

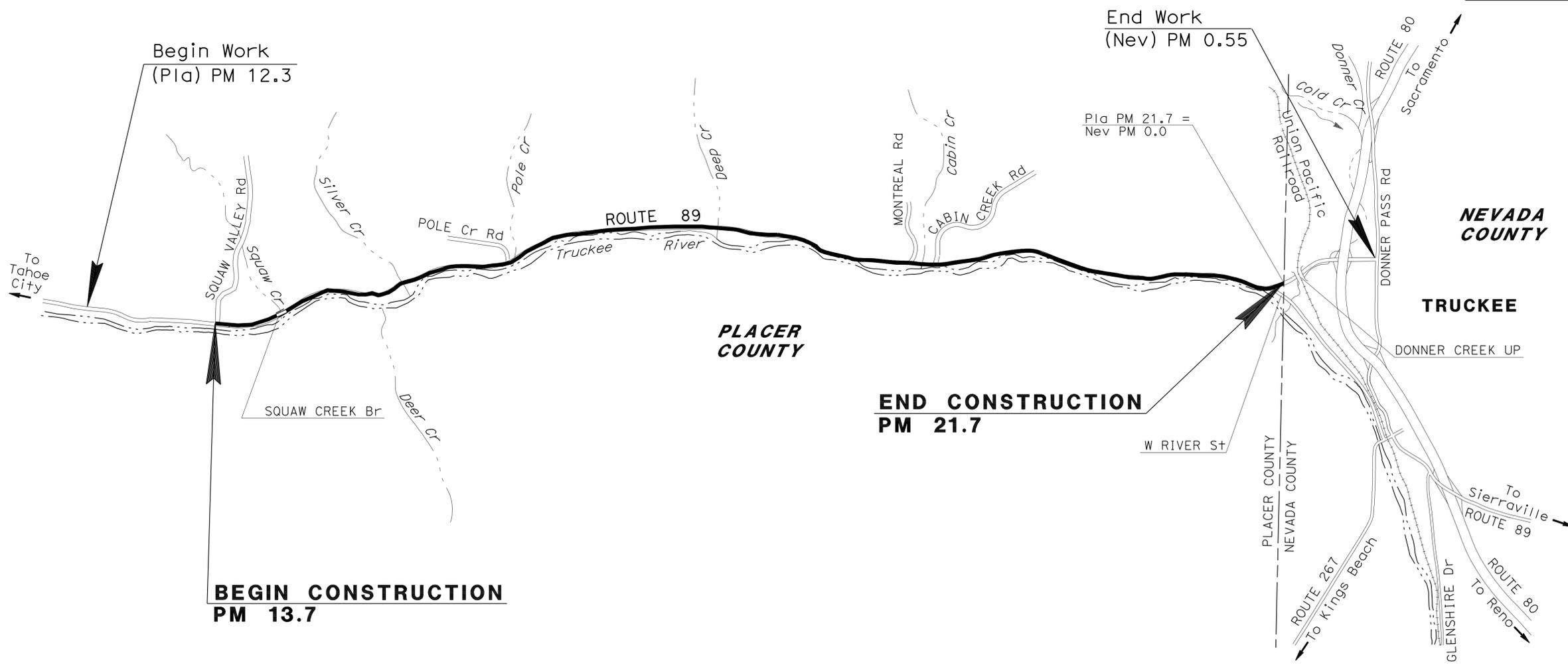
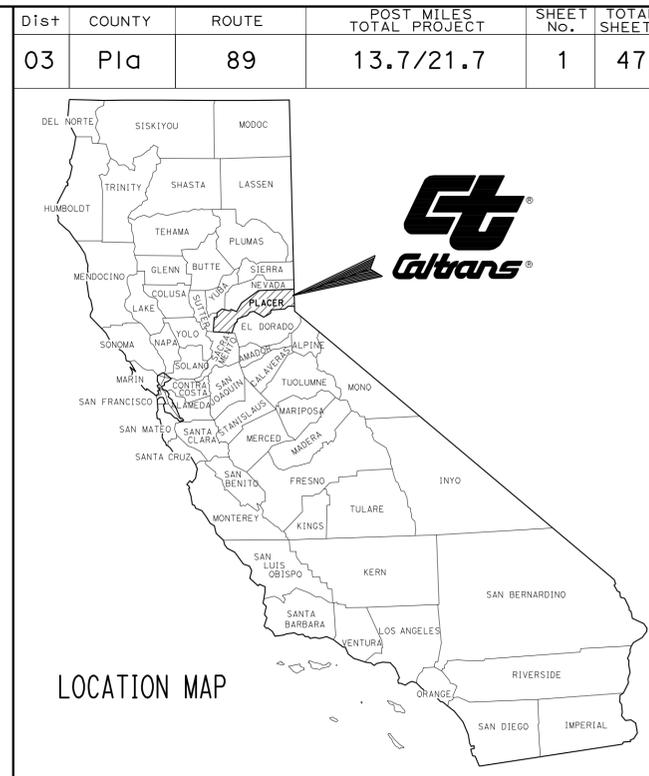
INDEX OF PLANS

SHEET No.	DESCRIPTION
1	TITLE AND LOCATION MAP
2-3	TYPICAL CROSS SECTIONS
4-7	CONSTRUCTION DETAILS
8	CONSTRUCTION AREA SIGNS
9	PAVEMENT DELINEATION QUANTITIES
10-12	SUMMARY OF QUANTITIES
13-17	ELECTRICAL PLANS
18-47	REVISED AND NEW STANDARD PLANS

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

STATE OF CALIFORNIA ACSTP-P089(103)E
DEPARTMENT OF TRANSPORTATION
PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY
IN PLACER COUNTY
NEAR TRUCKEE FROM
SQUAW VALLEY ROAD TO
THE NEVADA COUNTY LINE

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006



END CONSTRUCTION
PM 21.7

End Work
(Nev) PM 0.55

Plc PM 21.7 =
Nev PM 0.0

NO SCALE

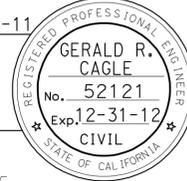
PROJECT MANAGER MIKE BARTLETT	DESIGN ENGINEER MOHAMMAD U. SADIQ
---	---

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

Gerald R. Cagle 8-26-11
 PROJECT ENGINEER DATE
 REGISTERED CIVIL ENGINEER

January 9, 2012
 PLANS APPROVAL DATE

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



CONTRACT No.	03-1E0004
PROJECT ID	0300020255



DATE PLOTTED => 14-MAR-2012
 TIME PLOTTED => 06:40

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Pla	89	13.7/21.7	2	47

<i>Gerald R. Cagle</i> 8-26-11 REGISTERED CIVIL ENGINEER DATE		
1-9-12 PLANS APPROVAL DATE		

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

NOTES:

1. MATCH EXISTING PAVEMENT WIDTH AND GUTTER WIDTH AT ALL LOCATIONS.
2. MATCH EXISTING CROSS SLOPE AT LANES, SHOULDERS AND GUTTERS AT ALL LOCATIONS.
3. THE CFIPR COMPACTED SURFACE SHALL MATCH EXISTING GRADES UNLESS OTHERWISE SHOWN.
4. DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
5. SEE SUMMARY OF QUANTITIES SHEETS FOR HMA DIKE TYPE AND LOCATIONS AND MBGR LOCATIONS.
6. THE FINISHED SURFACE AT SQUAW VALLEY ROAD INTERSECTION SHALL MATCH EXISTING GRADES. THE 0.25' COLD PLANE AC PAVEMENT OF STRUCTURAL SECTION 3 SHALL BE FROM THE CFIPR COMPACTED SURFACE. SEE CONSTRUCTION DETAILS FOR SQUAW VALLEY ROAD LIMITS AND DETAILS.
7. SEE CONSTRUCTION DETAILS FOR ALL LOCAL ROAD AND DRIVEWAY PAVING LIMITS AND DETAILS.

LEGEND:

- STRUCTURAL SECTION
- EXISTING STRUCTURAL SECTION

DESIGN DESIGNATION

ADT (2012)	10,700	D	65%
ADT (2032)	13,400	T	5%
DHV	1,580	V	55 mph
ESAL	1,226,620	TI ₂₀	9

ABBREVIATIONS:

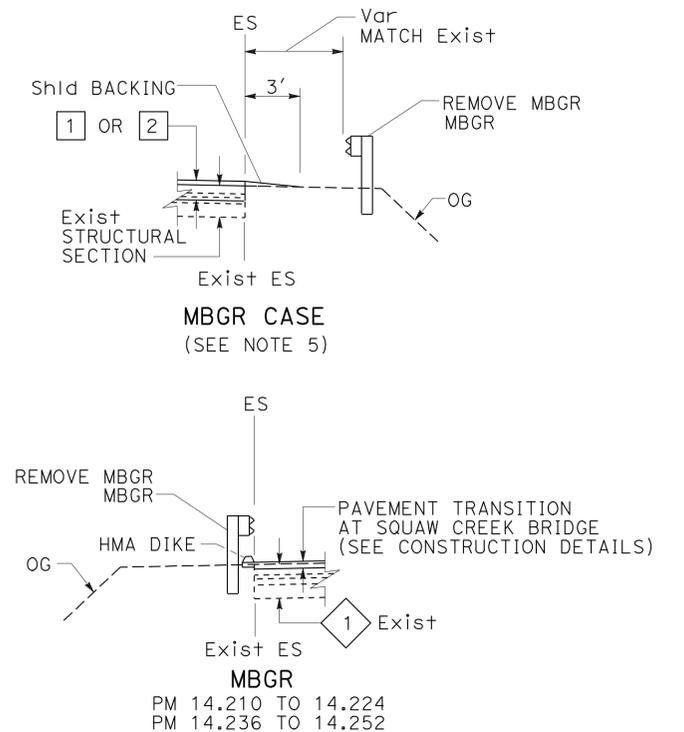
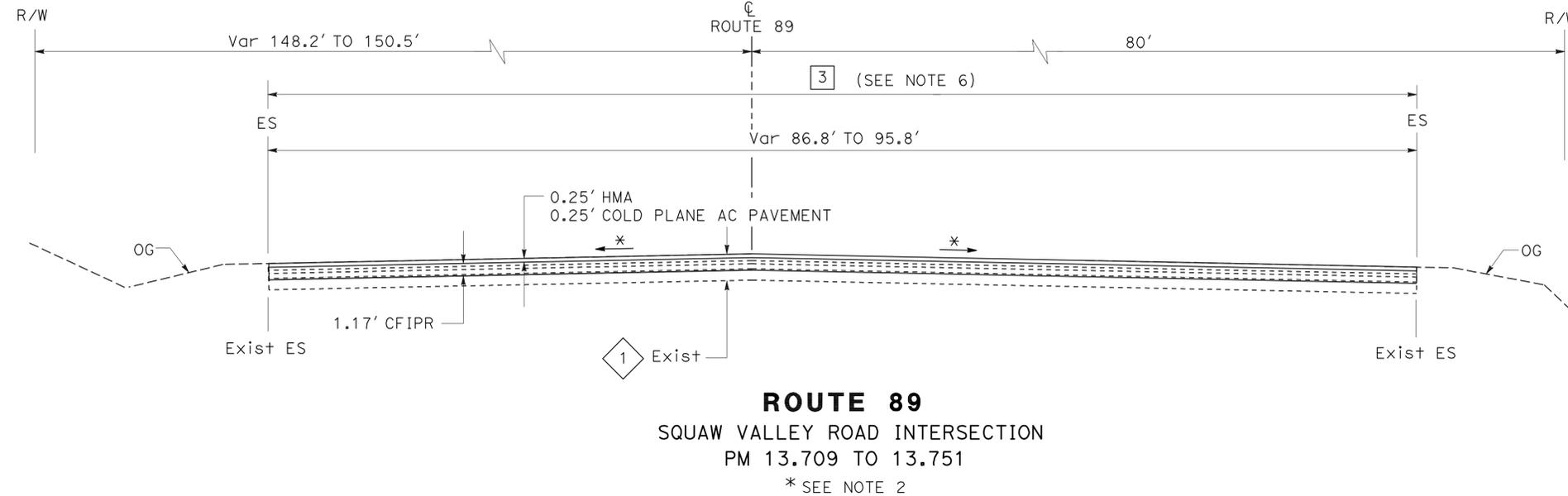
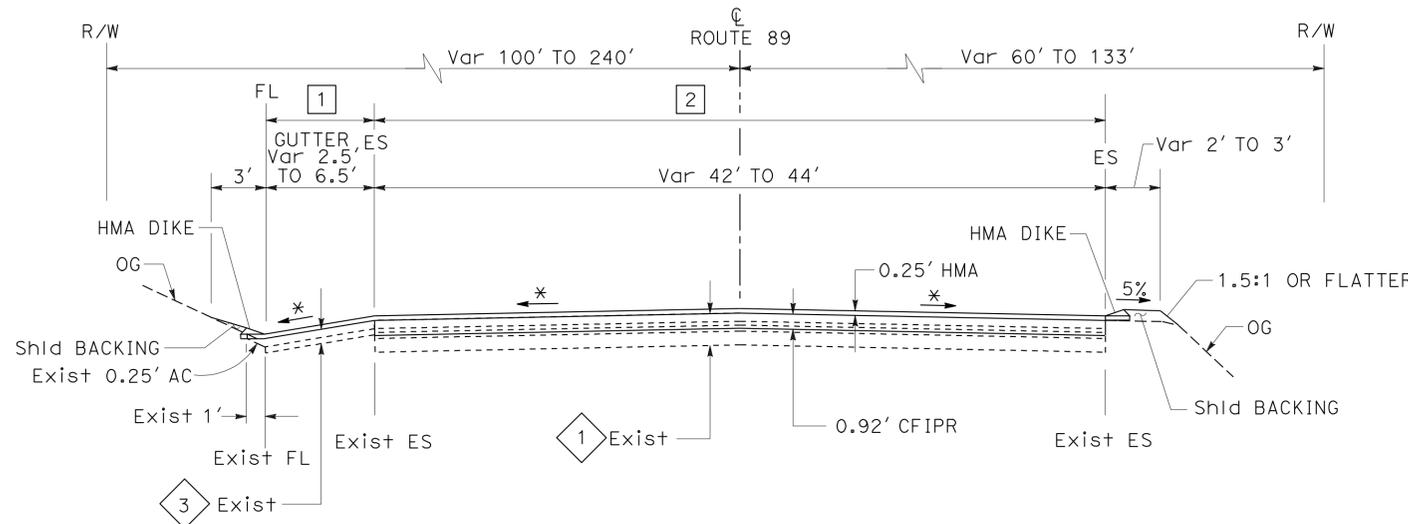
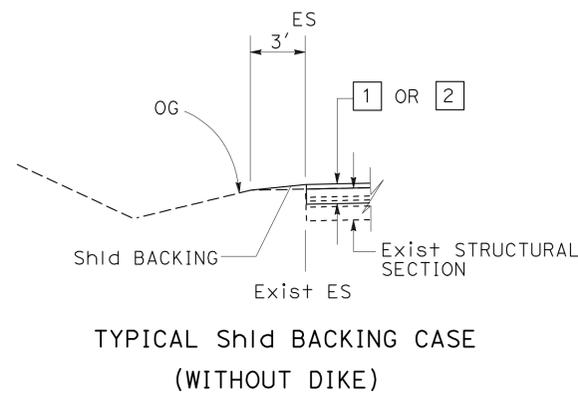
- CFIPR COLD FOAM IN-PLACE RECYCLING
- ISM IMPORTED SUBBASE MATERIAL
- UB UNTREATED BASE

STRUCTURAL SECTIONS

- 0.25' HMA
- 0.25' HMA
0.92' CFIPR
- 0.25' HMA
0.25' COLD PLANE AC PAVEMENT
1.17' CFIPR

EXISTING STRUCTURAL SECTIONS

- Exist Var 0.68' TO 0.95' AC
0.33' UB
0.75' ISM
- Exist Var 0.16' TO 0.20' AC
PRF
Var 0.60' TO 0.72' AC
0.33' UB
0.75' ISM
- Exist 0.55' AC
0.33' AB
- Exist Var 0.33' TO 0.45' AC
0.33' AB



TYPICAL CROSS SECTIONS

NO SCALE

X-1

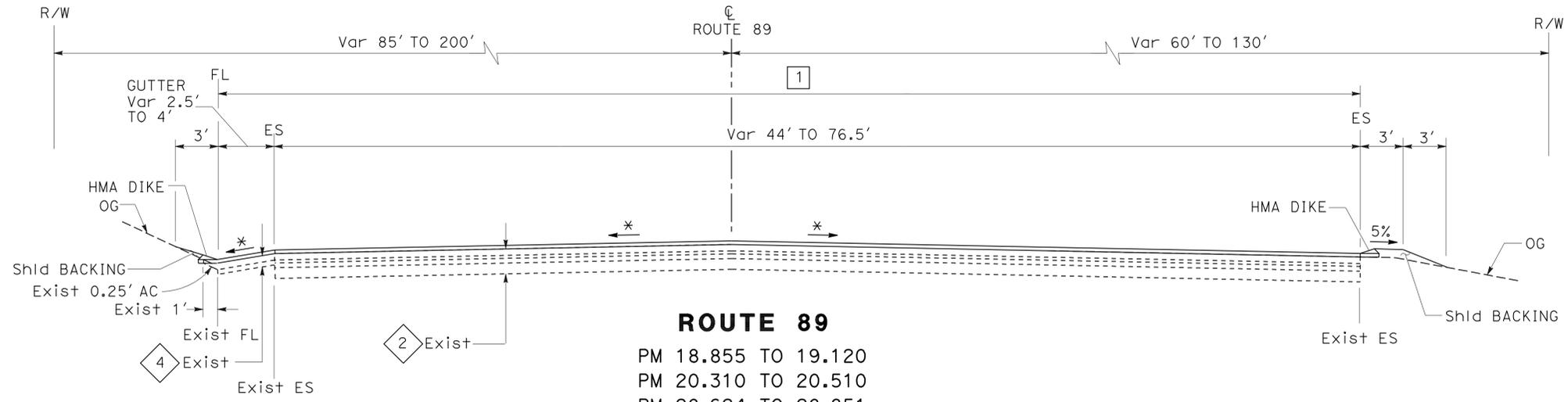
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - 03-DIVISION OF ENGINEERING
 FUNCTIONAL SUPERVISOR: MOHAMMAD U. SADIO
 JERRY CAGLE (DESIGNED BY), SHAKER BALKIS (CHECKED BY)
 REVISIONS: REVISED BY, DATE REVISED



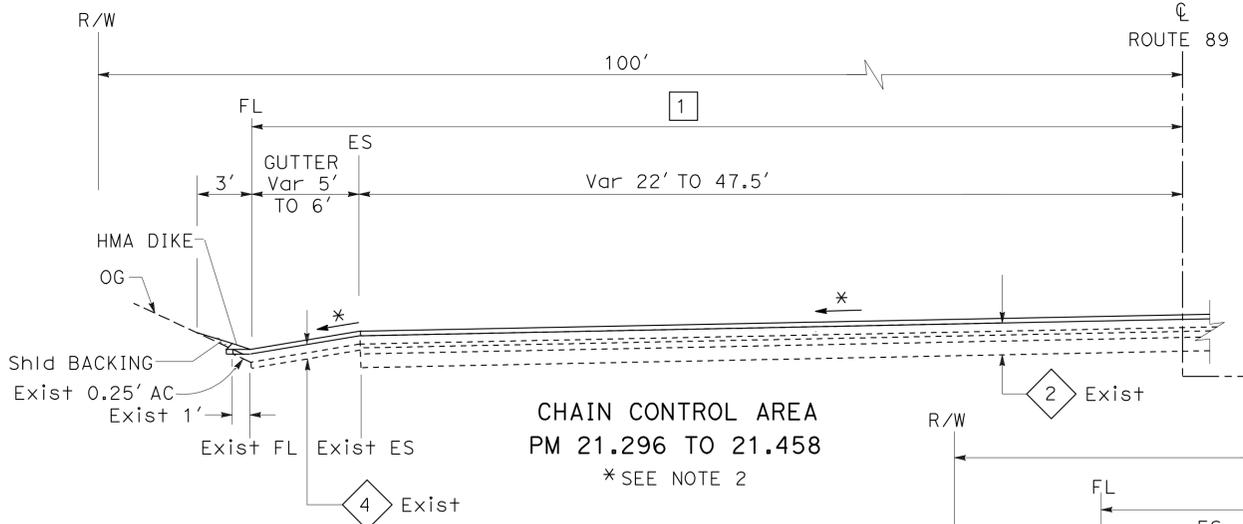
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Pla	89	13.7/21.7	3	47

<i>Gerald R. Cagle</i> 8-26-11 REGISTERED CIVIL ENGINEER DATE	
1-9-12 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>	

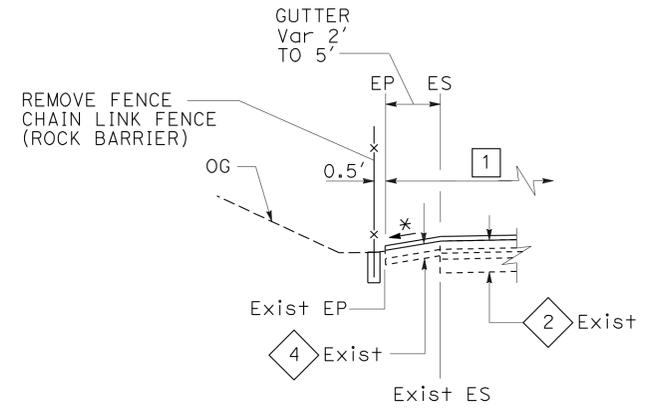
REGISTERED PROFESSIONAL ENGINEER
GERALD R. CAGLE
 No. 52121
 Exp. 12-31-12
 CIVIL
STATE OF CALIFORNIA



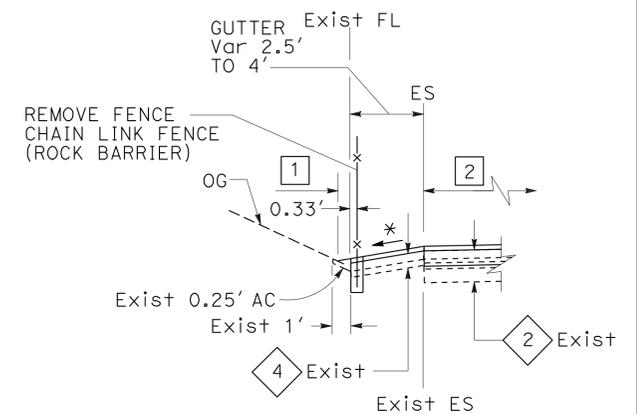
ROUTE 89
 PM 18.855 TO 19.120
 PM 20.310 TO 20.510
 PM 20.624 TO 20.851
 PM 21.496 TO 21.677
 *SEE NOTE 2



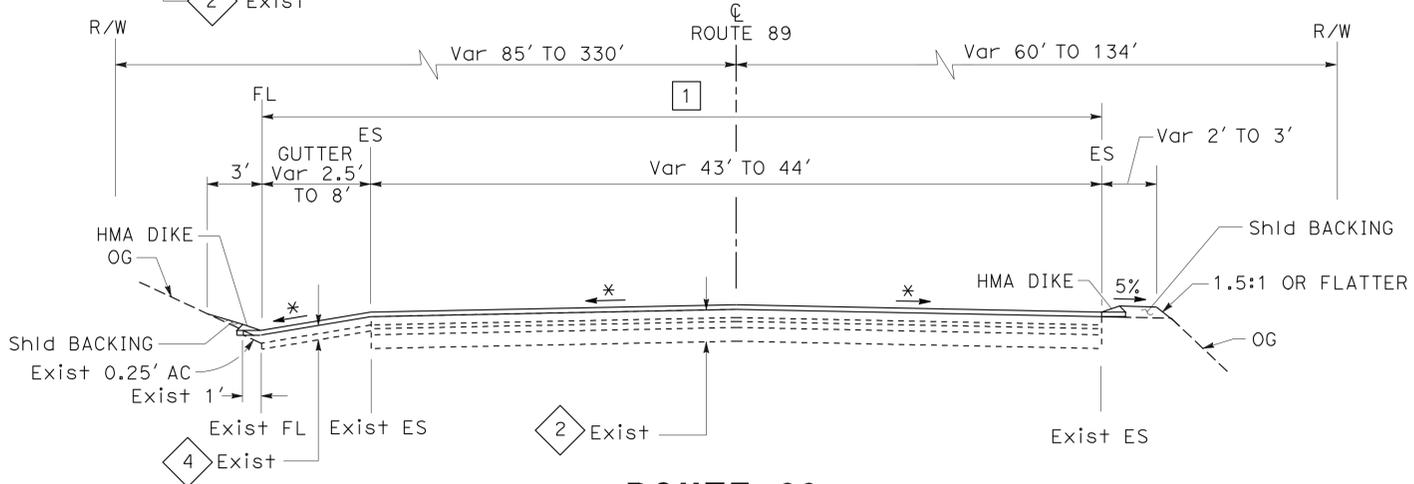
CHAIN CONTROL AREA
 PM 21.296 TO 21.458
 *SEE NOTE 2



PM 18.211 TO 18.297
 *SEE NOTE 2



PM 17.215 TO 17.320
 *SEE NOTE 2



ROUTE 89
 PM 18.000 TO 18.855
 PM 19.120 TO 20.310
 PM 20.510 TO 20.624
 PM 20.851 TO 21.496
 *SEE NOTE 2

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

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - 03-DIVISION OF ENGINEERING
 Caltrans
 REVISIONS: 00-00-00 DATE PLOTTED => 12-JAN-2012 TIME PLOTTED => 13:56
 REVISIONS: 00-00-00 DATE PLOTTED => 12-JAN-2012 TIME PLOTTED => 13:56

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - 03-DIVISION OF ENGINEERING

FUNCTIONAL SUPERVISOR: MOHAMMAD U. SADIO

REVISOR: SHAKER BALKIS, JERRY CAGLE

DESIGNER: SHAKER BALKIS, JERRY CAGLE

CHECKER: SHAKER BALKIS, JERRY CAGLE

NOTES:

- SEE STANDARD PLAN RSP A88A AND A88B FOR CURB RAMP DETECTABLE WARNING SURFACE DETAILS NOT SHOWN.
- EXACT LOCATION AND WIDTH OF THE ISLAND PASSAGEWAY DETECTABLE WARNING SURFACE TO BE DETERMINED BY THE ENGINEER.
- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

ABBREVIATION:

CFIPR - COLD FOAM IN-PLACE RECYCLING

LEGEND:

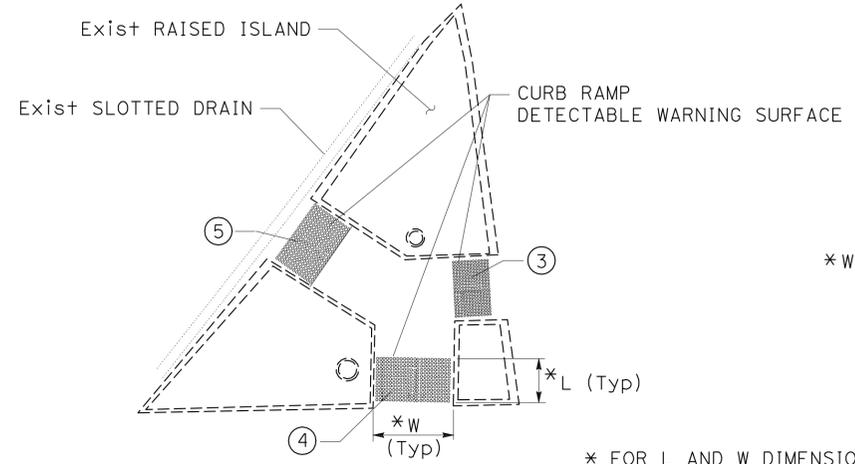
- Exist TRAFFIC SIGNAL
- DETECTABLE WARNING SURFACE NUMBER
- STRUCTURAL SECTION (SEE TYPICAL SECTIONS)
- COLD PLANE AC PAVEMENT (CFIPR MATERIAL) OR COLD PLANE AC PAVEMENT
- DIRECTION OF TRAVEL

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Plca	89	13.7/21.7	4	47

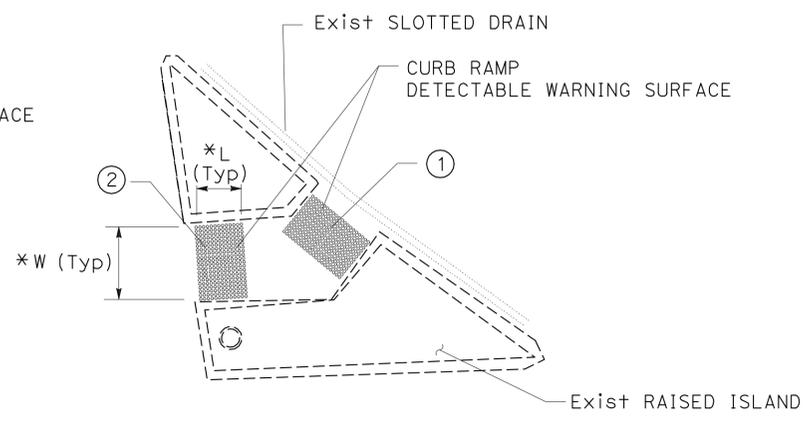
REGISTERED CIVIL ENGINEER: GERALD R. CAGLE, No. 52121, Exp. 12-31-12

PLANS APPROVAL DATE: 1-9-12

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.



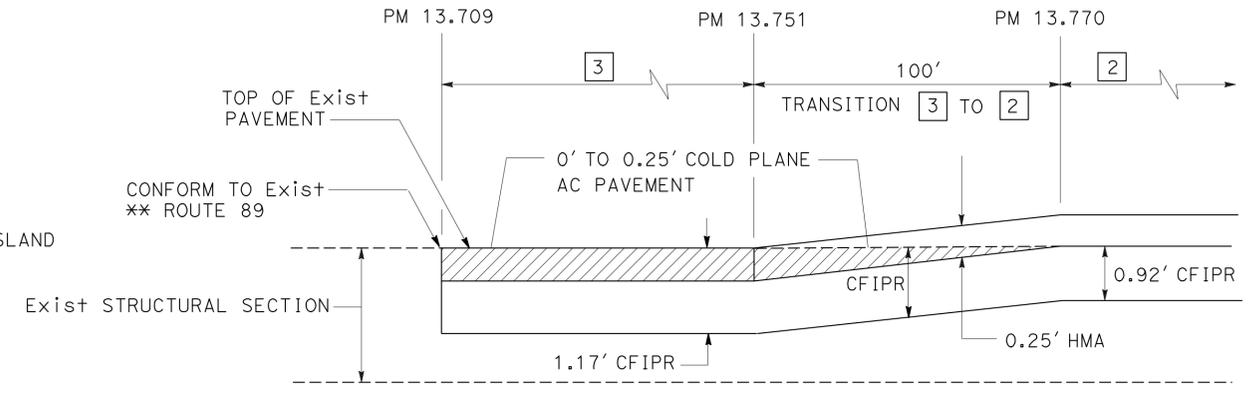
DETAIL A



DETAIL B

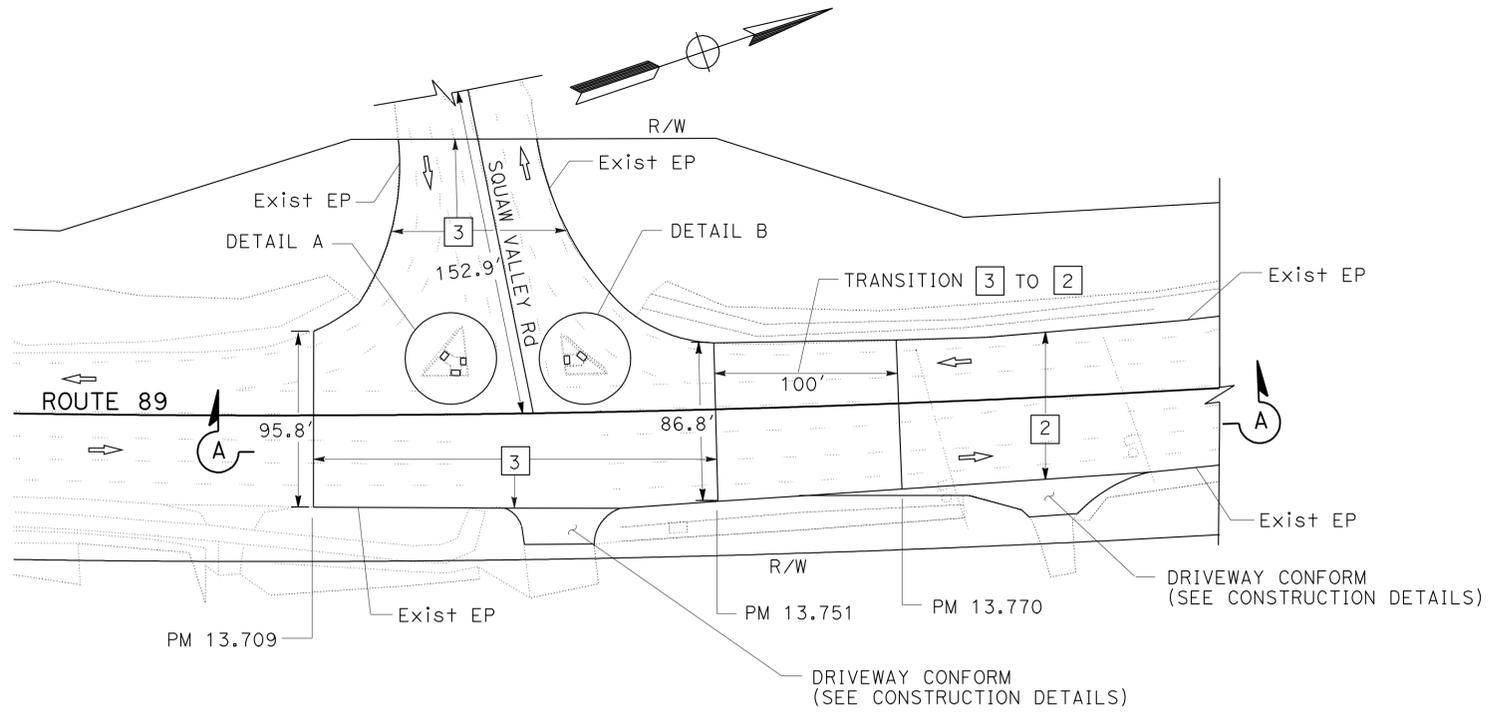
* FOR L AND W DIMENSIONS, SEE SUMMARY OF QUANTITIES SHEETS

ISLAND PASSAGEWAY DETECTABLE WARNING SURFACE

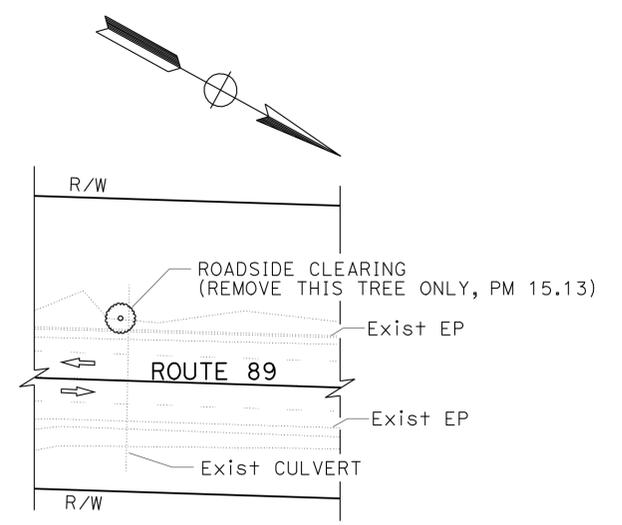


SECTION A-A

** SQUAW VALLEY ROAD CONFORM SIMILAR



ROUTE 89/SQUAW VALLEY ROAD INTERSECTION



REMOVE TREE

CONSTRUCTION DETAILS

NO SCALE

C-1

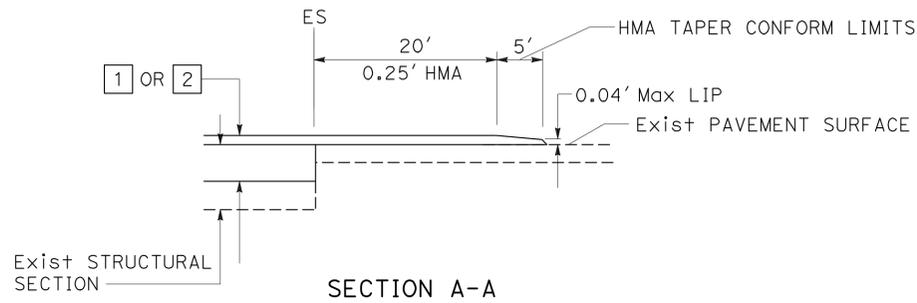
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Plā	89	13.7/21.7	5	47

<i>Gerald R. Cagle</i>	8-26-11
REGISTERED CIVIL ENGINEER	DATE
1-9-12	
PLANS APPROVAL DATE	

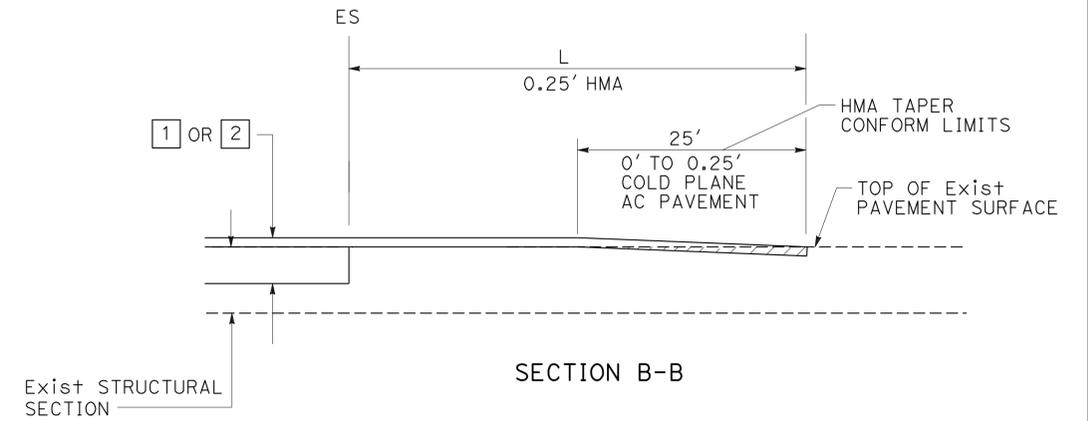
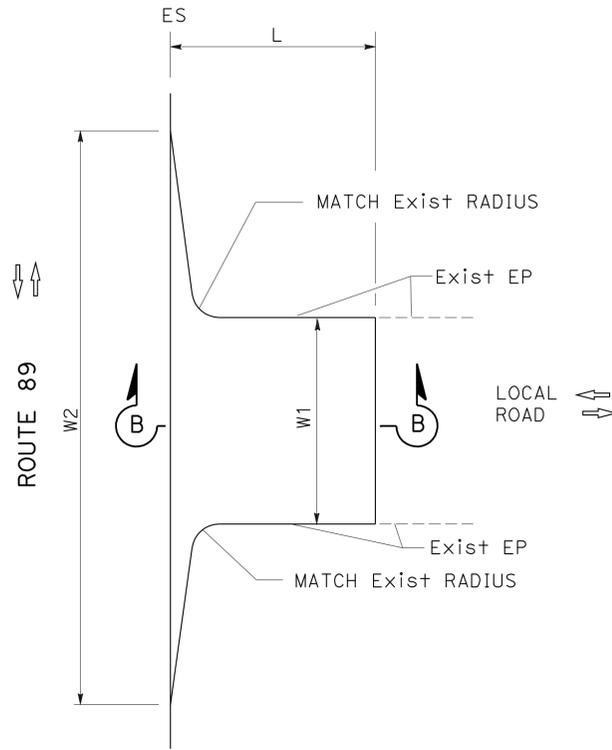
REGISTERED PROFESSIONAL ENGINEER	GERALD R. CAGLE
No. 52121	Exp. 12-31-12
CIVIL	

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

NOTE (THIS SHEET ONLY):
FOR W1, W2 AND L DIMENSIONS, SEE SUMMARY OF QUANTITIES SHEETS



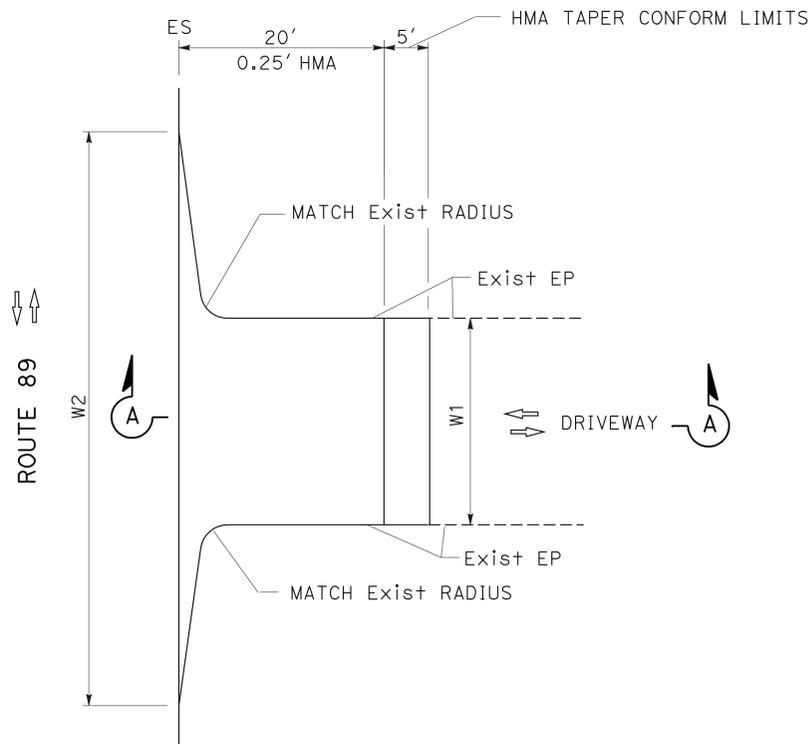
SECTION A-A



SECTION B-B

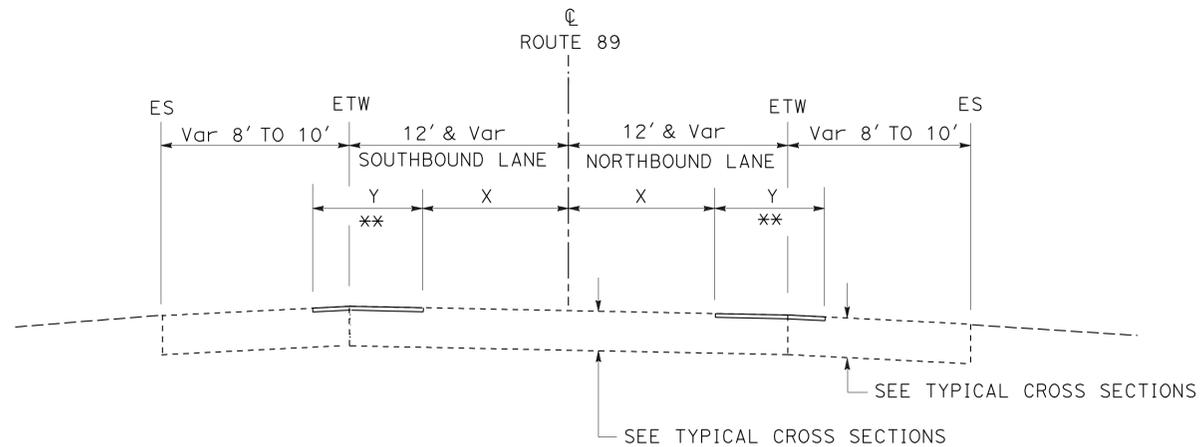
COUNTY ROAD PAVING LIMITS

(AS DIRECTED BY THE ENGINEER)



DRIVEWAY AND LOCAL ROAD PAVING LIMITS

(AS DIRECTED BY THE ENGINEER)



- X OFFSET FROM CENTERLINE.
- Y WIDTH OF REPLACE AC SURFACING.
- ** REMOVE 0.25' Exist AC AND REPLACE WITH 0.25' HOT MIX ASPHALT.

