

STATE OF CALIFORNIA  
**DEPARTMENT OF TRANSPORTATION**  
**PROJECT PLANS FOR CONSTRUCTION ON**  
**STATE HIGHWAY**  
**IN LASSEN COUNTY**  
**ABOUT 10 MILES EAST OF WESTWOOD**  
**FROM 3.4 MILES WEST OF SUSAN RIVER BRIDGE**  
**TO 3.4 MILES EAST OF ROUTE 36/44**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Las	36	14.0/22.5	1	38

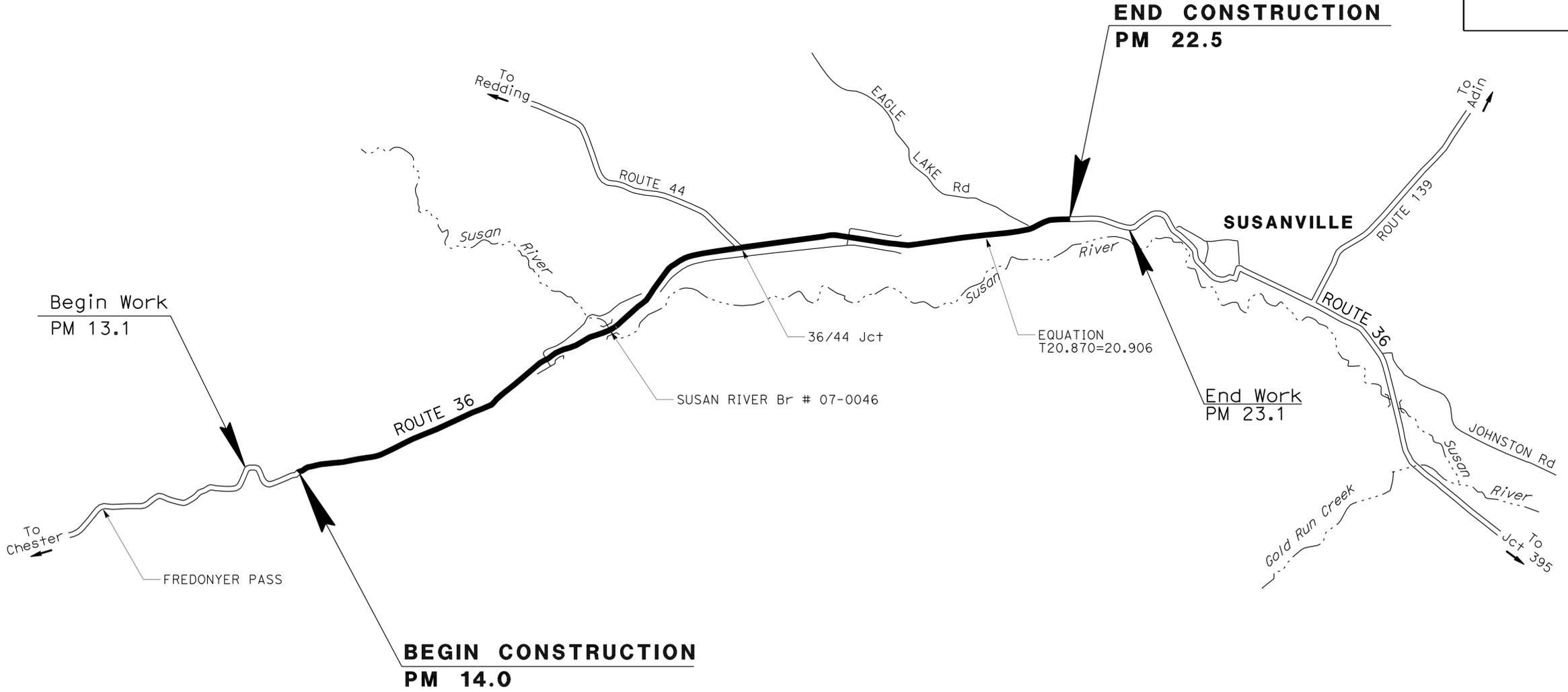


INDEX OF PLANS

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

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006



PROJECT MANAGER  
**ERIC ORR**  
 DESIGN ENGINEER  
**MARK MILLER**

*Stephen Veatch* 02-23-10  
 PROJECT ENGINEER DATE  
 REGISTERED CIVIL ENGINEER  
**February 26, 2010**  
 PLANS APPROVAL DATE



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

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

NO SCALE



USERNAME => s123119  
 DGN FILE => 20e200ab001.dgn

CONTRACT No. **02-OE2004**

CU 02 185  
 EA 0E2001

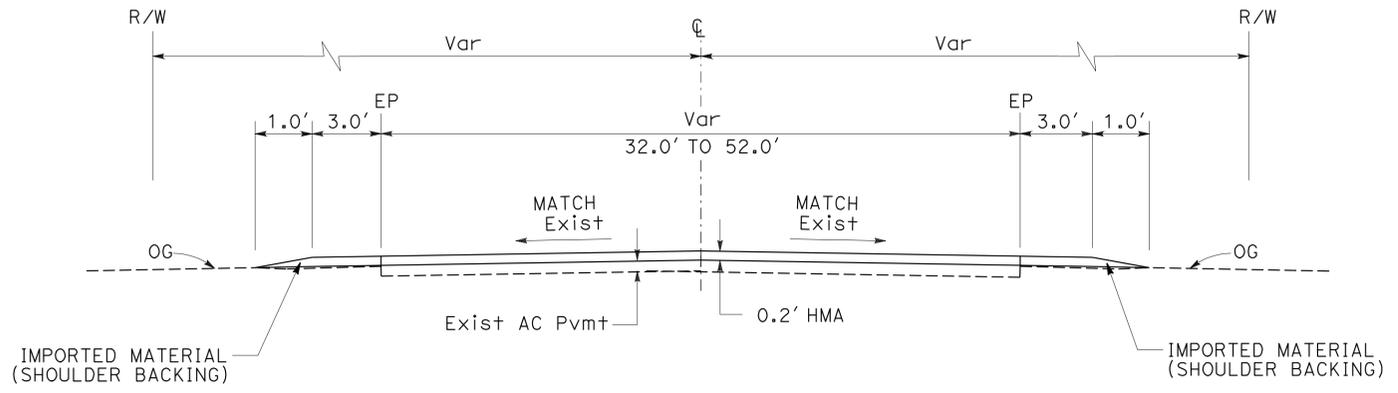
Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Las	36	14.0/22.5	2	38
<i>Stephen Veatch</i> 02-26-10 REGISTERED CIVIL ENGINEER DATE					
02-26-10			PLANS APPROVAL DATE		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

**ABBREVIATION**

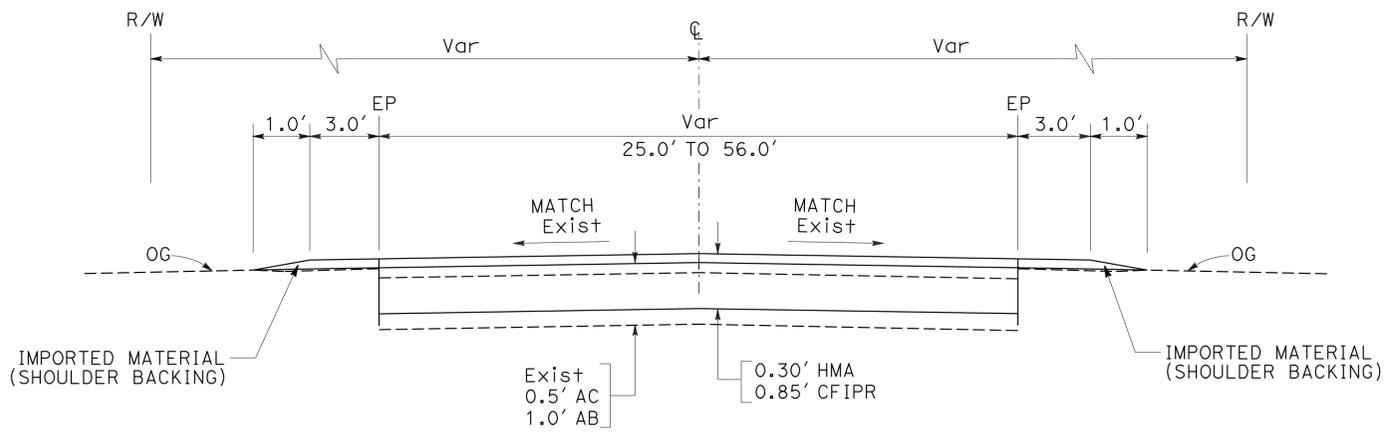
CFIPR COLD FOAM IN-PLACE RECYCLING

**NOTES:**

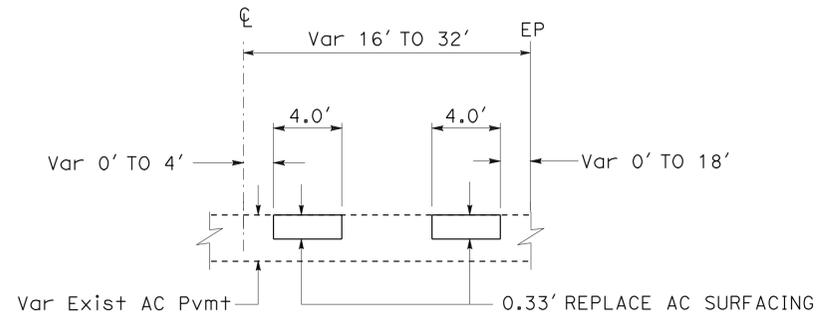
- DIMENSIONS OF THE STRUCTURAL SECTIONS ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
- SUPERELEVATIONS AS SHOWN OR AS DIRECTED BY THE ENGINEER.
- EXISTING UTILITY FACILITIES HAVE NOT BEEN PLOTTED ON THESE PLANS.
- FOR COMPLETE RIGHT OF WAY DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.



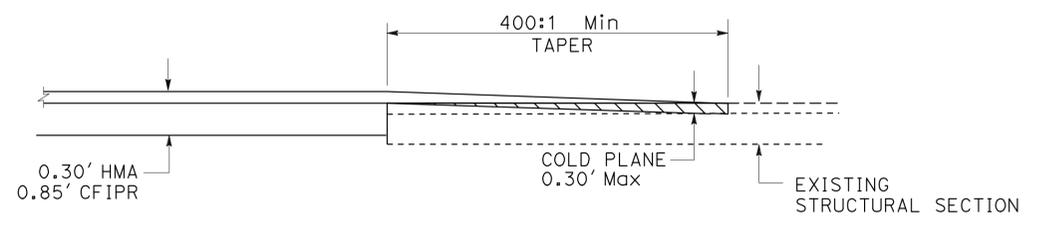
**TYPICAL CROSS SECTION**  
PM R17.4/22.5



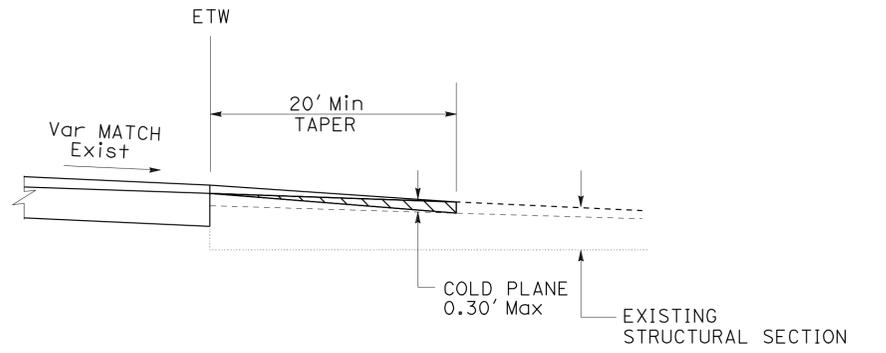
**TYPICAL CROSS SECTION**  
PM 14.3/R17.4



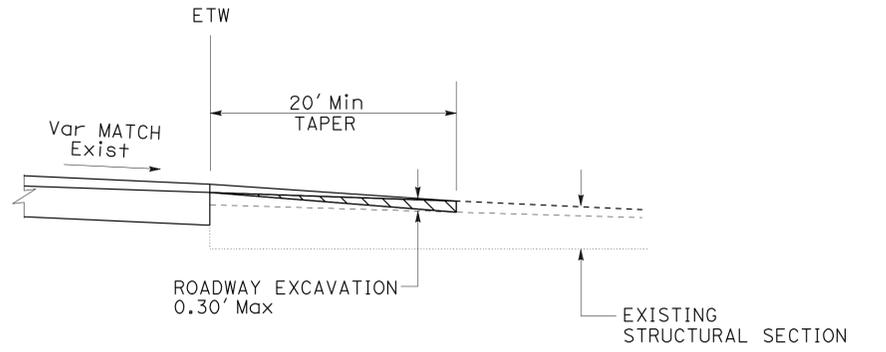
**REPLACE AC SURFACING**  
(TYPICAL BOTH DIRECTIONS)  
PM R17.4/22.5



**MAINLINE CONFORM TAPER**  
PM 14.3 AND 22.5



**CONFORM TAPER FOR PAVED ROAD CONNECTIONS**  
PM 14.3/22.5

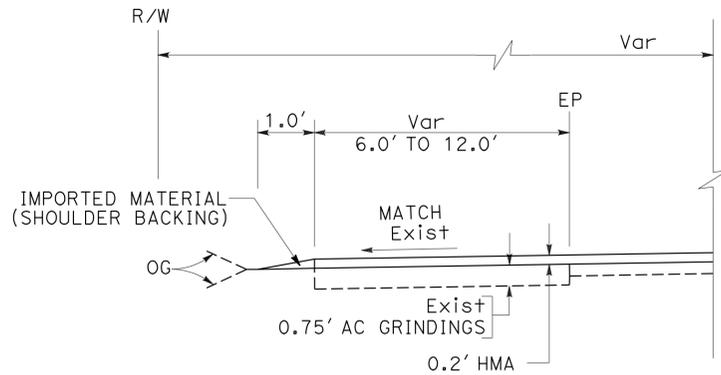


**CONFORM TAPER FOR UNPAVED ROAD CONNECTIONS**  
PM 14.3/22.5

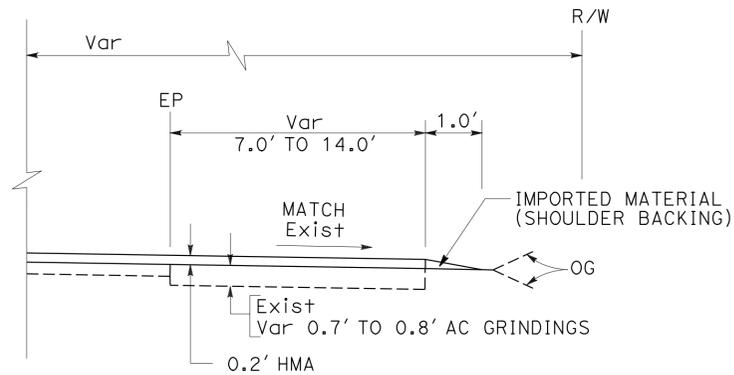
**TYPICAL CROSS SECTIONS**  
NO SCALE  
**X-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ADVANCE PLANNING  
 FUNCTIONAL SUPERVISOR: MARK MILLER  
 CALCULATED/DESIGNED BY: [Blank]  
 CHECKED BY: [Blank]  
 STEVE VEATCH  
 KENDEE VANCE  
 REVISED BY: [Blank]  
 DATE REVISED: [Blank]

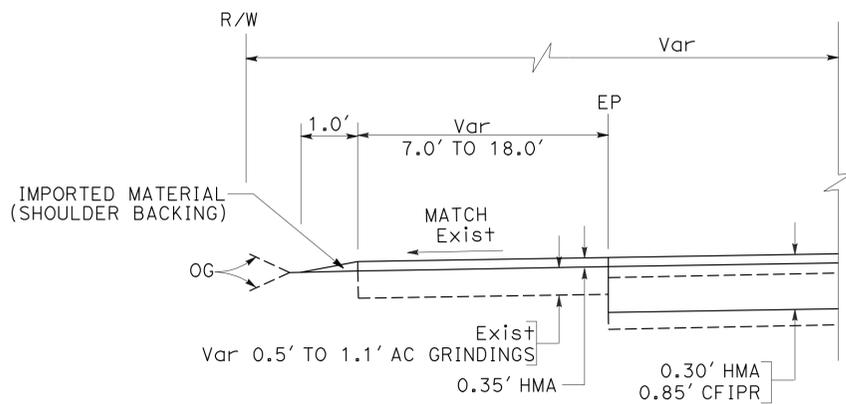
Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Las	36	14.0/22.5	3	38
<i>Michael R. Webb</i> REGISTERED CIVIL ENGINEER DATE 02-26-10			02-26-10 PLANS APPROVAL DATE		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					



**TYPICAL SHOULDER PAVING CHAIN ON/OFF AREA**  
PM 19.3/19.4 WB Shld



**TYPICAL SHOULDER PAVING CHAIN ON/OFF AREA**  
PM 19.2/19.4 EB Shld



**TYPICAL SHOULDER PAVING CHAIN ON/OFF AREA**  
PM 15.0/15.2 WB Shld

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

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



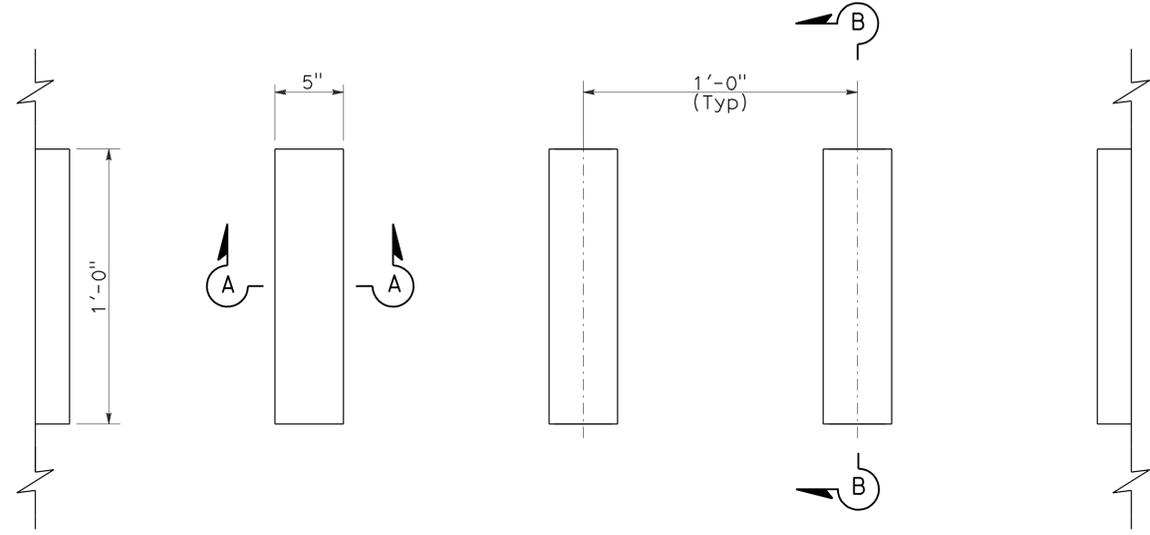
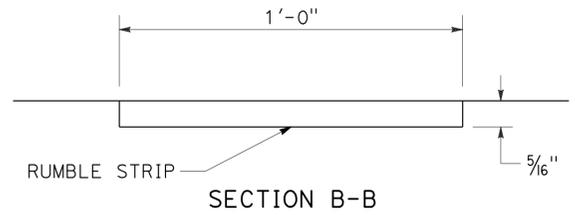
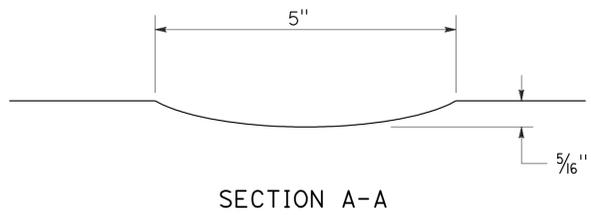
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02	Las	36	14.0/22.5	5	38

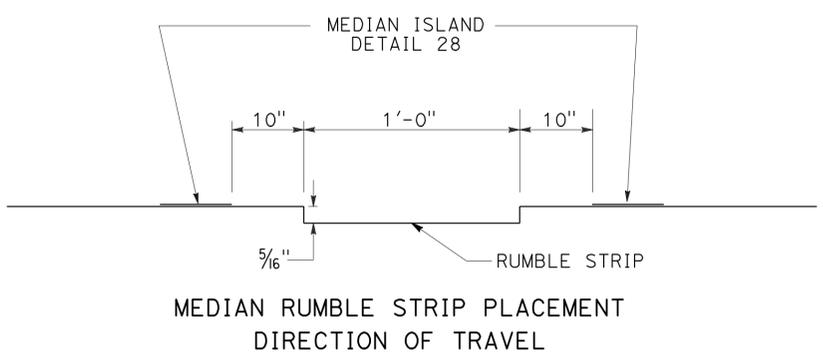
<i>Stephen Veatch</i>	02-26-10
REGISTERED CIVIL ENGINEER	DATE
02-26-10	
PLANS APPROVAL DATE	

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PLAN  
GROUND-IN INDENTATIONS



**TYPICAL GROUND-IN RUMBLE STRIP  
MEDIAN PLACEMENT**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	DESIGNED BY	REVISOR
<b>Caltrans</b> ADVANCE PLANNING	MARK MILLER	STEVE VEATCH	STEVE VEATCH
		CHECKED BY	DATE REVISED
		KENDEE VANCE	



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Las	36	14.0/22.5	7	38
			02-23-10	DATE	
			02-26-10	DATE	

