

INDEX OF PLANS

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY
IN SAN MATEO AND SOLANO COUNTIES
AT VARIOUS LOCATIONS

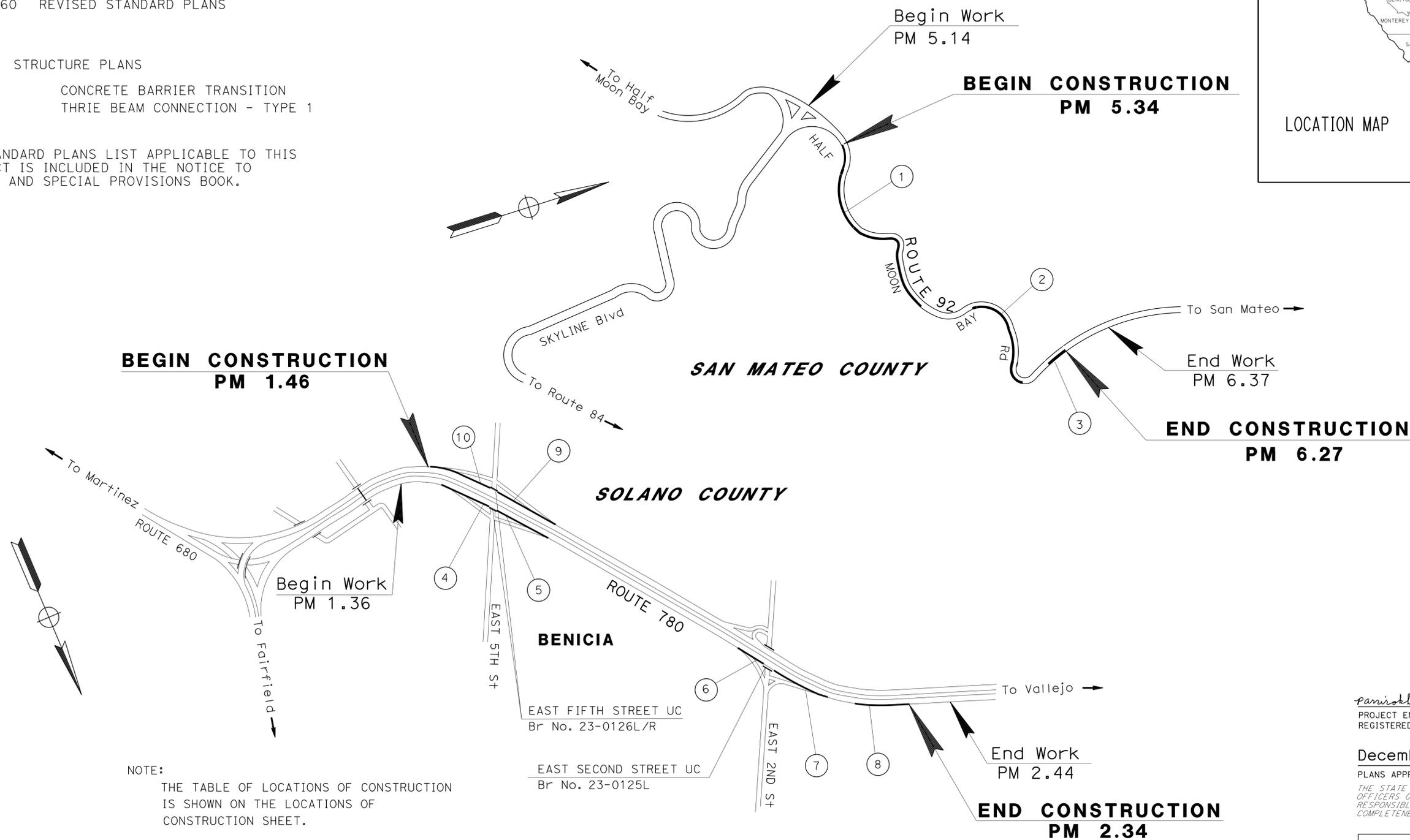
TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, SoI	92, 780	Var	1	62





LOCATION MAP



**BEGIN CONSTRUCTION
PM 1.46**

**Begin Work
PM 1.36**

**Begin Work
PM 5.14**

**BEGIN CONSTRUCTION
PM 5.34**

**End Work
PM 6.37**

**END CONSTRUCTION
PM 6.27**

**End Work
PM 2.44**

**END CONSTRUCTION
PM 2.34**

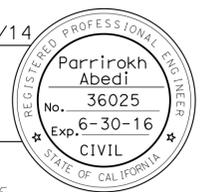
NOTE:
THE TABLE OF LOCATIONS OF CONSTRUCTION IS SHOWN ON THE LOCATIONS OF CONSTRUCTION SHEET.

NO SCALE

PROJECT MANAGER
MOHAMMAD SULEIMAN

DESIGN MANAGER
GHULAM POPAL

Parrirokh Abedi 10/15/14
PROJECT ENGINEER DATE
REGISTERED CIVIL ENGINEER



December 15, 2014
PLANS APPROVAL DATE

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

CONTRACT No.	04-1G8504
PROJECT ID	0400020617

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN

FUNCTIONAL SUPERVISOR
 GHULAM POPAL

CALCULATED-DESIGNED BY
 CHECKED BY

TOMO MORI
 PARI ABEDI

REVISED BY
 DATE REVISED

PA
 12/15/14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92,780	Var	2	62

Parrirokh Abedi 10/15/14
 REGISTERED CIVIL ENGINEER DATE

12-15-14
 PLANS APPROVAL DATE

Parrirokh Abedi
 No. 36025
 Exp. 6-30-16
 CIVIL

REGISTERED PROFESSIONAL ENGINEER
 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.

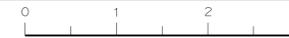
LOCATIONS OF CONSTRUCTION FOR ROUTE 92

LOCATION	DIRECTION	PM	DESCRIPTION
①	EB	5.34/5.68	FROM EXISTING MBGR TO CUT SLOPE
②	EB	5.80/6.00	CUT SLOPE TO EXISTING MBGR
③	EB	6.06/6.27	EXISTING MBGR TO END OF THE TANGENT SECTION

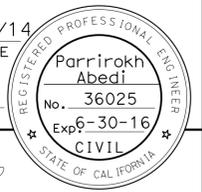
LOCATIONS OF CONSTRUCTION FOR ROUTE 780

LOCATION	DIRECTION	PM	DESCRIPTION
④	WB	1.50/1.57	AFTER 5TH S+ OFF-RAMP TO BRIDGE RAILING OF BRIDGE No. 23-0126L
⑤	WB	1.59/1.68	AFTER BRIDGE RAILING OF BRIDGE No. 23-0126L
⑥	WB	1.92/2.00	AFTER 2ND S+ OFF-RAMP TO BRIDGE RAILING OF BRIDGE No. 23-0125L
⑦	WB	2.02/2.16	AFTER BRIDGE RAILING OF BRIDGE No. 23-0125L
⑧	WB	2.23/2.34	AT THE END OF THE 2ND S+ ON-RAMP
⑨	EB	1.59/1.68	AFTER 5TH S+ OFF-RAMP TO BRIDGE RAILING OF BRIDGE No. 23-0126R
⑩	EB	1.46/1.57	AFTER BRIDGE RAILING OF BRIDGE No. 23-0126R

**LOCATIONS OF CONSTRUCTION
 LC-1**



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92,780	Var	3	62
Parrirokh Abedi 10/15/14			REGISTERED CIVIL ENGINEER	DATE	
12-15-14			PLANS APPROVAL DATE		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



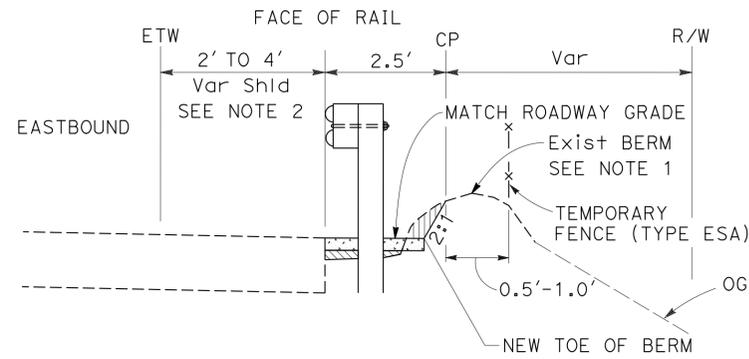
NOTES:

- EXISTING BERM REMAIN IN PLACE.
- DISTANCE BETWEEN ETW AND FACE OF RAIL MUST BE AT LEAST 2 FEET.

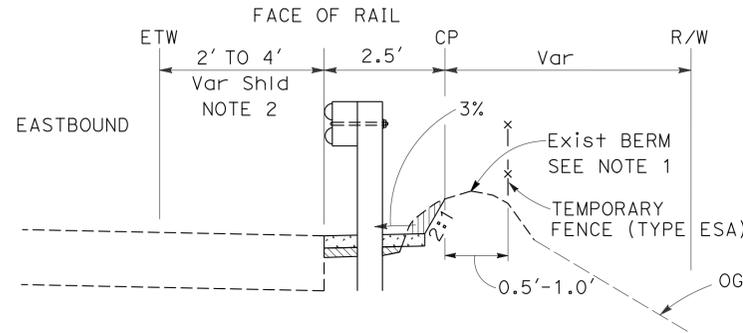
LEGEND:

- ROADWAY EXCAVATION
- VEGETATION CONTROL (MINOR CONCRETE)
- ROADWAY EMBANKMENT

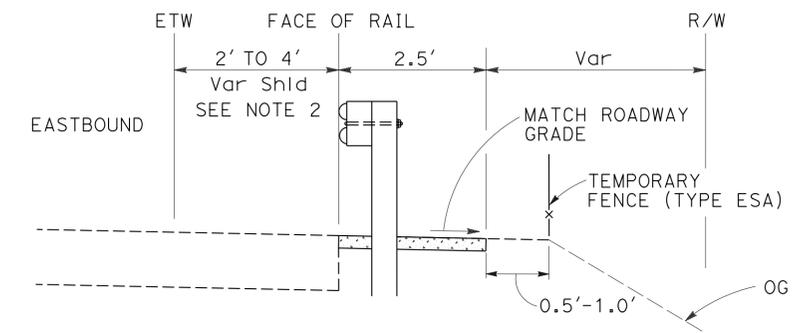
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN
 FUNCTIONAL SUPERVISOR: DIXON LAU
 ERIC K. WONG
 DIXON LAU
 CALCULATED/DESIGNED BY: DIXON LAU
 CHECKED BY:
 REVISED BY: DATE REVISED: EW 12/15/14
 X
 X
 X
 X
 X



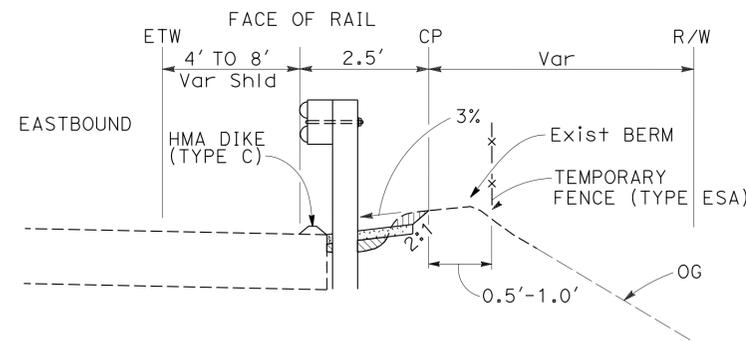
AT LOCATION 1 WITH BERM



AT LOCATION 2 WITH BERM



AT LOCATION 3



AT LOCATION 2 WITH DIKE

TYPICAL CROSS SECTIONS
NO SCALE

X-1



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN
 FUNCTIONAL SUPERVISOR: GHULAM POPAL
 CHECKED BY: PARI ABEDI
 TO MO MORI
 REVISOR: TM
 DATE: 12/15/14

NOTES:

- EXISTING UTILITIES ARE NOT SHOWN ON THE PLANS EXCEPT FOR PG&E, NATURAL GAS LINE ON ROUTE 92, BETWEEN POSTMILE MARKER 6.2 AND 6.3. LOCATION OF GAS LINE IS APPROXIMATE. VERIFY ALL EXISTING UTILITIES BEFORE CONSTRUCTION. MGS POST MAY BE OMITTED AT UTILITY LOCATIONS AS AUTHORIZED BY THE ENGINEERS. SEE SHEET C-6.
- FOR DIKE POSITIONING WITH GUARD RAILING INSTALLATIONS, SEE RSP A77N4.
- THE 15:1 OR FLATTER FLARE IS BASED ON THE EDGE OF THE PAVED SHOULDER. THE LENGTH OF THE GUARD RAILING WITHIN THE 15:1 OR FLATTER FLARE IS BASED ON EXISTING CONDITIONS AND MUST BE A LENGTH EQUAL TO MULTIPLES OF 12'-6".
- FOR DETAILS OF TYPICAL FLARE OFFSETS, PARABOLIC LAYOUT, AND TYPICAL FLARE OF OFFSETS FOR 1' MAXIMUM END OFFSET, SEE RSP A77P1.
- FOR ADDITIONAL DETAILS NOT SHOWN ON SHEET C-5, REFER TO RSP A77L1 AND RSP A77L2.
- CONTROLLED RELEASE TERMINAL POST TO BE WOOD ONLY. SEE C-6.
- IF FACE OF RAIL TO HINGE POINT IS LESS THAN 2.5', MGS POST MAY BE OMITTED AS AUTHORIZED BY THE ENGINEER, SEE SHEET C-6 FOR DETAILS.

LEGEND:

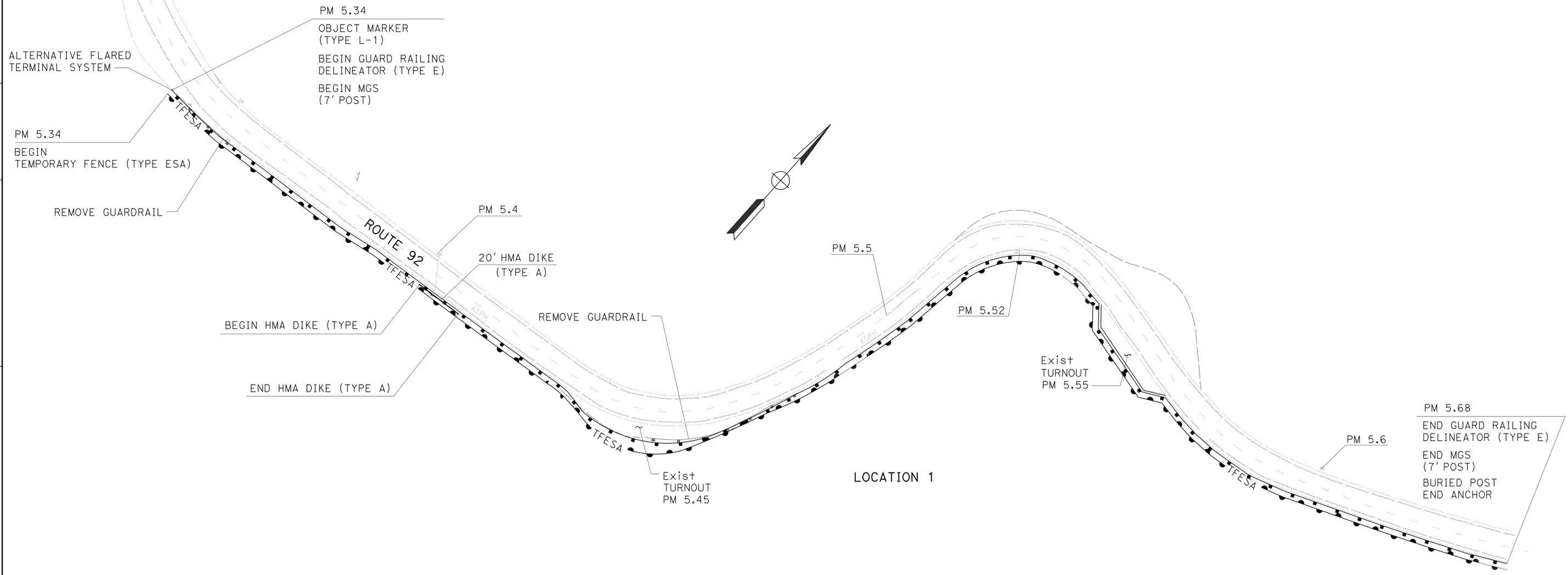


ABBREVIATIONS:

- Nom NOMINAL
 PG&E PACIFIC GAS AND ELECTRIC

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92, 780	Var	4	62

10/15/14
 REGISTERED CIVIL ENGINEER DATE
 12-15-14
 PLANS APPROVAL DATE
 Parrirokh Abedi
 No. 36025
 Exp. 9-30-16
 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.



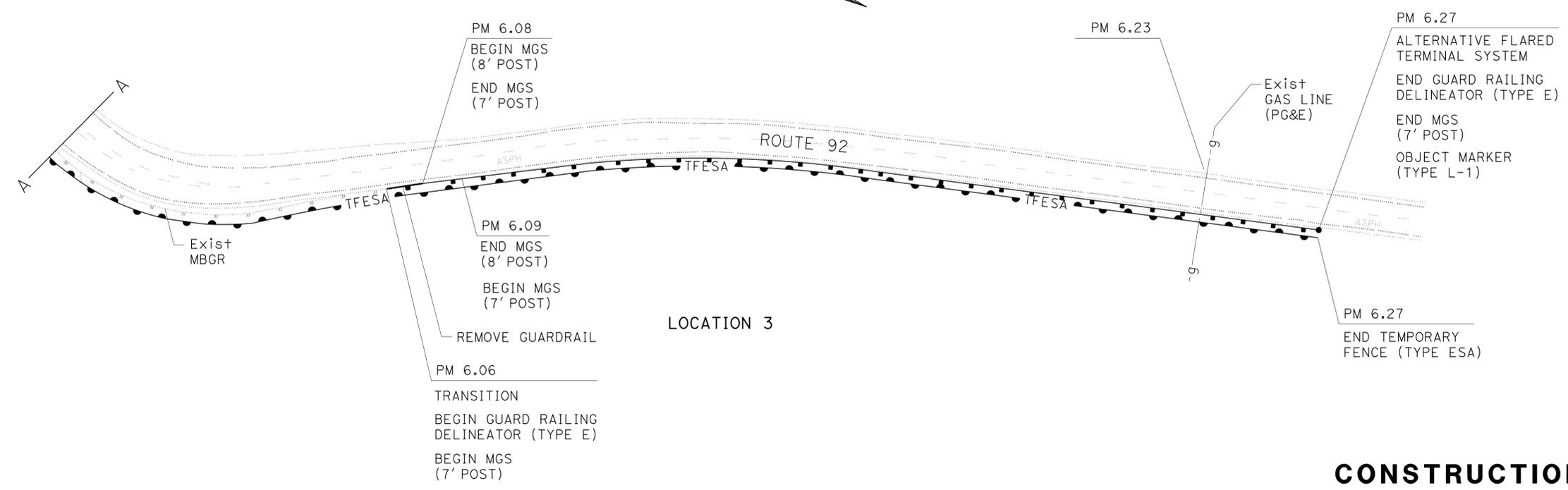
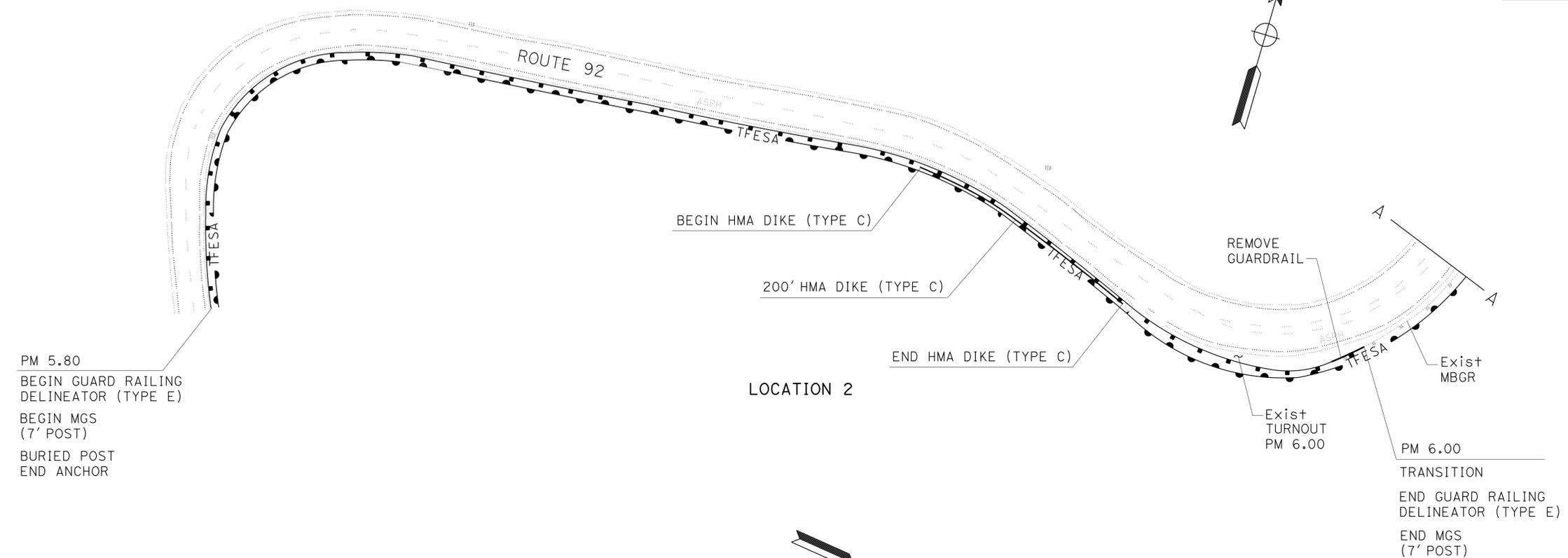
CONSTRUCTION DETAILS
 NO SCALE

C-1

LAST REVISION DATE PLOTTED => 14-JAN-2015
 12-12-14 TIME PLOTTED => 12:45

FUNCTIONAL SUPERVISOR	GHULAM POPAL
CALCULATED/DESIGNED BY	CHECKED BY
TOMO MORI	PARI ABEDI
REVISOR	DATE
TM	12/15/14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92,780	Var	5	62
Parirokh Abedi 10/15/14				REGISTERED CIVIL ENGINEER	DATE
12-15-14				PLANS APPROVAL DATE	
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					
REGISTERED PROFESSIONAL ENGINEER Parrirokh Abedi No. 36025 Exp. 6-30-16 CIVIL STATE OF CALIFORNIA					

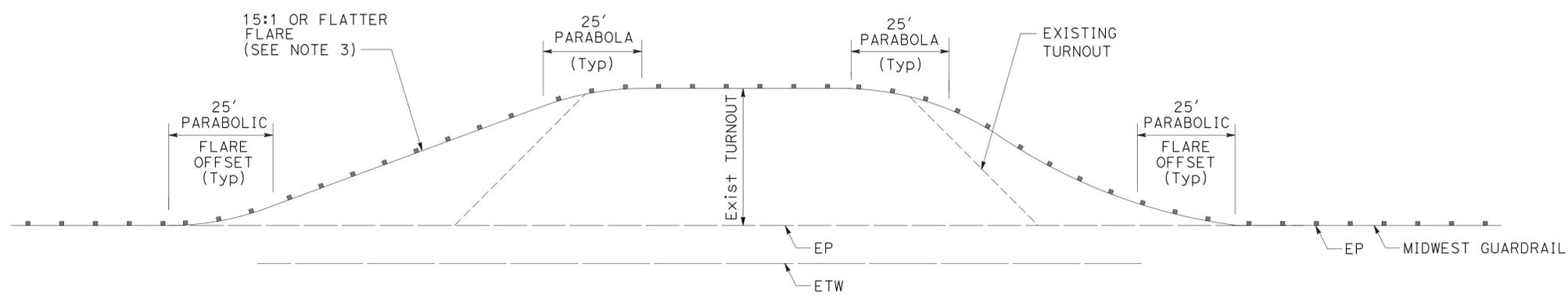


FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET C-1

CONSTRUCTION DETAILS
 NO SCALE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92,780	Var	6	62
Parrirokh Abedi 10/15/14				REGISTERED CIVIL ENGINEER	DATE
12-15-14				PLANS APPROVAL DATE	
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

CALCULATED/DESIGNED BY	CHECKED BY	FUNCTIONAL SUPERVISOR	DESIGN
TOMO MORI	PARI ABEDI	GHULAM POPAL	DESIGN
REVISOR	DATE		
PA	12/15/14		



PLAN

MIDWEST GUARDRAIL SYSTEM AT EXISTING TURNOUT

LOCATION 1, PM 5.45
 PM 5.55
 LOCATION 3, PM 6.00

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET C-1

CONSTRUCTION DETAILS
 NO SCALE
C-3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92,780	Var	7	62

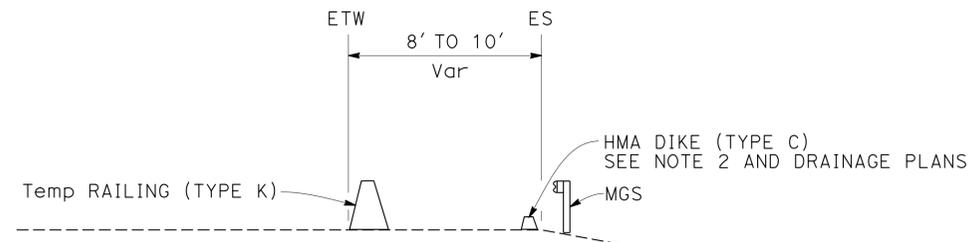
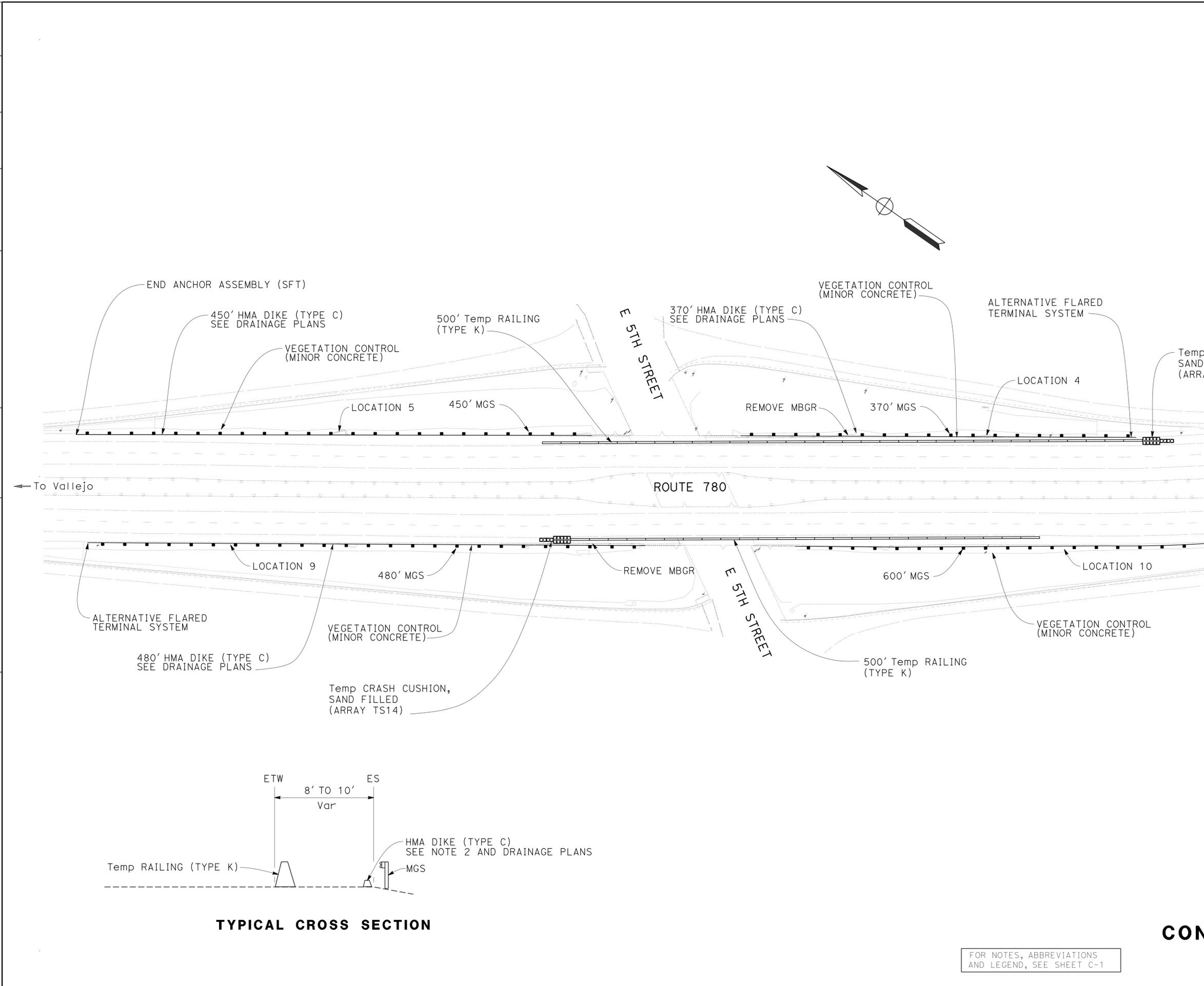
Parrirokh Abedi 10/15/14
REGISTERED CIVIL ENGINEER DATE

12-15-14
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Parrirokh Abedi
No. 36025
Exp. 6-30-16
CIVIL
STATE OF CALIFORNIA

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

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN



TYPICAL CROSS SECTION

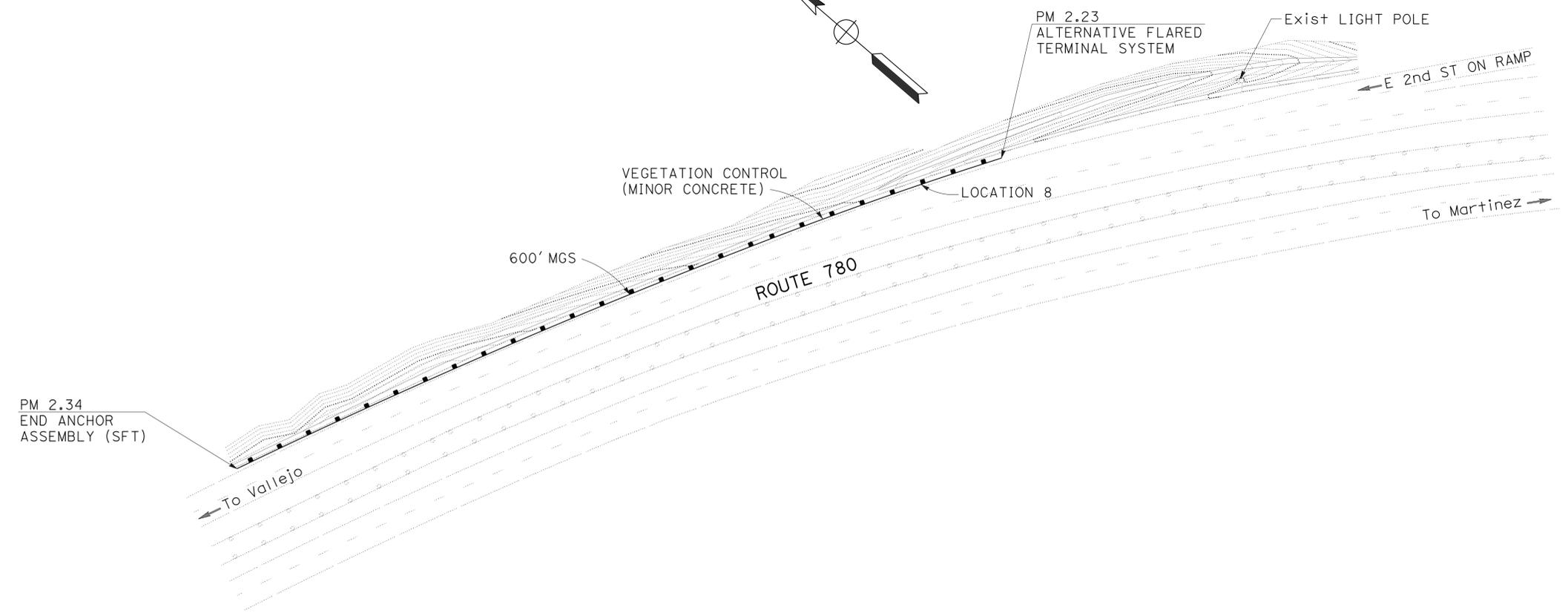
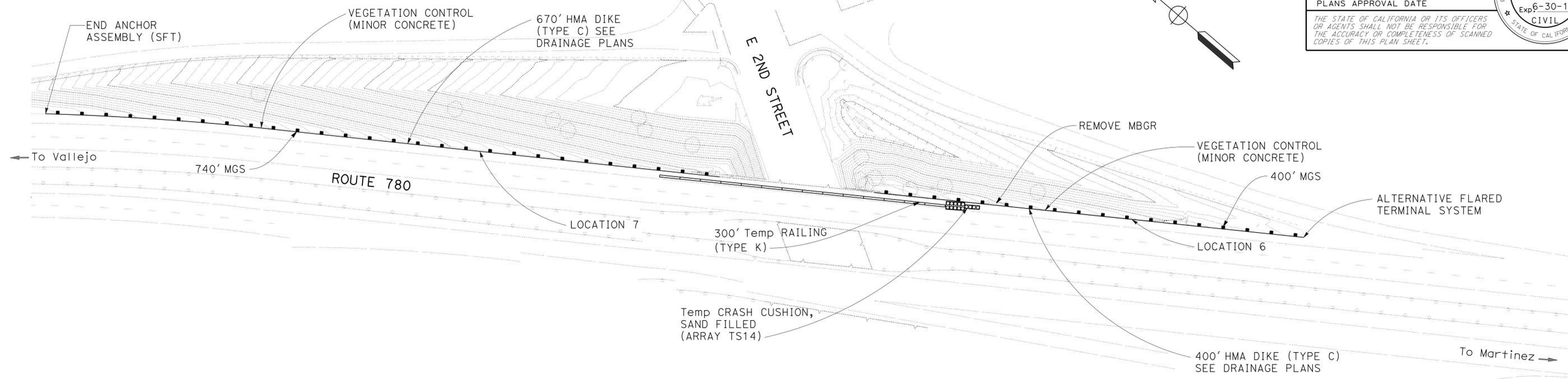
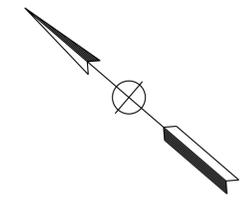
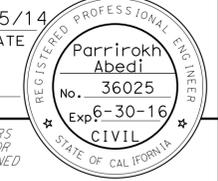
CONSTRUCTION DETAILS

SCALE: 1" = 50'

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET C-1

LAST REVISION DATE PLOTTED => 14-JAN-2015 12-15-14 TIME PLOTTED => 12:45

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92,780	Var	8	62
Parrirokh Abedi			10/15/14	REGISTERED CIVIL ENGINEER DATE	
12-15-14			PLANS APPROVAL DATE		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



FOR NOTES, ABBREVIATION AND LEGEND, SEE SHEET C-1

CONSTRUCTION DETAILS
SCALE: 1" = 50'

C-5

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN
FUNCTIONAL SUPERVISOR: GHULAM POPAL
TOMO MORI
PARI ABEDI
REVISOR: PA
DATE: 12/15/14
CALCULATED/DESIGNED BY: CHECKED BY:

USERNAME => s124763
DGN FILE => 0400020617ga005.dgn



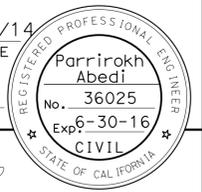
UNIT 0708

PROJECT NUMBER & PHASE

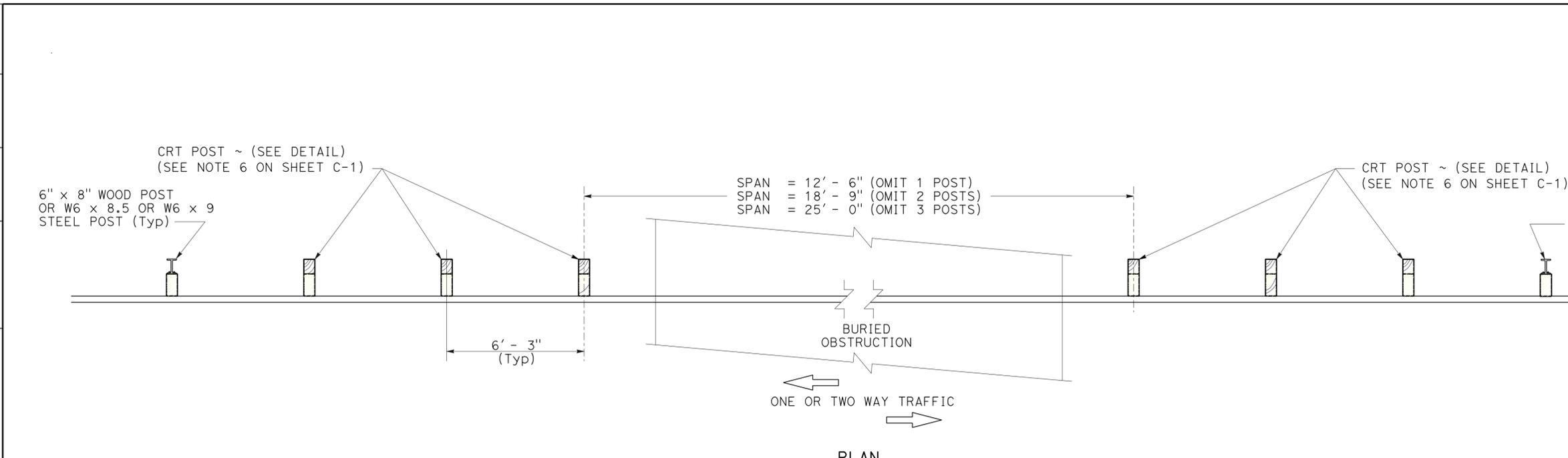
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LAST REVISION: DATE PLOTTED => 14-JAN-2015
12-15-14 TIME PLOTTED => 12:45

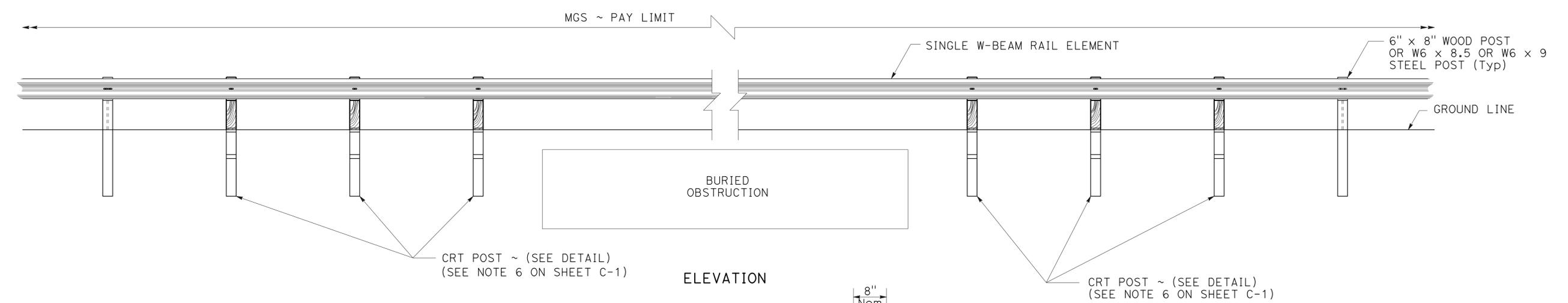
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92,780	Var	9	62
Parrirakh Abedi 10/15/14				REGISTERED CIVIL ENGINEER	DATE
12-15-14				PLANS APPROVAL DATE	
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					



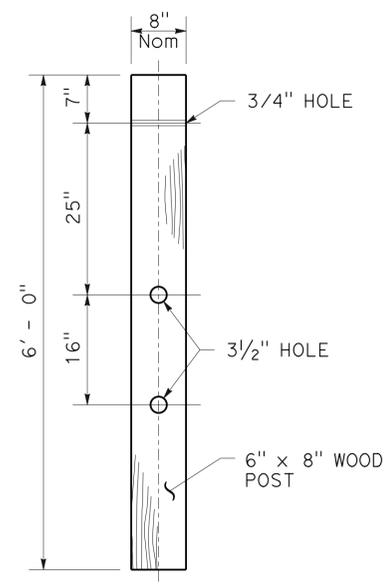
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN



PLAN



ELEVATION



**CONTROLLED RELEASING
 TERMINAL (CRT) POST DETAIL**

FOR NOTES AND LEGEND,
 SEE SHEET C-1

CONSTRUCTION DETAILS

NO SCALE

C-6

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans WATER QUALITY

FUNCTIONAL SUPERVISOR
KAMRAN NAKHJIRI

CALCULATED-DESIGNED BY
CHECKED BY

SHARON YUAN
KAMRAN NAKHJIRI

REVISOR BY
DATE REVISED

SY
12/15/14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92,780	Var	10	62

 10/27/14
 REGISTERED CIVIL ENGINEER DATE
 12-15-14
 PLANS APPROVAL DATE



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

TEMPORARY WATER POLLUTION CONTROL BMPS

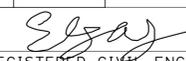
ROUTE	LOCATION No.	DIRECTION	PM	TEMPORARY DI PROTECTION	TEMPORARY HYDRAULIC MULCH	TEMPORARY FIBER ROLL
				EA	SQYD	LF
92	1	EB	5.34/5.68	2		
	2	EB	5.80/6.00	2		
	3	EB	6.06/6.27			
780	4	WB	1.50/1.57	3	17	200
	5	WB	1.59/1.68	3	52	340
	6	WB	1.92/2.00			120
	7	WB	2.02/2.16	2	39	
	8	WB	2.23/2.34			400
	9	EB	1.59/1.68	4	58	340
	10	EB	1.46/1.57	3	34	
TOTAL				19	200	1400

TEMPORARY WATER POLLUTION CONTROL QUANTITIES

NO SCALE

WPCQ-1

APPROVED FOR WATER POLLUTION CONTROL WORK ONLY

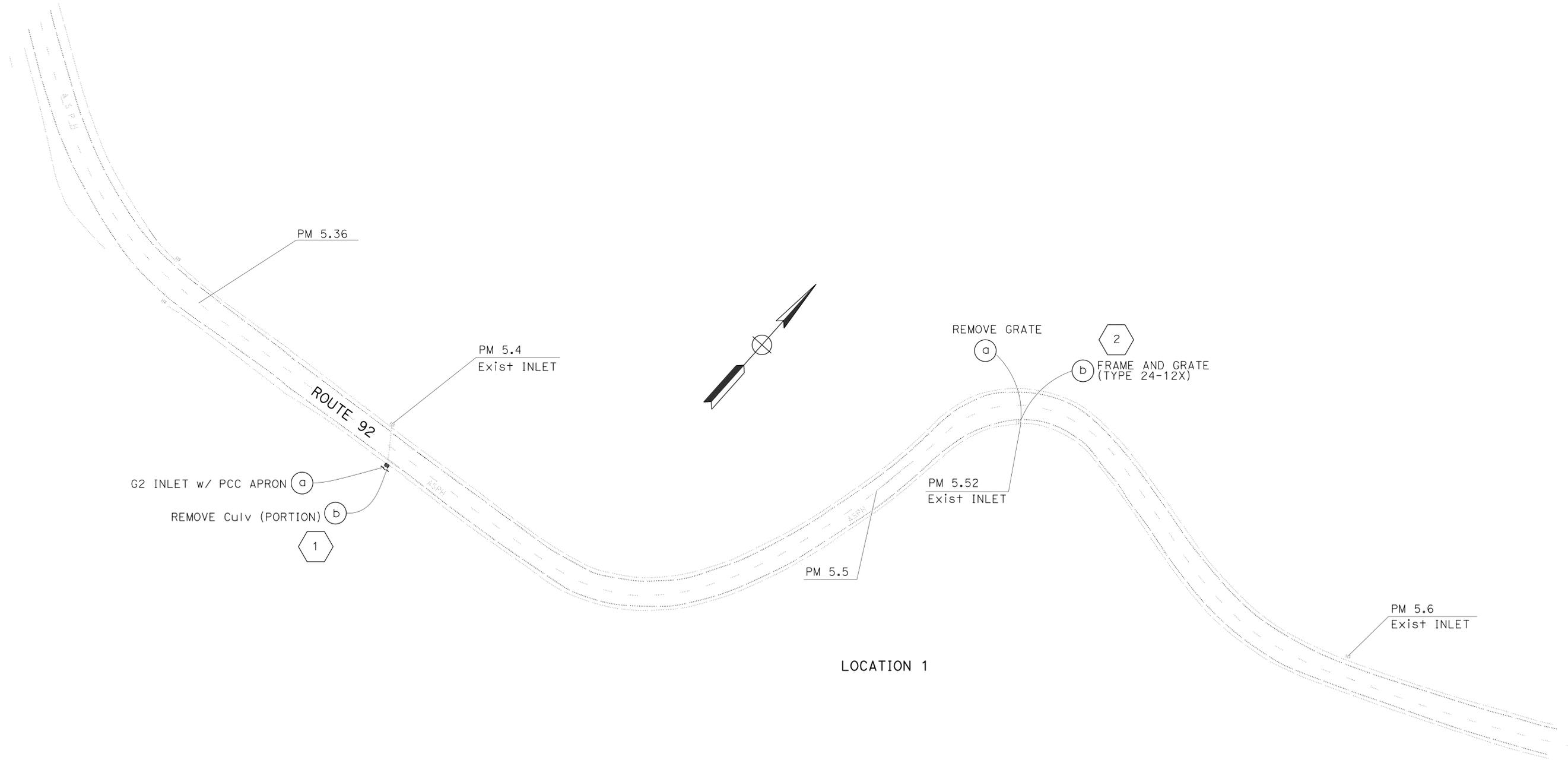
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92,780	Var	11	62
			10/16/14		
REGISTERED CIVIL ENGINEER			DATE		
12-15-14			PLANS APPROVAL DATE		
					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

NOTES:

1. LOCATION OF EXISTING DRAINAGE FACILITIES ARE APPROXIMATE. VERIFY LOCATION AND ELEVATION OF EXISTING DRAINAGE FACILITIES PRIOR TO MODIFYING.
2. TOP OF GRATE ELEVATIONS STATION ARE MEASURED AS PER DETAIL ON SHEET DD-2.
3. FOR FILL SECTIONS AT MGS LOCATION, SEE TYPICAL CROSS SECTIONS (SHEET X-1).

