

INDEX OF PLANS

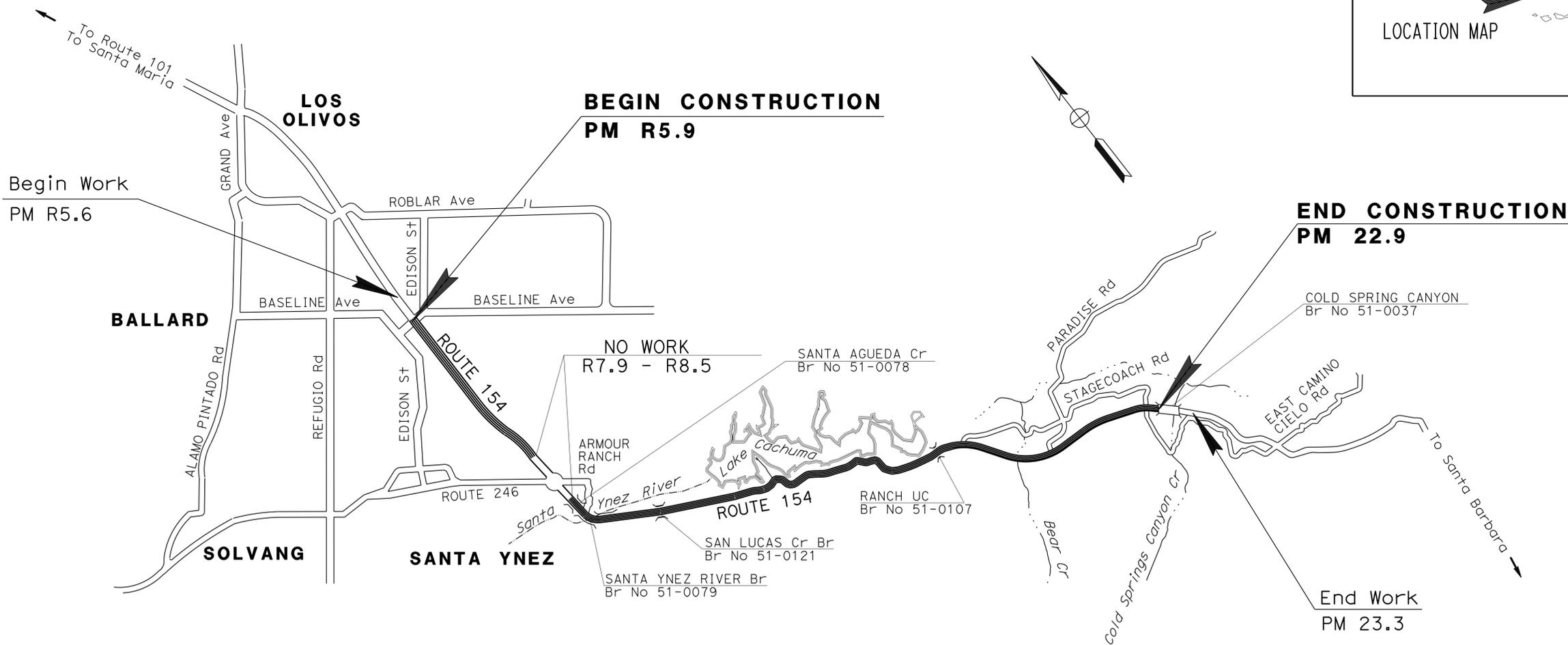
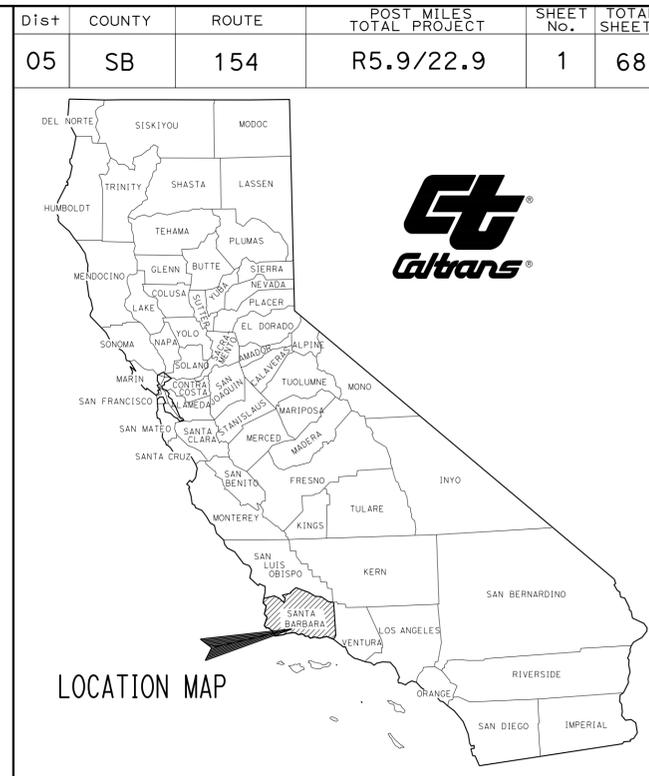
SHEET No.	DESCRIPTION
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THE STANDARD PLANS LIST APPLICABLE TO THIS CONTRACT IS INCLUDED IN THE NOTICE TO BIDDERS AND SPECIAL PROVISION BOOK

STATE OF CALIFORNIA ACSTP-P154(022)E
DEPARTMENT OF TRANSPORTATION
PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY
IN SANTA BARBARA COUNTY
NEAR SANTA YNEZ FROM BASELINE AVENUE
TO COLD SPRING CANYON BRIDGE

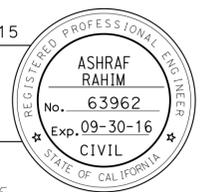
TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010



PROJECT MANAGER
PAUL MARTINEZ

DESIGN MANAGER
JOHN FOCHE

Ashraf M 11-20-15
 PROJECT ENGINEER DATE
 REGISTERED CIVIL ENGINEER



November 30, 2015
 PLANS APPROVAL DATE

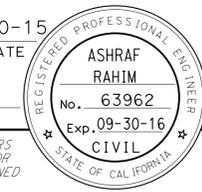
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NO SCALE

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

CONTRACT No.	05-1C8304
PROJECT ID	0512000238

DATE PLOTTED => 22-MAR-2016
 TIME PLOTTED => 15:24
 11-20-15

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	2	68
			11-20-15		
REGISTERED CIVIL ENGINEER			DATE		
11-30-15			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>					

NOTE:

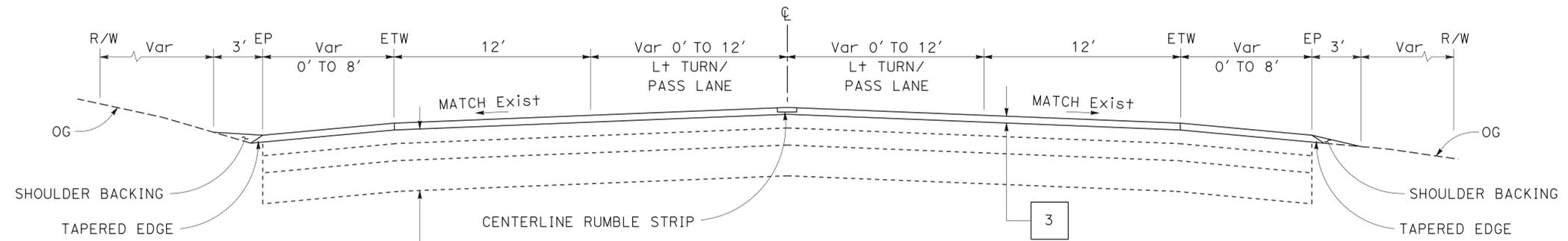
1. DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
2. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
3. EXACT LOCATIONS AND TYPES OF DIKES, AND GUARD RAILING, ARE SHOWN ON THE SUMMARY OF QUANTITIES SHEETS.
4. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

ABBREVIATIONS:

- CIR COLD IN-PLACE RECYCLING
- RHMA-G RUBBERIZED HOT MIX ASPHALT (GAP GRADED)
- AR ASPHALT RUBBER

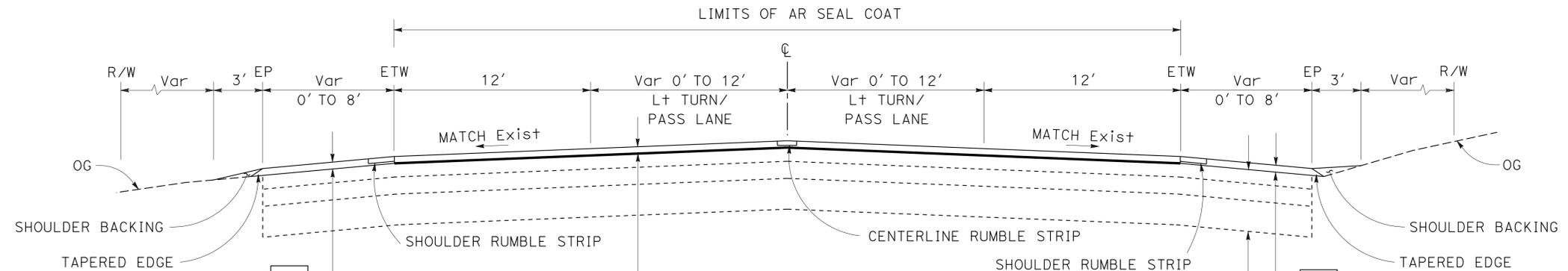
PAVEMENT CLIMATE REGION

SOUTH COAST



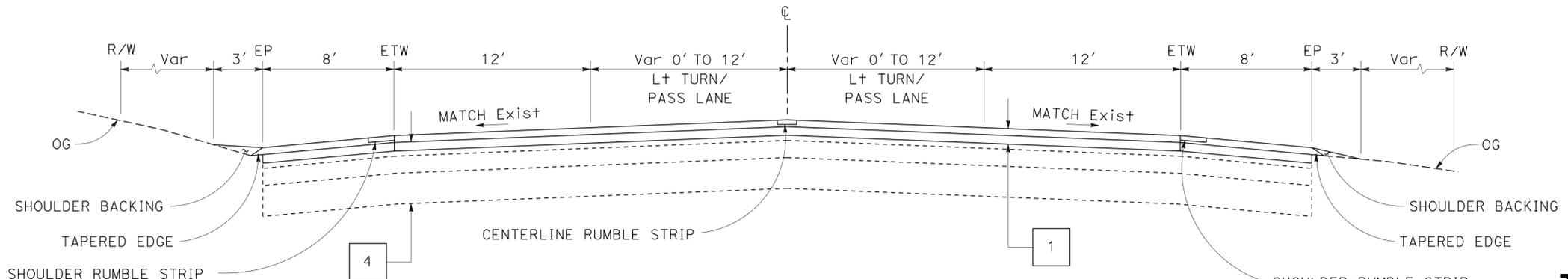
ROUTE 154

PM R12.2 TO 22.9



ROUTE 154

PM R8.5 TO R12.2



ROUTE 154

PM R5.9 TO R7.9

TYPICAL PAVEMENT STRUCTURE SECTIONS

- 1. 0.20' RHMA-G
0.25' CIR
- 2. 0.20' RHMA-G
AR SEAL COAT
- 3. 0.20' RHMA-G
- 4. Exist
0.40 AC (TYPE B)
0.50 AB CI 2
0.90 AS CI 4

TYPICAL CROSS SECTIONS

NO SCALE

X-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 DESIGN
 FUNCTIONAL SUPERVISOR: JOHN H FOUCHÉ
 CHECKED BY: CHRIS BAAB, ASHRAF RAHIM
 REVISIONS: (None shown)

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN

FUNCTIONAL SUPERVISOR
 JOHN H FOUCHÉ

CHECKED BY

CALCULATED/DESIGNED BY

CHRIS BAAB
 ASHRAF RAHIM

REVISED BY
 DATE REVISED

LEGEND

-  COLD PLANE AC PAVEMENT
- CIR COLD IN-PLACE RECYCLING

NOTES (THIS SHEET ONLY):

1. ONLY AT PM R5.9 AND R7.9 CONFORM
2. COLD PLANE FULL DEPTH OF EXISTING AC OVERLAY IF LESS THAN 0.20' AND REPAVE.

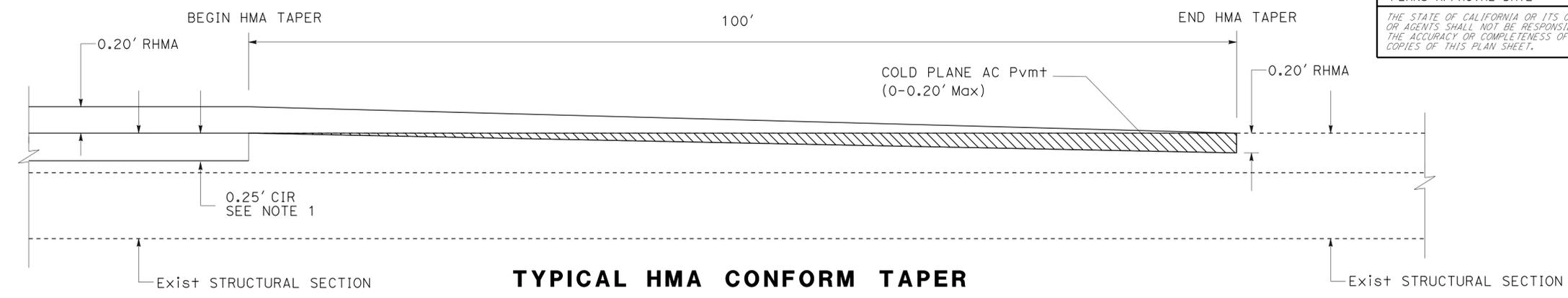
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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11-20-15
 REGISTERED CIVIL ENGINEER DATE

11-30-15
 PLANS APPROVAL DATE

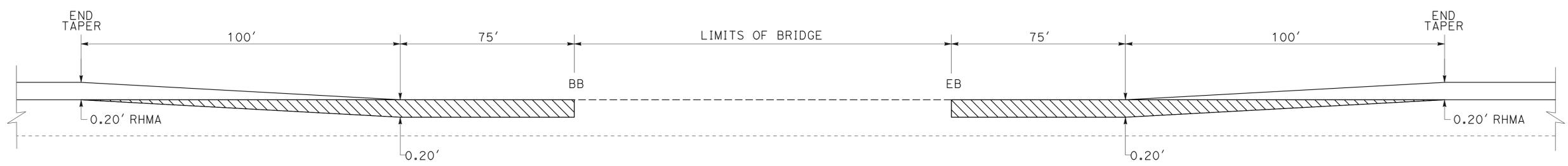
ASHRAF RAHIM
 No. 63962
 Exp. 09-30-16
 CIVIL

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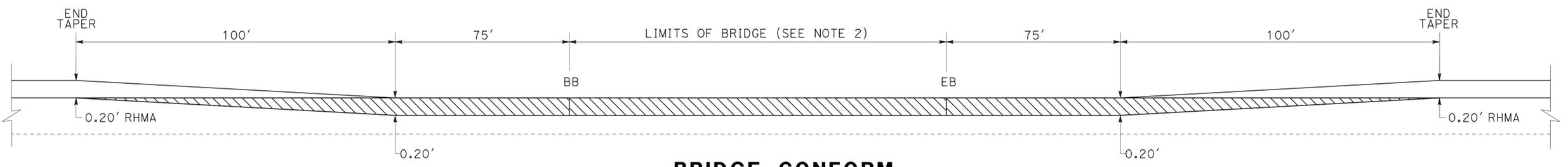
TYPICAL HMA CONFORM TAPER

PM R5.9
 PM R7.9
 PM R8.5



BRIDGE CONFORM

- SANTA AGUEDA CREEK BRIDGE
 PM R9.97
- SANTA YNEZ RIVER BRIDGE
 PM R10.12
- SAN LUCAS CREEK BRIDGE
 PM R11.51
- COLD SPRING CANYON BRIDGE
 PM 22.95



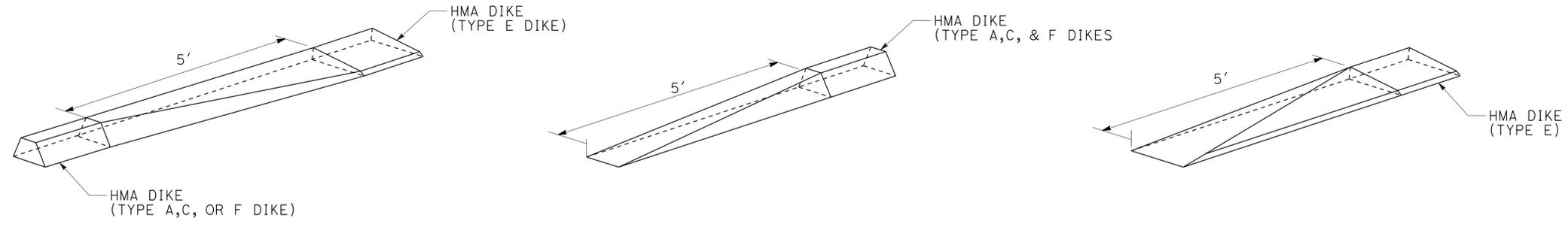
BRIDGE CONFORM

RANCH UC
 PM 18.83

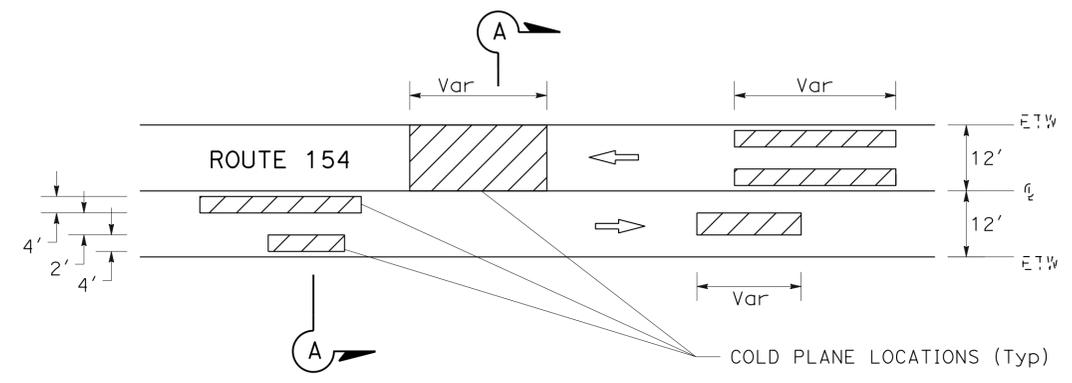
CONSTRUCTION DETAILS

NO SCALE

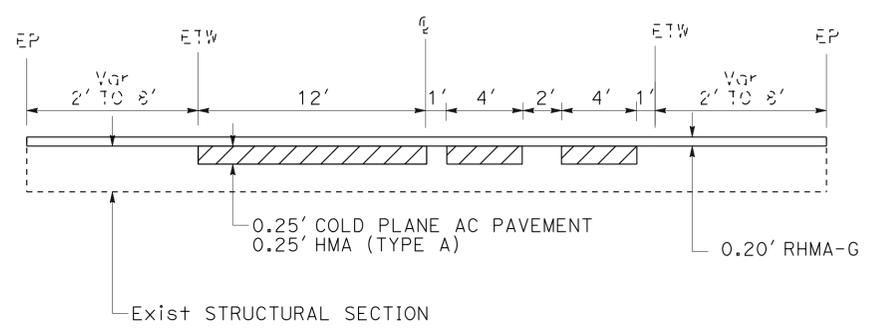
C-1



TYPICAL HMA DIKE TRANSITION



PLAN

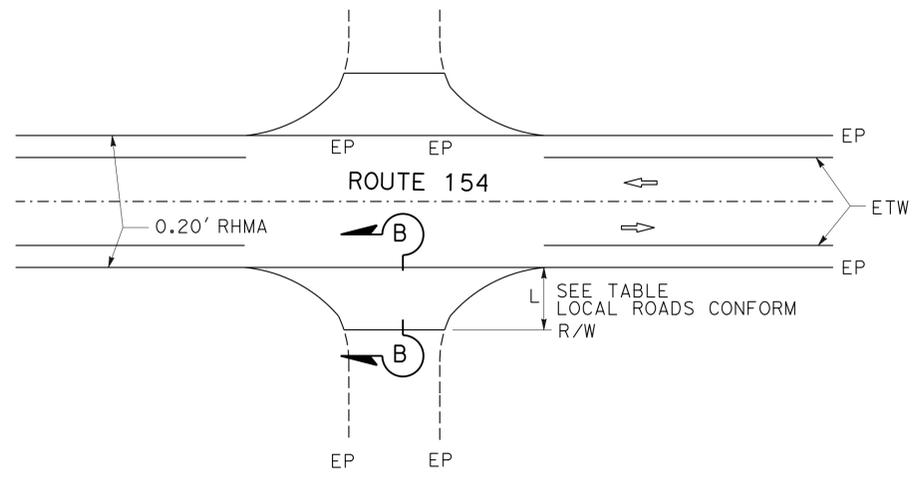


SECTION A-A

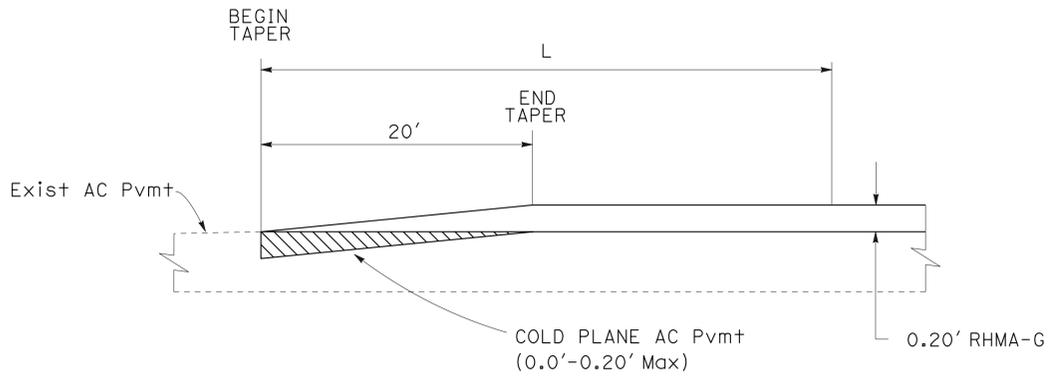
ROADWAY REPAIR
(SEE Q-3 FOR LOCATIONS)

LOCAL ROADS CONFORM

LOCATION (PM)	DIRECTION	L (Ft)	COMMENTS
R5.90	EB	80	BASELINE Ave / EDISON St
	WB	83	
R6.82	EB	55	MEADOWVALE Rd
	WB	110	MEADOWVALE Rd
R7.13	WB	117	
	WB	102	TORRANCE Ave
R7.55	EB	25	TORRANCE Ave
R10.04	WB	220	AMOUR RANCH Rd
	WB	128	
	EB	144	
12.30	WB	80	CACHUMA VILLAGE Rd
	WB	35	ENTRANCE TO BRADBURY DAM
13.51	EB	32	TO GRANIT CONSTRUCTION QUARRY
13.55	WB	35	CACHUMA OBSERVATION POINT
14.35	EB	86	
15.30	EB	39	CAMP TEQUEPIS Rd
15.94	EB	55	
16.55	WB	71	
16.95	EB	79	
17.34	EB	64	
18.10	EB	88	
18.44	EB	77	
	WB	67	
	EB	94	
18.79	EB	223	
	WB	66	
19.88	EB	178	
20.11	WB	45	LIVE OAK Rd
20.65	WB	138	STAGE COACH Rd
	WB	71	
20.96	EB	78	
21.43	EB	20	
21.46	WB	20	
21.56	WB	103	PARADISE Rd
22.05	EB	20	
22.05	WB	20	
22.52	WB	46	ENTRANCE TO PARKING AREA



LOCAL ROADS CONFORM



SECTION B-B

CONSTRUCTION DETAILS

NO SCALE

C-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION DESIGN
 FUNCTIONAL SUPERVISOR JOHN H FOUCHÉ
 CALCULATED/DESIGNED BY ASHRAF RAHIM
 CHECKED BY CHRIS BAAB
 REVISED BY DATE
 REVISIONS: 11-20-15, 11-30-15

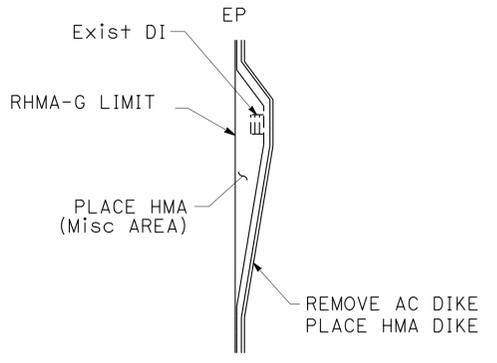
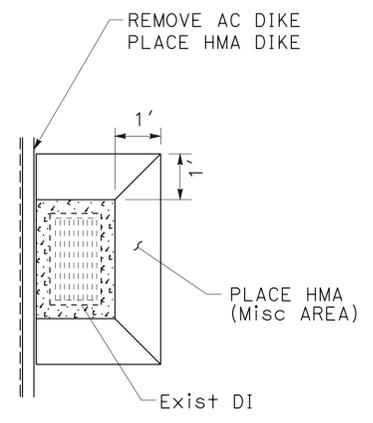
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	5	68

REGISTERED CIVIL ENGINEER	DATE	11-20-15
REGISTERED PROFESSIONAL ENGINEER	DATE	11-30-15
PLANS APPROVAL DATE		

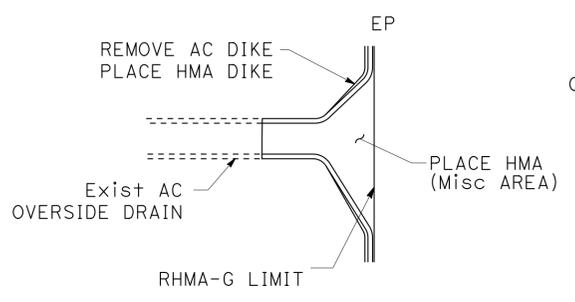
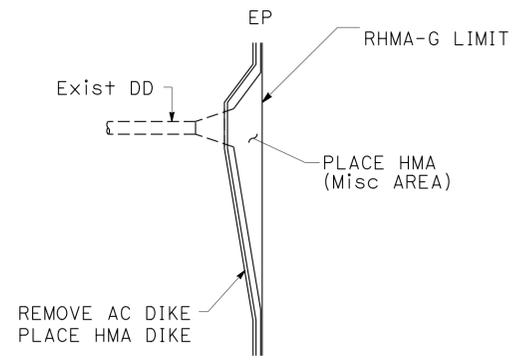
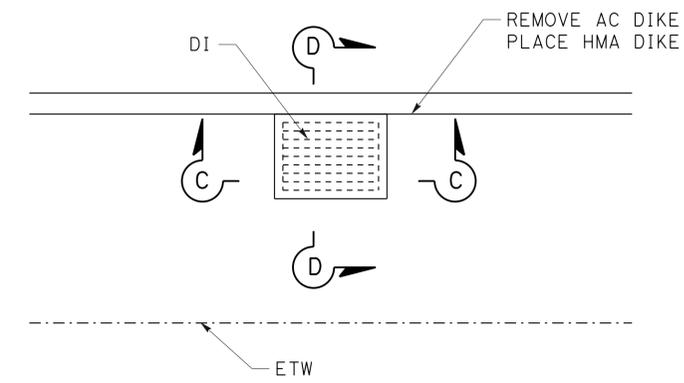
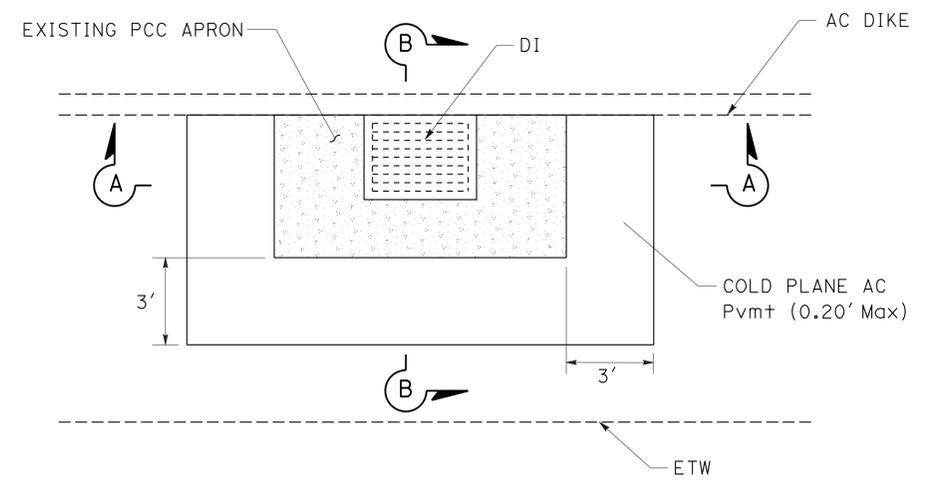
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 DESIGN
 Et Caltrans®
 FUNCTIONAL SUPERVISOR: JOHN H FOUCHÉ
 CALCULATED/DESIGNED BY: ASHRAF RAHIM
 CHECKED BY: CHRIS BAAB
 REVISIONS: REVISED BY: ASHRAF RAHIM, DATE: 11-20-15; REVISED BY: CHRIS BAAB, DATE: 11-30-15
 BORDER LAST REVISED 7/2/2010

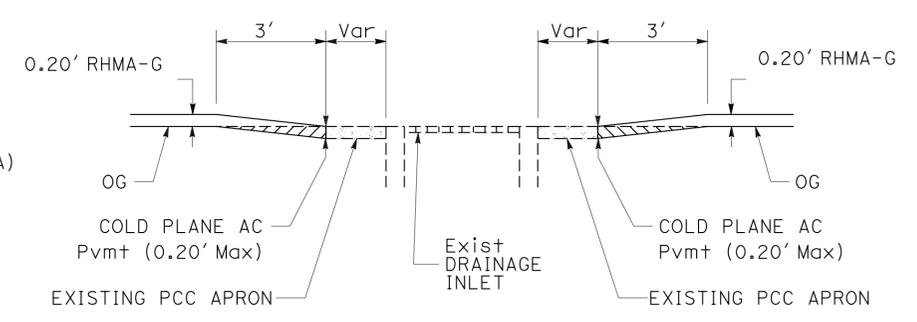


DRAINAGE INLET

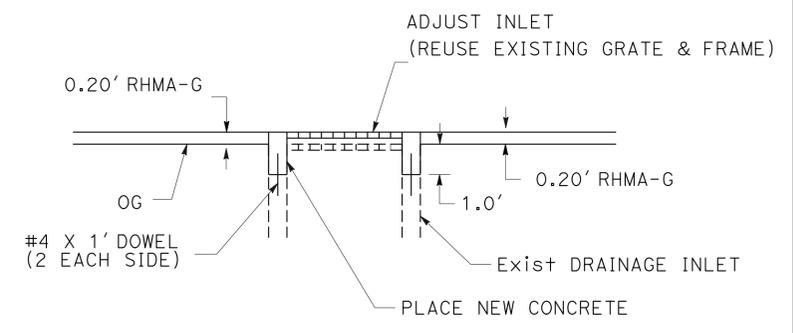


DOWNDRAIN

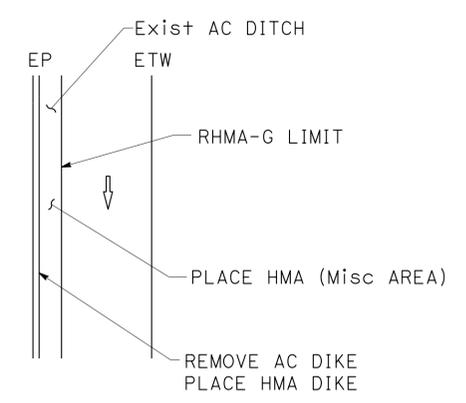
OVERSIDE DRAIN



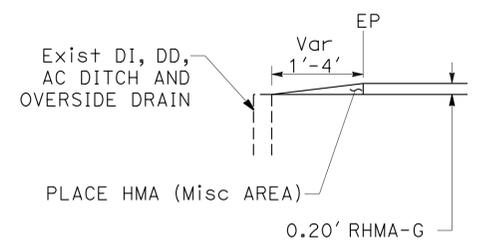
SECTION A-A



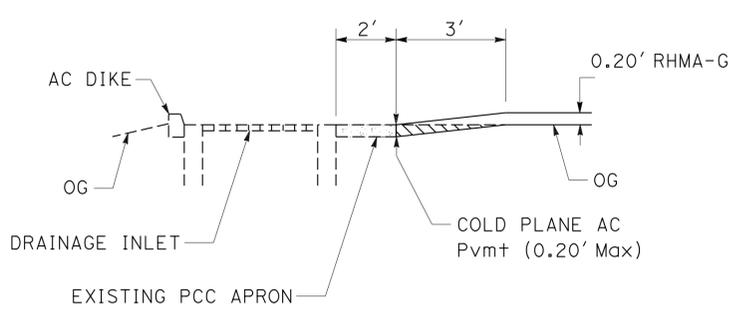
SECTION C-C



AC DITCH

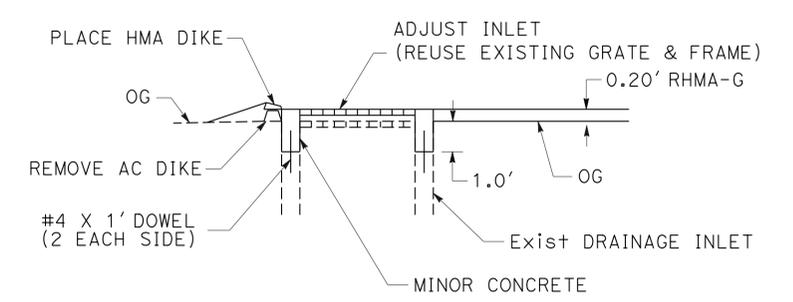


PROFILE



SECTION B-B

APRON INLET



SECTION D-D

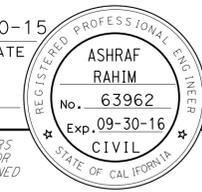
ADJUST INLET

DRAINAGE FACILITY CONFORM

CONSTRUCTION DETAILS

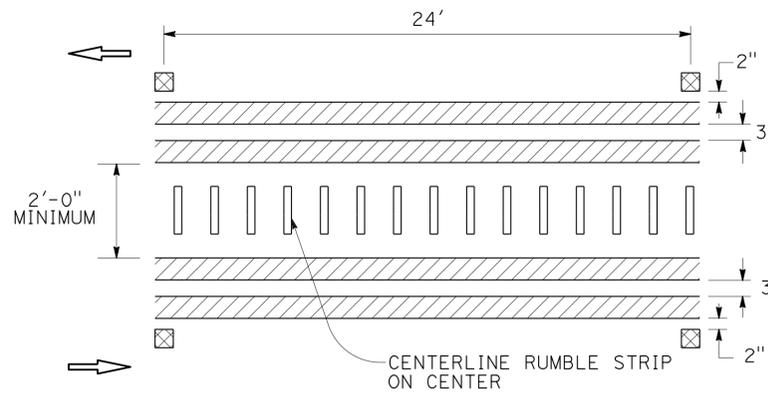
C-3

NO SCALE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	6	68
			11-20-15		
REGISTERED CIVIL ENGINEER			DATE		
11-30-15			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>					

LEGEND (THIS SHEET ONLY):

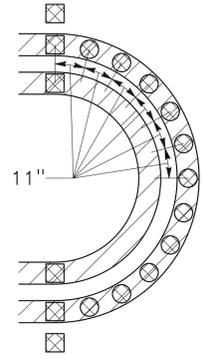
-  4" YELLOW THERMOPLASTIC TRAFFIC STRIPE (SPRAYABLE)
-  TYPE D TWO-WAY YELLOW RETROREFLECTIVE Pvm+ Mkr
-  TYPE H ONE-WAY YELLOW RETROREFLECTIVE Pvm+ Mkr
-  TYPE AY YELLOW NON-REFLECTIVE Pvm+ Mkr
-  DIRECTION OF TRAFFIC



**DETAIL 29
WITH CENTERLINE RUMBLE STRIP**

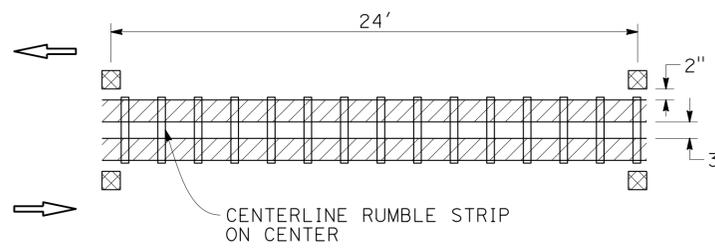


SECTION A-A SECTION B-B

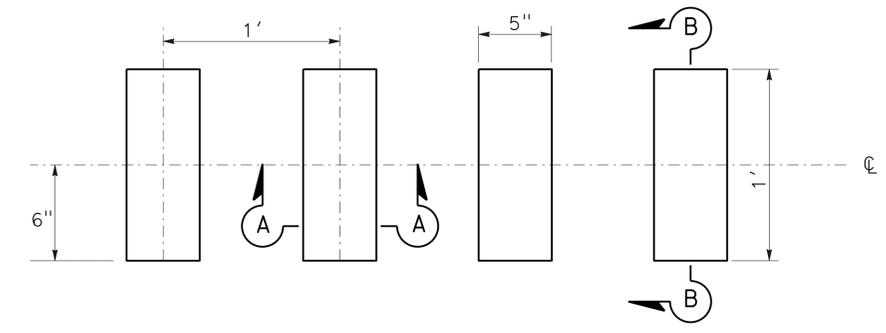


**DETAIL BN
ISLAND BULL NOSE**

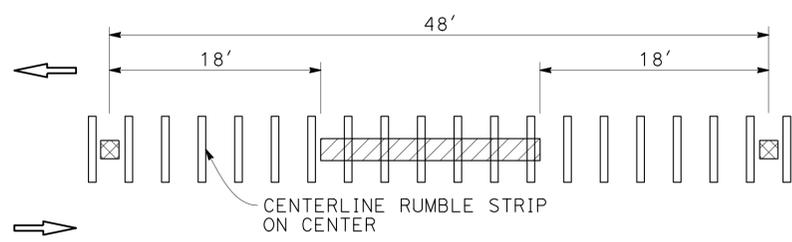
PM 19.87
PM 19.89



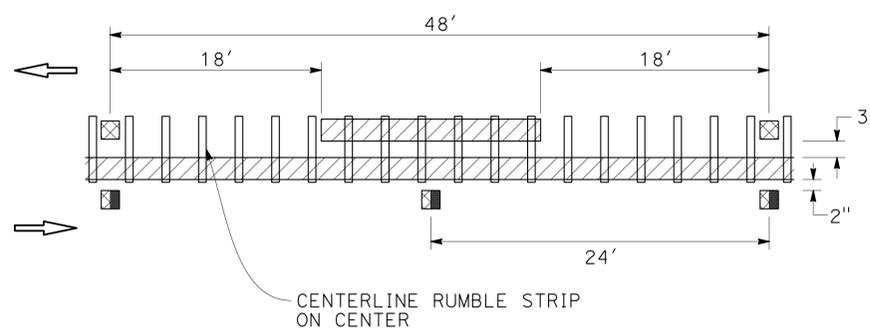
**DETAIL 22
WITH CENTERLINE RUMBLE STRIP**



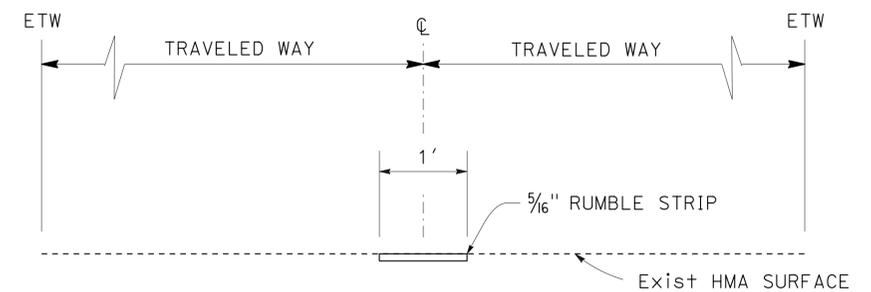
**CENTERLINE RUMBLE STRIP
PLAN**



**DETAIL 6
WITH CENTERLINE RUMBLE STRIP**



**DETAIL 19
WITH CENTERLINE RUMBLE STRIP**



CENTERLINE RUMBLE STRIP PLACEMENT

CONSTRUCTION DETAILS

NO SCALE

C-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION DESIGN
 Et Caltrans
 FUNCTIONAL SUPERVISOR JOHN H FOUCHÉ
 CALCULATED/DESIGNED BY CHECKED BY
 CHRIS BAAB ASHRAF RAHIM
 REVISOR BY DATE REVISOR
 REVISOR BY DATE REVISOR

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	7	68

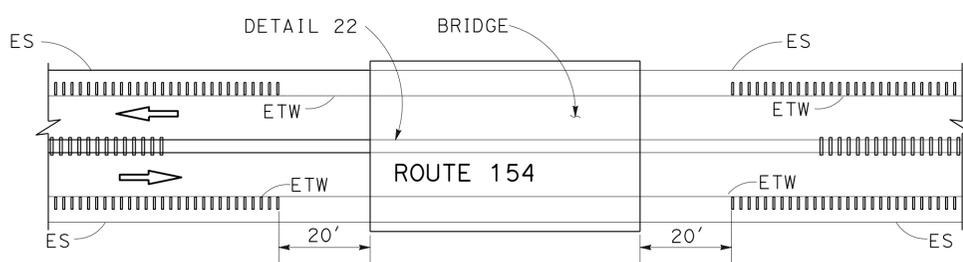
REGISTERED CIVIL ENGINEER	DATE
11-20-15	11-20-15
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
ASHRAF RAHIM
No. 63962
Exp. 09-30-16
CIVIL

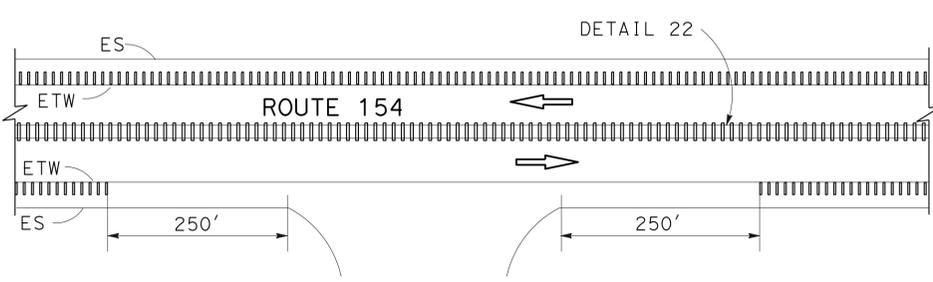
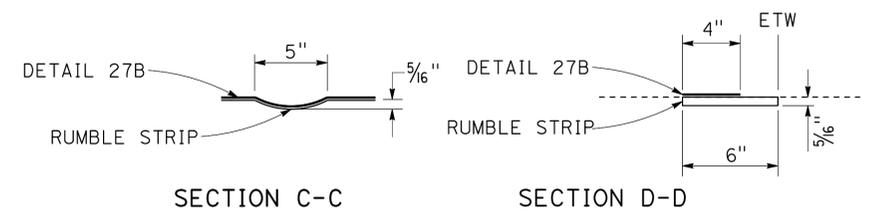
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NOTES:

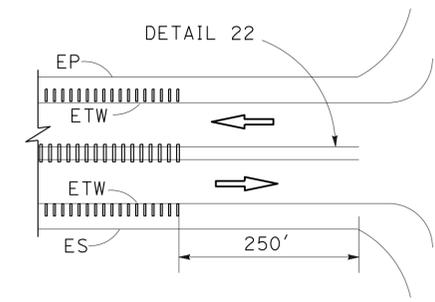
1. DO NOT PLACE RUMBLE STRIPS WHERE THE SHOULDER WIDTH IS LESS THAN 5'.