PROFESSIONAL GEOLOGIST

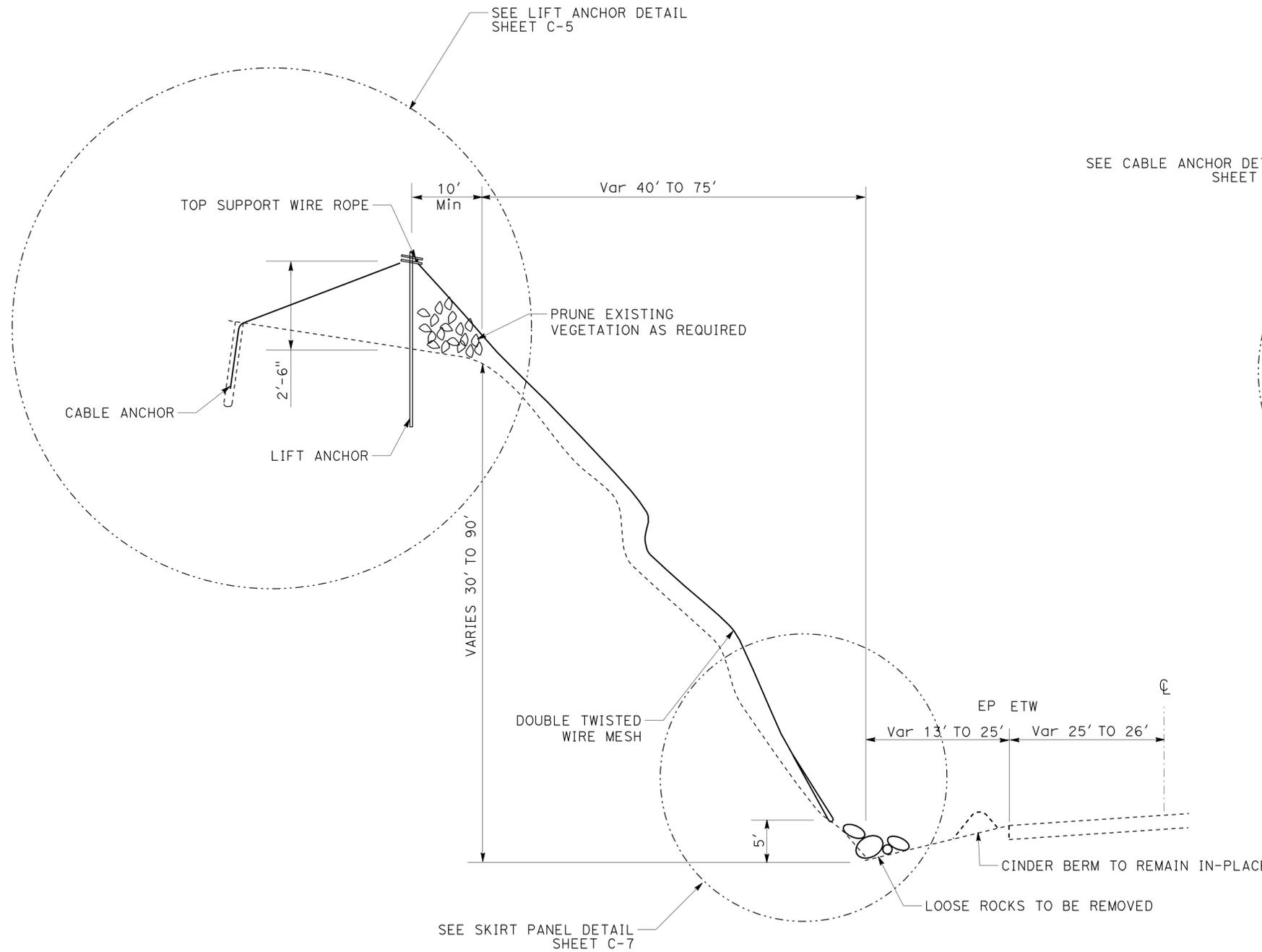
JOHN D. DUFFY  
No. 2368  
CERTIFIED ENGINEERING GEOLOGIST  
2/28/12

STATE OF CALIFORNIA

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**NOTE:**

1. SEE SHEETS C-5 AND C-6 FOR ALTERNATE ANCHORS AND DETAILS.



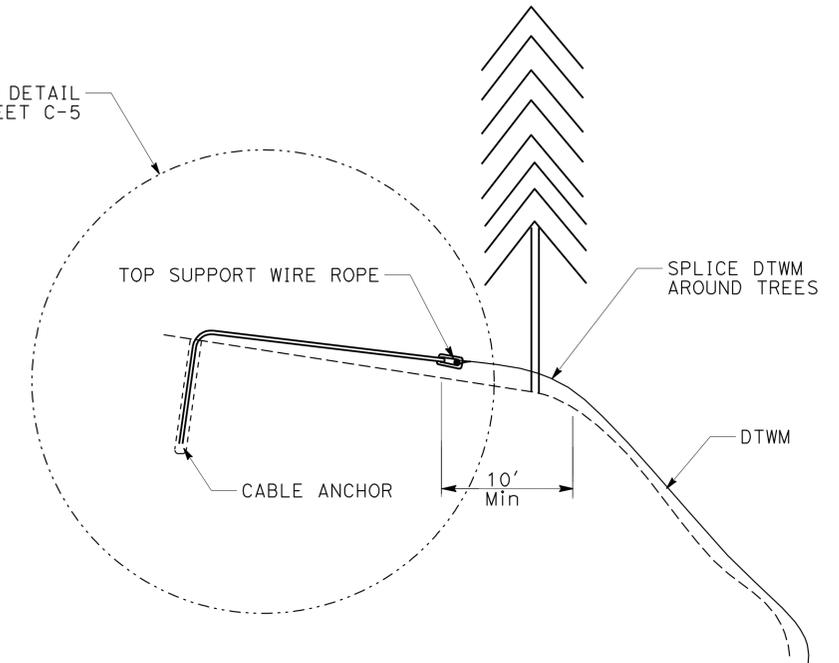
**LIFT ANCHOR METHOD**

PM 14.12 TO PM 14.27

**NOTE:**

1. SEE MID-SPAN LIFTER POST DETAIL FOR BETWEEN LIFT ANCHORS.

SEE CABLE ANCHOR DETAIL SHEET C-5



**CABLE ANCHOR METHOD**

PM 14.05 TO PM 14.12  
PM 14.27 TO 14.33

**CONSTRUCTION DETAILS  
DOUBLE TWISTED WIRE MESH**

NO SCALE

**C-4**

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR  
LANCE BROWN

CALCULATED-DESIGNED BY  
CHECKED BY

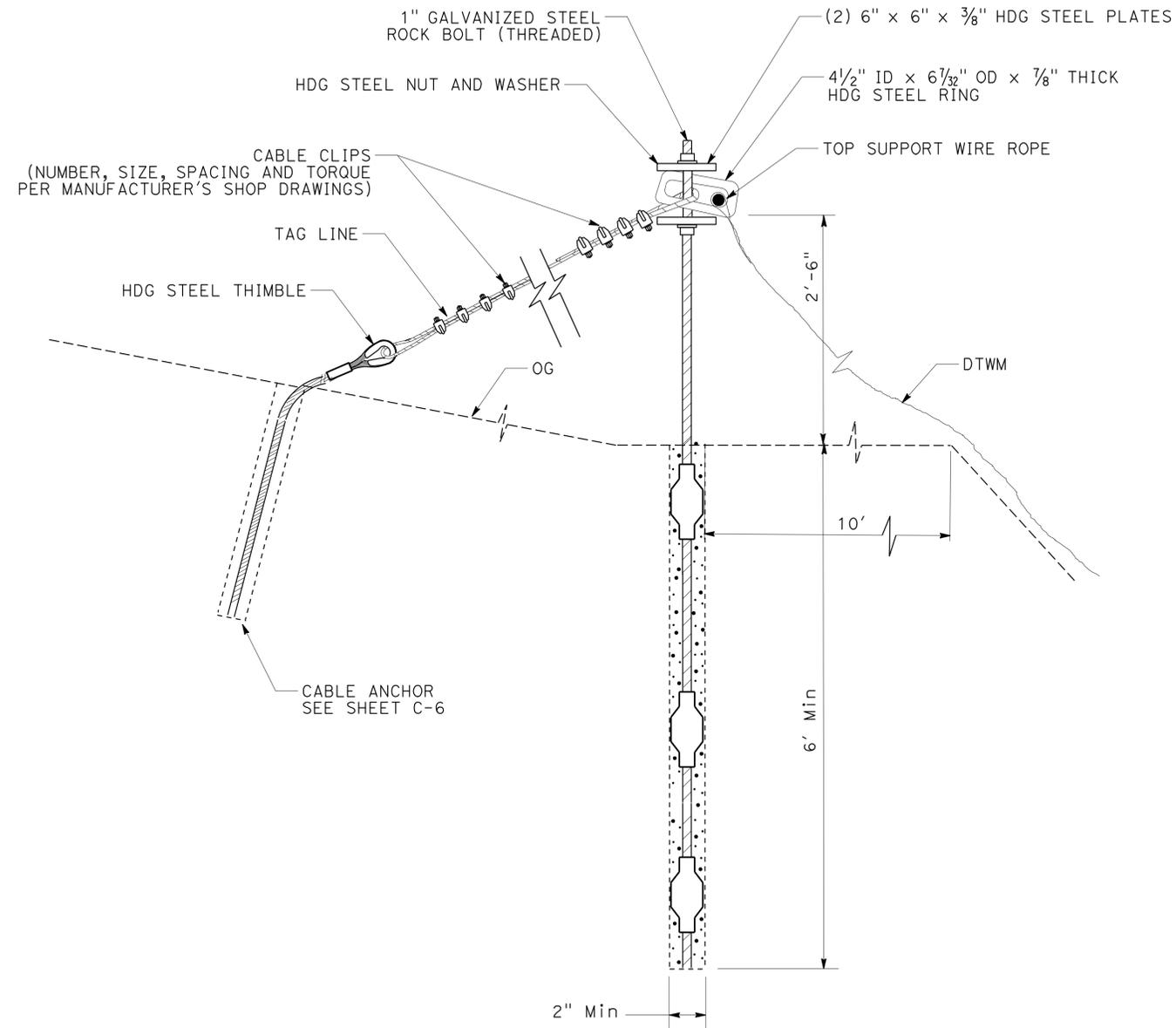
KURT SCHNEIDER  
MATT GOWAN

REVISED BY  
DATE REVISED

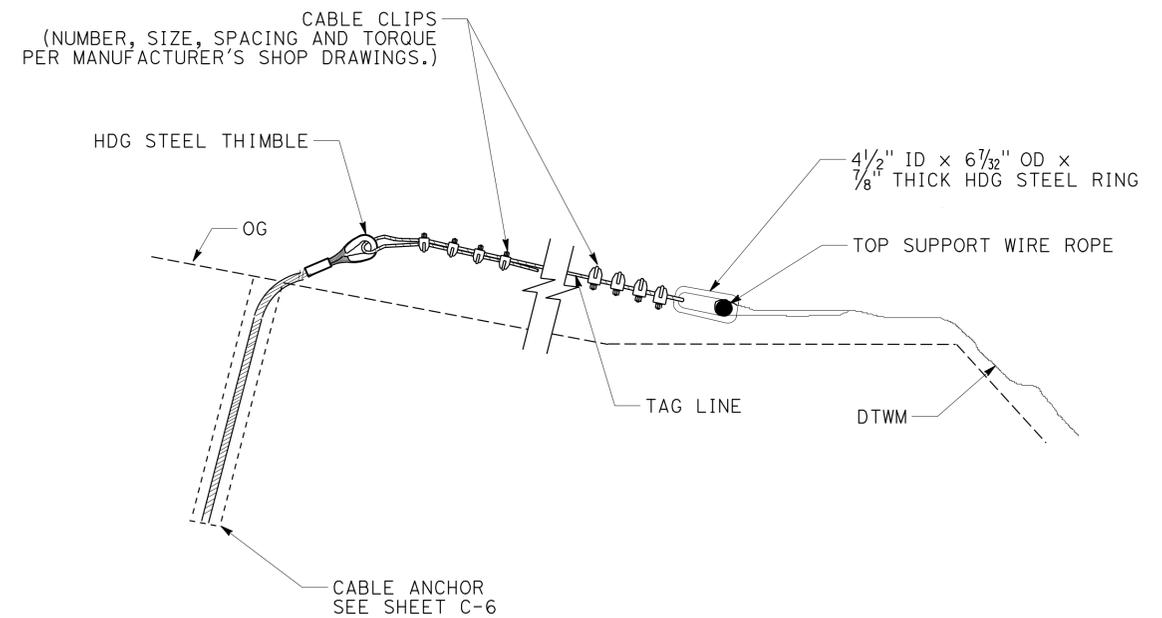
DATE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Las	36	14.0/22.5	8	38
			02-23-10	DATE	
			02-26-10	DATE	

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**LIFT ANCHOR DETAIL**



**CABLE ANCHOR DETAIL**

**CONSTRUCTION DETAILS**

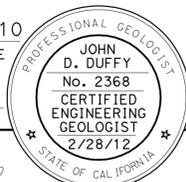
NO SCALE

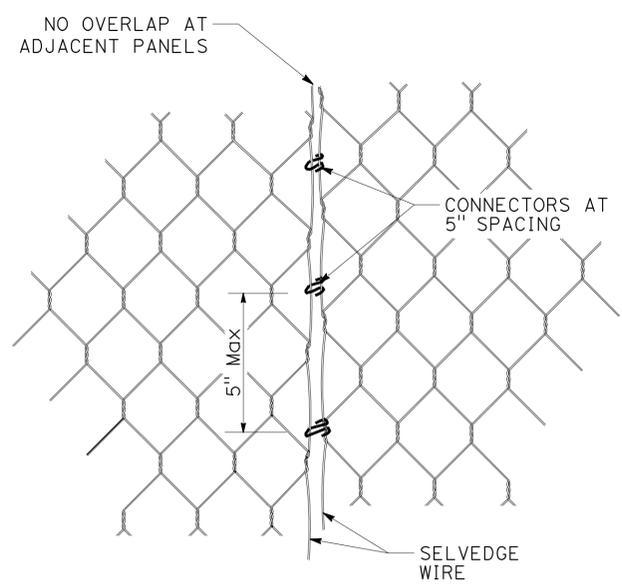
**C-5**

FUNCTIONAL SUPERVISOR	LANCE BROWN	REVISOR	DATE	
DESIGNED BY	CHECKED BY	KURT SCHNEIDER	MATT GOWAN	
CALCULATED BY	DESIGNED BY	KURT SCHNEIDER	MATT GOWAN	
REVISOR	DATE	REVISOR	DATE	

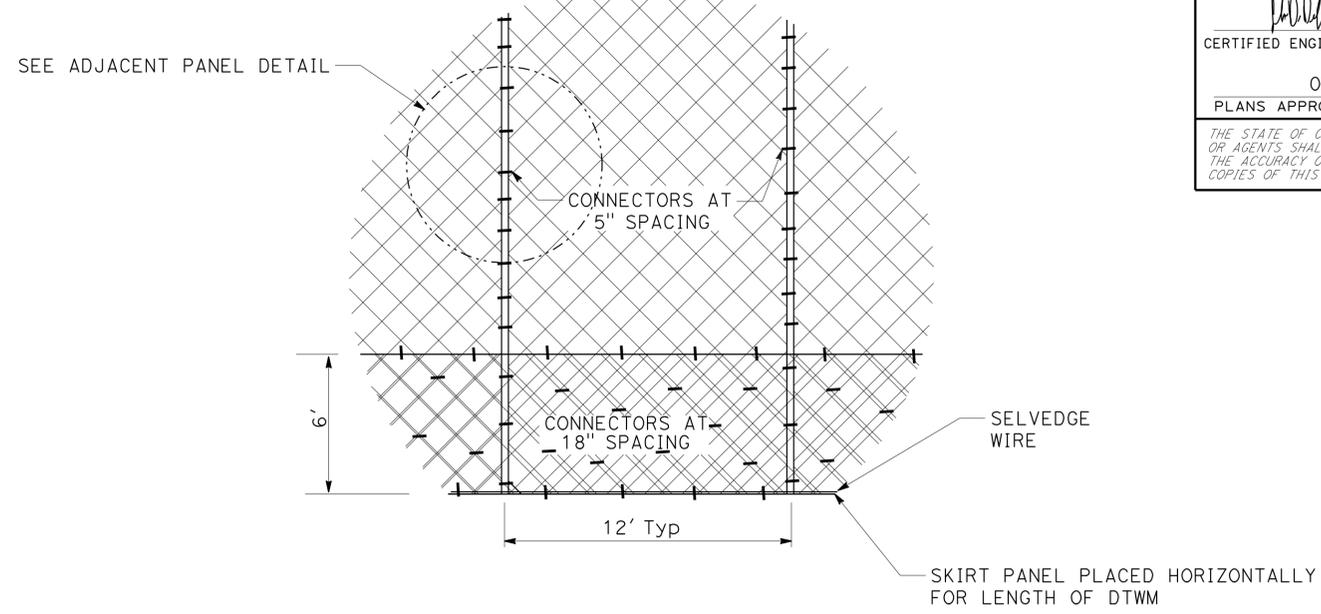




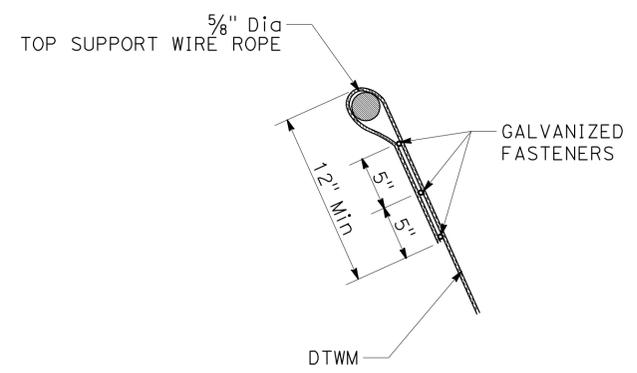
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Las	36	14.0/22.5	10	38
			02-23-10		
			02-26-10	PLANS APPROVAL DATE	
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



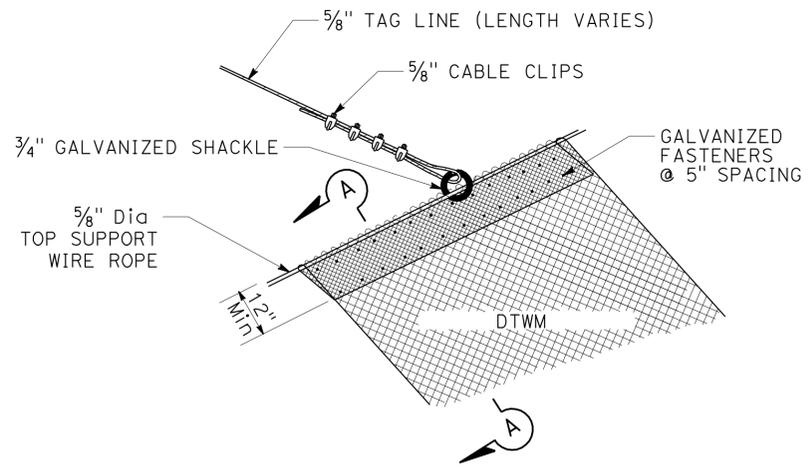
**ADJACENT PANEL DETAIL**



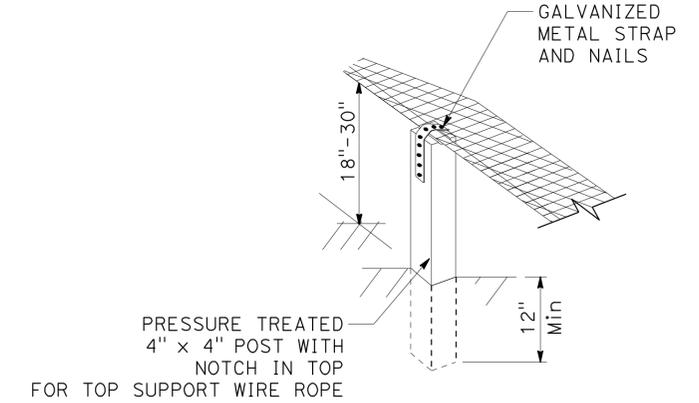
**SKIRT PANEL DETAIL**



**SECTION A-A  
DTWM TO TOP SUPPORT  
ROPE CONNECTION DETAIL**



**TAG LINE TO TOP SUPPORT  
WIRE ROPE CONNECTION DETAIL**

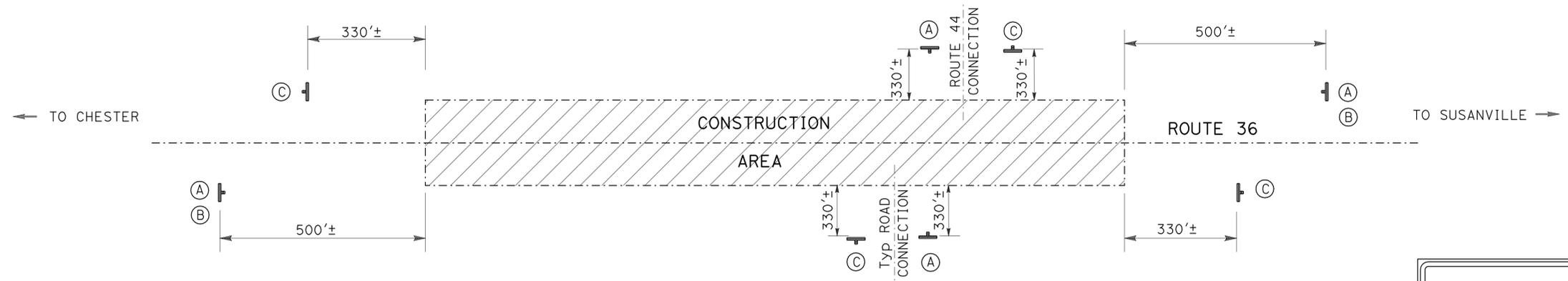


**MID-SPAN LIFTER POST DETAIL**

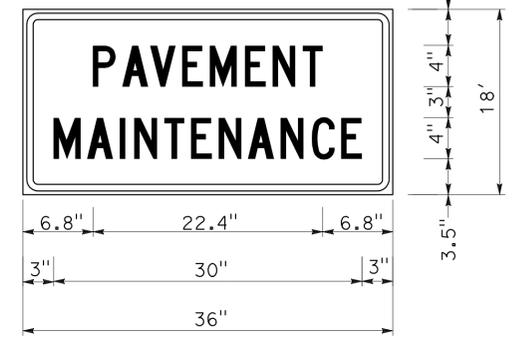
NOTE:  
1. MAY BE REQUIRED BETWEEN LIFT ANCHORS TO MAINTAIN 18" MINIMUM CLEARANCE UNDER THE TOP EDGE OF DTWM.

x  
x  
x  
x  
x  
x  
 STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 Maintenance Engineering  
 KURT SCHNEIDER  
 MATT GOWAN  
 LANCE BROWN  
 REVISOR BY DATE  
 CHECKED BY  
 DESIGNED BY  
 FUNCTIONAL SUPERVISOR  
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NOTE:  
1. EXACT SIGN LOCATION TO BE DETERMINED BY THE ENGINEER.

