

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	201	302

Hector A. Santamaria 10-10-14  
REGISTERED ELECTRICAL ENGINEER DATE

01-20-15  
PLANS APPROVAL DATE

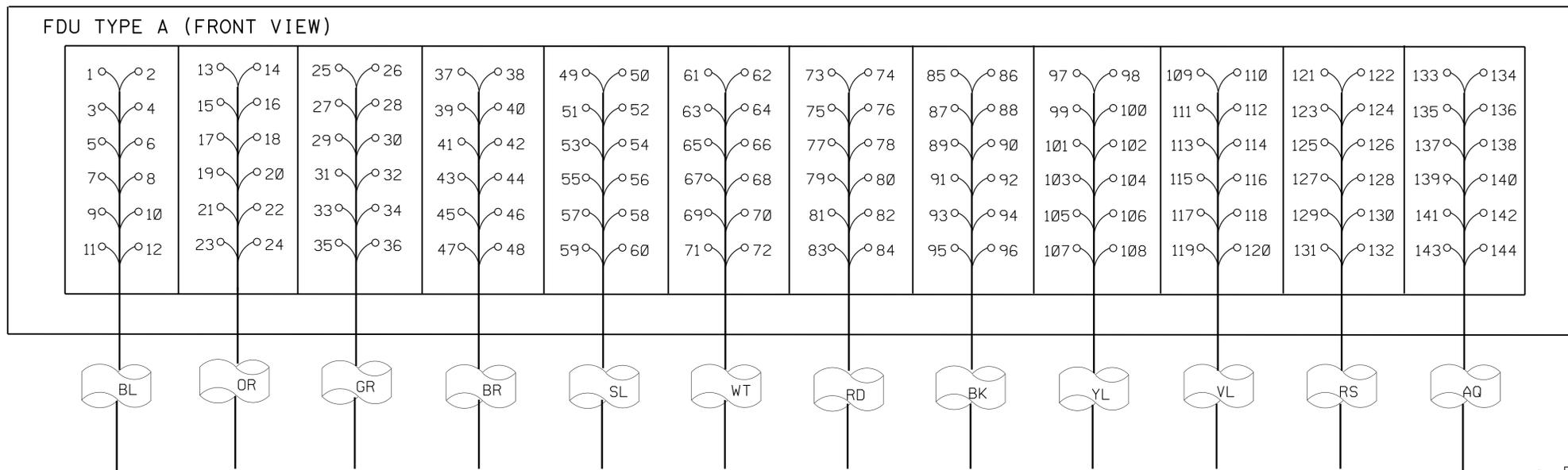
HECTOR A. SANTAMARIA  
No. 18207  
Exp. 12-31-15  
ELECTRICAL

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.

**COLOR CODES FOR BUFFER TUBES AND FIBERS:**

- |                |               |                |                 |
|----------------|---------------|----------------|-----------------|
| 1. BLUE (BL)   | 4. BROWN (BR) | 7. RED (RD)    | 10. VIOLET (VL) |
| 2. ORANGE (OR) | 5. SLATE (SL) | 8. BLACK (BK)  | 11. ROSE (RS)   |
| 3. GREEN (GR)  | 6. WHITE (WT) | 9. YELLOW (YL) | 12. AQUA (AQ)   |

**TOLL PLAZA**



F0144  
(TOLL PLAZA)

**DETAIL "FO"**

**LEGEND**

- SPLICE OF TWO FIBER
- CUT END OF FIBER, NOT SPLICED
- SC FEMALE CONNECTOR ON AN FDU PANEL
- SC MALE CONNECTOR ON AN SMFO PATCHCORD

**CLOSED CIRCUIT TELEVISION SYSTEM  
(ELECTRICAL DETAILS)**

**E-26**

APPROVED FOR ELECTRICAL WORK ONLY

NO SCALE

**NOTES:**

- 1 - SEE CAMERA CABLE CROSS SECTION ON THIS SHEET.
- 2 - SEE TABLE "A" FOR CONNECTOR 1 ASSIGNMENT.
- 3 - SEE TABLE "B" FOR CONNECTOR 2 ASSIGNMENT.
- 4 - SEE TABLE "C" FOR CONNECTOR 3 ASSIGNMENT.
- 5 - MIN 40" OF SLACK IS REQUIRED FROM CAMERA CABLE TO THE CONNECTORS.
- 6 - SEE TABLE "D" FOR CONNECTOR ASSIGNMENT.
- 7 - THE CONTRACTOR SHALL VERIFY THE LENGTH OF CAMERA CABLE AT EACH LOCATION AS SHOWN IN ELECTRICAL PLANS. A SLACK OF 80" IS REQUIRED AT EACH LOCATION.

CIRCULAR PLASTIC CONNECTOR (CPC), FEMALE

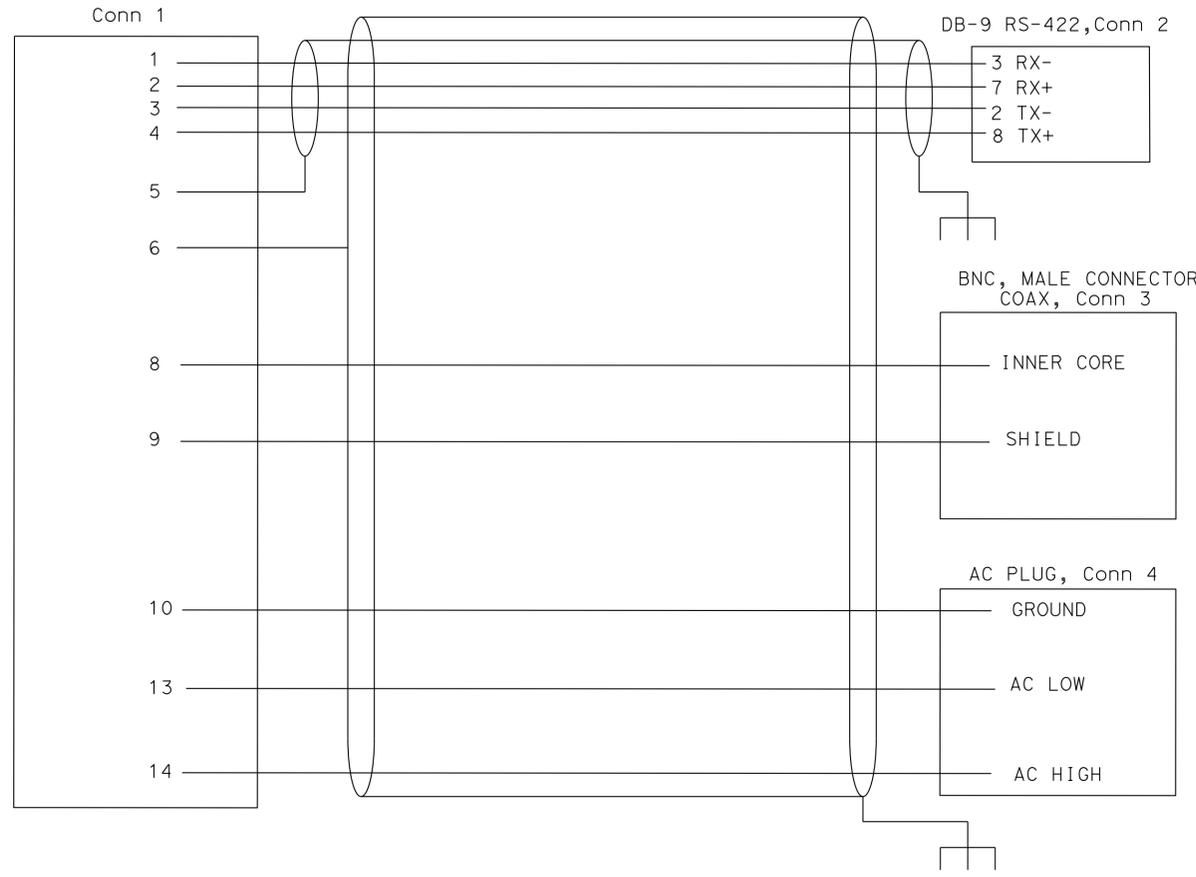


TABLE "D":

CPC PIN DESCRIPTION	
PIN 1	- 22 AWG,RS-422
PIN 2	- 22 AWG,RS-422
PIN 3	- 22 AWG,RS-422
PIN 4	- 22 AWG,RS-422
PIN 5	- DATA GROUND
PIN 6	- OVERALL SHIELD
PIN 8	- RG-59,CORE WIRE
PIN 9	- RG-59,SHIELD
PIN 10	- 18 AWG,AC Gnd
PIN 13	- AC LOW
PIN 14	- AC HIGH

TABLE "A":

Conn 1 DESCRIPTION			
PIN	FUNCTION	WIRE COLOR	WIRE GAUGE
1	CAMERA CONTROL RX-	BLACK	26 AWG
2	CAMERA CONTROL RX+	WHITE	26 AWG
3	CAMERA CONTROL TX-	GREEN	26 AWG
4	CAMERA CONTROL TX+	RED	26 AWG
8	VIDEO SIGNAL COAX INNER CORE	BARE	
9	VIDEO SIGNAL COAX SHIELD	WHITE/BLACK	22 AWG
10	CAMERA POWER,GROUND	YELLOW	18 AWG
13	CAMERA POWER,AC LOW	BLUE	18 AWG
14	CAMERA POWER,AC HIGH	BROWN	18 AWG

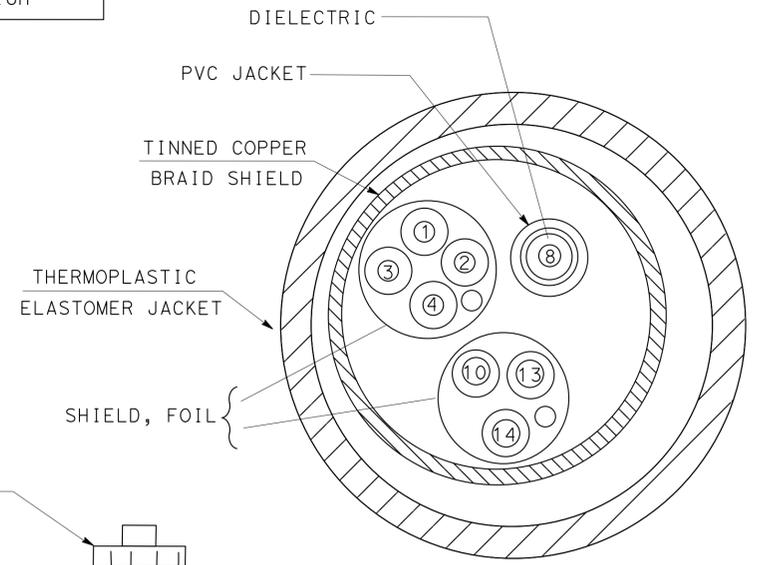
TABLE "B":

Conn 2 DESCRIPTION				
DB-9 PIN	Conn 1 POSITION	FUNCTION	WIRE COLOR	WIRE GAUGE
3	1	CAMERA CONTROL RX-	BLACK	22 AWG
7	2	CAMERA CONTROL RX+	WHITE	22 AWG
2	3	CAMERA CONTROL TX-	GREEN	22 AWG
8	4	CAMERA CONTROL TX+	RED	22 AWG

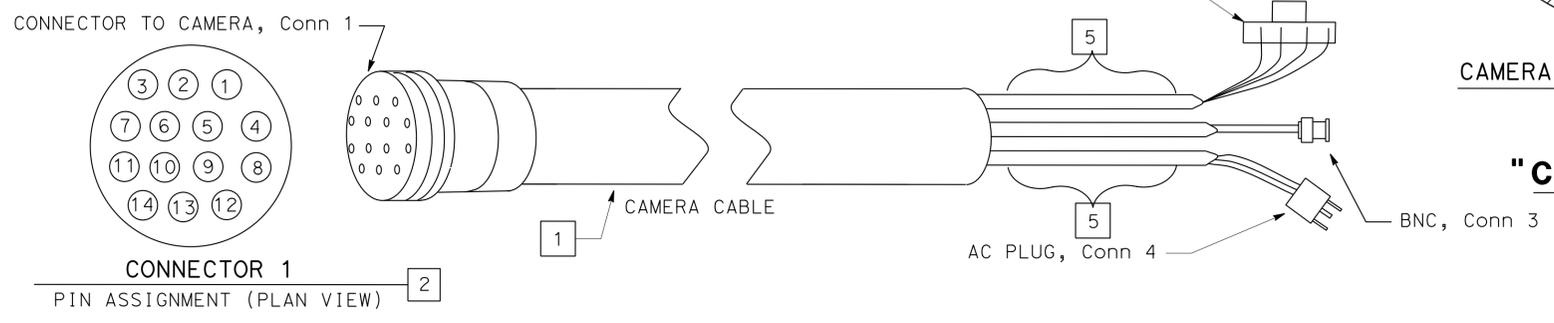
TABLE "C":

Conn 3 DESCRIPTION	
PIN	FUNCTION
CENTER	VIDEO SIGNAL INNER CORE, COAX
SHIELD	VIDEO SIGNAL SHIELD, COAX

CONNECTOR DESCRIPTIONS			
CONNECTOR	TYPE	FUNCTION	LOCATION
Conn 1	CPC	CONTROL, VIDEO, POWER	POLE TOP 2
Conn 2	DB-9	CAMERA CONTROL	CCTV CABINET 3
Conn 3	BNC, MALE	VIDEO	CCTV CABINET 4
Conn 4	AC PLUG, 3 PRONG	CAMERA POWER	CCTV CABINET



CAMERA CABLE CROSS SECTION 6



**"CAMERA CABLE"**

**CLOSED CIRCUIT TELEVISION SYSTEM (ELECTRICAL DETAILS)**

**E-27**

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - TRAFFIC ELECTRICAL

HECTOR SANTAMARIA  
DANNY MCCLURE  
RAJPREET SINGH

LAST REVISION DATE PLOTTED => 23-FEB-2015 10-20-14 TIME PLOTTED => 15:36

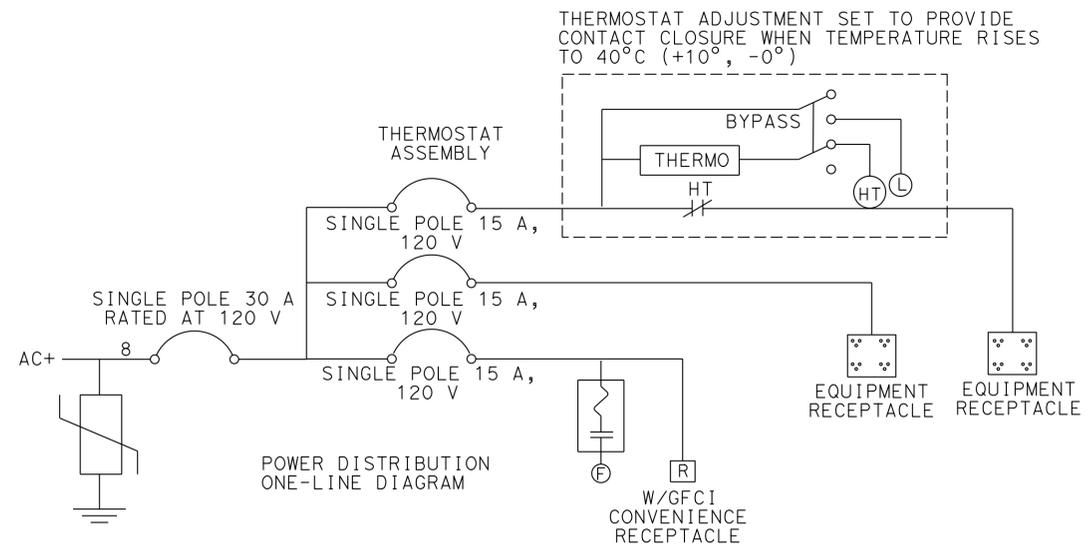
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	203	302

Hector A. Santamaria 10-10-14  
REGISTERED ELECTRICAL ENGINEER DATE  
01-20-15  
PLANS APPROVAL DATE

HECTOR A. SANTAMARIA  
No. 18207  
Exp. 12-31-15  
ELECTRICAL  
STATE OF CALIFORNIA

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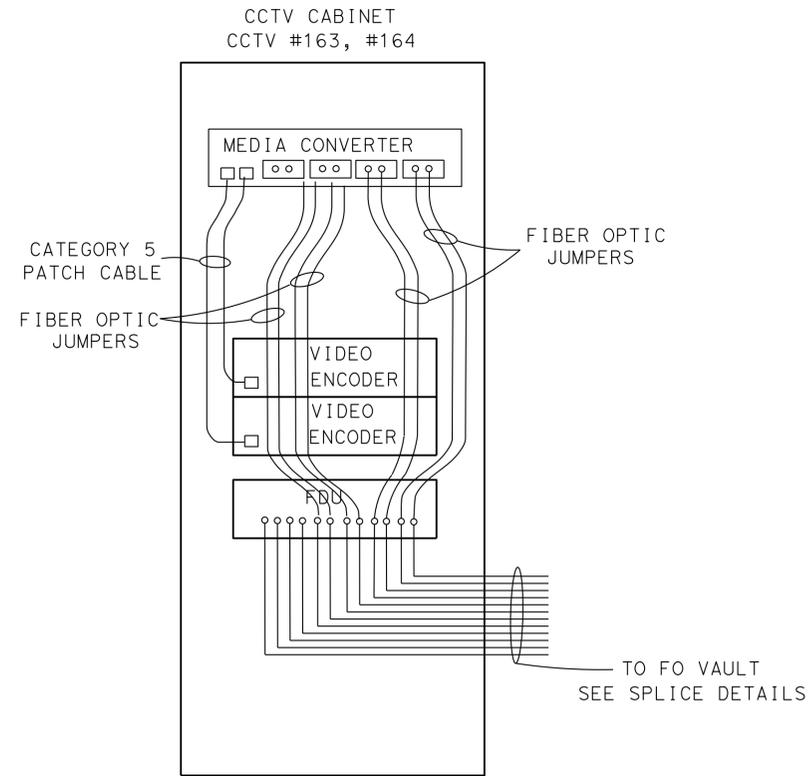
- LEGEND:**
- SURGE PROTECTOR
  - CIRCUIT BREAKER
  - RELAY COIL - HIGH TEMPERATURE
  - RELAY CONTACT - NORMALLY CLOSED
  - WNGFC1 WITH GROUND FAULT CURRENT INTERRUPT
  - 8 WIRE SIZE, IF NOT INDICATED SHALL BE #12 AWG
  - FAN
  - INDICATOR LAMP
  - DUPLEX RECEPTACLE (MODEL 334 CABINET)
  - THERMOSTATIC CONTROL
  - THERMO ADJUSTABLE CALIBRATED THERMOSTAT



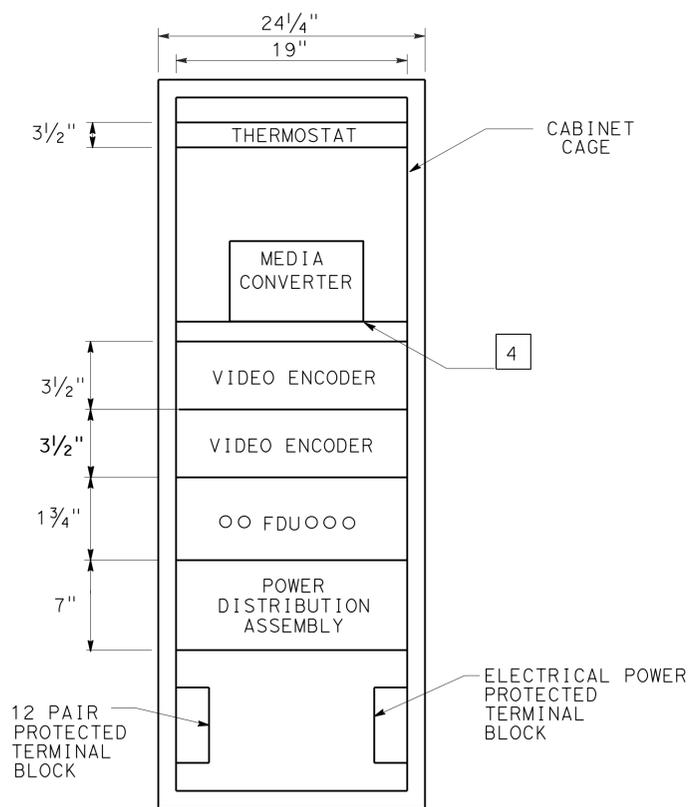
**CCTV CABINET POWER DISTRIBUTION ASSEMBLY**

- NOTES:**
- THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING MATERIAL.
  - GFCI RECEPTACLES ARE FOR MAINTENANCE EQUIPMENT ONLY.
  - CONSTRUCT FOUNDATION PER S+D PLAN ES-3C.
  - SHELF REQUIRED FOR EQUIPMENT.

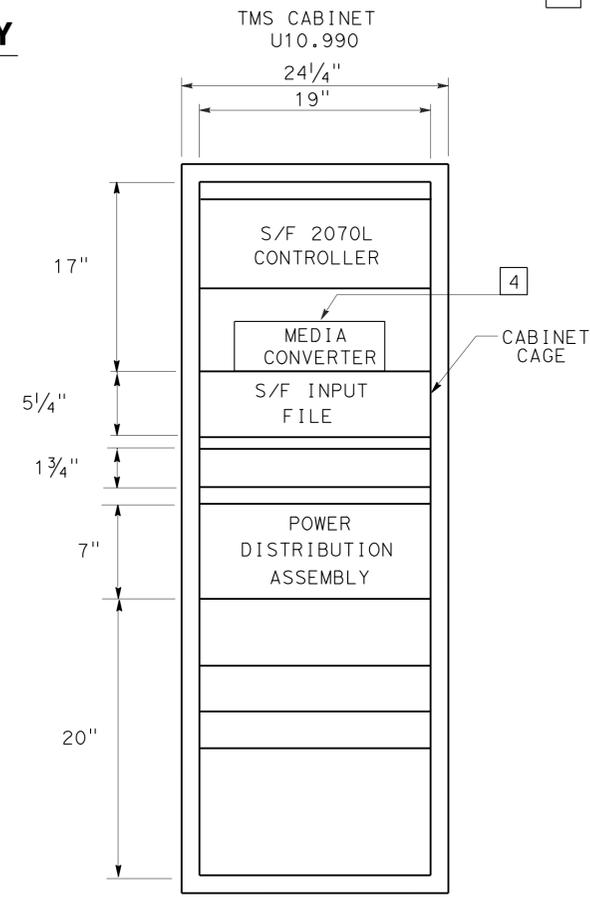
- TBO - TERMINAL BLOCK 0
- NETWORK PORT
- FIBER OPTIC TRANSMITTER/RECEIVER



**CCTV CABINET COMPONENT DIAGRAM (TYPICAL)**



**CCTV CABINET DETAIL AND EQUIPMENT PLACEMENT (TYPICAL)**



**TMS CABINET EQUIPMENT PLACEMENT (TYPICAL)**

**CLOSED CIRCUIT TELEVISION SYSTEM (ELECTRICAL DETAILS)**

APPROVED FOR ELECTRICAL WORK ONLY

NO SCALE

**E-28**

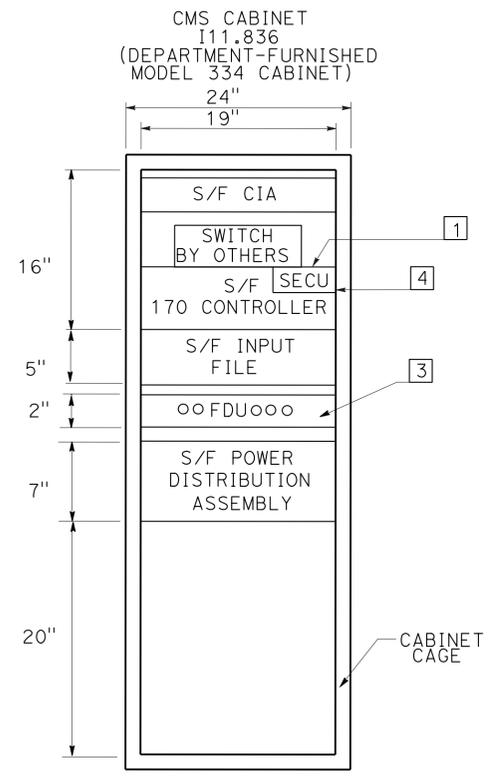
**NOTES:**

- 1 - SHELF REQUIRED FOR EQUIPMENT.
- 2 - 110 PUNCH BLOCK WITH RJ45 CONNECTION. TERMINATE OCC PER EIA/TIA 568B.
- 3 - REMOVE BLANK PANEL AND REPLACE WITH FDU.
- 4 - INSTALL SECU IN 170 CONTROLLER CARD SLOT.
- 5 - LABEL CABLE END IN EACH CABINET. THE LABEL NAME SHALL CORRESPOND TO THE TERMINATION IN THE CABINET.
- 6 - THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING AND INSTALLING EQUIPMENT.
- 7 - THIS SHEET DEMONSTRATES TYPICAL EQUIPMENT CONNECTIONS.

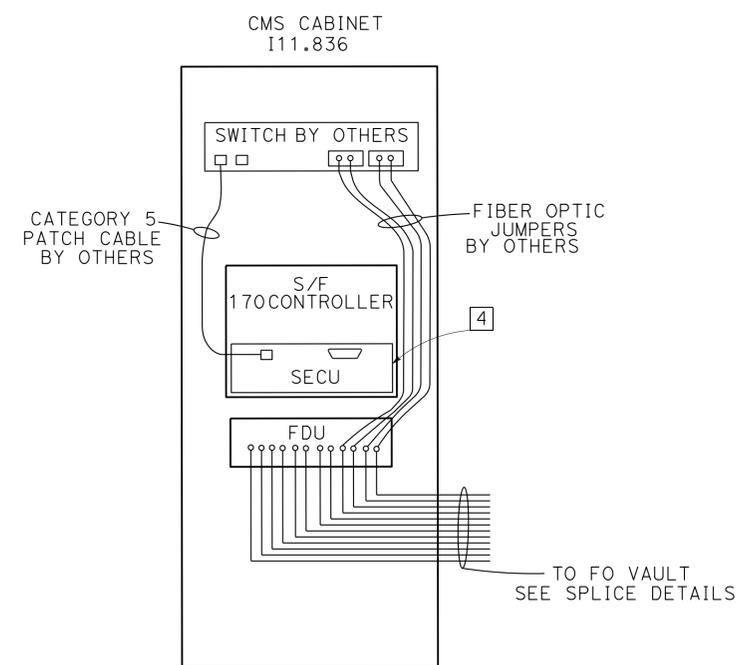
**LEGEND:**

- SECU - SERIAL TO ETHERNET CONVERSION UNIT
- - FIBER OPTIC TRANSMITTER/RECEIVER
- - NETWORK PORT
- - SERIAL CONNECTION
- CIA - CONTROL ISOLATION ASSEMBLY
- - RJ45 CONNECTION

CABINET S10.361T (CCTV#157) FDU POSITION NUMBER											
1	2	3	4	5	6	7	8	9	10	11	12
HUB 13		RING 1 HUB 13 CCTV#164 SO.772				RING 2 HUB 13 CCTV#164 SO.772				SPLICE ENCLOSURE FO VAULT Sta 69+20 "A" LINE	
1	2	133	134	3	4	135	136	7	8	1	2



**CMS CABINET  
EQUIPMENT PLACEMENT  
DETAIL "CMS"**



**CMS CABINET  
COMPONENT DIAGRAM**

**CLOSED CIRCUIT TELEVISION SYSTEM  
(ELECTRICAL DETAILS)**

NO SCALE

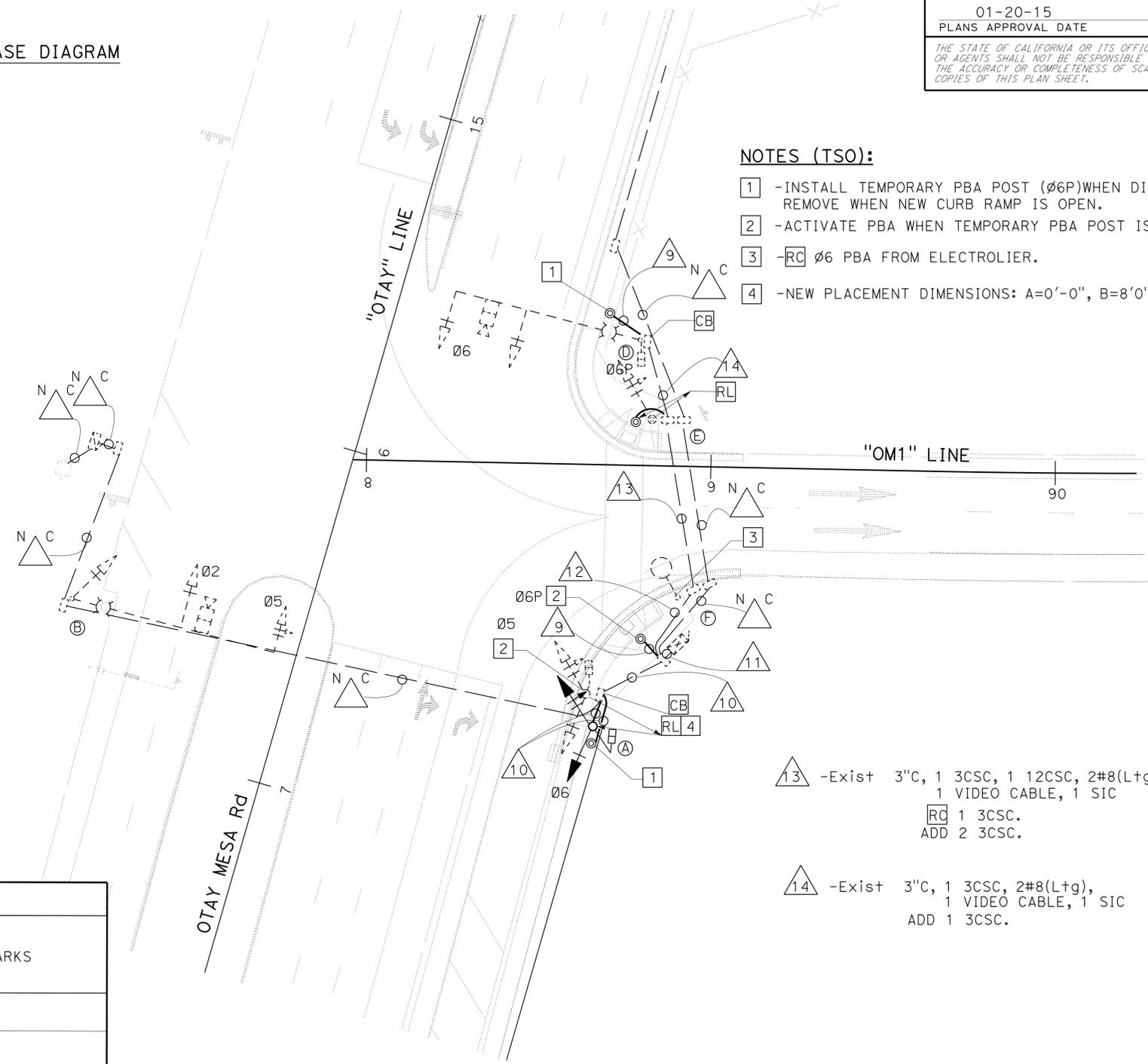
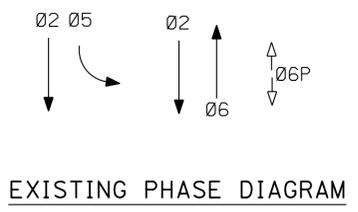
**E-29**

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** TRAFFIC ELECTRICAL  
 HECTOR SANTAMARIA  
 DANNY MCCLURE  
 RAJPREET SINGH



EXISTING CONDUIT AND CONDUCTOR SCHEDULE		CONDUIT SIZE AND RUN								
AWG SIZE OR CABLE TYPE	PHASE	POLE OR CIRCUIT	3/2"	3"	3"	3"	3"	3"	2-3"	2"
			1	2	3	4	5	6	7	8
No. 14 CABLES		POLE - A	1							1
3CSC		B	1	1						1
		C	1	1	1					1
		D				1	1	1	1	
		E					1	1	1	
12CSC		F								1
										1
TOTAL CABLES-3 CSC/12 CSC			3	2	1	1	1	1	2	4
6		SIGNAL POWER	2						2	2
8		LIGHTING	2	2		2	2	2		
14		PEU						3		
TYPE B	Ø1	LOOP DETECTOR	3	3	3					3
	Ø2	LOOP DETECTOR								
DLC	Ø3	LOOP DETECTOR	3							3
		TOTAL DLC	6	3	3					6
VIDEO CABLE			1	1		1	1	1	2	
INTERCONNECT (SIC)									2	1
EVC			1	1		1	1	1	2	
TOTAL CONDUCTORS/CABLES			15	12	4	5	6	12	18	4



- NOTES (TSO):**
- 1 -INSTALL TEMPORARY PBA POST (Ø6P) WHEN DIRECTED BY ENGINEER. REMOVE WHEN NEW CURB RAMP IS OPEN.
  - 2 -ACTIVATE PBA WHEN TEMPORARY PBA POST IS REMOVED.
  - 3 -RC Ø6 PBA FROM ELECTROLIER.
  - 4 -NEW PLACEMENT DIMENSIONS: A=0'-0", B=8'0".

- CONDUIT NOTES (TSO):**
- 9 <sup>N,C</sup> 2"C, 1 3CSC
  - 10 -Exist 3/2"C, 2#8(Ltg), 2#6(POWER), 3 3CSC, 6 DLC, 1 VIDEO CABLE, 1 EVC. RC 1 3CSC. ADD 2 3CSC.
  - 11 -Exist 2-3"C, 4 3CSC, 2 12CSC, 6 DLC, 2 VIDEO CABLE, 2 EVC, 2 SIC. RC 2 3CSC. ADD 4 3CSC.
  - 12 -Exist 3"C, 1 3CSC, 1 12CSC, 3 PEU, 2#8(Ltg), 1 VIDEO CABLE, 2 EVC. RC 1 3CSC. ADD 2 3CSC.
  - 13 -Exist 3"C, 1 3CSC, 1 12CSC, 2#8(Ltg), 1 VIDEO CABLE, 1 SIC. RC 1 3CSC. ADD 2 3CSC.
  - 14 -Exist 3"C, 1 3CSC, 2#8(Ltg), 1 VIDEO CABLE, 1 SIC. ADD 1 3CSC.

EXISTING POLE SCHEDULE AND EQUIPMENT											
Loc	STANDARD TYPE	MAST ARM		PLACEMENT DIMENSIONS		SIGNAL MOUNTING AND PLACEMENT				HPS LUMINAIRE	REMARKS
		SMA	LMA	A FOOT	B FOOT	VEHICLE (i)		PEDESTRIAN			
						POLE	MAST ARM	SIGNAL	PPB		
(A)	1-A (10 ft)	-	-	-	-	TV-2-T		SP-1-T	Ø6		NEW PBA [2]
(B)	29A-5-100	-	-	-	-	SV-1-T	MAT MAS	SP-2-T		310 W	
(C)	-	-	-	-	-	-	-	-	-	-	
(D)	24A-4-100	65	30			SV-1-T	2-MAS	SP-1-T		310 W	
(E)	PED POST	-	-	-	-	-	-	-	Ø6		
(F)	15TS	-	-	-	-	-	-	SP-1-T		250 W	[3]
(G)	EXISTING MODEL 170 CONTROLLER ASSEMBLY (TYPE 332 CABINET)										

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**MODIFY SIGNAL**

**E-31**

SCALE: 1" = 20'

LAST REVISION DATE PLOTTED => 23-FEB-2015 10-20-14 TIME PLOTTED => 15:36

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	207	302

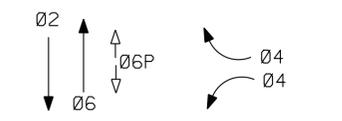
Hector A. Santamaria 10-10-14  
REGISTERED ELECTRICAL ENGINEER DATE

01-20-15  
PLANS APPROVAL DATE

HECTOR A. SANTAMARIA  
No. 18207  
Exp. 12-31-15  
ELECTRICAL

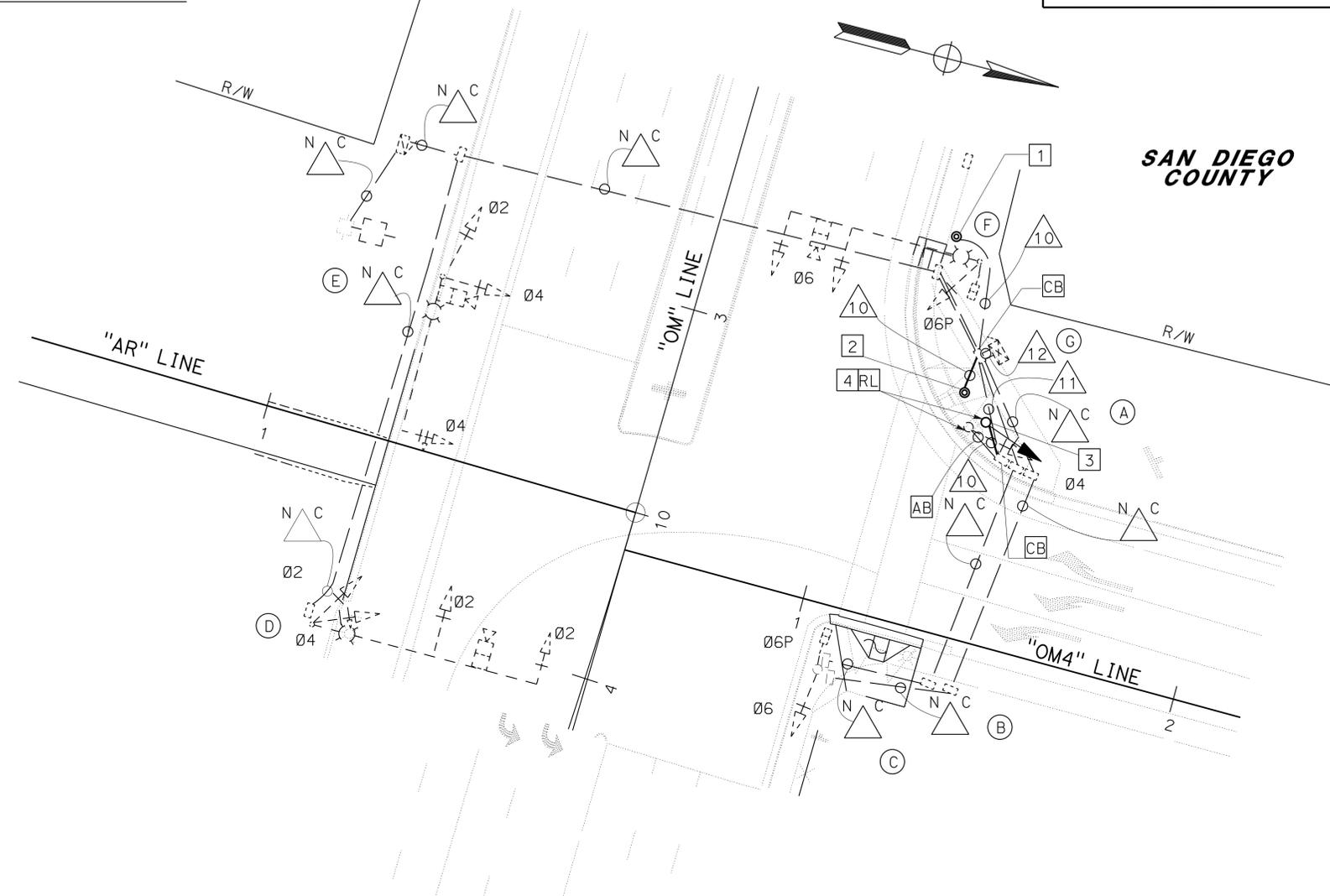
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EXISTING CONDUIT AND CONDUCTOR SCHEDULE		CONDUIT SIZE AND RUN									
AWG SIZE OR CABLE TYPE	P H A S E	POLE OR CIRCUIT	3 1/2"	3"	3"	3"	3 1/2"	3 1/2"	4"	2-4"	
			1	2	3	4	5	6	7	8	
No. 14 CABLES	04	PPB POLE - A	1	1						1	
3CSC	6PPB	B	1	1	1					1	
	06,6P	C	1	1	1					1	
	02,04	D				2	2	2	2	2	
	02,04	E				2	2	2	2	2	
12CSC	06,6P	F							1	1	
									1	1	
TOTAL CABLES-3 CSC/12 CSC			2	2	1	1	2	4	4	5	7
6		SIGNAL POWER	2					2		2	
8		LIGHTING	2	2		2	2	2			
14		PEU						3			
TYPE B	01	LOOP DETECTOR	3	3	3				3		
	02	LOOP DETECTOR									
DLC	03	LOOP DETECTOR	3						3		
		TOTAL DLC	6	3	3				6		
VIDEO CABLE			1	1		1	1	1	2		
INTERCONNECT (SIC)									2	1	
EVC			1	1		1	1	1	2		
TOTAL CONDUCTORS/CABLES			15	12	4	5	6	12	18	4	



EXISTING PHASE DIAGRAM

- NOTES (TSO):**
- INSTALL TEMPORARY PBA POST (06P) WHEN DIRECTED BY ENGINEER. REMOVE WHEN NEW CURB RAMP IS OPEN.
  - ACTIVATE PBA WHEN TEMPORARY PBA POST IS REMOVED.
  - RC PPB FROM TYPE 1A.
  - NEW PLACEMENT DIMENSIONS: A=27.5', B=7'0".



**CONDUIT NOTES (TSO):**

- 9 -Exist 2"C, mt.
- 10 2"C, 1 3CSC
- 11 -Exist 3 1/2 "C, 2 3CSC, 2 12CSC, 7 DLC, 2#8(Ltg)  
RC 1 3CSC.  
ADD 1 3CSC.
- 12 -Exist 3"C, 7 3CSC, 2 12CSC, 10 DLC, 2#6(Ltg)  
3 VIDEO CABLE, 2 EVC, 2 SIC  
RC 1 3CSC.  
ADD 3 3CSC.

EXISTING POLE SCHEDULE AND EQUIPMENT										
Loc	STANDARD		PLACEMENT DIMENSIONS		SIGNAL MOUNTING AND PLACEMENT				HPS LUMINAIRE	REMARKS
	TYPE	MAST ARM		A FOOT	B FOOT	VEHICLE (i)		PEDESTRIAN		
		SMA	LMA			POLE	MAST ARM			
A	1-A (10 ft)	-	-	-	-	TV-1-T			06	[3] WHEN [RL], [4]
B	15TS	-	-	-	-				06	250 W
C	1-A (10 ft)	-	-	-	-	TV-1-T		SP-1-T		
D	29A-5-100					SV-2-T	2-MAS			310 W
E	19-3-100					SV-2-T	1-MAS-4B			250 W
F	26A-4-100					SV-1-T	2-MAS	SP-1-T		310 W
G	EXISTING MODEL 170 CONTROLLER ASSEMBLY (TYPE 332 CABINET)									

SIGNAL P1.701  
SB ROUTE 125 EXIT RAMP  
AT OTAY MESA ROAD

**MODIFY SIGNAL**

SCALE: 1" = 20'

**E-32**

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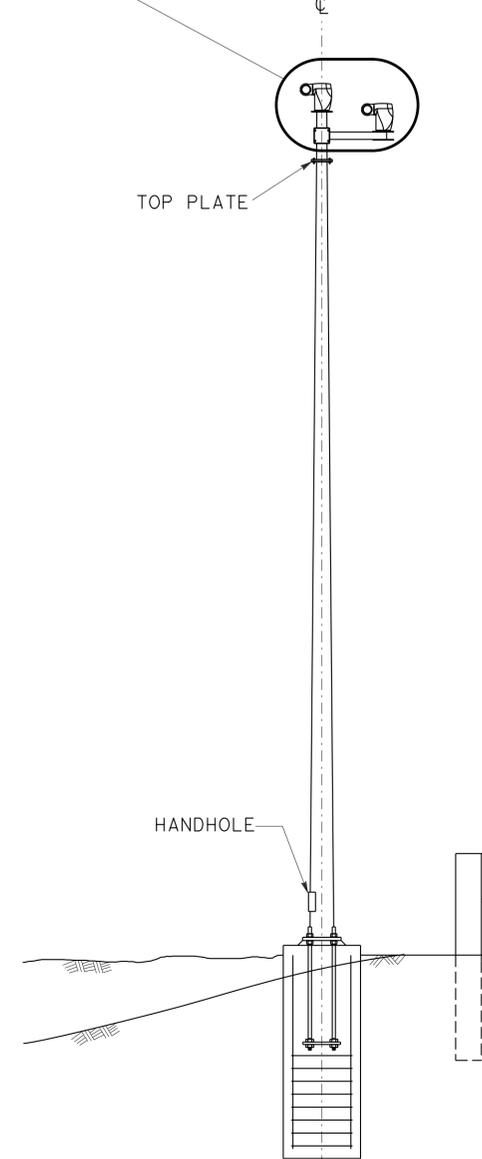
REVISOR: HECTOR SANTAMARIA, DANNY MCCLURE, RAJPREET SINGH  
DATE: 10-10-14, 01-20-15  
PROJECT: 1113000167Ua032.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
11	SD	11,125,905	Var	208	302
<i>Eliseo Lopez</i> 1/22/14 REGISTERED CIVIL ENGINEER DATE					
01-20-15				PLANS APPROVAL DATE	
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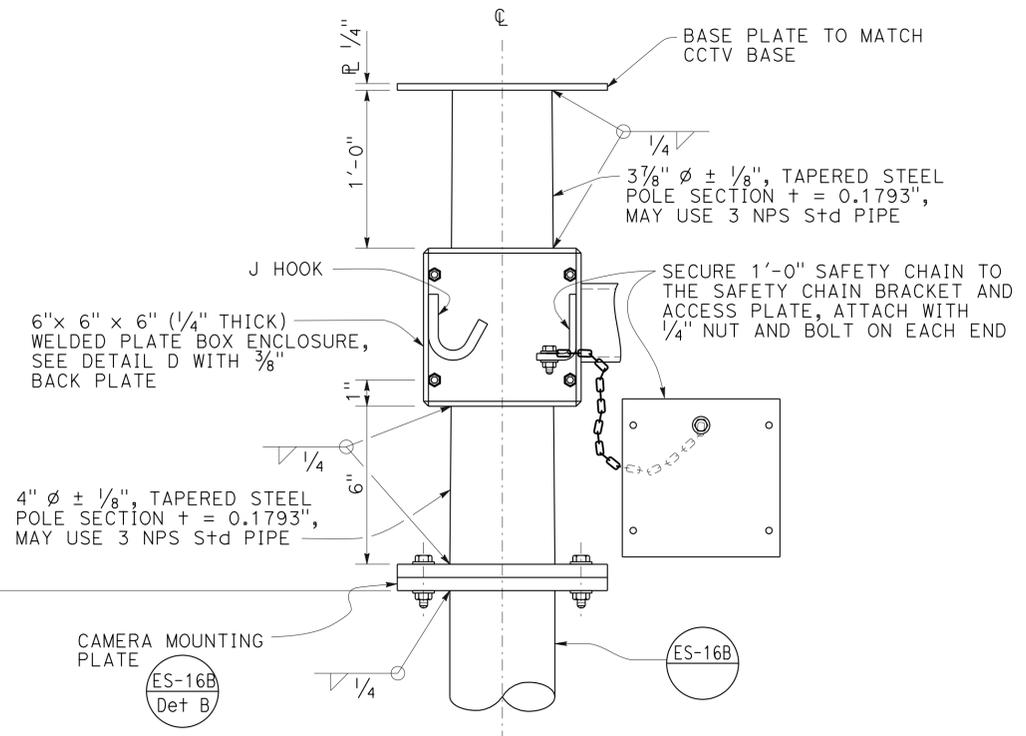
**NOTES:**

- During pole installation, the post shall be raked as necessary with the use of leveling nuts to provide a plumb pole axis.
- Wind Loadings (3-second gust): 100 mph
- Unit Stresses (Structural Steel):
  - fy = 55,000 psi (tapered steel tube and anchor bolts)
  - fy = 50,000 psi (unless otherwise noted)
- Unit Stresses (Reinforced Concrete):
  - f'c = 3,625 psi
  - fy = 60,000 psi
- Mounting area to be perpendicular to traffic.
- For details not shown, see "2010 Standard Plans".

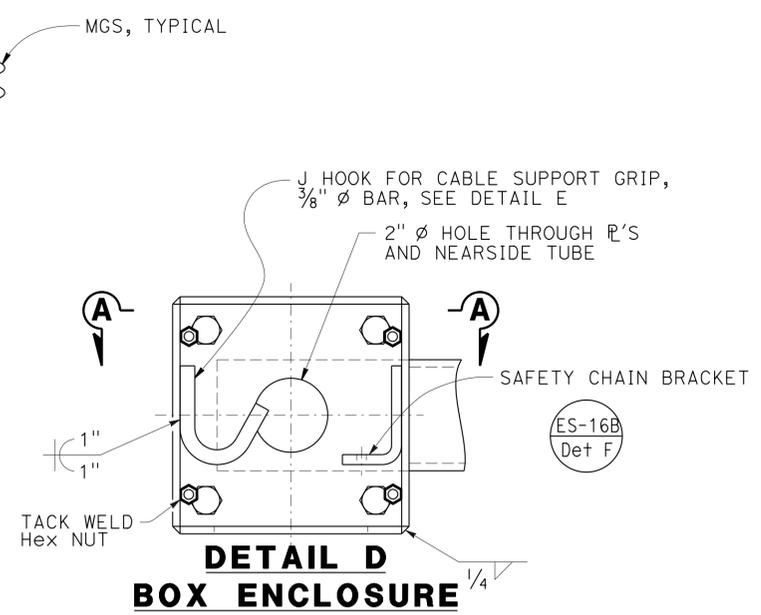
CCTV MOUNTING ADAPTER DETAIL SHALL BE SUBMITTED BY THE CONTRACTOR FOR THE ENGINEER'S APPROVAL, CCTV CAMERA NOT TO EXCEED 30 LBS AND EPA = 1 FT<sup>2</sup> EACH



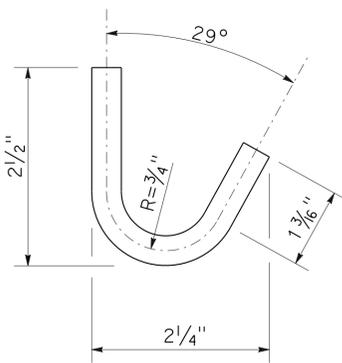
**ELEVATION**  
CCTV 35



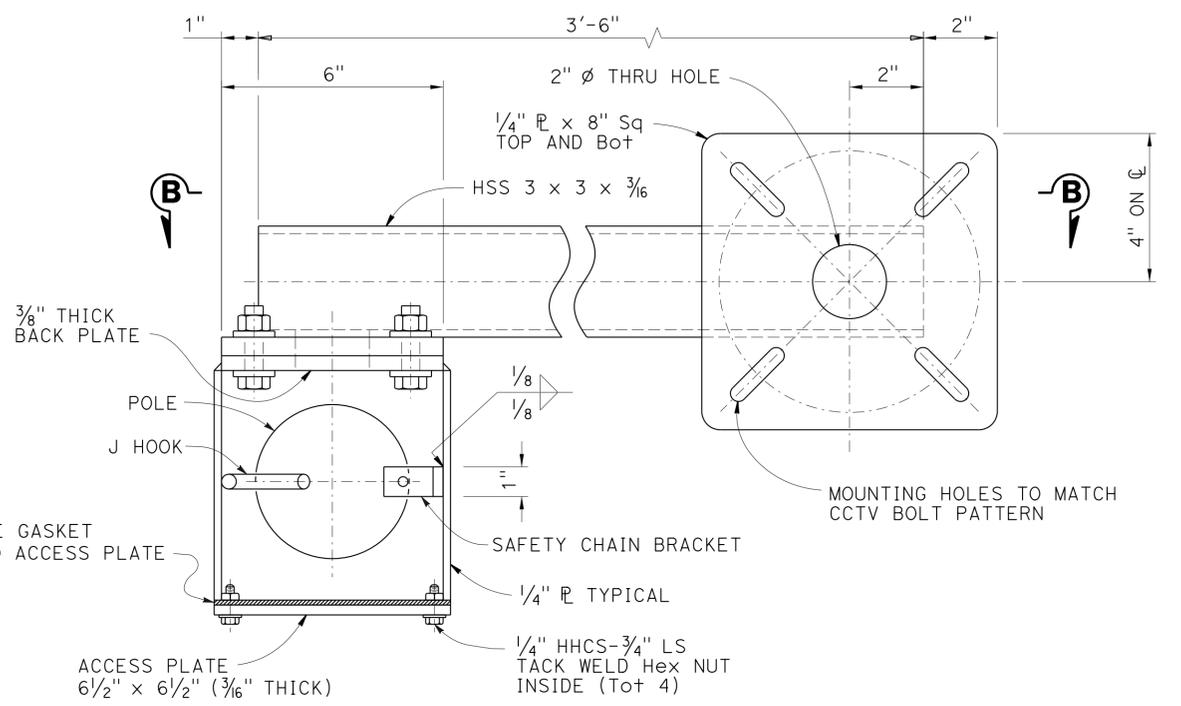
**DETAIL C**  
**CLOSED CIRCUIT TELEVISION MOUNTING ADAPTER**



**DETAIL D**  
**BOX ENCLOSURE**



**DETAIL E**  
**J HOOK**



**SECTION A-A**

**VIEW B-B**  
**MOUNTING ARM**

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

BRANCH CHIEF	<b>JEFF WOODY</b>
--------------	-------------------

DESIGN	BY E LOPEZ	CHECKED A GUTIERREZ
DETAILS	BY J GUO	CHECKED E LOPEZ
QUANTITIES	BY	CHECKED

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

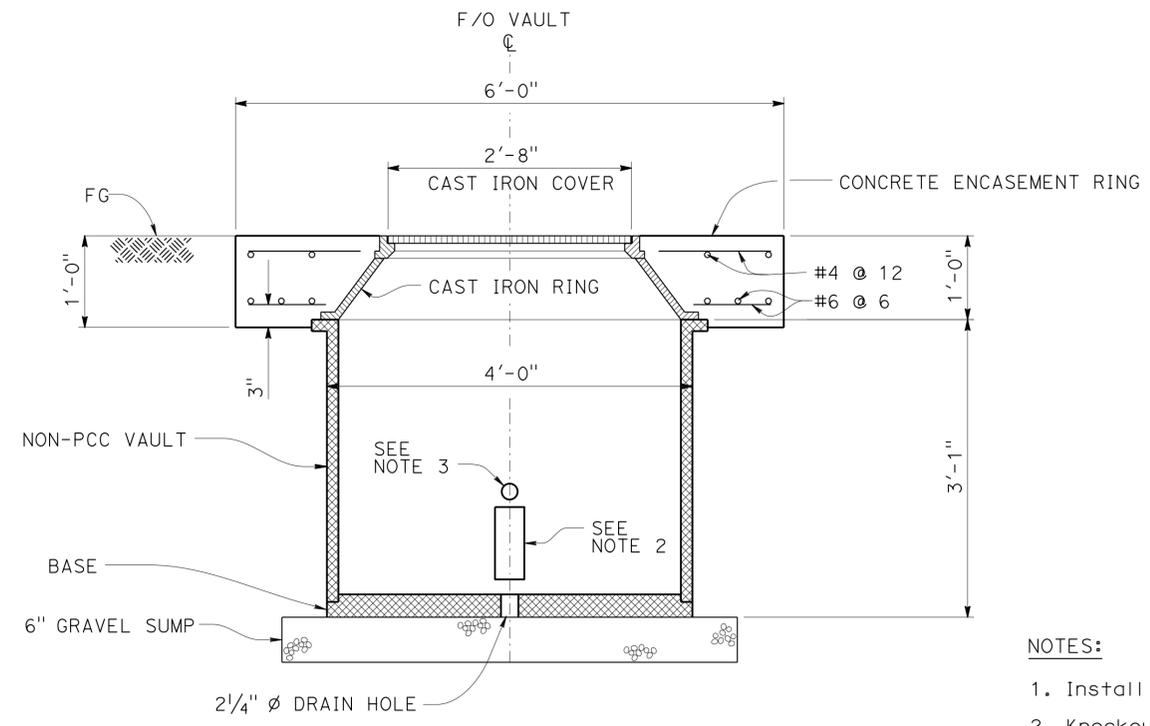
DIVISION OF ENGINEERING SERVICES  
DESIGN AND TECHNICAL SERVICES  
SPECIAL DESIGNS BRANCH **A**

BRIDGE NO.	N/A
POST MILE	Various

**CLOSED CIRCUIT TELEVISION SYSTEM**  
**CANTILEVERED ARM DETAILS**

SES-1

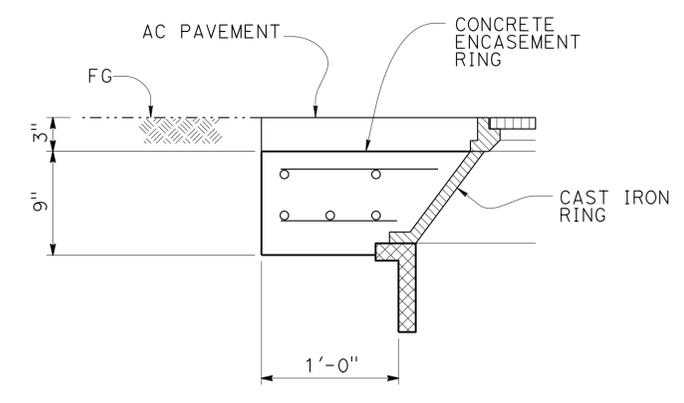
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125,905	Var	209	302
<i>Eliseo Lopez</i> REGISTERED CIVIL ENGINEER DATE 1/22/14				01-20-15 PLANS APPROVAL DATE	
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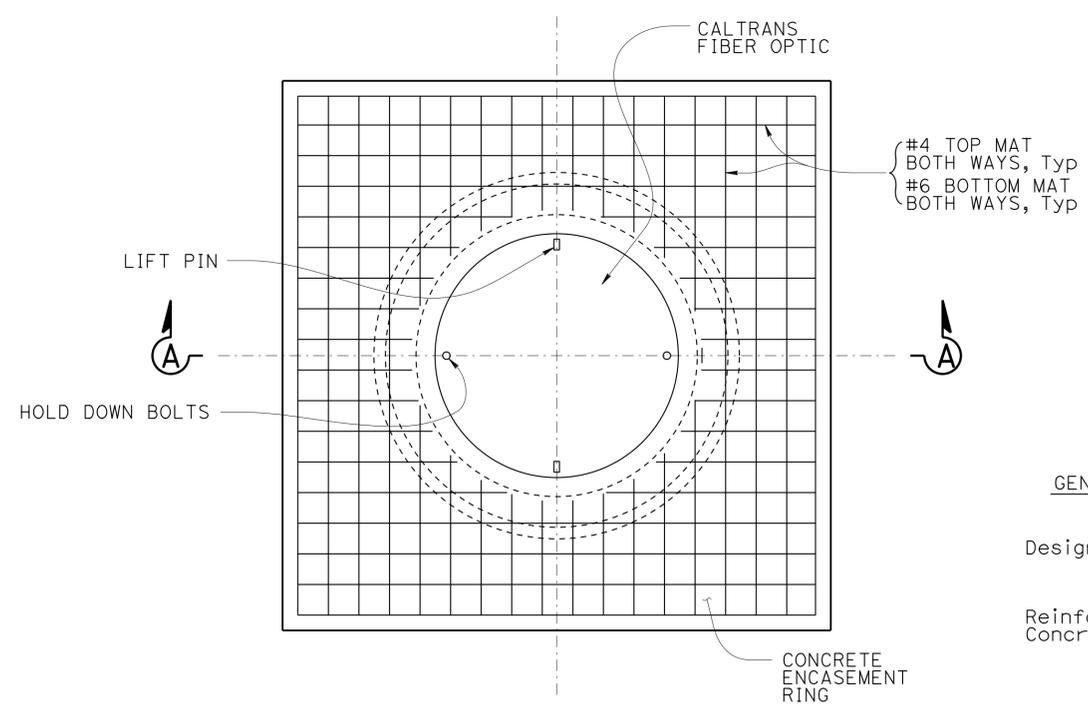
**SECTION A-A**

**NOTES:**

1. Install per manufacturer's recommendation.
2. Knockout for Multi-Duct Conduit System (MDCS) (8) provide two equally spaced around vault.
3. 2" knockout (total 4) equally spaced around vault.



**DETAIL A**  
(VAULT INSIDE OF PULLOUT)

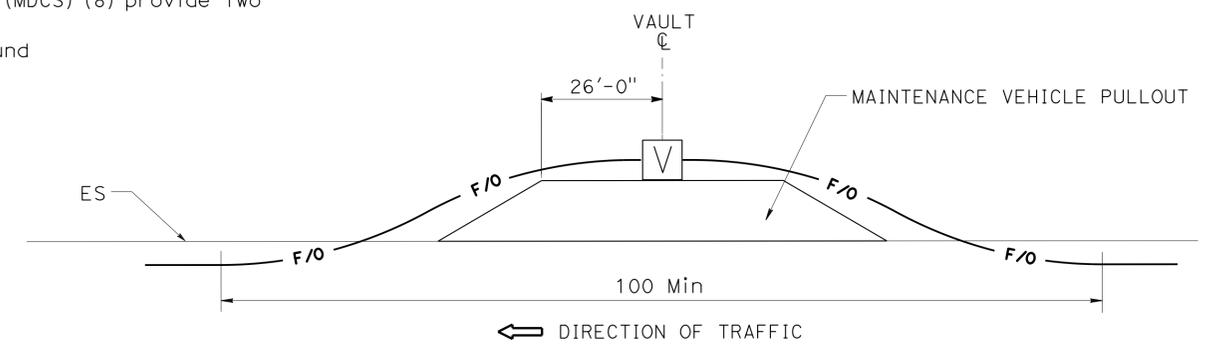


**PLAN**

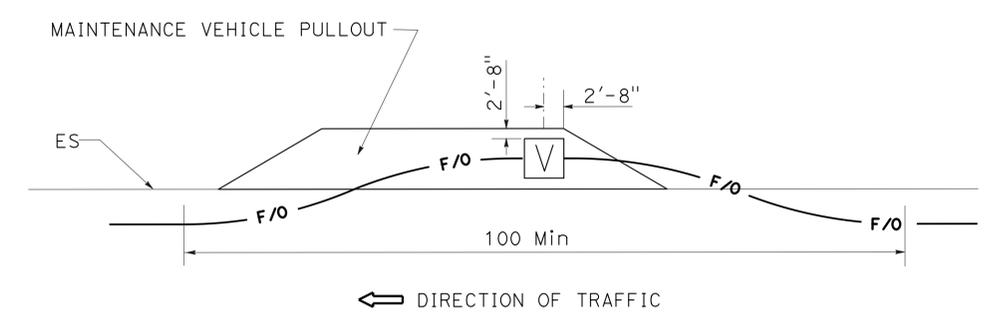
**GENERAL NOTES:**

Design : CALTRANS BRIDGE DESIGN SPECIFICATIONS  
APRIL 2000 (LFD)

Reinforced Concrete :  $f_y = 60$  ksi (Yield strength of reinforcement)  
 $f'_c = 36$  ksi (Concrete compressive strength at 28 days)  
 $n = 8$



**FIBER OPTIC VAULT INSTALLATION DETAIL (TYPICAL)**  
(OUTSIDE OF PULLOUT)



**FIBER OPTIC VAULT INSTALLATION DETAIL (TYPICAL)**  
(INSIDE OF PULLOUT)  
NOTE: SEE DETAIL "A"

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

NO SCALE

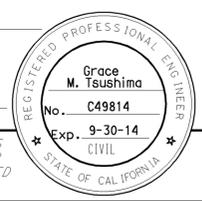
DESIGN	BY E. LOPEZ	CHECKED A. GUTIERREZ	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>SPECIAL DESIGN BRANCH</b>	BRIDGE NO.	<b>FIBER OPTIC COMMUNICATION SYSTEM</b> <b>FIBER OPTIC VAULT DETAILS</b>	<b>SES-2</b>
DETAILS	BY J. GUO	CHECKED E. LOPEZ			N/A		
QUANTITIES	BY G. DORIA	CHECKED L. WARREN			Various		

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	210	302

*Grace M. Tsushima*  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

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



TO ACCOMPANY PLANS DATED 01-20-15

**UNIT OF MEASUREMENT SYMBOLS:**

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

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

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

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

\* For use on a sign panel only

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**ABBREVIATIONS  
(SHEET 2 OF 2)**

NO SCALE

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

**REVISED STANDARD PLAN RSP A10B**

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

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

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

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

Q	
R	

U	
V	
W	
X	
Y	

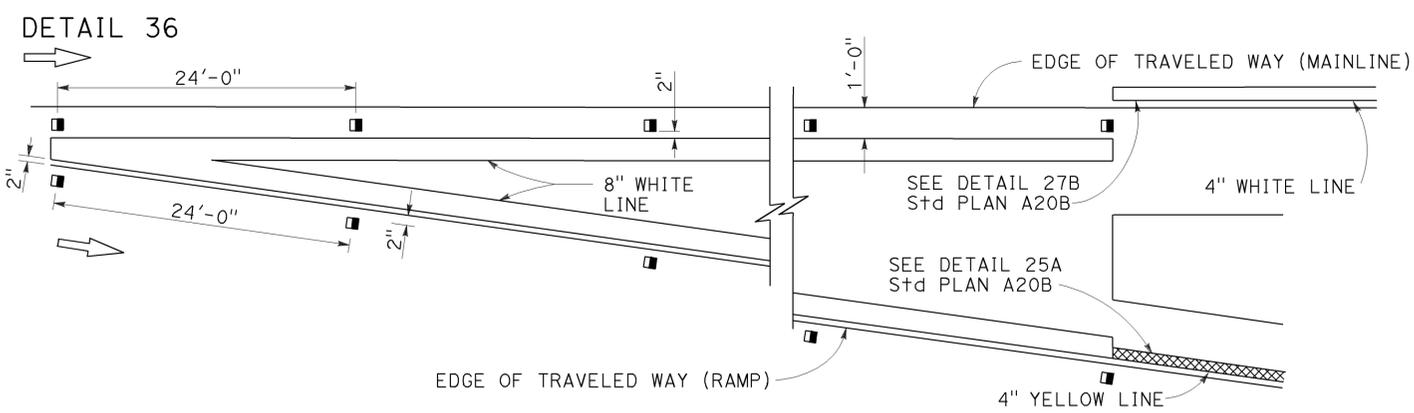
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11, 125, 905	Var	211	302

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

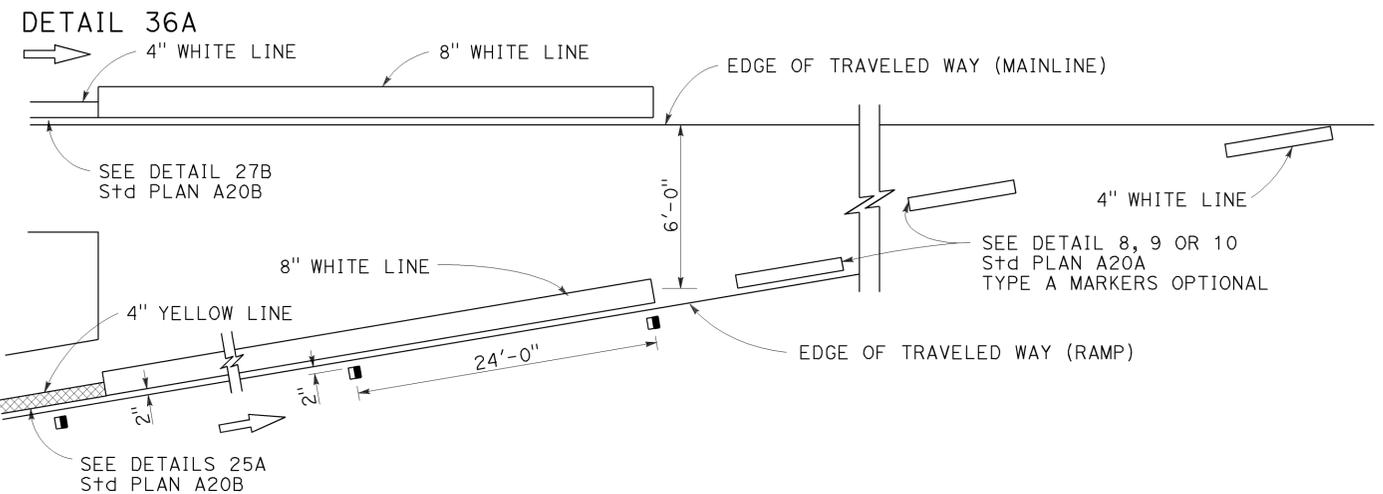
July 19, 2013  
 PLANS APPROVAL DATE

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

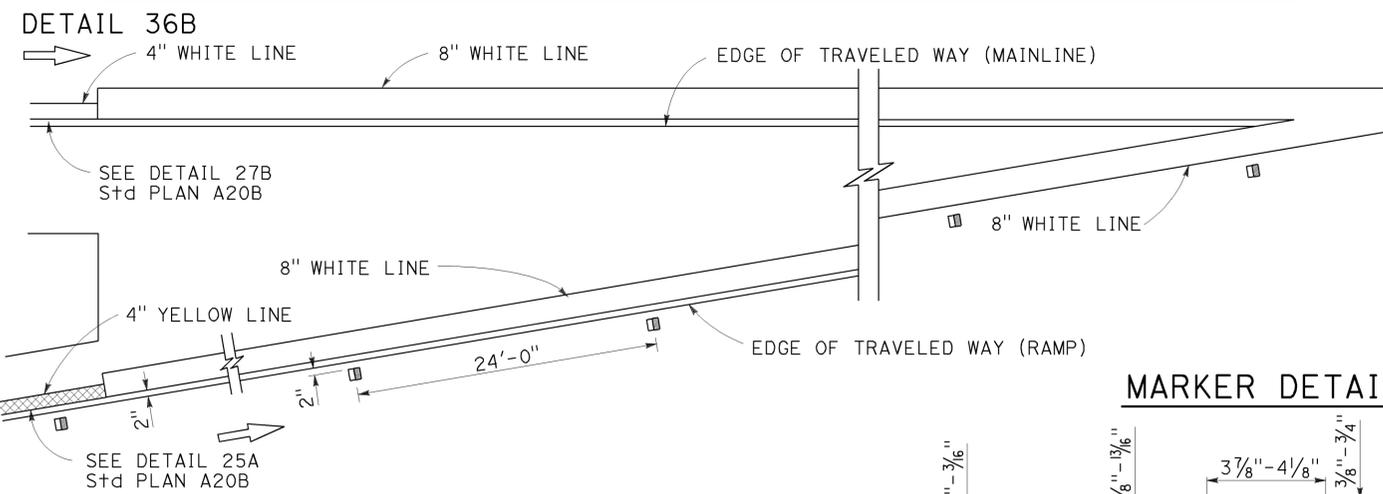
### EXIT RAMP NEUTRAL AREA (GORE) TREATMENT



### ENTRANCE RAMP NEUTRAL AREA (MERGE) TREATMENT

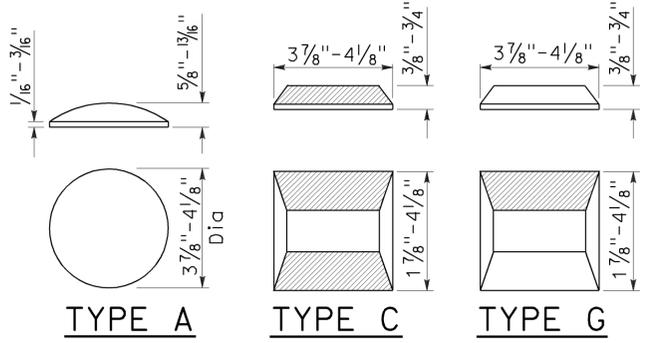


### ENTRANCE RAMP NEUTRAL AREA (ACCELERATION LANE) TREATMENT

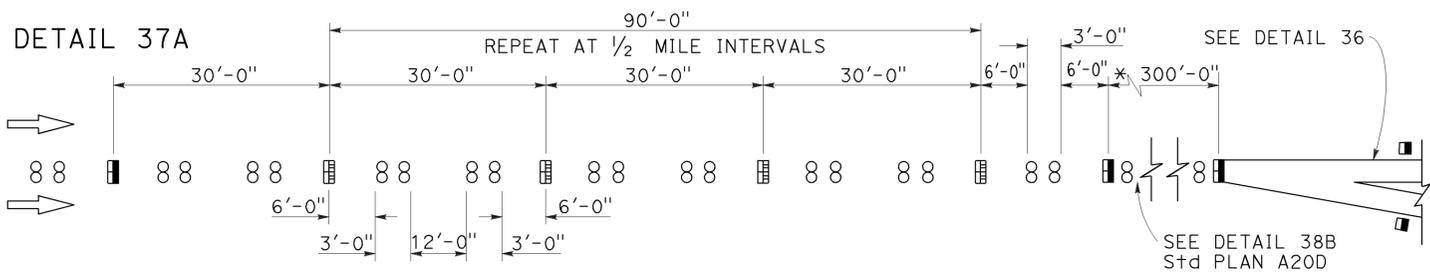
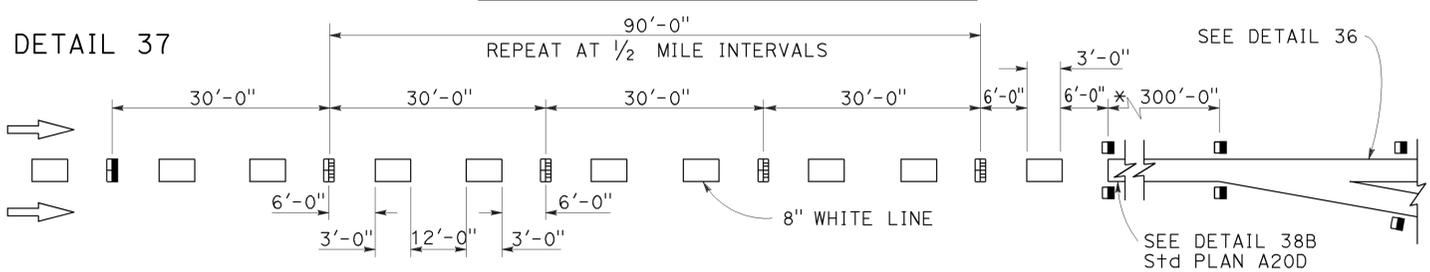


### MARKER DETAILS

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

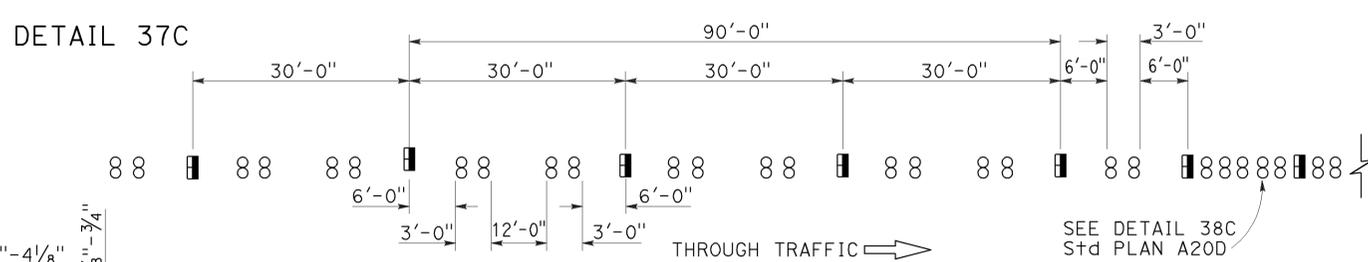
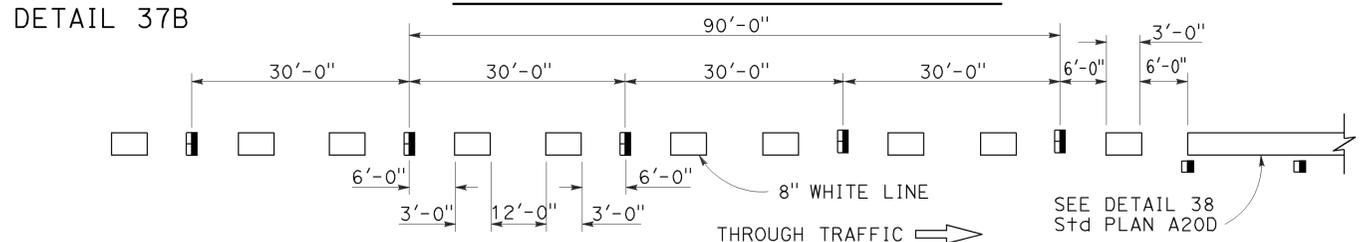


### LANE DROP AT EXIT RAMPS



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

### LANE DROP AT INTERSECTIONS



STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

## PAVEMENT MARKERS AND TRAFFIC LINE TYPICAL DETAILS

NO SCALE

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

## REVISED STANDARD PLAN RSP A20C

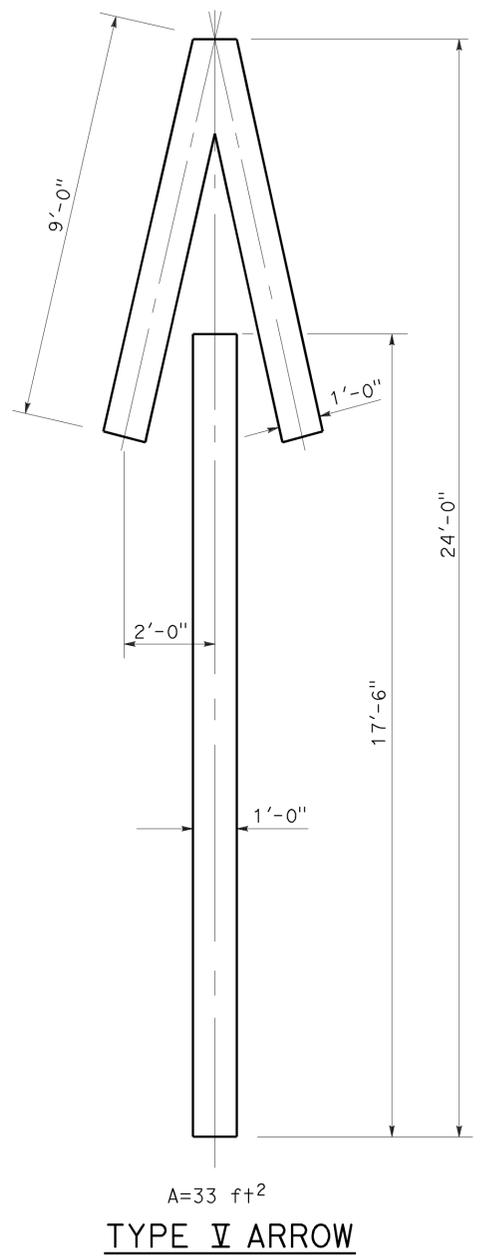
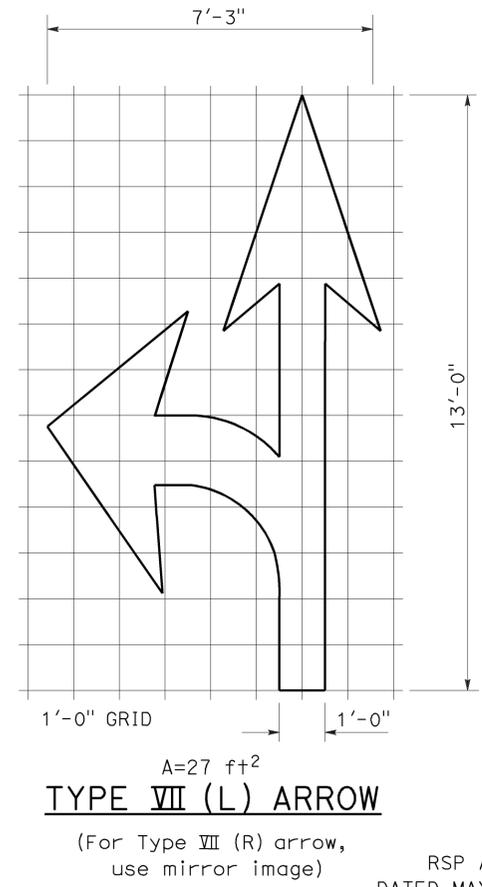
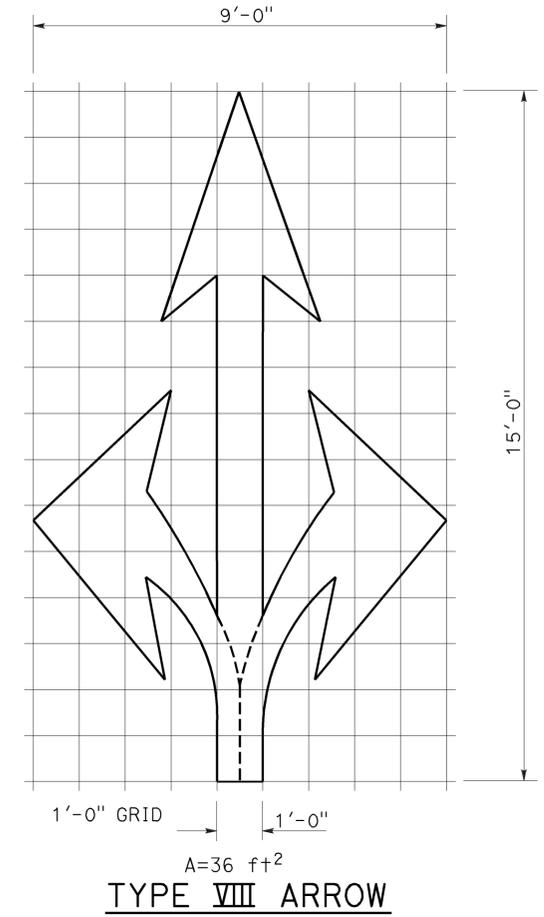
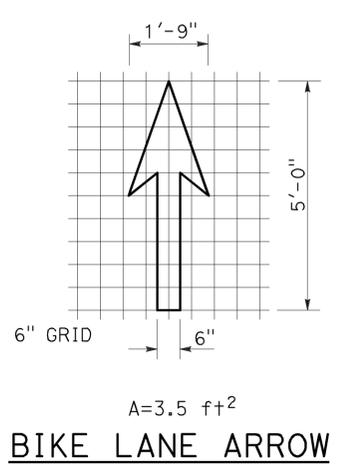
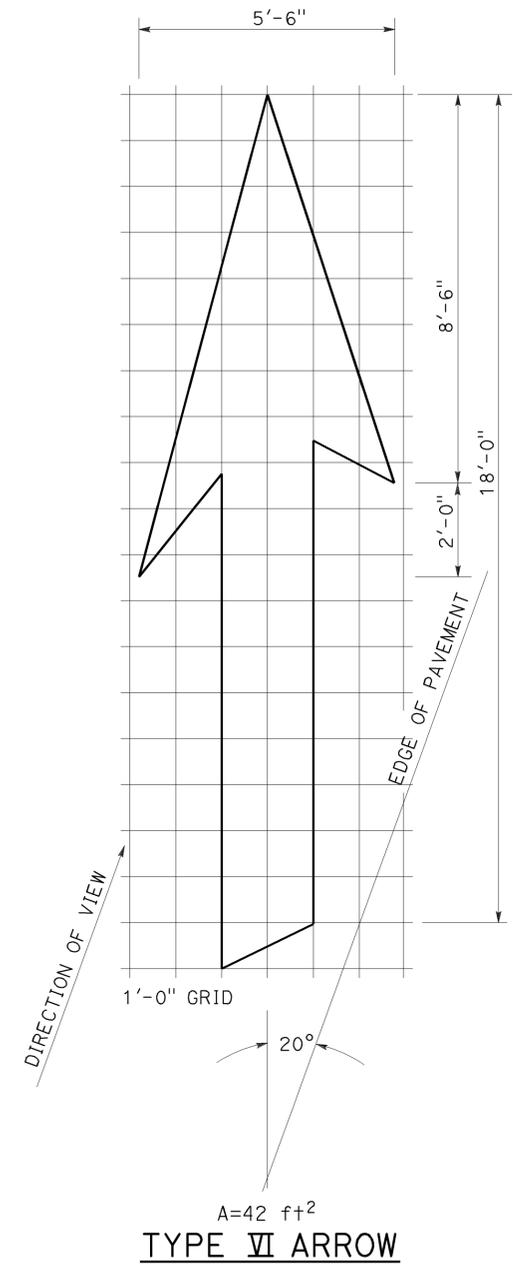
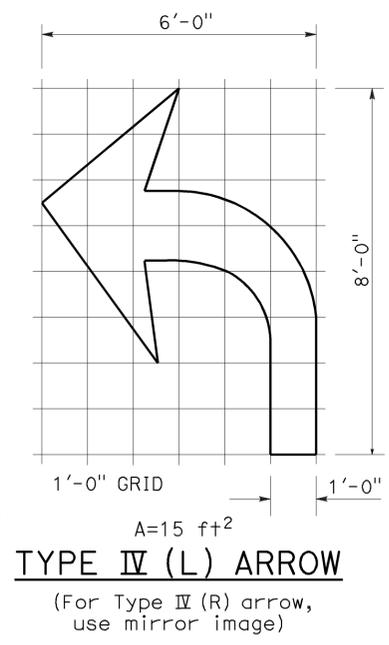
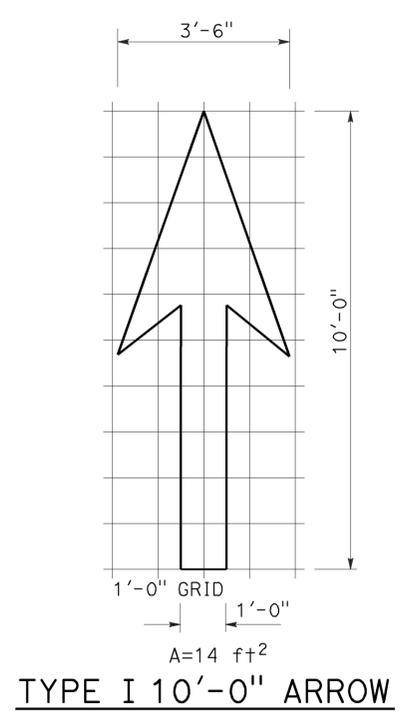
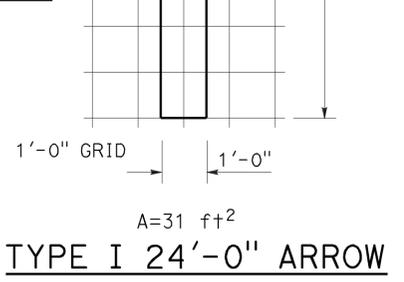
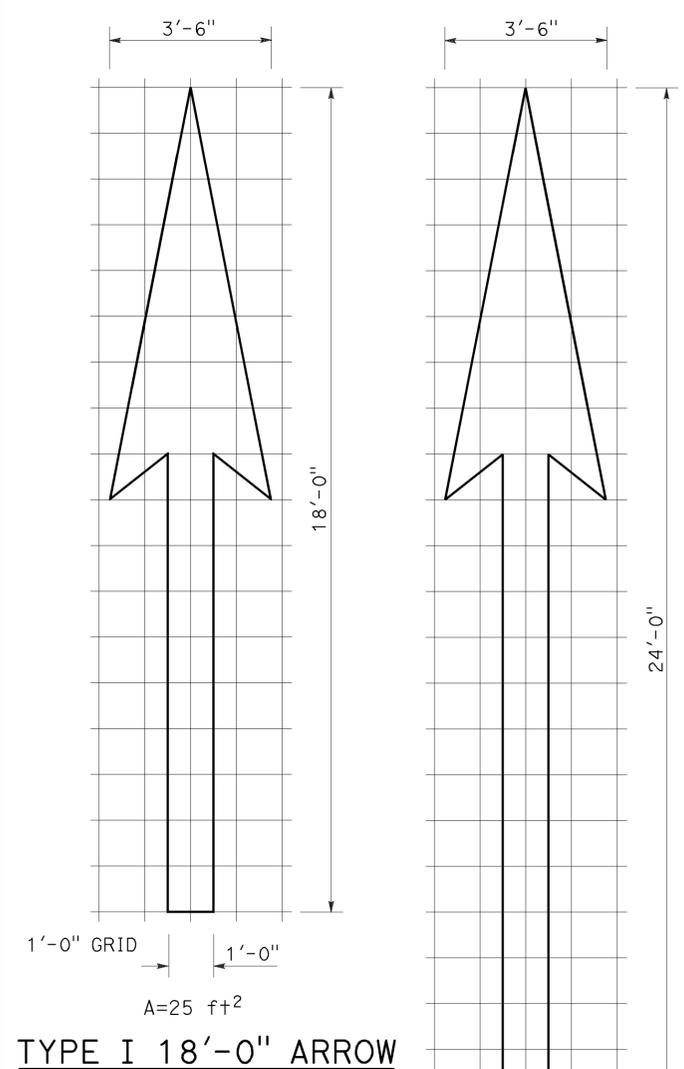
2010 REVISED STANDARD PLAN RSP A20C

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	212	302

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

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

TO ACCOMPANY PLANS DATED 01-20-15



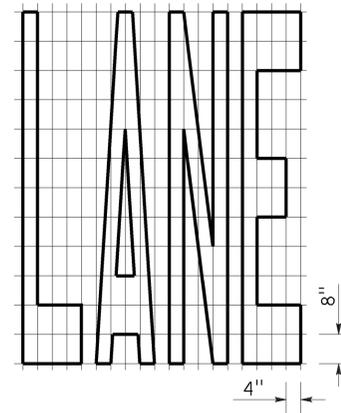
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**PAVEMENT MARKINGS  
ARROWS**  
NO SCALE

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

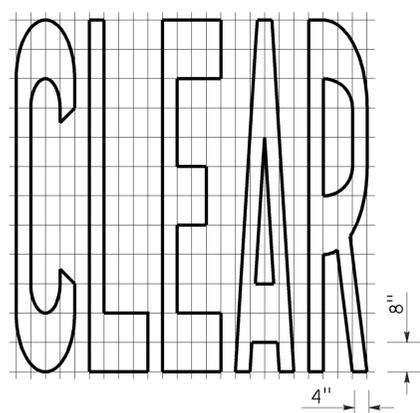
RSP A24A DATED APRIL 20, 2012 SUPERSEDES STANDARD PLAN A24A DATED MAY 20, 2011 - PAGE 13 OF THE STANDARD PLANS BOOK DATED 2010.

TO ACCOMPANY PLANS DATED 01-20-15

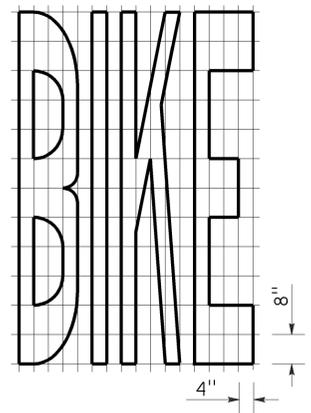
2010 REVISED STANDARD PLAN RSP A24E



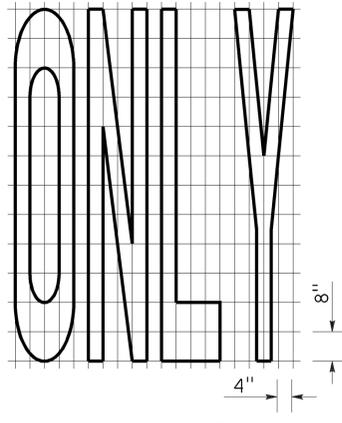
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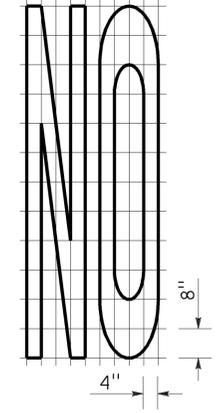
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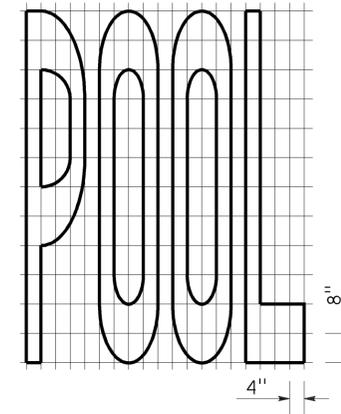
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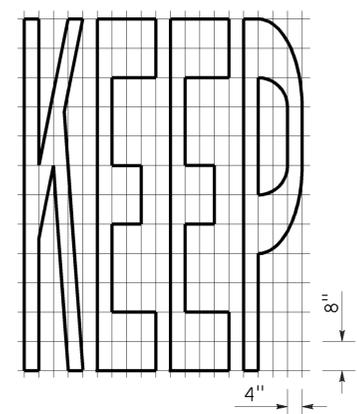
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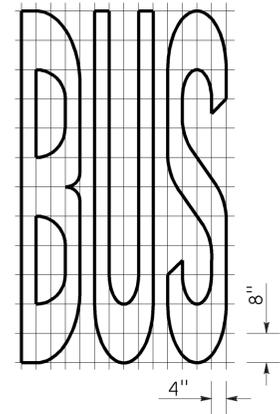
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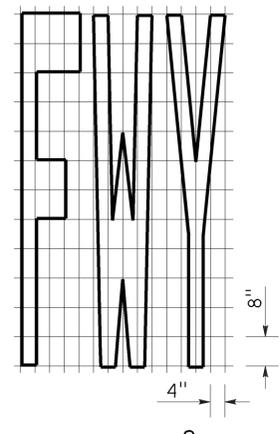
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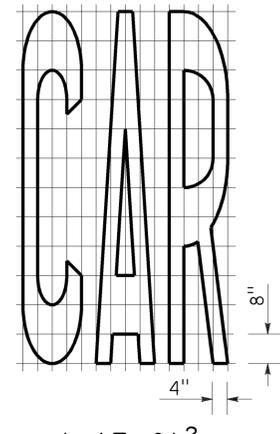
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A=20 ft<sup>2</sup>

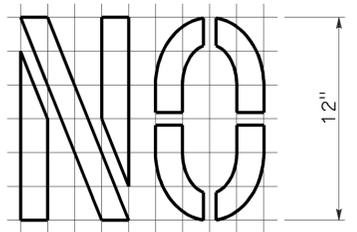


A=16 ft<sup>2</sup>



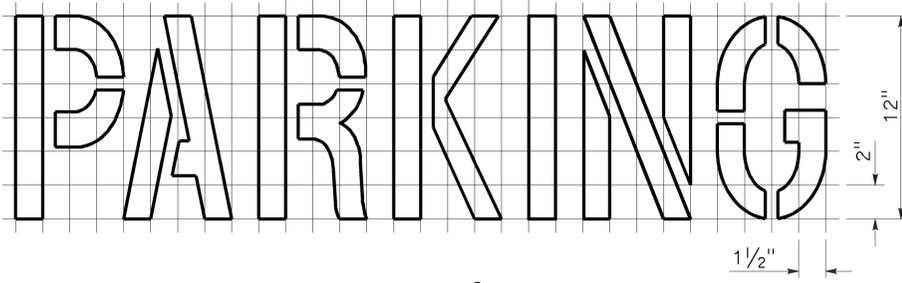
A=17 ft<sup>2</sup>

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



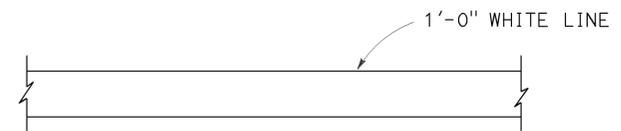
A=2 ft<sup>2</sup>

See Notes 6 and 7



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

See Notes 6 and 7



LIMIT LINE (STOP LINE)



YIELD LINE

**NOTES:**

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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**PAVEMENT MARKINGS  
WORDS, LIMIT AND YIELD LINES**

NO SCALE

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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	214	302

  
 REGISTERED CIVIL ENGINEER  
 July 18, 2014  
 PLANS APPROVAL DATE  
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

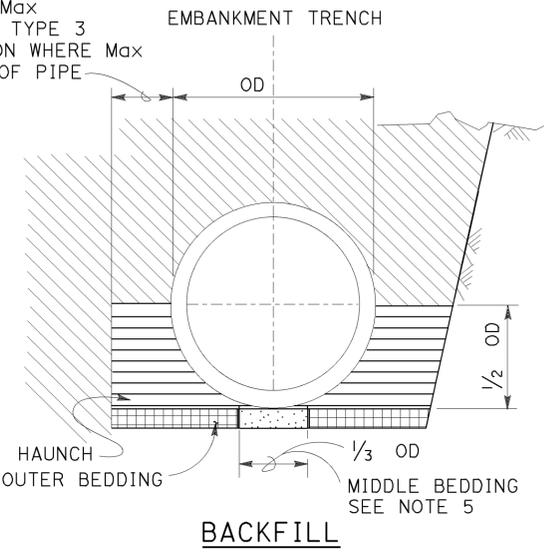
REGISTERED PROFESSIONAL ENGINEER  
 Carl M. Duan  
 No. C59976  
 Exp. 6-30-16  
 CIVIL  
 STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 01-20-15

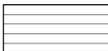
**DESIGN NOTES:**

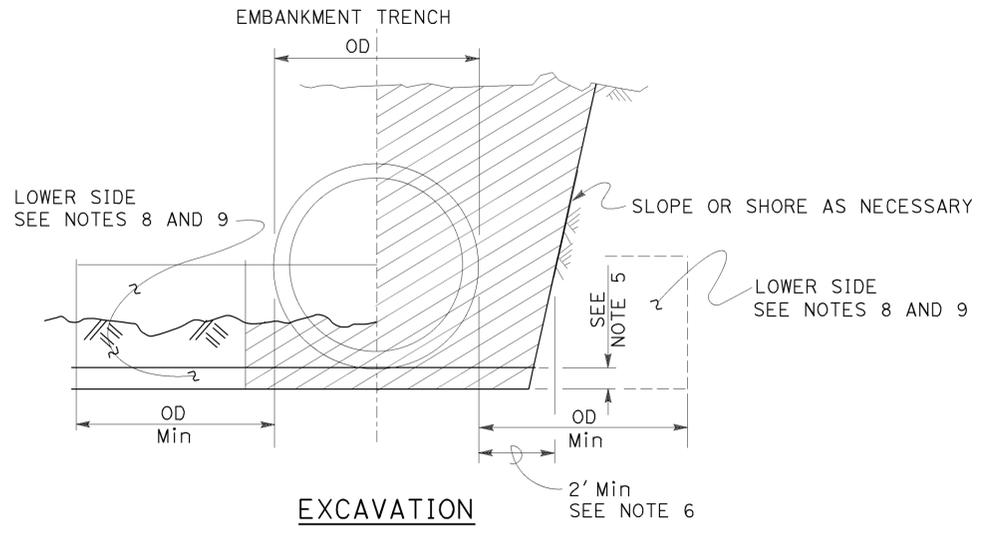
- Design: AASHTO LRFD Bridge Design Specifications, 4th edition with California Amendments. ACPA DESIGN DATA 1, October 2007. INDIRECT DESIGN METHOD
- Soil: w Fe = 162 pcf Installation Type 1  
 w Fe = 168 pcf Installation Types 2 & 3  
 w = Unit weight of soil (pcf)  
 Fe = Soil-structure interaction factor

2' Min; NO Max EXCEPT FOR TYPE 3 INSTALLATION WHERE Max EQUALS OD OF PIPE



**LEGEND:**

-  ROADWAY EMBANKMENT
-  STRUCTURE BACKFILL (CULVERT) FOR HAUNCH SEE NOTE 6
-  STRUCTURE BACKFILL (CULVERT) FOR OUTER BEDDING SEE NOTE 6
-  LOOSE BACKFILL
-  STRUCTURE EXCAVATION (CULVERT)



**INSTALLATION TYPE 1:**

The haunch and outer bedding shall be compacted to a minimum 90 percent relative compaction. In addition, the minimum sand equivalent in these areas shall be 30 and the maximum percentage passing the No. 200 sieve size shall be 12.

**INSTALLATION TYPE 2:**

The haunch and outer bedding shall be compacted to a minimum 90 percent relative compaction. In addition, the minimum sand equivalent in these areas shall be 25.

**INSTALLATION TYPE 3:**

The haunch and outer bedding shall be compacted to a minimum 85 percent relative compaction. 90 percent relative compaction will be required where the fill over the pipe is less than 4'-0" or 1/2 OD. In addition, the minimum sand equivalent in these areas shall be 25 and the material shall not contain rocks, broken concrete, or other solid material exceeding 3" in greatest dimension.

**INSTALLATION TYPE 1**

MINIMUM CLASS AND D-LOAD	COVER	
	60" Dia AND SMALLER	OVER 60" Dia TO 120" Dia Max
CLASS II 1000D	14.9'	12.9'
CLASS III 1350D	15.0' - 21.9'	13.0' - 18.9'
CLASS III SPECIAL 1700D	22.0' - 27.9'	19.0' - 24.9'
CLASS IV 2000D	28.0' - 32.9'	25.0' - 29.9'
CLASS IV SPECIAL 2500D	33.0' - 41.9'	30.0' - 38.9'
CLASS I 3000D	42.0' - 49.9'	39.0' - 46.9'
CLASS I SPECIAL 3600D	50.0' - 60.0'	47.0' - 58.0'

**INSTALLATION TYPE 2**

MINIMUM CLASS AND D-LOAD	COVER	
	60" Dia AND SMALLER	OVER 60" Dia TO 120" Dia Max
CLASS II 1000D	11.9'	9.9'
CLASS III 1350D	12.0' - 15.9'	10.0' - 14.9'
CLASS III SPECIAL 1700D	16.0' - 20.9'	15.0' - 19.9'
CLASS IV 2000D	21.0' - 24.9'	20.0' - 23.9'
CLASS IV SPECIAL 2500D	25.0' - 31.9'	24.0' - 30.9'
CLASS I 3000D	32.0' - 37.9'	31.0' - 37.9'
CLASS I SPECIAL 3600D	38.0' - 46.0'	38.0' - 46.0'

**INSTALLATION TYPE 3**

MINIMUM CLASS AND D-LOAD	COVER	
	60" Dia AND SMALLER	OVER 60" Dia TO 120" Dia Max
CLASS II 1000D	8.9'	5.9'
CLASS III 1350D	9.0' - 11.9'	6.0' - 10.9'
CLASS III SPECIAL 1700D	12.0' - 15.9'	11.0' - 13.9'
CLASS IV 2000D	16.0' - 18.9'	14.0' - 17.9'
CLASS IV SPECIAL 2500D	19.0' - 24.9'	18.0' - 22.9'
CLASS I 3000D	25.0' - 29.9'	23.0' - 28.9'
CLASS I SPECIAL 3600D	30.0' - 36.0'	29.0' - 35.0'

**NOTES:**

- Unless otherwise shown on the plans or specified in the special provision, the Contractor shall have the option of selecting the class of RCP and the type of installation to be used, provided the height of cover does not exceed the value shown for the RCP selected.  
 Example: 24" RCP culvert with maximum cover of 24'-0" the options are:  
 a) Class III Special or stronger with Installation Type 1.  
 b) Class IV or stronger with Installation Type 2.  
 c) Class IV Special or stronger with Installation Type 3.  
 Cover is defined as the maximum vertical distance from top of the pipe to finished grade within the length of any given culvert.
- The class of RCP and Installation Type selected shall be the same throughout the length of any given culvert.
- The "length of any culvert" is defined as the culvert between:  
 a) Successive drainage structure (inlets, junction boxes, headwalls, etc.).  
 b) A drainage structure and the inlet or outlet end of the culvert.  
 c) The inlet and outlet end of the culvert when there are no intervening drainage structures.
- Oval and arch shaped RCP shall not be used.
- Bedding depth: 1/25 OD Min, not less than 3".
- Slurry cement backfill may be substituted for backfill in the outer bedding and haunch areas. If slurry is used, the outer and middle beddings shall be omitted. Prior to installation, the soil under the middle 1/3 of the outside diameter of the pipe shall be softened by scarifying or other means to a minimum depth of 1/25 OD, but not less than 3". Where slurry cement backfill is used, clear distance to trench wall may be reduced as set forth in the Standard Specifications.
- Backfill shall be placed full width of excavation except where dimensions are shown for backfill width or thickness. Dimensions shown are minimum.
- Lower side shall be suitable material as determined by the Engineer. Otherwise it shall be considered unsuitable as set forth in of the Standard Specifications. See Note 9.
- Where the pipe is placed in a trench, if the trench walls are sloped at 5 vertical to 1 horizontal or steeper for at least 90 percent of the trench height or up to not less than 12" from the grading plane, the firmness of the soil in the lower side need not be considered.
- Non-reinforced precast concrete pipe sizes 3'-0" or smaller may be placed under installation Types 1, 2 or 3.