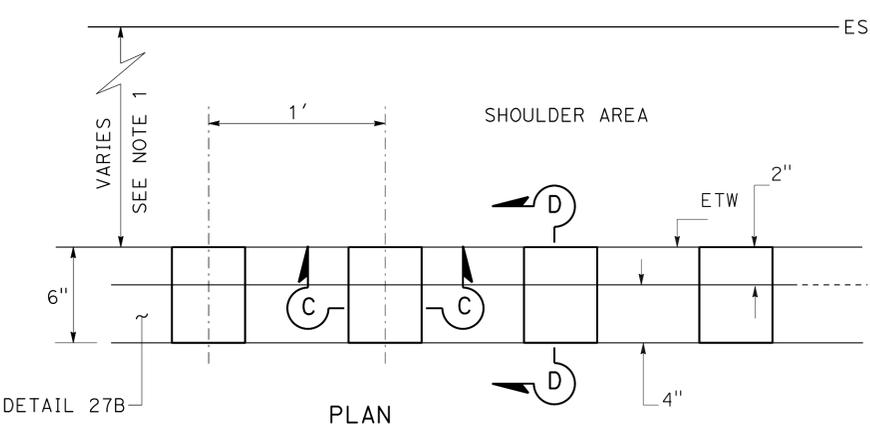
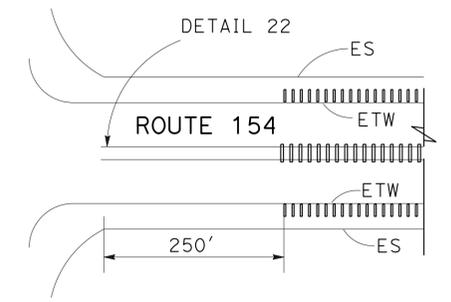
RUMBLE STRIP AT BRIDGE (Typ)



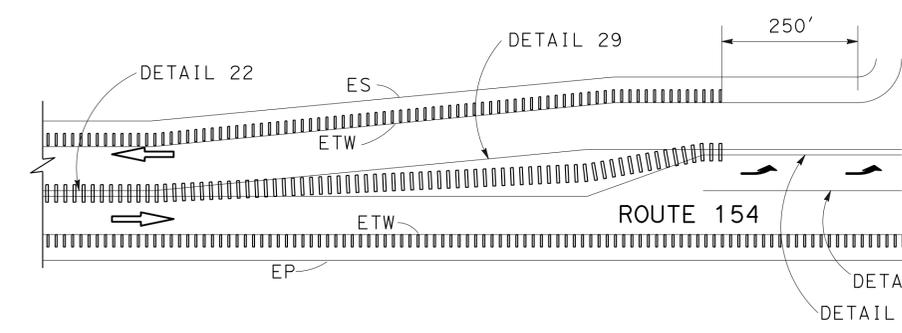
RUMBLE STRIP AT DRIVEWAY (Typ)



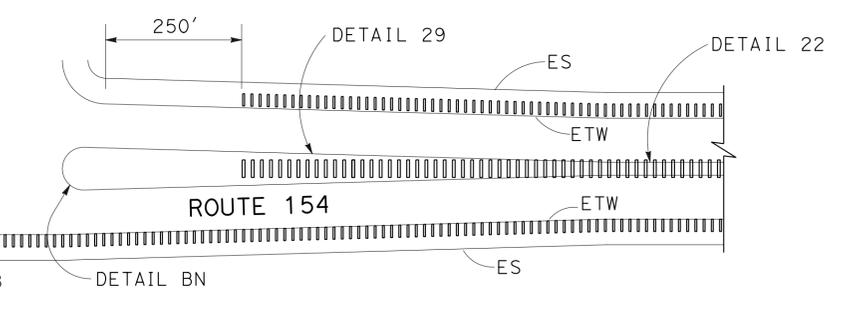
RUMBLE STRIP AT INTERSECTION WITHOUT CHANNELIZATION (Typ)



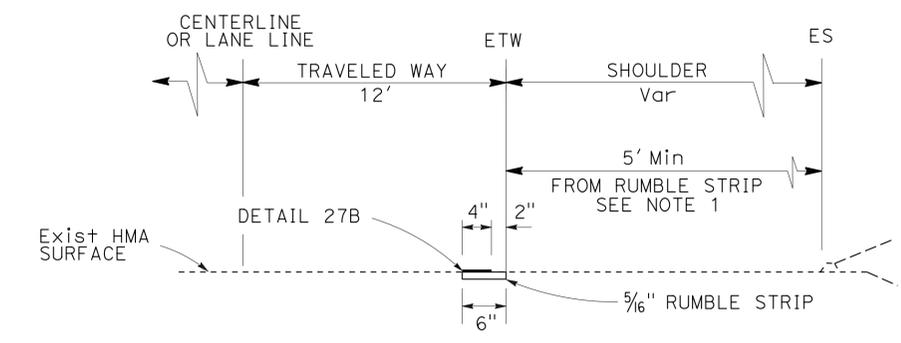
SHOULDER RUMBLE STRIP



RUMBLE STRIP AT INTERSECTION WITH LEFT TURN CHANNELIZATION (Typ)



RUMBLE STRIP AT INTERSECTION WITH LEFT TURN CHANNELIZATION AND ACCELERATION LANE (Typ)



SHOULDER RUMBLE STRIP PLACEMENT RIGHT OF DIRECTION OF TRAVEL PM R5.9/12.2

CONSTRUCTION DETAILS

C-5

NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION DESIGN

REVISOR: CHRIS BAAB, ASHRAF RAHIM, JOHN H FOUCHÉ

LAST REVISION DATE PLOTTED => 22-MAR-2016
11-20-15 TIME PLOTTED => 15:24

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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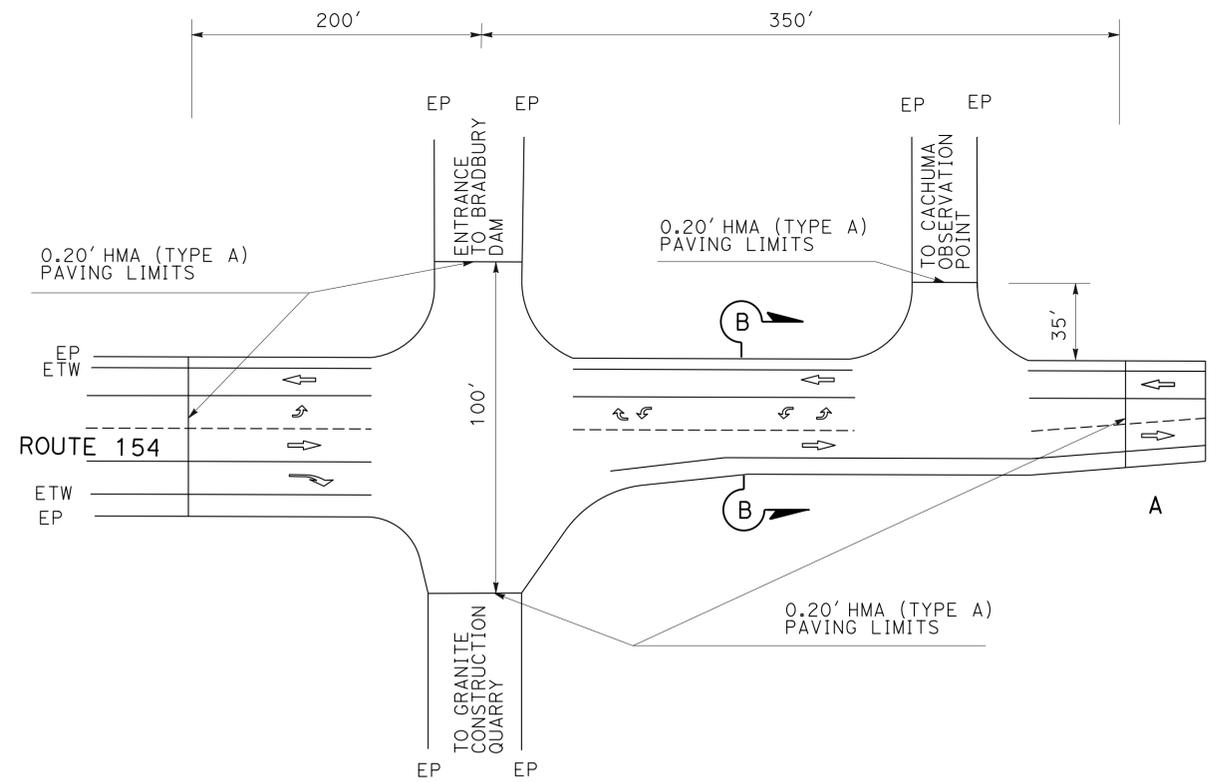
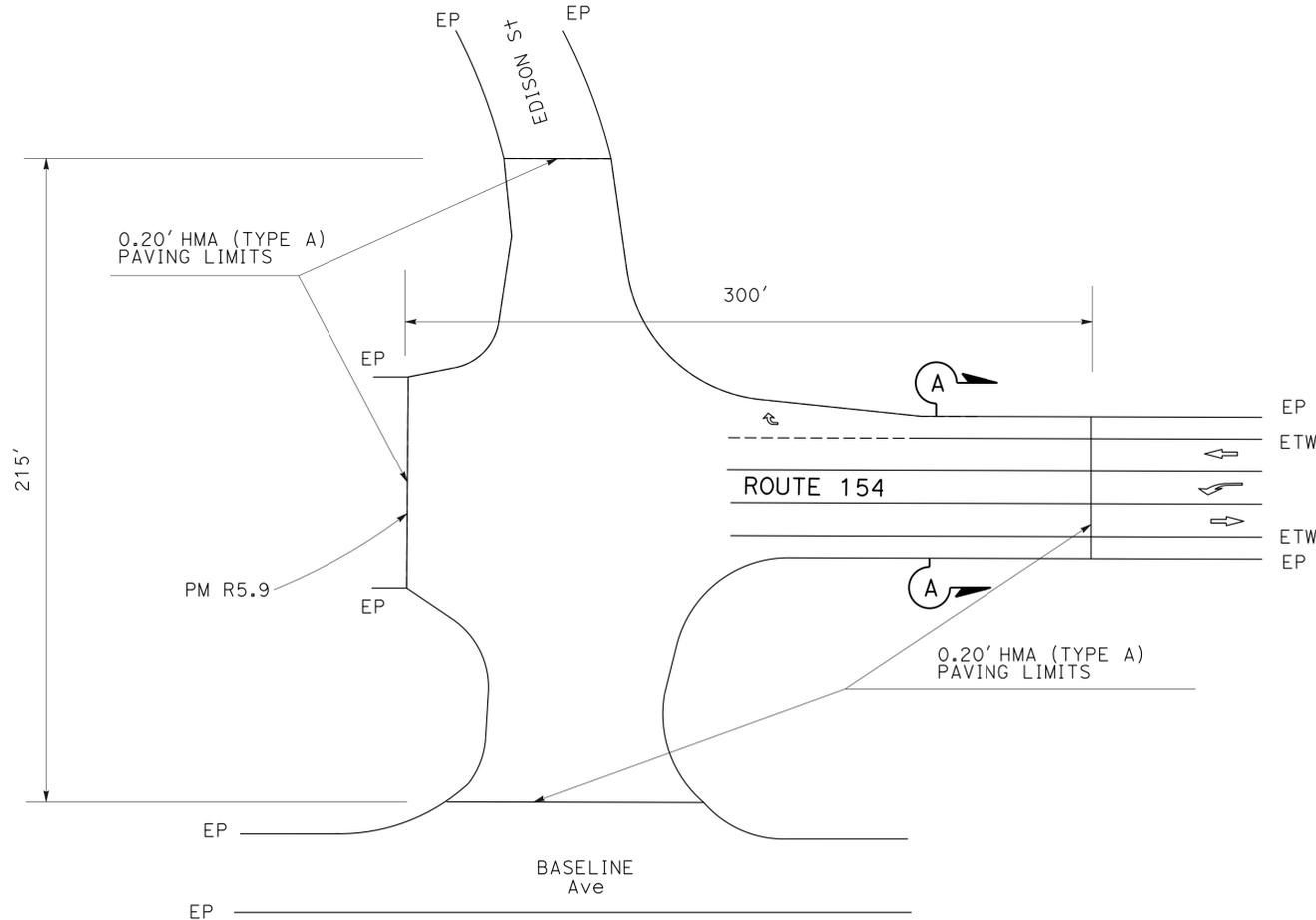
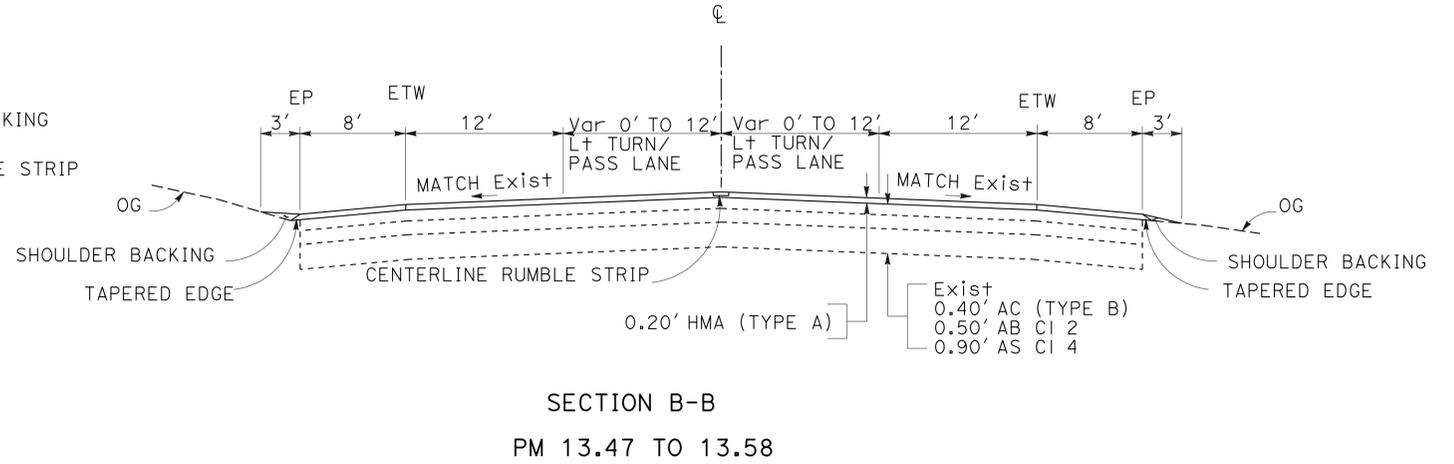
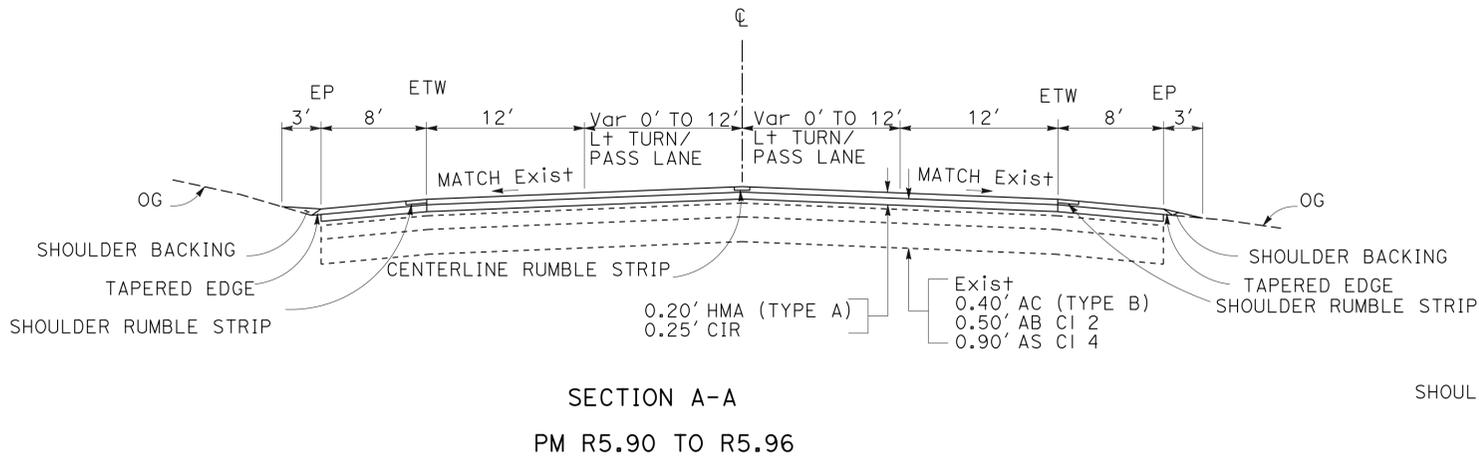
REGISTERED CIVIL ENGINEER	DATE	11-20-15
PLANS APPROVAL DATE		11-30-15

REGISTERED PROFESSIONAL ENGINEER	STATE OF CALIFORNIA
ASHRAF RAHIM	No. 63962
Exp. 09-30-16	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.

NOTES (THIS SHEET ONLY) :

FOR PAVING LIMITS ON LOCAL ROADS SEE SHEET C-2



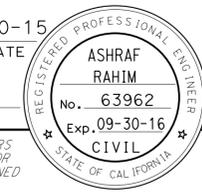
LIMITS OF HMA (TYPE A) OVERLAY AT EDISON St INTERSECTION (PM R5.9)

LIMITS OF HMA (TYPE A) OVERLAY AT CACHUMA OBSERVATION POINT (PM 13.55)

CONSTRUCTION DETAILS

NO SCALE

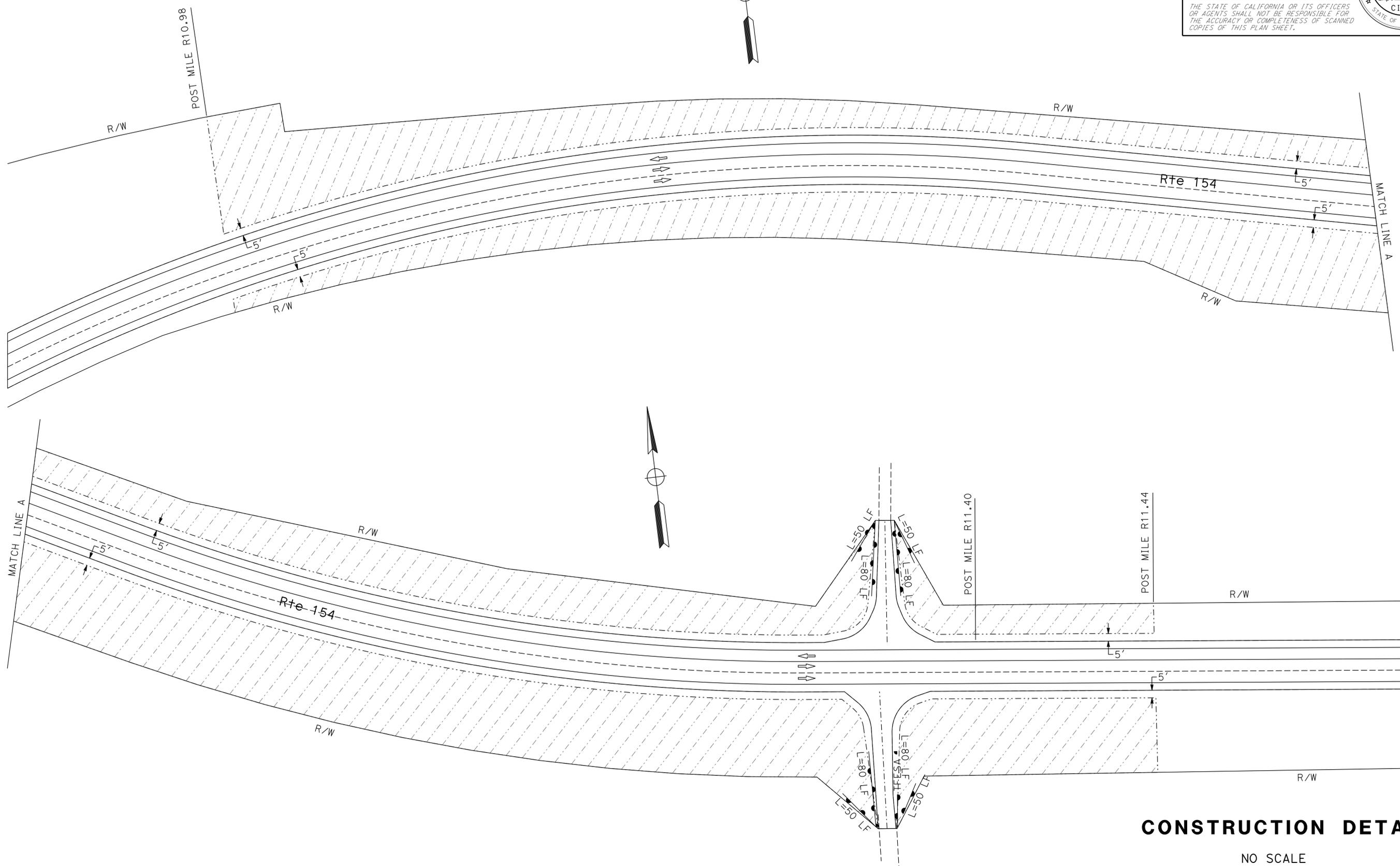
C-6

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	9	68
			11-20-15	DATE	
REGISTERED CIVIL ENGINEER					
11-30-15			PLANS APPROVAL DATE		
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LEGEND (THIS SHEET ONLY):

 CONSTRUCTION PARKING NOT ALLOWED (SPA2)

 TFESA  PLACE Temp FENCE (TYPE ESA)



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN

FUNCTIONAL SUPERVISOR
 JOHN H FOUICHE

CALCULATED/DESIGNED BY
 CHECKED BY

CHRIS BAAB
 ASHRAF RAHIM

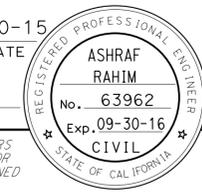
REVISED BY
 DATE REVISED

CONSTRUCTION DETAILS

NO SCALE

C-7

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	10	68

 REGISTERED CIVIL ENGINEER DATE 11-20-15	
PLANS APPROVAL DATE 11-30-15	

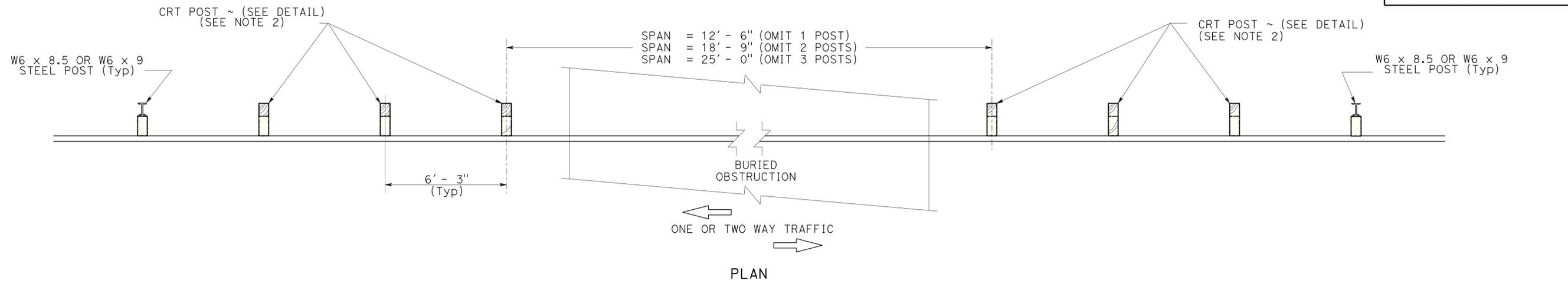
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NOTES (THIS SHEET ONLY):

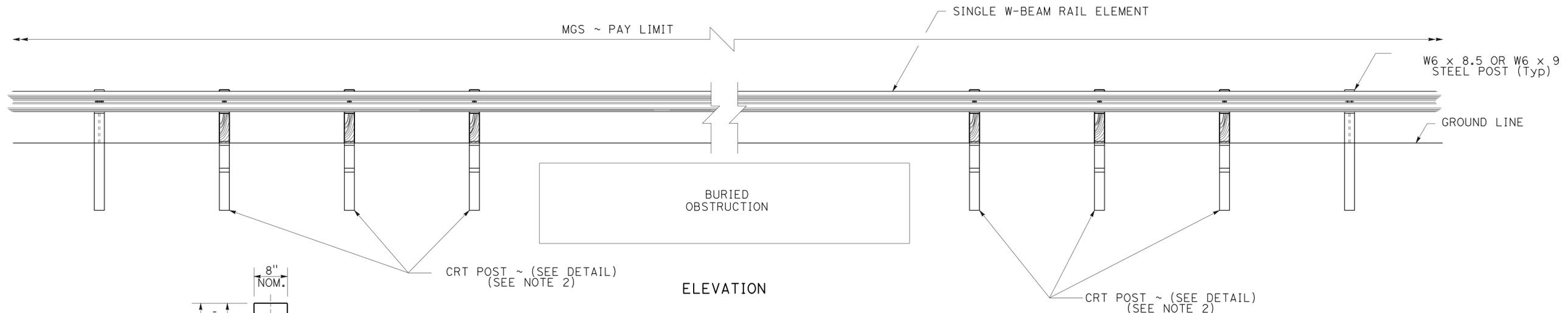
- For additional details not shown on this plan, refer to RSP A77L1 and RSP A77L2.
- CRT post to be wood only.

ABBREVIATIONS:

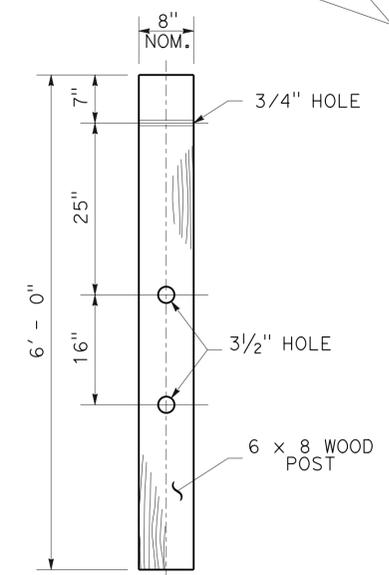
CRT CONTROLLED RELEASING TERMINAL.



PLAN



ELEVATION



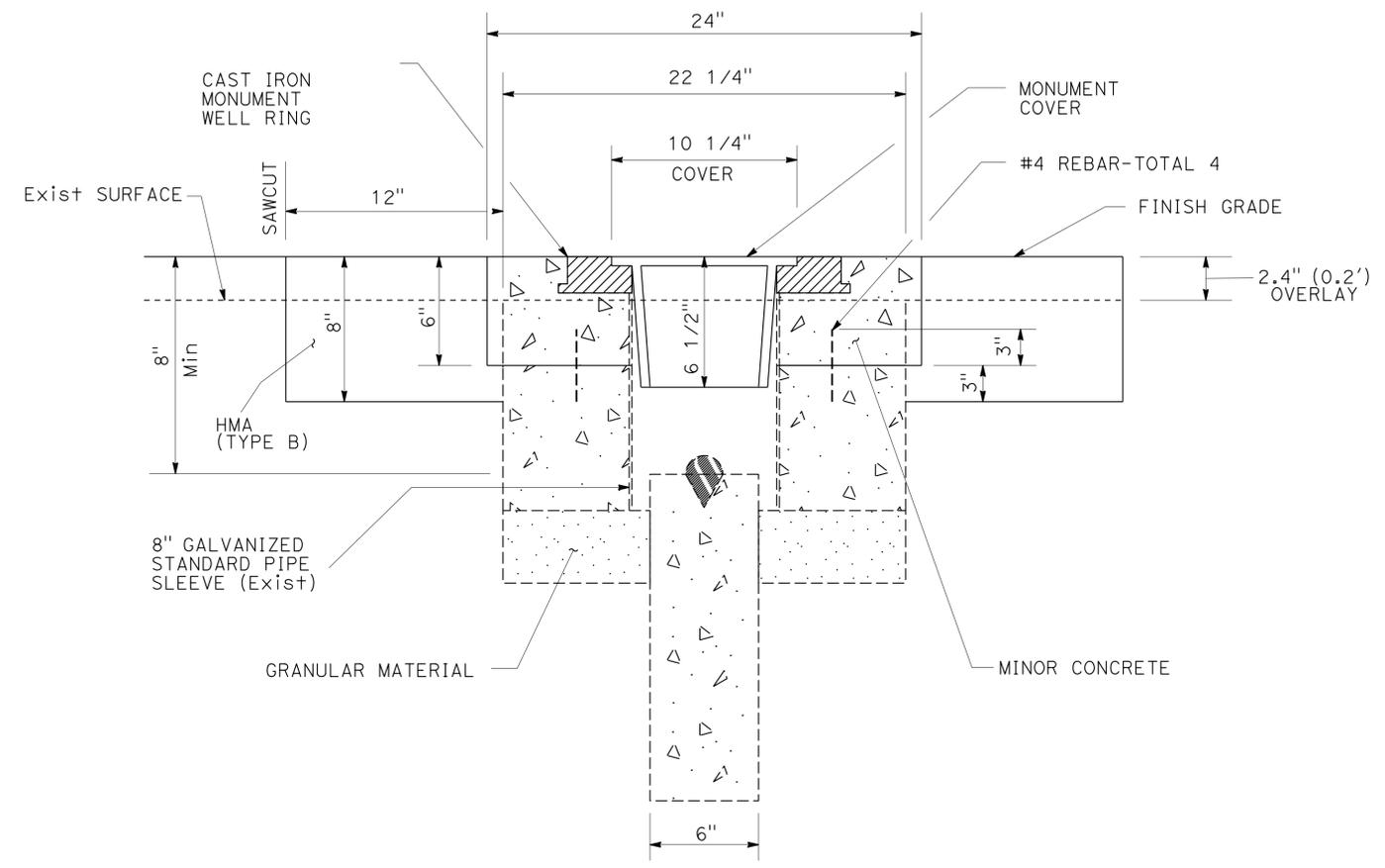
CONTROLLED RELEASING TERMINAL (CRT) POST DETAIL

CONSTRUCTION DETAILS
C-8
NO SCALE

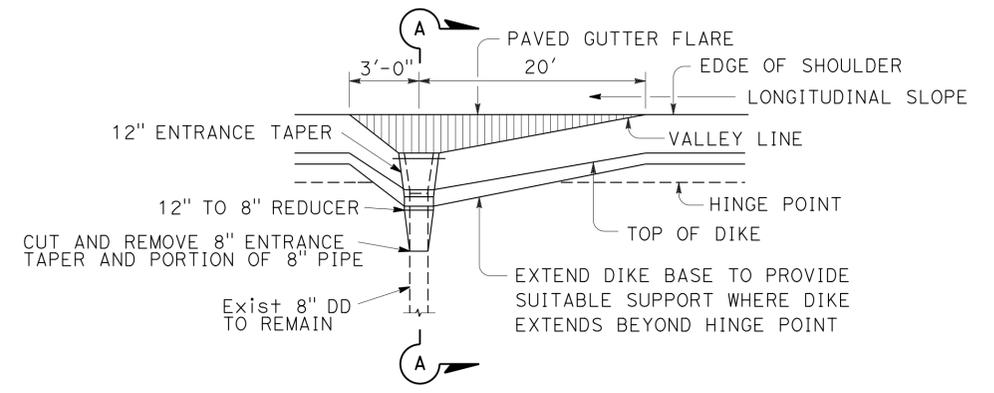
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 SCOTT MORRIS CHRIS BAAB
 REVISED BY DATE REVISED
 BORDER LAST REVISED 7/2/2010

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	11	68
			11-20-15	DATE	
REGISTERED CIVIL ENGINEER			PROFESSIONAL ENGINEER		
11-30-15			No. 63962		
PLANS APPROVAL DATE			Exp. 09-30-16		
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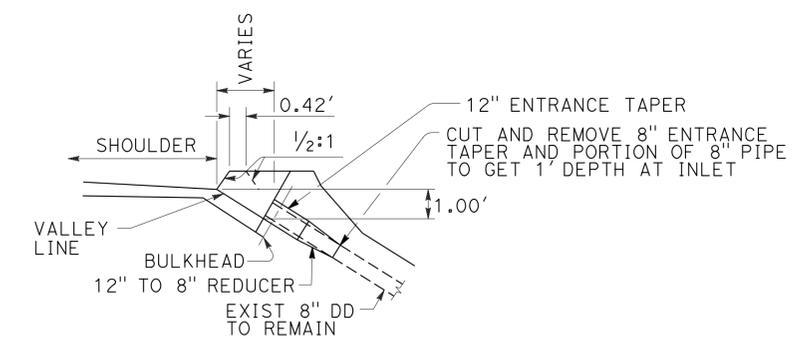
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 CALCULATED/DESIGNED BY: GLENN ESPINO
 CHECKED BY: ASHRAF RAHIM
 REVISED BY: GLENN ESPINO
 DATE REVISED: ASHRAF RAHIM



ADJUST MONUMENT COVER



PLAN



SECTION A-A

MODIFY DOWNDRAIN

NOTE: ALL PIPE JOINTS TO BE DOWNDRAIN TYPE PER STANDARD PLAN D97G

CONSTRUCTION DETAILS

NO SCALE

C-9

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	12	68

<i>Ashraf</i>	11-20-15
REGISTERED CIVIL ENGINEER	DATE
11-30-15	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
ASHRAF RAHIM
No. 63962
Exp. 09-30-16
CIVIL

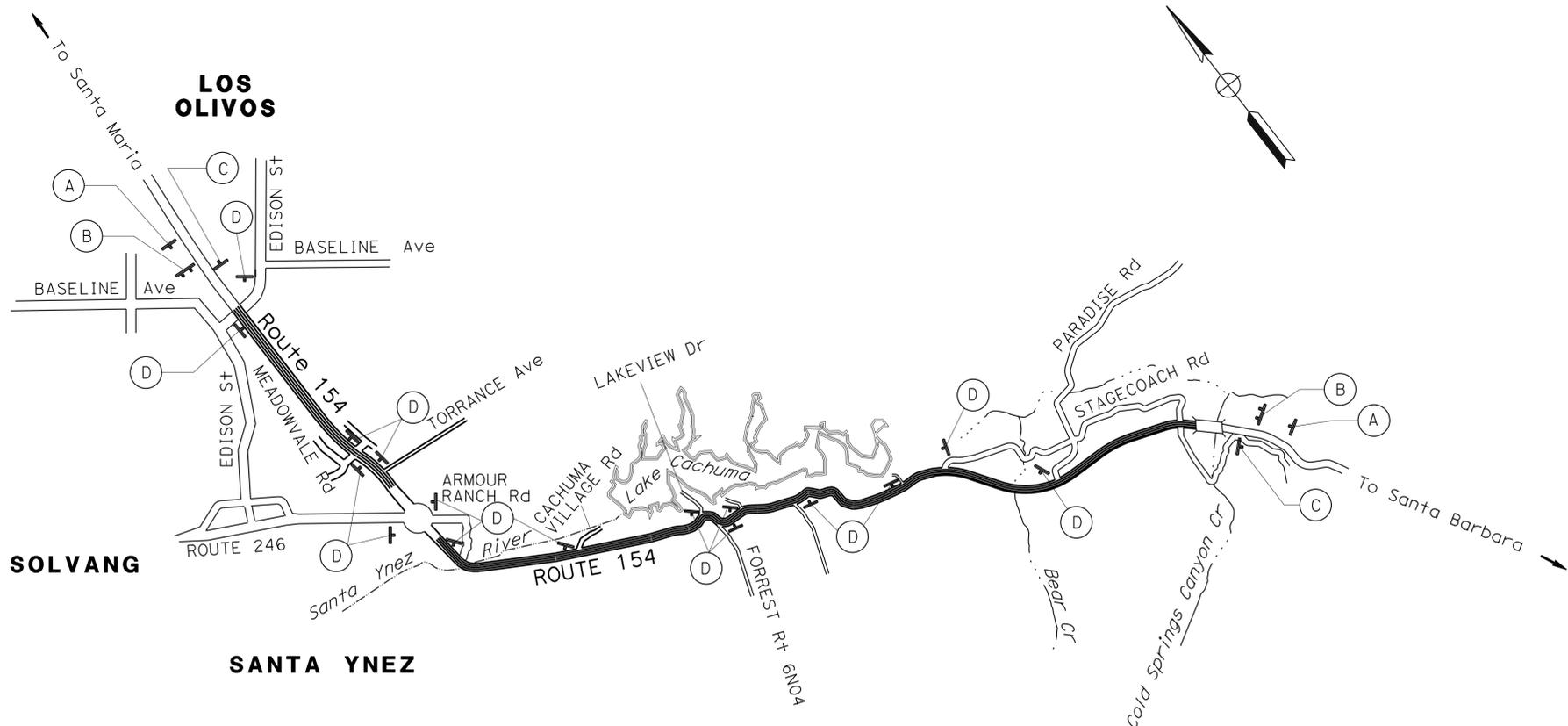
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTES:

1. LOCATION OF CONSTRUCTION AREA SIGNS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.
2. FOR ADDITIONAL CONSTRUCTION AREA SIGNS, SEE TRAFFIC HANDLING PLANS.
3. THE SIZE AND NUMBER OF POST ARE SHOWN FOR SIGNS DESIGNATED AS STATIONARY MOUNTED.

STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN No.	SIGN CODE	PANEL SIZE	SIGN MESSAGE	No. OF POSTS AND SIZE	No. OF SIGNS
(A)	G20-1	36" x 18"	ROAD WORK NEXT 17 MILES	1 - 4" x 4"	2
(B)	W20-1	60" x 60"	ROAD WORK AHEAD	2 - 6" x 6"	2
(C)	G20-2	60" x 24"	END ROAD WORK	2 - 4" x 4"	2
(D)	W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 4"	16



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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 GLENN ESPINO
 REVISED BY: DATE REVISED:

CONSTRUCTION AREA SIGNS
NO SCALE
CS-1

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

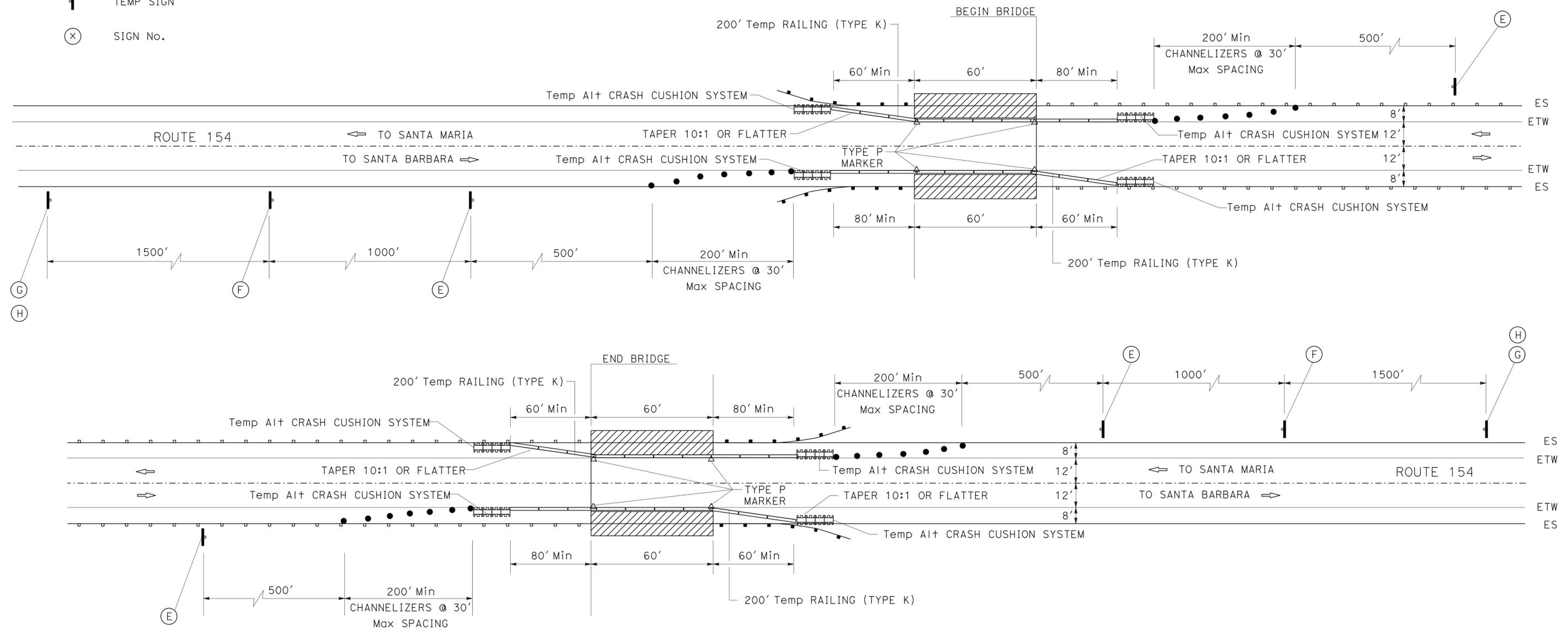
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	13	68
			11-20-15	DATE	
REGISTERED CIVIL ENGINEER			ASHRAF RAHIM No. 63962 Exp. 09-30-16 CIVIL		
11-30-15 PLANS APPROVAL DATE			THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.		

NOTES:

- EXACT LOCATION OF SIGNS WILL BE DETERMINED BY THE ENGINEER.
- ONE SIDE WORK (EB OR WB) TO BE COMPLETED AT A TIME.

LEGEND

-  AREA OF WORK
-  CHANNELIZER (SURFACE MOUNTED)
-  TEMP AIT+ CRASH CUSHION
-  TEMP SIGN
-  SIGN No.



SHOULDER CLOSURE AT BRIDGE TRANSITION

SANTA YNEZ RIVER BRIDGE
PM R10.12

APPROVED FOR TRAFFIC HANDLING WORK ONLY

TRAFFIC HANDLING PLAN
NO SCALE
TH-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 DESIGN
 Et Caltrans

REVISOR BY DATE

CHRIS BAAB ASHRAF RAHIM

CALCULATED/DESIGNED BY CHECKED BY

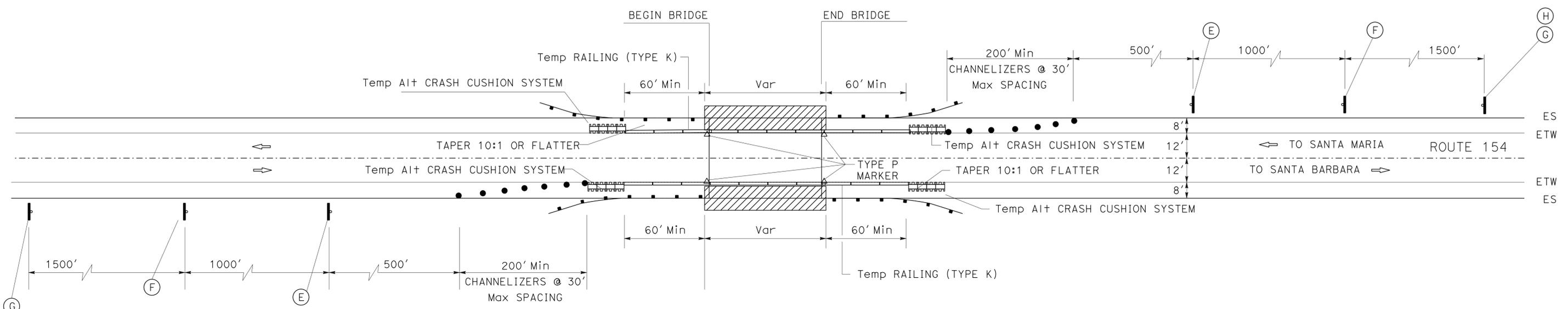
FUNCTIONAL SUPERVISOR JOHN H FOUICHE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	14	68

REGISTERED CIVIL ENGINEER	DATE
11-20-15	11-20-15

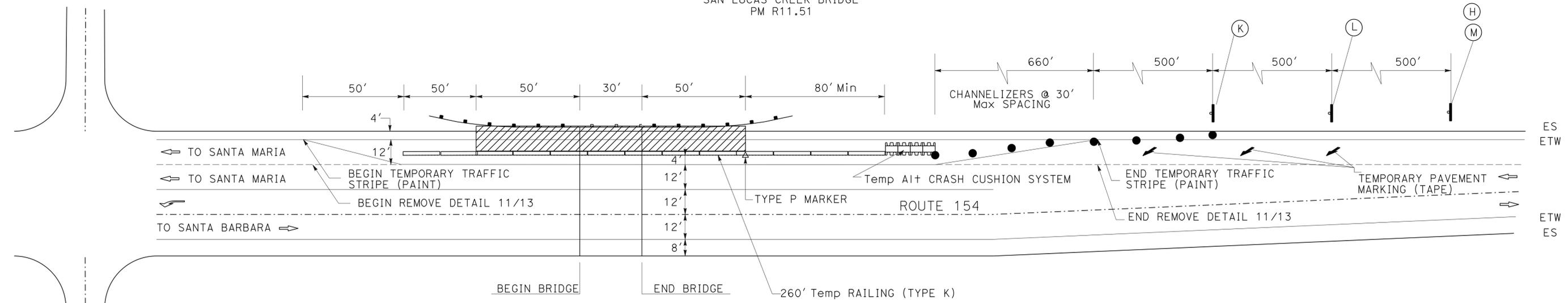
REGISTERED PROFESSIONAL ENGINEER	DATE
ASHRAF RAHIM	11-20-15
No. 63962	
Exp. 09-30-16	
CIVIL	

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SHOULDER CLOSURE AT BRIDGE TRANSITION

SANTA AGUEDA CREEK BRIDGE
PM R9.97
SAN LUCAS CREEK BRIDGE
PM R11.51



SHOULDER CLOSURE AT BRIDGE TRANSITION

RANCH UC
PM 18.83

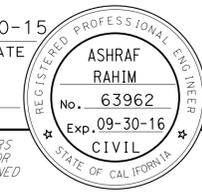
APPROVED FOR TRAFFIC HANDLING WORK ONLY

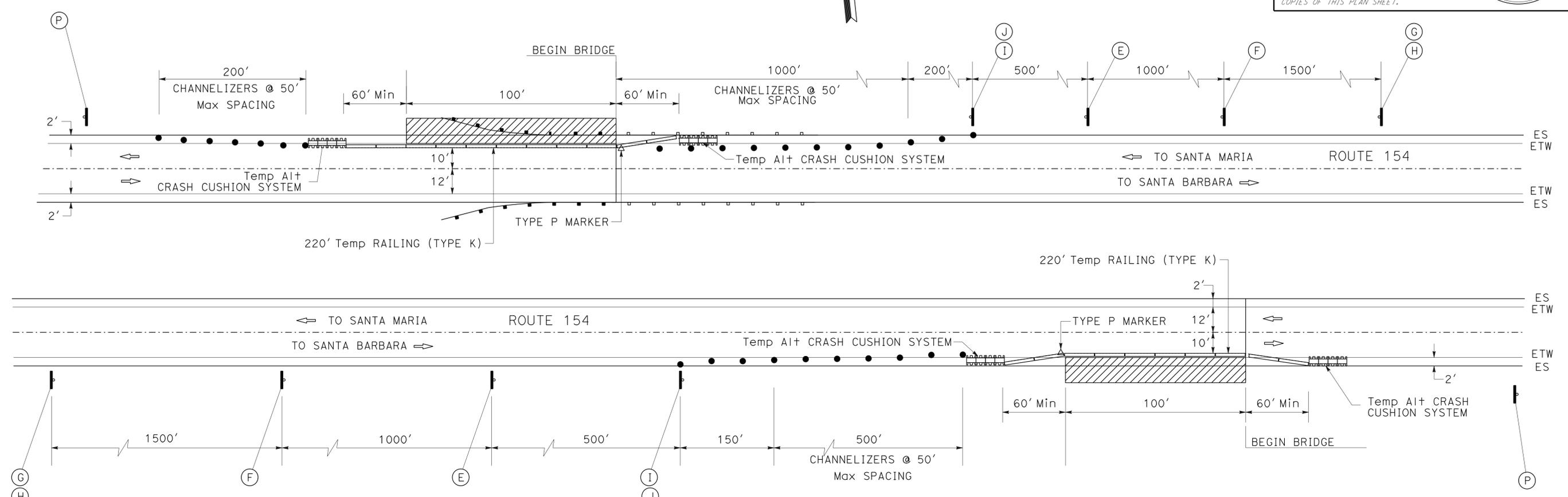
TRAFFIC HANDLING PLAN
NO SCALE
TH-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
Caltrans

REVISOR: CHRIS BAAB, ASHRAF RAHIM
CALCULATED/DESIGNED BY: ASHRAF RAHIM
CHECKED BY: ASHRAF RAHIM

FUNCTIONAL SUPERVISOR: JOHN H FOUICHE

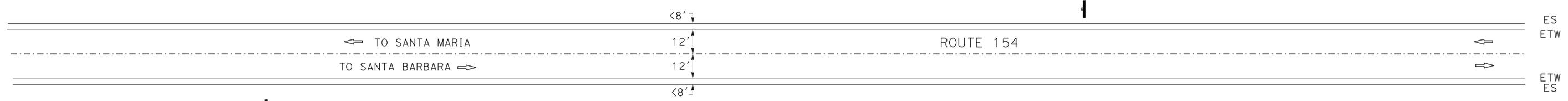
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	15	68
			11-20-15		
REGISTERED CIVIL ENGINEER			DATE		
11-30-15			PLANS APPROVAL DATE		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



SHOULDER CLOSURE AT BRIDGE TRANSITION

COLD SPRING CANYON BRIDGE
PM 22.95

WB
 PM 12.04 TO 13.64
 PM 14.59 TO 15.41
 PM 17.40 TO 19.27
 PM 21.19 TO 22.90



LOCATIONS FOR W11-1 AND W16-1P

EB
 PM 12.04 TO 17.46
 PM 20.16 TO 22.90

APPROVED FOR TRAFFIC HANDLING WORK ONLY

TRAFFIC HANDLING PLAN TH-3
NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION DESIGN
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FUNCTIONAL SUPERVISOR: JOHN H FOUCHÉ
 CALCULATED/DESIGNED BY: ASHRAF RAHIM
 CHECKED BY: CHRIS BAAB
 REVISED BY: DATE REVISIONS

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	16	68

11-20-15
 REGISTERED CIVIL ENGINEER DATE
 11-30-15
 PLANS APPROVAL DATE

ASHRAF RAHIM
 No. 63962
 Exp. 09-30-16
 CIVIL

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NOTES:

1. EXACT LOCATION OF SIGNS WILL BE DETERMINED BY THE ENGINEER.

STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN No.	SIGN CODE		PANEL SIZE	SIGN MESSAGE	No. OF POSTS AND SIZE	No. OF SIGNS
	FEDERAL	CALIFORNIA				
(E)		C30A	48" X 48"	SHOULDER CLOSED	1 - 4" x 6"	10
(F)	W21-5b		48" X 48"	RIGHT SHOULDER CLOSED 1500'	1 - 4" x 6"	8
(G)	W21-5		48" X 48"	SHOULDER WORK	1 - 4" x 6"	8
(H)	W10-1P		18" X 24"	SHARE THE ROAD	1 - 4" x 6"	9
(I)		C12	48" X 48"	NARROW LANE	1 - 4" x 6"	2
(J)	W13-1P		30" X 30"	ADVISORY SPEED (45)	1 - 4" x 6"	2
(K)	W4-2		48" X 48"	LANE ENDS	1 - 4" x 6"	1
(L)		C20R	48" X 48"	RIGHT LANE CLOSE AHEAD	1 - 4" x 6"	1
(M)	W20-1		48" X 48"	ROAD WORK AHEAD	1 - 4" x 6"	1
(N)	W16-1P		18" X 24"	SHARE THE ROAD	1 - 4" x 6"	6
(O)	W11-1		18" X 24"	BICYCLE CROSSING	1 - 4" x 6"	6
(P)		R3(CA)	24" X 30"	END SPEED LIMIT (45)	1 - 4" x 6"	2

TRAFFIC HANDLING QUANTITIES

LOCATION	DIRECTION	CHANNELIZER (SURFACE MOUNTED)	TEMPORARY ALTERNATIVE CRASH CUSHION SYSTEM	TEMPORARY RAILING (TYPE K)	TEMPORARY TRAFFIC STRIPE (PAINT)	TEMPORARY PAVEMENT MARKING (TAPE)
		EA	EA	LF	LF	SQFT
SANTA AGUEDA CREEK BRIDGE	EB	14	2	320		
SANTA AGUEDA CREEK BRIDGE	WB	14	2	320		
SANTA YNEZ RIVER BRIDGE	EB	14	4	400		
SANTA YNEZ RIVER BRIDGE	WB	14	4	400		
SAN LUCAS CREEK BRIDGE	EB	14	2	200		
SAN LUCAS CREEK BRIDGE	WB	14	2	200		
RANCH UC BRIDGE	WB	40	1	260	982	126
COLD SPRINGS BRIDGE	EB	13	2	220		
COLD SPRINGS BRIDGE	WB	28	2	220		
TOTAL		165	21	2540	982	126

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

**TRAFFIC HANDLING QUANTITIES
THQ-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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 REVISED BY: DATE REVISED:

MIDWEST GUARDRAIL SYSTEMS, END TREATMENTS

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	20	68

REGISTERED CIVIL ENGINEER DATE 11-20-15	
11-30-15 PLANS APPROVAL DATE	

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DIRECTION	LOCATION	TREATED WOOD WASTE	REMOVE GUARDRAIL	MIDWEST GUARDRAIL SYSTEM (STEEL POST)	GUARD RAILING DELINEATOR	VEGETATION CONTROL (MINOR CONCRETE)	TRANSITION RAILING (TYPE WB-31)	END ANCHOR ASSEMBLY (TYPE SFT)	ALTERNATIVE IN-LINE TERMINAL SYSTEM	ALTERNATIVE FLARED TERMINAL SYSTEM	BURIED POST END ANCHOR (N)	LAYOUT TYPE (N)	REMARKS	
		LB	LF	LF	EA	SQYD	EA	EA	EA	EA	EA	EA		
EASTBOUND	PM R9.96 TO R9.97	813	74	31.5	3	24.7	1			1		12B	Trans RAILING TO SANTA AGUEDA CREEK BRIDGE	
	PM R10.01 TO R10.12	6370	580	570.0	4	193.3	2					12D	Trans RAILING FROM SANTA AGUEDA Cr TO SANTA YNEZ Riv Br	
	PM R10.31 TO R10.32	714	65	22.5	3	21.7	1			1		12BB	Trans RAILING TO SANTA YNEZ Riv BRIDGE	
	PM R10.58 TO R10.60	1560	142	67.0	3	47.3			1	1		11H	7' x 10' RCB at PM 10.58 - NESTING MAY BE REQUIRED	
	PM R11.50 TO R11.51	967	88	45.5	3	29.3	1			1		12B	Trans RAILING TO SAN LUCAS CREEK BRIDGE	
	PM R11.53 TO R11.54	824	75	76.0	3	14.6					1	12CC	Trans RAILING TO SAN LUCAS CREEK BRIDGE	
	PM 12.82 TO 12.91	5656	515	471.0	3	65.8		1			1	11C		
	PM 14.36 TO 14.44	4723	430	398.5	3	47.8				1	1	11G		
	PM 15.33 TO 15.38	2823	257	201.0	6	57.1			1	1		11H		
	PM 15.40 TO 15.43	1758	160	85.0	3	49.8		1		1		11B		
	PM 16.83 TO 16.92	4976	453	378.0	3	93.1					2	11E		
	PM 18.82 TO 18.85	2131	194	119.0	3	64.7					2	11E		
	PM 19.88 TO 20.20	824	1,647	1,547.0	3	549.0			2			11D		
	PM 20.64 TO 20.70	3603	328	340.0	3	72.9					2	11F	36" HDPE AT PM 20.65 - NESTING WILL BE REQUIRED	
	PM 21.26 TO 21.43	9786	891	791.0	7	198.0			2			11D		
	PM 21.45 TO 21.58	7853	715	640.0	3	158.9				2		11E		
	PM 21.88 TO 22.06	10,071	917	861.0	3	203.8			1	1		11H		
	PM 22.93 TO 22.95	824	88	45.5	3	29.3	1		1			12A	Trans RAILING TO COLD SPRING CANYON BRIDGE	
	WESTBOUND	PM R9.94 TO R9.96	813	74	31.5	3	24.7	1			1		12BB	Trans RAILING TO SANTA AGUEDA CREEK BRIDGE
		PM R10.01 TO R10.02	703	64	21.5	3	21.3	1		1			12A	Trans RAILING TO SANTA AGUEDA CREEK BRIDGE
PM R10.10 TO R10.12		758	69	26.5	3	23.0	1			1		12BB	Trans RAILING TO SANTA YNEZ Riv BRIDGE	
PM R10.31 TO R10.41		5547	505	462.5	3	168.3	1			1		12B	Trans RAILING TO SANTA YNEZ Riv BRIDGE	
PM R11.50 TO R11.51		692	63	20.5	3	21.0	1	1				12DD	Trans RAILING TO SAN LUCAS CREEK BRIDGE	
PM R11.52 TO R11.55		1922	175	132.5	3	58.3	1			1		12B	Trans RAILING TO SAN LUCAS CREEK BRIDGE	
PM 12.43 TO 12.58		9116	830	798.5	7	276.7				1	1	11L		
PM 14.73 TO 14.81		3913	400	356.0	5	44.4			1		1	11K		
PM 15.03 TO 15.11		4393	400	368.5	5	133.3				1	1	11G	18" CSP AT PM 15.10 - NESTING MAY BE REQUIRED	
PM 15.40 TO 15.42		1648	150	75.0	3	46.3					2	11E		
PM 17.78 TO 17.89		6041	550	518.5	6	152.8				1	1	11G	24" CSP AT PM 17.88 - NESTING MAY BE REQUIRED	
PM 18.81 TO 18.83		681	62	19.5	3	20.7	1			1		12BB	Trans RAILING TO RANCH UC	
PM 18.83 TO 18.86		1209	110	111.0	3	36.7	1				1	12C	Trans RAILING TO RANCH UC	
PM 20.09 TO 20.11		813	124	68.0	3	27.6		1		1		11B		
PM 20.11 TO 20.17		1744	290	290.0	3	96.7		1			1	11C		
PM 20.64 TO 20.68		2252	205	149.0	3	68.3		1		1		11B	36" HDPE AT PM 20.65 - NESTING MAY BE REQUIRED	
PM 20.96 TO 21.05		5239	477	389.5	4	106.0		1	1			11A		
PM 21.49 TO 21.56		6700	610	578.5	3	169.4		1			1	11C		
PM 21.60 TO 21.74		7592	760	716.0	7	211.1				1	1	11K		
PM 21.90 TO 22.06		9182	836	780.0	3	232.2		1		1		11B		
PM 22.22 TO 22.28	3021	350	306.0	3	38.9		1			1	11C			
PM 22.56 TO 22.63	824	365	265.0	3	81.1			2			11D			
PM 22.66 TO 22.95	17,023	1550	1,507.5	13	344.4	1			1		12BB	Trans RAILING TO COLD SPRING CANYON BRIDGE		
TOTALS		158,102	16,638	14,681.0	157	4,324.3	15	10	14	28	14			