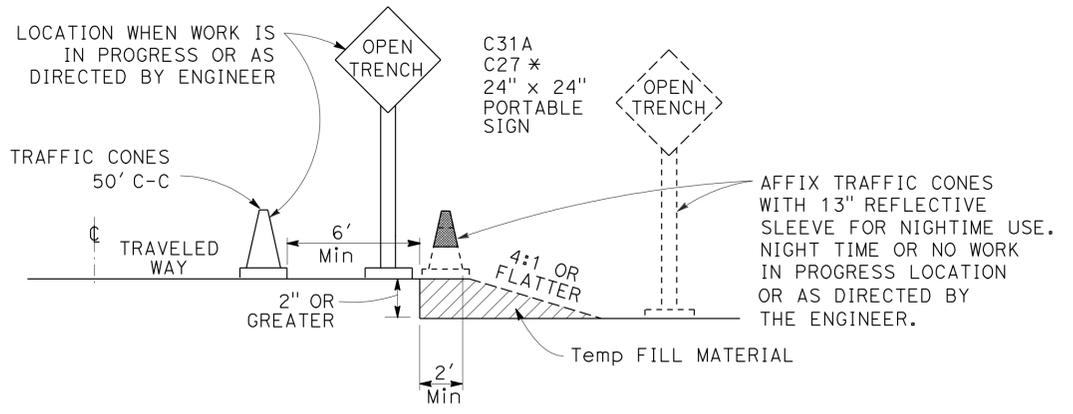


**CONSTRUCTION AREA SIGNS (TYPICAL)**



1.5" RADIUS, 0.6" BORDER, 0.4" INDENT, BLACK ON ORANGE;  
[PAVEMENT] C;  
[MAINTENANCE] C;

**C23B SIGN PANEL DETAIL**



**OPEN TRENCH SIGNING AND MARKING**

\* PLACE AT 250' INTERVALS THROUGH THE OPEN TRENCH AREA, ALTERNATE C27 (OPEN TRENCH) AND C31A (NO SHOULDER) SIGNS

**CONSTRUCTION AREA SIGNS (STATIONARY MOUNTED)**

TYPE	CODE	PANEL SIZE	SIGN MESSAGE	NUMBER AND SIZE OF POST	No. OF SIGNS
(A)	G20-1	48" x 48"	ROAD WORK AHEAD	1-4" x 6"	15
(B)	C23B(CA)	36" x 18"	PAVEMENT MAINTENANCE		2
(C)	G20-2	48" x 18"	END ROAD WORK	1-4" x 6"	15

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

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ADVANCE PLANNING

FUNCTIONAL SUPERVISOR: MARK MILLER  
 CALCULATED/DESIGNED BY: [blank]  
 CHECKED BY: [blank]  
 STEVE VEATCH  
 KENDEE VANCE  
 REVISED BY: [blank]  
 DATE REVISED: [blank]

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Las	36	14.0/22.5	12	38

Stephen Veatch 02-26-10  
 REGISTERED CIVIL ENGINEER DATE  
 02-26-10  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 STEPHEN VEATCH  
 No. C73772  
 Exp. 6-30-11  
 CIVIL  
 STATE OF CALIFORNIA

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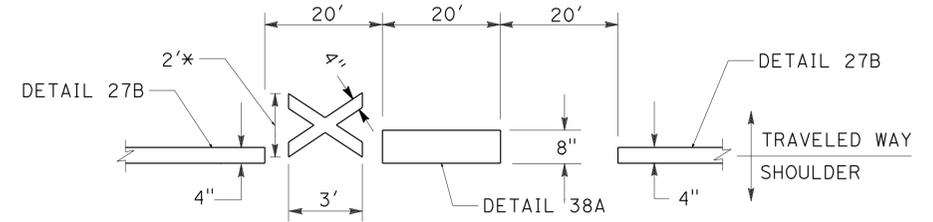
### THERMOPLASTIC TRAFFIC STRIPE (SPRAYABLE)

POST MILE LIMITS	LOCATION			DETAIL NUMBER OR DESCRIPTION	THERMOPLASTIC TRAFFIC STRIPE (SPRAYABLE) (LF)	
	L+	CENTER	R+		YELLOW	WHITE
14.30 TO 14.32	X			11 (WB)		105.6
14.30 TO 14.41		X		21	580.8	
14.30 TO 19.10	X		X	27B, 38A*		50688.0
14.41 TO 14.45		X		18	211.2	
14.45 TO 14.83		X		5	2006.4	
14.83 TO 15.07		X		21	1267.2	
15.07 TO 15.20		X		18	686.4	
15.20 TO 15.51		X		5	1636.8	
15.51 TO 15.75		X		18	1267.2	
15.75 TO 15.92		X		5	897.6	
15.92 TO 16.08		X		18	844.8	
16.08 TO 16.42		X		21	1795.2	
16.42 TO 16.60		X		18	950.4	
16.60 TO 16.76		X		5	844.8	
R16.76 TO R16.85		X		18	475.2	
R16.85 TO R16.98		X		21	686.4	
R16.98 TO R17.06		X		18	422.4	
R17.06 TO R17.50		X		5	2323.2	
R17.50 TO R17.68		X		21	950.4	
R17.64 TO R18.79	X			11 (WB)		6072.0
R17.68 TO R18.80			X	11 (EB)		5913.6
R17.68 TO R18.80		X		28	11827.2	
R18.80 TO R18.90		X		28	1056	
R18.90 TO R18.92		X		21	105.6	
R18.92 TO R18.98		X		18	316.8	
R18.98 TO R19.10		X		5	633.6	
R19.10 TO R22.50	X		X	27B, 38A*		35904.0
R19.16 TO R19.32		X		18	844.8	
R19.32 TO R20.11		X		5	4171.2	
R20.11 TO R20.24		X		21	686.4	
R20.16 TO R20.27			X	27C (EB)		1161.6
R20.24 TO R20.31		X		18	369.6	
R20.31 TO R20.61		X		5	1584.0	
R20.61 TO R20.86		X		21	1320	
20.86 TO 21.01		X		18	792.0	
21.01 TO 21.26		X		5	1320	
21.26 TO 21.39		X		18	686.4	
21.39 TO 21.45		X		21	316.8	
21.45 TO 21.59		X		18	739.2	
21.59 TO 21.75		X		5	844.8	
21.75 TO 21.84		X		18	475.2	
21.84 TO 22.50		X		21	3484.8	
22.02 TO 22.09			X	38A (EB)		369.6
SUBTOTAL					49420.8	100214.4
TOTAL					149635	

\* SEE TYPICAL MILE POST STRIPE DETAIL FOR LOCATIONS OF 38A STRIPE

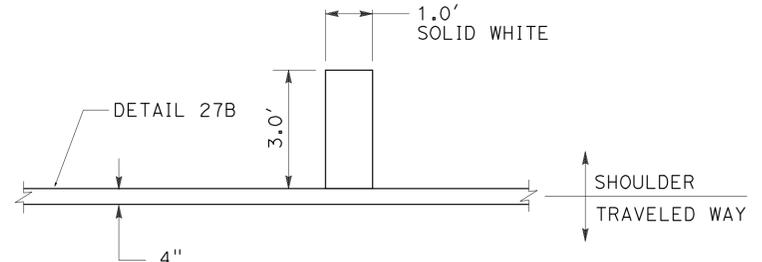
### THERMOPLASTIC PAVEMENT MARKING

POST MILE	L+	Mid	R+	LF	SOFT	DESCRIPTION
14.50	X				3	HALF MILE POST STRIPE
14.83	X			20	20	LIMIT LINE
14.83	X				22	STOP
15.50	X				3	HALF MILE POST STRIPE
15.63			X	20	20	LIMIT LINE
15.63			X		22	STOP
16.34	X	X	X		256	CATTLE GUARD
16.50	X				3	HALF MILE POST STRIPE
R16.83	X			20	20	LIMIT LINE
R16.83	X				22	STOP
R16.83			X	20	20	LIMIT LINE
R16.83			X		22	STOP
R17.50	X				3	HALF MILE POST STRIPE
R17.55			X	20	20	LIMIT LINE
R17.55			X		22	STOP
R18.50	X				3	HALF MILE POST STRIPE
R19.20	X			20	20	LIMIT LINE
R19.20	X				22	STOP
R19.20	X				42	TYPE III (R+) ARROW
R19.50	X				3	HALF MILE POST STRIPE
R20.22			X		42	TYPE III (R+) ARROW
R20.22	X			20	20	LIMIT LINE
R20.22	X				22	STOP
R20.22			X	20	20	LIMIT LINE
R20.22			X		22	STOP
R20.50	X				3	HALF MILE POST STRIPE
R20.81	X	X	X		256	CATTLE GUARD
21.50	X				3	HALF MILE POST STRIPE
21.98			X	20	20	LIMIT LINE
21.98			X		22	STOP
22.05	X			20	20	LIMIT LINE
22.05	X				22	STOP
22.05			X		42	TYPE III (R+) ARROW
22.06			X	20	20	LIMIT LINE
22.06			X		22	STOP
22.06	X				42	TYPE III (L+) ARROW
22.39	X			20	20	LIMIT LINE
22.39	X				22	STOP
22.49	X				42	TYPE VI (L+) ARROW
22.50	X				3	HALF MILE POST STRIPE
TOTAL					1253	



**TYPICAL MILE POST STRIPE**

- NOTES:  
 1. ON RIGHT EDGELINE AT EACH WHOLE POST MILE  
 2. \* 4" SOLID WHITE "X" TO BE PLACED ONLY AT BOTH ENDS OF A FRACTIONAL MILE.



**TYPICAL HALF MILE POST STRIPE**

- NOTES:  
 1. ON LEFT EDGELINE AT EACH HALF POST MILE  
 2. NOT TO BE USED WITHIN FRACTIONAL MILE SEGMENT

## PAVEMENT DELINEATION DETAILS AND QUANTITIES

NO SCALE **PDD-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - ADVANCE PLANNING  
 Steve Veatch  
 Kendee Vance  
 Mark Miller  
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Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Las	36	14.0/22.5	13	38

*Stephen Veatch* 02-26-10  
 REGISTERED CIVIL ENGINEER DATE  
 02-26-10  
 PLANS APPROVAL DATE

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NOTES:  
 1. (N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

**MEDIAN RUMBLE STRIP  
 (HMA, GROUND-IN INDENTATIONS)**

POST MILE	LOCATION	LENGTH (F+) (N)	STA
17.6 TO 18.8	CL	6336	64
		TOTAL	64

**SHOULDER RUMBLE STRIP  
 (HMA, GROUND-IN INDENTATIONS)**

POST MILE	LOCATION	LENGTH (F+) (N)	STA
18.8 TO 20.1	LT/RT	13728	137
		TOTAL	137

**ROADWAY QUANTITIES**

POST MILE LIMITS	L+/R+	REMOVE ASPHALT CONCRETE DIKE	ROADWAY EXCAVATION	IMPORTED MATERIAL (SHOULDER BACKING)	ASPHALTIC EMULSION	HOT MIX ASPHALT	PLACE HOT MIX ASPHALT DIKE (TYPE E)	PLACE HOT MIX ASPHALT DIKE (TYPE F)	TACK COAT	STABILIZING AGENT (FOAMED ASPHALT)	STABILIZING AGENT (CEMENTITIOUS MATERIAL)	COLD FOAM IN-PLACE RECYCLING	COMMENTS
		LF	CY	TON	TON	TON	LF	LF	TON	TON	TON	SOYD	
14.30 TO R17.40	L+/R+			1989	41	10024			25	910	520	49503	CFIPR/OVERLAY
R17.40 TO 22.50	L+/R+			3272		16374			30				DIGOUT/OVERLAY
14.83	L+			3.04		13.1							ROADWAY CONNECTION CONFORM
15.00 TO 15.02	L+					495							Typ Shld PAVING CHAIN ON/OFF AREA
15.06	R+		3.33	3.04		13.1							UNPAVED DRIVEWAY CONFORM
15.63	L+			3.04		26.1							ROADWAY CONNECTION CONFORM
15.91	L+		3.33	3.04		13.1							UNPAVED DRIVEWAY CONFORM
16.13	R+		3.33	3.04		13.1							UNPAVED DRIVEWAY CONFORM
R16.83	L+			3.04		30.5							ROADWAY CONNECTION CONFORM
R16.83	R+			3.04		30.5							ROADWAY CONNECTION CONFORM
R17.16 TO R17.17	L+	53				1.4	53						
R17.17 TO R17.30	R+	687				9.2		687					
R17.19 TO R17.28	L+	475				6.4		475					
R17.34 TO R17.36	R+	106				1.4		106					
R17.43 TO R17.48	R+	264				3.5		264					
R17.55	R+			3.04		30.5							ROADWAY CONNECTION CONFORM
R19.20	L+			3.04		26.1							ROADWAY CONNECTION CONFORM
19.20 TO 19.44	R+					200							Typ Shld PAVING CHAIN ON/OFF AREA
19.30 TO 19.44	L+					159							Typ Shld PAVING CHAIN ON/OFF AREA
R19.71 TO R19.90	R+	1003				13.4		1003					
R19.71 TO R19.95	L+	1267				16.9		1267					
R19.96 TO R20.00	L+	211				5.6	211						
R20.09 TO R20.19	R+	528				13.9	528						
R20.22	L+			3.04		26.1							ROADWAY CONNECTION CONFORM
R20.22	R+			3.04		26.1							ROADWAY CONNECTION CONFORM
R20.33 TO R20.42	R+	475				12.5	475						
R20.86	R+		3.33	3.04		13.1							UNPAVED DRIVEWAY CONFORM
21.07	L+		3.33	3.04		13.1							UNPAVED DRIVEWAY CONFORM
21.10	L+		3.33	3.04		13.1							UNPAVED DRIVEWAY CONFORM
21.19	R+		3.33	3.04		13.1							UNPAVED DRIVEWAY CONFORM
21.32	R+			3.04		26.1							ROADWAY CONNECTION CONFORM
21.98	R+			3.04		17.4							ROADWAY CONNECTION CONFORM
22.05	L+			3.04		30.5							ROADWAY CONNECTION CONFORM
22.05	R+			3.04		13.1							ROADWAY CONNECTION CONFORM
22.39	L+			3.04		13.1							ROADWAY CONNECTION CONFORM
TOTAL		5069	23	5321	41	27737	1267	3802	55	910	520	49503	

**SUMMARY OF QUANTITIES  
 Q-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - ADVANCE PLANNING  
 Steve Veatch  
 Kendee Vance  
 Calculated/Designed By  
 Checked By  
 Functional Supervisor  
 Mark Miller

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
02	Las	36	14.0/22.5	14	38

Stephen Veatch 02-26-10  
 REGISTERED CIVIL ENGINEER DATE  
 02-26-10  
 PLANS APPROVAL DATE

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

**NOTES:**

1. REPLACE ASPHALT CONCRETE SURFACE AT DIRECTION OF ENGINEER.
2. PROTECT IN PLACE MBGR BURIED POST END ANCHOR SECTION AT PM 18.23 Lt.
3. (N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

**REPLACE ASPHALT CONCRETE SURFACING**

POST MILE LIMITS	APPROXIMATE NUMBER OF DIGOUTS (N)	AVERAGE LENGTH (N)	WIDTH (N)	DEPTH (N)	REPLACE ASPHALT CONCRETE SURFACING
		LF	LF	LF	CY
R17.40 TO 22.50	273	100	4	0.33	1334
<b>TOTAL</b>	<b>273</b>				<b>1334</b>

**DOUBLE TWISTED WIRE MESH**

BEGIN PM	END PM	(N) CABLE ANCHOR	(N) LIFT ANCHOR	(N) SLOPE LENGTH	DTWM
		EA	EA	FT	SQFT
14.05	14.12	7		35-63	27,000
14.12	14.27	17	17	60-103	70,200
14.27	14.33	7		40-85	19,800
<b>TOTAL</b>		<b>31</b>	<b>17</b>		<b>117,000</b>

**BRIDGE WORK QUANTITIES**

Co-Rte	PM	BRIDGE NUMBER	BRIDGE NAME	DECK LENGTH (N)	DECK WIDTH BETWEEN RAILS (N)	SKEW ANGLE (N)	REMOVE ASPHALT CONCRETE SURFACING	MINOR CONCRETE (MINOR STRUCTURE)	RAPID SETTING CONCRETE (PATCH)	FURNISH POLYESTER CONCRETE OVERLAY	PLACE POLYESTER CONCRETE OVERLAY	REMOVE UNSOUND CONCRETE	PREPARE CONCRETE BRIDGE DECK SURFACE
				LF	LF	DEGREES	SQFT	CY	CF	CF	SQFT	CF	SQFT
Las-36	17.38	07 0046	SUSAN RIVER	289.4	32.0	25	9261	4.1	116	1852	9261	116	9261
<b>TOTAL</b>							<b>9261</b>	<b>4.1</b>	<b>116</b>	<b>1852</b>	<b>9261</b>	<b>116</b>	<b>9261</b>

**METAL BEAM GUARD RAILING**

POST MILE LIMITS	L+/R+	REMOVE MBGR	RECONSTRUCT MBGR	ALTERNATIVE FLARED TERMINAL SYSTEM	TRANSITION RAILING (TYPE WB)	BURIED POST ANCHOR (N)
		LF	LF	EA	EA	EA
14.38 TO 14.39	L+		12.5	1		1
R17.16 TO R17.31	R+	25.0	712.5	2		
R17.18 TO R17.29	L+	25.0	512.5	2		
R17.34 TO R17.36	L+		50.0	1	1	
R17.34 TO R17.36	R+		50.0	1	1	
R17.42 TO R17.48	L+	12.5	250.0	1	1	
R17.42 TO R17.48	R+	12.5	250.0	1	1	
R18.11 TO R18.25	R+		737.5			
R18.16 TO R18.23	L+		375.0			
R18.53 TO R18.68	L+		800.0			
R19.16 TO R19.20	R+	25.0	137.5	2		
R19.68 TO R19.93	L+	25.0	1250.0	2		
R19.70 TO R19.90	R+	25.0	987.5	2		
<b>TOTAL</b>		<b>150</b>	<b>6125.0</b>	<b>15</b>	<b>4</b>	<b>1</b>

**COLD PLANE ASPHALT CONCRETE PAVEMENT**

POST MILE	L+/R+	WIDTH (N)	LENGTH (N)	COLD PLANE ASPHALT CONCRETE PAVEMENT	COMMENTS
		LF	LF	SQYD	
14.30	L+/R+	32	120	426	MAINLINE CONFORM
14.83	L+	20	30	67	ROAD CONNECTION CONFORM
15.63	R+	20	60	133	ROAD CONNECTION CONFORM
R16.83	L+	20	70	156	ROAD CONNECTION CONFORM
R16.83	R+	20	70	156	ROAD CONNECTION CONFORM
R17.38	L+/R+	32	160	569	SUSAN RIVER BRIDGE CONFORM*
R17.38	L+/R+	32	160	569	SUSAN RIVER BRIDGE CONFORM*
R17.55	R+	20	70	156	ROAD CONNECTION CONFORM
R19.20	L+	20	60	133	ROAD CONNECTION CONFORM
R20.22	L+	20	60	133	ROAD CONNECTION CONFORM
R20.22	R+	20	60	133	ROAD CONNECTION CONFORM
21.32	R+	20	60	133	ROAD CONNECTION CONFORM
21.98	R+	20	40	89	ROAD CONNECTION CONFORM
22.05	L+	20	70	156	ROAD CONNECTION CONFORM
22.05	R+	20	30	67	ROAD CONNECTION CONFORM
22.39	L+	20	30	67	ROAD CONNECTION CONFORM
22.50	L+/R+	32	120	426	MAINLINE CONFORM
<b>TOTAL</b>				<b>3569</b>	

\* COLD PLANE AC PAVEMENT TO HAVE VARIABLE CROSS-SLOPE BETWEEN ROADWAY CONFORM AND DECK CONFORM (ASSUMED -1.5% FINISH GRADE DECK CROSS-SLOPE)

**SUMMARY OF QUANTITIES**  
**Q-2**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**ADVANCE PLANNING**  
 SUPERVISOR: MARK MILLER  
 DESIGNED BY: STEVE VEATCH  
 CHECKED BY: KENDEE VANCE  
 REVISIONS: (None)  
 DATE: 4/11/2008

LAST REVISION: DATE PLOTTED => 26-APR-2010 TIME PLOTTED => 10:24



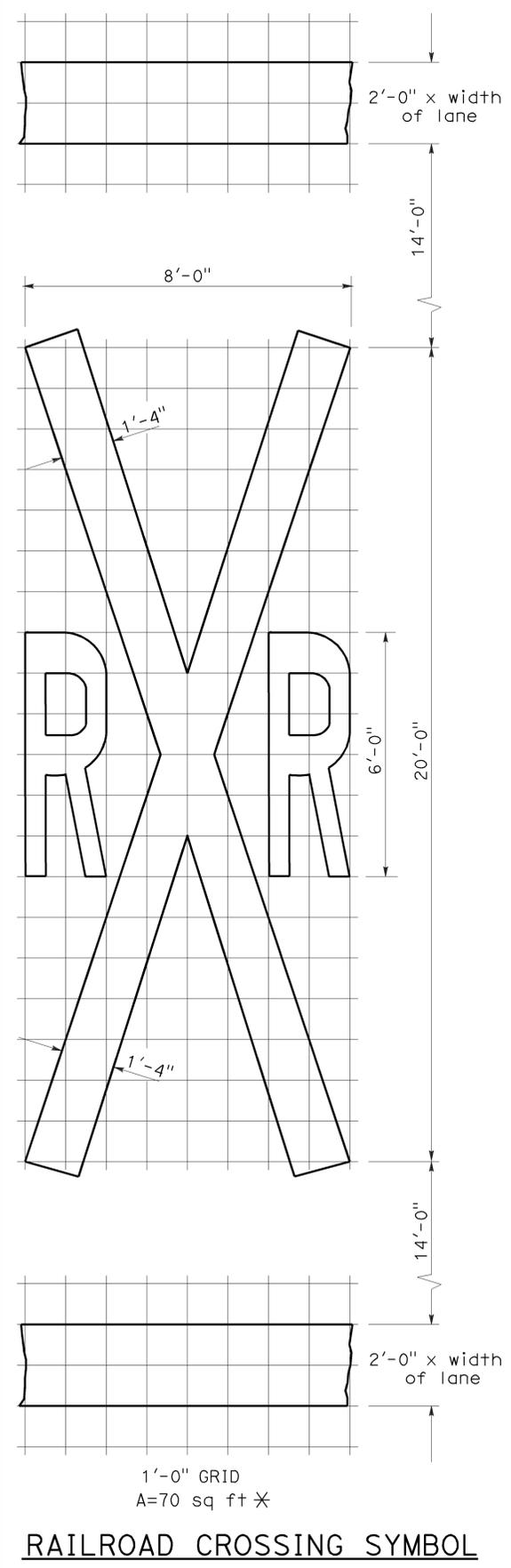
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Las	36	14.0/22.5	16	38

Donald E. Howe  
 REGISTERED CIVIL ENGINEER  
 June 6, 2008  
 PLANS APPROVAL DATE