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**EXCAVATION AND BACKFILL  
 CONCRETE PIPE CULVERTS  
 INDIRECT DESIGN METHOD**  
 NO SCALE

RSP A62DA DATED JULY 18, 2014 SUPERSEDES STANDARD PLAN A62DA  
 DATED MAY 20, 2011 - PAGE 24 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP A62DA

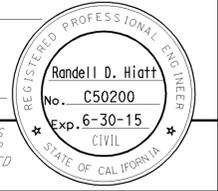
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	215	302

Randell D. Hiatt  
REGISTERED CIVIL ENGINEER

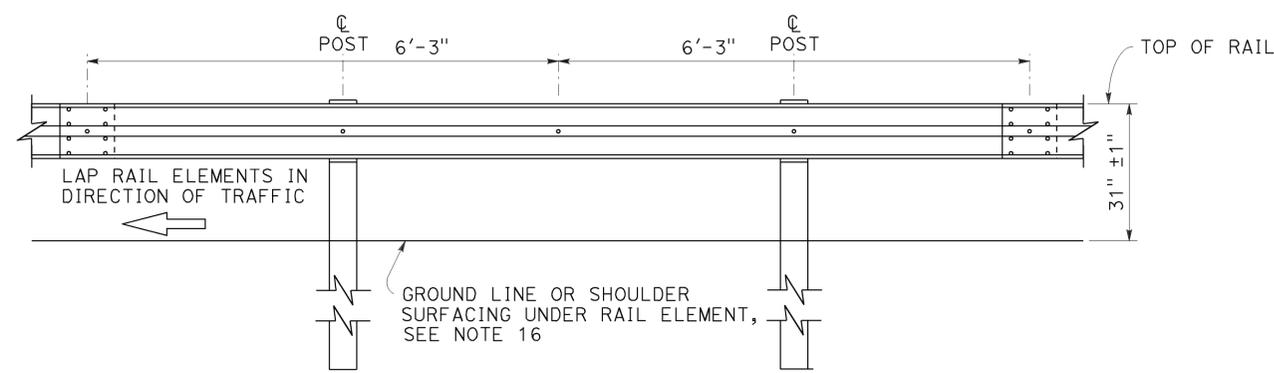
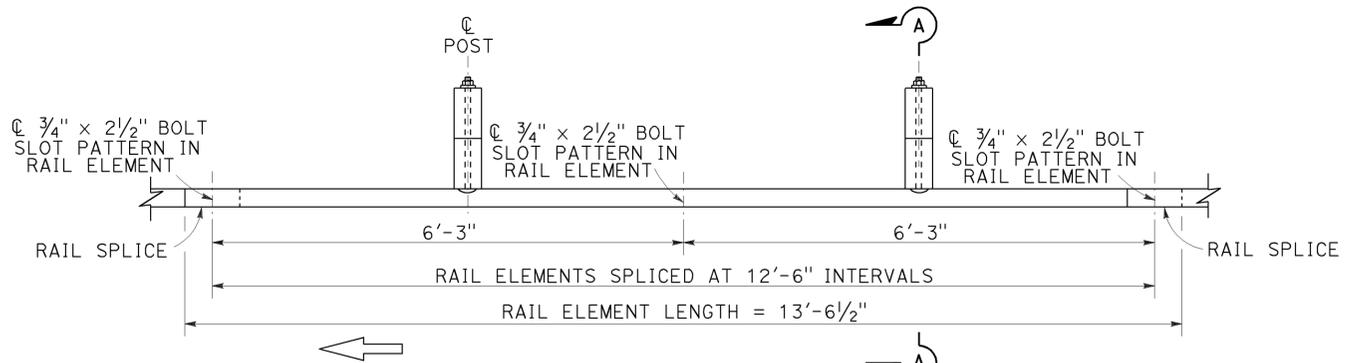
July 19, 2013  
PLANS APPROVAL DATE

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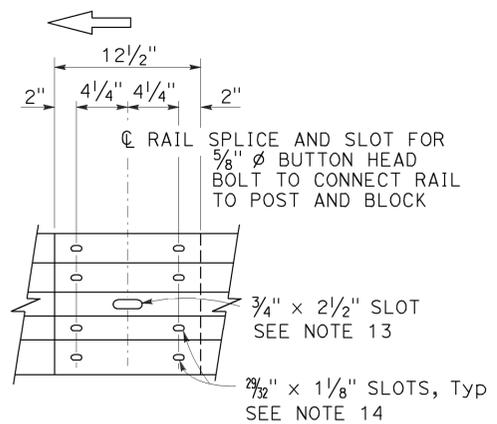
01-20-15



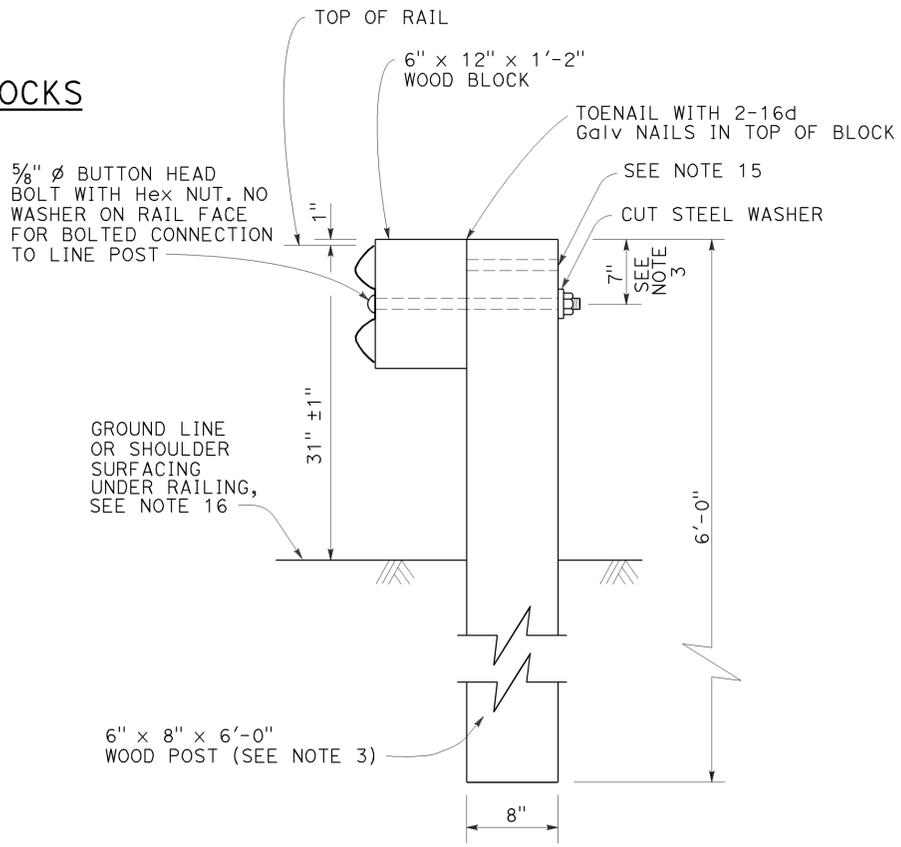
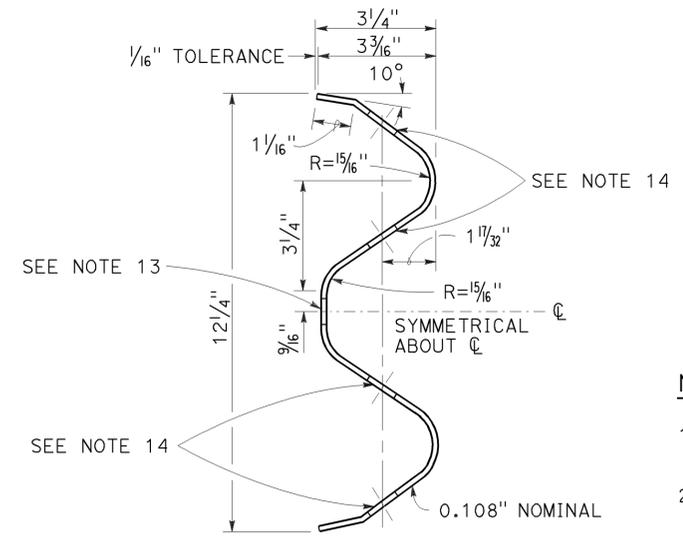
TO ACCOMPANY PLANS DATED 01-20-15



MIDWEST GUARDRAIL SYSTEM WITH WOOD POST AND BLOCKS



- Connect the over lapped end of the rail elements with  $\frac{5}{8}$ "  $\phi$   $\times$   $1\frac{3}{8}$ " button head oval shoulder splice bolts inserted into the  $\frac{7}{32}$ "  $\times$   $1\frac{1}{8}$ " slots and bolted together with  $\frac{5}{8}$ "  $\phi$  recessed hex nuts. Recess of hex nut points toward rail element. A total of 8 bolts and nuts are to be used at each rail splice connection.
- The ends of the rail elements are to be overlapped in the direction of traffic (see details).
- Where end cap is to be attached to the end of a rail element, a total of 4 of the above described splice bolts and nuts are to be used.



SECTION A-A  
TYPICAL WOOD LINE POST INSTALLATION  
See Note 4

NOTES:

- For details of steel post installations, see Revised Standard Plan RSP A77L2.
- For details of standard hardware used to construct MGS, see Revised Standard Plan RSP A77M1.
- For details of wood posts and wood blocks used to construct MGS, see Revised Standard Plan RSP A77N1.
- For additional installation details, see Revised Standard Plan RSP A77N3.
- MGS post spacing to be 6'-3" center to center, except as otherwise noted.
- For MGS typical layouts, see the A77P, A77Q and A77R Series of Standard Plans.
- If railing is connected to terminal system end treatment, use 31" height terminal system end treatment.
- For MGS end anchor details, see Revised Standard Plans RSP A77S1 and RSP A77T2.
- For details of MGS transition to bridge railing, see Revised Standard Plan RSP A77U4.
- For additional details of MGS connection to bridge railing, see Revised Standard Plans RSP A77U1, RSP A77U2 and RSP A77V1.
- For MGS connection details to abutments and walls, see Revised Standard Plan RSP A77U3.
- For typical MGS delineation and dike positioning details, see Revised Standard Plan RSP A77N4.
- Slotted hole for bolted connection of rail element to block and post. See "Section Thru Rail Element".
- Slotted holes for splice bolts to overlap ends of rail element. See "Section Thru Rail Element".
- Additional hole in uppermost portion of line post is for potential future adjustments of railing height. See Revised Standard Plan RSP A77N1.
- Install posts in soil.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM  
STANDARD RAILING SECTION  
(WOOD POST WITH WOOD BLOCK)

NO SCALE

RSP A77L1 DATED JULY 19, 2013 SUPPLEMENTS STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77L1

2010 REVISED STANDARD PLAN RSP A77L1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	216	302

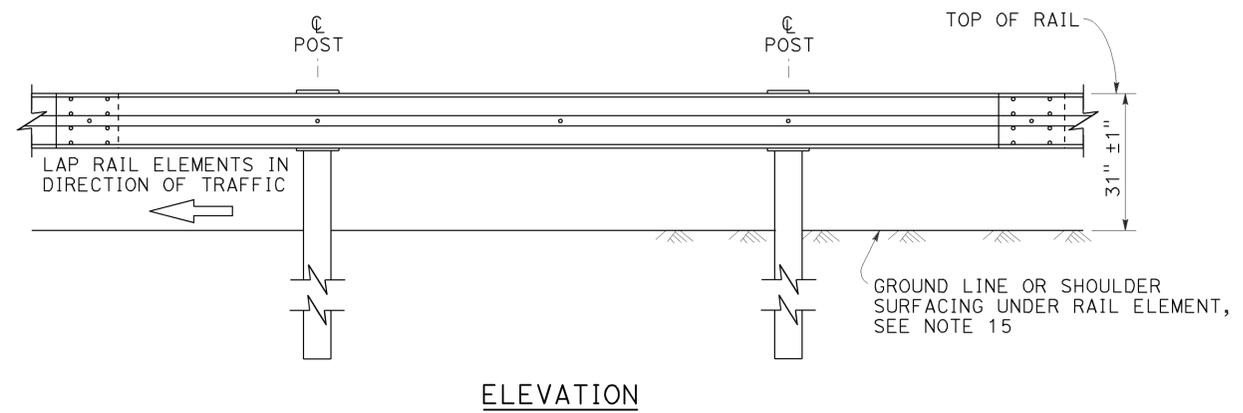
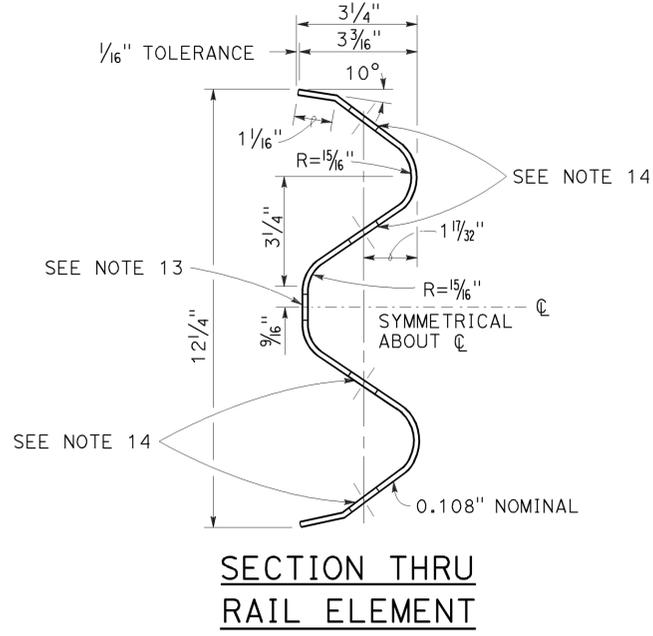
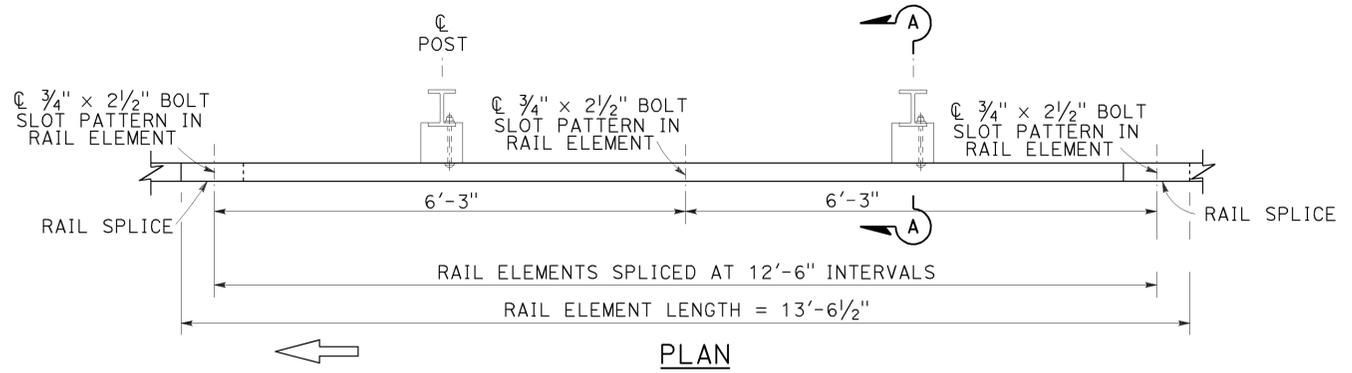
**Randell D. Hiatt**  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

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TO ACCOMPANY PLANS DATED 01-20-15

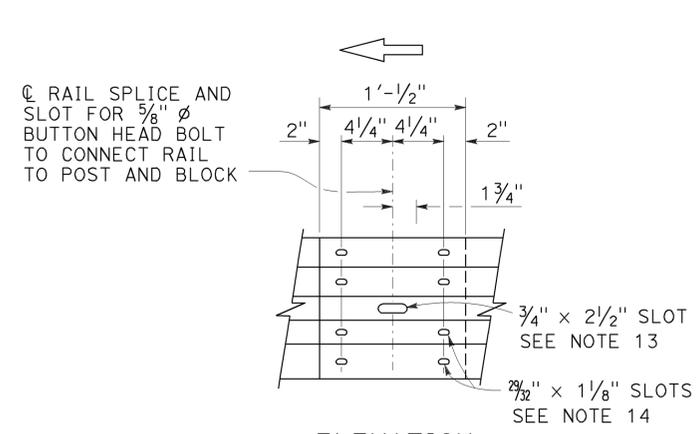
**Randell D. Hiatt**  
REGISTERED PROFESSIONAL ENGINEER  
No. C50200  
Exp. 6-30-15  
CIVIL  
STATE OF CALIFORNIA



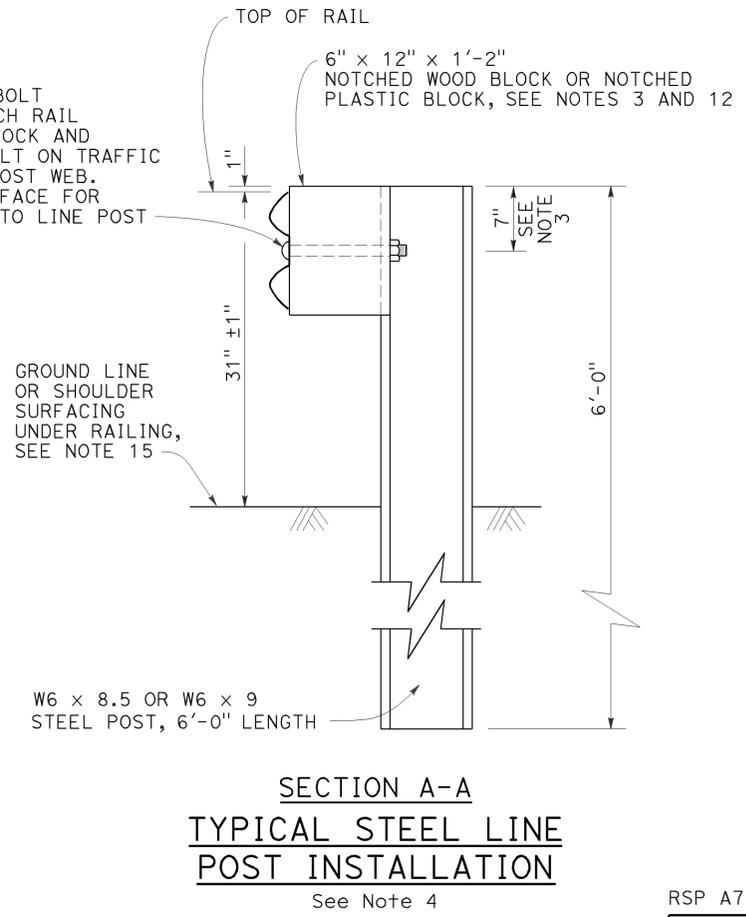
**MIDWEST GUARDRAIL SYSTEM WITH STEEL POSTS AND NOTCHED WOOD OR NOTCHED RECYCLED PLASTIC BLOCKS**

**NOTES:**

- For details of wood post installations, see Revised Standard Plan RSP A77L1.
- For details of standard hardware used to construct MGS, see Revised Standard Plan RSP A77M1.
- For details of steel posts and notched wood blocks used to construct MGS, see Revised Standard Plan RSP A77N2.
- For additional installation details, see Revised Standard Plan RSP A77N3.
- MGS post spacing to be 6'-3" center to center, except as otherwise noted.
- For MGS typical layouts, see the A77P, A77Q and A77R Series of Standard Plans.
- If railing is connected to terminal system end treatment, use 31" height terminal system end treatment.
- For MGS end anchor details, see Revised Standard Plans RSP A77S1 and RSP A77T2.
- For details of MGS transition to bridge railing, see Revised Standard Plan RSP A77U4.
- For additional details of MGS connection to bridge railings, see Revised Standard Plans RSP A77U1, RSP A77U2 and RSP A77V1.
- For dike positioning and MGS delineation details, see Revised Standard Plan RSP A77N4.
- Notched face of block faces steel post.
- Slotted hole for bolted connection of rail element to block and post. See "Section Thru Rail Element".
- Slotted holes for splice bolts to overlap ends of rail element. See "Section Thru Rail Element".
- Install posts in soil.



- Connect the overlapped end of the rail elements with 5/8" Ø x 1 3/8" button head oval shoulder splice bolts inserted into the 7/32" x 1 1/8" slots and bolted together with 5/8" Ø recessed hex nuts. Recess of hex nut points toward rail element. A total of 8 bolts and nuts are to be used at each rail splice connection.
- The ends of the rail elements are to be overlapped in the direction of traffic (see details).
- Where end cap is to be attached to the end of a rail element, a total of 4 of the above described splice bolts and nuts are to be used.



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

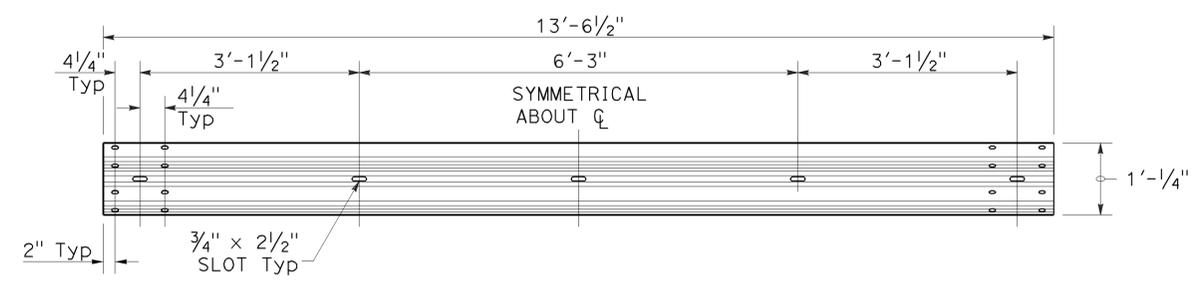
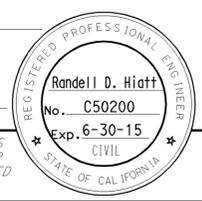
**MIDWEST GUARDRAIL SYSTEM STANDARD RAILING SECTION (STEEL POST WITH NOTCHED WOOD OR NOTCHED RECYCLED PLASTIC BLOCK)**

NO SCALE

RSP A77L2 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77L2**

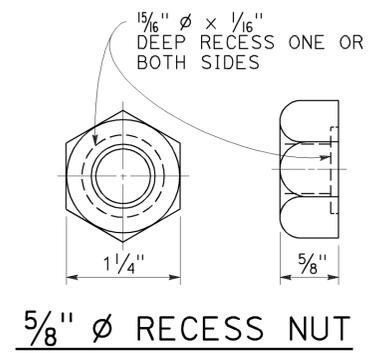
2010 REVISED STANDARD PLAN RSP A77L2



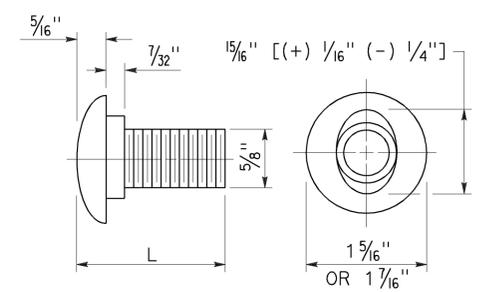
**TYPICAL RAIL ELEMENT**

**NOTE:**

1. Slotted holes for splice bolts to overlap ends of rail element.



**5/8" Ø RECESS NUT**

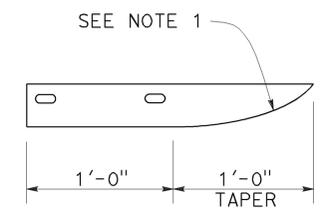


**5/8" Ø BUTTON HEAD BOLT**

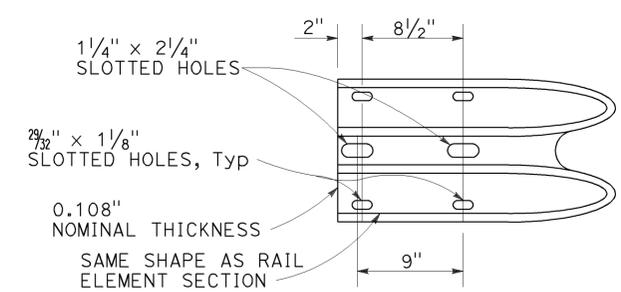
**BUTTON HEAD BOLT**

L	THREAD LENGTH
1 3/8"	FULL THREAD LENGTH
2"	FULL THREAD LENGTH
10"	4" Min THREAD LENGTH
18"	4" Min THREAD LENGTH
20"	4" Min THREAD LENGTH
22"	4" Min THREAD LENGTH
26"	4" Min THREAD LENGTH
36"	4" Min THREAD LENGTH
** 2 3/4"	2" Min THREAD LENGTH
** 19"	4" Min THREAD LENGTH

\*\* For nested rail applications.



**PLAN**



**ELEVATION  
END CAP  
(TYPE A)**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM  
STANDARD HARDWARE**

NO SCALE

RSP A77M1 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77M1**

2010 REVISED STANDARD PLAN RSP A77M1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	218	302

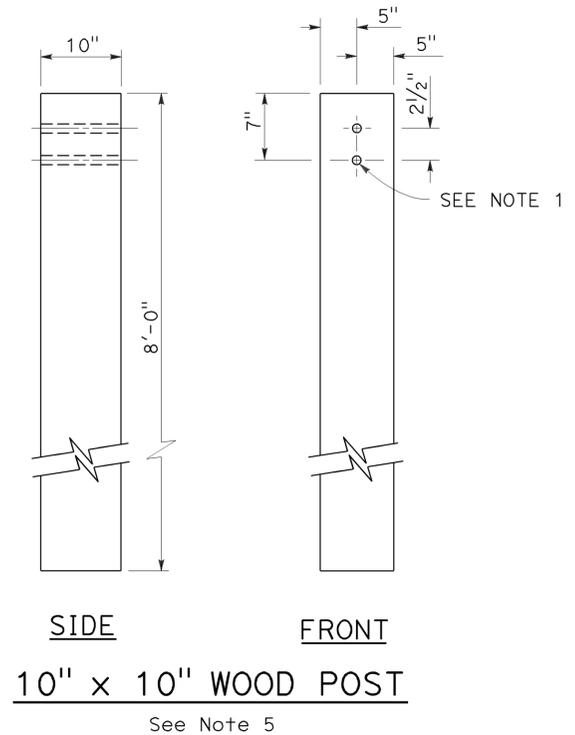
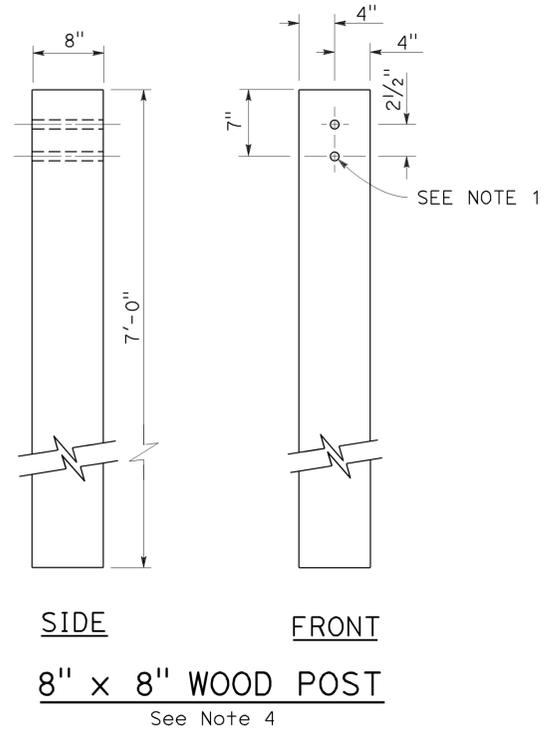
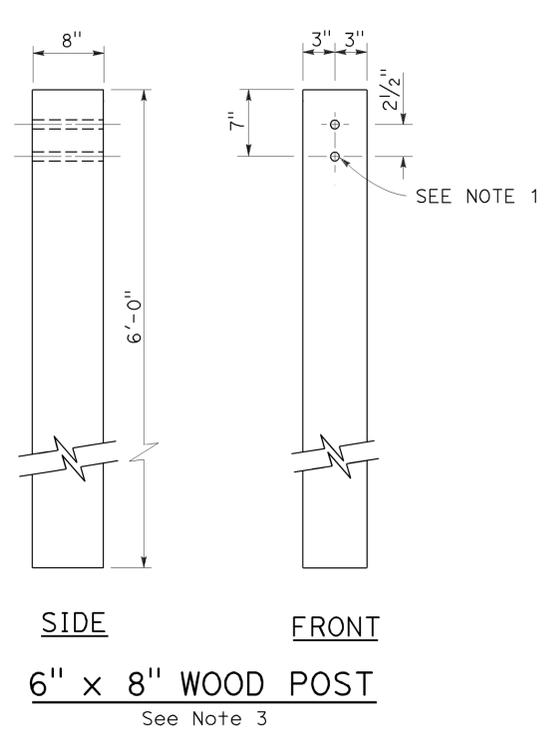
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

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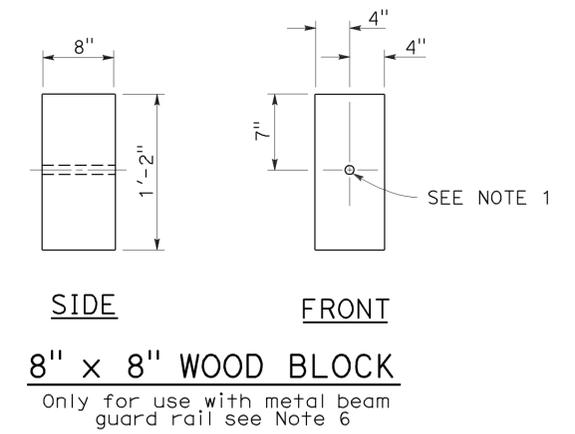
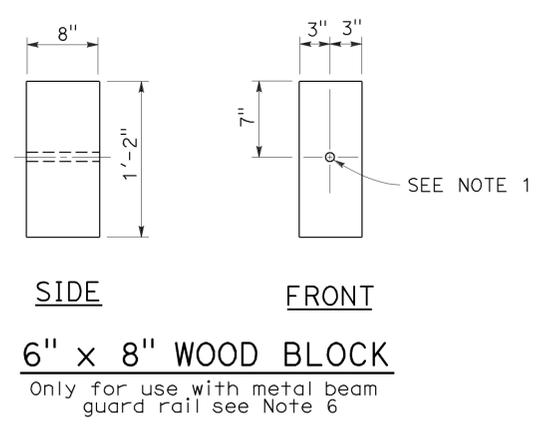
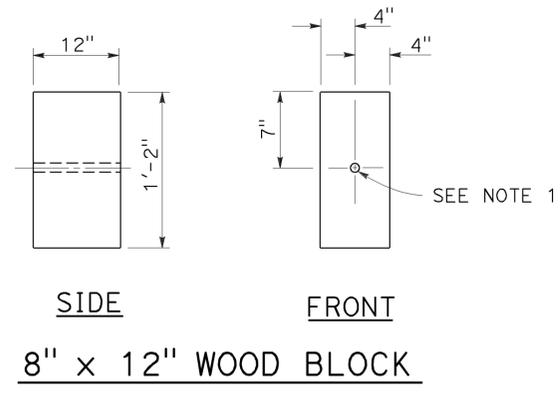
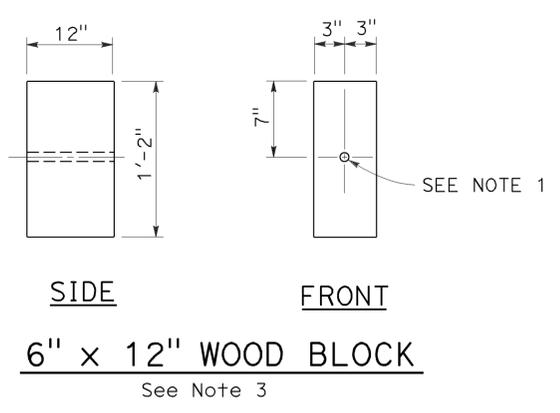
REGISTERED PROFESSIONAL ENGINEER  
Randell D. Hiatt  
No. C50200  
Exp. 6-30-15  
CIVIL  
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 01-20-15



**NOTES:**

1. All holes in wood posts and blocks shall be 3/4" Dia ± 1/16".
2. Dimensions shown for wood post are nominal.
3. This post and block combination used for standard line post sections of MGS.
4. This post and 8" x 12" block combination used for line post sections of MGS on narrow roadways.
5. This post and 8" x 12" block combination is typically used where strengthened line post sections of MGS are warranted to shield fixed objects.
6. See Revised Standard Plan RSP A77L3 for use of 6" x 8" and 8" x 8" wood blocks.



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM  
WOOD POST AND  
WOOD BLOCK DETAILS**

NO SCALE

RSP A77N1 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77N1**

2010 REVISED STANDARD PLAN RSP A77N1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	11,125, 905	Var	219	302

**Randell D. Hiatt**  
REGISTERED CIVIL ENGINEER

November 15, 2013  
PLANS APPROVAL DATE

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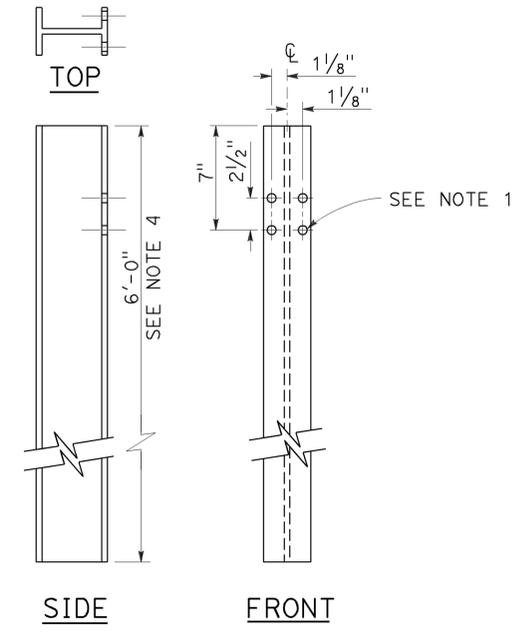
REGISTERED PROFESSIONAL ENGINEER  
No. C50200  
Exp. 6-30-15  
CIVIL  
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 01-20-15

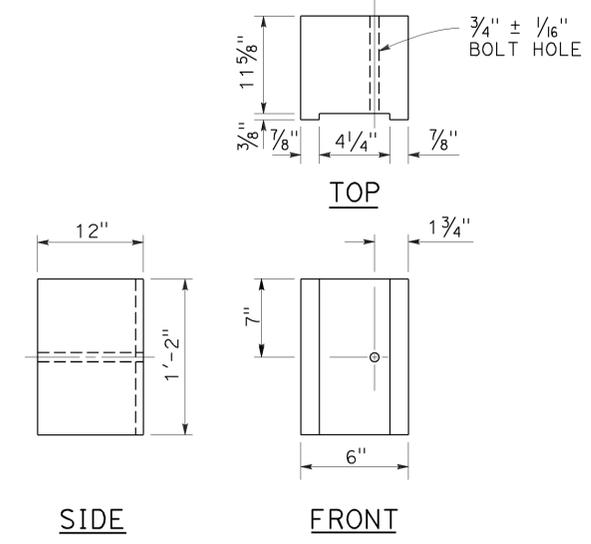
**NOTES:**

1. All holes in steel post shall be  $\frac{13}{16}$ " Dia maximum.
2. Dimensions shown for wood block are nominal.
3. Notched face of block faces steel post.
4. 6'-0" length posts to be used for typical roadway installation. See Revised Standard Plan RSP A77N3.
5. See Revised Standard Plan RSP A77L3 for use of 6" x 8" and 8" x 8" notched wood blocks.
6. This post and 8" x 12" block combination to be used for line post sections of MGS on narrow roadways and where strengthened line post sections of MGS are warranted to shield fixed objects.

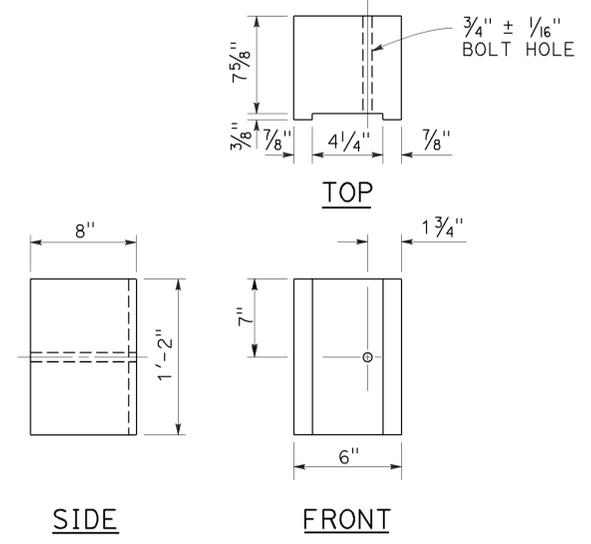
2010 REVISED STANDARD PLAN RSP A77N2



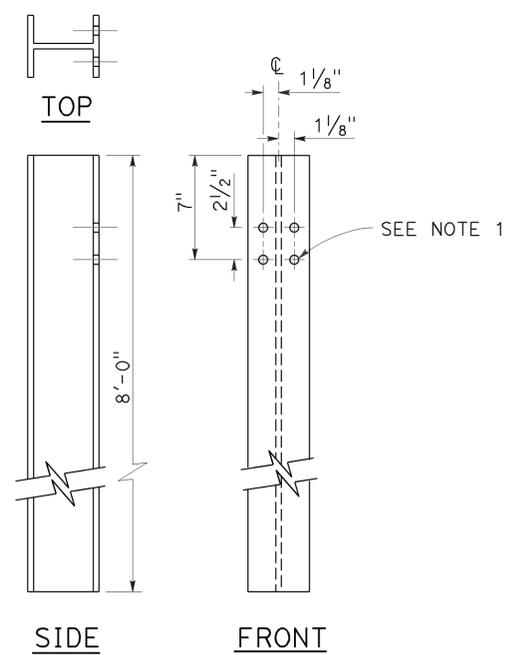
**W6 x 9 OR W6 x 8.5**  
**STEEL POST**  
See Note 4



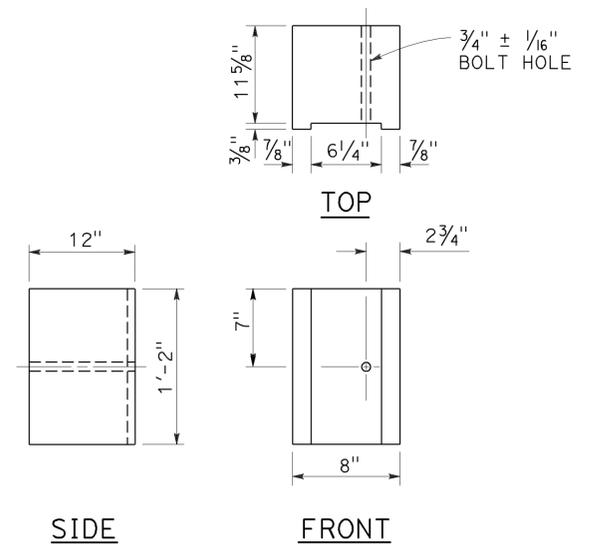
**6" x 12"**  
**NOTCHED WOOD BLOCK**  
See Notes 2 and 3



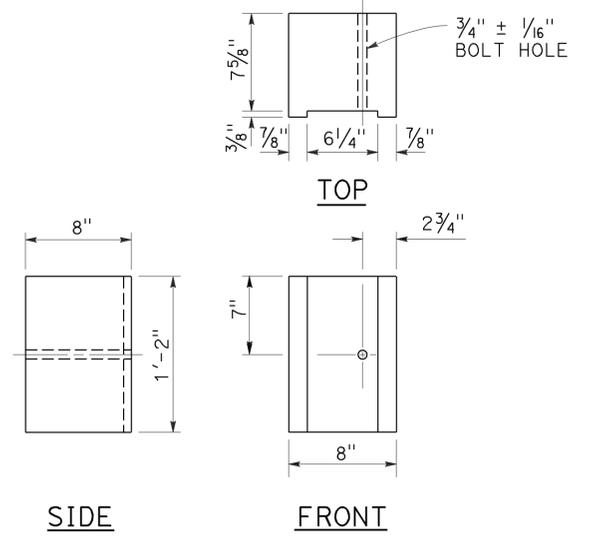
**6" x 8"**  
**NOTCHED WOOD BLOCK**  
Only for use with metal beam guard railing. See Note 5



**W6 x 15**  
**STEEL POST**  
See Note 6



**8" x 12"**  
**NOTCHED WOOD BLOCK**  
See Notes 2 and 3



**8" x 8"**  
**NOTCHED WOOD BLOCK**  
Only for use with metal beam guard railing. See Note 5

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM**  
**STEEL POST AND**  
**NOTCHED WOOD BLOCK DETAILS**

NO SCALE

RSP A77N2 DATED NOVEMBER 15, 2013 SUPERSEDES RSP A77N2  
DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

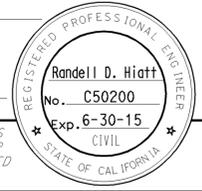
**REVISED STANDARD PLAN RSP A77N2**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	220	302

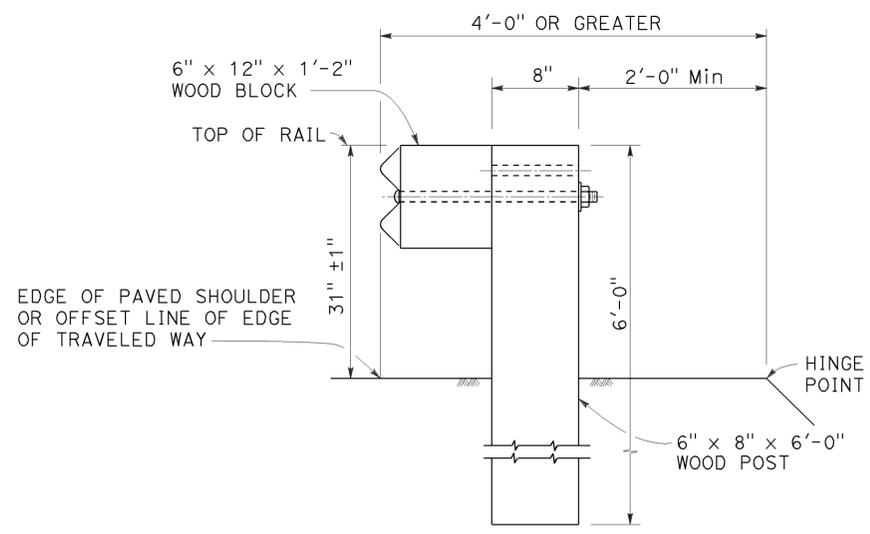
Randell D. Hiatt  
REGISTERED CIVIL ENGINEER

November 15, 2013  
PLANS APPROVAL DATE

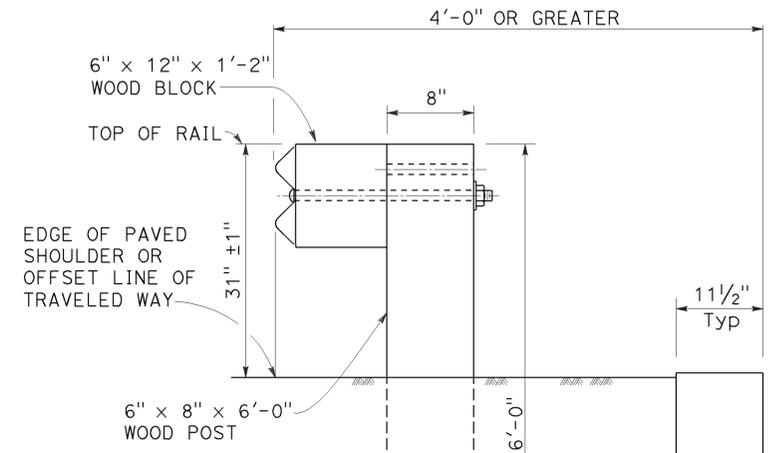
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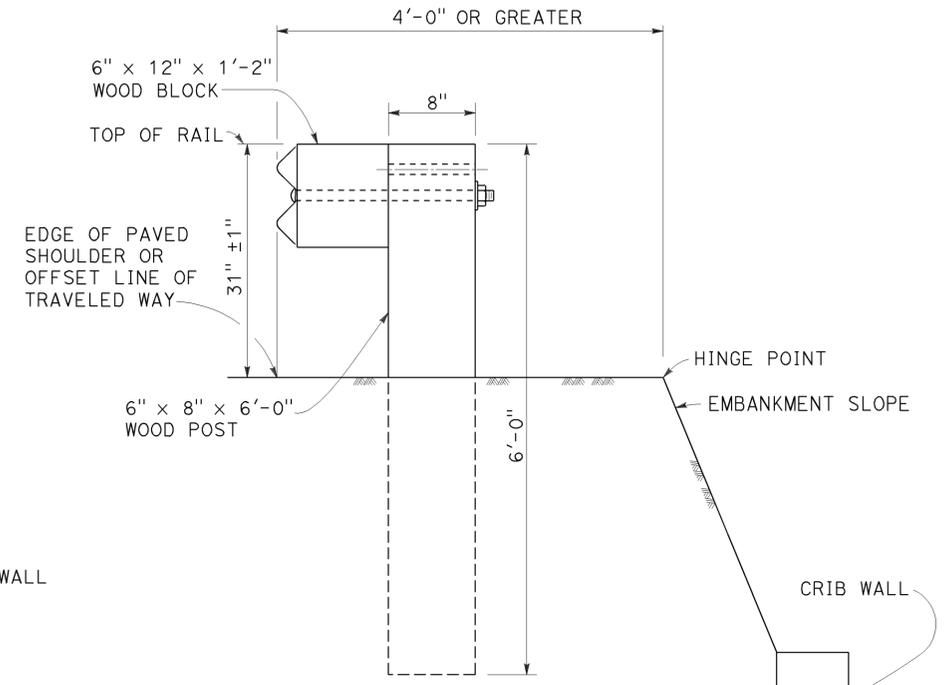
TO ACCOMPANY PLANS DATED 01-20-15



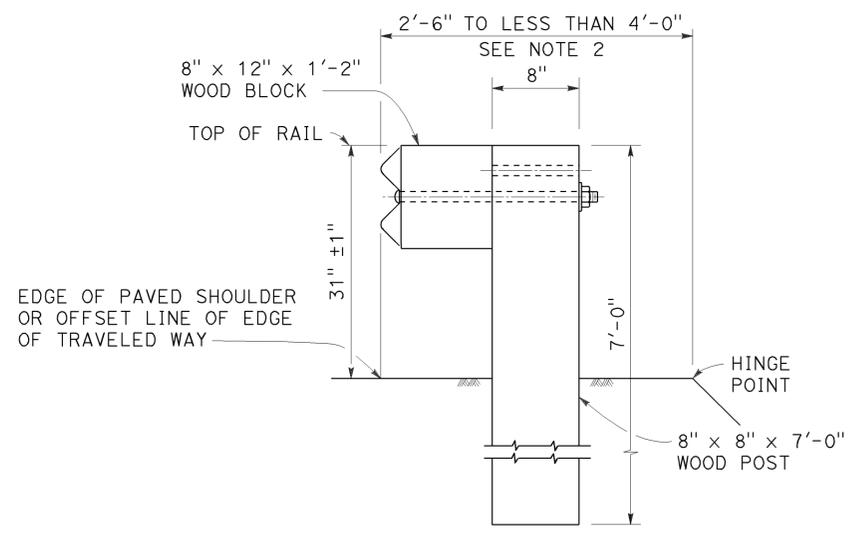
**DETAIL A**  
**TYPICAL ROADWAY**  
**INSTALLATION**  
See Note 1



**DETAIL C**  
**INSTALLATION AT EARTH RETAINING WALLS**



**DETAIL D**



**DETAIL B**  
**NARROW ROADWAY**  
**INSTALLATION**  
See Note 1

**POST EMBEDMENT**

**NOTES:**

1. These installation details also applicable to steel line post installations. For Detail A, C, and D, where steel line post installations are constructed, W6 x 8.5 or W6 x 9 steel post, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or notched recycled plastic blocks are to be used in place of the size of wood post and wood block shown. For Detail B, where steel line post installations are constructed, W6 x 15 steel post, 8'-0" in length, with 8" x 12" x 1'-2" notched wood blocks or notched recycled plastic blocks are to be used in place of the size of wood post and wood block shown. For additional installation details, see Revised Standard Plan RSP A77L1 and RSP A77L2.
2. Where the distance between the face of the rail and the hinge point is less than 2'-6", see the Project Plans for special details.
3. For dike positioning with MGS installations, see Revised Standard Plan RSP A77N4.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM**  
**TYPICAL LINE POST**  
**EMBEDMENT AND**  
**HINGE POINT OFFSET DETAILS**

NO SCALE

RSP A77N3 DATED NOVEMBER 15, 2013 SUPERSEDES RSP A77N3  
DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77N3**

2010 REVISED STANDARD PLAN RSP A77N3

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	221	302

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

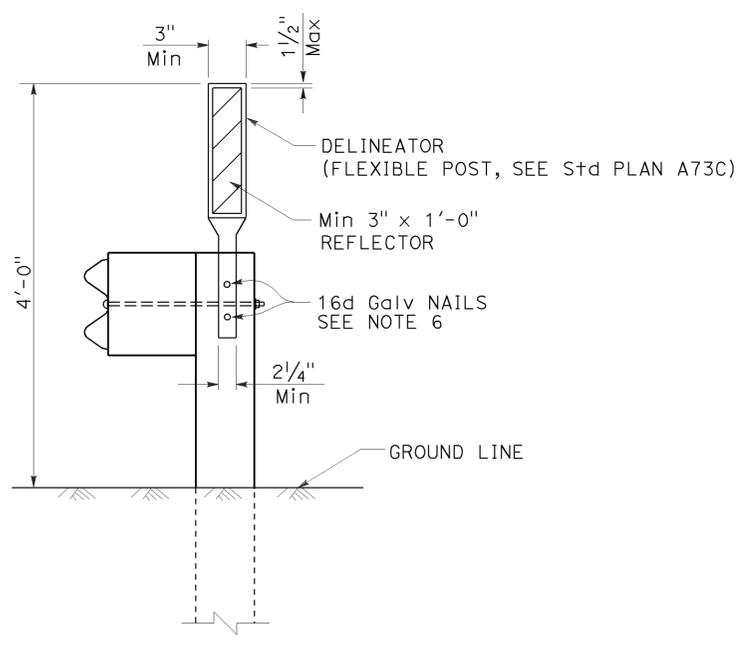
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REGISTERED PROFESSIONAL ENGINEER  
Randell D. Hiatt  
No. C50200  
Exp. 6-30-15  
CIVIL  
STATE OF CALIFORNIA

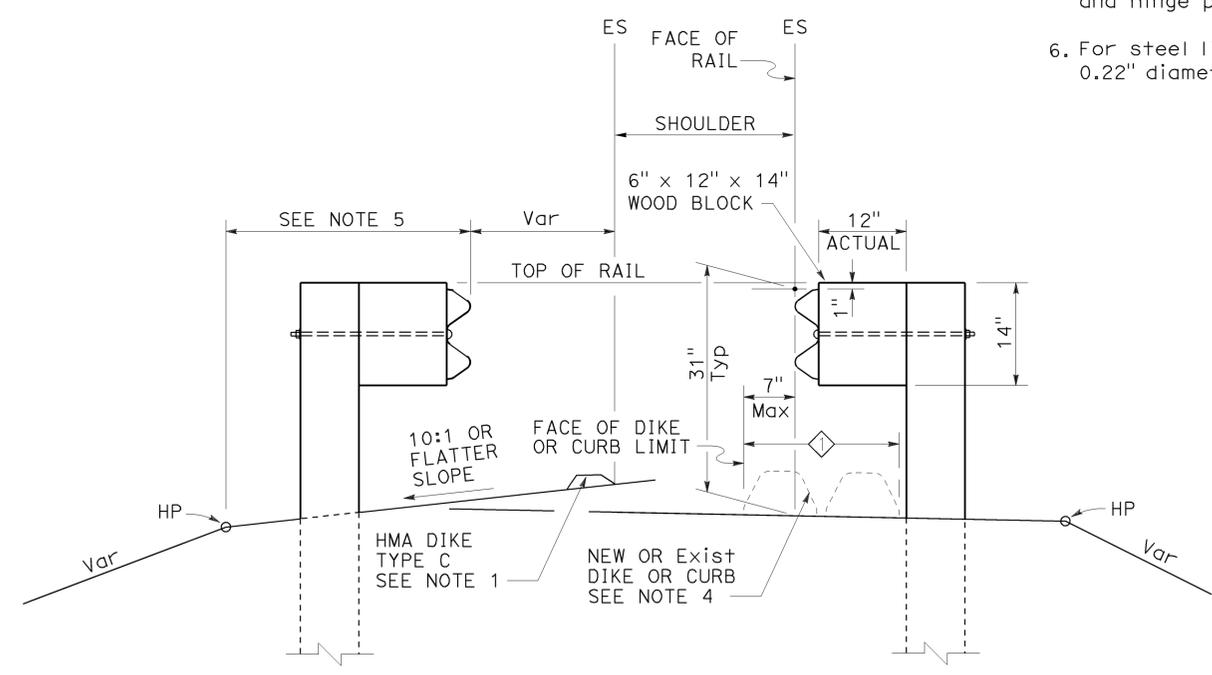
TO ACCOMPANY PLANS DATED 01-20-15

**NOTES:**

1. When necessary to place dike more than 7" in front of face of MGS, only Type C dike may be used. For dike details, see Revised Standard Plan RSP A87B.
2. For standard railing post embedment, see Revised Standard Plan RSP A77N3.
3. MGS delineation to be used where shown on the Project Plans.
4. When dike or curb is placed under MGS, the maximum height of the dike or curb shall be 6". Mountable dike should not be used. For dike and curb details, see Revised Standard Plans RSP A87A and RSP A87B.
5. For details of typical distance between the face of rail and hinge point, see Revised Standard Plan RSP A77N3.
6. For steel line posts, use 1/4" - 20 self-tapping screws in 0.22" diameter holes or 1/4" bolts in 5/32" diameter holes.



**MGS DELINEATION**  
See Note 3



**DIKE POSITIONING**  
See Note 1

◇ PERMISSIBLE DIKE OR CURB PLACEMENT AREA

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM  
TYPICAL RAILING DELINEATION  
AND DIKE POSITIONING DETAILS**  
NO SCALE

RSP A77N4 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77N4**

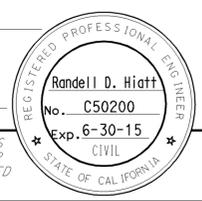
2010 REVISED STANDARD PLAN RSP A77N4

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	222	302

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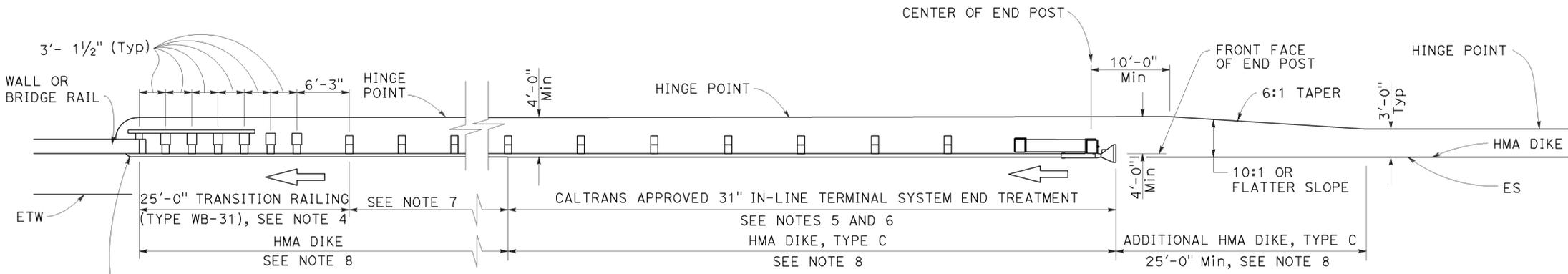
July 19, 2013  
PLANS APPROVAL DATE

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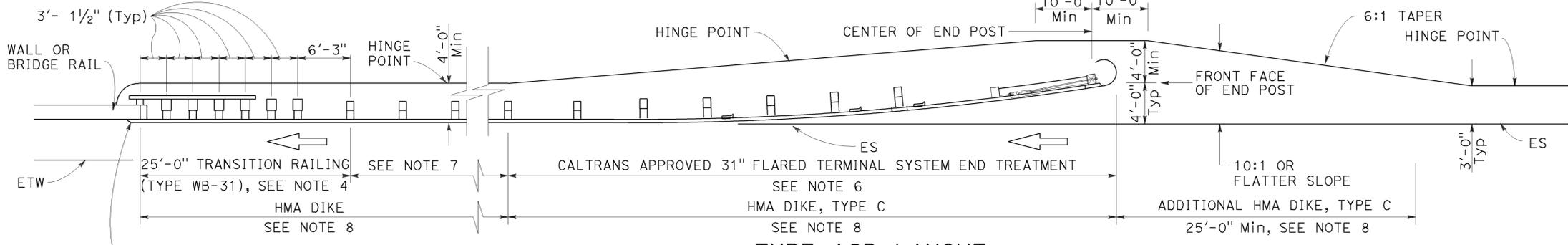
TO ACCOMPANY PLANS DATED 01-20-15

2010 REVISED STANDARD PLAN RSP A77Q1



**TYPE 12A LAYOUT**

(MGS installation at structure approach with 31" in-line end treatment at traffic approach end of railing)  
See Notes 5 and 6  
SEE NOTE 8



**TYPE 12B LAYOUT**

(MGS installation at structure approach with 31" Flared end treatment at traffic approach end of railing)  
SEE NOTE 6  
SEE NOTE 8

**NOTES:**

- Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
- MGS post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 12" x 1'-2" wood blocks. W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
- For Transition Railing (Type WB-31) details for Types 12A and 12B Layouts, see Revised Standard Plan RSP A77U4.
- 31" in-line terminal system end treatments are used where site conditions will not accommodate a 31" flared end treatment.
- The type 31" of terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height, side slopes, or other fixed objects), it may be advisable to construct additional guard railing (a length equal to multiples of 12'-6" with 6'-3" post spacing) between the transition railing and end treatment. A 12.5 degree angle of departure can be drawn on the Project Plans from the edge of traveled way through the outer most point of the fixed object to determine the additional length of railing needed.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77N4 for dike positioning details.
- Type 12A or Type 12B Layouts are typically used:
  - To the right of approaching traffic, at the end of a structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
  - To the left of approaching traffic, at the end of a structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
  - To the right of approaching traffic at the end of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.
  - To the right of approaching traffic at the end of the structure on multilane freeways or expressways with decked median on the bridge.
- See Revised Standard Plan RSP A77Q3 for typical layout used left of approaching traffic at the ends of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.
- For additional details of typical connections to bridge rail, see Connection Detail AA on Revised Standard Plans RSP A77U1 and RSP A77U2 and Connection Detail FF on Revised Standard Plans RSP A77V1 and RSP A77V2.
- For additional details of a typical connection to walls or abutments, see Revised Standard Plan RSP A77U3.

**MIDWEST GUARDRAIL SYSTEM  
TYPICAL LAYOUTS FOR  
STRUCTURE APPROACH**

NO SCALE

RSP A77Q1 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77Q1**

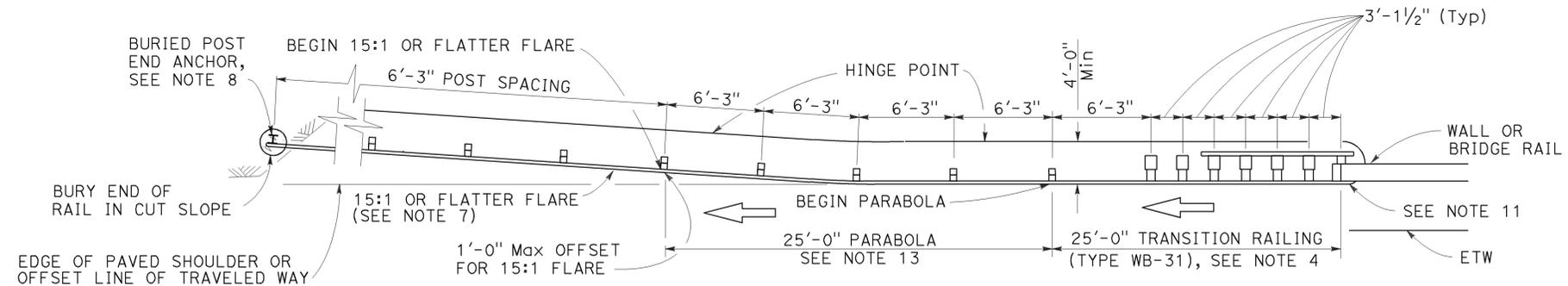
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	223	302

**Randell D. Hiatt**  
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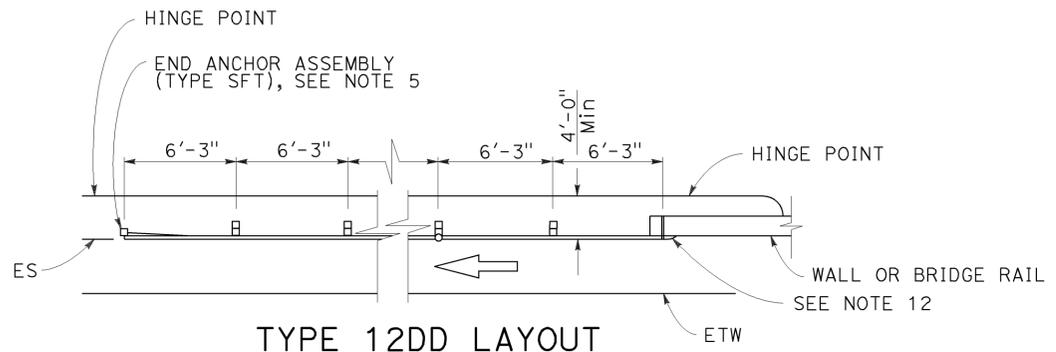
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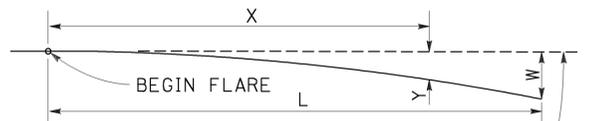
**TYPE 12CC LAYOUT**

(MGS installation at structure departure with a Buried end anchor treatment at trailing end of railing)  
See Notes 9 and 10



**TYPE 12DD LAYOUT**

(MGS installation at structure departure With end anchor assembly at trailing end of railing)  
See Notes 6 and 9

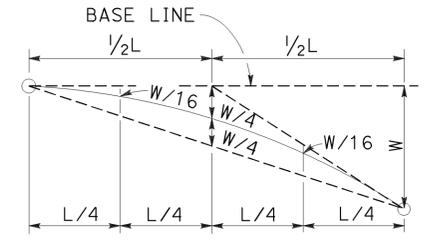


BASE LINE (EDGE OF PAVED SHOULDER OR OFFSET LINE OF EDGE OF TRAVELED WAY)

$Y = \frac{WX^2}{L^2}$

Y = OFFSET FROM BASE LINE  
W = MAXIMUM OFFSET  
X = DISTANCE ALONG BASE LINE  
L = LENGTH OF FLARE

**PARABOLIC FLARE OFFSETS**



**TYPICAL PARABOLIC LAYOUT**

**NOTES:**

- Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
- MSG post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 12" x 1'-2" wood blocks. W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood line posts with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
- For Transition Railing (Type WB-31) details for Type 12CC Layout, see Revised Standard Plan RSP A77U4.
- For details of End Anchor Assembly (Type SFT) used with Type 12DD Layout, see Revised Standard Plan RSP A77S1.
- Type 12DD layout is typically used to the right of traffic departing a structure on two-way conventional highways where the roadbed width across the structure is equal to or greater than 40 feet and MGS is recommended (embankment height, side slopes, other fixed objects). Length of railing to be equal to multiples of 12'-6". For MGS connection details to bridge rail, see Revised Standard Plans RSP A77U1 and RSP A77V1. For MGS connection details to wall, see Revised Standard Plan RSP A77U3.
- The 15:1 or flatter flare for Type 12CC Layout is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of MGS within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the buried post end anchor used with Type 12CC Layout, see Revised Standard Plan RSP A77T2.
- Where placement of dike is required with MGS installations, see Revised Standard Plan RSP A77N4 for dike positioning details.
- Type 12CC Layout is typically used to the right of traffic departing a structure on two-way conventional highways where the roadbed width across the structure is less than 40 feet.
- For additional details of a typical connection to bridge rail for Layout Type 12CC, see Connection Detail CC on Revised Standard Plan RSP A77U2 and Connection Detail HH on Revised Standard Plan RSP A77V2.
- For additional details of a typical connection to bridge rail for Layout Type 12DD, see Connection Detail BB on Revised Standard Plan RSP A77U1 and Connection Detail GG on Revised Standard Plan RSP A77V1.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77P1.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM  
TYPICAL LAYOUTS FOR  
STRUCTURE DEPARTURE**

NO SCALE

RSP A77Q5 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77Q5**

2010 REVISED STANDARD PLAN RSP A77Q5

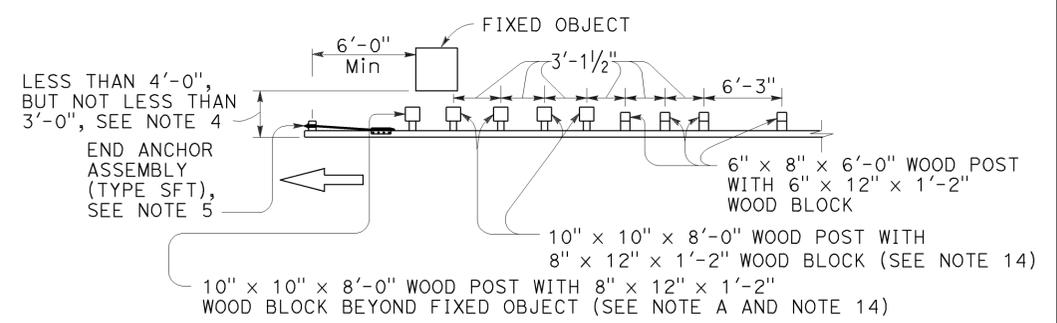
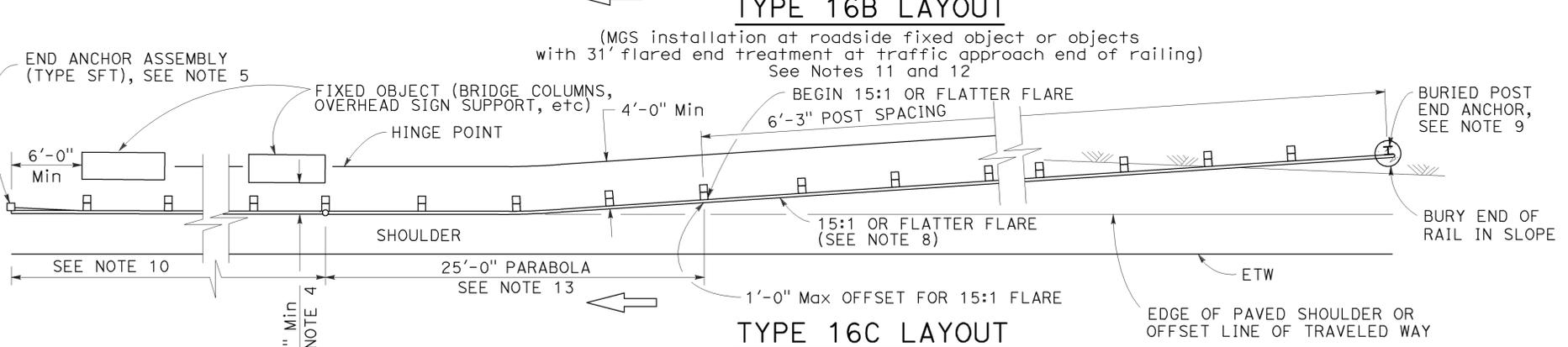
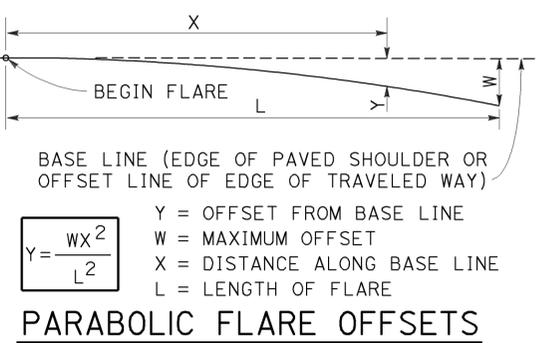
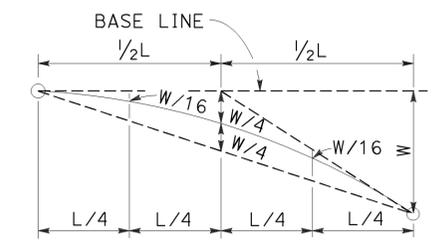
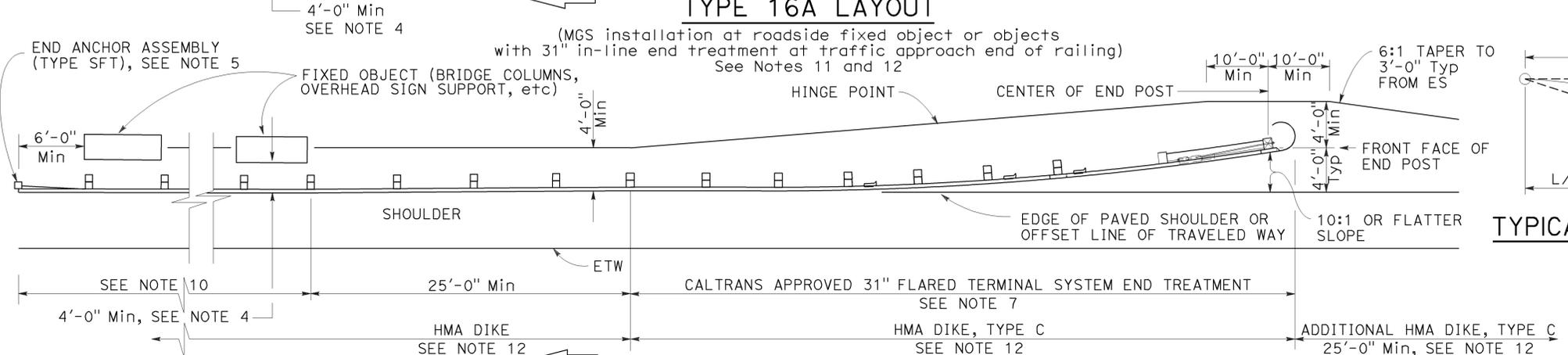
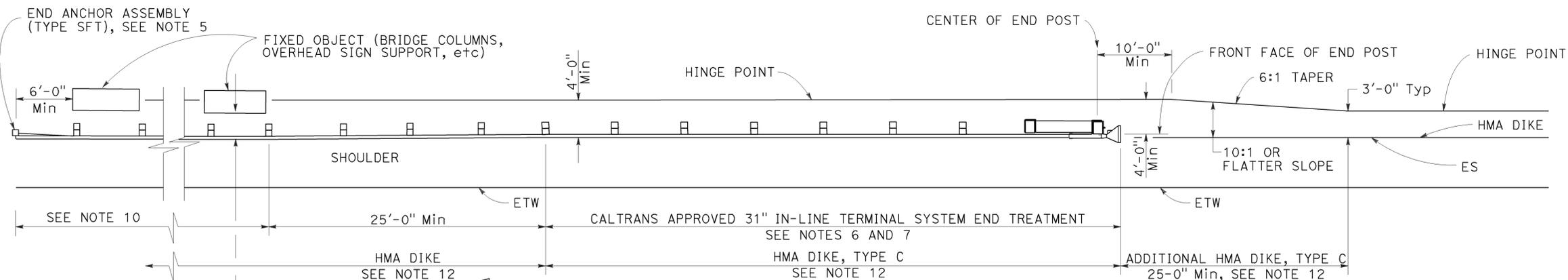
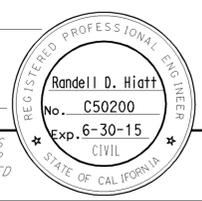
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	224	302

**Randell D. Hiatt**  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

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TO ACCOMPANY PLANS DATED 01-20-15



**NOTE A:** For a series of fixed objects (bridge columns, overhead sign supports, etc.) additional 10" x 10" x 8'-0" wood post with 8" x 12" x 1'-2" wood blocks at 3'-1/2" center to center spacing are to be used between fixed objects.

**NOTES:**

- Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
- MGS post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 12" x 1'-2" wood blocks. W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood line posts with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
- A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object located directly behind MGS sections with post spacing of 6'-3". Construct MGS as shown in the detail "Strengthened Midwest Guardrail System Sections for Fixed Object" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 3'-0". Where the clearance is less than 3'-0", a concrete wall or barrier should be constructed to shield the fixed object(s).
- For End Anchor Assembly (Type SFT) details, see Revised Standard Plan RSP A77S1.
- 31" in-line terminal system end treatments are used where site conditions will not accommodate a 31" flared end treatment.
- The type of 31" terminal system to be used will be shown on the Project Plans.
- The 15:1 or flatter flare used with Type 16C Layout is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of MGS within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the Buried Post End Anchor used with Type 16C Layout, see Revised Standard Plan RSP A77T2.
- As site conditions dictate, construct additional MGS to shield fixed object(s). Additional MGS length equal to multiples of 12'-6". Post spacing at 6'-3" except as specified in Note 4.
- Layout Types 16A, 16B or 16C are typically used where MGS is recommended to shield roadside fixed object(s) and a crashworthy 31" end treatment is required for only one direction of traffic.
- Where placement of dike is required with MGS, see Revised Standard Plan RSP A77N4 for dike positioning details.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77P1.
- W6 x 15 steel post, 8'-0" in length, with 8" x 12" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 12" x 1'-2" wood block shown in the detail "Strengthened Midwest Guardrail System Sections for Fixed Object".

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**MIDWEST GUARDRAIL SYSTEM  
TYPICAL LAYOUTS FOR  
ROADSIDE FIXED OBJECTS**

NO SCALE

RSP A77R3 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77R3**

2010 REVISED STANDARD PLAN RSP A77R3

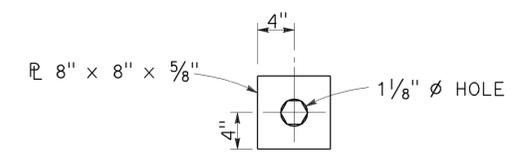
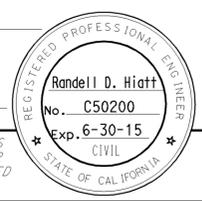
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	225	302

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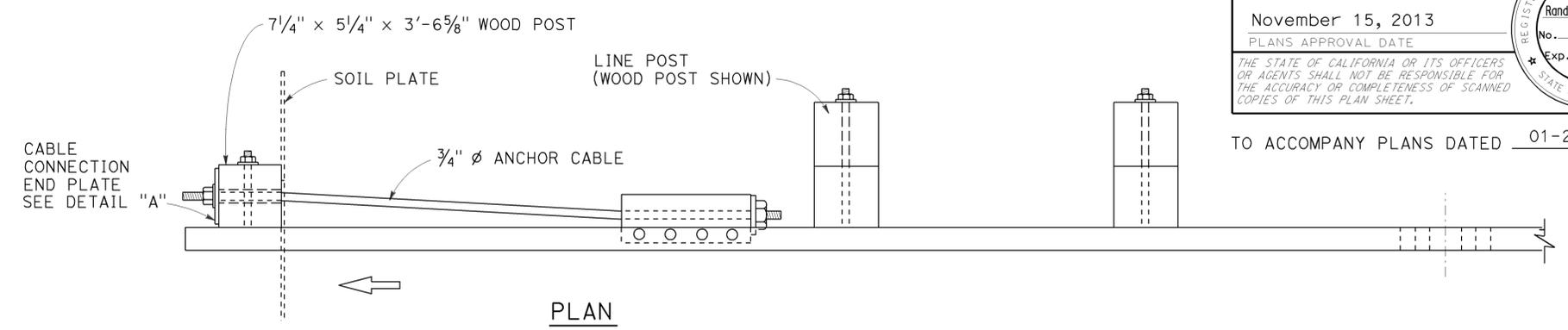
November 15, 2013  
PLANS APPROVAL DATE

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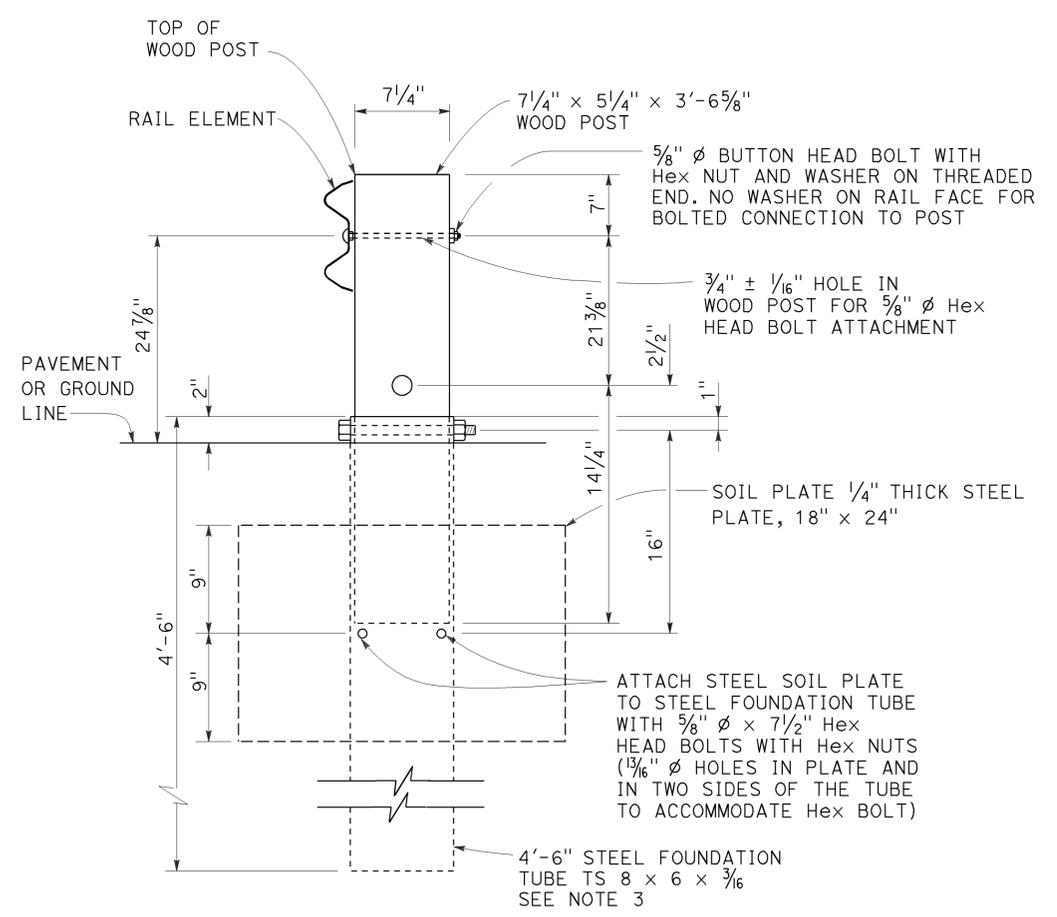
TO ACCOMPANY PLANS DATED 01-20-15



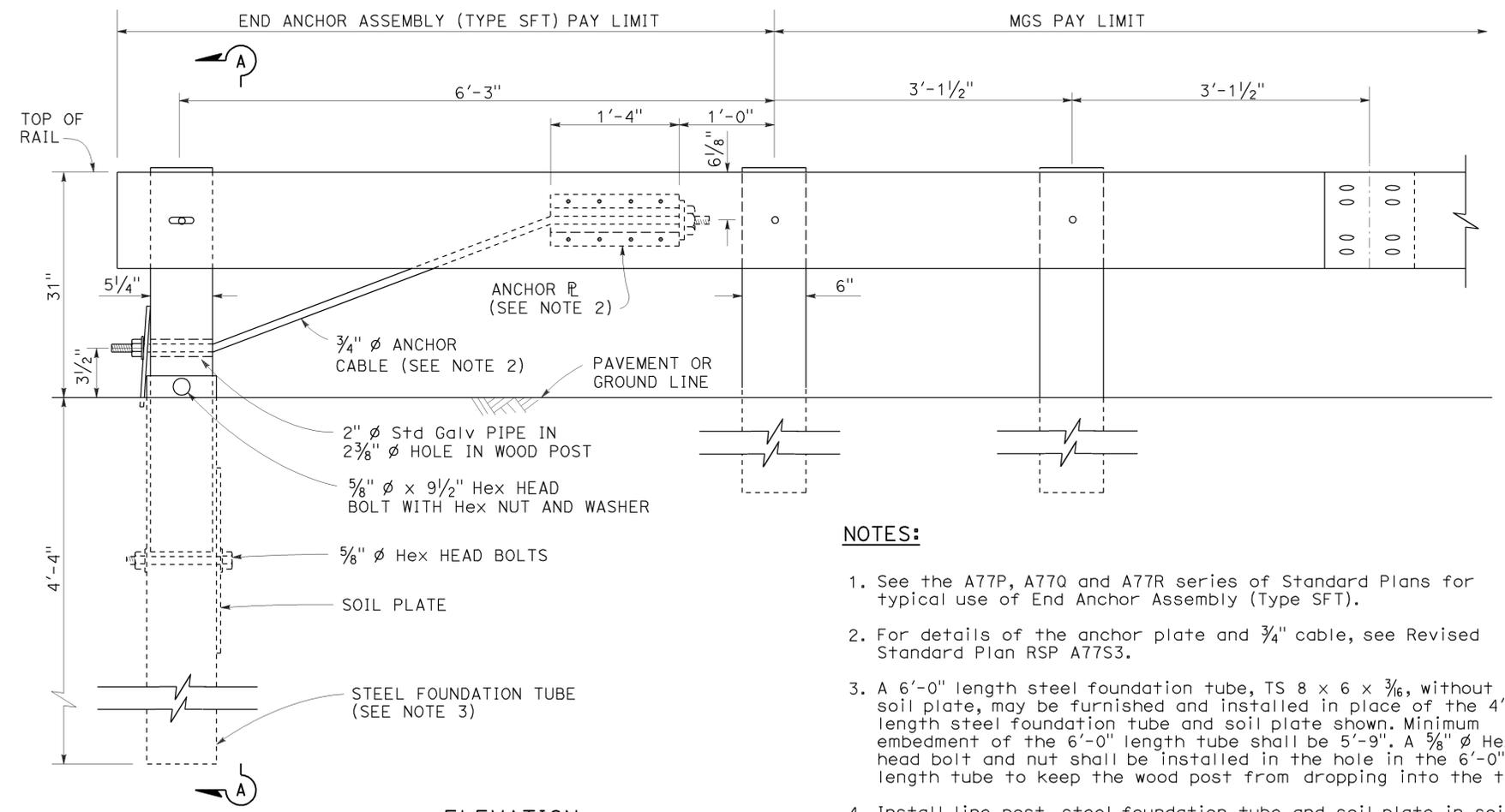
**DETAIL "A"**  
**CABLE CONNECTION**  
**END PLATE**



**PLAN**



**SECTION A-A**



**ELEVATION**

**END ANCHOR**  
**ASSEMBLY (TYPE SFT)**  
See Note 1

**NOTES:**

1. See the A77P, A77Q and A77R series of Standard Plans for typical use of End Anchor Assembly (Type SFT).
2. For details of the anchor plate and 3/4" cable, see Revised Standard Plan RSP A77S3.
3. A 6'-0" length steel foundation tube, TS 8 x 6 x 3/16, without a soil plate, may be furnished and installed in place of the 4'-6" length steel foundation tube and soil plate shown. Minimum embedment of the 6'-0" length tube shall be 5'-9". A 5/8" diameter hex head bolt and nut shall be installed in the hole in the 6'-0" length tube to keep the wood post from dropping into the tube.
4. Install line post, steel foundation tube and soil plate in soil.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**MIDWEST GUARDRAIL SYSTEM**  
**END ANCHOR ASSEMBLY**  
**(TYPE SFT)**

NO SCALE

RSP A77S1 DATED NOVEMBER 15, 2013 SUPERSEDES RSP A77S1 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77S1**

2010 REVISED STANDARD PLAN RSP A77S1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	226	302

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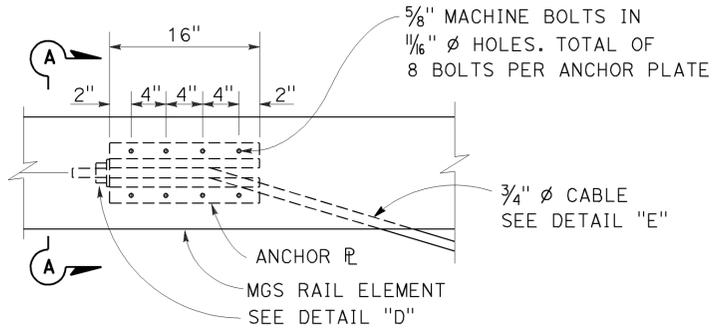
November 15, 2013  
PLANS APPROVAL DATE

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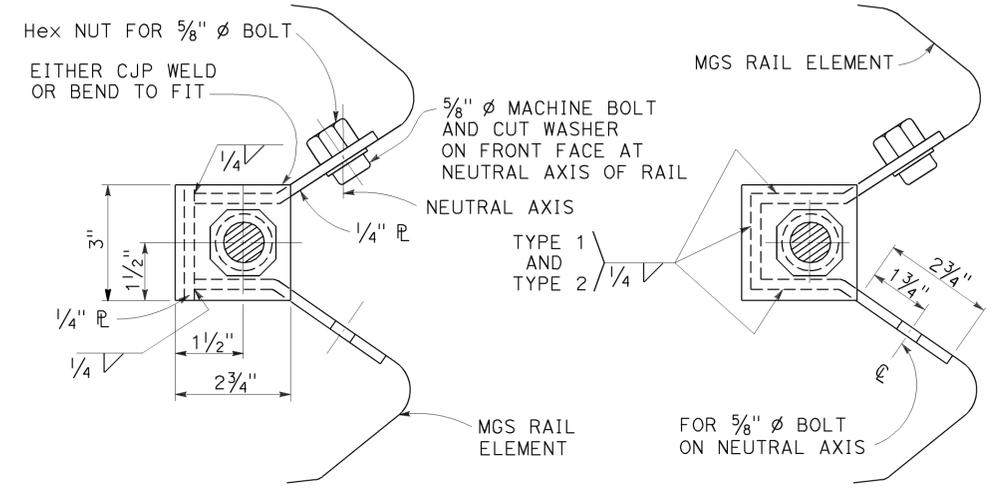
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STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 01-20-15

**NOTE:**  
See Revised Standard Plans RSP A77S1, RSP A77S2 and RSP A77T1 for typical use of anchor cable and anchor plate.



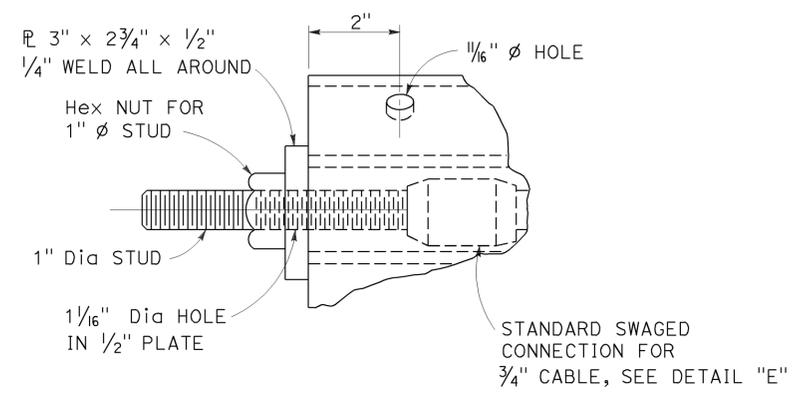
**ANCHOR PLATE DETAIL**  
(MGS shown, TBB similar)



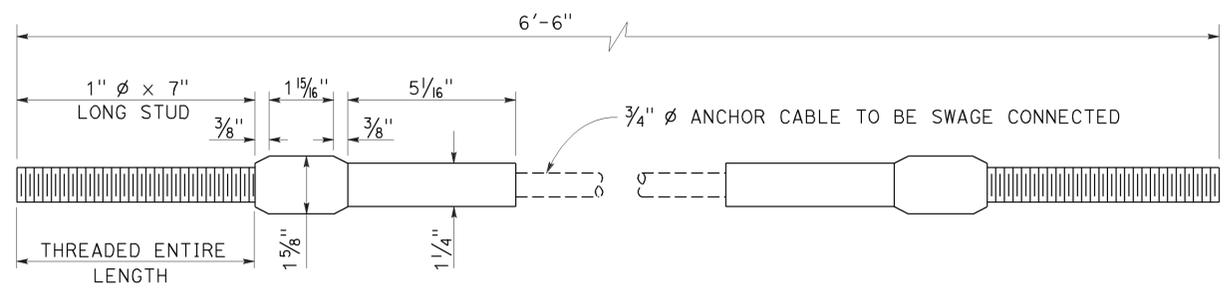
**SECTION A-A**  
(ALTERNATIVE TYPE 1)

**SECTION A-A**  
(ALTERNATIVE TYPE 2)

**NOTE:**  
Dimensioning applies to both types.



**DETAIL "D"**



**ANCHOR CABLE WITH SWAGED FITTING AND STUD**  
**DETAIL "E"**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**METAL RAILING  
ANCHOR CABLE AND  
ANCHOR PLATE DETAILS**

NO SCALE  
RSP A77S3 DATED NOVEMBER 15, 2013 SUPERSEDES RSP A77S3  
DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77S3**

2010 REVISED STANDARD PLAN RSP A77S3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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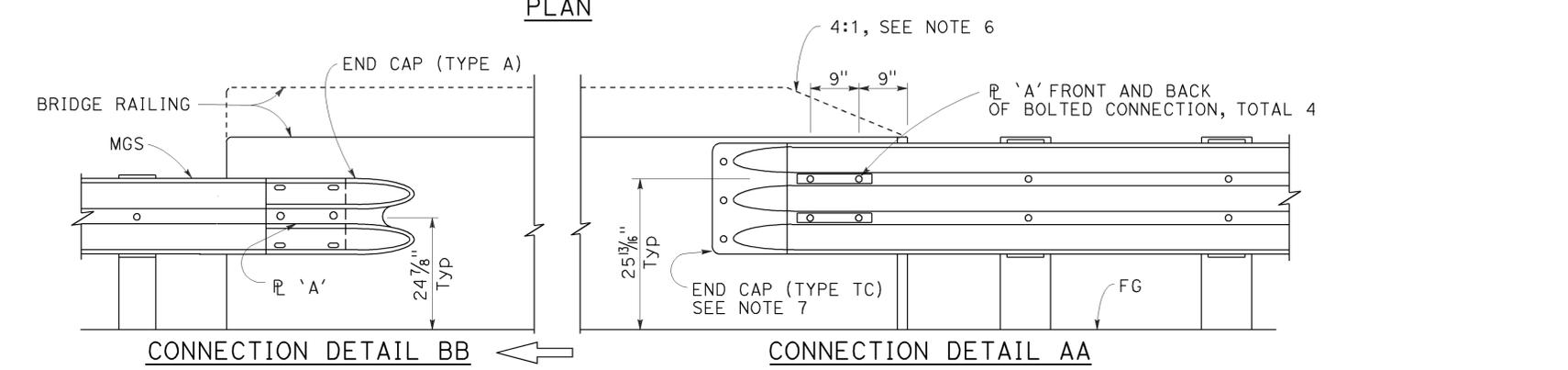
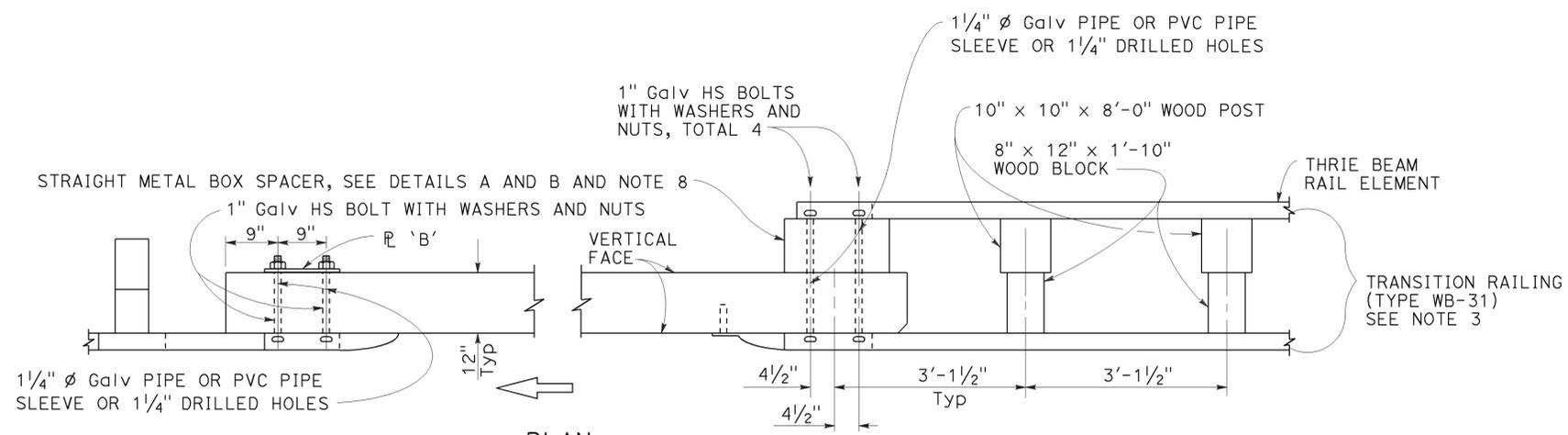
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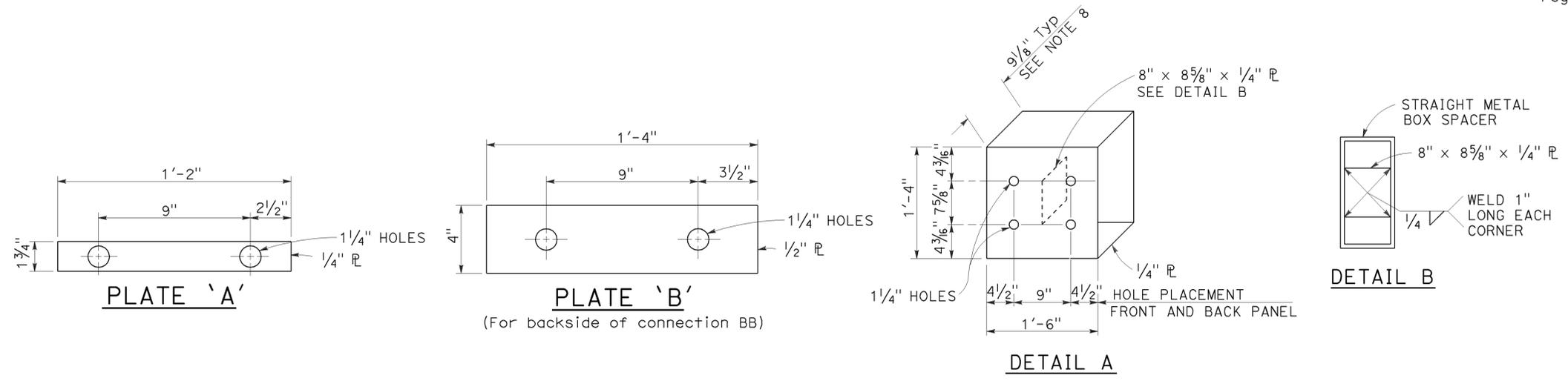
TO ACCOMPANY PLANS DATED 01-20-15



**MIDWEST GUARDRAIL SYSTEM CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK**

**NOTES:**

1. See Revised Standard Plan RSP A77U2 for additional connection details to bridges without sidewalks.
2. Additional details of posts, blocks and hardware are shown on Revised Standard Plans RSP A77M1, RSP A77N1 and RSP A77N2.
3. For additional details of Transition Railing (Type WB-31), see Revised Standard Plan RSP A77U4. Transition Railing (Type WB-31) transitions the 12 gauge MGS railing section to a heavier gage nested thrie beam railing section which is connected to the concrete bridge railing.
4. For typical use of Connection Detail AA, see Layout Types 12A and 12B on Revised Standard Plan RSP A77Q1, Layout Types 12C and 12D on Revised Standard Plan RSP A77Q2, and Layout Type 12E on Revised Standard Plan RSP A77Q3.
5. For typical use of Connection Detail BB, see Layout Type 12D (structure departure railing connection) on Revised Standard Plan RSP A77Q2 and Layout Type 12DD on Revised Standard Plan RSP A77Q5.
6. Where the height of the bridge railing exceeds the height of the thrie beam railing by more than 1" at Connection Detail AA, taper the top of the end of the bridge railing at 4:1 to match the top elevation of the thrie beam rail.
7. For details of End Cap (Type TC), see Revised Standard Plan RSP A77U4.
8. See Revised Standard Plan RSP A77U4 for additional details regarding depth dimension for straight metal box spacer.



