

INDEX OF PLANS

SHEET No	DESCRIPTION
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11-13	PAVEMENT DELINEATION DETAILS AND QUANTITIES
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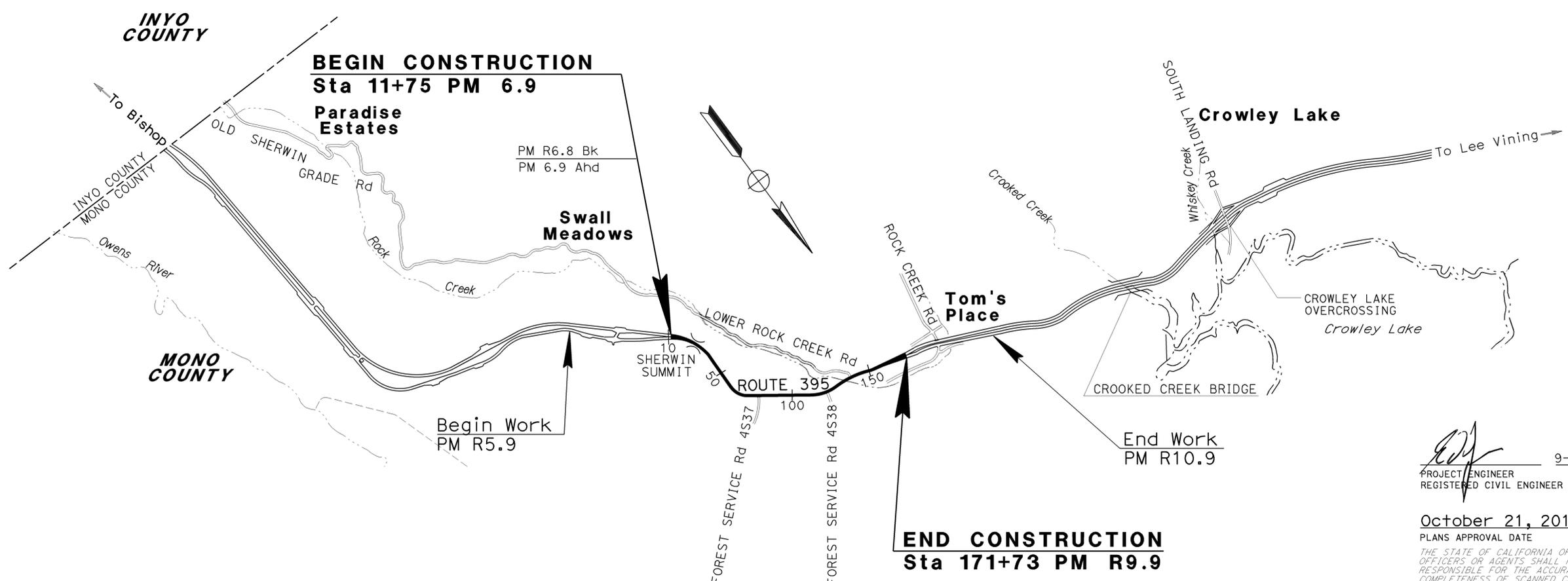
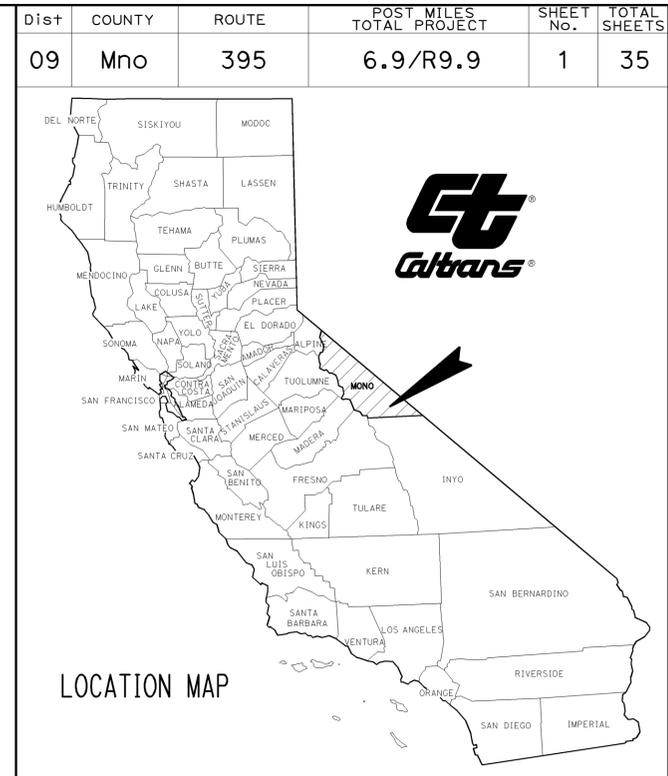
THE STANDARD PLANS LIST APPLICABLE TO THIS CONTRACT IS INCLUDED IN THE NOTICE TO BIDDERS AND SPECIAL PROVISIONS BOOK.

STATE OF CALIFORNIA **ACNHP-P395(243)E**
DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON STATE HIGHWAY

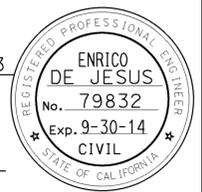
IN MONO COUNTY NEAR TOM'S PLACE FROM 2.4 MILES SOUTH OF LOWER ROCK CREEK ROAD TO 0.4 MILE SOUTH OF ROCK CREEK ROAD

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010



PROJECT MANAGER
BRIAN MCELWAIN
DESIGN ENGINEER
BRIAN WESLING

[Signature] 9-30-13
 PROJECT ENGINEER DATE
 REGISTERED CIVIL ENGINEER
October 21, 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.

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

NO SCALE

CONTRACT No.	09-353101
PROJECT ID	091200006

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mng	395	6.9/R9.9	2	35

REGISTERED CIVIL ENGINEER	DATE
ENRICO DE JESUS	9-30-13
No. 79832	
Exp. 9-30-14	
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:

- DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
- SUPERELEVATION AS SHOWN OR AS DIRECTED BY THE ENGINEER.
- EXACT DEPTH MAY VARY DEPENDING ON JOB MIX FORMULA.
- EXACT LOCATIONS AND TYPES OF HMA DIKE ARE SHOWN IN THE SUMMARY OF QUANTITIES SHEETS.
- COLD PLANE EXISTING ASPHALT RUBBER SEAL COAT PRIOR TO COLD IN-PLACE RECYCLING.

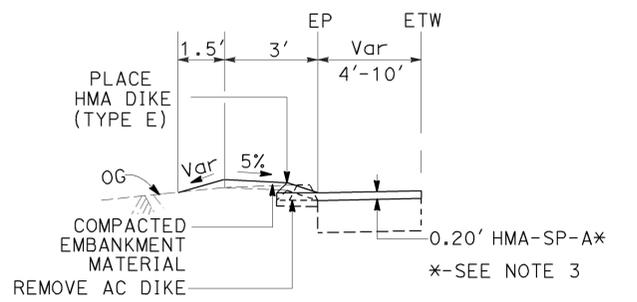
ABBREVIATIONS:

CIPR - COLD IN PLACE RECYCLING
HMA-SP-A - HOT MIX ASPHALT-SUPERPAVE (TYPE A)

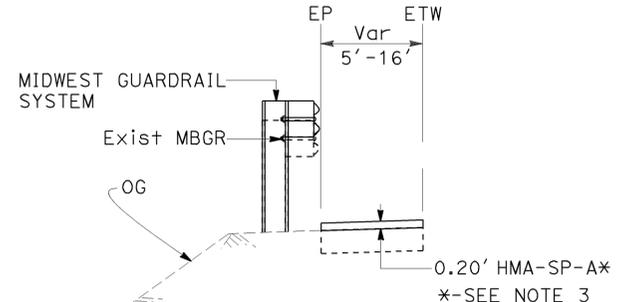
- EXISTING STRUCTURAL SECTION
Var 0.62'-0.97' AC
- EXISTING STRUCTURAL SECTION
Var 0.83'-0.88' AC

DESIGN DESIGNATION

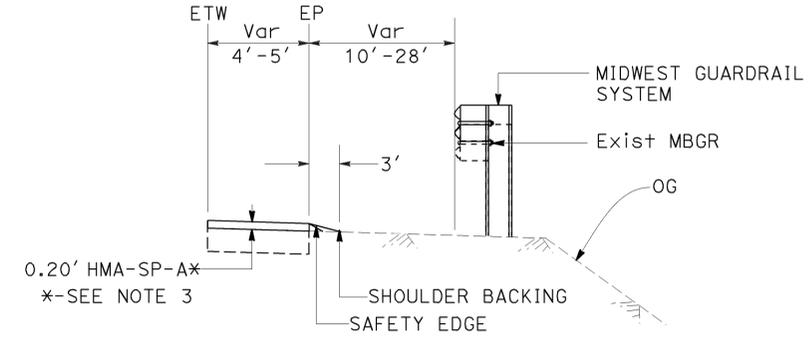
2014 AADT = 6,650 D = 82.41%
2024 AADT = 6,990 T = 12.8%
2014 DHV = 920 V = 65 mph
TI(20) = 11.0
PAVEMENT CLIMATE REGION - HIGH DESERT



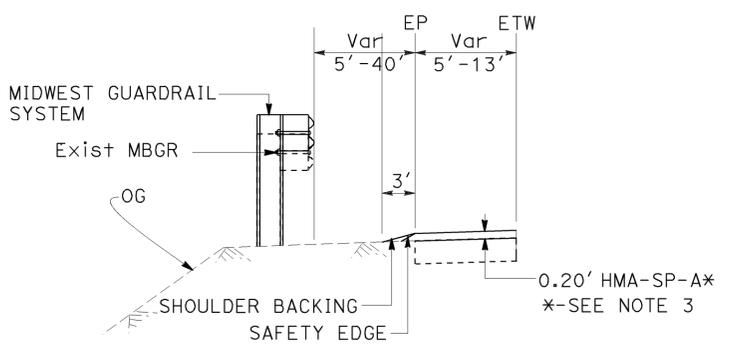
40+00 L+ TO 49+30 L+ 52+36 L+ TO 91+69 L+
153+10 L+ TO 171+73 L+



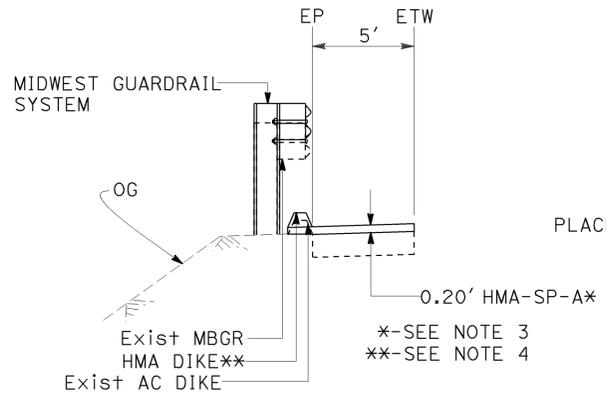
132+70 L+ TO 138+83 L+



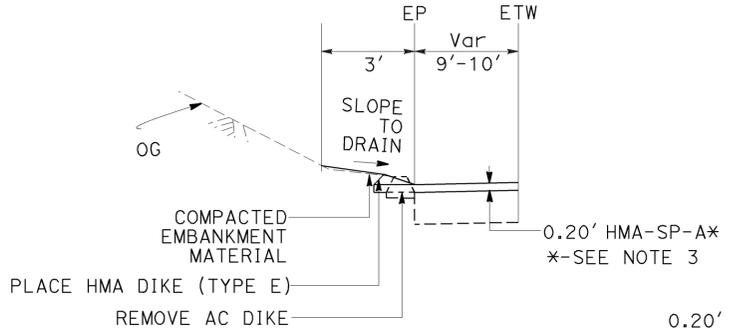
116+64 R+ TO 120+02 R+



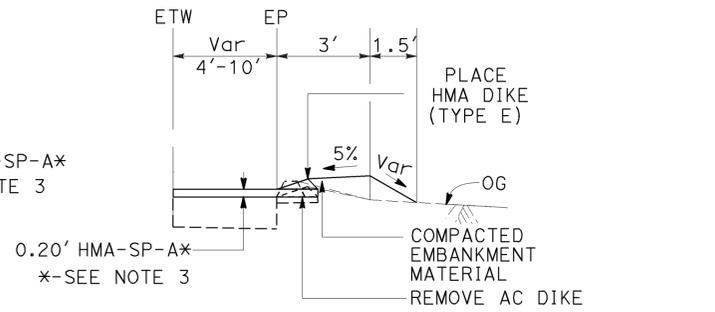
12+11 L+ TO 19+74 L+ 21+97 L+ TO 30+35 L+



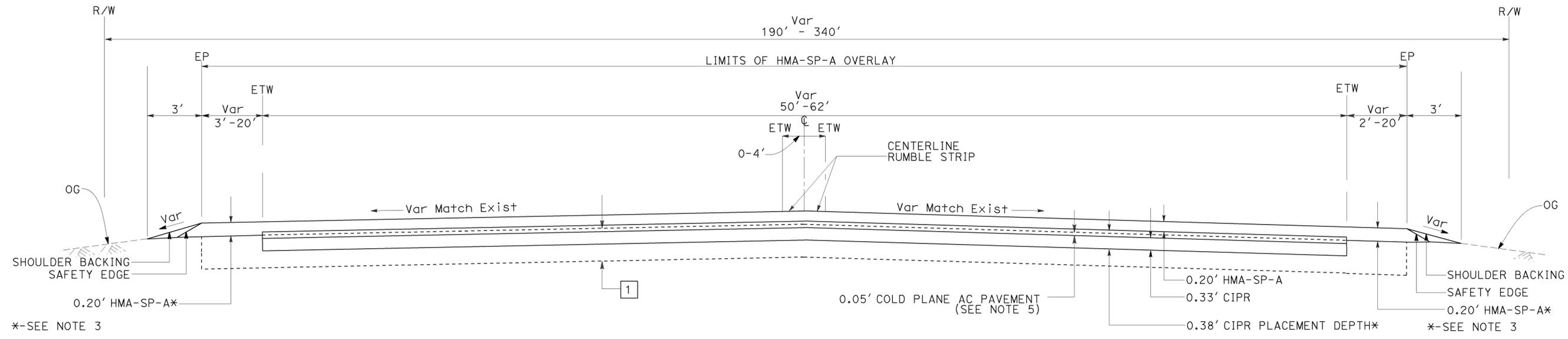
116+58 L+ TO 127+46 L+



145+45 L+ TO 151+27 L+



11+75 R+ TO 15+66 R+ 43+75 R+ TO 54+32 R+
54+80 R+ TO 59+30 R+ 85+01 R+ TO 90+16 R+
129+00 R+ TO 144+52 R+

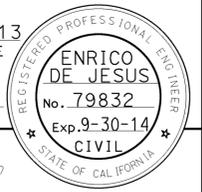


ROUTE 395
11+75 TO 165+00

TYPICAL CROSS SECTIONS
NO SCALE
X-1

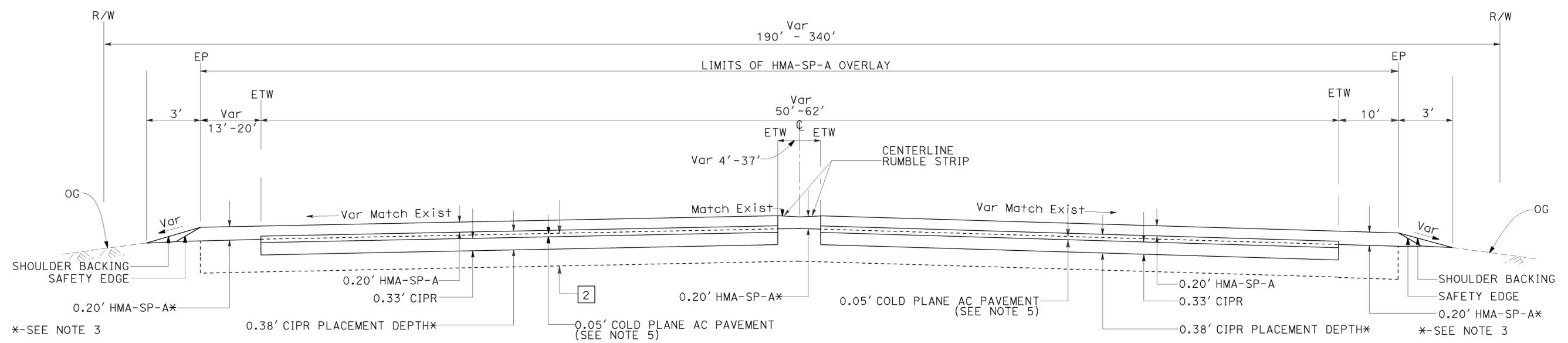
REVISOR: ENRICO DE JESUS
DESIGNER: BRIAN WESLING
CALCULATED/DESIGNED BY: ENRICO DE JESUS
CHECKED BY: BRIAN WESLING
FUNCTIONAL SUPERVISOR: BRIAN WESLING
DEPARTMENT OF TRANSPORTATION DESIGN
STATE OF CALIFORNIA - Caltrans

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mng	395	6.9/R9.9	3	35
			9-30-13	REGISTERED CIVIL ENGINEER DATE	
			10-21-13	PLANS APPROVAL DATE	



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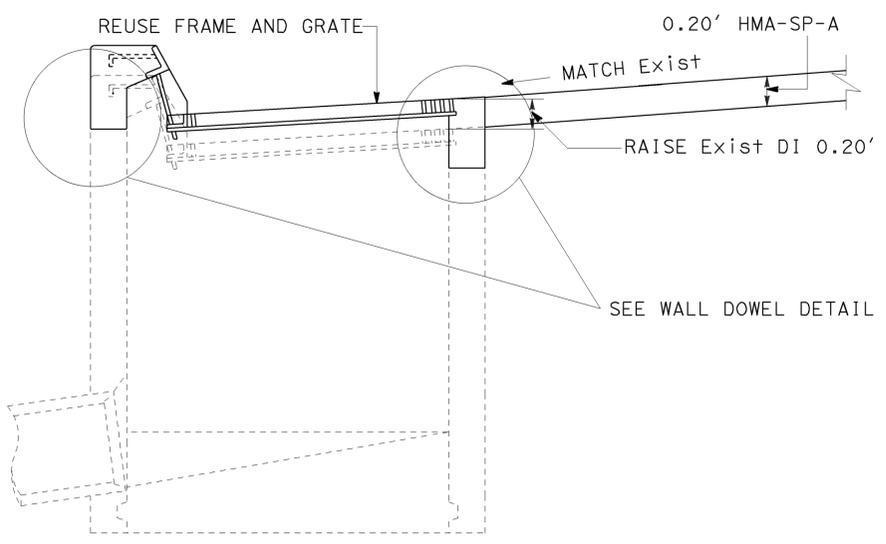
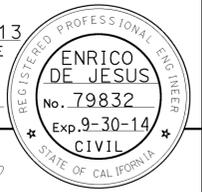
ENRICO DE JESUS	REVISOR	ENRICO DE JESUS
BRIAN WESLING	DATE	
CALCULATED/DESIGNED BY	CHECKED BY	
BRIAN WESLING	BRIAN WESLING	
FUNCTIONAL SUPERVISOR		
BRIAN WESLING		
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION		
Caltrans		
DESIGN		



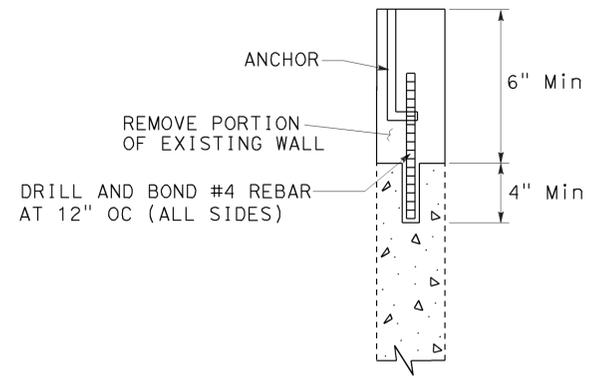
ROUTE 395
165+00 TO 171+73

TYPICAL CROSS SECTIONS
NO SCALE
X-2

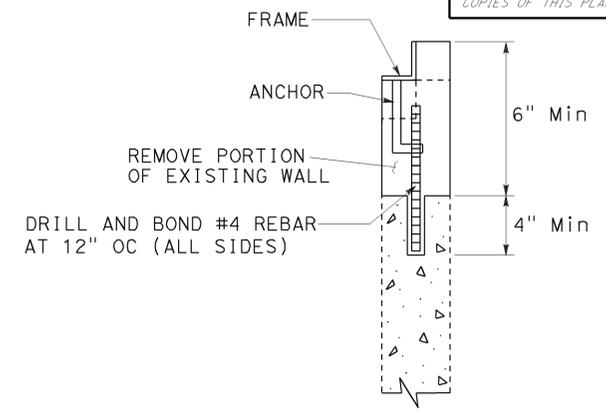
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mng	395	6.9/R9.9	5	35
			9-30-13	REGISTERED CIVIL ENGINEER DATE	
			10-21-13	PLANS APPROVAL DATE	
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



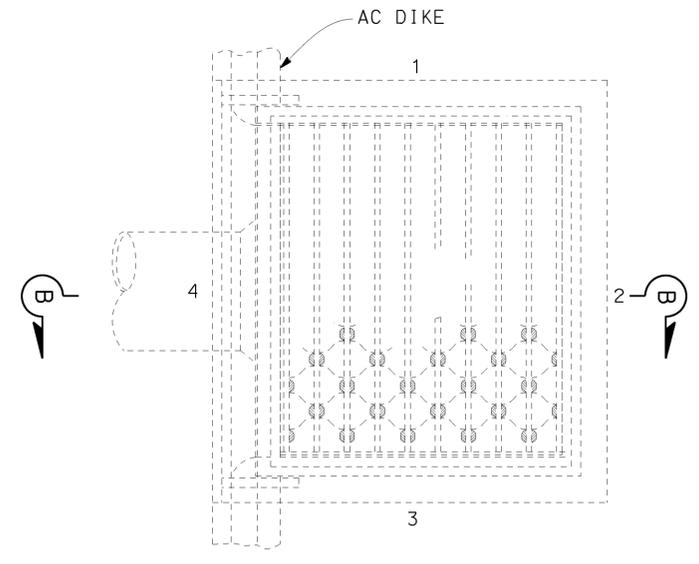
**SECTION B-B
ADJUST INLET
GRATE DRAIN INLET**
Sta 121+06 Lt, 126+63 Lt, 137+15 Rt



