

INDEX OF PLANS

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY
IN CONTRA COSTA COUNTY
AT VARIOUS LOCATIONS**

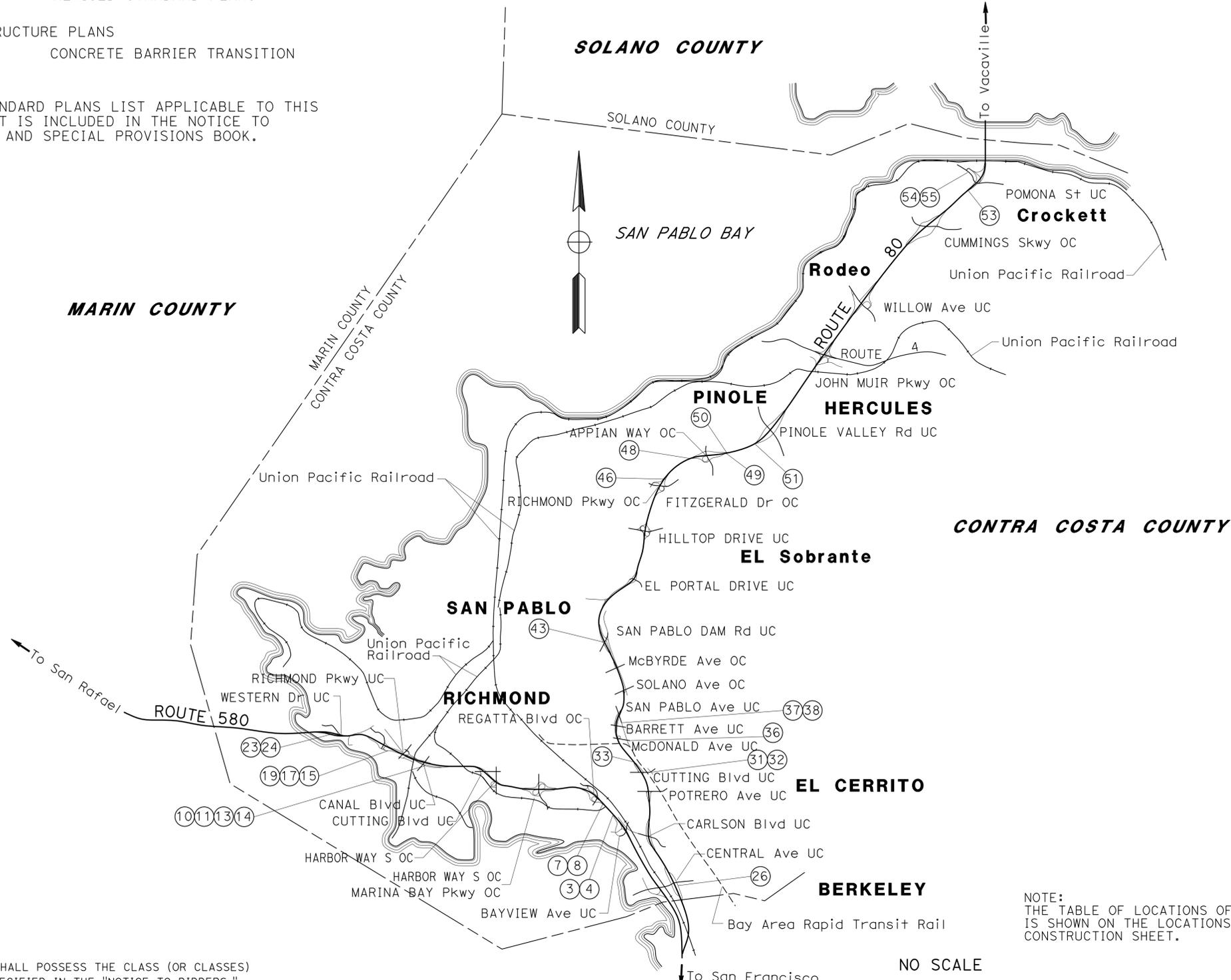
TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	1	67





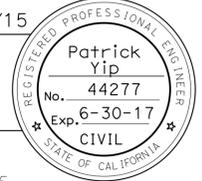
LOCATION MAP



PROJECT MANAGER
HAMID FATHOLLAHI
 DESIGN MANAGER
GEORGE LO

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


 PROJECT ENGINEER
 REGISTERED CIVIL ENGINEER
 DATE **6/20/15**
June 22, 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.



CONTRACT No.	04-2G4414
PROJECT ID	0414000245

DATE PLOTTED => 17-JUL-2015
 TIME PLOTTED => 10:37
 LAST REVISION 06-22-15

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN

NOTE:
 EXISTING UTILITY FACILITIES HAVE NOT BEEN POSITIVELY LOCATED.

LOCATIONS OF CONSTRUCTION

PROJECT WORK LOCATIONS		POST MILE	DIRECTION	SHOULDER	DESCRIPTION
No.	ROUTE				
③	580	0.72	WB	RIGHT	RUST DRAIN 28-0090, K RAILING
④	580	0.72	EB	RIGHT	RUST DRAIN 28-0090, BRIDGE RAILING
⑦	580	1.17	EB	RIGHT	STEGE DRAIN 28-0091, BRIDGE RAILING
⑧	580	1.17	WB	RIGHT	CASTRO St UC 28-0290 R/L, BRIDGE RAILING
⑩	580	R4.78	WB	RIGHT	OFF-RAMP TO CASTRO St, K RAILING
⑪	580	R4.81	WB	LEFT	SEGMENT OFF-RAMP TO CASTRO St, BRIDGE RAILING
⑬	580	R4.81	EB	RIGHT	CANAL Blvd UC, BRIDGE RAILING
⑭	580	R4.81	WB	RIGHT	RAILROAD Ave OH 28-0056 R/L, BRIDGE RAILING
⑮	580	R5.11	WB	RIGHT	CASTRO St UC 28-0290 R/L, BRIDGE RAILING
⑰	580	R5.11	WB	LEFT	OFF-RAMP AT CASTRO St, UC BRIDGE RAILING
⑲	580	R5.43	WB	RIGHT	MARINE St UC, RETAINING WALL
⑳	580	6.22	WB	RIGHT	MAINLINE R5.655, BRIDGE RAILING
㉑	580	6.22	WB	LEFT	MAINLINE R5.655, BRIDGE RAILING
㉒	80	0.22	EB	RIGHT	ON-RAMP FROM CENTRAL Ave, RETAINING WALL
㉓	80	1.89	EB	RIGHT	LOOP ON-RAMP FROM CUTTING Blvd, BRIDGE RAILING
㉔	80	1.99	EB	RIGHT	ON-RAMP FROM CUTTING Blvd, K RAILING
㉕	80	2.04	WB	RIGHT	CUTTING Blvd UC 28-0080L, RETAINING WALL
㉖	80	2.75	EB	RIGHT	OFF-RAMP TO SAN PABLO Ave, BRIDGE RAILING
㉗	80	2.75	EB	LEFT	OFF-RAMP TO SAN PABLO Ave, BRIDGE RAILING
㉘	80	2.82	EB	RIGHT	BARRETT Ave UC 28-0083S, K RAILING
㉙	80	2.99	WB	RIGHT	OFF-RAMP TO BARRETT Ave, BRIDGE RAILING
㉚	80	6.70	WB	LEFT	RICHMOND Pkwy OC 28-0308, RETAINING WALL
㉛	80	7.60	EB	RIGHT	LOOP ON-RAMP FROM APPIAN WAY OC 28-0288L, RETAINING WALL
㉜	80	7.73	EB	RIGHT	ON-RAMP FROM NB APPIAN WAY, RETAINING WALL
㉝	80	7.78	WB	RIGHT	OFF-RAMP TO APPIAN WAY, RETAINING WALL
㉞	80	8.51	EB	RIGHT	PINOLE VALLEY Rd UC 28-0121, BRIDGE RAILING
㉟	80	13.48	EB	RIGHT	OFF-RAMP TO CROCKETT Ave, K RAILING
㊱	80	13.48	WB	RIGHT	ON-RAMP FROM POMONA St, BRIDGE RAILING
㊲	80	13.48	WB	LEFT	ON-RAMP FROM POMONA St, BRIDGE RAILING

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	2	67

6/20/15
 REGISTERED CIVIL ENGINEER DATE

6-22-15
 PLANS APPROVAL DATE

Thanh C. Nguyen
 No. 58137
 Exp. 6-30-16
 CIVIL

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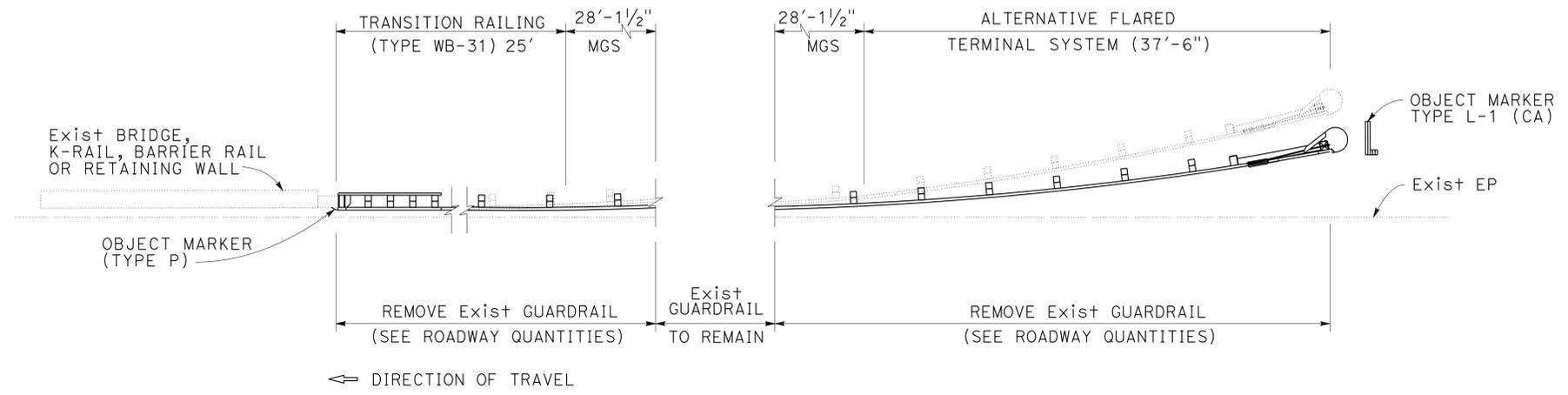
LOCATIONS OF CONSTRUCTION

LC-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	3	67
			6/20/15	DATE	
REGISTERED CIVIL ENGINEER			DATE		
			6-22-15	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>					

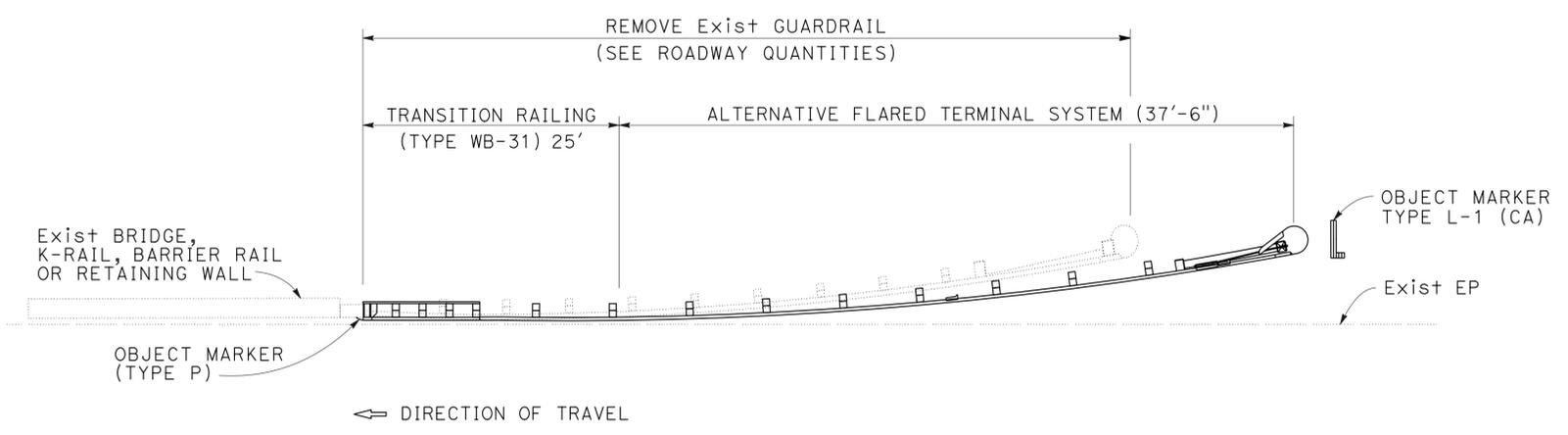
NOTES:

- EXISTING UTILITY FACILITIES HAVE NOT BEEN POSITIVELY LOCATED.
- EXACT POSITION OF LUMBER ON MGS SHALL BE DETERMINED BY THE ENGINEER.
- INSTALL GUARD RAILING DELINEATOR 25 FEET FROM THE END OF MGS; SPACING 25 FEET.
- FOR DETAILS NOT SHOWN, SEE STANDARD PLANS DATED 2010.
- 28'-1.5" MGS, SEE TRANSITION DETAIL RSP A77U5.
- 25' TRANSITION RAILING (TYPE WB-31) SEE RSP A77U4.



DETAIL A

LOCATION 7 - ROUTE 580 EB AT STEGE DRAIN 28-0091 TYPE 12B LAYOUT SEE RSP A77Q1)
 LOCATION 10 - ROUTE 580 WB OFF-RAMP TO CASTRO ST TYPE 12B LAYOUT SEE RSP A77Q1)



DETAIL B

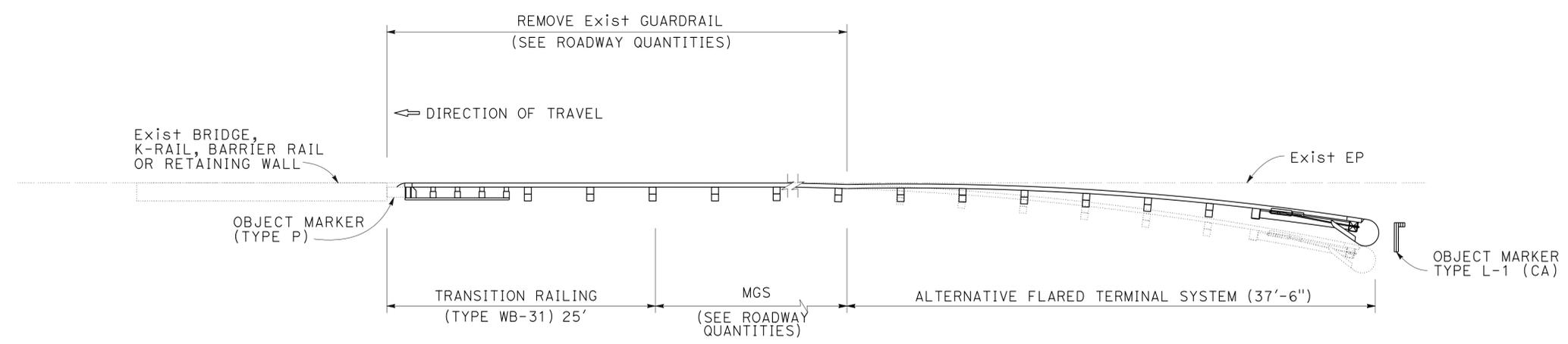
LOCATION 3 - ROUTE 580 WB AT RUST DRAIN 28-0090 TYPE 12B LAYOUT (SEE RSP A77Q1)
 LOCATION 4 - ROUTE 580 EB AT RUST DRAIN 28-0090 TYPE 12B LAYOUT (SEE RSP A77Q1)
 LOCATION 8 - ROUTE 580 WB AT CASTRO ST UC 28-0290 TYPE 12B LAYOUT (SEE RSP A77Q1)

CONSTRUCTION DETAILS
NO SCALE

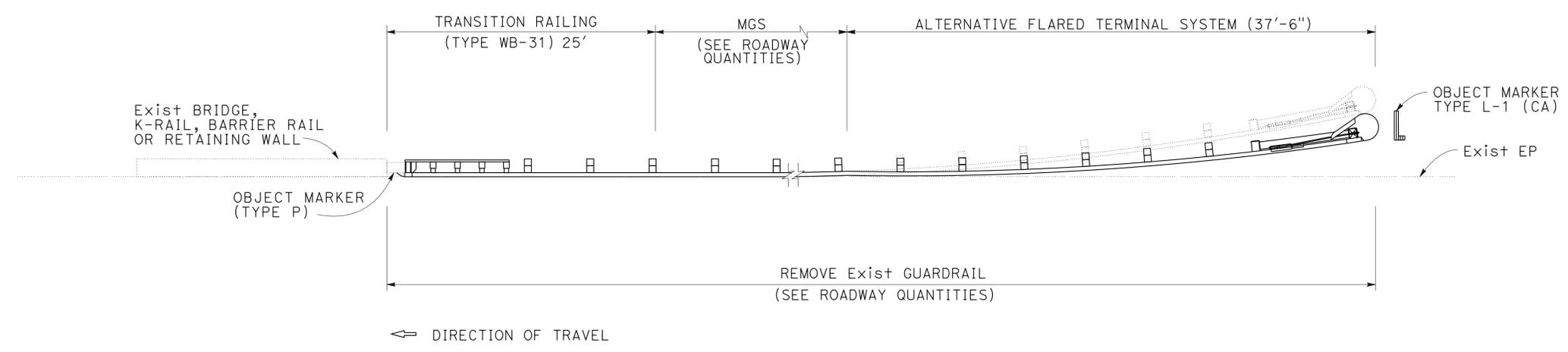
C-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN
FUNCTIONAL SUPERVISOR	GEORGE LO
CALCULATED/DESIGNED BY	CHECKED BY
THANH NGUYEN	PATRICK YIP
REVISOR	DATE
TN	6/22/15

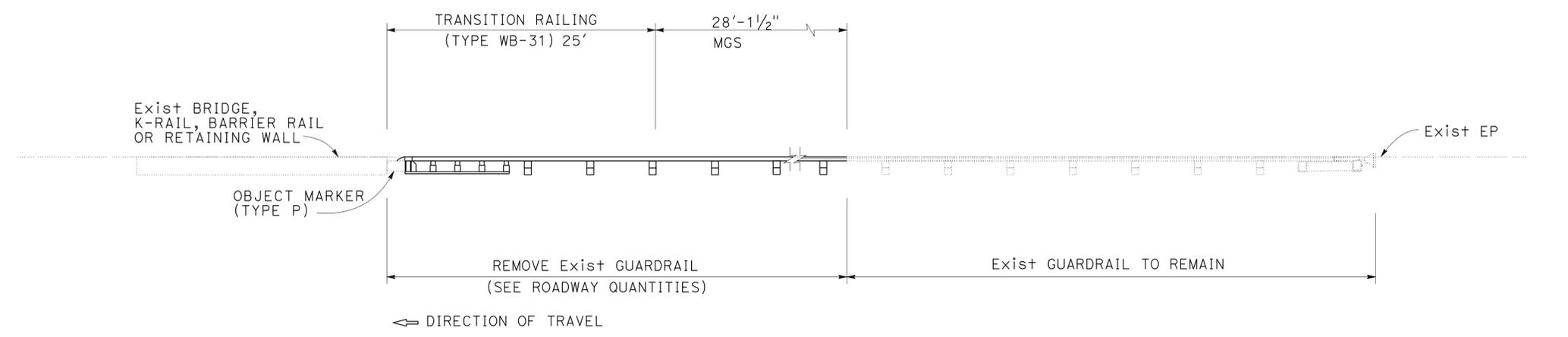
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	4	67
			6/20/15	DATE	
REGISTERED CIVIL ENGINEER			DATE		
			6-22-15	PLANS APPROVAL DATE	
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



DETAIL C
LOCATION 11 - ROUTE 580 SEGMENT WB OFF-RAMP TO CASTRO St TYPE 12B LAYOUT (SEE RSP A77Q1)



DETAIL D
LOCATION 54 - ROUTE 80 WB ON-RAMP FROM CROCKETT Ave TYPE 12B LAYOUT (SEE RSP A77Q1)



DETAIL D1
LOCATION 55 - ROUTE 80 WB ON-RAMP FROM CROCKETT Ave TYPE 12B LAYOUT (SEE RSP A77Q1)

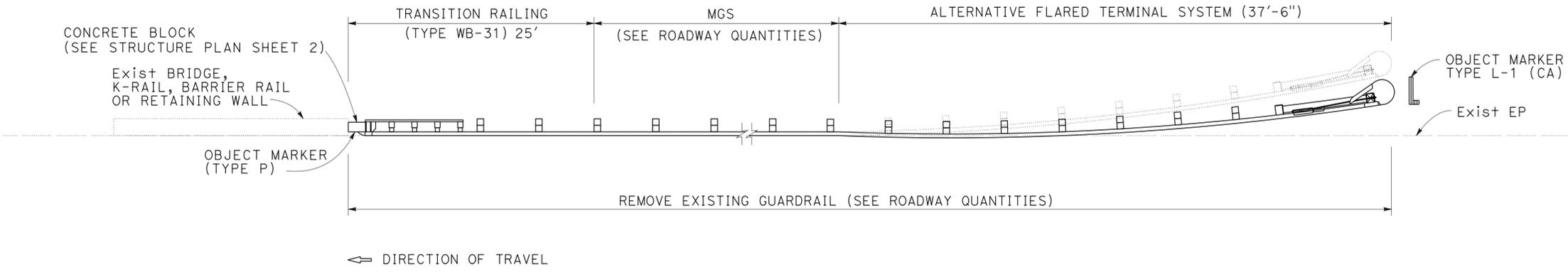
CONSTRUCTION DETAILS
NO SCALE

FOR NOTES AND LEGEND, SEE SHEET C-1

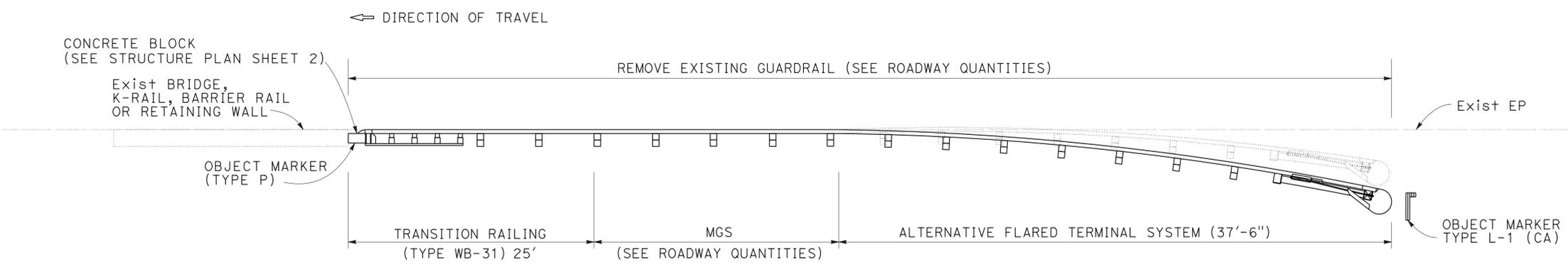
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN
FUNCTIONAL SUPERVISOR	GEORGE LO
CALCULATED/DESIGNED BY	CHECKED BY
THANH NGUYEN	PATRICK YIP
REVISOR	DATE
TN	6/22/15

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	5	67
			6/20/15		
REGISTERED CIVIL ENGINEER			DATE		
6-22-15			PLANS APPROVAL DATE		
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CALCULATED/DESIGNED BY	CHECKED BY
THANH NGUYEN	PATRICK YIP
REVISOR	DATE
TN	6/22/15



DETAIL E
LOCATION 23 - ROUTE 580 WB AT BEGINNING OF RICHMOND-SAN RAFAEL BRIDGE TYPE 12B LAYOUT (SEE RSP A77Q1)



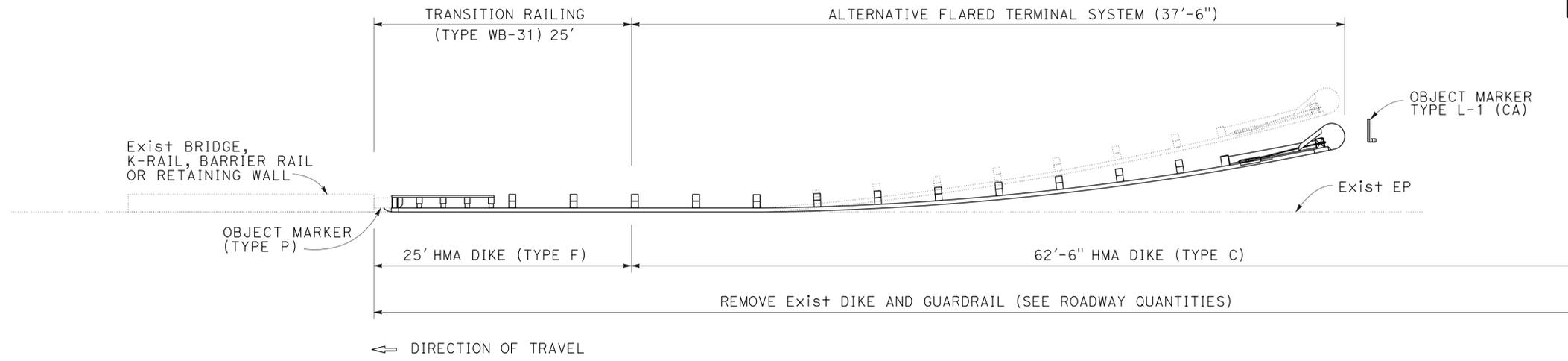
DETAIL E1
LOCATION 24 - ROUTE 580 WB AT BEGINNING OF RICHMOND-SAN RAFAEL BRIDGE TYPE 12B LAYOUT (SEE RSP A77Q1)

FOR NOTES AND LEGEND, SEE SHEET C-1

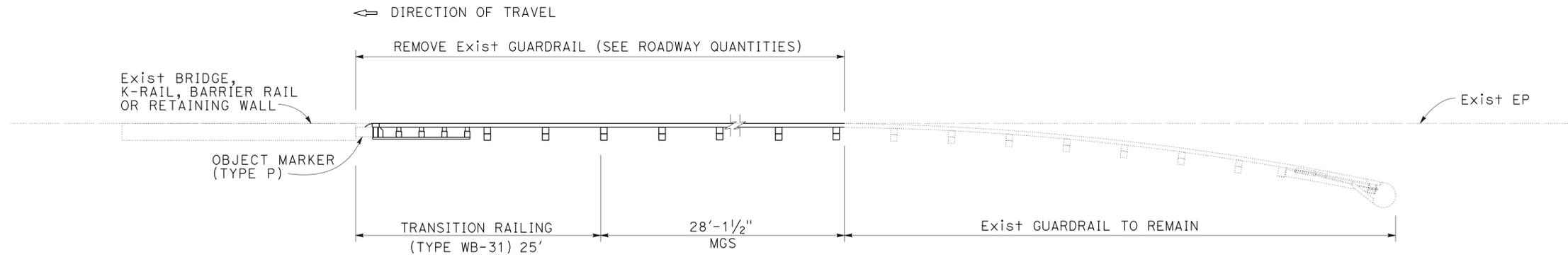
CONSTRUCTION DETAILS
NO SCALE

LAST REVISION DATE PLOTTED => 17-JUL-2015 05-10-15 TIME PLOTTED => 10:37

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	6	67
			6/20/15	REGISTERED CIVIL ENGINEER DATE	
			6-22-15	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>					



DETAIL F
LOCATION 36 - ROUTE 80 EB OFF-RAMP TO SAN PABLO Ave TYPE 12B LAYOUT (SEE RSP A77Q1)



DETAIL F1
LOCATION 37 - ROUTE 80 EB OFF-RAMP TO SAN PABLO Ave TYPE 12B LAYOUT (SEE RSP A77Q1)

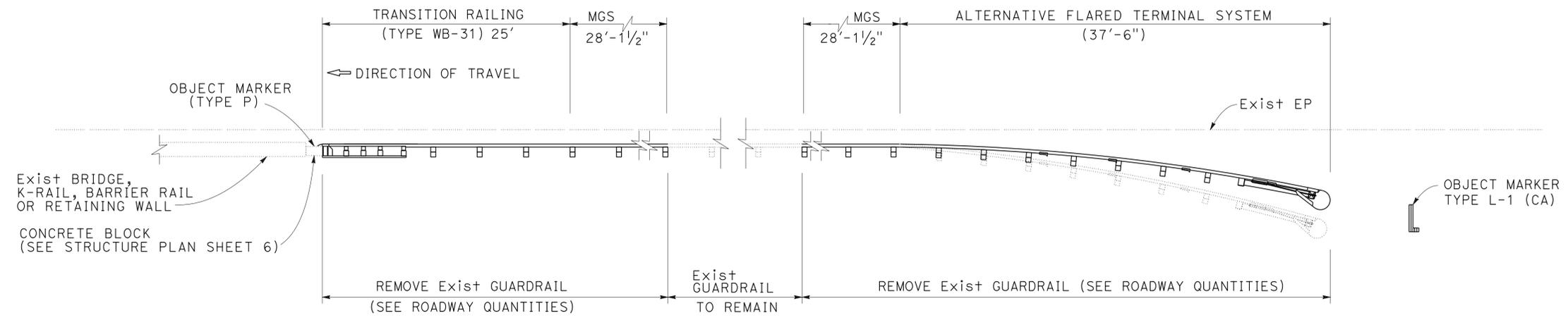
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN
 FUNCTIONAL SUPERVISOR: GEORGE LO
 CALCULATED/DESIGNED BY: [blank] CHECKED BY: [blank]
 THANH NGUYEN PATRICK YIP
 REVISOR: [blank] DATE REVISED: [blank]
 TN 6/22/15

CONSTRUCTION DETAILS
NO SCALE

FOR NOTES AND LEGEND,
SEE SHEET C-1

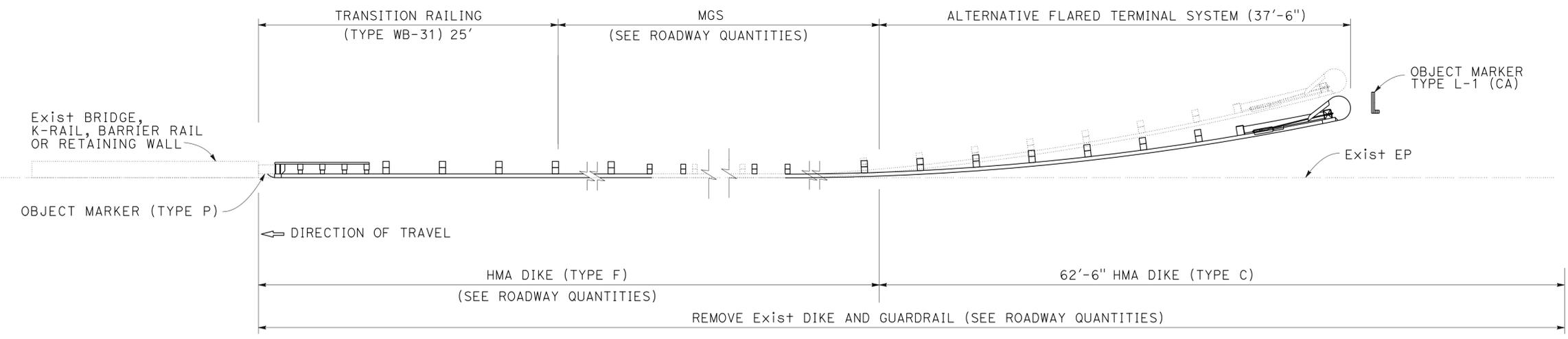
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	7	67
			6/20/15	REGISTERED CIVIL ENGINEER DATE	
			6-22-15	PLANS APPROVAL DATE	
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CALCULATED/DESIGNED BY	CHECKED BY
THANH NGUYEN	PATRICK YIP
REVISOR	DATE
TN	6/22/15



DETAIL G

LOCATION 46 - ROUTE 80 WB AT RICHMOND Pkwy OC 28-0308 TYPE 12B LAYOUT (SEE RSP A77Q1)



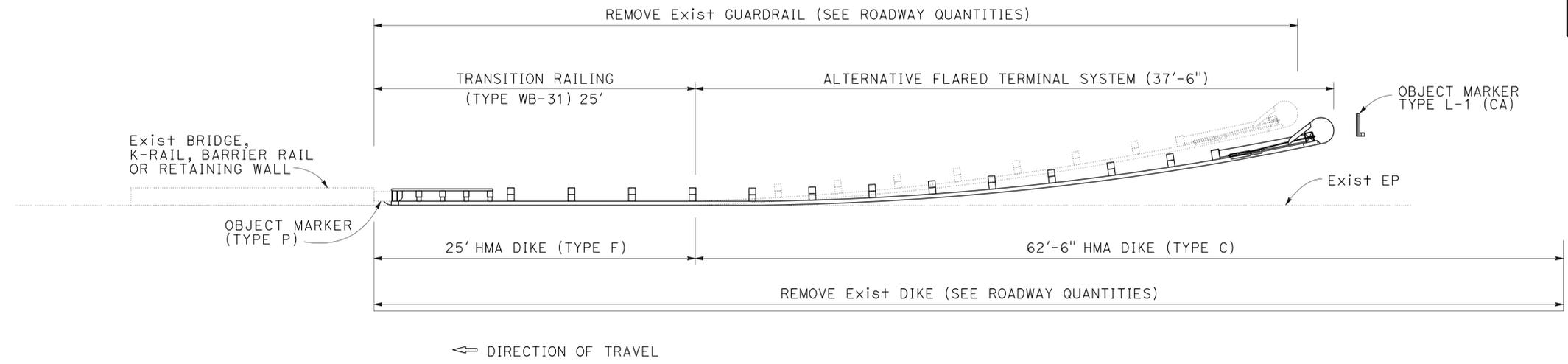
DETAIL H

LOCATION 14 - ROUTE 580 WB AT RAILROAD Ave OH 28-0056 TYPE 12B LAYOUT (SEE RSP A77Q1)

CONSTRUCTION DETAILS
NO SCALE

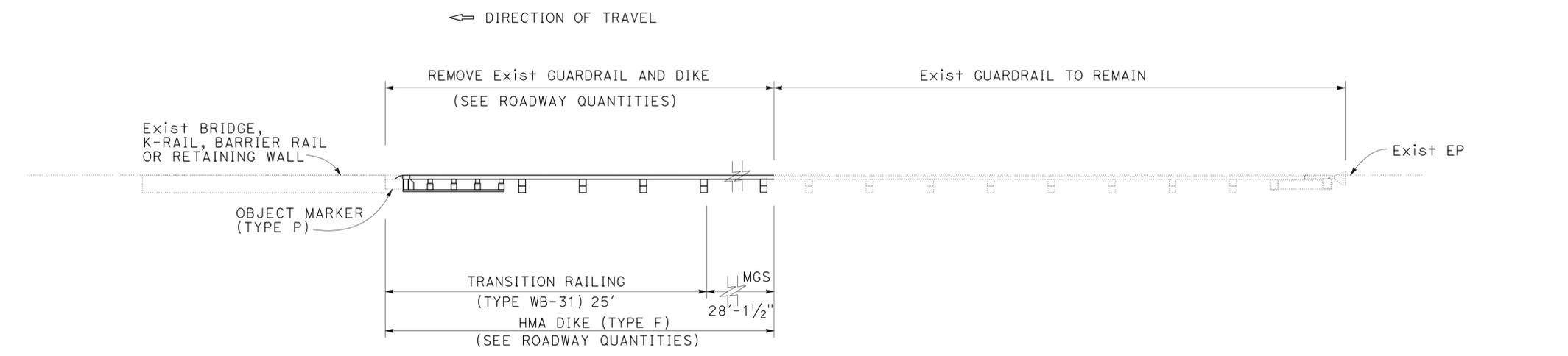
FOR NOTES AND LEGEND, SEE SHEET C-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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			6/20/15	REGISTERED CIVIL ENGINEER DATE	
			6-22-15	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>					



DETAIL I

LOCATION 31 - ROUTE 80 EB LOOP ON-RAMP FROM CUTTING Blvd TYPE 12B LAYOUT (SEE RSP A77Q1)
 LOCATION 33 - ROUTE 80 WB AT CUTTING Blvd UC 28-0080L TYPE 12B LAYOUT (SEE RSP A77Q1)
 LOCATION 53 - ROUTE 80 EB OFF-RAMP TO CROCKETT Ave TYPE 12B LAYOUT (SEE RSP A77Q1)



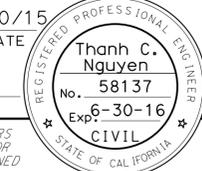
DETAIL J

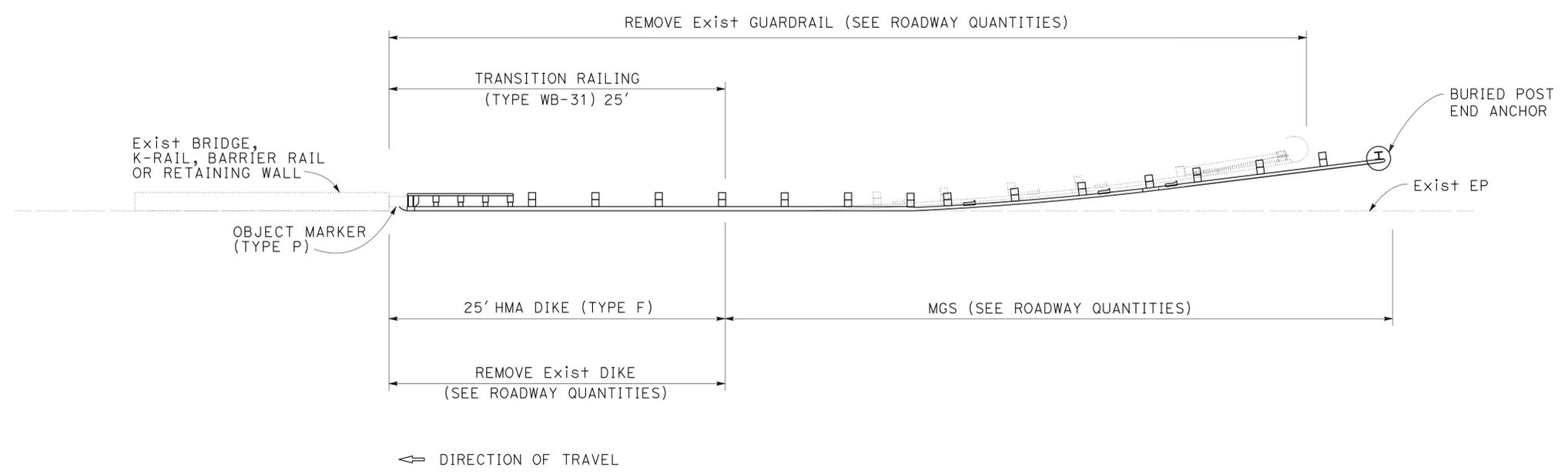
LOCATION 38 - ROUTE 80 EB AT BARRETT Ave UC 28-0083S TYPE 12A LAYOUT (SEE RSP A77Q1)
 LOCATION 43 - ROUTE 80 WB OFF-RAMP TO BARRETT Ave TYPE 12A LAYOUT (SEE RSP A77Q1)

CONSTRUCTION DETAILS
NO SCALE

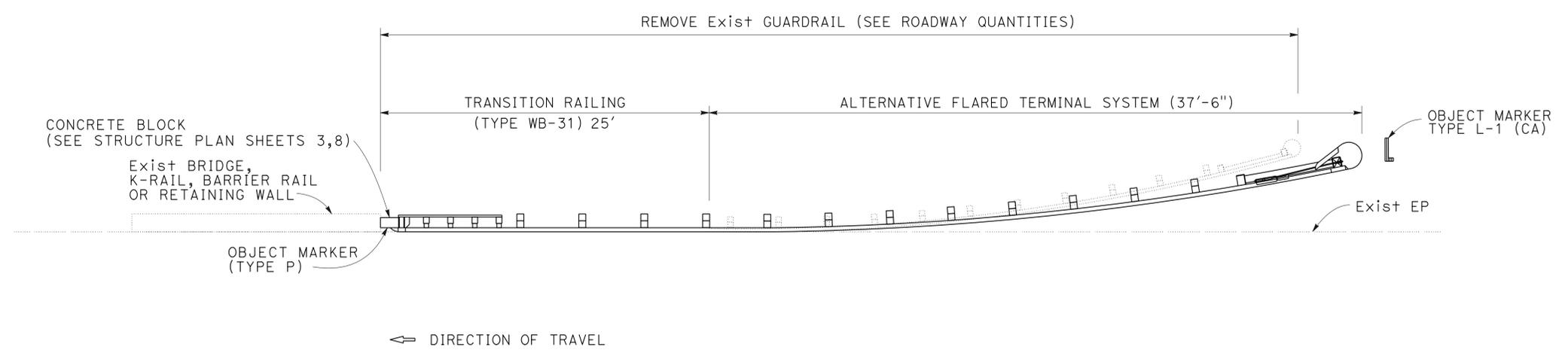
FOR NOTES AND LEGEND, SEE SHEET C-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN
FUNCTIONAL SUPERVISOR	GEORGE LO
CALCULATED/DESIGNED BY	CHECKED BY
THANH NGUYEN	PATRICK YIP
REVISOR	DATE
TN	6/22/15

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	9	67
 6/20/15 REGISTERED CIVIL ENGINEER DATE					
6-22-15 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>					



DETAIL K
 LOCATION 26 - ROUTE 80 EB ON-RAMP FROM CENTRAL Ave TYPE 12C LAYOUT (SEE RSP A77Q2)



DETAIL L
 LOCATION 32 - ROUTE 80 EB ON-RAMP FROM CUTTING Blvd TYPE 12B LAYOUT (SEE RSP A77Q2)
 LOCATION 49 - ROUTE 80 EB ON-RAMP FROM NB APPIAN WAY TYPE 12B LAYOUT (SEE RSP A77Q2)

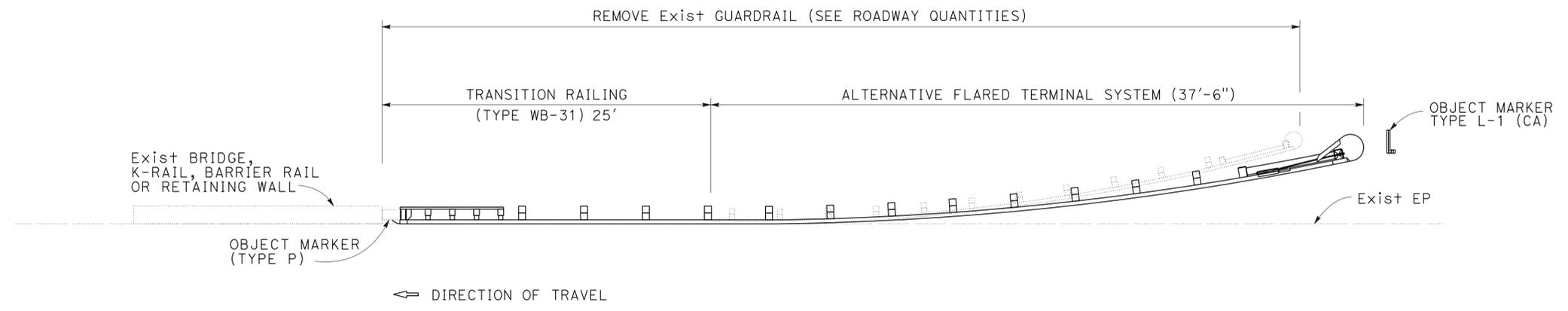
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
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 FUNCTIONAL SUPERVISOR: GEORGE LO
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 THANH NGUYEN
 PATRICK YIP
 REVISIONS: [blank]
 REVISOR: [blank]
 DATE: 6/22/15
 TN: [blank]

CONSTRUCTION DETAILS
 NO SCALE

FOR NOTES AND LEGEND,
 SEE SHEET C-1

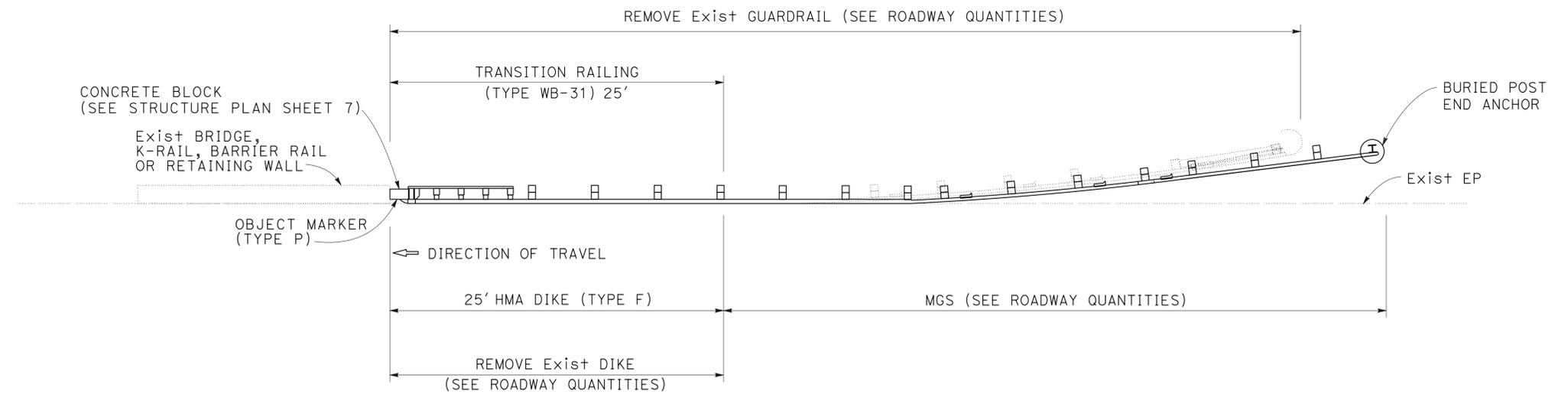
C-7

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	10	67
 6/20/15 REGISTERED CIVIL ENGINEER DATE					
6-22-15 PLANS APPROVAL DATE					
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DETAIL M

LOCATION 50 - ROUTE 80 WB OFF-RAMP TO APPIAN WAY TYPE 12B LAYOUT (SEE RSP A77Q1)
 LOCATION 51 - ROUTE 80 EB AT PINOLE VALLEY Rd UC 28-0121 TYPE 12B LAYOUT (SEE RSP A77Q1)



DETAIL N

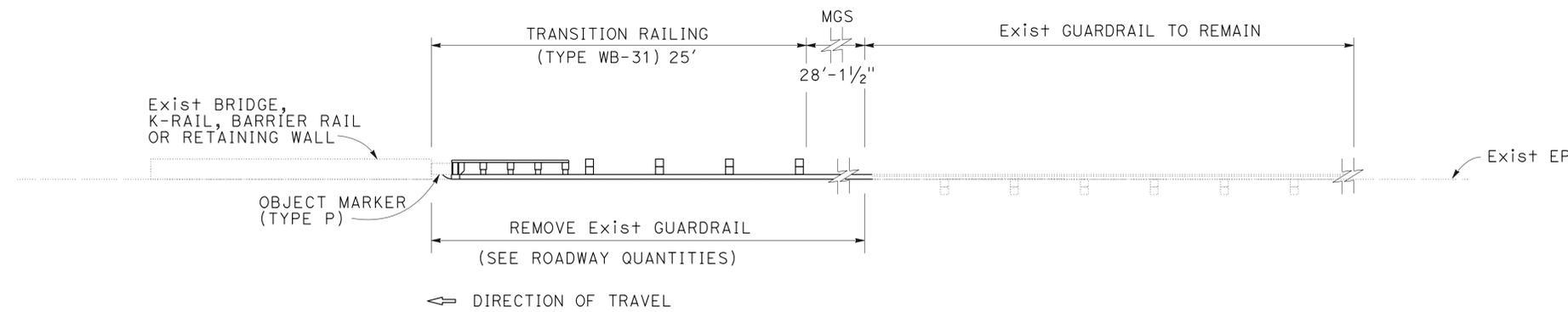
LOCATION 48 - ROUTE 80 EB ON-RAMP LOOP FROM APPIAN WAY OC 28-0288L TYPE 12C LAYOUT (SEE RSP A77Q2)

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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 DESIGN
 FUNCTIONAL SUPERVISOR: GEORGE LO
 CHECKED BY: PATRICK YIP
 THANH NGUYEN
 REVISOR: THANH NGUYEN
 DATE REVISED: 6/22/15
 TN
 6/22/15