**STRAIGHT METAL BOX SPACER**

**MIDWEST GUARDRAIL SYSTEM CONNECTIONS TO BRIDGE RAILINGS WITHOUT SIDEWALKS DETAILS No. 1**

NO SCALE

RSP A77U1 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77U1**

2010 REVISED STANDARD PLAN RSP A77U1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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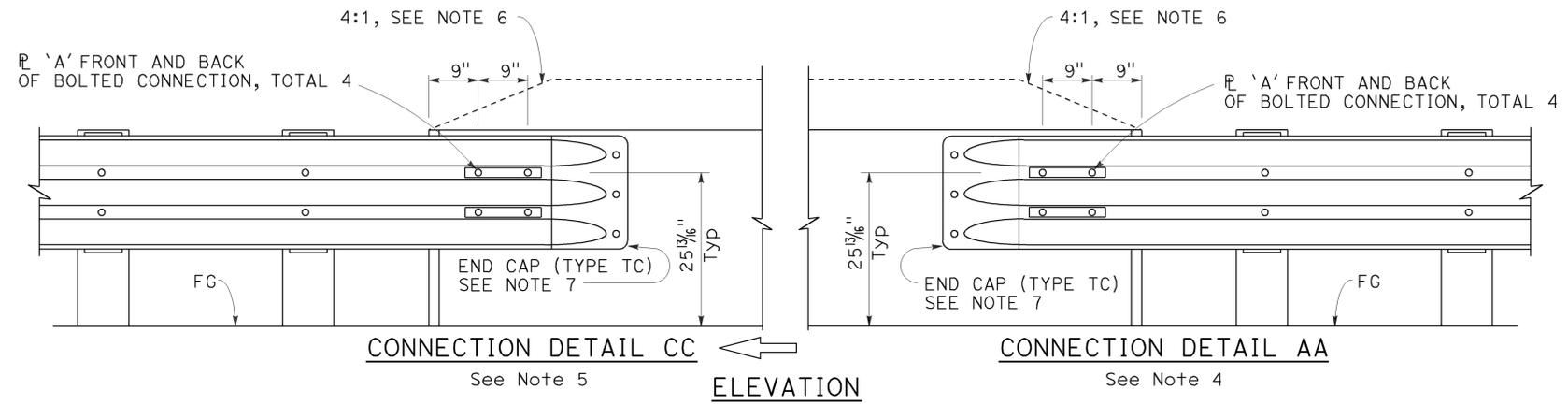
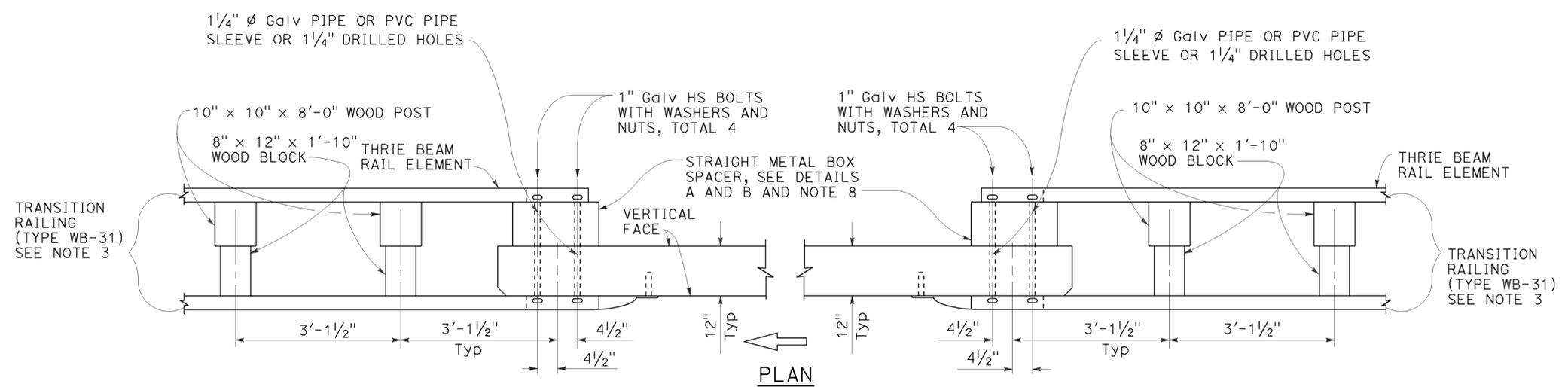
**Randell D. Hiatt**  
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July 19, 2013  
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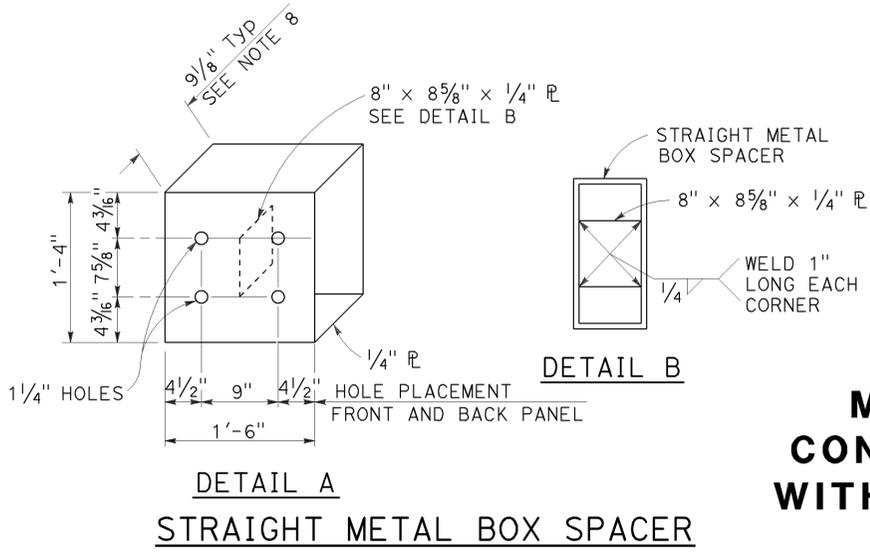
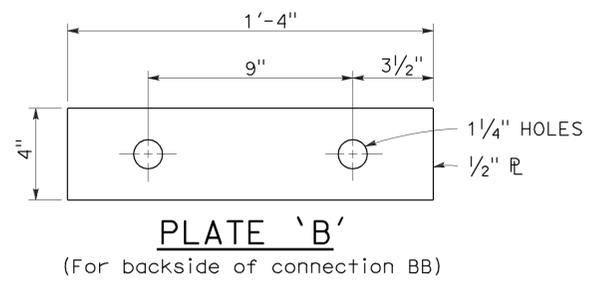
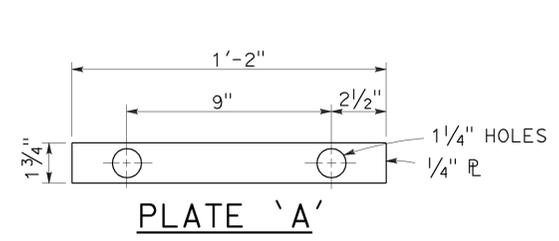
TO ACCOMPANY PLANS DATED 01-20-15



**MIDWEST GUARDRAIL SYSTEM CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK**

**NOTES:**

1. See Revised Standard Plan RSP A77U1 for additional connection details to bridges without sidewalks.
2. Additional details of posts, blocks and hardware are shown on Revised Standard Plans RSP A77M1, RSP A77N1 and RSP A77N2.
3. For additional details of Transition Railing (Type WB-31), see Revised Standard Plan RSP A77U4. Transition Railing (Type WB-31) transitions the 12 gauge MGS railing section to a heavier gage nested thrie beam railing section which is connected to the concrete bridge railing.
4. For typical use of Connection Detail AA, see Layout Types 12A and 12B on Revised Standard Plan RSP A77Q1, Layout Types 12C and 12D on Revised Standard Plan RSP A77Q2, and Layout Type 12E on Revised Standard Plan RSP A77Q3.
5. For typical use of Connection Detail CC, see Layout Types 12AA and 12BB on Revised Standard Plan RSP A77Q4 and Layout Type 12CC on Revised Standard Plan RSP A77Q5.
6. Where the height of the bridge railing exceeds the height of the thrie beam railing by more than 1" at Connection Detail AA and connection Detail CC, taper the top of the end of the bridge railing at 4:1 to match the top elevation of the thrie beam railing.
7. For details of End Cap (Type TC), see Revised Standard Plan RSP A77U4.
8. See Revised Standard Plan RSP A77U4 for additional details regarding depth dimension for straight metal box spacer.



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DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM  
CONNECTIONS TO BRIDGE RAILINGS  
WITHOUT SIDEWALKS DETAILS No. 2**

NO SCALE

RSP A77U2 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77U2**

2010 REVISED STANDARD PLAN RSP A77U2

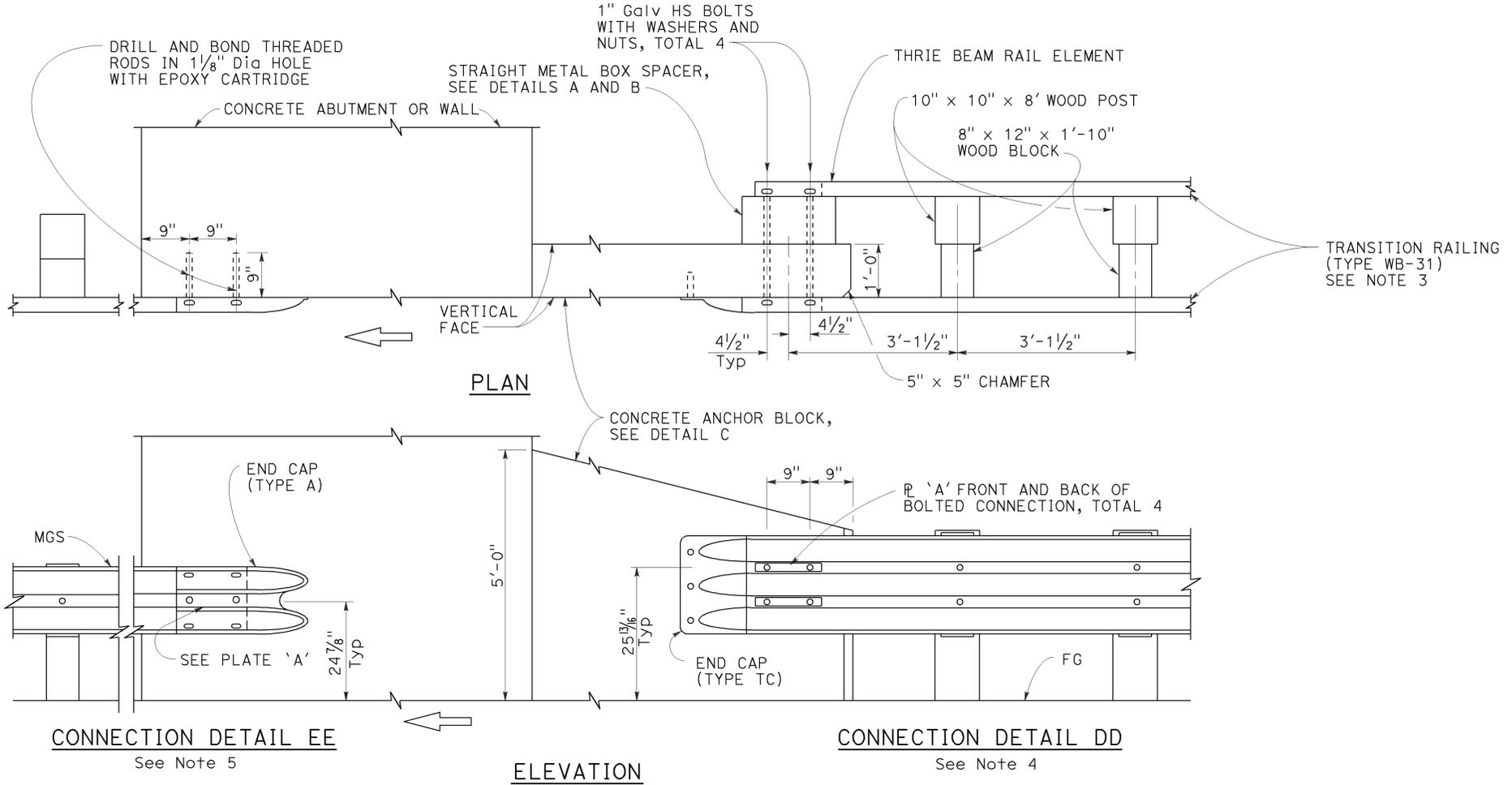
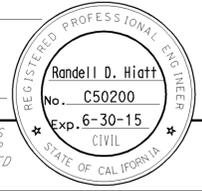
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	229	302

**Randell D. Hiatt**  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

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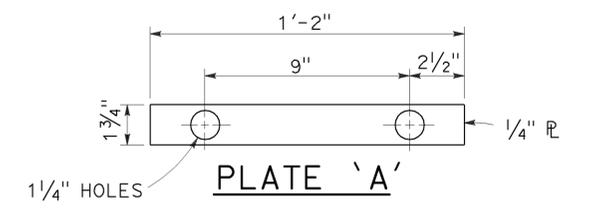
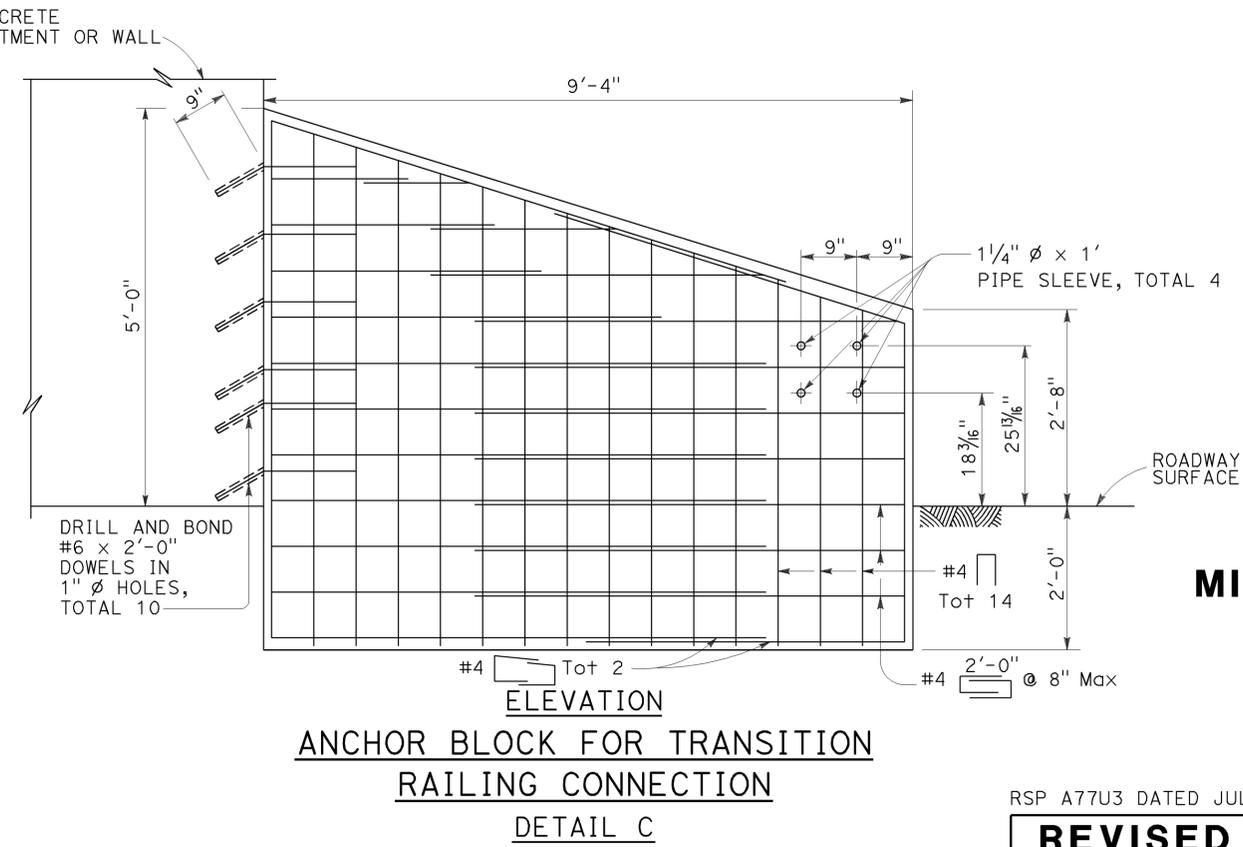
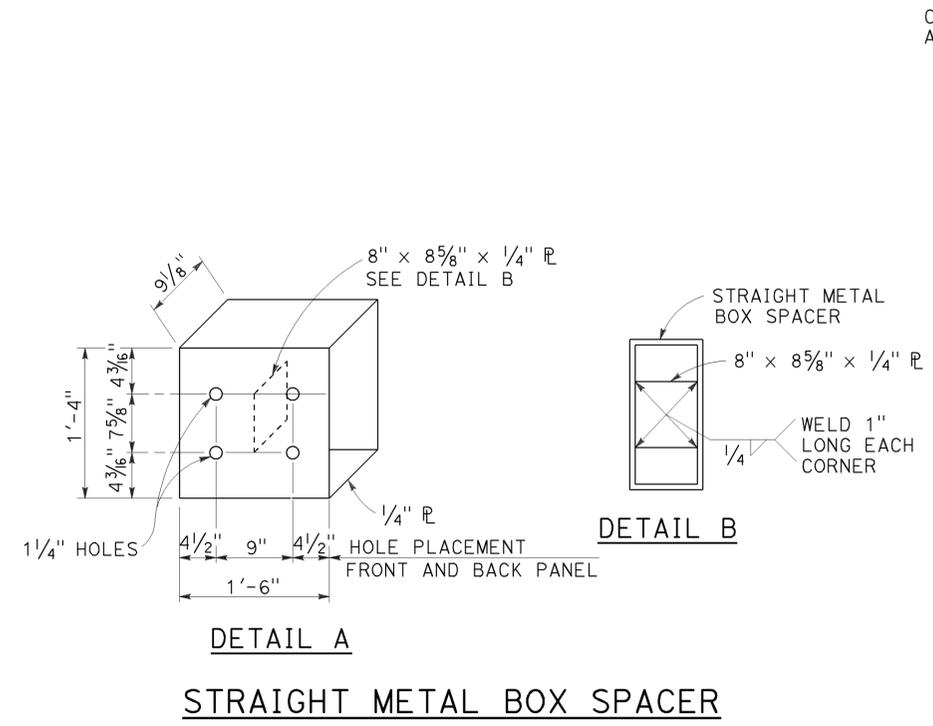
TO ACCOMPANY PLANS DATED 01-20-15



**NOTES:**

1. These connection details apply to abutments and walls.
2. Additional details of posts, blocks and hardware are shown on Revised Standard Plans RSP A77M1, RSP A77N1 and RSP A77N2.
3. For additional details of Transition Railing (Type WB-31), see Revised Standard Plan RSP A77U4. Transition Railing (Type WB-31) transitions the 12 gauge MGS railing section to a heavier gage nested thrie beam railing section which is connected to the concrete anchor block.
4. For typical use of Connection Details DD, see Layout Types 12A and 12B on Revised Standard Plan RSP A77Q1 and Layout Types 12C and 12D on Revised Standard Plan RSP A77Q2.
5. For typical use of Connection Detail EE, see Layout Type 12D on Revised Standard Plan RSP A77Q2 and Layout Type 12DD on Revised Standard Plan RSP A77Q5.

**MIDWEST GUARDRAIL SYSTEM CONNECTION TO ABUTMENT OR WALL**



**MIDWEST GUARDRAIL SYSTEM CONNECTIONS TO ABUTMENTS AND WALLS**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

NO SCALE

RSP A77U3 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77U3**

2010 REVISED STANDARD PLAN RSP A77U3

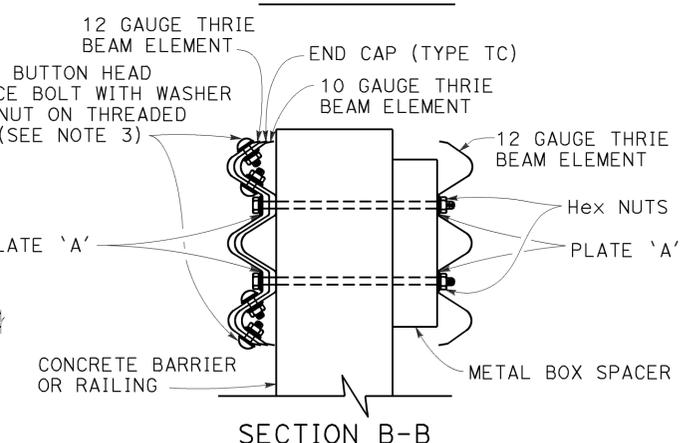
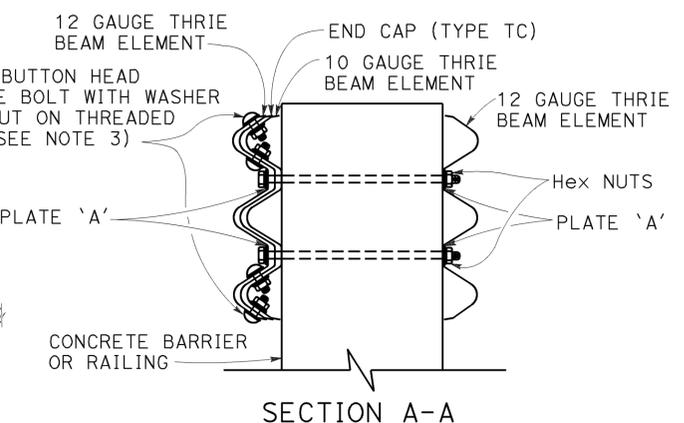
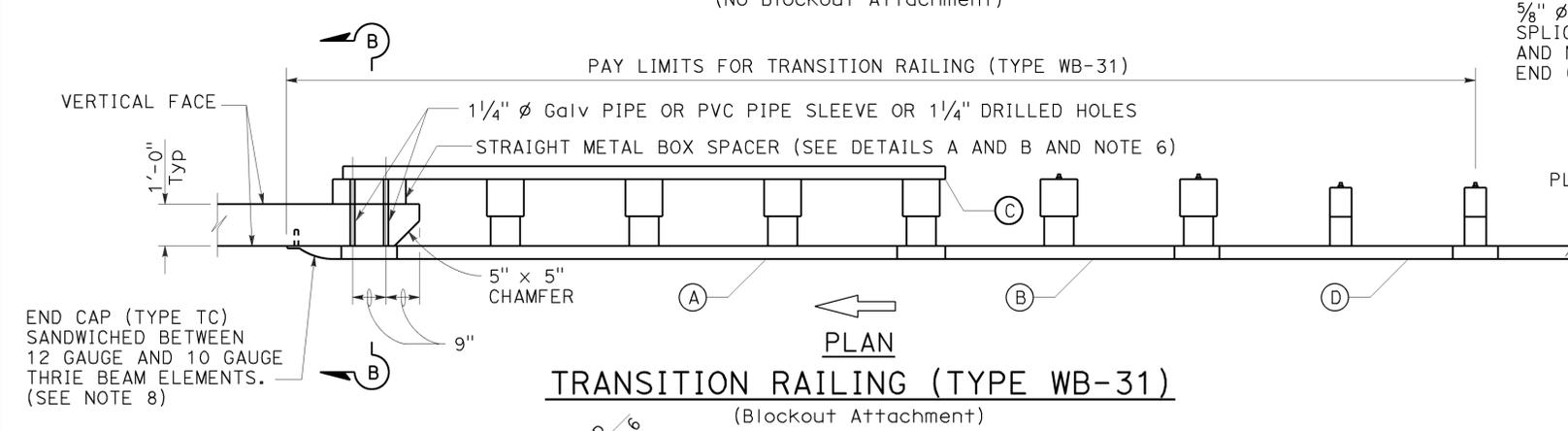
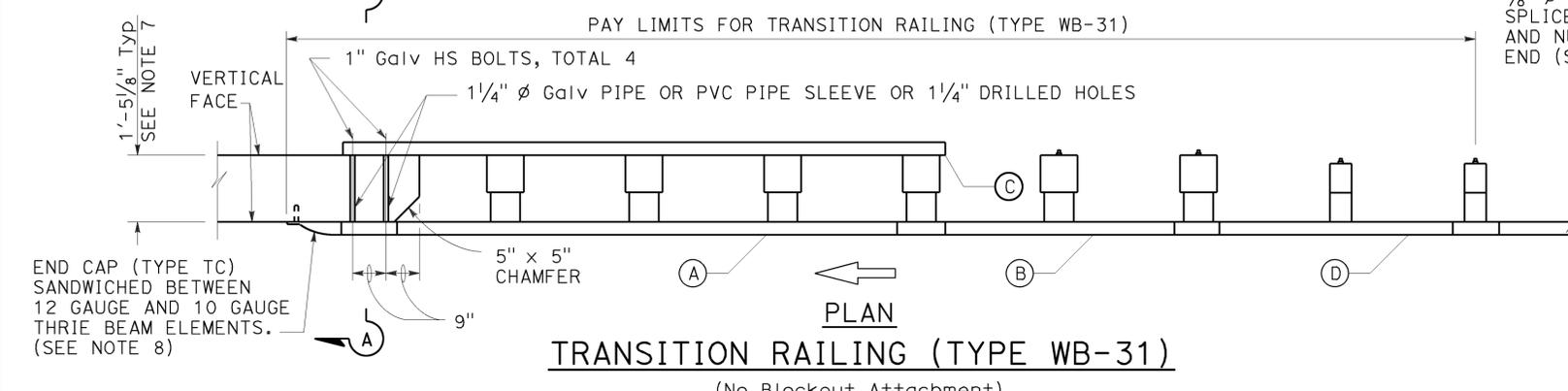
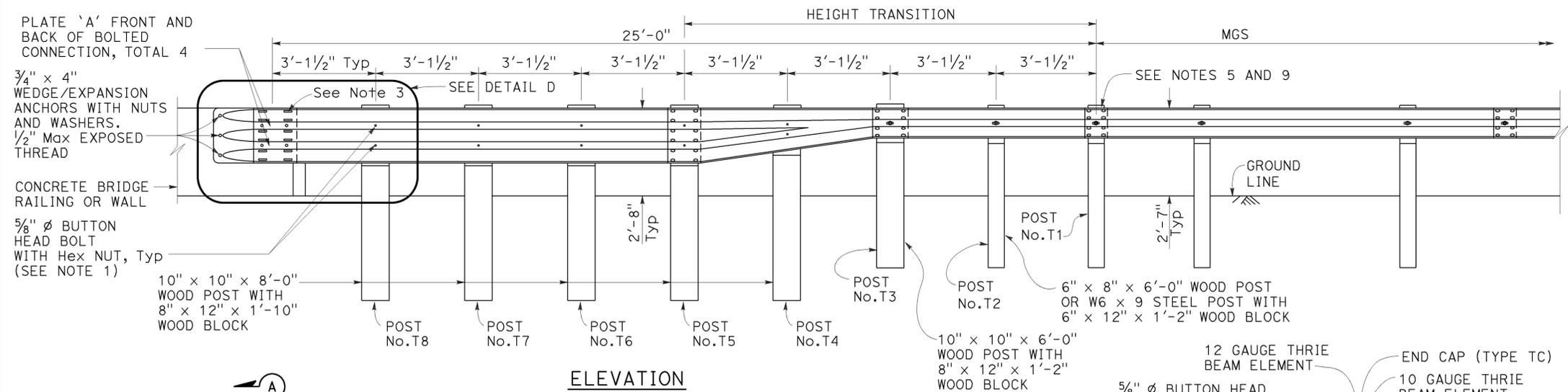
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	230	302

**Randell D. Hiatt**  
REGISTERED CIVIL ENGINEER

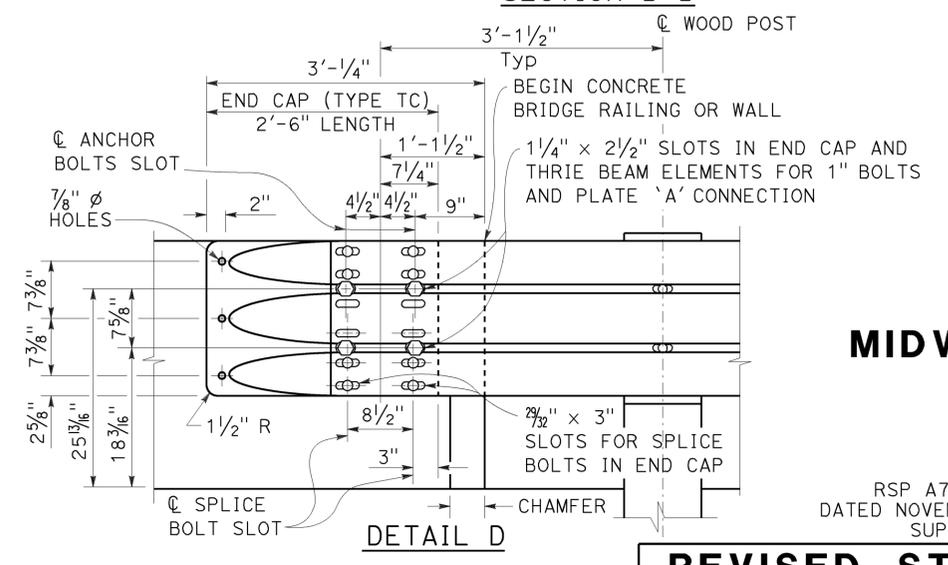
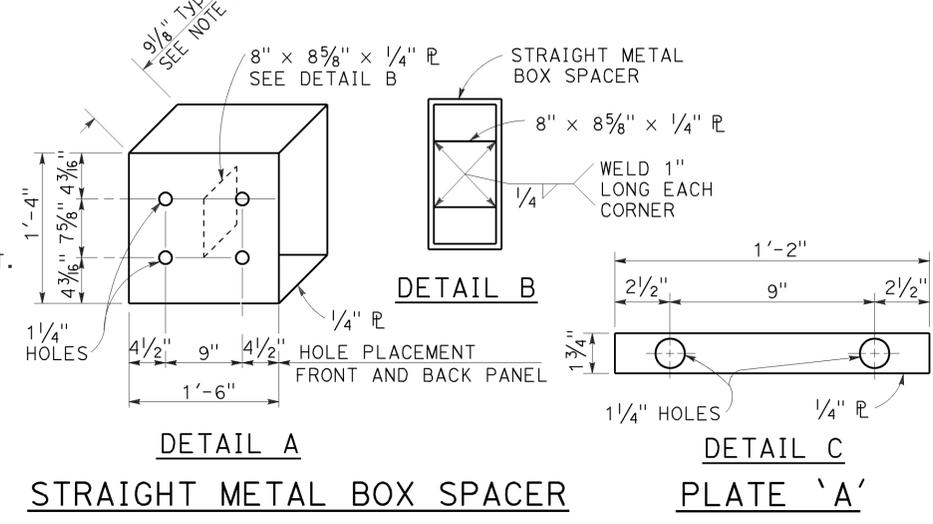
January 23, 2015  
PLANS APPROVAL DATE

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

REGISTERED PROFESSIONAL ENGINEER  
No. C50200  
Exp. 6-30-15  
CIVIL  
STATE OF CALIFORNIA



- LEGEND:**
- (A) NESTED THRIE BEAM ELEMENTS (ONE 12 GAUGE ELEMENT NESTED OVER ONE 10 GAUGE ELEMENT).
  - (B) ONE ASYMMETRICAL 10 GAUGE "W" BEAM TO THRIE BEAM ELEMENT.
  - (C) ONE 12 GAUGE THRIE BEAM ELEMENT.
  - (D) ONE 10 GAUGE "W" BEAM RAIL ELEMENT (7'-3/2" LENGTH)
- 10 GAUGE = 0.138" THICK  
12 GAUGE = 0.108" THICK



- NOTES:** TO ACCOMPANY PLANS DATED 01-20-15
1. Use 5/8"  $\phi$  Button head bolts and hex nuts for connections to posts. No washer on rail face for bolted connections to post.
  2. The nested rail elements, end cap, and "W" beam to thrie beam element may be spliced together prior to bolting the elements to the wood post and concrete barrier or railing.
  3. Exterior splice bolt holes for rail element splices at Post No. T5 and the connection to the concrete barrier or railing shall be the standard 29/32" x 1/8" slot size. Interior splice bolt holes at these locations may be increased up to 1/4"  $\phi$ . Only the top 4 and the bottom 4 splice bolts with washers and nuts are required for rail splices at Post No. T5 and the connection to the concrete barrier or railing.
  4. The top elevation of Posts No. T2 through No. T7 shall not project more than 1" above the top elevation of the rail element.
  5. Typically, the railing connected to Transition Railing (Type WB-31) will be either standard railing section of MGS with height transition ratio of 150:1 or a Caltrans approved 31" end treatment attached to Post No. T1.
  6. The depth of the metal box spacer varies from the 9/8" to 1/2" and is dependent on the width of the concrete railing or wall. The combined dimension for the depth of the metal box spacer plus the width of railing or wall is typically 21 1/8". Where the space between the backside of the concrete railing or wall and the rear thrie beam element is less than 1 1/2", metal plates similar to Plate 'A' are to be used as spacers.
  7. Where the width of the concrete railing or wall is greater than 17 1/8", wood blocks are to be used to fill the space created between the backside of Posts No. T5 through No. T8 and the rear thrie beam element. These wood blocks shall be 8" in width and 1'-2" in length. The dimension between the front thrie beam element and the rear thrie beam element is to match the width of the concrete railing or wall.
  8. End cap may be installed over 12 gauge and 10 gauge thrie beam elements where transition railing is installed on the departure end of bridge railing.
  9. Conform standard railing section height to 31" at Post No. T1 using height transition ratio of 150:1.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM  
TRANSITION RAILING  
(TYPE WB-31)**

NO SCALE

RSP A77U4 DATED JANUARY 23, 2015 SUPERSEDES RSP A77U4 DATED NOVEMBER 15, 2013 AND RSP A77U4 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77U4**

2010 REVISED STANDARD PLAN RSP A77U4

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	231	302

Randell D. Hiatt  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

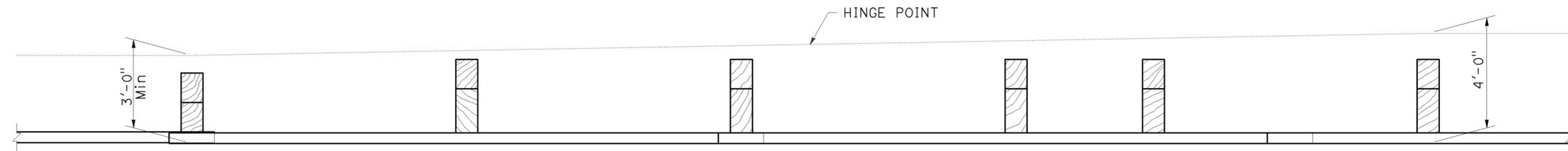
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REGISTERED PROFESSIONAL ENGINEER  
Randell D. Hiatt  
No. C50200  
Exp. 6-30-15  
CIVIL  
STATE OF CALIFORNIA

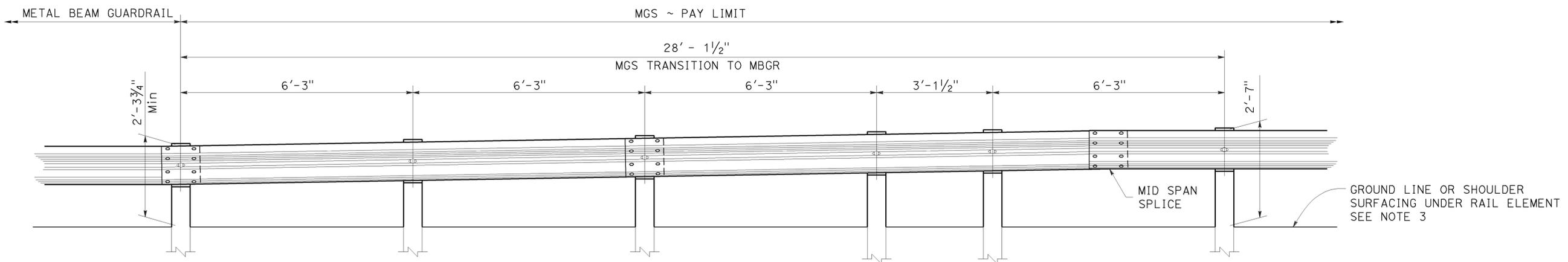
TO ACCOMPANY PLANS DATED 01-20-15

**NOTES:**

1. Refer to Revised Standard Plans RSP A77L1 and RSP A77L2 for component details for MGS not shown on this plan.
2. All posts for any standard barrier run shall be of the same type: Wood or Steel.
3. Install posts in soil.



**PLAN**



**ELEVATION**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

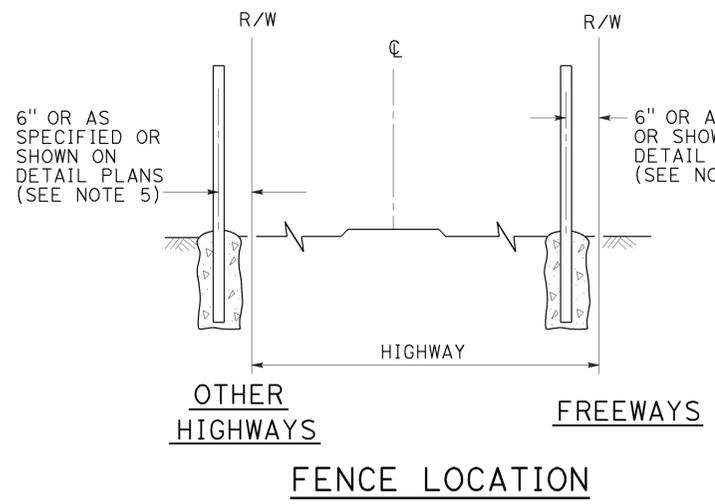
**MIDWEST GUARDRAIL SYSTEM  
TRANSITION TO METAL BEAM GUARDRAIL**

NO SCALE

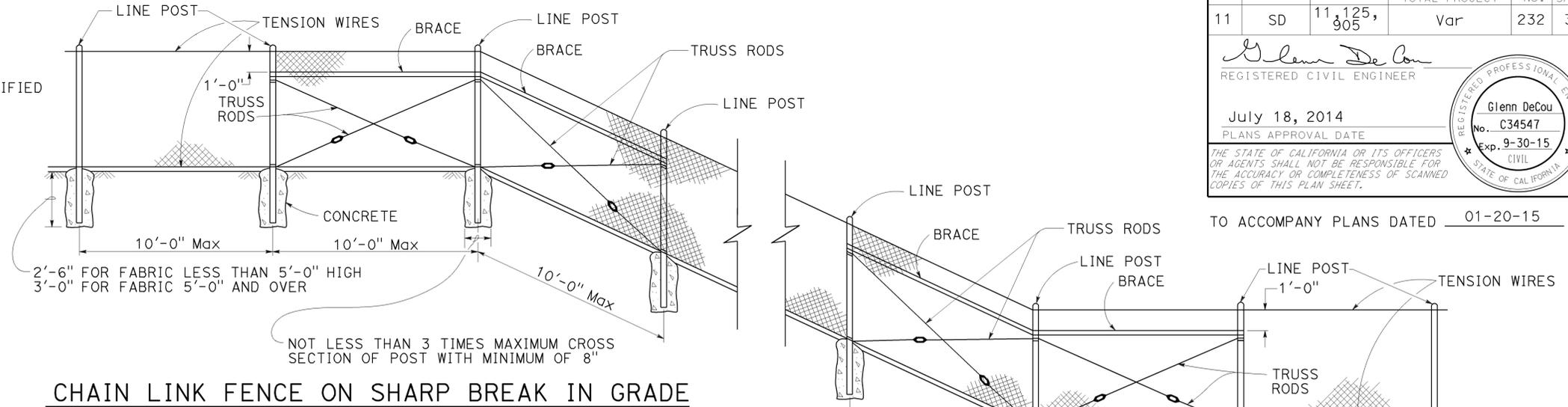
RSP A77U5 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77U5**

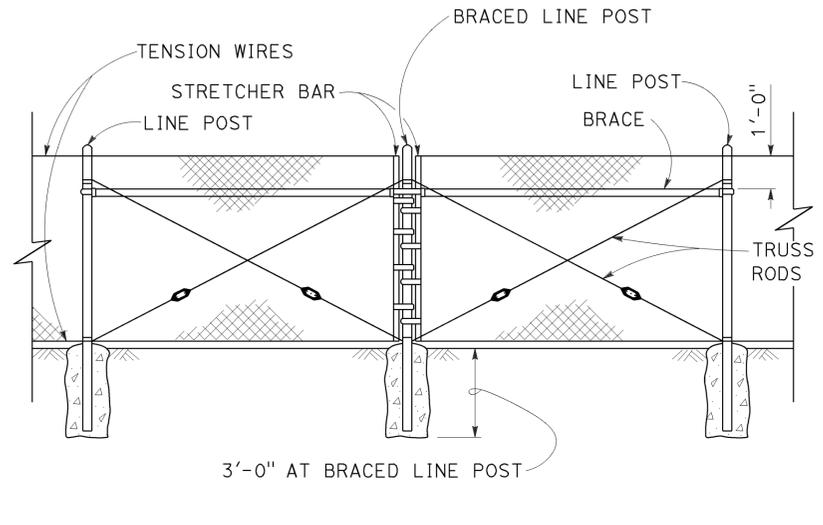
2010 REVISED STANDARD PLAN RSP A77U5



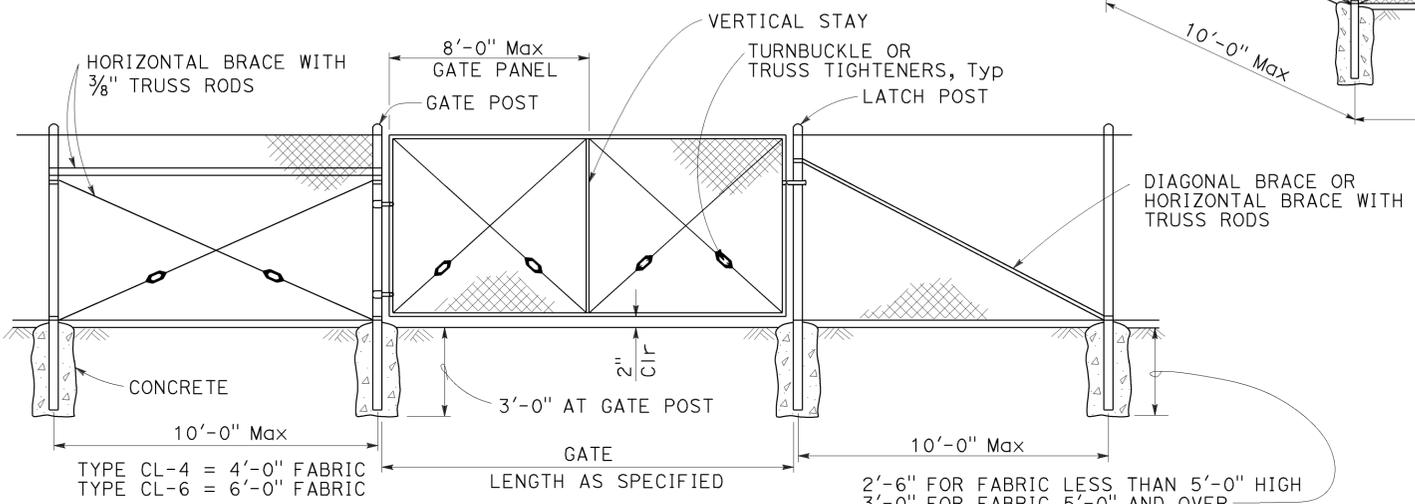
**FENCE LOCATION**



**CHAIN LINK FENCE ON SHARP BREAK IN GRADE**



**BRACED LINE POST INSTALLATION**  
Braced line post at intervals not exceeding 1000'



**CHAIN LINK GATE INSTALLATION**

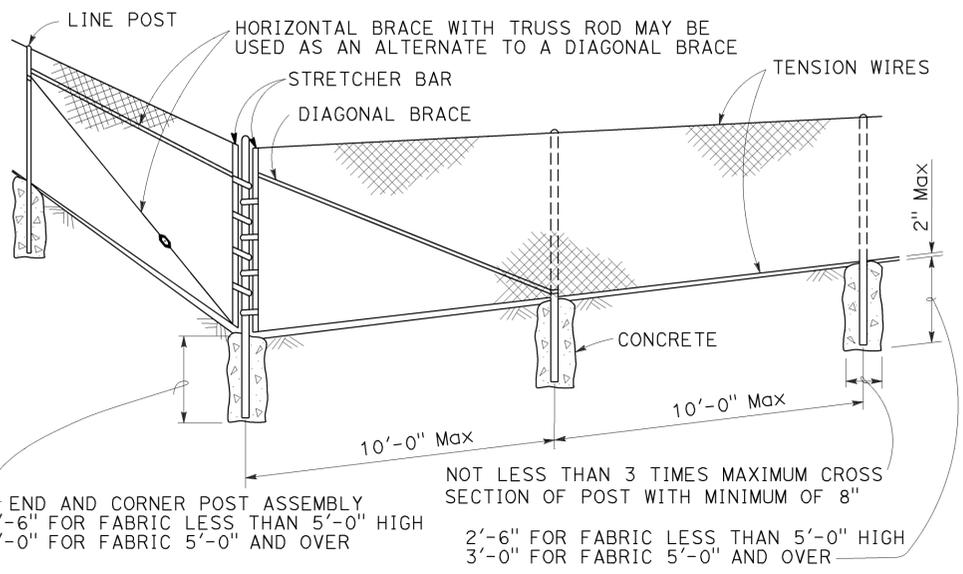
GATE POST			
FENCE HEIGHT	GATE WIDTHS	ROUND OD PIPE	WEIGHT (lb/ft)
6'-0" AND LESS	UP THRU 6'-0"	2.875"	5.80
	OVER 6'-0" THRU 12'-0"	4.500"	10.80
	OVER 12'-0" THRU 18'-0"	5.563"	14.63
OVER 6'-0" TO 8'-0" Max	OVER 18'-0" TO 24'-0" Max	6.625"	18.99
	UP THRU 6'-0"	3.500"	7.58
	OVER 6'-0" THRU 12'-0"	5.563"	14.63
	OVER 12'-0" THRU 18'-0"	6.625"	18.99
	OVER 18'-0" TO 24'-0" Max	8.625"	28.58

Above post dimensions and weights are minimums. Larger sizes may be used upon approval.

**NOTES:**

- The table below shows minimum sized posts and braces complying with the specifications. Larger or heavier post and brace sizes may be used upon approval.
- Sections shown in the tables must also comply with the strength requirements and other provisions of the Specifications.
- Other sections which comply with the strength requirements and other provisions of the Specifications may be used upon approval.
- Options exercised shall be uniform on any one project.
- Offset to be 2'-0" at monument locations, measured at right angles to R/W lines. Taper to achieve offset to be at least 20'-0" long.
- See Revised Standard Plan RSP A85B for Brace, Stretcher Bar, and Truss Tightener Details.

FENCE HEIGHT	TYPICAL MEMBER DIMENSIONS (See Notes)									
	LINE POSTS				END, LATCH AND CORNER POSTS		BRACES			
	ROUND OD PIPE	WEIGHT (lb/ft)	ROLL FORMED		ROUND OD PIPE	WEIGHT (lb/ft)	ROUND OD PIPE	WEIGHT (lb/ft)	ROLL FORMED	
			SECTION	WEIGHT (lb/ft)					SECTION	WEIGHT (lb/ft)
6'-0" AND LESS	1.900"	2.72	1.875" x 1.625"	1.85	2.375"	3.65	1.66"	2.27	1.625" x 1.25"	1.35
OVER 6'-0" TO 8'-0" Max	2.375"	3.65	2.25" x 1.70"	2.78	2.875"	5.80	1.66"	2.27	1.625" x 1.25"	1.35



**CORNER POST**

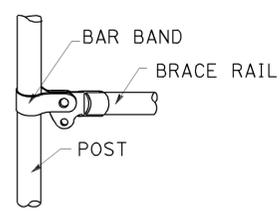
RSP A85 DATED JULY 18, 2014 SUPERSEDES STANDARD PLAN A85 DATED MAY 20, 2011 - PAGE 112 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP A85

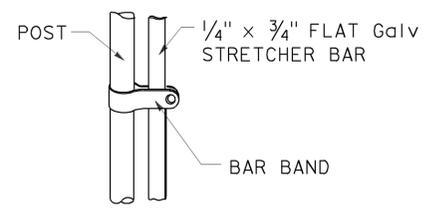
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	233	302

Glenn DeCou  
 REGISTERED CIVIL ENGINEER  
 October 19, 2012  
 PLANS APPROVAL DATE  
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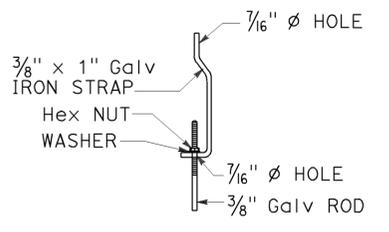
REGISTERED PROFESSIONAL ENGINEER  
 Glenn DeCou  
 No. C34547  
 Exp. 9-30-13  
 CIVIL  
 STATE OF CALIFORNIA



**BRACE RAIL**



**STRETCHER BAR**

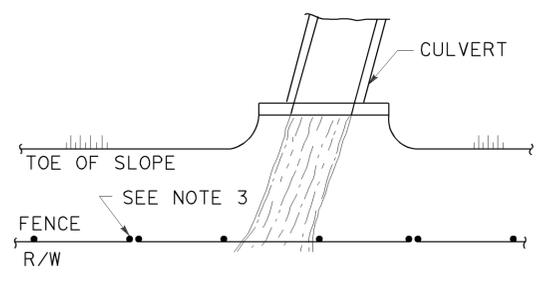


**TRUSS TIGHTENER**

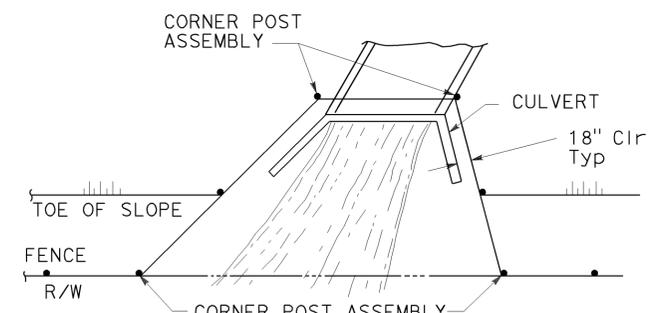
**NOTES:**

1. All material for abutment connection to be galvanized.
2. The chain link fabric shall be replaced by barbed wire strands at 12" maximum centers between the double posts.
3. When the width of the culvert makes it necessary to anchor a post to the top of the culvert, a cast iron shoe or other device approved by the Engineer shall be used.
4. Fencing over stream and around headwall may also use Barbed Wire or Wire Mesh fencing with either wood post or steel post installation.
5. See Standard Plan A85 for Chain Link fence dimensions. See Standard Plan A86 for Barbed Wire and Wire Mesh fence dimensions and for wood post and steel post installation.

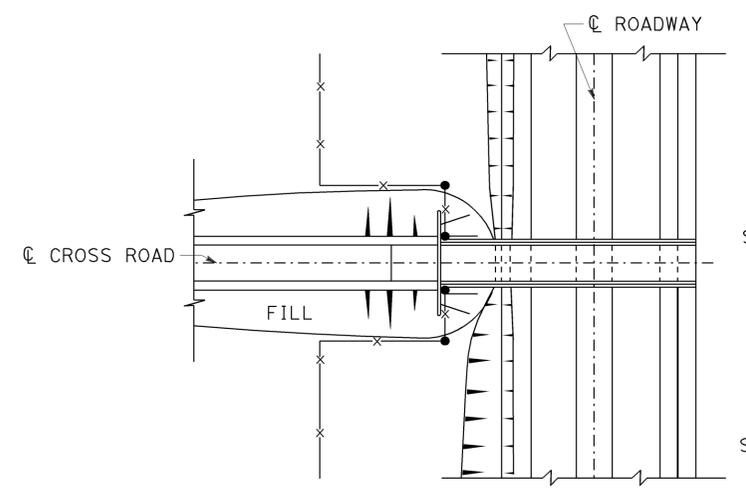
TO ACCOMPANY PLANS DATED 01-20-15



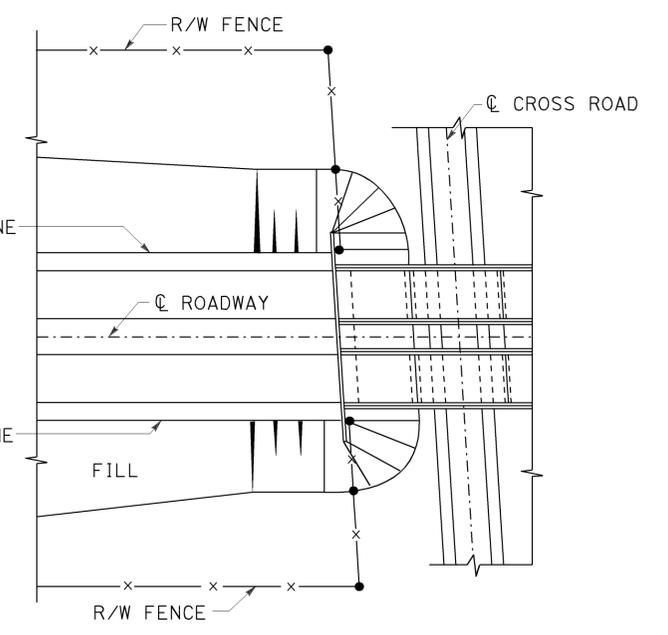
**PLAN**



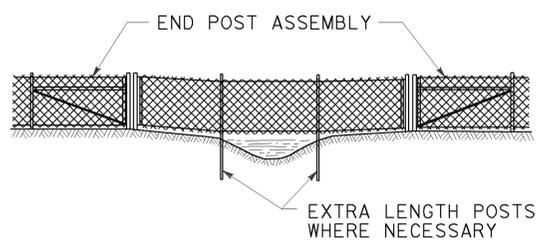
**PLAN**



**PLAN OF ROADWAY - OVERCROSSING**

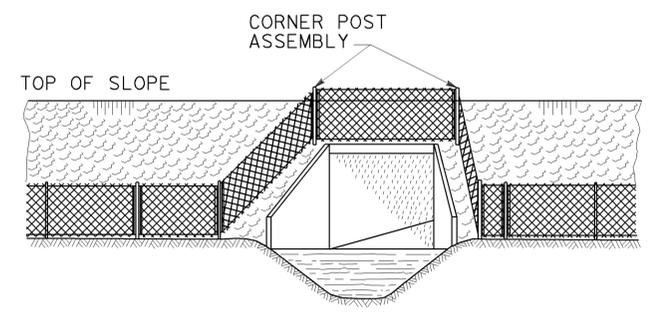


**PLAN OF ROADWAY - UNDERCROSSING**



**ELEVATION**

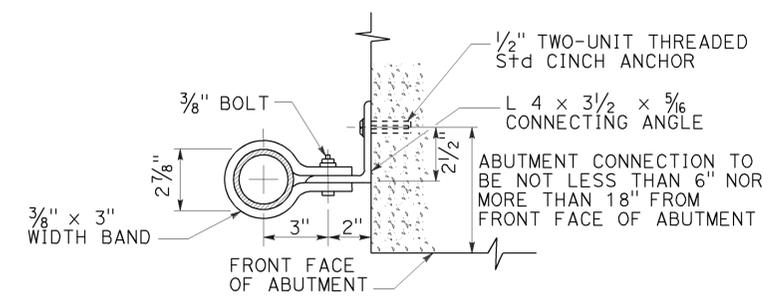
**INSTALLATION OVER STREAM**



**ELEVATION**

**INSTALLATION AROUND HEADWALL**

See Note 4



**ABUTMENT CONNECTION**

**TYPICAL INSTALLATION AT BRIDGES**

ABUTMENT CONNECTION TO BE NOT LESS THAN 6" NOR MORE THAN 18" FROM FRONT FACE OF ABUTMENT

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**CHAIN LINK FENCE DETAILS**

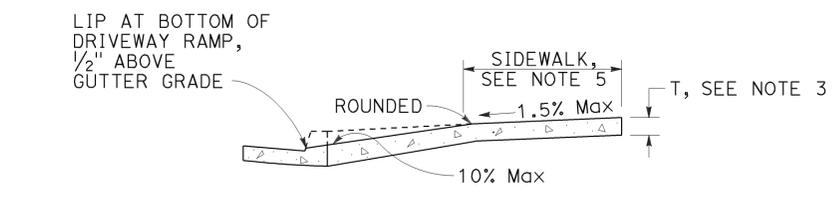
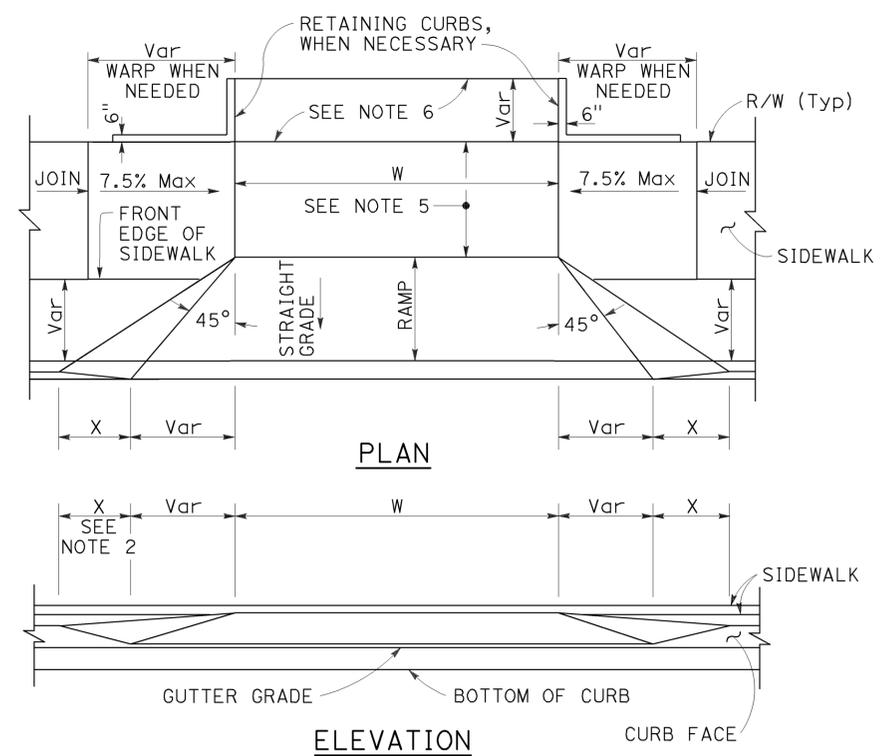
NO SCALE

RSP A85B DATED OCTOBER 19, 2012 SUPERSEDES STANDARD PLAN A85B DATED MAY 20, 2011 - PAGE 114 OF THE STANDARD PLANS BOOK DATED 2010.

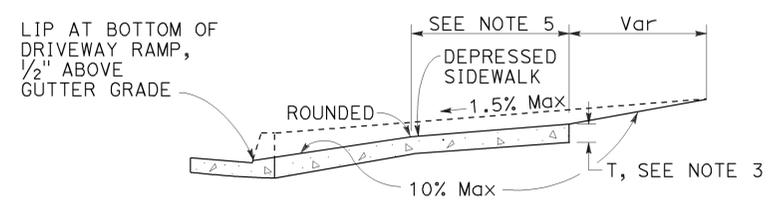
**REVISED STANDARD PLAN RSP A85B**

2010 REVISED STANDARD PLAN RSP A85B

TO ACCOMPANY PLANS DATED 01-20-15



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



**CASE B**  
Driveway with depressed sidewalk

**SECTIONS**

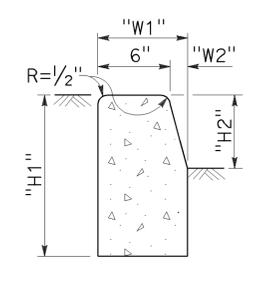
**TABLE A**

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

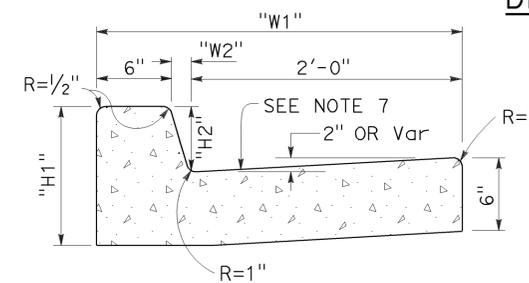
**CURB QUANTITIES**

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

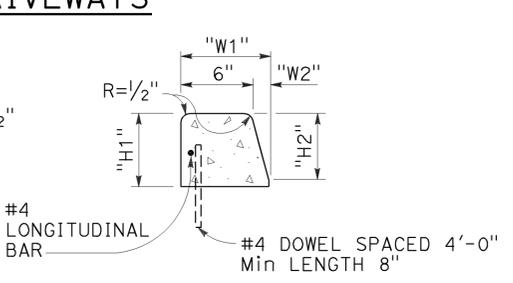
**DRIVEWAYS**



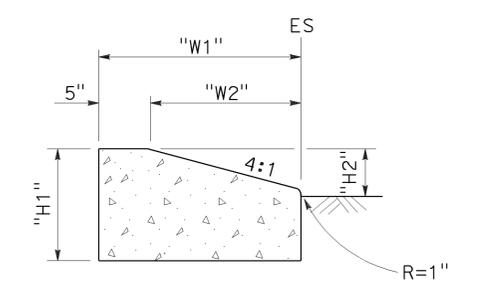
**TYPE A1 CURBS**  
See Table A



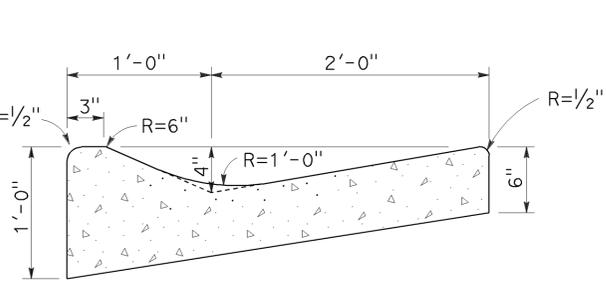
**TYPE A2 CURBS**  
See Table A



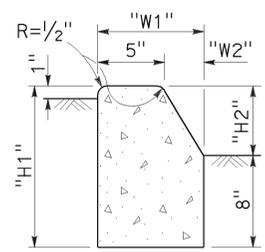
**TYPE A3 CURBS**  
Superimposed on existing pavement  
See Table A



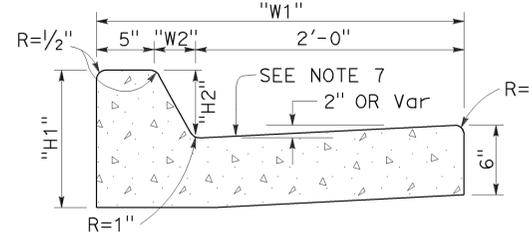
**TYPE D CURBS**  
See Table A



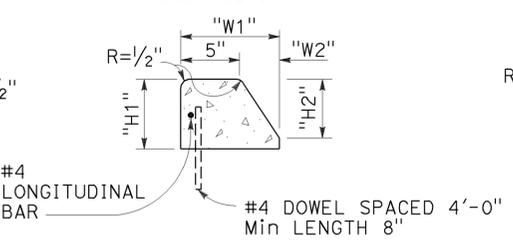
**TYPE E CURB**



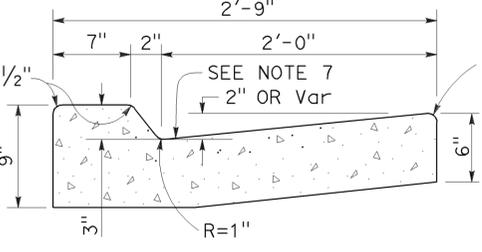
**TYPE B1 CURBS**  
See Table A



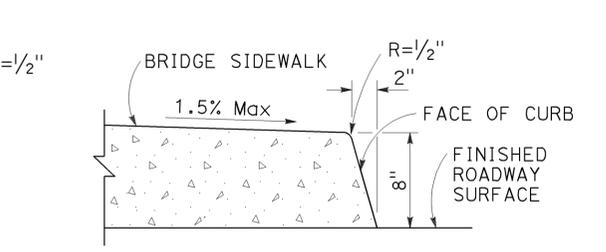
**TYPE B2 CURBS**  
See Table A



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



**TYPE B4 CURBS**



**TYPE H CURB**  
On Bridges

**CURBS**

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

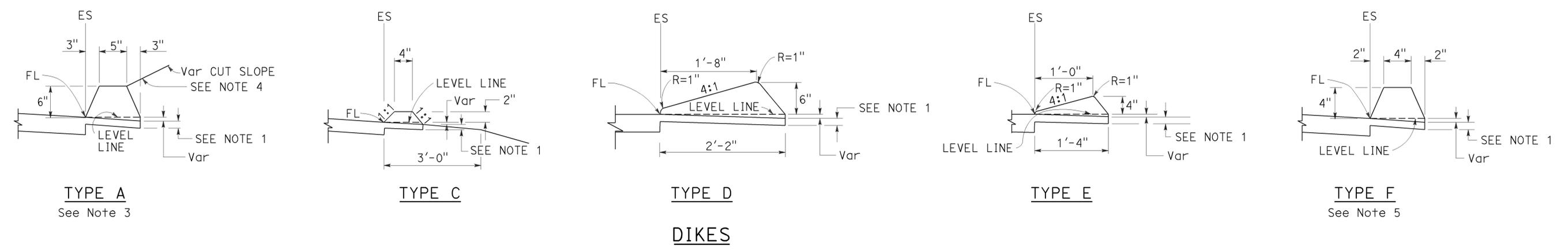
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**CURBS AND DRIVEWAYS**

NO SCALE

2010 REVISED STANDARD PLAN RSP A87A

TO ACCOMPANY PLANS DATED 01-20-15



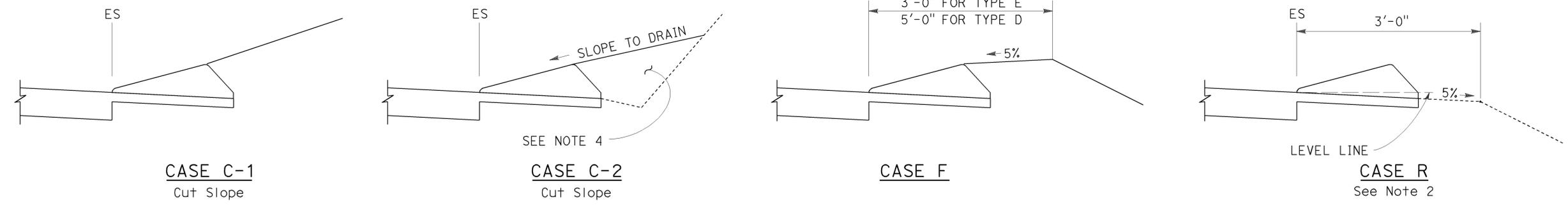
**TYPE A**  
See Note 3

**TYPE C**

**TYPE D**

**TYPE E**

**TYPE F**  
See Note 5



**CASE C-1**  
Cut Slope

**CASE C-2**  
Cut Slope

**CASE F**

**CASE R**  
See Note 2

**NOTES:**

- For HMA shoulders only, extend top layer of HMA placed on the shoulder under dike with no joint at the ES. For projects with OGFC shoulders, do not extend OGFC under dike. See project plans for modified dike detail.
- Case R applies to retrofit only projects where restrictive conditions do not provide enough width for Case F backfill.
- Type A dike only to be used where restrictive slope conditions do not provide enough width to use Type D or Type E dike.
- Fill and compact with excavated material to top of dike.
- Use Type F dike, where dike is required with guard railing installations. See Revised Standard Plan RSP A77N4 for dike positioning details.

**DIKE QUANTITIES**

TYPE	CUBIC YARDS PER LINEAR FOOT
A	0.0135
C	0.0038
D	0.0293
E	0.0130
F	0.0066

Quantities based on 5% cross slope.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**HOT MIX ASPHALT DIKES**  
NO SCALE

RSP A87B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN A87B  
DATED MAY 20, 2011 - PAGE 120 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP A87B

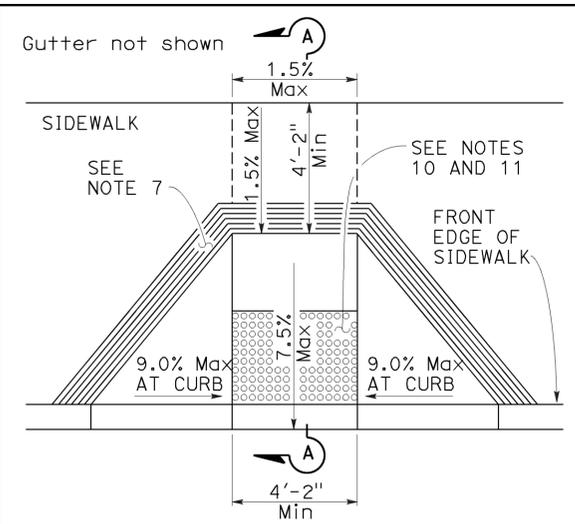
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	236	302

H. David Cordova  
REGISTERED CIVIL ENGINEER

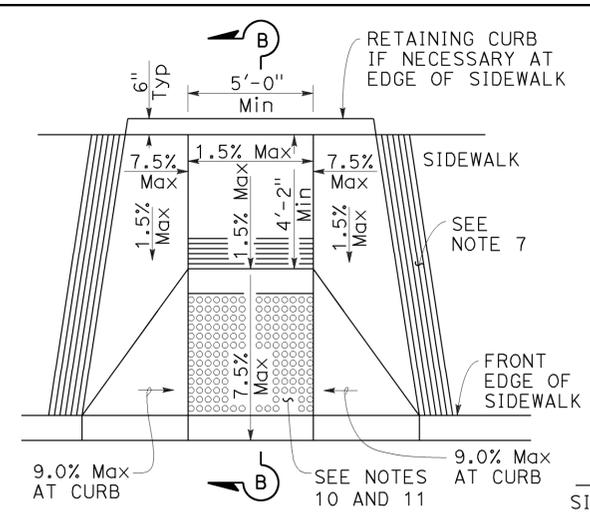
March 21, 2014  
PLANS APPROVAL DATE

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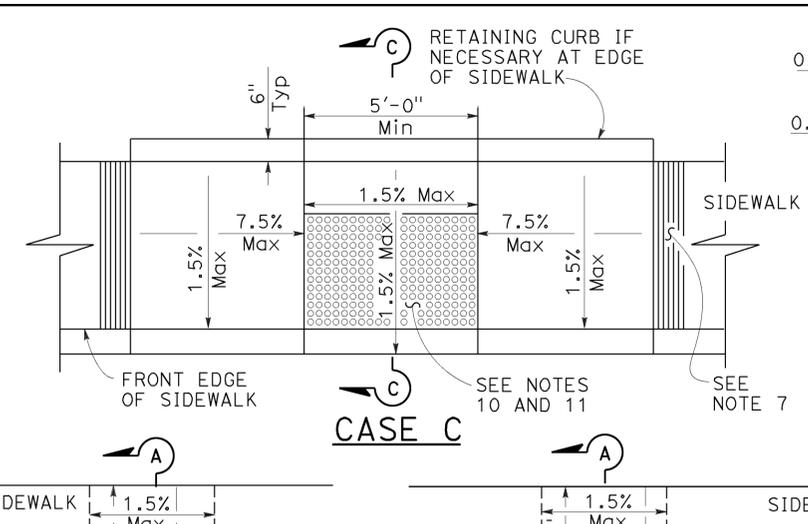
Hector David Cordova  
REGISTERED PROFESSIONAL ENGINEER  
No. C41957  
Exp. 3-31-14  
CIVIL  
STATE OF CALIFORNIA



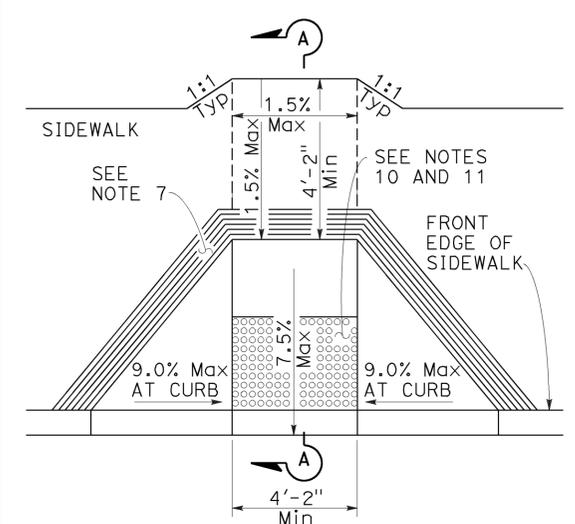
**CASE A**



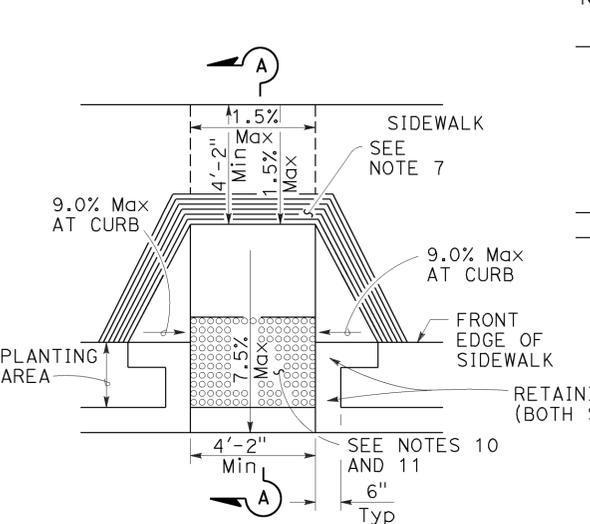
**CASE B**



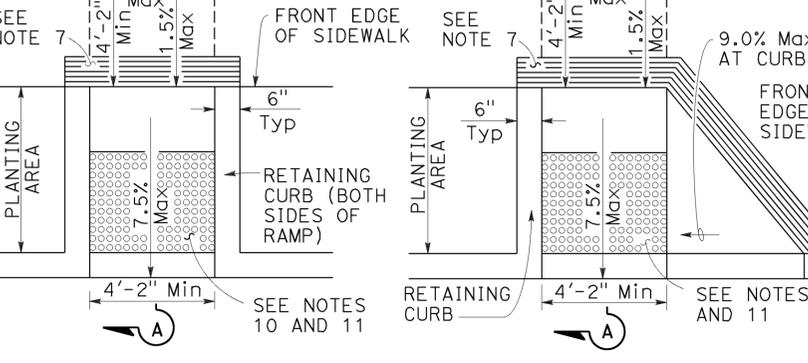
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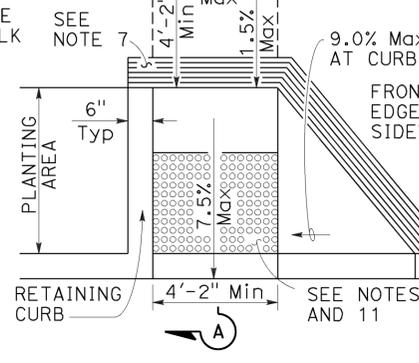
**CASE D**



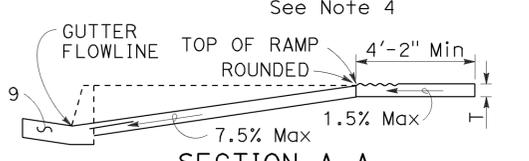
**CASE E**



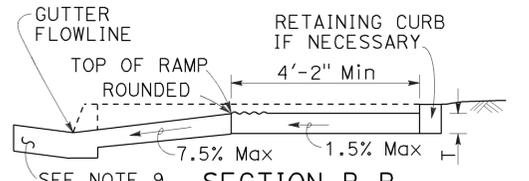
**CASE F**



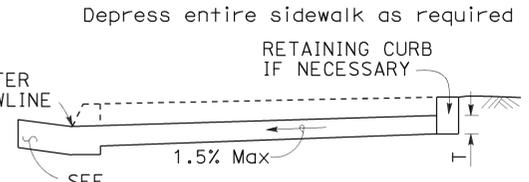
**CASE G**



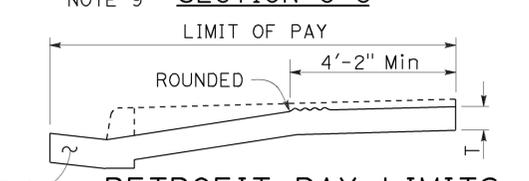
**SECTION A-A**



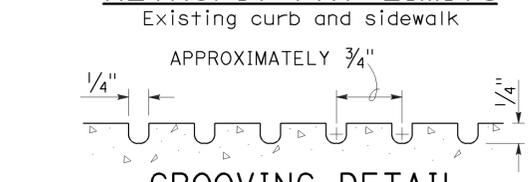
**SECTION B-B**



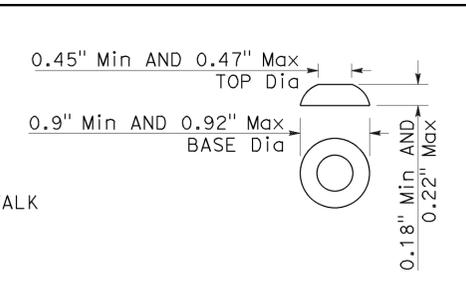
**SECTION C-C**



**RETROFIT PAY LIMITS**



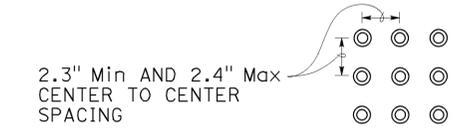
**GROOVING DETAIL**



**RAISED TRUNCATED DOME**

**NOTES:**

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

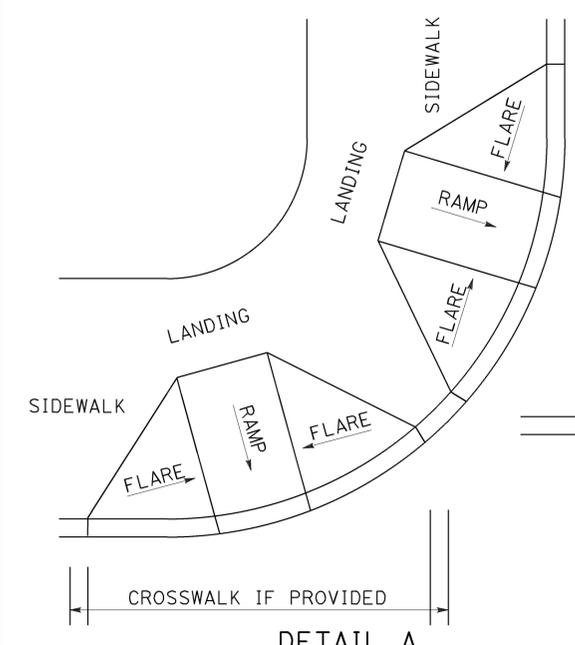


**RAISED TRUNCATED DOME PATTERN (IN-LINE) DETECTABLE WARNING SURFACE**

See Note 10

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

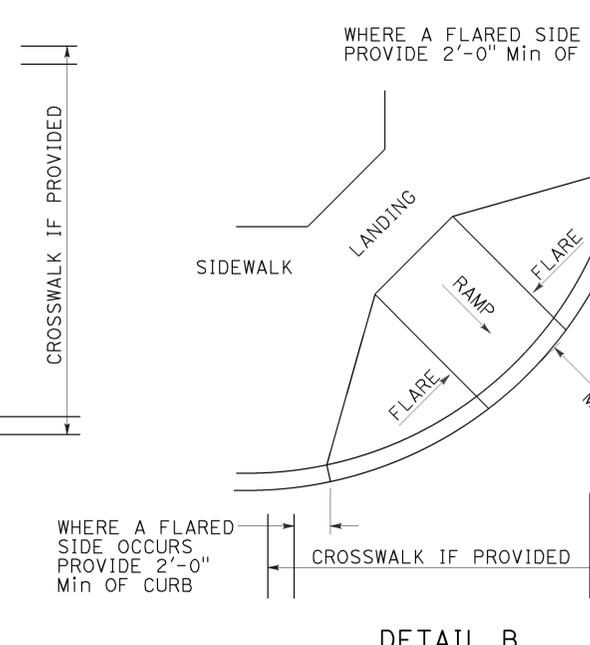
RSP A88A DATED MARCH 21, 2014 SUPERSEDES RSP A88A DATED JULY 19, 2013 AND STANDARD PLAN A88A DATED MAY 20, 2011 - PAGE 121 OF THE STANDARD PLANS BOOK DATED 2010.



**DETAIL A**

**TYPICAL TWO-RAMP CORNER INSTALLATION**

See Note 1



**DETAIL B**

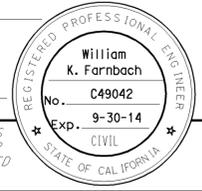
**TYPICAL ONE-RAMP CORNER INSTALLATION**

See Notes 1 and 3

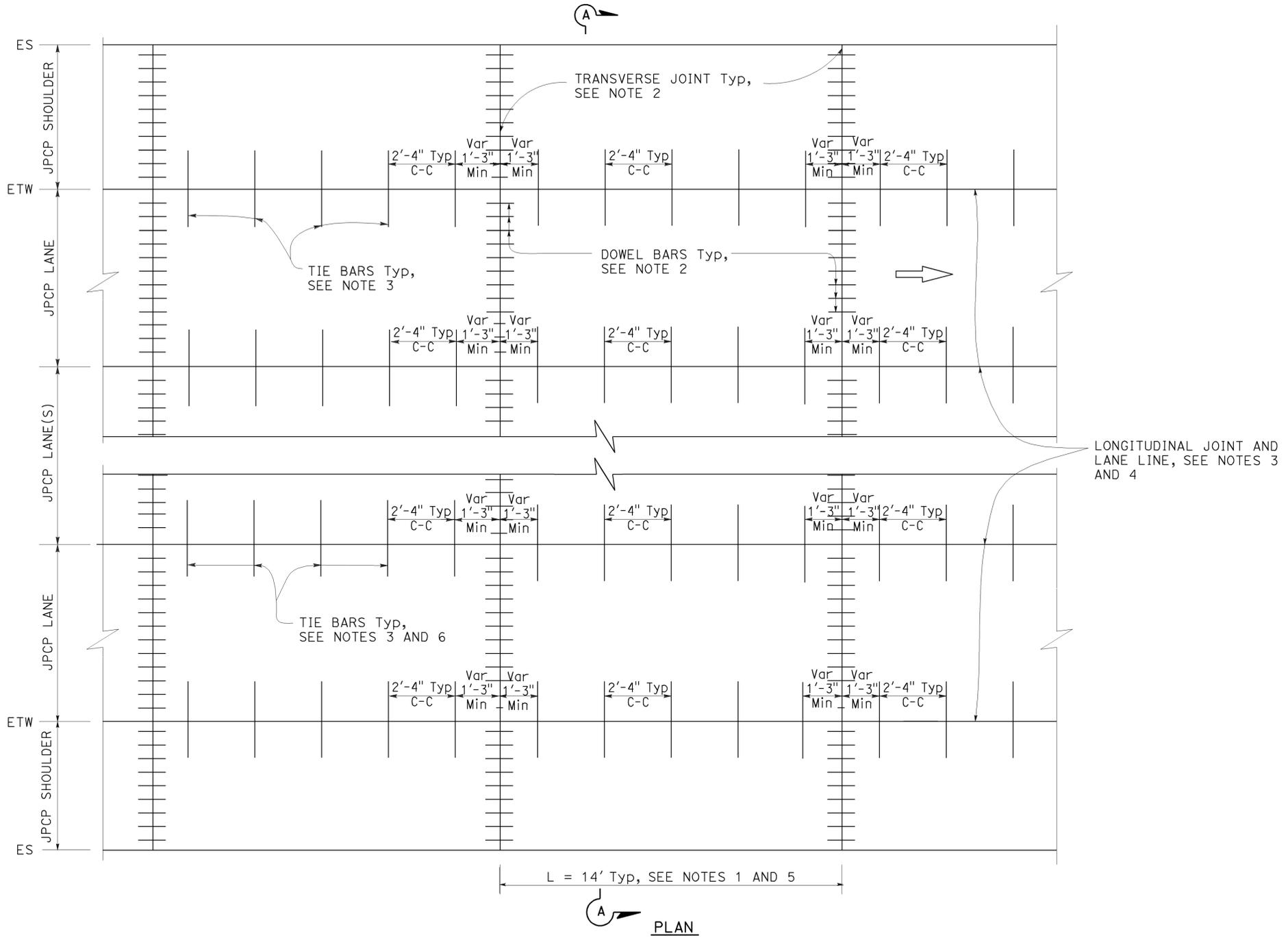
2010 REVISED STANDARD PLAN RSP A88A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	237	302

William K. Farnbach  
 REGISTERED CIVIL ENGINEER  
 July 19, 2013  
 PLANS APPROVAL DATE  
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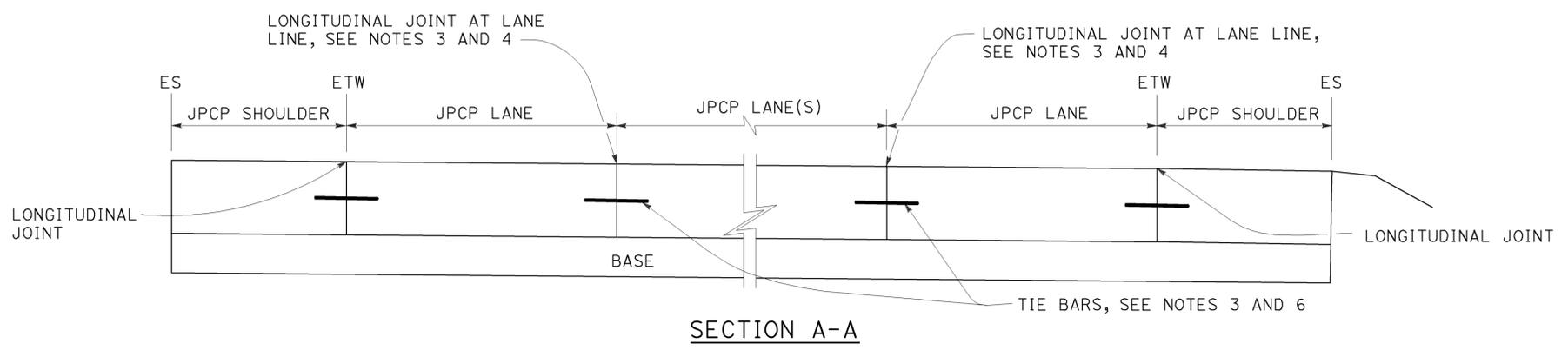


TO ACCOMPANY PLANS DATED 01-20-15



**NOTES:**

1. Transverse joint spacing may be adjusted to no less than 10' and no more than 14' to conform to bridges, change in pavement type, and hardened concrete pavement.
2. For transverse joint and dowel bar details not shown, see Revised Standard Plan RSP P10.
3. For longitudinal joint and tie bar details not shown, see Revised Standard Plan RSP P15.
4. For additional longitudinal joint layout details, see Revised Standard Plan RSP P18.
5. For joint layout at intersections, see Project Plans.
6. For dowel bars at longitudinal joint. see Revised Standard Plan RSP P18.



STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**JOINTED PLAIN  
 CONCRETE PAVEMENT  
 NEW CONSTRUCTION**  
 NO SCALE

RSP P1 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN P1  
 DATED MAY 20, 2011 - PAGE 125 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP P1**

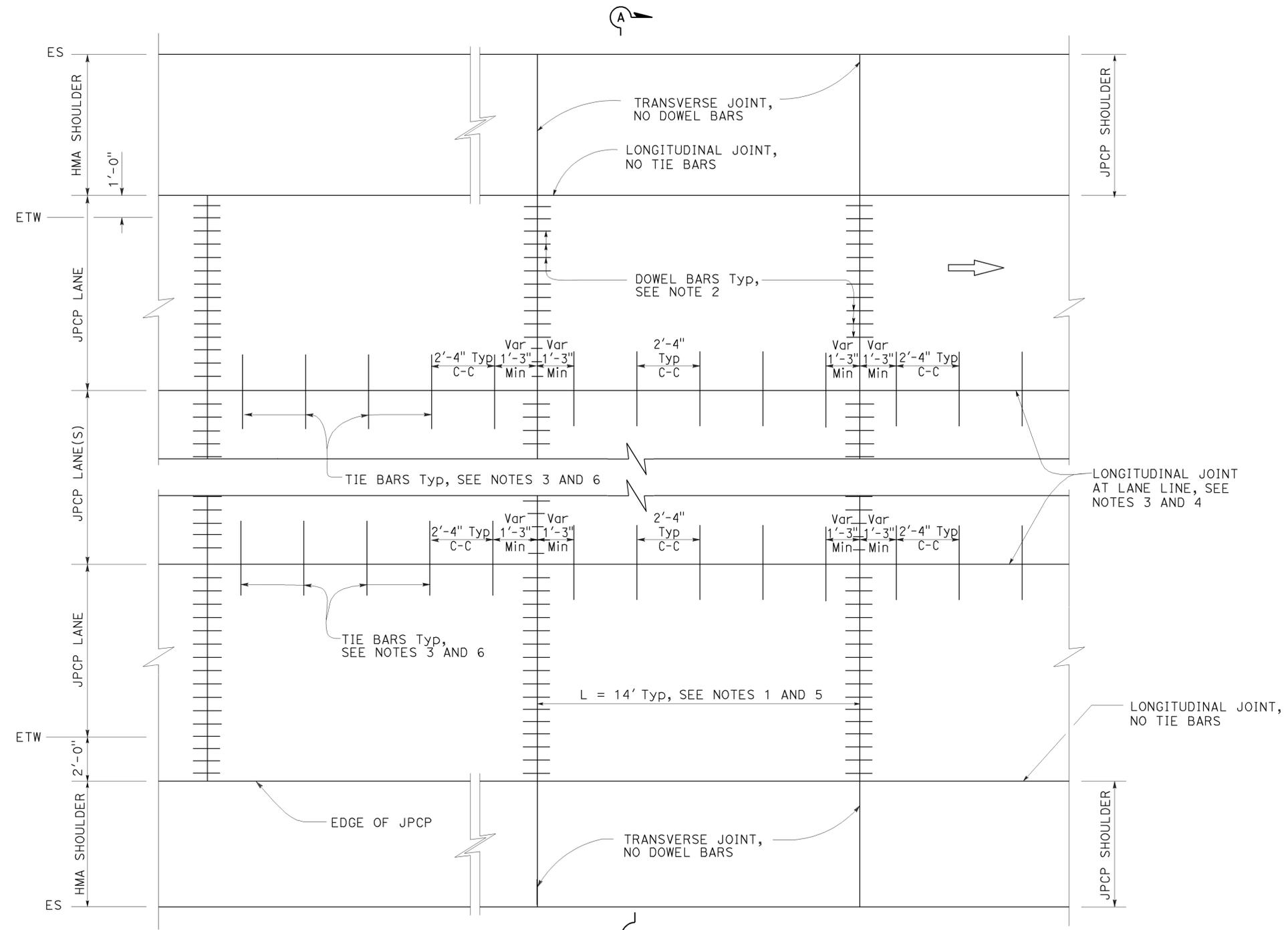
2010 REVISED STANDARD PLAN RSP P1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11, 125, 905	Var	238	302

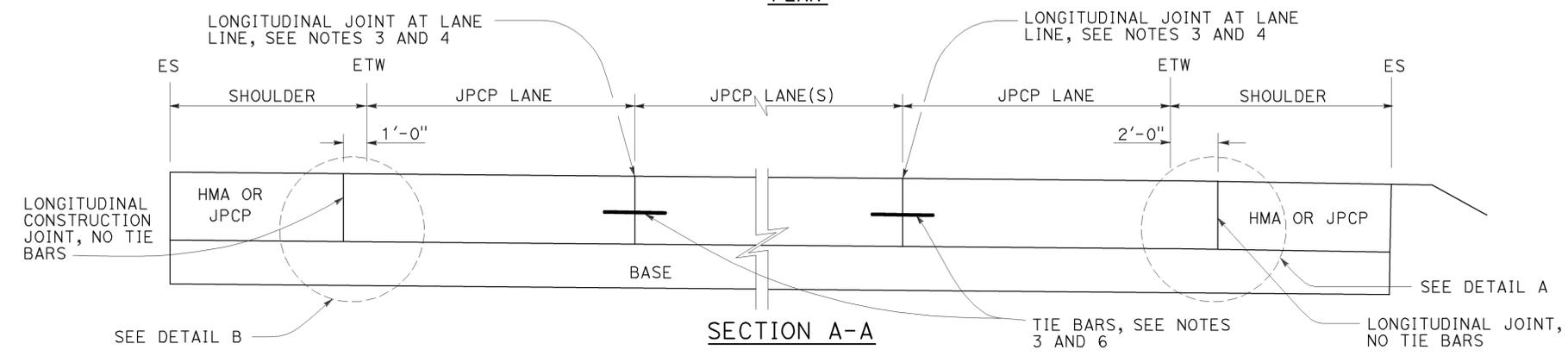
William K. Farnbach  
 REGISTERED CIVIL ENGINEER  
 July 19, 2013  
 PLANS APPROVAL DATE

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2010 REVISED STANDARD PLAN RSP P2



PLAN

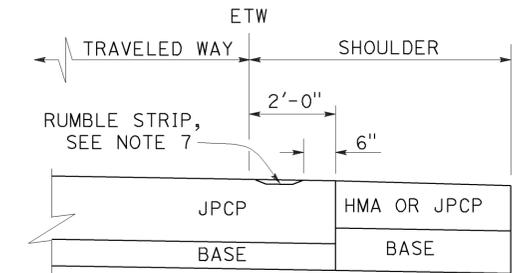


SECTION A-A

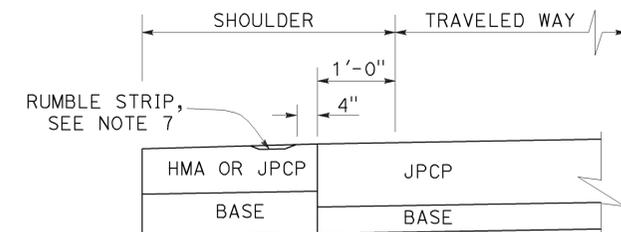
NOTES:

1. Transverse joint spacing may be adjusted to no less than 10' and no more than 14' to conform to bridges, change in pavement type, and hardened concrete pavement.
2. For transverse joint and dowel bar details not shown, see Revised Standard Plan RSP P10.
3. For longitudinal joint and tie bar details not shown, see Revised Standard Plan RSP P15.
4. For additional longitudinal joint layout details, see Revised Standard Plan RSP P18.
5. For joint layout at intersections, see Project Plans.
6. For dowel bars at longitudinal joint. see Revised Standard Plan RSP P18.
7. For limits of rumble strips, see Projects Plans.

TO ACCOMPANY PLANS DATED 01-20-15



DETAIL A



DETAIL B

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**JOINTED PLAIN  
 CONCRETE PAVEMENT  
 (WIDENED LANE)  
 NEW CONSTRUCTION**  
 NO SCALE

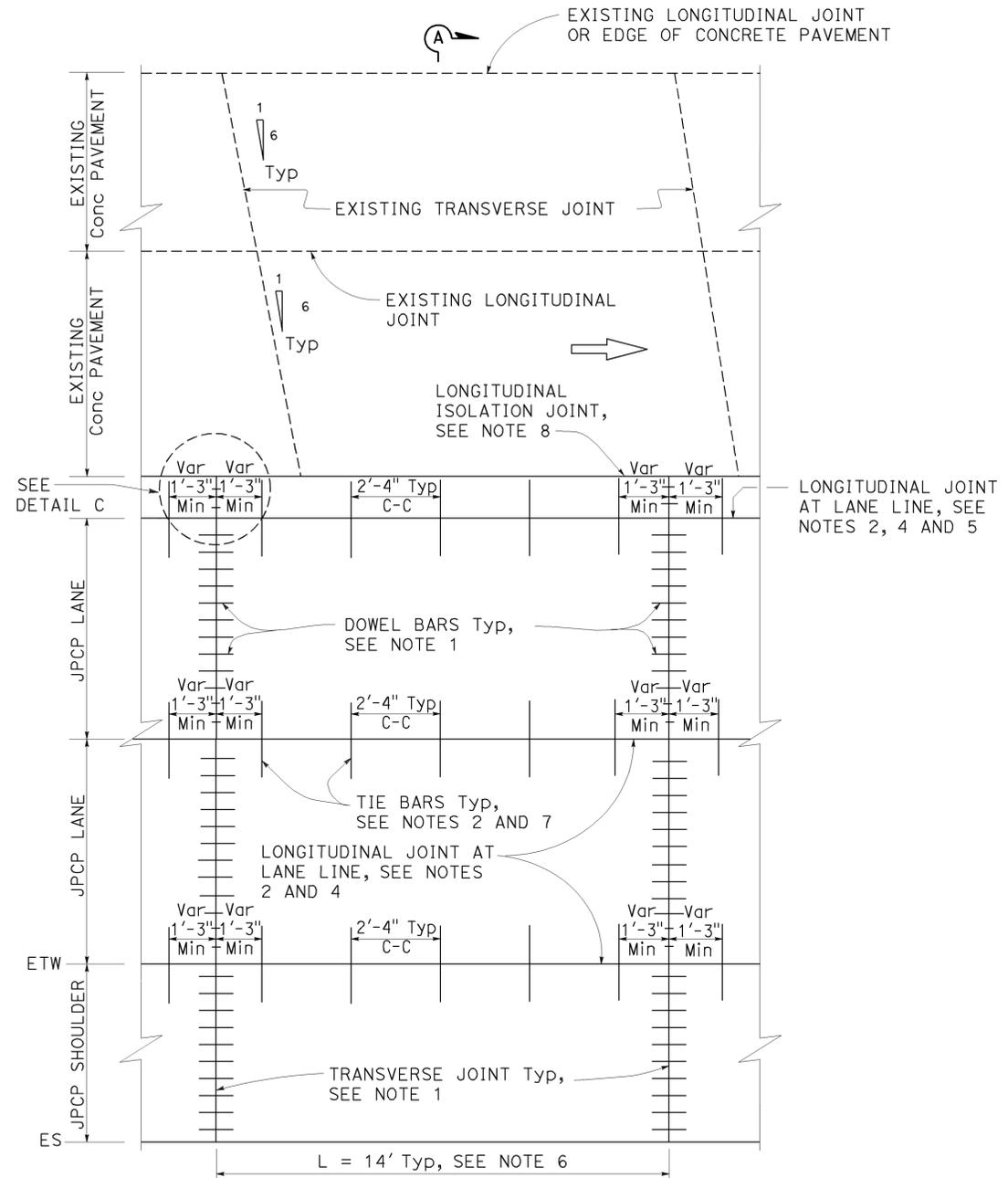
RSP P2 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN P2 DATED MAY 20, 2011 - PAGE 126 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP P2**

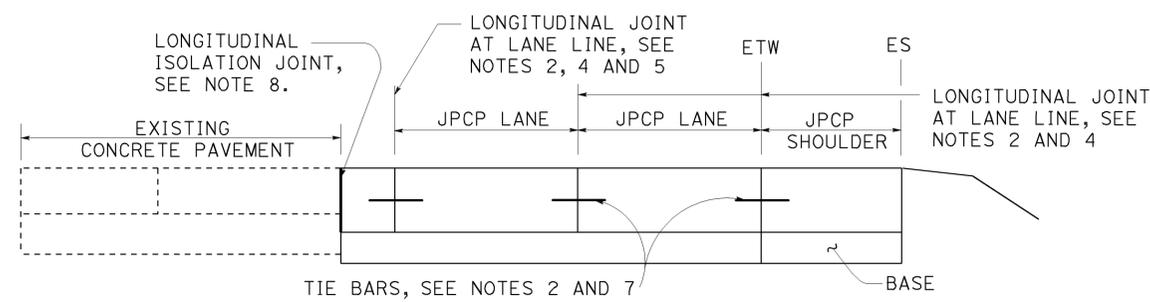
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	239	302

William K. Farnbach  
 REGISTERED CIVIL ENGINEER  
 July 19, 2013  
 PLANS APPROVAL DATE  
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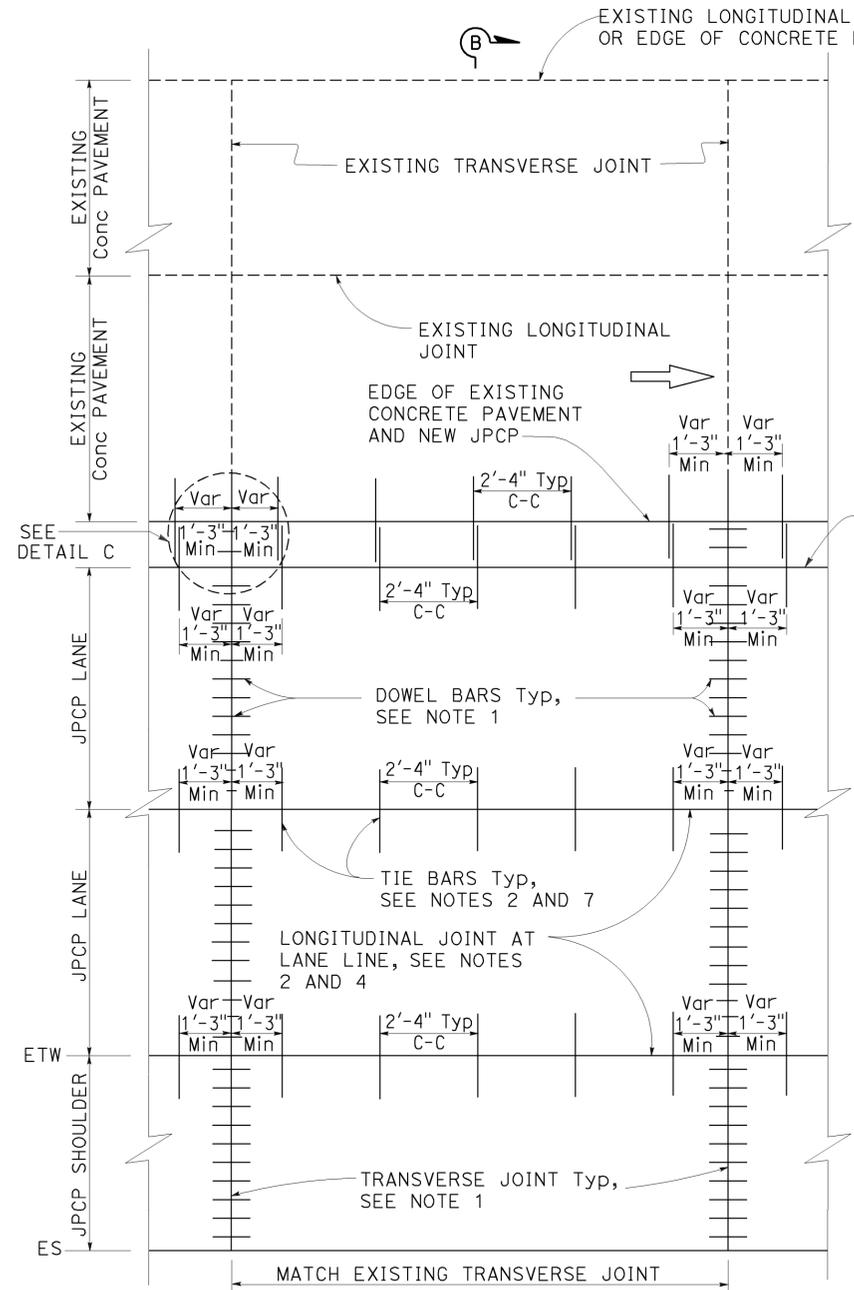
2010 REVISED STANDARD PLAN RSP P3A



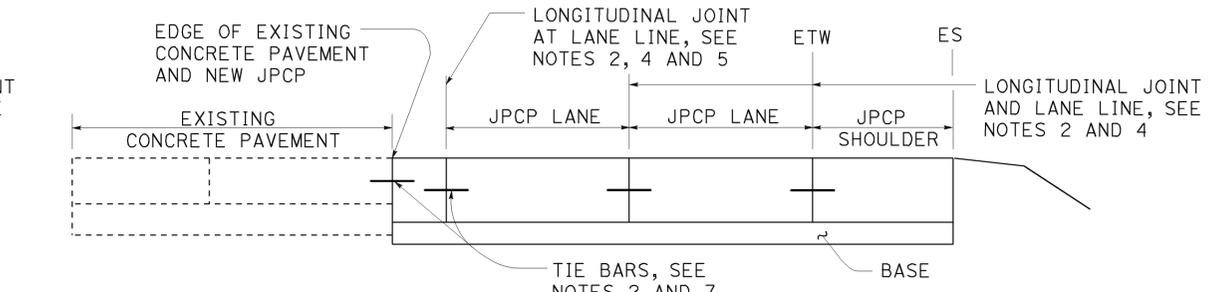
**PLAN ISOLATED**  
See Note 3



**SECTION A-A**



**PLAN TIED**  
See Note 3

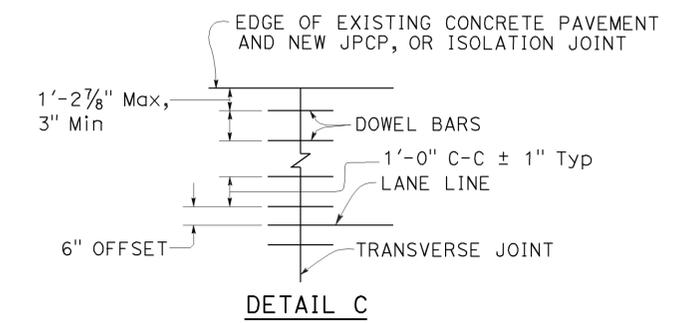


**SECTION B-B**

LONGITUDINAL JOINT AT LANE LINE, SEE NOTES 2, 4 AND 5

**NOTES:**

1. For transverse joint and dowel bar details not shown, see Revised Standard Plan RSP P10.
2. For longitudinal joint and tie bar details not shown, see Revised Standard Plan RSP P15.
3. For joint layout at intersections, see Project Plans.
4. For additional longitudinal joint details, see Revised Standard Plan RSP P18.
5. Omit longitudinal joint when edge of new concrete pavement is 3'-3" or less from JPCP lane line.
6. Transverse joint spacing may be adjusted to no less than 10' and no more than 15'-6" to conform to bridges, change in pavement type and existing pavement.
7. For dowel bars at longitudinal joint, see Revised Standard Plan RSP P18.
8. For isolation joints, see Detail A on Revised Standard Plan RSP P18.