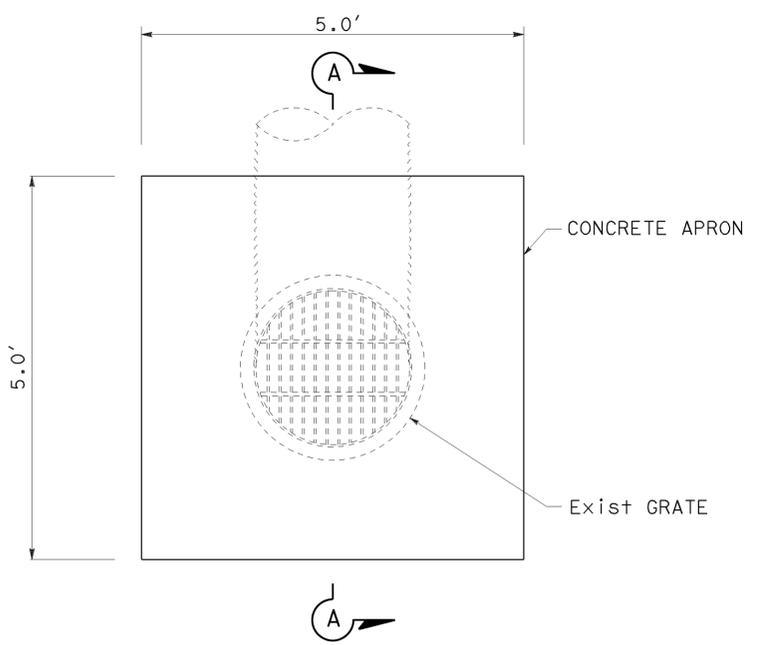
**ADJUST INLET
(SEE SIDE 4 OF PLAN VIEW)
GRATE DRAIN INLET
WALL DOWEL DETAIL**
Sta 121+06 Lt, 126+63 Lt, 137+15 Rt



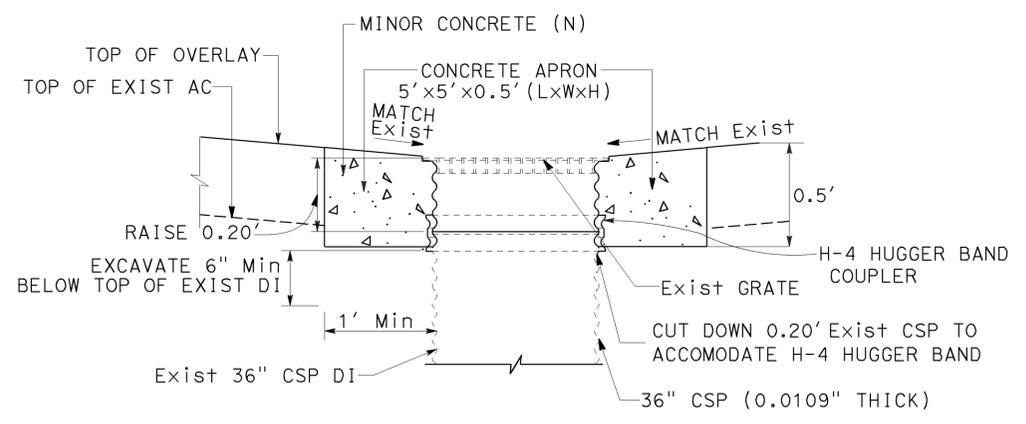
**ADJUST INLET
(SEE SIDES 1, 2 AND 3 OF PLAN VIEW)
GRATE DRAIN INLET
WALL DOWEL DETAIL**
Sta 121+06 Lt, 126+63 Lt, 137+15 Rt



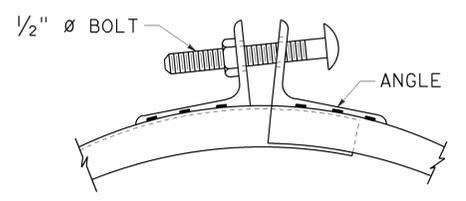
**PLAN
ADJUST INLET**
Sta 121+06 Lt, 126+63 Lt, 137+15 Rt



**PLAN
ADJUST INLET**
STA 170+69 Median



SECTION A-A

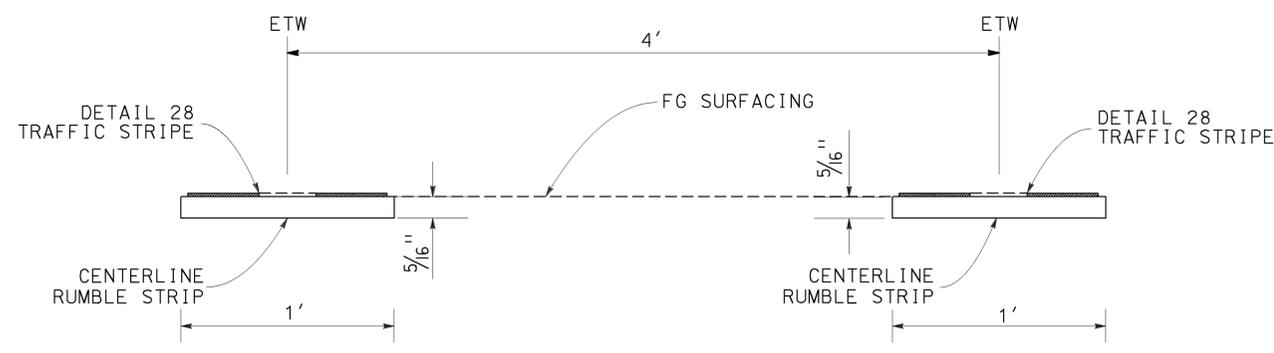


BOLT DETAIL

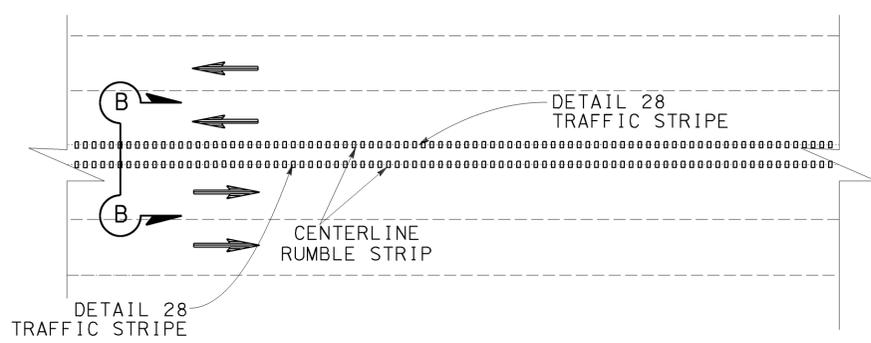
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
DESIGN
FUNCTIONAL SUPERVISOR: BRIAN WESLING
REVISOR: ENRICO DE JESUS, BRIAN WESLING
DATE: 9-30-13, 10-21-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mng	395	6.9/R9.9	7	35
			9-30-13	REGISTERED CIVIL ENGINEER DATE	
			10-21-13	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>					

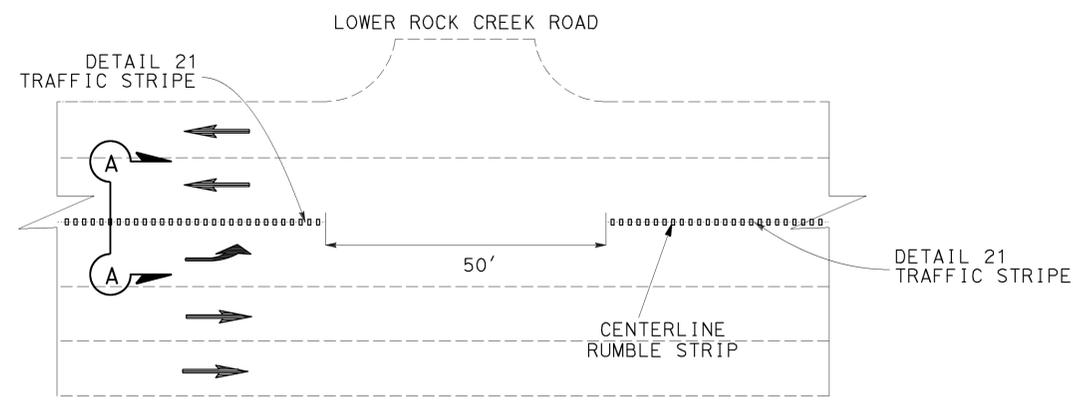
- NOTES:**
- FOR ADDITIONAL RUMBLE STRIP DETAILS SEE A40B OF THE STANDARD PLANS.
 - FOG SEAL COAT APPLIED TO THE GROUND AREAS SHALL NOT COVER THE EXISTING TRAFFIC STRIPE.
 - PAINT TRAFFIC STRIPE (1-COAT) FOR DETAIL 28 PRIOR TO GRINDING THE CENTERLINE RUMBLESTRIP.



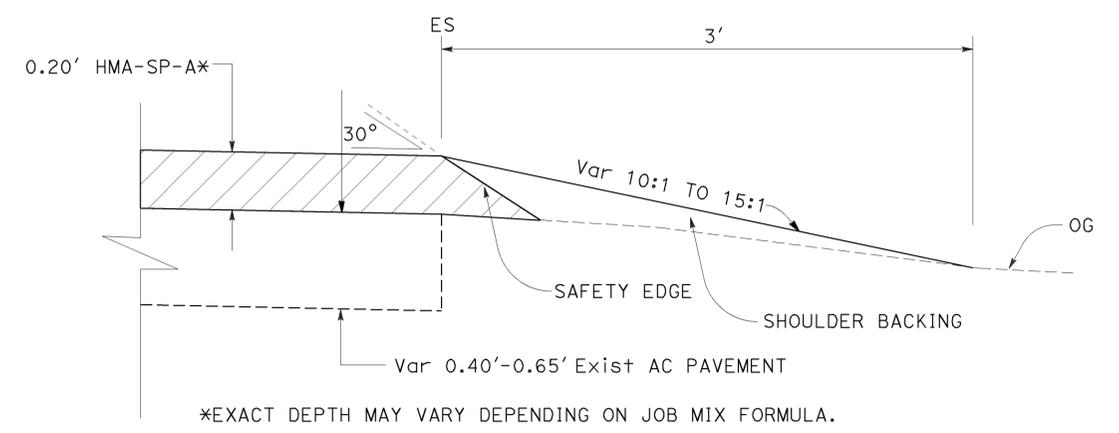
SECTION B-B



RUMBLE STRIP AT MEDIAN

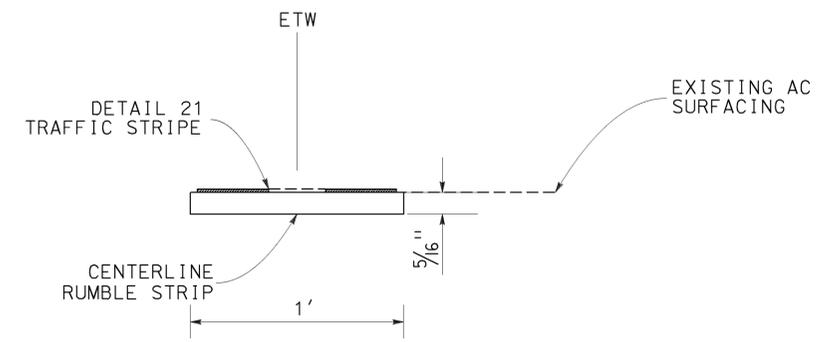


**STA 138+73
RUMBLE STRIP AT LOWER ROCK CREEK ROAD**



*EXACT DEPTH MAY VARY DEPENDING ON JOB MIX FORMULA.

SHOULDER BACKING DETAIL (TYPICAL)

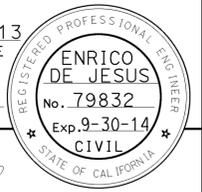


SECTION A-A

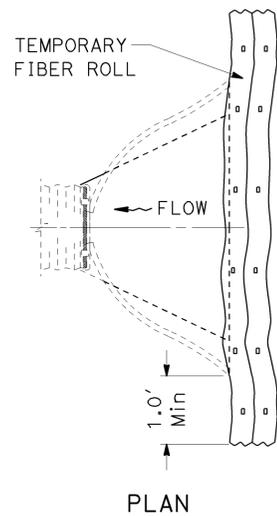
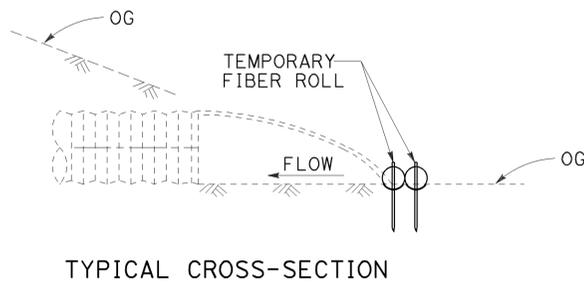
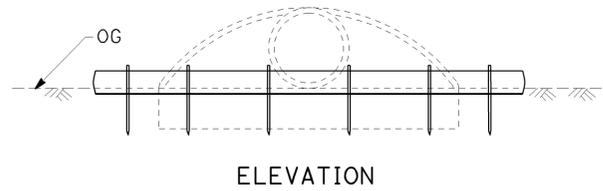
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN
 FUNCTIONAL SUPERVISOR: BRIAN WESLING
 CALCULATED/DESIGNED BY: ENRICO DE JESUS
 CHECKED BY: BRIAN WESLING
 REVISED BY: ENRICO DE JESUS
 DATE REVISED: BRIAN WESLING

LAST REVISION | DATE PLOTTED => 21-OCT-2013
 10-01-13 | TIME PLOTTED => 14:34

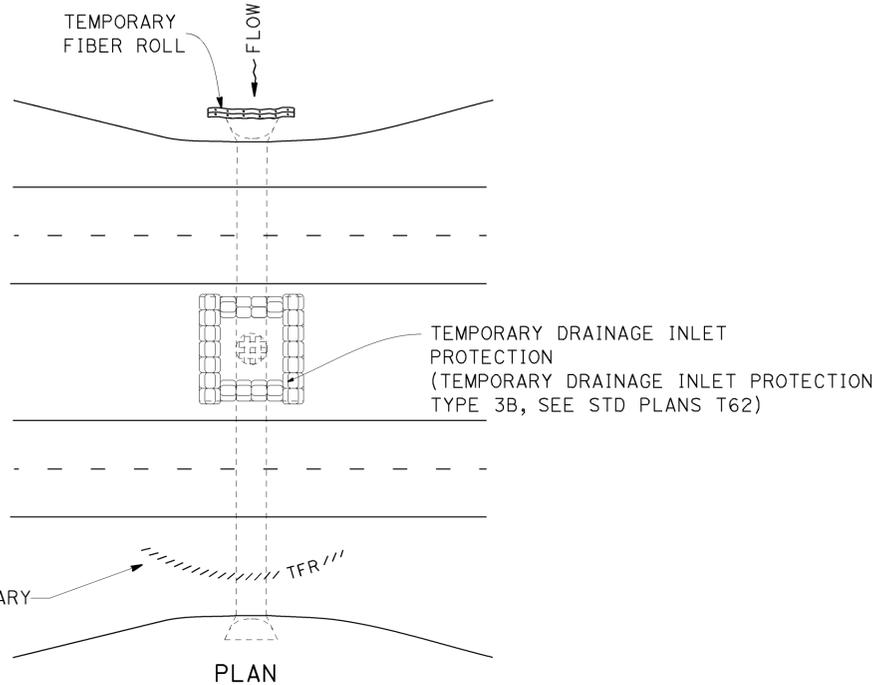
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mng	395	6.9/R9.9	8	35
			9-30-13	REGISTERED CIVIL ENGINEER DATE	
			10-21-13	PLANS APPROVAL DATE	
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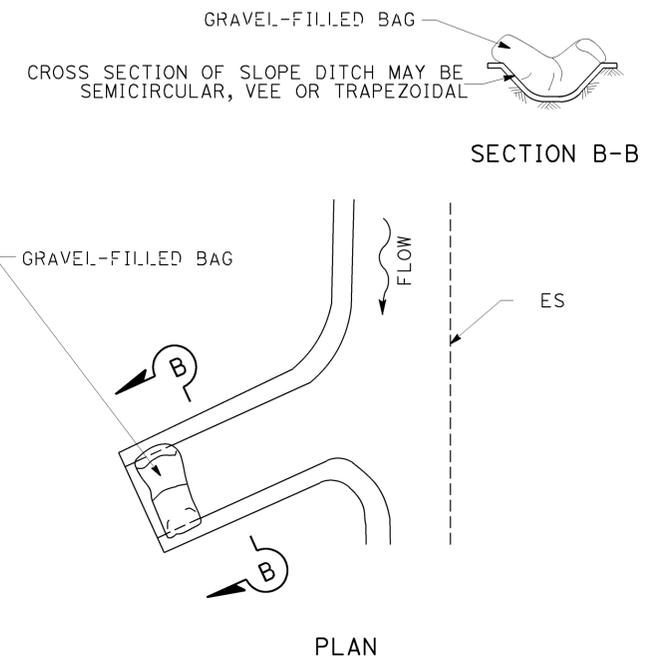
NOTE:
EXACT LOCATION AND POSITION OF TEMPORARY DRAINAGE PROTECTION AS APPROVED BY THE ENGINEER.



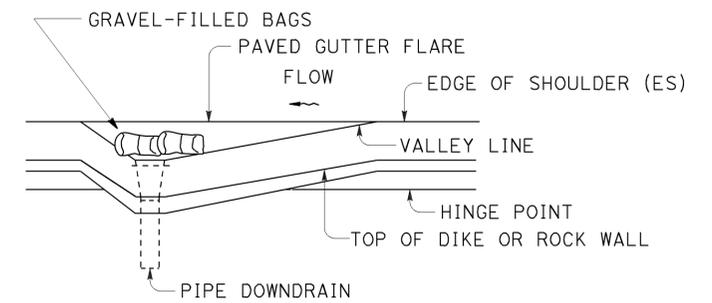
**TEMPORARY FIBER ROLL
(DRY CULVERT INLET)**



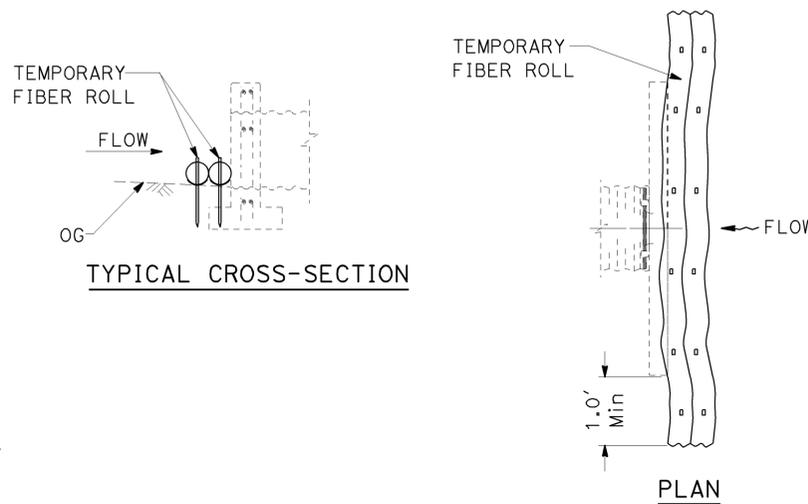
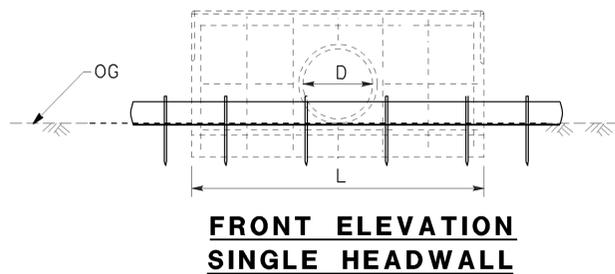
**TEMPORARY FIBER ROLL
TEMPORARY DRAINAGE INLET PROTECTION AT MEDIAN
(DRY CULVERT INLET)
STA 170+69**



**TEMPORARY GRAVEL BAG BERM
AT ASPHALT CONCRETE OVERSIDE
DRAIN (TYPICAL)**



**TEMPORARY GRAVEL BAG BERM
AT PIPE DOWNDRAIN (TYPICAL)**

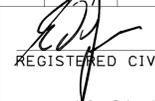


**TEMPORARY WATER POLLUTION
CONTROL DETAILS
NO SCALE
WPCD-1**

APPROVED FOR TEMPORARY WATER POLLUTION CONTROL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
ENRICO DE JESUS
BRIAN WESLING
BRIAN WESLING
DESIGN

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mng	395	6.9/R9.9	12	35


 9-30-13
 REGISTERED CIVIL ENGINEER DATE

10-21-13
 PLANS APPROVAL DATE

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PAINT PAVEMENT MARKING (2-COAT)														
STATION	SIDE		TYPE V ARROW		TYPE III (L) ARROW		LIMIT LINE		STOP		TYPE III (R) ARROW		CATTLE GUARD	
	L+	R+	EA (N)	SQFT	EA (N)	SQFT	EA (N)	SQFT	EA (N)	SQFT	EA (N)	SQFT	EA (N)	SQFT
11+80	X		2	66										
13+10	X		2	66										
14+39	X	X											1	349
138+20		X			1	42								
138+80	X						1	20	1	22				
140+80	X										1	42		
165+00		X	2	66										
166+50		X	2	66										
166+00	X		2	66										
166+80	X		2	66										
SUB-TOTAL				396		42		20		22		42		349
TOTAL														871