CONSTRUCTION DETAILS
 NO SCALE

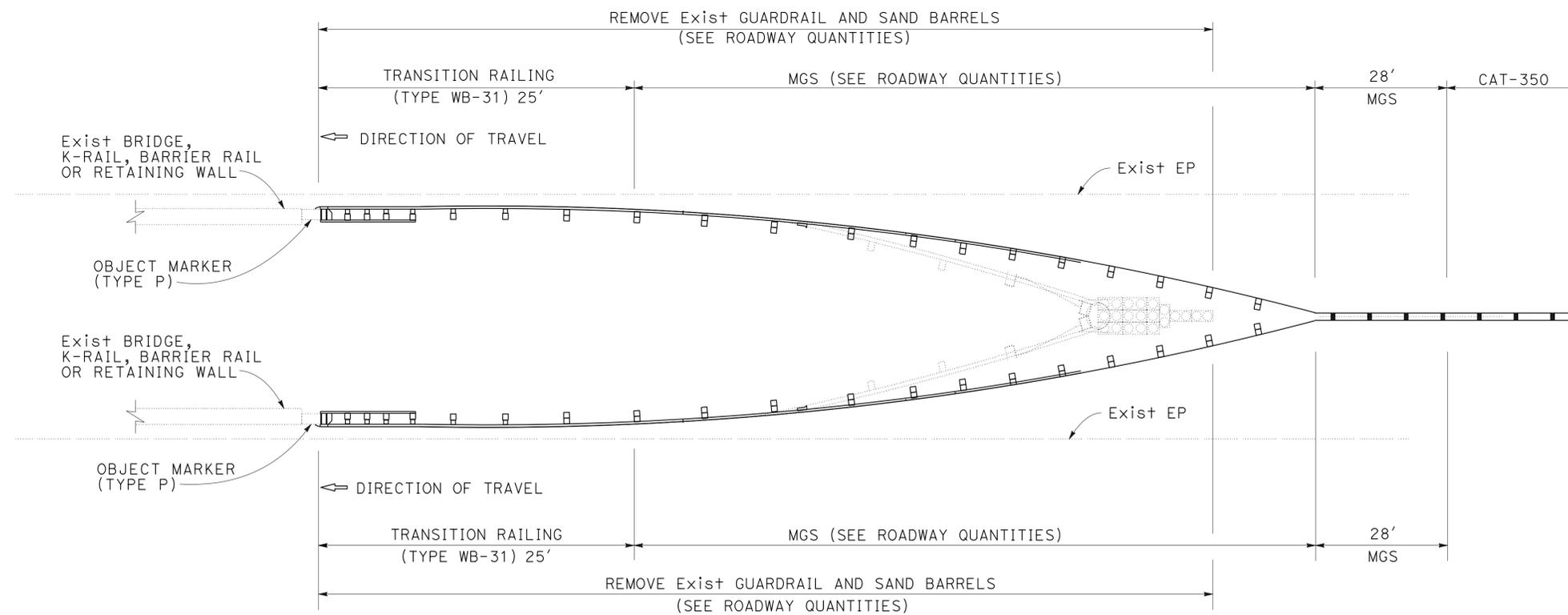
FOR NOTES AND LEGEND,
 SEE SHEET C-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	11	67
 6/20/15 REGISTERED CIVIL ENGINEER DATE					
6-22-15 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>					



DETAIL O

LOCATION 13 - ROUTE 580 EB AT CANAL Blvd UC TYPE 12A LAYOUT (SEE RSP A77Q1)
 LOCATION 19 - ROUTE 580 WB AT MARINE St RETAINING WALL TYPE 12A LAYOUT (SEE RSP A77Q1)



DETAIL P

LOCATION 15 - ROUTE 580 WB AT CASTRO St UC 28-0290 TYPE 15A LAYOUT (SEE RSP A77R2)
 LOCATION 17 - ROUTE 580 WB OFF-RAMP, AT CASTRO St UC 28-0290 TYPE 15A LAYOUT (SEE RSP A77R2)

CONSTRUCTION DETAILS
NO SCALE

FOR NOTES AND LEGEND,
SEE SHEET C-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN
FUNCTIONAL SUPERVISOR	GEORGE LO
CALCULATED/DESIGNED BY	CHECKED BY
THANH NGUYEN	PATRICK YIP
REVISOR	DATE
TN	6/22/15

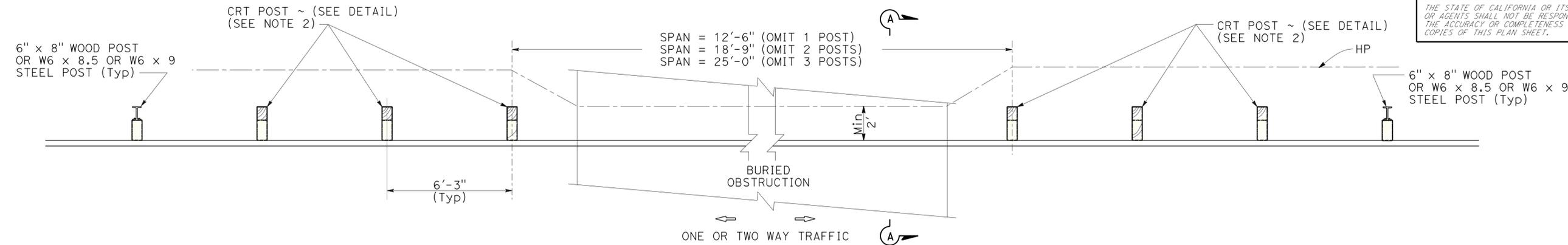


Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	12	67

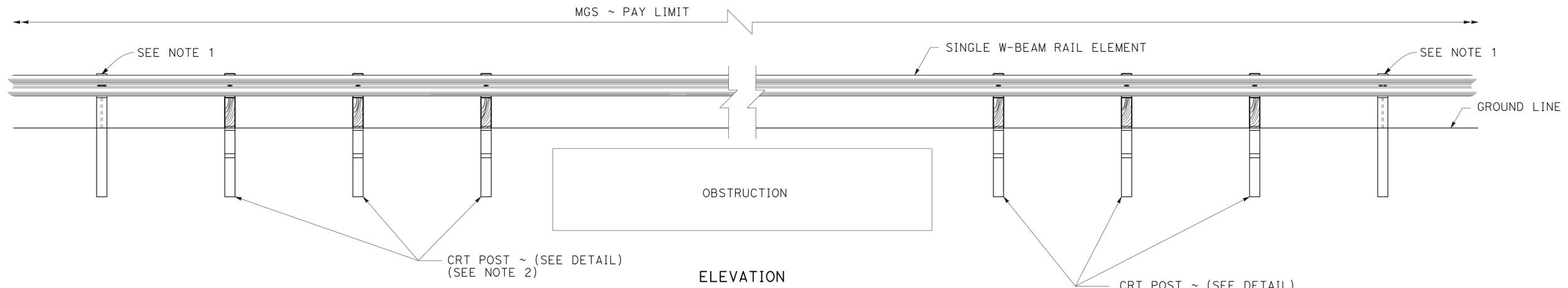
6/20/15
REGISTERED CIVIL ENGINEER DATE
6-22-15
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Thanh C. Nguyen
No. 58137
Exp. 6-30-16
CIVIL
STATE OF CALIFORNIA

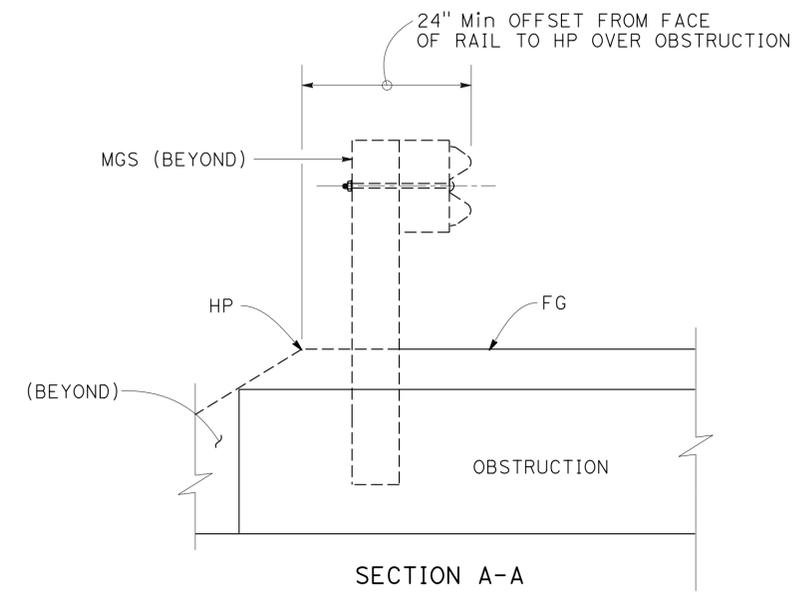
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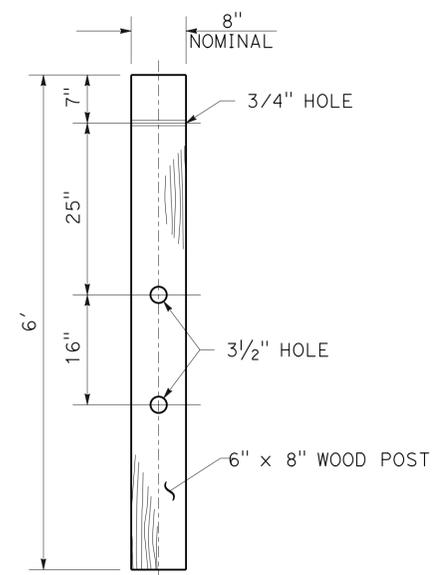
PLAN



ELEVATION



CONTROLLED RELEASING TERMINAL (CRT) POST DETAIL
SEE NOTE 2



NOTES:

1. STANDARD 6" POST CAN BE WOOD OR STEEL, SEE RSP A77L1 AND RSP A77L2 FOR ADDITIONAL DETAILS NOT SHOWN ON THIS PLAN.
2. CRT POST SHALL BE WOOD.
3. SPLICE LOCATION OF MGS WILL NOT AFFECT SPAN.
4. GUARDRAIL ELEMENTS TO BE STANDARD 12'-6" LENGTH BETWEEN SPLICES.
5. MINIMUM INSTALLATION LENGTH OF THE MGS SEGMENT IS 175', THE LENGTH OF MGS, INCLUDING THE END TREATMENTS AT BOTH UPSTREAM AND DOWNSTREAM, SHOULD BE NO LESS THAN 62.5' BEGINNING AT THE THIRD CRT POST.
6. APPLY AT LOCATION WHERE THERE ARE UNDERGROUND UTILITY CONTACT.

**CONSTRUCTION DETAILS
MIDWEST GUARDRAIL SYSTEM
OMIT 1 TO 3 POSTS
NO SCALE**

FOR NOTES AND LEGEND, SEE SHEET C-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN
FUNCTIONAL SUPERVISOR: GEORGE LO
CHECKED BY: [blank]
DESIGNED BY: [blank]
THANH NGUYEN
PATRICK YIP
REVISOR: [blank]
DATE: 6/22/15
T.N.

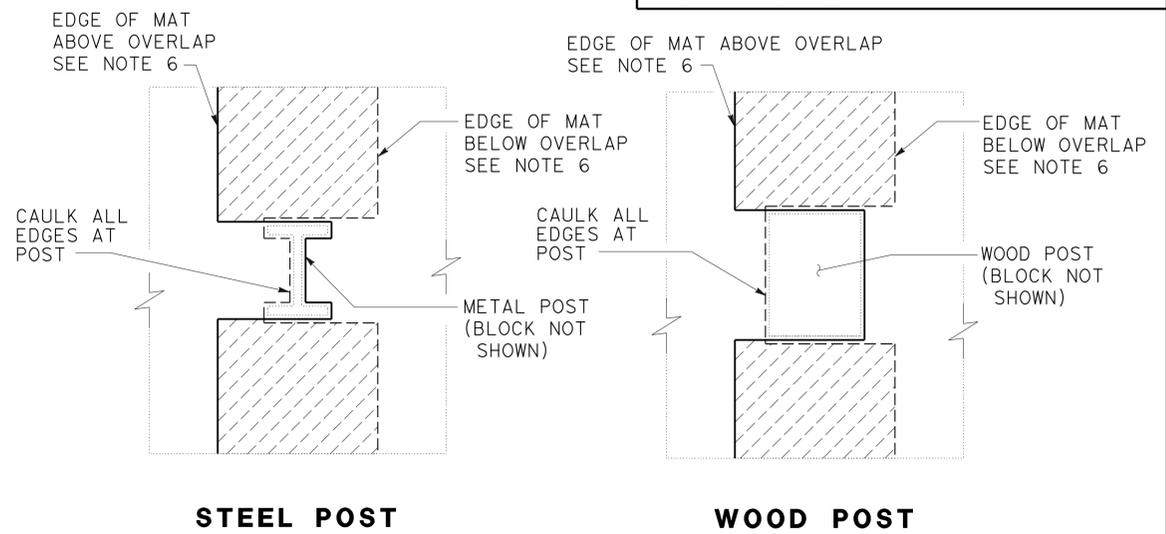
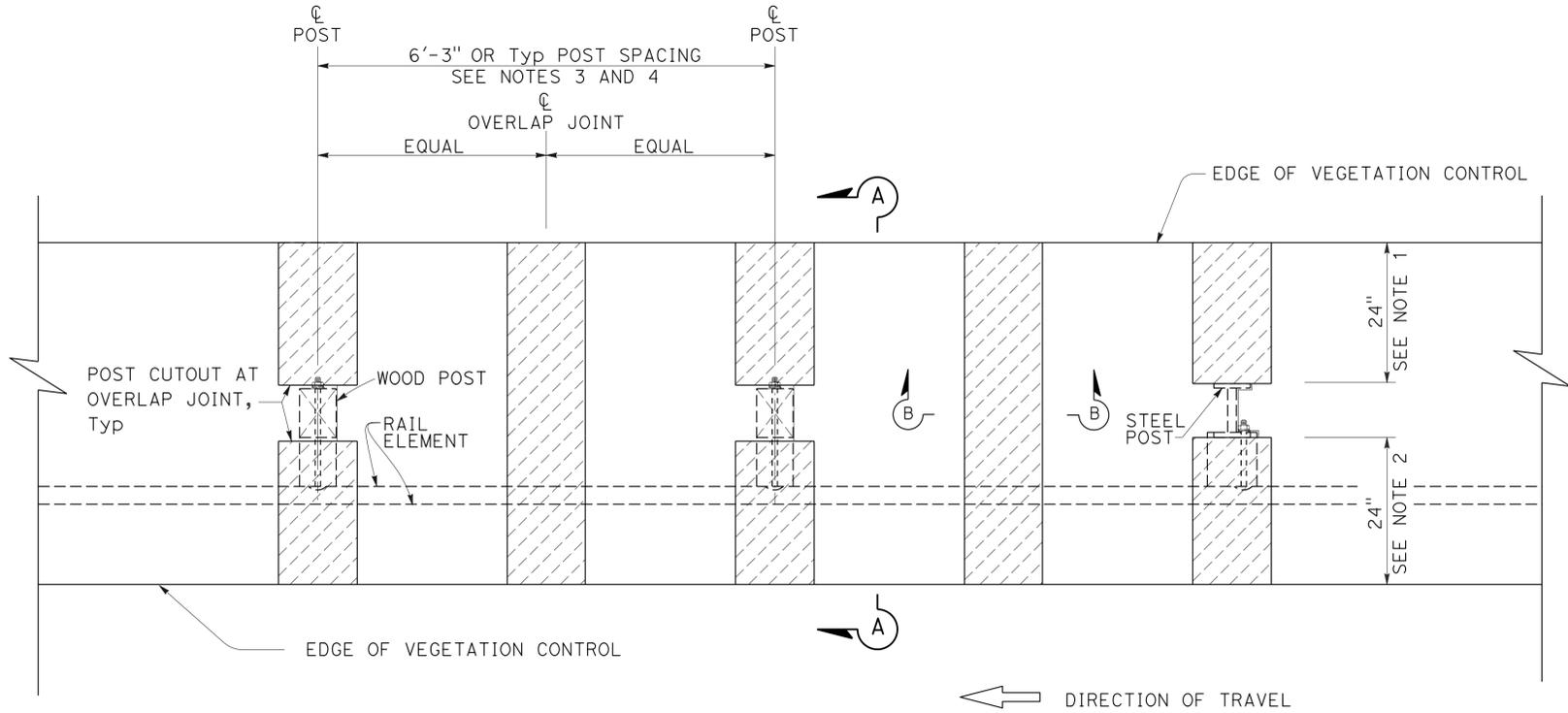
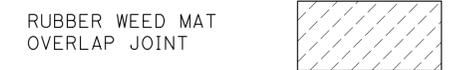
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	13	67

REGISTERED CIVIL ENGINEER	DATE	6/20/15
PLANS APPROVAL DATE	6-22-15	

REGISTERED PROFESSIONAL ENGINEER	No.	58137
CIVIL	Exp.	6-30-16

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.

LEGEND:

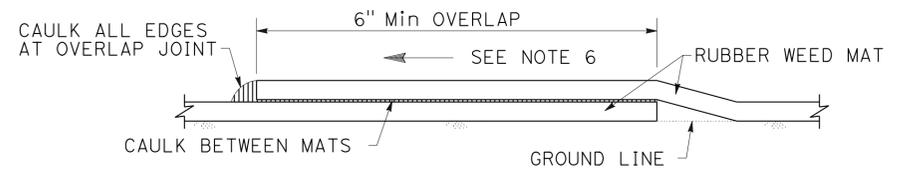


STEEL POST

WOOD POST

PLAN

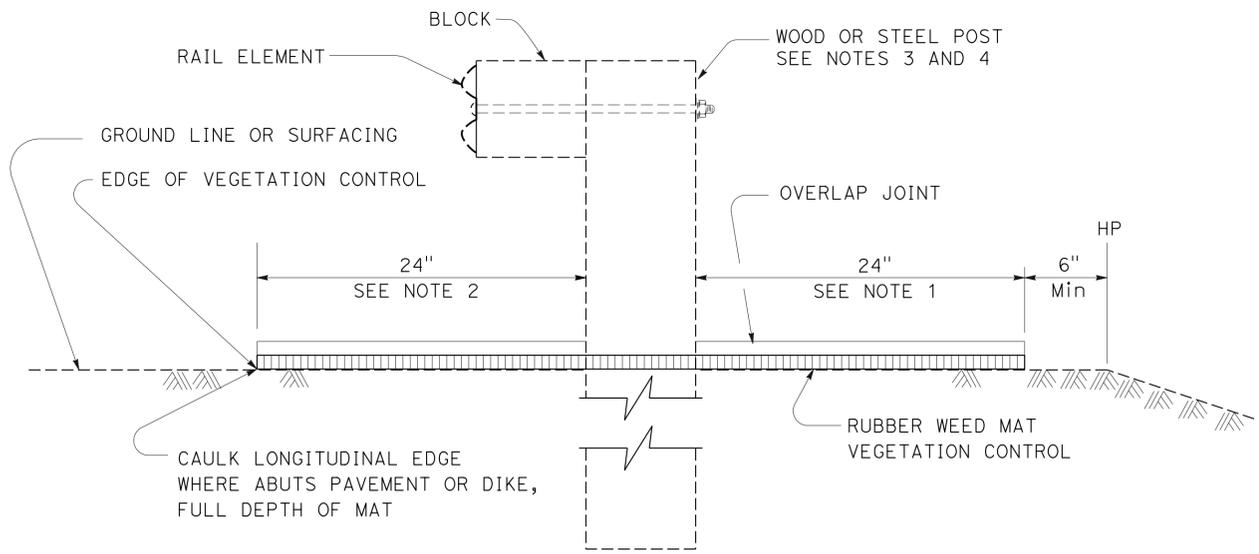
POST CUTOUT AT OVERLAP JOINT



**SECTION B-B
OVERLAP JOINT**

NOTES:

- WHERE THE DISTANCE BETWEEN BACK OF POST AND HINGE POINT IS LESS THAN 30", CONSTRUCT VEGETATION CONTROL TO 6" FROM HINGE POINT. TRIM MATS TO AN EVEN, CONSISTENT EDGE.
- WHERE DIKE IS CONSTRUCTED UNDER RAILING, CONSTRUCT VEGETATION CONTROL TO BACK EDGE OF DIKE. WHERE PAVED SHOULDER IS CONSTRUCTED WITHIN 24" IN FRONT OF POST, CONSTRUCT VEGETATION CONTROL TO THE EDGE OF PAVED SHOULDER. TRIM MATS FLUSH WITH DIKE OR PAVED SHOULDER.
- FOR WOOD POST SIZE AND SPACING, SEE REVISED STANDARD PLAN RSP A77N1.
- FOR STEEL POST SIZE AND SPACING, SEE REVISED STANDARD PLAN RSP A77N2.
- FOR DETAILS NOT SHOWN, SEE SHEET C-12 AND REVISED STANDARD PLANS RSP A77L1 AND RSP A77L2.
- LAP WEED MAT IN DIRECTION OF WATER FLOW.
- FOR CONTINUOUS ROLL PRODUCT, LOCATE OVERLAP JOINT BETWEEN POSTS AS SHOWN.



SECTION A-A

**RUBBER WEED MAT VEGETATION CONTROL
AT MIDWEST GUARDRAIL SYSTEM (STANDARD RAILING SECTION)**

**CONSTRUCTION DETAILS
(WEED MAT VEGETATION CONTROL)**

NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN
 FUNCTIONAL SUPERVISOR: GEORGE LO
 CHECKED BY: PATRICK YIP
 REVISIONS: TN 6/22/15
 USERNAME => s123043
 DGN FILE => 0414000245ga011.dgn



UNIT 0271

PROJECT NUMBER & PHASE

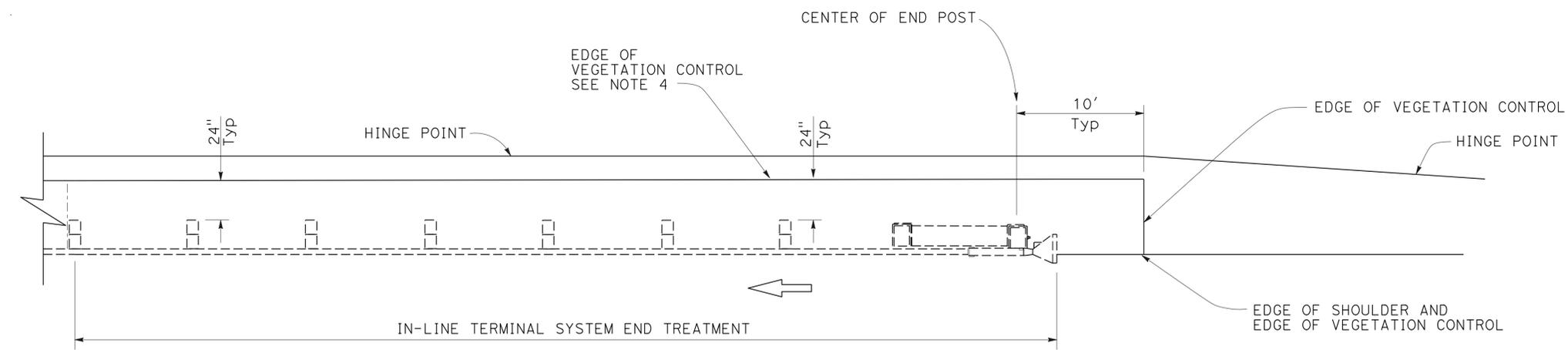
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BORDER LAST REVISED 7/2/2010

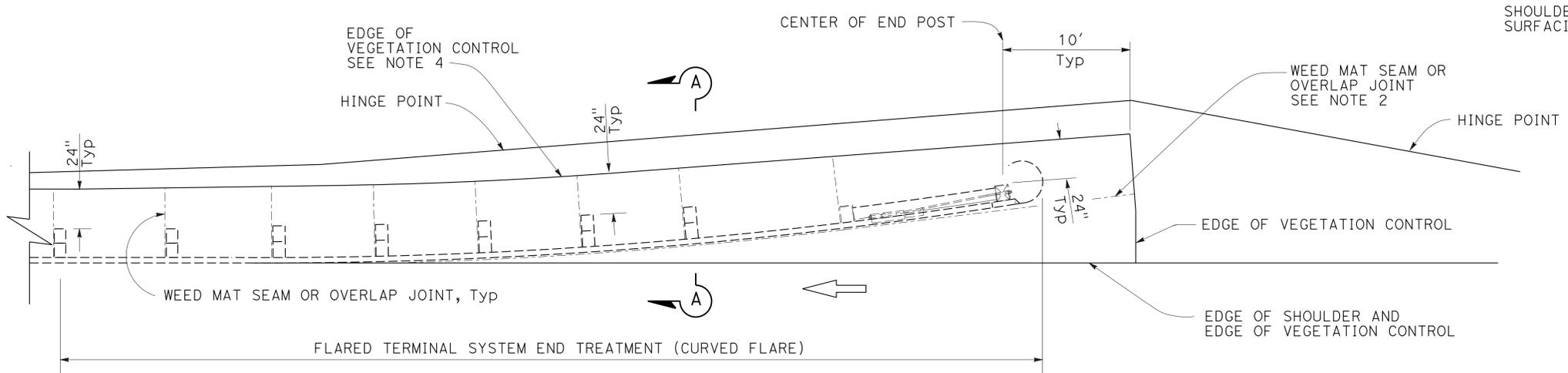
LAST REVISION DATE PLOTTED => 17-JUL-2015
 05-10-15 TIME PLOTTED => 10:37

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	14	67
			6/20/15	REGISTERED CIVIL ENGINEER DATE	
			6-22-15	PLANS APPROVAL DATE	
			REGISTERED PROFESSIONAL ENGINEER Thanh C. Nguyen No. 58137 Exp. 6-30-16 CIVIL STATE OF CALIFORNIA		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

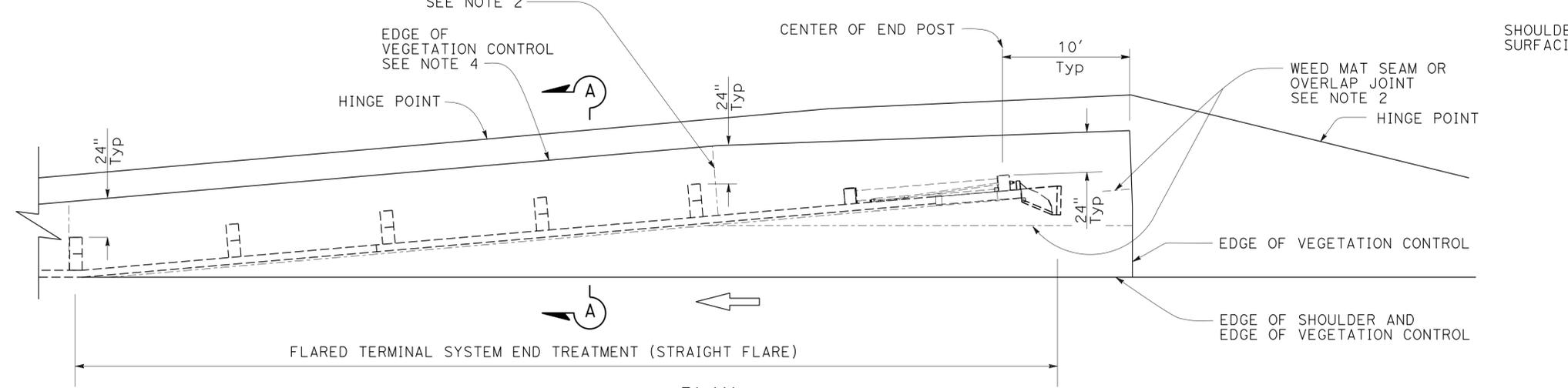
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 DESIGN
 GEORGE LO
 FUNCTIONAL SUPERVISOR
 THANH NGUYEN
 PATRICK YIP
 REVISOR
 TN
 6/22/15
 DATE REVISED



PLAN



PLAN

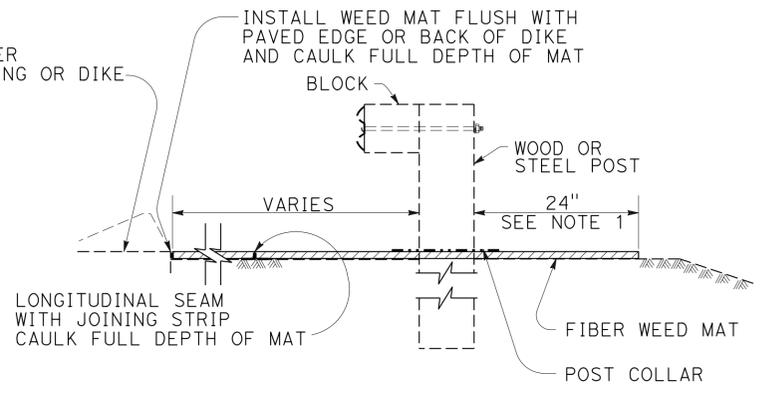


PLAN

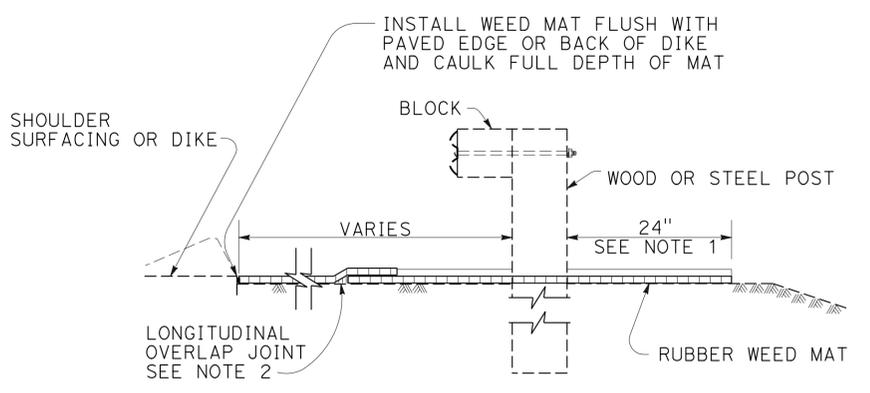
WEED MAT VEGETATION CONTROL AT MIDWEST GUARDRAIL SYSTEM (TERMINAL SYSTEM END TREATMENTS)

NOTES:

- SEE SHEET C-11 FOR ADDITIONAL WEED MAT VEGETATION CONTROL DETAILS AND NOTES.
- LAP RUBBER WEED MAT IN DIRECTION OF WATER FLOW.
- ADDITIONAL SEAMS AND OVERLAP JOINTS MAY BE REQUIRED FOR PROPER INSTALLATION, AS DIRECTED BY THE ENGINEER.
- CONTINUE ALIGNMENT OF WEED MAT EDGE AT OFFSET FROM BACK OF POST.



SECTION A-A FIBER WEED MAT VEGETATION CONTROL



SECTION A-A RUBBER WEED MAT VEGETATION CONTROL

CONSTRUCTION DETAILS (WEED MAT VEGETATION CONTROL)

NO SCALE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	580,80	Var	15	67

PM 6/22/15
 REGISTERED CIVIL ENGINEER DATE
 6-22-15
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 Patrick Yip
 No. 44277
 Exp. 6-30-17
 CIVIL
 STATE OF CALIFORNIA

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

TEMPORARY WATER POLLUTION CONTROL QUANTITIES

LOCATION No.	ROUTE	COUNTY	DIRECTION	SHOULDER	POST MILE	TEMPORARY FIBER ROLL	TEMPORARY HYDRAULIC MULCH (BONDED FIBER MATRIX)	TEMPORARY DRAINAGE INLET PROTECTION
						LF	SQYD	EA
3	580	CC	WB	R+	0.72	65	70	
4	580	CC	EB	R+	0.72	65	70	
7	580	CC	EB	R+	1.17	120	110	
8	580	CC	WB	R+	1.17	65	70	
10	580	CC	WB	R+	R4.78	120	110	1
11	580	CC	WB	L+	R4.81	140	130	
13	580	CC	EB	R+	R4.81	55	50	
14	580	CC	WB	R+	R4.81	180	150	1
15	580	CC	WB	R+	R5.11	50	200	
17	580	CC	WB	L+	R5.11	50	200	
19	580	CC	WB	R+	R5.43	55	50	1
23	580	CC	WB	R+	6.22	130	120	
24	580	CC	WB	L+	6.22	130	120	
26	80	CC	EB	R+	0.22	50	20	
31	80	CC	EB	R+	1.89	65	70	1
32	80	CC	EB	R+	1.99	60	80	
33	80	CC	WB	R+	2.04	70	70	
36	80	CC	EB	R+	2.75	70	70	1
37	80	CC	EB	L+	2.75	60	50	
38	80	CC	EB	R+	2.82	60	50	
43	80	CC	WB	R+	2.99	60	50	1
46	80	CC	WB	L+	6.79	120	120	
48	80	CC	EB	R+	7.6	70	50	
49	80	CC	EB	R+	7.73	70	80	1
50	80	CC	WB	R+	7.78	60	70	
51	80	CC	EB	R+	8.51	70	70	
53	80	CC	EB	R+	13.48	70	70	1
54	80	CC	WB	R+	13.48	125	110	1
55	80	CC	WB	R+	13.48	60		1
TOTAL						2365	2480	10

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN
 FUNCTIONAL SUPERVISOR: GEORGE LO
 CALCULATED/DESIGNED BY: THANH NGUYEN
 CHECKED BY: PATRICK YIP
 REVISED BY: TN
 DATE REVISED: 6/22/15

TEMPORARY WATER POLLUTION CONTROL QUANTITIES

WPCQ-1

LAST REVISION | DATE PLOTTED => 17-JUL-2015
 06-16-15 | TIME PLOTTED => 10:37

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 FUNCTIONAL SUPERVISOR: ROLAND AU-YEUNG
 CALCULATED/DESIGNED BY: SHARI TALAI
 CHECKED BY: JERILYN STRUVEN
 REVISED BY: ST
 DATE REVISED: 6/22/15

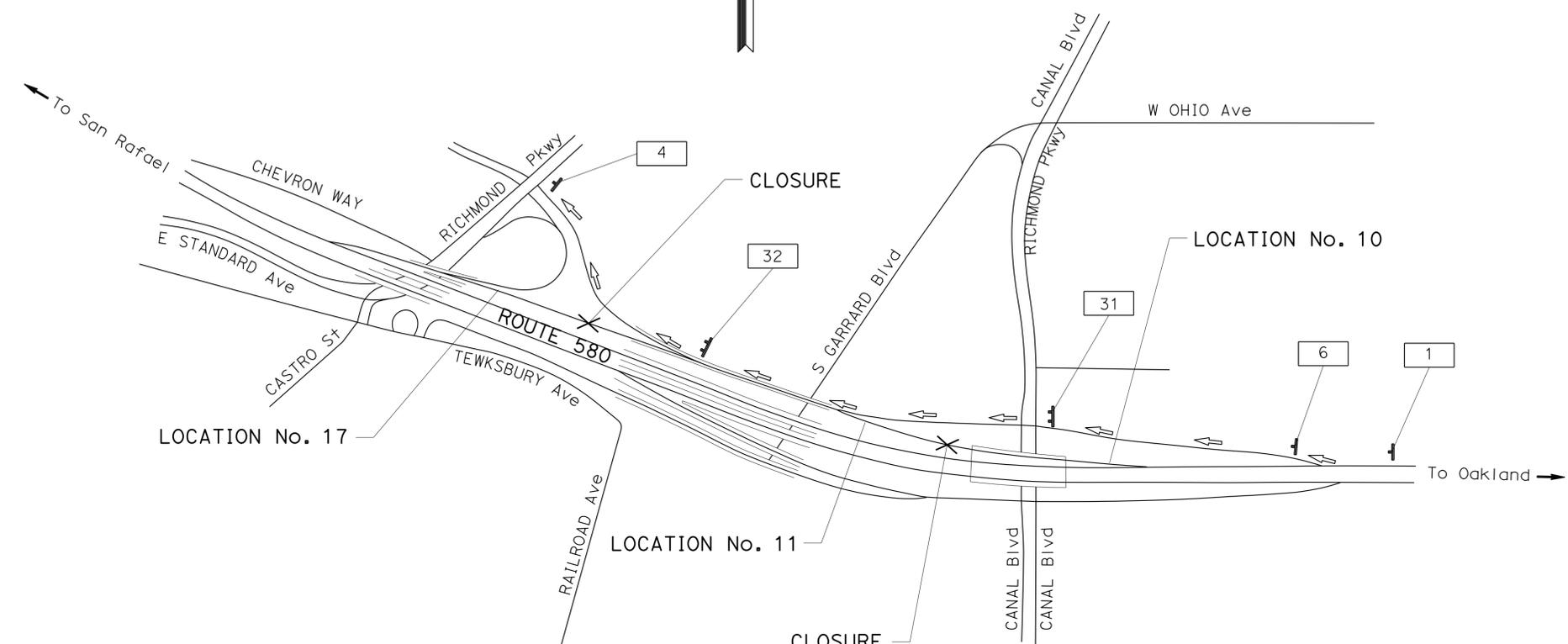
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	16	67

6/17/15
 REGISTERED CIVIL ENGINEER DATE
 6-22-15
 PLANS APPROVAL DATE

Shari S. Talai
 No. 81708
 Exp. 3-31-16
 CIVIL
 STATE OF CALIFORNIA

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LEGEND:
 No. CONSTRUCTION AREA SIGN NUMBER



CASTRO St TRAFFIC

DETOUR VIA

TAKE CANAL Blvd OFF-RAMP;
 CONTINUE ONTO WB ROUTE 580
 CANAL Blvd ON-RAMP;
 TAKE CASTRO St OFF-RAMP

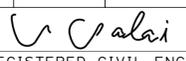
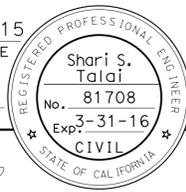
DETOUR PLAN No. 2
 WB ROUTE 580 CASTRO St OFF-RAMP CLOSURE

CONSTRUCTION AREA SIGNS
 NO SCALE

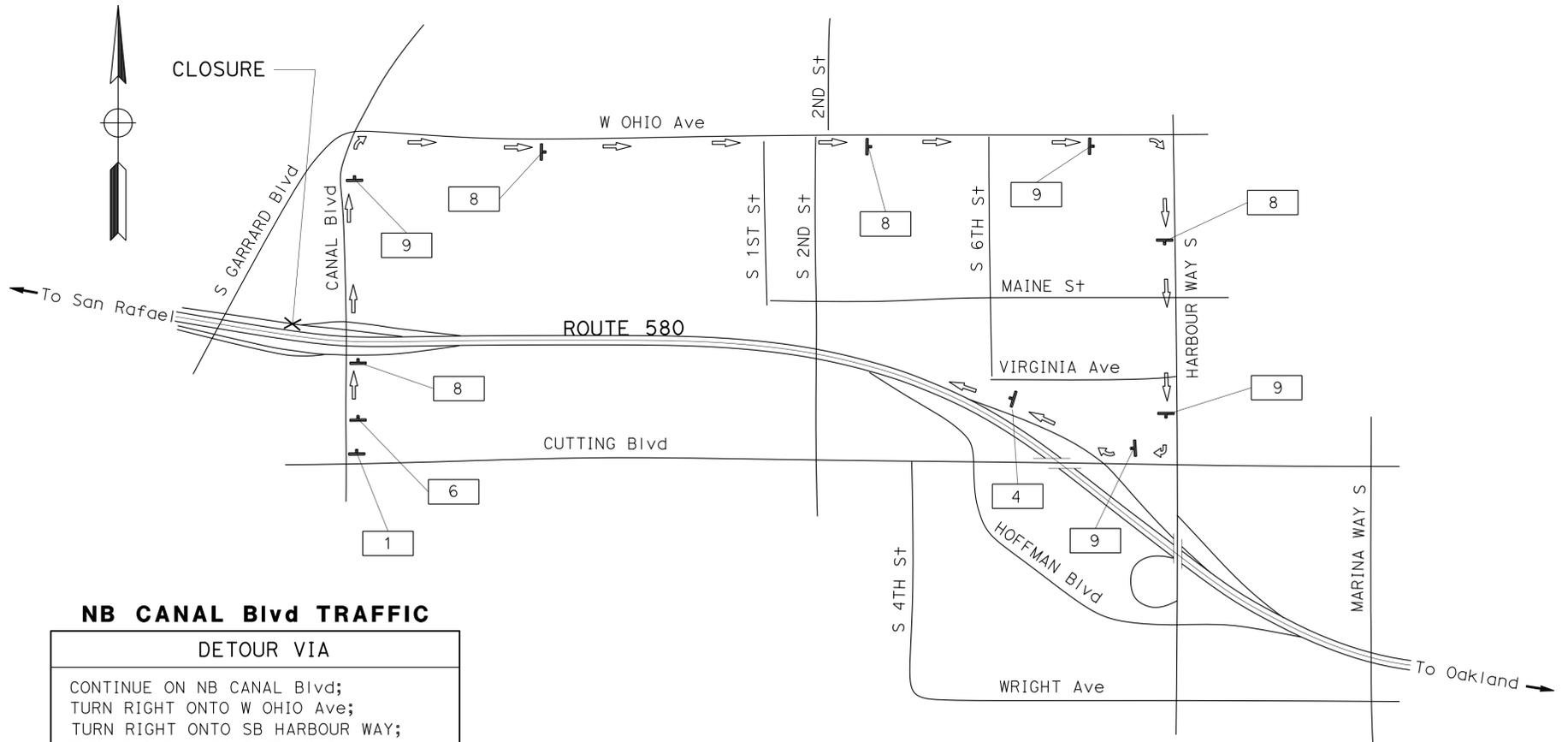
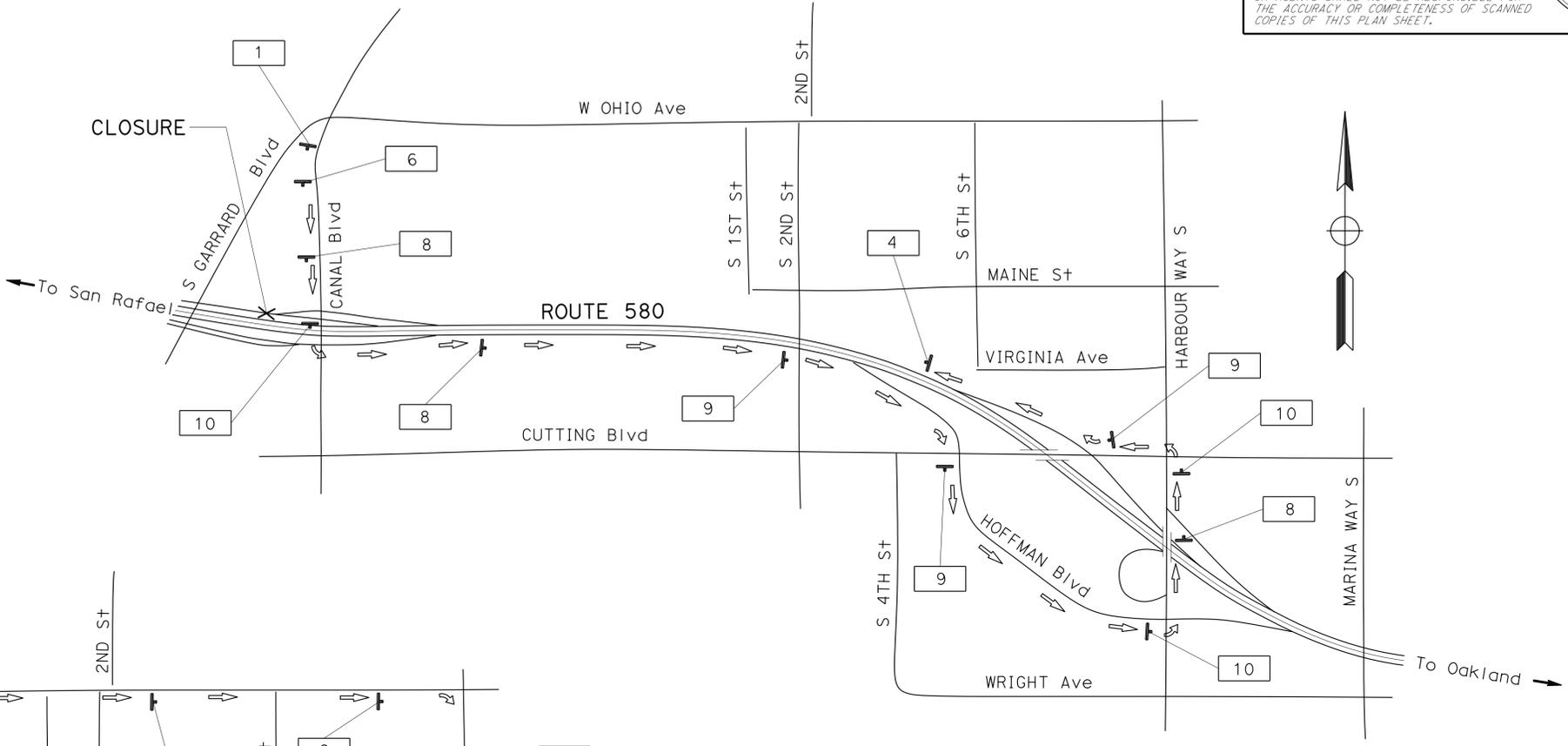
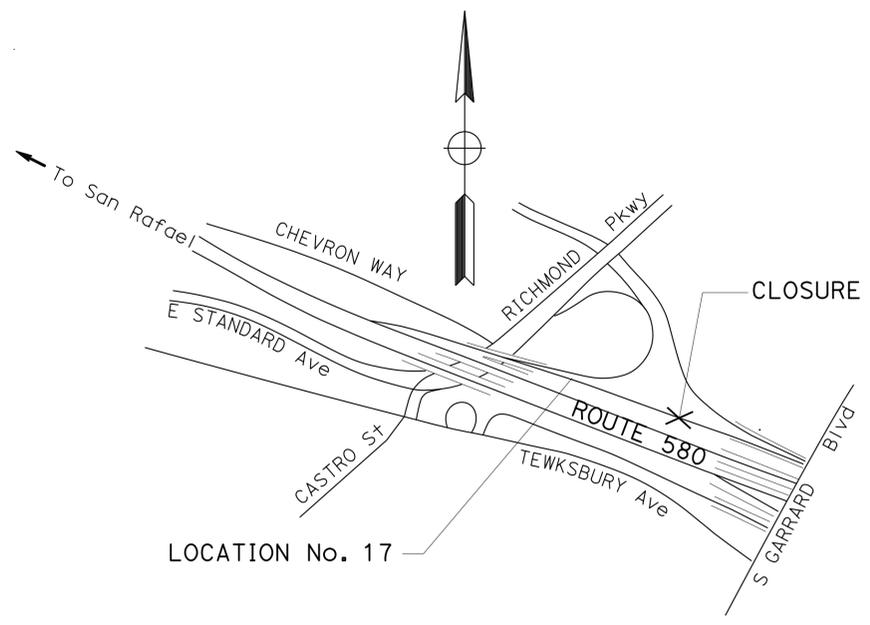
APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

CS-1

LAST REVISION DATE PLOTTED => 17-JUL-2015
 06-22-15 TIME PLOTTED => 10:37

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	17	67
				6/17/15	
REGISTERED CIVIL ENGINEER				DATE	
				6-22-15	
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>					
					

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	SHARI TALAI	REVISOR	ST
	JERILYN STRUVEN	DATE REVISOR	6/22/15
FUNCTIONAL SUPERVISOR	CHECKED BY	DESIGNED BY	
ROLAND AU-YEUNG			



NB CANAL Blvd TRAFFIC
DETOUR VIA
 CONTINUE ON NB CANAL Blvd;
 TURN RIGHT ONTO W OHIO Ave;
 TURN RIGHT ONTO SB HARBOUR WAY;
 TURN RIGHT ONTO CUTTING Blvd;
 TAKE WB ROUTE 580 ON-RAMP

SB CANAL Blvd TRAFFIC
DETOUR VIA
 CONTINUE ON SB CANAL Blvd;
 TURN LEFT ONTO EB ROUTE 580 ON-RAMP;
 EXIT OFF-RAMP TO CUTTING Blvd;
 CONTINUE ONTO HOFFMAN Blvd;
 TURN LEFT ONTO NB HARBOUR WAY S;
 TURN LEFT ONTO WB CUTTING Blvd;
 TAKE WB ROUTE 580 ON-RAMP