ABBREVIATIONS:

- TG TOP OF GRATE ELEVATION
w/ WITH



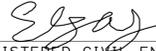
LOCATION 1

DRAINAGE PLAN
NO SCALE

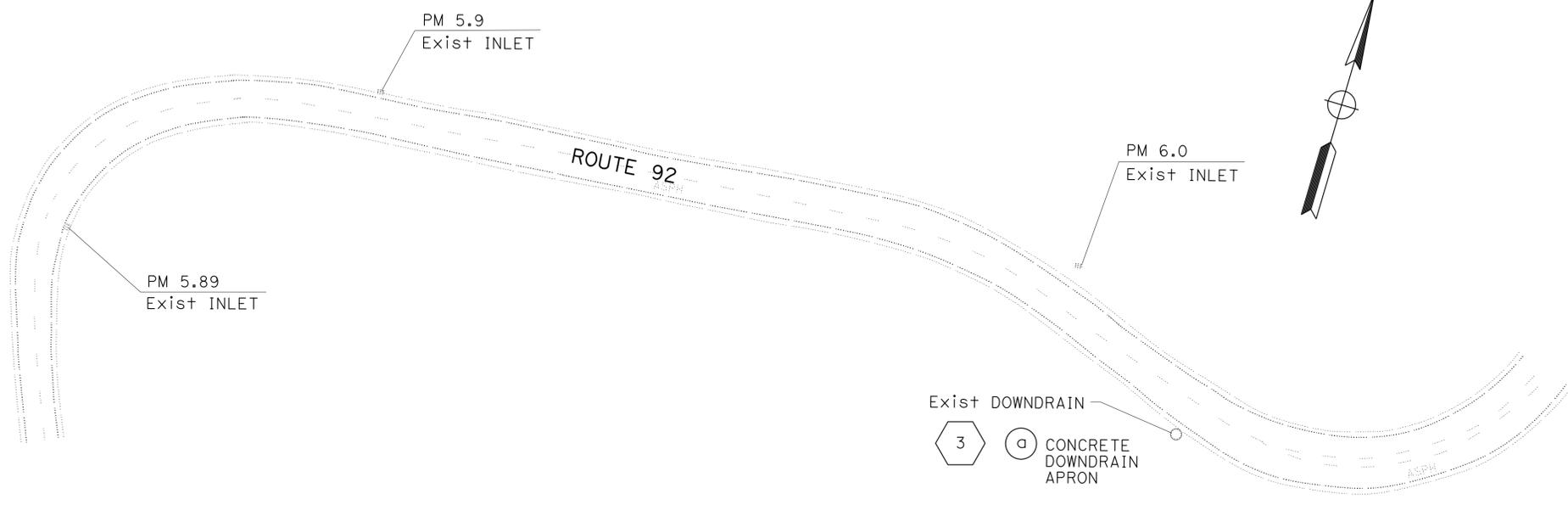
APPROVED FOR DRAINAGE WORK ONLY

D-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	ERIC WONG	REVISOR	EW
Caltrans	DIXON LAU	DATE	12/15/14
FUNCTIONAL SUPERVISOR		CHECKED BY	
DIXON LAU		DESIGNED BY	

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92, 780	Var	12	62
			10/16/14	DATE	
REGISTERED CIVIL ENGINEER			DATE		
12-15-14			PLANS APPROVAL DATE		
					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	ERIC WONG	REVISOR BY	EW
Caltrans	DIXON LAU	DATE REVISED	12/15/14
FUNCTIONAL SUPERVISOR	DIXON LAU	CHECKED BY	
HYDRAULICS		DESIGNED BY	



LOCATION 2

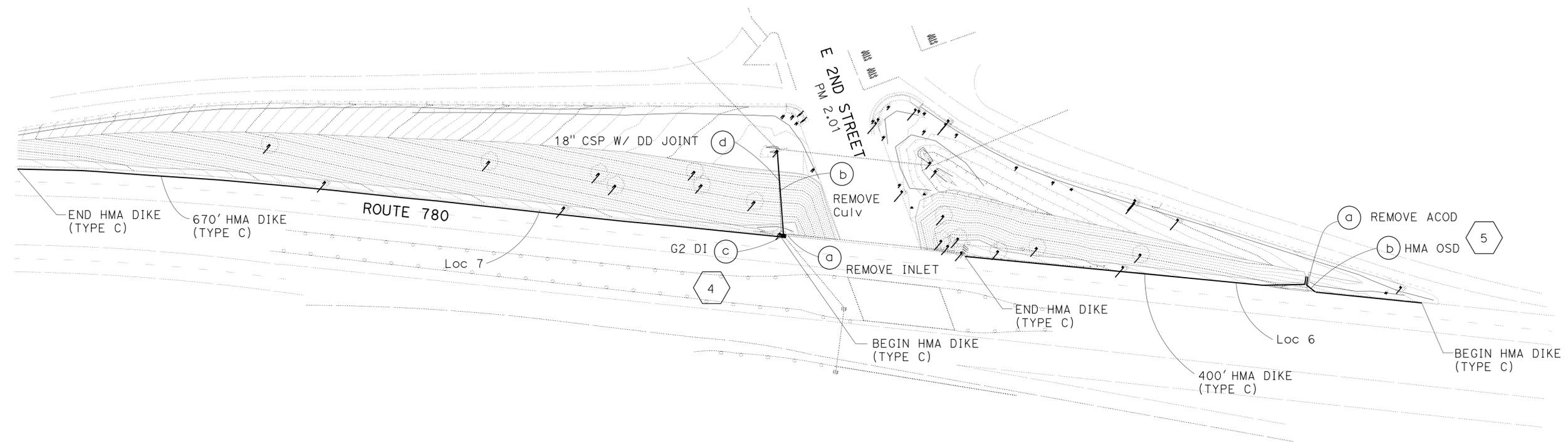
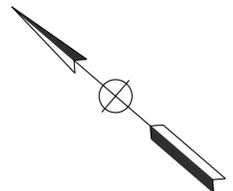
DRAINAGE PLAN
NO SCALE

APPROVED FOR DRAINAGE WORK ONLY

FOR NOTES AND ABBREVIATIONS,
SEE SHEET D-1

D-2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92,780	Var	13	62
			10/16/14		
REGISTERED CIVIL ENGINEER			DATE		
12-15-14			PLANS APPROVAL DATE		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR BY	DATE
Caltrans	KATHLEEN REILLY	KATHLEEN REILLY	KL	12/15/14
HYDRAULICS				

APPROVED FOR DRAINAGE WORK ONLY

FOR NOTES AND ABBREVIATIONS,
SEE SHEET D-1

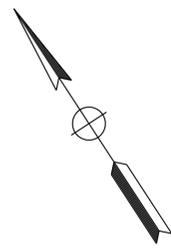
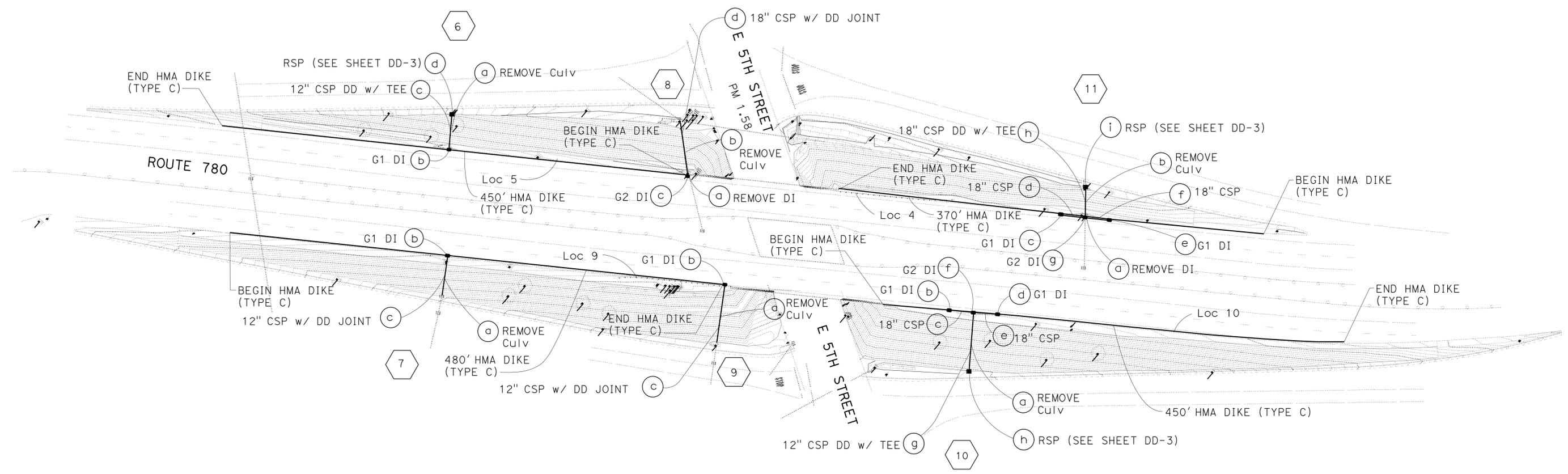
DRAINAGE PLAN
SCALE: 1" = 50'

D-3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92,780	Var	14	62
			REGISTERED CIVIL ENGINEER	DATE	
			12-15-14	10/16/14	
			PLANS APPROVAL DATE		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	HYDRAULICS
FUNCTIONAL SUPERVISOR	KATHLEEN REILLY
CALCULATED/DESIGNED BY	CHECKED BY
KHAI LEONG	KATHLEEN REILLY
REVISED BY	DATE REVISED
KL	12/15/14



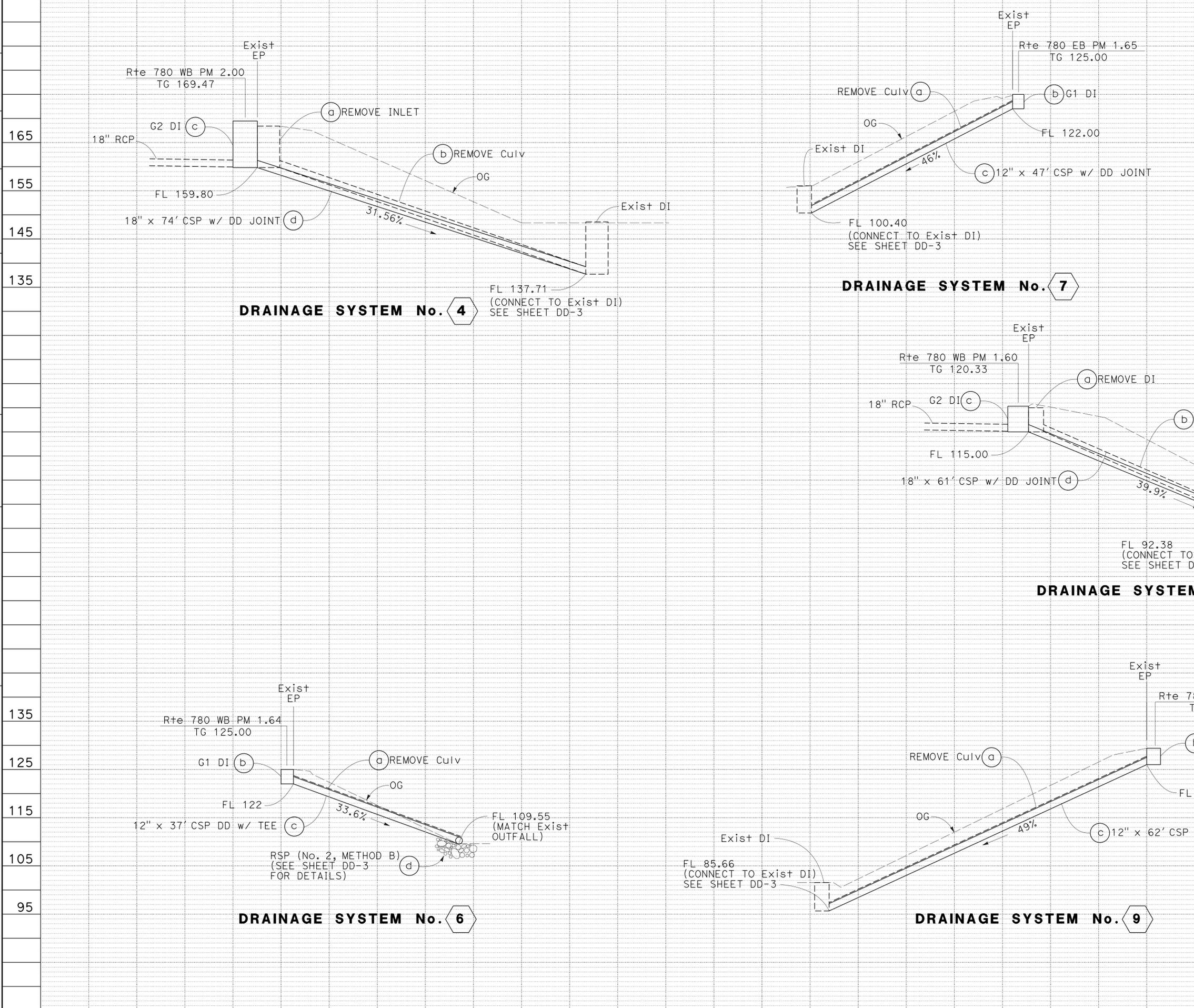
DRAINAGE PLAN
SCALE: 1" = 50'

APPROVED FOR DRAINAGE WORK ONLY

FOR NOTES AND ABBREVIATIONS, SEE SHEET D-1

D-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 FUNCTIONAL SUPERVISOR: GHULAM POPAL
 CALVIN TRAN: PARI ABEDI
 REVISIONS: 165, 155, 145, 135, 125, 115, 105, 95



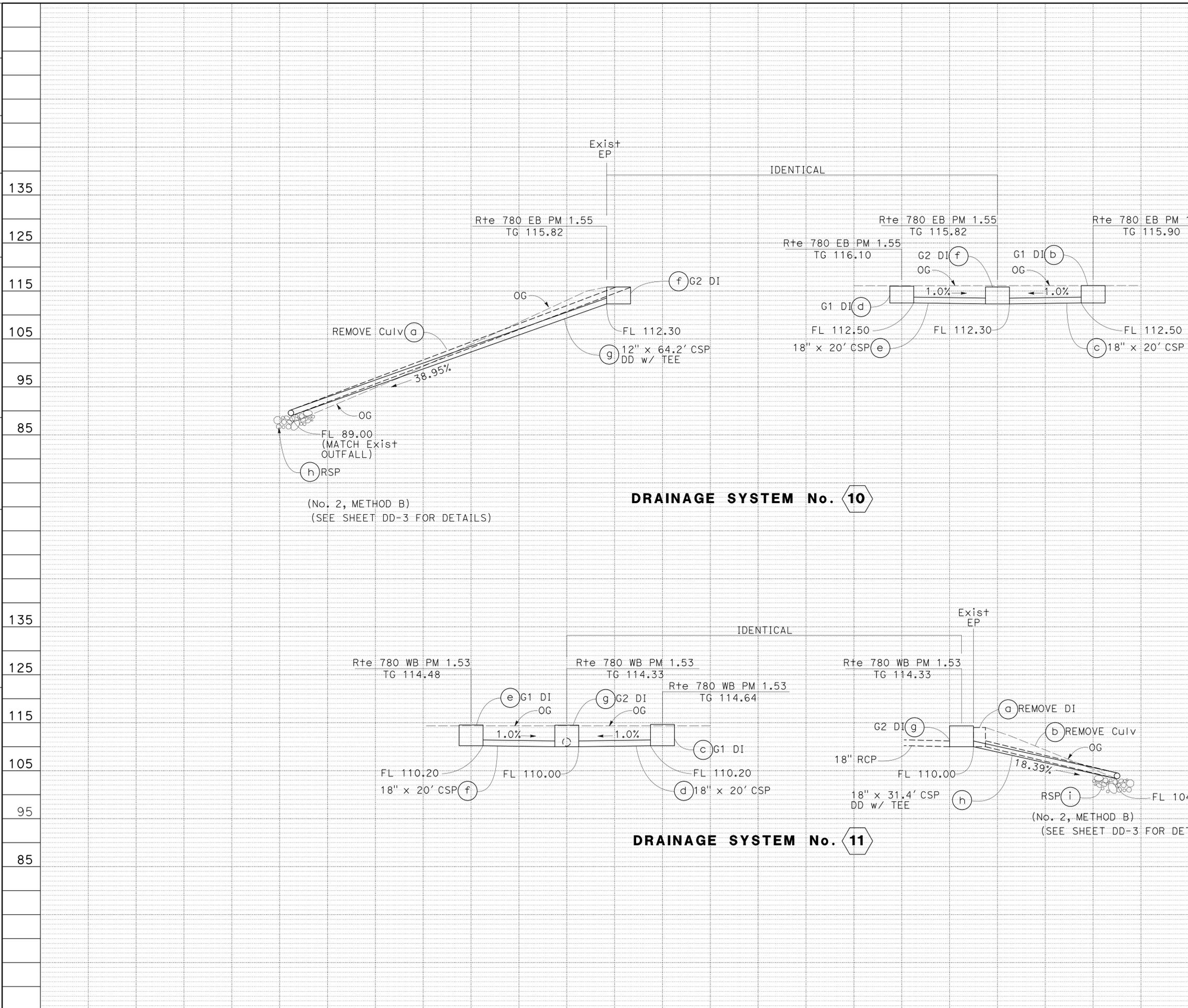
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92,780	Var	15	62
PARIROKH ABEDI 10/15/14 REGISTERED CIVIL ENGINEER DATE					
125 12-15-14 PLANS APPROVAL DATE					
115 <small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



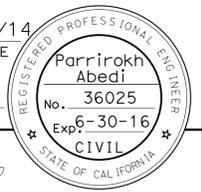
DRAINAGE PROFILES
 SCALE: HORIZ 1" = 10'
 VERT 1" = 10'
DP-1

LAST REVISION: DATE PLOTTED => 14-JAN-2015 10-23-14 TIME PLOTTED => 12:46

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 FUNCTIONAL SUPERVISOR
 GHULAM POPAL
 CALVIN TRAN
 PARI ABEDI
 REVISIONS:
 135
 125
 115
 105
 95
 85
 135
 125
 115
 105
 95
 85



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92,780	Var	16	62
Parrirakh sheet 10/15/14				REGISTERED CIVIL ENGINEER	DATE
12-15-14				PLANS APPROVAL DATE	
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



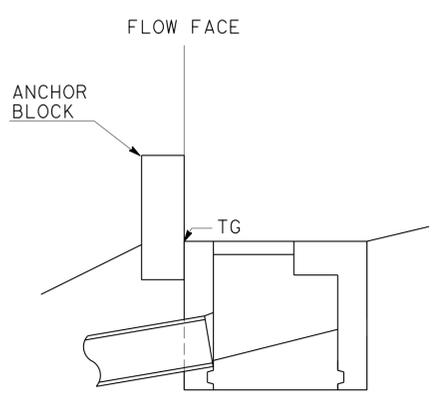
DRAINAGE PROFILES
 SCALE: HORIZ 1" = 10'
 VERT 1" = 10'
DP-2

LAST REVISION: DATE PLOTTED => 14-JAN-2015 10-22-14 TIME PLOTTED => 12:46

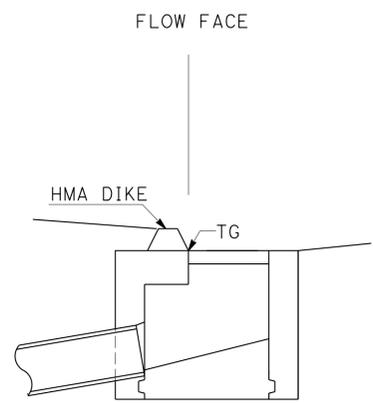
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92,780	Var	17	62
			10/16/14		
REGISTERED CIVIL ENGINEER			DATE		
12-15-14			PLANS APPROVAL DATE		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					



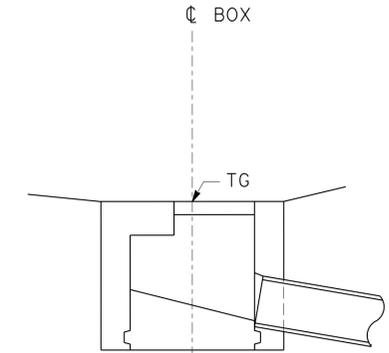
NOTE:
 1. FOR INFORMATION NOT SHOWN, SEE STANDARD
 PLANS D73 THROUGH D74B.



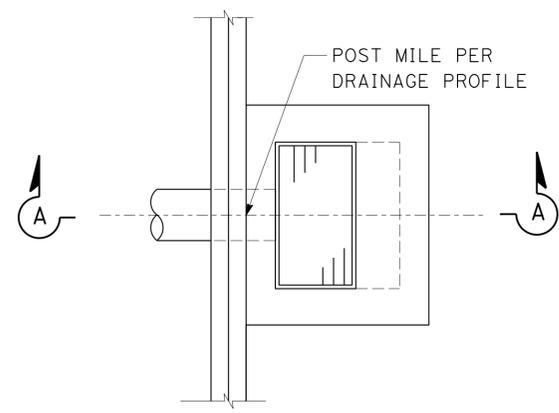
SECTION A-A



SECTION B-B

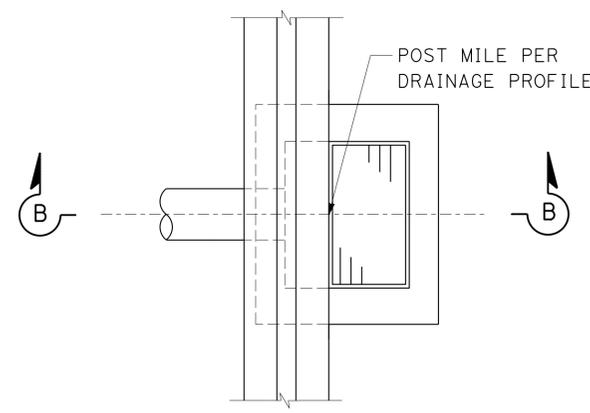


ELEVATION



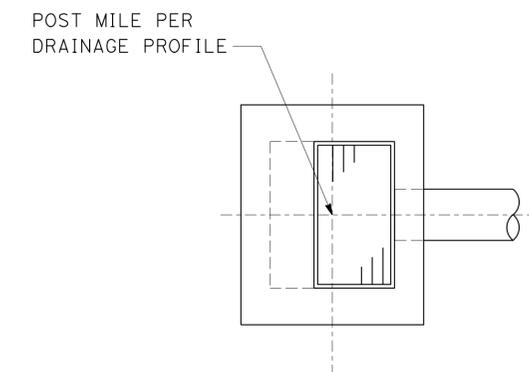
PLAN

**INLET ADJACENT
TO ANCHOR BLOCK**



PLAN

**INLET ADJACENT
TO HMA DIKE**



PLAN

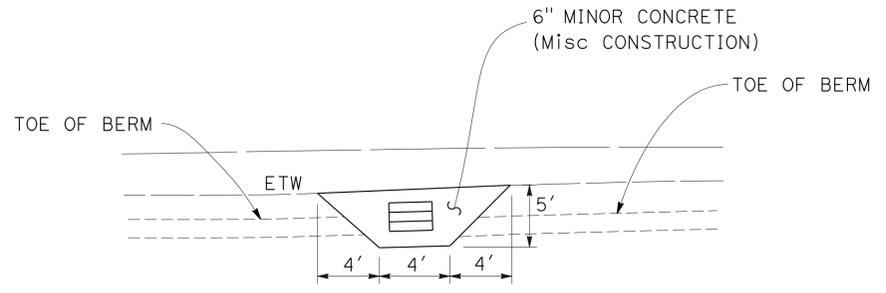
FIELD INLET

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 HYDRAULICS
 FUNCTIONAL SUPERVISOR
 KATHLEEN REILLY
 CALCULATED/DESIGNED BY
 CHECKED BY
 KHAI LEONG
 KATHLEEN REILLY
 REVISED BY
 DATE REVISED
 KL
 12/15/14

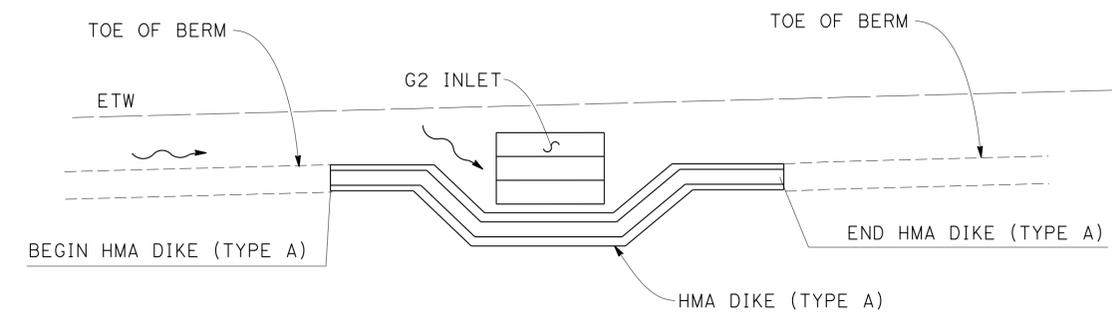
DRAINAGE DETAILS
NO SCALE

DD-1

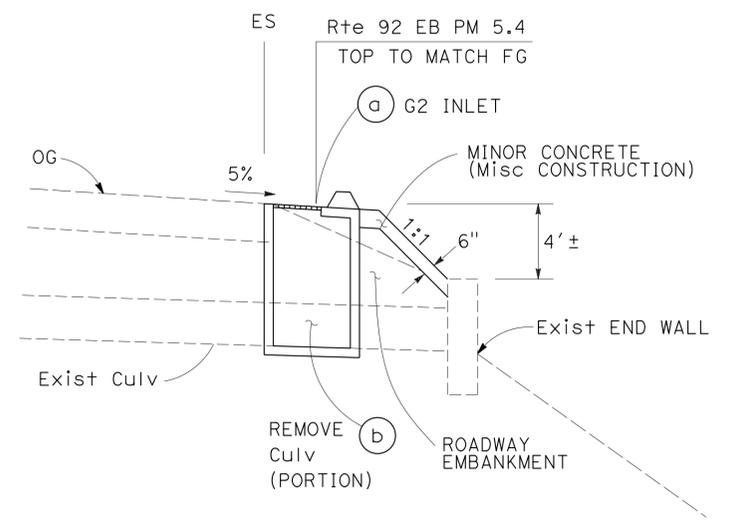
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92, 780	Var	18	62
			10/16/14	DATE	
REGISTERED CIVIL ENGINEER			No. 70259		
12-15-14			Exp. 9-30-16		
PLANS APPROVAL DATE			CIVIL		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



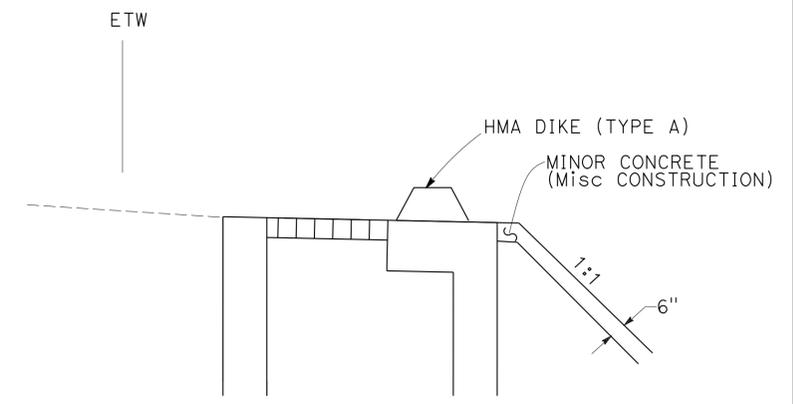
PLAN



HMA DIKE CONFORM TO EXISTING BERM

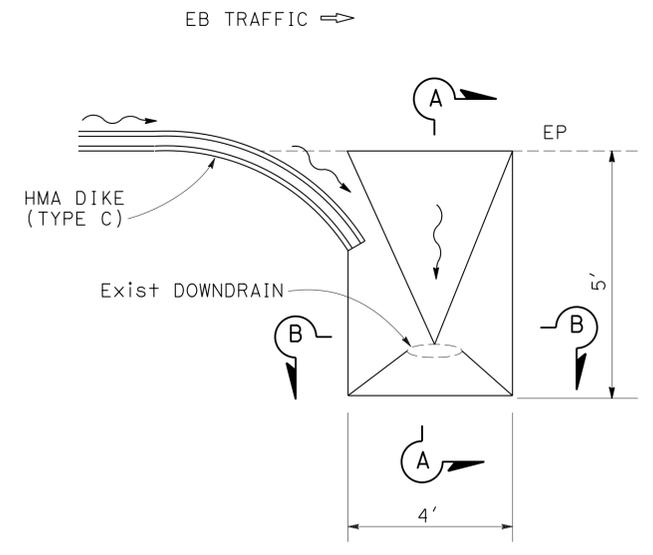


ELEVATION

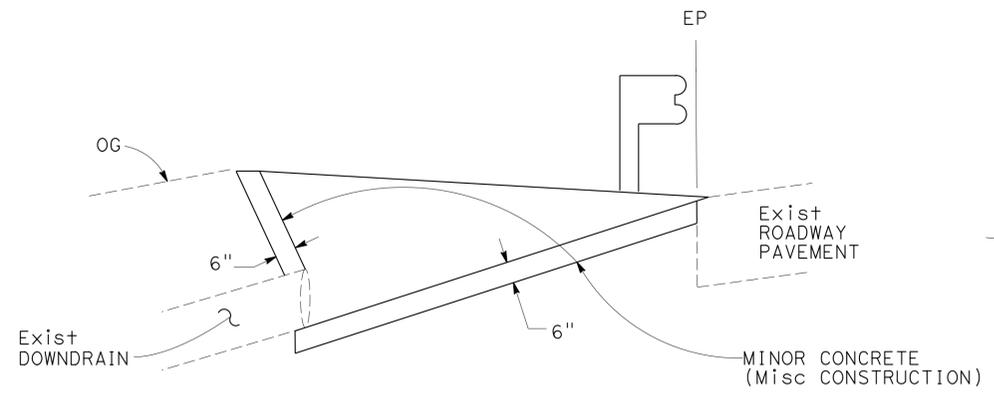


POSITION OF INLET

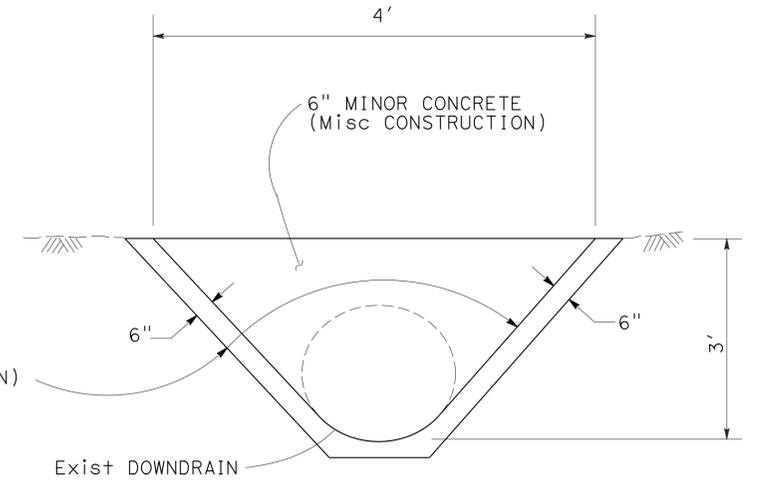
G2 INLET/TRANSITION AREA
DRAINAGE SYSTEM No. 1 AT PM 5.4



PLAN



SECTION A-A



SECTION B-B

HMA DIKE TRANSITION TO EXISTING DOWNDRAIN
DRAINAGE SYSTEM No. 3 AT PM 6.0

DRAINAGE DETAILS
NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Eric K. Wong
DIXON LAU
HYDRAULICS

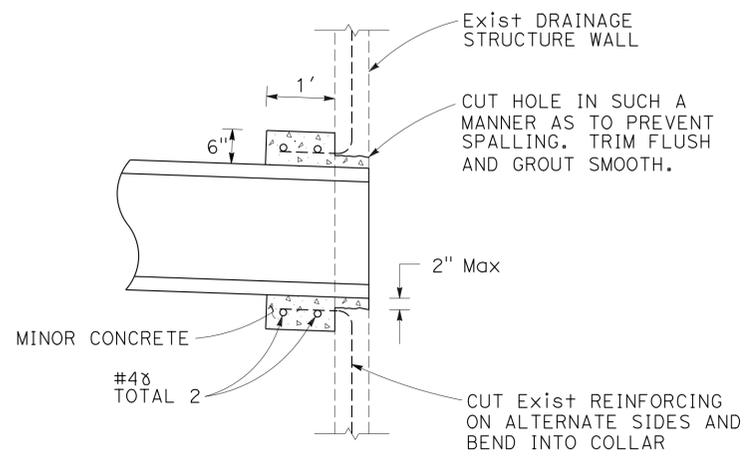
LAST REVISION DATE PLOTTED => 14-JAN-2015
12-15-14 TIME PLOTTED => 12:46

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92,780	Var	19	62
			10/16/14	DATE	
REGISTERED CIVIL ENGINEER			DATE		
12-15-14			PLANS APPROVAL DATE		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					

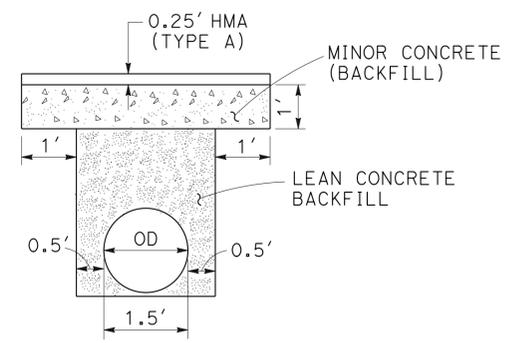
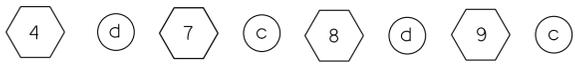


NOTES:

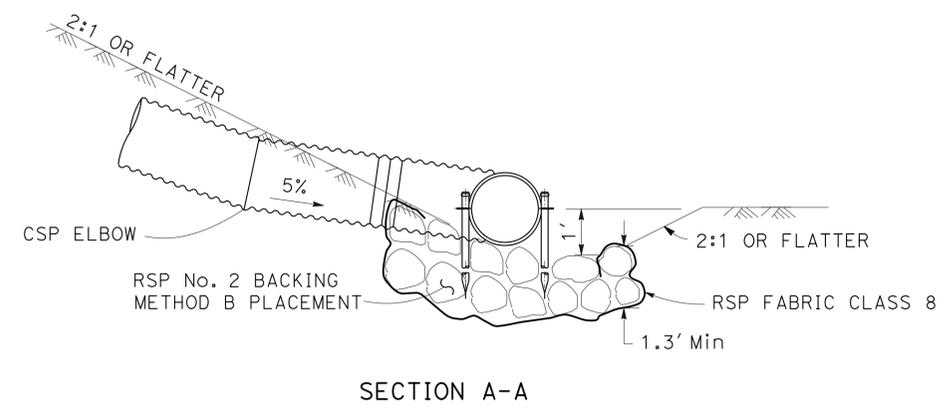
1. IF WALL OF EXISTING DRAINAGE STRUCTURE HAS NO REINFORCING, DRILL AND BOND DOWELS, 1' ON CENTER, 6" INTO WALL AND BEND INTO COLLAR.
2. SQUARE OR CIRCULAR COLLAR OPTIONAL.
3. SEE STANDARD PLAN D87A FOR ANCHOR ASSEMBLY DETAILS.



