

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.

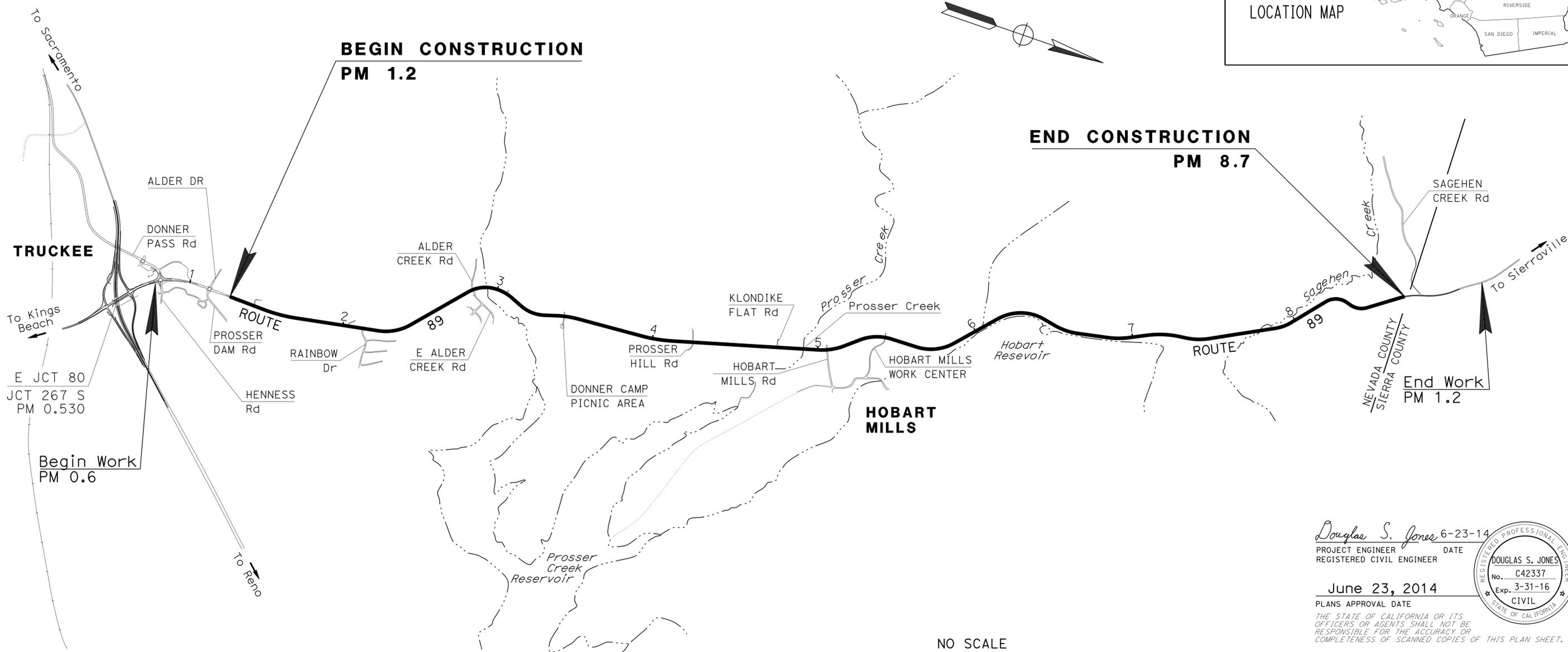
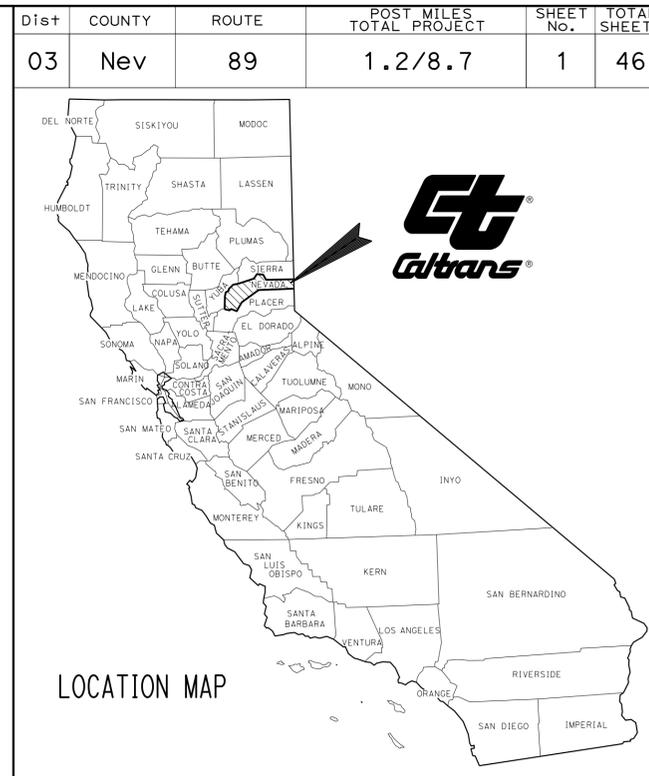
TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ACSTP-P089(115)

PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY

IN NEVADA COUNTY
IN AND NEAR TRUCKEE
FROM 0.7 MILE NORTH OF THE 80/267 JUNCTION
TO THE SIERRA COUNTY LINE



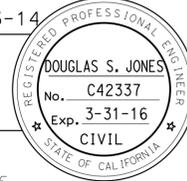
PROJECT MANAGER
SUKHWINDER S. BAJWA

DESIGN MANAGER
DOUGLAS S. JONES

Douglas S. Jones 6-23-14
PROJECT ENGINEER DATE
REGISTERED CIVIL ENGINEER

June 23, 2014
PLANS APPROVAL DATE

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

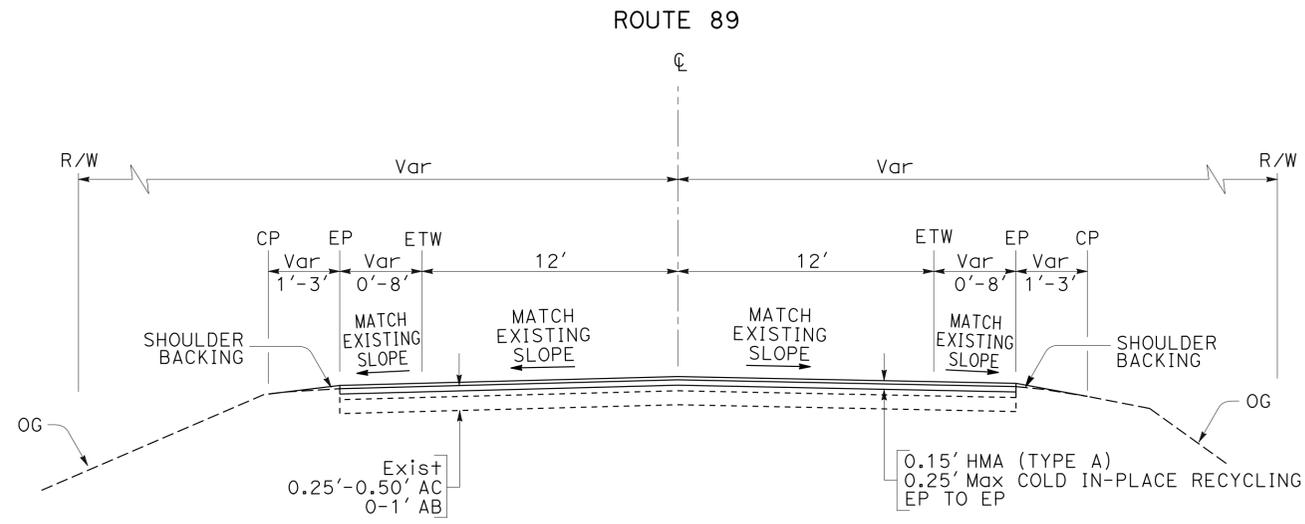


CONTRACT No.	03-3F6504
PROJECT ID	0313000038

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	89	1.2/8.7	3	46
<i>Douglas S. Jones</i> 6-23-14 REGISTERED CIVIL ENGINEER DATE			REGISTERED PROFESSIONAL ENGINEER No. C42337 Exp. 03-31-16 CIVIL STATE OF CALIFORNIA		
6-23-14 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:

- EXISTING UTILITIY FACILITIES ARE NOT INCLUDED ON THESE PLANS
- DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.



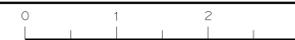
**ROUTE 89
(SAGE HEN Dbl RCB)**

PM 7.777 TO 7.886
SEE CONSTRUCTION DETAILS FOR ADDITIONAL DETAILS

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR	DATE	DATE
Caltrans DIVISION OF ENGINEERING	DOUGLAS S. JONES	DOUGLAS S. JONES	LARRY GRYBOS	5/29/14	5/29/14
		CHECKED BY	RON STAGE		

TYPICAL CROSS SECTIONS
NO SCALE

X-2



DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	89	1.2/8.7	4	46

Douglas S. Jones 6-23-14
 REGISTERED CIVIL ENGINEER DATE
 6-23-14
 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER
 DOUGLAS S. JONES
 No. C42337
 Exp. 03-31-16
 CIVIL
 STATE OF CALIFORNIA

NOTES:

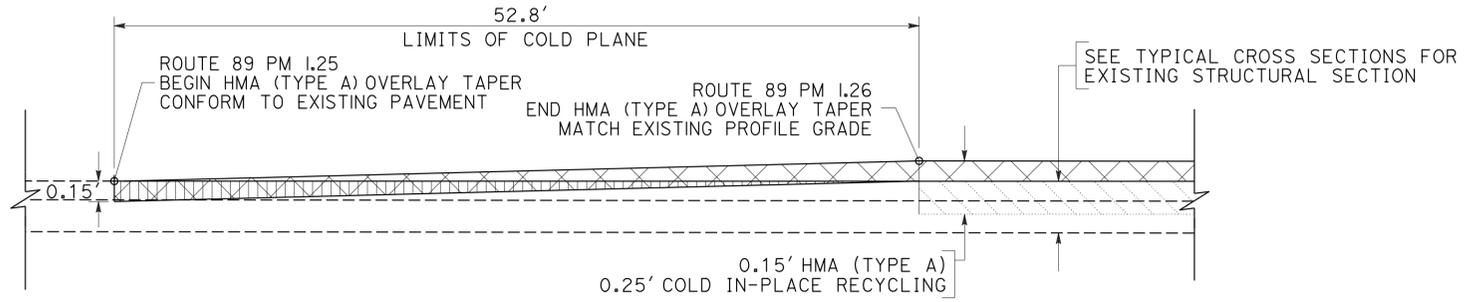
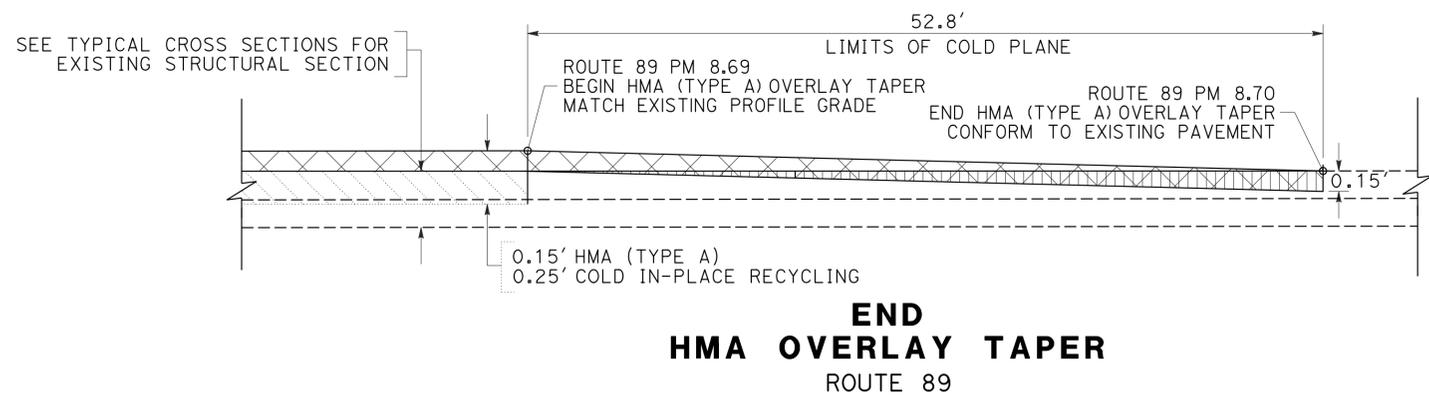
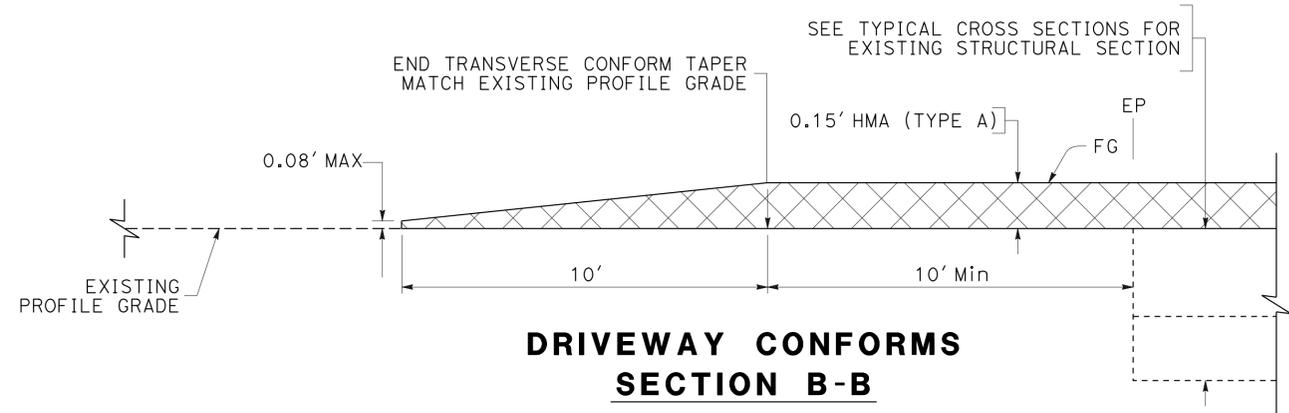
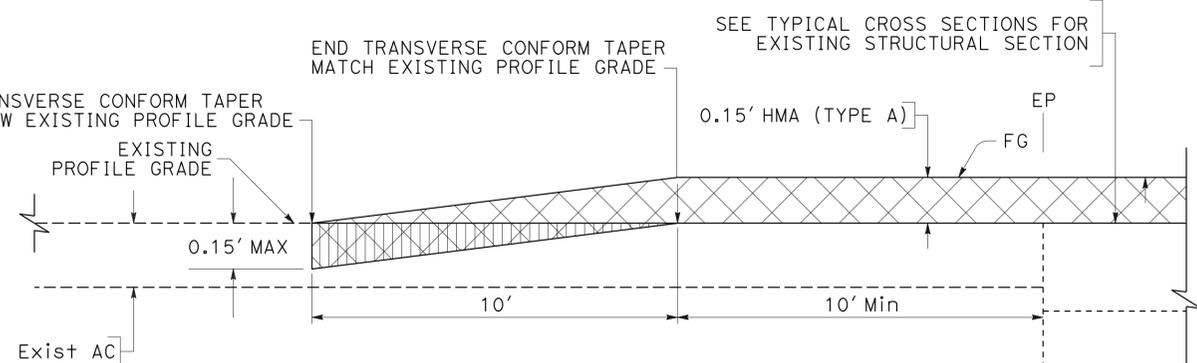
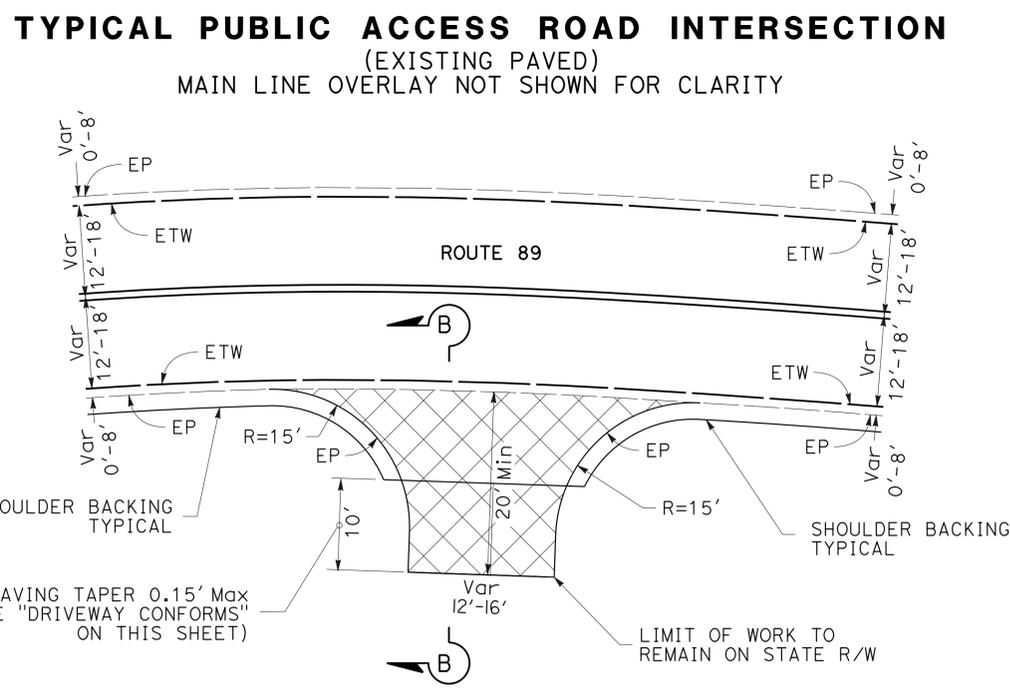
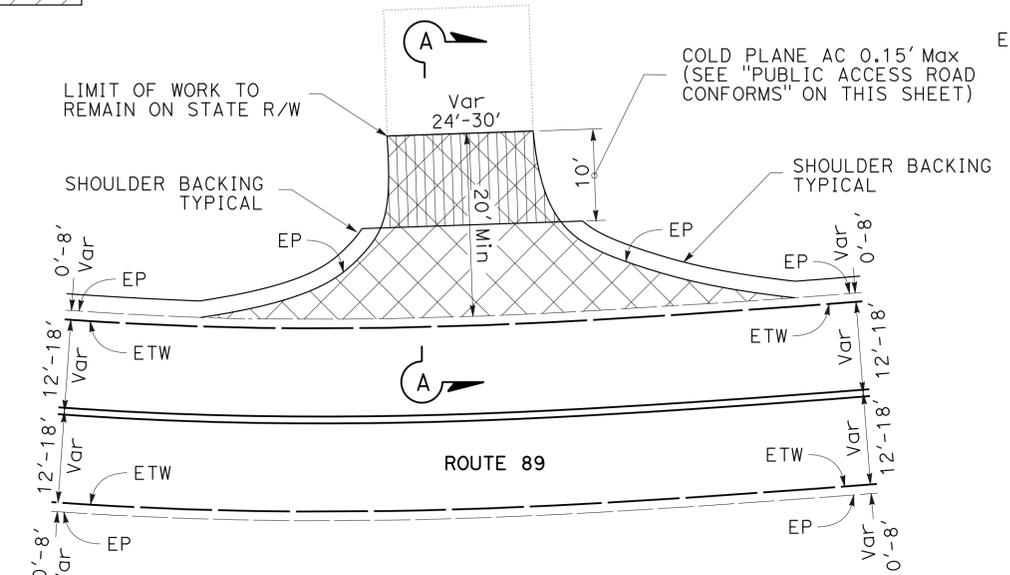
- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- EXISTING UTILITY FACILITIES ARE NOT INCLUDED ON THESE PLANS.

LEGEND:

- COLD PLANE AC Pvm+ AND 0.15' HMA (TYPE A)
- 0.15' Max HMA (TYPE A)
- 0.25' Max COLD IN-PLACE RECYCLING
- COLD PLANE AC PAVEMENT

ABBREVIATIONS:

CIR COLD IN-PLACE RECYCLING



CONSTRUCTION DETAILS

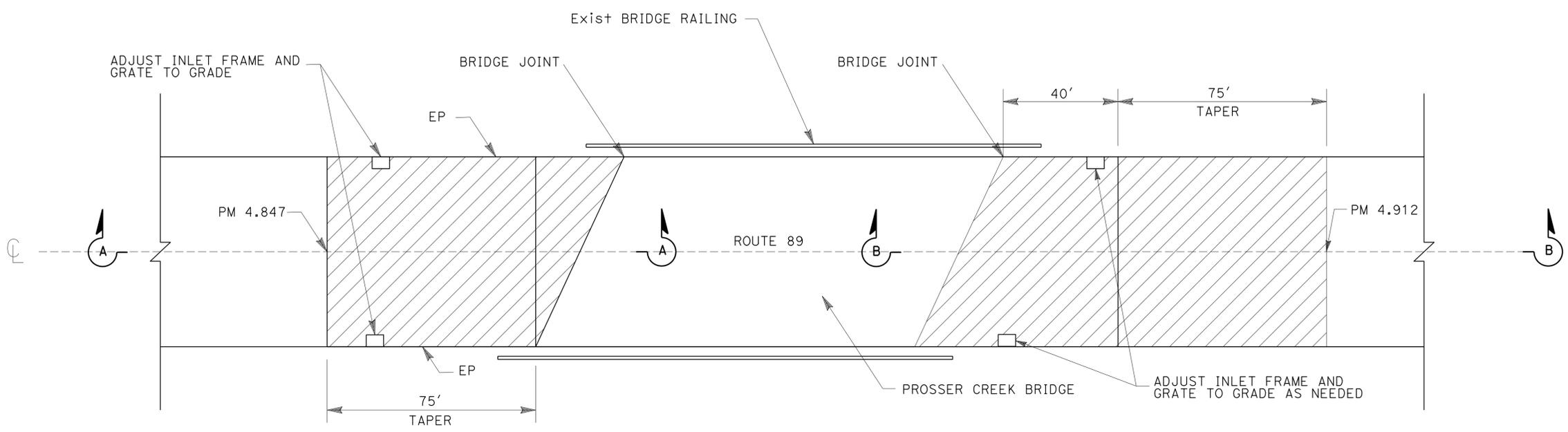
NO SCALE

C-1

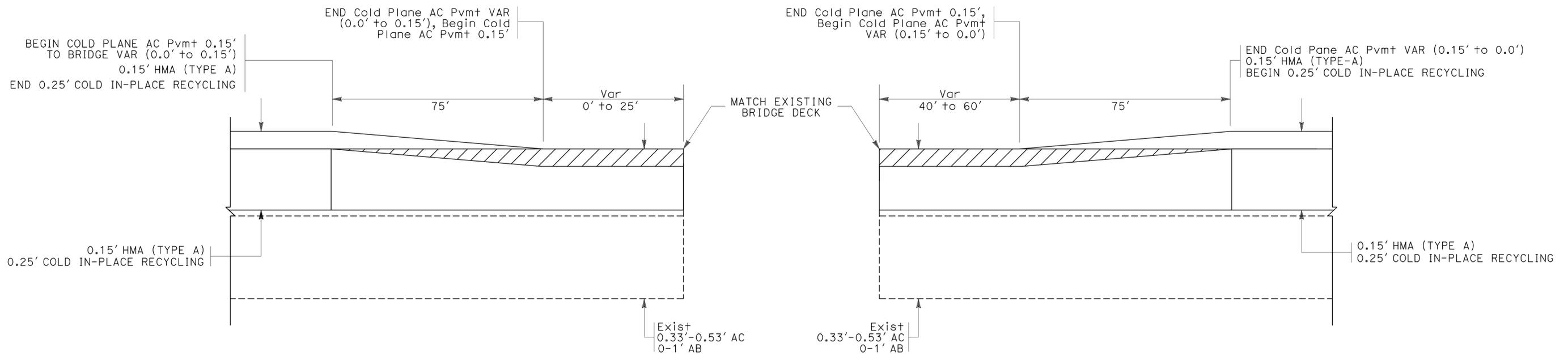
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - DIVISION OF ENGINEERING
 FUNCTIONAL SUPERVISOR: DOUGLAS S. JONES
 SCOTT FOSTER
 REVISIONS: LFG 5/30/14, LFG 5/20/14, LFG 1/30/14
 REVISOR: LFG
 DATE: 5/30/14, 5/20/14, 1/30/14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	89	1.2/8.7	5	46
Douglas S. Jones REGISTERED CIVIL ENGINEER			6-23-14	DATE	
6-23-14 PLANS APPROVAL DATE			DOUGLAS S. JONES No. C42337 Exp. 03-31-16 CIVIL		
<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:**
- EXISTING UTILITY FACILITIES ARE NOT INCLUDED ON THESE PLANS
 - POST MILE LOCATIONS ARE APPROXIMATE



HMA PAVING CONFORM AT BEGIN/END PROSSER CREEK BRIDGE



SECTION A-A

SECTION B-B

CONSTRUCTION DETAILS
NO SCALE

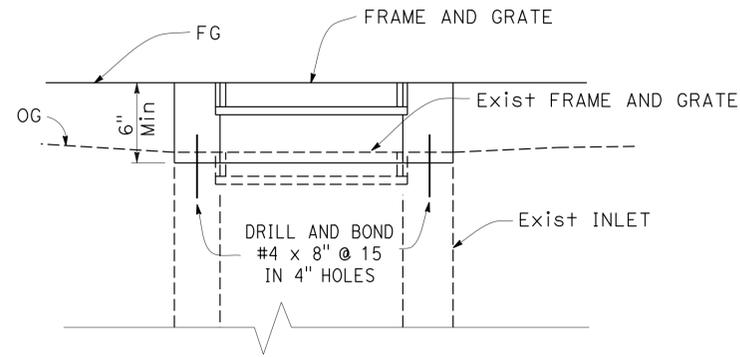
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - DIVISION OF ENGINEERING
 LARRY GRAYBOS
 RON STAGE
 LFG
 5/30/14
 DOUGLAS S. JONES
 FUNCTIONAL SUPERVISOR

DATE PLOTTED => 15-AUG-2014 TIME PLOTTED => 08:35

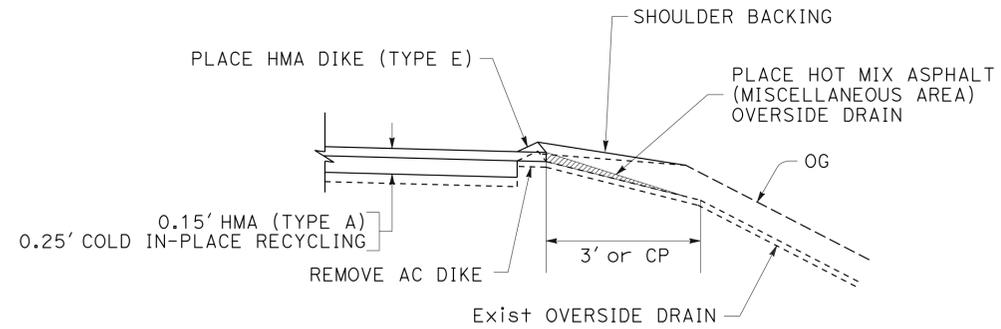
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	89	1.2/8.7	7	46
Douglas S. Jones 6-23-14 REGISTERED CIVIL ENGINEER DATE					
6-23-14 PLANS APPROVAL DATE					
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NOTES:

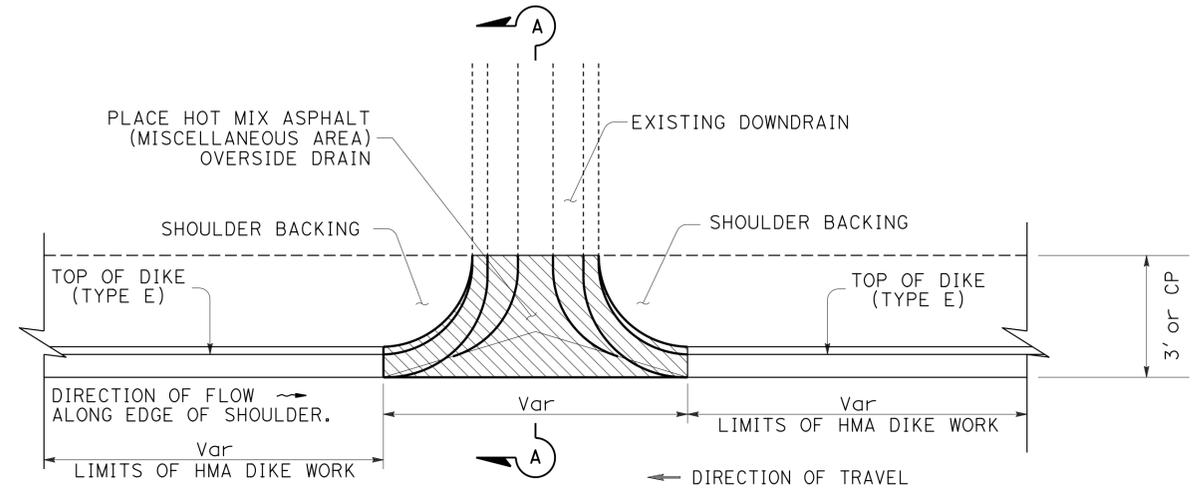
1. SEE SUMMARY OF QUANTITIES ADJUST FRAME AND GRATE TO GRADE LOCATION.
2. EXISTING UTILITY FACILITIES ARE NOT INCLUDED ON THESE PLANS.