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

ADJUST PULL BOX *

PM	DIRECTION	PULL BOX		DESCRIPTION	LOCATION
		EA	EA		
R5.90	EB	1		STOP SIGN	EDISON St AND BASELINE Ave
R5.90	WB	1		LUMINAIRE	EDISON St AND BASELINE Ave
R5.92	EB	1		LUMINAIRE	EDISON St AND BASELINE Ave
R5.92	WB	1		STOP SIGN	EDISON St AND BASELINE Ave
R6.01	WB	1		STOP AHEAD WARNING SIGN	0.11 MILE EAST OF EDISON St
14.69	WB	1		LUMINAIRE	LAKEVIEW Dr
14.71	EB	1		LUMINAIRE	LAKEVIEW Dr
TOTAL		7			

* ADJUST PULL BOX TO GRADE

SUMMARY OF QUANTITIES

Q-2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	22	68

11-20-15
 REGISTERED CIVIL ENGINEER DATE
 11-30-15
 PLANS APPROVAL DATE
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PLACE HOT MIX ASPHALT DIKE

DIRECTION	LOCATION	TYPE (A)	TYPE (C)	TYPE (E)	HOT MIX ASPHALT (TYPE A)	REMOVE ASPHALT CONCRETE DIKE
		LF	LF	LF	TON	LF
		EASTBOUND	PM R6.37 TO R6.61	1267		
	PM R6.82 TO R7.11	1531			41.9	1531
	PM R7.13 TO R7.54	2165			59.2	2165
	PM R7.52 TO R7.55			158	4.2	158
	PM R7.55 TO R7.70	792			21.7	792
	PM R8.55 TO R8.60	264			7.2	264
	PM R8.60 TO R8.70			528	13.9	528
	PM R8.70 TO R8.87	898			24.5	898
	PM R8.87 TO R9.11			1230	32.4	1230
	PM R9.11 TO R9.37	1426			39.0	1426
	PM R9.37 TO R9.52			785	20.7	785
	PM R9.52 TO R9.70	950			26.0	950
	PM R9.70 TO R9.91			1109	29.2	1109
	PM R10.61 TO R10.80			1005	26.5	1005
	PM R11.41 TO R11.50	211			5.8	211
	PM R11.50 TO R11.51		53		0.4	53
	PM R12.02 TO R12.25			1214	32.0	1214
	PM 12.30 TO 12.50			1056	27.8	1056
	PM 12.52 TO R12.54	106			2.9	106
	PM 12.57 TO 12.61			211	5.6	211
	PM 12.67 TO 12.69	106			2.9	106
	PM 13.01 TO 13.11			528	13.9	528
	PM 13.16 TO 13.21			264	6.9	264
	PM 13.50 TO 13.60	528			14.4	528
	PM 13.63 TO 13.64	53			1.4	53
	PM 13.66 TO 13.67	53			1.4	53
	PM 13.68 TO 13.75	370			10.1	370
	PM 14.60 TO 14.68	422			11.5	422
	PM 14.69 TO 14.80	581			15.9	581
	PM 14.90 TO 15.00			528	13.9	528
	PM 15.00 TO 15.03	158			4.3	158
	PM 15.49 TO 15.66			370	9.7	370
	PM 15.94 TO 15.95			53	1.4	53
	PM 15.96 TO 16.03			370	9.7	370
	PM 16.04 TO 16.07			158	4.2	158
	PM 16.17 TO 16.21			211	5.6	211
	PM 16.36 TO 16.41	264			7.2	264
	PM 16.49 TO 16.56	370			10.1	370
	PM 16.86 TO 16.88		106		0.8	106
	PM 16.88 TO 16.95	370			10.1	370
	PM 17.36 TO 17.41	264			7.2	264
	PM 17.80 TO 17.90			528	13.9	528
	PM 17.90 TO 18.01	581			15.9	581

PLACE HOT MIX ASPHALT DIKE

DIRECTION	LOCATION	TYPE (A)	TYPE (C)	TYPE (E)	HOT MIX ASPHALT (TYPE A)	REMOVE ASPHALT CONCRETE DIKE
		LF	LF	LF	TON	LF
		EASTBOUND	PM 18.70 TO 18.80	528		
	PM 18.97 TO 19.04			370	9.7	370
	PM 19.18 TO 19.21			158	4.2	158
	PM 19.89 TO 19.90		53		0.4	53
	PM 19.90 TO 19.97	370			10.1	370
	PM 20.11 TO 20.20	475			13.0	475
	PM 20.20 TO 20.61			2165	57.0	2165
	PM 20.61 TO 20.63		106		0.8	106
	PM 20.63 TO 20.70	370			10.1	370
	PM 20.93 TO 21.13			1056	27.8	1056
	PM 21.43 TO 21.44		53		0.4	53
	PM 21.44 TO 21.49	264			7.2	264
	PM 21.69 TO 21.77	422			11.5	422
	PM 21.77 TO 21.80			158	4.2	158
	PM 22.07 TO 22.42	1848			50.5	1848
	PM 22.42 TO 22.60			950	25.0	950
	PM 22.60 TO 22.89	1531			41.9	1531
	PM 22.89 TO 22.93			211	5.6	211
WESTBOUND	PM R7.05 TO R7.55	2640			72.2	2640
	PM R8.60 TO R8.87	1426			39.0	1426
	PM R8.89 TO R9.10			1109	29.2	1109
	PM R9.10 TO R9.38	1478			40.4	1478
	PM R9.38 TO R9.45			370	9.7	370
	PM R9.46 TO R9.79			1742	45.9	1742
	PM R10.04 TO R10.05			53	1.4	53
	PM R10.30 TO R10.38	422			11.5	422
	PM R10.40 TO R10.47	370			10.1	370
	PM R10.92 TO R11.00	422			11.5	422
	PM R11.30 TO R11.49			1003	26.4	1003
	PM R11.50 TO R11.51		53		0.4	53
	PM R11.61 TO R12.05			2323	61.2	2323
	PM R12.05 TO 12.29	1267			34.5	1267
	PM 12.29 TO 12.31			106	2.8	106
	PM 12.61 TO 12.67			317	8.3	317
	PM 12.79 TO 12.89			528	13.9	528
	PM 12.98 TO 13.28			1584	41.7	1584
	PM 13.51 TO 13.60			475	12.5	475
	PM 13.64 TO 13.66			106	2.8	106
	PM 13.71 TO 13.73			106	2.8	106
	PM 13.75 TO 13.82			370	9.7	370
	PM 13.94 TO 13.95			53	1.4	53
	PM 14.27 TO 14.43			845	22.2	845
	PM 14.50 TO 14.60			528	13.9	528
	PM 14.60 TO 14.68	422			11.5	422
	PM 14.91 TO 15.01			528	13.9	528

PLACE HOT MIX ASPHALT DIKE

DIRECTION	LOCATION	TYPE (A)	TYPE (C)	TYPE (E)	HOT MIX ASPHALT (TYPE A)	REMOVE ASPHALT CONCRETE DIKE
		LF	LF	LF	TON	LF
		WESTBOUND	PM 15.13 TO 15.39			1,373
	PM 15.48 TO 15.66			950	25.0	950
	PM 15.96 TO 16.00			211	5.6	211
	PM 16.04 TO 16.14			528	13.9	528
	PM 16.19 TO 16.21			106	2.8	106
	PM 16.34 TO 16.53			1003	26.4	1,003
	PM 16.82 TO 16.97			792	20.8	792
	PM 16.98 TO 17.00			106	2.8	106
	PM 17.35 TO 17.40			264	6.9	264
	PM 17.48 TO 17.50			106	2.8	106
	PM 17.90 TO 18.34	2,323			63.5	2,323
	PM 18.34 TO 18.75			2,165	57.0	2,165
	PM 18.75 TO 18.77		106		0.8	106
	PM 18.82 TO 18.84	106			2.9	106
	PM 18.88 TO 19.22	1,795			49.1	1,795
	PM 19.33 TO 19.40	370			10.1	370
	PM 19.74 TO 20.00			1,373	36.1	1,373
	PM 20.07 TO 20.15	422			11.5	422
	PM 20.15 TO 20.16		53		0.4	53
	PM 20.20 TO 20.65	2,376			65.0	2,376
	PM 20.66 TO 20.94			1,478	38.9	1,478
	PM 20.94 TO 20.96	106			2.9	106
	PM 21.06 TO 21.11			264	6.9	264
	PM 21.11 TO 21.58	2,323			63.5	2,323
	PM 21.58 TO 21.62			211	5.6	211
	PM 21.62 TO 21.75	686			18.8	686
	PM 21.83 TO 22.21	2,006			54.8	2,006
	PM 22.33 TO 22.55			1,162	30.6	1,162
	PM 22.55 TO 22.95	2,112			57.7	2,112
	WB SUBTOTAL	23,072	212	24,238	1270	47,522
	EB SUBTOTAL	19,538	371	15,374	941.7	35,283
	TOTAL	42,610	583	39,612	2211.7*	82,805

* QUANTITY INCLUDED IN PAVEMENT STRUCTURE TABLE

SUMMARY OF QUANTITIES

Q-4

	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	
WWL	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
05	SB	154	R5.9/22.9	24	68

Grace M. Tsushima
REGISTERED CIVIL ENGINEER

REGISTERED PROFESSIONAL ENGINEER
 Grace M. Tsushima
 No. C49814
 Exp. 9-30-14
 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 11-30-15

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

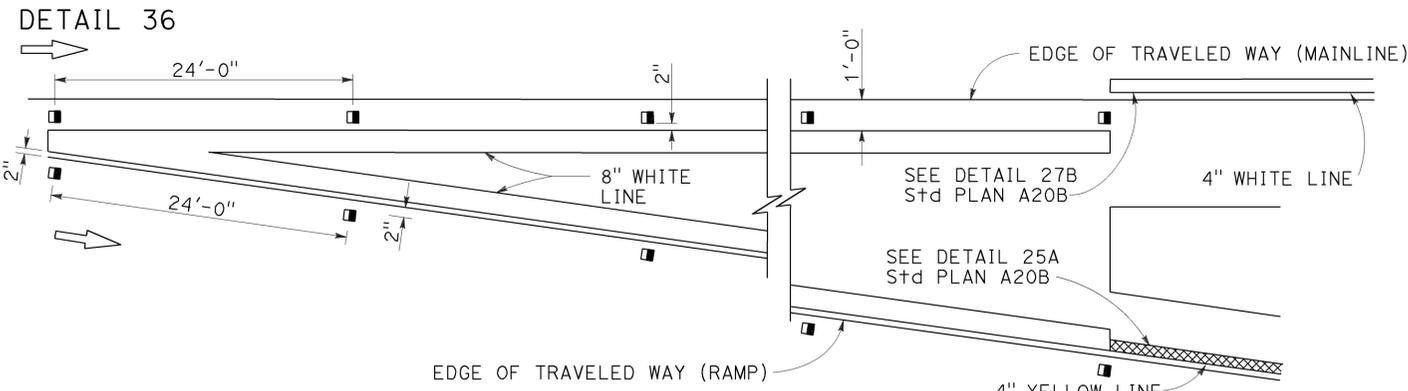
**ABBREVIATIONS
(SHEET 2 OF 2)**

NO SCALE

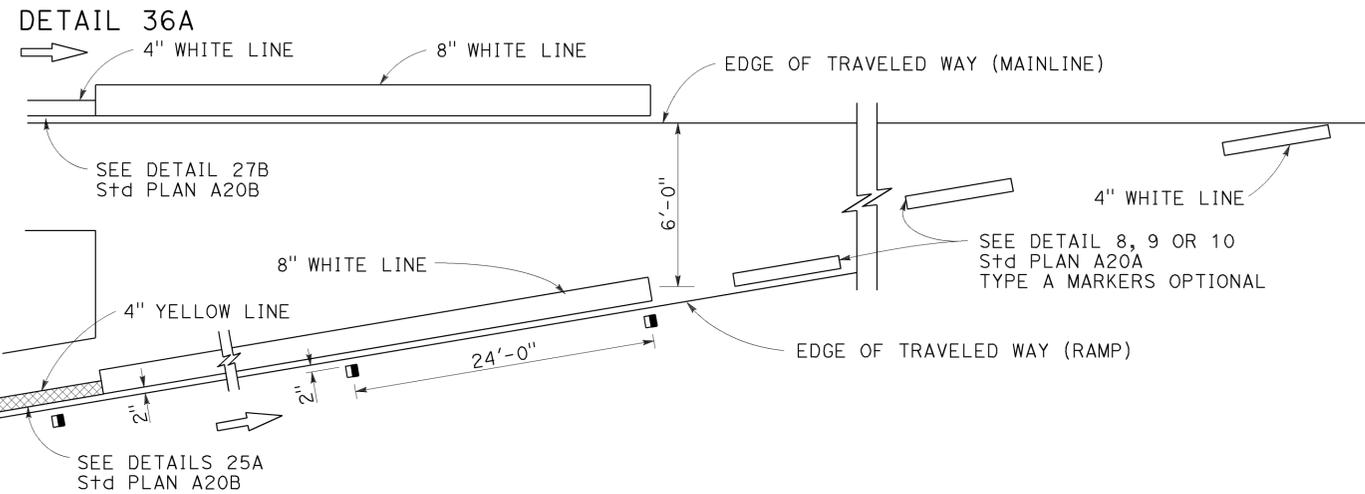
RSP A10B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN A10B
DATED MAY 20, 2011 - PAGE 2 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP A10B

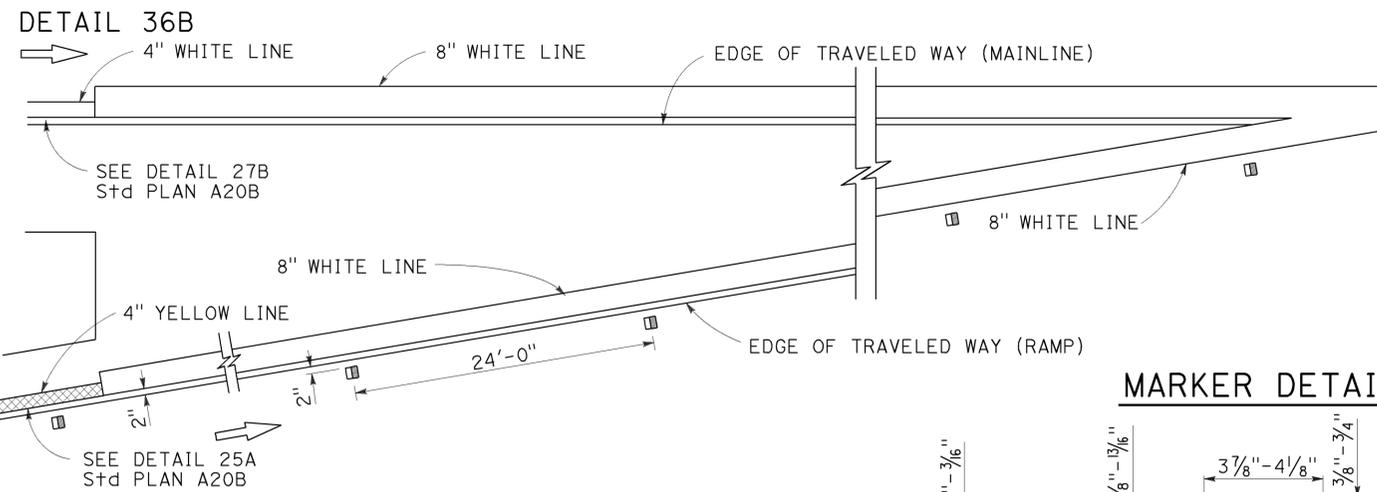
EXIT RAMP NEUTRAL AREA (GORE) TREATMENT



ENTRANCE RAMP NEUTRAL AREA (MERGE) TREATMENT



ENTRANCE RAMP NEUTRAL AREA (ACCELERATION LANE) TREATMENT

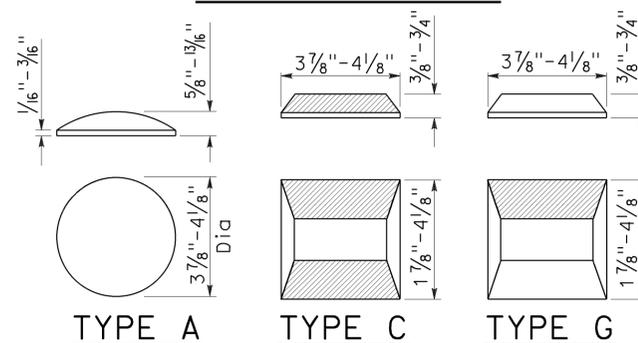


MARKER DETAILS

LEGEND:

MARKERS

- TYPE A WHITE NON-REFLECTIVE
- ◻ TYPE C RED-CLEAR RETROREFLECTIVE
- TYPE G ONE-WAY CLEAR RETROREFLECTIVE



RETROREFLECTIVE FACE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	25	68

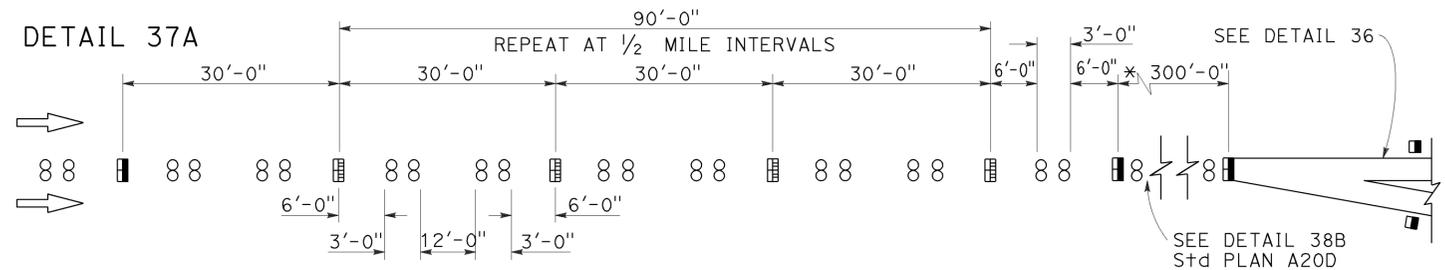
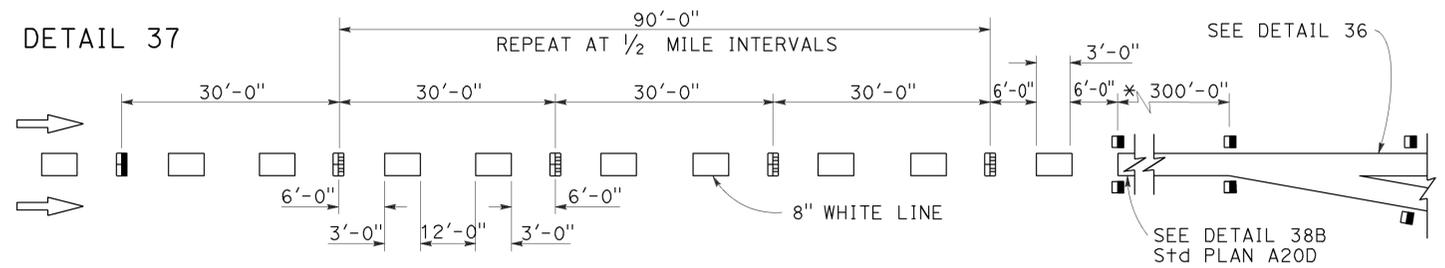
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July 19, 2013
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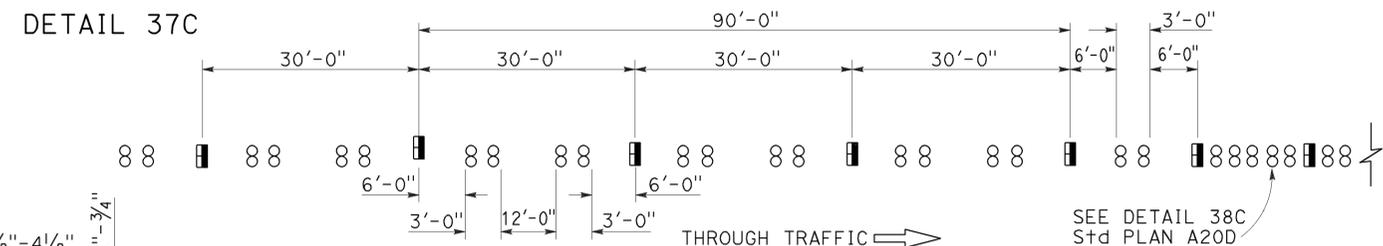
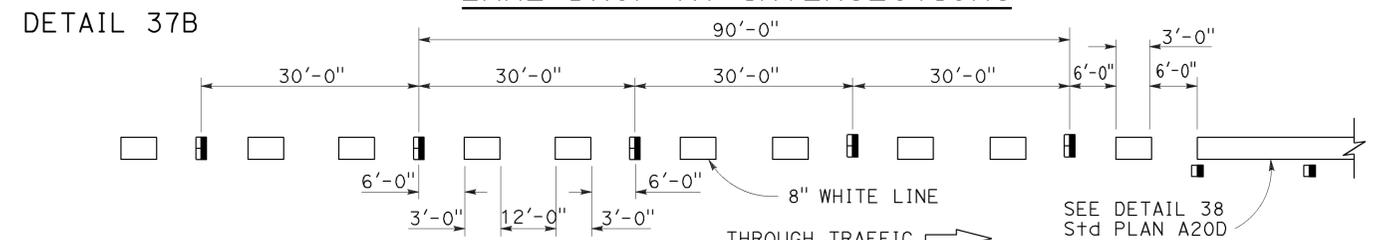
TO ACCOMPANY PLANS DATED 11-30-15

LANE DROP AT EXIT RAMP



* The solid channelizing line shown may be omitted on short auxiliary lanes where weaving length is critical.

LANE DROP AT INTERSECTIONS



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKERS AND TRAFFIC LINE TYPICAL DETAILS

NO SCALE

RSP A20C DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN A20C DATED MAY 20, 2011 - PAGE 11 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A20C

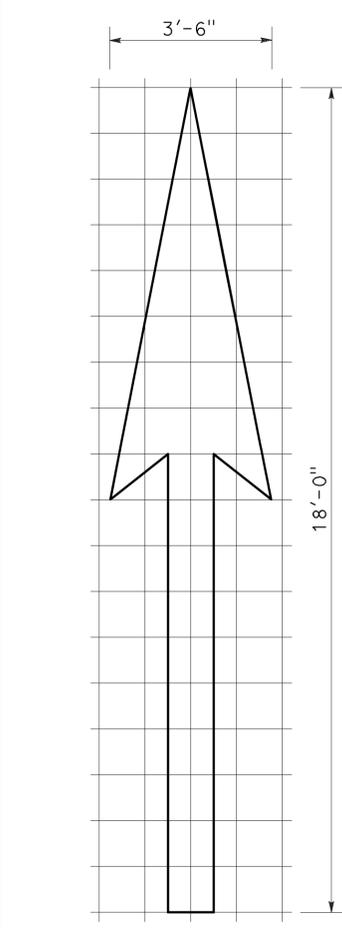
2010 REVISED STANDARD PLAN RSP A20C

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	26	68

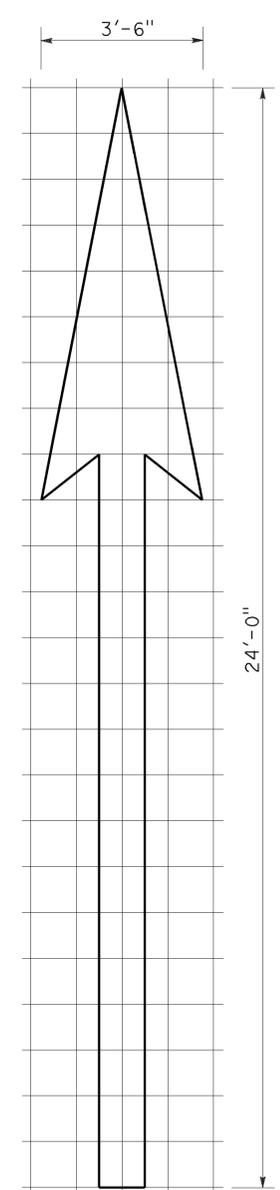
Roberta L. McLaughlin
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 April 20, 2012
 PLANS APPROVAL DATE
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REGISTERED PROFESSIONAL ENGINEER
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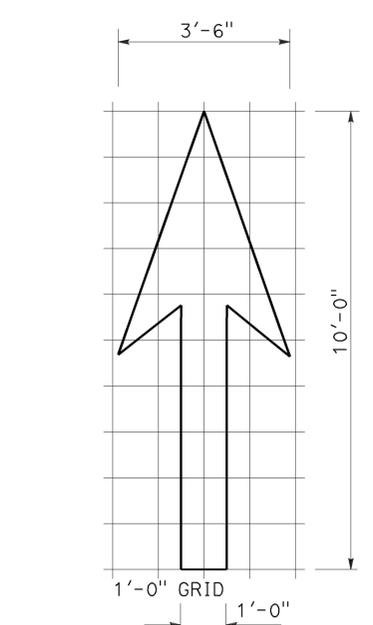
TO ACCOMPANY PLANS DATED 11-30-15



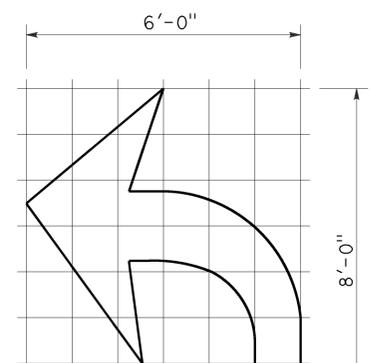
A=25 ft²
TYPE I 18'-0" ARROW



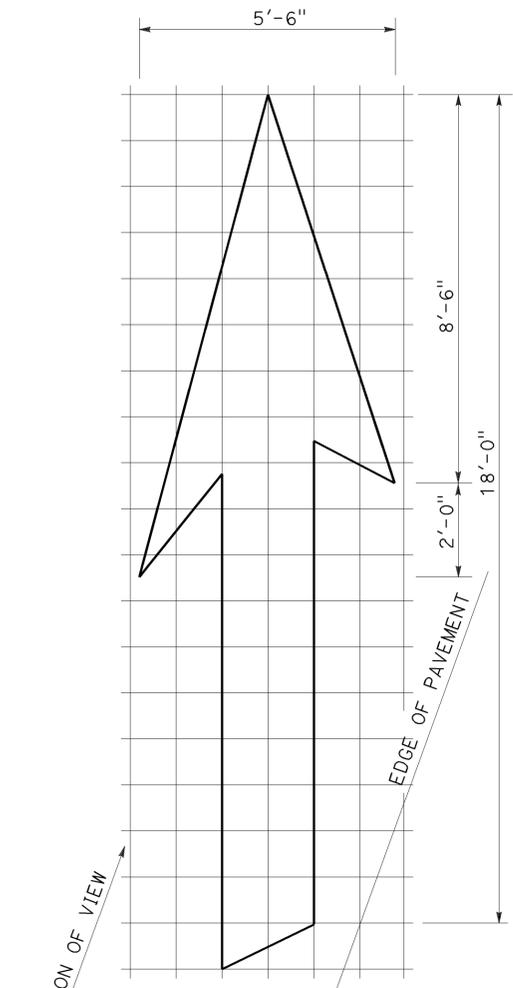
A=31 ft²
TYPE I 24'-0" ARROW



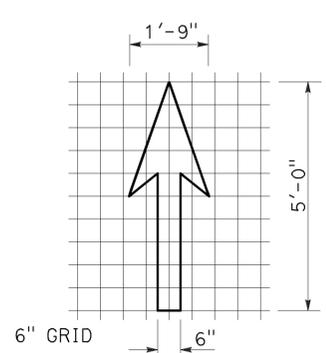
A=14 ft²
TYPE I 10'-0" ARROW



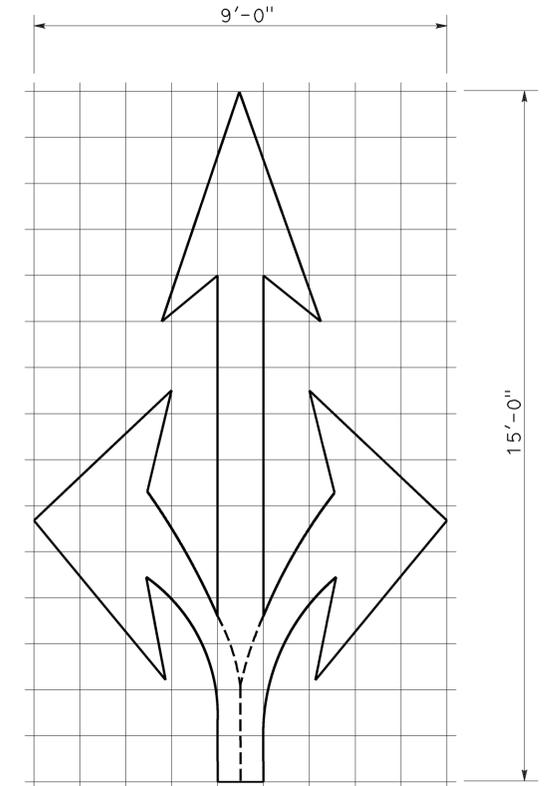
A=15 ft²
TYPE IV (L) ARROW
 (For Type IV (R) arrow, use mirror image)



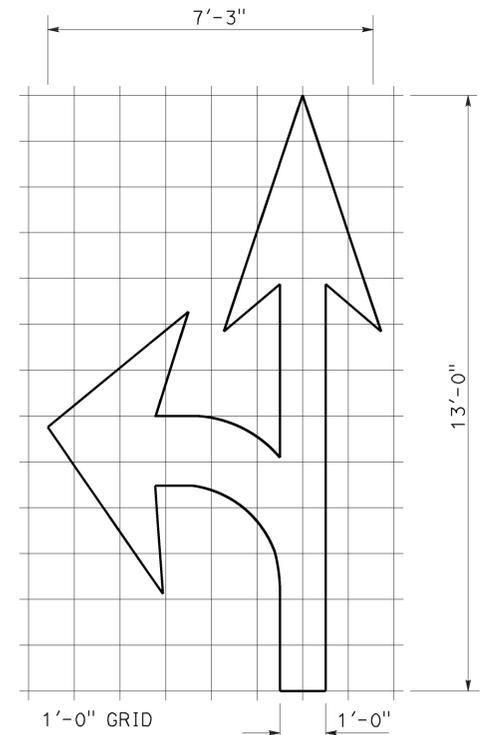
A=42 ft²
TYPE VI ARROW
 Right lane drop arrow
 (For left lane, use mirror image)



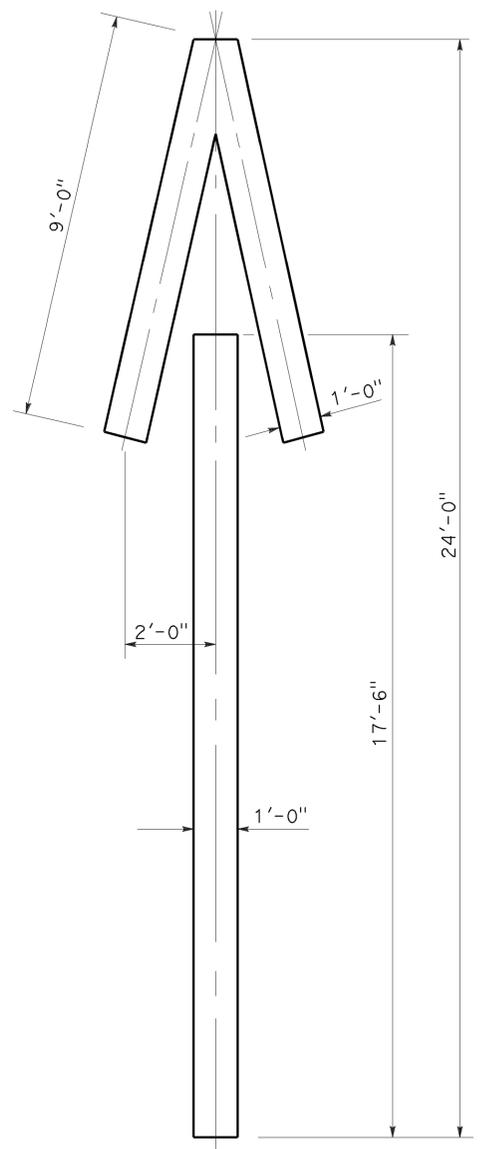
A=3.5 ft²
BIKE LANE ARROW



A=36 ft²
TYPE VIII ARROW



A=27 ft²
TYPE VII (L) ARROW
 (For Type VII (R) arrow, use mirror image)



A=33 ft²
TYPE V ARROW

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

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**PAVEMENT MARKINGS
 ARROWS**
 NO SCALE

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

REVISED STANDARD PLAN RSP A24A

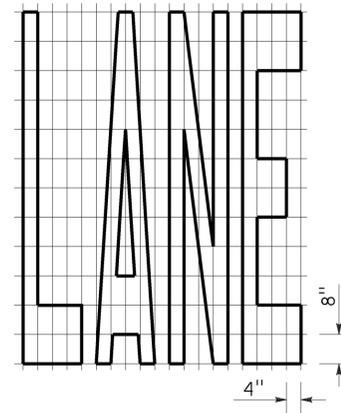
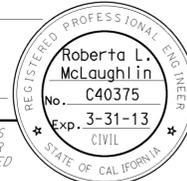
2010 REVISED STANDARD PLAN RSP A24A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	27	68

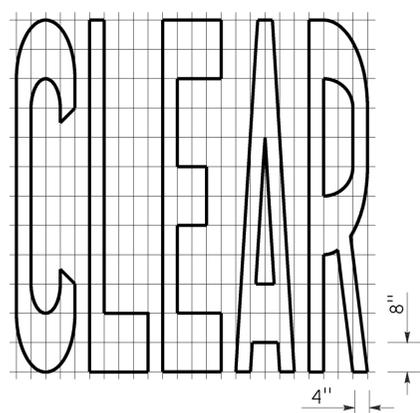
Roberta L. McLaughlin
 REGISTERED CIVIL ENGINEER
 July 20, 2012
 PLANS APPROVAL DATE

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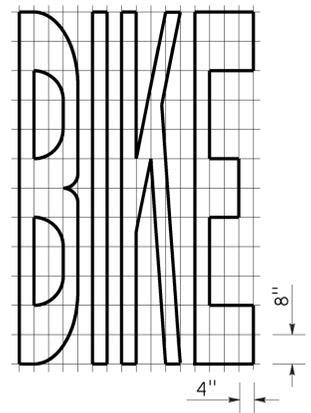
TO ACCOMPANY PLANS DATED 11-30-15



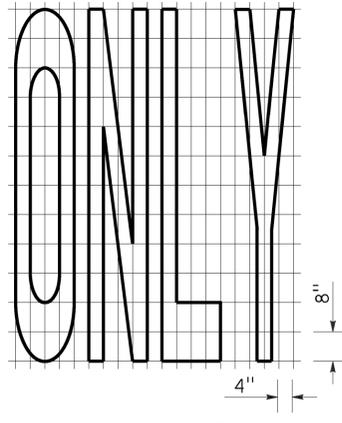
A=24 ft²



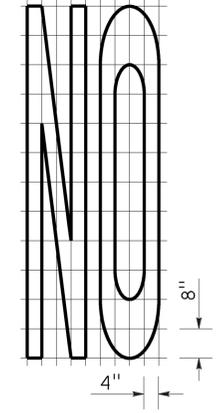
A=27 ft²



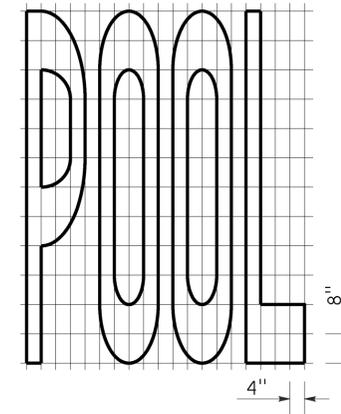
A=21 ft²



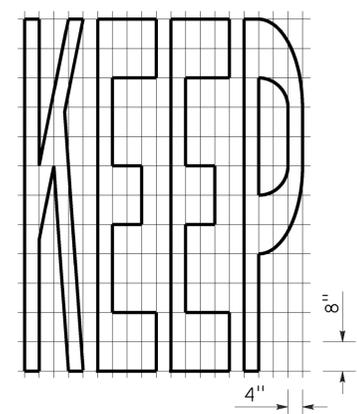
A=22 ft²



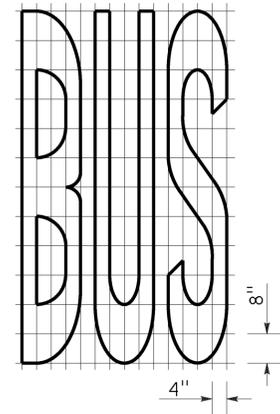
A=14 ft²



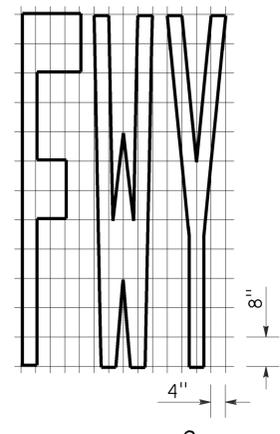
A=23 ft²



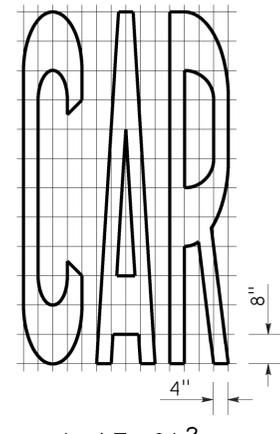
A=24 ft²



A=20 ft²

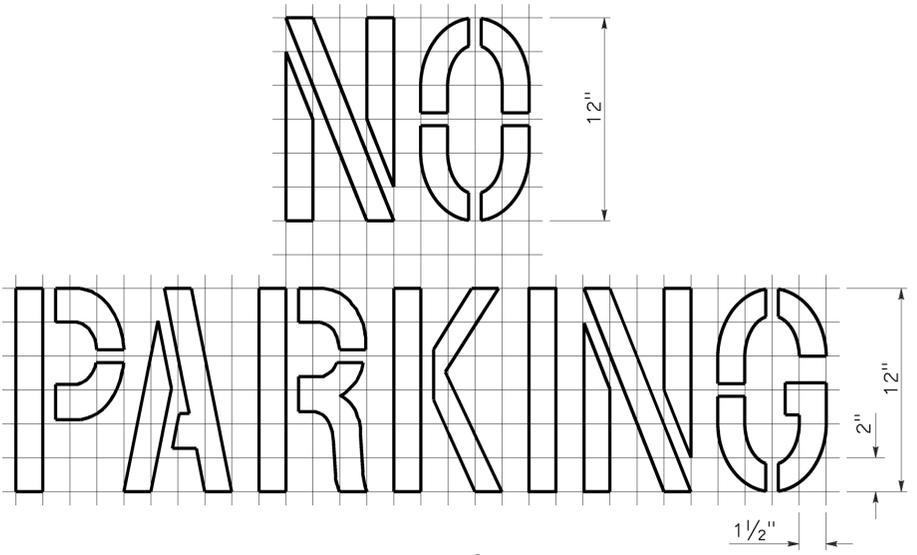


A=16 ft²

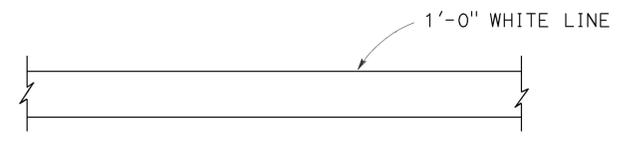


A=17 ft²

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



A=2 ft²
See Notes 6 and 7



LIMIT LINE (STOP LINE)



DIRECTION OF TRAVEL
YIELD LINE

NOTES:

1. If a message consists of more than one word, it should read "UP", i.e., the first word should be nearest the driver.
2. The space between words should be at least four times the height of the characters for low speed roads, but not more than ten times the height of the characters. The space may be reduced appropriately where there is limited space because of local conditions.
3. Minor variations in dimensions may be accepted by the Engineer.
4. Portions of a letter, number or symbol may be separated by connecting segments not to exceed 2" in width.
5. The words "NO PARKING" pavement marking is to be used for parking facilities. For typical locations of markings, see Standard Plans A90A and A90B.
6. The words "NO PARKING", shall be painted in white letters no less than 1'-0" high on a contrasting background and located so that it is visible to traffic enforcement officials.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**PAVEMENT MARKINGS
WORDS, LIMIT AND YIELD LINES**
NO SCALE

RSP A24E DATED JULY 20, 2012 SUPERSEDES STANDARD PLAN A24E
DATED MAY 20, 2011 - PAGE 17 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP A24E

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	28	68

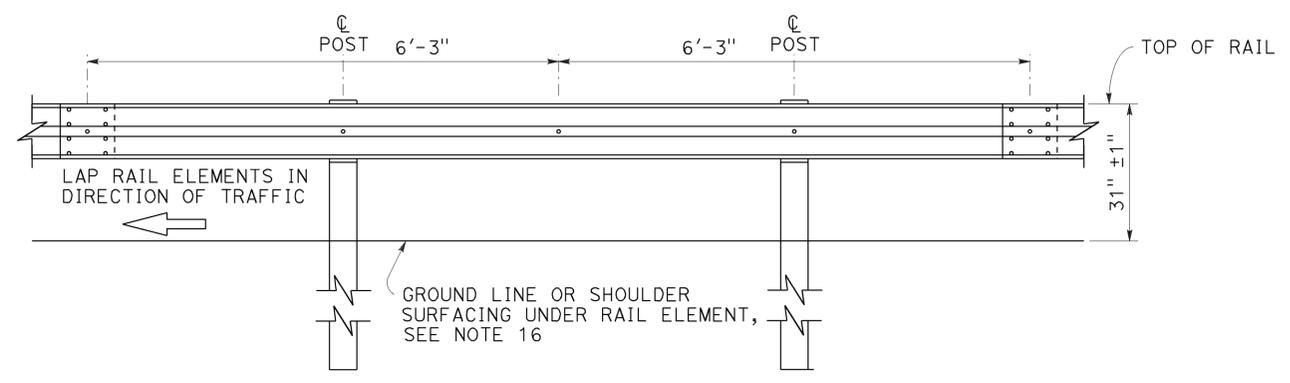
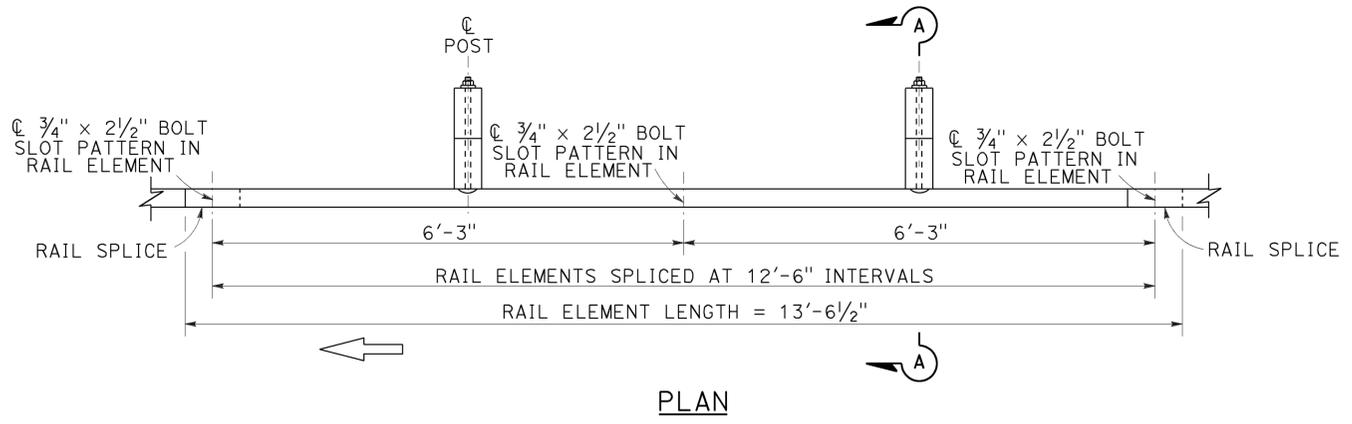
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

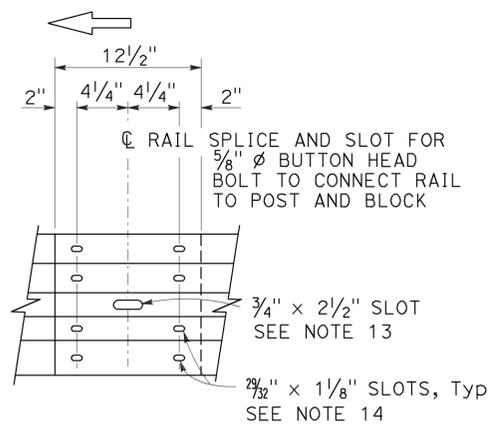
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REGISTERED PROFESSIONAL ENGINEER
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

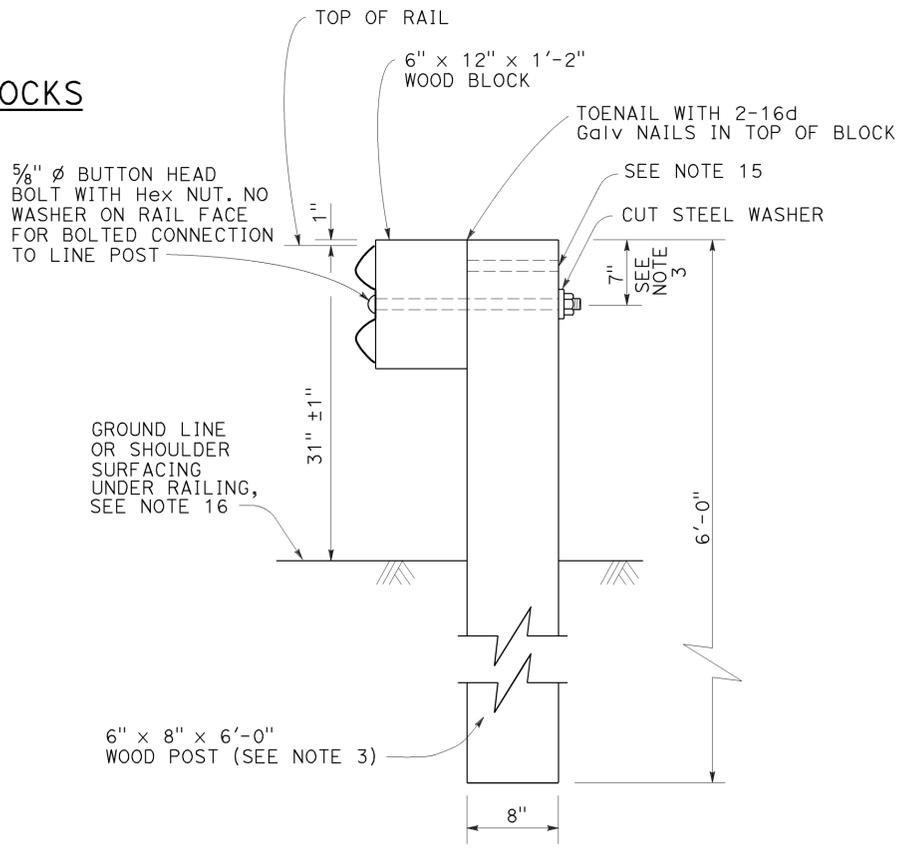
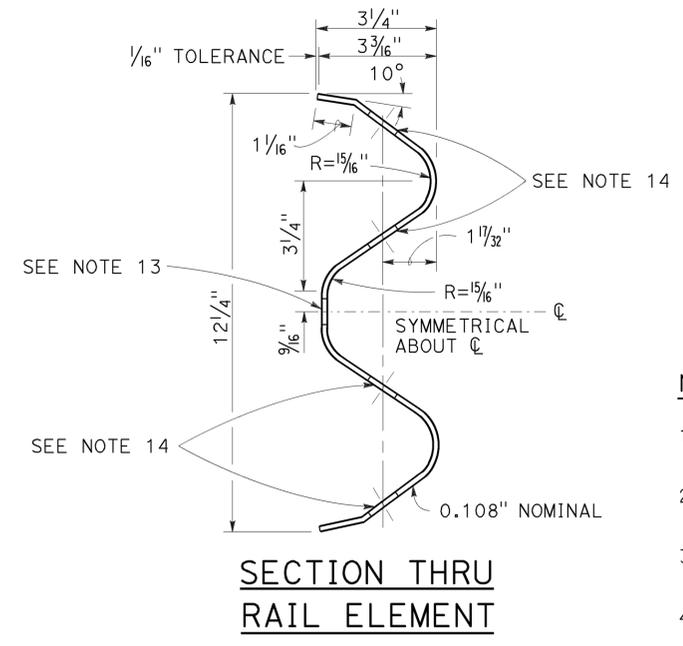
TO ACCOMPANY PLANS DATED 11-30-15