TO ACCOMPANY PLANS DATED 01-20-15

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**JOINTED PLAIN CONCRETE PAVEMENT LANE & SHOULDER ADDITION OR REPLACEMENT**

NO SCALE

RSP P3A DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP P3A**

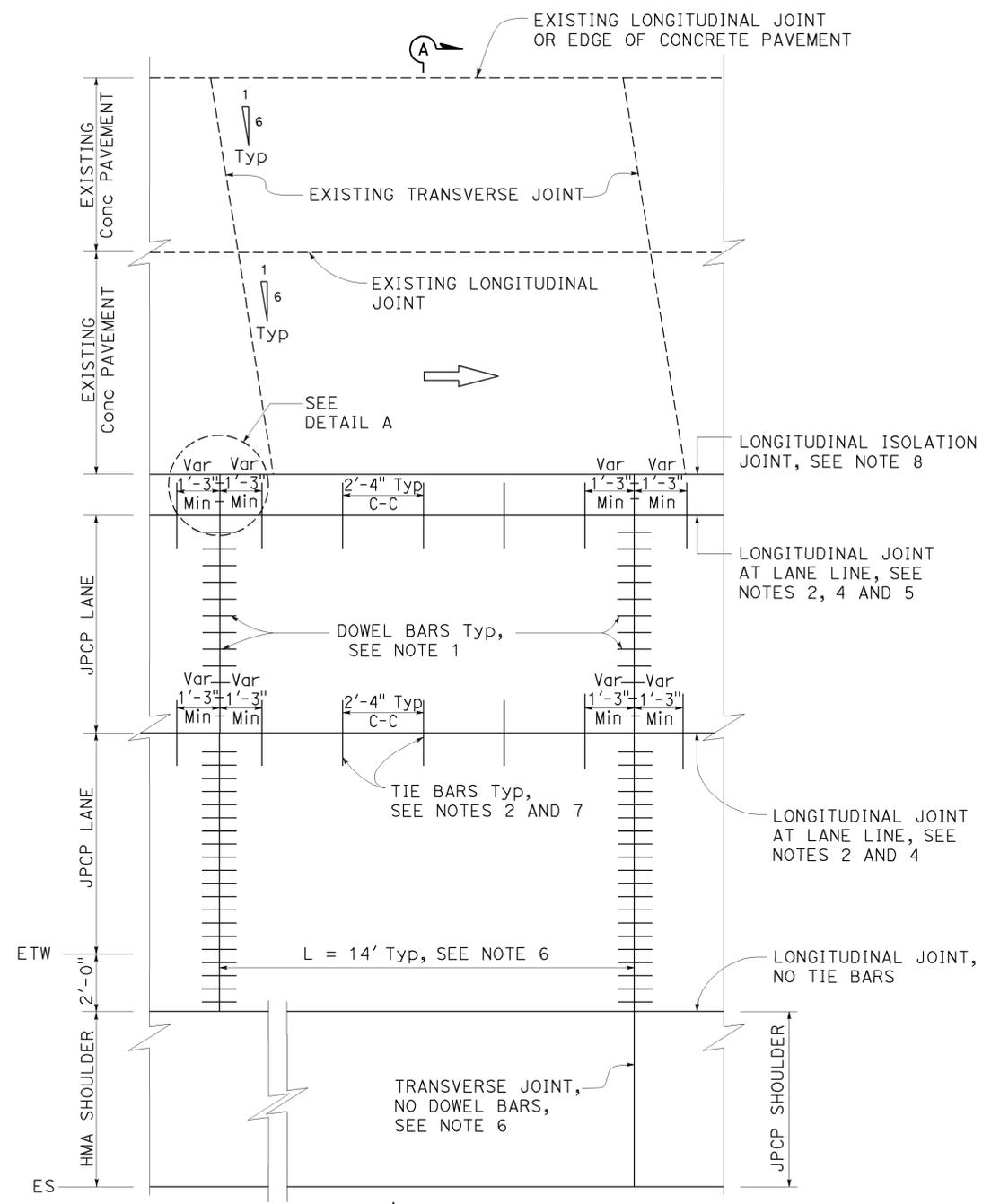
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	240	302

William K. Farnbach  
 REGISTERED CIVIL ENGINEER  
 July 19, 2013  
 PLANS APPROVAL DATE

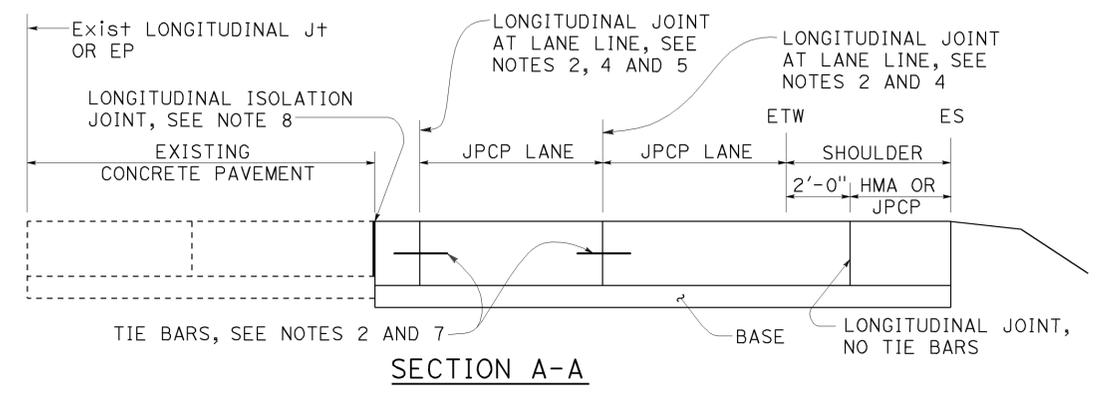
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TO ACCOMPANY PLANS DATED 01-20-15

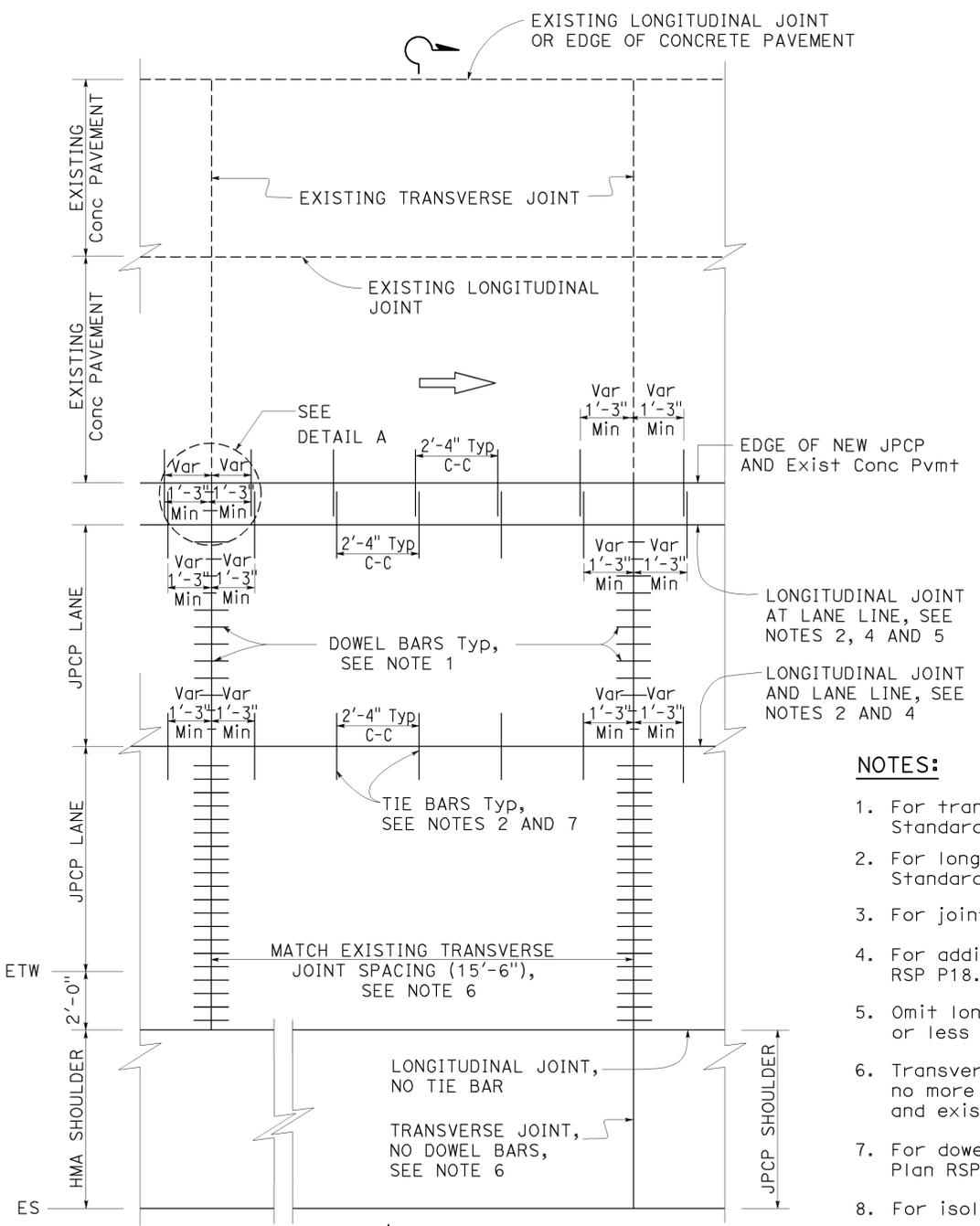
2010 REVISED STANDARD PLAN RSP P3B



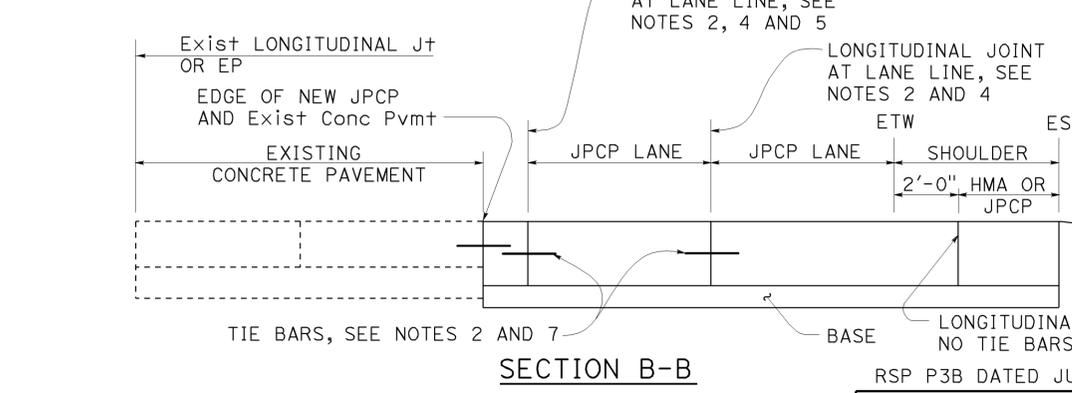
**PLAN ISOLATED**  
See Note 3



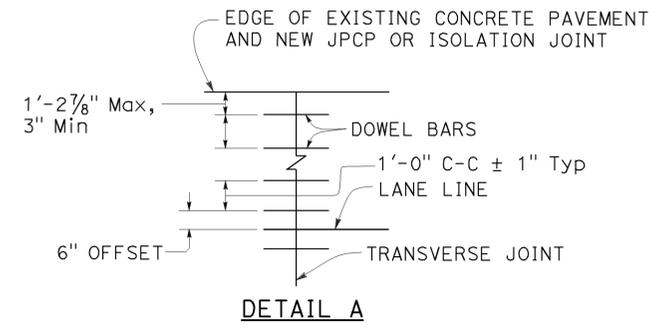
**SECTION A-A**



**PLAN TIED**  
See Note 3



**SECTION B-B**



**NOTES:**

1. For transverse joint and dowel bar details not shown, see Revised Standard Plan RSP P10.
2. For longitudinal joint and tie bar details not shown, see Revised Standard Plan RSP P15.
3. For joint layout at intersections, see Project Plans.
4. For additional longitudinal joint details, see Revised Standard Plan RSP P18.
5. Omit longitudinal joint when edge of new concrete pavement is 3'-3" or less from JPCP lane line.
6. Transverse joint spacing may be adjusted to no less than 10' and no more than 15'-6" to conform to bridges, change in pavement type and existing pavement.
7. For dowel bars at longitudinal joint. see Revised Standard Plan RSP P18.
8. For isolation joints, see Detail A on Revised Standard Plan RSP P18.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**JOINTED PLAIN CONCRETE PAVEMENT (WIDENED LANE) LANE AND SHOULDER ADDITION OR REPLACEMENT**

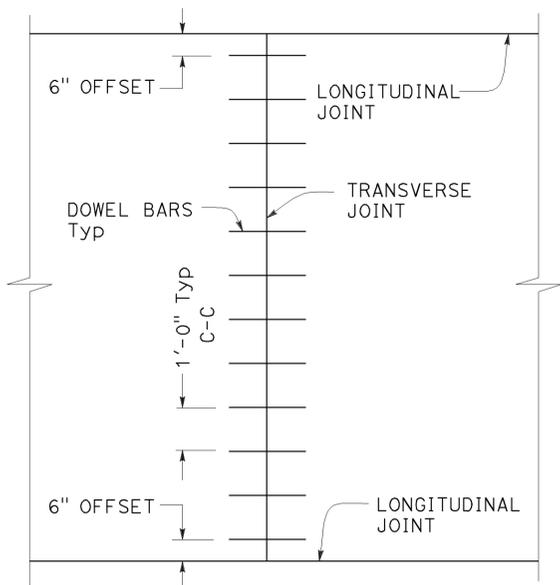
NO SCALE

RSP P3B DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

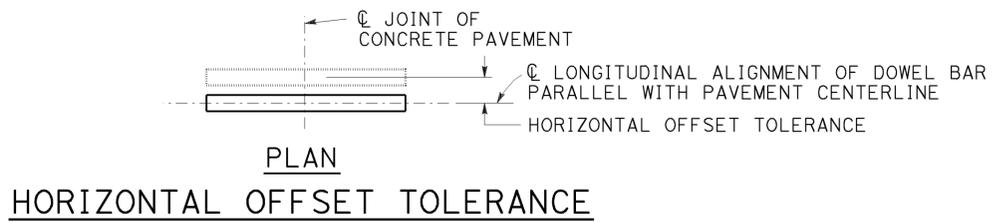
**REVISED STANDARD PLAN RSP P3B**

TO ACCOMPANY PLANS DATED 01-20-15

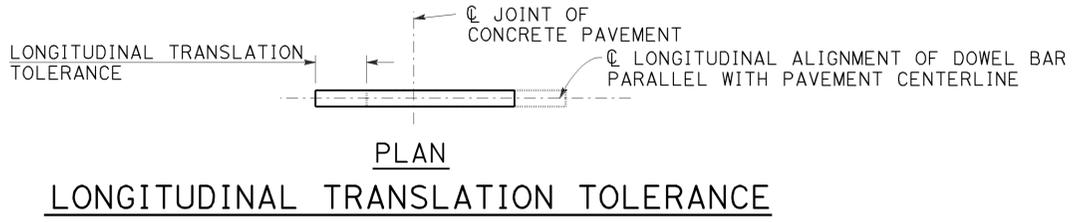
- NOTES:**
- See Revised Standard Plan RSP P1 for typical dowel bar placement and locations.
  - Where fresh concrete pavement is placed against new concrete or existing concrete pavement, rounding the corner of the existing concrete pavement is not required.
  - May also use 3/4" Dia dowel bars 2'-4" ± 1/4" in length. Center the length of dowel bars at the centerline of longitudinal joint.



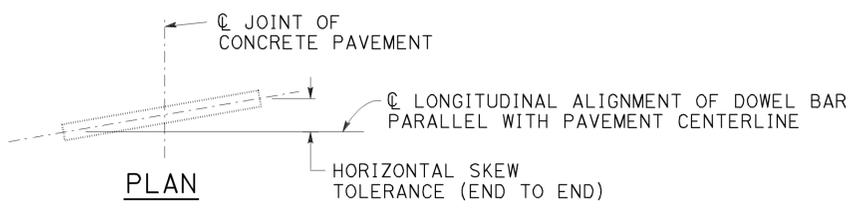
**TRANSVERSE JOINT  
DOWEL BAR LAYOUT**



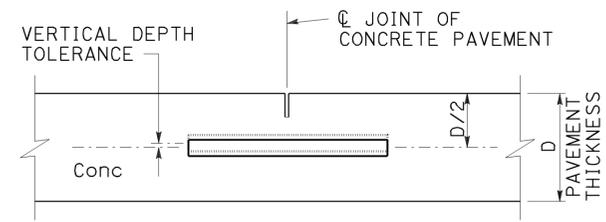
**PLAN  
HORIZONTAL OFFSET TOLERANCE**



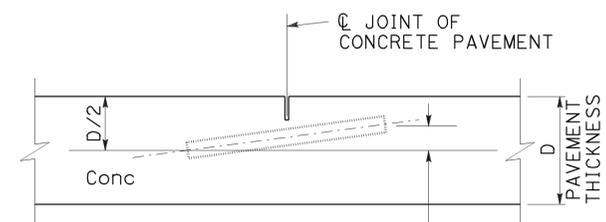
**PLAN  
LONGITUDINAL TRANSLATION TOLERANCE**



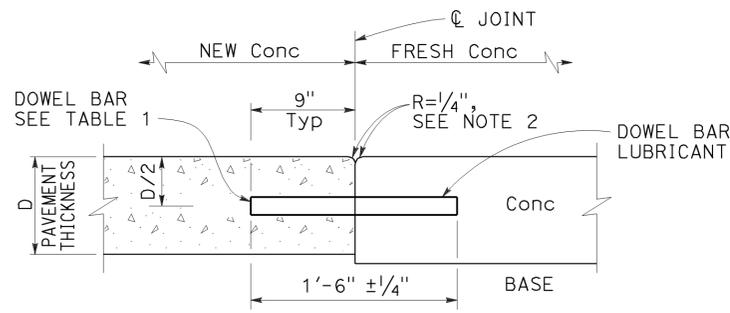
**PLAN  
HORIZONTAL SKEW TOLERANCE**



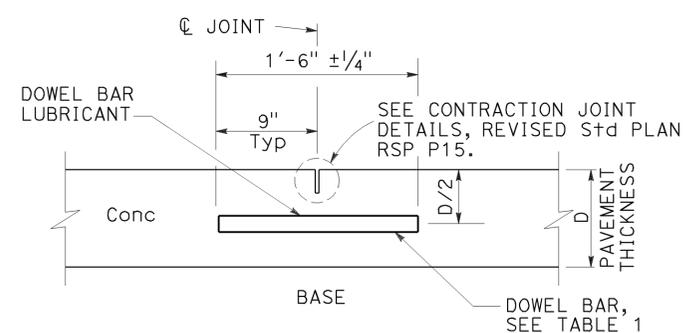
**ELEVATION  
VERTICAL DEPTH TOLERANCE**



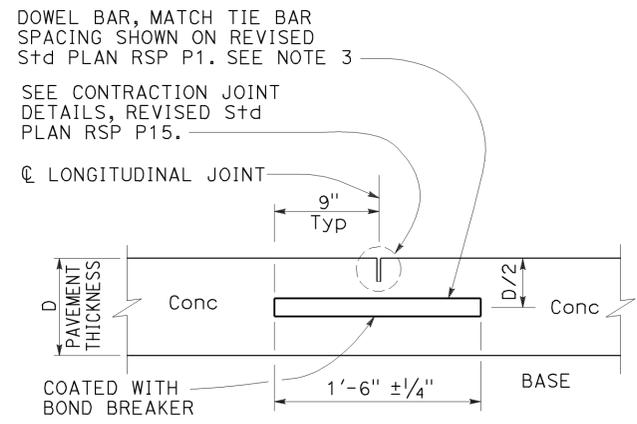
**ELEVATION  
VERTICAL SKEW TOLERANCE**



**TRANSVERSE  
CONSTRUCTION JOINT DETAIL**



**TRANSVERSE CONTRACTION JOINT**

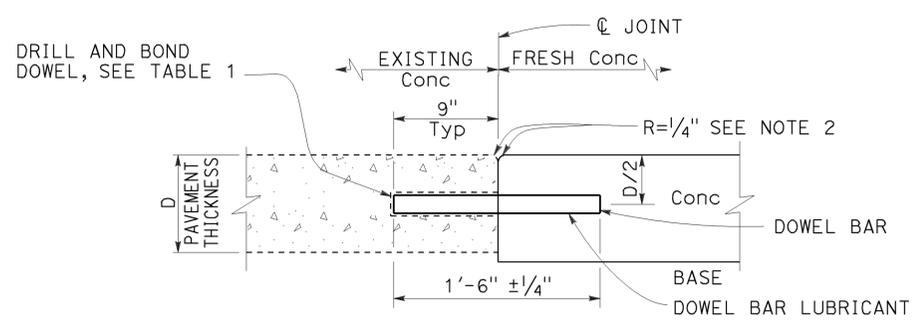


**LONGITUDINAL CONTRACTION  
JOINT WITH DOWEL BARS**  
See Revised Std Plan RSP P18

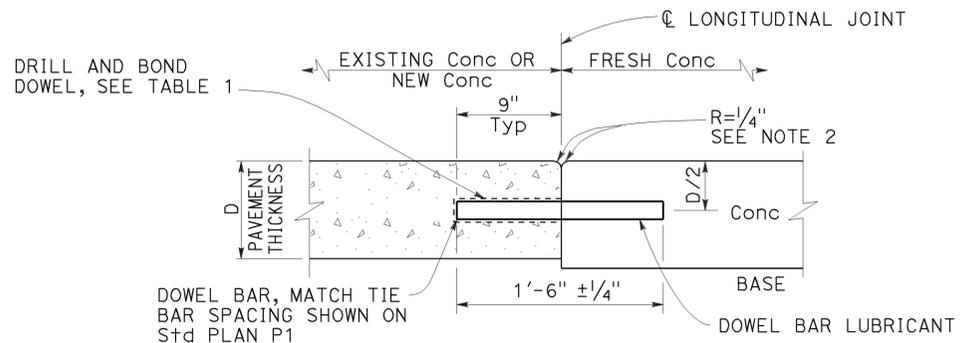
**TABLE 1  
DOWEL BAR DIAMETER TABLE**

PAVEMENT THICKNESS	0.65'	> 0.65' - 0.85'	> 0.85'
MINIMUM DOWEL * BAR DIAMETER	1"	1 1/4"	1 1/2"

\* The drilled hole diameter must be 1/8" to 3/16" larger than the bar diameter.



**TRANSVERSE CONSTRUCTION JOINT  
FOR EXISTING CONCRETE PAVEMENT**



**LONGITUDINAL CONSTRUCTION JOINT  
WITH DOWEL BARS**  
See Revised Std Plan RSP P18

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**CONCRETE PAVEMENT  
DOWEL BAR  
DETAILS**  
NO SCALE

RSP P10 DATED JULY 19, 2013 SUPERSEDES RSP P10 DATED APRIL 20, 2012 AND STANDARD PLAN P10 DATED MAY 20, 2011 - PAGE 131 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP P10**

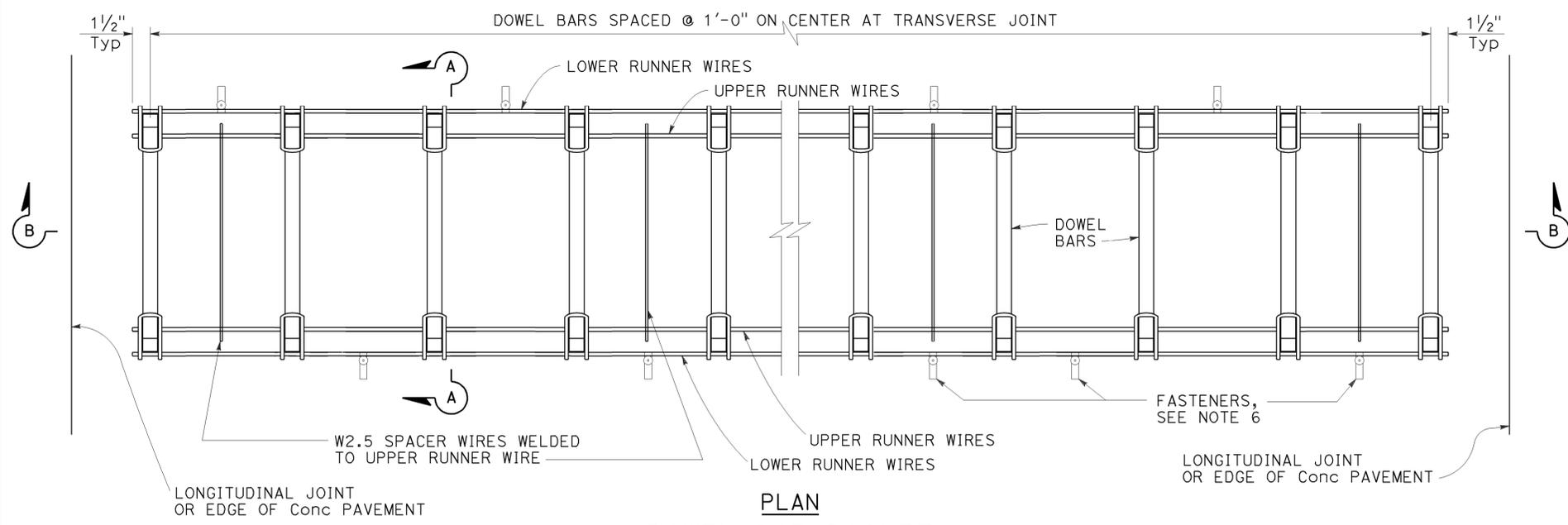
2010 REVISED STANDARD PLAN RSP P10

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	242	302

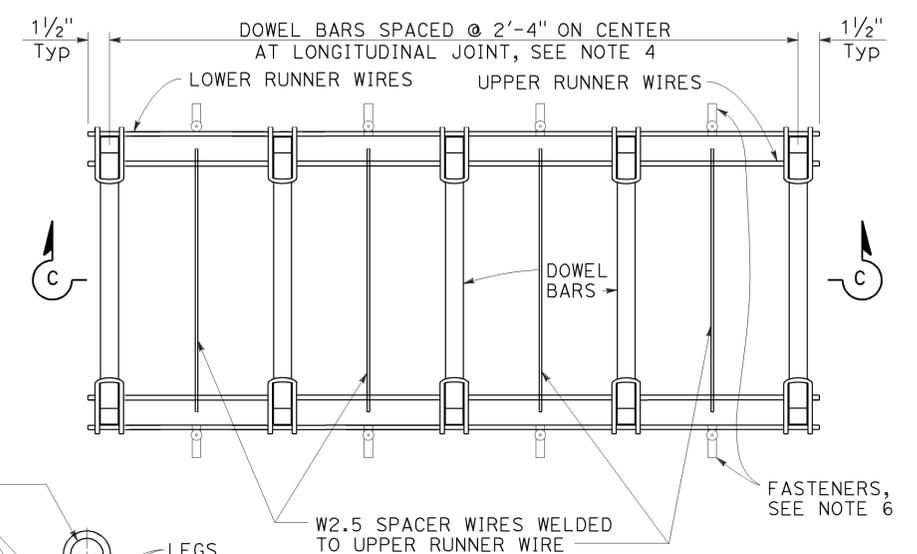
William K. Farnbach  
 REGISTERED CIVIL ENGINEER  
 July 19, 2013  
 PLANS APPROVAL DATE  
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER  
 William K. Farnbach  
 No. C49042  
 Exp. 9-30-14  
 CIVIL  
 STATE OF CALIFORNIA

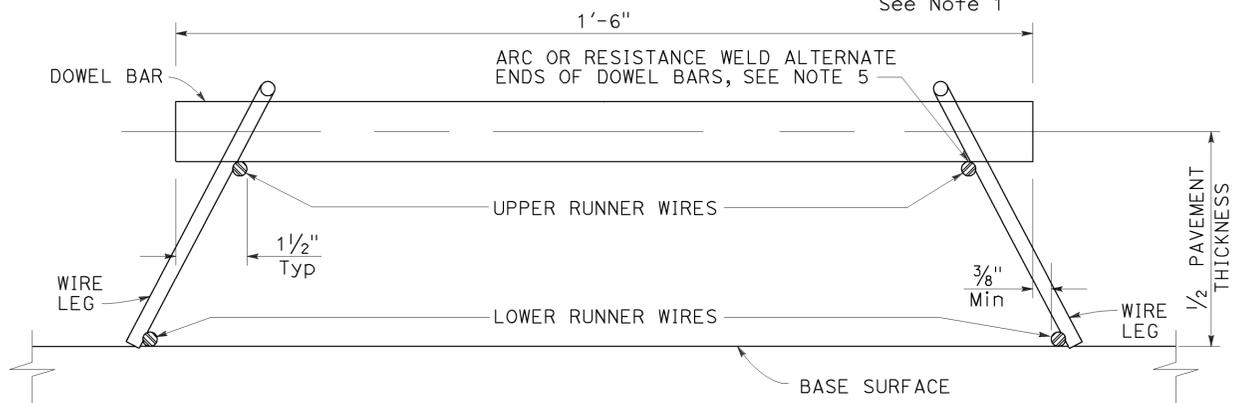
TO ACCOMPANY PLANS DATED 01-20-15



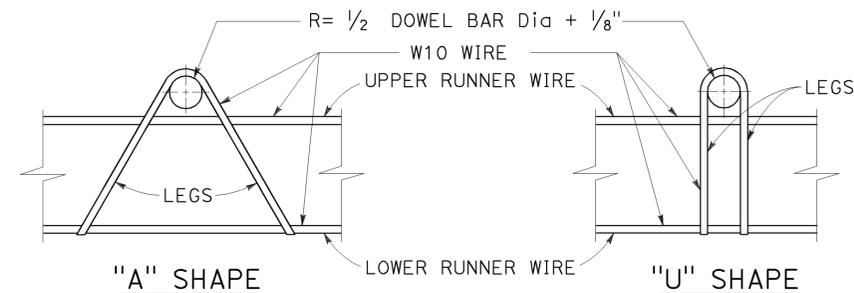
**PLAN**  
**DOWEL BAR BASKET**  
**(TRANSVERSE JOINT)**  
 See Note 1



**PLAN**  
**DOWEL BAR BASKET**  
**(LONGITUDINAL JOINT)**  
 See Note 1



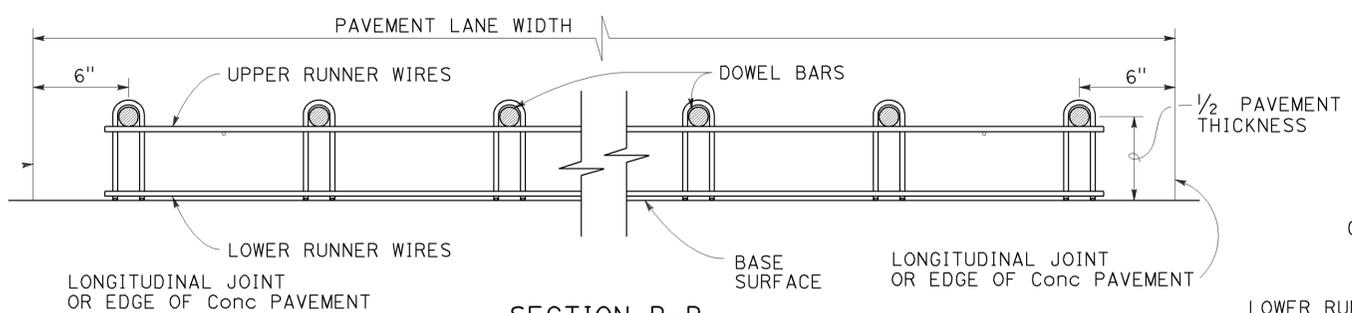
**SECTION A-A**



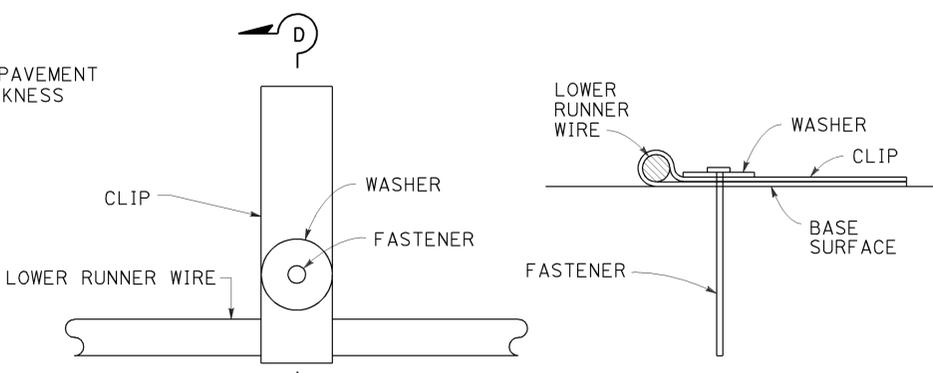
**ASSEMBLY FRAME DETAILS**

**NOTES:**

- "U" frame shape assembly shown. Use either "U" frame shape or "A" frame shape.
- Wire sizes shown are the minimum required.
- All wire intersections must be resistance welded.
- Use tie bar spacing for longitudinal dowel bar locations. See Revised Standard Plans RSP P1, RSP P2, RSP P3A, and RSP P3B for tie bar requirements.
- Weld may be at the top or bottom of the dowel bar.
- Use anchor pins where soil or granular base is used. See Revised Standard Plan RSP P17 for Anchor Pin Detail.

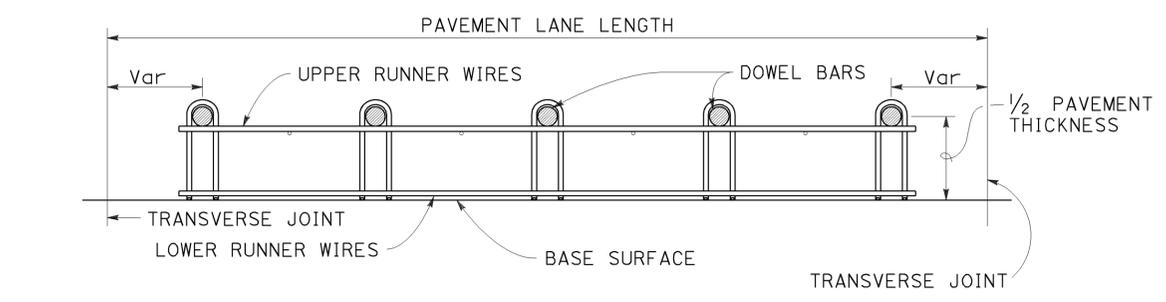


**SECTION B-B**  
 See Note 1



**FASTENER DETAIL**  
 See Note 6

**SECTION D-D**



**SECTION C-C**  
 See Notes 1 and 4

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**CONCRETE PAVEMENT**  
**DOWEL BAR BASKET**  
**DETAILS**  
 NO SCALE

RSP P12 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN P12  
 DATED MAY 20, 2011 - PAGE 132 OF THE STANDARD PLANS BOOK DATED 2010.

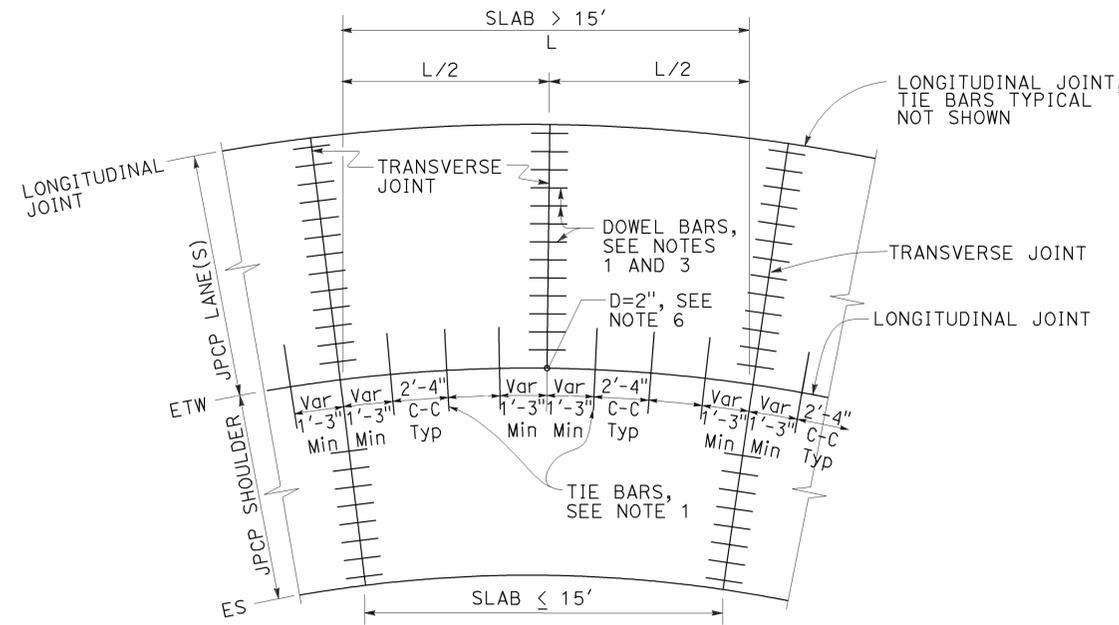
**REVISED STANDARD PLAN RSP P12**

2010 REVISED STANDARD PLAN RSP P12

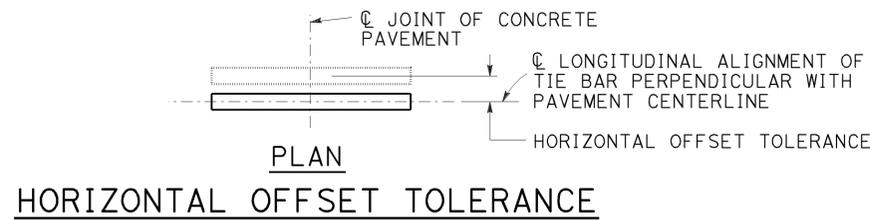
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11, 125, 905	Var	243	302

William K. Farnbach  
 REGISTERED CIVIL ENGINEER  
 July 19, 2013  
 PLANS APPROVAL DATE  
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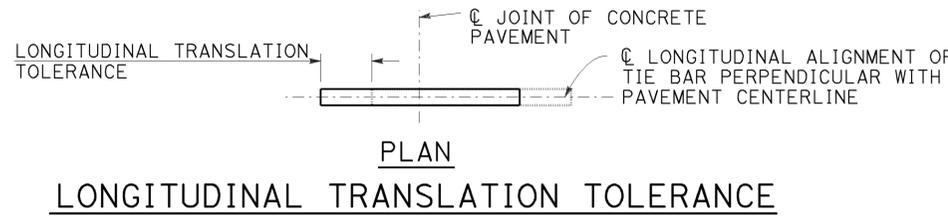
REGISTERED PROFESSIONAL ENGINEER  
 William K. Farnbach  
 No. C49042  
 Exp. 9-30-14  
 CIVIL  
 STATE OF CALIFORNIA



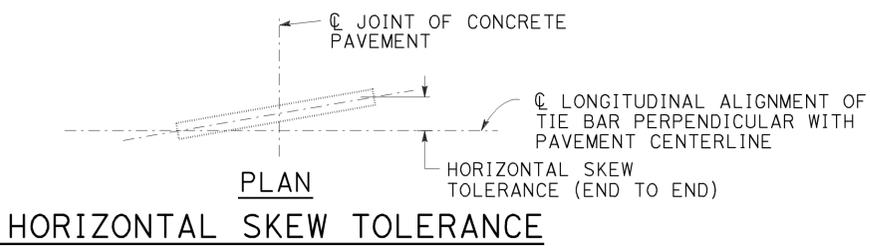
**TIE BAR LAYOUT IN CURVED LANES**



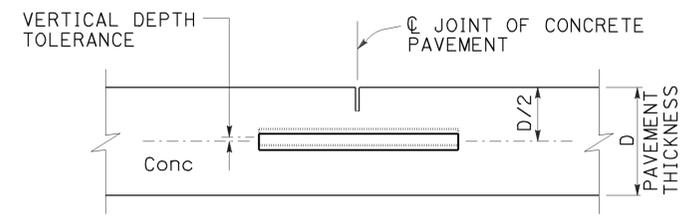
**HORIZONTAL OFFSET TOLERANCE**



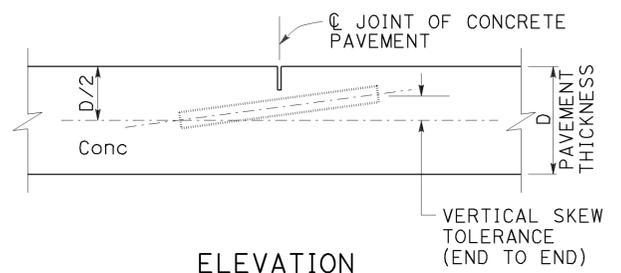
**LONGITUDINAL TRANSLATION TOLERANCE**



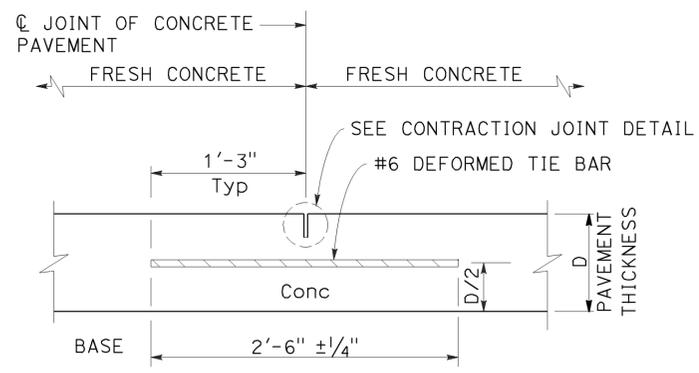
**HORIZONTAL SKEW TOLERANCE**



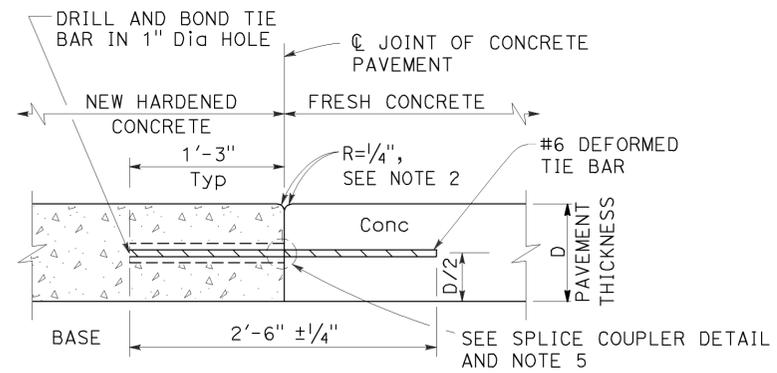
**ELEVATION VERTICAL DEPTH TOLERANCE**



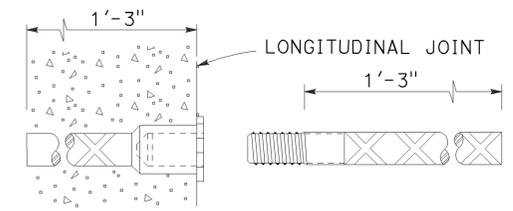
**ELEVATION VERTICAL SKEW TOLERANCE**



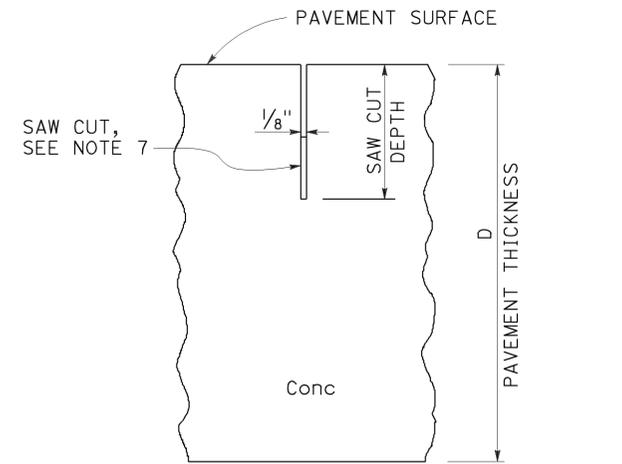
**LONGITUDINAL CONTRACTION JOINT**



**LONGITUDINAL CONSTRUCTION JOINT**



**ALTERNATIVE SPLICE COUPLER**



**CONTRACTION JOINT DETAIL**

- NOTES:**
1. See Revised Standard Plan RSP P1 for typical dowel bar and tie bar placement and locations.
  2. Where new pavement is placed against existing concrete pavement, rounding the corner is not required.
  3. For dowel bar sizes, See Revised Standard Plan RSP P10.
  4. Tie bar details apply to inside widenings.
  5. Use either drill and bond or splice couplers.
  6. Full depth drilled hole. Fill hole with filler material.
  7. The bottom of the saw cut must be at least 0.5" clear of any dowel bar, tie bar and bar reinforcement.

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**CONCRETE PAVEMENT-TIE BAR DETAILS**  
 NO SCALE

RSP P15 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP P15**

2010 REVISED STANDARD PLAN RSP P15

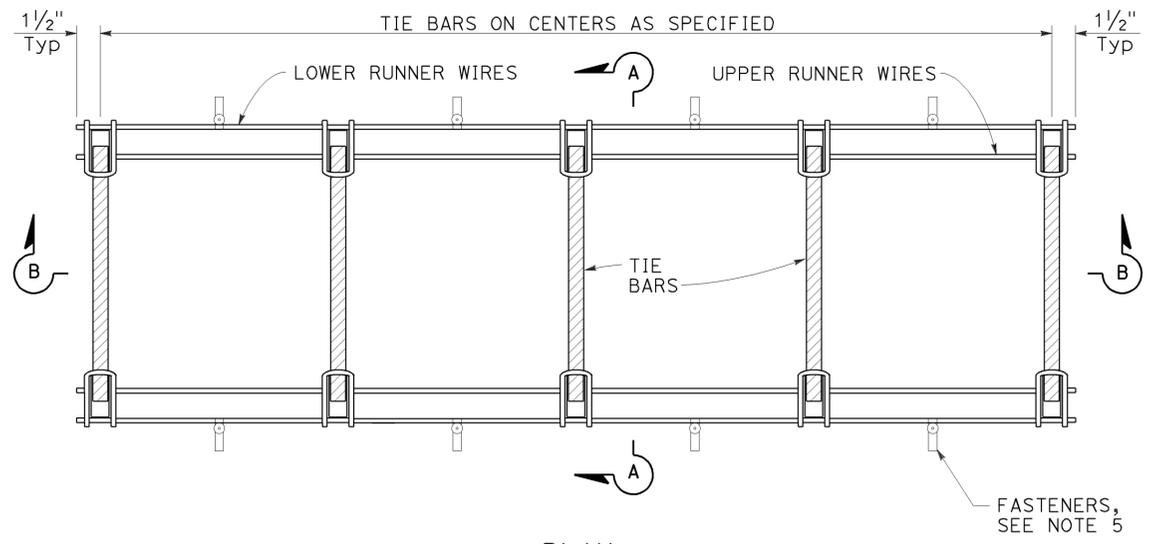
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	244	302

William K. Farnbach  
 REGISTERED CIVIL ENGINEER  
 No. C49042  
 Exp. 9-30-14  
 CIVIL  
 STATE OF CALIFORNIA

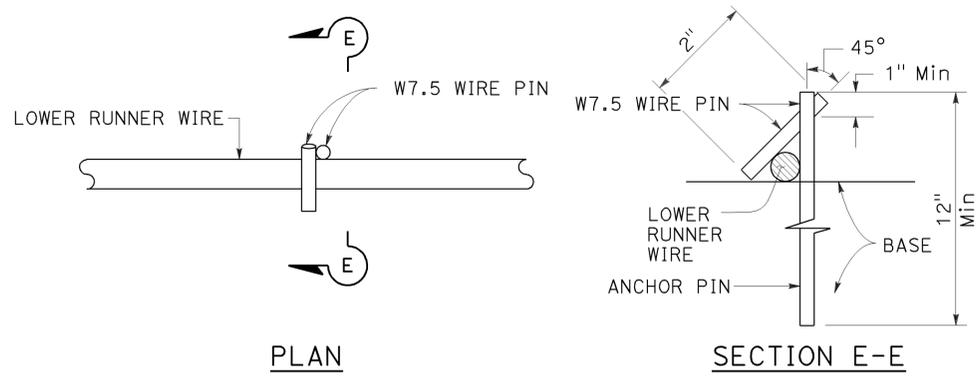
July 19, 2013  
 PLANS APPROVAL DATE

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

TO ACCOMPANY PLANS DATED 01-20-15

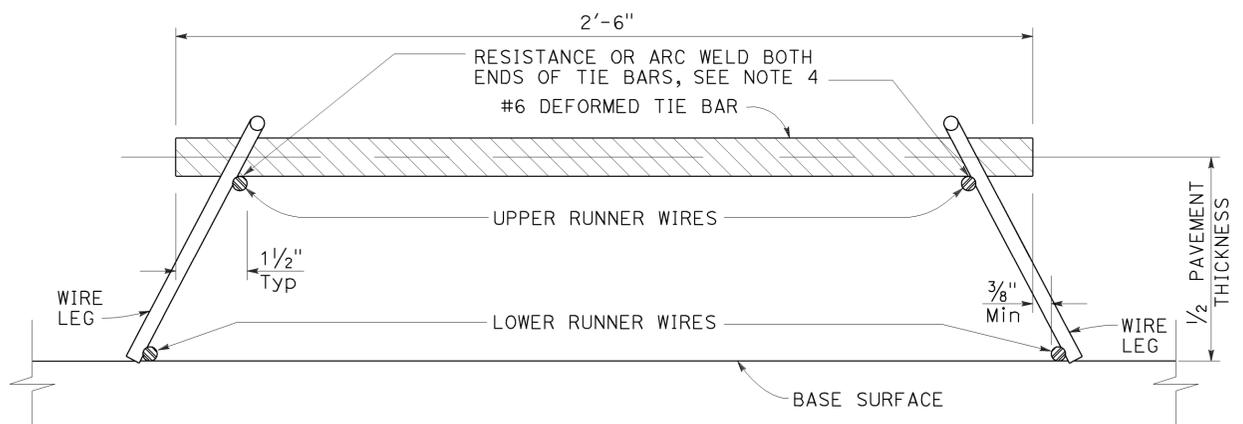


**PLAN**  
**TIE BAR BASKET**  
 (Tie bars at longitudinal joint)  
 See Note 1

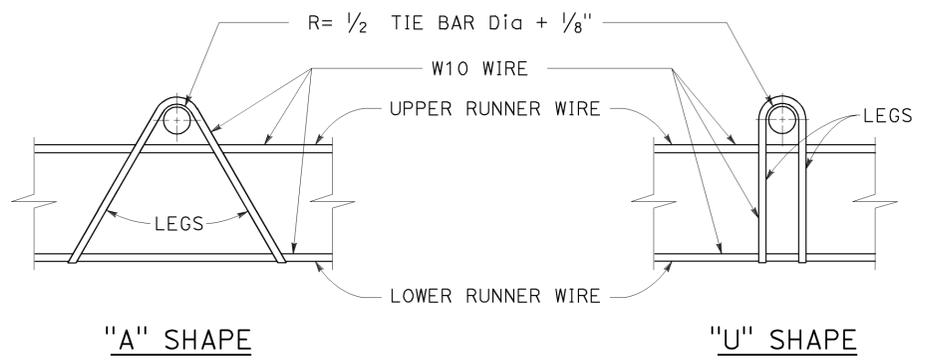


**ANCHOR PIN DETAIL**  
 See Note 5

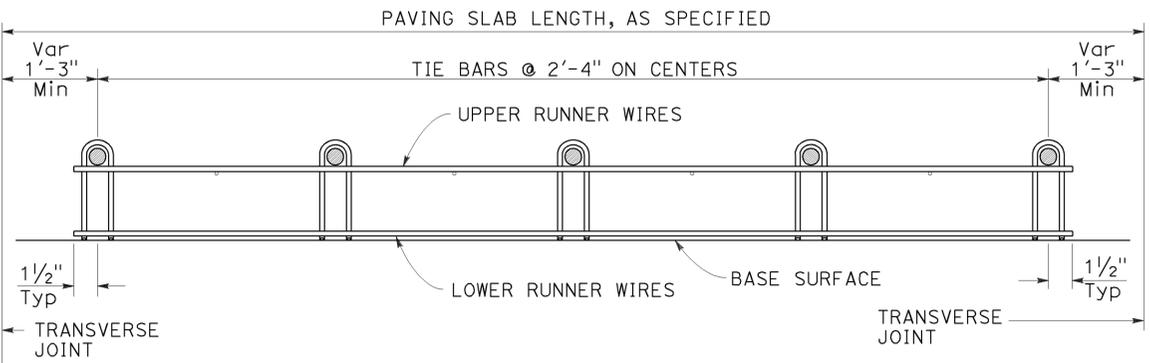
- NOTES:**
- "U" frame shape assembly shown. Use either "U" frame shape or "A" frame shape.
  - Wire sizes shown are the minimum required.
  - All wire intersections must be resistance welded.
  - Weld may be at top or bottom of tie bars.
  - Use anchor pins where soil or granular base is used.



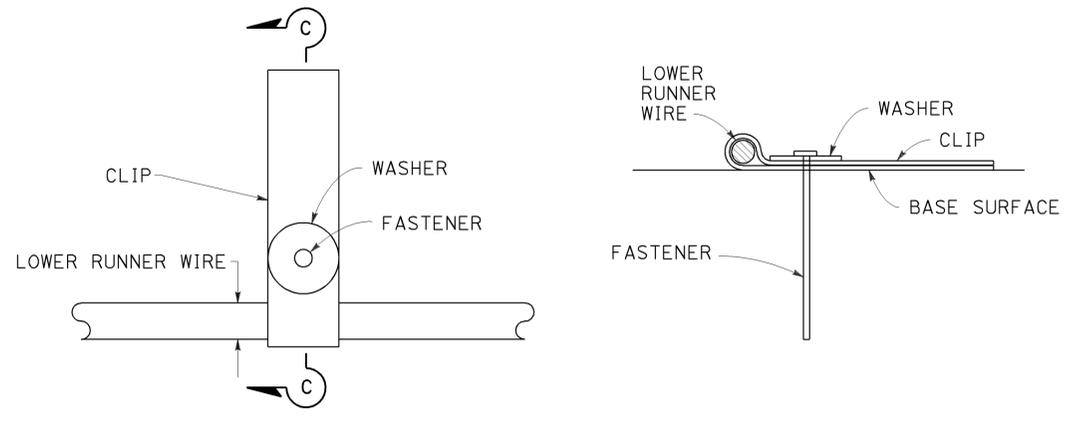
**SECTION A-A**



**ASSEMBLY FRAME DETAILS**  
 See Note 1



**SECTION B-B**  
 See Note 1



**FASTENER DETAIL**

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**CONCRETE PAVEMENT  
 TIE BAR BASKET  
 DETAILS**  
 NO SCALE

RSP P17 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN P17  
 DATED MAY 20, 2011 - PAGE 134 OF THE STANDARD PLANS BOOK DATED 2010.

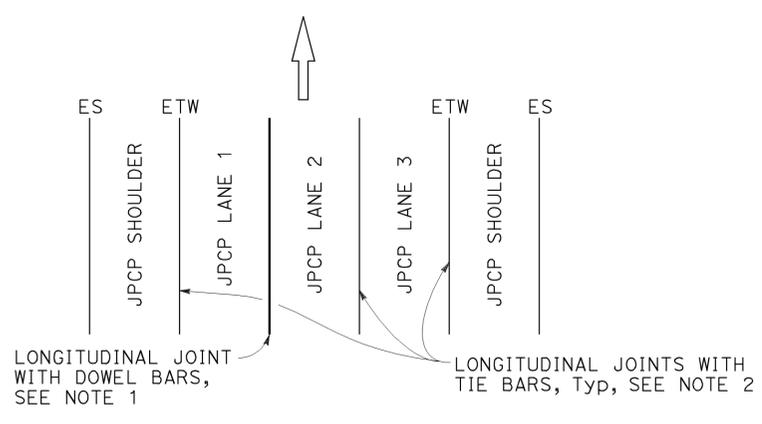
**REVISED STANDARD PLAN RSP P17**

2010 REVISED STANDARD PLAN RSP P17

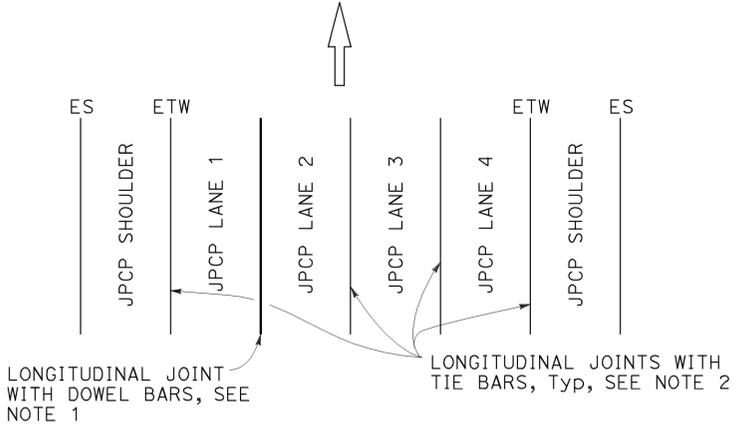
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	245	302

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

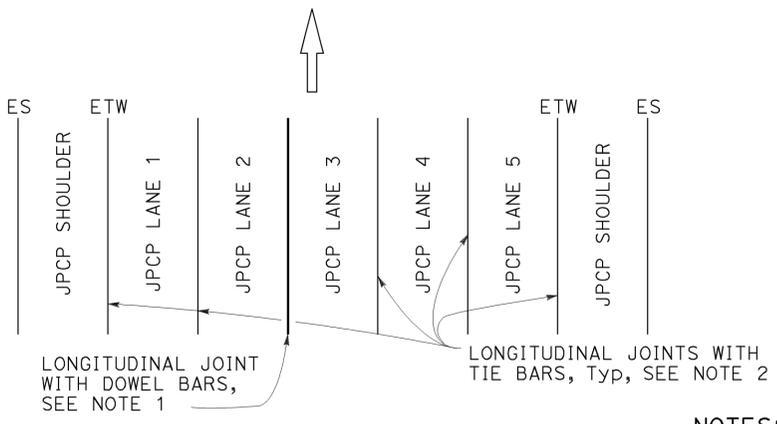
2010 REVISED STANDARD PLAN RSP P18



**3 LANES WITH CONCRETE SHOULDERS**  
PLAN



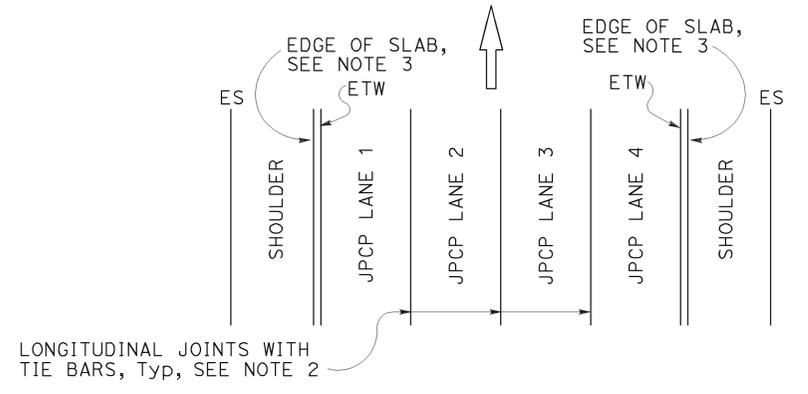
**4 LANES WITH CONCRETE SHOULDERS**  
PLAN



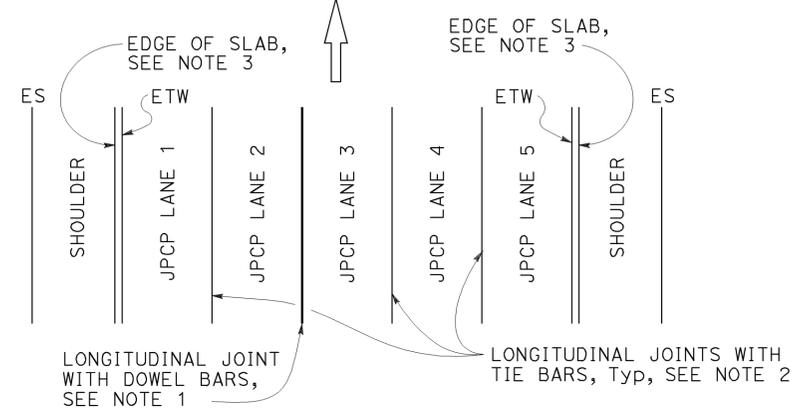
**5 LANES WITH CONCRETE SHOULDERS**  
PLAN

**NOTES:**

- See Revised Standard Plan RSP P10 for longitudinal joint with dowel bars.
- See Revised Standard Plan RSP P15 for longitudinal joint with tie bars.
- S = Reservoir depth.  
 $S = \frac{7}{8}'' \pm \frac{1}{16}''$  for asphalt rubber seals  
 $S = \frac{9}{16}'' \pm \frac{1}{16}''$  for silicone seals  
 Preformed compression seals must be  $\frac{13}{16}''$  wide and  $S = 1\frac{1}{16}'' \pm \frac{1}{16}''$

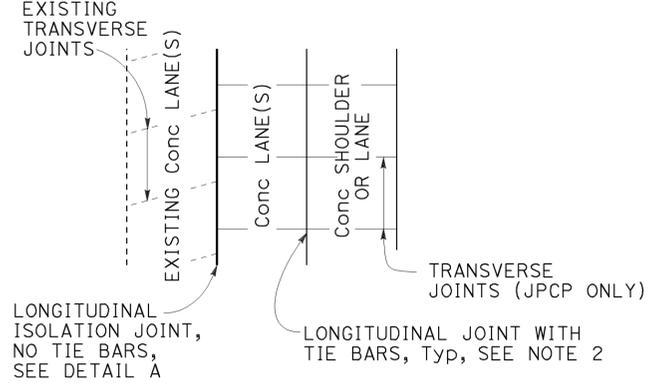


**4 LANES OR LESS WITH AC SHOULDERS**  
PLAN



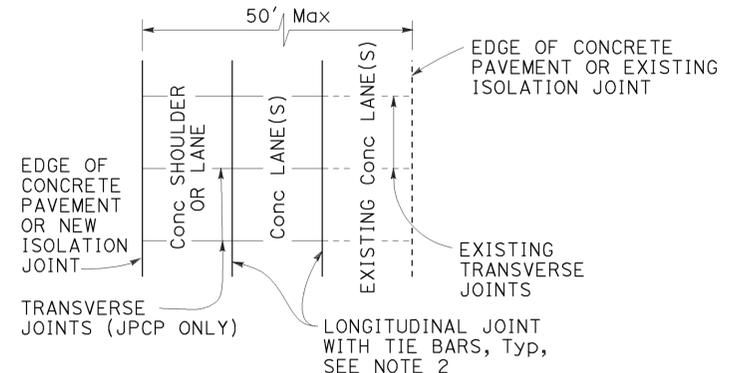
**5 LANES WITH AC SHOULDERS**  
PLAN

**NEW CONSTRUCTION**  
Location of Longitudinal Joints For JPCP



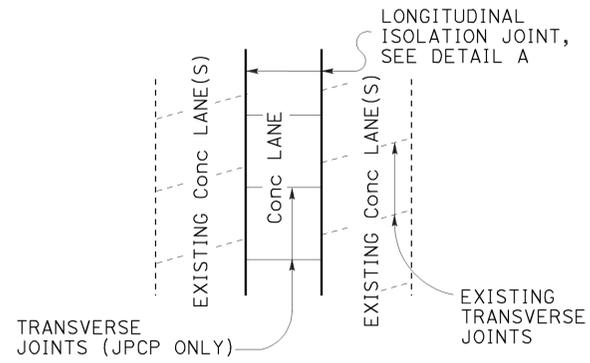
**CASE 1**  
PLAN

Transverse joints do not align between new and existing.



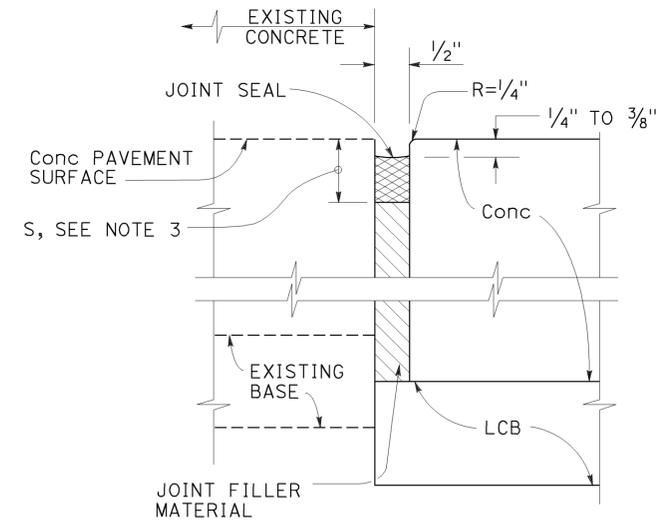
**CASE 2**  
PLAN

Transverse joints align between new and existing. (For JPCP only)



**CASE 3 (INTERIOR LANE REPLACEMENT)**  
PLAN

Transverse joints do not align between new and existing.



**DETAIL "A"**  
**ISOLATION JOINT**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

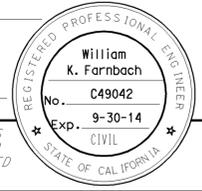
**CONCRETE PAVEMENT  
LANE SCHEMATICS  
AND ISOLATION JOINT DETAIL**

NO SCALE

**LANE/SHOULDER ADDITION OR RECONSTRUCTION**  
For JPCP and CRCP

RSP P18 DATED JULY 19, 2013 SUPERSEDES RSP P18 DATED APRIL 20, 2012 AND STANDARD PLAN P18 DATED MAY 20, 2011 - PAGE 135 OF THE STANDARD PLANS BOOK DATED 2010.

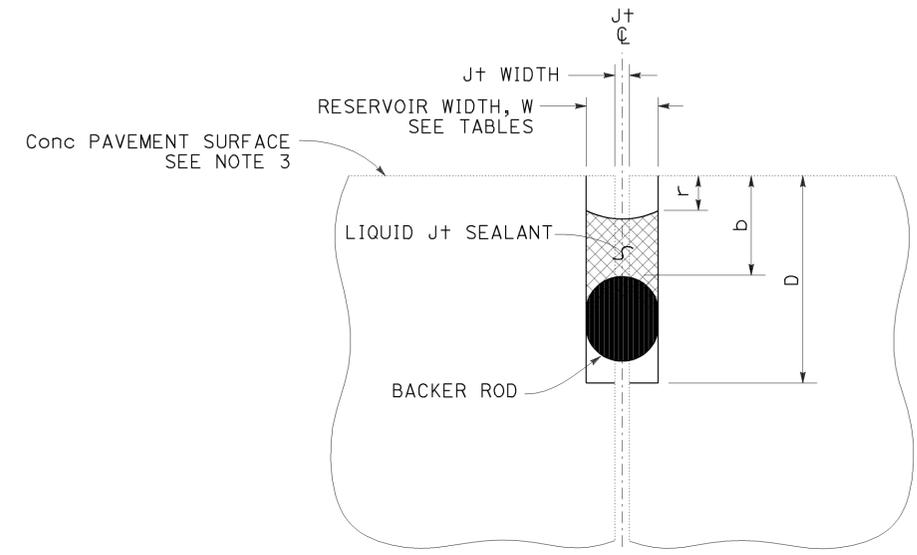
**REVISED STANDARD PLAN RSP P18**



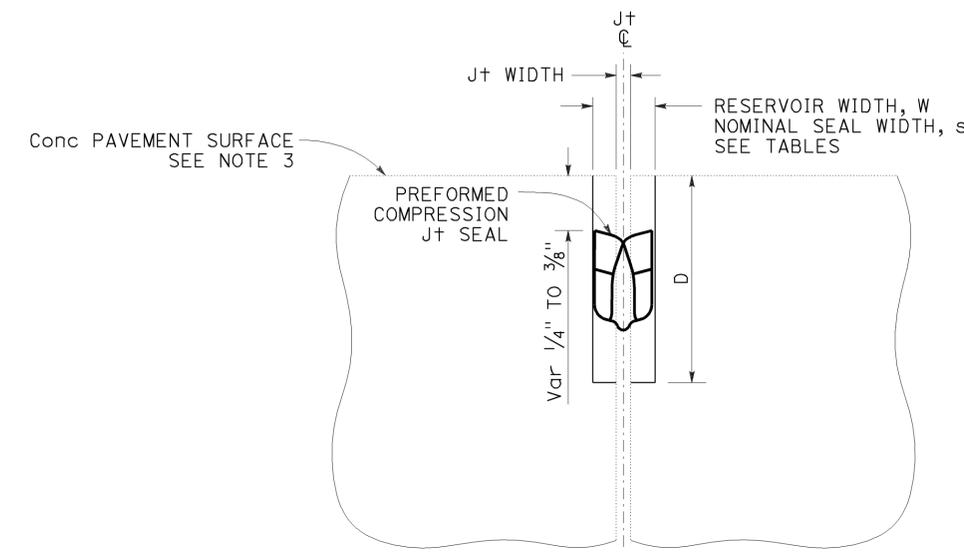
TO ACCOMPANY PLANS DATED 01-20-15

**NOTES:**

1. Details do not apply to isolation joints and longitudinal construction joints.
2. Tie bars, dowel bars, and bar reinforcement are not shown.
3. Depths are measured from the final concrete pavement surface elevation after any grinding.



**LIQUID JOINT SEALANT**



**PREFORMED COMPRESSION JOINT SEAL**

Const SEASON	Min RESERVOIR WIDTH * W ± 1/16"
WINTER	1/4"
SPRING	3/8"
SUMMER	
FALL	

\* Minimum reservoir width for replace joint seal = existing joint width + 1/8"

RESERVOIR WIDTH W ± 1/16"	LIQUID JOINT SEALANT DIMENSIONS					
	BACKER ROD NOMINAL Dia *	DEPTHS (ASPHALT RUBBER) **		DEPTHS (SILICONE)		
		RESERVOIR D ± 1/4"	BACKER ROD b ± 1/16"	RESERVOIR D ± 1/4"	BACKER ROD b ± 1/16"	RECESS r ± 1/16"
1/4"	3/8"	1 3/4"	7/8"	1 3/8"	1/2"	1/4"
3/8"	1/2"	1 7/8"	7/8"	1 1/2"	1/2"	1/4"
1/2"	3/4"	2"	7/8"	1 3/4"	9/16"	5/16"
5/8"	7/8"	2 1/4"	1"	2"	5/8"	5/16"
3/4"	1"	2 3/4"	1 1/8"	2 1/4"	3/4"	3/8"
7/8"	1 1/4"	3"	1 1/4"	2 1/2"	13/16"	3/8"
1"	1 1/2"	3 1/4"	1 3/8"	2 5/8"	7/8"	3/8"
1 1/8"	1 1/2"	3 1/2"	1 1/2"	2 13/16"	1"	1/2"

\* Larger diameter backer rods may be substituted according to manufacturer recommendations if reservoir depth is increased equivalently.

\*\* Asphalt rubber sealant recess depth "r" varies from 1/4" to 3/8"

RESERVOIR WIDTH W ± 1/16"	PREFORMED COMPRESSION JOINT SEAL DIMENSIONS	
	NOMINAL SEAL WIDTH s	RESERVOIR DEPTH D ± 1/4"
1/4"	7/16"	1 1/4"
3/8"	11/16"	1 1/16"
1/2"	13/16"	1 1/8"
5/8"	1"	1 7/8"
3/4"	1 1/4"	2 1/8"
7/8"	1 5/8"	2 5/8"
1"	1 7/8"	2 3/8"
1 1/8"	2"	2 7/8"

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**JOINT SEALS**

NO SCALE

RSP P20 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN P20  
DATED MAY 20, 2011 - PAGE 136 OF THE STANDARD PLANS BOOK DATED 2010.

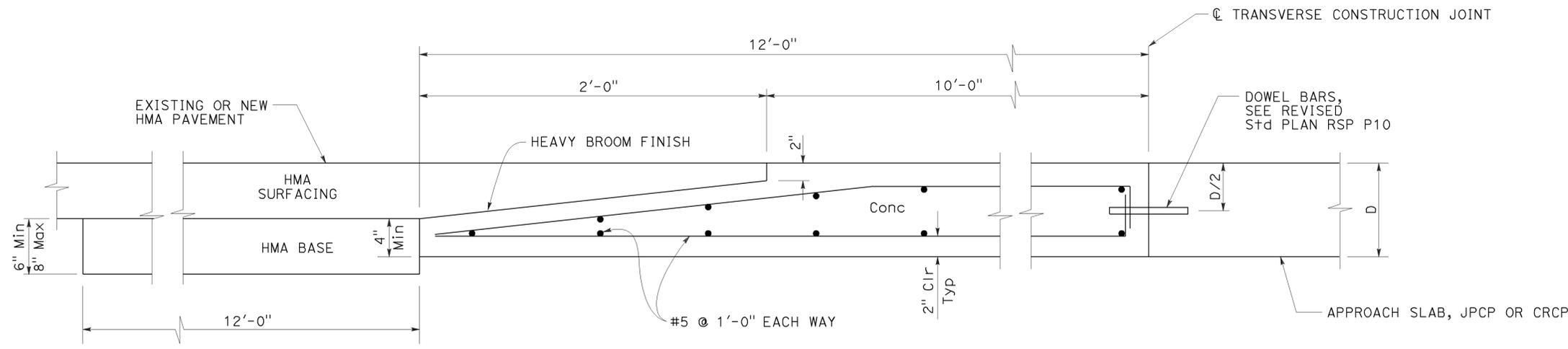
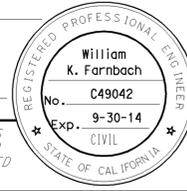
2010 REVISED STANDARD PLAN RSP P20

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11, 125, 905	Var	247	302

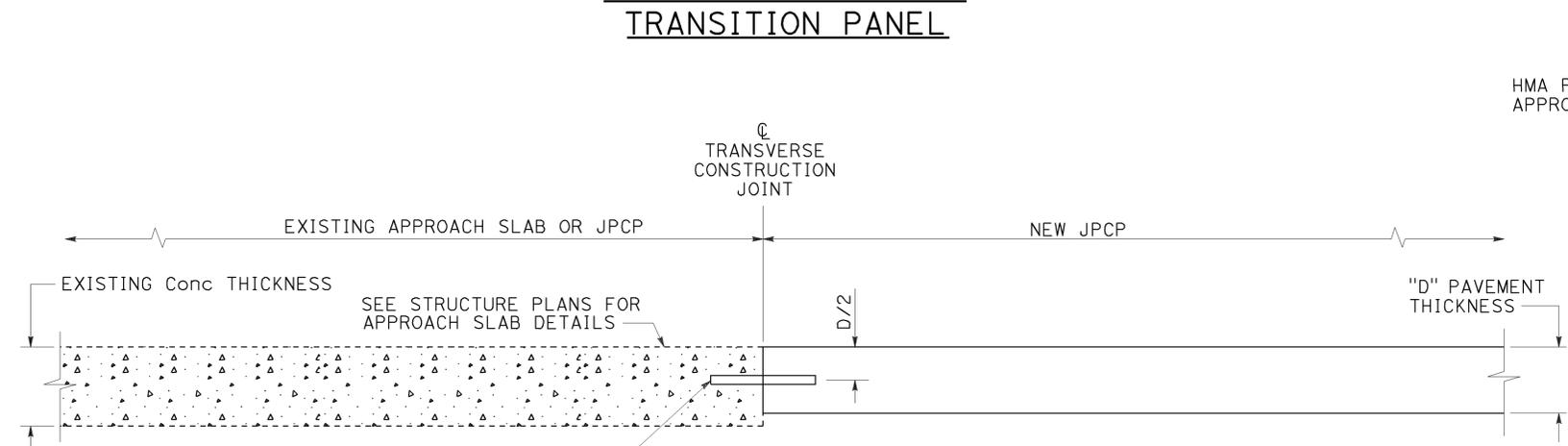
William K. Farnbach  
 REGISTERED CIVIL ENGINEER  
 July 19, 2013  
 PLANS APPROVAL DATE

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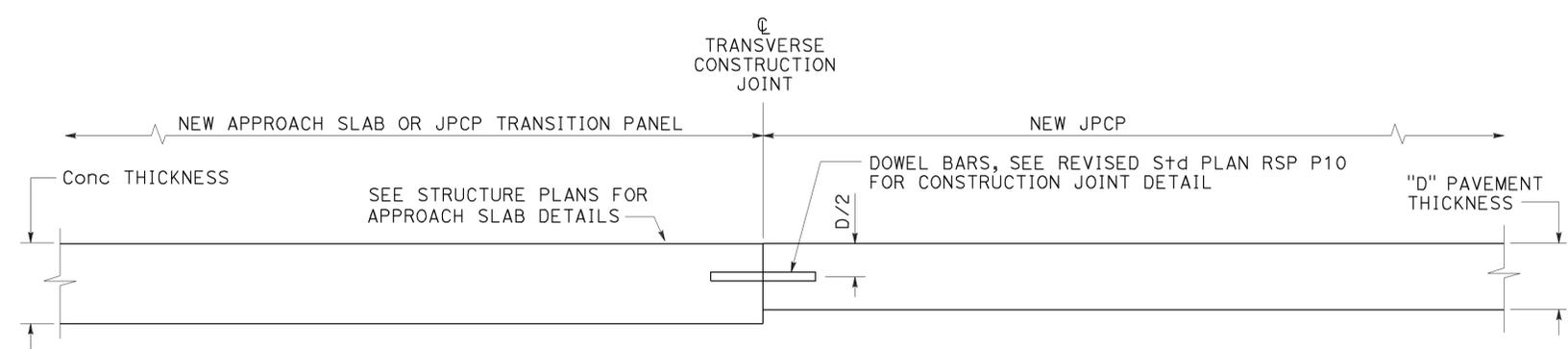
TO ACCOMPANY PLANS DATED 01-20-15



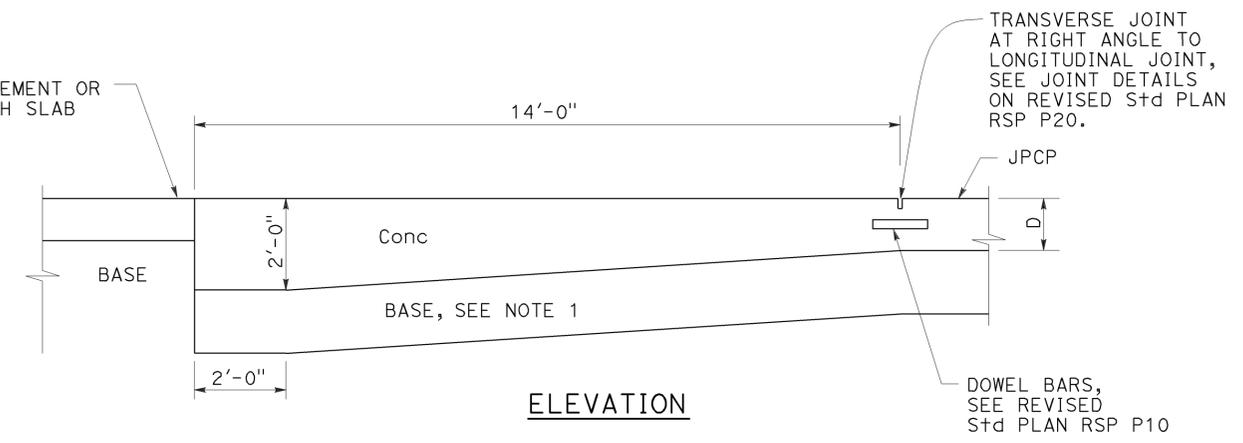
**ELEVATION**  
**CONCRETE PAVEMENT**  
**TRANSITION PANEL**



**ELEVATION**  
**TERMINAL JOINT TYPE 1**  
 For Exist JPCP or Approach Slab



**ELEVATION**  
**TERMINAL JOINT TYPE 2**  
 For JPCP Transition Panel or Approach Slab



**ELEVATION**  
**PAVEMENT END ANCHOR**  
 For HMA Pvmt or Approach Slab

**NOTE:**  
 1. Maintain same base thickness as JPCP.

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**CONCRETE PAVEMENT-  
 END PANEL  
 PAVEMENT TRANSITIONS**

NO SCALE

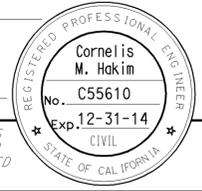
RSP P30 DATED JULY 19, 2013 SUPERSEDES RSP P30 DATED APRIL 20, 2012 AND STANDARD PLAN P30 DATED MAY 20, 2011 - PAGE 137 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP P30**

2010 REVISED STANDARD PLAN RSP P30

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	248	302

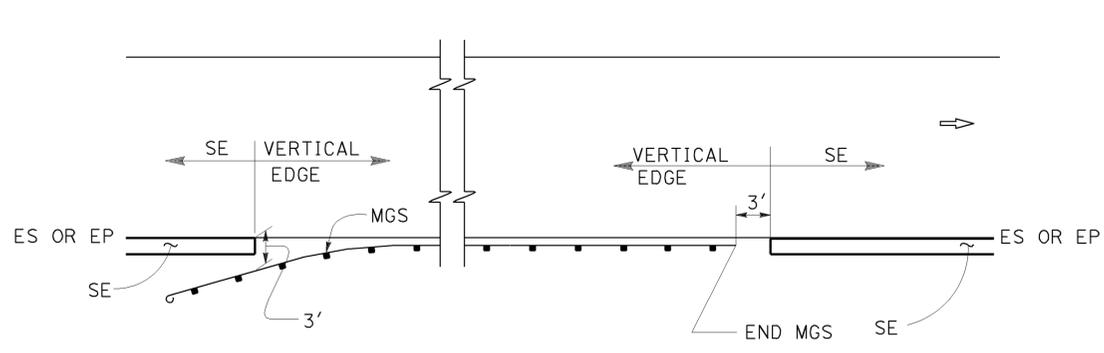
REGISTERED CIVIL ENGINEER  
 November 15, 2013  
 PLANS APPROVAL DATE  
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



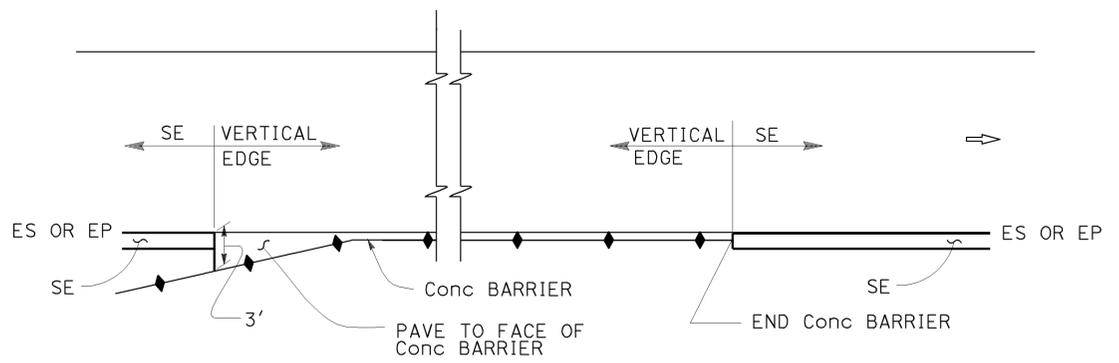
TO ACCOMPANY PLANS DATED 01-20-15

**ABBREVIATIONS:**

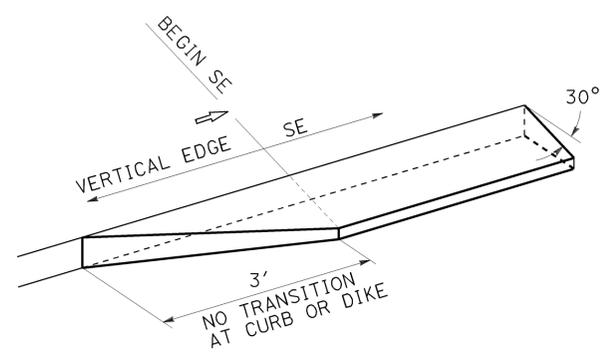
SE SAFETY EDGE



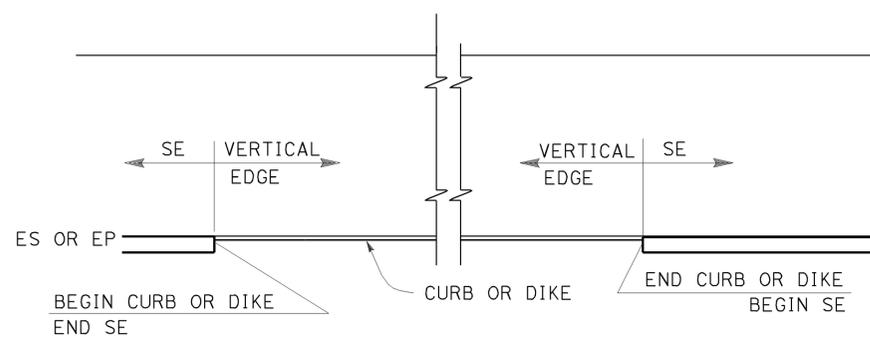
**MGS**



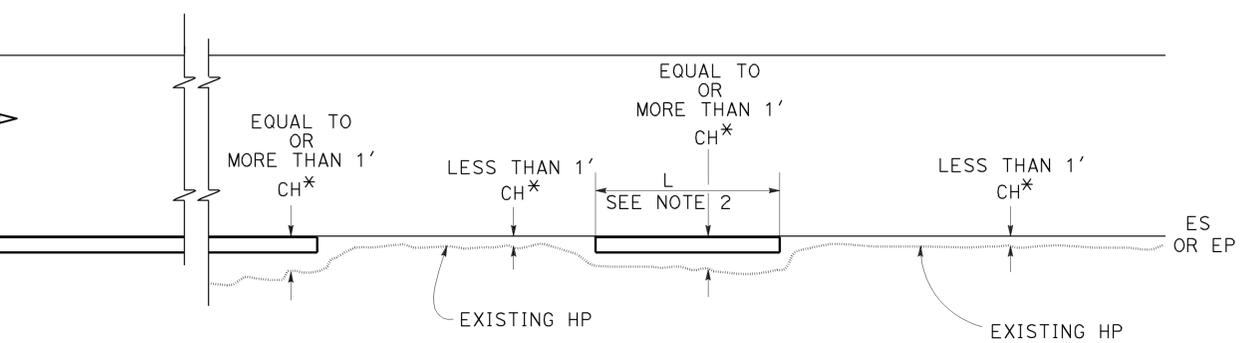
**CONCRETE BARRIER**



**TRANSITION DETAIL FOR CONCRETE ONLY**

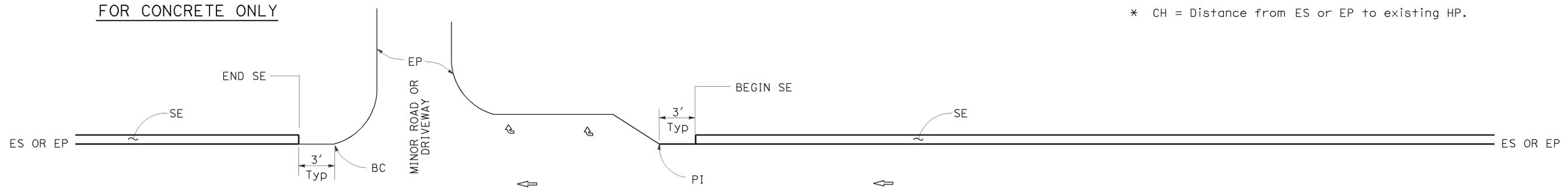


**CURB OR DIKE**



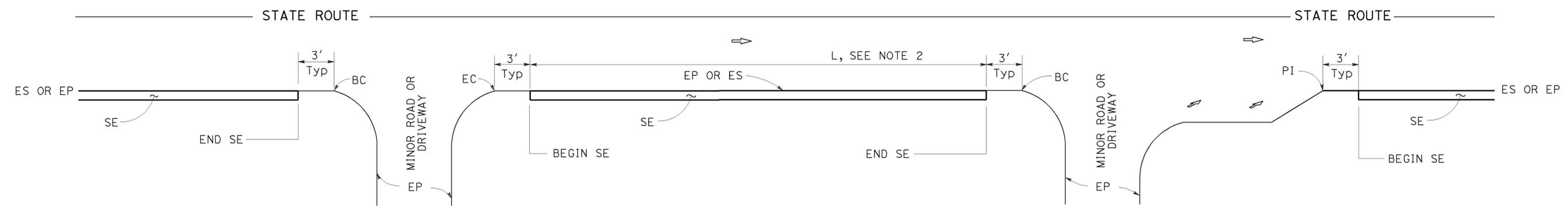
**NARROW SIDE SLOPE**

\* CH = Distance from ES or EP to existing HP.



**STATE ROUTE**

**STATE ROUTE**



**INTERSECTION**

**DRIVEWAY AND INTERSECTION**

**MINOR ROADWAY OR DRIVEWAY**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**PAVEMENT EDGE TREATMENTS**

NO SCALE

**NOTES:**

1. For details not shown, see Revised Standard Plans RSP P75 and RSP P76.
2. Safety edge is optional when L is less than 30'.

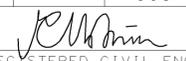
RSP P74 DATED NOVEMBER 15, 2013 SUPERSEDES RSP P74 DATED JANUARY 20, 2012 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP P74**

2010 REVISED STANDARD PLAN RSP P74

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	249	302

 REGISTERED CIVIL ENGINEER		
November 15, 2013 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>		

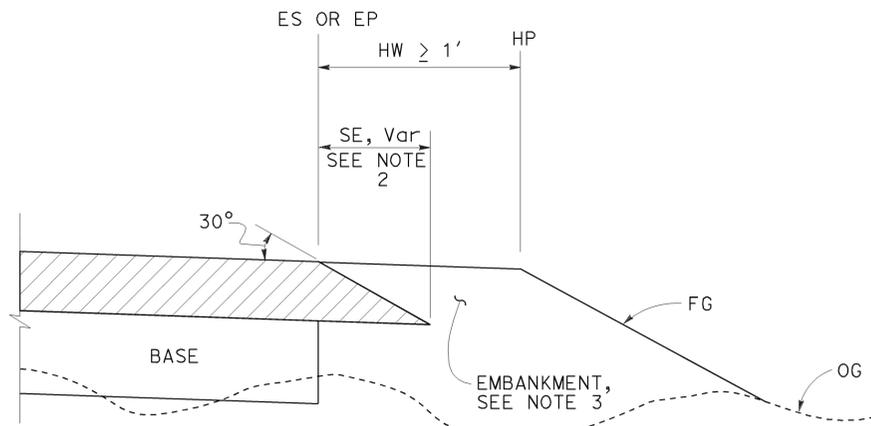
**LEGEND:**

-  HMA PAVEMENT
-  HMA OR CONCRETE PAVEMENT
-  CONCRETE PAVEMENT

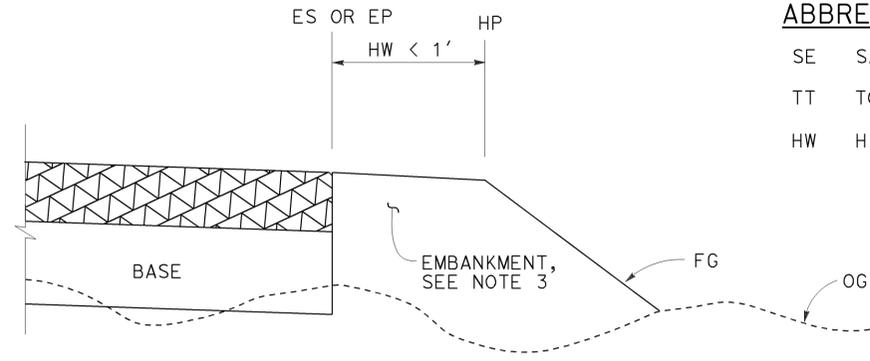
**ABBREVIATIONS:**

- SE SAFETY EDGE
- TT TOTAL THICKNESS OF SE
- HW HINGE WIDTH, DISTANCE FROM ES OR EP TO HP

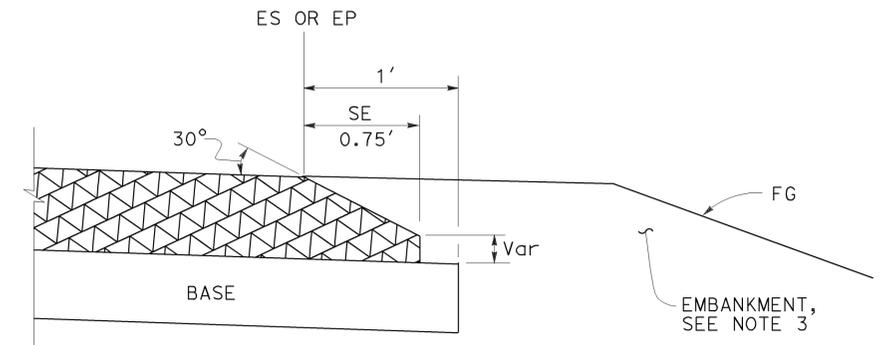
TO ACCOMPANY PLANS DATED 01-20-15



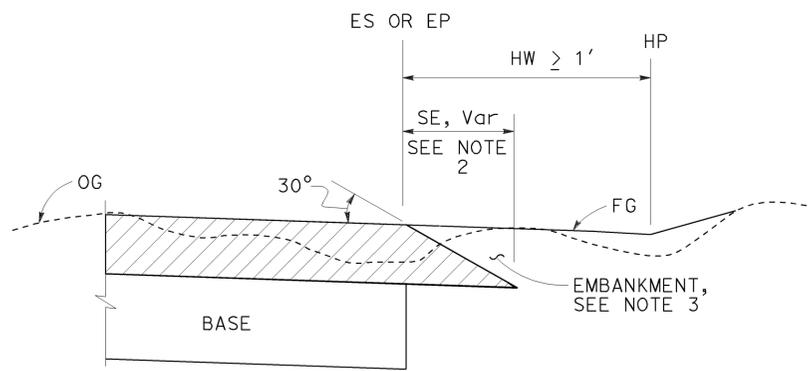
**CASE K**  
Safety Edge - Fill Section, HW  $\geq 1'$



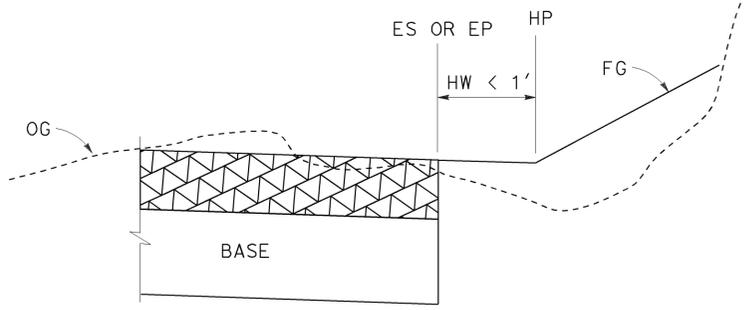
**CASE L**  
Vertical Edge - Fill Section, HW  $< 1'$



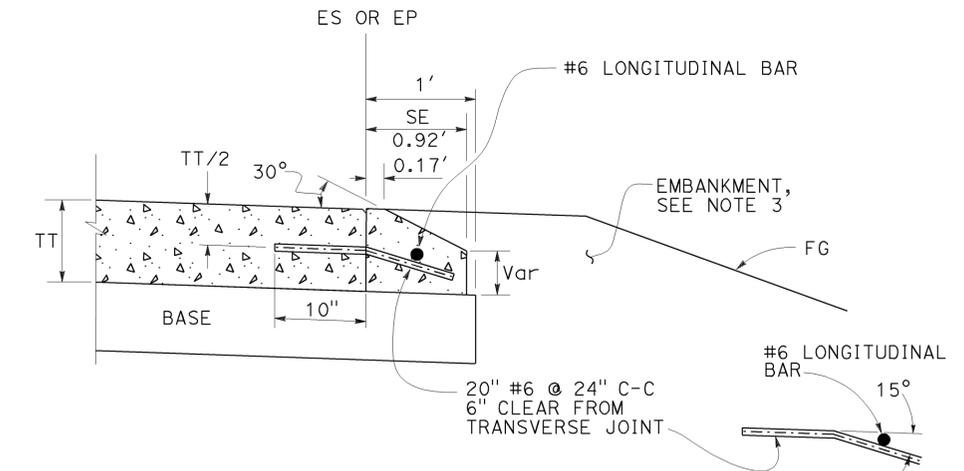
**DETAIL "B"**  
For HMA pavement thickness more than 0.43' or concrete pavement



**CASE M**  
Safety Edge - Cut Section, HW  $\geq 1'$



**CASE N**  
Vertical Edge - Cut Section, HW  $< 1'$



**OPTIONAL DETAIL "B"**  
For concrete pavement  
See Note 4

**FILL SECTION**

**CUT SECTION**

**NOTES:**

- For limits of safety edge and vertical edge treatments, see Revised Standard Plan RSP P74
- Details shown for HMA pavement thickness less than 0.43'. See Detail "B" for HMA pavement thickness more than 0.43' or concrete pavement.
- For locations and limits of embankment see project plans.
- Safety edge transverse joint must match pavement transverse joint. End of #6 longitudinal bar must be 2"  $\pm 1/2$ " clear from transverse joint.
- Safety edge is not needed in the area of MGS, barrier, right turn lane and acceleration lane. See Revised Standard Plan RSP P74.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**PAVEMENT EDGE TREATMENTS-  
NEW CONSTRUCTION**  
NO SCALE

RSP P76 DATED NOVEMBER 15, 2013 SUPERSEDES RSP P76 DATED JANUARY 20, 2012 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.  
**REVISED STANDARD PLAN RSP P76**

2010 REVISED STANDARD PLAN RSP P76

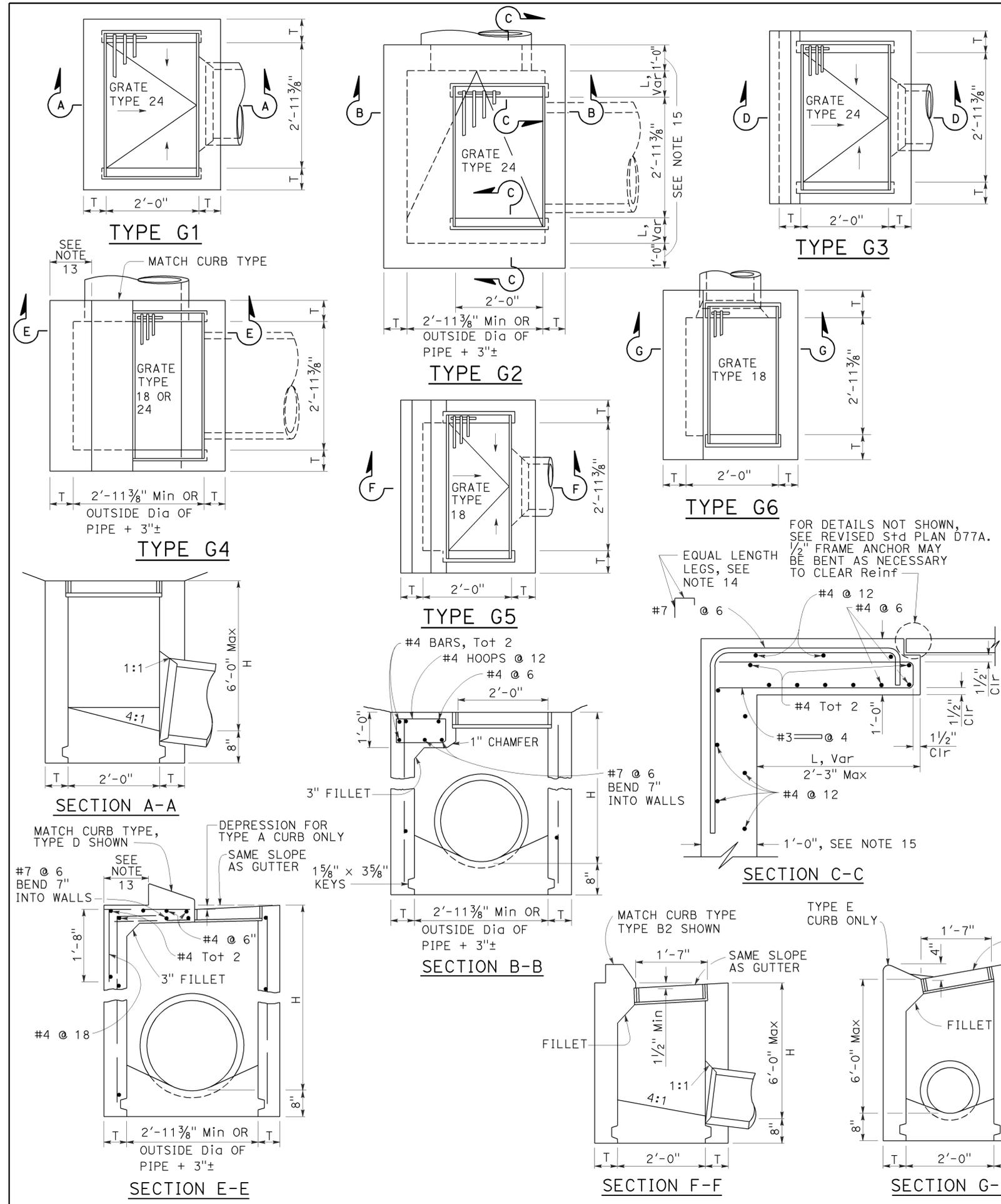
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	250	302

Glenn DeCou  
REGISTERED CIVIL ENGINEER

October 19, 2012  
PLANS APPROVAL DATE

Glenn DeCou  
No. C34547  
Exp. 9-30-13  
CIVIL  
STATE OF CALIFORNIA

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



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

**TABLE A**

**CONCRETE QUANTITIES**

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

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

**NOTE A:**  
Maximum allowable height 6'-0".

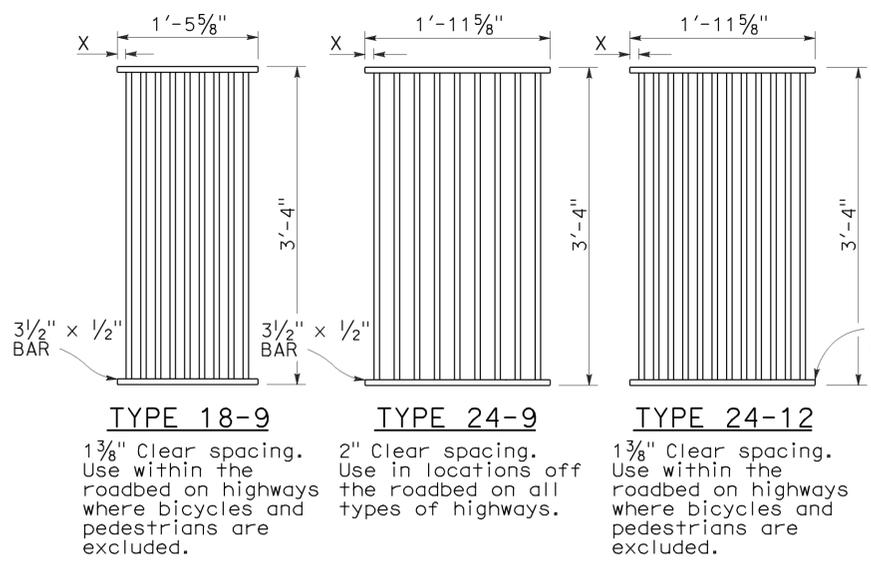
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**DRAINAGE INLETS**  
NO SCALE

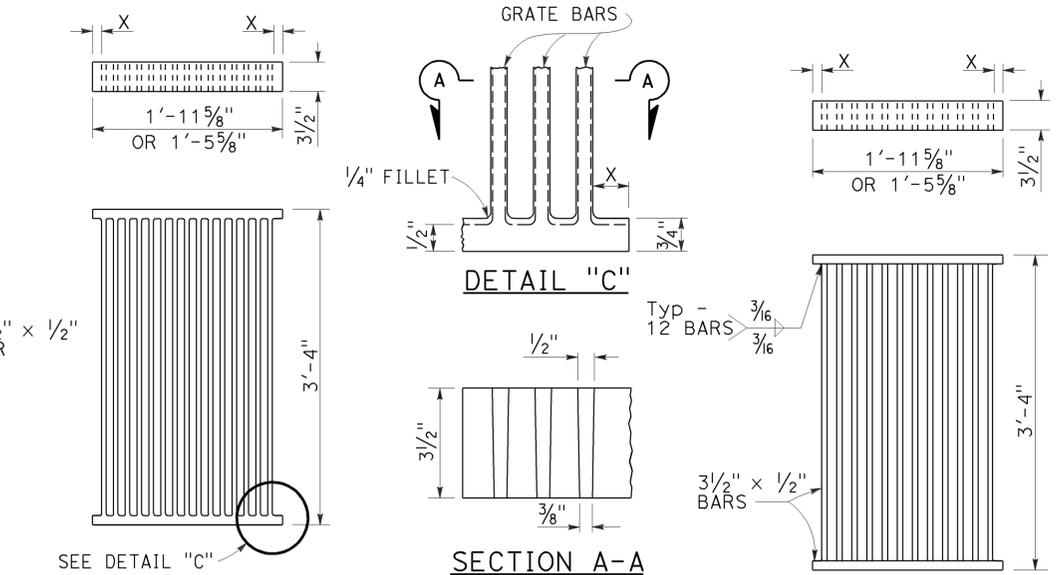
RSP D73 DATED OCTOBER 19, 2012 SUPERSEDES STANDARD PLAN D73 DATED MAY 20, 2011 - PAGE 156 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP D73**

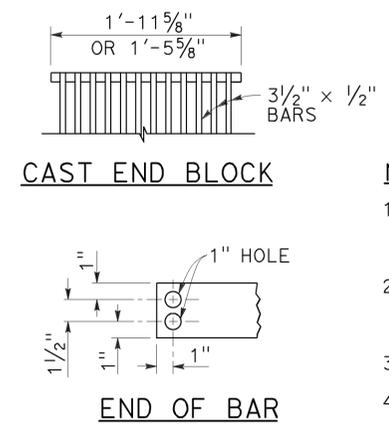
2010 REVISED STANDARD PLAN RSP D73



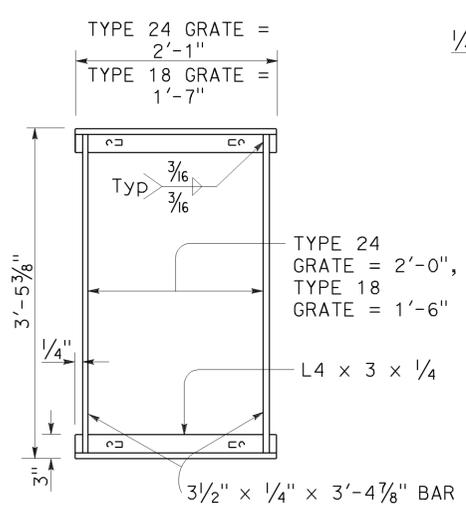
**RECTANGULAR GRATE DETAILS**  
(See table below)



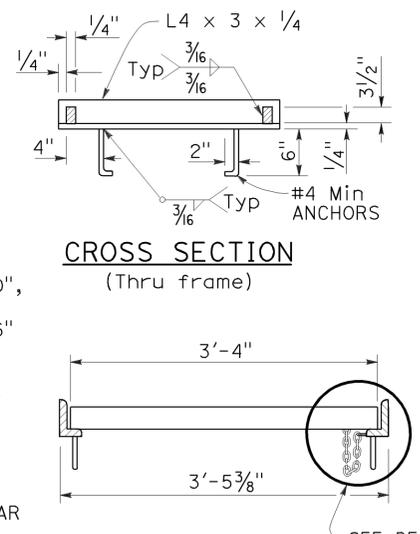
**ALTERNATIVE CAST DUCTILE IRON GRATE OR CAST CARBON STEEL GRATE**  
**ALTERNATIVE WELDED GRATE**



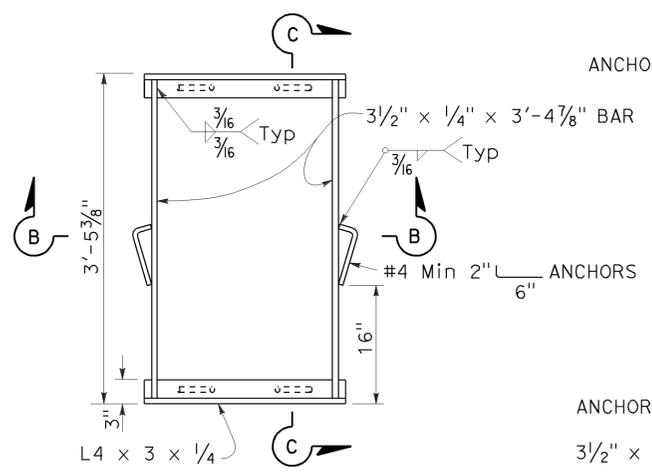
**CAST END BLOCK**  
**END OF BAR**



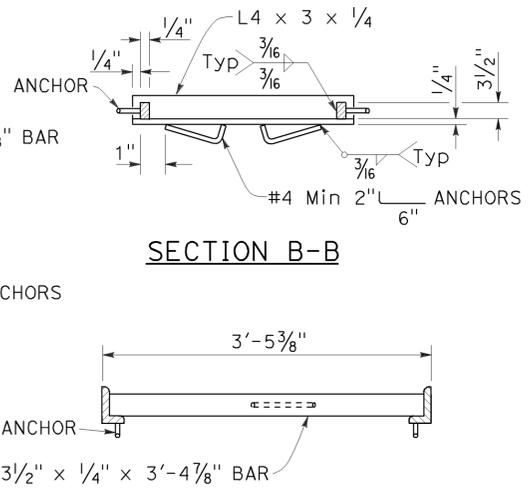
**TYPICAL FRAME**



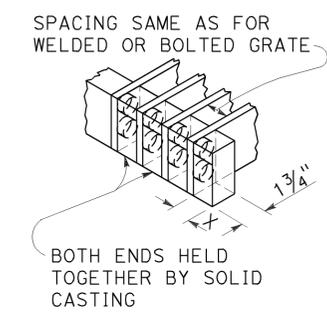
**CROSS SECTION (Thru frame)**  
**LONGITUDINAL SECTION (Thru frame and grate)**



**TYPICAL FRAME**  
**ALTERNATIVE ANCHOR FOR RECTANGULAR FRAME**  
(For details not shown, See Rectangular Frame Details)



**SECTION B-B**  
**SECTION C-C**



**ALTERNATIVE CAST DUCTILE IRON OR CAST CARBON STEEL END BLOCK GRATE**

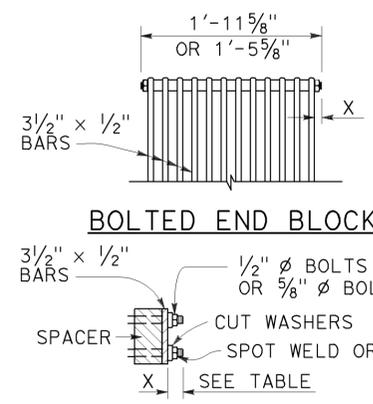
**RECTANGULAR FRAME DETAILS**  
(For all rectangular grates)

**GRATE BAR SPACING TABLE**

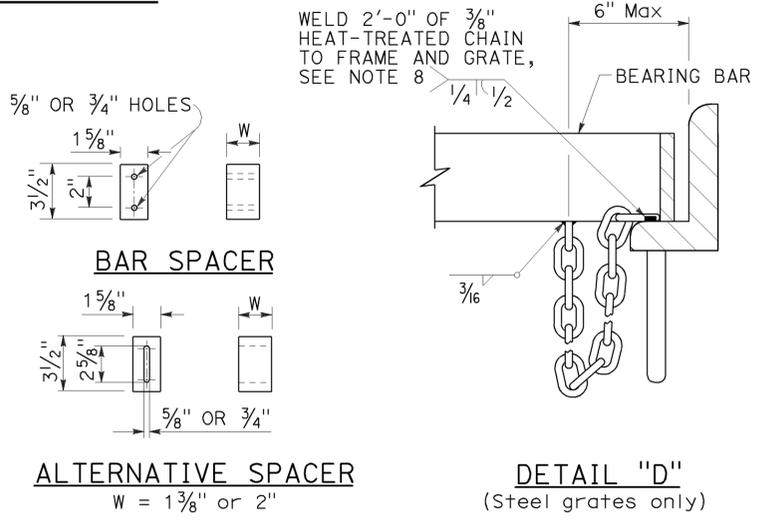
TYPE	NO. OF BARS	CLEAR BAR SPACING	X
18-9	9	1 3/8"	1 1/16"
24-9	9	2"	1 9/16"
24-12	12	1 3/8"	1 1/4"

INLET TYPE	COVER TYPE	WEIGHT LB
OS	PLATE	174
OL-7	PLATE	170
OL-10	PLATE	170
OL-14	PLATE	170
OL-21	PLATE	170
OCPI	PLATE	112
OCPI	PLATE	112
OCPI	REDWOOD	42
OMP	PLATE	177
OMPI	PLATE	177

INLET TYPE	GRATE TYPE	NO. OF GRATES	WEIGHT LB
GDO	24-12	2	634
GOL-7	24-12	1	326
GOL-10	24-12	1	326
G0,G1,G2,G3,G4 (TYPE 24)	24-9	1	263
	24-12	1	326
G4 (TYPE 18),G5,G6	18-9	1	249
GT1	18-9	2	498
GT2	18-9	2	498
GT3	24-12	2	652
GT4	24-12	2	652
TRASH RACK			22
GRATE CHAIN			3



**BOLTED END BLOCK**  
**BOLTING DETAIL**  
**ALTERNATIVE BOLTED GRATE**



**BAR SPACER**  
**ALTERNATIVE SPACER**  
**DETAIL "D"**  
(Steel grates only)

- NOTES:**
- Grate type numbers refer to approximate width of grate in inches and number of bars, respectively.
  - Contractor has the option of using cast ductile iron, cast carbon steel, welded, bolted, or cast end block grate.
  - Rounded top of bars optional on all grates.
  - Pipe inlets with a grate shall be placed so that bars parallel direction of principle surface flow.
  - Complete joint penetration butt welds may be substituted for the fillet welds on all anchors.
  - Standard square, hexagon, round or equivalent headed anchors may be substituted for the right angle hooks on the anchors shown on this plan.
  - Grate and frame weights are based on welded grates (weights of face angles, steps, protection bars, etc. are not included).
  - Connect chain to grate and frame only at locations shown on the plans. When chain is required, do not use cast ductile iron grates.