ADJUST FRAME AND GRATE TO GRADE
(SEE NOTE 1)

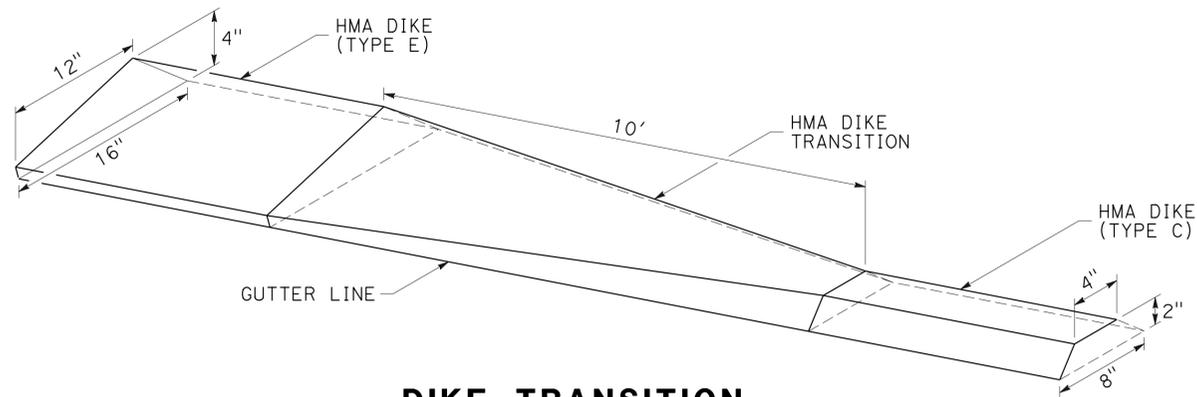


SECTION A-A



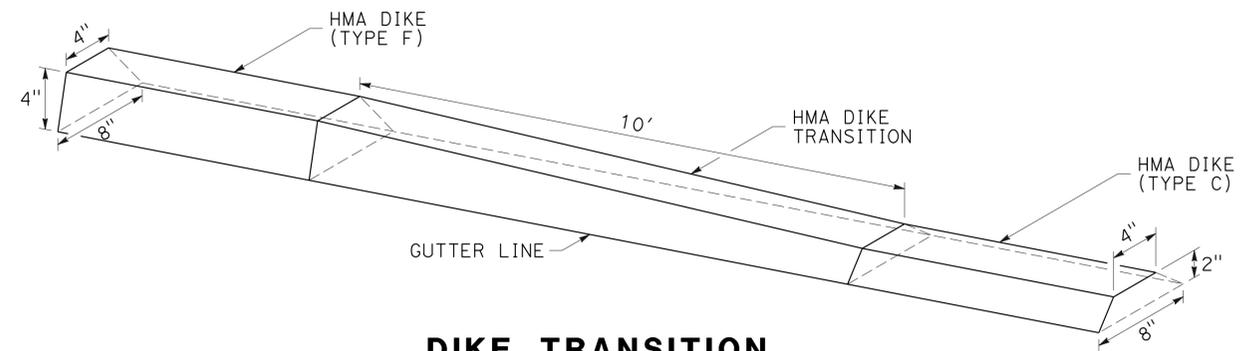
PLAN

OVERSIDE DRAIN & DOWNDRAIN
MAIN LINE OVERLAY NOT SHOWN FOR CLARITY



DIKE TRANSITION TYPE E TO TYPE C

(FOR LOCATION SEE SUMMARY OF QUANTITIES.
FOR DETAILS NOT SHOWN, SEE STANDARD PLAN RSP A87B)



DIKE TRANSITION TYPE F TO TYPE C

(FOR LOCATION SEE SUMMARY OF QUANTITIES.
FOR DETAILS NOT SHOWN, SEE STANDARD PLAN RSP A87B)

CONSTRUCTION DETAILS
NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - DIVISION OF ENGINEERING
FUNCTIONAL SUPERVISOR DOUGLAS S. JONES
SCOTT FOSTER
RON STAGE
LFG
5/27/14
REVISOR BY DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	89	1.2/8.7	8	46

Douglas S. Jones 6-23-14	
REGISTERED CIVIL ENGINEER	DATE
6-23-14	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
DOUGLAS S. JONES
No. C42337
Exp. 03-31-16
CIVIL

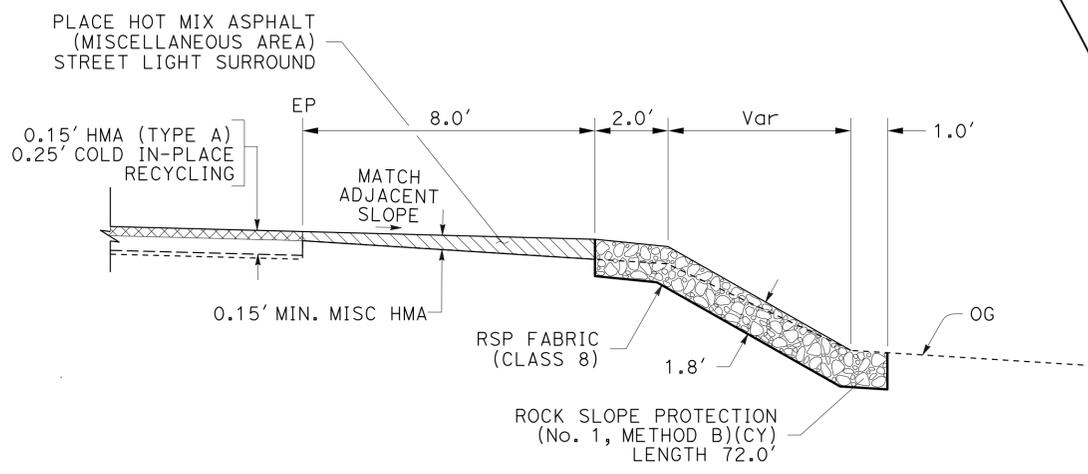
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NOTES:

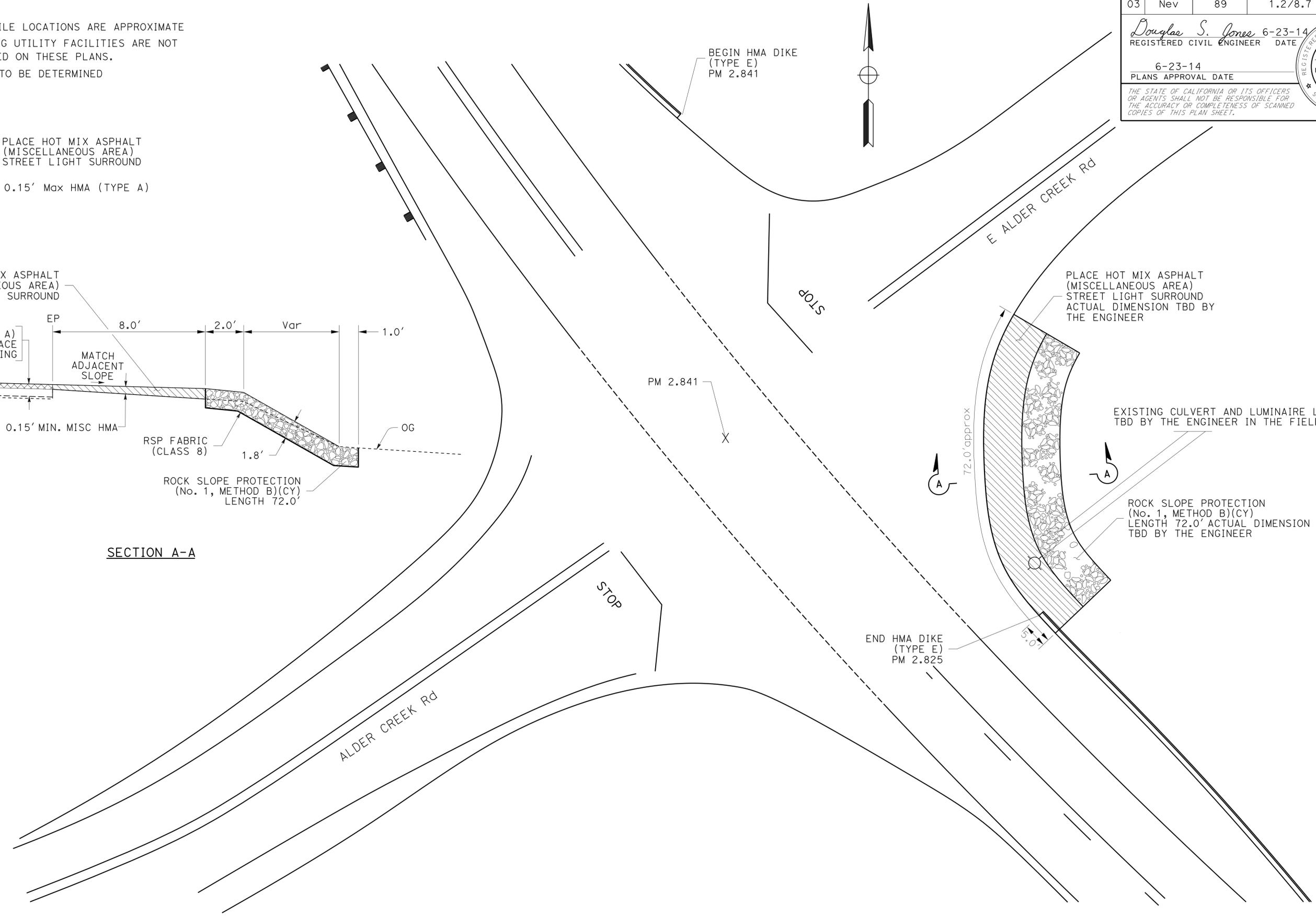
1. POST MILE LOCATIONS ARE APPROXIMATE
2. EXISTING UTILITY FACILITIES ARE NOT INCLUDED ON THESE PLANS.
3. TBD - TO BE DETERMINED

LEGEND:

- PLACE HOT MIX ASPHALT (MISCELLANEOUS AREA) STREET LIGHT SURROUND
- 0.15' Max HMA (TYPE A)



SECTION A-A



CONSTRUCTION DETAILS
NO SCALE

C-5

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DIVISION OF ENGINEERING
 FUNCTIONAL SUPERVISOR: DOUGLAS S. JONES
 SCOTT FOSTER
 REVISIONS: LFG 5/27/14
 CHECKED BY: [blank]
 DESIGNED BY: [blank]

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - DIVISION OF ENGINEERING
 LARRY GRIBOS
 REVISOR BY
 LFG
 DATE REVISOR
 5/30/14
 CALCULATED/DESIGNED BY
 CHECKED BY
 FUNCTIONAL SUPERVISOR
 DOUGLAS S. JONES

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	89	1.2/8.7	9	46

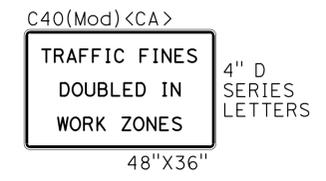
Douglas S. Jones 6-23-14
 REGISTERED CIVIL ENGINEER DATE
 6-23-14
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 DOUGLAS S. JONES
 No. C42337
 Exp. 03-31-16
 CIVIL
 STATE OF CALIFORNIA

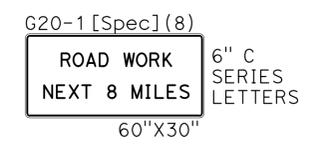
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STATIONARY MOUNTED CONSTRUCTION AREA SIGNS													
SIGN LOCATION		FACING TRAFFIC				SIGN CODE		PANEL SIZE	SIGN MESSAGE	NUMBER OF POST AND SIZE	NUMBER OF SIGNS		
		DESCRIPTION		NB	SB	EB	WB					FEDERAL	CALIFORNIA
PM Nev 1.20	ROUTE 89	1				G20-1 [Spec] (8)		60" x 30"	ROAD WORK NEXT 8 MILES	2 - 4" x 6"	1		
PM Nev 1.20	ROUTE 89	1					C40(Mod)	48" x 36"	TRAFFIC FINES DOUBLED IN WORK ZONES	1 - 4" x 6"	1		
PM Nev 1.18	ROUTE 89		1			G20-2	C14	36" x 18"	END ROAD WORK	1 - 4" x 4"	1		
PM Nev 2.11	RAINBOW DRIVE			1		G20-2	C14	36" x 18"	END ROAD WORK	1 - 4" x 4"	1		
					1	W20-1	C23	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1		
PM Nev 2.84	ALDER CREEK ROAD			1	1	G20-2	C14	36" x 18"	END ROAD WORK	1 - 4" x 4"	2		
				1	1	W20-1	C23	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	2		
PM Nev 3.43	DONNER CAMP PINIC GROUND			1		G20-2	C14	36" x 18"	END ROAD WORK	1 - 4" x 4"	1		
					1	W20-1	C23	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1		
PM Nev 4.22	PROSSER HILL			1	1	G20-2	C14	36" x 18"	END ROAD WORK	1 - 4" x 4"	2		
				1	1	W20-1	C23	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	2		
PM Nev 4.73	KLONDIKE FLAT ROAD				1	G20-2	C14	36" x 18"	END ROAD WORK	1 - 4" x 4"	1		
				1		W20-1	C23	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1		
PM Nev 5.06	HOBART MILLS ROAD			1		G20-2	C14	36" x 18"	END ROAD WORK	1 - 4" x 4"	1		
					1	W20-1	C23	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1		
PM Nev 5.42	HOBART WORK CENTER			1		G20-2	C14	36" x 18"	END ROAD WORK	1 - 4" x 4"	1		
					1	W20-1	C23	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1		
PM Sie 0.10	ROUTE 89		1			G20-1 [Spec] (8)		60" x 30"	ROAD WORK NEXT 8 MILES	2 - 4" x 6"	1		
PM Sie 0.05	ROUTE 89		1				C40(Mod)	48" x 36"	TRAFFIC FINES DOUBLED IN WORK ZONES	1 - 4" x 6"	1		
PM Sie 0.05	ROUTE 89	1				G20-2	C14	36" x 18"	END ROAD WORK	1 - 4" x 4"	1		

NOTE: EXACT SIGN LOCATION TO BE DETERMINED BY THE ENGINEER.



RETROREFLECTIVE WHITE BACKGROUND WITH BLACK LEGEND AND BORDERS.



ORANGE BACKGROUND WITH BLACK LEGEND AND BORDERS.

CONSTRUCTION AREA SIGNS

NO SCALE

CS-1

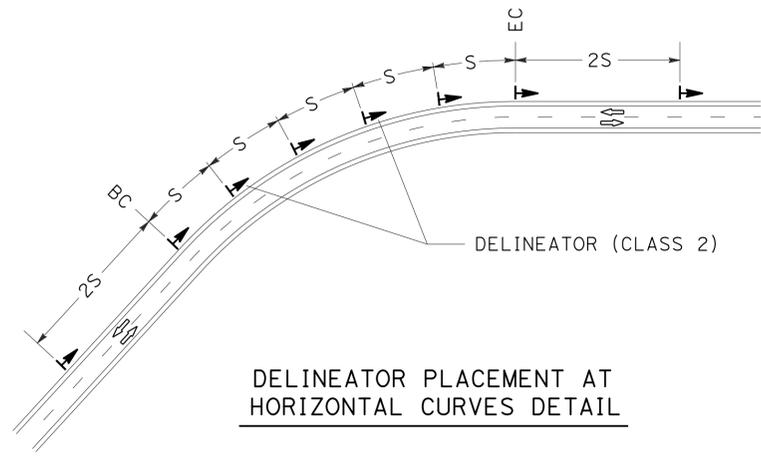
APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

LAST REVISION
 DATE PLOTTED => 15-AUG-2014
 TIME PLOTTED => 08:35

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	89	1.2/8.7	10	46

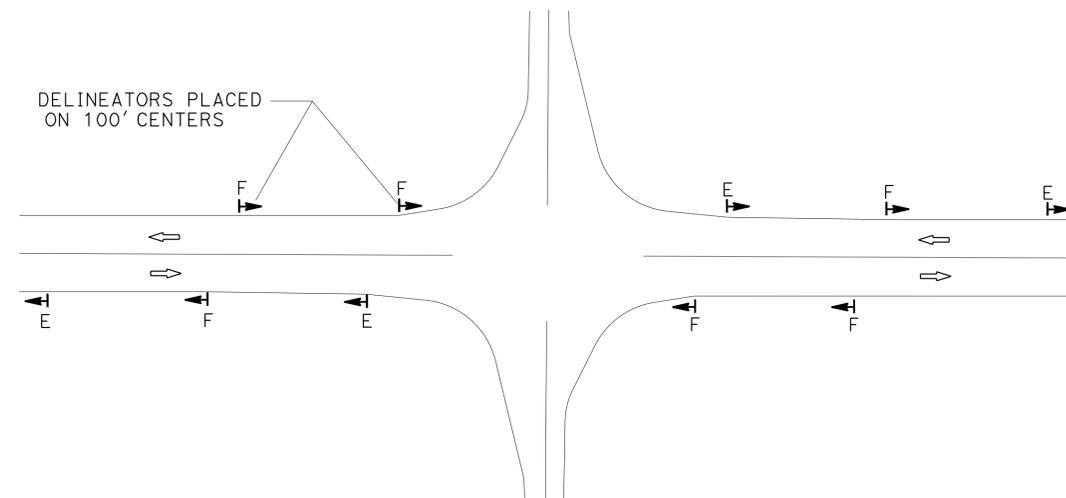
<i>Douglas S. Jones</i> 6-23-14		REGISTERED PROFESSIONAL ENGINEER No. C42337 Exp. 03-31-16 CIVIL STATE OF CALIFORNIA
REGISTERED CIVIL ENGINEER	DATE	
6-23-14		
PLANS APPROVAL DATE		
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NOTE:
FOR DELINEATION SPACING SEE PDQ-2



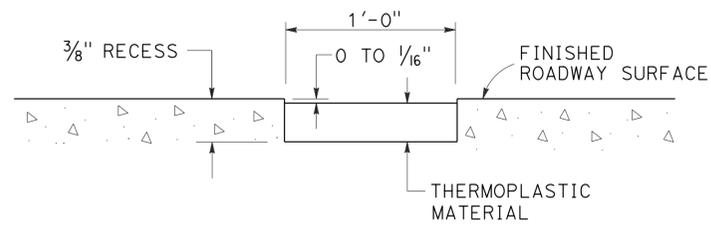
DELINEATOR PLACEMENT AT HORIZONTAL CURVES DETAIL

LEGEND
S= DELINEATOR SPACING



DELINEATORS PLACED ON 100' CENTERS

DELINEATOR PLACEMENT AT INTERSECTIONS DETAIL



LIMIT LINE RECESSING DETAIL

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - DIVISION OF ENGINEERING
Caltrans
 FUNCTIONAL SUPERVISOR: DOUGLAS S. JONES
 LARRY GRYBOS
 CALCULATED/DESIGNED BY: []
 CHECKED BY: []
 REVISOR: []
 DATE: []
 REVISOR: []
 DATE: []
 REVISOR: []
 DATE: []

PAVEMENT DELINEATION DETAILS
NO SCALE

PDD-1

TRAFFIC STRIPE						
LOCATION PM TO PM	4" THERMOPLASTIC TRAFFIC STRIPE (RECESSED)		4" THERMOPLASTIC TRAFFIC STRIPE (RECESSED, BROKEN 36-12)		4" TWO-COMPONENT PAINT TRAFFIC STRIPE	4" TWO-COMPONENT PAINT TRAFFIC STRIPE (BROKEN 12-3)
	DETAIL NO.		DETAIL NO.		DETAIL NO.	DETAIL NO.
	18 (LF)	21 (LF)	5 (LF)	18 (LF)	27B (LF)	27C (LF)
PM 1.248 to PM 1.314			349		697	
PM 1.314 to PM 1.438			655		1,310	
PM 1.438 to PM 1.627	998			998	1,996	
PM 1.627 to PM 1.727		1,056			1,056	
PM 1.727 to PM 1.865	729			729	1,458	
PM 1.865 to PM 1.944			418		835	
PM 1.944 to PM 2.097	808			808	1616	
PM 2.097 to PM 2.332		2,482			2,482	53
PM 2.332 to PM 2.505	914			914	1,827	
PM 2.505 to PM 2.726			1,167		2,334	
PM 2.726 to PM 2.848	532			532	1090	200
PM 2.848 to PM 3.419		6,030			5,515	315
PM 3.419 to PM 3.501	374			374	626	240
PM 3.501 to PM 3.898			2,097		4,193	
PM 3.898 to PM 4.023	660			660	1,320	
PM 4.023 to PM 4.382		3,740			3,212	580
PM 4.382 to PM 4.499	618			618	1,236	
PM 4.499 to PM 4.660			851		1,701	
PM 4.660 to PM 4.722	328			328	625	30
PM 4.722 to PM 4.789	354			354	638	70
PM 4.789 to PM 4.914			660		1,320	
PM 4.914 to PM 5.045	692			692	1,384	
PM 5.045 to PM 5.835		7,739			7,973	370
PM 5.835 to PM 5.957	645			645	1,289	
PM 5.957 to PM 6.042			449		898	
PM 6.042 to PM 6.214	909			909	1,817	
PM 6.214 to PM 7.516		13,750			13,750	
PM 7.516 to PM 7.692	930			930	1,859	
PM 7.692 to PM 7.815			650		1,299	
PM 7.815 to PM 7.965	792			792	1,584	
PM 7.965 to PM 8.700		7,762			7,762	
SUB TOTAL	10,283	42,559	7296	10,283	76,702	1,858
TOTAL		52,842		17,579	76,702	1,858

NOTE: POST MILE LOCATIONS ARE APPROXIMATE.

TWO-COMPONENT PAINT PAVEMENT MARKING			
LOCATION		AREA	DESCRIPTION
PM		(SQFT)	
1.200	L+	1 @ 55	"YIELD AHEAD"
2.107	R+	1 @ 22	"STOP"
2.841	L+/R+	2 @ 22	"STOP"
3.425	L+	1 @ 22	"STOP"
4.215	L+/R+	2 @ 22	"STOP"
4.725	L+	1 @ 22	"STOP"
5.057	R+	1 @ 22	"STOP"
5.419	L+/R+	2 @ 22	"STOP"
TOTAL		275	

12" THERMOPLASTIC PAVEMENT MARKING (RECESSED)				
LOCATION			AREA	DESCRIPTION
CROSS STREET/INTERSECTION	PM		(SQFT)	
RAINBOW DRIVE	2.11	R+	25	"LIMIT LINE"
ALDER CREEK ROAD	2.84	L+/R+	50	"LIMIT LINE"
DONNER CAMP PINIC GROUND	3.43	L+	25	"LIMIT LINE"
PROSSER HILL	4.22	L+/R+	50	"LIMIT LINE"
KLONDIKE FLAT ROAD	4.73	L+	25	"LIMIT LINE"
HOBART MILLS ROAD	5.06	R+	25	"LIMIT LINE"
HOBART WORK CENTER	5.42	L+/R+	50	"LIMIT LINE"
TOTAL			250	

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	89	1.2/8.7	11	46

Douglas S. Jones 6-23-14
 REGISTERED CIVIL ENGINEER DATE

6-23-14
 PLANS APPROVAL DATE

DOUGLAS S. JONES
 No. C42337
 Exp. 03-31-16
 CIVIL
 STATE OF CALIFORNIA

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**PAVEMENT DELINEATION
QUANTITIES**

PDQ-1

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DIVISION OF ENGINEERING
 FUNCTIONAL SUPERVISOR DOUGLAS S. JONES
 CALCULATED/DESIGNED BY CHECKED BY
 LARRY GRYBOS RON STAGE
 REVISED BY DATE REVISED
 LFG 5/29/14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	89	1.2/8.7	12	46

Douglas S. Jones 6-23-14
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 6-23-14
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REGISTERED PROFESSIONAL ENGINEER
 DOUGLAS S. JONES
 No. C42337
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 CIVIL
 STATE OF CALIFORNIA

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DELINEATOR (CLASS 2)

DESCRIPTION	SPACING S=	DELINEATOR (CLASS 2)			
		TYPE E		TYPE F	
		FNBT EACH	FSBT EACH	FNBT EACH	FSBT EACH
MAINLINE CURVE, PM 2.20 TO PM 2.42	120	12			
MAINLINE CURVE, PM 2.80 TO PM 3.00	95'		12		
MAINLINE CURVE, PM 3.17 TO PM 3.33	100'	11			
MAINLINE CURVE, PM 3.40 TO PM 3.54	165'		7		
MAINLINE CURVE, PM 4.98 TO PM 5.18	130'	10			
MAINLINE CURVE, PM 5.25 TO PM 5.47	115'		12		
MAINLINE CURVE, PM 5.60 TO PM 5.88	115'	14			
MAINLINE CURVE, PM 6.12 TO PM 6.47	115'		19		
MAINLINE CURVE, PM 6.50 TO PM 6.70	130'	9			
MAINLINE CURVE, PM 6.82 TO PM 7.00	150'	7			
MAINLINE CURVE, PM 7.29 TO PM 7.51	135'	9			
MAINLINE CURVE, PM 7.85 TO PM 8.00	110'	8			
MAINLINE CURVE, PM 8.20 TO PM 8.51	40'	17	21		
MAINLINE CURVE, PM 8.67 TO PM 8.70	125'		4		
MAINLINE TANGENT SECTIONS, PM 1.2 TO PM 8.70	525'	62	66		
RAINBOW Dr (N)		2		3	
ALDER CREEK Rd (N)		2		3	
ALDER CREEK Rd (S)			2		3
DONNER CAMP PICNIC GROUND (N)		2		3	
DONNER CAMP PICNIC GROUND (S)			2		3
PROSSER HILL Rd (N)		2		3	
PROSSER HILL Rd (S)			2		3
KLONDIKE FLAT Rd (S)			2		3
HOBART MILLS Rd (N)		2		3	
HOBART MILLS WORK CENTER (N)		2		3	
HOBART MILLS WORK CENTER (S)			2		3
SUBTOTAL		171	151	18	15
TOTAL					355

NOTE: EXACT DELINEATOR LOCATIONS TO BE DETERMINED BY THE ENGINEER.

HIGHWAY POST MARKER

POST MILE	HIGHWAY POST MARKER SOUTH BOUND TRAFFIC	HIGHWAY POST MARKER NORTH BOUND TRAFFIC
	(EA)	(EA)
AT PM 1.50	1	
AT PM 2.00		1
AT PM 2.50	1	
AT PM 3.00		1
AT PM 3.50	1	
AT PM 4.00		1
AT PM 4.50	1	
AT PM 5.00		1
AT PM 5.50	1	
AT PM 6.00		1
AT PM 6.50	1	
AT PM 7.00		1
AT PM 7.50	1	
AT PM 8.00		1
AT PM 8.50	1	
SUBTOTAL	8	7
TOTAL		15

NOTE: EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER

PAVEMENT DELINEATION QUANTITIES

PDQ-2

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	89	1.2/8.7	13	46

Douglas S. Jones 6-23-14
REGISTERED CIVIL ENGINEER DATE

6-23-14
PLANS APPROVAL DATE

DOUGLAS S. JONES
No. C42337
Exp. 03-31-16
CIVIL
STATE OF CALIFORNIA

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

NOTES:

- (N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.
- POST MILE LOCATIONS ARE APPROXIMATE.

PLACE HOT MIX ASPHALT DIKE							
GUARDRAIL No.		POST MILE TO POST MILE		TYPE C	TYPE E	TYPE F	MINOR HMA
		(LF)	(LF)	(LF)	(LF)	(TON)	
-	L+	1.248	TO 1.369		639		16.6
-	R+	1.248	TO 1.397		787		20.5
-	R+	1.701	TO 2.069		1,943		50.5
-	R+	2.408	TO 2.825		2,202		57.3
-	R+	2.850	TO 2.996		771		20.0
-	R+	3.392	TO 3.420		148		3.8
-	R+	3.431	TO 3.554		649		16.9
-	R+	3.822	TO 3.885		333		8.7
-	L+	3.819	TO 3.879		317		8.2
-	L+	4.050	TO 4.113		333		8.7
-	R+	4.452	TO 4.561		576		15.0
-	L+	4.451	TO 4.559		570		14.8
-	R+	4.698	TO 4.815		618		16.1
-	L+	4.733	TO 4.820		459		11.9
3	R+	4.815	TO 4.827	63			0.5
3	R+	4.827	TO 4.859			169	2.2
2	L+	4.815	TO 4.827	63			0.5
2	L+	4.827	TO 4.863			190	2.5
4	R+	4.891	TO 4.911			106	1.4
4	R+	4.911	TO 4.922	58			0.4
5	L+	4.895	TO 4.930			185	2.4
5	L+	4.930	TO 4.941	58			0.4
-	L+	5.133	TO 5.199		348		9.0
-	R+	5.386	TO 5.415		153		4.0
-	R+	5.424	TO 5.578		813		21.1
-	L+	5.475	TO 5.562		459		11.9
-	L+	5.780	TO 5.867		459		11.9
-	R+	5.965	TO 6.380		2,191		57.0
-	L+	6.024	TO 6.130		560		14.6
-	L+	6.589	TO 6.805		1,140		29.6
-	R+	6.734	TO 6.848		602		15.7
-	R+	7.511	TO 7.541		158		4.1
-	L+	8.460	TO 8.562		539		14.0
TOTAL				242	17,767	650	472.2*

* SEE ROADWAY QUANTITIES SUMMARY FOR TOTAL

REMOVE ASPHALT CONCRETE DIKE				
GUARDRAIL No.		POST MILE TO POST MILE		(LF)
		-	L+	1.248
-	R+	1.248	TO 1.397	787
-	R+	1.701	TO 2.069	1,943
-	R+	2.408	TO 2.825	2,202
-	R+	2.850	TO 2.996	771
-	R+	3.392	TO 3.420	148
-	R+	3.431	TO 3.554	649
-	R+	3.822	TO 3.885	333
-	L+	3.819	TO 3.879	317
-	L+	4.050	TO 4.113	333
-	R+	4.452	TO 4.561	576
-	L+	4.451	TO 4.559	570
-	R+	4.698	TO 4.815	618
-	L+	4.733	TO 4.820	459
3	R+	4.820	TO 4.858	232
2	L+	4.820	TO 4.862	253
4	R+	4.885	TO 4.917	164
5	L+	4.896	TO 4.936	243
-	L+	5.133	TO 5.199	348
-	R+	5.386	TO 5.415	153
-	R+	5.424	TO 5.578	813
-	L+	5.475	TO 5.562	459
-	L+	5.780	TO 5.867	459
-	R+	5.965	TO 6.380	2,191
-	L+	6.024	TO 6.130	560
-	L+	6.589	TO 6.805	1,140
-	R+	6.734	TO 6.848	602
-	R+	7.511	TO 7.541	158
-	L+	8.460	TO 8.562	539
TOTAL				18,659

COLD PLANE AC PAVEMENT			
PUBLIC ACCESS ROADS			
	POST MILE	DESCRIPTION	(SQYD)
R+	2.107	RAINBOW DRIVE	51
L+/R+	2.841	ALDER CREEK ROAD	126
R+	3.425	DONNER CAMP PICNIC GROUND	74
L+/R+	4.215	PROSSER HILL	154
L+	4.725	KLONDIKE FLAT ROAD	59
R+	5.057	HOBART MILLS ROAD	57
L+	5.419	HOBART WORK CENTER	29
SUB TOTAL			550
MAIN LINE			
PM	1.25 - 1.26	BEGIN PROJECT	165
PM	4.85 - 4.87	BEGIN PROSSER CREEK BRIDGE	405
PM	4.89 - 4.91	END PROSSER CREEK BRIDGE	583
PM	8.69 - 8.70	END PROJECT	165
SUB TOTAL			1318
TOTAL			1868

RSP QUANTITIES		
LOCATION	RSP (No. 1, METHOD B)	RSP FABRIC (CLASS 8)
	(CY)	(SQYD)
PM		
2.841	38.4	96
TOTAL	38.4	96

ADJUST FRAME AND GRATE TO GRADE		
	POST MILE TO POST MILE	(EA)
L+	4.833 TO 4.896	2
R+	4.833 TO 4.893	2
TOTAL		4

SUMMARY OF QUANTITIES

Q-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - DIVISION OF ENGINEERING
 PROJECT: 0313000038pa001.dgn
 USER: s119538
 DATE PLOTTED: 18-AUG-2014 16:14
 TIME PLOTTED: 16:14



NOTES:

1. (N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.
2. POST MILE LOCATIONS ARE APPROXIMATE.