PAINT TRAFFIC STRIPE (2-COAT)					
STATION TO STATION (LOCATION)	DETAIL No.				
	11 LF	21 LF	27B LF	28 LF	38A LF
11+75 TO 171+73	31,996	395	30,612	31,006	600
TOTAL	94,609				

TEMPORARY TRAFFIC STRIPE (PAINT)					
STATION TO STATION (LOCATION)	DETAIL No.				
	11 LF	21 LF	27B LF	28 LF	38A LF
11+75 TO 171+73	31,996	395	30,612	31,006	600
TOTAL	94,609				

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 ENRICO DE JESUS
 BRIAN WESLING
 BRIAN WESLING
 DESIGN

PAVEMENT DELINEATION QUANTITIES
 NO SCALE
PDQ-1

LAST REVISION | DATE PLOTTED => 21-OCT-2013
 09-30-13 | TIME PLOTTED => 14:34

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mng	395	6.9/R9.9	13	35

9-30-13
 REGISTERED CIVIL ENGINEER DATE
 10-21-13
 PLANS APPROVAL DATE

ENRICO DE JESUS
 No. 79832
 Exp. 9-30-14
 CIVIL

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

DELINEATOR (SPECIAL), OBJECT MARKER

STA	SIDE		DELINEATOR (SPECIAL)			OBJECT MARKER			STA	SIDE		DELINEATOR (SPECIAL)			OBJECT MARKER			STA	SIDE		DELINEATOR (SPECIAL)			OBJECT MARKER		
	L+	R+	TYPE E	TYPE F	TYPE L-1	EA	EA	EA		L+	R+	TYPE E	TYPE F	TYPE L-1	EA	EA	EA		L+	R+	TYPE E	TYPE F	TYPE L-1	EA	EA	EA
										EA	EA								EA	EA						
12+00	X	X		2					57+00	X	X	2						132+52	X	X	2					
13+25	X	X		2					59+50	X	X	2						133+50	X	X	2					
14+08		X		1					62+00	X	X	2						134+47	X	X	2					
14+13		X		1					63+25	X	X	2						135+44	X	X	2					
14+32		X					1		64+50	X	X	2						136+42	X	X	2					
14+43	X						1		65+75	X	X	2						137+00	X						1	
14+50	X	X		2					67+00	X	X	2						137+39	X	X	2					
14+60		X		1					68+25	X	X	2						137+50	X					1		
14+65		X		1					69+50	X	X	2						138+00	X					1		
15+66		X					1		70+75	X	X	2						138+36	X	X	2					
15+75	X	X		2					72+00	X	X	2						139+33	X	X	2					
17+00	X	X	2						73+25	X	X	2						139+50	X		1					
18+25	X	X	2						74+50	X	X	2						140+00	X					1		
19+00	X						1		75+75	X	X	2						140+31	X	X	2					
19+50	X	X	2						77+00	X	X	2						140+50			X					
20+75	X	X	2						79+50	X	X	2						140+70		X					1	
22+00	X	X	2						82+00	X	X	2						141+28	X	X	2					
23+00		X		1					84+50	X	X	2						142+25	X	X	2					
23+25	X	X	2						85+00	X					1		144+20	X	X	2						
23+32		X		1					85+00		X				1		145+23	X	X	2						
24+50	X	X	2						87+00	X	X	2					145+45	X						1		
25+50	X						1		89+50	X	X	2					147+63	X	X	2						
25+54		X		1					90+16		X				1		148+82	X	X	2						
25+75	X	X	2						91+70	X					1		150+01	X	X	2						
27+00	X	X	2						92+00	X	X	2					151+20	X	X	2						
28+25	X	X	2						94+50	X	X	2					151+27	X						1		
29+50	X	X	2						97+00	X	X	2					152+39	X	X	2						
30+75	X	X	2						99+50	X	X	2					153+10	X						1		
32+00	X	X	2						102+00	X	X	2					153+59	X	X	2						
33+25	X	X	2						104+50	X	X	2					154+78	X	X	2						
34+50	X	X	2						107+00	X	X	2					155+97	X	X	2						
35+75	X	X	2						109+50	X	X	2					157+16	X	X	2						
37+00	X	X	2						112+00	X	X	2					157+60		X				1			
38+25	X	X	2						113+92	X	X	2					158+35	X	X	2						
39+50	X	X	2						116+09	X	X	2					158+58		X				1			
40+20		X		1					116+95		X				1		159+54	X	X	2						
40+84		X		1					117+18	X	X	2					161+94	X	X	2						
42+00	X	X	2						118+27	X	X	2					163+35		X				1			
42+40		X		1					119+35	X	X	2					164+34		X				1			
43+75		X					1		120+44	X	X	2					164+50	X	X				2			
44+05	X						1		121+53	X	X	2					167+00	X	X				2			
44+50	X	X	2						122+62	X	X	2					169+50	X	X				2			
47+00	X	X	2						123+71	X	X	2					SUBTOTAL Col 3			51		13			5	
49+30	X						1		124+79	X	X	2					SUBTOTAL Col 2			86		-			7	
49+50	X	X	2						125+88	X	X	2					SUBTOTAL Col 1			50		18			11	
51+10		X					1		126+66	X					1		TOTAL			187		31			23	
52+00	X	X	2						128+05	X	X	2														
52+36	X						1		129+00		X				1											
54+50	X	X	2						129+60	X	X	2														
54+80		X					1		131+55	X	X	2														
SUBTOTAL Col 1			50		18		11		SUBTOTAL Col 2			86		-		7		TOTAL						218		23

(N) - Not a separate pay item - for information purposes only.

REMOVE DELINEATOR	
STATION TO STATION	EA
11+75 TO 171+00	240
TOTAL	240

REMOVE MARKER	
STATION TO STATION	EA
11+75 TO 171+00	25
TOTAL	25

MILEPOST MARKER				
STATION	SIDE		MILEPOST MARKER	MESSAGE
	L+	R+	EA	
14+38	X		1	395 Mno 6.92Ahd
14+38	X		1	395 Mno R6.774Bk
18+61		X	1	395 Mno 7.0
45+00	X		1	395 Mno 7.5
71+41		X	1	395 Mno 8.0
97+80	X		1	395 Mno 8.5
124+20		X	1	395 Mno 9.0
150+60	X		1	395 Mno 9.5
TOTAL			8	

PAVEMENT DELINEATION QUANTITIES

NO SCALE PDQ-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 ENRICO DE JESUS
 BRIAN WESLING
 BRIAN WESLING
 DESIGN

ABBREVIATIONS:

HMA-SP-A -HOT MIX ASPHALT-SUPERPAVE (TYPE A)

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mng	395	6.9/R9.9	14	35

9-30-13
 REGISTERED CIVIL ENGINEER DATE
 10-21-13
 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.

ROADWAY QUANTITIES

	STATION TO STATION	COLD IN-PLACE RECYCLING	EMULSIFIED RECYCLING AGENT (COLD IN-PLACE RECYCLING)	ASPHALTIC EMULSION (COLD IN-PLACE RECYCLING)	SAND COVER (COLD IN-PLACE RECYCLING)	HMA-SP-A	TACK COAT	SHOULDER BACKING	COLD PLANE ASPHALT CONCRETE PAVEMENT	CEMENT (COLD IN-PLACE RECYCLING)
		SQYD	TON	TON	TON	TON	TON	TON	SQYD	TON
	11+75 TO 171+73	97,800	790	57	105	15,515.0	55	900	97,800	210
	SAFETY EDGE					44.0				
	HMA DIKE*					312.0				
	PLACE HMA (Misc AREA)					11.3				
	TOTAL	96,300	790	57	105	15,882.3	55	900	97,800	210

HOT MIX ASPHALT DIKE AND OVSIDE DRAIN

STATION TO STATION	L+	R+	REMOVE AC DIKE	PLACE HMA DIKE (TYPE E)		PLACE HMA DIKE (TYPE C)		PLACE HMA DIKE (TYPE F)		HMA-SP-A	PLACE HMA (Misc AREA)		REMOVE AC OVSIDE DRAIN	HMA OVSIDE DRAIN	HMA OVSIDE DRAIN LENGTH	ROADWAY EXCAVATION	EMBANKMENT	IMPORTED BORROW
			LF	LF	TON***	LF	TON***	LF	TON***	TON*	SQYD**	TON**	EA	EA (N)	LF (N)	CY	CY (N)	CY
11+75 TO 15+66		X	391	391	10.6					11.3	8.5	1.3	1	1	10	3.0	18.3	15.3
40+00 TO 49+30	X		930	930	23.7					24.6	5.0	0.9				11.7	57.0	45.3
43+75 TO 54+32		X	1,057	1,057	26.9					28.2	8.5	1.3	1	1	10	22.0	71.6	49.6
52+36 TO 91+69	X		1,471	3,933	100.0					102.6	17.0	2.6	2	2	10,10	81.8	237.5	155.7
54+80 TO 59+30		X	450	450	11.5					11.5						8.9	25.2	16.3
85+01 TO 90+16		X	475	515	13.1					14.4	8.5	1.3	1	1	10	6.2	16.6	10.4
116+33 TO 116+96	X					62.5	0.5			0.5								
116+96 TO 127+08	X		1012.5					1012.5	13.2	13.2								
127+08 TO 127+71	X					62.5	0.5			0.5								
129+00 TO 144+52		X	1,552	1,552	39.5					40.8	8.5	1.3	1	1	10	32.0	114.0	82.0
145+45 TO 151+27	X		582	582	14.8					16.1	8.5	1.3	1	1	10	10.0	-	-
153+10 TO 171+73	X		1,863	1,863	47.4					48.7	8.5	1.3	1	1	10	33.0	83.3	50.3
TOTAL			9,796	11,273		125		1012.5		312	73	11.3	8			208.6	623.5	424.9

- * THIS QUANTITY IS FOR HMA OVSIDE DRAINS, VALLEY GUTTER AT PIPE DOWNDRAINS AND PLACE HMA DIKES.
- ** THIS QUANTITY IS FOR AREA FOR HMA OVSIDE DRAINS AND VALLEY GUTTER AT PIPE DOWNDRAINS.
- (N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.
- *** QUANTITY INCLUDED IN ROADWAY QUANTITIES TABLE.

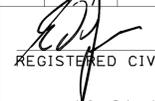
SAFETY EDGE

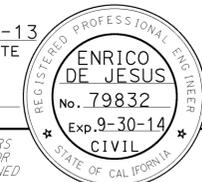
STATION TO STATION	SIDE	SAFETY EDGE LF (N)	HMA-A TON***
11+75 TO 171+73	L+	5,270	13.7
	R+	11,640	30.3
TOTAL		16,910	44.0

SUMMARY OF QUANTITIES
NO SCALE **Q-1**



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mng	395	6.9/R9.9	15	35


 9-30-13
 REGISTERED CIVIL ENGINEER DATE
 10-21-13
 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.

MIDWEST GUARDRAIL SYSTEM											
RUN	STATION TO STATION	SIDE		RAIL COUNT	LENGTH	REMOVE GUARDRAIL	MIDWEST GUADRAIL SYSTEM (STEEL POST)	MIDWEST GUADRAIL SYSTEM (8' STEEL POST)	ALTERNATIVE FLARED TERMINAL SYSTEM	BURIED POST END ANCHOR	TREATED WOOD WASTE
		LT	RT	EA (N)	FT (N)	FT	LF	LF	EA	EA (N)	LB
1	12+11 TO 12+49	X		3	37.5'	37.5				1	8,448
	12+49 TO 16+74	X		34	425'	425	425				
	16+74 TO 17+86	X		9	112.5'	112.5		112.5			
	17+86 TO 19+74	X		15	187.5'	187.5	187.5		1		
2	21+97 TO 23+85	X		15	187.5'	187.5	187.5			1	9,272
	23+85 TO 25+48	X		13	162.5'	162.5		162.5			
	25+48 TO 30+35	X		39	487.5'	487.5	487.5		1		
3	116+58 TO 116+96	X		3	37.5'	37.5			1		12,017
	116+96 TO 119+90	X		23	287.5'	287.5	287.5				
	119+90 TO 120+52	X		5	62.5'	62.5		62.5			
	120+52 TO 127+08	X		53	662.5'	662.5	662.5				
4	116+64 TO 119+64		X	24	300'	300	300			1	3,781
	119+64 TO 120+02		X	3	37.5'	37.5			1		
5	132+70 TO 133+08	X		3	37.5'	37.5			1		6,801
	133+08 TO 138+20	X		41	512.5'	512.5	512.5				
	138+20 TO 138+46	X		2	25'	25		25			
	138+46 TO 138+83	X		3	37.5'	37.5			1		
TOTAL						3,637.5	3,050	362.5	6	-	40,319

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

RUMBLE STRIP				
STATION TO STATION	LENGTH (N)	CENTERLINE RUMBLE STRIP	PAINT TRAFFIC STRIPE (1- COAT) DETAIL 28	PAINT TRAFFIC STRIPE (1- COAT) DETAIL 21
			LF	LF
11+75 TO 136+65	12,490	249.80	24,980	
136+65 TO 141+60	495	4.95		495
141+60 TO 171+73	3,013	60.26	6,026	
SUBTOTAL		315.01	31,006	495
TOTAL		315.01	31,501	

ADJUST INLET			
STATION	EA	SIDE	
		L+	R+
121+06	1	X	
126+63	1	X	
137+15	1		X
170+69 (MEDIUM INLET)	1		
TOTAL	4		

NOTE: PLACE DETAILS 21 AND 28 PAINT TRAFFIC STRIPE (1-COAT) PRIOR TO CONSTRUCTING CENTERLINE RUMBLE STRIP.

SUMMARY OF QUANTITIES

NO SCALE **Q-2**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN
 FUNCTIONAL SUPERVISOR: BRIAN WESLING
 CALCULATED/DESIGNED BY: J NASH/ENRICO DE JESUS
 CHECKED BY: BRIAN WESLING
 REVISED BY: [] DATE: []
 REVISIONS: []

LAST REVISION | DATE PLOTTED => 21-OCT-2013
 09-30-13 TIME PLOTTED => 14:34

	M	
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	
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	
	O	
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	
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	

	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	
	Q	
Qty	QUANTITY	
	R	
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	
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	
	U	
UC	UNDERCROSSING	
UD	UNDERDRAIN	
UG	UNDERGROUND	
UON	UNLESS OTHERWISE NOTED	
UP	UNDERPASS	
	V	
V	VALVE, DESIGN SPEED	
Var	VARIABLE, VARIES	
VC	VERTICAL CURVE	
VCP	VITRIFIED CLAY PIPE	
Vert	VERTICAL	
Via	VIADUCT	
Vol	VOLUME	
	W	
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	
X Sec	CROSS SECTION	
Xing	CROSSING	
	Y	
Yr	YEAR	
Yrs	YEARS	

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mno	395	6.9/R9.9	16	35

Grace M. Tsushima
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 Grace M. Tsushima
 No. C49814
 Exp. 9-30-14
 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.

TO ACCOMPANY PLANS DATED 10-21-13

UNIT OF MEASUREMENT SYMBOLS:

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

TABLE A

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

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

TABLE B

SYMBOL USED	DEFINITIONS
ksi	KIPS PER SQUARE INCH
ksf	KIPS PER SQUARE FOOT
psi	POUNDS PER SQUARE INCH
psf	POUNDS PER SQUARE FOOT
lb/ft ³ , pcf	POUNDS PER CUBIC FOOT
tsf	TONS PER SQUARE FOOT
mph, MPH *	MILES PER HOUR
ø	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.

2010 REVISED STANDARD PLAN RSP A10B

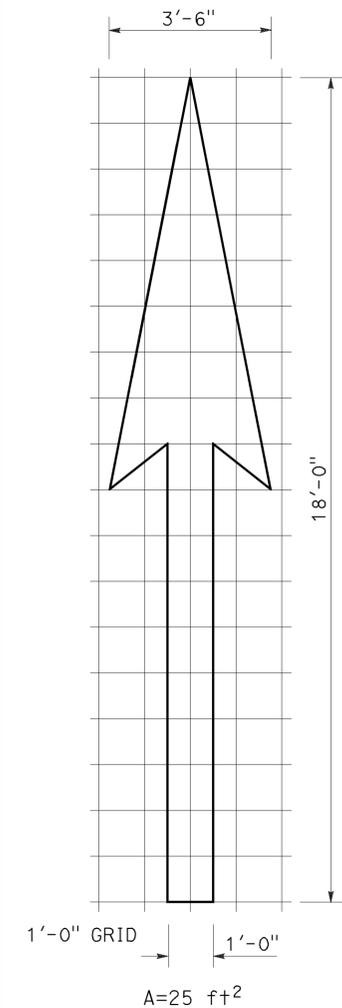
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mno	395	6.9/R9.9	17	35

Roberta L. McLaughlin
 REGISTERED CIVIL ENGINEER
 April 20, 2012
 PLANS APPROVAL DATE

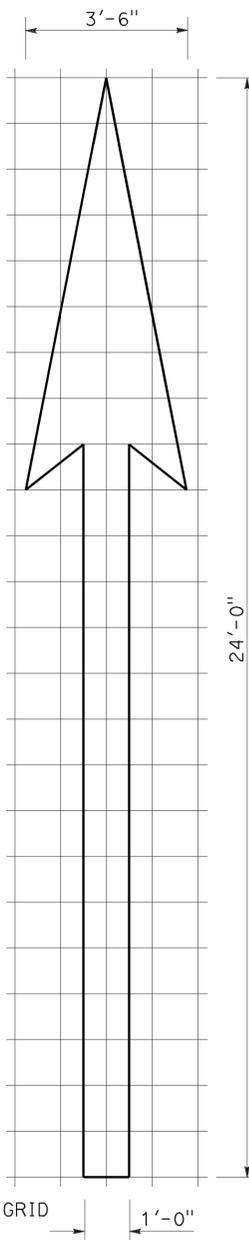
REGISTERED PROFESSIONAL ENGINEER
 Roberta L. McLaughlin
 No. C40375
 Exp. 3-31-13
 CIVIL
 STATE OF CALIFORNIA

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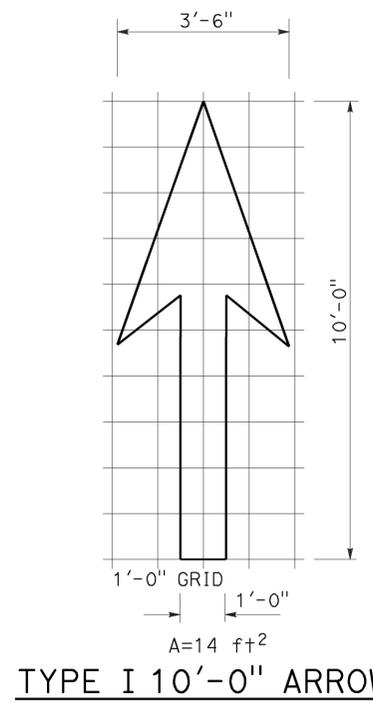
TO ACCOMPANY PLANS DATED 10-21-13



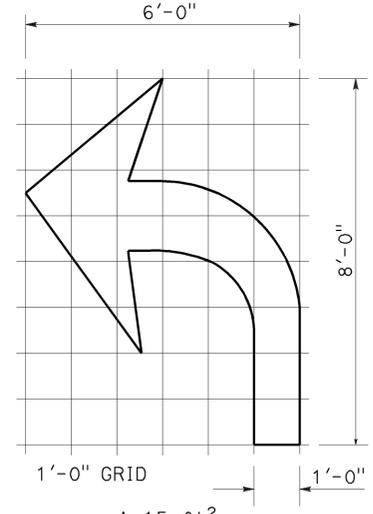
TYPE I 18'-0" ARROW



TYPE I 24'-0" ARROW

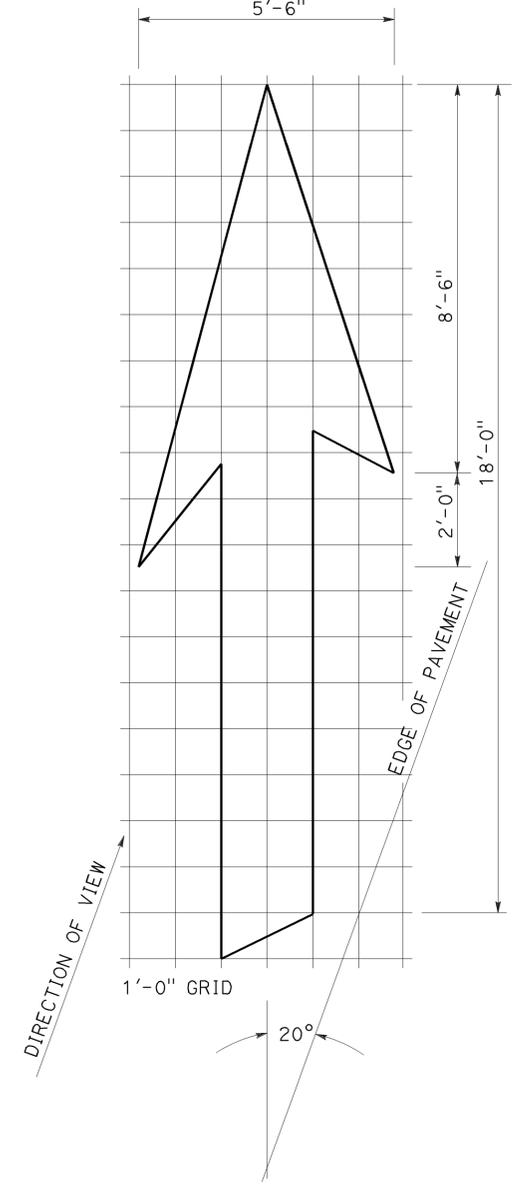


TYPE I 10'-0" ARROW



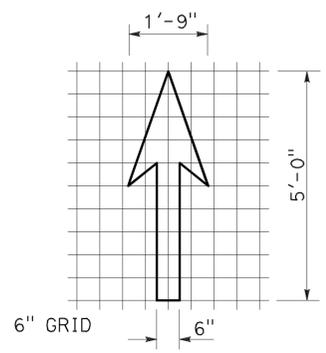
TYPE IV (L) ARROW

(For Type IV (R) arrow, use mirror image)