REPLACE AC SURFACING

(FOR X AND Y DIMENSIONS AND LOCATIONS OF REPLACE AC SURFACING, SEE SUMMARY OF QUANTITIES SHEETS)

CONSTRUCTION DETAILS

NO SCALE

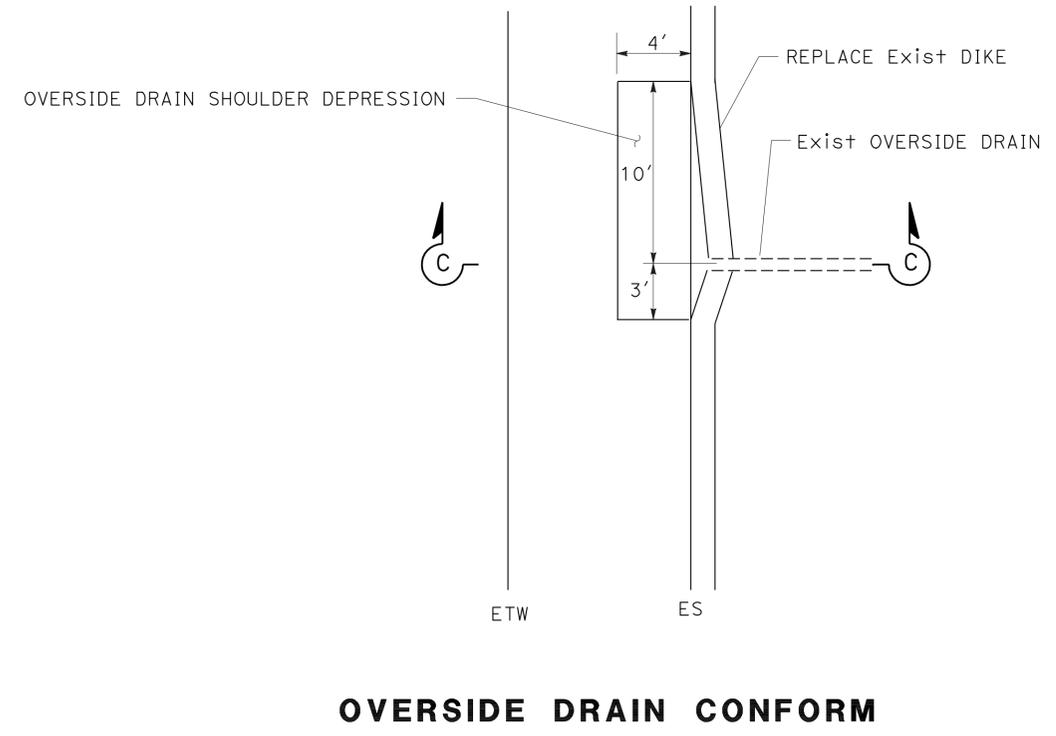
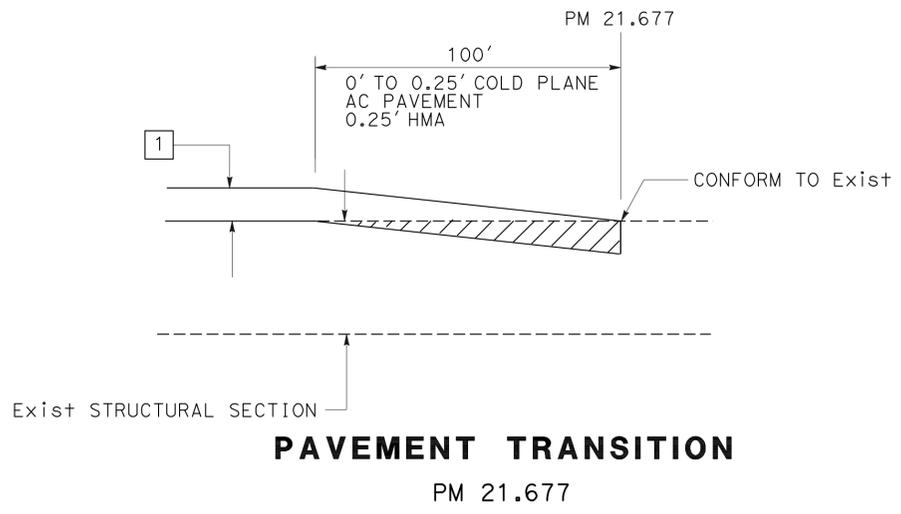
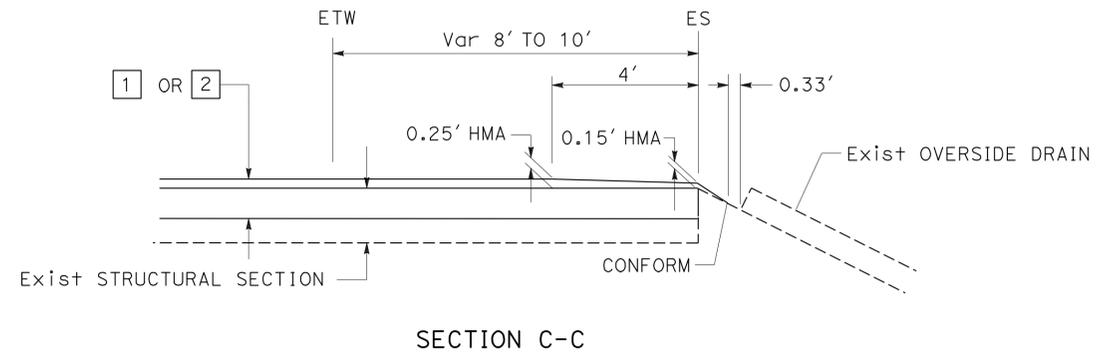
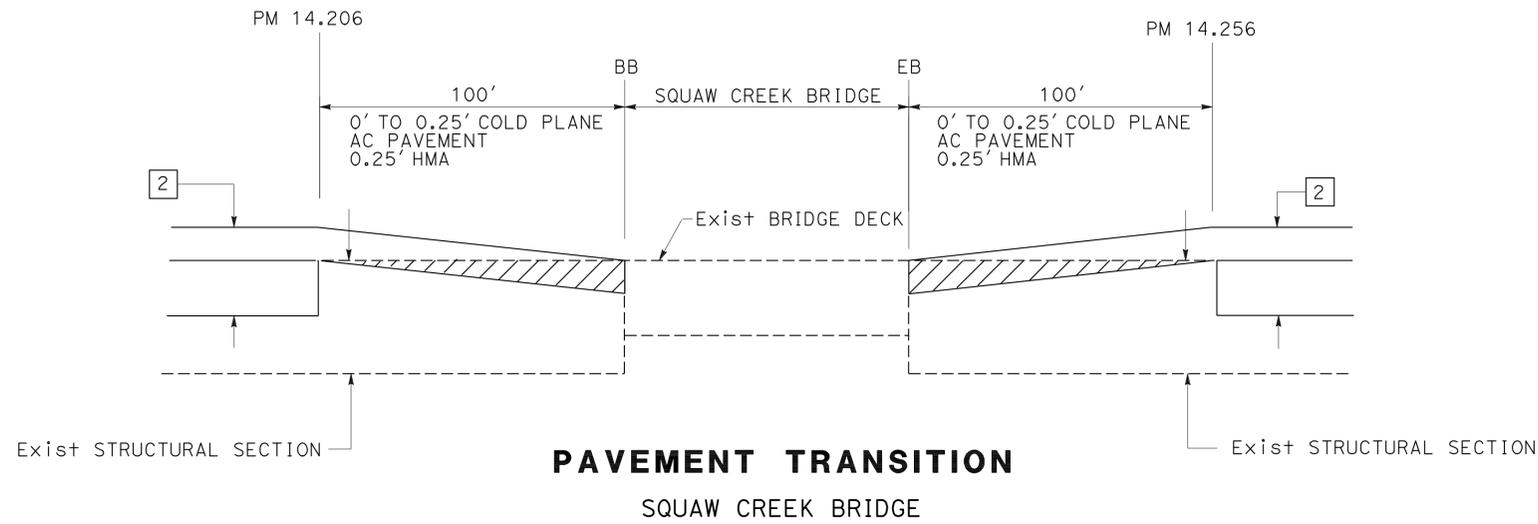
C-2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Plq	89	13.7/21.7	6	47

<i>Gerald R. Cagle</i>	8-26-11
REGISTERED CIVIL ENGINEER	DATE
1-9-12	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER	GERALD R. CAGLE
No. 52121	Exp. 12-31-12
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.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - 03-DIVISION OF ENGINEERING

Caltrans

FUNCTIONAL SUPERVISOR: MOHAMMAD U. SADIO

DESIGNED BY: SHAKER BALKIS

CHECKED BY: JERRY CAGLE

REVISOR: SHAKER BALKIS

DATE: JERRY CAGLE

REVISIONS:

NO.	DESCRIPTION	DATE

USERNAME => s121614
DGN FILE => 0300020255ga003.dgn

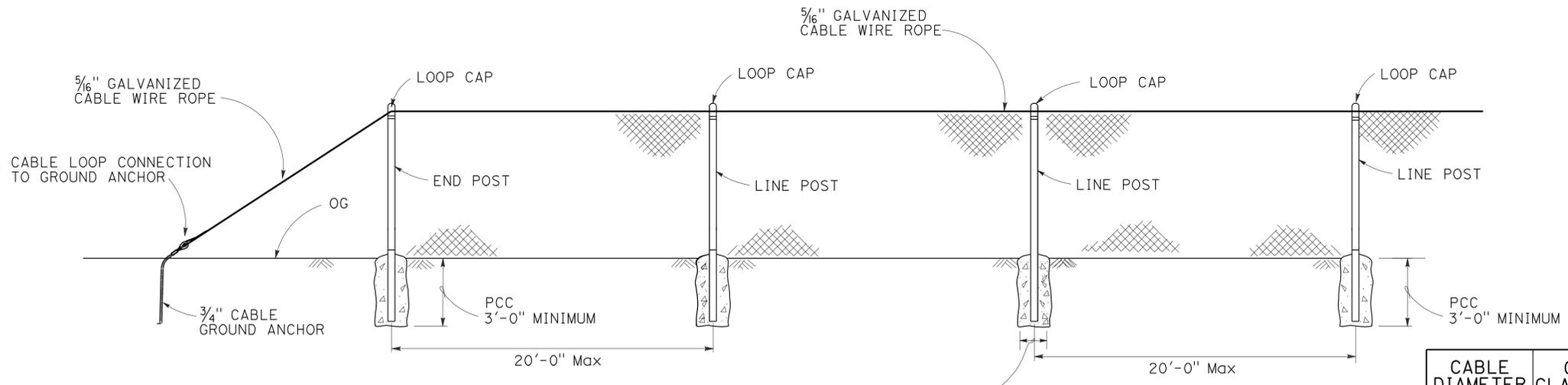


UNIT 0322

CONSTRUCTION DETAILS
NO SCALE
C-3

PROJECT NUMBER & PHASE: 03000202551

LAST REVISION: 00-00-00 DATE PLOTTED => 13-JAN-2012 TIME PLOTTED => 07:47

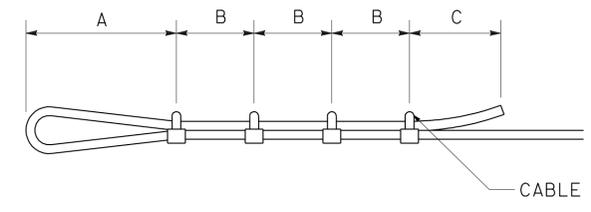


TYPICAL CABLE CLAMP TABLE

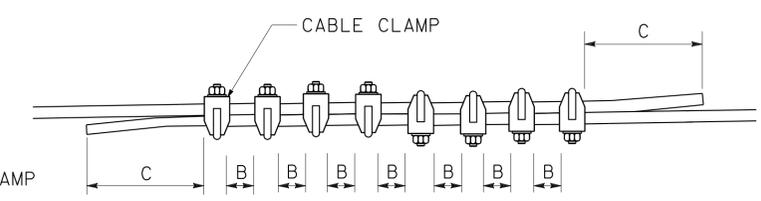
CABLE DIAMETER	CABLE CLAMP SIZE	CABLE CLAMP QUANTITY		A	B	C	TORQUE REQUIRED
		AA	BB				
5/16	5/16	3	6	5	5	5	30
1/2	1/2	4	8	7	7	7	65
5/8	5/8	4	8	9	9	9	95
3/4	3/4	5	10	11	11	11	130

NOT LESS THAN 3 TIMES MAXIMUM CROSS SECTION OF POST WITH MINIMUM OF 8"

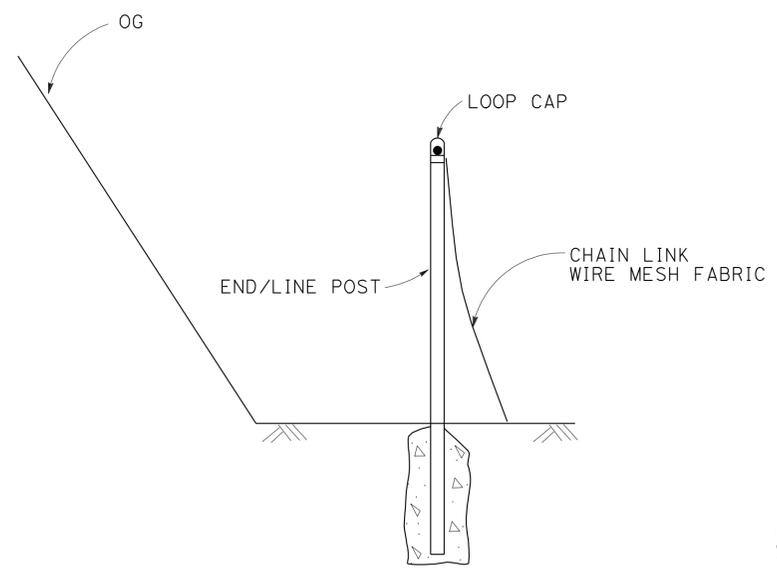
CHAIN LINK POST INSTALLATION



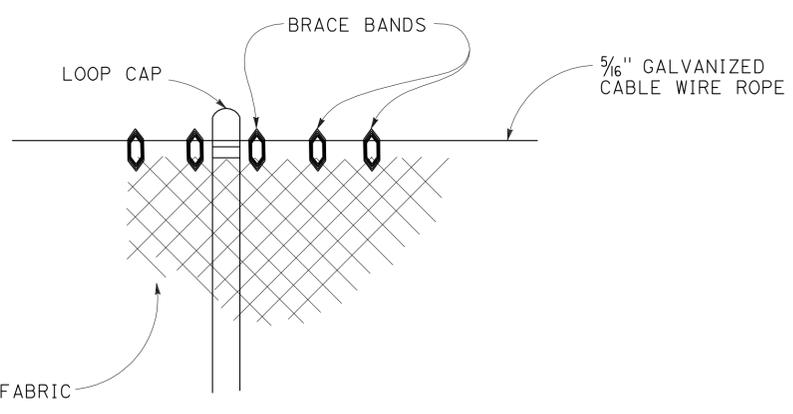
CABLE LOOP DETAIL



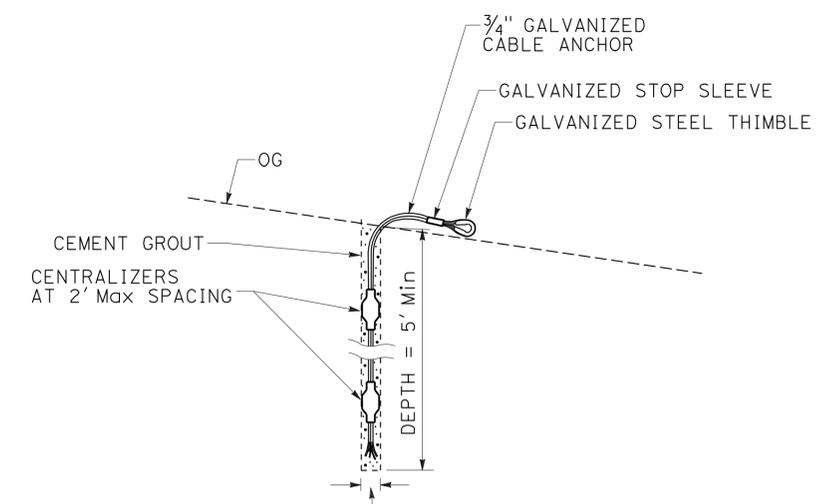
CABLE SPLICE DETAIL



CHAIN LINK FENCE CROSS SECTION



CHAIN LINK MESH CONNECTION DETAIL



CABLE GROUND ANCHOR DETAIL

NOTES:

- CHAIN LINK FENCE (ROCK BARRIER) TO BE PLACED AS SHOWN IN THE TYPICAL CROSS SECTIONS AND AS DIRECTED BY THE ENGINEER.
- SECTIONS SHOWN IN THE TABLES MUST ALSO COMPLY WITH THE STRENGTH REQUIREMENTS AND OTHER PROVISIONS OF THE SPECIFICATIONS.
- OTHER SECTIONS WHICH COMPLY WITH THE STRENGTH REQUIREMENTS AND OTHER PROVISIONS OF THE SPECIFICATIONS MAY BE USED ON APPROVAL OF THE ENGINEER.
- CHAIN LINK WIRE MESH FABRIC SHALL BE CONNECTED TO THE 5/16" CABLE VIA BRACE BANDS ONLY.
- MAXIMUM SPACING OF BRACE BANDS FOR CONNECTION OF THE MESH TO THE 5/16" CABLE SHALL BE 8".
- EXCESS MESH SHALL BE DRAPED ON THE GROUND BETWEEN THE FENCE POSTS AND THE HIGHWAY.

MEMBER DIMENSIONS

FENCE HEIGHT	MESH HEIGHT	LINE POSTS		END POSTS
		ROUND ID	ROUND ID	ROUND ID
6'	8'	2"	2"	2 1/2"

CHAIN LINK FENCE (ROCK BARRIER)

CONSTRUCTION DETAILS

NO SCALE

C-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - 03-DIVISION OF ENGINEERING
 Caltrans
 REVISIONS: 00-00-00 TIME PLOTTED => 12-JAN-2012 13:58

STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN LETTER	SIGN CODE		PANEL SIZE	SIGN MESSAGE	NUMBER OF POST AND SIZE	NUMBER OF SIGNS
	FEDERAL	CALIFORNIA				
(A)	W20-1	C23	48" x 48"	ROAD WORK AHEAD	1 - 6" x 6"	5
(B)	G20-2	C14	36" x 18"	END ROAD WORK	1 - 4" x 4"	7
(C)	G20-1 [Spec] (9)		60" x 30"	ROAD WORK NEXT 9 MILES	2 - 4" x 6"	2
(D)		C40(Mod)	48" x 36"	TRAFFIC FINES DOUBLED IN WORK ZONES	1 - 4" x 6"	2

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

LEGEND:

- (X) CONSTRUCTION AREA SIGN LETTER
- ┆ SIGN - SINGLE POST
- ┆┆ SIGN - TWO POSTS

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Plac	89	13.7/21.7	8	47

Jeffrey Jewett 8-26-11
 REGISTERED CIVIL ENGINEER DATE
 1-9-12
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER

Jeffrey S. Jewett

No. 49233

Exp. 9-30-12

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.

SIGN DETAILS

(C) G20-1 [Spec] (9)

ROAD WORK

NEXT 9 MILES

6" C SERIES LETTERS

60"x30"

RETROREFLECTIVE ORANGE BACKGROUND WITH BLACK LEGEND AND BORDER.

(D) C40(Mod) <CA>

TRAFFIC FINES

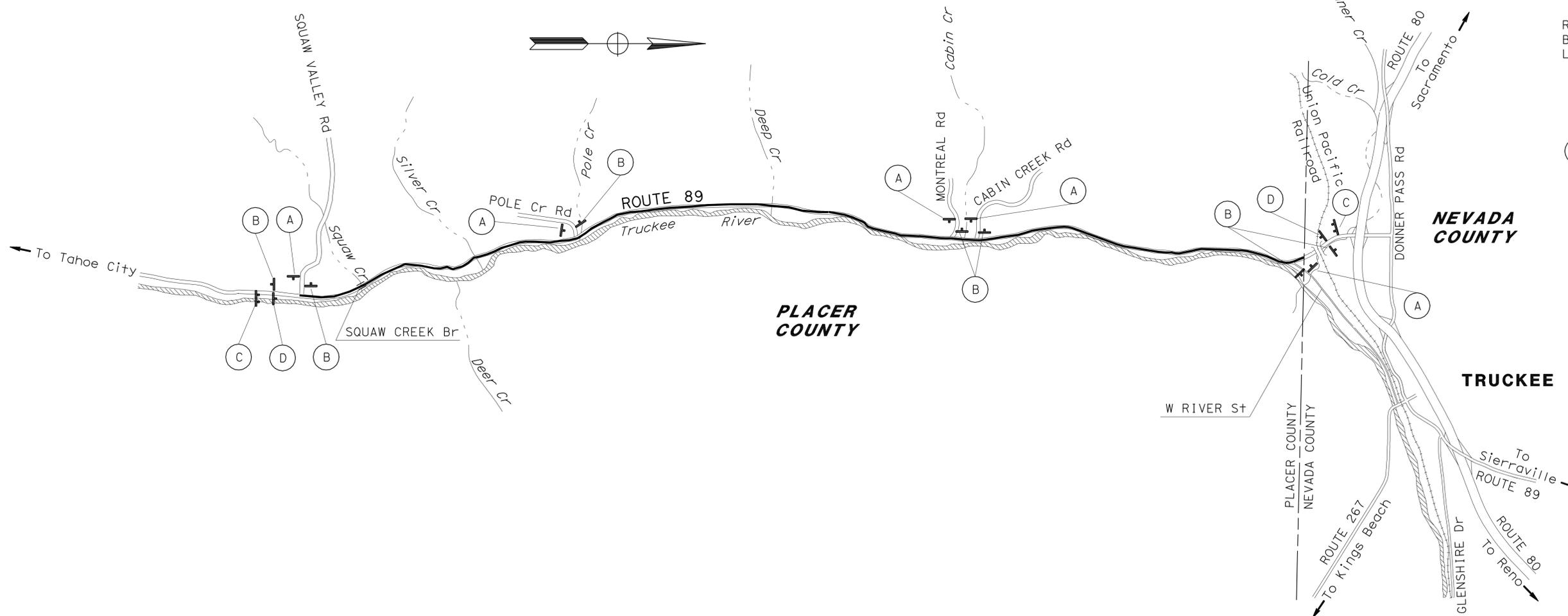
DOUBLED IN

WORK ZONES

4" D SERIES LETTERS

48"x36"

RETROREFLECTIVE WHITE BACKGROUND WITH BLACK LEGEND AND BORDER.



CONSTRUCTION
AREA SIGNS

NO SCALE

CS-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 TRAFFIC
 FUNCTIONAL SUPERVISOR: SERGIO ACEVES
 CALCULATED/DESIGNED BY: CHUCK COOK
 CHECKED BY: JOHN KEBER
 REVISED BY: _____ DATE REVISED: _____

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

USERNAME => s114926
 DGN FILE => 03000202551a001.dgn



UNIT 0390

PROJECT NUMBER & PHASE 03000202551

BORDER LAST REVISED 7/2/2010

LAST REVISION: DATE PLOTTED => 12-JAN-2012
 08-18-11 TIME PLOTTED => 13:59

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Pla	89	13.7/21.7	9	47

Jeffrey S. Jewett 8-26-11
 REGISTERED CIVIL ENGINEER DATE

1-9-12
 PLANS APPROVAL DATE

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

REGISTERED PROFESSIONAL ENGINEER
 Jeffrey S. Jewett
 No. 49233
 Exp. 9-30-12
 CIVIL
 STATE OF CALIFORNIA

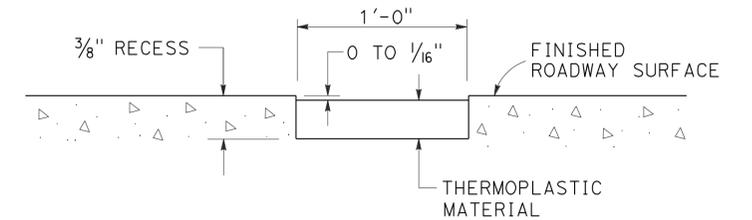
4" THERMOPLASTIC TRAFFIC STRIPE (RECESSED)

DETAIL NUMBER	LINEAR FEET
18	10,016
21	45,750
31	400
TOTAL	56,166

4" TWO-COMPONENT PAINT TRAFFIC STRIPE

DETAIL NUMBER	LINEAR FEET
21	622
27B	82,924
27C	865
TOTAL	84,411

NOTE: DETAIL 21 FOR CENTERLINE ON COUNTY ROADS.



RECESSING DETAIL
(FOR LIMIT LINE AND CROSSWALK)
NO SCALE

4" THERMOPLASTIC TRAFFIC STRIPE (RECESSED, BROKEN 36 - 12)

DETAIL NUMBER	LINEAR FEET
5	11,774
11	1,793
18	10,016
31	400
TOTAL	23,983

TWO-COMPONENT PAINT PAVEMENT MARKING

DESCRIPTION	NUMBER	SQUARE FEET
TYPE I (24') ARROW	3	93
TYPE II ARROW	1	45
TYPE III ARROW	9	378
TYPE VI ARROW	5	210
"SIGNAL"	3	96
"AHEAD"	3	93
"STOP"	5	110
TOTAL		1,025

THERMOPLASTIC PAVEMENT MARKING (RECESSED)

DESCRIPTION	NUMBER	SQUARE FEET
LIMIT LINE	7	239
CROSSWALK	6	769
TOTAL		1,008

8" THERMOPLASTIC TRAFFIC STRIPE (RECESSED)

DETAIL NUMBER	LINEAR FEET
38A	1,970
TOTAL	1,970

8" TWO-COMPONENT PAINT TRAFFIC STRIPE

DETAIL NUMBER	LINEAR FEET
38A	597
TOTAL	597

NOTE: DETAIL 38A FOR CHANNELIZING LINES ON COUNTY ROADS.

OBJECT MARKER

DESCRIPTION	OBJECT MARKER (TYPE L-1)	
	FNBT (EACH)	FSBT (EACH)
PM 13.78	1	
PM 15.82	1	
PM 18.96	1	
PM 18.98		1
SUBTOTAL	3	1
TOTAL	4	

NOTE: EXACT OBJECT MARKER LOCATIONS TO BE DETERMINED BY THE ENGINEER.

PAVEMENT DELINEATION QUANTITIES

PDQ-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 FUNCTIONAL SUPERVISOR: SERGIO ACEVES
 CHECKED BY: JEFF JEWETT
 DESIGNED BY: CHUCK COOK
 REVISIONS: 18, 21, 31, 38A

POST MILES ARE APPROXIMATE, EXACT LOCATION TO BE DETERMINED BY THE ENGINEER.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Pla	89	13.7/21.7	10	47

Gerald R. Cagle 8-26-11
 REGISTERED CIVIL ENGINEER DATE

1-9-12
 PLANS APPROVAL DATE

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

ROADWAY QUANTITY SUMMARY

PM	HOT MIX ASPHALT	TACK COAT	COLD FOAM IN-PLACE RECYCLING	STABILIZING AGENT (FOAMED ASPHALT)	STABILIZING AGENT (CEMENTITIOUS MATERIAL)	COLD PLANE ASPHALT CONCRETE PAVEMENT	PLACE HMA (Misc AREA)	ASPHALTIC EMULSION		
									FROM	TO
*	13.709	13.751	575.3		3,526.9	62.7	50.1	3,526.9		2.2
	13.751	13.770	152.7		936.2	14.9	11.9	936.2		0.5
	13.770	13.948	966.9		6,316.9	88.3	70.6			3.7
	13.948	14.076	463.8		2,843.1	39.7	31.8			1.7
	14.076	14.206	616.3		3,733.7	52.2	41.7			2.2
	14.206	14.225	90.6	0.2				481.0		
	14.237	14.256	80.7	0.1				497.0		
	14.256	14.516	1,123.8		6,686.1	93.4	74.7			4.0
	14.516	14.989	2,066.6		12,384.1	173.0	138.4			7.4
	14.989	15.463	2,020.9		12,210.4	170.6	136.5			7.2
	15.463	15.936	2,007.3		12,070.3	168.7	134.9			7.2
	15.936	16.410	1,971.3		12,084.4	168.8	135.1			7.0
	16.410	16.883	1,972.1		12,089.2	168.9	135.1			7.1
	16.883	17.357	1,997.1		12,242.8	171.1	136.8			7.1
	17.357	17.830	1,989.8		12,198.2	170.4	136.4			7.1
	17.830	18.039	886.0		5,432.9	75.9	60.7			3.2
	18.039	18.777	3,068.0	5.5						
	18.777	19.251	2,224.7	4.0						
	19.251	19.724	1,988.7	3.6						
	19.724	20.198	1,576.7	2.8						
	20.198	20.671	2,084.5	3.7						
	20.671	21.145	2,110.3	3.8						
	21.145	21.575	2,175.0	3.9						
	21.575	21.604	186.0	0.3						
	21.604	21.658	301.6	0.5						
	21.658	21.677	102.0	0.2				614.0		
	FROM PLACE HMA (Misc AREA) GUTTER		1,953.6	3.49					11,978	
	FROM METAL BEAM GUARD RAILING		1.2	0.01						
	FROM COUNTY ROAD PAVEMENT		311.4	0.56				648.0	1,909	
	FROM DRIVEWAY AND LOCAL Rd PAVEMENT		1,218.7	2.32					7,952	
	FROM PLACE HMA DIKE (TYPE E)		729.82	1.2						
	FROM PLACE HMA (Misc AREA) OVERSIDE DRAIN CONFORM		10.27	0.02					63.08	
TOTAL			39,023.69	36.20	114,755.1	1,618.7	1,294.9	6,703.1	21,902.08	67.6

* INCLUDES SQUAW VALLEY Rd LIMITS

SHOULDER BACKING

PM	TON	TON	
			FROM
13.726	13.960	51	61
13.960	14.269	43	14
14.269	14.563	16	84
14.563	14.833	27	76
14.833	15.158	33	65
15.158	15.446	44	78
15.446	15.731	27	54
15.731	16.031	38	44
16.031	16.334	22	73
16.334	16.622	27	76
16.622	16.906	22	82
16.906	17.189	24	71
17.189	17.455	34	76
17.455	17.766	22	68
17.766	17.936	49	49
17.936	18.063	36	36
18.063	18.357	49	79
18.357	18.639	54	65
18.639	18.921	46	65
18.921	19.213	38	77
19.213	19.516	44	73
19.516	19.811	41	65
19.811	20.099	44	67
20.099	20.381	41	76
20.381	20.668	16	69
20.668	20.967	41	65
20.967	21.252	49	60
21.252	21.537	54	68
21.537	21.675	19	19
SUBTOTAL		1,051	1,855
TOTAL		2,906	

REPLACE AC SURFACING QUANTITIES

DIRECTION	PM	LENGTH	DIMENSIONS **		REPLACE AC SURFACING	
			OFFSET	WIDTH		
			X	Y		
NB/SB	FROM	TO	FT	FT	FT	CY
SB	21.516	21.596	422.4	0	6	23.5
SB	21.496	21.516	105.6	0	12	11.7
SB	21.356	21.366	52.8	12	4	2.0
SB	21.256	21.276	105.6	12	4	3.9
SB	21.206	21.236	158.4	12	20	29.3
SB	21.026	21.056	158.4	12	8	11.7
SB	19.886	19.896	52.8	12	8	3.9
SB	19.836	19.846	52.8	12	8	3.9
SB	19.006	19.016	52.8	12	8	3.9
SB	19.016	19.036	105.6	0	20	19.6
SB	19.036	19.136	528.0	12	8	39.1
SB	18.276	18.686	2,164.8	15	5	100.2
SB	18.936	19.016	422.4	0	12	46.9
NB	18.566	18.646	422.4	15	5	19.6
NB	18.736	18.926	1,003.2	15	5	46.4
NB	19.016	19.156	739.2	15	5	34.2
NB	19.356	19.446	475.2	15	5	22.0
NB	19.696	19.706	52.8	15	5	2.4
NB	19.736	19.746	52.8	6	14	6.8
NB	20.866	20.870	211.2	15	5	9.8
NB	21.096	21.196	528.0	15	5	24.4
NB	21.216	21.486	1,425.6	15	5	66.0
NB	21.346	21.469	792.0	0	4	29.3
NB	21.536	21.646	581.0	0	12	64.5
TOTAL						625.0

** SEE CONSTRUCTION DETAILS SHEETS

REMOVE FENCE

DIRECTION	PM		LENGTH
	FROM	TO	
NB/SB			LF
SB	17.215	17.320	551
SB	18.211	18.264	280
TOTAL			831

CHAIN LINK FENCE (ROCK BARRIER)

DIRECTION	PM		LENGTH
	FROM	TO	
NB/SB			LF
SB	17.215	17.320	551
SB	18.211	18.297	450
TOTAL			1,001

SUMMARY OF QUANTITIES

Q-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Pla	89	13.7/21.7	11	47

8-26-11
 REGISTERED CIVIL ENGINEER DATE
 1-9-12
 PLANS APPROVAL DATE

GERALD R. CAGLE
 No. 52121
 Exp. 12-31-12
 CIVIL

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

POST MILES ARE APPROXIMATE, EXACT LOCATION TO BE DETERMINED BY THE ENGINEER.

PLACE HMA DIKE (TYPE E)

DIRECTION	PM		LENGTH	HMA
NB/SB	FROM	TO	LF	TON
SB	14.215	14.222	45	1.13
SB	14.238	14.242	24	0.61
SB	14.260	14.326	394	10.03
NB	14.321	14.694	1,971	50.15
SB	14.487	14.511	123	3.14
NB	14.695	14.749	336	8.56
NB	14.751	14.759	40	1.01
SB	14.785	14.853	358	9.10
SB	14.854	14.943	463	11.78
SB	14.950	15.017	350	8.91
SB	15.030	15.207	932	23.73
NB	15.077	15.091	74	1.87
SB	15.256	15.380	654	16.64
NB	15.260	15.423	874	22.23
NB	15.426	15.461	194	4.95
SB	15.473	15.475	12	0.30
NB	15.510	15.524	63	1.60
NB	15.537	15.582	284	7.24
NB	15.583	15.616	205	5.22
NB	15.619	15.639	140	3.56
NB	15.640	15.643	13	0.34
NB	15.684	15.710	137	3.48
SB	15.696	15.730	180	4.58
NB	15.711	15.756	241	6.14
SB	16.123	16.137	73	1.84
SB	16.302	16.329	142	3.60
NB	16.373	16.413	209	5.33
NB	16.416	16.469	158	4.02
SB	16.438	16.469	168	4.28
NB	16.470	16.471	8	0.19
NB	16.579	16.598	102	2.59
SB	16.599	16.702	198	5.05
NB	16.607	16.654	244	6.21
NB	16.661	16.690	171	4.36
NB	16.692	16.694	12	0.31
SB	16.885	16.958	385	9.79
SB	17.173	17.184	62	1.58
SB	17.184	17.229	235	5.97
SB	17.230	17.315	489	12.44
NB	17.235	17.238	17	0.42
NB	17.238	17.453	1,158	29.46
NB	17.484	17.533	264	6.72
NB	17.503	17.524	114	2.89
NB	17.698	17.754	298	7.57
NB	17.755	17.808	283	7.19
NB	17.808	17.831	115	2.92
SB	17.821	17.931	568	14.44
SB	17.939	17.998	311	7.92
NB	18.002	18.081	421	10.71
NB	18.082	18.166	441	11.21
NB	18.168	18.234	351	8.93
SB	18.801	18.880	398	10.13
SB	18.932	18.962	158	4.02
SB	18.978	19.005	147	3.73
SB	19.078	19.204	668	17.01
NB	19.565	19.666	562	14.30
SUBTOTAL			17,037	433.43

PLACE HMA DIKE (TYPE E) (Cont)

DIRECTION	PM		LENGTH	HMA
NB/SB	FROM	TO	LF	TON
SUBTOTAL PREVIOUS COLUMNS			17,037	433.43
SB	19.667	19.773	560	14.25
NB	19.685	19.746	335	8.52
NB	19.749	19.805	323	8.22
NB	19.807	19.810	30	0.77
NB	19.818	19.909	476	12.11
NB	19.909	20.015	607	15.45
NB	20.016	20.072	308	7.85
SB	20.047	20.207	843	21.45
NB	20.074	20.234	857	21.82
SB	20.208	20.268	319	8.11
NB	20.237	20.249	70	1.78
NB	20.250	20.268	92	2.34
SB	20.268	20.345	402	10.23
SB	20.347	20.419	385	9.79
SB	20.420	20.523	542	13.79
SB	20.524	20.660	720	18.33
SB	20.662	20.726	340	8.66
NB	20.901	20.950	258	6.57
SB	20.936	21.004	358	9.12
NB	20.952	21.046	499	12.69
SB	21.007	21.149	756	19.24
NB	21.047	21.088	222	5.65
SB	21.162	21.209	254	6.47
SB	21.222	21.236	82	2.07
NB	21.224	21.283	353	8.99
SB	21.283	21.288	23	0.57
NB	21.291	21.459	880	22.39
SB	21.459	21.503	228	5.80
SB	21.504	21.605	525	13.36
SUBTOTAL DIKE (TYPE E)			28,684	*729.82
TOTAL			28,684	

* FOR TOTAL QUANTITIES, SEE ROADWAY QUANTITY SUMMARY TABLE ON Q-1.