REMOVE OVERSIDE DRAIN		
POST MILE	(EA)	
L+/R+	1.288	2
R+	1.367	1
R+	1.711	1
R+	1.889	1
R+	2.562	1
R+	2.825	1
R+	2.996	1
R+	3.420	1
R+	3.431	1
R+	3.473	1
R+	3.510	1
L+	3.819	1
R+	3.851	1
L+/R+	4.509	2
L+/R+	4.766	2
R+	5.386	1
R+	5.424	1
R+	5.457	1
L+	5.479	1
R+	5.485	1
L+/R+	5.513	2
L+	5.544	1
L+	5.780	1
L+	6.032	1
R+	6.066	1
L+	6.090	1
R+	6.135	1
R+	6.199	1
L+	6.589	1
L+	6.685	1
R+	6.774	1
R+	6.776	1
R+	6.814	1
R+	7.541	1
R+	7.835	1
L+	7.836	1
L+	8.479	1
L+	8.519	1
TOTAL		42

PLACE HOT MIX ASPHALT CONCRETE PUBLIC ACCESS ROADS				
	POST MILE	LOCATION DESCRIPTION	(N) (CY)	(TON)
R+	2.107	RAINBOW DRIVE	17.3	36.4
L+/R+	2.841	ALDER CREEK ROAD	59.1	124.1
R+	3.425	DONNER CAMP PICNIC GROUND	24.2	50.8
L+/R+	4.215	PROSSER HILL	38.8	81.5
L+	4.725	KLONDIKE FLAT ROAD	15.2	32.0
R+	5.057	HOBART MILLS ROAD	32.9	69.1
L+	5.419	HOBART WORK CENTER	8.5	17.8
SUBTOTAL			196.0	411.7
SEE "ROADWAY QUANTITIES SUMMARY" TABLE ON THIS SHEET FOR TOTAL QUANTITY				

PLACE HOT MIX ASPHALT CONCRETE DRIVEWAY			
	LOCATION (POST MILE)	(N) (CY)	(TON)
L+	3.04	7.9	16.7
L+	3.43	23.1	48.5
L+	4.22	23.8	50.0
L+	5.06	29.9	62.8
R+	5.42	8.2	17.3
L+	7.20	4.2	8.8
SUBTOTAL		97.1	204.1
SEE "ROADWAY QUANTITIES SUMMARY" TABLE ON THIS SHEET FOR TOTAL QUANTITY			

PLACE HOT MIX ASPHALT (MISCELLANEOUS AREA)								
HMA OVERSIDE DRAINS				STREET LIGHT SURROUND				
POST MILE	(SQYD)	MINOR HMA (TON)	POST MILE	(SQYD)	MINOR HMA (TON)			
L+/R+	1.288	2.4	1.0	R+	2.841	64.0	6.7	
R+	1.367	1.2	0.5					
R+	1.711	1.2	0.5					
R+	1.889	1.2	0.5					
R+	2.562	1.2	0.5					
R+	2.825	1.2	0.5					
R+	2.996	1.2	0.5					
R+	3.420	1.2	0.5					
R+	3.431	1.2	0.5					
R+	3.473	1.2	0.5					
R+	3.510	1.2	0.5					
L+	3.819	1.2	0.5					
R+	3.851	1.2	0.5					
L+/R+	4.509	2.4	1.0					
L+/R+	4.766	2.4	1.0					
R+	5.386	1.2	0.5					
R+	5.424	1.2	0.5					
R+	5.457	1.2	0.5					
L+	5.479	1.2	0.5					
R+	5.485	1.2	0.5					
L+/R+	5.513	2.4	1.0					
L+	5.544	1.2	0.5					
L+	5.780	1.2	0.5					
L+	6.032	1.2	0.5					
R+	6.066	1.2	0.5					
L+	6.090	1.2	0.5					
R+	6.135	1.2	0.5					
L+	6.199	1.2	0.5					
L+	6.589	1.2	0.5					
R+	6.774	1.2	0.5					
R+	6.776	1.2	0.5					
R+	6.814	1.2	0.5					
R+	7.541	1.2	0.5					
R+	7.835	1.2	0.5					
L+	7.836	1.2	0.5					
L+	8.479	1.2	0.5					
L+	8.519	1.2	0.5					
SUBTOTAL (1)		50.4	21.0	SUBTOTAL (2)		64.0	6.7	
SUBTOTAL (1)+(2)		114.4	27.7					
SEE "ROADWAY QUANTITIES SUMMARY" TABLE ON THIS SHEET FOR TOTAL QUANTITY								

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	89	1.2/8.7	14	46

Douglas S. Jones 6-23-14
REGISTERED CIVIL ENGINEER DATE

6-23-14
PLANS APPROVAL DATE

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

REGISTERED PROFESSIONAL ENGINEER
DOUGLAS S. JONES
No. C42337
Exp. 03-31-16
CIVIL
STATE OF CALIFORNIA

SHOULDER BACKING ^Φ		
POST MILE TO POST MILE	(TON)	
L+	1.248 TO 8.700	710
R+	1.248 TO 8.700	710
TOTAL		1420
Φ MAINLINE AND ALL PUBLIC ACCESS ROADS AND DRIVEWAYS REQUIRE CLASS 2 AGGREGATE BASE (SHOULDER BACKING)		

ROADWAY QUANTITIES SUMMARY								
LOCATION	HOT MIX ASPHALT (TYPE A) (TON)	MINOR HOT MIX ASPHALT (TON)	TACK COAT (TON)	COLD IN-PLACE RECYCLING (SQYD)	EMULSIFIED RECYCLING AGENT (COLD IN-PLACE RECYCLING) (TON)	ASPHALTIC EMULSION (COLD IN-PLACE RECYCLING) (TON)	SAND COVER (COLD IN-PLACE RECYCLING) (TON)	CEMENT (COLD IN-PLACE RECYCLING) (TON)
ROUTE 89 PM 1.20 TO 8.70	13,934		24	127,400	860	58	195	220
PUBLIC ACCESS ROADS AND DRIVEWAYS	615.8		3					
HMA DIKE*		472.2						
OVERSIDE DRAINS		21						
STREET LIGHT SURROUND		6.7						
TOTAL	14,549.8	499.9	27	127,400	860	58	195	220

* SEE SHEET Q-1 FOR PLACE HOT MIX ASPHALT DIKE.

SUMMARY OF QUANTITIES



NOTES:

POST MILE LOCATIONS ARE APPROXIMATE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	89	1.2/8.7	15	46

Douglas S. Jones 6-23-14
REGISTERED CIVIL ENGINEER DATE

6-23-14
PLANS APPROVAL DATE

DOUGLAS S. JONES
No. C42337
Exp. 03-31-16
CIVIL
STATE OF CALIFORNIA

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MIDWEST GUARDRAIL SYSTEM										
GUARDRAIL No.	POST MILE TO POST MILE		MIDWEST GUARDRAIL SYSTEM (7' WOOD POST)	ALTERNATIVE FLARED TERMINAL SYSTEM	ALTERNATIVE IN-LINE TERMINAL SYSTEM	TRANSITION RAILING (TYPE WB-31)	END ANCHOR ASSEMBLY (TYPE SFT)	END CAP (TYPE A)	OBJECT MARKER (TYPE L-1)	TYPE LAYOUT
			(LF)	(EA)	(EA)	(EA)	(EA)	(EA)	(EA)	
1	L+	2.852 TO 2.966	502	2					1	TYPE 11E LAYOUT
2	L+	4.820 TO 4.859	131	1		1			1	TYPE 12B LAYOUT
3	R+	4.820 TO 4.863	152	1		1			1	TYPE 12BB LAYOUT
4	R+	4.891 TO 4.917	62	1		1			1	TYPE 12BB LAYOUT
5	L+	4.895 TO 4.936	141	1		1			1	TYPE 12B LAYOUT
6	R+	5.765 TO 5.893	576	2					1	TYPE 11E LAYOUT
7	R+	6.559 TO 6.712	708	2					1	TYPE 11E LAYOUT
8	R+	7.816 TO 7.827	8		1	1		1	1	TYPE 12A LAYOUT ^{a,b}
9	L+	7.821 TO 7.831	47				1			TYPE 12AA LAYOUT ^b
10	R+	7.831 TO 7.842	52				1			TYPE 12AA LAYOUT ^b
11	L+	7.835 TO 7.849	12		1	1		1	1	TYPE 12A LAYOUT ^{a,b}
12	L+	8.265 TO 8.345	372	2					1	TYPE 11E LAYOUT
TOTAL			2763	12	2	6	2	2	10	

- a Std PLAN RSP A77U1, DIRECTION OF TRAFFIC, NOTE 3, IS REVERSED
- b Std PLAN RSP A77U1, METAL BEAM GUARD RAILING CONNECTION TO BRIDGE RAILINGS, USE CONNECTION DETAIL BB, END CAP (TYPE A)

MINOR CONCRETE (MINOR STRUCTURE)				
LOCATION	DESCRIPTION	DIRECTION	Sht No.	(CY)
SAGEHEN	BARRIER CAP	NB	C-3	1.0
SAGEHEN	BARRIER CAP	SB	C-3	1.0
SAGEHEN	END BLOCK	NB	C-3	1.0
SAGEHEN	END BLOCK	SB	C-3	1.0
TOTAL				4.0

TEMPORARY DRAINAGE INLET PROTECTION	
POST MILE TO POST MILE	(EA)
1.2 TO 8.7	46
TOTAL	46

TEMPORARY FIBER ROLL	
POST MILE TO POST MILE	(LF)
1.2 TO 8.7	72
TOTAL	72

TEMPORARY GRAVEL BAG BERM	
POST MILE TO POST MILE	(LF)
1.2 TO 8.7	3,610
TOTAL	3,610

REMOVE GUARDRAIL				
POST MILE TO POST MILE*				(LF)
1	R+	2.852 TO 2.966	602	
2	L+	4.820 TO 4.859	206	
3	R+	4.820 TO 4.863	227	
4	R+	4.891 TO 4.917	137	
5	L+	4.895 TO 4.936	216	
6	R+	5.765 TO 5.893	676	
7	R+	6.559 TO 6.712	808	
8	R+	7.816 TO 7.827	58	
9	L+	7.821 TO 7.831	53	
10	R+	7.831 TO 7.842	58	
11	L+	7.835 TO 7.849	74	
12	L+	8.265 TO 8.345	422	
TOTAL				3,537

* MBGR LENGTHS INCLUDE MBGR & END TREATMENT(S).

TREATED WOOD WASTE	
	TREATED WOOD WASTE LB
REMOVE GUARDRAIL	27,500
TOTAL	27,500

SUMMARY OF QUANTITIES Q-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - DIVISION OF ENGINEERING
 LARRY GRAYBOS
 REVISIONS BY DATE
 LFG 6/2/14
 CALCULATED/DESIGNED BY
 CHECKED BY
 FUNCTIONAL SUPERVISOR
 DOUGLAS S. JONES
 PROJECT: 0313000038pa003.dgn
 USERNAME => s119538
 DGN FILE => 0313000038pa003.dgn
 BORDER LAST REVISED 7/2/2010
 RELATIVE BORDER SCALE IS IN INCHES
 UNIT 0307
 PROJECT NUMBER & PHASE 03130000381

LAST REVISION DATE PLOTTED => 15-AUG-2014
 06-11-14 TIME PLOTTED => 08:35

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	89	1.2/8.7	16	46

Jaskaran Singh Boparai 6-23-14
 REGISTERED ELECTRICAL ENGINEER
 No. E15056
 Exp. 12-31-15
 ELECT

6-23-14
 PLANS APPROVAL DATE

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

QUANTITIES

DIRECTIONAL BORING	DLC	No. 5 PB	T&B IN DIRT BY MACHINE 30" DEEP	2" CONDUIT	2" TERMINATE CONDUIT	TYPE A LOOP
FT	FT	EA	FT	FT	EA	EA
50	200	2	20	70	6	4

ITEMS SHOWN IN TABLE ARE NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.

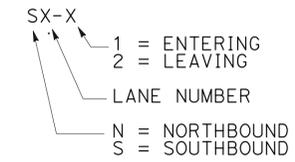
LEGEND:

- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- EXACT LOCATION OF ITEMS SHOWN TO BE DETERMINED BY FIELD ENGINEER.

NOTES:

- INSTALL TYPE R CABINET. FOR PCC PAD SEE DETAIL "A" THIS SHEET.
- 2-2"C, 4 DLC.
- 2"C, 2 DLC.

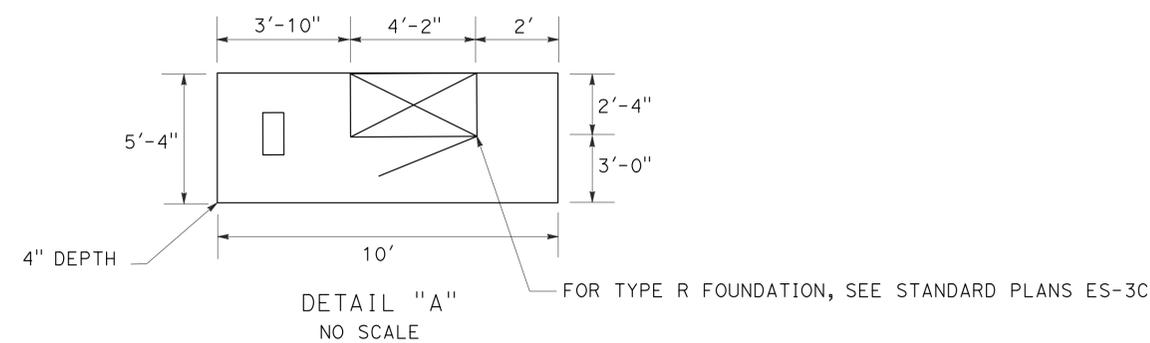
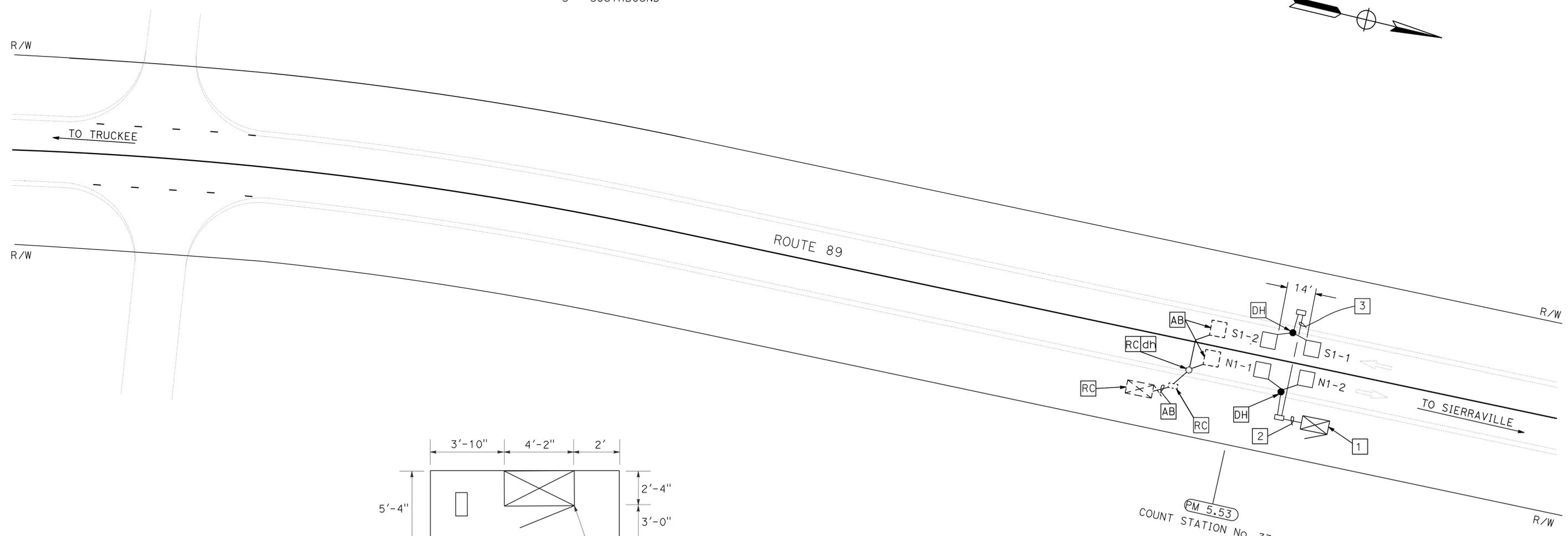
LOOP IDENTIFICATION LEGEND:



ABBREVIATIONS::

T&B: TRENCH AND BACKFILL

REVISOR: YOUNG TON
 DESIGNER: JASKARAN S. BOPARAI
 CHECKED BY:
 SUPERVISOR: NELSON LEE
 DEPARTMENT OF TRANSPORTATION - ELECTRICAL DESIGN
 STATE OF CALIFORNIA - Caltrans



TRAFFIC MONITORING STATION (COUNT)

SCALE: 1" = 20'

E-1

APPROVED FOR ELECTRICAL WORK ONLY

LAST REVISION: DATE PLOTTED => 15-AUG-2014
 05-20-14 TIME PLOTTED => 08:35

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	89	1.2/8.7	17	46

Grace M. Tsushima
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

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 6-23-14

UNIT OF MEASUREMENT SYMBOLS:

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

TABLE A

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

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

TABLE B

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

* For use on a sign panel only

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**ABBREVIATIONS
(SHEET 2 OF 2)**

NO SCALE

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

REVISED STANDARD PLAN RSP A10B

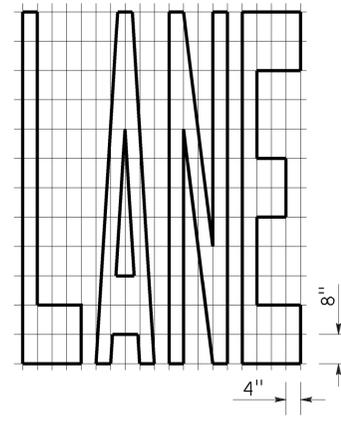
	M
Maint	MAINTENANCE
Max	MAXIMUM
MB	METAL BEAM
MBB	METAL BEAM BARRIER
MBGR	METAL BEAM GUARD RAILING
Med	MEDIAN
MGS	MIDWEST GUARDRAIL SYSTEM
MH	MANHOLE
Min	MINIMUM
Misc	MISCELLANEOUS
Misc I & S	MISCELLANEOUS IRON AND STEEL
Mkr	MARKER
Mod	MODIFIED, MODIFY
Mon	MONUMENT
MP	METAL PLATE
MPGR	METAL PLATE GUARD 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

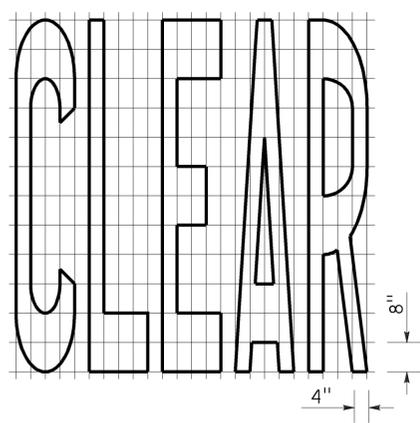
	S
S	SOUTH, SUPPLEMENT
SAE	STRUCTURE APPROACH EMBANKMENT
Salv	SALVAGE
SAPP	STRUCTURAL ALUMINUM PLATE PIPE
SB	SOUTHBOUND
SC	SAND CUSHION
SCSP	SLOTTED CORRUGATED STEEL PIPE
SD	STORM DRAIN
Sec	SECOND, SECTION
Sep	SEPARATION
SG	SUBGRADE
Shld	SHOULDER
Sht	SHEET
Sim	SIMILAR
ℒ	STATION LINE
SM	SELECTED MATERIAL
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

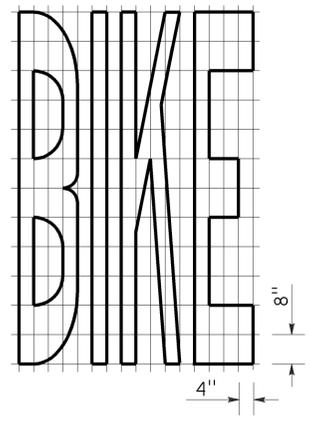
TO ACCOMPANY PLANS DATED 6-23-14



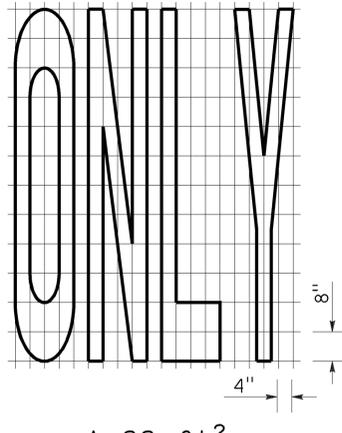
A=24 ft²



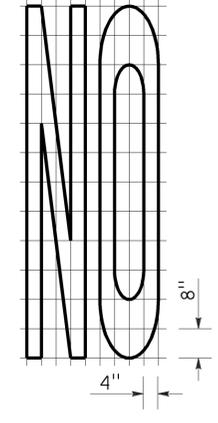
A=27 ft²



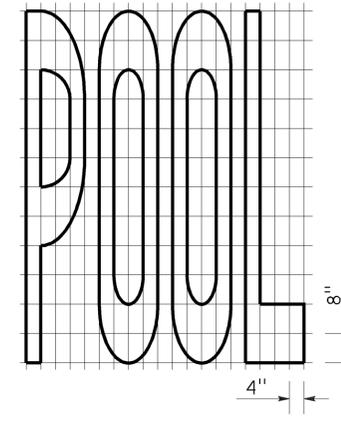
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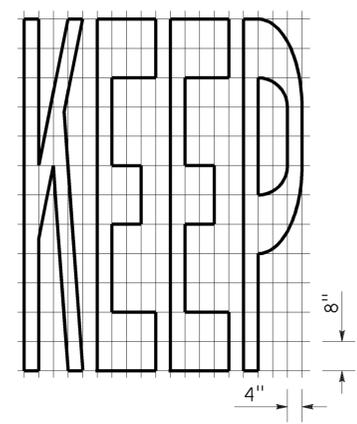
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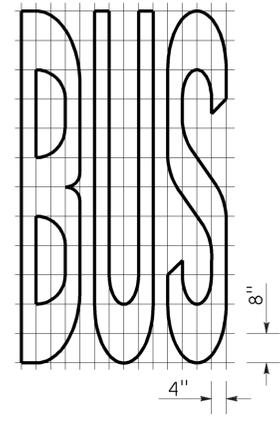
A=14 ft²



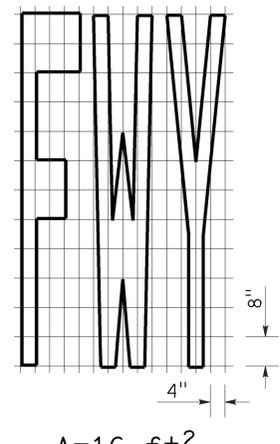
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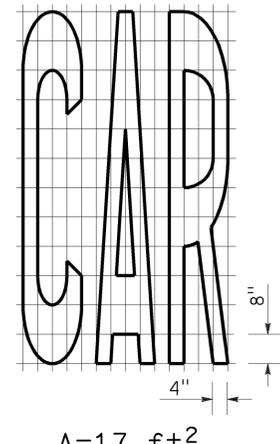
A=24 ft²



A=20 ft²

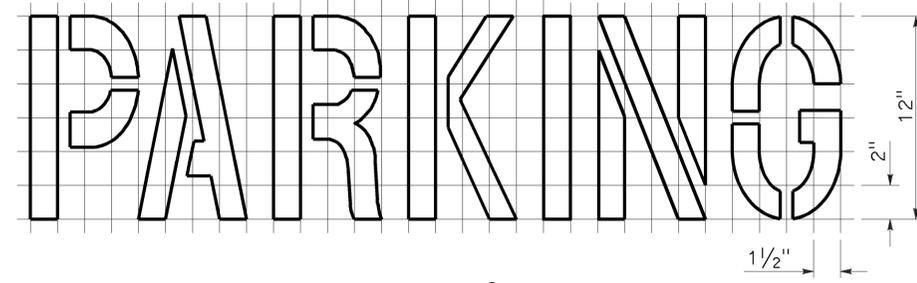
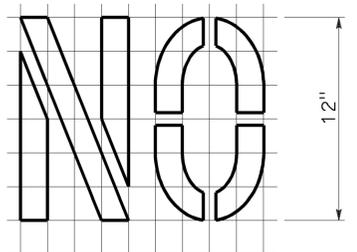


A=16 ft²

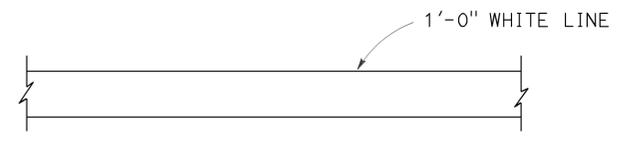


A=17 ft²

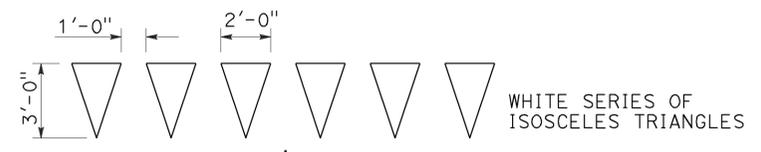
WORD MARKINGS			
ITEM	ft ²	ITEM	ft ²
LANE	24	NO	14
POOL	23	BIKE	21
CAR	17	BUS	20
CLEAR	27	ONLY	22
KEEP	24	FWY	16



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
03	Nev	89	1.2/8.7	19	46

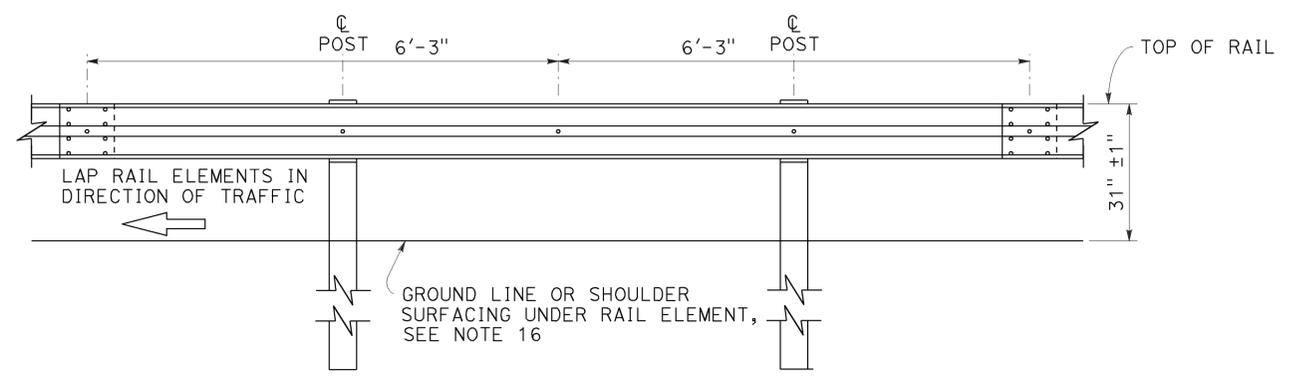
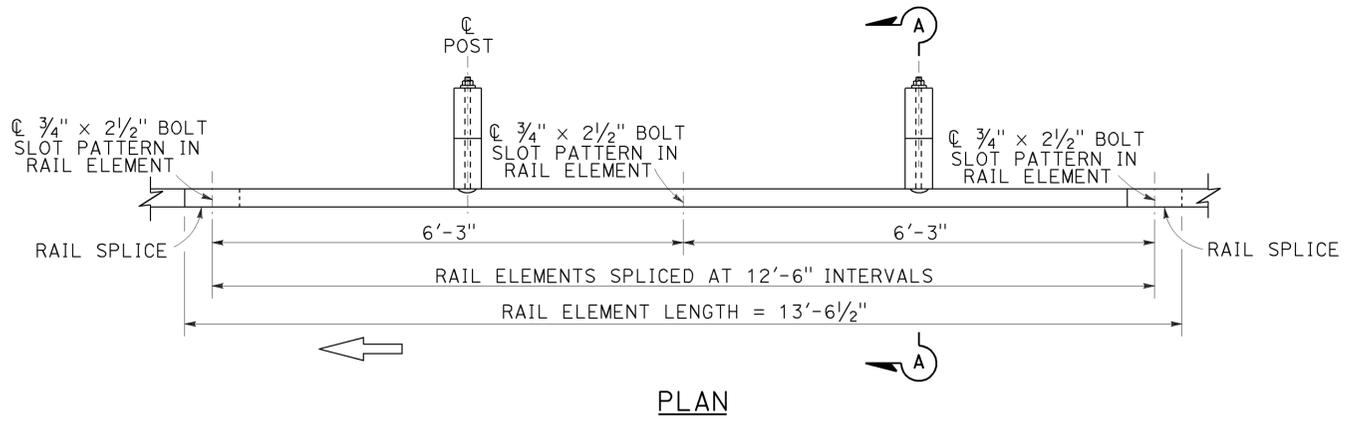
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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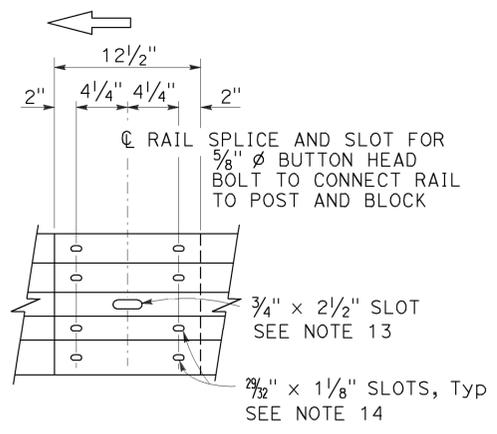
REGISTERED PROFESSIONAL ENGINEER
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 6-23-14



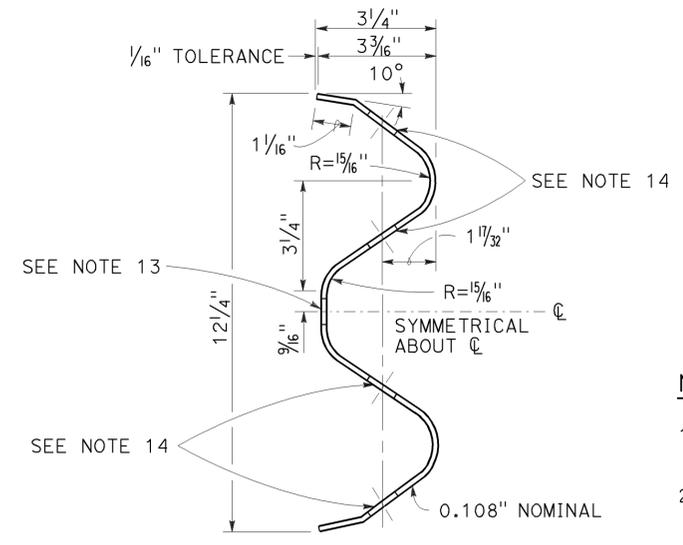
ELEVATION

MIDWEST GUARDRAIL SYSTEM WITH WOOD POST AND BLOCKS

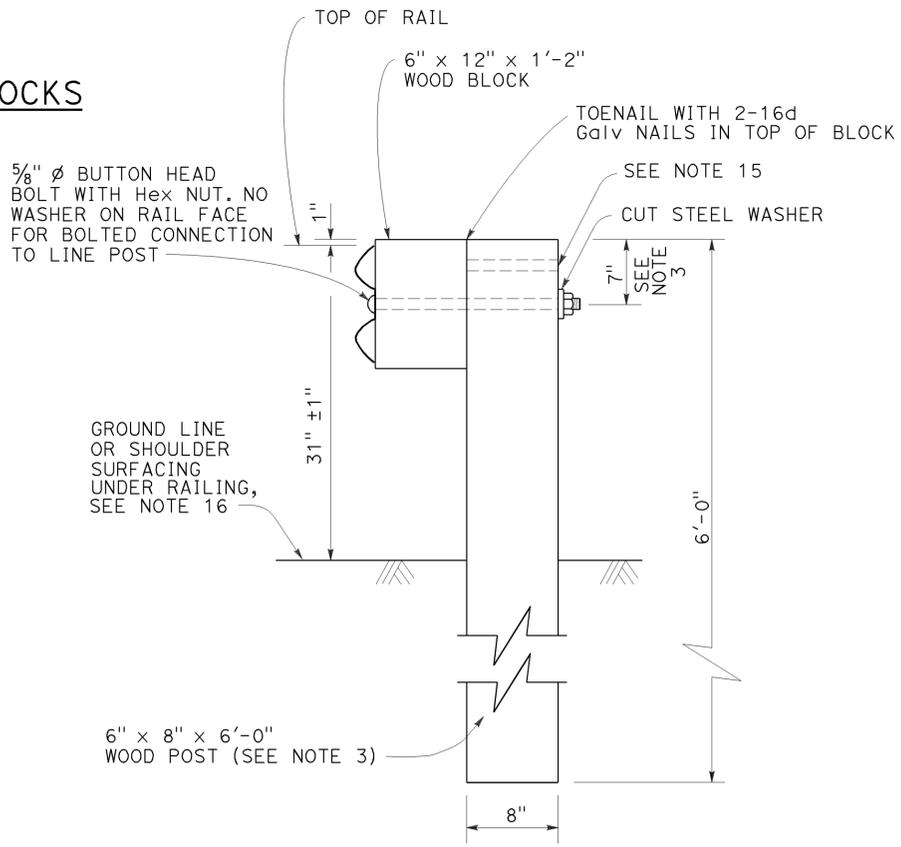


**ELEVATION
RAIL ELEMENT SPLICE DETAIL**

- Connect the over lapped end of the rail elements with $\frac{5}{8}$ " ϕ x $1\frac{3}{8}$ " button head oval shoulder splice bolts inserted into the $\frac{3}{32}$ " x $1\frac{1}{8}$ " slots and bolted together with $\frac{5}{8}$ " 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.



