Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	1	128

STATE OF CALIFORNIA **ACHSNHPG-X013(030)E**

DEPARTMENT OF TRANSPORTATION

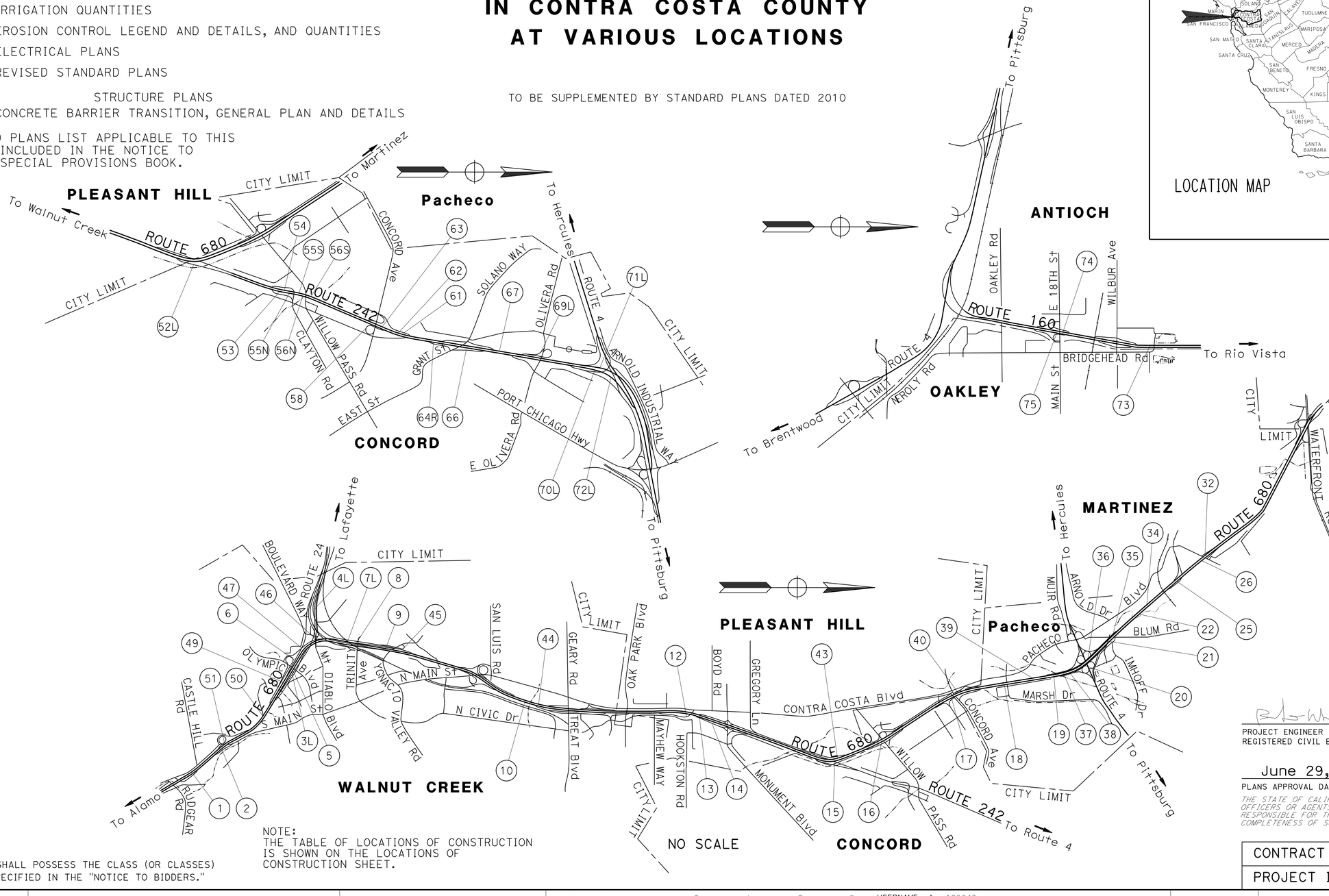
PROJECT PLANS FOR CONSTRUCTION ON STATE HIGHWAY

IN CONTRA COSTA COUNTY AT VARIOUS LOCATIONS

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010

INDEX OF PLANS

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



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

NO SCALE

LOCATION MAP

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

6/26/15
PROJECT ENGINEER — DATE
REGISTERED CIVIL ENGINEER

Ber-lin Wei
No. 49855
Exp. 9-30-16
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

June 29, 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.	04-2G4514
PROJECT ID	0414000246

DESIGN MANAGER: GEORGE LO
PROJECT MANAGER: YADOLLAH FATHOLLAHI

LAST REVISION 06-26-15
DATE PLOTTED => 02-SEP-2015
TIME PLOTTED => 09:31

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	2	128

REGISTERED CIVIL ENGINEER — DATE: 6/26/15

Ber-lin Wei, No. 49855, Exp 9-30-16, CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

PLANS APPROVAL DATE: 6-29-15

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

ROUTE 160

LOCATION					
LOCATION No.	DIRECTION	PM	MAINLINE OR RAMP	LEFT OR RIGHT SHOULDER	DESCRIPTION
75R	NB	0.01	RAMP	RIGHT	VICTORY Hwy Sep (Br No. 28-0041R)
73		0.82	MAINLINE	RIGHT	SAN JOAQUIN RIVER (ANTIOCH Br No. 28-0009)
74R	SB	0.01	RAMP	RIGHT	VICTORY Hwy Sep (Br No. 28-0041L)

ROUTE 242

LOCATION					
LOCATION No.	DIRECTION	PM	MAINLINE OR RAMP	LEFT OR RIGHT SHOULDER	DESCRIPTION
52L	NB	R0.21	MAINLINE	LEFT	JUST AFTER Rte 680/242 SPLIT
53		R0.66	RAMP	RIGHT	OFF-RAMP TO CLAYTON Rd/MARKET St
55N		R0.78	MAINLINE		CLAYTON Rd UC (Br No. 28-0289)
56N		R0.78			WILLOW PASS Rd UC (Br No. 28-0163)
58		R1.47			CONCORD Ave UC (Br No. 28-0185R)
64R		R1.95	MAINLINE		MAINLINE/GORE OFF-RAMP TO GRANT St
66		R2.27	RAMP	RIGHT	ON-RAMP FROM GRANT St
70L		R3.08	CONNECTOR	LEFT	CONNECTOR TO WB 4/PORT CHICAGO Hwy
72L		R3.37			CONNECTOR FROM NB Rte 242 TO EB Rte 4
71L	SB	R3.30	CONNECTOR	LEFT	CONNECTOR FROM WB Rte 4 TO SB Rte 242
69L		R2.73	RAMP		ON-RAMP FROM OLIVERA Rd
67		R2.28		RIGHT	OFF-RAMP TO GRANT St
61		R1.71		LEFT	OFF-RAMP TO CONCORD Ave (CONCORD OFF-RAMP)
62		R1.70	MAINLINE	RIGHT	MAINLINE/CONCORD OH (Br No. 28-0186L)
63		R1.60			MAINLINE/CONCORD Ave UC (Br No. 28-0185L)
56S		R0.78			MAINLINE/WILLOW PASS Rd UC (Br No. 28-0163L)
55S		R0.78			MAINLINE/CLAYTON Rd UC (Br No. 28-0289)
54		R0.66	RAMP		ON-RAMP FROM CLAYTON Rd/MARKET St

ROUTE 680

LOCATION					
LOCATION No.	DIRECTION	PM	MAINLINE OR RAMP	LEFT OR RIGHT SHOULDER	DESCRIPTION
1	NB	R12.72	RAMP	RIGHT	ON-RAMP FROM DANVILLE Blvd
2		13.08	MAINLINE		MAINLINE/SOUTH MAIN St UC (Br No. 28-0167)
3L		13.87	CONNECTOR	LEFT	CONNECTOR TO WB Rte 24 (NB Rte 680-WB Rte 24 CONNECTOR OC, Br No. 28-0130G, PM 14.15)
4L		13.88			CONNECTOR TO WB Rte 24
5		13.93	MAINLINE	RIGHT	MAINLINE/OLYMPIC Blvd UC (Br No. 28-0161)
6		14.09	RAMP		ON-RAMP FROM OLYMPIC Blvd
7L		14.49		LEFT	OFF-RAMP TO YGNACIO VALLEY Rd
8		14.56	MAINLINE	RIGHT	MAINLINE/OAKVALE Rd-TRINITY Ave OC (Br No. 28-0116)
9		14.85			MAINLINE/YGNACIO VALLEY Rd UC (Br No. 28-0117R)
10		16.08			MAINLINE/CONTRA COSTA CANAL TRAIL (Br No. 28-0135)
12R		R17.20	RAMP		OFF-RAMP TO CONTRA COSTA Blvd, PLEASANT HILL (Br No. 28-0325S)
12L		R17.20		LEFT	
13		R17.53		RIGHT	OFF-RAMP TO MONUMENT Blvd
14		R17.67	MAINLINE		MAINLINE/MONUMENT Blvd UC (Br No. 28-0104)
15		R18.65			MAINLINE/BELOW SB Rte 242 OH STRUCTURE
16		19.04			MAINLINE/WILLOW PASS Rd UC (Br No. 28-0178)
17		19.86			MAINLINE/CONCORD Ave UC (Br No. 28-0190)
18		20.38			MAINLINE/CENTER St UC (Br No. 28-0181)
19		20.89			MAINLINE/GRAYSON Cr (Br No. 28-0180)
20		21.24	CONNECTOR		CONNECTOR TO WB Rte 4
21		21.52	MAINLINE		MAINLINE/BLUM Rd UC (Br No. 28-0172)
22		21.88			MAINLINE/CONTRA COSTA Rd UC (Br No. 28-0174)
25		22.43			MAINLINE/EAST MARTINEZ Sep (Br No. 28-0169S)
26		22.70			MAINLINE/ARTHUR Rd UC (Br No. 28-0170)
32	SB	22.70	MAINLINE	RIGHT	MAINLINE/ARTHUR Rd UC (Br No. 28-0170)
34		21.88			MAINLINE/CONTRA COSTA CANAL Rd UC (Br No. 28-0174)
35		21.52			MAINLINE/BLUM Rd UC (Br No. 28-0172)
36		21.38	CONNECTOR		CONNECTOR LOOP FROM WB Rte 4
37		21.14			CONNECTOR DIAGONAL FROM EB Rte 4 (GRAYSON Cr)
39		20.76	MAINLINE		MAINLINE /500' SOUTH OF GRAYSON Cr Br
38		20.89			MAINLINE/GRAYSON Cr (Br No. 28-0180)
40		19.86			MAINLINE/CONCORD Ave UC (Br No. 28-0190)
43R		R18.75	RAMP		OFF-RAMP TO CONTRA COSTA/MONUMENT Blvd
43L		R18.75		LEFT	
44		16.08	MAINLINE	RIGHT	MAINLINE/CONTRA COSTA CANAL Rd UC (Br No. 28-0135)
45		14.67	RAMP	LEFT	ON-RAMP FROM YGNACIO VALLEY Blvd
46R		14.22	MAINLINE	RIGHT	MAINLINE Mt DIABLO Blvd UC (Br No. 28-0128L)
46L		14.22		LEFT	
47		14.08		RIGHT	MAINLINE/800' NORTH OF OLYMPIC Blvd UC
49		13.66			MAINLINE/NEWELL Ave UC (Br No. 28-0160)
50		13.66	RAMP	LEFT	ON-RAMP FROM OLYMPIC Blvd (NEWELL Ave UC)
51		13.08		RIGHT	ON-RAMP FROM SOUTH MAIN St

LOCATIONS OF CONSTRUCTION

LC-1

LAST REVISION | DATE PLOTTED => 14-JUL-2015 | 06-26-15 | TIME PLOTTED => 09:04

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — DESIGN

FUNCTIONAL SUPERVISOR: GEORGE LO

CALCULATED-DESIGNED BY: LLEWELLYN CHAN | BER-LIN WEI

CHECKED BY: HH

REVISED BY | DATE REVISED: 10/29/14

BORDER LAST REVISED 7/2/2010

USERNAME => s141096
DGN FILE => 0414000246ba001.dgn

RELATIVE BORDER SCALE IS IN INCHES: 0 1 2 3

UNIT 0704

PROJECT NUMBER & PHASE: 04140002461

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	3	128

6/26/15
REGISTERED CIVIL ENGINEER DATE

Ber-lin Wei
No. 49855
Exp 9-30-16
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

6-29-15
PLANS APPROVAL DATE

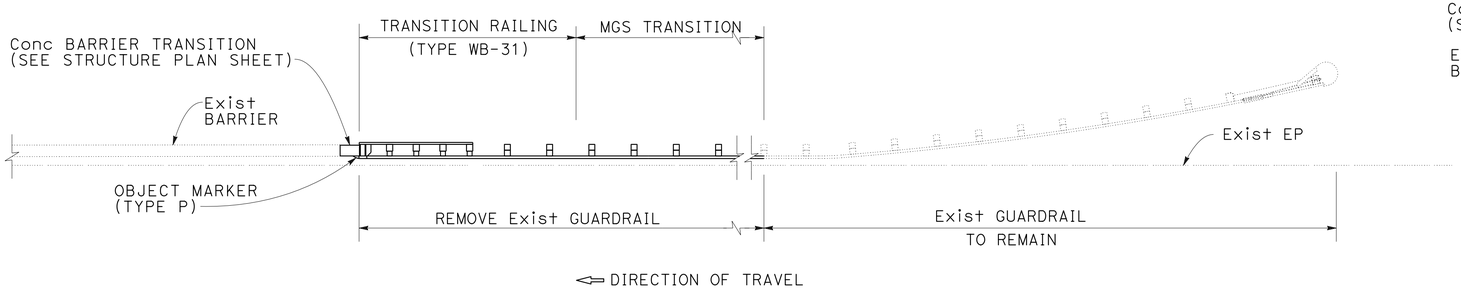
NOTES:

1. FOR MGS LOCATIONS, SEE SUMMARY OF QUANTITIES.
2. PLACE VEGETATION CONTROL (MINOR CONCRETE) UNDER NEW MGS ONLY.
3. FOR TYPE B2 CURB (Mod) DETAILS NOT SHOWN, USE TYPE B2 CURB SHOWN IN STANDARD PLANS.

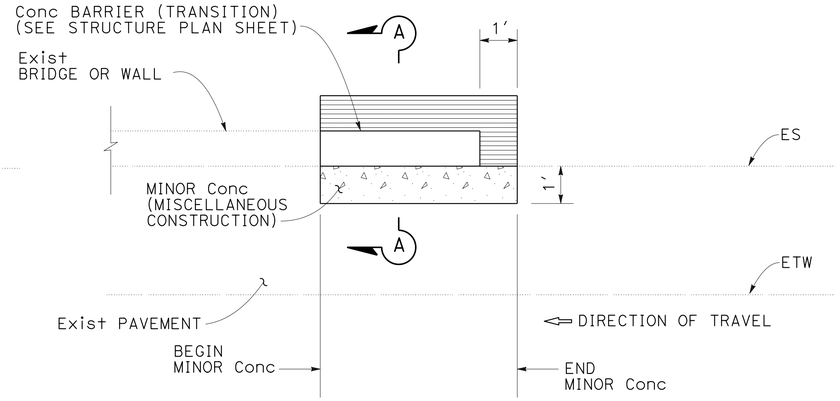
LEGEND:

MINOR CONCRETE (MISCELLANEOUS CONSTRUCTION)

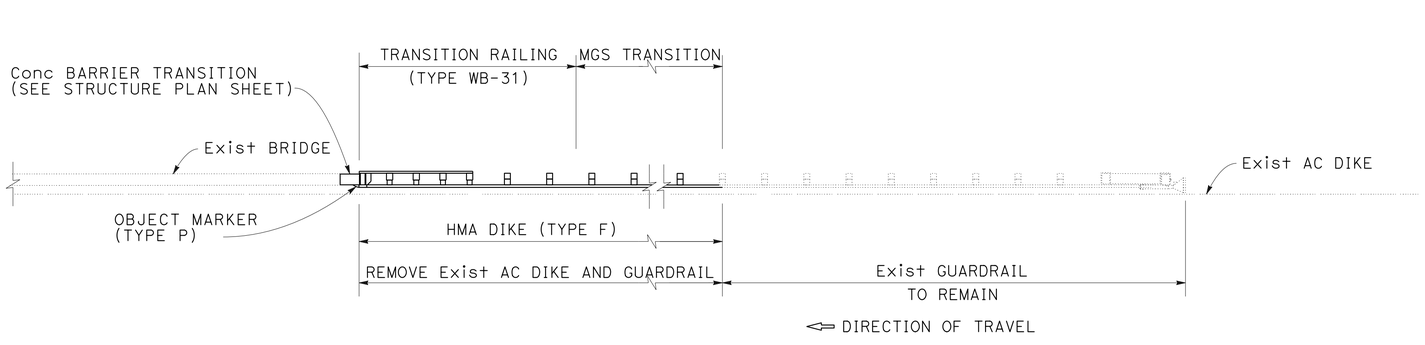
STRUCTURE BACKFILL



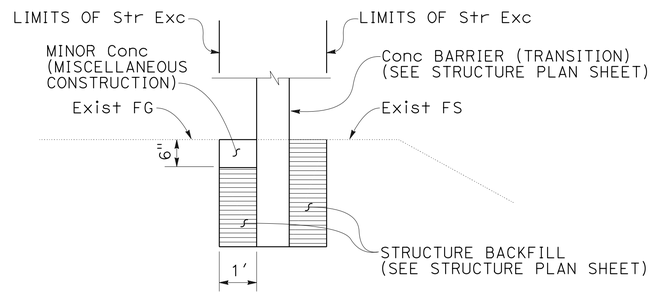
DETAIL A1
LOCATION No. 242-53



PLAN



DETAIL A2
LOCATION No. 680-44



SECTION A-A

TYPICAL DETAILS FOR MINOR CONCRETE (MISCELLANEOUS CONSTRUCTION) AT CONCRETE BARRIER (TRANSITION)

CONSTRUCTION DETAILS

NO SCALE

C-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
FUNCTIONAL SUPERVISOR: GEORGE LO
CALCULATED-DESIGNED BY: LLEWELLYN CHAN
CHECKED BY: BER-LIN WEI
REVISED BY: HH
DATE REVISED: 10/29/14

LAST REVISION DATE PLOTTED => 14-JUL-2015
06-27-15 TIME PLOTTED => 09:04

BORDER LAST REVISED 7/2/2010
USERNAME => s141096
DGN FILE => 04140002461ga001.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0704
PROJECT NUMBER & PHASE 04140002461

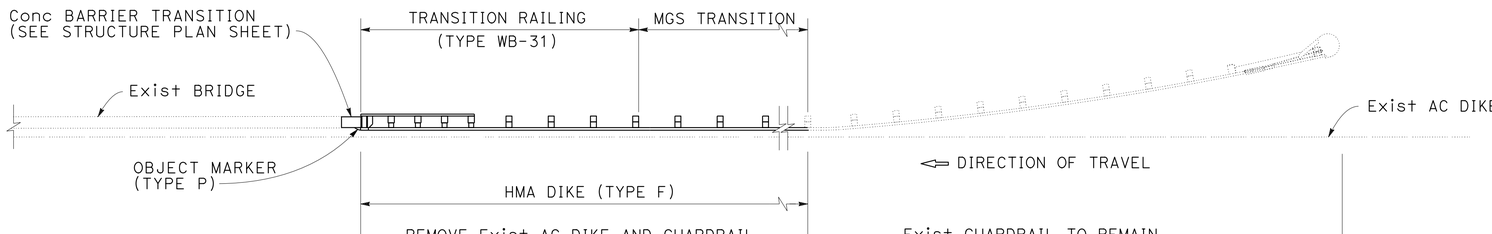
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	4	128

REGISTERED CIVIL ENGINEER — DATE: 6/26/15

Ber-lin Wei
No. 49855
Exp. 9-30-16
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

6-29-15
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.



DETAIL A3
LOCATION No. 680-39

CONSTRUCTION DETAILS

NO SCALE

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

C-2

CALCULATED-DESIGNED BY	REVISED BY	
CHECKED BY	DATE REVISED	
LLEWELLYN CHAN	HH	
BER-LIN WEI	10/29/14	

FUNCTIONAL SUPERVISOR: GEORGE LO

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

LAST REVISION | DATE PLOTTED => 14-JUL-2015
06-26-15 | TIME PLOTTED => 09:04

BORDER LAST REVISED 7/2/2010

USERNAME => s141096
DGN FILE => 0414000246ga002.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0704 | PROJECT NUMBER & PHASE | 04140002461

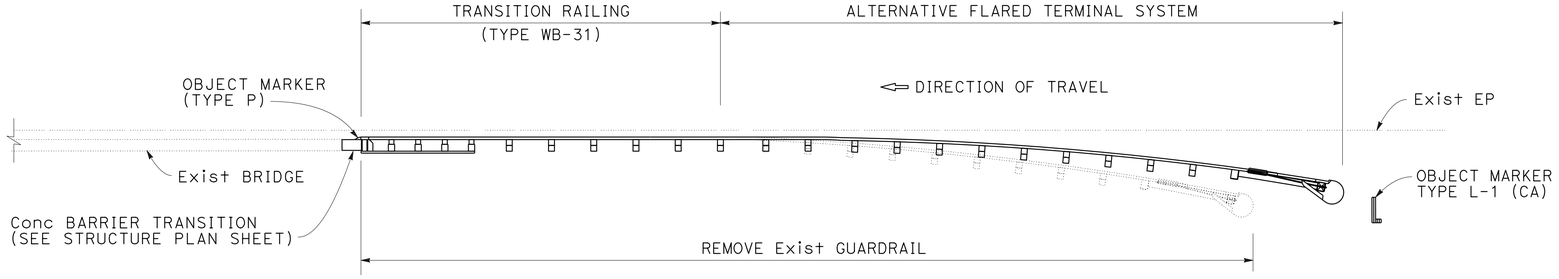
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	5	128

REGISTERED CIVIL ENGINEER — DATE: 6/26/15

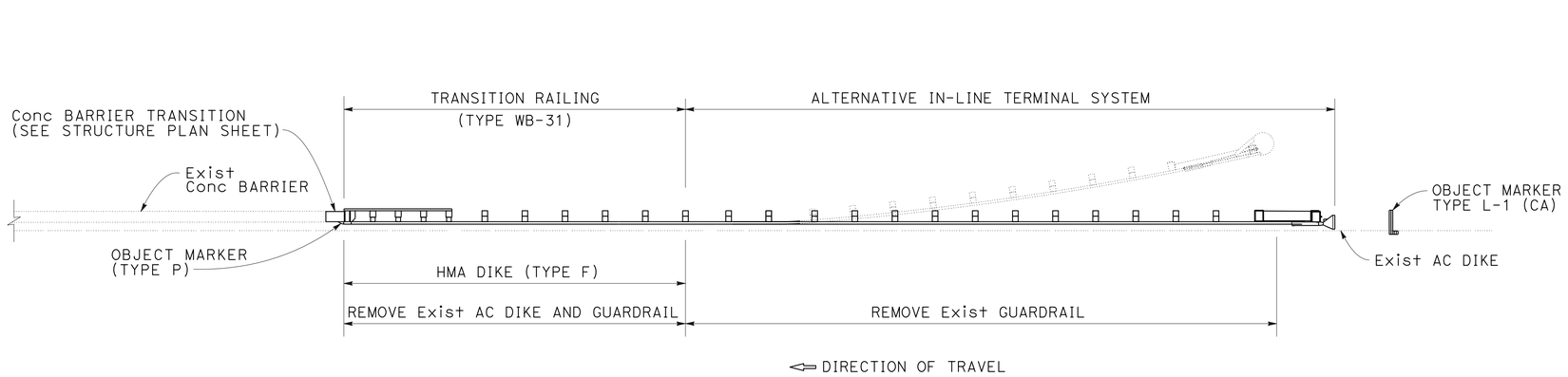
PLANS APPROVAL DATE: 6-29-15

REGISTERED PROFESSIONAL ENGINEER — Ber-lin Wei — No. 49855 — Exp 9-30-16 — CIVIL — STATE OF CALIFORNIA

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



DETAIL B1
LOCATION No. 242-70L



DETAIL B2
LOCATION No. 680-13

CONSTRUCTION DETAILS

NO SCALE

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

C-3

REVISED BY	DATE REVISED
HH	10/29/14

CALCULATED-DESIGNED BY: LLEWELLYN CHAN
CHECKED BY: BER-LIN WEI

FUNCTIONAL SUPERVISOR: GEORGE LO

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

LAST REVISION — DATE PLOTTED => 14-JUL-2015 — TIME PLOTTED => 09:04
06-26-15

BORDER LAST REVISED 7/2/2010

USERNAME => s141096
DGN FILE => 0414000246ga003.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0704

PROJECT NUMBER & PHASE 04140002461

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	6	128

REGISTERED CIVIL ENGINEER — DATE: 6/26/15

Ber-lin Wei
No. 49855
Exp. 9-30-16
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

6-29-15
PLANS APPROVAL DATE

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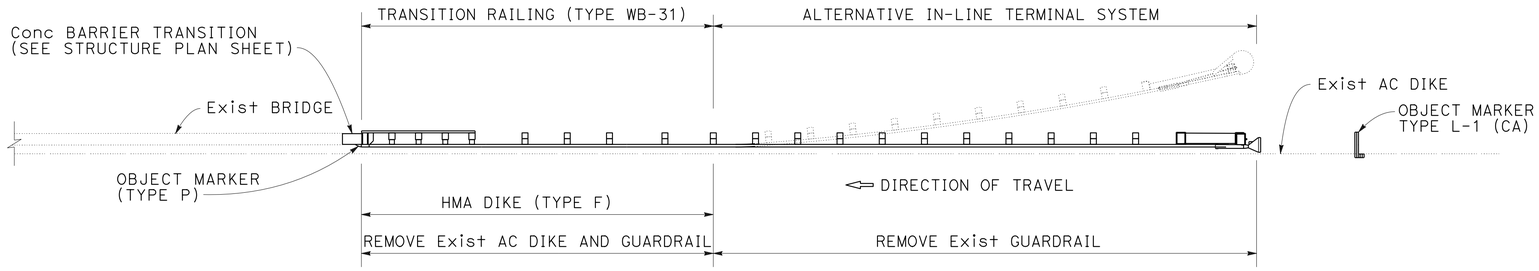
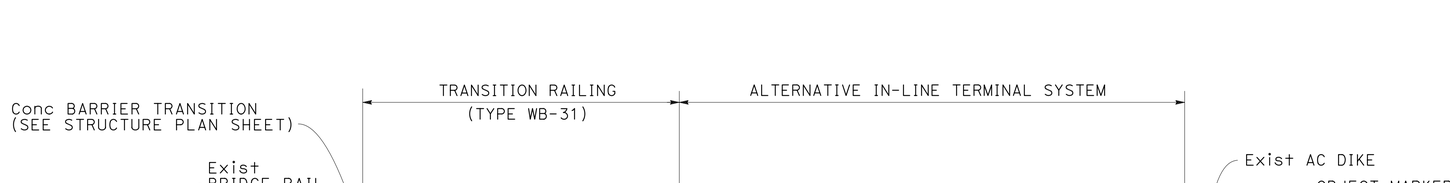


DETAIL C
LOCATION No. 680-37



DETAIL D1
LOCATION No. 680-16

CONSTRUCTION DETAILS

NO SCALE

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

C-4

REVISED BY	HH		
DATE REVISED	10/29/14		
CALCULATED-DESIGNED BY	LLEWELLYN CHAN		
CHECKED BY	BER-LIN WEI		
FUNCTIONAL SUPERVISOR	GEORGE LO		

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

LAST REVISION 06-26-15 | DATE PLOTTED => 14-JUL-2015 | TIME PLOTTED => 09:04

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	7	128

REGISTERED CIVIL ENGINEER — DATE: 6/26/15

Ber-lin Wei
No. 49855
Exp. 9-30-16
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

6-29-15
PLANS APPROVAL DATE

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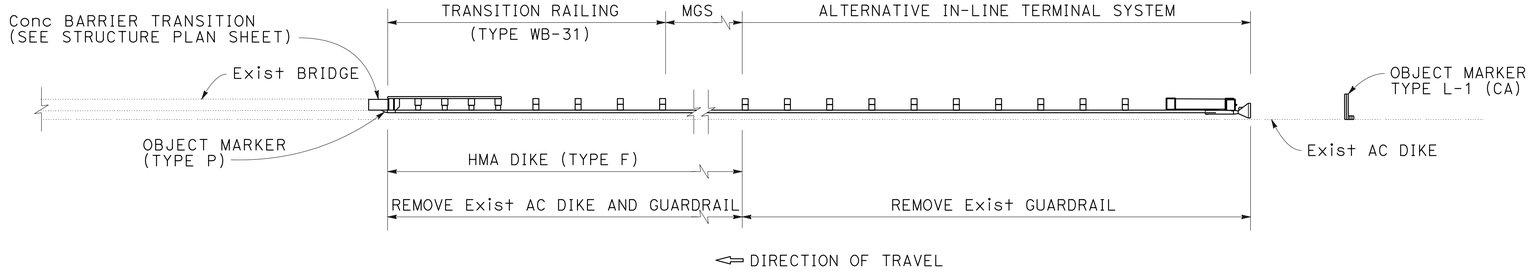