REMOVE ASPHALT CONCRETE DIKE

DIRECTION	PM		LENGTH
NB/SB	FROM	TO	LF
NB	14.321	15.784	7,725
SB	14.215	15.383	6,166
NB	18.039	18.234	1,032
SB	18.801	18.880	418
SB	18.932	18.962	158
SB	18.978	19.005	142
SB	19.078	19.204	670
NB	19.565	19.666	532
SB	19.667	19.773	556
NB	19.685	19.746	323
NB	19.749	19.805	294
NB	19.807	19.810	15
NB	19.818	19.909	480
NB	19.909	20.015	557
NB	20.016	20.072	298
SB	20.047	20.207	844
NB	20.074	20.234	847
SB	20.208	20.268	316
NB	20.237	20.249	65
NB	20.250	20.268	94
SB	20.268	20.345	407
SB	20.347	20.419	382
SB	20.420	20.523	542
SB	20.524	20.660	720
SB	20.662	20.726	336
NB	20.901	20.950	258
SB	20.936	21.004	357
NB	20.952	21.046	493
SB	21.007	21.149	749
NB	21.047	21.088	220
SB	21.162	21.209	248
SB	21.222	21.236	76
NB	21.224	21.283	307
SB	21.283	21.288	21
NB	21.291	21.459	885
SB	21.459	21.503	228
SB	21.504	21.605	535
SB	14.236	14.242	32
TOTAL			28,328

PLACE HMA (Misc AREA) GUTTER

DIRECTION	PM		HMA	AREA	TACK COAT
NB/SB	FROM	TO	TON	SQYD	TON
NB	14.194	14.224	8.0	49	0.01
SB	14.194	14.211	33.9	208	0.06
SB	14.242	14.516	228.8	1,402	0.41
SB	14.516	14.834	135.8	833	0.24
SB	14.950	14.989	7.5	46	0.01
SB	14.989	15.223	104.0	638	0.19
SB	15.254	15.463	111.2	681	0.20
SB	15.463	15.539	31.8	195	0.06
NB	16.088	16.258	120.0	736	0.21
SB	16.078	16.331	72.8	446	0.13
SB	16.383	16.410	12.3	76	0.02
SB	16.599	16.722	70.9	435	0.13
SB	16.798	16.883	33.0	202	0.06
SB	16.883	16.959	46.8	287	0.08
SB	17.224	17.314	42.2	259	0.08
SB	17.830	18.001	87.8	538	0.16
SB	18.190	18.209	9.1	56	0.02
SB	18.209	18.314	91.4	560	0.16
SB	18.701	18.777	49.5	304	0.09
SB	18.777	18.880	33.9	208	0.06
SB	19.156	19.204	21.8	134	0.04
SB	19.667	19.724	28.0	171	0.05
SB	19.724	19.773	23.4	144	0.04
SB	20.129	20.198	18.1	111	0.03
SB	20.198	20.671	215.2	1,319	0.38
SB	20.671	20.728	21.3	131	0.04
SB	20.936	21.149	78.1	479	0.14
SB	21.164	21.575	209.8	1,286	0.38
SB	21.575	21.604	7.2	44	0.01
SUBTOTAL			*1,953.6	*11,978	* 3.49

* FOR TOTAL QUANTITIES, SEE ROADWAY QUANTITY SUMMARY TABLE ON Q-1.

METAL BEAM GUARD RAILING

LOCATION			REMOVE METAL BEAM GUARD RAILING	(N) REMOVE TERMINAL SYSTEM	(N) REMOVE END ANCHOR ASSEMBLY	TRANSITION RAILING (TYPE WB)	METAL BEAM GUARD RAILING (WOOD POST)	ALTERNATIVE FLARED TERMINAL SYSTEM	END ANCHOR ASSEMBLY (TYPE SFT)	ALTERNATIVE IN-LINE TERMINAL SYSTEM	PLACE HMA DIKE (TYPE F)	HMA	REMARK
PM	DIR	FROM											
13.768	13.777	NB					50	1	1				11B
13.986	14.225	NB	1,266	1		1	1,187	1		1			12A
14.241	14.253	NB	63	1		1	38	1	1				12BB
15.832	15.922	NB	476	2			400	2					11E
18.967	18.995	NB	150	1	1		100	1	1				16B
18.978	18.997	SB	102	2			13	1		1			11H
14.240	14.252	SB	84	1		1	46			1	71	1.2	12BB
14.210	14.225	SB	73	1		1	16	1					12A
TOTAL			2,214	9	1	4	1,850	8	3	3	71	*1.2	

* FOR TOTAL QUANTITIES, SEE ROADWAY QUANTITY SUMMARY TABLE ON Q-1.
(N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

SUMMARY OF QUANTITIES Q-2

DRIVEWAY AND LOCAL ROAD PAVEMENT ***

POST MILES ARE APPROXIMATE, EXACT LOCATION TO BE DETERMINED BY THE ENGINEER.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Pla	89	13.7/21.7	12	47

Gerald R. Cagle 8-26-11
 REGISTERED CIVIL ENGINEER DATE

1-9-12
 PLANS APPROVAL DATE

GERALD R. CAGLE
 No. 52121
 Exp. 12-31-12
 CIVIL

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

PM	DIRECTION	W1	W2	PLACE HMA (Misc AREA)	HMA
	NB/SB	LF	LF	SQYD	TON
13.785	NB	21	98	122	21.9
13.732	NB	38.5	64	123	18.2
13.815	SB	47	96	182	27.3
13.932	NB	16	70	102	15.7
14.259	NB	24	63	110	20.0
14.756	NB	22	40	74	14.0
14.772	SB	20	45	110	10.6
14.961	NB	32	132	239	36.9
15.027	SB	37	67	135	25.3
15.122	NB	70	88	214	31.7
15.175	NB	13	29	52	7.9
15.217	SB	28	98	187	28.8
15.221	NB	21	70	106	19.2
15.245	SB	27	80	150	23.0
15.468	NB	20	49	81	12.3
15.484	NB	25	52	103	15.6
15.531	NB	28	77	160	24.2
15.595	SB	20	45	83	12.6
15.624	NB	21	35	74	11.1
15.647	NB	27	41	91	13.5
15.665	SB	24	81	117	18.1
16.046	NB	27	89	149	22.9
16.164	NB	64	124	201	30.5
17.607	NB	72	121	271	40.5
17.639	NB	86	136	305	45.8
18.315	NB	22	98	155	24.0
16.078	NB	28	120	175	27.3
16.112	SB	24	55	92	14.0
16.206	NB	30	53	103	15.5
16.255	NB	16	30	55	8.2
16.573	NB	33	63	128	19.4
16.603	NB	34	47	104	15.3
16.662	NB	20	61	112	17.6
16.770	NB	20	27	63	9.5
16.845	NB	13	24	45	6.8
16.978	SB	27	60	103	15.5
17.004	NB	30	53	107	16.2
17.148	SB	16	62	110	17.3
17.203	NB	27	69	118	18.0
17.466	NB	20	40	67	10.0
17.475	NB	38	61	123	18.3
17.499	SB	45	77	159	23.9
17.551	NB	20	43	83	12.6
17.618	SB	30	48	103	15.5
18.626	SB	25	76	126	19.4
18.635	NB	40	70	131	19.5
18.654	SB	25	50	94	14.2
18.664	NB	17	32	62	9.4
18.673	SB	20	48	91	14.0
18.698	NB	20	28	64	9.6
18.720	NB	12	30	54	8.3
18.747	NB	14	34	56	8.5
18.781	NB	14	34	56	8.5
18.838	NB	12	32	45	6.8
18.891	SB	40	83	165	26.3
18.902	NB	13	37	58	8.9
18.929	NB	62	72	177	26.1
18.929	SB	22	38	73	11.0
18.967	SB	12	37	55	8.5
18.999	NB	10	27	38	5.8
19.535	NB	22	67	103	15.8
19.561	SB	26	54	100	15.1
19.813	NB	20	66	81	12.3
20.398	NB	35	120	177	27.1
20.728	NB	40	117	193	29.3
21.217	SB	62	106	268	40.5
21.660	SB	28	85	139	21.3
SUBTOTAL				*7,952	*1,218.7

PLACE HMA (Misc AREA) OVERSIDE DRAIN CONFORM

PM	DIRECTION	AREA	HMA
	NB/SB	SQYD	TON
14.750	NB	9.22	1.50
15.425	NB	3.78	0.62
15.582	NB	1.11	0.18
15.617	NB	2.22	0.36
15.640	NB	2.89	0.47
16.691	NB	3.11	0.51
17.236	NB	2.33	0.38
19.666	NB	2.33	0.38
19.748	NB	2.22	0.36
20.015	NB	2.22	0.36
20.208	SB	1.67	0.27
20.073	NB	2.22	0.36
20.236	NB	2.22	0.36
20.249	NB	1.78	0.29
20.269	SB	3.33	0.54
20.346	SB	2.22	0.36
20.420	SB	2.22	0.36
20.523	SB	3.33	0.54
20.661	SB	5.33	0.87
21.150	SB	7.33	1.20
SUBTOTAL		*63.08	*10.27

* FOR TOTAL QUANTITIES, SEE ROADWAY QUANTITY SUMMARY TABLE ON Q-1.

CURB RAMP DETECTABLE WARNING SURFACE

(No.)	L	W	AREA
	LF	LF	SQFT
1	3	5	15.0
2	3	5	15.0
3	3	4	12.0
4	3	5	15.0
5	3	4.5	13.5
TOTAL			70.5

COUNTY ROAD PAVEMENT **

ROAD NAME	PM	DIRECTION	LENGTH	W1	W2	PLACE HMA (Misc AREA)	HMA	COLD PLANE AC Pvmt
		NB/SB	LF	LF	LF	SQYD	TON	SQYD
SQUAW CREEK	14.203	SB	25	21	131	191	31.2	165
POLE CREEK ROAD	16.031	SB	60	32	164	511	83.3	115
CABIN CREEK ROAD	19.011	SB	50	48	389	644	105.1	165
W RIVER STREET	21.590	NB	50	64	174	563	91.8	203
SUBTOTAL						*1,909	*311.4	*648

* FOR TOTAL QUANTITIES, SEE ROADWAY QUANTITY SUMMARY TABLE ON Q-1.
 ** FOR SQUAW VALLEY Rd QUANTITIES, SEE ROADWAY QUANTITY SUMMARY TABLE.
 *** AS DIRECTED BY THE ENGINEER.

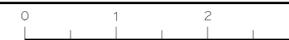
TEMPORARY EROSION CONTROL

TEMPORARY FIBER ROLL	TEMPORARY GRAVEL BAG BERM	TEMPORARY COVER
LF	LF	SQYD
8,700	342	1,178

SUMMARY OF QUANTITIES

Q-3

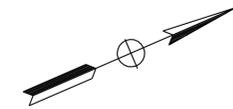
* FOR TOTAL QUANTITIES, SEE ROADWAY QUANTITY SUMMARY TABLE ON Q-1.
 *** AS DIRECTED BY THE ENGINEER.



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Plc	89	13.7/21.7	13	47

Jaskaran Boparai 8-29-11
 REGISTERED ELECTRICAL ENGINEER DATE
 1-9-12
 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.

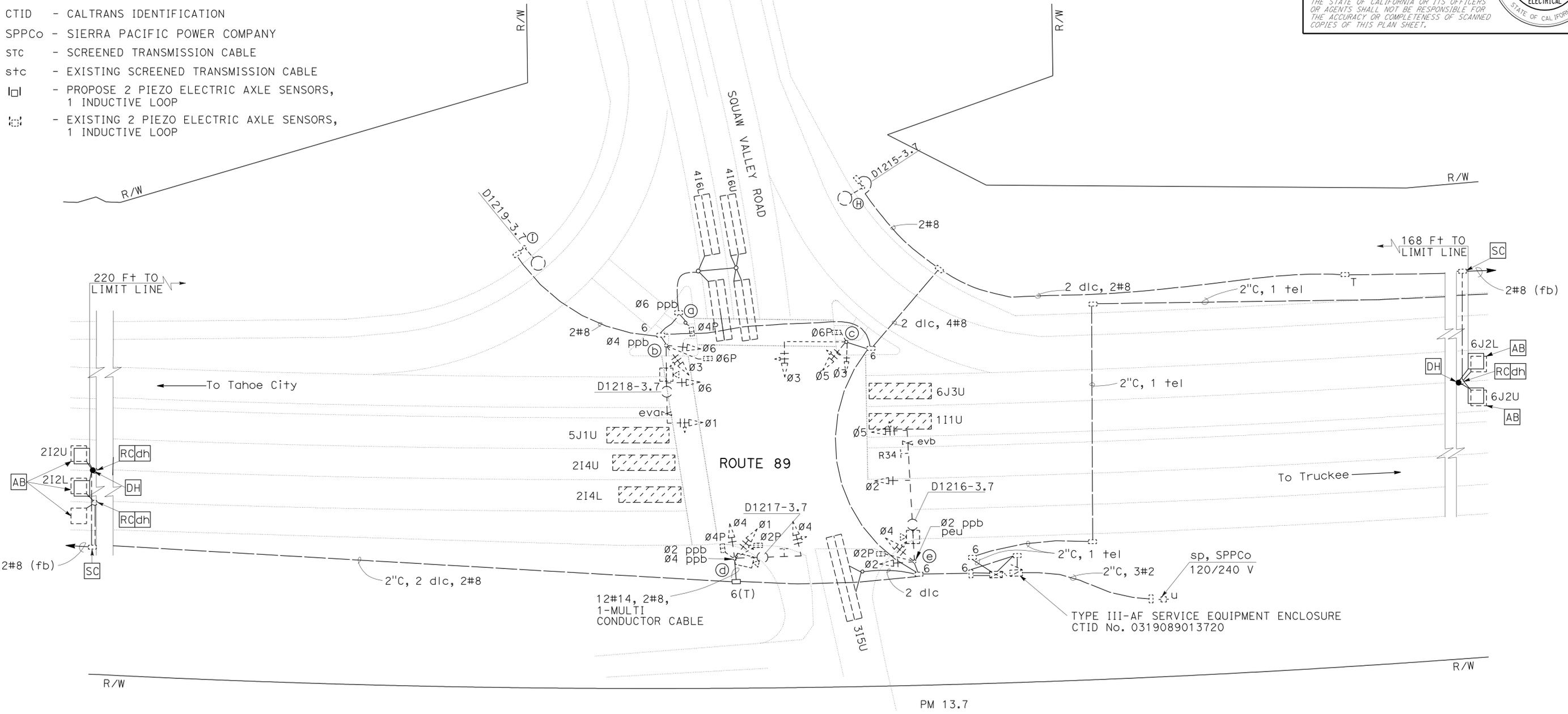
REGISTERED PROFESSIONAL ENGINEER
JASKARAN S. BOPARAI
 No. 15056
 Exp. 12-31-13
 ELECTRICAL
 STATE OF CALIFORNIA



NOTE:
 FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

LEGEND AND ABBREVIATION

- cs - COUNT STATION
- CTID - CALTRANS IDENTIFICATION
- SPPCo - SIERRA PACIFIC POWER COMPANY
- stc - SCREENED TRANSMISSION CABLE
- stc - EXISTING SCREENED TRANSMISSION CABLE
- - PROPOSE 2 PIEZO ELECTRIC AXLE SENSORS, 1 INDUCTIVE LOOP
- ⊙ - EXISTING 2 PIEZO ELECTRIC AXLE SENSORS, 1 INDUCTIVE LOOP



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: NELSON LEE
 CALCULATED/DESIGNED BY: JASKARAN S. BOPARAI
 CHECKED BY:
 REVISOR: OANH D. NGUYEN
 DATE:

MODIFY SIGNAL AND LIGHTING

SCALE: 1" = 20'

E-1

APPROVED FOR ELECTRICAL WORK ONLY

LAST REVISION: 07-21-11 DATE PLOTTED => 13-JAN-2012 TIME PLOTTED => 08:44

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Plca	89	13.7/21.7	14	47

Jaskaran Boparai 8-29-11
 REGISTERED ELECTRICAL ENGINEER DATE
 1-9-12
 PLANS APPROVAL DATE
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REGISTERED PROFESSIONAL ENGINEER
JASKARAN S. BOPARAI
 No. 15056
 Exp. 12-31-13
 ELECTRICAL
 STATE OF CALIFORNIA

NOTE:
 FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

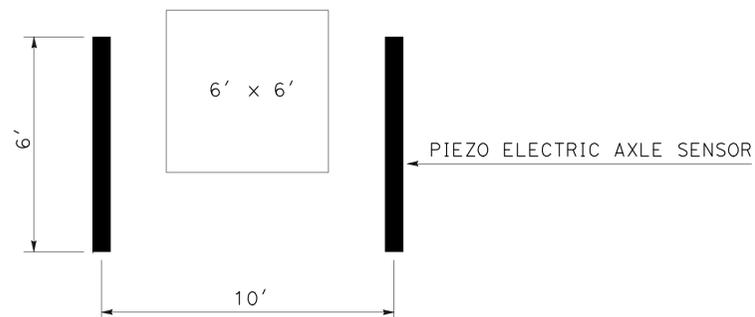
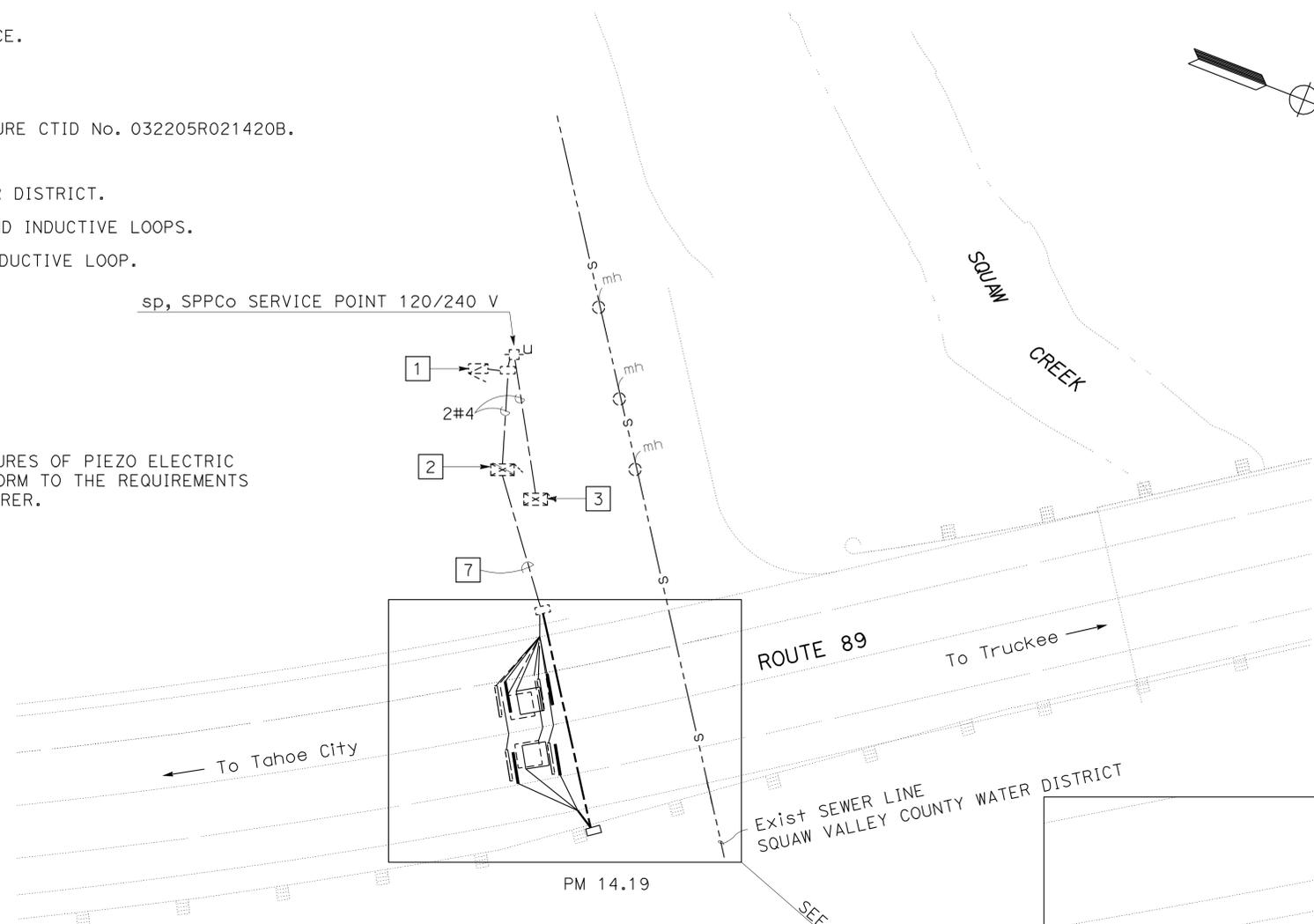
PROJECT NOTES (THIS SHEET ONLY)

- 1 Exist TYPE III-AF SERVICE EQUIPMENT ENCLOSURE CTID No. 032205R021420B.
- 2 Exist TYPE M CABINET.
- 3 EXISTING CABINET SQUAW VALLEY COUNTY WATER DISTRICT.
- 4 AB EXISTING PIEZO ELECTRIC AXLE SENSORS AND INDUCTIVE LOOPS.
- 5 INSTALL PIEZO ELECTRIC AXLE SENSORS AND INDUCTIVE LOOP. FOR DETAIL, SEE DETAIL B THIS SHEET.
- 6 RC CONDUCTORS. ADD LOOP CONDUCTOR, 2 STC.
- 7 RC 2 dlc, 4 stc. ADD 2 DLC, 4 STC.

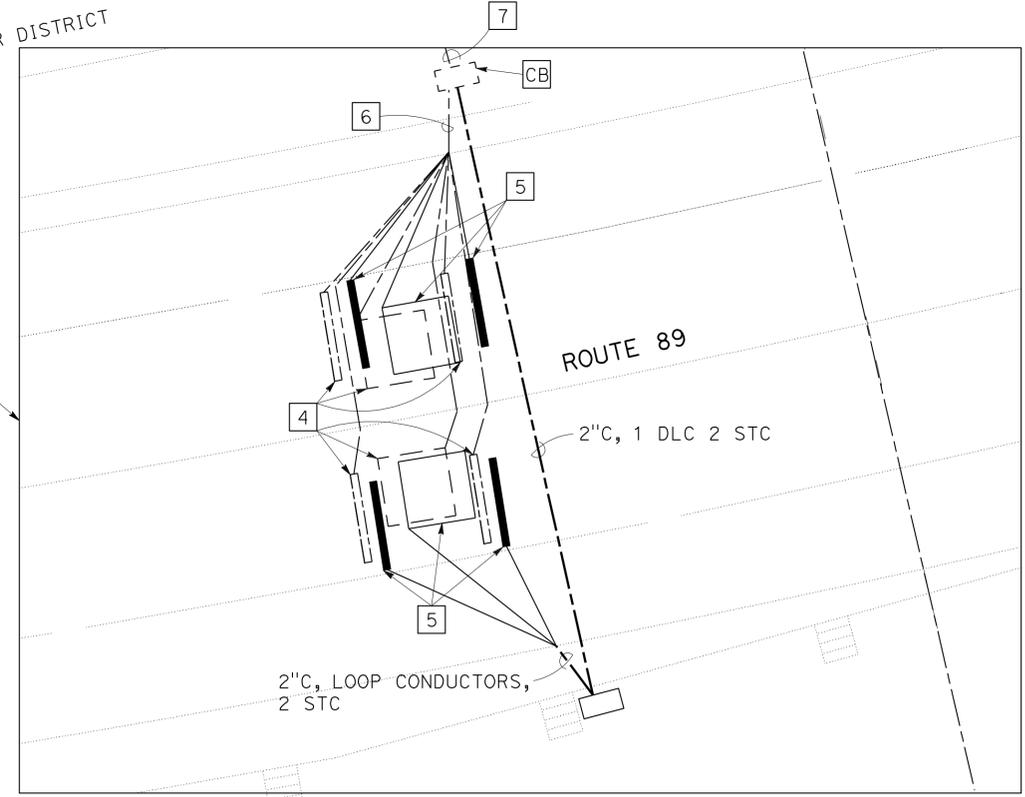
GENERAL NOTE:

1. EXACT CONFIGURATION AND INSTALLATION PROCEDURES OF PIEZO ELECTRIC AXLE SENSORS AND LOOP DETECTORS SHALL CONFORM TO THE REQUIREMENTS OF THE PIEZO ELECTRIC AXLE SENSOR MANUFACTURER.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: NELSON LEE
 CALCULATED/DESIGNED BY: JASKARAN S. BOPARAI
 CHECKED BY:
 REVISED BY: OANH D. NGUYEN
 DATE REVISED:



DETAIL B
 NO SCALE



DETAIL A
 NO SCALE

MODIFY AUTOMATIC VEHICLE CLASSIFICATION SYSTEM

SCALE: 1" = 20'

APPROVED FOR ELECTRICAL WORK ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Pla	89	13.7/21.7	15	47

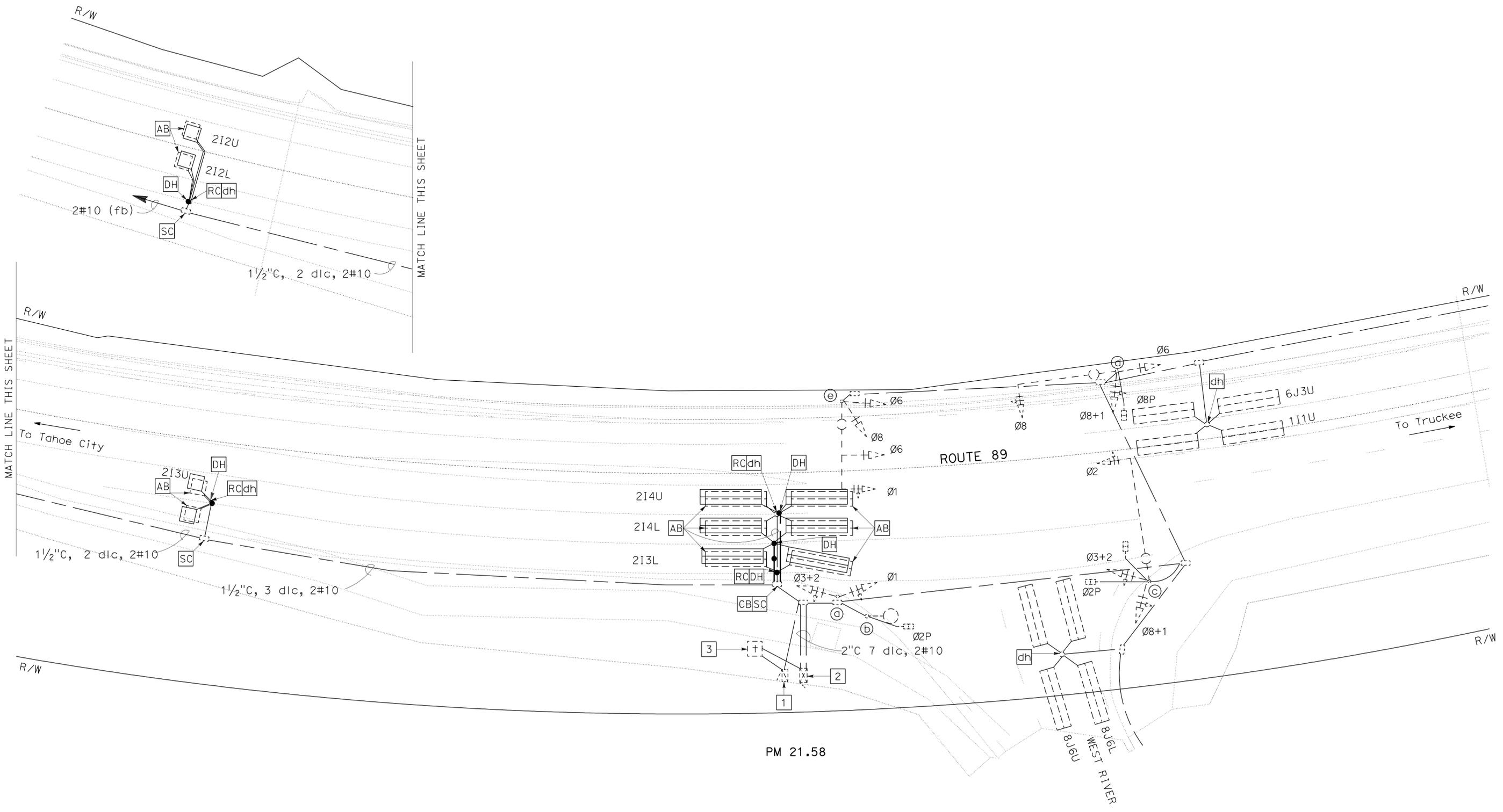
Jaskaran S. Boparai 8-29-11
 REGISTERED ELECTRICAL ENGINEER DATE
 1-9-12
 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER
JASKARAN S. BOPARAI
 No. 15056
 Exp. 12-31-13
 ELECTRICAL
 STATE OF CALIFORNIA

NOTE:
 FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

PROJECT NOTES (THIS SHEET ONLY)

- 1 Exist TYPE III-AF SERVICE EQUIPMENT ENCLOSURE CTID No. 03172670001268.
- 2 Exist MODEL 332 CONTROLLER CABINET.
- 3 Exist TELEPHONE DEMARCATION CABINET.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: NELSON LEE
 CALCULATED/DESIGNED BY: [blank] CHECKED BY: [blank]
 OANH D. NGUYEN JASKARAN S. BOPARAI
 REVISED BY: [blank] DATE REVISED: [blank]

APPROVED FOR ELECTRICAL WORK ONLY



MODIFY SIGNAL AND LIGHTING

SCALE: 1" = 20'

E-3

LAST REVISION: 07-21-11 DATE PLOTTED => 13-JAN-2012 TIME PLOTTED => 06:12

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Plā	89	13.7/21.7	16	47

<i>Jaskaran Boparai</i> 8-29-11	
REGISTERED ELECTRICAL ENGINEER	DATE
1-9-12	
PLANS APPROVAL DATE	

No. 15056	
Exp. 12-31-13	
ELECTRICAL	

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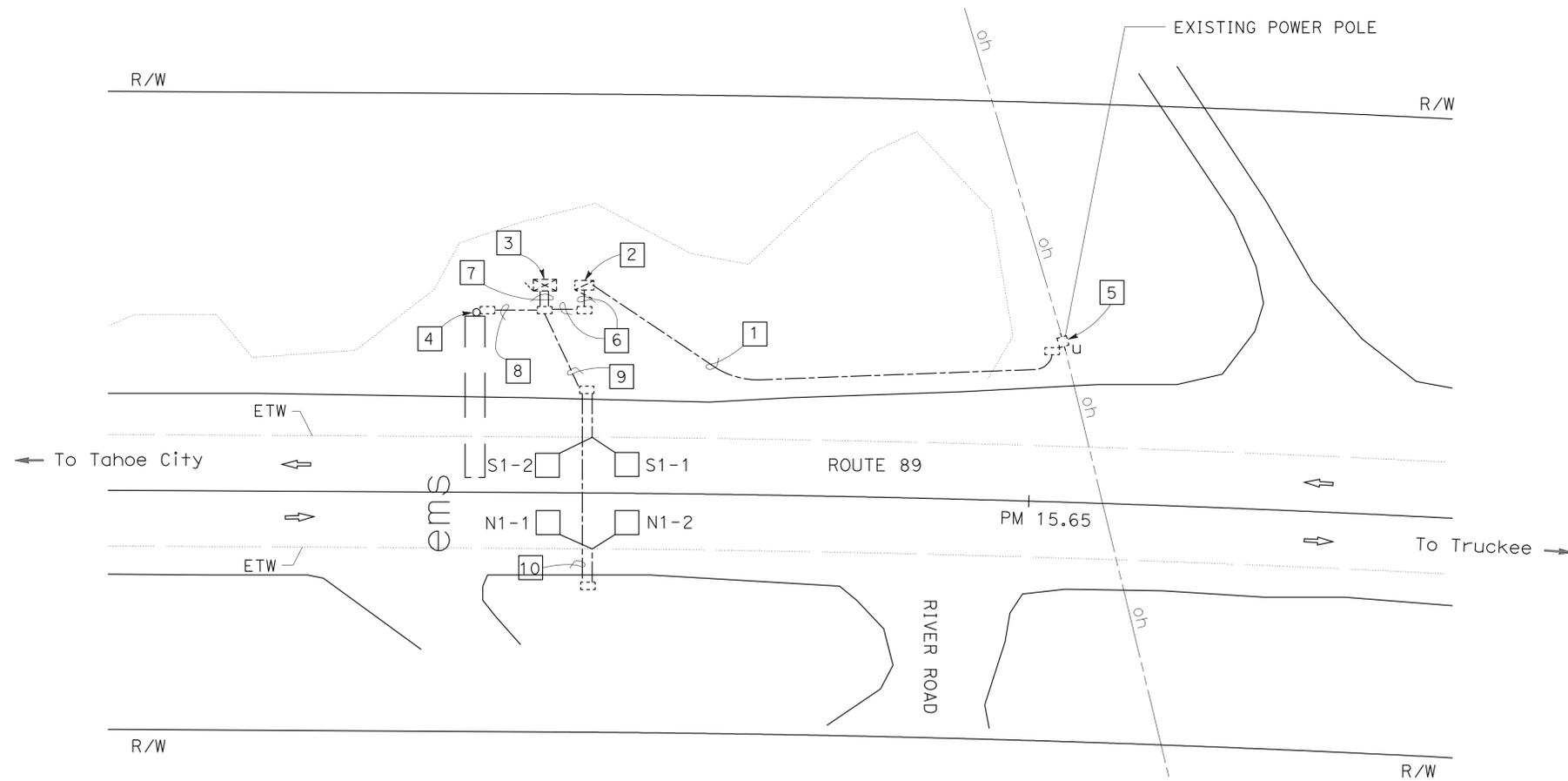
NOTE:
FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

PROJECT NOTES: (THIS SHEET ONLY)

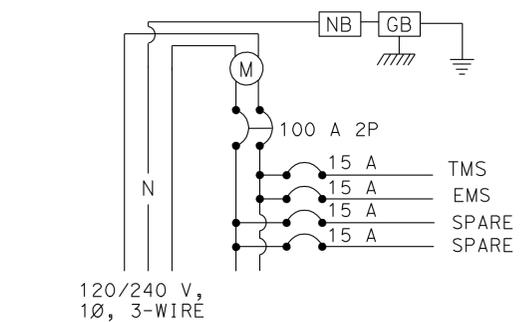
- 1 Exist 2"C, 3#2
- 2 Exist TYPE III-AF SERVICE EQUIPMENT ENCLOSURE, 1-PHASE, 3-WIRE, (120/240 V) CTID No. 03190890015600.
LOAD: ems 500 W
tms 400 W
- 3 Exist MODEL 334 CONTROLLER CABINET.
- 4 Exist EXTINGUISHABLE MESSAGE SIGN.
- 5 Exist TYPE H SERVICE RISER.
- 6 Exist 1½"C, 2#8 (120 V, ems), 2#8 (120 V, tms).
- 7 Exist 2-2"C, 2#8 (120 V, tms). ADD 4 DLC.
- 8 Exist 1½"C, 2#8 (120 V, ems).
- 9 Exist 1½"C. ADD 4 DLC.
- 10 Exist 2"C mt. ADD 2 DLC.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: NELSON LEE
 CALCULATED/DESIGNED BY: [blank] CHECKED BY: [blank]
 OANH D. NGUYEN JASKARAN S. BOPARAI
 REVISED BY: [blank] DATE REVISED: [blank]



Plā 89, APPROXIMATELY 0.5 MILE SOUTH OF POLE CREEK ROAD
PM 15.6



EXISTING SERVICE WIRING DIAGRAM
CTID No. 03190890015600

MODIFY TRAFFIC MONITORING STATION

SCALE: 1" = 20'

APPROVED FOR ELECTRICAL WORK ONLY

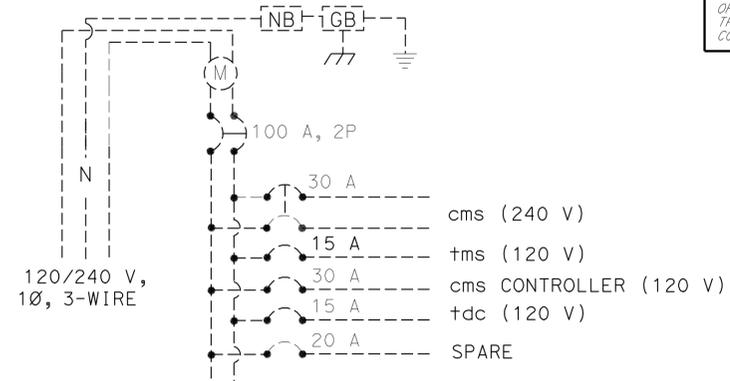
LAST REVISION: [blank] DATE PLOTTED => 13-JAN-2012
 07-21-11 TIME PLOTTED => 08:44

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Plq	89	13.7/21.7	17	47
<i>Jaskaran Boparai</i> REGISTERED ELECTRICAL ENGINEER DATE 8-29-11			1-9-12 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 JASKARAN S. BOPARAI No. 15056 Exp. 12-31-13 ELECTRICAL STATE OF CALIFORNIA		

NOTE:
 FOR ACCURATE RIGHT OF WAY DATA, CONTACT
 RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

PROJECT NOTES: (FOR THIS SHEET ONLY)

- 1 Exist UTILITY POLE.
- 2 Exist 1/2"C, 3#2.
- 3 Exist TYPE III-AF SERVICE EQUIPMENT ENCLOSURE, CTID No. 0317008900028000.
 Exist LOAD: 1- 250 W tdc
 1-3200 W cms
 1- 400 W tms
- 4 NOT USE
- 5 Exist 1/2"C, tc.
- 6 Exist 1/2"C, 2#8.
- 7 Exist 2"C, 1 tc. ADD 1 TC.
- 8 Exist 1/2"C, 2#8 (cms SIGN), 2#8 (CMS CONTROLLER). ADD 2#10 (tms).
- 9 Exist 1/2"C, 2#8 (cms CONTROLLER).
- 10 Exist 2"C, 1 cms HARNESS #4, 1 cms HARNESS #5.
- 11 1/2"C, 2#8 (120 V, TMS CONTROLLER).
- 12 Exist MODEL 334 CABINET AND MODEL 170 CONTROLLER ASSEMBLY FOR cms.
- 13 Exist 2"C, 1 tc, ADD 1 CAT 5E CABLE.
- 14 Exist 2"C, 1 TC, 1 CAT 5E CABLE.
- 15 Exist MODEL 334 CONTROLLER CABINET FOR tms.
- 16 Exist 2-2"C, 2#8 (120 V, tms CONTROLLER). ADD 4 DLC.
- 17 Exist 1/2"C, 2#8 (cms SIGN).
- 18 Exist 1/2"C, ADD 4 DLC.
- 19 Exist 2"C, ADD 2 DLC.
- 20 1/2"C, 2#10 (tms).

