASE PLATE DATA				LUMINAIRE MAST ARM	SIGNAL MAST ARM	CIDH PILE FOUNDATION				
			A HEIGHT	Min OD BASE	Min OD TOP	THICKNESS	B LENGTH	ALTERNATIVE SECTION BOTTOM	ALTERNATIVE SECTION TOP	C			BC = BOLT CIRCLE	THICKNESS	ANCHOR BOLT SIZE	Dia	DEPTH
28-5-100	5	100	17'-0"	11 1/16"	0.3125"	NONE	23"	21"	3"	2 1/2" ø x 42"	NONE	50'-0", 55'-0"	3'-6"	12'-0"	YES		
29-5-100			30'-0"	14"		9 1/16"					10'-0"					11 1/8"	9 1/16"
29A-5-100			35'-0"	14"		8 5/16"					15'-0"					11 1/8"	8 5/16"

INDICATES MAST ARM LENGTH TO BE USED UNLESS OTHERWISE NOTED ON PLANS.

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS**  
**(SIGNAL AND LIGHTING STANDARD,**  
**CASE 5 SIGNAL MAST ARM LOADING,**  
**WIND VELOCITY=100 MPH AND SIGNAL**  
**MAST ARM LENGTHS 50' TO 55')**  
 NO SCALE

RSP ES-7G DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-7G DATED MAY 20, 2011 - PAGE 468 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP ES-7G**

2010 REVISED STANDARD PLAN RSP ES-7G

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SM	82	17.1	47	50

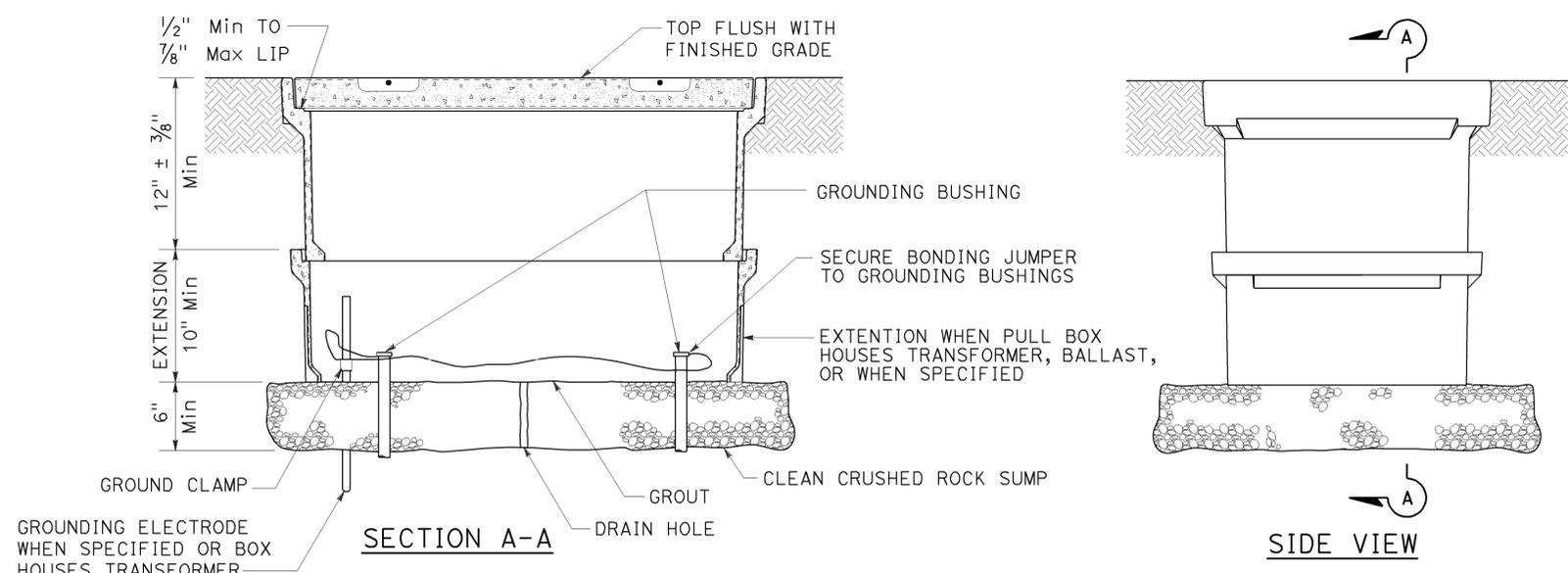
Theresa Gabriel  
REGISTERED ELECTRICAL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