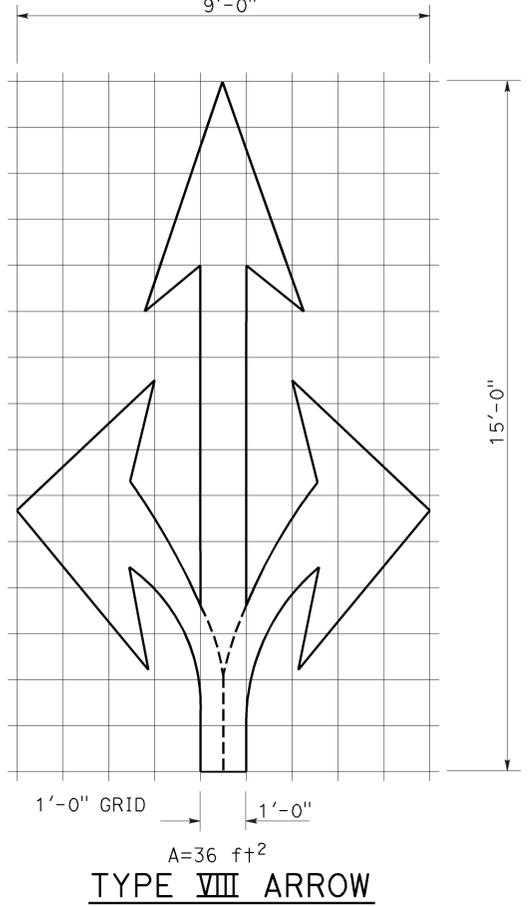


TYPE VI ARROW

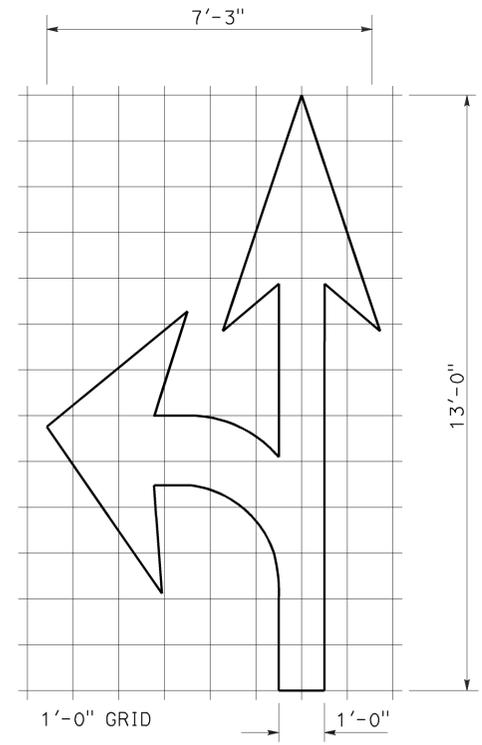
Right lane drop arrow
(For left lane, use mirror image)



BIKE LANE ARROW

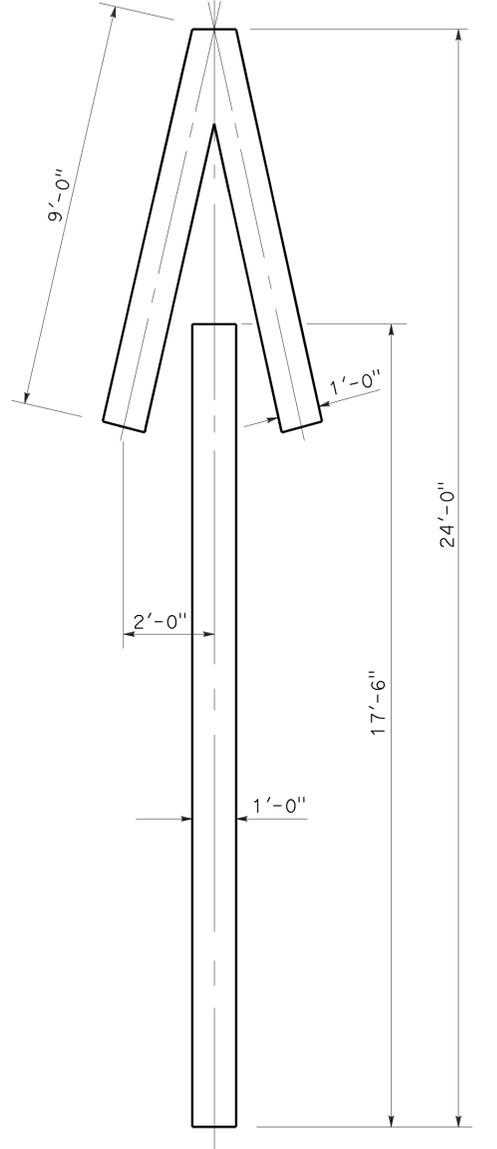


TYPE VIII ARROW



TYPE VII (L) ARROW

(For Type VII (R) arrow, use mirror image)



TYPE V ARROW

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

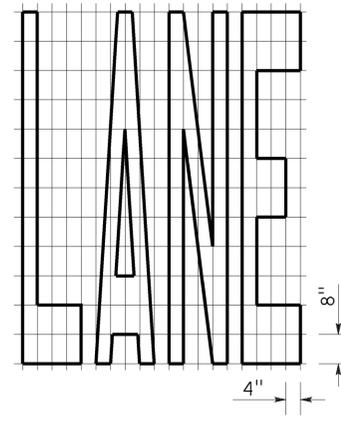
**PAVEMENT MARKINGS
ARROWS**
NO SCALE

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

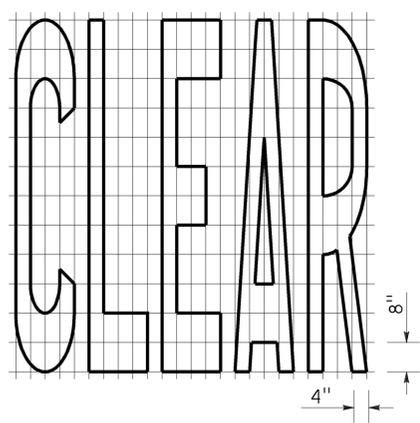
2010 REVISED STANDARD PLAN RSP A24A

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

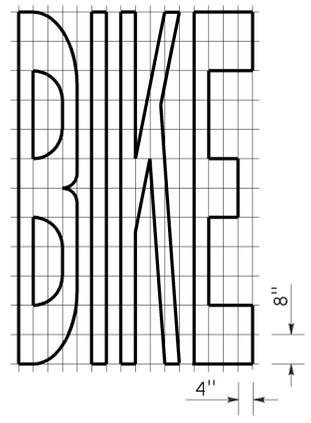
TO ACCOMPANY PLANS DATED 10-21-13



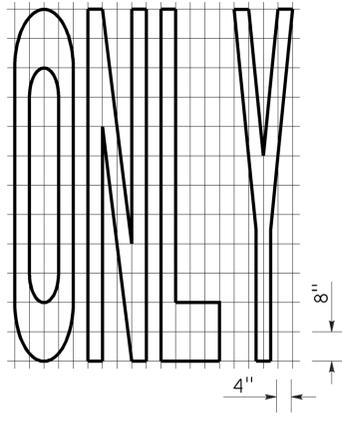
A=24 ft²



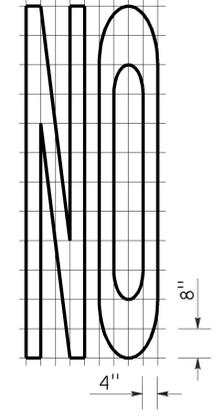
A=27 ft²



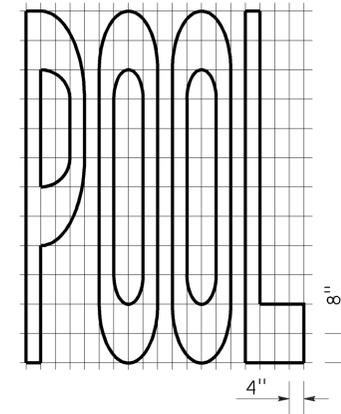
A=21 ft²



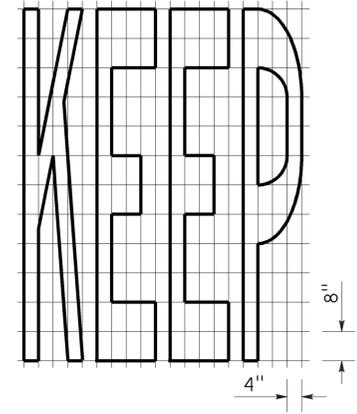
A=22 ft²



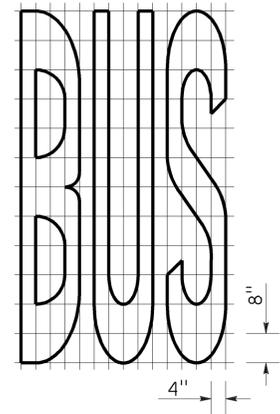
A=14 ft²



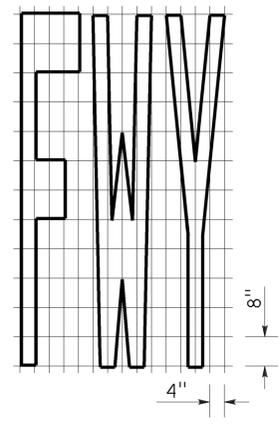
A=23 ft²



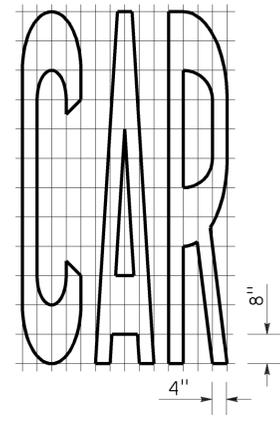
A=24 ft²



A=20 ft²

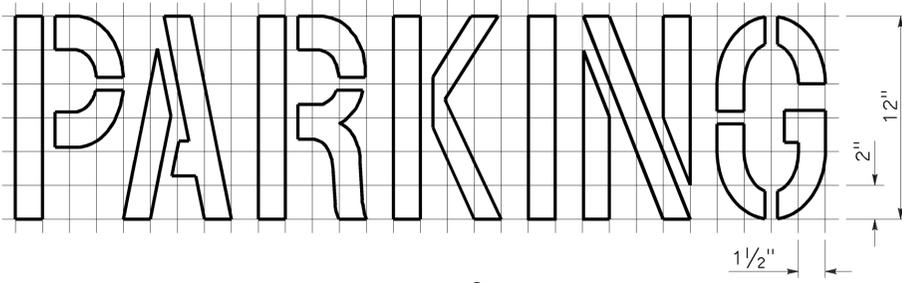
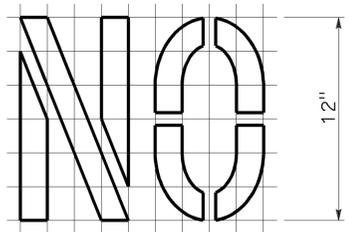


A=16 ft²

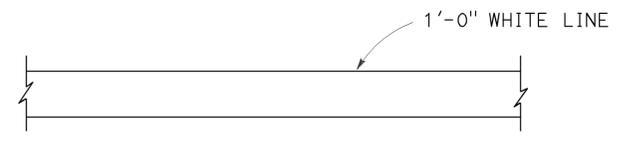


A=17 ft²

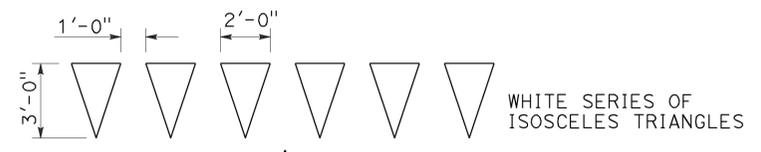
WORD MARKINGS			
ITEM	ft ²	ITEM	ft ²
LANE	24	NO	14
POOL	23	BIKE	21
CAR	17	BUS	20
CLEAR	27	ONLY	22
KEEP	24	FWY	16



A=2 ft²
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.

2010 REVISED STANDARD PLAN RSP A24E

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
09	Mno	395	6.9/R9.9	19	35

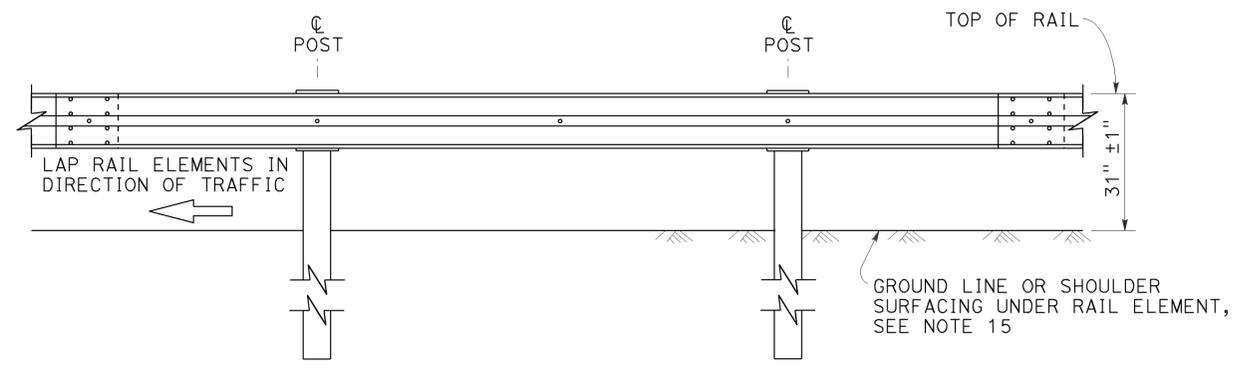
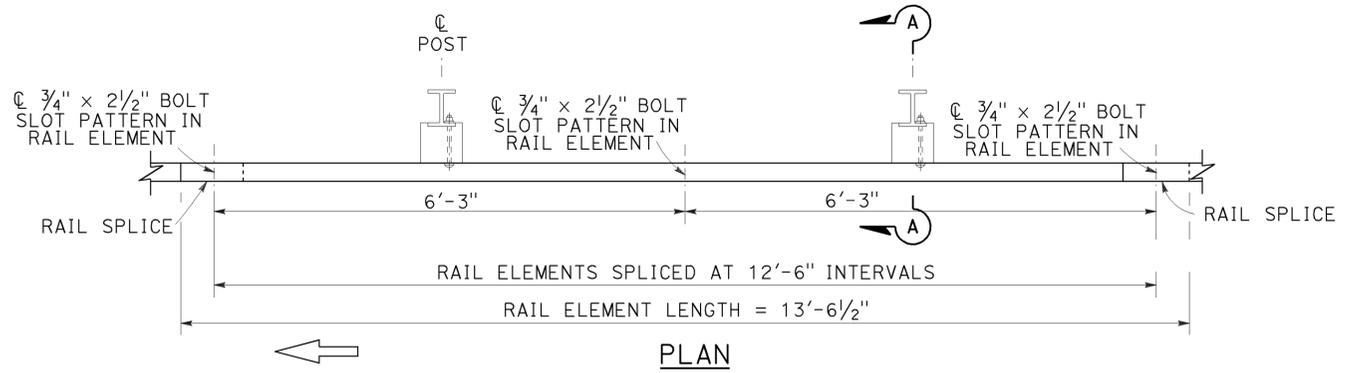
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

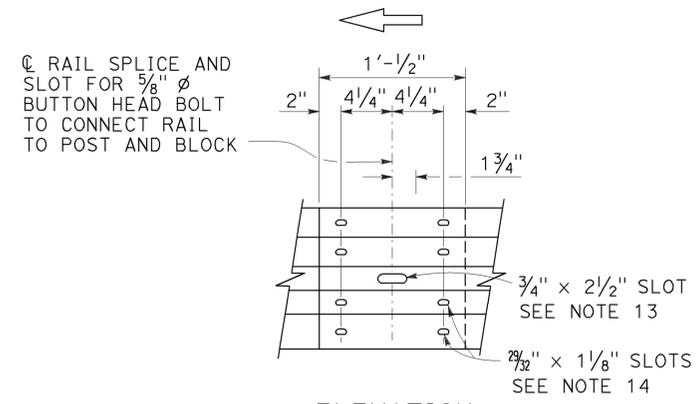
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Exp. 6-30-15
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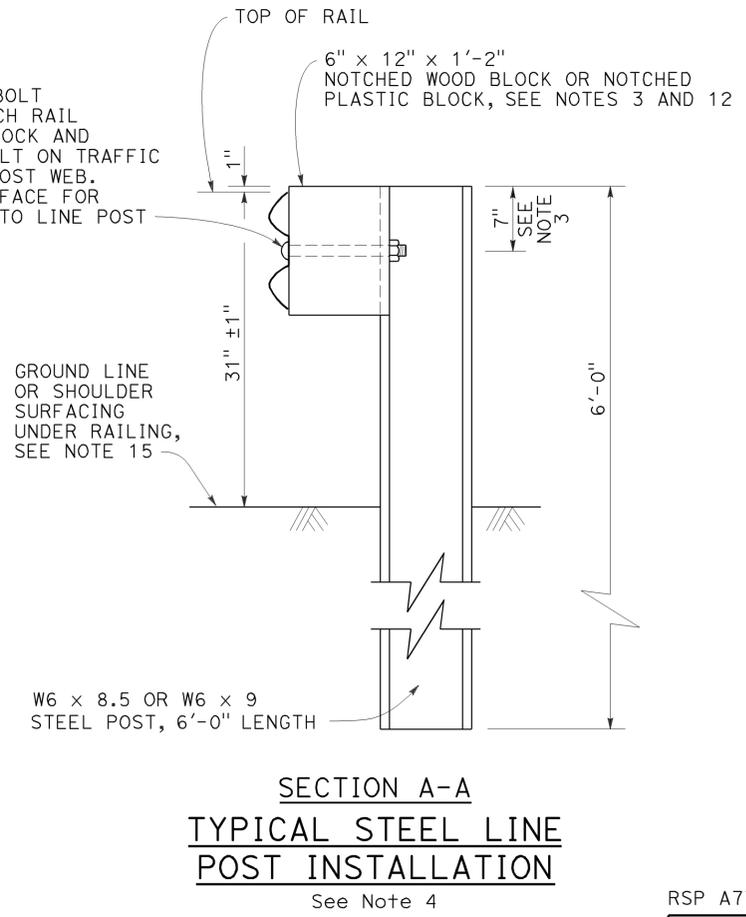
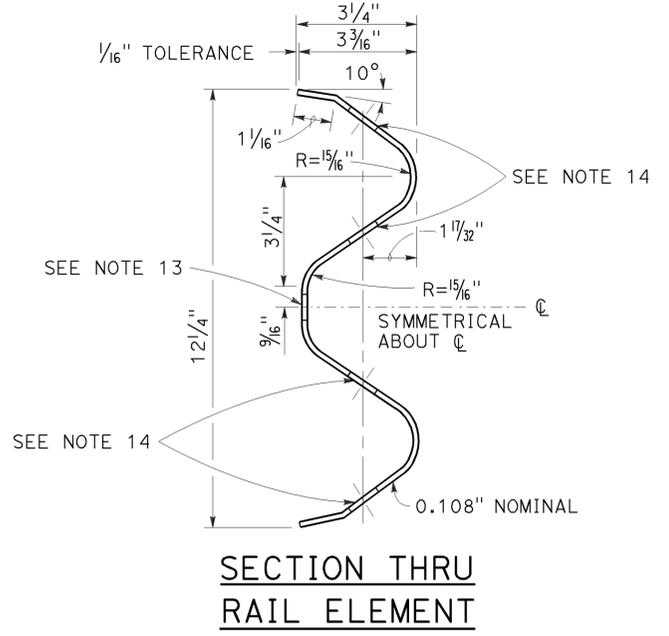
TO ACCOMPANY PLANS DATED 10-21-13



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



- Connect the overlapped end of the rail elements with 5/8" ϕ 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" ϕ 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.



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.