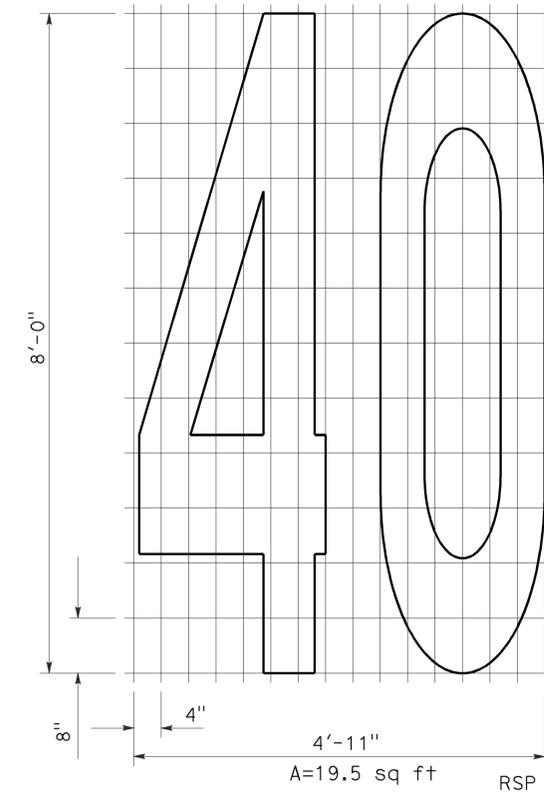
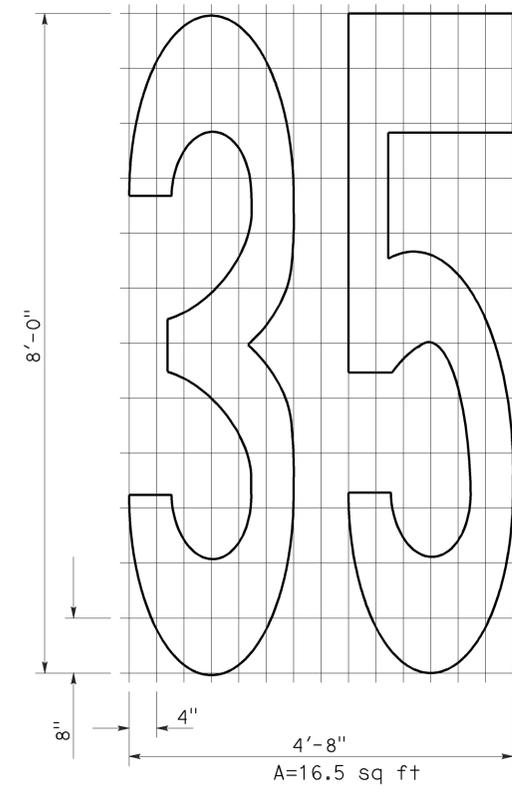
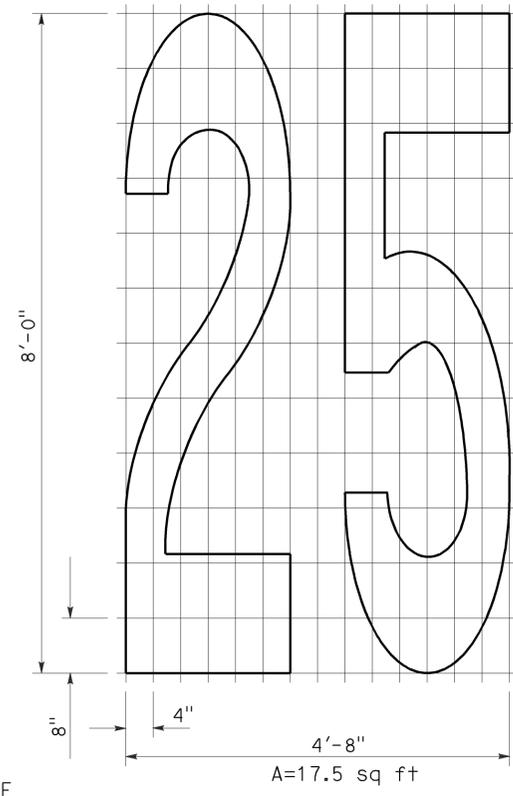
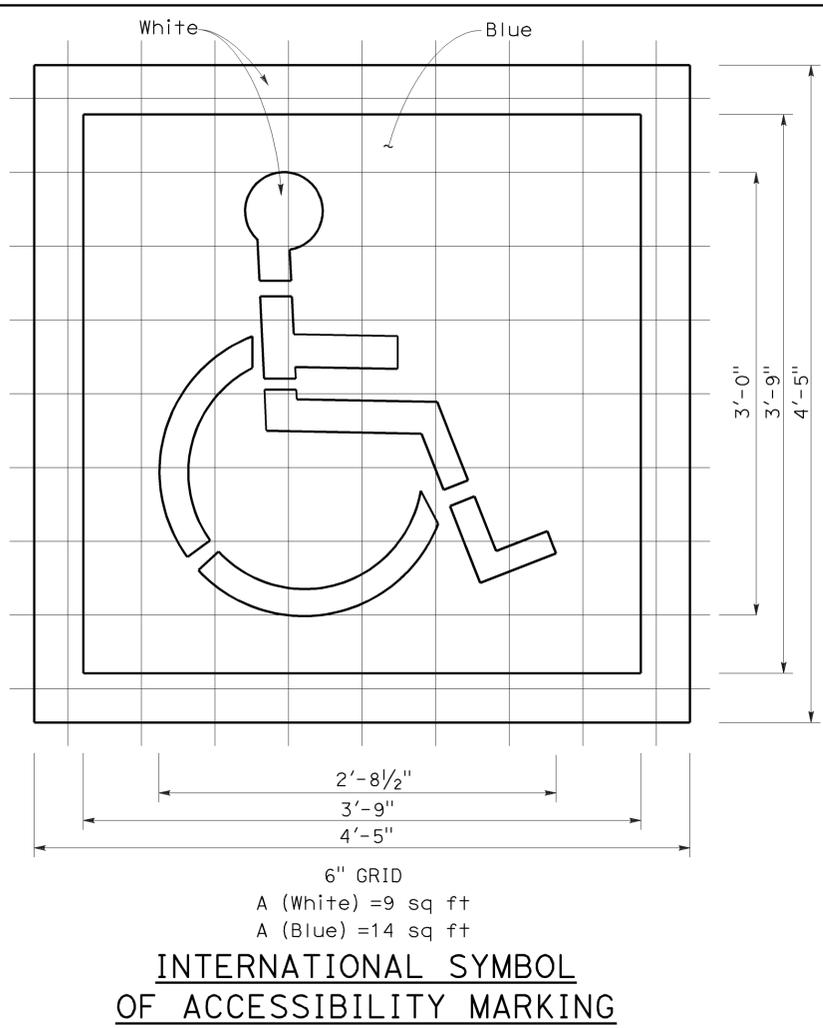
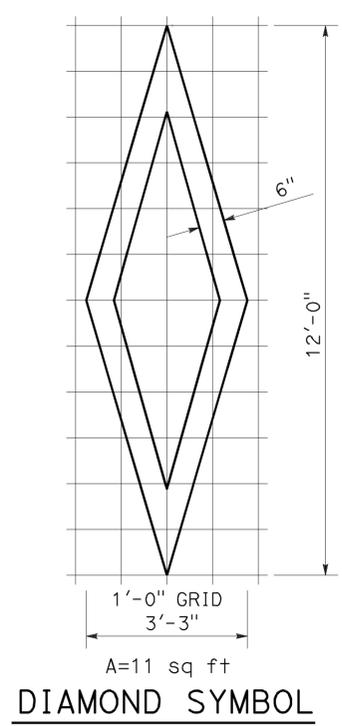
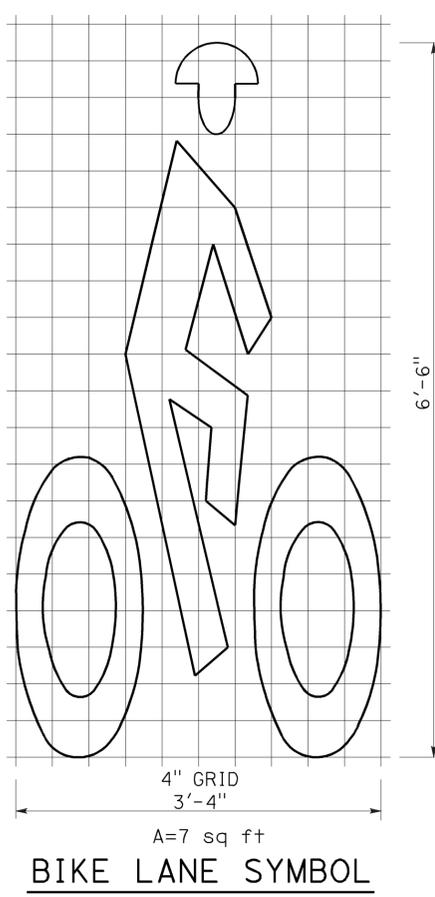
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REGISTERED PROFESSIONAL ENGINEER  
 Donald E. Howe  
 No. C46402  
 Exp. 3-31-09  
 CIVIL  
 STATE OF CALIFORNIA

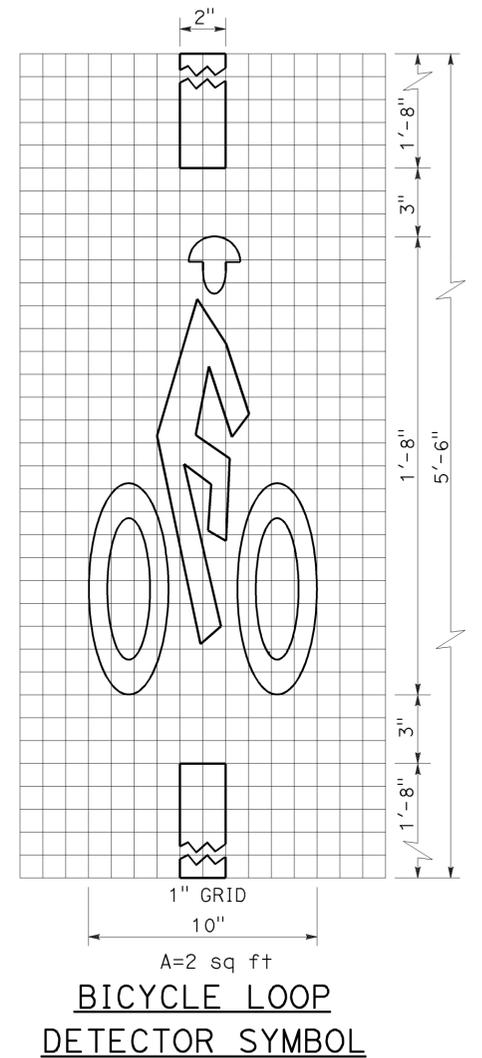
To accompany plans dated 02-26-10



\*70 sq ft DOES NOT INCLUDE THE 2'-0" x VARIABLE WIDTH TRANSVERSE LINES.



**NUMERALS**



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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**PAVEMENT MARKINGS SYMBOLS AND NUMERALS**  
NO SCALE

RSP A24C DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A24C DATED MAY 1, 2006 - PAGE 11 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP A24C

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Los	36	14.0/22.5	17	38

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

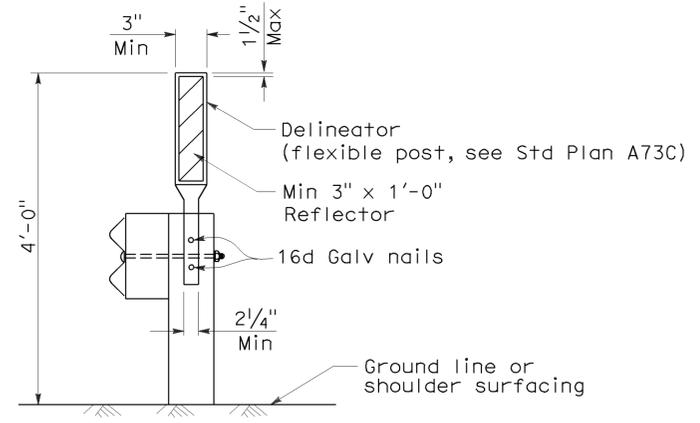
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REGISTERED PROFESSIONAL ENGINEER  
Randell D. Hiatt  
No. C50200  
Exp. 6-30-09  
CIVIL  
STATE OF CALIFORNIA

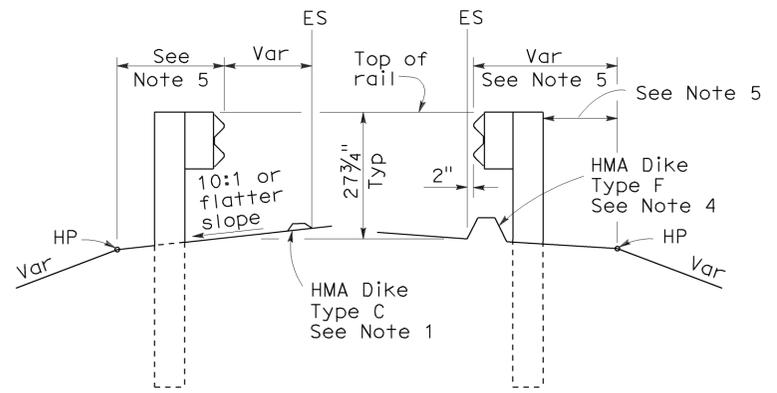
To accompany plans dated 02-26-10

**NOTES:**

1. When necessary to place dike in front of face of guard railing, only Type C dike may be used. For dike details, see Standard Plan A87B.
2. For standard railing post embedment, see Standard Plans A77C3.
3. Guard railing delineation to be used where shown on the Project Plans.
4. When dike or curb is placed under guard railing, the maximum height of the dike or curb shall be 4". Mountable dike should not be used. For dike and curb details, see Revised Standard Plans RSP A87A and Standard Plan A87B.
5. For details of typical distance between the face of rail and hinge point, see Standard Plan A77C3.



**GUARD RAILING DELINEATION**  
See Note 3



**DIKE POSITIONING**  
See Note 1

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING  
TYPICAL RAILING DELINEATION  
AND DIKE POSITIONING DETAILS**

NO SCALE

RSP A77C4 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77C4  
DATED MAY 1, 2006 - PAGE 47 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A77C4**

2006 REVISED STANDARD PLAN RSP A77C4



DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Los	36	14.0/22.5	19	38

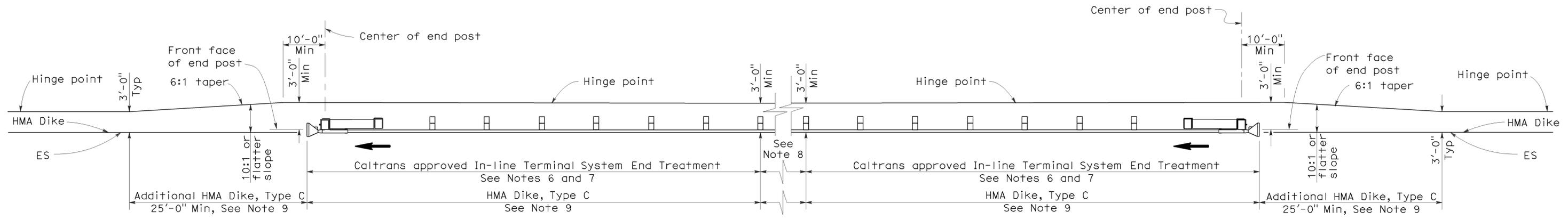
Randell D. Hiatt  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

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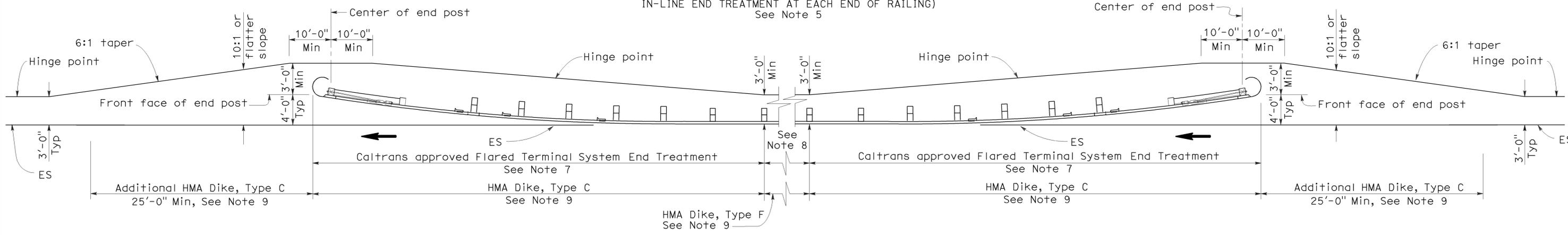
REGISTERED PROFESSIONAL ENGINEER  
Randell D. Hiatt  
No. C50200  
Exp. 6-30-09  
CIVIL  
STATE OF CALIFORNIA

To accompany plans dated 02-26-10



**TYPE 11D LAYOUT**

(EMBANKMENT GUARD RAILING INSTALLATION WITH IN-LINE END TREATMENT AT EACH END OF RAILING)  
See Note 5



**TYPE 11E LAYOUT**

(EMBANKMENT GUARD RAILING INSTALLATION WITH FLARED END TREATMENT AT EACH END OF RAILING)  
See Note 5

**NOTES:**

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard rail 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 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by →.
- Layout Types 11D through 11L, shown on the A77E Series of Revised Standard Plans, are typically used where guard railing is recommended to shield embankment slopes and a crashworthy end treatment is required for both directions of traffic.
- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of 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 guard railing (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**METAL BEAM GUARD RAILING  
TYPICAL LAYOUTS FOR  
EMBANKMENTS**

NO SCALE  
RSP A77E2 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77E2  
DATED MAY 1, 2006 - PAGE 49 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP A77E2

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Las	36	14.0/22.5	20	38

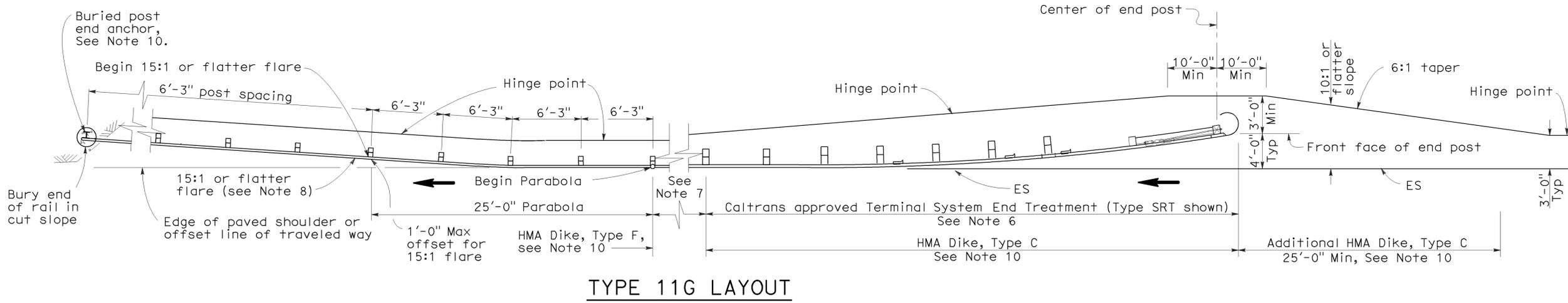
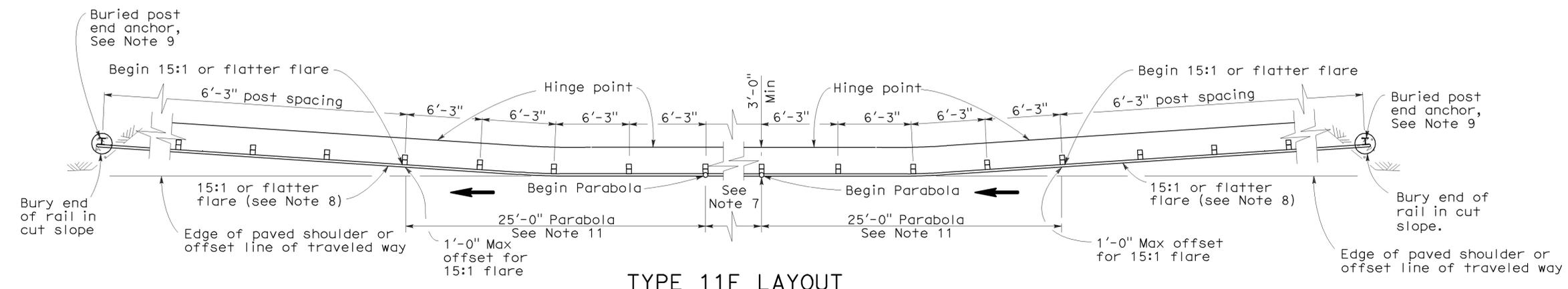
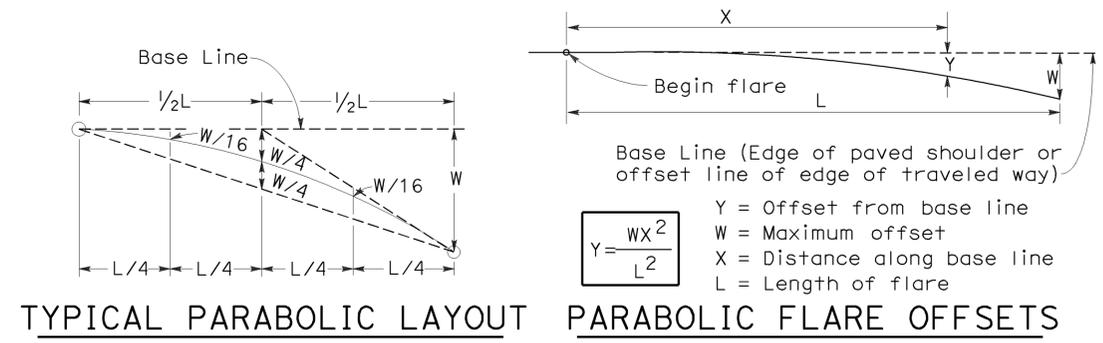
Randell D. Hiatt  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

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

To accompany plans dated 02-26-10



**NOTES:**

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard rail 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 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by  $\rightarrow$ .
- Layout Types 11D through 11L, shown on the A77E Series of Revised Standard Plans, are typically used where guard railing is recommended to shield embankment slopes and a crashworthy end treatment is required for both directions of traffic.
- The type of 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 guard railing (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 guard railing 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 Standard Plan A77I2.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77E1.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING  
TYPICAL LAYOUTS FOR  
EMBANKMENTS**

NO SCALE

RSP A77E3 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77E3  
DATED MAY 1, 2006 - PAGE 50 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A77E3**

2006 REVISED STANDARD PLAN RSP A77E3

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Las	36	14.0/22.5	21	38

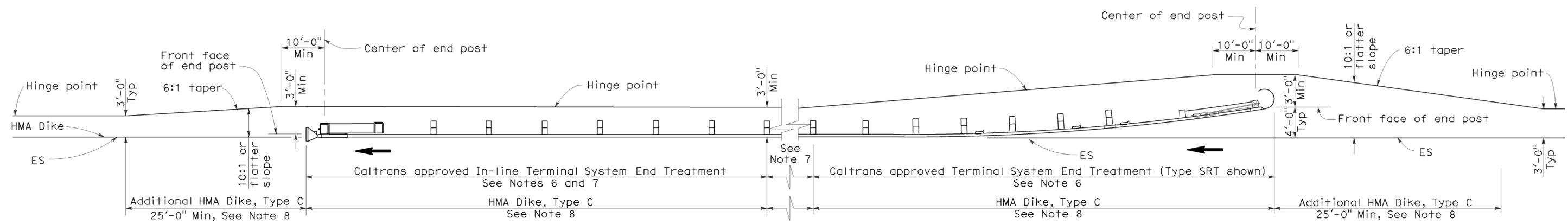
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

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

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To accompany plans dated 02-26-10



**TYPE 11H LAYOUT**

(EMBANKMENT GUARD RAILING INSTALLATION WITH FLARED END TREATMENT AND AN IN-LINE TREATMENT AT THE ENDS OF RAILING)  
See Notes 5 and 8

**NOTES:**

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard rail 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 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by →.
- Layout Types 11D through 11L, shown on the A77E Series of Revised Standard Plans, are typically used where guard railing is recommended to shield embankment slopes and a crashworthy end treatment is required for both directions of traffic.
- The type of 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 guard railing (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**METAL BEAM GUARD RAILING  
TYPICAL LAYOUTS FOR  
EMBANKMENTS**

NO SCALE

RSP A77E4 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77E4  
DATED MAY 1, 2006 - PAGE 51 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A77E4**