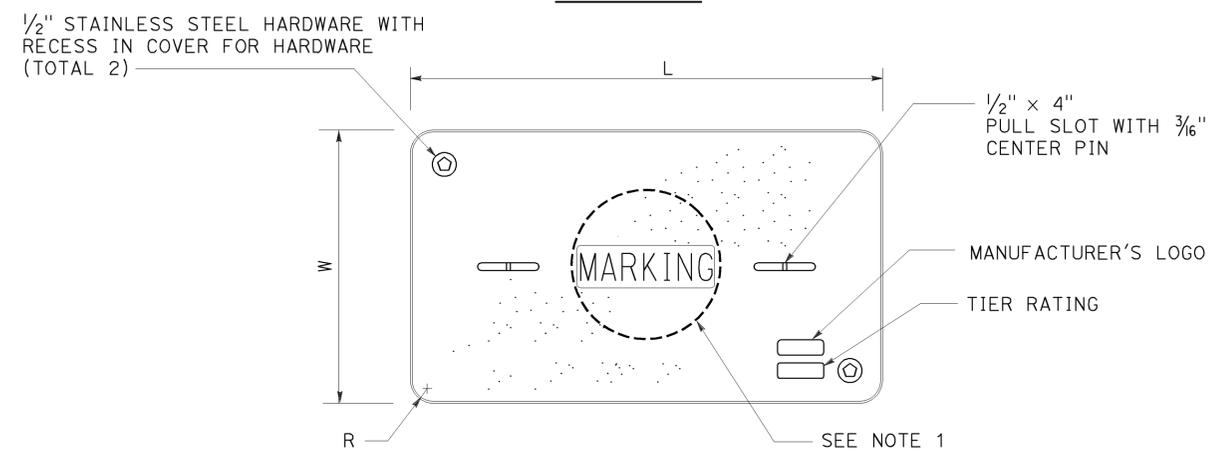
Theresa Aziz Gabriel  
No. E15129  
Exp. 6-30-14  
ELECTRICAL  
STATE OF CALIFORNIA

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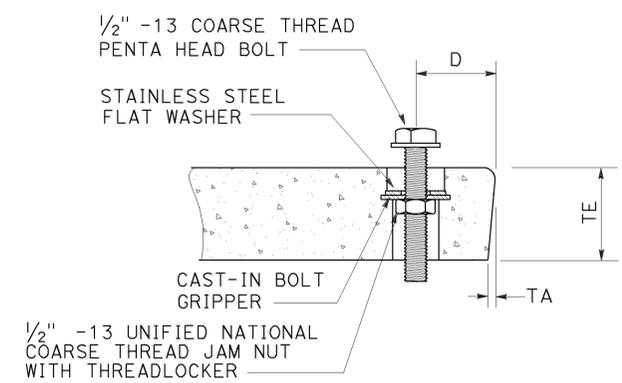
TO ACCOMPANY PLANS DATED 11-10-14