MIDWEST GUARDRAIL SYSTEM WITH WOOD POST AND BLOCKS



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



SECTION 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 MSG 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
05	SB	154	R5.9/22.9	29	68

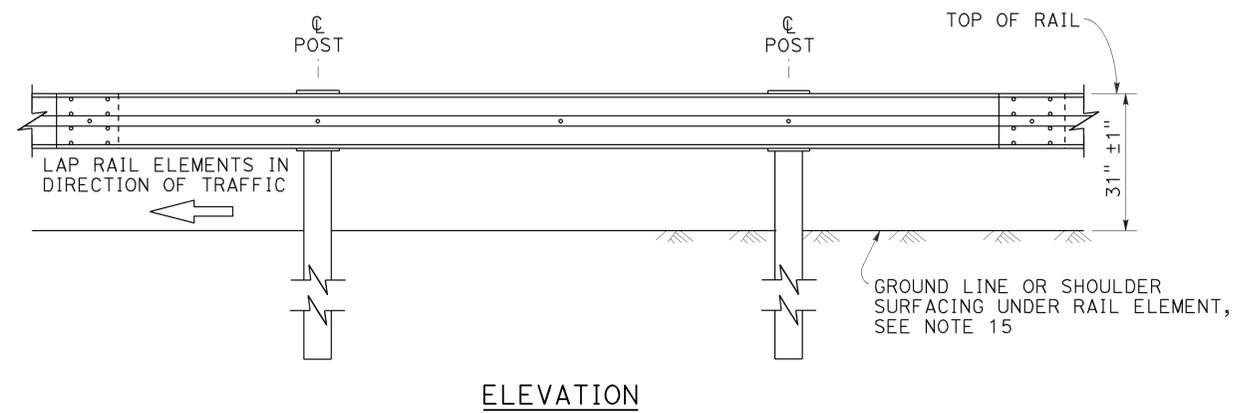
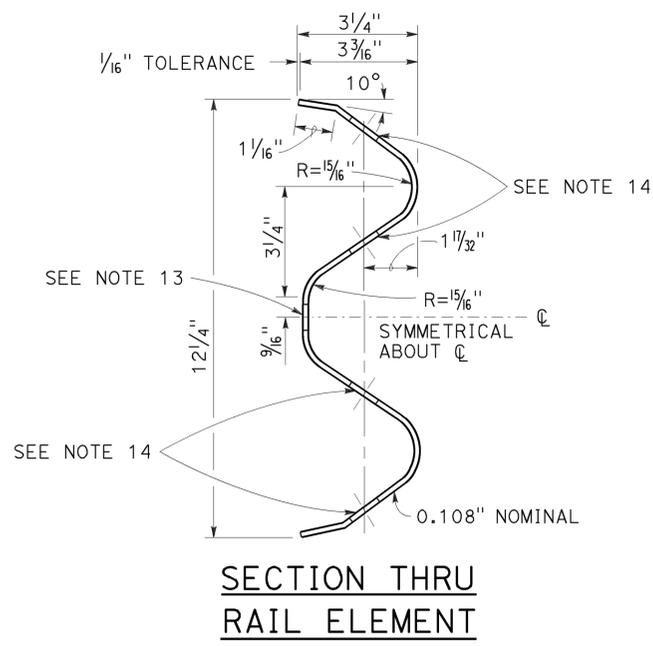
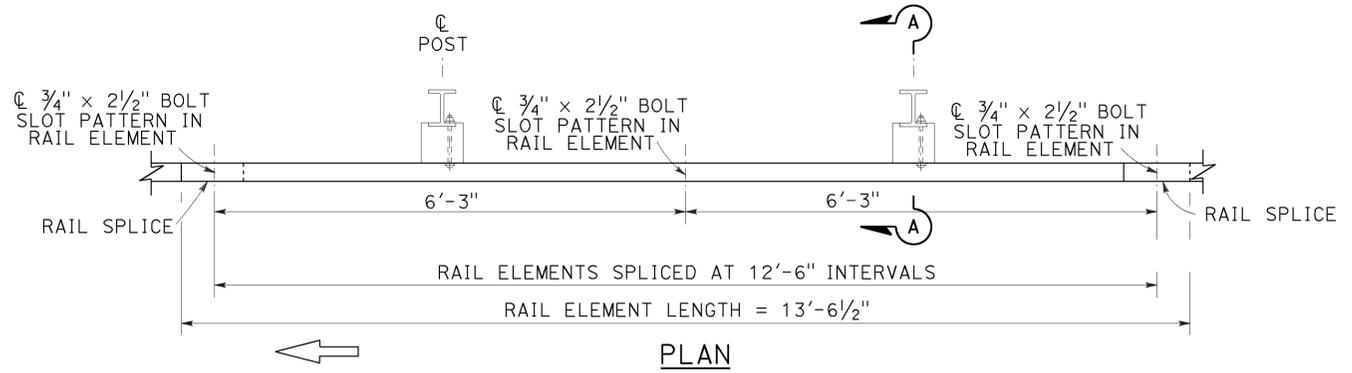
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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TO ACCOMPANY PLANS DATED 11-30-15

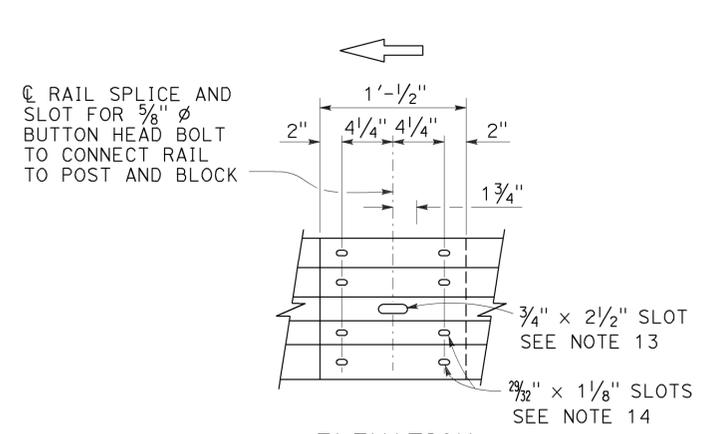
REGISTERED PROFESSIONAL ENGINEER
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA



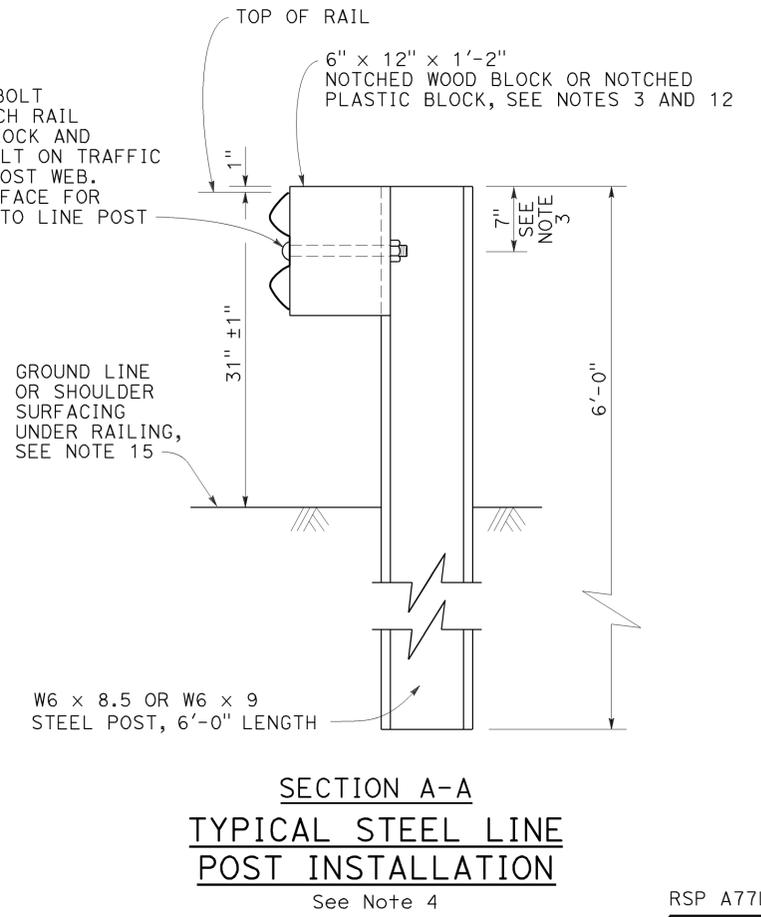
NOTES:

- 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.

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" ø 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" 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.



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

2010 REVISED STANDARD PLAN RSP A77L2

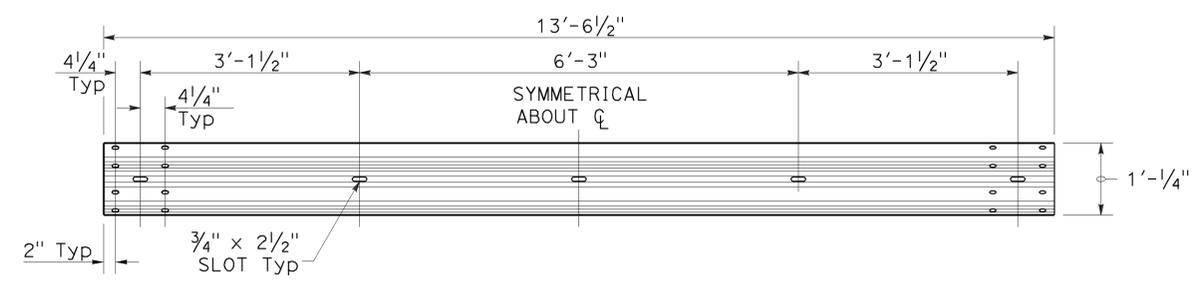
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	30	68

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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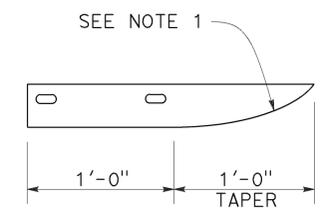
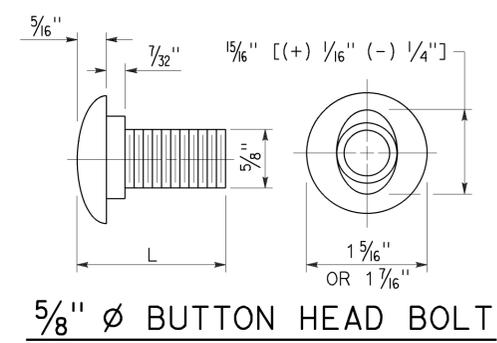
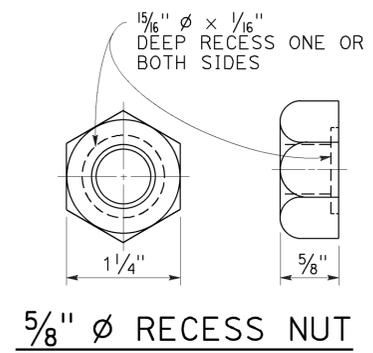
TO ACCOMPANY PLANS DATED 11-30-15



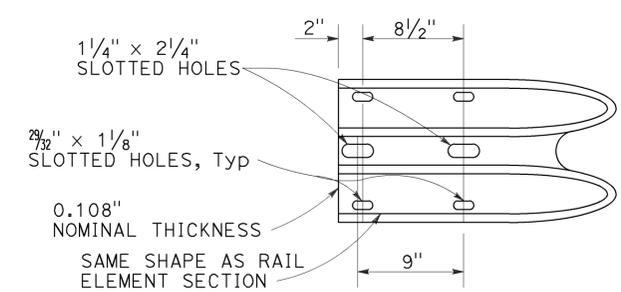
TYPICAL RAIL ELEMENT

NOTE:

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



PLAN



**ELEVATION
END CAP
(TYPE A)**

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.

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
05	SB	154	R5.9/22.9	31	68

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

November 15, 2013
PLANS APPROVAL DATE

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

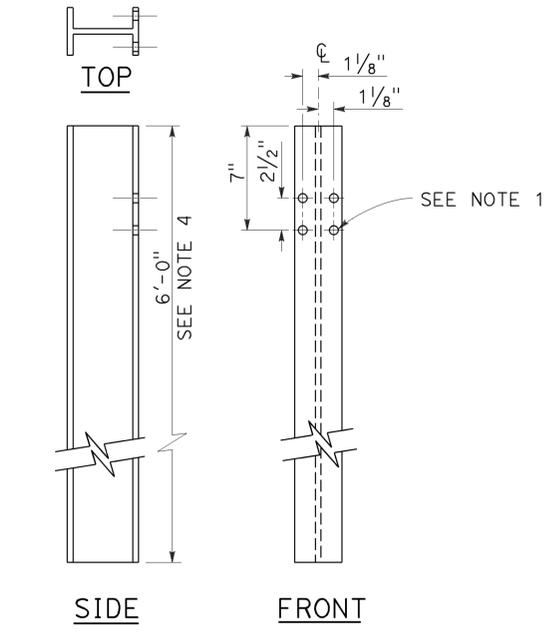
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TO ACCOMPANY PLANS DATED 11-30-15

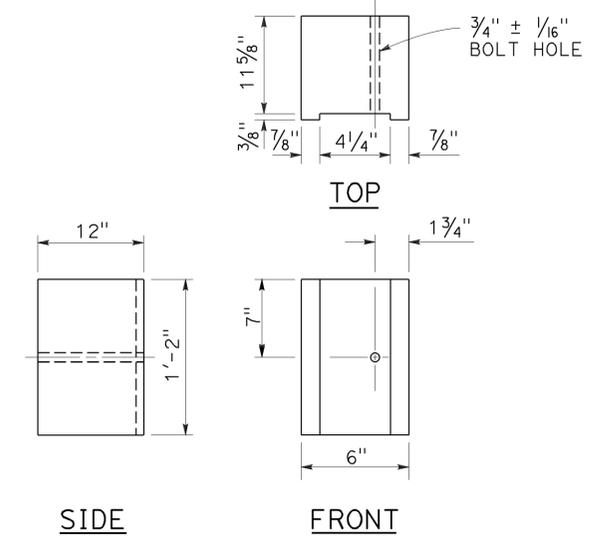
NOTES:

1. All holes in steel post shall be $\frac{13}{16}$ " 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.

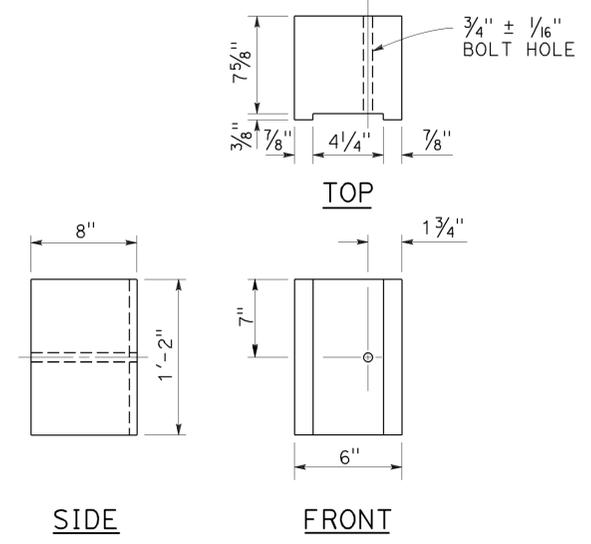
2010 REVISED STANDARD PLAN RSP A77N2



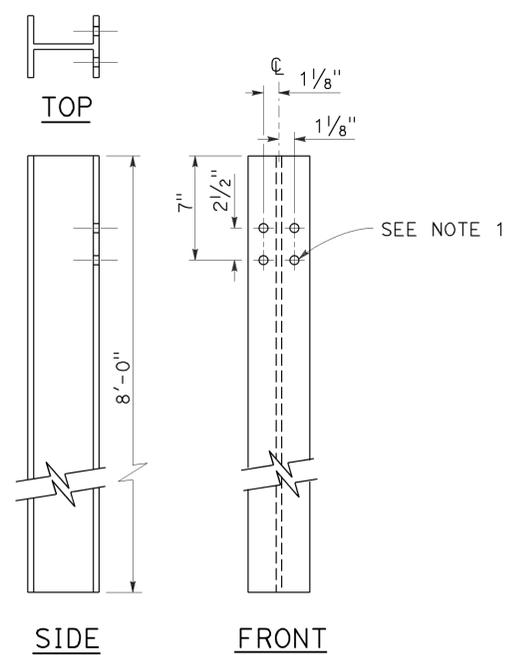
**W6 x 9 OR W6 x 8.5
STEEL POST**
See Note 4



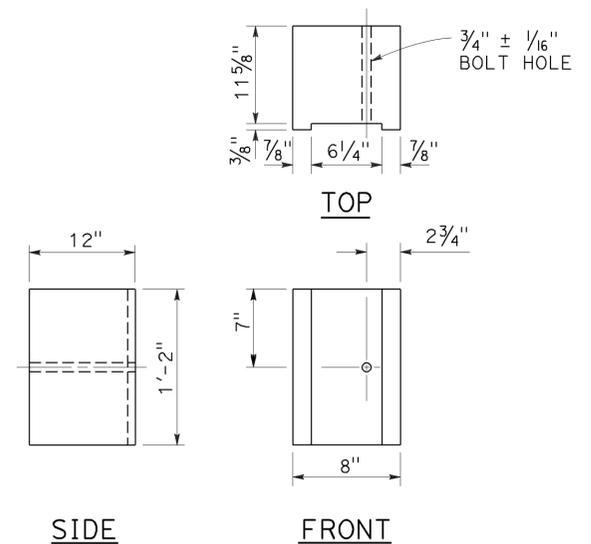
**6" x 12"
NOTCHED WOOD BLOCK**
See Notes 2 and 3



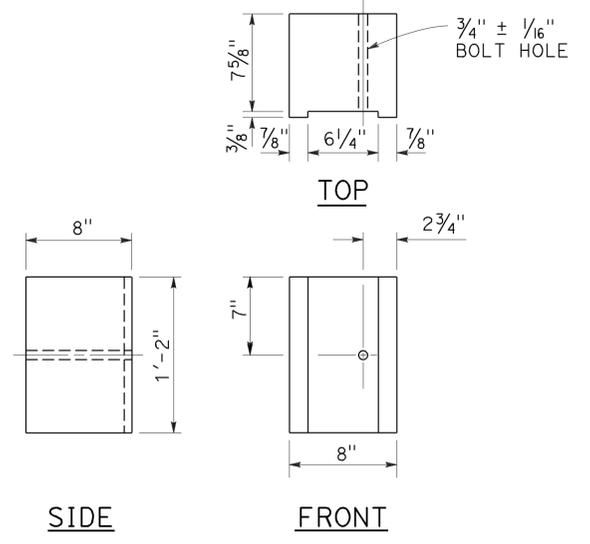
**6" x 8"
NOTCHED WOOD BLOCK**
Only for use with metal beam guard railing. See Note 5



**W6 x 15
STEEL POST**
See Note 6



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



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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

REVISED STANDARD PLAN RSP A77N2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	32	68

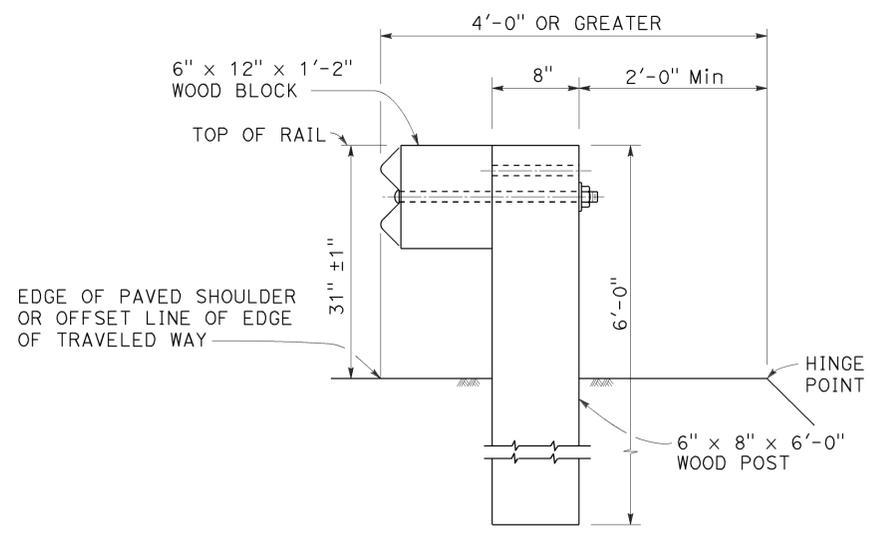
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

November 15, 2013
PLANS APPROVAL DATE

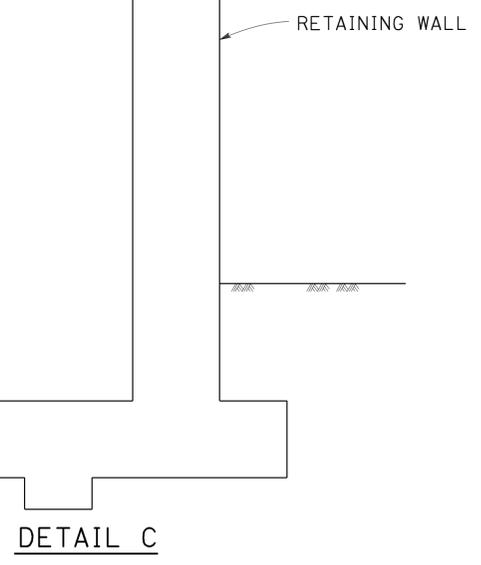
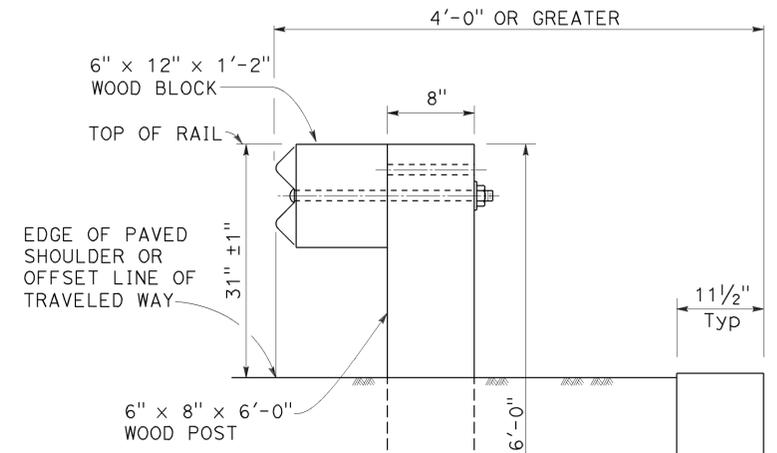
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Randell D. Hiatt
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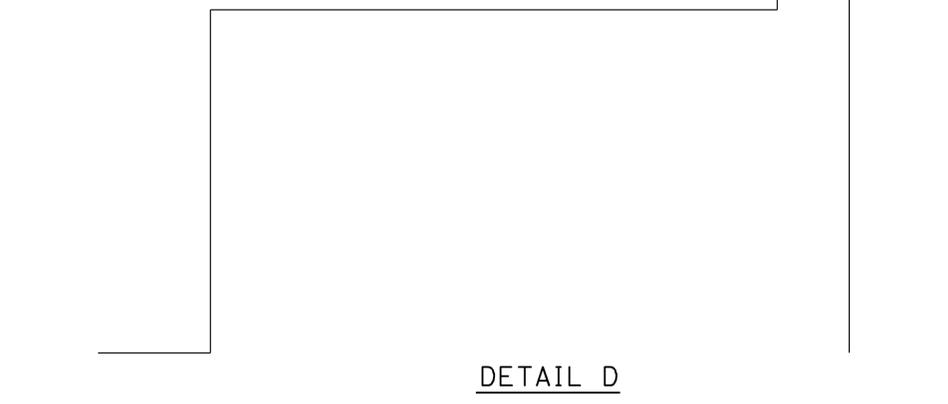
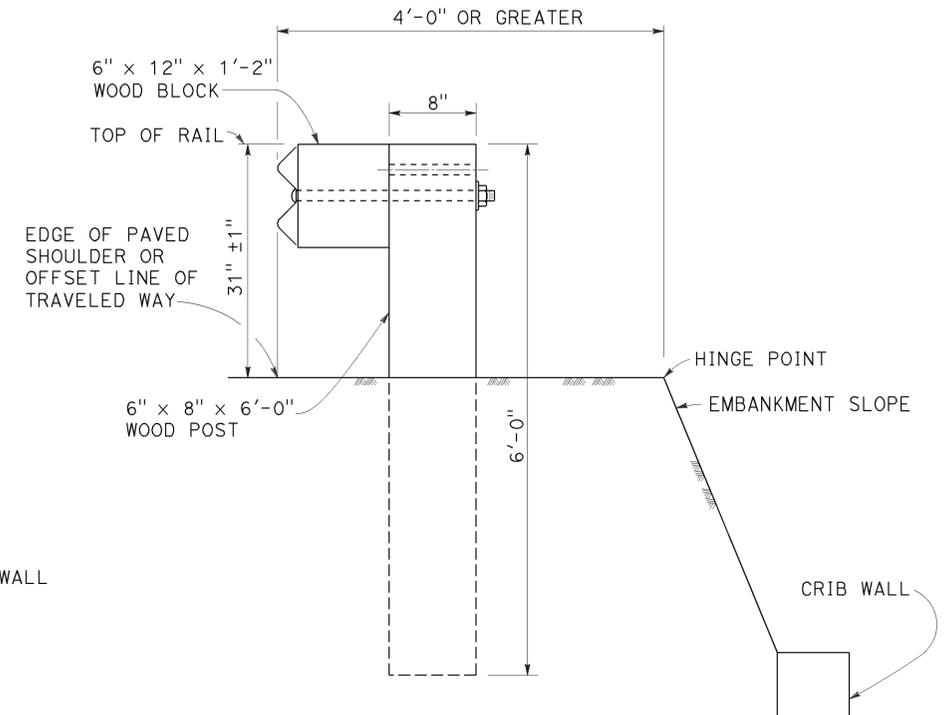
TO ACCOMPANY PLANS DATED 11-30-15



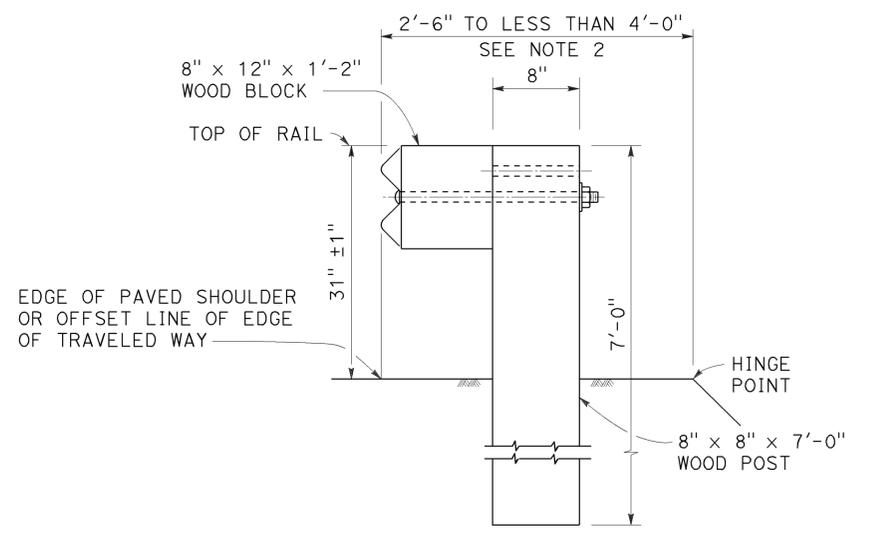
DETAIL A
TYPICAL ROADWAY
INSTALLATION
See Note 1



DETAIL C
INSTALLATION AT EARTH RETAINING WALLS



DETAIL D



DETAIL B
NARROW ROADWAY
INSTALLATION
See Note 1

POST EMBEDMENT

NOTES:

1. These installation details also applicable to steel line post installations. For Detail A, C, and D, where steel line post installations are constructed, W6 x 8.5 or W6 x 9 steel post, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or notched recycled plastic blocks are to be used in place of the size of wood post and wood block shown. For Detail B, where steel line post installations are constructed, 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

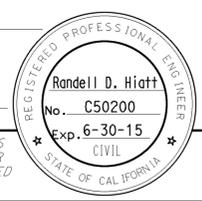
2010 REVISED STANDARD PLAN RSP A77N3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	33	68

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

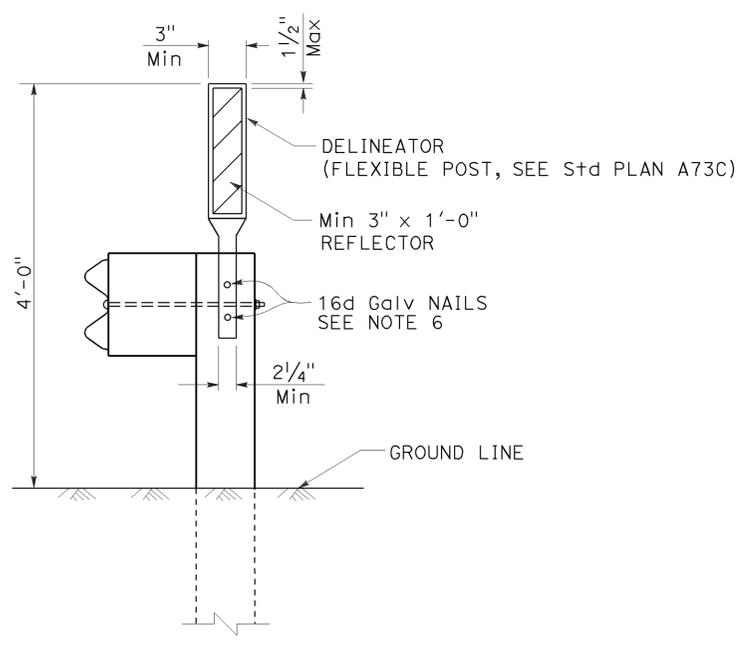
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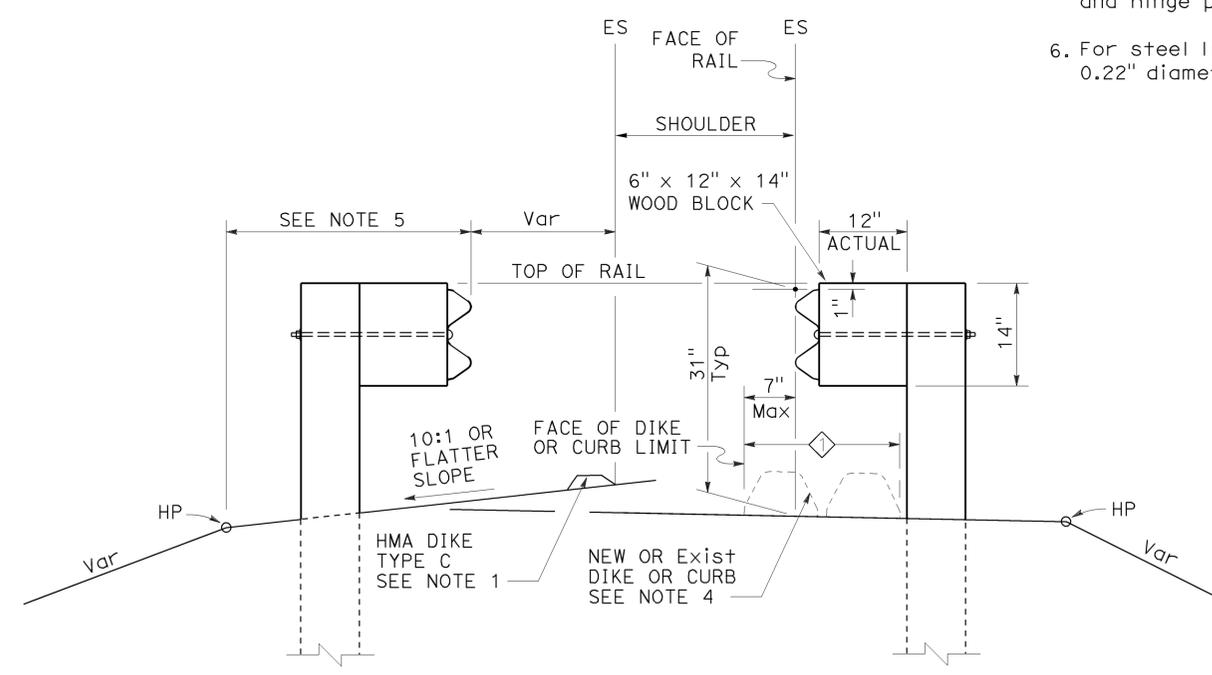
TO ACCOMPANY PLANS DATED 11-30-15

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

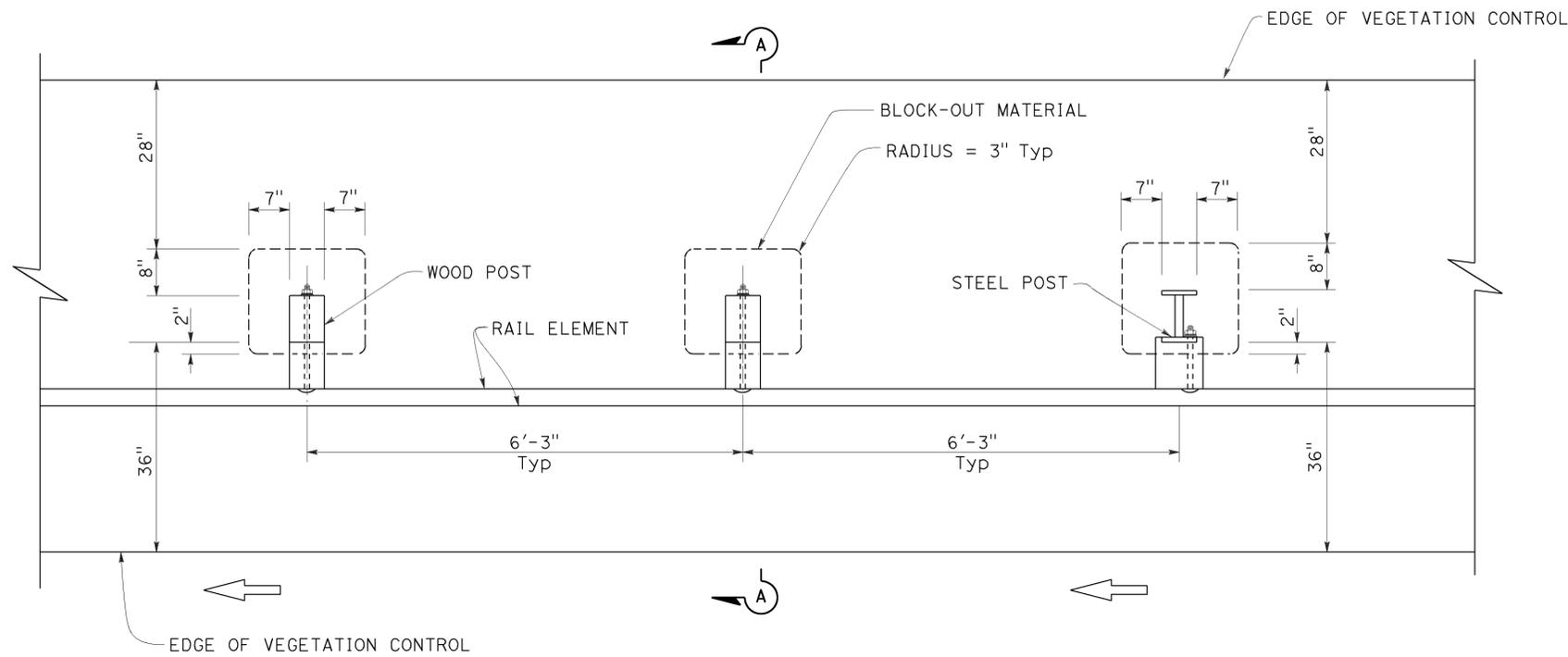
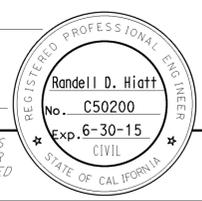
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	34	68

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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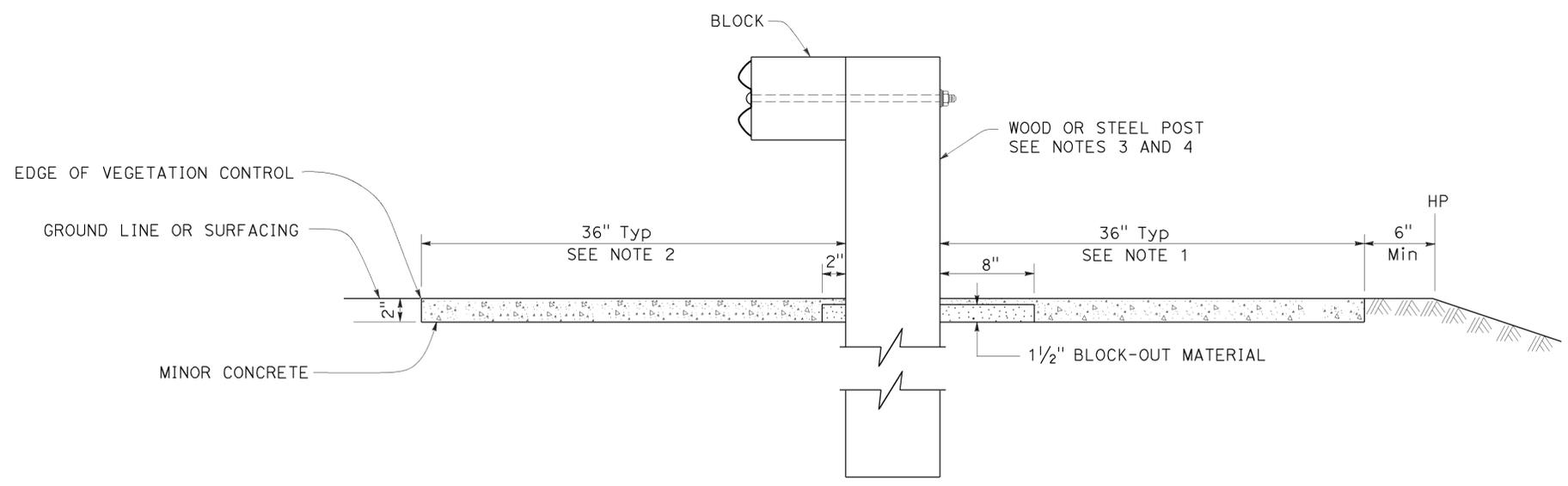
TO ACCOMPANY PLANS DATED 11-30-15



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

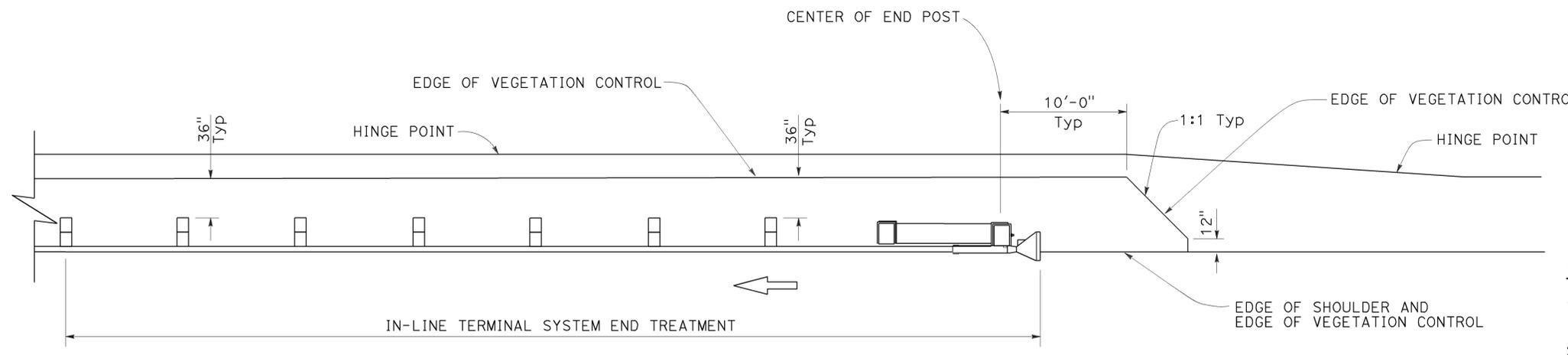
2010 REVISED STANDARD PLAN RSP A77N5

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	35	68

RANDALL D. HIATT
 REGISTERED CIVIL ENGINEER
 July 19, 2013
 PLANS APPROVAL DATE
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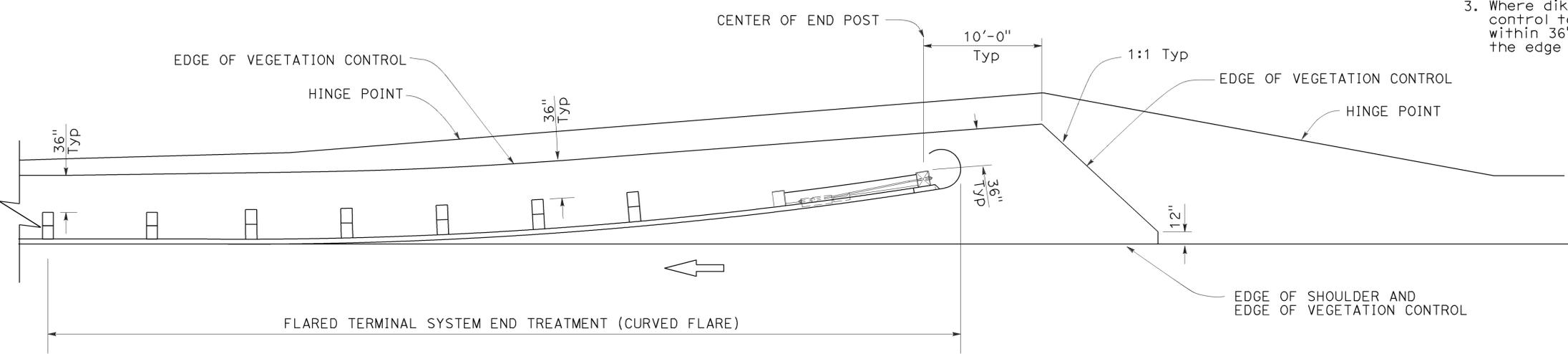
TO ACCOMPANY PLANS DATED 11-30-15



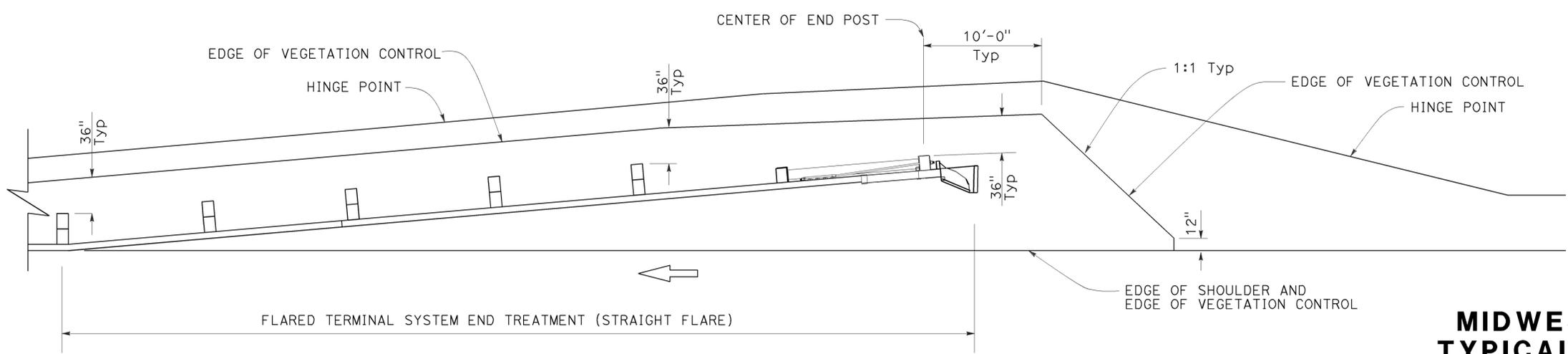
PLAN

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
05	SB	154	R5.9/22.9	36	68

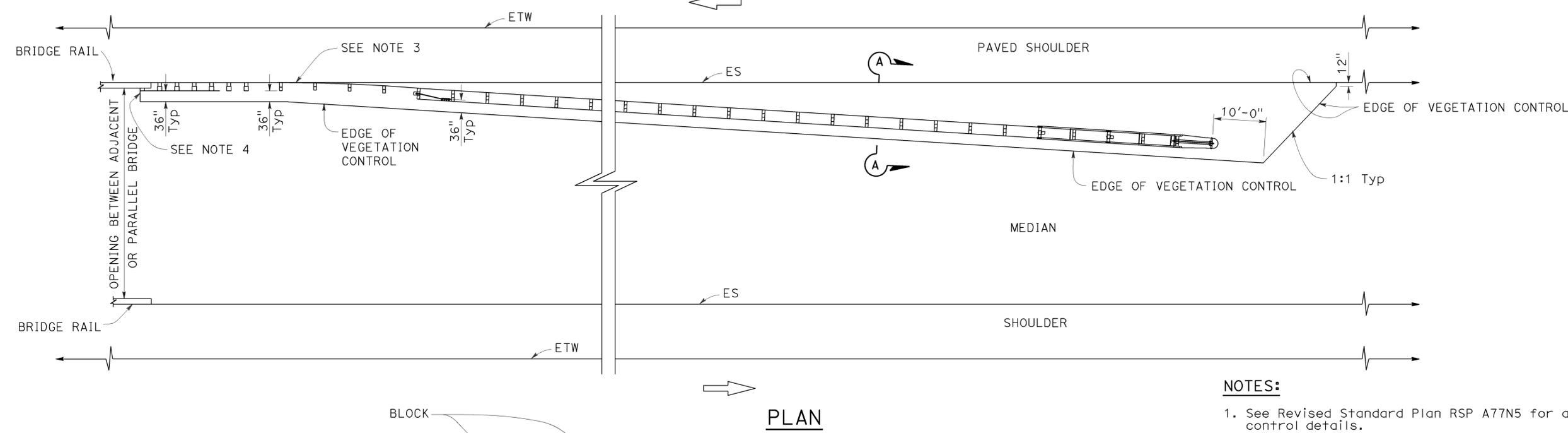
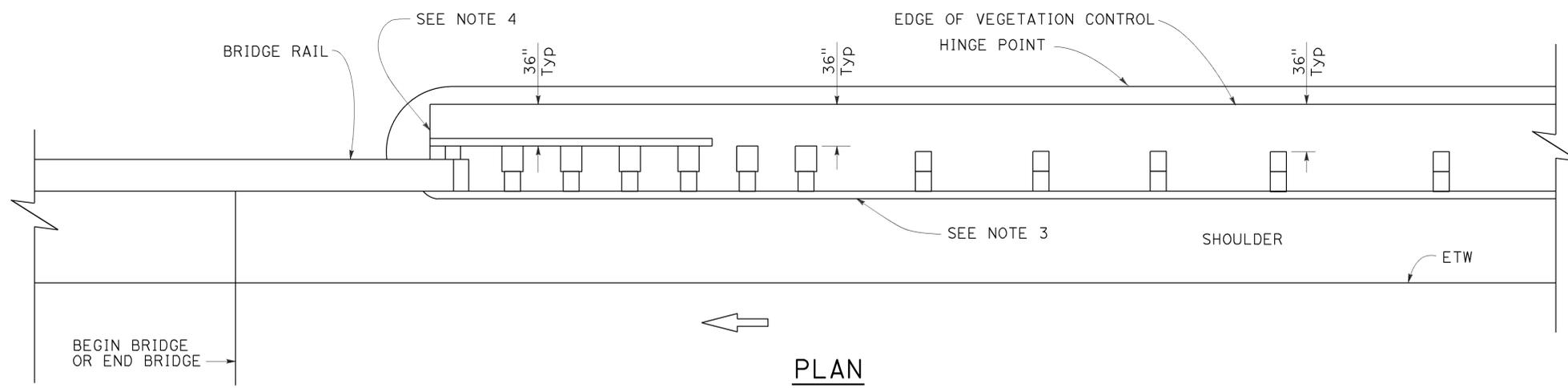
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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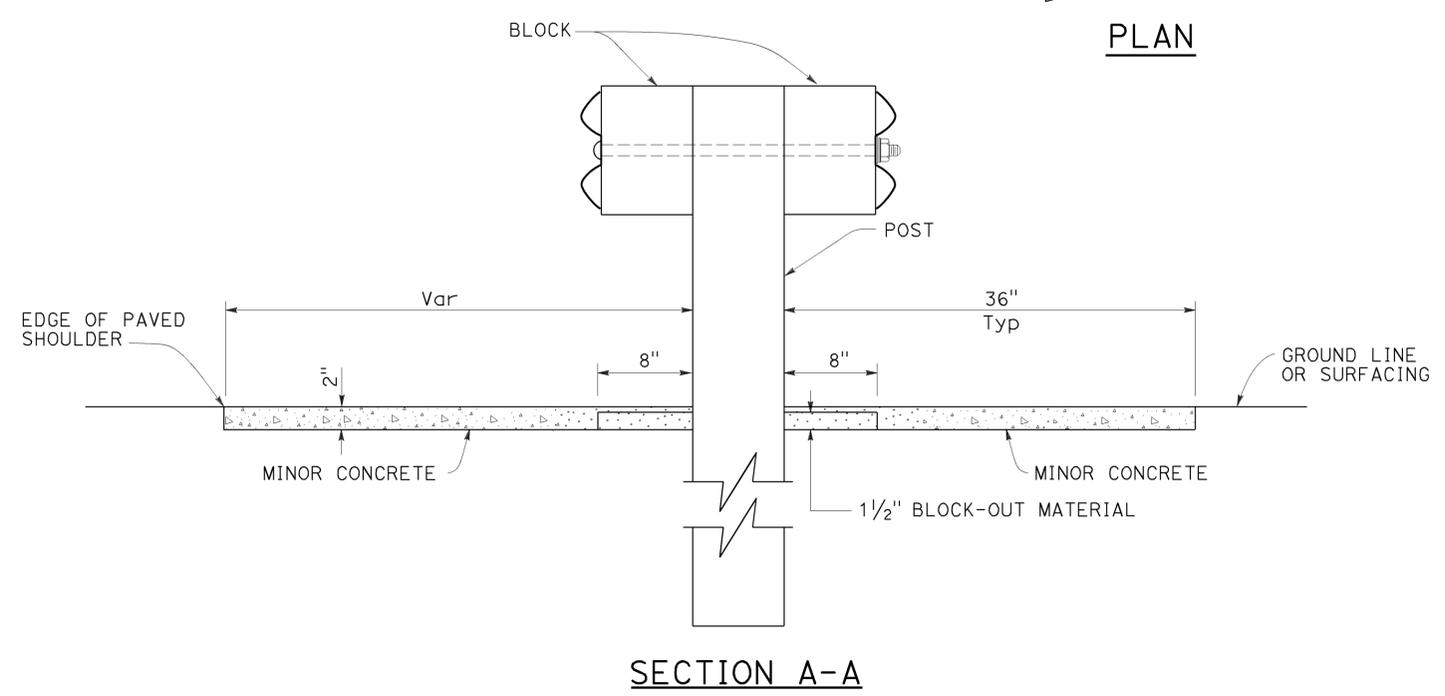
TO ACCOMPANY PLANS DATED 11-30-15

2010 REVISED STANDARD PLAN RSP A77N7



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.