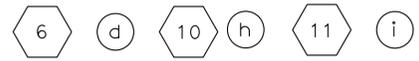
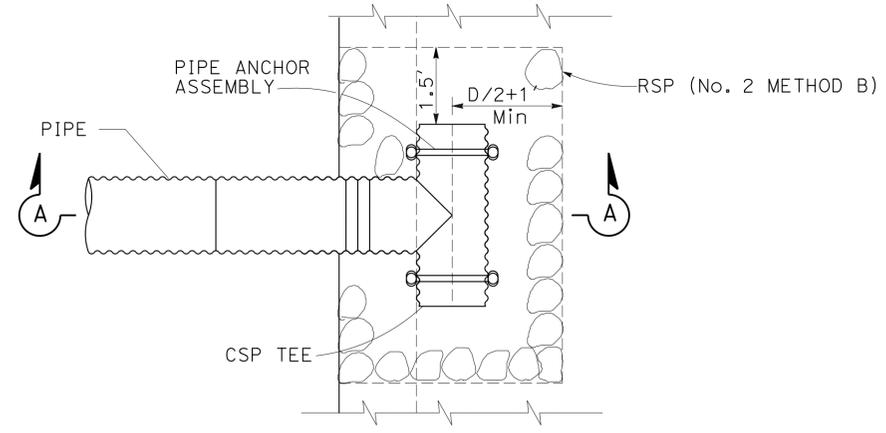
PIPE CONNECTION TO EXISTING DRAINAGE STRUCTURE



TRENCH DETAIL



ROCK SLOPE PROTECTION



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 KHAI LEONG
 KATHLEEN REILLY
 KATHLEEN REILLY
 KATHLEEN REILLY
 HYDRAULICS

DRAINAGE DETAILS
NO SCALE

DD-3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92,780	Var	21	62

10/15/14
 REGISTERED CIVIL ENGINEER DATE
 12-15-14
 PLANS APPROVAL DATE

Parrirokh Abedi
 No. 36025
 Exp. 6-30-16
 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.

DRAINAGE QUANTITIES

DRAINAGE SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT	REMOVE INLET	REMOVE CULVERT	REMOVE ASPHALT CONCRETE OVERSIDE DRAIN	POLYMERIC SHEET COATING				12" ANCHOR ASSEMBLY	18" ANCHOR ASSEMBLY	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT (MISCELLANEOUS AREA)	MINOR CONCRETE (Misc CONSTRUCTION)	ROCK SLOPE PROTECTION (No. 2 METHOD B)	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	LEAN CONCRETE BACKFILL	MINOR CONCRETE (BACKFILL)	MINOR CONCRETE (MINOR STRUCTURE)	MISCELLANEOUS IRON AND STEEL	REMOVE GRATE	HEIGHT OF INLET (N)	MAXIMUM COVER (N)	GRATE TYPE 24-12 (N)	GRATE TYPE 24-12X (N)	PIPE JOINT CLASSIFICATION (N)	DESCRIPTION	LOCATION	DRAINAGE SHEET No.	DRAINAGE SYSTEM No.	DRAINAGE UNIT
						EA	LF	EA	LF																						
D-4	10	a		64.2																						REMOVE CULVERT	ROUTE 780 EB PM 1.55	D-4	10	a	
		b																								G1 DI	ROUTE 780 EB PM 1.55			b	
		c																								18" CSP	ROUTE 780 EB PM 1.55			c	
		d					20																			G1 DI	ROUTE 780 EB PM 1.55			d	
		e																								18" CSP	ROUTE 780 EB PM 1.55			e	
		f																								G2 DI	ROUTE 780 EB PM 1.55			f	
		g																								12" CSP DD w/ TEE	ROUTE 780 EB PM 1.55			g	
		h																								RSP	ROUTE 780 EB PM 1.55			h	
D-4	11	a	1																							REMOVE DI	ROUTE 780 WB PM 1.53	D-4	11	a	
		b		31.4																						REMOVE CULVERT	ROUTE 780 WB PM 1.53			b	
		c																								G1 DI	ROUTE 780 WB PM 1.53			c	
		d																								18" CSP	ROUTE 780 WB PM 1.53			d	
		e																								G1 DI	ROUTE 780 WB PM 1.53			e	
		f																								18" CSP	ROUTE 780 WB PM 1.53			f	
		g																								G2 DI	ROUTE 780 WB PM 1.53			g	
		h																								18" CSP DD w/ TEE	ROUTE 780 WB PM 1.53			h	
		i																								RSP	ROUTE 780 WB PM 1.53			i	
TOTAL			1	95.6		64.2		31.4	80	2	2	6.8																			
SHEET DQ-1 TOTAL			2	284.0	1	37.0	109.0		135	2		2.03	1.0	1.74	0.72	3.98															
GRAND TOTAL			3	379.6	1	101.2	109.0	31.4	215	4	2	8.83*	1.0	1.74	2.45	13.04	16	14	18.67	4064	1										
SHEET TOTAL																															

* QUANTITY INCLUDED IN SUMMARY OF QUANTITIES SHEET.
 (N) NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.

DRAINAGE QUANTITIES DQ-2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92, 780	Var	22	62
<i>Jerilyn L. Struven</i> REGISTERED CIVIL ENGINEER			10/24/14 DATE		
			12-15-14 PLANS APPROVAL DATE		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
REGISTERED PROFESSIONAL ENGINEER Jerilyn L. Struven No. 49964 Exp. 2-31-16 CIVIL STATE OF CALIFORNIA					

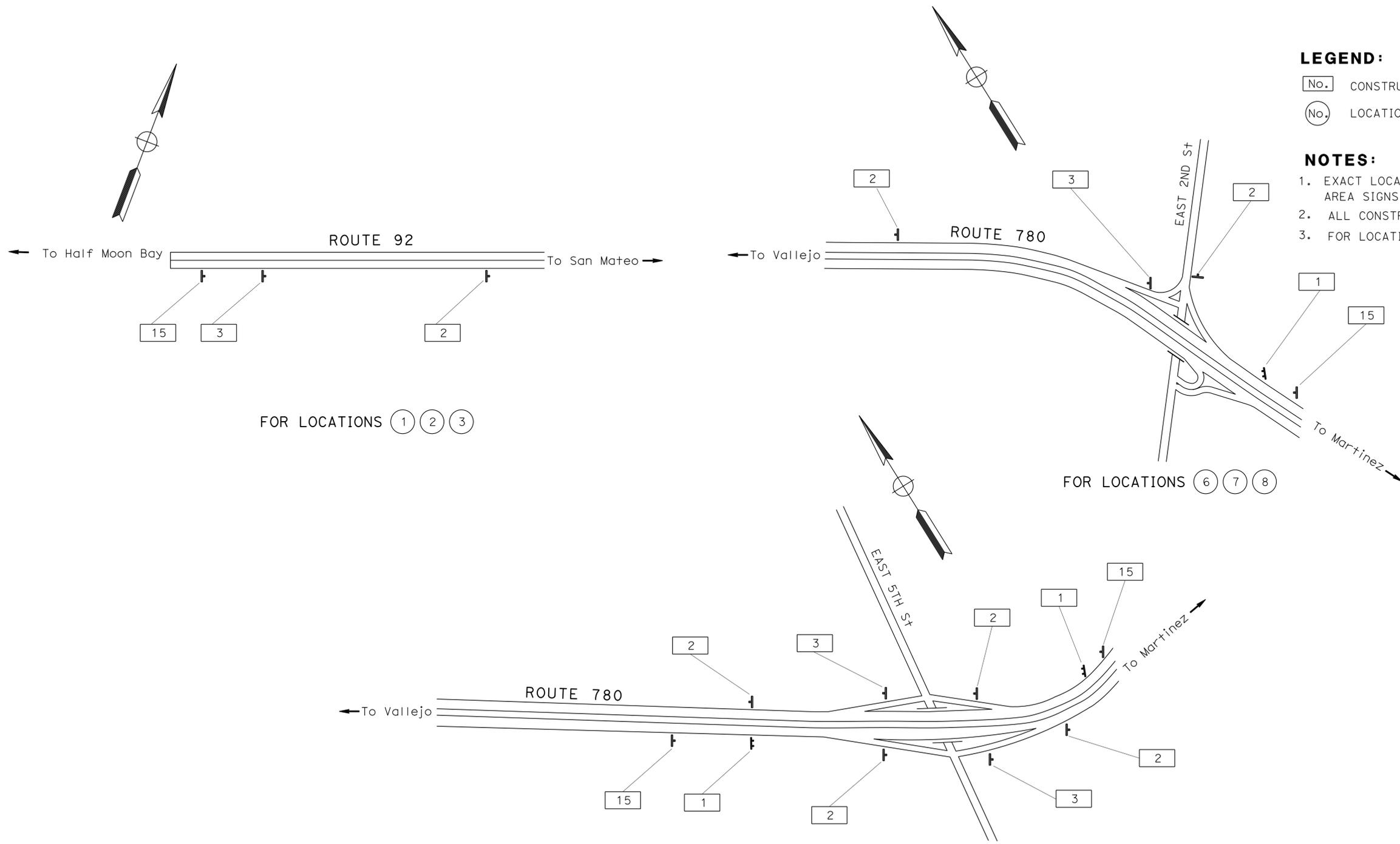
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR	DATE
Caltrans	ROLAND AU-YEUNG	HERMINIO S. RUIDERA JERILYN L. STRUVEN	HR	12/15/14
TRAFFIC				

LEGEND:

- [No.] CONSTRUCTION AREA SIGN DESIGNATION
- (No.) LOCATION OF CONSTRUCTION AREA SIGN

NOTES:

1. EXACT LOCATION AND POSITION OF CONSTRUCTION AREA SIGNS TO BE DETERMINED BY THE ENGINEER.
2. ALL CONSTRUCTION AREA SIGNS TO BE STATIONARY MOUNTED.
3. FOR LOCATION OF CONSTRUCTION, SEE SHEET LC-1.



FOR LOCATIONS (1) (2) (3)

FOR LOCATIONS (6) (7) (8)

FOR LOCATIONS (4) (5) (9) (10)

TYPICAL SIGN INSTALLATION

CONSTRUCTION AREA SIGNS

NO SCALE

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

CS-1



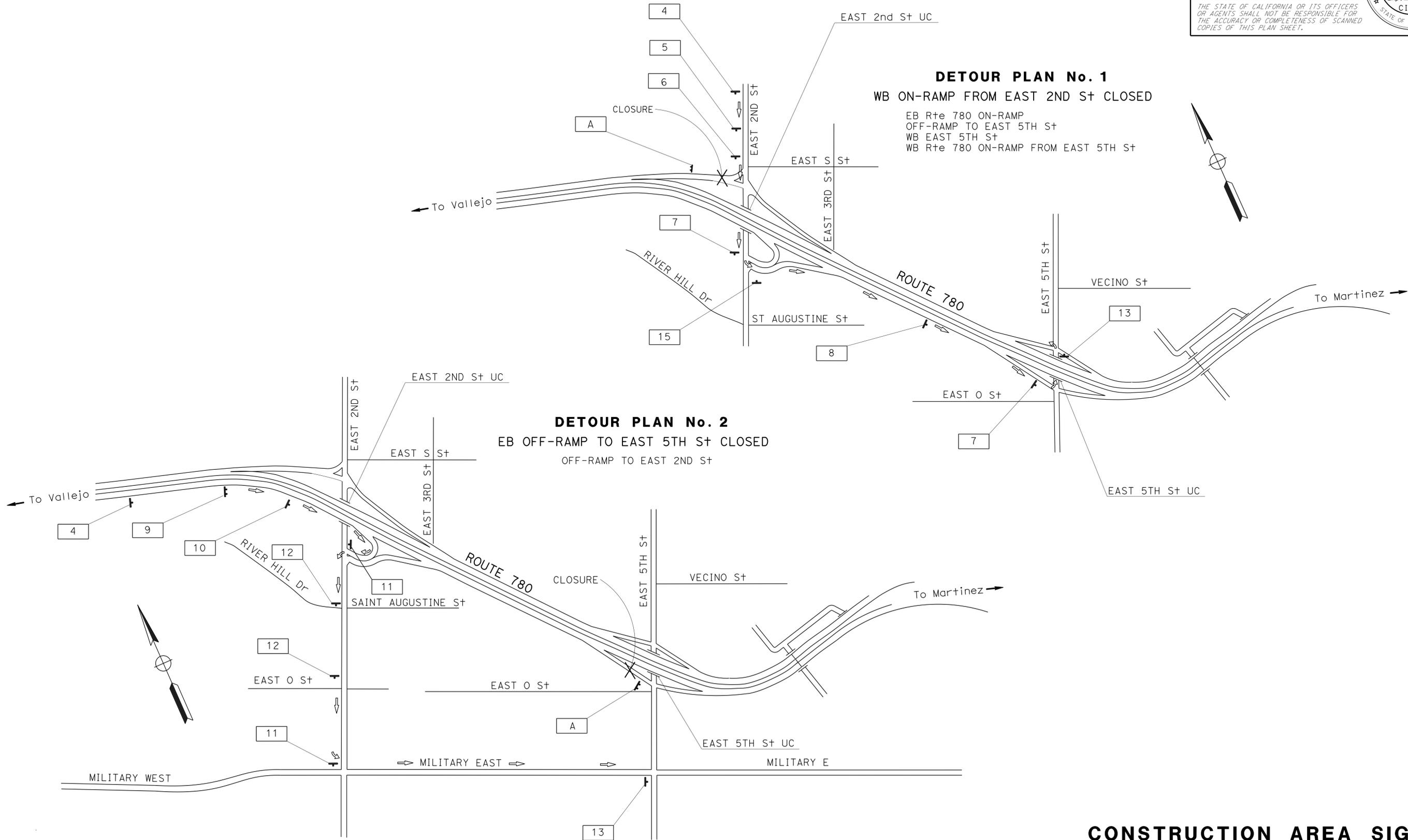
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92,780	Var	23	62

Jerilyn L. Struven 10/24/14
 REGISTERED CIVIL ENGINEER DATE
 12-15-14
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 Jerilyn L. Struven
 No. 49964
 Exp. 2-31-16
 CIVIL
 STATE OF CALIFORNIA

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

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	REVISOR	DATE
Caltrans	ROLAND AU-YEUNG	HERMINIO S. RUIDERA	12/15/14
	TRAFFIC	JERILYN L. STRUVEN	
		CALCULATED/DESIGNED BY	CHECKED BY



CONSTRUCTION AREA SIGNS
 NO SCALE

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

FOR NOTES AND LEGEND, SEE SHEET CS-1

CS-2

LAST REVISION | DATE PLOTTED => 14-JAN-2015
 10-27-14 | TIME PLOTTED => 12:46

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92, 780	Var	24	62

Jerilyn L. Struven 10/24/14
 REGISTERED CIVIL ENGINEER DATE
 12-15-14
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 Jerilyn L. Struven
 No. 49964
 Exp. 2-31-16
 CIVIL
 STATE OF CALIFORNIA

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CONSTRUCTION AREA SIGNS

SIGN No.	SIGN CODE	PANEL SIZE	SIGN MESSAGE	NUMBER OF POSTS AND SIZE	NUMBER OF SIGNS	REMARKS
1	W20-1	60" x 60"	ROAD WORK AHEAD	2 - 4" x 6"	3	
2	G20-2	36" x 18"	END ROAD WORK	1 - 4" x 4"	7	
3	W20-2	48" x 48"	ROAD WORK AHEAD	1 - 4" x 6"	4	
4	W20-2	48" x 48"	DETOUR AHEAD	1 - 4" x 6"	2	
5	W20-2	48" x 18"	DETOUR AHEAD	1 - 4" x 6"	1	
	G27-2(CA)	21" x 18"	780			
6	M3-4	24" x 12"	WEST	1 - 4" x 6"	1	
	M4-8	24" x 12"	DETOUR			
	G27-2(CA)	21" x 18"	780			
	M6-3	21" x 15"	↑			
7	M4-8	24" x 12"	DETOUR	1 - 4" x 6"	2	
	G27-1(CA)	21" x 18"	780			
	M3-4	24" x 12"	WEST			
	M6-1	21" x 15"	←			
8	M4-8	30" x 15"	DETOUR	1 - 4" x 6"	1	
	G27-2(CA)	25" x 30"	780			
	M6-2	21" x 15"	↗			
9	SPEC	96" x 72"	E 5TH ST RAMP CLOSED USE NEXT EXIT	2 - 6" x 6"	1	SEE DETAILS
10	M4-8	30" x 15"	DETOUR	1 - 4" x 6"	1	SEE DETAILS
	G85(CA)	54" x 60"				
11	M4-8	24" x 12"	DETOUR	1 - 4" x 6"	2	SEE DETAILS
	G8(CA)	42" x 42"				
12	M4-8	24" x 12"	DETOUR	1 - 4" x 6"	2	SEE DETAILS
	G8(CA)	42" x 42"				
13	M4-8A	24" x 12"	END DETOUR	1 - 4" x 4"	2	
A	SC6-4(CA)	48" x 60"	RAMP CLOSED DATE __ TIME __	1 - 4" x 6"	2	
14	M4-8	24" x 12"	DETOUR	1 - 4" x 6"	1	
	G27-1(CA)	21" x 18"	780			
	M3-4	24" x 12"	WEST			
	M6-1	21" x 15"	→			
15	C40(CA)	72" x 36"	TRAFFIC FINES DOUBLED IN CONSTRUCTION ZONES	1 - 4" x 6"	4	



CONSTRUCTION AREA SIGNS

NO SCALE

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

CS-3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92,780	Var	25	62

Parrirokh Abedi 10/15/14
REGISTERED CIVIL ENGINEER DATE
12-15-14
PLANS APPROVAL DATE

Parrirokh Abedi
No. 36025
Exp. 3-30-16
CIVIL
STATE OF CALIFORNIA

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NOTE:
ALL MGS TO BE CONSTRUCTED ON RIGHT SIDE OF THE TRAVEL WAY UNLESS OTHERWISE NOTED.

MIDWEST GUARDRAIL SYSTEM

LOCATION	COUNTY-ROUTE	DIRECTION	POST MILE	LAYOUT TYPE/ CONNECTION TYPE	MIDWEST GUARDRAIL SYSTEM (8' POST)	MIDWEST GUARDRAIL SYSTEM (7' POST)	MIDWEST GUARDRAIL SYSTEM (WOOD POST)	ALTERNATIVE FLARED TERMINAL SYSTEM	END ANCHOR ASSEMBLY (SFT)	MGS TRANSITION FROM MBGR (N)	REMOVE GUARDRAIL	TREATED WOOD WASTE	VEGETATION CONTROL (MINOR CONCRETE)	TRANSITION RAILING (TYPE WB-31)	GUARD RAILING DELINEATOR		OBJECT MARKER	
					LF	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
1	SM-92	EB	5.34/5.68	11G		1900		1			300	2920	640		48			1
2	SM-92	EB	5.80/6.00	TRANSITION		1060				1	40	470	360		27			
3	SM-92	EB	6.06/6.27	TRANSITION		1080		1		1	40	470	360		27			1
	SM-92	EB	6.08/6.09	ROADSIDE TREE	30								10					
4	Sol-780	WB	1.50/1.57	12B			370	1			140	1170	170	1		7	1	1
5	Sol-780	WB	1.59/1.68	12DD			450		1				200			9		
6	Sol-780	WB	1.92/2.00	12B			400	1			140	1170	180	1		8	1	1
7	Sol-780	WB	2.02/2.16	12DD			740		1				330			15		
8	Sol-780	WB	2.23/2.34	11B			600	1	1				270			12		1
9	Sol-780	EB	1.59/1.68	12B			480	1			140	1170	220	1		10	1	1
10	Sol-780	EB	1.46/1.57	12DD			600		1				270			12		
TOTAL					30	4040	3640	6	4		800	7370	3010	3	175	3	6	

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

SUMMARY OF QUANTITIES

Q-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN
FUNCTIONAL SUPERVISOR: GHULAM POPAL
CALCULATED/DESIGNED BY: TOMO MORI
CHECKED BY: PARI ABEDI
REVISOR: TM
DATE REVISED: 12/15/14

LAST REVISION: DATE PLOTTED => 14-JAN-2015
10-22-14 TIME PLOTTED => 12:46

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92,780	Var	26	62

Parrirokh Abedi 10/15/14
REGISTERED CIVIL ENGINEER DATE

12-15-14
PLANS APPROVAL DATE

**Parrirokh
Abedi**
No. 36025
Exp. 6-30-16
CIVIL
STATE OF CALIFORNIA

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

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN

FUNCTIONAL SUPERVISOR
GHULAM POPAL

CALCULATED-DESIGNED BY
CHECKED BY

TOMO MORI
PARI ABEDI

REVISED BY
DATE REVISED

PA
12/15/14

TEMPORARY FENCE (TYPE ESA)

LOCATION No.	COUNTY-ROUTE	PM	TEMPORARY FENCE (TYPE ESA)
			LF
1	SM-92	5.34/5.68	2000
2	SM-92	5.80/6.00	1200
3	SM-92	6.06/6.27	1200
TOTAL			4400

ROADWAY EXCAVATION

LOCATION No.	COUNTY-ROUTE	PM	ROADWAY EXCAVATION
			CY
1	SM-92	5.34/5.68	140
2	SM-92	5.80/5.95	60
TOTAL			200

HOT MIX ASPHALT

LOCATION No.	COUNTY-ROUTE	DIRECTION	PM	HOT MIX ASPHALT (TYPE A)	PLACE HOT MIX ASPHALT DIKE *	
					TYPE A	TYPE C
				TON	LF	
1	SM-92	EB	5.4/5.41	0.5	20	
2	SM-92	EB	5.98/6.02	1.25		200
4	Sol-780	WB	1.50/1.57	2.31		370
5	Sol-780	WB	1.59/1.68	2.81		450
6	Sol-780	WB	1.92/2.00	2.50		400
7	Sol-780	WB	2.02/2.15	4.19		670
9	Sol-780	EB	1.59/1.68	3.00		480
10	Sol-780	EB	1.48/1.57	2.81		450
FROM DQ SHEET				8.83		
TOTAL				28.20	20	3020

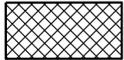
* SEE DRAINAGE PLANS AND CONSTRUCTION DETAILS FOR LOCATIONS OF HMA DIKES.

SUMMARY OF QUANTITIES

Q-2



LEGEND:

-  EROSION CONTROL TYPE 1
-  WOOD MULCH
-  FIBER ROLLS

EROSION CONTROL TYPE 1

SEQUENCE	ITEM	MATERIAL		APPLICATION RATE
		DESCRIPTION	TYPE	
STEP 1	ROLLED EROSION CONTROL PRODUCT (NETTING)	NETTING	TYPE A	
STEP 2	FIBER ROLLS	FIBER ROLL	8" TO 10" Dia AND 1.1LB/FT	
STEP 3	HYDROSEED	FERTILIZER	ORGANIC	1,200 LB/ACRE
		SEED	SEED MIX	54 LB/ACRE
		FIBER	WOOD	500 LB/ACRE
STEP 4	HYDROMULCH	FIBER	WOOD	1,500 LB/ACRE
		TACKIFIER	GUAR	125 LB/ACRE

SEED MIX

BOTANICAL NAME (COMMON NAME)	PERCENT GERMINATION (MINIMUM)	POUNDS PURE LIVE SEED PER ACRE (SLOPE MEASUREMENT)
LUPINUS BICOLOR (PYGMY LEAF LUPINE)	40	4
BROMUS CARINATUS ¹ (CALIFORNIA BROME)	40	11
ESCHSCHOLZIA CALIFORNICA ¹ (CALIFORNIA POPPY)	50	2
ELYMUS GLAUCUS (BLUE WILD RYE)	50	9
HORDEUM BRACHYANTHERUM (MEADOW BARLEY)	50	11
NASSELLA PULCHRA (PURPLE NEEDLEGRASS)	40	10
ROSA CALIFORNICA (CALIFORNIA WILD ROSE)	40	2
VULPIA MICROSTACHYS (SMALL FESCUE)	50	5
TOTAL		54

¹ SEED PRODUCED IN CALIFORNIA ONLY.

WOOD MULCH

SHEET No.	LOCATION No.	DIRECTION	PM	WOOD MULCH
				CY
EC-1	4	WB	1.50/1.57	2.8
EC-1	10	EB	1.46/1.57	3.2
EC-2	6	WB	1.92/2.00	2.7
EC-2	7	WB	2.02/2.16	1.3
TOTAL				10

EROSION CONTROL QUANTITIES

SHEET No.	LOCATION No.	DIRECTION	PM	FIBER ROLL	ROLLED EROSION CONTROL PRODUCT (NETTING)	EROSION CONTROL (HYDROSEED)	EROSION CONTROL (HYDROMULCH)
				LF	SQFT		
EC-1	4	WB	1.50/1.57	40	240	240	240
EC-1	5	WB	1.59/1.68	140	740	740	740
EC-1	9	EB	1.59/1.68	140	840	840	840
EC-1	10	EB	1.46/1.57	120	480	480	480
EC-2	7	WB	2.02/2.16	80	640	640	640
TOTAL				520	2,940	2,940	2,940

EROSION CONTROL LEGEND AND QUANTITIES

ECL-1

APPROVED FOR EROSION CONTROL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

 WATER QUALITY
 FUNCTIONAL SUPERVISOR HARDEEP TAKHAR
 CALCULATED/DESIGNED BY
 CHECKED BY
 ANGELA KWAN DAVID YAM
 REVISED BY
 DATE REVISED 12/15/14
 AK

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 WATER QUALITY

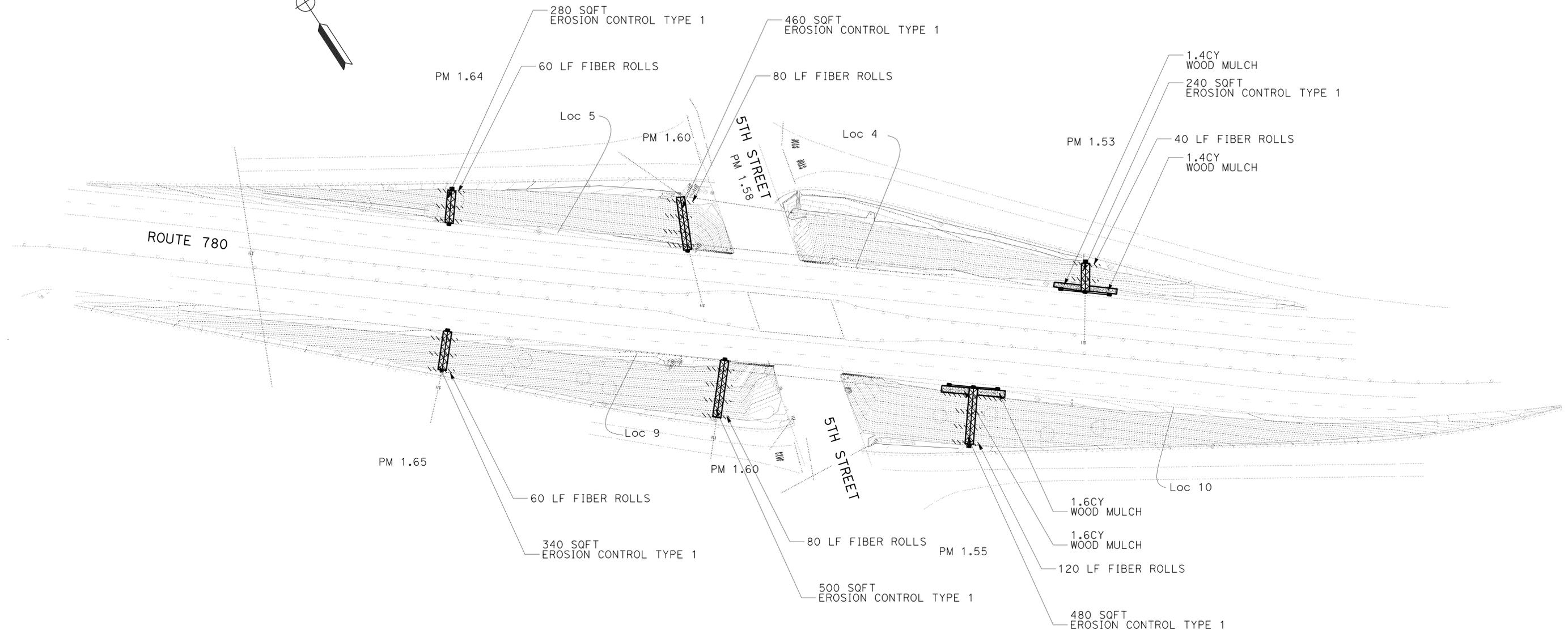
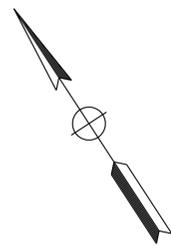
NOTE:
 FOR ACCURATE RIGHT OF WAY DATA, CONTACT
 RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92,780	Var	28	62

12-15-14
 PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT
 11-30-15
 Renewal Date
 12-15-14
 DGT

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S O L A N O

EROSION CONTROL PLAN
 SCALE: 1"=50'

APPROVED FOR EROSION CONTROL WORK ONLY

EC-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 WATER QUALITY

FUNCTIONAL SUPERVISOR
 HARDEEP TAKHAR

CALCULATED-DESIGNED BY
 CHECKED BY

ANGELA KWAN
 DAVID YAM

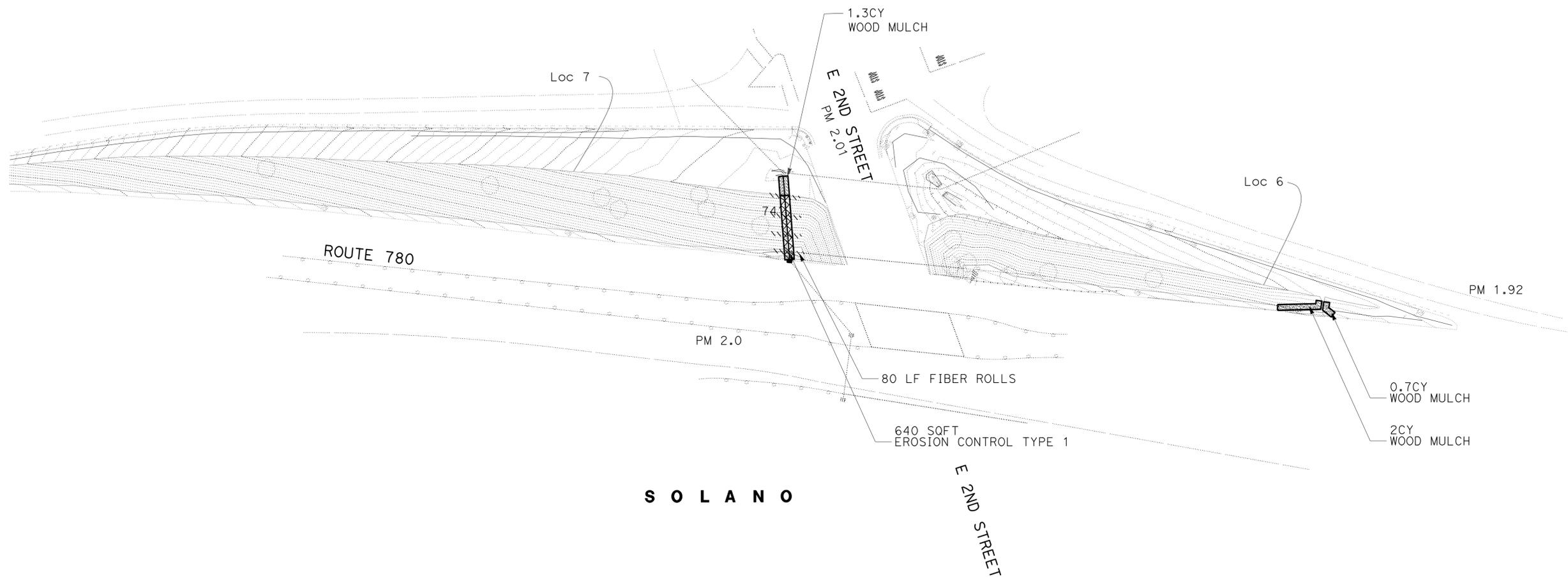
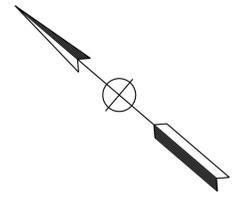
REVISED BY
 DATE REVISED

AK
 12/15/14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92,780	Var	29	62

12-15-14
 PLANS APPROVAL DATE

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APPROVED FOR EROSION CONTROL WORK ONLY

EROSION CONTROL PLAN
 SCALE: 1"=50'

EC-2

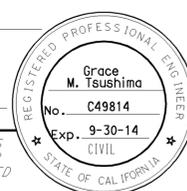
	M	
Maint	MAINTENANCE	
Max	MAXIMUM	
MB	METAL BEAM	
MBB	METAL BEAM BARRIER	
MBGR	METAL BEAM GUARD RAILING	
Med	MEDIAN	
MGS	MIDWEST GUARDRAIL SYSTEM	
MH	MANHOLE	
Min	MINIMUM	
Misc	MISCELLANEOUS	
Misc I & S	MISCELLANEOUS IRON AND STEEL	
Mkr	MARKER	
Mod	MODIFIED, MODIFY	
Mon	MONUMENT	
MP	METAL PLATE	
MPGR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

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

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

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92, 780	Var	30	62



Grace M. Tsushima
 REGISTERED CIVIL ENGINEER
 July 19, 2013
 PLANS APPROVAL DATE

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TO ACCOMPANY PLANS DATED 12-15-14

UNIT OF MEASUREMENT SYMBOLS:

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

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

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

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

* For use on a sign panel only

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**ABBREVIATIONS
(SHEET 2 OF 2)**

NO SCALE

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

2010 REVISED STANDARD PLAN RSP A10B

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92, 780	Var	31	62

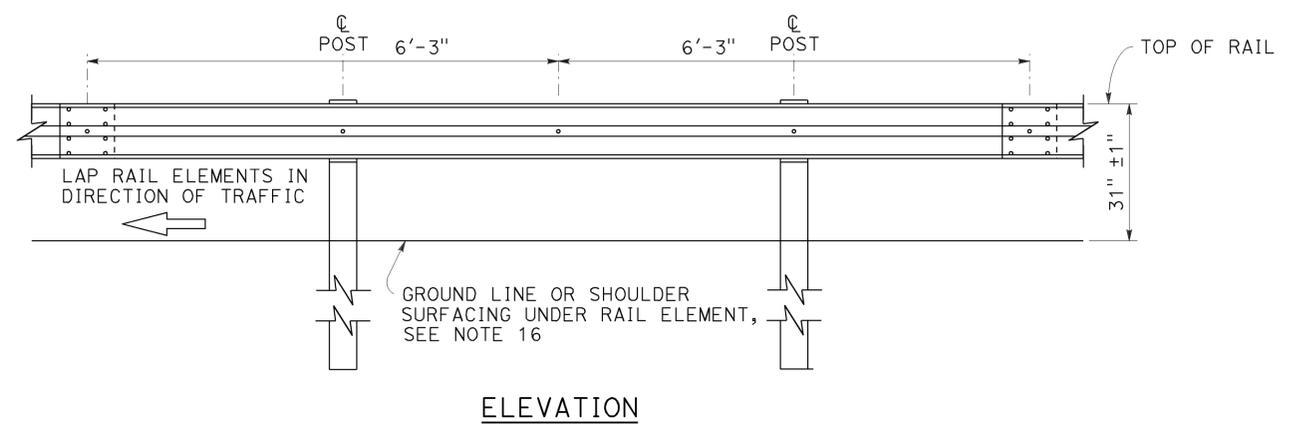
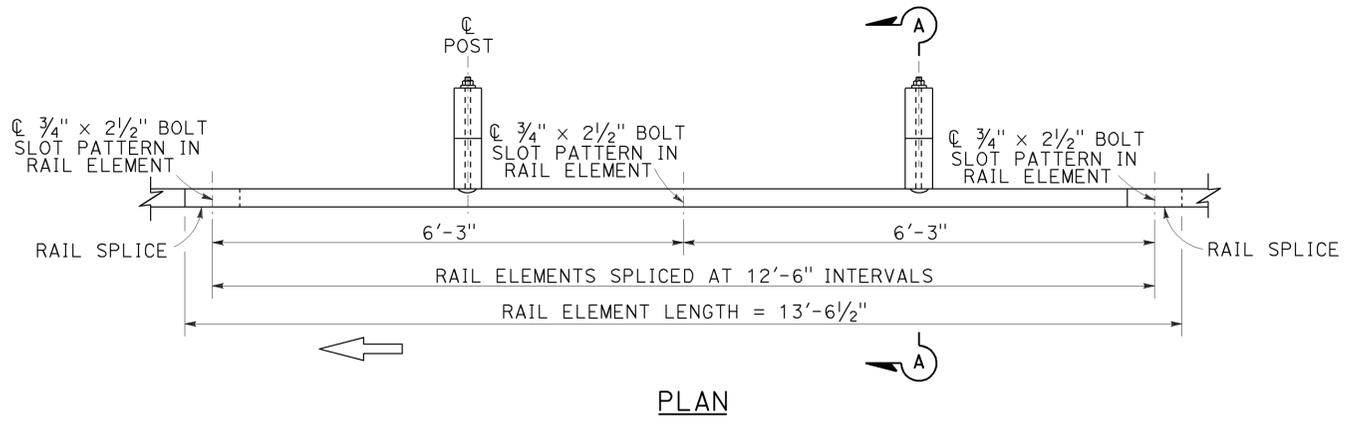
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

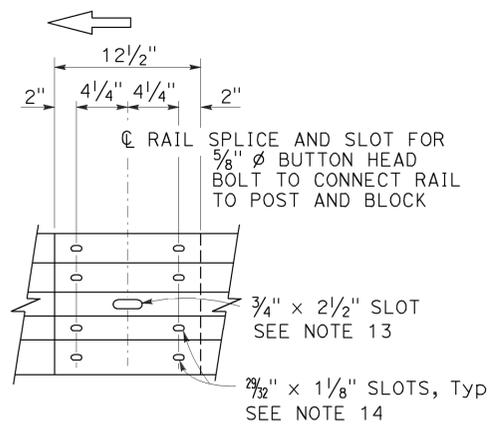
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REGISTERED PROFESSIONAL ENGINEER
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

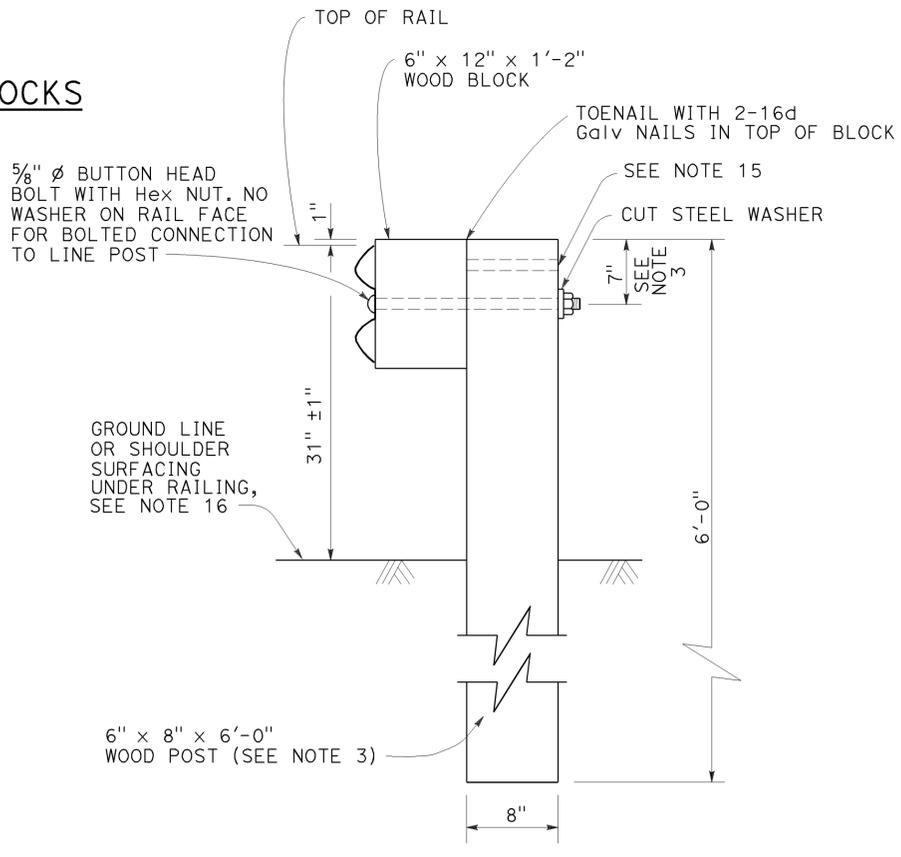
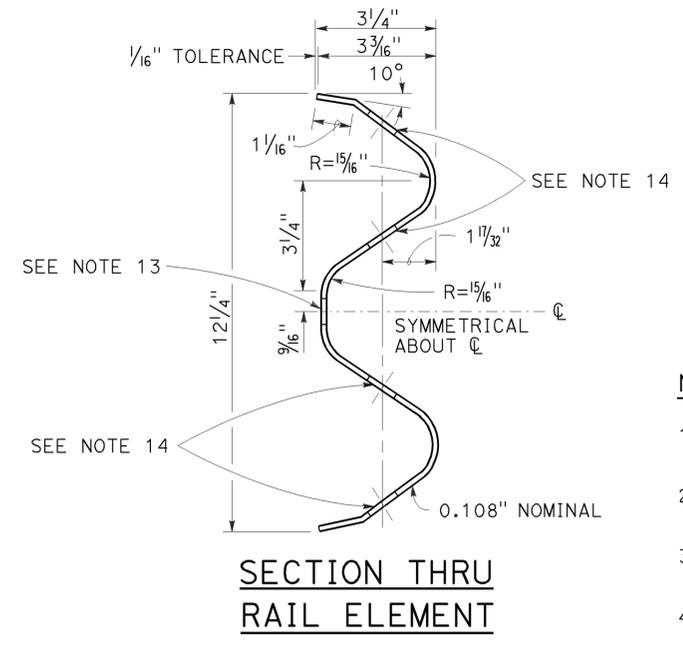
TO ACCOMPANY PLANS DATED 12-15-14



MIDWEST GUARDRAIL SYSTEM WITH WOOD POST AND BLOCKS



- Connect the over lapped end of the rail elements with 5/8" Ø 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" Ø recessed hex nuts. Recess of hex nut points toward rail element. A total of 8 bolts and nuts are to be used at each rail splice connection.
- The ends of the rail elements are to be overlapped in the direction of traffic (see details).
- Where end cap is to be attached to the end of a rail element, a total of 4 of the above described splice bolts and nuts are to be used.