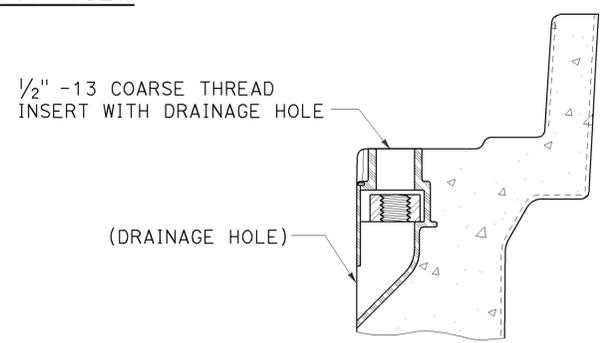
**INSTALLATION DETAILS**  
**DETAIL A**



**COVER TOP VIEW**



**TYPICAL COVER CAPTIVE BOLT**  
**OR SIMILAR**



**TYPICAL THREADED INSERT**  
**OR SIMILAR**

**NOTES:**

- Pull box covers shall be marked as follows: "SERVICE" Service circuits between service point and service disconnect; "SPRINKLER-CONTROL" sprinkler control circuits, 50 V or less; "CALTRANS" on all pull boxes, except pull boxes marked "SPRINKLER-CONTROL"; and "TELEPHONE" Telephone service;
  - No. 3½ pull box.
    - "SIGNAL" - Traffic signal circuits with or without lighting or sign lighting circuits.
    - "LIGHTING" - Lighting or sign lighting circuits where voltage is under 600 V.
  - No. 5, 6, 9 or 9A pull box.
    - "TRAFFIC SIGNAL" - Traffic signal circuits with or without lighting or sign lighting circuits.
    - "LIGHTING" - Lighting or sign lighting circuits where voltage is under 600 V.
    - "LIGHTING-HIGH VOLTAGE" - Lighting or sign lighting circuits where voltage is above 600 V.
    - "IRRIGATION" - Circuits to irrigation controller 120 V or more.
    - "RAMP METER" - Ramp meter circuits.
    - "COUNT STATION" - Count or speed monitor circuits.
    - "COMMUNICATIONS" - Communication circuits.
    - "TOS COMMUNICATIONS" - TOS communication line.
    - "TOS POWER" - TOS power.
    - "TDC POWER" - Telephone demarcation cabinet power.
    - "CCTV" - Closed circuit television circuits.
    - "TMS" - Traffic monitoring station circuits.
    - "CMS" - Changeable message sign circuits.
    - "HAR" - Highway advisory radio circuits.
    - "BOOSTER PUMP" - Booster pump circuit.
- The nominal dimensions of the opening in which the cover sets shall be the same as the cover dimensions except the length and width dimensions shall be 1/8" greater.
- Covers and boxes shall be interchangeable with California standard male and female gages. When interchanged with a standard male or female gage, the top surfaces shall be flush within 1/8". Top outside radius of covers and pull boxes shall have a 1/8" radius.
- Pull box extension may be another pull box as long as the bottom edge of the pull box can fit into the cover opening.
- All dimensions for the cover for non-traffic pull box are nominal values.

DIMENSION TABLE										
PULL BOX	PULL BOX			COVER						
	MINIMUM DEPTH BOX	MINIMUM DEPTH EXTENSION	MAXIMUM WEIGHT	L	W	R	TE	TA	D	MAXIMUM WEIGHT
No. 3½	12"	N/A	40 lb	1' - 3¾"	10 1/8"	1 3/8"	2"	1/8"	1 3/4"	30 lb
No. 5	12"	10"	55 lb	1' - 11¼"	1' - 1¾"	1 3/8"	2"	1/8"	1 3/4"	60 lb
No. 6	12"	10"	70 lb	2' - 6½"	1' - 5½"	1 3/8"	2"	1/8"	2"	85 lb

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS**  
**(NON-TRAFFIC PULL BOX)**  
NO SCALE

RSP ES-8A DATED JULY 19, 2013 SUPERSEDES RSP ES-8A DATED JANUARY 20, 2012 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP ES-8A**

2010 REVISED STANDARD PLAN RSP ES-8A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.1	48	50

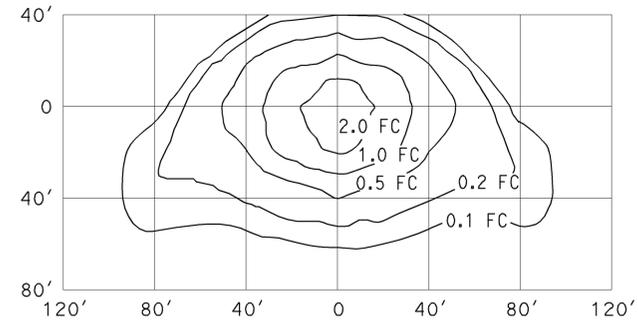
*Theresa Gabriel*  
 REGISTERED ELECTRICAL ENGINEER  
 Theresa Aziz Gabriel  
 No. E15129  
 Exp. 6-30-14  
 ELECTRICAL  
 STATE OF CALIFORNIA

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.