**SECTION THRU
RAIL ELEMENT**



**SECTION A-A
TYPICAL WOOD LINE
POST INSTALLATION**

See Note 4

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

REVISED STANDARD PLAN RSP A77L1

2010 REVISED STANDARD PLAN RSP A77L1

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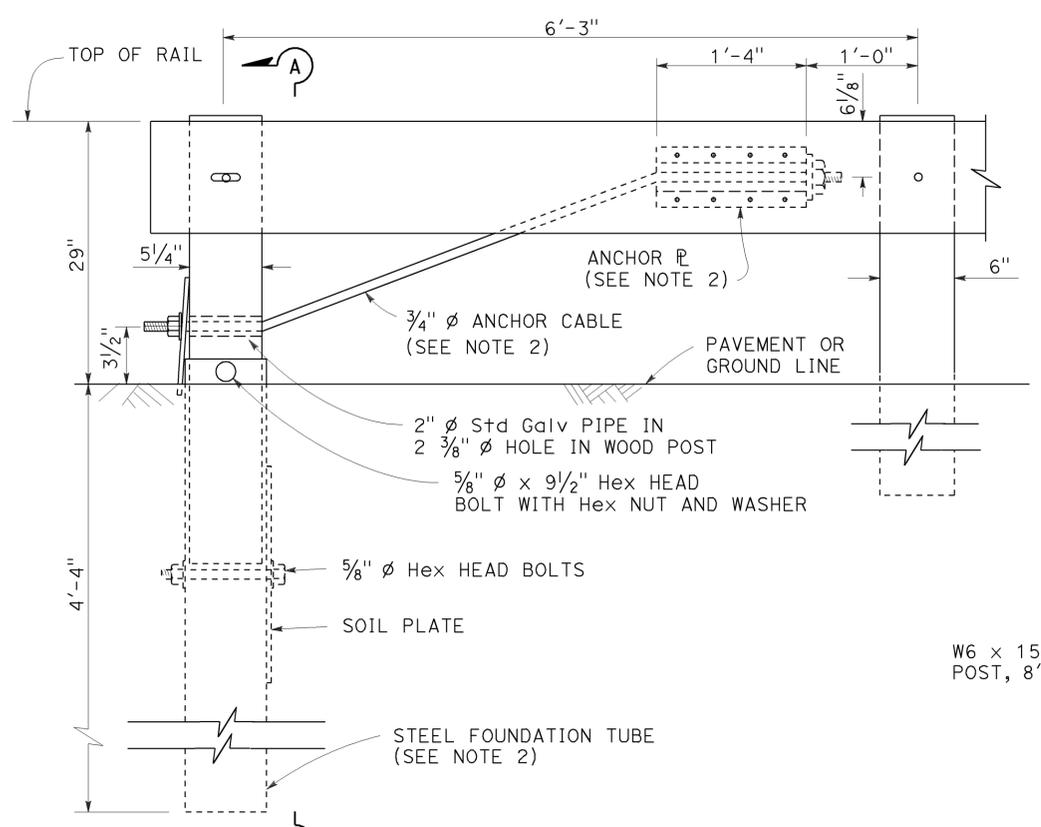
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

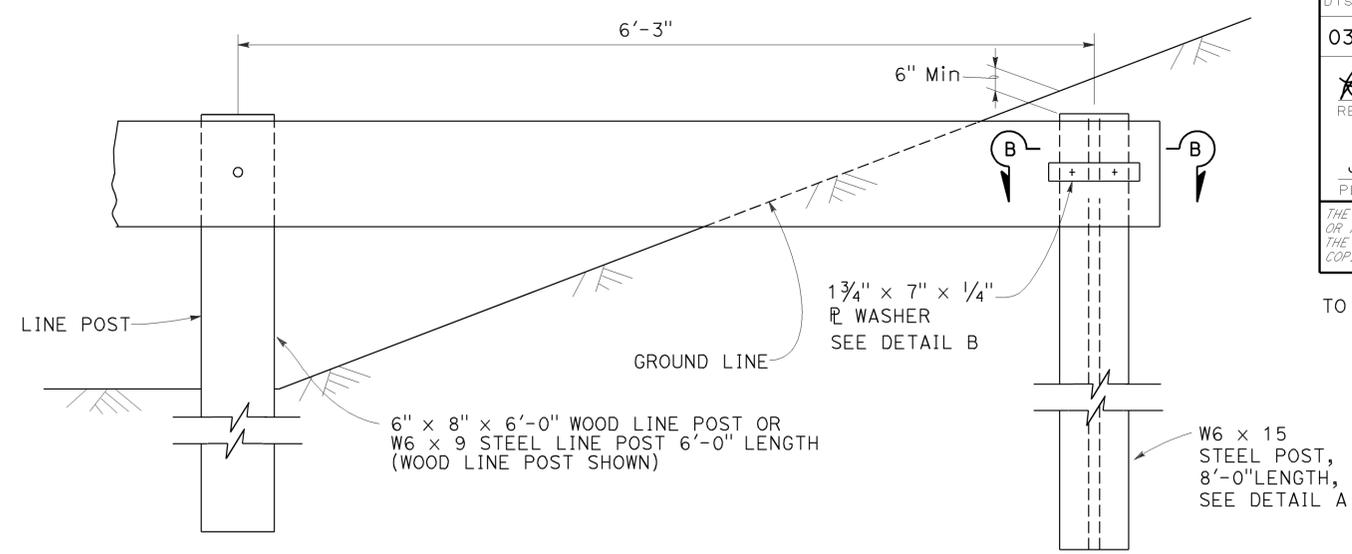
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TO ACCOMPANY PLANS DATED 6-23-14

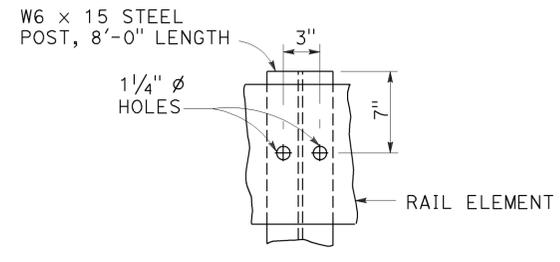
REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA



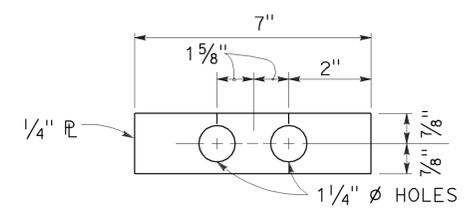
**ELEVATION
END ANCHOR
ASSEMBLY (TYPE SFT)**



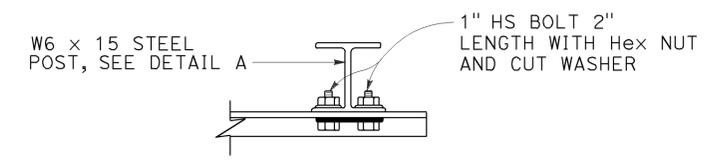
BURIED POST END ANCHOR



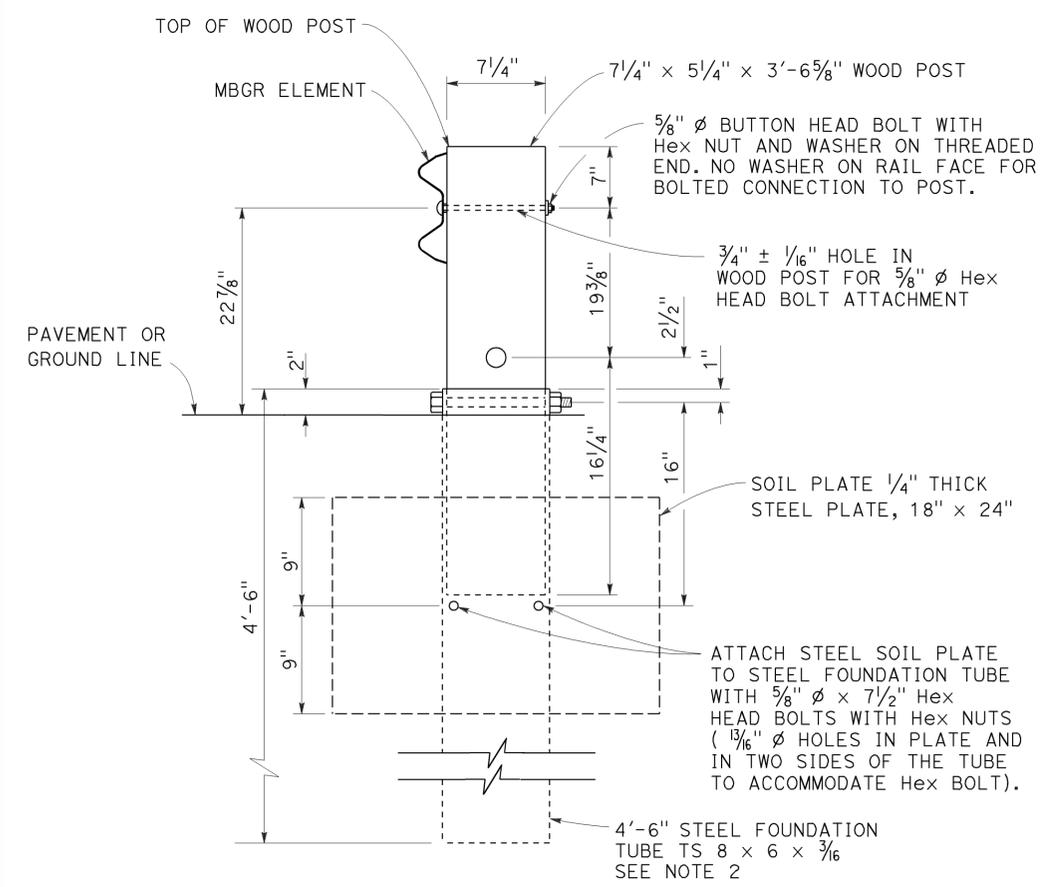
DETAIL A



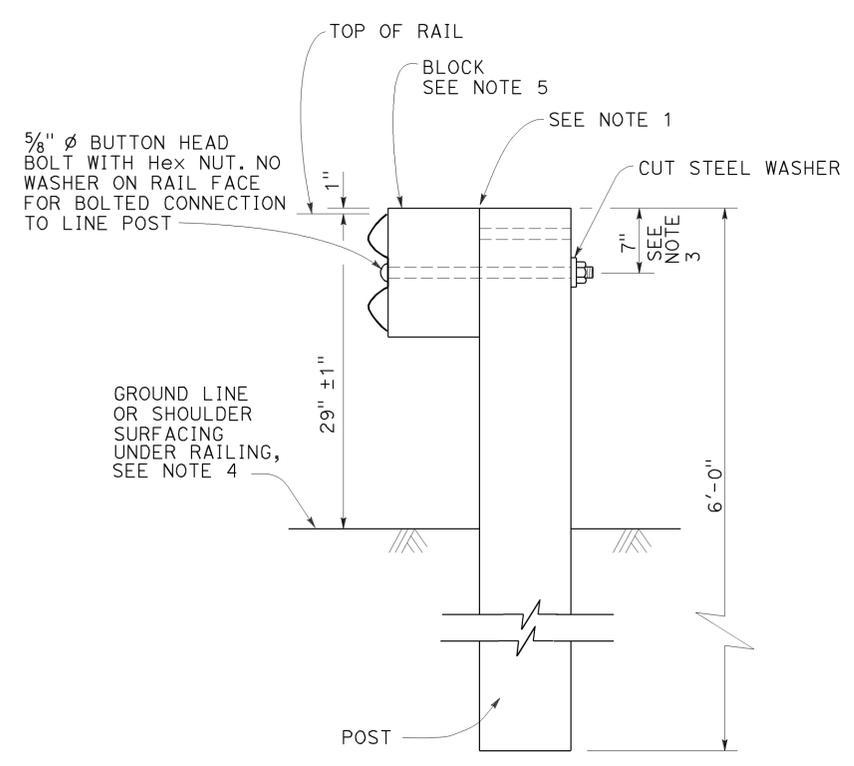
DETAIL B



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.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
RECONSTRUCT INSTALLATION**

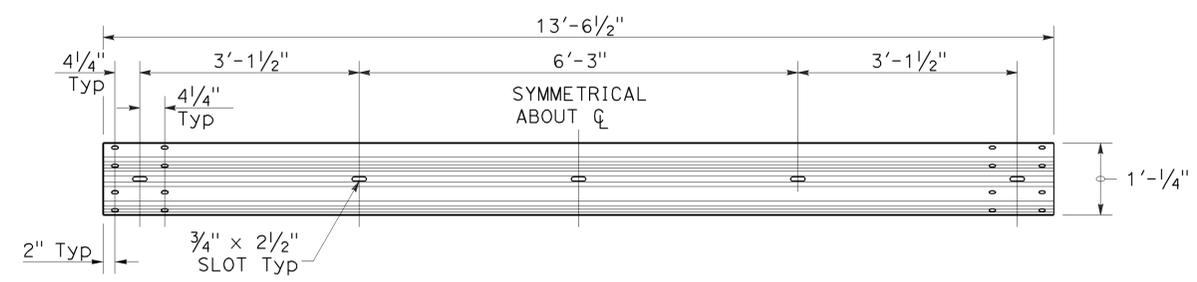
NO SCALE

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

REVISED STANDARD PLAN RSP A77L3

2010 REVISED STANDARD PLAN RSP A77L3

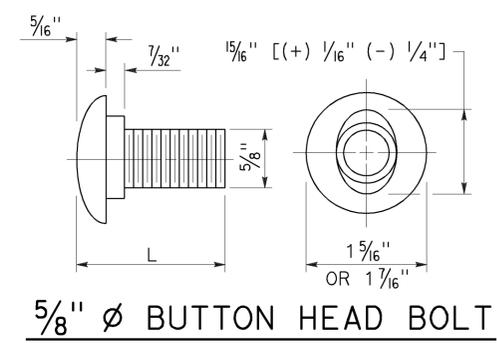
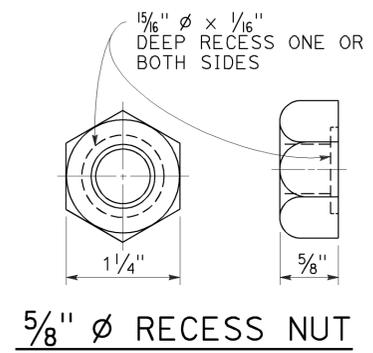
TO ACCOMPANY PLANS DATED 6-23-14



TYPICAL RAIL ELEMENT

NOTE:

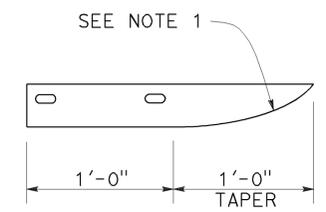
1. Slotted holes for splice bolts to overlap ends of rail element.



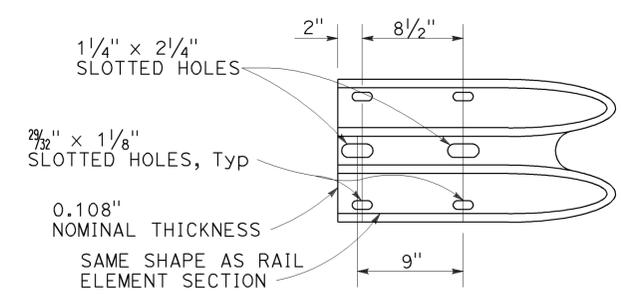
BUTTON HEAD BOLT

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
03	Nev	89	1.2/8.7	22	46

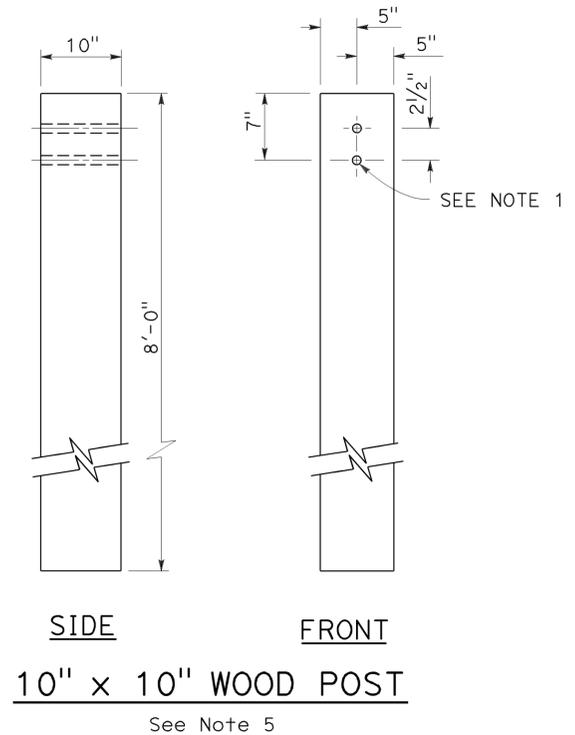
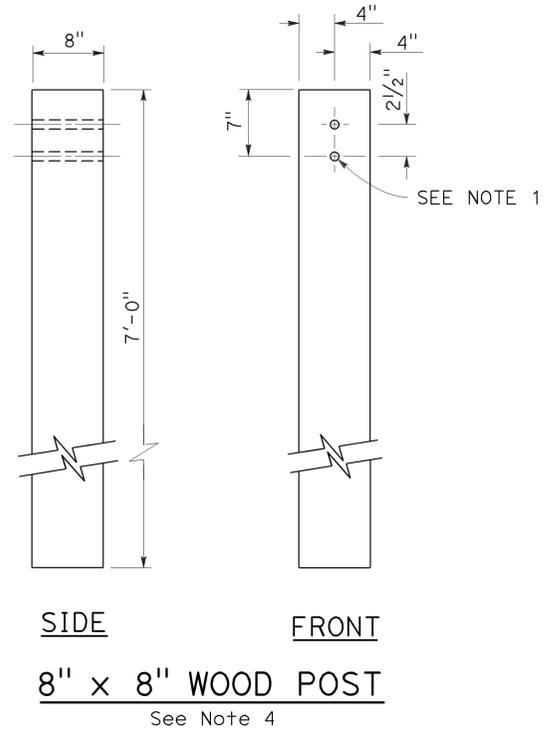
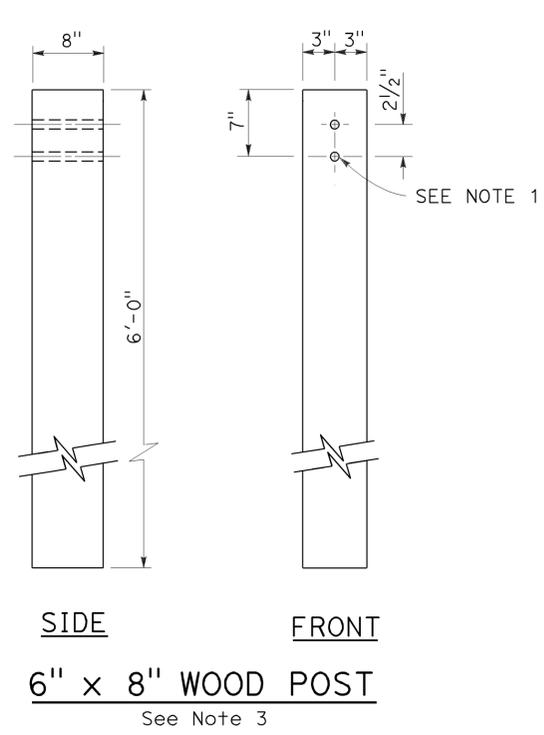
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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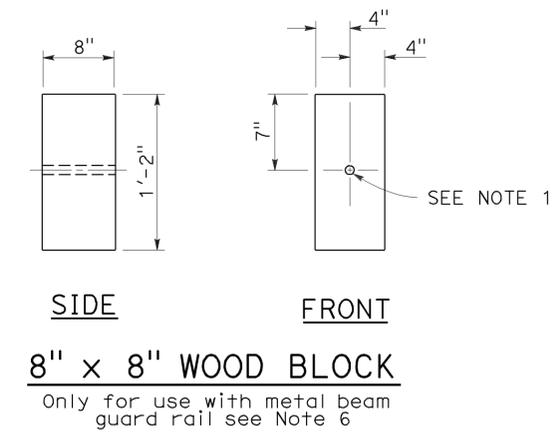
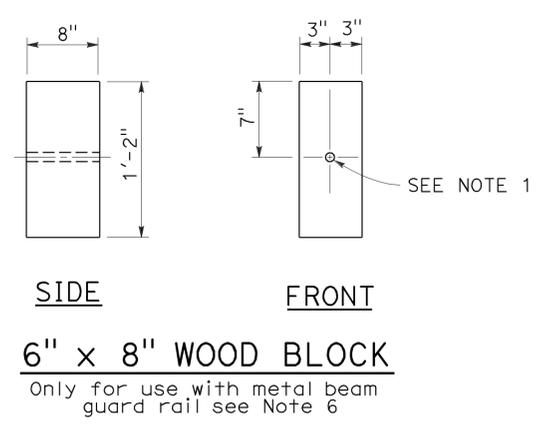
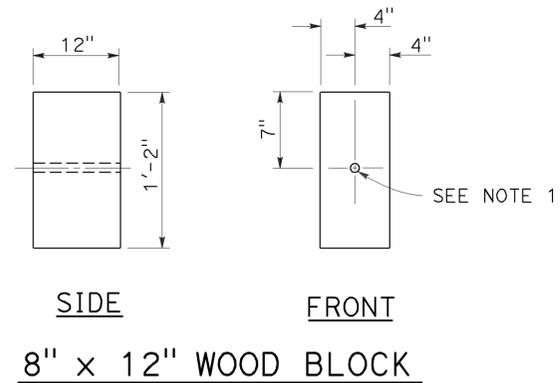
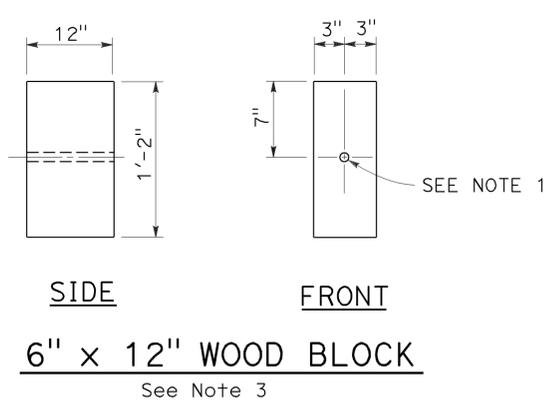
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Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 6-23-14



NOTES:

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



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

REVISED STANDARD PLAN RSP A77N1

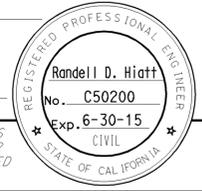
2010 REVISED STANDARD PLAN RSP A77N1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	89	1.2/8.7	23	46

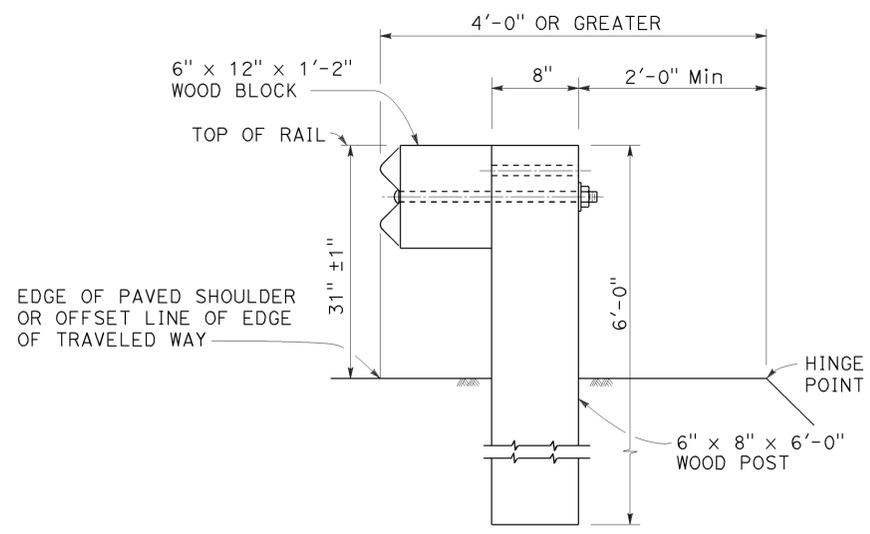
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

November 15, 2013
PLANS APPROVAL DATE

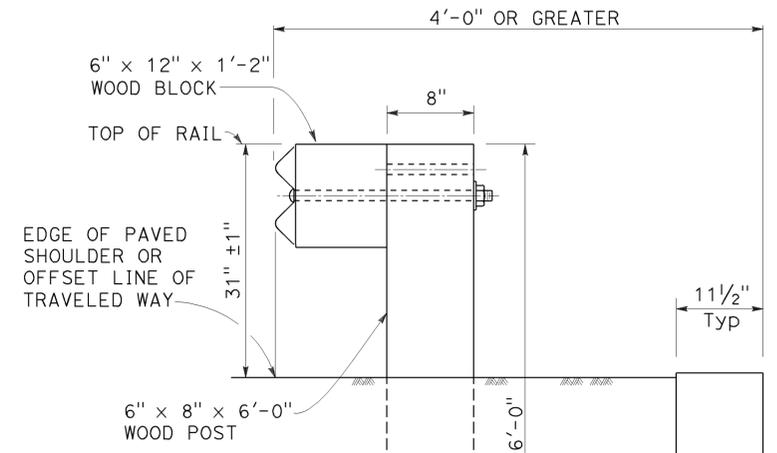
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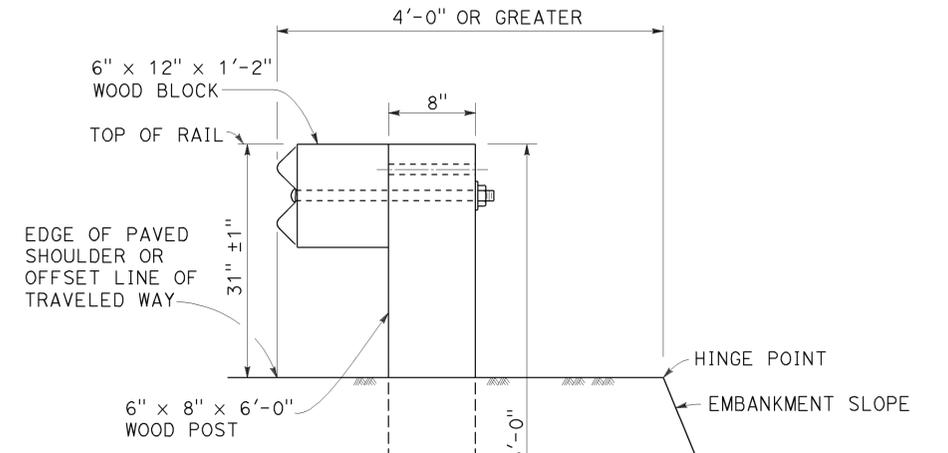
TO ACCOMPANY PLANS DATED 6-23-14



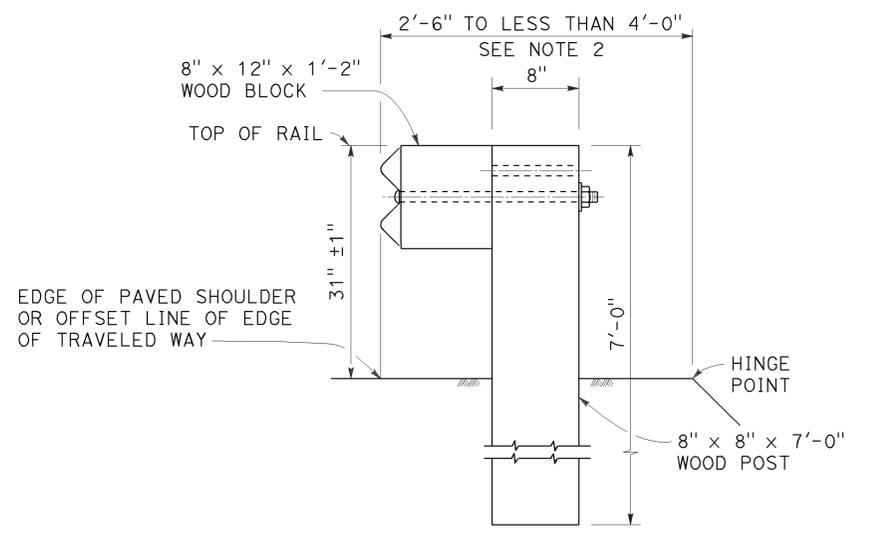
DETAIL A
TYPICAL ROADWAY
INSTALLATION
See Note 1



DETAIL C



DETAIL D



DETAIL B
NARROW ROADWAY
INSTALLATION
See Note 1

POST EMBEDMENT

INSTALLATION AT EARTH RETAINING WALLS

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

REVISED STANDARD PLAN RSP A77N3

2010 REVISED STANDARD PLAN RSP A77N3

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	89	1.2/8.7	24	46

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July 19, 2013
PLANS APPROVAL DATE

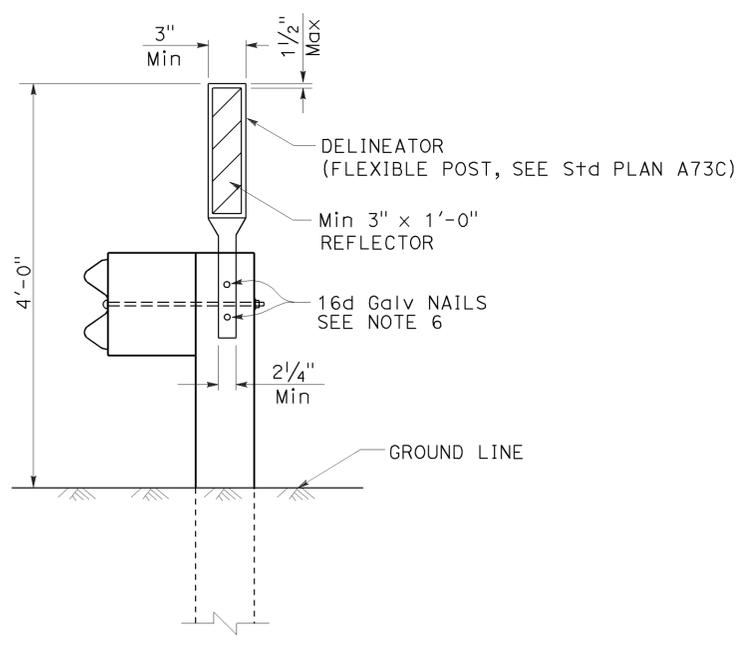
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Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

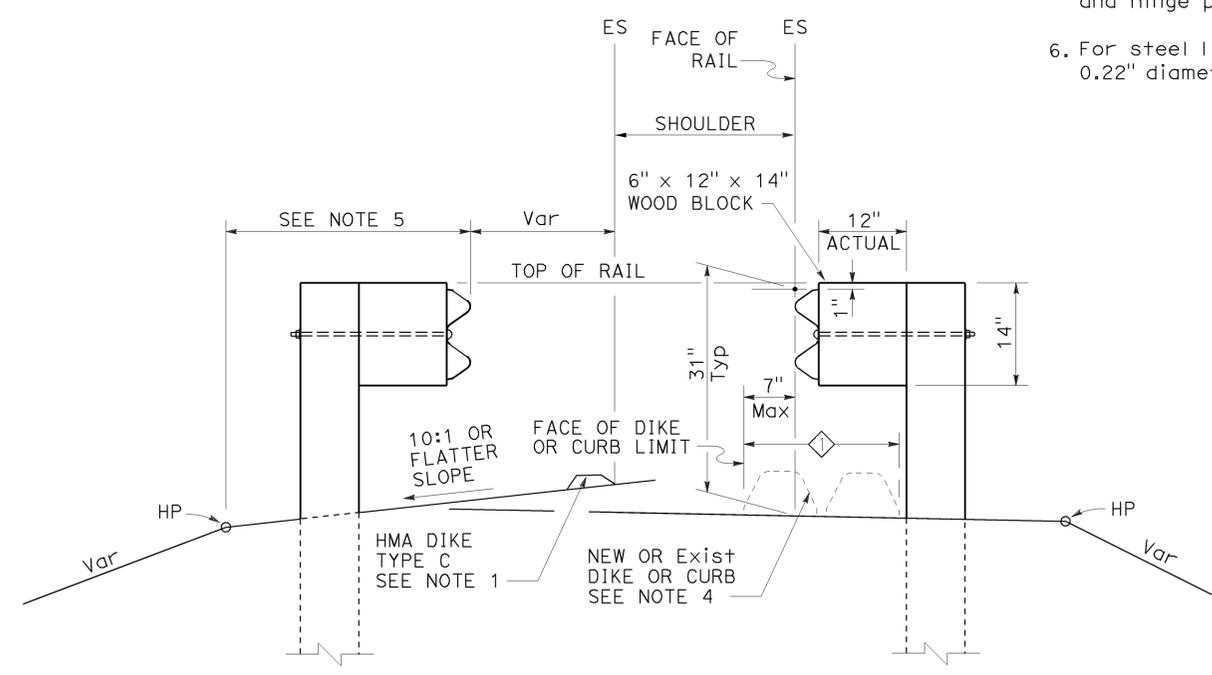
TO ACCOMPANY PLANS DATED 6-23-14

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.