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
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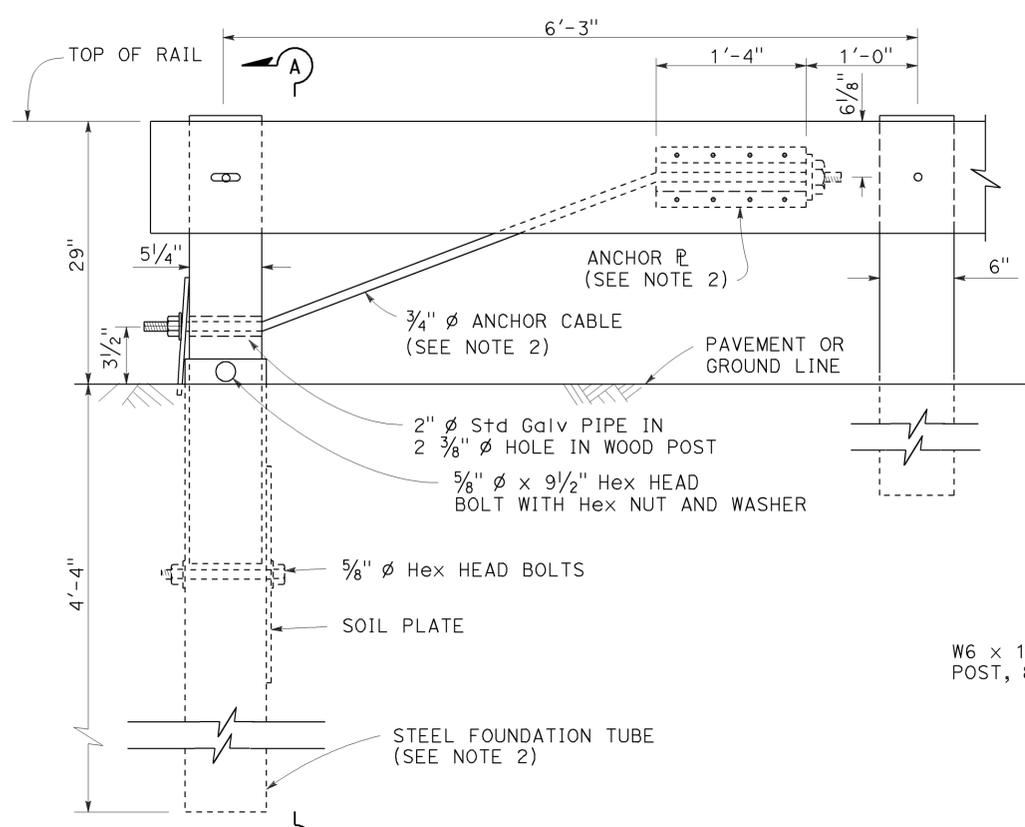
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

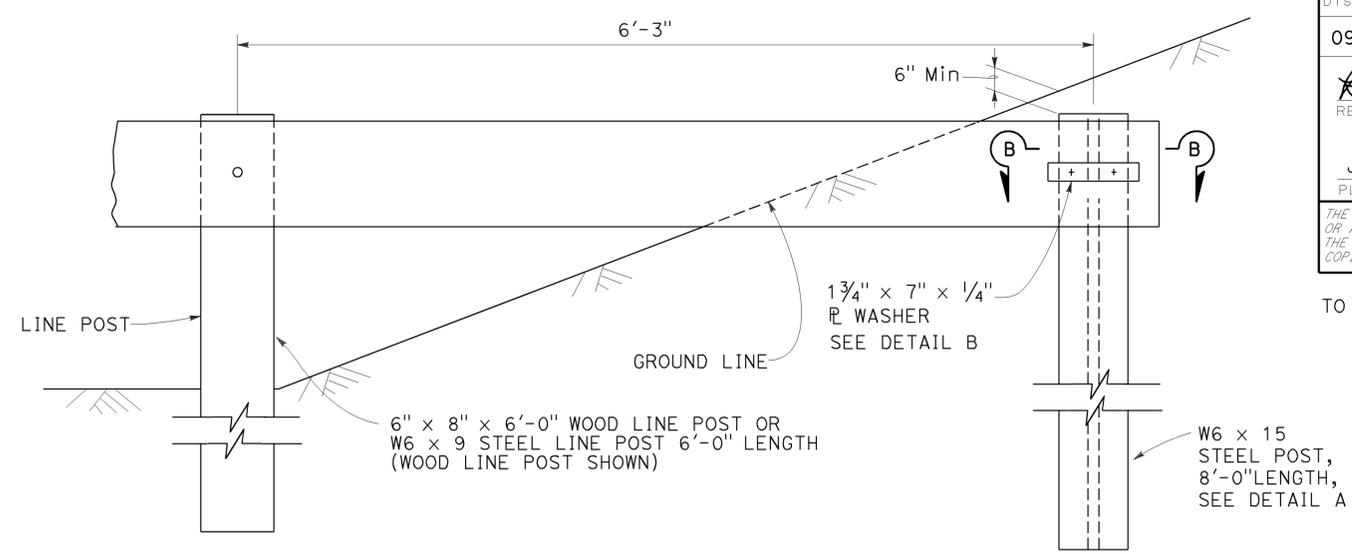
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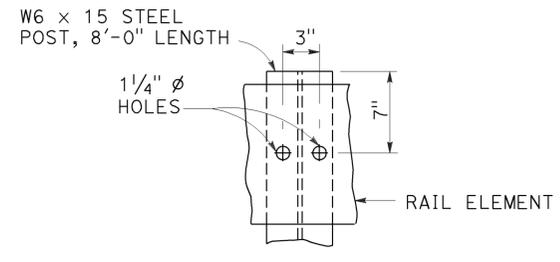
TO ACCOMPANY PLANS DATED 10-21-13



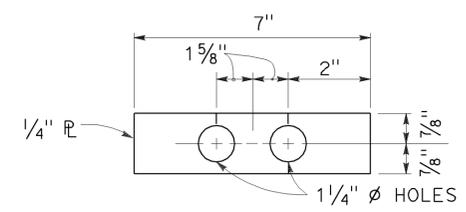
**ELEVATION
END ANCHOR
ASSEMBLY (TYPE SFT)**



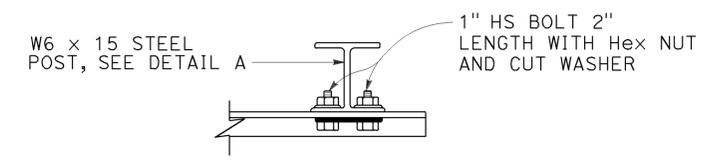
BURIED POST END ANCHOR



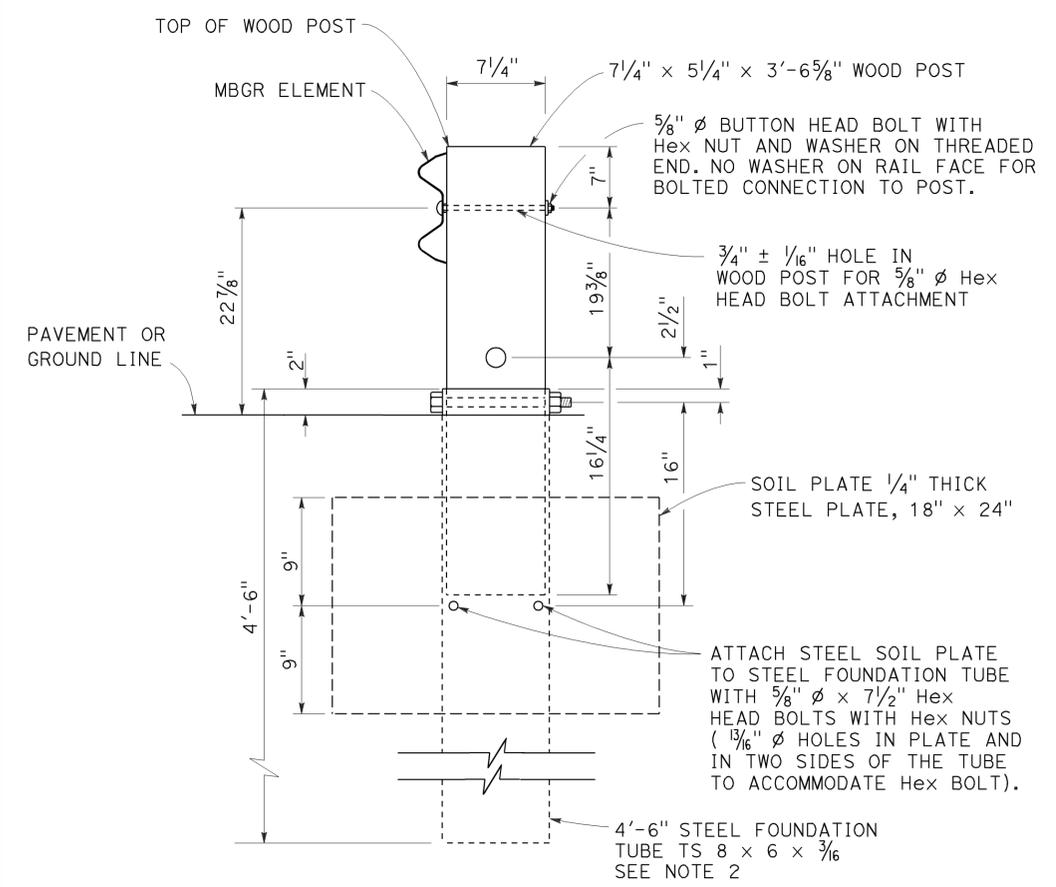
DETAIL A



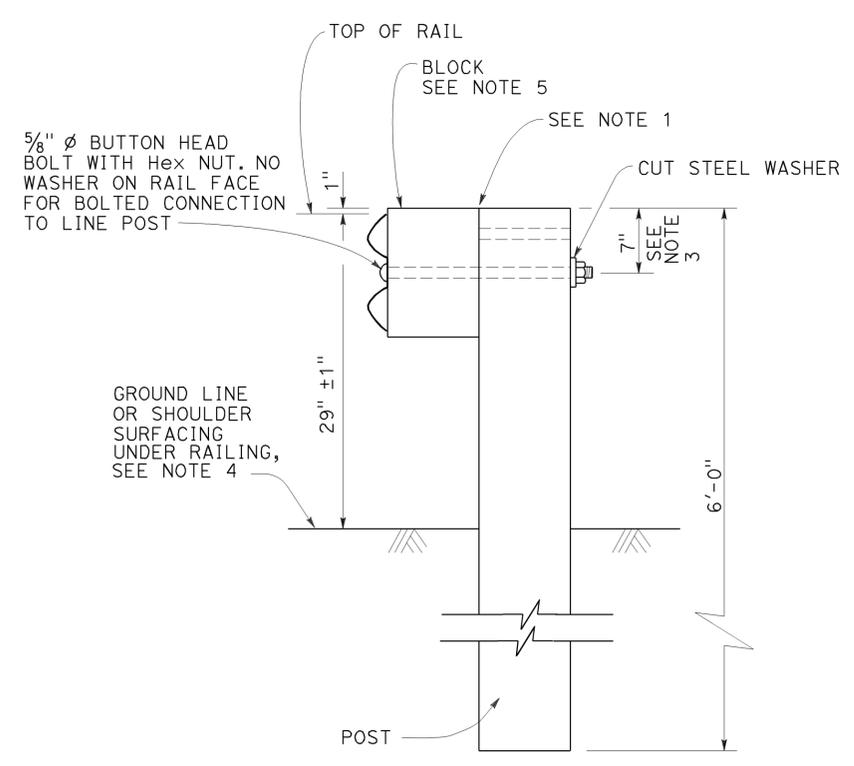
DETAIL B



SECTION B-B



SECTION A-A



**TYPICAL LINE
POST INSTALLATION**

NOTES:

1. For wood post and wood block, toenail with 2-16d Galv nails in top of block. For steel post and notched wood or plastic block, notched face of block faces steel post.
2. 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" ϕ 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.
3. To connect railing to 27" terminal system end treatment, transition the top of railing height at a ratio of 120:1 to terminal system end treatment height plus one 12'-6" standard railing section at the transitioned height for a horizontal connection to the end treatment.
4. Install posts in soil.
5. See Revised Standard Plans RSP A77N1 and RSP A77N2 for details.
6. Holes excavation in the slope to construct the buried post end anchor shall be backfilled with selected earth, placed in layers approximately 1'-0" thick. Each layer shall be moistened and thoroughly compacted.

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DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
RECONSTRUCT INSTALLATION**

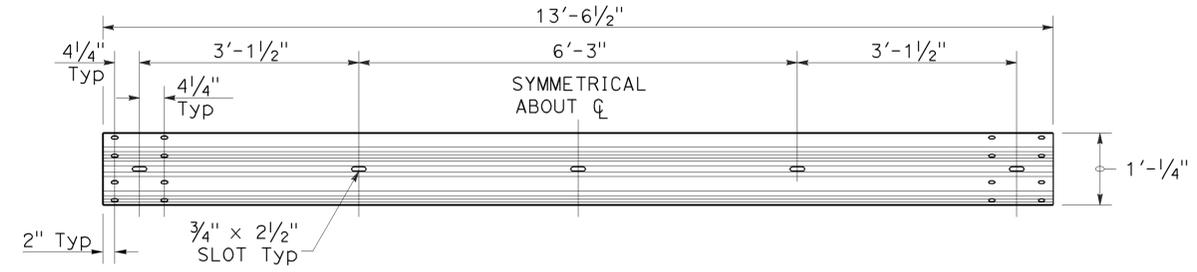
NO SCALE

RSP A77L3 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77L3

2010 REVISED STANDARD PLAN RSP A77L3

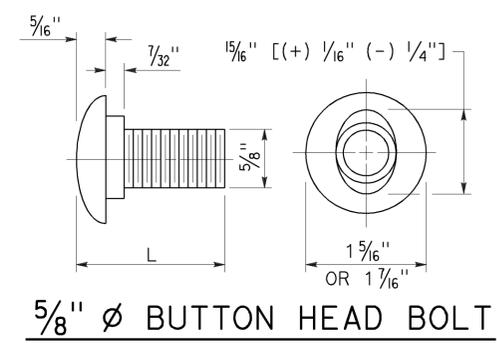
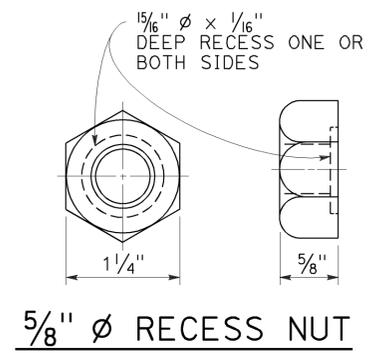
TO ACCOMPANY PLANS DATED 10-21-13



TYPICAL RAIL ELEMENT

NOTE:

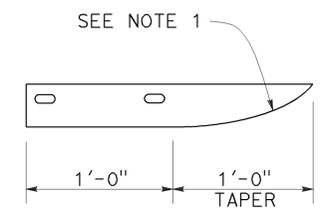
1. Slotted holes for splice bolts to overlap ends of rail element.



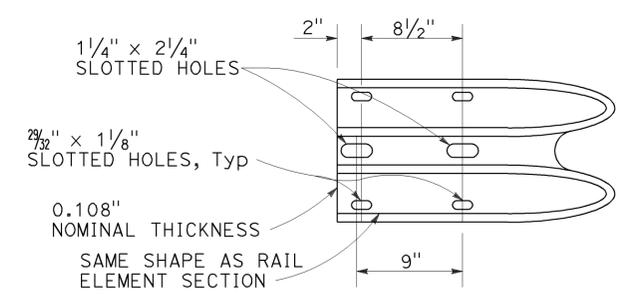
BUTTON HEAD BOLT

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
09	Mno	395	6.9/R9.9	22	35

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

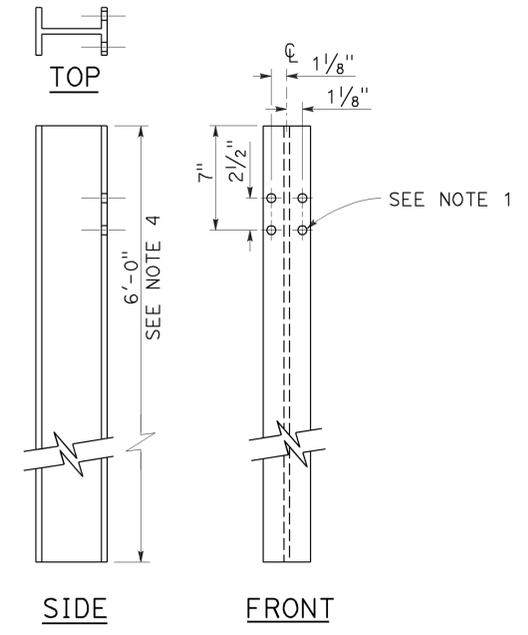
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TO ACCOMPANY PLANS DATED 10-21-13

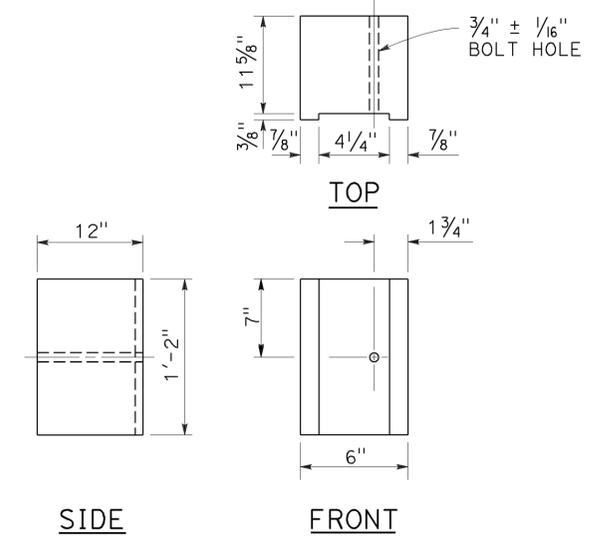
NOTES:

- All holes in steel post shall be $\frac{13}{16}$ " Dia maximum.
- Dimensions shown for wood block are nominal.
- Notched face of block faces steel post.
- 6'-0" length posts to be used for typical roadway installation. 7'-0" length posts to be used for narrow roadway installation. See Revised Standard Plan RSP A77N3.
- See Revised Standard Plan RSP A77L3 for use of 6" x 8" and 8" x 8" notched wood blocks.
- 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.

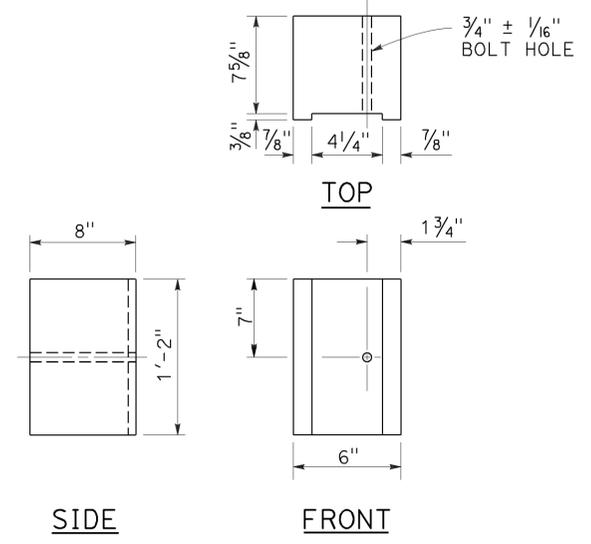
2010 REVISED STANDARD PLAN RSP A77N2



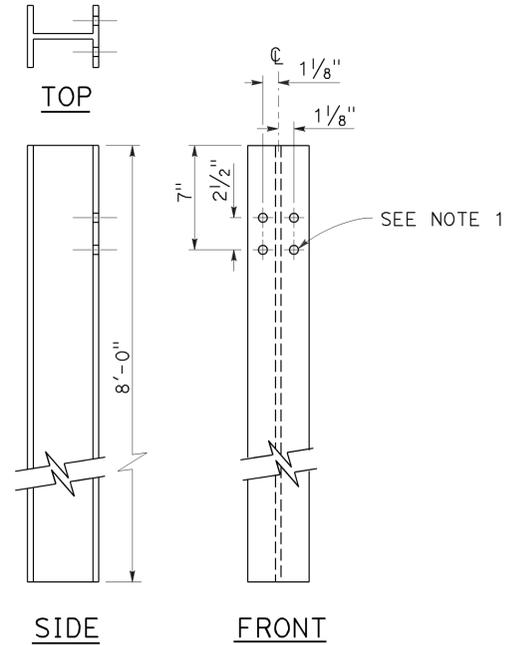
**W6 x 9 OR W6 x 8.5
STEEL POST**
See Note 4



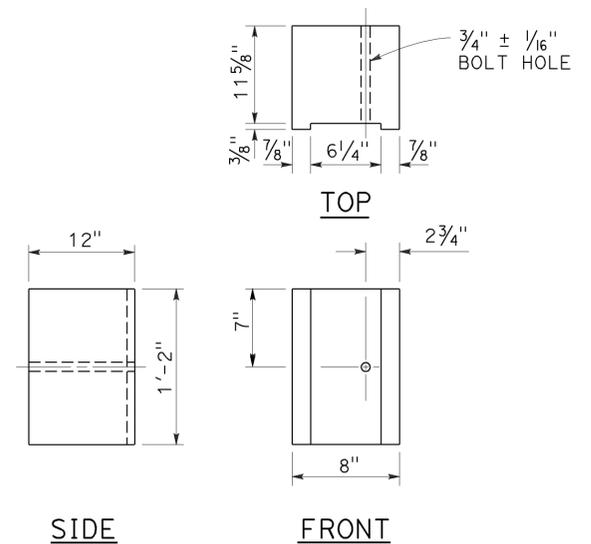
**6" x 12"
NOTCHED WOOD BLOCK**
See Notes 2 and 3



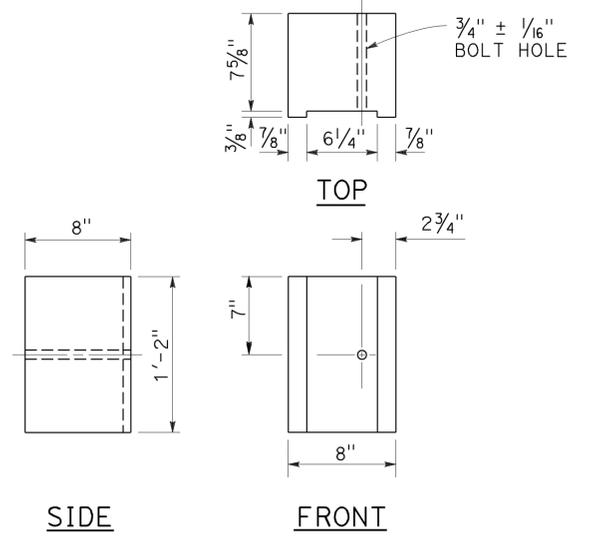
**6" x 8"
NOTCHED WOOD BLOCK**
Only for use with metal beam guard railing. See Note 5