**BASIS FOR MISC IRON & STEEL FINAL PAY WEIGHTS FOR DRAINAGE INLETS**  
(See Note 7)

RSP D77A DATED APRIL 19, 2013 SUPERSEDES RSP D77A DATED JULY 20, 2012 AND STANDARD PLAN D77A DATED MAY 20, 2011 - PAGE 164 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP D77A**

2010 REVISED STANDARD PLAN RSP D77A



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	253	302

*Gregory A. Balzer*  
LICENSED LANDSCAPE ARCHITECT

July 19, 2013  
PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS  
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THE ACCURACY OR COMPLETENESS OF SCANNED  
COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 01-20-15

**A**

AB AGGREGATE BASE  
 ABS ACRYLONITRILE-BUTADIENE-STYRENE  
 AC ASPHALT CONCRETE  
 ACC ARMOR-CLAD CONDUCTORS  
 Adj ADJACENT/ADJUSTABLE  
 AIC AUXILIARY IRRIGATION CONTROLLER  
 Alt ALTERNATIVE  
 AMEND AMENDMENT  
 ARV AIR RELEASE VALVE  
 AUTO AUTOMATIC  
 AUX AUXILIARY  
 AVB ATMOSPHERIC VACUUM BREAKER

**B**

B&B BALLED AND BURLAPPED  
 B/B BRASS/BRONZE  
 B/B/PL BRASS/BRONZE/PLASTIC  
 B/PL BRASS/PLASTIC  
 BFM BONDED FIBER MATRIX  
 Bit Ctd BITUMINOUS COATED  
 BP BOOSTER PUMP  
 BPA BACKFLOW PREVENTER ASSEMBLY  
 BPE BACKFLOW PREVENTER ENCLOSURE  
 BV BALL VALVE

**C**

C CONDUIT  
 CAP CORRUGATED ALUMINUM PIPE  
 CARV COMBINATION AIR RELEASE VALVE  
 CB COUPLING BAND  
 CCA CAM COUPLER ASSEMBLY  
 CEC CONTROLLER ENCLOSURE CABINET  
 CHDPE CORRUGATED HIGH DENSITY POLYETHYLENE  
 CL CHAIN LINK  
 CNC CONTROL AND NEUTRAL CONDUCTORS  
 Conc CONCRETE  
 CP COPPER PIPE  
 CS COMPOST SOCK  
 CSP CORRUGATED STEEL PIPE  
 CST CENTER STRIP  
 CV CHECK VALVE

**D**

Dia DIAMETER  
 DIP DUCTILE IRON PIPE  
 DIT DRIP IRRIGATION TUBING  
 DG DECOMPOSED GRANITE  
 DN DIAMETER NOMINAL  
 DVA DRIP VALVE ASSEMBLY

**E**

EC EROSION CONTROL  
 ECTC EROSION CONTROL TECHNOLOGY COUNCIL  
 ElecT ELECTRIC/ELECTRICAL  
 Elev ELEVATION  
 ELL ELBOW  
 ENCL ENCLOSURE  
 EP EDGE OF PAVEMENT  
 ES EDGE OF SHOULDER  
 EST END STRIP  
 ESTB ESTABLISHMENT  
 ETW EDGE OF TRAVELED WAY

**F**

F FULL CIRCLE  
 F/P FULL/PART CIRCLE  
 FCV FLOW CONTROL VALVE  
 FERT FERTILIZER  
 FG FINISHED GRADE  
 FH FLEXIBLE HOSE  
 FIPT FEMALE IRON PIPE THREAD  
 FIS FERTILIZER INJECTOR SYSTEM  
 FL FLOW LINE  
 FR FIBER ROLL  
 FS FLOW SENSOR  
 FSC FLOW SENSOR CABLE  
 FV FLUSH VALVE

**G**

Galv GALVANIZED  
 GARV GARDEN VALVE  
 GARVA GARDEN VALVE ASSEMBLY  
 GM GRAVEL MULCH  
 GPH GALLONS PER HOUR  
 GPM GALLONS PER MINUTE  
 GSP GALVANIZED STEEL PIPE  
 GV GATE VALVE

**H**

H HALF CIRCLE  
 HDPE HIGH DENSITY POLYETHYLENE  
 HP HORSEPOWER/HINGE POINT  
 HPL HIGH PRESSURE LINE  
 Hwy HIGHWAY

**I**

IC IRRIGATION CONTROLLER  
 ICC IRRIGATION CONTROLLER(S)  
 IN CONTROLLER ENCLOSURE CABINET  
 ID INSIDE DIAMETER  
 IFS IRRIGATION FILTRATION SYSTEM  
 IPS IRON PIPE SIZE  
 IPT IRON PIPE THREAD  
 Irr IRRIGATION

**L**

L LENGTH

**M**

Max MAXIMUM  
 MBGR METAL BEAM GUARD RAILING  
 MCV MANUAL CONTROL VALVE  
 MIC MASTER IRRIGATION CONTROLLER  
 Min MINIMUM  
 MIPT MALE IRON PIPE THREAD  
 Misc MISCELLANEOUS  
 MtI MATERIAL  
 MVP MAINTENANCE VEHICLE PULLOUT

**N**

NCN NO COMMON NAME  
 NL NOZZLE LINE  
 No. NUMBER  
 NPT NATIONAL PIPE THREAD

**O**

O/C ON CENTER  
 OD OUTSIDE DIAMETER  
 OL OVERLAP

**P**

P PART CIRCLE  
 PB PULL BOX  
 PCC PORTLAND CEMENT CONCRETE  
 PE POLYETHYLENE  
 Pkt+ PACKET  
 PL PLASTIC  
 PLS PURE LIVE SEED  
 PLT PLANT/PLANTING  
 PLT ESTB PLANT ESTABLISHMENT  
 PM POST MILE  
 PR PRESSURE RATED  
 PRLV PRESSURE RELIEF VALVE  
 PRV PRESSURE REGULATING VALVE  
 PVC POLYVINYL CHLORIDE  
 Pvm+ PAVEMENT

**Q**

Q QUARTER CIRCLE  
 QCV QUICK COUPLING VALVE

**R**

R RADIUS  
 RCP REINFORCED CONCRETE PIPE  
 RCV REMOTE CONTROL VALVE  
 RCVM REMOTE CONTROL VALVE (MASTER)  
 RCVMF REMOTE CONTROL VALVE (MASTER) W/FLOW  
 SENSOR  
 RCVP REMOTE CONTROL VALVE W/PRESSURE  
 REGULATOR  
 RCW RECYCLED WATER  
 RECP ROLLED EROSION CONTROL PRODUCT  
 REQ REQUIRED  
 RICS REMOTE IRRIGATION CONTROL SYSTEM  
 R/W RIGHT OF WAY

**S**

S SLIP  
 SCH SCHEDULE  
 SF STATE-FURNISHED  
 Shld SHOULDER  
 Sq SQUARE  
 SST SIDE STRIP  
 Sta STATION  
 Std STANDARD  
 SW SIDEWALK/SOUND WALL

**T**

T THIRD CIRCLE/THREAD  
 TLS TRUCK LOADING STANDPIPE  
 TQ THREE QUARTER CIRCLE  
 TRM TURF REINFORCEMENT MAT  
 TT TWO-THIRDS CIRCLE  
 TWSA TREE WELL SPRINKLER ASSEMBLY  
 Typ TYPICAL

**U**

UG UNDERGROUND

**W**

W WIDTH  
 W/ WITH  
 WM WATER METER  
 WS WYE STRAINER  
 WSA WYE STRAINER ASSEMBLY  
 WSP WELDED STEEL PIPE  
 WWM WELDED WIRE MESH

**NOTE:**  
 For additional abbreviations,  
 see Standard Plans A10A and A10B.

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**LANDSCAPE AND  
 EROSION CONTROL ABBREVIATIONS**  
 NO SCALE

RSP H1 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN H1  
 DATED MAY 20, 2011 - PAGE 218 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP H1**

2010 REVISED STANDARD PLAN RSP H1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	254	302

*Gregory A. Balzer*  
LICENSED LANDSCAPE ARCHITECT

November 15, 2013  
PLANS APPROVAL DATE

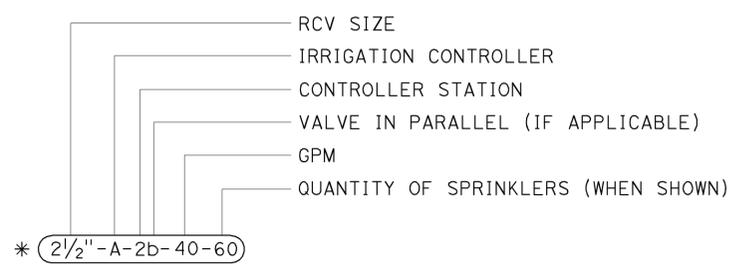
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TO ACCOMPANY PLANS DATED 01-20-15

2010 REVISED STANDARD PLAN RSP H2

EXISTING	NEW	ITEM DESCRIPTION
		WATER METER (WM)
		BACKFLOW PREVENTER ASSEMBLY (BPA)
		BACKFLOW PREVENTER ENCLOSURE (BPE)
		BOOSTER PUMP (BP)
		TRUCK LOADING STANDPIPE (TLS)
		FLOW SENSOR (FS)
		MASTER IRRIGATION CONTROLLER (MIC)
		AUXILIARY IRRIGATION CONTROLLER (AIC)
		IRRIGATION CONTROLLER (IC)
		IRRIGATION CONTROLLER (IC) (BATTERY)
		IRRIGATION CONTROLLER (IC) (SOLAR)
		IRRIGATION CONTROLLER (IC) (TWO WIRE)
		IRRIGATION CONTROLLER(S) IN CONTROLLER ENCLOSURE CABINET (ICC)
		ARMOR-CLAD CONDUCTORS (ACC)
		CONTROL AND NEUTRAL CONDUCTORS (CNC)
		IRRIGATION CONDUIT
		EXTEND IRRIGATION CONDUIT
		DUCTILE IRON PIPE (SUPPLY LINE) (MAIN) (DIP)
		GALVANIZED STEEL PIPE (SUPPLY LINE) (MAIN) (GSP)
		GALVANIZED STEEL PIPE (SUPPLY LINE) (LATERAL) (GSP)
		PLASTIC PIPE (SUPPLY LINE) (MAIN)
		PLASTIC PIPE (SUPPLY LINE) (LATERAL)
		COPPER PIPE (SUPPLY LINE)
		DRIP IRRIGATION TUBING
		REMOTE CONTROL VALVE (RCV)
		REMOTE CONTROL VALVE (MASTER) (RCVM)
		REMOTE CONTROL VALVE (MASTER) W/FLOW METER (RCVMF)
		REMOTE CONTROL VALVE W/PRESSURE REGULATOR (RCVP)
		EXISTING MANUAL CONTROL VALVE (MCV)
		DRIP VALVE ASSEMBLY (DVA)
		WYE STRAINER ASSEMBLY (WSA)

EXISTING	NEW	ITEM DESCRIPTION
		GATE VALVE (GV)
		BALL VALVE (BV)
		QUICK COUPLING VALVE (QCV)
		CAM COUPLER ASSEMBLY (CCA)
		GARDEN VALVE ASSEMBLY (GARVA)
		PRESSURE REGULATING VALVE (PRV)
		PRESSURE RELIEF VALVE (PRLV)
		FLOW CONTROL VALVE (FCV)
		COMBINATION AIR RELEASE VALVE (CARV)
		CHECK VALVE (CV)
		FLUSH VALVE (FV)
		EXISTING NOZZLE LINE W/TURNING UNION
		EXISTING IRRIGATION SYSTEM
		EXISTING IRRIGATION SYSTEM TO BE REMOVED
		CHAIN LINK GATE
		QUICK COUPLING VALVE W/SPRINKLER PROTECTOR
		SPRINKLER W/SPRINKLER PROTECTOR
		CONNECT TO EXISTING SYSTEM
		CAP
		CAP EXISTING
		FIBER ROLL
		COMPOST SOCK



\* 2 1/2" - A - 2b - 40 - 60

**VALVE CODE**

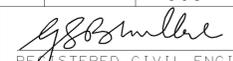
\* VALVE CODES FOR EXISTING VALVES ARE SHOWN IN A DASHED ENCLOSURE.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**LANDSCAPE AND EROSION CONTROL SYMBOLS**  
NO SCALE

RSP H2 DATED NOVEMBER 15, 2013 SUPERSEDES RSP H2 DATED JULY 19, 2013 AND STANDARD PLAN H2 DATED MAY 20, 2011 - PAGE 219 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP H2**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11, 125, 905	Var	255	302

  
 REGISTERED CIVIL ENGINEER  
 July 19, 2013  
 PLANS APPROVAL DATE



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

TO ACCOMPANY PLANS DATED 01-20-15

TABLE 1

TAPER LENGTH CRITERIA AND CHANNELIZING DEVICE SPACING							
SPEED (S)	MINIMUM TAPER LENGTH * FOR WIDTH OF OFFSET 12 FEET (W)				MAXIMUM CHANNELIZING DEVICE SPACING		
	TANGENT 2L	MERGING L	SHIFTING L/2	SHOULDER L/3	X Y Z **		
					TAPER	TANGENT	CONFLICT
mph	ft	ft	ft	ft	ft	ft	ft
20	160	80	40	27	20	40	10
25	250	125	63	42	25	50	12
30	360	180	90	60	30	60	15
35	490	245	123	82	35	70	17
40	640	320	160	107	40	80	20
45	1080	540	270	180	45	90	22
50	1200	600	300	200	50	100	25
55	1320	660	330	220	55	110	27
60	1440	720	360	240	60	120	30
65	1560	780	390	260	65	130	32
70	1680	840	420	280	70	140	35

\* - For other offsets, use the following merging taper length formula for L:  
 For speed of 40 mph or less,  $L = WS^2/60$   
 For speed of 45 mph or more,  $L = WS$

Where: L = Taper length in feet  
 W = Width of offset in feet  
 S = Posted speed limit, off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph

\*\* - Use for taper and tangent sections where there are no pavement markings or where there is a conflict between existing pavement markings and channelizers (CA).

TABLE 2

LONGITUDINAL BUFFER SPACE AND FLAGGER STATION SPACING				
SPEED *	Min D **	DOWNGRADE Min D ***		
		-3%	-6%	-9%
		ft	ft	ft
20	115	116	120	126
25	155	158	165	173
30	200	205	215	227
35	250	257	271	287
40	305	315	333	354
45	360	378	400	427
50	425	446	474	507
55	495	520	553	593
60	570	598	638	686
65	645	682	728	785
70	730	771	825	891

\* - Speed is posted speed limit, off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph  
 \*\* - Longitudinal buffer space or flagger station spacing  
 \*\*\* - Use on sustained downgrade steeper than -3 percent and longer than 1 mile.

TABLE 3

ADVANCE WARNING SIGN SPACING			
ROAD TYPE	DISTANCE BETWEEN SIGNS *		
	A	B	C
	ft	ft	ft
URBAN - 25 mph OR LESS	100	100	100
URBAN - MORE THAN 25 mph TO 40 mph	250	250	250
URBAN - MORE THAN 40 mph	350	350	350
RURAL	500	500	500
EXPRESSWAY / FREEWAY	1000	1500	2640

\* - The distances are approximate, are intended for guidance purposes only, and should be applied with engineering judgment. These distances should be adjusted by the Engineer for field conditions, if necessary, by increasing or decreasing the recommended distances.

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**TRAFFIC CONTROL SYSTEM TABLES  
 FOR LANE AND RAMP CLOSURES**  
 NO SCALE

RSP T9 DATED JULY 19, 2013 SUPERSEDES RSP T9 DATED APRIL 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP T9**

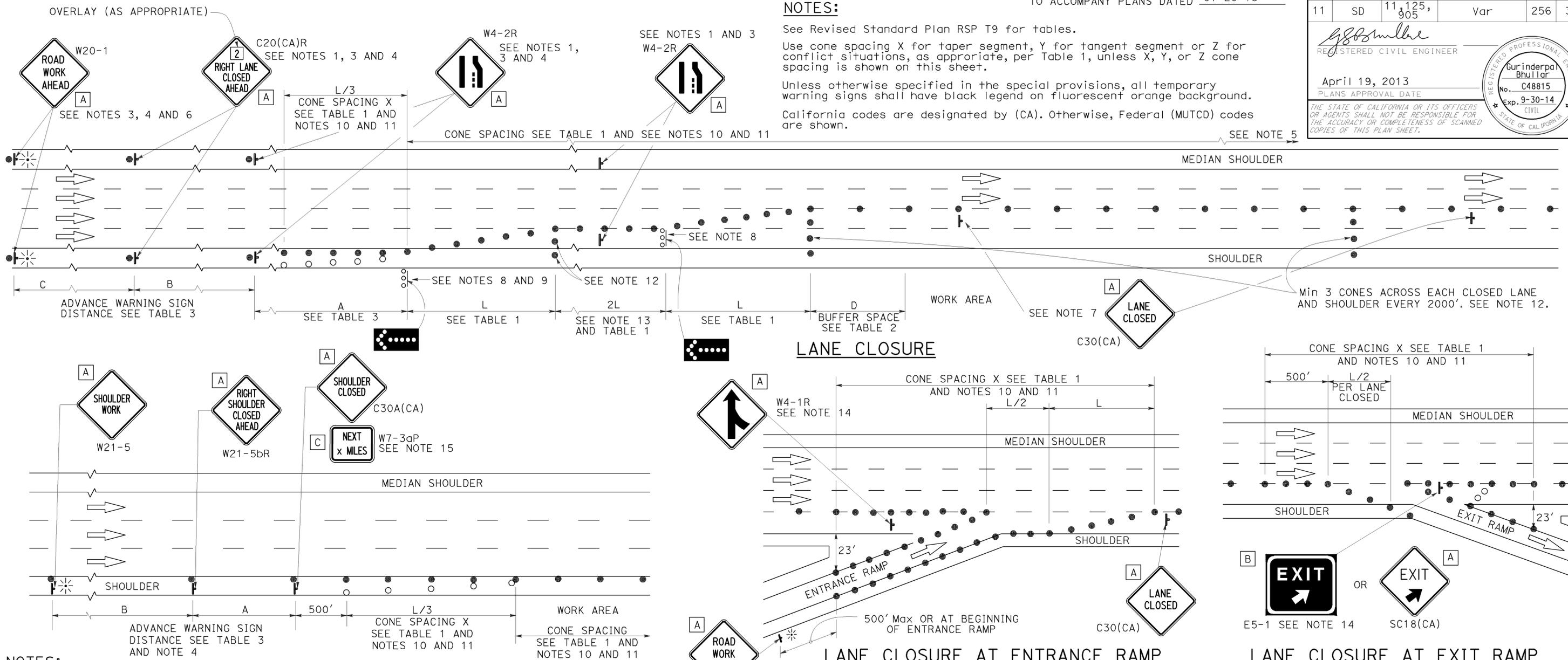
2010 REVISED STANDARD PLAN RSP T9

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	256	302

REGISTERED CIVIL ENGINEER  
 April 19, 2013  
 PLANS APPROVAL DATE

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

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



**NOTES:**

1. Median lane closures shall conform to the details as shown except that C20(CA)L and W4-2L signs shall be used.
2. At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closures.
3. Duplicate sign installations are not required:
  - a) On opposite shoulder if at least one-half of the available lanes remain open to traffic.
  - b) In the median if the width of the median shoulder is less than 8' and the outside lanes are to be closed.
4. Each advance warning sign on each side of the roadway shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
5. A G20-2 "END ROAD WORK" sign, with minimum size of 48" x 24" as appropriate, shall be placed at the end of the lane closure unless the end of work area is obvious or ends within a larger project's limits.

**SHOULDER CLOSURE**

6. If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT x MILES", use a C20(CA)L and W4-2L signs shall be used.
7. Place a C30(CA) sign every 2000' throughout length of lane closure.
8. One flashing arrow sign for each lane closed. The flashing arrow signs shall be Type I.
9. A minimum 1500' of sight distance shall be provided where possible for vehicles approaching the first flashing arrow sign. Lane closures shall not begin at top of crest vertical curve or on a horizontal curve.
10. All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
11. Portable delineators, placed at one-half the spacing indicated for traffic cones may be used instead of cones for daytime closures only.

W20-1 SEE NOTE 4

12. Unless otherwise specified in the special provisions, a minimum of 3 cones shall be placed transversely across each closed lane and shoulder at each location where a taper across a traffic lane ends and every 2000' as shown on the "Lane Closure" detail. Two Type II barricades may be used instead of the 3 cones. The transverse alignment of the cones or barricades on the closed shoulder may be shifted from the transverse alignment to provide access to the work.
13. Unless otherwise specified in the special provisions, the 2L tangent shown along lane lines shall be used between the L tapers required for each closed traffic lane.
14. Unless otherwise specified in the special provisions, the E5-1 or SC18(CA) and W4-1 signs shall be used as shown.
15. A W7-3aP "NEXT x MILES" plaque must be used if the shoulder closure extends beyond the distance that can be perceived by road users.

**NOTES:**

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

**LEGEND**

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

**SIGN PANEL SIZE (Min)**

- A 48" x 48"
- B 72" x 60"
- C 36" x 30"

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

**TRAFFIC CONTROL SYSTEM  
 FOR LANE CLOSURE ON  
 FREEWAYS AND EXPRESSWAYS**

NO SCALE

RSP T10 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T10  
 DATED MAY 20, 2011 - PAGE 237 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP T10**

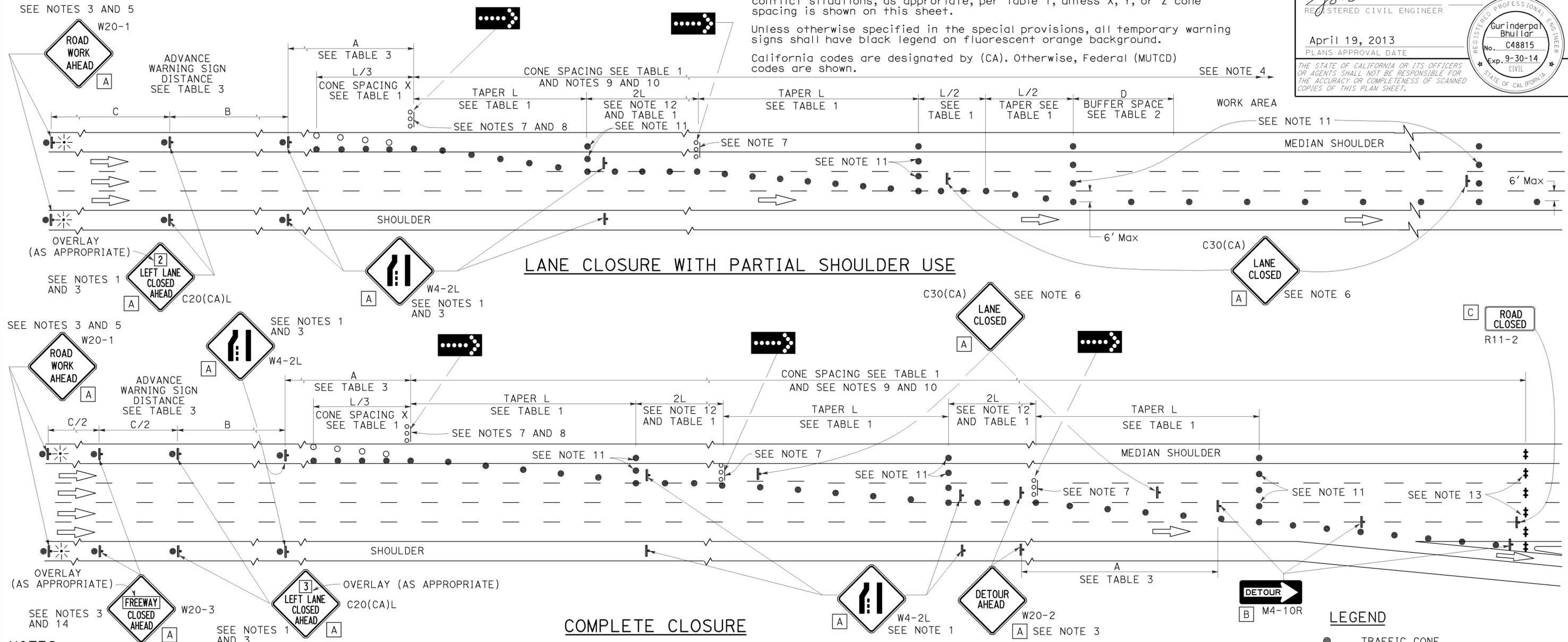
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	257	302

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

April 19, 2013  
 PLANS APPROVAL DATE

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

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



- NOTES:**
- Lane closures on the right side using partial median shoulder as a traffic lane shall conform to the details as shown except that C20(CA)R and W4-2R signs shall be used.
  - At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closures.
  - Each advance warning sign on each side of the roadway shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" X 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
  - A G20-2 "END ROAD WORK" sign, with minimum size of 48" x 24" as appropriate, shall be placed at the end of the lane closure unless the end of work area is obvious or ends within a larger project's limits.
  - If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT \_\_\_ MILES", use a C20(CA) sign for the first advance warning sign.
  - Place a C30(CA) sign every 2000' throughout length of lane closure.

- One flashing arrow sign for each lane closed. The flashing arrow signs shall be Type I.
- A minimum 1500' of sight distance shall be provided where possible for vehicles approaching the first flashing arrow sign. Lane closures shall not begin at the top of crest vertical curve or on a horizontal curve.
- All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
- Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime closures only.
- Unless otherwise specified in the special provisions, a minimum of 3 cones shall be placed transversely across each closed lane and shoulder at each location where a taper across a traffic lane ends and every 2000' as shown on the "Lane Closure With Partial Shoulder Use" detail. Two Type II barricades may be used instead of the 3 cones. The transverse alignment of the cones or barricades on the closed shoulder may be shifted from the transverse alignment to provide access to the work.

- Unless otherwise specified in the special provisions, the 2L tangent shown along lane lines shall be used between the L tapers required for each closed traffic lane.
- A minimum of Two Type II or III barricades shall be placed across each closed lane and shoulder at the location shown and every 2000' within the complete closure area. Within the complete closure area, the transverse alignment of the barricades on the closed shoulder may be shifted from the transverse alignment to provide access to the work.
- When specified in the special provisions, a W20-2 "DETOUR AHEAD" sign is to be used in place of the W20-3 "FREEWAY CLOSED AHEAD" sign.

**SIGN PANEL SIZE (Min)**

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

**LEGEND**

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

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

## TRAFFIC CONTROL SYSTEM FOR LANE CLOSURES ON FREEWAYS AND EXPRESSWAYS

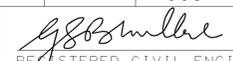
NO SCALE

RSP T10A DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T10A DATED MAY 20, 2011 - PAGE 238 OF THE STANDARD PLANS BOOK DATED 2010.

### REVISED STANDARD PLAN RSP T10A

2010 REVISED STANDARD PLAN RSP T10A

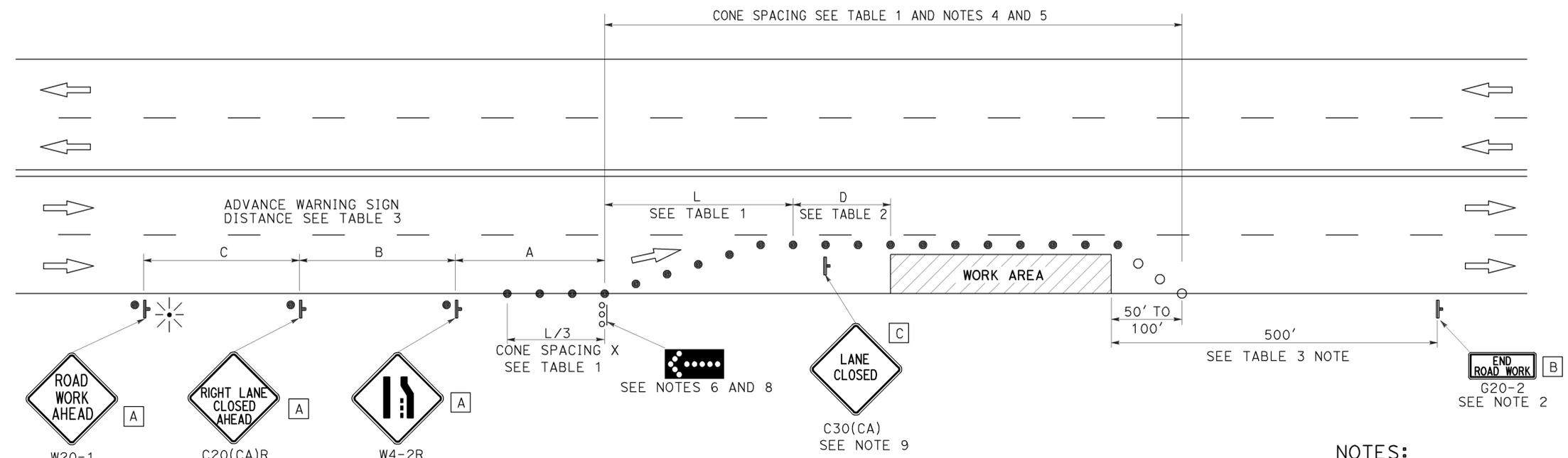
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	258	302

  
 REGISTERED CIVIL ENGINEER  
 April 19, 2013  
 PLANS APPROVAL DATE



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

TO ACCOMPANY PLANS DATED 01-20-15



TYPICAL LANE CLOSURE

NOTES:

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

NOTES:

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

LEGEND

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

SIGN PANEL SIZE (Min)

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

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

NO SCALE

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

**REVISED STANDARD PLAN RSP T11**

2010 REVISED STANDARD PLAN RSP T11

# TYPICAL RAMP CLOSURES

## SIGN PANEL SIZE (Min)

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

## LEGEND

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

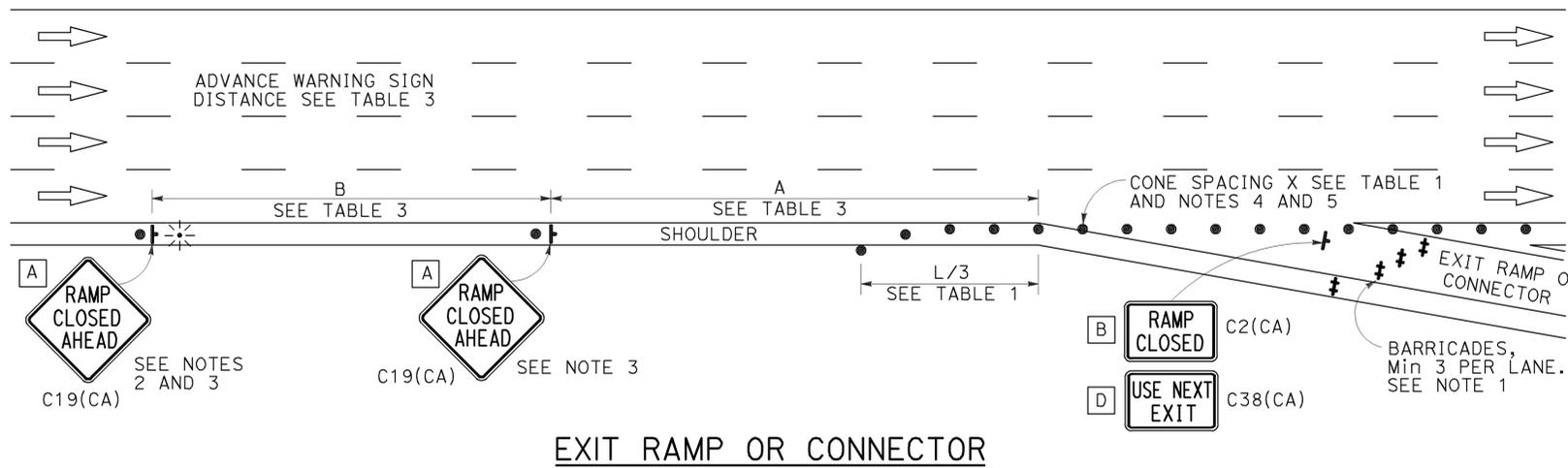
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	259	302

*Gurinderpal Bhullar*  
 REGISTERED CIVIL ENGINEER  
 April 19, 2013  
 PLANS APPROVAL DATE

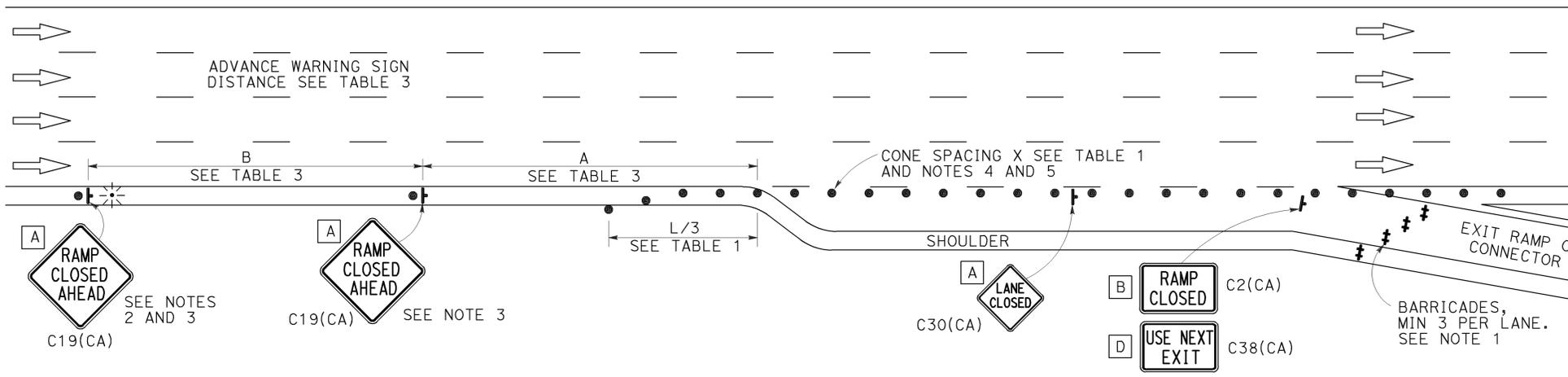
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 01-20-15

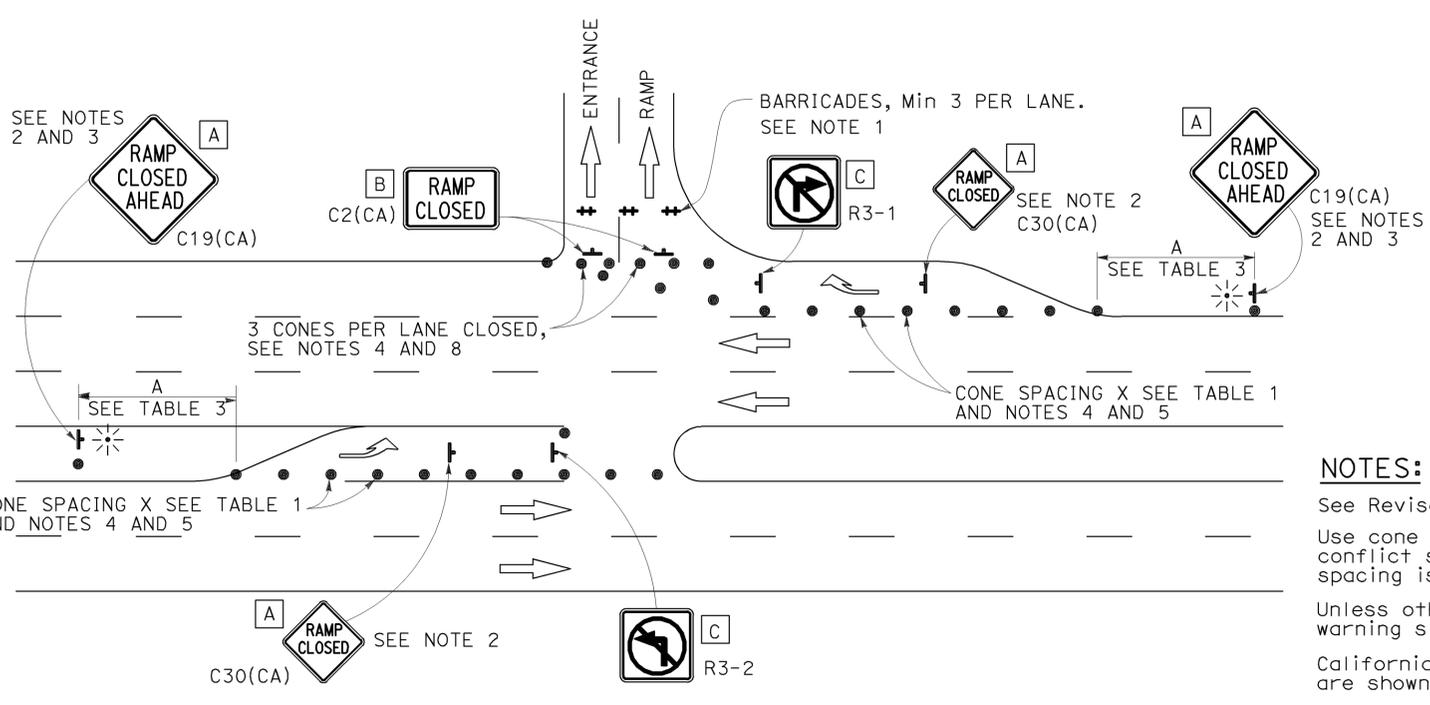
2010 REVISED STANDARD PLAN RSP T14



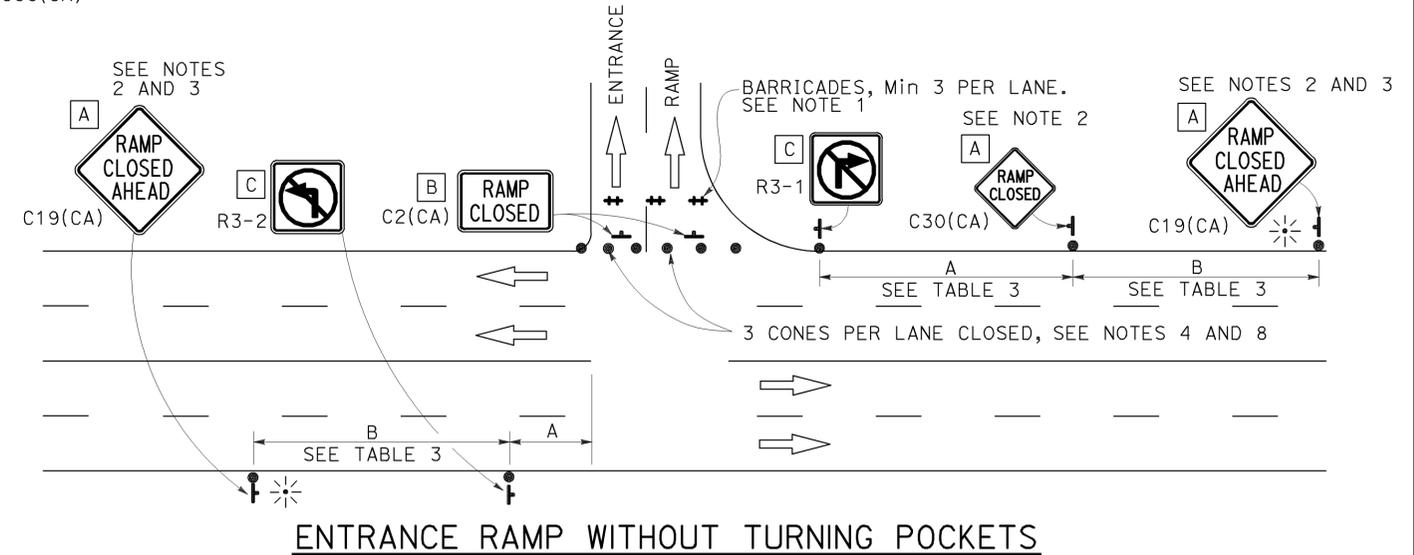
EXIT RAMP OR CONNECTOR



EXIT RAMP OR CONNECTOR WITH ADDITIONAL LANE



ENTRANCE RAMP WITH TURNING POCKETS



ENTRANCE RAMP WITHOUT TURNING POCKETS

## NOTES:

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

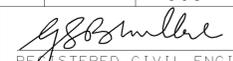
## NOTES:

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

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

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

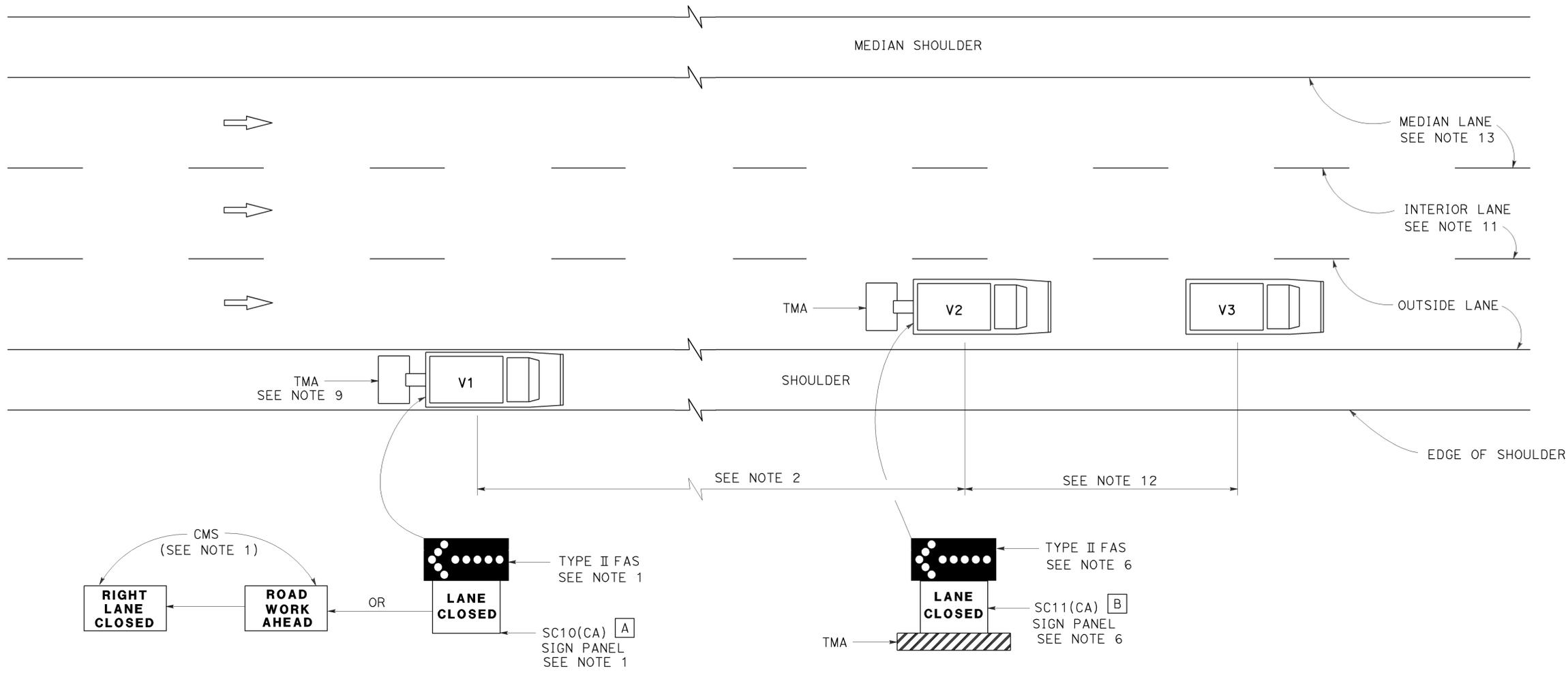
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	260	302

  
 REGISTERED CIVIL ENGINEER  
 April 19, 2013  
 PLANS APPROVAL DATE



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TO ACCOMPANY PLANS DATED 01-20-15



**SIGN PANEL SIZE (Min)**

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

**LEGEND**

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

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

**NOTES:**

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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

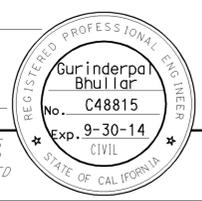
RSP T15 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T15 DATED MAY 20, 2011 - PAGE 243 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP T15**

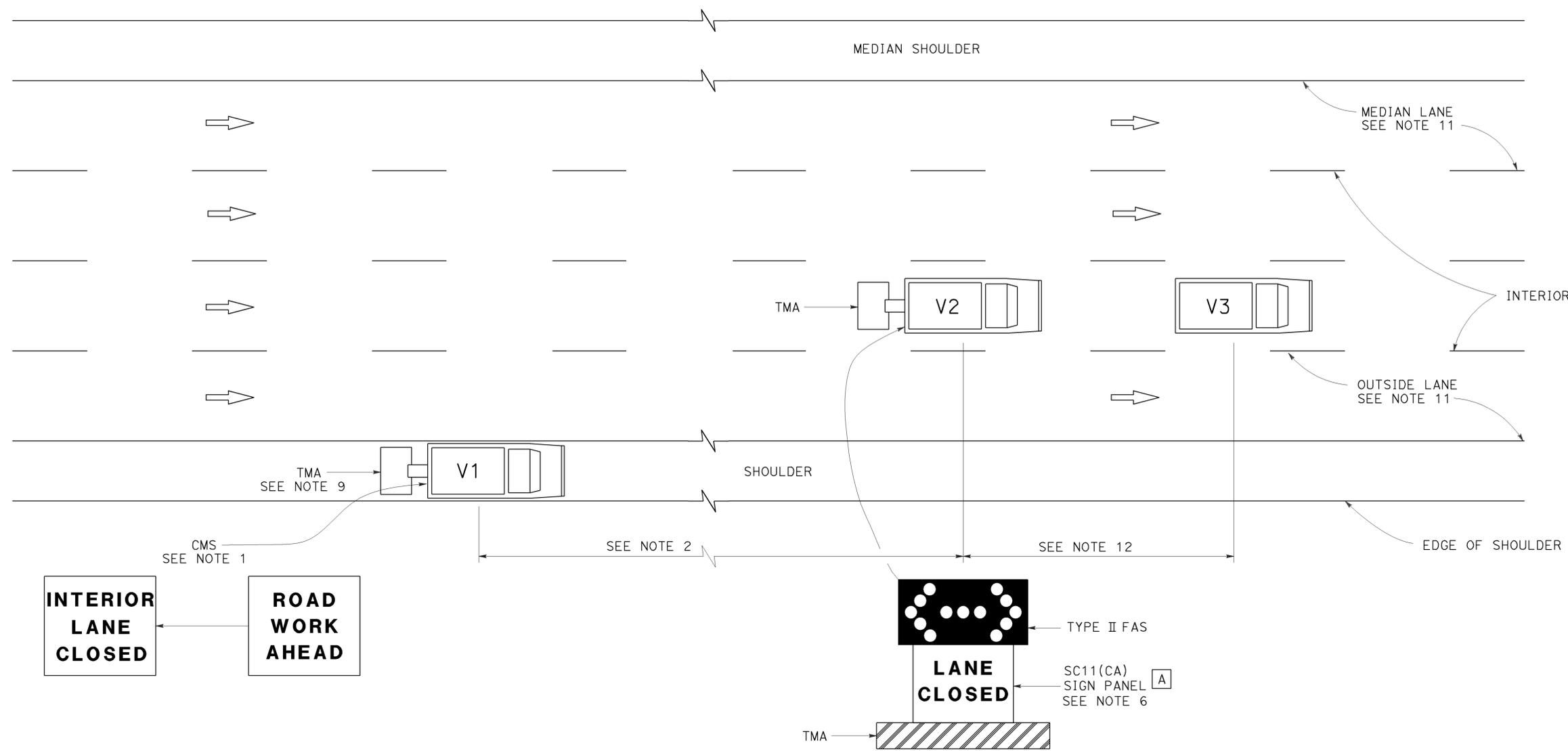
2010 REVISED STANDARD PLAN RSP T15

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	261	302

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



TO ACCOMPANY PLANS DATED 01-20-15



SIGN PANEL SIZE (Min)

A 54" x 42"

LEGEND

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

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

NOTES:

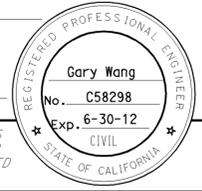
1. A changeable message sign shall be mounted on the rear of sign vehicle V1. The changeable message sign shall be sequenced to show the "ROAD WORK AHEAD" message first, followed by the "INTERIOR LANE CLOSED" message. The message "CENTER LANE CLOSED" may be used in place of the "INTERIOR LANE CLOSED"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

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**TRAFFIC CONTROL SYSTEM  
 FOR MOVING LANE CLOSURE  
 ON MULTILANE HIGHWAYS**  
 NO SCALE

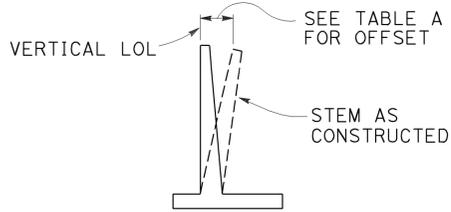
RSP T16 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T16 DATED MAY 20, 2011 - PAGE 244 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP T16**

2010 REVISED STANDARD PLAN RSP T16



TO ACCOMPANY PLANS DATED 01-20-15

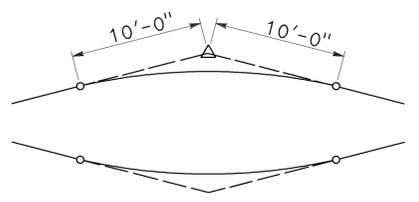


**TABLE A**

H	OFFSET
4'-12'	H/200
14'-16'	H/160
18'-20'	H/140
22'-24'	H/130
26'-36'	2 1/2"

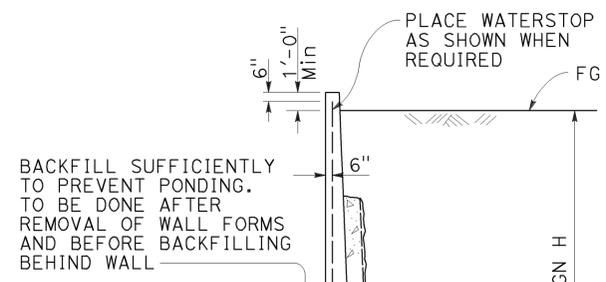
**APPROXIMATE WALL OFFSET VALUES**

Values for offsetting forms to be determined by the Engineer.



**20'-0" VC AT TOP OF WALL SLOPE CHANGE**

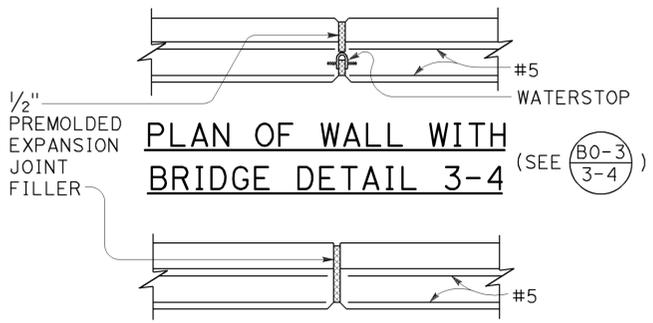
Where shown on the plans



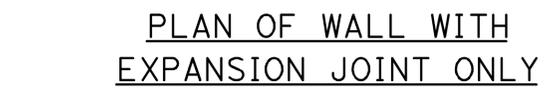
BACKFILL SUFFICIENTLY TO PREVENT PONDING. TO BE DONE AFTER REMOVAL OF WALL FORMS AND BEFORE BACKFILLING BEHIND WALL.

PLACE CONCRETE IN TOE AGAINST UNDISTURBED MATERIAL EXCEPT AS PERMITTED BY THE ENGINEER.

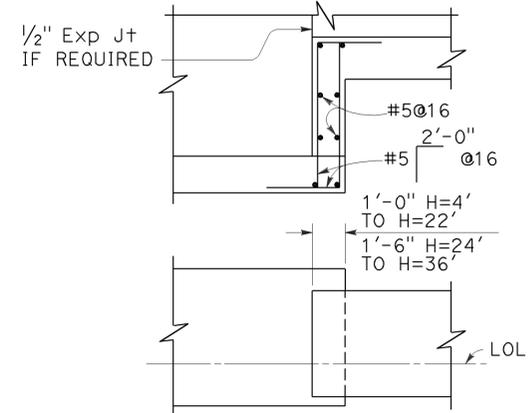
**DESIGN AND DRAINAGE**



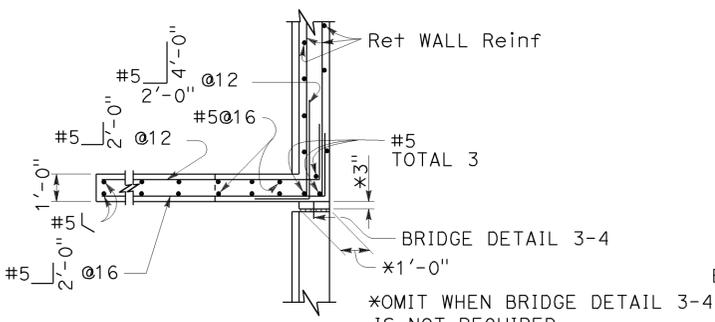
**PLAN OF WALL WITH BRIDGE DETAIL 3-4**



**PLAN OF WALL WITH EXPANSION JOINT ONLY**

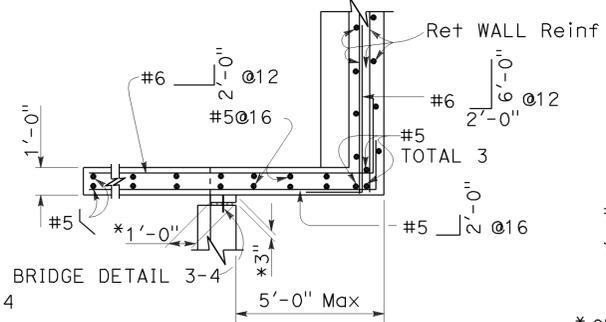


**FOOTING STEP**



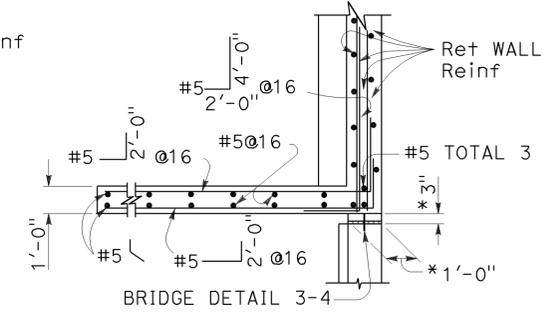
**PLAN**

(For return wall Type "A")



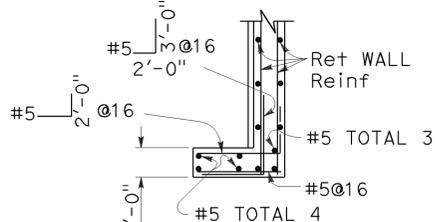
**PLAN**

(For return wall Type "B")



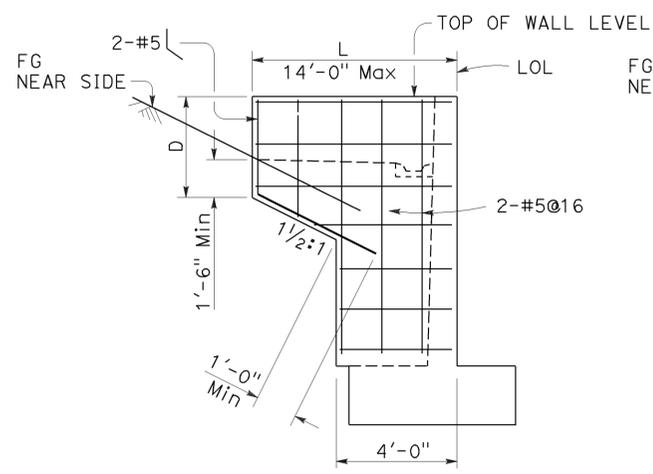
**PLAN**

(For return wall Type "C")



**PLAN**

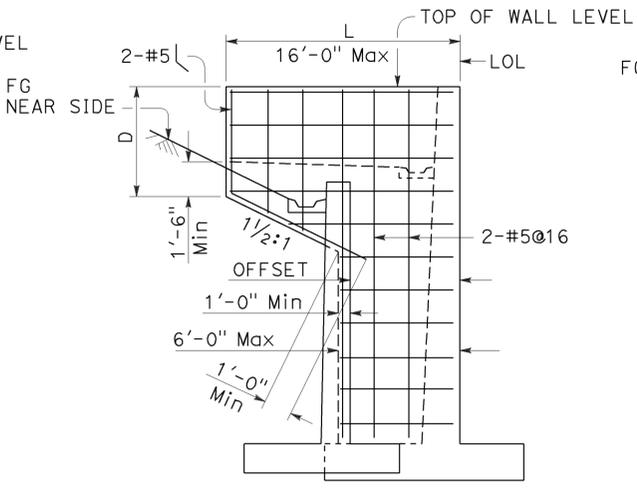
(For return wall Type "D")



**ELEVATION**

**RETURN WALL TYPE "A"**

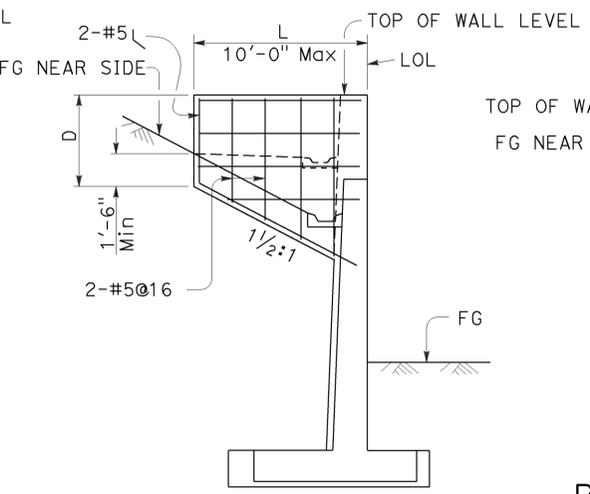
Use where H=8' or less



**ELEVATION**

**RETURN WALL TYPE "B"**

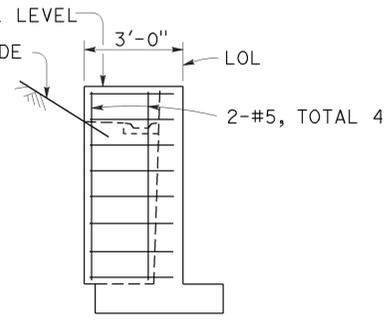
Use where H=10' or more on offset walls



**ELEVATION**

**RETURN WALL TYPE "C"**

Use where H=10' or more on straight walls



**ELEVATION**

**RETURN WALL TYPE "D"**

Use where H=6' or less

**DESIGN CONDITIONS:**

Design "H" may be exceeded by 6" before going to the next size. Special footing design is required where foundation material is incapable of supporting bearing stress listed in table

Return wall not required unless shown elsewhere

**DESIGN NOTES:**

DESIGN: AASHTO LRFD Bridge Design Specifications, 4th edition with California Amendments

LIVE LOAD: Surcharge on level ground surface

SOIL:  $\phi = 34^\circ$   
 $\gamma = 120$  pcf

REINFORCED CONCRETE:  $f_y = 60,000$  psi  
 $f_c' = 3,600$  psi

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**RETAINING WALL DETAILS No. 1**

NO SCALE

RSP B3-5 DATED APRIL 20, 2012 SUPERSEDES STANDARD PLAN B3-5 DATED MAY 20, 2011 - PAGE 277 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP B3-5**

2010 REVISED STANDARD PLAN RSP B3-5

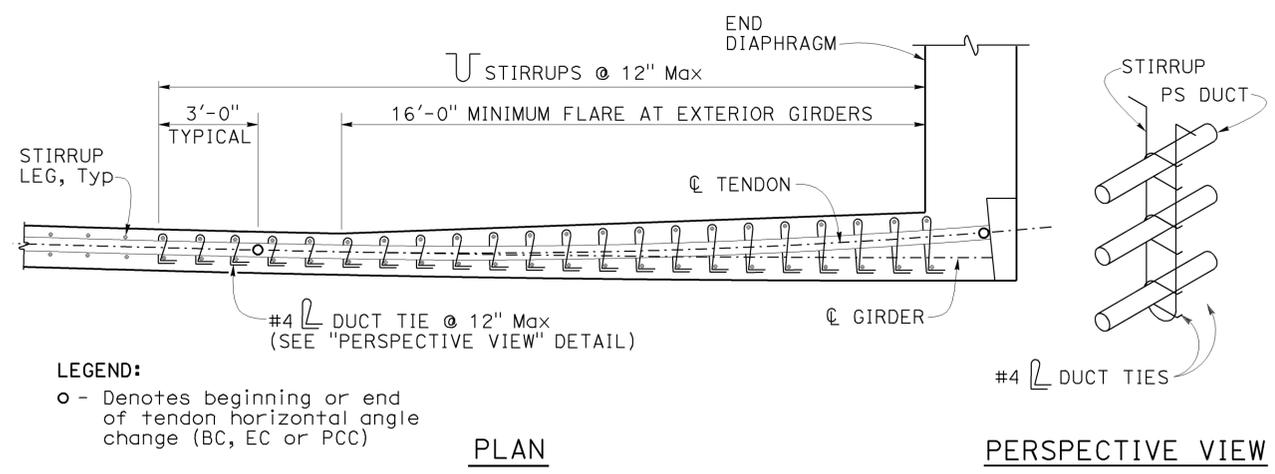
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	263	302

REGISTERED CIVIL ENGINEER

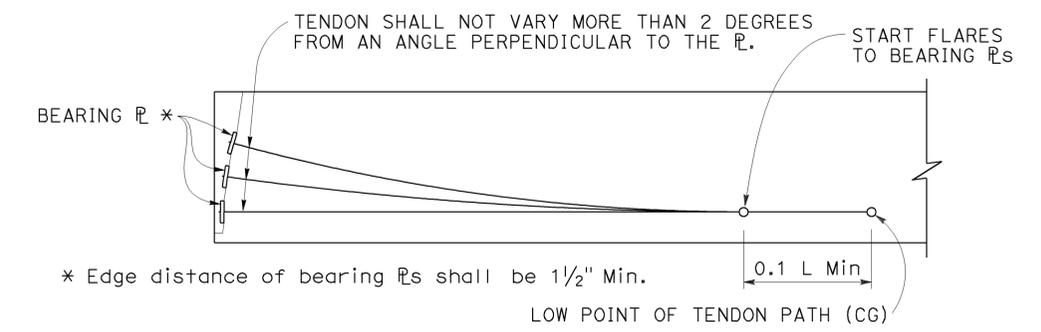
July 19, 2013  
PLANS APPROVAL DATE

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

REGISTERED PROFESSIONAL ENGINEER  
Marc Friedheim  
No. C57968  
Exp. 6-30-14  
CIVIL  
STATE OF CALIFORNIA

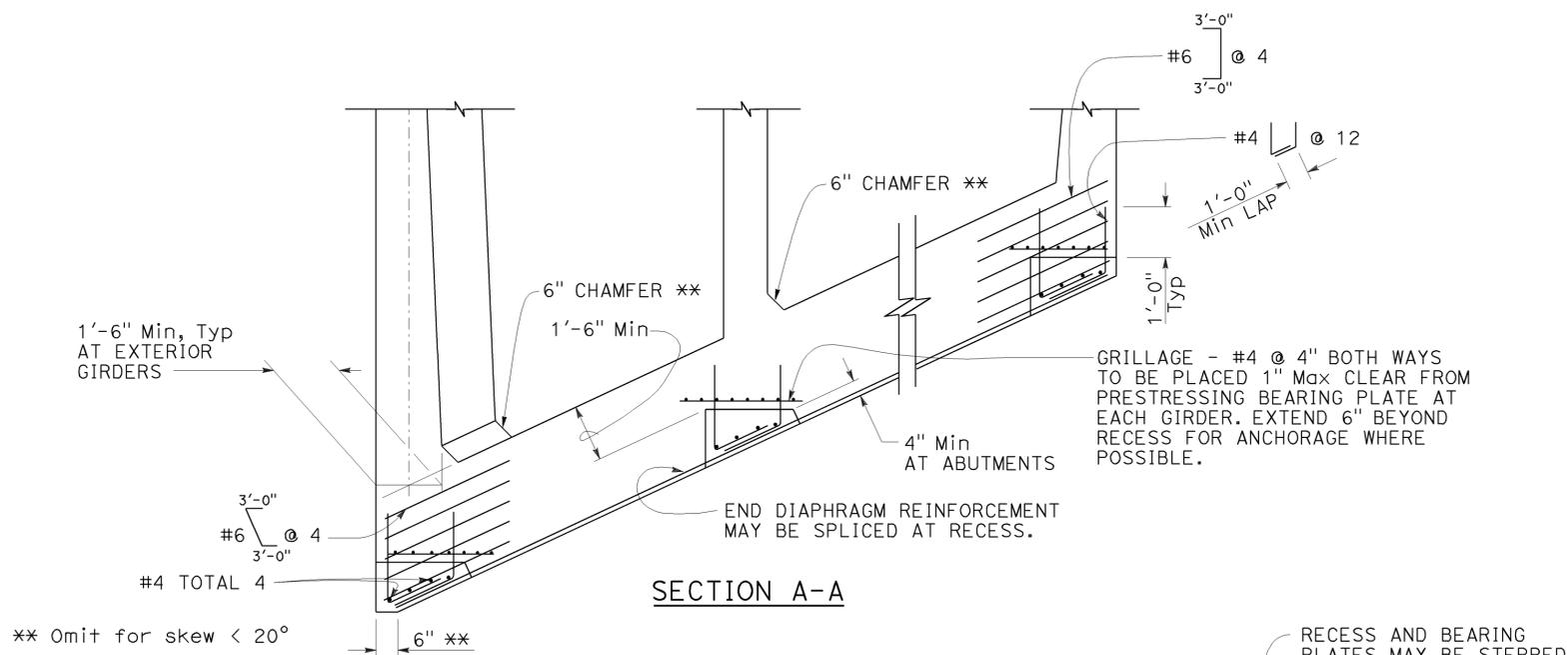


**DUCT TIES AT TENDON HORIZONTAL ANGLE CHANGES**  
**DETAIL 5-1**

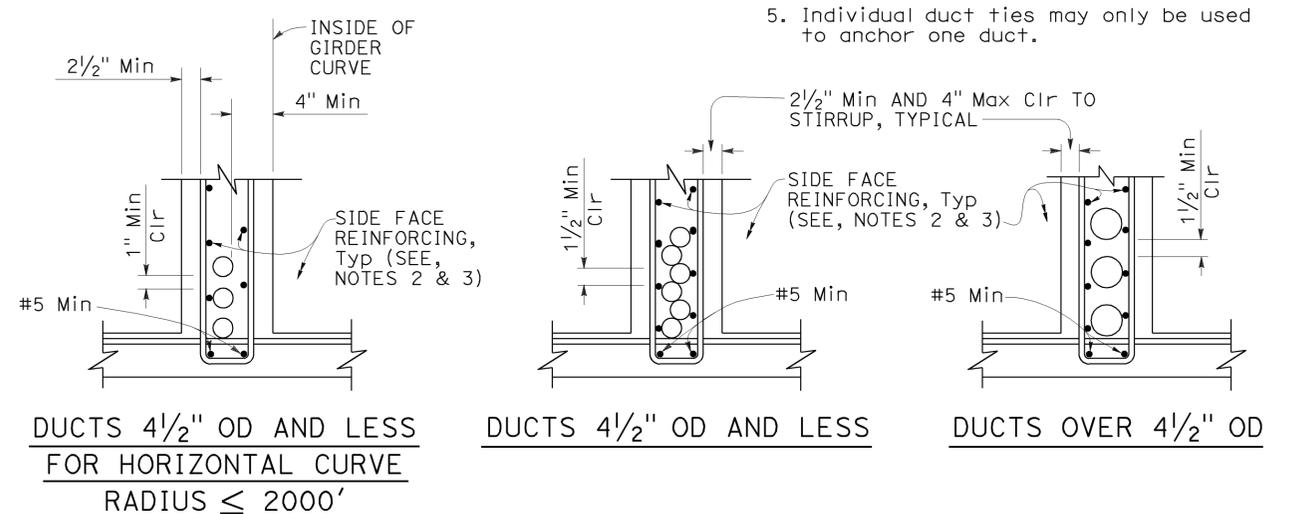


**ELEVATION - BEARING PLATE AND PRESTRESSING PATH**  
**DETAIL 5-2**

- TO ACCOMPANY PLANS DATED 01-20-15
- NOTES FOR DETAIL 5-1**
1. Tendon horizontal angle change at end diaphragm shown. Duct tie placement similar for other locations where tendon horizontal angle changes occur. For curved girders place duct ties at tendon angle changes where tendon radius is smaller than tendon radius.
  2. Adjacent duct ties may be staggered to facilitate placement if stirrup spacing is less than 12 inches.
  3. Place closed end of duct ties toward inside of tendon curve.
  4. Wrap duct ties around both stirrup legs.
  5. Individual duct ties may only be used to anchor one duct.



**PRESTRESS ANCHORAGE DETAILS AT END DIAPHRAGMS**  
**DETAIL 5-3**



**CLEARANCE REQUIREMENTS FOR DUCTS**  
**DETAIL 5-4**

- NOTES FOR DETAIL 5-4:**
1. Stirrups may also be used.
  2. For additional details, see Standard Plan B7-1, and Project Plans.
  3. Bar reinforcing which interferes with prestressing ducts may be adjusted as approved by the Engineer.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**CAST-IN-PLACE POST-TENSIONED GIRDER DETAILS**  
NO SCALE

RSP B8-5 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN B8-5 DATED MAY 20, 2011 - PAGE 291 OF THE STANDARD PLANS BOOK DATED 2010.

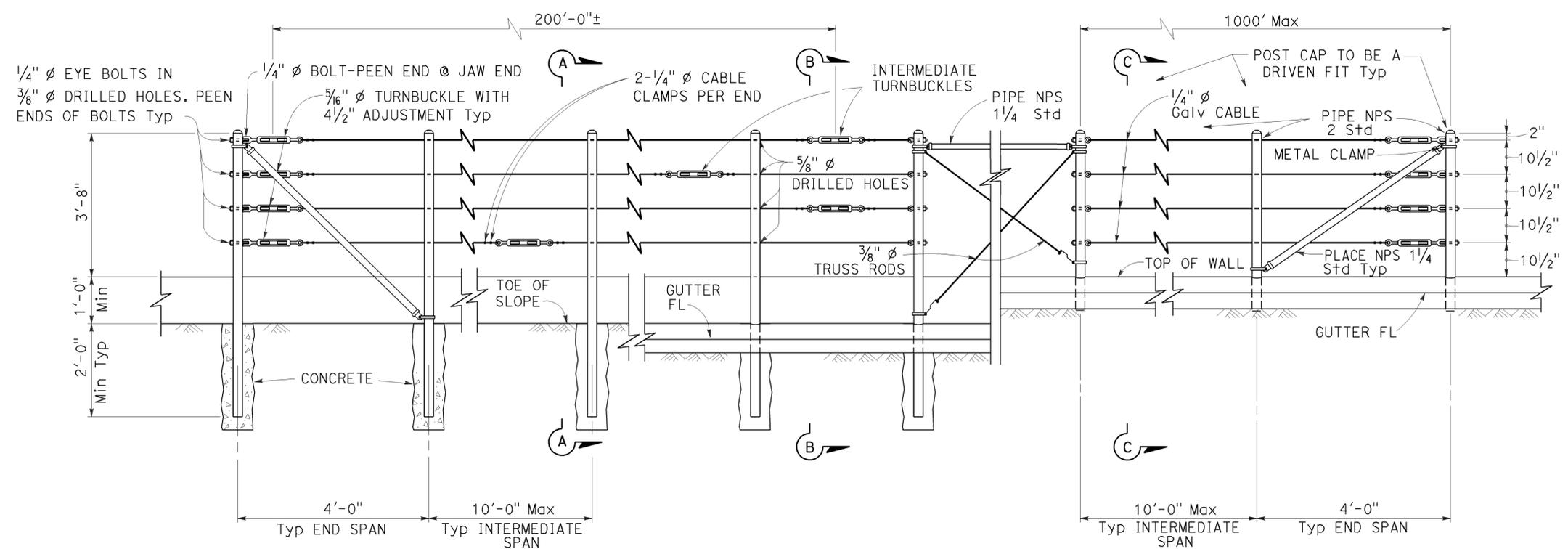
**REVISED STANDARD PLAN RSP B8-5**

2010 REVISED STANDARD PLAN RSP B8-5

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	264	302

REGISTERED CIVIL ENGINEER  
 October 21, 2011  
 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  
 Tillet Satter  
 No. C42892  
 Exp. 3-31-12  
 CIVIL  
 STATE OF CALIFORNIA

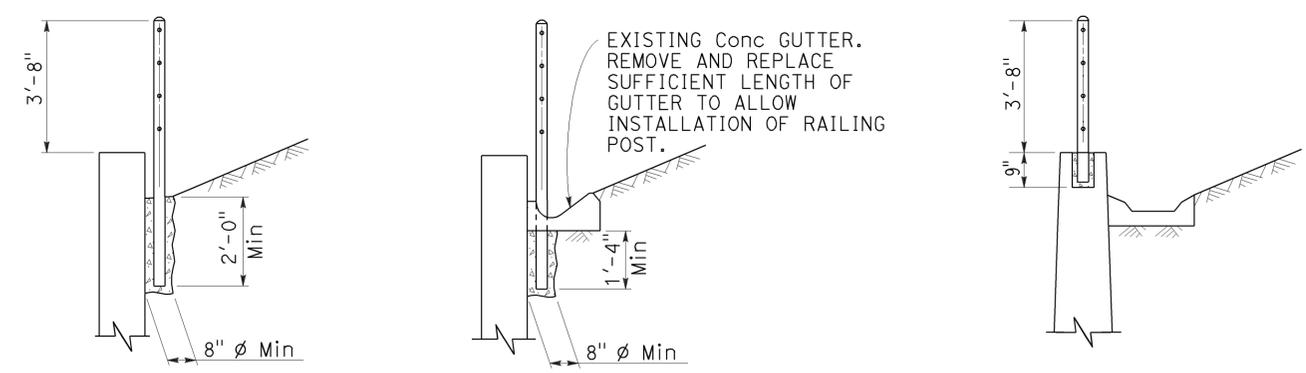


**EXISTING WALL (WITHOUT GUTTER)** Existing  
**RETAINING WALL (WITH GUTTER)** Existing  
**RETAINING WALL (WITH GUTTER)** New construction

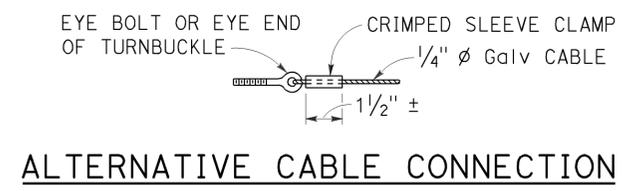
**ELEVATION**

**NOTES:**

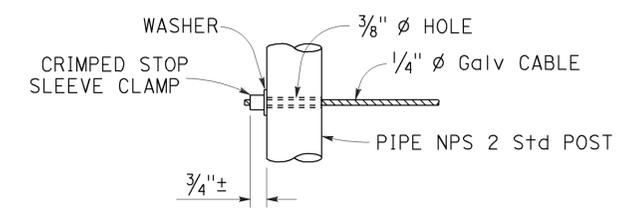
1. Maximum distance between turnbuckles shall be 200'-0"±.
2. Intermediate turnbuckles to be placed in adjacent spans.
3. Cable shall not be spliced between intermediate turnbuckles and end posts.
4. Posts to be vertical.
5. Alignment of holes in posts may vary to conform to slope of top of retaining wall.
6. The Contractor shall verify all dependent dimensions in the field before ordering or fabricating any material.
7. Line posts shall be braced horizontally and trussed diagonally in both directions at intervals not to exceed 1000'.
8. Post pockets to be centered in top of wall.
9. Typical end spans, braced in both directions, shall be constructed at changes in line where the angle of deflection is 15° or more.
10. Provide thimbles at all cable loops.



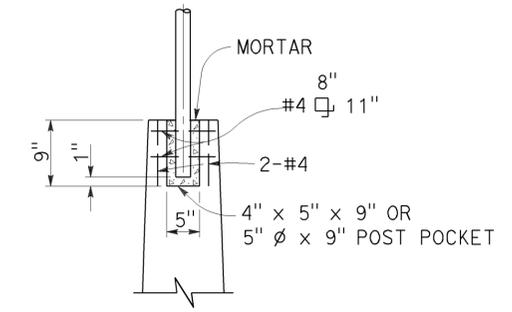
**SECTION A-A** Existing  
**SECTION B-B** Existing  
**SECTION C-C** New construction



**ALTERNATIVE CABLE CONNECTION**



**ALTERNATIVE DEAD END ANCHORAGE**



**POST POCKET**

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**CABLE RAILING**

NO SCALE

RSP B11-47 DATED OCTOBER 21, 2011 SUPERSEDES STANDARD PLAN B11-47 DATED MAY 20, 2011 - PAGE 293 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP B11-47**

2010 REVISED STANDARD PLAN RSP B11-47

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	265	302

REGISTERED CIVIL ENGINEER

November 15, 2013  
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
Tillat Satter  
No. C42892  
Exp. 3-31-14  
CIVIL  
STATE OF CALIFORNIA

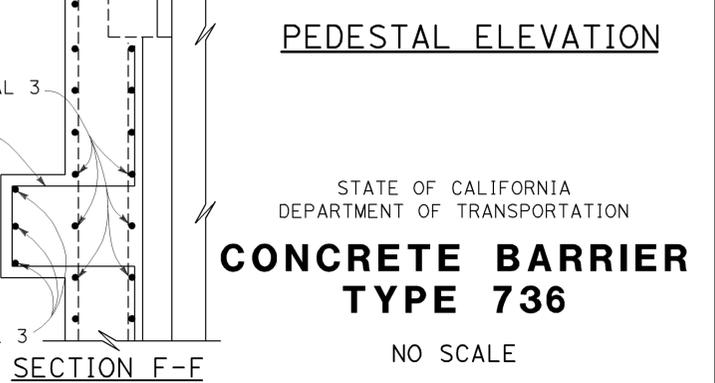
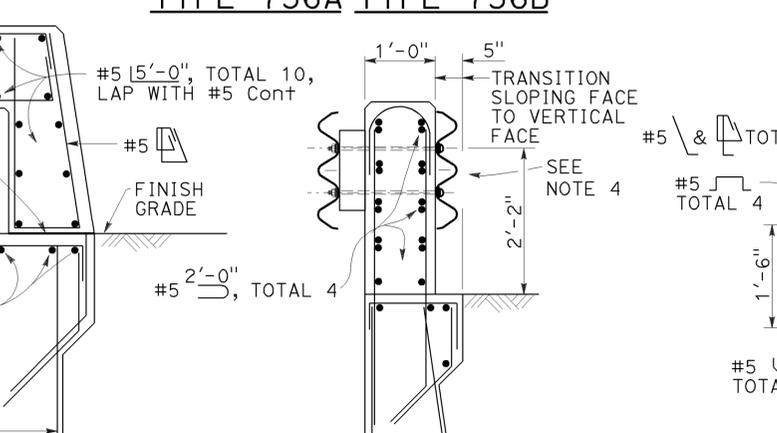
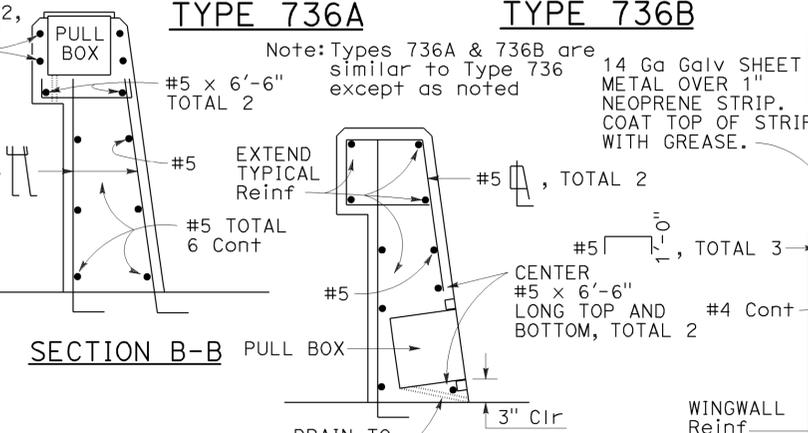
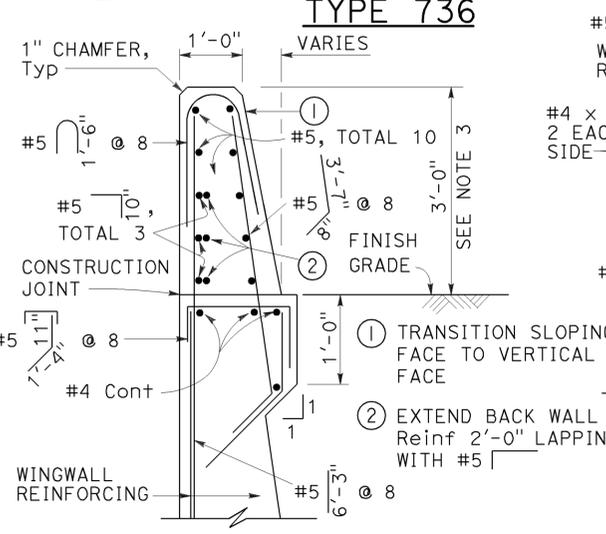
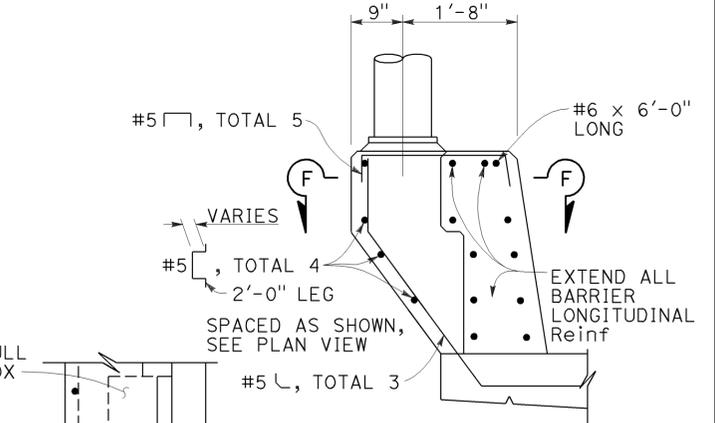
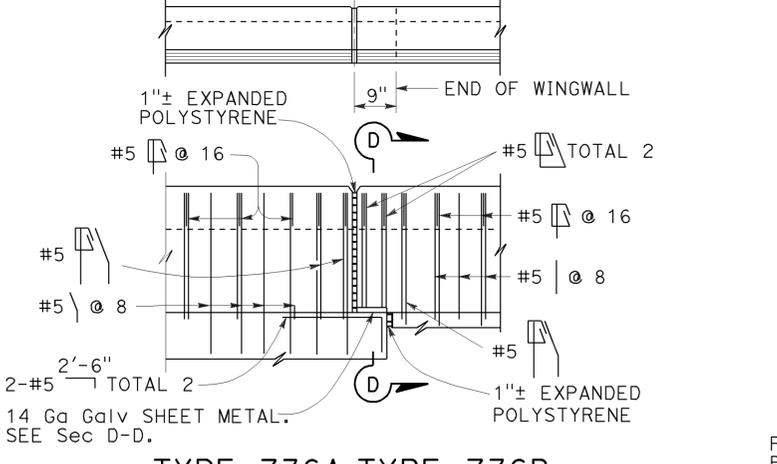
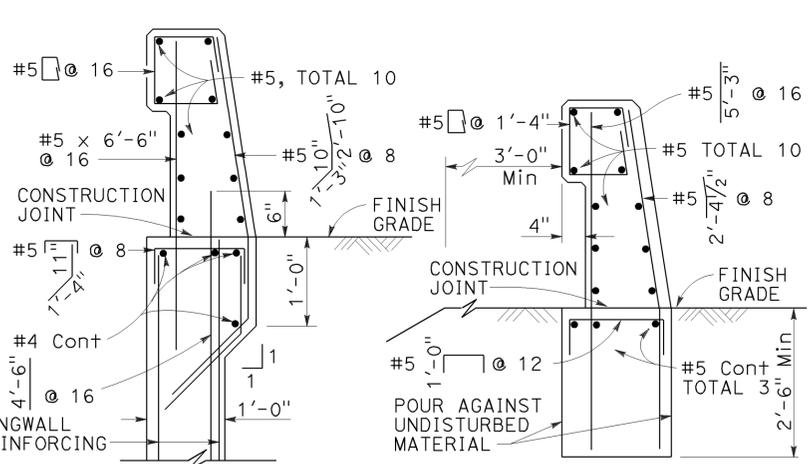
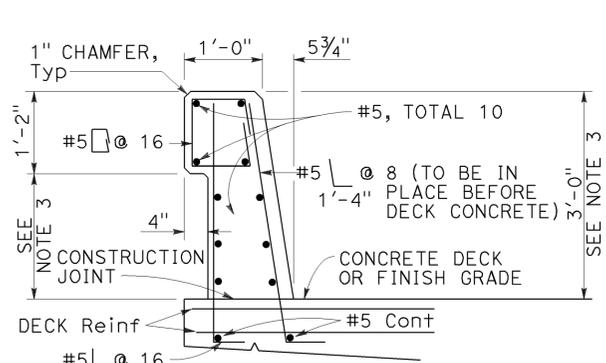
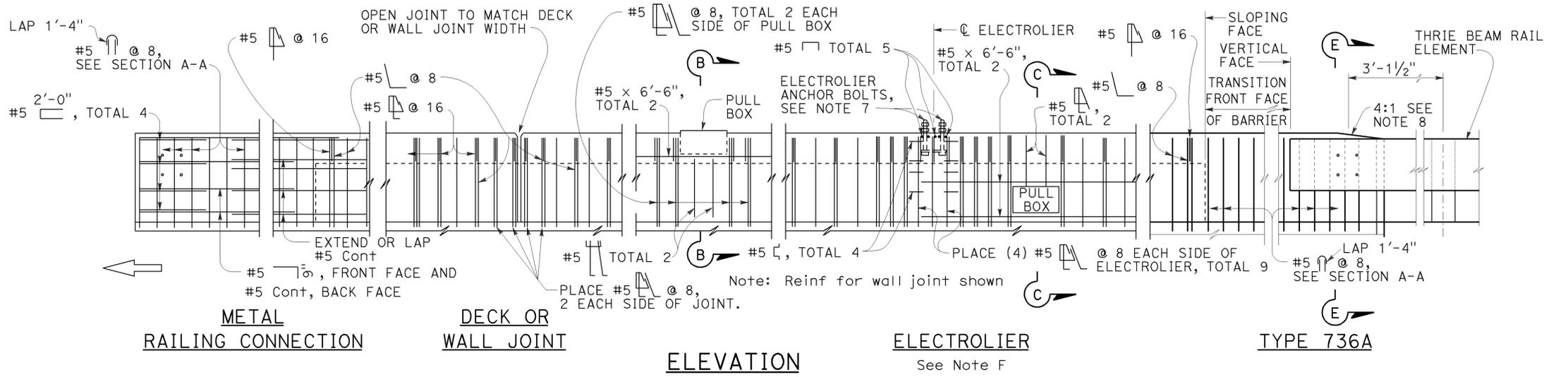
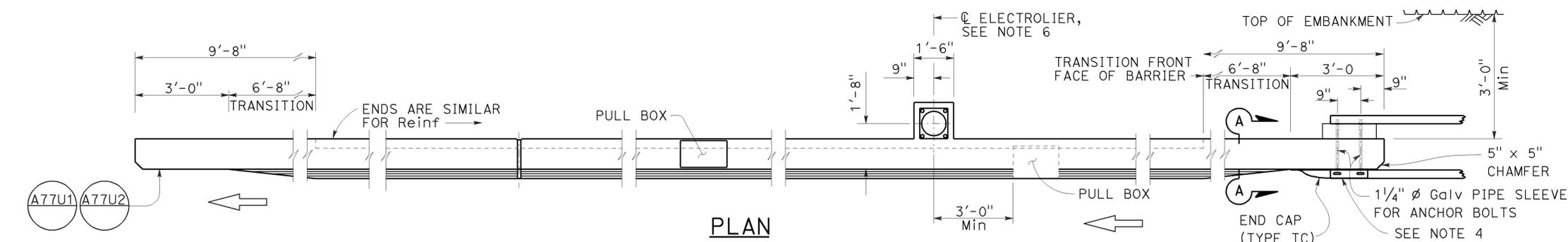
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 01-20-15

**NOTES:**

1. Walls are to be backfilled before barrier is placed.
2. Clearance to reinforcing steel in barrier to be 1", except as noted. Longitudinal reinforcement to stop at all expansion joints.
3. Dimensions may vary with roadway cross slope and with certain thickness of surfacing. See Project Plans.
4. For typical metal railing connection details not shown, see Revised Standard Plans RSP A77U1 and RSP A77U2.
5. See Standard Plans ES-9A, ES-9B, ES-9C, ES-9D and ES-9E for electrical details. The maximum number of conduits in the barrier is limited to two 2" conduits along with one 3" conduit. When a 3" conduit is used, it is restricted to the base of the barrier.
6. For electrolier mounting details, See Standard Plans ES-6A and ES-6B.
7. Minimum concrete edge distance, to the reinforcing shown, shall be maintained. Edge distance may be adjusted to accommodate increase in concrete cover for architectural treatment.
8. Taper the top of the end of the bridge railing at 4:1 to match the top elevation of the thrie beam rail element.

2010 REVISED STANDARD PLAN RSP B11-56



**SECTION A-A**  
Details shown for barrier anchorage to Type 736A. Anchorage for barrier Types 736 and 736B are similar to their respective details.

**SECTION B-B**  
Note: Types 736A & 736B are similar to Type 736 except as noted.

**SECTION D-D**  
Note: Types 736A & 736B are similar to Type 736 except as noted.

**SECTION F-F**  
NO SCALE

RSP B11-56 DATED NOVEMBER 15, 2013 SUPERSEDES RSP B11-56 DATED JULY 19, 2013 AND STANDARD PLAN B11-56 DATED MAY 20, 2011 - PAGE 298 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP B11-56**

# INSTRUCTIONS TO FABRICATOR

## PROJECT PLANS SHOW:

1. Sign structure location.
2. Length of structure frame.
3. Panel size and locations on structure.
4. Walkway length for two post signs.
5. Post type and height to bottom of frame.
6. Base plate elevation.
7. Footing elevation or location of pile foundation.
8. Photoelectric unit location if required.