REVISED STANDARD PLAN RSP A77N4

2010 REVISED STANDARD PLAN RSP A77N4

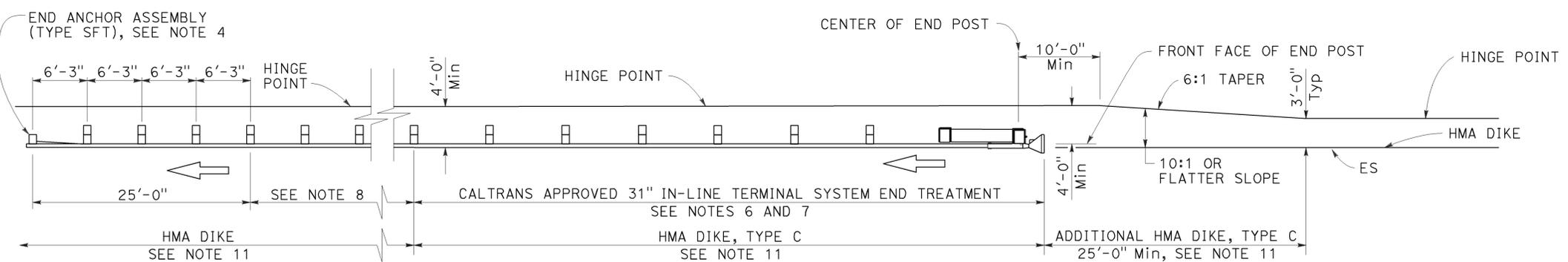
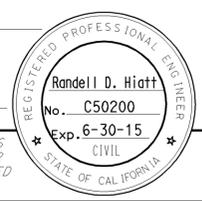
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	89	1.2/8.7	25	46

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

November 15, 2013
PLANS APPROVAL DATE

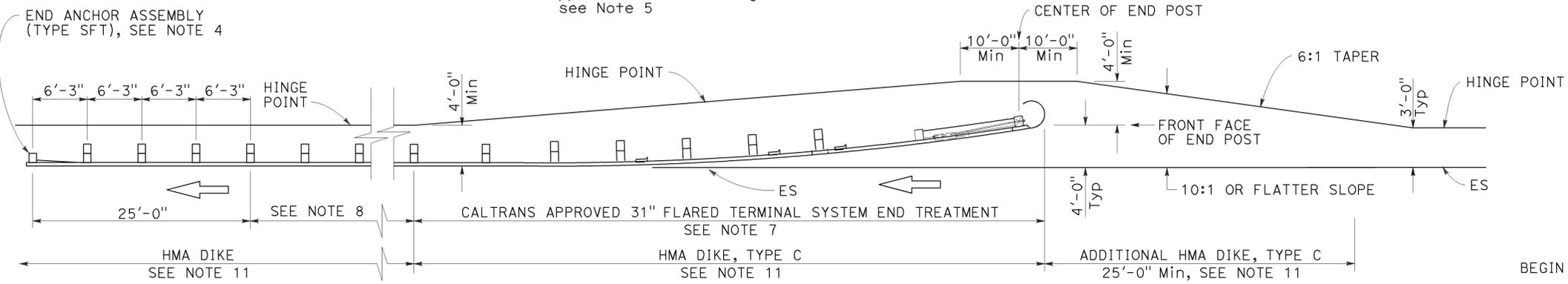
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TO ACCOMPANY PLANS DATED 6-23-14



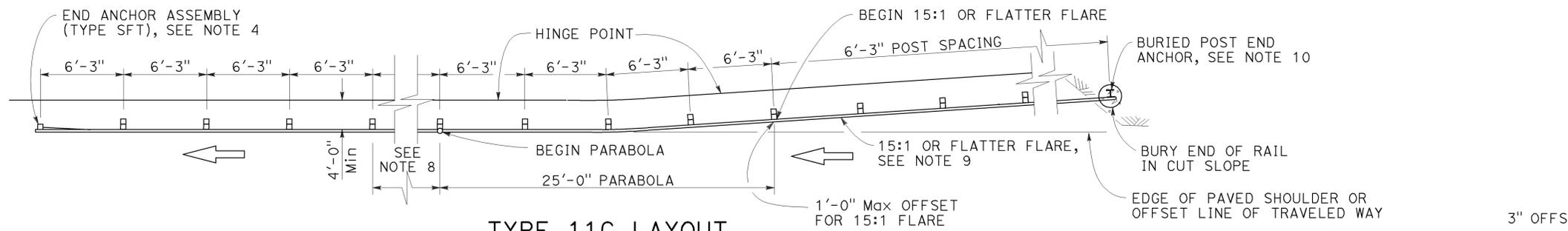
TYPE 11A LAYOUT

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



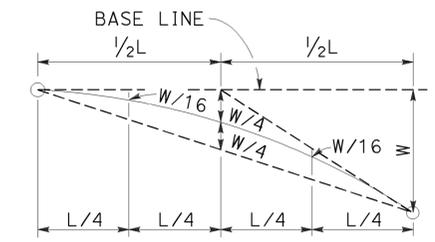
TYPE 11B LAYOUT

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

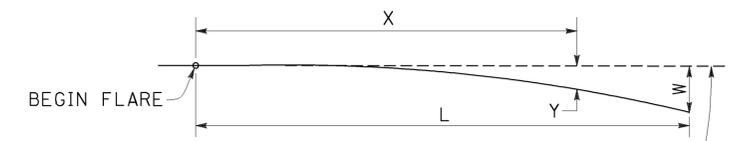


TYPE 11C LAYOUT

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



TYPICAL PARABOLIC LAYOUT

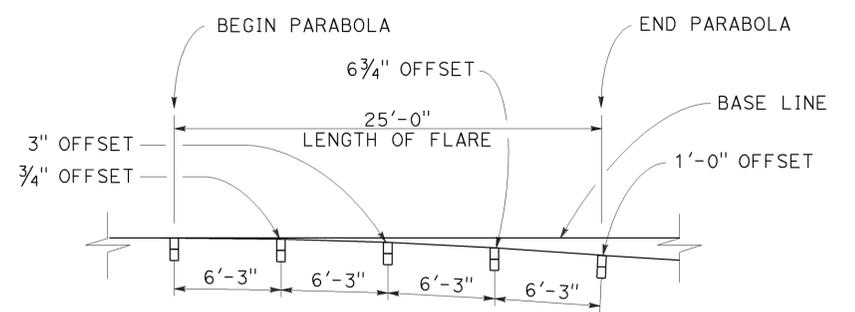


BASE LINE (EDGE OF PAVED SHOULDER OR OFFSET LINE OF EDGE OF TRAVELED WAY)

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

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

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 A77S1.
- 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.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL LAYOUTS FOR EMBANKMENTS

NO SCALE

RSP A77P1 DATED NOVEMBER 15, 2013 SUPERSEDES RSP A77P1 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77P1

2010 REVISED STANDARD PLAN RSP A77P1

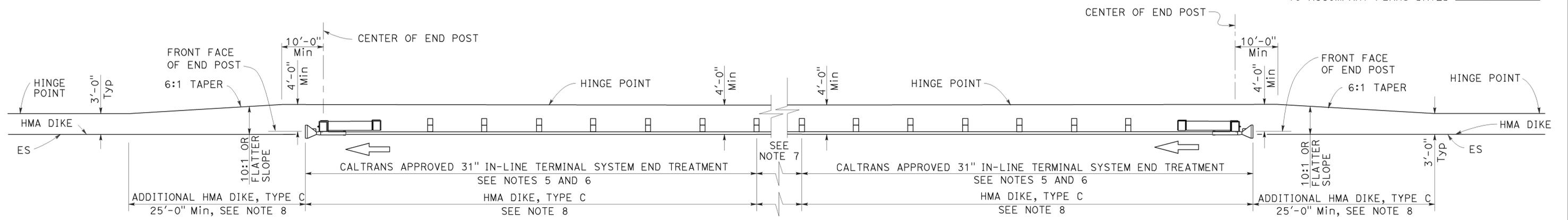
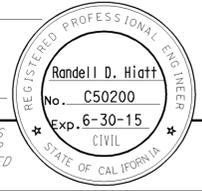
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	89	1.2/8.7	26	46

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

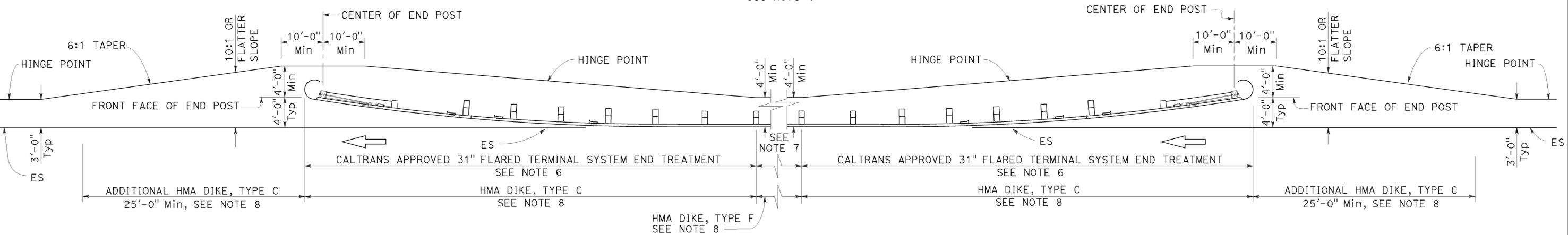
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TO ACCOMPANY PLANS DATED 6-23-14



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

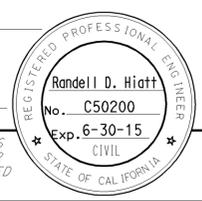
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	89	1.2/8.7	27	46

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

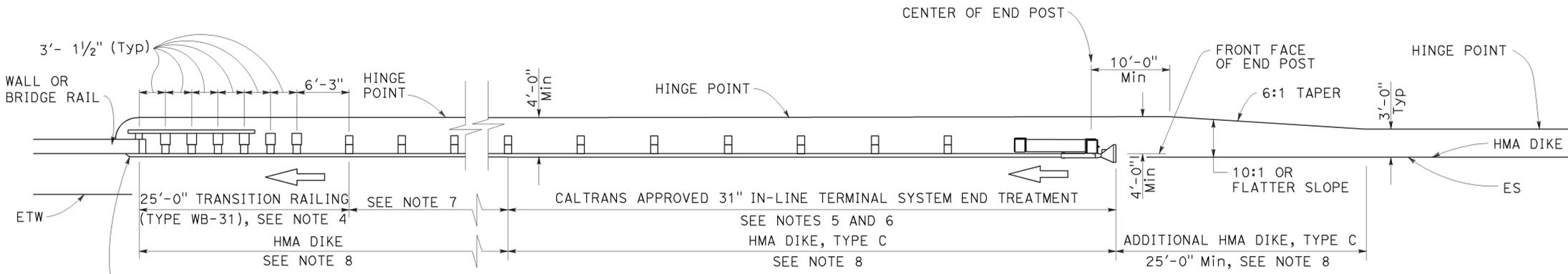
July 19, 2013
PLANS APPROVAL DATE

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TO ACCOMPANY PLANS DATED 6-23-14

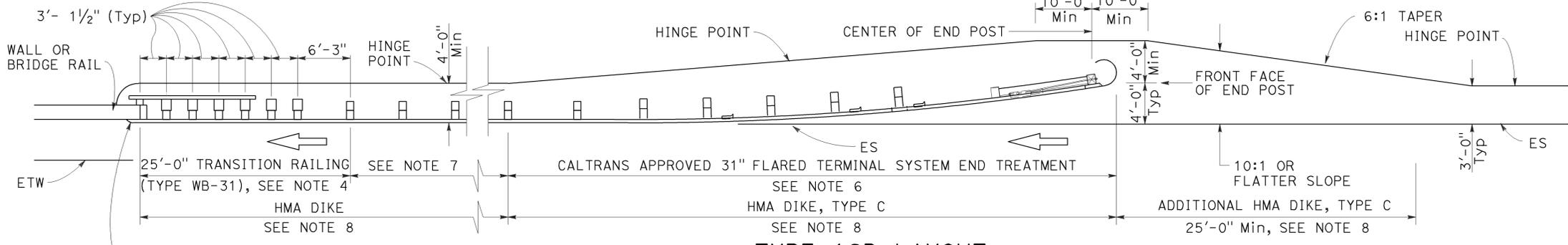


2010 REVISED STANDARD PLAN RSP A77Q1



TYPE 12A LAYOUT

(MGS installation at structure approach with 31" in-line end treatment at traffic approach end of railing)
See Notes 9



TYPE 12B LAYOUT

(MGS installation at structure approach with 31" Flared end treatment at traffic approach end of railing)
See Notes 9

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

REVISED STANDARD PLAN RSP A77Q1

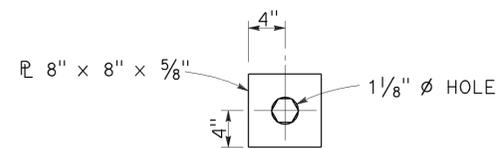
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	89	1.2/8.7	29	46

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

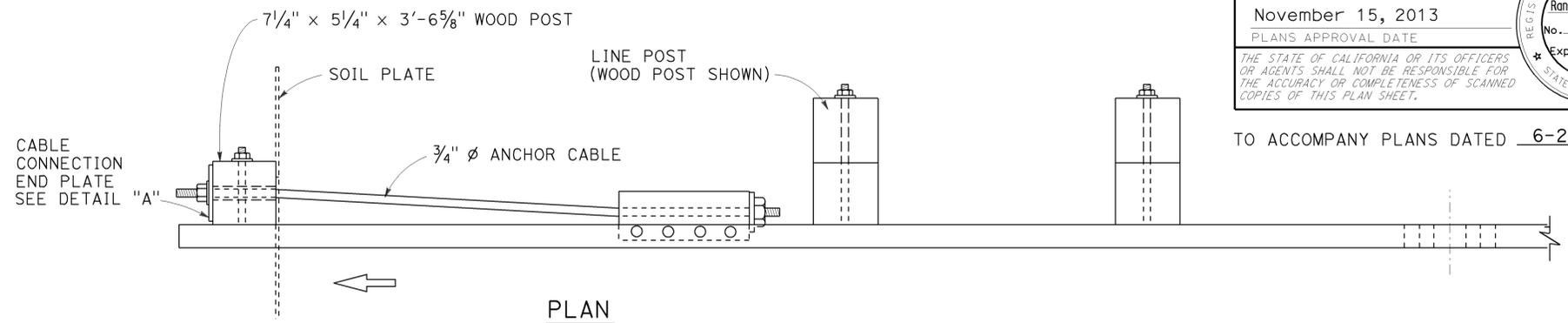
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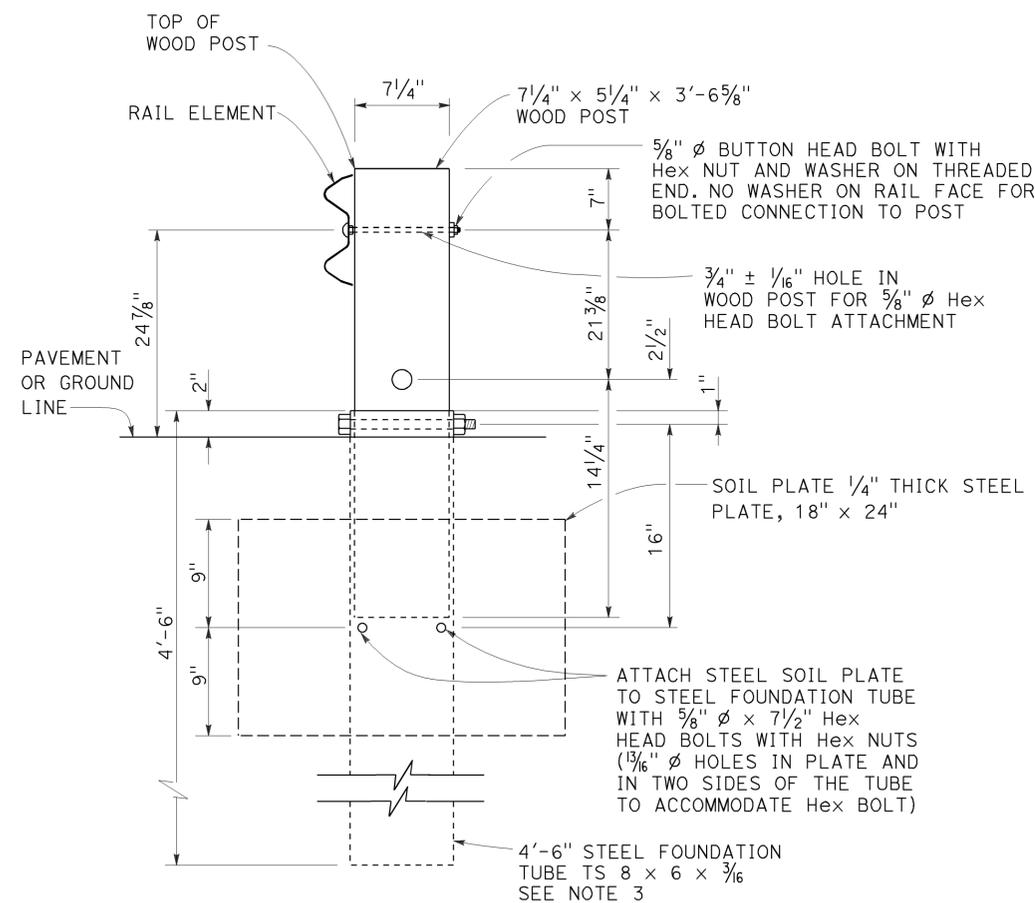
TO ACCOMPANY PLANS DATED 6-23-14



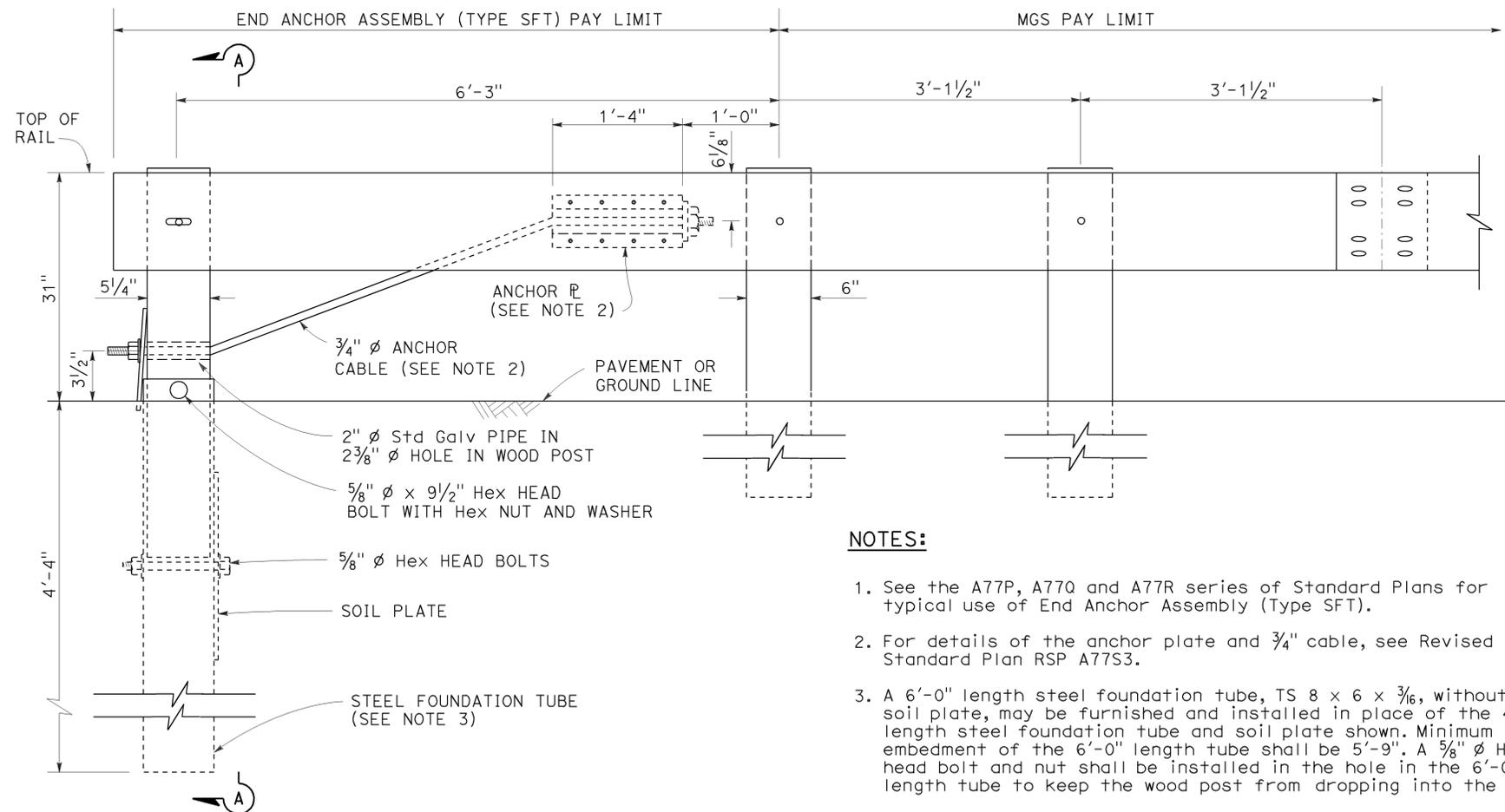
DETAIL "A"
CABLE CONNECTION
END PLATE



PLAN



SECTION A-A



ELEVATION

END ANCHOR
ASSEMBLY (TYPE SFT)

See Note 1

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM
END ANCHOR ASSEMBLY
(TYPE SFT)

NO SCALE

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

REVISED STANDARD PLAN RSP A77S1

2010 REVISED STANDARD PLAN RSP A77S1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	89	1.2/8.7	30	46

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July 19, 2013
PLANS APPROVAL DATE

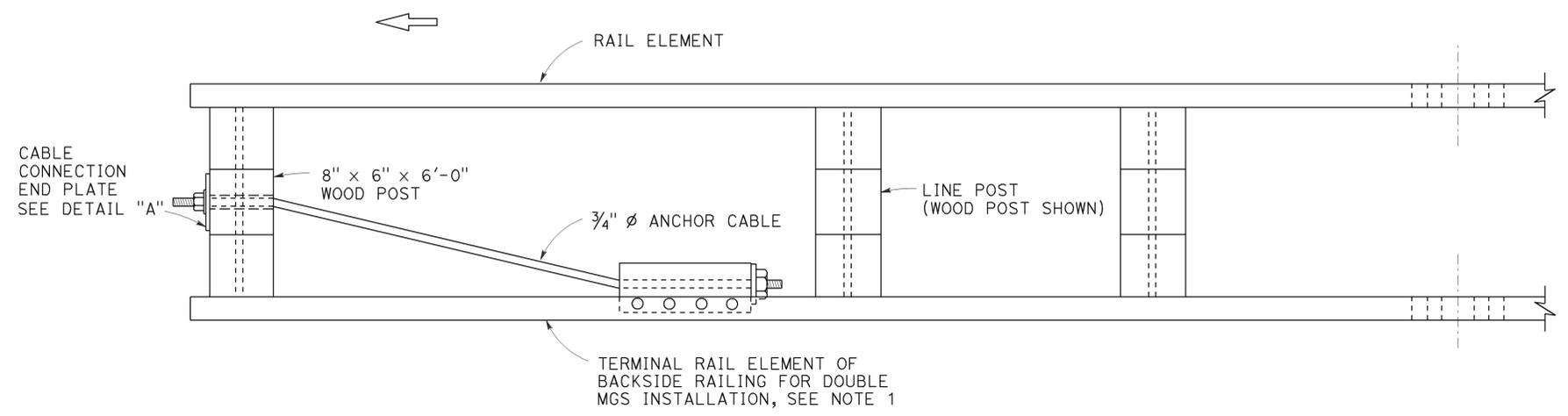
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Exp. 6-30-15
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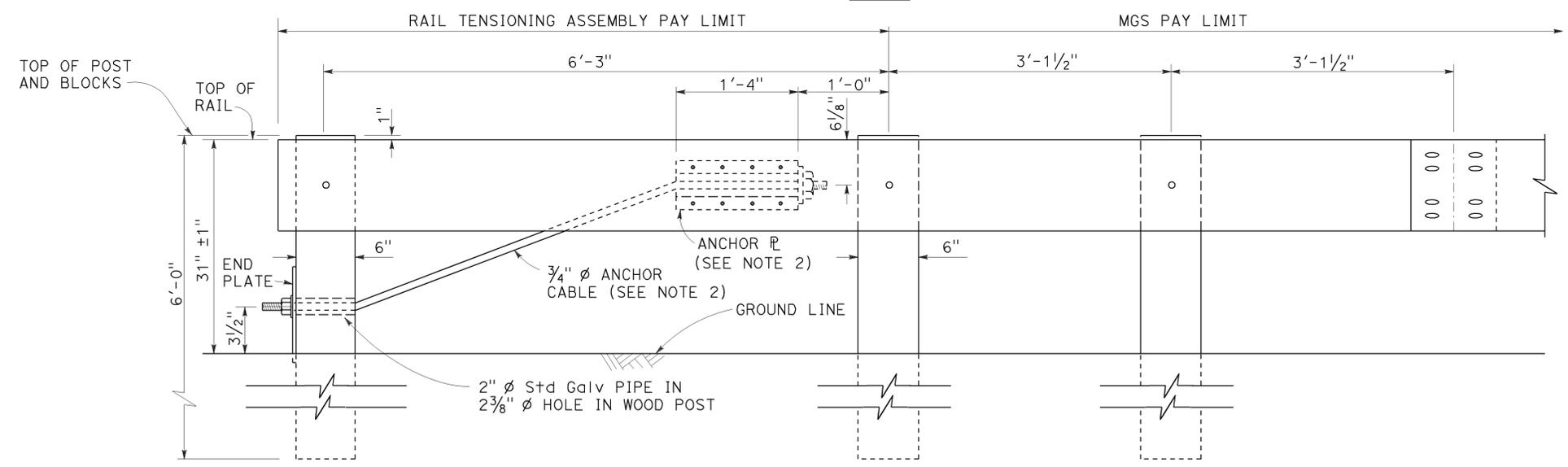
TO ACCOMPANY PLANS DATED 6-23-14

NOTES:

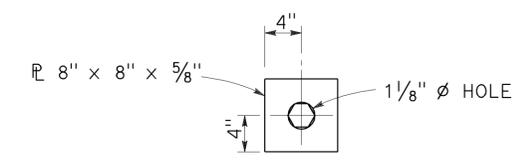
1. See Revised Standard Plans RSP A77Q3 and RSP A77R1 for typical use of rail tensioning assembly.
2. For details of the anchor plate and 3/4" cable, see Revised Standard Plan RSP A77S3.



PLAN



ELEVATION
RAIL TENSIONING
ASSEMBLY
See Note 1



DETAIL "A"
CABLE CONNECTION
END PLATE

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM
RAIL TENSIONING ASSEMBLY

NO SCALE

RSP A77S2 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77S2

2010 REVISED STANDARD PLAN RSP A77S2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	89	1.2/8.7	31	46

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REGISTERED CIVIL ENGINEER

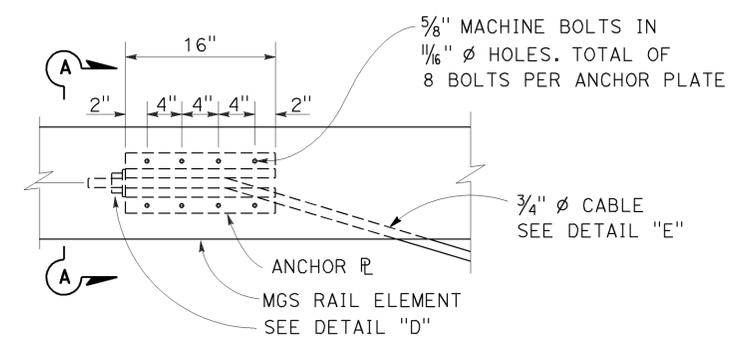
November 15, 2013
PLANS APPROVAL DATE

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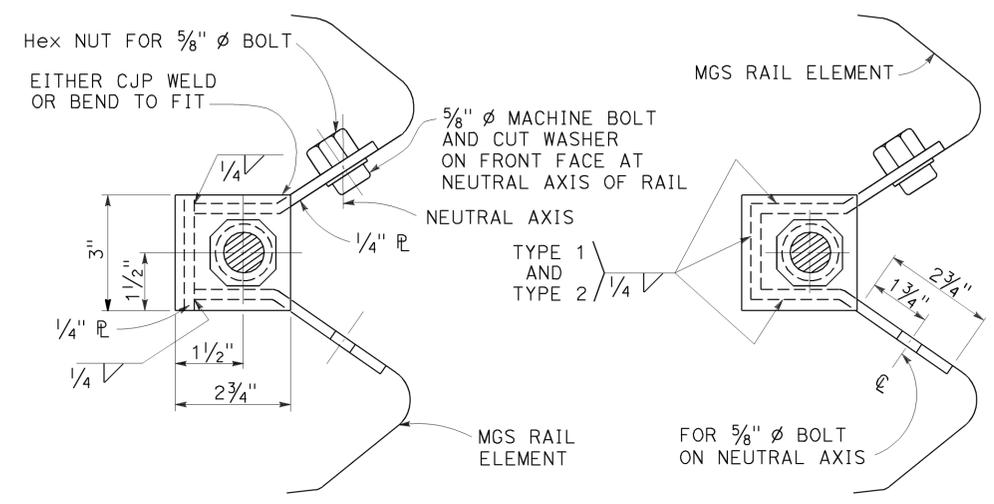
Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 6-23-14

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



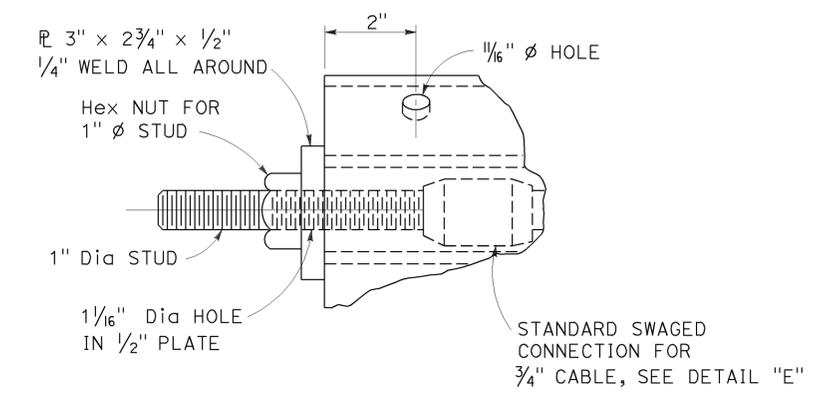
ANCHOR PLATE DETAIL
(MGS shown, TBB similar)



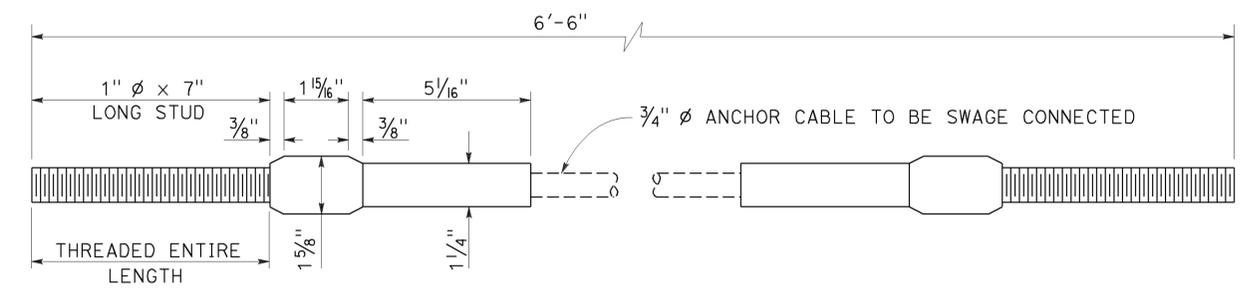
SECTION A-A (ALTERNATIVE TYPE 1)

SECTION A-A (ALTERNATIVE TYPE 2)

NOTE:
Dimensioning applies to both types.