DETAIL D2
LOCATION No. 680-32

DETAIL D3
LOCATION No. 242-54

CONSTRUCTION DETAILS

NO SCALE

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

C-5

CALCULATED-DESIGNED BY					
CHECKED BY	HH	10/29/14			
	REVISED BY	DATE REVISED			
	LLEWELLYN CHAN				
	BER-LIN WEI				
FUNCTIONAL SUPERVISOR	GEORGE LO				
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN				

LAST REVISION — DATE PLOTTED => 14-JUL-2015
06-26-15 — TIME PLOTTED => 09:04

BORDER LAST REVISED 7/2/2010

USERNAME => s141096
DGN FILE => 04140002461ga005.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0704 | PROJECT NUMBER & PHASE | 04140002461

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	8	128

REGISTERED CIVIL ENGINEER — DATE: 6/26/15

Ber-lin Wei
No. 49855
Exp. 9-30-16
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

6-29-15
PLANS APPROVAL DATE

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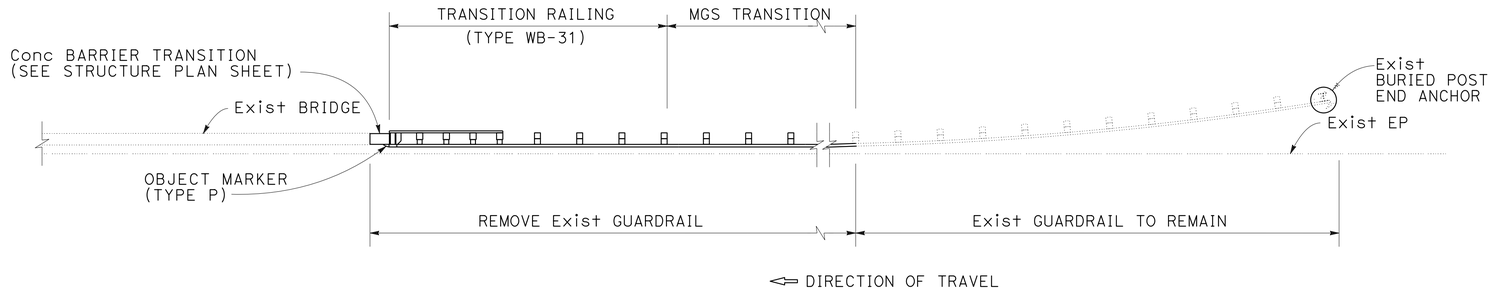
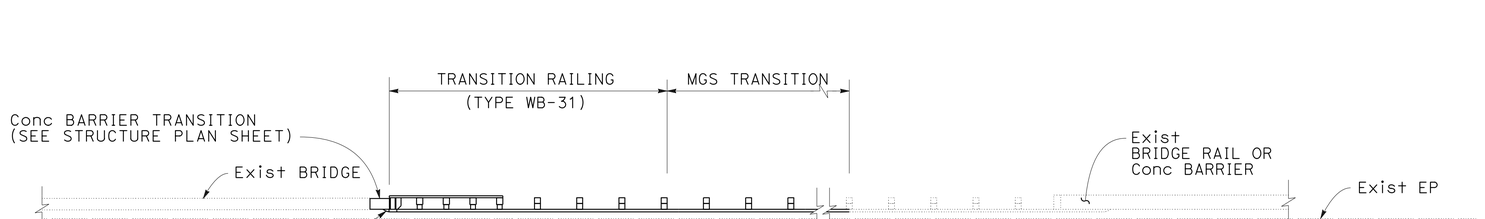


DETAIL E1
LOCATION No. 680-46R



DETAIL E2
LOCATION No. 680-47

CONSTRUCTION DETAILS

NO SCALE

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

C-6

REVISED BY	DATE REVISED
HH	10/29/14

CALCULATED-DESIGNED BY: LLEWELLYN CHAN
CHECKED BY: BER-LIN WEI
FUNCTIONAL SUPERVISOR: GEORGE LO

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

LAST REVISION 06-26-15 | DATE PLOTTED => 14-JUL-2015 | TIME PLOTTED => 09:04

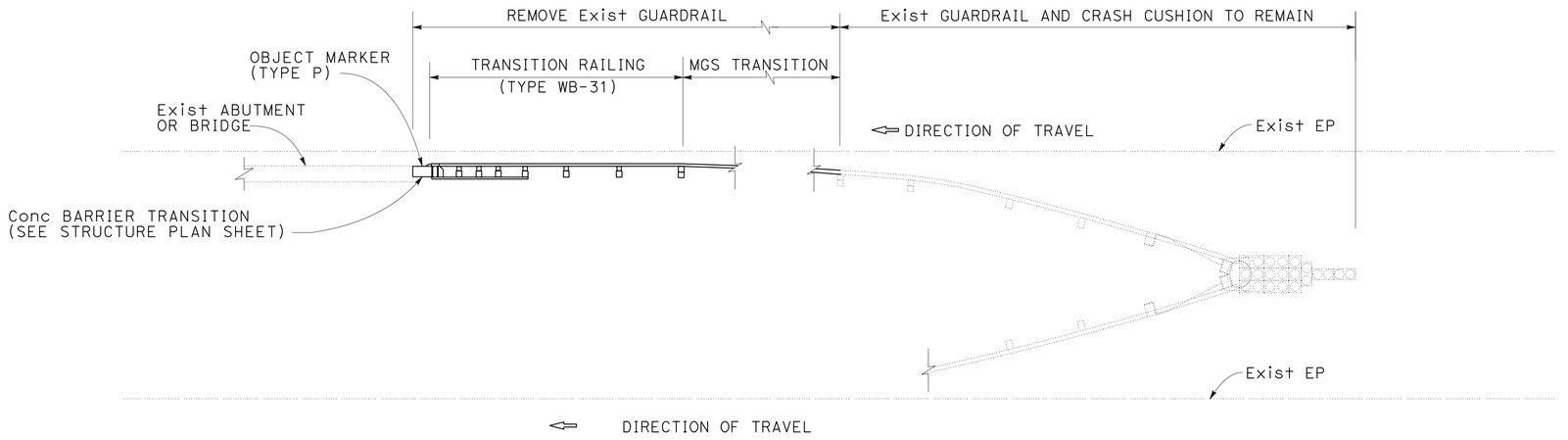
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	9	128

REGISTERED CIVIL ENGINEER — 6/26/15 DATE

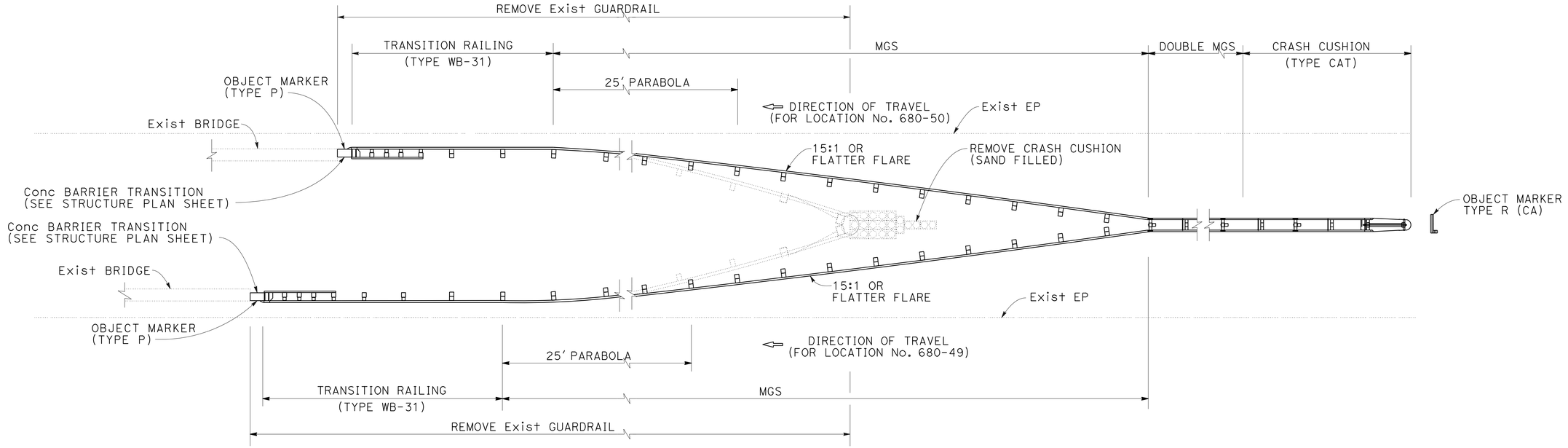
PLANS APPROVAL DATE — 6-29-15

Ber-lin Wei
No. 49855
Exp. 9-30-16
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

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



DETAIL E3
LOCATION No. 680-43L



DETAIL E4
LOCATION Nos. 680-49 AND 680-50

CONSTRUCTION DETAILS

NO SCALE

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

C-7

REVISED BY	DATE REVISED
HH	10/29/14

CALCULATED-DESIGNED BY: LLEWELLYN CHAN
CHECKED BY: BER-LIN WEI
FUNCTIONAL SUPERVISOR: GEORGE LO

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
Caltrans

LAST REVISION | DATE PLOTTED => 14-JUL-2015
06-26-15 | TIME PLOTTED => 09:04

BORDER LAST REVISED 7/2/2010
USERNAME => s141096
DGN FILE => 0414000246ga007.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0704
PROJECT NUMBER & PHASE 04140002461

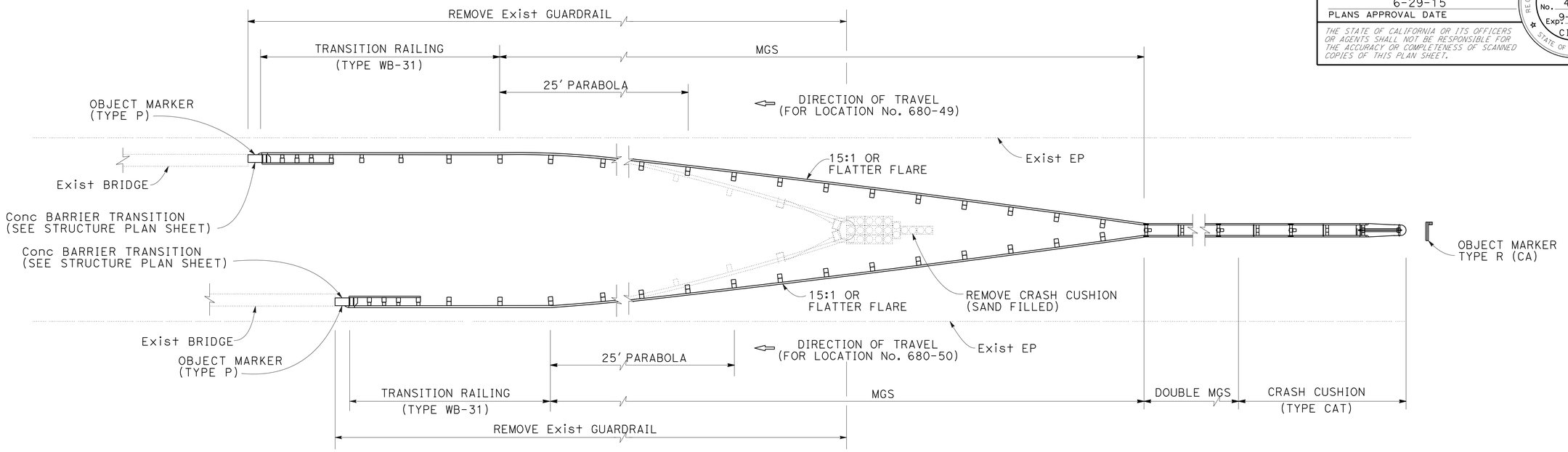
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	10	128

REGISTERED CIVIL ENGINEER — 6/26/15 DATE

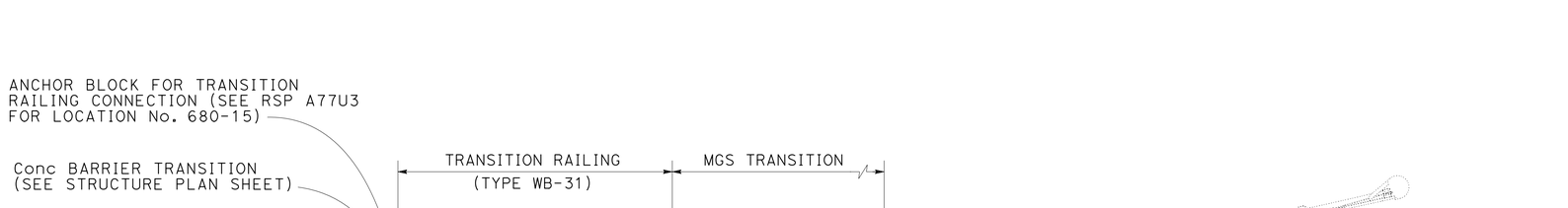
Ber-lin Wei No. 49855 Exp 9-30-16 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

6-29-15
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.



DETAIL E5
LOCATION Nos. 242-61 AND 242-62



DETAIL E6
LOCATION Nos. 680-15, 680-34, 680-38 AND 242-58

CONSTRUCTION DETAILS

NO SCALE

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

C-8

REVISED BY	DATE REVISED
HH	10/29/14

CALCULATED-DESIGNED BY: LLEWELLYN CHAN
CHECKED BY: BER-LIN WEI
FUNCTIONAL SUPERVISOR: GEORGE LO

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

LAST REVISION: DATE PLOTTED => 14-JUL-2015 06-26-15 TIME PLOTTED => 09:04

BORDER LAST REVISED 7/2/2010 | USERNAME => s141096 | DGN FILE => 04140002461ga008.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0704 | PROJECT NUMBER & PHASE 04140002461

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	11	128

REGISTERED CIVIL ENGINEER — DATE: 6/26/15

Ber-lin Wei
No. 49855
Exp. 9-30-16
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

6-29-15
PLANS APPROVAL DATE

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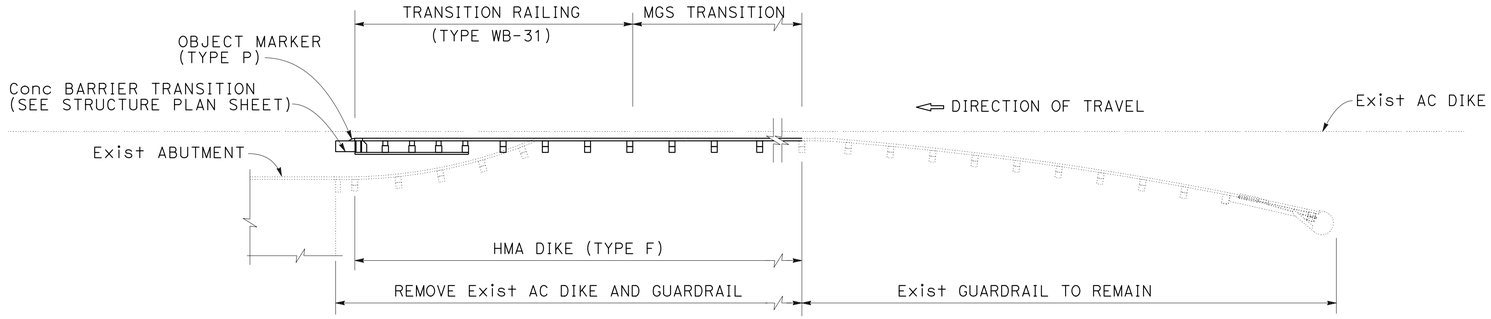
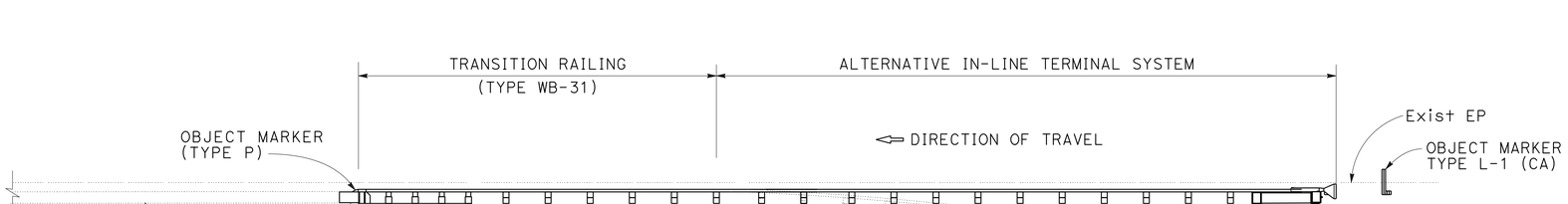


DETAIL E7
LOCATION No. 680-4L



DETAIL E8
LOCATION No. 680-3L

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

CONSTRUCTION DETAILS

NO SCALE

C-9

REVISED BY	HH	
DATE REVISED	10/29/14	
CALCULATED-DESIGNED BY	LLEWELLYN CHAN	
CHECKED BY	BER-LIN WEI	
FUNCTIONAL SUPERVISOR	GEORGE LO	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

LAST REVISION | DATE PLOTTED => 14-JUL-2015
06-26-15 | TIME PLOTTED => 09:04

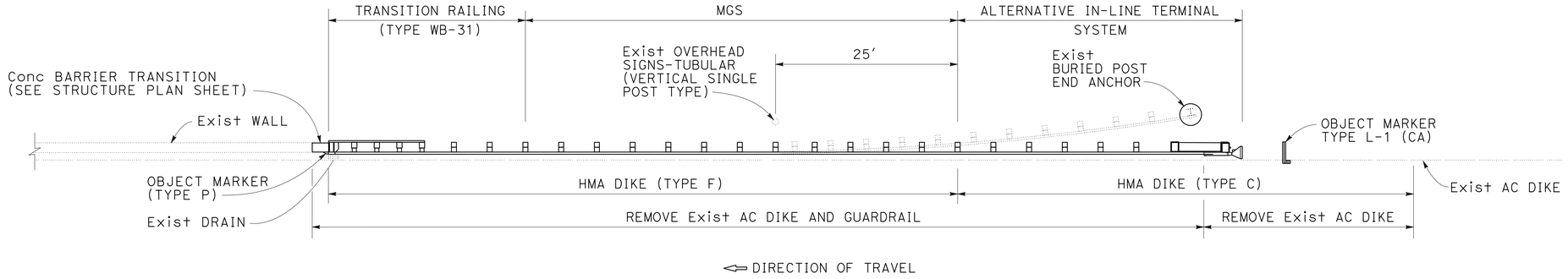
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	12	128

REGISTERED CIVIL ENGINEER — DATE: 6/26/15

Ber-lin Wei
No. 49855
Exp 9-30-16
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

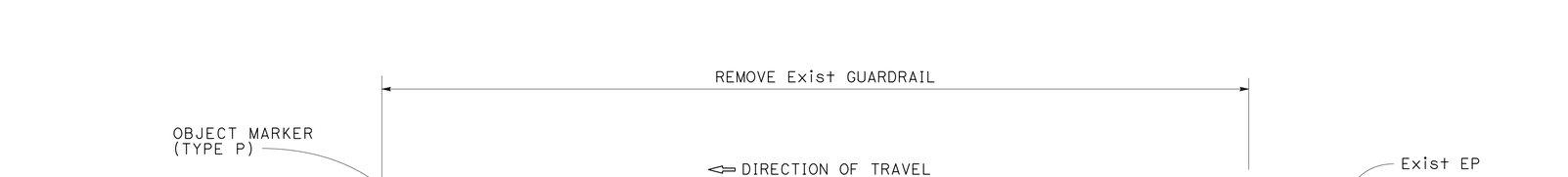
6-29-15
PLANS APPROVAL DATE

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.



DETAIL E9
LOCATION No. 242-67

NOTE: SEE SHEET DD-2 FOR DRAINAGE WORK



DETAIL F1
LOCATION No. 680-7L

CONSTRUCTION DETAILS

NO SCALE

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

C-10

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
FUNCTIONAL SUPERVISOR: GEORGE LO
CALCULATED-DESIGNED BY: LLEWELLYN CHAN
CHECKED BY: BER-LIN WEI
REVISED BY: HH
DATE REVISED: 10/29/14

LAST REVISION: DATE PLOTTED => 14-JUL-2015
06-26-15 TIME PLOTTED => 09:04

BORDER LAST REVISED 7/2/2010
USERNAME => s141096
DGN FILE => 04140002461ga010.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0704
PROJECT NUMBER & PHASE 04140002461

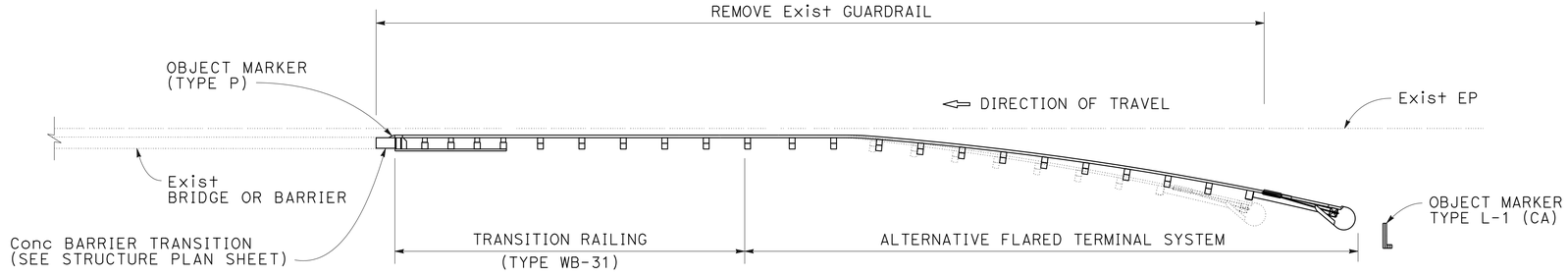
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	13	128

REGISTERED CIVIL ENGINEER — DATE: 6/26/15

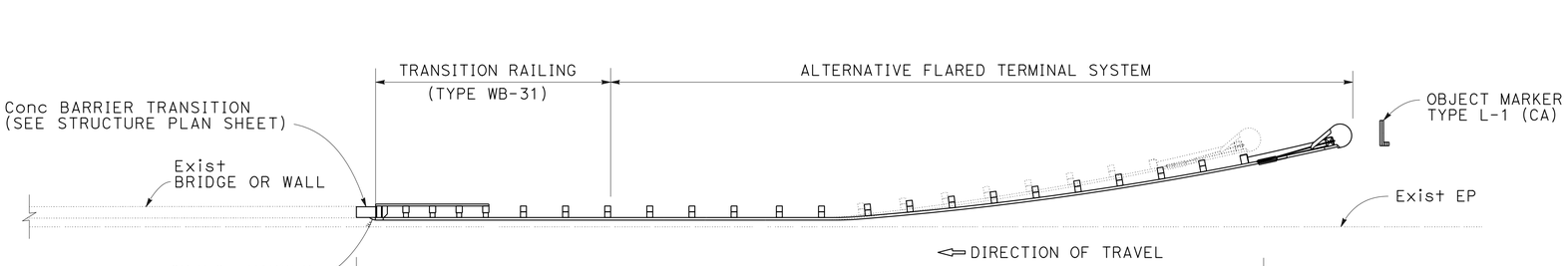
Ber-lin Wei
No. 49855
Exp. 9-30-16
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

6-29-15
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.



DETAIL F2
LOCATION Nos. 242-71L AND 242-72L



DETAIL F3
LOCATION Nos. 680-40 AND 242-66

CONSTRUCTION DETAILS

NO SCALE

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

C-11

REVISED BY	HH		
DATE REVISED	10/29/14		
CALCULATED-DESIGNED BY	LLEWELLYN CHAN		
CHECKED BY	BER-LIN WEI		
FUNCTIONAL SUPERVISOR	GEORGE LO		
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN		

LAST REVISION — DATE PLOTTED => 14-JUL-2015 — TIME PLOTTED => 09:04 — 06-26-15

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	14	128

REGISTERED CIVIL ENGINEER — DATE: 6/26/15

Ber-lin Wei
No. 49855
Exp. 9-30-16
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

6-29-15
PLANS APPROVAL DATE

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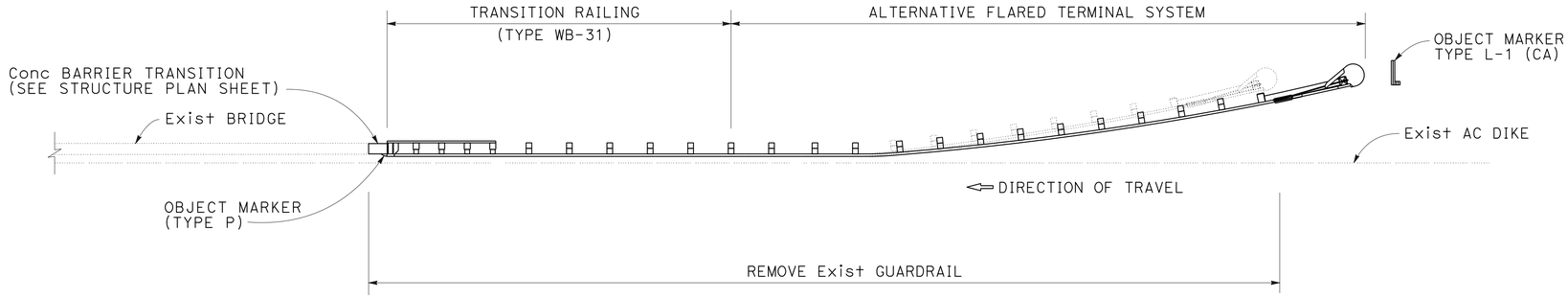
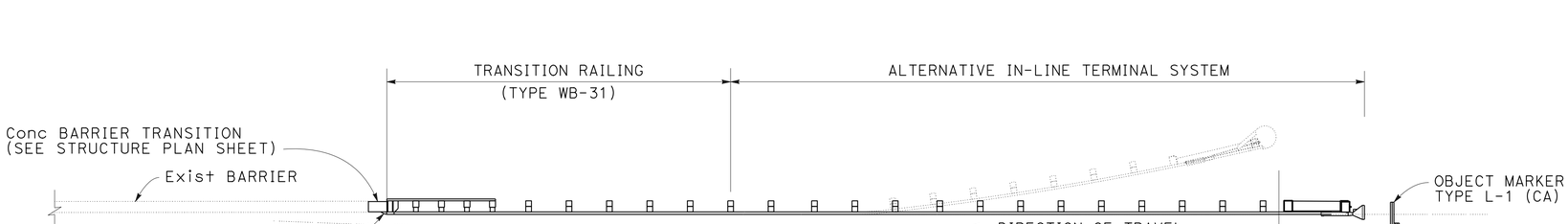


DETAIL F4
LOCATION Nos. 680-5 AND 160-75R



DETAIL F5
LOCATION No. 680-8

CONSTRUCTION DETAILS

NO SCALE

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

C-12

CALCULATED-DESIGNED BY	CHECKED BY	REVISED BY	DATE REVISED
HUNG C. HSU	BER-LIN WEI	HH	10/29/14

FUNCTIONAL SUPERVISOR: GEORGE LO

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

LAST REVISION | DATE PLOTTED => 14-JUL-2015 | TIME PLOTTED => 09:04
06-26-15

BORDER LAST REVISED 7/2/2010 | USERNAME => s141096 | DGN FILE => 04140002461ga012.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0704 | PROJECT NUMBER & PHASE 04140002461

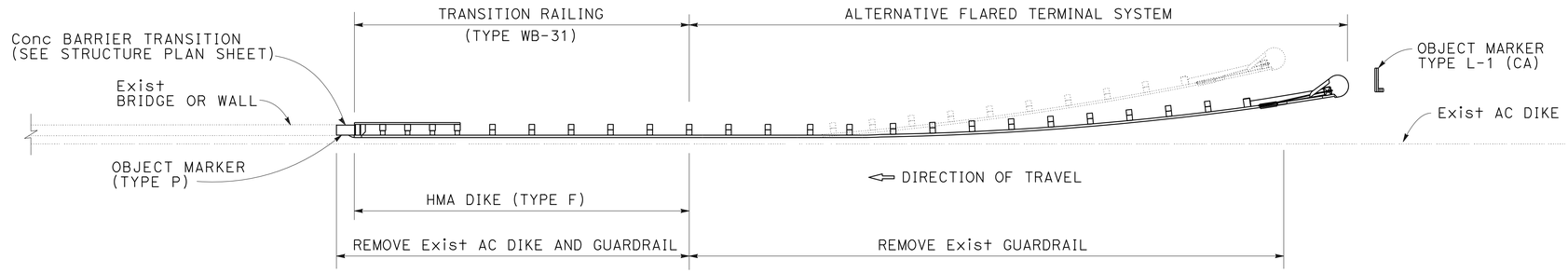
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	15	128

REGISTERED CIVIL ENGINEER — DATE: 6/26/15

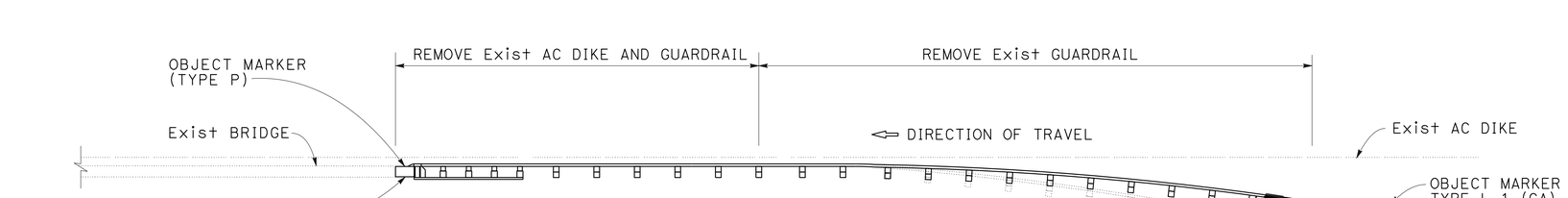
Ber-lin Wei
No. 49855
Exp. 9-30-16
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

6-29-15
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.



