

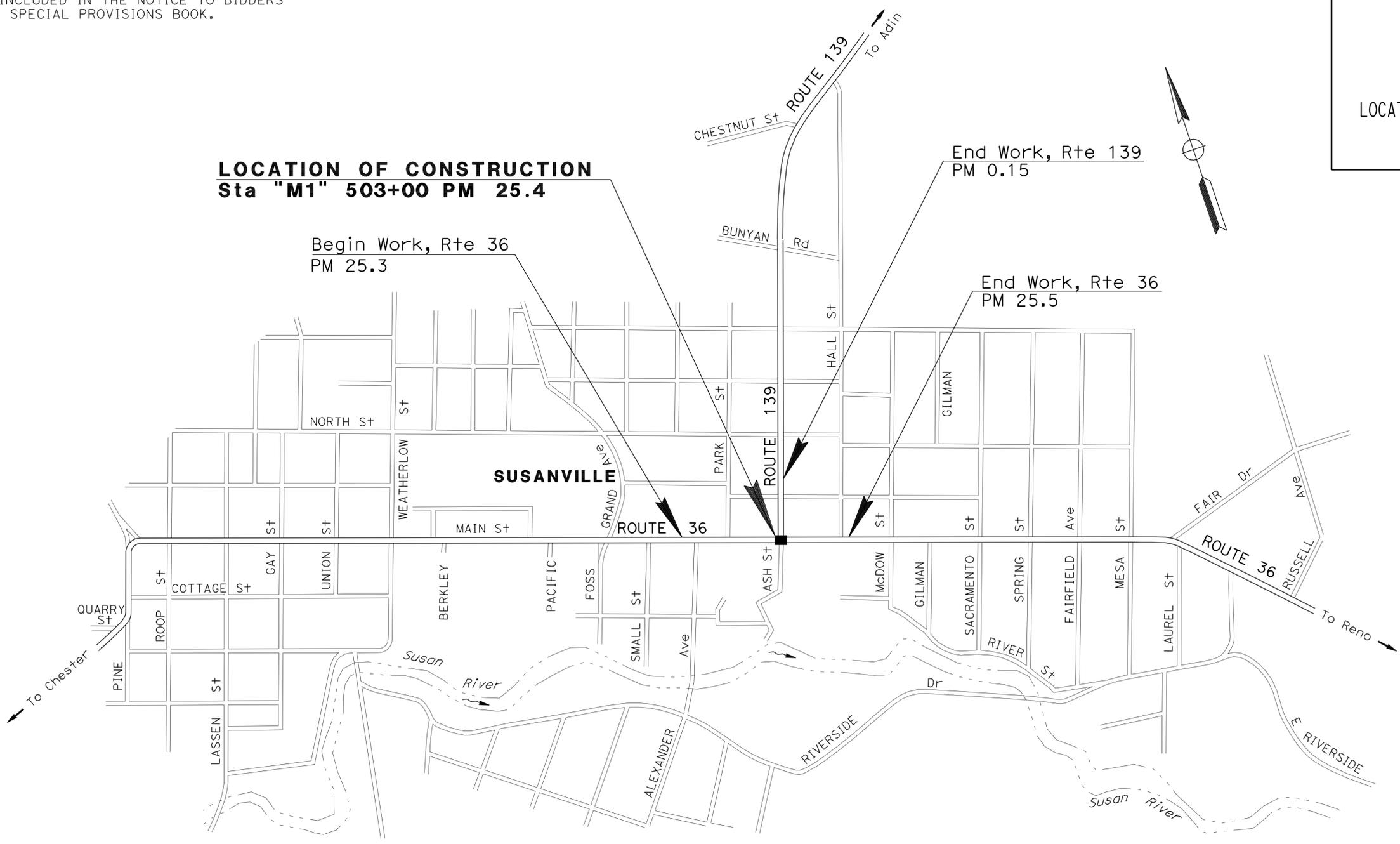
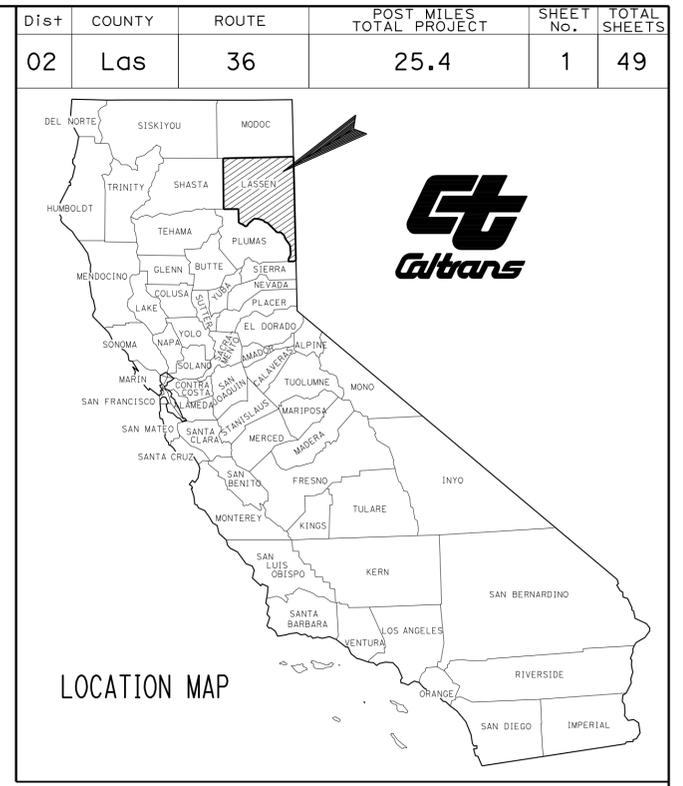
STATE OF CALIFORNIA  
**DEPARTMENT OF TRANSPORTATION**  
**PROJECT PLANS FOR CONSTRUCTION ON**  
**STATE HIGHWAY**  
**IN LASSEN COUNTY**  
**AT ROUTE 139**

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006

INDEX OF PLANS

SHEET No.	DESCRIPTION
1	TITLE AND LOCATION MAP
2-3	TYPICAL CROSS SECTIONS
4	LAYOUTS
5-11	CONSTRUCTION DETAILS
12	UTILITY PLANS
13-14	CONSTRUCTION AREA SIGNS
15	PAVEMENT DELINEATION AND SIGN PLANS
16-17	PAVEMENT DELINEATION AND SIGN QUANTITIES
18-19	SIGN DETAILS
20	SUMMARY OF QUANTITIES
21-27	ELECTRICAL PLANS
28-49	REVISED AND NEW STANDARD PLANS

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



*Michael R. Webb* 03-30-10  
 PROJECT ENGINEER DATE  
 REGISTERED CIVIL ENGINEER

**May 3, 2010**  
 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>02-1E4604</b>
PROJECT ID	<b>0200000105</b>
CU 03 246	EA 1E4601

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

NO SCALE



USERNAME => trlenard  
 DGN FILE => 21e460ab001.dgn

PROJECT MANAGER PHIL BAKER  
 DESIGN ENGINEER JULIE CASEY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Las	36	25.4	2	49

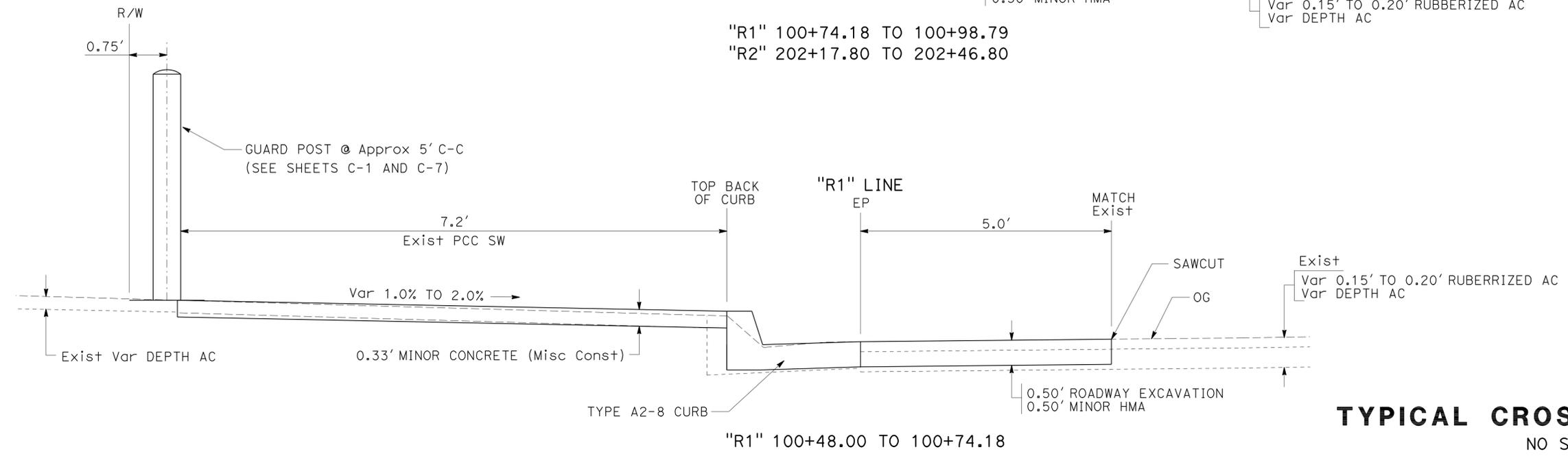
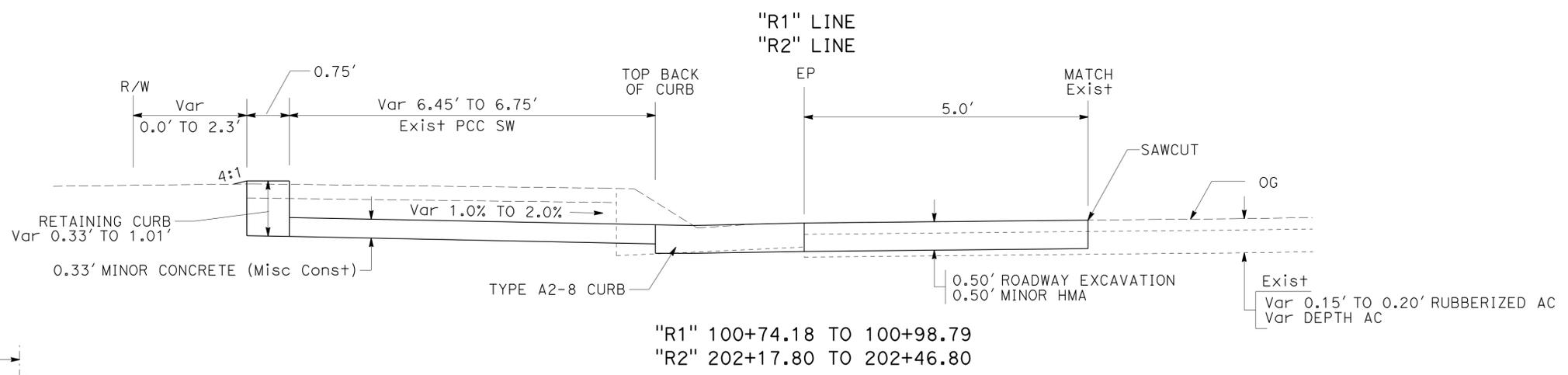
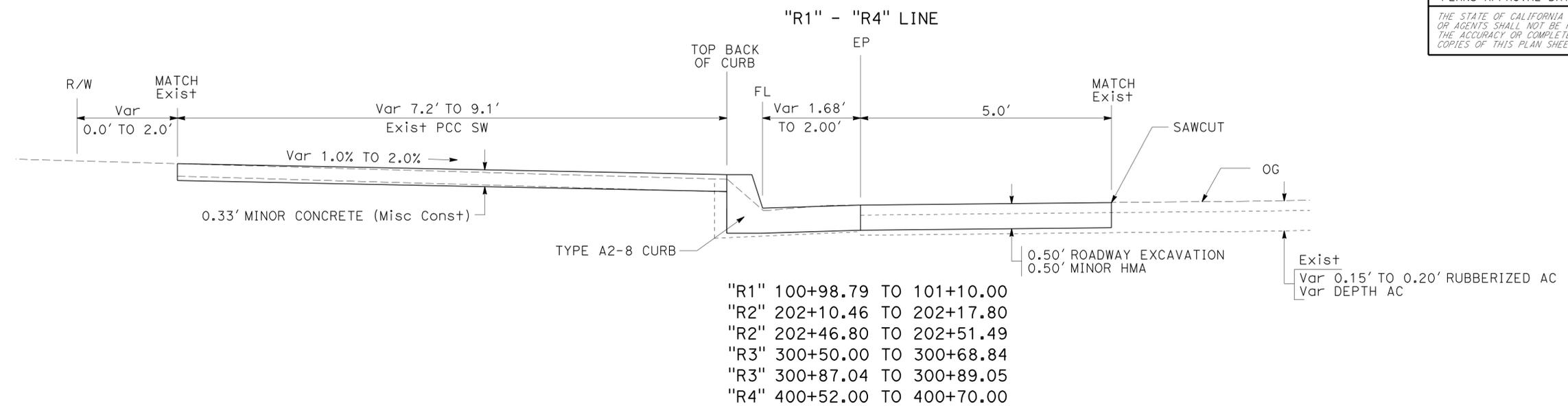
Michael R. Webb		03-30-10
REGISTERED CIVIL ENGINEER	DATE	
5-3-10		
PLANS APPROVAL DATE		

REGISTERED PROFESSIONAL ENGINEER
MICHAEL R. WEBB
No. C73986
Exp. 6-30-11
CIVIL
STATE OF CALIFORNIA

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

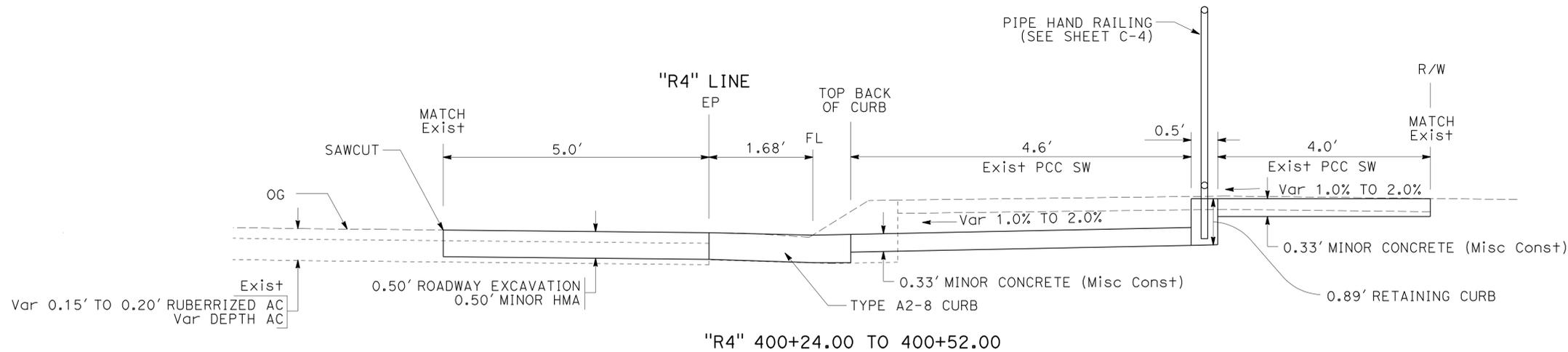
NOTE:  
 1. DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.



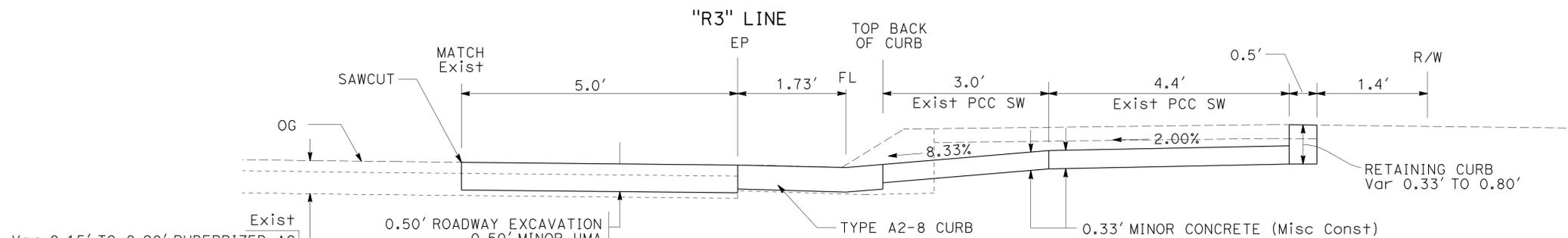
**TYPICAL CROSS SECTIONS**  
NO SCALE  
**X-1**

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 STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** DESIGN  
 FUNCTIONAL SUPERVISOR: JULIE CASEY  
 CALCULATED/DESIGNED BY: JULIE CASEY  
 CHECKED BY:  
 REVISIONS:  
 REVISION BY: MICHAEL R. WEBB  
 DATE: JULIE CASEY  
 REVISION DATE:

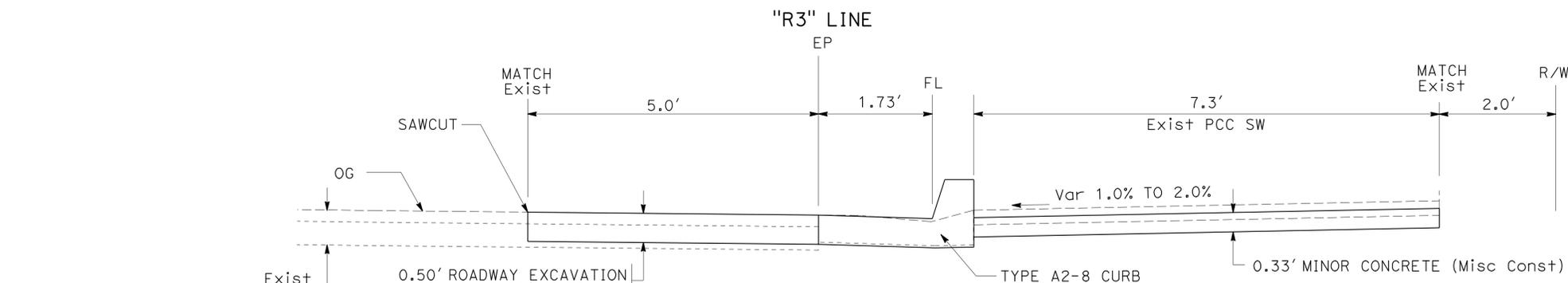
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Las	36	25.4	3	49
<i>Michael R. Webb</i> 03-30-10 REGISTERED CIVIL ENGINEER DATE			MICHAEL R. WEBB No. C73986 Exp. 6-30-11 CIVIL STATE OF CALIFORNIA		
5-3-10 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



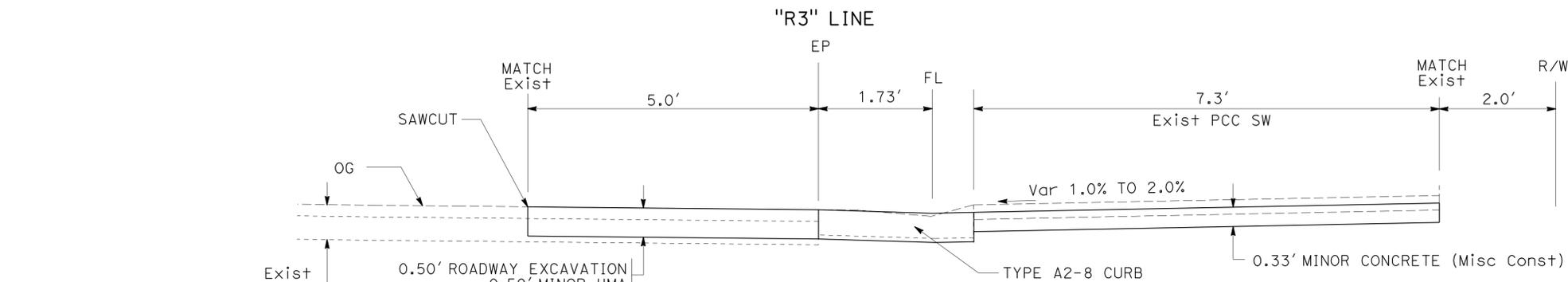
"R4" 400+24.00 TO 400+52.00



"R3" 300+68.84 TO 300+87.04



"R3" 300+35.44 TO 300+50.00



"R3" 300+20.80 TO 300+35.44

**TYPICAL CROSS SECTIONS**  
 NO SCALE  
**X-2**

P:\proj\2\0211E460\plans\pse\21e460ca002.dgn  
 STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 DESIGN  
 CALTRANS  
 FUNCTIONAL SUPERVISOR: JULIE CASEY  
 CHECKED BY: JULIE CASEY  
 CALCULATED/DESIGNED BY: MICHAEL R. WEBB  
 REVISOR: JULIE CASEY  
 DATE: 5-3-10

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Las	36	25.4	4	49

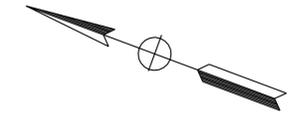
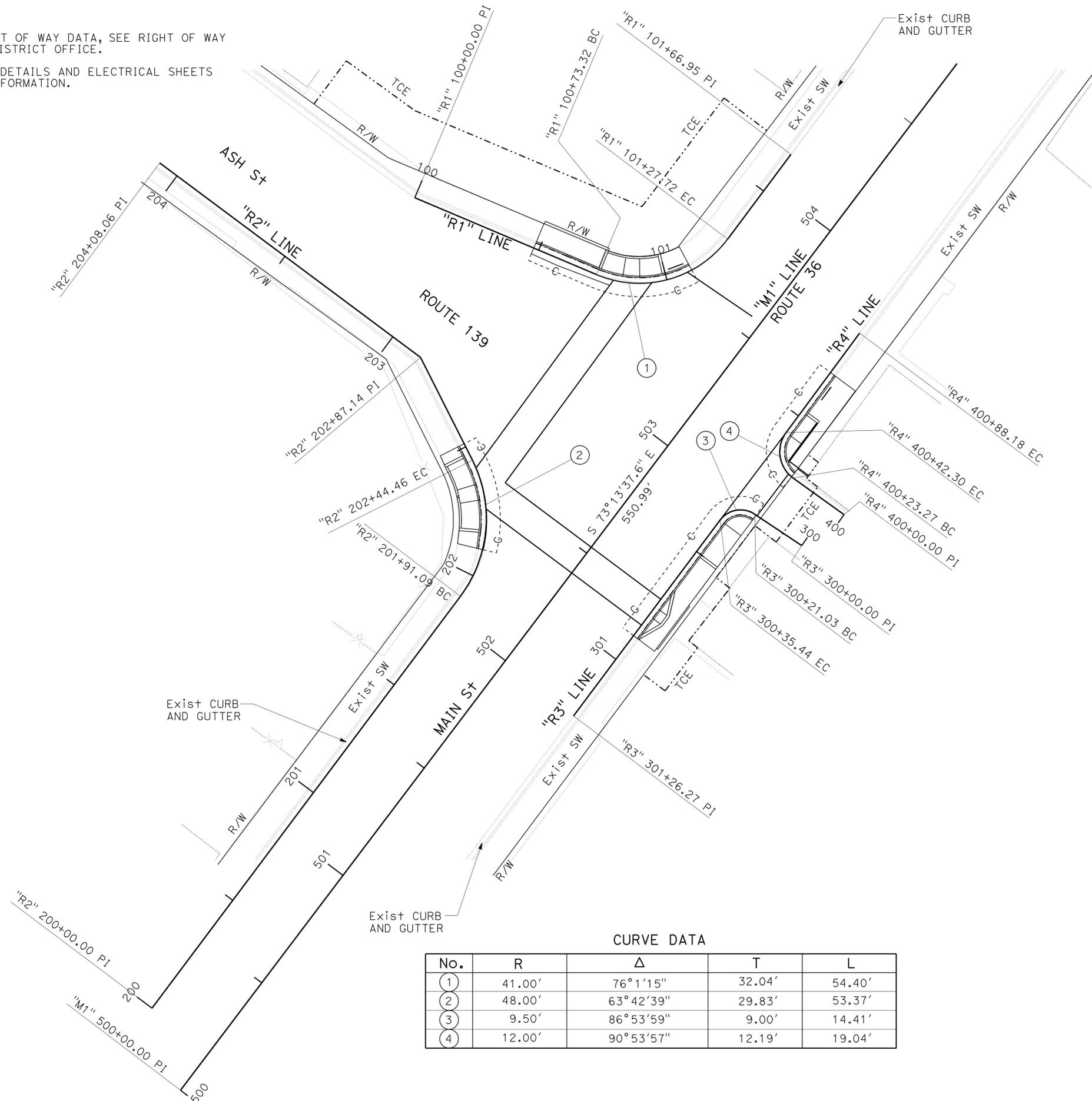
Michael R. Webb 03-30-10  
 REGISTERED CIVIL ENGINEER DATE  
 5-3-10  
 PLANS APPROVAL DATE

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  
 MICHAEL R. WEBB  
 No. C73986  
 Exp. 6-30-11  
 CIVIL  
 STATE OF CALIFORNIA

NOTES:

- FOR COMPLETE RIGHT OF WAY DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.
- SEE CONSTRUCTION DETAILS AND ELECTRICAL SHEETS FOR ADDITIONAL INFORMATION.



ABBREVIATIONS

TCE TEMPORARY CONSTRUCTION EASEMENT

LEGEND

- ① CURB RAMP No. 1
- ② CURB RAMP No. 2
- ③ CURB RAMP No. 3
- ④ CURB RAMP No. 4

----- TCE

CURVE DATA

No.	R	Δ	T	L
①	41.00'	76° 1' 15"	32.04'	54.40'
②	48.00'	63° 42' 39"	29.83'	53.37'
③	9.50'	86° 53' 59"	9.00'	14.41'
④	12.00'	90° 53' 57"	12.19'	19.04'

**LAYOUT**  
SCALE: 1" = 20' L-1

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

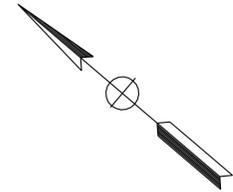
FUNCTIONAL SUPERVISOR	JULIE CASEY
CALCULATED/DESIGNED BY	CHECKED BY
MICHAEL R. WEBB	JULIE CASEY
REVISED BY	DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Las	36	25.4	5	49

*Michael R. Webb* 03-30-10  
 REGISTERED CIVIL ENGINEER DATE  
 5-3-10  
 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.

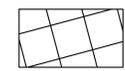
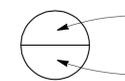
REGISTERED PROFESSIONAL ENGINEER  
 MICHAEL R. WEBB  
 No. C73986  
 Exp. 6-30-11  
 CIVIL  
 STATE OF CALIFORNIA

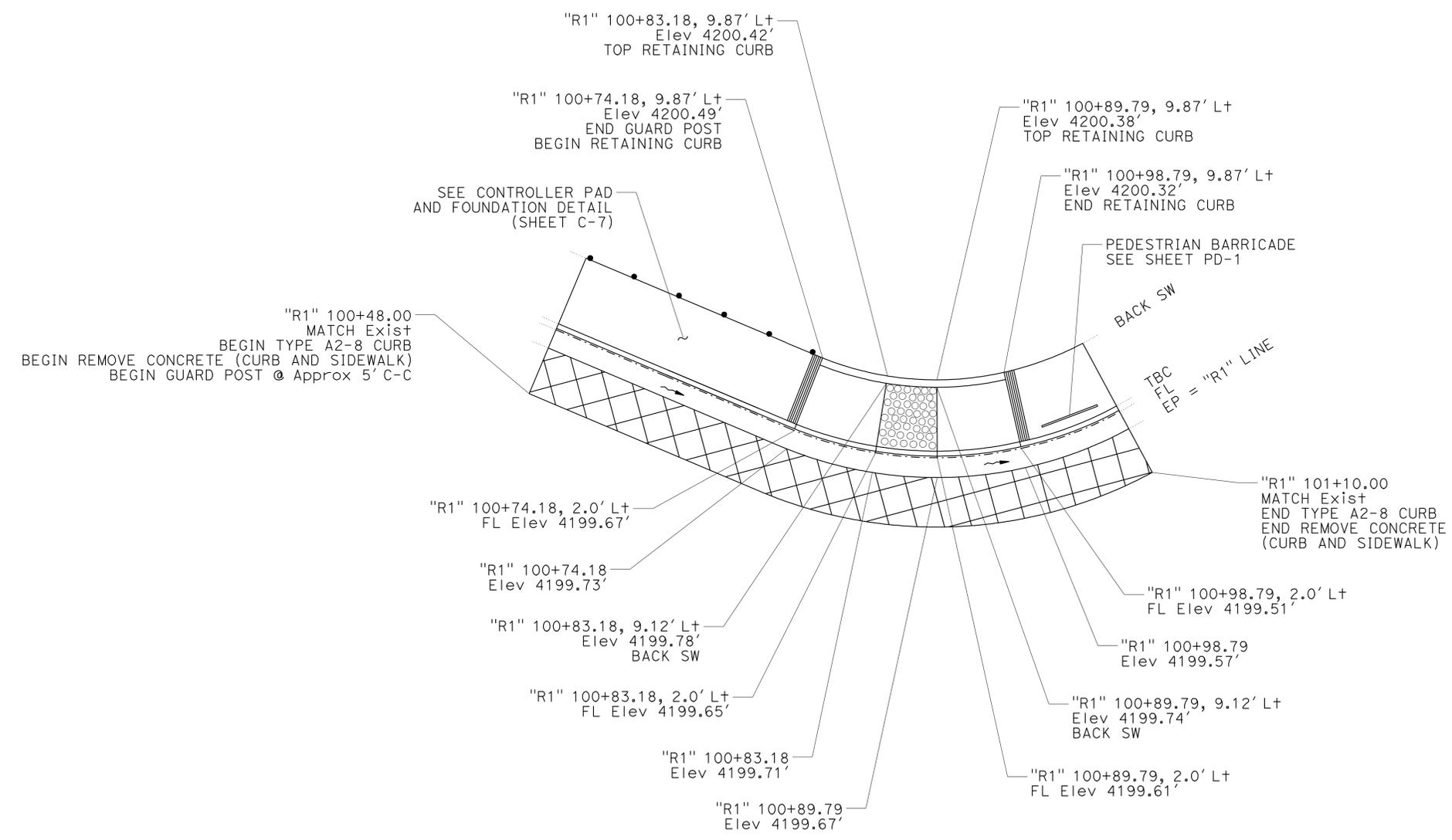


**ABBREVIATIONS**

TBC TOP BACK OF CURB

**LEGEND**

-  ROADWAY EXCAVATION  
MINOR HOT MIX ASPHALT
-  FLOW LINE
-  DETECTABLE WARNING SURFACE
-  GUARD POST
-  PIPE HAND RAILING
-  CONCRETE GROOVING
-  STANDARD PLAN SHEET No.
-  DETAIL No.



**CURB RAMP 1**

"R1" LINE  
CASE "C" MODIFIED

**CONSTRUCTION DETAILS**

NO SCALE

**C-1**

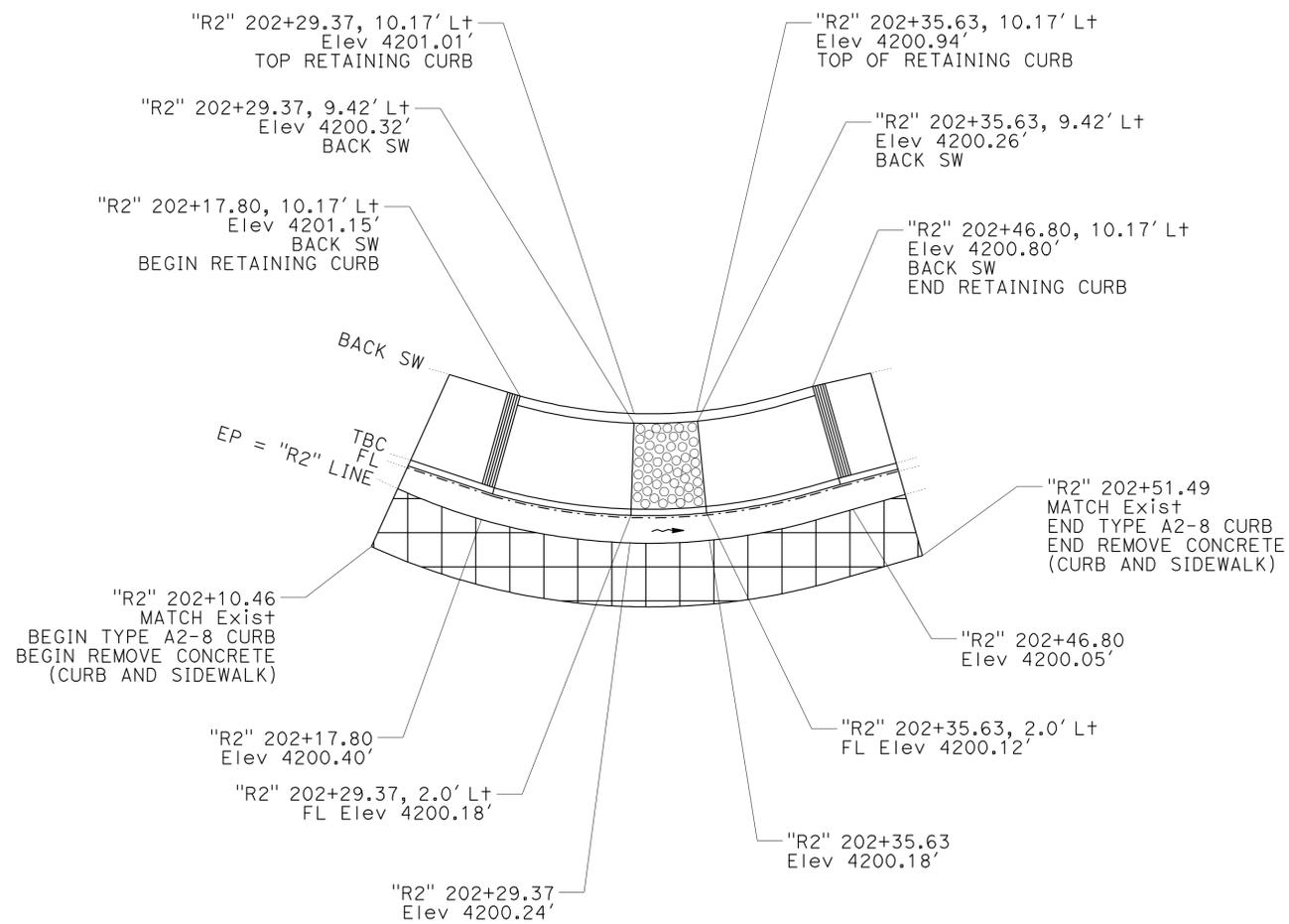
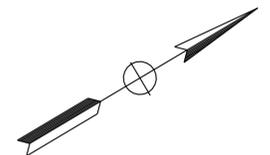
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 DESIGN  
 CALTRANS

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Las	36	25.4	6	49

*Michael R. Webb* 03-30-10  
 REGISTERED CIVIL ENGINEER DATE  
 5-3-10  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 MICHAEL R. WEBB  
 No. C73986  
 Exp. 6-30-11  
 CIVIL  
 STATE OF CALIFORNIA

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



**CURB RAMP (2)**

"R2" LINE  
CASE "C" MODIFIED

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

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR
DESIGN	JULIE CASEY	CHECKED BY	MICHAEL R. WEBB
			JULIE CASEY
			DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Los	36	25.4	7	49

*Michael R. Webb* 03-30-10  
 REGISTERED CIVIL ENGINEER DATE  
 5-3-10  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 MICHAEL R. WEBB  
 No. C73986  
 Exp. 6-30-11  
 CIVIL  
 STATE OF CALIFORNIA

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DESIGNED BY	REVISOR	DATE
CALCULATED BY	CHECKED BY	
FUNCTIONAL SUPERVISOR		

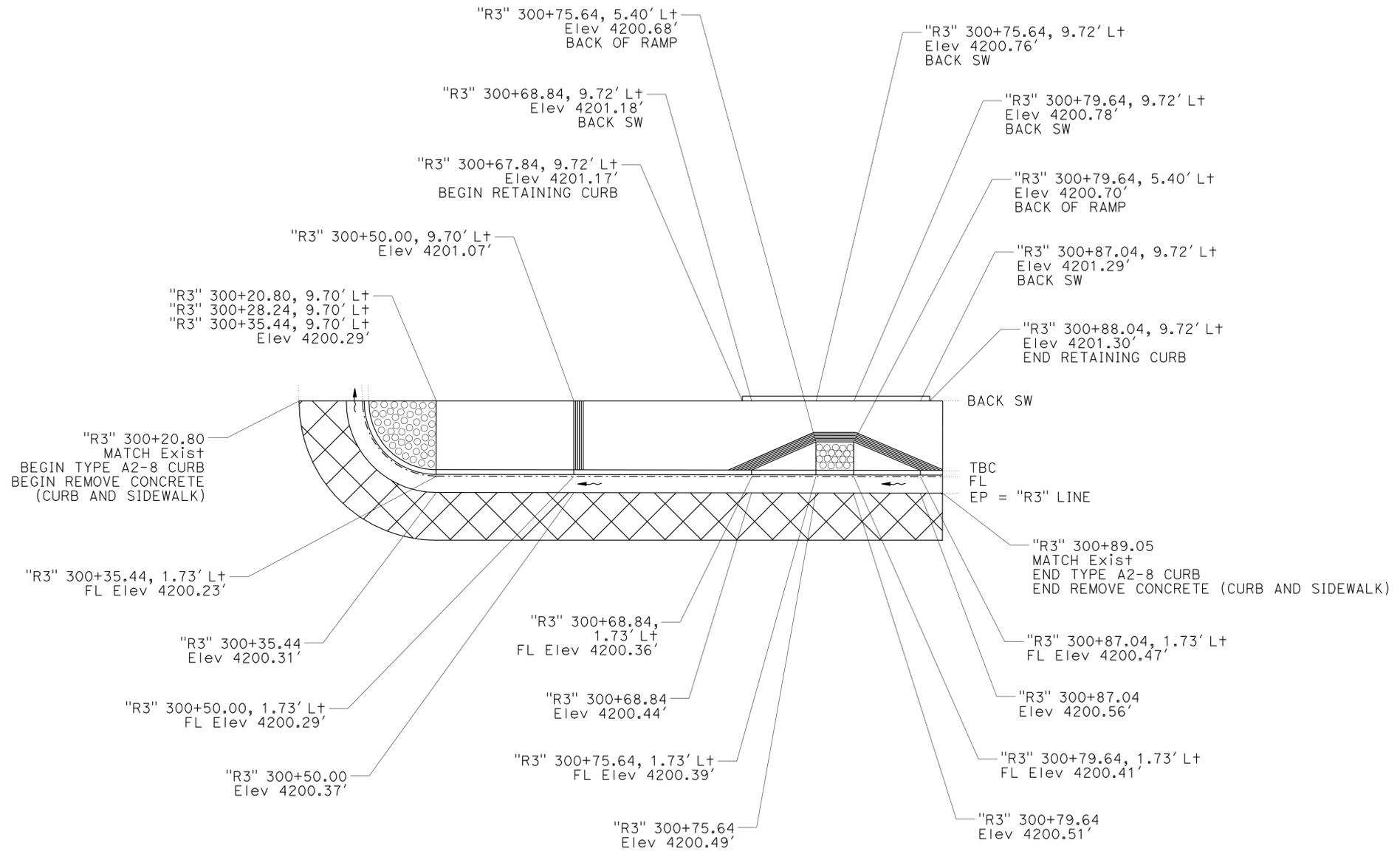
REVISOR: MICHAEL R. WEBB  
DATE: 03-30-10

DESIGNED BY: JULIE CASEY

CHECKED BY: JULIE CASEY

FUNCTIONAL SUPERVISOR: JULIE CASEY

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



**CURB RAMP ③**  
 "R3" LINE  
 CASE "A" AND "F" MODIFIED

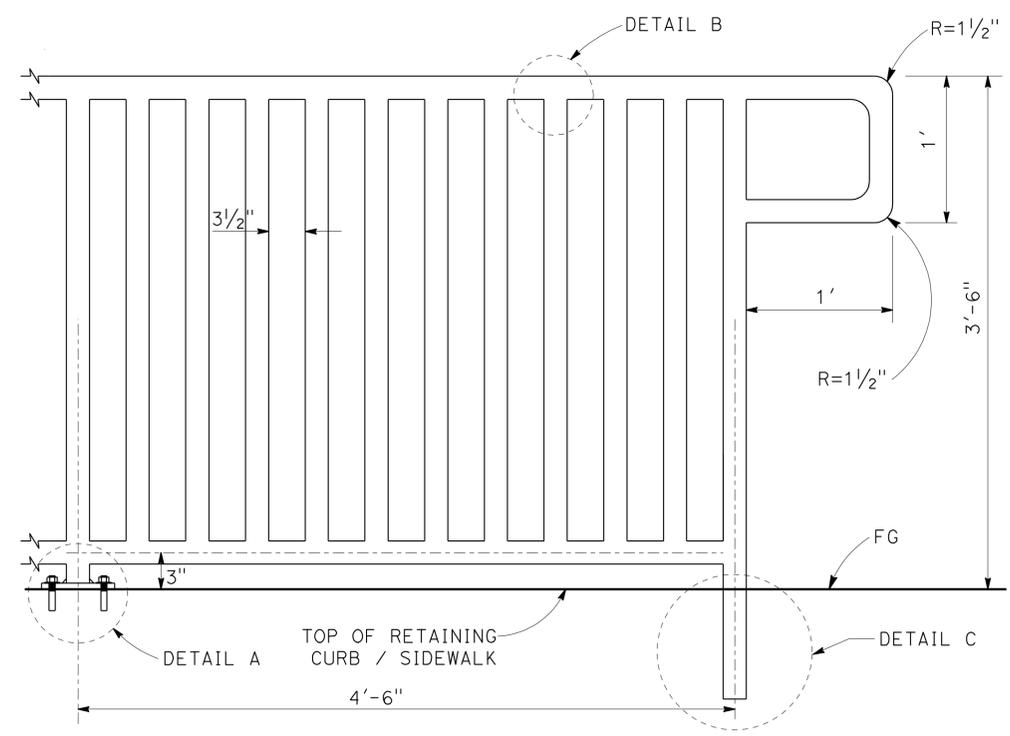
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 NO SCALE  
**C-3**