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

REVISED STANDARD PLAN RSP A77N2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
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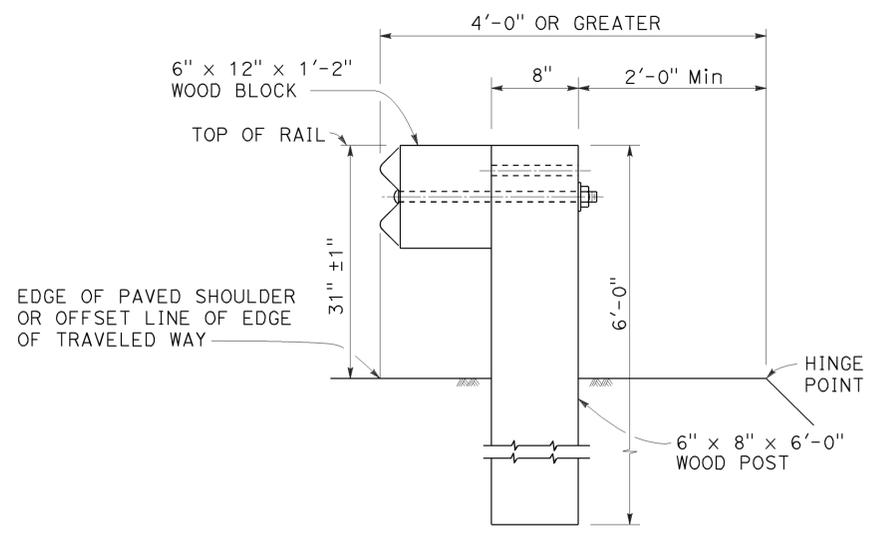
Randell D. Hiatt
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July 19, 2013
PLANS APPROVAL DATE

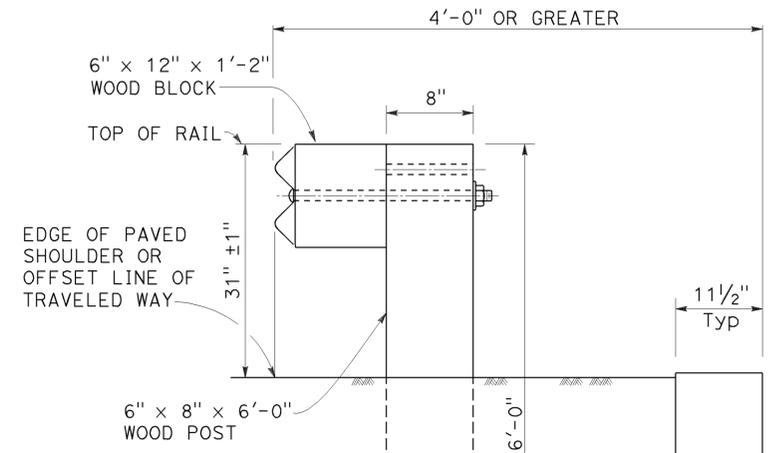
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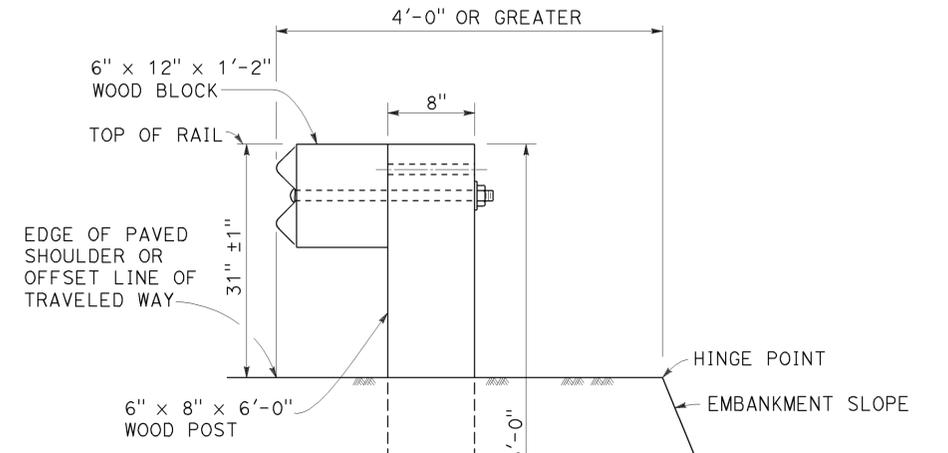
TO ACCOMPANY PLANS DATED 10-21-13



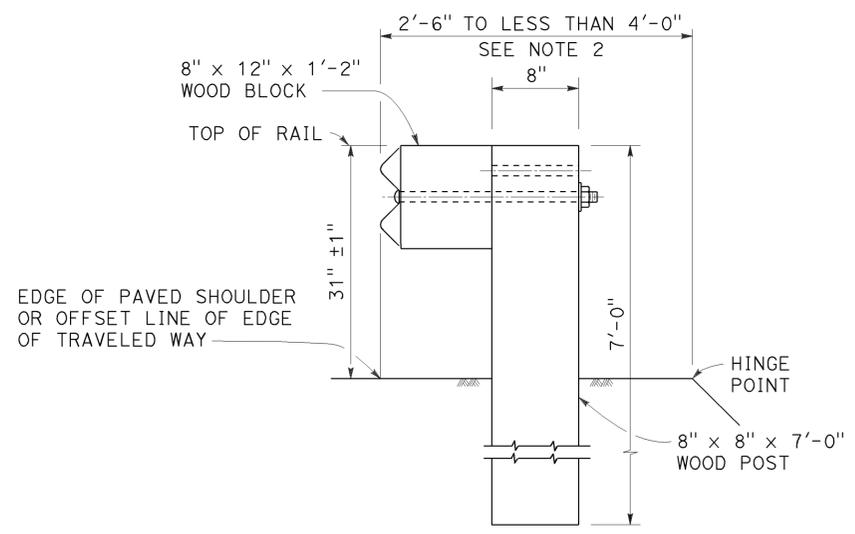
DETAIL A
TYPICAL ROADWAY
INSTALLATION
See Note 1



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, or 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 JULY 19, 2013 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
09	Mno	395	6.9/R9.9	24	35

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July 19, 2013
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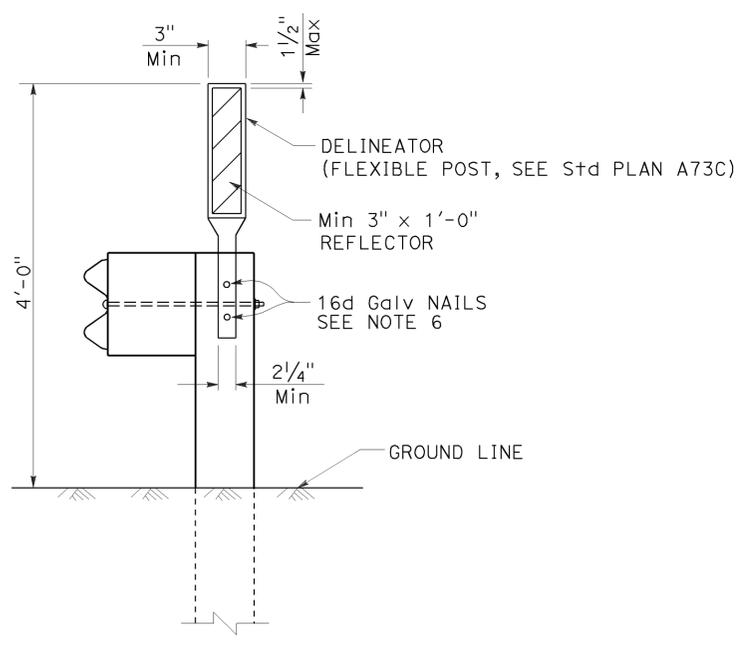
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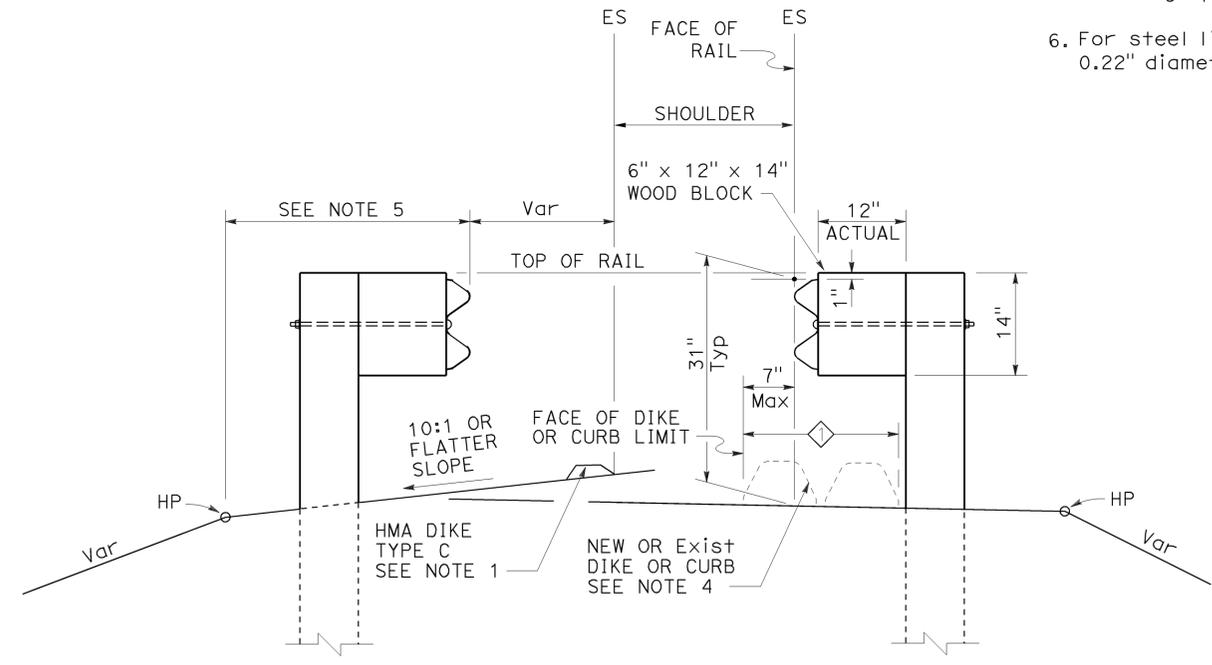
TO ACCOMPANY PLANS DATED 10-21-13

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 3/32" 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.

2010 REVISED STANDARD PLAN RSP A77N4

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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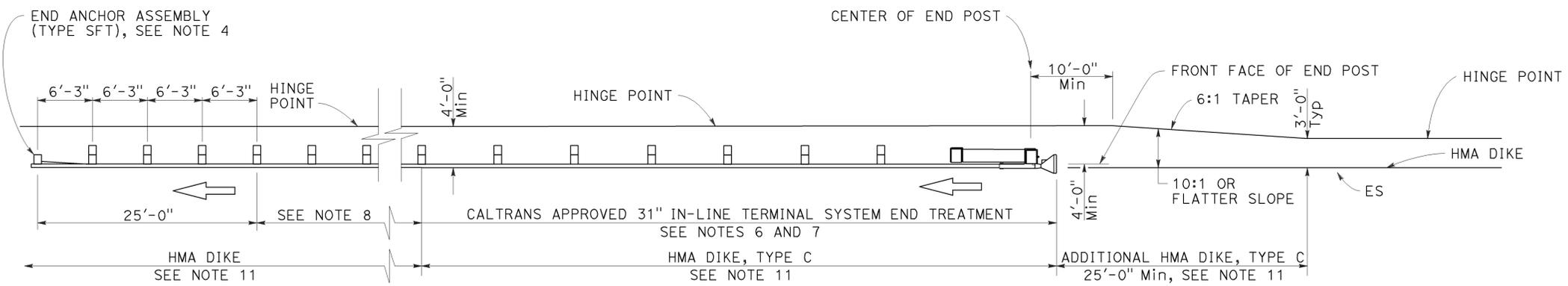
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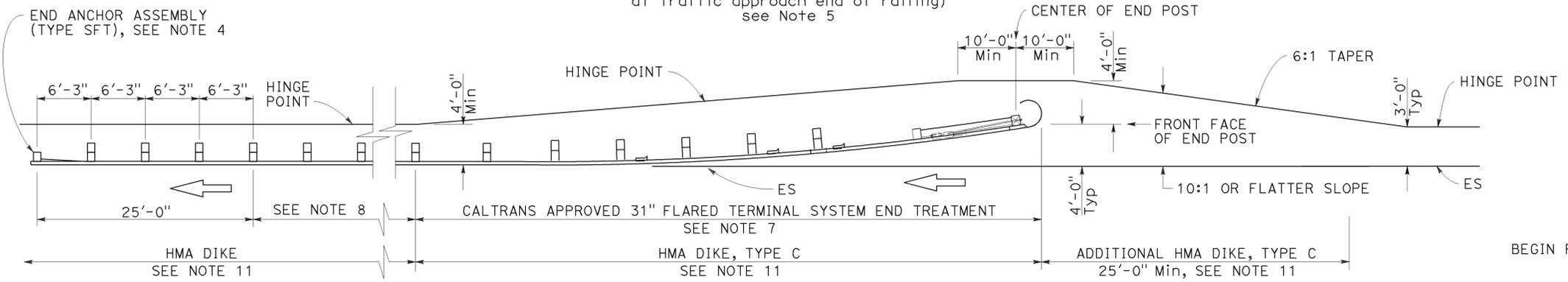
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TO ACCOMPANY PLANS DATED 10-21-13



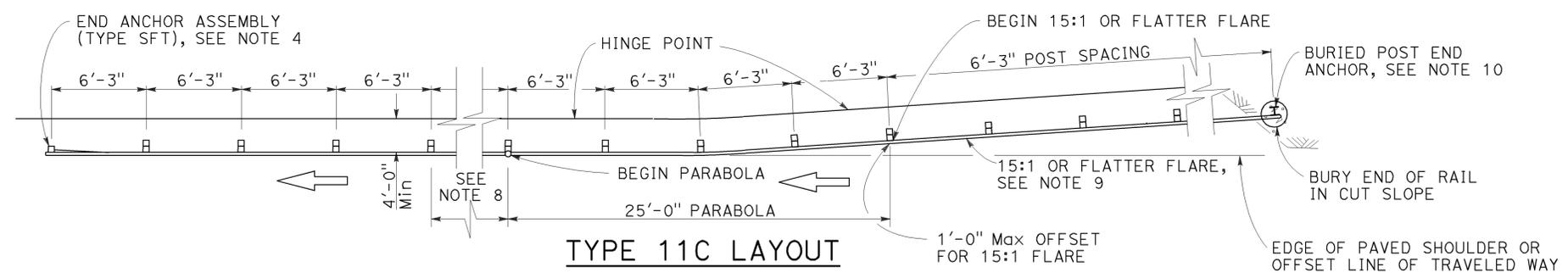
TYPE 11A LAYOUT

(Embankment MGS installation with 31" in-line end treatment at traffic approach end of railing) see Note 5



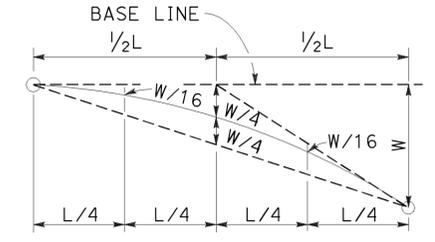
TYPE 11B LAYOUT

(Embankment MGS installation with 31" flared end treatment at traffic approach end of railing) see Note 5

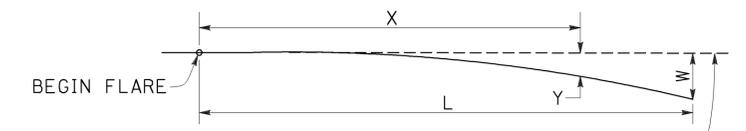


TYPE 11C LAYOUT

(Embankment MGS installation with buried end anchor treatment at traffic approach end of railing) see Notes 5 and 11



TYPICAL PARABOLIC LAYOUT

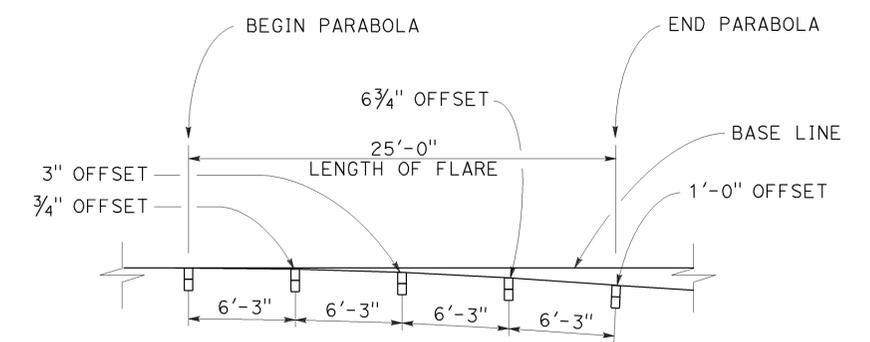


BASE LINE (EDGE OF PAVED SHOULDER OR OFFSET LINE OF EDGE OF TRAVELED WAY)

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

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

PARABOLIC FLARE OFFSETS



TYPICAL FLARE OFFSETS FOR 1 FOOT Max END OFFSET

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL LAYOUTS FOR EMBANKMENTS

NO SCALE

RSP A77P1 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77P1

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 recycled plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
- For End Anchor Assembly (Type SFT) details, see Revised Standard Plan RSP A77H1.
- Layout Types 11A, 11B or 11C are typically used where MGS is recommended to shield embankment slopes and a crashworthy end treatment is required for only one direction of traffic.
- 31" in-line terminal system end treatments are used where site conditions will not accommodate a flared end treatment.
- The type of 31" terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height and side slope), construction of additional MGS (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
- The 15:1 or flatter flare used with buried end anchors 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 11C 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.

2010 REVISED STANDARD PLAN RSP A77P1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mno	395	6.9/R9.9	26	35

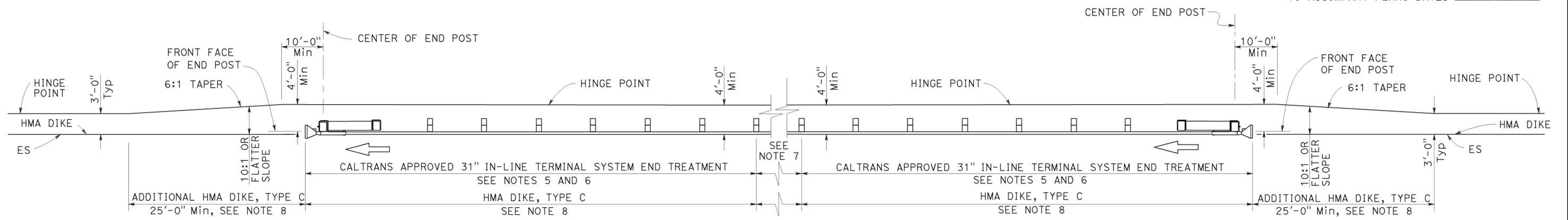
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

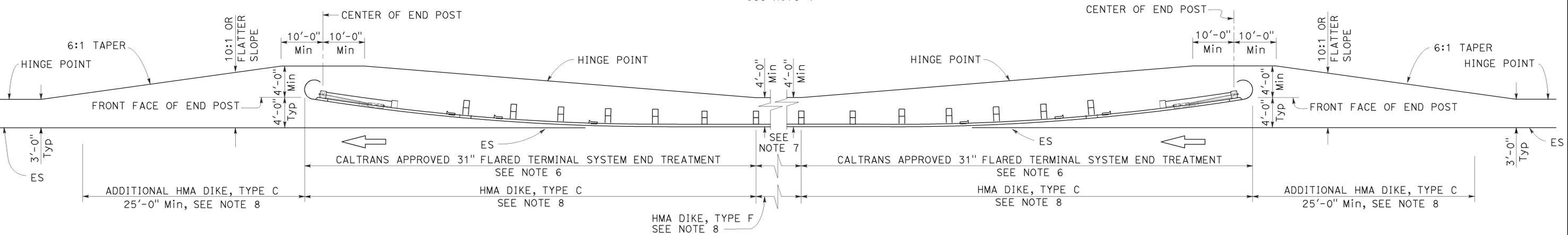
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TO ACCOMPANY PLANS DATED 10-21-13



TYPE 11D LAYOUT

(Embankment MGS installation with 31" in-line end treatment at each end of railing)
See Note 4



TYPE 11E LAYOUT

(Embankment MGS installation with 31" flared end treatment at each end of railing)
See Note 4

NOTES:

1. 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.
2. MGS post spacing to be 6'-3" center to center, except as otherwise noted.
3. 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 post with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
4. Layout Types 11D through 11L, shown on the A77P Series of Standard Plans, are typically used where MGS is recommended to shield embankment slopes and a crashworthy 31" end treatment is required for both directions of traffic.
5. 31" in-line terminal system end treatments are used where site conditions will not accommodate a flared end treatment.
6. The type of 31" terminal system end treatment to be used will be shown on the Project Plans.
7. Dependent on site conditions (embankment height and side slope), construction of additional MGS (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
8. Where placement of dike is required with MGS installations, see Revised Standard Plan RSP A77N4 for dike positioning details.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
TYPICAL LAYOUTS FOR
EMBANKMENTS**