2006 REVISED STANDARD PLAN RSP A77E4

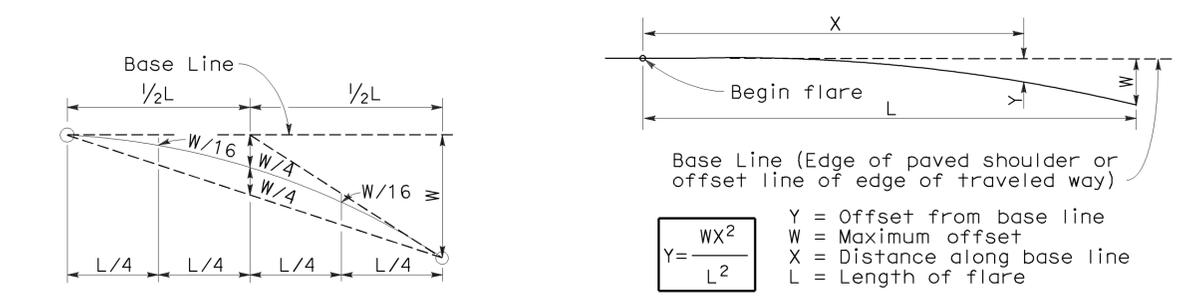
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Las	36	14.0/22.5	22	38

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

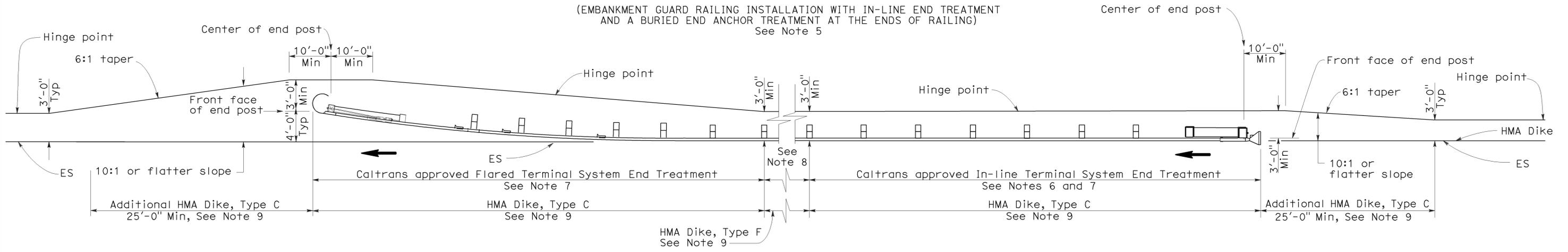
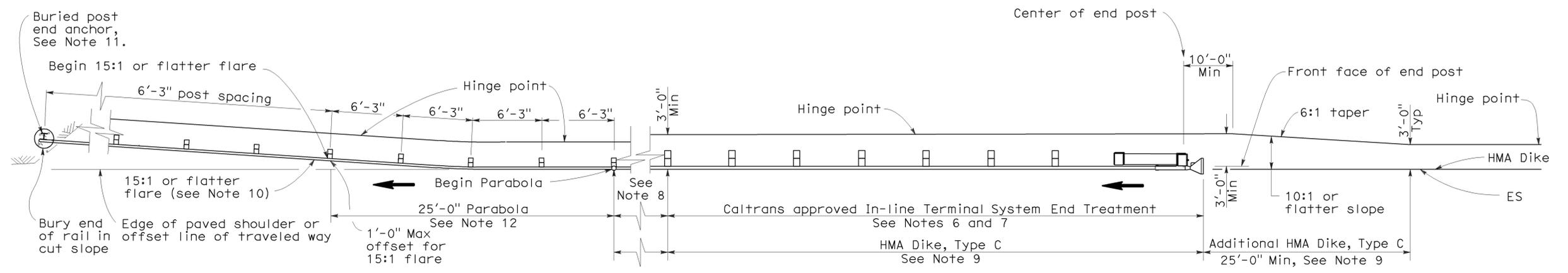
June 6, 2008  
PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER  
No. C50200  
Exp. 6-30-09  
CIVIL  
STATE OF CALIFORNIA



To accompany plans dated 02-26-10



**NOTES:**

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard rail 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 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by  $\rightarrow$ .
- Layout Types 11D through 11L, shown on the A77E Series of Revised Standard Plans, are typically used where guard railing is recommended to shield embankment slopes and a crashworthy end treatment is required for both directions of traffic.
- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of 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 guard railing (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 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 guard railing 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 11I Layout, see Standard Plan A77I2.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77E1.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING  
TYPICAL LAYOUTS FOR  
EMBANKMENTS**

NO SCALE

RSP A77E5 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77E5  
DATED MAY 1, 2006 - PAGE 52 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP A77E5

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Los	36	14.0/22.5	23	38

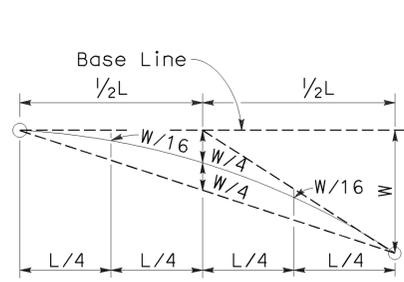
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

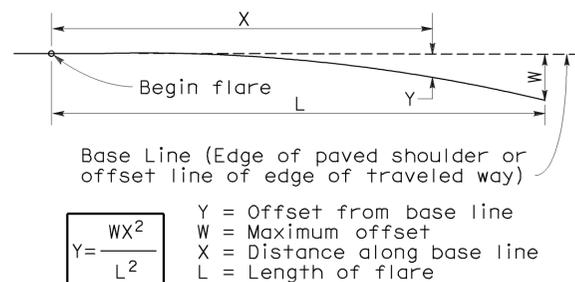
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REGISTERED PROFESSIONAL ENGINEER  
No. C50200  
Exp. 6-30-09  
CIVIL  
STATE OF CALIFORNIA

To accompany plans dated 02-26-10



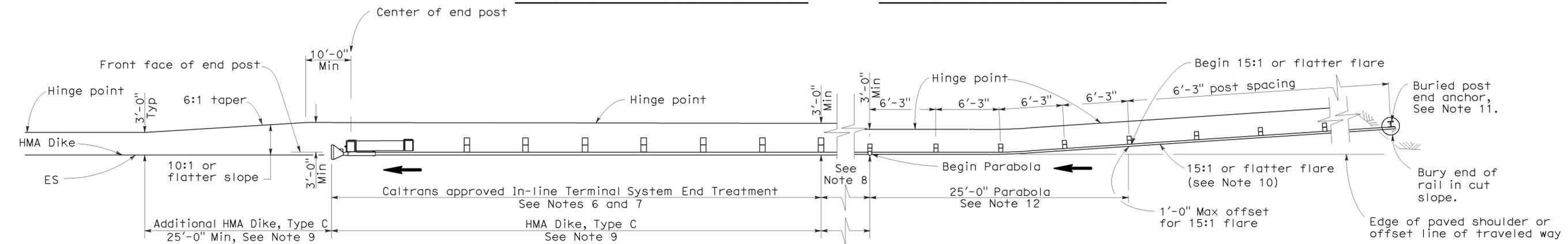
**TYPICAL PARABOLIC LAYOUT**



**PARABOLIC FLARE OFFSETS**

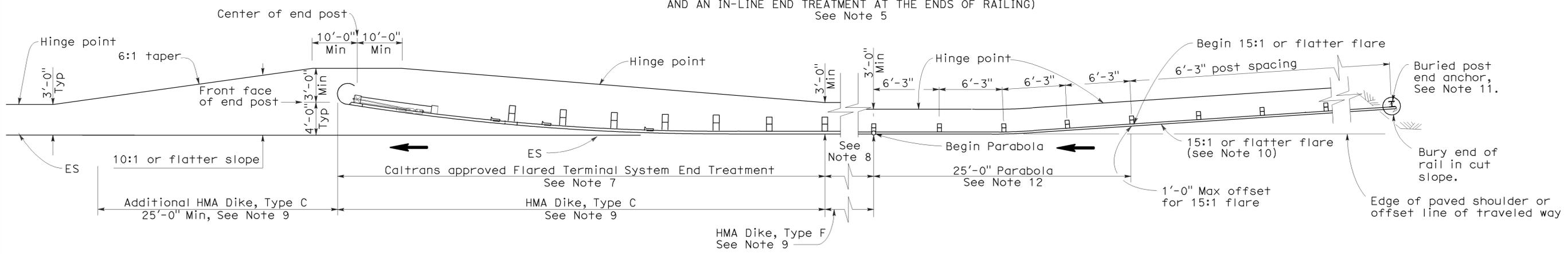
$$Y = \frac{WX^2}{L^2}$$

Y = Offset from base line  
W = Maximum offset  
X = Distance along base line  
L = Length of flare



**TYPE 11K LAYOUT**

(EMBANKMENT GUARD RAILING INSTALLATION WITH A BURIED END ANCHOR TREATMENT AND AN IN-LINE END TREATMENT AT THE ENDS OF RAILING)  
See Note 5



**TYPE 11L LAYOUT**

(EMBANKMENT GUARD RAILING INSTALLATION WITH A BURIED END ANCHOR TREATMENT AND A FLARED END TREATMENT AT THE ENDS OF RAILING)  
See Note 5

**NOTES:**

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard rail 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 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by →.
- Layout Types 11D through 11L, shown on the A77E Series of Revised Standard Plans, are typically used where guard railing is recommended to shield embankment slopes and a crashworthy end treatment is required for both directions of traffic.
- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of 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 guard railing (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 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 guard railing 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 Standard Plan A77I2.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77E1.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**METAL BEAM GUARD RAILING  
TYPICAL LAYOUTS FOR  
EMBANKMENTS**

NO SCALE  
RSP A77E6 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77E6  
DATED MAY 1, 2006 - PAGE 53 OF THE STANDARD PLANS BOOK DATED MAY 2006.  
**REVISED STANDARD PLAN RSP A77E6**

2006 REVISED STANDARD PLAN RSP A77E6

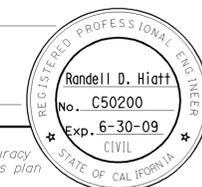
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Las	36	14.0/22.5	24	38

Randell D. Hiatt  
REGISTERED CIVIL ENGINEER

June 6, 2008

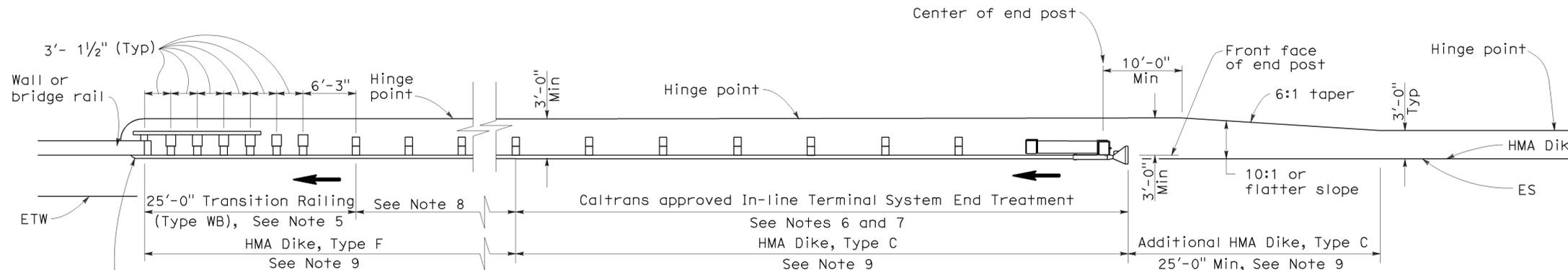
PLANS APPROVAL DATE

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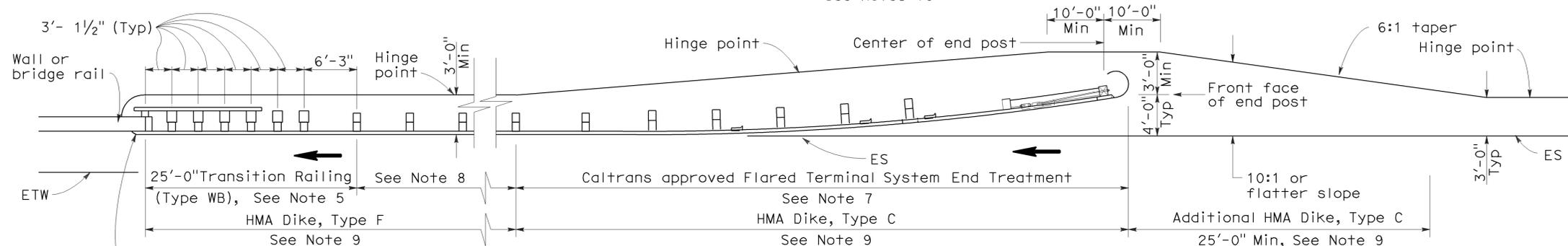
To accompany plans dated 02-26-10

2006 REVISED STANDARD PLAN RSP A77F1



**TYPE 12A LAYOUT**

(GUARD RAILING INSTALLATION AT STRUCTURE APPROACH WITH AN IN-LINE END TREATMENT AT TRAFFIC APPROACH END OF RAILING)  
See Notes 10



**TYPE 12B LAYOUT**

(GUARD RAILING INSTALLATION AT STRUCTURE APPROACH WITH A FLARED END TREATMENT AT TRAFFIC APPROACH END OF RAILING)  
See Notes 10

**NOTES:**

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard rail 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 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by  $\rightarrow$ .
- For Transition Railing (Type WB) details for Types 12A and 12B Layouts, see Standard Plan A77J4.
- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height, side slopes, or other fixed objects), it may be advisable to construct additional guard railing (a length equal to multiples of 12'-6" with 6'-3" post spacing) between the transition railing and end treatment.

- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.
- Type 12A or Type 12B Layouts are typically used:
  - To the right of approaching traffic, at the end of a structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
  - To the left of approaching traffic, at the end of a structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
  - To the right of approaching traffic at the end of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.
  - To the right of approaching traffic at the end of the structure on multilane freeways or expressways with decked median on the bridge.
- See Revised Standard Plan RSP A77F3 for typical layout used left of approaching traffic at the ends of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.

- For additional details of typical connections to bridge rail, see Connection Detail AA on Revised Standard Plans RSP A77J1 and RSP A77J2 and Connection Detail FF on Standard Plans A77K1 and A77K2.
- For additional details of a typical connection to walls or abutments, see Standard Plan A77J3.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING  
TYPICAL LAYOUTS FOR  
STRUCTURE APPROACH**

NO SCALE

RSP A77F1 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77F1  
DATED MAY 1, 2006 - PAGE 54 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A77F1**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Los	36	14.0/22.5	25	38

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

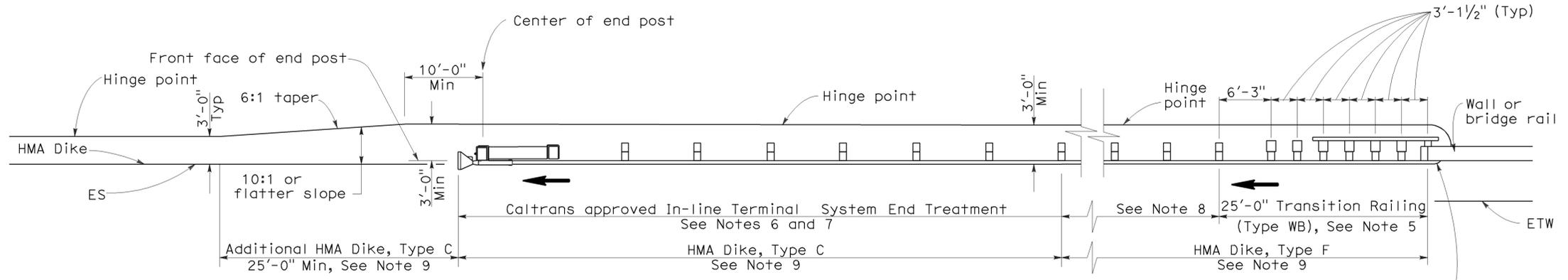
June 6, 2008  
PLANS APPROVAL DATE

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

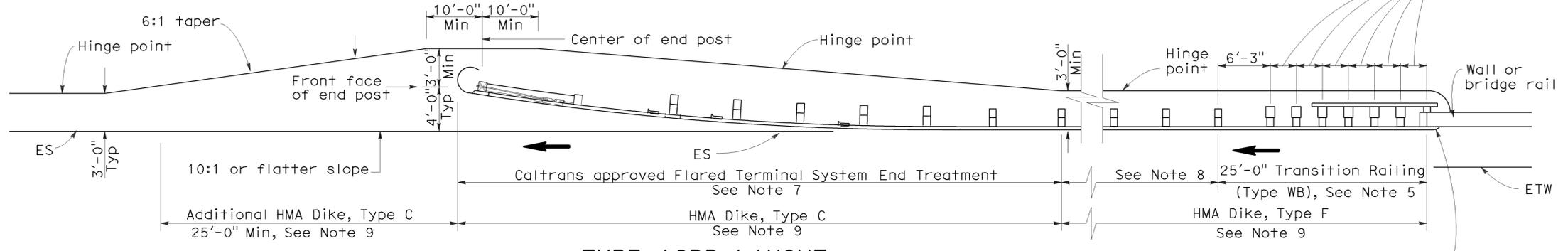
To accompany plans dated 02-26-10

2006 REVISED STANDARD PLAN RSP A77F4



**TYPE 12AA LAYOUT**

(GUARD RAILING INSTALLATION AT STRUCTURE DEPARTURE WITH AN IN-LINE END TREATMENT AT TRAILING END OF RAILING)  
See Notes 9 and 10



**TYPE 12BB LAYOUT**

(GUARD RAILING INSTALLATION AT STRUCTURE DEPARTURE WITH A FLARED END TREATMENT AT TRAILING END OF RAILING)  
See Notes 9 and 10

**NOTES:**

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard rail 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 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by →.
- For Transition Railing (Type WB) details for Types 12AA and 12BB Layouts, see Standard Plan A77J4.
- In-line Terminal System Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height, side slopes, other fixed objects), it may be advisable to construct additional guard railing (a length equal to multiples of 12'-6" with 6'-3" post spacing) between the transition railing and end treatments.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.
- Type 12AA or Type 12BB Layouts are typically used to the right of traffic departing a structure on two-way conventional highways where the roadbed width across the structure is less than 40 feet.
- For additional details of typical connections to bridge rail, see Connection Detail CC on Revised Standard Plan RSP A77J2 and Connection Detail HH on Standard Plans A77K2.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING  
TYPICAL LAYOUTS FOR  
STRUCTURE DEPARTURE**

NO SCALE

RSP A77F4 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77F4  
DATED MAY 1, 2006 - PAGE 57 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A77F4**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Los	36	14.0/22.5	26	38

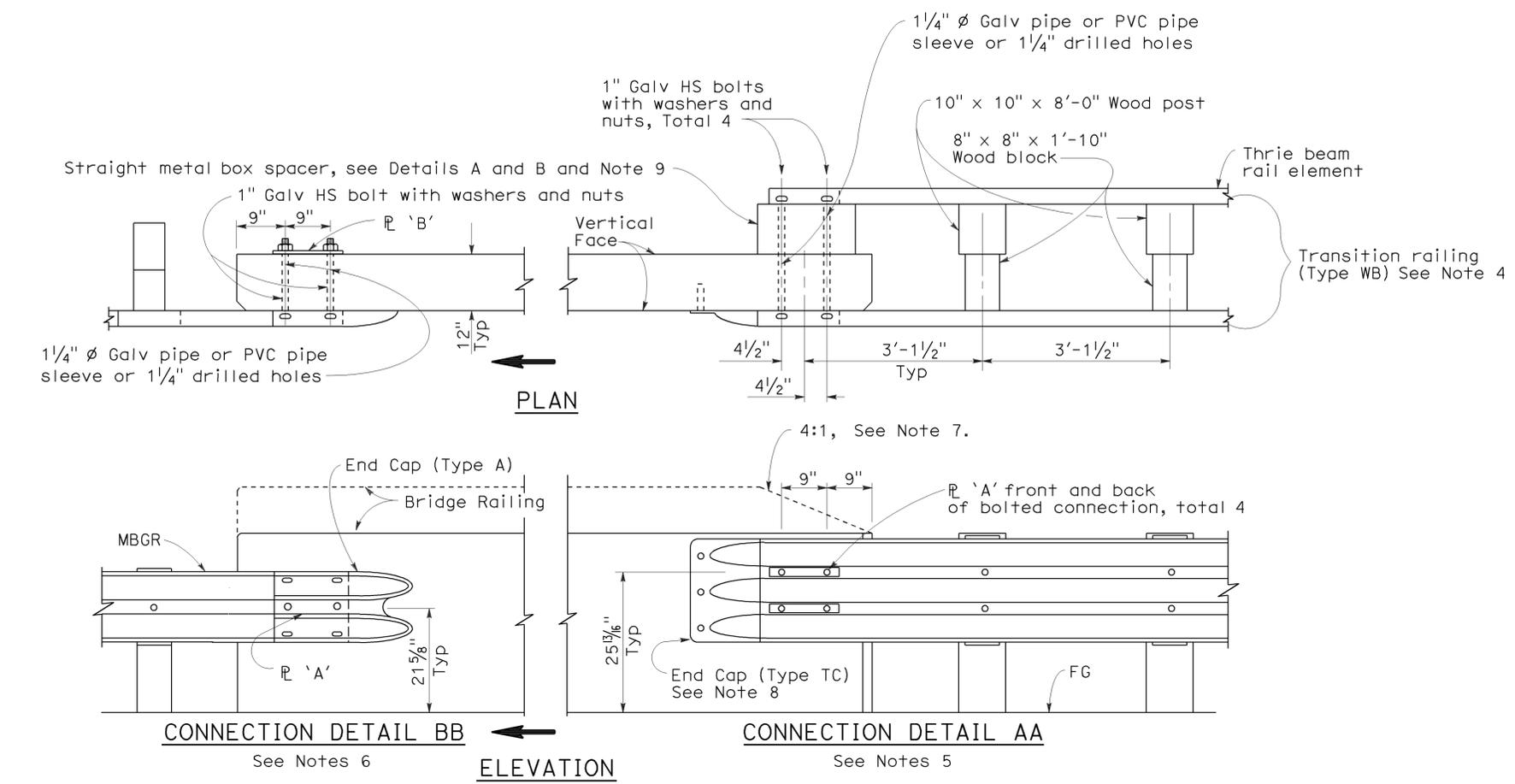
Randell D. Hiatt  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

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

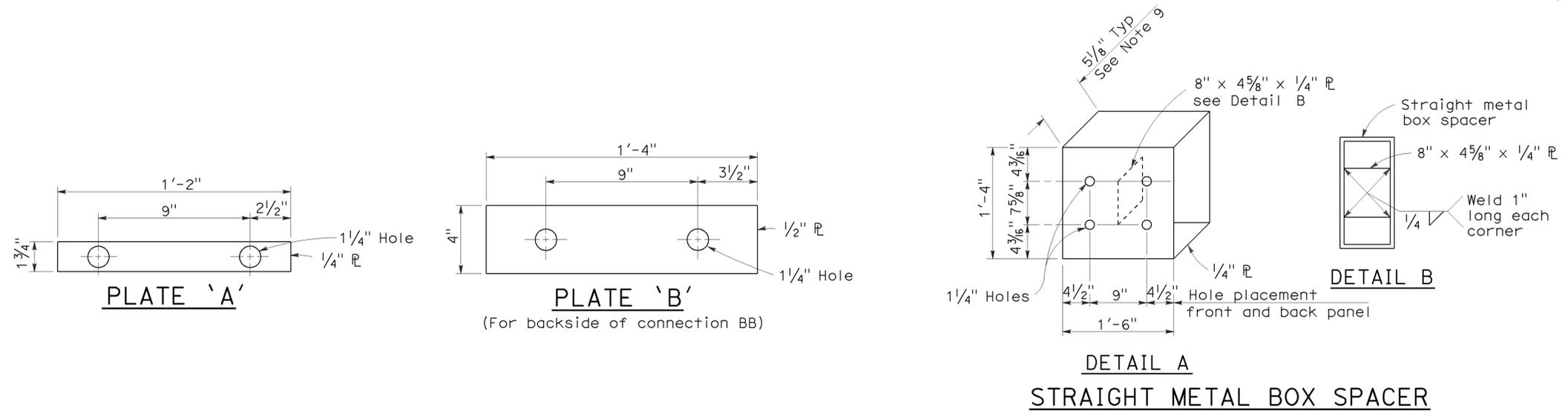
To accompany plans dated 02-26-10



**GUARD RAILING CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK**

**NOTES:**

1. See Revised Standard Plan RSP A77J2 for additional connection details to bridges without sidewalks.
2. Additional details of posts, blocks and hardware are shown on Standard Plan A77B1, A77C1 and A77C2.
3. Direction of adjacent traffic indicated by →.
4. For additional details of Transition Railing (Type WB), see Standard Plan A77J4. Transition Railing (Type WB) transitions the 12 gage w-beam standard railing section of guard railing to a heavier gage nested thrie beam railing section which is connected to the concrete bridge railing.
5. For typical use of Connection Detail AA, see Layout Types 12A and 12B on Revised Standard Plan RSP A77F1, Layout Types 12C and 12D on Standard Plan A77F2, and Layout Type 12E on Revised Standard Plan RSP A77F3.
6. For typical use of Connection Detail BB, see Layout Type 12D (structure departure railing connection) on Standard Plan A77F2 and Layout Type 12DD on Standard Plan A77F5.
7. Where the height of the bridge railing exceeds the height of the thrie beam railing by more than 1" at Connection Detail AA, taper the top of the end of the bridge railing at 4:1 to match the top elevation of the thrie beam rail.
8. For details of End Cap (Type TC), see Standard Plan A77J4.
9. See Standard Plan A77J4 for additional details regarding depth dimension for straight metal box spacer.