LAST REVISION | DATE PLOTTED => 04-MAY-2010  
 03-30-10 TIME PLOTTED => 07:22

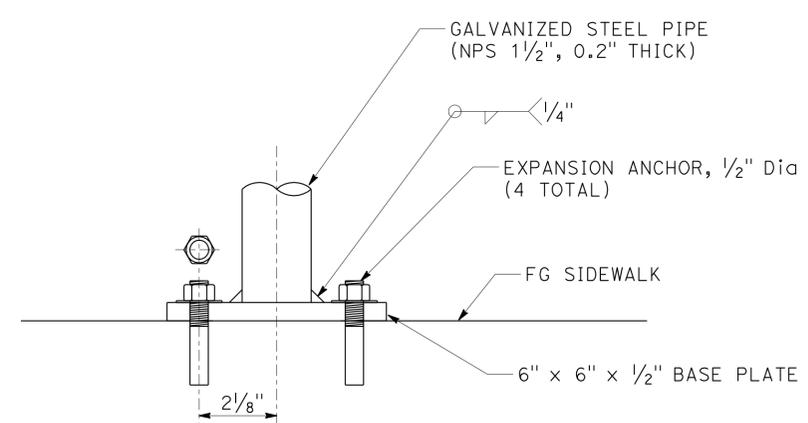
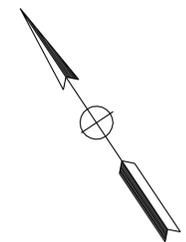
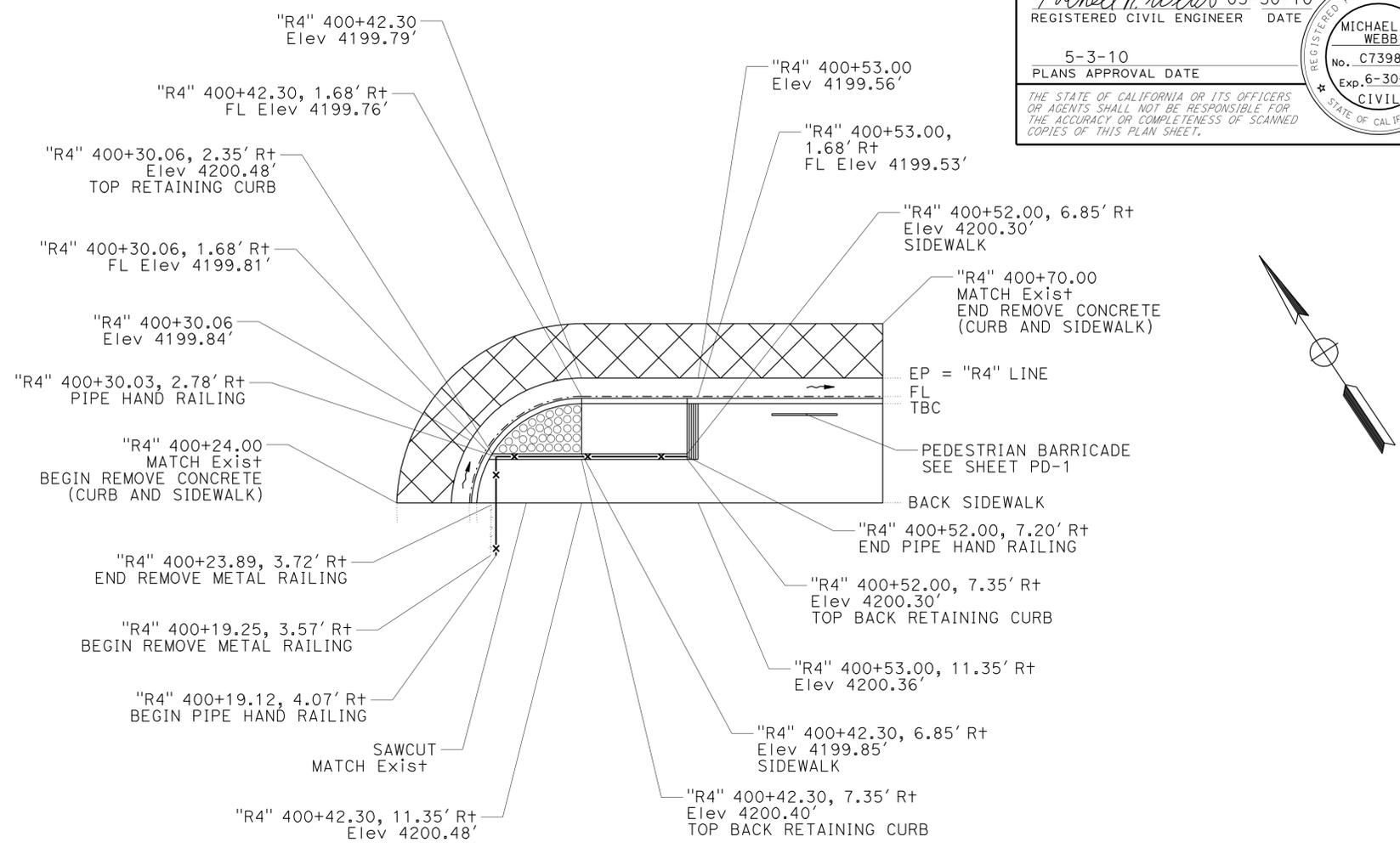
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Lgs	36	25.4	8	49

<i>Michael R. Webb</i> 03-30-10 REGISTERED CIVIL ENGINEER DATE		
5-3-10 PLANS APPROVAL DATE		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>		

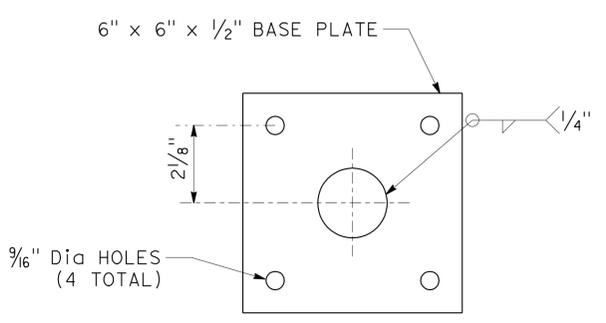


**PIPE HAND RAILING**

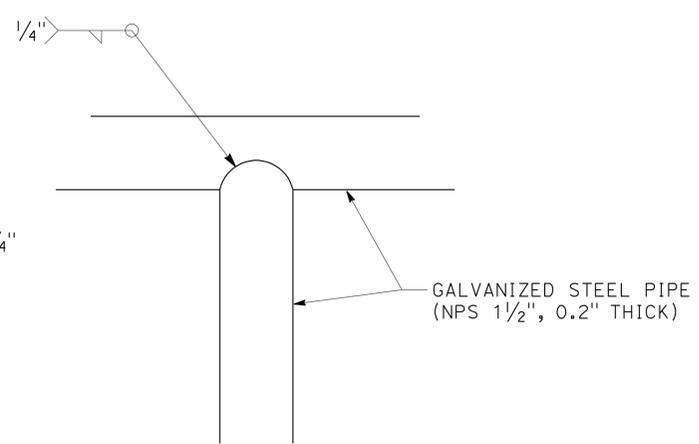


**ELEVATION  
DETAIL A**

(TYPICAL Exist & NEW SIDEWALK CONNECTIONS)

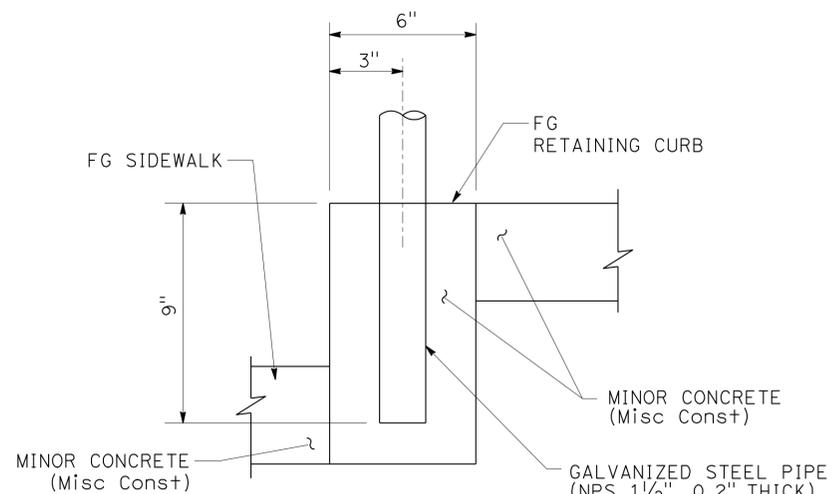


**PLAN  
DETAIL B**



**DETAIL B  
(TYPICAL ALL CONNECTIONS)**

**CURB RAMP ④**  
"R4" LINE  
CASE "F" MODIFIED



**DETAIL C**

(TYPICAL RETAINING CURB CONNECTIONS)

**CONSTRUCTION DETAILS  
NO SCALE  
C-4**

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 STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 DESIGN  
 FUNCTIONAL SUPERVISOR: JULIE CASEY  
 CHECKED BY: JULIE CASEY  
 CALCULATED/DESIGNED BY: MICHAEL R. WEBB  
 REVISIONS: JULIE CASEY  
 REVISIONS: JULIE CASEY  
 REVISIONS: JULIE CASEY

P:\proj2\02\1E460\plans\pse\21e460ga005.dgn

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION



DESIGN

FUNCTIONAL SUPERVISOR

JULIE CASEY

CALCULATED/DESIGNED BY

CHECKED BY

MICHAEL R. WEBB

JULIE CASEY

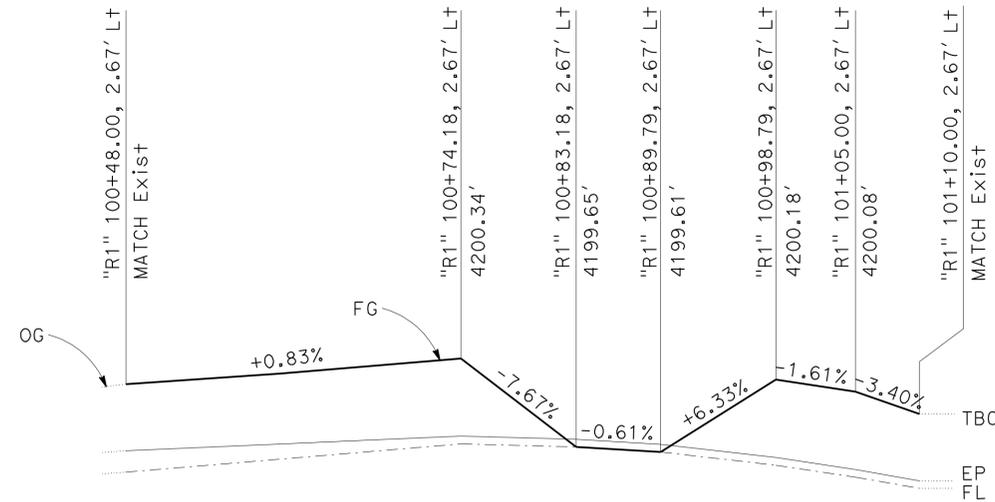
REVISED BY

DATE REVISED

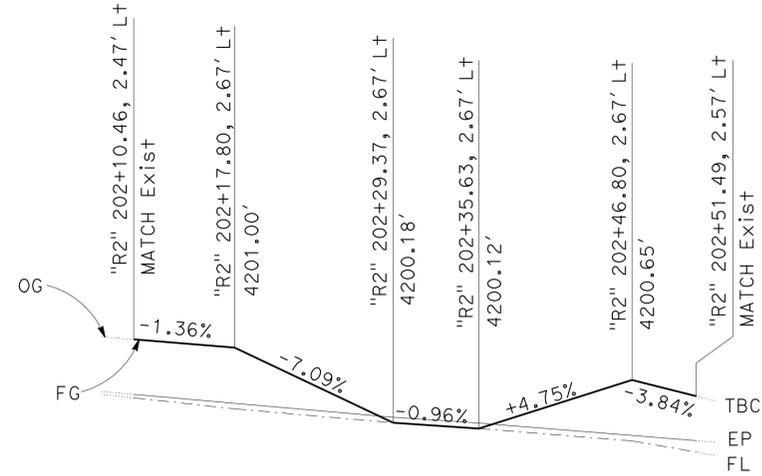
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Las	36	25.4	9	49

*Michael R. Webb* 03-30-10  
 REGISTERED CIVIL ENGINEER DATE  
 5-3-10  
 PLANS APPROVAL DATE

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PROFILE CURB RAMP 1



PROFILE CURB RAMP 2



USERNAME => trmikesl  
DGN FILE => 21e460ga005.dgn

CU 03 246

EA 1E4601

CONSTRUCTION DETAILS  
NO SCALE

C-5

LAST REVISION | DATE PLOTTED => 04-MAY-2010  
03-30-10 TIME PLOTTED => 07:23

P:\proj2\02\1E460\plans\pse\21e460ga006.dgn

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

DESIGN

FUNCTIONAL SUPERVISOR

JULIE CASEY

CALCULATED/DESIGNED BY

CHECKED BY

MICHAEL R. WEBB

JULIE CASEY

REVISED BY

DATE REVISED

x

x

x

x

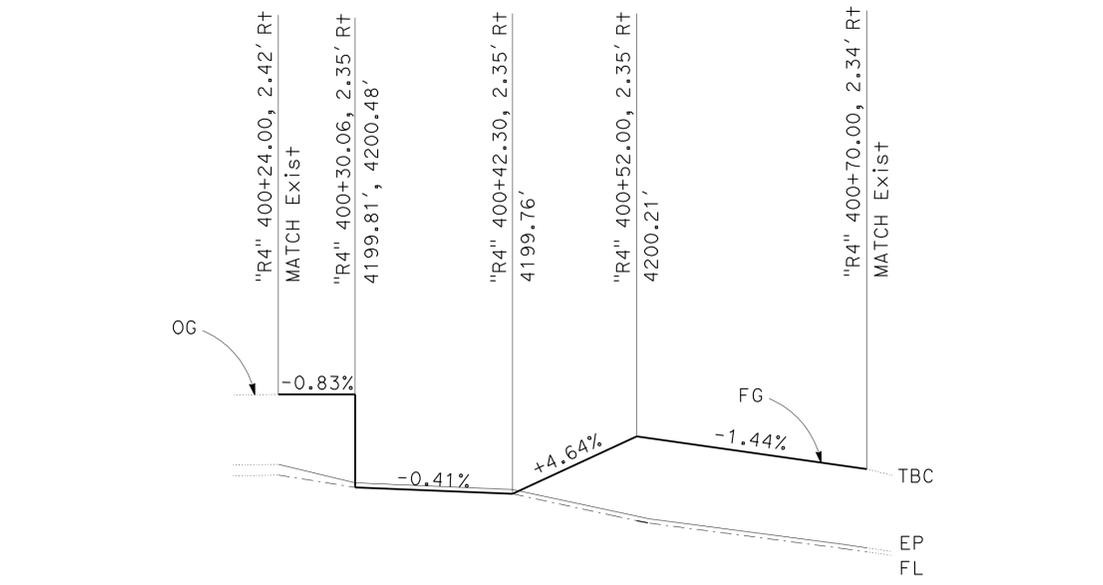
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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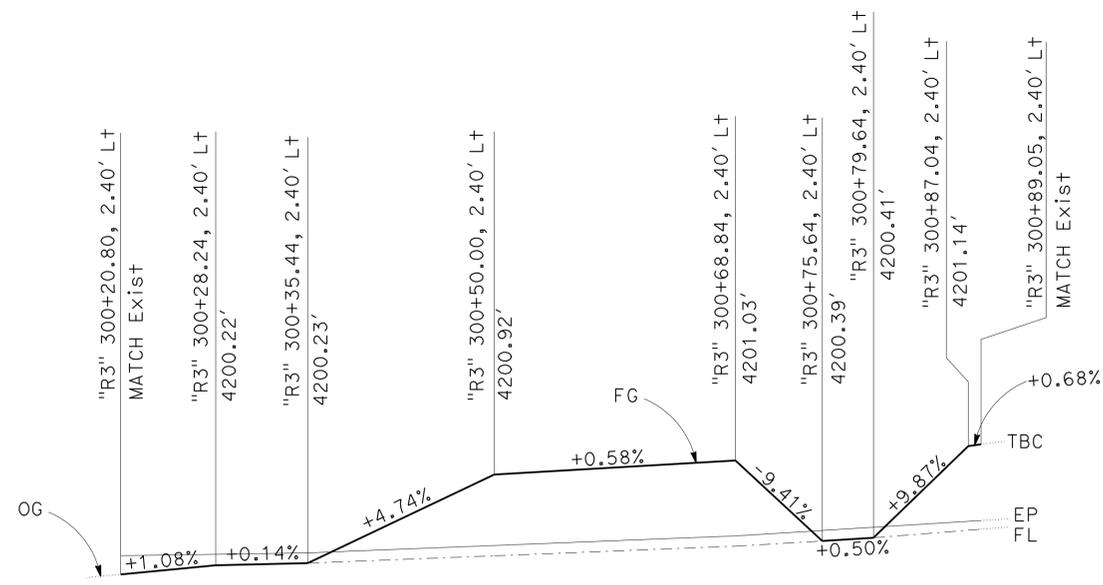
*Michael R. Webb* 03-30-10  
 REGISTERED CIVIL ENGINEER DATE  
 5-3-10  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 MICHAEL R. WEBB  
 No. C73986  
 Exp. 6-30-11  
 CIVIL  
 STATE OF CALIFORNIA

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



PROFILE CURB RAMP 4



PROFILE CURB RAMP 3

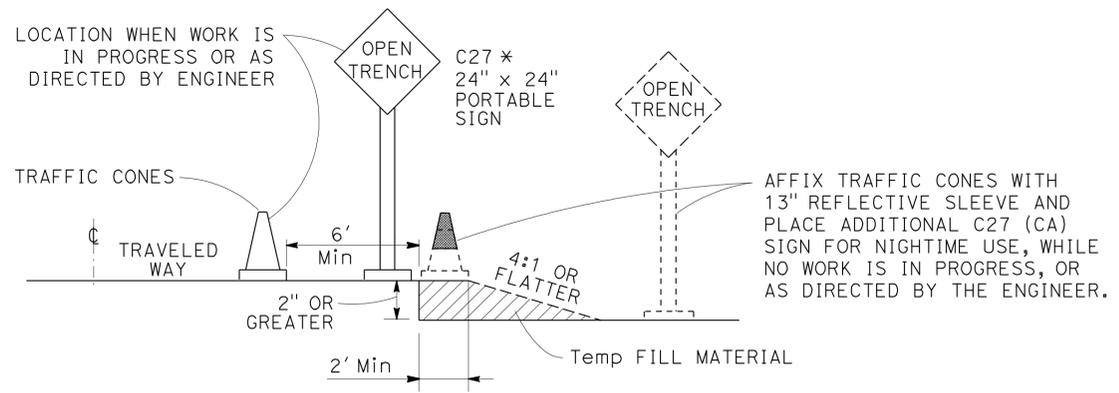
CONSTRUCTION DETAILS  
NO SCALE  
C-6

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Las	36	25.4	11	49

*Michael R. Webb* 03-30-10  
 REGISTERED CIVIL ENGINEER DATE  
 5-3-10  
 PLANS APPROVAL DATE

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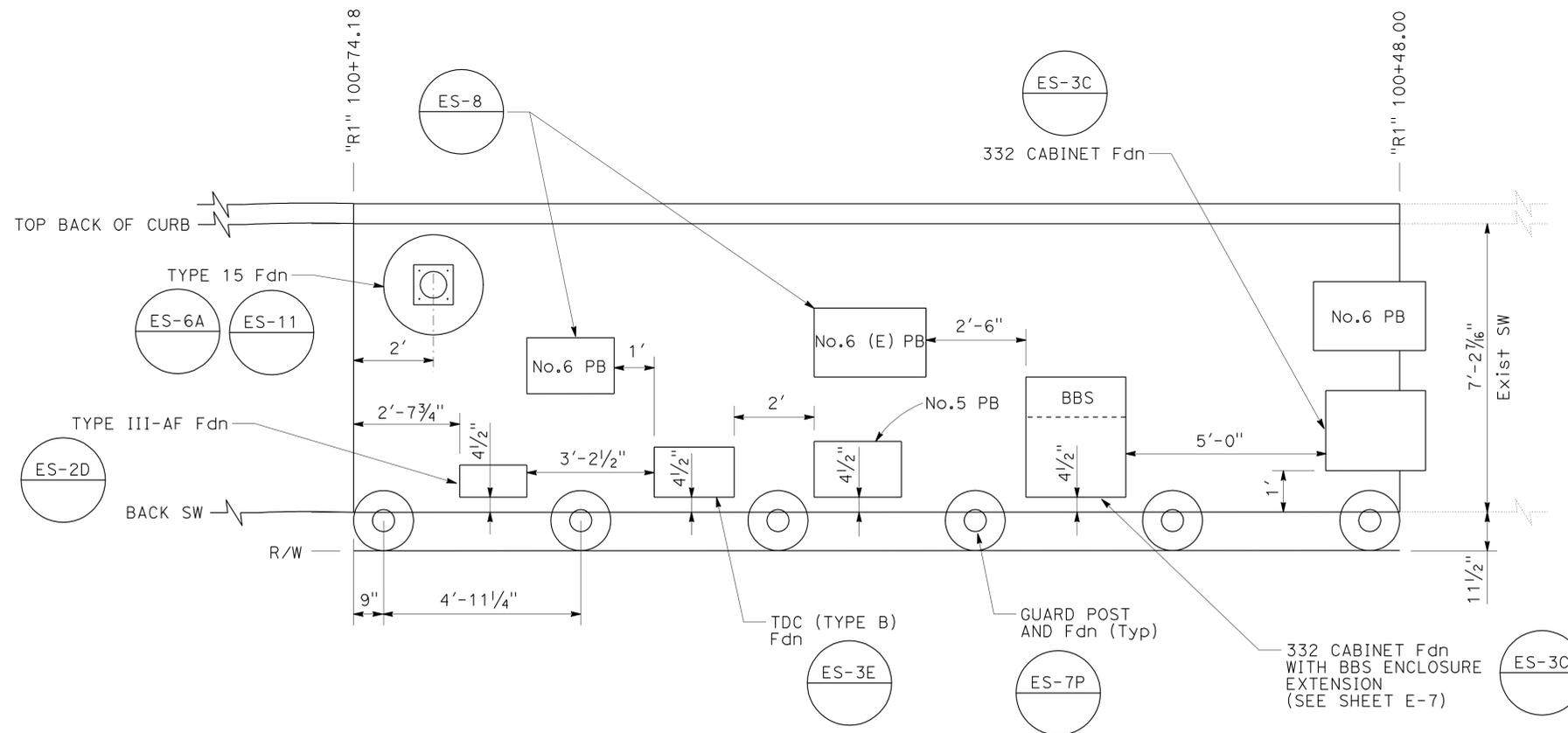
REGISTERED PROFESSIONAL ENGINEER  
 MICHAEL R. WEBB  
 No. C73986  
 Exp. 6-30-11  
 CIVIL  
 STATE OF CALIFORNIA



**OPEN TRENCH SIGNING AND MARKING**

NO SCALE

\* PLACE ONE AT EACH OPEN TRENCH LOCATION



**CONTROLLER PAD AND FOUNDATION DETAIL**

SCALE: 1" = 2'

**CONSTRUCTION DETAILS**

SCALE: AS SHOWN

**C-7**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 DESIGN  
 FUNCTIONAL SUPERVISOR: JULIE CASEY  
 CALCULATED/DESIGNED BY: JULIE CASEY  
 CHECKED BY:  
 MICHAEL R. WEBB  
 JULIE CASEY  
 REVISOR BY: DATE  
 REVISOR BY: DATE  
 REVISOR BY: DATE





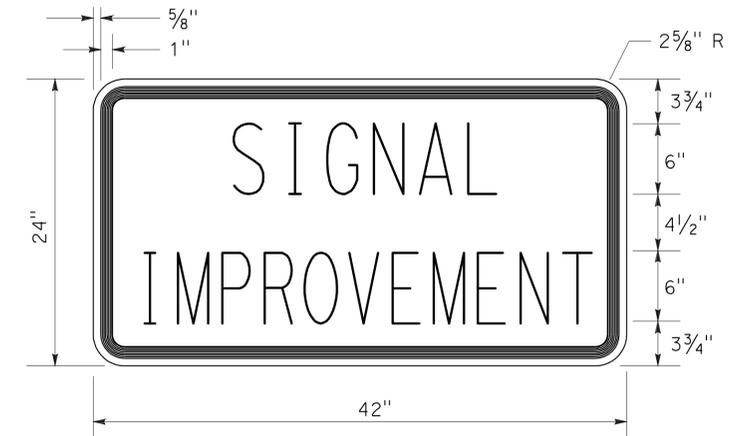
**NOTES:**

- EXACT SIGN LOCATIONS TO BE DETERMINED BY THE ENGINEER.
- CALIFORNIA SIGN CODES ARE DESIGNATED (CA), OTHERWISE FEDERAL SIGN CODES ARE SHOWN.

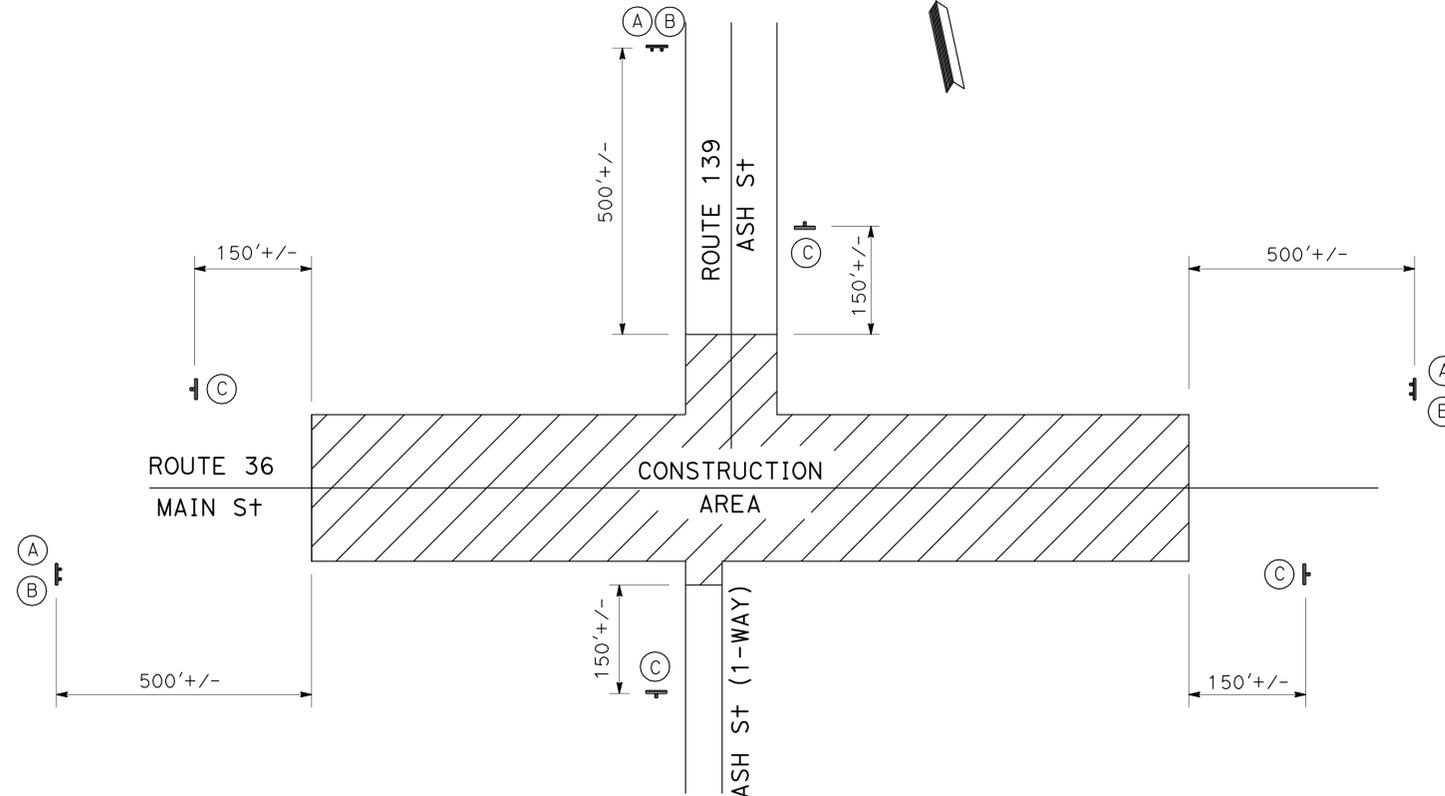
**CONSTRUCTION AREA SIGNS (STATIONARY MOUNTED)**

SIGN	CODE	PANEL SIZE	SIGN MESSAGE	No. AND SIZE OF POST	No. OF SIGNS
(A)	G20-2	36" x 36"	ROAD WORK AHEAD	2 - 4" x 6"	3
(B)	C23B (CA)	42" x 24"	SIGNAL IMPROVEMENT		3
(C)	W20-1	36" x 18"	END ROAD WORK	1 - 4" x 4"	4

NOTES: 1. SIGN (B) TO BE MOUNTED BELOW SIGN (A)



**C23B SIGN PANEL DETAIL**



**TYPICAL CONSTRUCTION AREA SIGN PLAN**

**CONSTRUCTION AREA SIGNS**  
NO SCALE **CS-1**

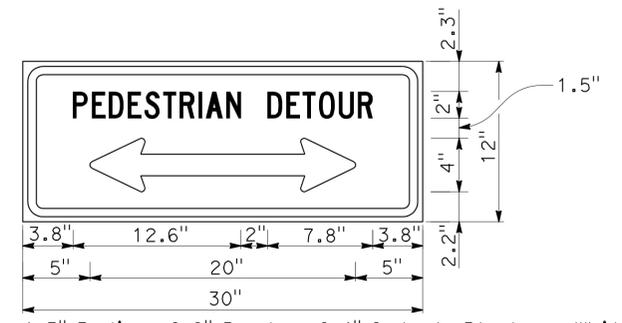
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 DESIGN  
 CALTRANS  
 FUNCTIONAL SUPERVISOR: JULIE CASEY  
 REVISIONS: MICHAEL R. WEBB, JULIE CASEY  
 REVISIONS: DATE, REVISIONS: DATE

**NOTES:**

1. EXACT SIGN LOCATIONS TO BE DETERMINED BY THE ENGINEER.
2. (N) NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.

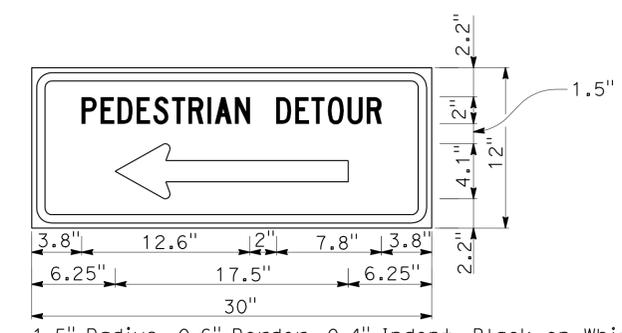
**PEDESTRIAN DETOUR SIGNS (BARRICADE MOUNTED)**

SIGN	CODE	PANEL SIZE	SIGN MESSAGE	No. OF SIGNS (N)	TYPE I BARRICADE
					EA
(E)	Spec	24" x 12"	SIDEWALK CLOSED USE DETOUR	2	2
(F)	Spec	24" x 12"	SIDEWALK CLOSED USE DETOUR	2	2
(G)	Spec	30" x 12"	PEDESTRIAN DETOUR	2	2
(H)	Spec	30" x 12"	PEDESTRIAN DETOUR	2	2
(I)	Spec	20" x 12"	PEDESTRIAN DETOUR	2	2
TOTAL				10	10



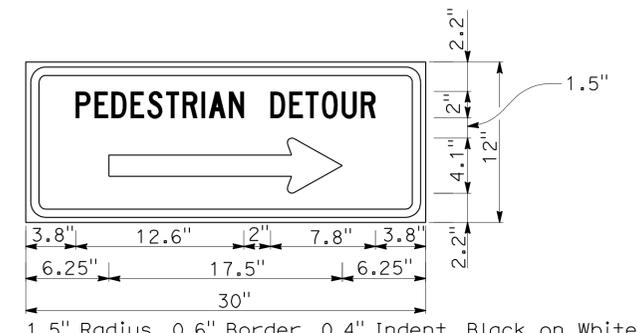
1.5" Radius, 0.6" Border, 0.4" Indent, Black on White;  
 [PEDESTRIAN DETOUR] C 79% spacing;  
 Double Headed Arrow Custom - 19.9" 0°;

**SIGN PANEL DETAIL I**



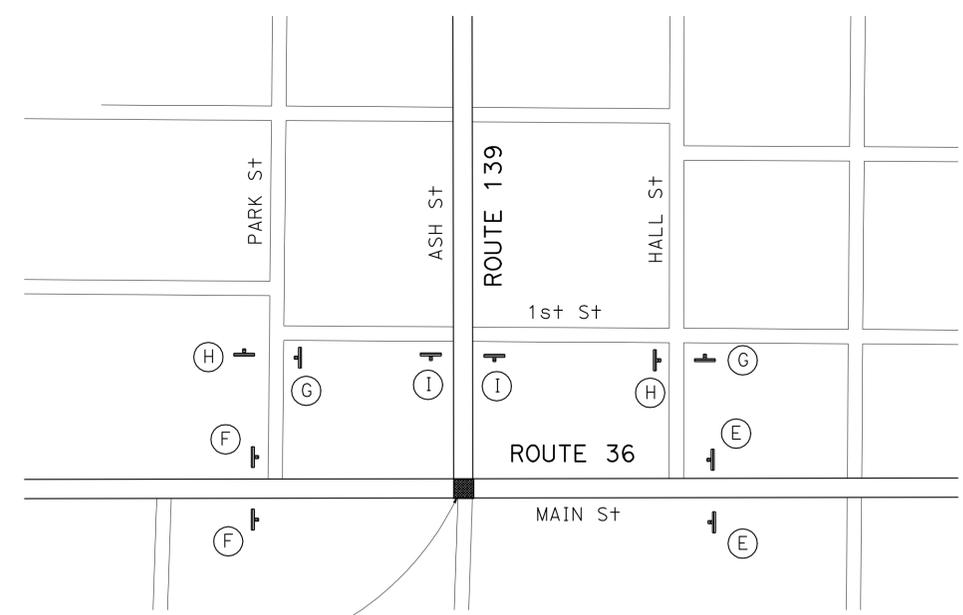
1.5" Radius, 0.6" Border, 0.4" Indent, Black on White;  
 [PEDESTRIAN DETOUR] C 79% spacing;  
 Standard Arrow Custom 17.5" X 4.1" 180°;

**SIGN PANEL DETAIL G**

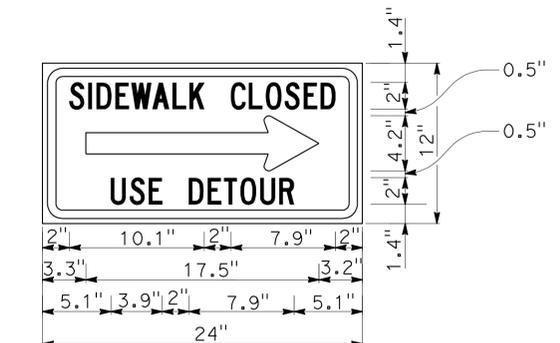


1.5" Radius, 0.6" Border, 0.4" Indent, Black on White;  
 [PEDESTRIAN DETOUR] C 79% spacing;  
 Standard Arrow Custom 17.5" X 4.1" 0°;

**SIGN PANEL DETAIL H**

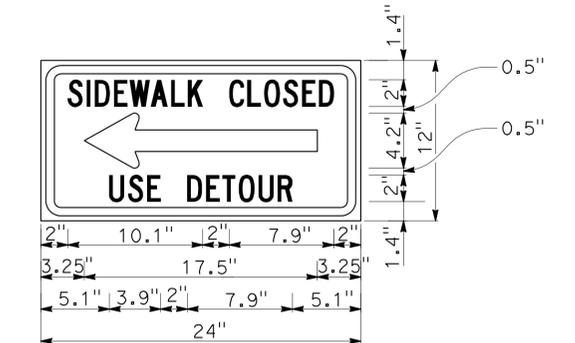


**TYPICAL PEDESTRIAN DETOUR PLAN**



1.5" Radius, 0.6" Border, 0.4" Indent, Black on White;  
 [SIDEWALK CLOSED] C 79% spacing;  
 Standard Arrow Custom 17.5" X 4.1" 0°;  
 [USE DETOUR] C 79% spacing;

**SIGN PANEL DETAIL E**



1.5" Radius, 0.6" Border, 0.4" Indent, Black on White;  
 [SIDEWALK CLOSED] C 79% spacing;  
 Standard Arrow Custom 17.5" X 4.1" 180°;  
 [USE DETOUR] C 79% spacing;

**SIGN PANEL DETAIL F**

**CONSTRUCTION AREA SIGNS, DETOUR PLAN AND SIGN DETAILS**

NO SCALE

**CS-2**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Las	36	25.4	15	49

*Michael R. Webb* 03-30-10  
 REGISTERED CIVIL ENGINEER DATE  
 5-3-10  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 MICHAEL R. WEBB  
 No. C73986  
 Exp. 6-30-11  
 CIVIL  
 STATE OF CALIFORNIA

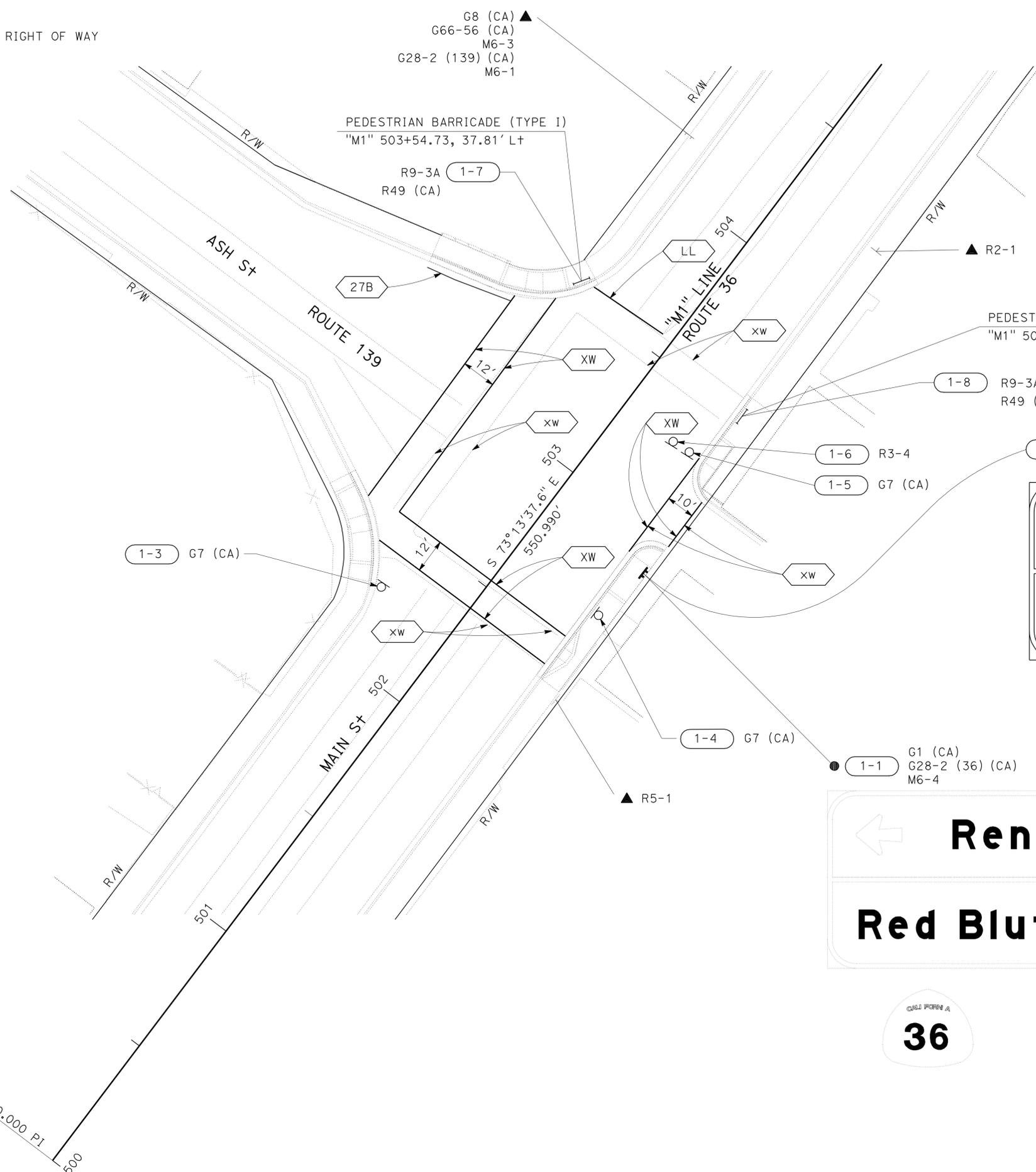
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

**NOTE:**

1. FOR COMPLETE RIGHT OF WAY DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

**LEGEND**

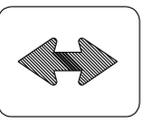
- † Exist ROADSIDE SIGN (1 POST)
- †† Exist ROADSIDE SIGN (2 POST)
- ‡ ROADSIDE SIGN (2 POST)
- ] PEDESTRIAN BARRICADE (TYPE 1)
- X-X ROADSIDE SIGN
- ▲ EXISTING SIGN TO REMAIN
- REMOVE ROADSIDE SIGN
- d MAST ARM MOUNTED SIGN
- 27B PAVEMENT DELINEATION STRIPE DETAIL No.
- XW CROSSWALK (1'-0" WHITE LINE)
- xw REMOVE Exist PAVEMENT MARKING (CROSSWALK)
- LL LIMIT LINE (1'-0" WHITE LINE)



← **Reno 84**

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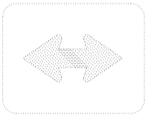
**Red Bluff 109** →



← **Reno 84**

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**Red Bluff 109** →



**PAVEMENT DELINEATION AND SIGN PLAN**  
 SCALE: 1" = 20' PD-1

P:\proj\2\02\1E460\plans\pse\21e460na001.dgn  
 STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** DESIGN  
 FUNCTIONAL SUPERVISOR: JULIE CASEY  
 CHECKED BY: JULIE CASEY  
 CALCULATED/DESIGNED BY: MICHAEL R. WEBB  
 REVISIONS: JULIE CASEY  
 REVISOR: MICHAEL R. WEBB  
 DATE: 03-30-10



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Ker	46	6.8/19.8	17	244

*Michael R. Webb* 03-30-10  
 REGISTERED CIVIL ENGINEER DATE

3-8-10  
 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.