DETOUR PLAN No. 3
 WB ROUTE 580 CANAL Blvd ON RAMP CLOSURE

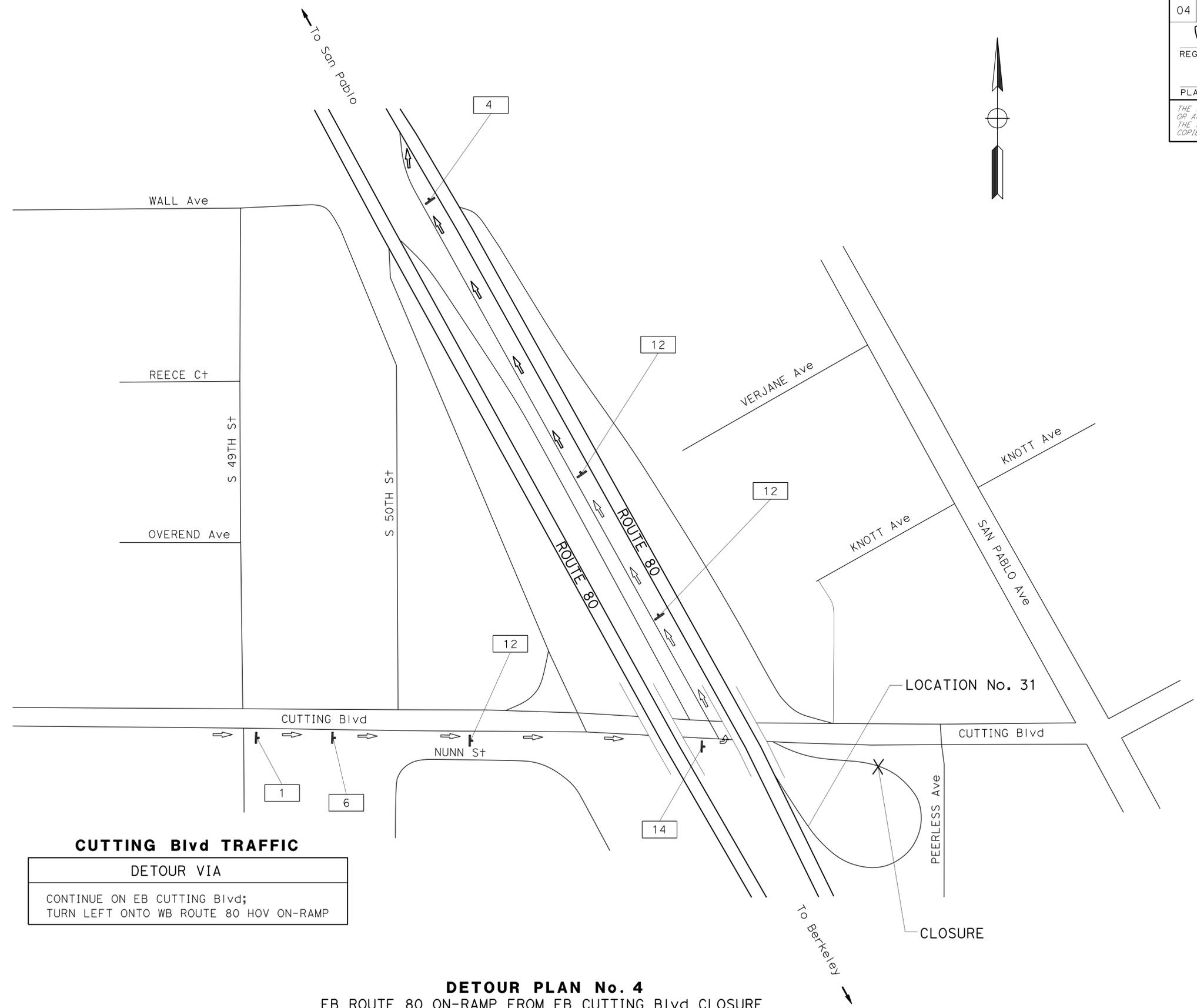
CONSTRUCTION AREA SIGNS
 NO SCALE

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

FOR LEGEND, SEE SHEET CS-1

CS-2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	18	67
		6/17/15			
REGISTERED CIVIL ENGINEER		DATE			
6-22-15		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>					



CUTTING Blvd TRAFFIC

DETOUR VIA

CONTINUE ON EB CUTTING Blvd;
TURN LEFT ONTO WB ROUTE 80 HOV ON-RAMP

DETOUR PLAN No. 4
EB ROUTE 80 ON-RAMP FROM EB CUTTING Blvd CLOSURE

CONSTRUCTION AREA SIGNS
NO SCALE

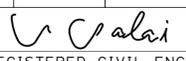
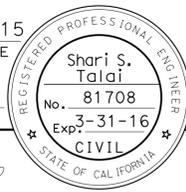
CS-3

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

FOR LEGEND, SEE SHEET CS-1



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	ROLAND AU-YEUNG	CALCULATED/DESIGNED BY	SHARI TALAI	REVISOR	ST
			CHECKED BY	JERILYN STRUVEN	DATE REVISED	6/22/15

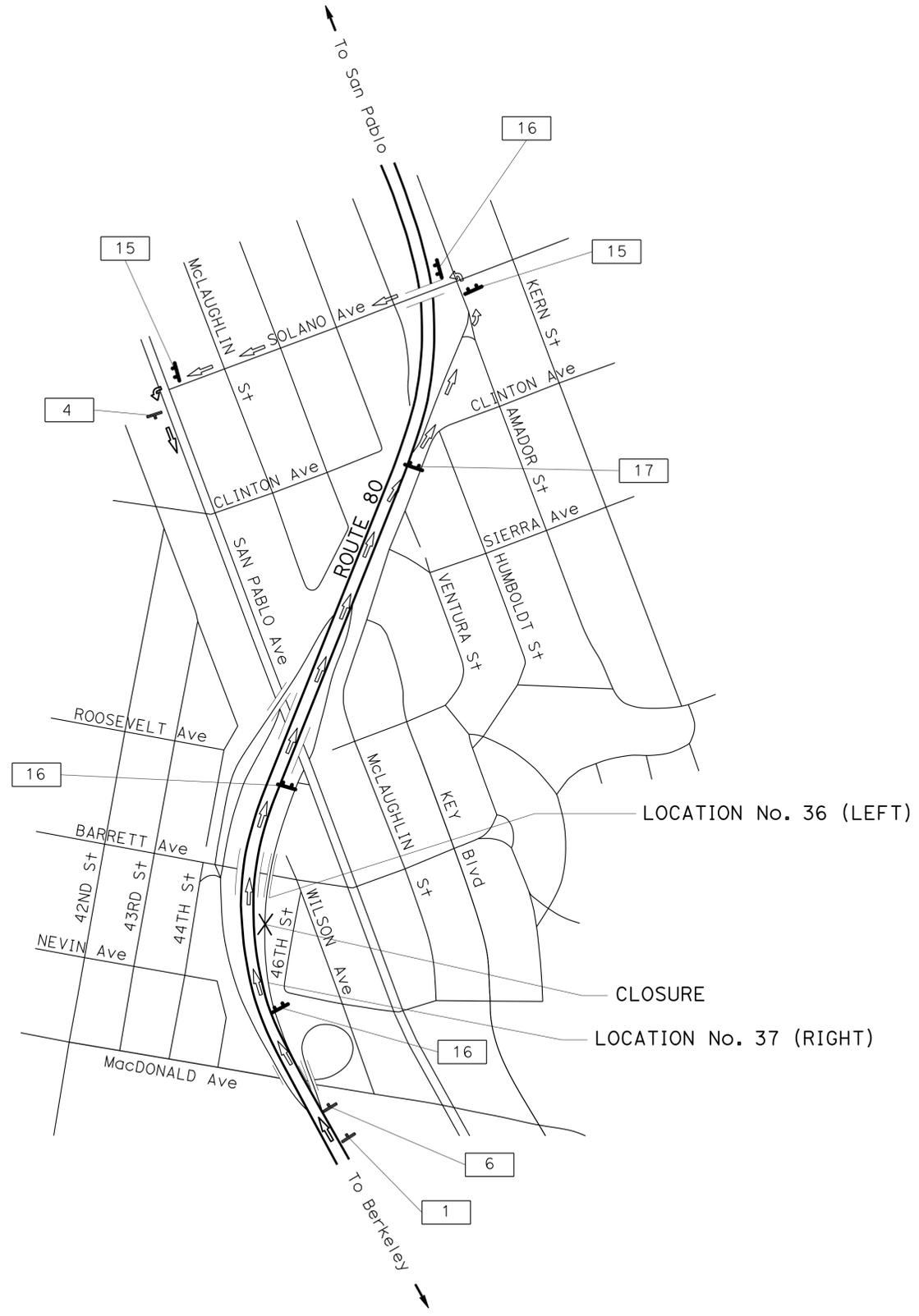
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	19	67
			6/17/15		
REGISTERED CIVIL ENGINEER			DATE		
6-22-15					
PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
					

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	REVISOR	DATE
Caltrans	ROLAND AU-YEUNG	SHARI TALAI	6/22/15
	TRAFFIC	JERILYN STRUVEN	ST
	CHECKED BY	DESIGNED BY	

SAN PABLO Ave TRAFFIC

DETOUR VIA

CONTINUE ON EB ROUTE 80;
 TAKE SOLANO Ave OFF-RAMP;
 MERGE ONTO NB AMADOR St;
 TURN LEFT ONTO WB SOLANO Ave;
 TURN LEFT ONTO SAN PABLO Ave



DETOUR PLAN No. 5
 EB ROUTE 80 SAN PABLO Ave OFF-RAMP CLOSURE

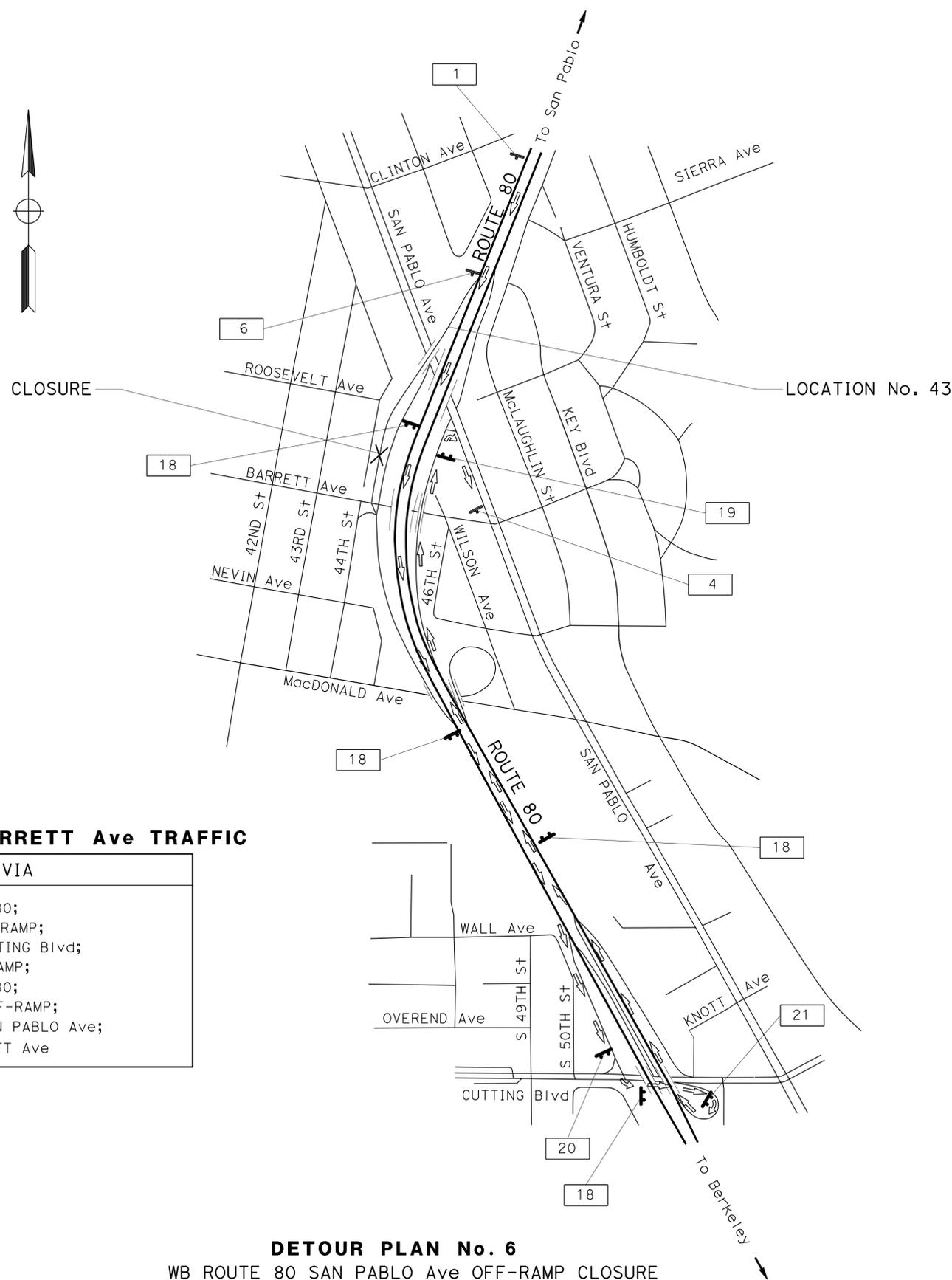
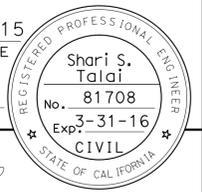
CONSTRUCTION AREA SIGNS
 NO SCALE

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

FOR LEGEND, SEE SHEET CS-1

CS-4

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	20	67
		6/17/15			
REGISTERED CIVIL ENGINEER		DATE			
6-22-15		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.					



SAN PABLO Ave/BARRETT Ave TRAFFIC

DETOUR VIA

CONTINUE ON WB ROUTE 80;
 TAKE CUTTING Blvd OFF-RAMP;
 TURN LEFT ONTO EB CUTTING Blvd;
 TAKE EB ROUTE 80 ON-RAMP;
 CONTINUE ON EB ROUTE 80;
 TAKE SAN PABLO Ave OFF-RAMP;
 TURN RIGHT ONTO SB SAN PABLO Ave;
 TURN RIGHT ONTO BARRETT Ave

DETOUR PLAN No. 6
 WB ROUTE 80 SAN PABLO Ave OFF-RAMP CLOSURE

CONSTRUCTION AREA SIGNS
 NO SCALE

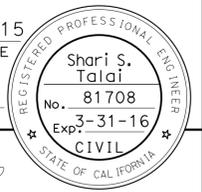
APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

FOR LEGEND, SEE SHEET CS-1

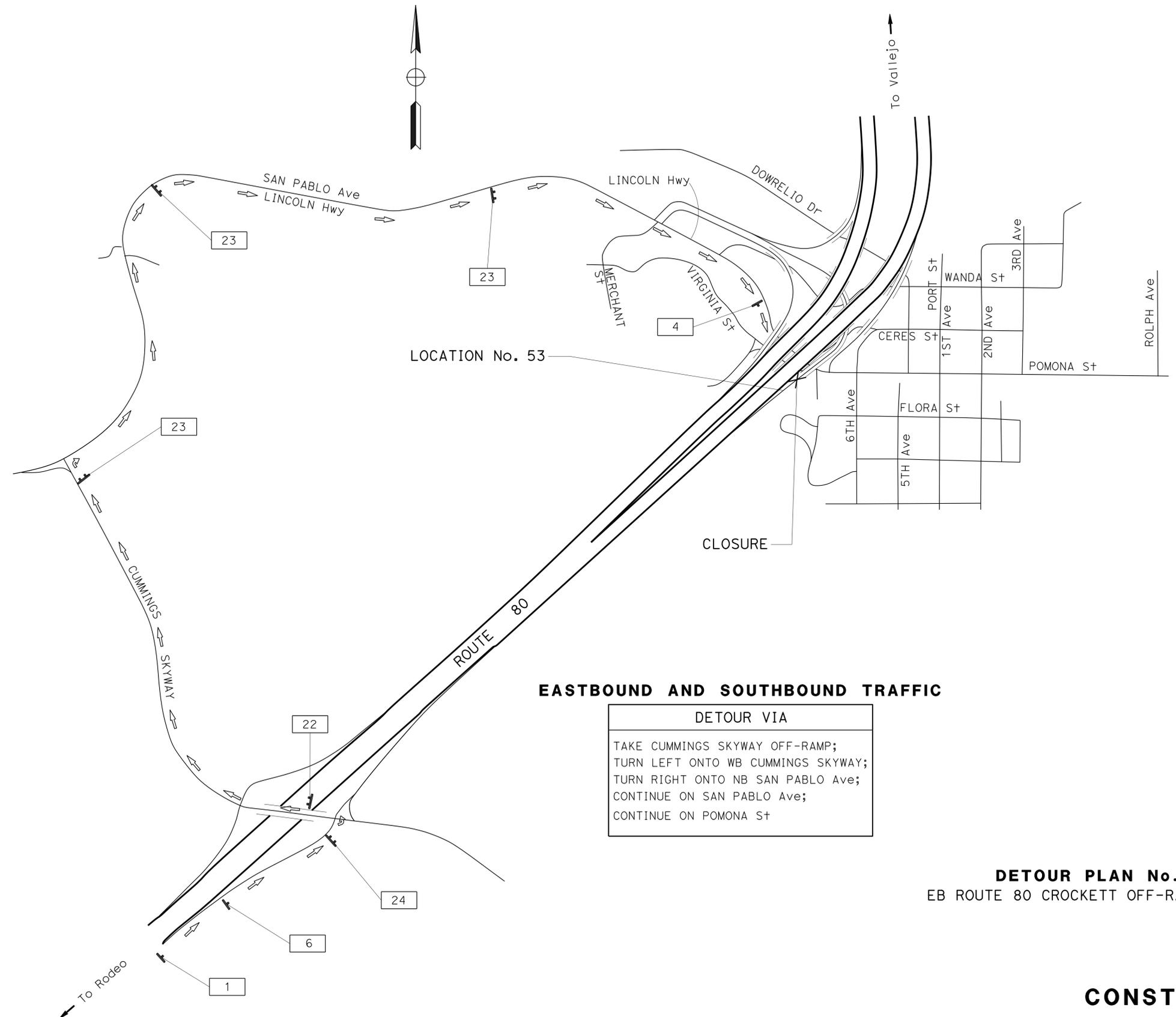
CS-5

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	REVISOR	DATE
Caltrans	ROLAND AU-YEUNG	SHARI TALAI	6/22/15
TRAFFIC		JERILYN STRUVEN	
		CALCULATED/DESIGNED BY	
		CHECKED BY	

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	21	67
		6/17/15			
REGISTERED CIVIL ENGINEER		DATE			
6-22-15					
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.					



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR	ST
Caltrans	ROLAND AU-YEUNG	CHECKED BY	SHARI TALAI	6/22/15
TRAFFIC			JERILYN STRUVEN	



EASTBOUND AND SOUTHBOUND TRAFFIC

DETOUR VIA
 TAKE CUMMINGS SKYWAY OFF-RAMP;
 TURN LEFT ONTO WB CUMMINGS SKYWAY;
 TURN RIGHT ONTO NB SAN PABLO Ave;
 CONTINUE ON SAN PABLO Ave;
 CONTINUE ON POMONA St

DETOUR PLAN No. 7
 EB ROUTE 80 CROCKETT OFF-RAMP CLOSURE

CONSTRUCTION AREA SIGNS
 NO SCALE

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

FOR LEGEND, SEE SHEET CS-1

CS-6

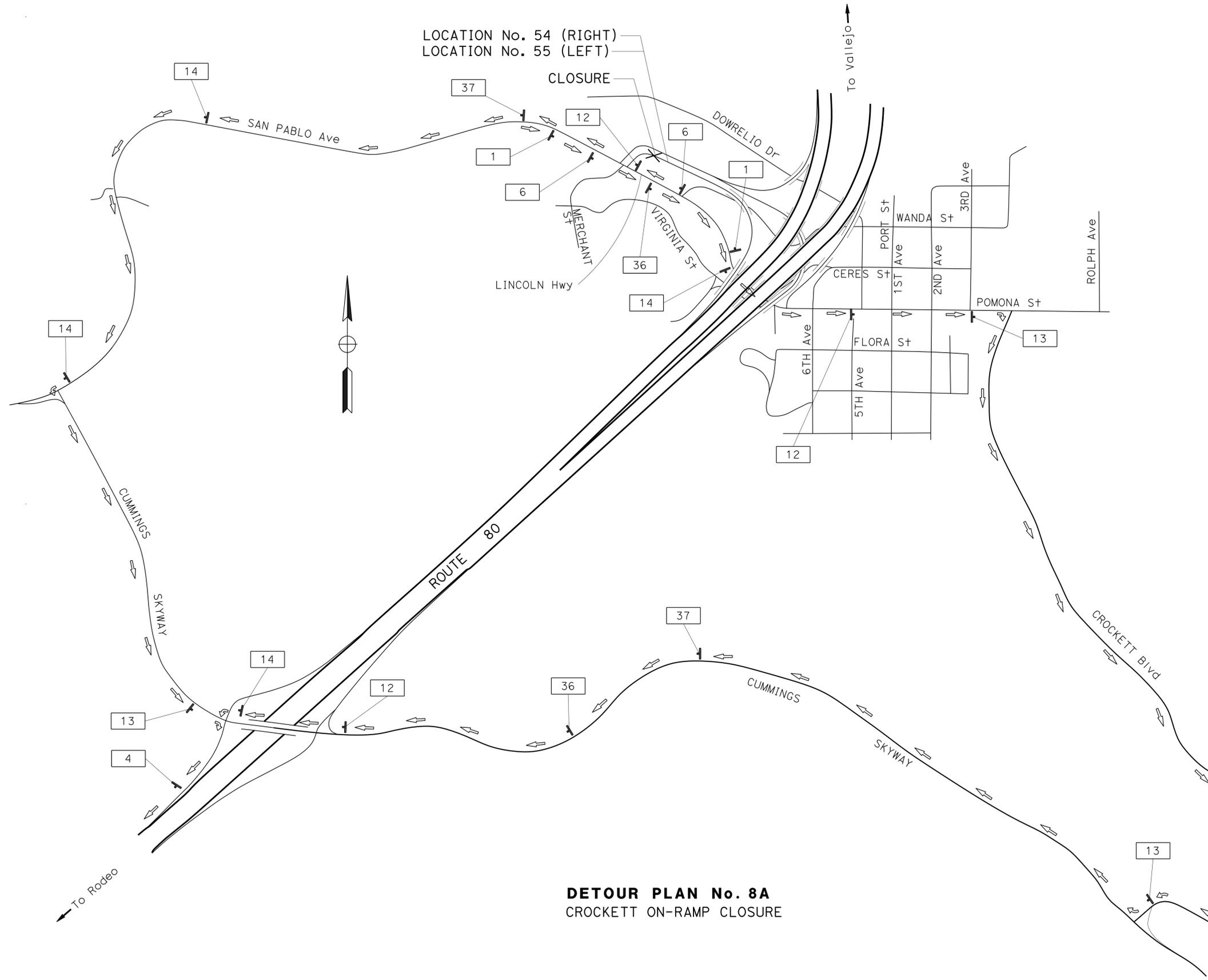
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	22	67

Shari S. Talai 6/17/15
 REGISTERED CIVIL ENGINEER DATE
 6-22-15
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 Shari S. Talai
 No. 81708
 Exp. 3-31-16
 CIVIL
 STATE OF CALIFORNIA

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 FUNCTIONAL SUPERVISOR: ROLAND AU-YEUNG
 CALCULATED/DESIGNED BY: SHARI TALAI
 CHECKED BY: JERILYN STRUVEN
 REVISED BY: ST
 DATE REVISED: 6/22/15



WESTBOUND TRAFFIC

DETOUR VIA

CONTINUE ON WB SAN PABLO Ave;
 TURN LEFT ONTO CUMMINGS SKYWAY;
 TURN RIGHT ONTO WB ROUTE 80 ON-RAMP.

EASTBOUND TRAFFIC

DETOUR VIA

CONTINUE ON EB SAN PABLO Ave;
 CONTINUE ON LINCOLN Hwy;
 CONTINUE ON POMONA St;
 TURN RIGHT ONTO CROCKETT Blvd;
 TURN RIGHT ONTO CUMMINGS SKYWAY;
 TURN LEFT AND TAKE WB ROUTE 80 ON-RAMP.

DETOUR PLAN No. 8A
 CROCKETT ON-RAMP CLOSURE

CONSTRUCTION AREA SIGNS
 NO SCALE

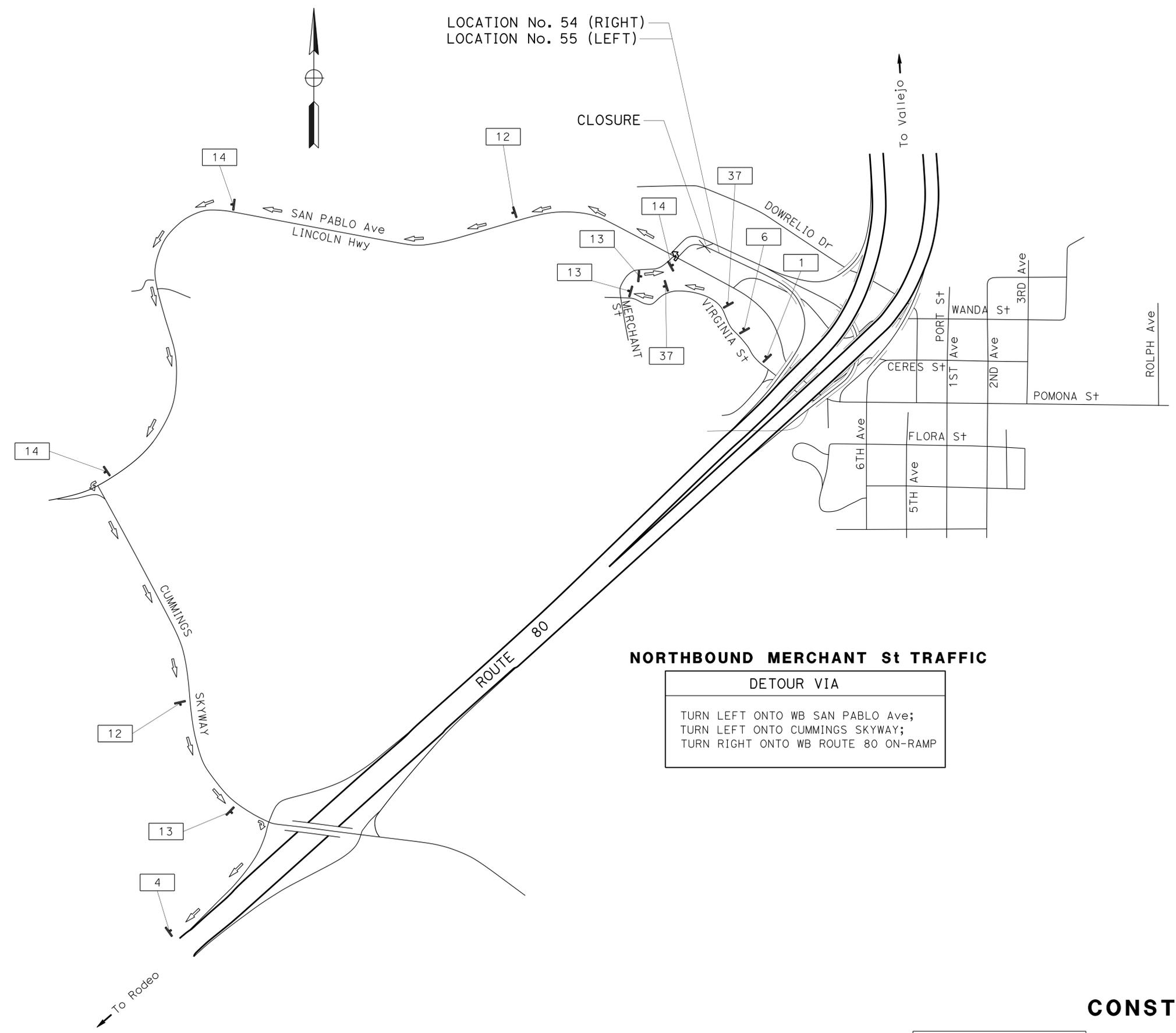
APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

FOR LEGEND, SEE SHEET CS-1

CS-7

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	23	67
		<i>Shari S. Talai</i> 6/17/15 REGISTERED CIVIL ENGINEER DATE			
		6-22-15 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.			

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	SHARI TALAI	REVISOR BY	ST
Caltrans	ROLAND AU-YEUNG	CHECKED BY	JERILYN STRUVEN	DATE REVISED	6/22/15



NORTHBOUND MERCHANT St TRAFFIC

DETOUR VIA

TURN LEFT ONTO WB SAN PABLO Ave;
 TURN LEFT ONTO CUMMINGS SKYWAY;
 TURN RIGHT ONTO WB ROUTE 80 ON-RAMP

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

FOR LEGEND, SEE SHEET CS-1

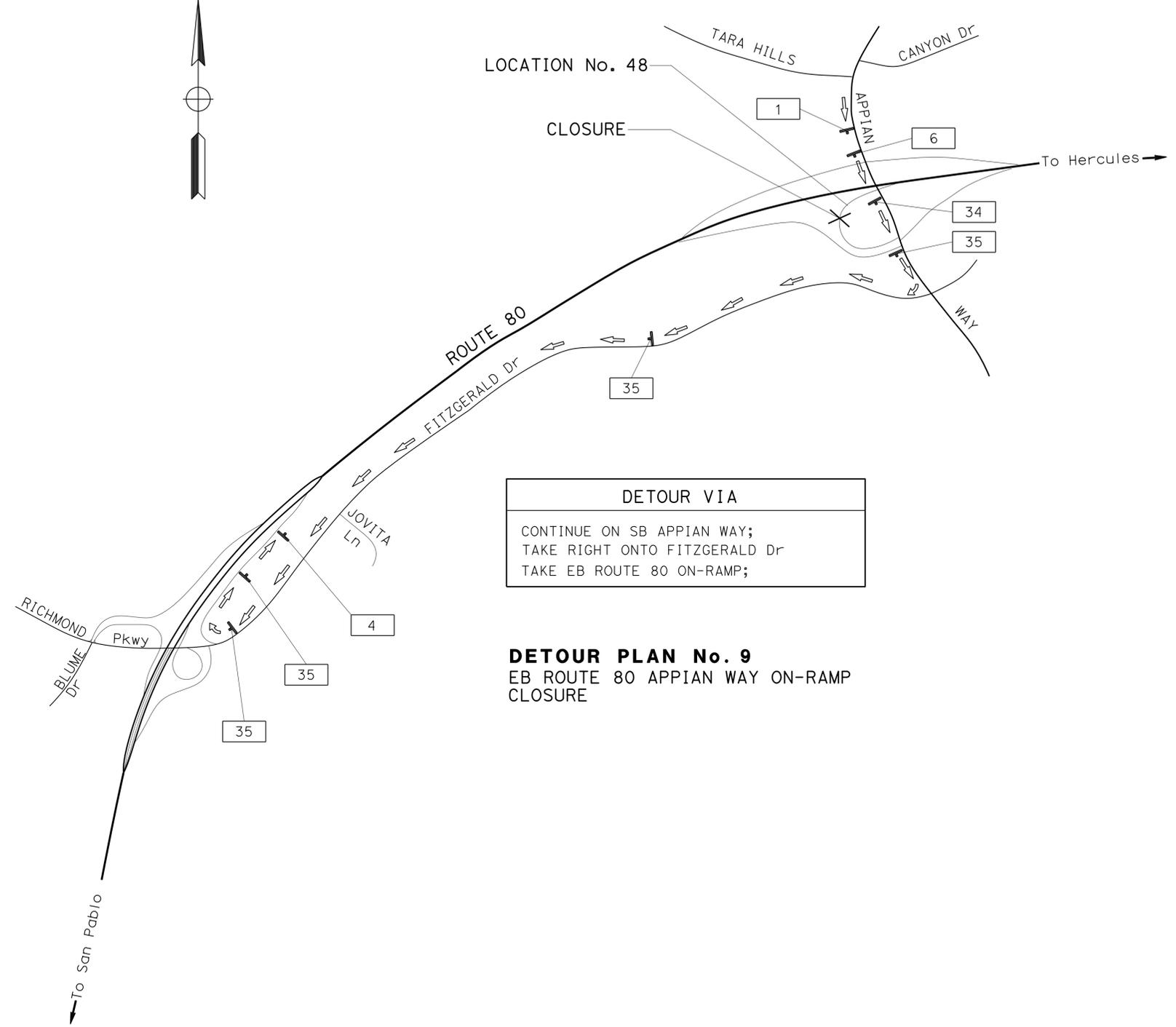
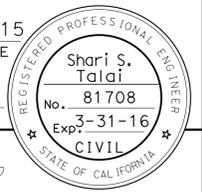
CONSTRUCTION AREA SIGNS

NO SCALE

CS-8

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION Caltrans	FUNCTIONAL SUPERVISOR ROLAND AU-YEUNG	CALCULATED-DESIGNED BY CHECKED BY	SHARI TALAI	REVISOR	ST
			JERILYN STRUVEN	DATE REVISED	6/22/15

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	24	67
		6/17/15			
		REGISTERED CIVIL ENGINEER DATE			
		6-22-15			
		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.					



DETOUR VIA
 CONTINUE ON SB APPIAN WAY;
 TAKE RIGHT ONTO FITZGERALD Dr
 TAKE EB ROUTE 80 ON-RAMP;

DETOUR PLAN No. 9
 EB ROUTE 80 APPIAN WAY ON-RAMP
 CLOSURE

CONSTRUCTION AREA SIGNS
 NO SCALE

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

FOR LEGEND, SEE SHEET CS-1

CS-9

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	25	67

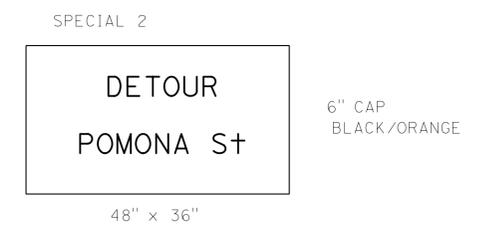
Shari S. Talai 6/17/15
 REGISTERED CIVIL ENGINEER DATE
 6-22-15
 PLANS APPROVAL DATE

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.

REGISTERED PROFESSIONAL ENGINEER
 Shari S. Talai
 No. 81708
 Exp. 3-31-16
 CIVIL
 STATE OF CALIFORNIA

STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN No.	SIGN CODE		PANEL SIZE	MESSAGE	NUMBER OF POSTS AND SIZE	No. OF SIGNS
	FEDERAL	CALIFORNIA				
1	W20-1		48" x 48"	ROAD WORK AHEAD	(ONE) - 4" x 6"	11
2	G20-2		48" x 24"	END ROAD WORK	(ONE) - 4" x 4"	0
3	W20-1		48" x 36"	ROAD WORK AHEAD	(ONE) - 4" x 6"	0
4	G20-2		36" x 18"	END ROAD WORK	(ONE) - 4" x 4"	10
5		SC6-4	48" x 60"	RAMP CLOSED (DATE & TIME)	(ONE) - 6" x 6"	0
6	W20-2		48" x 48"	DETOUR AHEAD	(ONE) - 4" x 6"	11
7	M4-8a		24" x 18"	END DETOUR	(ONE) - 4" x 4"	0
8		SC-3(↑)	48" x 18"	DETOUR (STRAIGHT AHEAD ARROW)	(ONE) - 4" x 6"	7
		G27-2(580)	30" x 25"	ROUTE SHIELD		
		M3-4	21" x 9"	WEST		
9		M4-10 (R+)	48" x 18"	DETOUR (RIGHT)	(ONE) - 4" x 6"	7
		G27-2(580)	30" x 25"	ROUTE SHIELD		
		M3-4	21" x 9"	WEST		
10		M4-10 (L+)	48" x 18"	DETOUR (LEFT)	(ONE) - 4" x 6"	3
		G27-2(580)	30" x 25"	ROUTE SHIELD		
		M3-4	21" x 9"	WEST		
12		SC-3(↑)	48" x 18"	DETOUR (STRAIGHT AHEAD ARROW)	(ONE) - 4" x 6"	8
		G27-2(80)	24" x 25"	ROUTE SHIELD		
		M3-4	21" x 9"	WEST		
13		M4-10 (R+)	48" x 18"	DETOUR (RIGHT)	(ONE) - 4" x 6"	7
		G27-2(80)	24" x 25"	ROUTE SHIELD		
		M3-4	21" x 9"	WEST		
14		M4-10 (L+)	48" x 18"	DETOUR (LEFT)	(ONE) - 4" x 6"	8
		G27-2(80)	24" x 25"	ROUTE SHIELD		
		M3-4	21" x 9"	WEST		
15		SPECIAL SIGN No.1	54" x 36"		(TWO) - 4" x 6"	2
		M4-10 (L+)	48" x 18"	DETOUR (LEFT)		
16		SPECIAL SIGN No.1	54" x 36"		(TWO) - 4" x 6"	3
		SC-3(↑)	48" x 18"	DETOUR (STRAIGHT AHEAD ARROW)		
17		SPECIAL SIGN No.1	54" x 36"		(TWO) - 4" x 6"	1
		M6-2(↘)	21" x 15"	DETOUR (DIAGONAL ARROW)		



CONSTRUCTION AREA SIGNS

NO SCALE

CS-10

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 TRAFFIC
 FUNCTIONAL SUPERVISOR: ROLAND AU-YEUNG
 CHECKED BY: JERILYN STRUVEN
 SHARI TALAI
 REVISOR: SHARI TALAI
 DATE: 6/22/15
 ST: 6/22/15

LAST REVISION DATE PLOTTED => 17-JUL-2015
 06-22-15 TIME PLOTTED => 10:37

STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN No.	SIGN CODE		PANEL SIZE	MESSAGE	NUMBER OF POSTS AND SIZE	No. OF SIGNS
	FEDERAL	CALIFORNIA				
18	SPECIAL SIGN No.3		54" x 54"		(TWO) - 4" x 6"	4
		SC-3(↑)	48" x 18"	DETOUR (STRAIGHT AHEAD ARROW)		
19	SPECIAL SIGN No.3		54" x 54"		(TWO) - 4" x 6"	1
		M4-10 (R+)	48" x 18"	DETOUR (RIGHT)		
20	SPECIAL SIGN No.3		54" x 54"		(TWO) - 4" x 6"	1
		M4-10 (L+)	48" x 18"	DETOUR (LEFT)		
21	SPECIAL SIGN No.3		54" x 54"		(TWO) - 4" x 6"	1
		M6-2(↘)	21" x 15"	DETOUR (DIAGONAL ARROW)		
22	SPECIAL SIGN No.2		48" x 36"		(TWO) - 4" x 4"	1
		SC-3(↑)	48" x 18"	DETOUR (STRAIGHT AHEAD ARROW)		
23	SPECIAL SIGN No.2		48" x 36"		(TWO) - 4" x 4"	3
		M4-10 (R+)	48" x 18"	DETOUR (RIGHT)		
24	SPECIAL SIGN No.2		48" x 36"		(TWO) - 4" x 4"	1
		M4-10 (L+)	48" x 18"	DETOUR (LEFT)		
31	SPECIAL SIGN No.5		48" x 36"		(TWO) - 4" x 4"	1
		SC-3(↑)	48" x 18"	DETOUR (STRAIGHT AHEAD ARROW)		
32	SPECIAL SIGN No.5		48" x 36"		(TWO) - 4" x 4"	1
		M4-10 (R+)	48" x 18"	DETOUR (RIGHT)		
34		SC-3(↑)	48" x 18"	DETOUR (STRAIGHT AHEAD ARROW)	(ONE) - 4" x 6"	1
		G27-2(80)	24" x 25"	ROUTE SHIELD		
		M3-2	21" x 9"	EAST		
35		M4-10 (R+)	48" x 18"	DETOUR (RIGHT)	(ONE) - 4" x 6"	4
		G27-2(80)	24" x 25"	ROUTE SHIELD		
		M3-2	21" x 9"	EAST		
36		M4-6	21" x 9"	DETOUR	(ONE) - 4" x 6"	3
		G27-2(80)	30" x 25"	ROUTE SHIELD		
		M3-4	21" x 9"	WEST		
37		M6-2(↘)	21" x 15"	DETOUR (DIAGONAL ARROW)	(ONE) - 4" x 6"	4
		M4-6	21" x 9"	DETOUR		
		G27-2(80)	30" x 25"	ROUTE SHIELD		
		M3-4	21" x 9"	WEST		
TOTAL						104

SPECIAL 5



48" x 36"

6" CAP
BLACK/ORANGE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	26	67

Shari S. Talai 6/17/15
 REGISTERED CIVIL ENGINEER DATE
 6-22-15
 PLANS APPROVAL DATE

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CONSTRUCTION AREA SIGNS

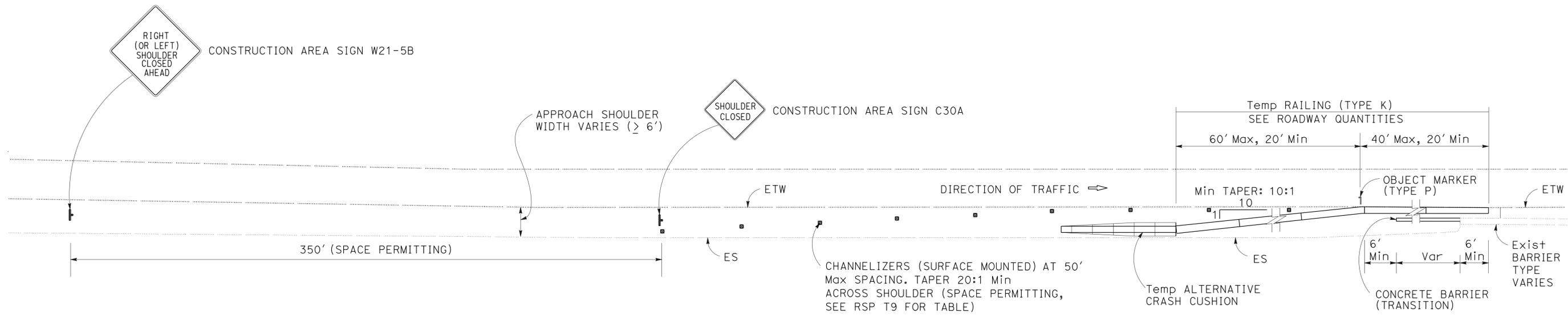
NO SCALE

CS-11



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	27	67
			REGISTERED CIVIL ENGINEER	DATE	
			6-22-15	6/22/15	
			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>					

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN
Caltrans	
FUNCTIONAL SUPERVISOR	GEORGE LO
CALCULATED/DESIGNED BY	CHECKED BY
THANH NGUYEN	PATRICK YIP
REVISOR	DATE
TN	6/22/15



LOCATION LAYOUT

TRAFFIC HANDLING PLAN
SCALE: 1" = 50'

APPROVED FOR TRAFFIC HANDLING WORK ONLY

TH-1

LAST REVISION DATE PLOTTED => 17-JUL-2015 04-24-15 TIME PLOTTED => 10:37

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80, 580	Var	30	67

Owen Williams
 LICENSED LANDSCAPE ARCHITECT
 6-22-15
 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.

IRRIGATION QUANTITIES

LOCATION No.	DIRECTION / ROUTE	PM	LEFT OR RIGHT SHOULDER	DESCRIPTION	RELOCATE VALVE * EA	REMOVE IRRIGATION FACILITIES		PLASTIC PIPE (SCH 40) (SUPPLY LINE)				SPRINKLER ASSEMBLY			
						IRRIGATION SUPPLY LINE (N) LF	SPRINKLER ASSEMBLY (N) EA	TYPE I				TYPE V		POP-UP	
								3/4"	1"	1-1/4"	1-1/2"	EA		TYPE II	
11	WB/580	R4.81	LEFT	OFF-RAMP TO CASTRO St		20	5	10	40	10					4
13	EB/580	R4.81	RIGHT	CANAL Blvd UC, BRIDGE RAILING		60	8	20	60	10	10	6			
14	WB/580	R4.81	RIGHT	RAILROAD Ave, OH 28-0056	1	20	4	20	40	10			3		
17	WB/580	R5.11	LEFT	OFF-RAMP AT CASTRO St	2	20	2	10	30			4			
23	WB/580	6.22	RIGHT	MAINLINE R5.655, BRIDGE RAILING		40	4	20	40	10		4			
24	WB/580	6.22	LEFT	MAINLINE R5.655, BRIDGE RAILING	4	40	4	10	40	10		2			
26	EB/80	0.22	RIGHT	ON-RAMP FROM CENTRAL Ave	2	40	4	20	40	10			4		
31	EB/80	1.89	RIGHT	LOOP ON-RAMP CUTTING Blvd	2	40	4	20	40			4			
32	EB/80	1.99	RIGHT	CUTTING Blvd	2	40	4	10	40	10		4			
33	WB/80	2.04	RIGHT	CUTTING Blvd UC		40	4	10	40	10		4			
SUBTOTAL												28	7		
TOTAL					13	360	43	150	410	80	10	35			4

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

NOTE:

* RELOCATE VALVE 10 FEET FROM EXISTING VALVE LOCATION, OR AS DIRECTED BY THE ENGINEER.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans LANDSCAPE ARCHITECTURE
 SENIOR LANDSCAPE ARCHITECT
 OWEN WILLIAMS
 REVISOR BY
 O.L.W.
 CALCULATED/DESIGNED BY
 CHECKED BY
 LYDIA MAC
 6-30-15
 DATE REVISED

IRRIGATION QUANTITIES

IQ-1

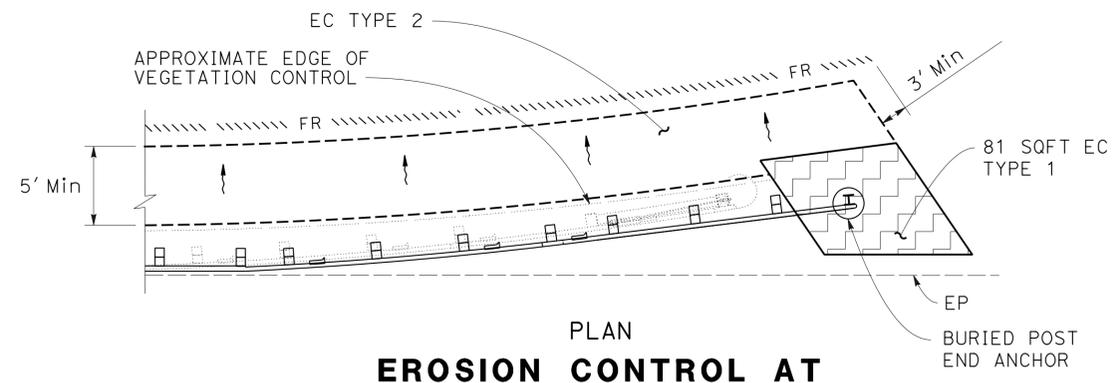
LAST REVISION | DATE PLOTTED => 17-JUL-2015
 06-22-15 TIME PLOTTED => 10:37

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	31	67

Alex McDonald
 LICENSED LANDSCAPE ARCHITECT

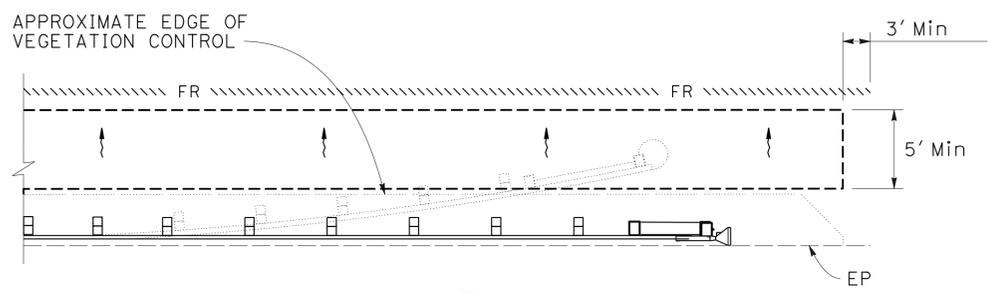
6-22-15
 PLANS APPROVAL DATE

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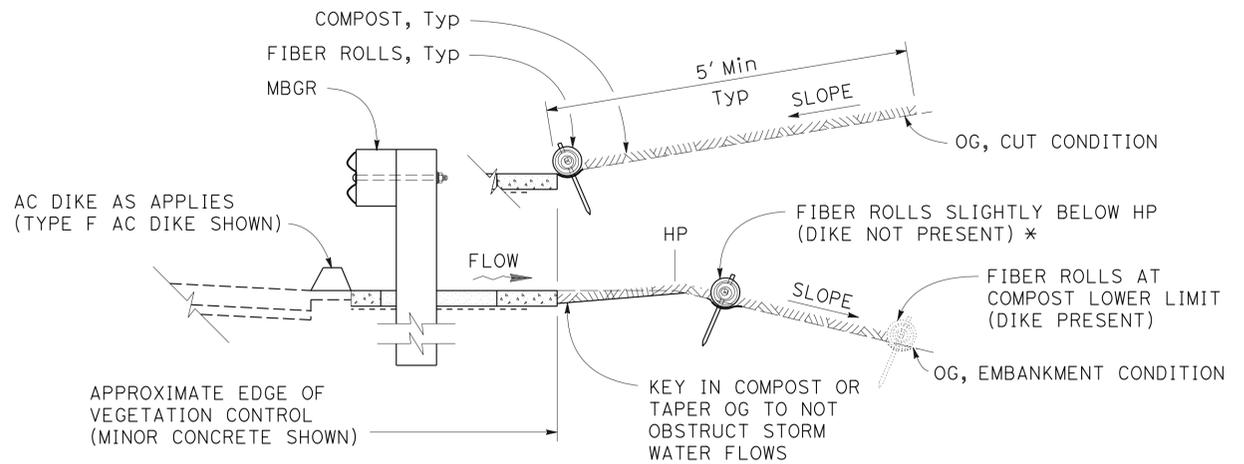
EROSION CONTROL AT BURIED POST END ANCHOR

Loc 26 (EMBANKMENT CONDITION) SHOWN. RECP (NETTING) KEY TRENCH NOT REQUIRED WHERE VEGETATION CONTROL OCCURS.



EROSION CONTROL TYPE 2 AT VEGETATION CONTROL, TYPICAL

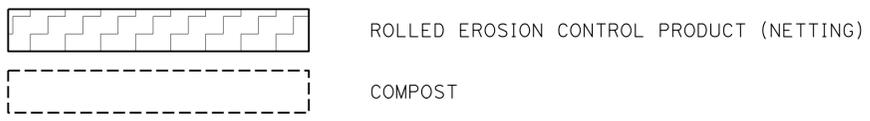
REMOVE Exist MBGR AND INSTALL ALTERNATIVE INLINE TERMINAL SYSTEM (EMBANKMENT CONDITION) SHOWN. EXTEND EROSION CONTROL PAST VEGETATION CONTROL LIMITS AS NEEDED FOR HMA DIKE WORK (Loc 14, 31, 33, 36, 52 & 53). Loc 15 & 17 MBGR & CAT-350 RECEIVES EROSION CONTROL ON BOTH SIDES OF VEGETATION CONTROL.