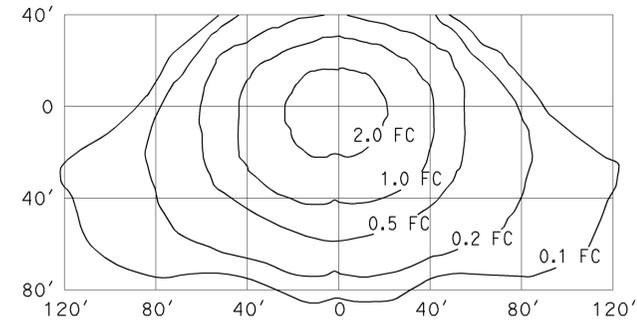
TO ACCOMPANY PLANS DATED 11-10-14

**ISOFOOTCANDLE CURVE - MINIMUM**



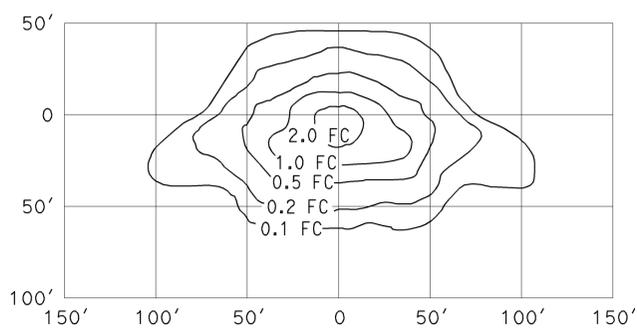
**TYPE III MEDIUM CUTOFF**  
 Cutoff Luminaire  
 34' Mounting Height  
 Lamp operated at 22,000 lm  
 200-W high pressure sodium lamp  
 ANSI Designation S66

**ISOFOOTCANDLE CURVE - MINIMUM**



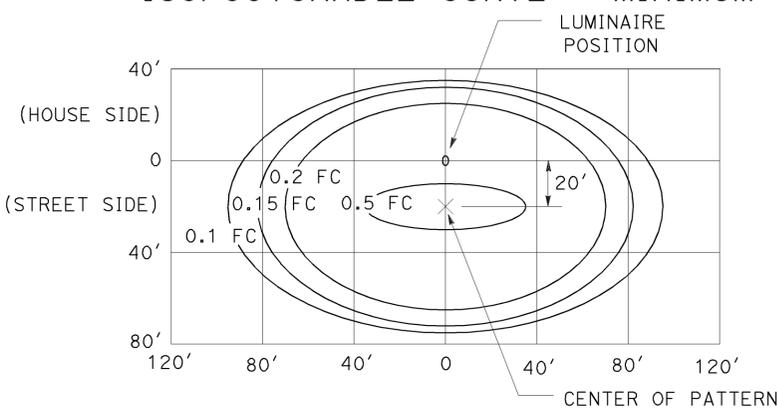
**TYPE III MEDIUM CUTOFF**  
 Cutoff Luminaire  
 40' Mounting Height  
 Lamp operated at 37,000 lm  
 310-W high pressure sodium lamp  
 ANSI Designation S67

**ISOFOOTCANDLE CURVE - MINIMUM**



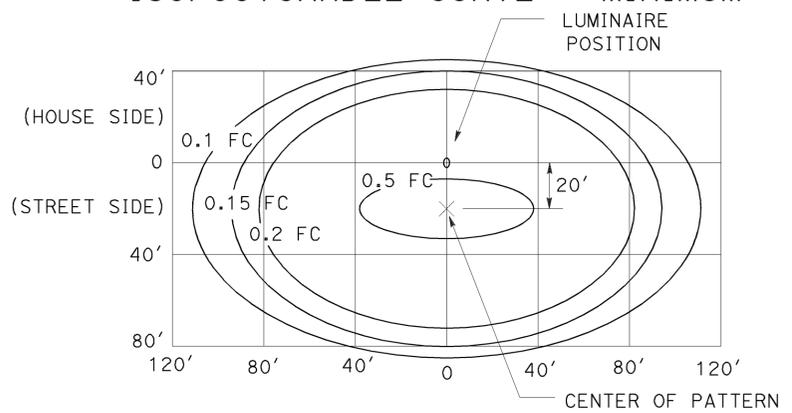
**TYPE III MEDIUM CUTOFF**  
 Cutoff Luminaire  
 30' Mounting Height  
 Lamp operated at 16,000 lm  
 150-W high pressure sodium lamp  
 ANSI Designation S55