**DETAIL A  
STRAIGHT METAL BOX SPACER**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**METAL BEAM GUARD RAILING  
CONNECTIONS TO  
BRIDGE RAILINGS  
WITHOUT SIDEWALKS  
DETAILS No.1**

NO SCALE

RSP A77J1 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77J1  
DATED MAY 1, 2006 - PAGE 72 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A77J1**

2006 REVISED STANDARD PLAN RSP A77J1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Los	36	14.0/22.5	27	38

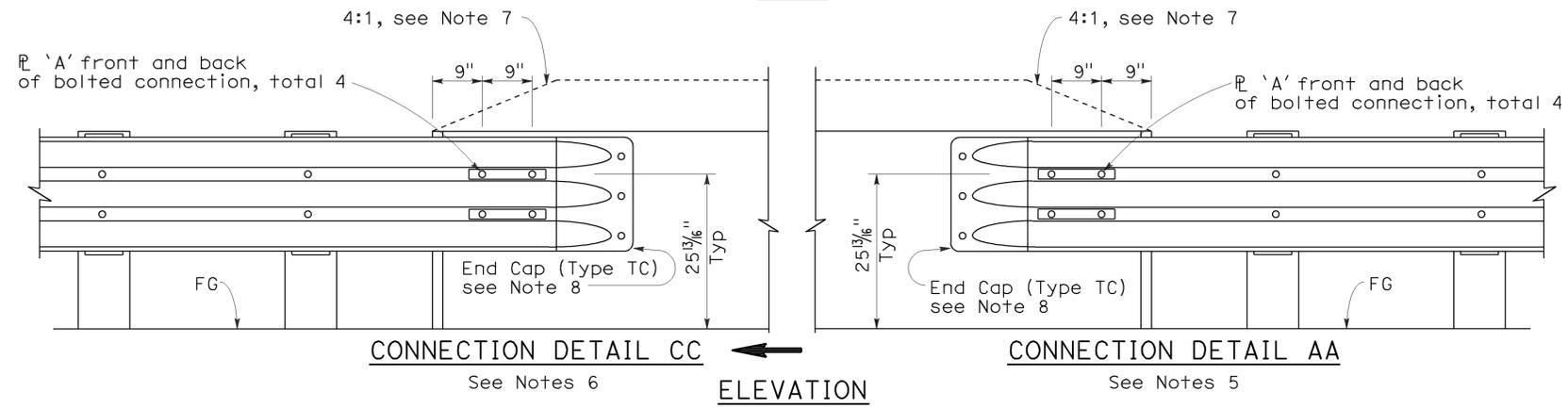
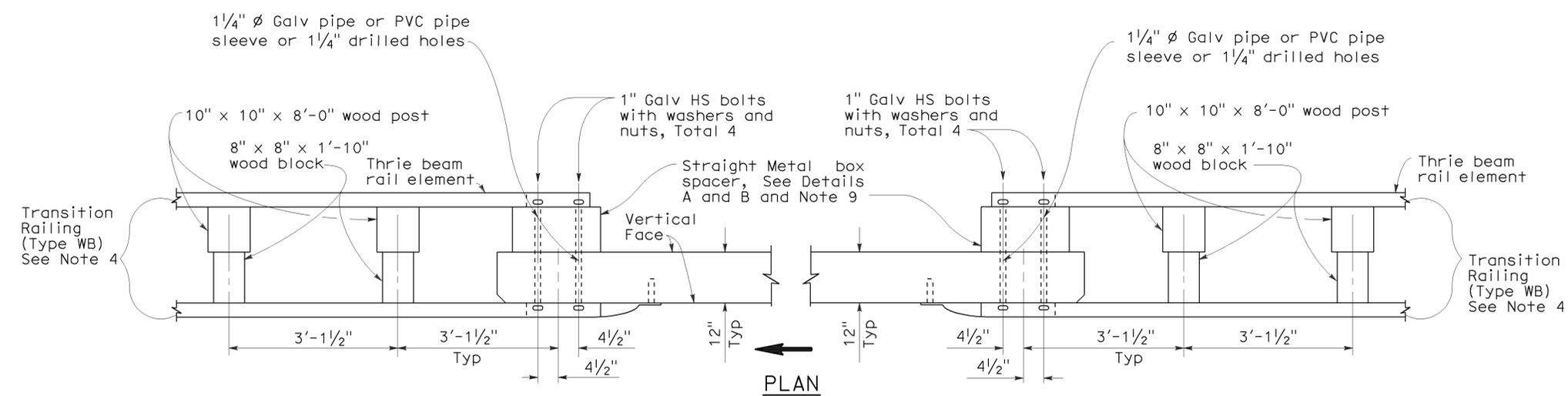
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

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

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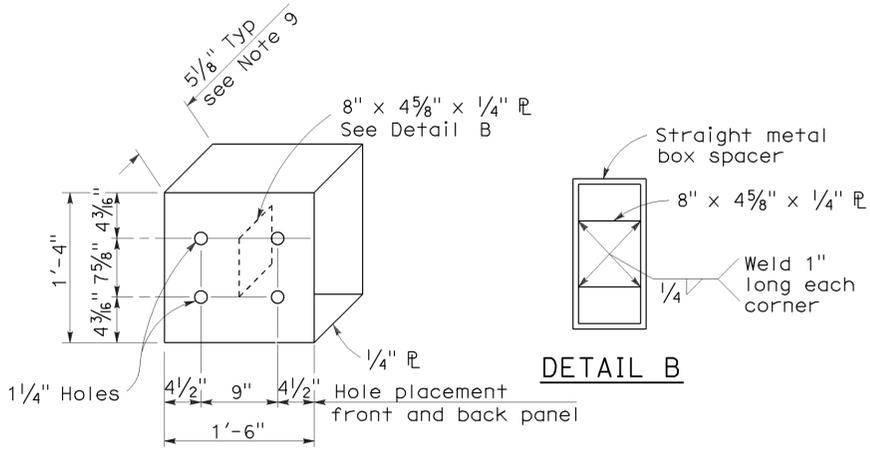
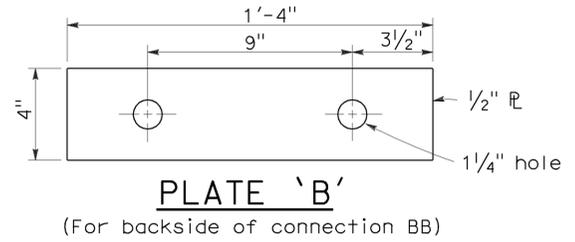
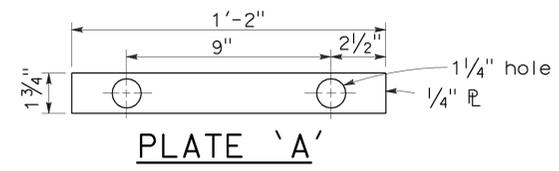
To accompany plans dated 02-26-10



**GUARD RAILING CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK**

**NOTES:**

- See Revised Standard Plan RSP A77J1 for additional connection details to bridges without sidewalks.
- Additional details of posts, blocks and hardware are shown on Standard Plan A77B1, A77C1 and A77C2.
- Direction of adjacent traffic indicated by →.
- For additional details of Transition Railing (Type WB), see Standard Plan A77J4. Transition Railing (Type WB) transitions the 12 gage w-beam standard railing section of guard railing to a heavier gage nested thrie beam railing section which is connected to the concrete bridge railing.
- For typical use of Connection Detail AA, see Layout Types 12A and 12B on Revised Standard Plan RSP A77F1, Layout Types 12C and 12D on Standard Plan A77F2, and Layout Type 12E on Revised Standard Plan RSP A77F3.
- For typical use of Connection Detail CC, see Layout Types 12AA and 12BB on Standard Plan A77F4 and Layout Type 12CC on Standard Plan A77F5.
- Where the height of the bridge railing exceeds the height of the thrie beam railing by more than 1" at Connection Detail AA and connection Detail CC, taper the top of the end of the bridge railing at 4:1 to match the top elevation of the thrie beam railing.
- For details of End Cap (Type TC), see Standard Plans A77J4.
- See Standard Plans A77J4 for additional details regarding depth dimension for straight metal box spacer.



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING CONNECTIONS TO BRIDGE RAILINGS WITHOUT SIDEWALKS DETAILS No.2**

NO SCALE  
RSP A77J2 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77J2  
DATED MAY 1, 2006 - PAGE 73 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP A77J2



# ELECTROLIERS

STANDARD TYPES		
15, 15D		High mast light pole
15 STRUCTURE		Double Arm lighting standard
21, 21D STRUCTURE		Existing electrolier
30		Electrolier foundation (Future installation)
31		
32		
35		
36-20A		

**NOTES:**

- Luminaires shall be 310 W HPS when installed on Type 21, 21D, 30, 31, 32, 35 and 36-20A Standards, unless otherwise specified. Luminaires shall be 200 W HPS when installed on other type standards or poles, unless otherwise specified.
- Luminaires shall be the cutoff type, ANSI Type III medium cutoff lighting distribution, unless otherwise specified.
- Variations noted adjacent to symbol on project plans.

- Electrolier (see project notes or project plans)
- Luminaire on wood pole

## STANDARD NOTES:

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

# ABBREVIATIONS AND EQUIPMENT DESIGNATIONS

## PROPOSED EXISTING

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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Las	36	14.0/22.5	29	38

*Jeffery G. McRae*  
REGISTERED ELECTRICAL ENGINEER

October 5, 2007  
PLANS APPROVAL DATE

*Jeffery G. McRae*  
REGISTERED PROFESSIONAL ENGINEER  
No. E14512  
Exp. 6-30-08  
ELECTRICAL  
STATE OF CALIFORNIA

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To accompany plans dated 02-26-10

## SOFFIT AND WALL MOUNTED LUMINAIRES

- Pendant, 70 W HPS unless otherwise specified.
- Flush, 70 W HPS unless otherwise specified.
- Wall surface, 70 W HPS unless otherwise specified.
- Existing soffit or wall luminaire to remain unmodified.
- Existing soffit or wall luminaire to be modified as specified.

### NOTE:

Arrow indicates "street side" of luminaire.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

## ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

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

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

2006 REVISED STANDARD PLAN RSP ES-1A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Las	36	14.0/22.5	30	38

*Jeffery G. McRae*  
 REGISTERED ELECTRICAL ENGINEER  
 October 5, 2007  
 PLANS APPROVAL DATE  
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To accompany plans dated 02-26-10

### CONDUIT

PROPOSED	EXISTING	
---	---	Lighting Conduit, unless otherwise indicated or noted
---	---	Traffic signal conduit
-C-	-c-	Communication conduit
-T-	-t-	Telephone conduit
-F-	-f-	Fire alarm conduit
-FO-	-fo-	Fiber optic conduit
---	---	Conduit termination
		Conduit riser in/on structure or service pole

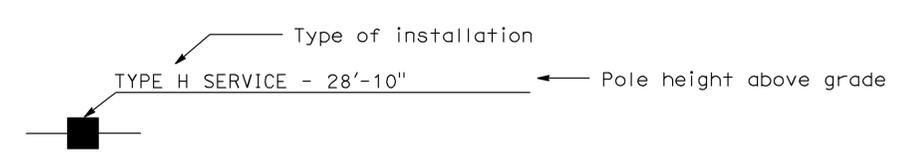
### SIGNAL EQUIPMENT

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

### SERVICE EQUIPMENT

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

### POLE-MOUNTED SERVICE DESIGNATION



### ILLUMINATED OVERHEAD SIGN

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

### SIGNAL EQUIPMENT Cont

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

### NOTES:

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

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

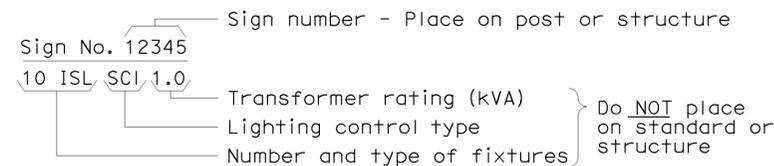
RSP ES-1B DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1B  
 DATED MAY 1, 2006 - PAGE 401 OF THE STANDARD PLANS BOOK DATED MAY 2006.

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

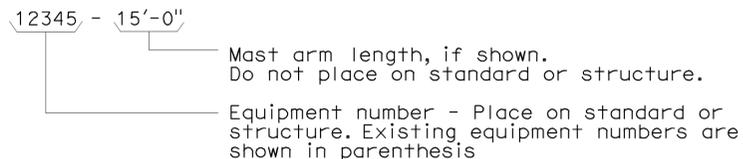
2006 REVISED STANDARD PLAN RSP ES-1B

### EQUIPMENT IDENTIFICATION

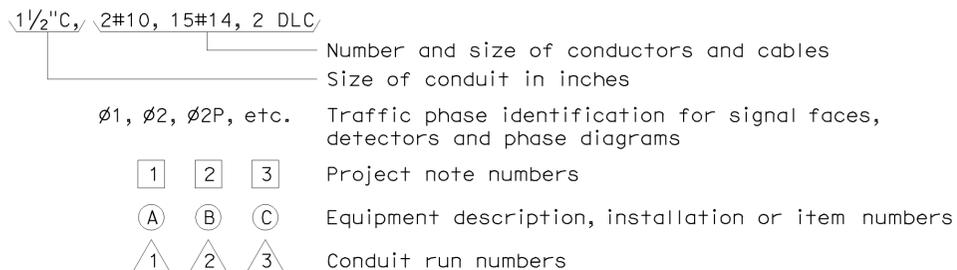
#### ILLUMINATED SIGN IDENTIFICATION NUMBER:



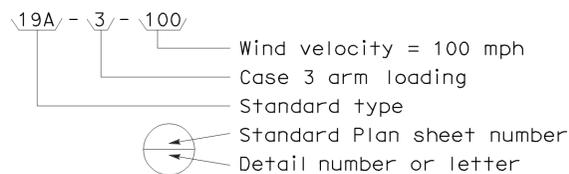
#### ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



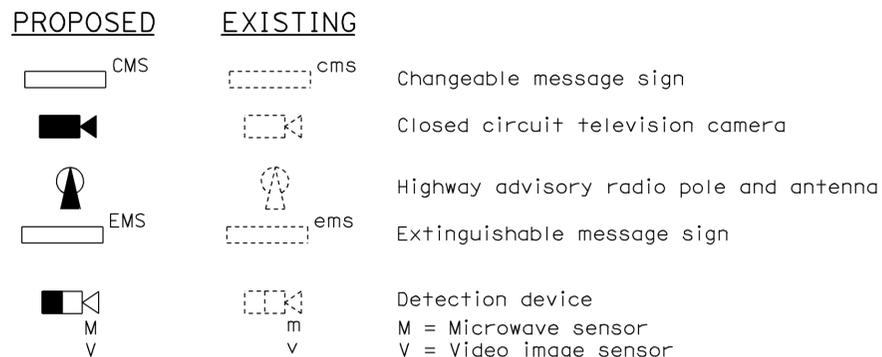
#### CONDUIT AND CONDUCTOR IDENTIFICATION:



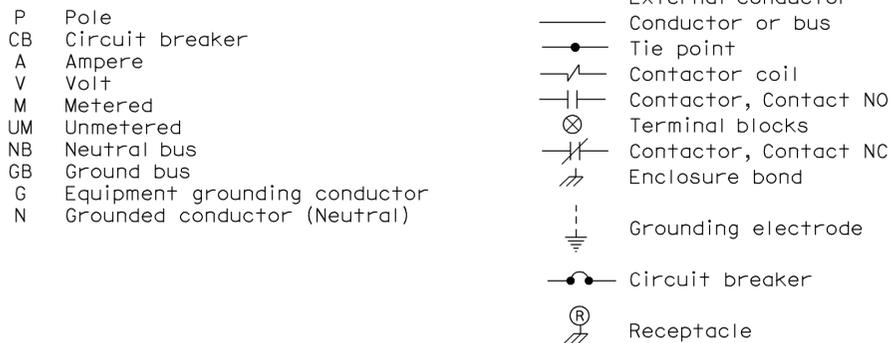
#### SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



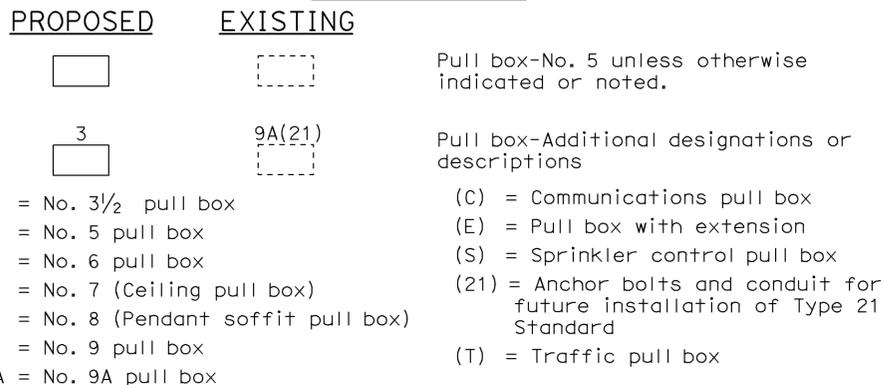
### MISCELLANEOUS EQUIPMENT



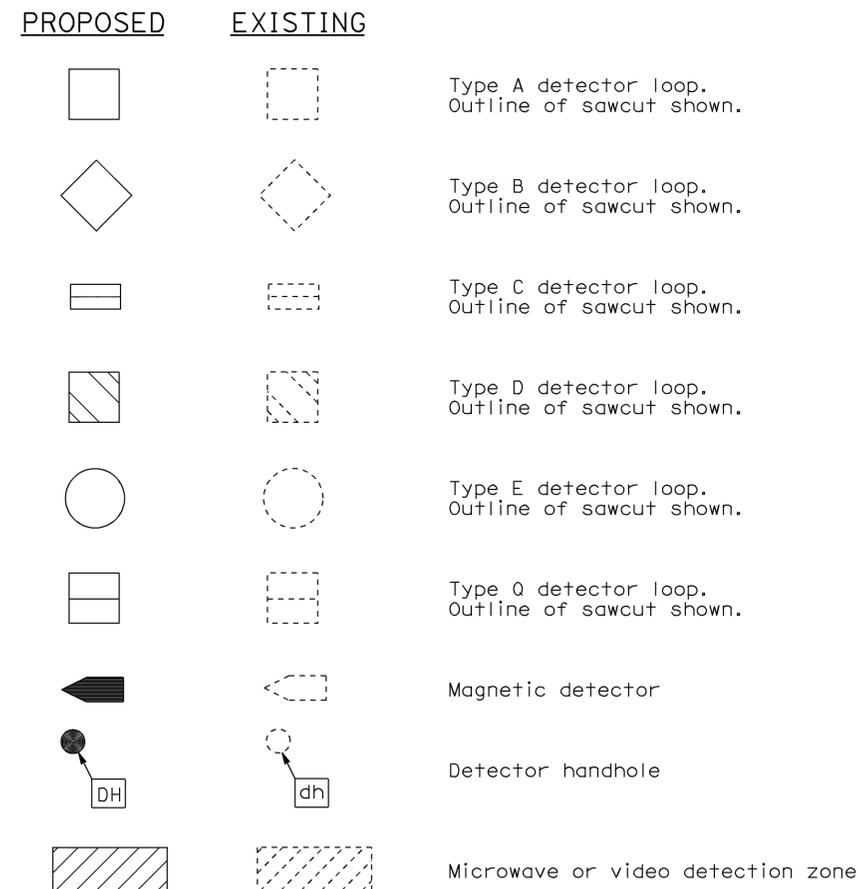
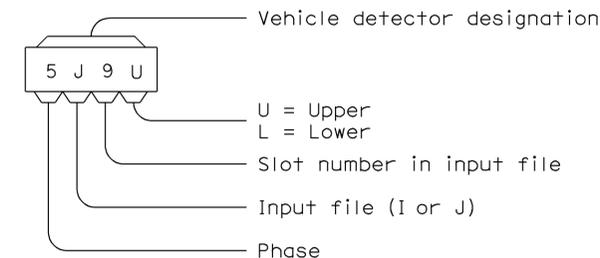
### WIRING DIAGRAM LEGEND