EROSION CONTROL TYPE 2 AT VEGETATION CONTROL

* IF EDGE OF VEGETATION CONTROL AND HINGE POINT COINCIDE, PLACE FIBER ROLLS AT EDGE OF VEGETATION CONTROL.

LEGEND:



SEED MIX

SEED	BOTANICAL NAME (COMMON NAME)	PERCENT GERMINATION (MINIMUM)	POUNDS PURE LIVE SEED PER ACRE (SLOPE MEASUREMENT)
MIX 1	HORDEUM BRACHYANTHERUM (MEADOW BARLEY)	40	12
	LEYMUS TRITICOIDES (CREEPING WILDRYE)	35	12
	NASSELLA PULCHRA (PURPLE NEEDLEGRASS)	35	24
	VULPIA MICROSTACHYS (THREE WEEKS FESCUE)	45	12

EROSION CONTROL TYPE 1

SEQUENCE	ITEM	MATERIAL		APPLICATION RATE	DEPTH	REMARKS
		DESCRIPTION	TYPE			
STEP 1	COMPOST	COMPOST	MEDIUM	135 CY/ACRE	1"	
	EROSION CONTROL (DRY SEED)	DRY SEED	MIX 1	60 LB/ACRE		
STEP 2	ROLLED EROSION CONTROL PRODUCT (NETTING)	NETTING	TYPE A			
STEP 3	FIBER ROLLS	FIBER ROLL	8 TO 10 INCHES IN Dia			RICE STRAW FILLED JUTE COVERED AND INSTALLATION TYPE 1

EROSION CONTROL TYPE 2

SEQUENCE	ITEM	MATERIAL		APPLICATION RATE	DEPTH	REMARKS
		DESCRIPTION	TYPE			
STEP 1	FIBER ROLLS	FIBER ROLL	8 TO 10 INCHES IN Dia			RICE STRAW FILLED JUTE COVERED AND INSTALLATION TYPE 1
STEP 2	COMPOST	COMPOST	COARSE	404 CY/ACRE	3"	MAY BE SUBSTITUTED WITH TREE TRIMMING WOOD MULCH
	EROSION CONTROL (DRY SEED)	DRY SEED	MIX 1	60 LB/ACRE		

EROSION CONTROL LEGEND AND DETAILS

NO SCALE

ECL-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - WATER QUALITY

SENIOR LANDSCAPE ARCHITECT: DAVID W. YAM

CALCULATED/DESIGNED BY: ALEX MCDONALD

CHECKED BY: CHRIS PADICK

REVISOR: AKM

DATE REVISED: 6/22/15

LAST REVISION: 12-15-14 DATE PLOTTED => 17-JUL-2015 TIME PLOTTED => 10:37

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	32	67

Alex McDonald
 LICENSED LANDSCAPE ARCHITECT
 6-22-15
 PLANS APPROVAL DATE

8-31-16
 1-16-15
 Signature
 Renewal Date
 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.

EROSION CONTROL QUANTITIES (580)

LOCATION No.	COUNTY	ROUTE	POST MILE	DIRECTION	DESCRIPTION	COMPOST	EROSION CONTROL (DRY SEED)	ROLLED EROSION CONTROL PRODUCT (NETTING)	FIBER ROLLS	FIELD NOTES
						SQFT	SQFT	SQFT	LF	
3	CC	580	R	0.72	WB	480	480		102	VCRM LIMITS
4				0.72	EB	480	480		102	
7				1.17	EB	810	810		168	
8				1.17	WB	480	480		102	
10				4.78	WB	810	810		168	VCMC LIMITS
11			L	4.81	WB	310	310		68	
13			R	4.81	EB	310	310		68	
14				4.81	WB	935	935		193	VCMC LIMITS AND PLACE (TYPE C) DIKE
15				5.11	WB	1225	1225		257	VCMC LIMITS AND MBGR/CAT-350 (BOTH SIDES)
17			L	5.11	WB	1225	1225		257	
19			R	5.43	WB	310	310		68	VCRM LIMITS
20				5.66	WB	310	310		68	
23				6.22	WB	345	345		75	
24			L	6.22	WB	520	520		110	
SUBTOTAL						8550	8550		1806	

EROSION CONTROL QUANTITIES (80)

LOCATION No.	COUNTY	ROUTE	POST MILE	DIRECTION	DESCRIPTION	COMPOST	EROSION CONTROL (DRY SEED)	ROLLED EROSION CONTROL PRODUCT (NETTING)	FIBER ROLLS	FIELD NOTES
						SQFT	SQFT	SQFT	LF	
26	CC	80	R	0.17	EB	271	271	81	44	VCMC LIMITS & BURIED POST END ANCHOR AREA
31				1.89	EB	605	605		127	VCMC LIMITS AND (TYPE C) DIKE
32				1.99	EB	520	520		110	VCMC LIMITS
33				2.04	WB	605	605		127	VCMC LIMITS AND (TYPE C) DIKE
36				2.75	EB	605	605		127	
37			L	2.75	EB	310	310		68	VCMC LIMITS
38			R	2.82	EB	345	345		75	
43				2.99	WB	300	300		66	
46			L	6.74	WB	840	840		174	
48			R	7.60	EB	345	345		75	
49				7.73	EB	520	520		110	
50				7.78	WB	480	480		102	
51				8.51	EB	480	480		102	
52				8.51	WB	605	605		127	VCMC LIMITS AND (TYPE C) DIKE
53				13.48	EB	745	745		93	
54				13.48	WB	145	145		35	VCMC LIMITS
55			L	13.48	WB				60	TRANSITION RAILING & MBGR
SUBTOTAL						7721	7721	81	1622	
TOTAL						16271	16271	81	3428	

VCMC - VEGETATION CONTROL (MINOR CONCRETE)
 VCRM - VEGETATION CONTROL (RUBBER MAT)

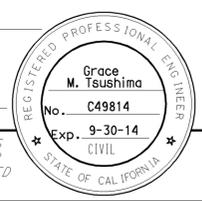
EROSION CONTROL QUANTITIES ECQ-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	33	67

Grace M. Tsushima
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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



TO ACCOMPANY PLANS DATED 6-22-15

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.

REVISED STANDARD PLAN RSP A10B

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

	P continued
PG	PROFILE GRADE
PI	POINT OF INTERSECTION
PJP	PARTIAL JOINT PENETRATION
Pkwy	PARKWAY
P, 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
±	STATION LINE
SM	SELECTED MATERIAL
Spec	SPECIAL, SPECIFICATIONS
SPP	SLOTTED PLASTIC PIPE
SS	SLOPE STAKE
SSBM	STRAP AND SADDLE BRACKET METHOD
SSD	STRUCTURAL SECTION DRAIN
SSPA	STRUCTURAL STEEL PLATE ARCH
SSPP	STRUCTURAL STEEL PLATE PIPE
SSPPA	STRUCTURAL STEEL PLATE PIPE ARCH
SSRP	STEEL SPIRAL RIB PIPE
St	STREET
Sta	STATION
STBB	SINGLE THRIE BEAM BARRIER
Std	STANDARD
Str	STRUCTURE
Surf	SURFACING
SW	SIDEWALK, SOUND WALL
Swr	SEWER
Sym	SYMMETRICAL
S4S	SURFACE 4 SIDES
	T
T	SEMI-TANGENT
Tan	TANGENT
TBB	THRIE BEAM BARRIER
Tbr	TIMBER
TC	TOP OF CURB
TCB	TRAFFIC CONTROL BOX
TCE	TEMPORARY CONSTRUCTION EASEMENT
TeI	TELEPHONE
Temp	TEMPORARY
TG	TOP OF GRADE
Tot	TOTAL
TP	TELEPHONE POLE
TPB	TREATED PERMEABLE BASE
TPM	TREATED PERMEABLE MATERIAL
Trans	TRANSITION

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

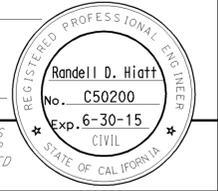
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	34	67

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

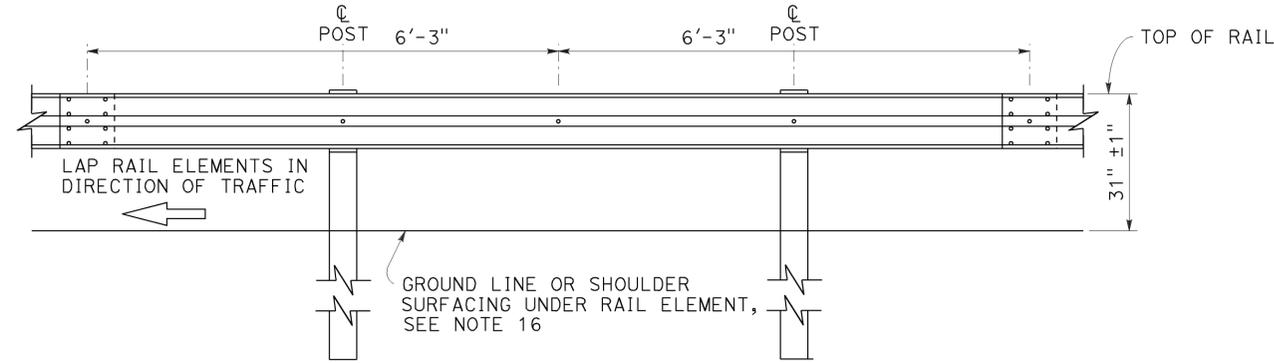
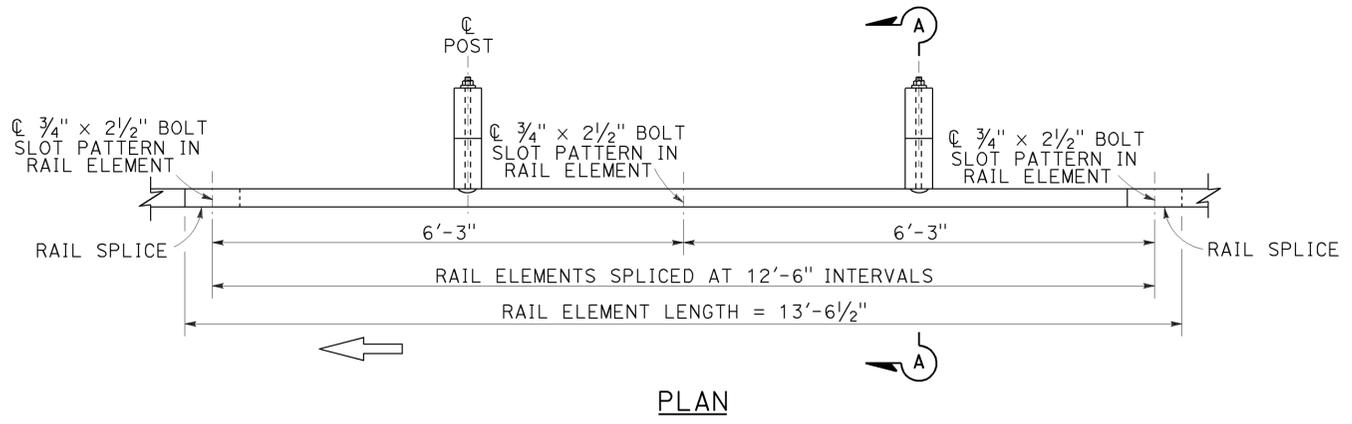
July 19, 2013
PLANS APPROVAL DATE

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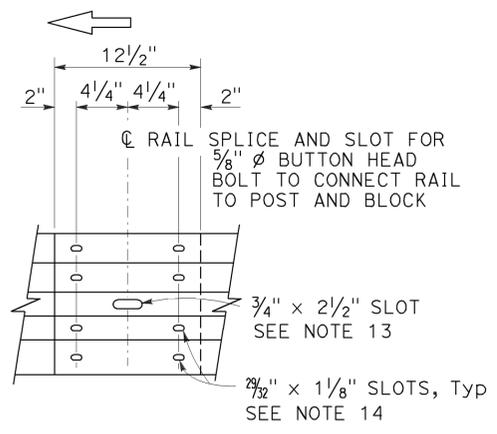
6-22-15



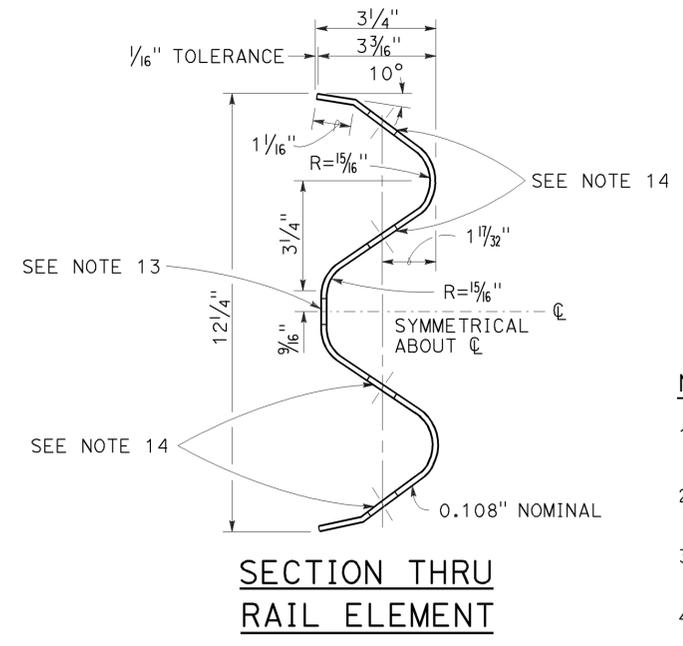
TO ACCOMPANY PLANS DATED 6-22-15



MIDWEST GUARDRAIL SYSTEM WITH WOOD POST AND BLOCKS

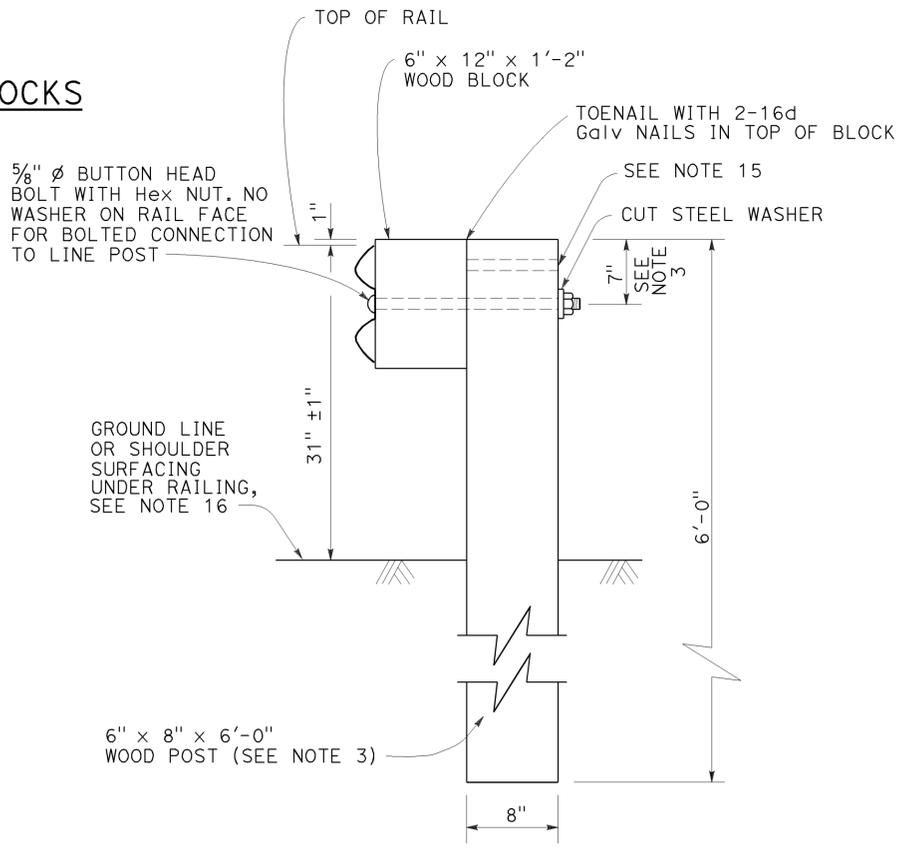


- Connect the over lapped end of the rail elements with $\frac{5}{8}$ " ϕ x $1\frac{3}{8}$ " button head oval shoulder splice bolts inserted into the $\frac{7}{32}$ " x $1\frac{1}{8}$ " slots and bolted together with $\frac{5}{8}$ " ϕ recessed hex nuts. Recess of hex nut points toward rail element. A 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.



NOTES:

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



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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
MIDWEST GUARDRAIL SYSTEM
STANDARD RAILING SECTION
(WOOD POST WITH WOOD BLOCK)

NO SCALE

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

REVISED STANDARD PLAN RSP A77L1

2010 REVISED STANDARD PLAN RSP A77L1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	35	67

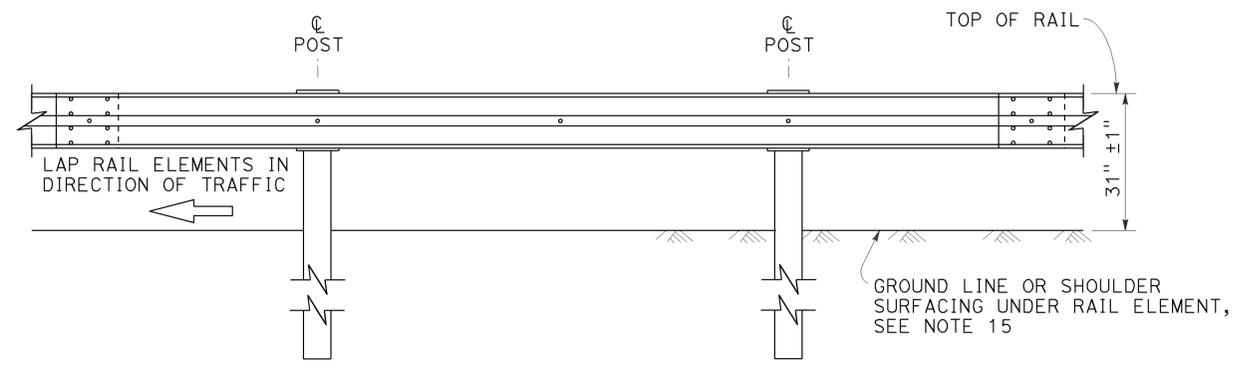
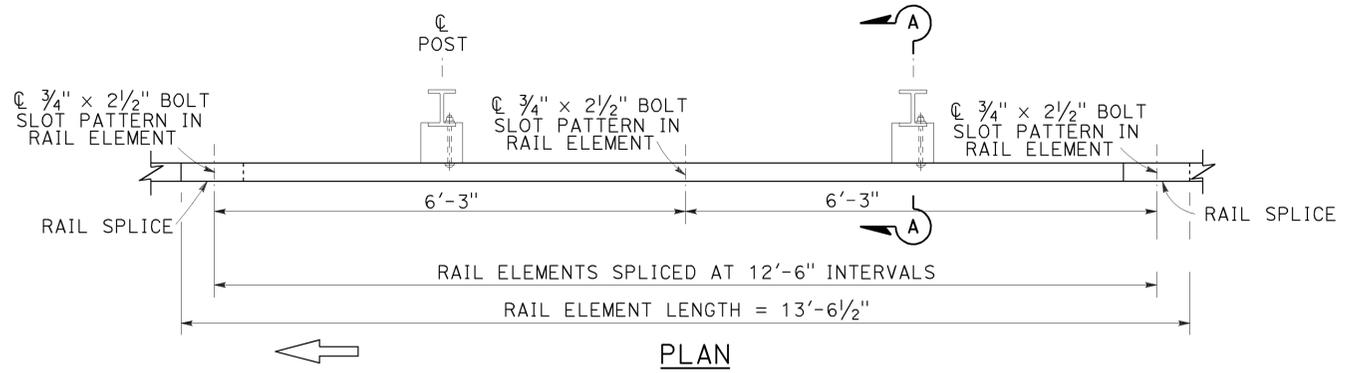
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

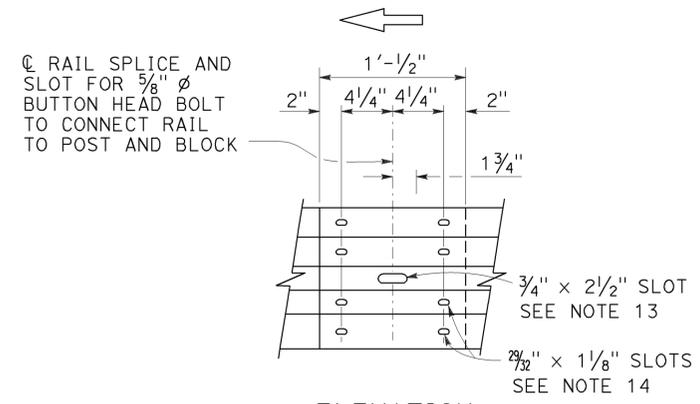
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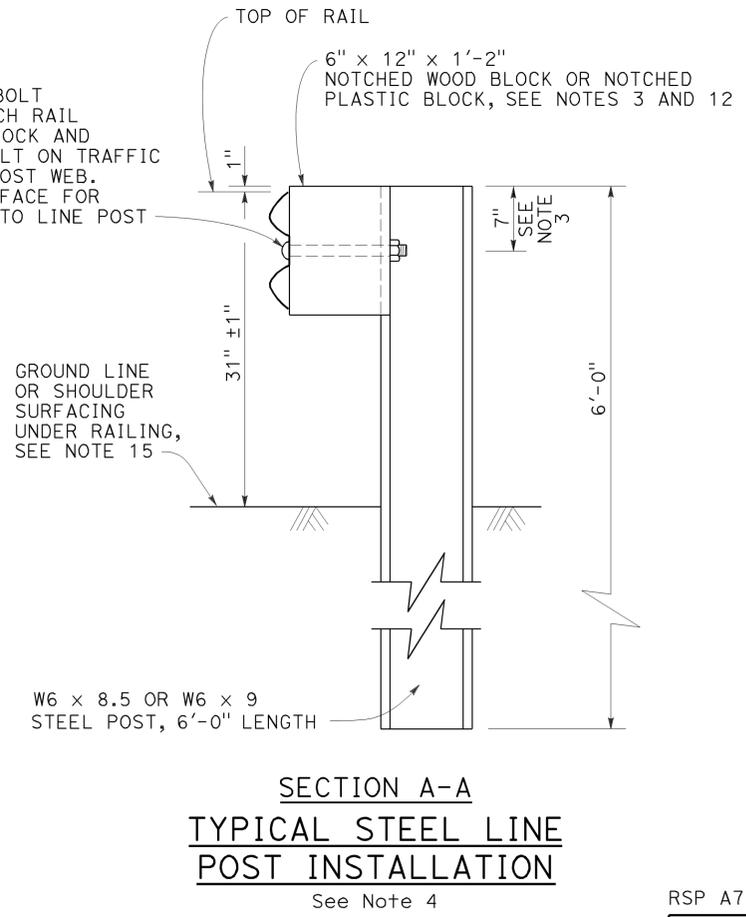
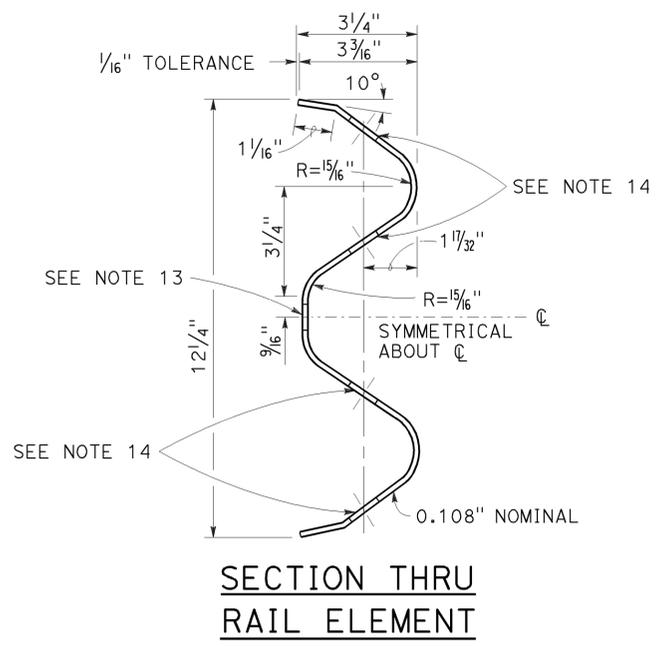
Randell D. Hiatt
REGISTERED PROFESSIONAL ENGINEER
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA



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



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



NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

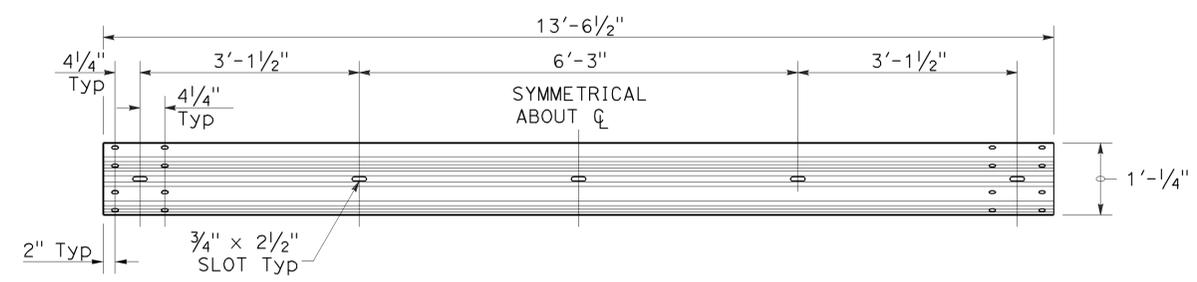
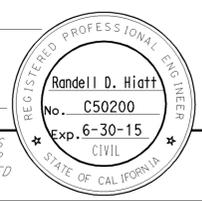
MIDWEST GUARDRAIL SYSTEM STANDARD RAILING SECTION (STEEL POST WITH NOTCHED WOOD OR NOTCHED RECYCLED PLASTIC BLOCK)

NO SCALE

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

REVISED STANDARD PLAN RSP A77L2

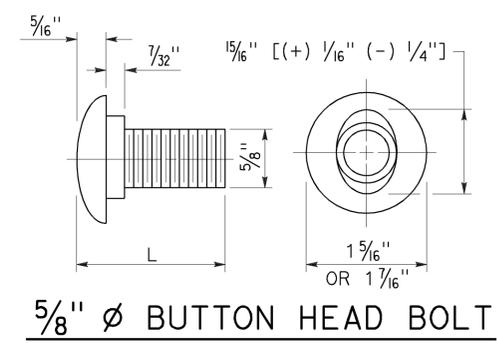
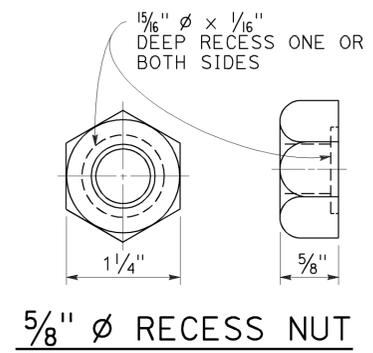
2010 REVISED STANDARD PLAN RSP A77L2



TYPICAL RAIL ELEMENT

NOTE:

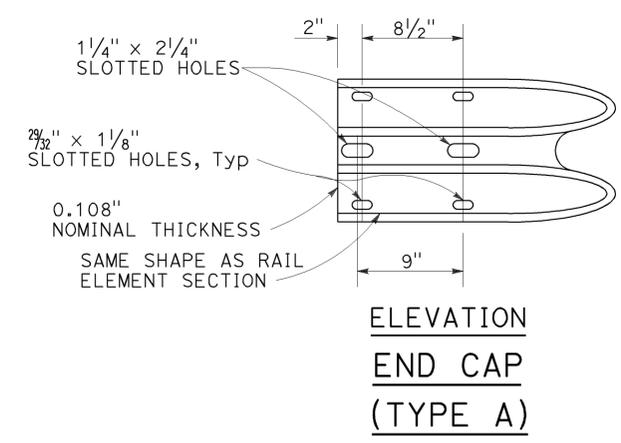
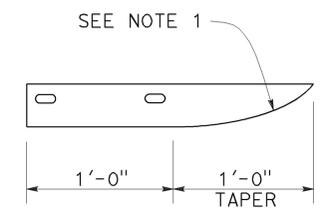
- Slotted holes for splice bolts to overlap ends of rail element.



BUTTON HEAD BOLT

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

** For nested rail applications.



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
STANDARD HARDWARE**

NO SCALE

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

REVISED STANDARD PLAN RSP A77M1

2010 REVISED STANDARD PLAN RSP A77M1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	37	67

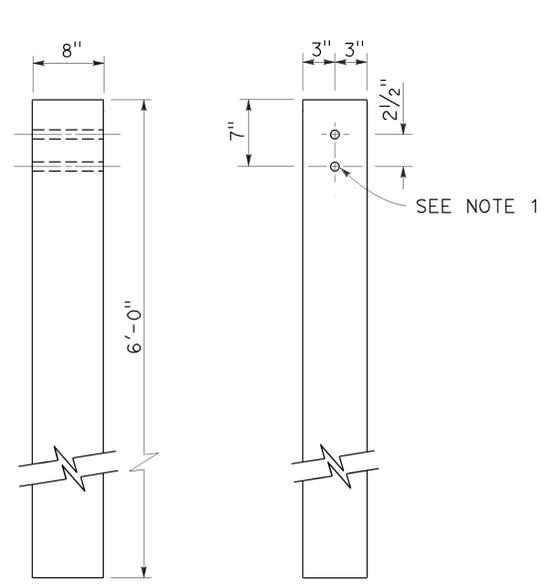
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

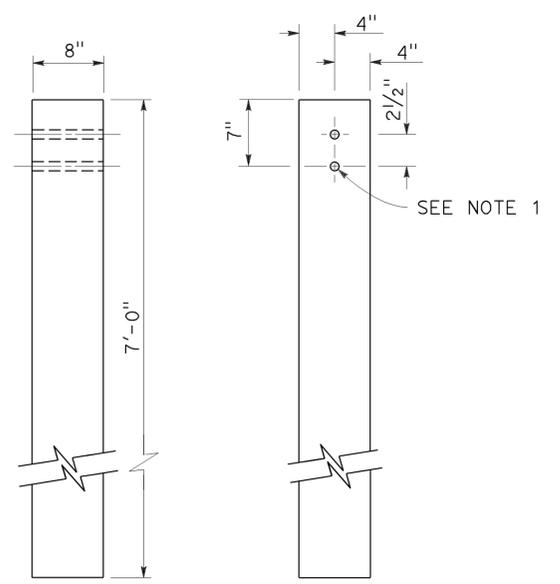
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REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

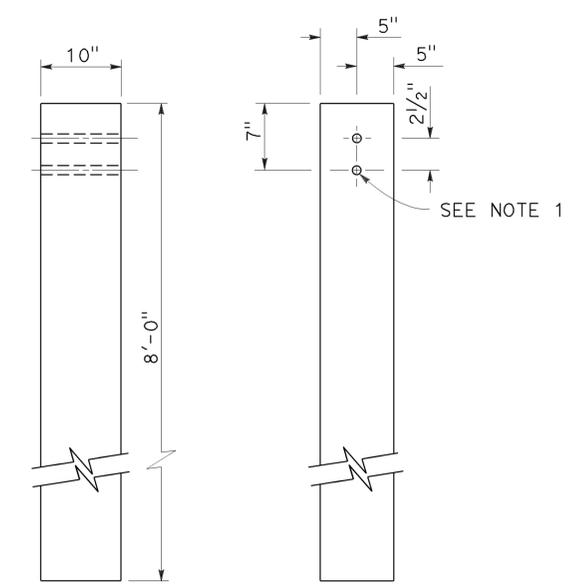
TO ACCOMPANY PLANS DATED 6-22-15



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



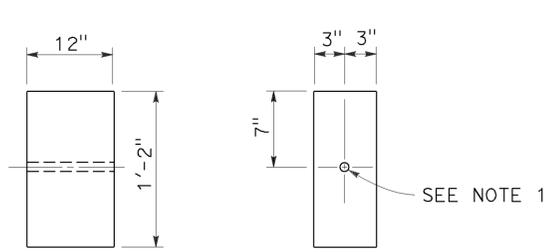
SIDE FRONT
8" x 8" WOOD POST
See Note 4



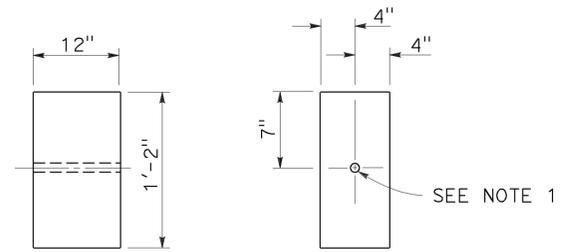
SIDE FRONT
10" x 10" WOOD POST
See Note 5

NOTES:

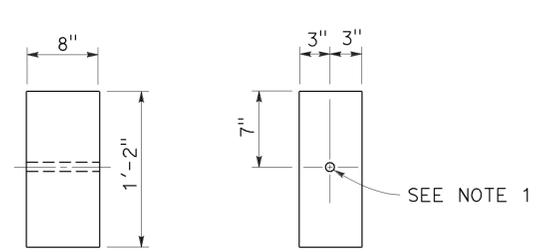
1. All holes in wood posts and blocks shall be 3/4" Dia ± 1/16".
2. Dimensions shown for wood post are nominal.
3. This post and block combination used for standard line post sections of MGS.
4. This post and 8" x 12" block combination used for line post sections of MGS on narrow roadways.
5. This post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



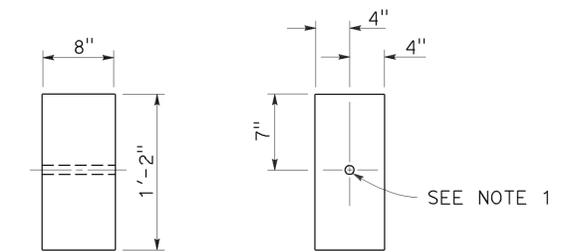
SIDE FRONT
6" x 12" WOOD BLOCK
See Note 3



SIDE FRONT
8" x 12" WOOD BLOCK



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



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

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

NO SCALE

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

REVISED STANDARD PLAN RSP A77N1

2010 REVISED STANDARD PLAN RSP A77N1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	38	67

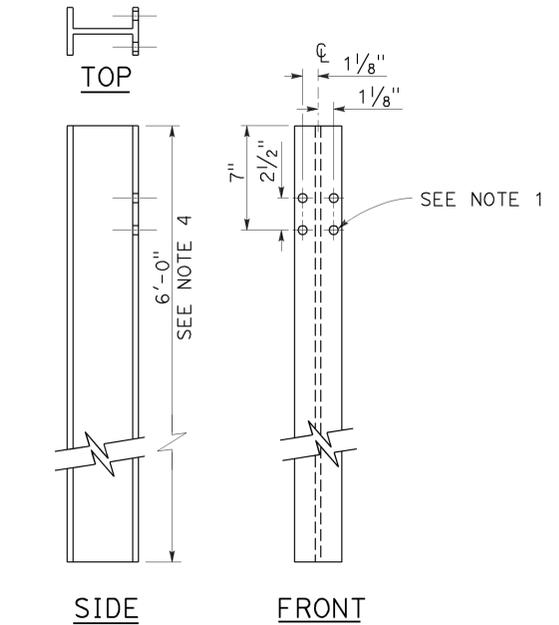
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

November 15, 2013
PLANS APPROVAL DATE

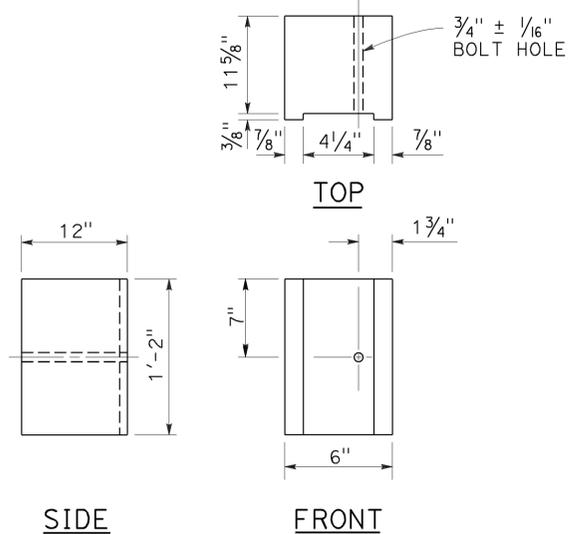
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TO ACCOMPANY PLANS DATED 6-22-15

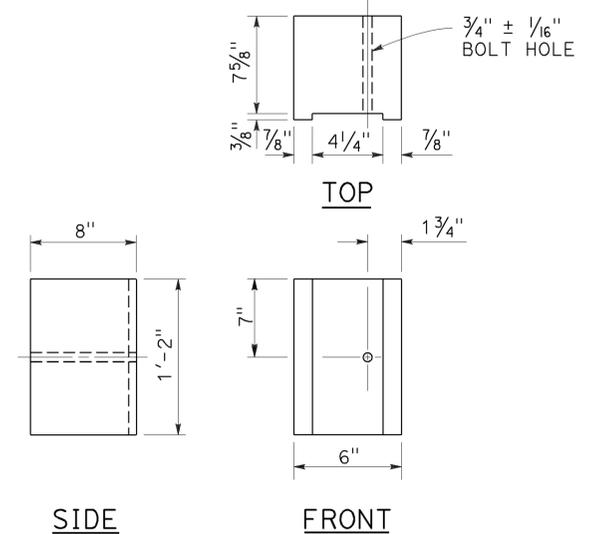
2010 REVISED STANDARD PLAN RSP A77N2



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



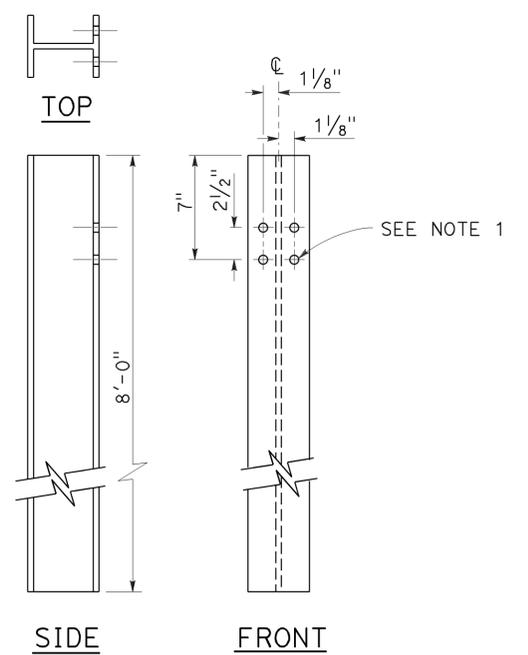
**6" x 12"
NOTCHED WOOD BLOCK**
See Notes 2 and 3



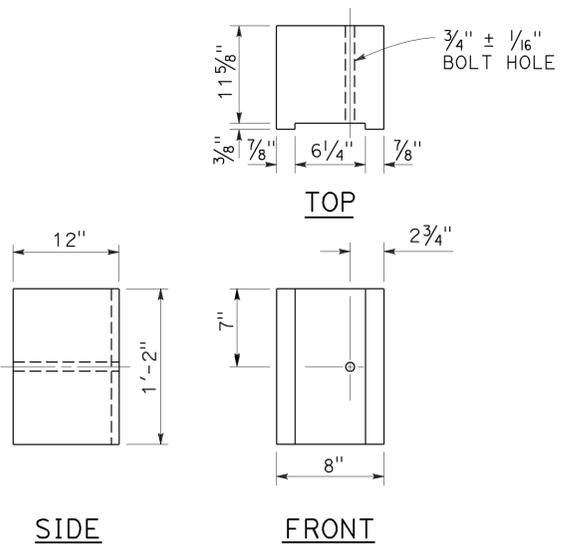
**6" x 8"
NOTCHED WOOD BLOCK**
Only for use with metal beam guard railing. See Note 5

NOTES:

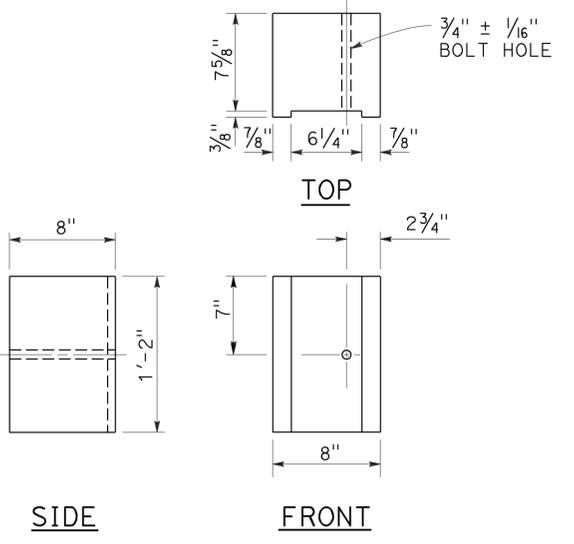
1. All holes in steel post shall be 13/16" Dia maximum.
2. Dimensions shown for wood block are nominal.
3. Notched face of block faces steel post.
4. 6'-0" length posts to be used for typical roadway installation. See Revised Standard Plan RSP A77N3.
5. See Revised Standard Plan RSP A77L3 for use of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



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



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



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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

REVISED STANDARD PLAN RSP A77N2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	39	67

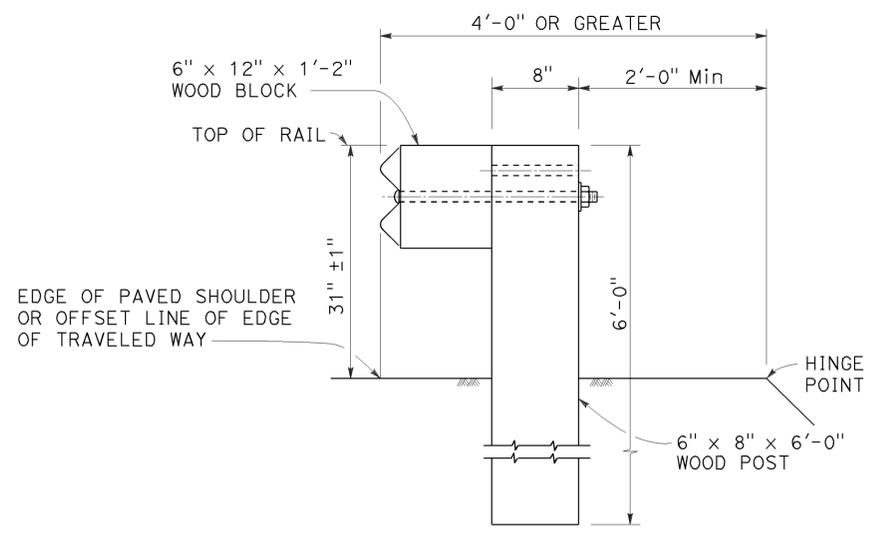
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

November 15, 2013
PLANS APPROVAL DATE

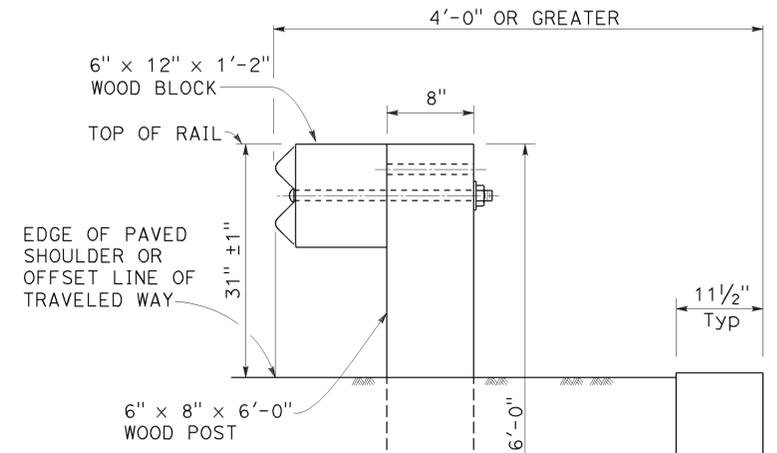
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NOV 15 2013
REGISTERED PROFESSIONAL ENGINEER
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STATE OF CALIFORNIA

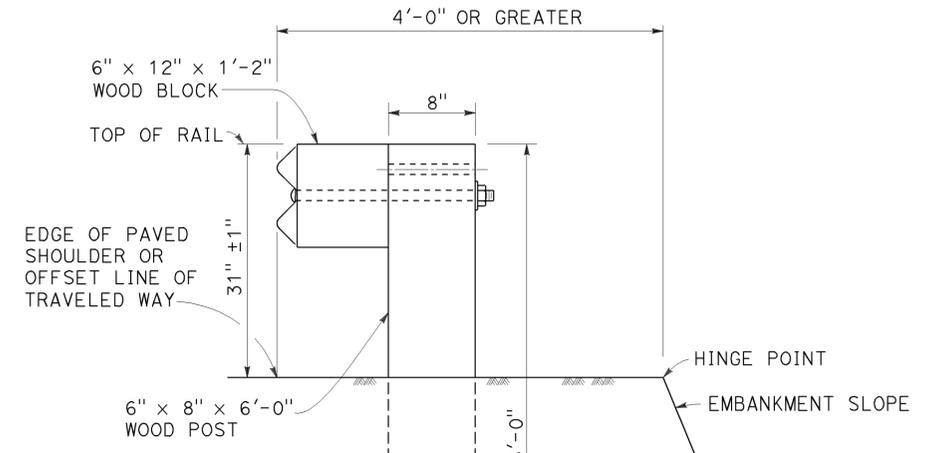
TO ACCOMPANY PLANS DATED 6-22-15



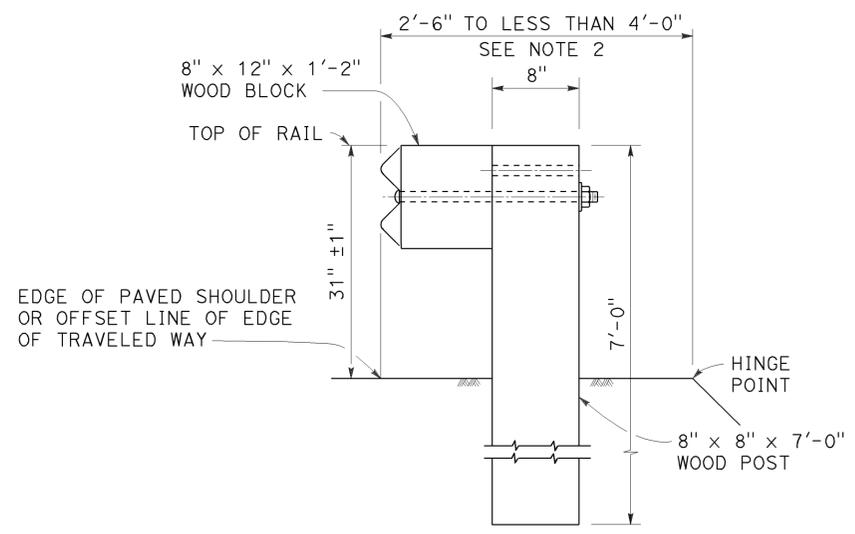
DETAIL A
TYPICAL ROADWAY
INSTALLATION
See Note 1



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
04	CC	80,580	Var	40	67

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

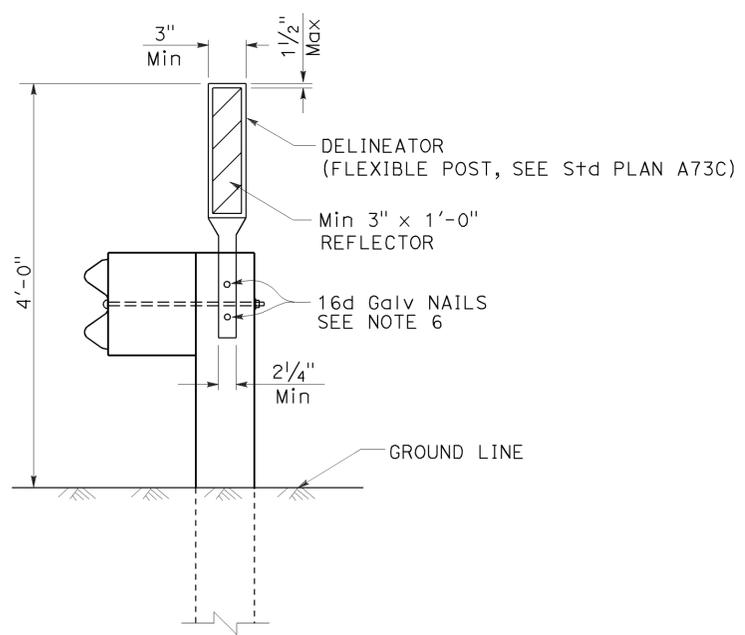
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STATE OF CALIFORNIA