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

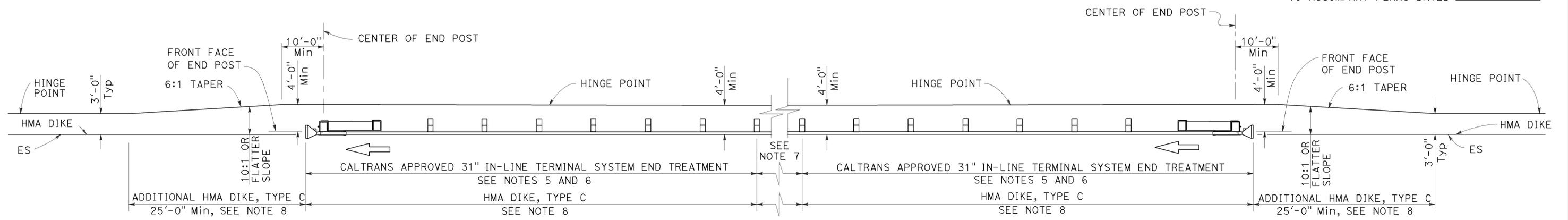
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	38	68

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

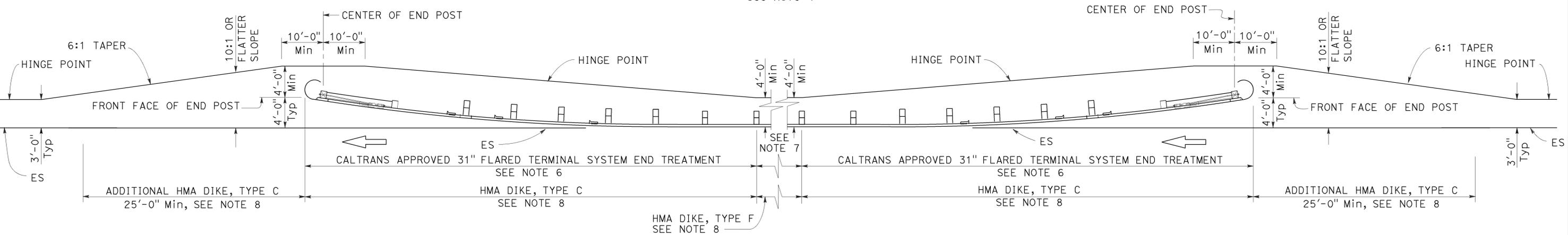
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TO ACCOMPANY PLANS DATED 11-30-15



TYPE 11D LAYOUT

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



TYPE 11E LAYOUT

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

NOTES:

1. Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
2. MGS post spacing to be 6'-3" center to center, except as otherwise noted.
3. Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 12" x 1'-2" wood blocks. W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
4. Layout Types 11D through 11L, shown on the A77P Series of Standard Plans, are typically used where MGS is recommended to shield embankment slopes and a crashworthy 31" end treatment is required for both directions of traffic.
5. 31" in-line terminal system end treatments are used where site conditions will not accommodate a flared end treatment.
6. The type of 31" terminal system end treatment to be used will be shown on the Project Plans.
7. Dependent on site conditions (embankment height and side slope), construction of additional MGS (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
8. Where placement of dike is required with MGS installations, see Revised Standard Plan RSP A77N4 for dike positioning details.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
TYPICAL LAYOUTS FOR
EMBANKMENTS**

NO SCALE

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

REVISED STANDARD PLAN RSP A77P2

2010 REVISED STANDARD PLAN RSP A77P2

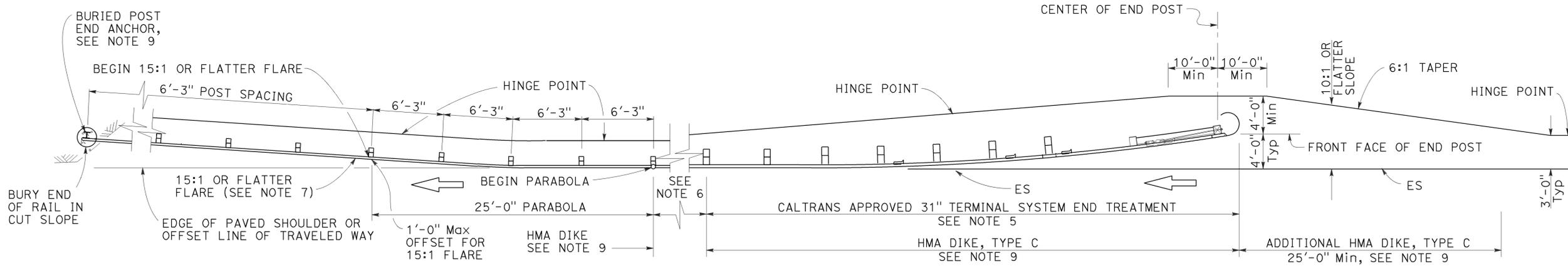
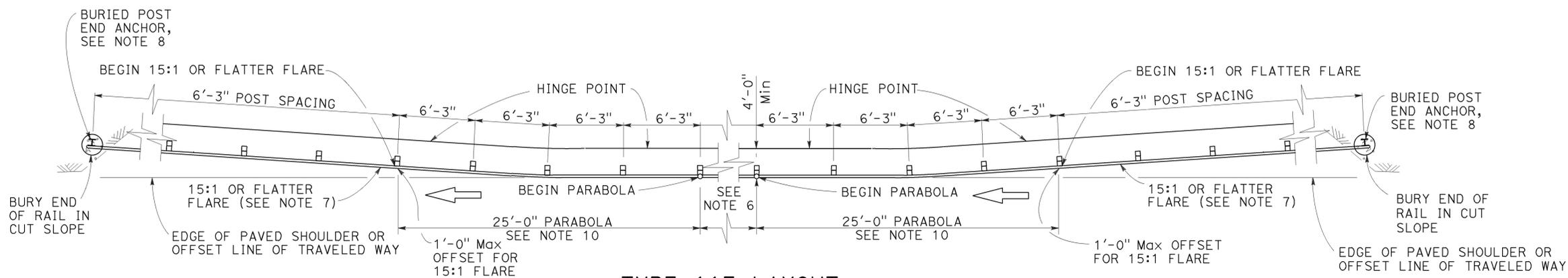
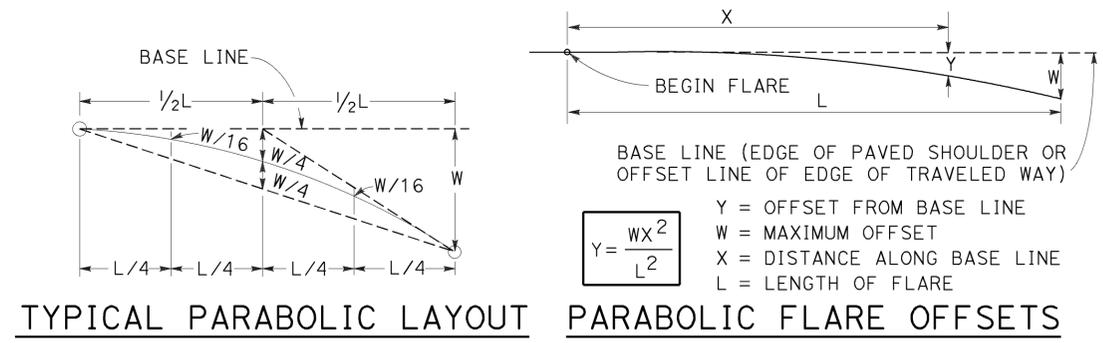
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	39	68

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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TO ACCOMPANY PLANS DATED 11-30-15



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

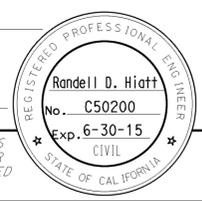
2010 REVISED STANDARD PLAN RSP A77P3

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	40	68

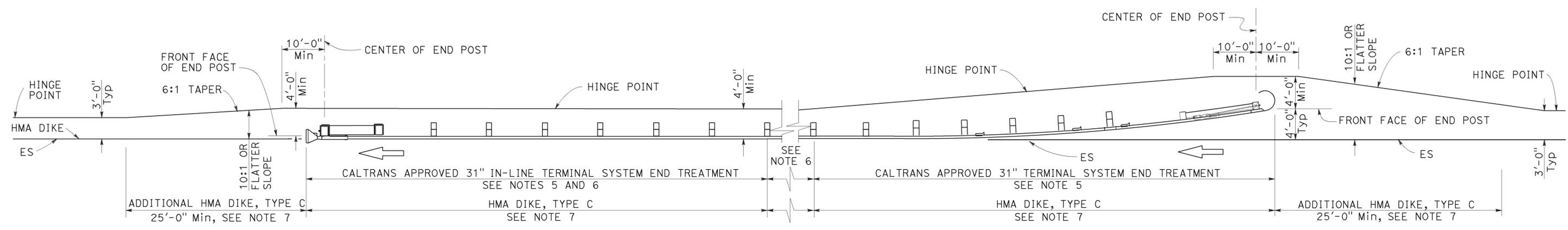
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
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TO ACCOMPANY PLANS DATED 11-30-15



TYPE 11H LAYOUT

(Embankment MGS installation with 31" flared end treatment and 31" in-line treatment at the ends of railing)
See Notes 4 and 7

NOTES:

1. Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
2. MGS post spacing to be 6'-3" center to center, except as otherwise noted.
3. Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 12" x 1'-2" wood blocks, W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
4. Layout Types 11D through 11L, shown on the A77P Series of Standard Plans, are typically used where MGS is recommended to shield embankment slopes and a crashworthy 31" end treatment is required for both directions of traffic.
5. The type of 31" terminal system end treatment to be used will be shown on the Project Plans.
6. 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.
7. Where placement of dike is required with MGS installations, see Revised Standard Plan RSP A77N4 for dike positioning details.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**MIDWEST GUARDRAIL SYSTEM
TYPICAL LAYOUTS FOR
EMBANKMENTS**
NO SCALE

RSP A77P4 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77P4

2010 REVISED STANDARD PLAN RSP A77P4

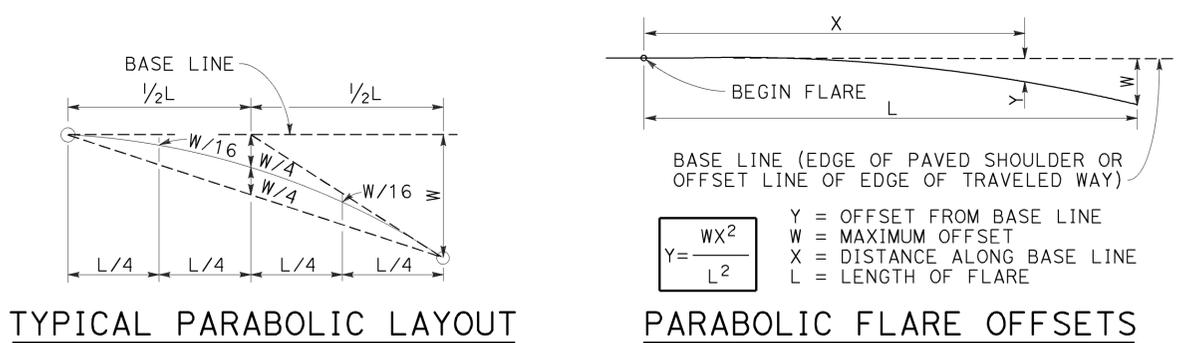
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	41	68

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

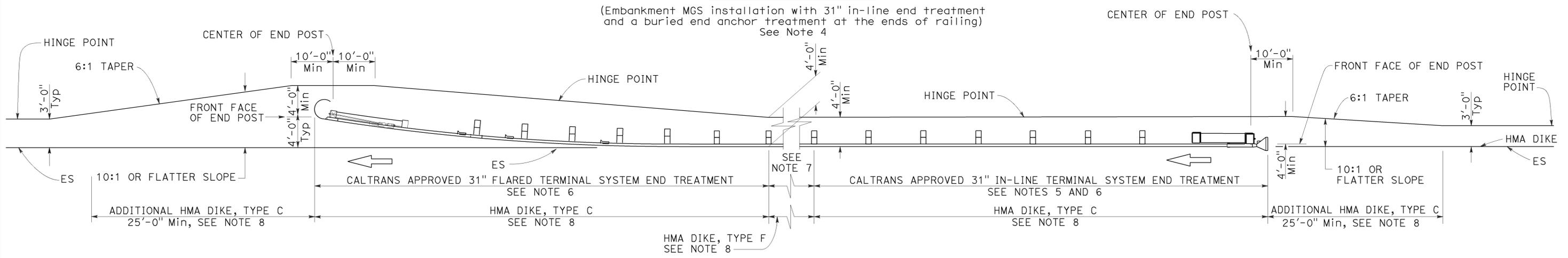
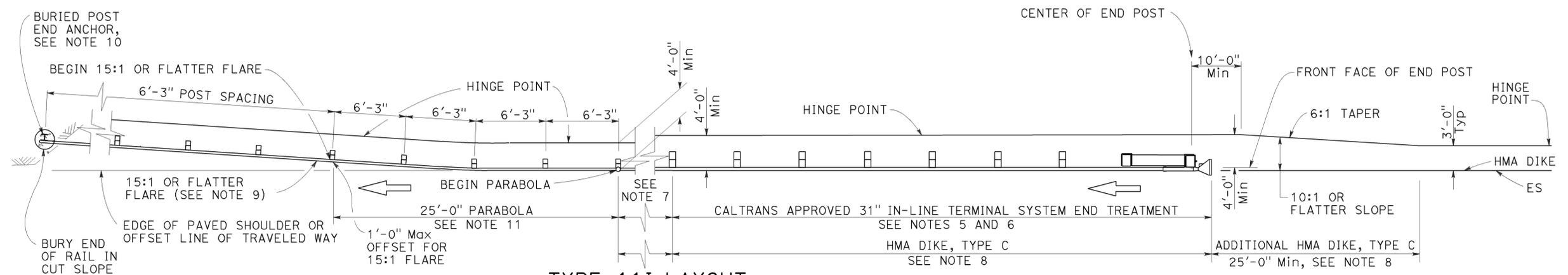
July 19, 2013
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REGISTERED PROFESSIONAL ENGINEER
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA



TO ACCOMPANY PLANS DATED 11-30-15



NOTES:

- Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
- MGS post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 12" x 1'-2" wood blocks, W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
- Layout Types 11D through 11L, shown on the A77P Series of Standard Plans, are typically used where MGS is recommended to shield embankment slopes and a crashworthy 31" end treatment is required for both directions of traffic.
- 31" in-line terminal system end treatments are used where site conditions will not accommodate a 31" flared end treatment.
- The type of 31" terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height and side slope), construction of additional MGS (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
- Where placement of dike is required with MGS installations, see Revised Standard Plan RSP A77N4 for dike positioning details.
- The 15:1 or flatter flare used with buried end anchors is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of MGS within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the buried post end anchor used with Type 11I Layout, see Revised Standard Plan RSP A77T2.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77P1.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
TYPICAL LAYOUTS FOR
EMBANKMENTS**

NO SCALE

RSP A77P5 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP A77P5

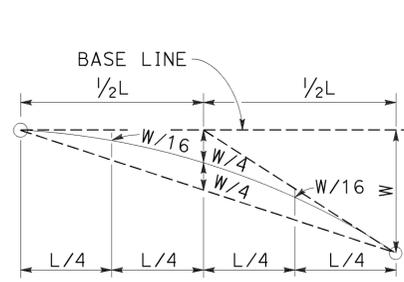
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	42	68

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

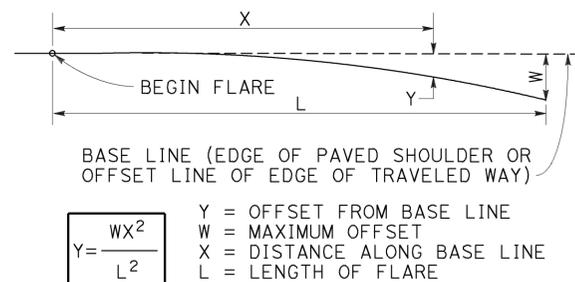
July 19, 2013
PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER
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Exp. 6-30-15
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STATE OF CALIFORNIA

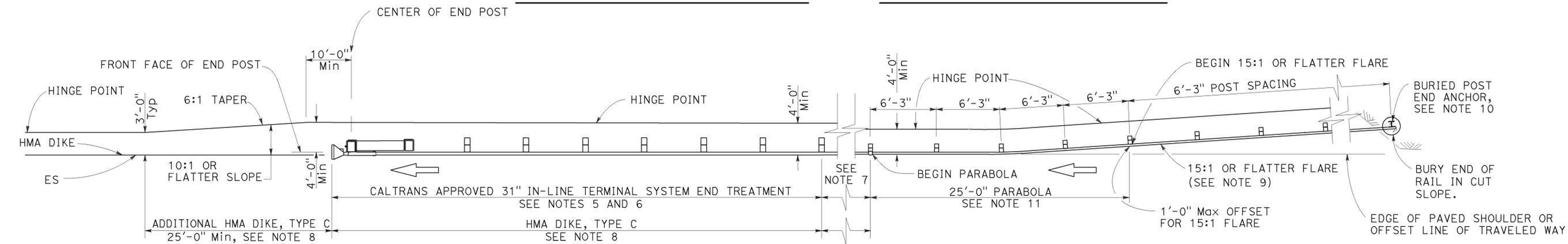


TYPICAL PARABOLIC LAYOUT



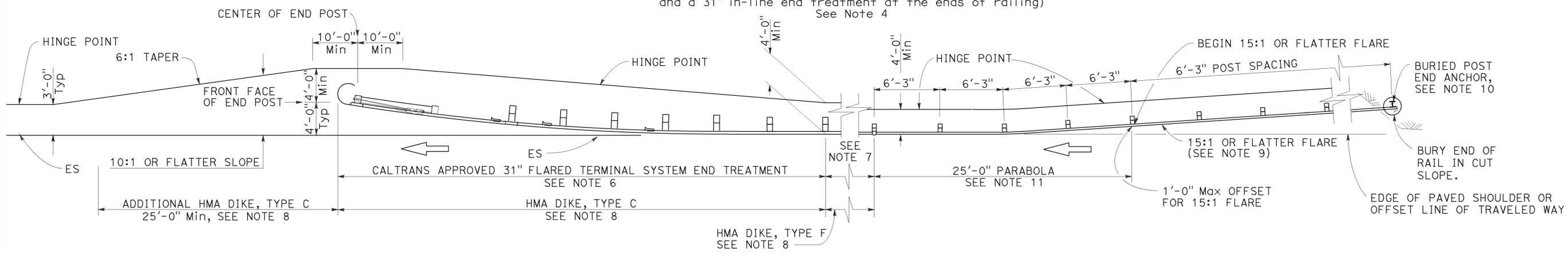
PARABOLIC FLARE OFFSETS

TO ACCOMPANY PLANS DATED 11-30-15



TYPE 11K LAYOUT

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



TYPE 11L LAYOUT

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

NOTES:

- Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
- MGS post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 12" x 1'-2" wood blocks. W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
- Layout Types 11D through 11L, shown on the A77P Series of Standard Plans, are typically used where MGS is recommended to shield embankment slopes and a crashworthy 31" end treatment is required for both directions of traffic.
- 31" in-line terminal system end treatments are used where site conditions will not accommodate a 31" flared end treatment.
- The type of 31" terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height and side slope), construction of additional MGS (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
- Where placement of dike is required with MGS installations, see Revised Standard Plan RSP A77N4 for dike positioning details.
- The 15:1 or flatter flare used with buried end anchors is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of MGS within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the buried post end anchor used with Type 11K and 11L Layouts, see Revised Standard Plan RSP A77T2.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77P1.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**MIDWEST GUARDRAIL SYSTEM
TYPICAL LAYOUTS FOR
EMBANKMENTS**
NO SCALE

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

2010 REVISED STANDARD PLAN RSP A77P6

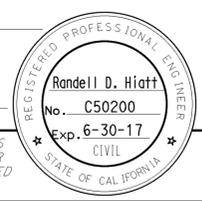
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	43	68

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

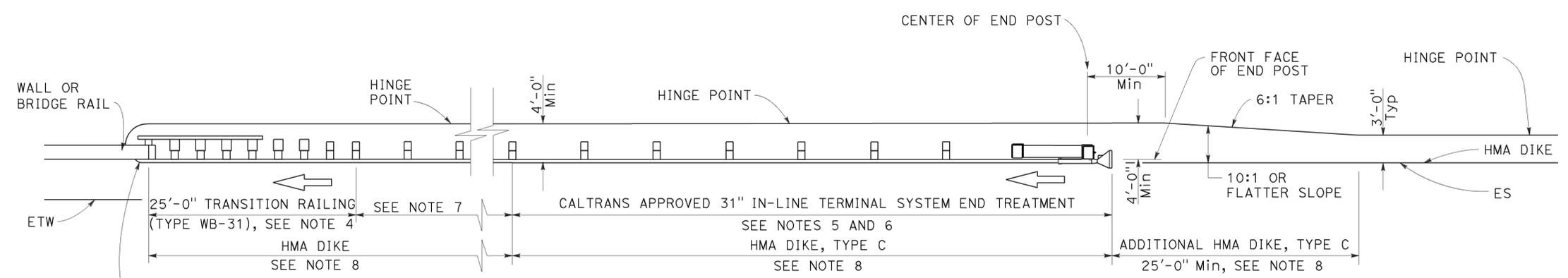
August 14, 2015
PLANS APPROVAL DATE

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TO ACCOMPANY PLANS DATED 11-30-15

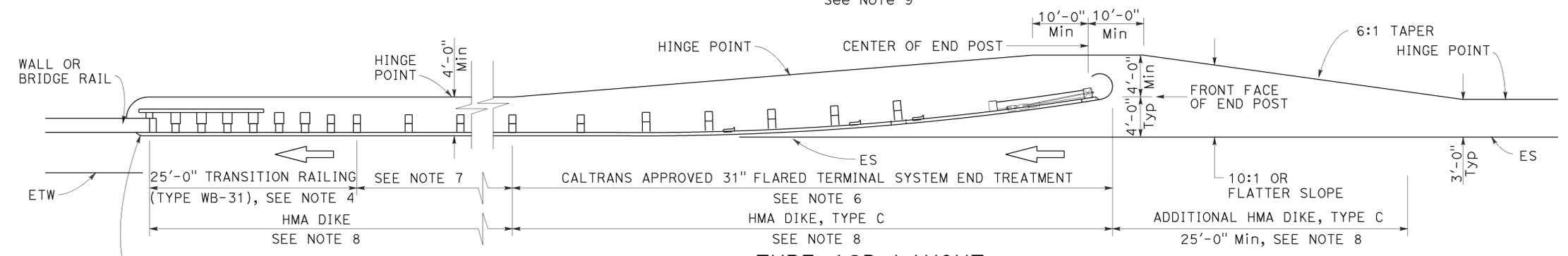


2010 REVISED STANDARD PLAN RSP A77Q1



TYPE 12A LAYOUT

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



TYPE 12B LAYOUT

(MGS installation at structure approach with 31" Flared end treatment at traffic approach end of railing)
See Note 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 of 31" terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height, side slopes, or other fixed objects), it may be advisable to construct additional guard railing (a length equal to multiples of 12'-6" with 6'-3" post spacing) between the transition railing and end treatment. A 12.5 degree angle of departure can be drawn on the Project Plans from the edge of traveled way through the outer most point of the fixed object to determine the additional length of railing needed.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77N4 for dike positioning details.
- Type 12A or Type 12B Layouts are typically used:
 - To the right of approaching traffic, at the end of a structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
 - To the left of approaching traffic, at the end of a structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
 - To the right of approaching traffic at the end of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.
 - To the right of approaching traffic at the end of the structure on multilane freeways or expressways with decked median on the bridge.
- See Revised Standard Plan RSP A77Q3 for typical layout used left of approaching traffic at the ends of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.
- For additional details of typical connections to bridge rail, see Connection Detail AA on Revised Standard Plans RSP A77U1 and RSP A77U2 and Connection Detail FF on Revised Standard Plans RSP A77V1 and RSP A77V2.
- For additional details of a typical connection to walls or abutments, see Revised Standard Plan RSP A77U3.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

RSP A77Q1 DATED AUGUST 14, 2015 SUPERSEDES RSP A77Q1 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

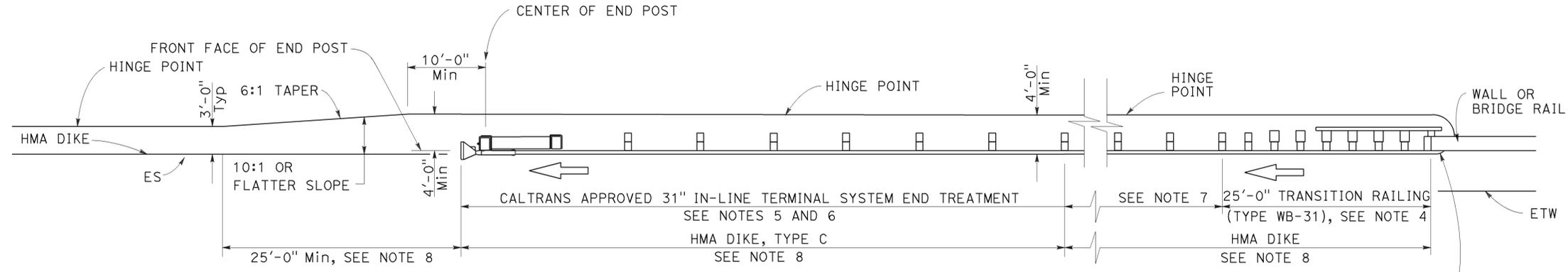
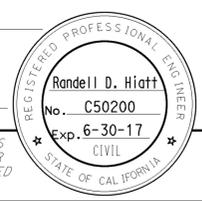
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	44	68

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

August 14, 2015
PLANS APPROVAL DATE

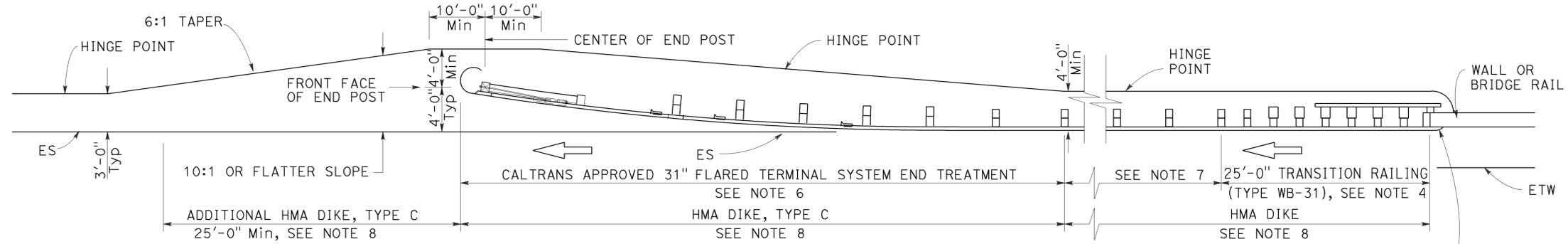
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TO ACCOMPANY PLANS DATED 11-30-15



TYPE 12AA LAYOUT

(MGS installation at structure departure with 31" in-line end treatment at trailing end of railing)
See Notes 8 and 9



TYPE 12BB LAYOUT

(MGS installation at structure departure with 31" flared end treatment at trailing end of railing)
See Notes 8 and 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 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.
- For Transition Railing (Type WB-31) details for Types 12AA and 12BB Layouts, see Revised Standard Plan RSP A77U4.
- 31" in-line terminal system 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.
- Dependent on site conditions (embankment height, side slopes, other fixed objects), it may be advisable to construct additional MGS (a length equal to multiples of 12'-6" with 6'-3" post spacing) between the transition railing and 31" end treatments.
- Where placement of dike is required with MGS installations, see Revised Standard Plan RSP A77N4 for dike positioning details.
- Type 12AA or Type 12BB Layouts are typically used to the right of traffic departing a structure on two-way conventional highways where the roadbed width across the structure is less than 40 feet.
- For additional details of typical connections to bridge rail, see Connection Detail CC on Revised Standard Plan RSP A77U2 and Connection Detail HH on Revised Standard Plan RSP A77V2.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**MIDWEST GUARDRAIL SYSTEM
TYPICAL LAYOUTS FOR
STRUCTURE DEPARTURE**
NO SCALE

RSP A77Q4 DATED AUGUST 14, 2015 SUPERSEDES RSP A77Q4 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77Q4

2010 REVISED STANDARD PLAN RSP A77Q4

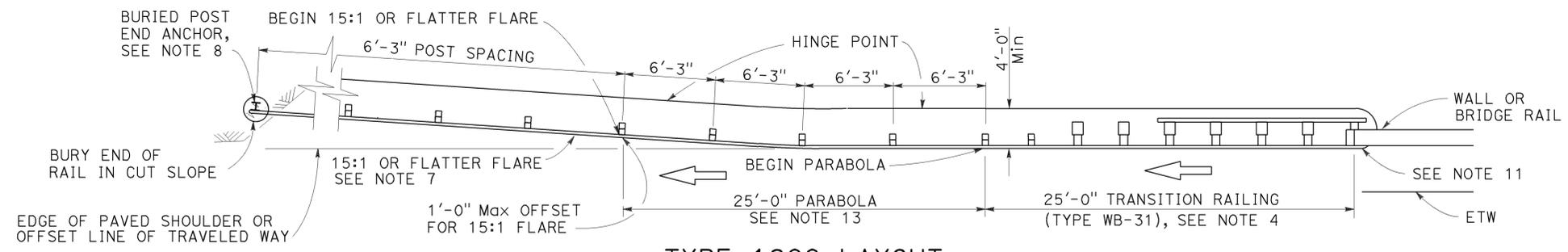
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	45	68

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

August 14, 2015
PLANS APPROVAL DATE

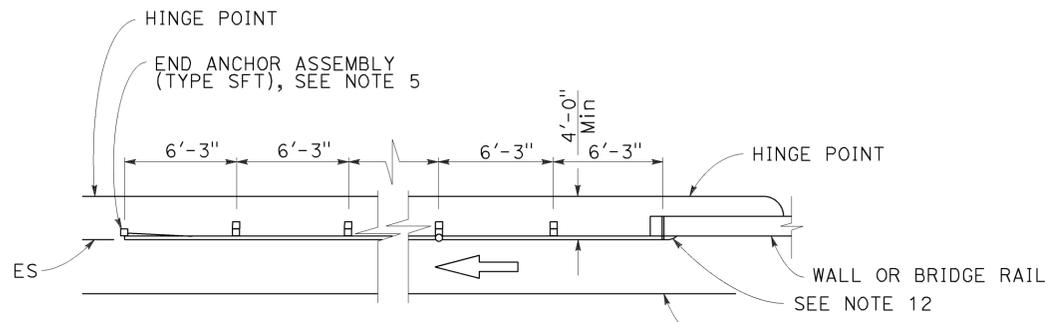
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REGISTERED PROFESSIONAL ENGINEER
No. C50200
Exp. 6-30-17
CIVIL
STATE OF CALIFORNIA



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

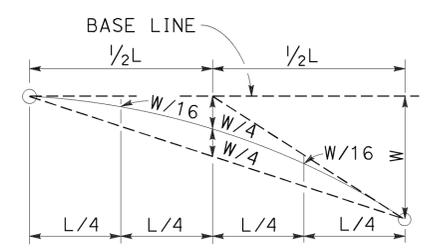


BASE LINE (EDGE OF PAVED SHOULDER OR OFFSET LINE OF EDGE OF TRAVELED WAY)

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

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 AUGUST 14, 2015 SUPERSEDES RSP A77Q5 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77Q5

2010 REVISED STANDARD PLAN RSP A77Q5

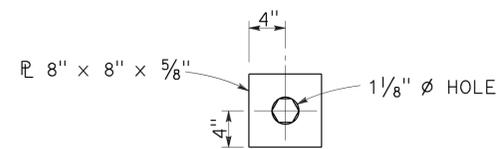
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	46	68

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

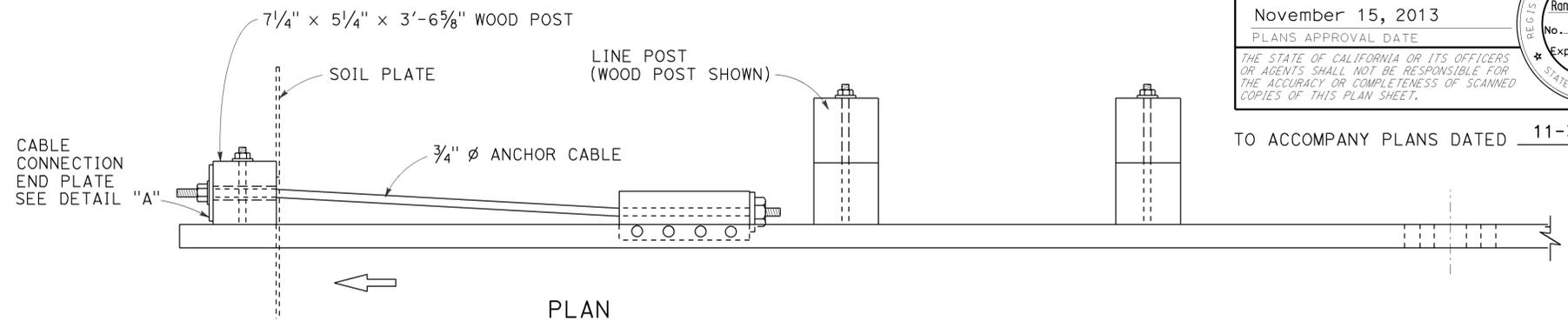
November 15, 2013
PLANS APPROVAL DATE

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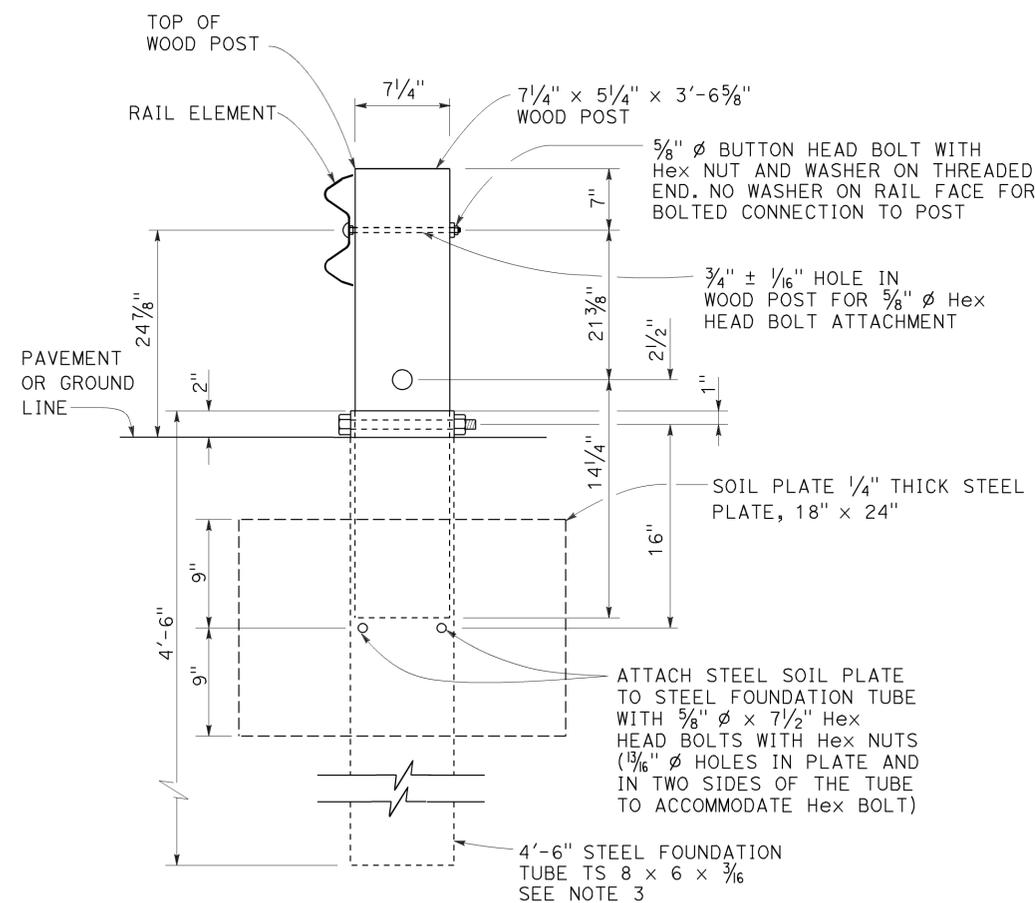
TO ACCOMPANY PLANS DATED 11-30-15



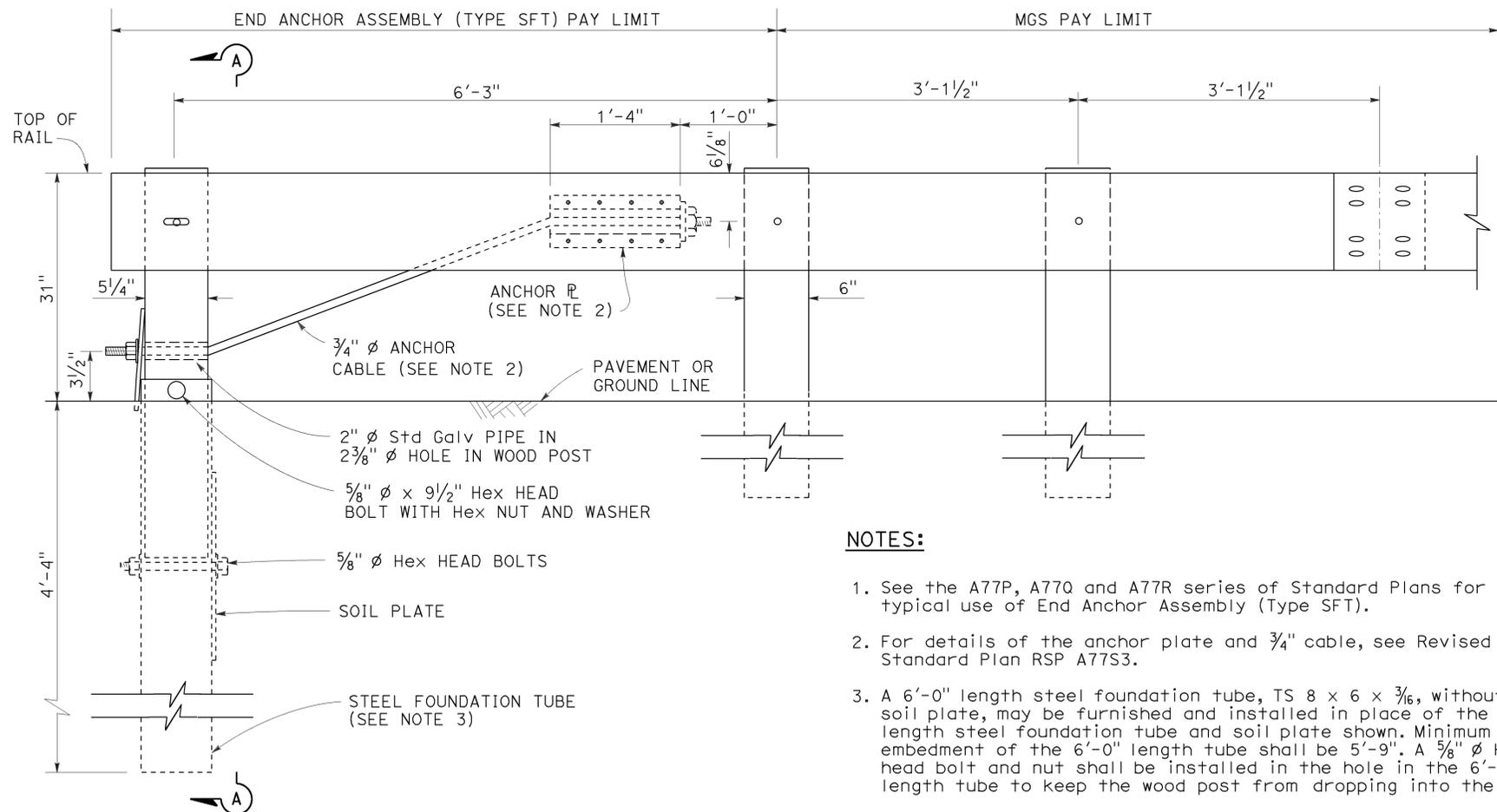
DETAIL "A"
CABLE CONNECTION
END PLATE



PLAN



SECTION A-A



ELEVATION

END ANCHOR
ASSEMBLY (TYPE SFT)

See Note 1

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM
END ANCHOR ASSEMBLY
(TYPE SFT)

NO SCALE

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

REVISED STANDARD PLAN RSP A77S1

2010 REVISED STANDARD PLAN RSP A77S1

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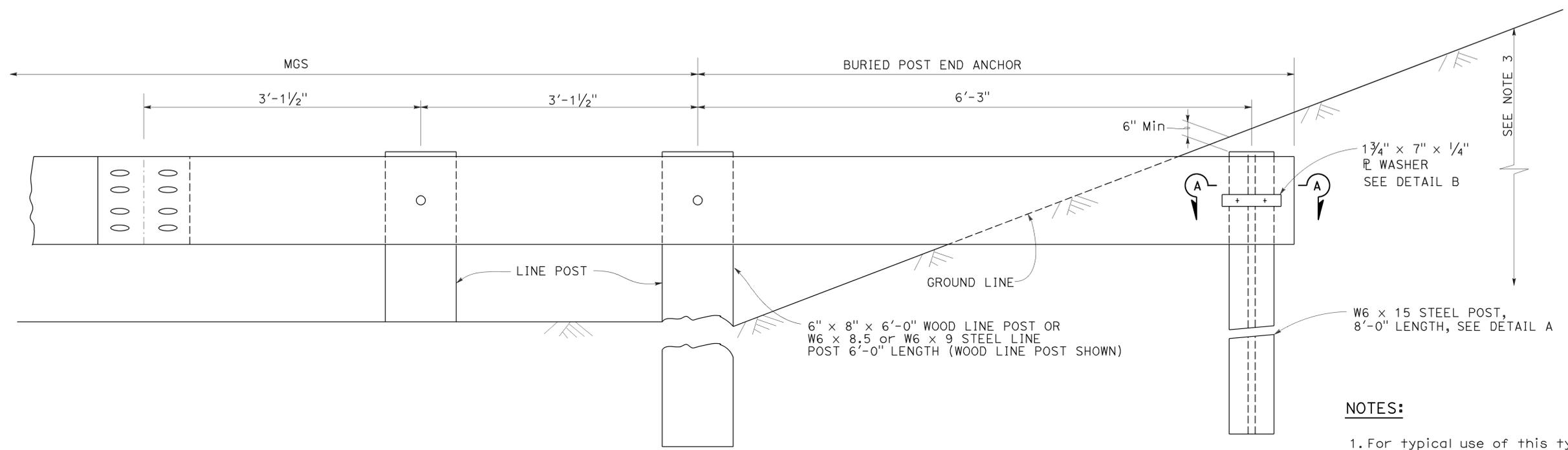
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REGISTERED CIVIL ENGINEER

November 15, 2013
PLANS APPROVAL DATE

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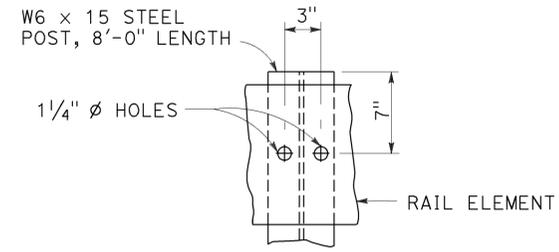
TO ACCOMPANY PLANS DATED 11-30-15



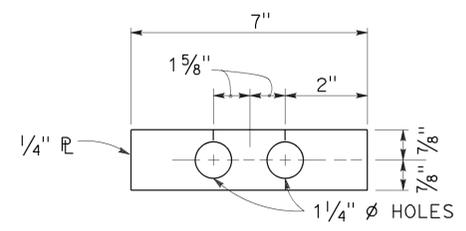
BURIED POST END ANCHOR
See Note 3

NOTES:

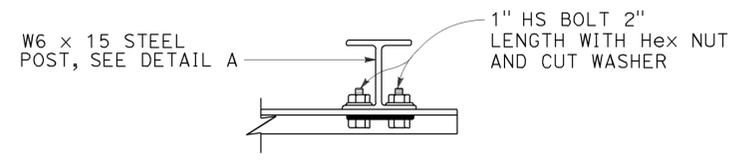
1. For typical use of this type of end anchor with MGS see the A77P, A77Q and A77R Series of the Standard Plans.
2. Holes excavation in the slope to construct the buried post end anchor shall be backfilled with selected earth, placed in layers approximately 1'-0" thick. Each layer shall be moistened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



DETAIL A



DETAIL B



SECTION A-A

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**MIDWEST GUARDRAIL SYSTEM
BURIED POST END ANCHOR**
NO SCALE

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

2010 REVISED STANDARD PLAN RSP A77T2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	48	68

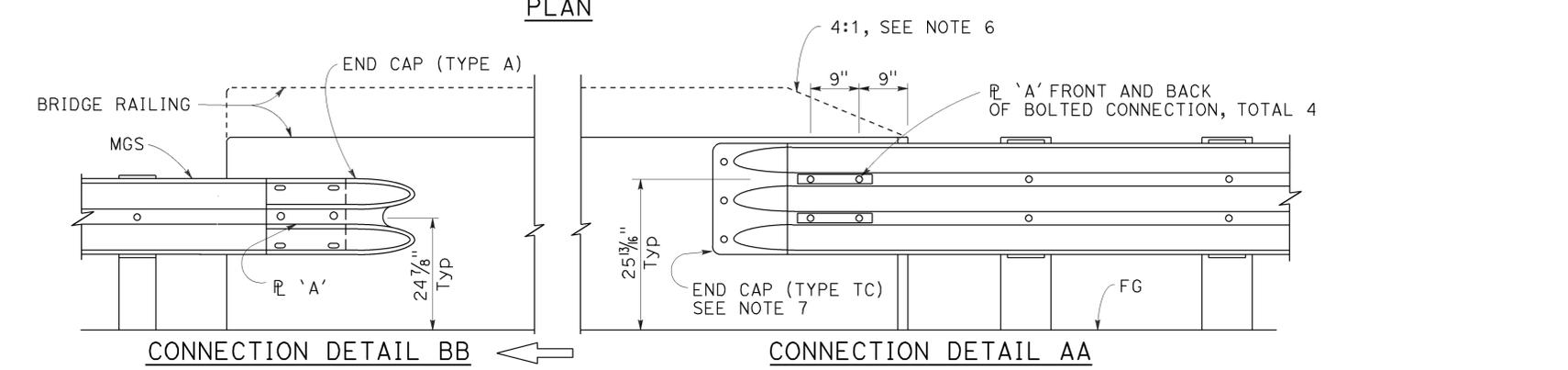
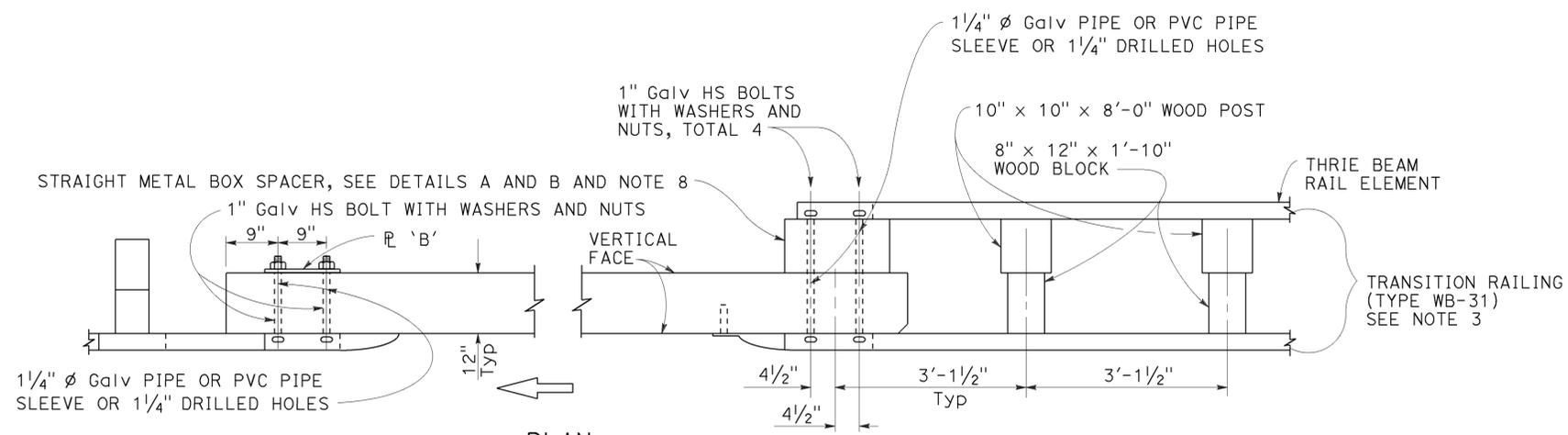
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