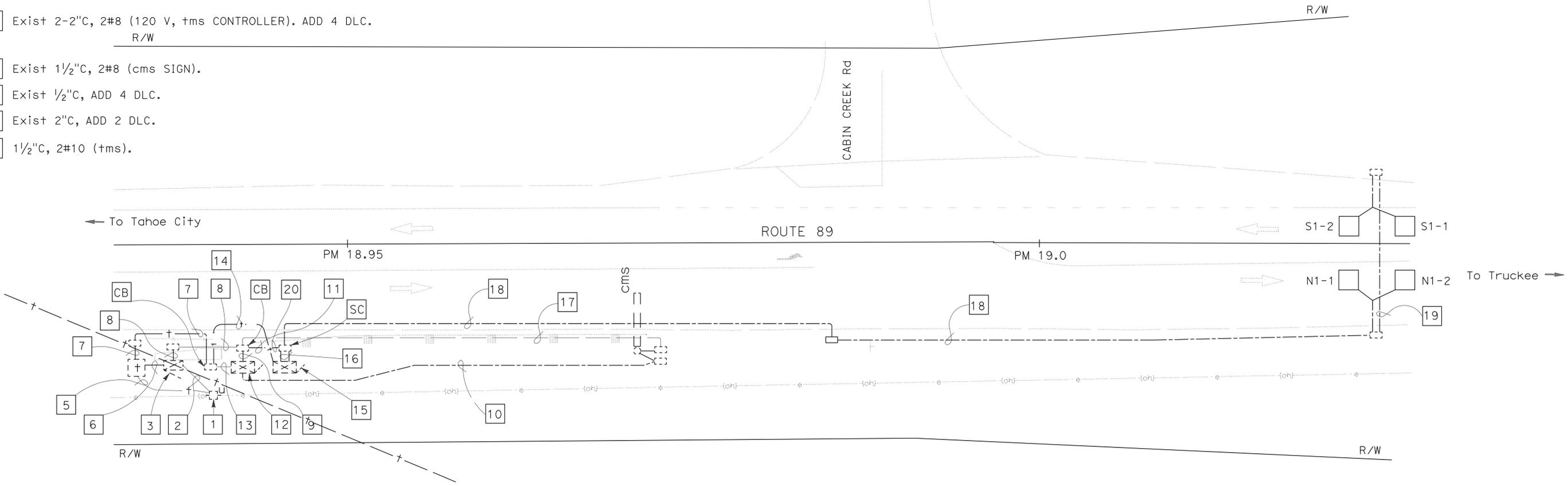


MODIFIED 120/240 V SERVICE WIRING DIAGRAM

CTID No. 03170089000280



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: NELSON LEE
 CALCULATED/DESIGNED BY: OANH D. NGUYEN, JASKARAN S. BOPARAI
 CHECKED BY: [blank]
 REVISED BY: [blank] DATE REVISED: [blank]



Plq 89, CABIN CREEK ROAD
 PM 19.0

MODIFY TRAFFIC MONITORING STATION

SCALE: 1" = 20'

E-5

APPROVED FOR ELECTRICAL WORK ONLY

LAST REVISION: DATE PLOTTED => 13-JAN-2012
 07-21-11 TIME PLOTTED => 08:44

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Pla	89	13.7/21.7	18	47

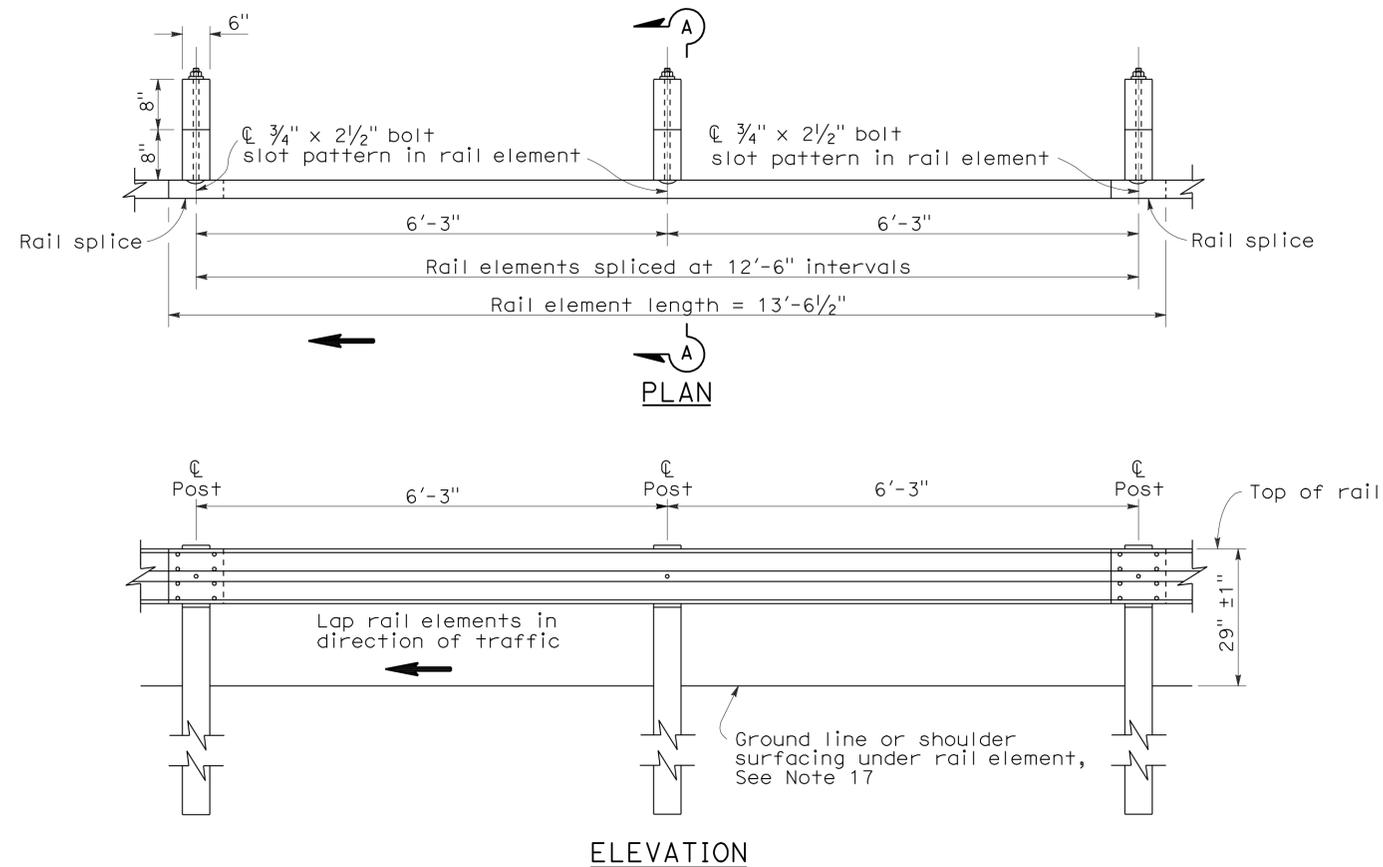
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

May 20, 2011
PLANS APPROVAL DATE

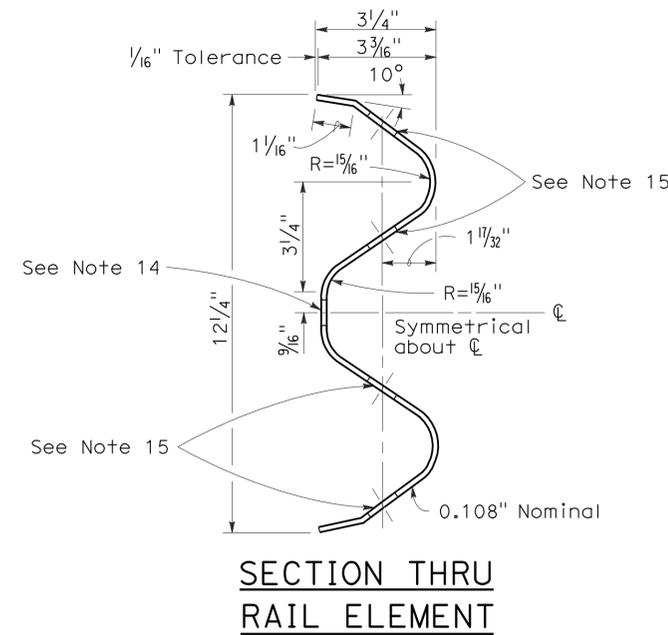
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To accompany plans dated 1-9-12

2006 REVISED STANDARD PLAN RSP A77A1

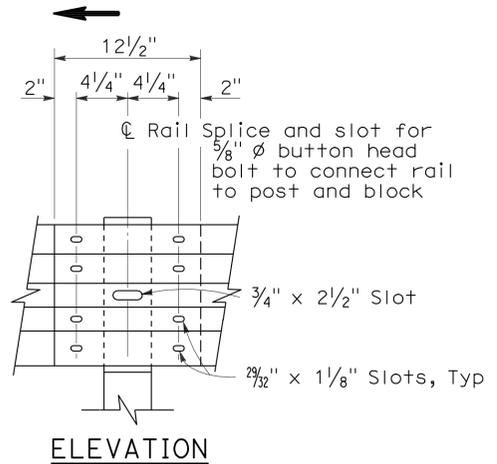


METAL BEAM GUARD RAILING WITH WOOD POST AND BLOCKS



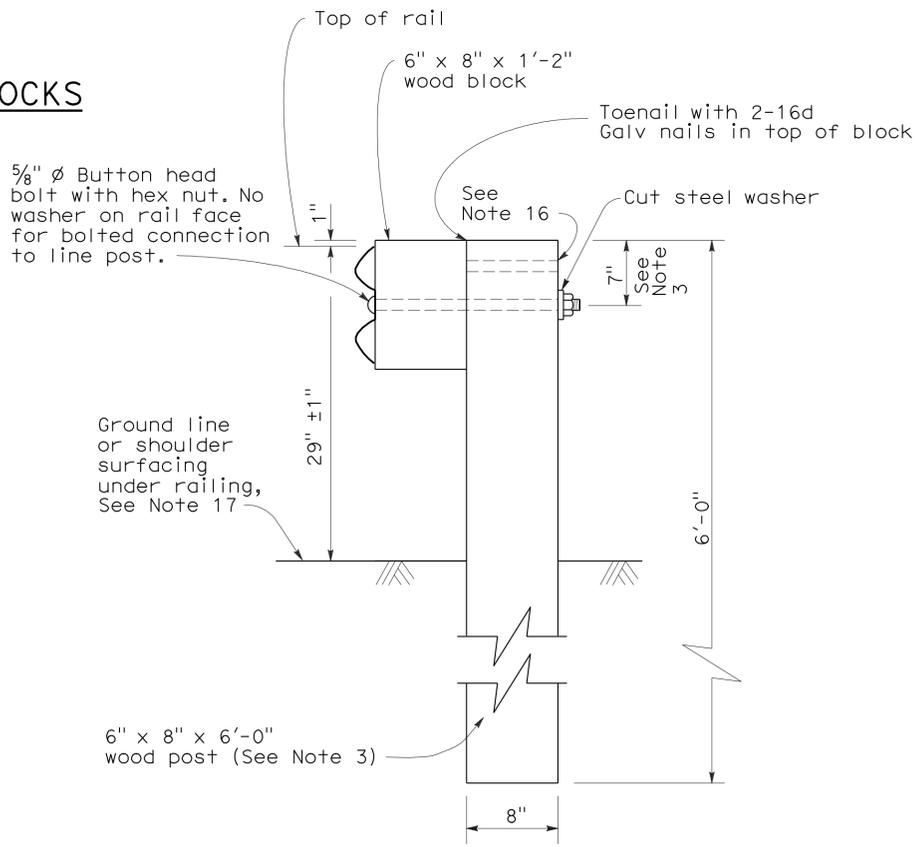
NOTES:

- For details of steel post installations, see Standard Plan A77A2.
- For details of standard hardware used to construct guard railing, see Standard Plan A77B1.
- For details of wood posts and wood blocks used to construct guard railing, see Standard Plan A77C1.
- For additional installation details, see Standard Plan A77C3.
- Guard railing post spacing to be 6'-3" center to center, except as otherwise noted.
- For guard railing typical layouts, see the A77E, A77F and A77G Series of Standard Plans.
- For terminal system end treatment details, see the A77L Series of Standard Plans. To connect railing to 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.
- For guard railing end anchor details, see Standard Plans A77H1 and A77I2.
- For details of guard railing transition to bridge railing, see Standard Plan A77J4.
- For additional details of guard railing connection to bridge railings, see Standard Plans A77J1, A77J2 and A77K1.
- For guard railing connection details to abutments and walls, see Standard Plan A77J3.
- Direction of adjacent traffic indicated by →.
- For typical guard railing delineation and dike positioning details, see Standard Plan A77C4.
- 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 Standard Plan A77C1.
- Install posts in soil.



RAIL ELEMENT SPLICE DETAIL

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



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

See Note 4

**METAL BEAM GUARD RAILING
STANDARD RAILING SECTION
(WOOD POST WITH
WOOD BLOCK)**

NO SCALE

RSP A77A1 DATED MAY 20, 2011 SUPERSEDES STANDARD PLAN A77A1
DATED MAY 1, 2006 - PAGE 41 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77A1

To accompany plans dated 1-9-12

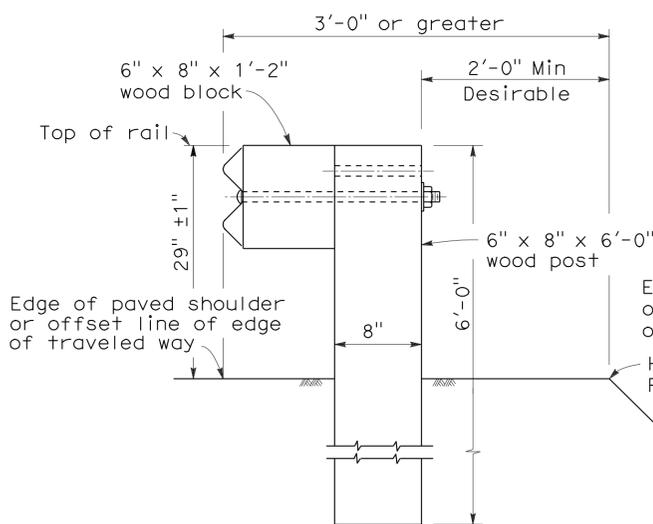
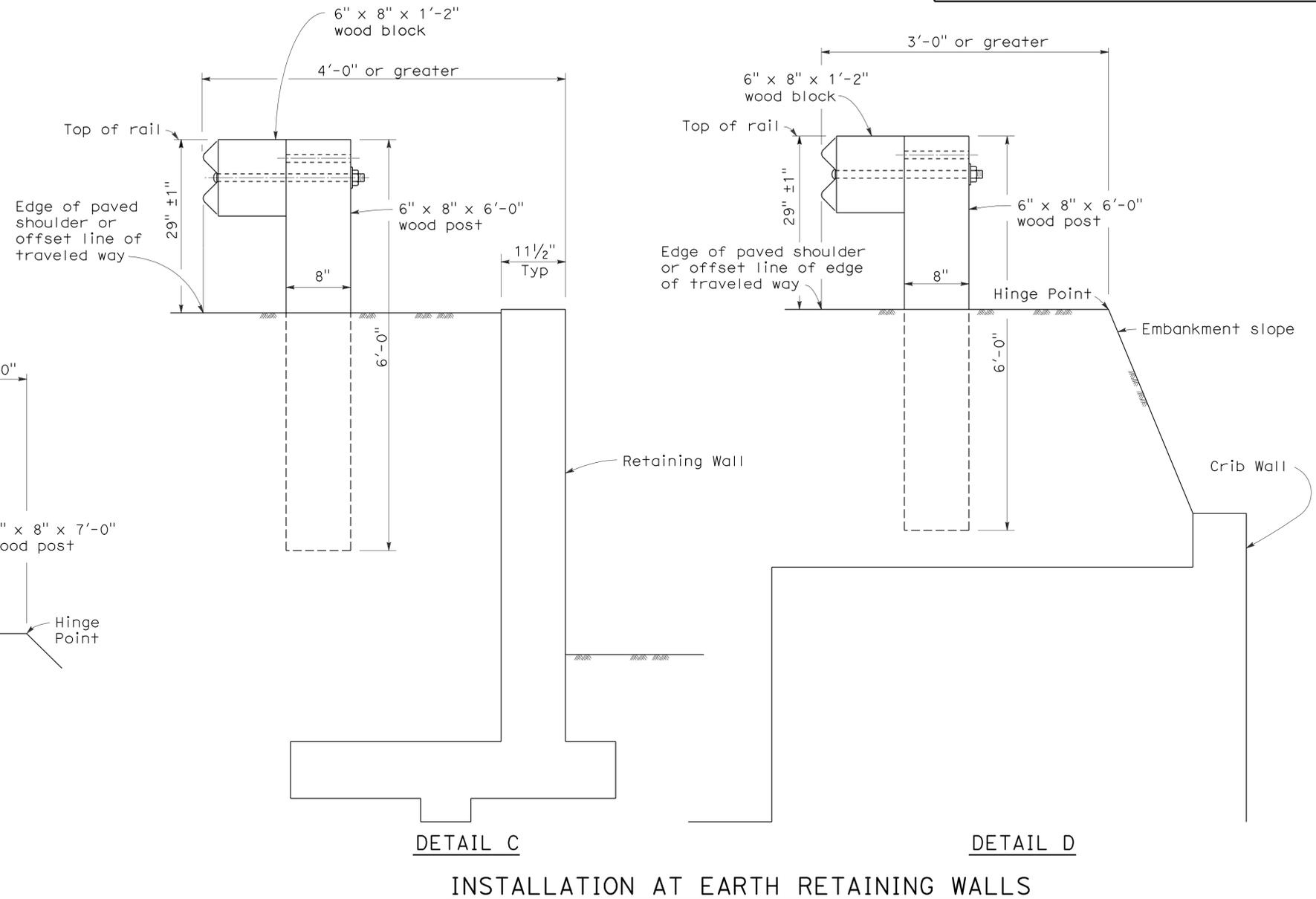
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Pla	89	13.7/21.7	19	47

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

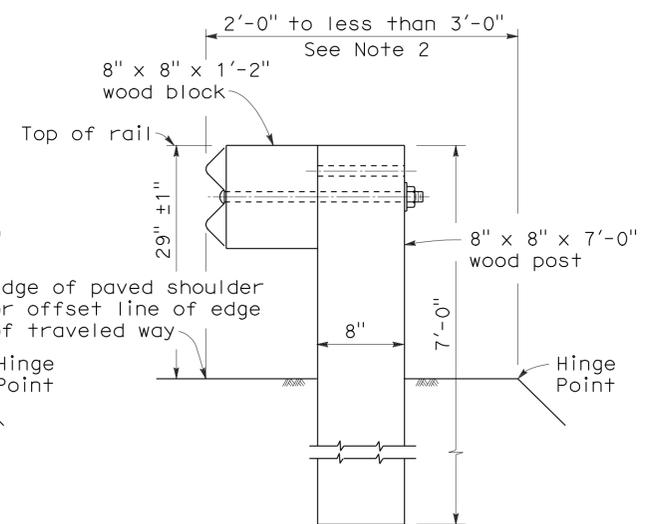
May 20, 2011
PLANS APPROVAL DATE

Randell D. Hiatt
No. C50200
Exp. 6-30-11
CIVIL
STATE OF CALIFORNIA

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DETAIL A
TYPICAL ROADWAY
INSTALLATION
See Note 1



DETAIL B
NARROW ROADWAY
INSTALLATION
See Note 1

POST EMBEDMENT

DETAIL C
INSTALLATION AT EARTH RETAINING WALLS
DETAIL D

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 9 steel post, 6'-0" in length, with 6" x 8" 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 9 steel post, 7'-0" in length, with 6" x 8" 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 Standard Plans A77A1 and A77A2.
2. Where the distance between the face of the rail and the hinge point is less than 2'-0", see the Project Plans for special details.
3. For dike positioning with guard railing installations, see Standard Plan A77C4.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

METAL BEAM GUARD RAILING
TYPICAL LINE POST
EMBEDMENT AND
HINGE POINT OFFSET DETAILS

NO SCALE

RSP A77C3 DATED MAY 20, 2011 SUPERSEDES STANDARD PLAN A77C3
DATED MAY 1, 2006 - PAGE 46 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP A77C3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Pla	89	13.7/21.7	20	47

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

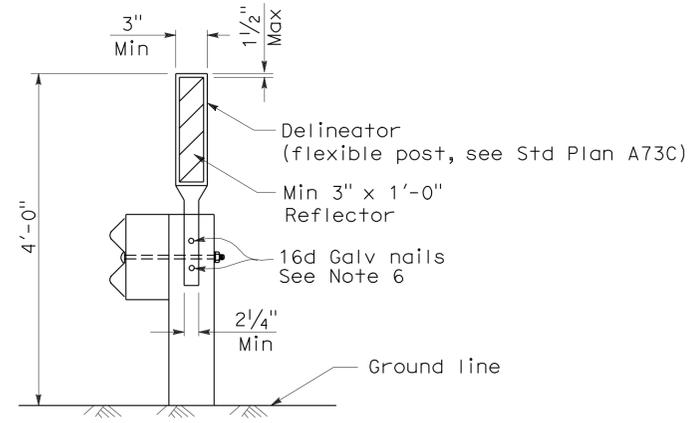
May 20, 2011
PLANS APPROVAL DATE

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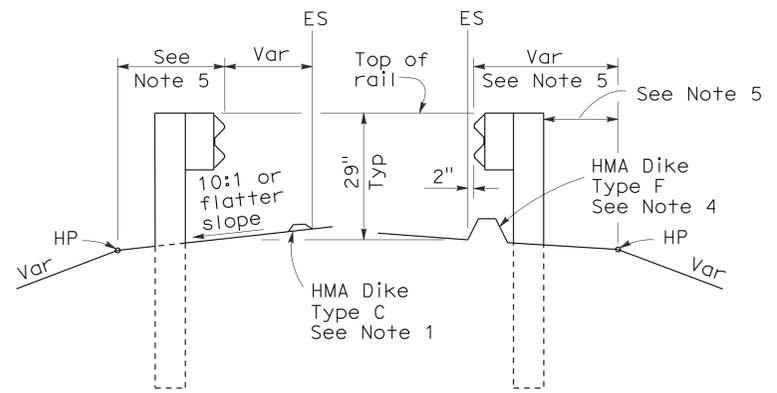
To accompany plans dated 1-9-12

NOTES:

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



GUARD RAILING DELINEATION
See Note 3



DIKE POSITIONING
See Note 1

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

RSP A77C4 DATED MAY 20, 2011 SUPERSEDES RSP A77C4 DATED JUNE 6, 2008 AND STANDARD PLAN A77C4 DATED MAY 1, 2006 - PAGE 47 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77C4

2006 REVISED STANDARD PLAN RSP A77C4

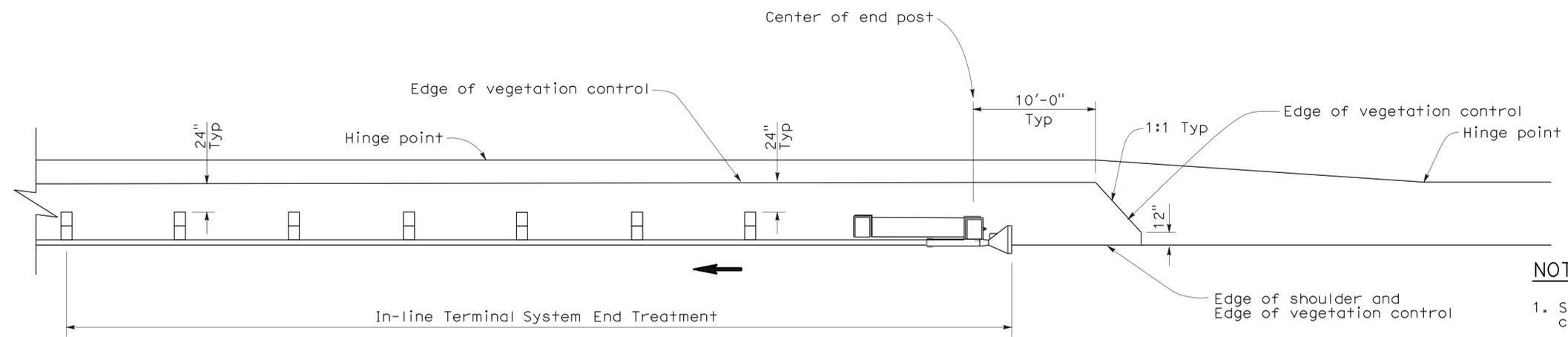
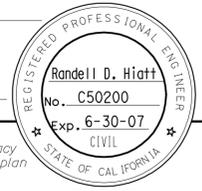
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Pla	89	13.7/21.7	22	47

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

October 20, 2006
PLANS APPROVAL DATE

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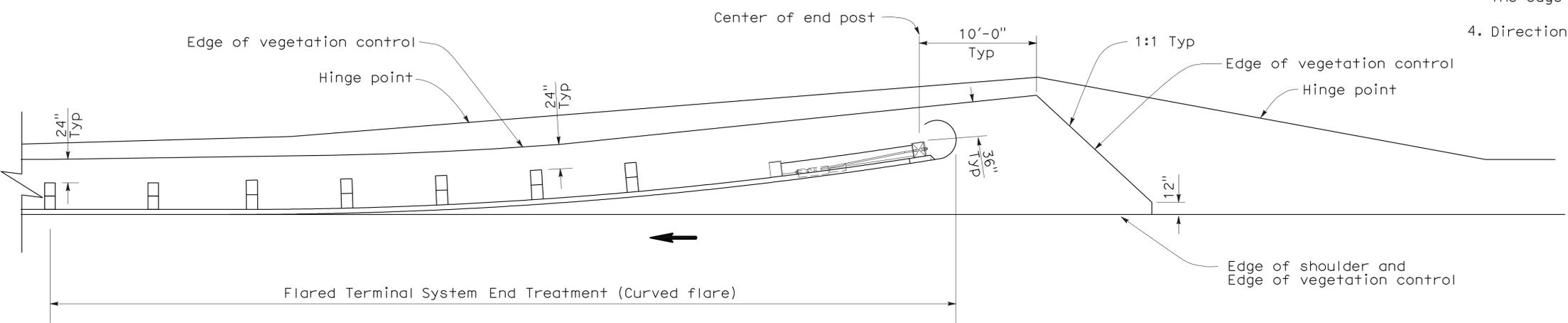
To accompany plans dated 1-9-12



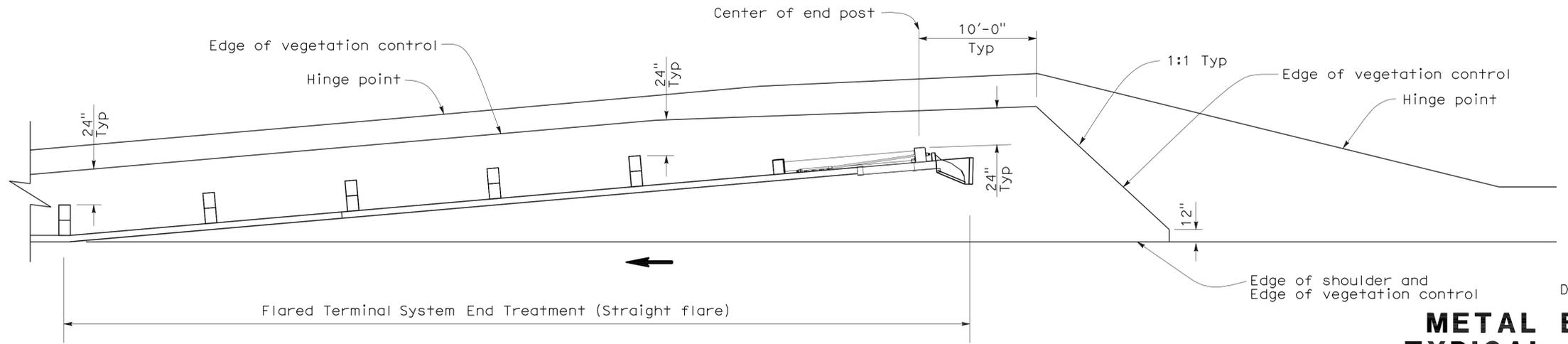
PLAN

NOTES:

1. See New Standard Plan NSP A77C5 for additional vegetation control details.
2. Where the distance between back of post and hinge point is less than 24", vegetation control to be constructed flush with the back edge of the post.
3. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 24" in front of the post, construct vegetation control to the edge of paved shoulder.
4. Direction of adjacent traffic indicated by ←.



PLAN



PLAN

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TYPICAL VEGETATION CONTROL
FOR TERMINAL SYSTEM END TREATMENTS**

NO SCALE
NSP A77C6 DATED OCTOBER 20, 2006 SUPPLEMENTS THE STANDARD
PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP A77C6

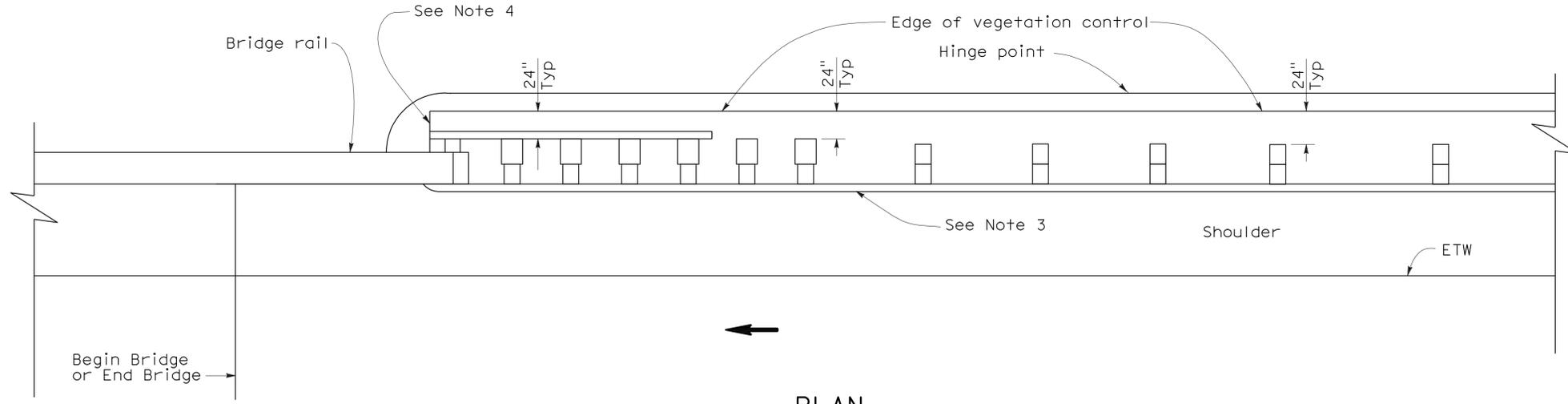
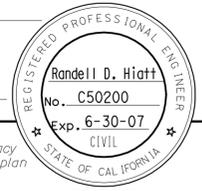
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Pla	89	13.7/21.7	23	47

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

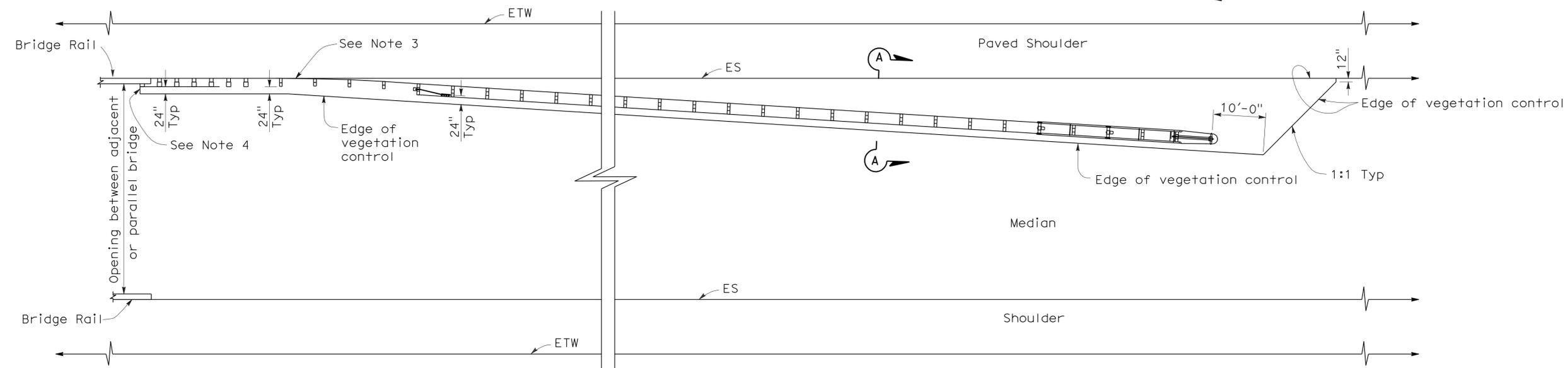
October 20, 2006
PLANS APPROVAL DATE

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To accompany plans dated 1-9-12



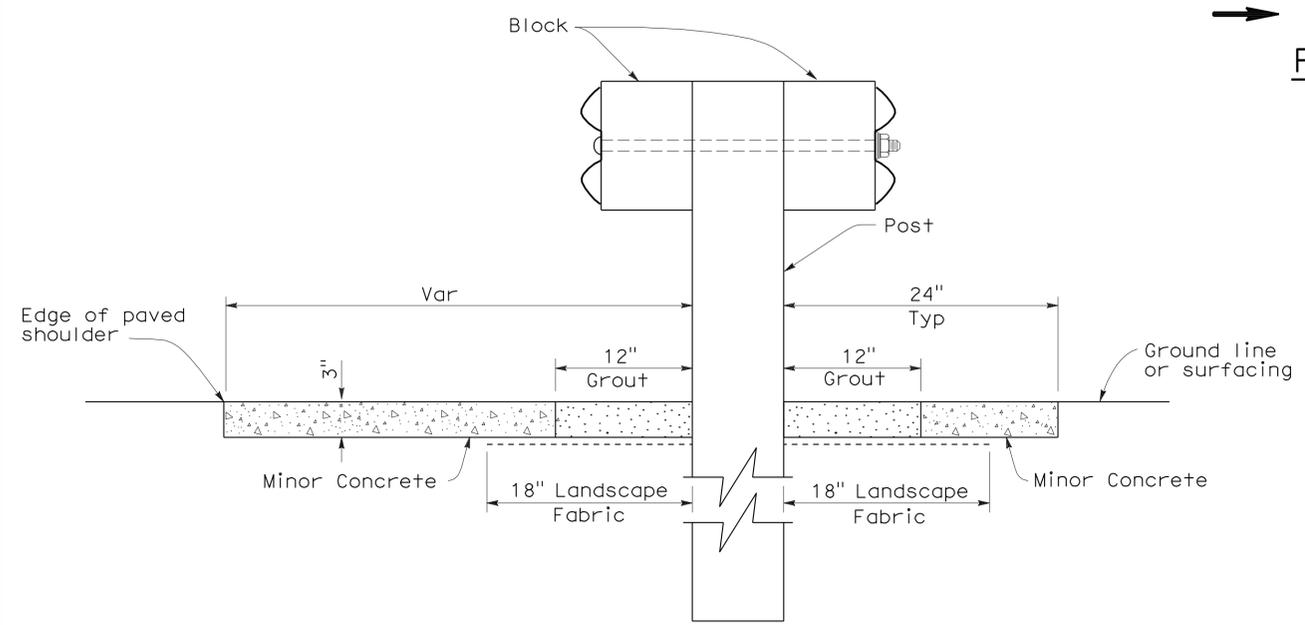
PLAN



PLAN

NOTES:

1. See New Standard Plan NSP A77C5 for additional vegetation control details.
2. Where the distance between back of post and hinge point is less than 24", vegetation control to be constructed flush with the back edge of the post.
3. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 24" in front of the post, construct vegetation control to the edge of paved shoulder.
4. End vegetation control at end of backside rail element.
5. Direction of adjacent traffic indicated by ←.