DETAIL F6
LOCATION Nos. 680-14, 680-20 AND 680-51



DETAIL F7
LOCATION No. 242-52L

CONSTRUCTION DETAILS

NO SCALE

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

C-13

CALCULATED-DESIGNED BY	CHECKED BY	REVISED BY	DATE REVISED
HUNG C. HSU	BER-LIN WEI	HH	10/29/14

FUNCTIONAL SUPERVISOR: GEORGE LO

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

LAST REVISION: DATE PLOTTED => 14-JUL-2015
06-26-15 TIME PLOTTED => 09:04

BORDER LAST REVISED 7/2/2010

USERNAME => s141096
DGN FILE => 04140002461ga013.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0704 | PROJECT NUMBER & PHASE | 04140002461

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	16	128

REGISTERED CIVIL ENGINEER — DATE: 6/26/15

Ber-lin Wei
No. 49855
Exp. 9-30-16
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

6-29-15
PLANS APPROVAL DATE

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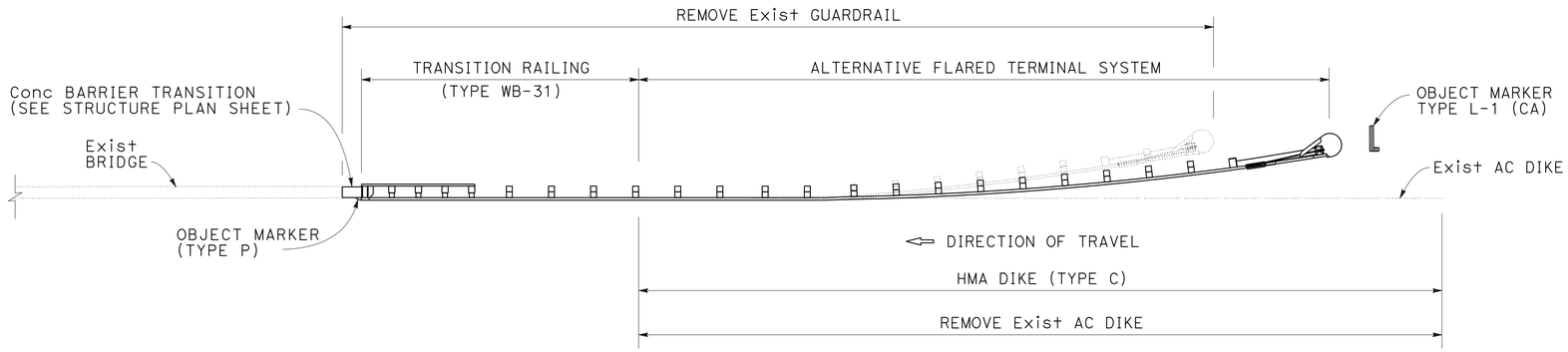
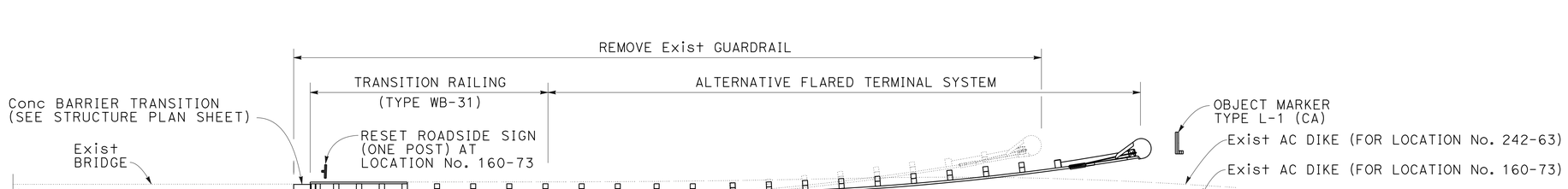


DETAIL F8
LOCATION No. 242-56N



DETAIL F9
LOCATION Nos. 242-63 AND 160-73

NOTE: SEE SHEET DD-1 FOR DRAINAGE WORK AT LOCATION No. 160-73

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

CONSTRUCTION DETAILS

NO SCALE

C-14

REVISED BY	DATE REVISED
HH	10/29/14

CALCULATED-DESIGNED BY: HUNG C. HSU
CHECKED BY: BER-LIN WEI
FUNCTIONAL SUPERVISOR: GEORGE LO

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

Caltrans

LAST REVISION: DATE PLOTTED => 14-JUL-2015
TIME PLOTTED => 09:04
06-26-15

BORDER LAST REVISED 7/2/2010
USERNAME => s141096
DGN FILE => 04140002461a014.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0704
PROJECT NUMBER & PHASE 04140002461

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	17	128

REGISTERED CIVIL ENGINEER — DATE: 6/26/15

Ber-lin Wei
No. 49855
Exp. 9-30-16
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

6-29-15
PLANS APPROVAL DATE

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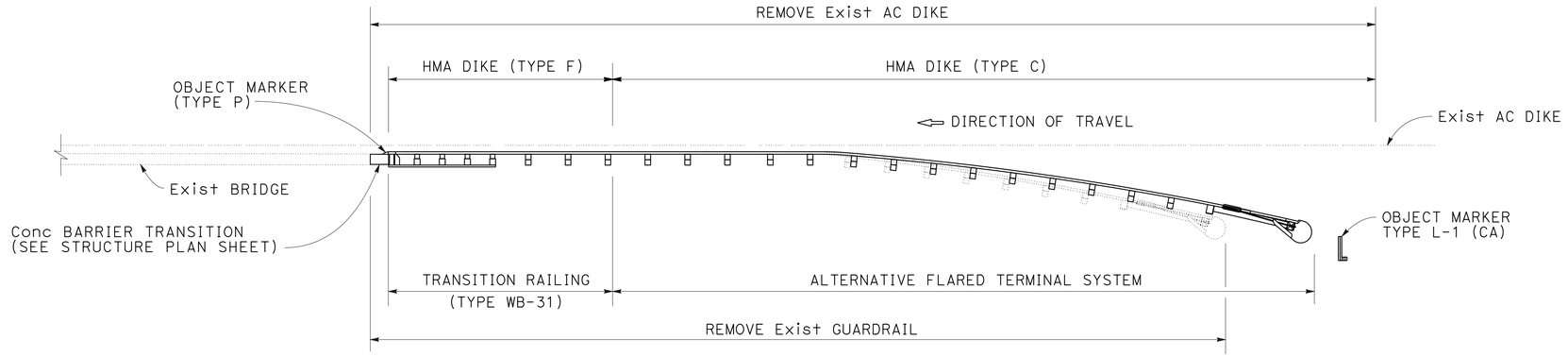
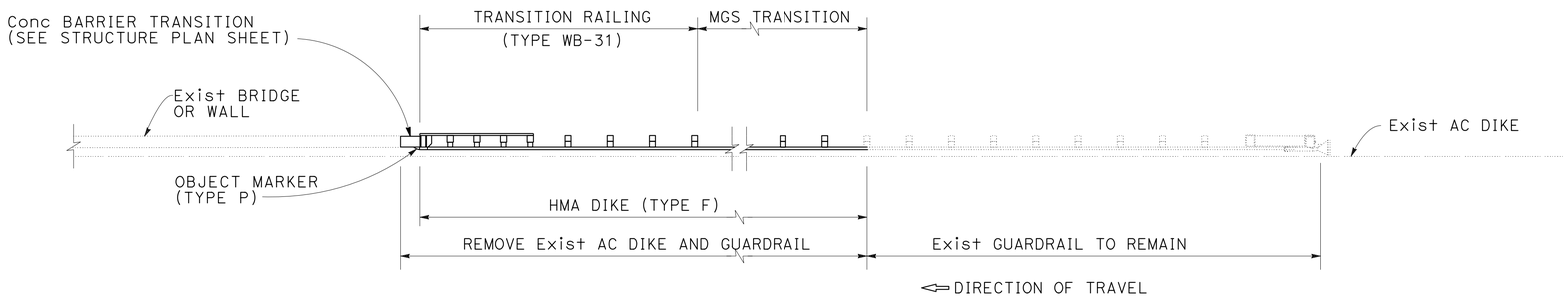


DETAIL F10
LOCATION No. 680-46L



DETAIL G1
LOCATION Nos. 680-19, 680-22 AND 680-43R

CONSTRUCTION DETAILS

NO SCALE

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

C-15

REVISED BY	DATE REVISED
HH	10/29/14

CALCULATED-DESIGNED BY: HUNG C. HSU
CHECKED BY: BER-LIN WEI

FUNCTIONAL SUPERVISOR: GEORGE LO

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

Caltrans

LAST REVISION: DATE PLOTTED => 14-JUL-2015
TIME PLOTTED => 09:04
06-27-15

BORDER LAST REVISED 7/2/2010

USERNAME => s141096
DGN FILE => 0414000246ga015.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0704 | PROJECT NUMBER & PHASE 04140002461

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	18	128

REGISTERED CIVIL ENGINEER — DATE: 6/26/15

Ber-lin Wei
No. 49855
Exp 9-30-16
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

6-29-15
PLANS APPROVAL DATE

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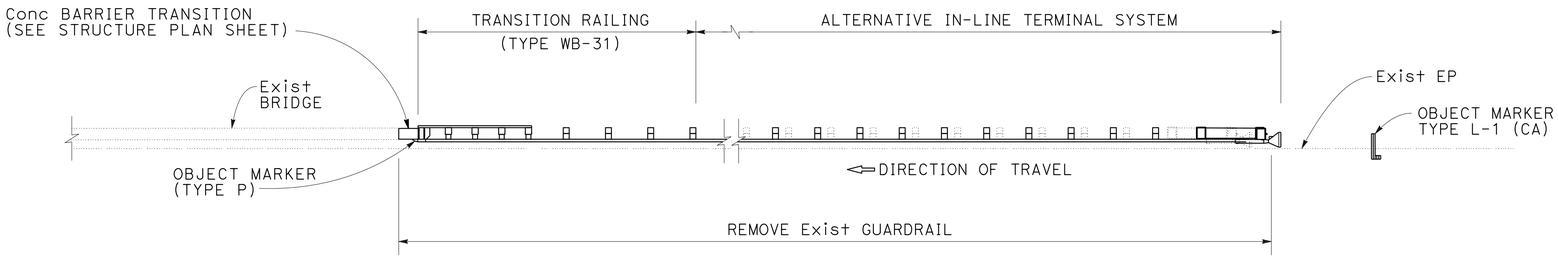
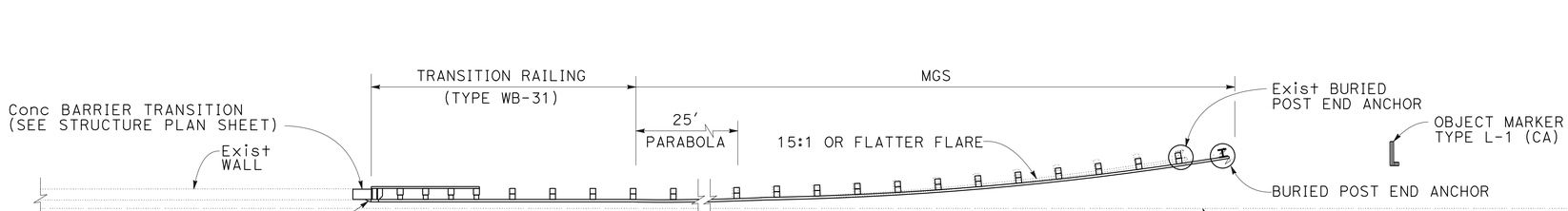


DETAIL G2
LOCATION No. 160-74R



DETAIL H1
LOCATION No. 680-6

CONSTRUCTION DETAILS

NO SCALE

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

C-16

REVISED BY	DATE REVISED
HH	10/29/14

CALCULATED-DESIGNED BY: HUNG C. HSU
CHECKED BY: BER-LIN WEI
FUNCTIONAL SUPERVISOR: GEORGE LO

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

LAST REVISION | DATE PLOTTED => 14-JUL-2015
06-26-15 | TIME PLOTTED => 09:04

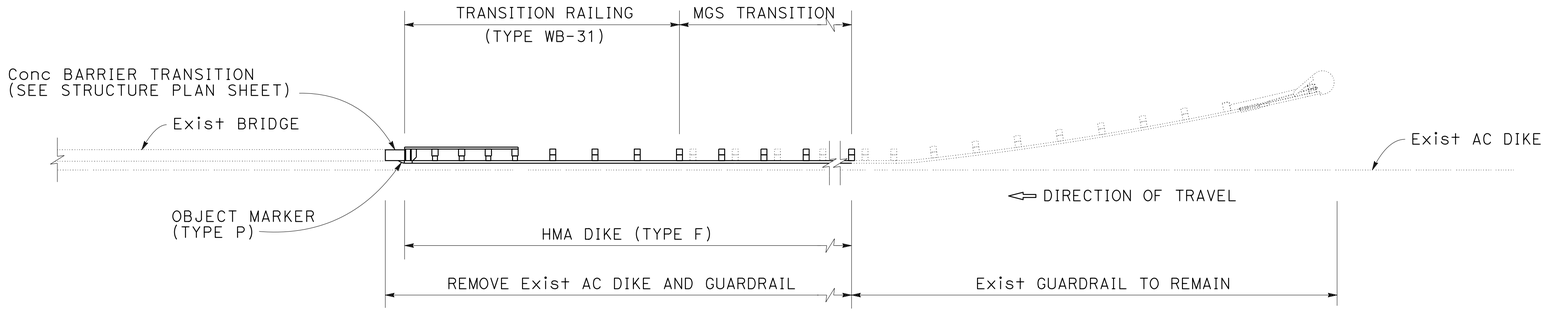
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	19	128

REGISTERED CIVIL ENGINEER — DATE: 6/26/15

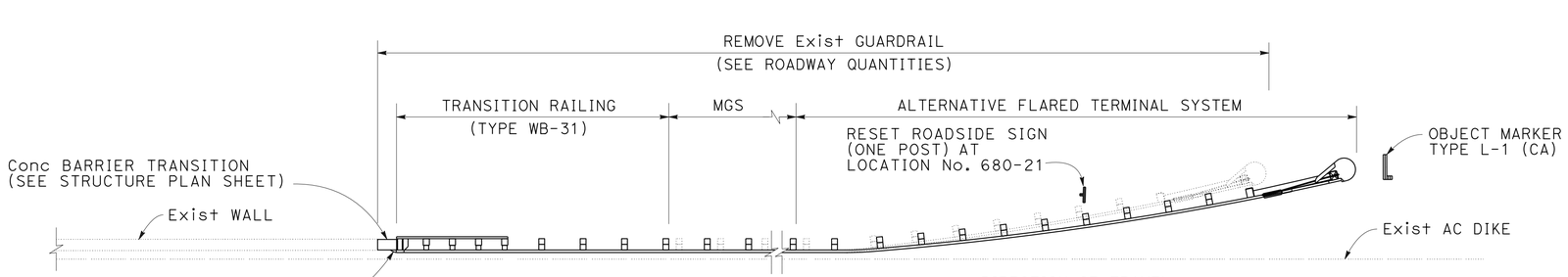
Ber-lin Wei
No. 49855
Exp. 9-30-16
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

6-29-15
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.



DETAIL H2
LOCATION No. 242-55N



DETAIL H3
LOCATION Nos. 680-21 AND 680-36

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

CONSTRUCTION DETAILS

NO SCALE

C-17

REVISED BY	DATE REVISED
HH	10/29/14

CALCULATED-DESIGNED BY: HUNG C. HSU
CHECKED BY: BER-LIN WEI
FUNCTIONAL SUPERVISOR: GEORGE LO

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

LAST REVISION | DATE PLOTTED => 14-JUL-2015
06-26-15 | TIME PLOTTED => 09:04

BORDER LAST REVISED 7/2/2010

USERNAME => s141096
DGN FILE => 0414000246ga017.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0704 | PROJECT NUMBER & PHASE | 04140002461

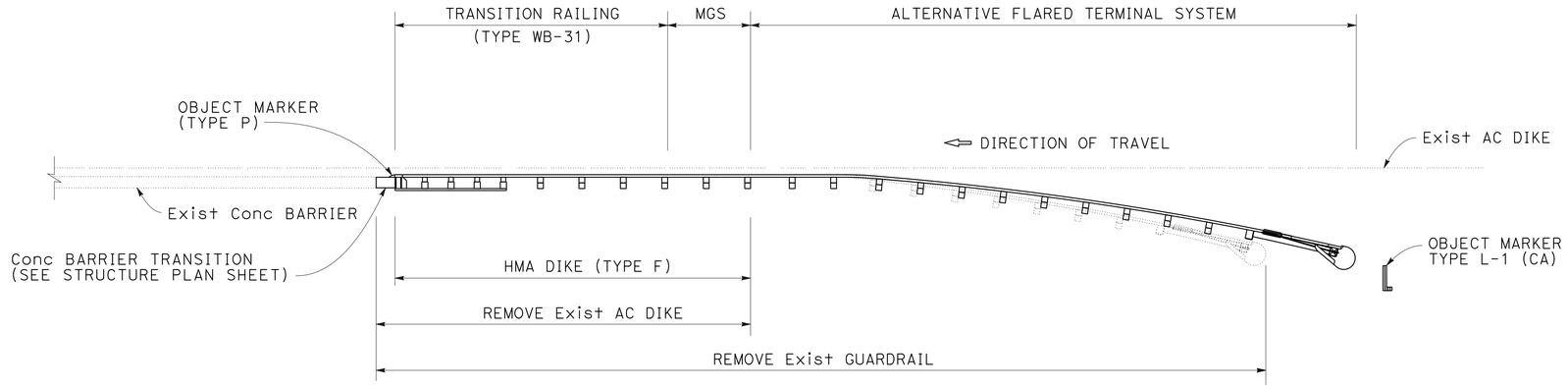
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	20	128

REGISTERED CIVIL ENGINEER — DATE: 6/26/15

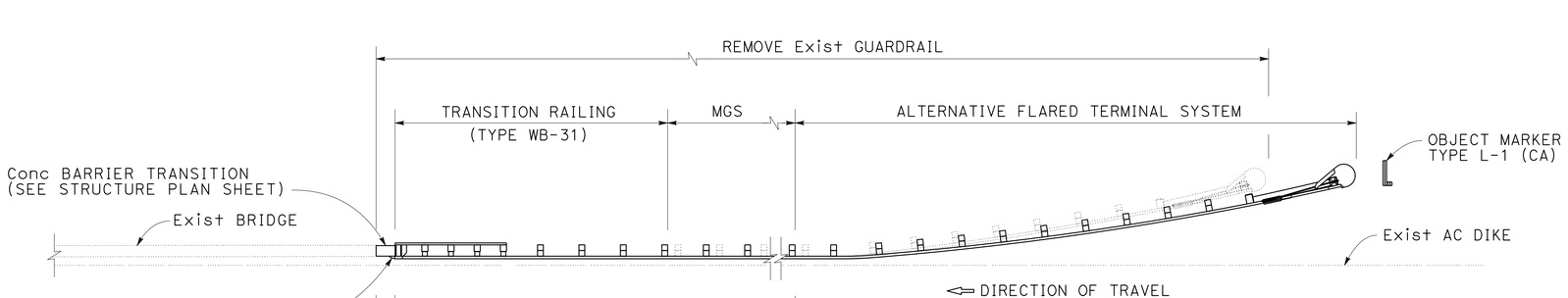
Ber-lin Wei
No. 49855
Exp. 9-30-16
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

6-29-15
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.



DETAIL H4
LOCATION No. 680-12L



DETAIL H5
LOCATION No. 242-55S

CONSTRUCTION DETAILS

NO SCALE

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

C-18

CALCULATED-DESIGNED BY	HUNG C. HSU	REVISED BY	HH
CHECKED BY	BER-LIN WEI	DATE REVISED	10/29/14
FUNCTIONAL SUPERVISOR	GEORGE LO		

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
Caltrans

LAST REVISION 06-26-15 | DATE PLOTTED => 14-JUL-2015 | TIME PLOTTED => 09:04

BORDER LAST REVISED 7/2/2010 | USERNAME => s141096 | DGN FILE => 0414000246ga018.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0704 | PROJECT NUMBER & PHASE 04140002461

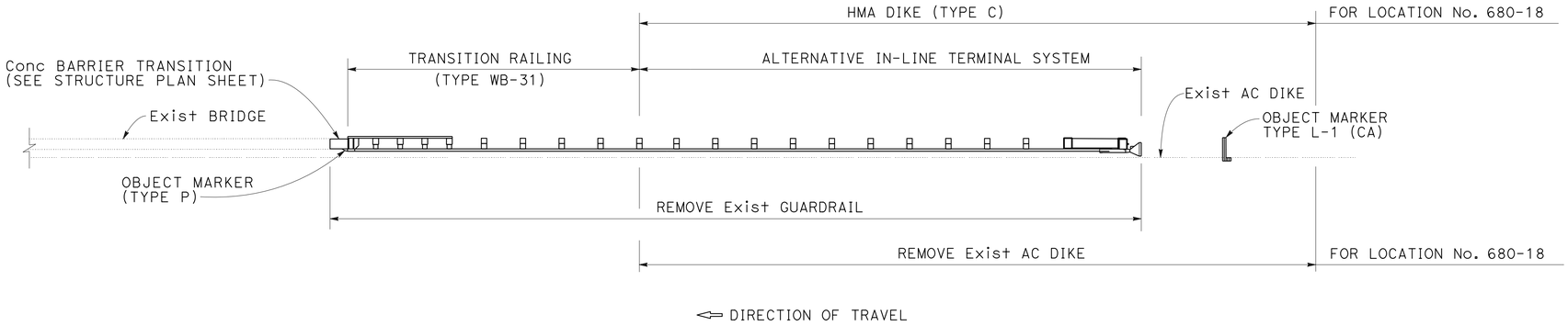
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	21	128

REGISTERED CIVIL ENGINEER — DATE: 6/26/15

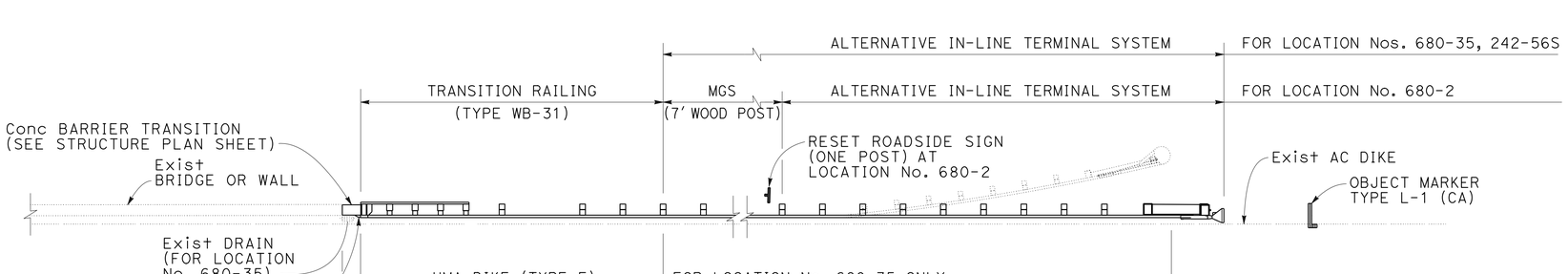
Ber-lin Wei
No. 49855
Exp. 9-30-16
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

6-29-15
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.



DETAIL I1
LOCATION Nos. 680-17 AND 680-18



DETAIL I2
LOCATION Nos. 680-2, 680-35 AND 242-56S

NOTE: SEE SHEET DD-2 FOR DRAINAGE WORK AT LOCATION No. 680-35

CONSTRUCTION DETAILS

NO SCALE

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

C-19

REVISED BY	DATE REVISED
HH	10/29/14

CALCULATED-DESIGNED BY: HUNG C. HSU
CHECKED BY: BER-LIN WEI
FUNCTIONAL SUPERVISOR: GEORGE LO

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

LAST REVISION | DATE PLOTTED => 14-JUL-2015
06-26-15 | TIME PLOTTED => 09:04

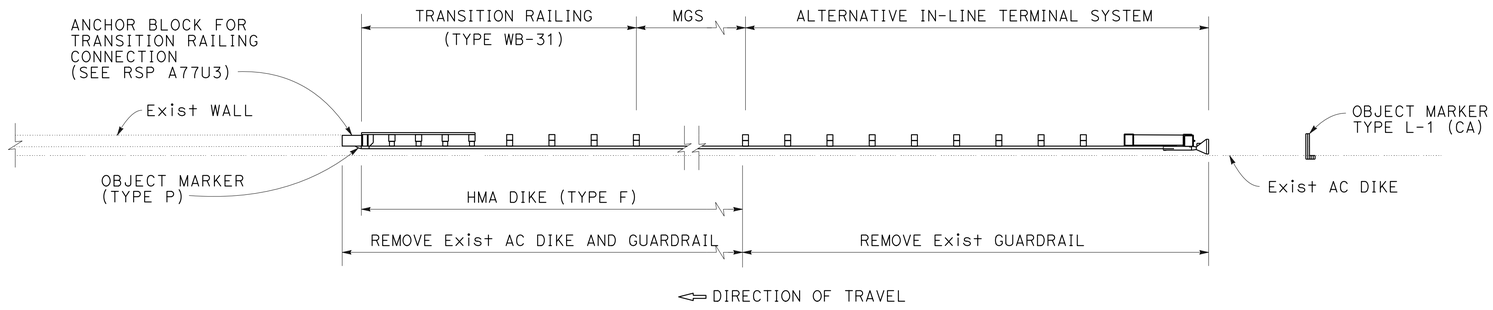
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	22	128

REGISTERED CIVIL ENGINEER — DATE: 6/26/15

Ber-lin Wei
No. 49855
Exp 9-30-16
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

6-29-15
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.



DETAIL I3
LOCATION No. 680-25

DETAIL J1
LOCATION No. 680-12R

CONSTRUCTION DETAILS

NO SCALE

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

C-20

CALCULATED-DESIGNED BY	CHECKED BY	REVISED BY	DATE REVISED
HUNG C. HSU	BER-LIN WEI	HH	10/29/14

FUNCTIONAL SUPERVISOR: GEORGE LO

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

LAST REVISION: DATE PLOTTED => 14-JUL-2015 TIME PLOTTED => 09:04
06-26-15

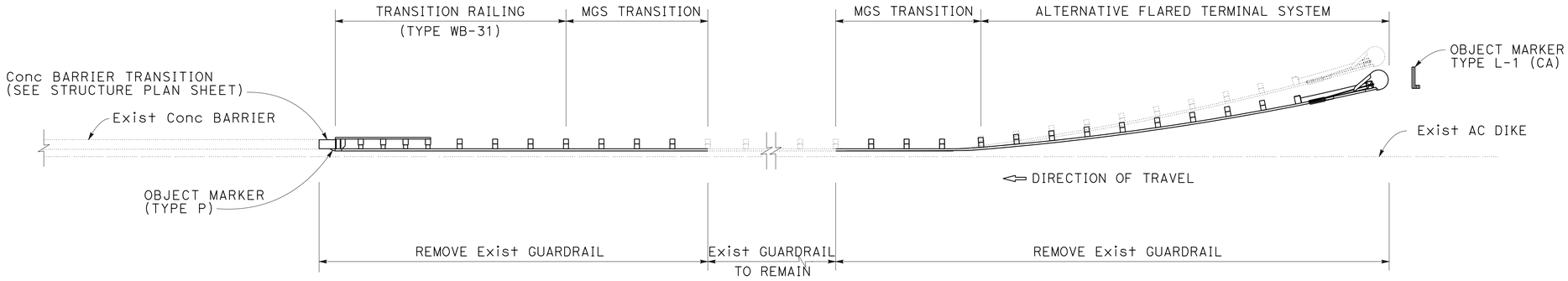
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	23	128

REGISTERED CIVIL ENGINEER — 6/26/15 DATE

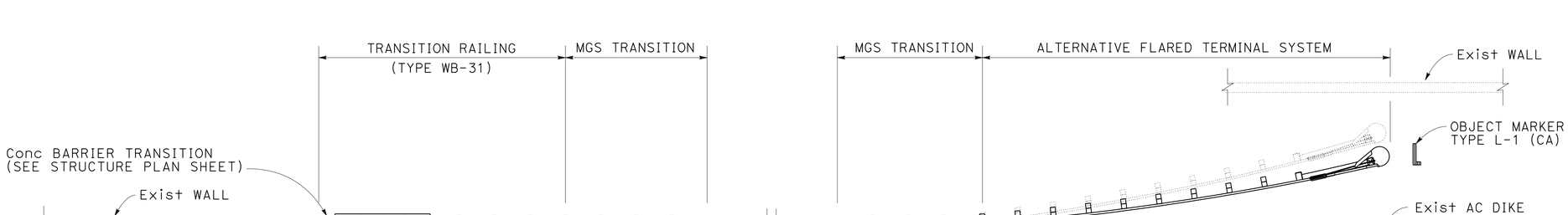
Ber-lin Wei
No. 49855
Exp. 9-30-16
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

6-29-15
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.