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

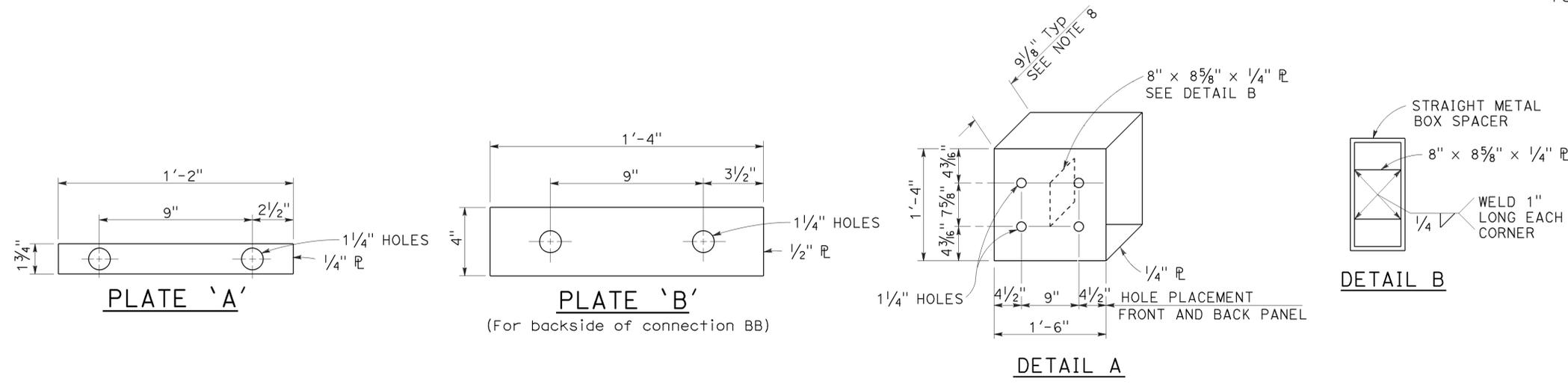
TO ACCOMPANY PLANS DATED 11-30-15



NOTES:

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

MIDWEST GUARDRAIL SYSTEM CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK



STRAIGHT METAL BOX SPACER

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

NO SCALE

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

REVISED STANDARD PLAN RSP A77U1

2010 REVISED STANDARD PLAN RSP A77U1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	49	68

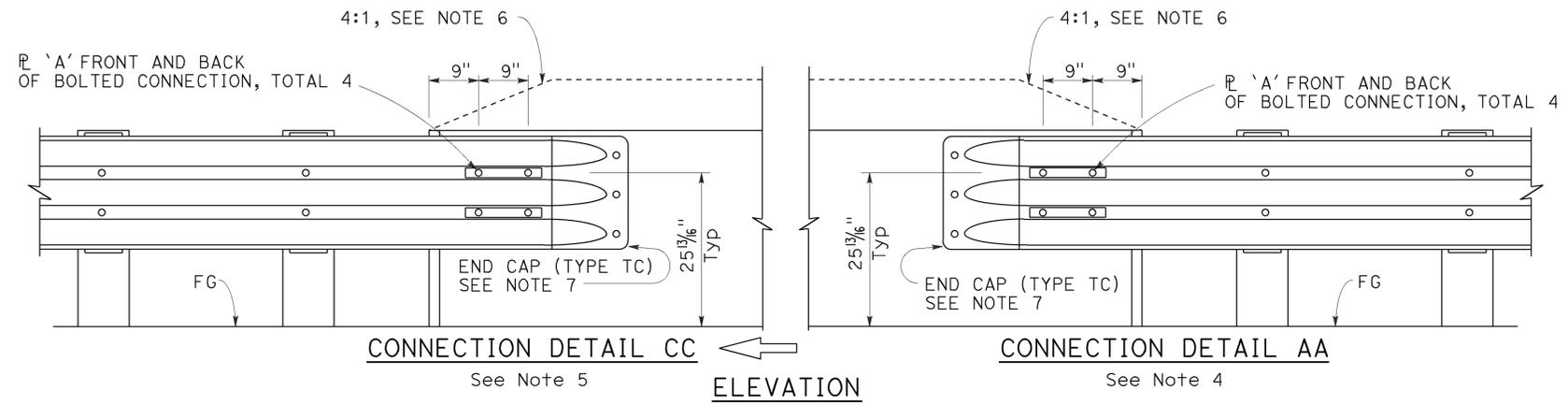
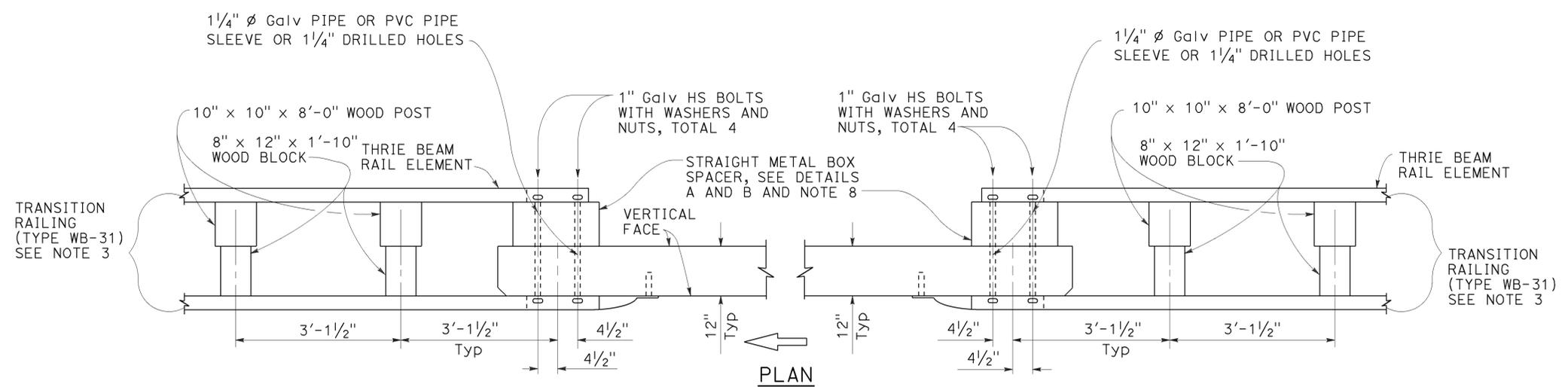
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

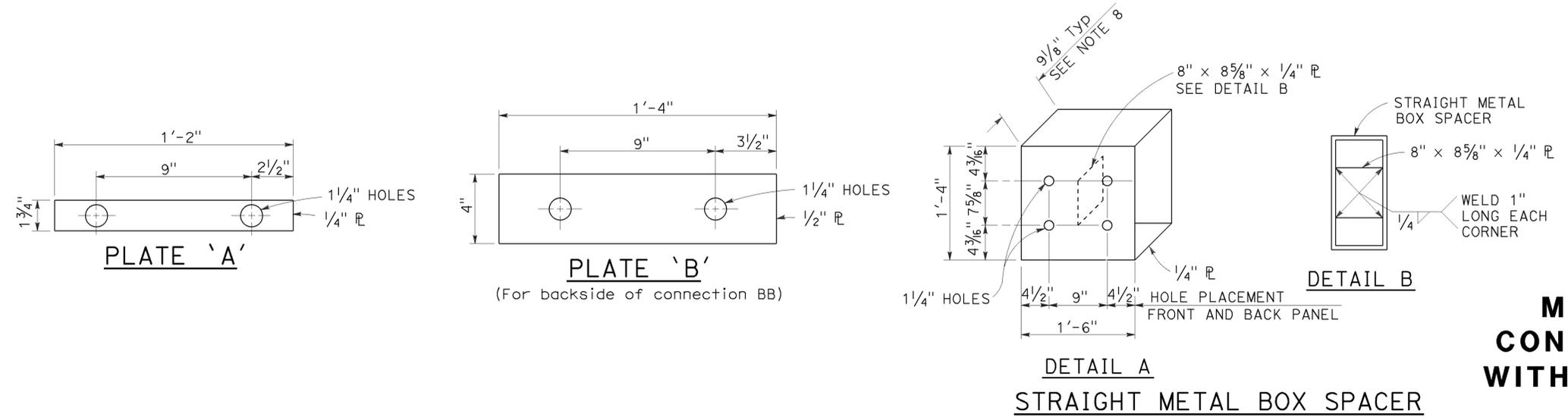
TO ACCOMPANY PLANS DATED 11-30-15



MIDWEST GUARDRAIL SYSTEM CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK

NOTES:

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



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

REVISED STANDARD PLAN RSP A77U2

2010 REVISED STANDARD PLAN RSP A77U2

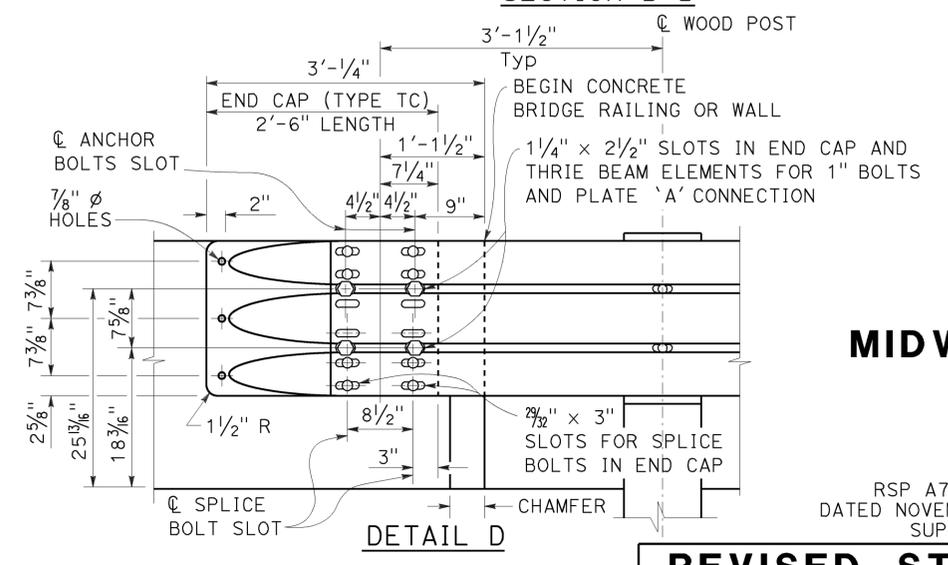
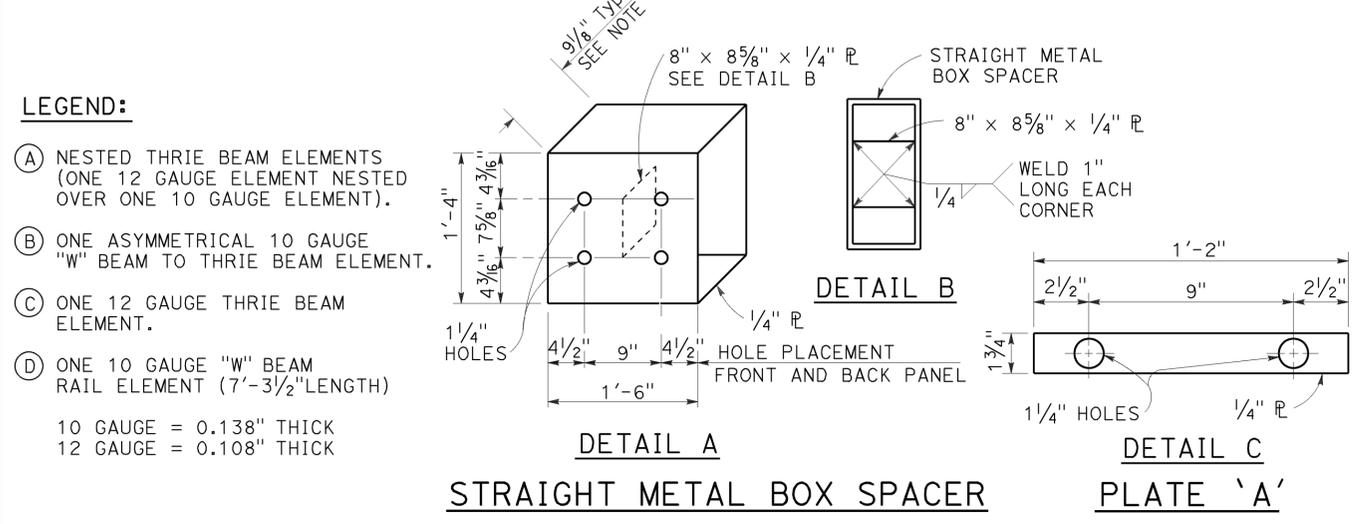
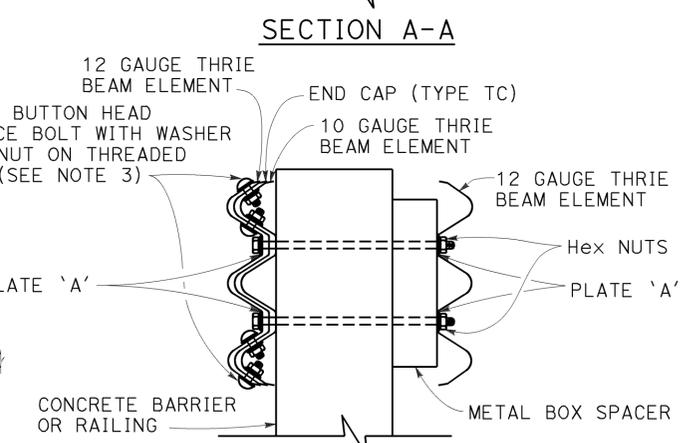
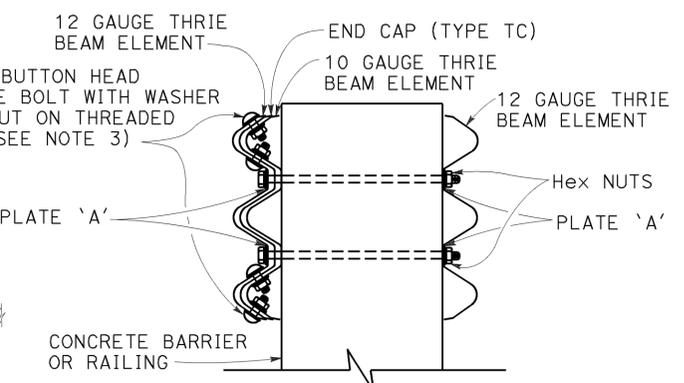
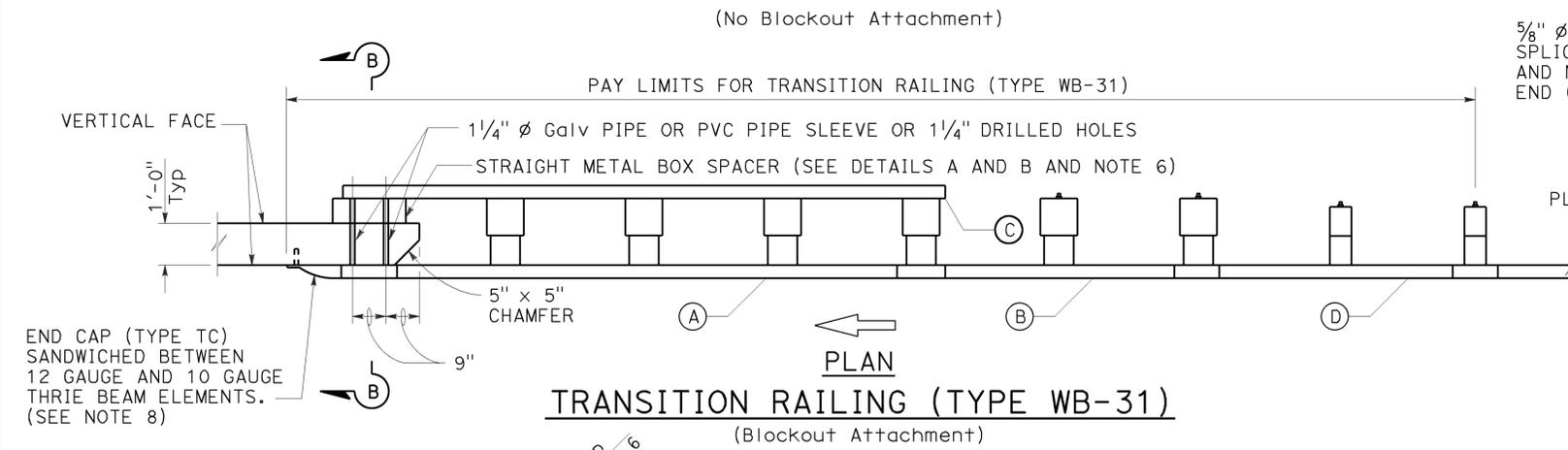
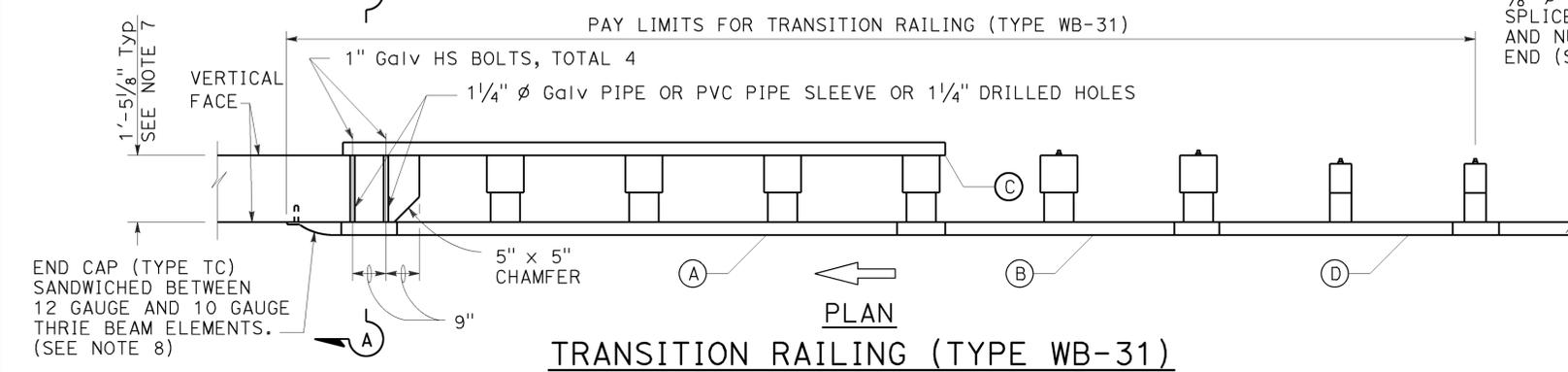
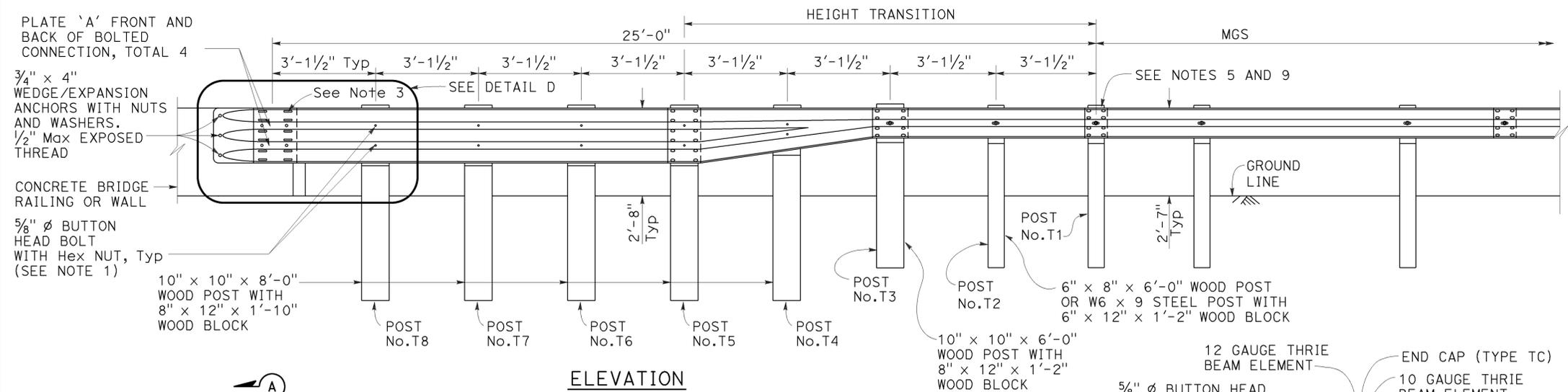
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	50	68

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

January 23, 2015
PLANS APPROVAL DATE

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



NOTES: TO ACCOMPANY PLANS DATED 11-30-15

- Use 5/8" ϕ Button head bolts and hex nuts for connections to posts. No washer on rail face for bolted connections to post.
- The nested rail elements, end cap, and 'W' beam to thrie beam element may be spliced together prior to bolting the elements to the wood post and concrete barrier or railing.
- Exterior splice bolt holes for rail element splices at Post No. 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.
- The top elevation of Posts No. T2 through No. T7 shall not project more than 1" above the top elevation of the rail element.
- Typically, the railing connected to Transition Railing (Type WB-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.
- 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.
- 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.
- 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.
- 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)**

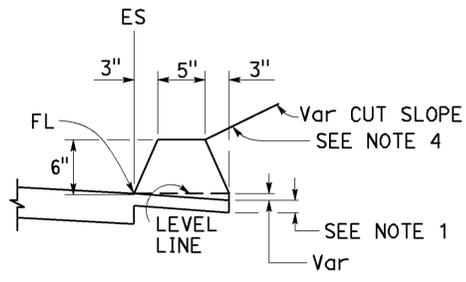
NO SCALE

RSP A77U4 DATED JANUARY 23, 2015 SUPERSEDES RSP A77U4 DATED NOVEMBER 15, 2013 AND RSP A77U4 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

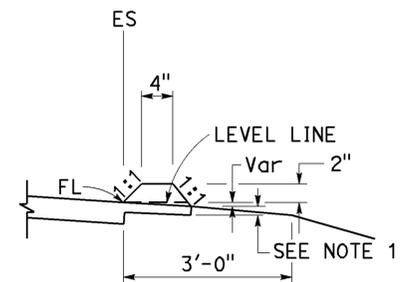
REVISED STANDARD PLAN RSP A77U4

2010 REVISED STANDARD PLAN RSP A77U4

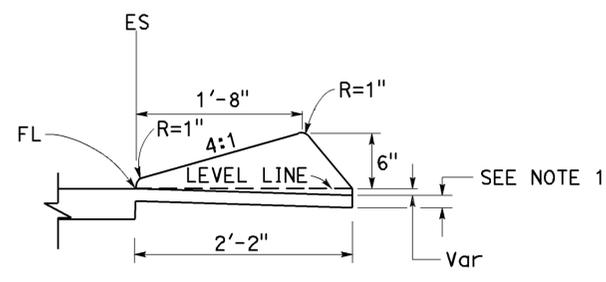
TO ACCOMPANY PLANS DATED 11-30-15



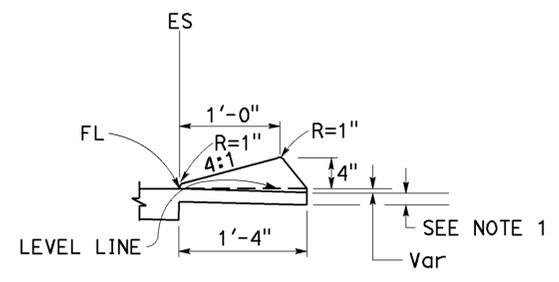
TYPE A
See Notes 3 and 5



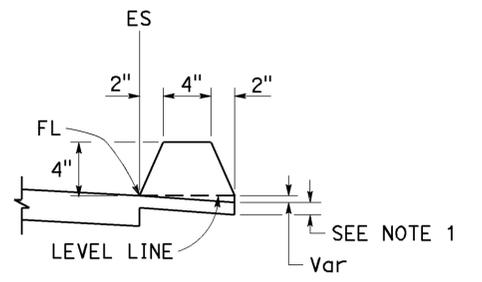
TYPE C



TYPE D

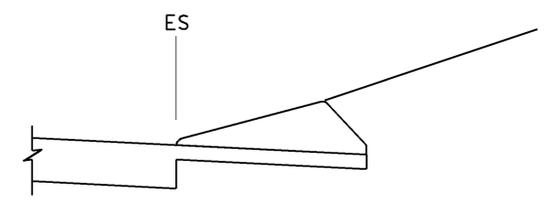


TYPE E

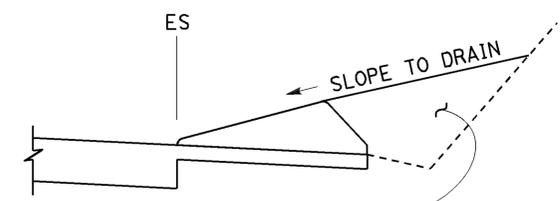


TYPE F
See Note 5

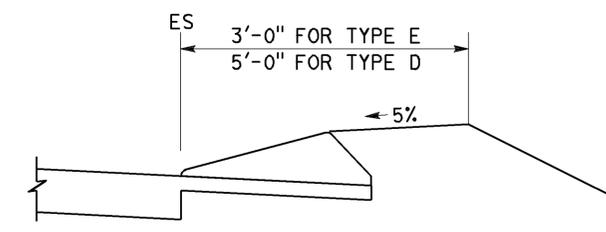
DIKES



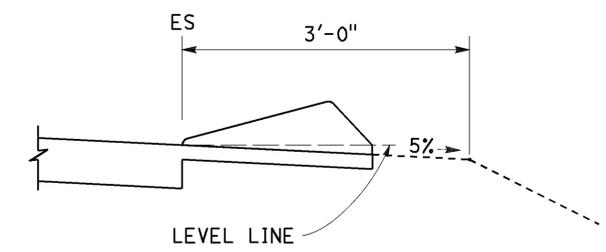
CASE C-1
Cut Slope



CASE C-2
Cut Slope



CASE F



CASE R
See Note 2

TYPE D AND E BACKFILL DETAILS

NOTES:

- 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.
- Case R applies to retrofit only projects where restrictive conditions do not provide enough width for Case F backfill.
- Type A dike only to be used where restrictive slope conditions do not provide enough width to use Type D or Type E dike.
- Fill and compact with excavated material to top of dike.
- Use Type A or F dike, where dike is required with guardrail installations. See Revised Standard Plan RSP A77N4 for dike positioning details. See Revised Standard Plan RSP A77N3 for hinge point offsets with guardrail.

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 JANUARY 15, 2016 SUPERSEDES RSP A87B DATED JULY 19, 2013 AND 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
05	SB	154	R5.9/22.9	52	68

Srikanth N. Balasubramanian
REGISTERED CIVIL ENGINEER

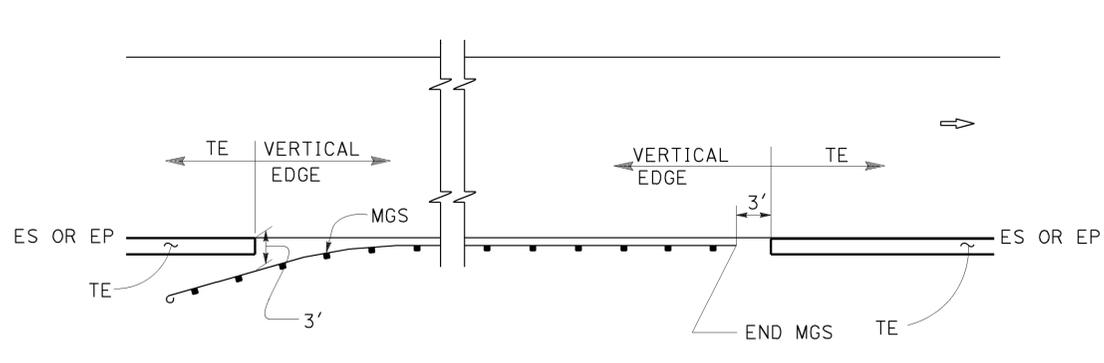
October 30, 2015
PLANS APPROVAL DATE

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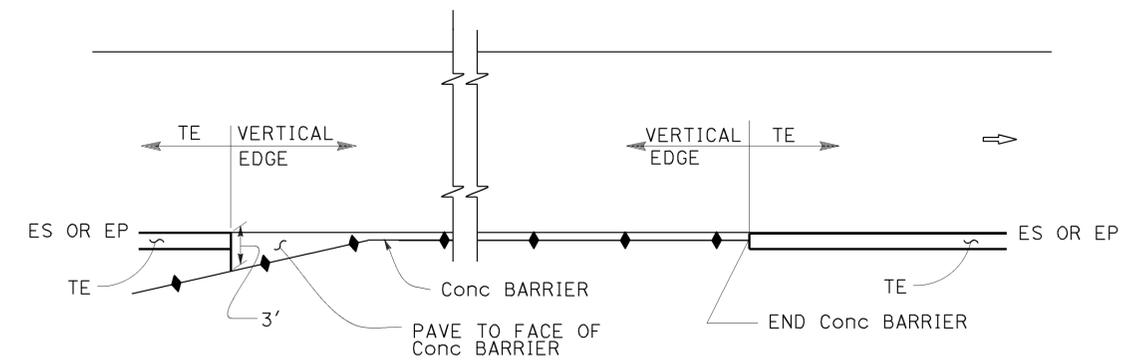
Srikanth N. Balasubramanian
REGISTERED PROFESSIONAL ENGINEER
No. C56426
Exp. 6-30-17
CIVIL
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 11-30-15

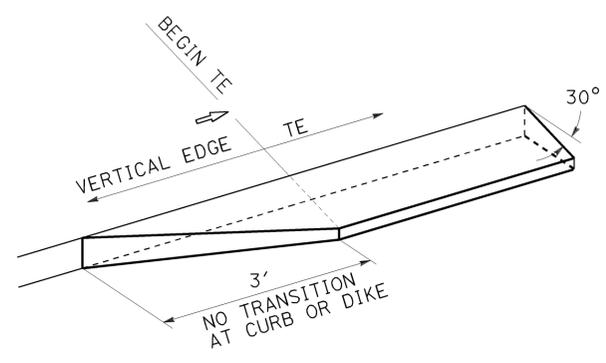
ABBREVIATIONS:
TE TAPERED EDGE



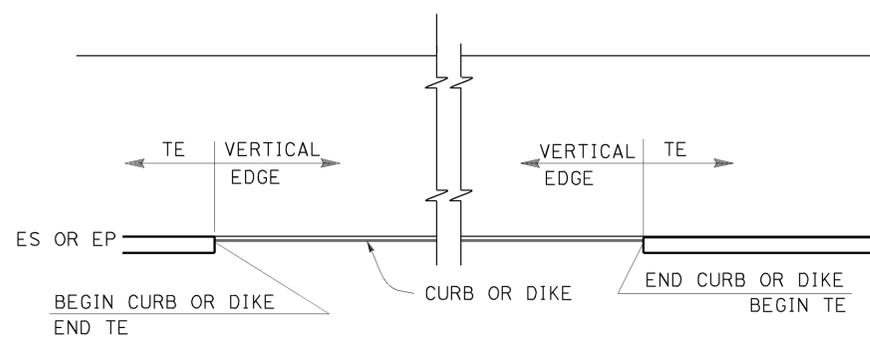
MGS



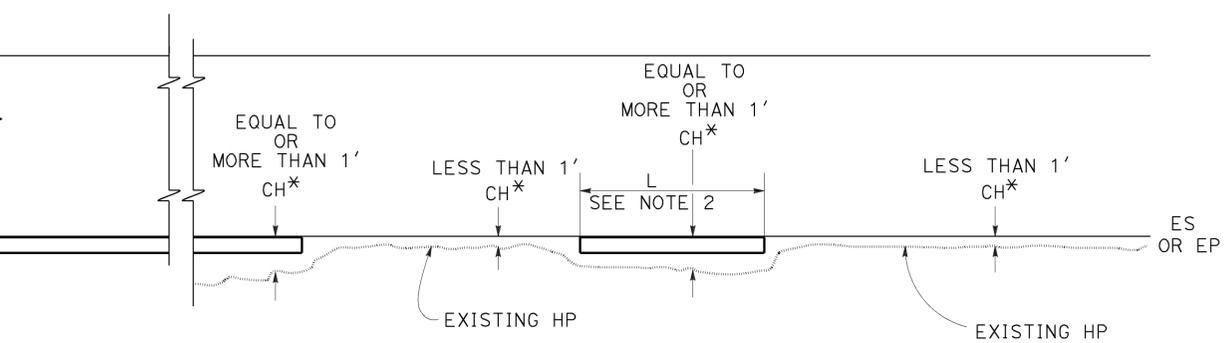
CONCRETE BARRIER



TRANSITION DETAIL FOR CONCRETE ONLY

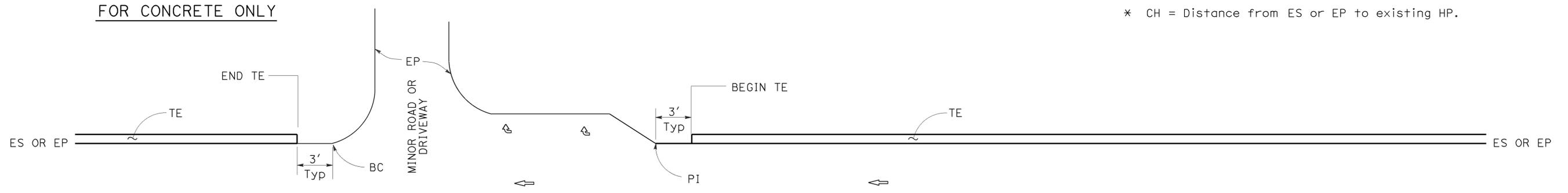


CURB OR DIKE



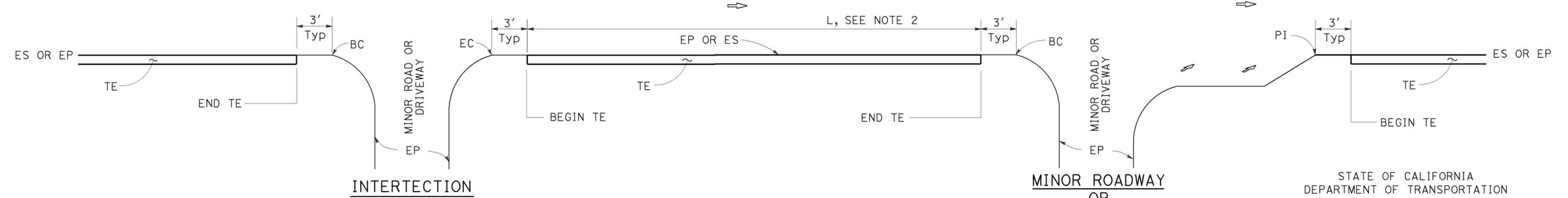
NARROW SIDE SLOPE

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



STATE ROUTE

STATE ROUTE



INTERSECTION

DRIVEWAY AND INTERSECTION

MINOR ROADWAY OR DRIVEWAY

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PAVEMENT EDGE TREATMENTS

NO SCALE

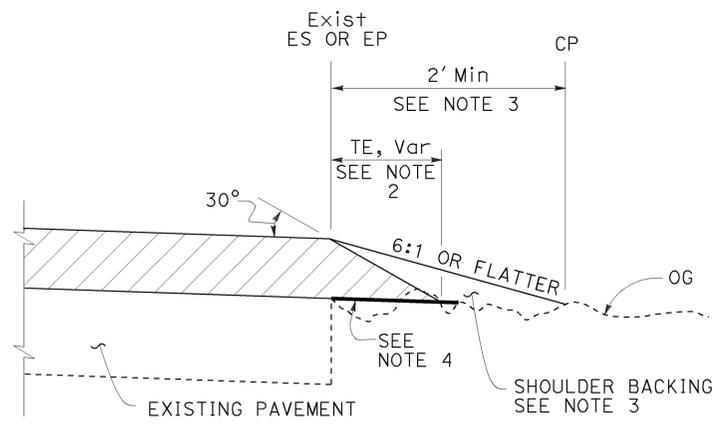
NOTES:

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

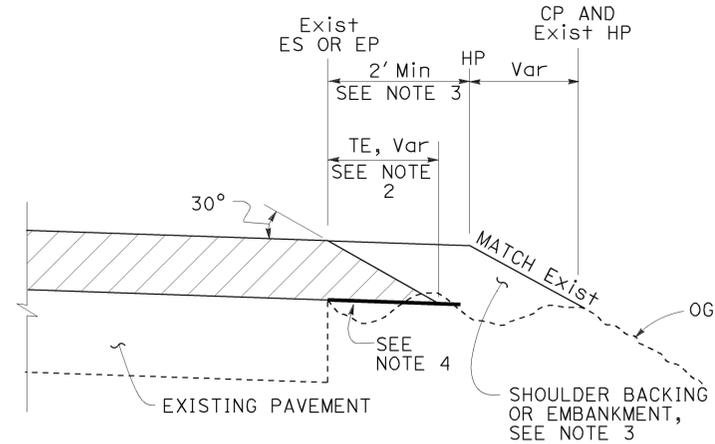
RSP P74 DATED OCTOBER 30, 2015 SUPERSEDES RSP P74 DATED NOVEMBER 15, 2013 AND RSP P74 DATED JANUARY 20, 2012 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP P74

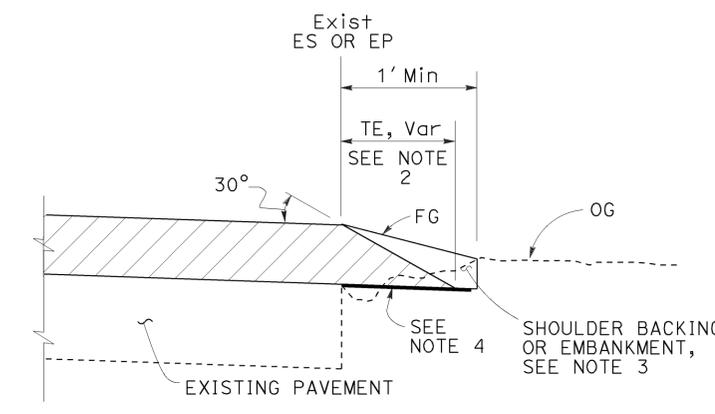
2010 REVISED STANDARD PLAN RSP P74



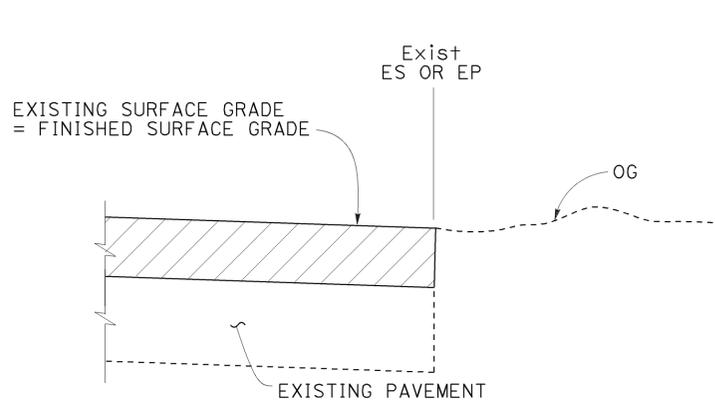
CASE A
Tapered Edge



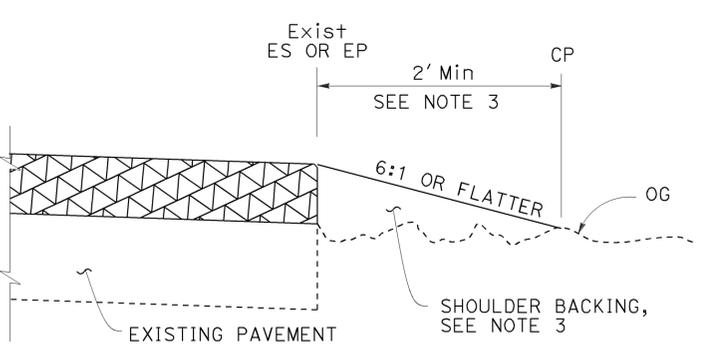
CASE B
Tapered Edge



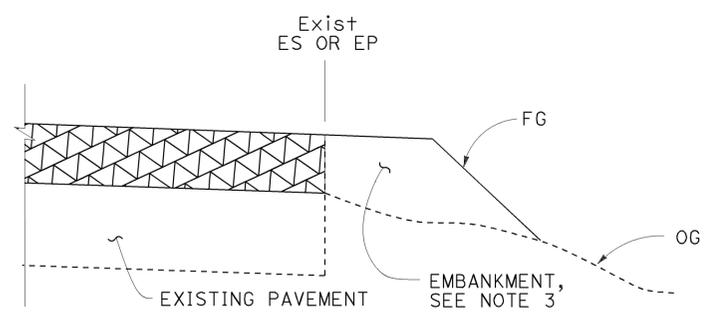
CASE C
Tapered Edge



CASE D
Vertical Edge



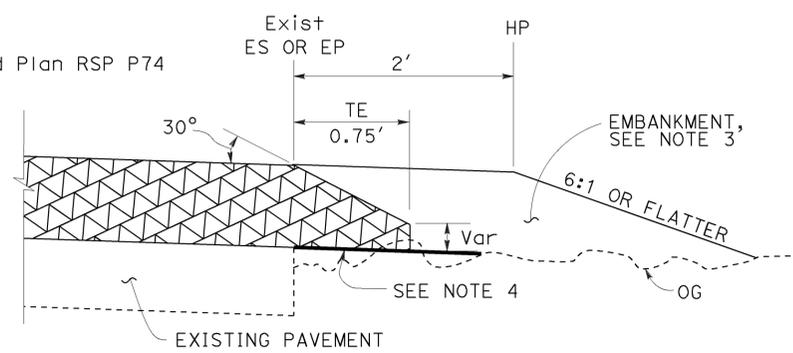
CASE E
Vertical Edge



CASE F
Vertical Edge

* See Table A and Revised Std Plan RSP P74

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



DETAIL "A"

For HMA overlay thickness more than 0.43' or concrete overlay

LEGEND:

- HMA OVERLAY
- HMA OR CONCRETE OVERLAY
- CONCRETE OVERLAY

ABBREVIATIONS:

- TE TAPERED EDGE
- TT TOTAL THICKNESS OF TE

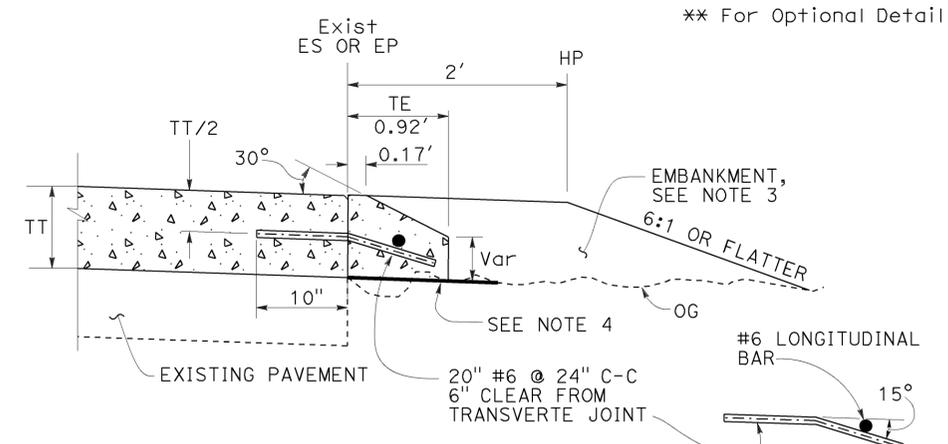
TABLE A
EDGE TREATMENT FOR VARIOUS OVERLAY THICKNESS AND CONDITIONS

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

ADDITIONAL HMA OR CONCRETE QUANTITIES FOR TE/SIDE/MILE

TYPICAL CROSS SECTION	TT	TOTAL ADDITIONAL MATERIAL FOR TE/SIDE/MILE		
		HMA (TON)	CONCRETE (CY)*	CONCRETE (CY)**
	0.15'	7.7	NA	NA
	0.20'	13.7	NA	NA
	0.30'	30.9	NA	NA
	0.40'	54.9	NA	NA
	0.45'	69.4	NA	NA
	0.50'	84.2	NA	NA
	0.60'	113.9	NA	NA
	0.70'	143.6	70.9	94.2
	0.80'	173.3	85.6	112.2
	0.90'	203.0	100.3	130.2
	1.00'	232.7	114.9	148.2
	1.10'	262.4	129.6	166.2
1.20'	292.1	144.3	184.2	

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



OPTIONAL DETAIL "A"

For concrete overlay
See Note 5

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PAVEMENT EDGE TREATMENTS- OVERLAYS

NO SCALE

RSP P75 DATED OCTOBER 30, 2015 SUPERSEDES RSP P75 DATED NOVEMBER 15, 2013 AND RSP P75 DATED JANUARY 20, 2012 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP P75

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	54	68

Srikanth N. Balasubramanian
REGISTERED CIVIL ENGINEER

October 30, 2015
PLANS APPROVAL DATE

Srikanth N. Balasubramanian
No. C56426
Exp. 6-30-17
CIVIL
STATE OF CALIFORNIA

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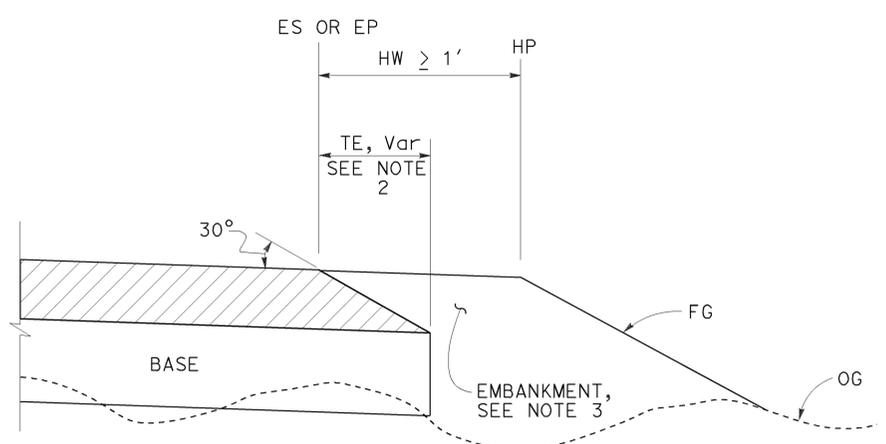
TO ACCOMPANY PLANS DATED 11-30-15

LEGEND:

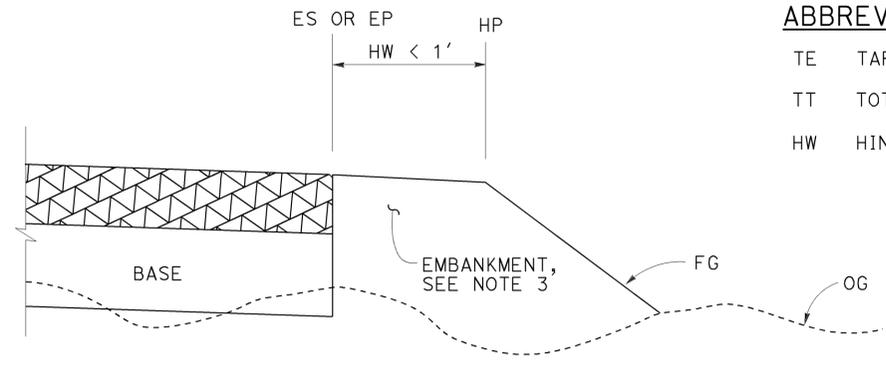
-  HMA PAVEMENT
-  HMA OR CONCRETE PAVEMENT
-  CONCRETE PAVEMENT

ABBREVIATIONS:

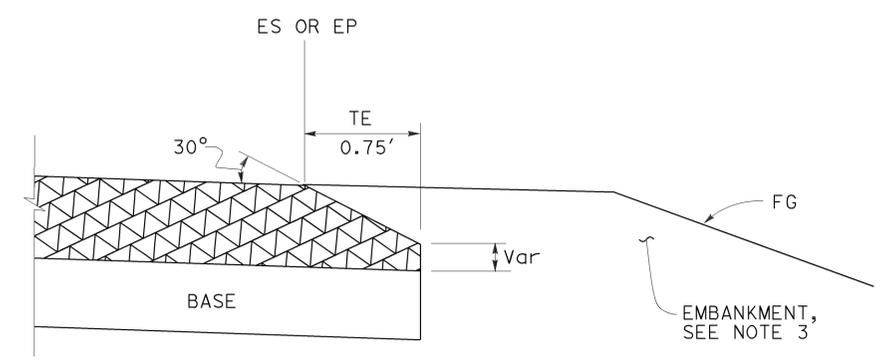
- TE TAPERED EDGE
- TT TOTAL THICKNESS OF TE
- HW HINGE WIDTH, DISTANCE FROM ES OR EP TO HP



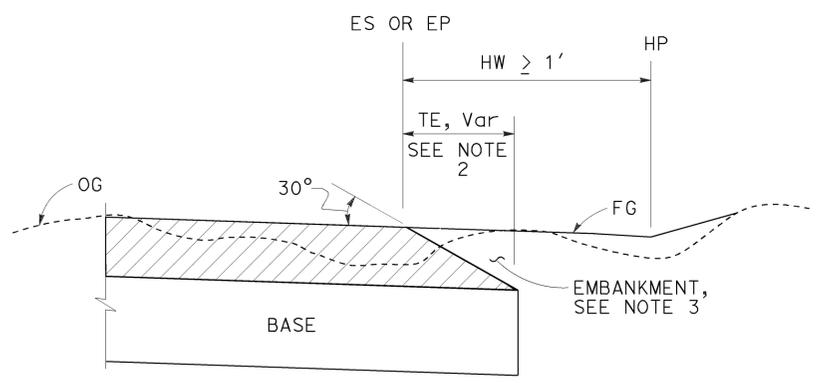
CASE K
Tapered Edge - Fill Section, HW $\geq 1'$



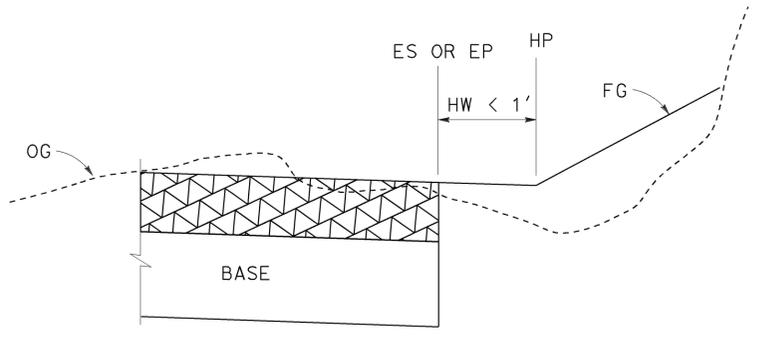
CASE L
Vertical Edge - Fill Section, HW $< 1'$



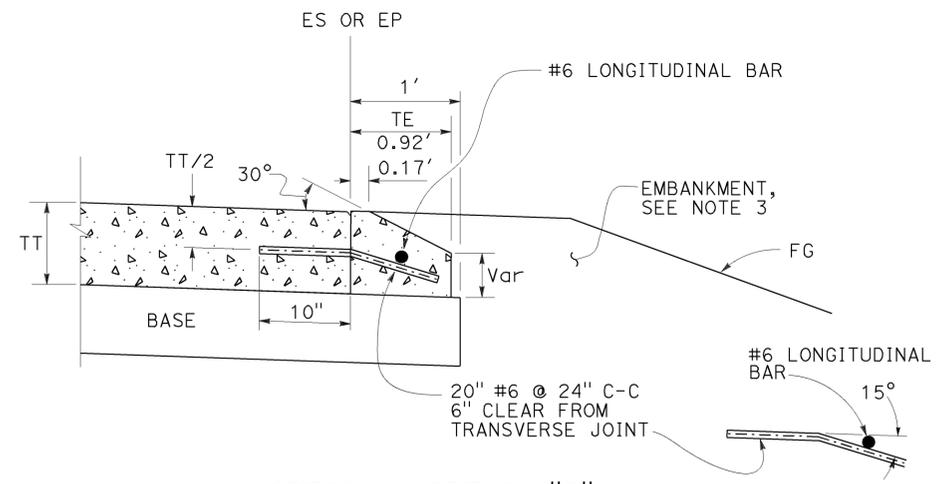
DETAIL "B"
For HMA pavement thickness more than 0.43' or concrete pavement



CASE M
Tapered Edge - Cut Section, HW $\geq 1'$



CASE N
Vertical Edge - Cut Section, HW $< 1'$



OPTIONAL DETAIL "B"
For concrete pavement
See Note 4

FILL SECTION

CUT SECTION

NOTES:

1. For limits of tapered edge and vertical edge treatments, see Revised Standard Plan RSP P74
2. Details shown for HMA pavement thickness less than 0.43'. See Detail "B" for HMA pavement thickness more than 0.43' or concrete pavement.
3. For locations and limits of embankment see project plans.
4. Tapered edge transverse joint must match pavement transverse joint. End of #6 longitudinal bar must be 2" $\pm 1/2$ " clear from transverse joint.
5. Tapered edge is not needed in the area of MGS, barrier, right turn lane and acceleration lane. See Revised Standard Plan RSP P74.