NO SCALE

RSP A77P2 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77P2

2010 REVISED STANDARD PLAN RSP A77P2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mno	395	6.9/R9.9	27	35

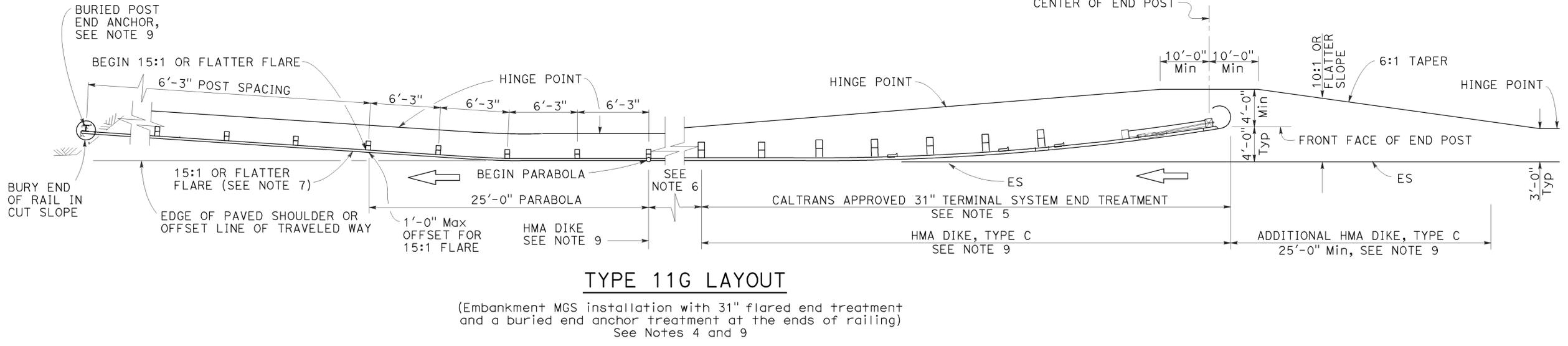
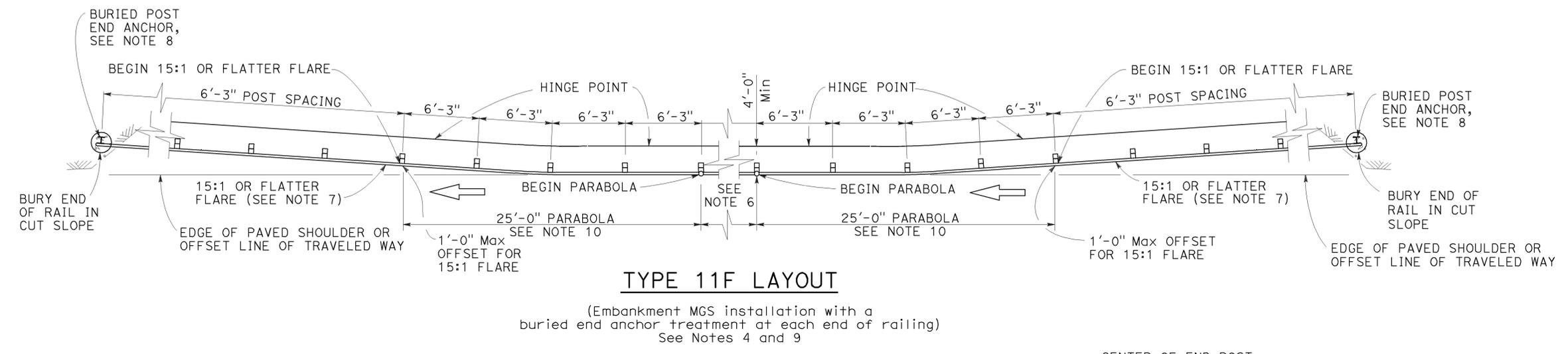
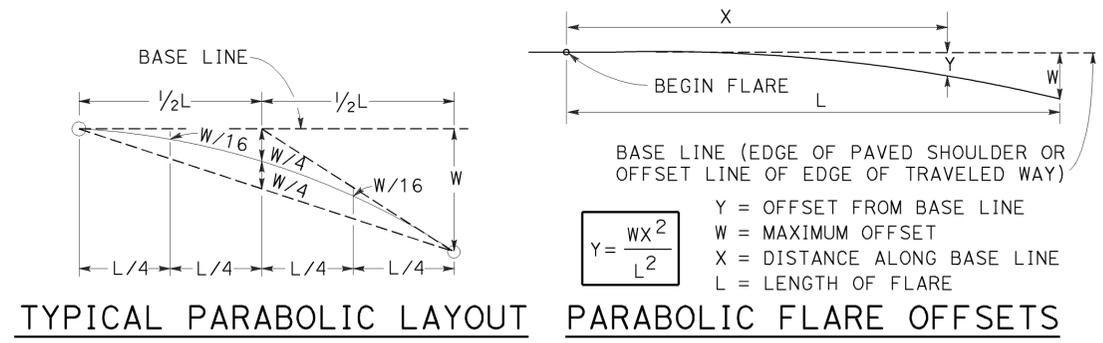
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 10-21-13



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 post with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
- Layout Types 11D through 11L, shown on the A77P Series of Standard Plans, are typically used where MGS is recommended to shield embankment slopes and a crashworthy 31" end treatment is required for both directions of traffic.
- The type of 31" terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height and side slope), construction of additional MGS (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
- The 15:1 or flatter flare used with buried end anchors 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 11F and 11G Layouts, 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.
- 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
EMBANKMENTS**

NO SCALE

RSP A77P3 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77P3

2010 REVISED STANDARD PLAN RSP A77P3

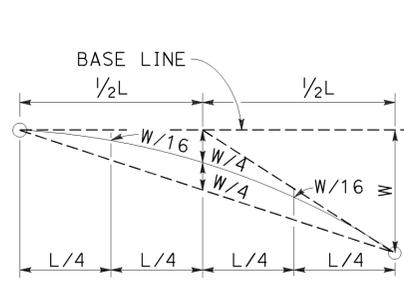
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mno	395	6.9/R9.9	28	35

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

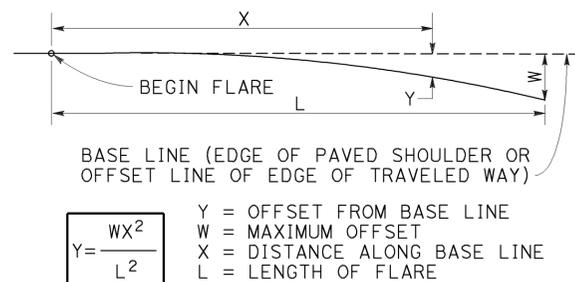
July 19, 2013
PLANS APPROVAL DATE

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STATE OF CALIFORNIA

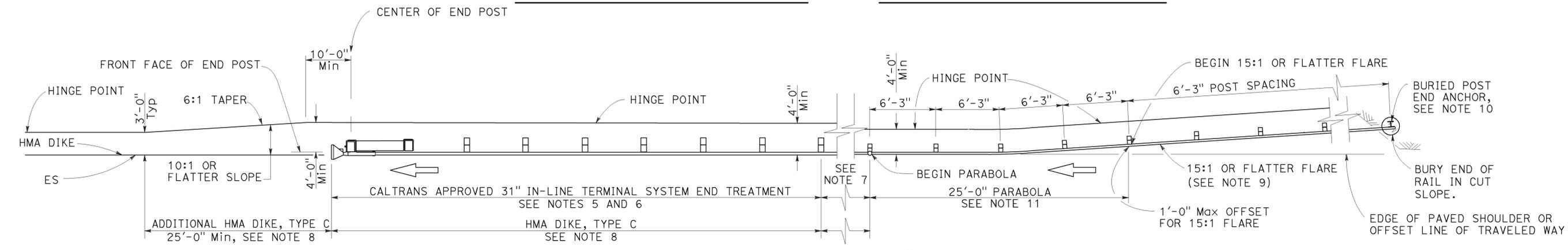


TYPICAL PARABOLIC LAYOUT



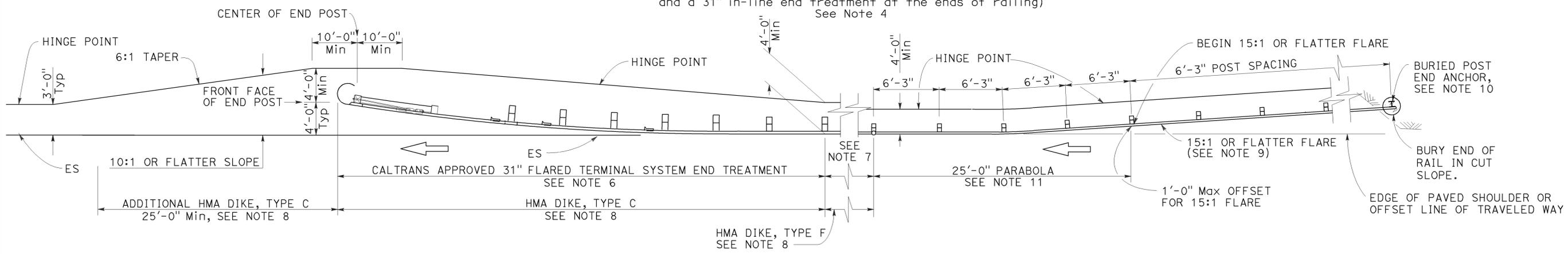
PARABOLIC FLARE OFFSETS

TO ACCOMPANY PLANS DATED 10-21-13



TYPE 11K LAYOUT

(Embankment MGS installation with a buried end anchor treatment and a 31" in-line end treatment at the ends of railing)
See Note 4



TYPE 11L LAYOUT

(Embankment MGS installation with a buried end anchor treatment and a 31" flared end treatment at the ends of railing)
See Note 4

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 post with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
- Layout Types 11D through 11L, shown on the A77P Series of Standard Plans, are typically used where MGS is recommended to shield embankment slopes and a crashworthy 31" end treatment is required for both directions of traffic.
- 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 end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height and side slope), construction of additional MGS (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
- Where placement of dike is required with MGS installations, see Revised Standard Plan RSP A77N4 for dike positioning details.
- The 15:1 or flatter flare used with buried end anchors 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 11K and 11L Layouts, see Revised Standard Plan RSP A77T2.
- 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
EMBANKMENTS**

NO SCALE

RSP A77P6 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP A77P6

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mno	395	6.9/R9.9	29	35

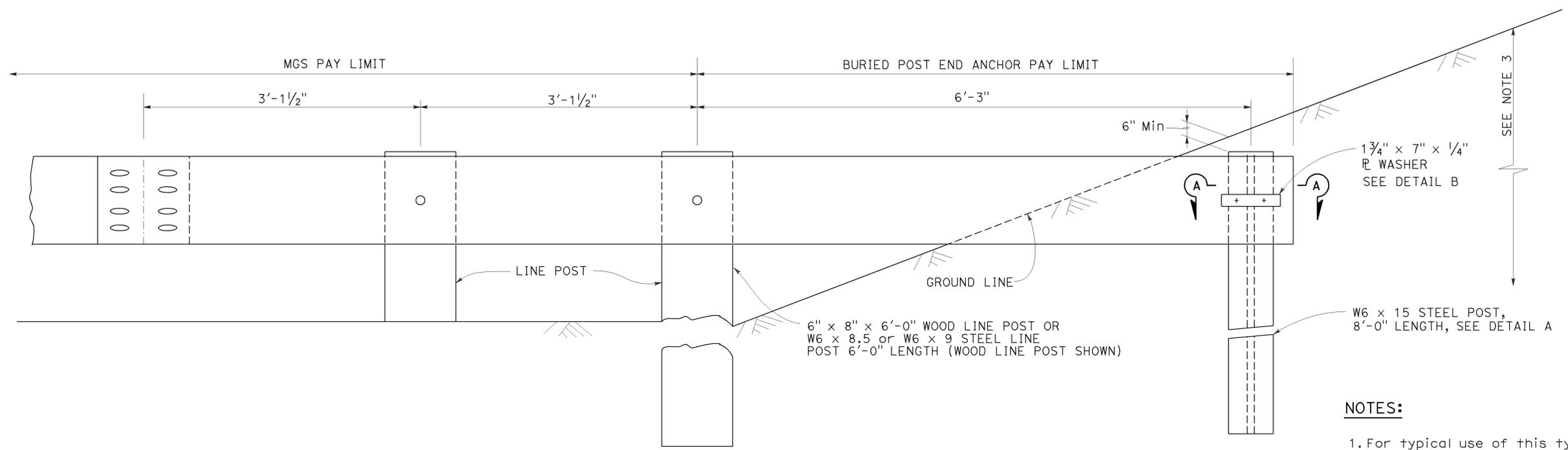
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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Randell D. Hiatt
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Exp. 6-30-15
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STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 10-21-13

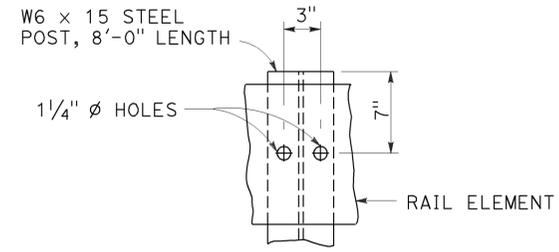


BURIED POST END ANCHOR

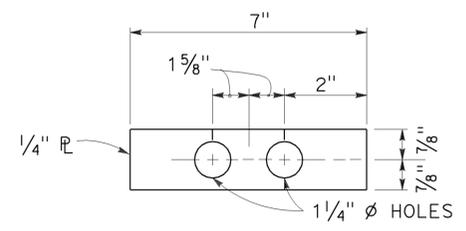
See Note 3

NOTES:

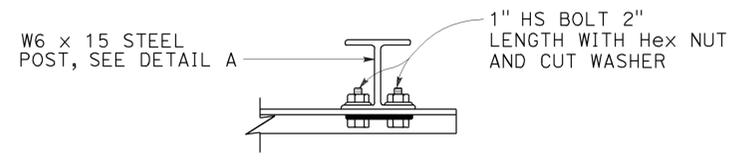
1. For typical use of this type of end anchor with MGS see the A77P, A77Q and A77R Series of the Standard Plans.
2. Holes excavation in the slope to construct the buried post end anchor shall be backfilled with selected earth, placed in layers approximately 1'-0" thick. Each layer shall be moistened and thoroughly compacted.
3. The buried post end anchor shall only be constructed at those locations where the slope perpendicular to the roadway is non-traversable.



DETAIL A



DETAIL B



SECTION A-A

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
BURIED POST END ANCHOR**

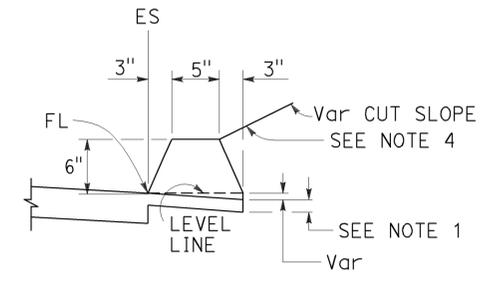
NO SCALE

RSP A77T2 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

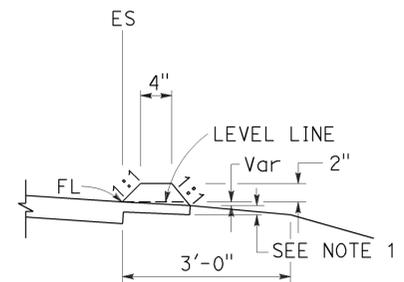
REVISED STANDARD PLAN RSP A77T2

2010 REVISED STANDARD PLAN RSP A77T2

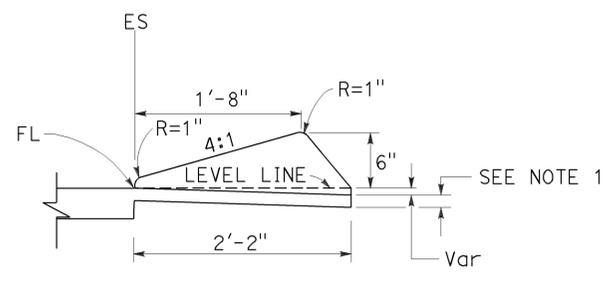
TO ACCOMPANY PLANS DATED 10-21-13



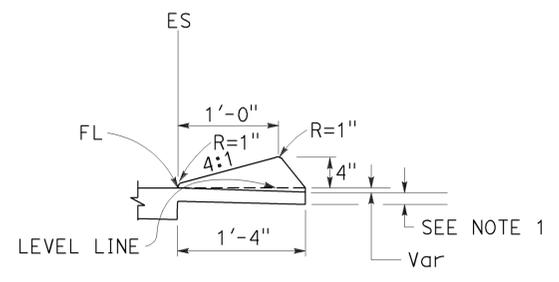
TYPE A
See Note 3



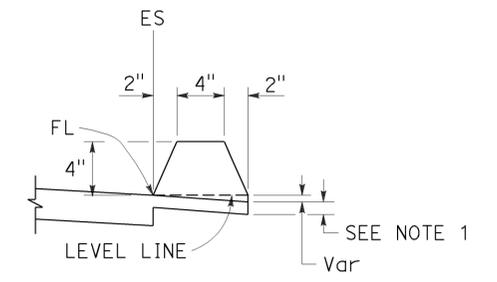
TYPE C



TYPE D

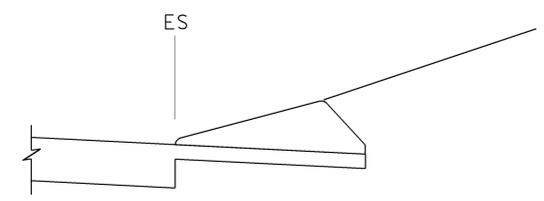


TYPE E

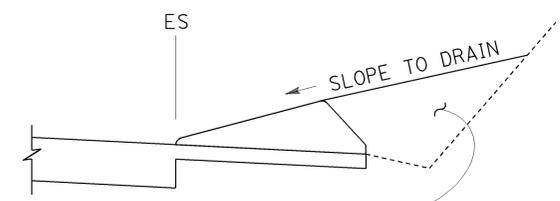


TYPE F
See Note 5

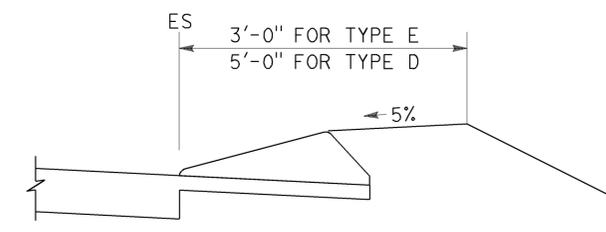
DIKES



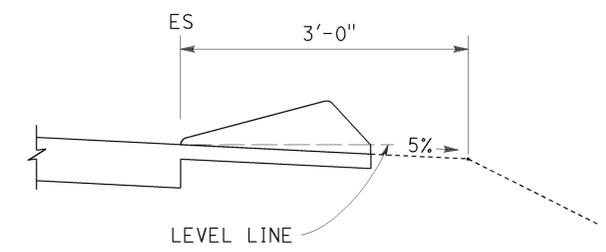
CASE C-1
Cut Slope



CASE C-2
Cut Slope



CASE F



CASE R
See Note 2

TYPE D AND E BACKFILL DETAILS

NOTES:

1. 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.
2. Case R applies to retrofit only projects where restrictive conditions do not provide enough width for Case F backfill.
3. Type A dike only to be used where restrictive slope conditions do not provide enough width to use Type D or Type E dike.
4. Fill and compact with excavated material to top of dike.
5. 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.

REVISED STANDARD PLAN RSP A87B

2010 REVISED STANDARD PLAN RSP A87B

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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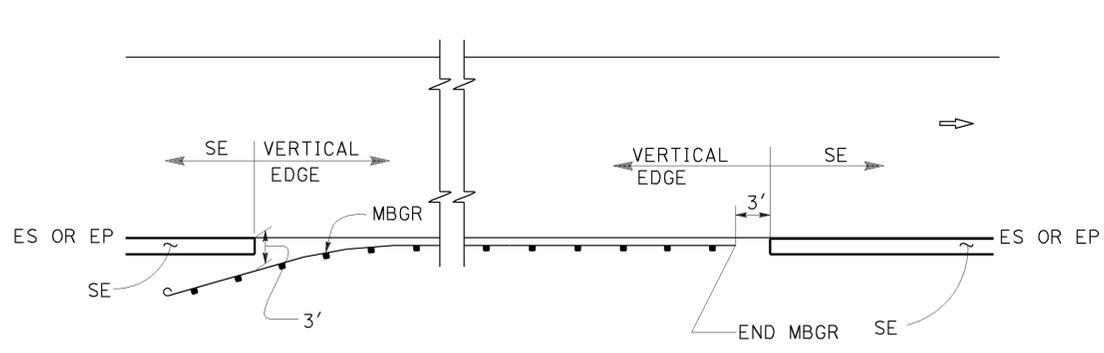
REGISTERED CIVIL ENGINEER
 Cornelis M. Hakim
 No. C55610
 Exp. 12-31-12
 CIVIL
 STATE OF CALIFORNIA

January 20, 2012
 PLANS APPROVAL DATE

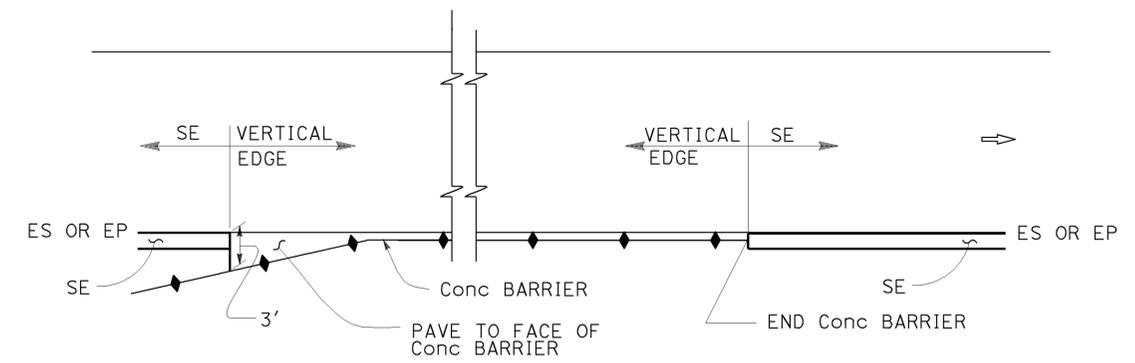
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TO ACCOMPANY PLANS DATED 10-21-13