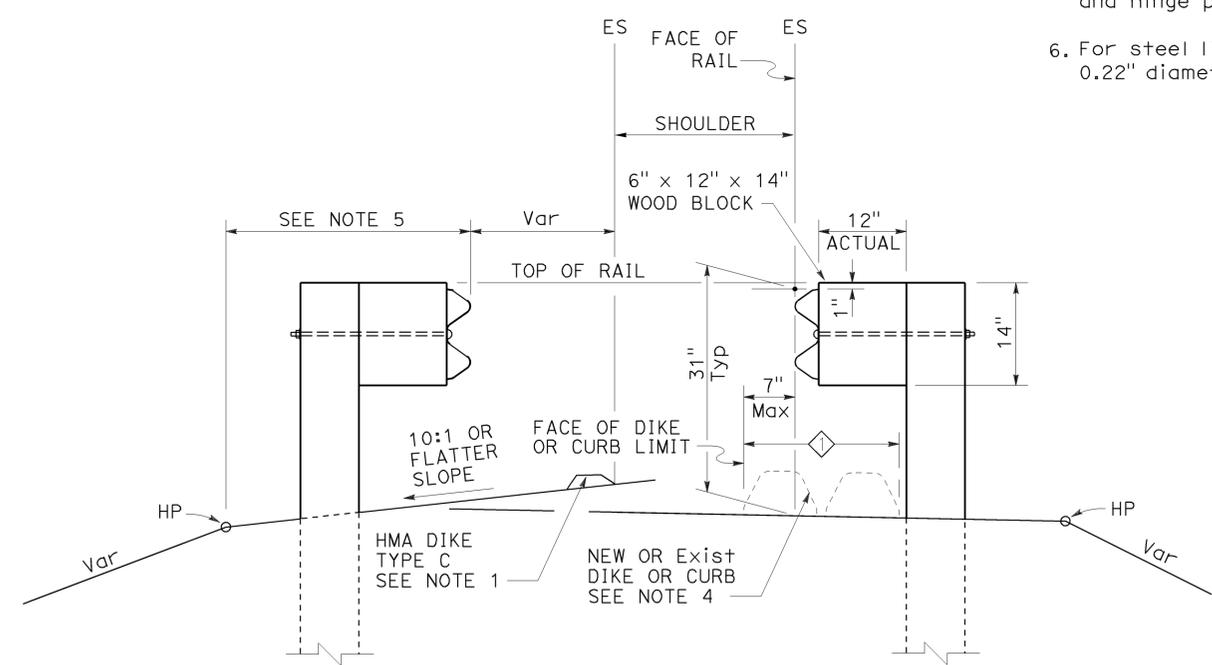
TO ACCOMPANY PLANS DATED 6-22-15

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

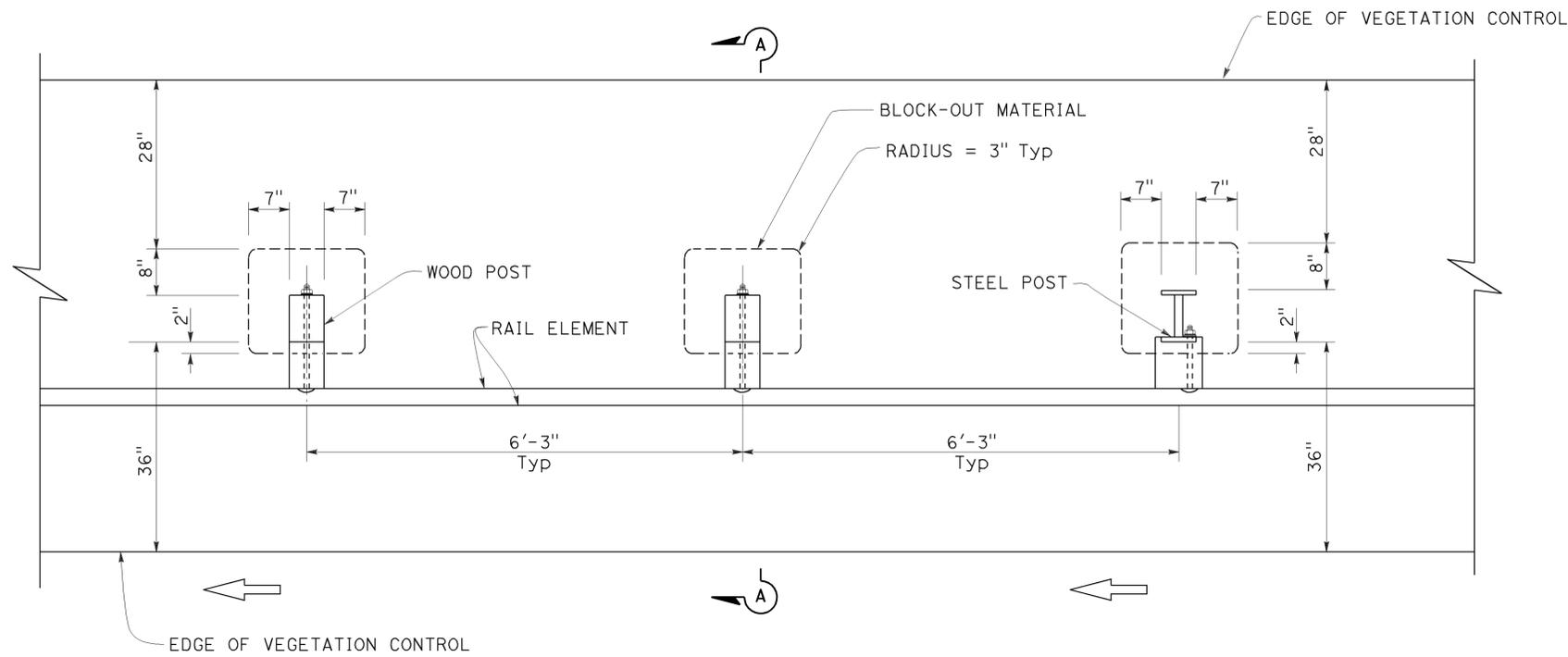
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	41	67

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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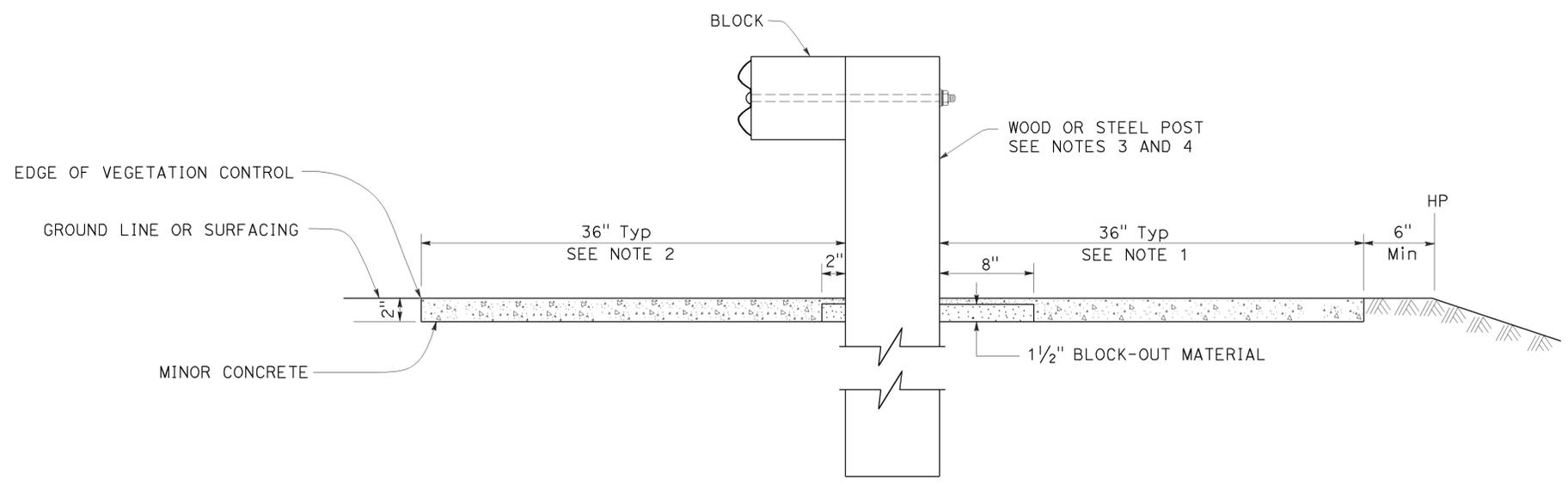
TO ACCOMPANY PLANS DATED 6-22-15



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

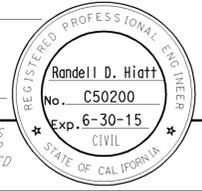
RSP A77N5 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77N5

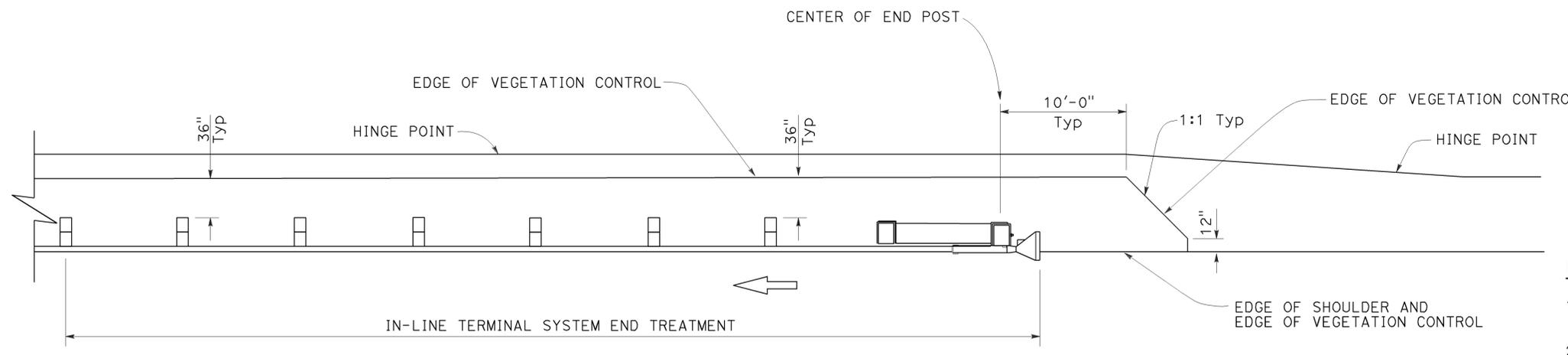
2010 REVISED STANDARD PLAN RSP A77N5

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	42	67

RANDALL D. HIATT
 REGISTERED CIVIL ENGINEER
 July 19, 2013
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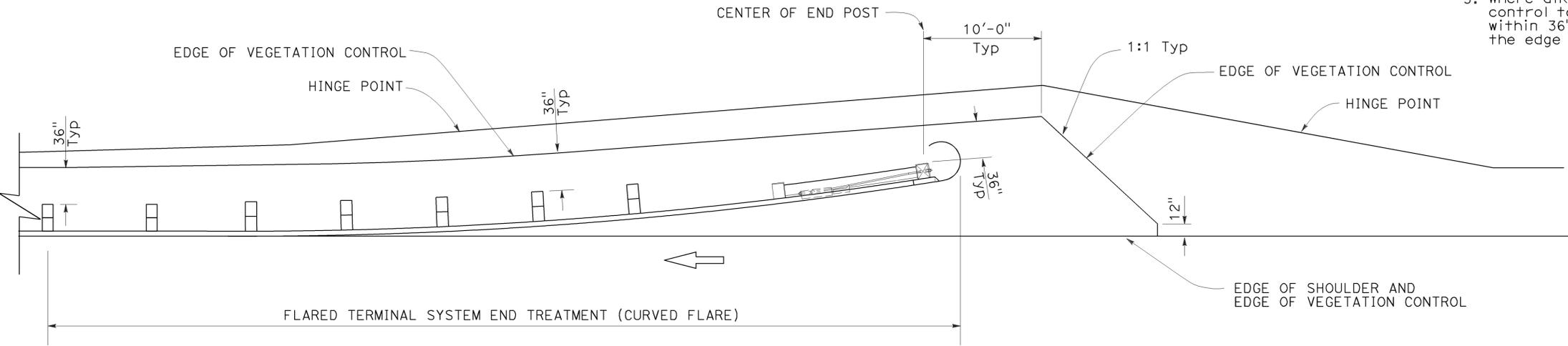
TO ACCOMPANY PLANS DATED 6-22-15



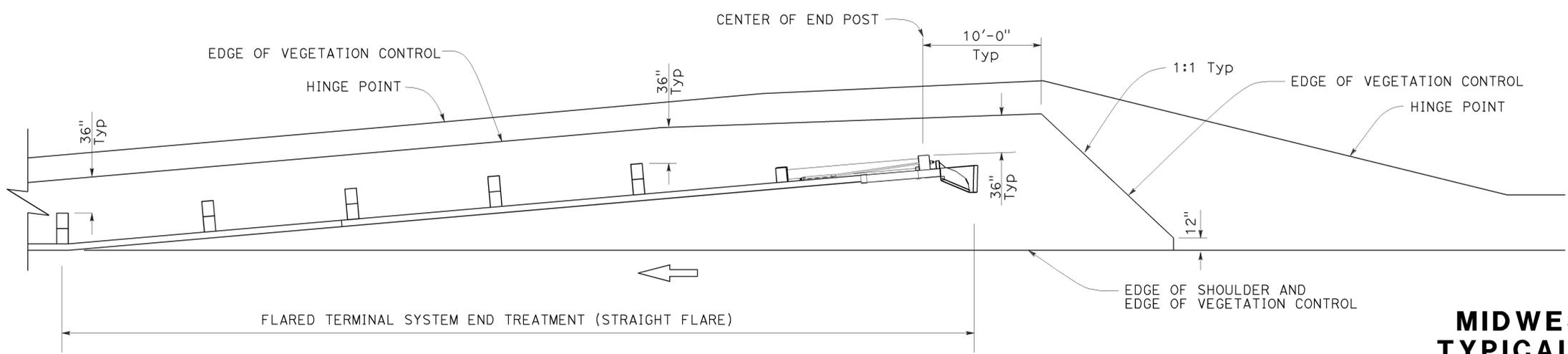
PLAN

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

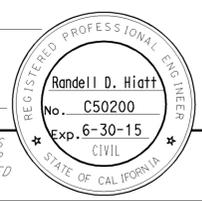
2010 REVISED STANDARD PLAN RSP A77N6

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	43	67

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

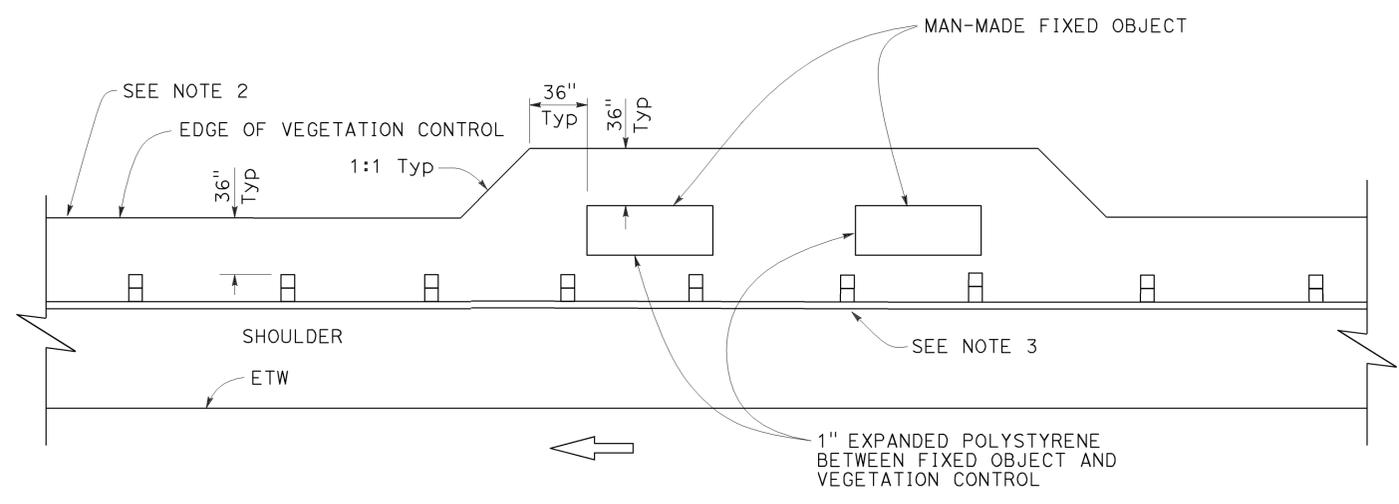
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TO ACCOMPANY PLANS DATED 6-22-15

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
Fixed object(s) on shoulder

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**MIDWEST GUARDRAIL SYSTEM
TYPICAL VEGETATION CONTROL
AT FIXED OBJECT**

NO SCALE

RSP A77N8 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77N8

2010 REVISED STANDARD PLAN RSP A77N8

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	44	67

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

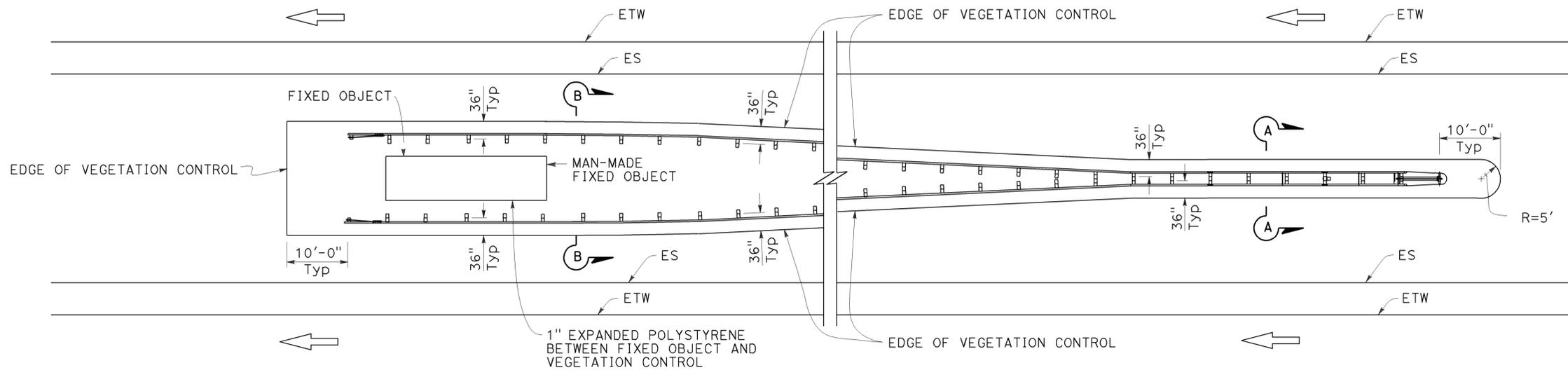
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TO ACCOMPANY PLANS DATED 6-22-15

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

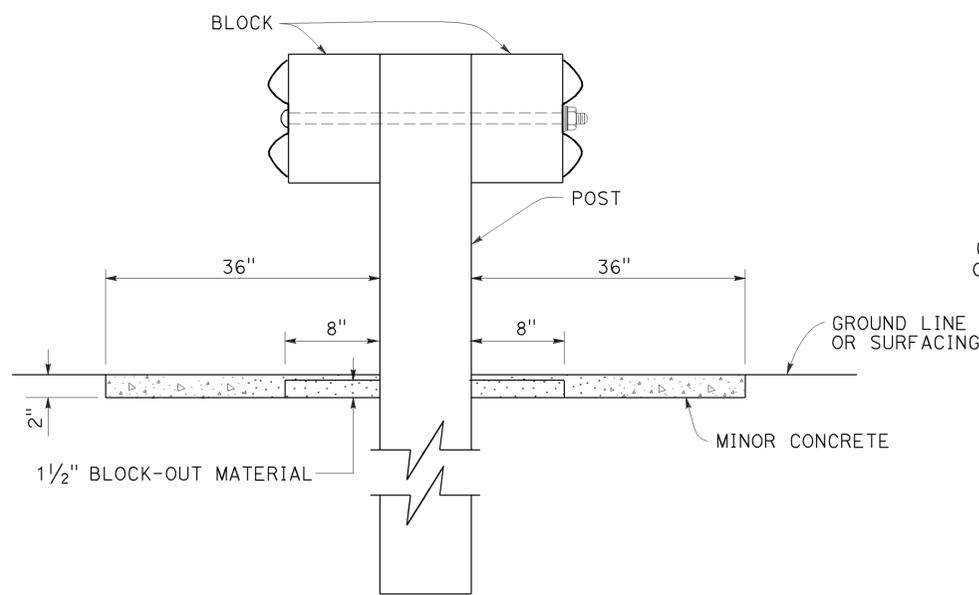
NOTES:

1. See Revised Standard Plan RSP A77N5 for additional vegetation control details.
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.

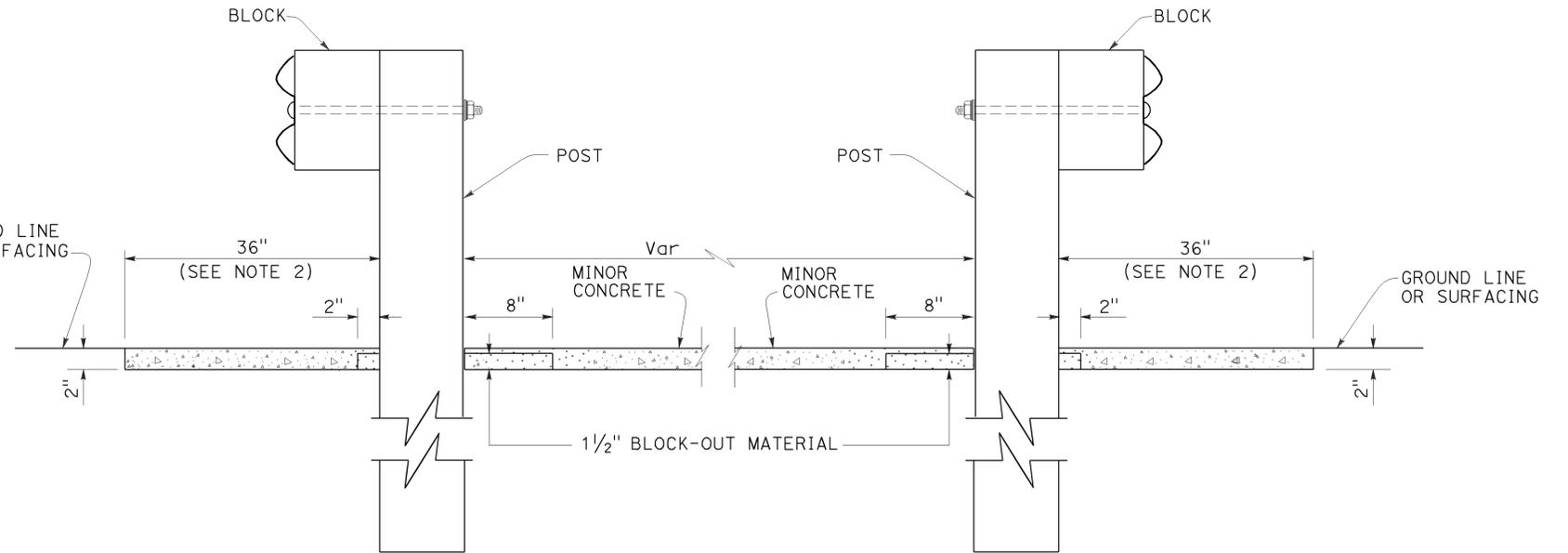


PLAN

Fixed object(s) between separate roadbeds
(One-Way Traffic)



SECTION A-A



SECTION B-B

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
TYPICAL VEGETATION CONTROL
AT FIXED OBJECT**

NO SCALE

RSP A77N10 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77N10

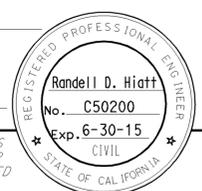
2010 REVISED STANDARD PLAN RSP A77N10

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	45	67

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

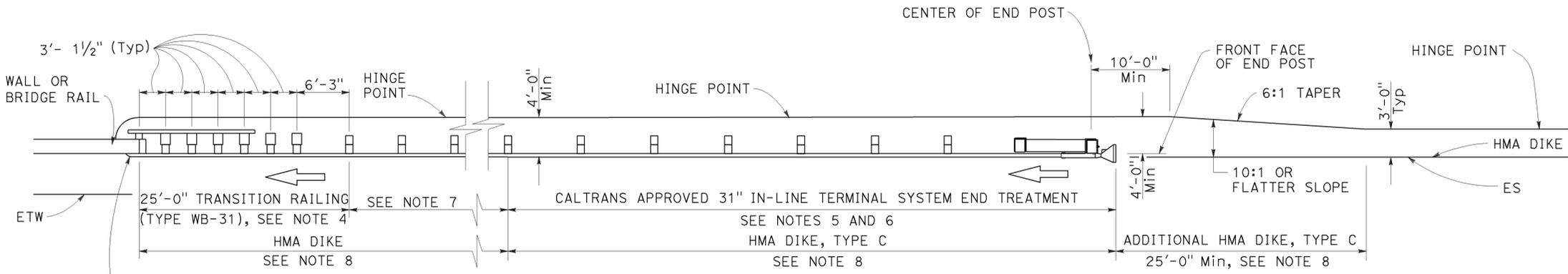
July 19, 2013
PLANS APPROVAL DATE

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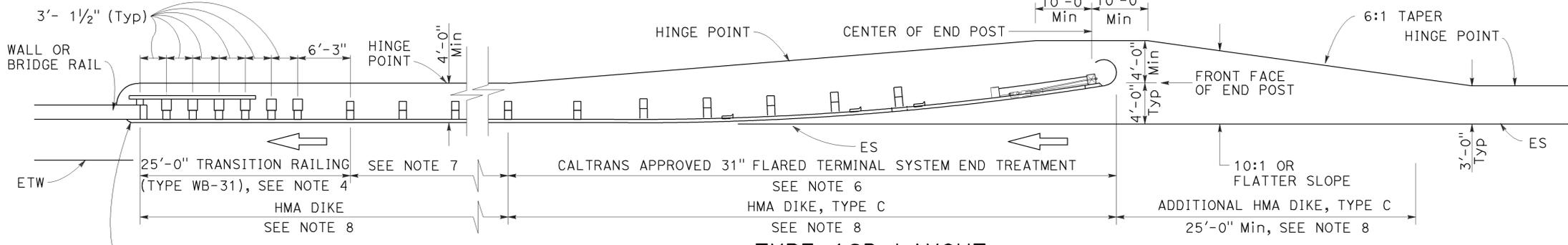
TO ACCOMPANY PLANS DATED 6-22-15

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 Notes 9



TYPE 12B LAYOUT

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

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

REVISED STANDARD PLAN RSP A77Q1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	46	67

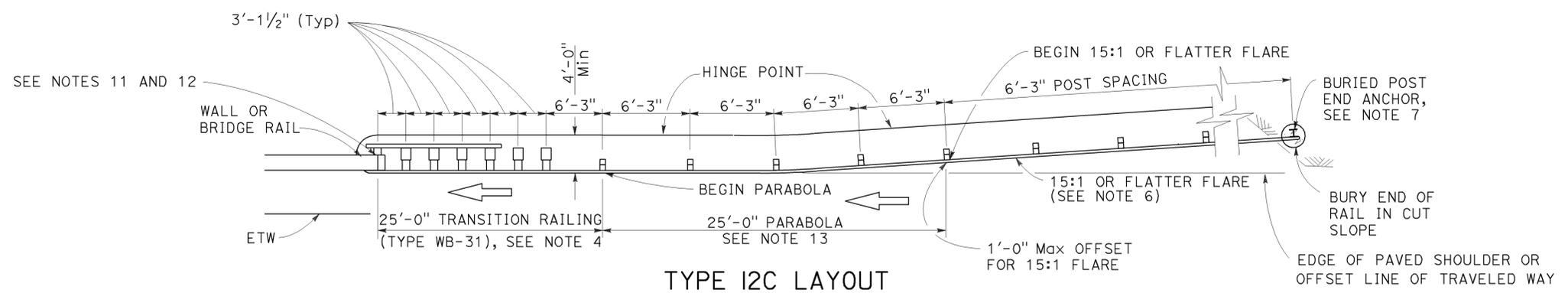
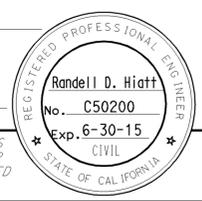
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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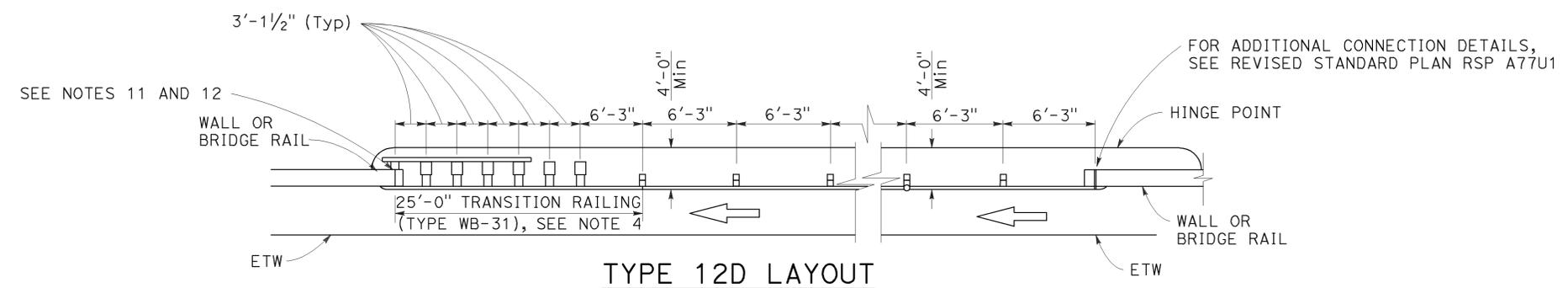
6-22-15

TO ACCOMPANY PLANS DATED



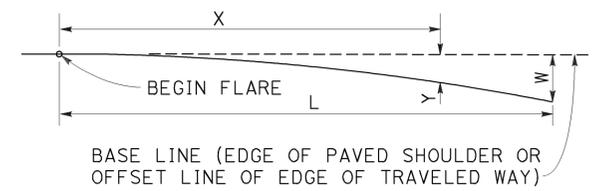
TYPE 12C LAYOUT

(MGS installation at structure approach with a Buried end anchor treatment at traffic approach end of railing)
See Notes 8 and 9



TYPE 12D LAYOUT

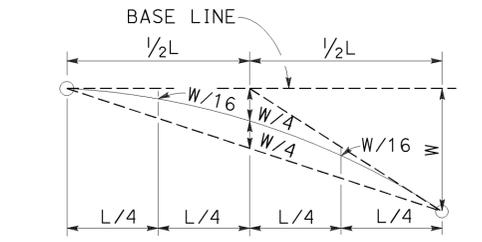
(Continuous MGS installation between structures)
See Notes 5 and 9



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

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.
- 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" m 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 12C and 12D Layouts, see Revised Standard Plan RSP A77U4.
- Type 12D layout is typically used where continous MGS is recommended between structures.
- The 15:1 or flatter flare for Type 12C Layout is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of MGS with 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 12C 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 12C Layout is typically used:
 - To the right of approaching traffic, at the end of the 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 each 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.
- 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 APPROACH
AND BETWEEN STRUCTURES**

NO SCALE

RSP A77Q2 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77Q2

2010 REVISED STANDARD PLAN RSP A77Q2

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 line posts with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
- A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object located directly behind MGS section with post spacing of 6'-3". Construct MGS as shown in the detail "Strengthened Midwest Guardrail System Sections for Fixed Object" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 3'-0". Where the clearance is less than 3'-0", a concrete wall or barrier should be constructed to shield the fixed object(s).

- For End Anchor Assembly (Type SFT) details, see Standard Plan RSP A77S1.
- Type of crash cushion to be used will be shown on the Project Plans.
- Type 15A layout is typically used on multilane freeways or expressways to shield fixed objects in the area between separated one-way roadbeds.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77P1.
- The 15:1 or flatter flare is measured off of the edge of the traveled way.
- W6 x 15 steel post, 8'-0" in length, with 8" x 12" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 12" x 1'-2" wood block shown in the detail "Strengthened Midwest Guardrail System Sections for Fixed Object".

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	47	67

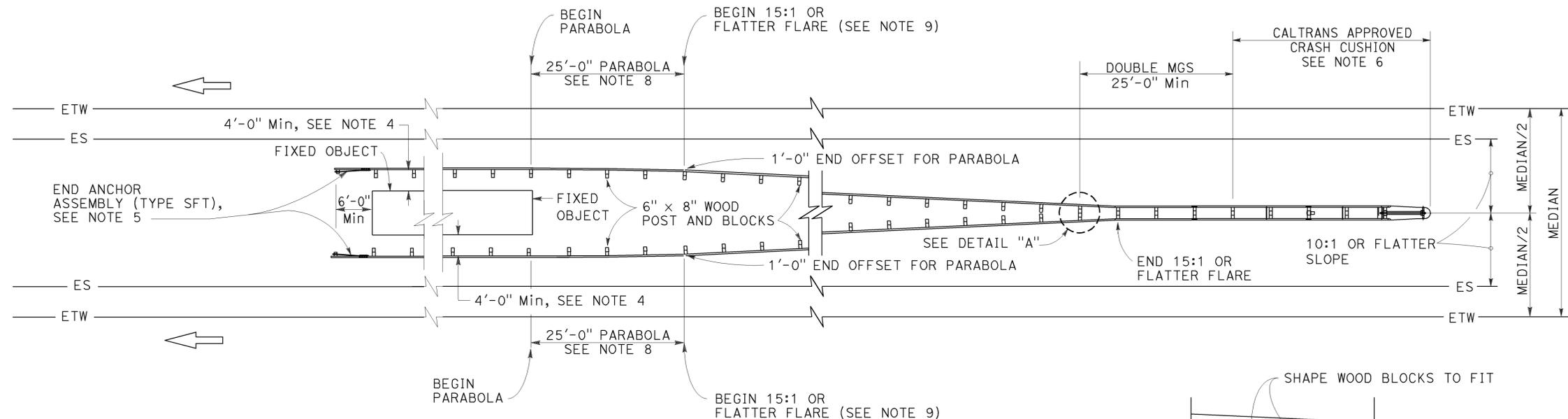
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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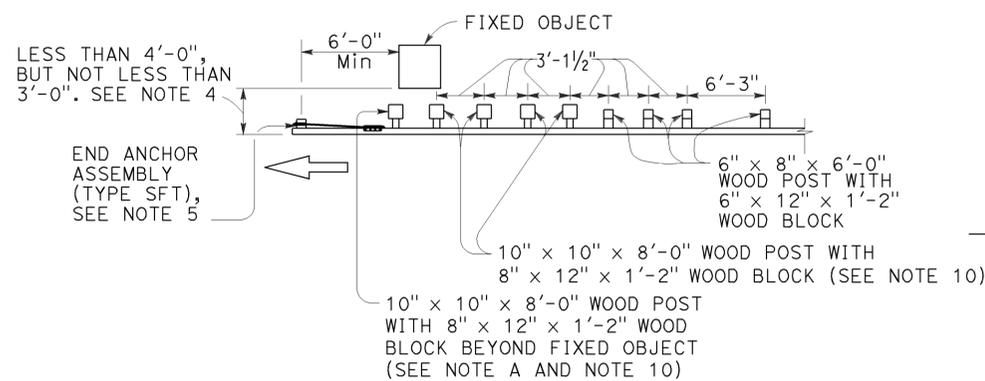
TO ACCOMPANY PLANS DATED 6-22-15

2010 REVISED STANDARD PLAN RSP A77R2



TYPE 15A LAYOUT

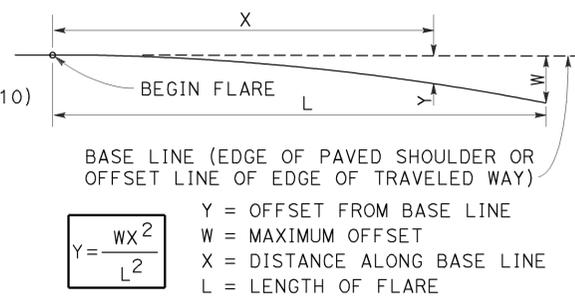
See Note 7



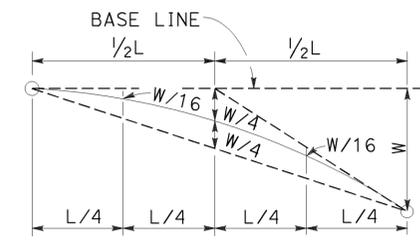
NOTE A: For a series of fixed objects (bridge columns, overhead sign supports, etc.) additional 10" x 10" x 8'-0" wood post with 8" x 12" x 1'-2" wood blocks at 3'-1/2" center to center spacing are to be used between fixed objects.

STRENGTHENED MIDWEST GUARDRAIL SYSTEM SECTIONS FOR FIXED OBJECT

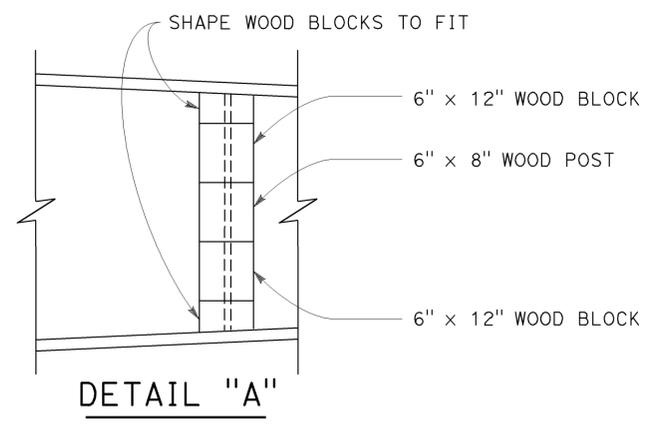
Use strengthened MGS sections with Type 15A layout where minimum clearance between the face of the MGS and the fixed object(s) is less than 4'-0", but not less than 3'-0". See Note 4.



PARABOLIC FLARE OFFSETS



TYPICAL PARABOLIC LAYOUT



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**MIDWEST GUARDRAIL SYSTEM
TYPICAL LAYOUTS FOR
FIXED OBJECTS
BETWEEN SEPARATE ROADBEDS
(ONE-WAY TRAFFIC)**

NO SCALE

RSP A77R2 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77R2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	48	67

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

November 15, 2013
PLANS APPROVAL DATE

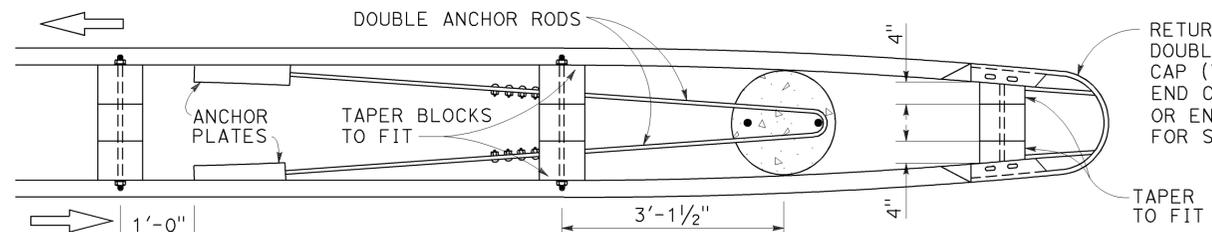
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REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 6-22-15

NOTES:

1. For typical use of this type of end anchor, see Revised Standard Plan RSP A78E2.
2. Anchor cable to be parallel to railing for straight runs of rail. Anchor cable may have angle point at anchor plate if railing is curved.
3. Anchor rod hooks to be in contact with anchor reinforcement when concrete is placed. Wire ties may be used to position anchor rods.
4. Single sided railing installations require only one anchor plate, anchor rod and anchor cable. Single sided railing will not have a rail element or blockouts on backside of line posts as shown in the plan view.

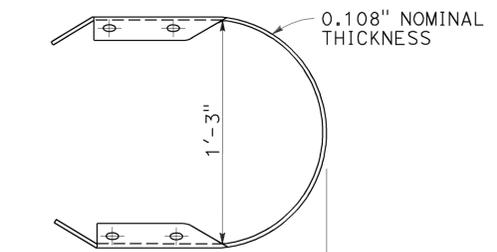


PLAN

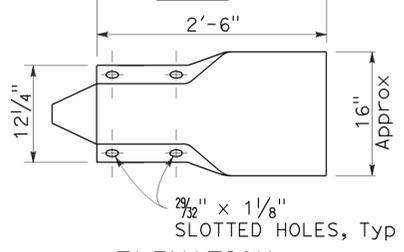
See Note 4

RETURN CAP (TYPE TA) FOR DOUBLE THRIE BEAM OR RETURN CAP (TYPE A) FOR DOUBLE MGS.
END CAP (TYPE A) FOR SINGLE MGS OR END CAP (TYPE TC) FOR SINGLE THRIE BEAM

TAPER TO FIT

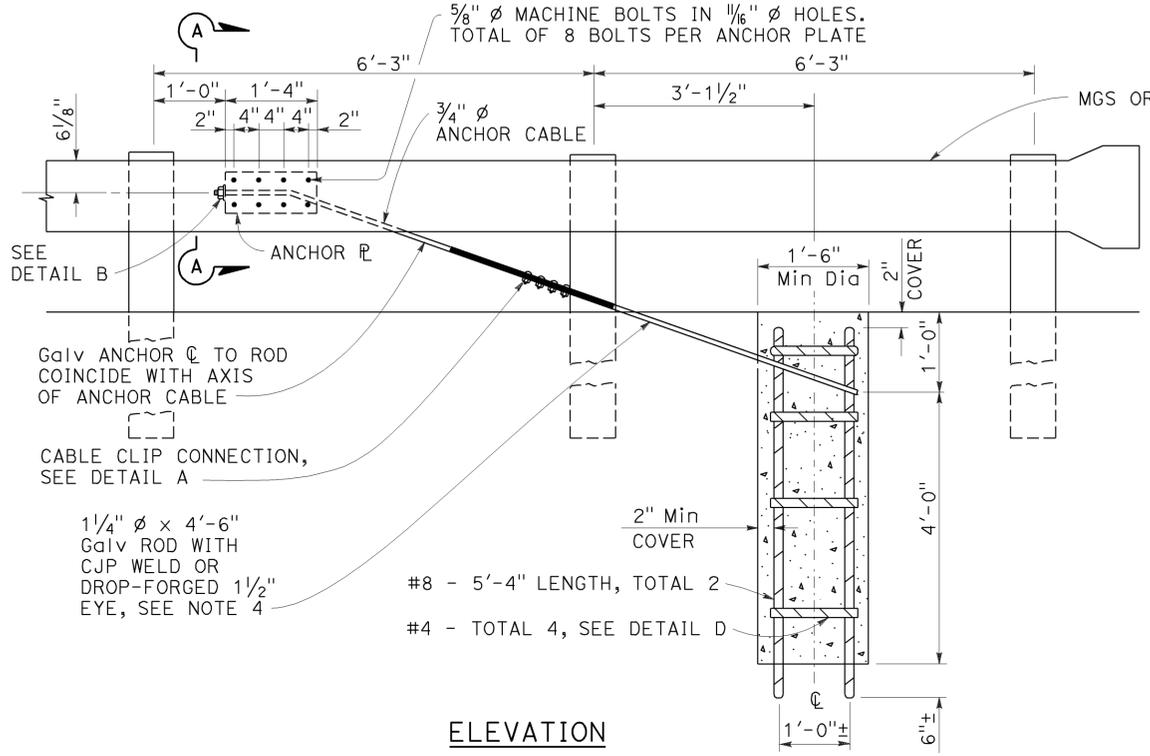


PLAN



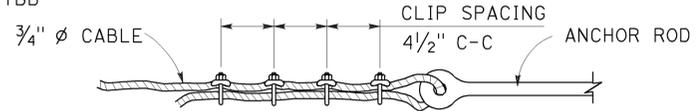
ELEVATION

RETURN CAP (TYPE A)



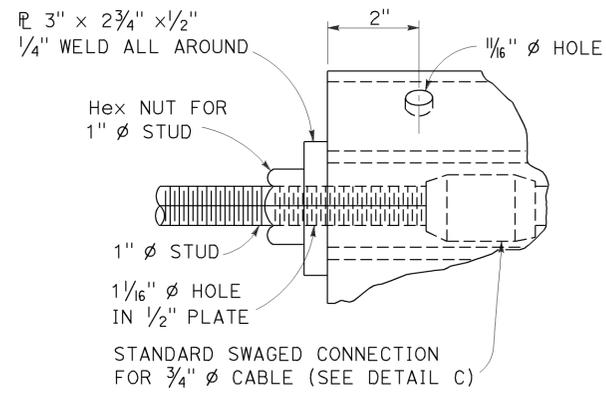
ELEVATION
END ANCHOR ASSEMBLY (TYPE CA)

(Wood post, MGS shown, details similar for Thrie Beam Barrier.)



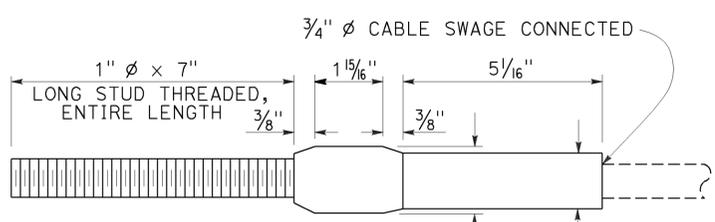
"U" bolts of clip on short end of cable only
"U" bolts tightened to 50 ft/lb torque

DETAIL A
CABLE CLIP CONNECTION



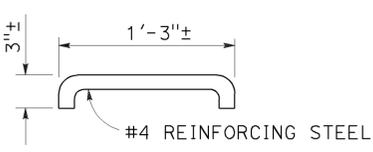
DETAIL B

ANCHOR CABLE WITH SWAGED FITTING AND STUD

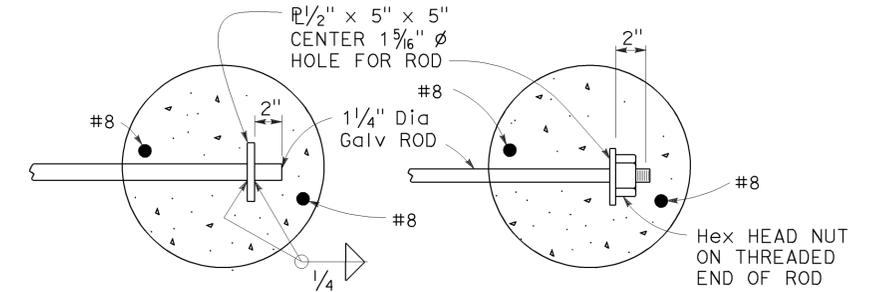


DETAIL C

ANCHOR CABLE WITH SWAGED FITTING AND STUD



DETAIL D

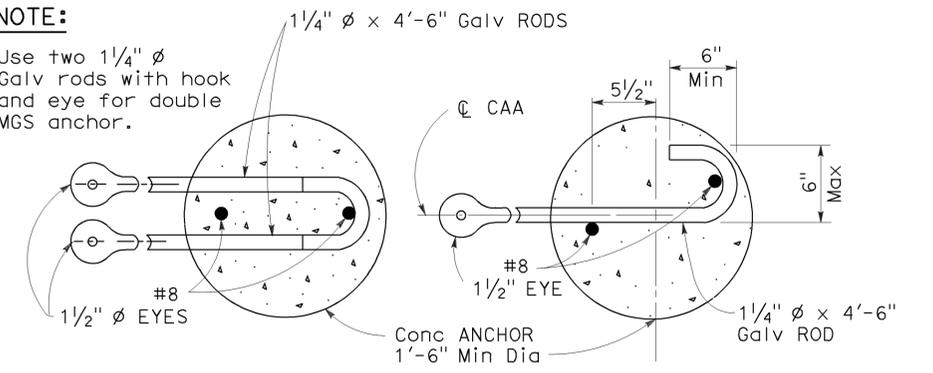


OPTIONAL ENDS ON SINGLE ANCHOR ROD

(Not to be used for double anchors)

NOTE:

Use two 1/4 inch diameter galvanized rods with hook and eye for double MGS anchor.