### THERMOPLASTIC TRAFFIC STRIPE (SPRAYABLE)

LOCATION	DETAIL 27B
	LF
"R1" 100+48 TO 100+80	32
TOTAL	32

### PAINT CURB (2-COAT)

STATION	PAINT CURB (2-COAT)	NOTES
	LF	
"R1" 100+48.00 TO 101+10.00	62.0	RED
"R2" 202+10.46 TO 202+51.49	41.0	RED
"R3" 300+20.80 TO 300+89.05	68.3	RED
"R4" 400+24.00 TO 400+70.00	46.0	RED
TOTALS	217.3	

### THERMOPLASTIC PAVEMENT MARKING

STATION / LOCATION	REMOVE THERMOPLASTIC PAVEMENT MARKING	THERMOPLASTIC PAVEMENT MARKING	NOTES
	SQFT	SQFT	
"M1" 502+49.35, 42.09' R+ TO 503+18.77, 42.06' R+		19.4	1' WHITE LINE (CROSSWALK)
"M1" 502+89.77, 32.11' R+ TO 503+30.48, 32.06' R+		40.7	1' WHITE LINE (CROSSWALK)
"M1" 502+40.77, 32.31' R+ TO 502+40.77, 39.57' L+		71.9	1' WHITE LINE (CROSSWALK)
"M1" 502+52.77, 32.24' R+ TO 502+52.77, 39.95' L+		72.2	1' WHITE LINE (CROSSWALK)
"M1" 502+52.77, 39.95' L+ TO 503+44.14, 41.34' L+		92.1	1' WHITE LINE (CROSSWALK)
"M1" 502+50.42, 51.92' L+ TO 503+36.75, 53.25' L+		86.3	1' WHITE LINE (CROSSWALK)
"M1" 503+55.70, 33.11' L+ TO 503+57.17, 4.06' L+		29	1' WHITE LINE (LIMIT LINE)
ROUTE 36 / ROUTE 139 INTERSECTION	502.0		1' WHITE LINE (CROSSWALK)
TOTALS	502.0	411.6	

## PAVEMENT DELINEATION AND SIGN QUANTITIES

### PDQ-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** DESIGN  
 FUNCTIONAL SUPERVISOR: JULIE CASEY  
 MICHAEL R. WEBB  
 JULIE CASEY  
 REVISOR: JULIE CASEY  
 DATE REVISOR: JULIE CASEY  
 CALCULATED/DESIGNED BY: JULIE CASEY  
 CHECKED BY: JULIE CASEY





Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Las	36	25.4	20	49

*Michael R. Webb* 03-30-10  
 REGISTERED CIVIL ENGINEER DATE  
 5-3-10  
 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.

### TEMPORARY WATER POLLUTION CONTROL

	TEMPORARY DRAINAGE INLET PROTECTION
	EA
	3
TOTAL	3

### MINOR CONCRETE (MISCELLANEOUS CONSTRUCTION)

STATION	CURB AND GUTTER (TYPE A2-8)	RETAINING CURB (0.5' WIDE)	RETAINING CURB (0.75' WIDE)	SIDEWALK
	CY	CY	CY	CY
"R1" 100+48.00 TO 101+10.00	3.75			
"R1" 100+74.18 TO 100+98.79			0.46	
"R1" 100+48.00 TO 101+10.00				5.33
"R2" 202+10.46 TO 202+51.49	2.40			
"R2" 202+17.80 TO 202+46.80			0.54	
"R2" 202+10.46 TO 202+51.49				3.50
"R3" 300+20.80 TO 300+89.05	4.00			
"R3" 300+67.84 TO 300+88.04		0.21		
"R3" 300+20.80 TO 300+89.05				5.22
"R4" 400+24.00 TO 400+70.00	2.67			
"R4" 400+30.00 TO 400+52.00		0.30		
"R4" 400+24.00 TO 400+70.00				3.80
SUBTOTALS	12.82	0.51	1.00	17.85
GRAND TOTAL	32.18			

### ROADWAY ITEMS

STATION	REMOVE METAL RAILING	REMOVE CONCRETE (CURB AND SIDEWALK)	ROADWAY EXCAVATION	MINOR HOT MIX ASPHALT	GUARD POST	PIPE HAND RAILING (POST TYPE)
	LF	CY	CY	TON	EA	LF
"R1" 100+48.00 TO 101+10.00		8.92	6.0	11.6		
"R2" 202+10.46 TO 202+51.49		5.98	4.0	8.0		
"R3" 300+20.80 TO 300+89.05		9.73	6.7	13.6		
"R4" 400+24.00 TO 400+70.00		6.87	4.6	9.4		
"R1" 100+48.00 TO 100+74.18					6	
"R4" 400+19.25 TO 400+23.89	4.6					27
TOTALS	4.6	31.5	21.3	42.6	6	27

## SUMMARY OF QUANTITIES Q-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Las	36	25.4	21	49

03-30-10  
 REGISTERED ELECTRICAL ENGINEER  
 ART ROBLER  
 No. E15293  
 Exp. 3/31/11  
 5-3-10  
 PLANS APPROVAL DATE

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

16. FOR COMPLETE RIGHT OF WAY DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

**LEGEND**



**ABBREVIATIONS**

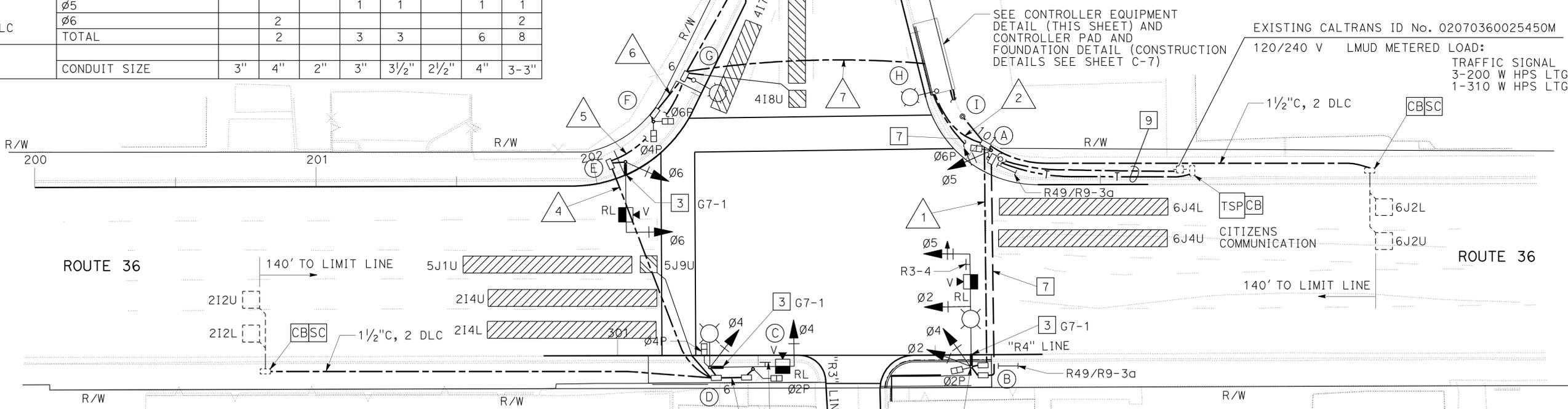
- LMUD LASSEN MUNICIPAL UTILITY DISTRICT
- CAB CABINET
- WICC WIRELESS INTERCONNECT ANTENNA CABLE
- VIVDS VIDEO IMAGING VEHICLE DETECTION SYSTEM

**CONDUCTOR AND CONDUIT SCHEDULE**

CONDUCTOR	CONDUCTOR RUN	CONDUIT RUN														
		1	2	3	4	5	6	7	8							
3CSC PPB	(A) 5,6P		1							1						
	(B) 2,4,5,2P	1	2	1						2						
	(C) 2P			1	1	1	1	1	1	1						
12CSC Veh	(D) 4,4P				1	1	1	1	1	1						
	(E) 6						1	1	1	1						
	(F) 4,6 4P,6P						2	1	2	2						
	(G)									1						
	(H)									1						
(I) 6									1	1						
TOTAL		1	2	2	3	1	2	2	3	2	1	4	4	6	7	
No. 6 AWG	SIGNAL															2
No. 8 AWG	LIGHTING	2	2			2	2					2				
VIVDS CABLE	Ø6					1						1				1
	Ø2, Ø5	1	1													1
	Ø4				1	1						1				1
	TOTAL	1	1		1	2						2	3			
DLC	Ø2				2	2						2	2			2
	Ø4											3	3			3
	Ø5				1	1						1	1			2
	TOTAL				2	3						6	8			8
CONDUIT SIZE		3"	4"	2"	3"	3 1/2"	2 1/2"	4"			3-3"					

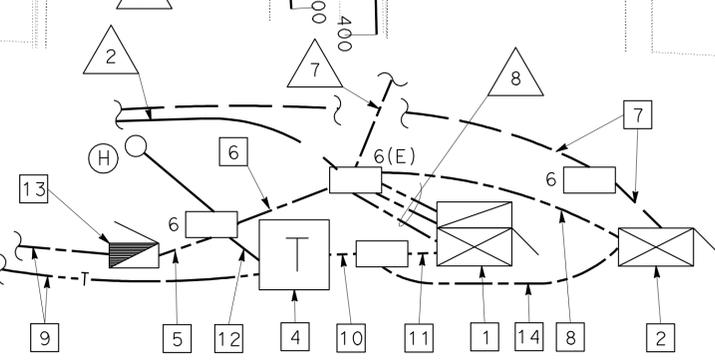
**POLE AND EQUIPMENT SCHEDULE**

No.	STANDARD		VEH SIG MTG		PED SIGNAL MTG	PPB		HPS LUMINAIRE	SPECIAL REQUIREMENTS
	Type	SMA	LMA	Mast Arm		Pole	Ø		
(A)	1-A				TV-1-T				
(B)	26A-4-100	40'	15'	2-MAS	SV-2-TC	SP-1-T	2	←	310 W
(C)	1-A					TP-1-T	2	→	
(D)	19-3-100	30'	12'	MAS	SV-1-T	SP-1-T	4	←	200 W
(E)	18-3-100	25'		MAS	SV-1-T				ROTATE LMA 90° / SNS-ASH S†
(F)	1-A					TP-2-T	4	↔	
(G)	15		15'						200 W
(H)	15		12'						200 W
(I)	PPB POST						6	←	

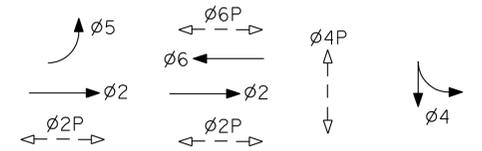


**NOTES: (THIS SHEET)**

- 1 INSTALL STATE-FURNISHED MODEL 2070 CONTROLLER ASSEMBLY (332 CABINET). PROVIDE EXTERNAL BBS ENCLOSURE. SEE LOW-PROFILE ANTENNA INSTALLATION DETAIL, SHEET E-4.
- 2 SYSTEM CONTROLLER MASTER CABINET.
- 3 SEE SIGN MOUNTED TO SIGNAL POLE/MAST ARM INSTALLATION DETAIL, SHEET E-3.
- 4 TYPE B TDC.
- 5 2" C, 2#6 (SIGNAL CAB), 2#8 (SYSTEM CONTROLLER MASTER CAB), 2#8 (LTG), 2#12 (TDC), 1#6G.
- 6 2" C, 2#6, 4#8, 1#6G.
- 7 2" C, WICC
- 8 2" C, 2#8, 1#8G.
- 9 2-2" C, (TYPE 3), MT.
- 10 2" C, TC.
- 11 2" C, TC, SIC.
- 12 1 1/2" C, 2#12, 1#12G.
- 13 TYPE III-AF SERVICE EQUIPMENT ENCLOSURE. SEE SERVICE WIRING DIAGRAM, SHEET E-2.
- 14 2" C, SIC.
- 15 SEE OMNIDIRECTIONAL ANTENNA INSTALLATION DETAIL, SHEET E-4.



**CONTROLLER EQUIPMENT DETAIL**  
NO SCALE



**PHASE DIAGRAM**

**WIRELESS INTERCONNECT SYSTEM SIGNAL AND LIGHTING**

SCALE: 1" = 20'

E-1

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

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

FUNCTIONAL SUPERVISOR: ROB STINGER  
 CALCULATED/DESIGNED BY: ARTURO ROBLES  
 CHECKED BY: JIM HANNIGAN  
 REVISED BY: DATE  
 REVISIONS:

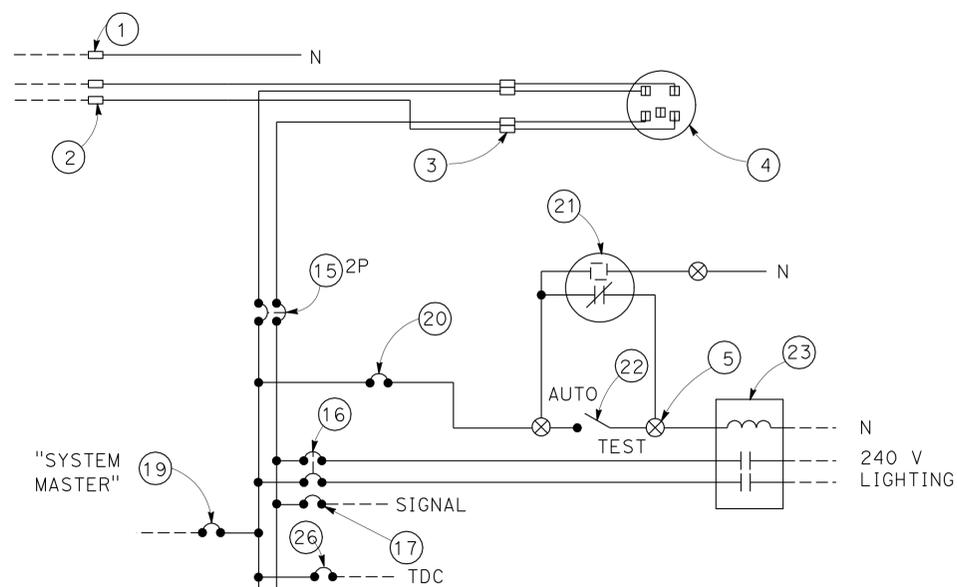
REVISIONS:

**NOTES (THIS SHEET):**

- UNLESS OTHERWISE NOTED, [RC] PULL BOXES.
- [RC] SIGNAL POLES AND EQUIPMENT, COMPLETE. SEE SHEET E-1 FOR NEW VIVDS CAMERA LOCATIONS.
- PULL BOX TO REMAIN.
- LOOP DETECTOR TO REMAIN.
- [RS] WIRELESS INTERCONNECT ANTENNA.
- [RS] VIVDS COMPONENTS.
- FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

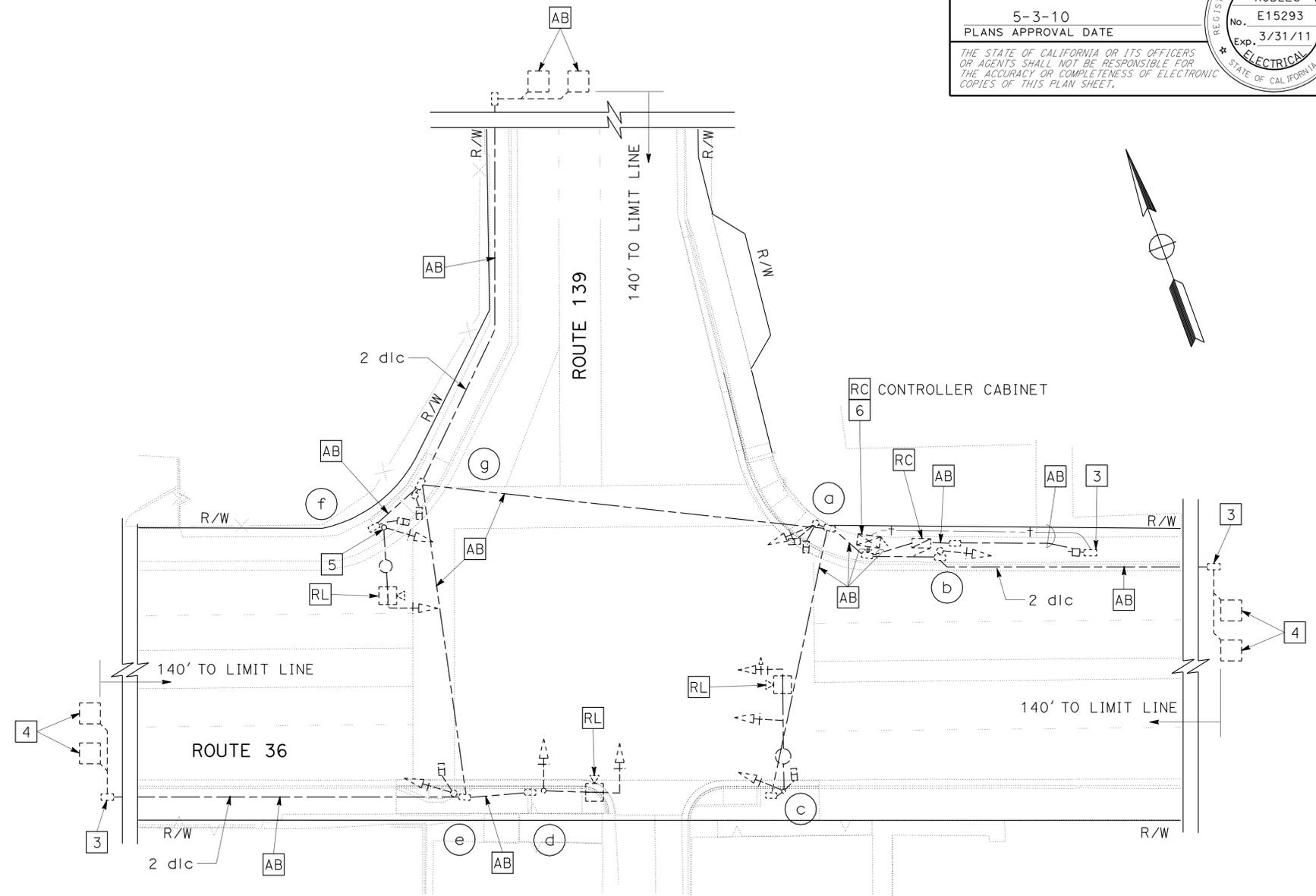
**POLE AND EQUIPMENT SCHEDULE**

No.	STANDARD			VEH SIG MTG		PED SIGNAL	PPB	HPS LUMINAIRE
	TYPE	SMA	LMA	MAST ARM	POLE			
(a)	1-B				1	2	1	
(b)	1-B				1			
(c)	24	35'	12'	2	1	1	1	200 W
(d)	16	15'		1	1			
(e)	1-B				1	1	1	
(f)	19	25'	12'	1	1	1	1	200 W
(g)	1-B				1	1	1	

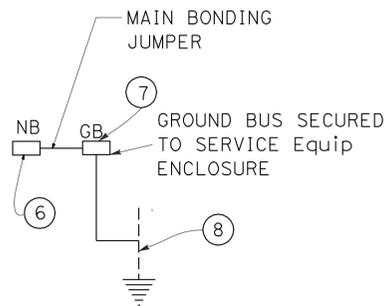


**SERVICE WIRING DIAGRAM**

SEE STANDARD PLAN ES-2D



PLAN SCALE: 1" = 20'



**SIGNAL AND LIGHTING (REMOVAL)**

SCALE: AS SHOWN

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

RELATIVE BORDER SCALE IS IN INCHES



USERNAME => trphilis  
DGN FILE => 21e460ua002.dgn

x

x

x

x

x

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Las	36	25.4	23	49

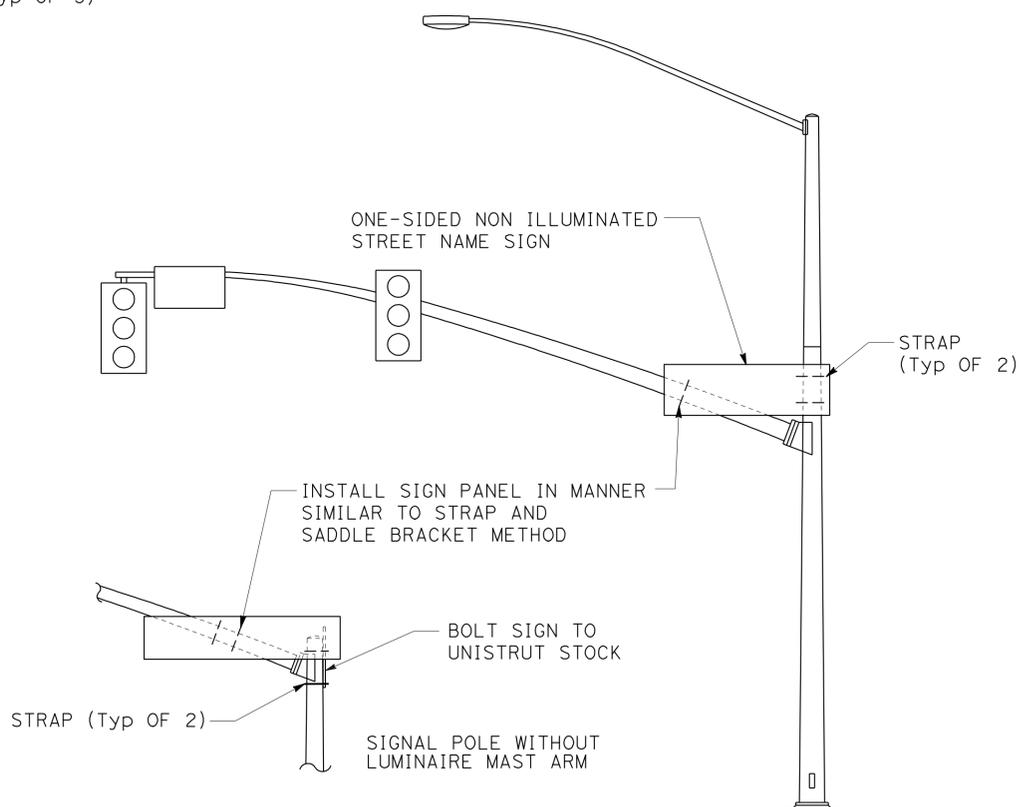
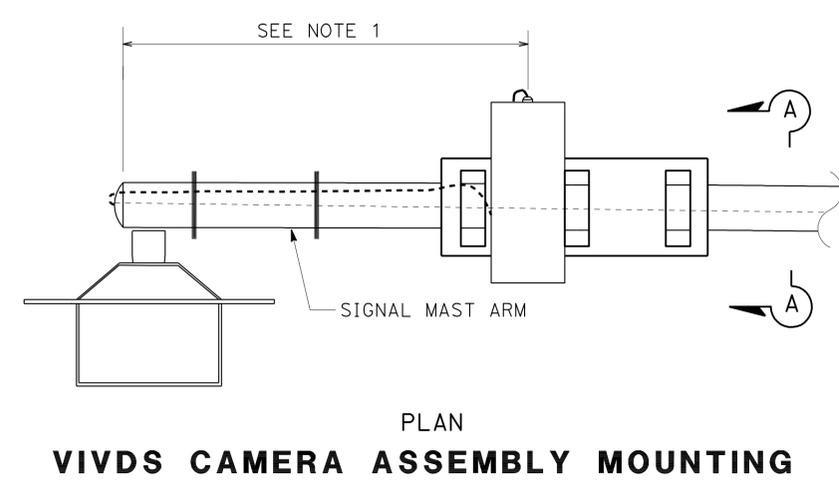
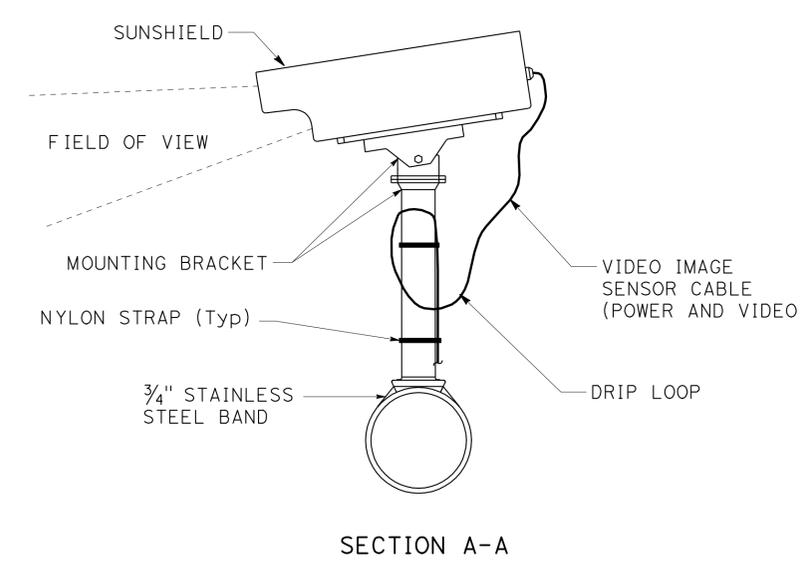
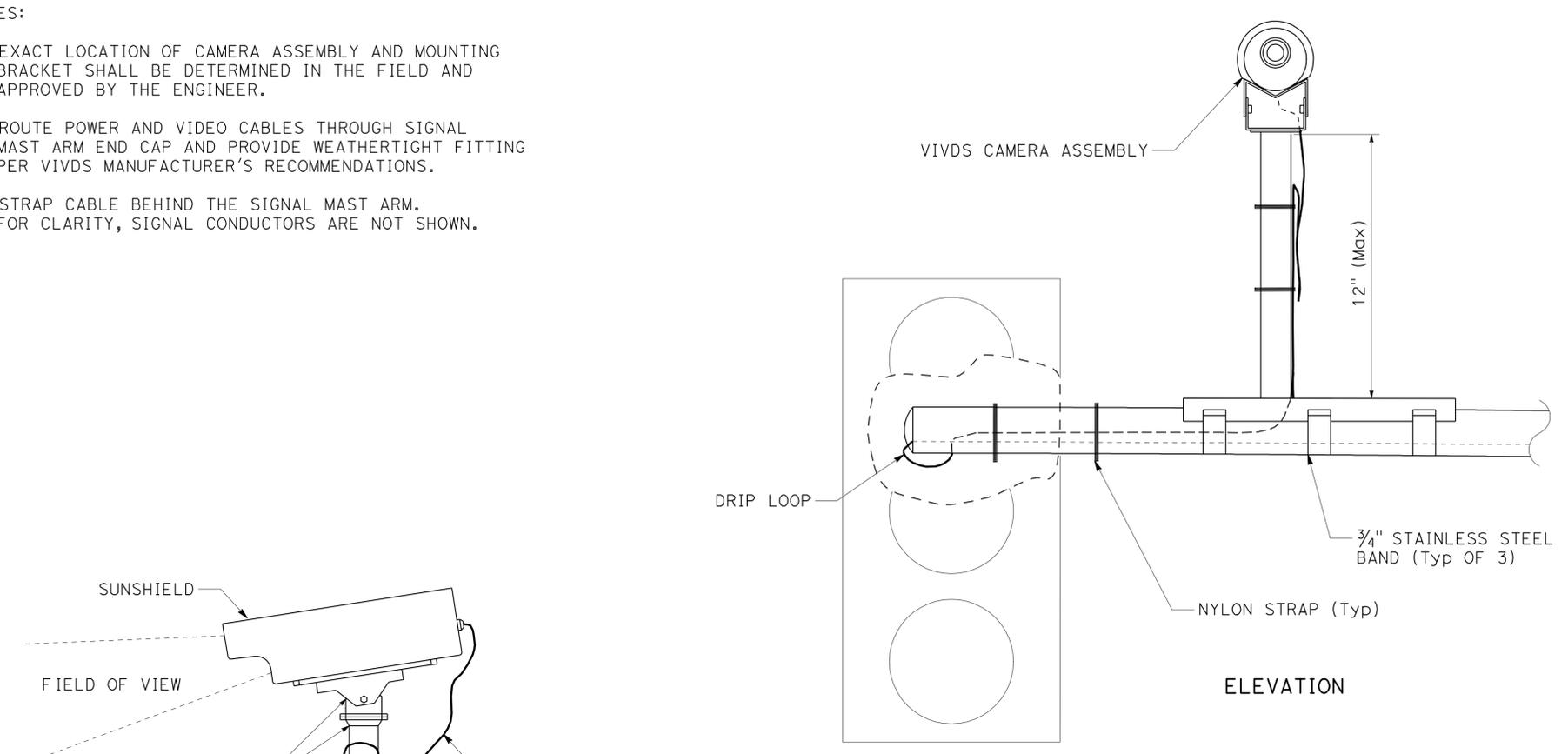
<i>Jeffrey B. Woody</i> 04-21-10 REGISTERED ELECTRICAL ENGINEER	
5-3-10	PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.	

Jeffrey B. Woody No. C41260 Exp. 3-31-11 CIVIL STATE OF CALIFORNIA
--------------------------------------------------------------------------------

NOTES:

1. EXACT LOCATION OF CAMERA ASSEMBLY AND MOUNTING BRACKET SHALL BE DETERMINED IN THE FIELD AND APPROVED BY THE ENGINEER.
2. ROUTE POWER AND VIDEO CABLES THROUGH SIGNAL MAST ARM END CAP AND PROVIDE WEATHERTIGHT FITTING PER VIVDS MANUFACTURER'S RECOMMENDATIONS.
3. STRAP CABLE BEHIND THE SIGNAL MAST ARM. FOR CLARITY, SIGNAL CONDUCTORS ARE NOT SHOWN.



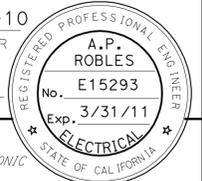
**SIGN MOUNTED TO SIGNAL POLE/MAST ARM INSTALLATION DETAIL**

**SIGNAL AND LIGHTING (DETAILS)**

NO SCALE

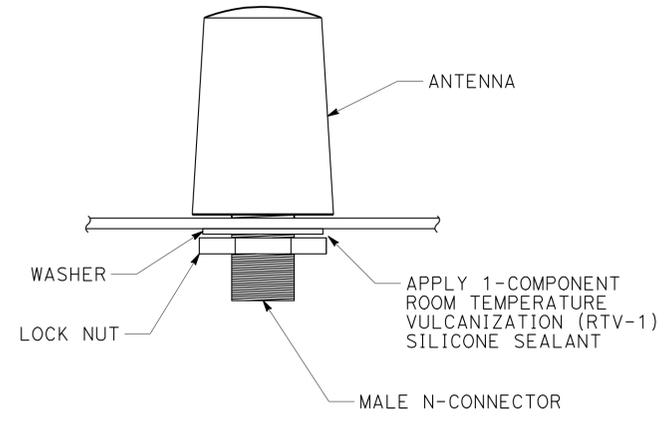
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 ELECTRICAL DESIGN  
 CALTRANS

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Las	36	25.4	24	49
ART			03-30-10		
REGISTERED ELECTRICAL ENGINEER			A.P. ROBLES		
5-3-10			No. E15293		
PLANS APPROVAL DATE			Exp. 3/31/11		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.</small>					



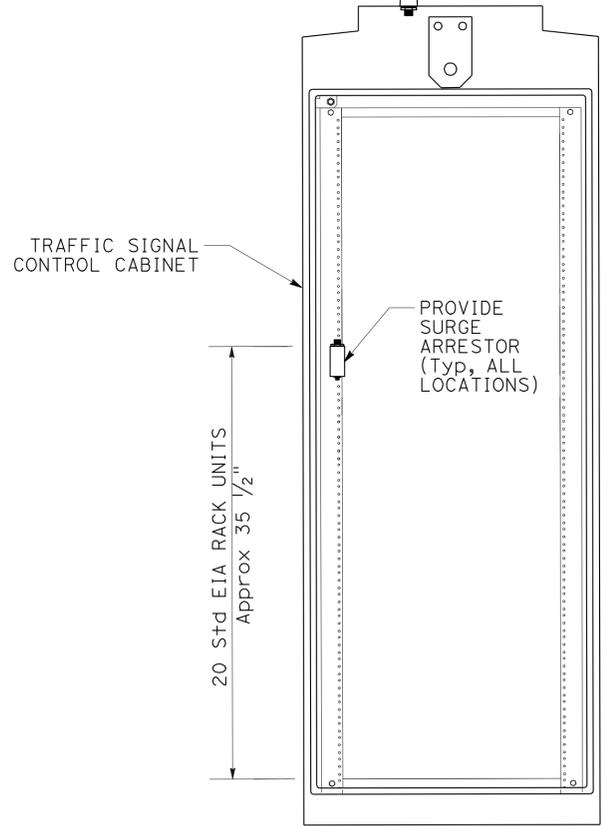
**NOTES (THIS SHEET):**

- 1 REMOVE SET SCREWS (3)  
DRILL AND TAP THROUGH RAIN CAP AND POLE  
INSTALL 3/8" CADMIUM PLATED STEEL SET SCREWS (3).
- 2 WEATHERPROOF PER MANUFACTURER'S INSTRUCTIONS.
- 3 THREADED, WATERTIGHT FITTING,  
MYERS HUB OR EQUIVALENT.
- 4 COUPLING.
- 5 BUSHING.
6. TRAFFIC SIGNAL CONTROL EQUIPMENT NOT SHOWN.
7. TIE COAXIAL ANTENNA CABLE (NOT SHOWN) TO  
RACK AND CONNECT TO SURGE ARRESTOR.

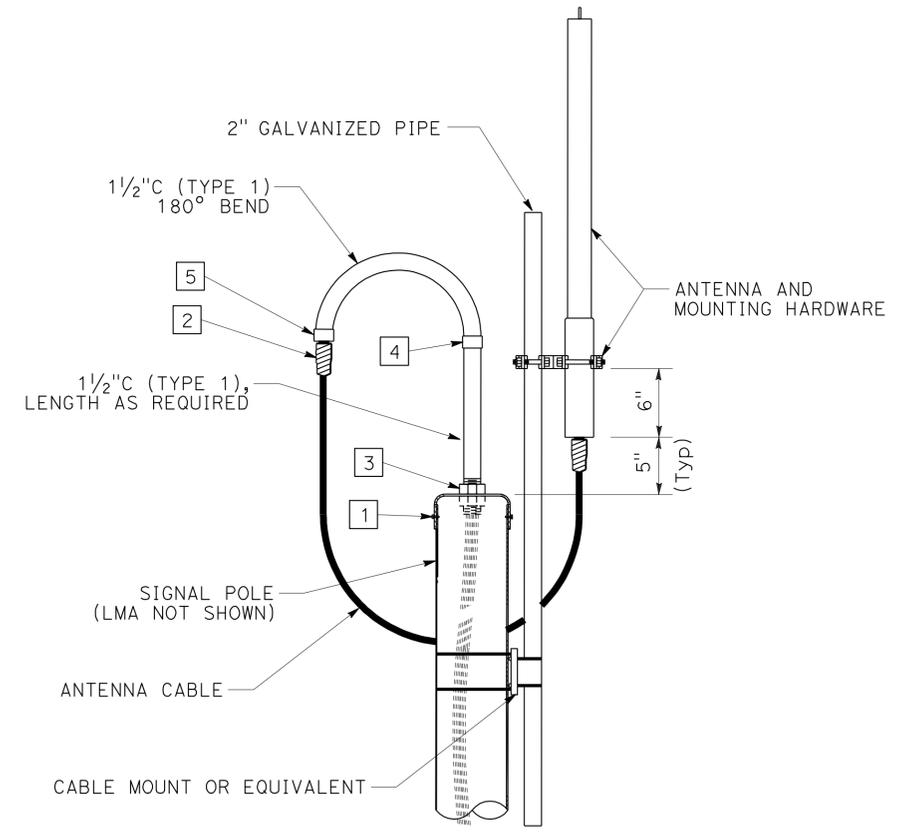


**LOW-PROFILE ANTENNA**

INSTALL LOW-PROFILE ANTENNA ON SYSTEM  
MASTER CABINET, AWAY FROM FAN ASSEMBLY



**CABINET-MOUNTED**  
NOTE: Std EIA RACK UNIT = 1 3/4"



**OMNIDIRECTIONAL ANTENNA  
INSTALLATION DETAIL**

**WIRELESS INTERCONNECT SYSTEM  
(ANTENNA INSTALLATION DETAILS)**

NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL DESIGN  
 FUNCTIONAL SUPERVISOR: ROB STINGER  
 CALCULATED/DESIGNED BY: ARTURO ROBLES  
 CHECKED BY: JIM HANNIGAN  
 REVISED BY: DATE REVISIONS:

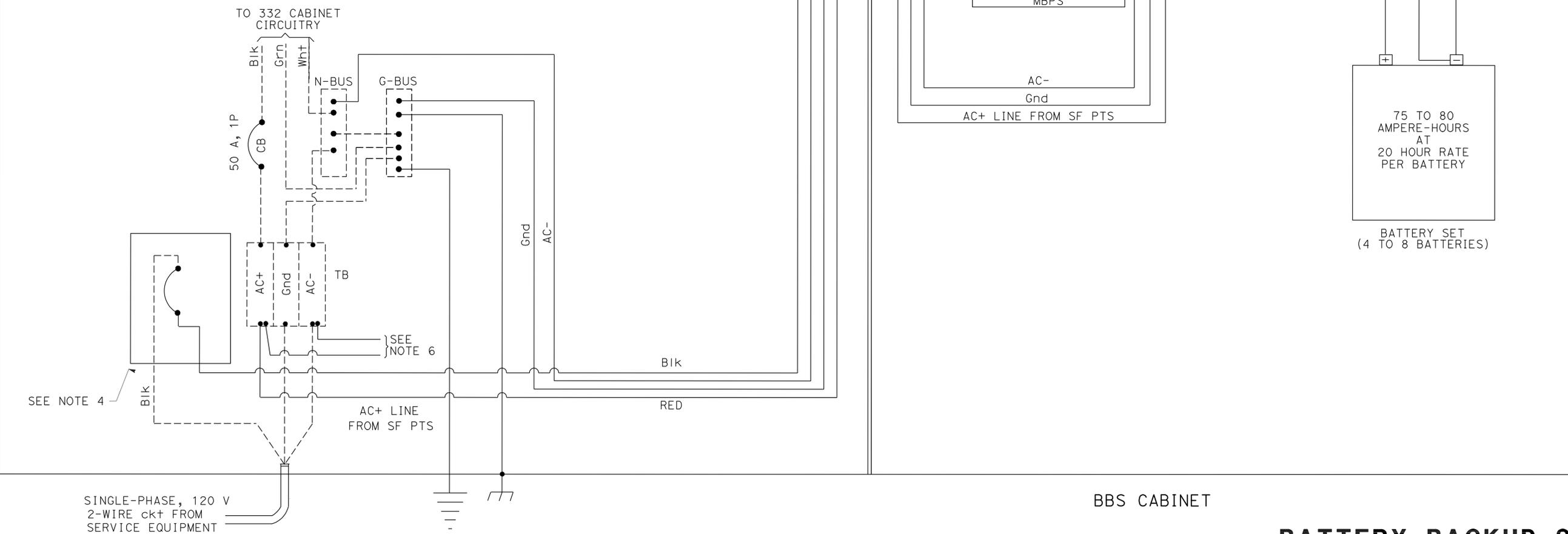
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Las	36	25.4	25	49
<i>Theresa Gabriel</i> 05-05-09 REGISTERED ELECTRICAL ENGINEER					
5-3-10 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.</small>					

**LEGEND: (THIS SHEET ONLY)**

- PTS = POWER TRANSFER SWITCH
- UPS = UNINTERRUPTIBLE POWER SUPPLY
- UPSC = UNINTERRUPTIBLE POWER SUPPLY CONTROLLER
- UPSM = UPS MODE
- BP = BYPASS
- MBPS = MANUAL BYPASS SWITCH
- AC+ = UNGROUNDED CONDUCTOR
- AC- = GROUNDED CONDUCTOR
- C = COMMON
- Grn = GREEN
- Blk = BLACK
- Wh+ = WHITE
- SF = STATE-FURNISHED
- Batt = BATTERY
- Temp = TEMPERATURE
- TB = TERMINAL BOARD
- Cntl = CONTROL
- Gnd = GROUND

**NOTES: (THIS SHEET ONLY)**

1. TYPE B REFERS TO THE BBS EQUIPMENT FROM MANUFACTURER B.
2. CASE-1 REFERS TO THE SITUATION WHEN THE ENTIRE BBS EQUIPMENT INCLUDING THE BATTERIES ARE INSTALLED IN THE BBS CABINET.
3. THE LOCATION OF THE 2" NIPPLE WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.
4. THE CONTRACTOR SHALL FURNISH AND INSTALL A NEMA-1 ENCLOSURE WITH 30 A, 1P, 120/240 VOLTS RATED CIRCUIT BREAKER MANUFACTURED PER UL STANDARD 489.
5. A TEMPERATURE PROBE SHALL BE ATTACHED TO THE BATTERY BY TAPE OR ATTACHED TO THE NEGATIVE TERMINAL OF THE BATTERY.
6. THE ELECTRICAL POWER FOR THE COOLING FAN FOR THE BBS CABINET SHALL BE TAPPED FROM THE BOTTOM OF THE TB IN THE 332 CABINET.
7. THE CONTRACTOR SHALL PROVIDE A 9-WIRE WIRING HARNESS OR BUNDLED 9 MULTICOLOR CONDUCTORS, #18 AWG WIRES FROM THE RELAY ON THE INVERTER/CHARGER UNIT TO THE CONTROLLER. THE ENDS OF THE CONDUCTORS SHALL BE INSULATED WITH TAPE AND A SIX-FOOT COIL ON EACH END.