DETAIL J2
LOCATION No. 680-10



DETAIL J3
LOCATION No. 680-26

CONSTRUCTION DETAILS

NO SCALE

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

C-21

REVISED BY	DATE REVISED
HH	10/29/14

CALCULATED-DESIGNED BY: HUNG C. HSU
CHECKED BY: BER-LIN WEI
FUNCTIONAL SUPERVISOR: GEORGE LO

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

LAST REVISION 06-26-15 | DATE PLOTTED => 14-JUL-2015 | TIME PLOTTED => 09:04

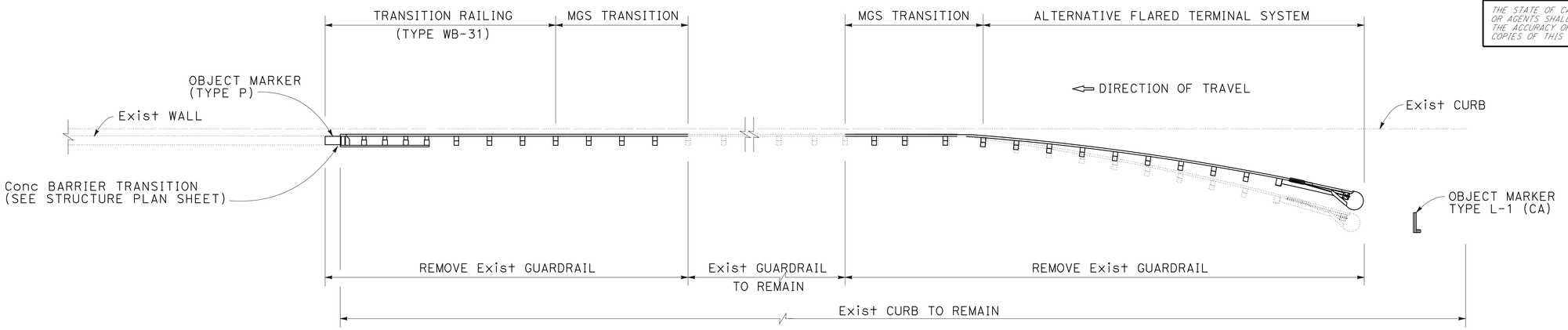
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	24	128

REGISTERED CIVIL ENGINEER — DATE: 6/26/15

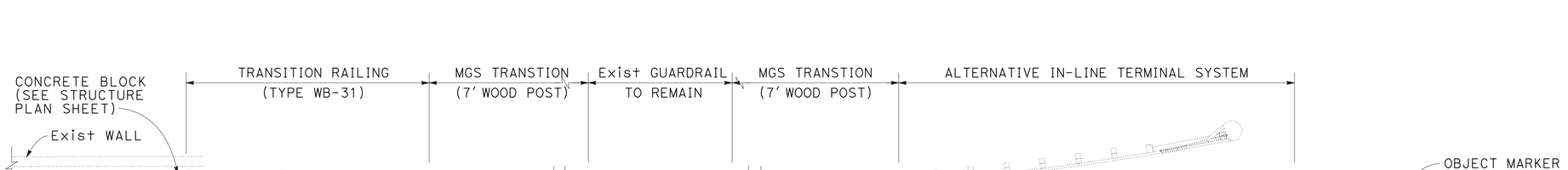
Ber-lin Wei
No. 49855
Exp. 9-30-16
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

6-29-15
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.



DETAIL J4
LOCATION No. 680-45



DETAIL K1
LOCATION No. 680-1

CONSTRUCTION DETAILS

NO SCALE

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

C-22

REVISED BY	DATE REVISED
HH	10/29/14

CALCULATED-DESIGNED BY: HUNG C. HSU
CHECKED BY: BER-LIN WEI
FUNCTIONAL SUPERVISOR: GEORGE LO

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

LAST REVISION: DATE PLOTTED => 14-JUL-2015
06-26-15 TIME PLOTTED => 09:04

BORDER LAST REVISED 7/2/2010
USERNAME => s141096
DGN FILE => 0414000246ga022.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0704
PROJECT NUMBER & PHASE 04140002461

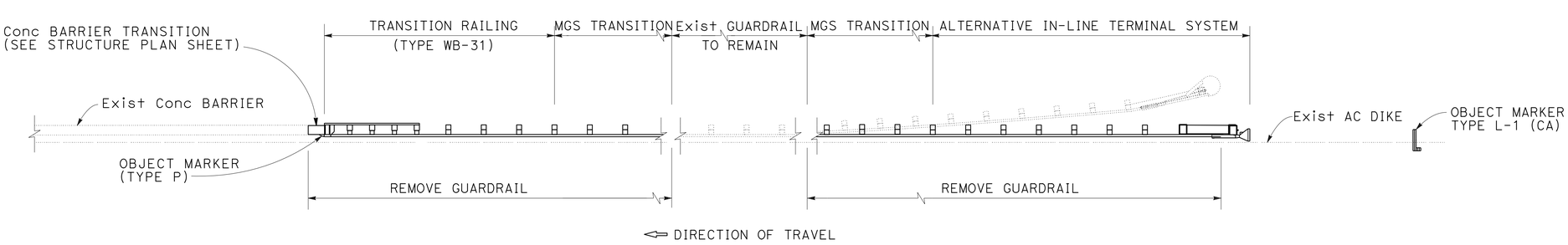
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	25	128

REGISTERED CIVIL ENGINEER — DATE: 6/26/15

Ber-lin Wei
No. 49855
Exp. 9-30-16
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

6-29-15
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.



DETAIL K2
LOCATION No. 680-9

CONSTRUCTION DETAILS

NO SCALE

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

C-23

REVISED BY	HH		
DATE REVISED	10/29/14		
CALCULATED-DESIGNED BY	HUNG C. HSU		
CHECKED BY	BER-LIN WEI		
FUNCTIONAL SUPERVISOR	GEORGE LO		

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
DESIGN

LAST REVISION: DATE PLOTTED => 14-JUL-2015
06-26-15 TIME PLOTTED => 09:04

BORDER LAST REVISED 7/2/2010 | USERNAME => s141096 | DGN FILE => 0414000246ga023.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0704 | PROJECT NUMBER & PHASE 04140002461

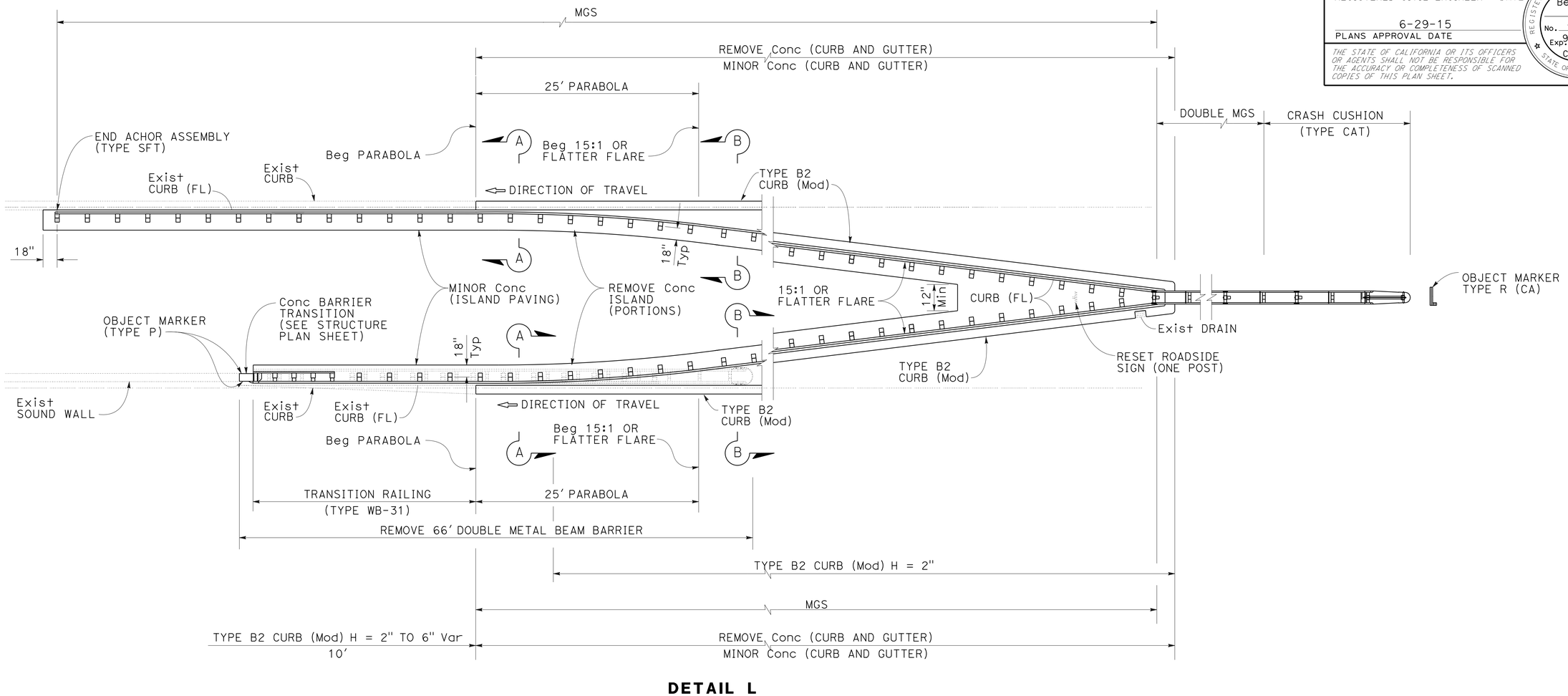
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	26	128

REGISTERED CIVIL ENGINEER — 6/26/15 DATE

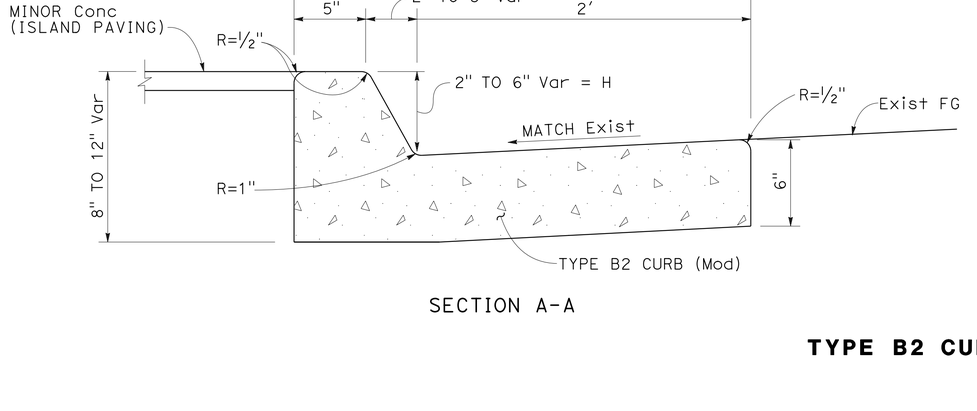
PLANS APPROVAL DATE — 6-29-15

REGISTERED PROFESSIONAL ENGINEER — Ber-lin Wei — No. 49855 — Exp 9-30-16 — CIVIL — STATE OF CALIFORNIA

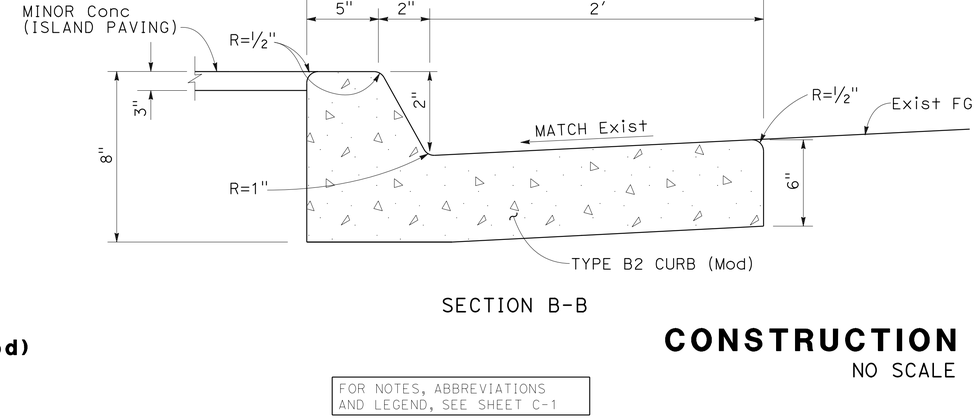
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



DETAIL L
LOCATION No. 242-64R



SECTION A-A



SECTION B-B

TYPE B2 CURB (Mod)

CONSTRUCTION DETAILS

NO SCALE

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

C-24

REVISED BY	DATE REVISED
HH	10/29/14

CALCULATED-DESIGNED BY: HUNG C. HSU
CHECKED BY: BER-LIN WEI
FUNCTIONAL SUPERVISOR: GEORGE LO

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

LAST REVISION | DATE PLOTTED => 14-JUL-2015
06-27-15 | TIME PLOTTED => 09:04

BORDER LAST REVISED 7/2/2010 | USERNAME => s141096 | DGN FILE => 0414000246ga024.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0704 | PROJECT NUMBER & PHASE 04140002461

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	27	128

REGISTERED CIVIL ENGINEER — DATE: 6/26/15

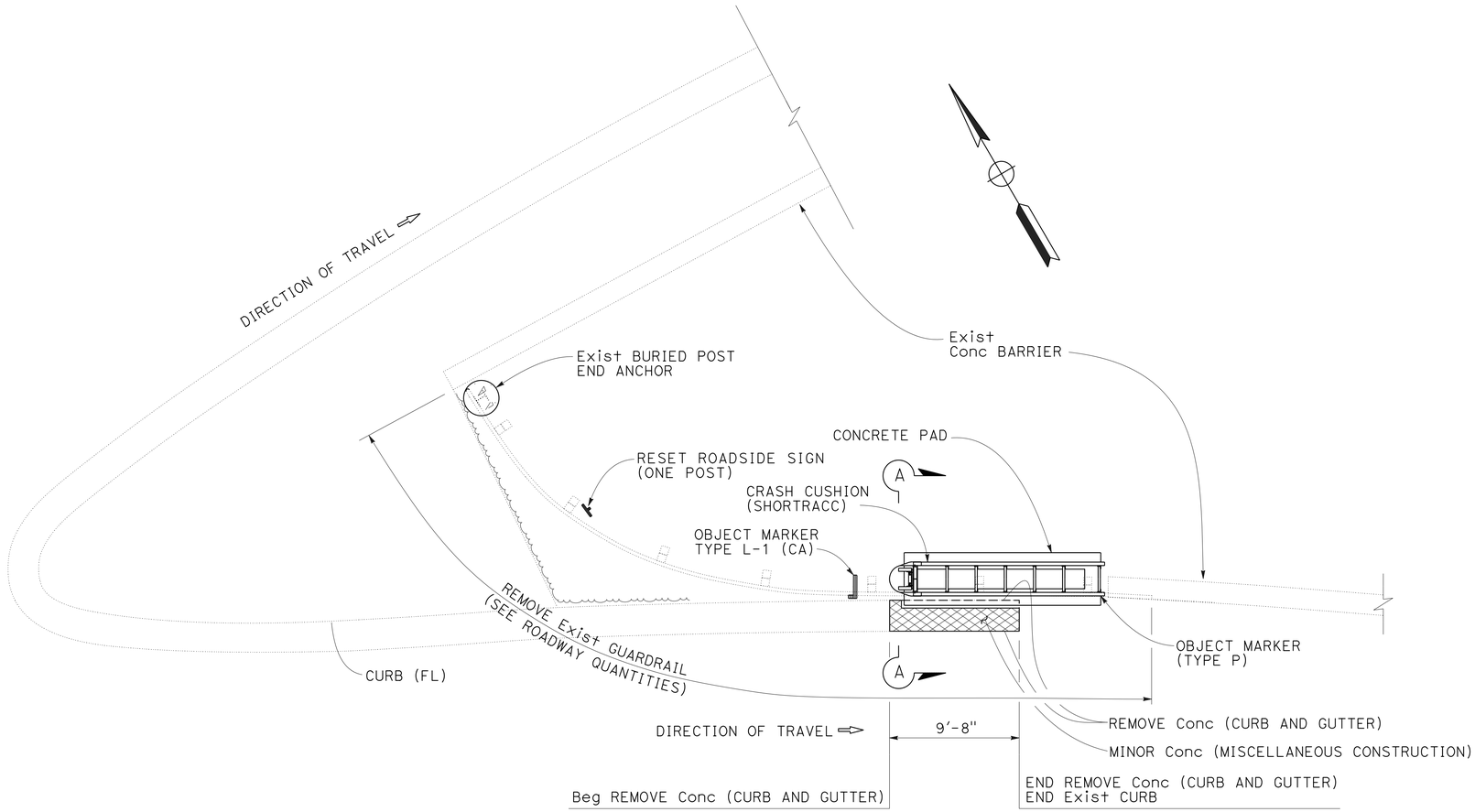
PLANS APPROVAL DATE: 6-29-15

REGISTERED PROFESSIONAL ENGINEER — Ber-lin Wei — No. 49855 — Exp 9-30-16 — CIVIL — STATE OF CALIFORNIA

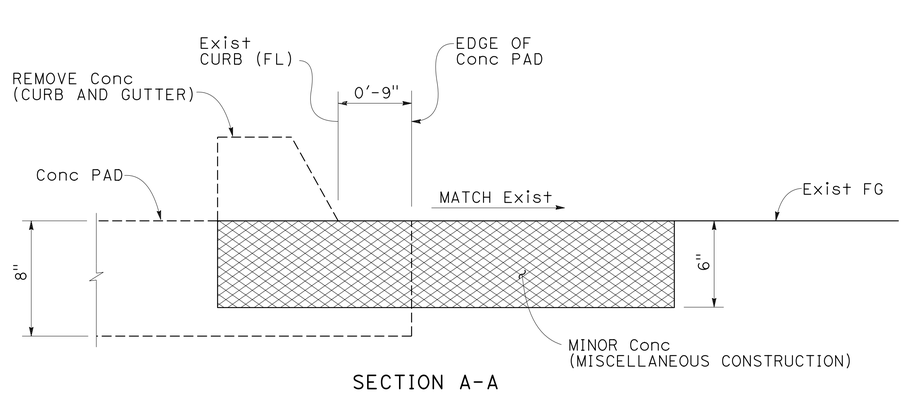
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

LEGEND:

MINOR CONCRETE (MISCELLANEOUS CONSTRUCTION)



DETAIL M
LOCATION No. 242-69L



SECTION A-A

CONSTRUCTION DETAILS

NO SCALE

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

C-25

REVISED BY	DATE REVISED
HH	10/29/14

CALCULATED-DESIGNED BY: HUNG C. HSU
CHECKED BY: BER-LIN WEI
FUNCTIONAL SUPERVISOR: GEORGE LO

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

LAST REVISION: DATE PLOTTED => 14-JUL-2015 TIME PLOTTED => 09:04

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	28	128

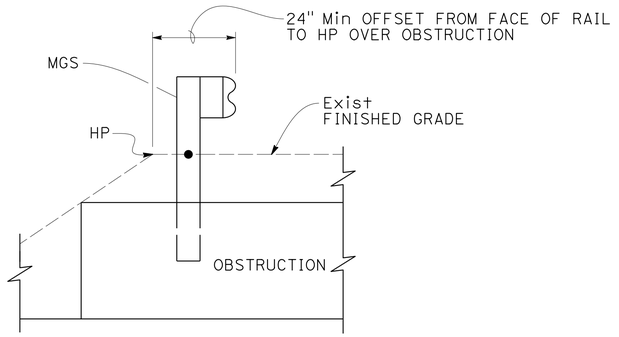
REGISTERED CIVIL ENGINEER — 6/26/15 DATE

PLANS APPROVAL DATE — 6-29-15

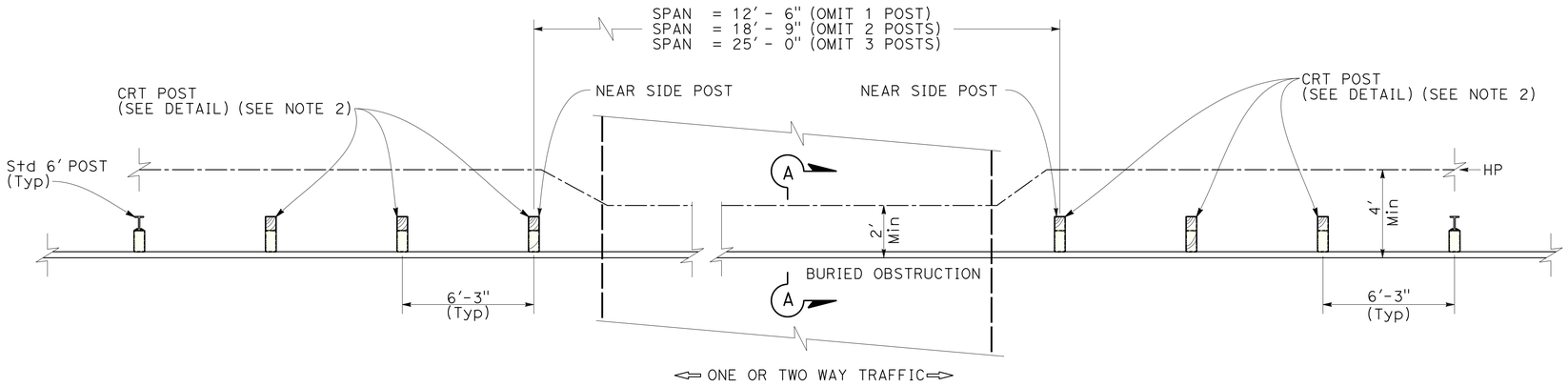
REGISTERED PROFESSIONAL ENGINEER — Ber-lin Wei — No. 49855 — Exp 9-30-16 — CIVIL — STATE OF CALIFORNIA

NOTES:

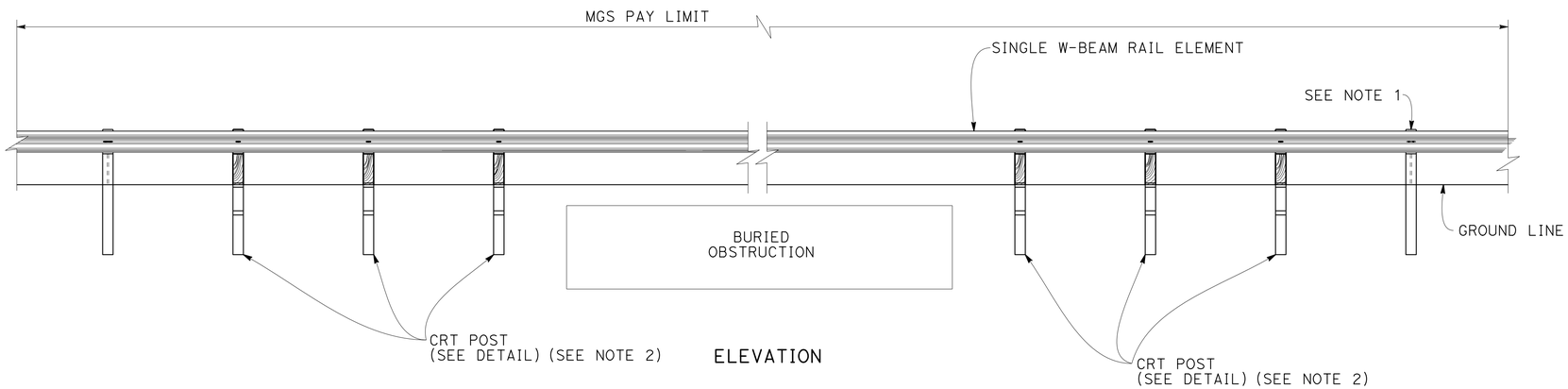
1. STANDARD 6′ POST MAY BE WOOD OR STEEL. SEE STANDARD PLAN RSP A77L1 FOR ADDITIONAL DETAILS NOT SHOWN.
2. CRT POST MUST BE WOOD.
3. GUARD RAIL ELEMENTS ARE STANDARD 12′-6" LENGTH BETWEEN SPLICES.
4. ON ONE LANE ROAD, THE NEAR SIDE POST DO NOT NEED TO BE CRT POST.



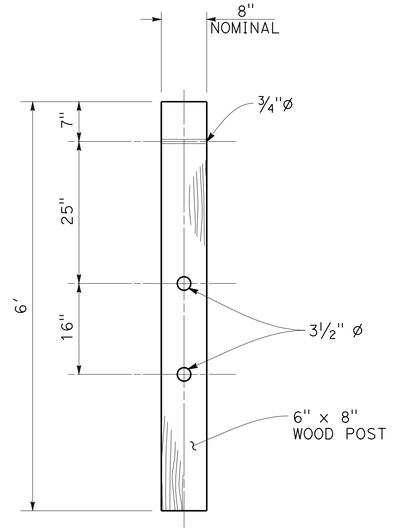
SECTION A-A



PLAN



ELEVATION



CONTROLLED RELEASING TERMINAL (CRT) POST DETAIL

MIDWEST GUARD RAIL SYSTEM (OMIT 1 TO 3 POSTS)

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

CONSTRUCTION DETAILS

NO SCALE

C-26

REVISED BY	DATE REVISED
HH	10/29/14

CALCULATED-DESIGNED BY: HUNG C. HSU
CHECKED BY: BER-LIN WEI
FUNCTIONAL SUPERVISOR: GEORGE LO

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
DESIGN

LAST REVISION | DATE PLOTTED => 14-JUL-2015
06-12-15 | TIME PLOTTED => 09:04

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	29	128

REGISTERED CIVIL ENGINEER — DATE: 6/26/15

PLANS APPROVAL DATE: 6-29-15

Ber-lin Wei
No. 49855
Exp 9-30-16
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

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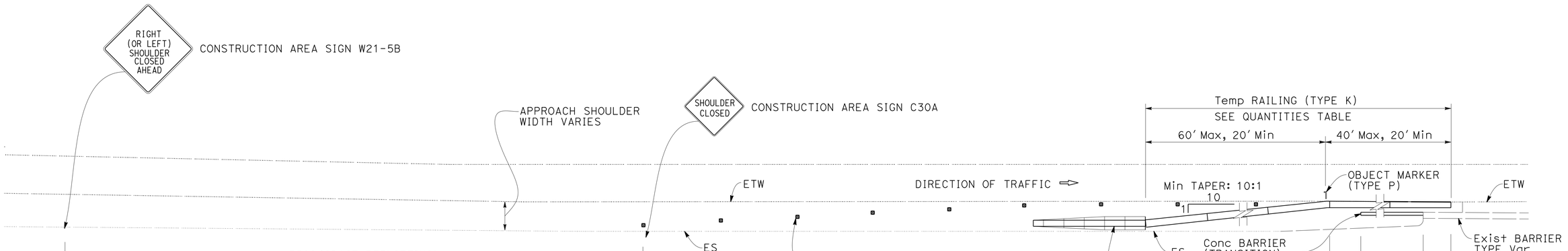
LEGEND:

- DIRECTION OF TRAVEL
- CHANNELIZERS (SURFACE MOUNTED)
- 1 OBJECT MARKER
- ROADSIDE (ONE POST)



SHOULDER CLOSURE PLAN (1)
DURING CONSTRUCTION OF CONCRETE BARRIER TRANSITION

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

CONSTRUCTION DETAILS

NO SCALE

C-27

CALCULATED-DESIGNED BY	CHECKED BY	REVISED BY	DATE REVISED
HUNG C. HSU	BER-LIN WEI	HH	10/29/14

FUNCTIONAL SUPERVISOR: GEORGE LO

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

LAST REVISION: DATE PLOTTED => 14-JUL-2015
06-12-15 TIME PLOTTED => 09:04

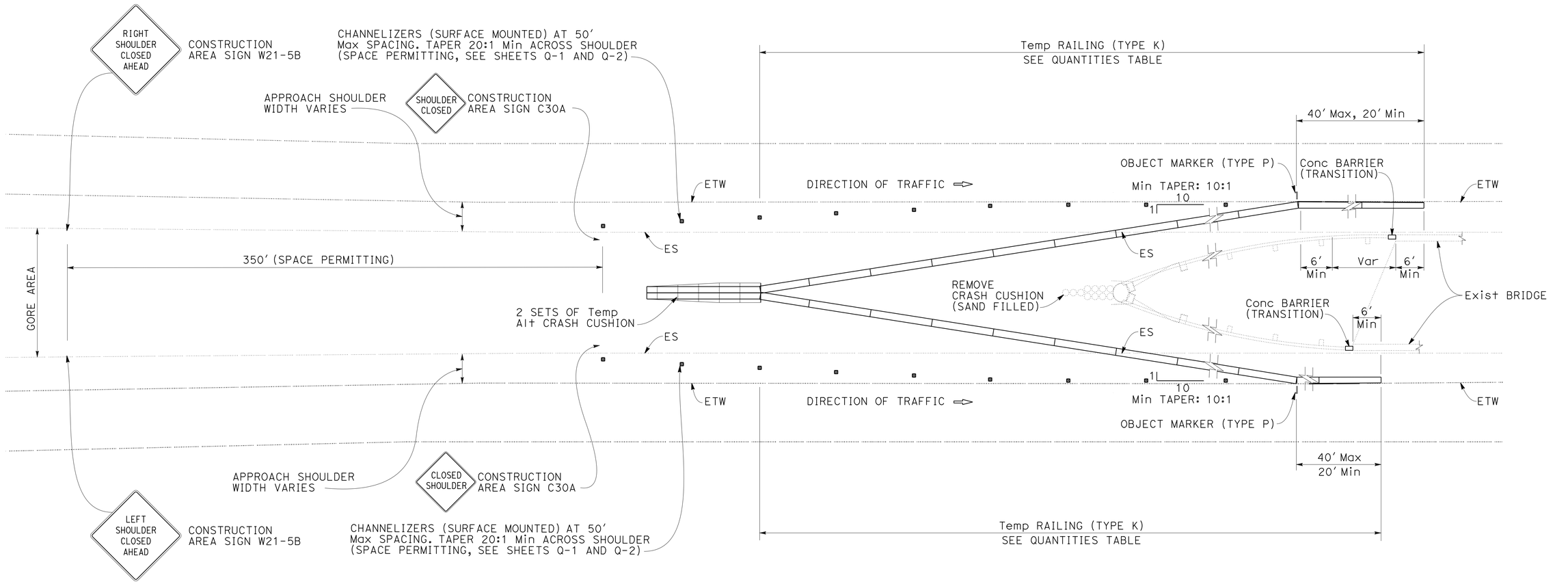
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	30	128