DOUBLE ANCHOR ANCHOR RODS
SINGLE ANCHOR ANCHOR RODS

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

METAL RAILING END ANCHOR ASSEMBLY (TYPE CA)

NO SCALE

RSP A77T1 DATED NOVEMBER 15, 2013 SUPERSEDES RSP A77T1 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77T1

2010 REVISED STANDARD PLAN RSP A77T1

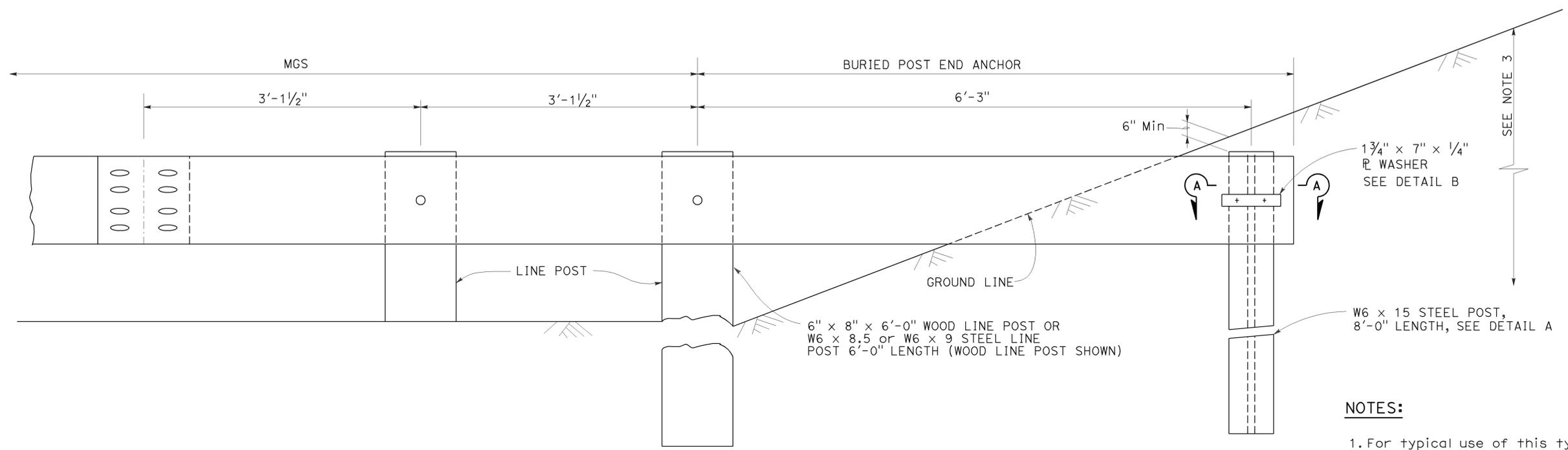
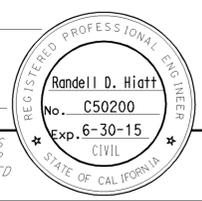
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	49	67

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

November 15, 2013
PLANS APPROVAL DATE

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TO ACCOMPANY PLANS DATED 6-22-15

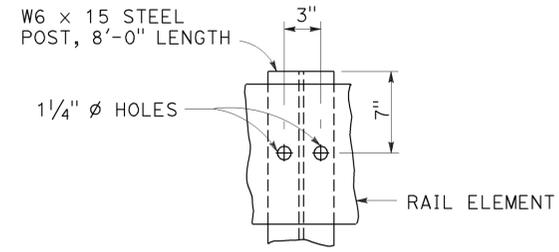


BURIED POST END ANCHOR

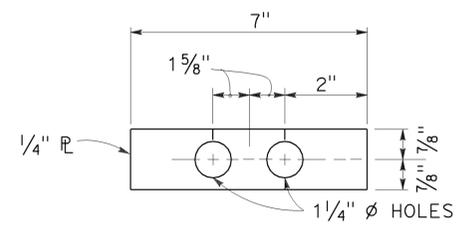
See Note 3

NOTES:

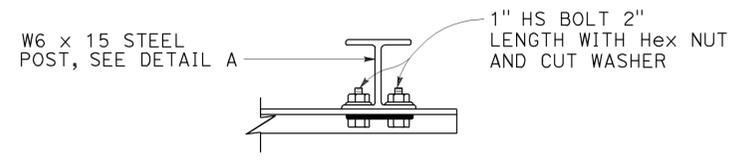
1. For typical use of this type of end anchor with MGS see the A77P, A77Q and A77R Series of the Standard Plans.
2. Holes excavation in the slope to construct the buried post end anchor shall be backfilled with selected earth, placed in layers approximately 1'-0" thick. Each layer shall be moistened 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.

REVISED STANDARD PLAN RSP A77T2

2010 REVISED STANDARD PLAN RSP A77T2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	50	67

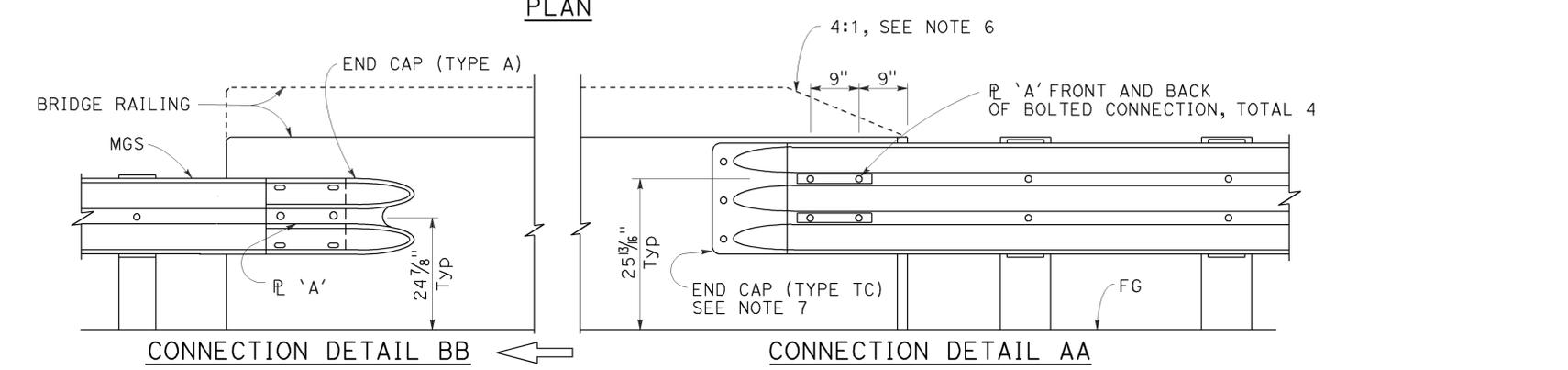
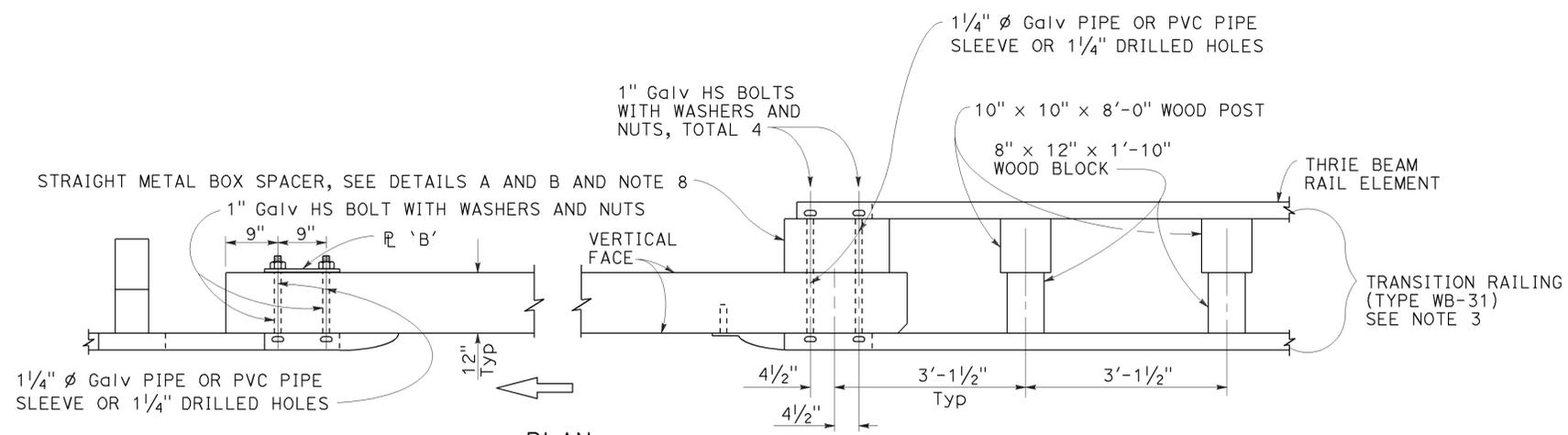
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

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

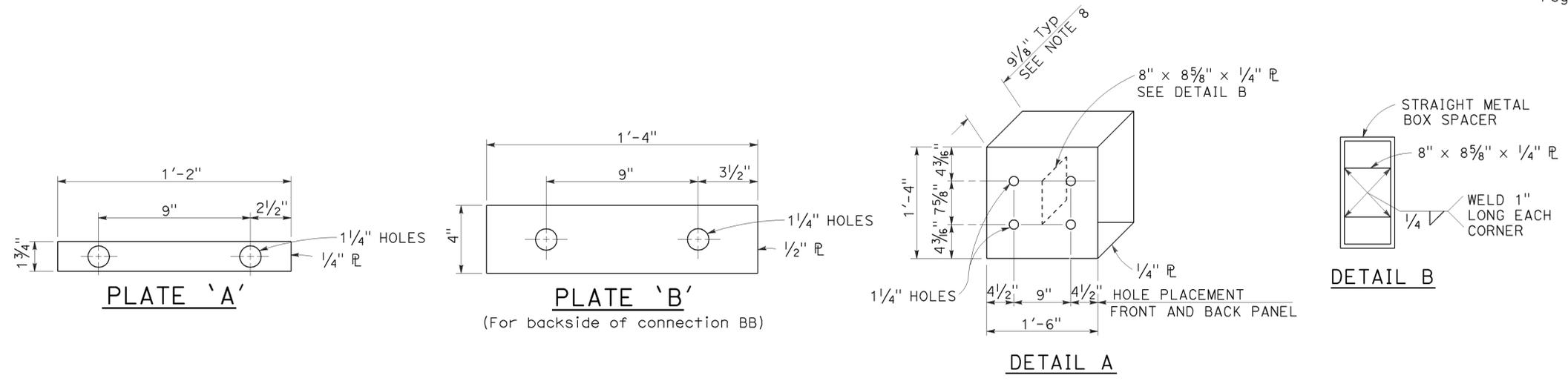
TO ACCOMPANY PLANS DATED 6-22-15



MIDWEST GUARDRAIL SYSTEM CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK

NOTES:

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



STRAIGHT METAL BOX SPACER

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
04	CC	80,580	Var	51	67

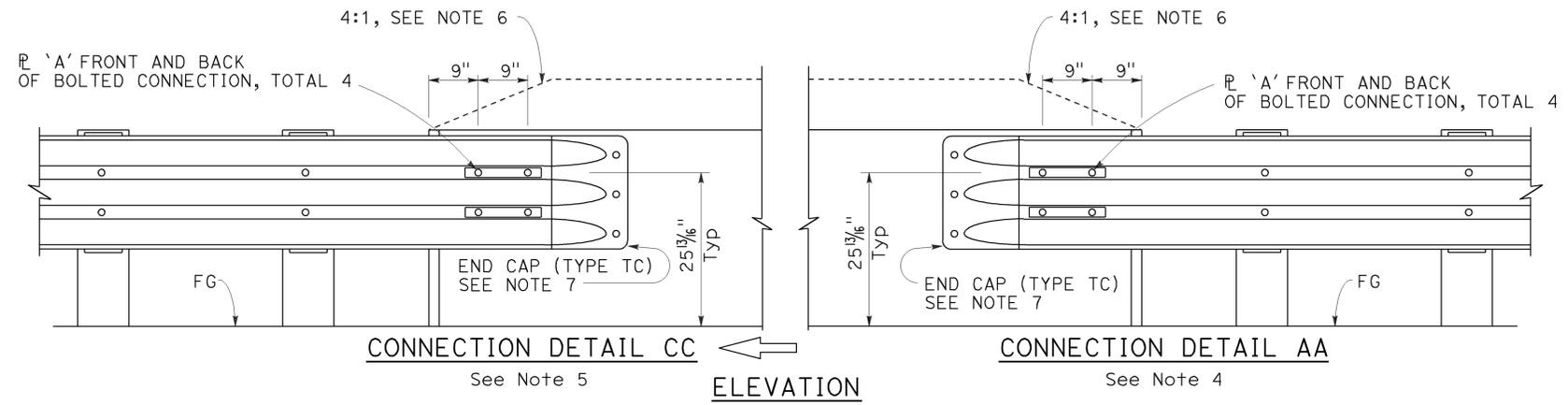
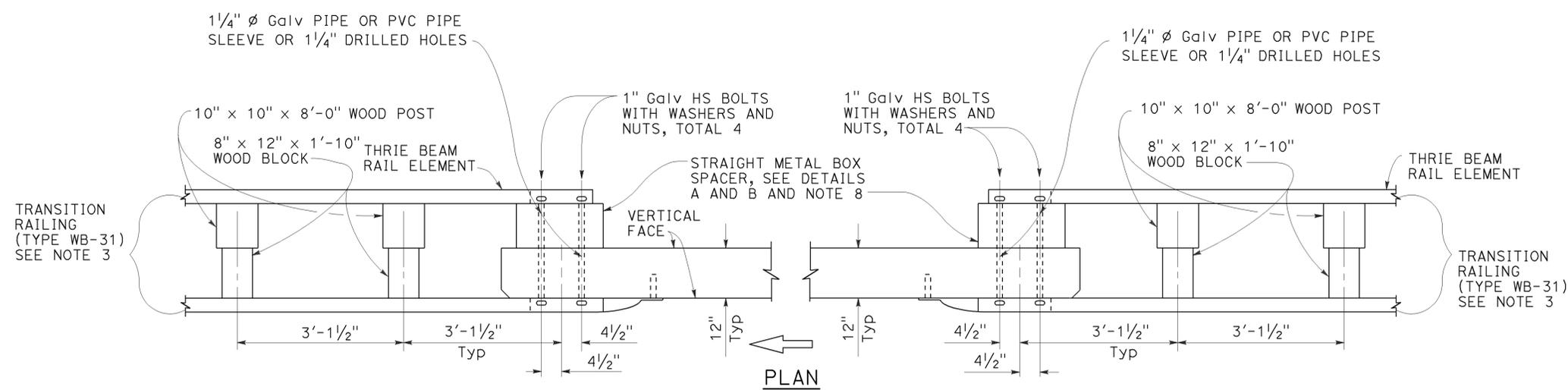
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

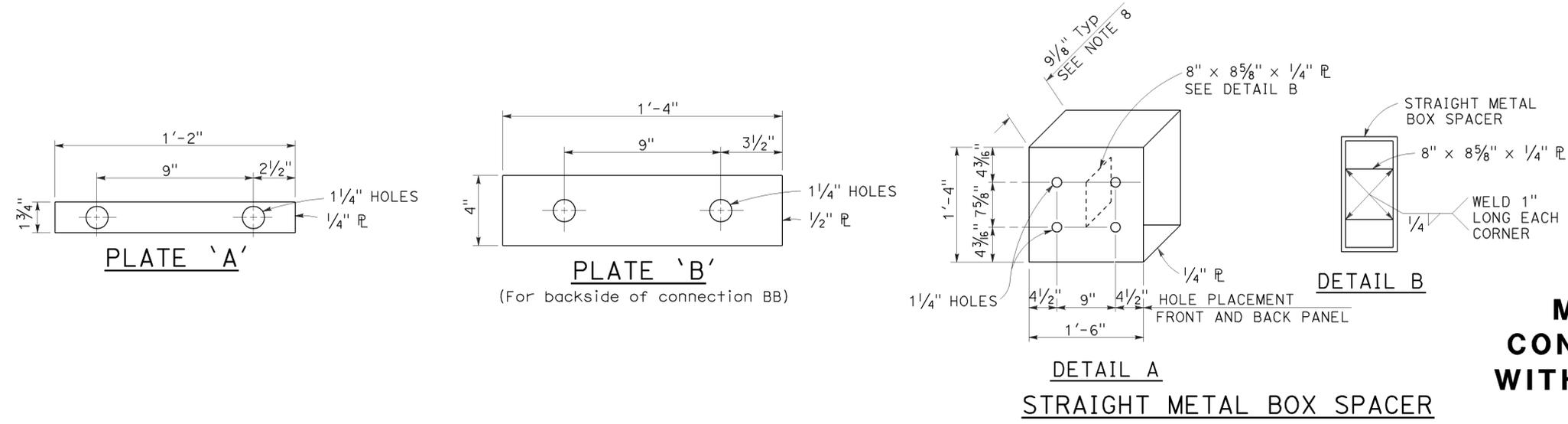
TO ACCOMPANY PLANS DATED 6-22-15



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.

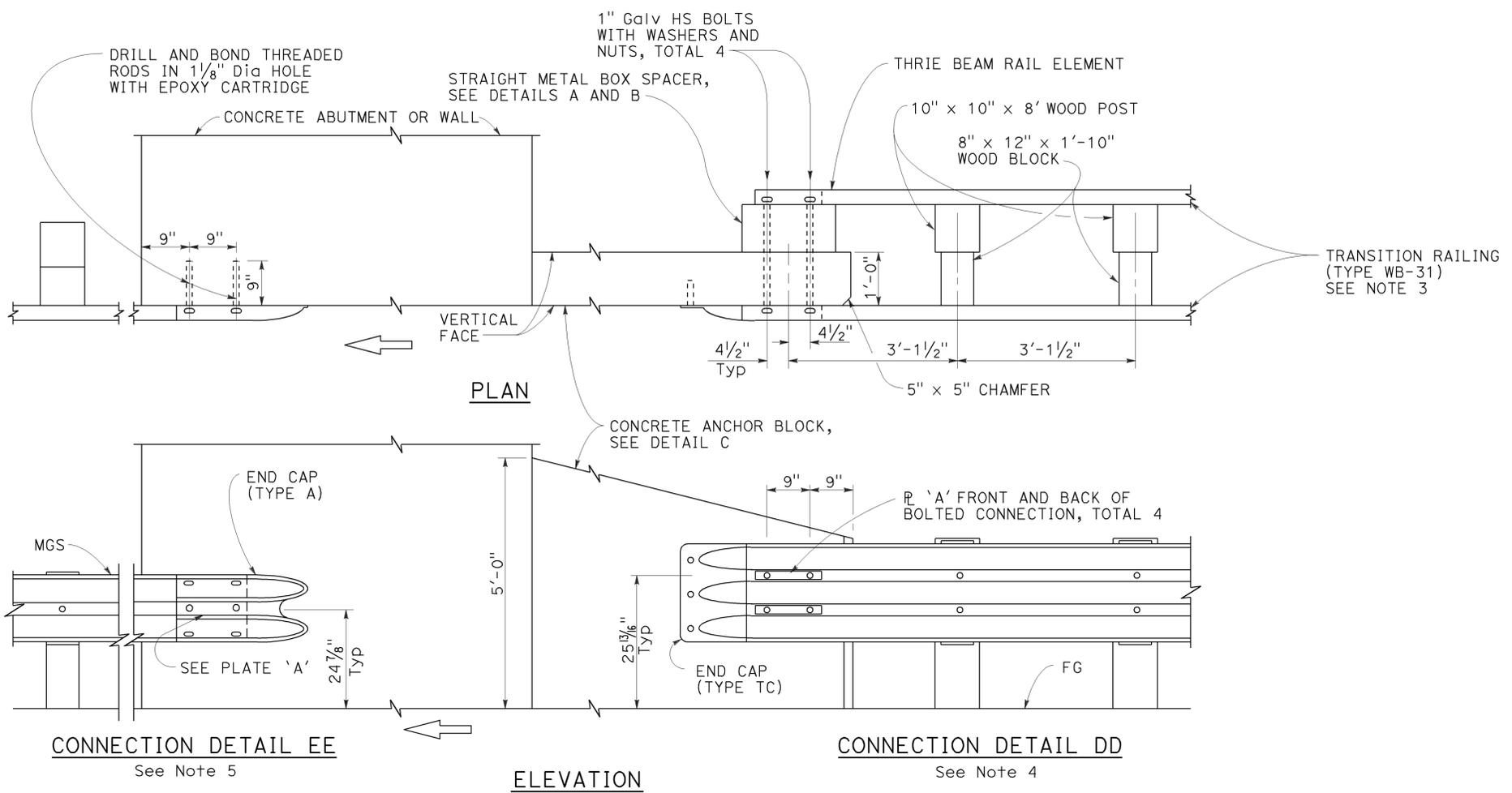
REVISED STANDARD PLAN RSP A77U2

2010 REVISED STANDARD PLAN RSP A77U2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	52	67

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

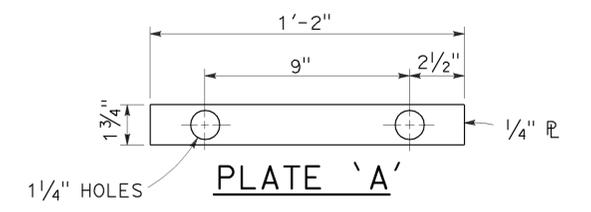
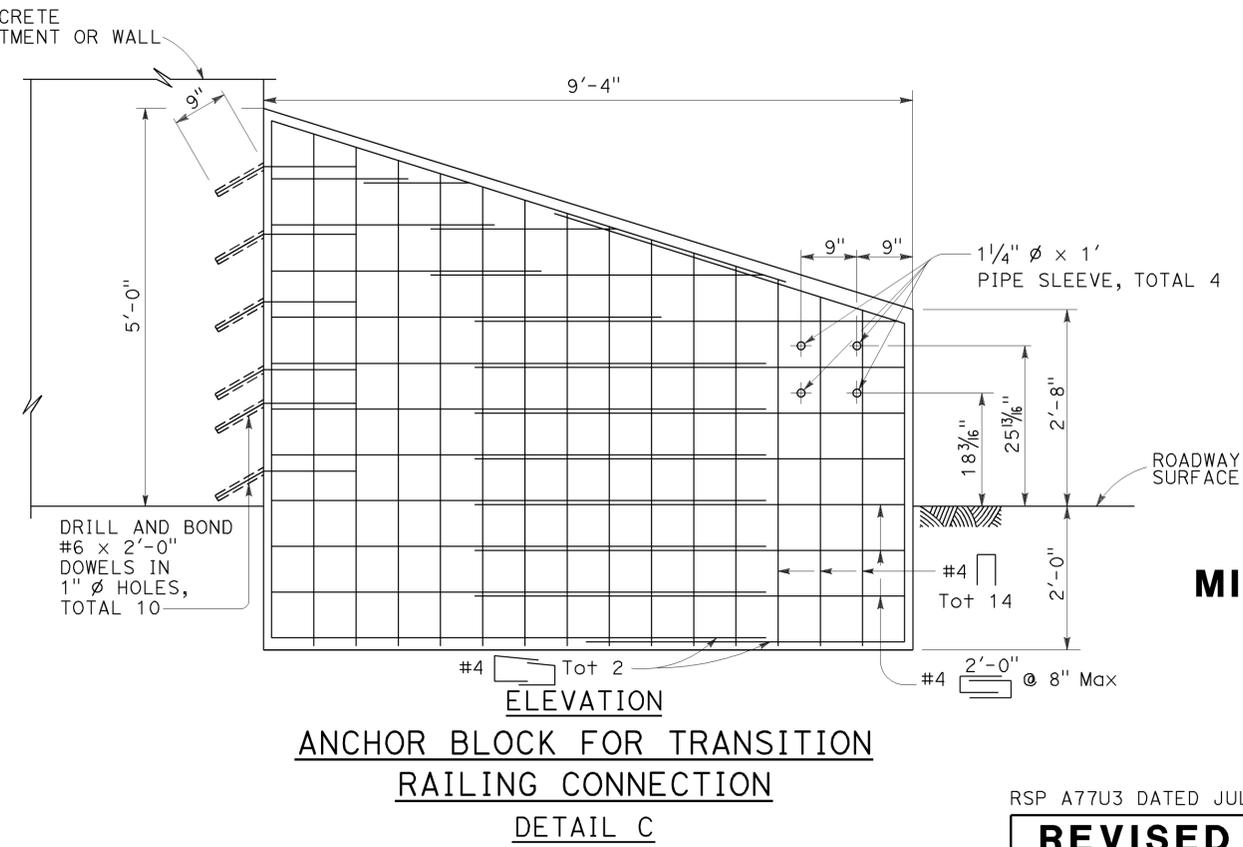
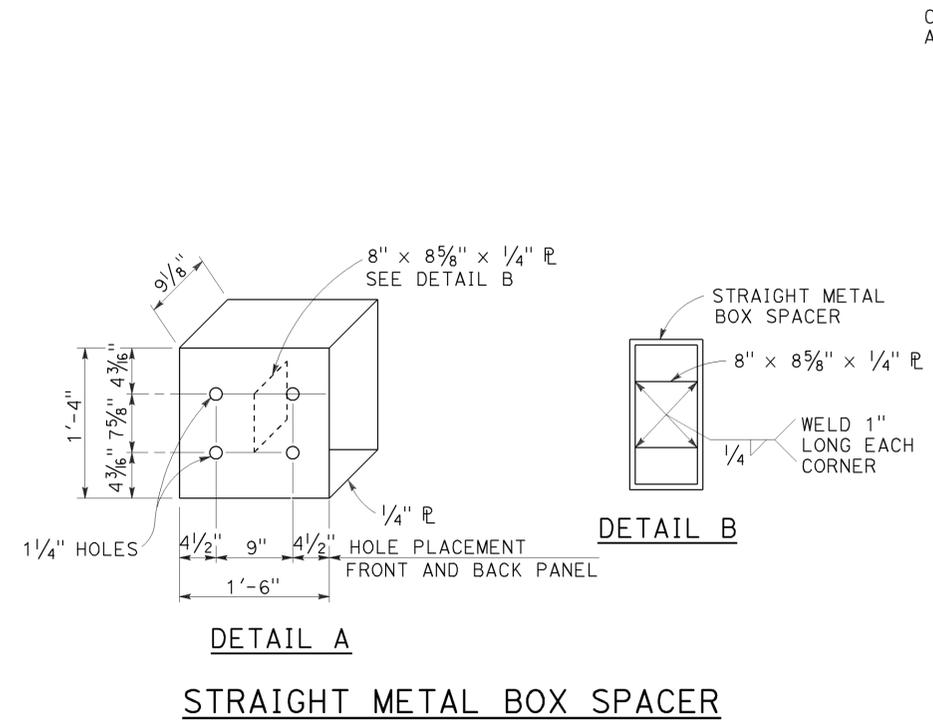
TO ACCOMPANY PLANS DATED 6-22-15



NOTES:

1. These connection details apply to abutments and walls.
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 anchor block.
4. For typical use of Connection Details DD, see Layout Types 12A and 12B on Revised Standard Plan RSP A77Q1 and Layout Types 12C and 12D on Revised Standard Plan RSP A77Q2.
5. For typical use of Connection Detail EE, see Layout Type 12D on Revised Standard Plan RSP A77Q2 and Layout Type 12DD on Revised Standard Plan RSP A77Q5.

MIDWEST GUARDRAIL SYSTEM CONNECTION TO ABUTMENT OR WALL



MIDWEST GUARDRAIL SYSTEM CONNECTIONS TO ABUTMENTS AND WALLS

NO SCALE

RSP A77U3 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77U3

2010 REVISED STANDARD PLAN RSP A77U3

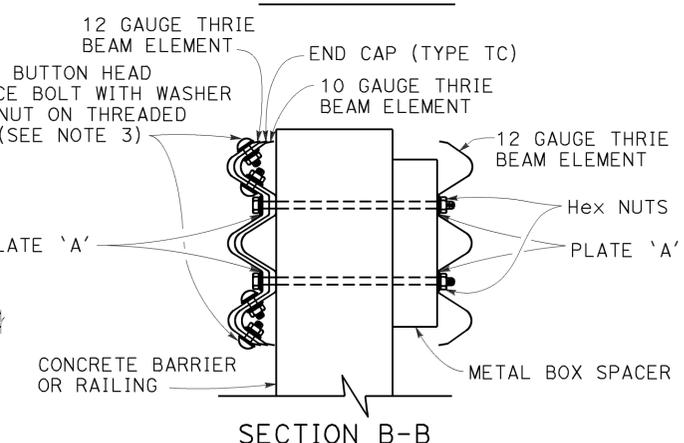
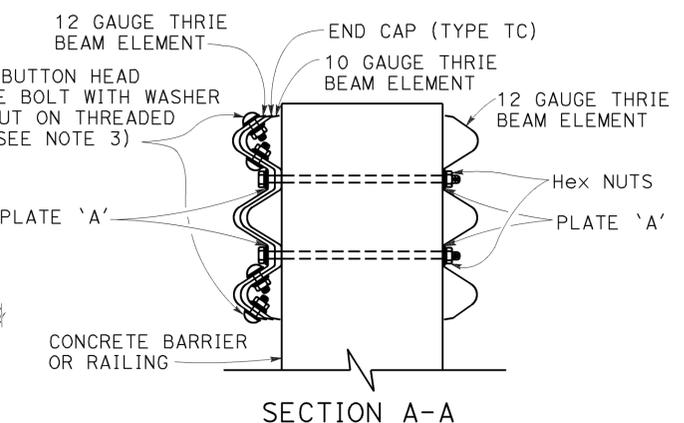
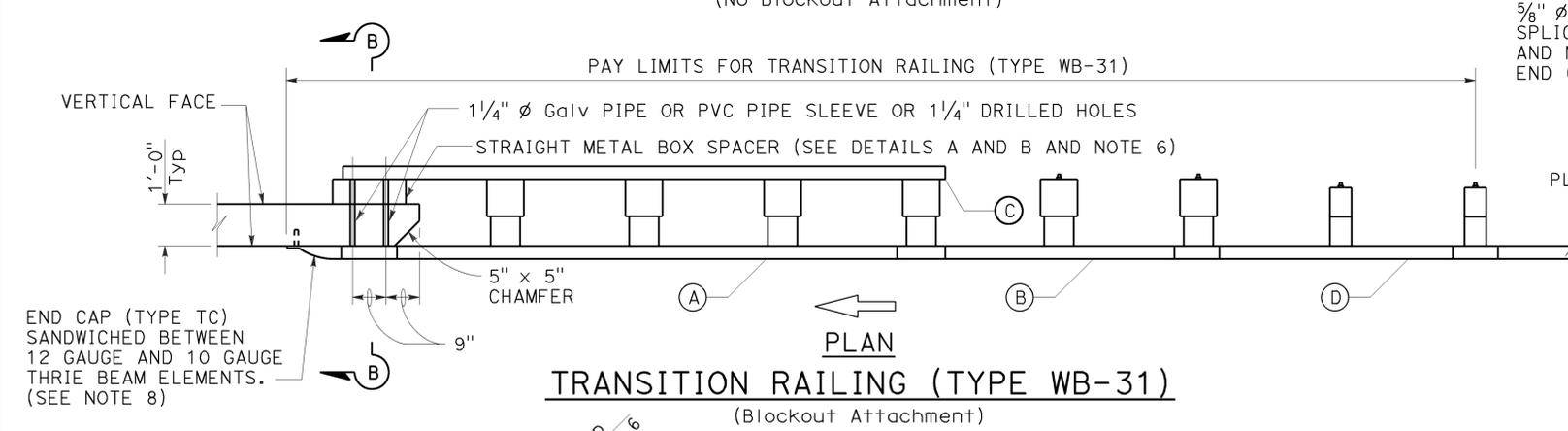
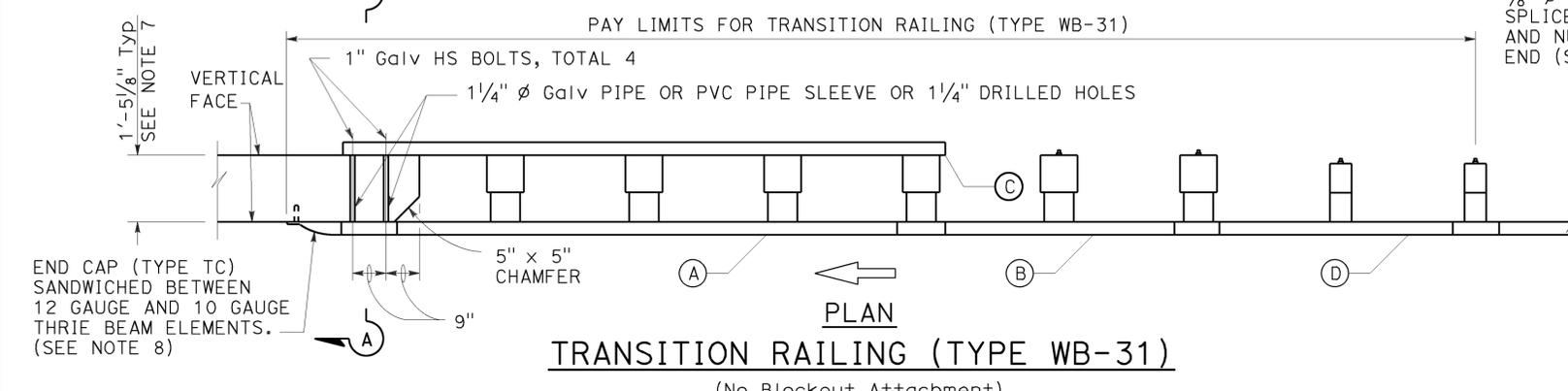
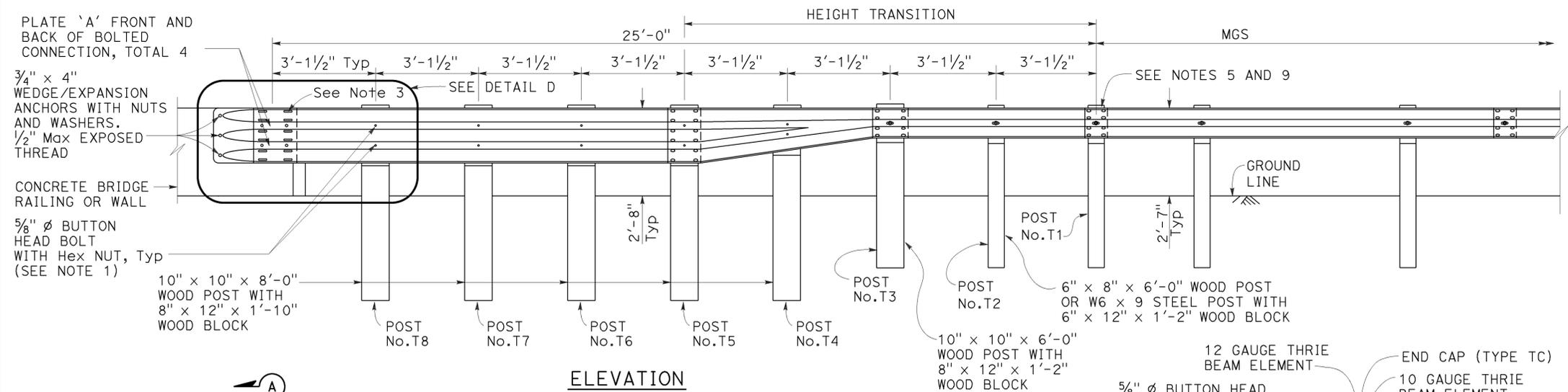
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	53	67

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

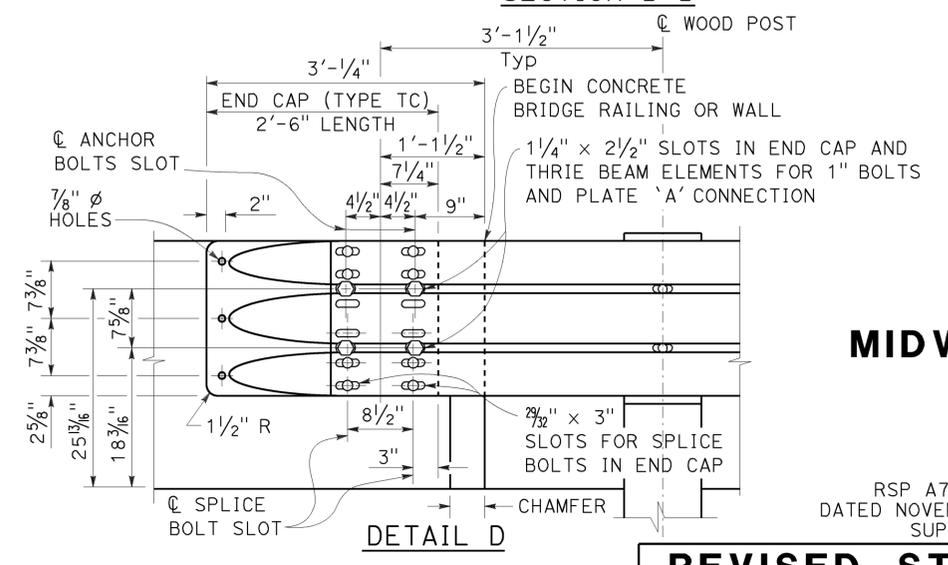
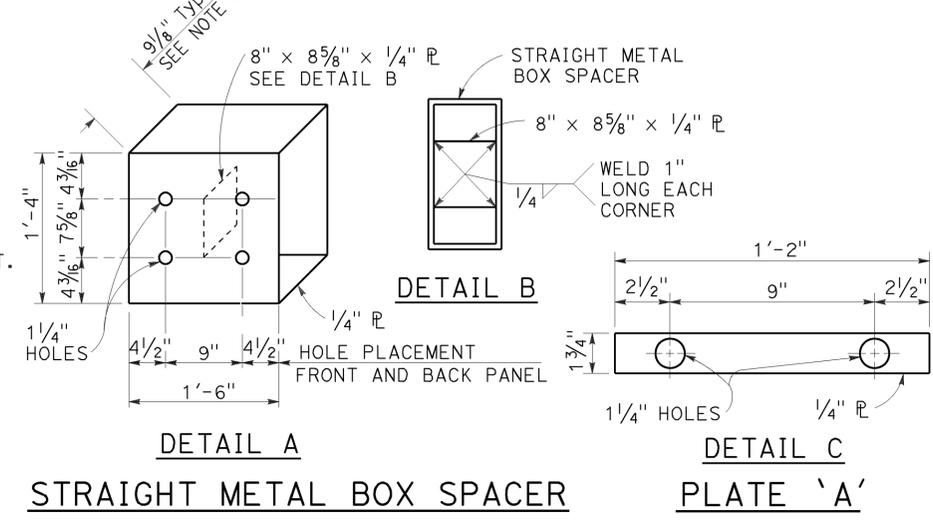
January 23, 2015
PLANS APPROVAL DATE

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



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



- NOTES:** TO ACCOMPANY PLANS DATED 6-22-15
1. Use 5/8" ϕ Button head bolts and hex nuts for connections to posts. No washer on rail face for bolted connections to post.
 2. The nested rail elements, end cap, and "W" beam to thrie beam element may be spliced together prior to bolting the elements to the wood post and concrete barrier or railing.
 3. Exterior splice bolt holes for rail element splices at Post No. T5 and the connection to the concrete barrier or railing shall be the standard 29/32" x 1/8" slot size. Interior splice bolt holes at these locations may be increased up to 1/4" ϕ . Only the top 4 and the bottom 4 splice bolts with washers and nuts are required for rail splices at Post No. T5 and the connection to the concrete barrier or railing.
 4. The top elevation of Posts No. T2 through No. T7 shall not project more than 1" above the top elevation of the rail element.
 5. Typically, the railing connected to Transition Railing (Type WB-31) will be either standard railing section of MGS with height transition ratio of 150:1 or a Caltrans approved 31" end treatment attached to Post No. T1.
 6. The depth of the metal box spacer varies from the 9/8" to 1/2" and is dependent on the width of the concrete railing or wall. The combined dimension for the depth of the metal box spacer plus the width of railing or wall is typically 21 1/8". Where the space between the backside of the concrete railing or wall and the rear thrie beam element is less than 1 1/2", metal plates similar to Plate 'A' are to be used as spacers.
 7. Where the width of the concrete railing or wall is greater than 17 1/8", wood blocks are to be used to fill the space created between the backside of Posts No. T5 through No. T8 and the rear thrie beam element. These wood blocks shall be 8" in width and 1'-2" in length. The dimension between the front thrie beam element and the rear thrie beam element is to match the width of the concrete railing or wall.
 8. End cap may be installed over 12 gauge and 10 gauge thrie beam elements where transition railing is installed on the departure end of bridge railing.
 9. Conform standard railing section height to 31" at Post No. T1 using height transition ratio of 150:1.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
TRANSITION RAILING
(TYPE WB-31)**

NO SCALE

RSP A77U4 DATED 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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	54	67

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

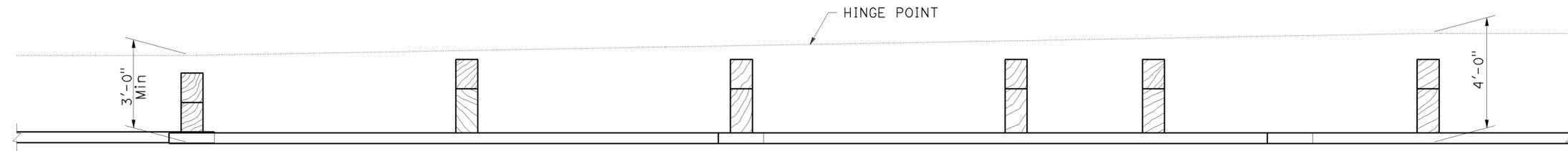
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REGISTERED PROFESSIONAL ENGINEER
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

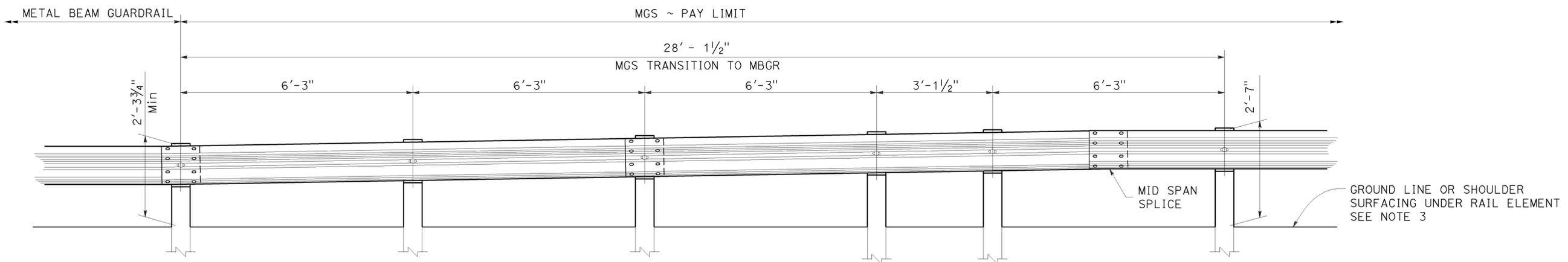
TO ACCOMPANY PLANS DATED 6-22-15

NOTES:

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



PLAN



ELEVATION

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

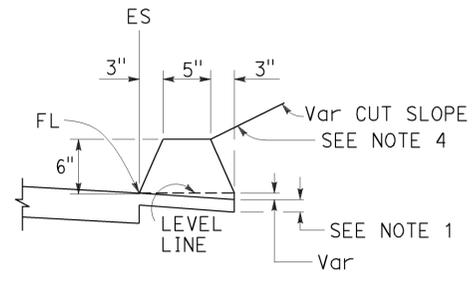
NO SCALE

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

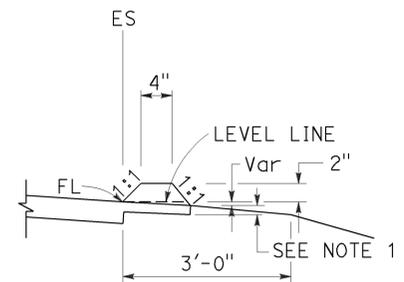
REVISED STANDARD PLAN RSP A77U5

2010 REVISED STANDARD PLAN RSP A77U5

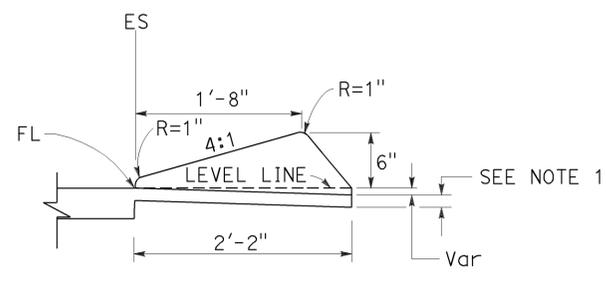
TO ACCOMPANY PLANS DATED 6-22-15



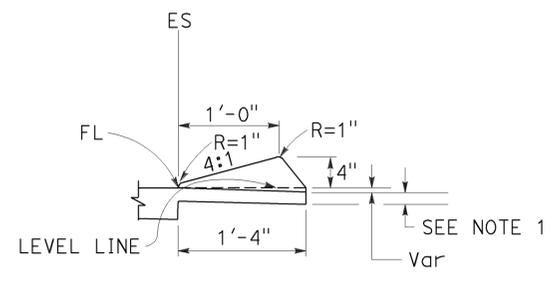
TYPE A
See Note 3



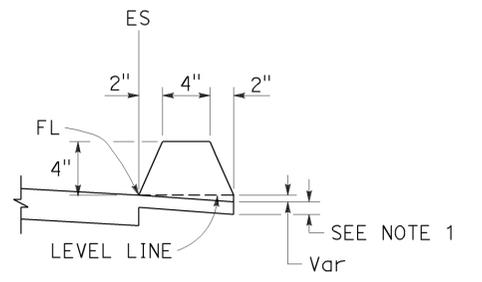
TYPE C



TYPE D

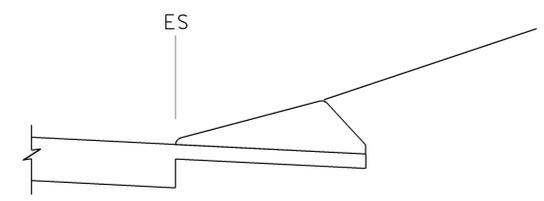


TYPE E

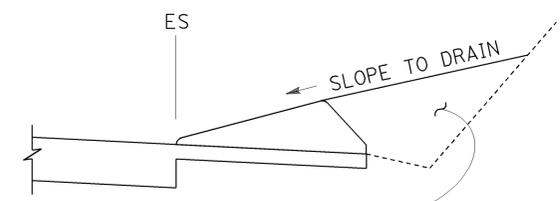


TYPE F
See Note 5

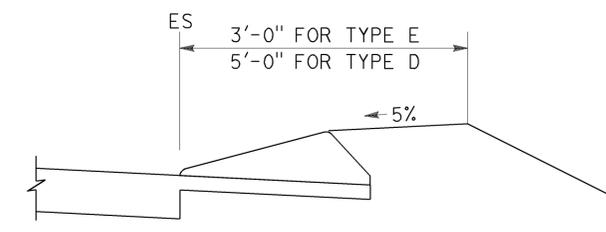
DIKES



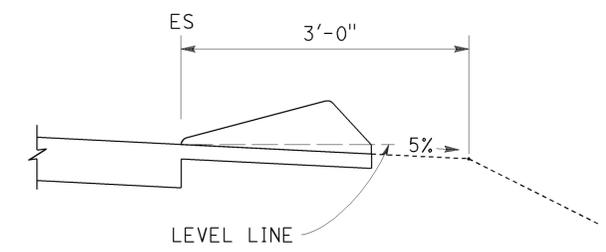
CASE C-1
Cut Slope



CASE C-2
Cut Slope



CASE F



CASE R
See Note 2

TYPE D AND E BACKFILL DETAILS

NOTES:

- 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 F dike, where dike is required with guard railing installations. See Revised Standard Plan RSP A77N4 for dike positioning details.