SECTION A-A

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TYPICAL VEGETATION CONTROL
AT STRUCTURE APPROACH
AND DEPARTURE**

NO SCALE
NSP A77C7 DATED OCTOBER 20, 2006 SUPPLEMENTS THE STANDARD
PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP A77C7

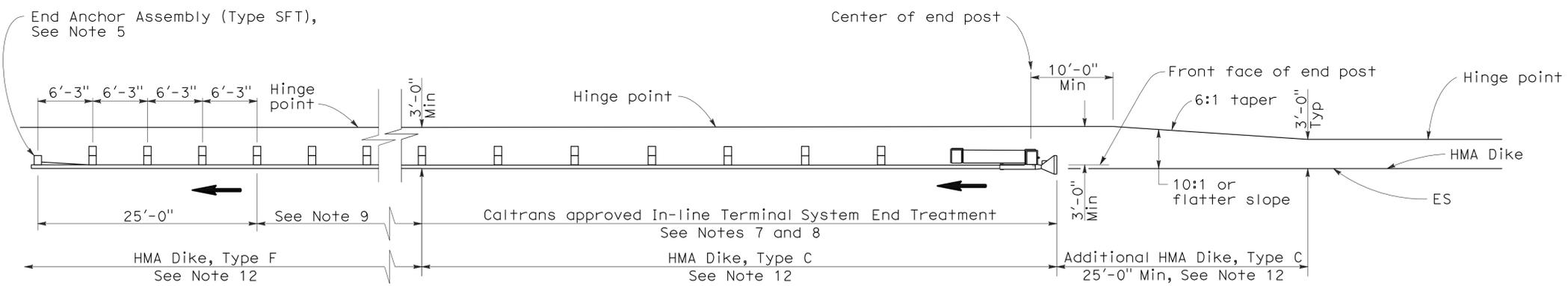
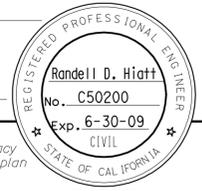
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Pla	89	13.7/21.7	24	47

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

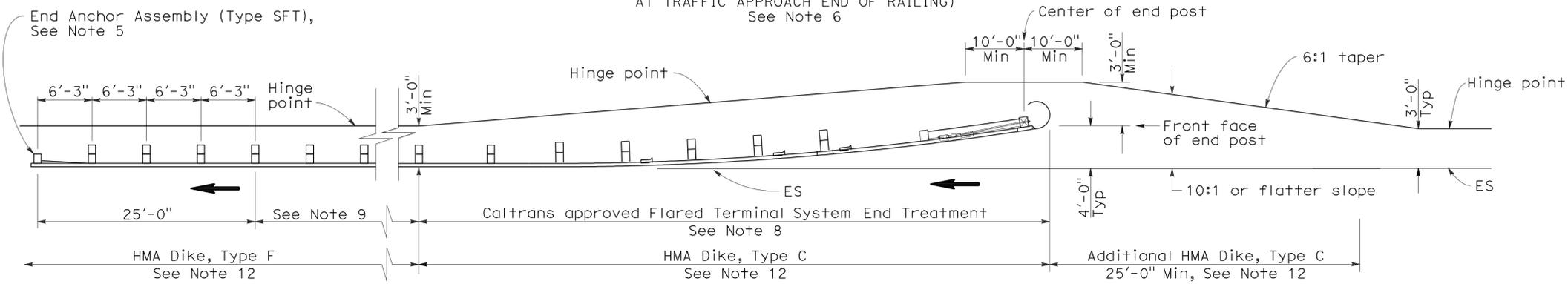
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To accompany plans dated 1-9-12



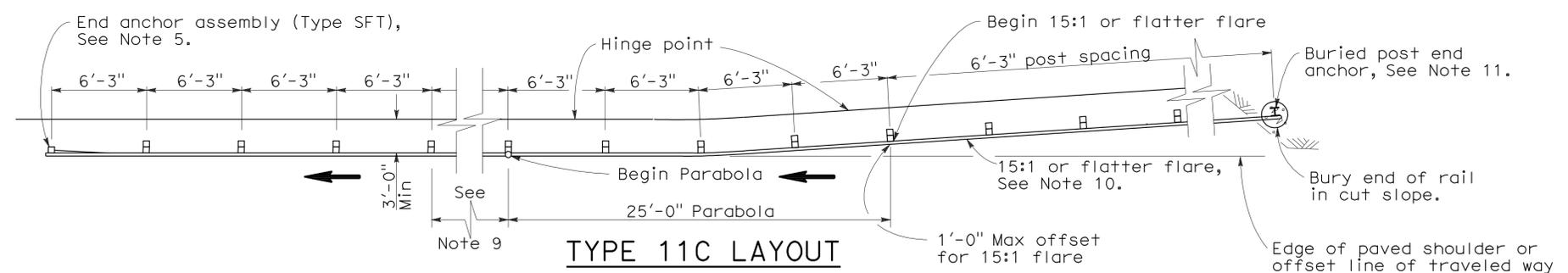
TYPE 11A LAYOUT

(EMBANKMENT GUARD INSTALLATION WITH IN-LINE END TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Note 6



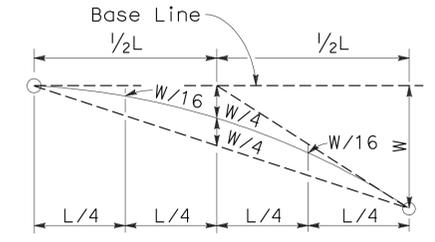
TYPE 11B LAYOUT

(EMBANKMENT GUARD RAILING INSTALLATION WITH FLARED END TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Note 6

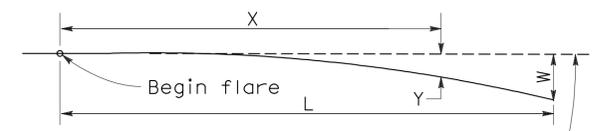


TYPE 11C LAYOUT

(EMBANKMENT GUARD RAILING INSTALLATION WITH BURIED END ANCHOR TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 6 and 12



TYPICAL PARABOLIC LAYOUT

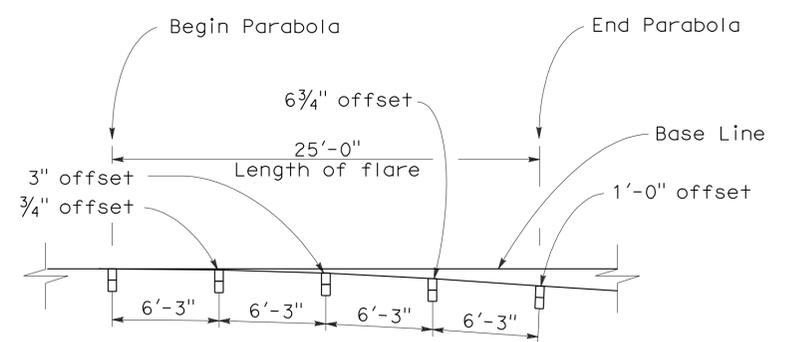


Base Line (Edge of paved shoulder or offset line of edge of traveled way)

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

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 Standard Plans A77A1, A77A2, A77B1, A77C1, and A77C2.
- Guard rail post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or recycled plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by →.
- For End Anchor Assembly (Type SFT) details, see Standard Plan A77H1.
- Layout Types 11A, 11B or 11C are typically used where guard railing is recommended to shield embankment slopes and a crashworthy end treatment is required for only one direction of traffic.
- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height and side slope), construction of additional guard railing (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
- The 15:1 or flatter flare used with buried end anchors is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the buried post end anchor used with Type 11C Layout, see Standard Plan A77I2.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

RSP A77E1 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77E1
DATED MAY 1, 2006 - PAGE 48 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77E1

2006 REVISED STANDARD PLAN RSP A77E1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Pla	89	13.7/21.7	25	47

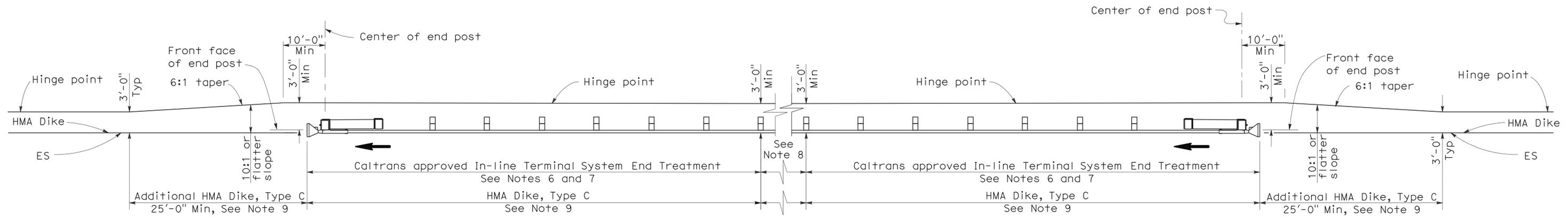
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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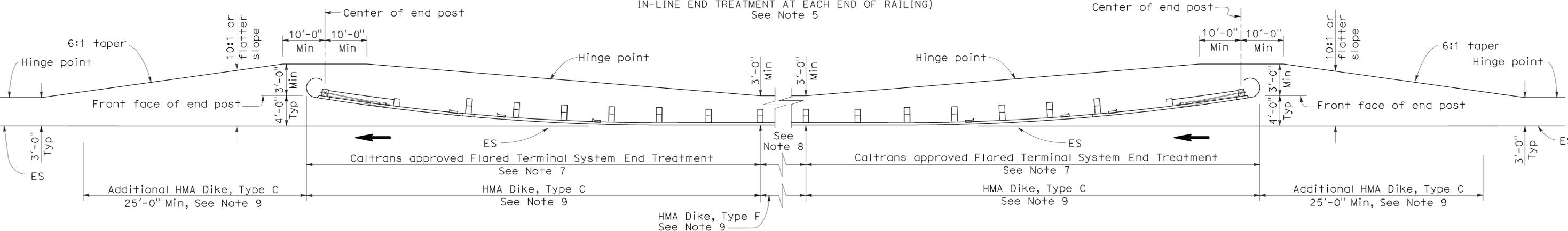
REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

To accompany plans dated 1-9-12



TYPE 11D LAYOUT

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



TYPE 11E LAYOUT

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

NOTES:

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

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

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

2006 REVISED STANDARD PLAN RSP A77E2

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Pla	89	13.7/21.7	26	47

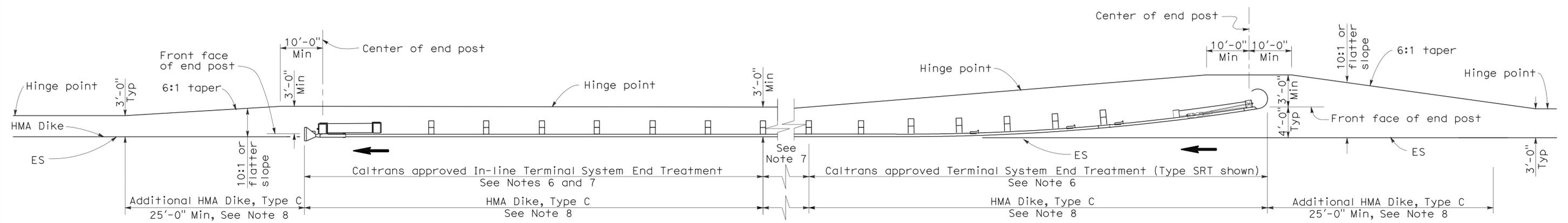
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

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To accompany plans dated 1-9-12



TYPE 11H LAYOUT

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

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**METAL BEAM GUARD RAILING
TYPICAL LAYOUTS FOR
EMBANKMENTS**
NO SCALE

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

REVISED STANDARD PLAN RSP A77E4

2006 REVISED STANDARD PLAN RSP A77E4

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Pla	89	13.7/21.7	27	47

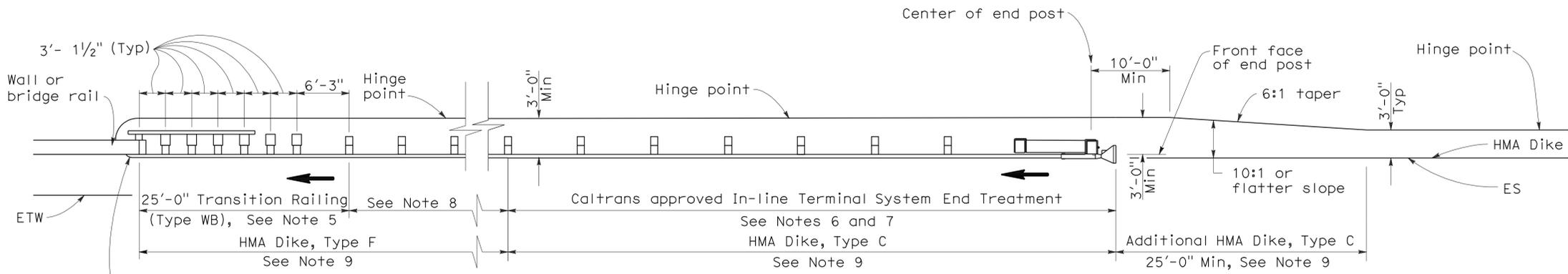
Randell D. Hiatt
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June 6, 2008
PLANS APPROVAL DATE

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

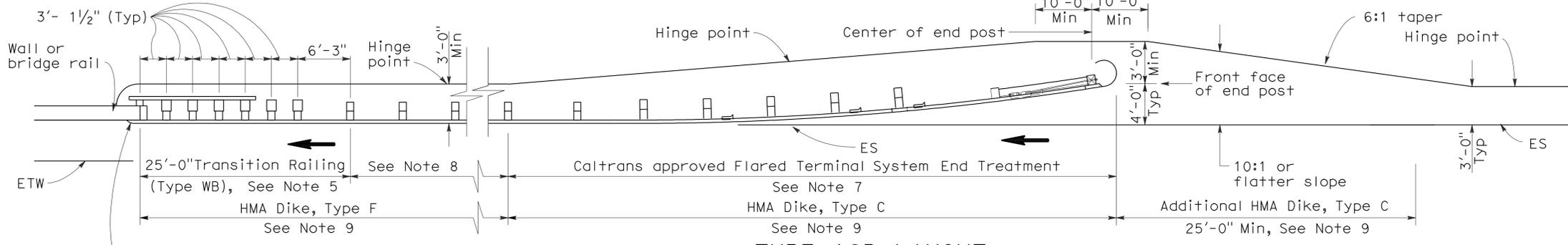
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To accompany plans dated 1-9-12



TYPE 12A LAYOUT

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



TYPE 12B LAYOUT

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

NOTES:

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

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

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

REVISED STANDARD PLAN RSP A77F1

2006 REVISED STANDARD PLAN RSP A77F1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Pla	89	13.7/21.7	28	47

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

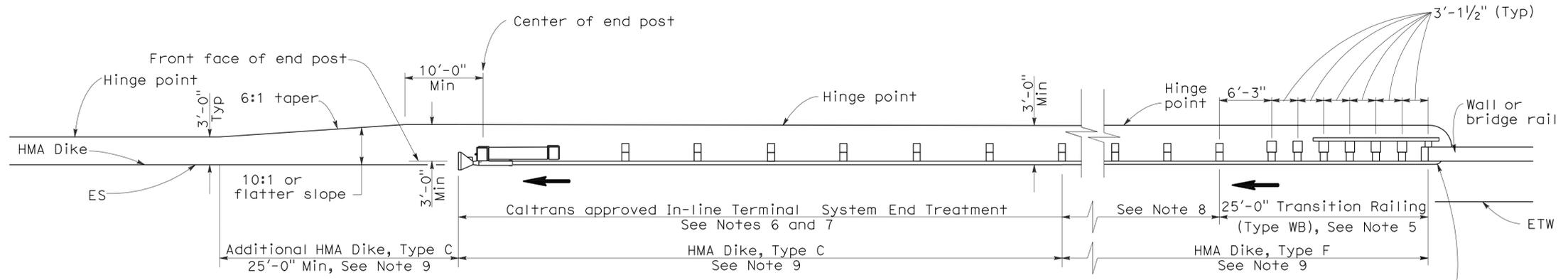
June 6, 2008
PLANS APPROVAL DATE

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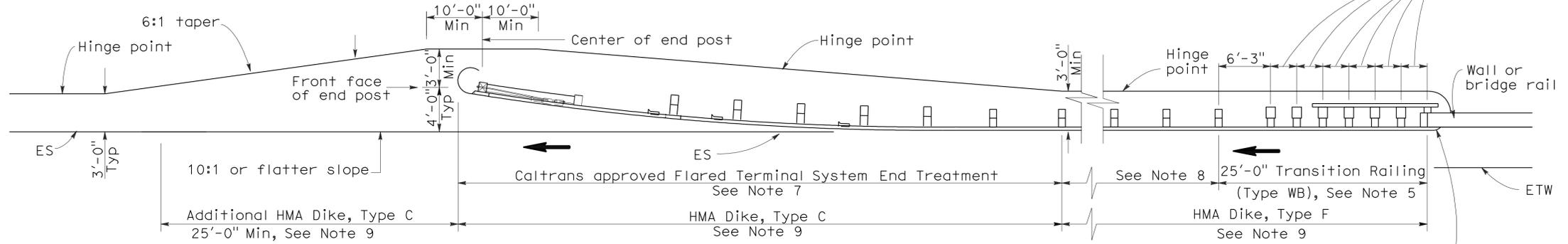
To accompany plans dated 1-9-12

2006 REVISED STANDARD PLAN RSP A77F4



TYPE 12AA LAYOUT

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



TYPE 12BB LAYOUT

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

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

REVISED STANDARD PLAN RSP A77F4

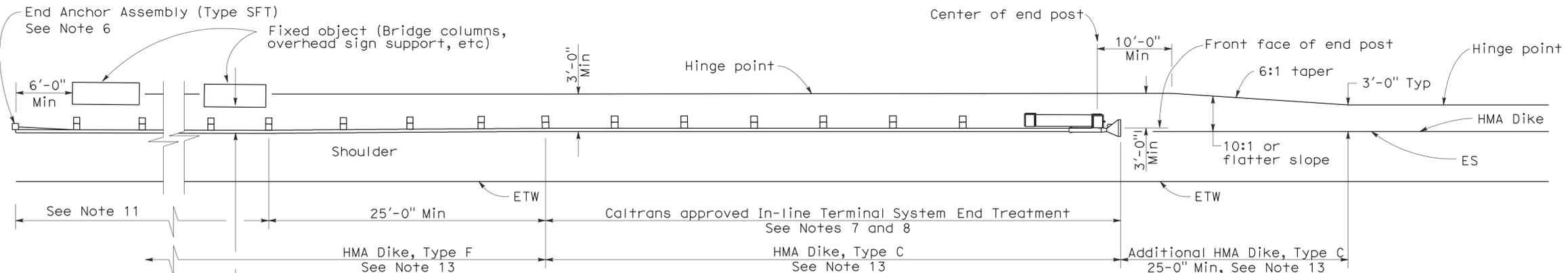
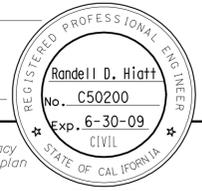
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Pla	89	13.7/21.7	29	47

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

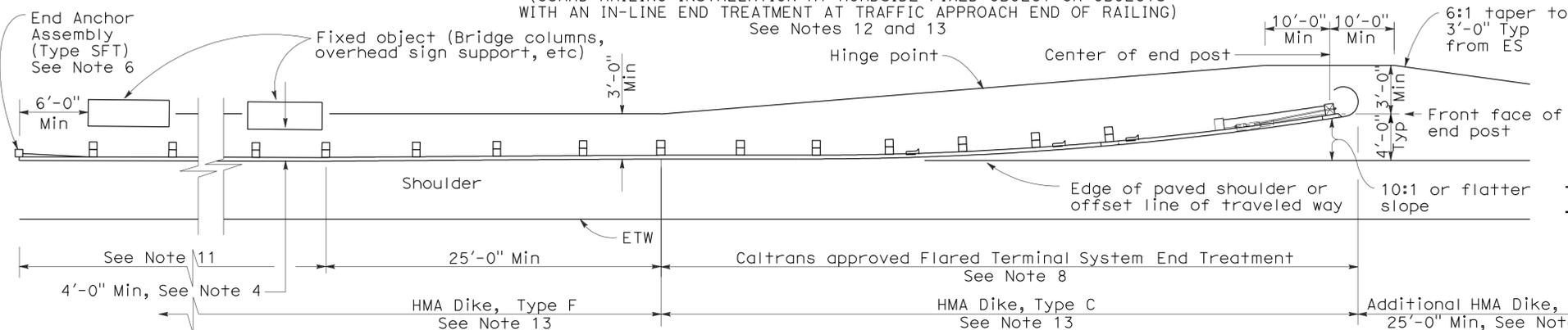
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To accompany plans dated 1-9-12



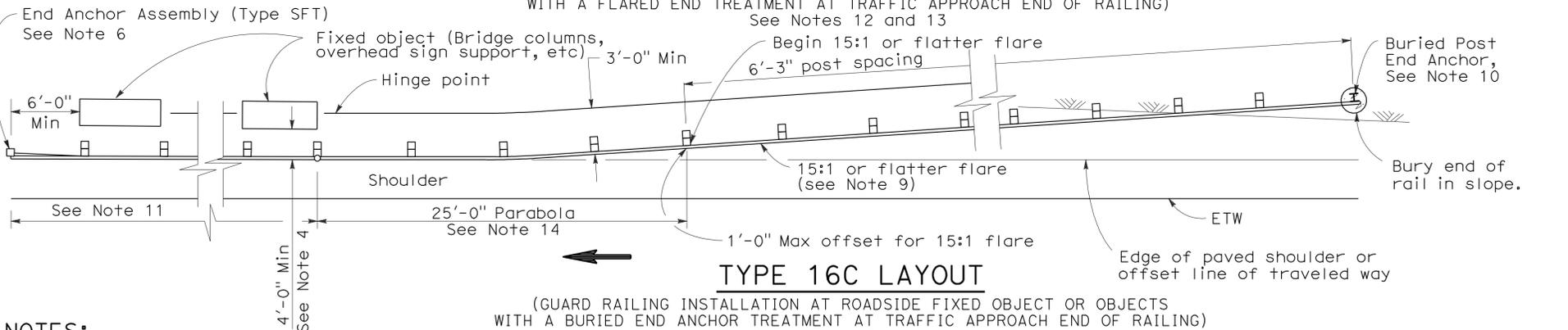
TYPE 16A LAYOUT

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH AN IN-LINE END TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 7 and 8



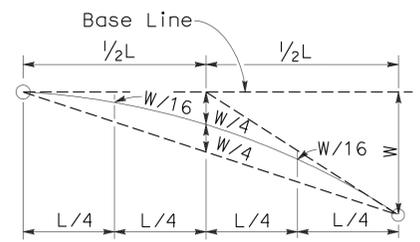
TYPE 16B LAYOUT

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH A FLARED END TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 12 and 13

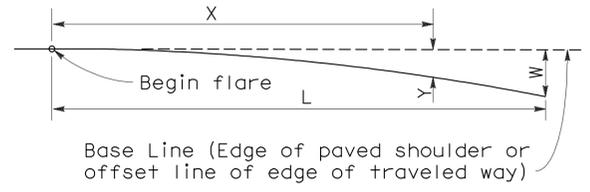


TYPE 16C LAYOUT

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH A BURIED END ANCHOR TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 12 and 13



TYPICAL PARABOLIC LAYOUT

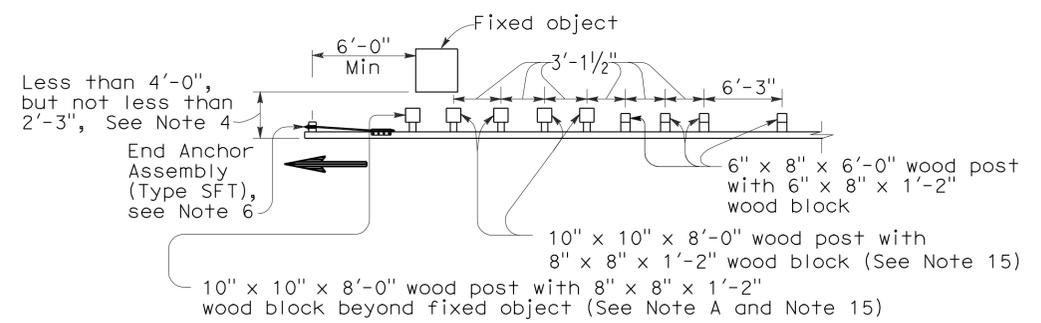


Y = Offset from base line
W = Maximum offset
X = Distance along base line
L = Length of flare

PARABOLIC FLARE OFFSETS

NOTES:

- Line post, blocks and hardware to be used are shown on Revised Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard railing post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood line posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object located directly behind standard guard railing sections with post spacing of 6'-3". Construct guard railing as shown in the detail "Strengthened Railing Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 2'-3". Where the clearance is less than 2'-3", a concrete wall or barrier should be constructed to shield the fixed object(s).
- Direction of adjacent traffic indicated by \rightarrow .
- For End Anchor Assembly (Type SFT) details, see Standard Plan A77H1.
- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system to be used will be shown on the Project Plans.
- The 15:1 or flatter flare used with Type 16C Layout is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the Buried Post End Anchor used with Type 16C Layout, see Standard Plan A77I2.
- As site conditions dictate, construct additional guard railing to shield fixed object(s). Additional guard railing length equal to multiples of 12'-6". Post spacing at 6'-3" except as specified in Note 4.
- Layout Types 16A, 16B or 16C are typically used where guard railing is recommended to shield roadside fixed object(s) and a crashworthy end treatment is required for only one direction of traffic.
- Where placement of dike is required with guard railing, see Revised Standard Plan RSP A77C4 for dike positioning details.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77E1.
- W6 x 15 steel post, 8'-0" in length, with 8" x 8" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood block shown in the "Strengthened Railing Sections Detail".



NOTE A:

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

STRENGTHENED RAILING SECTIONS FOR FIXED OBJECT

Use strengthened railing sections with Types 16A, 16B or 16C Layouts where minimum clearance between the face of the guard railing and fixed object(s) is less than 4'-0", but not less than 2'-3". See Note 4

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR ROADSIDE FIXED OBJECTS

NO SCALE

RSP A77G3 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77G3 DATED MAY 1, 2006 - PAGE 61 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77G3

2006 REVISED STANDARD PLAN RSP A77G3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Pla	89	13.7/21.7	30	47

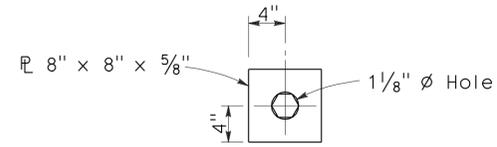
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

May 20, 2011
PLANS APPROVAL DATE

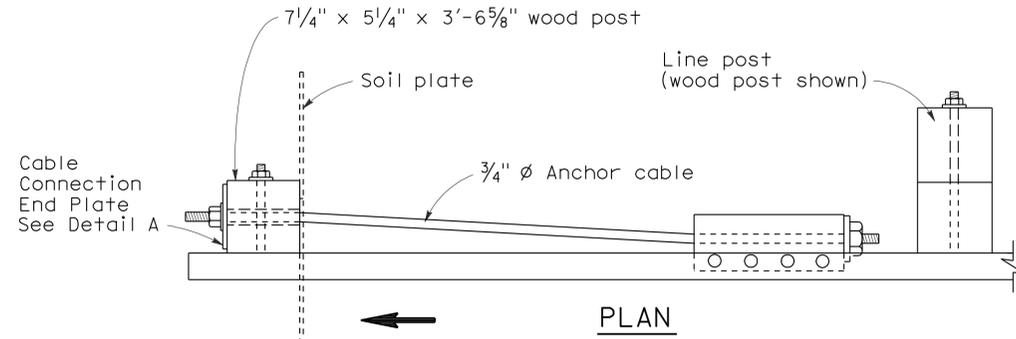
Randell D. Hiatt
No. C50200
Exp. 6-30-11
CIVIL
STATE OF CALIFORNIA

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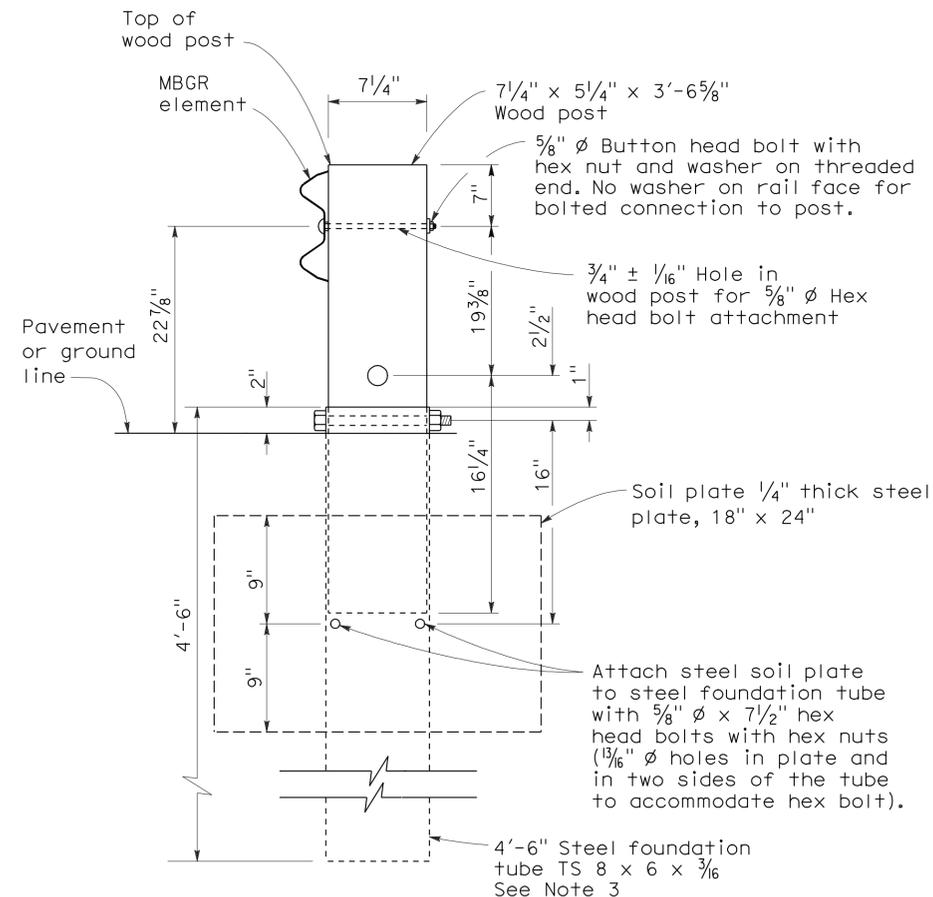
To accompany plans dated 1-9-12



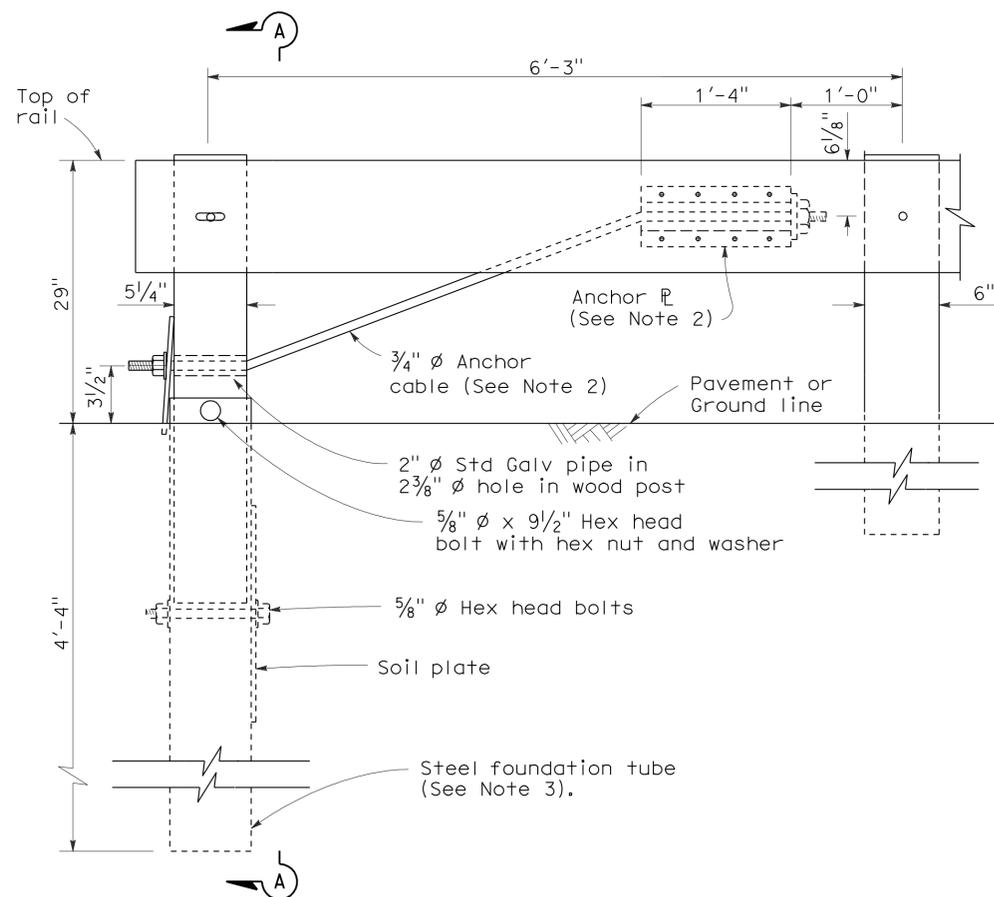
DETAIL A
CABLE CONNECTION
END PLATE



PLAN



SECTION A-A



ELEVATION
END ANCHOR
ASSEMBLY (TYPE SFT)
See Note 1

NOTES:

1. See the A77E, A77F and A77G 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 Standard Plan A77H3.
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. Direction of traffic indicated by →.
5. Install line post, steel foundation tube and soil plate in soil.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
METAL RAILING
END ANCHOR ASSEMBLY
(TYPE SFT)

NO SCALE

RSP A77H1 DATED MAY 20, 2011 SUPERSEDES STANDARD PLAN A77H1
DATED MAY 1, 2006 - PAGE 67 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77H1

2006 REVISED STANDARD PLAN RSP A77H1

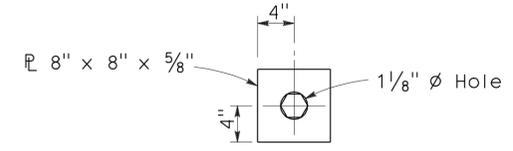
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Pla	89	13.7/21.7	31	47

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

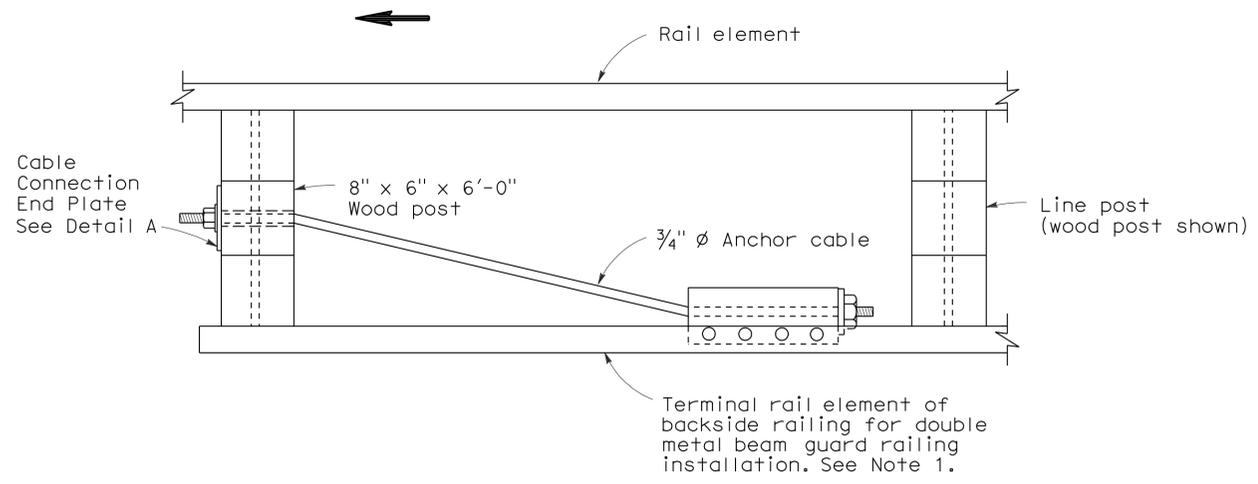
May 20, 2011
PLANS APPROVAL DATE

Randell D. Hiatt
REGISTERED PROFESSIONAL ENGINEER
No. C50200
Exp. 6-30-11
CIVIL
STATE OF CALIFORNIA

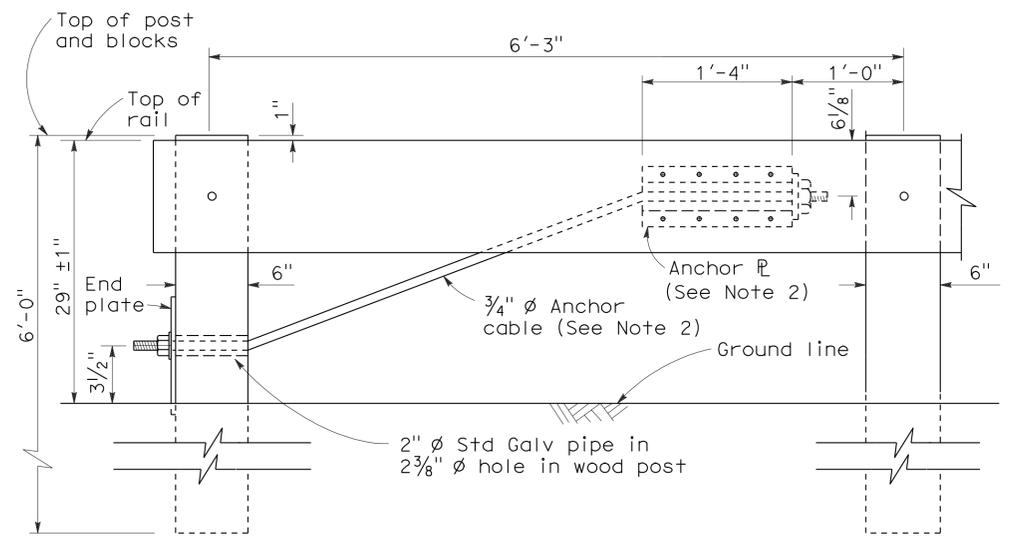
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DETAIL A
CABLE CONNECTION
END PLATE



PLAN



ELEVATION
RAIL TENSIONING
ASSEMBLY
See Note 1

NOTES:

1. See Standard Plan A77F3 and Standard Plan A77G1 for typical use of rail tensioning assembly.
2. For details of the anchor plate and 3/4 inch cable, see Standard Plan A77H3.
3. Direction of traffic indicated by →.

To accompany plans dated 1-9-12

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
METAL RAILING
RAIL TENSIONING ASSEMBLY

NO SCALE

RSP A77H2 DATED MAY 20, 2011 SUPERSEDES STANDARD PLAN A77H2
DATED MAY 1, 2006 - PAGE 68 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77H2

2006 REVISED STANDARD PLAN RSP A77H2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Pla	89	13.7/21.7	32	47

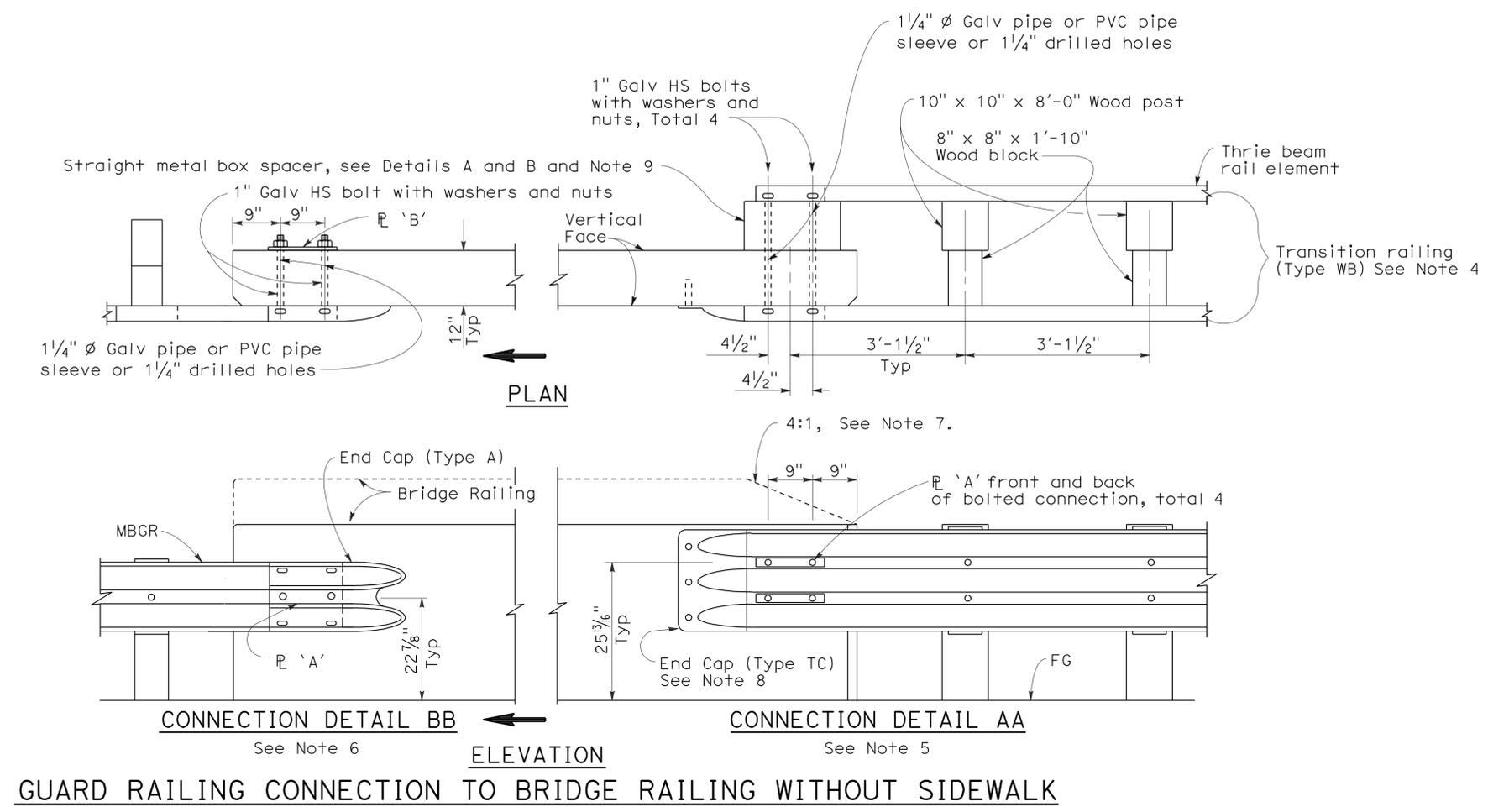
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

May 20, 2011
PLANS APPROVAL DATE

Randell D. Hiatt
REGISTERED PROFESSIONAL ENGINEER
No. C50200
Exp. 6-30-11
CIVIL
STATE OF CALIFORNIA

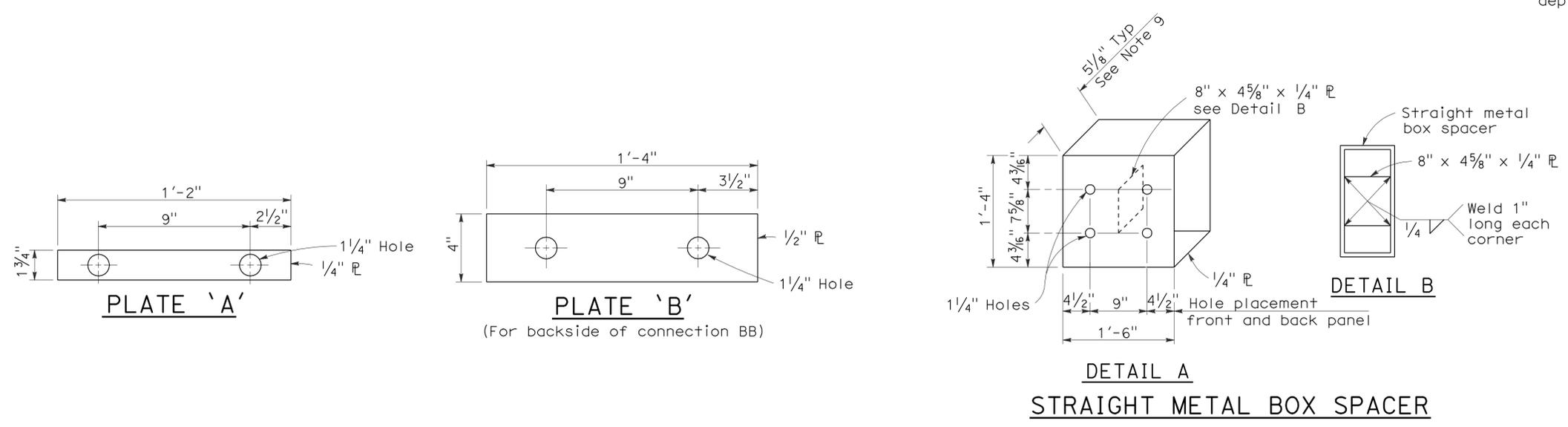
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To accompany plans dated 1-9-12



NOTES:

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



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
CONNECTIONS TO
BRIDGE RAILINGS
WITHOUT SIDEWALKS
DETAILS No.1**

NO SCALE

RSP A77J1 DATED MAY 20, 2011 SUPERSEDES RSP A77J1 DATED JUNE 6, 2008 AND STANDARD PLAN A77J1 DATED MAY 1, 2006 - PAGE 72 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP A77J1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Pla	89	13.7/21.7	33	47

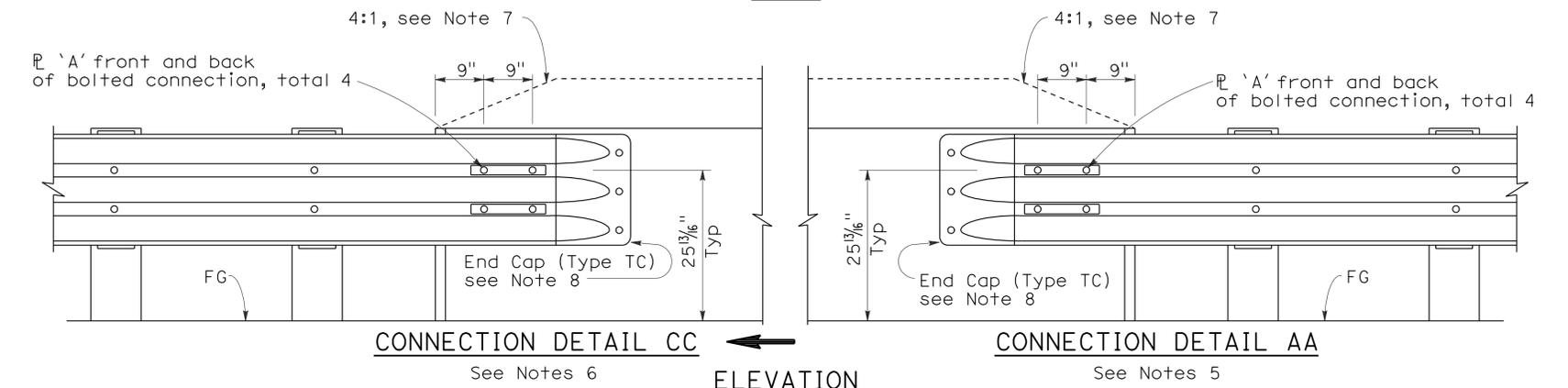
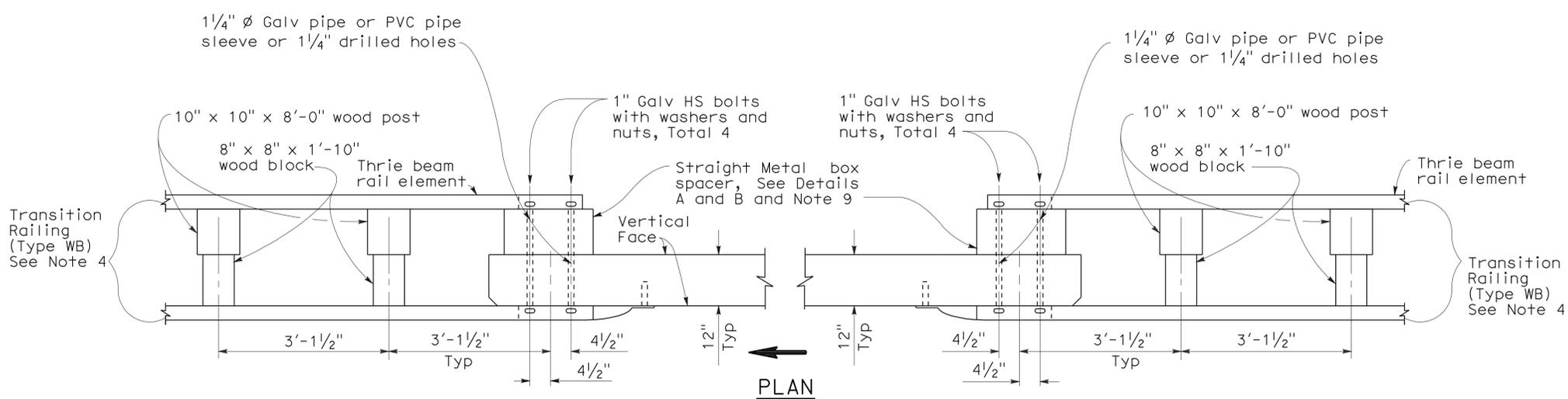
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

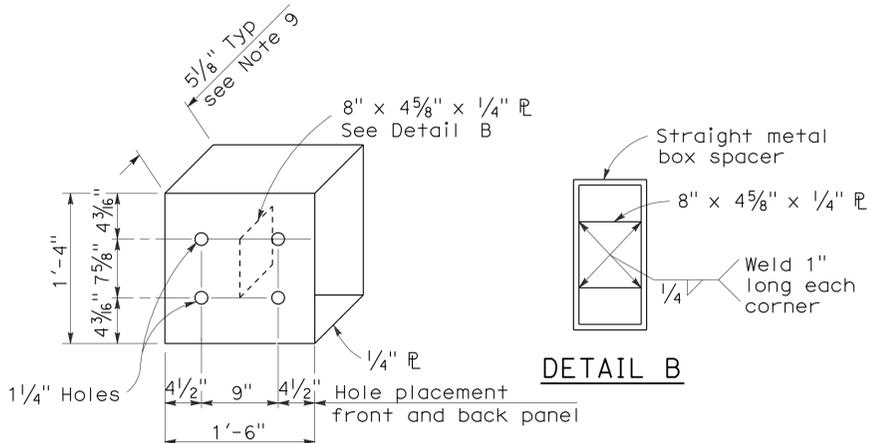
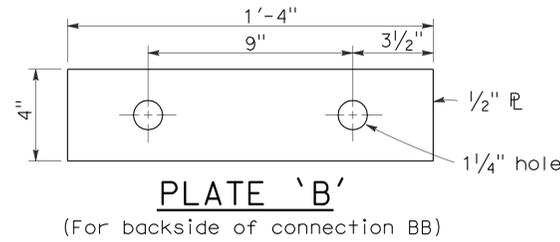
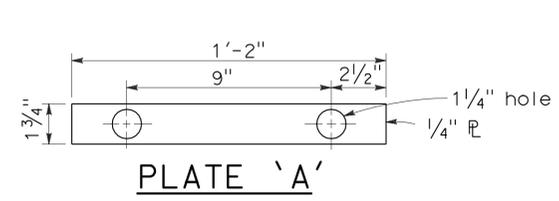
To accompany plans dated 1-9-12



GUARD RAILING CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK

NOTES:

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



**DETAIL A
STRAIGHT METAL BOX SPACER**

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

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

REVISED STANDARD PLAN RSP A77J2

2006 REVISED STANDARD PLAN RSP A77J2

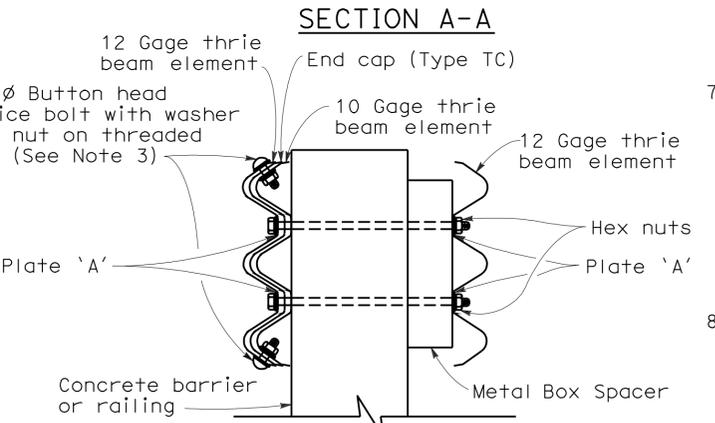
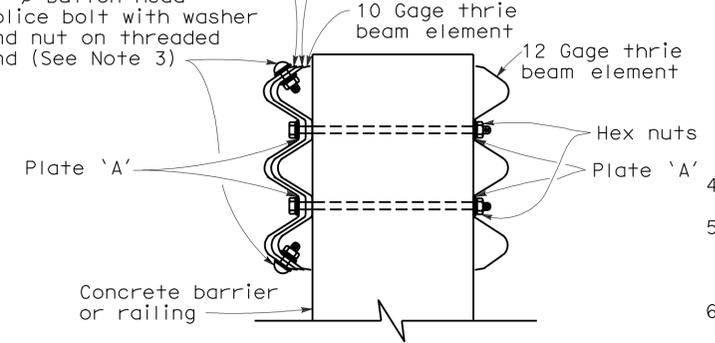
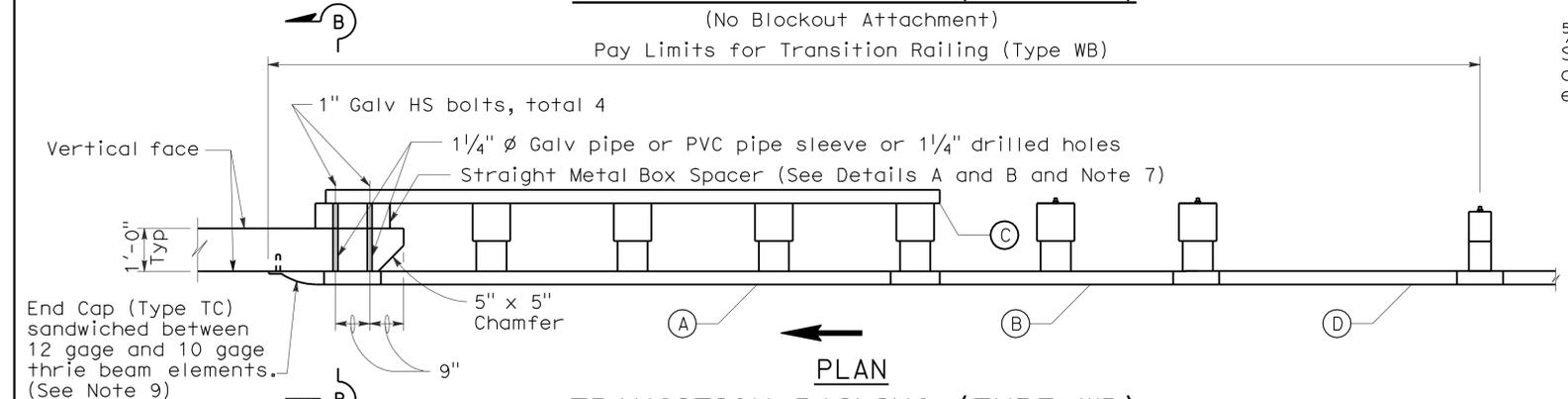
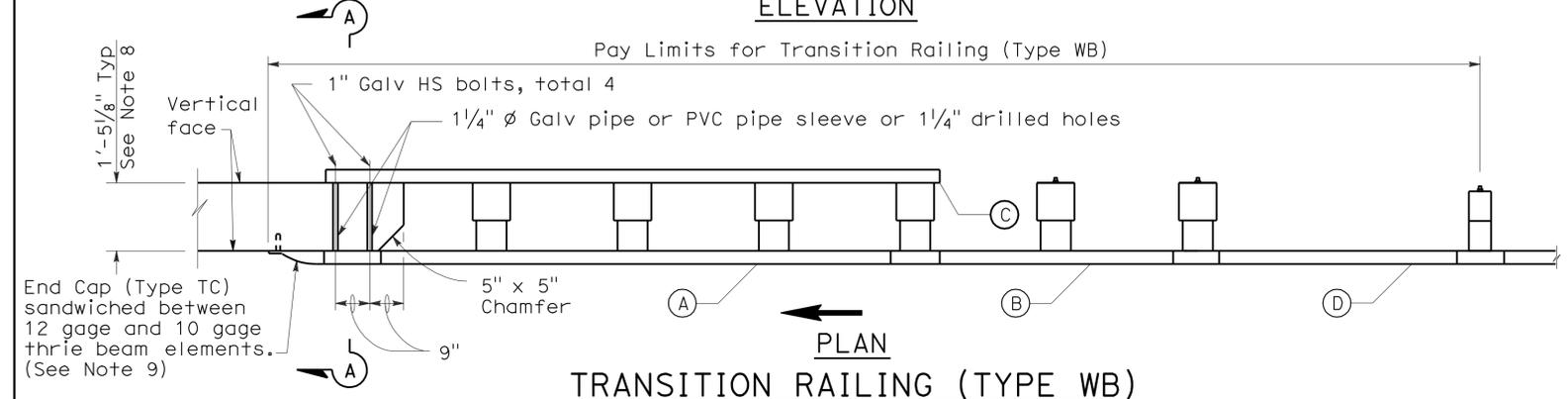
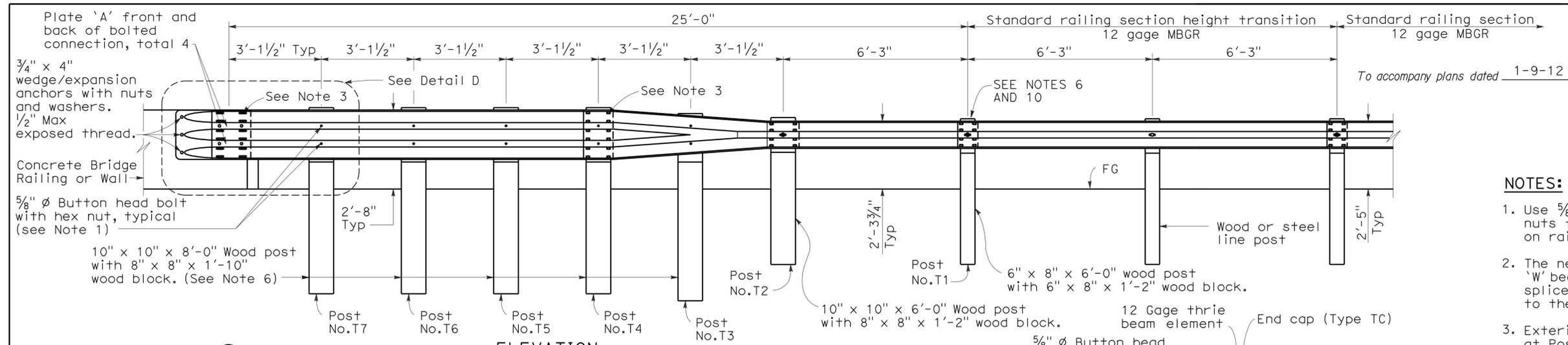
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Pla	89	13.7/21.7	34	47

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

May 20, 2011
PLANS APPROVAL DATE

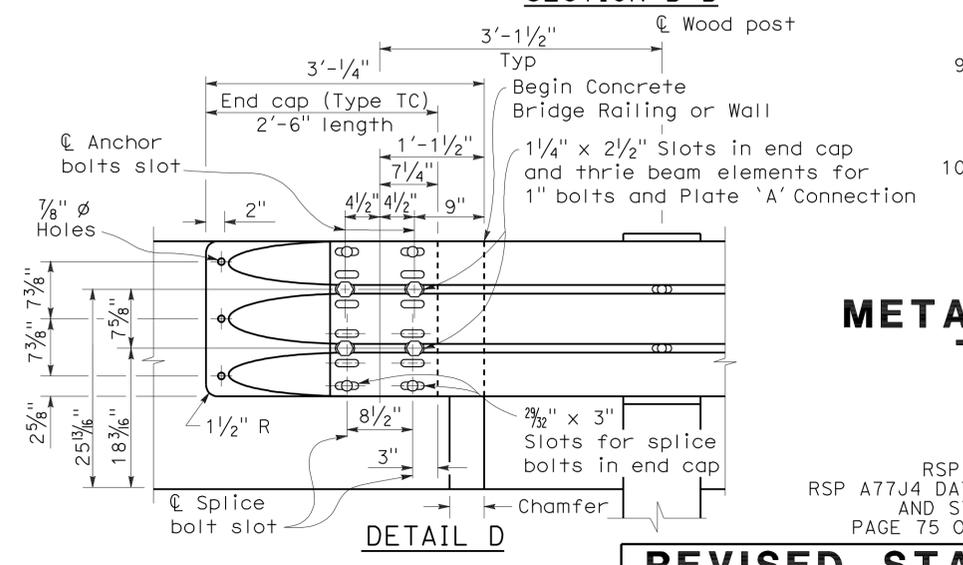
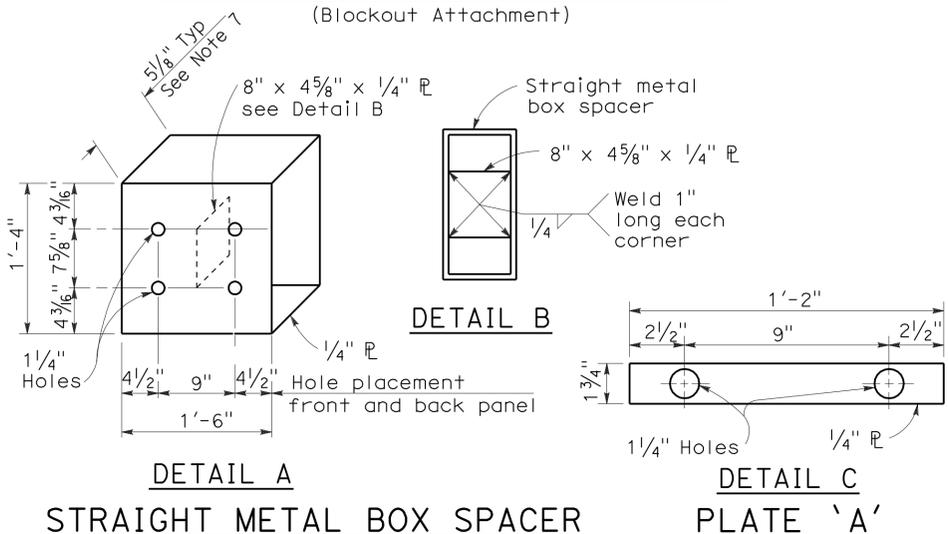
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REGISTERED PROFESSIONAL ENGINEER
No. C50200
Exp. 6-30-11
STATE OF CALIFORNIA



- NOTES:**
- Use 5/8" ϕ Button head bolts and hex nuts for connections to posts. No washer on rail face for bolted connections to post.
 - 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.
 - Exterior splice bolt holes for rail element splices at Post No. T4 and the connection to the concrete barrier or railing shall be the standard 7/32" x 1/8" slot size. Interior splice bolt holes at these locations may be increased up to 1/4" ϕ . Only the top 2 and the bottom 2 splice bolts with washers and nuts are required for rail splices at Post No. T4 and the connection to the concrete barrier or railing.
 - Direction of adjacent traffic indicated by \rightarrow .
 - The top elevation of Posts No. T2 through No. T7 shall not project more than 1" above the top elevation of the rail element.
 - Typically, the railing connected to Transition Railing (Type WB) will be either standard railing section of metal beam guard railing with height transition ratio of 120:1 or an approved Caltrans end treatment attached to Post No. T1.
 - The depth of the metal box spacer varies from the 5/8" to 1/2" and is dependent on the width of the concrete railing or wall. The combined dimension for the depth of the metal box spacer plus the width of railing or wall is typically 17/8". Where the space between the backside of the concrete railing or wall and the rear thrie beam element is less than 1/2", metal plates similar to Plate 'A' are to be used as spacers.
 - Where the width of the concrete railing or wall is greater than 17/8", wood blocks are to be used to fill the space created between the backside of Posts No. T4 through No. T7 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.
 - End cap may be installed over 12 gage and 10 gage thrie beam elements where transition railing is installed on the departure end of bridge railing.
 - Conform standard railing section height to 2'-3 3/4" at Post No. T1 using height transition ratio of 120:1.

- LEGEND**
- (A) Nested thrie beam elements (one 12 gage element nested over one 10 gage element).
 - (B) One 10 gage "W" beam to thrie beam element.
 - (C) One 12 gage thrie beam element.
 - (D) One 10 gage "W" beam rail element (7'-3 1/2" length)
- 10 gage = 0.135" thick
12 gage = 0.108" thick



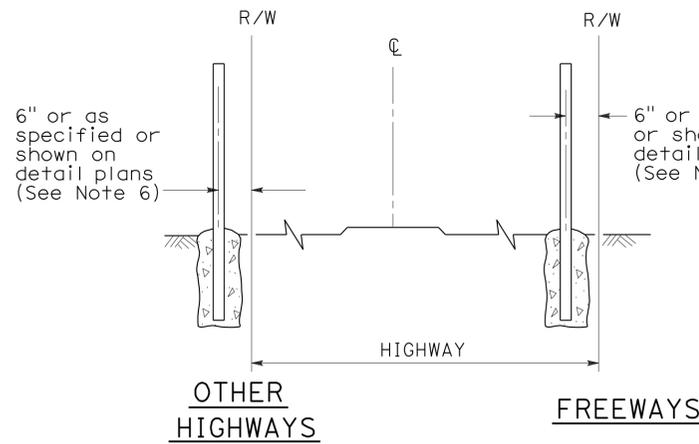
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TRANSITION RAILING
(TYPE WB)**

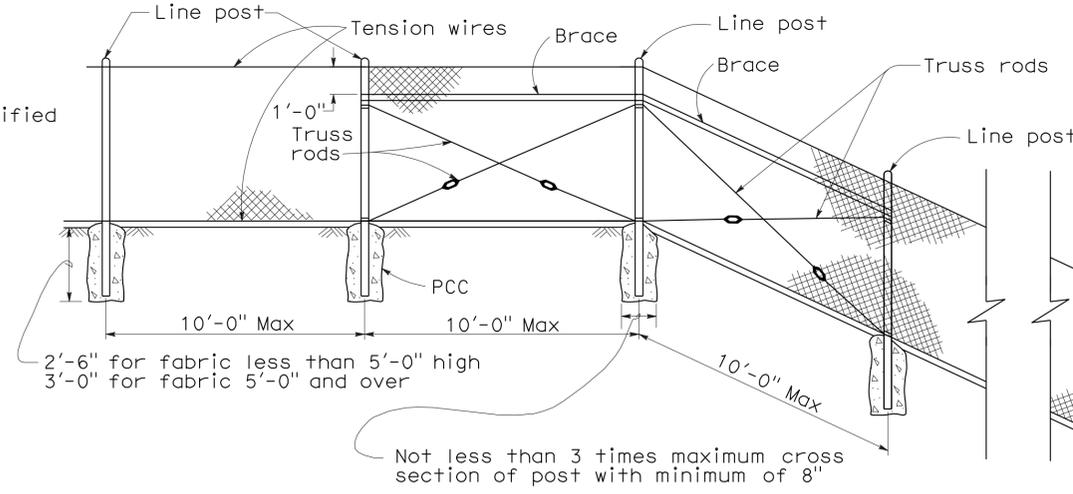
NO SCALE

RSP A77J4 DATED MAY 20, 2011 SUPERSEDES
RSP A77J4 DATED JUNE 5, 2009, RSP A77J4 DATED JUNE 6, 2008
AND STANDARD PLAN A77J4 DATED MAY 1, 2006 -
PAGE 75 OF THE STANDARD PLANS BOOK DATED MAY 2006.

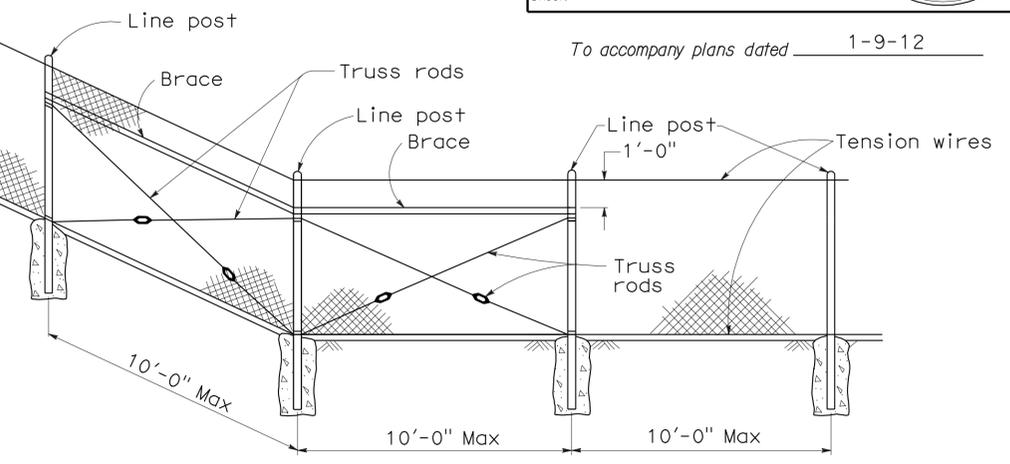
2006 REVISED STANDARD PLAN RSP A77J4



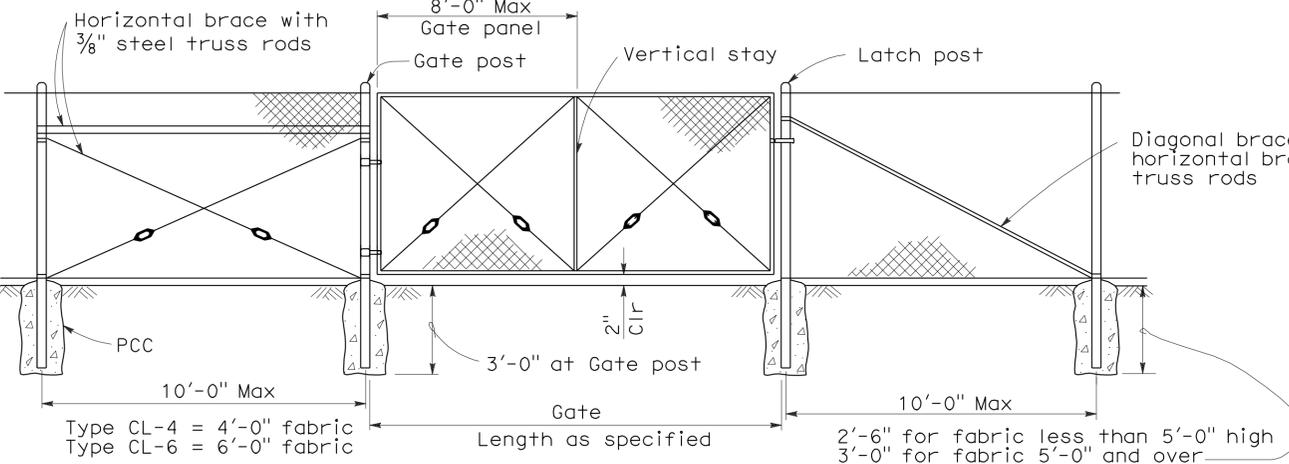
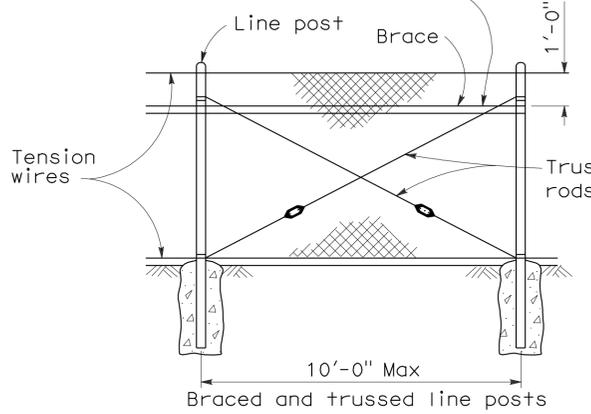
FENCE LOCATION



CHAIN LINK FENCE ON SHARP BREAK IN GRADE



Brace to be removed after all other fence construction is completed unless otherwise directed by the Engineer



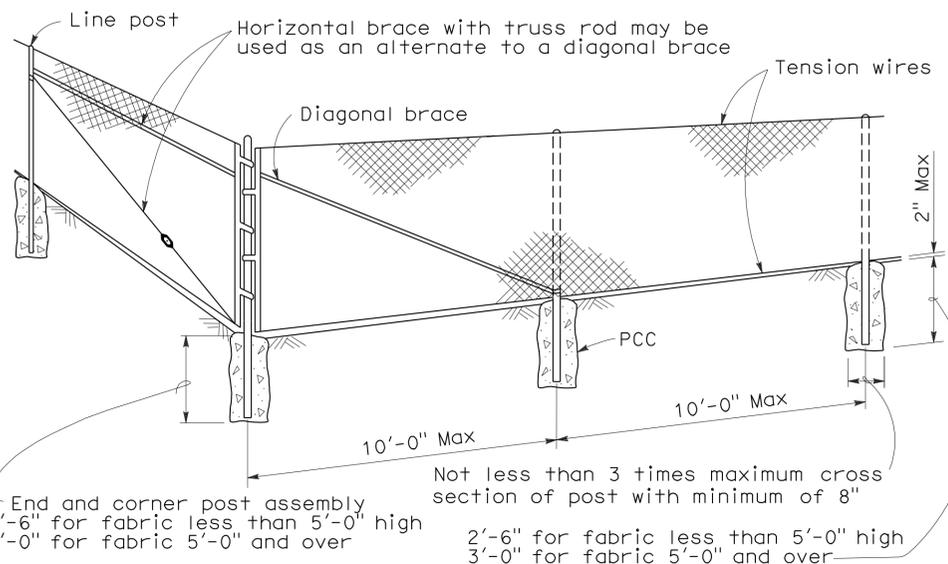
CHAIN LINK GATE INSTALLATION

NOTES:

- The below table shows examples of post and brace sections which may comply with the Specifications.
- Sections shown in the tables must also comply with the strength requirements and other provisions of the Specifications.
- Other sections which comply with the strength requirements and other provisions of the Specifications may be used on approval of the Engineer.
- Options exercised shall be uniform on any one project.
- Dimensions shown are nominal.
- Offset to be 2'-0" at monument locations, measured at right angles to R/W lines. Taper to achieve offset to be at least 20'-0" long.

GATE POST			
FENCE HEIGHT	GATE WIDTHS	NOMINAL ID	WEIGHT PER FOOT
6'-0" and Less	Up thru 6'-0"	2 1/2"	4.95 LB
	Over 6'-0" thru 12'-0"	4"	10.79 LB
	Over 12'-0" thru 18'-0"	5"	14.62 LB
	Over 18'-0" to 24'-0" Max	6"	18.97 LB
Over 6'-0"	Up thru 6'-0"	3"	7.58 LB
	Over 6'-0" thru 12'-0"	5"	14.62 LB
	Over 12'-0" thru 18'-0"	6"	18.97 LB
	Over 18'-0" to 24'-0" Max	8"	28.55 LB

Above post dimensions and weights are minimums. Larger sizes may be used on approval of the Engineer.



CORNER POST

FENCE HEIGHT	TYPICAL MEMBER DIMENSIONS (See Notes)									
	LINE POSTS			END, LATCH & CORNER POSTS			BRACES			
	ROUND ID	H	ROLL FORMED	ROUND ID	ROLL FORMED		ROUND ID	H	ROLL FORMED	
6' & less	1 1/2"	1 7/8" x 1 5/8"	1 7/8" x 1 5/8"	2"	3 1/2" x 3 1/2"	2" x 1 3/4"	1 1/4"	1 1/2" x 1 5/16"	1 5/8" x 1 1/4"	1 3/4" x 1 1/4"
Over 6'	2"	2 1/4" x 2"	2" x 1 3/4"	2 1/2"	3 1/2" x 3 1/2"	2 1/2" x 2 1/2"	1 1/4"	1 1/2" x 1 5/16"	1 5/8" x 1 1/4"	1 3/4" x 1 1/4"

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
CHAIN LINK FENCE
 NO SCALE

RSP A85 DATED JUNE 5, 2009 SUPERSEDES STANDARD PLAN A85
 DATED MAY 1, 2006 - PAGE 111 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A85

2006 REVISED STANDARD PLAN RSP A85

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Pla	89	13.7/21.7	36	47

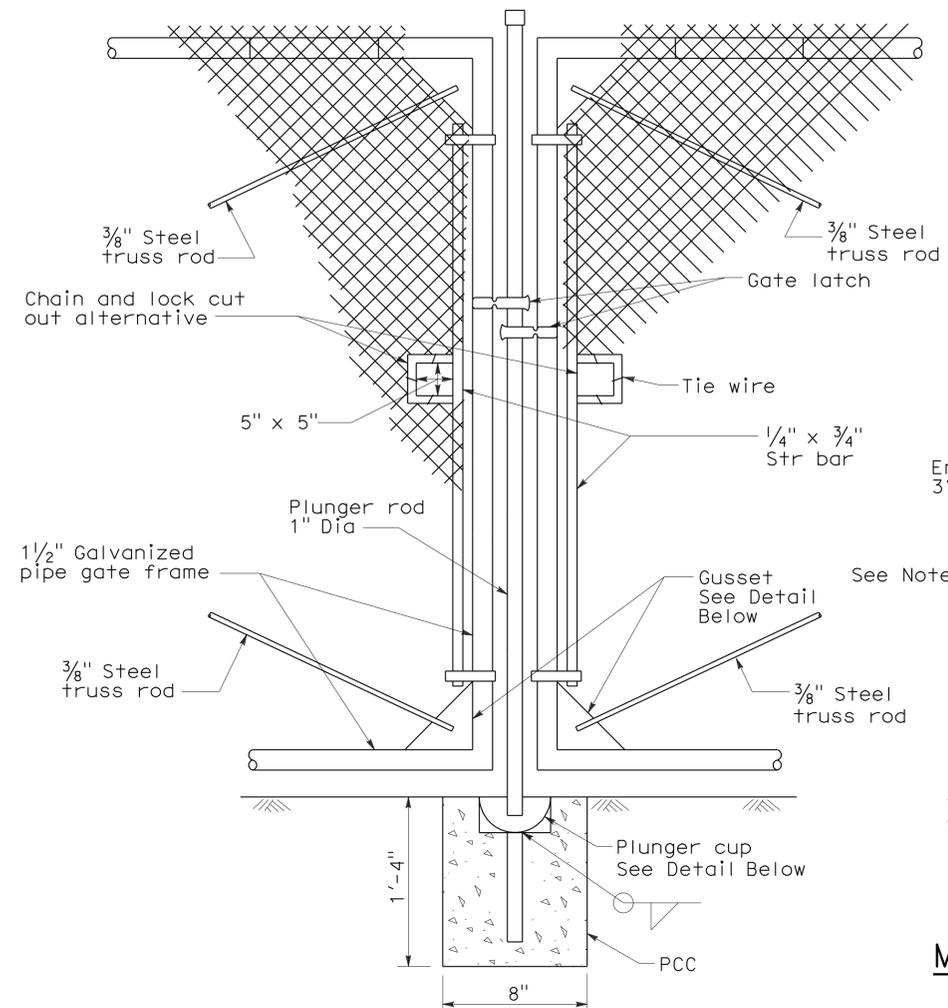
Glenn DeCou
 REGISTERED CIVIL ENGINEER
 No. C34547
 Exp. 9-30-09
 CIVIL
 STATE OF CALIFORNIA

June 5, 2009
 PLANS APPROVAL DATE

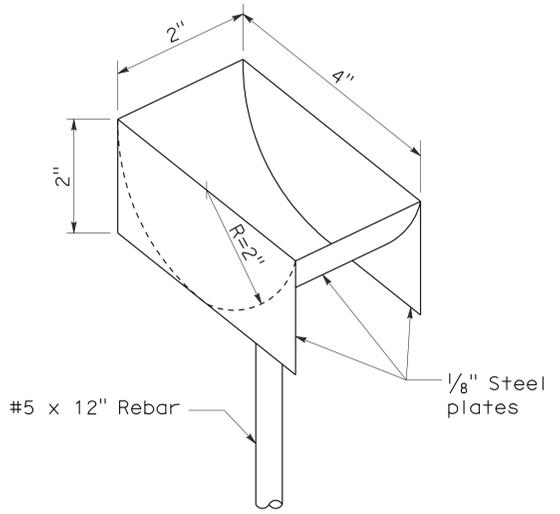
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To accompany plans dated 1-9-12

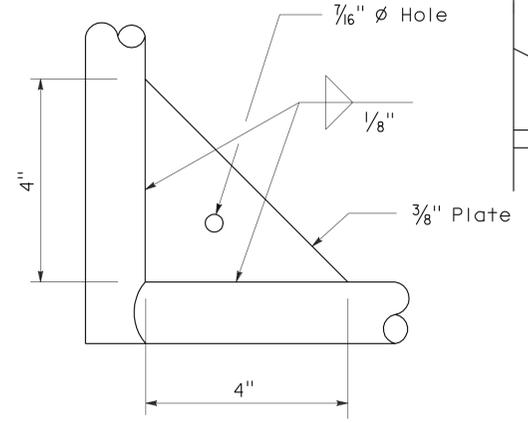
- NOTES:**
- H is 2'-6" for fabric less than 5'-0" high.
H is 3'-0" for fabric 5'-0" and over.
 - T is not less than 3 times maximum cross section of post with minimum of 8".
 - Arms with barbed wire to be used where shown on plans.
 - See Revised Standard Plan RSP A85 for Chain Link Fencing dimensions.
 - Reinforcing must comply with ASTM A 706.
 - See Detail A on New Standard Plan NSP A86B for connection at headwall.