332 CONTROLLER CABINET

BBS CABINET

**BATTERY BACKUP SYSTEM (DETAILS)**

NO SCALE

**E-5**

P:\proj\2102\1E460\plans\pse\21e460ua005.dgn

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

FUNCTIONAL SUPERVISOR  
ROB STINGER

CALCULATED/DESIGNED BY  
CHECKED BY

ARTURO ROBLES  
JIM HANNIGAN

REVISED BY  
DATE REVISED

x



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Las	36	25.4	26	49

Theresa Gabriel 05-05-09  
 REGISTERED ELECTRICAL ENGINEER  
 No. E15129  
 Exp. 6-30-10  
 PLANS APPROVAL DATE

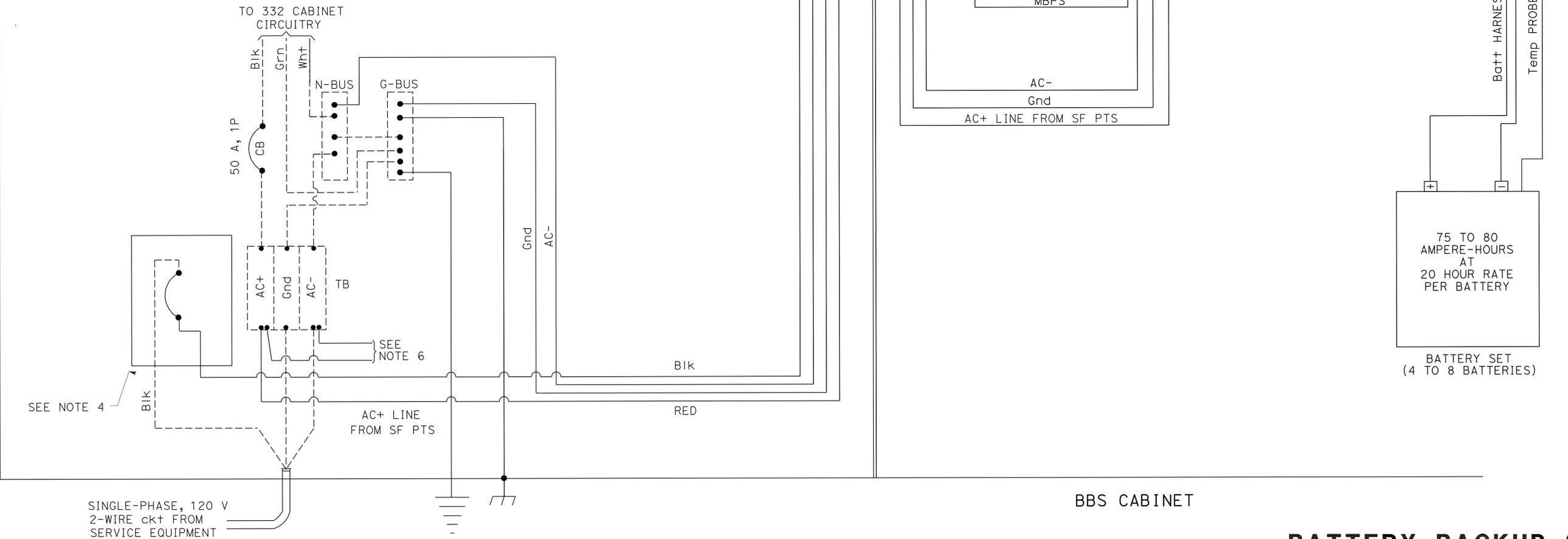
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

**LEGEND: (THIS SHEET ONLY)**

- PTS = POWER TRANSFER SWITCH
- UPS = UNINTERRUPTIBLE POWER SUPPLY
- UPSC = UNINTERRUPTIBLE POWER SUPPLY CONTROLLER
- UPSM = UPS MODE
- BP = BYPASS
- MBPS = MANUAL BYPASS SWITCH
- AC+ = UNGROUNDED CONDUCTOR
- AC- = GROUNDED CONDUCTOR
- C = COMMON
- Grn = GREEN
- Blk = BLACK
- Wht = WHITE
- SF = STATE-FURNISHED
- TB = TERMINAL BOARD
- Cntl = CONTROL
- Gnd = GROUND
- Temp = TEMPERATURE
- Batt = BATTERY

**NOTES: (THIS SHEET ONLY)**

1. TYPE A REFERS TO THE BBS EQUIPMENT FROM MANUFACTURER A.
2. CASE-1 REFERS TO THE SITUATION WHEN THE ENTIRE BBS EQUIPMENT INCLUDING THE BATTERIES ARE INSTALLED IN THE BBS CABINET.
3. THE LOCATION OF THE 2" C NIPPLE WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.
4. THE CONTRACTOR SHALL FURNISH AND INSTALL A NEMA-1 ENCLOSURE WITH 30 A, 1P, 120/240 VOLTS RATED CIRCUIT BREAKER MANUFACTURED PER UL STANDARD 489.
5. A TEMPERATURE PROBE SHALL BE ATTACHED TO THE BATTERY BY TAPE OR ATTACHED TO THE NEGATIVE TERMINAL OF THE BATTERY.
6. THE ELECTRICAL POWER FOR THE COOLING FAN FOR THE BBS CABINET SHALL BE TAPPED FROM THE BOTTOM OF THE TB IN THE 332 CABINET.
7. THE CONTRACTOR SHALL PROVIDE A 9-WIRE WIRING HARNESS OR BUNDLED 9 MULTICOLOR CONDUCTORS, #18 AWG WIRES FROM THE RELAY ON THE INVERTER/CHARGER UNIT TO THE CONTROLLER. THE ENDS OF THE CONDUCTORS SHALL BE INSULATED WITH TAPE AND A SIX-FOOT COIL ON EACH END.



332 CONTROLLER CABINET

BBS CABINET

**BATTERY BACKUP SYSTEM (DETAILS)**

NO SCALE

**E-6**

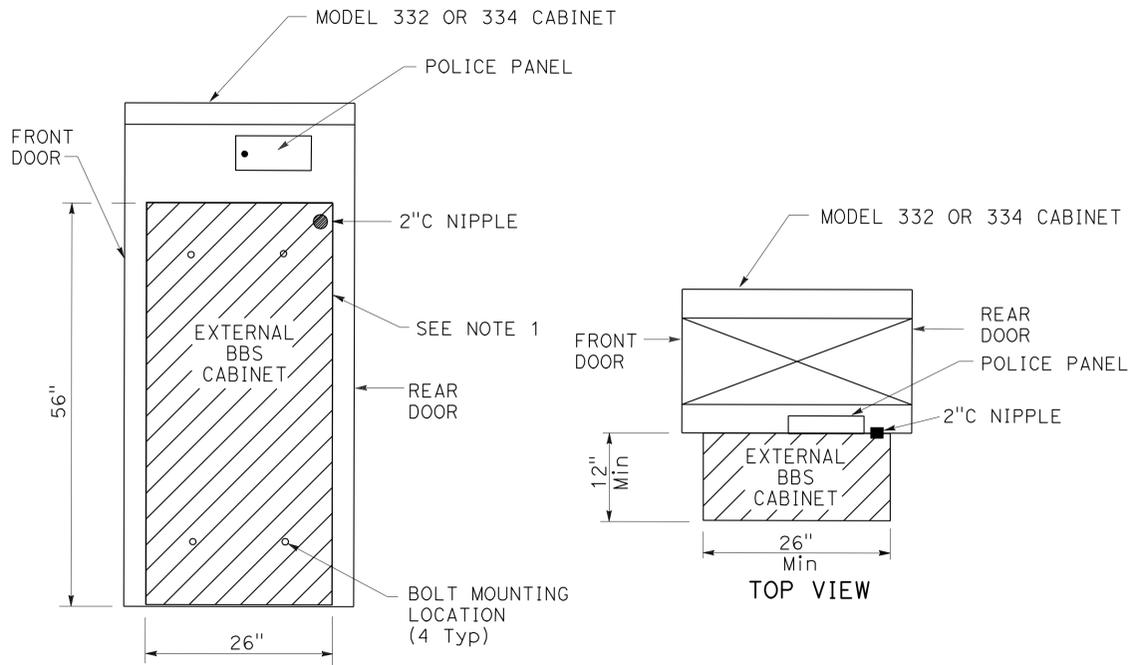
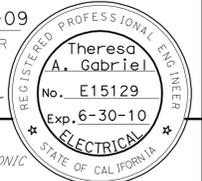
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	ARTURO ROBLES	REVISOR
<b>Electrical DESIGN</b>	JIM HANNIGAN	DATE
FUNCTIONAL SUPERVISOR	ROB STINGER	REVISOR
CALCULATED/DESIGNED BY	CHECKED BY	DATE

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Las	36	25.4	27	49

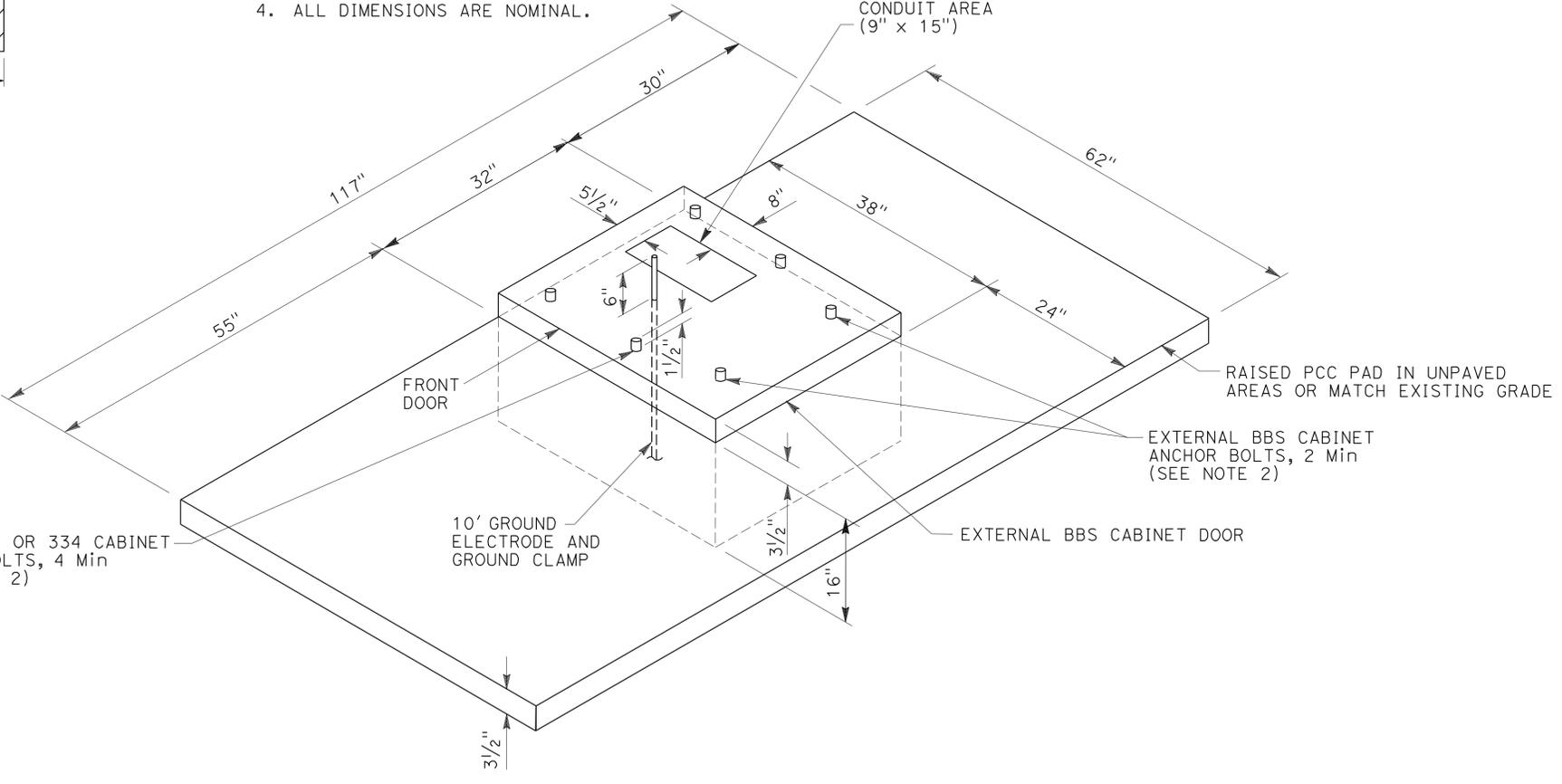
Theresa Gabriel REGISTERED ELECTRICAL ENGINEER No. E15129 Exp. 6-30-10	05-05-09
5-3-10	
PLANS APPROVAL DATE	
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.</small>	



**NOTE: (THIS SHEET ONLY)**

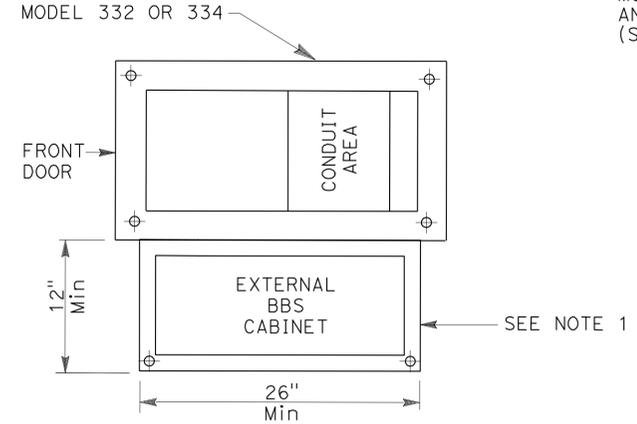
1. THE EXTERNAL BBS CABINET SHALL BE MOUNTED TO THE MODEL 332 OR 334 CABINET WITH FOUR 18-8 STAINLESS STEEL HEX HEAD, FULLY-THREADED,  $\frac{3}{8}$ "-16 X 1" BOLTS; TWO WASHERS PER BOLT, DESIGNED FOR  $\frac{3}{8}$ " BOLTS AND ARE 18-8 STAINLESS STEEL, 1" OUTSIDE DIAMETER, ROUND, AND FLAT; AND ONE K-LOCK NUT PER BOLT THAT IS 18-8 STAINLESS STEEL AND A HEX-NUT. THE ENGINEER WILL HAVE TO APPROVE THE BOLT MOUNTING LOCATION PRIOR TO INSTALLATION.
2. THE ANCHOR BOLTS SHALL BE  $\frac{3}{4}$ " Dia X 15" WITH A 2"-90° BEND. THE CABINET MANUFACTURER'S SPECIFICATION SHALL DETERMINE THE LOCATION OF THE ANCHOR BOLTS IN THE FOUNDATION. THE ENGINEER WILL HAVE TO APPROVE THE ANCHOR BOLTS AND ITS LOCATION IN THE FOUNDATION PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR SHALL VERIFY THE DIMENSIONS OF THE BBS CABINET PRIOR TO CONSTRUCTING THE FOUNDATION OF THE MODIFIED PORTION OF THE S+D MODEL 332 AND 334 CABINET FOUNDATION. THE ENGINEER WILL HAVE TO APPROVE ANY NECESSARY DEVIATIONS PRIOR TO CONSTRUCTION.
4. ALL DIMENSIONS ARE NOMINAL.

**EXTERNAL BBS CABINET MOUNTED TO THE MODEL 332 OR 334 CABINET**



**MODIFIED MODEL 332 AND 334 CABINET FOUNDATION DETAIL FOR BATTERY BACKUP SYSTEM (BBS)**

(FOR DIMENSIONS AND DETAILS NOT SHOWN AND ADDITIONAL NOTES, SEE SHEET ES-3C OF THE STANDARD PLANS FOR MODEL 332 AND 334 CABINETS)

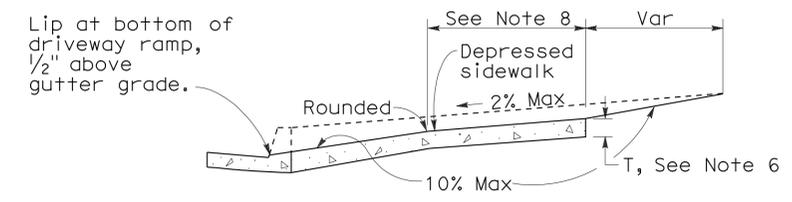
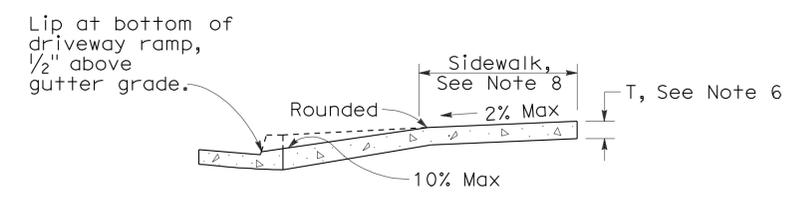
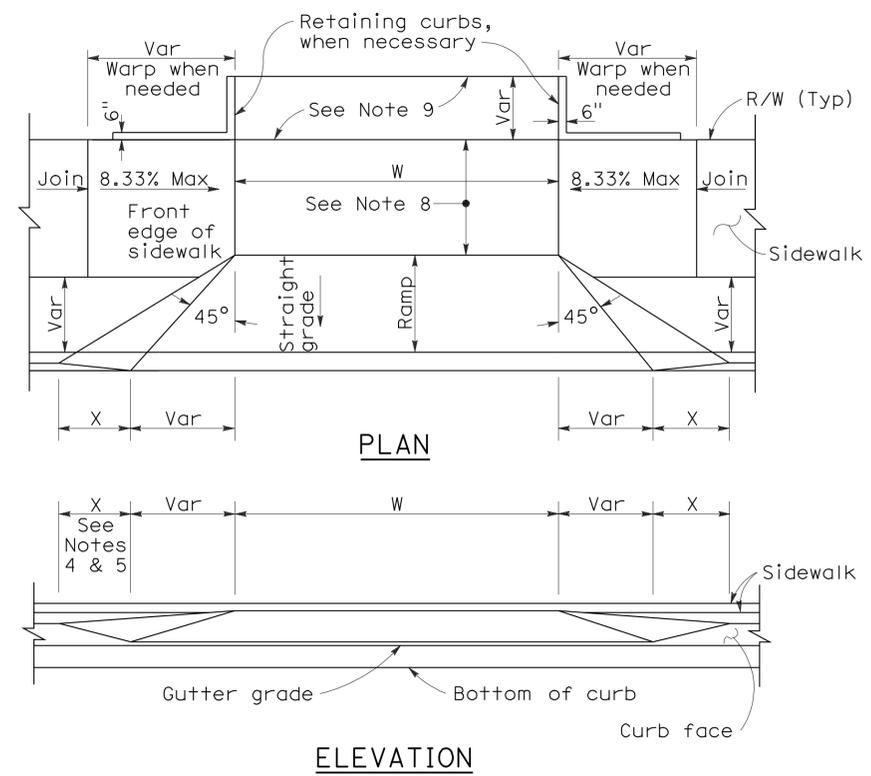


**BASE PLAN FOR BBS MOUNTED TO THE MODEL 332 OR 334 CABINET**

(FOR DIMENSIONS AND DETAILS NOT SHOWN, SEE SHEET A6-1 TO A6-4, CABINET HOUSING DETAILS OF THE TRANSPORTATION ELECTRICAL EQUIPMENT SPECIFICATION (TEES))

**BATTERY BACKUP SYSTEM (DETAILS)**  
NO SCALE **E-7**

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 STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL DESIGN  
 FUNCTIONAL SUPERVISOR ROB STINGER  
 CALCULATED/DESIGNED BY CHECKED BY  
 ARTURO ROBLES JIM HANNIGAN  
 REVISED BY DATE REVISED  
 x  
 x  
 x  
 x  
 x



**CASE A**

Typical driveway, sidewalk not depressed

**CASE B**

Driveway with depressed sidewalk

**SECTIONS**

**CURB QUANTITIES**

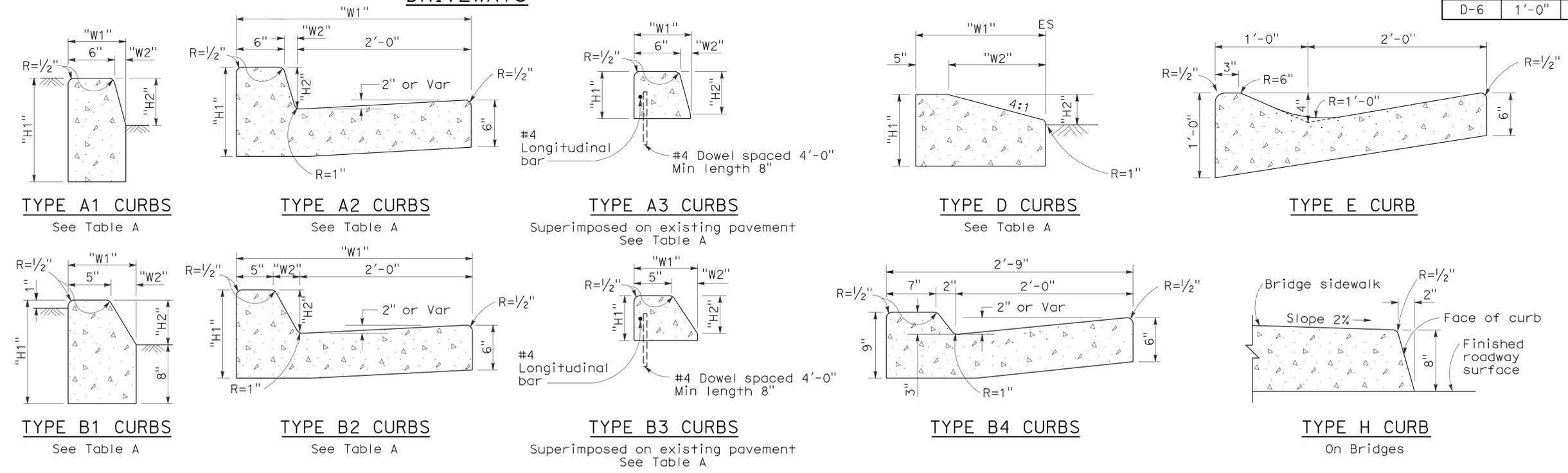
TYPE	CUBIC YARDS PER LINEAR FOOT
A1-6	0.02585
A1-8	0.03084
A2-6	0.05903
A2-8	0.06379
A3-6	0.01036
A3-8	0.01435
B1-4	0.02185
B1-6	0.02930
B2-4	0.05515
B2-6	0.06171
B3-4	0.00641
B3-6	0.01074
B4	0.05709
D-4	0.04083
D-6	0.06804
E	0.06661

**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'-8"

To accompany plans dated 5-3-10

**DRIVEWAYS**



**NOTES:**

- Case A driveway section typically applies.
- Use Case B driveway section when ramp slopes would exceed 10% in Case A.
- Use Case B driveway section when sidewalk cross slope would exceed 2% in Case A.
- X=3'-0" except for curb heights over 10" where 4:1 slopes shall be used on curb slope.
- X is a variable when sidewalk is located where wheelchairs may traverse the surface. Slopes shall not exceed 8.33%.
- 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'-0".
- 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.

**CURBS**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**CURBS AND DRIVEWAYS**

NO SCALE

RSP A87A DATED NOVEMBER 17, 2006 SUPERSEDES STANDARD PLAN A87A  
DATED MAY 1, 2006 - PAGE 113 OF THE STANDARD PLANS BOOK DATED MAY 2006.

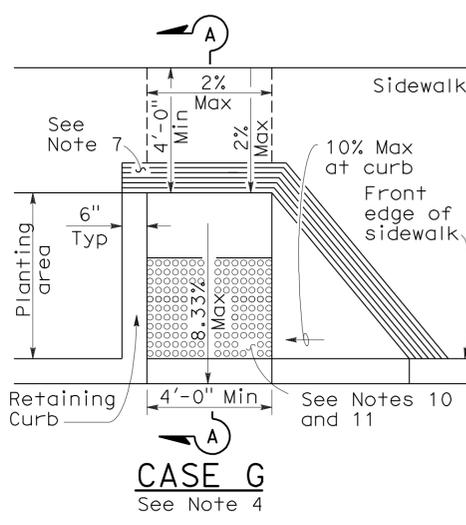
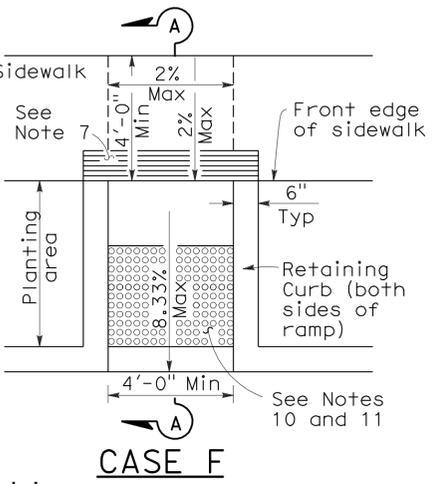
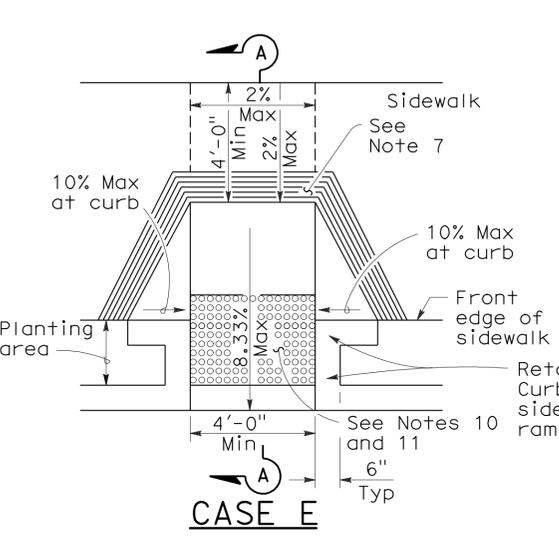
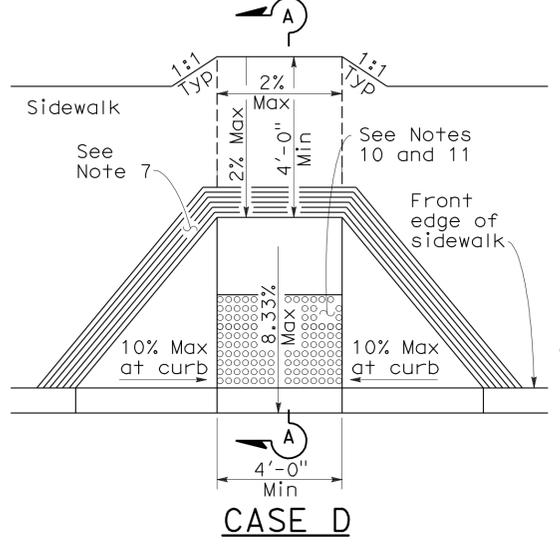
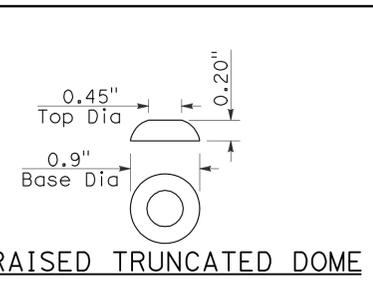
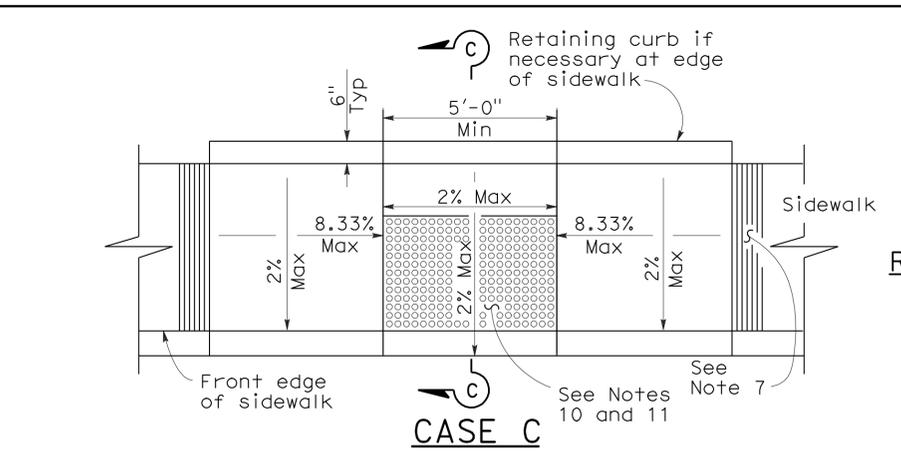
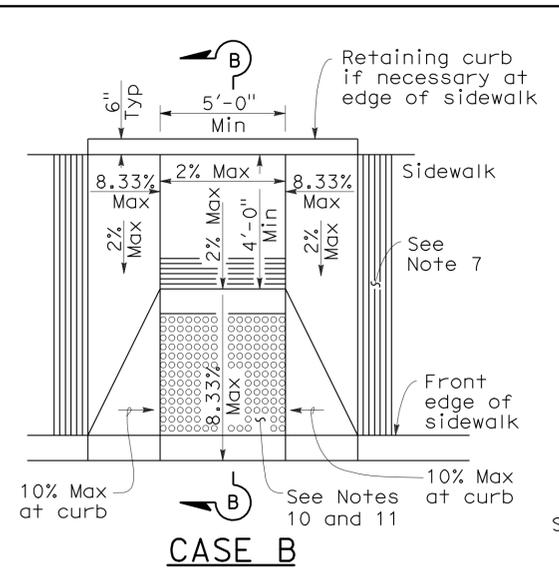
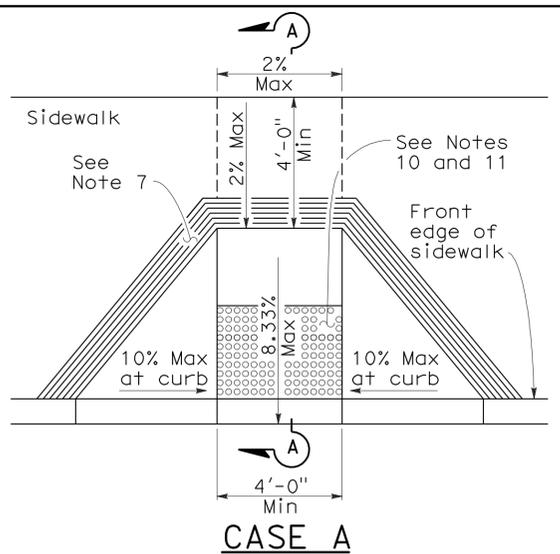
**REVISED STANDARD PLAN RSP A87A**

2006 REVISED STANDARD PLAN RSP A87A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Las	36	25.4	29	49

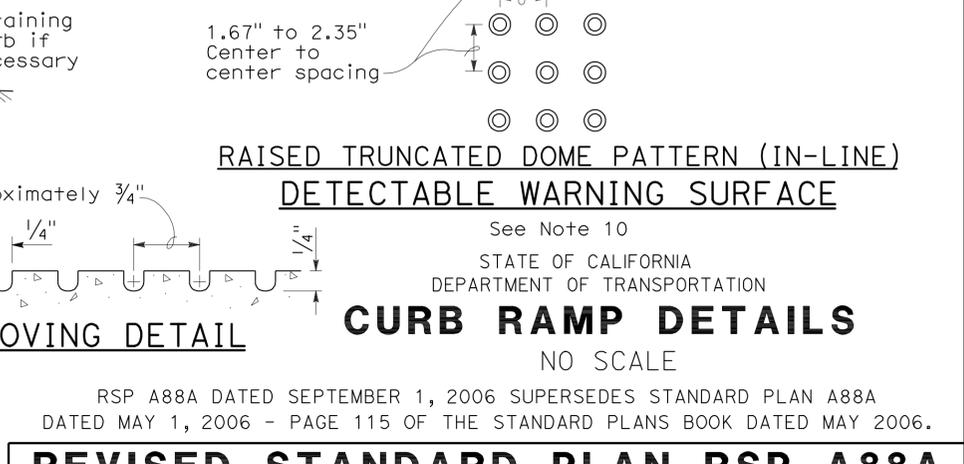
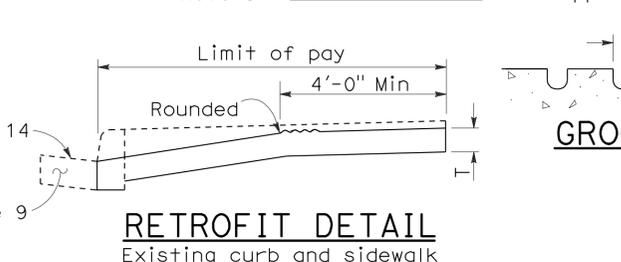
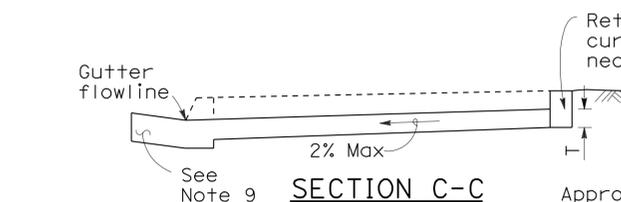
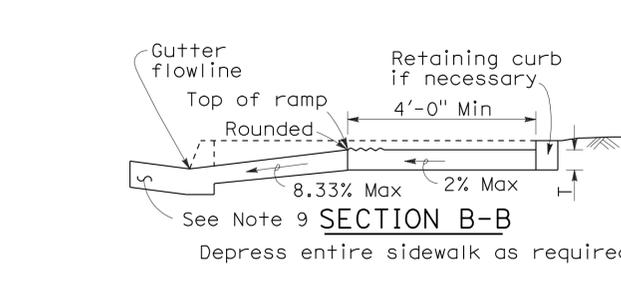
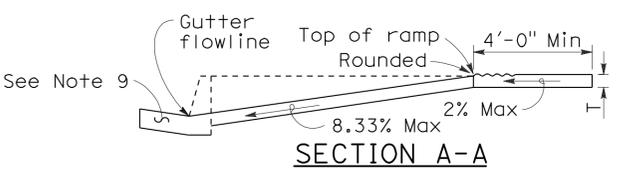
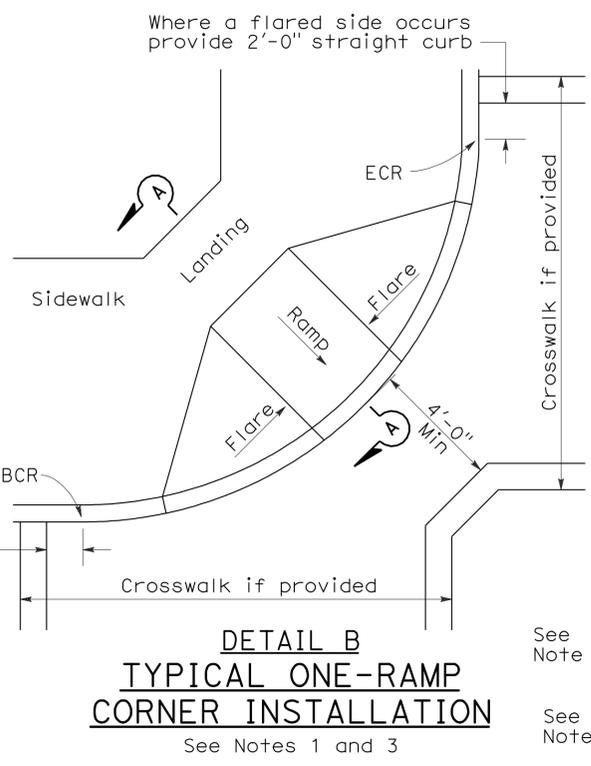
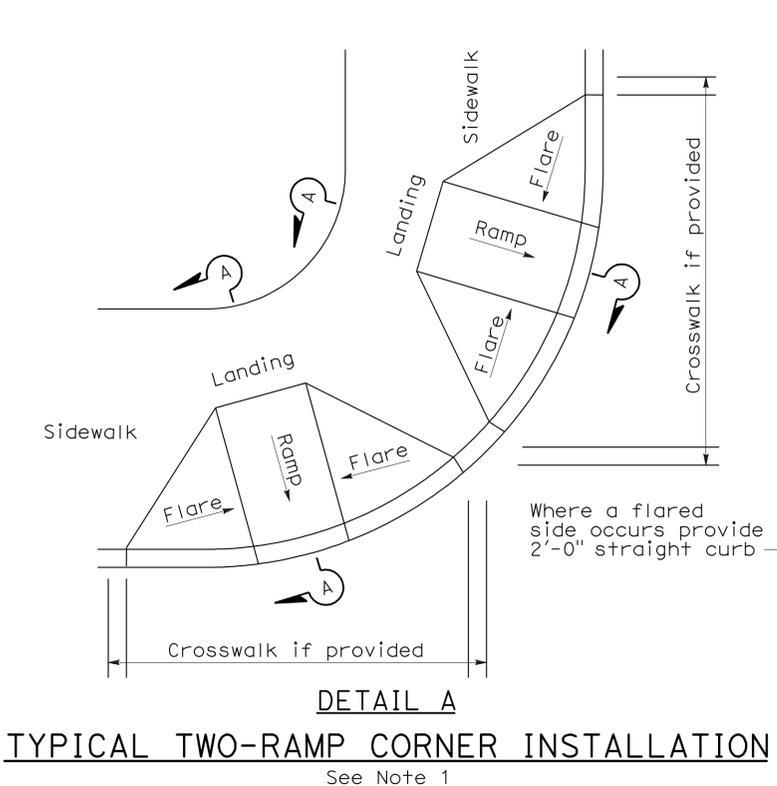
H. David Cordova  
 REGISTERED CIVIL ENGINEER  
 September 1, 2006  
 PLANS APPROVAL DATE  
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

REGISTERED PROFESSIONAL ENGINEER  
 Hector David Cordova  
 No. C41957  
 Exp. 3-31-08  
 CIVIL  
 STATE OF CALIFORNIA



**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'-0" 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'-0".
- Side slope of ramp flares vary uniformly from a maximum of 10% 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 and free of abrupt changes.
- Maximum slopes of adjoining gutters, the road surface immediately adjacent to the curb ramp or accessible route shall not exceed 5 percent within 4'-0" of the top and bottom of the curb ramp.
- Curb ramps shall have a detectable warning surface that extends the full width and 3'-0" depth of the ramp. Detectable Warning Surfaces shall conform to the details on this plan and the requirements in the Special Provisions.
- 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 3/2" 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.
- For retrofit conditions, removal and replacement of curb apron will be at the Contractor's option, unless otherwise shown on project plans.