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

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

REVISED STANDARD PLAN RSP A77L1

2010 REVISED STANDARD PLAN RSP A77L1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92, 780	Var	32	62

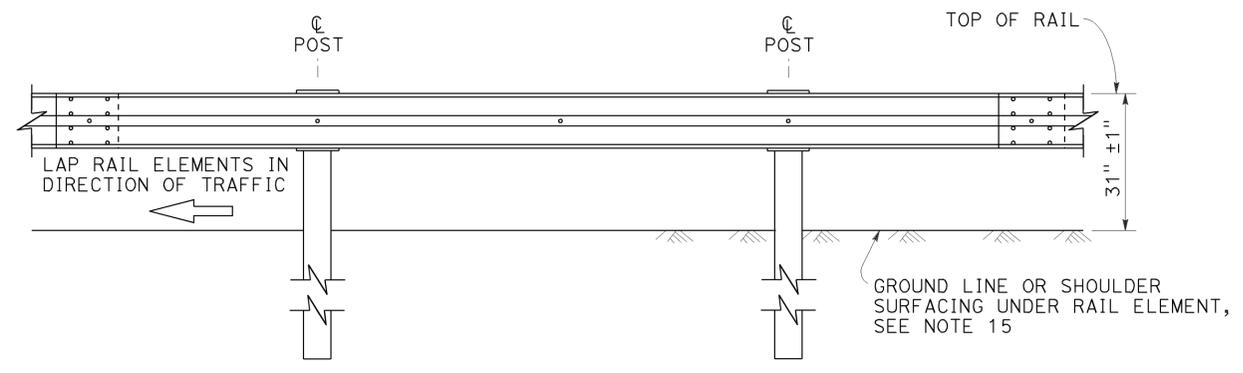
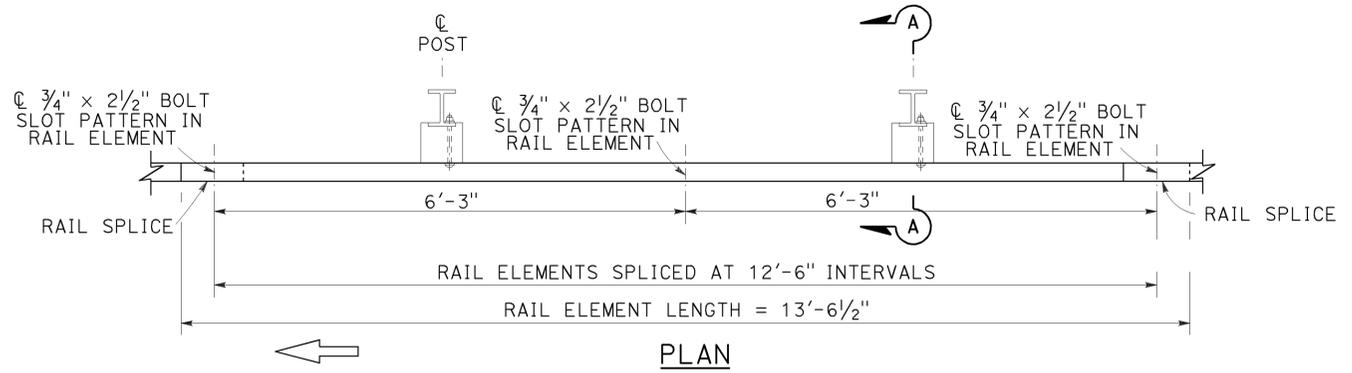
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

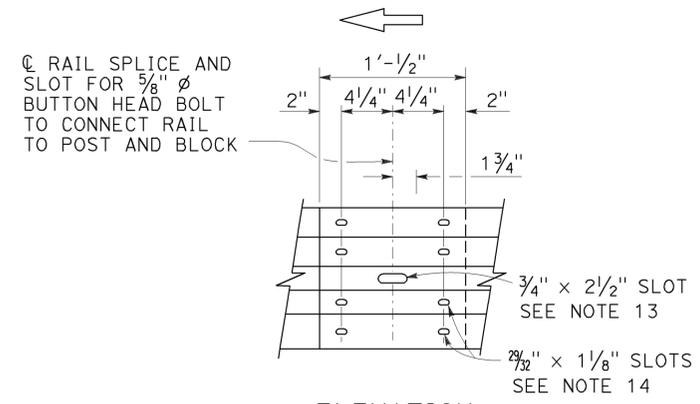
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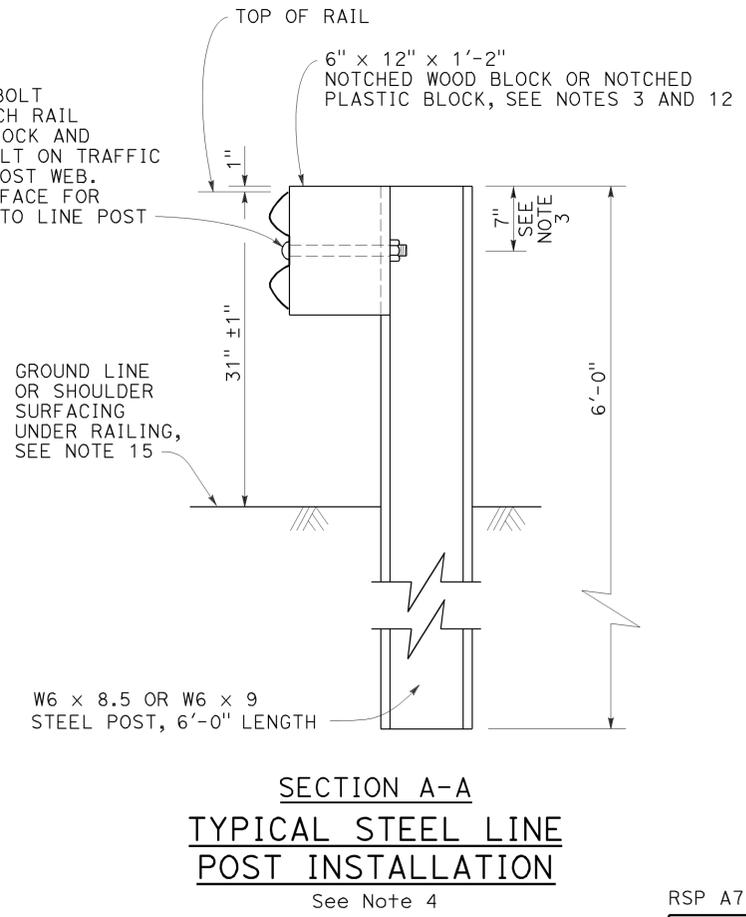
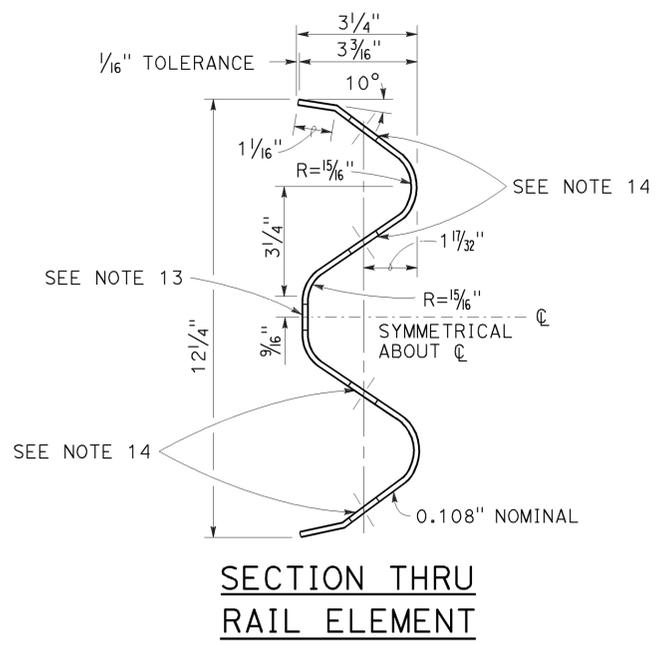
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No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA



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



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



NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

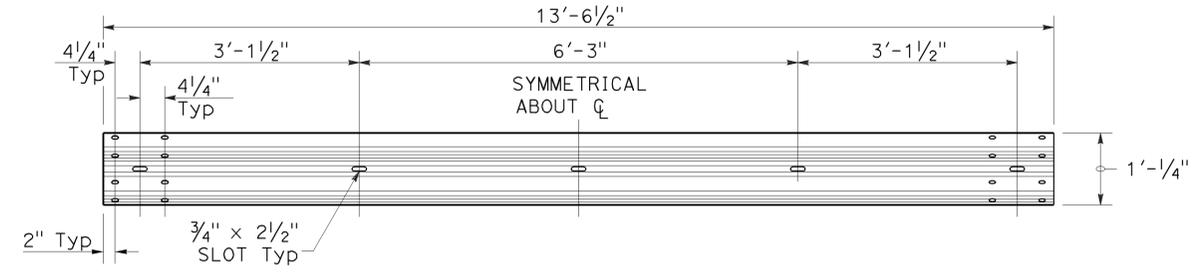
NO SCALE

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

REVISED STANDARD PLAN RSP A77L2

2010 REVISED STANDARD PLAN RSP A77L2

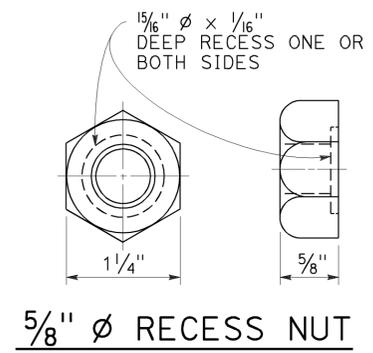
TO ACCOMPANY PLANS DATED 12-15-14



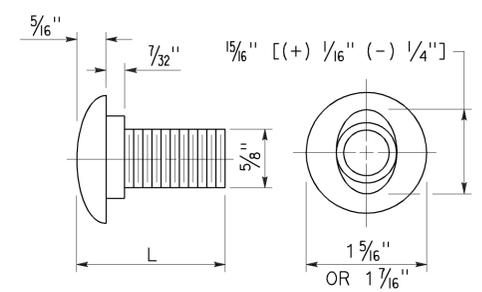
TYPICAL RAIL ELEMENT

NOTE:

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



5/8" Ø RECESS NUT

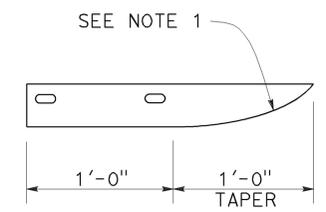


5/8" Ø BUTTON HEAD BOLT

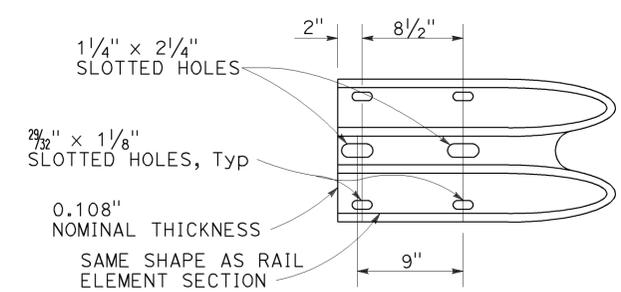
BUTTON HEAD BOLT

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

** For nested rail applications.



PLAN



**ELEVATION
END CAP
(TYPE A)**

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
STANDARD HARDWARE**

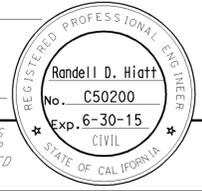
NO SCALE

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

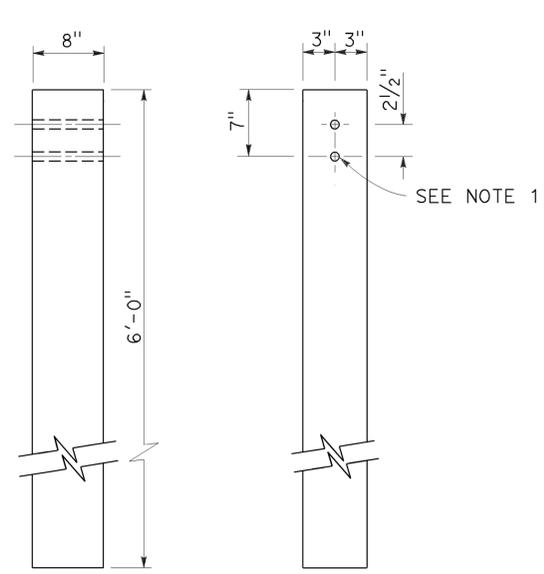
REVISED STANDARD PLAN RSP A77M1

2010 REVISED STANDARD PLAN RSP A77M1

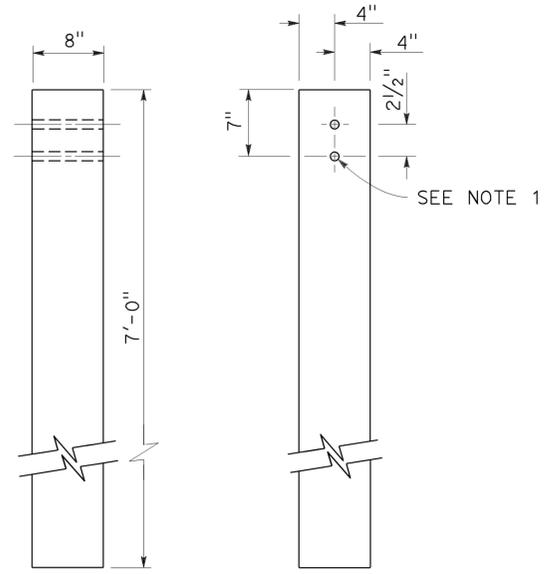
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92, 780	Var	34	62
<i>Randell D. Hiatt</i> REGISTERED CIVIL ENGINEER					
July 19, 2013 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



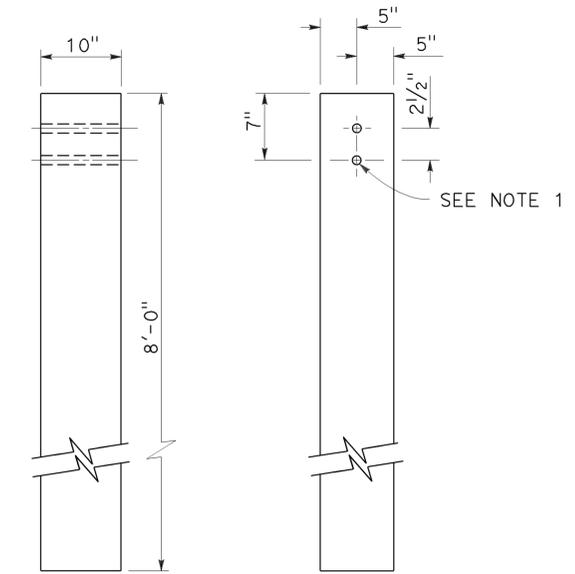
TO ACCOMPANY PLANS DATED 12-15-14



SIDE FRONT
6" x 8" WOOD POST
 See Note 3



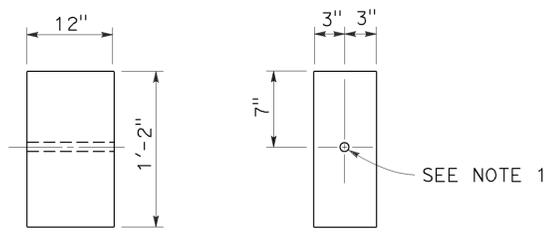
SIDE FRONT
8" x 8" WOOD POST
 See Note 4



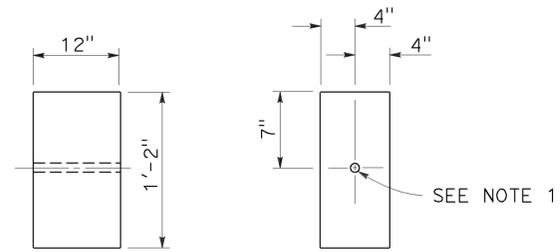
SIDE FRONT
10" x 10" WOOD POST
 See Note 5

NOTES:

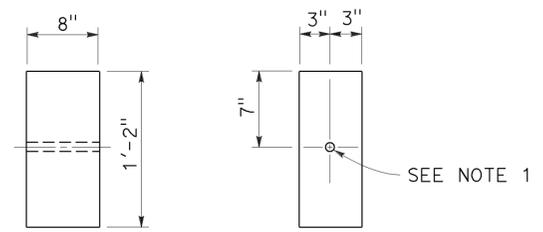
1. All holes in wood posts and blocks shall be 3/4" Dia ± 1/16".
2. Dimensions shown for wood post are nominal.
3. This post and block combination used for standard line post sections of MGS.
4. This post and 8" x 12" block combination used for line post sections of MGS on narrow roadways.
5. This post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



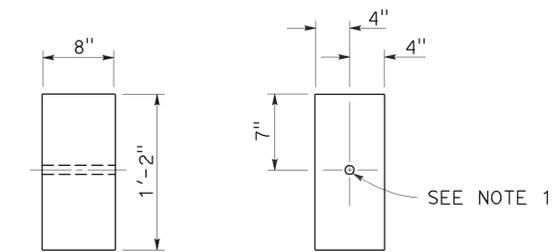
SIDE FRONT
6" x 12" WOOD BLOCK
 See Note 3



SIDE FRONT
8" x 12" WOOD BLOCK



SIDE FRONT
6" x 8" WOOD BLOCK
 Only for use with metal beam guard rail see Note 6



SIDE FRONT
8" x 8" WOOD BLOCK
 Only for use with metal beam guard rail see Note 6

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**MIDWEST GUARDRAIL SYSTEM
 WOOD POST AND
 WOOD BLOCK DETAILS**

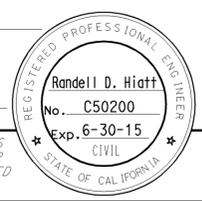
NO SCALE

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

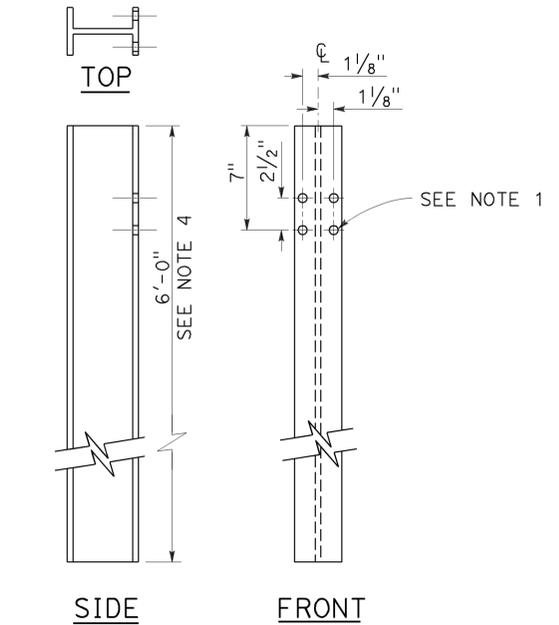
REVISED STANDARD PLAN RSP A77N1

2010 REVISED STANDARD PLAN RSP A77N1

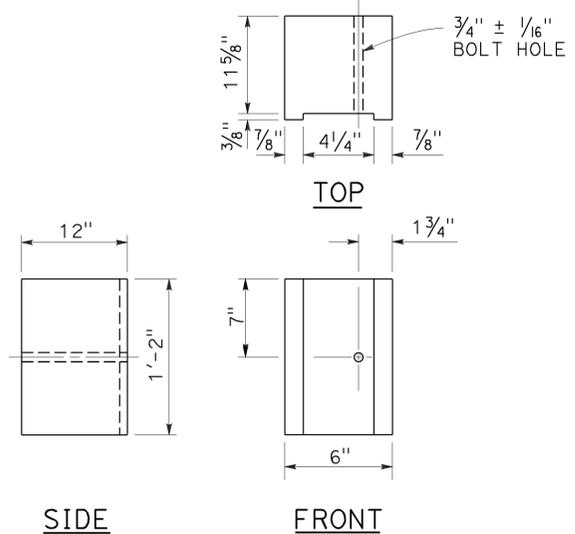
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92, 780	Var	35	62
<i>Randell D. Hiatt</i> REGISTERED CIVIL ENGINEER					
November 15, 2013 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



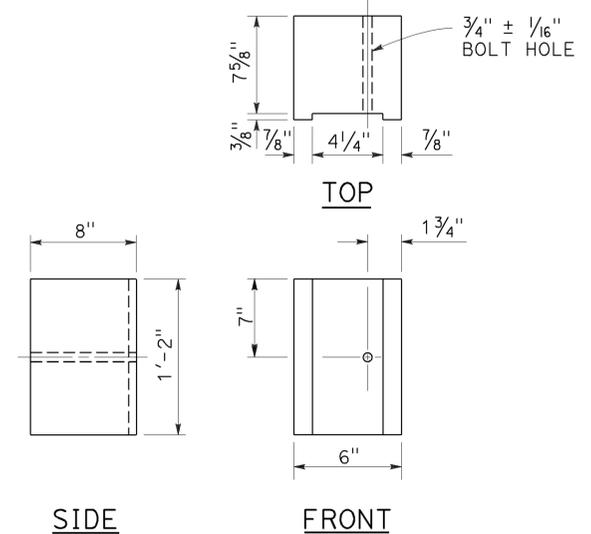
TO ACCOMPANY PLANS DATED 12-15-14



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



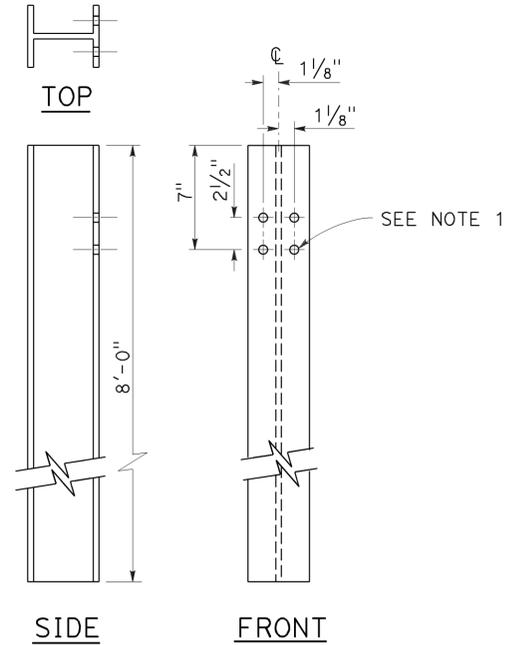
6" x 12"
NOTCHED WOOD BLOCK
See Notes 2 and 3



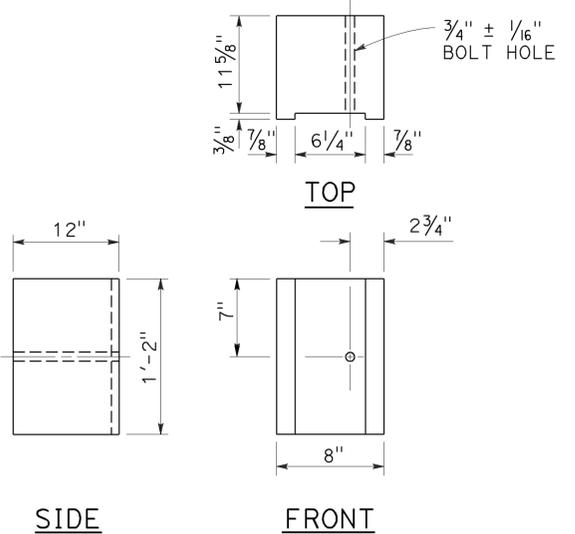
6" x 8"
NOTCHED WOOD BLOCK
Only for use with metal beam guard railing. See Note 5

NOTES:

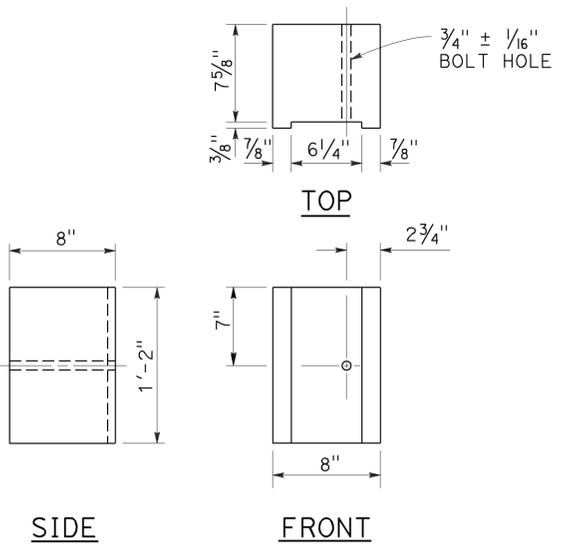
1. All holes in steel post shall be 13/16" Dia maximum.
2. Dimensions shown for wood block are nominal.
3. Notched face of block faces steel post.
4. 6'-0" length posts to be used for typical roadway installation. See Revised Standard Plan RSP A77N3.
5. See Revised Standard Plan RSP A77L3 for use of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



W6 x 15
STEEL POST
See Note 6



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



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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM
STEEL POST AND
NOTCHED WOOD BLOCK DETAILS

NO SCALE

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

REVISED STANDARD PLAN RSP A77N2

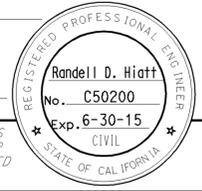
2010 REVISED STANDARD PLAN RSP A77N2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92, 780	Var	36	62

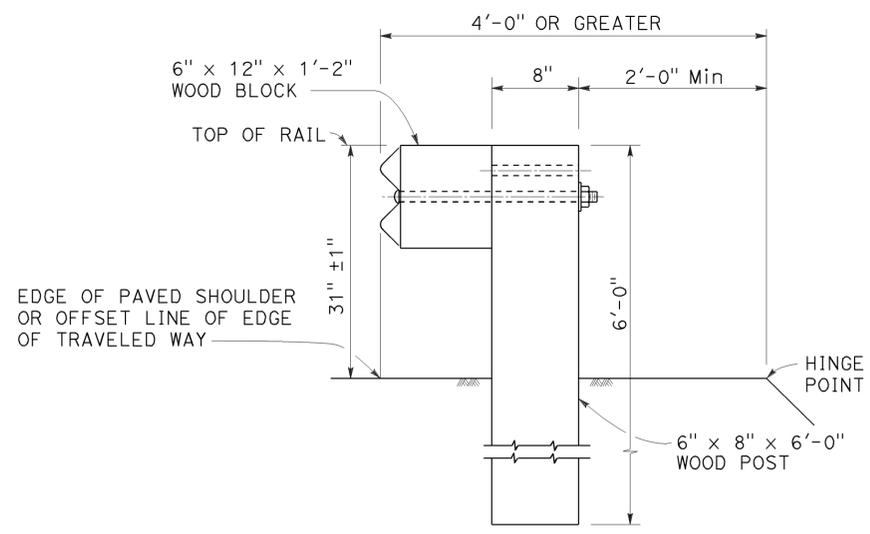
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

November 15, 2013
PLANS APPROVAL DATE

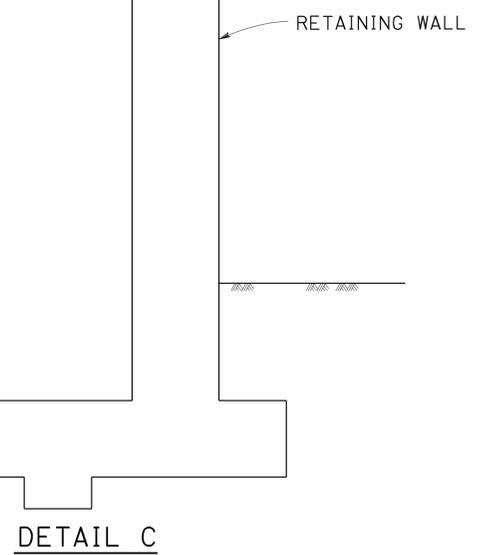
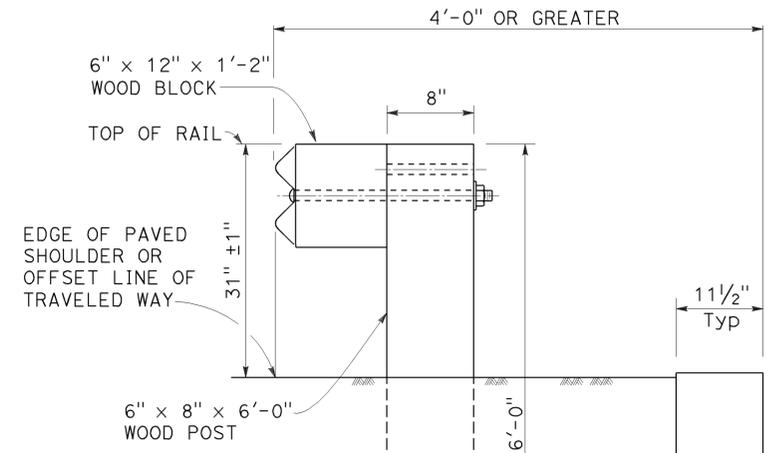
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



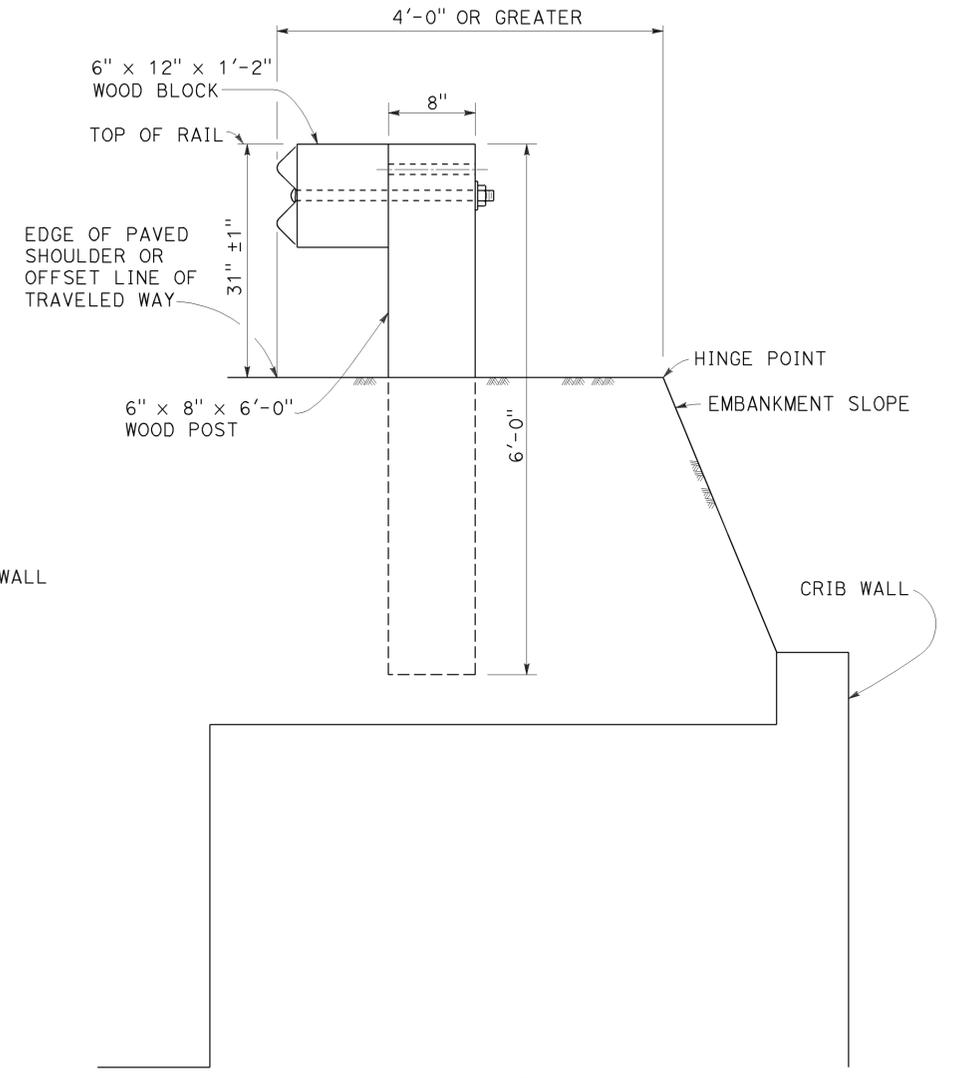
TO ACCOMPANY PLANS DATED 12-15-14



DETAIL A
TYPICAL ROADWAY
INSTALLATION
See Note 1



DETAIL B
NARROW ROADWAY
INSTALLATION
See Note 1



DETAIL D

INSTALLATION AT EARTH RETAINING WALLS

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

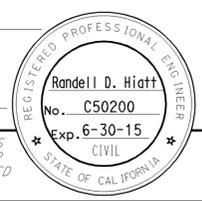
NO SCALE

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

REVISED STANDARD PLAN RSP A77N3

2010 REVISED STANDARD PLAN RSP A77N3

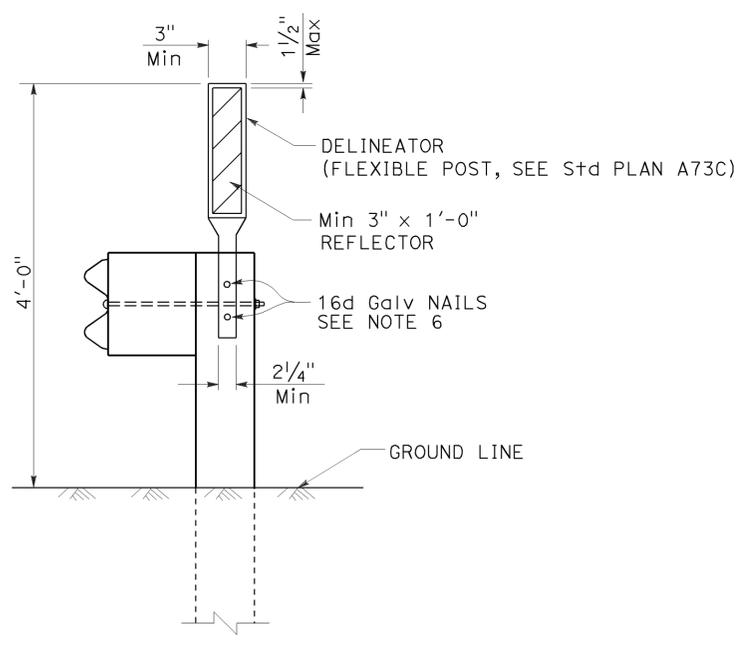
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92, 780	Var	37	62
<i>Randell D. Hiatt</i> REGISTERED CIVIL ENGINEER					
July 19, 2013 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



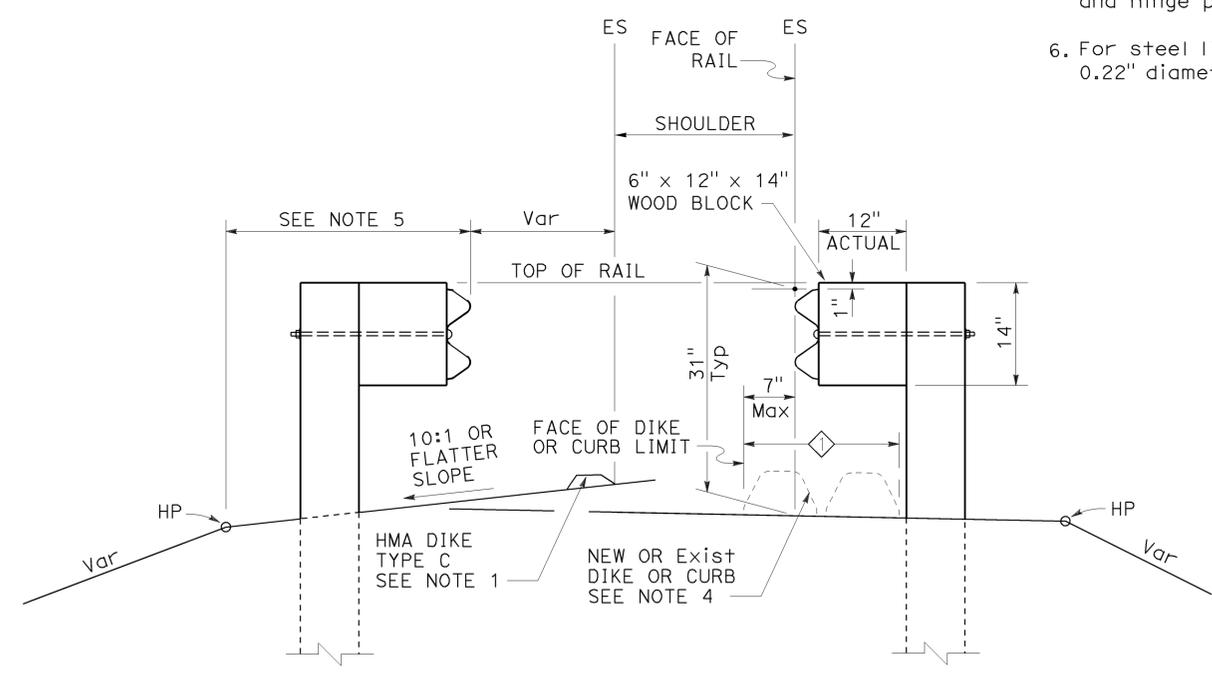
TO ACCOMPANY PLANS DATED 12-15-14

NOTES:

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



MGS DELINEATION
See Note 3



DIKE POSITIONING
See Note 1

◇ PERMISSIBLE DIKE OR CURB PLACEMENT AREA

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

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

REVISED STANDARD PLAN RSP A77N4

2010 REVISED STANDARD PLAN RSP A77N4

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92, 780	Var	38	62

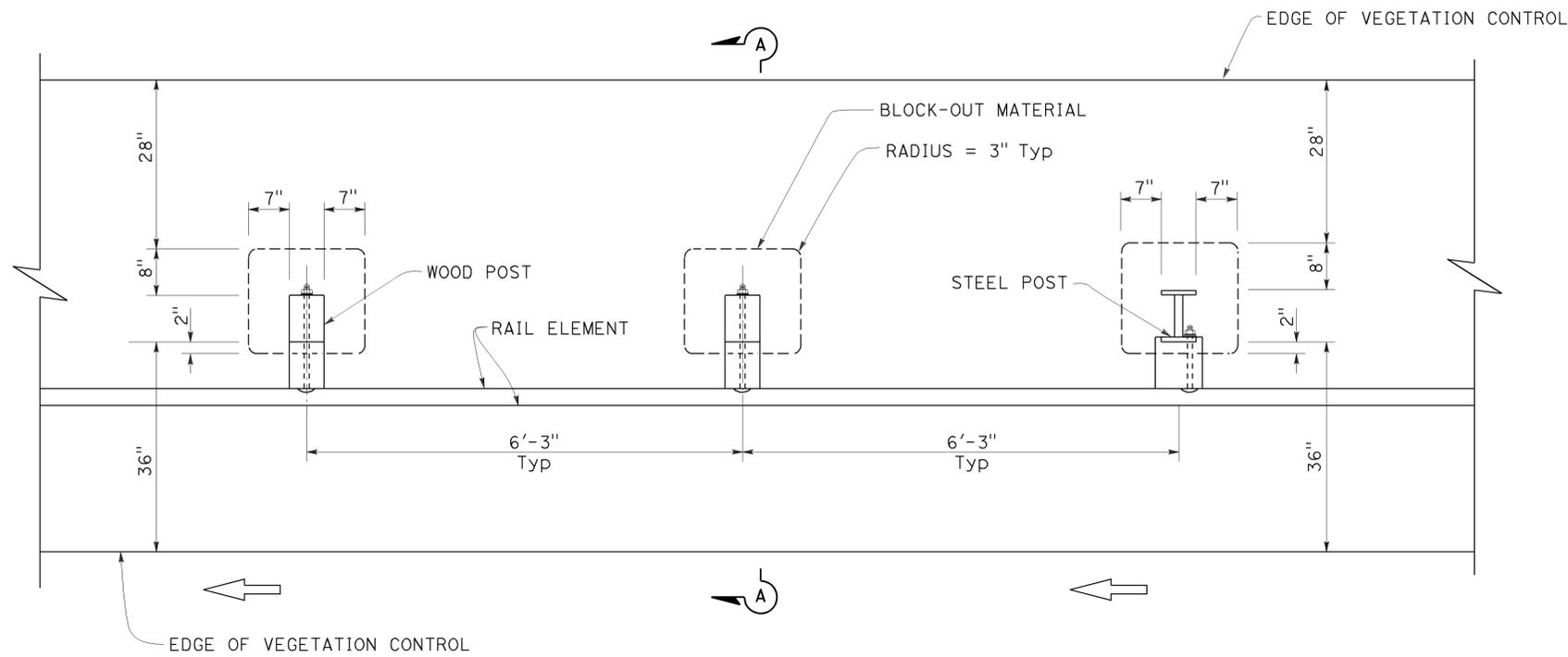
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

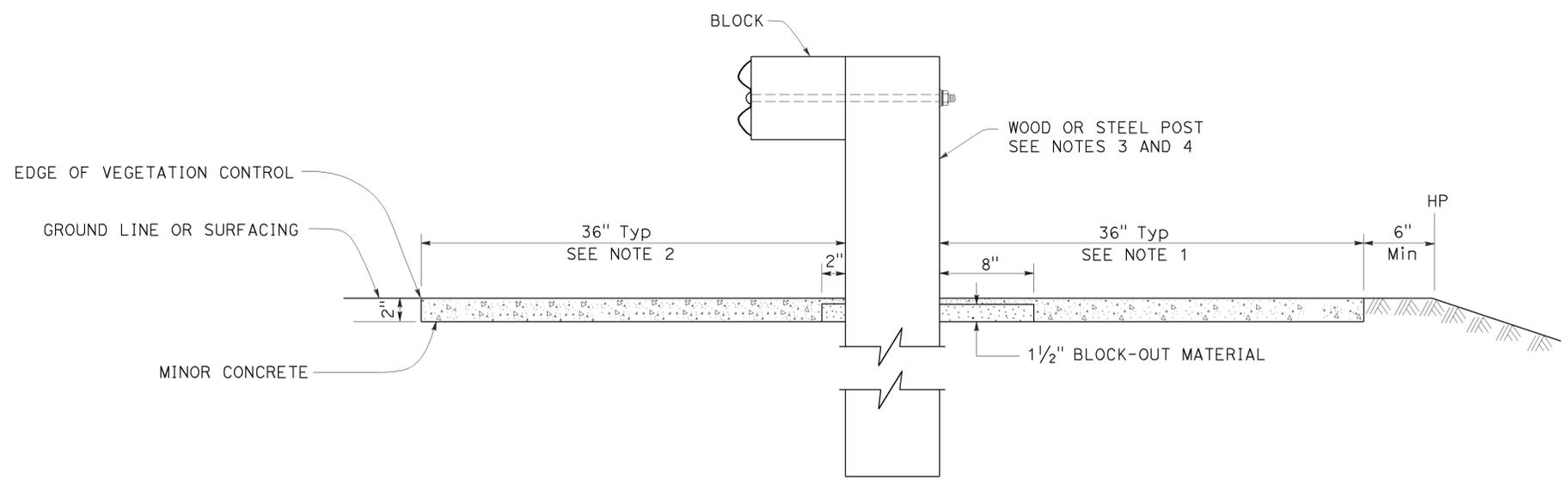
TO ACCOMPANY PLANS DATED 12-15-14



PLAN

NOTES:

1. Where the distance between back of post and hinge point is less than 42", construct vegetation control to 6" from hinge point while maintaining the 8" block-out at back of post. If the 8" block-out at back of post can not be maintained, construct vegetation control flush with the back edge of post.
2. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 36" in front of the post, construct vegetation control to the edge of paved shoulder.
3. For wood post sizes, see Revised Standard Plan RSP A77N1.
4. For steel post sizes, see Revised Standard Plan RSP A77N2.
5. For details not shown, see Revised Standard Plans RSP A77L1 and RSP A77L2.