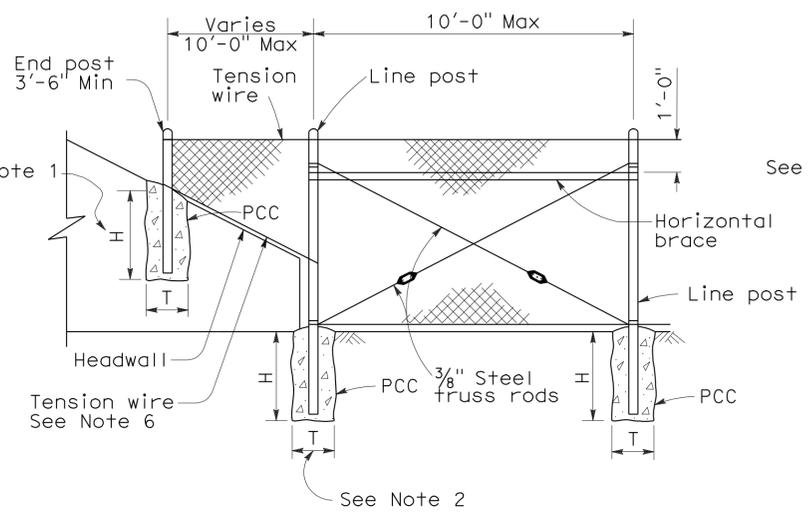
**TYPICAL DOUBLE GATE
REMOVABLE CENTER POST**



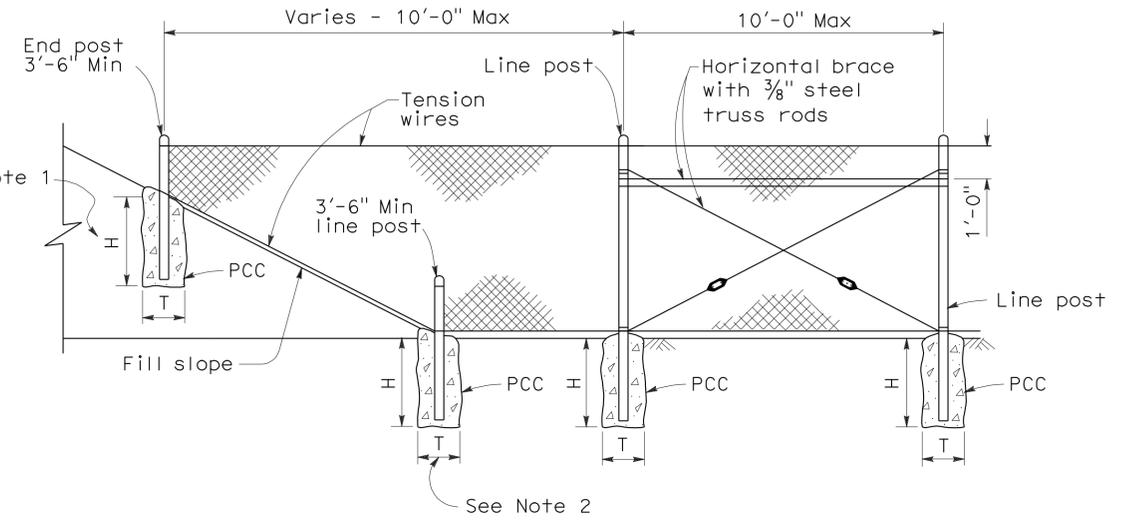
PLUNGER CUP DETAIL



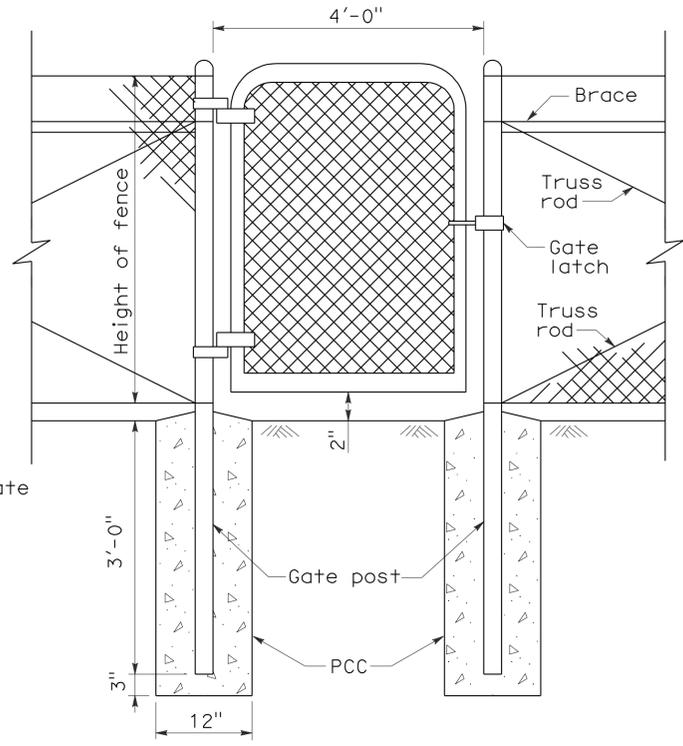
GUSSET DETAIL



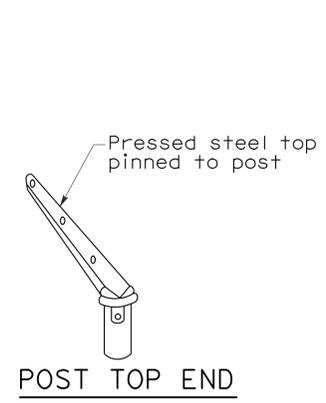
METHOD OF TYING FENCE TO HEADWALL



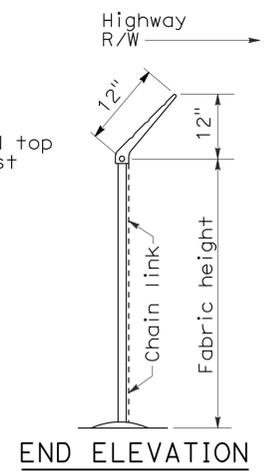
METHOD OF ERECTING FENCE FOR FILL SLOPE



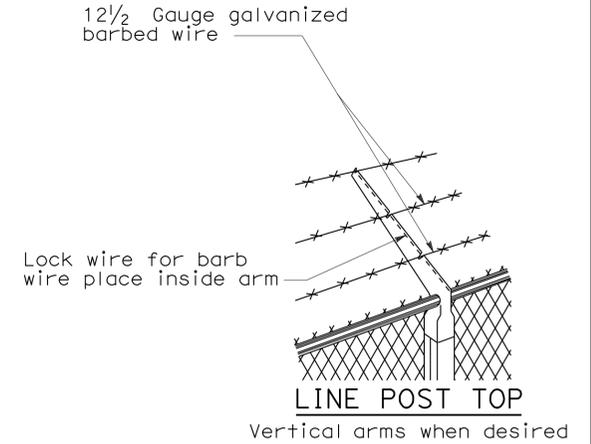
WALK GATE



POST TOP END



BARBED WIRE POST TOP
See Note 3



LINE POST TOP
Vertical arms when desired

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
CHAIN LINK FENCE DETAILS
NO SCALE

NSP A85A DATED JUNE 5, 2009 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

NEW STANDARD PLAN NSP A85A

2006 NEW STANDARD PLAN NSP A85A

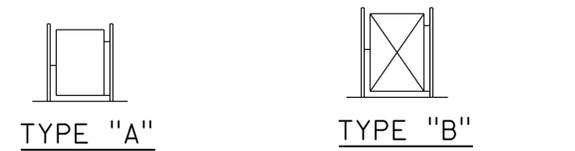
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Pla	89	13.7/21.7	37	47

Glenn DeCou
 REGISTERED CIVIL ENGINEER
 No. C34547
 Exp. 9-30-09
 STATE OF CALIFORNIA

June 5, 2009
 PLANS APPROVAL DATE

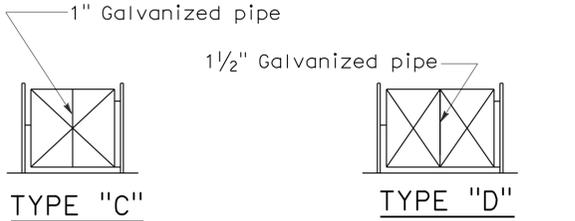
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To accompany plans dated 1-9-12



TYPE "A"
3' and 6' Single
6' and 12' Double

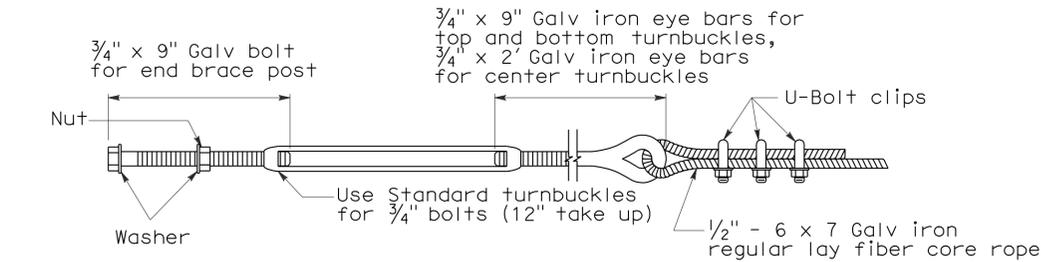
TYPE "B"
Over 6' to 12' Single.
Over 12' to 24' Double



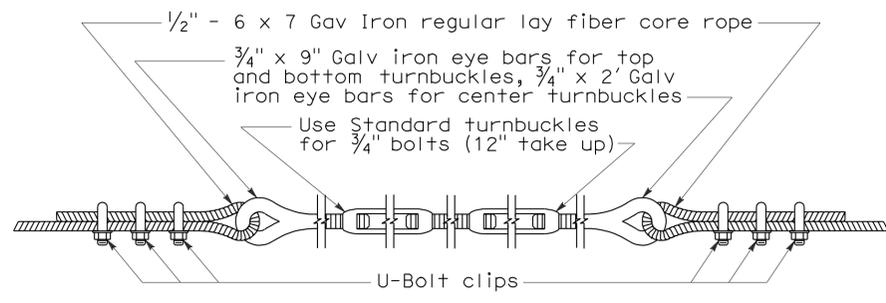
TYPE "C"
Over 12' to 18' Single
Over 24' to 36' Double.

TYPE "D"
Over 18' to 24' Single
Over 36' to 48' Double

TYPICAL FRAMEWORK SHOWING NUMBER OF BAYS IN GATE



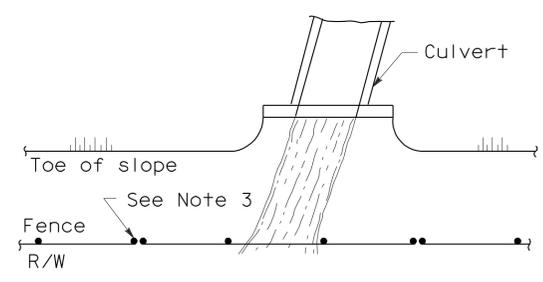
TURNBUCKLE A



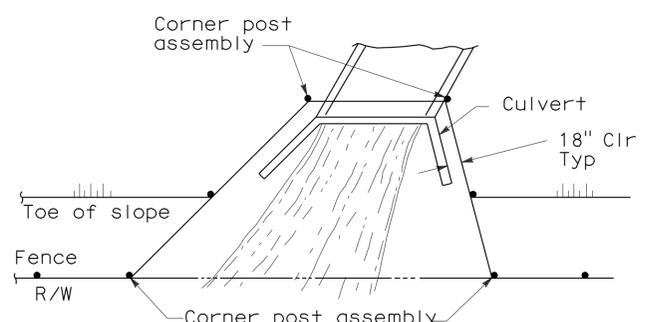
TURNBUCKLE B

NOTES:

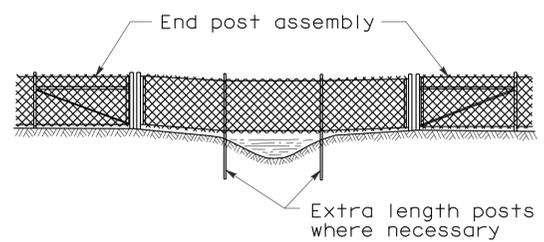
1. All material for abutment connection to be galvanized.
2. The chain link fabric shall be replaced by barbed wire strands at 12" maximum centers between the double posts.
3. When the width of the culvert makes it necessary to anchor a post to the top of the culvert, a cast iron shoe or other device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



PLAN

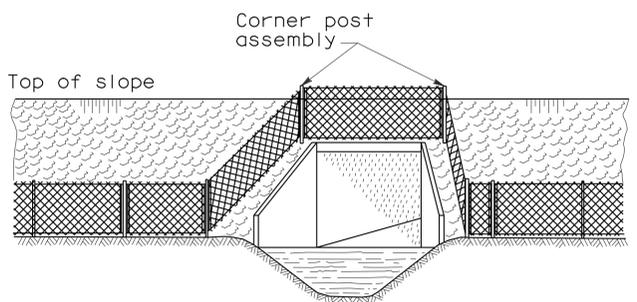


PLAN



ELEVATION

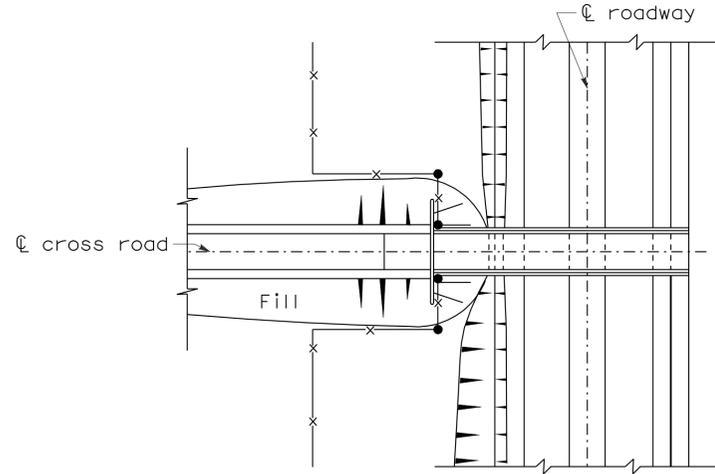
INSTALLATION OVER STREAM



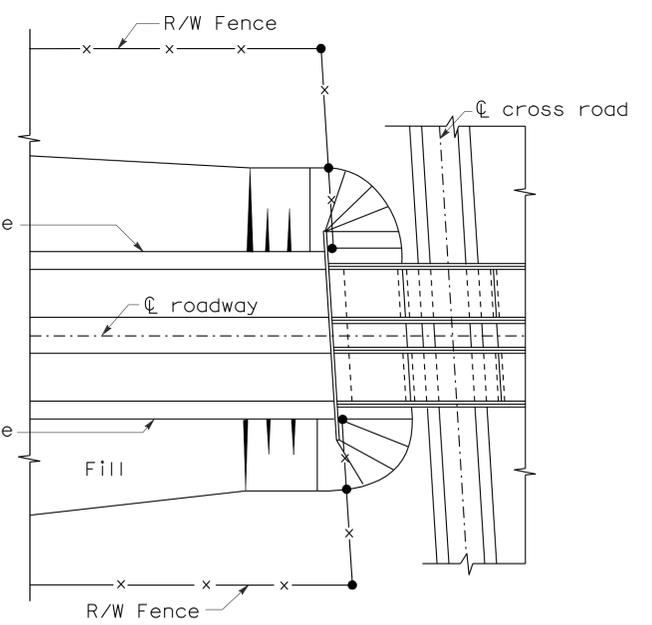
ELEVATION

INSTALLATION AROUND HEADWALL

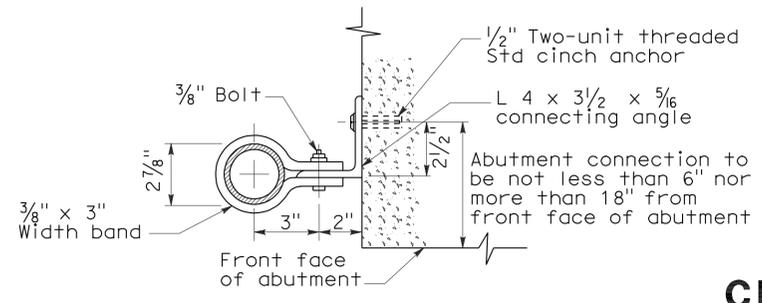
See Note 4



PLAN OF ROADWAY - UNDERPASS



PLAN OF ROADWAY - OVERPASS



ABUTMENT CONNECTION

TYPICAL INSTALLATION AT BRIDGES

CHAIN LINK FENCE DETAILS

NO SCALE

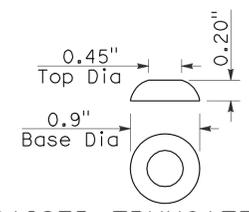
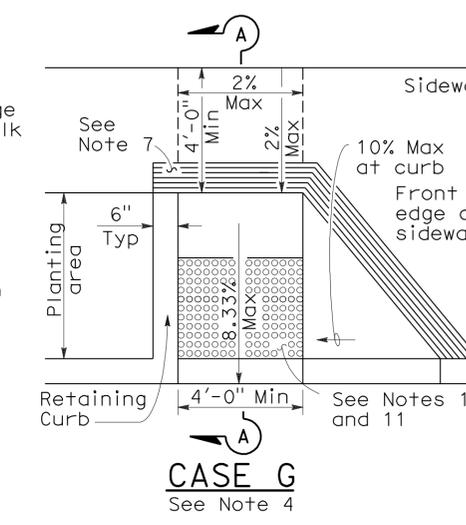
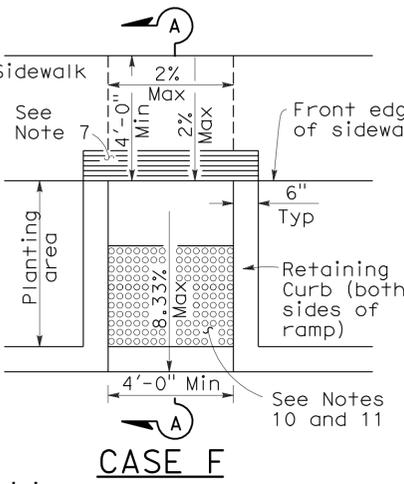
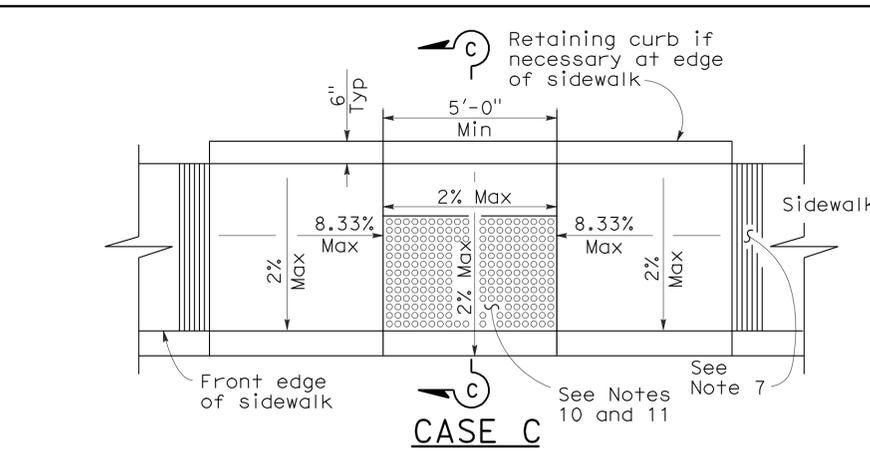
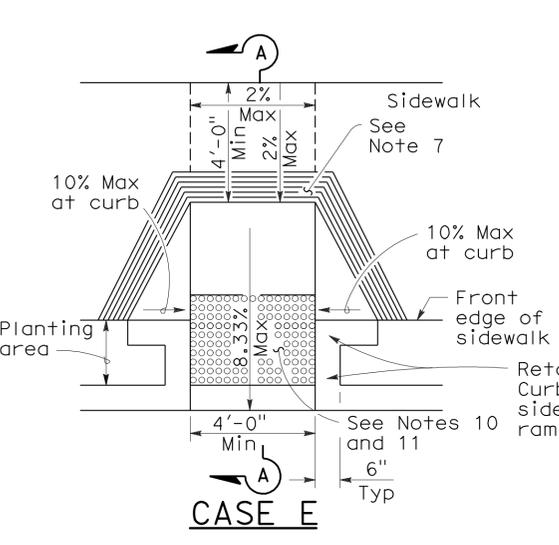
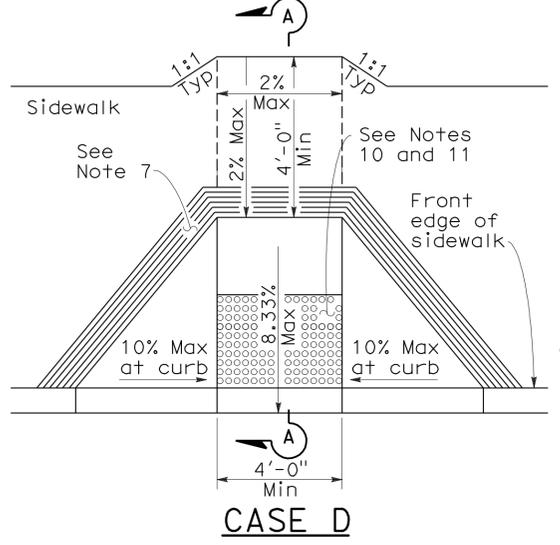
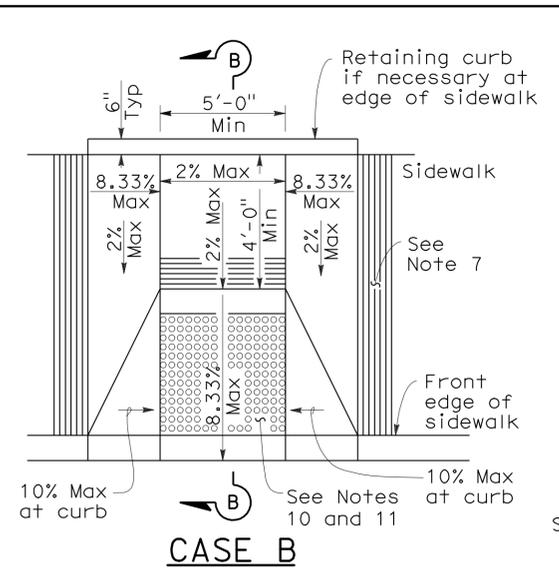
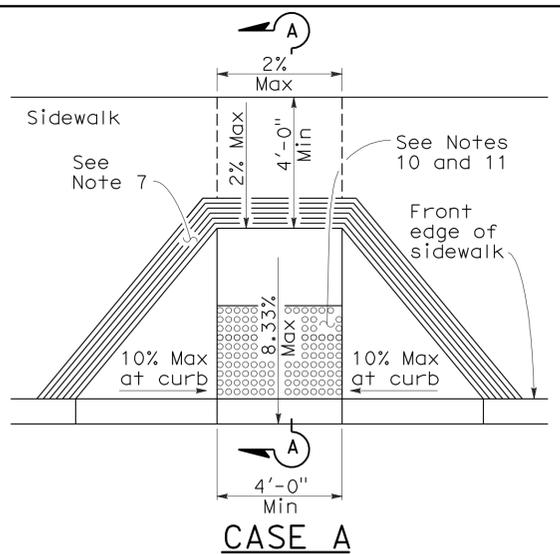
NSP A85B DATED JUNE 5, 2009 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP A85B

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Pla	89	13.7/21.7	38	47

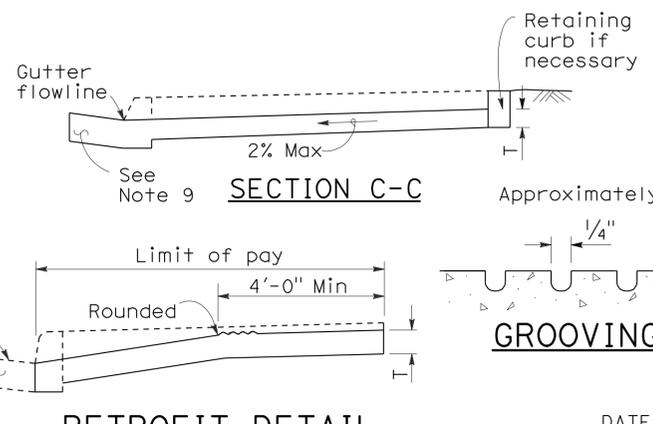
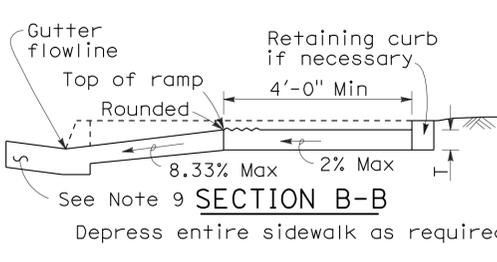
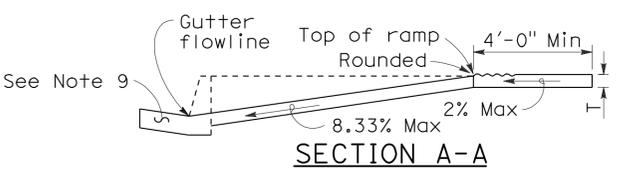
H. David Cordova
 REGISTERED CIVIL ENGINEER
 September 1, 2006
 PLANS APPROVAL DATE
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REGISTERED PROFESSIONAL ENGINEER
 Hector David Cordova
 No. C41957
 Exp. 3-31-08
 CIVIL
 STATE OF CALIFORNIA



NOTES:

- As site conditions dictate, Case A through Case G curb ramps may be used for corner installations similar to those shown in Detail A and Detail B. The case of curb ramps used in Detail A do not have to be the same. Case A through Case G curb ramps also may be used at mid block locations, as site conditions dictate.
- If distance from curb to back of sidewalk is too short to accommodate ramp and 4'-0" platform (landing) as shown in Case A, the sidewalk may be depressed longitudinally as in Case B, or C or may be widened as in Case D.
- When ramp is located in center of curb return, crosswalk configuration must be similar to that shown for Detail B.
- As site conditions dictate, the retaining curb side and the flared side of the Case G ramp shall be constructed in reversed position.
- If located on a curve, the sides of the ramp need not be parallel, but the minimum width of the ramp shall be 4'-0".
- Side slope of ramp flares vary uniformly from a maximum of 10% at curb to conform with longitudinal sidewalk slope adjacent to top of the ramp, except in Case C and Case F.
- The curb ramp shall be outlined, as shown, with a 1'-0" wide border with 1/4" grooves approximately 3/4" on center. See grooving detail.
- Transitions from ramps and landing to walks, gutters or streets shall be flush and free of abrupt changes.
- Maximum slopes of adjoining gutters, the road surface immediately adjacent to the curb ramp or accessible route shall not exceed 5 percent within 4'-0" of the top and bottom of the curb ramp.
- Curb ramps shall have a detectable warning surface that extends the full width and 3'-0" depth of the ramp. Detectable Warning Surfaces shall conform to the details on this plan and the requirements in the Special Provisions.
- The edge of the detectable warning surface nearest the street shall be between 6" and 8" from the gutter flowline.
- Sidewalk and ramp thickness, "T", shall be 3/2" minimum.
- Utility pull boxes, manholes, vaults and all other utility facilities within the boundaries of the curb ramp will be relocated or adjusted to grade by the owner prior to, or in conjunction with, curb ramp construction.
- For retrofit conditions, removal and replacement of curb apron will be at the Contractor's option, unless otherwise shown on project plans.



1.67" to 2.35"
Center to center spacing

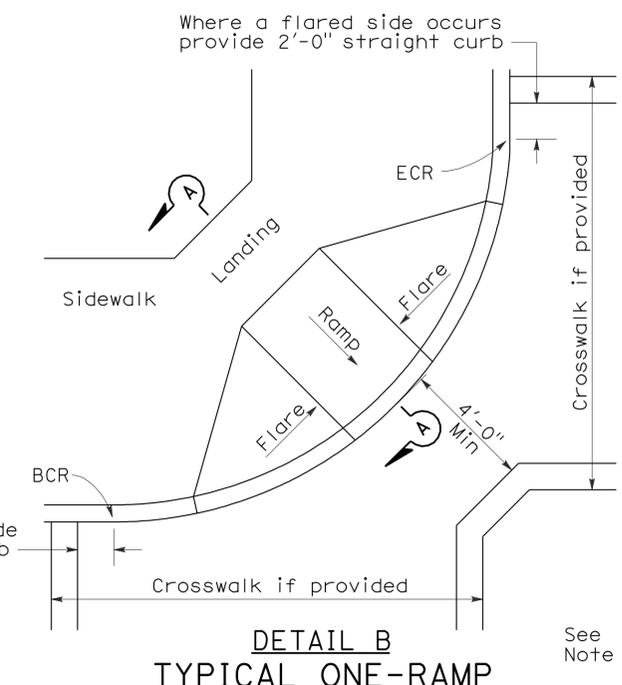
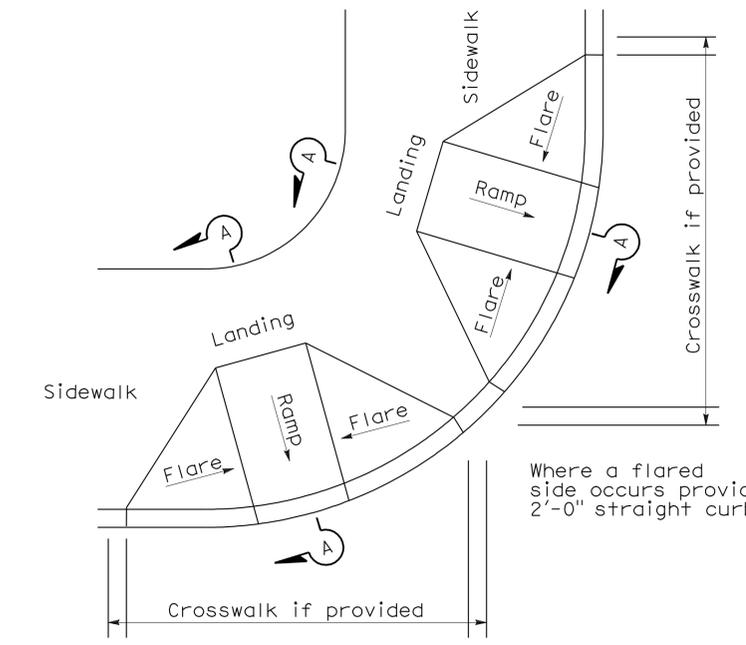
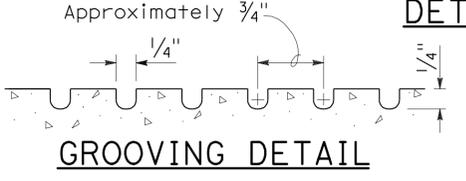
RAISED TRUNCATED DOME PATTERN (IN-LINE) DETECTABLE WARNING SURFACE

See Note 10

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CURB RAMP DETAILS

NO SCALE



See Note 14
See Note 9

RETROFIT DETAIL
Existing curb and sidewalk

TYPICAL TWO-RAMP CORNER INSTALLATION

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

2006 REVISED STANDARD PLAN RSP A88A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Pla	89	13.7/21.7	39	47

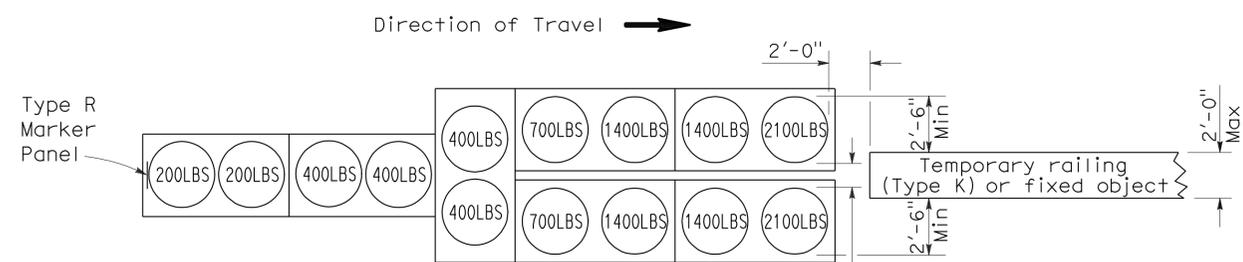
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

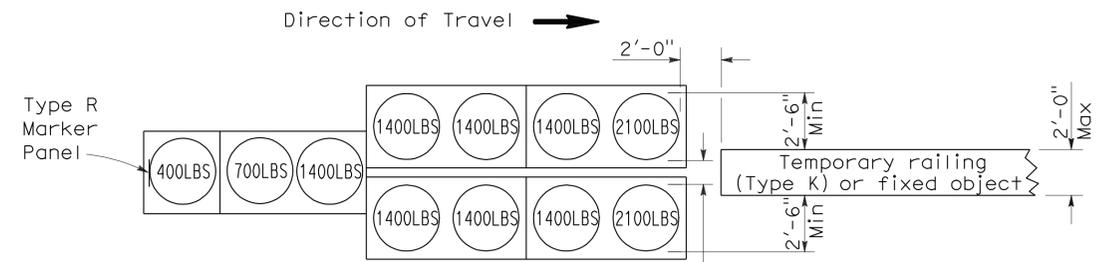
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 1-9-12



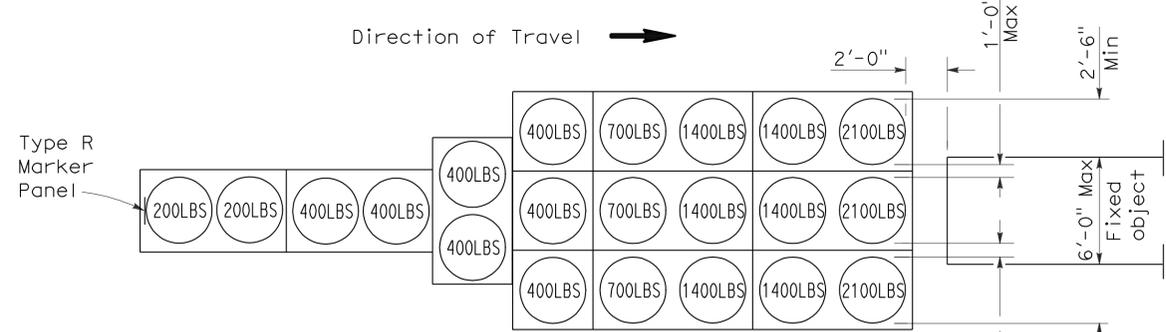
ARRAY 'TU14'

Approach speed 45 mph or more



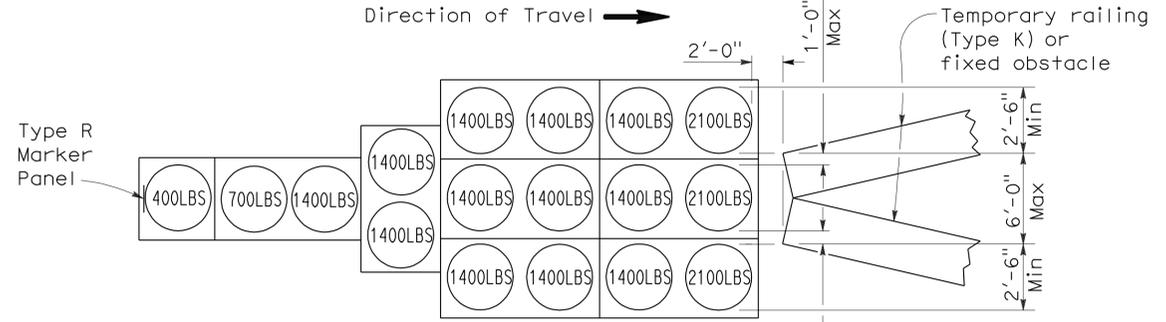
ARRAY 'TU11'

Approach speed less than 45 mph



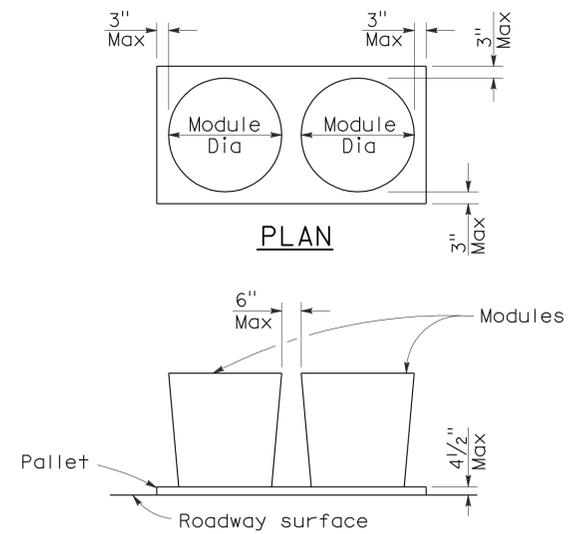
ARRAY 'TU21'

Approach speed 45 mph or more



ARRAY 'TU17'

Approach speed less than 45 mph



ELEVATION

CRASH CUSHION PALLET DETAIL

See Note 7

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

REVISED STANDARD PLAN RSP T1A

2006 REVISED STANDARD PLAN RSP T1A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Pla	89	13.7/21.7	40	47

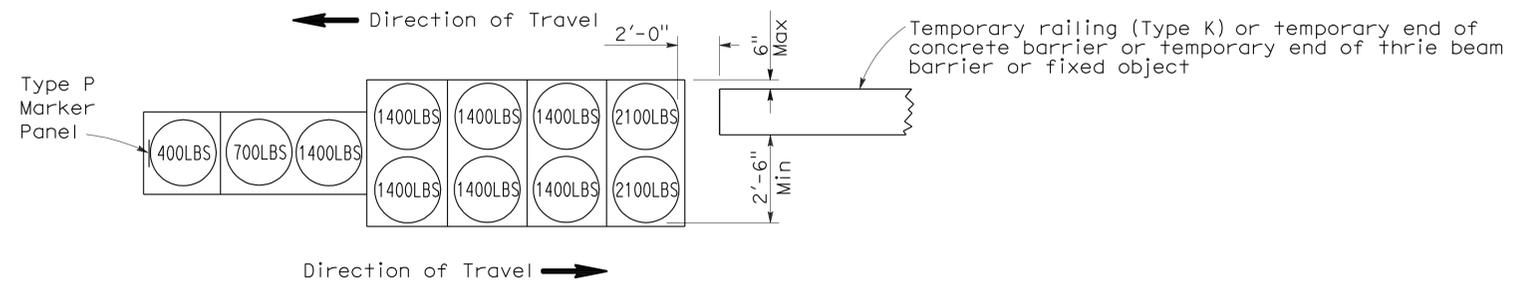
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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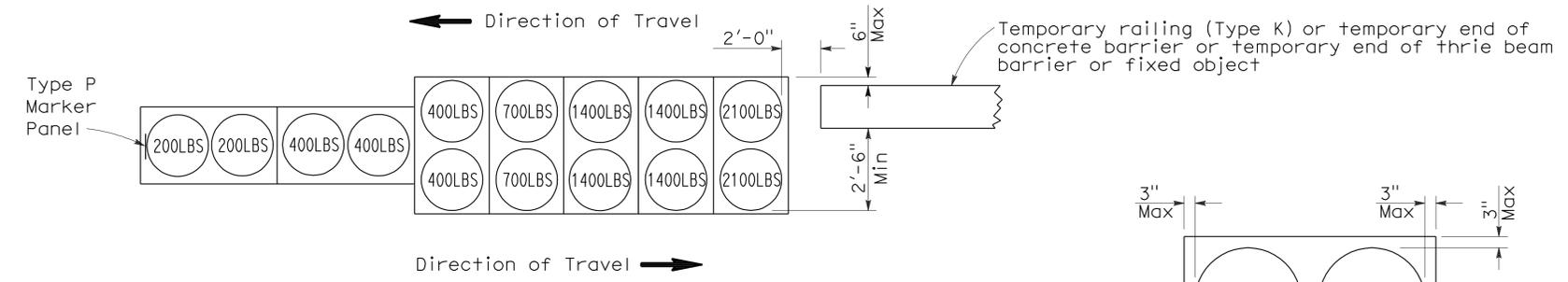
REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

To accompany plans dated 1-9-12



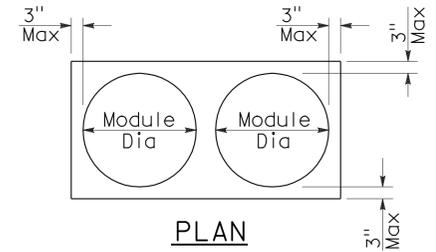
ARRAY 'TB11'

Approach speed less than 45 mph

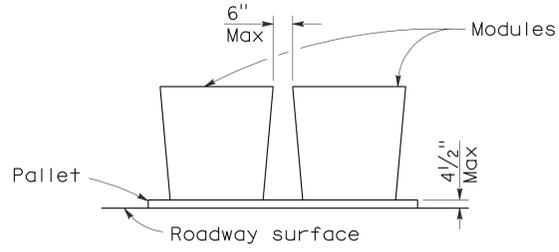


ARRAY 'TB14'

Approach speed 45 mph or more



PLAN



ELEVATION

CRASH CUSHION PALLET DETAIL

See Note 7

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

REVISED STANDARD PLAN RSP T1B

2006 REVISED STANDARD PLAN RSP T1B

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Pla	89	13.7/21.7	41	47

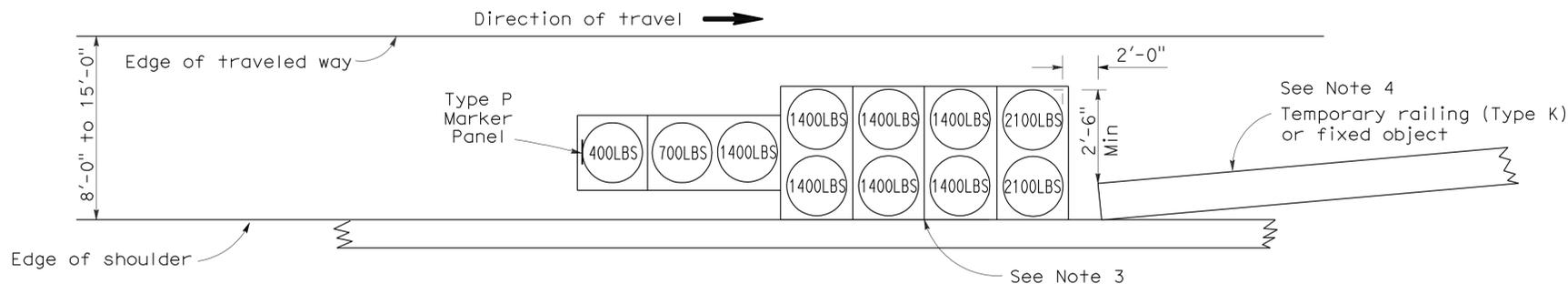
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

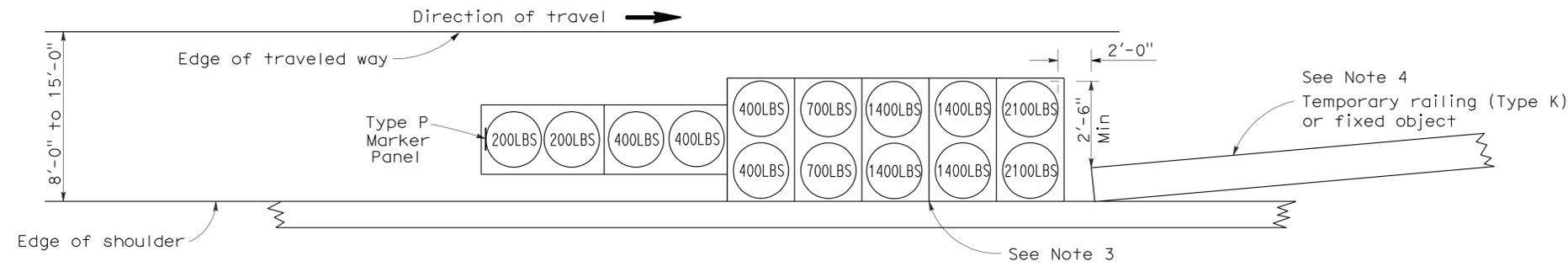
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REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