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

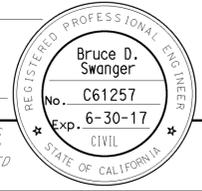
RSP P76 DATED OCTOBER 30, 2015 SUPERSEDES RSP P76 DATED NOVEMBER 15, 2013 AND RSP P76 DATED JANUARY 20, 2012 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP P76

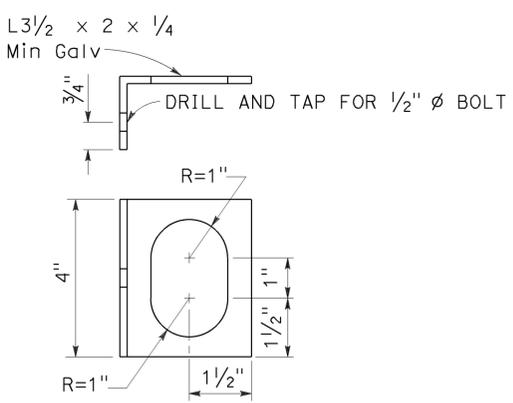
2010 REVISED STANDARD PLAN RSP P76

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SB	154	R5.9/22.9	55	68

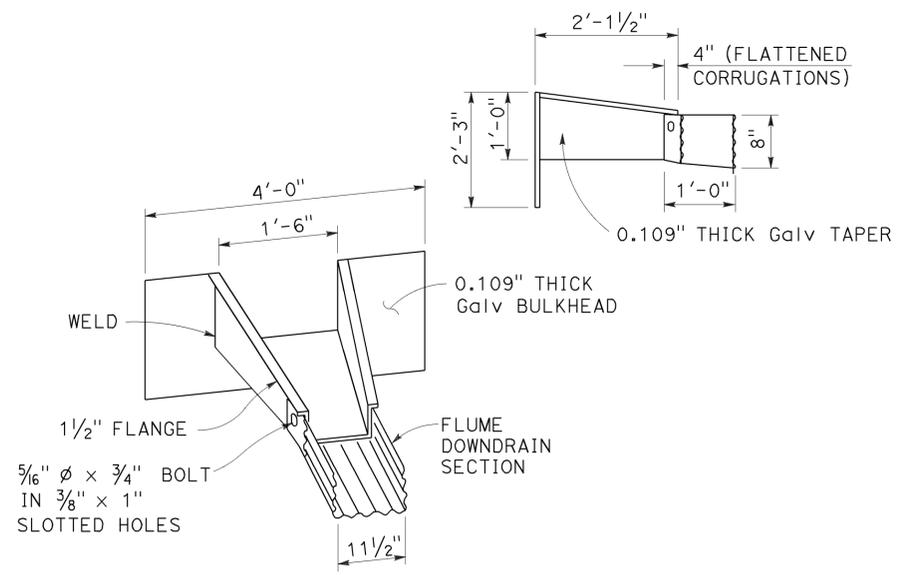
REGISTERED CIVIL ENGINEER	
October 30, 2015	
PLANS APPROVAL DATE	
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>	



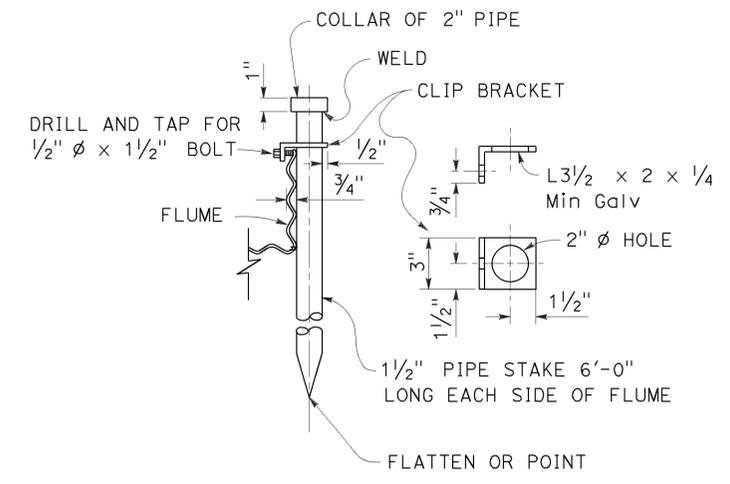
TO ACCOMPANY PLANS DATED 11-30-15



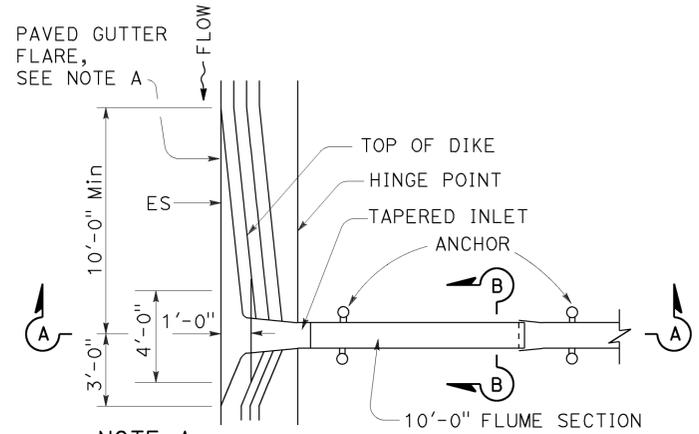
ALTERNATIVE CLIP BRACKET DETAIL



TAPERED INLET

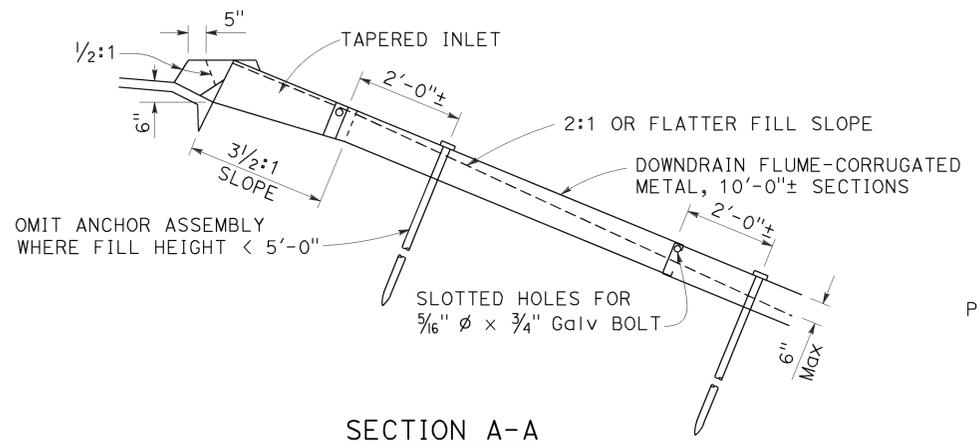


PIPE STAKE ANCHOR DETAIL

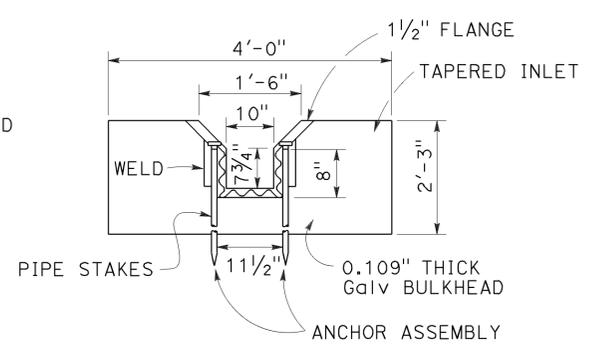


NOTE A
In sag location, use 10'-0" length of paved gutter flare on both sides of inlet.

PLAN

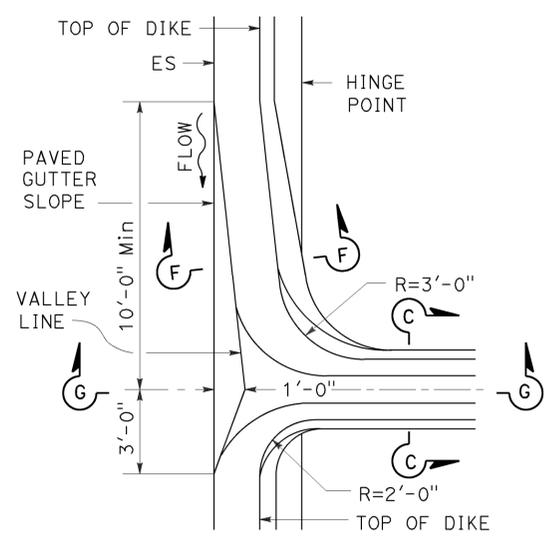


SECTION A-A



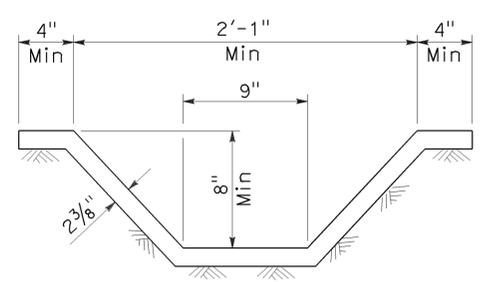
SECTION B-B

TAPERED INLET AND FLUME DOWNDRAIN



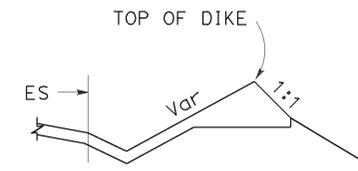
PLAN
MOUNTABLE DIKE

HOT MIX ASPHALT OVERSIDE DRAINS

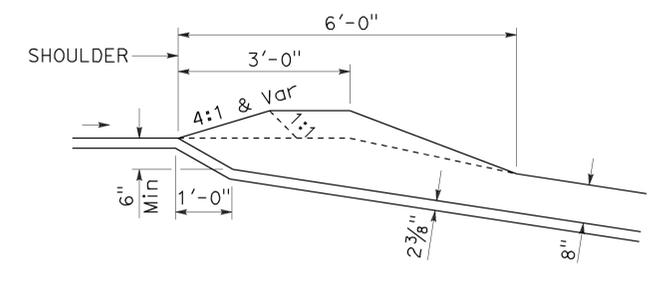


SECTION C-C
See Note 1

NOTE:
1. Cross section of slope ditch may be semicircular, vee or trapezoidal.



SECTION F-F



SECTION G-G

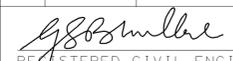
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
OVERSIDE DRAINS
NO SCALE

RSP D87D DATED OCTOBER 30, 2015 SUPERSEDES STANDARD PLAN D87D DATED MAY 20, 2011 - PAGE 185 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP D87D

2010 REVISED STANDARD PLAN RSP D87D

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	56	68


 REGISTERED CIVIL ENGINEER
 July 19, 2013
 PLANS APPROVAL DATE



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TO ACCOMPANY PLANS DATED 11-30-15

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

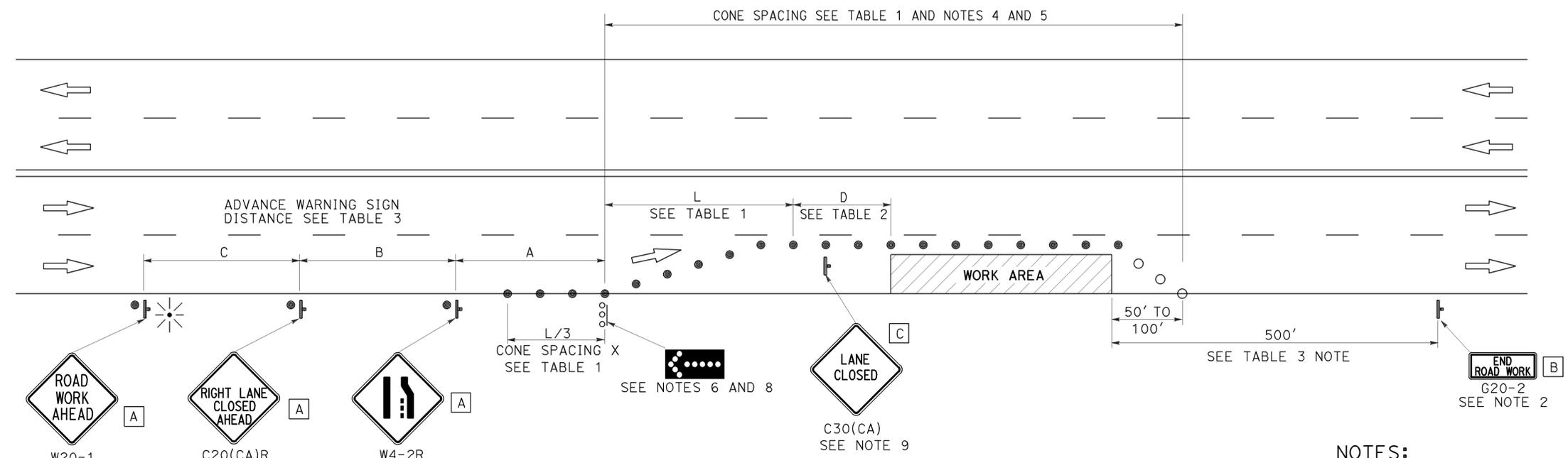
RSP T9 DATED JULY 19, 2013 SUPERSEDES RSP T9 DATED APRIL 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T9

2010 REVISED STANDARD PLAN RSP T9



TO ACCOMPANY PLANS DATED 11-30-15



TYPICAL LANE CLOSURE

NOTES:

See Revised Standard Plan RSP T9 for tables.

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

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

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

NOTES:

- Each advance warning sign shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
- A G20-2 "END ROAD WORK" sign, as appropriate, shall be placed at the end of the lane closure unless the end of work area is obvious, or ends within a larger project's limits.
- If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT _____ MILES", use a C20(CA) sign for the first advance warning sign.
- All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
- Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime closures only.
- Flashing arrow sign shall be either Type I or Type II.
- For approach speeds over 50 mph, use the "Traffic Control System for Lane Closure On Freeways And Expressways" plan for lane closure details and requirements.
- A minimum 1500' of sight distance shall be provided where possible for vehicles approaching the first flashing arrow sign. Lane closures shall not begin at the top of crest vertical curve or on a horizontal curve.
- Place a C30(CA) sign every 2000' throughout length of lane closure.
- Median lane closures shall conform to the details as shown except that C20(CA)L and W4-2L signs shall be used.
- At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closure unless, otherwise directed by the Engineer.

LEGEND

- TRAFFIC CONE
- TRAFFIC CONE (OPTIONAL TAPER)
- ⊥ TEMPORARY TRAFFIC CONTROL SIGN
- ⬢ FLASHING ARROW SIGN (FAS)
- ⊞ FAS SUPPORT OR TRAILER
- ⊛ PORTABLE FLASHING BEACON

SIGN PANEL SIZE (Min)

- A 48" x 48"
- B 36" x 18"
- C 30" x 30"

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**TRAFFIC CONTROL SYSTEM
FOR LANE CLOSURE ON
MULTILANE CONVENTIONAL
HIGHWAYS**

NO SCALE

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

REVISED STANDARD PLAN RSP T11

2010 REVISED STANDARD PLAN RSP T11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	58	68

Devinder Singh
 REGISTERED CIVIL ENGINEER
 No. C50470
 Exp. 6-30-17
 CIVIL
 STATE OF CALIFORNIA

October 30, 2015
 PLANS APPROVAL DATE

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NOTES:

See Revised Standard Plan RSP T9 for tables.

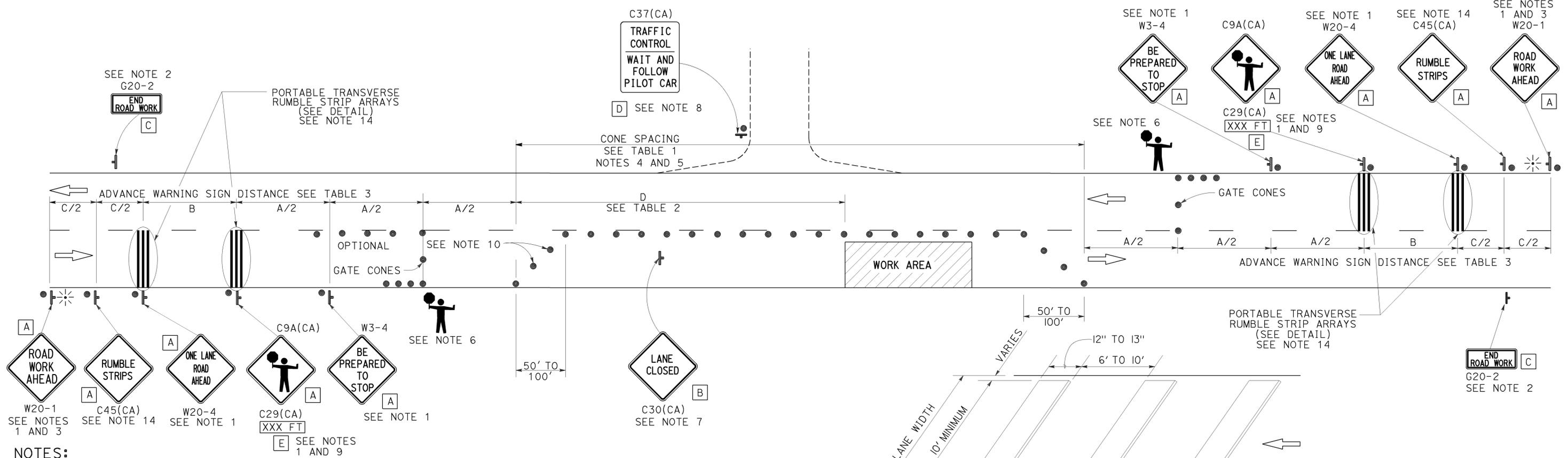
Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as appropriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.

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.

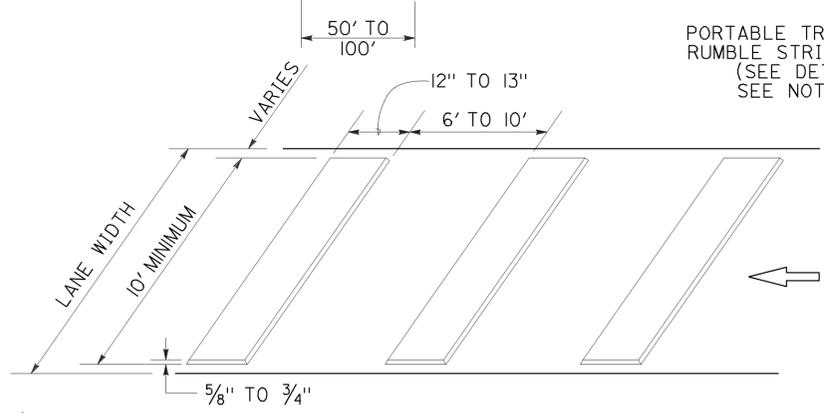
TYPICAL LANE CLOSURE WITH REVERSIBLE CONTROL

TO ACCOMPANY PLANS DATED 11-30-15



- 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

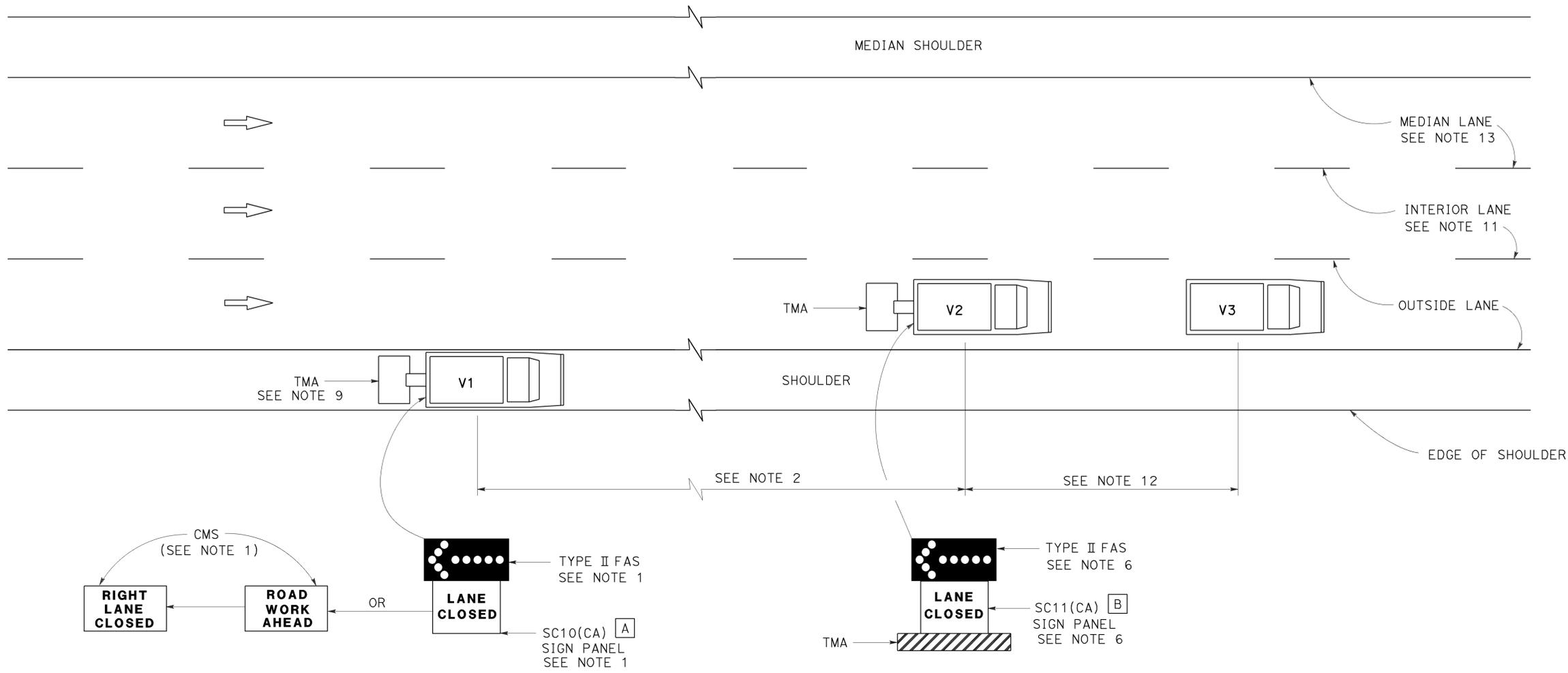
**TRAFFIC CONTROL SYSTEM
FOR LANE CLOSURE ON
TWO LANE CONVENTIONAL
HIGHWAYS**

NO SCALE

RSP T13 DATED OCTOBER 30, 2015 SUPERSEDES
RSP T13 DATED OCTOBER 17, 2014, 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

TO ACCOMPANY PLANS DATED 11-30-15



SIGN PANEL SIZE (Min)

- A 66" x 36"
- B 54" x 42"

LEGEND

- V1 SIGN VEHICLE
- V2 SHADOW VEHICLE
- V3 WORK/APPLICATION VEHICLE
- FLASHING ARROW SIGN (FAS)
- CMS CHANGEABLE MESSAGE SIGN
- TMA TRUCK-MOUNTED ATTENUATOR

MOVING LANE CLOSURE ON MEDIAN LANE OR OUTSIDE LANE OF MULTILANE HIGHWAYS

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SYSTEM FOR MOVING LANE CLOSURE ON MULTILANE HIGHWAYS

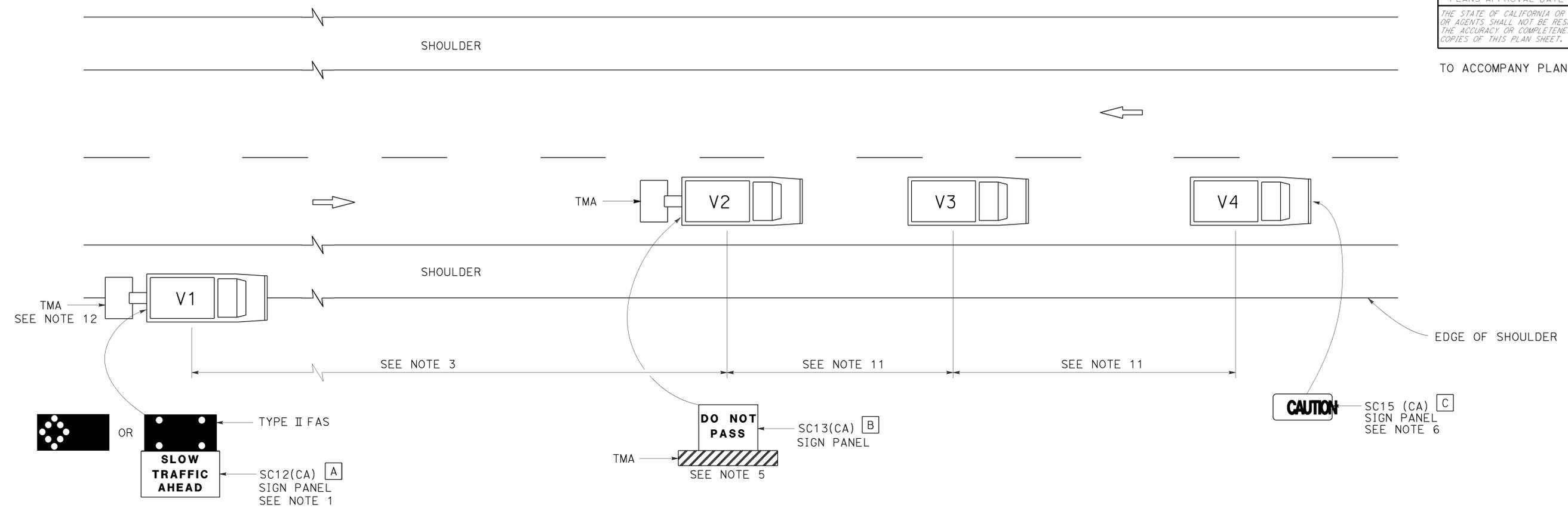
NO SCALE

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

REVISED STANDARD PLAN RSP T15

2010 REVISED STANDARD PLAN RSP T15

TO ACCOMPANY PLANS DATED 11-30-15



NOTES:

1. Either a changeable message sign or a SC12(CA) "SLOW TRAFFIC AHEAD" sign shall be mounted on the rear of sign vehicle V1. The changeable message sign shall be sequenced to show the "CAUTION" message first, follow by the "SLOW TRAFFIC AHEAD" message. A Type II flashing arrow sign may be used with the SC12(CA) sign panel.
2. Sign vehicle V1 should be positioned where highly visible when shoulders are not available.
3. If traffic queues develop, sign vehicle V1 should be positioned upstream from the end of queue.
4. Vehicle-mounted sign panels shall have Type III or above retroreflective sheeting, black on white, or black on fluorescent orange, with 6" minimum series D letters per Caltrans sign specifications.
5. Shadow vehicle shall be equipped with a truck-mounted attenuator. The sign panel shown shall be mounted on the rear of shadow vehicle V2. The message "LANE CLOSED" may be used in place of the "DO NOT PASS" message.
6. The sign panel shown shall be mounted on the front of sign vehicle V4, facing opposing traffic.

7. All vehicles shall be equipped with flashing or rotating amber lights.
8. Sign vehicle V4 will not be required when the work and vehicles V2 and V3 are 2' or more from the centerline of the highway during the work or application operations.
9. All vehicles used for lane closures shall be equipped with two-way radios and the vehicle operators shall maintain communication during the work or application operation.
10. This plan shall not be used where workers would be on foot in the work area. Use a stationary type lane closure (Revised Standard Plan T13) for this condition.
11. Minimize spacing between vehicles V2 and V3 and vehicles V3 and V4 to deter road users from driving in between them.
12. If sign vehicle V1 encroaches into the traffic lane due to insufficient shoulder width, sign vehicle V1 shall be equipped with a truck-mounted attenuator. Sign vehicle V1 shall stay as close to the edge of shoulder as practicable.

LEGEND

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

SIGN PANEL SIZE (Min)

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

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

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

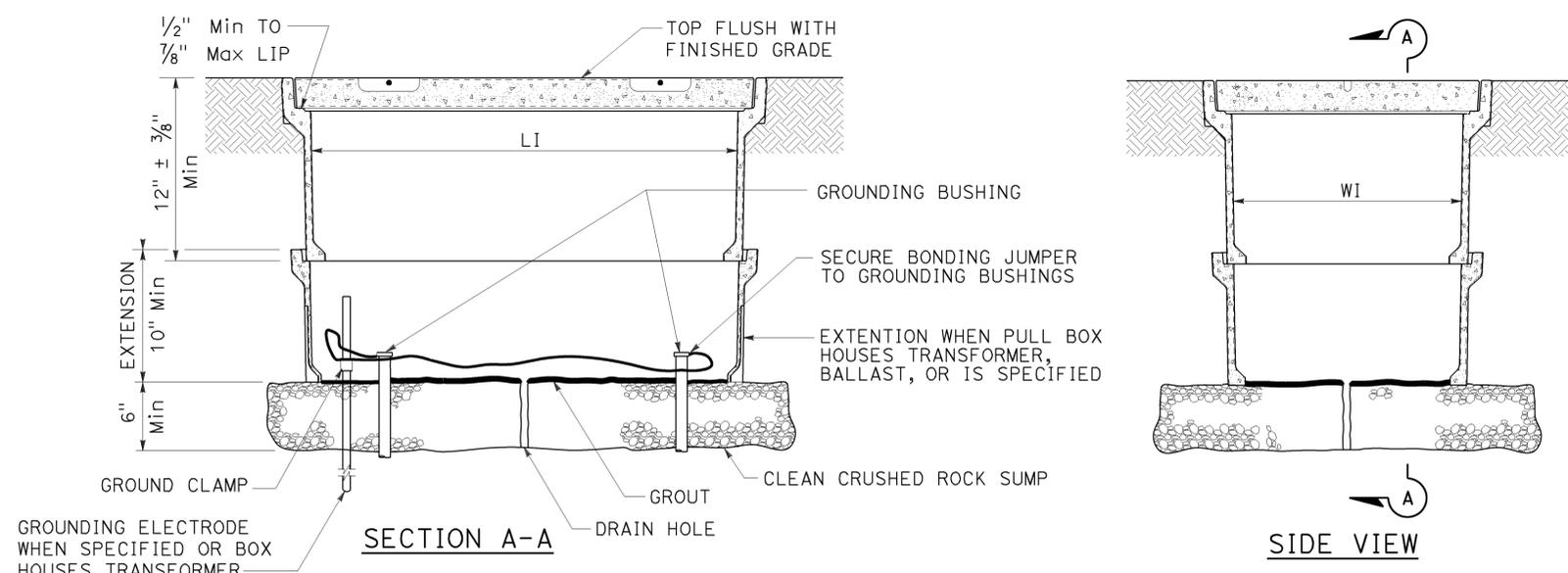
REVISED STANDARD PLAN RSP T17

2010 REVISED STANDARD PLAN RSP T17

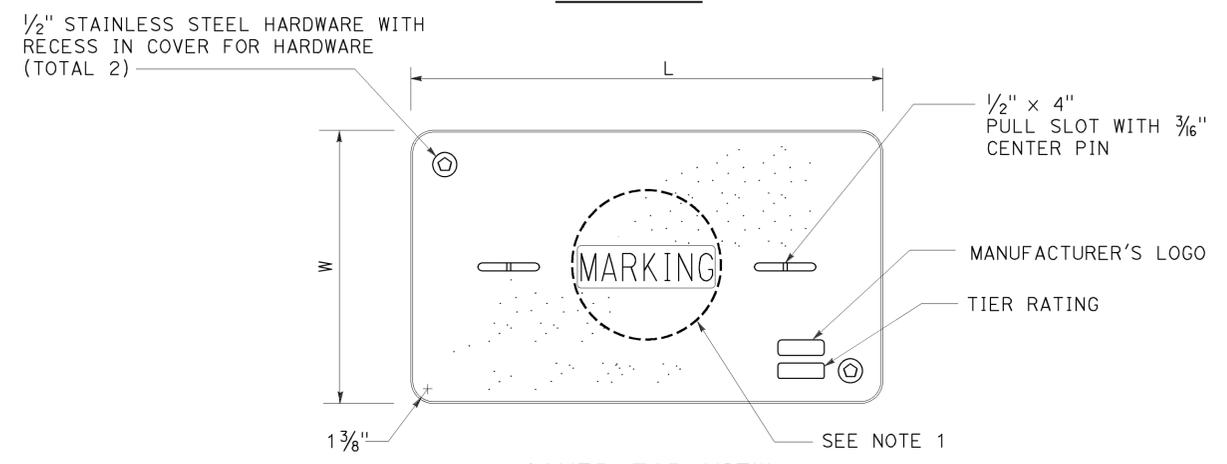
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SB	154	R5.9/22.9	61	68

Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 October 30, 2015
 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.

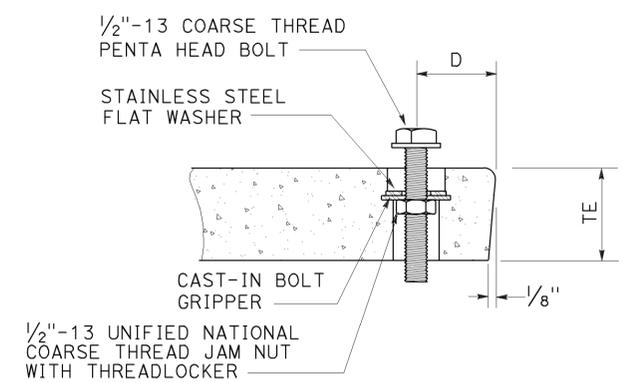
TO ACCOMPANY PLANS DATED 11-30-15



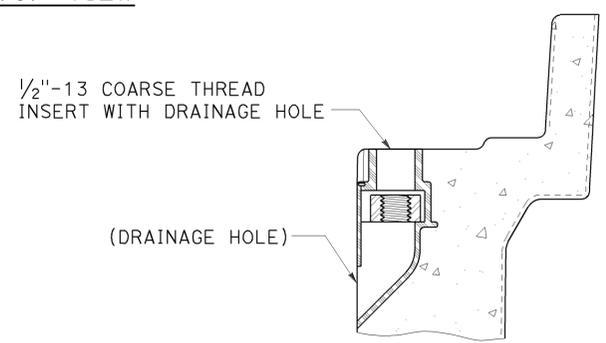
INSTALLATION DETAILS
DETAIL A



COVER TOP VIEW



TYPICAL COVER CAPTIVE BOLT
OR SIMILAR



TYPICAL THREADED INSERT
OR SIMILAR

NOTES:

- Pull box covers shall be marked as follows: "SERVICE" Service circuits between service point and service disconnect; "SPRINKLER-CONTROL" sprinkler control circuits, 50 V or less; "CALTRANS" on all pull boxes, except pull boxes marked "SPRINKLER-CONTROL"; and "TELEPHONE" Telephone service;
 - No. 3 1/2 pull box.
 - "SIGNAL" - Traffic signal circuits with or without lighting or sign lighting circuits.
 - "LIGHTING" - Lighting or sign lighting circuits where voltage is under 600 V.
 - No. 5, 6, 9 or 9A pull box.
 - "TRAFFIC SIGNAL" - Traffic signal circuits with or without lighting or sign lighting circuits.
 - "LIGHTING" - Lighting or sign lighting circuits where voltage is under 600 V.
 - "LIGHTING-HIGH VOLTAGE" - Lighting or sign lighting circuits where voltage is above 600 V.
 - "IRRIGATION" - Circuits to irrigation controller 120 V or more.
 - "RAMP METER" - Ramp meter circuits.
 - "COUNT STATION" - Count or speed monitor circuits.
 - "COMMUNICATIONS" - Communication circuits.
 - "TOS COMMUNICATIONS" - TOS communication line.
 - "TOS POWER" - TOS power.
 - "TDC POWER" - Telephone demarcation cabinet power.
 - "CCTV" - Closed circuit television circuits.
 - "TMS" - Traffic monitoring station circuits.
 - "CMS" - Changeable message sign circuits.
 - "HAR" - Highway advisory radio circuits.
 - "BOOSTER PUMP" - Booster pump circuit.
- The nominal dimensions of the opening in which the cover sets shall be the same as the cover dimensions except the length and width dimensions shall be 1/8" greater.
- Covers and boxes shall be interchangeable with California standard male and female gages. When interchanged with a standard male or female gage, the top surfaces shall be flush within 1/8". Top outside radius of covers and pull boxes shall have a 1/8" radius.
- Pull box extension may be another pull box as long as the bottom edge of the pull box can fit into the cover opening.
- Dimensions for the cover for non-traffic pull box are nominal values.

DIMENSION TABLE										
PULL BOX	PULL BOX			COVER						
	MINIMUM DEPTH BOX	MINIMUM DEPTH EXTENSION	MINIMUM WEIGHT	LI Min	WI Min	TE	D	L	W	MINIMUM WEIGHT
No. 3 1/2	12"	N/A	40 lb	1' - 3"	9"	1 3/4"	1 3/4"	1'-3 1/4" - 1'-3 3/8"	10" - 10 1/8"	30 lb
No. 5	12"	10"	55 lb	1' - 8"	11"	2"	1 3/4"	1'-11 1/4"	1'-1 3/4"	60 lb
No. 6	12"	10"	70 lb	2' - 4 1/4"	1' - 3 1/4"	2"	2"	2'-6 1/2"	1'-5 1/2"	85 lb

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

RSP ES-8A DATED OCTOBER 30, 2015 SUPERSEDES RSP ES-8A DATED JULY 19, 2013 AND RSP ES-8A DATED JANUARY 20, 2012 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-8A

2010 REVISED STANDARD PLAN RSP ES-8A

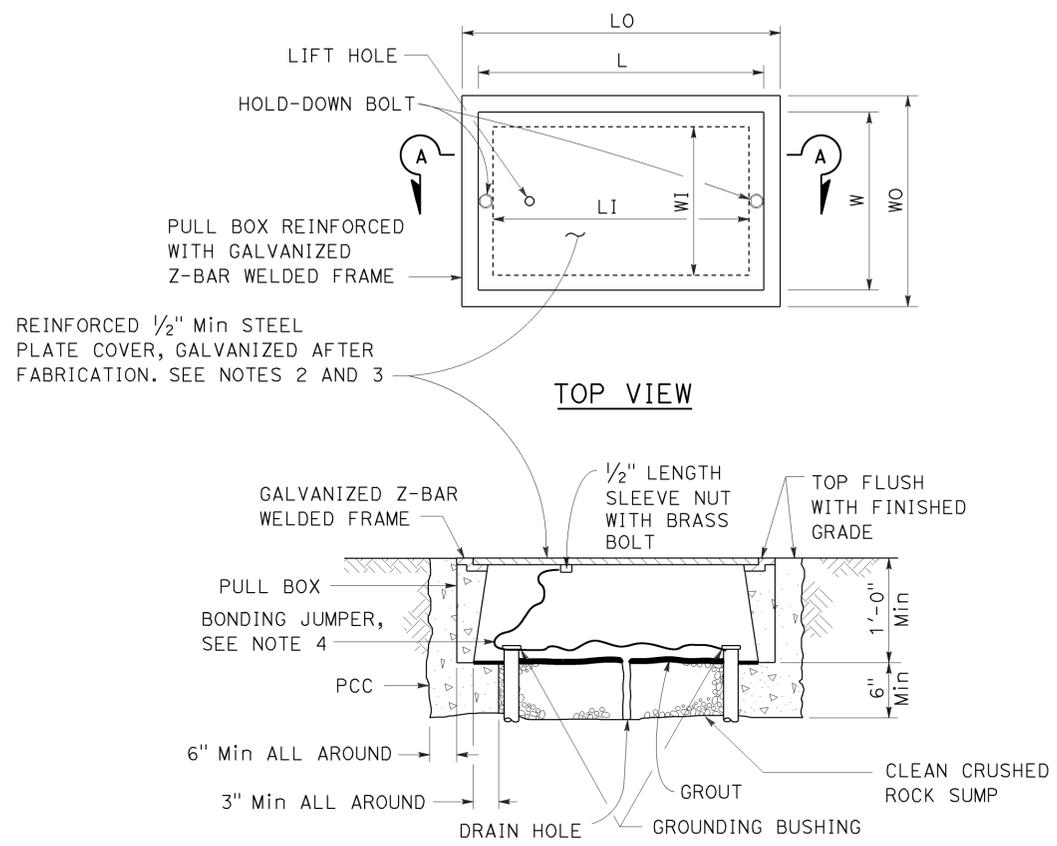
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SB	154	R5.9/22.9	62	68

Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 October 30, 2015
 PLANS APPROVAL DATE

Theresa Aziz Gabriel
 No. E15129
 Exp. 6-30-16
 ELECTRICAL
 STATE OF CALIFORNIA

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

TO ACCOMPANY PLANS DATED 11-30-15



SECTION A-A
**No. 3 1/2(T), No. 5(T) AND
 No. 6(T) TRAFFIC PULL BOX**

NOTES:

- Traffic pull box shall be provided with steel cover and special concrete footing. Steel cover shall have embossed non-skid pattern.
- Steel reinforcing shall be as regularly used in the standard products of the respective manufacturer.
- Pull box covers shall be marked as follows: "SERVICE" Service circuits between service point and service disconnect; "SPRINKLER-CONTROL" Sprinkler control circuits, 50 V or less; "CALTRANS" On all pull boxes, except pull boxes marked "SPRINKLER-CONTROL"; and "TELEPHONE" Telephone service.
 - No. 3 1/2(T) pull box.
 - "SIGNAL" - Traffic signal circuits with or without lighting or sign lighting circuits.
 - "LIGHTING" - Lighting or sign lighting circuits where voltage is under 600 V.
 - No. 5(T) or 6(T) pull box.
 - "TRAFFIC SIGNAL" - Traffic signal circuits with or without lighting or sign lighting circuits.
 - "LIGHTING" - Lighting or sign lighting circuits where voltage is under 600 V.
 - "LIGHTING-HIGH VOLTAGE" - Lighting or sign lighting circuits where voltage is above 600 V.
 - "IRRIGATION" - Circuits to irrigation controller 120 V or more.
 - "RAMP METER" - Ramp meter circuits.
 - "COUNT STATION" - Count or speed monitor circuits.
 - "COMMUNICATION" - Communication circuits.
 - "TOS COMMUNICATIONS" - TOS communications line.
 - "TOS POWER" - TOS power.
 - "TDC POWER" - Telephone demarcation cabinet power.
 - "CCTV" - Closed circuit television circuits.
 - "TMS" - Traffic monitoring station circuits.
 - "CMS" - Changeable message sign circuits.
 - "HAR" - Highway advisory radio circuits.
 - "BOOSTER PUMP" - Booster pump circuit.
- Bonding jumper for metal covers shall be 3' long, minimum.
- The nominal dimensions of the opening in which the cover sets shall be the same as the cover dimensions except the length and width dimensions shall be 1/8" greater.
- Covers and boxes shall be interchangeable with California standard male and female gages. When interchanged with a standard male or female gage, the top surfaces shall be flush within 1/8".