SECTION A-A

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
TYPICAL VEGETATION CONTROL
STANDARD RAILING SECTION**

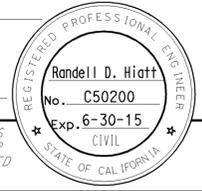
NO SCALE

RSP A77N5 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

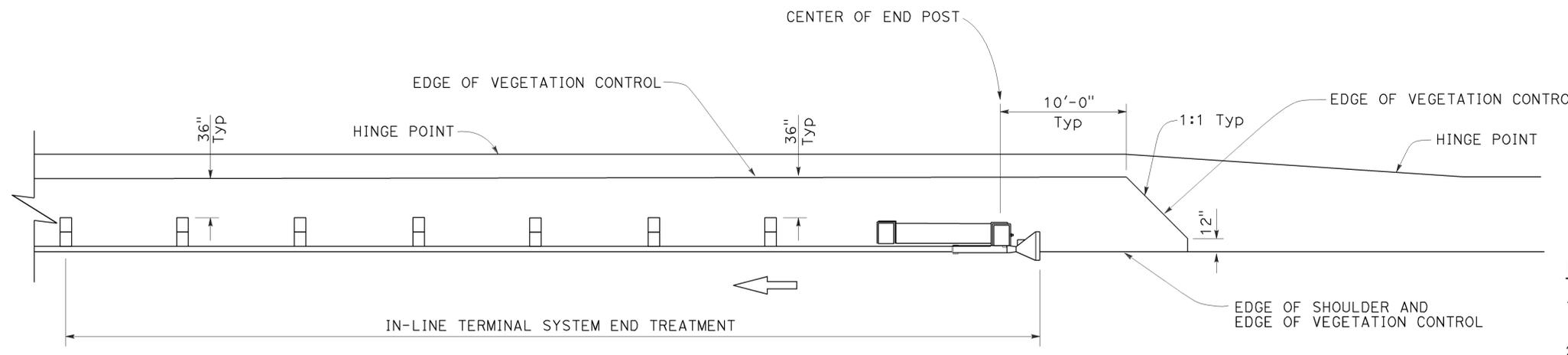
REVISED STANDARD PLAN RSP A77N5

2010 REVISED STANDARD PLAN RSP A77N5

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92, 780	Var	39	62
<i>Randell D. Hiatt</i> REGISTERED CIVIL ENGINEER					
July 19, 2013 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



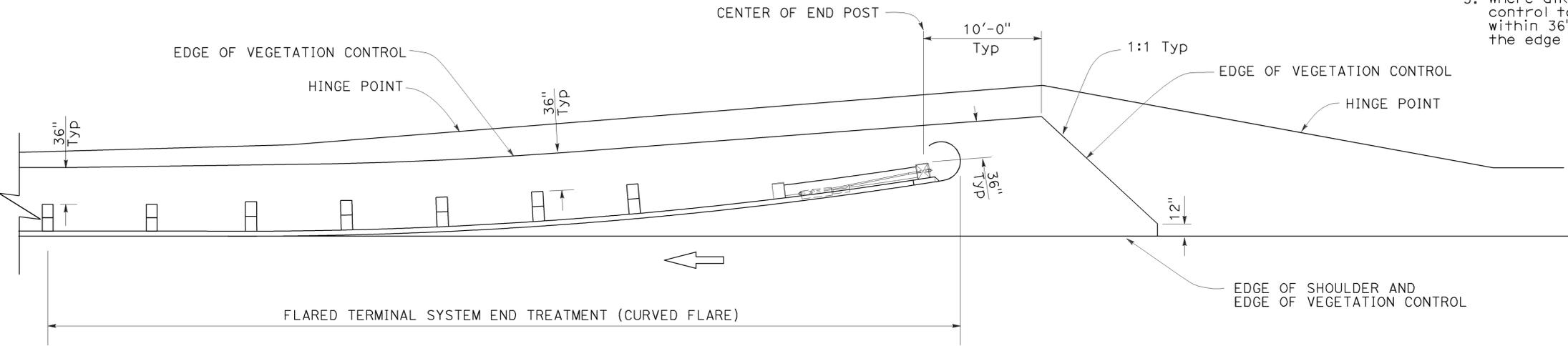
TO ACCOMPANY PLANS DATED 12-15-14



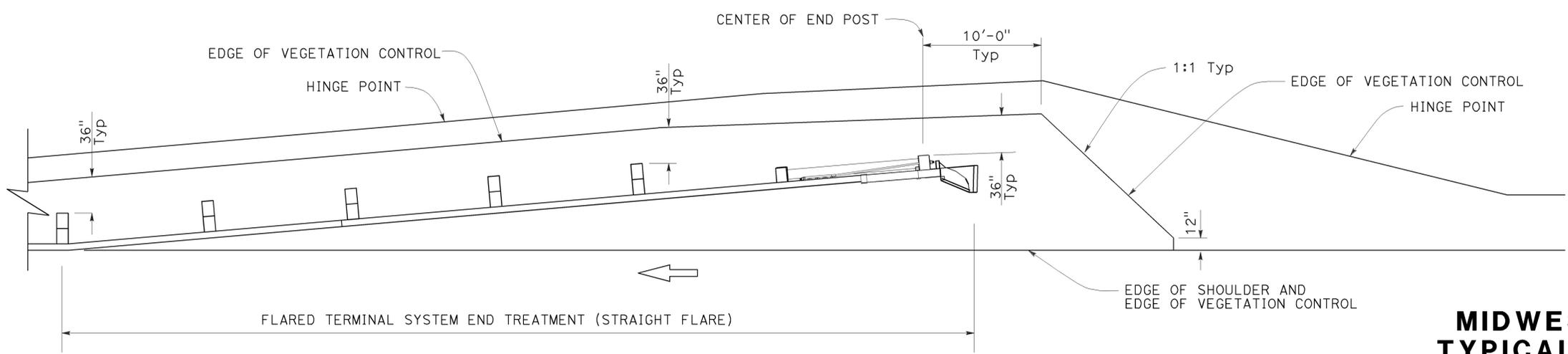
PLAN

NOTES:

1. See Revised Standard Plan RSP A77N5 for additional vegetation control details.
2. Where the distance between back of post and hinge point is less than 42", construct vegetation control to 6" from hinge point while maintaining the 8" block-out at back of post. If the 8" block-out at back of post can not be maintained, construct vegetation control flush with the back edge of post.
3. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 36" in front of the post, construct vegetation control to the edge of paved shoulder.



PLAN



PLAN

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**MIDWEST GUARDRAIL SYSTEM
 TYPICAL VEGETATION CONTROL
 FOR TERMINAL SYSTEM END TREATMENTS**
 NO SCALE

RSP A77N6 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77N6

2010 REVISED STANDARD PLAN RSP A77N6

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92, 780	Var	40	62

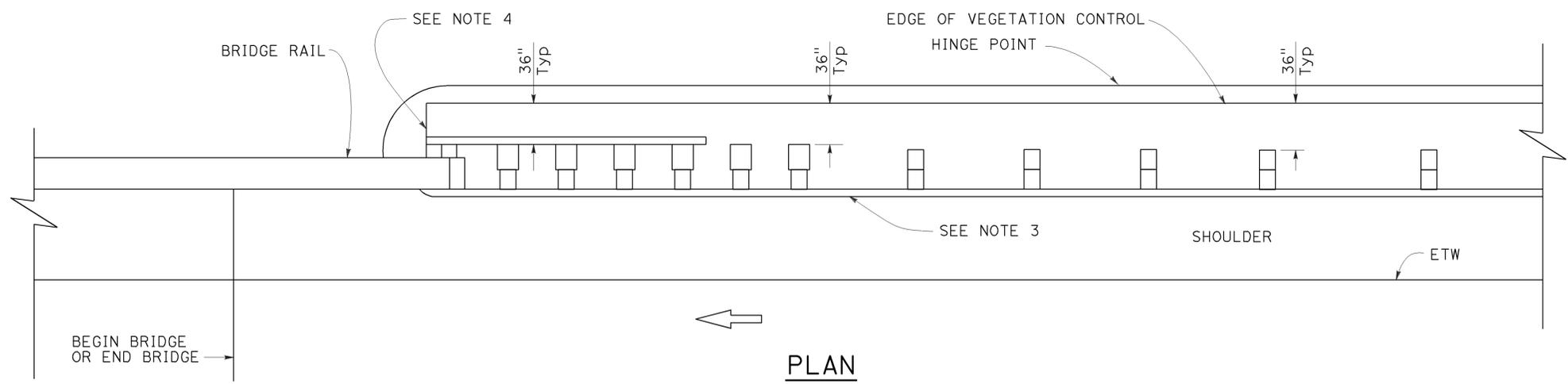
REGISTERED CIVIL ENGINEER
Randell D. Hiatt
 No. C50200
 Exp. 6-30-15
 CIVIL
 STATE OF CALIFORNIA

July 19, 2013
 PLANS APPROVAL DATE

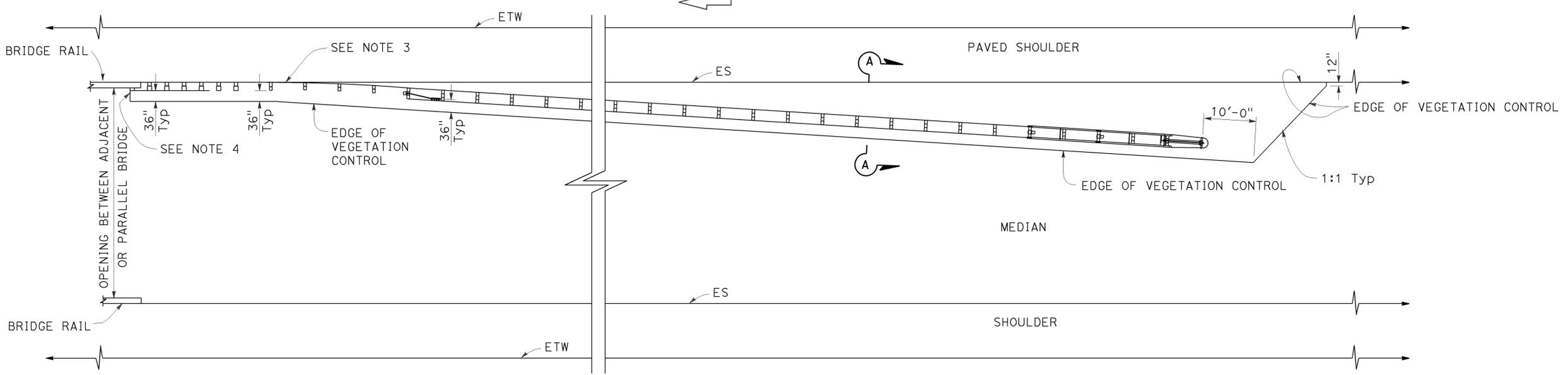
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 12-15-14

2010 REVISED STANDARD PLAN RSP A77N7



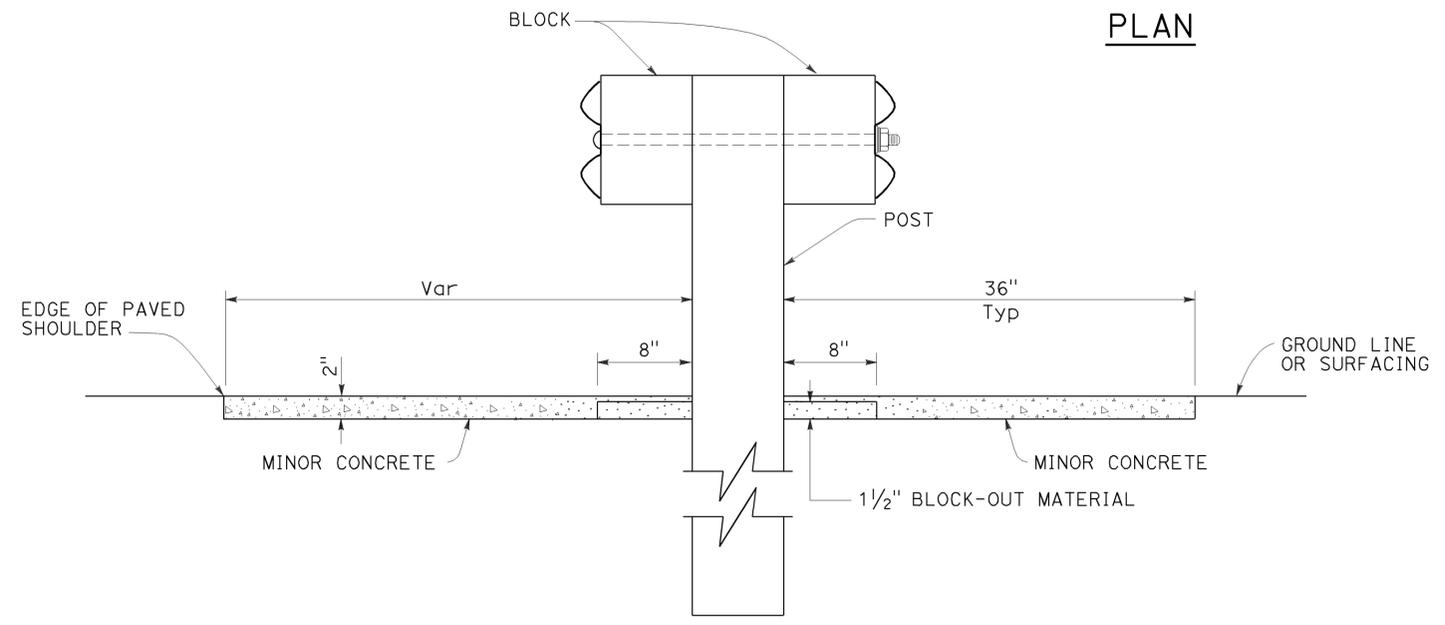
PLAN



PLAN

NOTES:

1. See Revised Standard Plan RSP A77N5 for additional vegetation control details.
2. Where the distance between back of post and hinge point is less than 42", construct vegetation control to 6" from hinge point while maintaining the 8" block-out at back of post. If the 8" block-out at back of post can not be maintained, construct vegetation control flush with the back edge of post.
3. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 36" in front of the post, construct vegetation control to the edge of paved shoulder.
4. End vegetation control at end of backside rail element.



SECTION A-A

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**MIDWEST GUARDRAIL SYSTEM
 TYPICAL VEGETATION CONTROL
 AT STRUCTURE APPROACH**

NO SCALE

RSP A77N7 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77N7

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92, 780	Var	41	62

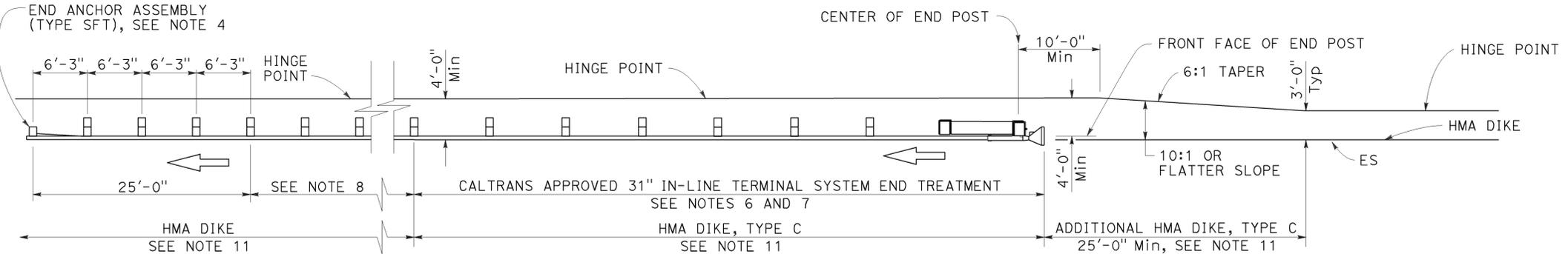
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

November 15, 2013
PLANS APPROVAL DATE

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

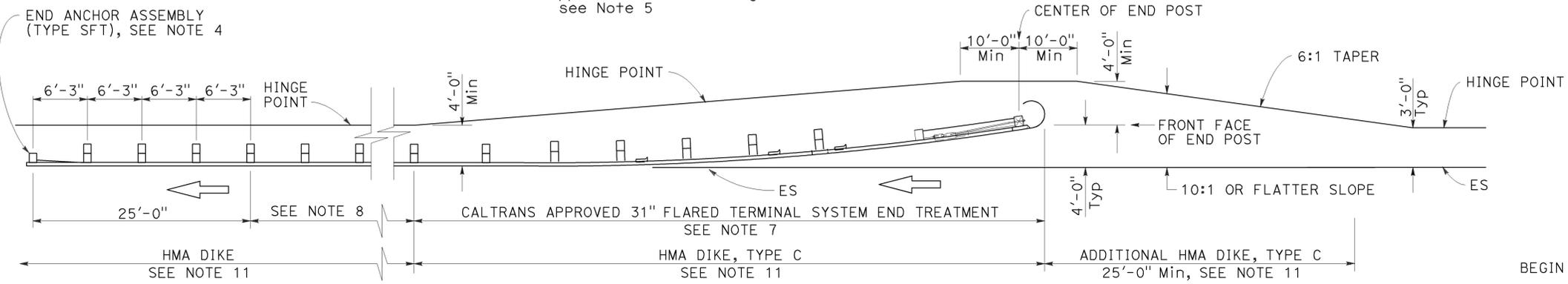
REGISTERED PROFESSIONAL ENGINEER
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 12-15-14



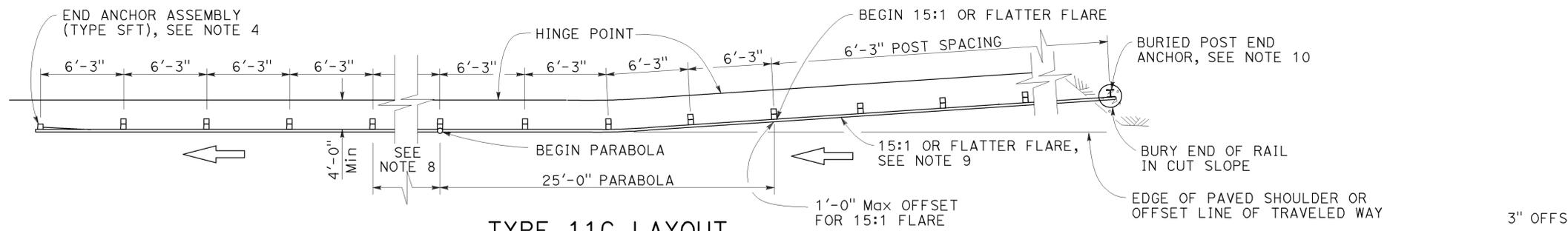
TYPE 11A LAYOUT

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



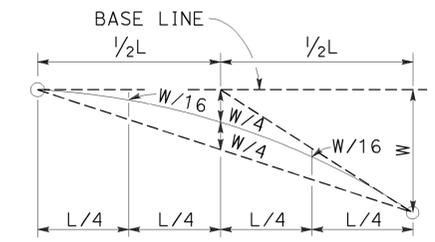
TYPE 11B LAYOUT

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

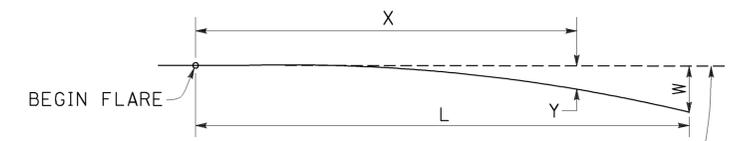


TYPE 11C LAYOUT

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



TYPICAL PARABOLIC LAYOUT

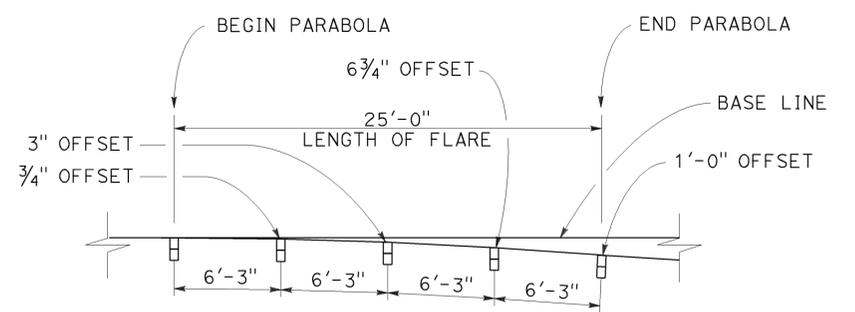


BASE LINE (EDGE OF PAVED SHOULDER OR OFFSET LINE OF EDGE OF TRAVELED WAY)

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

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

PARABOLIC FLARE OFFSETS



TYPICAL FLARE OFFSETS FOR 1 FOOT Max END OFFSET

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL LAYOUTS FOR EMBANKMENTS

NO SCALE

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

REVISED STANDARD PLAN RSP A77P1

NOTES:

- Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
- MGS post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 12" x 1'-2" wood blocks. W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or recycled plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
- For End Anchor Assembly (Type SFT) details, see Revised Standard Plan RSP A77S1.
- Layout Types 11A, 11B or 11C are typically used where MGS is recommended to shield embankment slopes and a crashworthy end treatment is required for only one direction of traffic.
- 31" in-line terminal system end treatments are used where site conditions will not accommodate a flared end treatment.
- The type of 31" terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height and side slope), construction of additional MGS (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
- The 15:1 or flatter flare used with buried end anchors is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of MGS within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the buried post end anchor used with Type 11C Layout, see Revised Standard Plan RSP A77T2.
- Where placement of dike is required with MGS installations, see Revised Standard Plan RSP A77N4 for dike positioning details.

2010 REVISED STANDARD PLAN RSP A77P1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92,780	Var	42	62

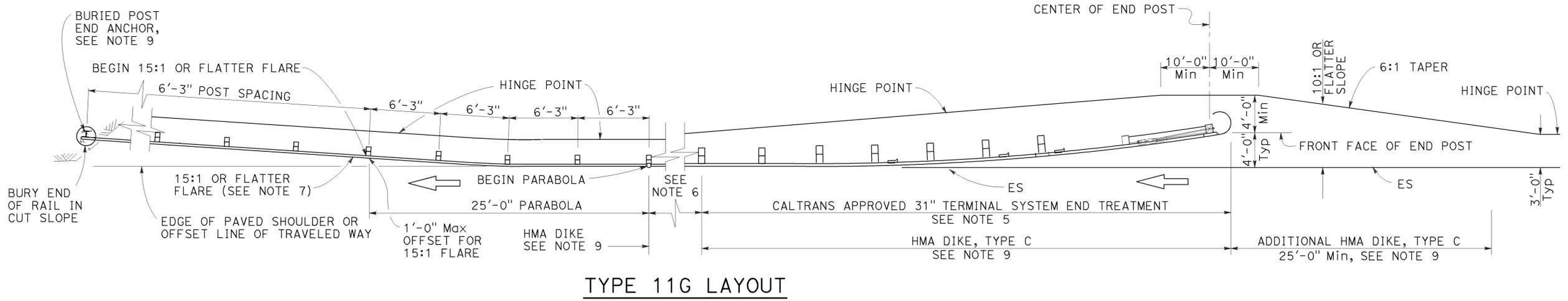
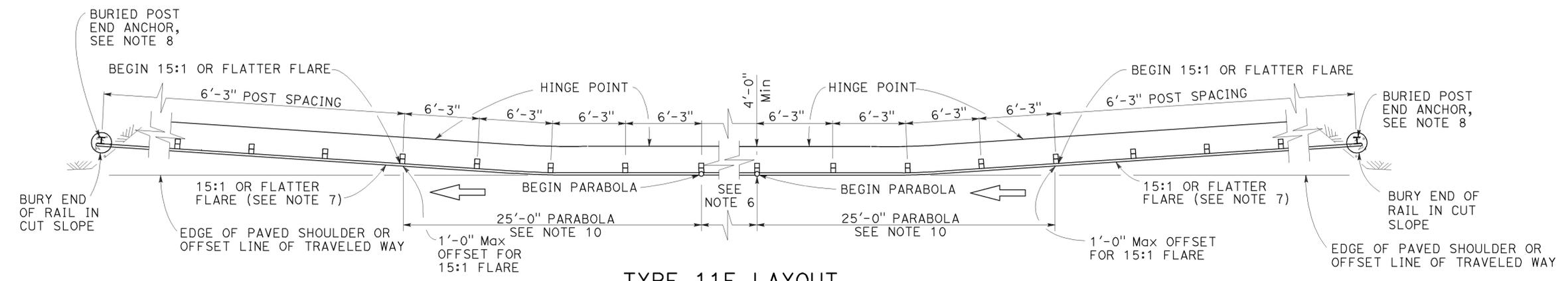
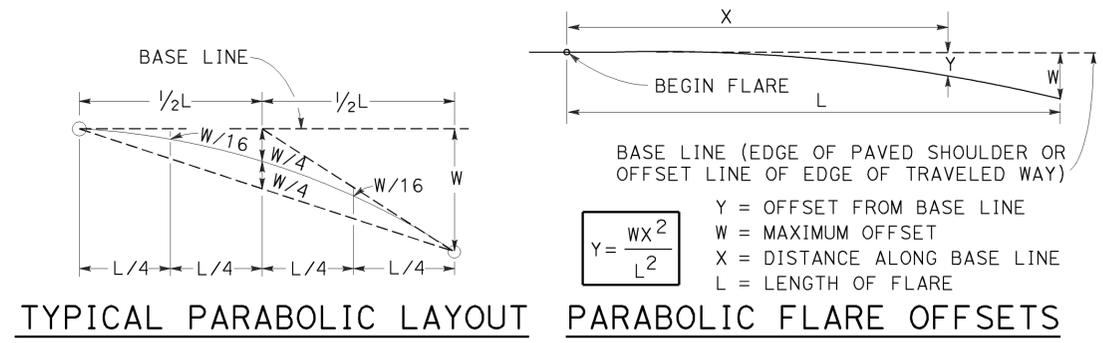
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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TO ACCOMPANY PLANS DATED 12-15-14



NOTES:

- Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
- MGS post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 12" x 1'-2" wood blocks. W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
- Layout Types 11D through 11L, shown on the A77P Series of Standard Plans, are typically used where MGS is recommended to shield embankment slopes and a crashworthy 31" end treatment is required for both directions of traffic.
- The type of 31" terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height and side slope), construction of additional MGS (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
- The 15:1 or flatter flare used with buried end anchors is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of MGS within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the buried post end anchor used with Type 11F and 11G Layouts, see Revised Standard Plan RSP A77T2.
- Where placement of dike is required with MGS installations, see Revised Standard Plan RSP A77N4 for dike positioning details.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77P1.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
TYPICAL LAYOUTS FOR
EMBANKMENTS**

NO SCALE

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

REVISED STANDARD PLAN RSP A77P3

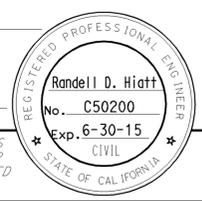
2010 REVISED STANDARD PLAN RSP A77P3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92, 780	Var	43	62

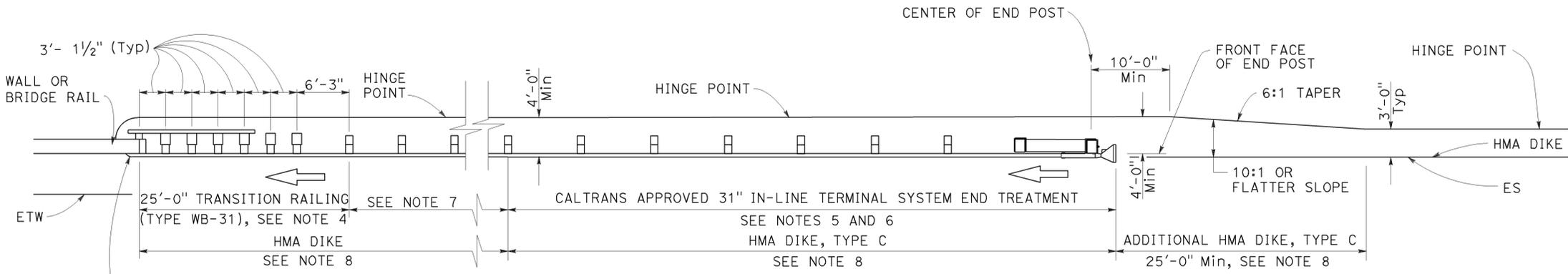
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July 19, 2013
PLANS APPROVAL DATE

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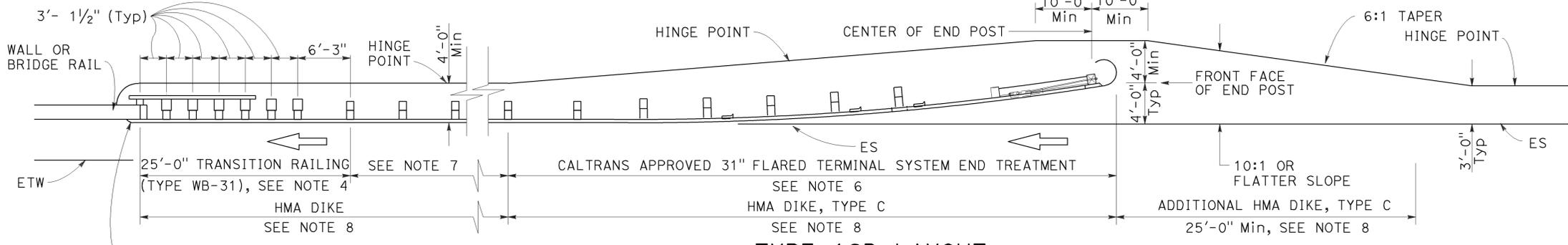


TO ACCOMPANY PLANS DATED 12-15-14



TYPE 12A LAYOUT

(MGS installation at structure approach with 31" in-line end treatment at traffic approach end of railing)
See Notes 5 and 6, 8, 9



TYPE 12B LAYOUT

(MGS installation at structure approach with 31" Flared end treatment at traffic approach end of railing)
See Notes 6, 8, 9

NOTES:

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

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DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

REVISED STANDARD PLAN RSP A77Q1

2010 REVISED STANDARD PLAN RSP A77Q1

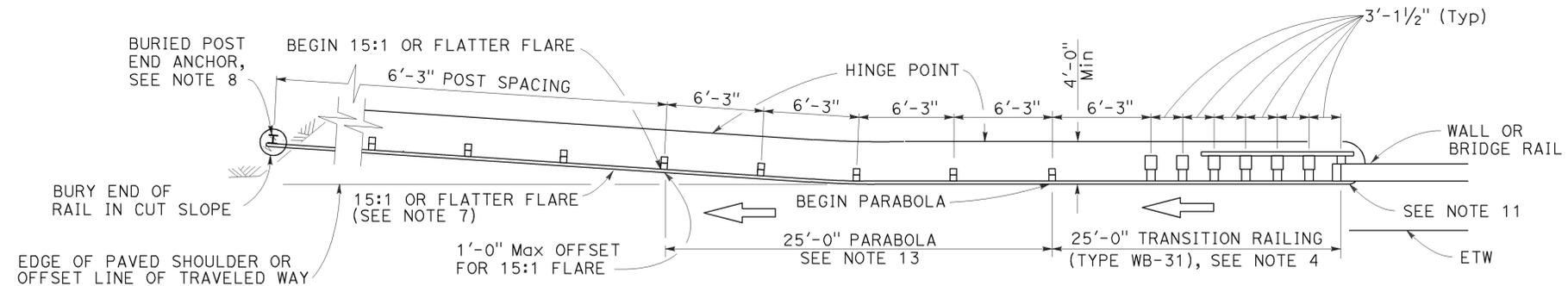
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92,780	Var	44	62

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

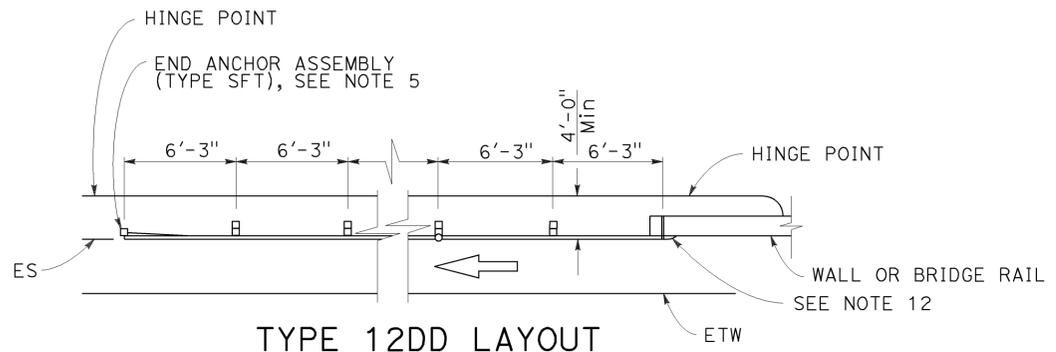
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TYPE 12CC LAYOUT

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



TYPE 12DD LAYOUT

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

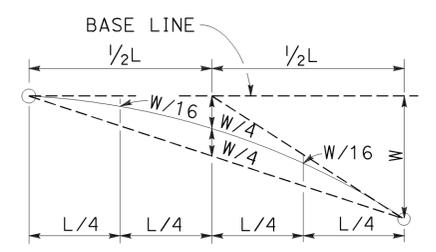


BASE LINE (EDGE OF PAVED SHOULDER OR OFFSET LINE OF EDGE OF TRAVELED WAY)

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

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

PARABOLIC FLARE OFFSETS



TYPICAL PARABOLIC LAYOUT

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

REVISED STANDARD PLAN RSP A77Q5

2010 REVISED STANDARD PLAN RSP A77Q5

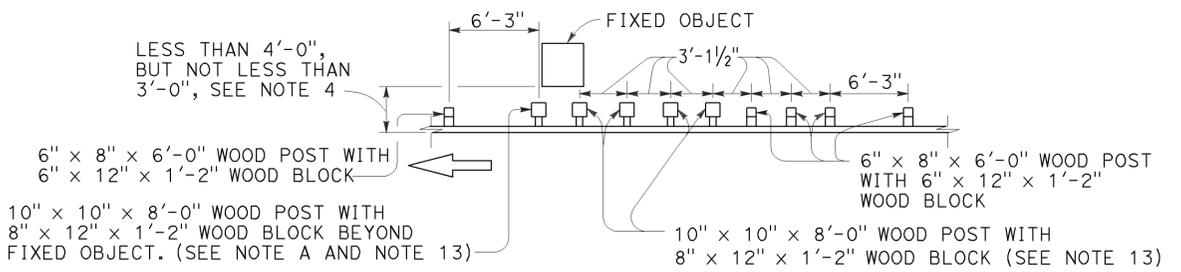
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92, 780	Var	45	62

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

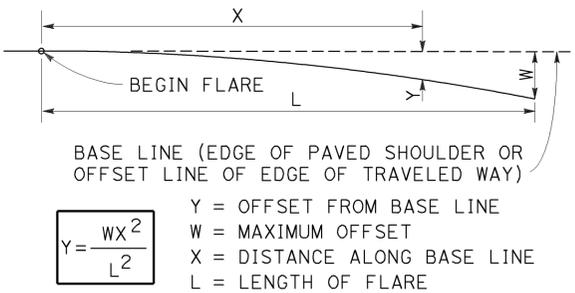
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STATE OF CALIFORNIA

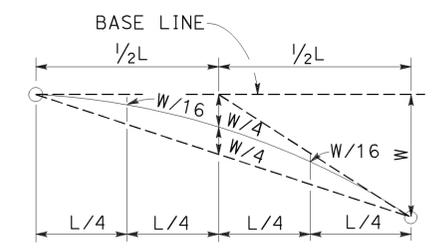


NOTE A: For a series of fixed objects (bridge columns, overhead sign supports, etc.) additional 10" x 10" x 8'-0" wood post with 8" x 12" x 1'-2" wood blocks at 3'-1/2" center to center spacing are to be used between fixed object(s).

STRENGTHENED MIDWEST GUARDRAIL SYSTEM SECTIONS FOR FIXED OBJECT

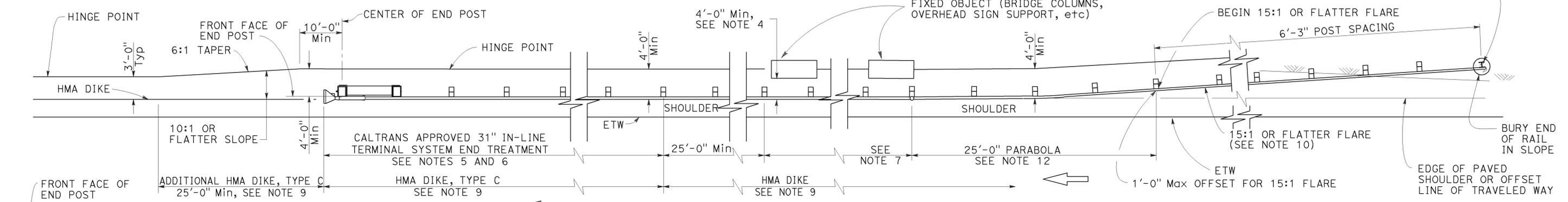


PARABOLIC FLARE OFFSETS



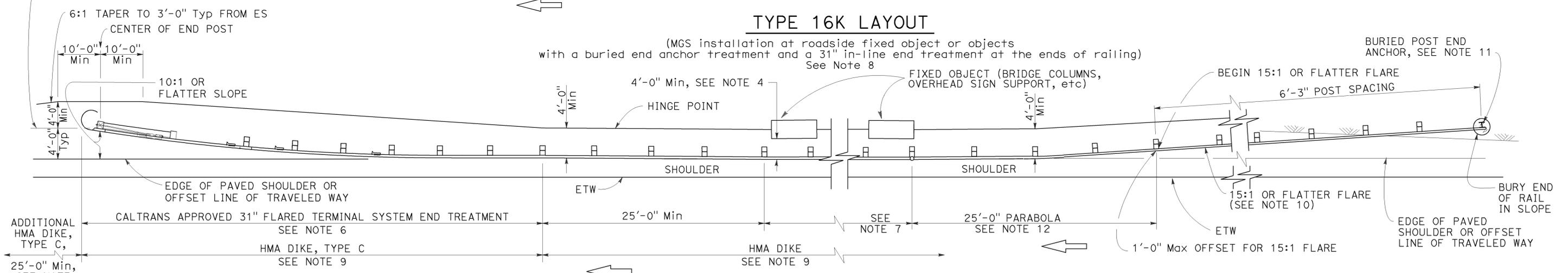
TYPICAL PARABOLIC LAYOUT

Use strengthened MGS sections with layout Types 16K or 16L layouts where minimum clearance between the face of the MGS and fixed object(s) is less than 4'-0", but not less than 3'-0". See Note 4.