To accompany plans dated 1-9-12



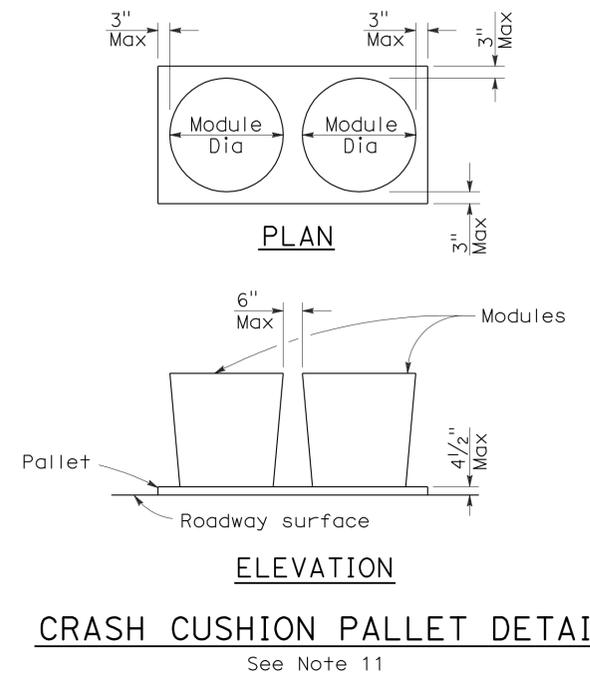
ARRAY 'TS11'
Approach speed less than 45 mph
See Note 9



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

NOTES:

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



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

RSP T2 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T2
DATED MAY 1, 2006 - PAGE 213 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP T2

2006 REVISED STANDARD PLAN RSP T2

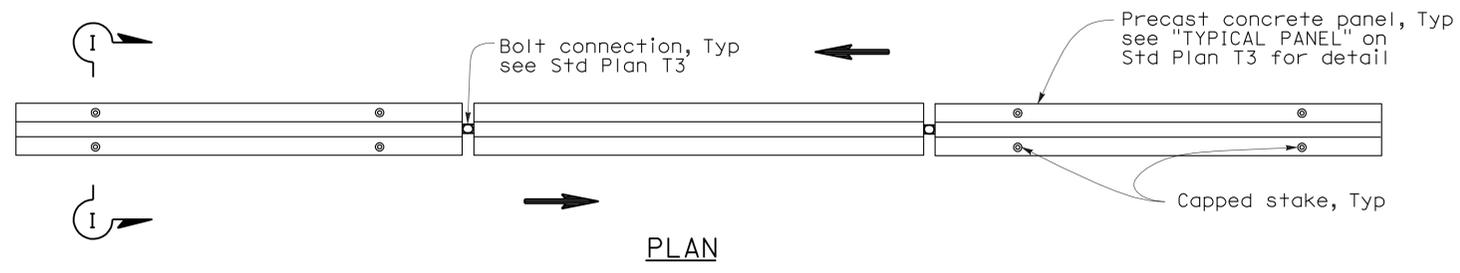
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Pla	89	13.7/21.7	42	47

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

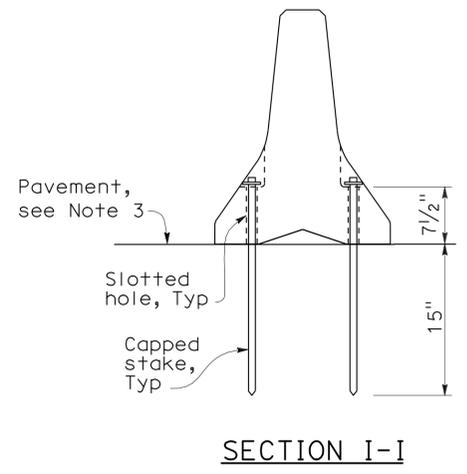
May 20, 2011
PLANS APPROVAL DATE

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To accompany plans dated 1-9-12

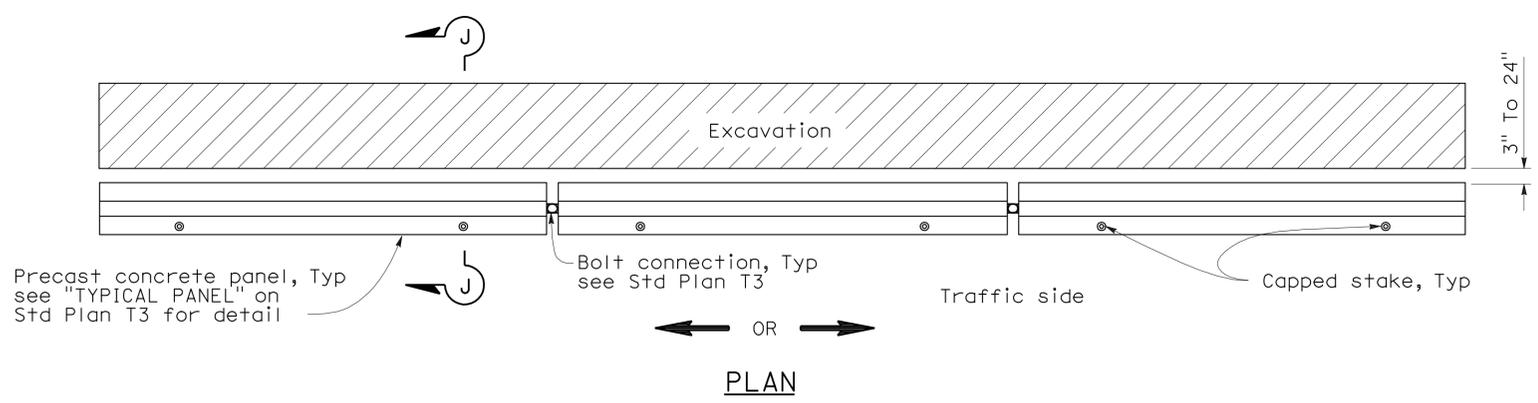


RAILING STAKING CONFIGURATION FOR TWO-WAY TRAFFIC
See Note 1

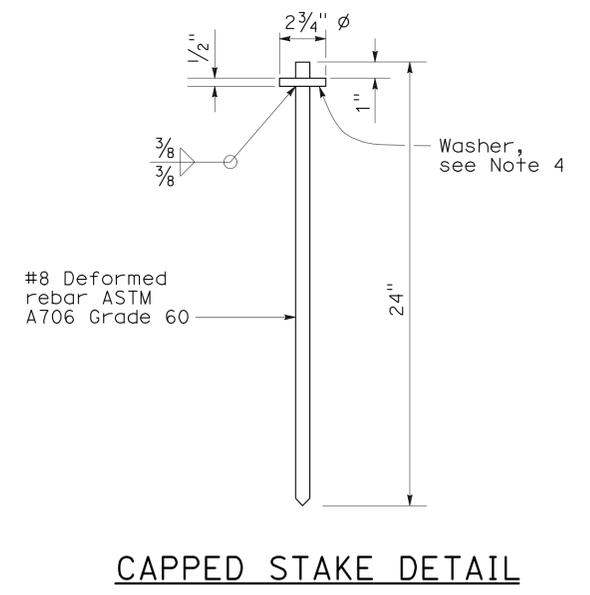
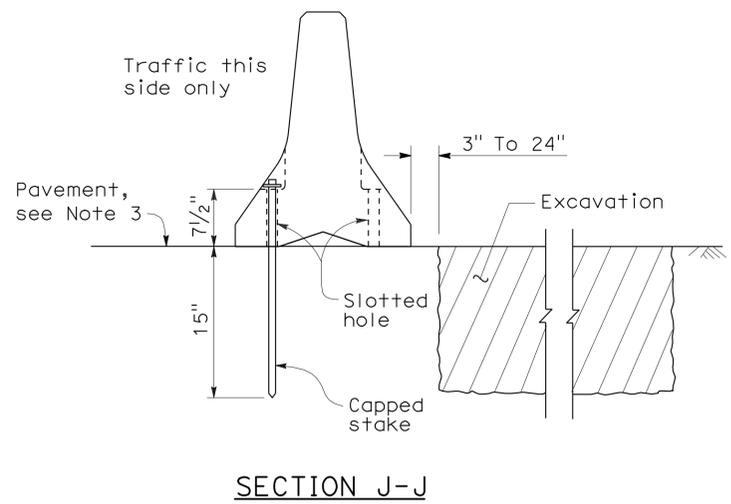


NOTES:

1. Where Type K Temporary Railing is placed as a temporary or long term barrier in two-way traffic on highways with less than 24" from the edge of traveled way, use four capped stakes per every other panel with end panels staked.
2. Where Type K Temporary Railing is placed 3" to 24" from the edge of an excavation on highways, use two capped stakes per panel along the traffic side.
3. Staked Type K Temporary Railing must be supported by at least 4" thick concrete, hot mix asphalt or existing asphalt concrete pavement.
4. The minimum yield strength for the washer must be 60,000 psi.
5. Direction of adjacent traffic indicated by \Rightarrow .



RAILING STAKING CONFIGURATION ADJACENT TO AN EXCAVATION
See Note 2



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**TEMPORARY RAILING
(TYPE K)**

NO SCALE

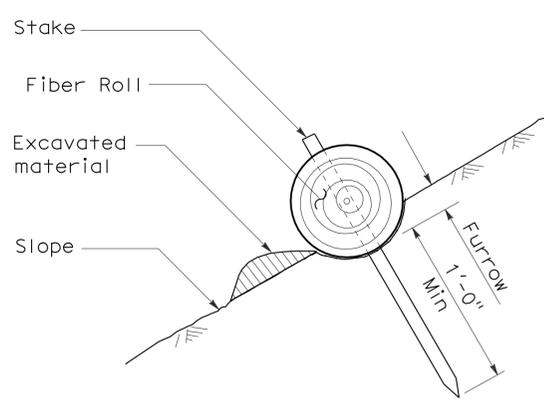
NSP T3A DATED MAY 20, 2011 SUPPLEMENTS
THE STANDARD PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP T3A

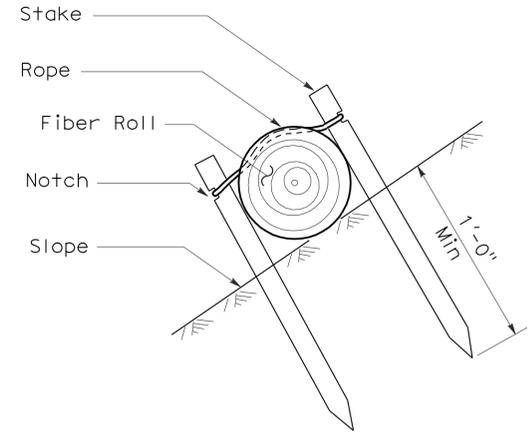
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Pla	89	13.7/21.7	43	47

Robert B. Schott
 LICENSED LANDSCAPE ARCHITECT
 April 3, 2009
 PLANS APPROVAL DATE
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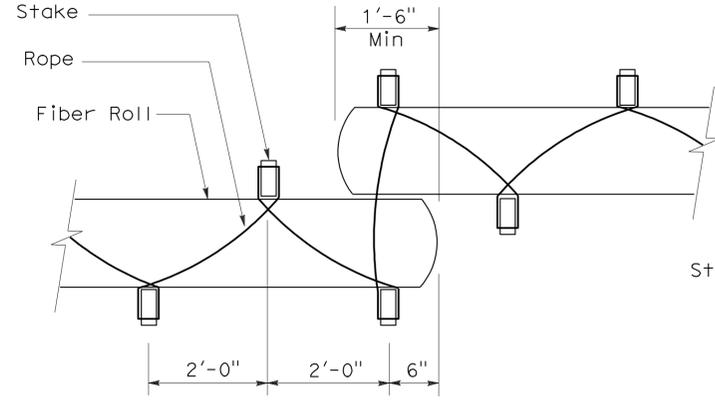
To accompany plans dated 1-9-12



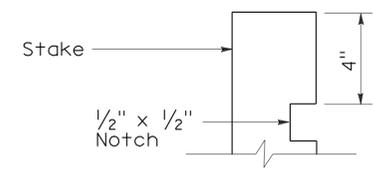
SECTION
TEMPORARY FIBER ROLL (TYPE 1)



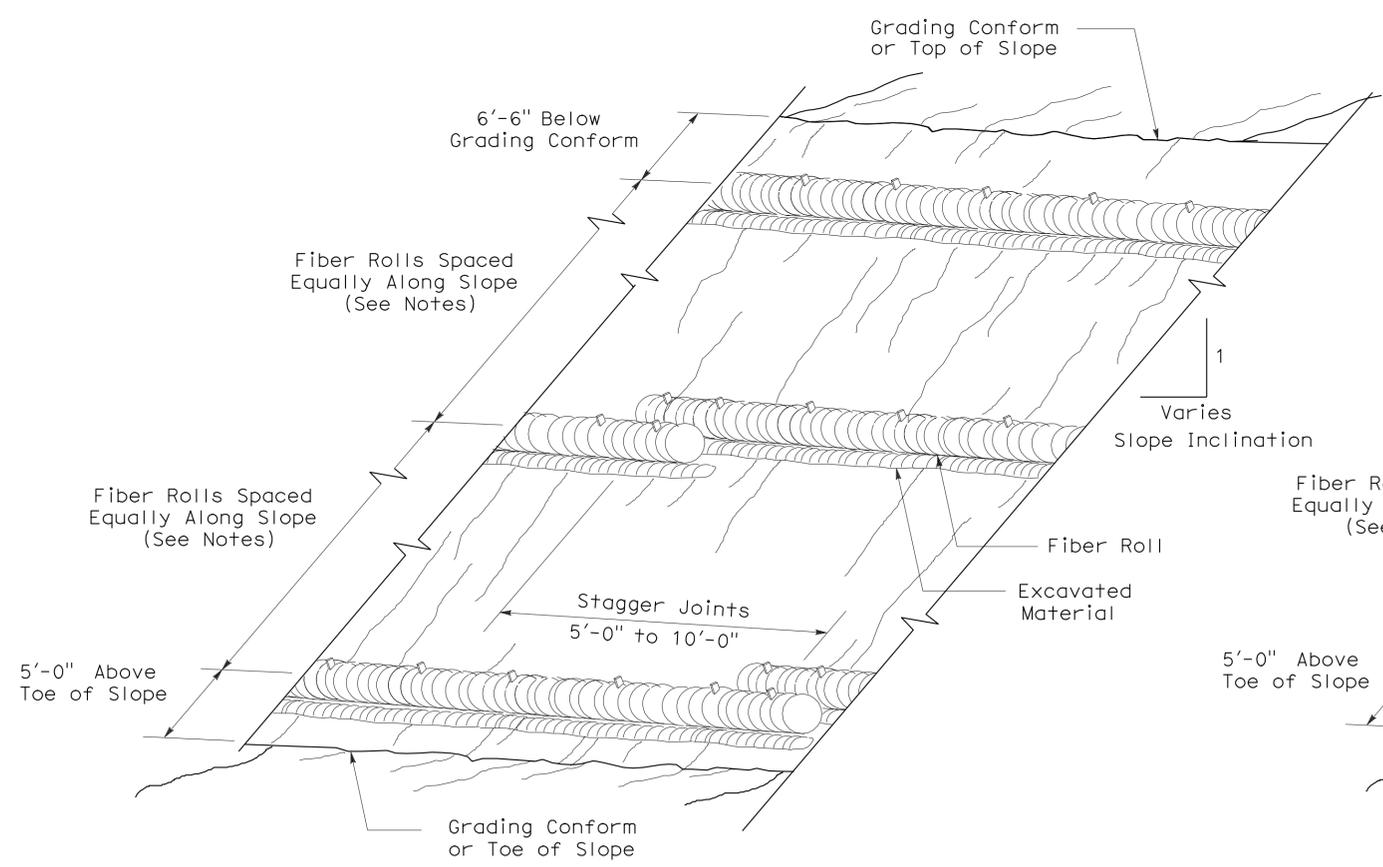
SECTION
TEMPORARY FIBER ROLL (TYPE 2)



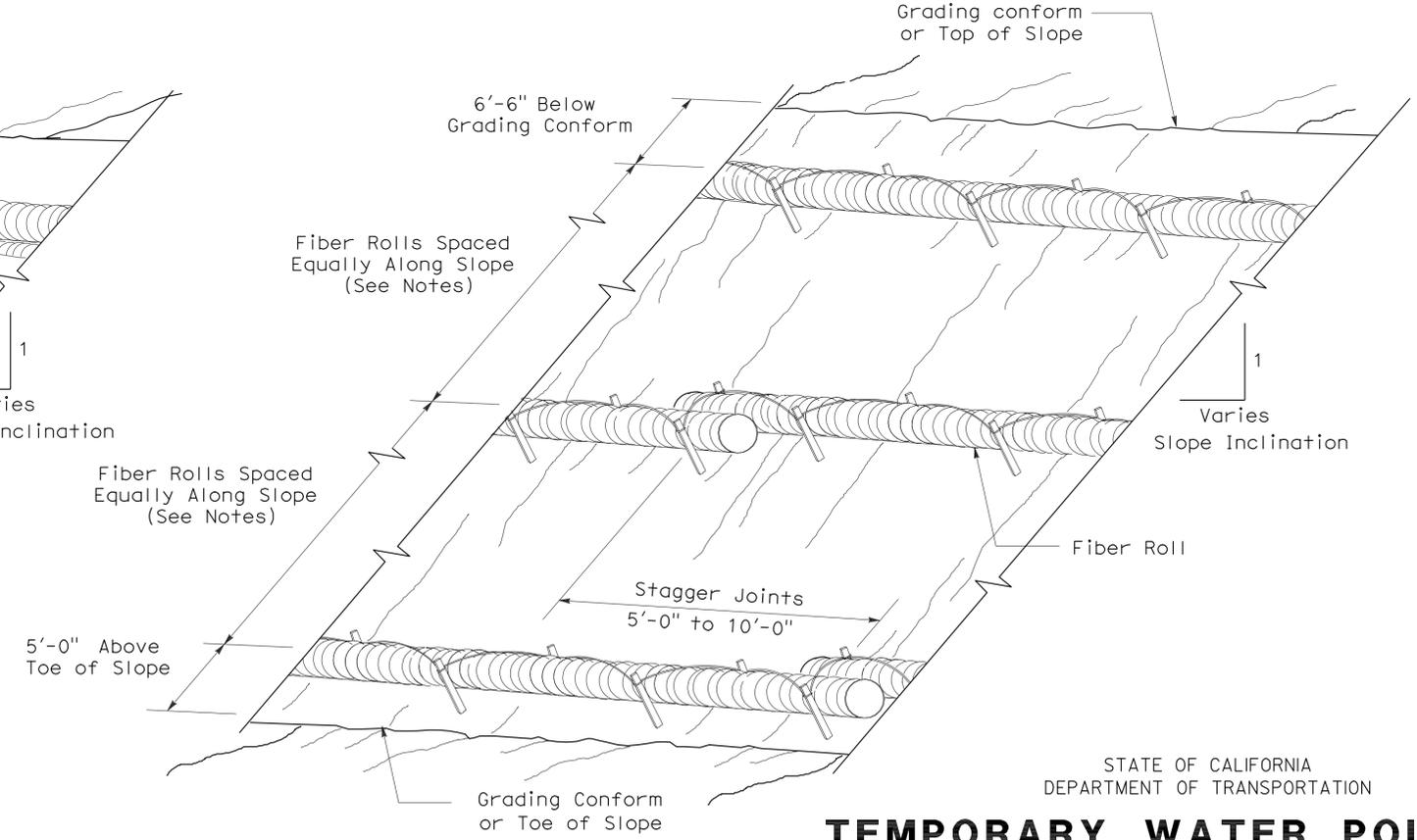
PLAN
ELEVATION
STAKE NOTCH DETAIL



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



PERSPECTIVE
TEMPORARY FIBER ROLL (TYPE 1)

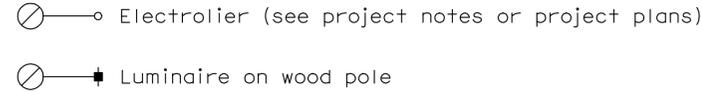
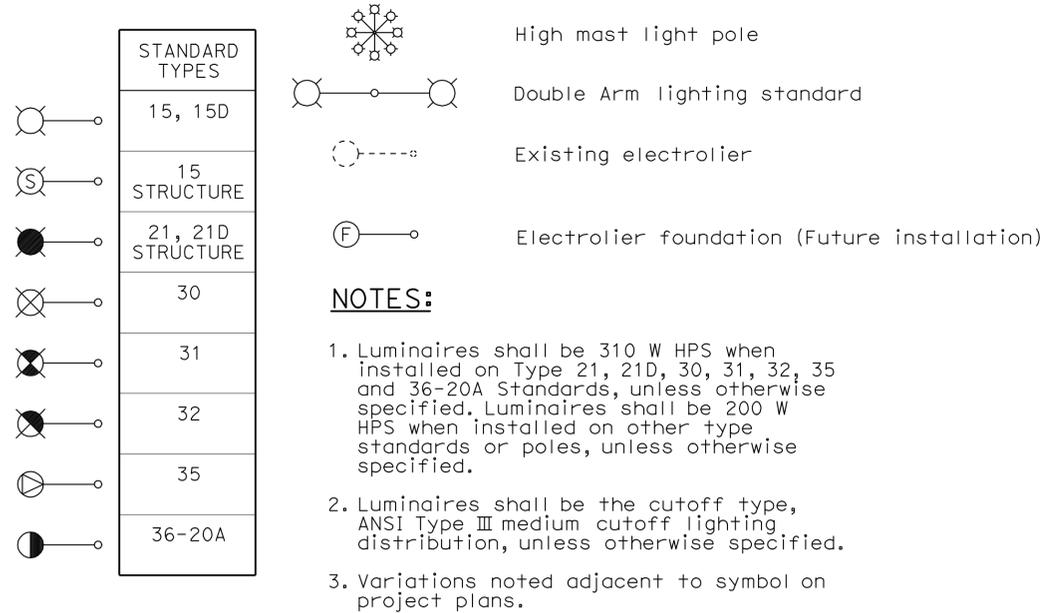


PERSPECTIVE
TEMPORARY FIBER ROLL (TYPE 2)

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

2006 REVISED STANDARD PLAN RSP T56

ELECTROLIERS



STANDARD NOTES:

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

ABBREVIATIONS AND EQUIPMENT DESIGNATIONS

PROPOSED EXISTING

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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Pla	89	13.7/21.7	44	47

Jeffery G. McRae
REGISTERED ELECTRICAL ENGINEER

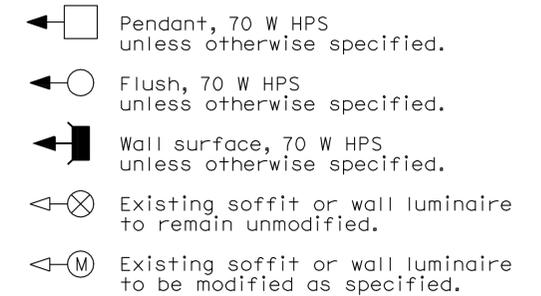
October 5, 2007
PLANS APPROVAL DATE

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

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To accompany plans dated 1-9-12

SOFFIT AND WALL MOUNTED LUMINAIRES



NOTE:

Arrow indicates "street side" of luminaire.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

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

REVISED STANDARD PLAN RSP ES-1A

2006 REVISED STANDARD PLAN RSP ES-1A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Pla	89	13.7/21.7	45	47

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REGISTERED PROFESSIONAL ENGINEER
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CONDUIT

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

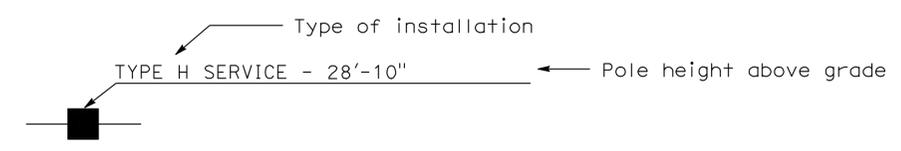
SIGNAL EQUIPMENT

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

SERVICE EQUIPMENT

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

POLE-MOUNTED SERVICE DESIGNATION



ILLUMINATED OVERHEAD SIGN

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

SIGNAL EQUIPMENT Cont

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

NOTES:

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

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

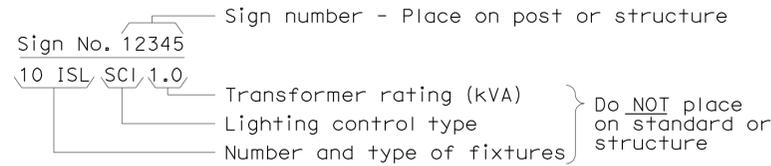
RSP ES-1B DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1B
 DATED MAY 1, 2006 - PAGE 401 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-1B

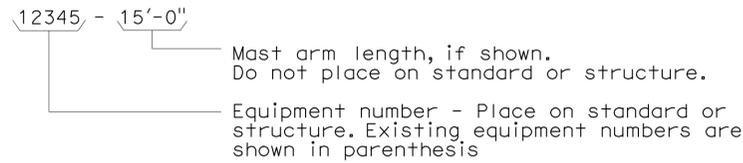
2006 REVISED STANDARD PLAN RSP ES-1B

EQUIPMENT IDENTIFICATION

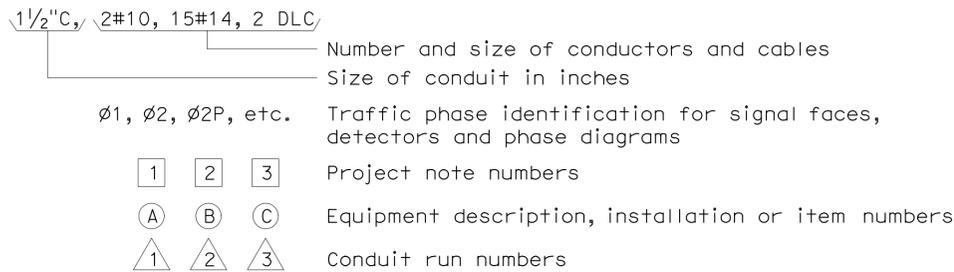
ILLUMINATED SIGN IDENTIFICATION NUMBER:



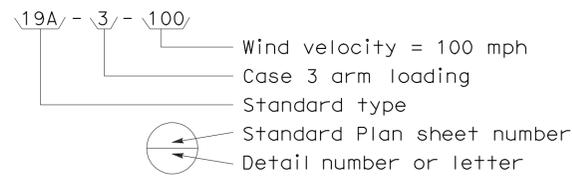
ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



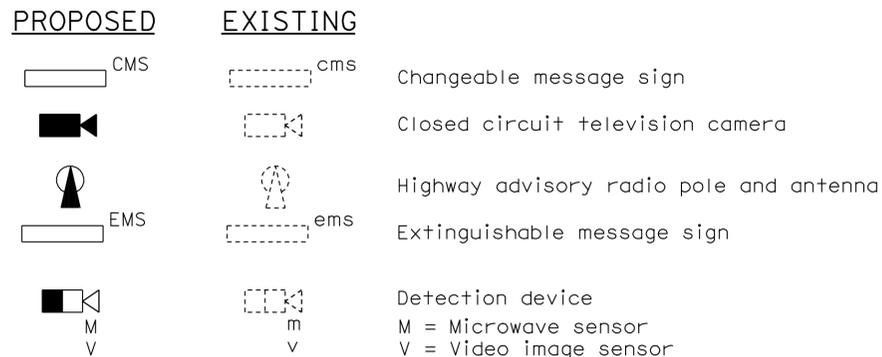
CONDUIT AND CONDUCTOR IDENTIFICATION:



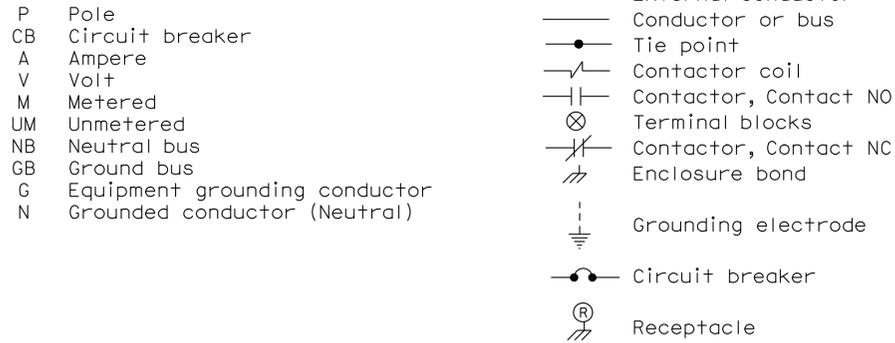
SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



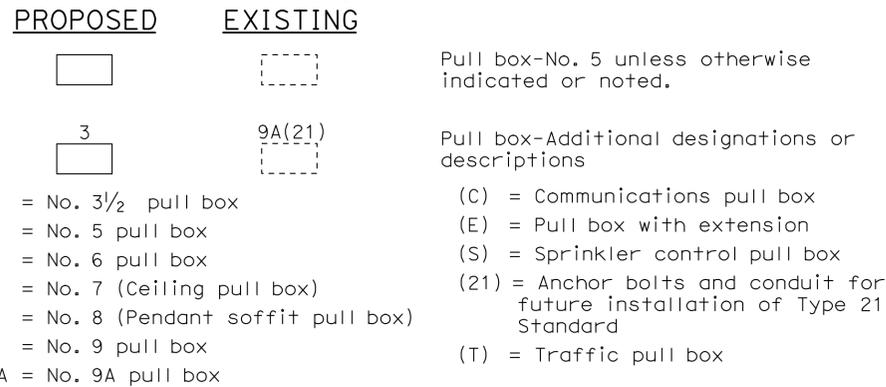
MISCELLANEOUS EQUIPMENT



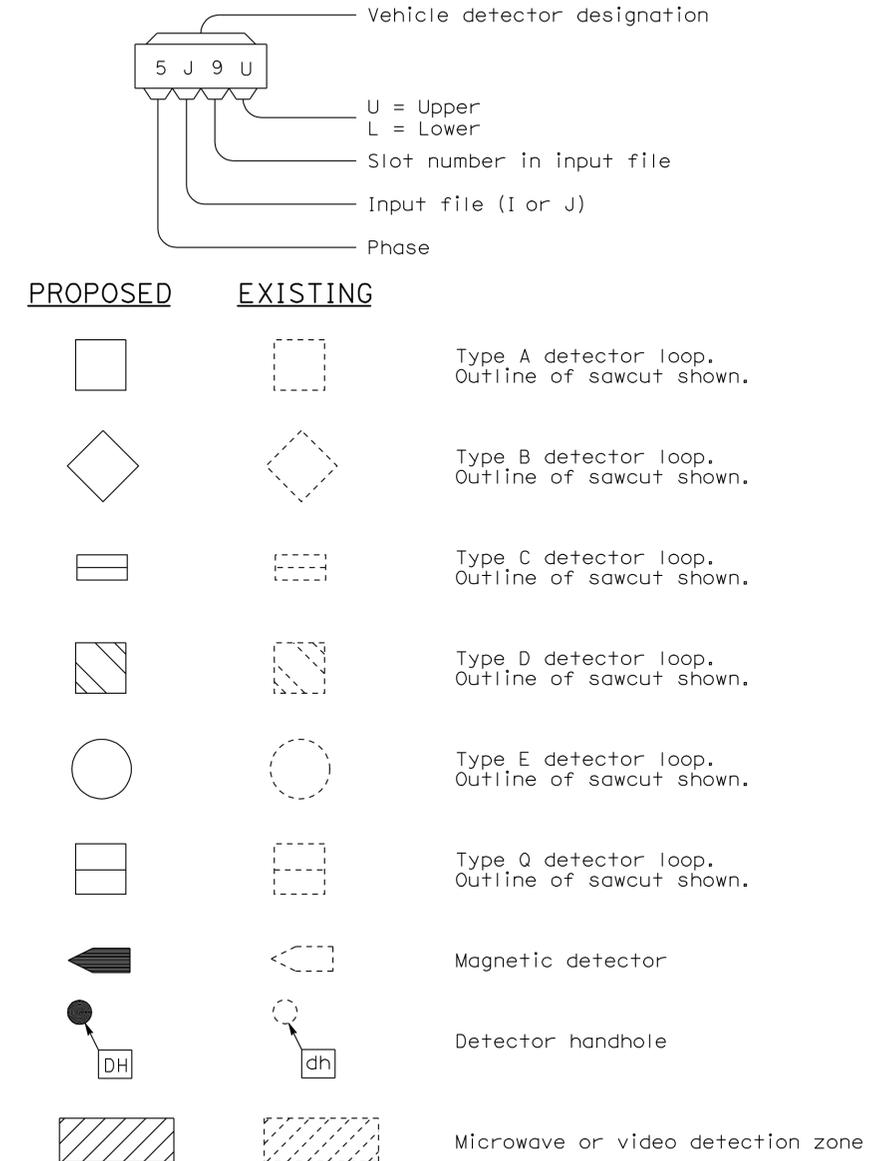
WIRING DIAGRAM LEGEND



PULL BOXES



VEHICLE DETECTORS



STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

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

REVISED STANDARD PLAN RSP ES-1C

2006 REVISED STANDARD PLAN RSP ES-1C

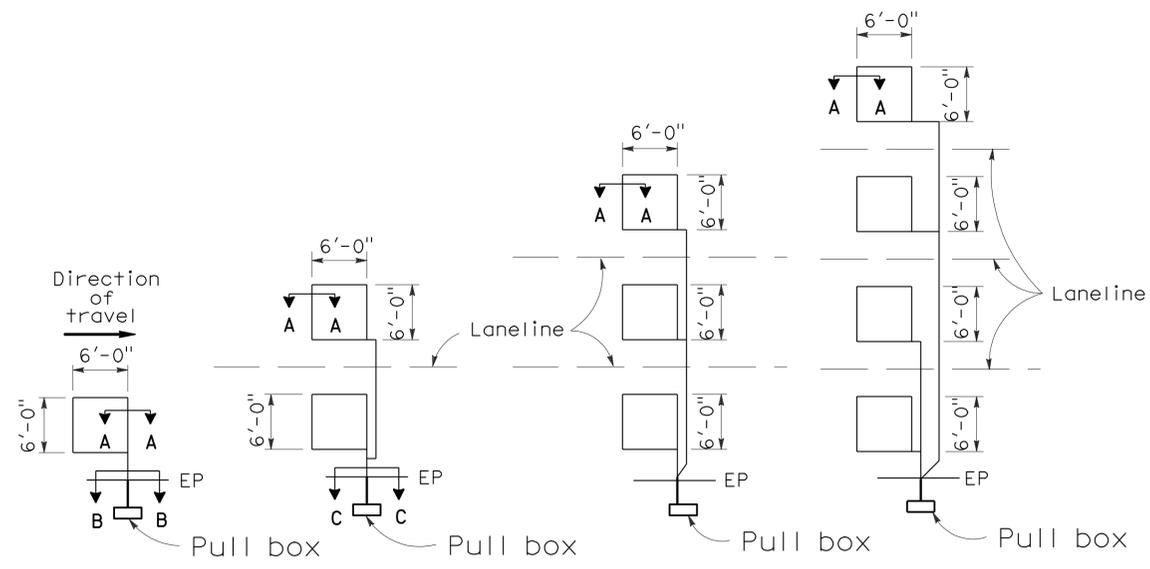
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Pla	89	13.7/21.7	47	47

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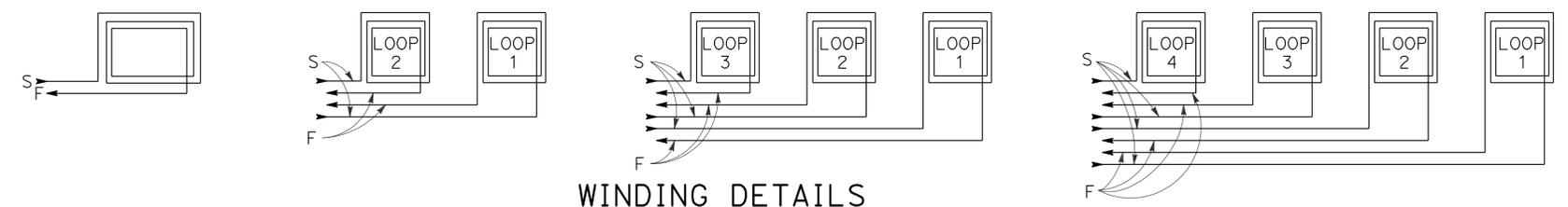
LOOP INSTALLATION PROCEDURE

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



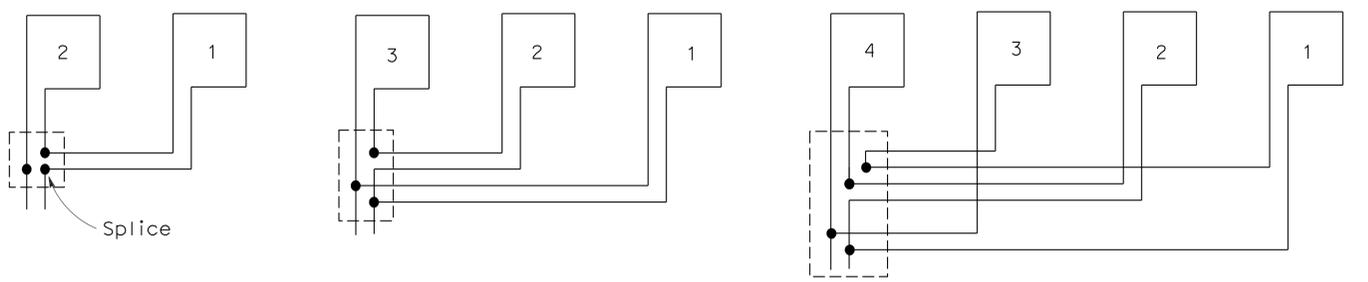
TYPE 1A INSTALLATION TYPE 2A INSTALLATION TYPE 3A INSTALLATION TYPE 4A INSTALLATION
SAWCUT DETAILS

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



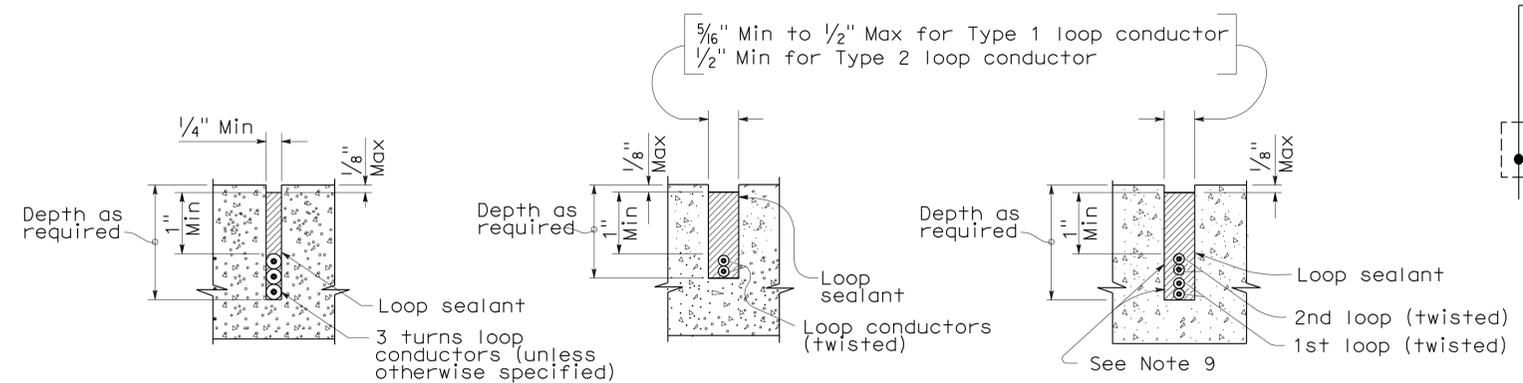
WINDING DETAILS

See Notes 6 and 7



TYPICAL LOOP CONNECTIONS

(Dashed lines represent the pull box)



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

ELECTRICAL SYSTEMS (DETECTORS)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

NO SCALE

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

2006 REVISED STANDARD PLAN RSP ES-5A