REGISTERED CIVIL ENGINEER — DATE: 6/26/15

PLANS APPROVAL DATE: 6-29-15

REGISTERED PROFESSIONAL ENGINEER — Ber-lin Wei — No. 49855 — Exp 9-30-16 — CIVIL — STATE OF CALIFORNIA

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



SHOULDER CLOSURE PLAN (2)
DURING CONSTRUCTION OF CONCRETE BARRIER TRANSITION

CONSTRUCTION DETAILS

NO SCALE

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET C-27

C-28

REVISED BY	DATE REVISED
HH	10/29/14

CALCULATED-DESIGNED BY: HUNG C. HSU
CHECKED BY: BER-LIN WEI
FUNCTIONAL SUPERVISOR: GEORGE LO

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN

LAST REVISION: DATE PLOTTED => 14-JUL-2015 TIME PLOTTED => 09:04
06-26-15

BORDER LAST REVISED 7/2/2010 | USERNAME => s141096 | DGN FILE => 0414000246ga028.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0704 | PROJECT NUMBER & PHASE 04140002461

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	31	128

6/29/15
REGISTERED CIVIL ENGINEER DATE

6-29-15
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Jiangfan Chen
No. 77248
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

ROUTE	POST MILE	TEMPORARY FIBER ROLL	TEMPORARY HYDRAULIC MULCH (BONDED FIBER MATRIX)	TEMPORARY DRAINAGE INLET PROTECTION
		LF	SQYD	EA
680 NB	12.72 TO 13.93	291	103.3	
	14.09 TO 14.85	378	246.7	2
	17.20 TO 17.67	235	97.8	1
	19.04 TO 21.52	310	87.3	
680 SB	22.70 TO 20.89	163		5
	19.86 TO 18.75	235	45	
	14.67 TO 13.08	218	83.8	1
242 NB	0.21 TO 1.60	86	94.3	
	2.27 TO 3.08	50	90	1
242 SB	2.73 TO 2.28	90		
	1.71 TO 1.60	148		1
	0.78 TO 0.66	158		
160 NB	0.01 TO 0.82	108	24	2
160 SB	0.01 TO 0.01	43	24	
TOTAL		2513	896.2	13

REVISED BY	DATE REVISED
NT	10/29/14

CALCULATED-DESIGNED BY: NGOCCHAU TRAN
CHECKED BY: JIANGFAN CHEN
FUNCTIONAL SUPERVISOR: KAMRAN NAKHJIRI

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® WATER QUALITY

TEMPORARY WATER POLLUTION CONTROL QUANTITIES

WPCQ-1

LAST REVISION 06-16-15
DATE PLOTTED => 14-JUL-2015
TIME PLOTTED => 09:12

BORDER LAST REVISED 7/2/2010
USERNAME => s141096
DGN FILE => 0414000246gd001.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0786
PROJECT NUMBER & PHASE 04140002461

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	32	128

Mark R. Morancy 6/29/15
REGISTERED CIVIL ENGINEER DATE

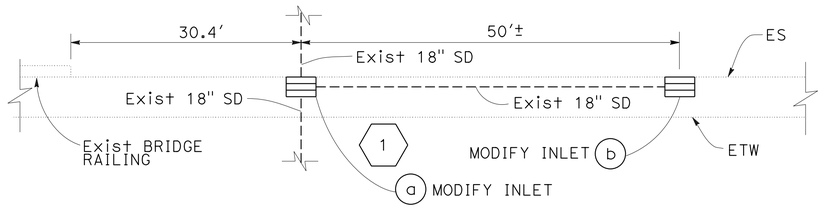
6-29-15
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Mark R. Morancy
No. 55907
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.

LEGEND:

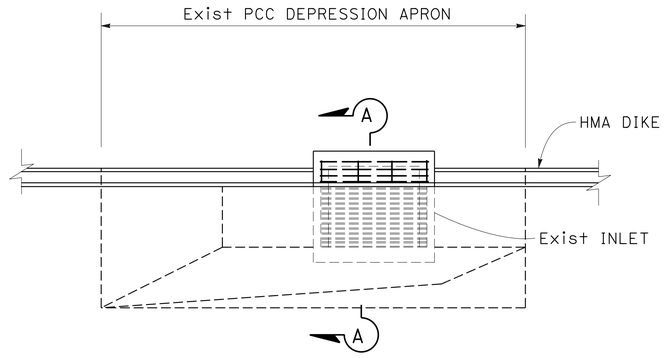
- HMA DIKE
- MINOR CONCRETE
- REMOVE CONCRETE



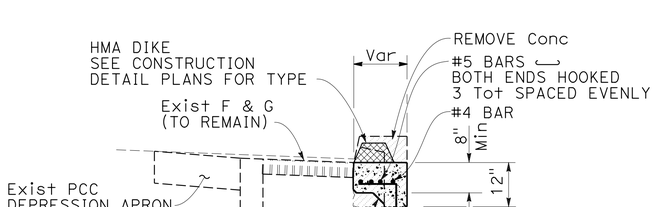
PLAN

LOCATION No. 160-73

NB ROUTE 160 PM 0.82



PLAN VIEW



SECTION A-A

MODIFY INLET

1 a b

DRAINAGE DETAILS

NO SCALE

DD-1

CALCULATED-DESIGNED BY	MM	REVISED BY	5/17/15
CHECKED BY		DATE REVISED	
MARK MORANCY			
CRAIG TOMIMATSU			
FUNCTIONAL SUPERVISOR			
CRAIG TOMIMATSU			
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION			
Caltrans	HYDRAULICS		

LAST REVISION 06-27-15
DATE PLOTTED => 14-JUL-2015
TIME PLOTTED => 09:04

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	33	128

Mark R. Morancy 6/29/15
REGISTERED CIVIL ENGINEER DATE

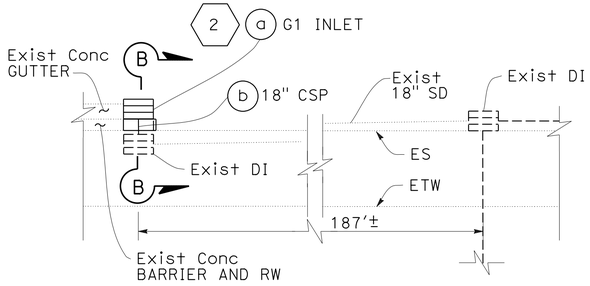
6-29-15
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Mark R. Morancy
No. 55907
Exp. 12-31-16
CIVIL
STATE OF CALIFORNIA

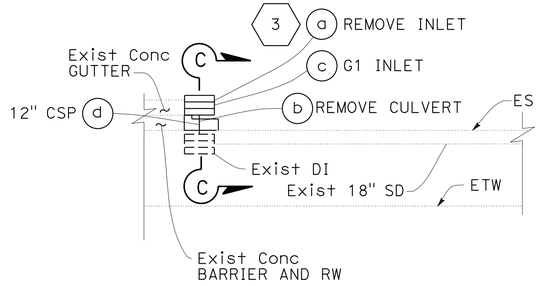
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTE:

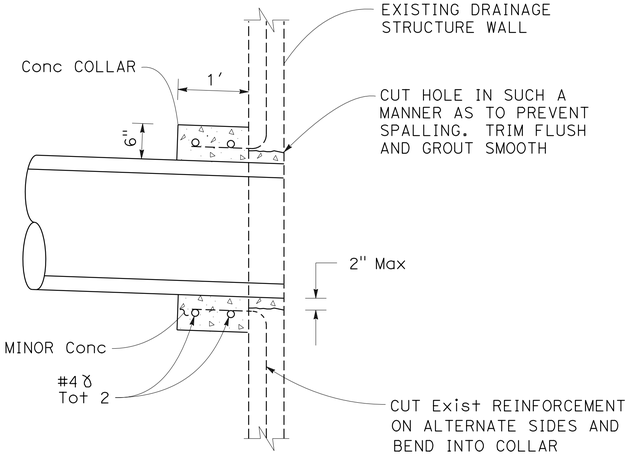
1. FOR ADDITIONAL INLET DETAILS NOT SHOWN, SEE RSP D73.



PLAN



PLAN

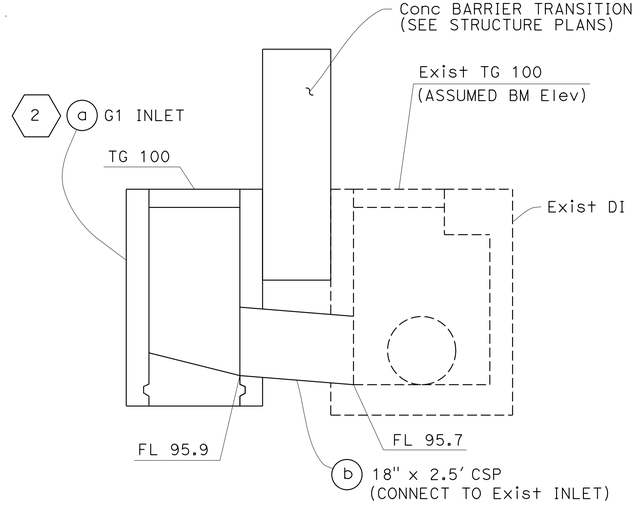


NOTES:

1. IF WALL OF EXISTING DRAINAGE STRUCTURE HAS NO REINFORCEMENT, DRILL AND BOND DOWELS, 1' ON CENTER, 6" INTO WALL AND BEND INTO COLLAR.
2. SQUARE OR CIRCULAR COLLAR OPTIONAL.

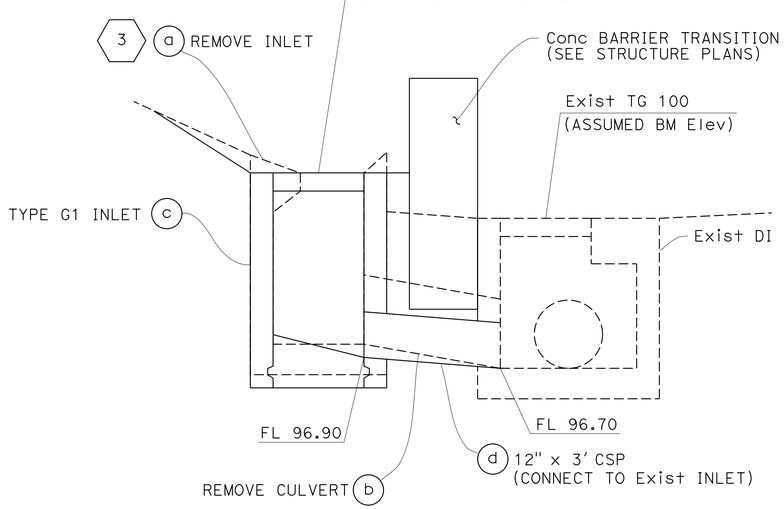
PIPE CONNECTION TO EXISTING DRAINAGE STRUCTURE

2 b 3 d



SECTION B-B

LOCATION No. 680-35
SB ROUTE 680 PM 21.52



SECTION C-C

LOCATION No. 242-67
SB ROUTE 242 PM 2.28

DRAINAGE DETAILS

NO SCALE

DD-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
HYDRAULICS
FUNCTIONAL SUPERVISOR: CRAIG TOMIMATSU
CALCULATED-DESIGNED BY: MARK MORANCY
CHECKED BY: CRAIG TOMIMATSU
REVISED BY: MM
DATE REVISED: 5/17/15

LAST REVISION DATE PLOTTED => 14-JUL-2015
TIME PLOTTED => 09:04
06-27-15

BORDER LAST REVISED 7/2/2010
USERNAME => s141096
DGN FILE => 04140002461c002.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0704
PROJECT NUMBER & PHASE 04140002461

ABBREVIATION:

S STANDARD TYPE JOINT

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	34	128

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

DRAINAGE QUANTITIES

DRAINAGE DETAIL SHEET No.	DRAINAGE SYSTEM No. ⬡	DRAINAGE UNIT ◯	12" CORRUGATED STEEL PIPE (0.079" THICK) LF	18" CORRUGATED STEEL PIPE (0.079" THICK) LF	FRAME AND GRATE (TYPE 24 x 12) (N) EA	HEIGHT OF INLET (N) ft	MINOR CONCRETE (MINOR STRUCTURE) CY	MISCELLANEOUS IRON AND STEEL LB	REMOVE INLET EA	REMOVE CULVERT LF	MODIFY INLET EA	PIPE JOINT CLASSIFICATION (N)	DESCRIPTION	LOCATION	DRAINAGE SYSTEM No. ⬡	DRAINAGE UNIT ◯
DD-1	1	a									1		MODIFY INLET	Loc 73-NB Rte 160 PM 0.82	1	a
	↓	b									1		MODIFY INLET	Loc 73-NB Rte 160 PM 0.81	↓	b
DD-2	2	a			1	4.1	1.19	326					G1 INLET	Loc 35-SB Rte 680 PM 21.52	2	a
	↓	b		2.5								S	18" CSP	Loc 35-SB Rte 680 PM 21.52	↓	b
	3	a							1				REMOVE INLET	Loc 67-SB-Rte 242 PM R 2.28	3	a
		b								3			REMOVE CULVERT	Loc 67-SB-Rte 242 PM R 2.28		b
		c			1	4.1	1.19	326					G1 INLET	Loc 67-SB-Rte 242 PM R 2.28		c
	↓	d	3									S	12" CSP	Loc 67-SB-Rte 242 PM R 2.28	↓	d
SHEET TOTAL			3	2.5			2.38	652	1	3	2		SHEET TOTAL			

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

CALCULATED-DESIGNED BY LLEWELLYN CHAN
CHECKED BY BER-LIN WEI
REVISED BY HH
DATE REVISED 10/29/14
FUNCTIONAL SUPERVISOR GEORGE LO
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

DRAINAGE QUANTITIES

DQ-1

LAST REVISION DATE PLOTTED => 14-JUL-2015
05-17-15 TIME PLOTTED => 09:04

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	35	128

6/29/15
REGISTERED CIVIL ENGINEER DATE

Rachel Liu
No. 74807
Exp. 12-31-15
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

6-29-15
PLANS APPROVAL DATE

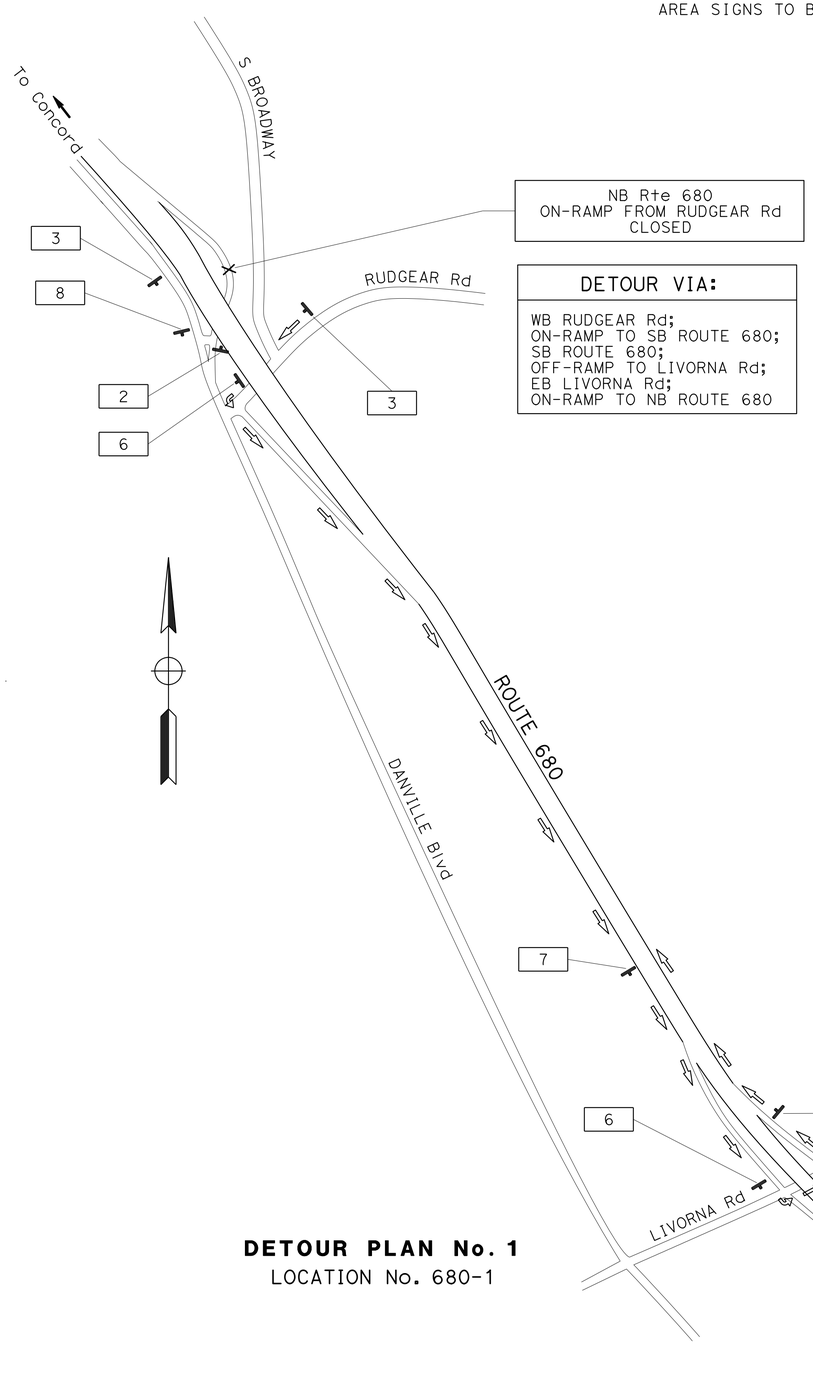
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTE:

1. EXACT LOCATION AND POSITION OF ROADSIDE SIGNS AND CONSTRUCTION AREA SIGNS TO BE DETERMINED BY THE ENGINEER.

LEGEND:

No. CONSTRUCTION AREA SIGN NUMBER

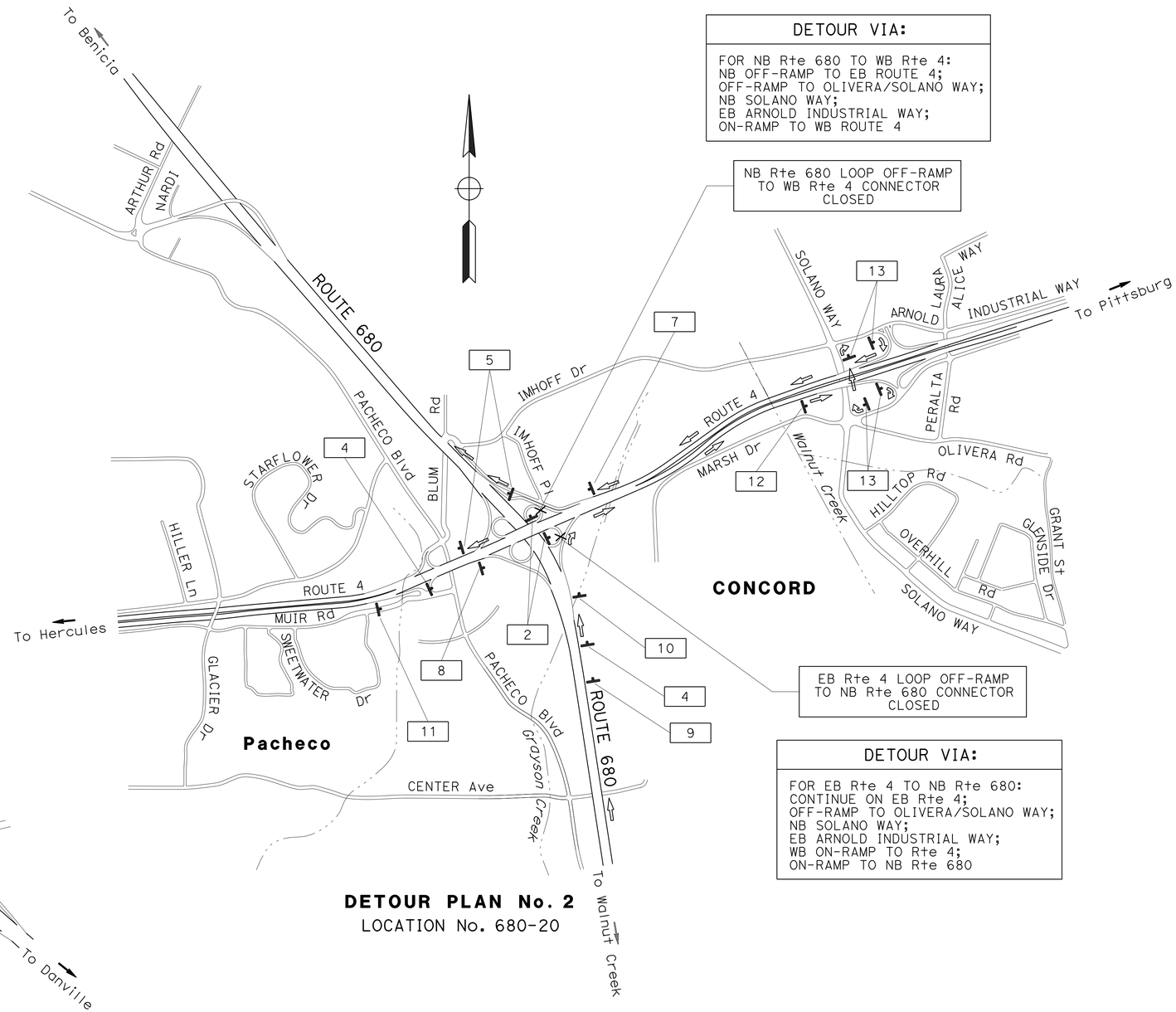


NB Rte 680
ON-RAMP FROM RUDGEAR Rd
CLOSED

DETOUR VIA:

WB RUDGEAR Rd;
ON-RAMP TO SB ROUTE 680;
SB ROUTE 680;
OFF-RAMP TO LIVORNA Rd;
EB LIVORNA Rd;
ON-RAMP TO NB ROUTE 680

DETOUR PLAN No. 1
LOCATION No. 680-1



DETOUR VIA:

FOR NB Rte 680 TO WB Rte 4:
NB OFF-RAMP TO EB ROUTE 4;
OFF-RAMP TO OLIVERA/SOLANO WAY;
NB SOLANO WAY;
EB ARNOLD INDUSTRIAL WAY;
ON-RAMP TO WB ROUTE 4

NB Rte 680 LOOP OFF-RAMP
TO WB Rte 4 CONNECTOR
CLOSED

EB Rte 4 LOOP OFF-RAMP
TO NB Rte 680 CONNECTOR
CLOSED

DETOUR VIA:

FOR EB Rte 4 TO NB Rte 680:
CONTINUE ON EB Rte 4;
OFF-RAMP TO OLIVERA/SOLANO WAY;
NB SOLANO WAY;
EB ARNOLD INDUSTRIAL WAY;
WB ON-RAMP TO Rte 4;
ON-RAMP TO NB Rte 680

DETOUR PLAN No. 2
LOCATION No. 680-20

CONSTRUCTION AREA SIGNS

NO SCALE

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

CS-1

CALCULATED-DESIGNED BY	RL	10/29/14	
CHECKED BY	RACHEL LIU		
FUNCTIONAL SUPERVISOR	LOURDES DAVID		
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	LOURDES DAVID	DATE REVISED	
Caltrans	TRAFFIC	REVISED BY	

LAST REVISION | DATE PLOTTED => 14-JUL-2015
04-14-15 | TIME PLOTTED => 09:04

BORDER LAST REVISED 7/2/2010 | USERNAME => s141096 | DGN FILE => 04140002461a001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0704 | PROJECT NUMBER & PHASE 04140002461

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	36	128

6/29/15
REGISTERED CIVIL ENGINEER DATE

Rachel Liu
No. 74807
Exp. 12-31-15
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

6-29-15
PLANS APPROVAL DATE

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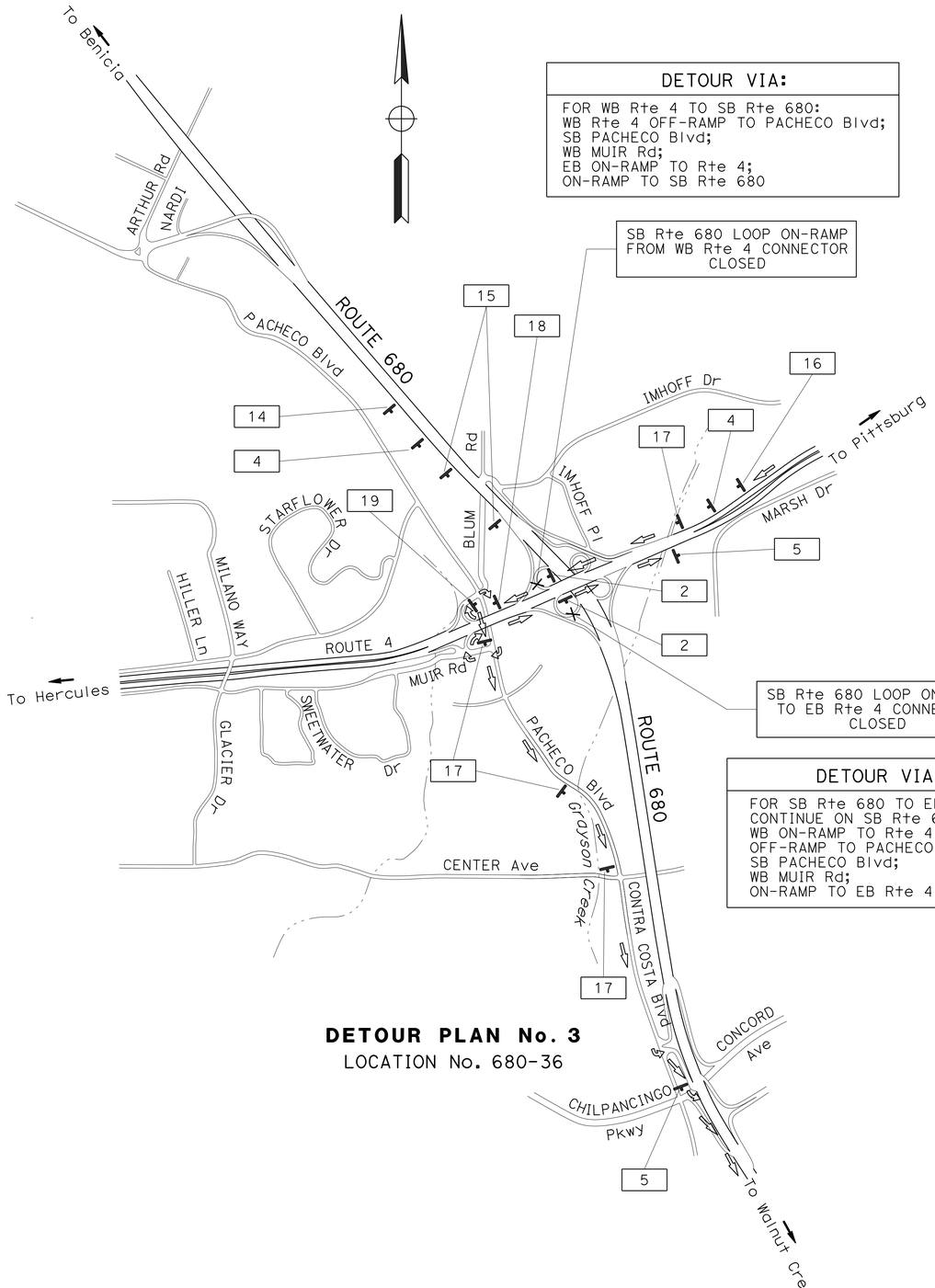