DIKE QUANTITIES

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

Quantities based on 5% cross slope.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

HOT MIX ASPHALT DIKES

NO SCALE

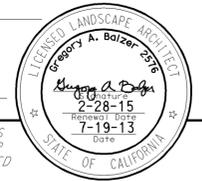
RSP A87B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN A87B
DATED MAY 20, 2011 - PAGE 120 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A87B

2010 REVISED STANDARD PLAN RSP A87B

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	56	67


 LICENSED LANDSCAPE ARCHITECT
 July 19, 2013
 PLANS APPROVAL DATE
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TO ACCOMPANY PLANS DATED 6-22-15

A

AB AGGREGATE BASE
 ABS ACRYLONITRILE-BUTADIENE-STYRENE
 AC ASPHALT CONCRETE
 ACC ARMOR-CLAD CONDUCTORS
 Adj ADJACENT/ADJUSTABLE
 AIC AUXILIARY IRRIGATION CONTROLLER
 Alt ALTERNATIVE
 AMEND AMENDMENT
 ARV AIR RELEASE VALVE
 AUTO AUTOMATIC
 AUX AUXILIARY
 AVB ATMOSPHERIC VACUUM BREAKER

B

B&B BALLED AND BURLAPPED
 B/B BRASS/BRONZE
 B/B/PL BRASS/BRONZE/PLASTIC
 B/PL BRASS/PLASTIC
 BFM BONDED FIBER MATRIX
 Bit Ctd BITUMINOUS COATED
 BP BOOSTER PUMP
 BPA BACKFLOW PREVENTER ASSEMBLY
 BPE BACKFLOW PREVENTER ENCLOSURE
 BV BALL VALVE

C

C CONDUIT
 CAP CORRUGATED ALUMINUM PIPE
 CARV COMBINATION AIR RELEASE VALVE
 CB COUPLING BAND
 CCA CAM COUPLER ASSEMBLY
 CEC CONTROLLER ENCLOSURE CABINET
 CHDPE CORRUGATED HIGH DENSITY POLYETHYLENE
 CL CHAIN LINK
 CNC CONTROL AND NEUTRAL CONDUCTORS
 Conc CONCRETE
 CP COPPER PIPE
 CS COMPOST SOCK
 CSP CORRUGATED STEEL PIPE
 CST CENTER STRIP
 CV CHECK VALVE

D

Dia DIAMETER
 DIP DUCTILE IRON PIPE
 DIT DRIP IRRIGATION TUBING
 DG DECOMPOSED GRANITE
 DN DIAMETER NOMINAL
 DVA DRIP VALVE ASSEMBLY

E

EC EROSION CONTROL
 ECTC EROSION CONTROL TECHNOLOGY COUNCIL
 ElecT ELECTRIC/ELECTRICAL
 Elev ELEVATION
 ELL ELBOW
 ENCL ENCLOSURE
 EP EDGE OF PAVEMENT
 ES EDGE OF SHOULDER
 EST END STRIP
 ESTB ESTABLISHMENT
 ETW EDGE OF TRAVELED WAY

F

F FULL CIRCLE
 F/P FULL/PART CIRCLE
 FCV FLOW CONTROL VALVE
 FERT FERTILIZER
 FG FINISHED GRADE
 FH FLEXIBLE HOSE
 FIPT FEMALE IRON PIPE THREAD
 FIS FERTILIZER INJECTOR SYSTEM
 FL FLOW LINE
 FR FIBER ROLL
 FS FLOW SENSOR
 FSC FLOW SENSOR CABLE
 FV FLUSH VALVE

G

Galv GALVANIZED
 GARV GARDEN VALVE
 GARVA GARDEN VALVE ASSEMBLY
 GM GRAVEL MULCH
 GPH GALLONS PER HOUR
 GPM GALLONS PER MINUTE
 GSP GALVANIZED STEEL PIPE
 GV GATE VALVE

H

H HALF CIRCLE
 HDPE HIGH DENSITY POLYETHYLENE
 HP HORSEPOWER/HINGE POINT
 HPL HIGH PRESSURE LINE
 Hwy HIGHWAY

I

IC IRRIGATION CONTROLLER
 ICC IRRIGATION CONTROLLER(S)
 IN CONTROLLER ENCLOSURE CABINET
 ID INSIDE DIAMETER
 IFS IRRIGATION FILTRATION SYSTEM
 IPS IRON PIPE SIZE
 IPT IRON PIPE THREAD
 Irr IRRIGATION

L

L LENGTH

M

Max MAXIMUM
 MBGR METAL BEAM GUARD RAILING
 MCV MANUAL CONTROL VALVE
 MIC MASTER IRRIGATION CONTROLLER
 Min MINIMUM
 MIPT MALE IRON PIPE THREAD
 Misc MISCELLANEOUS
 MtI MATERIAL
 MVP MAINTENANCE VEHICLE PULLOUT

N

NCN NO COMMON NAME
 NL NOZZLE LINE
 No. NUMBER
 NPT NATIONAL PIPE THREAD

O

O/C ON CENTER
 OD OUTSIDE DIAMETER
 OL OVERLAP

P

P PART CIRCLE
 PB PULL BOX
 PCC PORTLAND CEMENT CONCRETE
 PE POLYETHYLENE
 Pkt+ PACKET
 PL PLASTIC
 PLS PURE LIVE SEED
 PLT PLANT/PLANTING
 PLT ESTB PLANT ESTABLISHMENT
 PM POST MILE
 PR PRESSURE RATED
 PRLV PRESSURE RELIEF VALVE
 PRV PRESSURE REGULATING VALVE
 PVC POLYVINYL CHLORIDE
 Pvm+ PAVEMENT

Q

Q QUARTER CIRCLE
 QCV QUICK COUPLING VALVE

NOTE:
 For additional abbreviations,
 see Standard Plans A10A and A10B.

R

R RADIUS
 RCP REINFORCED CONCRETE PIPE
 RCV REMOTE CONTROL VALVE
 RCVM REMOTE CONTROL VALVE (MASTER)
 RCVMF REMOTE CONTROL VALVE (MASTER) W/FLOW SENSOR
 RCVP REMOTE CONTROL VALVE W/PRESSURE REGULATOR
 RCW RECYCLED WATER
 RECP ROLLED EROSION CONTROL PRODUCT
 REQ REQUIRED
 RICS REMOTE IRRIGATION CONTROL SYSTEM
 R/W RIGHT OF WAY

S

S SLIP
 SCH SCHEDULE
 SF STATE-FURNISHED
 Shld SHOULDER
 Sq SQUARE
 SST SIDE STRIP
 Sta STATION
 Std STANDARD
 SW SIDEWALK/SOUND WALL

T

T THIRD CIRCLE/THREAD
 TLS TRUCK LOADING STANDPIPE
 TQ THREE QUARTER CIRCLE
 TRM TURF REINFORCEMENT MAT
 TT TWO-THIRDS CIRCLE
 TWSA TREE WELL SPRINKLER ASSEMBLY
 Typ TYPICAL

U

UG UNDERGROUND

W

W WIDTH
 W/ WITH
 WM WATER METER
 WS WYE STRAINER
 WSA WYE STRAINER ASSEMBLY
 WSP WELDED STEEL PIPE
 WWM WELDED WIRE MESH

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**LANDSCAPE AND
 EROSION CONTROL ABBREVIATIONS**
 NO SCALE

RSP H1 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN H1
 DATED MAY 20, 2011 - PAGE 218 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP H1

2010 REVISED STANDARD PLAN RSP H1

TO ACCOMPANY PLANS DATED 6-22-15

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	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

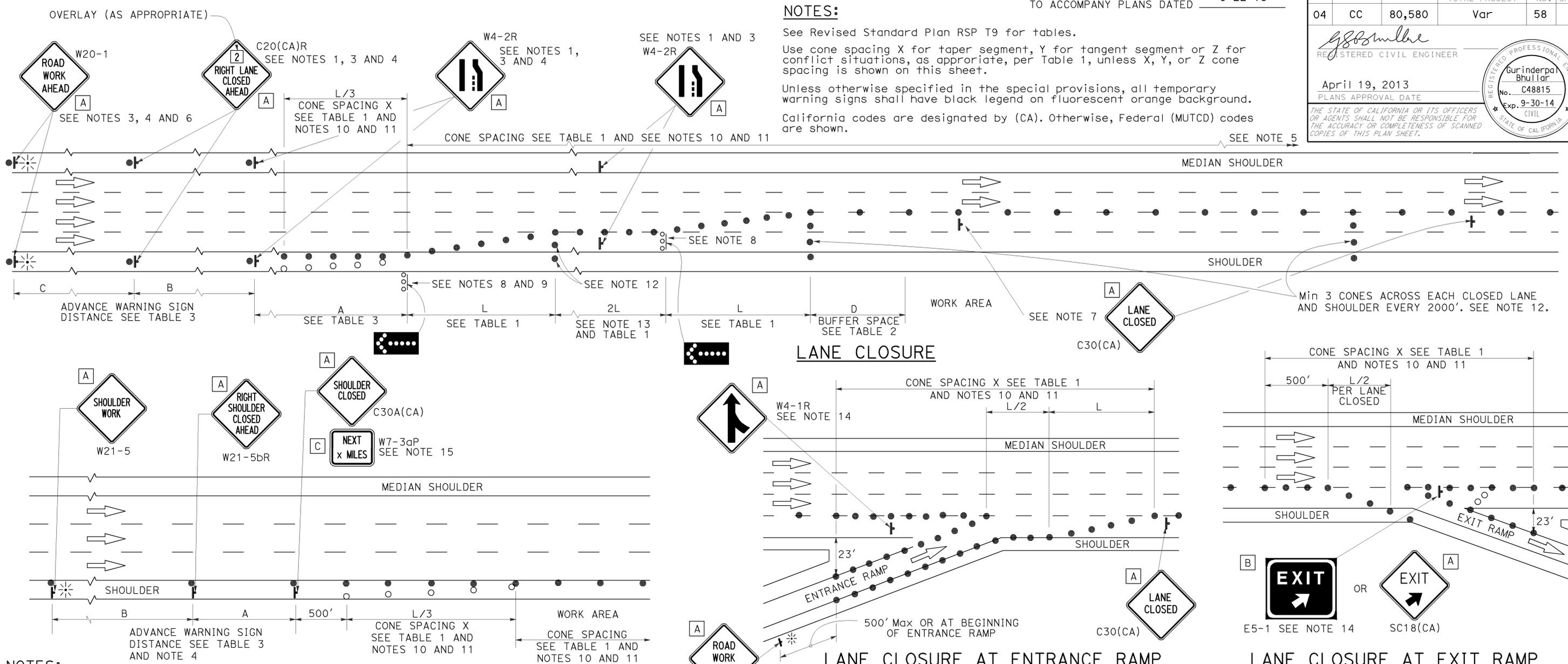
RSP T9 DATED JULY 19, 2013 SUPERSEDES RSP T9 DATED APRIL 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP T9

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	58	67

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

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



- NOTES:**
- 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 closures.
 - Duplicate sign installations are not required:
 - On opposite shoulder if at least one-half of the available lanes remain open to traffic.
 - In the median if the width of the median shoulder is less than 8' and the outside lanes are to be closed.
 - Each advance warning sign on each side of the roadway shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
 - A G20-2 "END ROAD WORK" sign, with minimum size of 48" x 24" as appropriate, shall be placed at the end of the lane closure unless the end of work area is obvious or ends within a larger project's limits.

- SHOULDER CLOSURE**
- 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) "NEXT _____ MILES" sign for the first advance warning sign.
 - Place a C30(CA) sign every 2000' throughout length of lane closure.
 - One flashing arrow sign for each lane closed. The flashing arrow signs shall be Type I.
 - A minimum 1500' of sight distance shall be provided where possible for vehicles approaching the first flashing arrow sign. Lane closures shall not begin at top of crest vertical curve or on a horizontal curve.
 - 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.

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

LEGEND

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

SIGN PANEL SIZE (Min)

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

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

REVISED STANDARD PLAN RSP T10

2010 REVISED STANDARD PLAN RSP T10

TYPICAL RAMP CLOSURES

SIGN PANEL SIZE (Min)

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

LEGEND

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

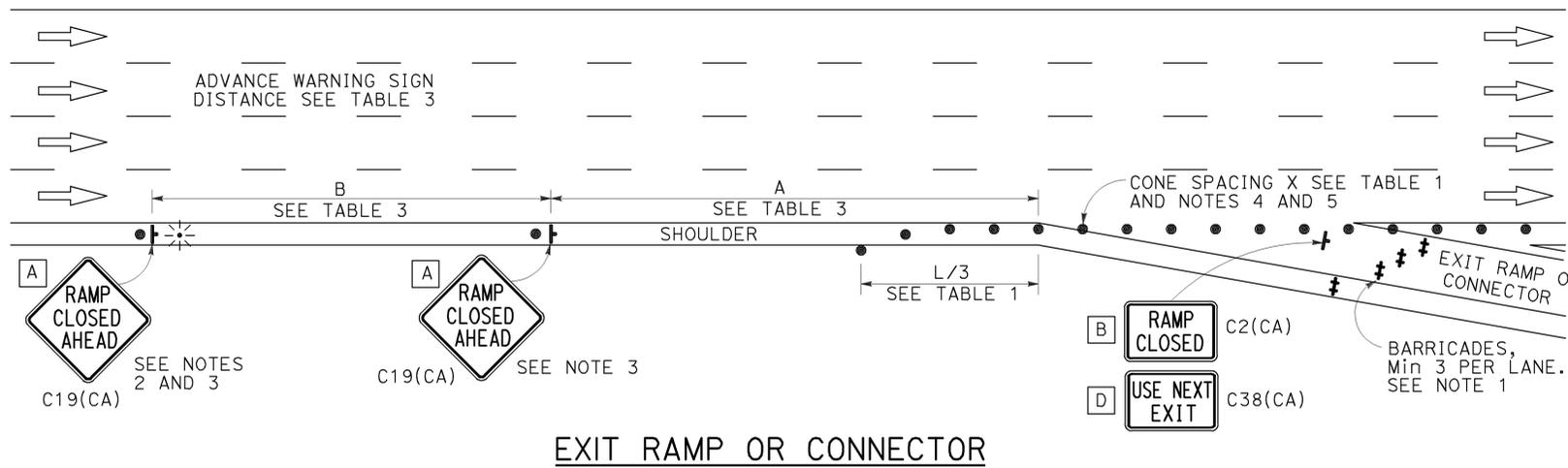
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	59	67

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

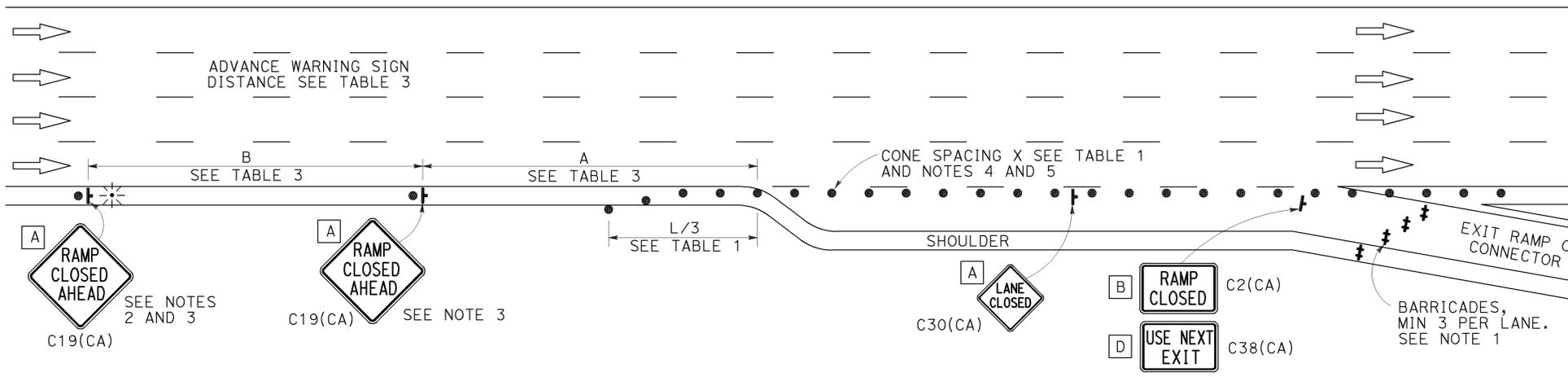
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REGISTERED PROFESSIONAL ENGINEER
 Gurinderpal Bhullar
 No. C48815
 Exp. 9-30-14
 CIVIL
 STATE OF CALIFORNIA

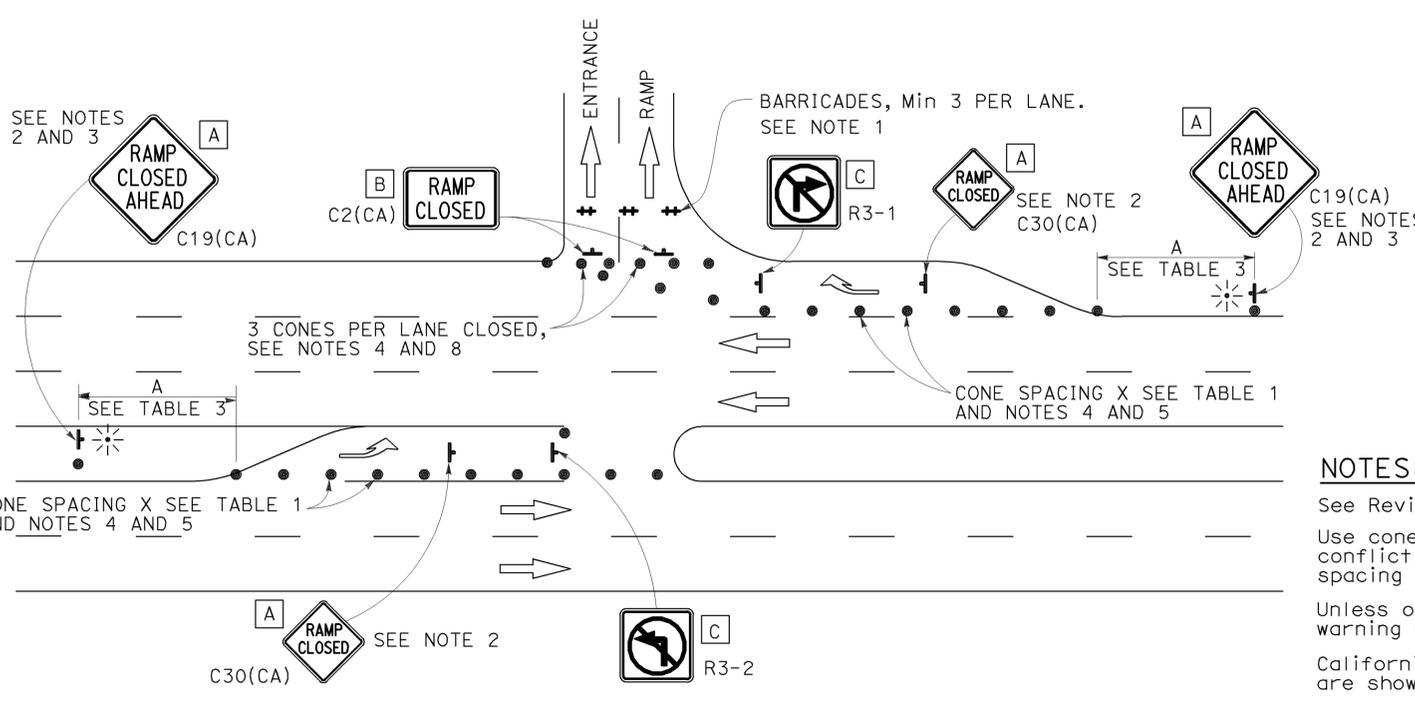
TO ACCOMPANY PLANS DATED 6-22-15



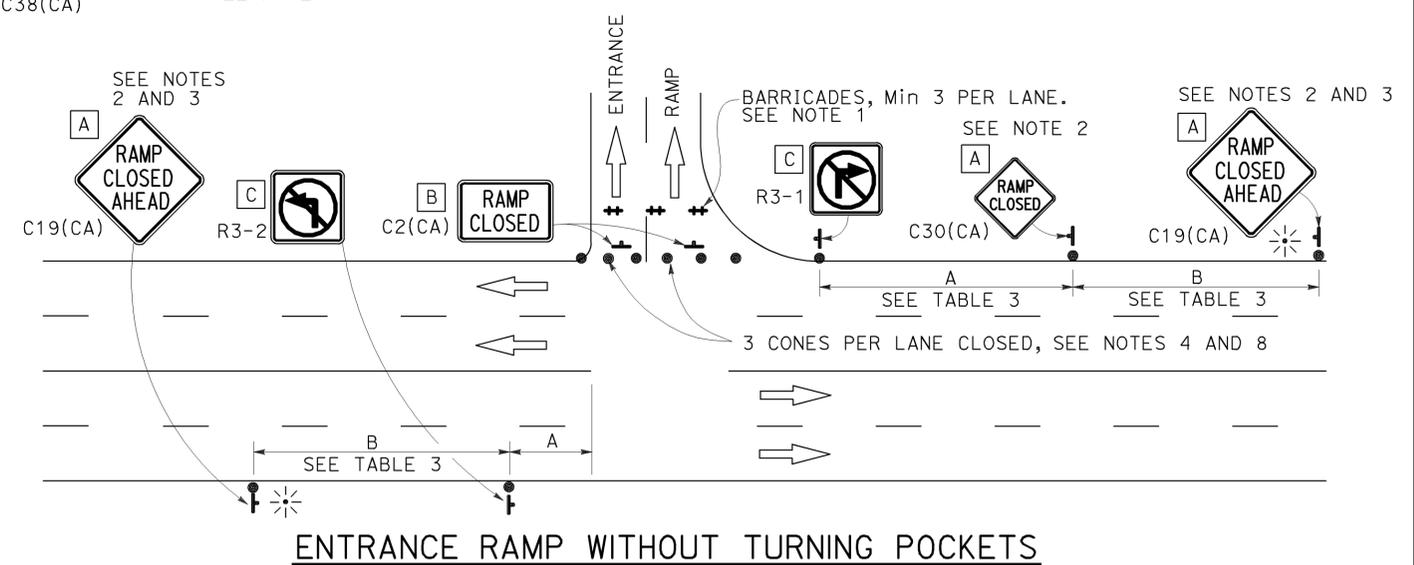
EXIT RAMP OR CONNECTOR



EXIT RAMP OR CONNECTOR WITH ADDITIONAL LANE



ENTRANCE RAMP WITH TURNING POCKETS



ENTRANCE RAMP WITHOUT TURNING POCKETS

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:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SYSTEM FOR RAMP CLOSURE

NO SCALE

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

REVISED STANDARD PLAN RSP T14

2010 REVISED STANDARD PLAN RSP T14

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	60	67

REGISTERED CIVIL ENGINEER DATE 3-26-15

PLANS APPROVAL DATE 6-22-15

REGISTERED PROFESSIONAL ENGINEER
TAMARA S. MARCHENKO
No. C76837
Exp. 12/31/16
CIVIL
STATE OF CALIFORNIA

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LOCATION TABLE OF TRANSITIONS ROUTE

80, CC-80										
LOCATION No.	DIRECTION	POST MILE	MAINLINE OR RAMP	LEFT OR RIGHT SHOULDER MEDIAN	BARRIER TYPE	OTHER STRUCTURES	DESCRIPTION	BRIDGE NUMBER	CONNECTION END FOR TRAFFIC	QUANTITIES
										CONCRETE BARRIER TRANSITION
										LF
32	EB	1.99	RAMP	RIGHT	TYPE 27A	RETAINING WALL	CUTTING BLVD ONRAMP		APPROACH	11
38	EB	2.82	MAIN	RIGHT	TYPE 27R		BARRETT AVE UC	28-0083	APPROACH	20
43	WB	2.99	RAMP	RIGHT	TYPE 1		WB OFF TO SAN PABLO	28-0084K	APPROACH	4
46	WB	6.74	MAIN	LEFT	TYPE 50D		RICHMOND PKWY OC	28-0308	APPROACH	13
48	EB	7.60	MAIN	RIGHT	TYPE 50D		APPIAN WAY OC	28-146	APPROACH	11
49	EB	7.73	RAMP	RIGHT	TYPE 27SV (Mod)	SOUNDWALL	EB ON FR NB APPIAN WAY		APPROACH	13
580, CC-580										
23	WB	6.22	MAIN	RIGHT	STEEL BARRIER W/STEEL CURB		MAINLINE R5.655			24
24	WB	6.22	MAIN	LEFT	STEEL BARRIER W/STEEL CURB		MAINLINE R5.655			24

INDEX TO PLANS

Sheet No.	Title
1	GENERAL PLANS
2	LOCATIONS No. 23, 24
3	LOCATION No. 32
4	LOCATION No. 38
5	LOCATION No. 43
6	LOCATION No. 46
7	LOCATION No. 48
8	LOCATION No. 49

GENERAL DESIGN DATA

DESIGN:
AASHTO LRFD Bridge Design Specifications, 6th Edition with California Amendments

IMPACT LOAD:
Vehicular collision force
F_t = 54 kips on barrier

REINFORCED CONCRETE:
f_y = 60 ksi
f'_c = 3.6 ksi
n = 8

STRUCTURAL STEEL:
f_y = ASTM A709 Grade 50

STANDARD PLANS DATED 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 A77U2	MIDWEST GUARDRAIL SYSTEM CONNECTIONS TO BRIDGE RAILINGS WITHOUT SIDEWALKS DETAILS No. 2
RSP A77U4	MIDWEST GUARDRAIL SYSTEM TRANSITION RAILING (TYPE WB-31)
B0-3	BRIDGE DETAILS

GENERAL NOTE:

- See "ROADWAY PLANS" for work locations and midwest guardrail system.

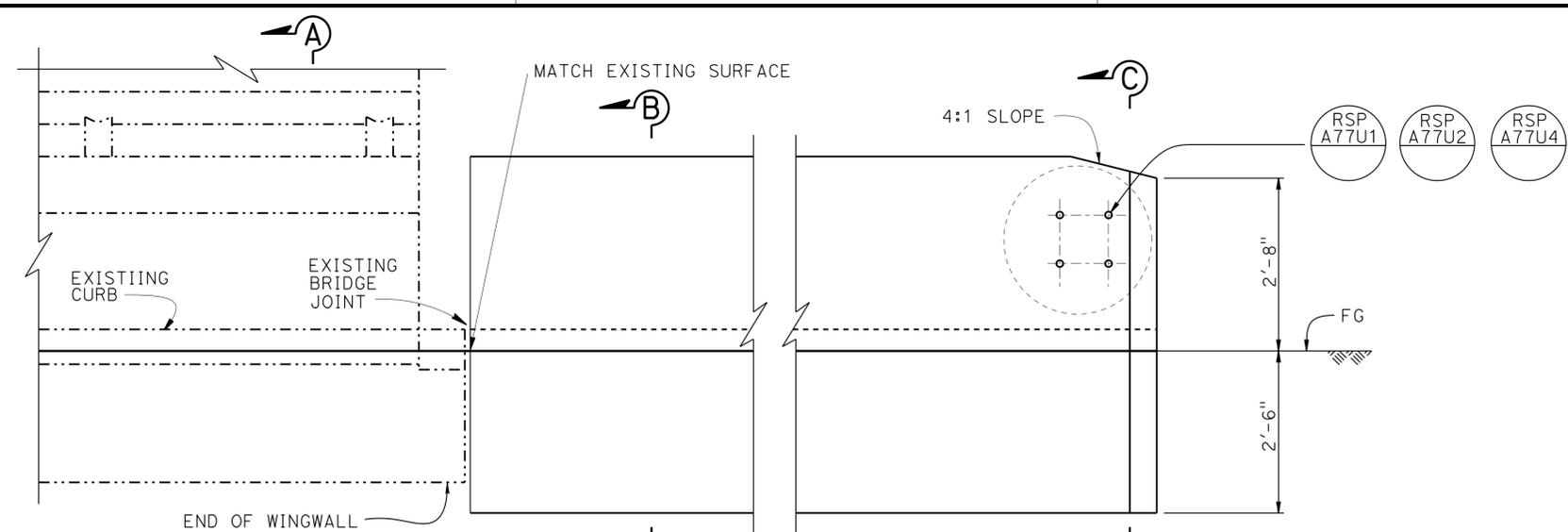
QUANTITIES
CONCRETE BARRIER (TRANSITION) 120 LF

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

DAVID NEUMANN DESIGN ENGINEER	DESIGN	BY TAMARA MARCHENKO	CHECKED J. MAGANA / L. WARREN	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN SPECIAL DESIGN BRANCH B	BRIDGE NO.	CONCRETE BARRIER TRANSITION GENERAL PLAN		
	DETAILS	BY MARIA CLEVERLEY	CHECKED TAMARA MARCHENKO	LAYOUT	BY MARIA CLEVERLEY			CHECKED		Varies	
	QUANTITIES	BY	CHECKED	SPECIFICATIONS	BY DAVID KLEIN			PLANS AND SPECS COMPARED DAVID KLEIN		Varies	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS						0 1 2 3	UNIT: 3619 PROJECT NUMBER & PHASE: 0414000245	CONTRACT NO.: 04-2g4411	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 1 OF 8

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	61	67
			DATE	3-26-15	
			REGISTERED CIVIL ENGINEER	TAMARA S. MARCHENKO	
			PLANS APPROVAL DATE	6-22-15	
			No.	C76837	
			Exp.	12/31/16	
			CIVIL	STATE OF CALIFORNIA	

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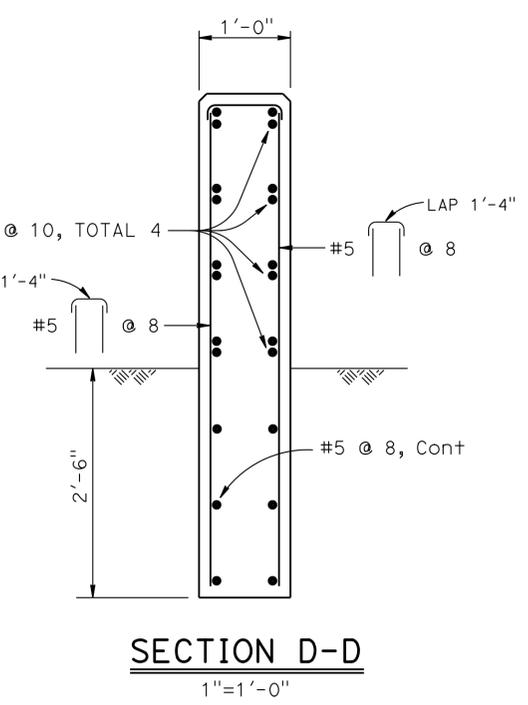
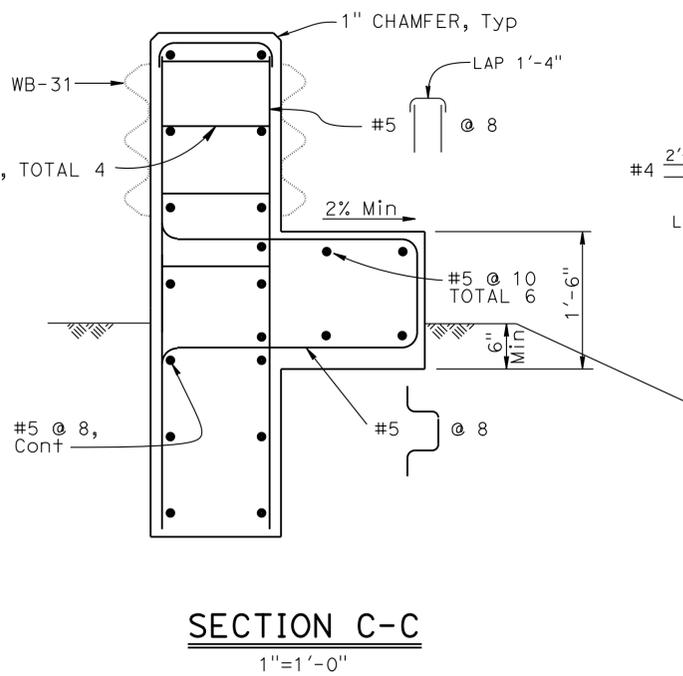
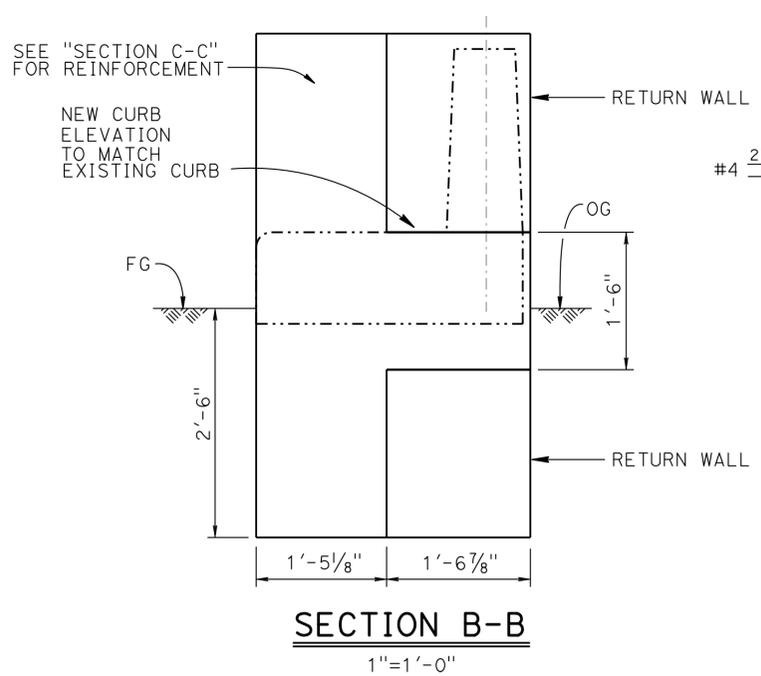
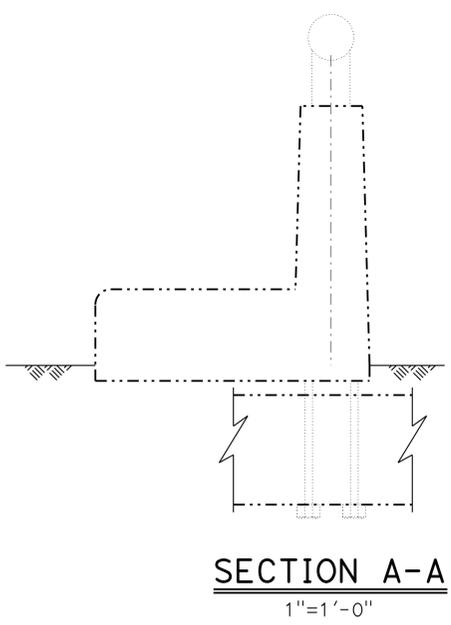
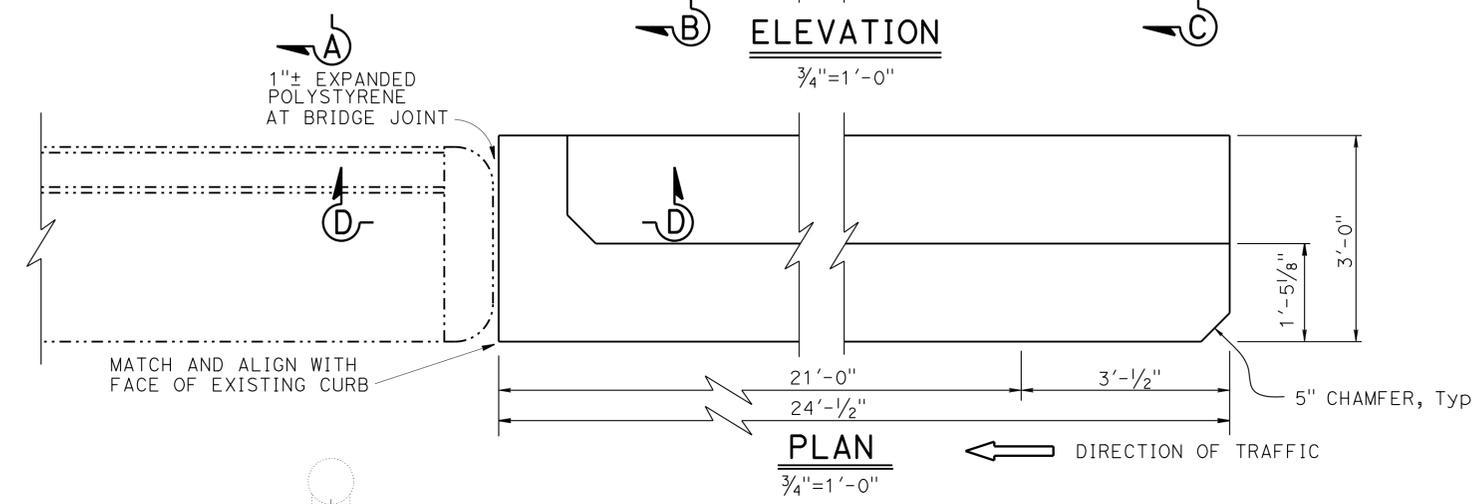


LEGEND:

- EXISTING STRUCTURE
- NEW CONSTRUCTION

NOTES:

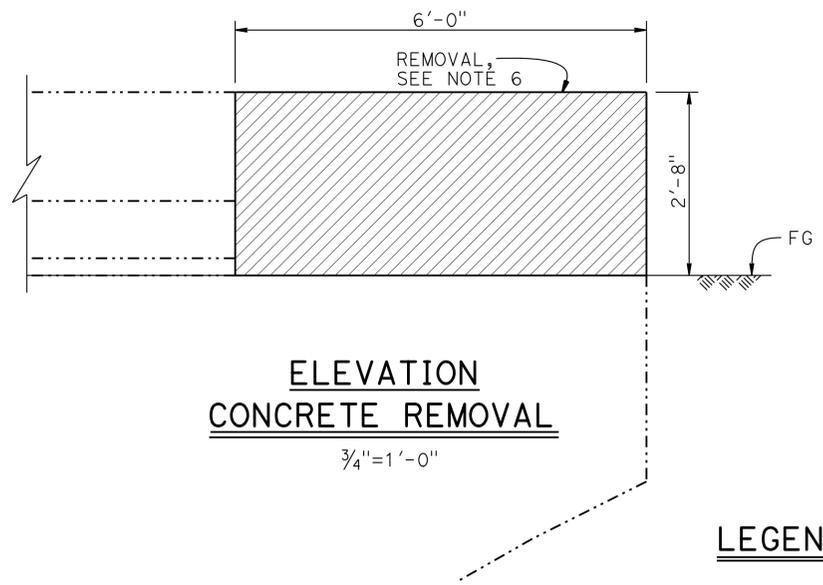
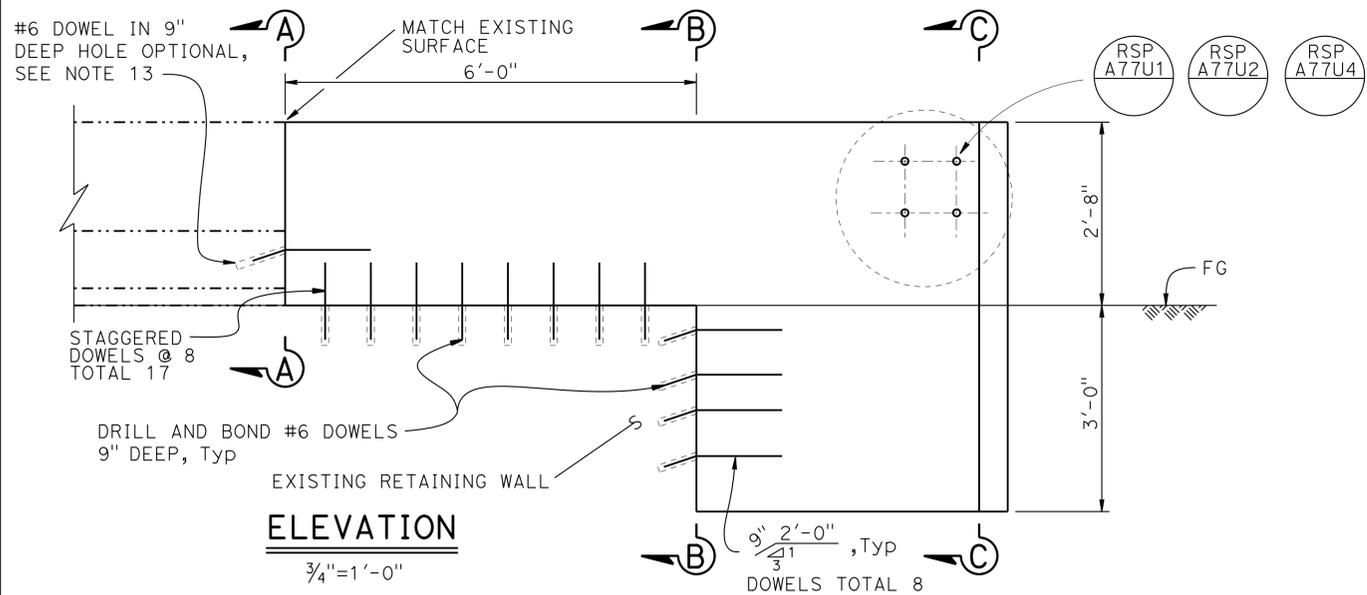
1. ALIGN CONCRETE BARRIER TRANSITION WITH BARRIERS CURVATURE IF NECESSARY. SEE ROAD PLANS.
2. EXISTING BARRIER HEIGHTS VARY. WHERE EXISTING BARRIER HEIGHT IS MORE THAN 2'-8", TRANSITION BARRIER HEIGHT TO 2'-8" @ 4:1 SLOPE.
3. CONCRETE COVER TO REINFORCING STEEL IN BARRIER TO BE 1", EXCEPT AS NOTED. LONGITUDINAL REINFORCEMENT TO STOP AT ALL EXPANSION JOINTS.
4. PROTECT EXISTING ELECTRICAL, DRAINAGE AND OTHER EXISTING FEATURES.
5. ALL STEEL REINFORCEMENT MUST BE EPOXY-COATED.
6. REINFORCEMENT BETWEEN THE BARRIER TRANSITION & RETURN WALL IS TO BE FABRICATED CONTINUOUS & BENT OR SPLICED IN THE FIELD.



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

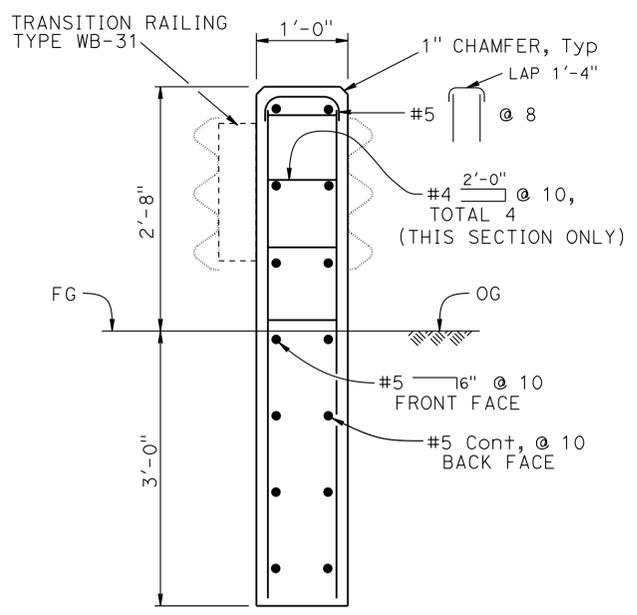
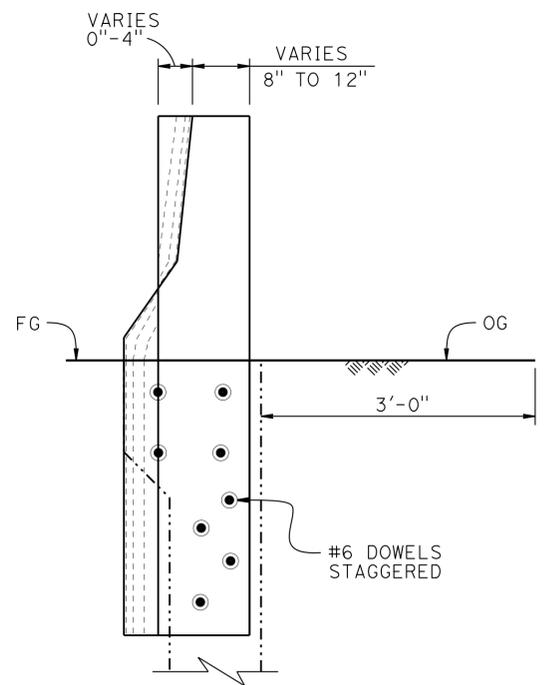
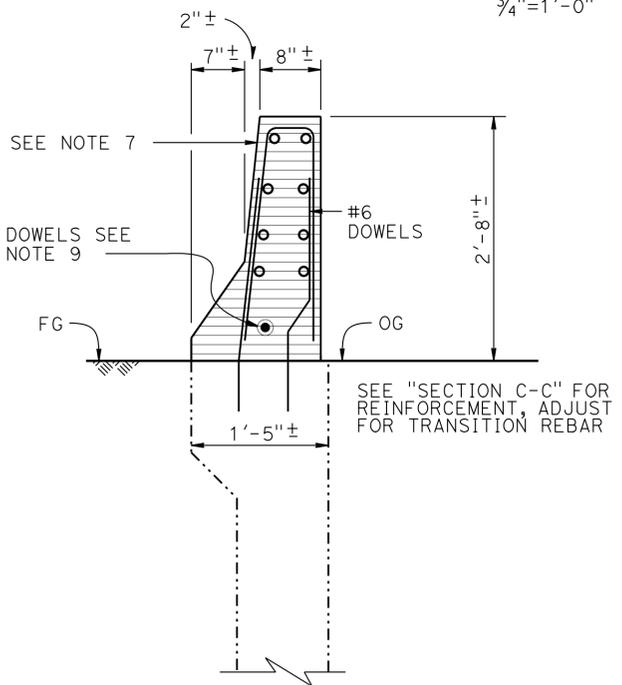
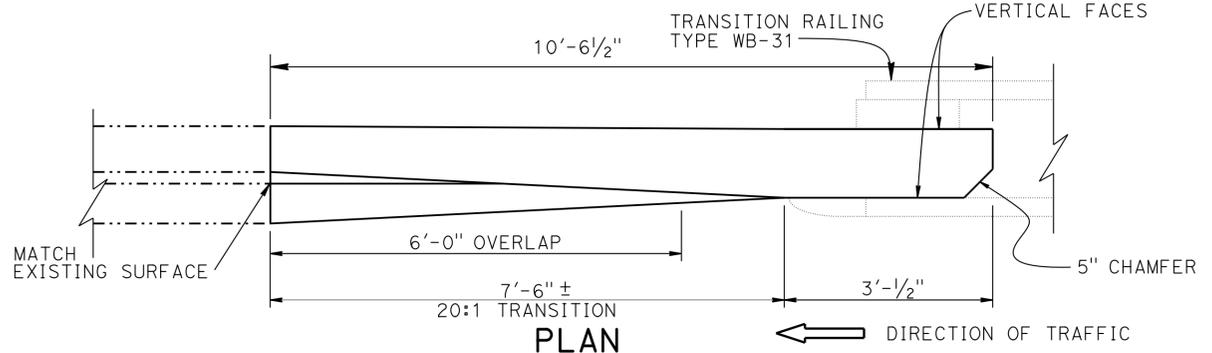
BRANCH CHIEF DAVID NEUMANN	DESIGN BY TAMARA MARCHENKO	CHECKED J. MAGANA / L. WARREN	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN SPECIAL DESIGN BRANCH B	BRIDGE NO. Varies	CONCRETE BARRIER TRANSITION
	DETAILS BY MARIA CLEVERLEY	CHECKED TAMARA MARCHENKO			POST MILE Varies	
	QUANTITIES BY TAMARA MARCHENKO	CHECKED L. WARREN				

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	62	67
			3-26-15	REGISTERED CIVIL ENGINEER DATE	
			6-22-15	PLANS APPROVAL DATE	
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LEGEND:

- EXISTING STRUCTURE
- NEW CONSTRUCTION
- ▨ CONCRETE REMOVAL
- ▨ NEW CONCRETE WITH EXISTING REINFORCEMENT INTACT
- EXISTING REINFORCEMENT
- NEW REINFORCEMENT
- DRILL AND BOND DOWEL



NOTES:

1. ALIGN CONCRETE BARRIER TRANSITION WITH BARRIERS CURVATURE IF NECESSARY. SEE ROAD PLANS.
2. EXISTING BARRIER HEIGHTS VARY. WHERE EXISTING BARRIER HEIGHT IS MORE THAN 2'-8", TRANSITION BARRIER HEIGHT TO 2'-8" @ 4:1 SLOPE.
3. CONCRETE COVER TO REINFORCING STEEL IN BARRIER TO BE 1", EXCEPT AS NOTED. LONGITUDINAL REINFORCEMENT TO STOP AT ALL EXPANSION JOINTS.
4. MINIMUM CONCRETE EDGE DISTANCE FOR DRILL AND BOND DOWELS MUST BE 4", EXCEPT AS NOTED. MAINTAIN 4" CLR MIN AROUND EACH DOWEL.
5. ROUGHEN FACES OF BARRIER THAT WILL BE IN CONTACT WITH NEW CONCRETE TO A 1/4" AMPLITUDE.
6. REMOVE CONCRETE AS SHOWN. EXISTING REINFORCEMENT TO REMAIN IN PLACE.
7. OVERLAP EXISTING HORIZONTAL REINFORCEMENT WITH NEW #5 BARS. HORIZONTAL REINFORCEMENT FROM SECTION A-A MUST CONTINUE THROUGH TRANSITION SECTIONS.
8. PROTECT EXISTING ELECTRICAL AND DRAINAGE SYSTEM.
9. IF LESS THAN 3 BARS OF EXISTING HORIZONTAL REINFORCEMENT TO REMAIN AFTER CONCRETE REMOVAL, ADD 2#6 DOWELS 9" DEEP. OVERLAP THE DOWELS WITH NEW REINFORCEMENT.