DIMENSION TABLE								
PULL BOX	PULL BOX				COVER			
	MINIMUM * THICKNESS	MINIMUM DEPTH BOX AND EXTENSION	LO	LI	WO	WI	L **	W **
No. 3 1/2(T)	1 1/2"	1'-0"	1'-10" - 1'-11"	1'-5" - 1'-6 1/2"	1'-3" - 1'-4"	10" - 1'-0"	1'-8" - 1'-8 1/2"	1'-1" - 1'-2"
No. 5(T)	1 3/4"	1'-0"	2'-5" - 2'-6"	2'-0" - 2'-1"	1'-6" - 1'-7"	1'-1" - 1'-2"	2'-3" - 2'-3 1/2"	1'-4" - 1'-4 1/2"
No. 6(T)	2"	1'-0"	2'-11" - 3'-1"	2'-6" - 2'-7"	1'-10" - 2'-0"	1'-5" - 1'-6"	2'-9" - 2'-9 1/2"	1'-8" - 1'-8 1/2"

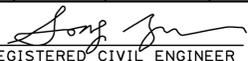
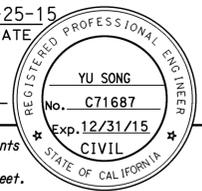
* EXCLUDING CONDUIT WEB ** TOP DIMENSION

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

RSP ES-8B DATED OCTOBER 30, 2015 SUPERSEDES RSP ES-8B DATED JULY 19, 2013 AND RSP ES-8B DATED JANUARY 20, 2012 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-8B

2010 REVISED STANDARD PLAN RSP ES-8B

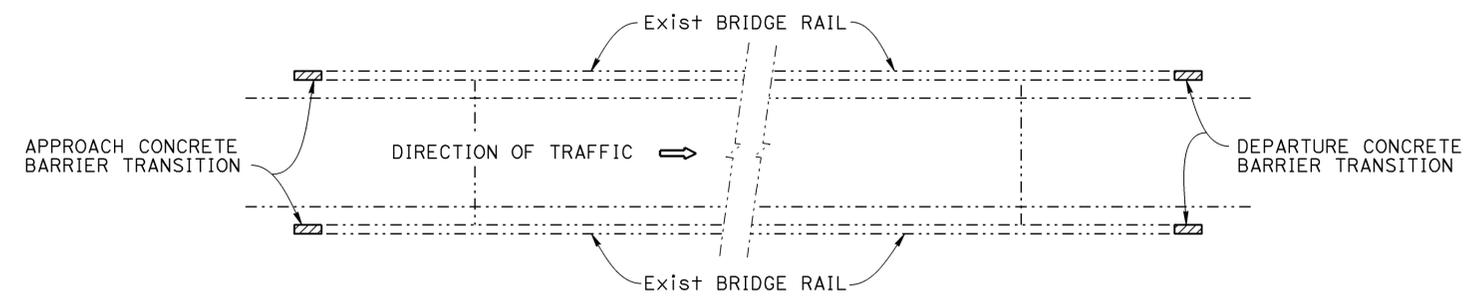
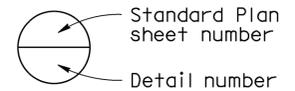
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	63	68
 REGISTERED CIVIL ENGINEER			11-25-15	DATE	
11-30-15 PLANS APPROVAL DATE					
<i>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.</i>					

INDEX TO PLANS

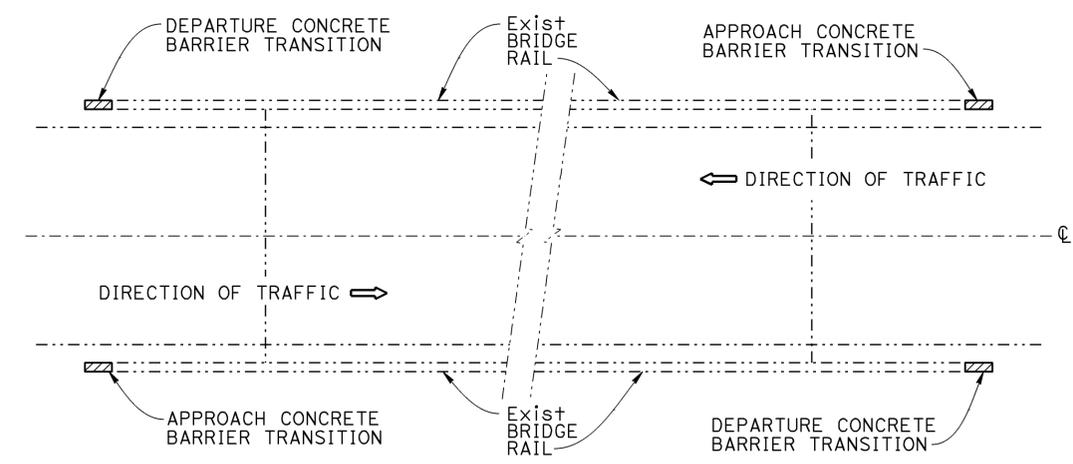
SHEET NO.	TITLE
1.	CONCRETE BARRIER TRANSITION - GENERAL PLAN
2.	CONCRETE BARRIER TRANSITION - TYPE 1 BARRIER
3.	CONCRETE BARRIER TRANSITION - TYPE 2 BARRIER
4.	CONCRETE BARRIER TRANSITION - TYPE 9 BARRIER
5.	CONCRETE BARRIER TRANSITION - TYPE 9-11 BARRIER
6.	CONCRETE BARRIER TRANSITION - TYPE 25 BARRIER

STANDARD PLANS 2010

A10A	ABBREVIATIONS (SHEET 1 OF 2)
RSP A10B	ABBREVIATIONS (SHEET 2 OF 2)
RSP A77U1	MIDWEST GUARDRAIL SYSTEM CONNECTIONS TO BRIDGE RAILINGS WITHOUT SIDEWALKS DETAILS No. 1
RSP A77U4	MIDWEST GUARDRAIL SYSTEM TRANSITION RAILING (TYPE WB-31)



**PLAN TYPE A
ONE WAY BRIDGES**
NO SCALE



**PLAN TYPE B
TWO WAY BRIDGES**
NO SCALE

LEGEND:
 - - - - - Indicates existing Structure
 _____ Indicates new structure

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

THE CONTRACTOR MUST VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

01 - RANCH UC (BRG #51-0107)	QUANTITIES	
CONCRETE BARRIER (TRANSITION)		10 LF
02 - COLD SPRINGS (BRG #51-0037)	QUANTITIES	
CONCRETE BARRIER (TRANSITION)		87 LF
03 - SAN LUCAS CREEK (BRG #51-0121)	QUANTITIES	
SALVAGE METAL BRIDGE RAILING		11 LF
CONCRETE BARRIER (TRANSITION)		15 LF
04 - SAN AGUEDA CREEK (BRG #51-0078)	QUANTITIES	
CONCRETE BARRIER (TRANSITION)		14 LF
05 - SANTA YNEZ RIVER (BRG #51-0079)	QUANTITIES	
CONCRETE BARRIER (TRANSITION)		14 LF
06 - SAN LUCAS CREEK (BRG #51-0121)	QUANTITIES	
CONCRETE BARRIER (TRANSITION)		10 LF

DIVAD MEUMANN DESIGN ENGINEER	DESIGN	BY YU SONG	CHECKED AIMAN MALAK	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES DESIGN AND TECHNICAL SERVICES SPECIAL DESIGNS BRANCH	BRIDGE NO.	CONCRETE BARRIER TRANSITION GENERAL PLAN	
	DETAILS	BY SHUMEI JIANG	CHECKED AIMAN MALAK	LAYOUT	BY YU SONG			CHECKED AIMAN MALAK		VARIES
	QUANTITIES	BY YU SONG	CHECKED AIMAN MALAK	SPECIFICATIONS	BY JENNIFER RAMIREZ			CHECKED JENNIFER RAMIREZ		VARIES
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS						UNIT: 3619 PROJECT NUMBER & PHASE: 0512000238-1	CONTRACT NO.: 05-1C8301	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 04-25-15 11-24-15	SHEET 1 OF 6

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	64	68

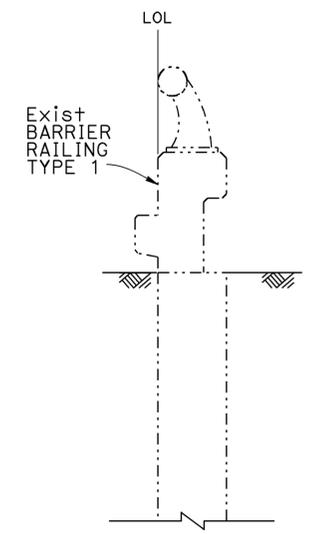
REGISTERED CIVIL ENGINEER	DATE
YU SONG	11-25-15
No. C71687	
Exp. 12/31/15	
CIVIL	

11-30-15
PLANS APPROVAL DATE

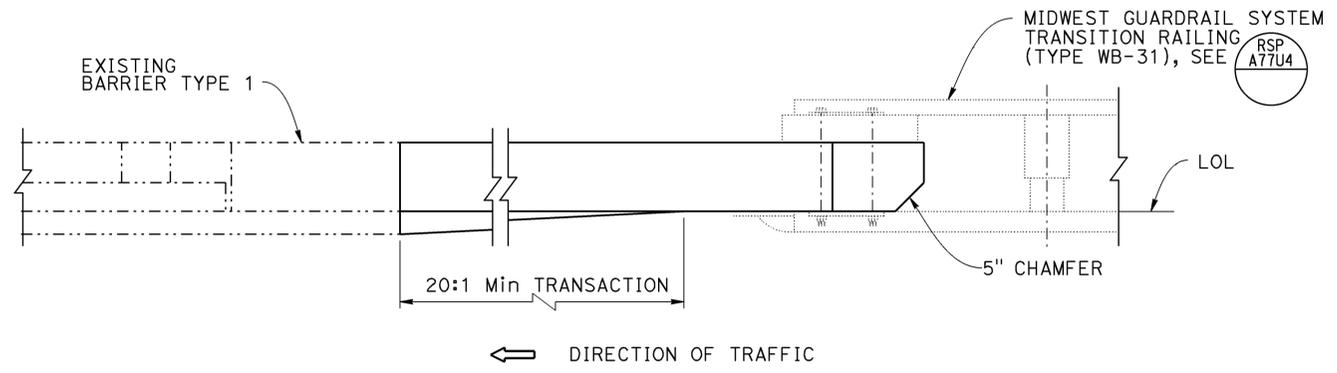
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LOCATION TABLE OF TYPE 1 CONCRETE BARRIER TRANSITION

BRIDGE No.	BRIDGE NAME	ROUTE	POST MILE	DIRECTION	APPROACH END	DEPARTURE END	LENGTH	TOTAL LENGTH	PLAN TYPE
51-0107	Ranch UC	154	18.83	WB RIGHT	1		10'-2"	10'-2"	B



SECTION A-A
3/4" = 1'-0"



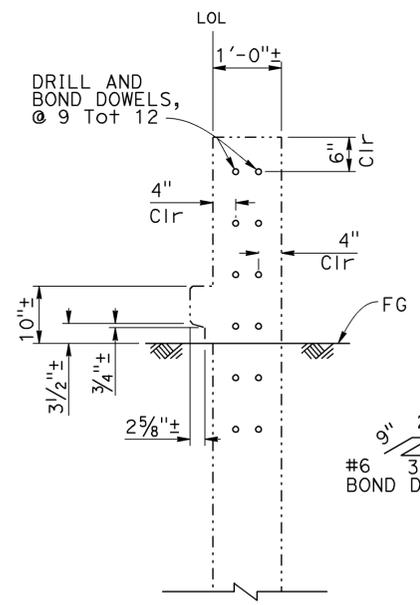
PLAN
3/4" = 1'-0"

LEGEND:

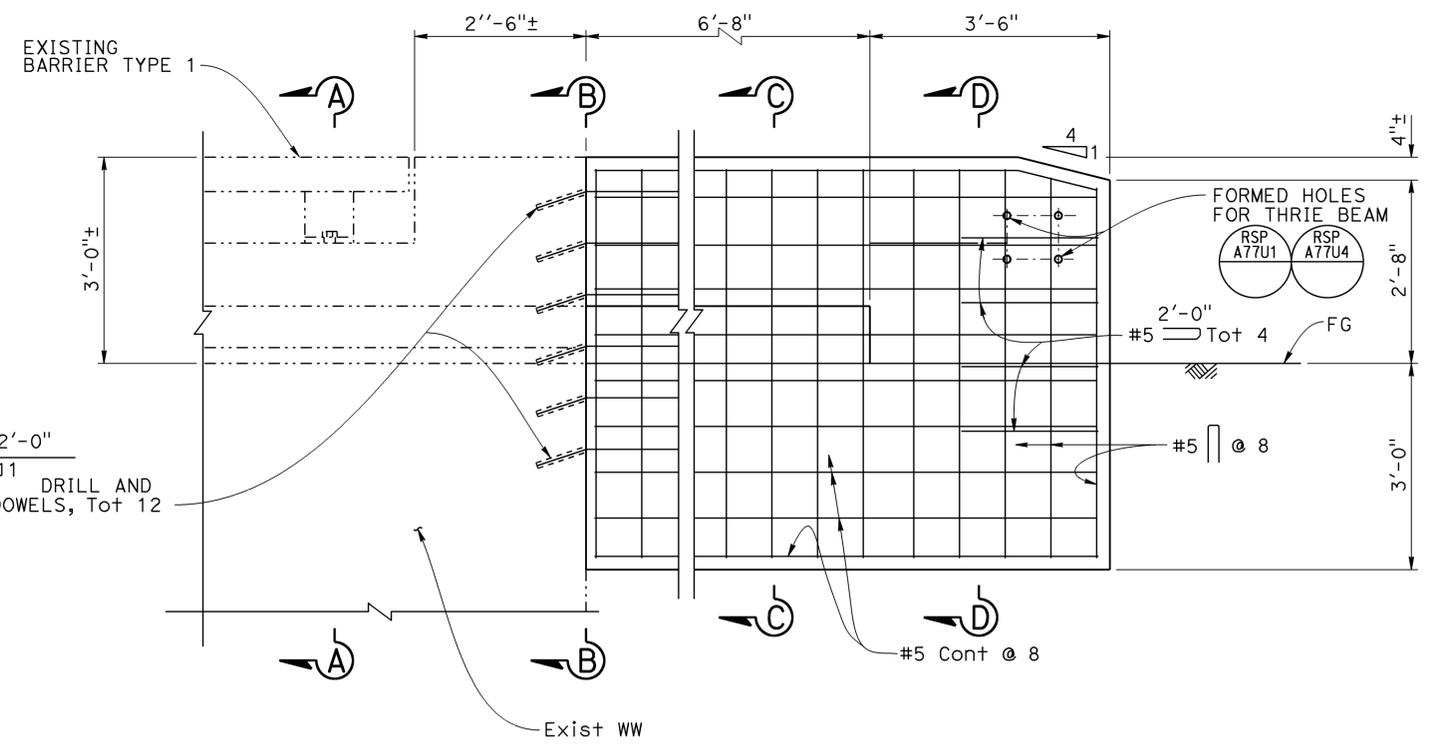
- Indicates existing
- Indicates new structure

NOTES:

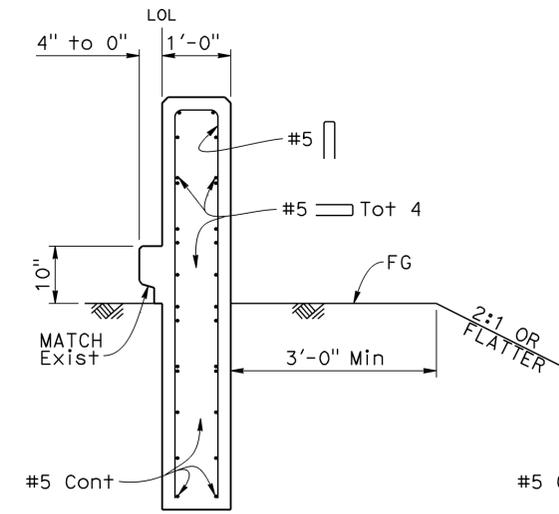
- See "ROADWAY PLANS" for work locations.
- Holes used for fastening existing MBGR must be mortar filled, unless holes were cast using pipe sleeves.
- Existing barrier heights vary. Where existing barrier height is more than 2'-8", transition barrier height to 2'-8" @ 4:1 slope.



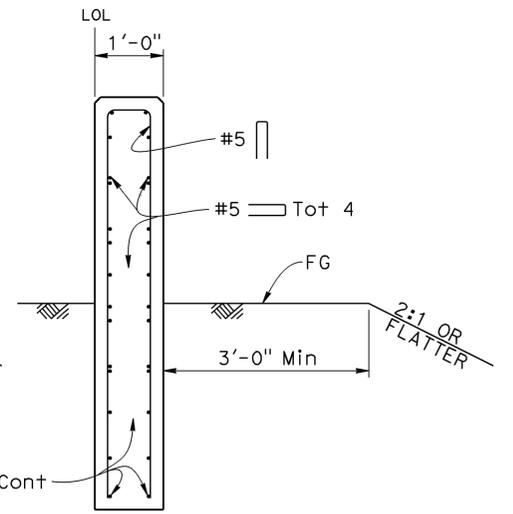
SECTION B-B
3/4" = 1'-0"



ELEVATION
3/4" = 1'-0"



SECTION C-C
3/4" = 1'-0"



SECTION D-D
3/4" = 1'-0"

THE CONTRACTOR MUST VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

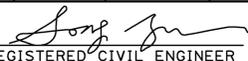
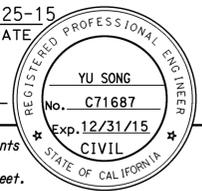
BRANCH CHIEF	DESIGN	BY YU SONG	CHECKED AIMAN MALAK
	DETAILS	BY SHUMEI JIANG	CHECKED AIMAN MALAK
	QUANTITIES	BY YU SONG	CHECKED AIMAN MALAK

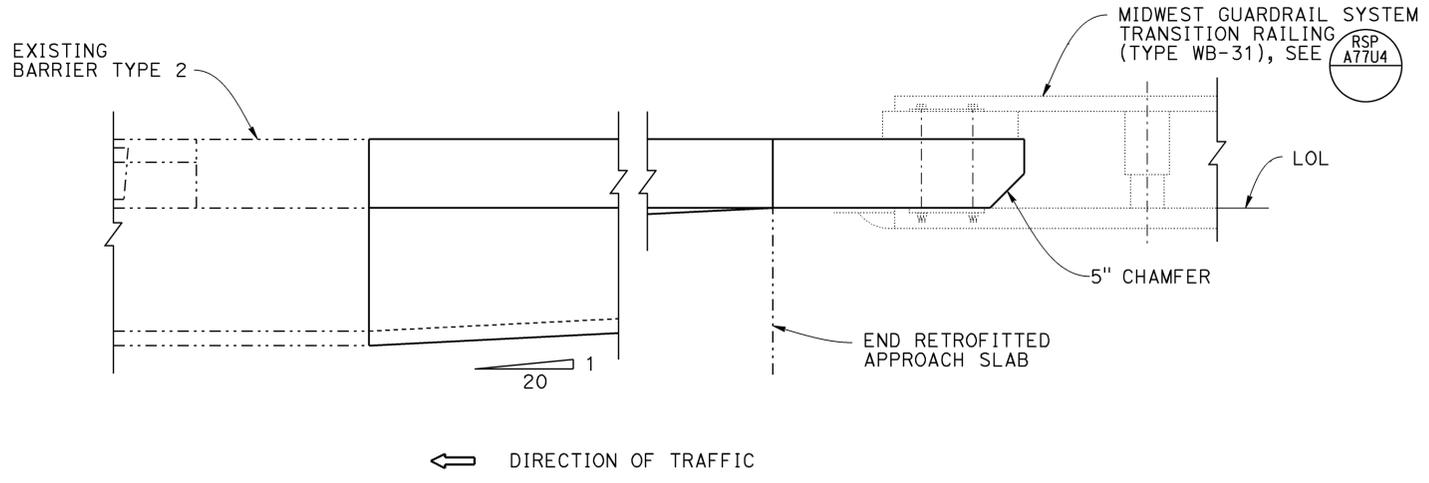
STATE OF CALIFORNIA	
DEPARTMENT OF TRANSPORTATION	

CONCRETE BARRIER TRANSITION
TYPE 1 BARRIER

DIVISION OF ENGINEERING SERVICES DESIGN AND TECHNICAL SERVICES	B	BRIDGE NO.	51-0107
SPECIAL DESIGNS BRANCH		POST MILE	18.83

CONTRACT NO.: 05-1C8301		REVISION DATES	SHEET	OF
		04-25-15 8-18-15 6-22-15	2	6

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	65	68
 REGISTERED CIVIL ENGINEER DATE 11-25-15					
11-30-15 PLANS APPROVAL DATE					
<i>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.</i>					



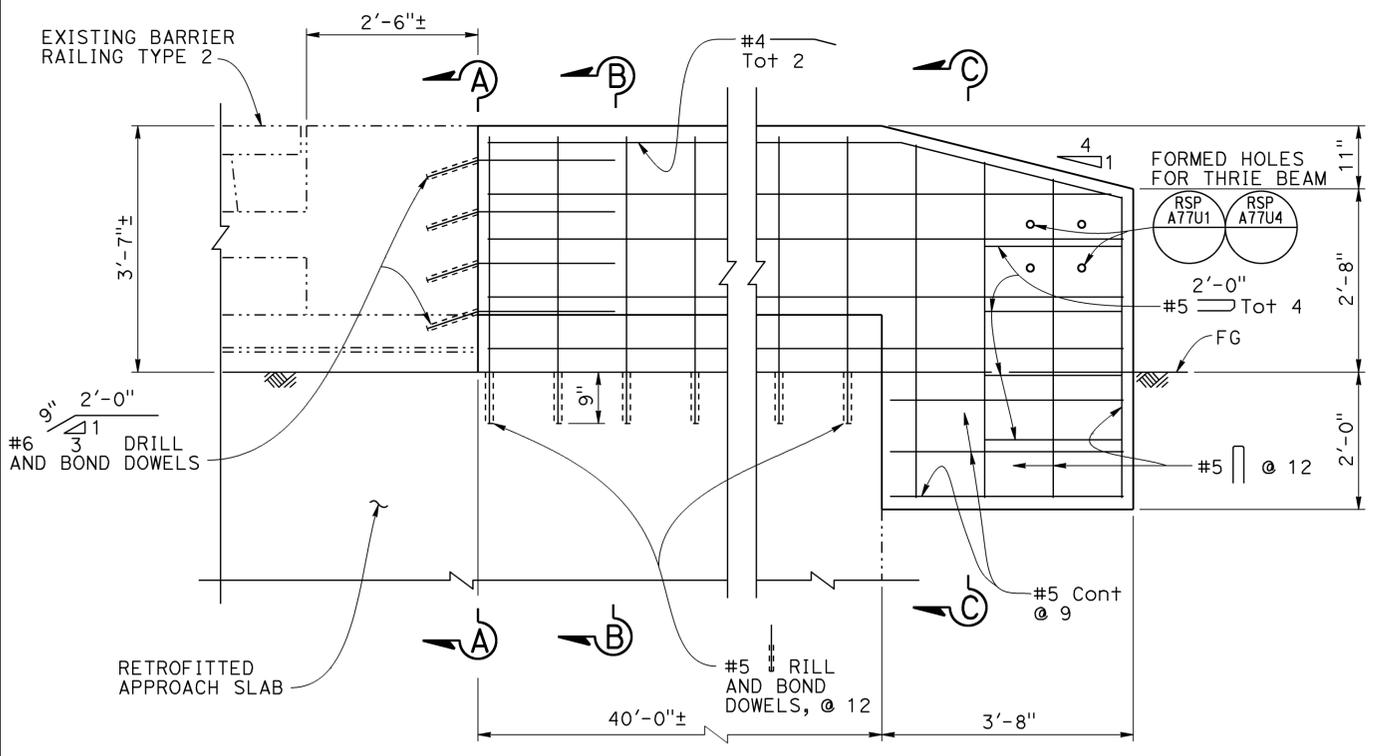
PLAN
3/4" = 1'-0"

NOTES:

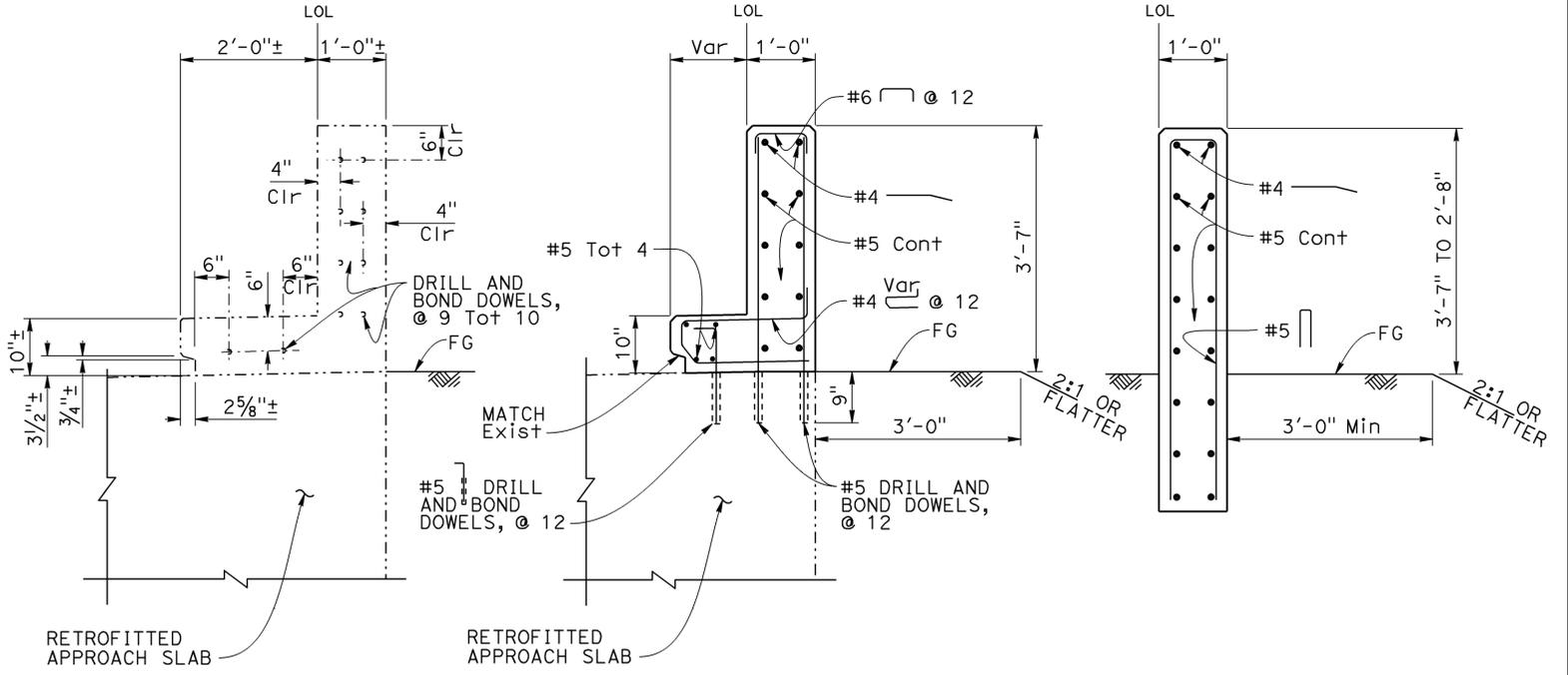
1. See "ROADWAY PLANS" for work locations.
2. Holes used for fastening existing MBGR must be mortar filled, unless holes were cast using pipe sleeves.
3. Existing barrier heights vary. Where existing barrier height is more than 2'-8", transition barrier height to 2'-8" @ 4:1 slope.

LEGEND:

- Indicates existing
- Indicates new structure



ELEVATION
3/4" = 1'-0"



SECTION A-A
3/4" = 1'-0"

SECTION B-B
3/4" = 1'-0"

SECTION C-C
3/4" = 1'-0"

LOCATION TABLE OF TYPE 2 CONCRETE BARRIER TRANSITION

BRIDGE No.	BRIDGE NAME	ROUTE	POST MILE	DIRECTION	APPROACH END	DEPARTURE END	LENGTH	TOTAL LENGTH	PLAN TYPE
51-0037	Cold Springs Bridge	154	22.95	EB RIGHT	1		43'-8"	87'-4"	B
			22.95	WB RIGHT		1			

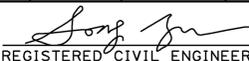
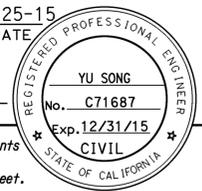
THE CONTRACTOR MUST VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

BRANCH CHIEF	DESIGN	BY YU SONG	CHECKED AIMAN MALAK
	DETAILS	BY SHUMEI JIANG	CHECKED AIMAN MALAK
	QUANTITIES	BY YU SONG	CHECKED AIMAN MALAK

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
DESIGN AND TECHNICAL SERVICES
SPECIAL DESIGNS BRANCH **B**

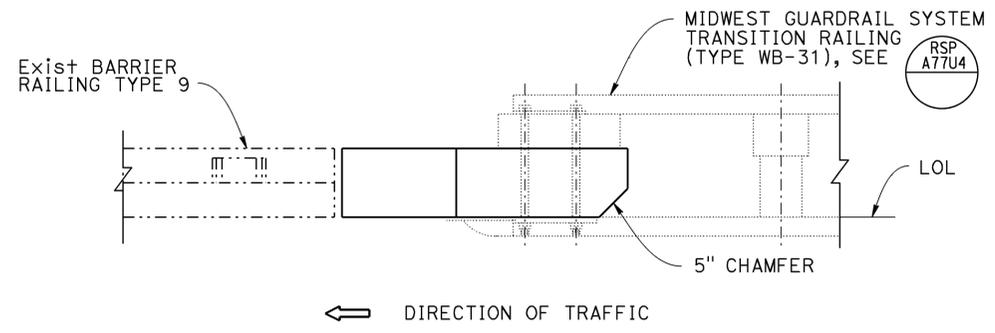
BRIDGE NO. 51-0037
POST MILE 22.95
CONCRETE BARRIER TRANSITION
TYPE 2 BARRIER

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	66	68
 REGISTERED CIVIL ENGINEER			11-25-15 DATE		
11-30-15 PLANS APPROVAL DATE					
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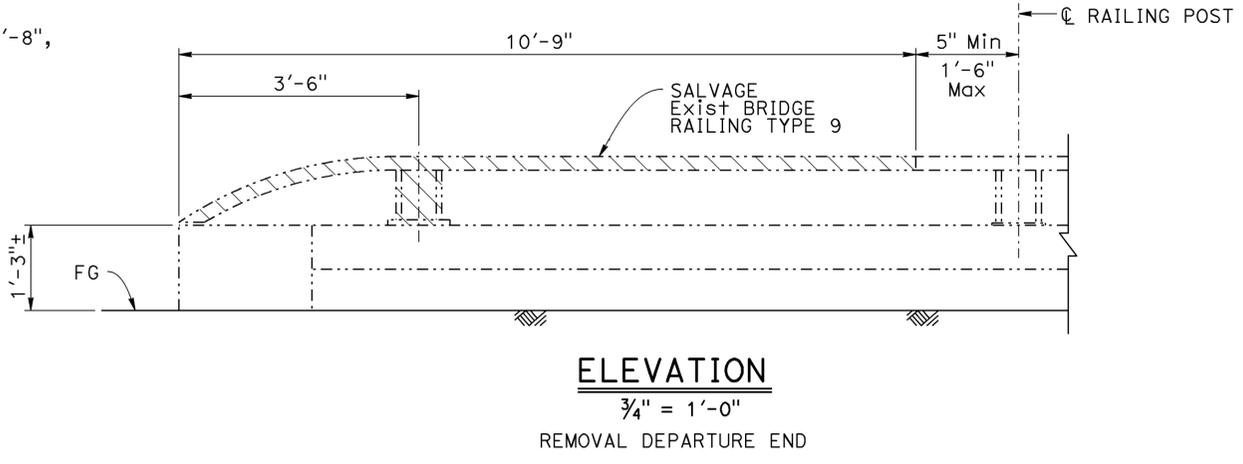
NOTES:

- See "ROADWAY PLANS" for work locations.
- Holes used for fastening existing MBGR must be mortar filled, unless holes were cast using pipe sleeves.
- Existing barrier heights vary. Where existing barrier height is more than 2'-8", transition barrier height to 2'-8" @ 4:1 slope.

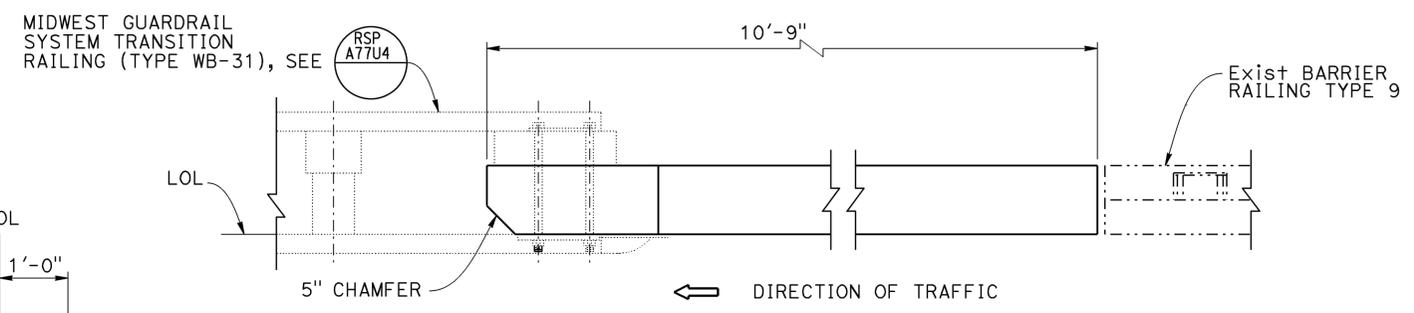
LEGEND:
 - - - - - Indicates existing
 _____ Indicates new structure



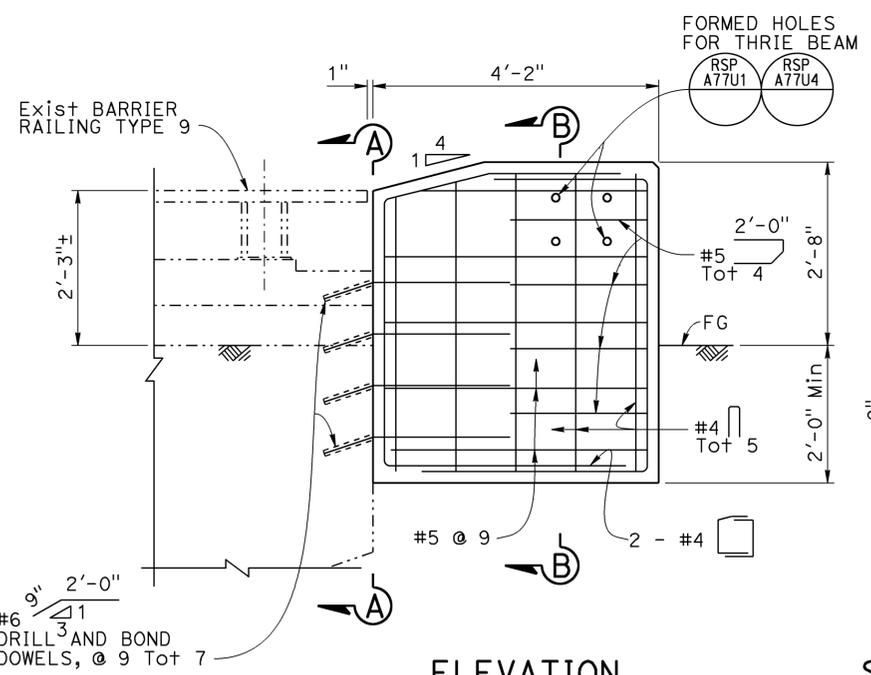
PLAN
 $\frac{3}{4}'' = 1'-0''$



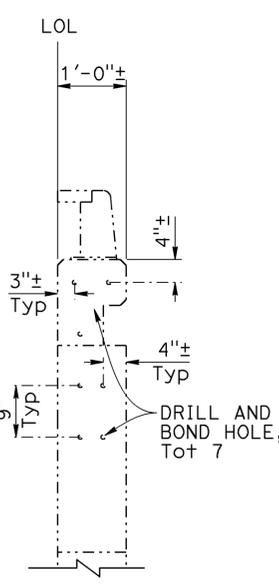
ELEVATION
 $\frac{3}{4}'' = 1'-0''$
 REMOVAL DEPARTURE END



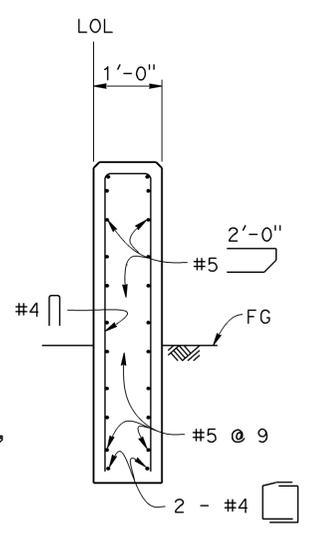
PLAN
 $\frac{3}{4}'' = 1'-0''$



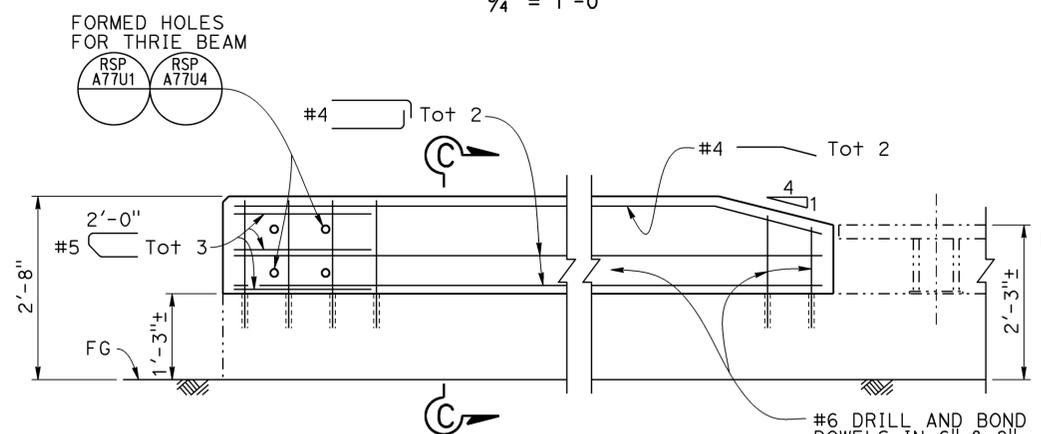
ELEVATION
 $\frac{3}{4}'' = 1'-0''$
 APPROACH END



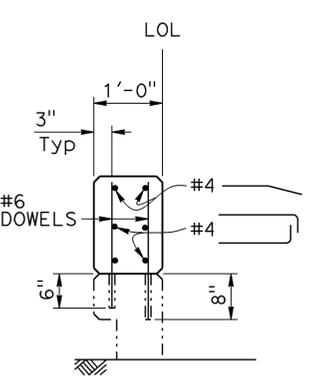
SECTION A-A
 $\frac{3}{4}'' = 1'-0''$



SECTION B-B
 $\frac{3}{4}'' = 1'-0''$



ELEVATION
 $\frac{3}{4}'' = 1'-0''$
 DEPARTURE END



SECTION C-C
 $\frac{3}{4}'' = 1'-0''$

LOCATION TABLE OF TYPE 9 CONCRETE BARRIER TRANSITION

BRIDGE No.	BRIDGE NAME	ROUTE	POST MILE	DIRECTION	APPROACH END	DEPARTURE END	LENGTH	TOTAL LENGTH	PLAN TYPE
51-0121	San Lucas Creek Bridge	154	R11.52	WB RIGHT	1		4'-2"	14'-11"	B
			R11.51	WB RIGHT		1	10'-9"		

THE CONTRACTOR MUST VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

BRANCH CHIEF DAVID NEUMANN

DESIGN	BY YU SONG	CHECKED AIMAN MALAK
DETAILS	BY SHUMEI JIANG	CHECKED AIMAN MALAK
QUANTITIES	BY YU SONG	CHECKED AIMAN MALAK

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

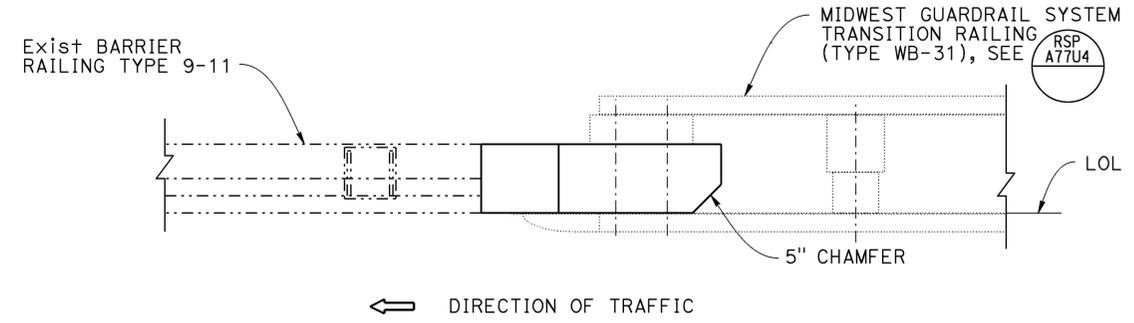
DIVISION OF ENGINEERING SERVICES
 DESIGN AND TECHNICAL SERVICES
SPECIAL DESIGNS BRANCH B

BRIDGE NO.	51-0121
POST MILE	R11.51

**CONCRETE BARRIER TRANSITION
 TYPE 9 BARRIER**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	67	68

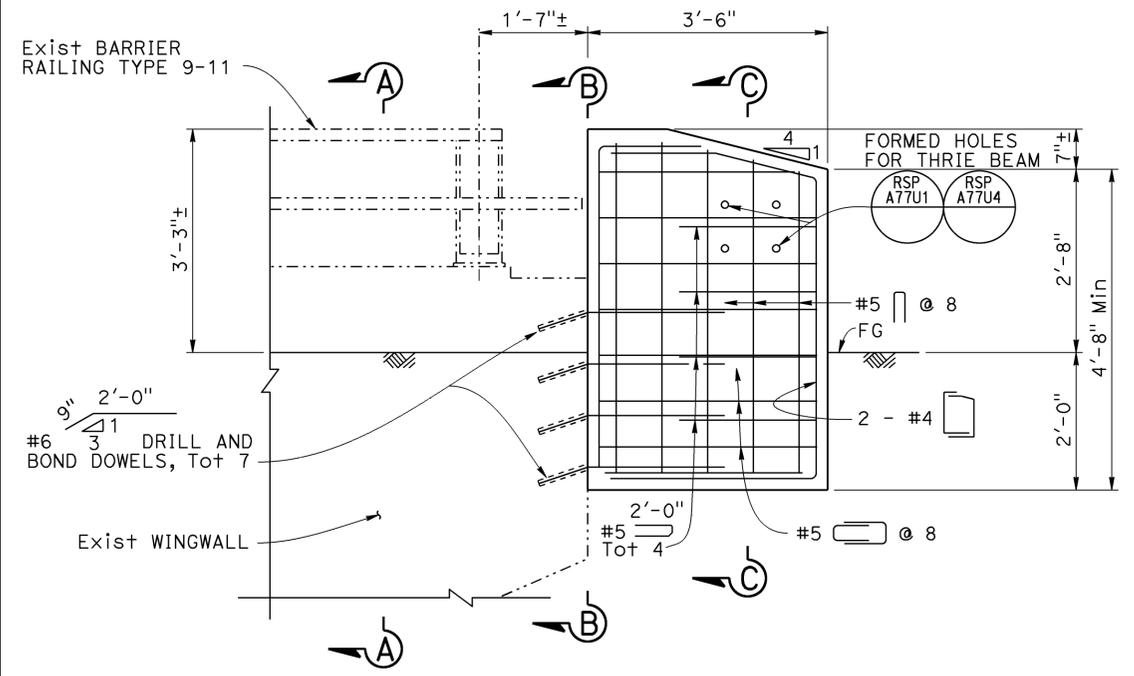
REGISTERED CIVIL ENGINEER **YU SONG** No. C71687 Exp. 12/31/15
 DATE 11-25-15
 PLANS APPROVAL DATE 11-30-15
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.



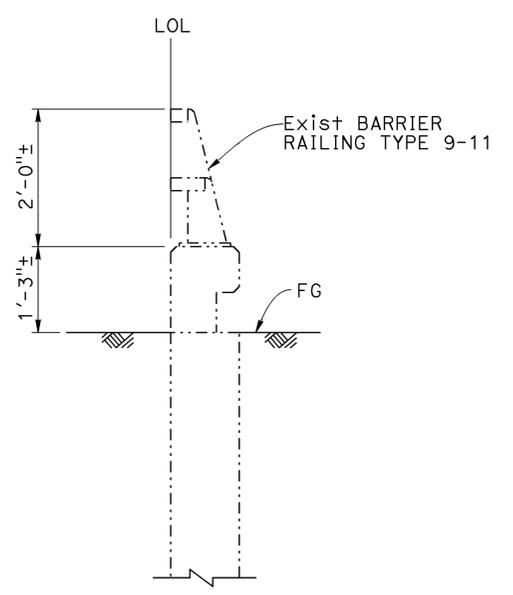
PLAN
3/4" = 1'-0"

LEGEND:
 - - - - - Indicates existing
 _____ Indicates new structure

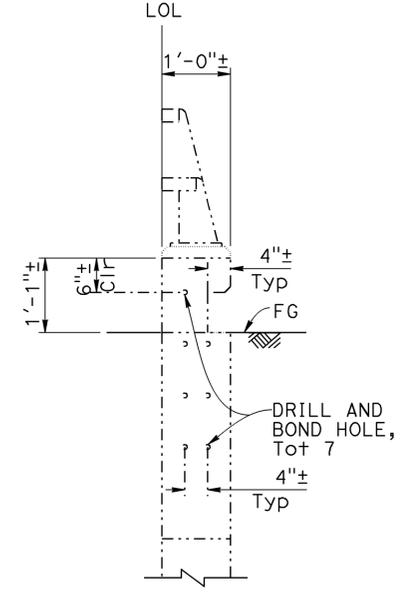
- NOTES:**
- See "ROADWAY PLANS" for work locations.
 - Holes used for fastening existing MBGR must be mortar filled, unless holes were cast using pipe sleeves.
 - Existing barrier heights vary. Where existing barrier height is more than 2'-8", transition barrier height to 2'-8" @ 4:1 slope.



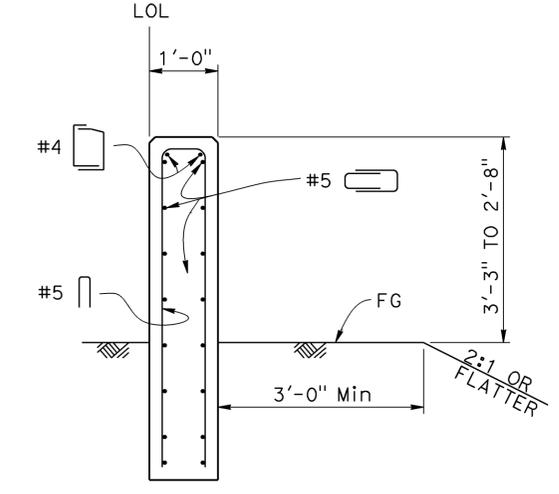
ELEVATION
3/4" = 1'-0"



SECTION A-A
3/4" = 1'-0"



SECTION B-B
3/4" = 1'-0"



SECTION C-C
3/4" = 1'-0"

THE CONTRACTOR MUST VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

LOCATION TABLE OF TYPE 9-11 CONCRETE BARRIER TRANSITION

BRIDGE No.	BRIDGE NAME	ROUTE	POST MILE	DIRECTION	APPROACH END	DEPARTURE END	LENGTH	TOTAL LENGTH	PLAN TYPE
51-0078	San Agueda Creek Bridge	154	R9.97	EB RIGHT/WB RIGHT	1	1	3'-6"	14'-0"	B
			R10.01	WB RIGHT/EB RIGHT	1	1			
51-0079	Santa Ynez River Bridge	154	R10.12	EB RIGHT/WB RIGHT	1	1	3'-6"	14'-0"	B
			R10.31	WB RIGHT/EB RIGHT	1	1			

BRANCH CHIEF DAVID NEUMANN	DESIGN	BY YU SONG	CHECKED AIMAN MALAK
	DETAILS	BY SHUMEI JIANG	CHECKED AIMAN MALAK
	QUANTITIES	BY YU SONG	CHECKED AIMAN MALAK

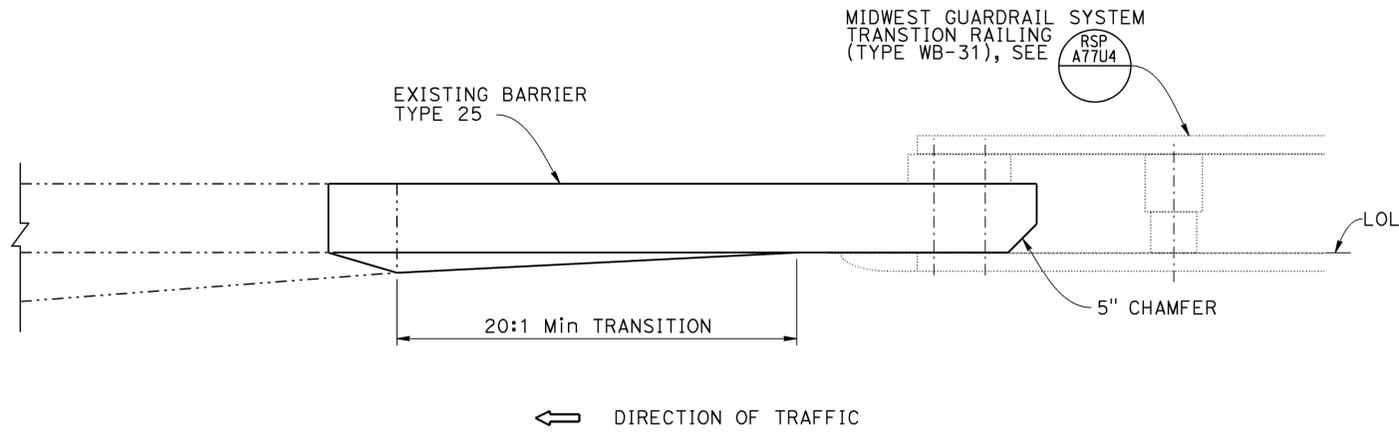
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 DESIGN AND TECHNICAL SERVICES
 SPECIAL DESIGNS BRANCH **B**

BRIDGE NO. 51-0078
 POST MILE VARIES
CONCRETE BARRIER TRANSITION
TYPE 9-11 BARRIER

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SB	154	R5.9/22.9	68	68

REGISTERED CIVIL ENGINEER **YU SONG** No. C71687 Exp. 12/31/15
 DATE 11-25-15
 PLANS APPROVAL DATE 11-30-15
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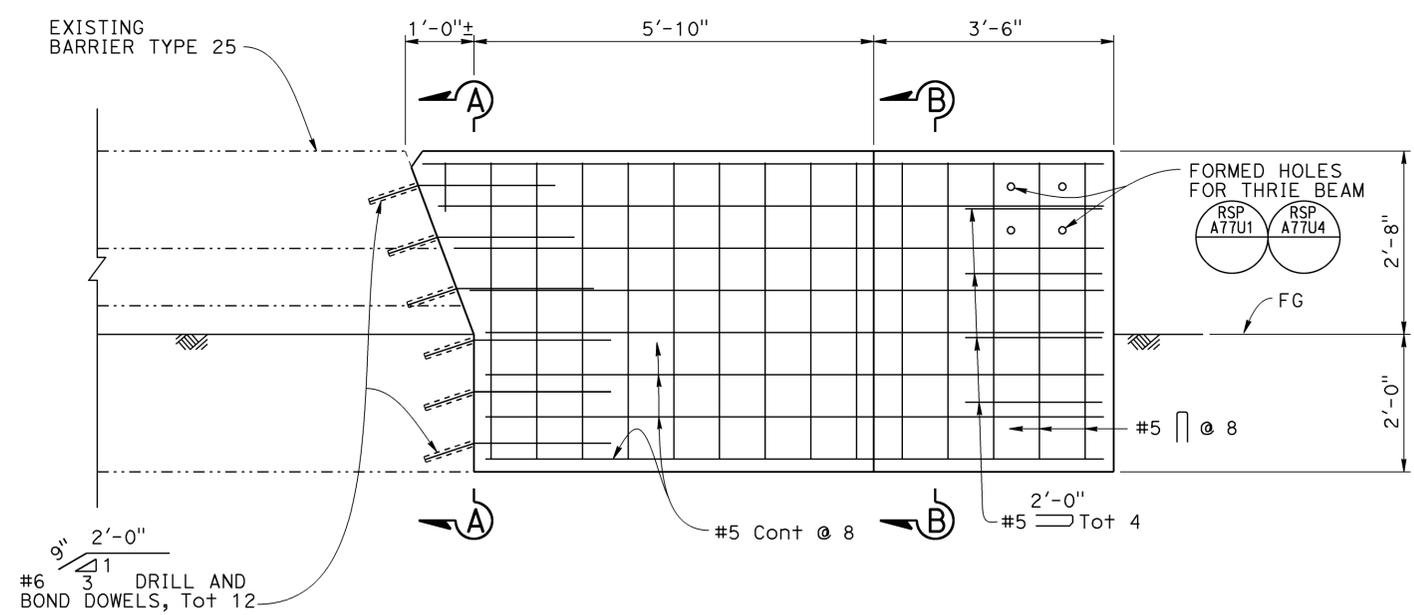
PLAN
3/4" = 1'-0"

NOTES:

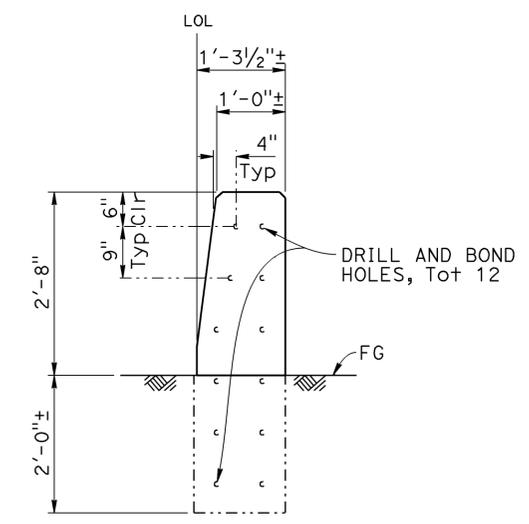
- See "ROADWAY PLANS" for work locations.
- Holes used for fastening existing MBGR must be mortar filled, unless holes were cast using pipe sleeves.
- Existing barrier heights vary. Where exist barrier height is more than 2'-8", transition barrier height to 2'-8" @ 4:1 slope.

LEGEND:

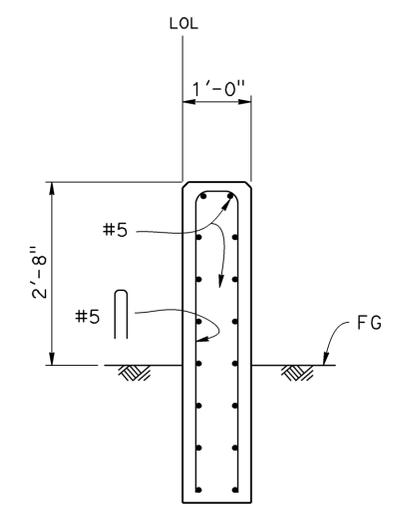
- Indicates existing
- Indicates new structure



ELEVATION
3/4" = 1'-0"



SECTION A-A
3/4" = 1'-0"



SECTION B-B
3/4" = 1'-0"

LOCATION TABLE OF TYPE 25 CONCRETE BARRIER TRANSITION

BRIDGE No.	BRIDGE NAME	ROUTE	POST MILE	DIRECTION	APPROACH END	DEPARTURE END	LENGTH	TOTAL LENGTH	PLAN TYPE
51-0121	San Lucas Creek Bridge	154	R11.51	EB RIGHT	1		10'-4"	10'-4"	B

THE CONTRACTOR MUST VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

BRANCH CHIEF DAVID NEUMANN

DESIGN	BY YU SONG	CHECKED AIMAN MALAK
DETAILS	BY SHUMEI JIANG	CHECKED AIMAN MALAK
QUANTITIES	BY YU SONG	CHECKED AIMAN MALAK

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
DESIGN AND TECHNICAL SERVICES
SPECIAL DESIGNS BRANCH **B**

BRIDGE NO.	51-0121
POST MILE	R11.51

CONCRETE BARRIER TRANSITION
TYPE 25 BARRIER