**ISOFOOTCANDLE CURVE - MINIMUM**



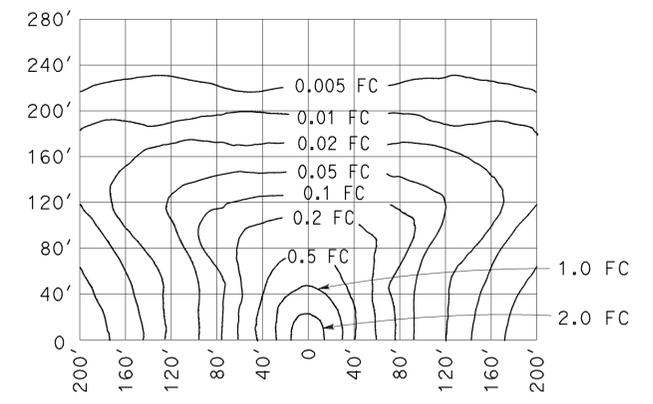
**LED LUMINAIRE ROADWAY 1**  
 165-W at 34' Mounting Height

**ISOFOOTCANDLE CURVE - MINIMUM**



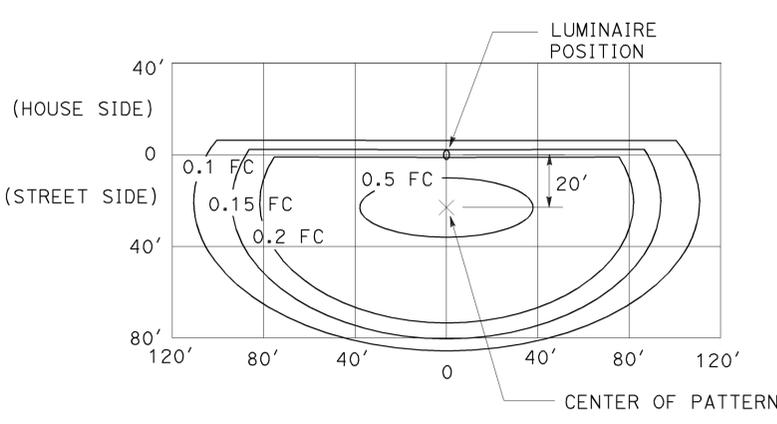
**LED LUMINAIRE ROADWAY 2**  
 235-W at 40' Mounting Height

**ISOFOOTCANDLE CURVE - MINIMUM**



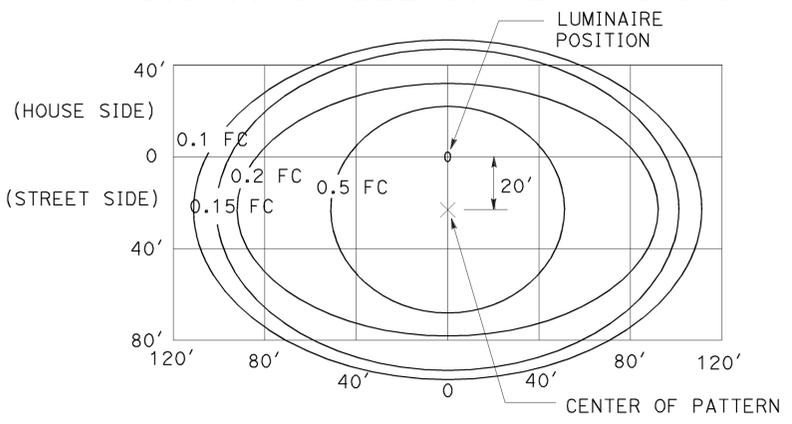
**LOW PRESSURE SODIUM LUMINAIRE**  
 40' Mounting Height  
 Lamp operated at 33,000 lm  
 180-W low pressure sodium lamp

**ISOFOOTCANDLE CURVE - MINIMUM**



**LED LUMINAIRE ROADWAY 3**  
 235-W at 40' Mounting Height  
 with back side control

**ISOFOOTCANDLE CURVE - MINIMUM**



**LED LUMINAIRE ROADWAY 4**  
 300-W at 40' Mounting Height

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
 (ISOFOOTCANDLE DIAGRAMS)**

NO SCALE  
 RSP ES-10A DATED JULY 19, 2013 SUPERSEDES RSP ES-10A DATED JULY 20, 2012  
 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-10A

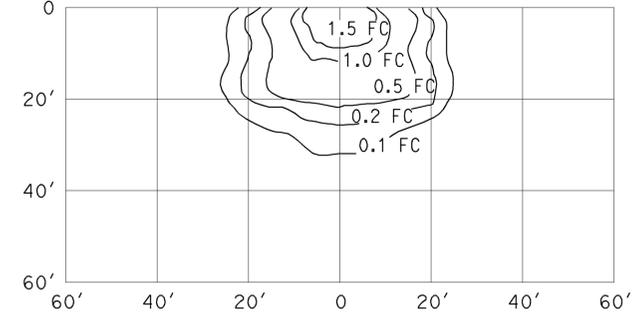
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	82	17.1	49	50