RSP A88A DATED SEPTEMBER 1, 2006 SUPERSEDES STANDARD PLAN A88A DATED MAY 1, 2006 - PAGE 115 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A88A**

2006 REVISED STANDARD PLAN RSP A88A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Las	36	25.4	30	49

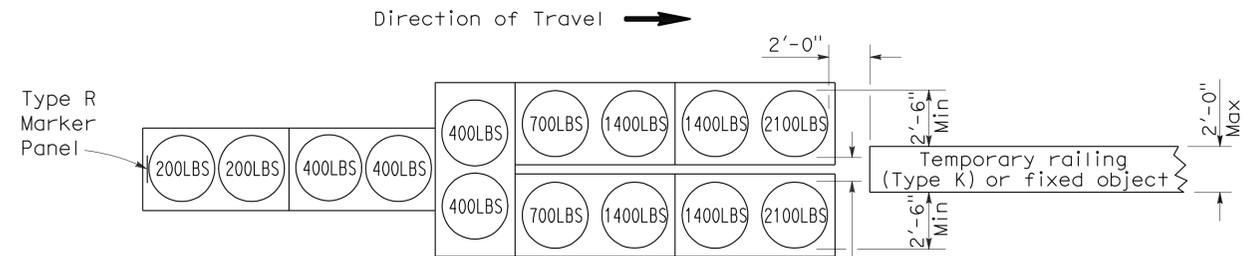
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

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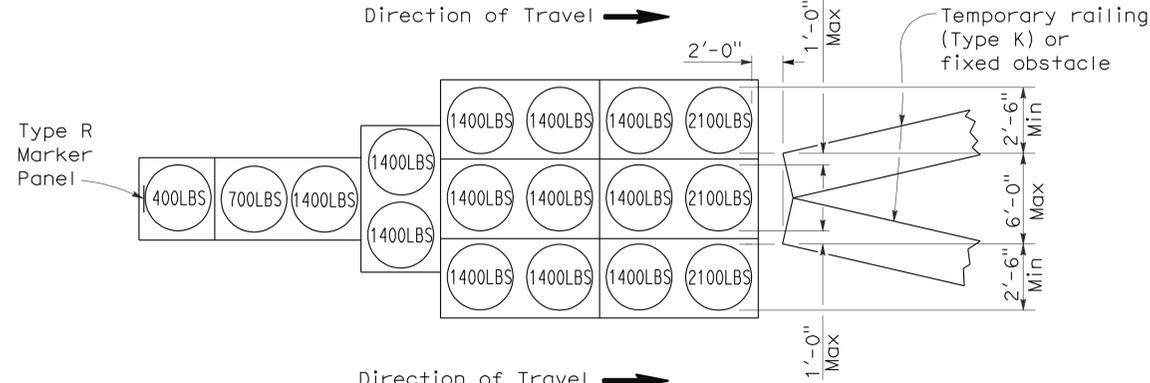
REGISTERED PROFESSIONAL ENGINEER  
*Randell D. Hiatt*  
No. C50200  
Exp. 6-30-09  
CIVIL  
STATE OF CALIFORNIA

To accompany plans dated 5-3-10



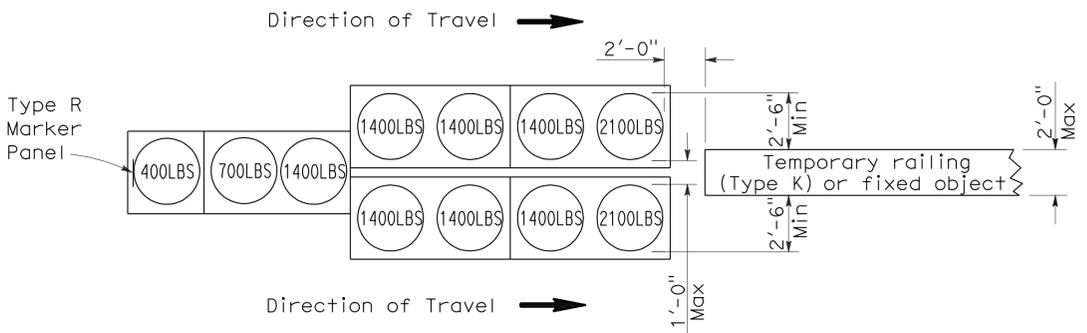
**ARRAY 'TU14'**

Approach speed 45 mph or more



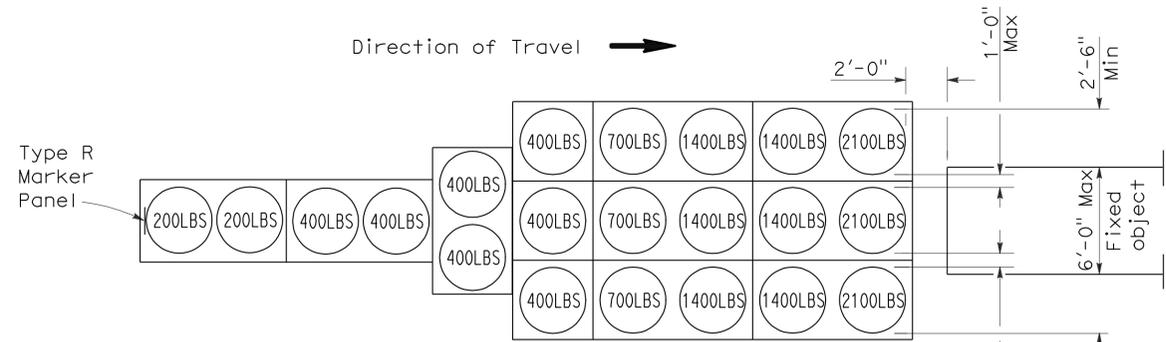
**ARRAY 'TU17'**

Approach speed less than 45 mph



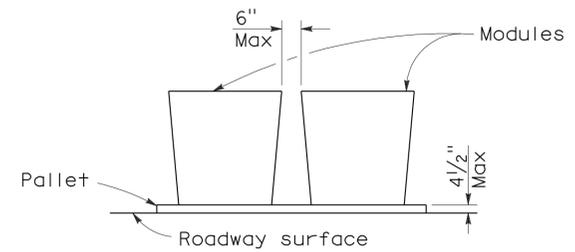
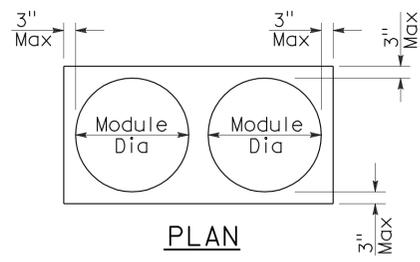
**ARRAY 'TU11'**

Approach speed less than 45 mph



**ARRAY 'TU21'**

Approach speed 45 mph or more



**CRASH CUSHION PALLET DETAIL**

See Note 7

**NOTES:**

1. (XXX) Indicates sand filled module location and weight of sand in pounds for each module. Module spacing is based on the greater diameter of the module.
2. All sand weights are nominal.
3. Temporary crash cushion arrays shall not encroach on the traveled way.
4. Place the top of Type R marker panel 1" below the module lid.
5. Refer to Standard Plan A73B for marker details.
6. Approach speeds indicated conform to NCHRP 350 Report criteria.
7. Use of pallets is optional.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**TEMPORARY CRASH CUSHION,  
SAND FILLED  
(UNIDIRECTIONAL)**

NO SCALE

RSP T1A DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T1A  
DATED MAY 1, 2006 - PAGE 211 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP T1A**

2006 REVISED STANDARD PLAN RSP T1A

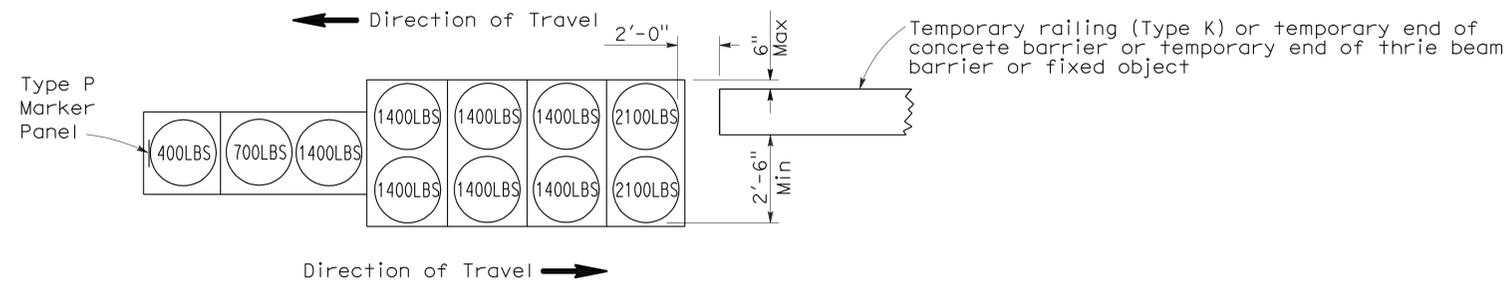
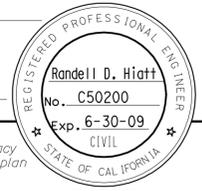
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Las	36	25.4	31	49

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

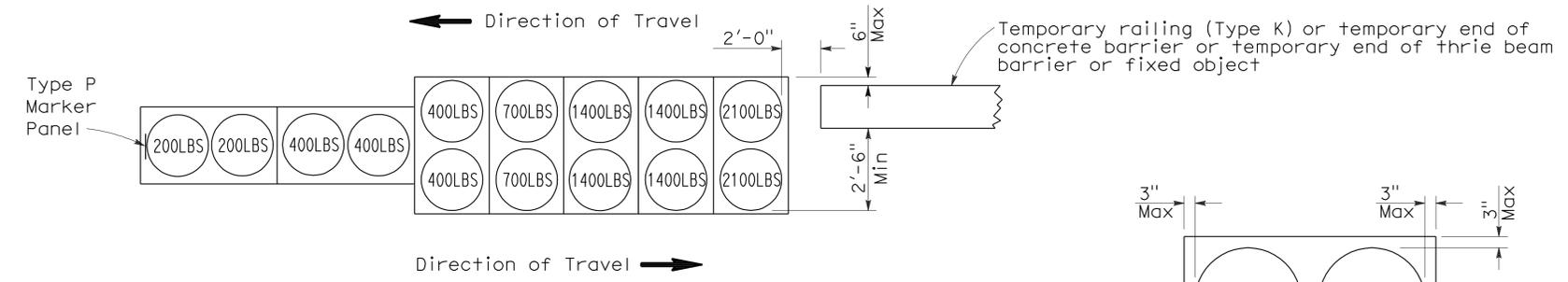
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To accompany plans dated 5-3-10



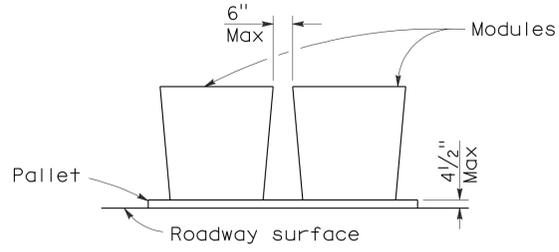
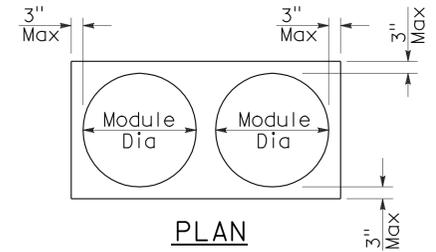
**ARRAY 'TB11'**

Approach speed less than 45 mph



**ARRAY 'TB14'**

Approach speed 45 mph or more



**CRASH CUSHION PALLET DETAIL**  
See Note 7

**NOTES:**

1. (XXX) Indicates sand filled module location and weight of sand in pounds for each module. Module spacing is based on the greater diameter of the module.
2. All sand weights are nominal.
3. Temporary crash cushion arrays shall not encroach on the traveled way.
4. Place the Type P marker panel so that the bottom of the panel rests upon the pallet.
5. Refer to Standard Plan A73B for marker details.
6. Approach speeds indicated conform to NCHRP 350 Report criteria.
7. Use of pallets is optional.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**TEMPORARY CRASH CUSHION,  
SAND FILLED  
(BIDIRECTIONAL)**  
NO SCALE

RSP T1B DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T1B  
DATED MAY 1, 2006 - PAGE 212 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP T1B**

2006 REVISED STANDARD PLAN RSP T1B

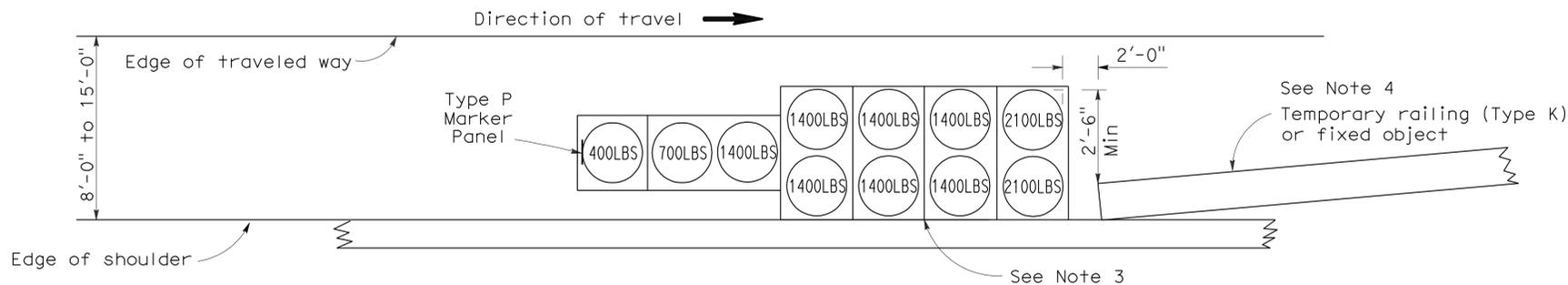
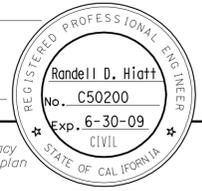
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Las	36	25.4	32	49

**Randell D. Hiatt**  
REGISTERED CIVIL ENGINEER

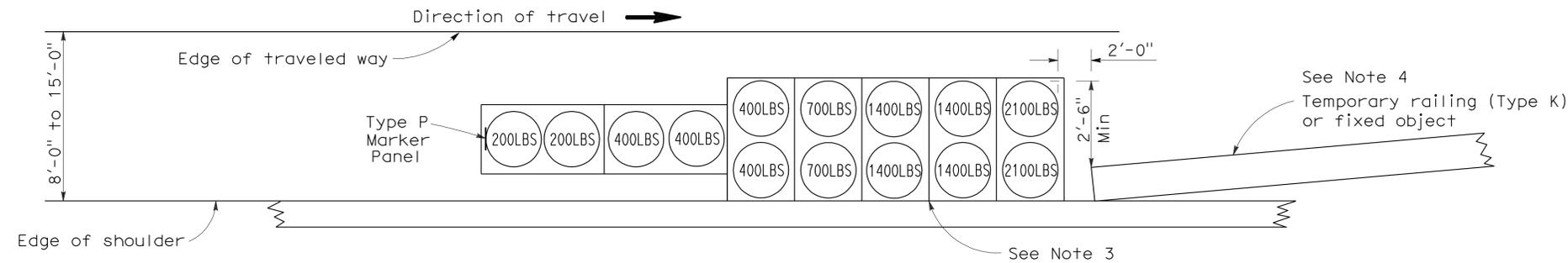
June 6, 2008  
PLANS APPROVAL DATE

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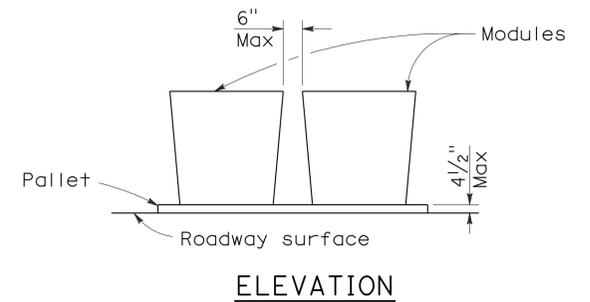
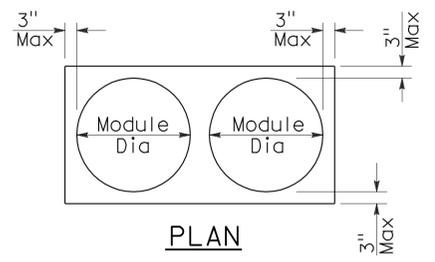
To accompany plans dated 5-3-10



**ARRAY 'TS11'**  
Approach speed less than 45 mph  
See Note 9



**ARRAY 'TS14'**  
Approach speed 45 mph or more  
See Note 9



**CRASH CUSHION PALLET DETAIL**  
See Note 11

**NOTES:**

- (XXX) Indicates sand filled module location and weight of sand in pounds for each module. Module spacing is based on the greater diameter of the module.
- All sand weights are nominal.
- The temporary crash cushion arrays shown on this plan shall be used only in locations where there will be traffic on one side of the temporary crash cushion array.
- If the fixed object or approach end of the temporary railing is less than 15'-0" from the edge of traveled way, a temporary crash cushion is required in a construction or work zone.
- Temporary crash cushion arrays shall not encroach on the traveled way.
- Arrays for median shoulders shall conform to details shown on this plan for outside shoulders.
- Place the Type P marker panel so that the bottom of the panel rests upon the pallet and faces traffic.
- Refer to Standard Plan A73B for marker details.
- For shoulder widths less than 8'-0", appropriate approved crash cushion protection, other than sand filled modules, shall be provided at fixed objects and at approach ends of temporary railing. The specific type of crash cushion shall be as shown on the project plans or as specified in the Special Provisions, or if not shown on the project plans or specified in the Special Provisions, shall be as approved by the Engineer.
- Approach speeds indicated conform to NCHRP 350 Report criteria.
- Use of pallets is optional.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**TEMPORARY CRASH CUSHION,  
SAND FILLED  
(SHOULDER INSTALLATIONS)**

NO SCALE  
RSP T2 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T2  
DATED MAY 1, 2006 - PAGE 213 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP T2**

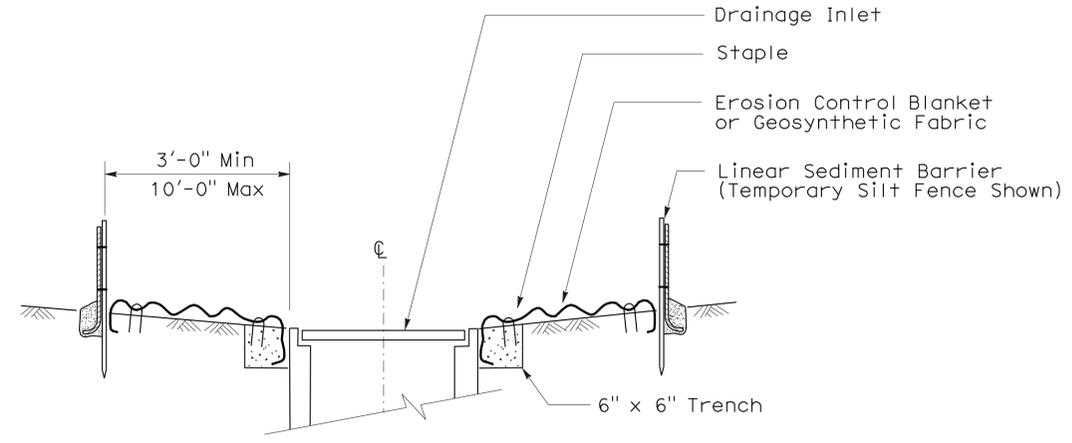
2006 REVISED STANDARD PLAN RSP T2

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Las	36	25.4	33	49

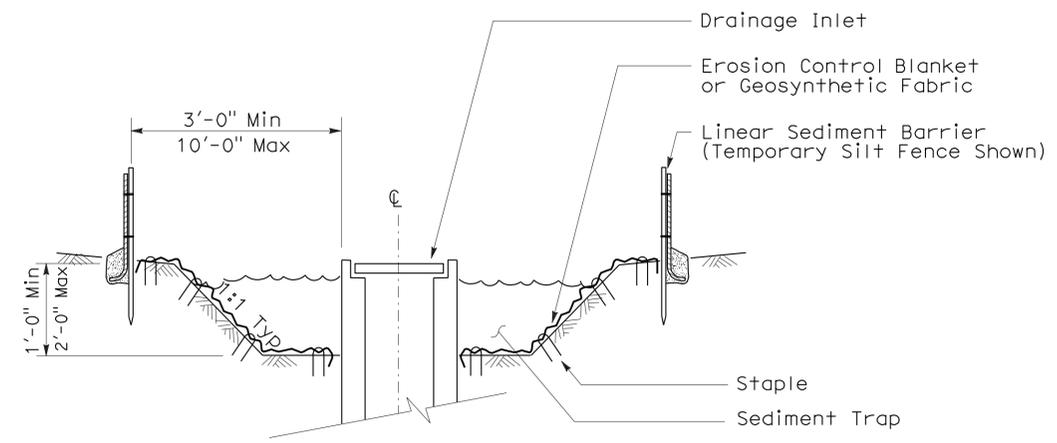
*Robert B. Schott*  
 LICENSED LANDSCAPE ARCHITECT  
 August 15, 2008  
 PLANS Approval DATE  
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 5-3-10

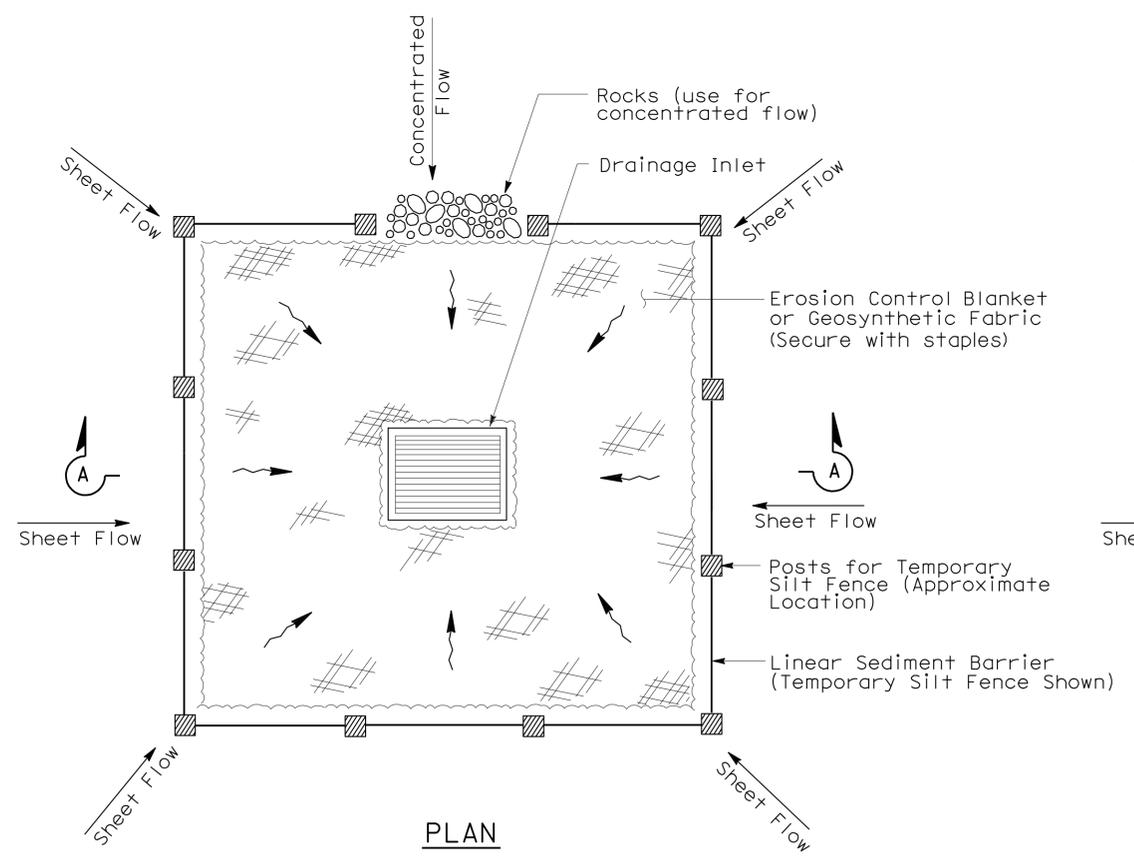
- NOTES:**
- See Standard Plan T51 for Temporary Silt Fence.
  - Dimensions may vary to fit field conditions.



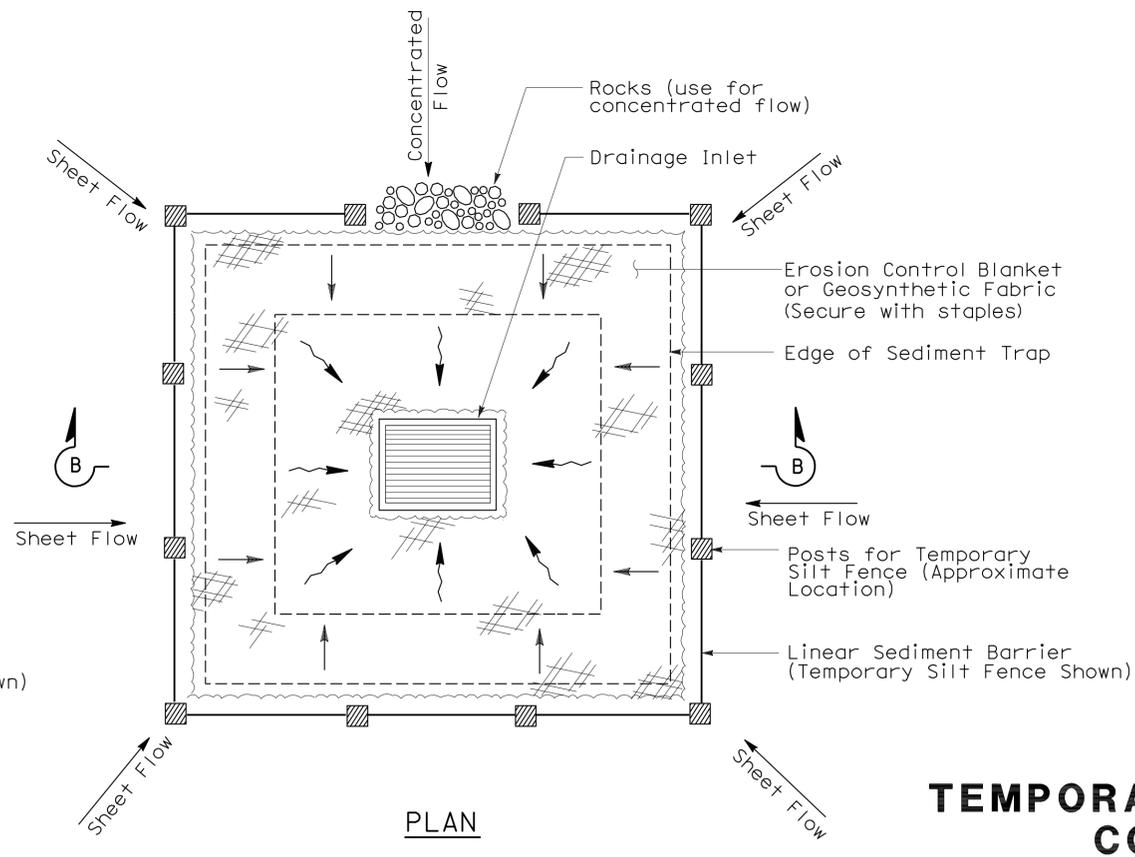
**SECTION A-A**



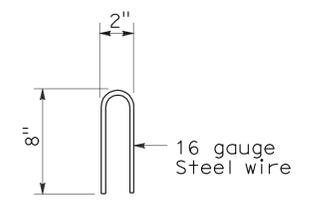
**SECTION B-B**



**TEMPORARY DRAINAGE INLET PROTECTION (TYPE 1)**



**TEMPORARY DRAINAGE INLET PROTECTION (TYPE 2) (EXCAVATED SEDIMENT TRAP)**



**STAPLE DETAIL**

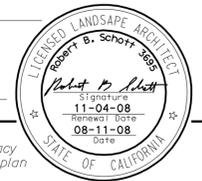
STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY DRAINAGE INLET PROTECTION)**  
 NO SCALE

NSP T61 DATED AUGUST 15, 2008 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP T61

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Las	36	25.4	34	49

Robert B. Schott  
 LICENSED LANDSCAPE ARCHITECT  
 August 15, 2008  
 PLANS APPROVAL DATE  
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To accompany plans dated 5-3-10

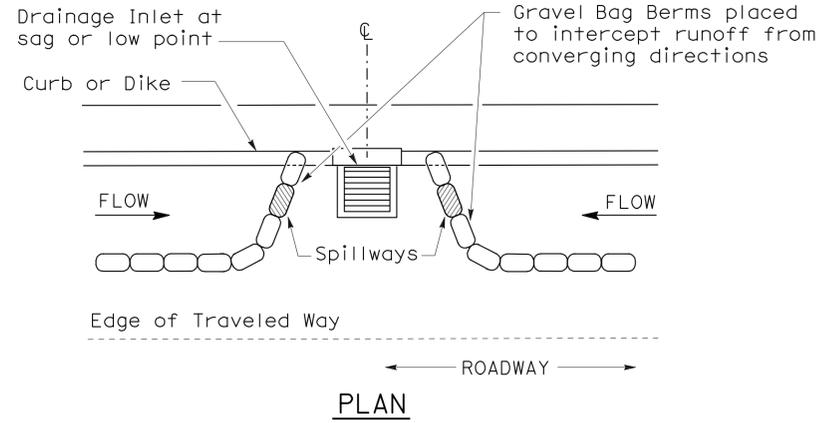
**NOTES:**

1. Place safety cones adjacent to drainage inlet protection.
2. Dimensions may vary to fit field conditions.
3. Install a minimum of 3 gravel bag berms upstream of each drainage inlet to be protected.
4. Position erosion control blanket or geosynthetic fabric at edge of concrete apron and secure in trench.
5. Erosion control blanket or geosynthetic fabric is not required if the area adjacent to the drainage inlet is vegetated or paved.

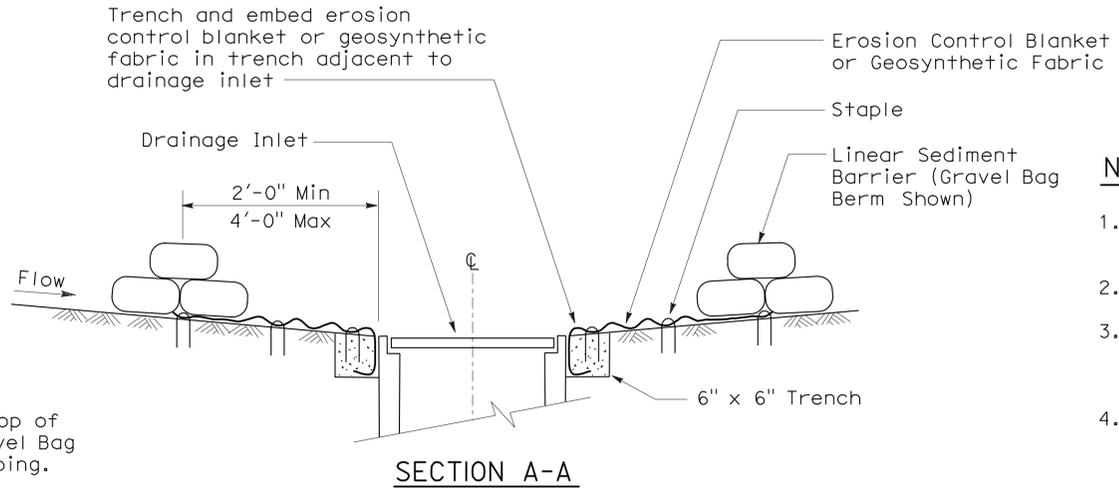
**GRAVEL BAG BERM (TYPE 3A) SPACING TABLE**

SLOPE OF ROADWAY (PERCENT)	1 to 3.9	4 to 5.9	6 to 7.9	8 to 10	10+
INTERVAL BETWEEN BERM	100'	75'	50'	25'	12'

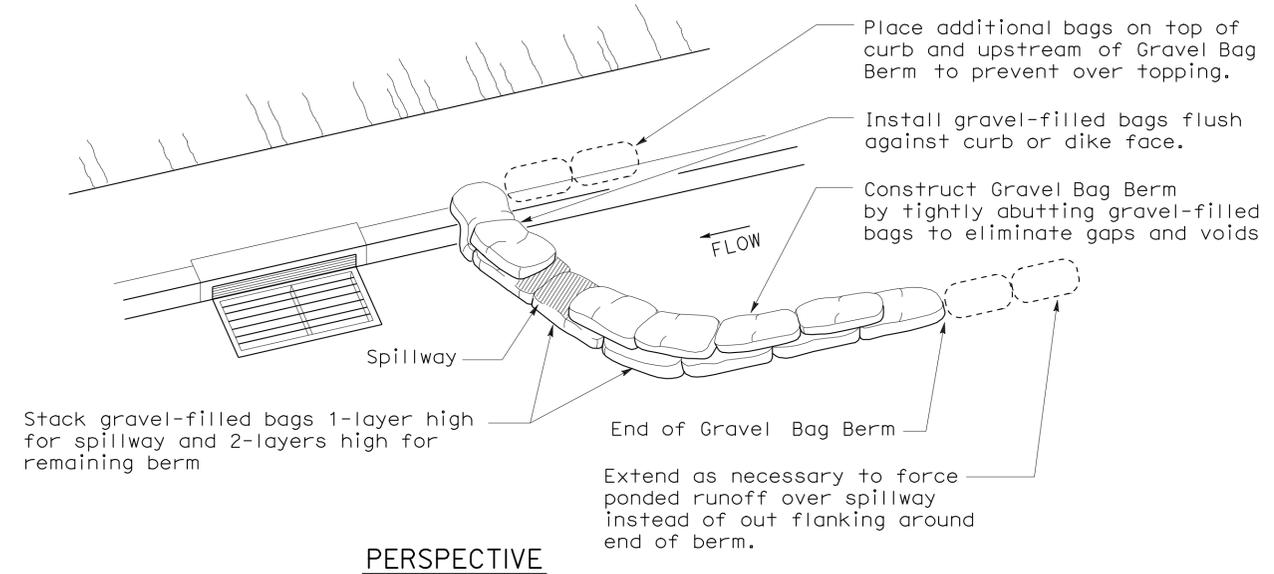
For slope of less than 1%, install barriers only if erosion/sediment is prevalent



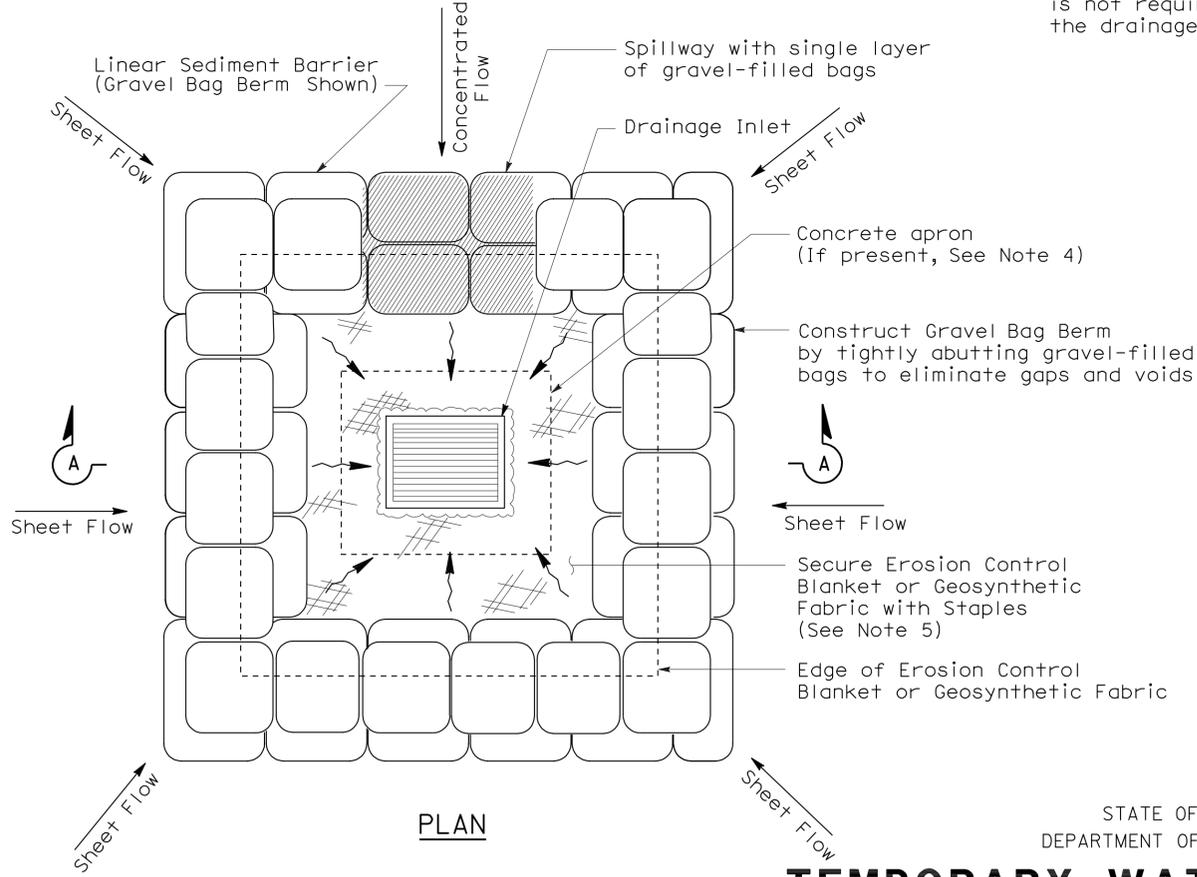
**PLAN  
CONFIGURATION FOR SAG POINT INLET  
(GRAVEL BAG BERM)**



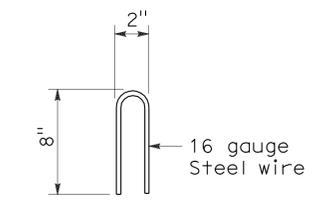
**SECTION A-A**



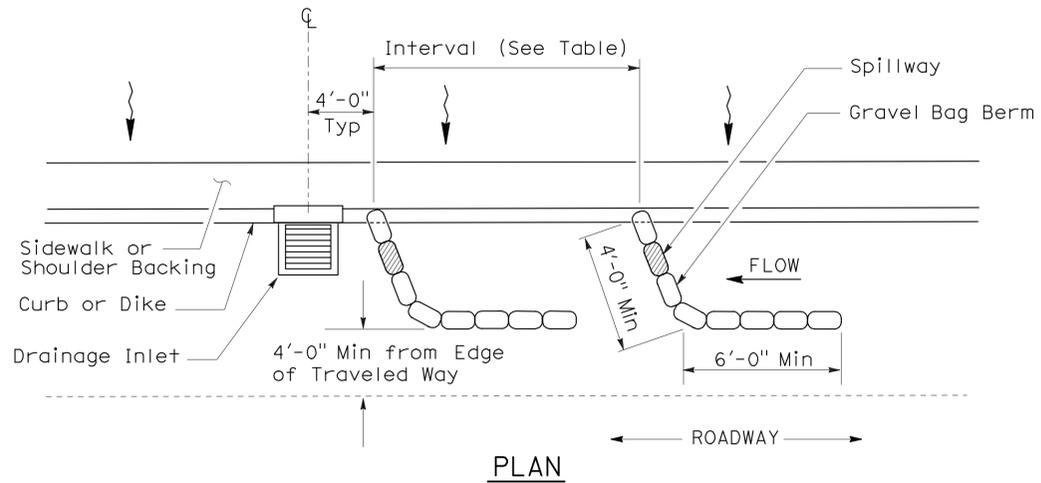
**PERSPECTIVE**



**PLAN  
TEMPORARY DRAINAGE  
INLET PROTECTION (TYPE 3B)**



**STAPLE DETAIL**



**PLAN  
TEMPORARY DRAINAGE  
INLET PROTECTION (TYPE 3A)  
(GRAVEL BAG BERM)**

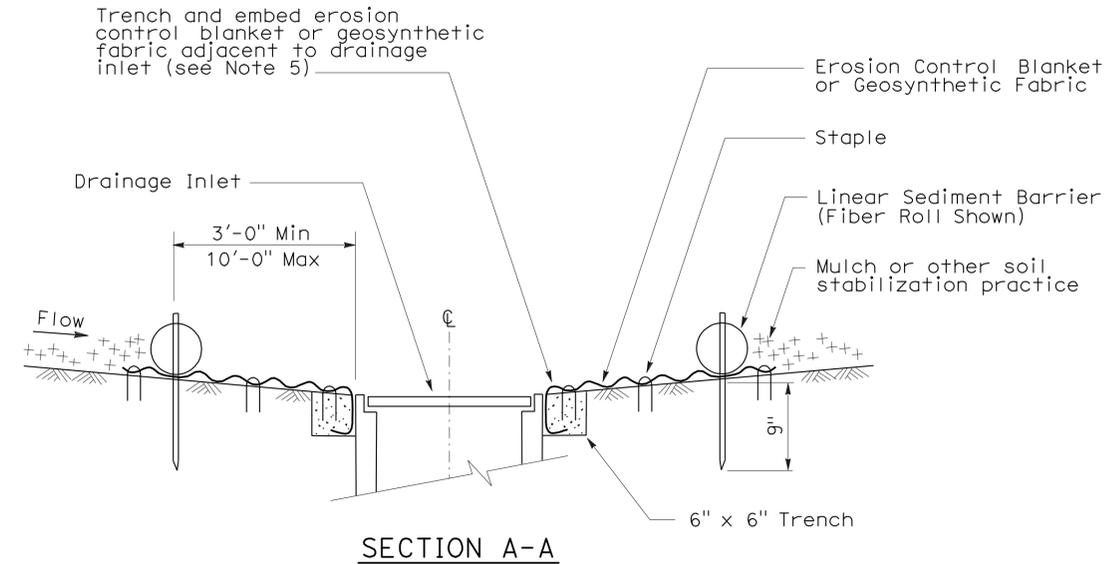
**TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY DRAINAGE INLET PROTECTION)**

NO SCALE  
NSP T62 DATED AUGUST 15, 2008 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

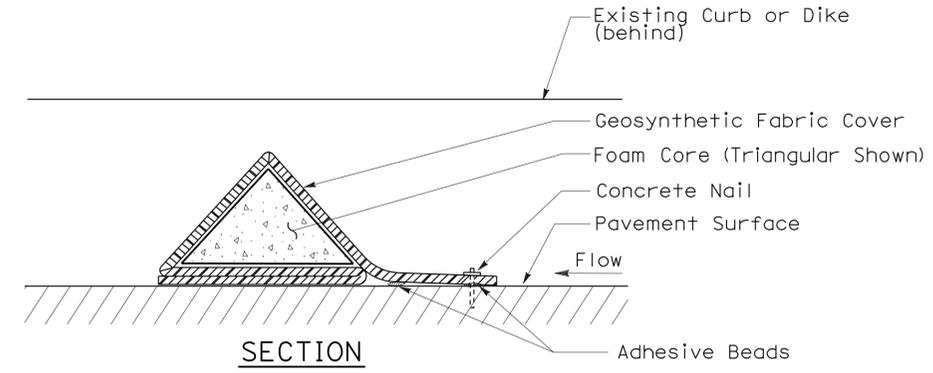
2006 NEW STANDARD PLAN NSP T62

**FLEXIBLE SEDIMENT BARRIER SPACING TABLE**

SLOPE OF ROADWAY (PERCENT)	0 to 0.9	1 to 1.9	2 to 2.9	3 to 4	5+
INTERVAL BETWEEN BARRIERS	50'	35'	30'	25'	20'
ANGLE FROM FACE OF CURB	70°	70°	70°	45°	45°
SUGGESTED BARRIER LENGTH	6'	6'	6'	6'	6'



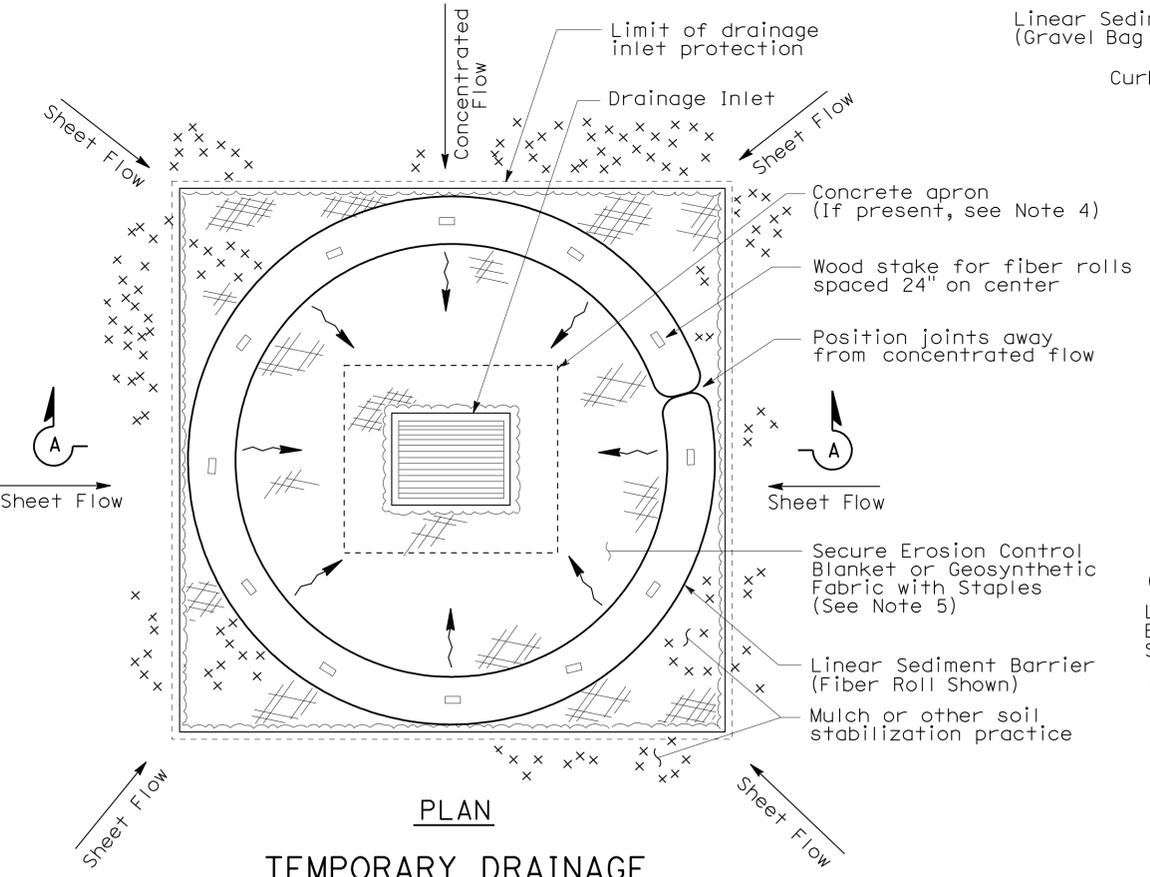
**SECTION A-A**



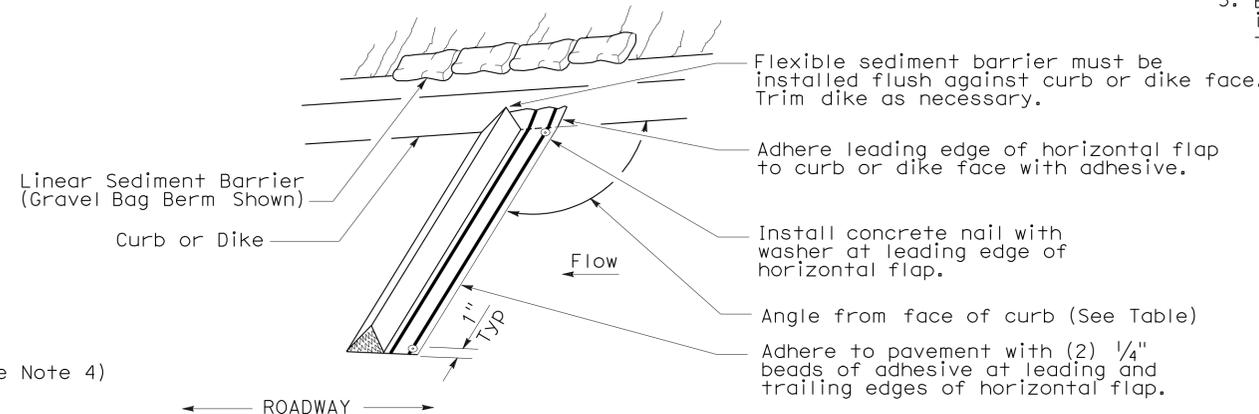
**SECTION FLEXIBLE SEDIMENT BARRIER DETAIL (FOAM BARRIER SHOWN)**

**NOTES:**

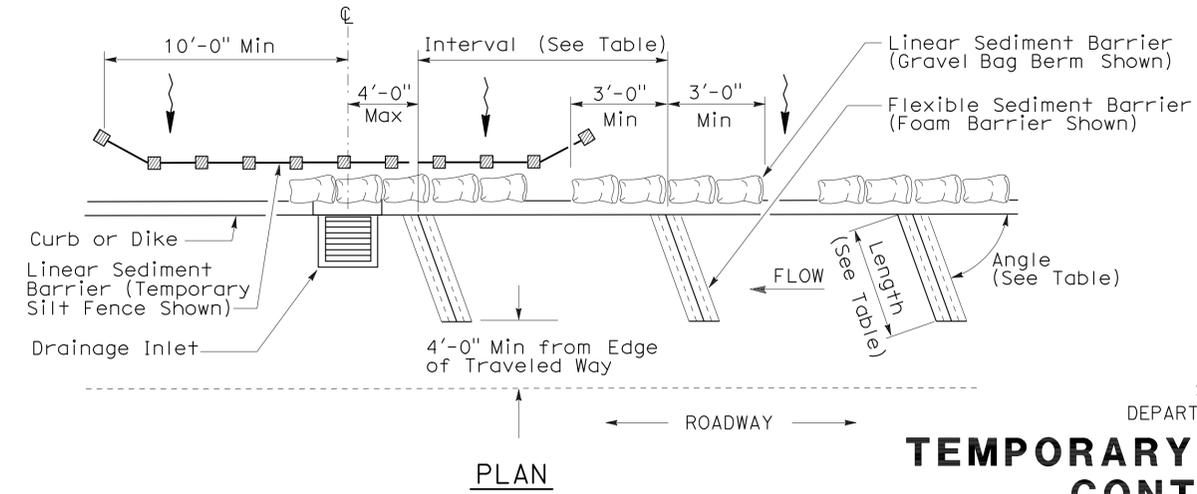
1. See Standard Plan T51 for Temporary Silt Fence.
2. Dimensions may vary to fit field conditions.
3. Install a minimum of 3 flexible sediment barriers upstream of each drainage inlet to be protected.
4. Position erosion control blanket or geosynthetic fabric at edge of concrete apron and secure in trench.
5. Erosion control blanket or geosynthetic fabric is not required if the area adjacent to the drainage inlet is vegetated.