DETOUR PLAN No. 3
LOCATION No. 680-36

DETOUR VIA:

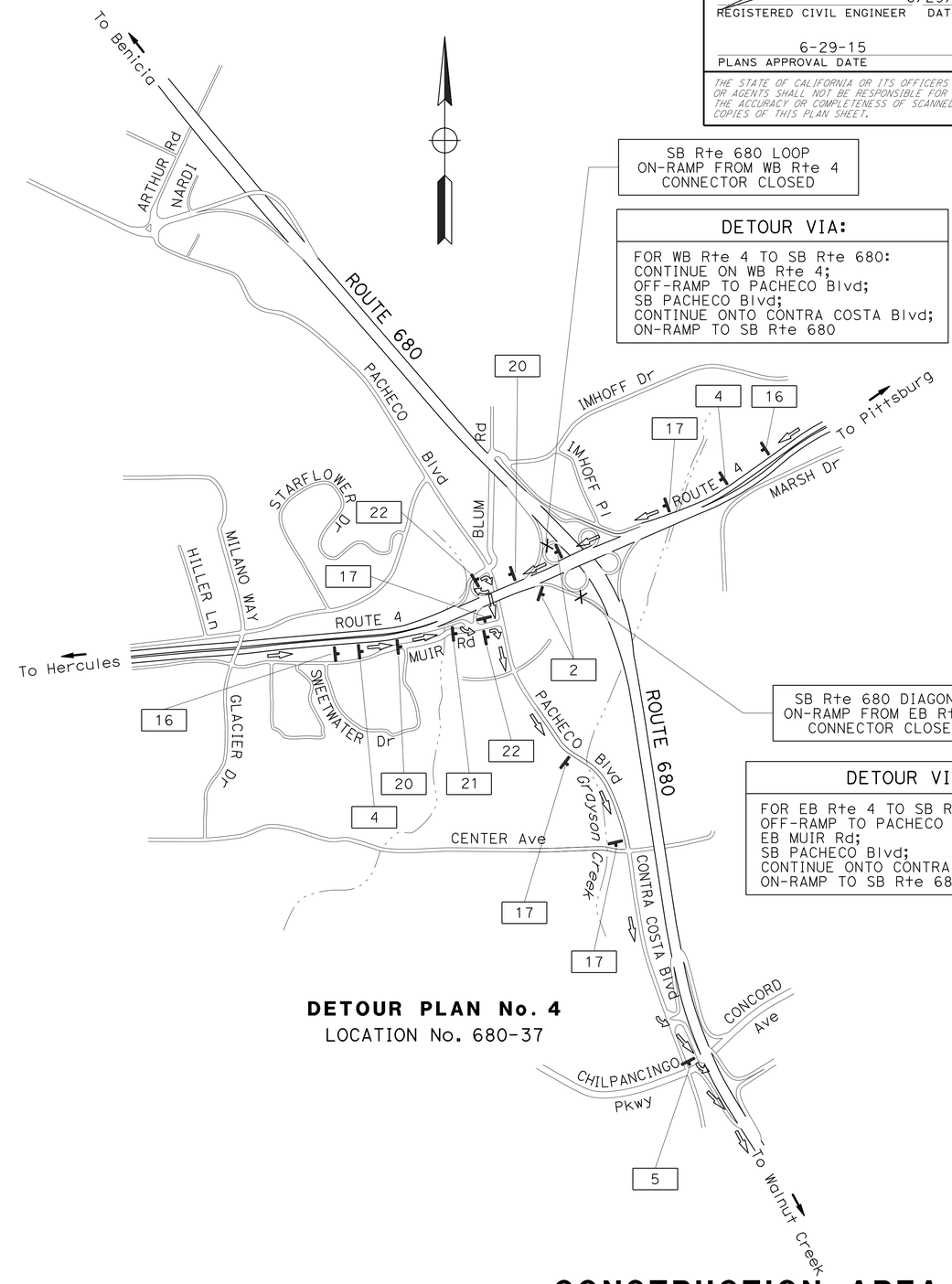
FOR WB Rte 4 TO SB Rte 680:
WB Rte 4 OFF-RAMP TO PACHECO Blvd;
SB PACHECO Blvd;
WB MUIR Rd;
EB ON-RAMP TO Rte 4;
ON-RAMP TO SB Rte 680

SB Rte 680 LOOP ON-RAMP FROM WB Rte 4 CONNECTOR CLOSED

SB Rte 680 LOOP ON-RAMP TO EB Rte 4 CONNECTOR CLOSED

DETOUR VIA:

FOR SB Rte 680 TO EB Rte 4:
CONTINUE ON SB Rte 680;
WB ON-RAMP TO Rte 4;
OFF-RAMP TO PACHECO Blvd;
SB PACHECO Blvd;
WB MUIR Rd;
ON-RAMP TO EB Rte 4



DETOUR PLAN No. 4
LOCATION No. 680-37

SB Rte 680 LOOP ON-RAMP FROM WB Rte 4 CONNECTOR CLOSED

DETOUR VIA:

FOR WB Rte 4 TO SB Rte 680:
CONTINUE ON WB Rte 4;
OFF-RAMP TO PACHECO Blvd;
SB PACHECO Blvd;
CONTINUE ONTO CONTRA COSTA Blvd;
ON-RAMP TO SB Rte 680

SB Rte 680 DIAGONAL ON-RAMP FROM EB Rte 4 CONNECTOR CLOSED

DETOUR VIA:

FOR EB Rte 4 TO SB Rte 680:
OFF-RAMP TO PACHECO Blvd;
EB MUIR Rd;
SB PACHECO Blvd;
CONTINUE ONTO CONTRA COSTA Blvd;
ON-RAMP TO SB Rte 680

CONSTRUCTION AREA SIGNS
NO SCALE

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

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

CS-2

	REVISED BY	DATE REVISED
	RL	10/29/14

CALCULATED-DESIGNED BY: RACHEL LIU
CHECKED BY: LOURDES DAVID
FUNCTIONAL SUPERVISOR: LOURDES DAVID

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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LAST REVISION | DATE PLOTTED => 14-JUL-2015
05-17-15 | TIME PLOTTED => 09:04

BORDER LAST REVISED 7/2/2010
USERNAME => s141096
DGN FILE => 04140002461a002.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0704
PROJECT NUMBER & PHASE 04140002461

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	37	128

6/29/15
REGISTERED CIVIL ENGINEER DATE

Rachel Liu
No. 74807
Exp. 12-31-15
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

6-29-15
PLANS APPROVAL DATE

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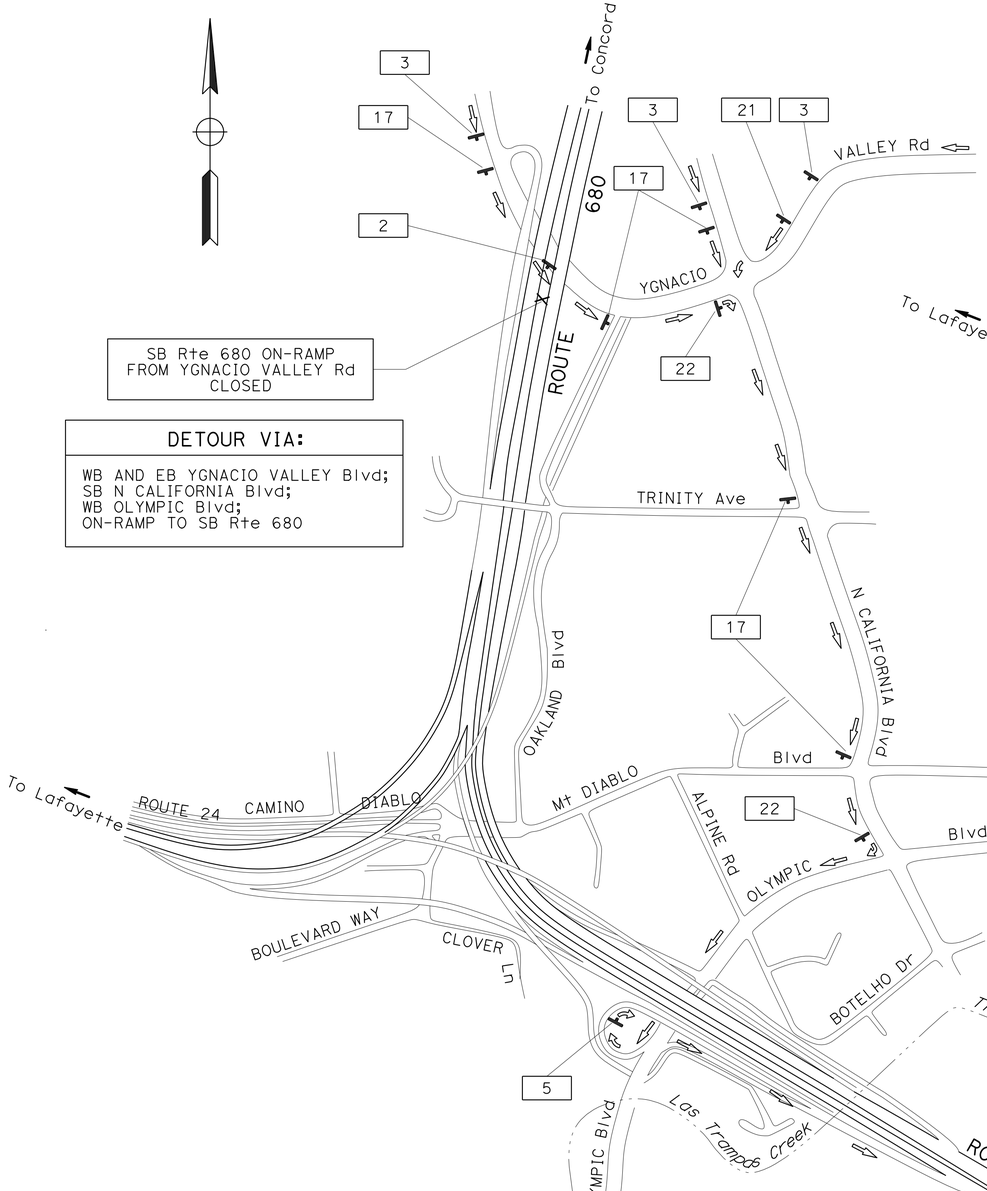
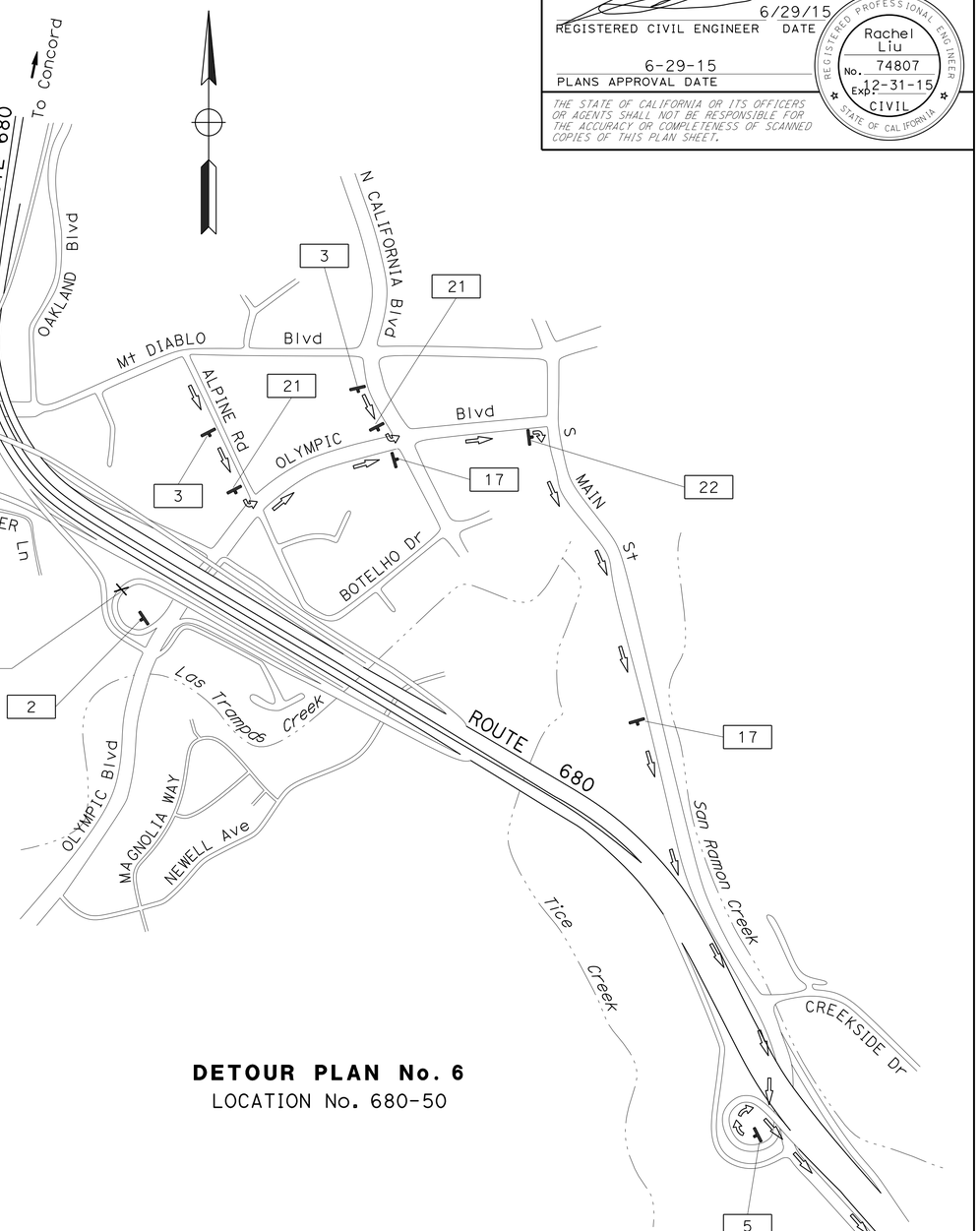


SB Rte 680 ON-RAMP
FROM YGNACIO VALLEY Rd
CLOSED

DETOUR VIA:

WB AND EB YGNACIO VALLEY Blvd;
SB N CALIFORNIA Blvd;
WB OLYMPIC Blvd;
ON-RAMP TO SB Rte 680

DETOUR PLAN No. 5
LOCATION No. 680-45



SB Rte 680 LOOP ON-RAMP
FROM SB OLYMPIC Blvd
CLOSED

DETOUR VIA:

SB OLYMPIC Blvd;
NB OLYMPIC Blvd;
SB S MAIN St;
ON-RAMP TO SB Rte 680

DETOUR PLAN No. 6
LOCATION No. 680-50

CONSTRUCTION AREA SIGNS
NO SCALE

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

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

CS-3

	REVISED BY	DATE REVISED
	RL	10/29/14

CALCULATED-DESIGNED BY: RACHEL LIU
CHECKED BY: LOURDES DAVID
FUNCTIONAL SUPERVISOR: LOURDES DAVID

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LAST REVISION | DATE PLOTTED => 14-JUL-2015
05-20-15 | TIME PLOTTED => 09:04

BORDER LAST REVISED 7/2/2010 | USERNAME => s141096 | DGN FILE => 04140002461a003.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0704 | PROJECT NUMBER & PHASE 04140002461

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	38	128

6/29/15
REGISTERED CIVIL ENGINEER DATE

Rachel Liu
No. 74807
Exp. 12-31-15
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

6-29-15
PLANS APPROVAL DATE

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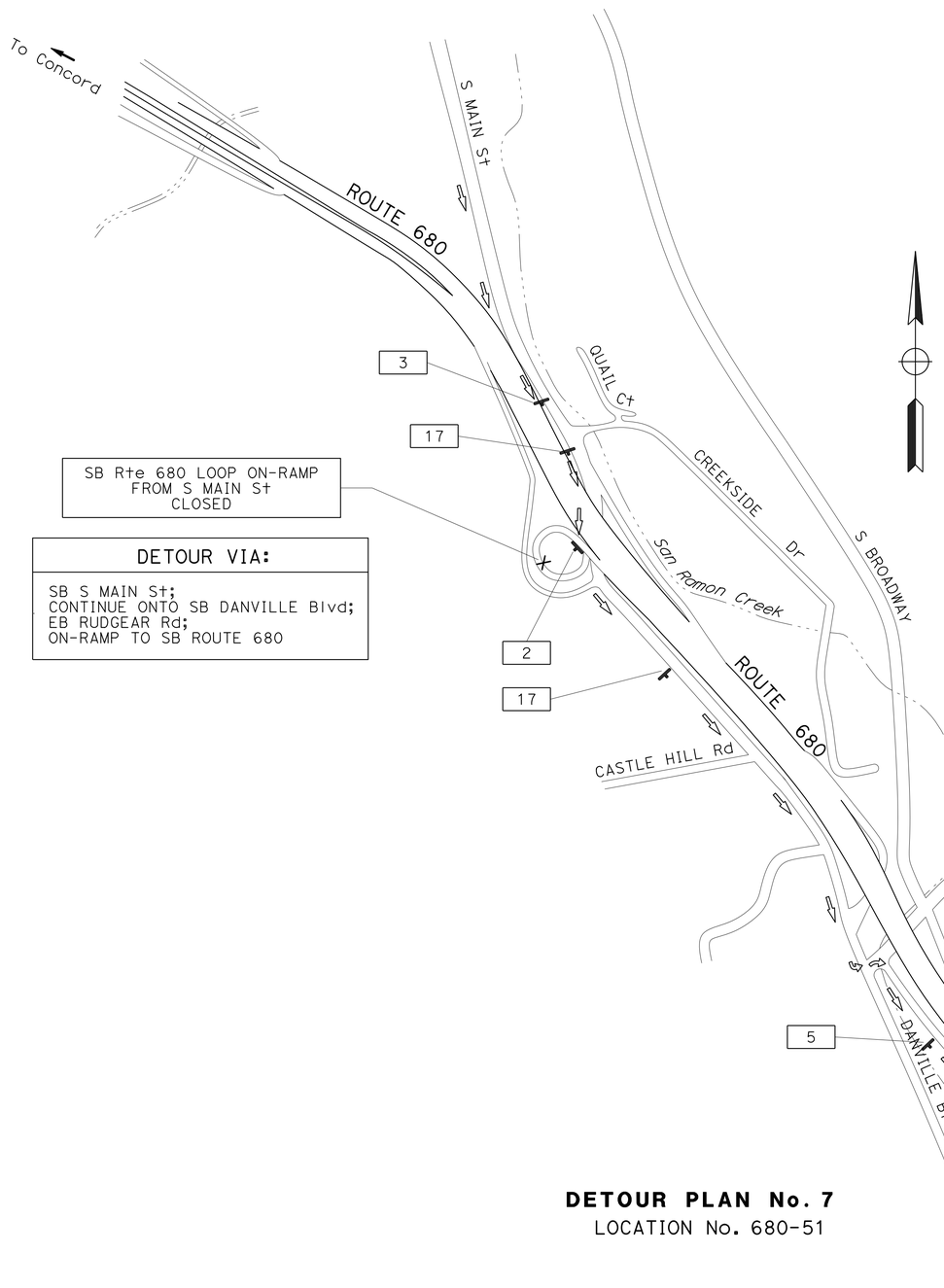
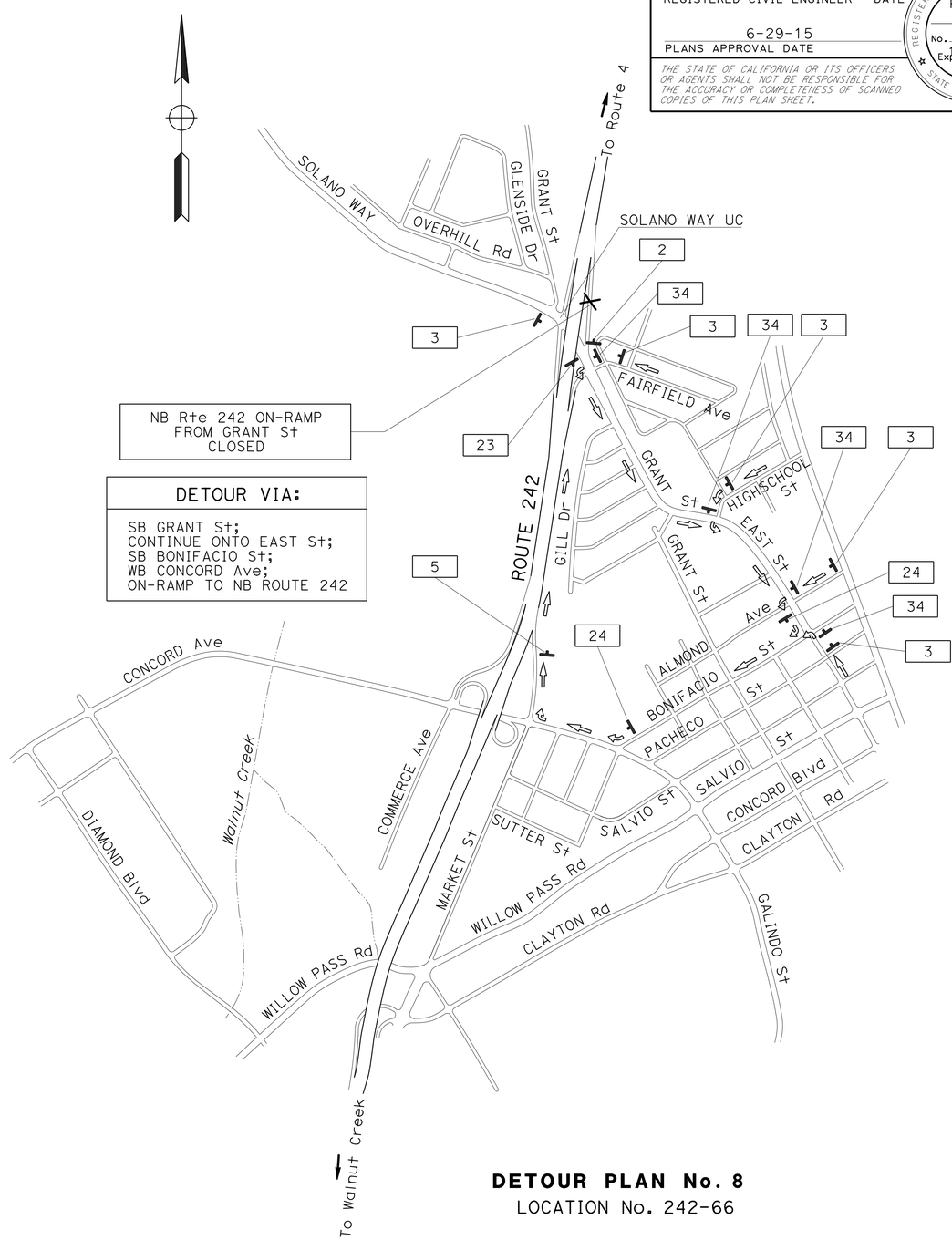


DETOUR PLAN No. 7
LOCATION No. 680-51



DETOUR PLAN No. 8
LOCATION No. 242-66

CONSTRUCTION AREA SIGNS
NO SCALE

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

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

CS-4

CALCULATED-DESIGNED BY	RACHEL LIU	REVISED BY	RL
CHECKED BY	LOURDES DAVID	DATE REVISED	10/29/14
FUNCTIONAL SUPERVISOR	LOURDES DAVID		

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LAST REVISION DATE PLOTTED => 14-JUL-2015
TIME PLOTTED => 09:04
06-15-15

BORDER LAST REVISED 7/2/2010
USERNAME => s141096
DGN FILE => 04140002461a004.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0704
PROJECT NUMBER & PHASE 04140002461

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	39	128

6/29/15
REGISTERED CIVIL ENGINEER DATE

Rachel Liu
No. 74807
Exp. 12-31-15
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

6-29-15
PLANS APPROVAL DATE

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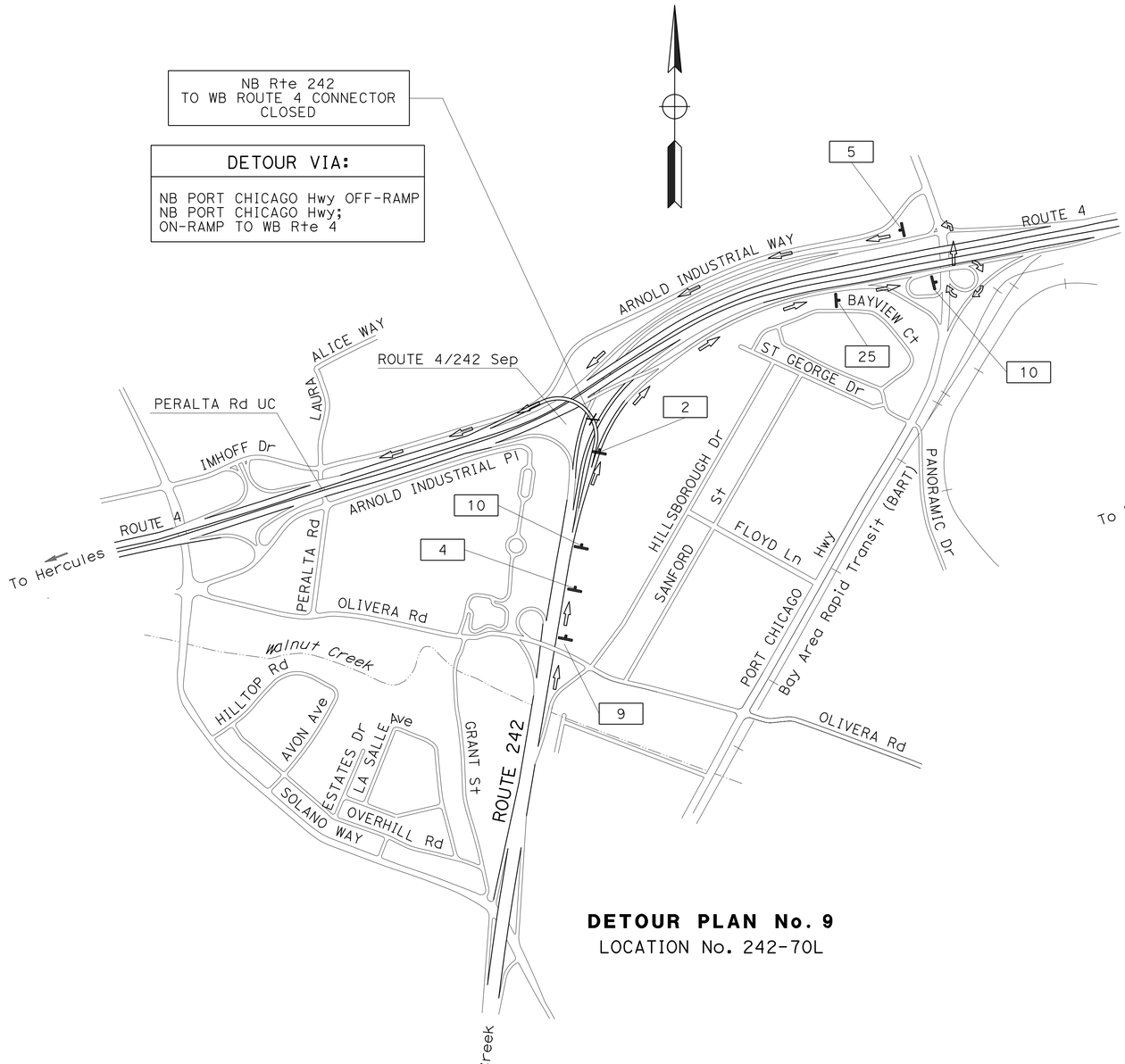
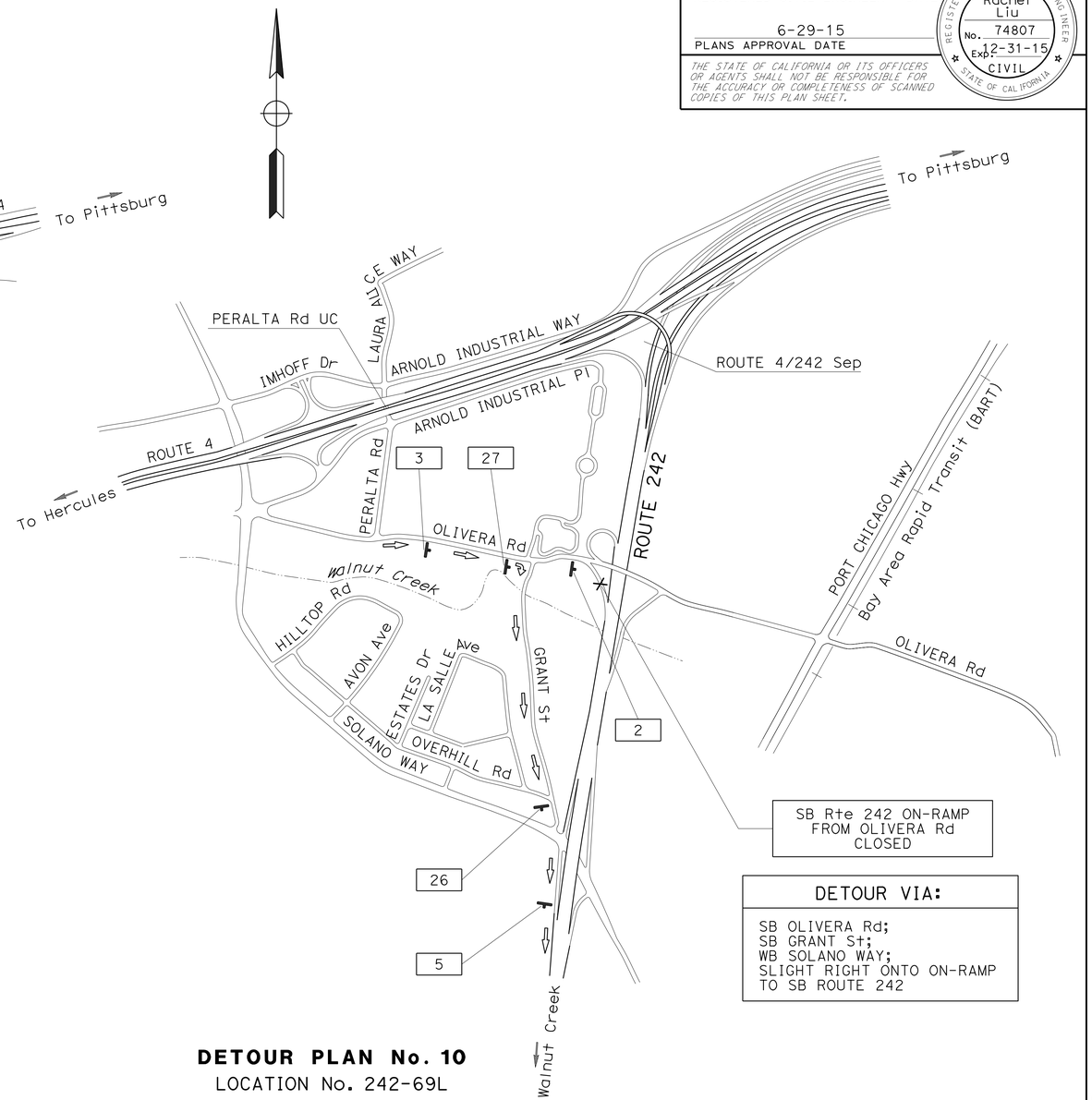
NB Rte 242
TO WB ROUTE 4 CONNECTOR
CLOSED