### PULL BOXES



### VEHICLE DETECTORS



STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

## ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

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

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

2006 REVISED STANDARD PLAN RSP ES-1C

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Las	36	14.0/22.5	32	38

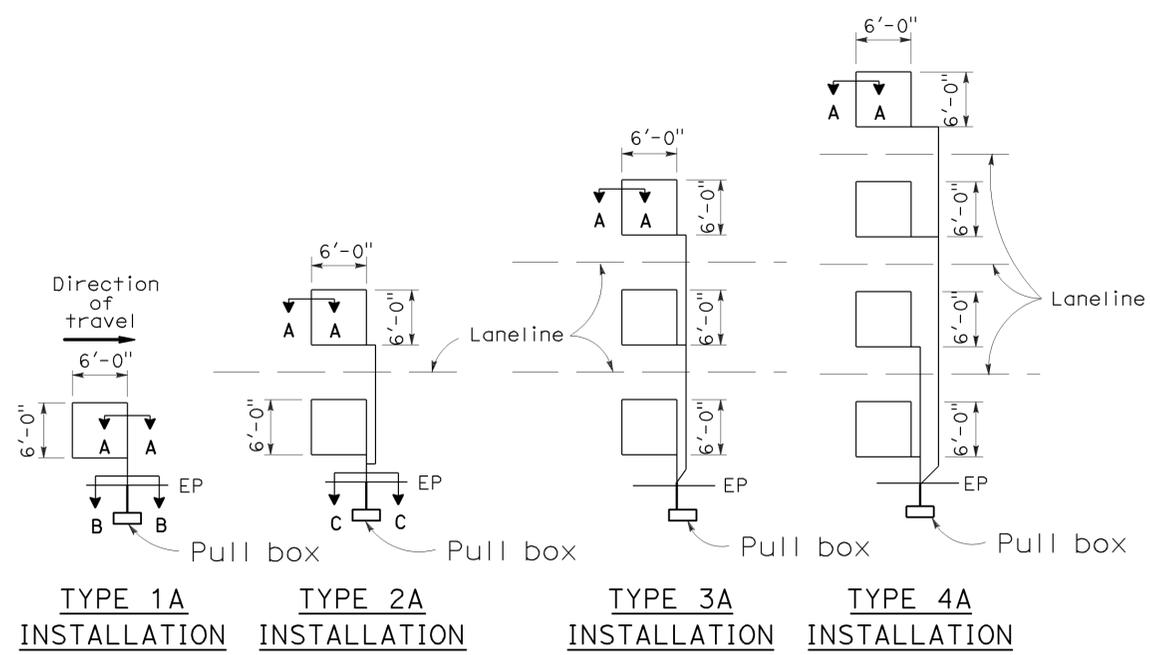
*Jeffery G. McRae*  
 REGISTERED ELECTRICAL ENGINEER  
 No. E14512  
 Exp. 6-30-08  
 ELECTRICAL  
 STATE OF CALIFORNIA

October 5, 2007  
 PLANS APPROVAL DATE

To accompany plans dated 02-26-10

## LOOP INSTALLATION PROCEDURE

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

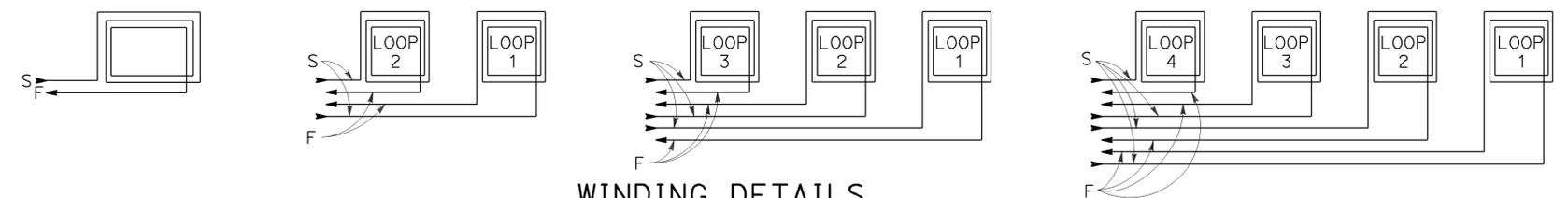


TYPE 1A INSTALLATION    TYPE 2A INSTALLATION    TYPE 3A INSTALLATION    TYPE 4A INSTALLATION

### SAWCUT DETAILS

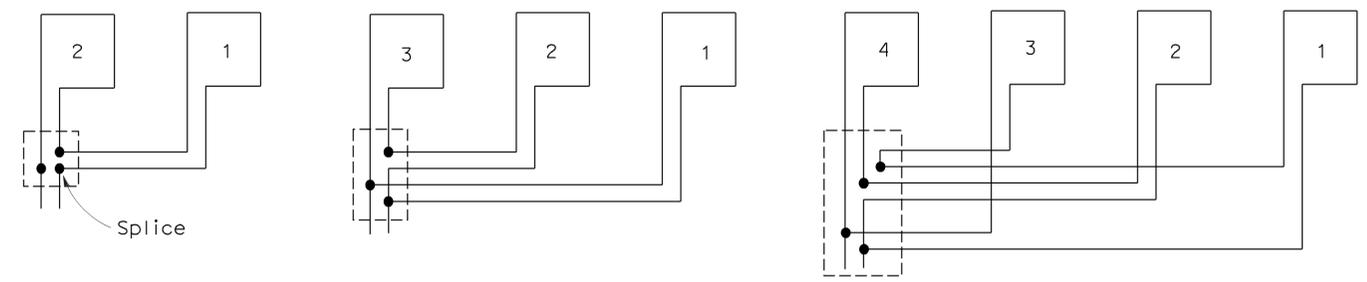
(Type A loop detector configurations illustrated)

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



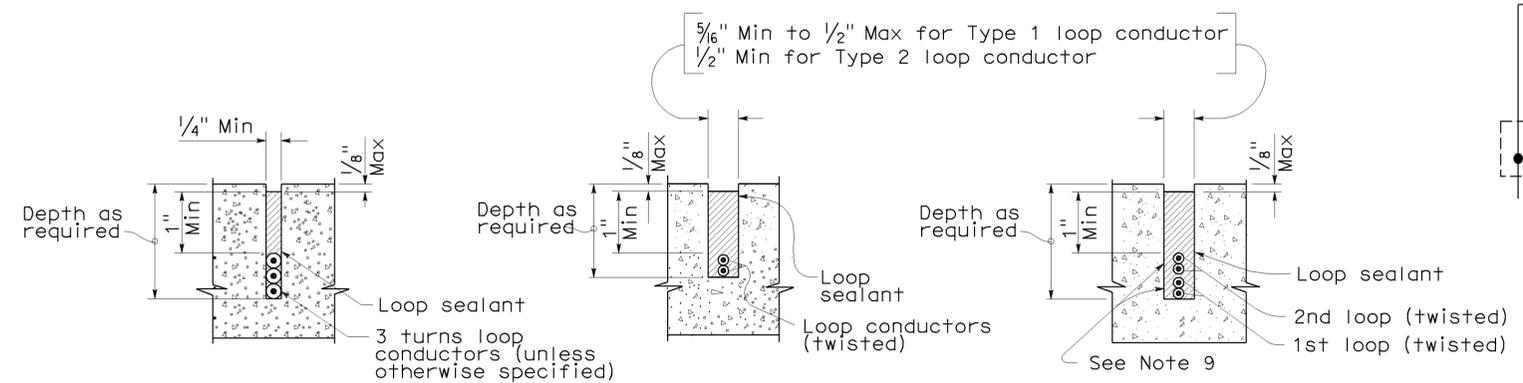
### WINDING DETAILS

See Notes 6 and 7



### TYPICAL LOOP CONNECTIONS

(Dashed lines represent the pull box)



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

## ELECTRICAL SYSTEMS (DETECTORS)

NO SCALE

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

2006 REVISED STANDARD PLAN RSP ES-5A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Los	36	14.0/22.5	33	38

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

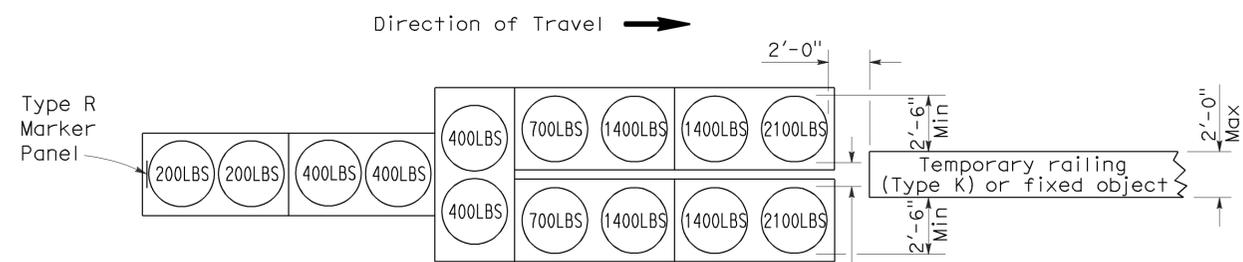
June 6, 2008  
PLANS APPROVAL DATE

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

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

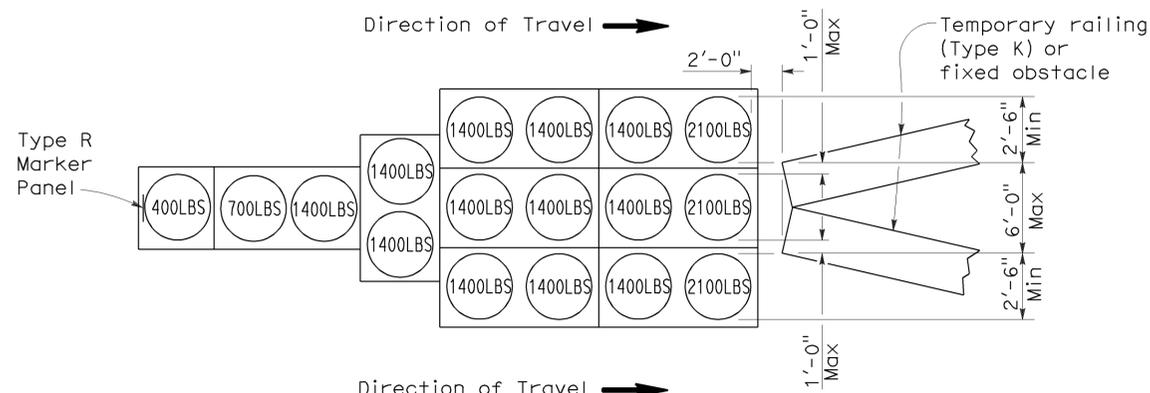
To accompany plans dated 02-26-10

2006 REVISED STANDARD PLAN RSP T1A



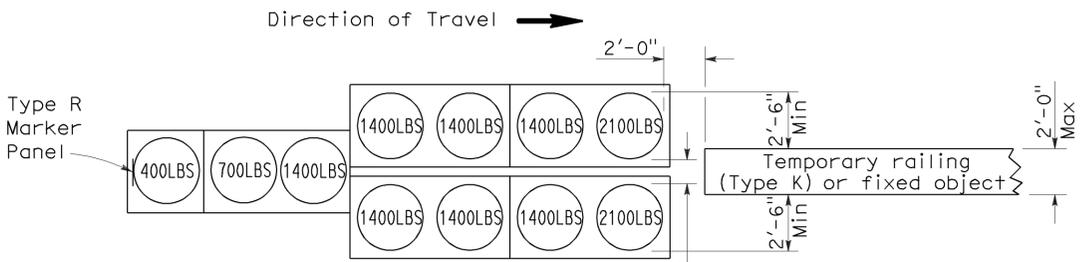
**ARRAY 'TU14'**

Approach speed 45 mph or more



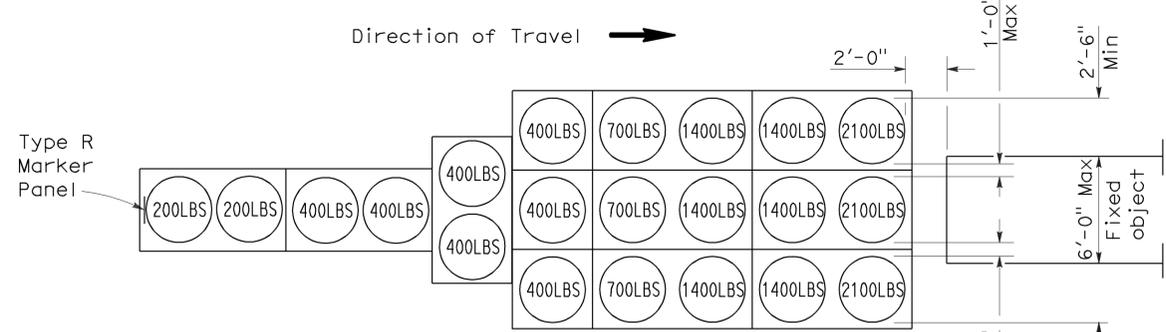
**ARRAY 'TU17'**

Approach speed less than 45 mph



**ARRAY 'TU11'**

Approach speed less than 45 mph

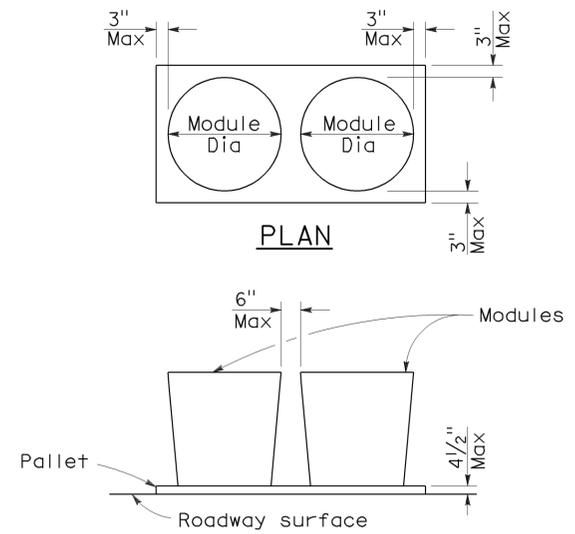


**ARRAY 'TU21'**

Approach speed 45 mph or more

**NOTES:**

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



**CRASH CUSHION PALLET DETAIL**

See Note 7

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**TEMPORARY CRASH CUSHION,  
SAND FILLED  
(UNIDIRECTIONAL)**

NO SCALE

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

**REVISED STANDARD PLAN RSP T1A**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Los	36	14.0/22.5	34	38

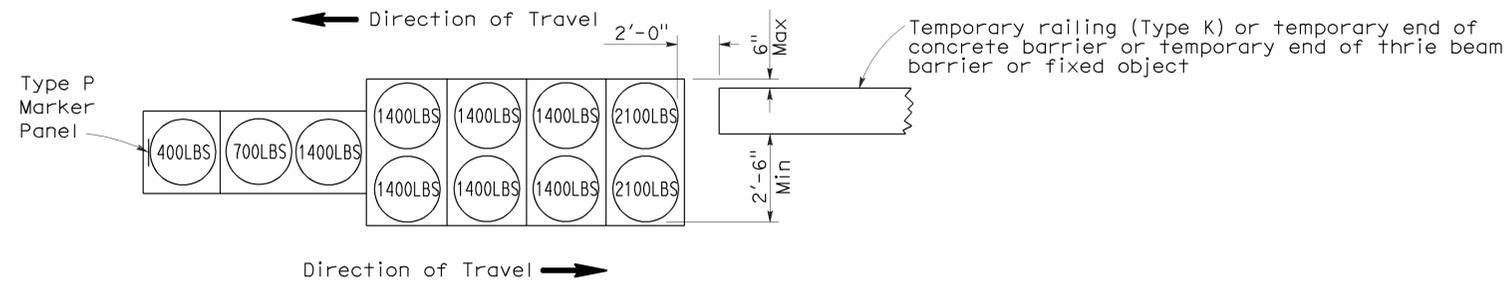
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

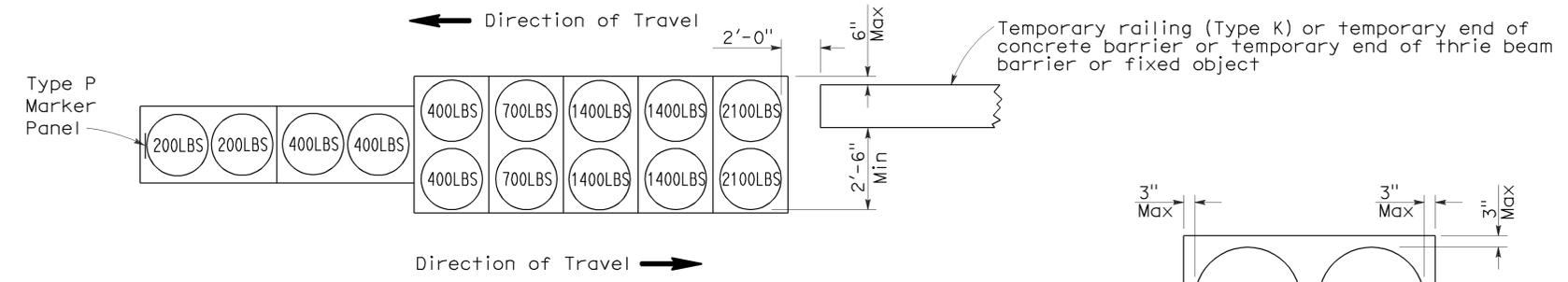
*Randell D. Hiatt*  
No. C50200  
Exp. 6-30-09  
CIVIL  
STATE OF CALIFORNIA

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

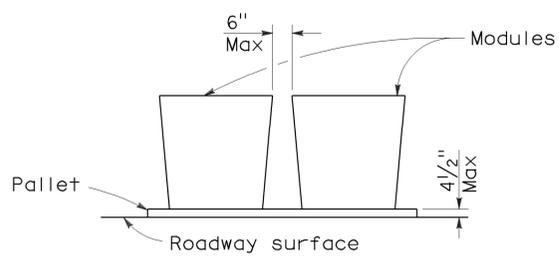
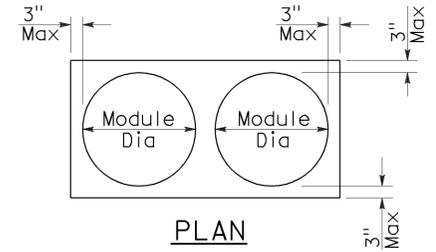
To accompany plans dated 02-26-10



**ARRAY 'TB11'**  
Approach speed less than 45 mph



**ARRAY 'TB14'**  
Approach speed 45 mph or more



**CRASH CUSHION PALLET DETAIL**  
See Note 7

**NOTES:**

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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

**REVISED STANDARD PLAN RSP T1B**

2006 REVISED STANDARD PLAN RSP T1B

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Las	36	14.0/22.5	35	38

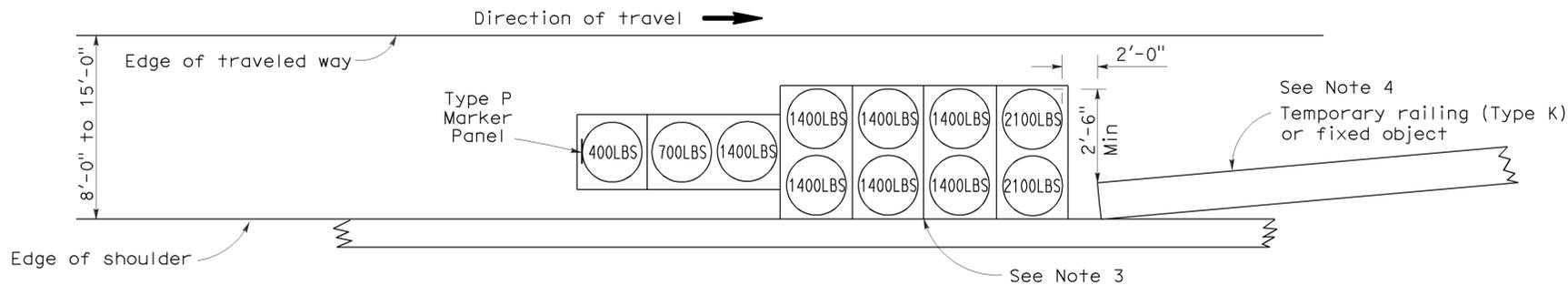
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

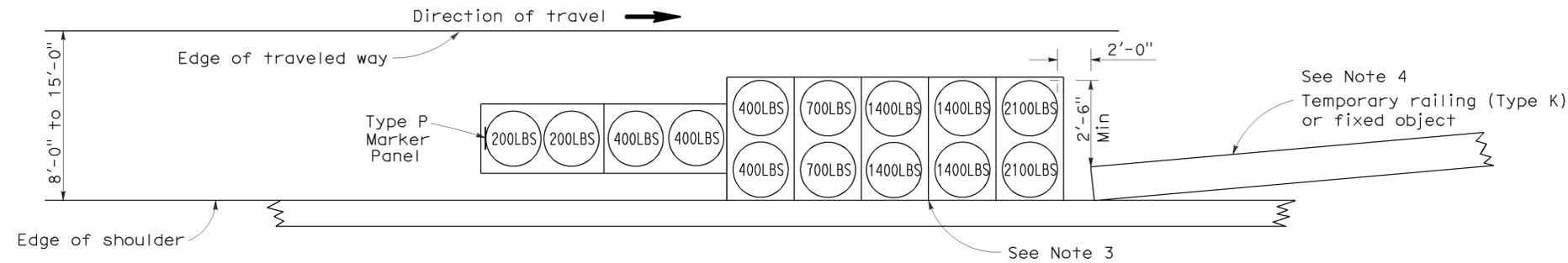
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REGISTERED PROFESSIONAL ENGINEER  
Randell D. Hiatt  
No. C50200  
Exp. 6-30-09  
CIVIL  
STATE OF CALIFORNIA

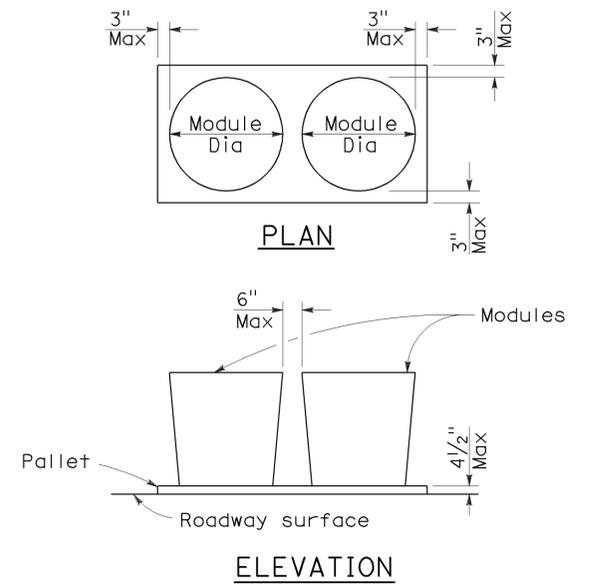
To accompany plans dated 02-26-10



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



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



**CRASH CUSHION PALLET DETAIL**  
See Note 11

**NOTES:**

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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**TEMPORARY CRASH CUSHION,  
SAND FILLED  
(SHOULDER INSTALLATIONS)**