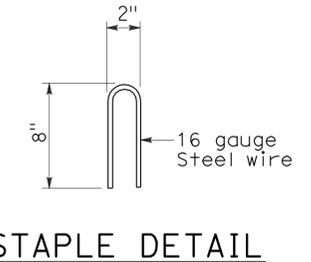
**PLAN TEMPORARY DRAINAGE INLET PROTECTION (TYPE 4A)**



**PERSPECTIVE**



**PLAN TEMPORARY DRAINAGE INLET PROTECTION (TYPE 4B) FLEXIBLE SEDIMENT BARRIER**



**STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY DRAINAGE INLET PROTECTION)**

NO SCALE  
 NSP T63 DATED AUGUST 15, 2008 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP T63

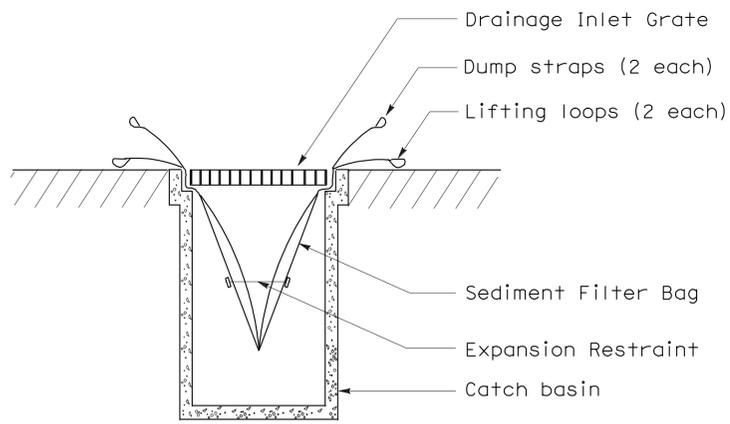
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Las	36	25.4	36	49

*Robert B. Schott*  
 LICENSED LANDSCAPE ARCHITECT

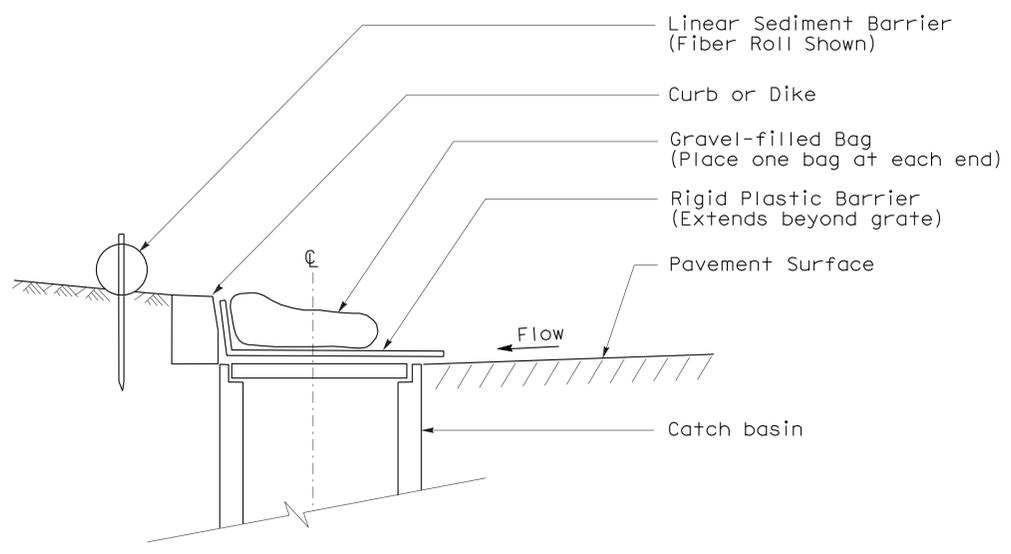
August 15, 2008  
 PLANS APPROVAL DATE

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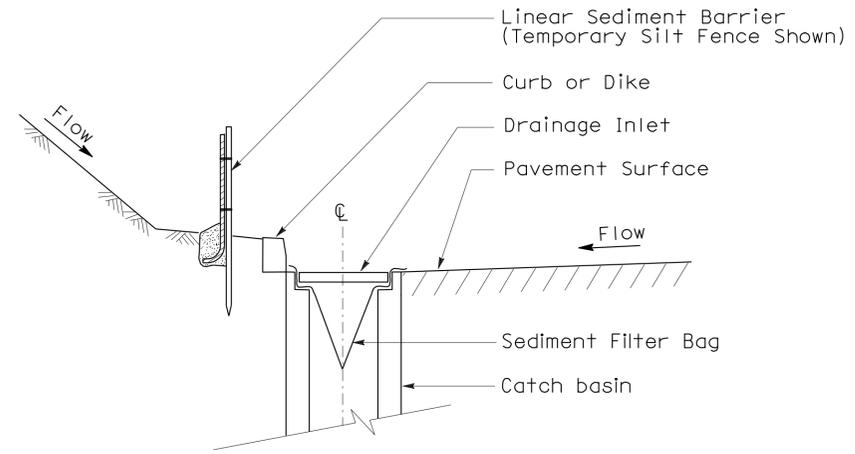
To accompany plans dated 5-3-10



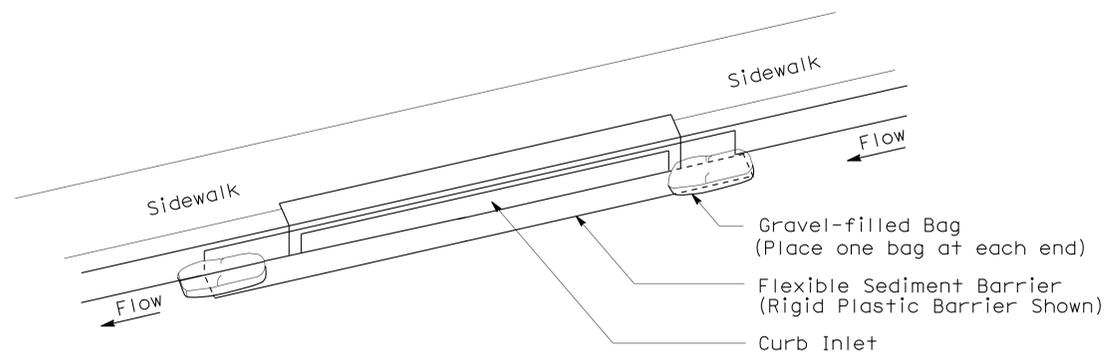
**SECTION B-B**  
**SEDIMENT FILTER BAG DETAIL**



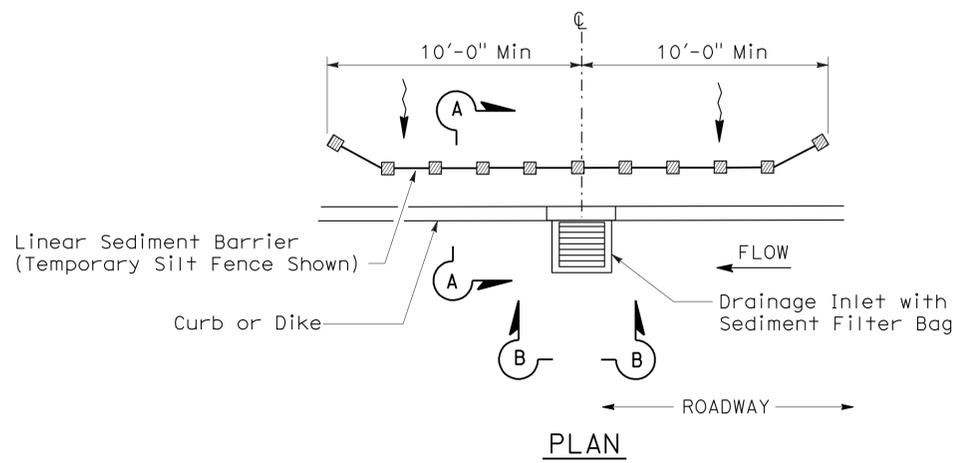
**SECTION**  
**TEMPORARY DRAINAGE INLET PROTECTION (TYPE 6A)**  
**(CATCH BASIN WITH GRATE)**



**SECTION A-A**



**PERSPECTIVE**  
**TEMPORARY DRAINAGE INLET PROTECTION (TYPE 6B)**  
**(CURB INLET WITHOUT GRATE)**



**PLAN**  
**TEMPORARY DRAINAGE INLET PROTECTION (TYPE 5)**  
**(SEDIMENT FILTER BAG)**

- NOTES:**
1. See Standard Plan T51 for Temporary Silt Fence.
  2. Dimensions may vary to fit field conditions.

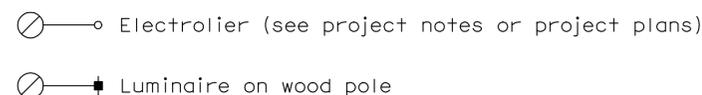
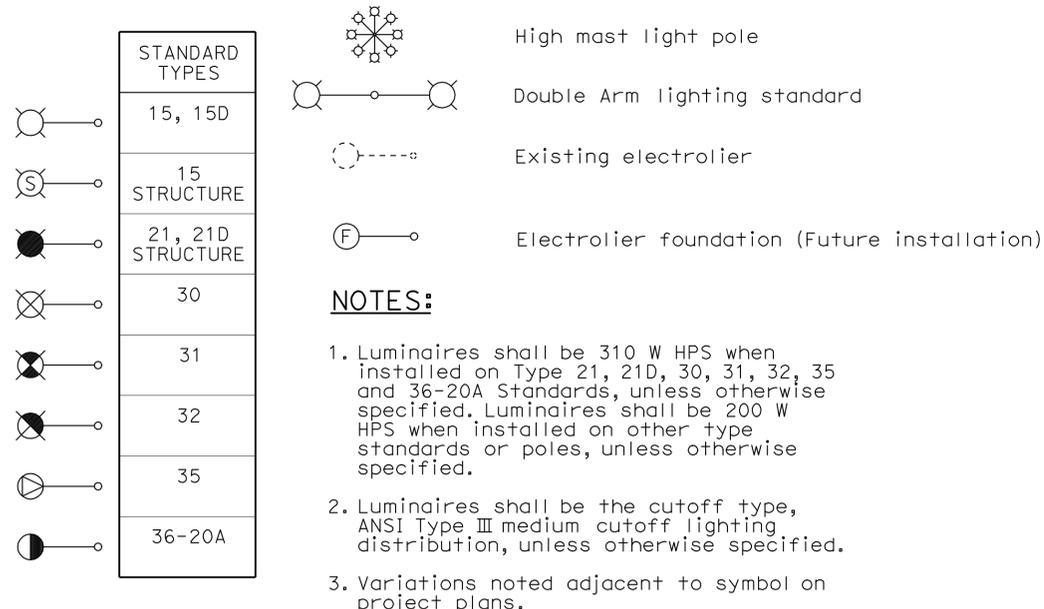
STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

**TEMPORARY WATER POLLUTION CONTROL DETAILS**  
**(TEMPORARY DRAINAGE INLET PROTECTION)**  
 NO SCALE  
 NSP T64 DATED AUGUST 15, 2008 SUPPLEMENTS  
 THE STANDARD PLANS BOOK DATED MAY 2006.

**NEW STANDARD PLAN NSP T64**

2006 NEW STANDARD PLAN NSP T64

# ELECTROLIERS



## STANDARD NOTES:

- AB** Abandon. If applied to conduit, remove conductors.
- BC** Install pull box in existing conduit run.
- BP** Pedestrian barricade, type as indicated on plan.
- CB** Install conduit into existing pull box.
- CC** Connect new and existing conduit. Remove existing conductors and install conductors as indicated.
- CF** Conduit to remain for future use. Remove conductors. Install pull wire or rope.
- DH** Detector handhole.
- FA** Foundation to be abandoned.
- IS** Install sign on signal mast arm.
- NS** No slip base on standard.
- PEC** Photoelectric control.
- PEU** Photoelectric unit.
- RC** Equipment or material to be removed and become the property of the Contractor.
- RE** Remove electrolier, fuses and ballast. Tape ends of conductors.
- RL** Relocate equipment.
- RR** Remove and reuse equipment.
- RS** Remove and salvage equipment.
- SC** Splice new to existing conductors.
- SD** Service disconnect.
- SF** Standard to remain for future use. Remove luminaire, pole conductors, fuses and ballast.
- TSP** Telephone service point.

# ABBREVIATIONS AND EQUIPMENT DESIGNATIONS

## PROPOSED EXISTING

BBS	bbs	Battery backup system
BC	bc	Bolt circle
C	C	Conduit
CCTV	cctv	Closed circuit television
CKT	ckt	Circuit
CMS	cms	Changeable message sign
DLC	dlc	Loop detector lead-in cable
EMS	ems	Extinguishable message sign
EVC	evc	Emergency vehicle cable
EVD	evd	Emergency vehicle detector
FB	fb	Flashing beacon
FBCA	fbca	Flashing beacon control assembly
FBS	fbs	Flashing beacon with slip base
FO	fo	Fiber optic
G	G	Ground (Equipment Grounding Conductor)
GFCI	GFCI	Ground fault circuit interrupt
HAR	har	Highway advisory radio
HEX	hex	Hexagonal
HPS	hps	High pressure sodium
IISNS	iisns	Internally illuminated street name sign
ISL	isl	Induction sign lighting
LED	led	Light emitting diode
LMA	lma	Luminaire mast arm
LPS	lps	Low pressure sodium
LTG	ltg	Lighting
LUM	lum	Luminaire
MAT	mat	Mast arm mounting vehicle signal faces, top attachment
MAS	mas	Mast arm mounting vehicle signal faces, side attachment
MAS-4A	mas-4A	Mast arm mounting vehicle signal faces, side attachment - 4 signal section
MAS-4B	mas-4B	
MAS-4C	mas-4C	
MAS-5A	mas-5A	Mast arm mounting vehicle signal faces, side attachment - 5 signal section
MAS-5B	mas-5B	
MC	mc	Mercury contactor
M/M	m/m	Multiple to multiple transformer
MT	mt	Conduit with pull wire or rope only
MTG	mtg	Mounting
	mv	Mercury vapor lighting fixture
N	N	Neutral (Grounded Conductor)
NC	NC	Normally closed
NO	NO	Normally open
PB	pb	Pull box
PEC	pec	Photoelectric control (Type I, II, III, IV or V as shown)
PED	ped	Pedestrian
PEU	peu	Photoelectric unit
PPB	ppb	Pedestrian push button
RL		Relocated equipment
RM	rm	Ramp metering
SB	sb	Slip base
SIC	sic	Signal interconnect cable
SIG	sig	Signal
SMA	sma	Signal mast arm
SNS	sns	Street name sign
SP	sp	Service point
TDC	tdc	Telephone demarcation cabinet
TMS	tms	Traffic monitoring station
TOS	tos	Traffic Operations System
VEH	veh	Vehicle
XFMR	xfmr	Transformer
COMM	comm	Communication
RWIS	rwis	Roadway weather information system

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Las	36	25.4	37	49

*Jeffery G. McRae*  
REGISTERED ELECTRICAL ENGINEER

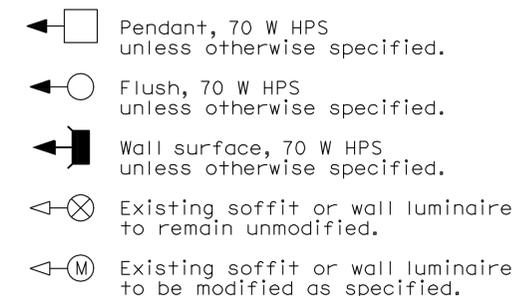
October 5, 2007  
PLANS APPROVAL DATE

Jeffery G. McRae  
No. E14512  
Exp. 6-30-08  
ELECTRICAL  
STATE OF CALIFORNIA

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To accompany plans dated 5-3-10

## SOFFIT AND WALL MOUNTED LUMINAIRES



### NOTE:

Arrow indicates "street side" of luminaire.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

## ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

RSP ES-1A DATED OCTOBER 5, 2007 SUPERSEDES STANDARD PLAN ES-1A DATED MAY 1, 2006 - PAGE 400 OF THE STANDARD PLANS BOOK DATED MAY 2006.

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

2006 REVISED STANDARD PLAN RSP ES-1A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Las	36	25.4	38	49

*Jeffrey G. McRae*  
 REGISTERED ELECTRICAL ENGINEER  
 October 5, 2007  
 PLANS APPROVAL DATE  
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REGISTERED PROFESSIONAL ENGINEER  
 Jeffrey G. McRae  
 No. E14512  
 Exp. 6-30-08  
 ELECTRICAL  
 STATE OF CALIFORNIA

To accompany plans dated 5-3-10

### CONDUIT

PROPOSED	EXISTING	
		Lighting Conduit, unless otherwise indicated or noted
		Traffic signal conduit
		Communication conduit
		Telephone conduit
		Fire alarm conduit
		Fiber optic conduit
		Conduit termination
		Conduit riser in/on structure or service pole

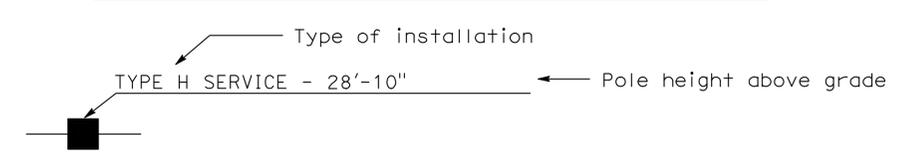
### SIGNAL EQUIPMENT

PROPOSED	EXISTING	
		Pedestrian signal face
		Pedestrian push button post
		Pedestrian barricade
		Vehicle signal face (with backplate, 3-Section: red, yellow and green)
		Vehicle signal face with angle visors
		Modifications of basic symbols: "L" indicates all non-arrow sections louvered "LG" indicates louvered green section only "PV" indicates 12" programmed visibility sections "8" indicates all 8" sections (only when specified)
		Type 15TS and Vehicle signal face
		Vehicle signal face with red, yellow and green left arrow sections
		Vehicle signal face with red and yellow sections and up green arrow
		Vehicle signal face (5 Section) with red, yellow and green sections and yellow and green right arrows
		Type 1 Standard and attached vehicle signal faces
		Standard with signal mast arm only and attached vehicle signal faces and internally illuminated street name sign
		Type 33 Standard, Left-turn vehicle signal face and sign
		Standard with luminaire and signal mast arms and attached vehicle signal faces
		Cantilever flashing beacon Type 9 Frame, with a sign unless otherwise specified or indicated
		Type 15-FBS Standard with two vehicle signal face sections with lens, backplate and visor with a sign
		Flashing beacon. One vehicle signal face section with lens, backplate and visor. "R" indicates red indication, "Y" indicates yellow indication
		Controller assembly. Door indicates front of cabinet

### SERVICE EQUIPMENT

PROPOSED	EXISTING	
		Overhead lines
		Wood pole "U" indicates utility owned
		Pole guy with anchor
		Utility transformer - ground mounted
		Service equipment enclosure type
		Service equipment enclosure door indicates front of enclosure
		Telephone demarcation cabinet

### POLE-MOUNTED SERVICE DESIGNATION



### ILLUMINATED OVERHEAD SIGN

PROPOSED	EXISTING	
		Overhead sign - Single post
		Overhead sign - Two post
		Overhead sign - Mounted on structure
		Overhead sign with electrolier

### SIGNAL EQUIPMENT Cont

PROPOSED	EXISTING	
		Guard post
		Type 1 Standard with "Meter On" sign
		Emergency Vehicle detector

### NOTES:

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

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
 (SYMBOLS AND ABBREVIATIONS)**  
 NO SCALE

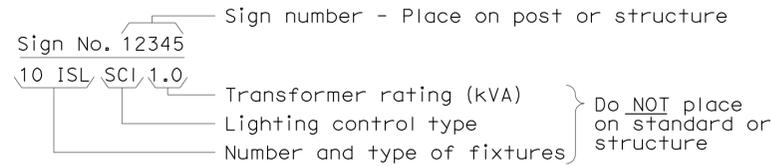
RSP ES-1B DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1B  
 DATED MAY 1, 2006 - PAGE 401 OF THE STANDARD PLANS BOOK DATED MAY 2006.

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

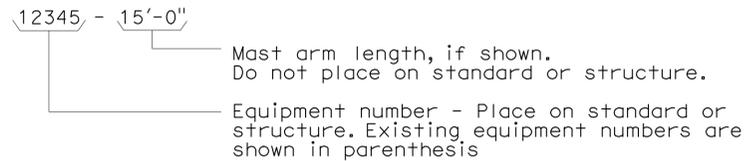
2006 REVISED STANDARD PLAN RSP ES-1B

### EQUIPMENT IDENTIFICATION

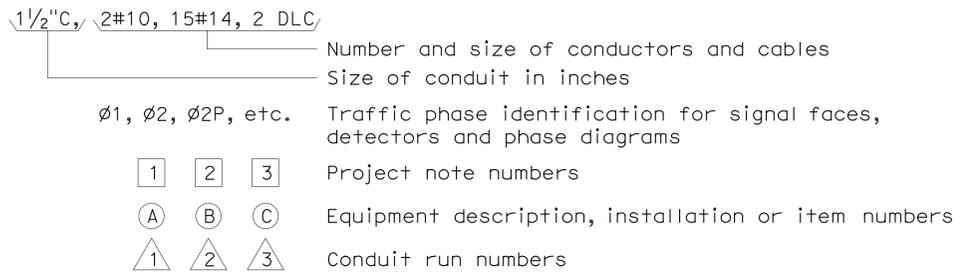
#### ILLUMINATED SIGN IDENTIFICATION NUMBER:



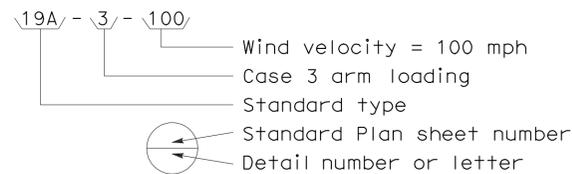
#### ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



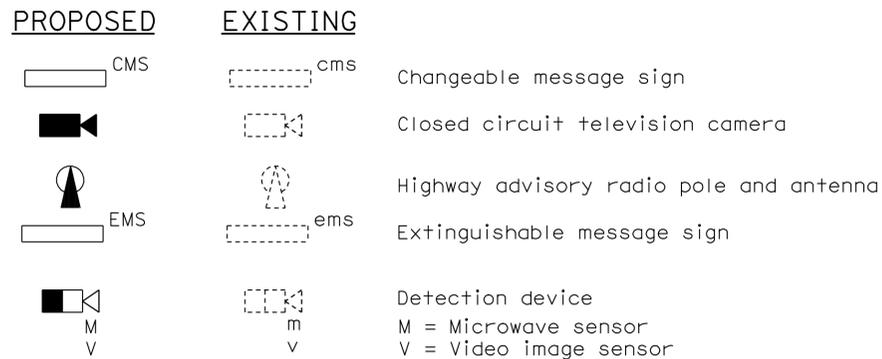
#### CONDUIT AND CONDUCTOR IDENTIFICATION:



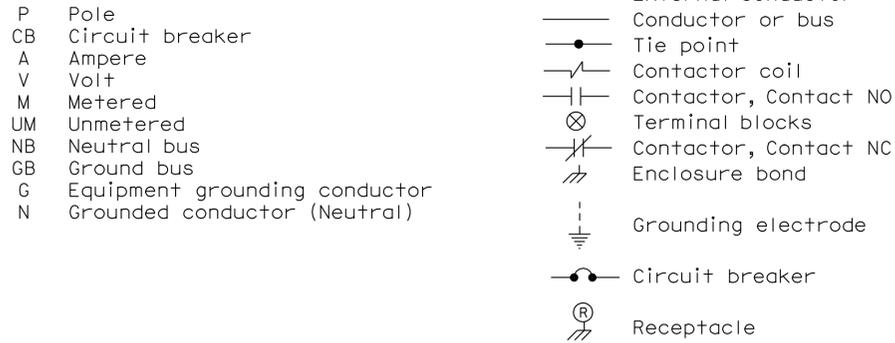
#### SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



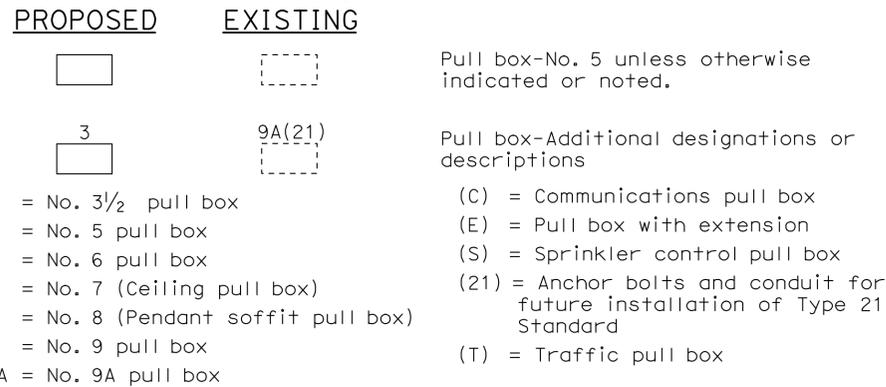
### MISCELLANEOUS EQUIPMENT



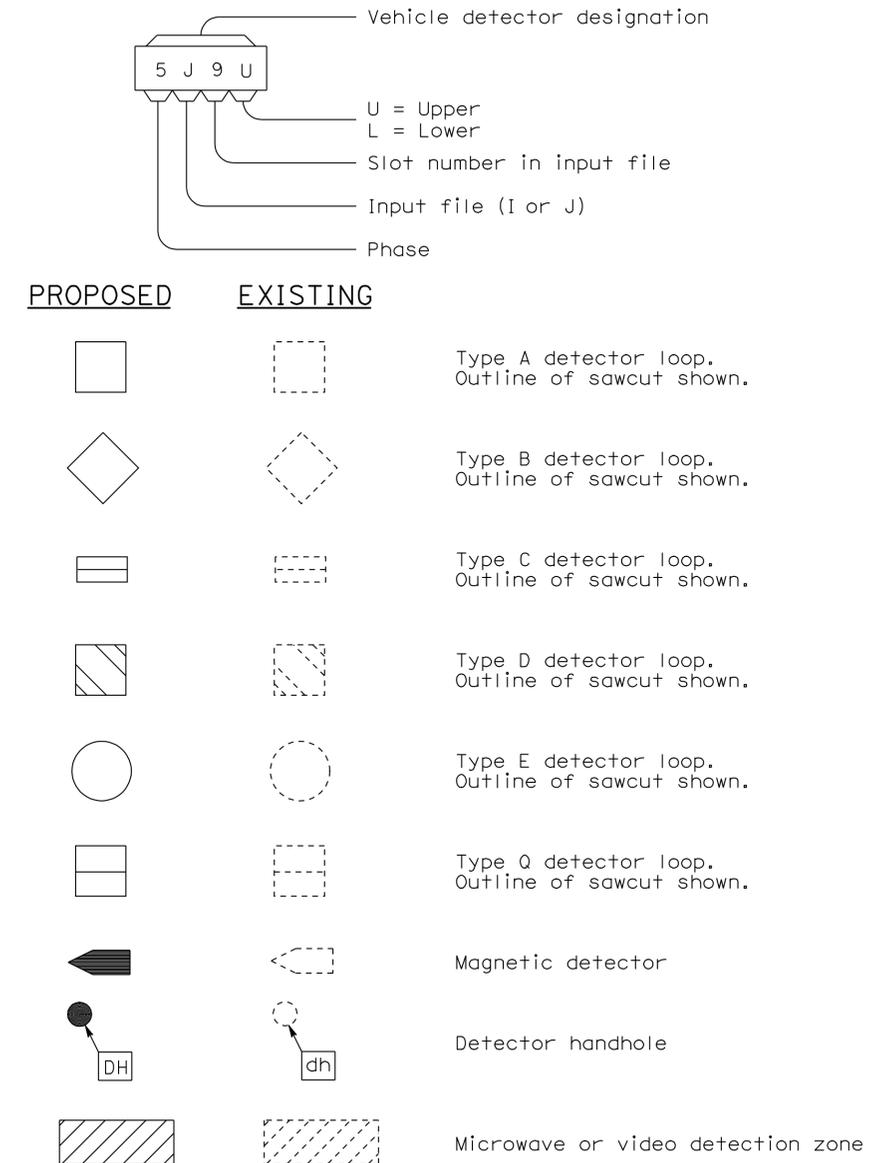
### WIRING DIAGRAM LEGEND



### PULL BOXES



### VEHICLE DETECTORS



STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

## ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

RSP ES-1C DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1C  
 DATED MAY 1, 2006 - PAGE 402 OF THE STANDARD PLANS BOOK DATED MAY 2006.

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

2006 REVISED STANDARD PLAN RSP ES-1C

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Las	36	25.4	40	49

*Jeffery G. McRae*  
 REGISTERED ELECTRICAL ENGINEER

October 5, 2007  
 PLANS APPROVAL DATE

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**NOTES-TYPE III SERVICE EQUIPMENT ENCLOSURES:**

1. Service equipment enclosure and metering equipment shall meet the requirements of the service utility. The meter area shall have a sealable, lockable, weathertight cover that can be removed without the use of tools.
2. Service equipment enclosures shall be factory wired and conform to NEMA standards.
3. Dimensions of service equipment enclosures shall meet the requirements of the service utility.
4. The dead front panels on Type III service equipment enclosures shall have a continuous stainless steel or aluminum piano hinge. The panel in front of the breakers shall be secured with a latch or captive screws. No live parts shall be mounted on the dead front panel.
5. The exterior door shall have provisions for padlocking. The padlock hole shall be a minimum diameter of  $\frac{7}{16}$ ".
6. Enclosures housing transformers of more than one kVA shall have effective screened ventilation louver of not less than 50 square inches. Screen shall be stainless steel No. 304, with a No. 10 size mesh. Framed screen shall be secured with at least four bolts.
7. Fasteners on the exterior of the enclosure shall be vandal-resistant and shall not be removable from the exterior. Exterior screws, nuts, bolts and washers shall be stainless steel.
8. Landing lugs for incoming service conductors shall be compatible with either copper or aluminum conductors sized to suit the conductors shown on the plan. Landing lugs shall be copper or tin-plated aluminum. Neutral bus shall be rated for 125 A and be suitable for copper or aluminum conductors unless otherwise specified. The terminal shall include but not be limited to:
  - a) Incoming terminals (landing lugs)
  - b) Neutral lugs
  - c) Solid neutral terminal strip
9. At least 6 standard single pole circuit breaker spaces,  $\frac{3}{4}$ " nominal, shall be provided for branch circuits. Circuit breaker interiors shall be copper. Interiors of enclosure shall accept plug-in or cable-in/cable-out circuit breakers.
10. Control wiring shall be 600 V, 14 stranded machine tool wire. Where subject to flexing, 19 strand wire shall be used.
11. Main bus shall be rated for 125 A and shall be tin-plated copper.
12. A plastic laminated wiring diagram shall be provided with brass mounting eyelets and attached to the inside of the enclosure and the wiring diagram shall be affixed to the interior with a UL or ETL approved method.

13. An engraved phenolic nameplate on the dead front panel indicating the function of each circuit or device shall be installed with stainless steel rivets or stainless steel screws:
  - a) Adjacent to the breaker or device with character size a minimum of  $\frac{1}{8}$ ".
  - b) At the top of the exterior door panel indicating State system number, voltage level and number of phases with character size a minimum of  $\frac{3}{16}$ ".
14. The plan shows the approximate location of devices within the enclosure. Components may be rearranged, however, the "working" clearances within the service equipment enclosure shall be maintained.
15. In unpaved areas a raised portland cement concrete pad 2'-0" x 4" x width of foundation shall be constructed in front of new service equipment enclosure installation. Pad shall be set to elevation of foundation.
16. Foundation shall extend 2" minimum beyond edge of service equipment enclosure.
17. Internal bus, where shown, is typical only. Alternative design of proposed service equipment enclosure shall be submitted to the Engineer for approval.
18. Plug-in circuit breakers may be mounted in the vertical or horizontal position. Cable-in/cable-out circuit breakers shall be mounted in the vertical position.
19. Type III-AF and Type III-BF service equipment enclosures shall have the meter viewing windows located on the front side of the service equipment enclosures.
20. Type III-AR and Type III-BR service equipment enclosures shall be similarly constructed as Type III-AF and Type III-BF respectively, except the meter viewing windows shall be located on the back side of the service equipment enclosures.
21. Minimum clearance shall be required for front and back of service equipment enclosure per National Electrical Code, Article 110.26, "Spaces About Electric Equipment (600 Volts, Nominal, or Less)."