TYPE 16K LAYOUT

(MGS installation at roadside fixed object or objects with a buried end anchor treatment and a 31" in-line end treatment at the ends of railing) See Note 8



TYPE 16L LAYOUT

(MGS installation at roadside fixed object or objects with a buried end anchor treatment and a 31" flared end treatment at the ends of railing) See Note 8

NOTES:

- Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
- MGS post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 12" x 1'-2" wood blocks. W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
- A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object located directly behind MGS sections with post spacing at 6'-3". Construct MGS as shown in the detail "Strengthened Midwest Guardrail System 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 3'-0". Where the clearance is less than 3'-0", a concrete wall or barrier should be constructed to shield the fixed object(s).

- 31" in-line terminal system end treatments are used where site conditions will not accommodate a 31" flared end treatment.
- The type of 31" terminal system to be used will be shown on the Project Plans.
- As site conditions dictate, construct additional MGS to shield fixed object(s). Additional MGS length equal to multiples of 12'-6". Post spacing at 6'-3", except as specified in Note 4.
- Layout Types 16D through 16L, shown on the A77R Series of Standard Plans are typically used where MGS is recommended to shield roadside fixed object(s) and a crashworthy 31" end treatment is required for both directions of traffic.
- Where placement of dike is required with MGS, see Revised Standard Plan RSP A77N4 for dike positioning details.
- The 15:1 or flatter flare for the buried post anchor is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of MGS within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".

- For details of Buried Post End Anchor, see Revised Standard Plan RSP A77T2.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77P1.
- W6 x 15 steel post, 8'-0" in length, with 8" x 12" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 12" x 1'-2" wood block shown in the detail "Strengthened Midwest Guardrail System Sections for Fixed Object".

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

NO SCALE

RSP A77R8 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77R8

2010 REVISED STANDARD PLAN RSP A77R8

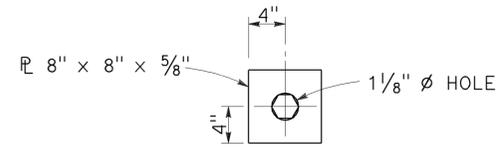
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92,780	Var	46	62

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

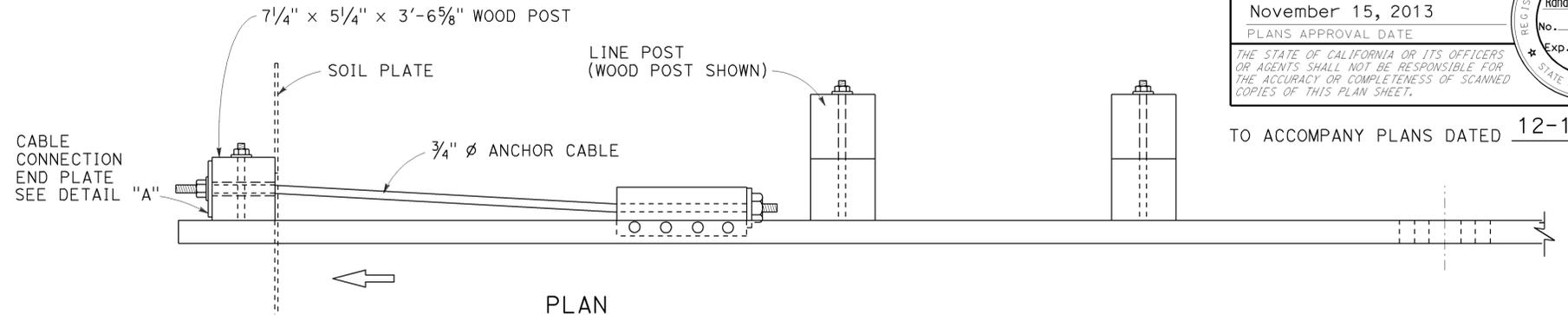
November 15, 2013
PLANS APPROVAL DATE

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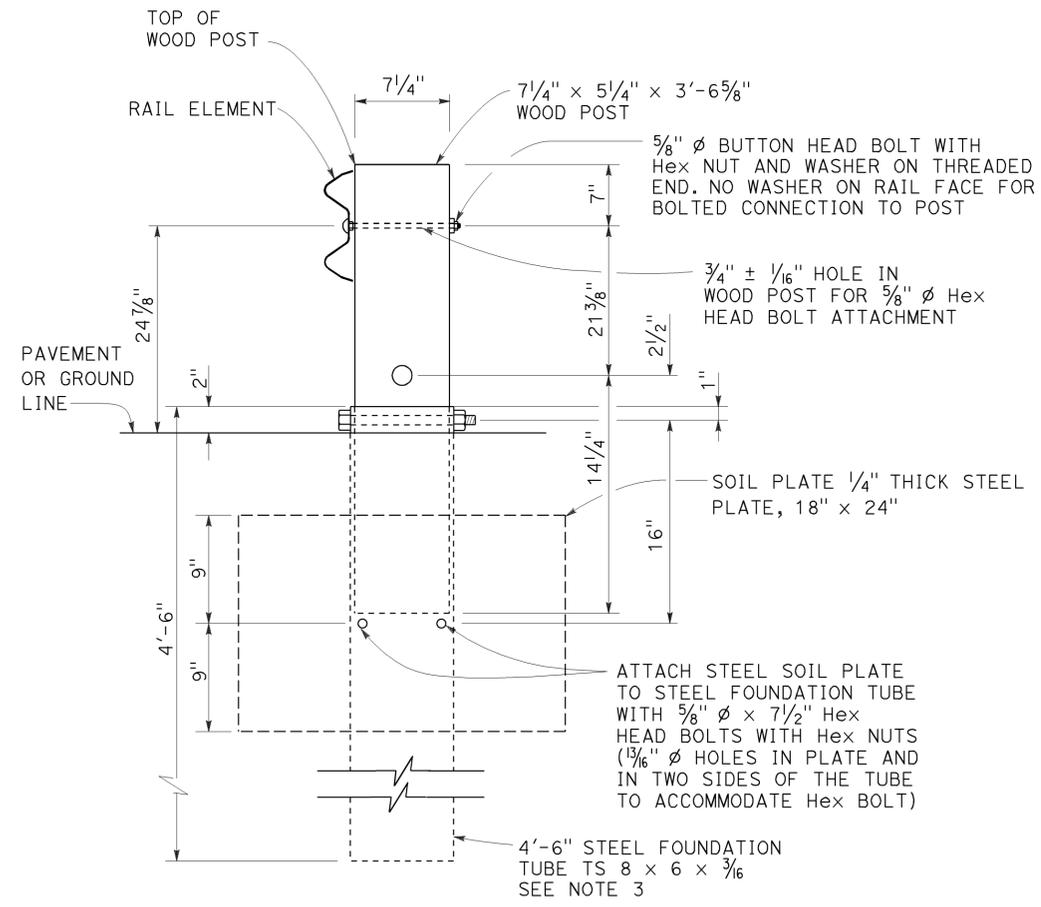
TO ACCOMPANY PLANS DATED 12-15-14



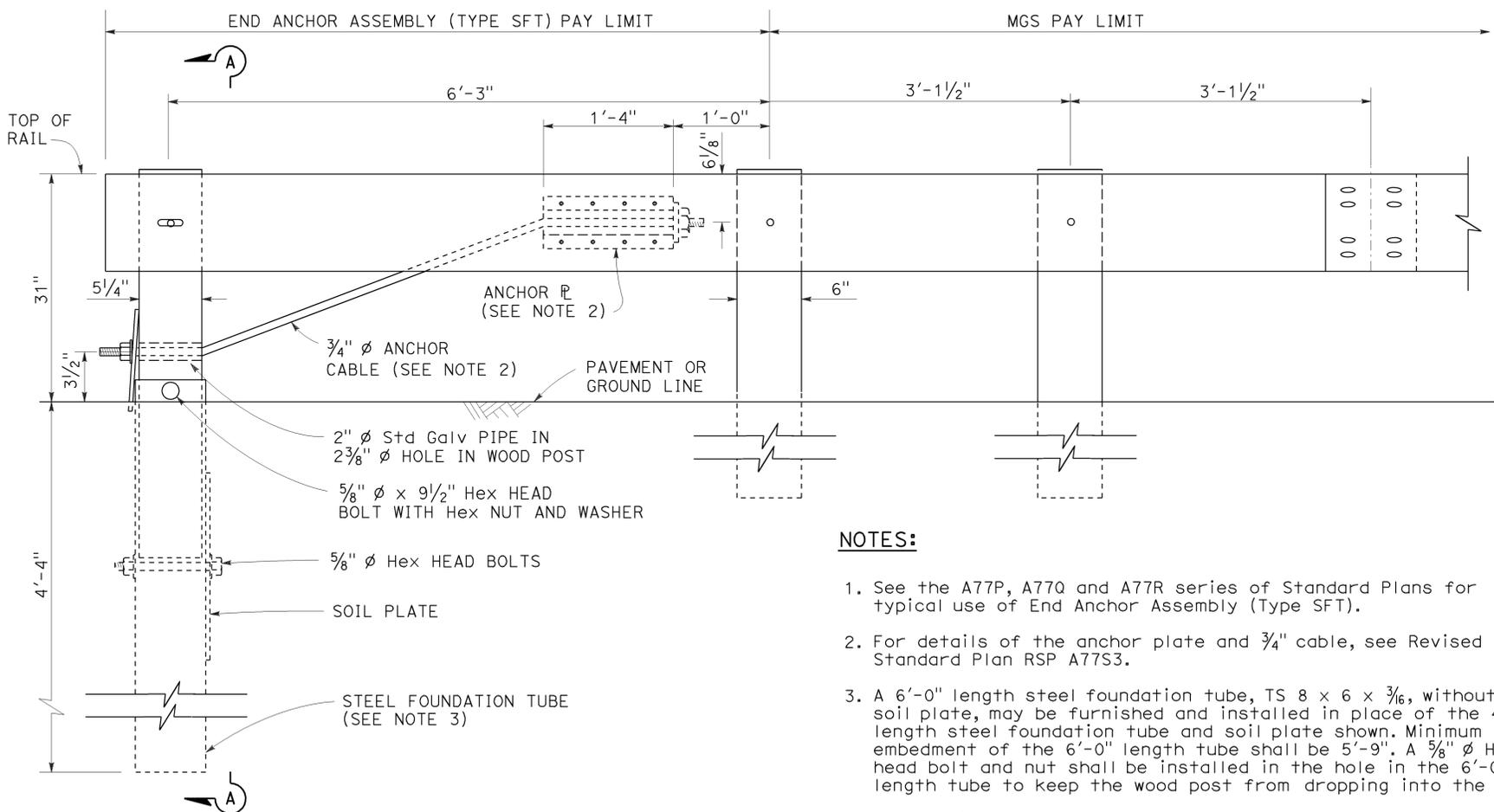
DETAIL "A"
CABLE CONNECTION
END PLATE



PLAN



SECTION A-A



ELEVATION

END ANCHOR
ASSEMBLY (TYPE SFT)
See Note 1

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM
END ANCHOR ASSEMBLY
(TYPE SFT)

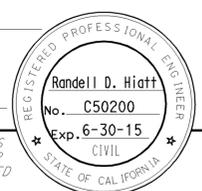
NO SCALE

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

REVISED STANDARD PLAN RSP A77S1

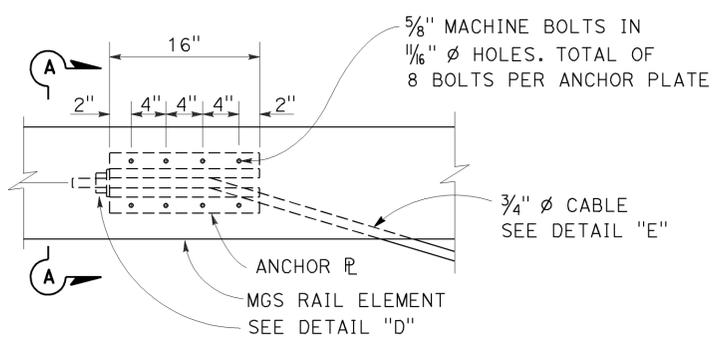
2010 REVISED STANDARD PLAN RSP A77S1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92,780	Var	47	62
<i>Randell D. Hiatt</i> REGISTERED CIVIL ENGINEER					
November 15, 2013 PLANS APPROVAL DATE					
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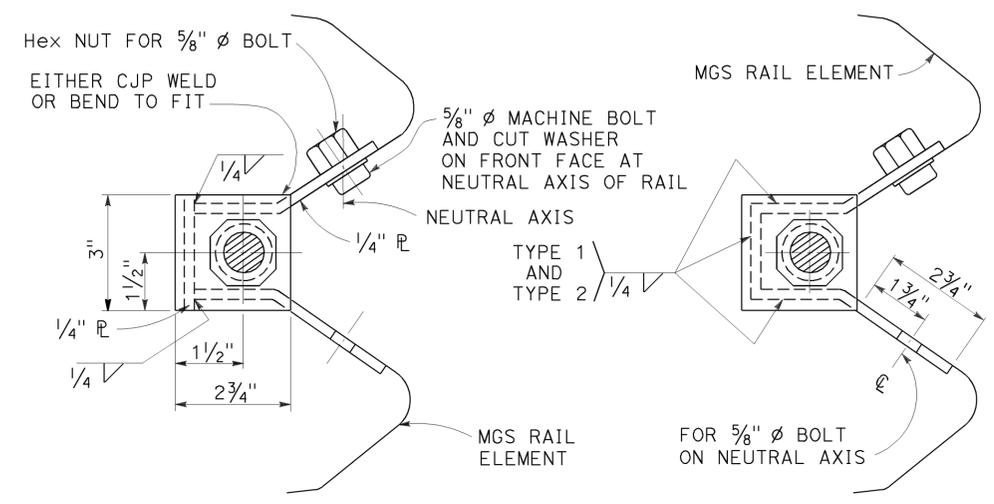


TO ACCOMPANY PLANS DATED 12-15-14

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



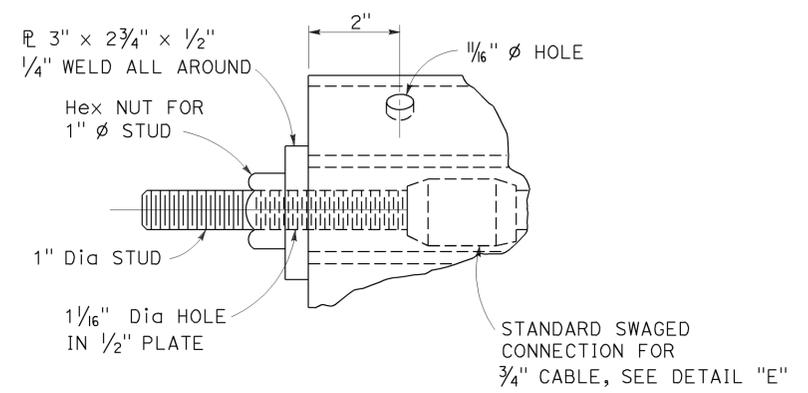
ANCHOR PLATE DETAIL
(MGS shown, TBB similar)



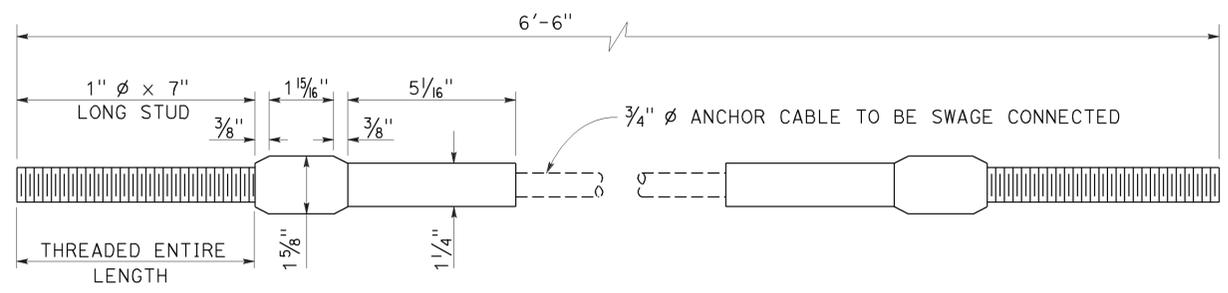
SECTION A-A
(ALTERNATIVE TYPE 1)

SECTION A-A
(ALTERNATIVE TYPE 2)

NOTE:
Dimensioning applies to both types.



DETAIL "D"



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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**METAL RAILING
ANCHOR CABLE AND
ANCHOR PLATE DETAILS**

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

2010 REVISED STANDARD PLAN RSP A77S3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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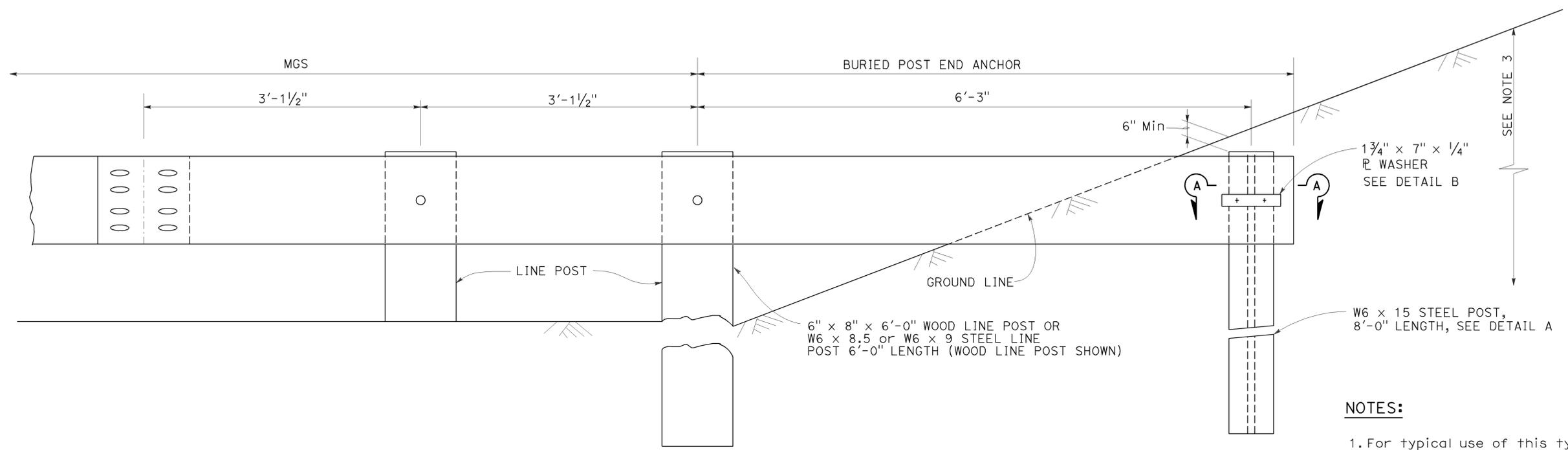
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November 15, 2013
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TO ACCOMPANY PLANS DATED 12-15-14

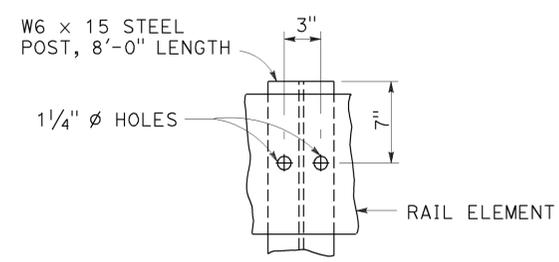


NOTES:

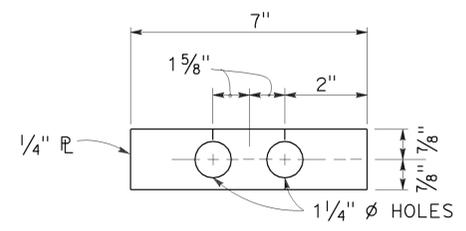
1. For typical use of this type of end anchor with MGS see the A77P, A77Q and A77R Series of the Standard Plans.
2. Holes excavation in the slope to construct the buried post end anchor shall be backfilled with selected earth, placed in layers approximately 1'-0" thick. Each layer shall be moistened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

BURIED POST END ANCHOR

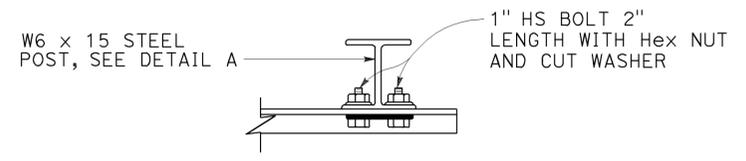
See Note 3



DETAIL A



DETAIL B



SECTION A-A

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
BURIED POST END ANCHOR**

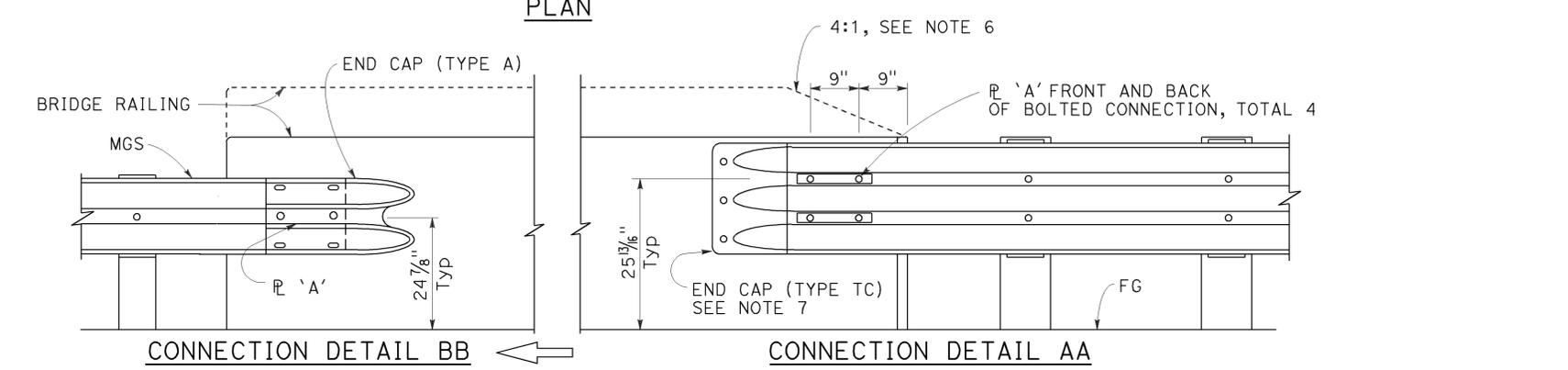
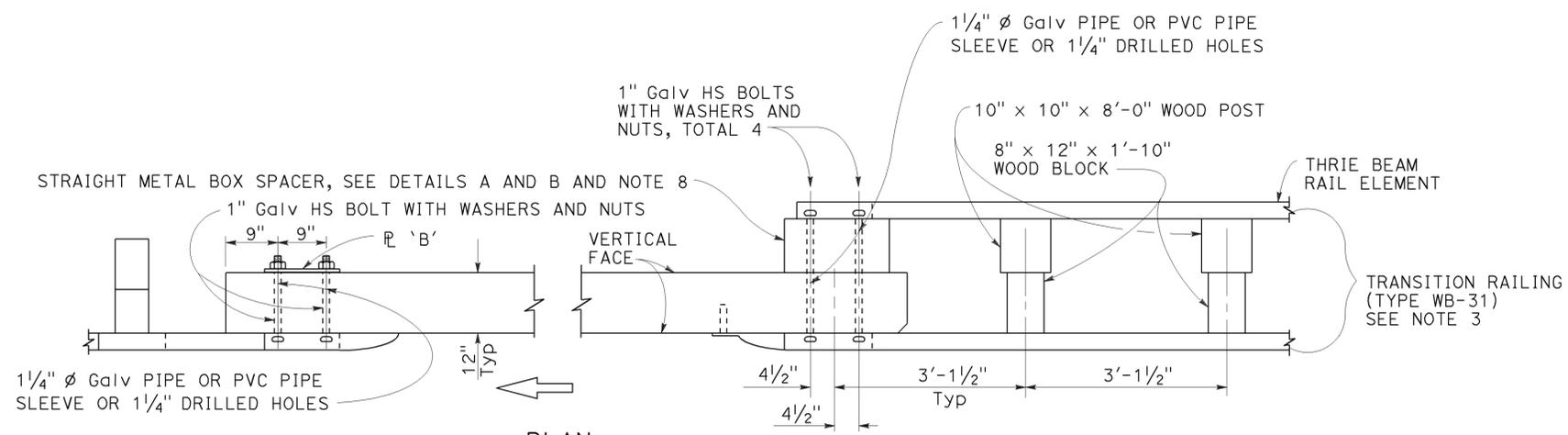
NO SCALE

RSP A77T2 DATED NOVEMBER 15, 2013 SUPERSEDES RSP A77T2 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77T2

2010 REVISED STANDARD PLAN RSP A77T2

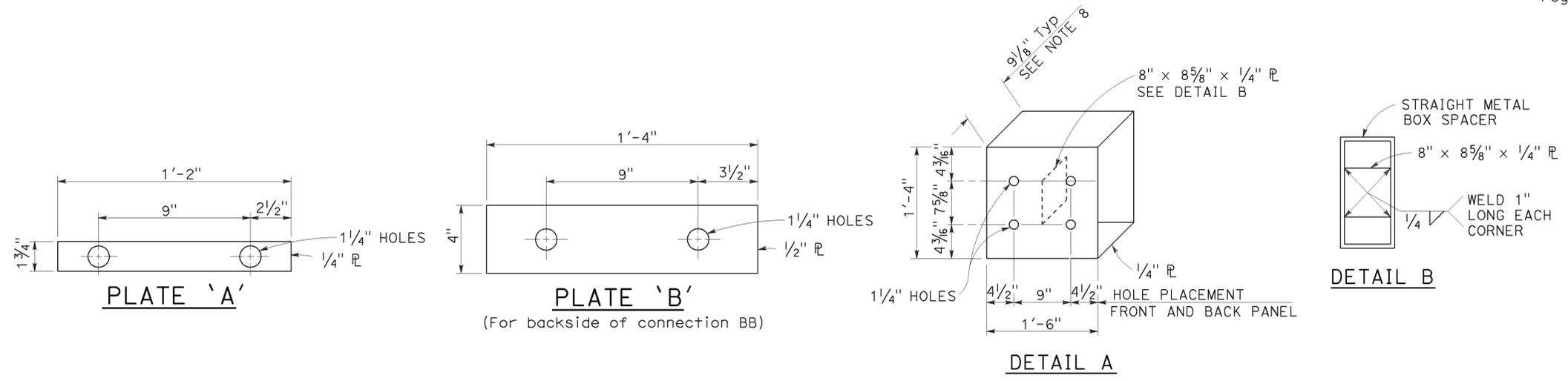
TO ACCOMPANY PLANS DATED 12-15-14



MIDWEST GUARDRAIL SYSTEM CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK

NOTES:

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



STRAIGHT METAL BOX SPACER

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

NO SCALE

2010 REVISED STANDARD PLAN RSP A77U1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92, 780	Var	50	62

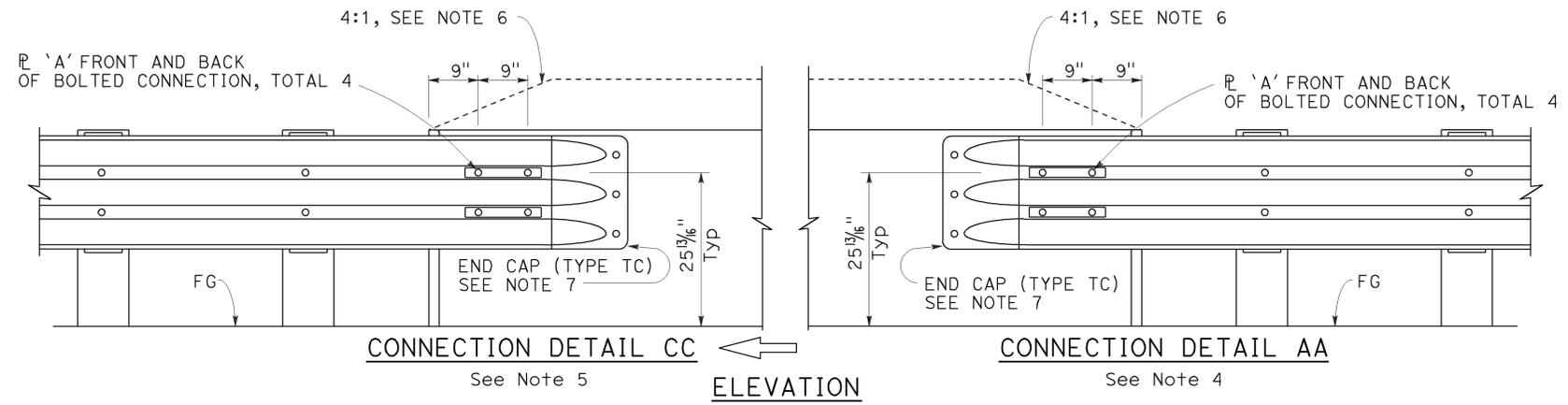
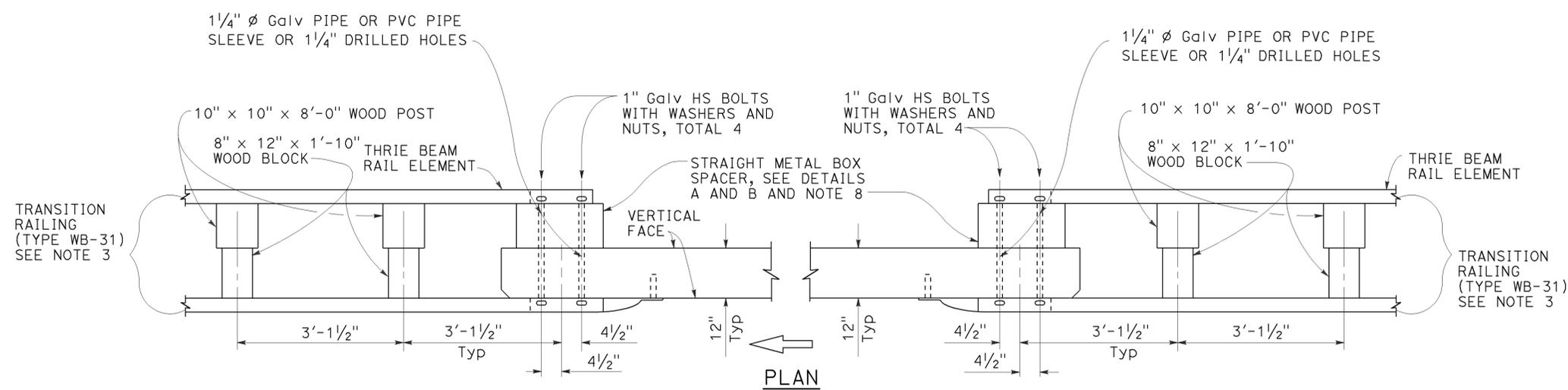
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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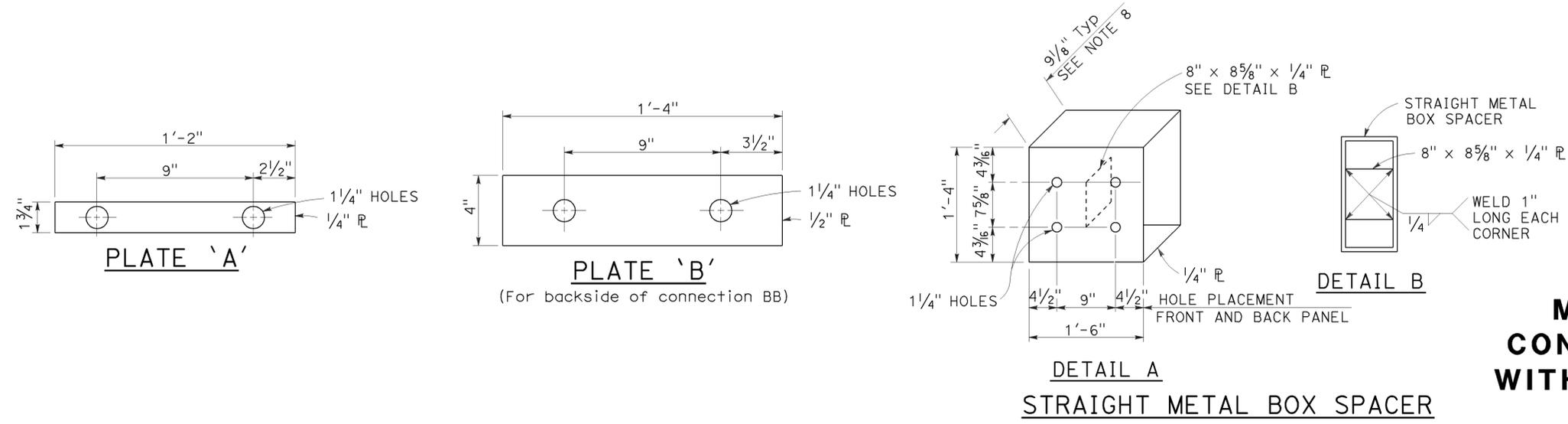
TO ACCOMPANY PLANS DATED 12-15-14



MIDWEST GUARDRAIL SYSTEM CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK

NOTES:

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



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

NO SCALE

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

REVISED STANDARD PLAN RSP A77U2

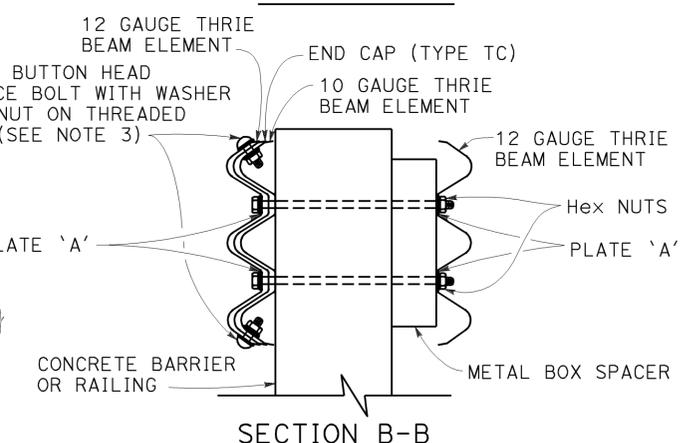
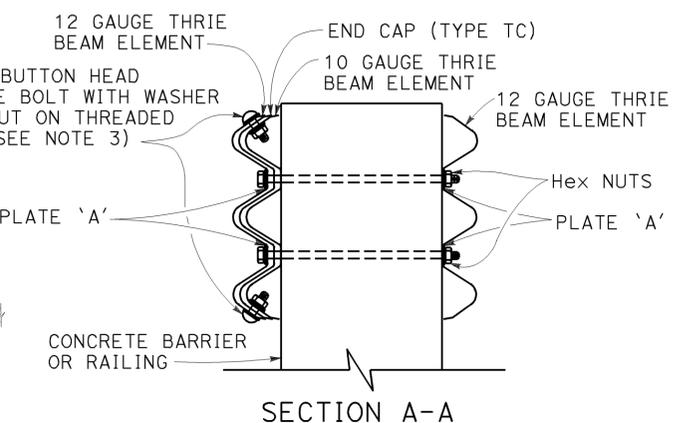
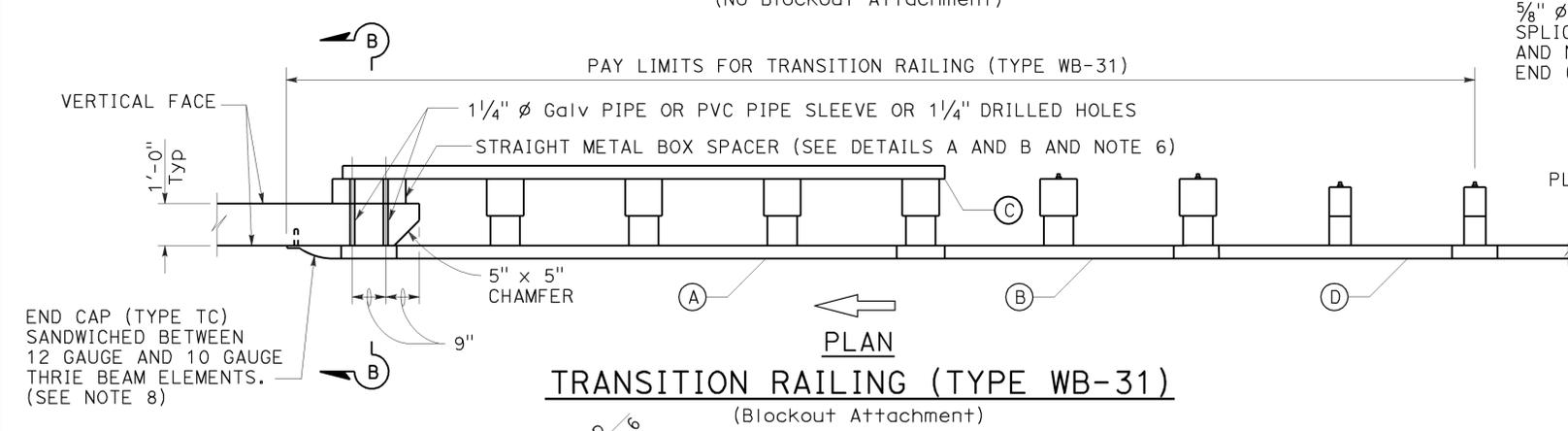
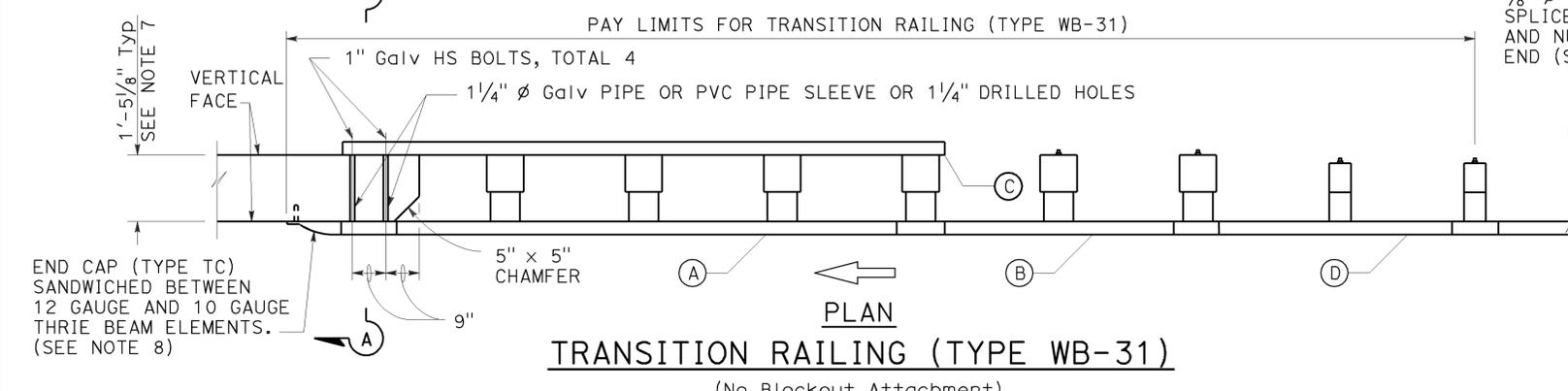
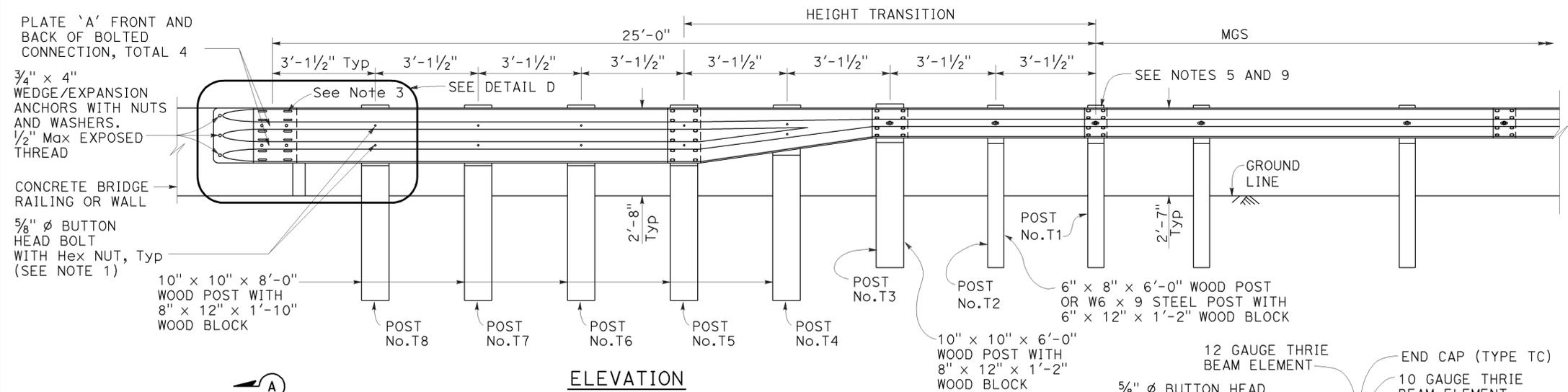
2010 REVISED STANDARD PLAN RSP A77U2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92, 780	Var	51	62