REFER TO THE FOLLOWING STANDARD PLANS FOR DETAILS NOT SHOWN ON PROJECT PLANS:

## Sheet No. SHEET NAME

- S1 Overhead Signs-Truss, Instructions and Examples
- S2 Overhead Signs-Truss, Single Post Type, Post Types II to IX
- S3 Overhead Signs-Truss, Single Post Type, Base Plate and Anchorage Details
- S4 Overhead Signs-Truss, Single Post Type, Structural Frame Members Details No. 1
- S5 Overhead Signs-Truss, Single Post Type, Structural Frame Members Details No. 2
- S6 Overhead Signs-Truss, Gusset Plate Details
- S8 Overhead Signs-Truss, Single Post Type, Round Pedestal Pile Foundation
- S9 Overhead Signs-Truss, Two Post Type, Post Types I-S through VII-S
- S10 Overhead Signs-Truss, Two Post Type, Base Plate and Anchorage Details
- S11 Overhead Signs-Truss, Two Post Type, Structural Frame Members
- S12 Overhead Signs-Truss, Structural Frame Details
- S13 Overhead Signs-Truss, Frame Juncture Details
- S15 Overhead Signs-Truss, Two Post Type, Round Pedestal Pile Foundation
- S16 Overhead Signs, Walkway Details No. 1
- S17 Overhead Signs, Walkway Details No. 2
- S17A Overhead Signs, Walkway Details No. 3
- S18 Overhead Signs, Walkway Safety Railing Details
- S19 Overhead Signs-Truss, Sign Mounting Details, Laminated Panel-Type A
- S20 Overhead Signs, Steel Frames, Removable Sign Panel Frames
- S21 Overhead Signs, Removable Sign Panel Frames, Mounting Details
- S22 Overhead Signs-Truss, Removable Sign Panel Frames, 9'-2" and 10'-0" Sign Panels

## WALKWAY BRACKETS:

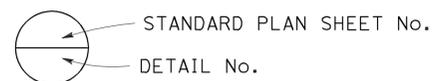
Space all walkway brackets maintaining uniform spacing where possible. Maximum spacing shall not exceed 5'-6".

## LIGHTING FIXTURE SUPPORTS:

Where distance from walkway bracket to end of sign panel exceeds 1'-4", extend lighting fixture supports to next walkway bracket. See Example No. 2.

## WALKWAY AND SAFETY RAILING:

Walkway to be continuous for entire length of frame for single post signs. For two post signs, see Project Plans. Safety railing to protect entire walkway, but continuous for no more than 11'-0" in one unit.



## NOTES:

1. Signs are shown and dimensioned looking in the direction of traffic. Double faced signs are shown and dimensioned looking ahead along stationing.
2. Mandatory dimension limit.

## GENERAL NOTES:

### LOADING:

#### WIND LOADING:

Normal to face of sign: 40.3 psf on 100% Truss surface area (i.e. 100% panel coverage).

Transverse to face of sign: 20% of normal force.

#### WALKWAY LOADING:

Dead load +500 LB concentrated live load.

### UNIT STRESSES:

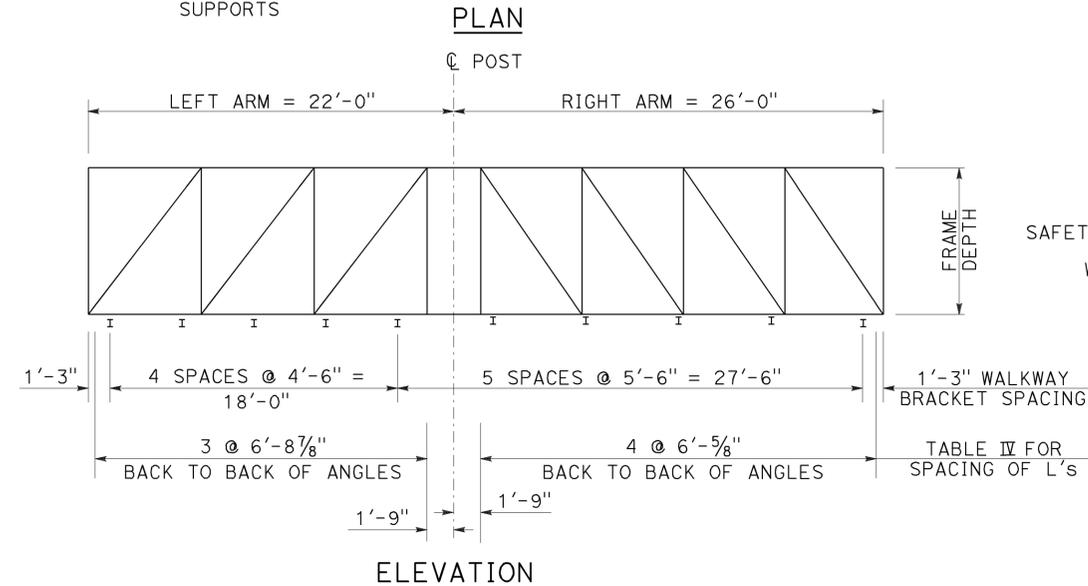
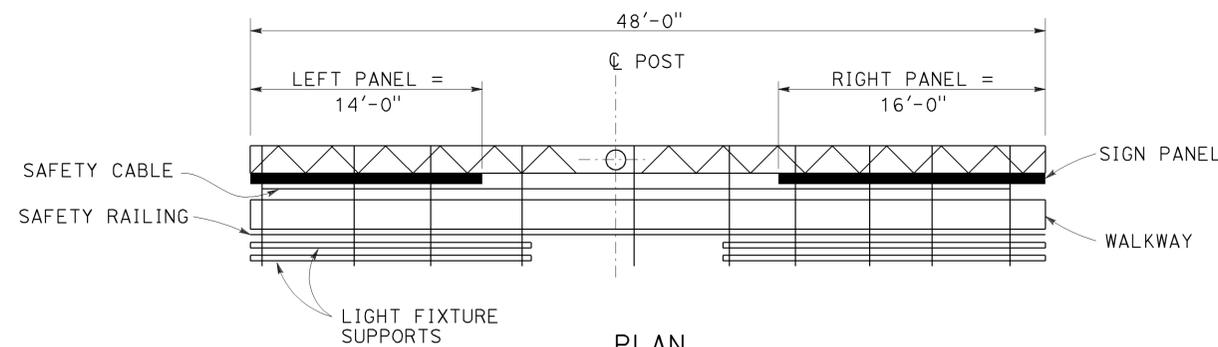
STRUCTURAL STEEL:  $f_y = 36,000$  psi  
 REINFORCED CONCRETE:  $f_y = 60,000$  psi  
 $f'_c = 3600$  psi  
 FOOTING SOIL PRESSURE: 2.5 ksf (spread footing)

### MINIMUM CLEARANCE

Vertical roadway clearance 18'-0" (bottom of walkway system)

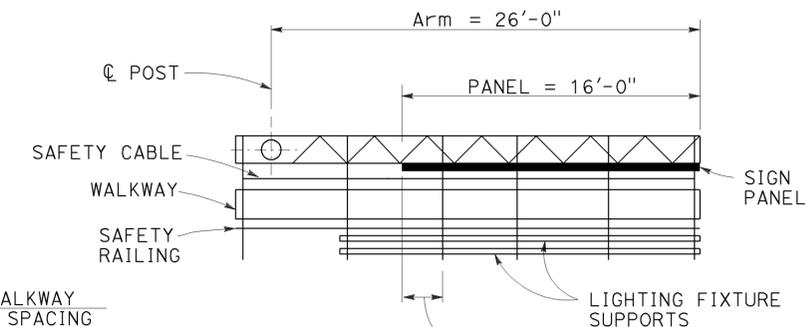
### WELDING:

All welding continuous unless otherwise noted on the plans.



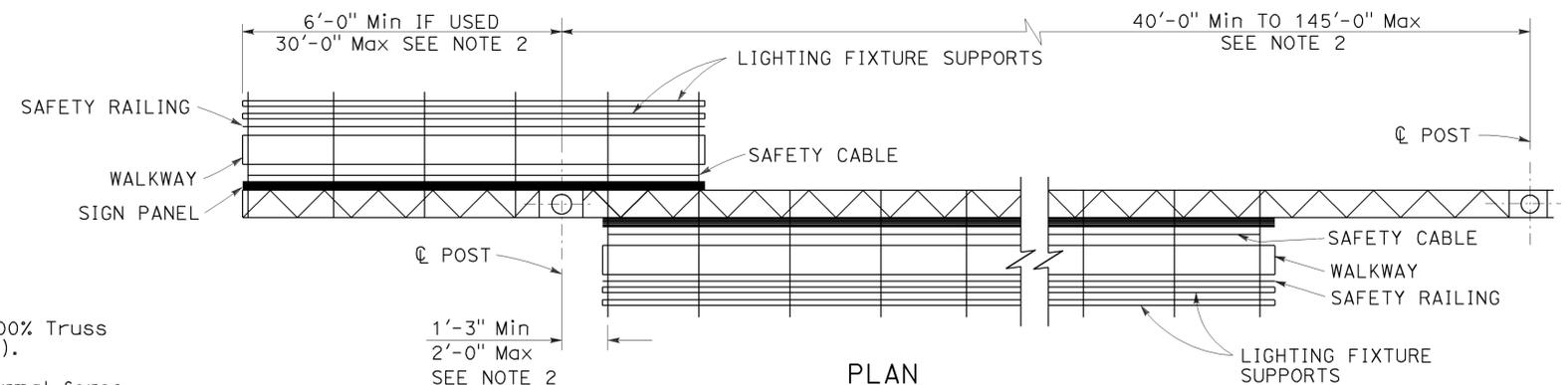
## UNBALANCED SINGLE POST TYPE

Example No. 1



## CANTILEVER SINGLE POST TYPE

Example No. 2



## TWO POST TYPE WITH CANTILEVER (PART DOUBLE-FACED)

Example No. 3

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

# OVERHEAD SIGNS-TRUSS INSTRUCTIONS AND EXAMPLES

NO SCALE

RSP S1 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN S1 DATED MAY 20, 2011 - PAGE 334 OF THE STANDARD PLANS BOOK DATED 2010.

## REVISED STANDARD PLAN RSP S1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11, 125, 905	Var	266	302

Stanley P. Johnson  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

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

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TO ACCOMPANY PLANS DATED 01-20-15

2010 REVISED STANDARD PLAN RSP S1

**TABLE XV**

POST TYPE	PIPE		CAP PLATE SIZE FOR CHORD L's 5 x 5	CAP PLATE SIZE FOR CHORD L's 6 x 6	ROUND PEDESTAL					SQUARE PEDESTAL					SPREAD FOOTING						
	NPS	THICKNESS			PEDESTAL SIZE Dia	VERTICAL EQUALLY SPACED TOTAL	J-BARS BAR SIZE	SPIRAL BAR SIZE	PITCH	PEDESTAL SIZE SQUARE	VERTICAL EQUALLY SPACED TOTAL	J-BARS BAR SIZE	# OF BARS EA FACE	HOOP BAR SIZE	SPACING	(SEE NOTE 2)					
	REINFORCEMENT		WIDTH													LONGITUDINAL		FOOTING STIRRUPS			
II	14	1/2"	2'-0" x 2'-0" x 1"	2'-2" x 2'-2" x 1"	5'-3"	16	#10	#5	3 1/2"	5'-3"	16	#10	5	#5	3 1/2"	12'-0" x 14'-0" x 2'-6"	14-#6		14-#7	13-#9	13-#9
III	16		2'-2" x 2'-2" x 1"	2'-4" x 2'-4" x 1"												12'-0" x 14'-0" x 2'-6"	15-#6	15-#7			
IV	18		2'-4" x 2'-4" x 1"	2'-6" x 2'-6" x 1"												12'-0" x 14'-0" x 2'-6"	15-#6	15-#7			
V	20		2'-6" x 2'-6" x 1"	2'-8" x 2'-8" x 1"												13'-0" x 14'-0" x 2'-6"	15-#6	15-#7	14-#9	14-#9	
VI	24		2'-10" x 2'-10" x 1"	3'-0" x 3'-0" x 1"	5'-9"		#11			5'-9"		#11				13'-0" x 16'-0" x 2'-6"	17-#7	17-#7		14-#11	
VII	24	3/4"														13'-0" x 17'-0" x 2'-6"	18-#7	18-#7			
VIII	24	3/32"														13'-0" x 18'-0" x 2'-6"	19-#7	19-#7			
IX	24	3/32"														13'-0" x 18'-0" x 2'-6"	19-#7	19-#7			

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11, 125, 905	Var	267	302

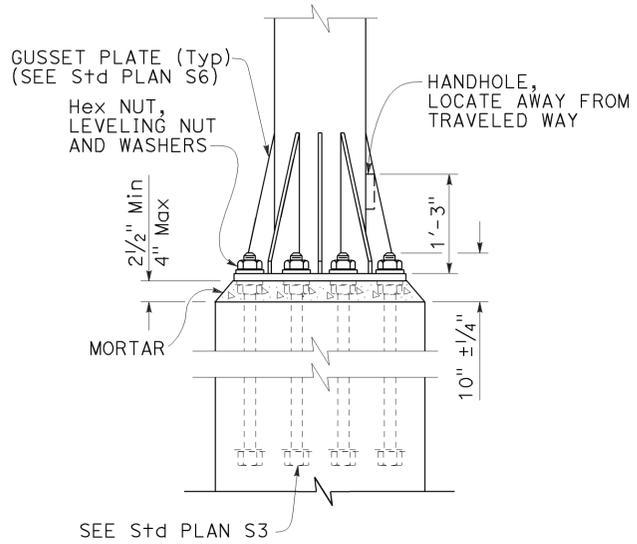
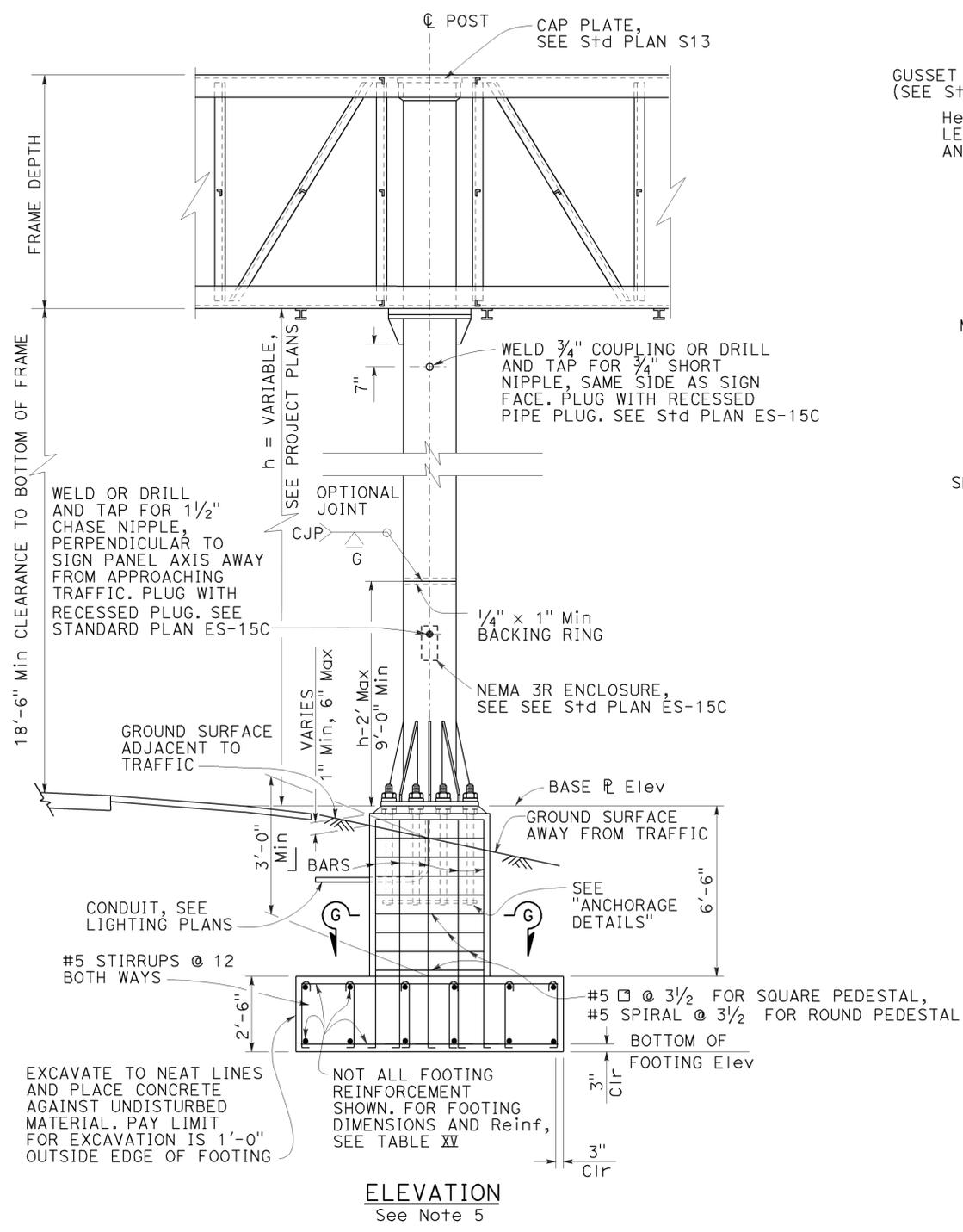
Stanley P. Johnson  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

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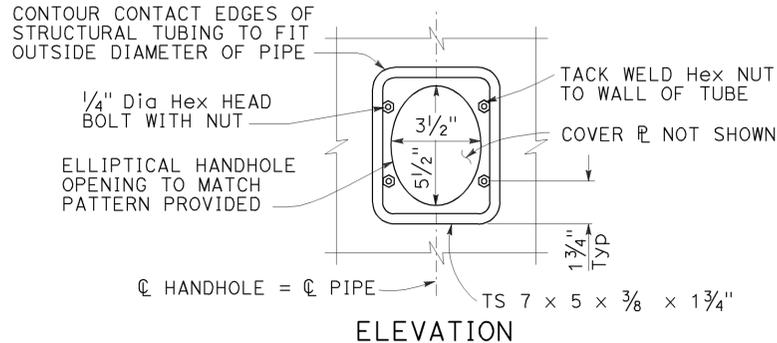
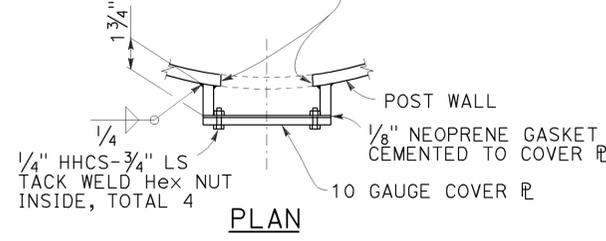
Stanley P. Johnson  
REGISTERED PROFESSIONAL ENGINEER  
No. C57793  
Exp. 3-31-14  
CIVIL  
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 01-20-15



**ELEVATION ANCHORAGE DETAILS**

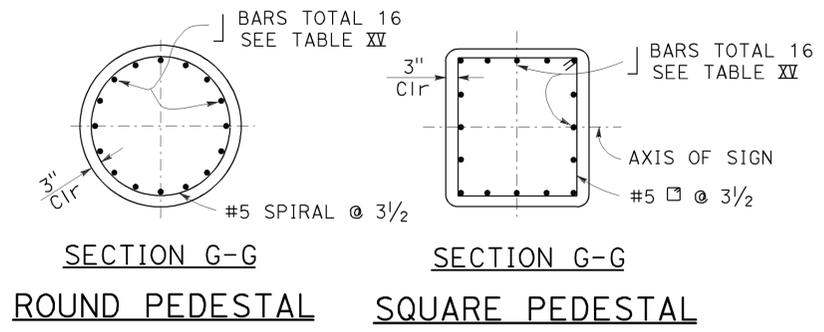
GRIND EDGES SMOOTH, ROUGHNESS OF EDGES NO GREATER THAN 1000 MICROINCHES



**TYPICAL DETAILS OF HANDHOLE AND COVER**

**NOTES:**

- For "General Notes", see Revised Standard Plan RSP S1.
- Longer side of footing (longitudinal) shall be normal to axis of sign.
- Backfill shall be in place prior to erection of post.
- Thread upper 10" of anchor bolts and galvanize upper 1'-0".
- Spread footing with square pedestal foundation shown, use Pile Foundation when shown on the Project Plans. For pile foundation details, see Standard Plan S8.
- Anchor plates may be retained with hexagon nut or formed head as alternatives to details shown.
- On single post sign structures, the post shall be raked out of plumb, with the use of the leveling nuts to make the bottom of the sign frame level.
- At final position of post all top and bottom nuts shall be tightened against base plate.
- When foundation is located on a steep slope with exposed face of concrete adjacent to traffic, see "Detail C" on Standard Plan S8, as applicable.
- Slope protection required when indicated on the Project Plans.



**SECTION G-G ROUND PEDESTAL SECTION G-G SQUARE PEDESTAL**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**OVERHEAD SIGNS-TRUSS  
SINGLE POST TYPE  
POST TYPES II THROUGH IX**  
NO SCALE

RSP S2 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN S2 DATED MAY 20, 2011 - PAGE 335 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP S2**

2010 REVISED STANDARD PLAN RSP S2

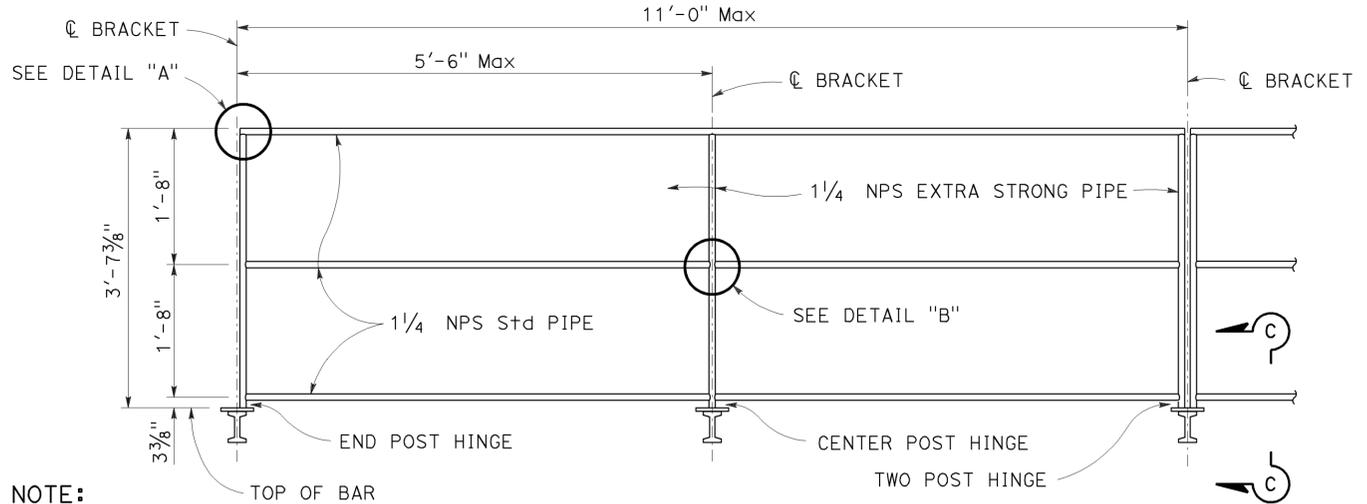
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11, 125, 905	Var	268	302

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

July 19, 2013  
 PLANS APPROVAL DATE

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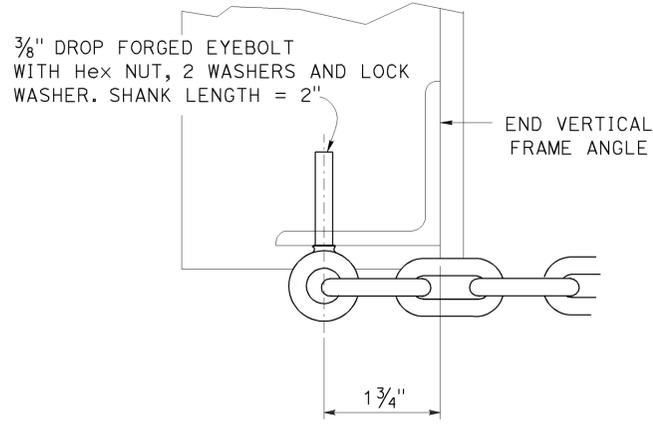
TO ACCOMPANY PLANS DATED 01-20-15



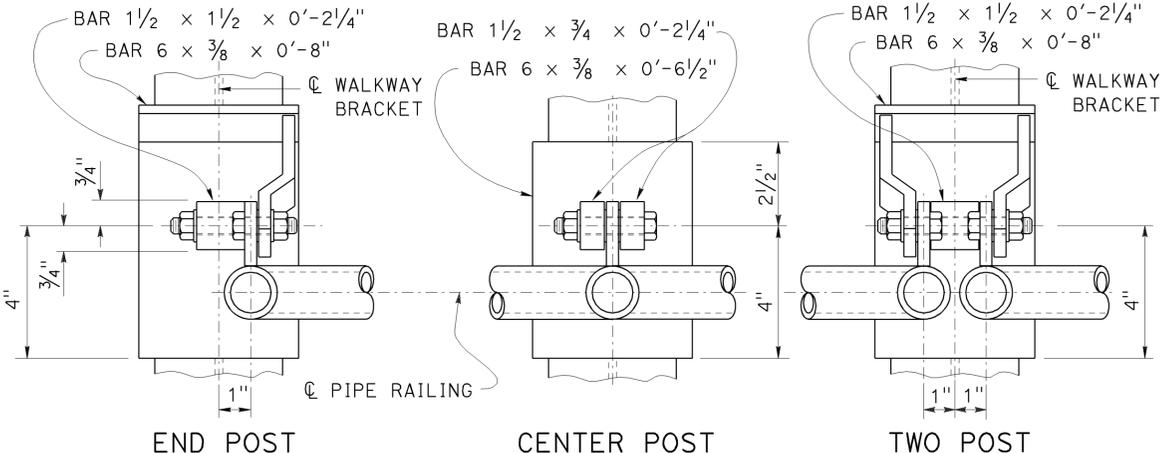
**SAFETY RAILING ELEVATION**

**NOTE:**  
Chain assembly behind (see detail this page)

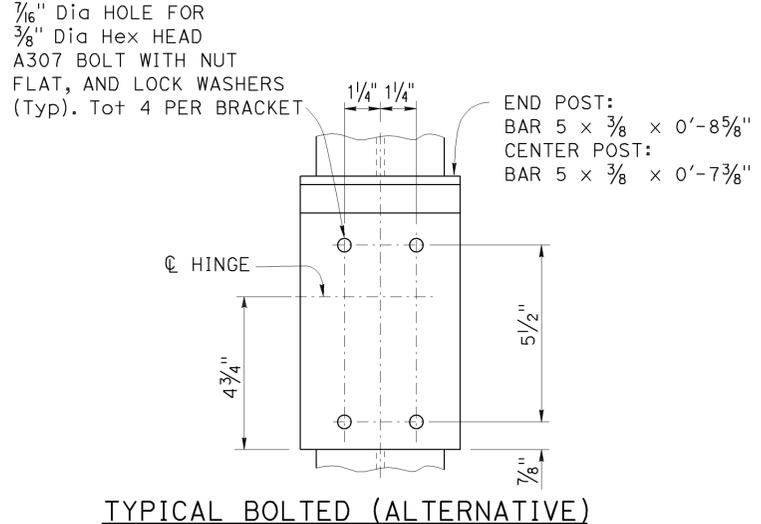
**NOTE:**  
See Standard Plans S101 and S105 and S109 for walkway bracket spacing.



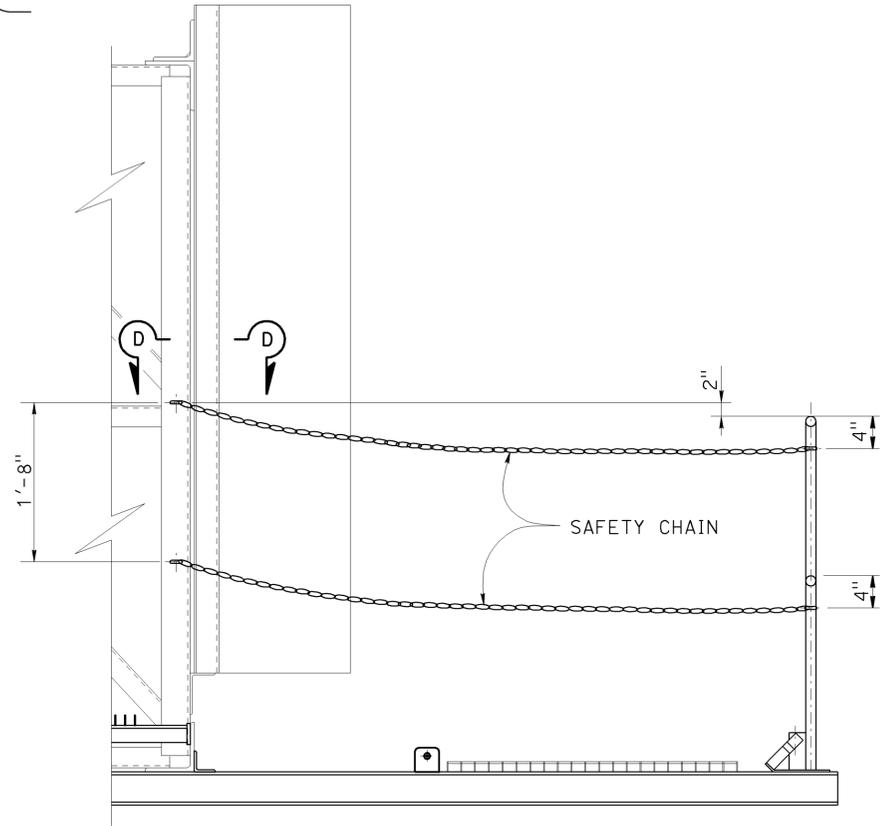
**SECTION D-D**



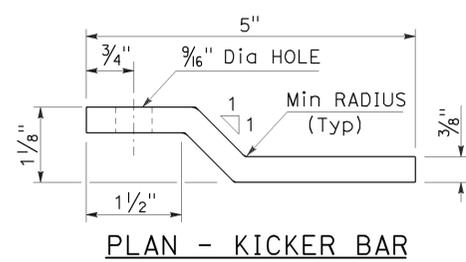
**WELDED HINGE - PLAN**



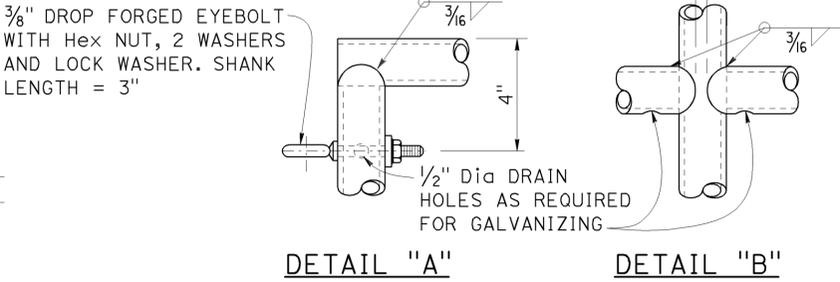
**TYPICAL BOLTED (ALTERNATIVE) HINGED CONNECTION**



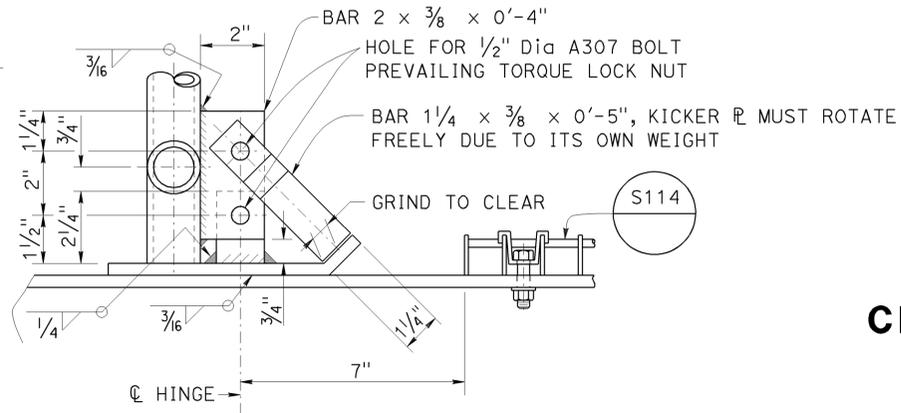
**CHAIN ASSEMBLY**



**PLAN - KICKER BAR**



**NOTE:**  
Alternative venting methods may be used if approved by the Engineer.



**SECTION C-C ELEVATION VIEW**

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**OVERHEAD SIGN-TRUSS  
 SINGLE POST TYPE  
 WALKWAY SAFETY  
 RAILING DETAILS  
 CHANGEABLE MESSAGE SIGNS  
 MODEL 500 AND 510**  
 NO SCALE

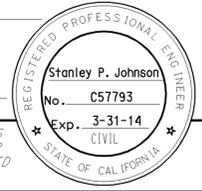
RSP S140 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN S140 DATED MAY 20, 2011 - PAGE 422 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP S140**

2010 REVISED STANDARD PLAN RSP S140

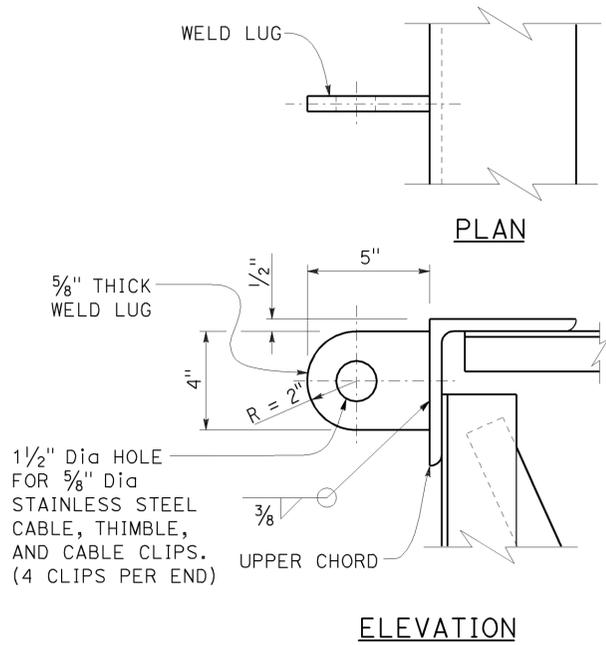
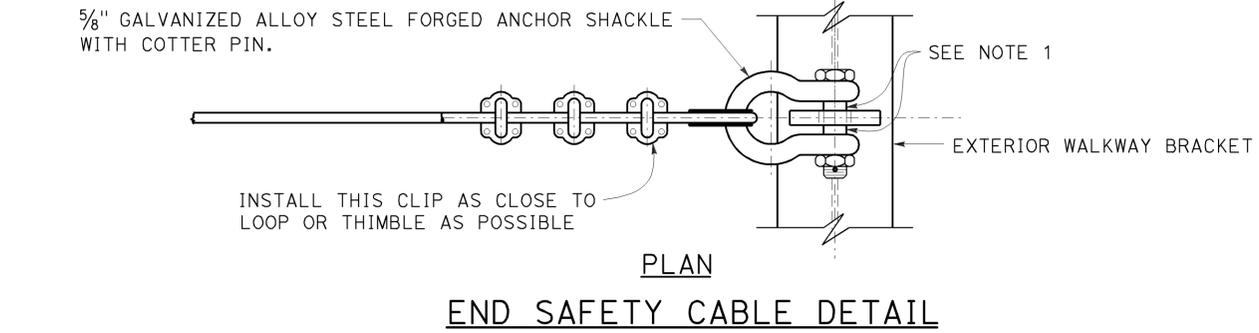
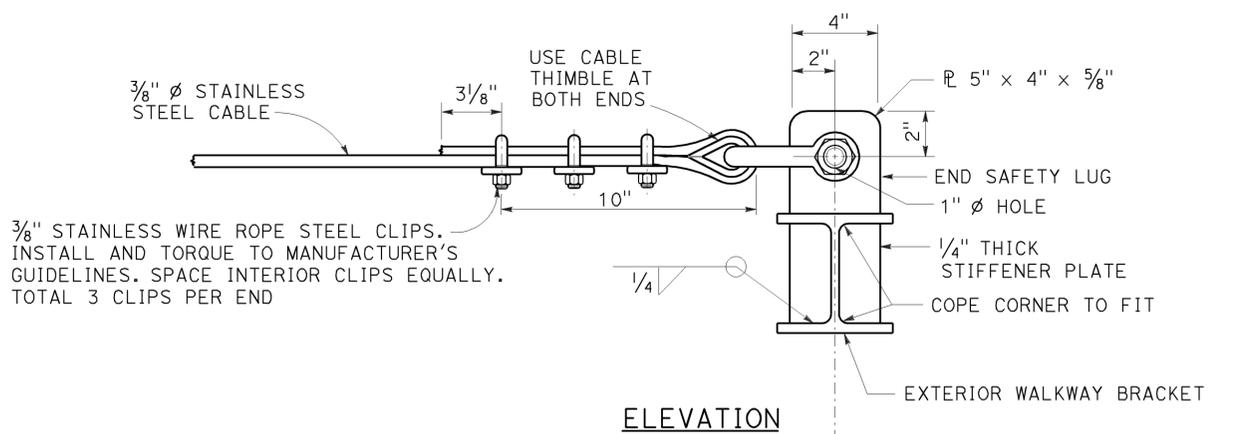
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	269	302

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



TO ACCOMPANY PLANS DATED 01-20-15

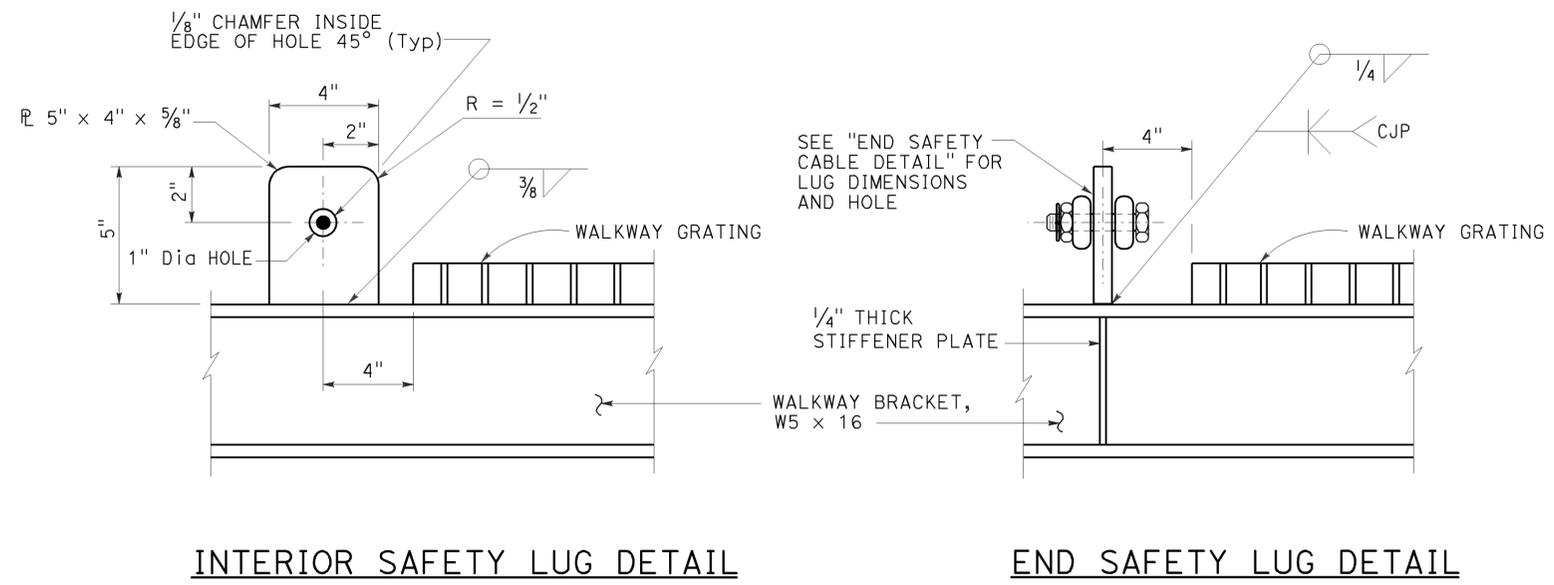
2010 REVISED STANDARD PLAN RSP S141



**NOTE:** Backside weld lug shall be installed only for projects requiring backside walkways.

**NOTES:**

- Place an equal amount of washers on each side to align cable with end lug without restricting shackle bolt rotation or contacting cable.
- For walkway grating details, see Standard Plan S114.



STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**OVERHEAD SIGN-TRUSS  
 SINGLE POST TYPE  
 SAFETY CABLE  
 ANCHORAGE DETAILS  
 CHANGEABLE MESSAGE SIGNS  
 MODEL 500 AND 510**

NO SCALE

RSP S141 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN S141 DATED MAY 20, 2011 - PAGE 423 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP S141**

**LEGEND:**

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

**ABBREVIATIONS**

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	270	302

Theresa Gabriel  
REGISTERED ELECTRICAL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

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

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TO ACCOMPANY PLANS DATED 01-20-15

**SOFFIT AND WALL MOUNTED LUMINAIRES**

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

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

COMMONLY USED SYMBOLS FOR UNITED STATES CUSTOMARY UNITS OF MEASUREMENT:

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

**MISCELLANEOUS ELECTROLIERS**

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

**NOTES:**

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

**STANDARD ELECTROLIER**

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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)**

NO SCALE

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

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

2010 REVISED STANDARD PLAN RSP ES-1A

TO ACCOMPANY PLANS DATED 01-20-15

**CONDUIT**

**SIGNAL EQUIPMENT**

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

NEW	EXISTING	
		PEDESTRIAN SIGNAL HEAD "C" INDICATES COUNTDOWN PEDESTRIAN HEAD
		PUSH BUTTON ASSEMBLY POST
		PEDESTRIAN BARRICADE
		VEHICLE SIGNAL HEAD (WITH BACKPLATE AND 3-SECTIONS: RED, YELLOW AND GREEN)
		VEHICLE SIGNAL HEAD WITH ANGLE VISOR
		MODIFICATIONS OF BASIC SYMBOL: "L" INDICATES ALL NON-ARROW SECTIONS LOUVERED "LG" INDICATES LOUVERED GREEN SECTION ONLY "PV" INDICATES ALL 12" SECTIONS PROGRAMMED VISIBILITY "8" INDICATES ALL 8" SECTIONS (ONLY WHEN SPECIFIED)
		VEHICLE SIGNAL HEAD CONSISTING OF RED, YELLOW AND GREEN LEFT ARROW SECTIONS
		VEHICLE SIGNAL HEAD CONSISTING OF RED AND YELLOW SECTIONS WITH AN UP GREEN ARROW SECTION
		VEHICLE SIGNAL HEAD (5 SECTION) CONSISTING OF RED, YELLOW AND GREEN SECTIONS WITH YELLOW AND GREEN RIGHT ARROW SECTIONS
		TYPE 15TS STANDARD WITH VEHICLE SIGNAL HEAD AND LUMINAIRE
		TYPE 21TS STANDARD WITH VEHICLE SIGNAL HEAD AND LUMINAIRE
		STANDARD WITH LUMINAIRE AND SIGNAL MAST ARMS AND ATTACHED VEHICLE SIGNAL HEADS
		TYPE 1 STANDARD WITH ATTACHED VEHICLE SIGNAL HEADS
		STANDARD WITH A SIGNAL MAST ARM, ATTACHED VEHICLE SIGNAL HEADS AND INTERNALLY ILLUMINATED STREET NAME SIGN
		CONTROLLER ASSEMBLY. DOOR INDICATES FRONT OF CABINET

**SERVICE EQUIPMENT**

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

**POLE-MOUNTED SERVICE DESIGNATION**

	TYPE H SERVICE, 28'-10"	TYPE OF INSTALLATION AND POLE HEIGHT ABOVE GRADE
--	-------------------------	--

**FLASHING BEACON**

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

**SIGNAL EQUIPMENT Cont**

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

**NOTES:**

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

**ILLUMINATED OVERHEAD SIGN**

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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS  
(LEGEND AND ABBREVIATIONS)**

NO SCALE

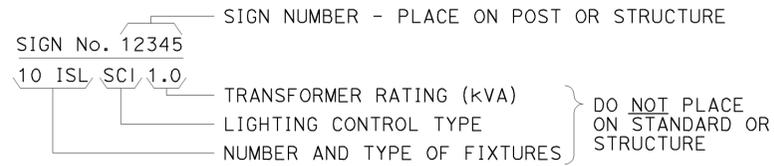
RSP ES-1B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-1B DATED MAY 20, 2011 - PAGE 426 OF THE STANDARD PLANS BOOK DATED 2010.

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

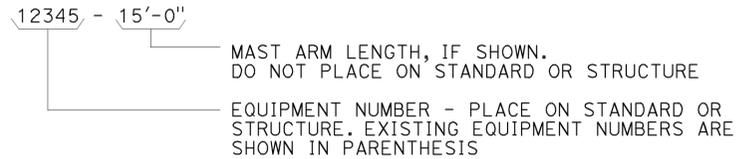
2010 REVISED STANDARD PLAN RSP ES-1B

### EQUIPMENT IDENTIFICATION

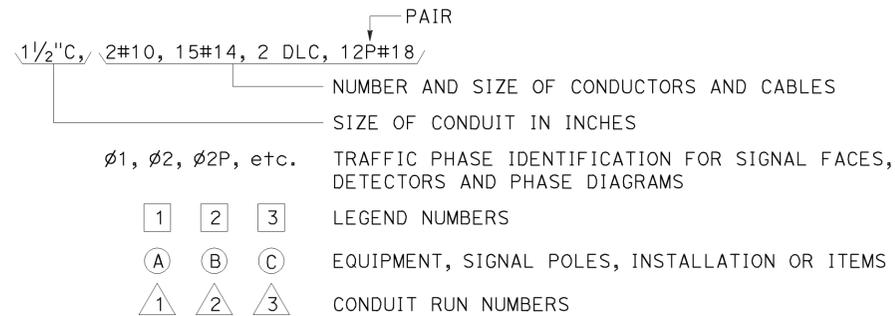
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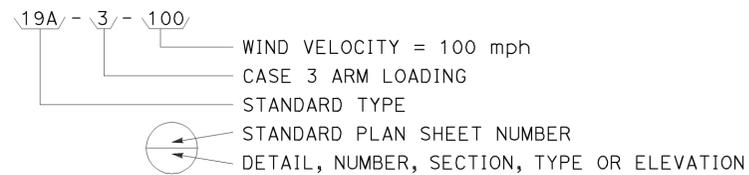
#### ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



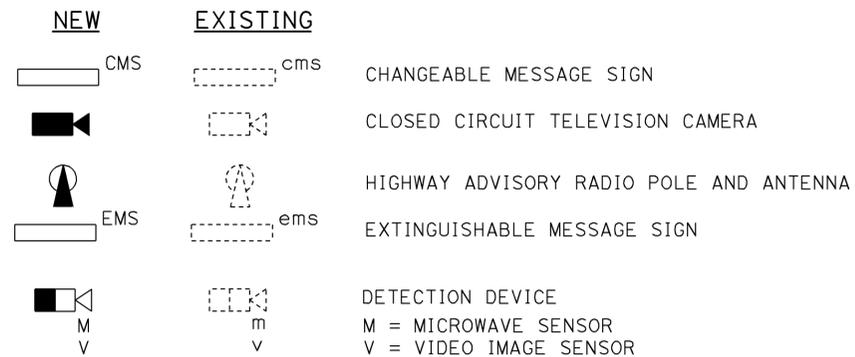
#### CONDUIT AND CONDUCTOR IDENTIFICATION:



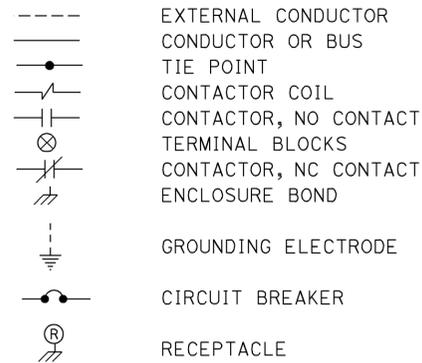
#### SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



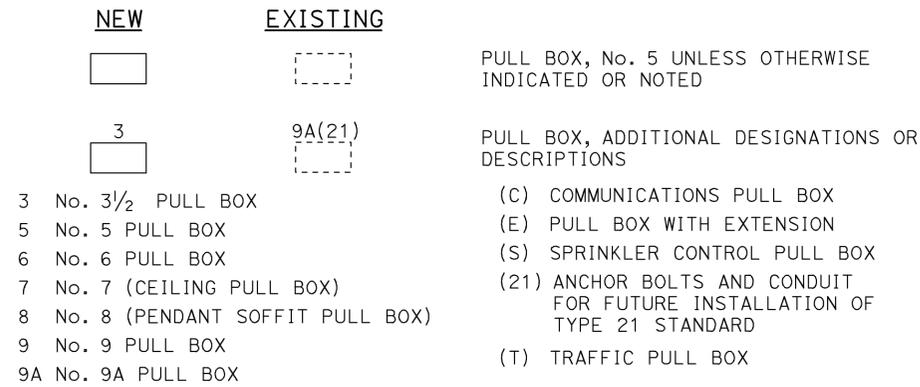
### MISCELLANEOUS EQUIPMENT



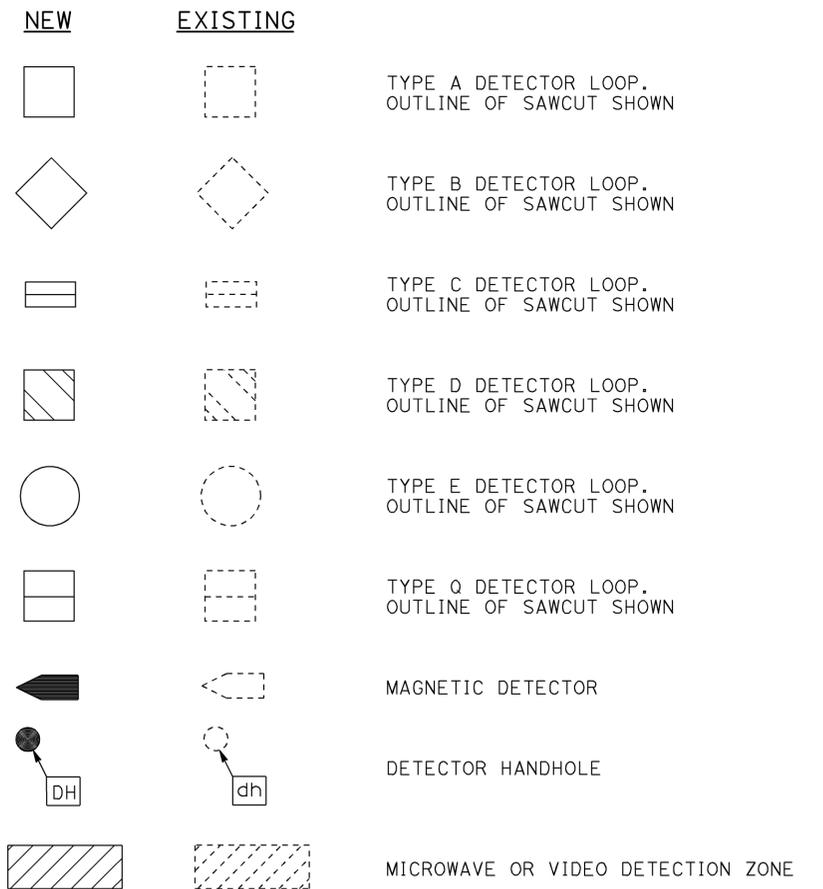
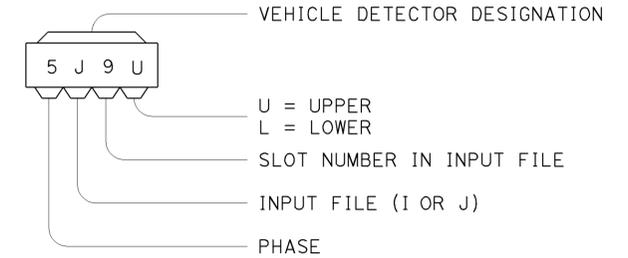
### WIRING DIAGRAM LEGEND



### PULL BOXES



### VEHICLE DETECTORS



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

## ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

NO SCALE

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

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

2010 REVISED STANDARD PLAN RSP ES-1C

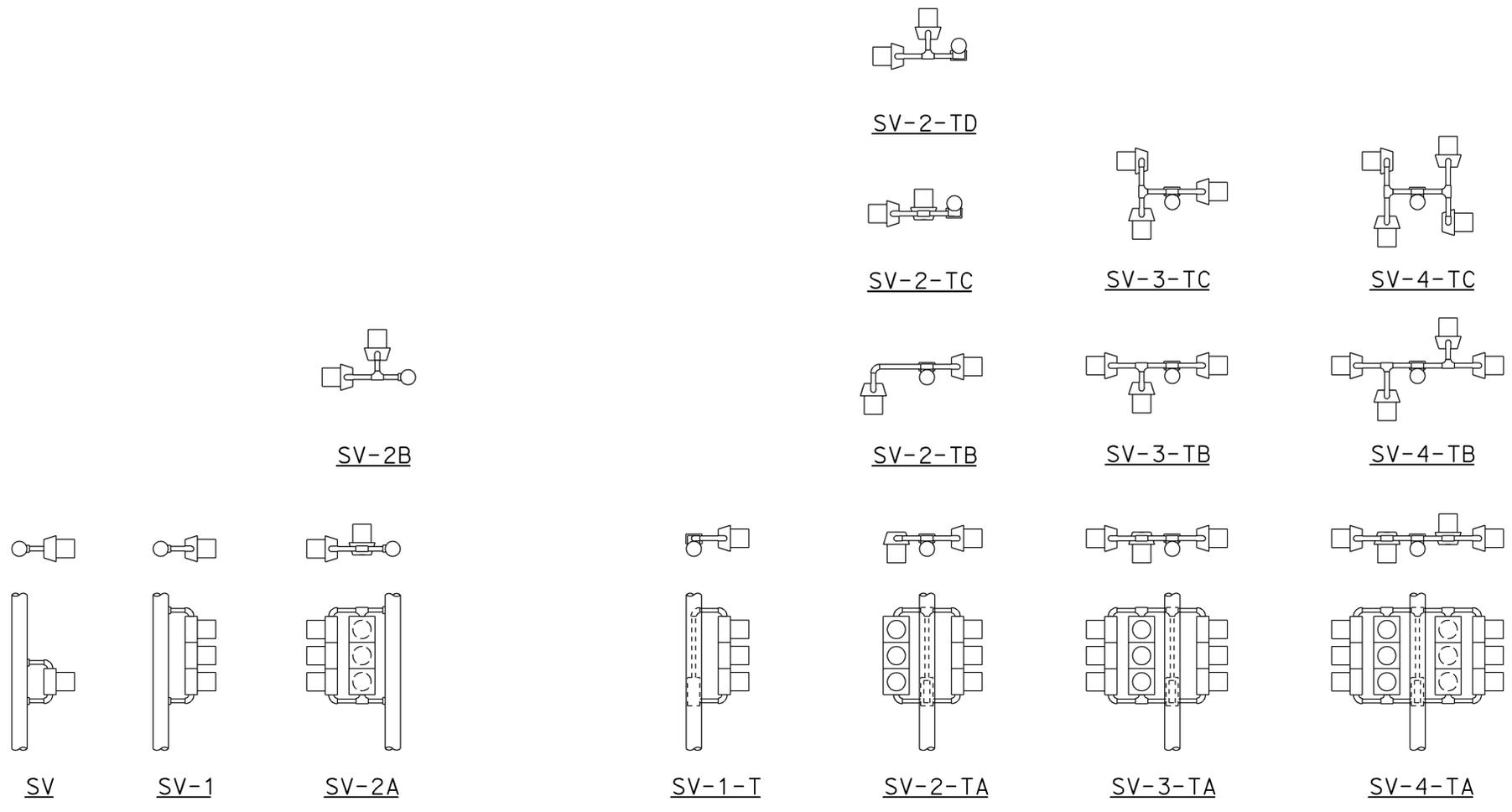
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	273	302

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



TO ACCOMPANY PLANS DATED 01-20-15

PLAN VIEW OF OTHER SIDE MOUNTINGS



SIDE MOUNTINGS

TOP MOUNTINGS

ABBREVIATIONS:

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

NOTES:

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

PLAN VIEW OF TOP MOUNTINGS

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

NO SCALE

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

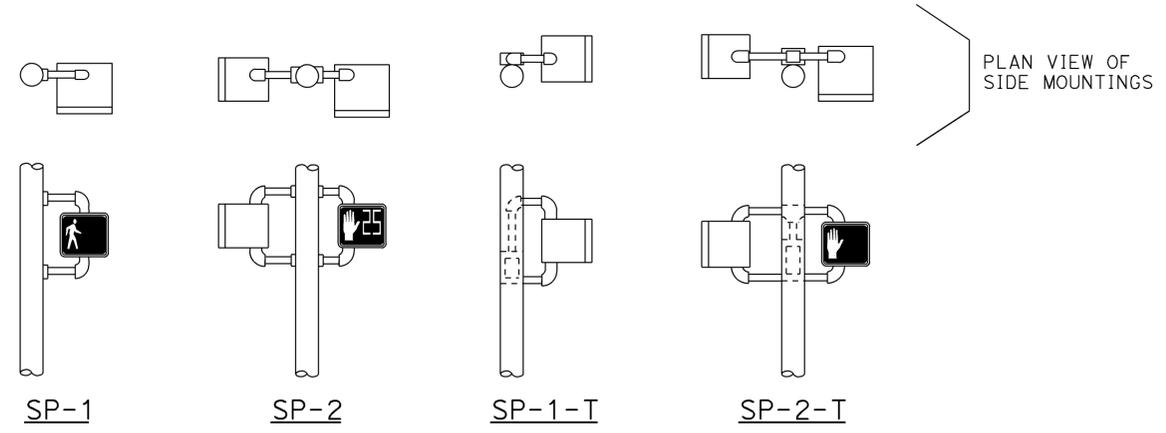
**REVISED STANDARD PLAN RSP ES-4A**

2010 REVISED STANDARD PLAN RSP ES-4A

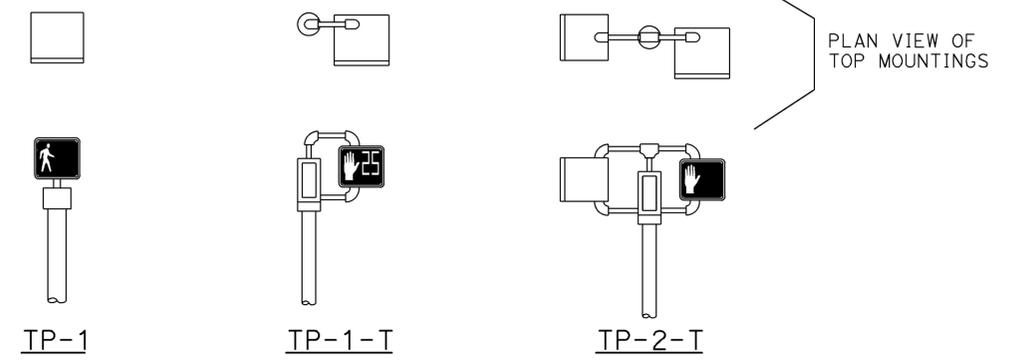
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	274	302
<i>Theresa Gabriel</i> REGISTERED ELECTRICAL ENGINEER					
October 17, 2014 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



TO ACCOMPANY PLANS DATED 01-20-15



SIDE MOUNTINGS



TOP MOUNTINGS

PEDESTRIAN SIGNALS AND MOUNTINGS

DETAIL A

NOTES:

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

ABBREVIATIONS:

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



PERSON WALKING INTERVAL FLASHING UPRaised HAND INTERVAL STEADY UPRaised HAND INTERVAL

PEDESTRIAN SIGNAL MODULE WITH COUNTDOWN

DETAIL B



PERSON WALKING INTERVAL STEADY UPRaised HAND INTERVAL

PEDESTRIAN SIGNAL MODULE WITHOUT COUNTDOWN

DETAIL C

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
 (PEDESTRIAN SIGNAL)**

NO SCALE

RSP ES-4B DATED OCTOBER 17, 2014 SUPERSEDES RSP ES-4B DATED JULY 19, 2013 AND STANDARD PLAN ES-4B DATED MAY 20, 2011 - PAGE 444 OF THE STANDARD PLANS BOOK DATED 2010.

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

2010 REVISED STANDARD PLAN RSP ES-4B

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	275	302

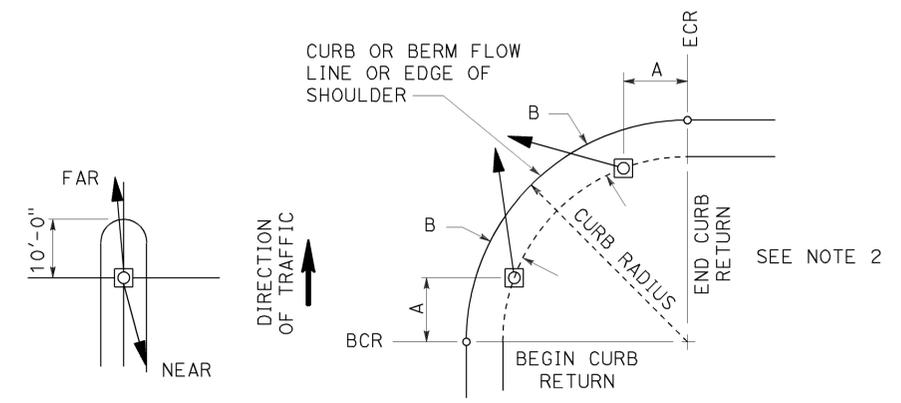
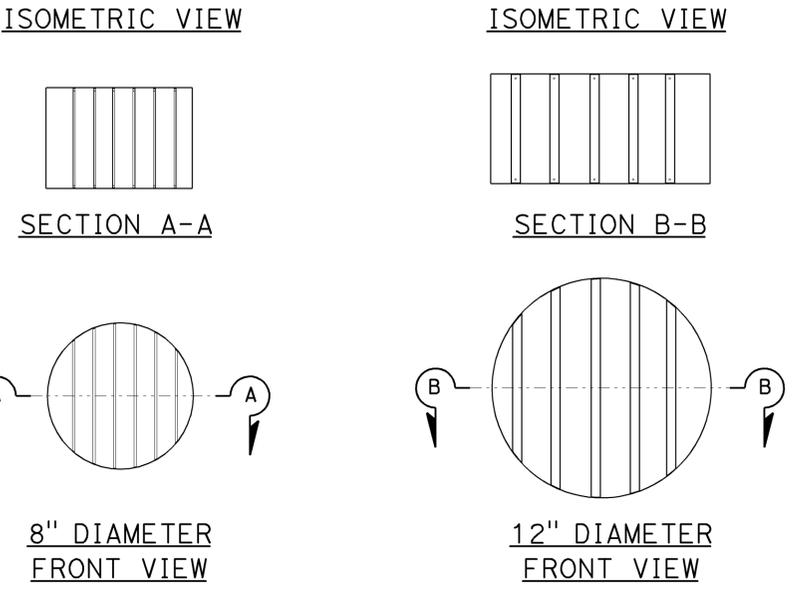
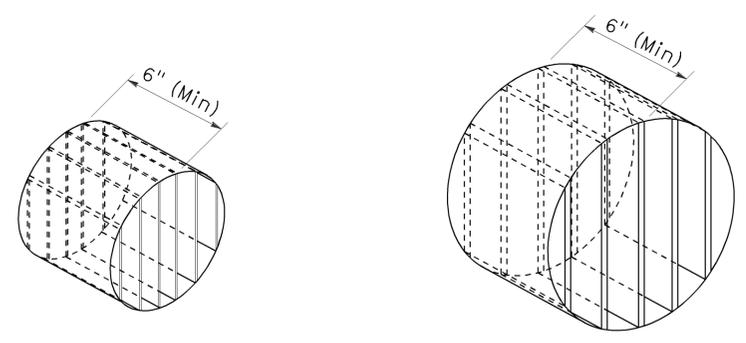
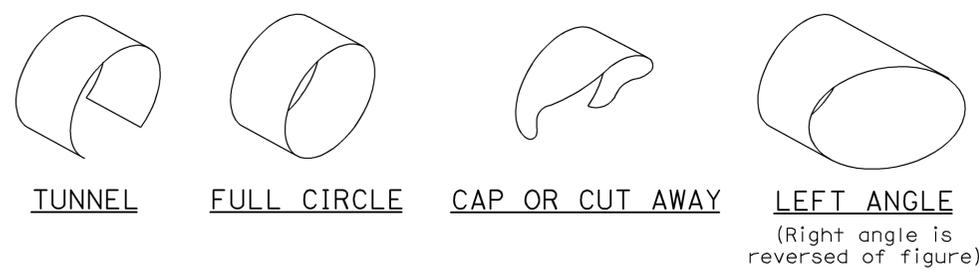
Theresa Gabriel  
REGISTERED ELECTRICAL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

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

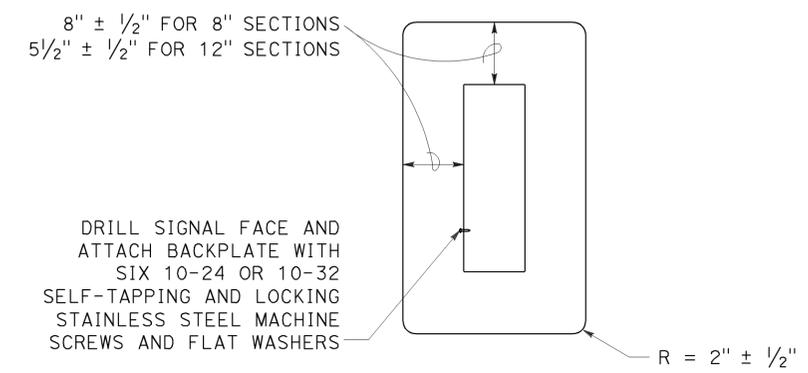
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 01-20-15



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

**VISORS**



**8" AND 12" SECTIONS**

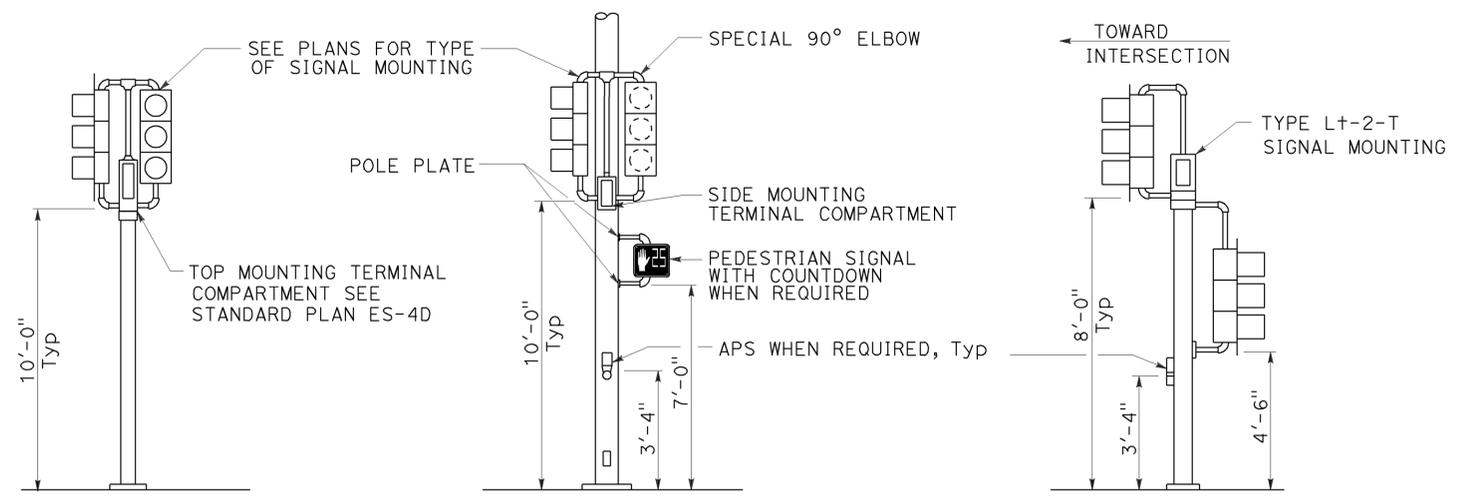
**BACKPLATE**

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

**DIRECTIONAL LOUVER**

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

**SIGNAL STANDARD PLACEMENT DIMENSIONS AND EQUIPMENT LOCATIONS**



**TOP MOUNTED SIGNALS (TV)**

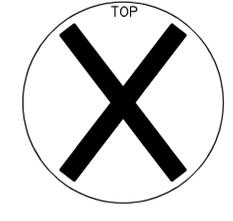
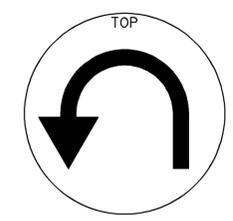
Type 1-A, 1-B, 1-C and 1-D standard as indicated on the plans

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

Normally used on standards with luminaire or signal mast arm

**LEFT TURN LANE SIGNAL**

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



**SIGNAL FACES**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

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

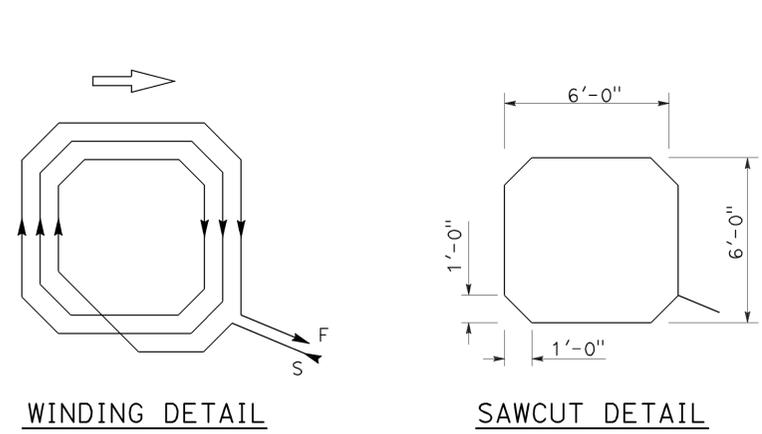
NO SCALE

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

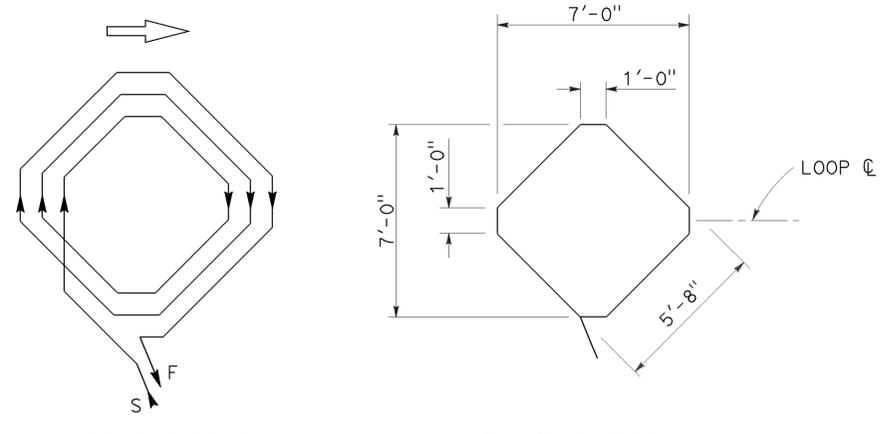
**REVISED STANDARD PLAN RSP ES-4C**

2010 REVISED STANDARD PLAN RSP ES-4C

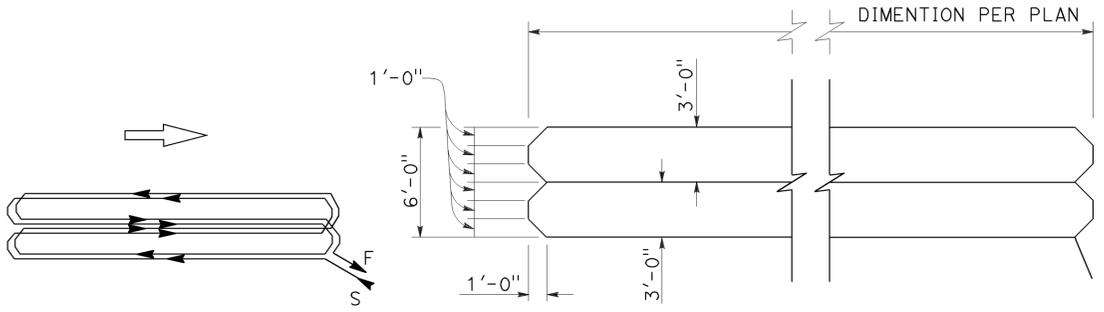
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	276	302
<i>Theresa Gabriel</i> REGISTERED ELECTRICAL ENGINEER July 19, 2013 PLANS APPROVAL DATE <small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
TO ACCOMPANY PLANS DATED 01-20-15					



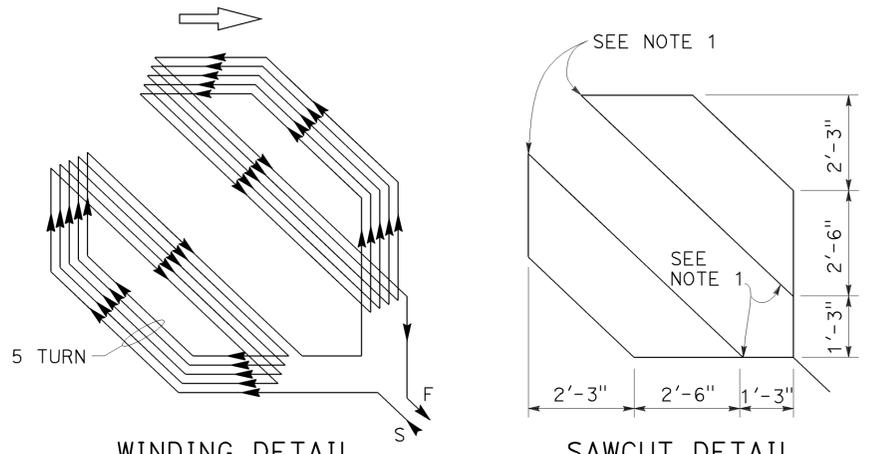
WINDING DETAIL  
SAWCUT DETAIL  
**TYPE A LOOP DETECTOR CONFIGURATION**



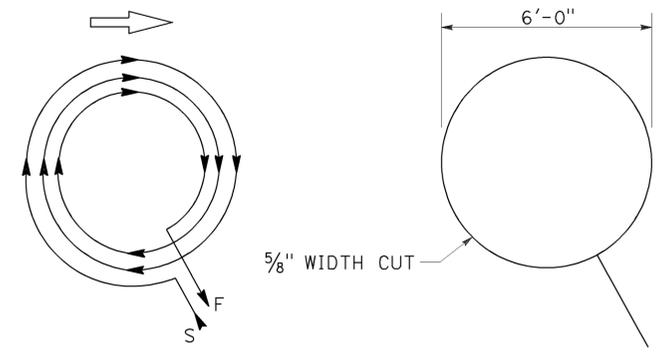
WINDING DETAIL  
SAWCUT DETAIL  
**TYPE B LOOP DETECTOR CONFIGURATION**



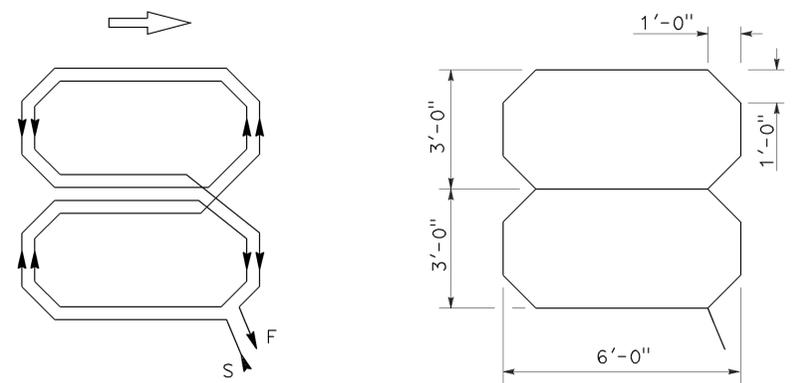
WINDING DETAIL  
SAWCUT DETAIL  
**TYPE C LOOP DETECTOR CONFIGURATION**



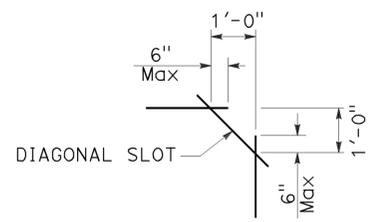
WINDING DETAIL  
SAWCUT DETAIL  
**TYPE D LOOP DETECTOR CONFIGURATION**



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



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



**PLAN VIEW OF DIAGONAL SLOT AT CORNERS**

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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

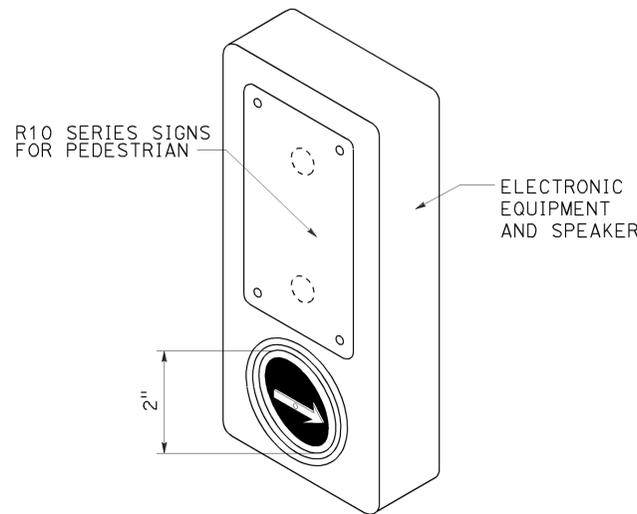
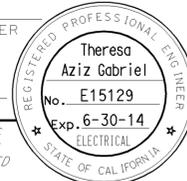
**ELECTRICAL SYSTEMS (DETECTORS)**

NO SCALE

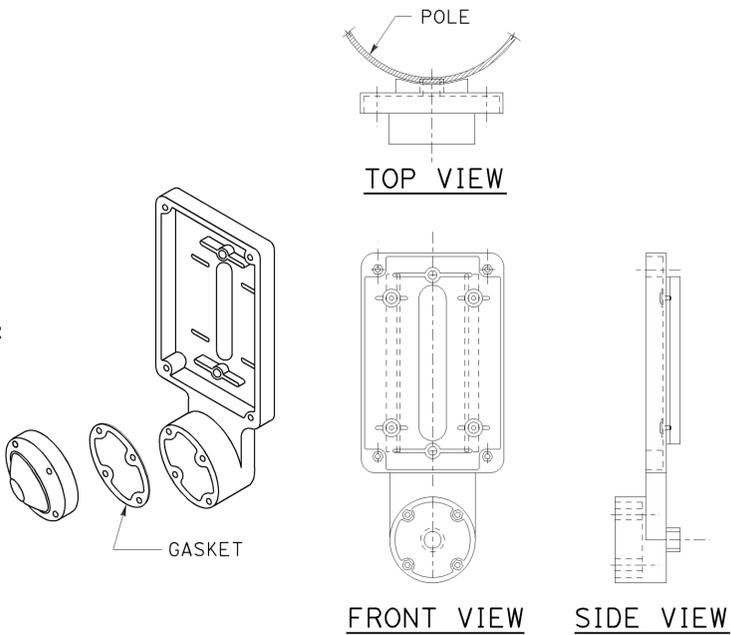
RSP ES-5B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-5B DATED MAY 20, 2011 - PAGE 449 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-5B

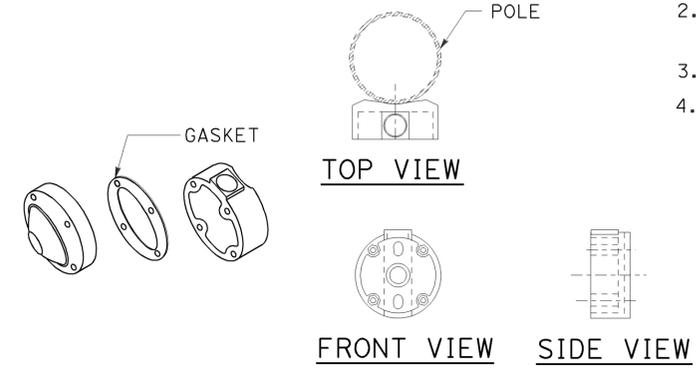
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	277	302
<p>Theresa Gabriel REGISTERED ELECTRICAL ENGINEER</p> <p>July 19, 2013 PLANS APPROVAL DATE</p> <p>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</p>					
<p>TO ACCOMPANY PLANS DATED 01-20-15</p>					



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

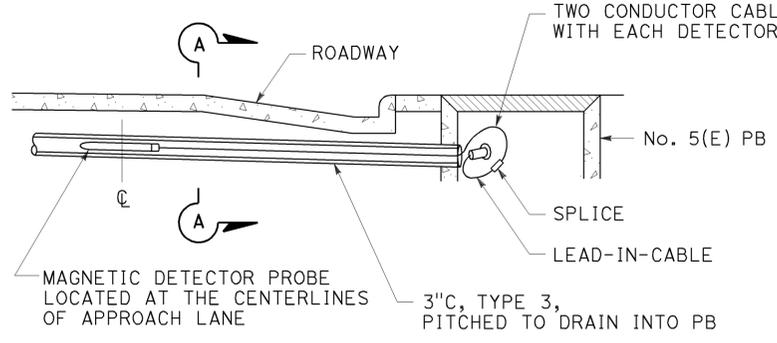
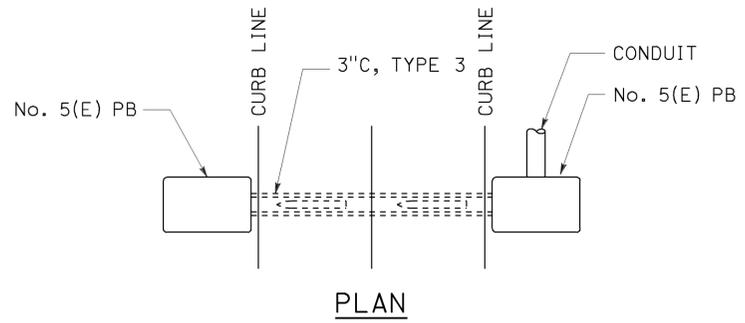


**TYPE B PUSH BUTTON ASSEMBLY**  
**DETAIL B**  
(See note 1 to 4)

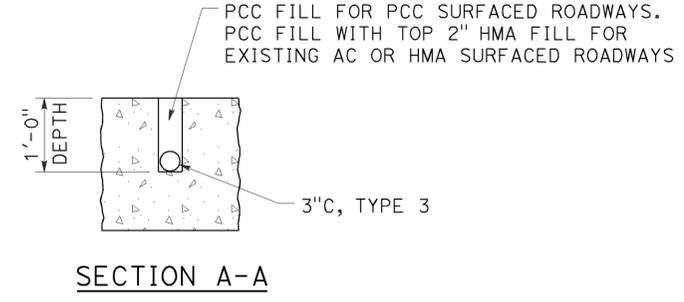


**TYPE C PUSH BUTTON ASSEMBLY**  
**DETAIL C**  
(See note 1 to 4)

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



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



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS**  
**(ACCESSIBLE PEDESTRIAN SIGNAL,**  
**PUSH BUTTON ASSEMBLIES AND**  
**MAGNETIC VEHICLE DETECTOR)**

NO SCALE

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

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

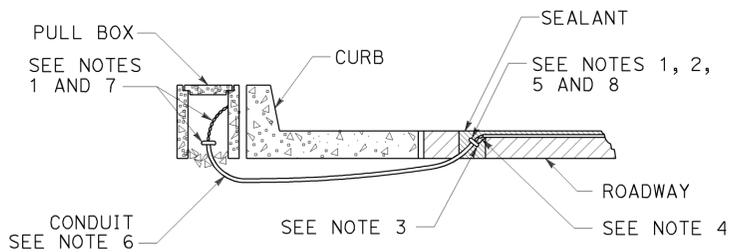
2010 REVISED STANDARD PLAN RSP ES-5C

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	278	302

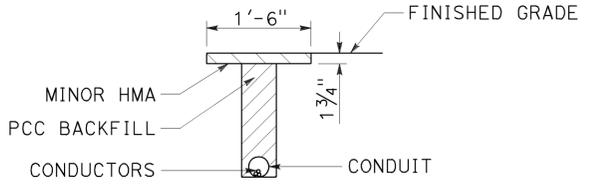
Theresa Gabriel  
 REGISTERED ELECTRICAL ENGINEER  
 July 19, 2013  
 PLANS APPROVAL DATE  
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



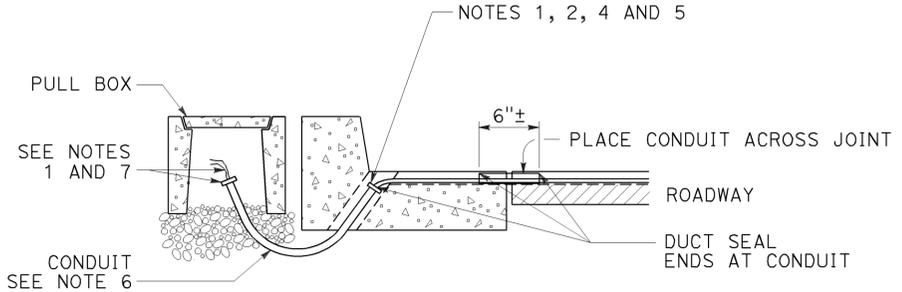
TO ACCOMPANY PLANS DATED 01-20-15



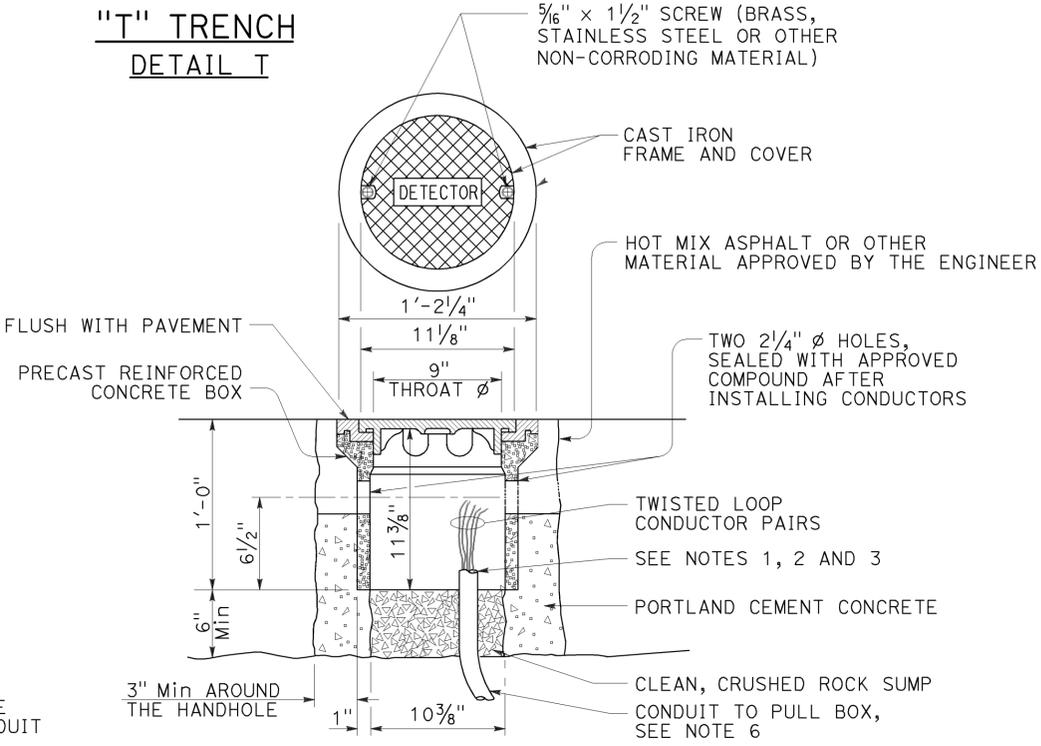
**TYPE A**  
**CURB TERMINATION DETAIL**



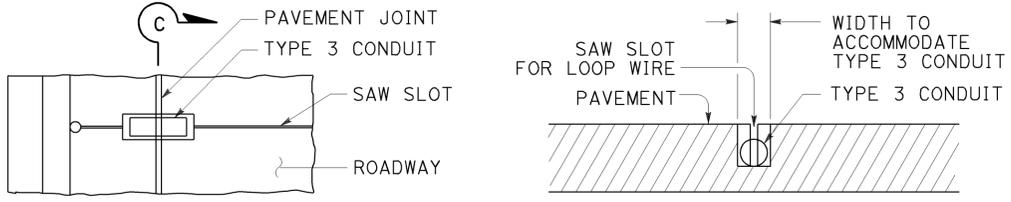
**"T" TRENCH**  
**DETAIL T**



**CROSS SECTION**



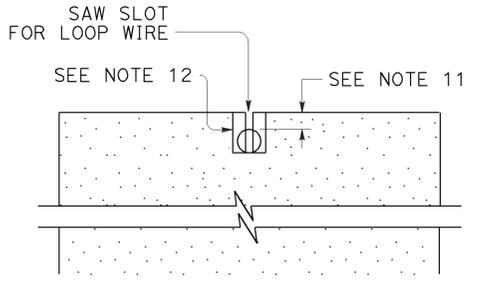
**DETECTOR HANDHOLE DETAIL**



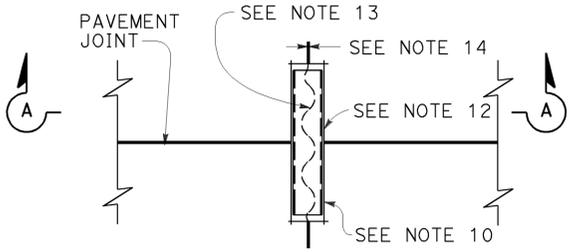
**PLAN VIEW**

**SECTION C-C**

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

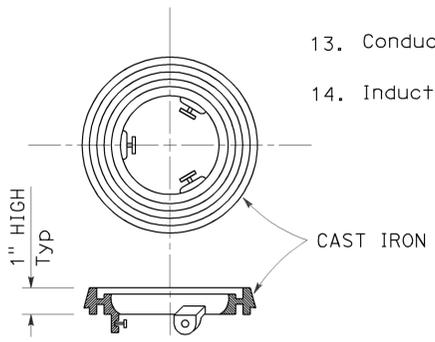


**SECTION A-A**

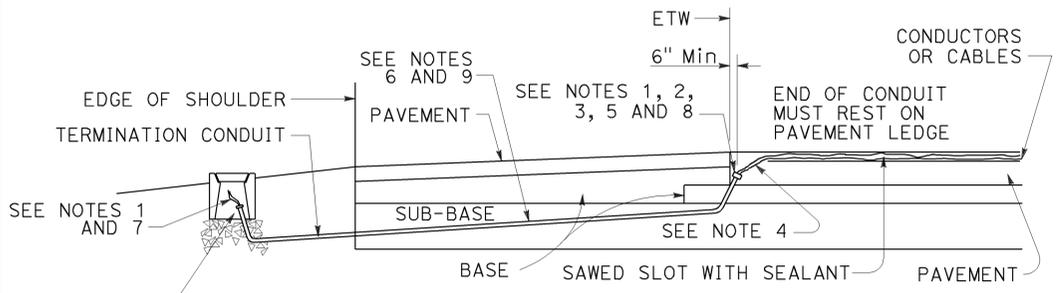


**PLAN VIEW**

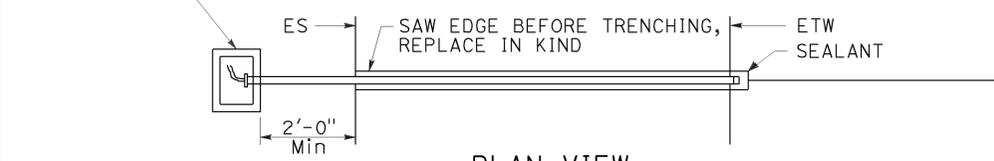
**TYPICAL LOOP LEAD-IN DETAIL**  
**AT PAVEMENT JOINT**



**LOCKING GRADE RING**



**CROSS SECTION**



**PLAN VIEW**

**SHOULDER TERMINATION DETAILS**

**NOTES:**

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

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

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

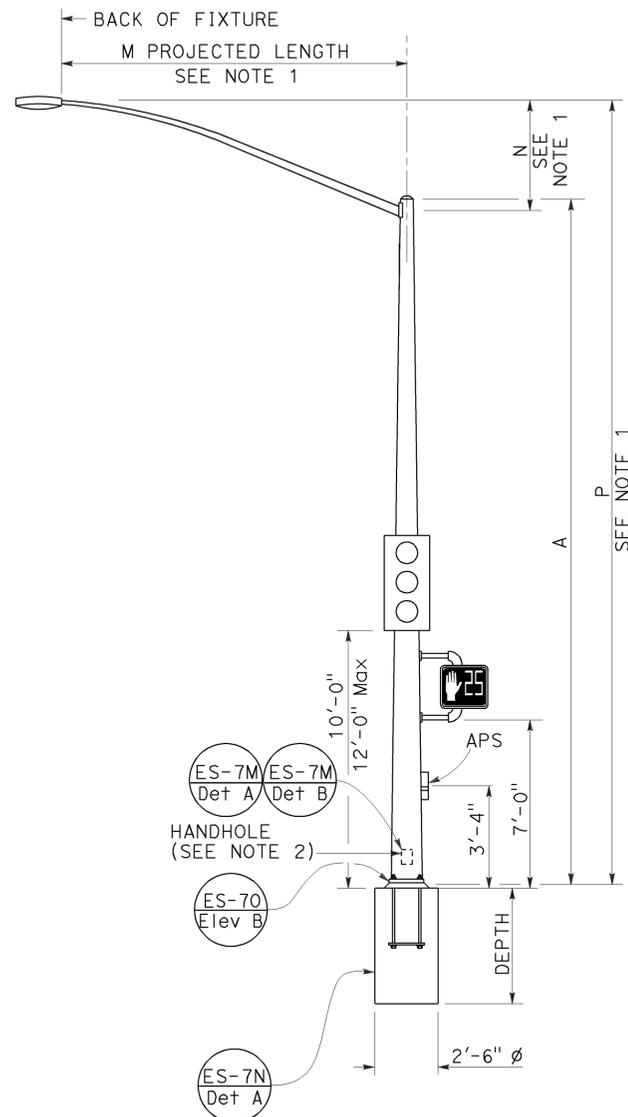
**REVISED STANDARD PLAN RSP ES-5D**

2010 REVISED STANDARD PLAN RSP ES-5D

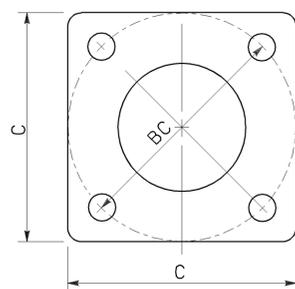
TO ACCOMPANY PLANS DATED 01-20-15

**NOTES:**

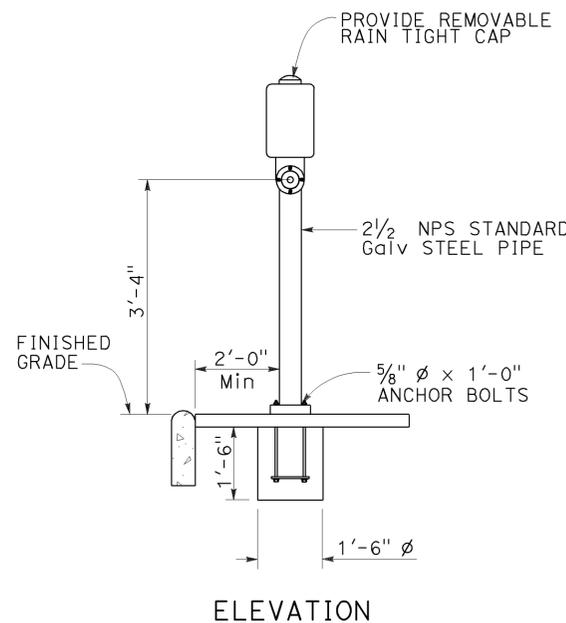
- For additional notes, details and data for Type 15TS and Type 21TS Standards, see Standard Plan ES-6A.
- Handhole shall be located on the downstream side of traffic.