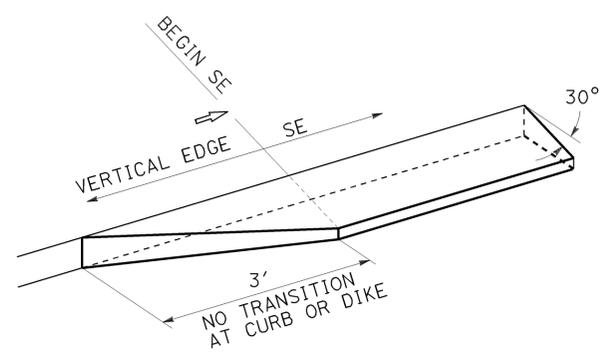
ABBREVIATIONS:
SE SAFETY EDGE



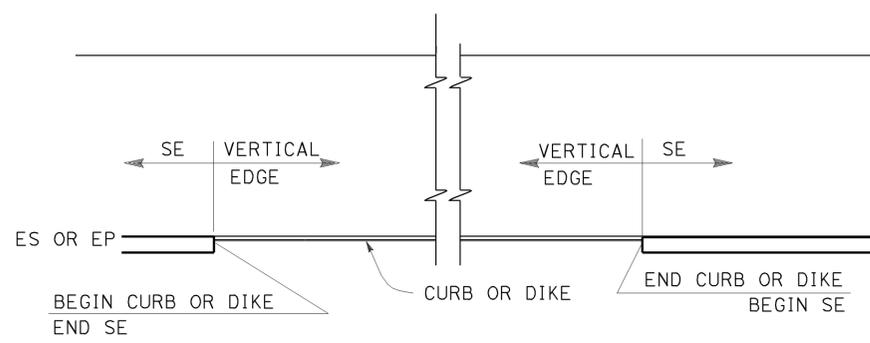
MBGR



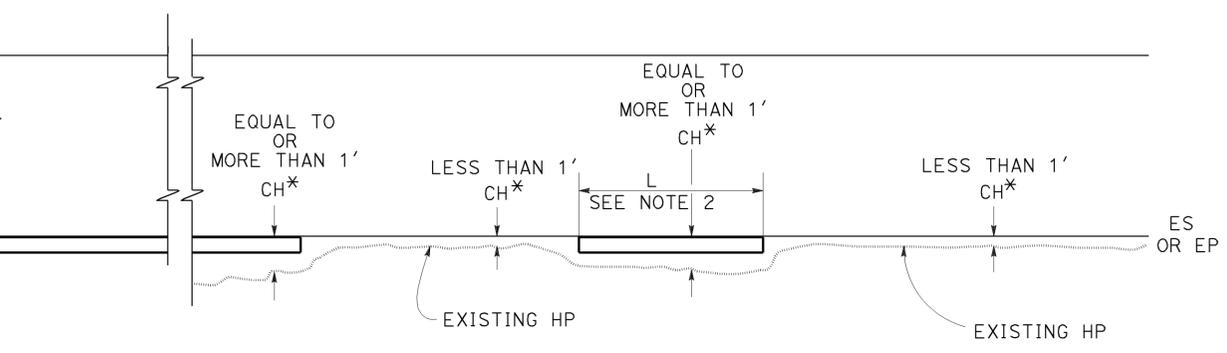
CONCRETE BARRIER



TRANSITION DETAIL FOR CONCRETE ONLY

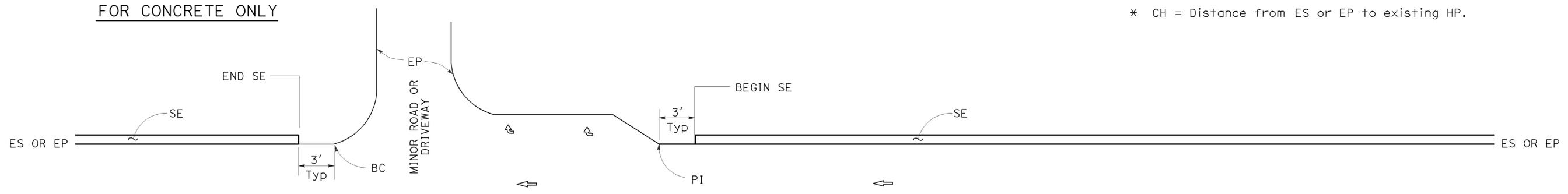


CURB OR DIKE



NARROW SIDE SLOPE

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



INTERSECTION

DRIVEWAY AND INTERSECTION

MINOR ROADWAY OR DRIVEWAY

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PAVEMENT EDGE TREATMENTS

NO SCALE

RSP P74 DATED JANUARY 20, 2012 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

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

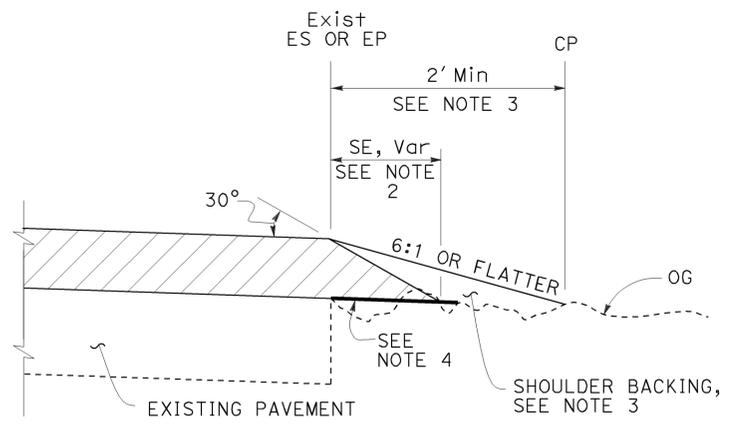
2010 REVISED STANDARD PLAN RSP P74

TO ACCOMPANY PLANS DATED 10-21-13

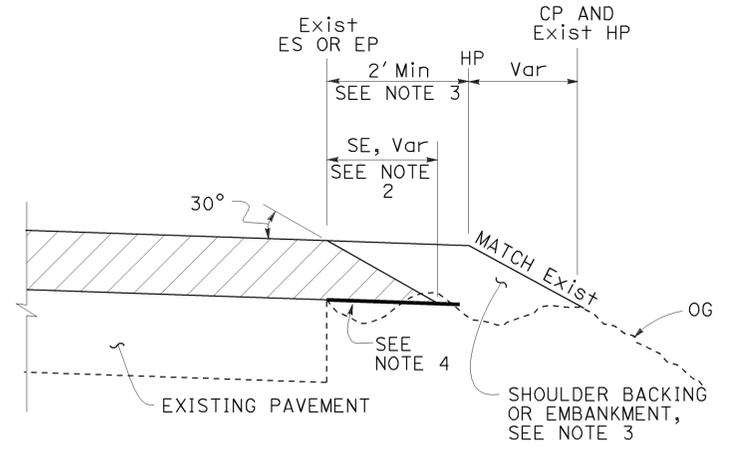
ADDITIONAL HMA OR CONCRETE QUANTITIES FOR SE/SIDE/MILE

TYPICAL CROSS SECTION	TT	TOTAL ADDITIONAL MATERIAL FOR SE/SIDE/MILE		
		HMA (TON)	CONCRETE (CY)*	CONCRETE (CY)**
	0.15'	NA	NA	NA
	0.20'	13.7	NA	NA
	0.30'	30.9	NA	NA
	0.40'	54.9	NA	NA
	0.45'	69.4	NA	NA
	0.50'	84.2	NA	NA
	0.60'	113.9	NA	NA
	0.70'	143.6	70.9	94.2
	0.80'	173.3	85.6	112.2
	0.90'	203.0	100.3	130.2
	1.00'	232.7	114.9	148.2
	1.10'	262.4	129.6	166.2
1.20'	292.1	144.3	184.2	

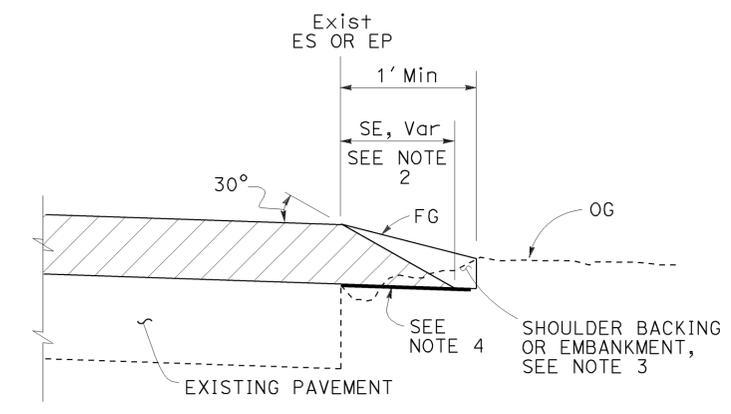
* For Detail "A"
 ** For Optional Detail "A"



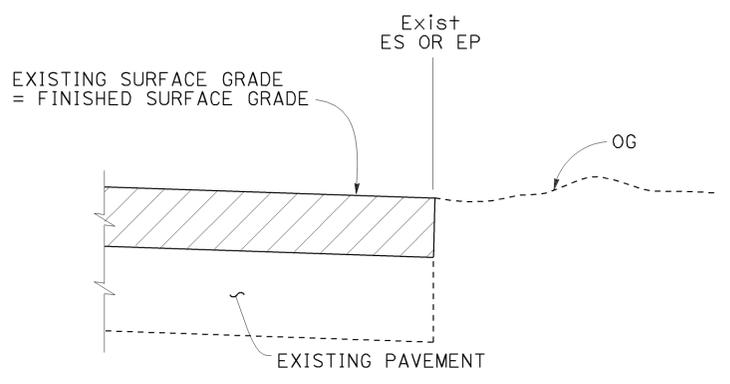
CASE A
Safety Edge



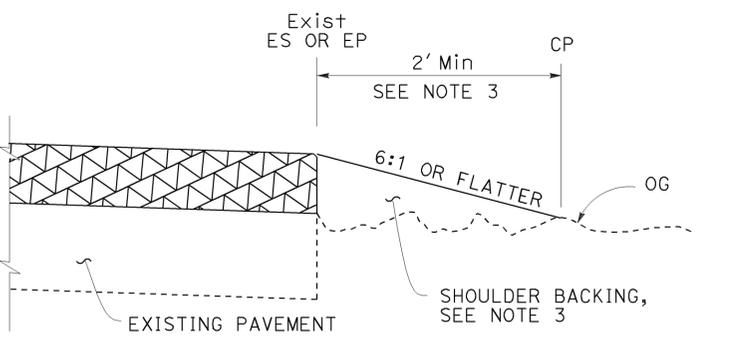
CASE B
Safety Edge



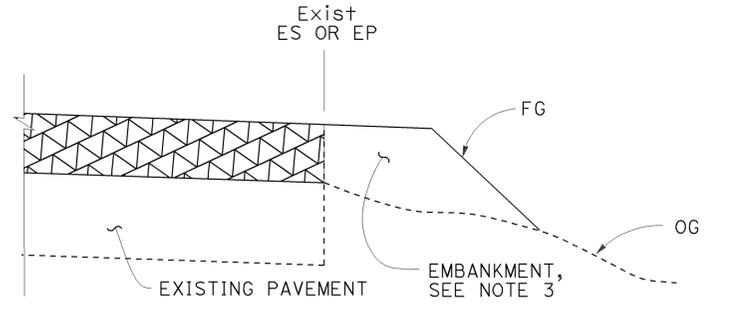
CASE C
Safety Edge



CASE D
Vertical Edge



CASE E
Vertical Edge

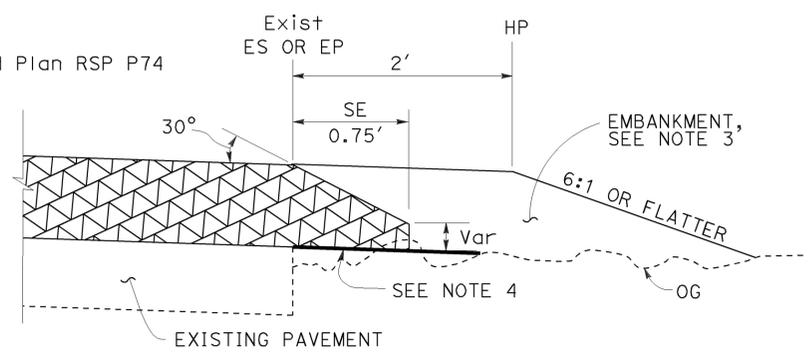


CASE F
Vertical Edge
* See Table A and Revised Std Plan RSP P74

- NOTES:**
- For limits of safety edge and vertical edge treatments, see Revised Standard Plan RSP P74.
 - Details shown for HMA overlay thickness less than 0.43'. See Detail "A" for HMA overlay thickness more than 0.43' or concrete overlay.
 - For locations and limits of shoulder backing or embankment see project plans.
 - Grade existing ground to place safety edge. 1' minimum width
 - Safety edge transverse joint must match overlay transverse joint. End of #6 longitudinal bar must be 2" ± 1/2" clear from transverse joint.
 - Safety edge is not needed in the area of MBGR, barrier, right turn lane and acceleration lane. See Revised Standard Plan RSP P74.

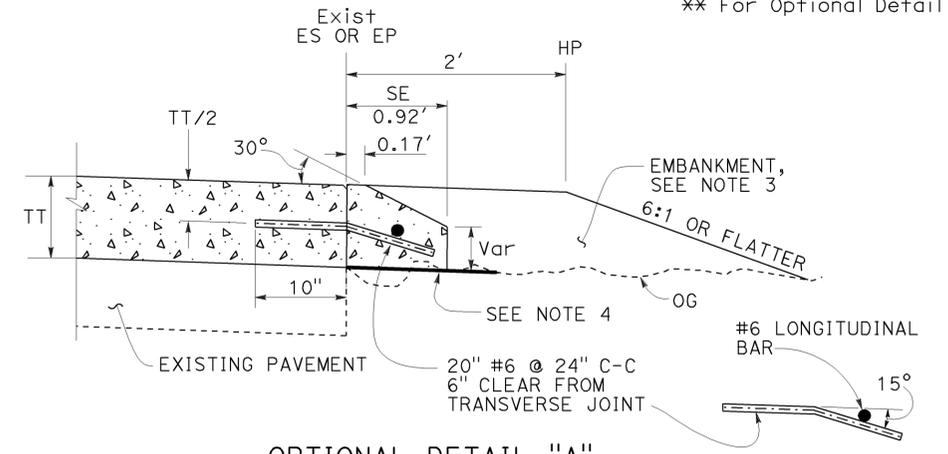
TABLE A
EDGE TREATMENT FOR VARIOUS OVERLAY THICKNESS AND CONDITIONS

FIELD CONDITION	OVERLAY THICKNESS	
	LESS THAN 0.15'	0.15' OR MORE
Exist SLOPE 6:1 OR FLATTER	CASE E	CASE A
Exist SLOPE 3:1 TO 6:1	CASE E	CASE B
Exist SLOPE STEEPER THAN 3:1	CASE F	CASE F
CUT SECTION (REPLACE, COLD PLANE, MILL PAVEMENT)	CASE D	CASE C



DETAIL "A"

For HMA overlay thickness more than 0.43' or concrete overlay



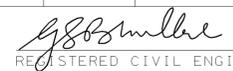
OPTIONAL DETAIL "A"
For concrete overlay
See Note 5

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

RSP P75 DATED JANUARY 20, 2012 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP P75

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mno	395	6.9/R9.9	33	35


 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 10-21-13

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
mph	ft	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
 FOR LANE CLOSURE ON
 FREEWAYS AND EXPRESSWAYS**

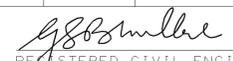
NO SCALE

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

REVISED STANDARD PLAN RSP T9

2010 REVISED STANDARD PLAN RSP T9

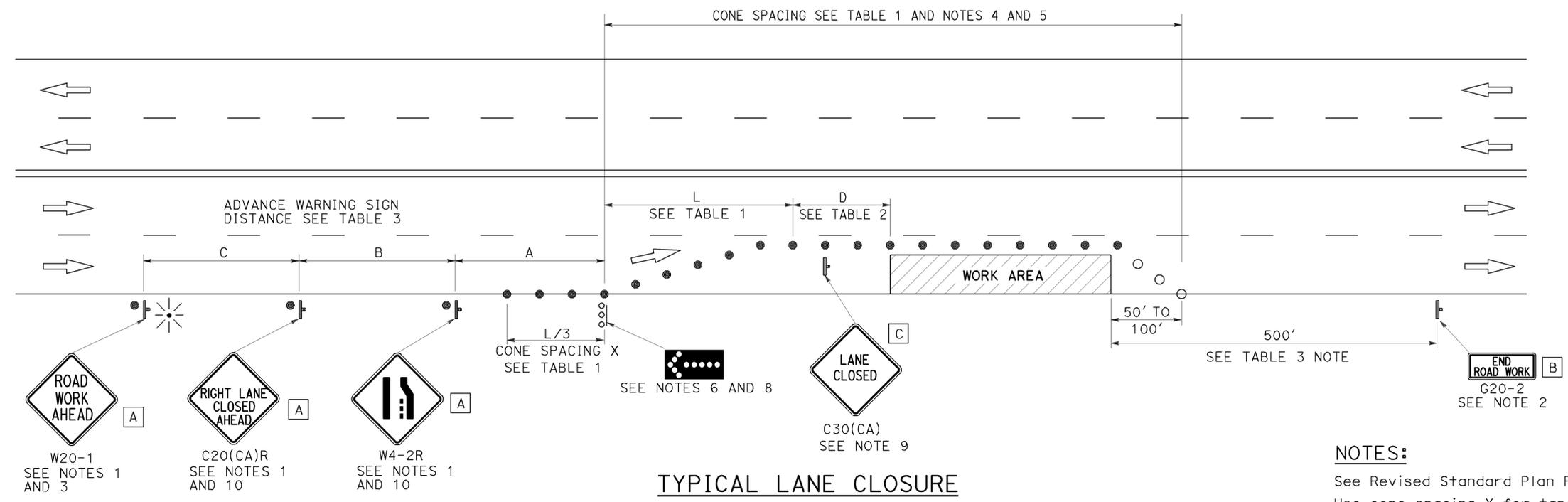
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mno	395	6.9/R9.9	34	35


 REGISTERED CIVIL ENGINEER
 April 19, 2013
 PLANS APPROVAL DATE

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

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

TO ACCOMPANY PLANS DATED 10-21-13



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

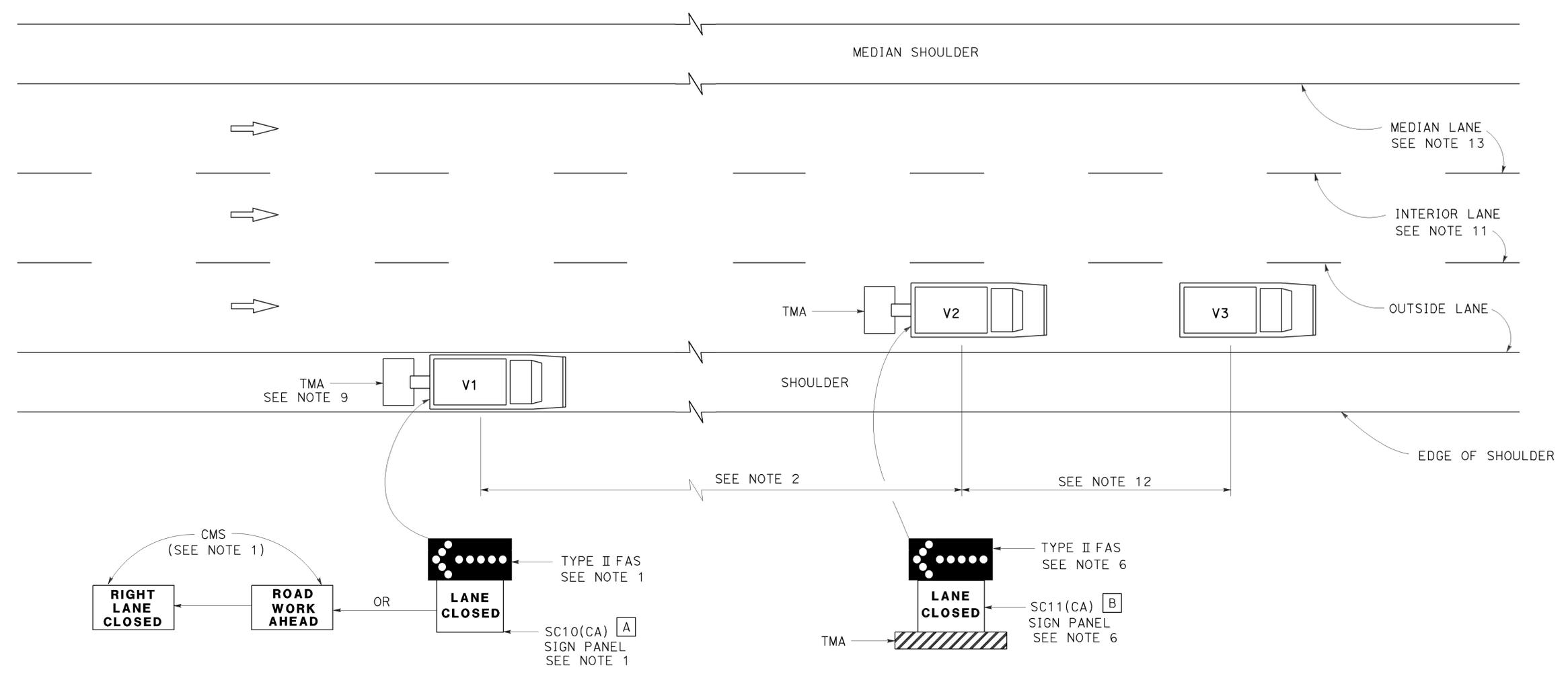
RSP T11 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T11 DATED MAY 20, 2011 - PAGE 239 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T11

2010 REVISED STANDARD PLAN RSP T11



TO ACCOMPANY PLANS DATED 10-21-13



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:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SYSTEM FOR MOVING LANE CLOSURE ON MULTILANE HIGHWAYS
NO SCALE

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

REVISED STANDARD PLAN RSP T15

2010 REVISED STANDARD PLAN RSP T15