*Jeffery G. McRae*  
 REGISTERED ELECTRICAL ENGINEER  
 July 20, 2012  
 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  
 Jeffery G. McRae  
 No. E14512  
 Exp. 6-30-14  
 ELECTRICAL  
 STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 11-10-14

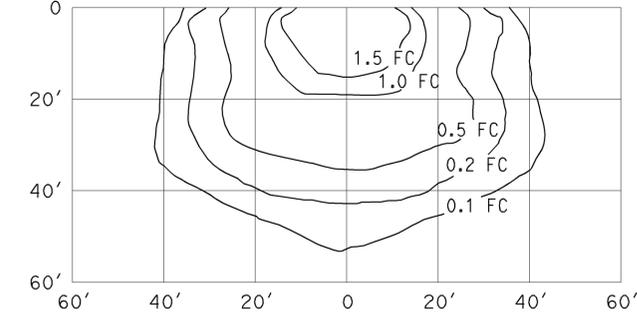
**ISOFOOTCANDLE CURVE - MINIMUM**



**WALL LUMINAIRE**

15' Mounting Height  
 Lamp operated at 5,800 lm  
 70-W high pressure sodium lamp  
 ANSI Designation S62

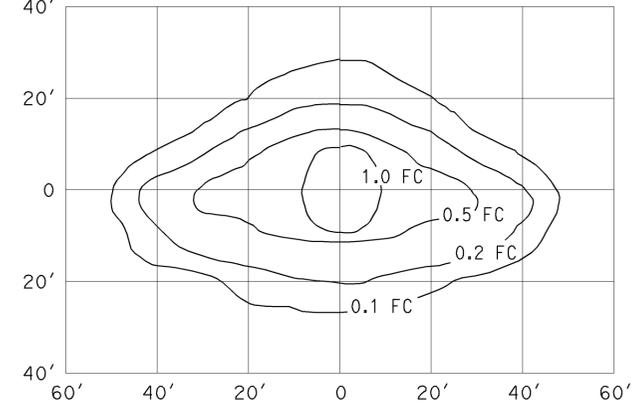
**ISOFOOTCANDLE CURVE - MINIMUM**



**WALL LUMINAIRE**

15' Mounting Height  
 Lamp operated at 9,500 lm  
 100-W high pressure sodium lamp  
 ANSI Designation S54

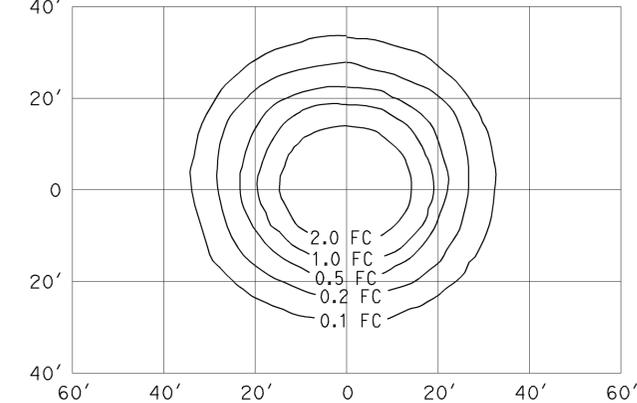
**ISOFOOTCANDLE CURVE - MINIMUM**



**PENDANT SOFFIT LUMINAIRE  
 TYPE III SHORT**

17' Mounting Height  
 Lamp operated at 5,800 lm  
 70-W high pressure sodium lamp  
 ANSI Designation S62