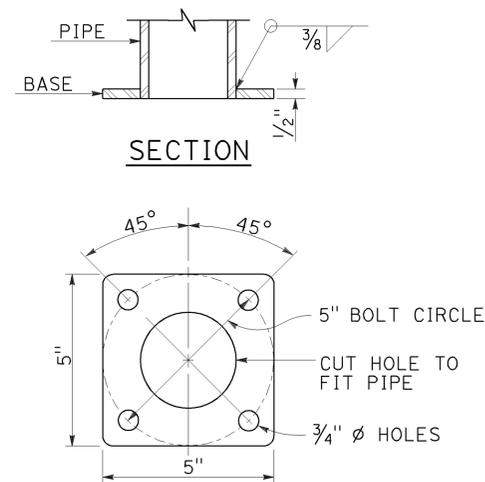
**TYPE 15TS AND 21TS STANDARD**  
**ELEVATION A**  
(See Note 1)



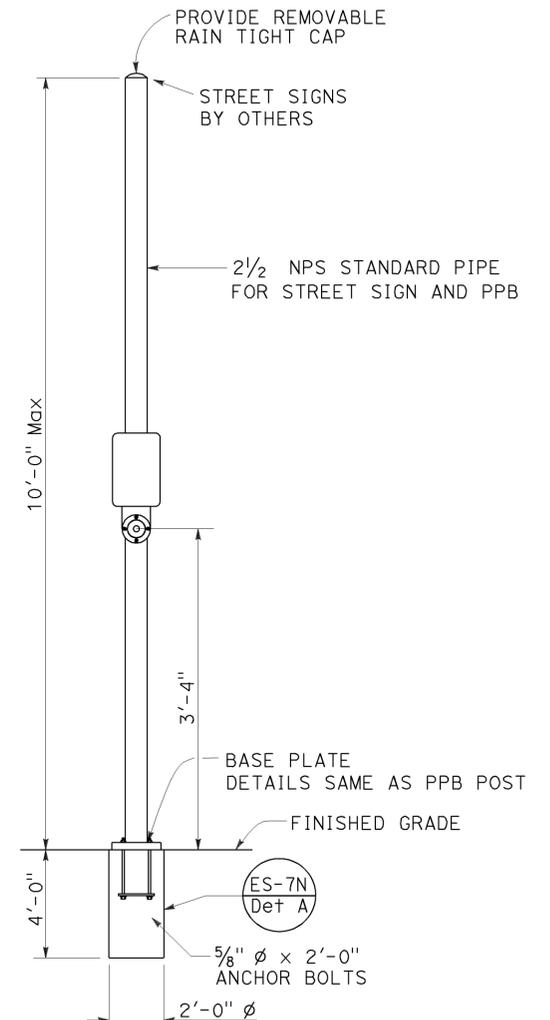
**BASE PLATE**  
**TYPE 15TS AND 21TS**  
**DETAIL A**



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



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



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

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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS**  
**(SIGNAL AND LIGHTING STANDARD, TYPE TS,**  
**AND PUSH BUTTON ASSEMBLY POST)**

NO SCALE

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

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

2010 REVISED STANDARD PLAN RSP ES-7A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	280	302

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

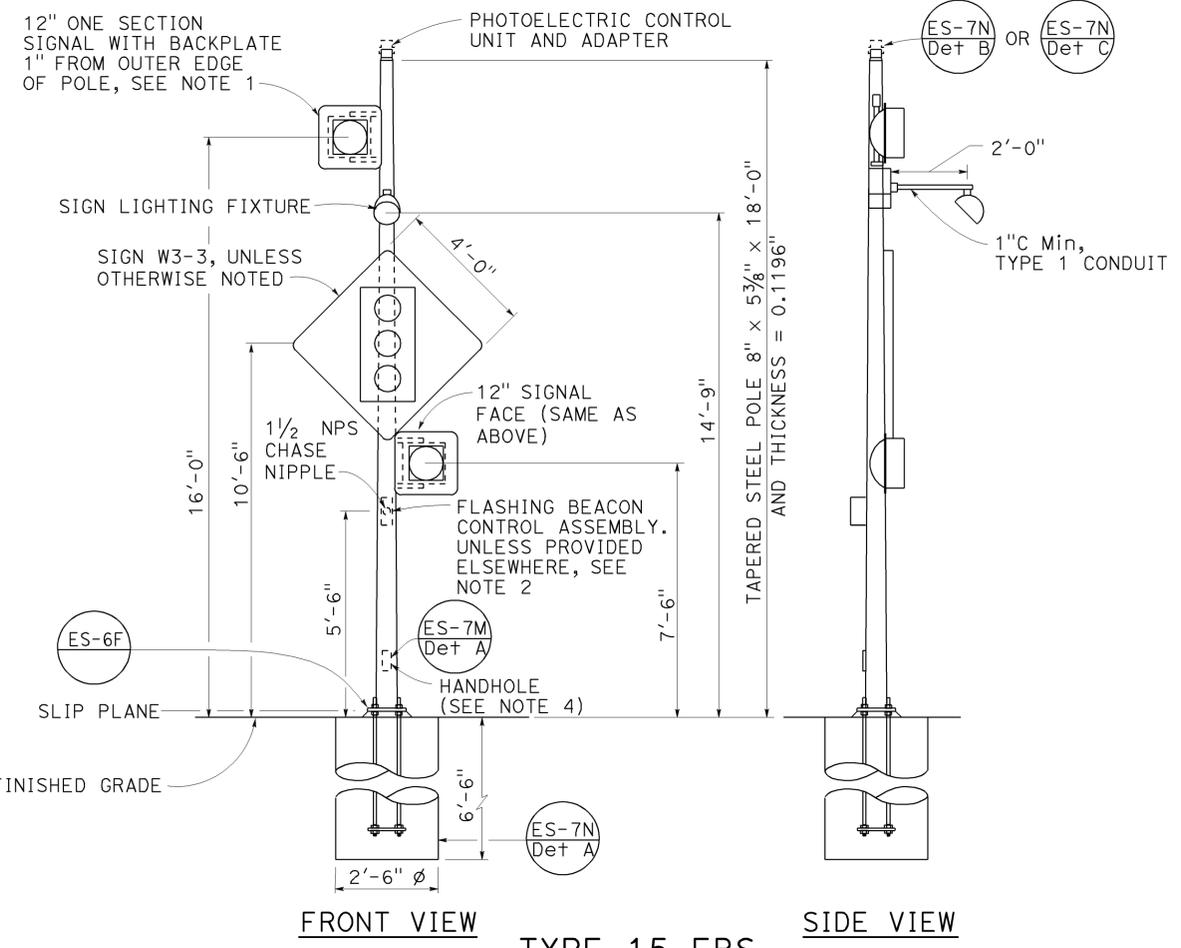
July 19, 2013  
 PLANS APPROVAL DATE

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

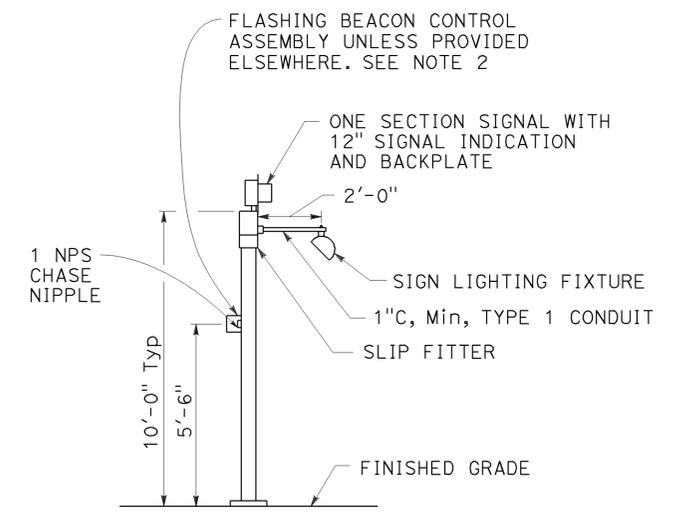
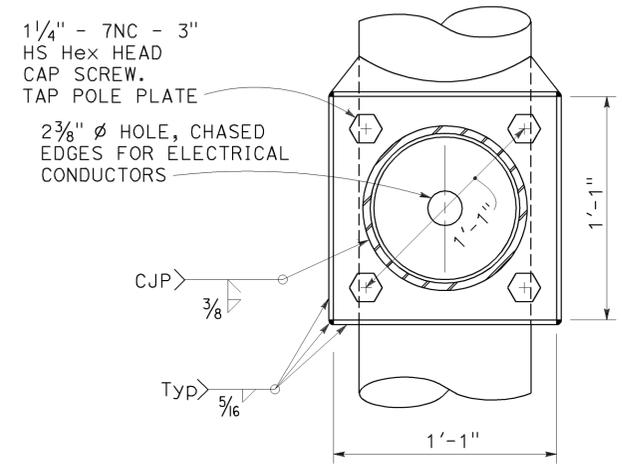
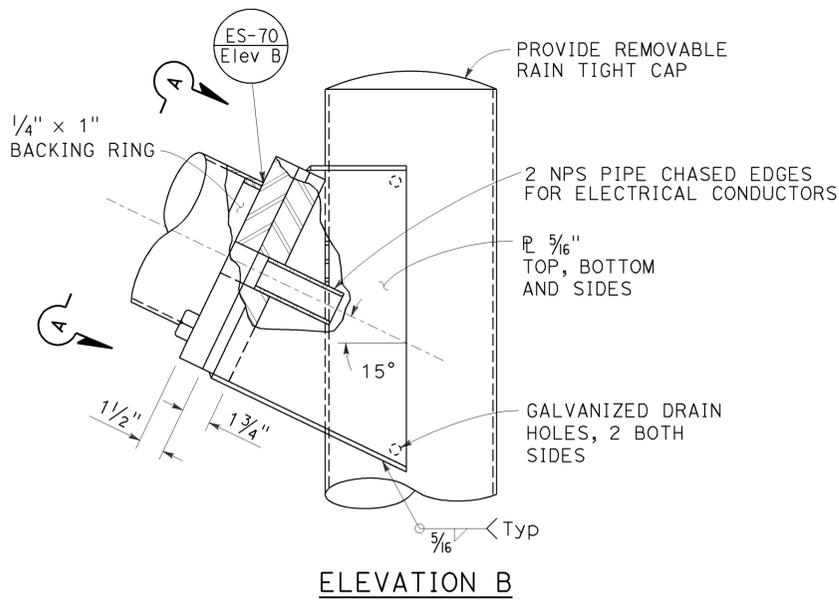
TO ACCOMPANY PLANS DATED 01-20-15

**NOTES:**

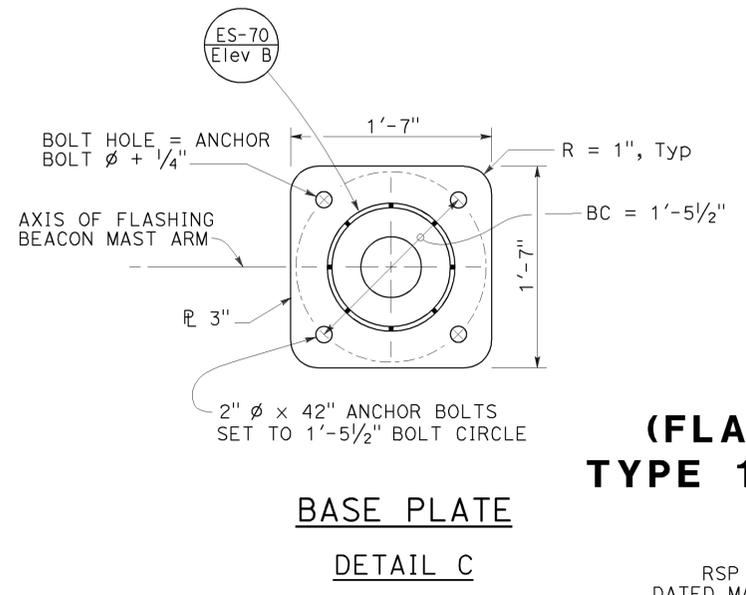
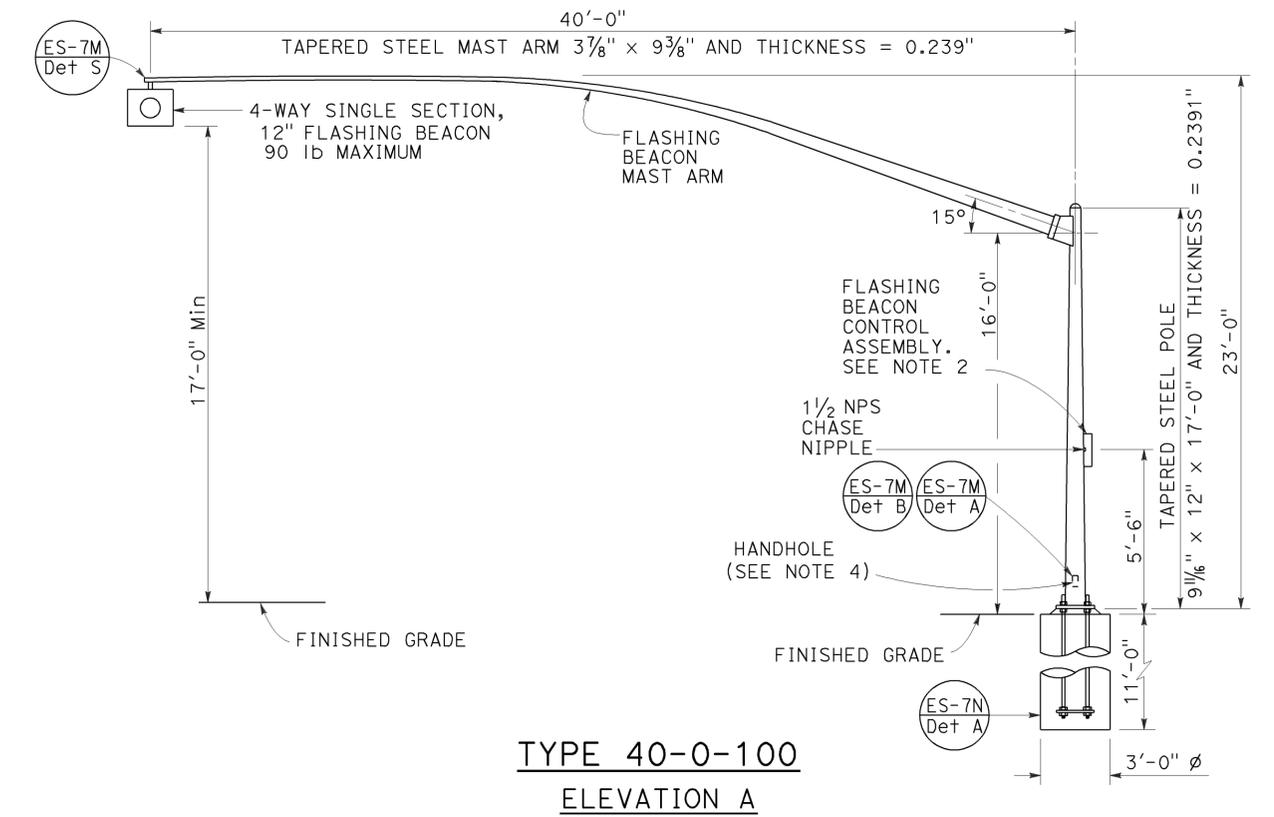
1. See Revised Standard Plan RSP ES-4A and Standard Plan ES-4D for attachment fitting details.
2. For wiring diagram, see Standard Plan ES-14B.
3. For additional notes and details, see Standard Plans ES-7M and ES-7N.
4. Handhole shall be located on the downstream side of traffic.
5. See project plans for type of standard to be installed.



**TYPE 15-FBS  
ADVANCE FLASHING BEACON WITH SLIP BASE INSTALLATION  
DETAIL A**



**TYPE 1-A, 1-B, 1-C AND 1-D  
ADVANCE FLASHING BEACON INSTALLATION  
DETAIL D  
See Note 5**



**ELECTRICAL SYSTEMS  
(FLASHING BEACON ON A TYPE 1, TYPE 15-FBS AND TYPE 40 STANDARD)  
NO SCALE**

RSP ES-7J DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-7J DATED MAY 20, 2011 - PAGE 471 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-7J

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
11	SD	11,125, 905	Var	281	302

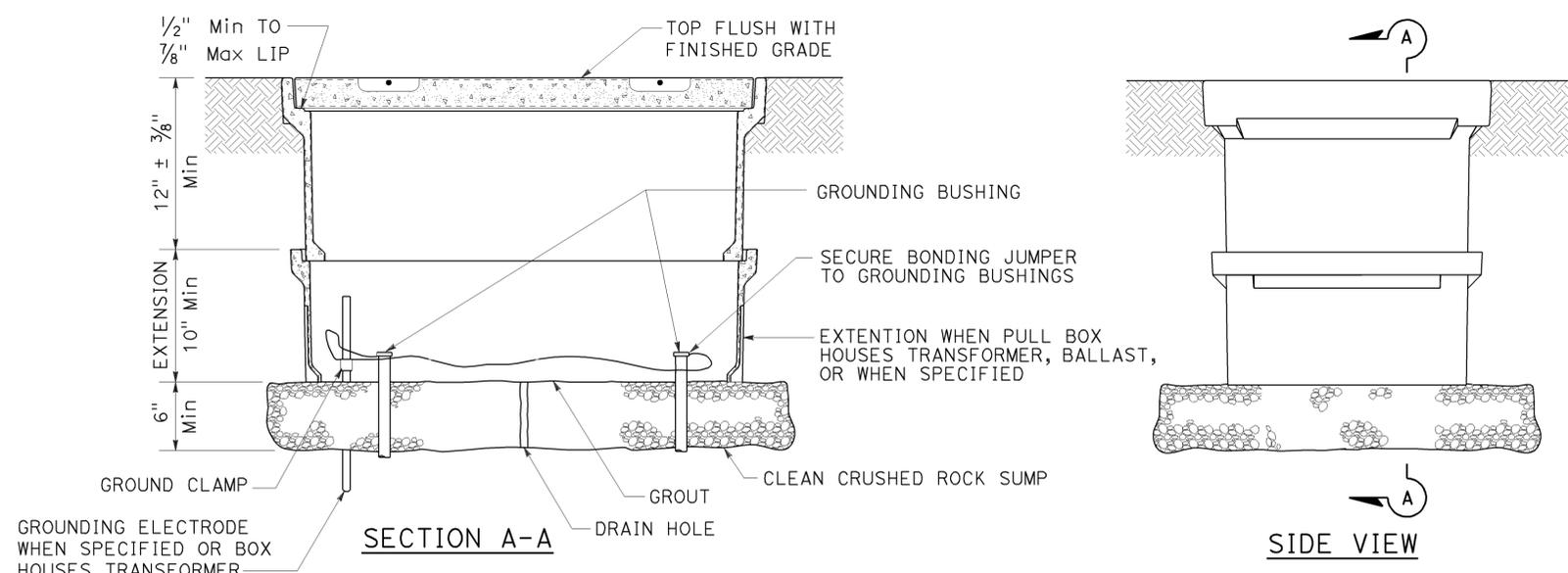
Theresa Gabriel  
REGISTERED ELECTRICAL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

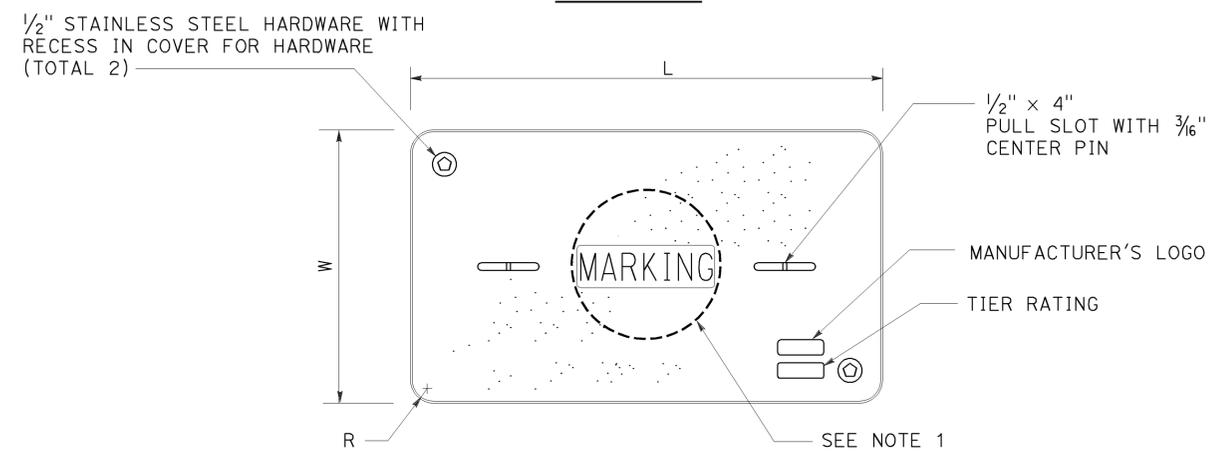
Theresa Aziz Gabriel  
No. E15129  
Exp. 6-30-14  
ELECTRICAL  
STATE OF CALIFORNIA

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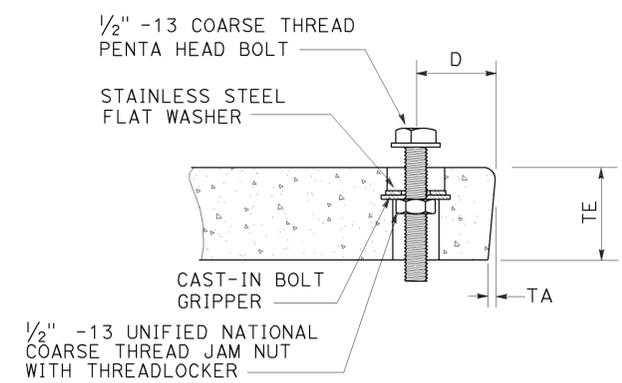
TO ACCOMPANY PLANS DATED 01-20-15



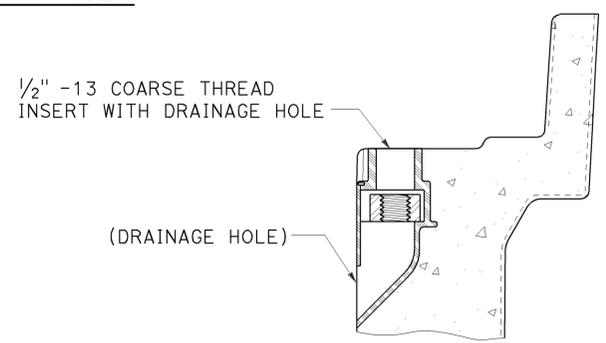
**INSTALLATION DETAILS**  
**DETAIL A**



**COVER TOP VIEW**



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



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

**NOTES:**

- Pull box covers shall be marked as follows: "SERVICE" Service circuits between service point and service disconnect; "SPRINKLER-CONTROL" sprinkler control circuits, 50 V or less; "CALTRANS" on all pull boxes, except pull boxes marked "SPRINKLER-CONTROL"; and "TELEPHONE" Telephone service;
  - No. 3 1/2 pull box.
    - "SIGNAL" - Traffic signal circuits with or without lighting or sign lighting circuits.
    - "LIGHTING" - Lighting or sign lighting circuits where voltage is under 600 V.
  - No. 5, 6, 9 or 9A pull box.
    - "TRAFFIC SIGNAL" - Traffic signal circuits with or without lighting or sign lighting circuits.
    - "LIGHTING" - Lighting or sign lighting circuits where voltage is under 600 V.
    - "LIGHTING-HIGH VOLTAGE" - Lighting or sign lighting circuits where voltage is above 600 V.
    - "IRRIGATION" - Circuits to irrigation controller 120 V or more.
    - "RAMP METER" - Ramp meter circuits.
    - "COUNT STATION" - Count or speed monitor circuits.
    - "COMMUNICATIONS" - Communication circuits.
    - "TOS COMMUNICATIONS" - TOS communication line.
    - "TOS POWER" - TOS power.
    - "TDC POWER" - Telephone demarcation cabinet power.
    - "CCTV" - Closed circuit television circuits.
    - "TMS" - Traffic monitoring station circuits.
    - "CMS" - Changeable message sign circuits.
    - "HAR" - Highway advisory radio circuits.
    - "BOOSTER PUMP" - Booster pump circuit.
- The nominal dimensions of the opening in which the cover sets shall be the same as the cover dimensions except the length and width dimensions shall be 1/8" greater.
- Covers and boxes shall be interchangeable with California standard male and female gages. When interchanged with a standard male or female gage, the top surfaces shall be flush within 1/8". Top outside radius of covers and pull boxes shall have a 1/8" radius.
- Pull box extension may be another pull box as long as the bottom edge of the pull box can fit into the cover opening.
- All dimensions for the cover for non-traffic pull box are nominal values.

DIMENSION TABLE										
PULL BOX	PULL BOX			COVER						
	MINIMUM DEPTH BOX	MINIMUM DEPTH EXTENSION	MAXIMUM WEIGHT	L	W	R	TE	TA	D	MAXIMUM WEIGHT
No. 3 1/2	12"	N/A	40 lb	1' - 3 3/8"	10 1/8"	1 3/8"	2"	1/8"	1 3/4"	30 lb
No. 5	12"	10"	55 lb	1' - 11 1/4"	1' - 1 3/4"	1 3/8"	2"	1/8"	1 3/4"	60 lb
No. 6	12"	10"	70 lb	2' - 6 1/2"	1' - 5 1/2"	1 3/8"	2"	1/8"	2"	85 lb

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

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

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

2010 REVISED STANDARD PLAN RSP ES-8A

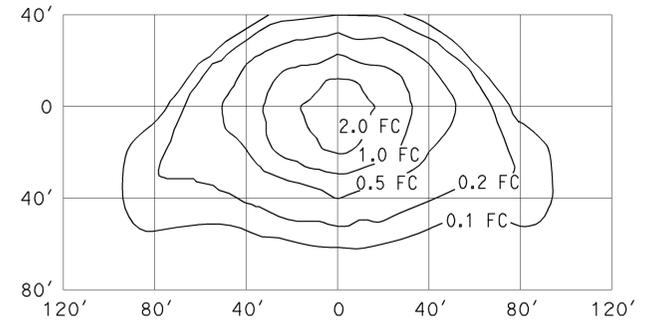
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	282	302

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



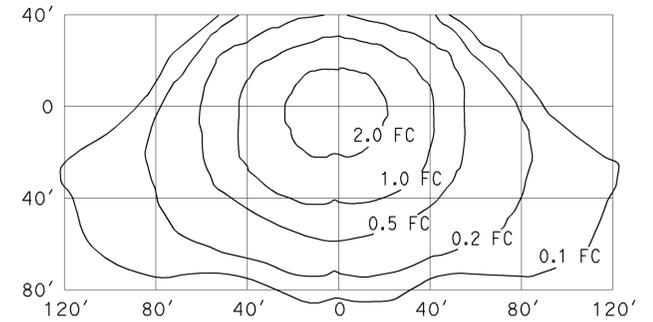
TO ACCOMPANY PLANS DATED 01-20-15

ISOFOOTCANDLE CURVE - MINIMUM



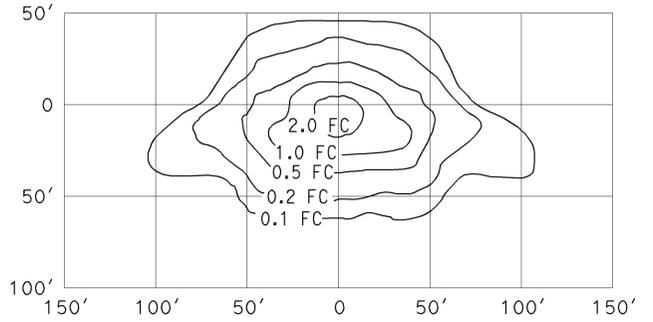
**TYPE III MEDIUM CUTOFF**  
 Cutoff Luminaire  
 34' Mounting Height  
 Lamp operated at 22,000 lm  
 200-W high pressure sodium lamp  
 ANSI Designation S66

ISOFOOTCANDLE CURVE - MINIMUM



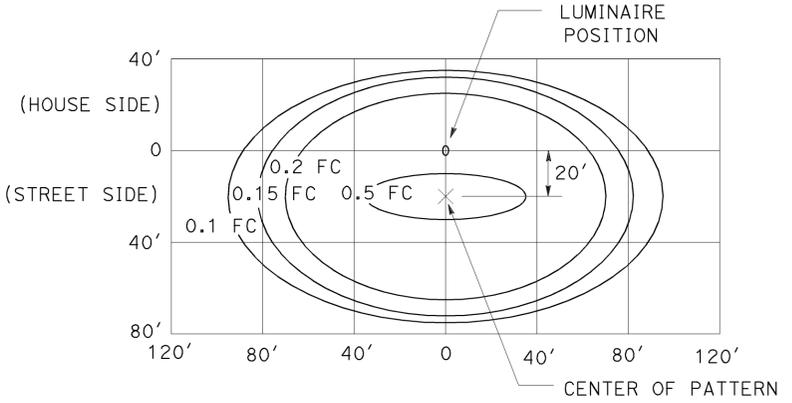
**TYPE III MEDIUM CUTOFF**  
 Cutoff Luminaire  
 40' Mounting Height  
 Lamp operated at 37,000 lm  
 310-W high pressure sodium lamp  
 ANSI Designation S67

ISOFOOTCANDLE CURVE - MINIMUM



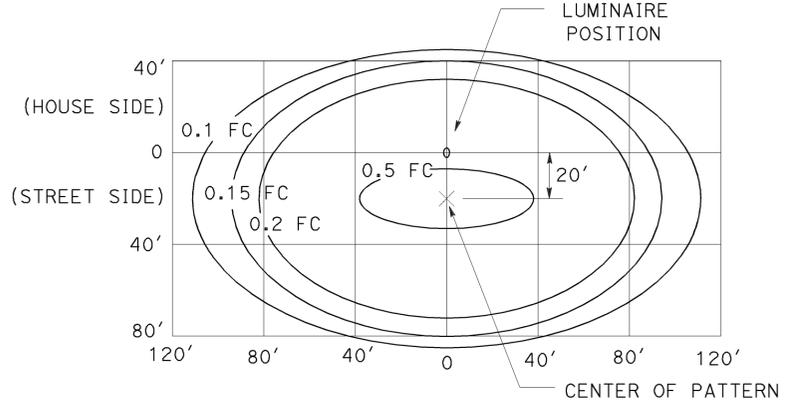
**TYPE III MEDIUM CUTOFF**  
 Cutoff Luminaire  
 30' Mounting Height  
 Lamp operated at 16,000 lm  
 150-W high pressure sodium lamp  
 ANSI Designation S55

ISOFOOTCANDLE CURVE - MINIMUM



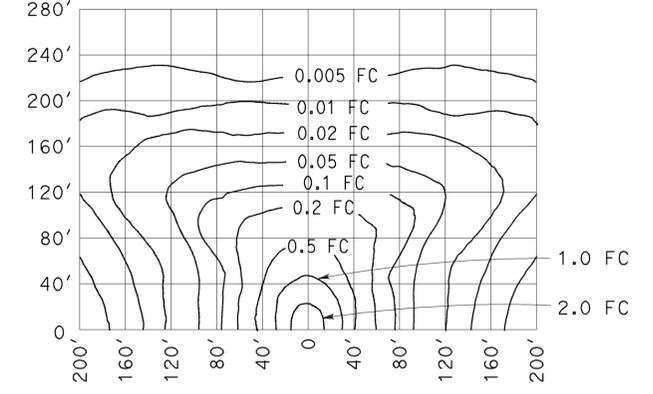
**LED LUMINAIRE ROADWAY 1**  
 165-W at 34' Mounting Height

ISOFOOTCANDLE CURVE - MINIMUM



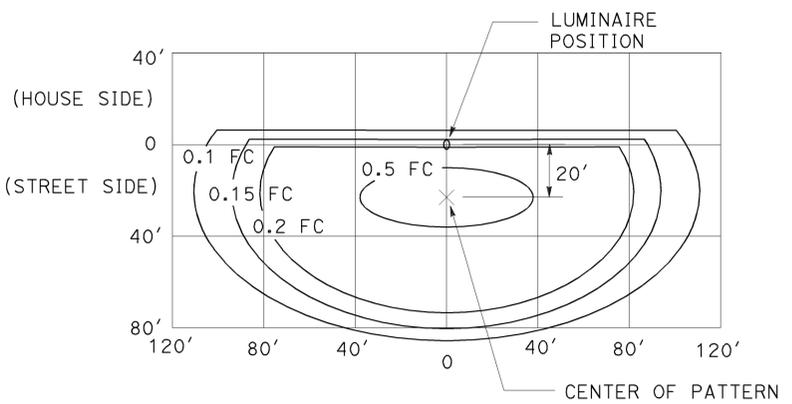
**LED LUMINAIRE ROADWAY 2**  
 235-W at 40' Mounting Height

ISOFOOTCANDLE CURVE - MINIMUM



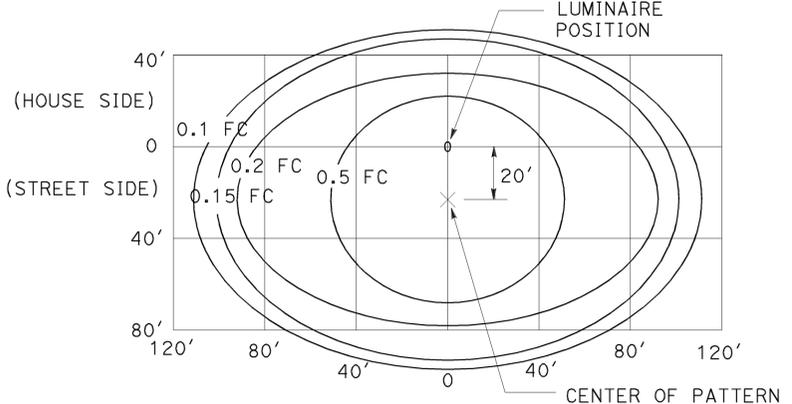
**LOW PRESSURE SODIUM LUMINAIRE**  
 40' Mounting Height  
 Lamp operated at 33,000 lm  
 180-W low pressure sodium lamp

ISOFOOTCANDLE CURVE - MINIMUM



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

ISOFOOTCANDLE CURVE - MINIMUM



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

**ELECTRICAL SYSTEMS (ISOFOOTCANDLE DIAGRAMS)**

NO SCALE

RSP ES-10A DATED JULY 19, 2013 SUPERSEDES RSP ES-10A DATED JULY 20, 2012 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP ES-10A**

2010 REVISED STANDARD PLAN RSP ES-10A

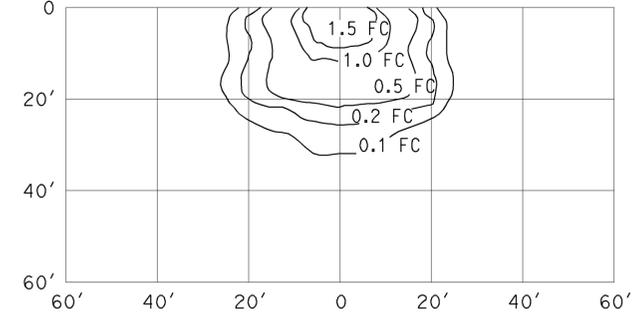
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11, 125, 905	Var	283	302

Jeffrey G. McRae  
 REGISTERED ELECTRICAL ENGINEER  
 July 20, 2012  
 PLANS APPROVAL DATE  
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER  
 Jeffrey G. McRae  
 No. E14512  
 Exp. 6-30-14  
 ELECTRICAL  
 STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 01-20-15

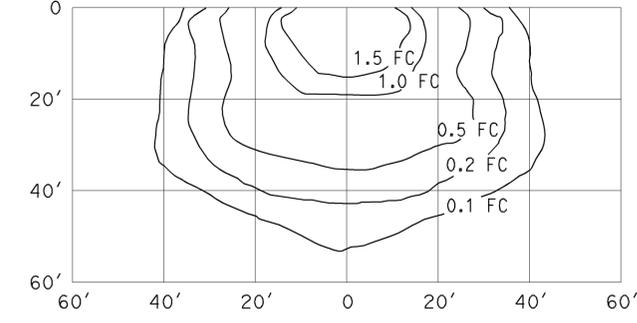
ISOFOOTCANDLE CURVE - MINIMUM



WALL LUMINAIRE

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

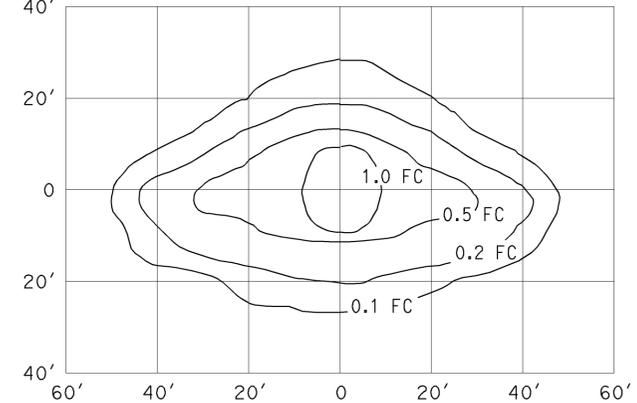
ISOFOOTCANDLE CURVE - MINIMUM



WALL LUMINAIRE

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

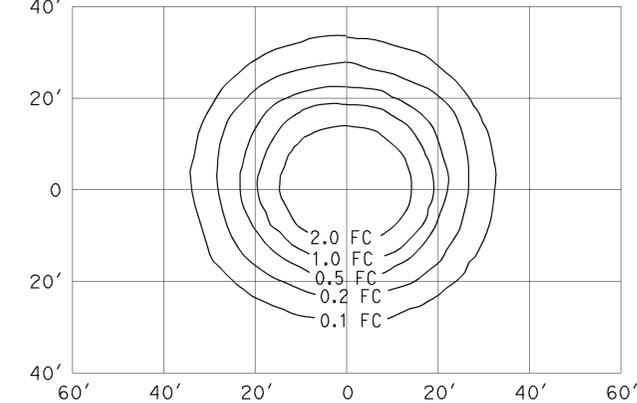
ISOFOOTCANDLE CURVE - MINIMUM



PENDANT SOFFIT LUMINAIRE  
TYPE III SHORT

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

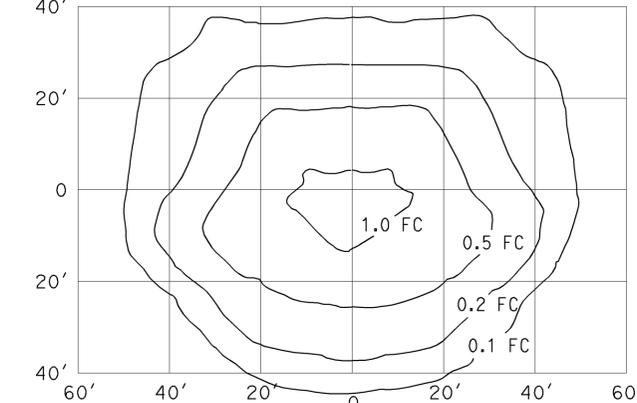
ISOFOOTCANDLE CURVE - MINIMUM



PENDANT SOFFIT LUMINAIRE

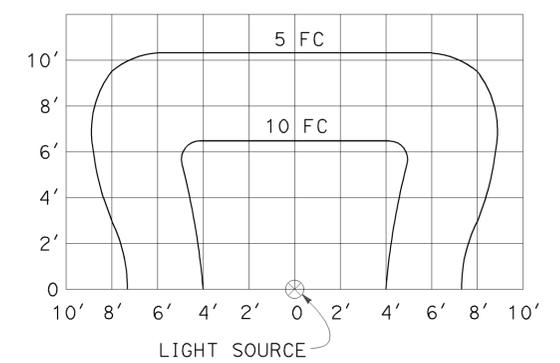
17' Mounting Height  
 Lamp operated at 5,800 lm  
 70-W high pressure sodium lamp  
 ANSI Designation S62

ISOFOOTCANDLE CURVE - MINIMUM



FLUSH SOFFIT LUMINAIRE

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



SIGN LIGHTING FIXTURE  
ISOFOOTCANDLE DIAGRAM

**NOTES:**

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

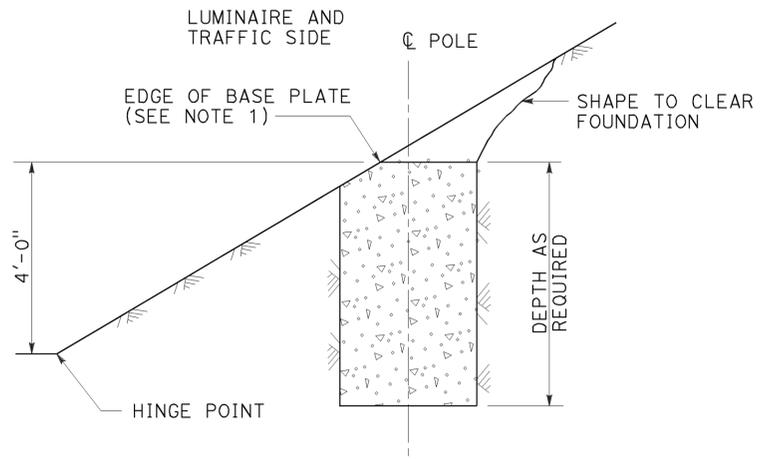
STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS**  
**(ISOFOOTCANDLE DIAGRAMS)**

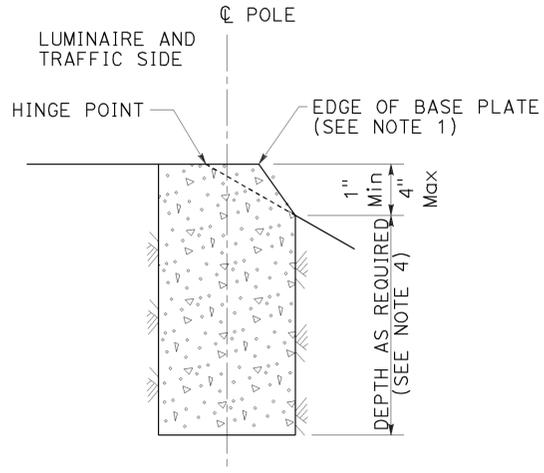
NO SCALE

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

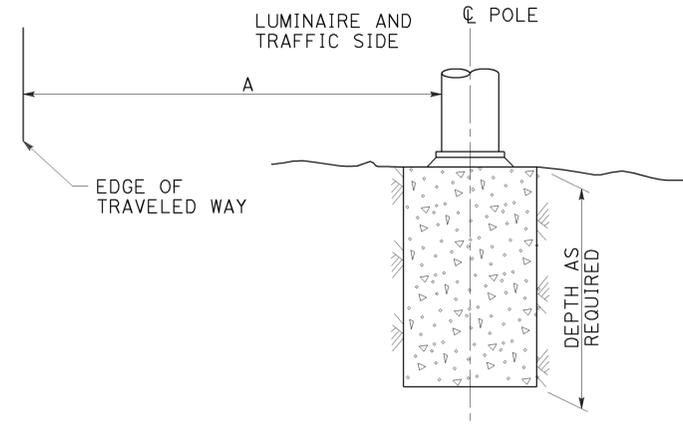
2010 REVISED STANDARD PLAN RSP ES-10B



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



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



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

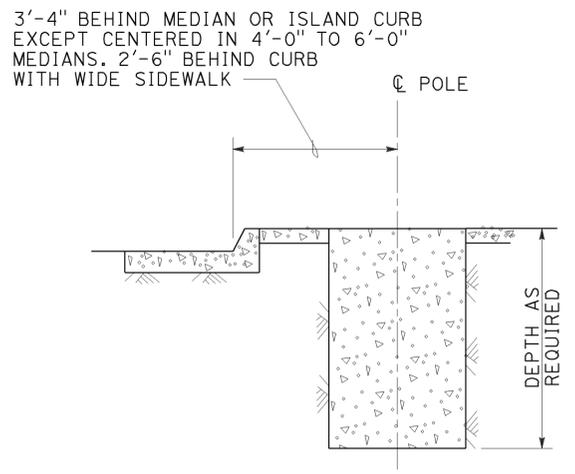
TO ACCOMPANY PLANS DATED 01-20-15

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

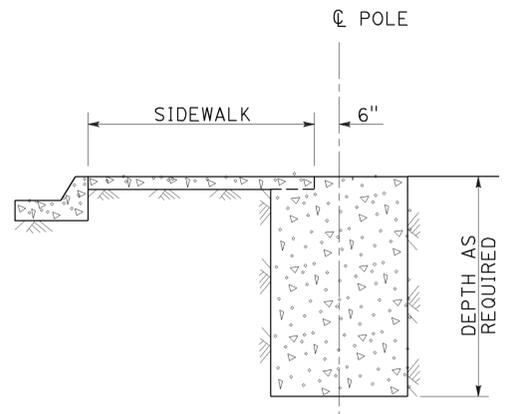
FOUNDATIONS ADJACENT TO ALL ROADWAYS EXCEPT  
IN SIDEWALK, MEDIAN AND ISLAND AREAS  
DETAIL A

NOTES:

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



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



NARROW SIDEWALK  
DETAIL B-2  
 Less than 7' wide

FOUNDATIONS IN SIDEWALK, MEDIAN AND ISLAND AREAS  
DETAIL B

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

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	285	302

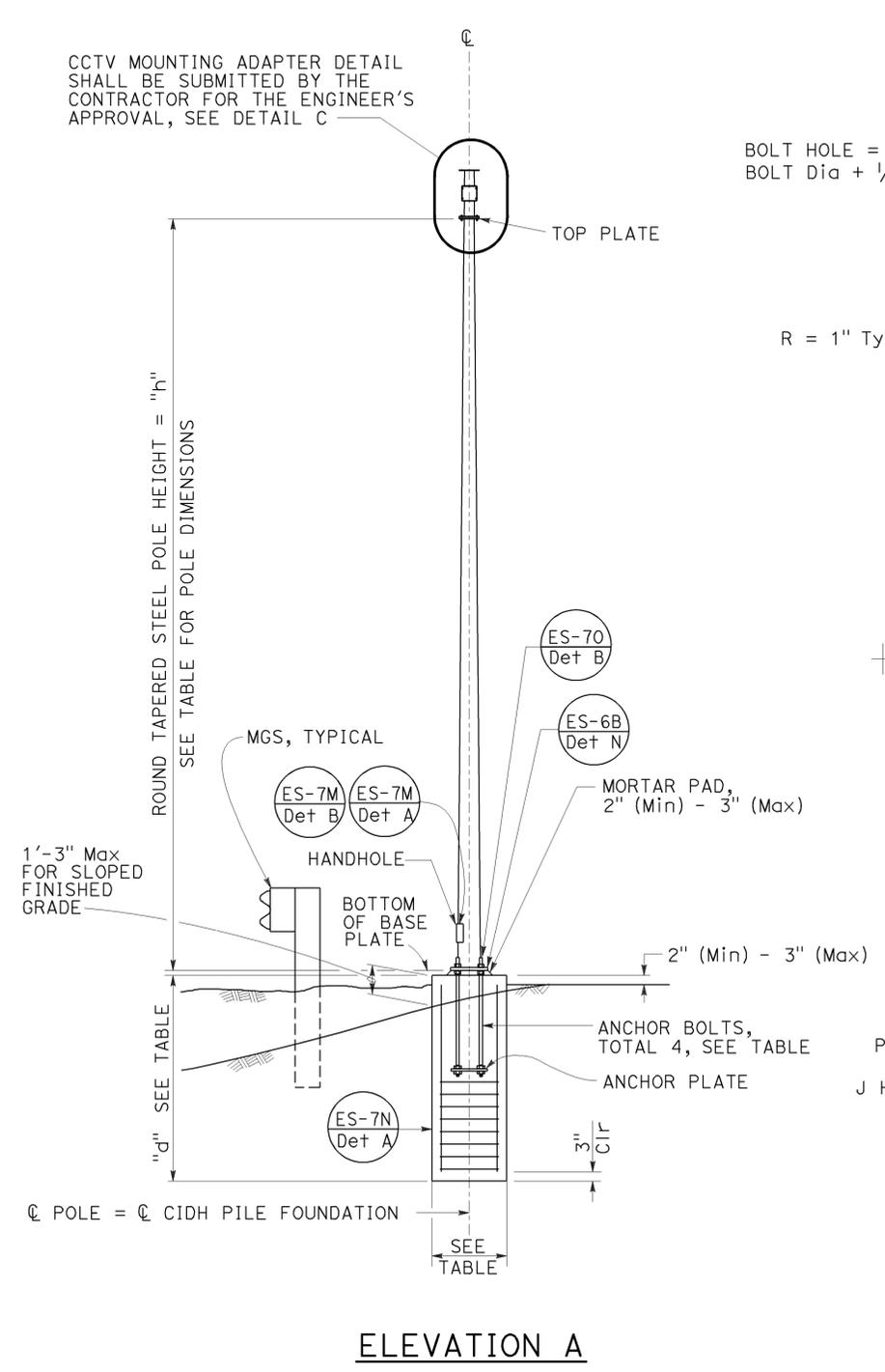
Stanley P. Johnson  
 REGISTERED CIVIL ENGINEER  
 November 15, 2013  
 PLANS APPROVAL DATE  
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

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

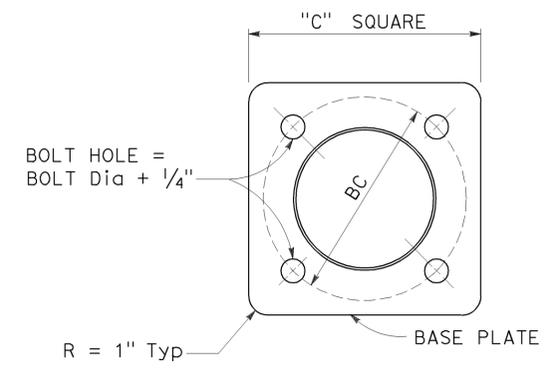
POLE TYPE	POLE DATA			BASE PLATE DATA				CIDH		
	HEIGHT "h"	Min OD		THICKNESS	"c"	THICKNESS	ANCHOR BOLT SIZE	BC = BOLT CIRCLE	Dia	"d"
		BASE	TOP							
CCTV 25	25'	7 <sup>3</sup> / <sub>8</sub> "	3 <sup>3</sup> / <sub>4</sub> "	0.1793"	1'-1"	1"	1/2" $\phi$ x 36"	11 <sup>1</sup> / <sub>2</sub> "	2'-6"	7'-0"
CCTV 30	30'	8"			1'-1 <sup>1</sup> / <sub>2</sub> "			1'-0"		7'-6"
CCTV 35	35'	8 <sup>5</sup> / <sub>8</sub> "			1'-2"			1'-1"		8'-0"
CCTV 40	40'	9 <sup>3</sup> / <sub>8</sub> "			1'-1 <sup>1</sup> / <sub>2</sub> "			1'-1 <sup>1</sup> / <sub>2</sub> "		8'-0"
CCTV 45	45'	10"			1'-3"			1'-2"		8'-6"

TO ACCOMPANY PLANS DATED 01-20-15

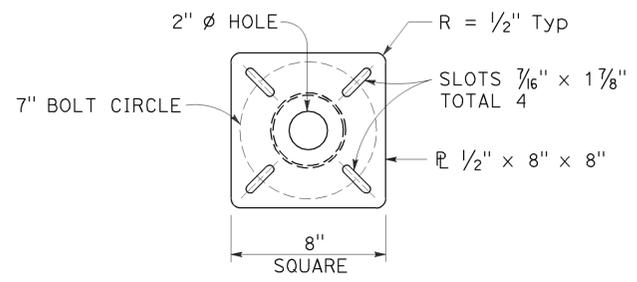
CCTV MOUNTING ADAPTER DETAIL SHALL BE SUBMITTED BY THE CONTRACTOR FOR THE ENGINEER'S APPROVAL, SEE DETAIL C



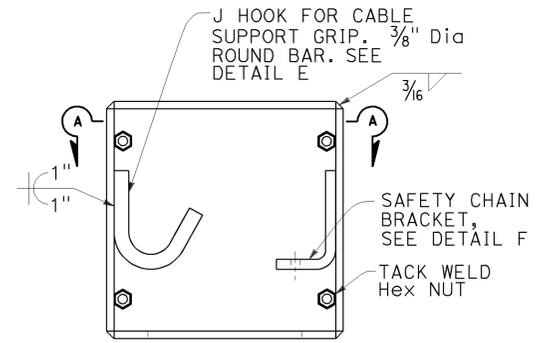
ELEVATION A



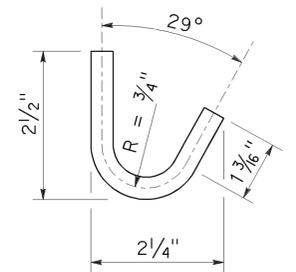
BASE PLATE  
DETAIL A



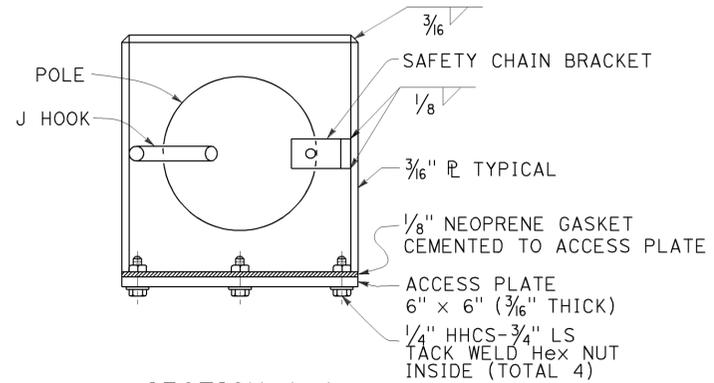
TOP PLATE  
DETAIL B



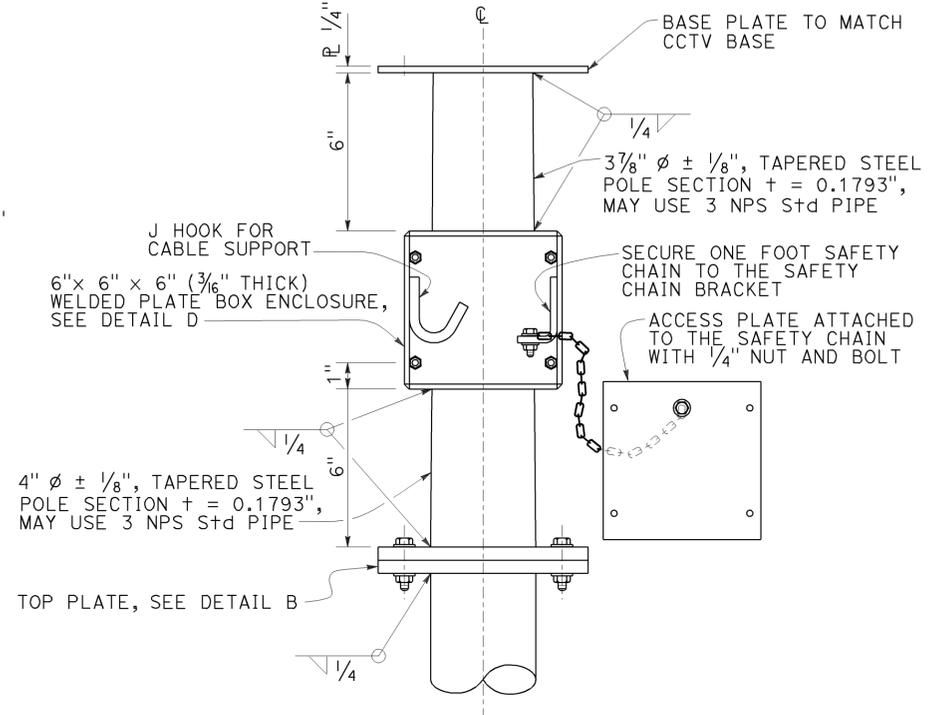
BOX ENCLOSURE  
DETAIL D



J HOOK  
DETAIL E



SECTION A-A



CLOSED CIRCUIT TELEVISION MOUNTING ADAPTER  
DETAIL C

NOTES:

- The Contractor shall verify controlling field dimensions before ordering or fabricating any material.
- During pole installation, the post shall be raked as necessary with the use of leveling nuts to provide a plumb pole axis.
- Wind Loadings (3-second gust): 100 mph
- Unit Stresses (Structural Steel):
  - fy = 55,000 psi (tapered steel tube and anchor bolts)
  - fy = 50,000 psi (unless otherwise noted)
- Unit Stresses (Reinforced Concrete):
  - f'c = 3,625 psi
  - fy = 60,000 psi

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS  
(CLOSED CIRCUIT TELEVISION,  
25' TO 45' POLE)**

NO SCALE

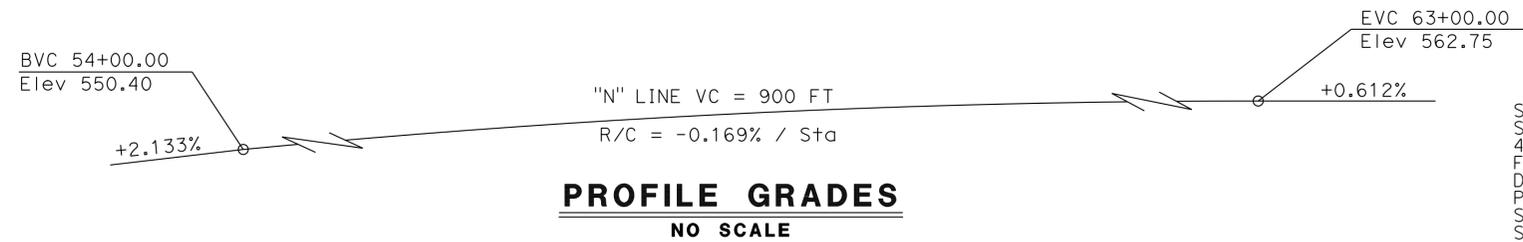
RSP ES-16B DATED NOVEMBER 15, 2013 SUPERSEDES STANDARD PLAN ES-16B DATED MAY 20, 2011 - PAGE 501 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP ES-16B**

2010 REVISED STANDARD PLAN RSP ES-16B

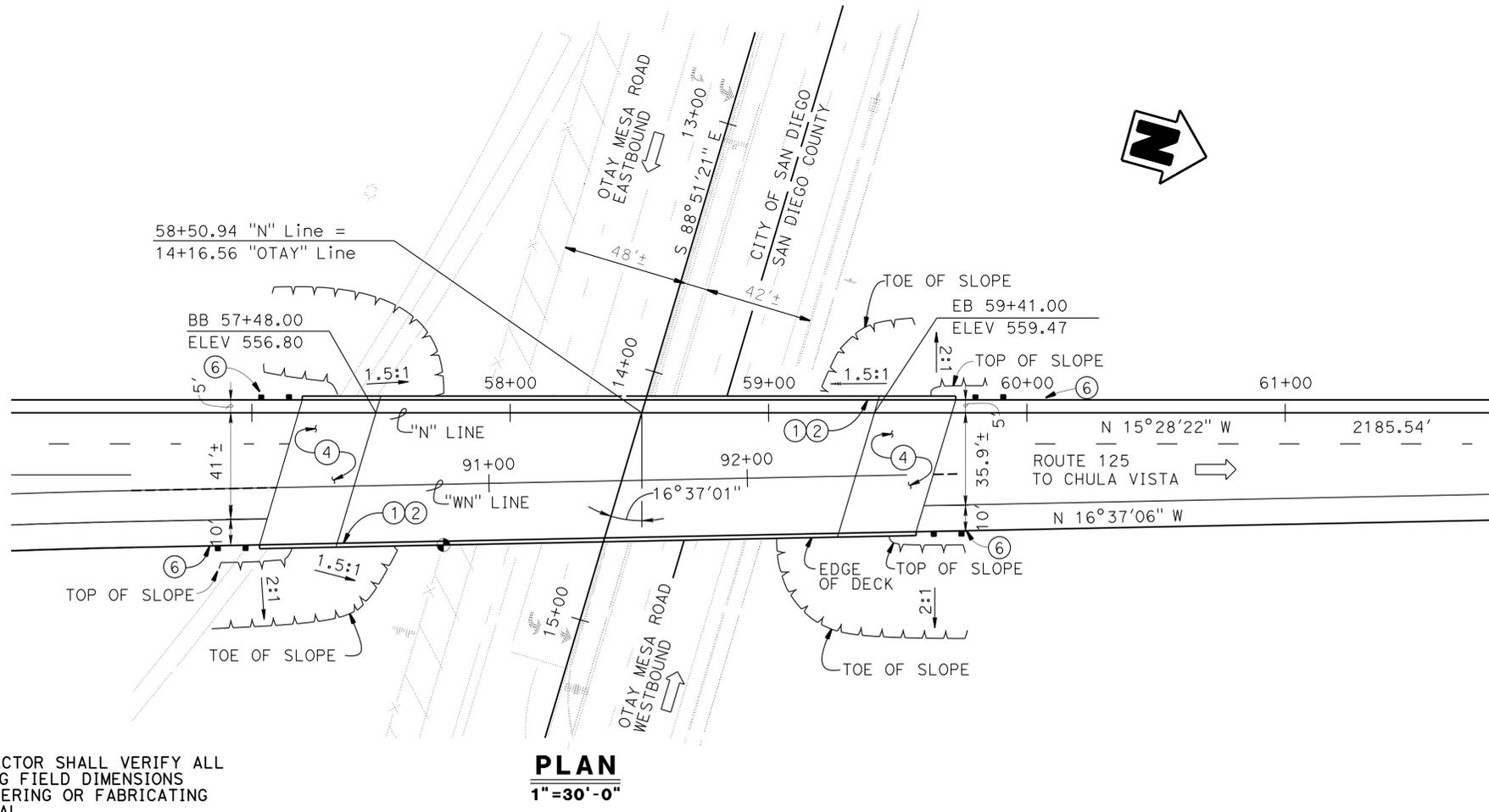
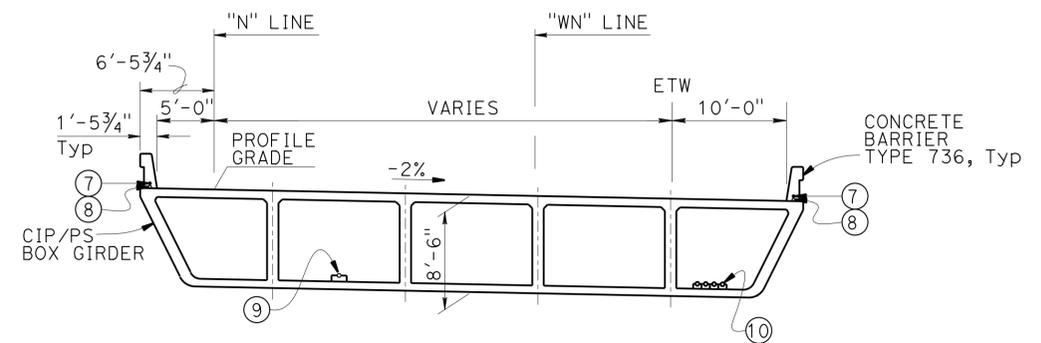
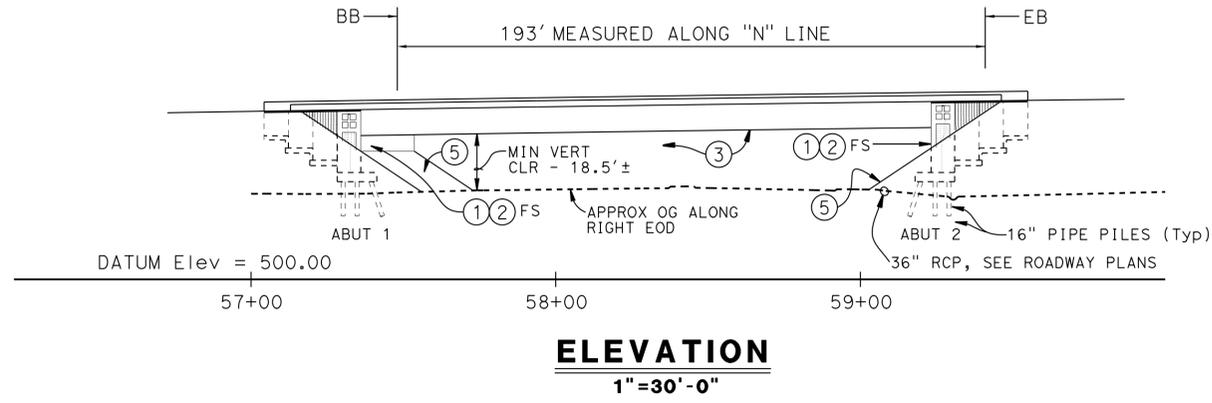
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	286	302

REGISTERED CIVIL ENGINEER DATE 03-13-14  
 PLANS APPROVAL DATE 01-20-15  
 REGISTERED PROFESSIONAL ENGINEER  
 PAUL A. PETERSON  
 No. C66764  
 Exp. 09-30-14  
 CIVIL  
 STATE OF CALIFORNIA  
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.



QUANTITIES

STRUCTURE EXCAVATION (BRIDGE)	1,482	CY
STRUCTURE BACKFILL (BRIDGE)	1,186	CY
4" SUPPLY LINE (BRIDGE)	263	LF
FURNISH PILE (CLASS 200) (ALTERNATIVE W MODIFIED)	1,900	LF
DRIVE PILE (CLASS 200) (ALTERNATIVE W MODIFIED)	70	EA
PRESTRESSING CAST-IN-PLACE CONCRETE	LUMP	SUM
STRUCTURAL CONCRETE, BRIDGE FOOTING	276	CY
STRUCTURAL CONCRETE, BRIDGE	1,291	CY
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE N)	119	CY
FRACTURED RIB TEXTURE (MODIFIED)	366	SQFT
JOINT SEAL (MR 1 1/2")	120	LF
BAR REINFORCING STEEL (BRIDGE)	348,859	LB
SLOPE PAVING (ROCK COBBLE)	3,651	SQFT
CONCRETE BARRIER (TYPE 736)	506	LF



**TYPICAL SECTION**  
1/8"=1'-0"

- NOTES:
- Paint "Br. No. 57-1202R"
  - Paint "OTAY MESA ROAD UC"
  - Soffit luminaire, total 2, see 'Road Plans'
  - Structure Approach Type N(30S)
  - Slope Paving (Rock Cobble)
  - Midwest Guardrail System, see 'Road Plans'
  - 2"Ø Conduit for Bridge Lighting, see 'Road Plans'
  - 3"Ø Conduit for control neutral conductors, see 'Road Plans'
  - 4"Ø Supply Line -- See 'Road Plans' at Terminus
  - 5"Ø Schedule 80 or Fiberglass Conduit for Fiber Optic lines, Tot 4, "see 'Road Plans'

- LEGEND:
- Indicates Point of Minimum Vertical Clearance
  - Indicates direction of traffic

- ADDITIONAL NOTES:
- Traffic will pass through construction. (15'-0" Min Vert Clearance required under Falsework).
  - For "GENERAL NOTES", "INDEX TO PLANS", "CONCRETE STRENGTH AND TYPE LIMITS" and "PILE DATA TABLE", see "INDEX TO PLANS" sheet.

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

*Douglas J. Peterson*  
DESIGN ENGINEER

DESIGN	BY P.A. PETERSON	CHECKED J.M. PETERSON	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE
DETAILS	BY P.A. PETERSON	CHECKED J.M. PETERSON	LAYOUT	BY P.A. PETERSON
QUANTITIES	BY J.M. PETERSON	CHECKED P.A. PETERSON	SPECIFICATIONS	BY T. NEDWICK

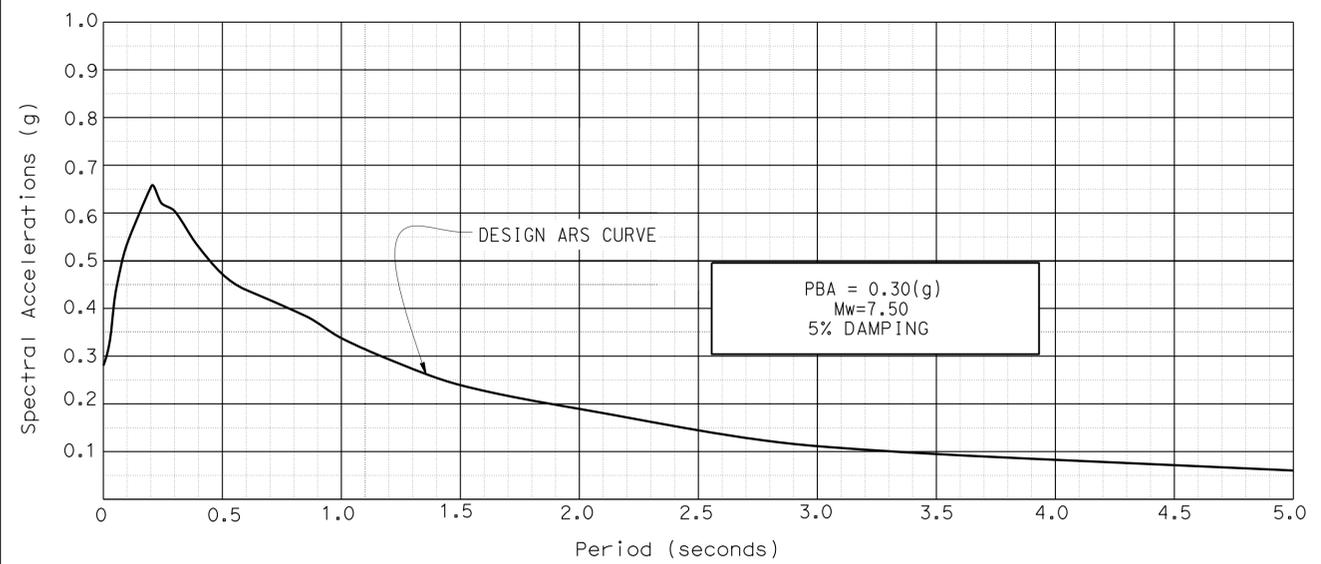
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
BRIDGE NO. 57-1202R  
POST MILE 0.74  
DESIGN BRANCH 14

OTAY MESA ROAD UC  
GENERAL PLAN

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	287	302

REGISTERED CIVIL ENGINEER DATE 03-13-14  
 PLANS APPROVAL DATE 01-20-15  
 REGISTERED PROFESSIONAL ENGINEER  
 PAUL A. PETERSON  
 No. C66764  
 Exp. 09-30-14  
 CIVIL  
 STATE OF CALIFORNIA  
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.



**SITE SPECIFIC ACCELERATION RESPONSE SPECTRA**

**GENERAL NOTES  
LOAD AND RESISTANCE FACTOR DESIGN**

DESIGN: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS (4th edition 2008 and California Amendments dated December 2011).

SEISMIC DESIGN: CALTRANS SEISMIC DESIGN CRITERIA (SDC) Version 1.7 July 2013

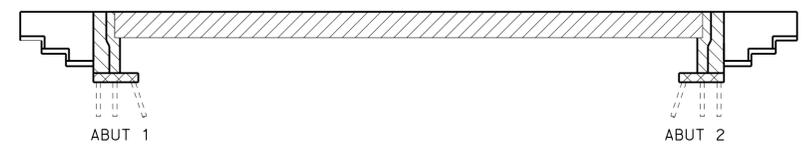
DEAD LOAD: Includes 35 psf for future wearing surface.

LIVE LOADING: HL93 with "Low-Boy" and Permit Design Vehicle.

SEISMIC LOADING: See Site Specific Acceleration Response Spectra

REINFORCED CONCRETE:  $f_y = 60$  Ksi  
 $f'_c =$  See Concrete Strength and Type Limits

PRESTRESSED CONCRETE: See "Prestressing Notes" on "Girder Layout" sheet.



**Legend:**

- Structural Concrete, Bridge (5.5 Ksi at 28 days)
- Structural Concrete, Bridge Footing (4.0 Ksi at 28 days)
- Structural Concrete, Bridge (Abutments -- 4.0 Ksi at 28 days)
- Structural Concrete, Bridge (Retaining Walls -- 3.6 Ksi at 28 days)

**CONCRETE STRENGTH AND TYPE LIMITS**

No Scale

**INDEX TO PLANS**

SHEET NO.	TITLE
1	GENERAL PLAN
2	INDEX TO PLANS
3	DECK CONTOUR
4	FOUNDATION PLAN
5	ABUTMENT 1 LAYOUT
6	ABUTMENT 2 LAYOUT
7	ABUTMENT DETAILS NO. 1
8	ABUTMENT DETAILS NO. 2
9	TYPICAL SECTION
10	GIRDER LAYOUT
11	GIRDER REINFORCEMENT
12	RETAINING WALL TYPE 1
13	SUPPLY LINE (BRIDGE) DETAILS
14	SLOPE PAVING (ROCK COBBLE)
15	STRUCTURE APPROACH TYPE N(30S)
16	STRUCTURE APPROACH DRAINAGE DETAILS
17	LOG OF TEST BORINGS

**STANDARD PLANS DATED 2010**

REF	STANDARD PLAN SHEET NO.	DETAIL NO.	TITLE
RSP	A10A		ABBREVIATIONS
RSP	A10B		ABBREVIATIONS
	A10C		LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL BRIDGE
	A10D		LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL BRIDGE
	A10E		LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL BRIDGE
	A62C		LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL BRIDGE
	B0-1		BRIDGE DETAILS
	B0-3		BRIDGE DETAILS
	B0-5		BRIDGE DETAILS
	B0-13		BRIDGE DETAILS
	B2-5		PILE DETAILS CLASS 90 AND CLASS 140
	B2-8		PILE DETAILS CLASS 200
RSP	B3-5		RETAINING WALL DETAILS No. 1
	B6-21		JOINT SEALS (MAXIMUM MOVEMENT RATING = 2")
	B7-1		BOX GIRDER DETAILS
	B7-10		UTILITY OPENING BOX GIRDER
RSP	B8-5		CAST-IN-PLACE PRESTRESSED GIRDER DETAILS
RSP	B11-56		CONCRETE BARRIER TYPE 736
	B14-3		COMMUNICATION AND SPRINKLER CONTROL CONDUITS (CONDUIT LESS THAN 4")
	B14-4		WATER SUPPLY LINE (BRIDGE) (PIPE SIZES LESS THAN 4")
	B14-5		WATER SUPPLY LINE (DETAILS) (PIPE SIZES LESS THAN 4")

**PILE DATA TABLE**

LOCATION	PILE TYPE	NOMINAL RESISTANCE (Kips)		DESIGN TIP ELEVATION (F+)	SPECIFIED TIP ELEVATION (F+)	NOMINAL DRIVING RESISTANCE (Kips)
		Compression	Tension			
Abutment 1	PP 16" x 0.75" Class 200 (Alternative W - Modified)	380	0	501.0 (a)	501.0	380
Abutment 2	PP 16" x 0.75" Class 200 (Alternative W - Modified)	380	0	512.0 (a)	512.0	380

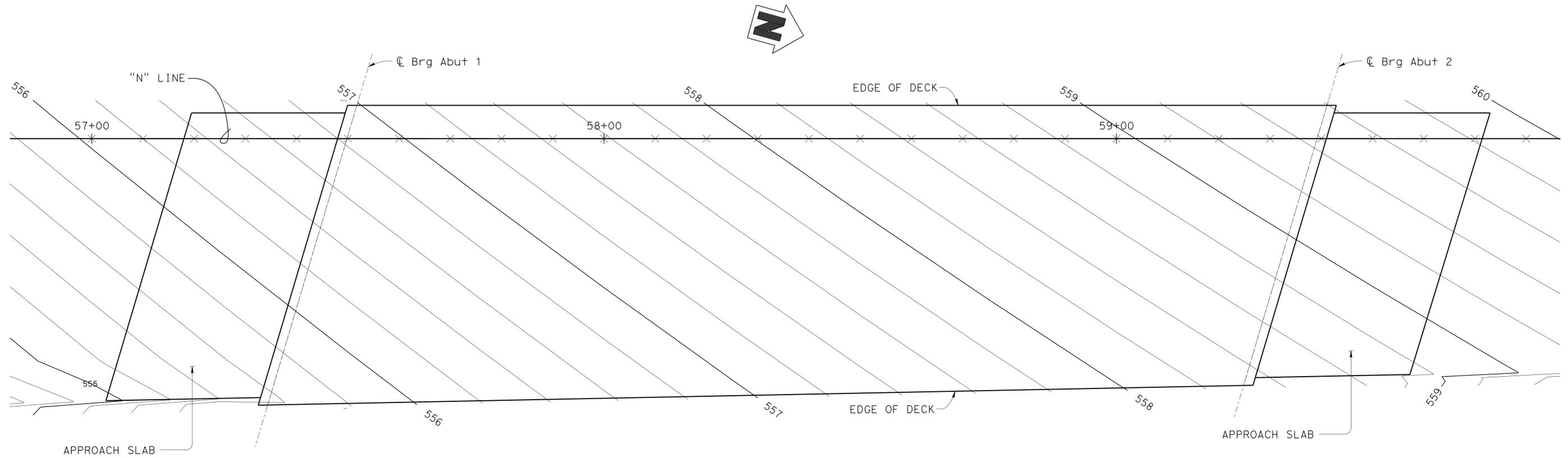
**NOTES:**

- Design Tip controlled by (a) Compression
- For details on the Class 200 (Alternative W - Modified) Piles see Standard Plans Sheet B2-8, Alternative "W"
- Piles shall be closed-ended (Modified). For details see Standard Plans Sheet B2-5, Alternative "V" closed-ended detail. Utilize 1/4" R Min with 3/4" fillet weld

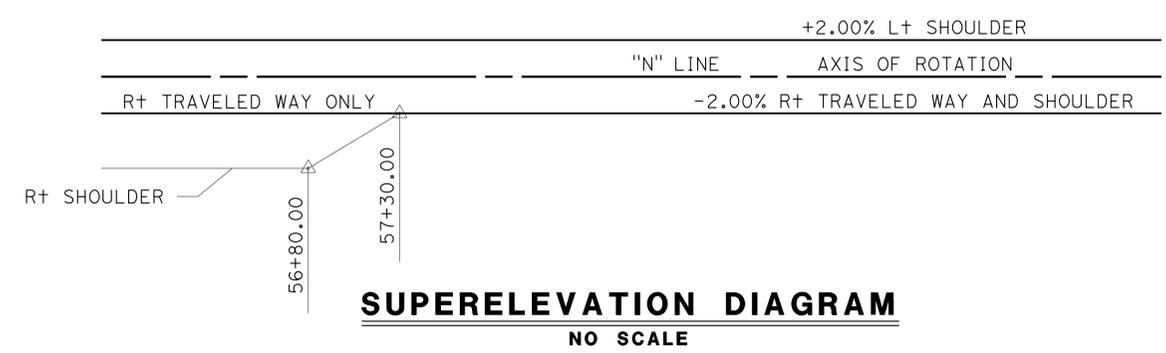
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	DESIGN	BY P. A. PETERSON	CHECKED J. M. PETERSON	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH X</b>	BRIDGE NO.	<b>OTAY MESA ROAD UC</b> <b>INDEX TO PLANS</b>	
	DETAILS	BY J. M. PETERSON	CHECKED P. A. PETERSON			57-1202R		
	QUANTITIES	BY J. M. PETERSON	CHECKED P. A. PETERSON			POST MILE 0.74		
UNIT: 3616					PROJECT NUMBER & PHASE: 11130001671		CONTRACT NO.: 11-288811	
DISREGARD PRINTS BEARING EARLIER REVISION DATES					REVISION DATES		SHEET 2	OF 17

USERNAME => s127400 DATE PLOTTED => 29-JAN-2015 TIME PLOTTED => 10:47

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	288	302
 REGISTERED CIVIL ENGINEER			03-13-14	DATE	
01-20-15			PLANS APPROVAL DATE		
					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.</small>					



**DECK CONTOURS**  
1" = 10'



**SUPERELEVATION DIAGRAM**  
NO SCALE

- NOTES:
1. X - 10' interval along station line.
  2. Contours do not include camber.
  3. Contour interval = 0.2'

DESIGN	BY P. A. Peterson	CHECKED J. M. Peterson
DETAILS	BY P. A. Peterson	CHECKED J. M. Peterson
QUANTITIES	BY P. A. Peterson	CHECKED J. M. Peterson

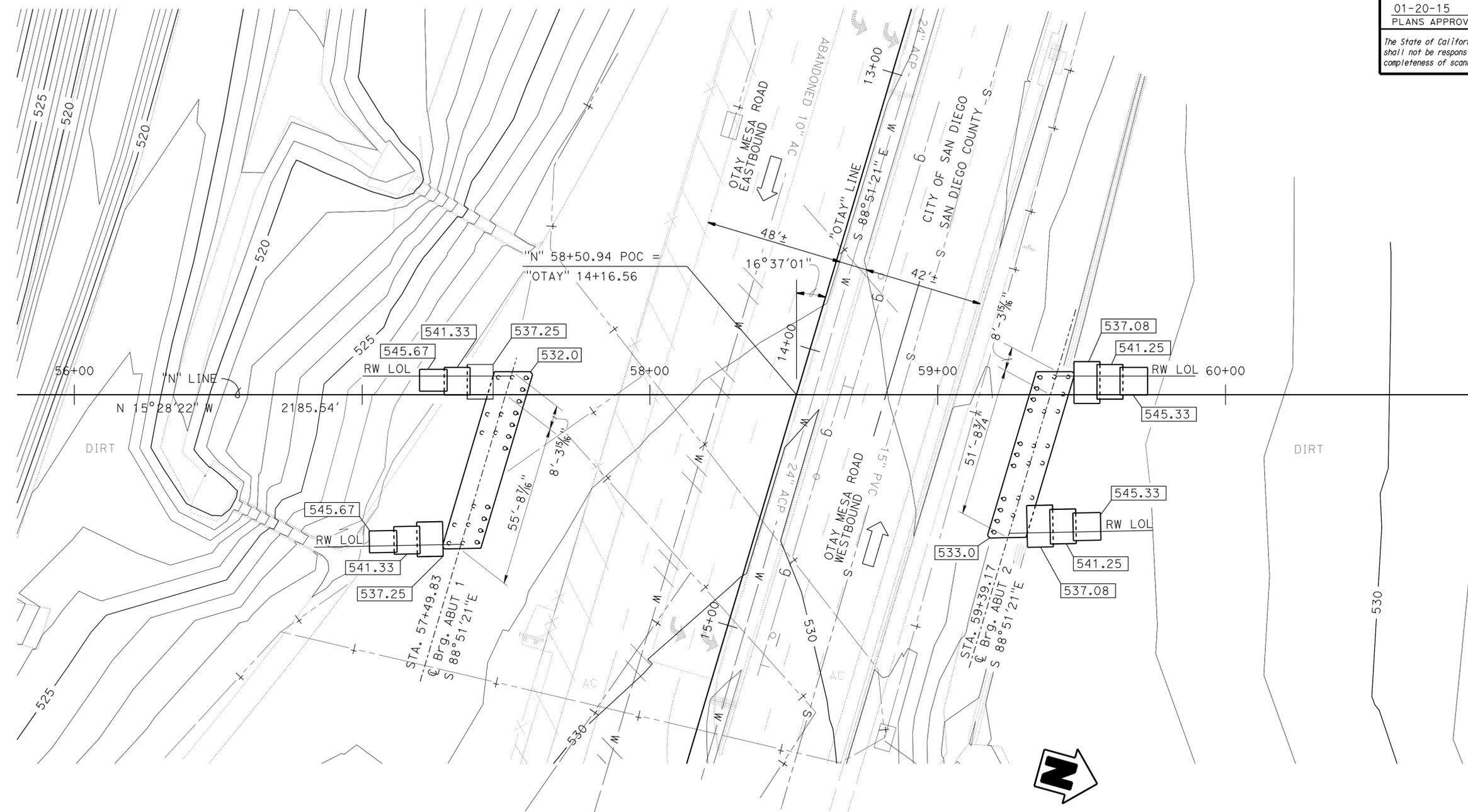
**STATE OF CALIFORNIA**  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
**DESIGN BRANCH 14**

BRIDGE NO.	57-1202R
POST MILE	0.74

**OTAY MESA ROAD UC**  
**DECK CONTOURS**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	289	302
			03-13-14		
REGISTERED CIVIL ENGINEER			DATE		
01-20-15			PLANS APPROVAL DATE		
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.					
					



**SURVEY NOTES:**

**BASIS OF BEARINGS AND COORDINATES:**

FOR THIS PROJECT IS THE CALIFORNIA COORDINATE SYSTEM OF 1983, HPGN EPOCH ADJUSTMENT [CCS 83 (1991.35)], ZONE 6. 2ND ORDER PROJECT CONTROL STATION VALUES WERE ESTABLISHED IN MARCH 2003 THROUGH JUNE 2011 BASED ON THE CRITERIA SET FORTH IN THE FEDERAL GEODETIC CONTROL SUBCOMMITTEE'S "GEOMETRIC GEODETIC ACCURACY STANDARDS AND SPECIFICATIONS FOR USING GPS RELATIVE POSITIONING TECHNIQUES" REPRINTED AUGUST 1, 1989.

**BASIS OF ELEVATIONS:**

FOR THIS PROJECT IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). ELEVATIONS WERE ESTABLISHED BY GPS FAST STATIC SURVEY.

**NOTES AND SYMBOLS:**

- Retaining Wall Layout lines match Roadway Alignment
- See 'Information Handout' for additional information

-  Indicates bottom of Footing Elevation
-  Denoted pile, all piles at Abutment not shown

DESIGN	BY P.A. PETERSON	CHECKED J.M. PETERSON
DETAILS	BY P & J PETERSON	CHECKED J.M. PETERSON
QUANTITIES	BY J.M. PETERSON	CHECKED VIJI RAMAKRISHNAN

**STATE OF CALIFORNIA**  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
**DESIGN BRANCH 14**

BRIDGE NO.	57-1202R
POST MILE	0.74

**OTAY MESA ROAD UC  
FOUNDATION PLAN**

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 3613  
PROJECT NUMBER & PHASE: 11130001671

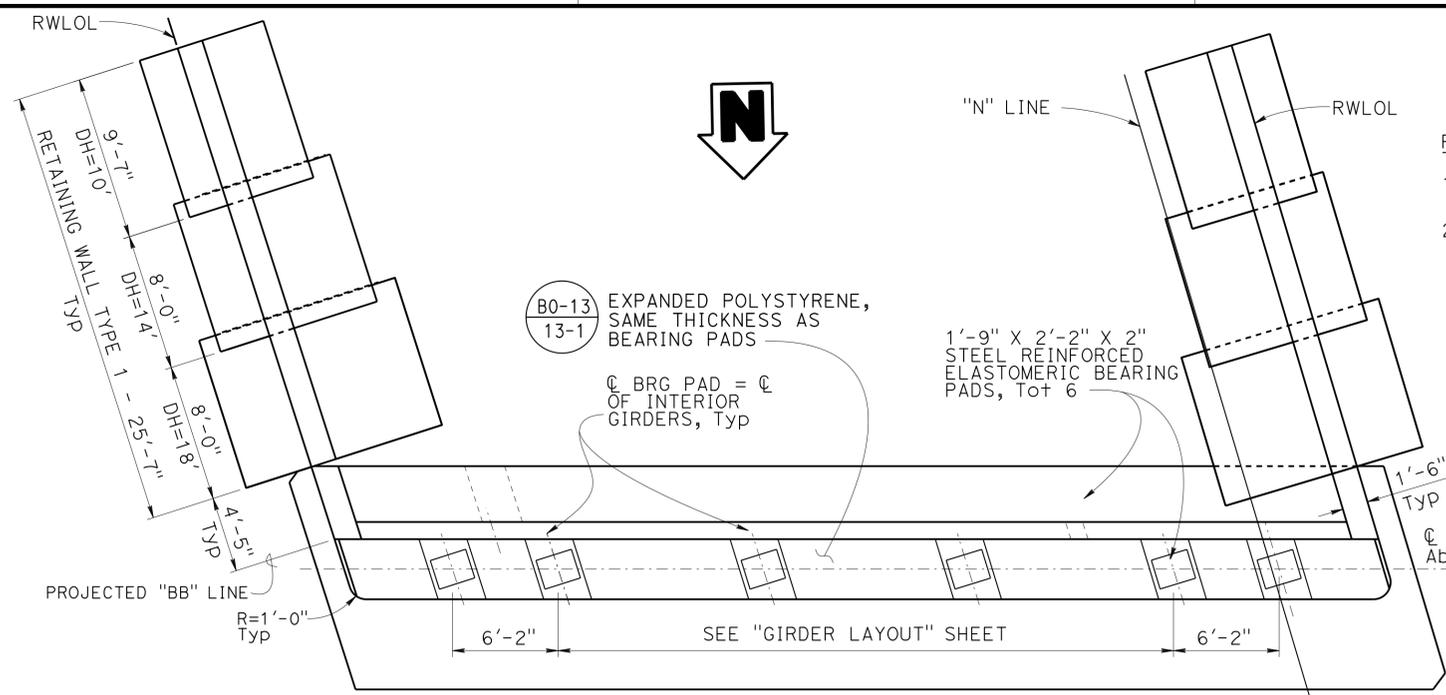
CONTRACT NO.: 11-288811

DISREGARD PRINTS BEARING EARLIER REVISION DATES

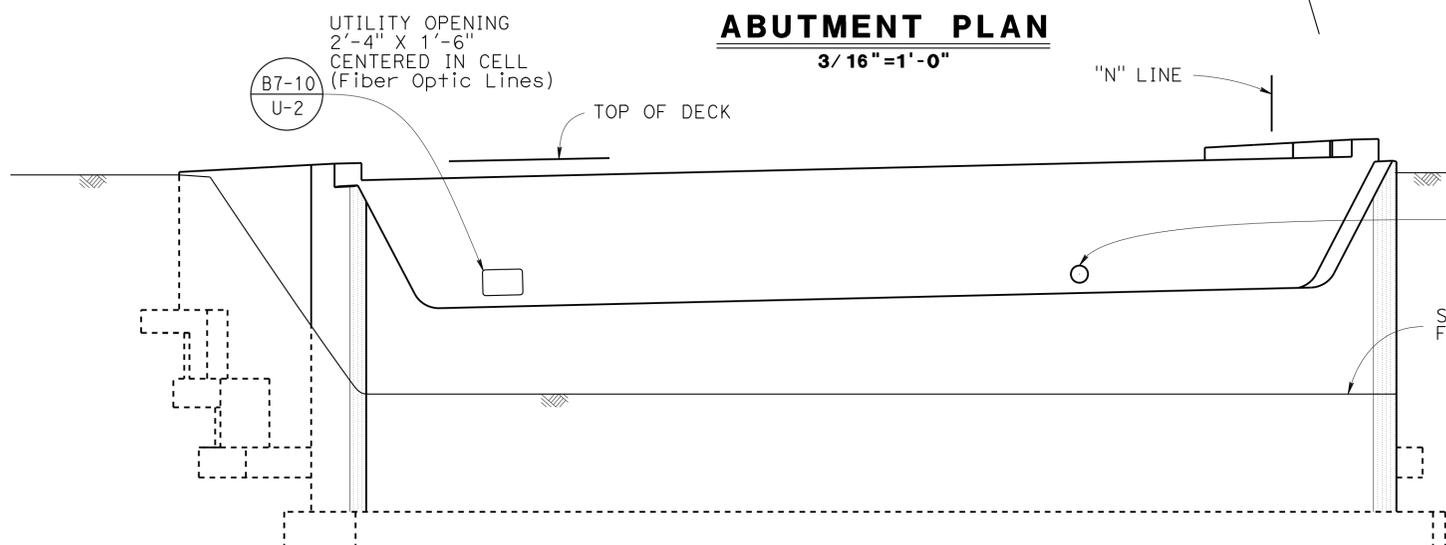
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12-05-13 12-11-13 03-11-14	4	17

USERNAME => s127400 DATE PLOTTED => 29-JAN-2015 TIME PLOTTED => 10:47

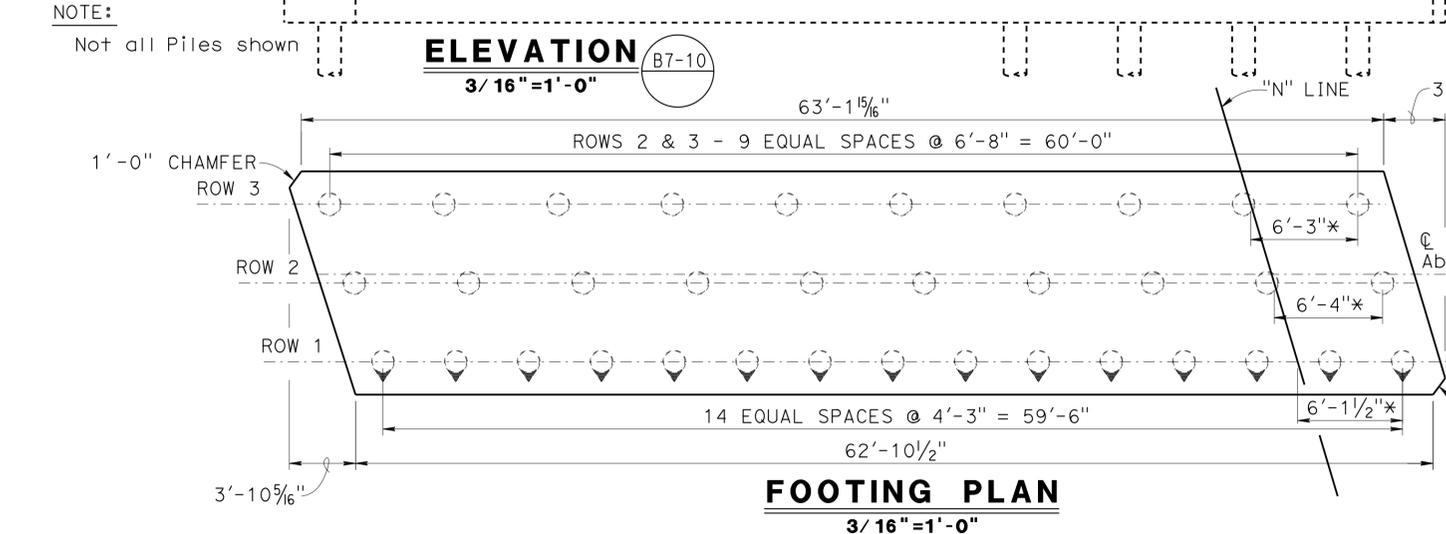
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	290	302
			03-13-14	DATE	
01-20-15 PLANS APPROVAL DATE					
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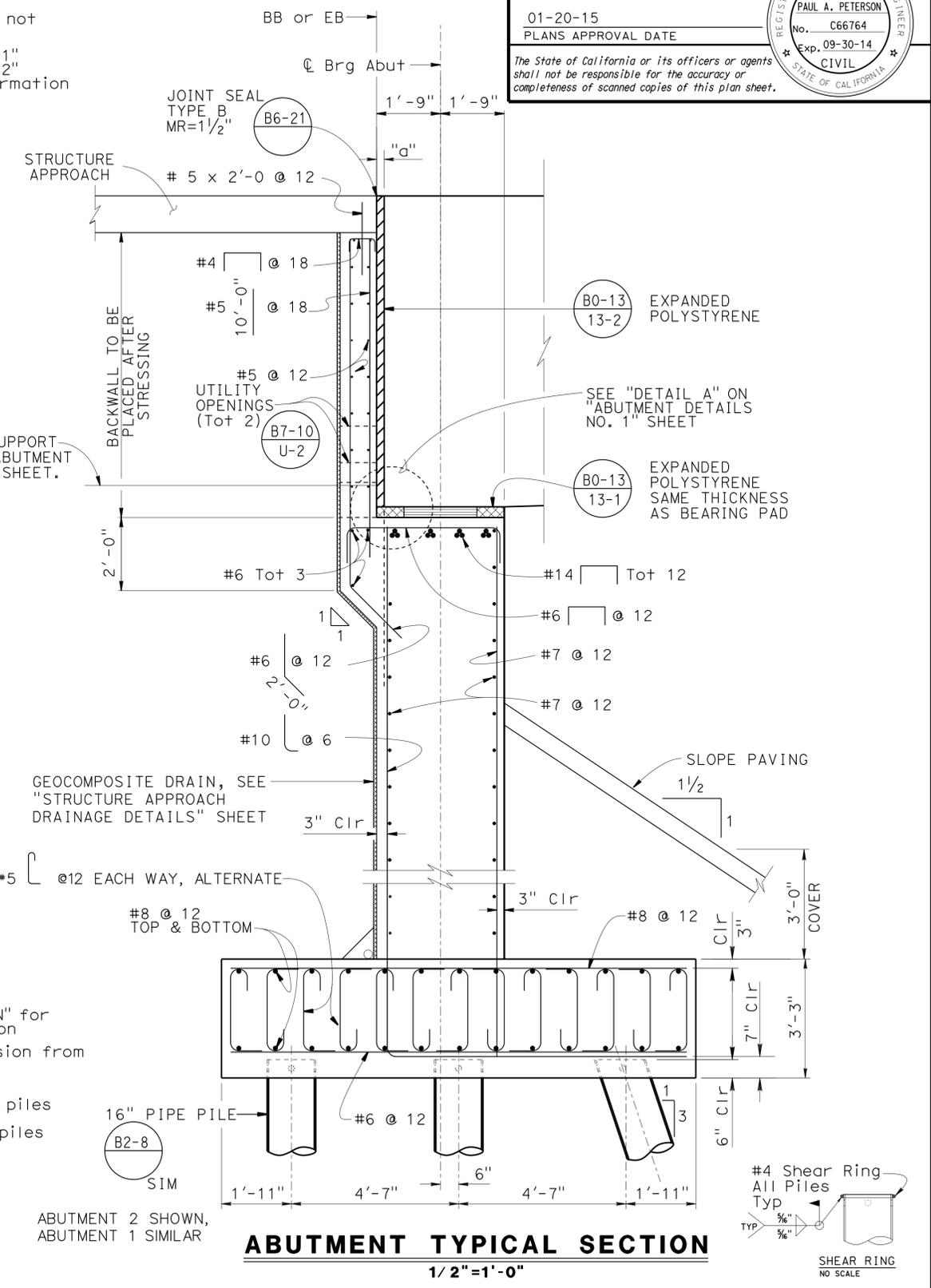
- PLAN AND ELEVATION NOTES:**
- Barrier and approach slab not shown for clarity
  - See "ABUTMENT DETAILS NO. 1" and "ABUTMENT DETAILS NO. 2" sheets for additional information



**NOTE:**  
Not all Piles shown



- FOOTING PLAN NOTES:**
- See "FOUNDATION PLAN" for additional information
  - \* - Indicates dimension from Pile to "N" Line
- - Indicates battered piles
  - - Indicates vertical piles



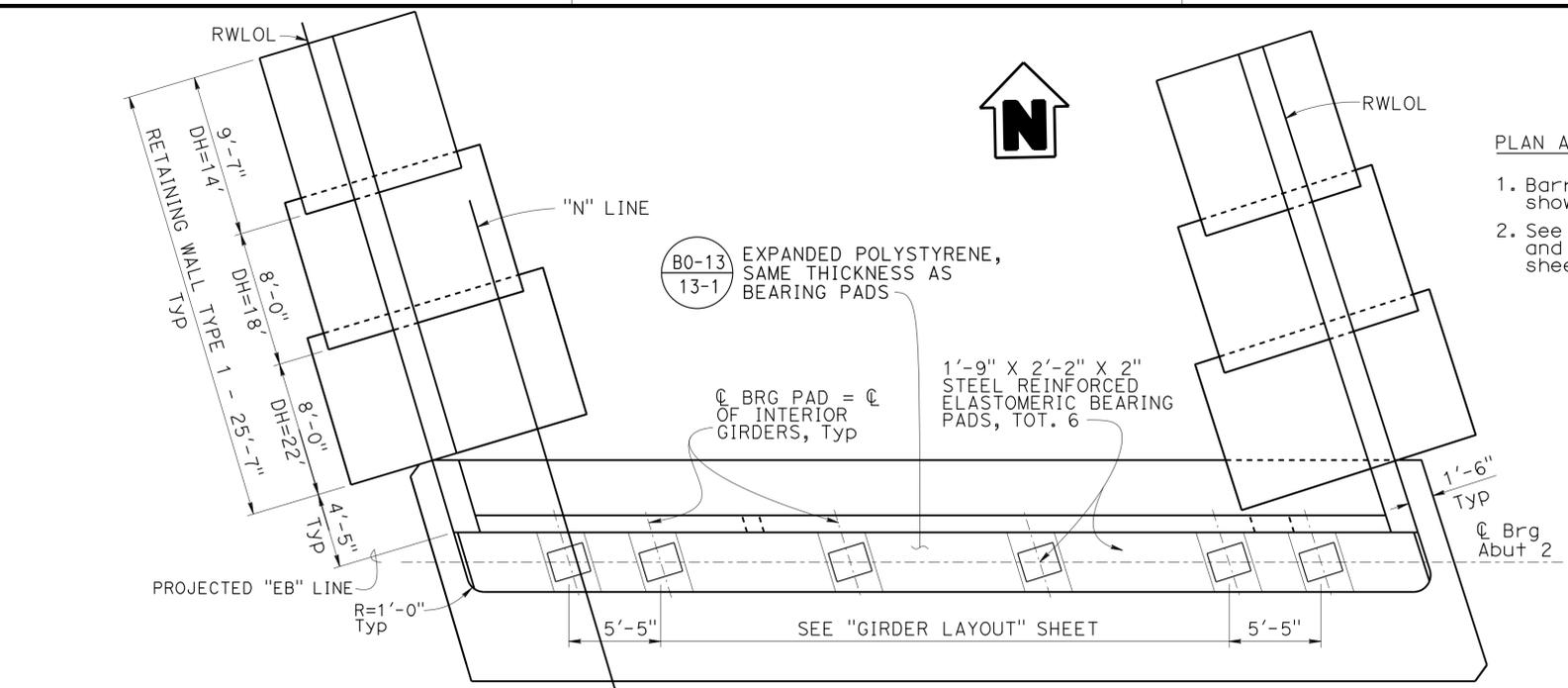
ABUTMENT 2 SHOWN, ABUTMENT 1 SIMILAR

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	DESIGN	BY P. A. PETERSON	CHECKED J. M. PETERSON	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 14</b>	BRIDGE NO.	57-1202R	<b>OTAY MESA ROAD UC</b> <b>ABUTMENT 1 LAYOUT</b>
	DETAILS	BY P & J PETERSON	CHECKED P. A. PETERSON			POST MILE	0.74	
	QUANTITIES	BY J. M. PETERSON	CHECKED P. A. PETERSON			UNIT: 3613	PROJECT NUMBER & PHASE: 1130001761	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS				0 1 2 3		REVISION DATES: 12-10-13, 12-11-13, 2-28-14, 03-12-14		SHEET 5 OF 17

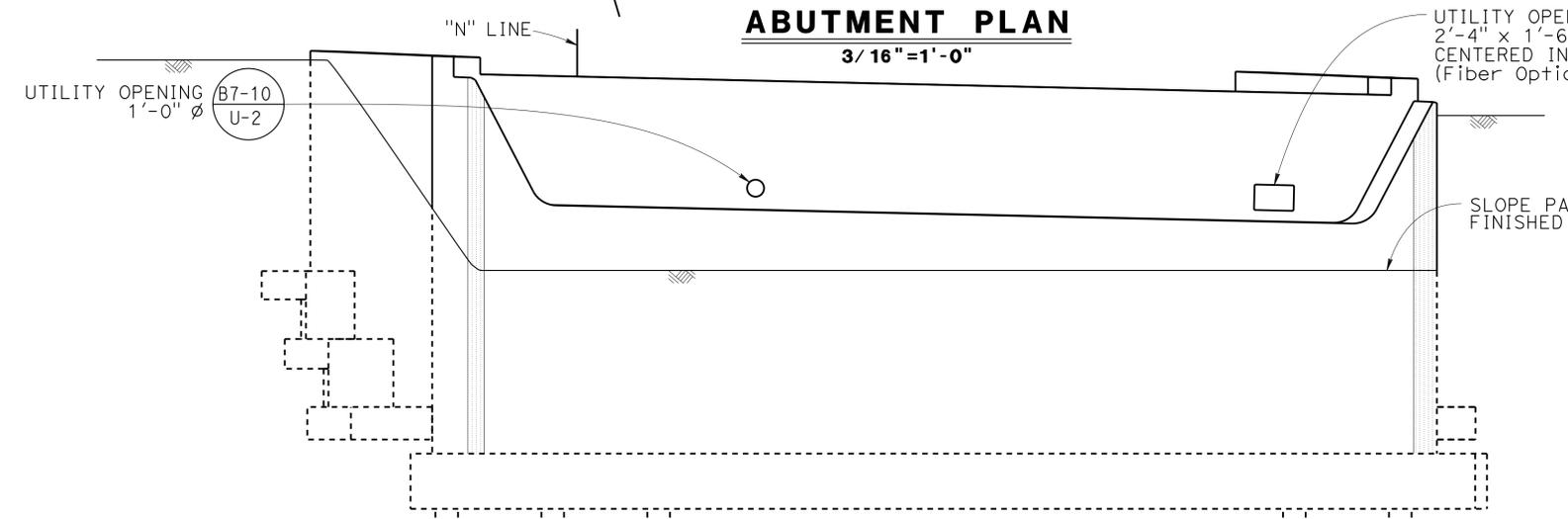
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	291	302
 REGISTERED CIVIL ENGINEER			DATE	03-13-14 01-20-15 PLANS APPROVAL DATE	
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.					