DETAIL "D"



ANCHOR CABLE WITH SWAGED FITTING AND STUD
DETAIL "E"

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

RSP A77S3 DATED NOVEMBER 15, 2013 SUPERSEDES RSP A77S3 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP A77S3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	89	1.2/8.7	32	46

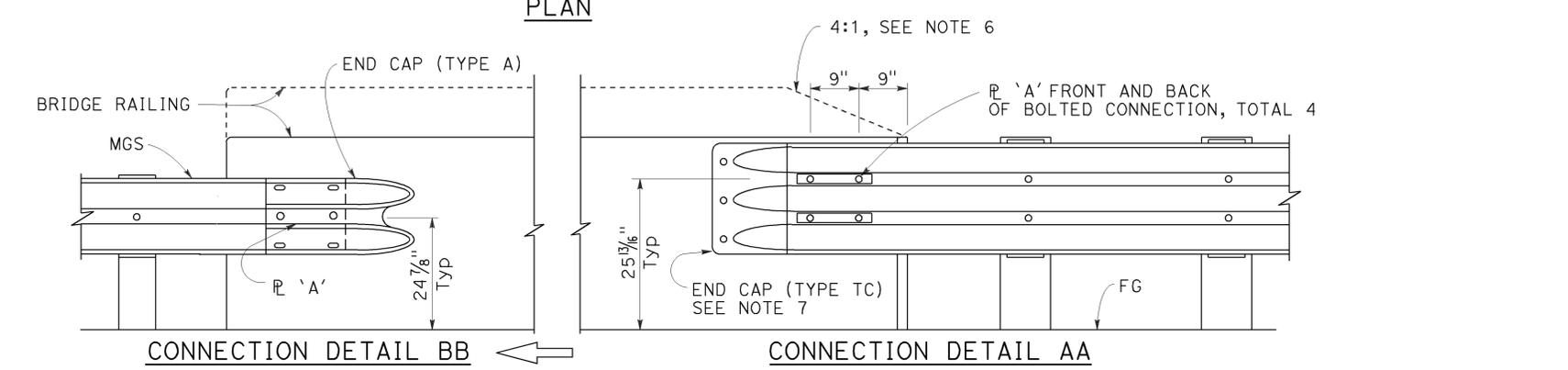
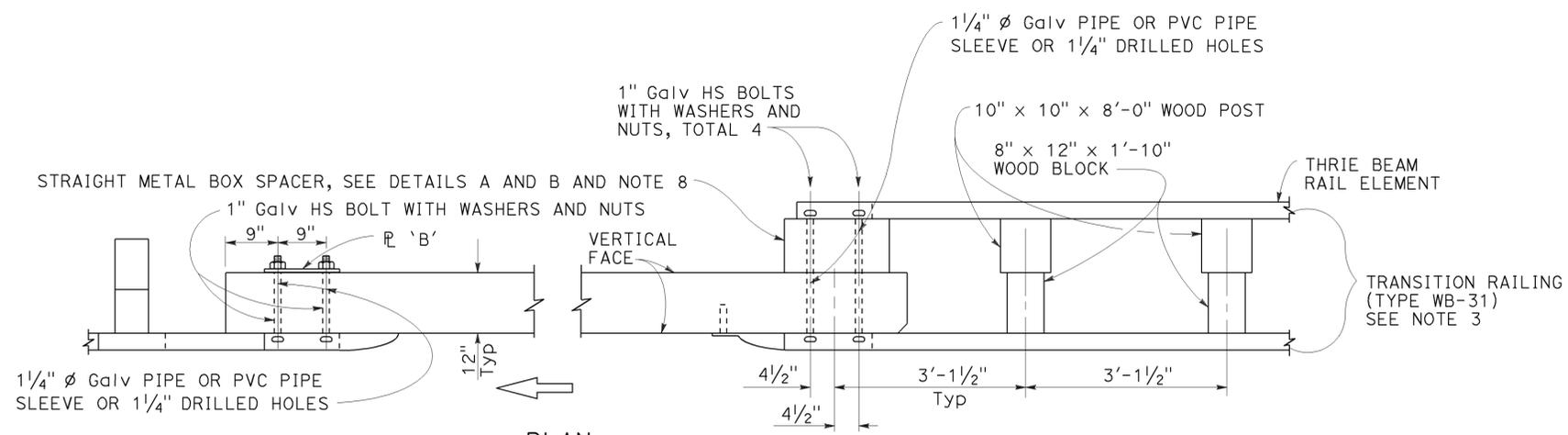
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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STATE OF CALIFORNIA

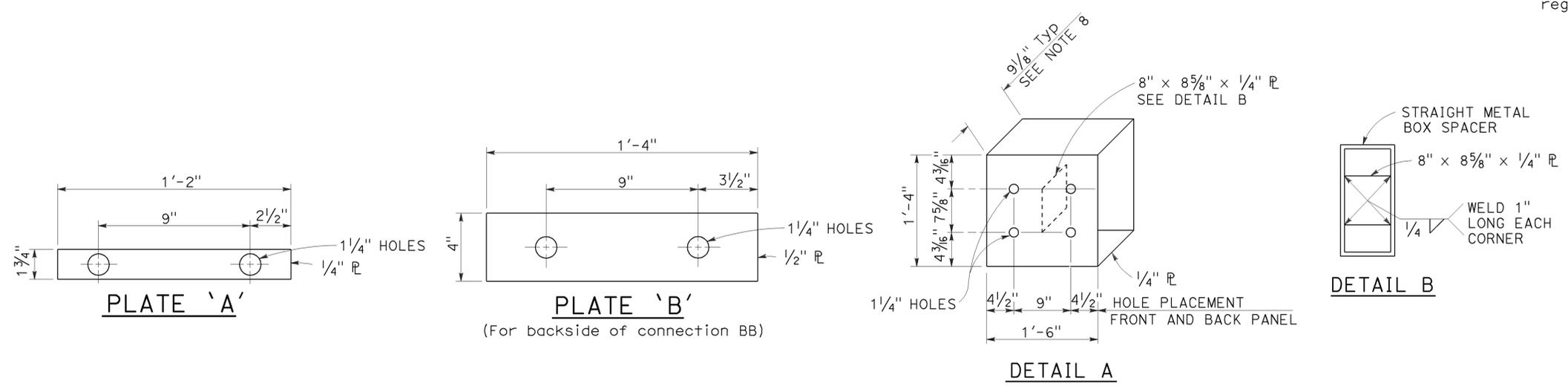
TO ACCOMPANY PLANS DATED 6-23-14



NOTES:

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

MIDWEST GUARDRAIL SYSTEM CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK



STRAIGHT METAL BOX SPACER

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**MIDWEST GUARDRAIL SYSTEM
CONNECTIONS TO
BRIDGE RAILINGS
WITHOUT SIDEWALKS
DETAILS No. 1**

NO SCALE

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

REVISED STANDARD PLAN RSP A77U1

2010 REVISED STANDARD PLAN RSP A77U1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	89	1.2/8.7	33	46

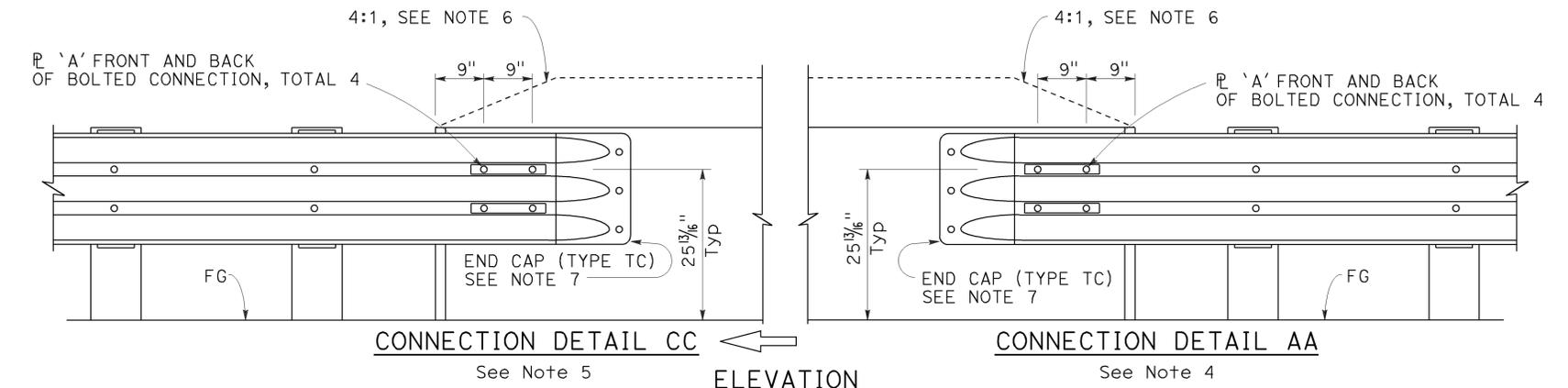
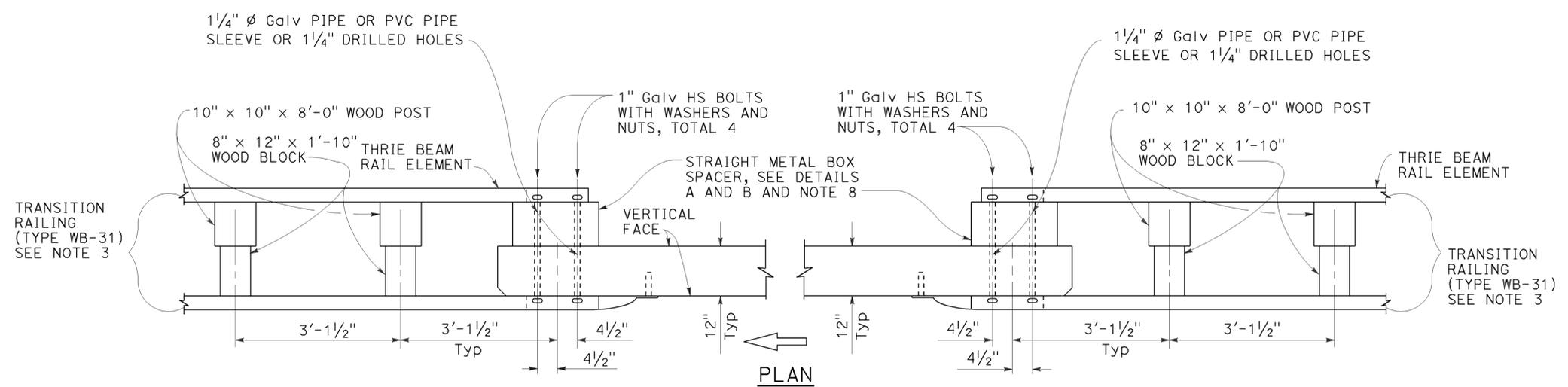
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
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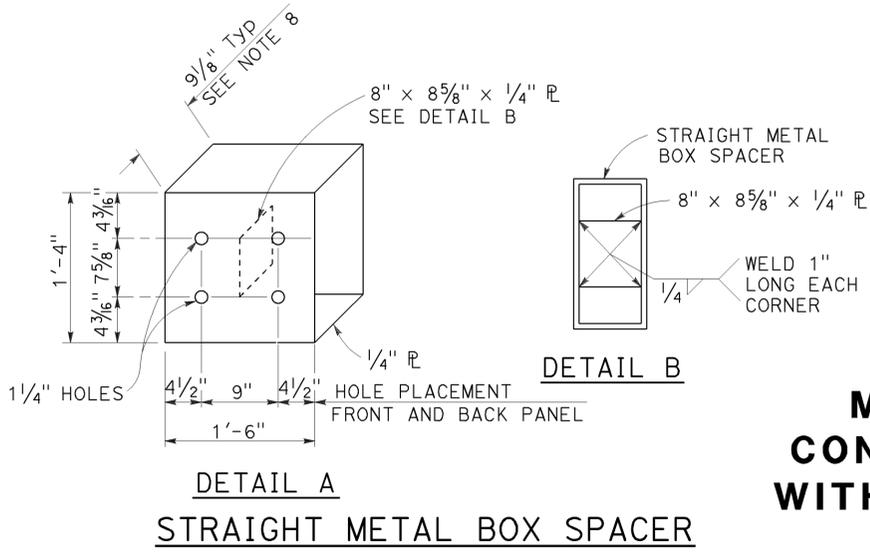
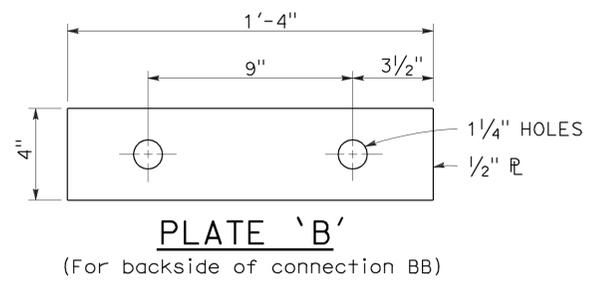
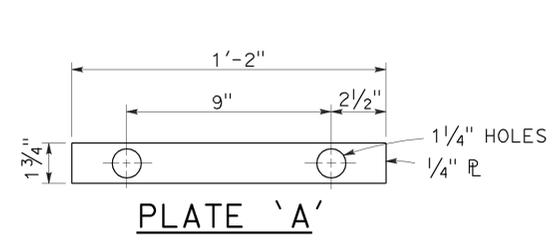
TO ACCOMPANY PLANS DATED 6-23-14



MIDWEST GUARDRAIL SYSTEM CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK

NOTES:

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



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

REVISED STANDARD PLAN RSP A77U2

2010 REVISED STANDARD PLAN RSP A77U2

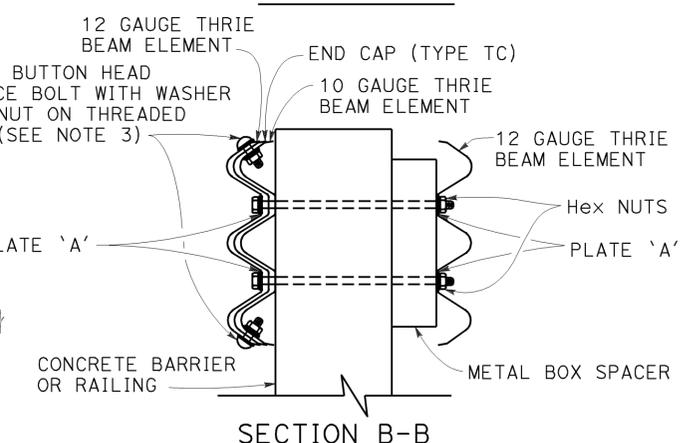
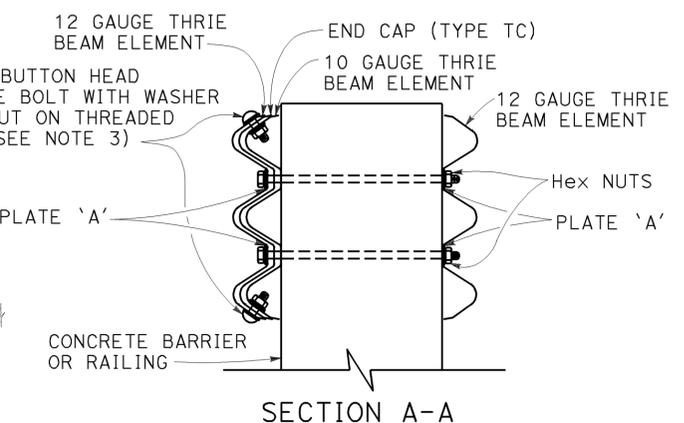
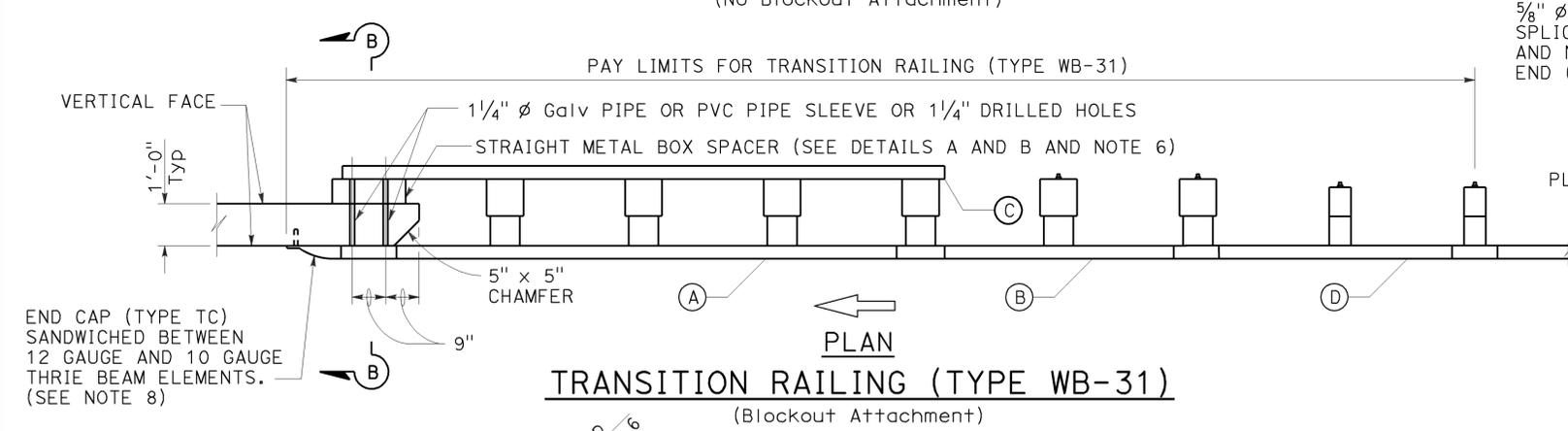
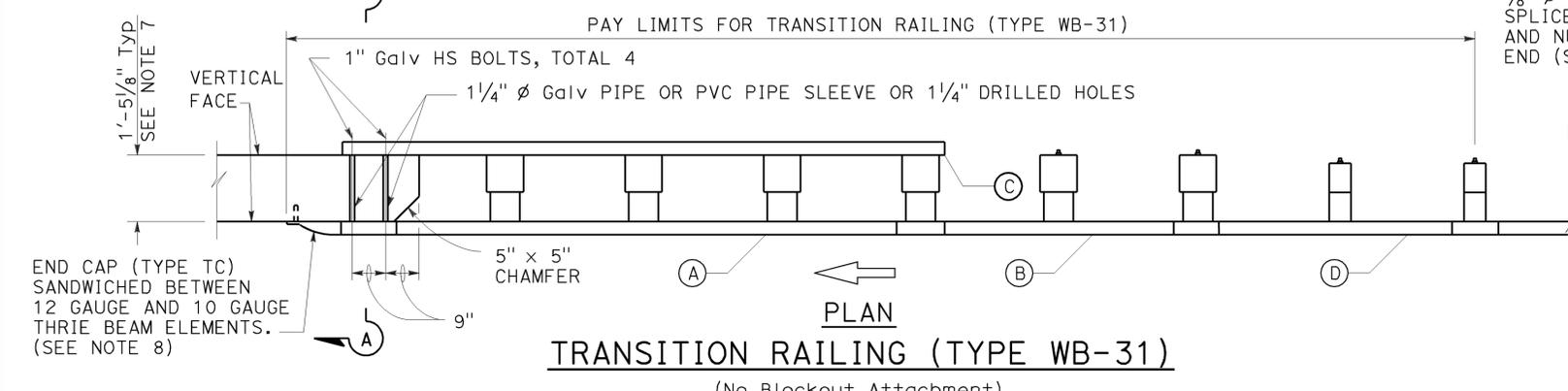
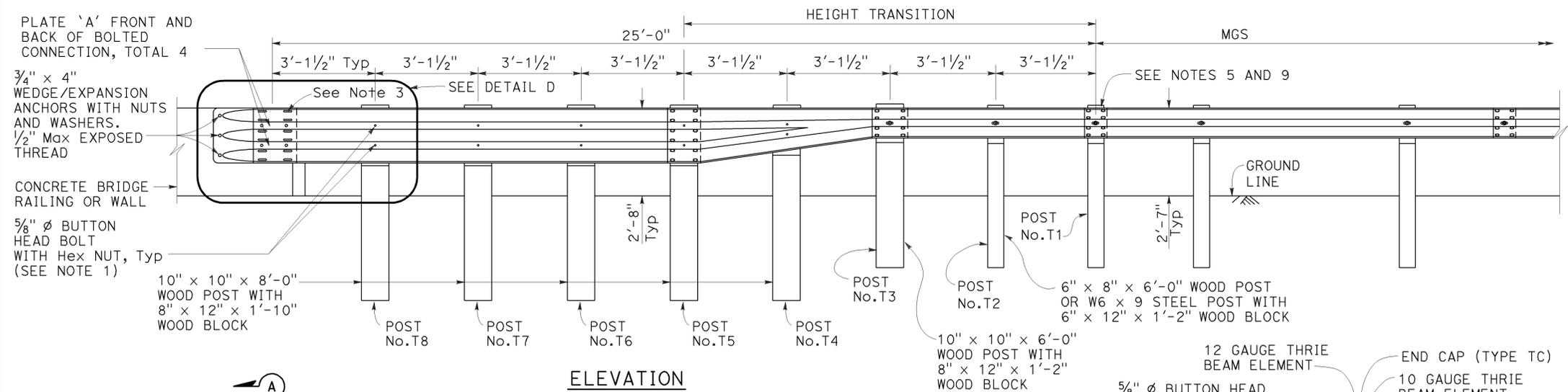
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	89	1.2/8.7	34	46

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

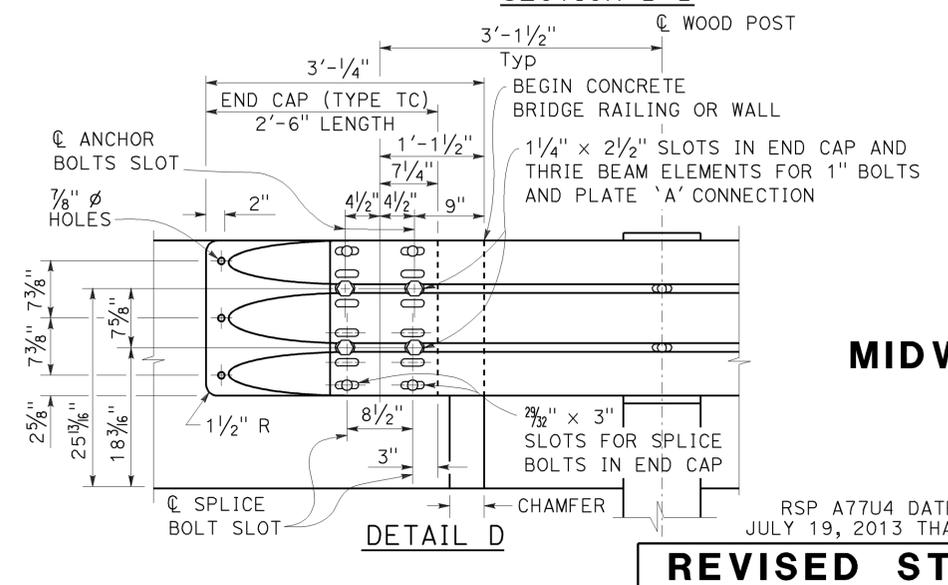
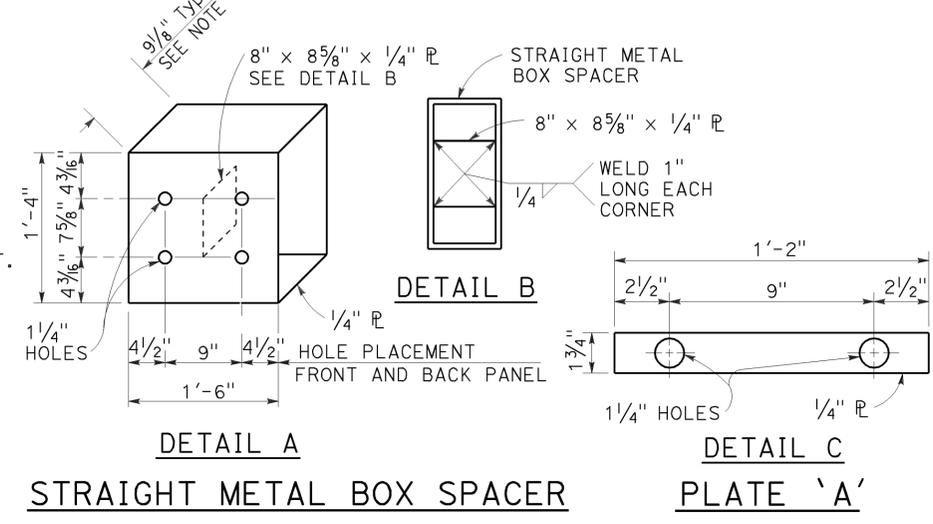
November 15, 2013
PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER
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- LEGEND:**
- (A) NESTED THRIE BEAM ELEMENTS (ONE 12 GAUGE ELEMENT NESTED OVER ONE 10 GAUGE ELEMENT).
 - (B) ONE ASYMMETRICAL 10 GAUGE "W" BEAM TO THRIE BEAM ELEMENT.
 - (C) ONE 12 GAUGE THRIE BEAM ELEMENT.
 - (D) ONE 10 GAUGE "W" BEAM RAIL ELEMENT (7'-3 1/2" LENGTH)
- 10 GAUGE = 0.138" THICK
12 GAUGE = 0.108" THICK



NOTES: TO ACCOMPANY PLANS DATED 6-23-14

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
TRANSITION RAILING
(TYPE WB-31)**
NO SCALE

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

REVISED STANDARD PLAN RSP A77U4

2010 REVISED STANDARD PLAN RSP A77U4

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Nev	89	1.2/8.7	35	46

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

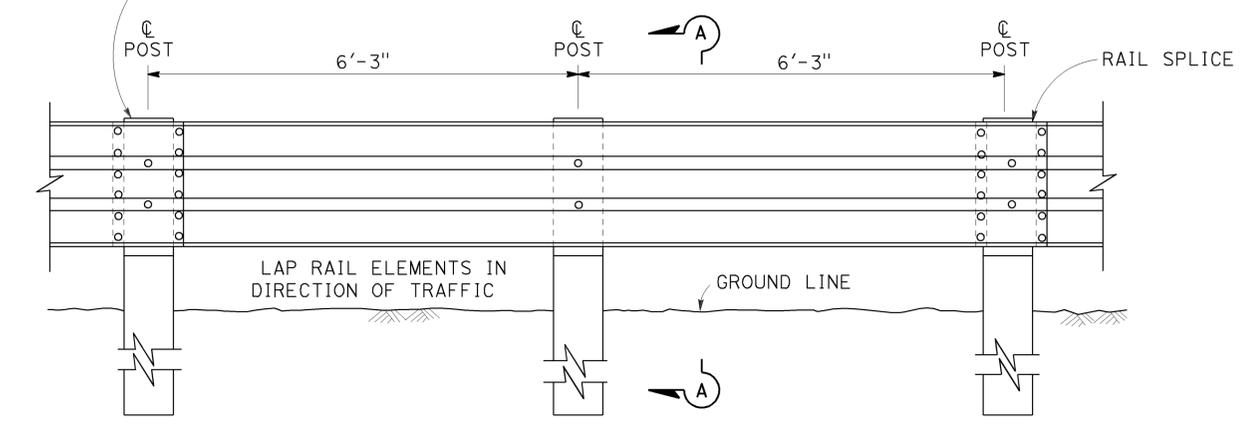
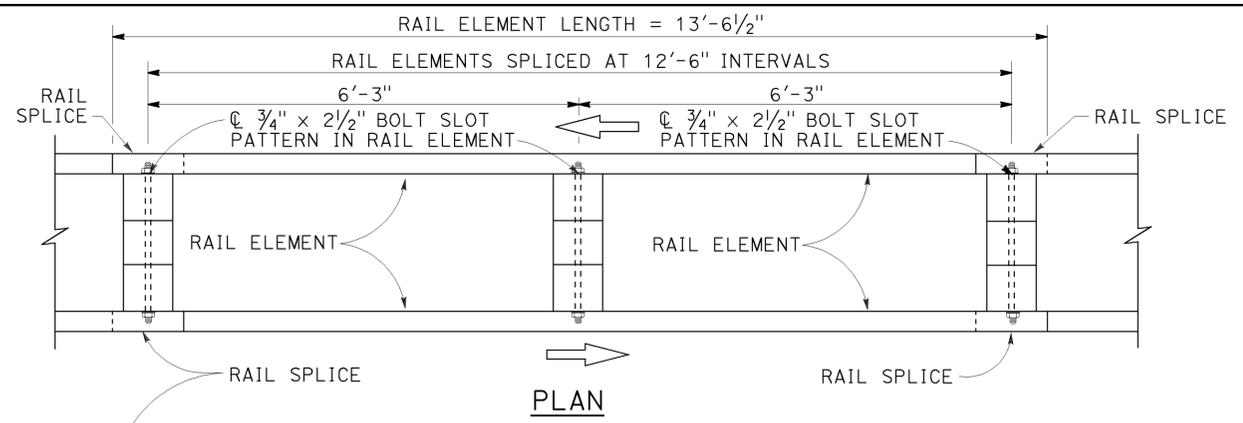
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STATE OF CALIFORNIA

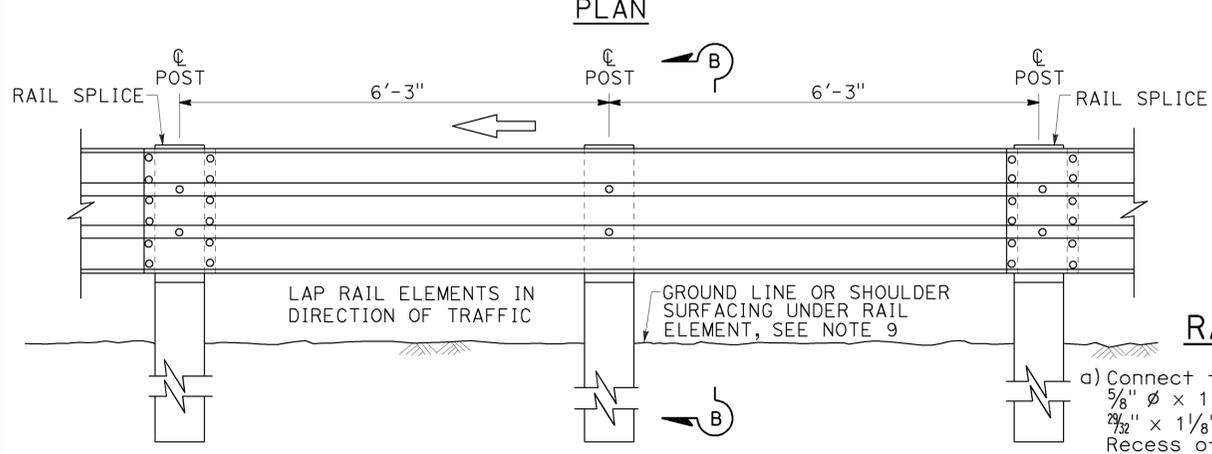
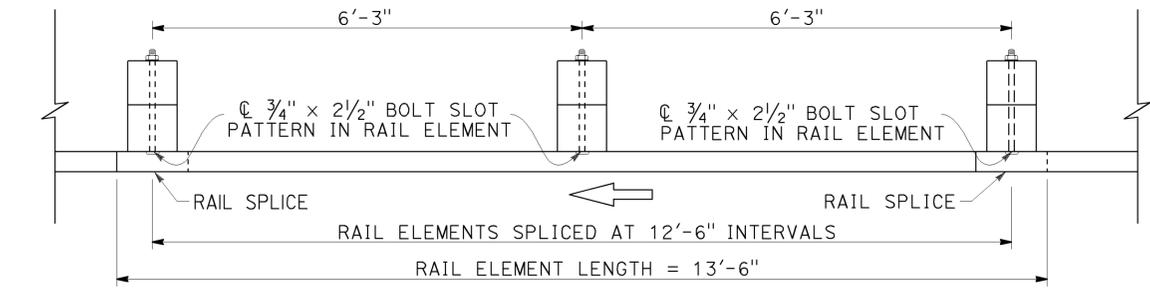
TO ACCOMPANY PLANS DATED 6-23-14

NOTES:

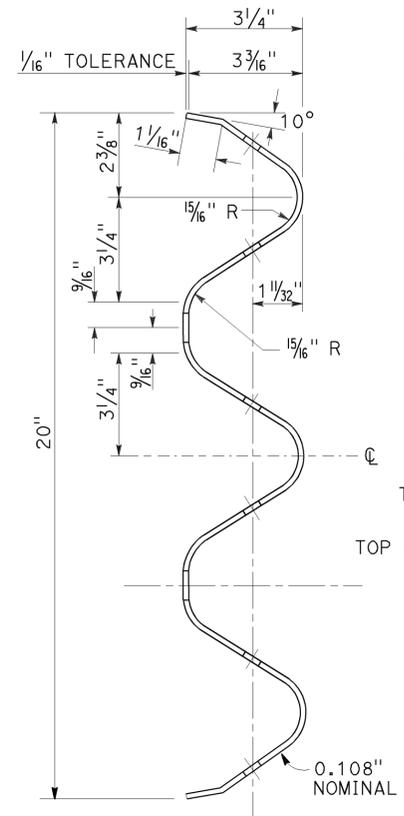
1. For details of steel post thrie beam barrier, see Standard Plan A78B.
2. For details of standard hardware, posts and blocks used to construct thrie beam barrier, see Standard Plan A78C1 and Revised Standard Plan RSP A78C2.
3. Thrie beam barrier post spacing to be 6'-3" center to center, except as otherwise noted.
4. Top of barrier rail to be 2'-8" above ground line or shoulder surfacing under the rail element.
5. For barrier end treatments and barrier connections, see Standard Plans A78E3 and A78G, and Revised Standard Plans RSP A78E1, RSP A78E2 RSP A77Q1, RSP A77Q2 and RSP A78H.
6. For connection to Concrete Barrier (Type 60), see Standard Plans A78I.
7. For details of thrie beam barrier on bridge see Standard Plan A78D2. For details of thrie beam barrier at fixed object, see Revised Standard Plan RSP A78D1.
8. Median barrier delineation to be used when required by the Special Provisions. Spacing of barrier markers to match spacing of raised pavement markers on adjacent median edgeline pavement delineation.
9. Install posts in soil.