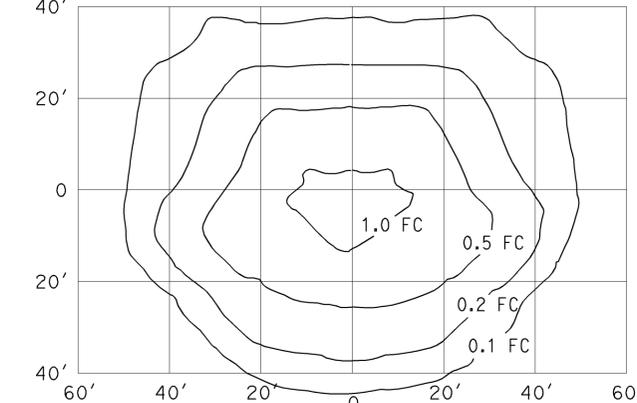
**ISOFOOTCANDLE CURVE - MINIMUM**



**PENDANT SOFFIT LUMINAIRE**

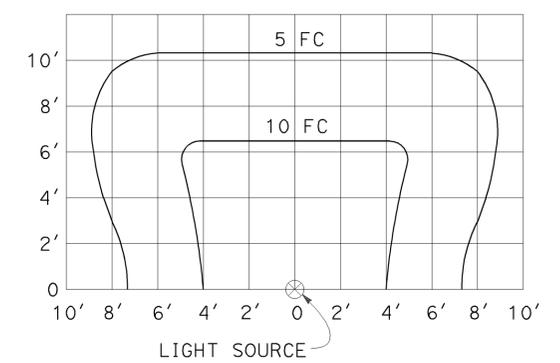
17' Mounting Height  
 Lamp operated at 5,800 lm  
 70-W high pressure sodium lamp  
 ANSI Designation S62

**ISOFOOTCANDLE CURVE - MINIMUM**



**FLUSH SOFFIT LUMINAIRE**

17' Mounting Height  
 Lamp operated at 5,800 lm  
 70-W high pressure sodium lamp  
 ANSI Designation S62



**SIGN LIGHTING FIXTURE  
 ISOFOOTCANDLE DIAGRAM**

**NOTES:**

- Curves represent the minimum footcandle (FC) of initial illumination on a 10'-0" x 20'-0" panel.
- The FC shown are with the fixture attached to the light fixture mounting channel which places the center of the source 4'-8" in front of panel and 1'-0" below the bottom edge.
- Applicable lamp: 85-W fluorescent phosphor coated induction lamp.

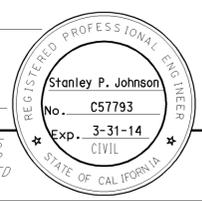
STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS  
 (ISOFOOTCANDLE DIAGRAMS)**

NO SCALE

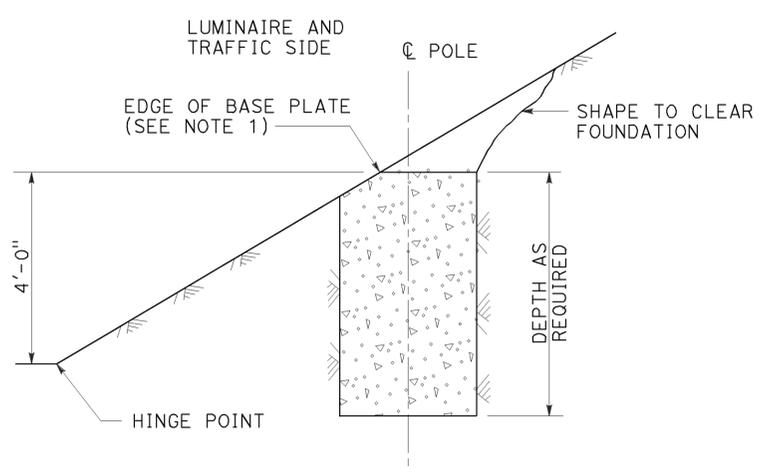
RSP ES-10B DATED JULY 20, 2012 SUPPLEMENTS THE  
 STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-10B