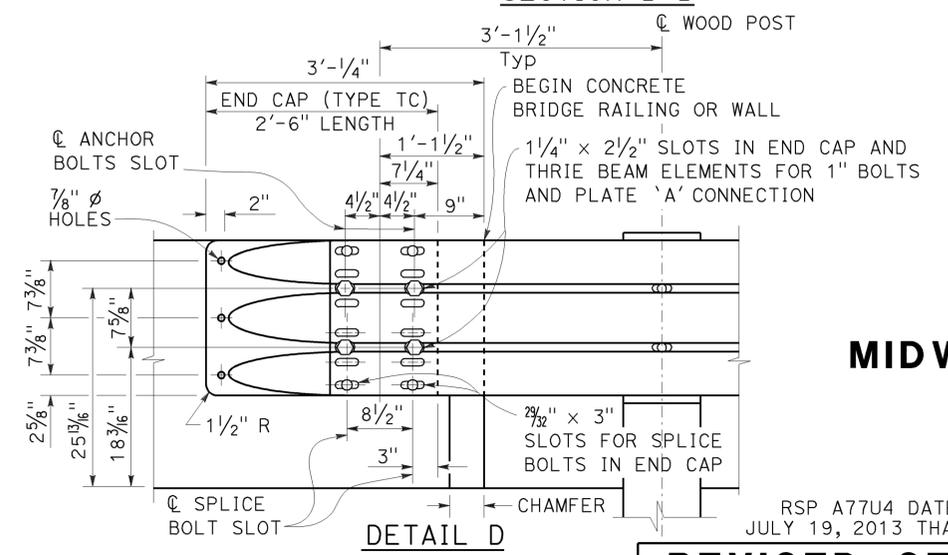
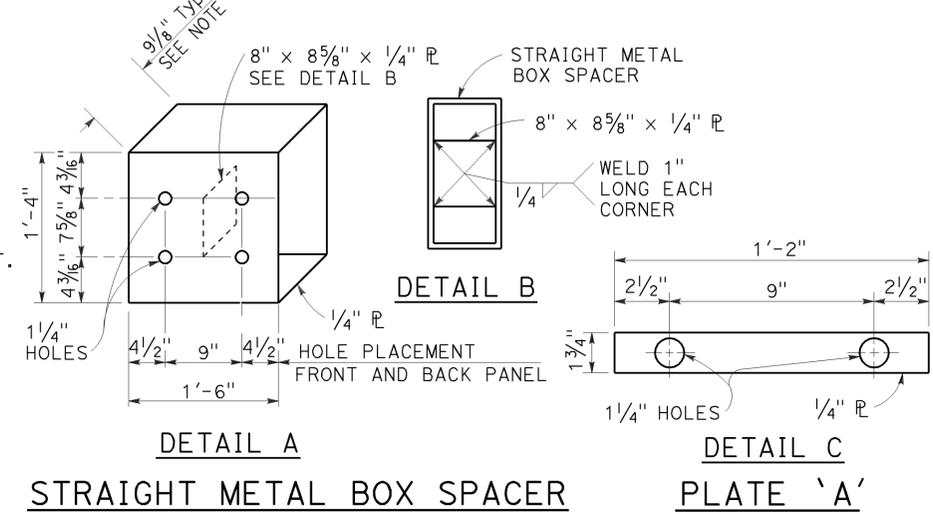
Randell D. Hiatt
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 No. C50200
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 CIVIL
 STATE OF CALIFORNIA

November 15, 2013
 PLANS APPROVAL DATE

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



- NOTES:** TO ACCOMPANY PLANS DATED 12-15-14
1. Use 5/8" ϕ Button head bolts and hex nuts for connections to posts. No washer on rail face for bolted connections to post.
 2. The nested rail elements, end cap, and "W" beam to thrie beam element may be spliced together prior to bolting the elements to the wood post and concrete barrier or railing.
 3. Exterior splice bolt holes for rail element splices at Post No. T5 and the connection to the concrete barrier or railing shall be the standard 29/32" x 1 1/8" slot size. Interior splice bolt holes at these locations may be increased up to 1 1/4" ϕ . Only the top 4 and the bottom 4 splice bolts with washers and nuts are required for rail splices at Post No. T5 and the connection to the concrete barrier or railing.
 4. The top elevation of Posts No. T2 through No. T7 shall not project more than 1" above the top elevation of the rail element.
 5. Typically, the railing connected to Transition Railing (Type WB-31) will be either standard railing section of MGS with height transition ratio of 150:1 or a Caltrans approved 31" end treatment attached to Post No. T1.
 6. The depth of the metal box spacer varies from the 9/8" to 1 1/2" and is dependent on the width of the concrete railing or wall. The combined dimension for the depth of the metal box spacer plus the width of railing or wall is typically 21 1/8". Where the space between the backside of the concrete railing or wall and the rear thrie beam element is less than 1 1/2", metal plates similar to Plate 'A' are to be used as spacers.
 7. Where the width of the concrete railing or wall is greater than 17 1/8", wood blocks are to be used to fill the space created between the backside of Posts No. T5 through No. T8 and the rear thrie beam element. These wood blocks shall be 8" in width and 1'-2" in length. The dimension between the front thrie beam element and the rear thrie beam element is to match the width of the concrete railing or wall.
 8. End cap may be installed over 12 gauge and 10 gauge thrie beam elements where transition railing is installed on the departure end of bridge railing.
 9. Conform standard railing section height to 31" at Post No. T1 using height transition ratio of 150:1.

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**MIDWEST GUARDRAIL SYSTEM
 TRANSITION RAILING
 (TYPE WB-31)**
 NO SCALE

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

2010 REVISED STANDARD PLAN RSP A77U4

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92, 780	Var	52	62

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

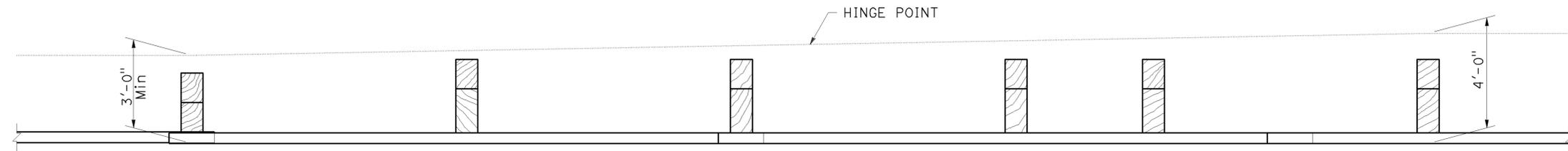
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REGISTERED PROFESSIONAL ENGINEER
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

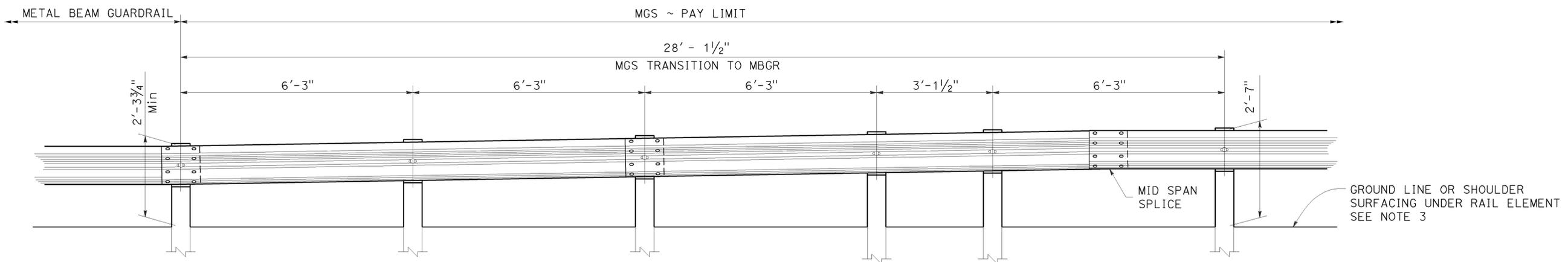
TO ACCOMPANY PLANS DATED 12-15-14

NOTES:

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



PLAN



ELEVATION

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

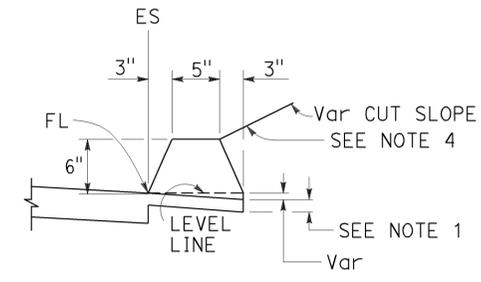
NO SCALE

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

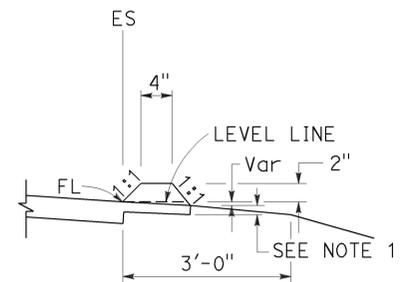
REVISED STANDARD PLAN RSP A77U5

2010 REVISED STANDARD PLAN RSP A77U5

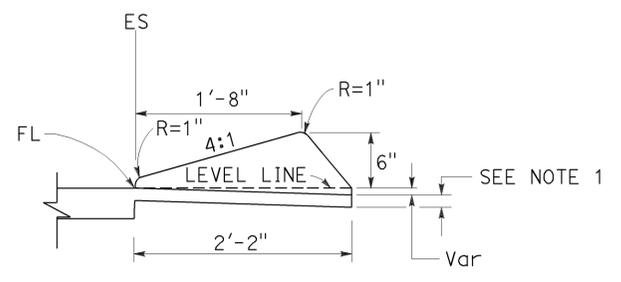
TO ACCOMPANY PLANS DATED 12-15-14



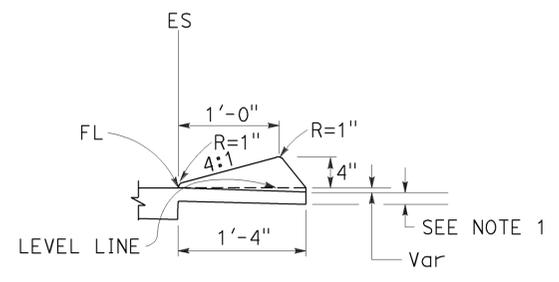
TYPE A
See Note 3



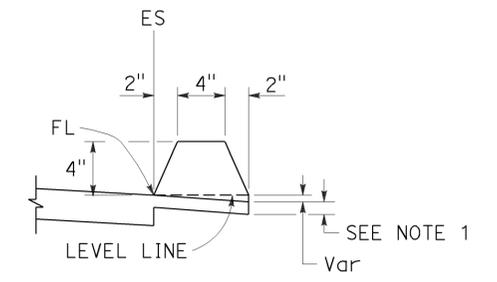
TYPE C



TYPE D

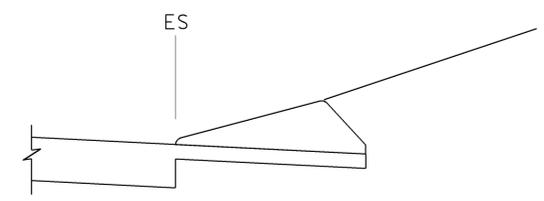


TYPE E

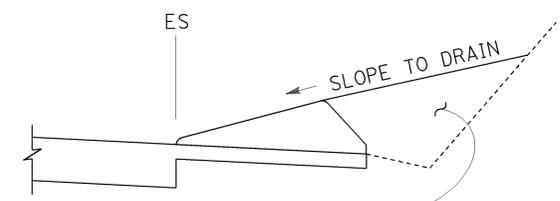


TYPE F
See Note 5

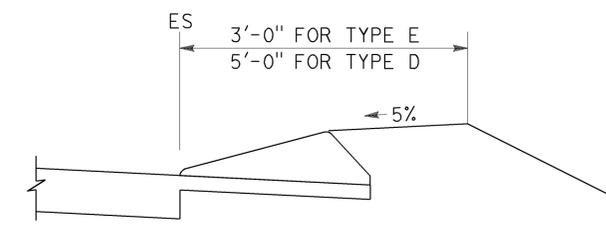
DIKES



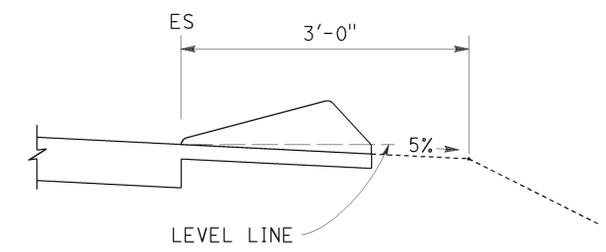
CASE C-1
Cut Slope



CASE C-2
Cut Slope



CASE F



CASE R
See Note 2

TYPE D AND E BACKFILL DETAILS

NOTES:

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

DIKE QUANTITIES

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

Quantities based on 5% cross slope.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

HOT MIX ASPHALT DIKES

NO SCALE

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

REVISED STANDARD PLAN RSP A87B

2010 REVISED STANDARD PLAN RSP A87B

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92, 780	Var	54	62

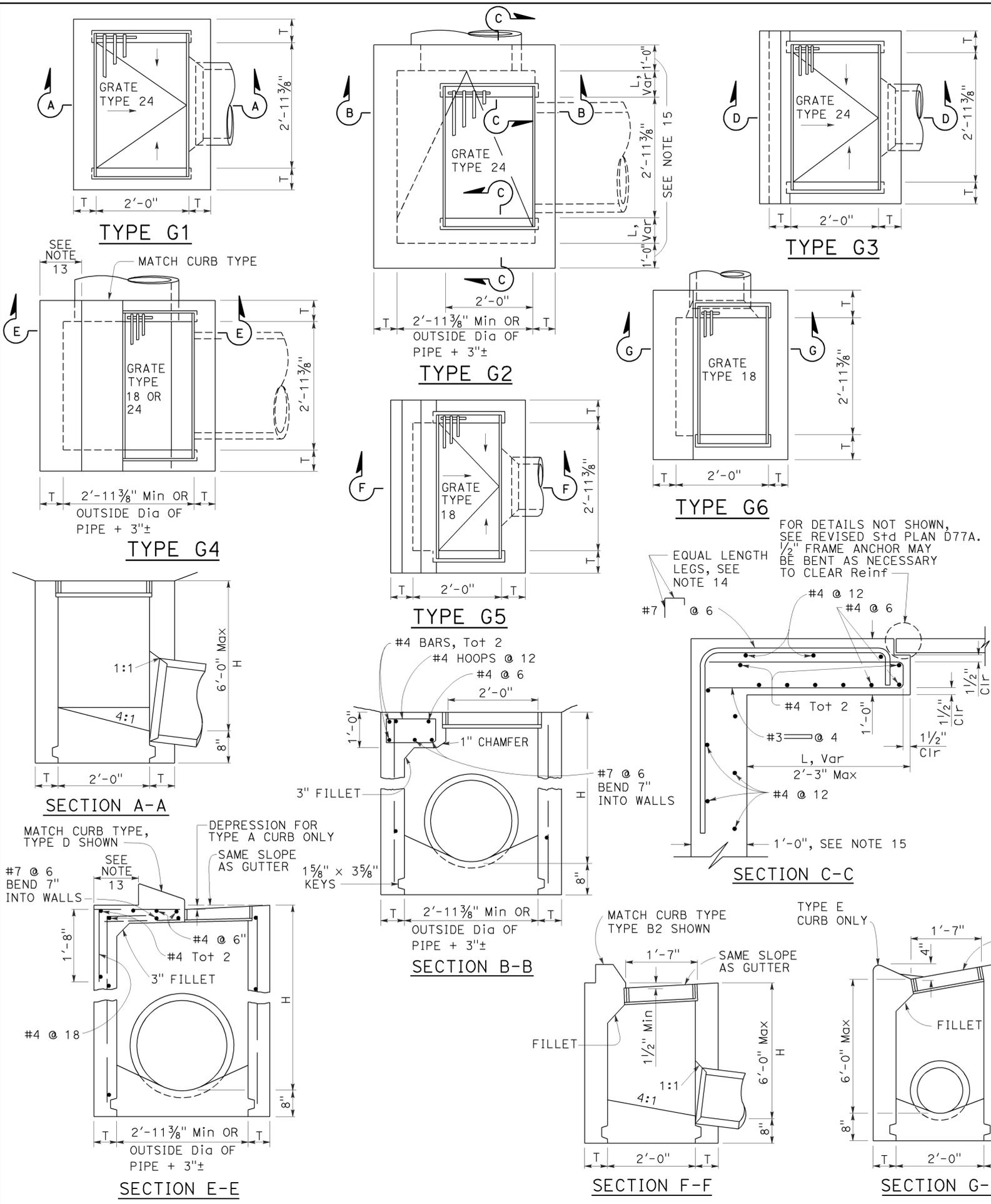
Glenn DeCou
REGISTERED CIVIL ENGINEER

October 19, 2012
PLANS APPROVAL DATE

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

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2010 REVISED STANDARD PLAN RSP D73



NOTES:

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

TABLE A

CONCRETE QUANTITIES

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

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

NOTE A:

Maximum allowable height 6'-0".

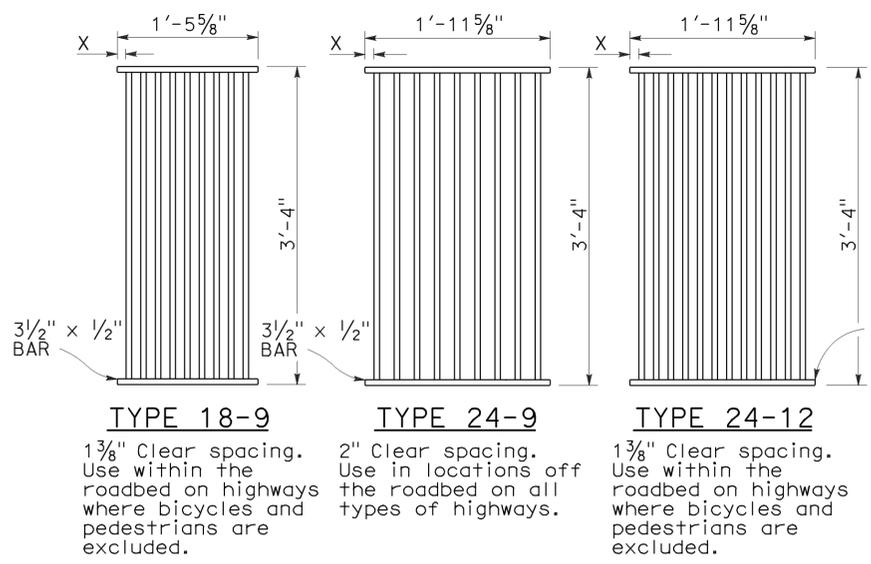
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DRAINAGE INLETS
NO SCALE

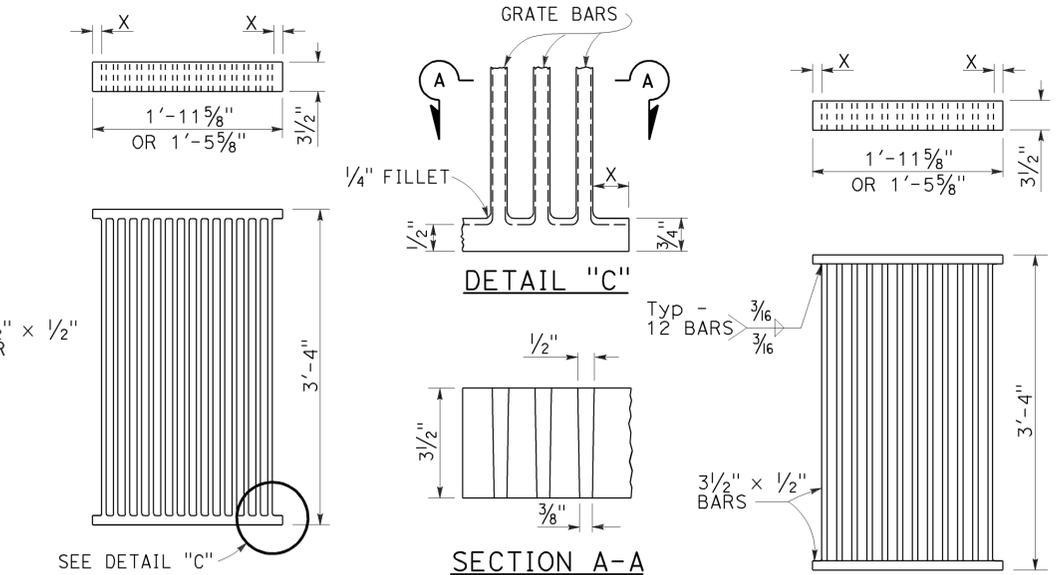
RSP D73 DATED OCTOBER 19, 2012 SUPERSEDES STANDARD PLAN D73 DATED MAY 20, 2011 - PAGE 156 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP D73

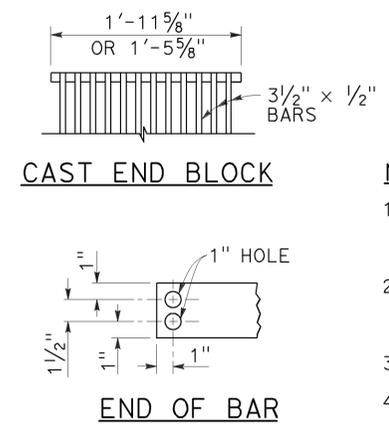
TO ACCOMPANY PLANS DATED 12-15-14



RECTANGULAR GRATE DETAILS
(See table below)

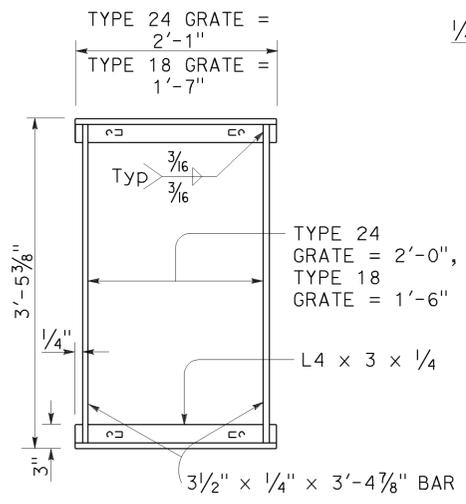


ALTERNATIVE CAST DUCTILE IRON GRATE OR CAST CARBON STEEL GRATE
ALTERNATIVE WELDED GRATE

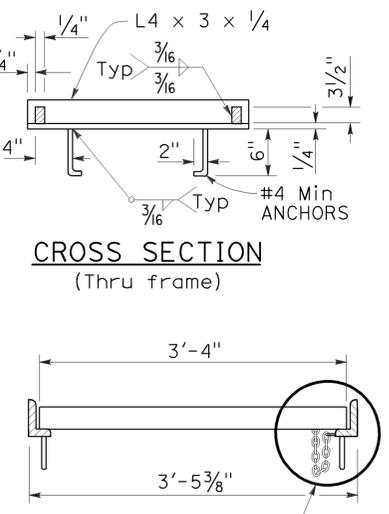


CAST END BLOCK
END OF BAR

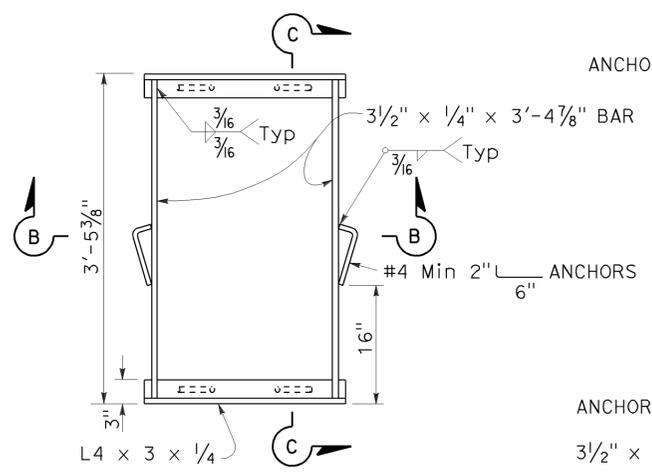
- NOTES:**
- Grate type numbers refer to approximate width of grate in inches and number of bars, respectively.
 - Contractor has the option of using cast ductile iron, cast carbon steel, welded, bolted, or cast end block grate.
 - Rounded top of bars optional on all grates.
 - Pipe inlets with a grate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



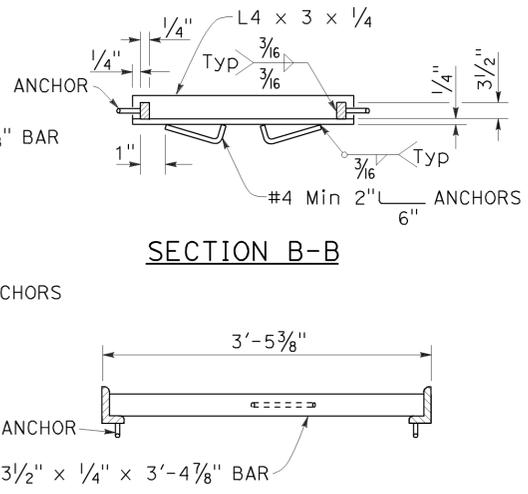
TYPICAL FRAME



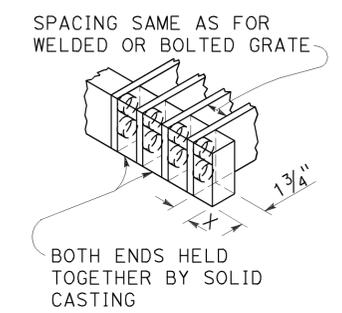
CROSS SECTION (Thru frame)
LONGITUDINAL SECTION (Thru frame and grate)



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



SECTION B-B
SECTION C-C



ALTERNATIVE CAST DUCTILE IRON OR CAST CARBON STEEL END BLOCK GRATE

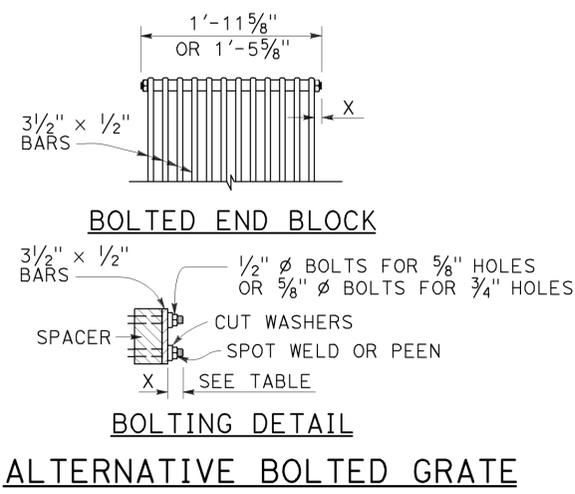
RECTANGULAR FRAME DETAILS
(For all rectangular grates)

GRATE BAR SPACING TABLE

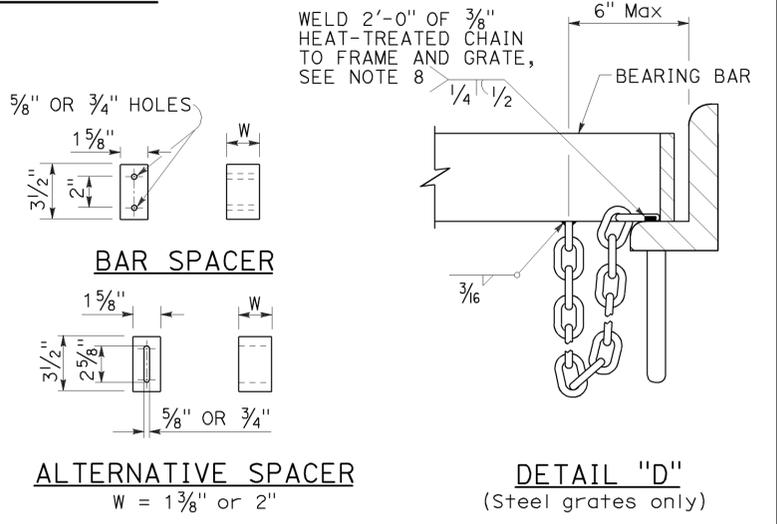
TYPE	NO. OF BARS	CLEAR BAR SPACING	X
18-9	9	1 3/8"	1 1/16"
24-9	9	2"	1 9/16"
24-12	12	1 3/8"	1 1/4"

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

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



BOLTED END BLOCK
BOLTING DETAIL
ALTERNATIVE BOLTED GRATE



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

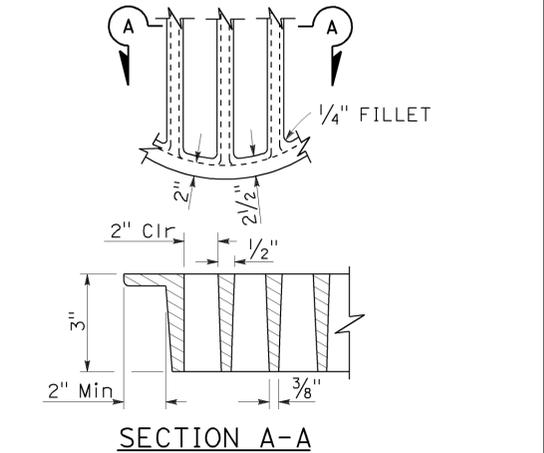
BASIS FOR MISC IRON & STEEL FINAL PAY WEIGHTS FOR DRAINAGE INLETS
(See Note 7)

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

REVISED STANDARD PLAN RSP D77A

2010 REVISED STANDARD PLAN RSP D77A

TO ACCOMPANY PLANS DATED 12-15-14



ALTERNATIVE CAST DUCTILE IRON GRATE OR CAST CARBON STEEL GRATE TYPE 36R AND 36RX

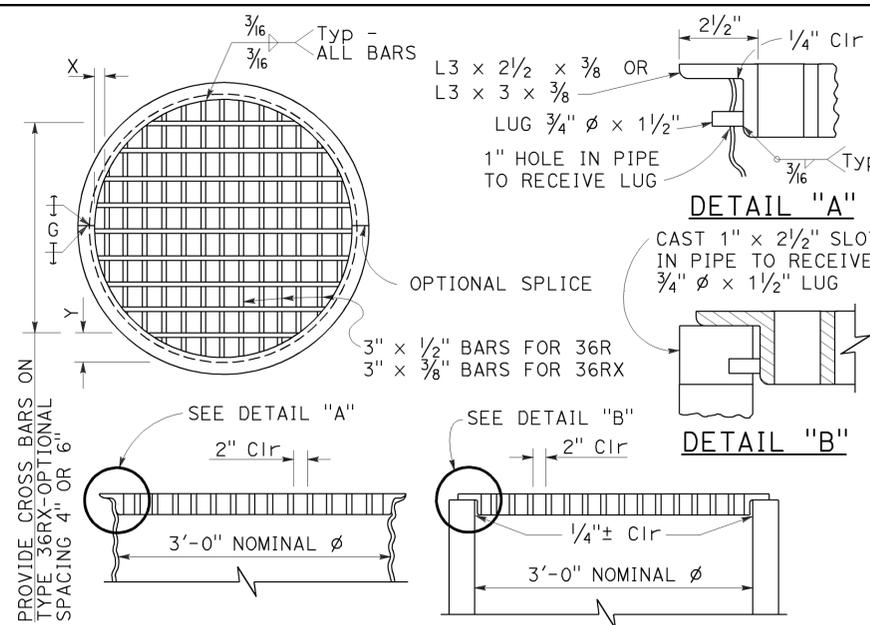
BASIS FOR Misc IRON AND STEEL FINAL PAY WEIGHTS FOR DRAINAGE INLETS

INLET TYPE	GRATE TYPE	No. OF GRATES	WEIGHT LB
GDO (SEE NOTE 4)	24-10C	2	391
	24-10S	2	456
	24-12X	2	473
	24-13	2	374
G0, G0L, G1, G2, G3, G4 (TYPE 24)	24-10C	1	202
	24-10S	1	229
	24-12X	1	239
	24-13	1	188
G4 (TYPE 18) G5, G6	18-8S	1	187
	18-9X	1	187
	18-10	1	149
GT1, GT2	18-8S	2	374
	18-9X	2	374
	18-10	2	298
GT3, GT4	24-10C	2	404
	24-10S	2	458
	24-12X	2	478
ODI	24-13	2	376
	36RX (Mod)	1	196
	36R (Mod)	1	220
GMP, GCP, GCPI	36RX	1	215
ODI	36R (Mod)	1	236
GMP, GCP, GCPI	36R	1	236
TRASH RACK			22
GRATE CHAIN			3

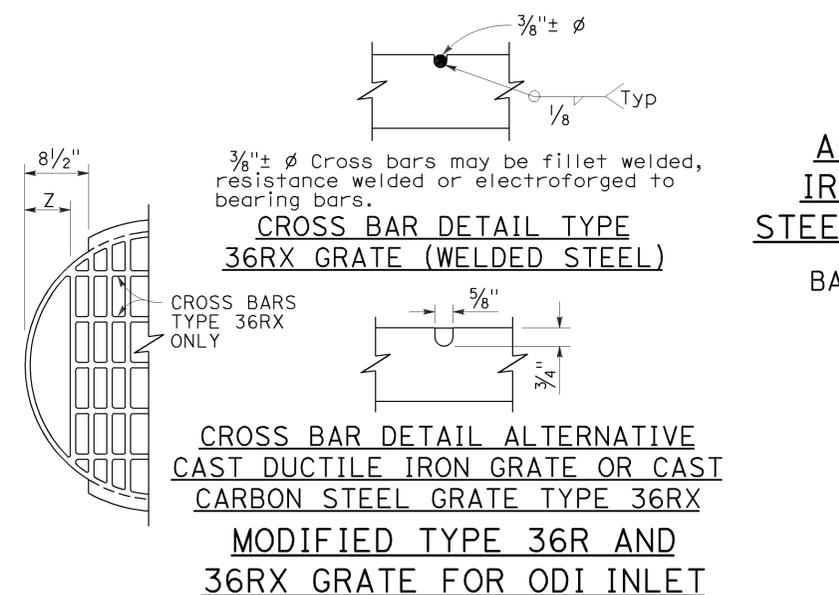
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
GRATE DETAILS No. 2
NO SCALE

RSP D77B DATED APRIL 19, 2013 SUPERSEDES RSP D77B DATED JULY 20, 2012 AND STANDARD PLAN D77B DATED MAY 20, 2011 - PAGE 165 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP D77B



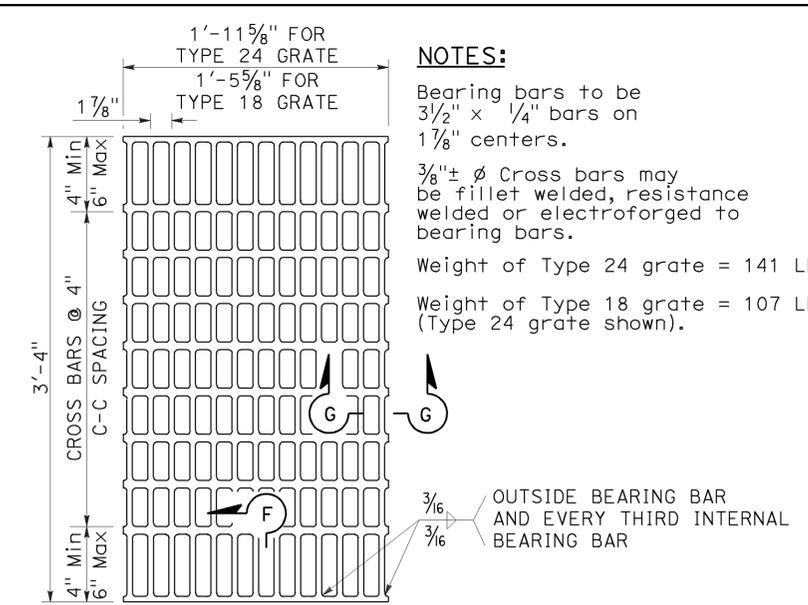
TYPE 36R AND 36RX GRATE DETAILS



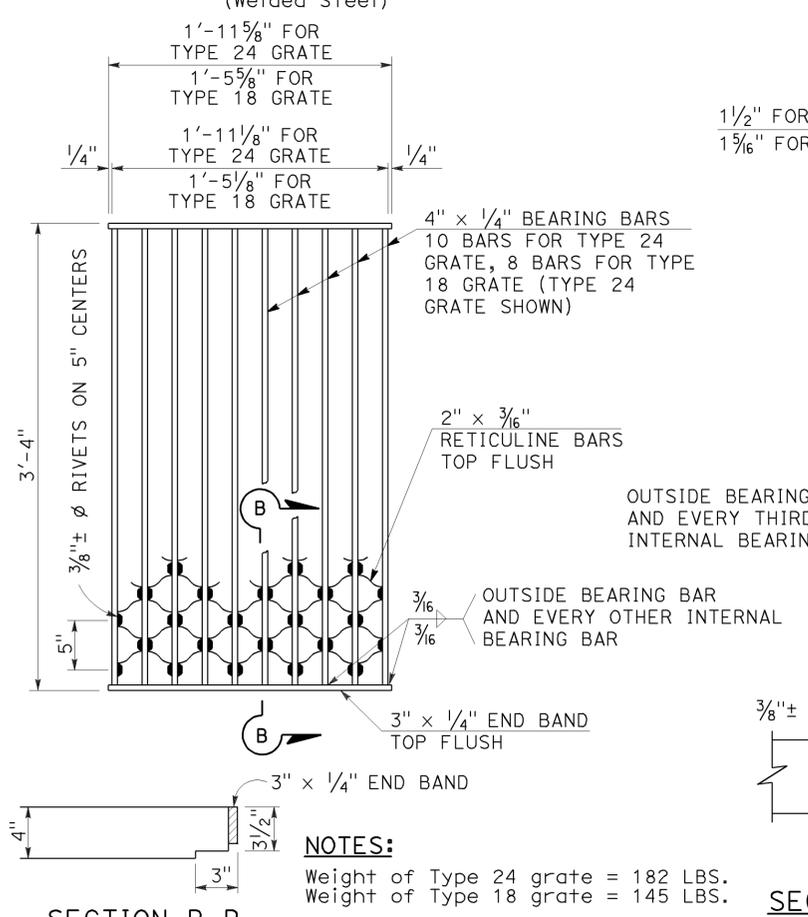
- NOTES:**
- When alternative grates are allowed - Final pay based on alternative with the lesser weight.
 - Use frame shown on Standard Plan D74A, D74B or RSP D77A as appropriate.
 - When Type 24-10S, 24-12X or 24-13 grates are used with GDO Inlets, a 1/4" x 3/2" x 3'-4 7/8" steel bar shall be welded across the center of inlet frame to separate the individual grates.
 - See Revised Standard Plan RSP D77A for connecting chain to welded grate and frame. When chain is required, do not use cast ductile iron grate.