DETOUR VIA:

NB PORT CHICAGO Hwy OFF-RAMP
NB PORT CHICAGO Hwy;
ON-RAMP TO WB Rte 4



DETOUR PLAN No. 9
LOCATION No. 242-70L



SB Rte 242 ON-RAMP
FROM OLIVERA Rd
CLOSED

DETOUR VIA:

SB OLIVERA Rd;
SB GRANT St;
WB SOLANO WAY;
SLIGHT RIGHT ONTO ON-RAMP
TO SB ROUTE 242

DETOUR PLAN No. 10
LOCATION No. 242-69L

CONSTRUCTION AREA SIGNS

NO SCALE

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

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

CS-5

REVISED BY	DATE REVISED
RL	10/29/14

CALCULATED-DESIGNED BY	CHECKED BY
RACHEL LIU	LOURDES DAVID

FUNCTIONAL SUPERVISOR: LOURDES DAVID

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
TRAFFIC

LAST REVISION 05-13-15
DATE PLOTTED => 14-JUL-2015
TIME PLOTTED => 09:04

BORDER LAST REVISED 7/2/2010
USERNAME => s141096
DGN FILE => 04140002461a005.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0704
PROJECT NUMBER & PHASE 04140002461

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	40	128

6/29/15
REGISTERED CIVIL ENGINEER DATE

Rachel Liu
No. 74807
Exp. 12-31-15
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

6-29-15
PLANS APPROVAL DATE

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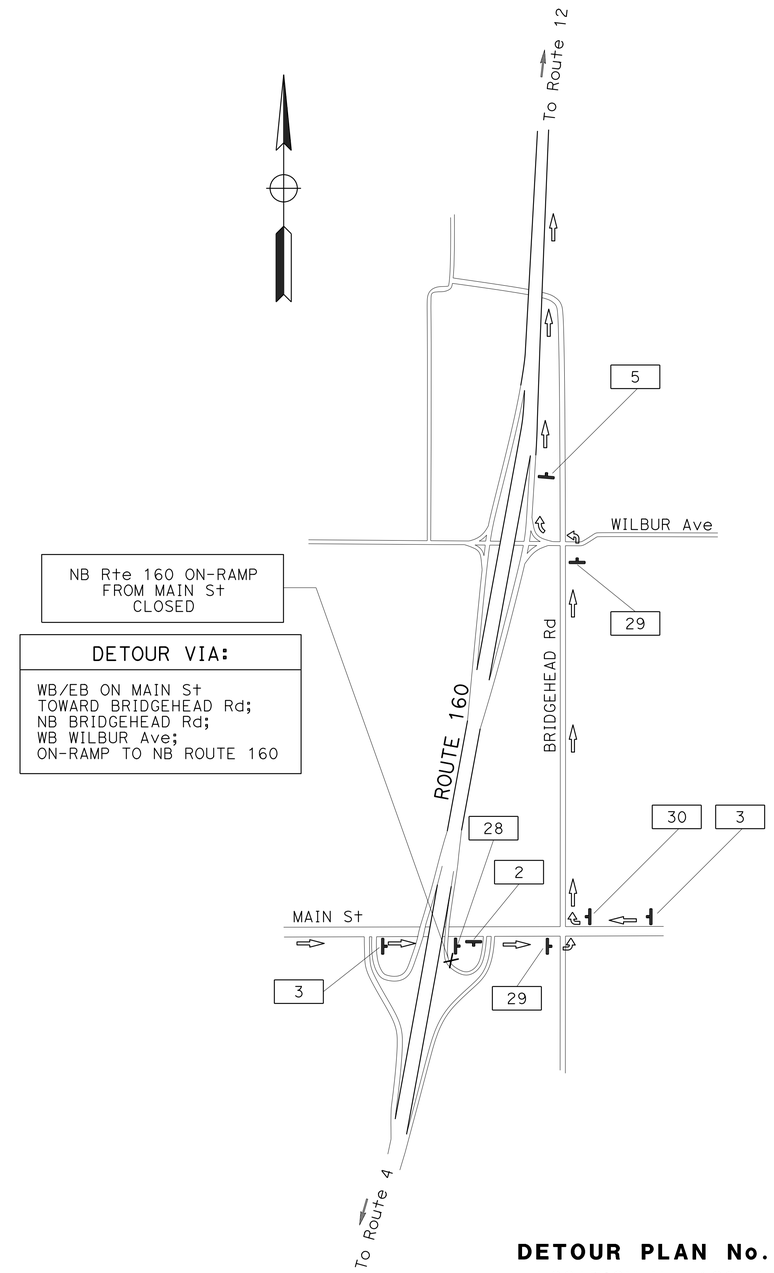

NB Rte 160 ON-RAMP FROM MAIN St CLOSED

DETOUR VIA:

WB/EB ON MAIN St
TOWARD BRIDGEHEAD Rd;
NB BRIDGEHEAD Rd;
WB WILBUR Ave;
ON-RAMP TO NB ROUTE 160

DETOUR PLAN No. 11
LOCATION No. 160-75R

CONSTRUCTION AREA SIGNS
NO SCALE

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

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

CS-6

CALCULATED-DESIGNED BY: RACHEL LIU
CHECKED BY: LOURDES DAVID
REVISED BY: RL
DATE REVISED: 10/29/14
FUNCTIONAL SUPERVISOR: LOURDES DAVID
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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LAST REVISION 05-20-15
DATE PLOTTED => 14-JUL-2015
TIME PLOTTED => 09:04

BORDER LAST REVISED 7/2/2010
USERNAME => s141096
DGN FILE => 04140002461a006.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0704
PROJECT NUMBER & PHASE 04140002461

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	41	128

6/29/15
REGISTERED CIVIL ENGINEER DATE

Rachel Liu
No. 74807
Exp. 12-31-15
CIVIL
REGISTERED PROFESSIONAL ENGINEER
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6-29-15
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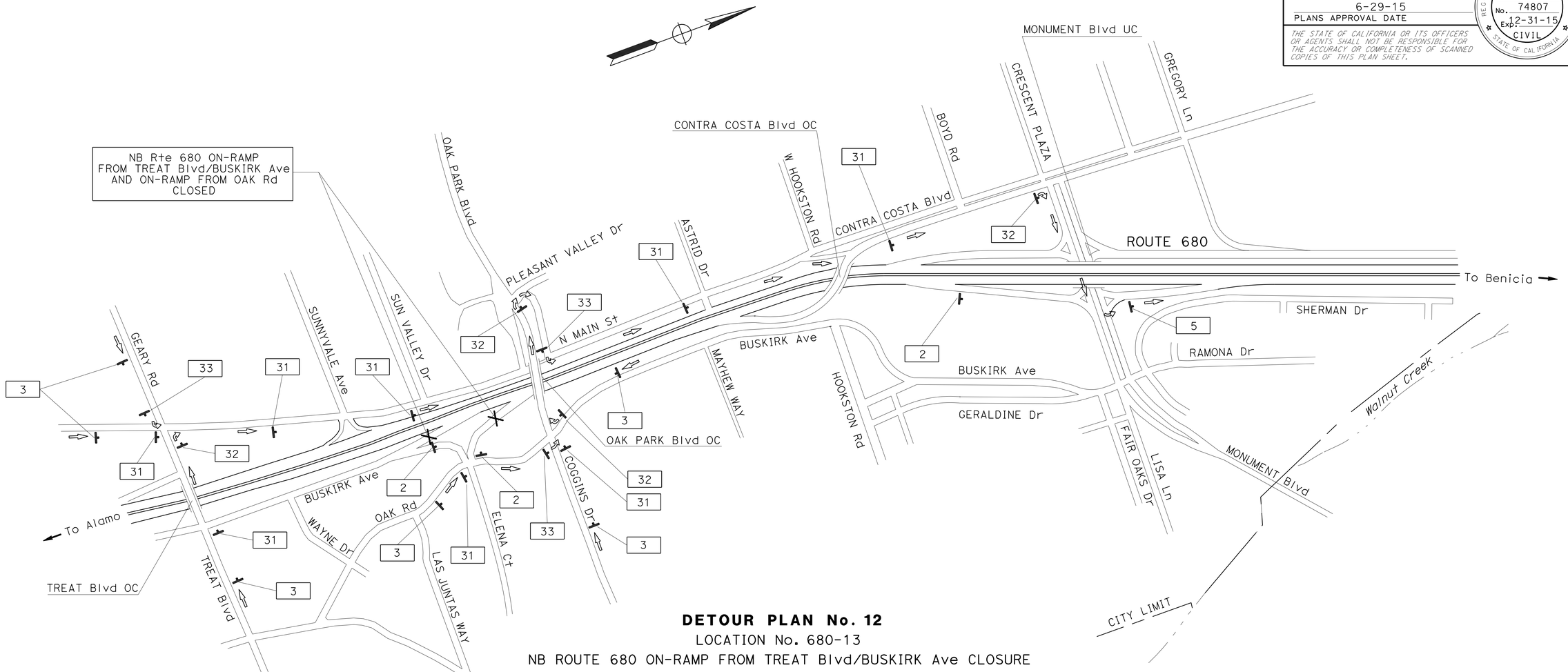

DETOUR PLAN No. 12

LOCATION No. 680-13

NB ROUTE 680 ON-RAMP FROM TREAT Blvd/BUSKIRK Ave CLOSURE

DETOUR VIA:
EB GEARY Rd/WB TREAT Blvd; NB N MAIN St; CONTINUE ON CONTRA COSTA Blvd; TURN RIGHT ONTO MONUMENT Blvd; ON-RAMP TO NB Rte 680

NB ROUTE 680 ON-RAMP FROM OAK Rd CLOSURE

DETOUR VIA:
WB OAK PARK Blvd; TURN RIGHT ONTO PLEASANT VALLEY Dr; TURN LEFT ONTO N MAIN St; CONTINUE ON CONTRA COSTA Blvd; TURN RIGHT ONTO MONUMENT Blvd; ON-RAMP TO NB Rte 680

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

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

CONSTRUCTION AREA SIGNS

NO SCALE

CS-7

CALCULATED-DESIGNED BY	RACHEL LIU	
CHECKED BY	LOURDES DAVID	
REVISED BY	RL	
DATE REVISED	10/29/14	
FUNCTIONAL SUPERVISOR	LOURDES DAVID	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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Caltrans

LAST REVISION | DATE PLOTTED => 14-JUL-2015
05-20-15 | TIME PLOTTED => 09:04

BORDER LAST REVISED 7/2/2010

USERNAME => s141096
DGN FILE => 04140002461a007.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0704

PROJECT NUMBER & PHASE 04140002461

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	42	128

6/29/15
REGISTERED CIVIL ENGINEER DATE

6-29-15
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Rachel Liu
No. 74807
Exp. 12-31-15
CIVIL
STATE OF CALIFORNIA

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42" x 54"

6" D CAPS
BLACK ON ORANGE

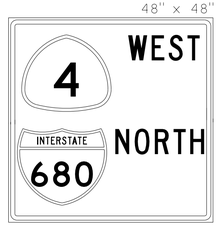
SPECIAL SIGN No. 1

42" x 54"

6" D CAPS
BLACK ON ORANGE

SPECIAL SIGN No. 2

48" x 48"



6" D CAPS
BLACK ON ORANGE

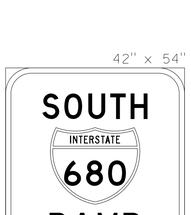
SPECIAL SIGN No. 3

42" x 54"

6" D CAPS
BLACK ON ORANGE

SPECIAL SIGN No. 4

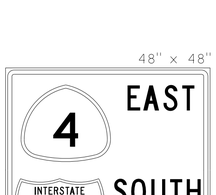
42" x 54"



6" D CAPS
BLACK ON ORANGE

SPECIAL SIGN No. 5

48" x 48"



6" D CAPS
BLACK ON ORANGE

SPECIAL SIGN No. 6

CONSTRUCTION AREA SIGNS

NO SCALE

CS-8

REVISED BY | DATE REVISED
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 05-20-15 | DATE PLOTTED => 14-JUL-2015 | TIME PLOTTED => 09:04

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	43	128

6/29/15
REGISTERED CIVIL ENGINEER DATE

Rachel Liu
No. 74807
Exp. 12-31-15
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

6-29-15
PLANS APPROVAL DATE

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STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN No.	SIGN CODE		SIGN MESSAGE	PANEL SIZE	No. OF POSTS AND SIZE	No. OF SIGNS
	FEDERAL	CALIFORNIA				
1		C24 (CA)	SHOULDER WORK AHEAD	48" x 48"	1 - 6" x 6"	65
2		SC6-4 (CA)	RAMP CLOSED	48" x 60"	1 - 6" x 6"	17
3	W20-2		DETOUR AHEAD	36" x 36"	1 - 4" x 6"	22
4	W20-2		DETOUR AHEAD	48" x 48"	1 - 6" x 6"	7
5	M4-8a		END DETOUR	24" x 18"	1 - 4" x 4"	14
6	M4-8		DETOUR	24" x 12"	1 - 4" x 6"	2
		G27-2 (680) (CA)	ROUTE 680 SHIELD	21" x 18"		
	M3-1		NORTH	24" x 12"		
	M6-1 (←)		LEFT ARROW	21" x 15"		
7	M4-8		DETOUR	24" x 12"	1 - 4" x 6"	2
		G27-2 (680) (CA)	ROUTE 680 SHIELD	21" x 18"		
	M3-1		NORTH	24" x 12"		
	M6-2 (↗)		DIAGONAL ARROW	21" x 15"		
8	M4-8		DETOUR	24" x 12"	1 - 4" x 6"	2
		G27-2 (680) (CA)	ROUTE 680 SHIELD	21" x 18"		
	M3-1		NORTH	24" x 12"		
	M6-3 (↑)		UP ARROW	21" x 15"		
9	SPECIAL SIGN No. 1		WEST 4 RAMP CLOSED	42" x 54"	1 - 4" x 6"	2
10	M4-8		DETOUR	24" x 12"	1 - 4" x 6"	3
		G28-2 (4) (CA)	ROUTE 4 SHIELD	21" x 18"		
	M3-4		WEST	24" x 12"		
	M6-2 (↗)		DIAGONAL ARROW	21" x 15"		
11	SPECIAL SIGN No. 2		NORTH 680 RAMP CLOSED	42" x 54"	1 - 4" x 6"	1
12		SC3(↗) (CA)	DETOUR UP RIGHT ARROW	48" x 18"	1 - 4" x 6"	1
		SPECIAL SIGN No. 3	WEST 4/NORTH 680	48" x 48"		
13		SC3(→) (CA)	DETOUR RIGHT ARROW	48" x 18"	1 - 4" x 6"	4
		SPECIAL SIGN No. 3	WEST 4/NORTH 680	48" x 48"		
14	SPECIAL SIGN No. 4		EAST 4 RAMP CLOSED	42" x 54"	1 - 4" x 6"	1
15	M4-8		DETOUR	24" x 12"	1 - 4" x 6"	2
		G28-2 (4) (CA)	ROUTE 4 SHIELD	21" x 18"		
	M3-2		EAST	24" x 12"		
	M6-2 (↗)		DIAGONAL ARROW	21" x 15"		
16	SPECIAL SIGN No. 5		SOUTH 680 RAMP CLOSED	42" x 54"	1 - 4" x 6"	3
17	M4-8		DETOUR	24" x 12"	1 - 4" x 6"	17
		G27-2 (680) (CA)	ROUTE 680 SHIELD	21" x 18"		
	M3-3		SOUTH	24" x 12"		
	M6-3 (↑)		UP ARROW	21" x 15"		
18		SC3(↗) (CA)	DETOUR UP RIGHT ARROW	48" x 18"	1 - 4" x 6"	1
		SPECIAL SIGN No. 6	EAST 4/SOUTH 680	48" x 48"		
19		SC3(→) (CA)	DETOUR RIGHT ARROW	48" x 18"	1 - 4" x 6"	1
		SPECIAL SIGN No. 6	EAST 4/SOUTH 680	48" x 48"		
20	M4-8		DETOUR	24" x 12"	1 - 4" x 6"	2
		G27-2 (680) (CA)	ROUTE 680 SHIELD	21" x 18"		
	M3-3		SOUTH	24" x 12"		
	M6-2 (↗)		DIAGONAL ARROW	21" x 15"		

CONSTRUCTION AREA SIGNS

CS-9

REVISED BY | DATE REVISED
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION 06-15-15 | DATE PLOTTED => 14-JUL-2015 | TIME PLOTTED => 09:04

BORDER LAST REVISED 7/2/2010 | USERNAME => s141096 | DGN FILE => 04140002461a009.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0704 | PROJECT NUMBER & PHASE 04140002461

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	44	128

6/29/15
REGISTERED CIVIL ENGINEER DATE

6-29-15
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Rachel Liu
No. 74807
Exp. 12-31-15
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.

STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN No.	SIGN CODE		SIGN MESSAGE	PANEL SIZE	No. OF POSTS AND SIZE	No. OF SIGNS
	FEDERAL	CALIFORNIA				
21	M4-8		DETOUR	24" x 12"	1 - 4" x 6"	4
		G27-2 (680) (CA)	ROUTE 680 SHIELD	21" x 18"		
	M3-3		SOUTH	24" x 12"		
	M6-1 (←)		LEFT ARROW	21" x 15"		
22	M4-8		DETOUR	24" x 12"	1 - 4" x 6"	5
		G27-2 (680) (CA)	ROUTE 680 SHIELD	21" x 18"		
	M3-3		SOUTH	24" x 12"		
	M6-1 (→)		RIGHT ARROW	21" x 15"		
23	M4-8		DETOUR	24" x 12"	1 - 4" x 6"	1
		G28-2 (242) (CA)	ROUTE 242 SHIELD	21" x 18"		
	M3-1		NORTH	24" x 12"		
	M6-3 (↑)		UP ARROW	21" x 15"		
24	M4-8		DETOUR	24" x 12"	1 - 4" x 6"	2
		G28-2 (242) (CA)	ROUTE 242 SHIELD	21" x 18"		
	M3-1		NORTH	24" x 12"		
	M6-1 (→)		RIGHT ARROW	21" x 15"		
25	M4-8		DETOUR	24" x 12"	1 - 4" x 6"	1
		G28-2 (4) (CA)	ROUTE 4 SHIELD	21" x 18"		
	M3-4		WEST	24" x 12"		
	M6-3 (↑)		UP ARROW	21" x 15"		
26	M4-8		DETOUR	24" x 12"	1 - 4" x 6"	1
		G28-2 (242) (CA)	ROUTE 242 SHIELD	21" x 18"		
	M3-3		SOUTH	24" x 12"		
	M6-1 (←)		LEFT ARROW	21" x 15"		
27	M4-8		DETOUR	24" x 12"	1 - 4" x 6"	1
		G28-2 (242) (CA)	ROUTE 242 SHIELD	21" x 18"		
	M3-3		SOUTH	24" x 12"		
	M6-1 (→)		RIGHT ARROW	21" x 15"		
28	M4-8		DETOUR	24" x 12"	1 - 4" x 6"	1
		G28-2 (160) (CA)	ROUTE 160 SHIELD	21" x 18"		
	M3-1		NORTH	24" x 12"		
	M6-3 (↑)		UP ARROW	21" x 15"		
29	M4-8		DETOUR	24" x 12"	1 - 4" x 6"	2
		G28-2 (160) (CA)	ROUTE 160 SHIELD	21" x 18"		
	M3-1		NORTH	24" x 12"		
	M6-1 (←)		LEFT ARROW	21" x 15"		
30	M4-8		DETOUR	24" x 12"	1 - 4" x 6"	1
		G28-2 (160) (CA)	ROUTE 160 SHIELD	21" x 18"		
	M3-1		NORTH	24" x 12"		
	M6-1 (→)		RIGHT ARROW	21" x 15"		
31	M4-8		DETOUR	24" x 12"	1 - 4" x 6"	8
		G27-2 (680) (CA)	ROUTE 680 SHIELD	21" x 18"		
	M3-1		NORTH	24" x 12"		
	M6-1 (↑)		UP ARROW	21" x 15"		
32	M4-8		DETOUR	24" x 12"	1 - 4" x 6"	4
		G27-2 (680) (CA)	ROUTE 680 SHIELD	21" x 18"		
	M3-1		NORTH	24" x 12"		
	M6-1 (→)		RIGHT ARROW	21" x 15"		
33	M4-8		DETOUR	24" x 12"	1 - 4" x 6"	3
		G27-2 (680) (CA)	ROUTE 680 SHIELD	21" x 18"		
	M3-1		NORTH	24" x 12"		
	M6-1 (←)		LEFT ARROW	21" x 15"		
34	M4-8		DETOUR	24" x 12"	1 - 4" x 6"	4
		G28-2 (242) (CA)	ROUTE 242 SHIELD	21" x 18"		
	M3-1		NORTH	24" x 12"		
	M6-1 (←)		LEFT ARROW	21" x 15"		

CONSTRUCTION AREA SIGNS

CS-10

REVISED BY | DATE REVISED
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

LAST REVISION | DATE PLOTTED => 14-JUL-2015
06-15-15 | TIME PLOTTED => 09:04

BORDER LAST REVISED 7/2/2010 | USERNAME => s141096 | DGN FILE => 04140002461a010.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0704 | PROJECT NUMBER & PHASE 04140002461

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	45	128

REGISTERED CIVIL ENGINEER — DATE: 6/26/15

Ber-lin Wei, No. 49855, Exp 9-30-16, CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

PLANS APPROVAL DATE: 6-29-15

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

ROADWAY AND GUARD RAILING QUANTITIES

LOCATION No.	ROUTE	SHOULDER	POST MILE	DIRECTION	DESCRIPTION	MIDWEST GUARDRAIL SYSTEM TYPE LAYOUT	REMOVE AC DIKE	REMOVE GUARDRAIL	TREATED WOOD WASTE	HMA DIKE: HMA (TYPE A)	HMA DIKE: PLACE HMA DIKE (TYPE C)	HMA DIKE: PLACE HMA DIKE (TYPE F)	OBJECT MARKER (TYPE L-1)	OBJECT MARKER (TYPE P)	OBJECT MARKER (TYPE R)	GUARD RAILING DELINEATOR: TYPE F	GUARD RAILING DELINEATOR: TYPE G	MGS (WOOD POST)	TRANSITION RAILING (TYPE WB-31)	ALTERNATIVE FLARED TERMINAL SYSTEM	ALTERNATIVE IN-LINE TERMINAL SYSTEM	CRASH CUSHION (TYPE CAT)	RESET ROADSIDE SIGN (ONE POST)	VEGETATION CONTROL (MINOR CONCRETE)	MINOR CONCRETE (MISCELLANEOUS CONSTRUCTION)	TEMPORARY RAILING (TYPE K)	TEMPORARY ALTERNATIVE CRASH CUSHION	CHANNELIZERS (SURFACE MOUNTED)	REFERENCES
							LF		LB	TON	LF		EA					LF	EA					SQYD	CY	LF	EA		
1	680	R†	R 12.72	NB	ON-RAMP FROM DANVILLE Blvd	12A		146.3	1755				1	2		4			1		1			115.8	0.3	60	1	10	C-22 AND Str PLAN Shts 12 AND 24
2		↑	13.08		MAINLINE/SOUTH MAIN St UC (Br No. 28-0167)	12A		100	1200				1	2		3			1		1		1	80.8	0.14	60	1	10	C-19 AND Str PLAN Shts 6 AND 24
3L		L†	13.87		CONNECTOR TO WB Rte 24 (NB Rte 680-WB Rte 24 CONNECTOR OC, Br No. 28-0130G, PM 14.15)	12B		62.5	750				1	2			2		1	1				57.3	0.1	60	1	10	C-9 AND Str PLAN Shts 5 AND 24
4L		↑	14.25		CONNECTOR TO WB Rte 24	12B	53.1	68.1	817.5	0.66		53.1		2			2	28.1	1					42.9	0.3	80	1	10	C-9 AND Str PLAN Shts 13 AND 24
5		R†	13.93		MAINLINE/OLYMPIC Blvd UC (Br No. 28-0161)	12B		62.5	750				1	2		2			1	1				51.3	0.1	60	1	10	C-12 AND Str PLAN Shts 5 AND 24
6		↑	14.09		ON-RAMP FROM OLYMPIC Blvd	12C		75	900				1	2		1		50	1					60.6	0.23	60	1	10	C-16 AND Str PLAN Shts 22 AND 25
7L		L†	14.49		OFF-RAMP TO YGNACIO VALLEY Rd	12B		50	600				1	2			2		1	1				57.3	0.1	60	1	10	C-10 AND Str PLAN Shts 14 AND 25
8		R†	14.56		MAINLINE/OAKVALE Rd-TRINITY Ave OC (Br No. 28-0116)	12A		50	600				1	2		3			1		1			92.5	0.11	60	1	10	C-12 AND Str PLAN Shts 7 AND 24
9			14.85		MAINLINE/YGNACIO VALLEY Rd UC (Br No. 28-0117R)	12A		134.8	1617				1	2		4		56.3	1		1			106	0.08	40	1	10	C-23 AND Str PLAN Shts 4 AND 24
10			16.08		MAINLINE/CONTRA COSTA CANAL TRAIL (Br No. 28-0135)	12B		122.3	1467				1	2		4		56.3	1	1				90.4	0.08	60	1	10	C-21 AND Str PLAN Shts 4 AND 24
12R		↓	R 17.20		OFF-RAMP TO CONTRA COSTA Blvd/PLEASANT HILL (Br No. 28-0325S)	12B		123.3	1479				1	2		4		56.3	1	1				90.4	0.1	40	1	10	C-20 AND Str PLAN Shts 5 AND 24
12L		L†	R 17.20		OFF-RAMP TO CONTRA COSTA Blvd/PLEASANT HILL (Br No. 28-0325S)	12B	37.5	75	900	0.47		37.5	1	2			2	12.5	1	1				57	0.1	40	1	10	C-18 AND Str PLAN Shts 5 AND 24
13		R†	R 17.53		OFF-RAMP TO MONUMENT Blvd	12A	25	62.5	750	0.31		25	1	2		2			1		1			60.6	0.08	60	1	10	C-3 AND Str PLAN Shts 4 AND 24
14			R 17.67		MAINLINE/MONUMENT Blvd UC (Br No. 28-0104)	12B	25	62.5	750	0.31		25	1	2		2			1	1				51.3	0.1	60	1	10	C-13 AND Str PLAN Shts 5 AND 24
15			R 18.65		MAINLINE/BELOW SB Rte 242 OH STRUCTURE	12B		62.5	749.5					2		2		28.1	1					42.9	0.19	60	1	10	C-8
16			19.04		MAINLINE/WILLOW PASS Rd UC (Br No. 28-0178)	12A		75	900				1	2		2			1		1			60.6	0.08	60	1	10	C-4 AND Str PLAN Shts 4 AND 24
17			19.86		MAINLINE/CONCORD Ave UC (Br No. 28-0190)	12A		75	900				1	2		2			1		1			60.6	0.1	40	1	10	C-19 AND Str PLAN Shts 5 AND 24
18			20.38		MAINLINE/CENTER St UC (Br No. 28-0181)	12A	75	75	900	0.47	75		1	2		2			1		1			60.6	0.08	60	1	10	C-19 AND Str PLAN Shts 4 AND 24
19			20.89		MAINLINE/GRAYSON Cr (Br No. 28-0180)	12A	53.1	56.6	679.5	0.66		53.1		2		2		28.1	1					42.9	0.08	60	1	10	C-15 AND Str PLAN Shts 11 AND 24
20			21.24		CONNECTOR TO WB Rte 4	12B	25	62.5	750	0.31		25	1	2		2			1	1				51.3	0.11	40	1	10	C-13 AND Str PLAN Shts 15 AND 25
21			21.52		MAINLINE/BLUM Rd UC (Br No. 28-0172)	12B	37.5	75	900	0.47		37.5	1	2		2		12.5	1	1			1	63.9	0.23	60	1	10	C-17 AND Str PLAN Shts 23 AND 25
22			21.88		MAINLINE/CONTRA COSTA CANAL Rd UC (Br No. 28-0174)	12A	53.1	56.6	679.5	0.66		53.1		2		2		28.1	1					42.9	0.08	60	1	10	C-15 AND Str PLAN Shts 10 AND 24
25			22.43		MAINLINE/EAST MARTINEZ Sep (Br No. 28-0169S)	12A	37.5	87.5	1050	0.47		37.5	1	2		3		12.5	1		1			70.7	0.19	40	1	10	C-20
26			22.7	↓	MAINLINE/ARTHUR Rd UC (Br No. 28-0170)	12B	81.3	130.1	1561.5	1.02		81.3	1	2		4		56.3	1	1				79.8	0.23	60	1	10	C-21 AND Str PLAN Shts 22 AND 25
32			22.7	SB	MAINLINE/ARTHUR Rd UC (Br No. 28-0170)	12A	25	75	900	0.31		25	1	2		2			1		1			60.6	0.08	60	1	10	C-5 AND Str PLAN Shts 4 AND 24
34			21.88		MAINLINE/CONTRA COSTA CANAL Rd UC	12B		56.6	679.5					2		2		28.1	1					42.9	0.08	60	1	10	C-8 AND Str PLAN Shts 10 AND 24
35			21.52		MAINLINE/BLUM Rd UC (Br No. 28-0172)	12A	25	75	900	0.31		25	1	2		2			1		1			60.6	0.08	60	1	10	C-19 AND Str PLAN Shts 16 AND 25
36			21.38		CONNECTOR LOOP ON FROM WB Rte 4	12B	37.5	75	900	0.47		37.5	1	2		2		12.5	1	1				57	0.11	60	1	10	C-17 AND Str PLAN Shts 17 AND 25
37			21.14		CONNECTOR DIAGONAL ON FROM EB Rte 4 (GRAYSON Cr)	12A	25	75	900	0.31		25	1	2		2			1		1			60.6	0.08	60	1	10	C-4 AND Str PLAN Shts 10 AND 24
39			20.76		MAINLINE/500' SOUTH OF GRAYSON Cr Br	12B	53.1	56.6	679.5	0.66		53.1		2		2		28.1	1					42.9	0.08	60	1	10	C-2 AND Str PLAN Shts 10 AND 24
38			20.89		MAINLINE/GRAYSON CR (Br No. 28-0180)	12B		56.6	679.5					2		2		28.1	1					42.9	0.08	60	1	10	C-8 AND Str PLAN Shts 11 AND 24
40			19.86		MAINLINE/CONCORD Ave UC (Br No. 28-0190)	12B		62.5	750				1	2		2			1	1				57.3	0.08	60	1	10	C-11 AND Str PLAN Shts 4 AND 24
43R	↓	↓	R 18.75	↓	OFF-RAMP TO CONTRA COSTA/MONUMENT Blvd	12A	53.1	57.6	691.5	0.66		53.1		2		2		28.1	1					42.9	0.1	60	1	10	C-15 AND Str PLAN Shts 5 AND 24
SHEET TOTAL							721.8	2540.5	30485.5	8.53	75	646.8	25	66		70	8	550	33	12	12		2	2058.1	4.06	1880	33	330	