To accompany plans dated 5-3-10

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

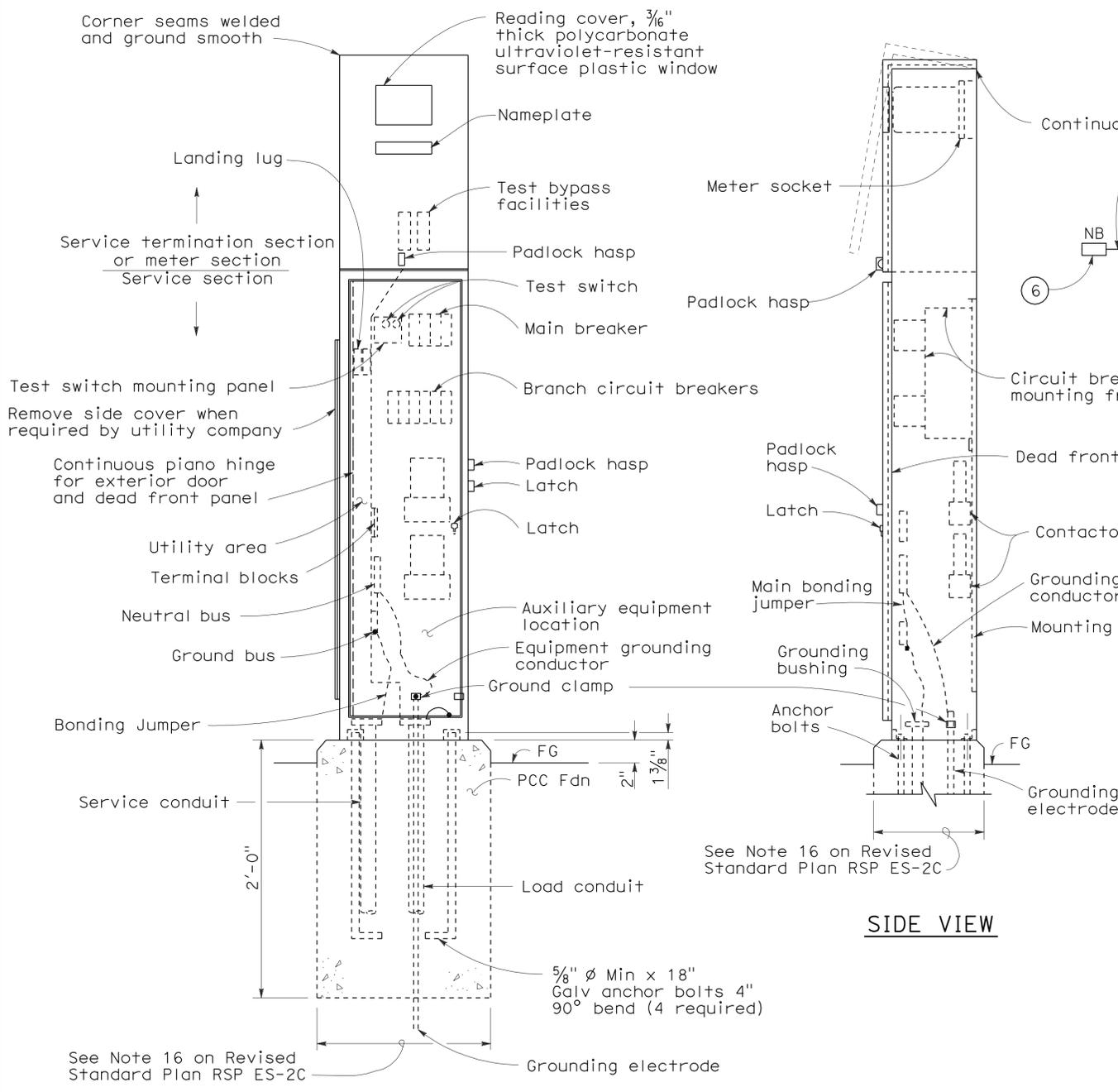
**ELECTRICAL SYSTEMS  
 (SERVICE EQUIPMENT NOTES  
 TYPE III SERIES)**

NO SCALE

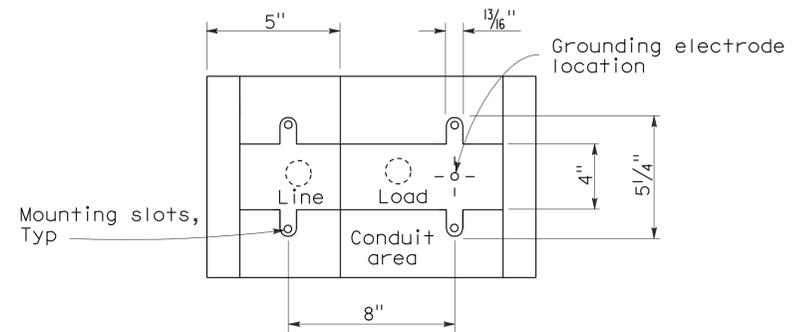
RSP ES-2C DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-2C  
 DATED MAY 1, 2006 - PAGE 405 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP ES-2C**

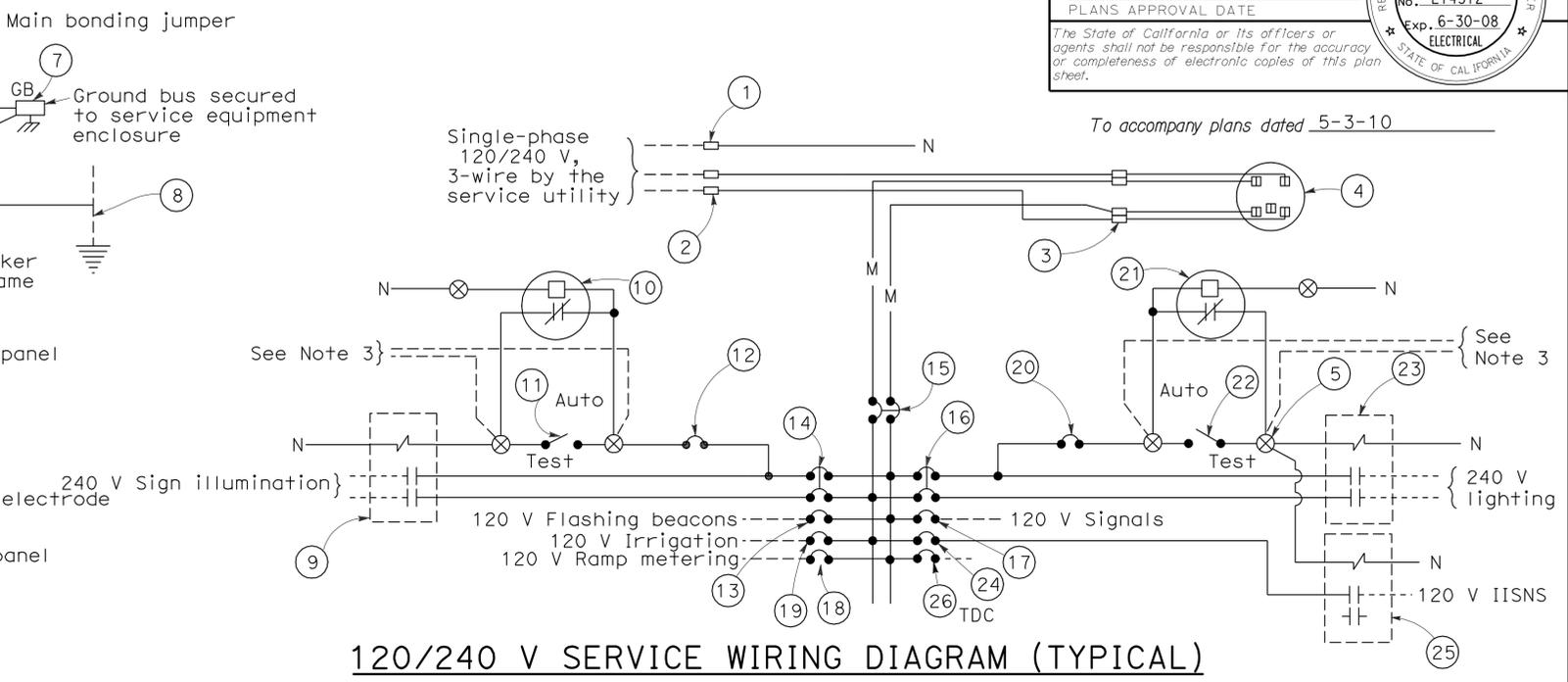
2006 REVISED STANDARD PLAN RSP ES-2C



**TYPE III-AF SERVICE EQUIPMENT ENCLOSURE (TYPICAL)**



**BASE FOR TYPE III-A SERVICE EQUIPMENT ENCLOSURE**



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

TYPE III-A SERVICE (120/240 V) EQUIPMENT LEGEND					
ITEM No.	COMPONENT	NAME PLATE DESCRIPTION	ITEM No.	COMPONENT	NAME PLATE DESCRIPTION
1	Neutral lug		14	30 A, 240 V, 2P, CB	Sign Illumination
2	Landing lug (Note 6)		15	100 A, 240 V, 2P, CB	Main Breaker
3	Test bypass facility		16	30 A, 240 V, 2P, CB	Lighting
4	Meter socket and support		17	50 A, 120 V, 1P, CB	Signals
5	Terminal blocks		18	30 A, 120 V, 1P, CB	Ramp Metering
6	Neutral bus		19	20 A, 120 V, 1P, CB	Irrigation
7	Ground bus		20	15 A, 120 V, 1P, CB	Lighting Control
8	Grounding electrode		21	Photoelectric unit (Note 7)	
9	30 A, 2PNO Contactor	Sign Illumination	22	15 A, 1P, Test switch	Lighting Test Switch
10	Photoelectric unit (Note 7)		23	60 A, 2PNO Contactor	Lighting
11	15 A, 1P, Test switch	Sign Illumination Test Switch	24	15 A, 120 V, 1P, CB	IISNS
12	15 A, 120 V, 1P, CB	Sign Illumination Control	25	30 A, 2PNO Contactor	IISNS
13	15 A, 120 V, 1P, CB	Flashing Beacon	26	20 A, 120 V, 1P, CB	Telephone Demarcation Cabinet

- NOTES: (FOR SERVICE EQUIPMENT ENCLOSURE)**
- 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 lighting standards, sign post or structure when required.
  - Items No. 1 and 6 shall be isolated from the service equipment enclosure.
  - Meter sockets shall be 5 clip type.
  - The landing lug shall be suitable for multiple conductors.
  - Type I photoelectric control shall be used unless otherwise indicated on the plans.

STATE OF CALIFORNIA  
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**ELECTRICAL SYSTEMS  
 (SERVICE EQUIPMENT AND  
 TYPICAL WIRING DIAGRAM,  
 TYPE III-A SERIES)**

NO SCALE

RSP ES-2D DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-2D DATED MAY 1, 2006 - PAGE 406 OF THE STANDARD PLANS BOOK DATED MAY 2006.

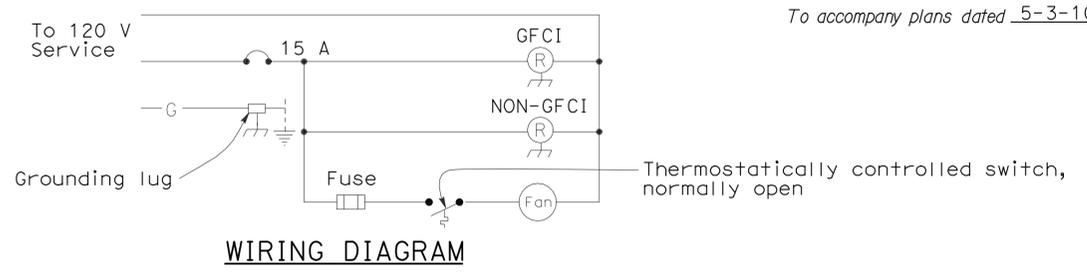
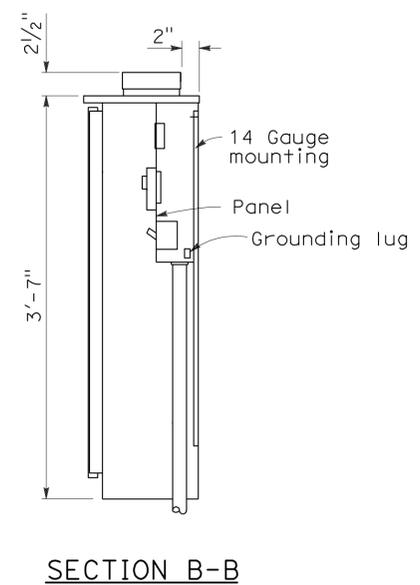
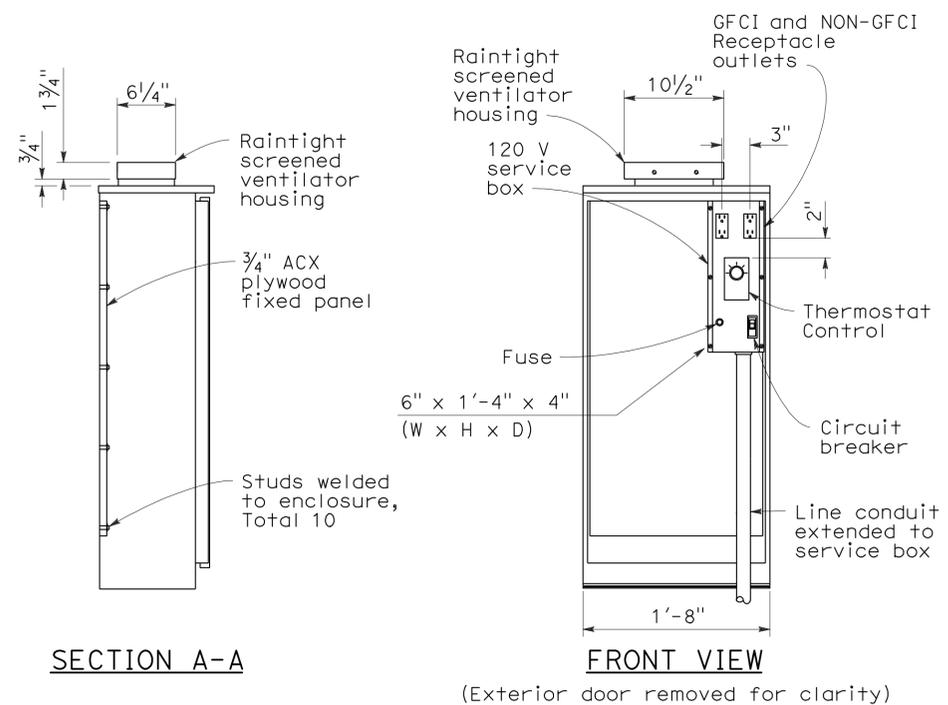
2006 REVISED STANDARD PLAN RSP ES-2D

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Las	36	25.4	42	49

*Jeffery G. McRae*  
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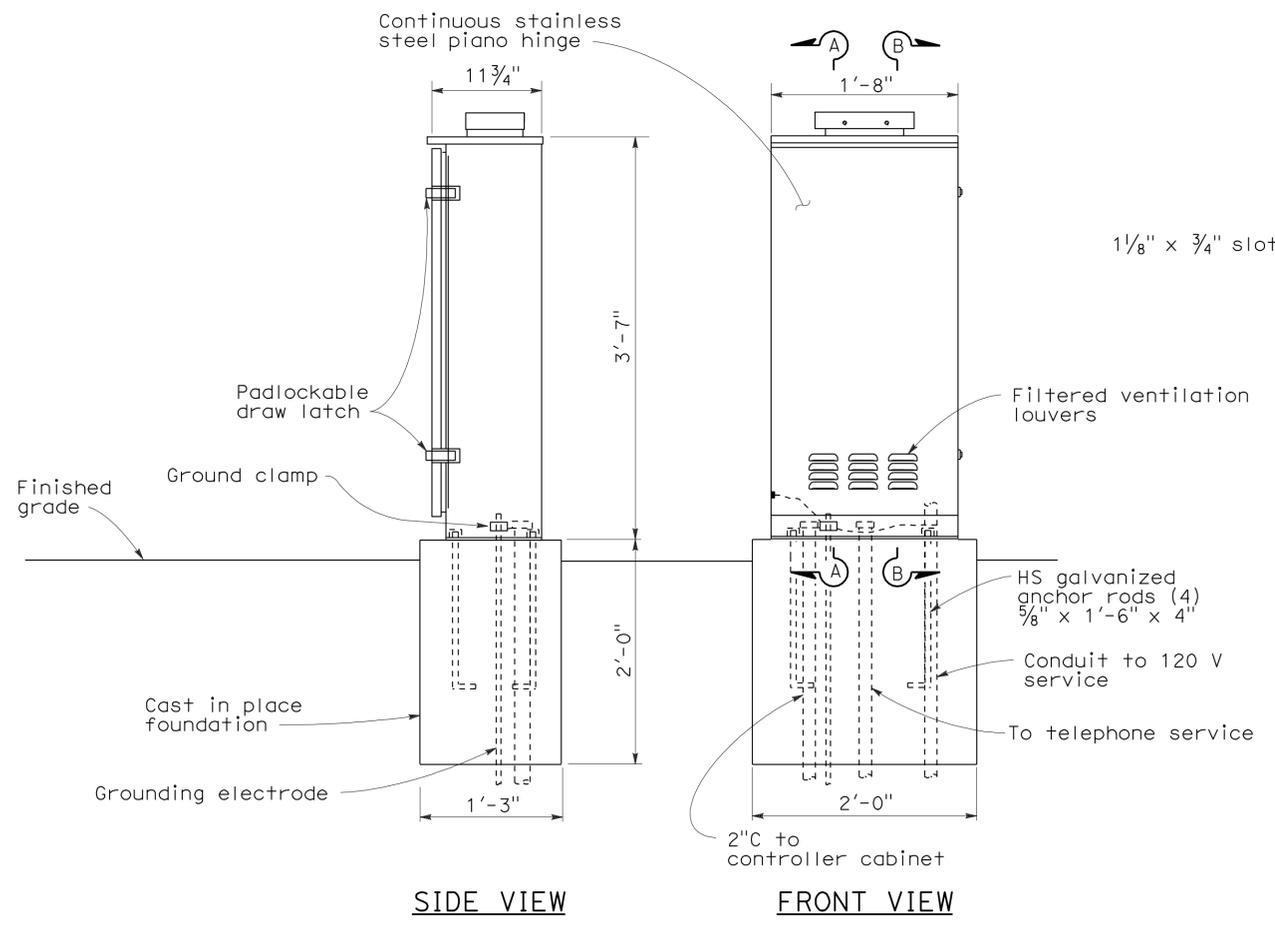
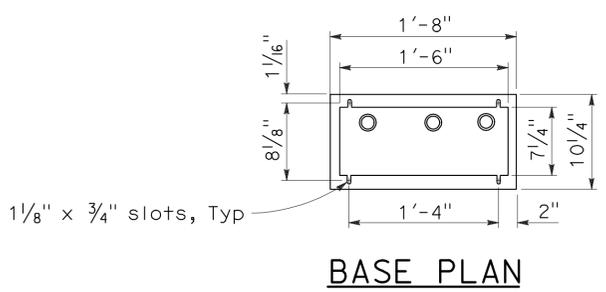
October 5, 2007  
 PLANS APPROVAL DATE

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**NOTES:**

- Telephone demarcation cabinet shall be furnished with a mounting panel, outlets, circuit breaker and deadfront plates in place. Dimensions are nominal.
- An approved mastic or caulking compound shall be placed on the foundation prior to placing the cabinet to seal openings between the bottom of the cabinet and the foundation.
- In unpaved areas, a raised PCC pad shall be placed in front of the telephone demarcation cabinet. Pad shall be 2'-0" x 1'-10" x 4" thick, with 2" above the finished grade.
- All conduits shall be bonded to the enclosure.
- Telephone demarcation cabinet:
  - Material shall be anodized aluminum (1/8" thick).
  - Fabrication shall conform to the requirements of the Standard Specifications.
  - The exterior door shall be side hung and secured with a padlockable draw latch, the padlock hole shall be a minimum diameter of 7/16" to receive a padlock.
  - Ventilation louvers shall be located on the door.
  - Fan shall be mounted in a ventilator housing.
  - Fan shall be thermostatically controlled and adjustable to turn on between 80°F and 130°F.
  - Fan circuit shall be fused at 175 percent of the fan motor capacity.
  - Fan capacity shall be at least 25 cubic feet per minute.
  - Fasten fixed mounting panels with nuts, lock and flat washers to 3/16" ø x 1" studs welded to enclosure.



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**ELECTRICAL SYSTEMS  
 (TELEPHONE DEMARCATIION  
 CABINET, TYPE B)**

NO SCALE

RSP ES-3E DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-3E DATED MAY 1, 2006 - PAGE 414 OF THE STANDARD PLANS BOOK DATED MAY 2006.

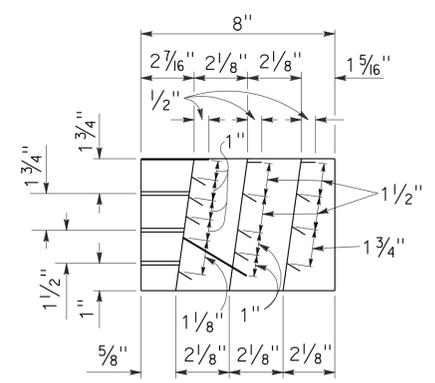
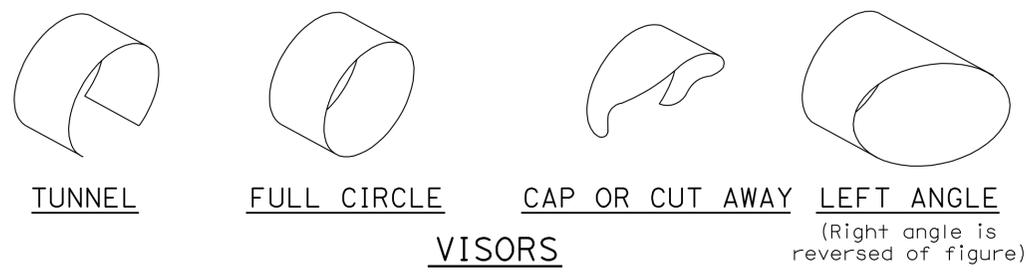
**REVISED STANDARD PLAN RSP ES-3E**

2006 REVISED STANDARD PLAN RSP ES-3E

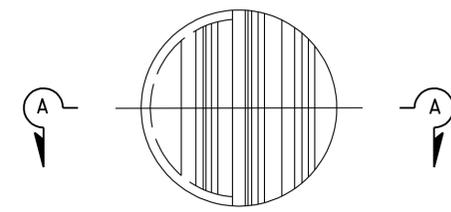
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Las	36	25.4	43	49

Jeffrey B. McRae  
 REGISTERED ELECTRICAL ENGINEER  
 June 6, 2008  
 PLANS APPROVAL DATE  
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 REGISTERED PROFESSIONAL ENGINEER  
 Jeffrey G. McRae  
 No. E14512  
 Exp. 6-30-10  
 ELECTRICAL  
 STATE OF CALIFORNIA

To accompany plans dated 5-3-10



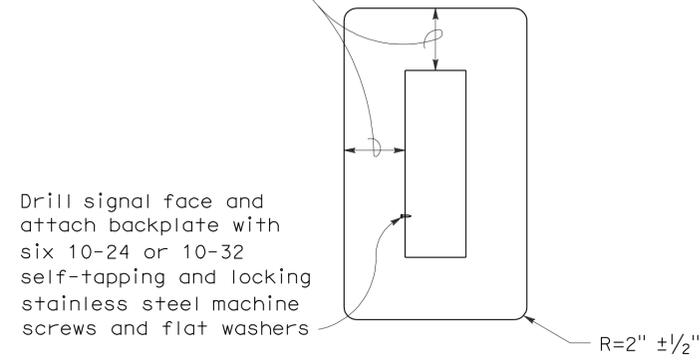
SECTION A-A



FRONT VIEW  
**DIRECTIONAL LOUVER**

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

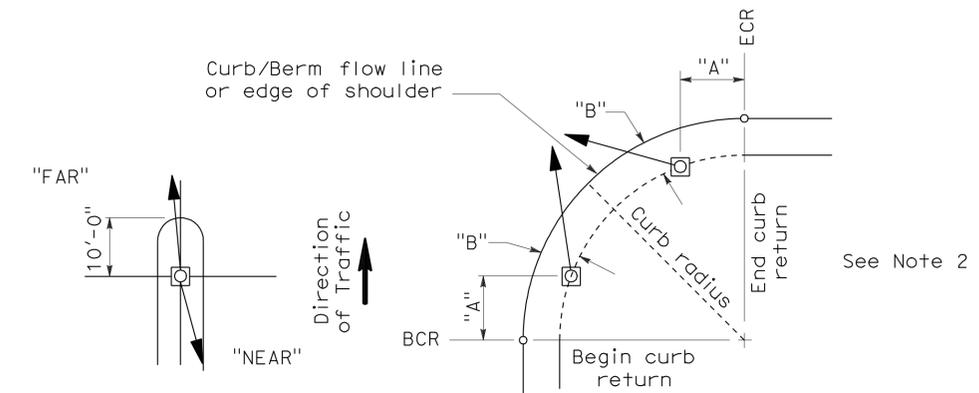
8" ± 1/2" for 8" sections  
 5 1/2" ± 1/2" for 12" sections



8" AND 12" SECTIONS

**BACKPLATE**

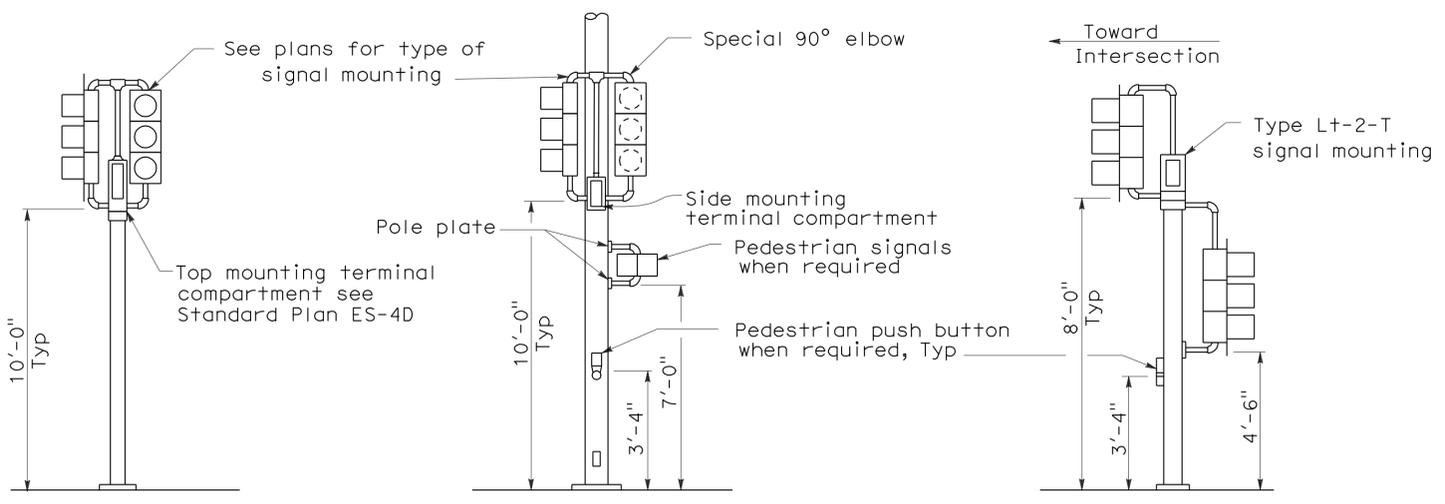
1/16" minimum thickness  
 3001-14 aluminum, or plastic when specified



**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.

**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

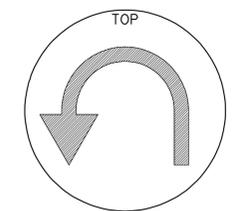
**SIDE MOUNTED SIGNALS (SV AND SP)**

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

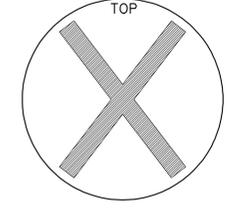
**TYPICAL SIGNAL INSTALLATIONS**



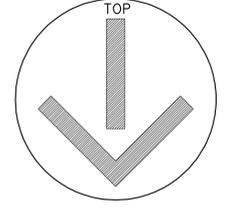
**U-TURN SIGNAL FACE**



**BICYCLE SIGNAL FACE**



**LANE CONTROL SIGNAL FACE**



**LANE CONTROL SIGNAL FACE**

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

NO SCALE

RSP ES-4C DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN ES-4C DATED MAY 1, 2006 - PAGE 420 OF THE STANDARD PLANS BOOK DATED MAY 2006.

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

2006 REVISED STANDARD PLAN RSP ES-4C

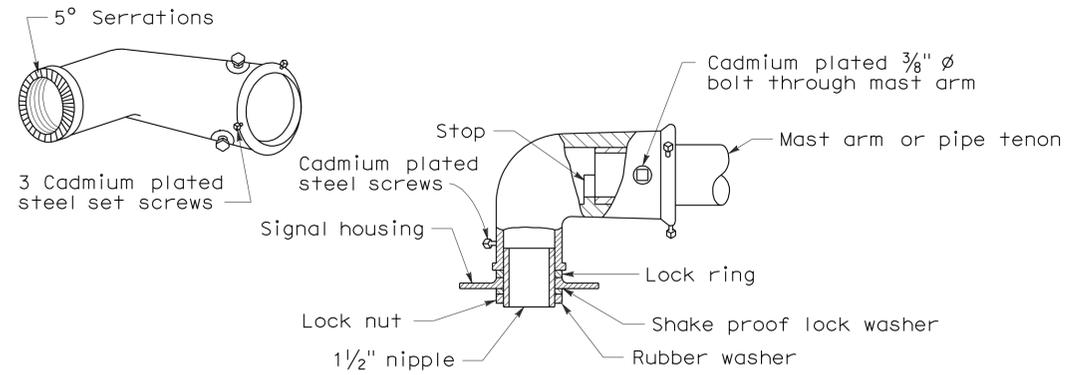
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Las	36	25.4	44	49

Jeffrey G. McRae  
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 STATE OF CALIFORNIA

June 6, 2008  
 PLANS APPROVAL DATE

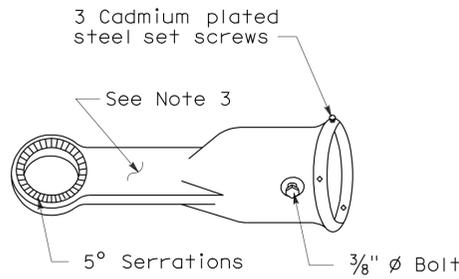
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To accompany plans dated 5-3-10



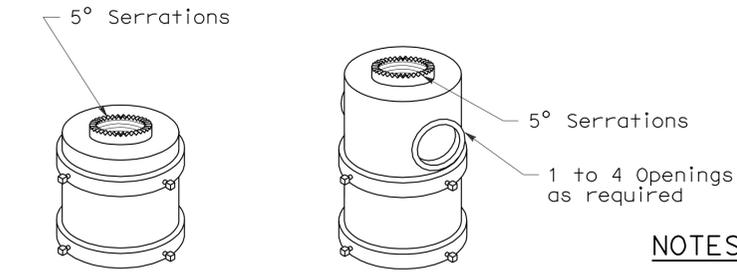
**MAST ARM MOUNTING - TYPE "MAT"**

For 2 NPS pipe, see Note 1.



**MAST ARM MOUNTING - TYPE "MAS"**

For 2 NPS pipe. See Note 1.

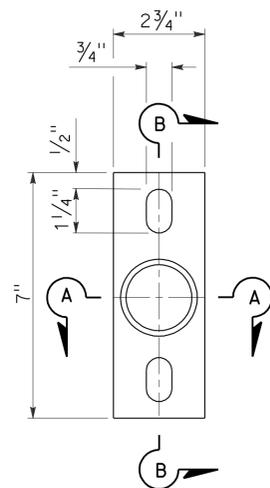


For one mounting For multiple mountings

**TOP MOUNTINGS**

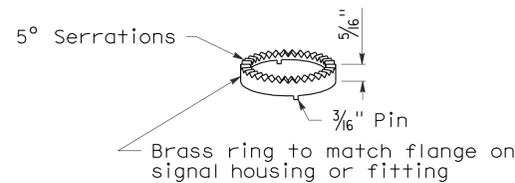
For 4 NPS pipe, see Note 2.

**SIGNAL SLIP FITTERS**



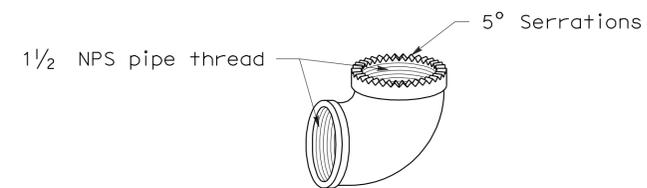
**POLE PLATE**

For side mountings



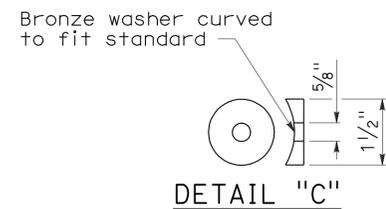
**LOCK RING**

Use where locking ring is not integral with signal housing or fitting.



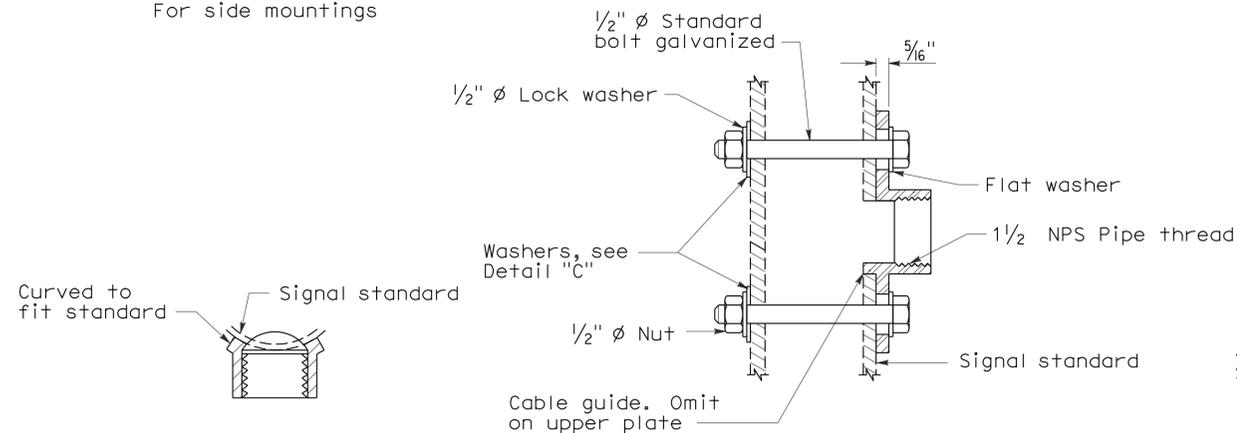
**SPECIAL 90° ELBOW**

One for each signal head, except those with special slip fitter mounting



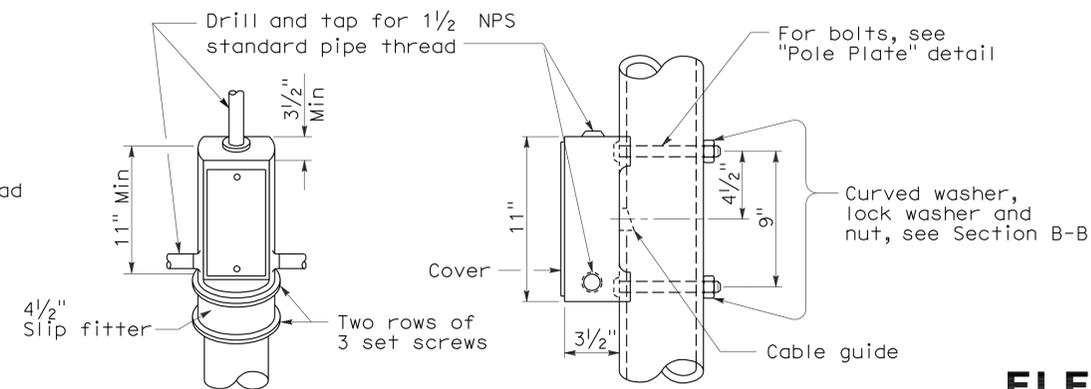
**DETAIL "C"**

**MISCELLANEOUS MOUNTING HARDWARE**



**SECTION A-A**

**SECTION B-B**



**TOP MOUNTING**

**SIDE MOUNTING**

**TERMINAL COMPARTMENTS**

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

NO SCALE

RSP ES-4D DATED June 6, 2008 SUPERSEDES STANDARD PLAN ES-4D DATED MAY 1, 2006 - PAGE 421 OF THE STANDARD PLANS BOOK DATED MAY 2006.

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

2006 REVISED STANDARD PLAN RSP ES-4D

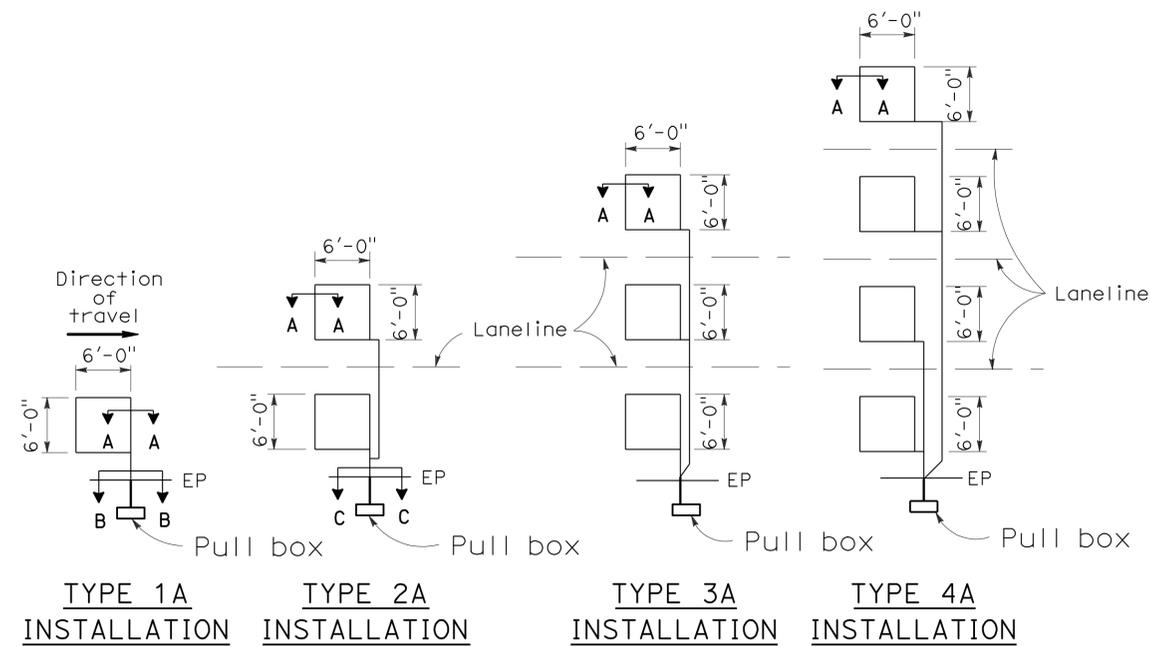
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Las	36	25.4	45	49

*Jeffery G. McRae*  
 REGISTERED ELECTRICAL ENGINEER  
 October 5, 2007  
 PLANS APPROVAL DATE  
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## LOOP INSTALLATION PROCEDURE

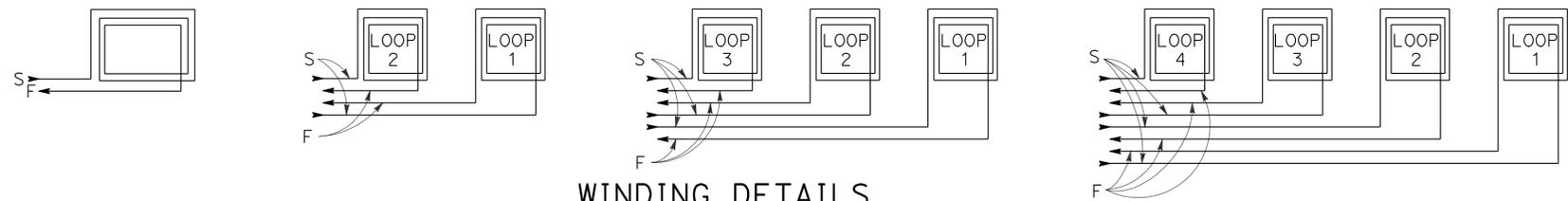
- Loops shall be centered in lanes.
- Saw slots in pavement for loop conductors as shown in details.
- Distance between side of loop and a lead-in saw cut from adjacent detectors shall be 2'-0" minimum. Distance between lead-in saw cuts shall be 6" minimum.
- Bottom of saw slot shall be smooth with no sharp edges.
- Slots shall be washed until clean, blown out and thoroughly dried before installing loop conductors.
- Adjacent loops on the same sensor unit channel shall be wound in opposite directions.
- Identify and tag loop circuit pairs in the pull box with loop number, start (S) and finish (F) of conductor. Identify and tag lead-in-cable with sensor number and phase.
- Install loop conductor in slot using a 3/16" to 1/4" thick wood paddle. Hold loop conductors with wood paddles (at the bottom of the sawed slot) during sealant placement.
- No more than 2 twisted pairs shall be installed in one sawed slot.
- Allow additional 5'-0" of slack length of conductor for the lead-in run to pull box.
- The additional length of each conductor for each loop shall be twisted together into a pair (6 turns per 3'-4" minimum) before being placed in the slot and conduit leading to pull box.
- Test each loop circuit for continuity, circuit resistance and insulation resistance at the pull box before filling slots.
- Fill slots as shown in details.
- Splice loop conductors to lead-in-cable. Splices shall be soldered.
- End of lead-in-cable and Type 2 loop conductor shall be waterproofed prior to installing in conduit to prevent moisture from entering the cable.
- Lead-in-cable shall not be spliced between the pull box and the controller cabinet terminals.
- Test each loop circuit for continuity, circuit resistance and insulation resistance at the controller cabinet location.
- Where loop conductors are not to be spliced to a lead-in-cable, the ends of the conductors shall be taped and waterproofed with electrical insulating coating.



TYPE 1A INSTALLATION    TYPE 2A INSTALLATION    TYPE 3A INSTALLATION    TYPE 4A INSTALLATION  
**SAWCUT DETAILS**

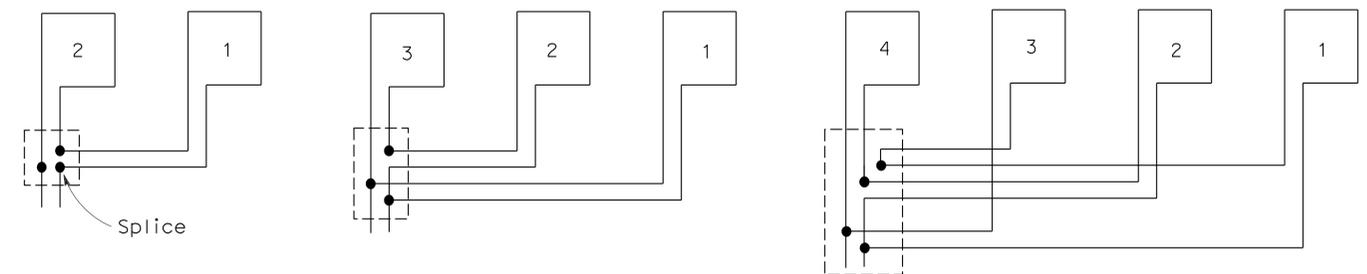
(Type A loop detector configurations illustrated)

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



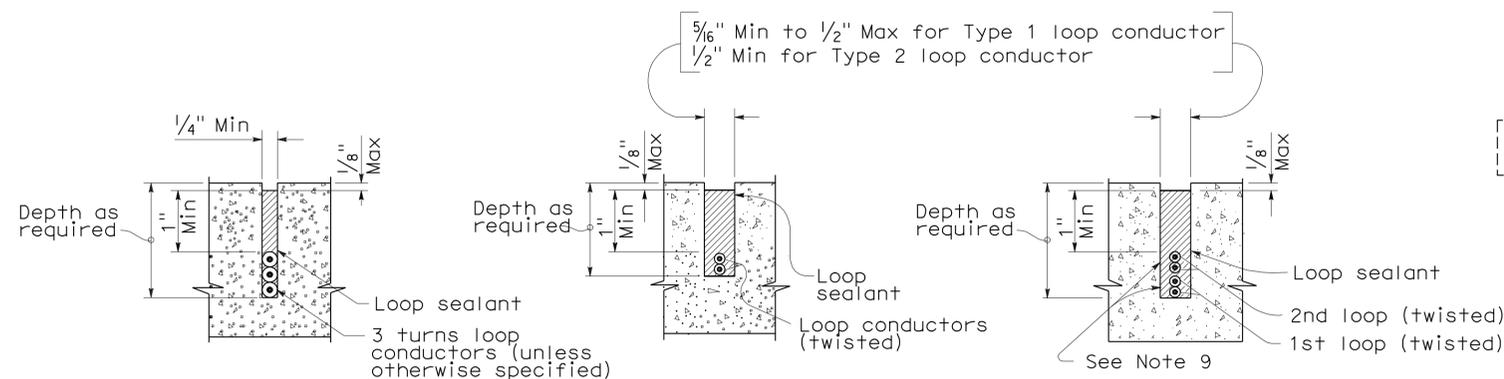
**WINDING DETAILS**

See Notes 6 and 7



**TYPICAL LOOP CONNECTIONS**

(Dashed lines represent the pull box)



SECTION A-A    SECTION B-B    SECTION C-C  
**SLOT DETAILS - TYPE 1 AND TYPE 2 LOOP CONDUCTOR**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

## ELECTRICAL SYSTEMS (DETECTORS)

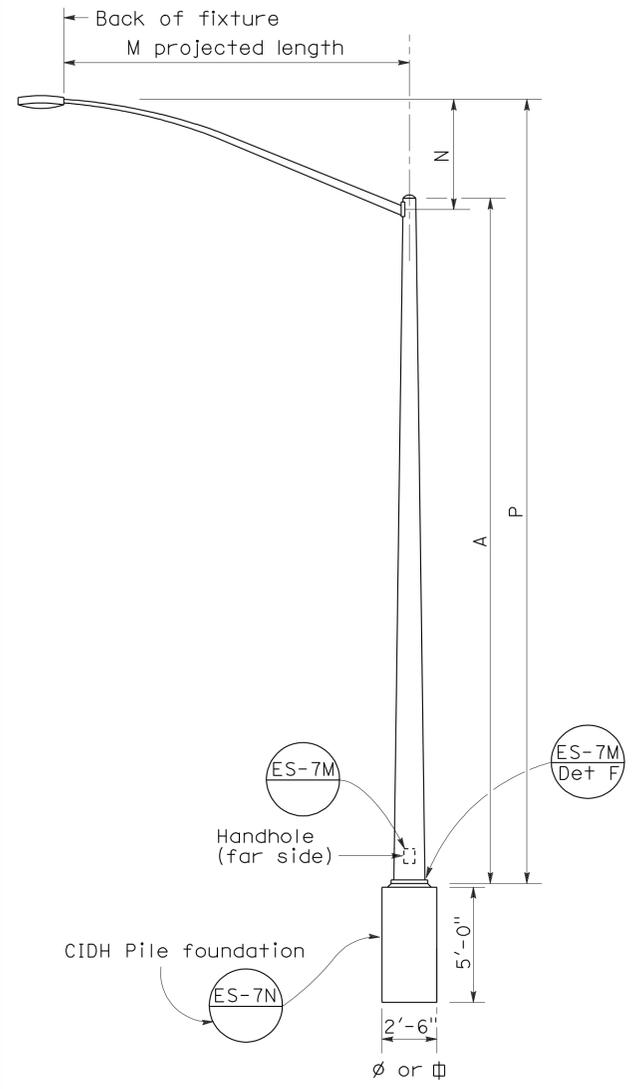
NO SCALE

RSP ES-5A DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-5A  
DATED MAY 1, 2006 - PAGE 423 OF THE STANDARD PLANS BOOK DATED MAY 2006.