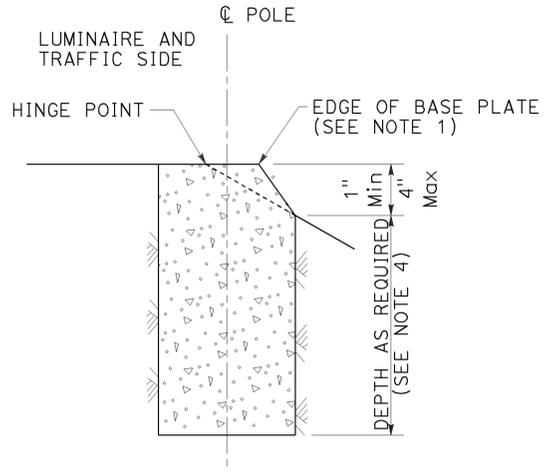


TO ACCOMPANY PLANS DATED 11-10-14

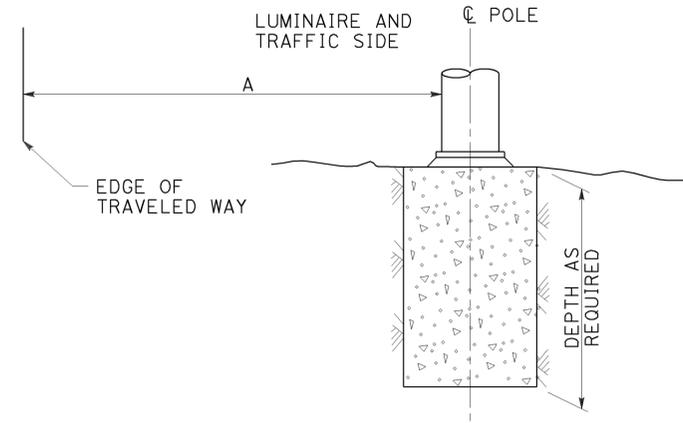
STANDARD TYPE	SETBACK (DIMENSION A)
32	30'-0" (Min)
31	20'-0" (Min)
15, 15D, 15-SB, 21, 21D, 30	ARM LENGTH (Min)



**CUT SLOPES  
STEEPER THAN 4:1,  
LESS THAN 2:1  
DETAIL A-1**  
See Note 2 and 3



**FILL SLOPES  
STEEPER THAN 4:1,  
LESS THAN 2:1  
DETAIL A-2**  
See Note 2 and 3

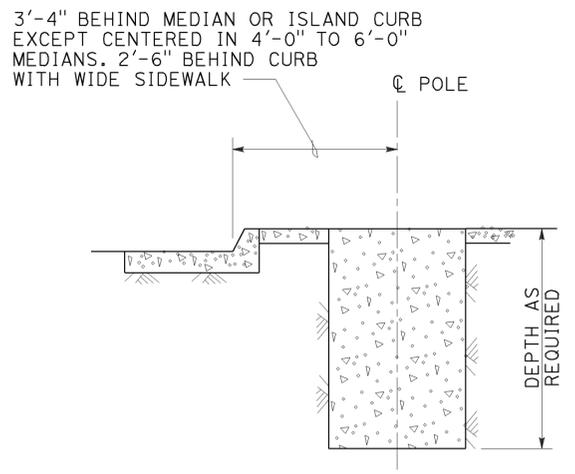


**FLAT SECTIONS, CUT OR FILL SLOPES  
4:1 OR FLATTER  
DETAIL A-3**  
See Note 2

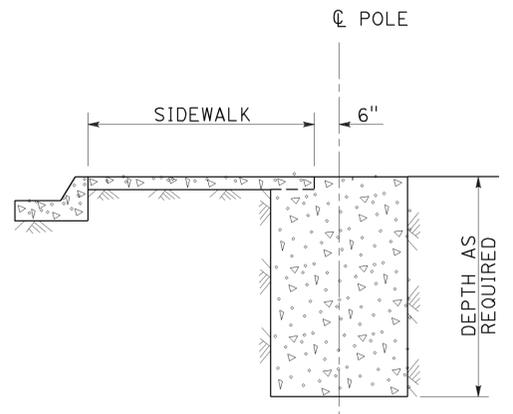
**FOUNDATIONS ADJACENT TO ALL ROADWAYS EXCEPT  
IN SIDEWALK, MEDIAN AND ISLAND AREAS  
DETAIL A**

**NOTES:**

1. Where a portion of the foundation is above grade, the top edges shall have a 1" chamfer.
2. Slopes shall be horizontal to vertical ratio (Horizontal : Vertical).
3. Horizontal setbacks on cut and fill slopes steeper than 4:1 shall not exceed the distance shown for flat sections.
4. CIDH embedment depth shall be increased beyond standard depths by the diameter of the CIDH.



**MEDIAN, ISLAND  
OR WIDE SIDEWALK  
DETAIL B-1**  
7' Wide and wider



**NARROW SIDEWALK  
DETAIL B-2**  
Less than 7' wide

**FOUNDATIONS IN SIDEWALK, MEDIAN AND ISLAND AREAS  
DETAIL B**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
(FOUNDATION INSTALLATIONS)**  
NO SCALE

RSP ES-11 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-11 DATED MAY 20, 2011 - PAGE 488 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-11