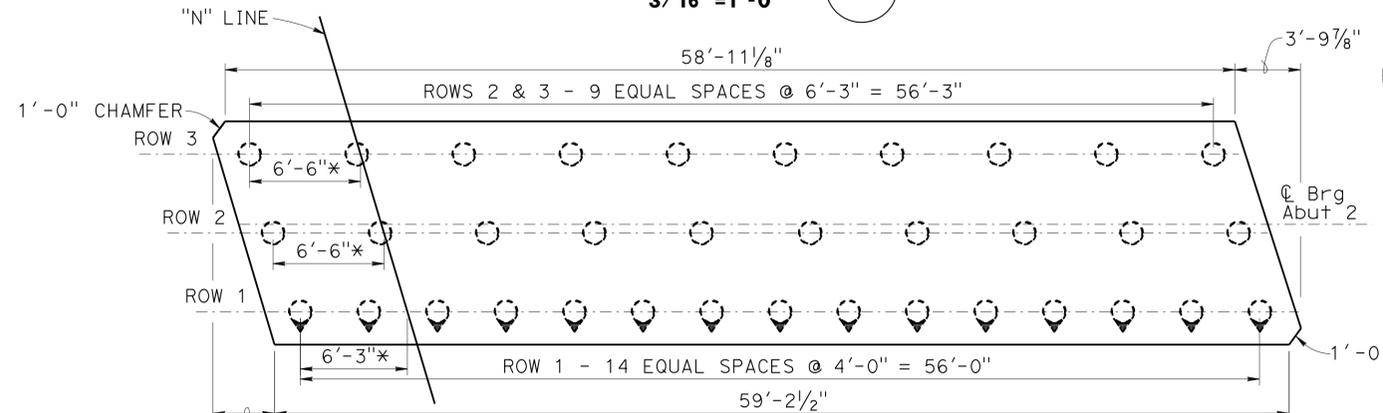
- PLAN AND ELEVATION NOTES:**
- Barrier and approach slab not shown for clarity
  - See "ABUTMENT DETAILS NO.1" and "ABUTMENT DETAILS NO.2" sheets for additional information



**ABUTMENT PLAN**  
3/16"=1'-0"



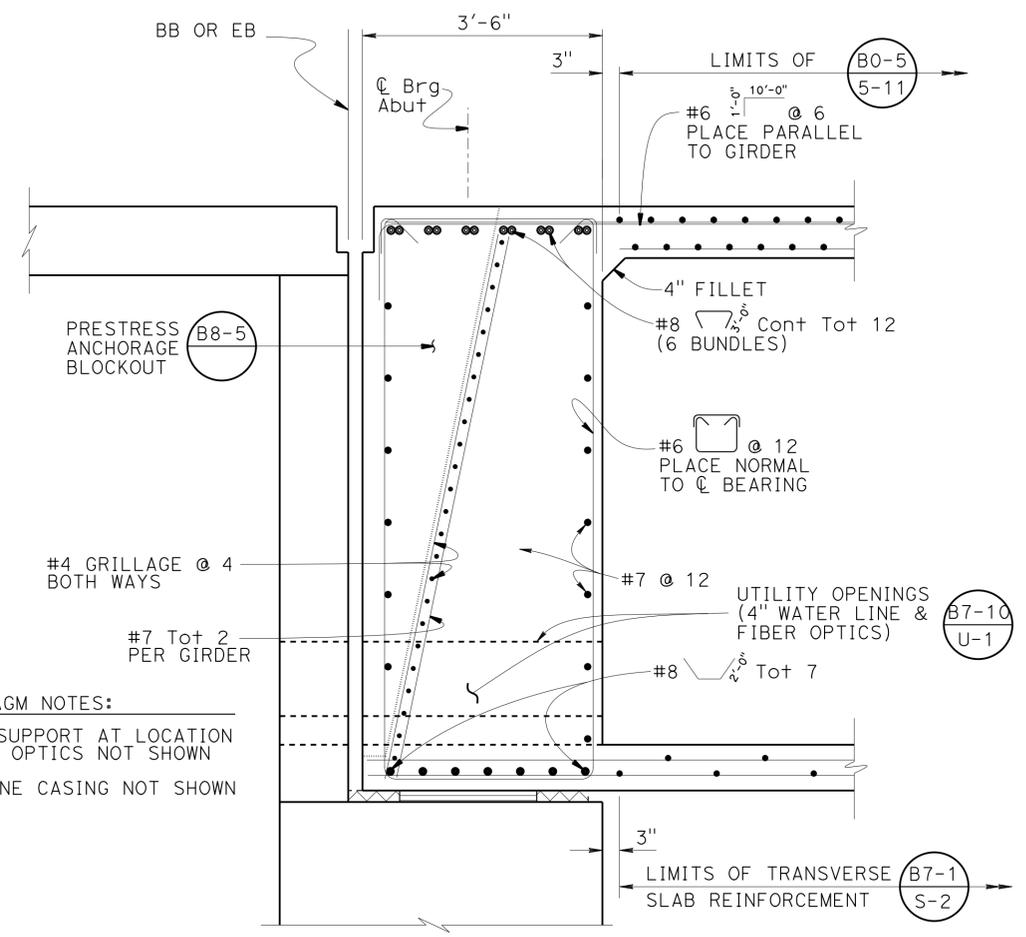
**ELEVATION**  
3/16"=1'-0"



**FOOTING PLAN**  
3/16"=1'-0"

- FOOTING PLAN NOTES:**
- See "FOUNDATION PLAN" for additional information
  - \* - Indicates dimension from Pile to "N" Line

- ⊙ - Indicates battered piles
- - Indicates vertical piles



**END DIAPHRAGM**  
3/4"=1'-0"

- END DIAPHRAGM NOTES:**
- UTILITY SUPPORT AT LOCATION OF FIBER OPTICS NOT SHOWN
  - WATER LINE CASING NOT SHOWN

- NOTES:**
- For Retaining Wall Details, see "RETAINING WALL TYPE 1" sheet
  - For Return Wall Details, see "ABUTMENT DETAILS NO. 2" sheet
  - For Abutment Details, see "ABUTMENT DETAILS NO.1" and "ABUTMENT DETAILS NO.2" sheets

DESIGN	BY P. A. PETERSON	CHECKED J. M. PETERSON
DETAILS	BY P. & J. PETERSON	CHECKED P. A. PETERSON
QUANTITIES	BY J. M. PETERSON	CHECKED P. A. PETERSON

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
DESIGN BRANCH 14

BRIDGE NO.	57-1202R
POST MILE	0.74

OTAY MESA ROAD UC  
ABUTMENT 2 LAYOUT

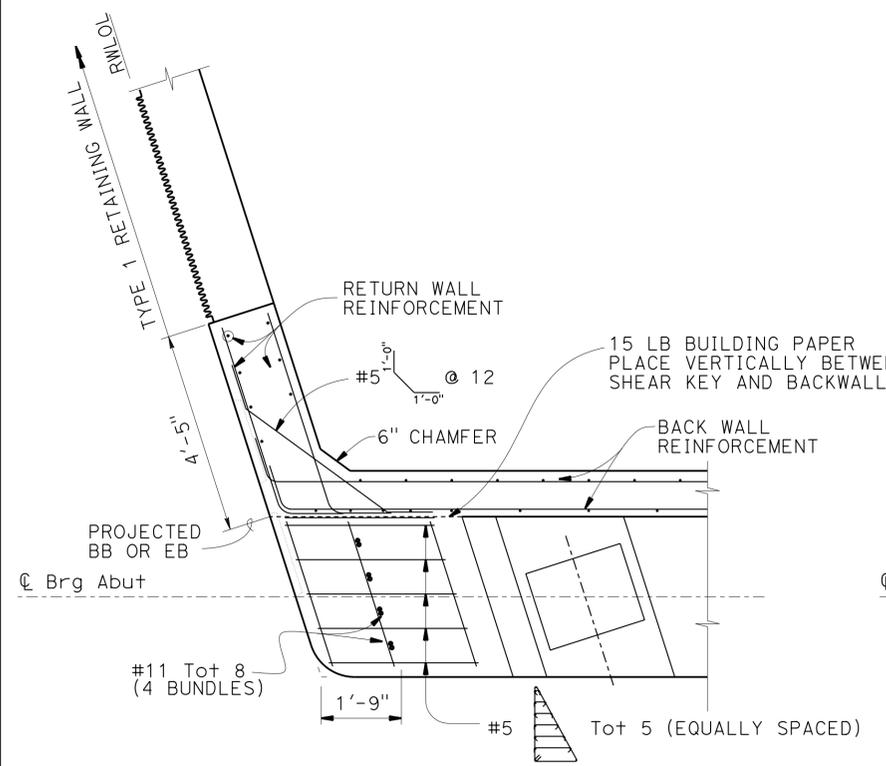
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	292	302

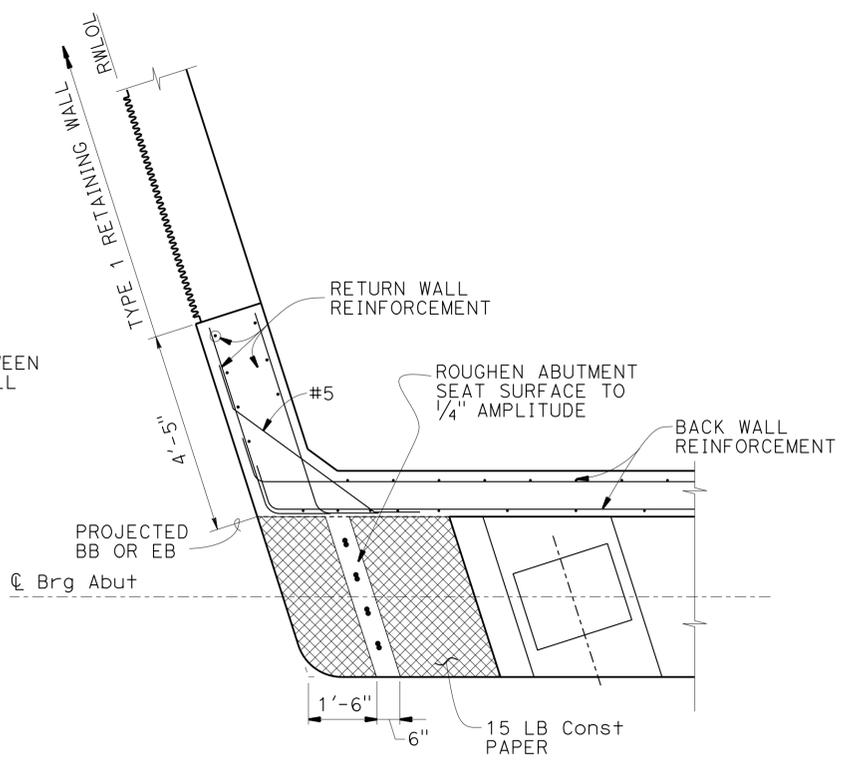
REGISTERED CIVIL ENGINEER	DATE
01-20-15	03-13-14
PLANS APPROVAL DATE	

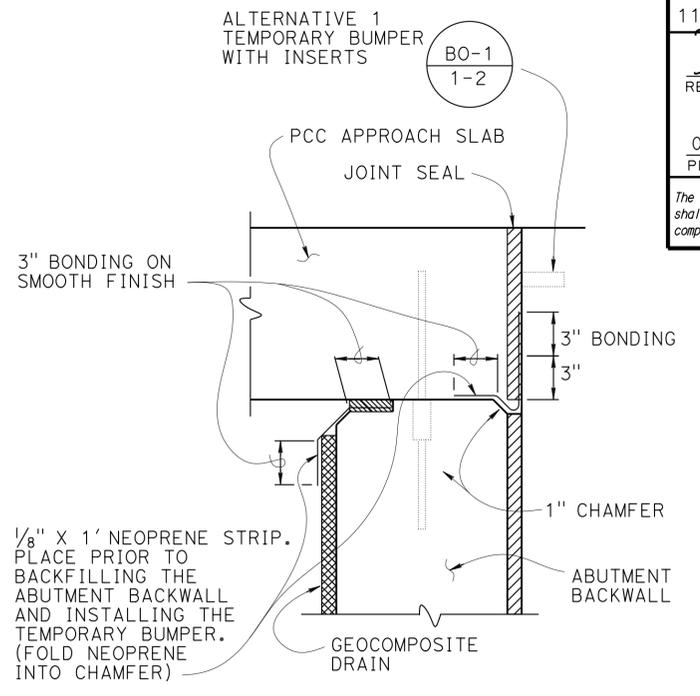
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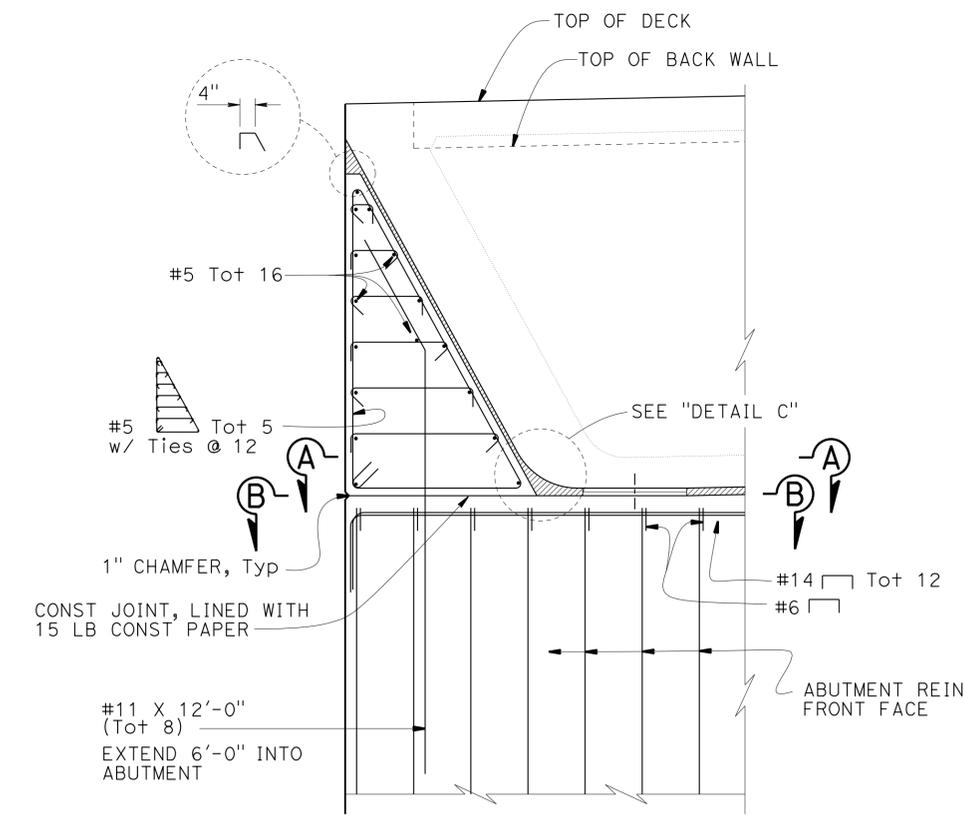
**SECTION A-A**  
1/2"=1'-0"



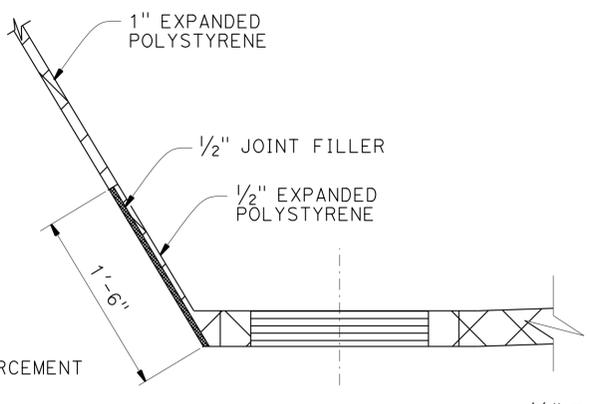
**SECTION B-B**  
1/2"=1'-0"



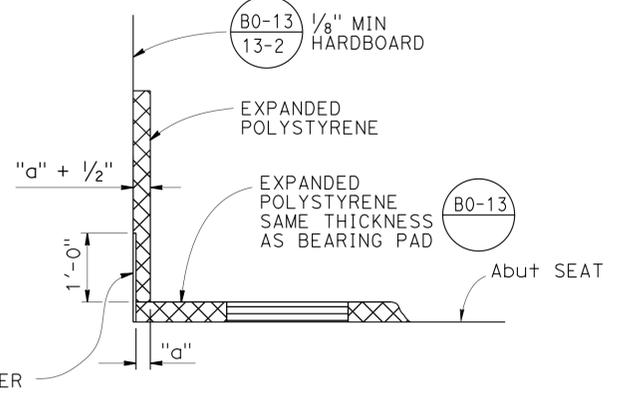
**JOINT PROTECTION DETAIL**  
No Scale



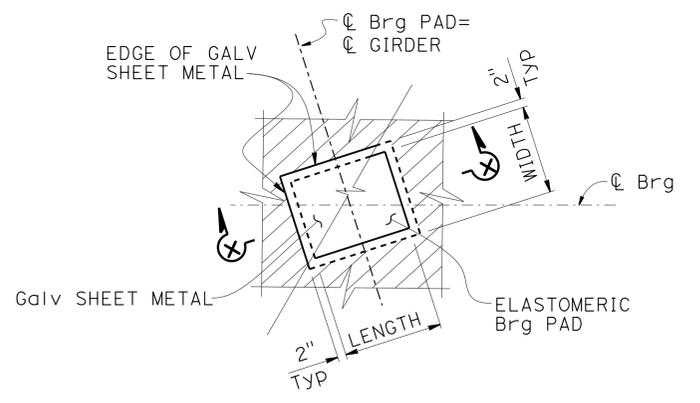
**ELEVATION**  
1/2"=1'-0"



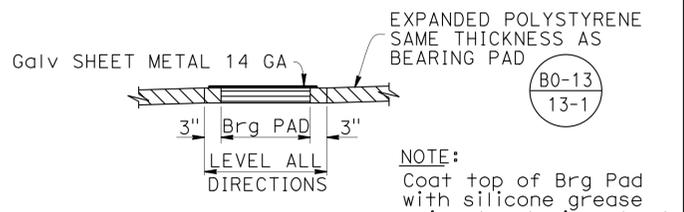
**DETAIL C**  
No Scale



**DETAIL A**  
No Scale



**BEARING PAD DETAIL**  
No Scale



**SECTION X-X**  
1/2"=1'-0"

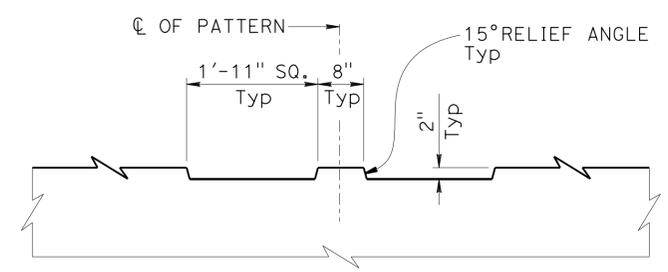
NOTE:  
Coat top of Brg Pad with silicone grease prior to placing sheet metal

DESIGN	BY	P. A. PETERSON	CHECKED	J. M. PETERSON	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 14	BRIDGE NO.	57-1202R	OTAY MESA ROAD UC ABUTMENT DETAILS NO. 1	
	DETAILS	BY	P. A. PETERSON	CHECKED			J. M. PETERSON	POST MILE		0.74
	QUANTITIES	BY	J. M. PETERSON	CHECKED			P. A. PETERSON	PROJECT NUMBER & PHASE:		1130001761

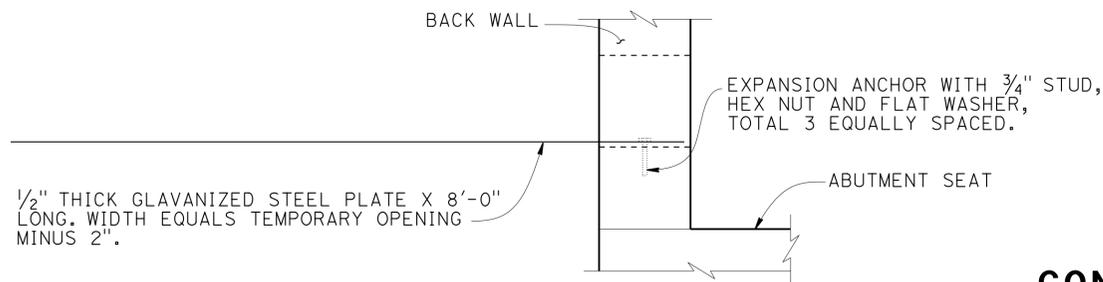
  

REVISION DATES	SHEET	OF
11-18-13 12-1-13 03-12-14	7	17

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	293	302
REGISTERED CIVIL ENGINEER DATE 03-13-14 PLANS APPROVAL DATE 01-20-15			REGISTERED PROFESSIONAL ENGINEER PAUL A. PETERSON No. C66764 Exp. 09-30-14 CIVIL STATE OF CALIFORNIA		
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.					

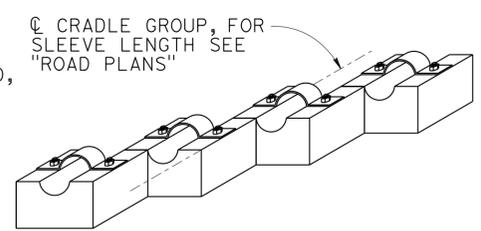


**ARCHITECTURAL SQUARE DETAIL**  
NO SCALE

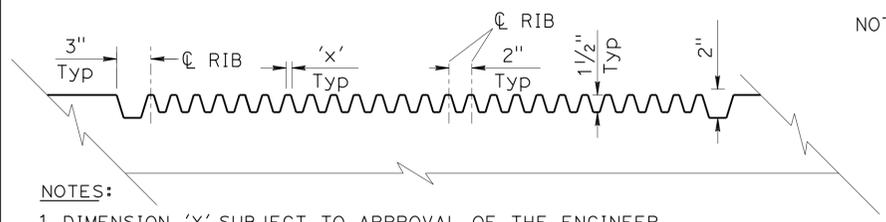


**UTILITY SUPPORT DETAIL**  
NO SCALE

NOTE: TO BE USED AT LOCATIONS OF FIBER OPTIC LINES ONLY

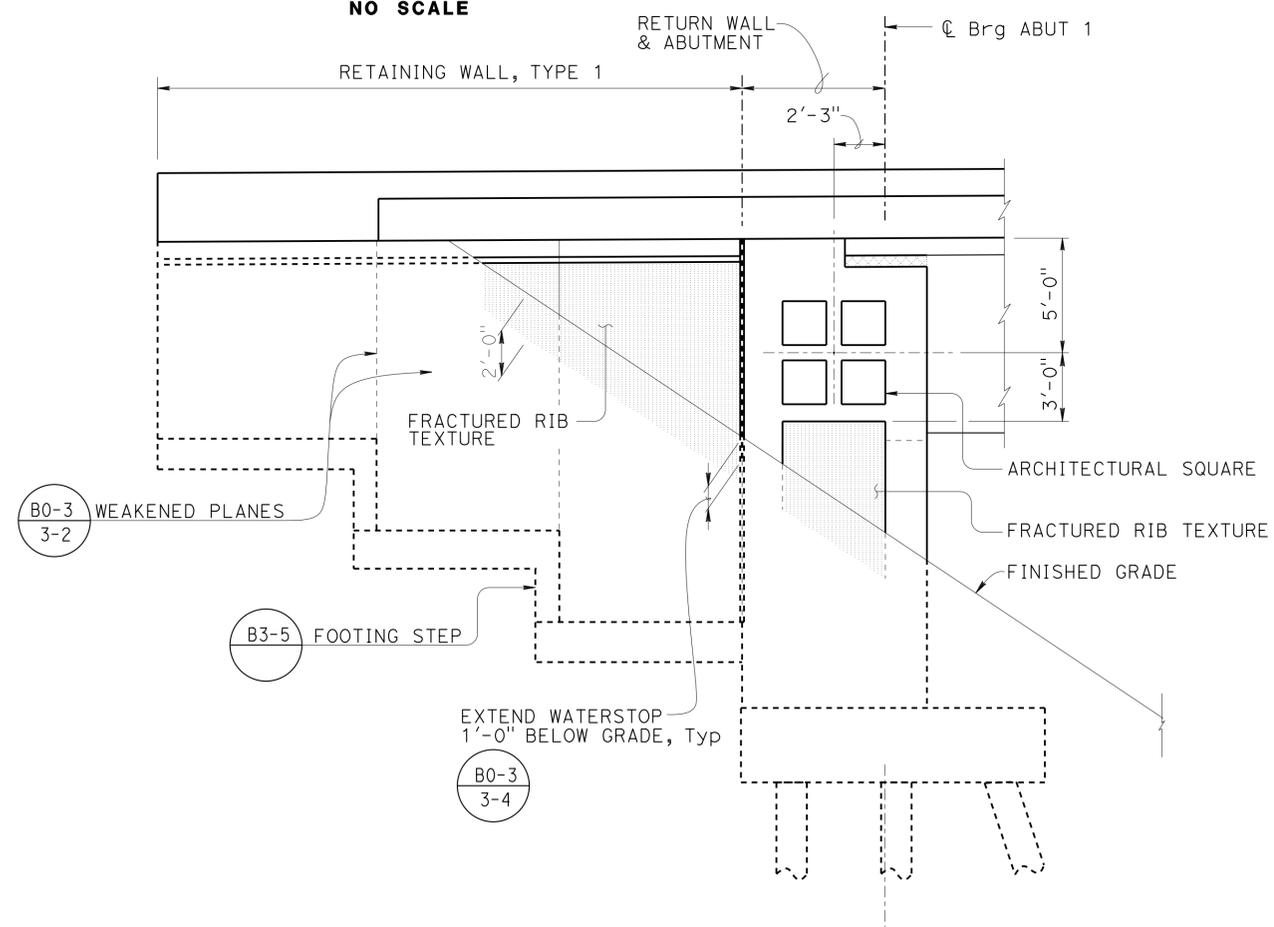


**CONDUIT CRADLE DETAIL**  
NO SCALE

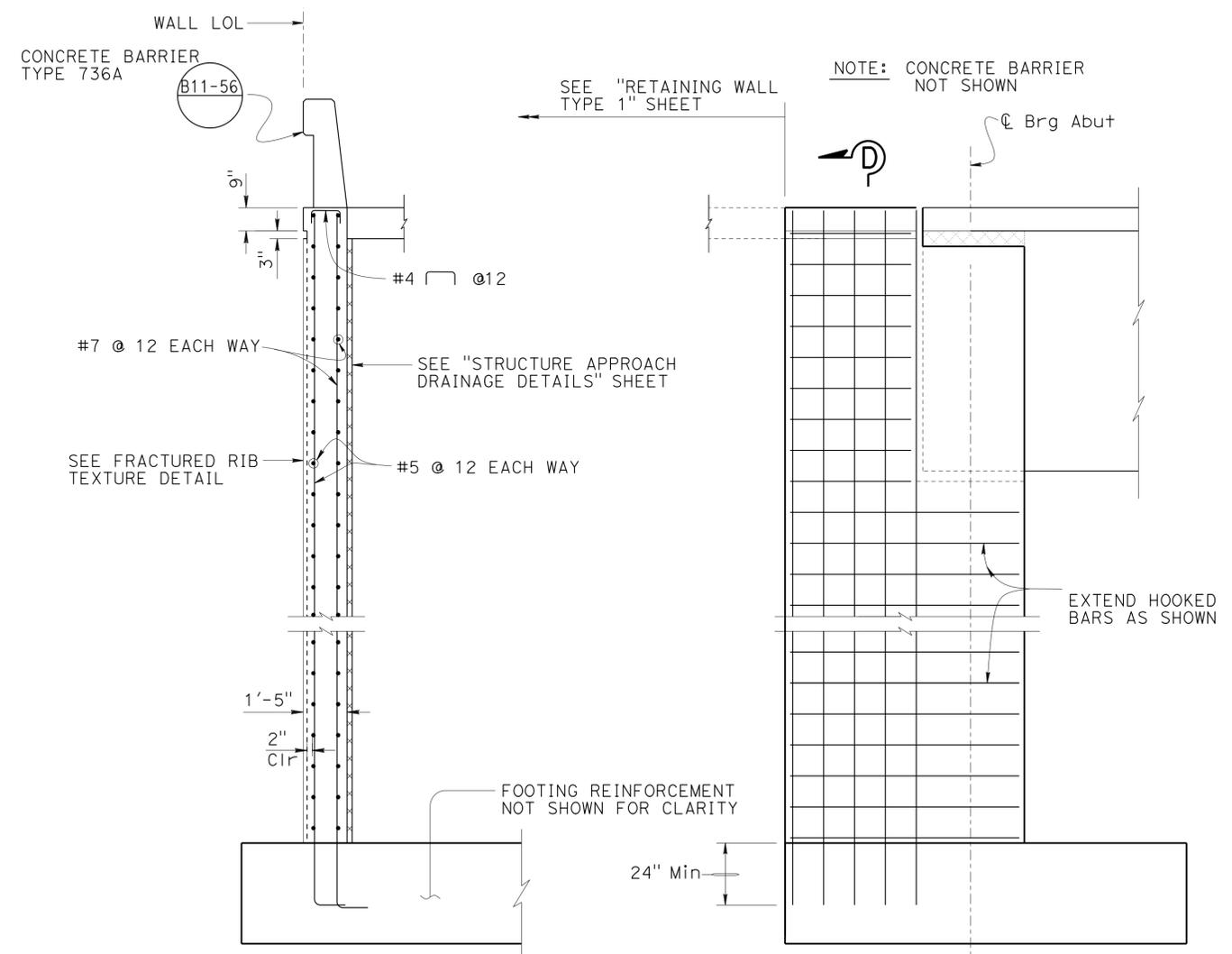


- NOTES:
1. DIMENSION 'X' SUBJECT TO APPROVAL OF THE ENGINEER
  2. AT ABUTMENT LOCATIONS, ALIGN FRACTURED RIB WITH ARCHITECTURAL SQUARES. THE WIDTH OF THE FRACTURED RIB PATTERN SHALL MATCH THE OVERALL WIDTH OF THE SQUARES.

**FRACTURED RIB DETAIL**  
NO SCALE



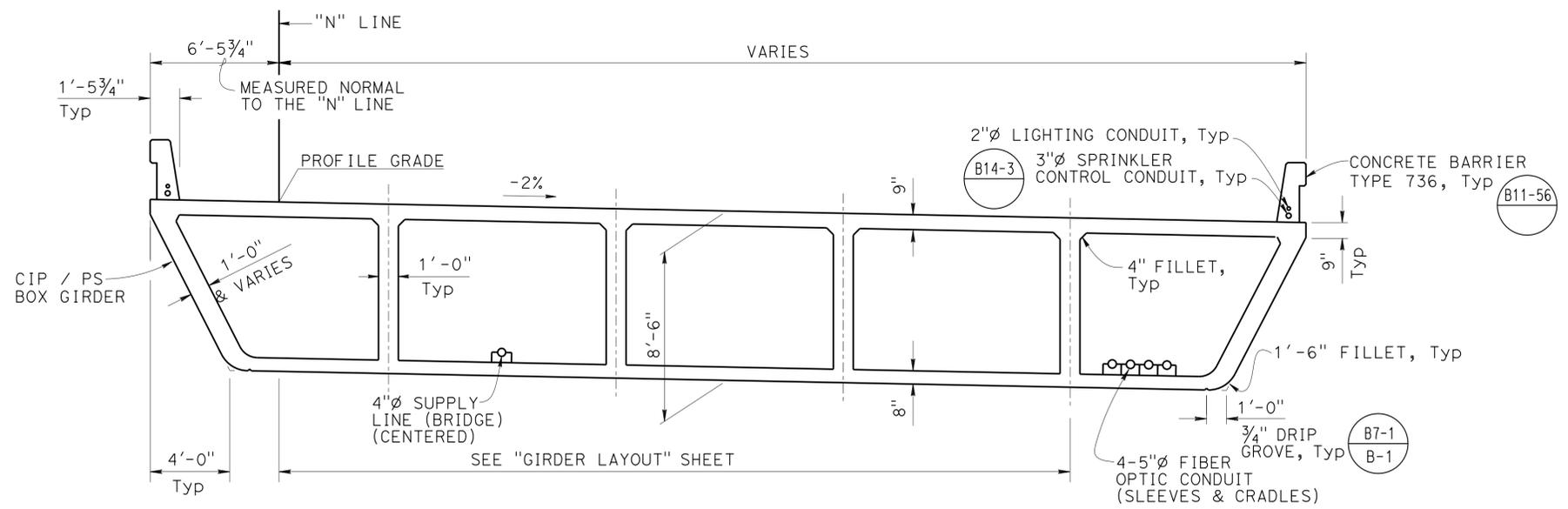
**TYPICAL WINGWALL ELEVATION**  
1/4" = 1'-0"



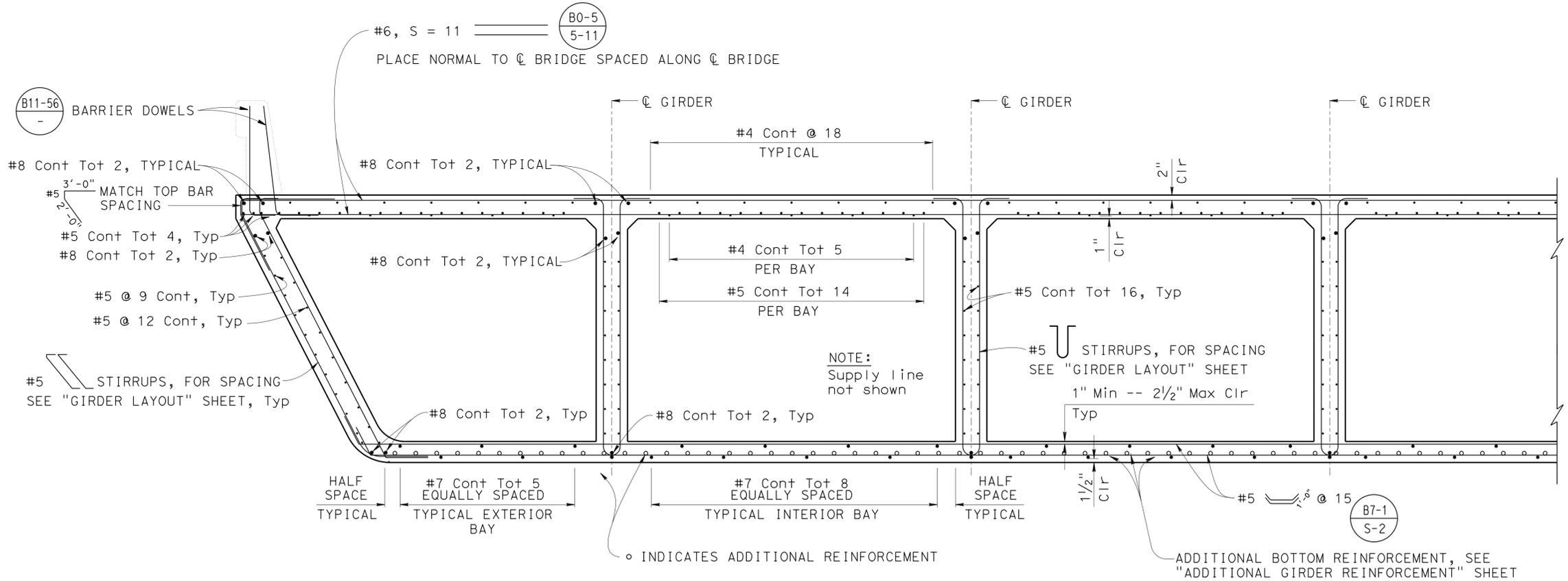
**RETURN WALL DETAILS**  
3/8" = 1'-0"

DESIGN BY P. A. Peterson CHECKED J. M. Peterson DETAILS BY P. A. PETERSON CHECKED J. M. Peterson QUANTITIES BY J. M. Peterson CHECKED P. A. Peterson	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 14</b>	BRIDGE NO. 57-1202R POST MILE 0.74	<b>OTAY MESA ROAD UC</b> <b>ABUTMENT DETAILS NO. 2</b>
	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3	UNIT: 3613 PROJECT NUMBER & PHASE: 11130001671 CONTRACT NO.: 11-28881	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES SHEET 8 OF 17
	STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	FILE => 57-1202r-e-adt02_detail1-sheet.dgn	DATE PLOTTED => 29-JAN-2015 TIME PLOTTED => 10:47	USERNAME => s127400

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	294	302
 REGISTERED CIVIL ENGINEER			03-13-14 DATE		
01-20-15 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of information appearing on this sheet.</small>					



**TYPICAL SECTION**  
 $\frac{1}{4}'' = 1'-0''$  (B14-3)



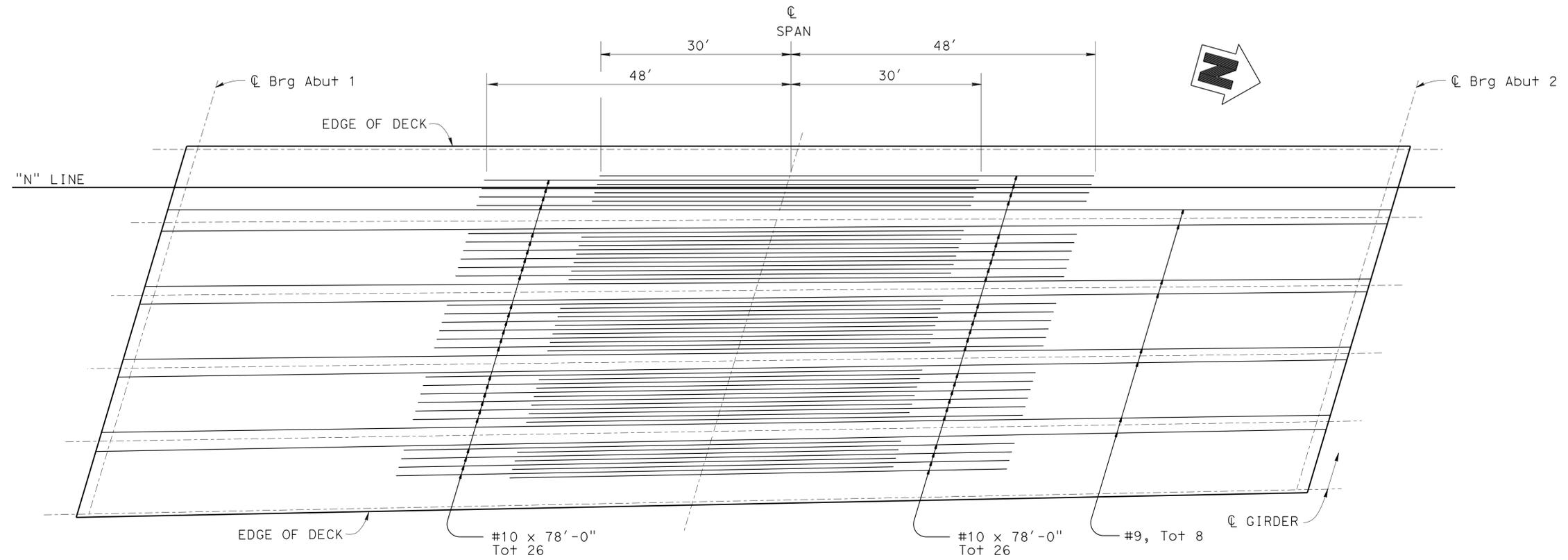
**PART TYPICAL SECTION**  
 $\frac{1}{2}'' = 1'-0''$  (B8-5, B7-1, B0-5, B11-56)

- NOTES:
- For utility description, see "GENERAL PLAN" sheet
  - For Fiber Optic Communication, see "CONDUIT CRADLE DETAIL," on "ABUTMENT DETAILS NO.2" sheet

DESIGN BY P. A. Peterson CHECKED J. M. Peterson DETAILS BY P. A. Peterson CHECKED J. M. Peterson QUANTITIES BY J. M. Peterson CHECKED P. A. Peterson	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 14</b>	BRIDGE NO. 57-1202R POST MILE 0.74	<b>OTAY MESA ROAD UC</b> <b>TYPICAL SECTION</b>
	UNIT: 3613 PROJECT NUMBER & PHASE: 11130001671	CONTRACT NO.: 11-28881	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES SHEET 9 OF 17
	STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	FILE => 57-1202r-f-ts_detail-sheet.dgn		



DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	296	302
			03-13-14		
REGISTERED CIVIL ENGINEER			DATE		
01-20-15			PLANS APPROVAL DATE		
					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.</small>					



**NOTES:**

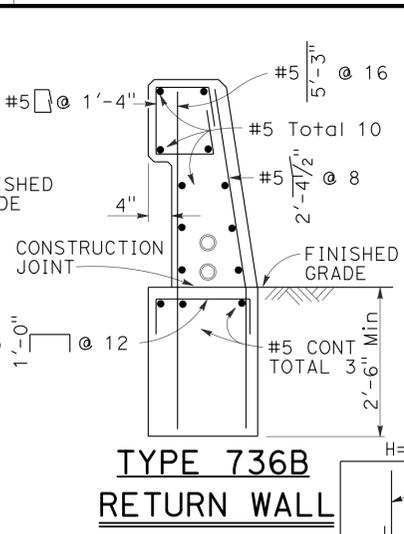
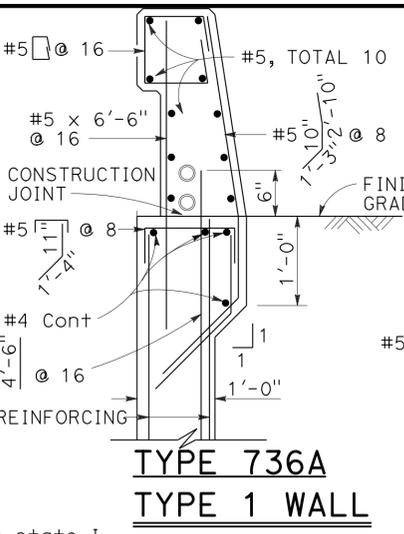
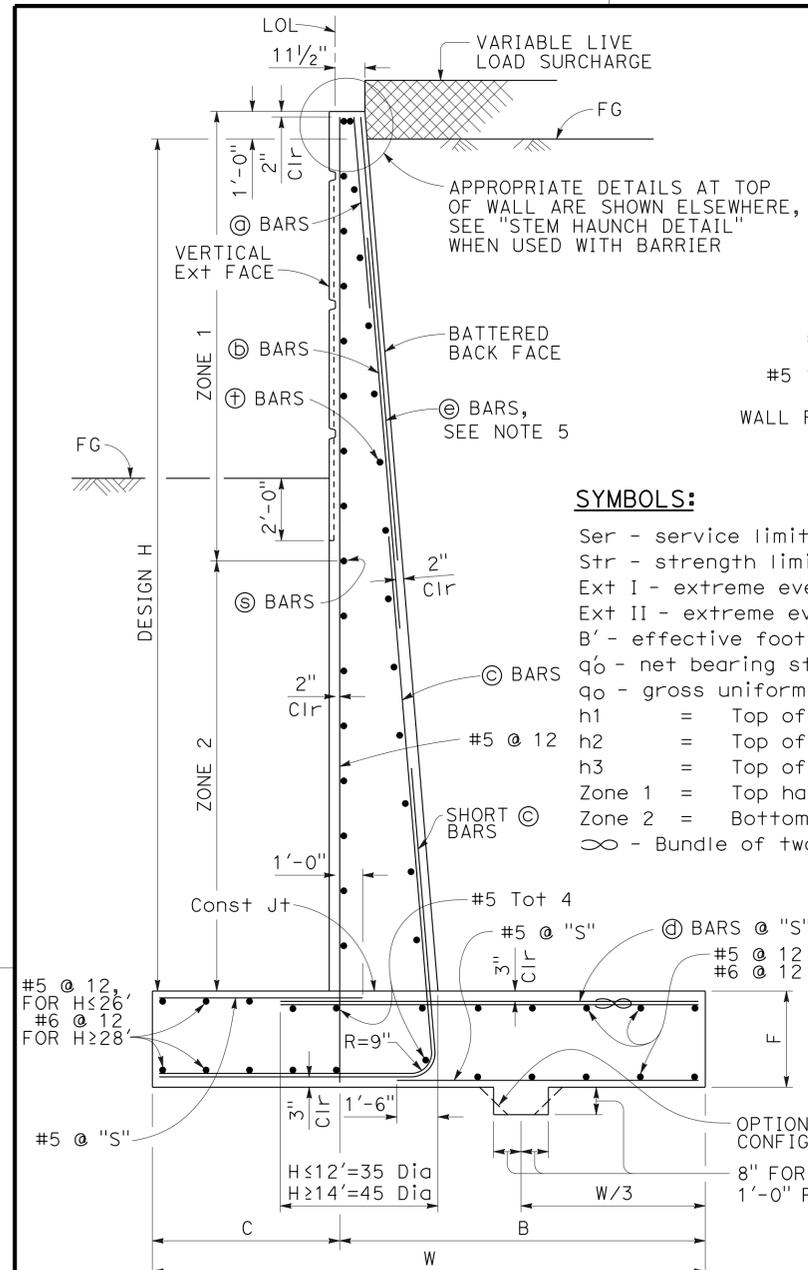
1. Reinforcement shown is in addition to that shown on the "TYPICAL SECTION" sheet
2. No splice allowed on #10 bars

**PLAN (ADDITIONAL BOTTOM SLAB REINFORCEMENT)**  
1"=10'-0"

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	DESIGN	BY P. A. Peterson	CHECKED J. M. Peterson	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 14</b>	BRIDGE NO.	<b>OTAY MESA ROAD UC</b> <b>GIRDER REINFORCEMENT</b>			
	DETAILS	BY P. A. Peterson	CHECKED J. M. Peterson			57-1202R				
	QUANTITIES	BY P. A. Peterson	CHECKED J. M. Peterson			POST MILE 0.74				
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS					UNIT: 3613 PROJECT NUMBER & PHASE: 11130001671	CONTRACT NO.: 11-288811	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 12-22-13 12-22-13 03-12-14	SHEET 11	OF 17

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	297	302

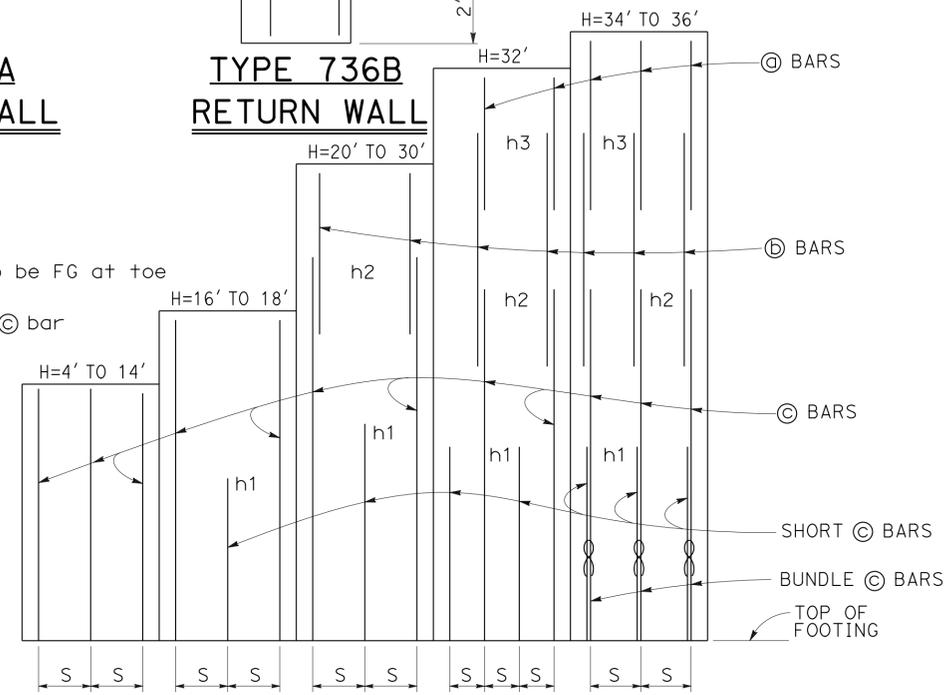
REGISTERED CIVIL ENGINEER  
 DATE 03-13-14  
 PLANS APPROVAL DATE 01-20-15  
 PAUL A. PETERSON  
 No. C66764  
 Exp. 09-30-14  
 CIVIL  
 STATE OF CALIFORNIA



- NOTES:**
- For Barrier Details and notes not shown, see B11-56
  - For Communication and Sprinkler Control Conduits Details and Notes not shown, see B14-3

**SYMBOLS:**

- Ser - service limit state I
- Str - strength limit state I
- Ext I - extreme event limit state I
- Ext II - extreme event limit state II
- B' - effective footing width (ft)
- q<sub>o</sub> - net bearing stress (ksf), OG assumed to be FG at toe
- q<sub>o</sub> - gross uniform bearing stress (ksf)
- h1 = Top of footing to top of short © bar
- h2 = Top of footing to top of © bar
- h3 = Top of footing to top of © bar
- Zone 1 = Top half of stem height
- Zone 2 = Bottom half of stem height
- ∞ - Bundle of two bars



**ELEVATION**

DESIGN H	4'	6'	8'	10'	12'	14'	16'	18'	20'	22'	24'	26'	28'	30'	32'	34'	36'
W	6'-10"	7'-0"	7'-3"	7'-7"	8'-4"	9'-7"	10'-9"	12'-0"	13'-3"	14'-6"	15'-9"	17'-1"	18'-5"	19'-10"	21'-2"	22'-7"	24'-0"
C	2'-2"	2'-3"	2'-3"	2'-4"	2'-6"	3'-0"	3'-6"	4'-0"	4'-0"	5'-0"	5'-5"	6'-0"	6'-6"	7'-2"	7'-8"	8'-2"	9'-0"
B	4'-8"	4'-9"	5'-0"	5'-3"	5'-10"	6'-7"	7'-3"	8'-0"	8'-9"	9'-6"	10'-4"	11'-1"	11'-11"	12'-8"	13'-6"	14'-5"	15'-0"
F	1'-4"	1'-4"	1'-4"	1'-4"	1'-6"	1'-8"	1'-8"	1'-9"	1'-9"	1'-11"	2'-2"	2'-5"	2'-10"	3'-3"	3'-6"	4'-0"	4'-3"
BATTER	1/2: 12	1/2: 12	1/2: 12	1/2: 12	1/2: 12	1/2: 12	1/2: 12	1/2: 12	1/2: 12	1/2: 12	5/8: 12	5/8: 12	3/4: 12	7/8: 12	1: 12	1: 12	1: 12
SPACING "S"	9"	9"	9"	9"	9"	7"	6"	5"	6"	6"	6"	6"	6"	6"	6"	10"	8"
© BARS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#7	#6
© BARS	-	-	-	-	-	-	-	-	#7	#7	#7	#7	#7	#7	#7	#9	#8
© BARS	#6	#6	#6	#6	#6	#6	#7	#7	#8	#9	#9	#10	#10	#10	#11	#11	#11
© BARS	#5	#5	#6	#6	#6	#6	#9	#8	#8	#9	#9	#10	#10	#10	#11	#11	#11
h1	-	-	-	-	-	-	5'-9"	5'-10"	8'-0"	9'-0"	10'-1"	11'-0"	12'-1"	13'-0"	13'-0"	12'-7"	11'-6"
h2	-	-	-	-	-	-	-	-	10'-5"	13'-0"	14'-7"	17'-6"	19'-0"	20'-5"	19'-0"	18'-0"	20'-2"
h3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21'-2"	21'-10"	24'-0"
ZONE 1 © BARS	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12
ZONE 2 © BARS	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#6 @ 12	#6 @ 12	#6 @ 12	#7 @ 12	#7 @ 12
ZONE 1 © BARS	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12
ZONE 2 © BARS	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12	#5 @ 12	#5 @ 12	#5 @ 12
Ser: B', q <sub>o</sub>	6.8, 0.7	6.5, 1.0	6.2, 1.3	6.0, 1.6	6.3, 2.0	7.5, 2.1	8.6, 2.2	9.8, 2.3	11.0, 2.4	12.1, 2.5	13.2, 2.8	14.4, 2.9	15.5, 3.1	16.8, 3.3	18.0, 3.5	19.2, 3.7	20.6, 3.7
Str: B', q <sub>o</sub>	6.6, 1.6	5.0, 1.8	3.6, 2.3	3.0, 3.3	3.2, 4.0	4.3, 3.8	5.3, 3.7	6.4, 3.7	7.4, 3.8	8.2, 4.1	9.0, 4.4	9.9, 4.6	10.7, 4.9	11.7, 5.2	12.6, 5.4	13.6, 5.8	14.6, 5.9
Ext I: B', q <sub>o</sub>	5.2, 1.1	4.7, 1.5	3.9, 2.2	3.1, 3.4	2.8, 4.8	3.2, 5.3	3.6, 5.7	4.1, 6.1	4.6, 6.4	5.0, 6.9	5.3, 7.6	5.8, 8.1	6.1, 8.9	6.7, 9.4	7.1, 10.0	7.5, 10.7	8.2, 10.9
Ext II: B', q <sub>o</sub>	2.6, 2.2	2.7, 2.6	2.8, 3.1	2.9, 3.6	3.7, 3.6	5.2, 3.3	6.7, 3.1	8.3, 3.0	9.8, 3.0	11.2, 3.1	12.5, 3.2	13.9, 3.4	15.2, 3.6	16.7, 3.8	18.0, 4.0	19.3, 4.2	20.8, 4.3

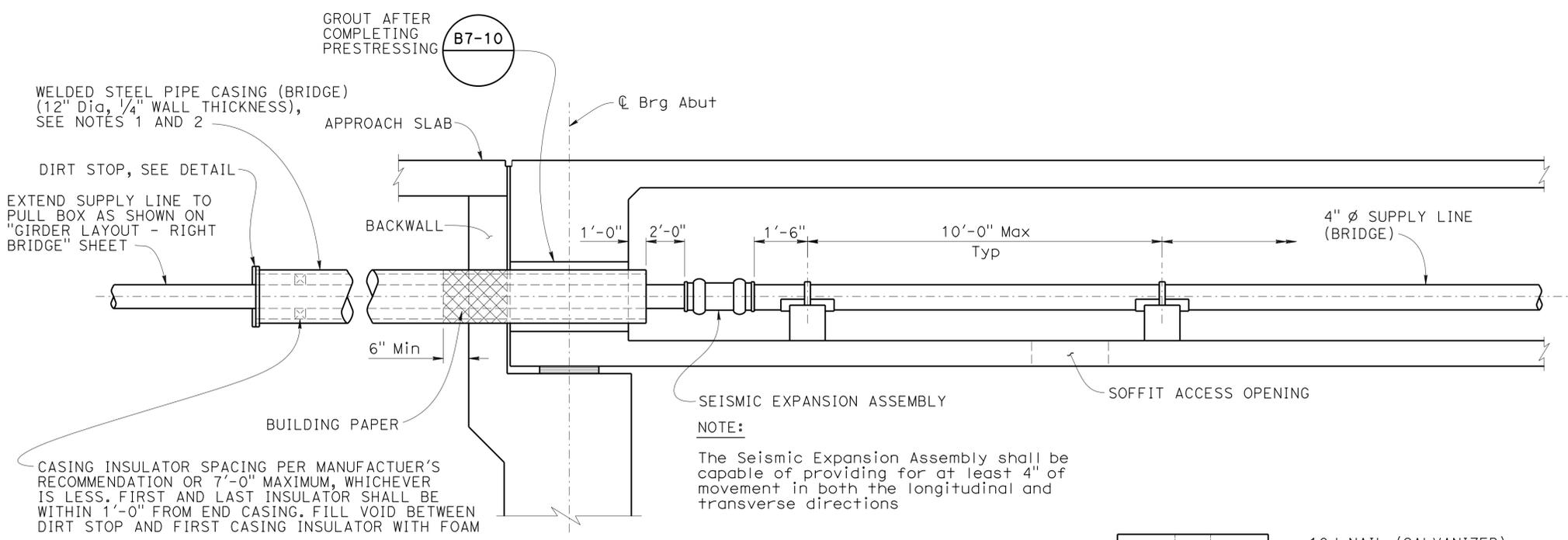
**NOTES:**

- For details not shown and drainage notes see RSP B3-5
- For wall stem Joint Details see B0-3/3-3 and B0-3/3-4
- At © bars:  
 H ≤ 6', no splices are allowed within 1'-8" above the top of footing.  
 H > 6', no splices are allowed within H/4 above the top of footing.
- Bundle © bars for H = 34' & 36'.
- Provide #6 @ 10" x 15'-0" © bars over a distance of 8'-0" measured from all expansion joints, begin wall and end wall locations. For H ≤ 14', hook © bar into footing and reduce bar length as needed to maintain Min Clr cover.

DESIGN	BY P. A. PETERSON	CHECKED J. M. PETERSON	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 14</b>	BRIDGE NO.	<b>OTAY MESA ROAD UC</b> <b>RETAINING WALL TYPE 1</b>
DETAILS	BY P & J PETERSON	CHECKED J. M. PETERSON			57-1202R	
QUANTITIES	BY J. M. PETERSON	CHECKED P. A. PETERSON			POST MILE 0.74	

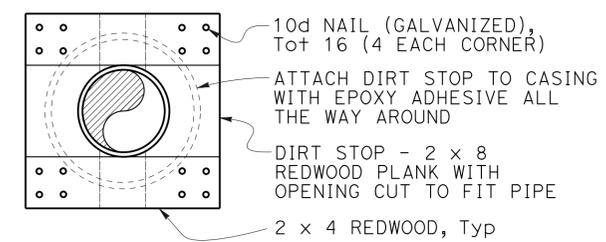
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS  
 UNIT: 3613 PROJECT NUMBER & PHASE: 11130001761 CONTRACT NO.: 57-288811  
 DISREGARD PRINTS BEARING EARLIER REVISION DATES  
 REVISION DATES: 12-31-13, 03-12-14  
 SHEET 12 OF 17

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	298	302
 REGISTERED CIVIL ENGINEER			03-13-14 DATE		
01-20-15 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>					

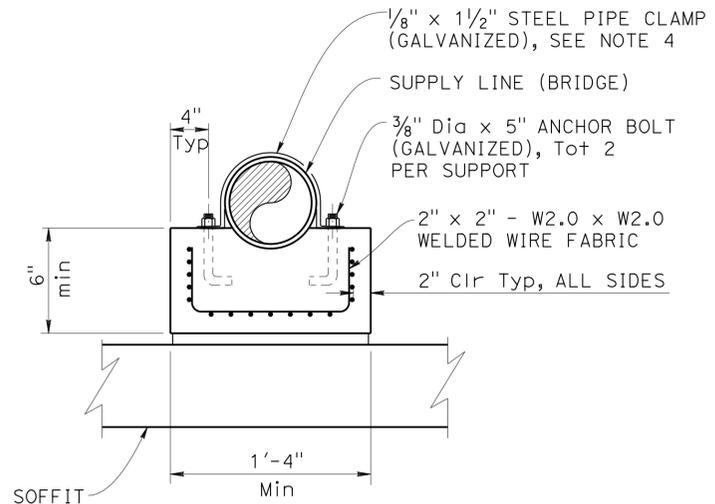
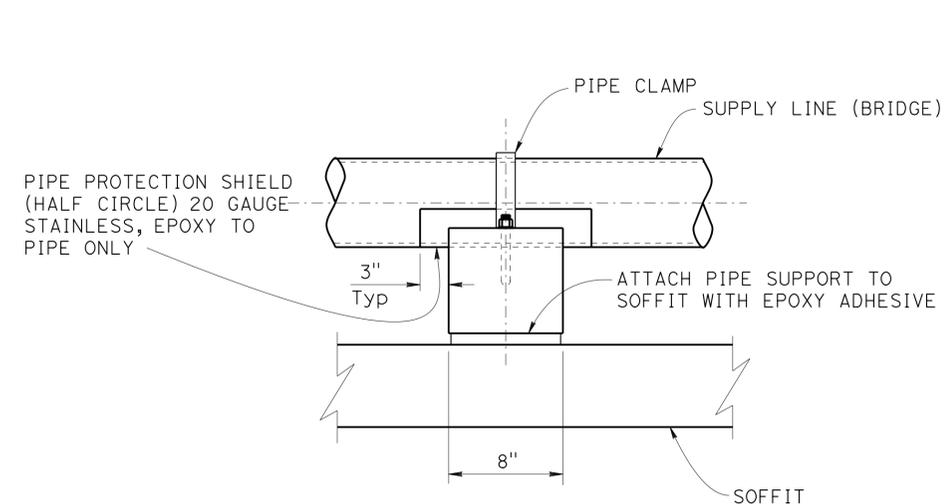


NOTE:  
 ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR

**PIPE INSTALLATION AT ABUTMENTS** (B7-10) (B14-5)  
 No Scale



**DIRT STOP DETAIL**  
 No Scale



**ELEVATION SECTION**

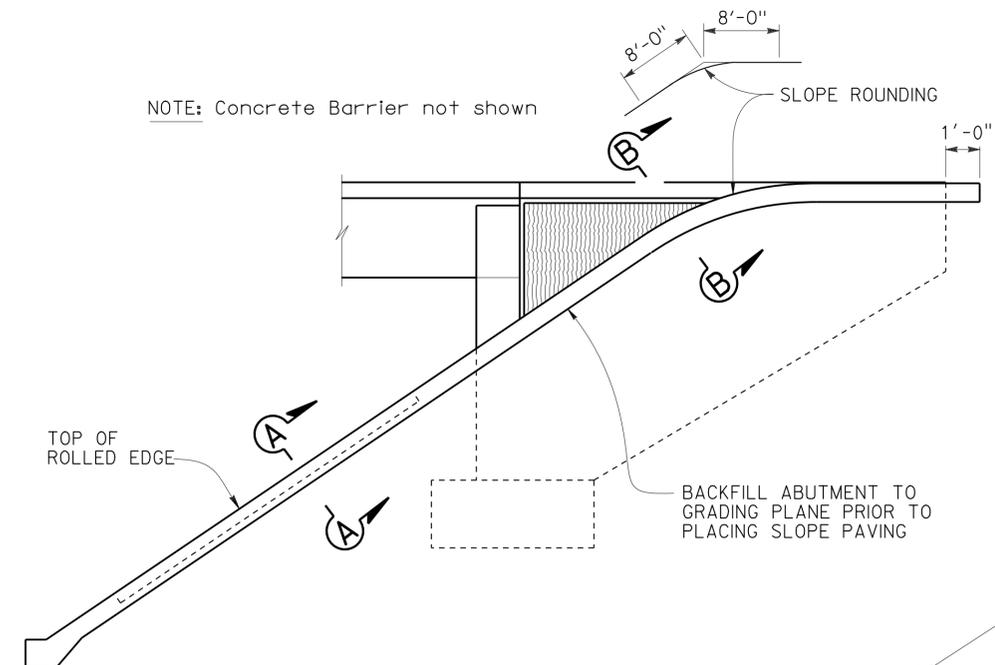
**CONCRETE PIPE SUPPORT**  
 No Scale

NOTES:

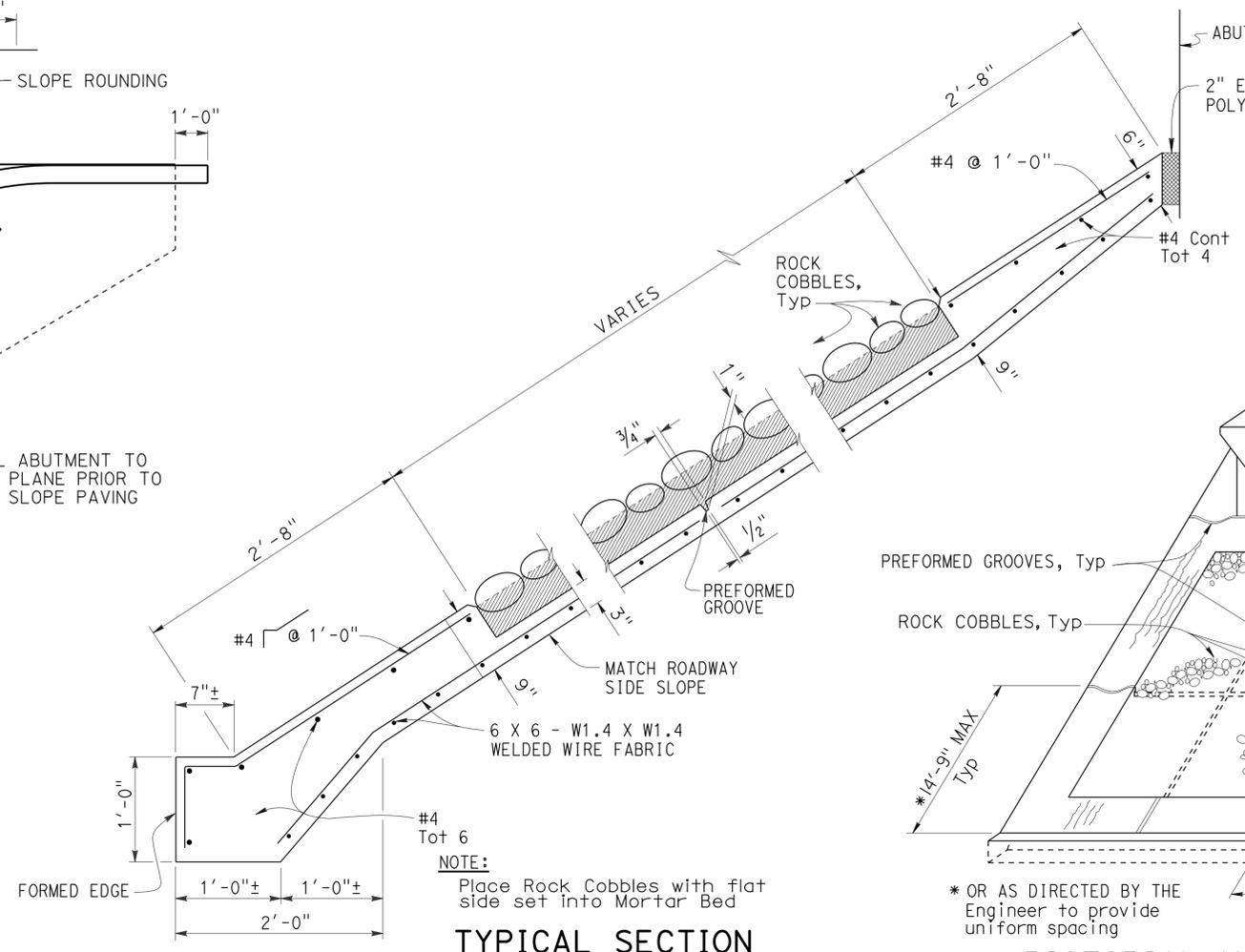
1. Casing shall extend 5'-0" beyond end of Approach Slab
2. Casing may be cast-in-place in the Backwall after tightly wrapping 2 layers of 15lb building paper or sealed per Standard Plan sheet B7-10
3. For location of Soffit Access Opening, see "Girder Layout" sheet
4. At all Pipe supports, the Pipe Clamp shall be shimmed with steel Washer Plates to provide 1/4" clearance between Supply Line and Pipe clamp
5. For additional details, see Standard Plans 2010 and "GIRDER LAYOUT" sheet

DESIGN BY P. A. Peterson CHECKED J. M. Peterson DETAILS BY P. A. Peterson CHECKED J. M. Peterson QUANTITIES BY P. A. Peterson CHECKED J. M. Peterson	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 14</b>	BRIDGE NO. 57-1202R POST MILE 0.74	<b>OTAY MESA ROAD UC</b> <b>SUPPLY LINE (BRIDGE) DETAILS</b>
	UNIT: 3613 PROJECT NUMBER & PHASE: 11130001671 CONTRACT NO.: 11-288811	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 11-28-13 12-2-13 3-12-14	SHEET 13 OF 17
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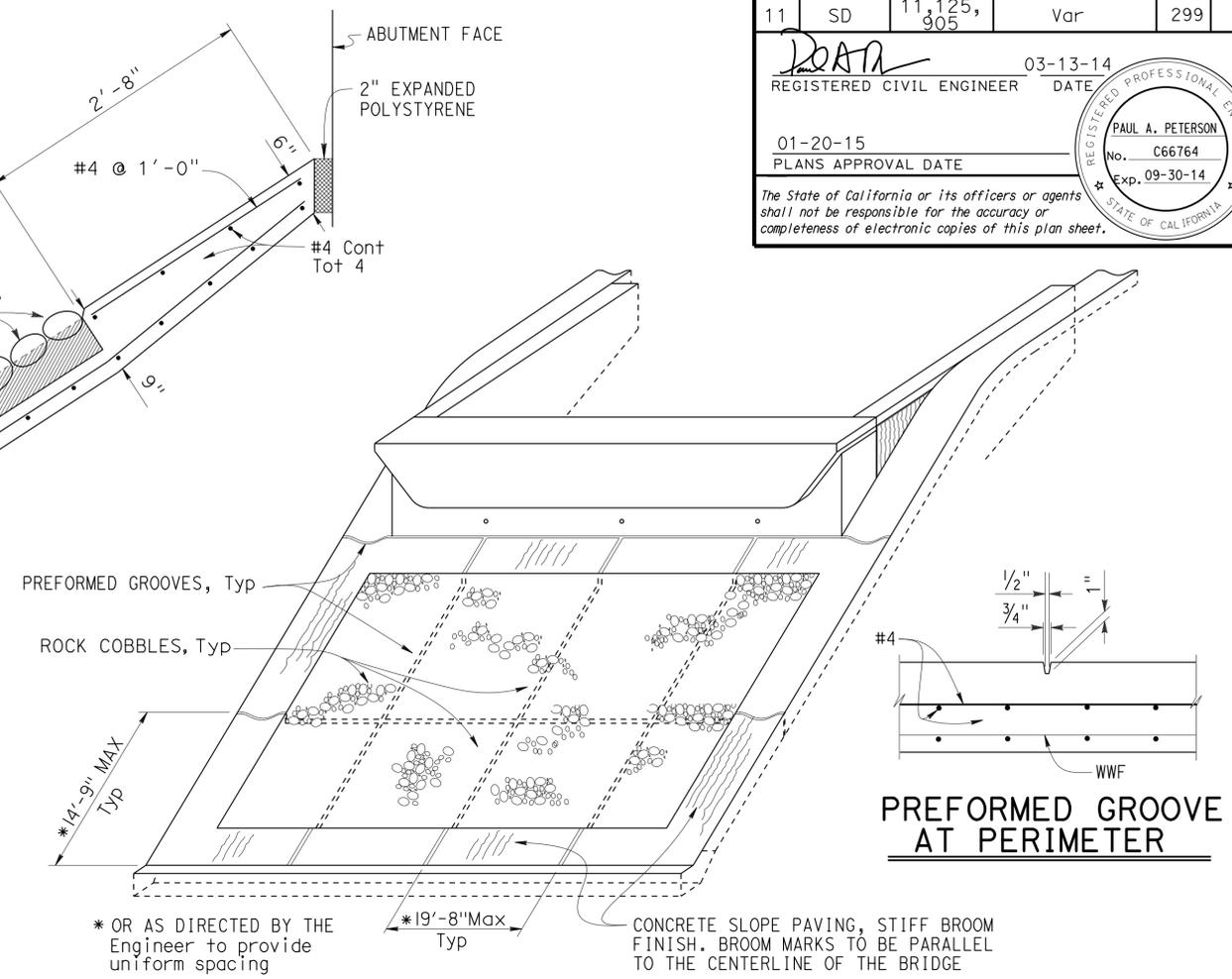
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	299	302
DATA			03-13-14	REGISTERED CIVIL ENGINEER DATE	
01-20-15			PLANS APPROVAL DATE		
REGISTERED PROFESSIONAL ENGINEER PAUL A. PETERSON No. C66764 Exp. 09-30-14 STATE OF CALIFORNIA					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.					



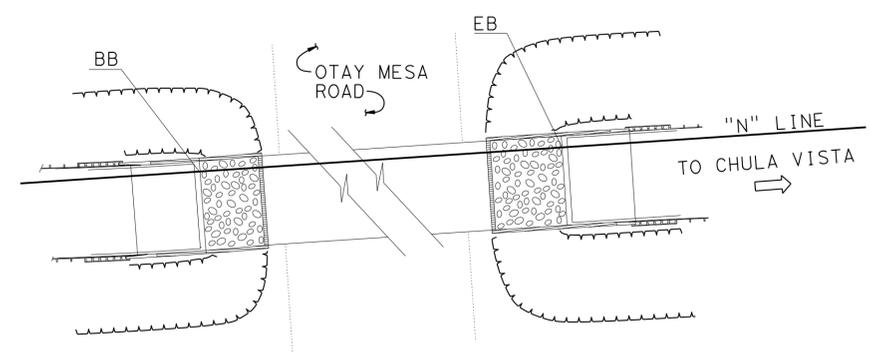
**WINGWALL ELEVATION**



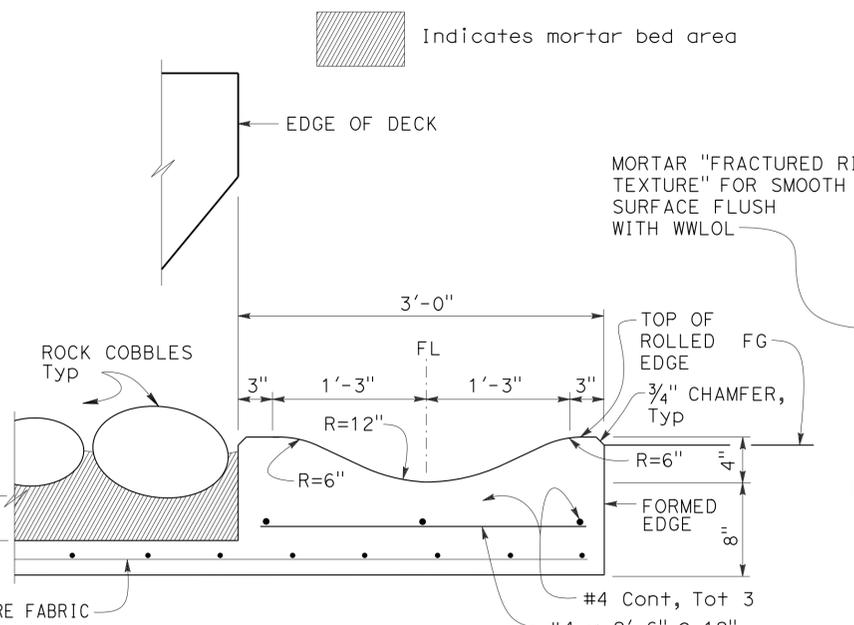
**TYPICAL SECTION**



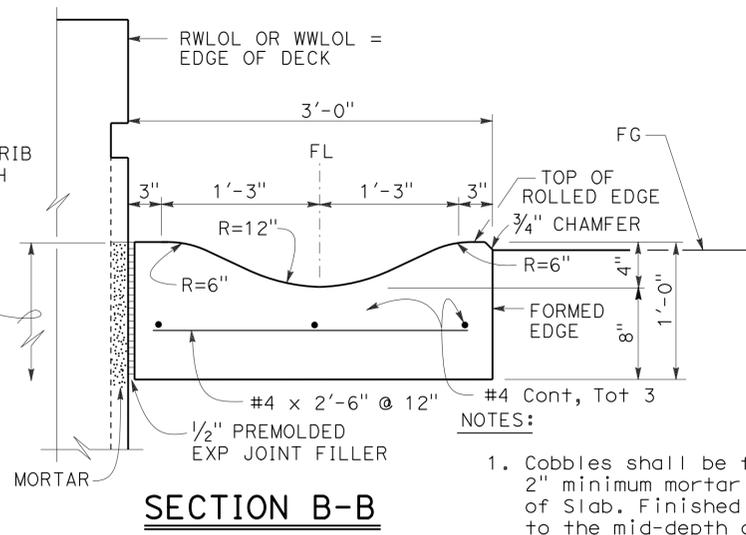
**PICTORIAL VIEW OF TYPICAL INSTALLATION**



**PLAN-LIMITS OF SLOPE PAVING (ROCK COBBLE)**



**SECTION A-A**



**SECTION B-B**

- NOTES:
1. Cobbles shall be fully seated in the mortar bed. 2" minimum mortar base between Cobbles and top of Slab. Finished mortar surface shall be placed to the mid-depth of the largest Cobbles
  2. Excess mortar shall be removed and the cobble surfaces shall be cleaned after placement
  3. Fill Preformed Grooves with mastic or plastic sealant
  4. See 'Special Provisions' for Cobble size
  5. See Drainage Details for Sidewalk Underdrain

NO SCALE

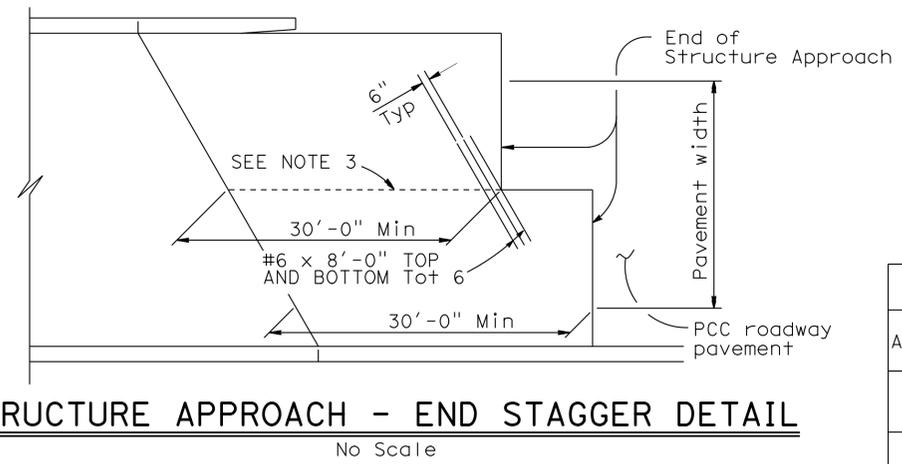
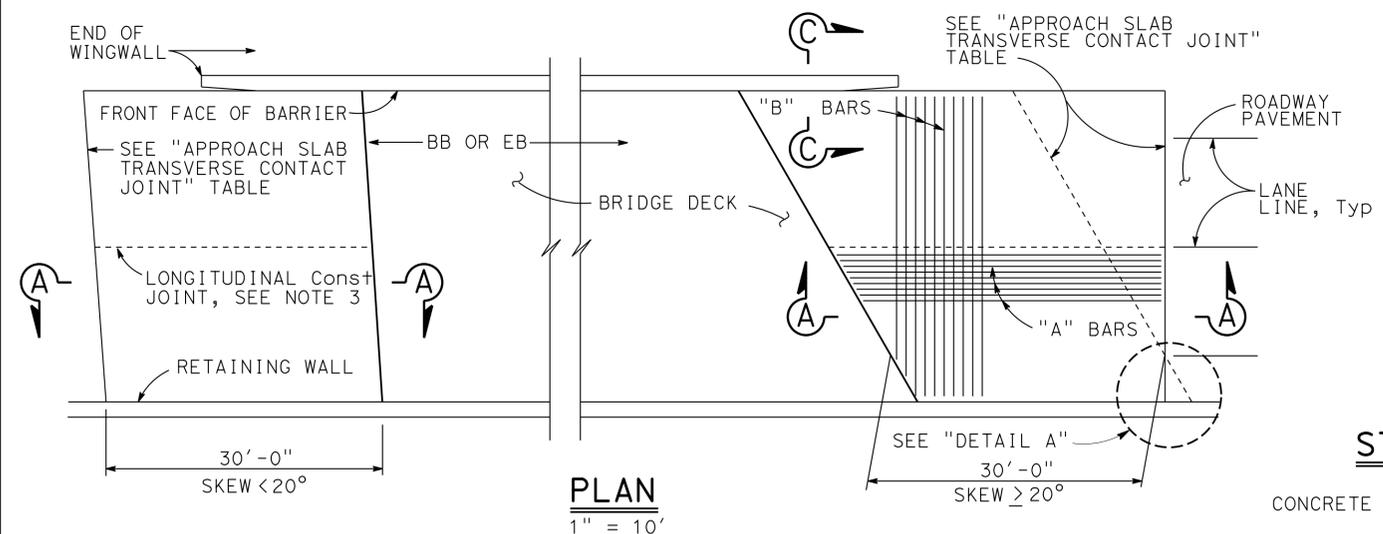
DESIGN	BY P. A. Peterson	CHECKED J. M. Peterson
DETAILS	BY P. A. Peterson	CHECKED J. M. Peterson
QUANTITIES	BY J. M. Peterson	CHECKED P. A. Peterson

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

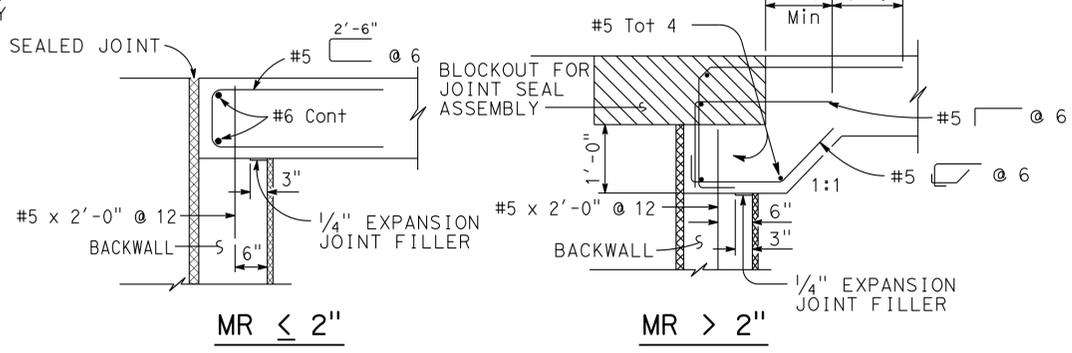
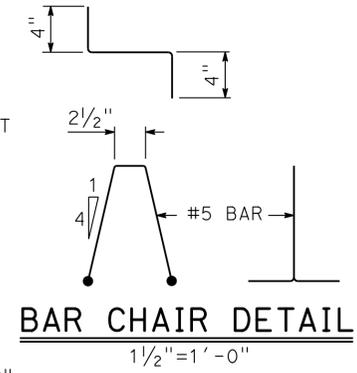
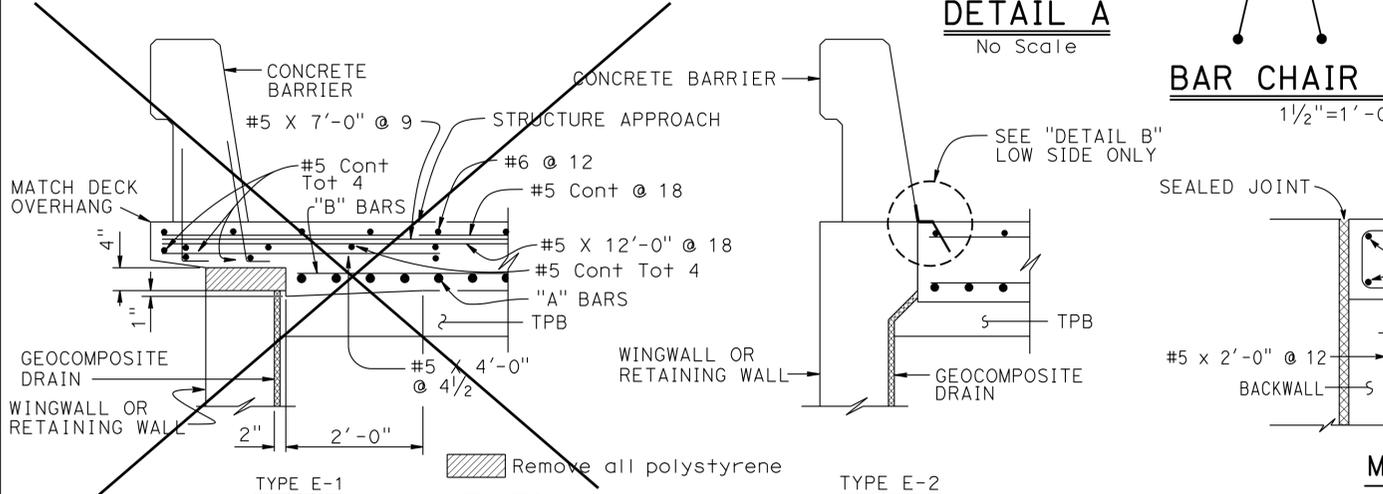
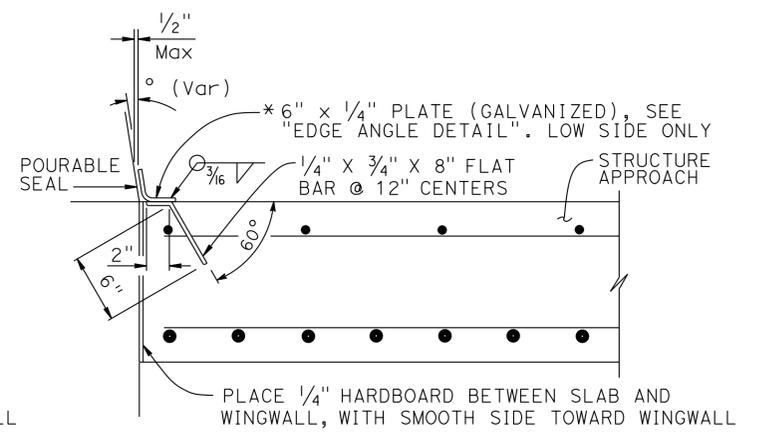
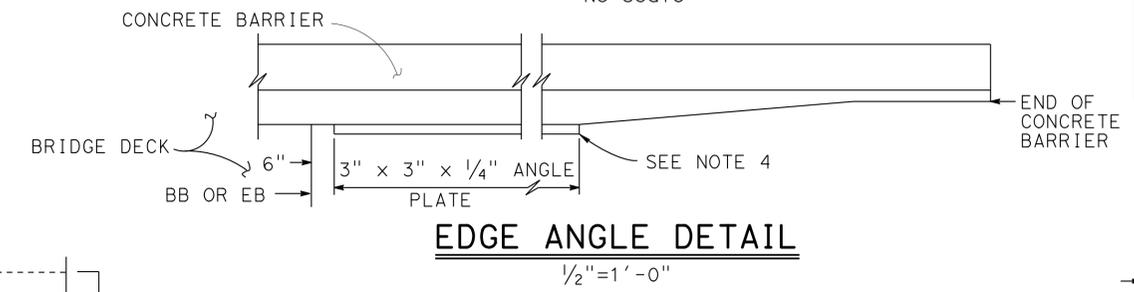
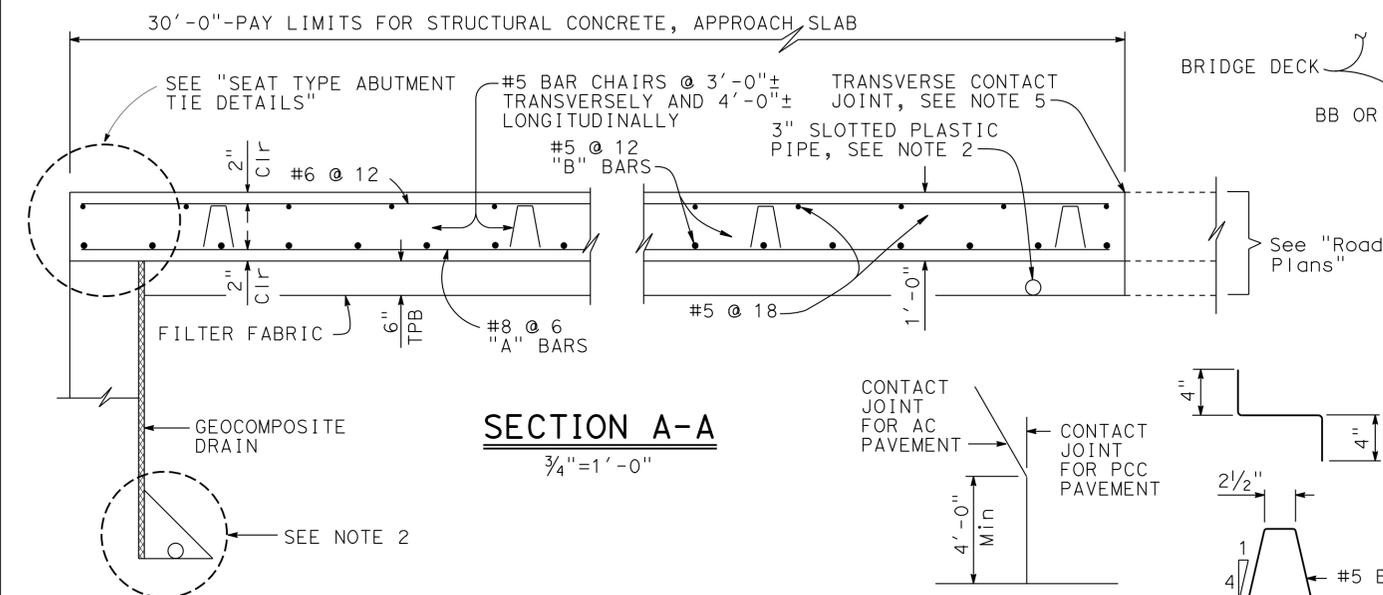
DIVISION OF ENGINEERING SERVICES  
STRUCTURE DESIGN  
DESIGN BRANCH 14

BRIDGE NO. 57-1202R  
POST MILE 0.74

OTAY MESA ROAD UC  
SLOPE PAVING (ROCK COBBLE)



APPROACH SLAB TRANSVERSE CONTACT JOINT		
APPROACH SKEW	WITH AC ROADWAY PAVEMENT	WITH PCC ROADWAY PAVEMENT
< 20°	PARALLEL TO FACE OF PN	PARALLEL TO FACE OF PN
20° - 45°	PARALLEL TO FACE OF PN USE "DETAIL A"	STAGGER LINES 24' TO 36' APART
> 45°	PARALLEL TO FACE OF PN USE "DETAIL A"	STAGGER AT EACH LANE LINE



- NOTES:**
- For details not shown, see Structure Plans. For MR < 2, adjust bar reinforcement to clear a sawcut for sealed joint, when required.
  - For drainage details, see "STRUCTURE APPROACH DRAINAGE DETAILS" sheet.
  - Longitudinal construction joints, when permitted by the Engineer, shall be located on lane lines.
  - End angle or plate at beginning of barrier transition, end of wingwall or end of structure approach as applicable.
  - For transverse contact joint with new PCC paving, refer to Standard Plan P10.
  - At the Contractor's option, approach slab transverse reinforcement may be placed parallel to paving notch. Spacing of transverse reinforcement is measured along C roadway.

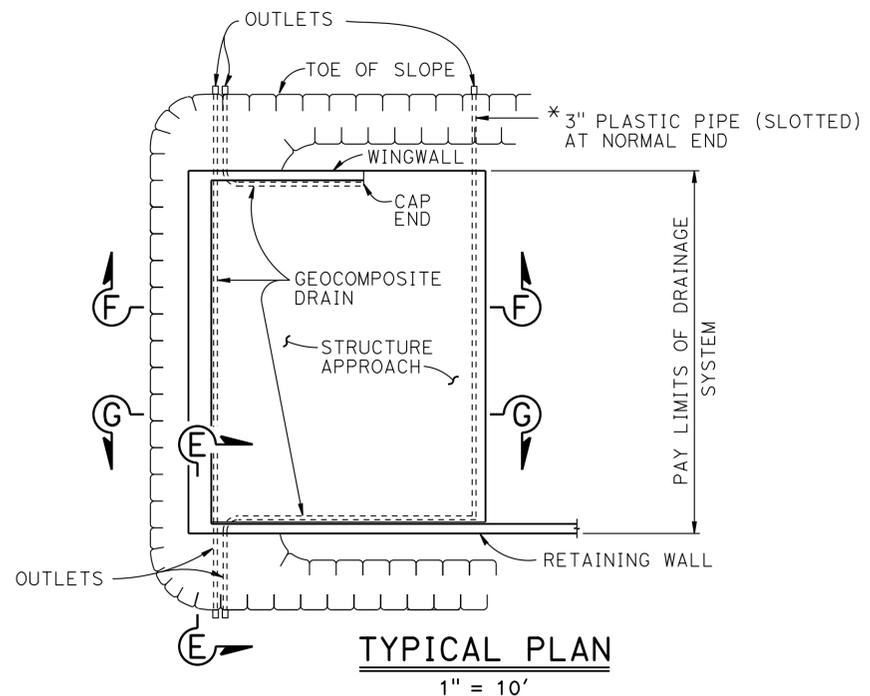
STANDARD DRAWING  
 FILE NO. **xs3-120**  
 APPROVAL DATE July 2011

DELETED DETAIL

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
 DIVISION OF ENGINEERING SERVICES

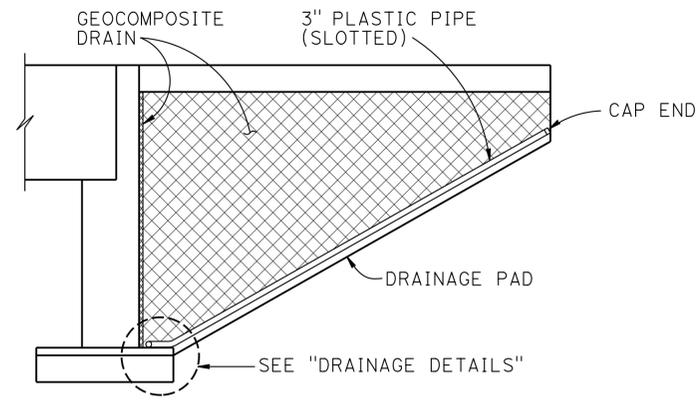
BRIDGE NO. 57-1202R  
 POST MILE 0.74  
**OTAY MESA ROAD UC**  
**STRUCTURE APPROACH TYPE N(30S)**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	301	302
			03-13-14	DATE	
REGISTERED CIVIL ENGINEER			DATE		
01-20-15			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>					

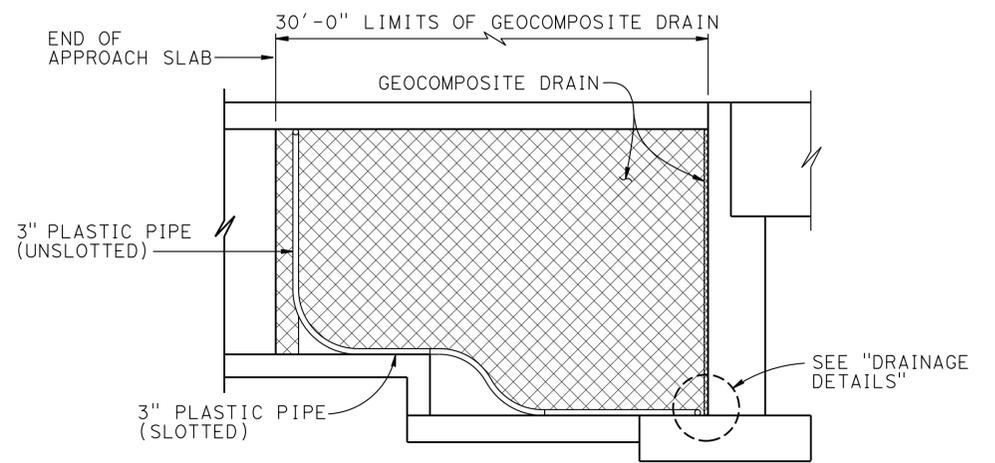


**TYPICAL PLAN**  
1" = 10'

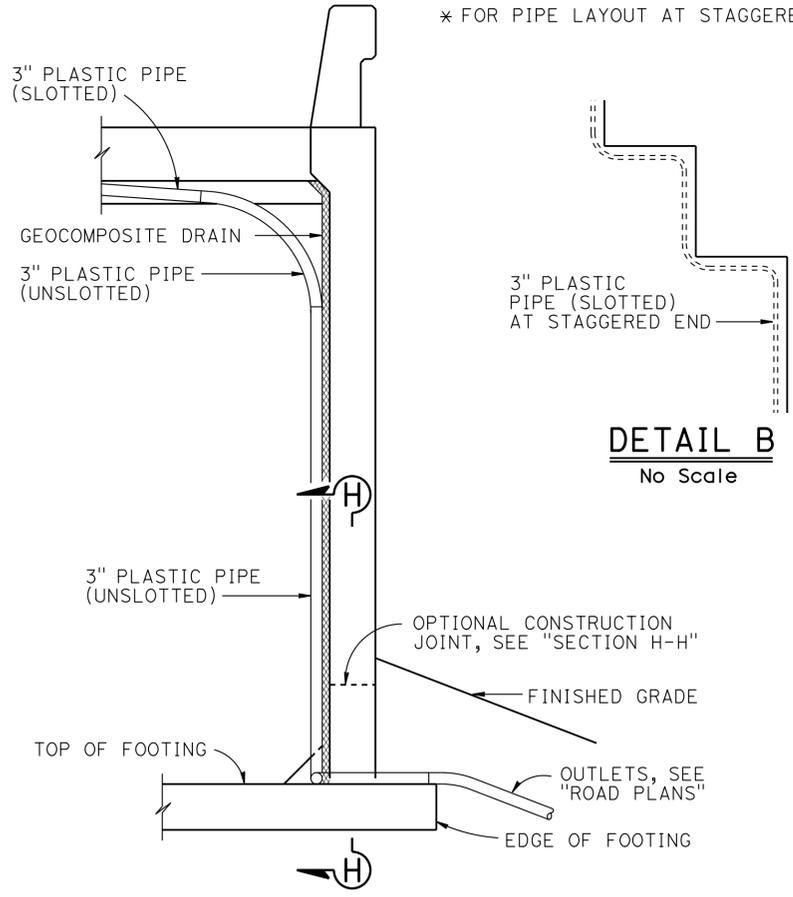
\* FOR PIPE LAYOUT AT STAGGERED END, SEE "DETAIL B"



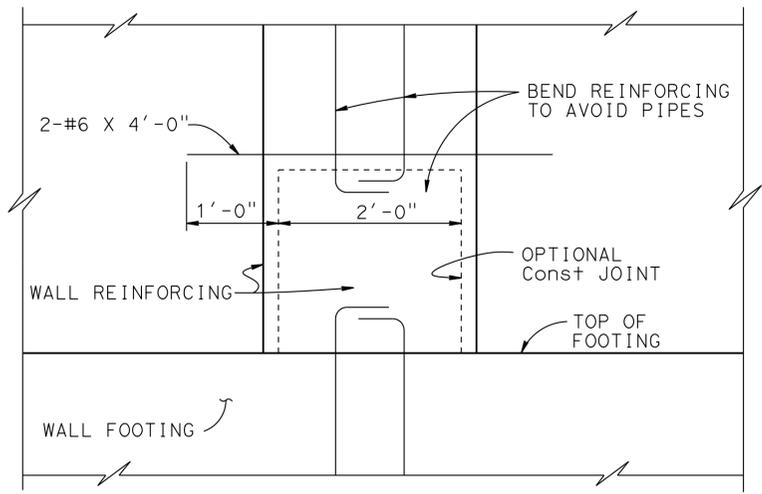
**CANTILEVER WINGWALL**  
**SECTION F-F**  
1/4" = 1'-0"



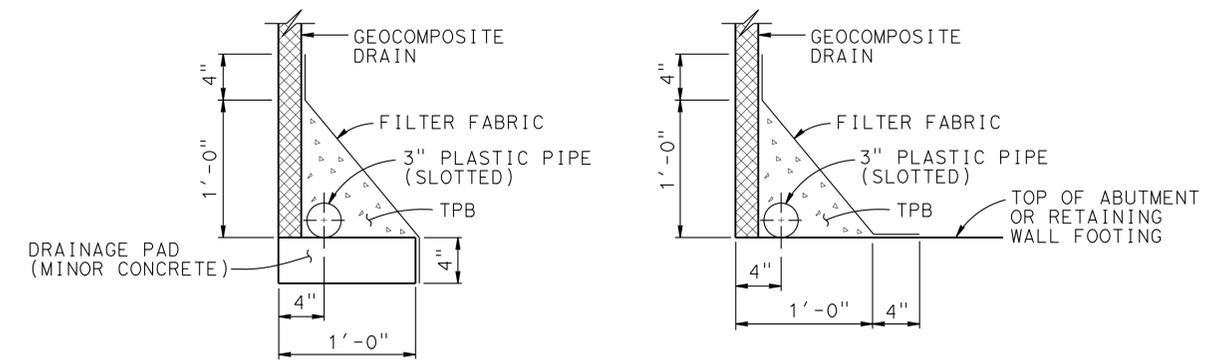
**RETAINING WALL WINGWALL DRAINAGE DETAILS**  
**SECTION G-G**  
1/4" = 1'-0"



**DETAIL B**  
No Scale



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



**WITHOUT FOOTING**      **WITH FOOTING**  
**DRAINAGE DETAILS**  
1 1/2" = 1'-0"

NOTE: Bends and junctions in 3" plastic pipe are 30" radius Min

**SECTION E-E**  
1/2" = 1'-0"

STANDARD DRAWING

FILE NO. **xs3-110**

APPROVAL DATE July 2011

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

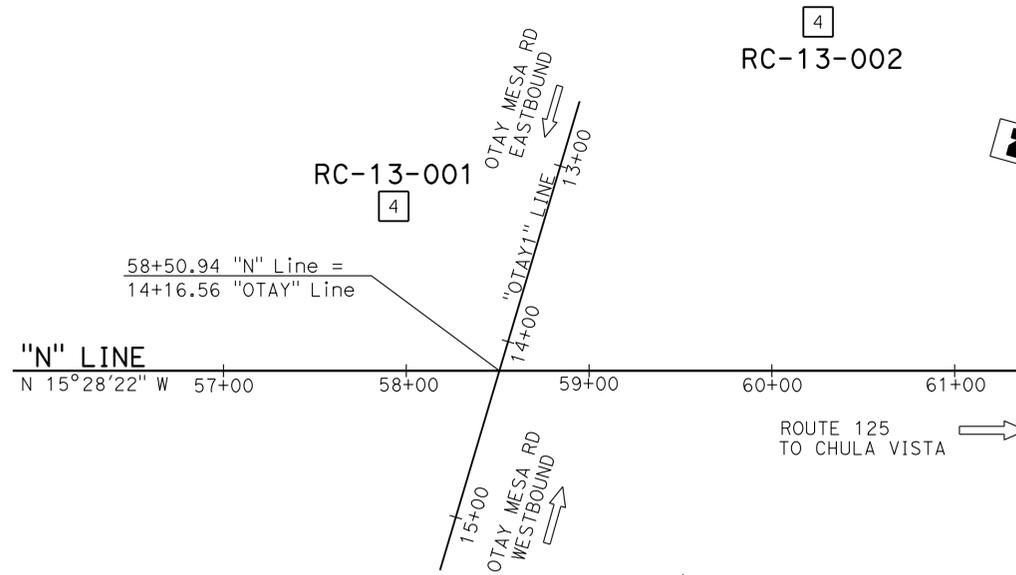
DIVISION OF ENGINEERING SERVICES

BRIDGE NO. 57-1202R  
POST MILE 0.74

OTAY MESA ROAD UC  
STRUCTURE APPROACH DRAINAGE DETAILS

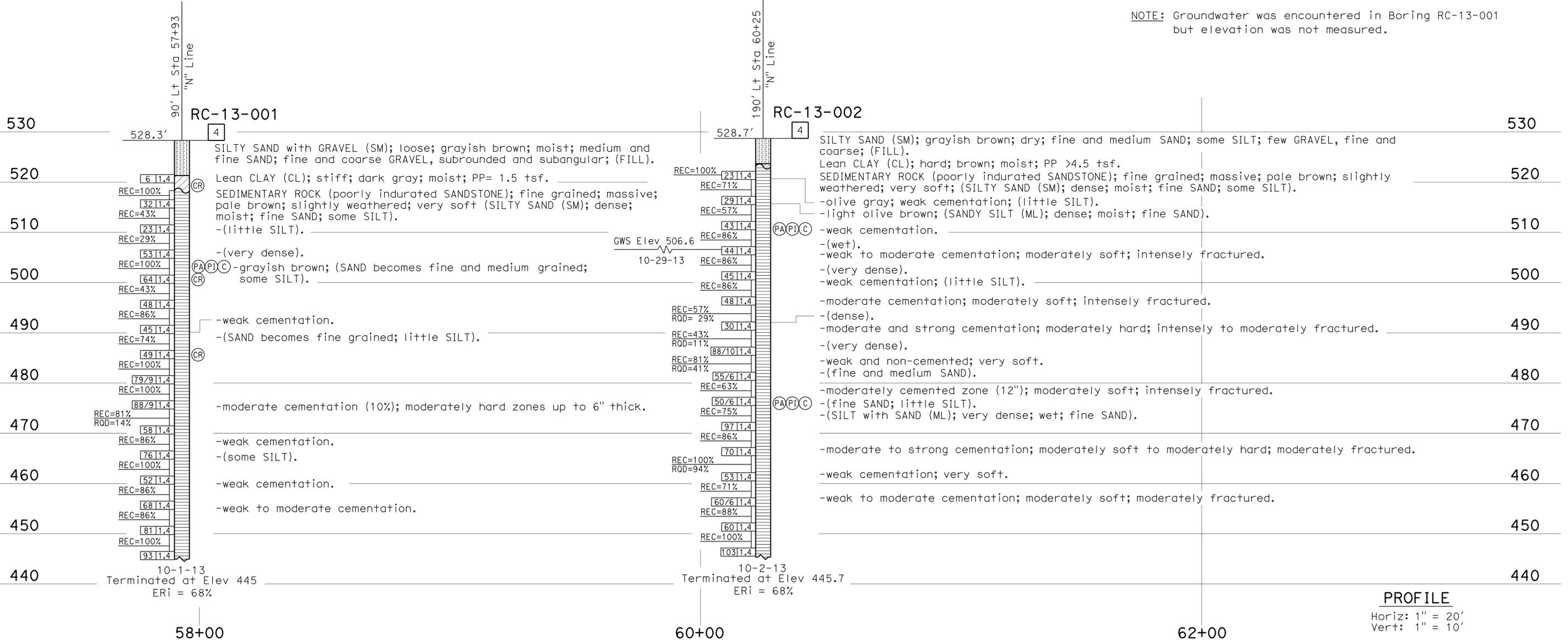
**BENCH MARK**

2013-294-704 Elev 530.12  
 Set PK&WSHR in AC raised median  
 N 1787031.42  
 E 6346006.72  
 NAVD 88



**PLAN**  
 1" = 50'

**NOTE:** Groundwater was encountered in Boring RC-13-001 but elevation was not measured.



**PROFILE**  
 Horiz: 1" = 20'  
 Vert: 1" = 10'

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	11,125, 905	Var	302	302

REGISTERED CIVIL ENGINEER DATE 1-13-14  
 01-20-15 PLANS APPROVAL DATE  
 David T-M Liao  
 No. C59838  
 Exp. 12-31-15  
 CIVIL  
 STATE OF CALIFORNIA  
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, & Presentation Manual (2010 Edition).

See 2010 Standard Plans A10F and A10G for Soil Legend, and A10H for Rock Legend.

<b>ENGINEERING SERVICES</b>		<b>MATERIALS AND GEOTECHNICAL SERVICES</b>		<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION		DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>DESIGN BRANCH 14</b>		BRIDGE NO. 57-1202R POST MILE 0.74		<b>OTAY MESA ROAD UC</b> <b>LOG OF TEST BORINGS</b>	
FUNCTIONAL SUPERVISOR NAME: M. Desalvatore		DRAWN BY: I. G-Remmen CHECKED BY: E. Neupert		FIELD INVESTIGATION BY: TM Liao		UNIT: 3643 PROJECT NUMBER & PHASE: 11130001671		CONTRACT NO.: 11-288811		DISREGARD PRINTS BEARING EARLIER REVISION DATES	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS										REVISION DATES	
0 1 2 3										01-09-13 01-13-14	
065 CIVIL LOG OF TEST BORINGS SHEET										SHEET 17 OF 17	

USERNAME => s127400 DATE PLOTTED => 29-JAN-2015 TIME PLOTTED => 10:47