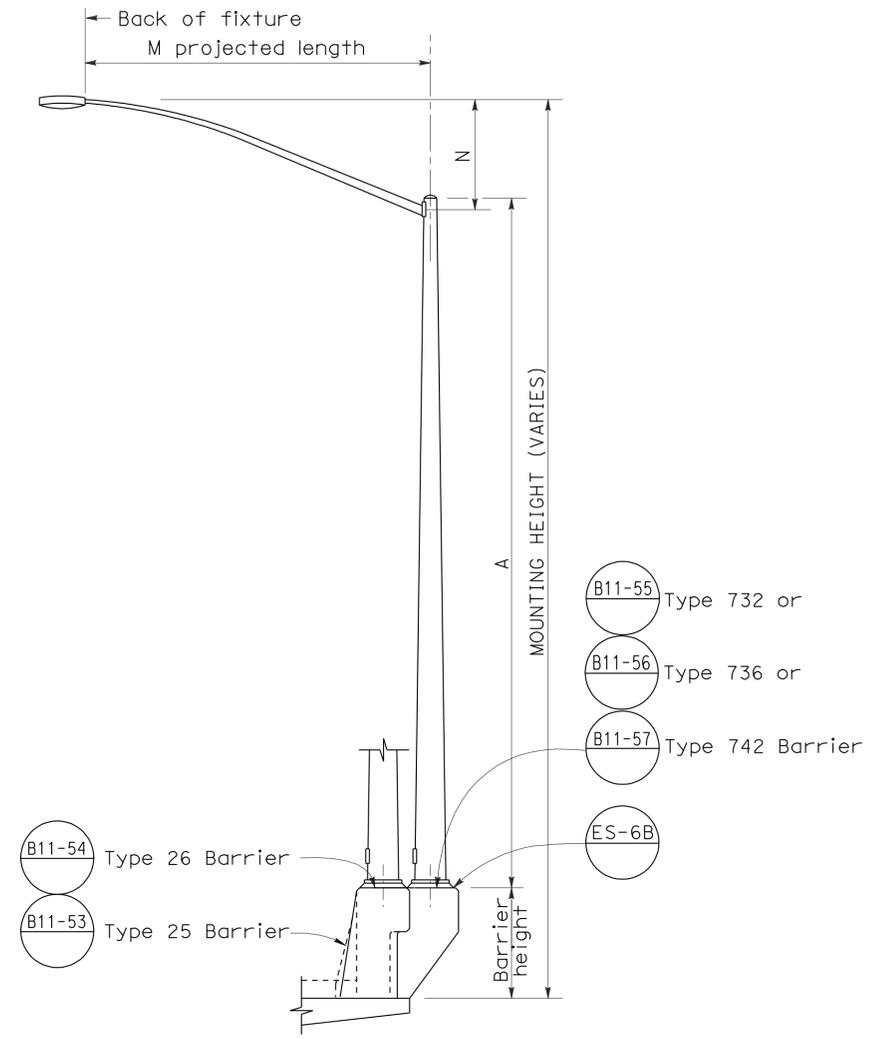
**REVISED STANDARD PLAN RSP ES-5A**

2006 REVISED STANDARD PLAN RSP ES-5A

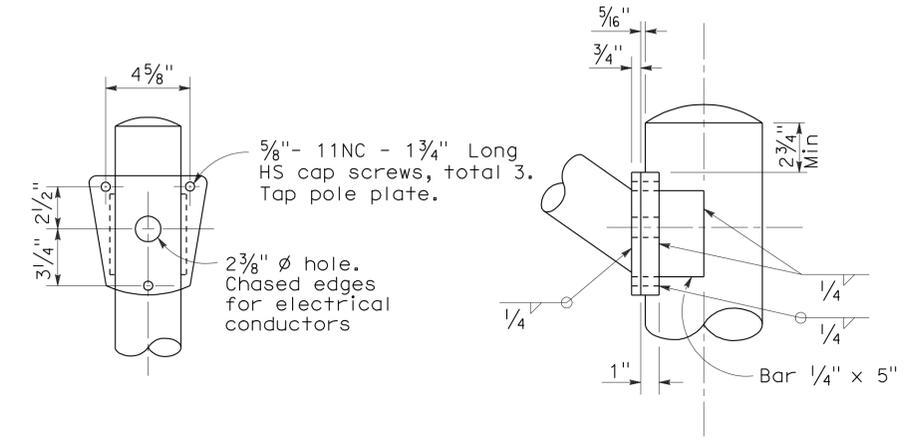
To accompany plans dated 5-3-10



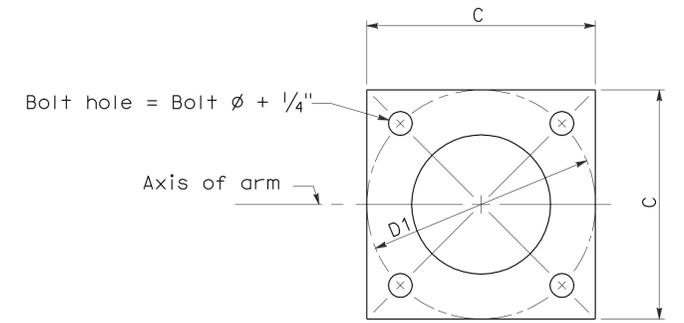
**ELEVATION**  
**TYPE 15 AND TYPE 21**



**ELEVATION**  
**TYPE 15 AND TYPE 21 BARRIER RAIL MOUNTED**



**DETAIL R**  
**LUMINAIRE ARM CONNECTION**



**BASE PLATE**

POLE TYPE	POLE DATA				BASE PLATE DATA				LUMINAIRE ARM
	A Height	Min OD		Wall Thickness	C	D1 Bolt Circle	Bolt Thickness	Anchor Bolts Size	
		Base	Top						
15	30'	8"	3 7/8"	0.1196"	1'-0"	1'-0"	1"	1" ø x 3'-0" x 4"*	6' - 15' 12'
21	35'	8 5/8"	3 7/8"	0.1196"	1'-0"	1'-0"	1"	1 1/4" ø x 3'-0" x 4"*	6' - 15' 12'

\* For barrier rail bolts, see Standard Plan ES-6B.

M Projected Length	N Rise	Min OD At Pole	Nominal Thickness	LUMINAIRE ARM DATA	
				P	
				Type 15	Type 21
6'-0"	2'-0"±	3/4"	0.1196"	31'-6"±	36'-6"±
8'-0"	2'-6"±	3/2"	0.1196"	32'-0"±	37'-0"±
10'-0"	3'-3"±	3 7/8"	0.1196"	32'-9"±	37'-9"±
12'-0"	4'-3"±	3 7/8"	0.1196"	33'-9"±	38'-9"±
15'-0"	4'-9"±	4 1/4"	0.1196"	34'-3"±	39'-3"±

**NOTES:**

- Indicates arm length to be used unless otherwise noted on the plans.
- For Type 15-SB, use Type 15 standard with Type 30 slip base plate details, see Standard Plan ES-6F.
- For additional notes, see Standard Plan ES-7M and ES-7N.

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS**  
**(LIGHTING STANDARD**  
**TYPES 15 AND 21)**

NO SCALE

RSP ES-6A DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-6A DATED MAY 1, 2006 - PAGE 427 OF THE STANDARD PLANS BOOK DATED MAY 2006.

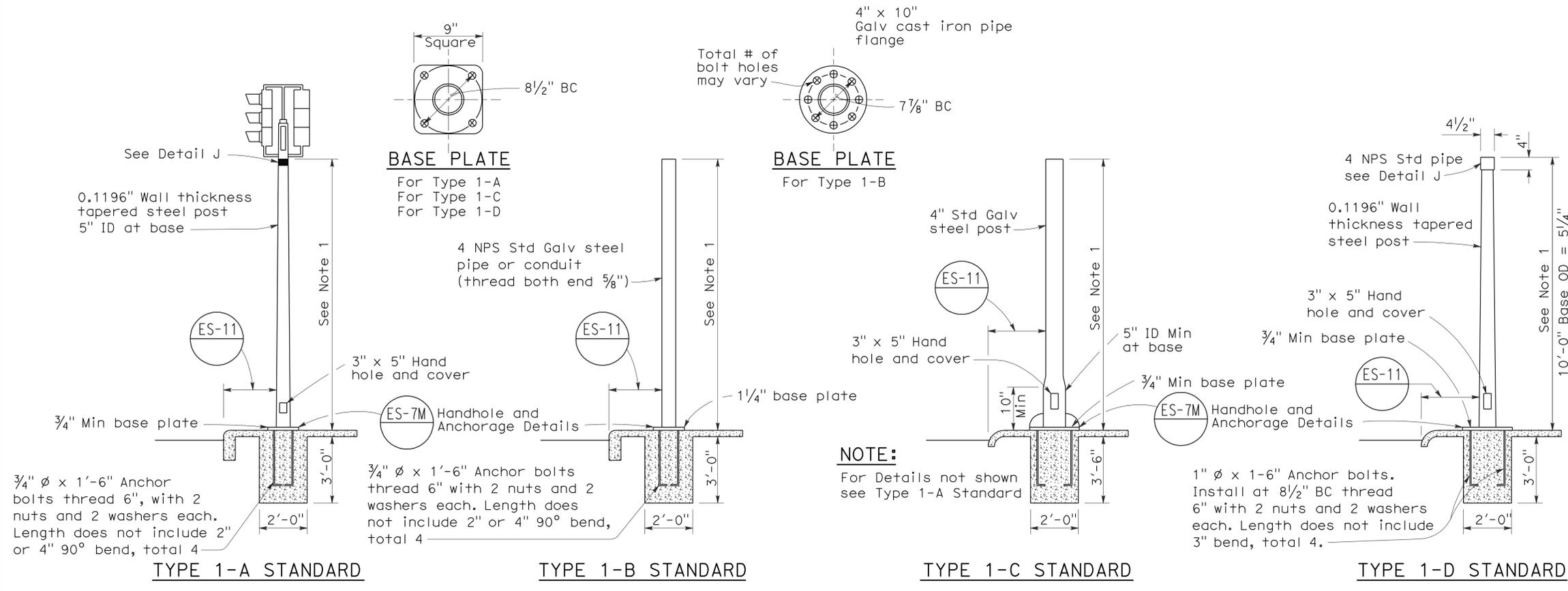
**REVISED STANDARD PLAN RSP ES-6A**

**2006 REVISED STANDARD PLAN RSP ES-6A**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Las	36	25.4	47	49

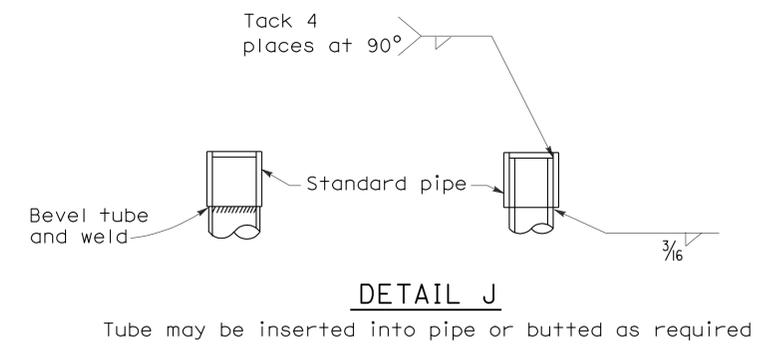
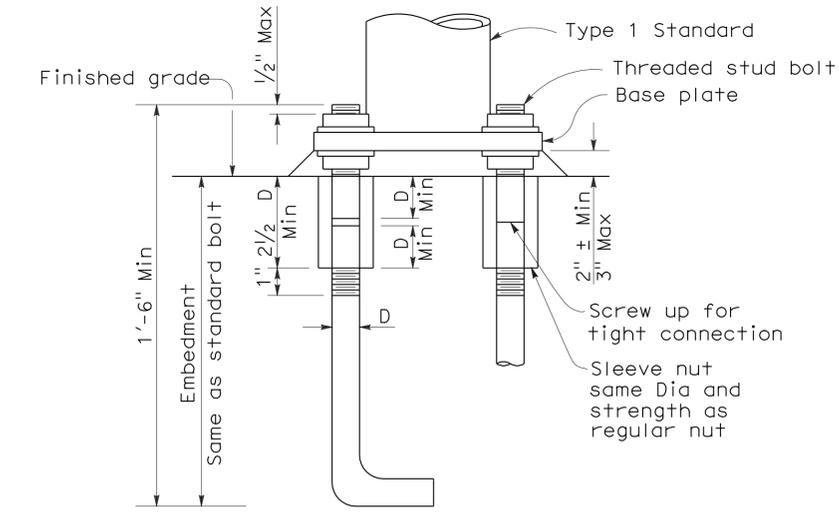
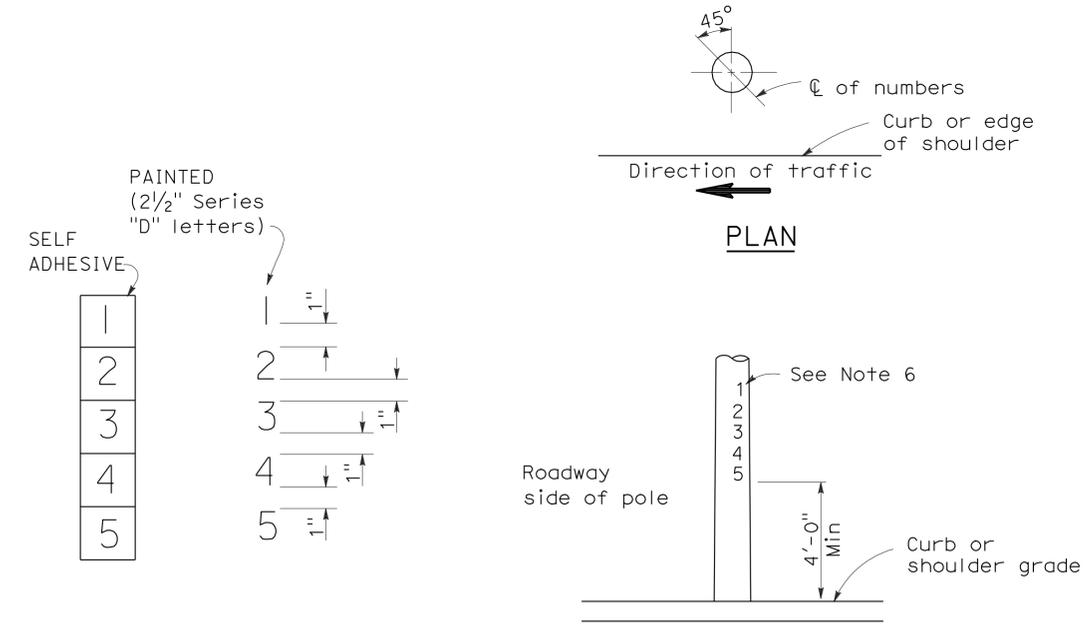
Stanley P. Johnson  
 REGISTERED CIVIL ENGINEER  
 October 5, 2007  
 PLANS APPROVAL DATE  
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.  
 REGISTERED PROFESSIONAL ENGINEER  
 Stanley P. Johnson  
 No. C57793  
 Exp. 3-31-08  
 CIVIL  
 STATE OF CALIFORNIA

To accompany plans dated 5-3-10



- NOTES:**
- Standards shall be 10'-0" ± 2" for vehicle signals and 7'-0" ± 2" for pedestrian signals unless otherwise noted on plans.
  - Top of standards shall be 4 1/2" OD.
  - Conduits shall extend 2" maximum above finished surface of foundation and for Types 1-A, 1-C and 1-D shall be sloped toward handhole.
  - Anchor bolts shall be bonded to conduit or grounding conductor.
  - Conduit between standard and adjacent pull box shall be 2" minimum.
  - Paint numbers on roadway side facing traffic when electrolier or post is left of direction of traffic.

**TYPE 1 SIGNAL STANDARDS**



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS  
(SIGNAL AND  
LIGHTING STANDARD  
TYPE 1 STANDARD AND  
EQUIPMENT NUMBERING)**

NO SCALE

RSP ES-7B DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-7B DATED MAY 1, 2006 - PAGE 438 OF THE STANDARD PLANS BOOK DATED MAY 2006.

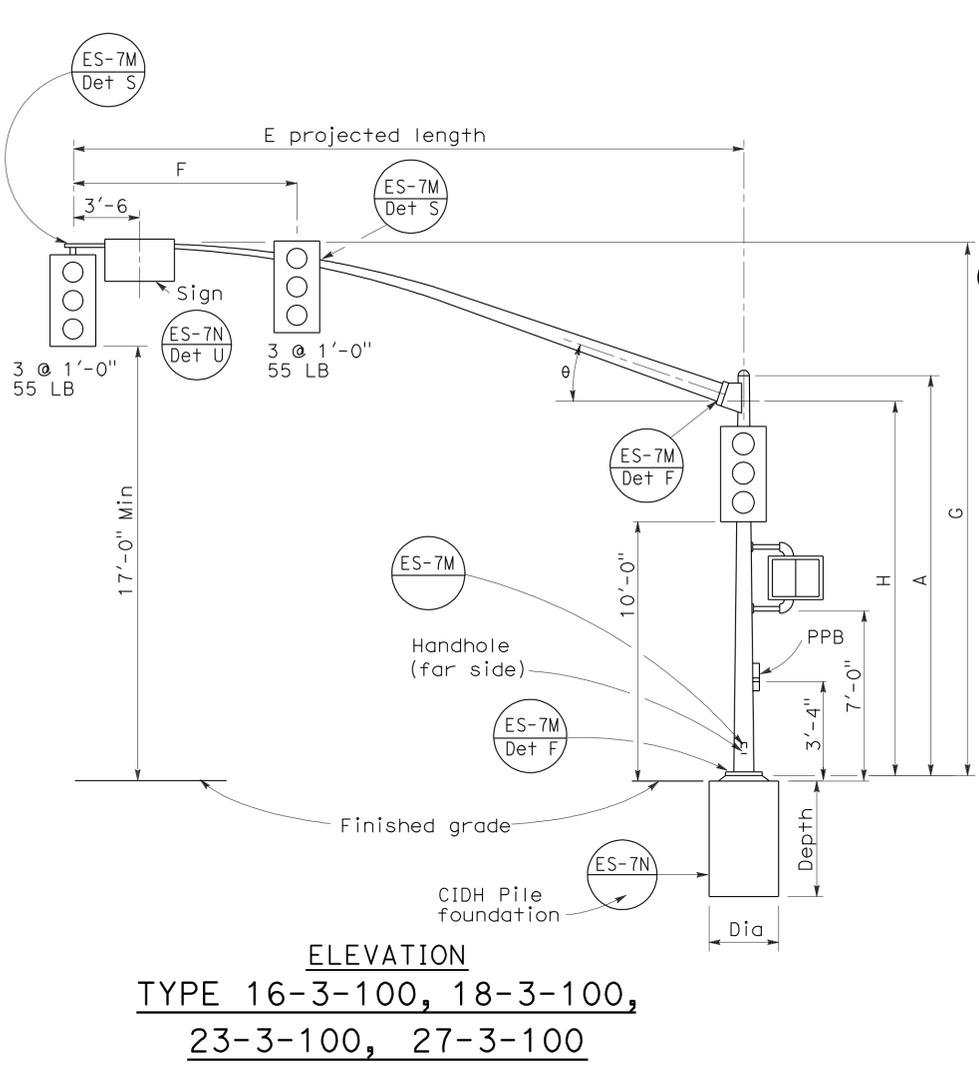
2006 REVISED STANDARD PLAN RSP ES-7B

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Las	36	25.4	48	49

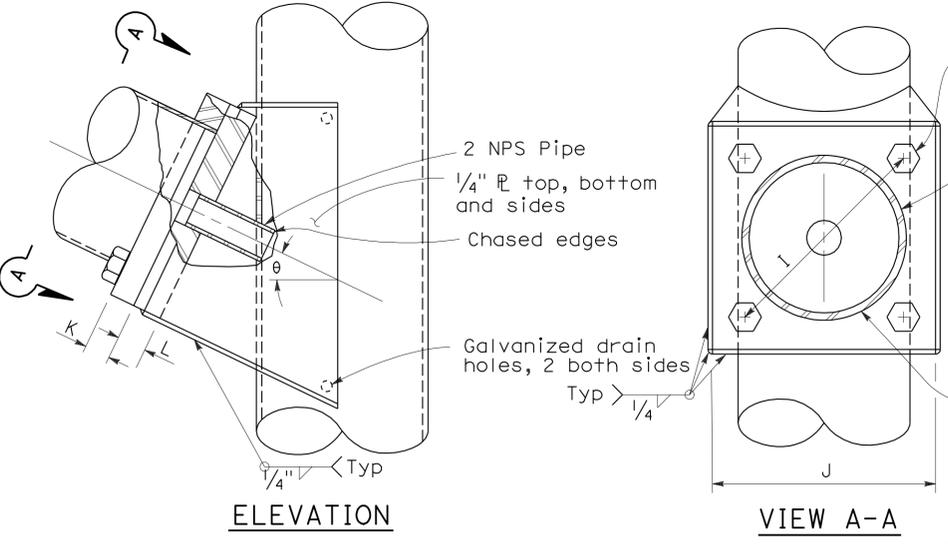
REGISTERED CIVIL ENGINEER  
 Jeffrey B. Woody  
 No. C41260  
 Exp. 3-31-07  
 STATE OF CALIFORNIA

June 30, 2006  
 PLANS APPROVAL DATE

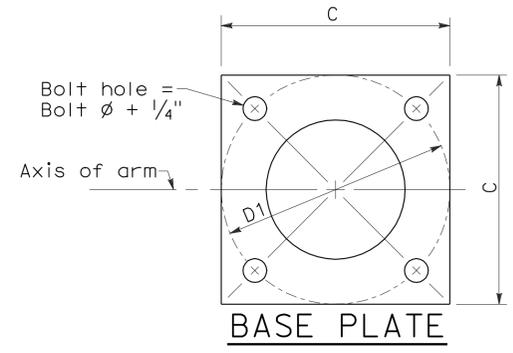
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



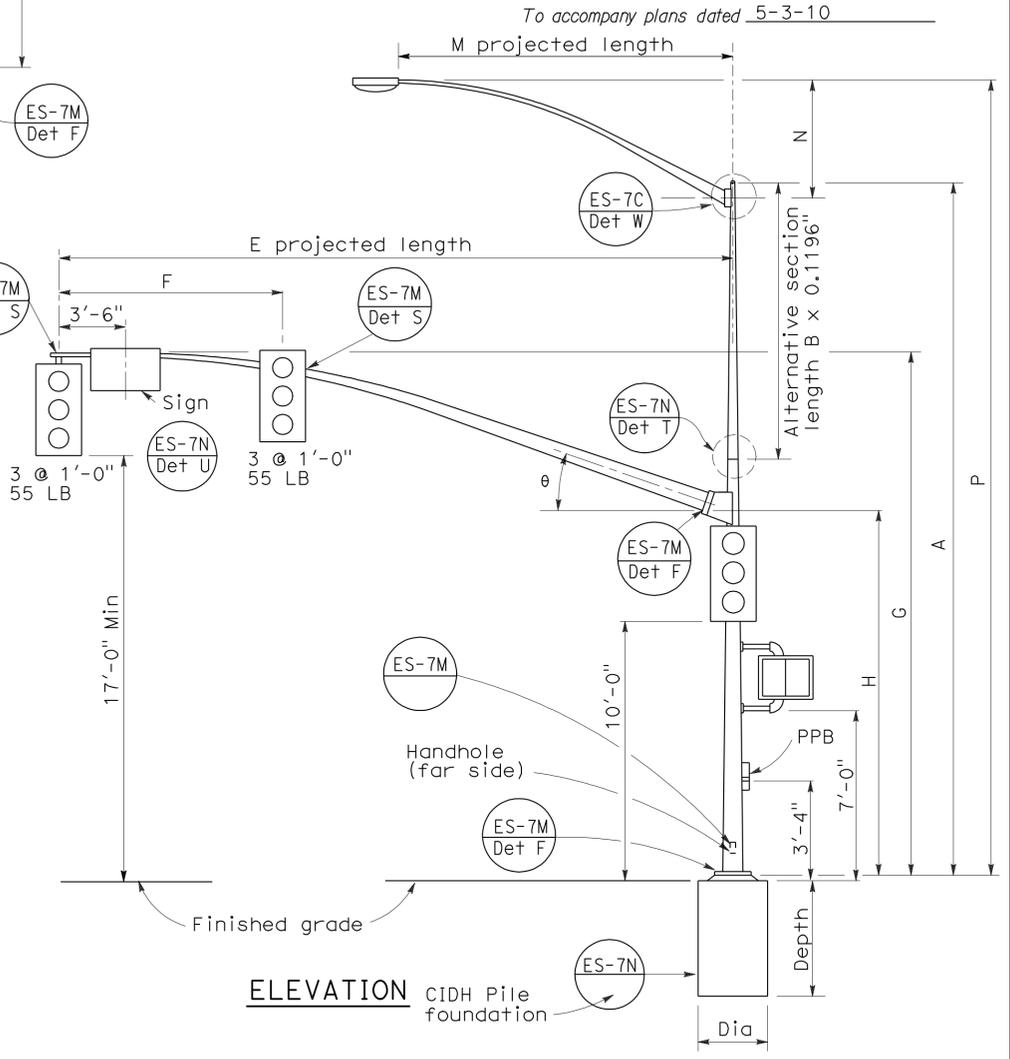
**ELEVATION**  
**TYPE 16-3-100, 18-3-100,**  
**23-3-100, 27-3-100**



**SIGNAL ARM CONNECTION DETAILS**



**BASE PLATE**



**ELEVATION**  
**TYPE 17-3-100, 24A-3-100,**  
**19-3-100, 26-3-100,**  
**19A-3-100, 26A-3-100, 24-3-100**

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 Arm R Thickness	L Pole R Thickness	θ
15'-0"	8'-0"	21'-8"±	17'-6"	6 5/8"	0.1793"	12"	1 1/4"-7NC-3"	1'-0"	1 1/4"	1 1/2"	23°
20'-0"		21'-8"±		7"							
25'-0"		22'-8"±		7 5/8"							
30'-0"	12'-0"			8"							
35'-0"	14'-0"	23'-0"±	16'-0"	8 3/4"	0.2391"	13"	1'-1"	1 1/2"	1 3/4"	21°	
40'-0"				9 3/8"							
45'-0"	15'-0"	23'-8"±		10 1/16"							

M Projected Length	N Rise	Min OD at Pole	Thickness	P Mounting Height Pole
6'-0"	2'-0"±	3 1/4"	0.1196"	30'-0" Pole
8'-0"	2'-6"±	3 1/2"		35'-0" Pole
10'-0"	3'-3"±	3 7/8"	0.1196"	31'-6"±
12'-0"	4'-3"±	4 1/4"		32'-0"±
15'-0"	4'-9"±	4 1/4"		32'-9"±
				37'-0"±
				37'-9"±
				38'-9"±
				39'-3"±

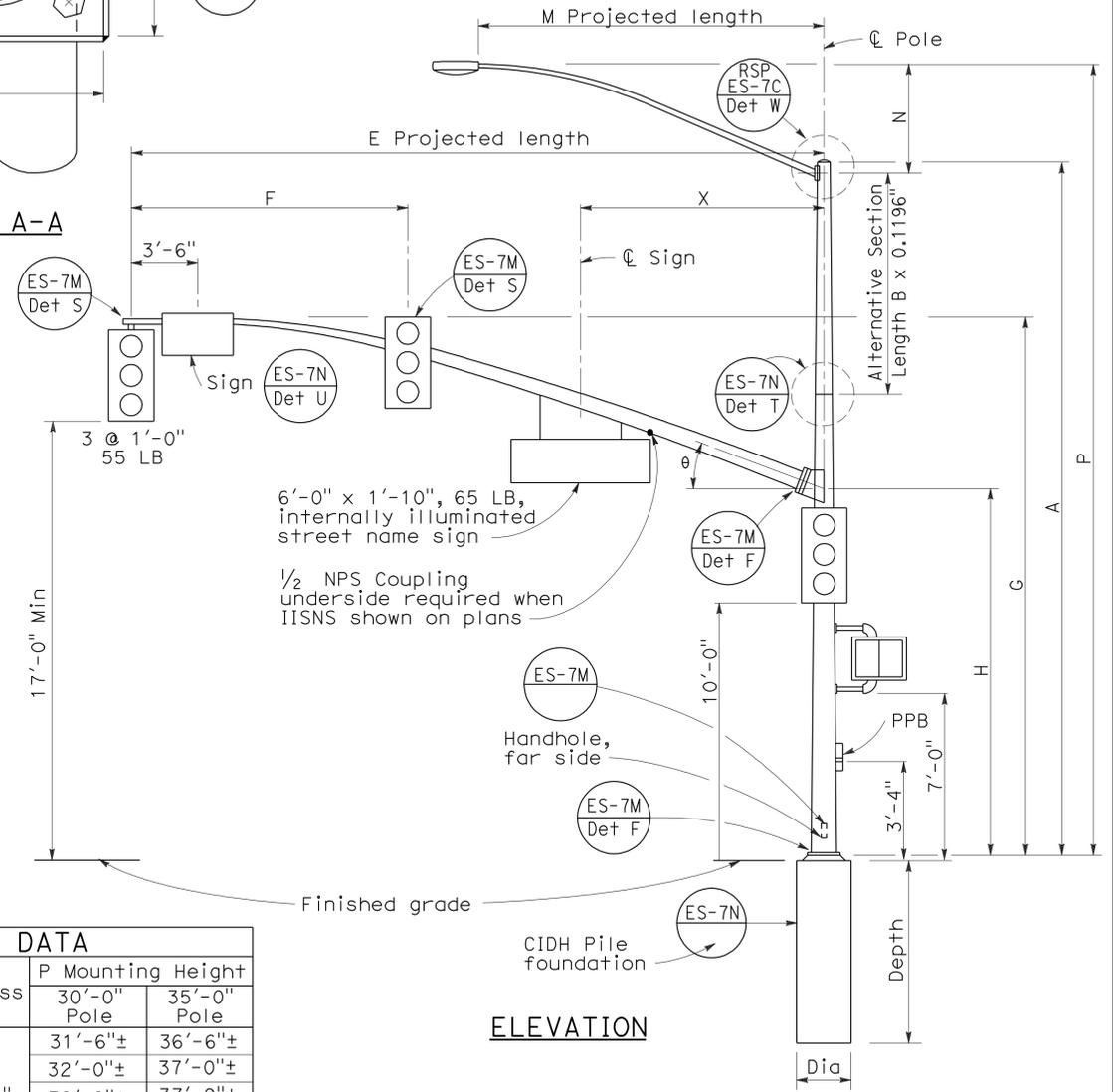
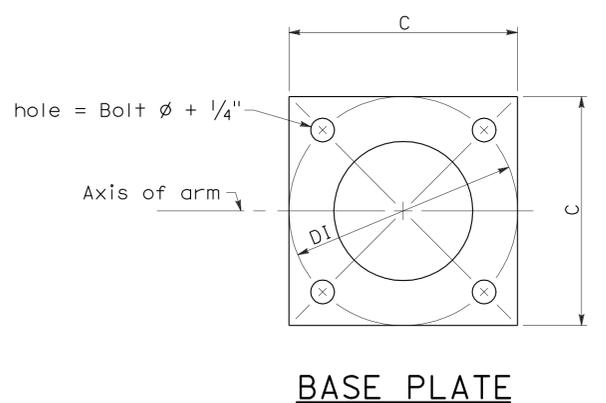
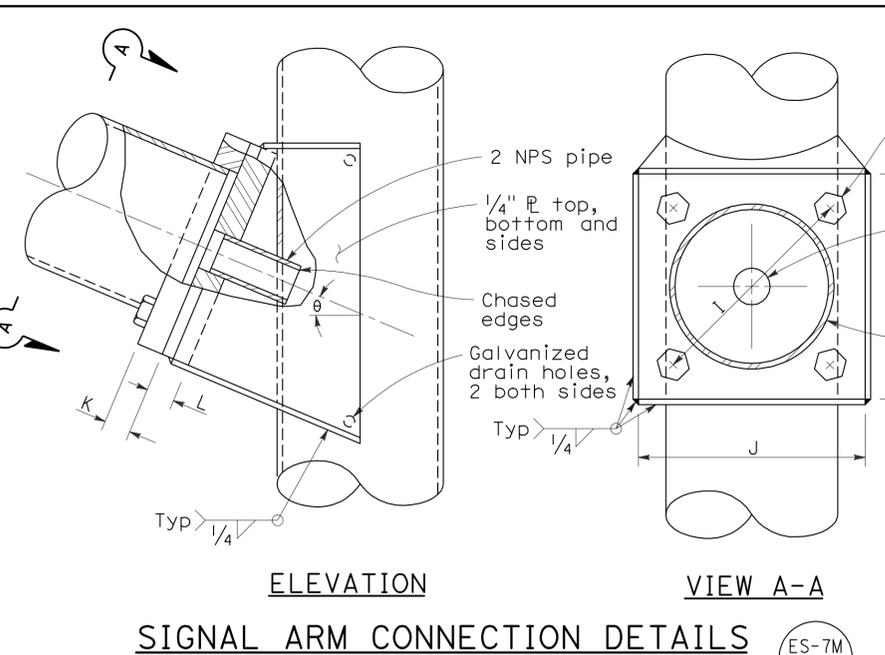
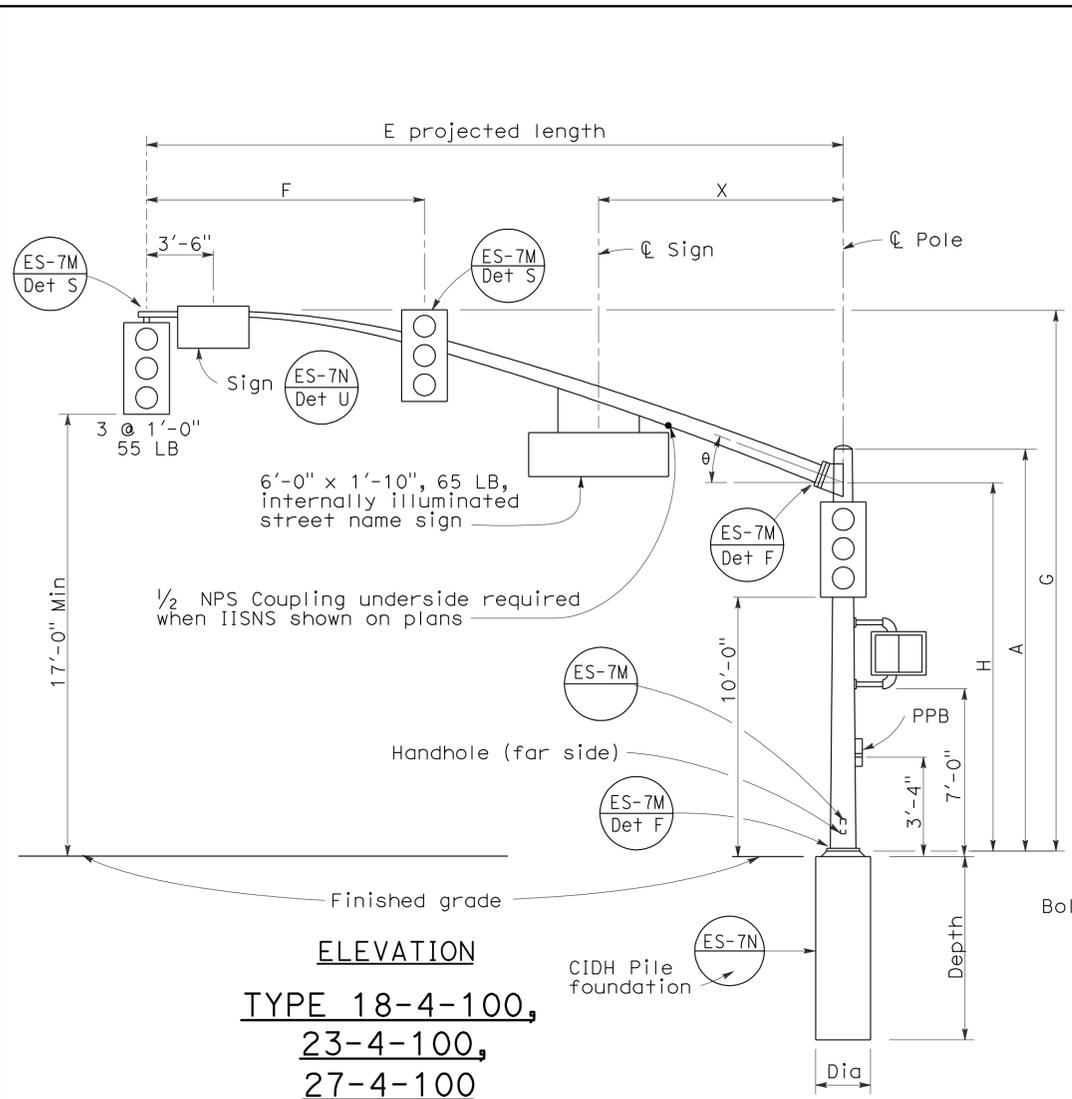
Pole Type	Load Case	Wind Velocity mph	POLE DATA				BASE PLATE DATA				Luminaire Arm	Signal Arm	CIDH PILE FOUNDATION					
			A Height	Min OD		Thickness	Alternative Section			C			D1 Bolt Circle	Thickness	Anchor Bolts Size	Diameter	Depth	Reinforced
				Base	Top		B Length	Bottom	Top									
16-3-100	3	100	18'-6"	10 3/4"	8 1/4"	0.1793"	None	8"	7 5/8"	1'-6"	1'-5 1/2"	1 1/2"	2"Ø x 42" x 6"	3'-0"	9'-0"	Yes		
17-3-100			30'-0"		6 5/8"		10'-0"		7 5/8"									
18-3-100			17'-0"	8 7/16"	None													
19-3-100			30'-0"	7 7/8"	10'-0"	9 1/4"	7 7/8"											
19A-3-100			35'-0"	7 3/16"	15'-0"	7 3/16"												
23-3-100			17'-0"	9 5/8"	None													
24-3-100			30'-0"	7 7/8"	10'-0"	9 1/4"	7 7/8"											
24A-3-100			35'-0"	7 3/16"	15'-0"	7 3/16"												
26-3-100			30'-0"	8"	10'-0"	9 3/8"	8"											
26A-3-100			35'-0"	7 5/16"	15'-0"	7 5/16"												
27-3-100			17'-0"	9 3/4"	None													

□ Indicates arm length to be used unless otherwise noted on plans.

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

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS**  
**(SIGNAL AND LIGHTING STANDARD**  
**CASE 3 ARM LOADING**  
**WIND VELOCITY=100 MPH**  
**ARM LENGTHS 15' TO 45')**  
 NO SCALE  
 RSP ES-7E DATED JUNE 30, 2006 SUPERSEDES STANDARD PLAN DATED MAY 1, 2006 -  
 PAGE 441 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP ES-7E



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 Arm P Thickness	L Pole P Thickness	θ	X Max
25'-0"	10'-0"	22'-8"±	16'-0"	7 5/16"	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"±	3 7/8"		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 Arm	Signal Arm	CIDH PILE FOUNDATION			
			A Height	Min OD		Thickness	Alternative Section			C	DI Bolt Circle	Thickness			Anchor Bolts Size	Dia	Depth	Reinforced
				Base	Top		B Length	Bottom	Top									
18-4-100	4	100	17'-0"	12"	0.2391"	None	9 3/8"	8"	1'-6"	1'-6"	1 1/2"	2" Ø x 42" x 6"	3'-0"	9'-0"	Yes			
19-4-100			30'-0"			8"										None	8"	
19A-4-100			35'-0"			7 5/16"										15'-0"	7 5/16"	
23-4-100			17'-0"			9"										None		
24-4-100			30'-0"	8"	10'-0"	8"												
24A-4-100			35'-0"	7 5/16"	15'-0"	7 5/16"												
26-4-100			30'-0"	8"	10'-0"	8 3/8"												
26A-4-100			35'-0"	7 5/16"	15'-0"	9 3/4"	7 1/16"											
27-4-100			17'-0"	9 3/4"	None													

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS**  
**(SIGNAL AND LIGHTING STANDARD**  
**CASE 4 ARM LOADING**  
**WIND VELOCITY=100 MPH**  
**ARM LENGTHS 25' TO 45')**  
 NO SCALE  
 RSP ES-7F DATED OCTOBER 5, 2007 SUPERCEDES RSP ES-7F DATED NOVEMBER 17, 2006 AND STANDARD PLAN ES-7F DATED MAY 1, 2006 - PAGE 442 OF THE STANDARD PLANS BOOK DATED MAY 2006.

□ Indicates arm length to be used unless otherwise noted on plans.

2006 REVISED STANDARD PLAN RSP ES-7F