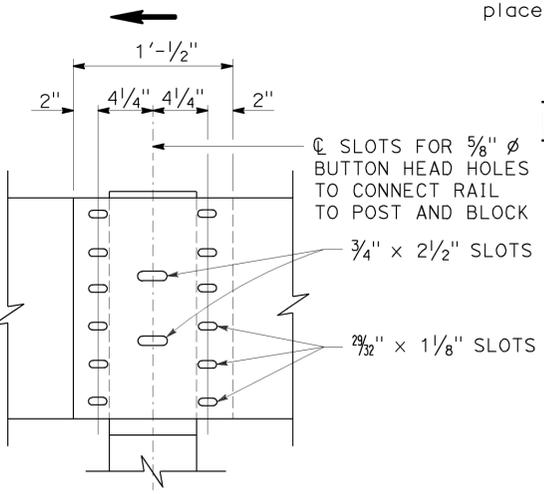
DOUBLE THRIE BEAM BARRIER
(Wood post and blocks)
See Note 1



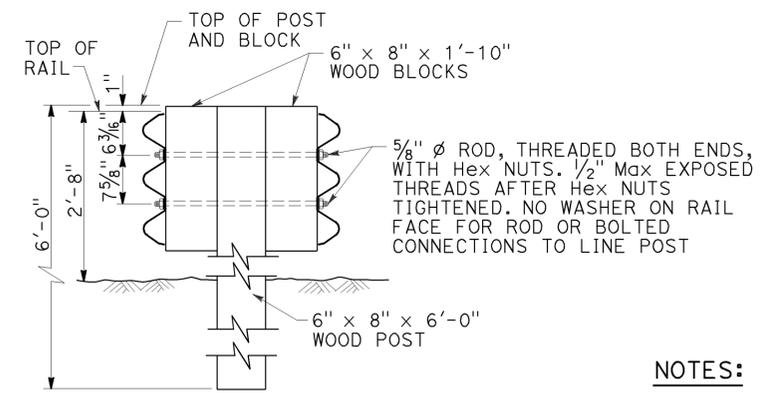
SINGLE THRIE BEAM BARRIER
(Wood post and blocks)
See Note 1



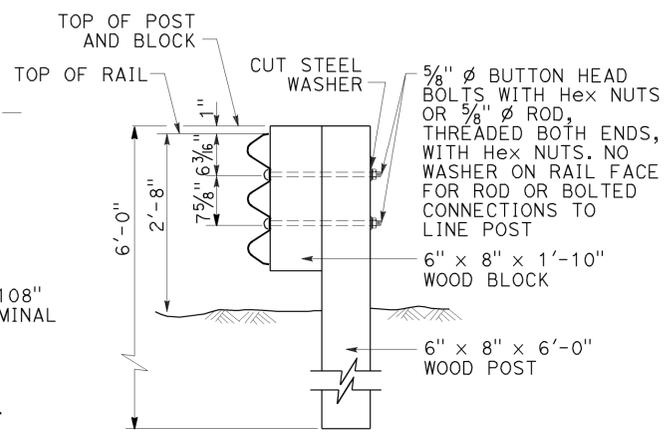
SECTION THRU RAIL ELEMENT



- a) Connect the overlapped ends of the thrie beam rail elements with 5/8" ϕ x 1 1/4" button head oval shoulder bolts inserted into the 2 3/32" 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 12 bolts and nuts are to be used at each rail splice connection.
- b) The ends of the rail elements are to be overlapped in the direction of traffic (see details).
- c) 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. Where a return cap is to be attached to the ends of rail elements, a total of 8 of the above described splice bolts and nuts are to be used.

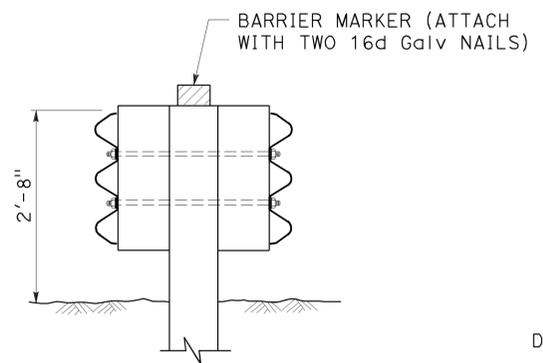


TYPICAL WOOD LINE POST INSTALLATION



TYPICAL WOOD LINE POST INSTALLATION

Where bolts are used, install so that the threaded end of the bolts and nuts are placed away from traffic side of rail.



THRIE BEAM BARRIER DELINEATION
See Note 8

THRIE BEAM BARRIER STANDARD BARRIER RAILING SECTION (WOOD POST WITH WOOD BLOCK)

NO SCALE

RSP A78A DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN A78A DATED MAY 20, 2011 - PAGE 89 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A78A

2010 REVISED STANDARD PLAN RSP A78A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	89	1.2/8.7	36	46

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

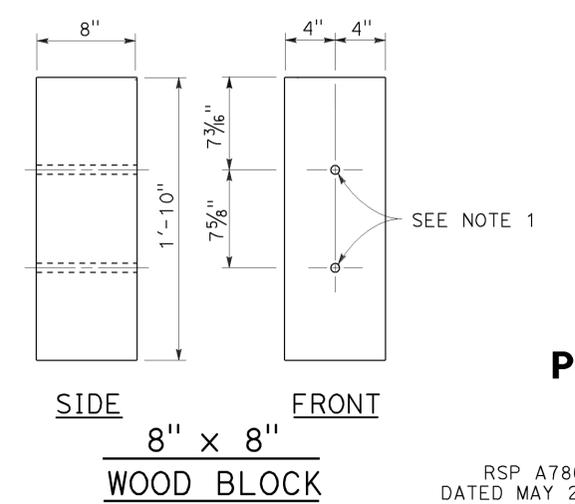
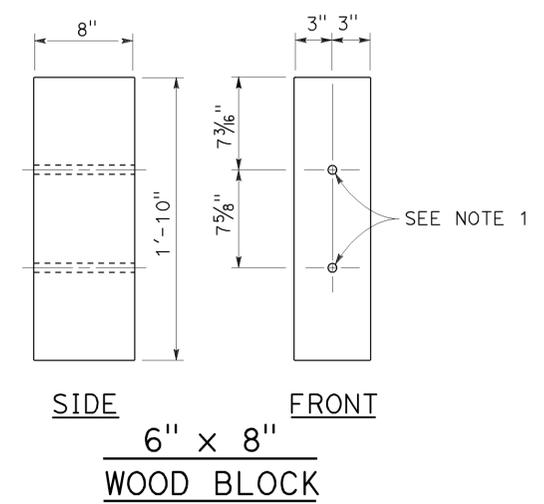
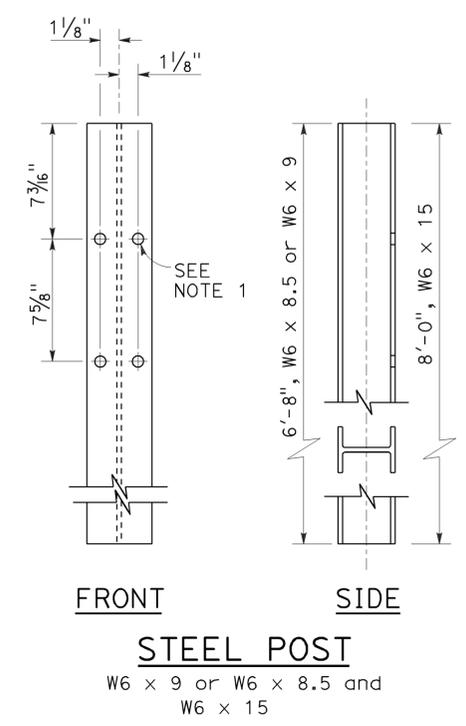
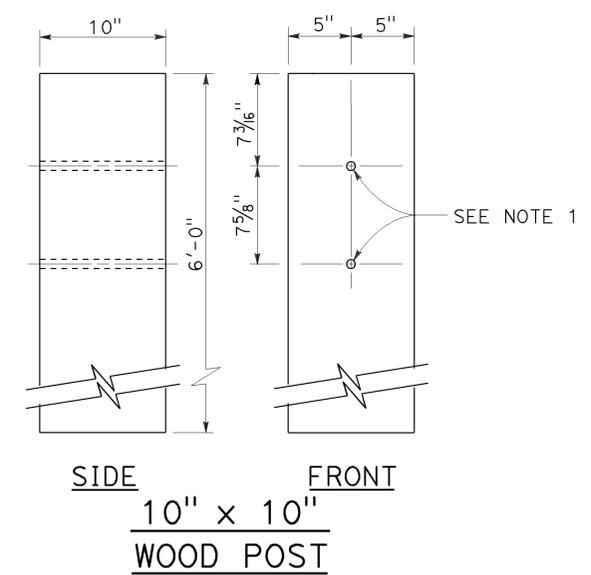
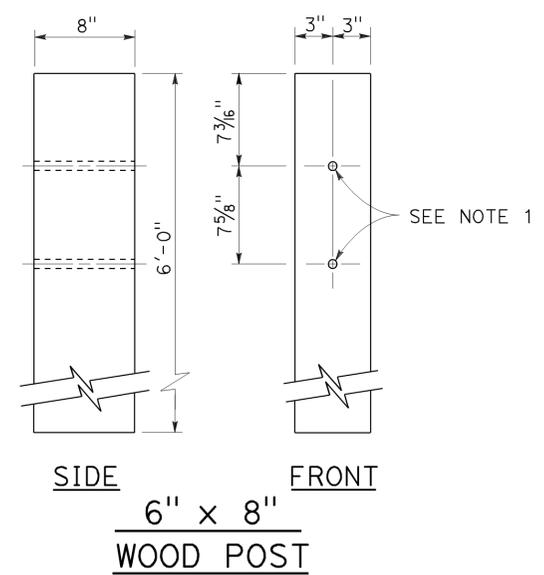
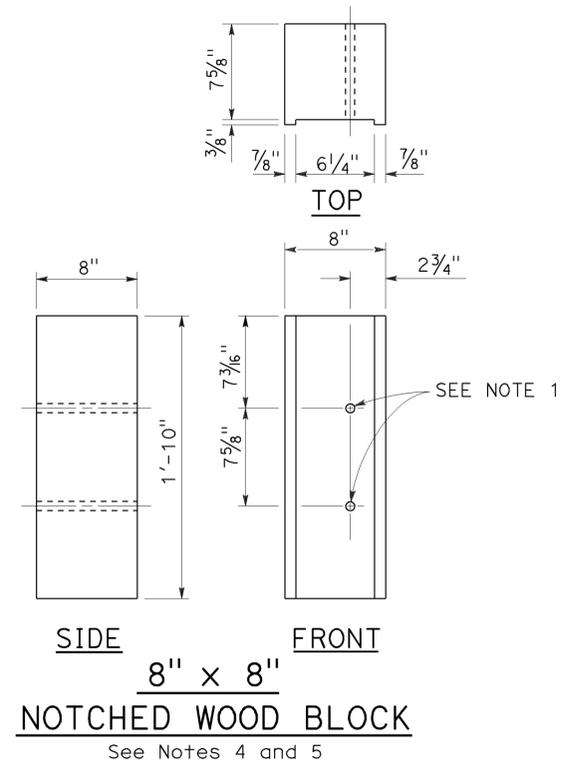
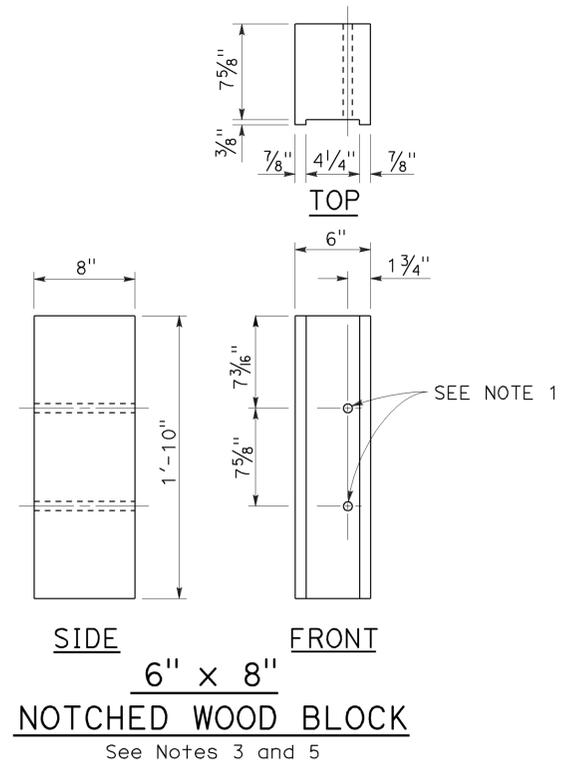
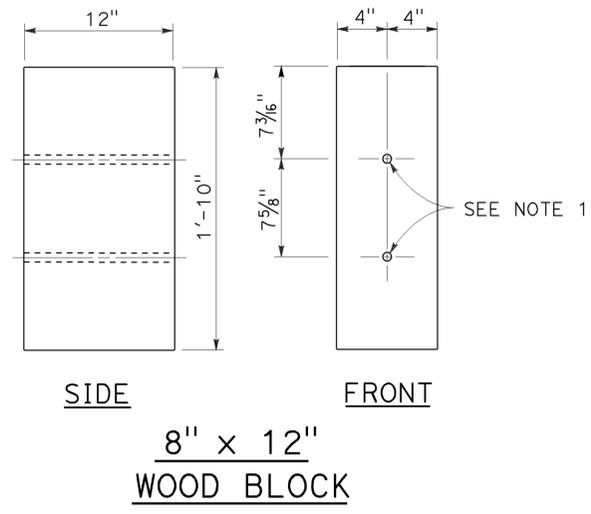
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Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 6-23-14

NOTES:

1. All holes in steel post to be $\frac{13}{16}$ " Dia maximum. Holes in wood posts and wood blocks to be $\frac{3}{4}$ " Dia $\pm \frac{1}{16}$ ".
2. Dimensions shown for wood post are nominal.
3. For use with W6 x 8.5 or W6 x 9 steel post.
4. For use with W6 x 15 steel post.
5. Notched face of block faces steel post.



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

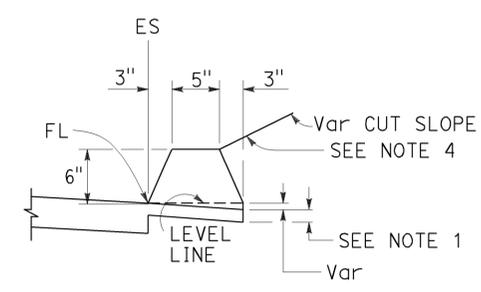
**THREE BEAM BARRIER
POST AND BLOCK DETAILS**

NO SCALE

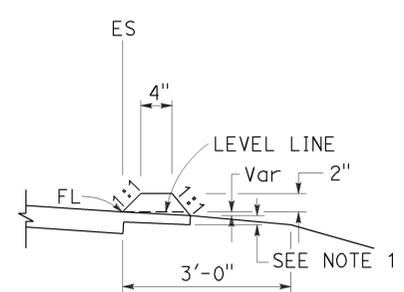
RSP A78C2 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN A78C2
DATED MAY 20, 2011 - PAGE 92 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP A78C2

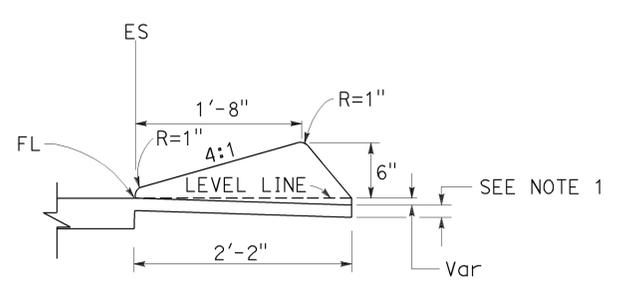
TO ACCOMPANY PLANS DATED 6-23-14



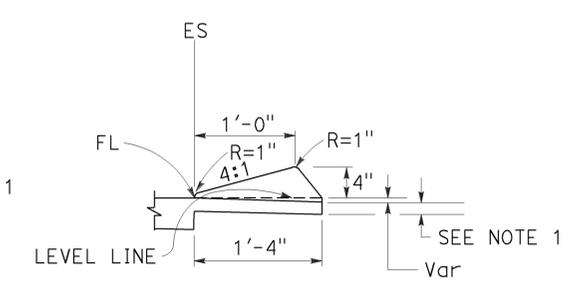
TYPE A
See Note 3



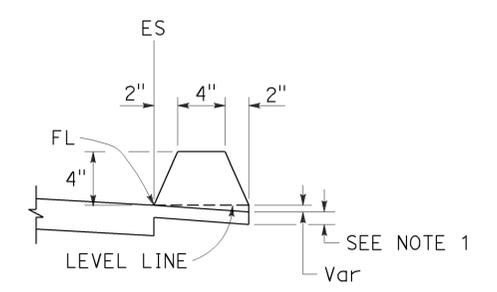
TYPE C



TYPE D

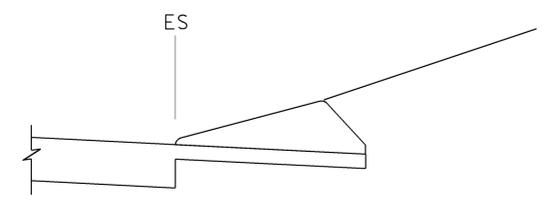


TYPE E

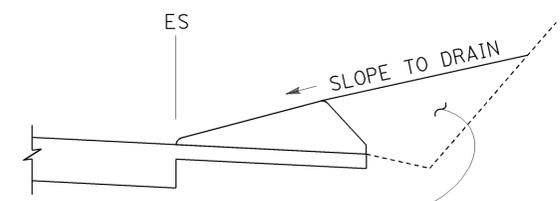


TYPE F
See Note 5

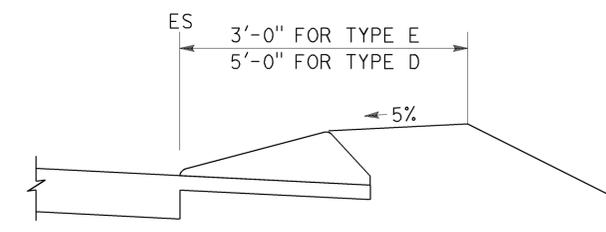
DIKES



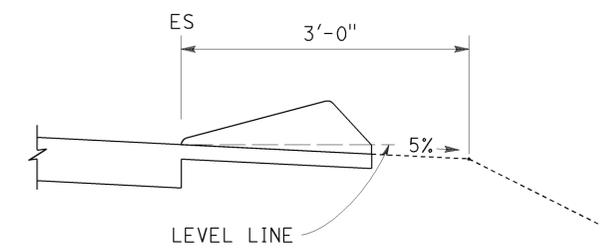
CASE C-1
Cut Slope



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.

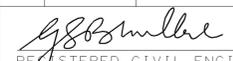
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	89	1.2/8.7	38	46


 REGISTERED CIVIL ENGINEER
 July 19, 2013
 PLANS APPROVAL DATE



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TO ACCOMPANY PLANS DATED 6-23-14

TABLE 1

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

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

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

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

TABLE 2

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

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

TABLE 3

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

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

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**TRAFFIC CONTROL SYSTEM TABLES
 FOR LANE AND RAMP CLOSURES**

NO SCALE

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

REVISED STANDARD PLAN RSP T9

2010 REVISED STANDARD PLAN RSP T9

NOTES:

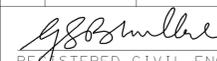
See Revised Standard Plan RSP T9 for tables.

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.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	89	1.2/8.7	39	46

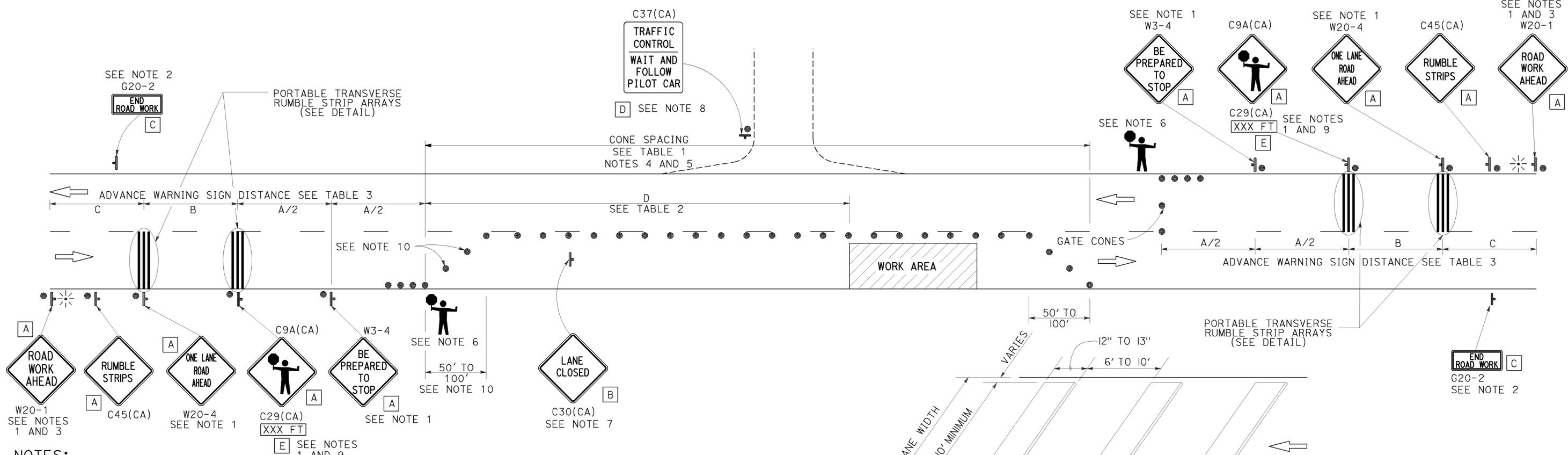

 REGISTERED CIVIL ENGINEER
 No. C48815
 Exp. 9-30-14
 CIVIL
 STATE OF CALIFORNIA

July 18, 2014
PLANS APPROVAL DATE

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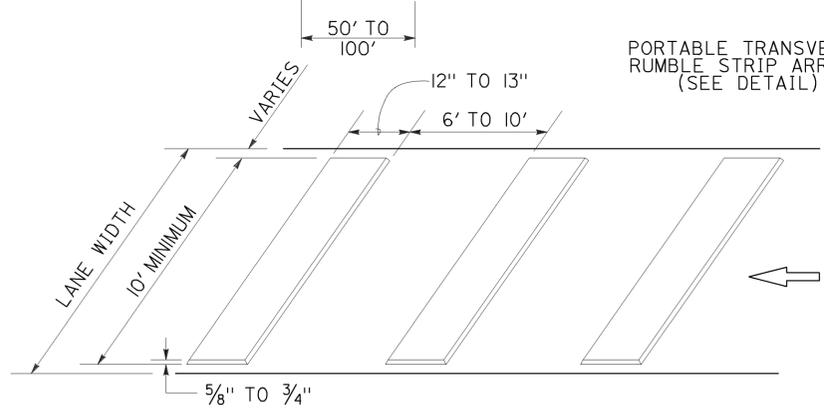
TYPICAL LANE CLOSURE WITH REVERSIBLE CONTROL

TO ACCOMPANY PLANS DATED 6-23-14



NOTES:

- Each advance warning sign in each direction of travel 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 control 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 W20-4 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.
- Additional advance flaggers may be required. Flagger should stand in a conspicuous place, be visible to approaching traffic as well as approaching vehicles after the first vehicle has stopped. During the hours of darkness, the flagging-station and flagger shall be illuminated and clearly visible to approaching traffic. The illumination footprint of the lighting on the ground shall be at least 20' in diameter. Place a minimum of four cones at 50' intervals in advance of flagger station as shown.
- Place C30(CA) "LANE CLOSED" sign at 500' to 1000' intervals throughout extended work areas. They are optional if the work area is visible from the flagger station.
- When a pilot car is used, place a C37(CA) "TRAFFIC CONTROL-WAIT AND FOLLOW PILOT CAR" sign with black legend on white background at all intersections, driveways and alleys without a flagger within traffic control area. Signs shall be clean and visible at all times. Where traffic can not be effectively self-regulated, at least one flagger shall be used at each intersection within traffic control area.
- An optional C29(CA) sign may be placed below the C9A(CA) sign.
- Either traffic cones or barricades shall be placed on the taper. Barricades shall be Type I, II, or III.
- The color of the portable transverse rumble strips shall be black or orange. Use 2 arrays, each array shall consist of 3 rumble strips.
- Portable transverse rumble strips shall not be placed on sharp horizontal or vertical curves nor shall they be placed through pedestrian crossings.
- If the portable transverse rumble strips become out of alignment (skewed) by more than 6 inches, measured from one end to the other, they shall be readjusted to bring the placement back to the original location.



PORTABLE TRANSVERSE RUMBLE STRIP ARRAY DETAIL

SIGN PANEL SIZE (Min)

- A 48" x 48"
- B 30" x 30"
- C 36" x 18"
- D 36" x 42"
- E 20" x 7"

LEGEND

- TRAFFIC CONE
- ⊥ TEMPORARY TRAFFIC CONTROL SIGN
- ⚡ PORTABLE FLASHING BEACON
- 🚧 FLAGGER

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE ON TWO LANE CONVENTIONAL HIGHWAYS

NO SCALE

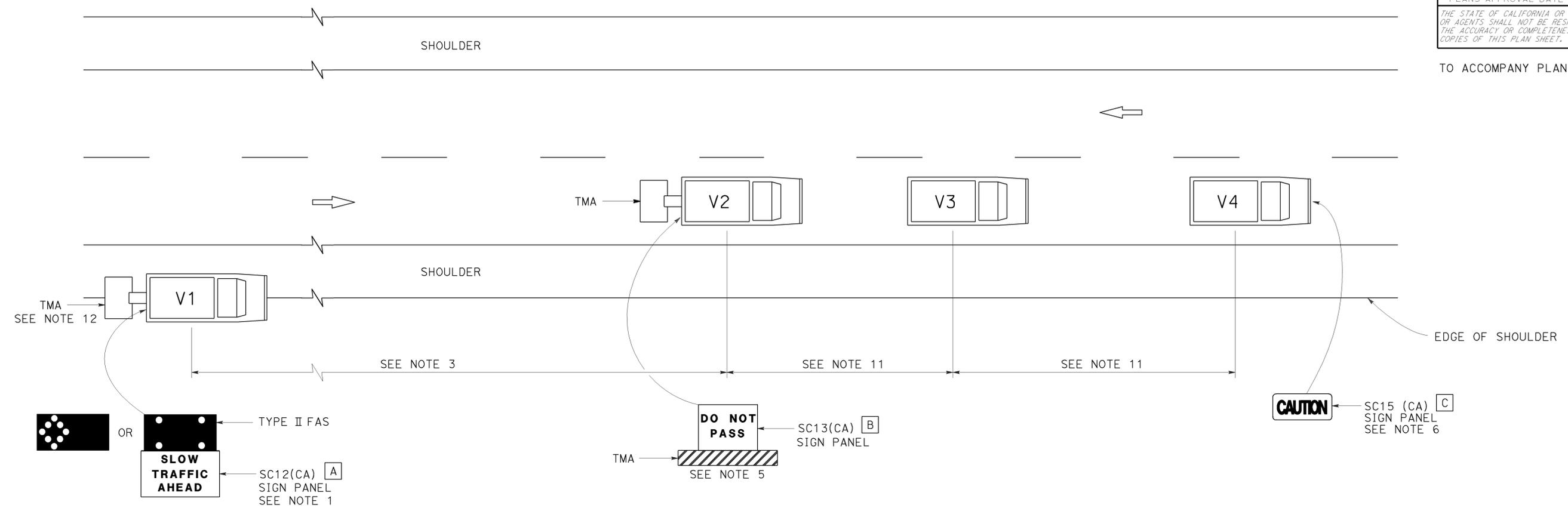
RSP T13 DATED JULY 18, 2014 SUPERSEDES RSP T13 DATED APRIL 19, 2013 AND STANDARD PLAN T13 DATED MAY 20, 2011 - PAGE 241 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T13

2010 REVISED STANDARD PLAN RSP T13



TO ACCOMPANY PLANS DATED 6-23-14



NOTES:

1. Either a changeable message sign or a SC12(CA) "SLOW TRAFFIC AHEAD" sign shall be mounted on the rear of sign vehicle V1. The changeable message sign shall be sequenced to show the "CAUTION" message first, follow by the "SLOW TRAFFIC AHEAD" message. A Type II flashing arrow sign may be used with the SC12(CA) sign panel.
2. Sign vehicle V1 should be positioned where highly visible when shoulders are not available.
3. If traffic queues develop, sign vehicle V1 should be positioned upstream from the end of queue.
4. 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.
5. Shadow vehicle shall be equipped with a truck-mounted attenuator. The sign panel shown shall be mounted on the rear of shadow vehicle V2. The message "LANE CLOSED" may be used in place of the "DO NOT PASS" message.
6. The sign panel shown shall be mounted on the front of sign vehicle V4, facing opposing traffic.
7. All vehicles shall be equipped with flashing or rotating amber lights.
8. Sign vehicle V4 will not be required when the work and vehicles V2 and V3 are 2' or more from the centerline of the highway during the work or application operations.
9. 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.
10. This plan shall not be used where workers would be on foot in the work area. Use a stationary type lane closure (Revised Standard Plan T13) for this condition.
11. Minimize spacing between vehicles V2 and V3 and vehicles V3 and V4 to deter road users from driving in between them.
12. 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.

LEGEND

- V1 SIGN VEHICLE
- V2 SHADOW VEHICLE
- V3 WORK/APPLICATION VEHICLE
- V4 SIGN VEHICLE
- TMA TRUCK-MOUNTED ATTENUATOR
-  FLASHING ARROW SIGN (FAS) IN FLASHING CAUTION MODE
-  FLASHING ARROW SIGN (FAS) IN ALTERNATING DIAMOND CAUTION

SIGN PANEL SIZE (Min)

- A** 72" x 42"
- B** 54" x 42"
- C** 54" x 24"

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

RSP T17 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T17
 DATED MAY 20, 2011 - PAGE 245 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T17

2010 REVISED STANDARD PLAN RSP T17

LEGEND:

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 TAPE
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
TSP	TELEPHONE SERVICE POINT

ABBREVIATIONS

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	89	1.2/8.7	41	46

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

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

TO ACCOMPANY PLANS DATED 6-23-14

SOFFIT AND WALL MOUNTED LUMINAIRES

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

NOTE:
Arrow indicates "street side" of luminaire.