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

BRANCH CHIEF **DAVID NEUMANN**

DESIGN	BY TAMARA MARCHENKO	CHECKED J. MAGANA / L. WARREN
DETAILS	BY MARIA CLEVERLEY	CHECKED TAMARA MARCHENKO
QUANTITIES	BY TAMARA MARCHENKO	CHECKED L. WARREN

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN

B

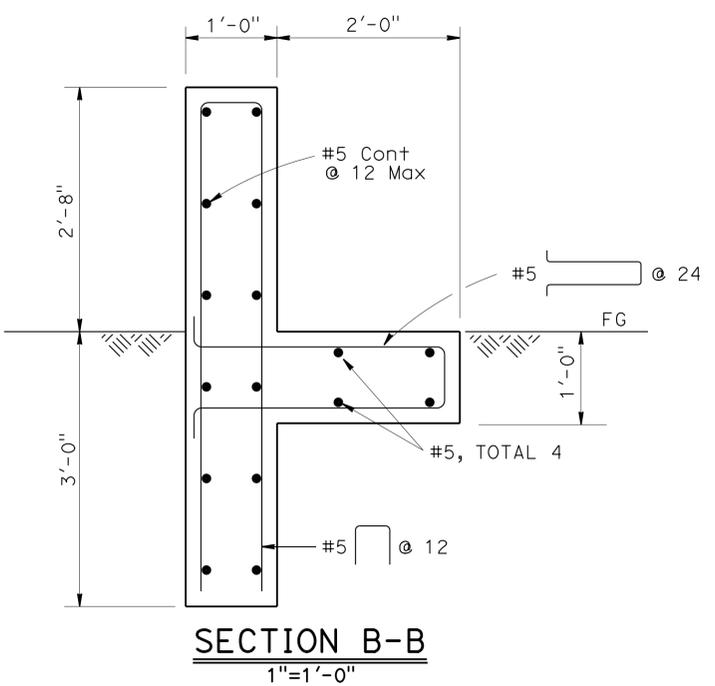
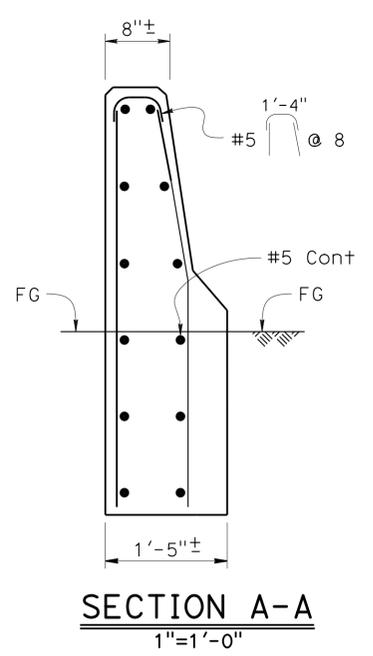
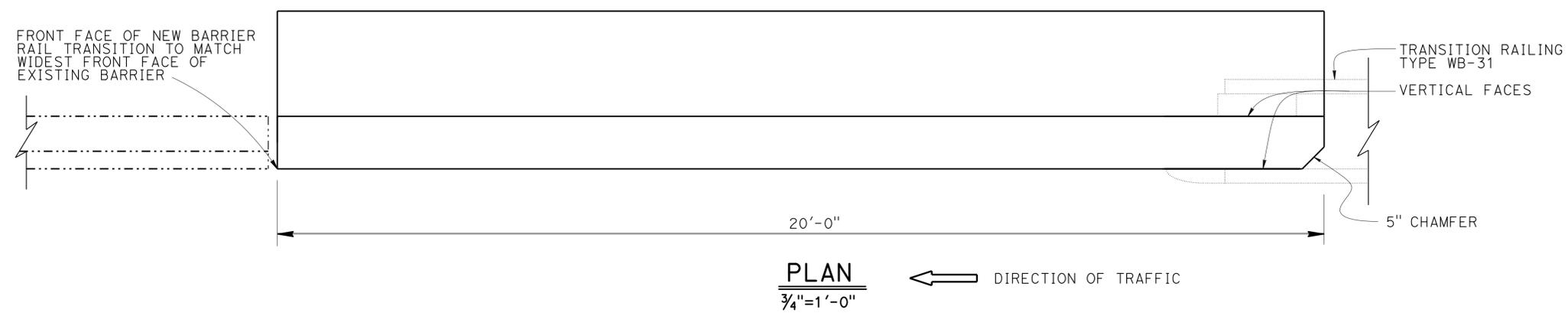
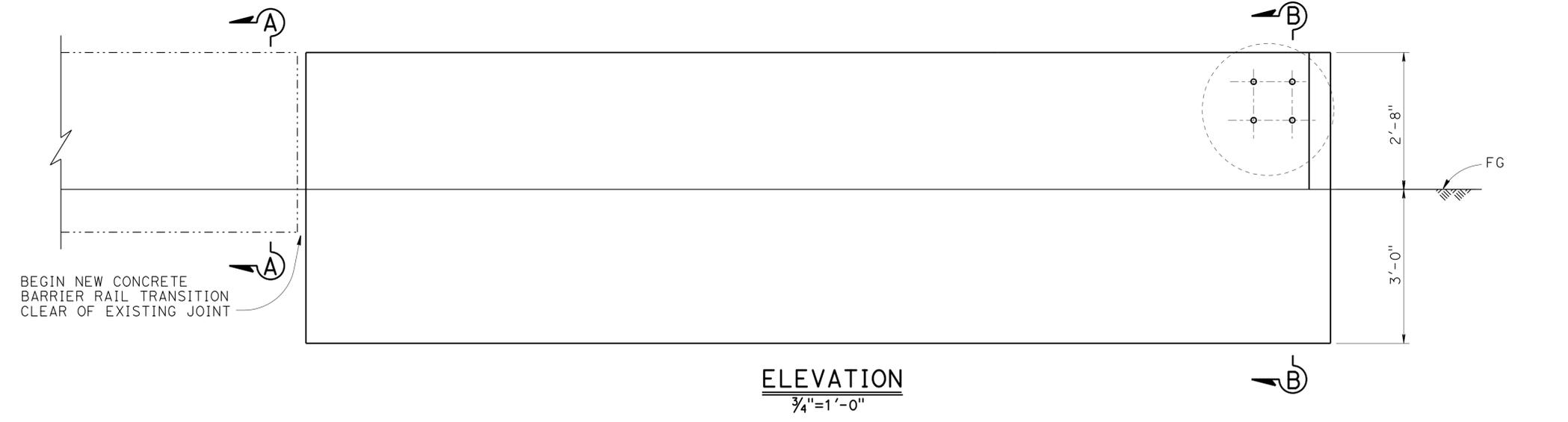
BRIDGE NO. Varies

POST MILE Varies

CONCRETE BARRIER TRANSITION

LOCATION #32

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	63	67
 REGISTERED CIVIL ENGINEER			DATE	3-26-15	
PLANS APPROVAL DATE 6-22-15					
<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>					



LEGEND:

- EXISTING STRUCTURE
- NEW CONSTRUCTION

NOTES:

1. ALIGN CONCRETE BARRIER TRANSITION WITH BARRIERS CURVATURE IF NECESSARY. SEE ROAD PLANS.
2. EXISTING BARRIER HEIGHTS VARY. WHERE EXISTING BARRIER HEIGHT IS MORE THAN 2'-8", TRANSITION BARRIER HEIGHT TO 2'-8" @ 4:1 SLOPE.
3. CONCRETE COVER TO REINFORCING STEEL IN BARRIER TO BE 1", EXCEPT AS NOTED. LONGITUDINAL REINFORCEMENT TO STOP AT ALL EXPANSION JOINTS. ADJUST REINFORCEMENT FOR TRANSITION.

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

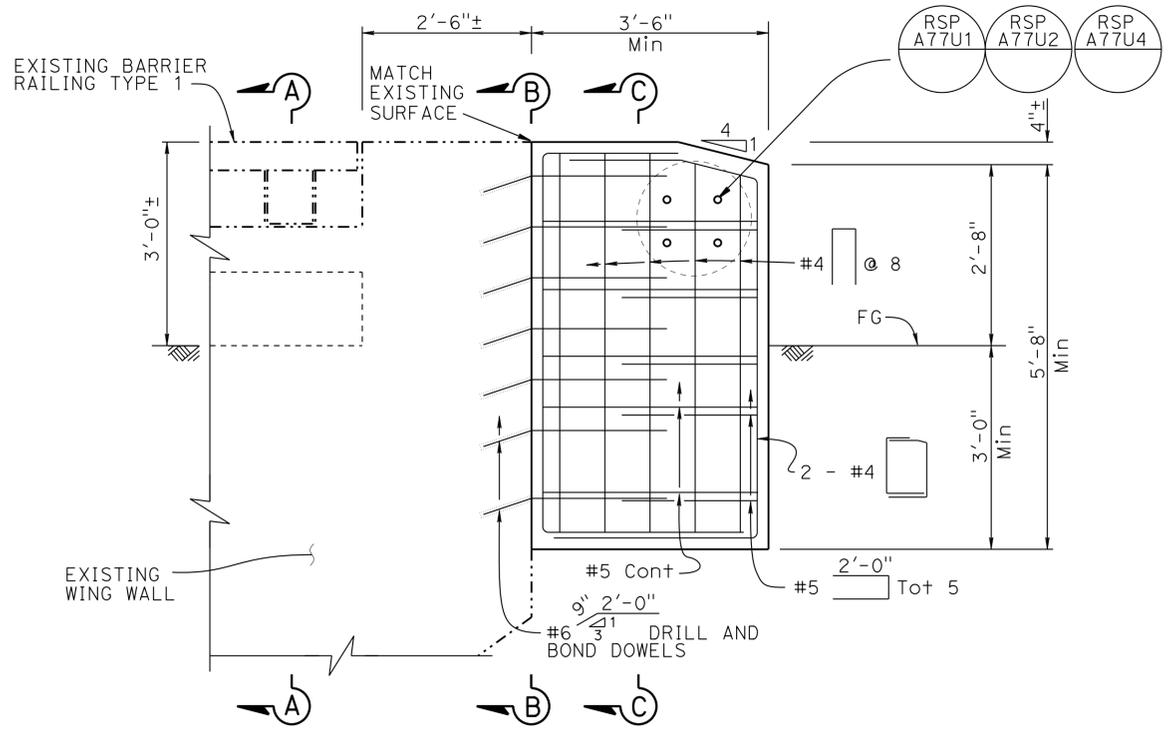
BRANCH CHIEF DAVID NEUMANN	DESIGN BY L. WARREN	CHECKED J. MAGANA	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN SPECIAL DESIGN BRANCH B	BRIDGE NO. Varies	CONCRETE BARRIER TRANSITION LOCATION #38
	DETAILS BY MARIA CLEVERLEY	CHECKED L. WARREN			POST MILE Varies	
	QUANTITIES BY L. WARREN	CHECKED J. MAGANA				

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	64	67

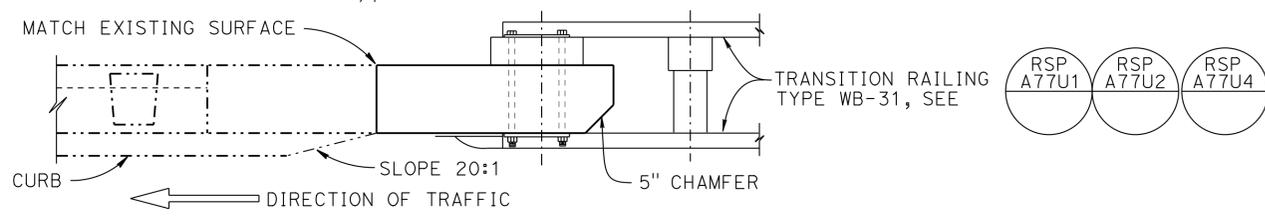
REGISTERED CIVIL ENGINEER	DATE	3-26-15
PLANS APPROVAL DATE		6-22-15

REGISTERED PROFESSIONAL ENGINEER
TAMARA S. MARCHENKO
No. C76837
Exp. 12/31/16
CIVIL
STATE OF CALIFORNIA

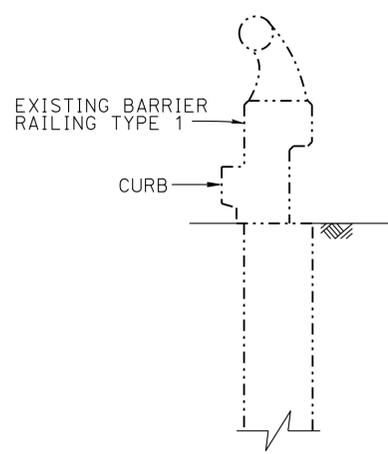
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.



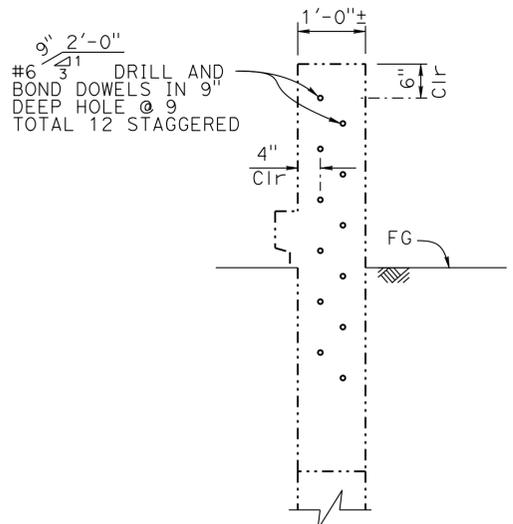
ELEVATION
3/4" = 1'-0"



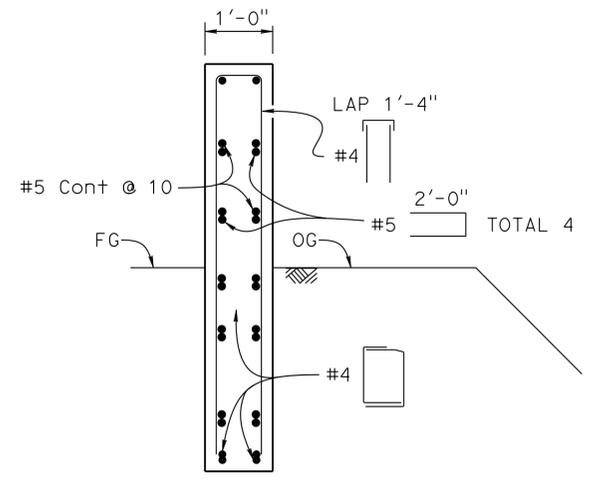
PLAN
3/4" = 1'-0"



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



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



NOTE:
Drill and bond dowels not shown

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

LEGEND:

- EXISTING STRUCTURE
- NEW CONSTRUCTION

NOTES:

- ALIGN CONCRETE BARRIER TRANSITION WITH BARRIERS CURVATURE IF NECESSARY. SEE ROAD PLANS.
- EXISTING BARRIER HEIGHTS VARY. WHERE EXISTING BARRIER HEIGHT IS MORE THAN 2'-8", TRANSITION BARRIER HEIGHT TO 2'-8" @ 4:1 SLOPE.
- CONCRETE COVER TO REINFORCING STEEL IN BARRIER TO BE 1", EXCEPT AS NOTED. LONGITUDINAL REINFORCEMENT TO STOP AT ALL EXPANSION JOINTS.
- MINIMUM CONCRETE EDGE DISTANCE FOR DRILL AND BOND DOWELS MUST BE 4", EXCEPT AS NOTED.
- ROUGHEN FACES OF BARRIER THAT WILL BE IN CONTACT WITH NEW CONCRETE TO A 1/4" AMPLITUDE.
- PROTECT EXISTING WATER BOXES AND SPRINKLER SYSTEM.

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

BRANCH CHIEF **DAVID NEUMANN**

DESIGN	BY TAMARA MARCHENKO	CHECKED J. MAGANA / L. WARREN
DETAILS	BY MARIA CLEVERLEY	CHECKED TAMARA MARCHENKO
QUANTITIES	BY TAMARA MARCHENKO	CHECKED L. WARREN

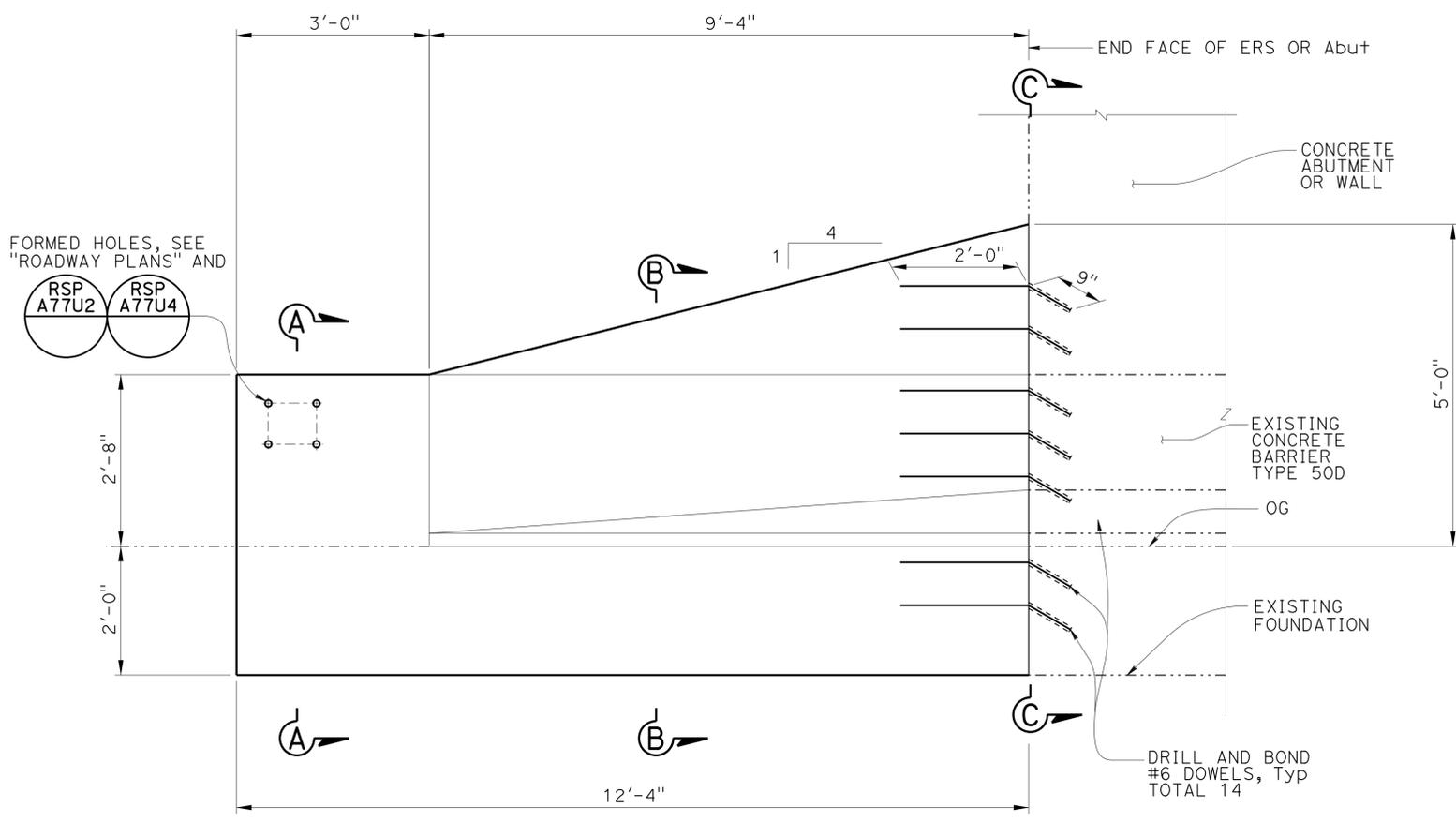
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
SPECIAL DESIGN BRANCH **B**

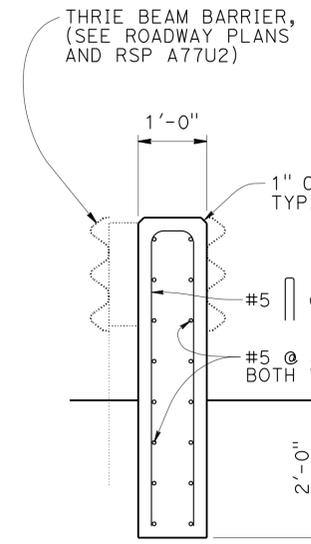
BRIDGE NO.	Varies
POST MILE	Varies

CONCRETE BARRIER TRANSITION
LOCATION #43

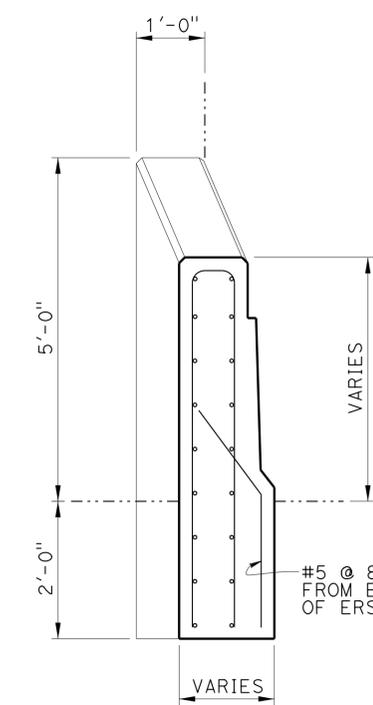
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	65	67
			3-26-15	DATE	
			6-22-15	DATE	
REGISTERED CIVIL ENGINEER					
PLANS APPROVAL DATE					
No. C76837					
Exp. 12/31/16					
CIVIL					
STATE OF CALIFORNIA					



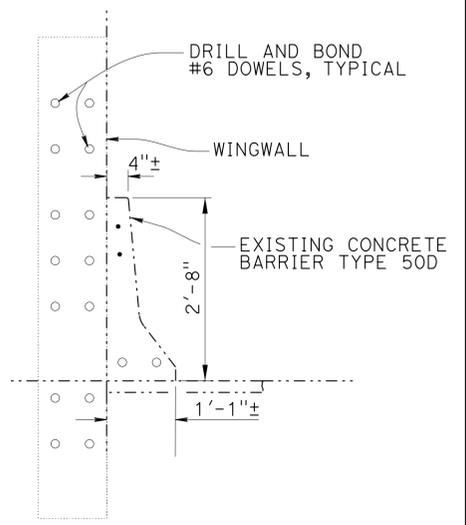
ELEVATION
NO SCALE



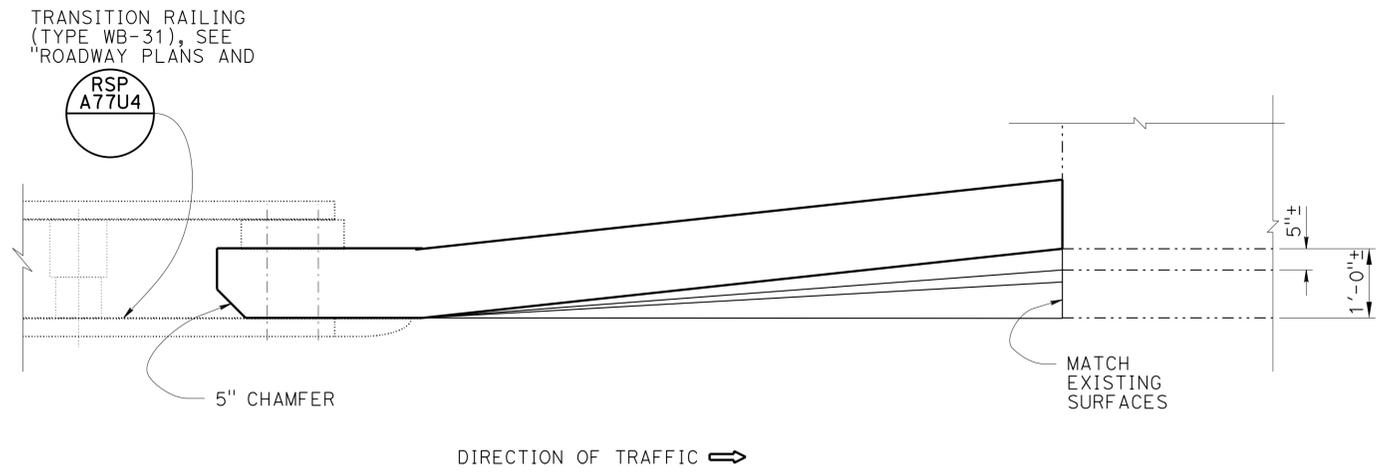
SECTION A-A
NO SCALE



SECTION B-B
NO SCALE



SECTION C-C
NO SCALE



PLAN
NO SCALE

LEGEND:

- Existing structure
- New construction

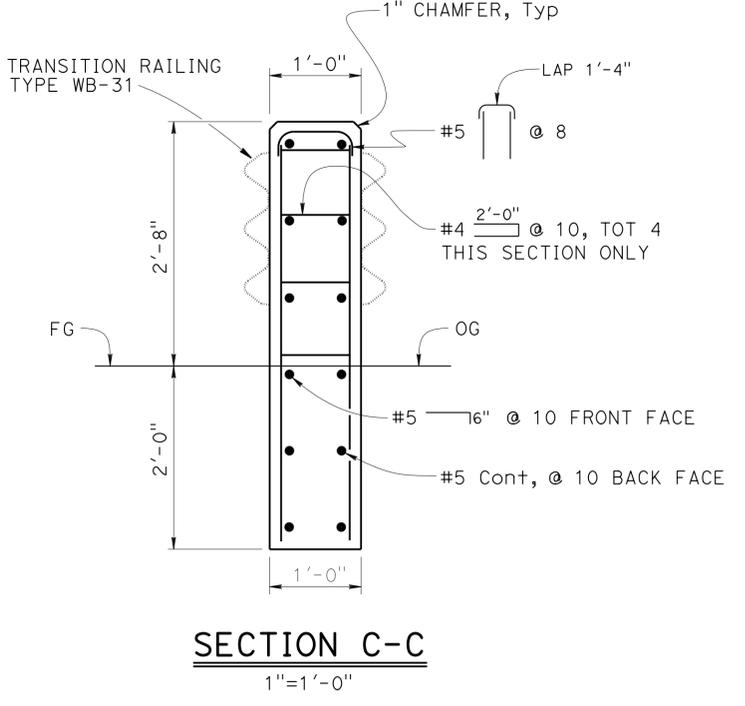
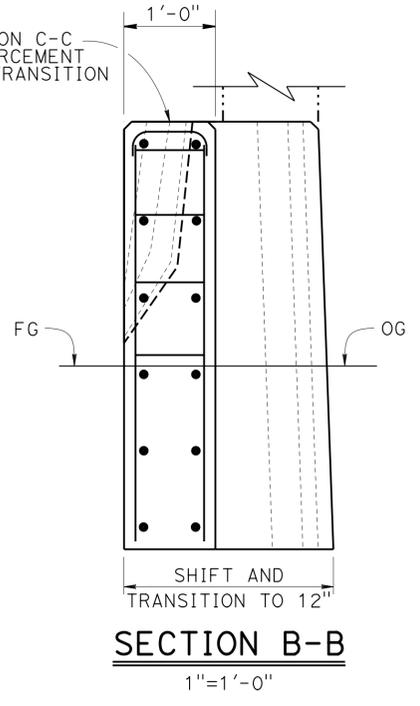
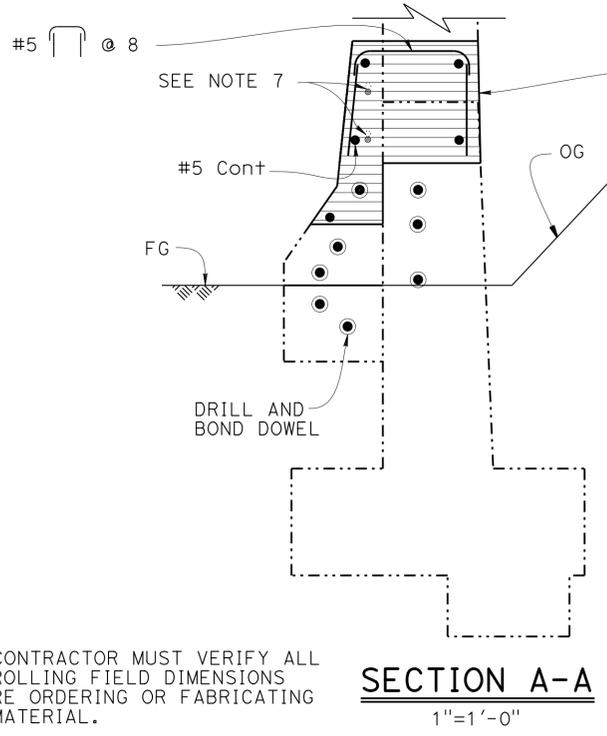
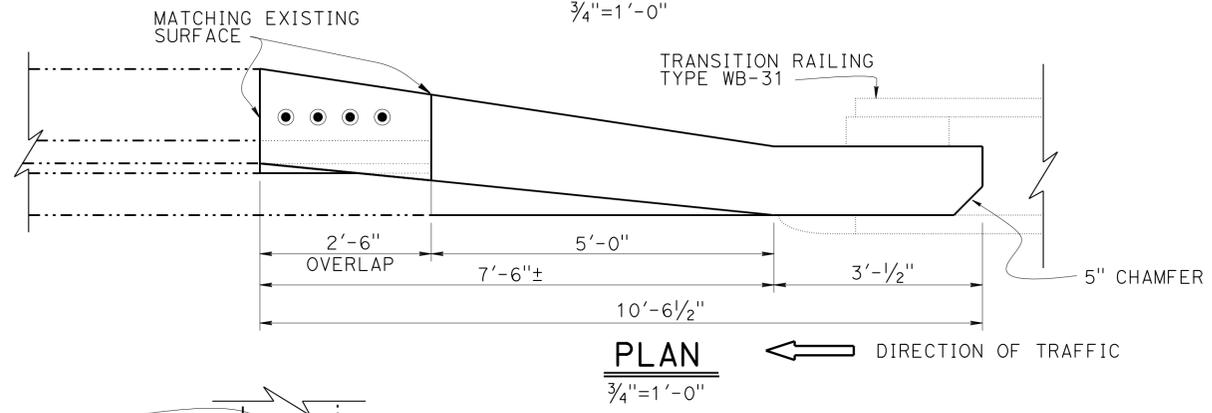
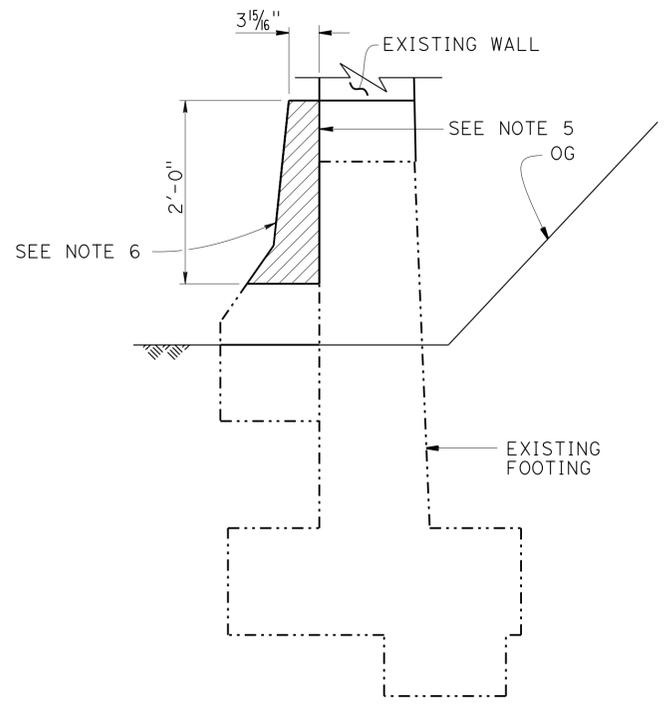
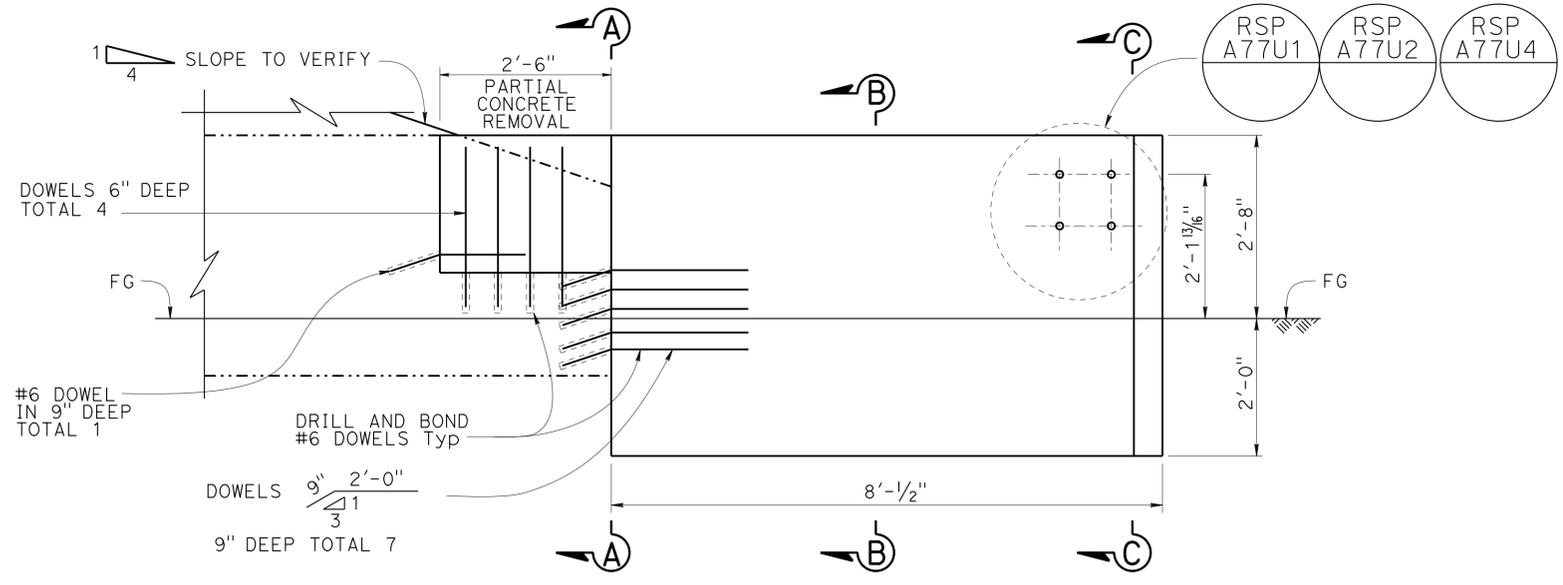
NOTES:

- See "Location Table" sheets and "Roadway Plans" for work locations.
- Holes used for fastening existing transition railing must be mortar filled, unless holes were cast using pipe sleeves.

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

BRANCH CHIEF DAVID NEUMANN	DESIGN BY TAMARA MARCHENKO	CHECKED J. MAGANA / L. WARREN	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN SPECIAL DESIGN BRANCH B	BRIDGE NO. Varies	CONCRETE BARRIER TRANSITION
	DETAILS BY MARIA CLEVERLEY	CHECKED TAMARA MARCHENKO			POST MILE Varies	
	QUANTITIES BY TAMARA MARCHENKO	CHECKED L. WARREN				

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	66	67
			DATE	3-26-15	
			REGISTERED CIVIL ENGINEER	TAMARA S. MARCHENKO	
			PLANS APPROVAL DATE	6-22-15	
			No.	C76837	
			Exp.	12/31/16	
			CIVIL		
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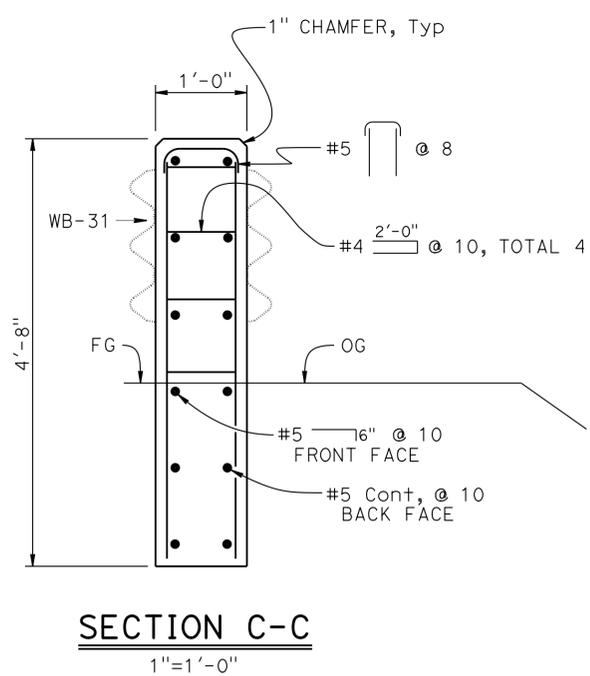
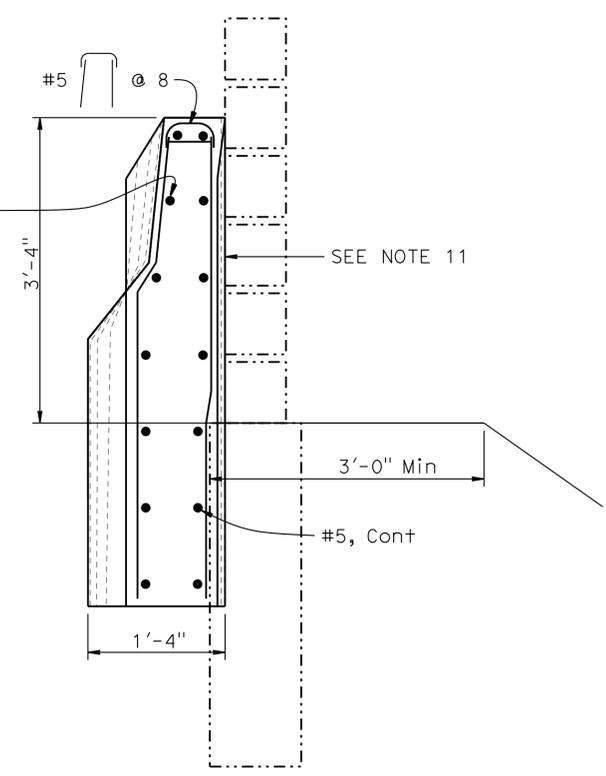
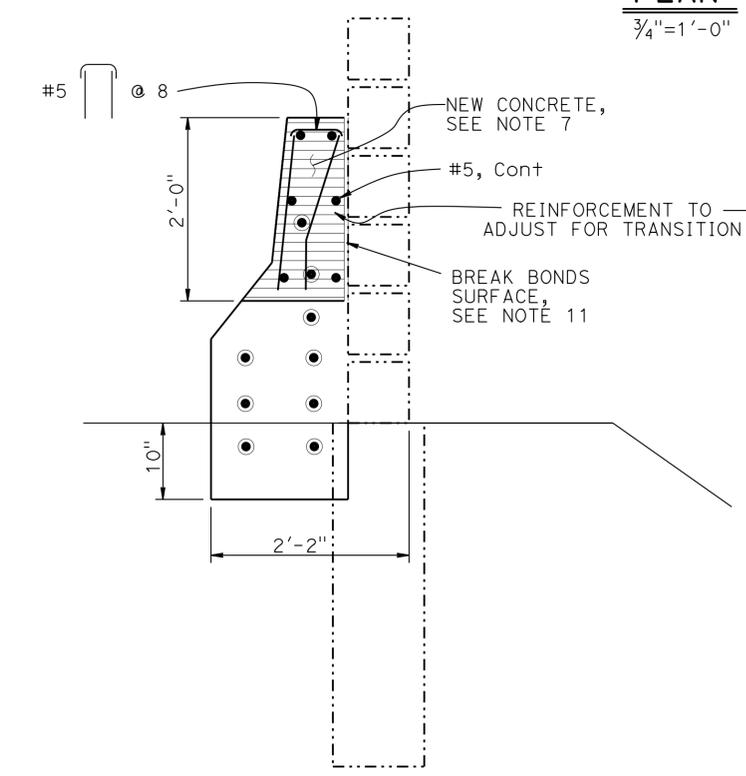
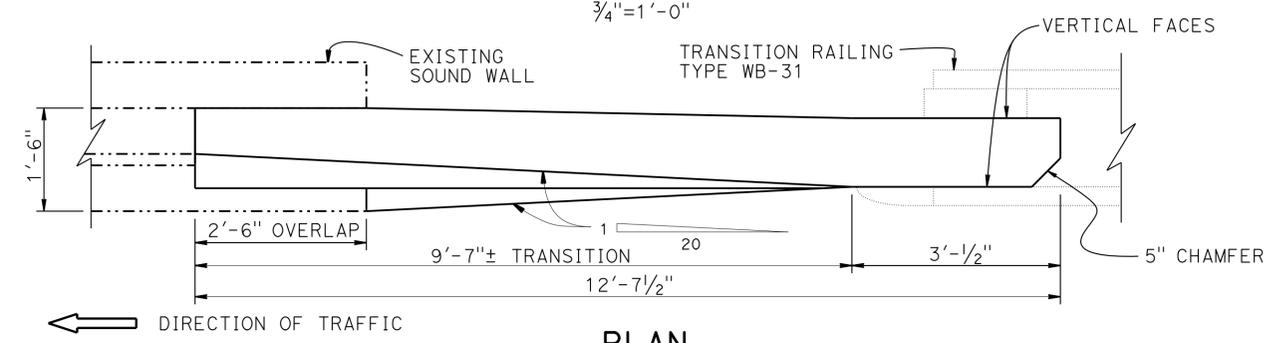
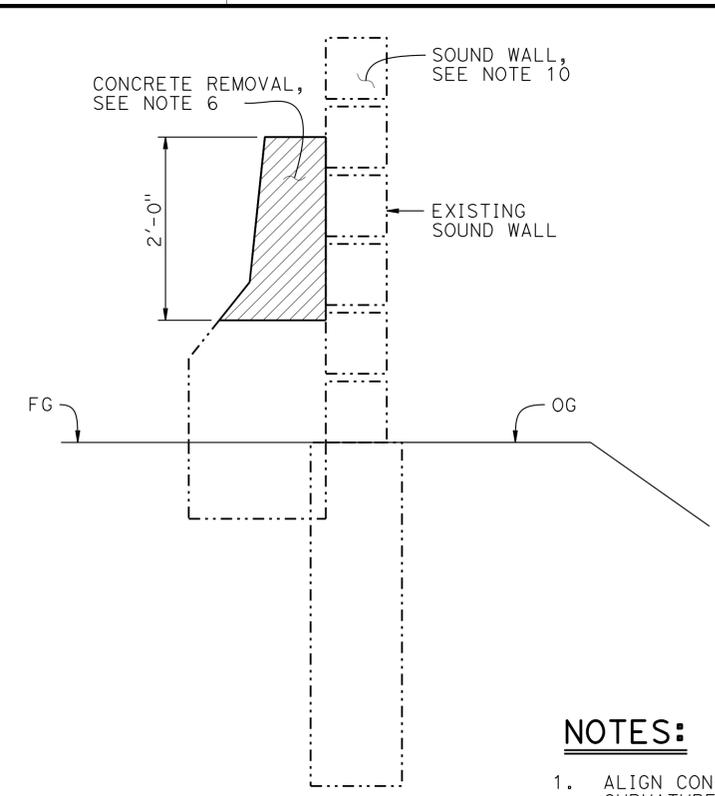
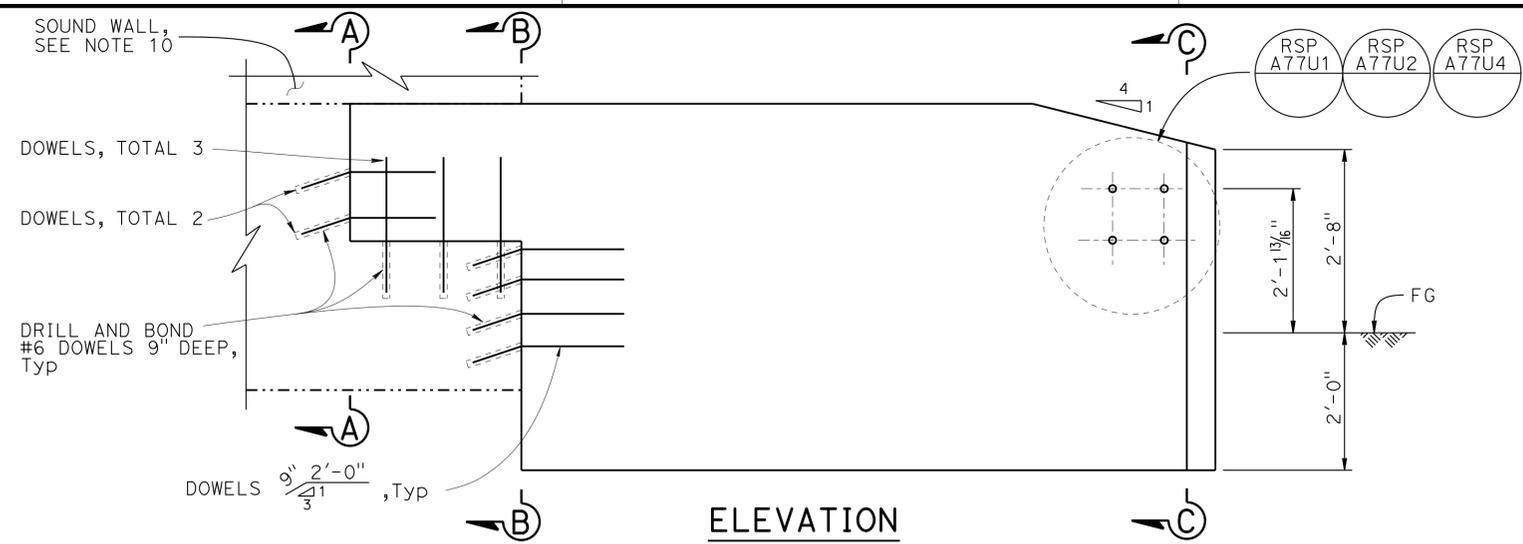
NOTES:

1. ALIGN CONCRETE BARRIER TRANSITION WITH BARRIERS CURVATURE IF NECESSARY. SEE ROAD PLANS.
2. EXISTING BARRIER HEIGHTS VARY. WHERE EXISTING BARRIER HEIGHT IS MORE THAN 2'-8", TRANSITION BARRIER HEIGHT TO 2'-8" @ 4:1 SLOPE.
3. CONCRETE COVER TO REINFORCING STEEL IN BARRIER TO BE 1", EXCEPT AS NOTED. LONGITUDINAL REINFORCEMENT TO STOP AT ALL EXPANSION JOINTS.
4. MINIMUM CONCRETE EDGE DISTANCE FOR DRILL AND BOND DOWELS MUST BE 4", EXCEPT AS NOTED.
5. ROUGHEN FACES THAT WILL BE IN CONTACT WITH NEW CONCRETE TO A 1/4" AMPLITUDE.
6. REMOVE CONCRETE AS SHOWN. EXISTING REINFORCEMENT TO REMAIN IN PLACE.
7. OVERLAP EXISTING REINFORCEMENT WITH NEW #5 BARS HORIZONTAL REINFORCEMENT FROM SECTION A-A MUST CONTINUE THROUGH TRANSITION AND OVERLAP SECTIONS.
8. PROTECT EXISTING ELECTRICAL AND DRAINAGE SYSTEM.

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

BRANCH CHIEF DAVID NEUMANN	DESIGN BY TAMARA MARCHENKO	CHECKED J. MAGANA / L. WARREN	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN SPECIAL DESIGN BRANCH B	BRIDGE NO. Varies	CONCRETE BARRIER TRANSITION
	DETAILS BY MARIA CLEVERLEY	CHECKED TAMARA MARCHENKO			POST MILE Varies	
	QUANTITIES BY TAMARA MARCHENKO	CHECKED L. WARREN			LOCATION #48	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	80,580	Var	67	67
			3-26-15		
			REGISTERED CIVIL ENGINEER DATE		
			6-22-15		
			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:

- EXISTING STRUCTURE
- NEW CONSTRUCTION
- ▨ CONCRETE REMOVAL
- ▨ NEW CONCRETE WITH EXISTING REINFORCEMENT INTACT
- EXISTING REINFORCEMENT
- NEW REINFORCEMENT
- DRILL AND BOND DOWEL

NOTES:

1. ALIGN CONCRETE BARRIER TRANSITION WITH BARRIERS CURVATURE IF NECESSARY. SEE ROAD PLANS.
2. EXISTING BARRIER HEIGHTS VARY. WHERE EXISTING BARRIER HEIGHT IS MORE THAN 2'-8", TRANSITION BARRIER HEIGHT TO 2'-8" @ 4:1 SLOPE.
3. CONCRETE COVER TO REINFORCING STEEL IN BARRIER TO BE 1", EXCEPT AS NOTED. LONGITUDINAL REINFORCEMENT TO STOP AT ALL EXPANSION JOINTS.
4. MINIMUM CONCRETE EDGE DISTANCE FOR DRILL AND BOND DOWELS MUST BE 4", EXCEPT AS NOTED.
5. ROUGHEN FACES OF BARRIER THAT WILL BE IN CONTACT WITH NEW CONCRETE TO A 1/4" AMPLITUDE.
6. REMOVE CONCRETE AS SHOWN. EXISTING REINFORCEMENT TO REMAIN IN PLACE.
7. OVERLAP EXISTING HORIZONTAL REINFORCEMENT WITH NEW #5 BARS. HORIZONTAL REINFORCEMENT FROM SECTION A-A MUST CONTINUE THROUGH TRANSITION AND OVERLAP SECTIONS.
8. PROTECT EXISTING ELECTRICAL AND DRAINAGE SYSTEM.
9. IF LESS THAN 3 BARS OF EXISTING HORIZONTAL REINFORCEMENT TO REMAIN IN SOUND CONDITION AFTER CONCRETE REMOVAL, ADD 2#6 DOWELS 9" DEEP. OVERLAP THE DOWELS WITH NEW REINFORCEMENT.
10. PROTECT EXISTING SOUND WALL FROM DAMAGE. RESTORE IF ANY DAMAGE OCCURS.
11. APPLY A BOND BREAKER BETWEEN SOUND WALL AND NEW BARRIER CONTACT SURFACE.

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

BRANCH CHIEF	DAVID NEUMANN		DESIGN BY TAMARA MARCHENKO	CHECKED J. MAGANA / L. WARREN	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN	BRIDGE NO. Varies	CONCRETE BARRIER TRANSITION
			DETAILS BY MARIA CLEVERLEY	CHECKED TAMARA MARCHENKO		SPECIAL DESIGN BRANCH B	POST MILE Varies	
			QUANTITIES BY TAMARA MARCHENKO	CHECKED L. WARREN			CONTRACT NO.: 04-2g4411	