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

**REVISED STANDARD PLAN RSP T2**

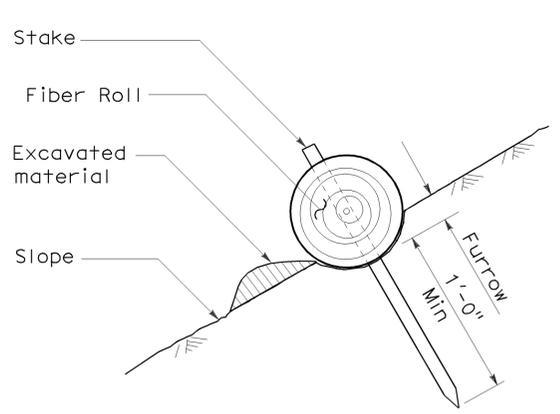
2006 REVISED STANDARD PLAN RSP T2



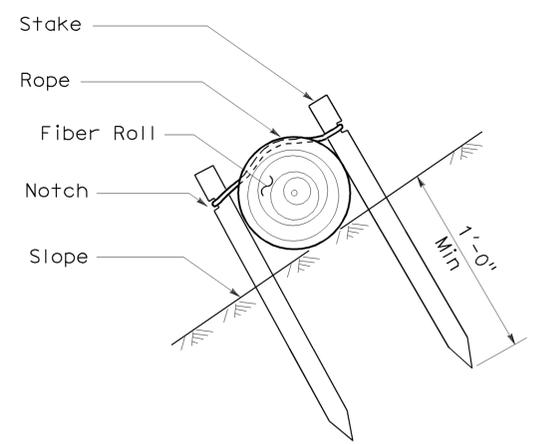
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	Los	36	14.0/22.5	37	38

*Robert B. Schott*  
 LICENSED LANDSCAPE ARCHITECT  
 April 3, 2009  
 PLANS APPROVAL DATE  
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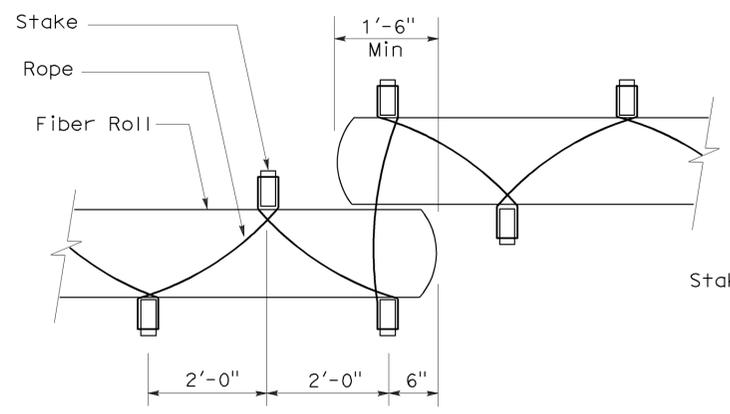
To accompany plans dated 02-26-10



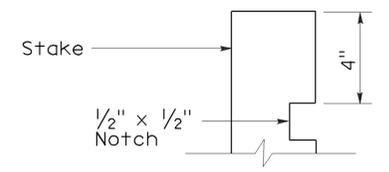
**SECTION**  
**TEMPORARY FIBER ROLL (TYPE 1)**



**SECTION**  
**TEMPORARY FIBER ROLL (TYPE 2)**

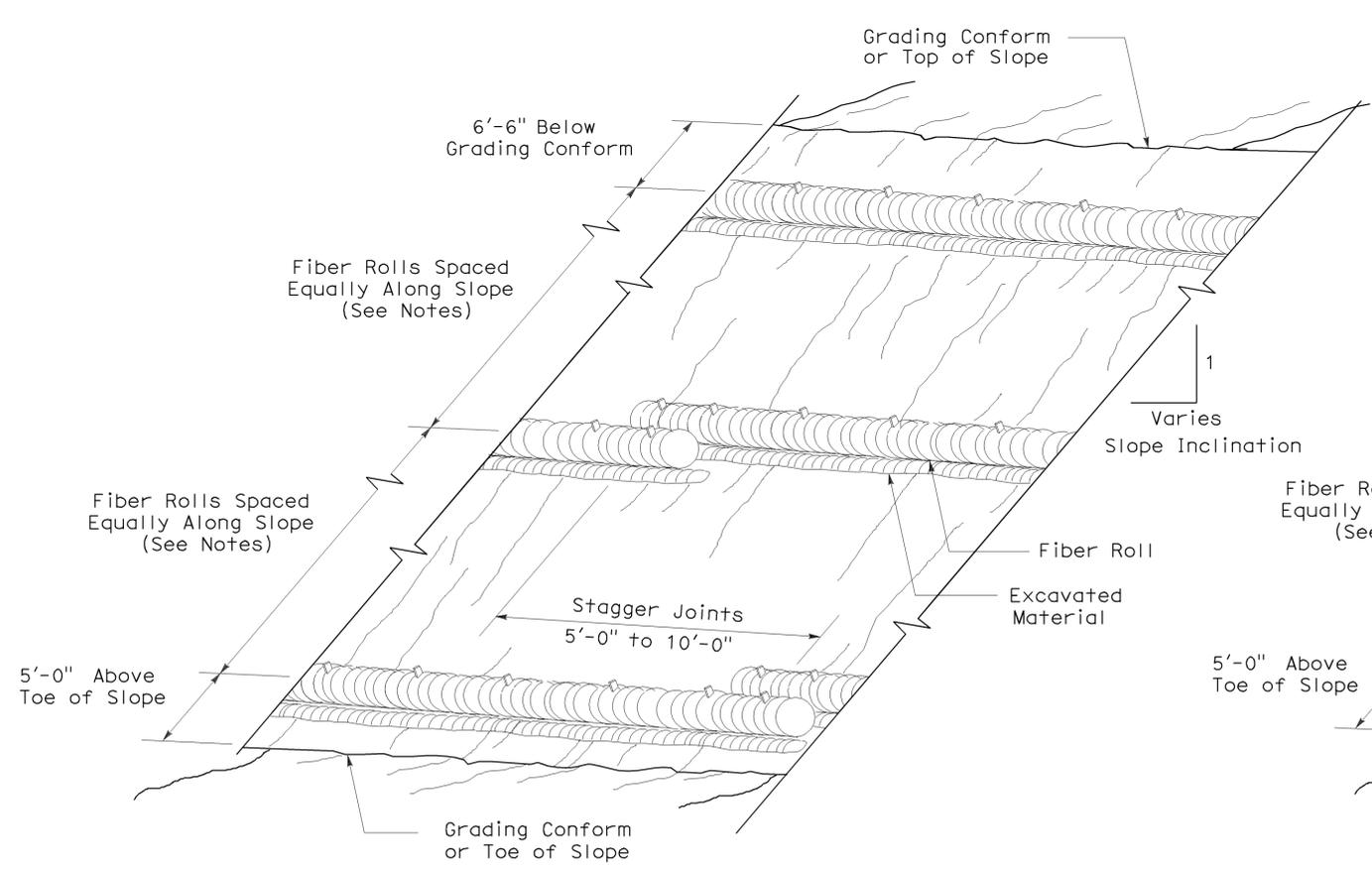


**PLAN**

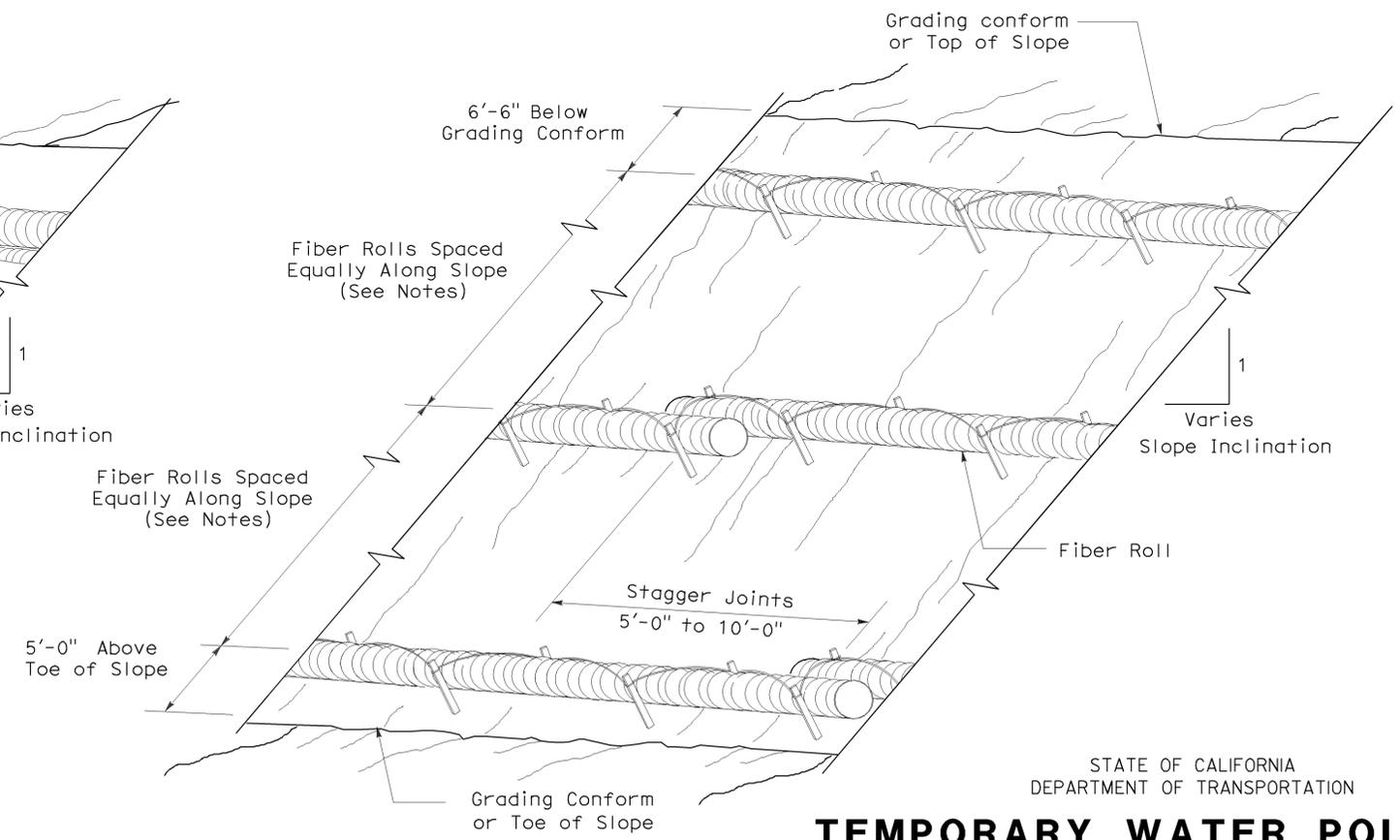


**ELEVATION**  
**STAKE NOTCH DETAIL**

- NOTES:**
1. Temporary fiber roll spacing varies depending upon slope inclination.
  2. Installations shown in the perspectives are for slope inclination of 10:1 and steeper.



**PERSPECTIVE**  
**TEMPORARY FIBER ROLL (TYPE 1)**



**PERSPECTIVE**  
**TEMPORARY FIBER ROLL (TYPE 2)**

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY FIBER ROLL)**  
 NO SCALE

RSP T56 DATED APRIL 3, 2009 SUPERSEDES STANDARD PLAN T56 DATED MAY 1, 2006 - PAGE 232 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP T56**

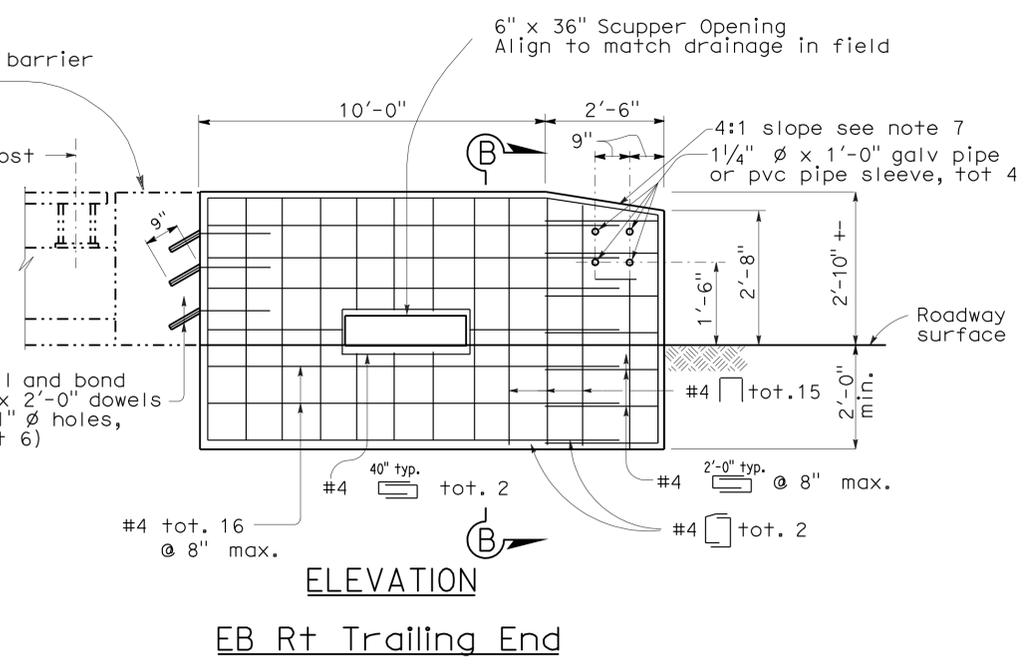
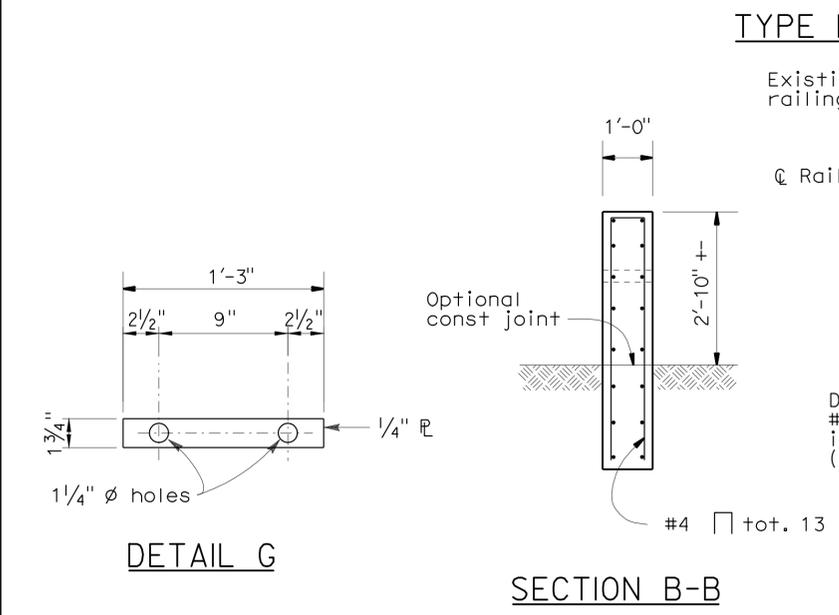
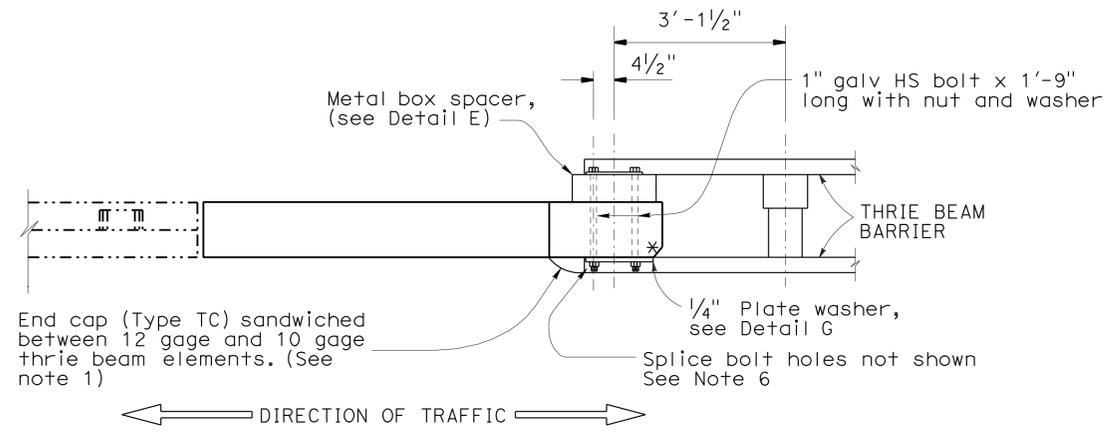
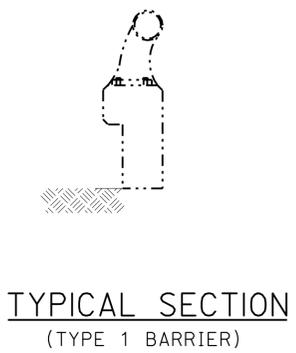
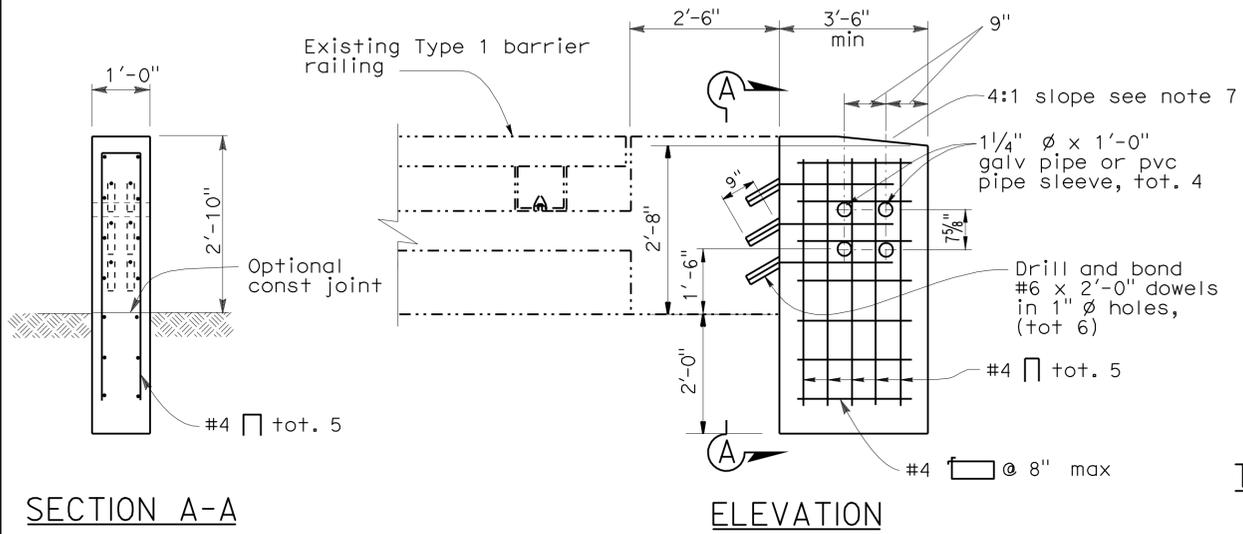
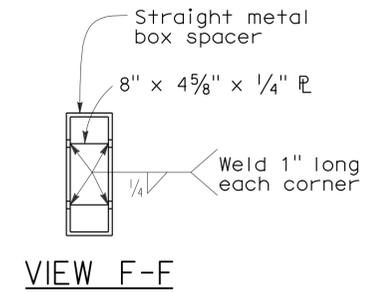
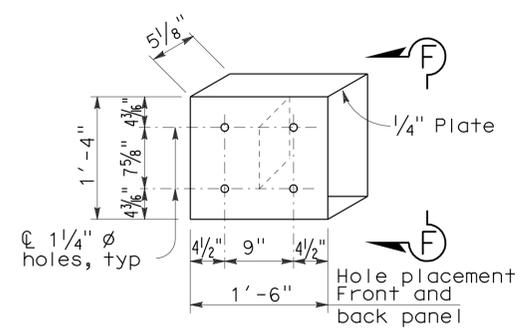
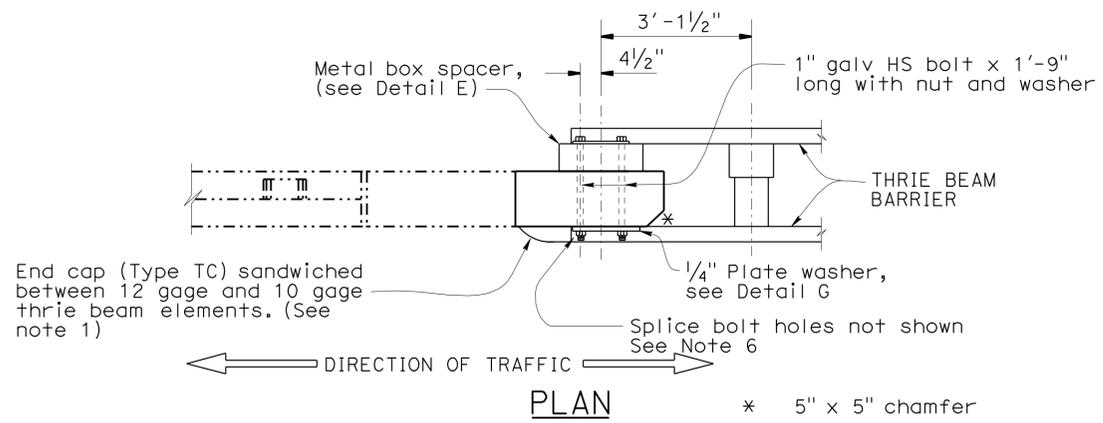
232

2006 REVISED STANDARD PLAN RSP T56

DIST.	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
02	LAS	36	14.0/22.5	38	38

*Dwight D. Winterlin*  
 REGISTERED ENGINEER - CIVIL  
 No. C68438  
 Exp. 9-30-11  
 CIVIL  
 STATE OF CALIFORNIA

02-26-10  
 PLANS APPROVAL DATE  
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- NOTES:**
- For details not shown, see Standard Plans, July 2006.
  - Dependent dimensions will be verified in the field before fabricating any end connection to conform with existing paved conditions.
  - When end section is called for, modify typical terminal section to fit. See Detail E
  - All plates and bolts are galvanized.
  - Cut and remove portion of Type 1, 2 and BAGR as required.
  - Exterior splice bolt holes shall be the standard 7/8" x 1 1/8" slot size for rail splices at post #T4 and the connection to the concrete barrier or railing. Interior splice bolt holes may be increased up to 1 1/4" dia. Washers shall be used with splice bolts on back side of rail element at post #T4 and connection to the concrete barrier or railing.
  - Taper the top of the end of the bridge railing at 4:1 or flatter to match the top elevation of the thrie beam rail element.

DESIGN	BY X	CHECKED MICHAEL R. WEBB	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES	BRIDGE NO.	THRIE BEAM CONNECTION DETAILS BARRIER RAILING TYPE 1 MODIFIED
DETAILS	BY X	CHECKED X			7-46	
QUANTITIES	BY X	CHECKED X			POST MILE 17.4	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			0 1 2 3	CU 02 366 EA 02-0E2004	REVISION DATES (PRELIMINARY STAGE ONLY)	

DATE PLOTTED => 26-APR-2010 TIME PLOTTED => 10:25 USERNAME => s123119 20e200zz001.dgn