COMMONLY USED SYMBOLS FOR UNITED STATES CUSTOMARY UNITS OF MEASUREMENT:

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

MISCELLANEOUS ELECTROLIERS

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

NOTES:

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

STANDARD ELECTROLIER

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

NO SCALE

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

REVISED STANDARD PLAN RSP ES-1A

2010 REVISED STANDARD PLAN RSP ES-1A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	89	1.2/8.7	42	46

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

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TO ACCOMPANY PLANS DATED 6-23-14

CONDUIT

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

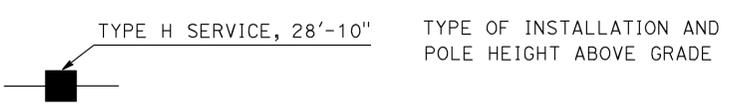
SIGNAL EQUIPMENT

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

SERVICE EQUIPMENT

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

POLE-MOUNTED SERVICE DESIGNATION



FLASHING BEACON

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

SIGNAL EQUIPMENT Cont

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

NOTES:

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

ILLUMINATED OVERHEAD SIGN

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS
(LEGEND AND ABBREVIATIONS)**

NO SCALE

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

REVISED STANDARD PLAN RSP ES-1B

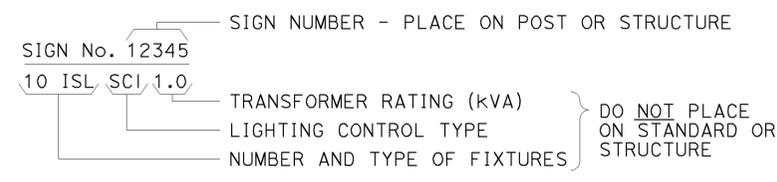
2010 REVISED STANDARD PLAN RSP ES-1B



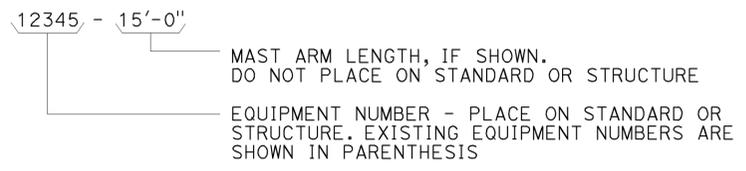
TO ACCOMPANY PLANS DATED 6-23-14

EQUIPMENT IDENTIFICATION

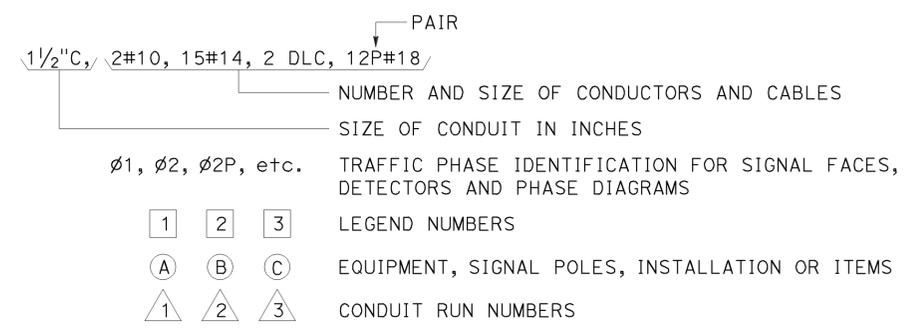
ILLUMINATED SIGN IDENTIFICATION NUMBER:



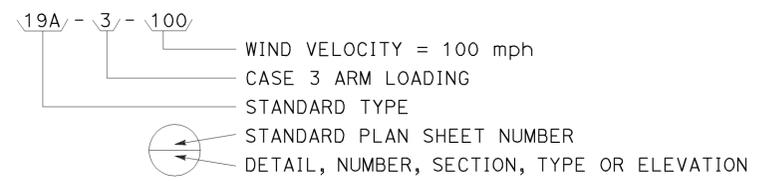
ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



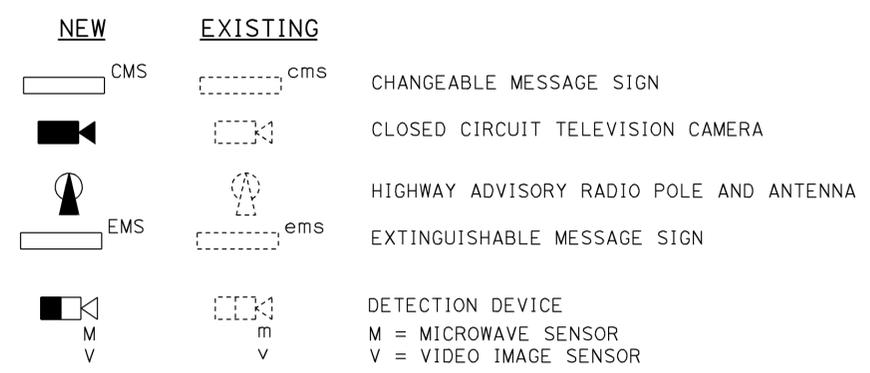
CONDUIT AND CONDUCTOR IDENTIFICATION:



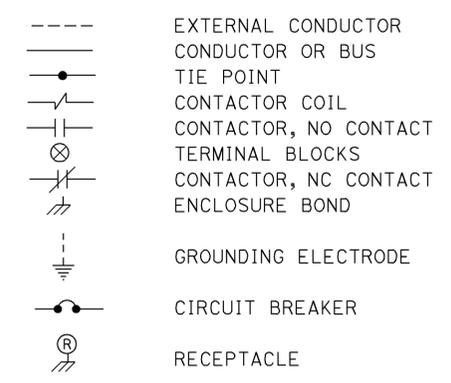
SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



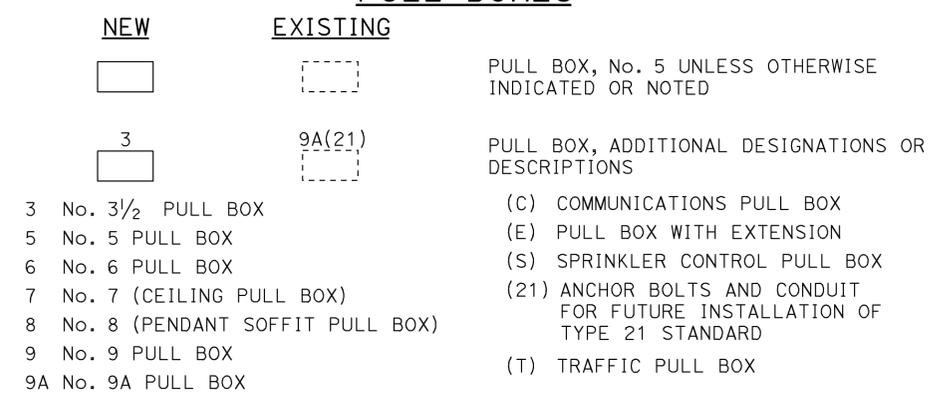
MISCELLANEOUS EQUIPMENT



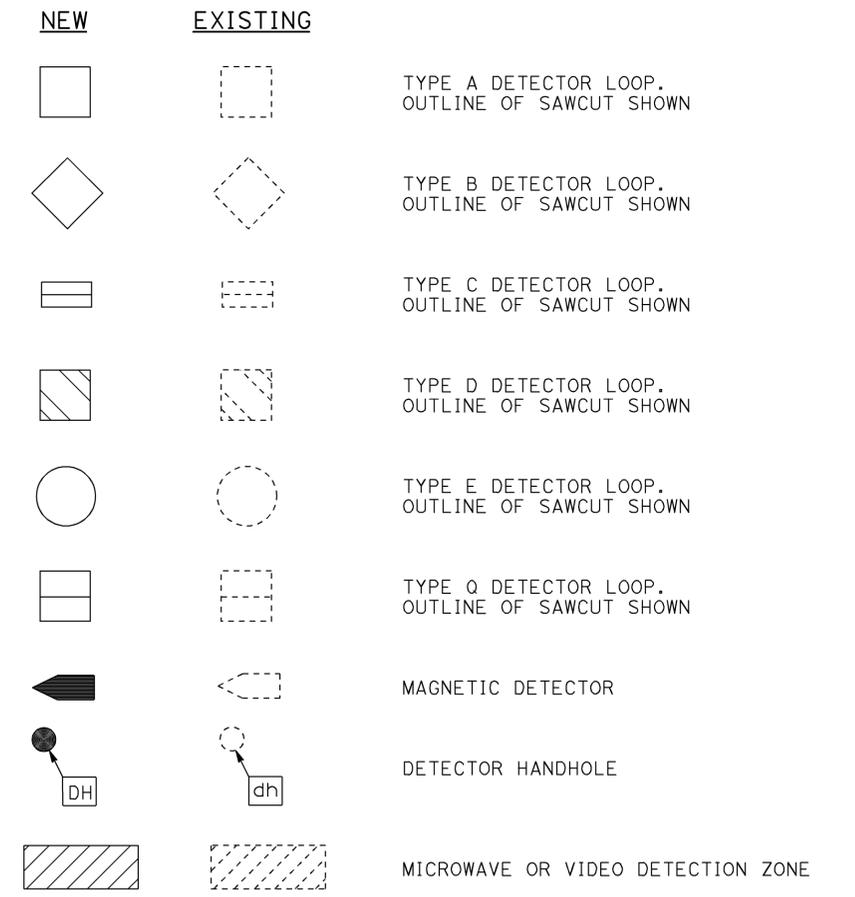
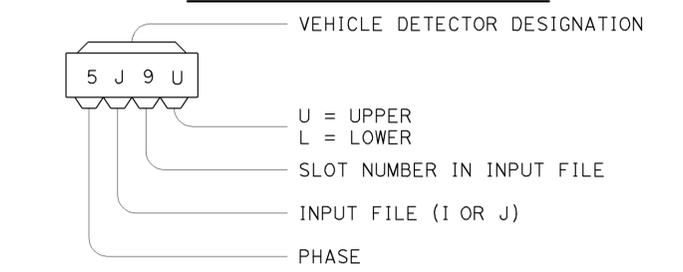
WIRING DIAGRAM LEGEND



PULL BOXES



VEHICLE DETECTORS



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

NO SCALE

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

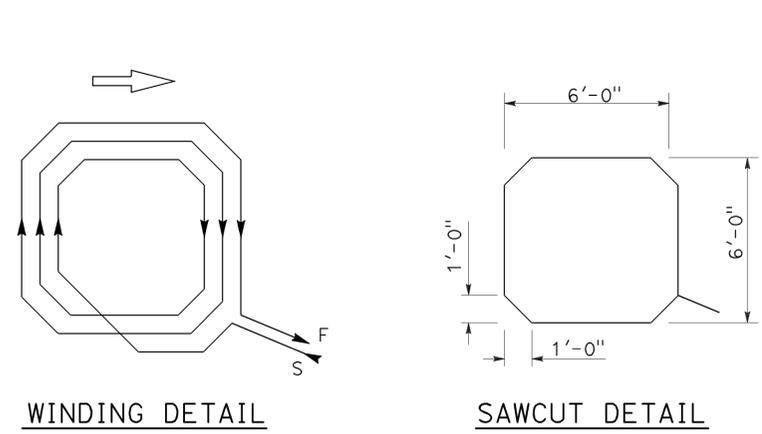
2010 REVISED STANDARD PLAN RSP ES-1C

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	89	1.2/8.7	44	46

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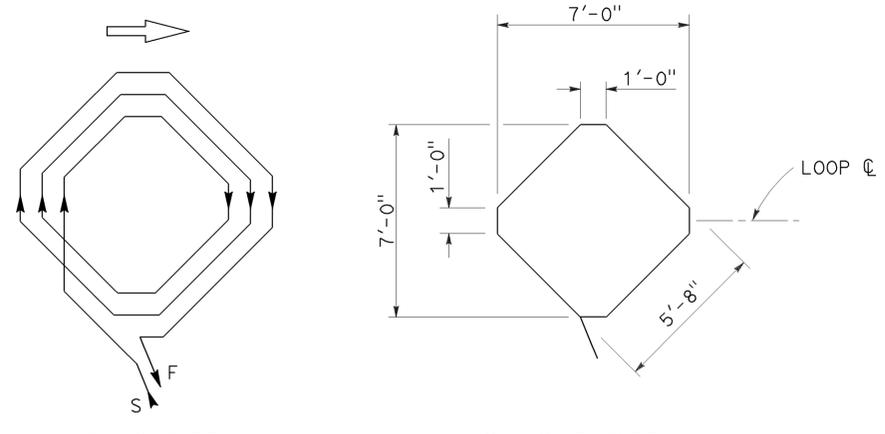
REGISTERED PROFESSIONAL ENGINEER
 Theresa Aziz Gabriel
 No. E15129
 Exp. 6-30-14
 ELECTRICAL
 STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 6-23-14



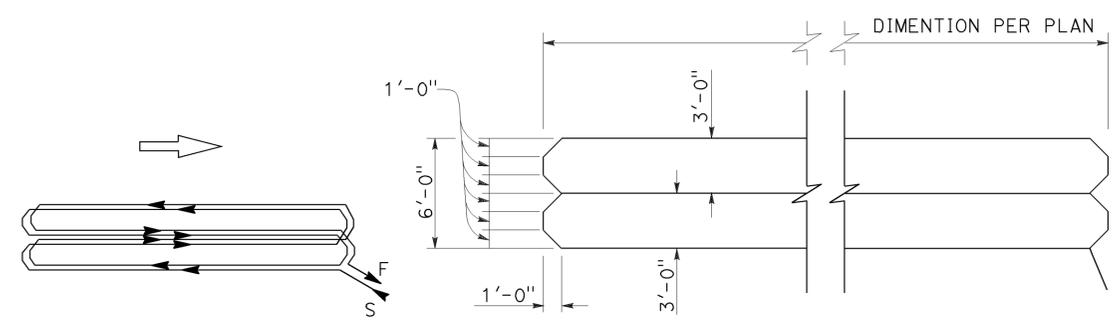
WINDING DETAIL SAWCUT DETAIL

TYPE A LOOP DETECTOR CONFIGURATION



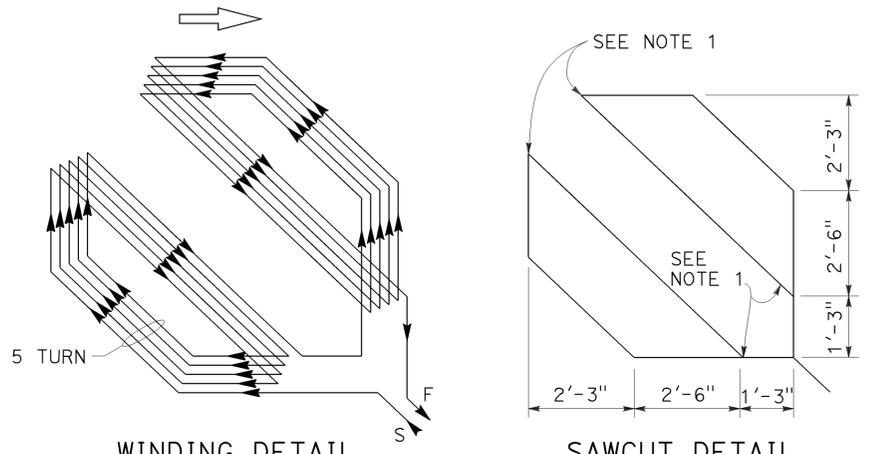
WINDING DETAIL SAWCUT DETAIL

TYPE B LOOP DETECTOR CONFIGURATION



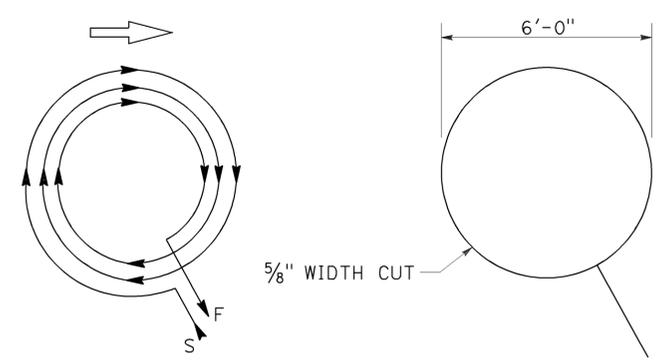
WINDING DETAIL SAWCUT DETAIL

TYPE C LOOP DETECTOR CONFIGURATION



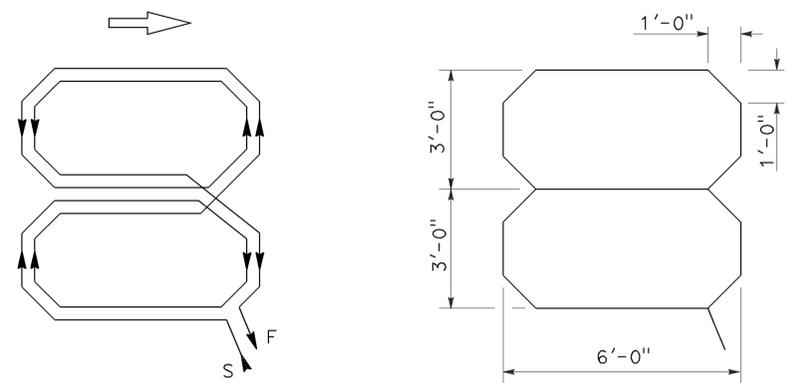
WINDING DETAIL SAWCUT DETAIL

TYPE D LOOP DETECTOR CONFIGURATION



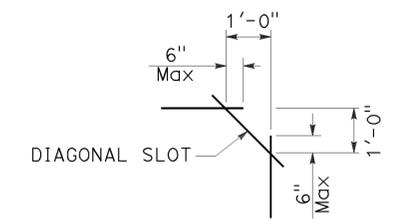
WINDING DETAIL SAWCUT DETAIL

TYPE E LOOP DETECTOR CONFIGURATION



WINDING DETAIL SAWCUT DETAIL

TYPE Q LOOP DETECTOR CONFIGURATION



PLAN VIEW OF DIAGONAL SLOT AT CORNERS

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (DETECTORS)

NO SCALE

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

REVISED STANDARD PLAN RSP ES-5B

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

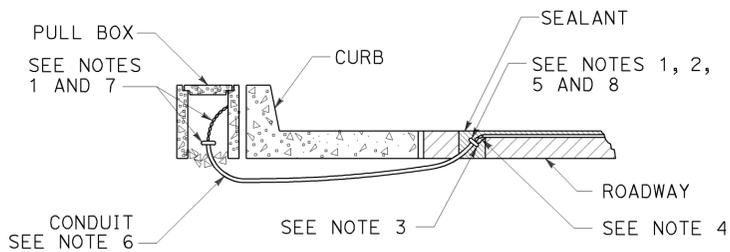
2010 REVISED STANDARD PLAN RSP ES-5B

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	89	1.2/8.7	45	46

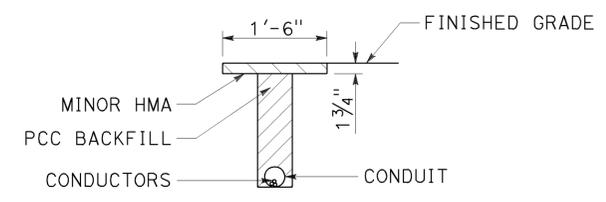
Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 July 19, 2013
 PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



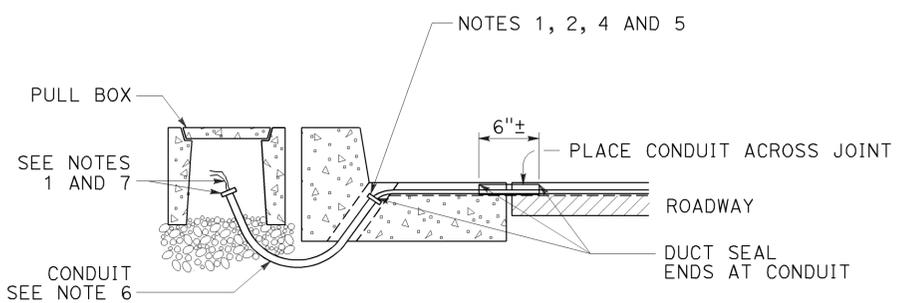
TO ACCOMPANY PLANS DATED 6-23-14



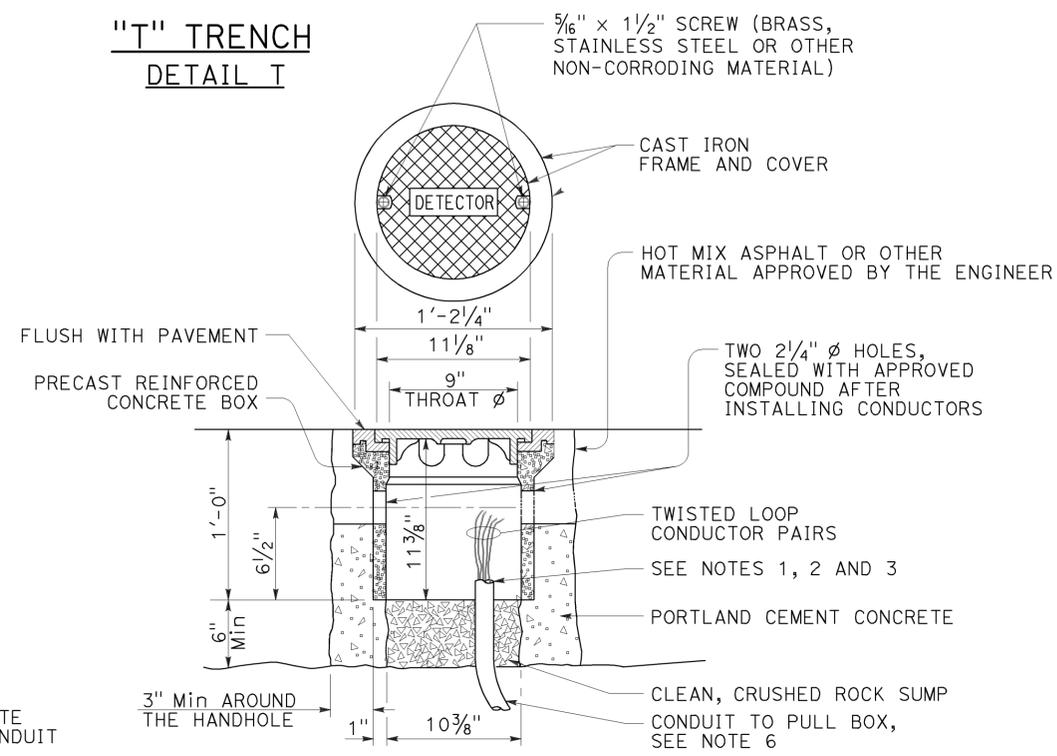
TYPE A
CURB TERMINATION DETAIL



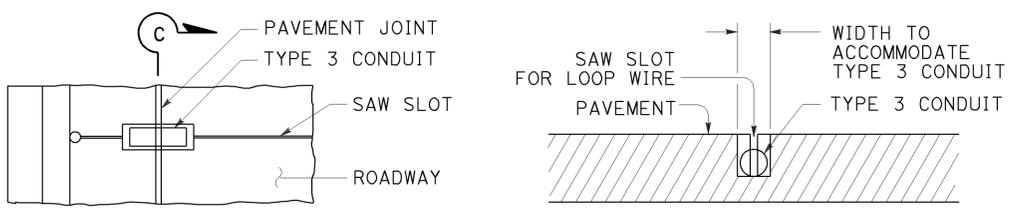
"T" TRENCH
DETAIL T



CROSS SECTION



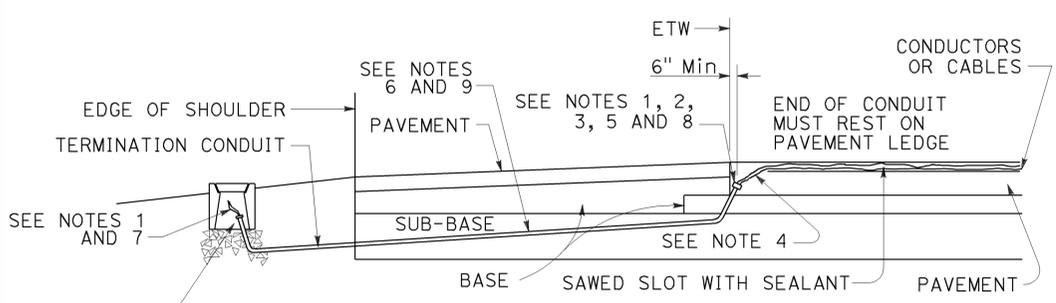
DETECTOR HANDHOLE DETAIL



PLAN VIEW

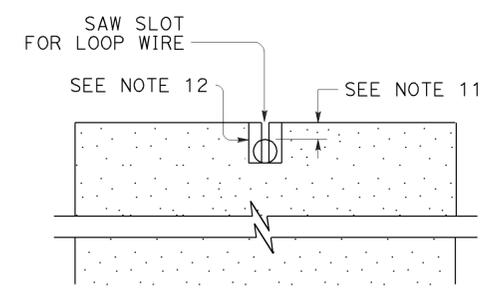
SECTION C-C

TYPE B
CURB TERMINATION DETAIL

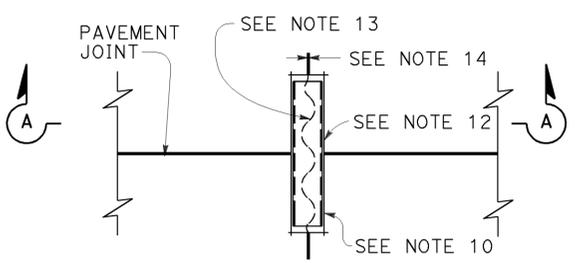


CROSS SECTION

PLAN VIEW
SHOULDER TERMINATION DETAILS

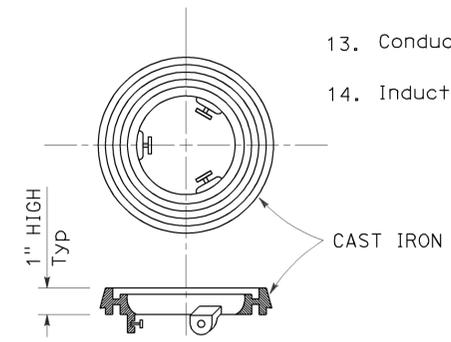


SECTION A-A



PLAN VIEW

TYPICAL LOOP LEAD-IN DETAIL
AT PAVEMENT JOINT



LOCKING GRADE RING

NOTES:

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

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

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

REVISED STANDARD PLAN RSP ES-5D

2010 REVISED STANDARD PLAN RSP ES-5D

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Nev	89	1.2/8.7	46	46

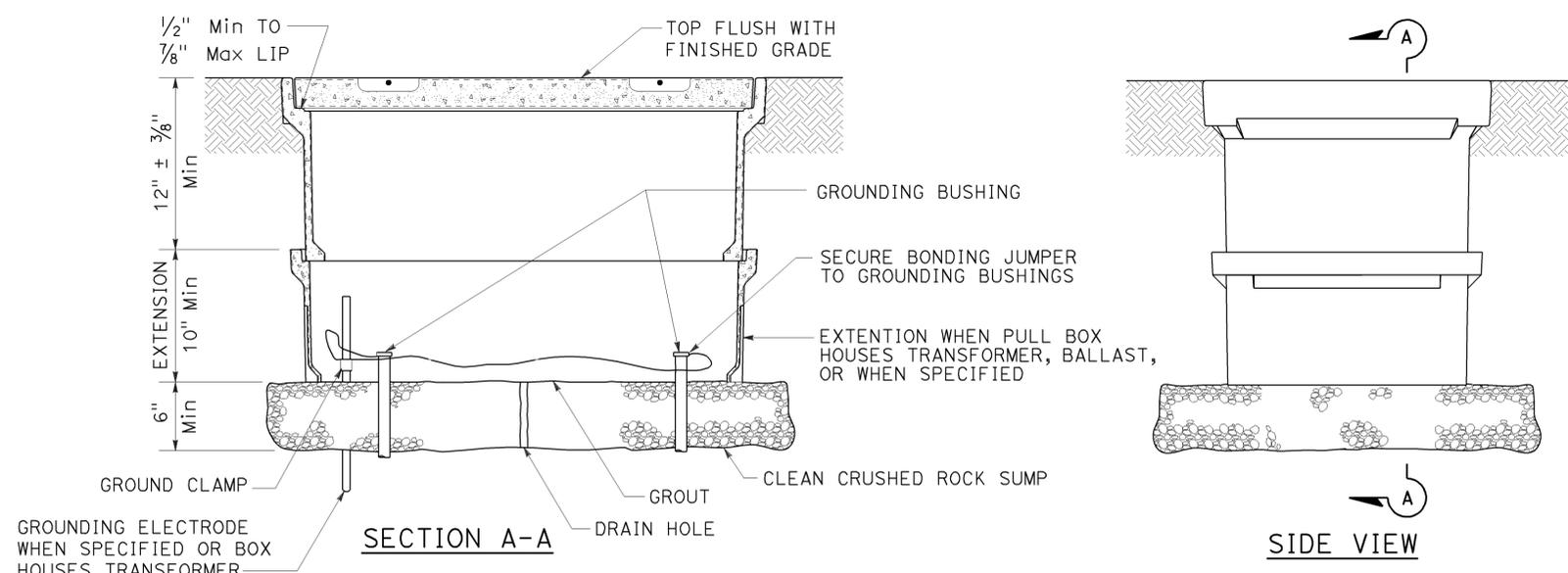
Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

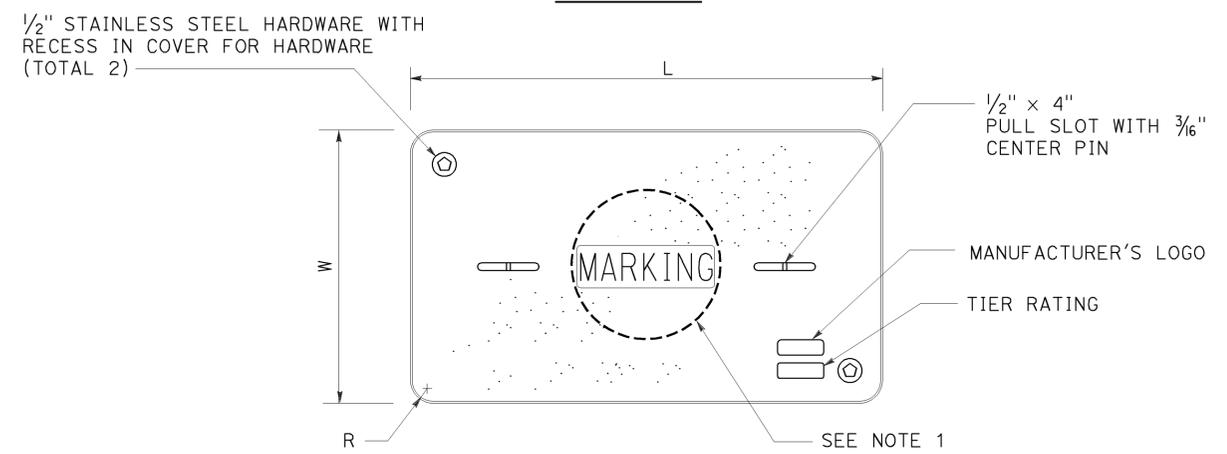
Theresa Aziz Gabriel
No. E15129
Exp. 6-30-14
ELECTRICAL
STATE OF CALIFORNIA

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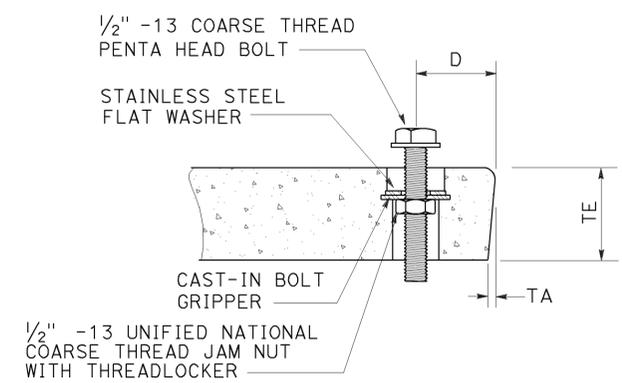
TO ACCOMPANY PLANS DATED 6-23-14



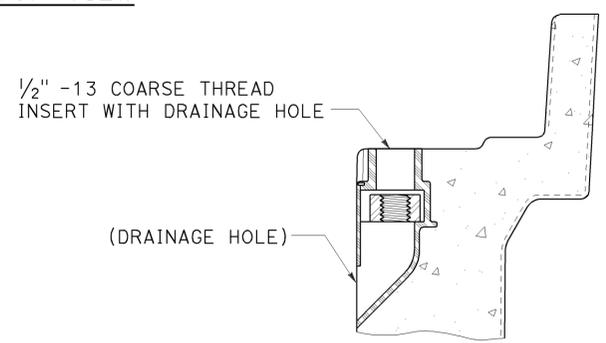
INSTALLATION DETAILS
DETAIL A



COVER TOP VIEW



TYPICAL COVER CAPTIVE BOLT
OR SIMILAR



TYPICAL THREADED INSERT
OR SIMILAR

NOTES:

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

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

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

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

REVISED STANDARD PLAN RSP ES-8A

2010 REVISED STANDARD PLAN RSP ES-8A