GRATE BAR SPACING TABLE

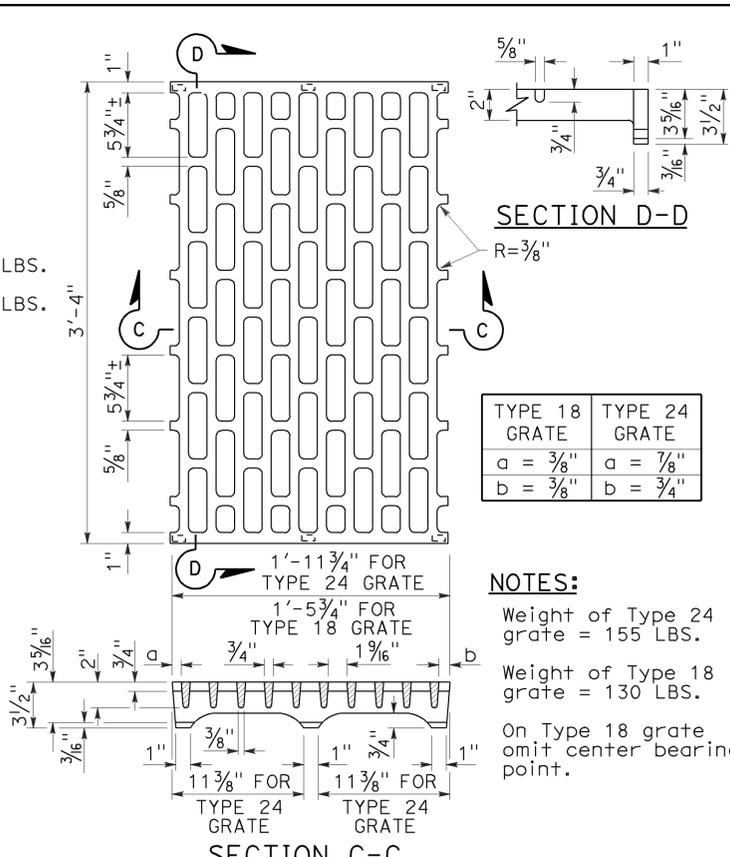
TYPE	NO. OF BARS	CLEAR BAR SPACING	X	Y		Z
				4" SPACING	6" SPACING	
36R	13	2"	2 1/8"	-	-	-
36RX (STEEL)	15	2"	9/16"	3 3/4"	5 3/4"	-
36RX (CAST)	13	2"	2 1/8"	3 3/4"	5 3/4"	-
36R Mod	12	2"	2 1/8"	-	-	5"
36RX Mod (STEEL)	13	2"	9/16"	3 3/4"	5 3/4"	5 1/16"
36RX Mod (CAST)	12	2"	2 1/8"	3 3/4"	5 3/4"	5"



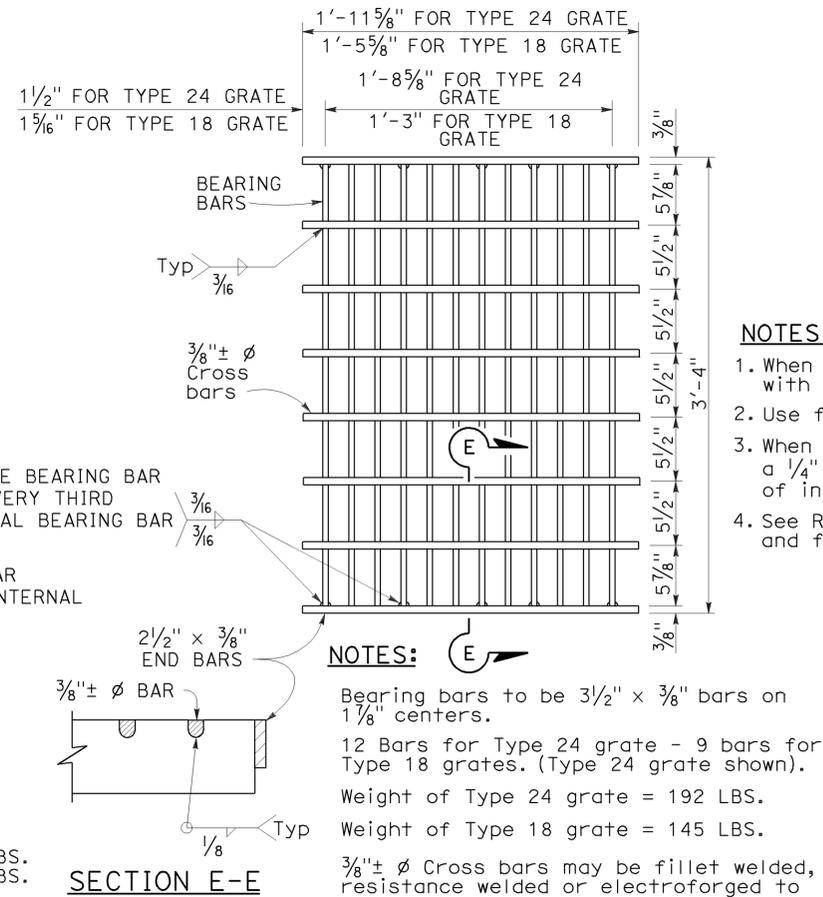
SECTION F-F SECTION G-G
TYPE 18-10 AND 24-13 GRATE
(Welded Steel)



SECTION B-B
TYPE 18-8S AND 24-10S GRATE
(Welded Steel) Reticuline type



SECTION C-C
TYPE 18-8C AND 24-10C GRATE
(Cast ductile iron)



SECTION E-E
TYPE 18-9X AND 24-12X GRATE
(Welded Steel)

NOTES:

Bearing bars to be 3/2" x 1/4" bars on 1 7/8" centers.
3/8" ± ϕ Cross bars may be fillet welded, resistance welded or electroforged to bearing bars.
Weight of Type 24 grate = 141 LBS.
Weight of Type 18 grate = 107 LBS. (Type 24 grate shown).

TYPE 18 GRATE	TYPE 24 GRATE
a = 3/8"	a = 7/8"
b = 3/8"	b = 3/4"

NOTES:

Weight of Type 24 grate = 155 LBS.
Weight of Type 18 grate = 130 LBS.
On Type 18 grate omit center bearing point.

NOTES:

Weight of Type 24 grate = 182 LBS.
Weight of Type 18 grate = 145 LBS.

2010 REVISED STANDARD PLAN RSP D77B

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92, 780	Var	57	62


 REGISTERED CIVIL ENGINEER
 July 19, 2013
 PLANS APPROVAL DATE



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

TO ACCOMPANY PLANS DATED 12-15-14

TABLE 1

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

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

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

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

TABLE 2

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

* - Speed is posted speed limit, off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph

** - Longitudinal buffer space or flagger station spacing

*** - Use on sustained downgrade steeper than -3 percent and longer than 1 mile.

TABLE 3

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

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

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

NO SCALE

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

REVISED STANDARD PLAN RSP T9

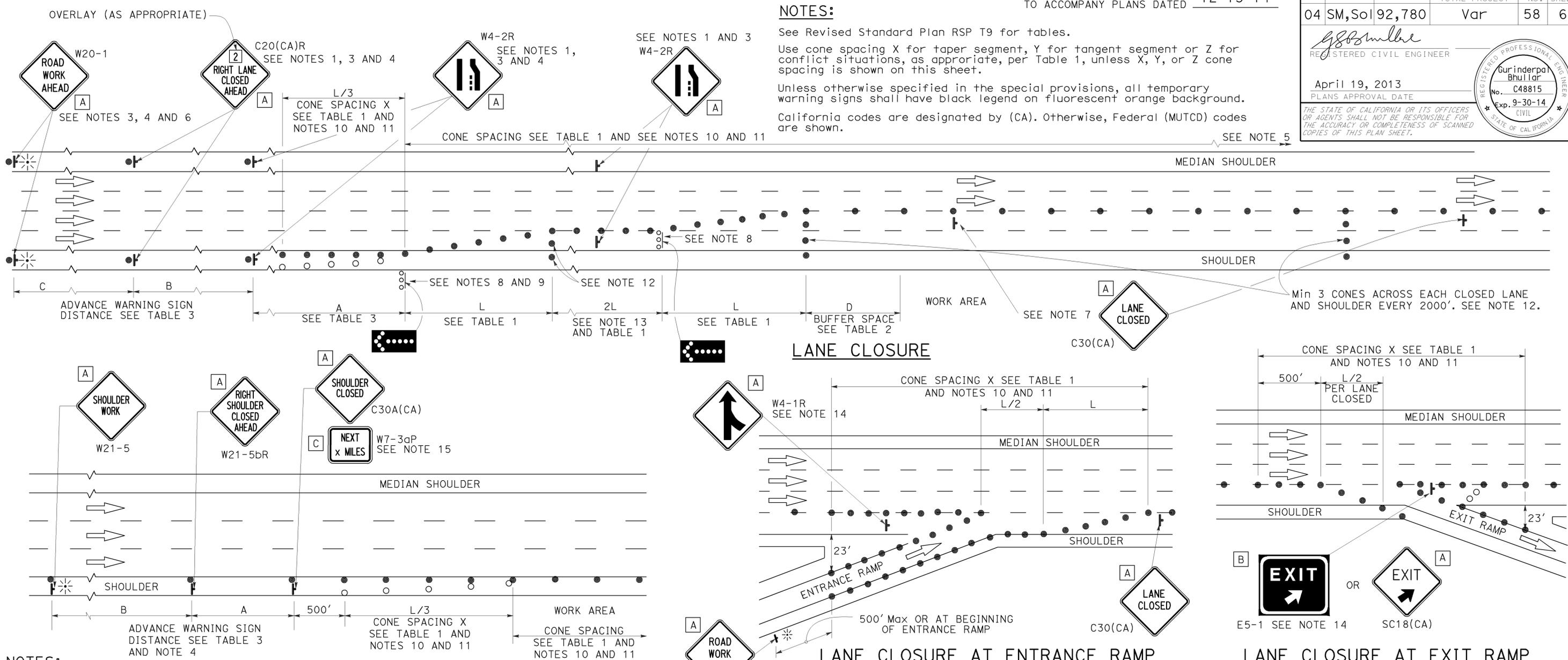
2010 REVISED STANDARD PLAN RSP T9

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92, 780	Var	58	62

REGISTERED CIVIL ENGINEER
 April 19, 2013
 PLANS APPROVAL DATE

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

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



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

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

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

LEGEND

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

SIGN PANEL SIZE (Min)

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

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

REVISED STANDARD PLAN RSP T10

2010 REVISED STANDARD PLAN RSP T10

NOTES:

See Revised Standard Plan RSP T9 for tables.

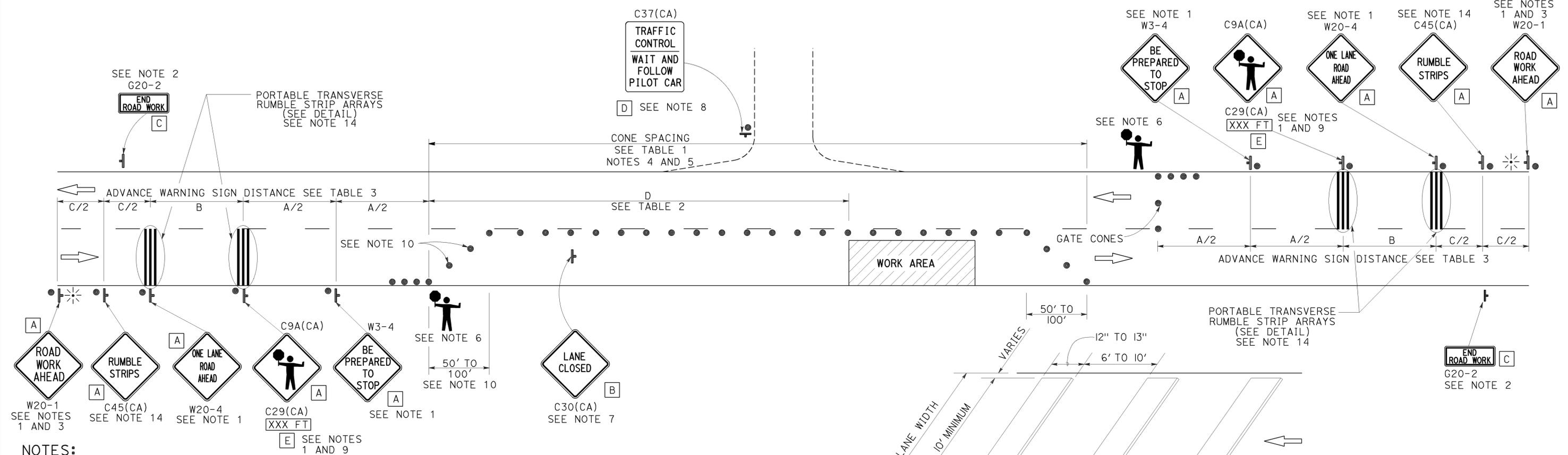
Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as appropriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.

Unless otherwise specified in the special provisions, all temporary warning signs shall have black legend on fluorescent orange background.

California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

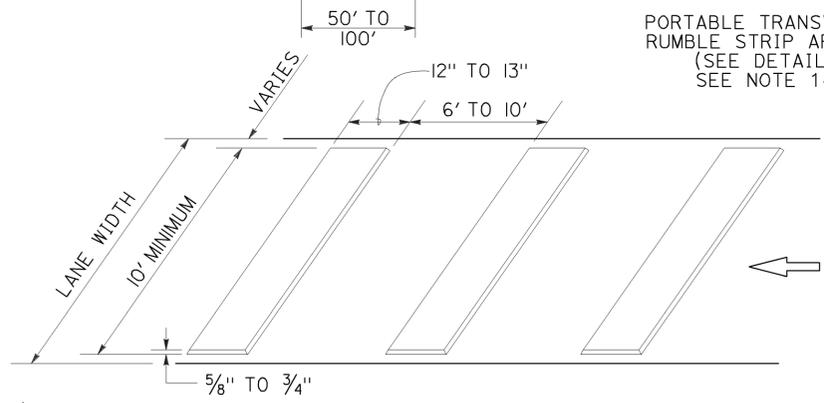
TYPICAL LANE CLOSURE WITH REVERSIBLE CONTROL

TO ACCOMPANY PLANS DATED 12-15-14



NOTES:

- Each advance warning sign in each direction of travel shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
- A G20-2 "END ROAD WORK" sign, as appropriate, shall be placed at the end of the lane control unless the end of work area is obvious, or ends within a larger project's limits.
- If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT _____ MILES", use a W20-4 sign for the first advance warning sign.
- All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
- Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime closures only.
- Additional advance flaggers may be required. Flagger should stand in a conspicuous place, be visible to approaching traffic as well as approaching vehicles after the first vehicle has stopped. During the hours of darkness, the flagging-station and flagger shall be illuminated and clearly visible to approaching traffic. The illumination footprint of the lighting on the ground shall be at least 20' in diameter. Place a minimum of four cones at 50' intervals in advance of flagger station as shown.
- Place C30(CA) "LANE CLOSED" sign at 500' to 1000' intervals throughout extended work areas. They are optional if the work area is visible from the flagger station.
- When a pilot car is used, place a C37(CA) "TRAFFIC CONTROL-WAIT AND FOLLOW PILOT CAR" sign with black legend on white background at all intersections, driveways and alleys without a flagger within traffic control area. Signs shall be clean and visible at all times. Where traffic can not be effectively self-regulated, at least one flagger shall be used at each intersection within traffic control area.
- An optional C29(CA) sign may be placed below the C9A(CA) sign.
- Either traffic cones or barricades shall be placed on the taper. Barricades shall be Type I, II, or III.
- The color of the portable transverse rumble strips shall be black or orange. Use 2 arrays, each array shall consist of 3 rumble strips.
- Portable transverse rumble strips shall not be placed on sharp horizontal or vertical curves nor shall they be placed through pedestrian crossings.
- If the portable transverse rumble strips become out of alignment (skewed) by more than 6 inches, measured from one end to the other, they shall be readjusted to bring the placement back to the original location.
- Portable transverse rumble strips are not required if any one of the following conditions is satisfied:
 - Work duration occupies a location for four hours or less
 - Posted speed limit is below 45 MPH
 - Work is of emergency nature
 - Work zone is in snow or icy weather conditions



SIGN PANEL SIZE (Min)

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

LEGEND

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**TRAFFIC CONTROL SYSTEM
FOR LANE CLOSURE ON
TWO LANE CONVENTIONAL
HIGHWAYS**

NO SCALE

RSP T13 DATED OCTOBER 17, 2014 SUPERSEDES RSP T13 DATED JULY 18, 2014
AND RSP T13 DATED APRIL 19, 2013 AND STANDARD PLAN T13 DATED
MAY 20, 2011 - PAGE 241 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP T13

TYPICAL RAMP CLOSURES

SIGN PANEL SIZE (Min)

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

LEGEND

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

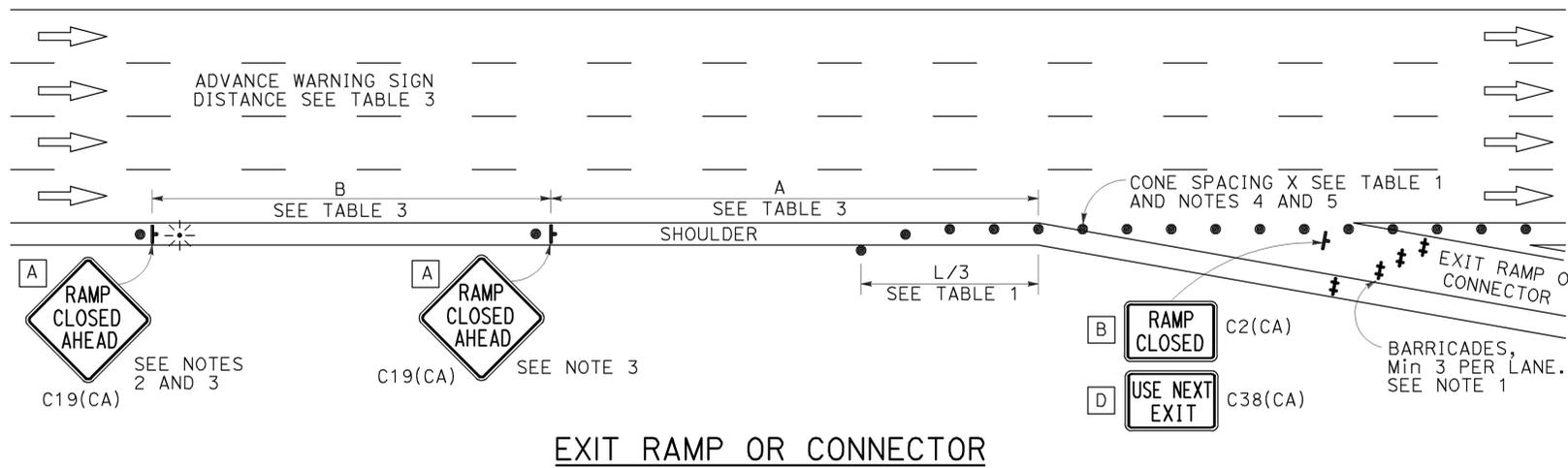
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92, 780	Var	60	62

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

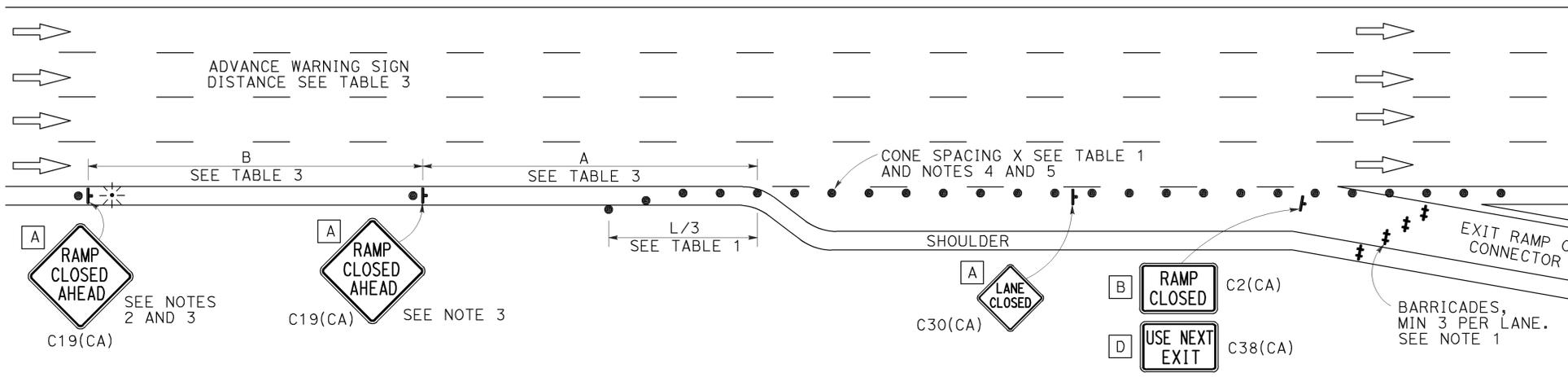
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REGISTERED PROFESSIONAL ENGINEER
 Gurinderpal Bhullar
 No. C48815
 Exp. 9-30-14
 CIVIL
 STATE OF CALIFORNIA

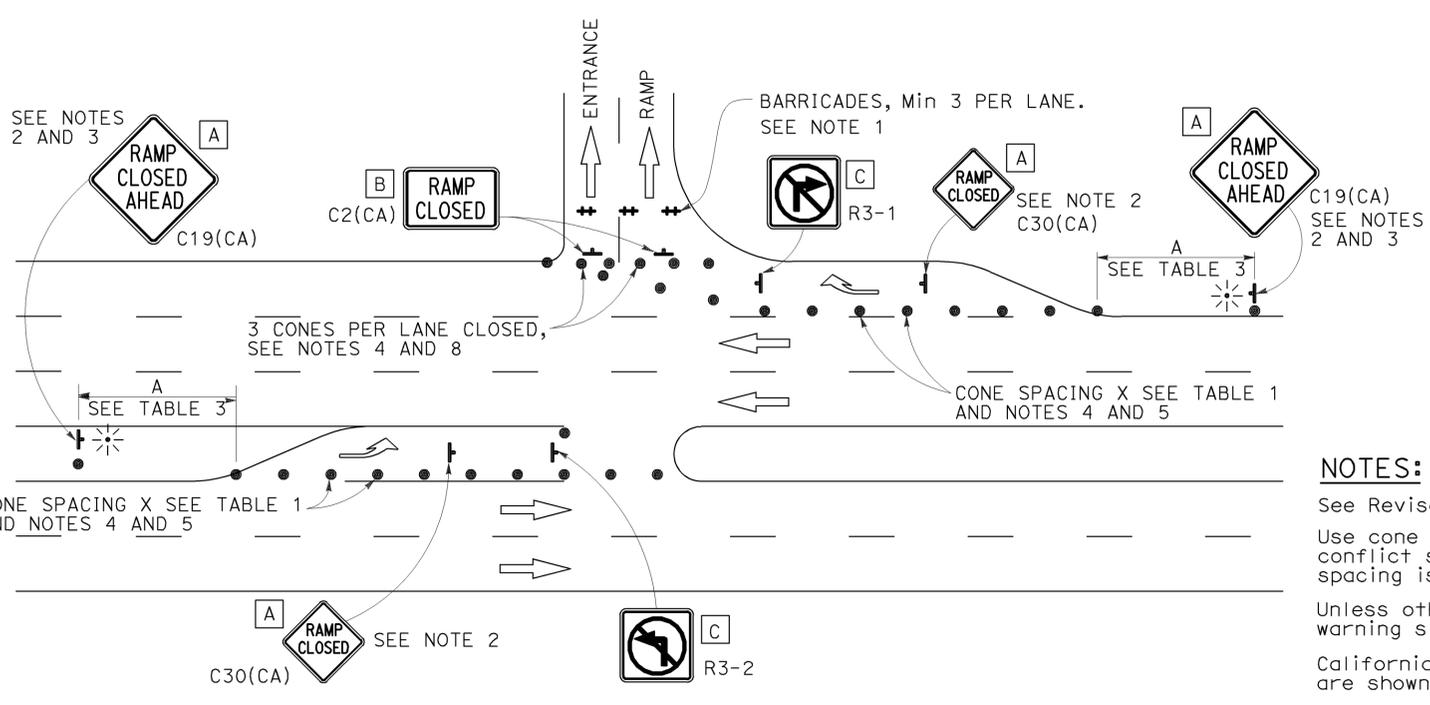
TO ACCOMPANY PLANS DATED 12-15-14



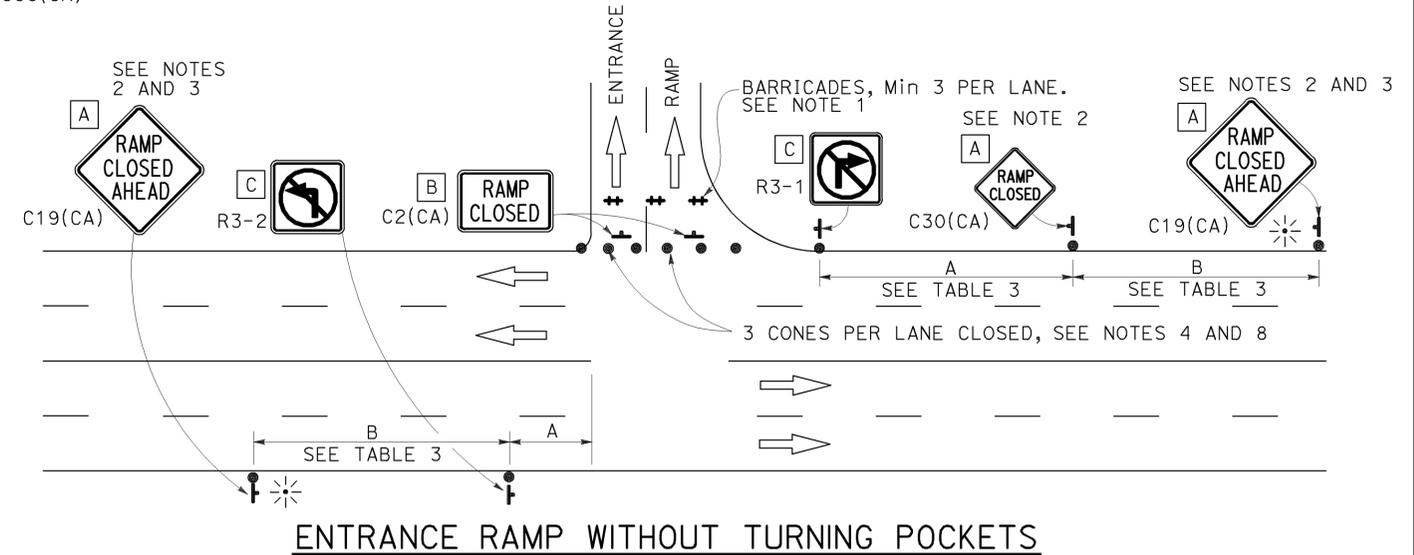
EXIT RAMP OR CONNECTOR



EXIT RAMP OR CONNECTOR WITH ADDITIONAL LANE



ENTRANCE RAMP WITH TURNING POCKETS



ENTRANCE RAMP WITHOUT TURNING POCKETS

NOTES:

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

NOTES:

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

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

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

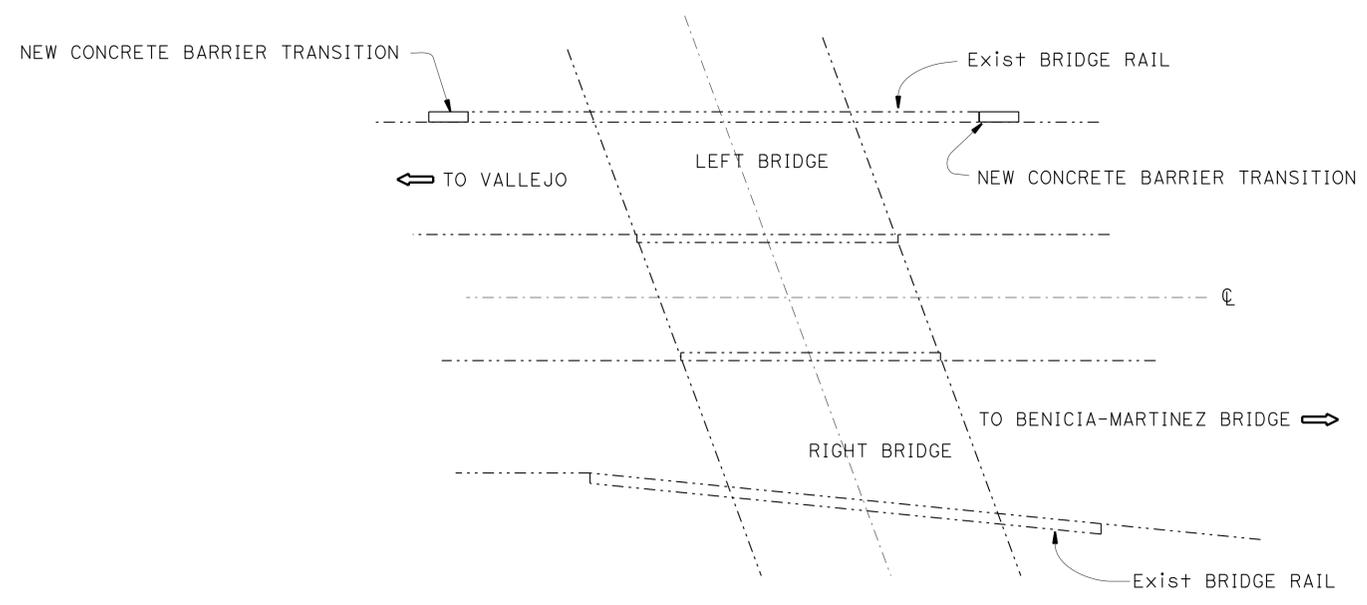
2010 REVISED STANDARD PLAN RSP T14

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92,780	Var	61	62

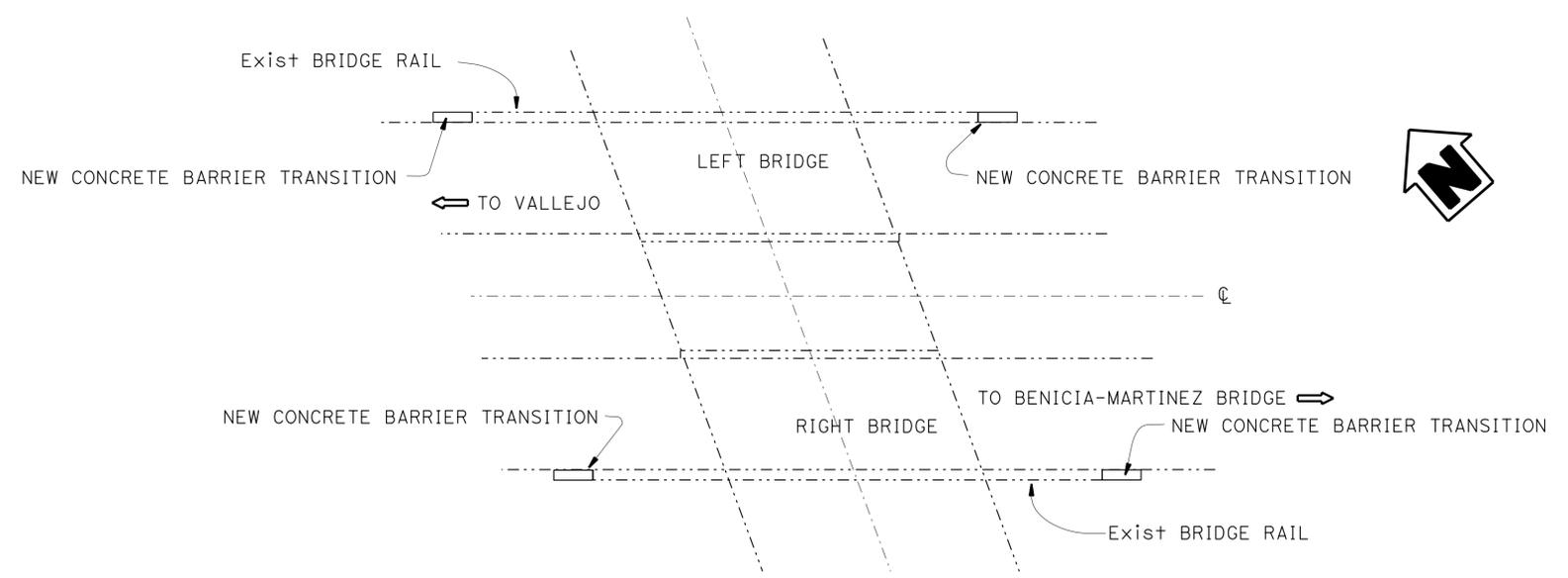
<i>[Signature]</i>	10-16-14
REGISTERED CIVIL ENGINEER	DATE
12-15-14	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER	RICHARD LANCE WARREN
No.	C78431
Exp.	9/30/15
CIVIL	STATE OF CALIFORNIA

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EAST SECOND STREET UC
BRIDGE No. 23-0125 L



EAST FIFTH STREET UC
BRIDGE No. 23-0126 L & R

STANDARD PLANS DATED 2010

- A10A ACRONYMS AND ABBREVIATIONS (SHEET 1 OF 2)
- RSP A10B ACRONYMS AND ABBREVIATIONS (SHEET 2 OF 2)
- A62B LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL - BRIDGE SURCHARGE AND WALL
- A62C LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL - BRIDGE
- RSP A77U1 MIDWEST GUARDRAIL SYSTEM CONNECTIONS TO BRIDGE RAILINGS WITHOUT SIDEWALKS DETAILS No. 1
- RSP A77U2 MIDWEST GUARDRAIL SYSTEM CONNECTIONS TO BRIDGE RAILINGS WITHOUT SIDEWALKS DETAILS No. 2
- RSP A77U4 MIDWEST GUARDRAIL SYSTEM TRANSITION RAILING (TYPE WB-31)
- B0-13 BRIDGE DETAILS

EAST SECOND STREET UC (23-0125L)	
QUANTITIES	
CONCRETE BARRIER (TRANSITION)	7 LF
EAST FIFTH STREET UC (23-0126L/R)	
QUANTITIES	
CONCRETE BARRIER (TRANSITION)	14 LF

NO SCALE

NOTE:
See "Roadway Plans" for work locations and Midwest Guardrail System.

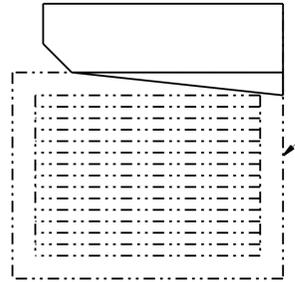
DAVID NEUMANN BRANCH CHIEF	DESIGN	BY LANCE WARREN	CHECKED JOEL MAGANA	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN SPECIAL DESIGN BRANCH B	BRIDGE NO.	CONCRETE BARRIER TRANSITION GENERAL PLAN	
	DETAILS	BY HUNG NGUYEN	CHECKED LANCE WARREN	LAYOUT	BY			CHECKED		VARIABLES
	QUANTITIES	BY LANCE WARREN	CHECKED JOEL MAGANA	SPECIFICATIONS	BY			PLANS AND SPECS COMPARED		POST MILE

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0	1	2	3	UNIT: 3619	PROJECT NUMBER & PHASE: 0400020617	CONTRACT NO.: 04-1G8501	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 1 OF 2
--	---	---	---	---	------------	------------------------------------	-------------------------	---	----------------	--------------

STRUCTURES DESIGN GENERAL PLAN SHEET (ENGLISH) (REV.09-01-10) FILE => 04-1g8501-u-01.dgn

USERNAME => s124763 DATE PLOTTED => 14-JAN-2015 TIME PLOTTED => 12:47

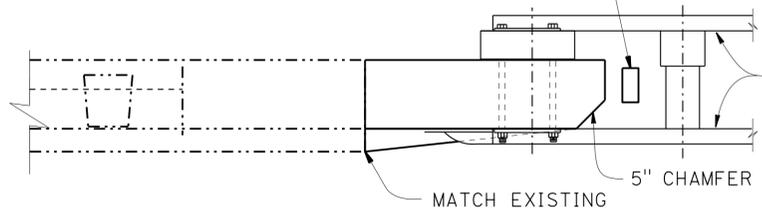
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM, Sol	92,780	Var	62	62
			10-16-14	REGISTERED CIVIL ENGINEER DATE	
			12-15-14	PLANS APPROVAL DATE	
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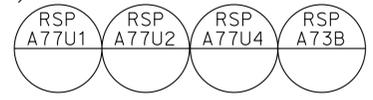
FOR DRAINAGE INLET LOCATIONS & DETAILS, SEE DRAINAGE PLANS. INSTALL 1/4" POLYSTYRENE BETWEEN DRAINAGE INLET & CONCRETE BARRIER RAIL TRANSITION AS NEEDED, SEE

BO-13
13-2

OBJECT MARKER (TYPE P), SEE ROADWAY PLANS



THREE BEAM BARRIER, SEE

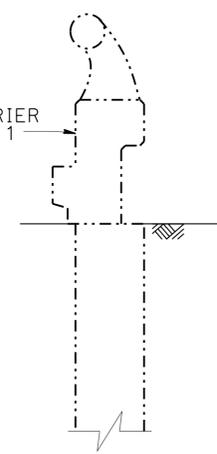


DRAINAGE INLET DETAIL

PLAN

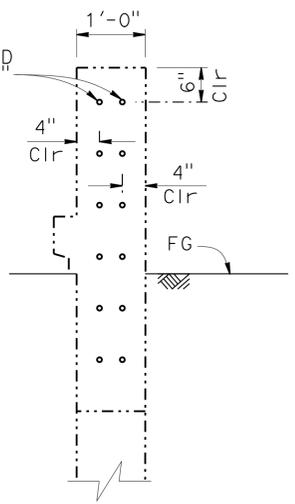
NOTE:
Approach concrete barrier rail transition shown.
Departure concrete barrier rail transition similar

EXISTING BARRIER RAILING TYPE 1 MODIFIED



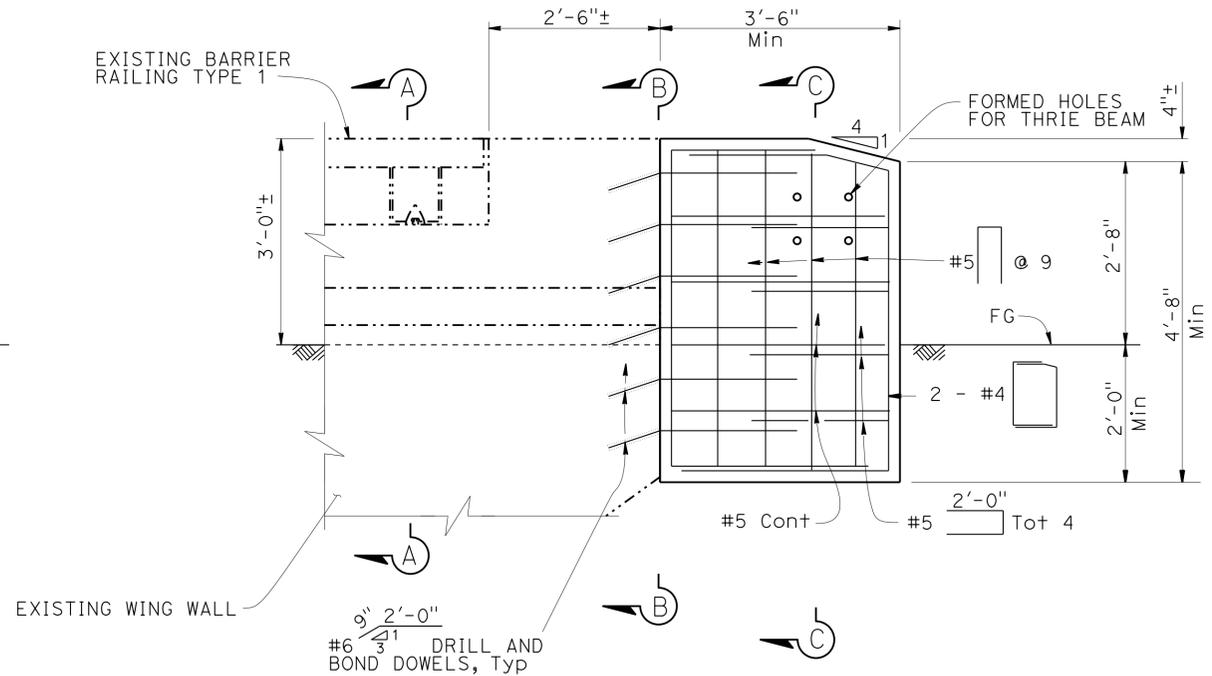
SECTION A-A

#6 ^{9"}/₃ DRILL AND BOND DOWELS IN 9" DEEP HOLE @ 9"



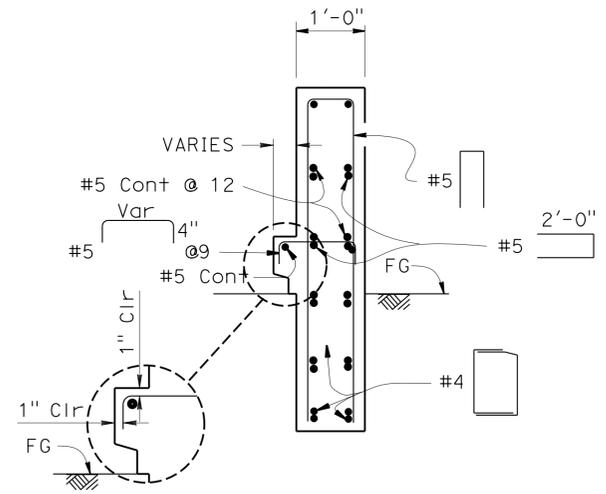
SECTION B-B

EXISTING BARRIER RAILING TYPE 1



ELEVATION

NO SCALE



SECTION C-C

NOTE:
Drill and bond dowels not shown
2" clearance on all reinforcement UON

LEGEND:

- Indicates Existing Structure
- Indicates New Structure
- Standard Plan sheet number
- Detail number

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

NOTE:
Cut and remove portion of Type 1 and BAGR as required

DESIGN	BY LANCE WARREN	CHECKED JOEL MAGANA
DETAILS	BY HUNG NGUYEN	CHECKED LANCE WARREN
QUANTITIES	BY LANCE WARREN	CHECKED JOEL MAGANA

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH B

BRIDGE NO.	
POST MILE	1.58/2.01

THREE BEAM CONNECTION - TYPE 1
CONCRETE BARRIER RAIL TRANSITION DETAILS