SUMMARY OF QUANTITIES

Q-1

CALCULATED-DESIGNED BY: HUNG C. HSU
CHECKED BY: BER-LIN WEI
FUNCTIONAL SUPERVISOR: GEORGE LO
REVISED BY: HH
DATE REVISED: 10/29/14

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

LAST REVISION DATE PLOTTED => 14-JUL-2015
TIME PLOTTED => 09:04
06-27-15

BORDER LAST REVISED 7/2/2010
USERNAME => s141096
DGN FILE => 0414000246pa001.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0704
PROJECT NUMBER & PHASE 04140002461

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	46	128

REGISTERED CIVIL ENGINEER — DATE: 6/26/15

Ber-lin Wei, No. 49855, Exp 9-30-16, CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

PLANS APPROVAL DATE: 6-29-15

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ROADWAY AND GUARD RAILING QUANTITIES (CONTINUED)

LOCATION No.	ROUTE	SHOULDER	POST MILE	DIRECTION	DESCRIPTION	MIDWEST GUARDRAIL SYSTEM TYPE LAYOUT	REMOVE AC DIKE	REMOVE GUARDRAIL	TREATED WOOD WASTE	HMA DIKE: HMA (TYPE A)	HMA DIKE: PLACE HMA DIKE (TYPE C)	HMA DIKE: PLACE HMA DIKE (TYPE F)	OBJECT MARKER (TYPE L-1)	OBJECT MARKER (TYPE P)	OBJECT MARKER (TYPE R)	GUARD RAILING DELINEATOR: TYPE F	GUARD RAILING DELINEATOR: TYPE G	MGS (WOOD POST)	TRANSITION RAILING (TYPE WB-31)	ALTERNATIVE FLARED TERMINAL SYSTEM	ALTERNATIVE IN-LINE TERMINAL SYSTEM	CRASH CUSHION (TYPE CAT)	RESET ROADSIDE SIGN (ONE POST)	VEGETATION CONTROL (MINOR CONCRETE)	MINOR CONCRETE (MISCELLANEOUS CONSTRUCTION)	TEMPORARY RAILING (TYPE K)	TEMPORARY ALTERNATIVE CRASH CUSHION	CHANNELIZERS (SURFACE MOUNTED)	REFERENCES
							LF		LB	TON	LF		EA					LF	EA						SQYD	CY	LF	EA		
43L	680	L↑	R 18.75	SB	OFF-RAMP TO CONTRA COSTA/MONUMENT Blvd			57.6	691.5					2			2	28.1	1					46.9	0.1	60	1	10	C-7 AND Str PLAN Shts 18 AND 25
44		R↑	16.08		MAINLINE/CONTRA COSTA CANAL Rd UC (Br No. 28-0135)	12A	53.1	56.6	679.5	0.66		53.1		2		2		28.1	1					42.9	0.08	60	1	10	C-1 AND Str PLAN Shts 10 & 24
45		L↑	14.67		ON-RAMP FROM YGNACIO VALLEY Blvd	12B		124.8	1497				1	2		4		56.3	1	1				79.8	0.13	40	1	10	C-22 AND Str PLAN Shts 2 AND 25
46R		R↑	14.22		MAINLINE/Mt DIABLO Blvd UC (Br No. 28-0128L)	12C		57.6	691.5					2		2		28.1	1					46.9	0.1	60	1	10	C-6 AND Str PLAN Shts 5 AND 24
46L		L↑	14.22		MAINLINE/Mt DIABLO Blvd UC (Br No. 28-0128L)	12B	87.5	62.5	750	0.70	62.5	25	1	2			2		1	1				51.3	0.1	60	1	10	C-15 AND Str PLAN Shts 5 AND 24
47		R↑	14.08		MAINLINE/800' NORTH OF OLYMPIC Blvd UC	12D		57.6	691.5					2		2		28.1	1					46.9	0.1	60	1	10	C-6 AND Str PLAN Shts 5 AND 24
49		↓	13.66		MAINLINE/NEWELL Ave UC (Br No. 28-0160)	15A		75	900					2	1	6		175	1			1		138.6	0.1	220	1	10	C-7 AND Str PLAN Shts 5 AND 24
50		L↑	13.66		ON-RAMP FROM OLYMPIC Blvd (NEWELL Ave UC)	15A		62.5	750					2			5	162.5	1					129.6	0.1	200	1	10	C-7 AND Str PLAN Shts 5 AND 24
51	↓	R↑	13.08	↓	ON-RAMP FROM SOUTH MAIN St	12B	25	62.5	750	0.31		25	1	2		2			1	1				51.3	0.14	60	1	10	C-13 AND Str PLAN Shts 6 AND 24
52L	242	L↑	R 0.21	NB	JUST AFTER Rte 680/242 SPLIT	12B	25	62.5	750	0.31		25	1	2			2		1	1				51.3	0.13	40	1	10	C-13 AND Str PLAN Shts 8 AND 24
53		R↑	R 0.66		OFF-RAMP TO CLAYTON/MARKET St	12B		56.6	679.5					2		2		28.1	1					36.6	0.08	60	1	10	C-1 AND Str PLAN Shts 11 AND 24
55N			R 0.78		CLAYTON Rd UC (Br No. 28-0289)	12B	53.1	57.6	691.5	0.66		53.1		2		2		28.1	1					29.7	0.1	60	1	10	C-17 AND Str PLAN Shts 5 AND 24
56N			R 0.78		WILLOW PASS Rd UC (Br No. 28-0163)	12B	62.5	62.5	750	0.39	62.5		1	2		2			1	1				51.3	0.08	60	1	10	C-14 AND Str PLAN Shts 2 AND 24
58			R 1.47		CONCORD Ave UC (Br No. 28-0185R)	12B		56.6	679.5					2		2		28.1	1					29.7	0.08	60	1	10	C-8 AND Str PLAN Shts 2 AND 24
64R			R 1.95		MAINLINE/GORE OFF-RAMP TO GRANT St	15A			795					4	1	5	6	375	1			1	1		0.19	200	1	20	C-24 AND Str PLAN Shts 21 AND 25
66		↓	R 2.27		ON-RAMP FROM GRANT St	12B		62.5	750				1	2		2			1	1				57.3	0.19	60	1	10	C-11 AND Str PLAN Shts 21 AND 25
70L		L↑	R 3.08		CONNECTOR TO WB Rte 4/PORT CHICAGO Hwy	12B		50	600				1	2			2		1	1				57.3	0.08	40	1	10	C-3 AND Str PLAN Shts 4 AND 24
72L			R 3.37	↓	CONNECTOR FROM NB Rte 242 TO EB Rte 4	12B		62.5	750				1	2			2		1	1				57.3	0.1	60	1	10	C-11 AND Str PLAN Shts 9 AND 24
71L			R 3.30	SB	CONNECTOR FROM WB Rte 4 TO SB Rte 242	12B		62.5	750				1	2			2		1	1				57.3	0.1	60	1	10	C-11 AND Str PLAN Shts 9 AND 24
69L		↓	R 2.73		ON-RAMP FROM OLIVERA Rd			37.5	450					3			1						1	2.8	0.49	240	1	20	C-25
67		R↑	R 2.28		OFF-RAMP TO GRANT St	16A	181.3	150	1800	1.80	75	106.3	1	2		5		81.3	1		1			73.1	0.1	40	1	10	C-10 AND Str PLAN Sht 19 AND 25
61		L↑	R 1.71		OFF-RAMP TO CONCORD Ave (CONCORD OH OFF-RAMP)	15A		77.5	930					2			6	150	1					118.1	0.13	160	1	10	C-8 AND Str PLAN Shts 8 AND 24
62		R↑	R 1.70		MAINLINE/CONCORD OH (Br No. 28-0186L)	15A	25	56.3	675	0.31		25		2	1	5		125	1			1	1	102.8	0.08	160	1	10	C-8 AND Str PLAN Shts 2 AND 24
63			R 1.60		MAINLINE/CONCORD Ave UC (Br No. 28-0185L)	12B	87.5	62.5	750	0.70	62.5	25	1	2		2			1	1				51.3	0.08	60	1	10	C-14 AND Str PLAN Shts 2 AND 24
56S			R 0.78		MAINLINE/WILLOW PASS Rd UC (Br No. 28-0163L)	12A	25	62.5	750	0.31		25	1	2		2			1		1			42.9	0.08	60	1	10	C-19 AND Str PLAN Shts 2 AND 24
55S			R 0.78		MAINLINE/CLAYTON Rd UC (Br No. 28-0289)	12B	62.5	100	1200	0.78		62.5	1	2		2		37.5	1	1				68.4	0.1	60	1	10	C-18 AND Str PLAN Shts 5 AND 24
54	↓		R 0.66	↓	ON-RAMP FROM CLAYTON Rd/MARKET St	12B		62.5	750				1	2		2			1	1			1	51.3	0.1	40	1	10	C-12 AND Str PLAN Shts 5 AND 24
75R	160	↓	0.01	NB	VICTORY Hwy Sep (Br No. 28-0041R)	12B		62.5	750				1	2		2			1	1				51.3	0.1	40	1	10	C-12 AND Str PLAN Shts 3 AND 24
73		R↑	0.82	↓	SAN JOAQUIN RIVER (ANTIOCH Br No. 28-0009)	12B	87.5	62.5	750	0.70	62.5	25	1	2		2			1	1			1	51.3	0.08	40	1	10	C-14 AND Str PLAN Shts 4 AND 24
74R	↓	↓	0.01	SB	VICTORY Hwy Sep (Br No. 28-0041L)	12A		62.5	750				1	2		2			1	1				46.3	0.1	40	1	10	C-16 AND Str PLAN Shts 3 AND 24
SHEET TOTAL							775	1946.3	24151.5	7.63	325	450	17	63	3	57	30	1359.3	29	14	3	3	5	1721.6	3.52	2460	30	320	
TOTAL FROM SHEET Q-1							721.8	2540.5	30485.5	8.53	75	646.8	25	66		70	8	550	33	12	12		2	2058.1	4.06	1880	33	330	
GRAND TOTAL							1496.8	4486.8	54637	16.16	400	1096.8	42	129	3	165		1909.3	62	26	15	3	7	3779.7	7.58	4340	63	650	

CALCULATED-DESIGNED BY: HUNG C. HSU
CHECKED BY: BER-LIN WEI
REVISED BY: HH
DATE REVISED: 10/29/14
FUNCTIONAL SUPERVISOR: GEORGE LO

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
Caltrans

LAST REVISION | DATE PLOTTED => 14-JUL-2015
06-27-15 | TIME PLOTTED => 09:04

SUMMARY OF QUANTITIES

Q-2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	47	128

REGISTERED CIVIL ENGINEER — DATE: 6/26/15

PLANS APPROVAL DATE: 6-29-15

REGISTERED PROFESSIONAL ENGINEER — Ber-lin Wei — No. 49855 — Exp 9-30-16 — CIVIL — STATE OF CALIFORNIA

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

MISCELLANEOUS ROADWAY QUANTITIES

LOCATION No.	REMOVE DOUBLE METAL BEAM BARRIER	REMOVE CRASH CUSHION (SAND FILLED)	DOUBLE MIDWEST GUARDRAIL SYSTEM (WOOD POST)	END ANCHOR ASSEMBLY (TYPE SFT)	REMOVE CONCRETE (CURB AND GUTTER)	MINOR CONCRETE (CURB AND GUTTER)	REMOVE CONCRETE ISLAND (PORTIONS)	MINOR CONCRETE (ISLAND PAVING)	CRASH CUSHION (SHORTRACC)	MIDWEST GUARDRAIL SYSTEM (7' WOOD POST)
	LF	EA	LF	EA	LF		CY		EA	LF
680-49, 680-50		1	28.1							
680-61, 680-62		1	28.1							
242-64R	66.3		28.1	1	303.3	303.3	8.8	8.8		
242-69L					9.7				1	
680-1										28
680-2										25
TOTAL	66.3	2	84.3	1	313	303.3	8.8	8.8	1	53

CONCRETE BARRIER (TRANSITION)

LOCATION No.	ANCHOR BLOCK FOR TRANSITION RAILING CONNECTION (SEE RSP A77U3)
	LF
680-15	9.3
680-25	9.3
TOTAL	18.6

SUMMARY OF QUANTITIES

Q-3

REVISED BY	HH		
DATE REVISED	10/29/14		
LLEWELLYN CHAN	BER-LIN WEI		
CALCULATED-DESIGNED BY	CHECKED BY		
FUNCTIONAL SUPERVISOR	GEORGE LO		
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN		

LAST REVISION 06-27-15 | DATE PLOTTED => 14-JUL-2015 | TIME PLOTTED => 09:04

BORDER LAST REVISED 7/2/2010 | USERNAME => s141096 | DGN FILE => 0414000246pa003.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0704 | PROJECT NUMBER & PHASE 04140002461

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	48	128

LICENSED LANDSCAPE ARCHITECT

6-29-15
PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT — OWEN WILLIAMS NORTHERN — Signature 4-30-17 Renewal Date 6-29-15 Date — STATE OF CALIFORNIA

NOTE: ALL IRRIGATION SYSTEM WORK TO OCCUR WITHIN LIMITS OF CONSTRUCTION FOR THIS CONTRACT AND 10' FROM EXISTING IRRIGATION PIPE AND FACILITY LOCATIONS. EXACT LOCATION TO BE VERIFIED IN THE FIELD BY THE ENGINEER.

IRRIGATION QUANTITIES

LOCATION No.	DIRECTION/ ROUTE	PM	LEFT OR RIGHT SHOULDER	DESCRIPTION	RELOCATE IRRIGATION VALVE	REMOVE IRRIGATION FACILITIES		PLASTIC PIPE (SCH 40) (SUPPLY LINE)				SPRINKLER ASSEMBLY		
						IRRIGATION SUPPLY LINE	SPRINKLER ASSEMBLY					RISER		POP-UP
								3/4"	1"	1-1/4"	1-1/2"	TYPE I	TYPE V	(TYPE II)
					(EA)	(EA) (N)	(EA) (N)	(LF)				(EA)		(EA)
56N	NB/242	0.78	RIGHT	WILLOW PASS Rd UC		40	4	10	40					4
55S	SB/242	0.78	RIGHT	CLAYTON Rd UC		50	5	20	50	10		5		
2	NB/680	13.08	LEFT	S MAIN St UC	1	80	8	20	80	10	10		8	
14	NB/680	17.67	RIGHT	MONUMENT Blvd UC		40	4	20	30	10		4		
17	NB/680	19.86	RIGHT	CONCORD Ave UC	4	20		10	20	10		2		
44	SB/680	16.08	RIGHT	CONTRA COSTA CANAL Rd UC	2	40	4	20	30	10			4	
51	SB/680	13.08	RIGHT	ON-RAMP FROM S MAIN St	2	20		20	20			2		
SUBTOTAL												13	12	
TOTAL					9			120	270	50	10	25		4

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

IRRIGATION QUANTITIES
IQ-1

REVISED BY	MO
DATE REVISED	6-15-15
OWEN WILLIAMS	
LYDIA MAC	
CALCULATED-DESIGNED BY	
CHECKED BY	
FUNCTIONAL SUPERVISOR	LYDIA MAC

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® LANDSCAPE ARCHITECTURE

LAST REVISION 05-13-15
DATE PLOTTED => 14-JUL-2015
TIME PLOTTED => 09:05

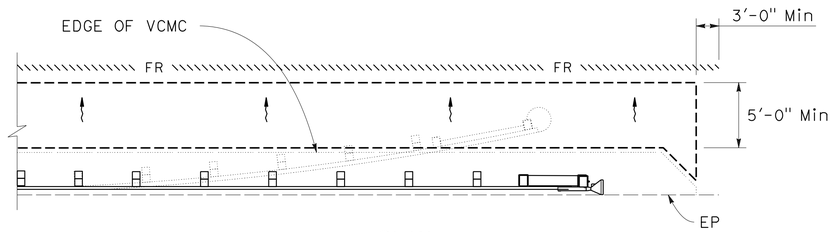
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	49	128

Alex Mcdonald
LICENSED LANDSCAPE ARCHITECT

6-29-15
PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT
ALEXANDRA K. J. MCDONALD No. 5242
Alex Mcdonald
Signature
8-31-16
Renewal Date
5-15-15
Date
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.



PLAN

EROSION CONTROL AT VEGETATION CONTROL, TYPICAL

ALTERNATIVE IN-LINE TERMINAL SYSTEM (FILL CONDITION SHOWN).
EXTEND EROSION CONTROL PAST Beg AND END VCMC LIMITS FOR HMA DIKE WORK AT LOCATION Nos. 18, 46L, 56N, 63, AND 73.

LEGEND:

COMPOST

ABBREVIATION:

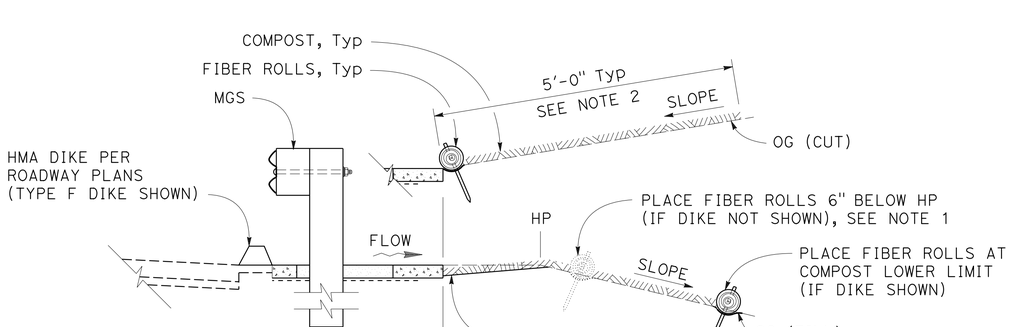
VCMC	VEGETATION CONTROL (MINOR CONCRETE)

NOTES:

1. IF EDGE OF VCMC AND HINGE POINT COINCIDE, PLACE FIBER ROLLS AT EDGE OF VCMC.
2. NOT TO EXCEED LIMTS OF SOIL DISTURBANCE, AS DIRECTED BY ENGINEER OR UP TO RIGHT OF WAY.

EROSION CONTROL

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



TYPICAL SECTION

EROSION CONTROL AT VEGETATION CONTROL

PLACE EROSION CONTROL ON BOTH SIDES OF FLARED MGS VCMC AT LOCATION Nos. 49, 50, 61, AND 62.

EROSION CONTROL LEGEND AND DETAILS

NO SCALE

ECL-1

REVISED BY	DATE REVISED
AKM	5-11-15

ALEX MCDONALD — CHRIS PADICK — DAVID W. YAM

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
SENIOR LANDSCAPE ARCHITECT
CALCULATED-DESIGNED BY
CHECKED BY

LAST REVISION | DATE PLOTTED => 14-JUL-2015 | TIME PLOTTED => 10:37
10-29-14

BORDER LAST REVISED 7/2/2010 | USERNAME => s141096 | DGN FILE => 0414000246tc001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0792 | PROJECT NUMBER & PHASE 04140002461

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	50	128

Alex Mcdonald
LICENSED LANDSCAPE ARCHITECT

6-29-15
PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT
ALEXANDER K. MCDONALD No. 5242
Alex Mcdonald
Signature
8-31-16
Renewal Date
5-15-15
Date
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.

EROSION CONTROL QUANTITIES

PROJECT WORK LOCATIONS					DESCRIPTION	COMPOST	FIBER ROLLS	COMMENTS
LOCATION No.	ROUTE	PREFIX	POST MILE	DIRECTION		SQFT	LF	
1			12.72		ON-RAMP FROM RUDGEAR Rd	870	180	VCMC LIMITS
2		R	13.08		MAINLINE/SOUTH MAIN St UC (Br No. 28-0167)	610	128	VCMC LIMITS
3L			13.87		OFF-RAMP TO WB Rte 24 (NB 680-WB 24 Conn OC, Br No. 28-0130G, PM 14.15)	495	105	VCMC LIMITS
4L		L	13.88		OFF-RAMP TO WB Rte 24	370	80	VCMC LIMITS
5			13.93		MAINLINE/OLYMPIC Blvd UC (Br No. 28-0161)	445	95	VCMC LIMITS
6		R	14.09		ON-RAMP FROM OLYMPIC Blvd	355	77	VCMC LIMITS
7L		L	14.49		OFF-RAMP TO YGNACIO VALLEY Rd	765	159	VCMC LIMITS
8			14.56		MAINLINE/OAKVALE Rd OC (Br No. 28-0116)	835	173	VCMC LIMITS
9			14.85		MAINLINE/YGNACIO VALLEY Rd UC (Br No. 28-0117R)	580	122	VCMC LIMITS
10		R	16.08		MAINLINE/CONTRA COSTA CANAL TRAIL (Br No. 28-0135)	660	138	VCMC LIMITS
12R			17.2		OFF-RAMP TO N MAIN St/CONTRA COSTA Blvd (Br No. 28-0325S)	495	105	VCMC LIMITS
12L		L	17.2		OFF-RAMP TO N MAIN St/CONTRA COSTA Blvd (Br No. 28-0325S)	430	92	VCMC LIMITS
13			17.53	NB	OFF-RAMP TO MONUMENT Blvd	390	84	VCMC LIMITS
14			17.67		MAINLINE/MONUMENT Blvd UC (Br No. 28-0104)	390	84	VCMC LIMITS
15	680		18.65		MAINLINE/BELOW SB Rte 242 OH STRUCTURE	355	77	VCMC LIMITS
16			19.04		MAINLINE/WILLOW PASS Rd UC (Br No. 28-0178)	430	92	VCMC LIMITS
17			19.86		MAINLINE/CONCORD Ave UC (Br No. 28-0190)	430	92	VCMC LIMITS
18			20.38		MAINLINE/CENTER St UC (Br No. 28-0181)	555	117	VCMC & DIKE LIMITS
19			20.89		MAINLINE/GRAYSON Cr (Br No. 28-0180)	200	46	VCMC LIMITS
20			21.24		OFF-RAMP TO WB Rte 4	390	84	VCMC LIMITS
21			21.52		MAINLINE/BLUM Rd UC (Br No. 28-0172)	320	70	VCMC LIMITS
22			21.88		MAINLINE/CONTRA COSTA CANAL Rd UC (Br No. 28-0174)	200	46	VCMC LIMITS
25			22.43		MAINLINE/EAST MARTINEZ Sep (Br No. 28-0169S)	470	100	VCMC LIMITS
26			22.7		MAINLINE/ARTHUR Rd UC (Br No. 28-0170)	580	122	VCMC LIMITS
32			22.7	SB	MAINLINE/ARTHUR Rd UC (Br No. 28-0170)	430	92	VCMC LIMITS
34			21.88		MAINLINE/CONTRA COSTA CANAL Rd UC	355	77	VCMC LIMITS
35		R	21.52		MAINLINE/BLUM Rd UC (Br No. 28-0172)	430	92	VCMC LIMITS
36			21.38		RAMP LOOP ON-RAMP FROM WB Rte 4	430	92	VCMC LIMITS
37			21.14		RAMP DIAGONAL ON-RAMP FROM EB Rte 4 (GRAYSON Cr)	430	92	VCMC LIMITS
39			20.76		MAINLINE/500' SOUTH OF GRAYSON Cr Br	355	77	VCMC LIMITS
38			20.89		MAINLINE/GRAYSON Cr (Br No. 28-0180)	515	109	VCMC LIMITS
40			19.86		MAINLINE/CONCORD Ave UC (Br No. 28-0190)	430	92	VCMC LIMITS
43R			18.75		OFF-RAMP TO CONTRA COSTA/MONUMENT Blvd	355	77	VCMC LIMITS
SUBTOTAL						15350	3268	

EROSION CONTROL QUANTITIES

PROJECT WORK LOCATIONS					DESCRIPTION	COMPOST	FIBER ROLLS	COMMENTS
LOCATION No.	ROUTE	PREFIX	POST MILE	DIRECTION		SQFT	LF	
43L		L	18.75		OFF-RAMP TO CONTRA COSTA/MONUMENT Blvd	405	93	VCMC LIMITS
44		R	16.08		MAINLINE/CONTRA COSTA CANAL Rd UC (Br No. 28-0135)	355	77	VCMC LIMITS
45		L	14.67		ON-RAMP FROM YGNACIO VALLEY Blvd	580	122	VCMC LIMITS
46R		R	14.22		MAINLINE/Mt DIABLO Blvd UC (Br No. 28-0128L)	390	84	VCMC LIMITS
46L	680	L	14.22	SB	MAINLINE/Mt DIABLO Blvd UC (Br No. 28-0128L)	515	109	VCMC & DIKE LIMITS
47		R	14.08		MAINLINE/800' NORTH OF OLYMPIC Blvd UC	390	84	VCMC LIMITS
49			13.66		MAINLINE/NEWELL Ave UC (Br No. 28-0160)	2097	276	WB-31, MGS & CAT
50		L	13.66		ON-RAMP FROM OLYMPIC Blvd (NEWELL Ave UC)	1972	263	WB-31, MGS & CAT
51		R	13.08		ON-RAMP FROM SOUTH MAIN St	390	84	VCMC LIMITS
52L		L	0.21		JUST AFTER Rte 680/242 SPLIT	390	84	VCMC LIMITS
53			0.66		OFF-RAMP TO CLAYTON Rd/MARKET St	390	84	VCMC LIMITS
55N		R	0.78		CLAYTON Rd UC (Br No. 28-0289)	515	109	VCMC LIMITS
56N			0.78		WILLOW PASS Rd UC (Br No. 28-0163)	515	109	VCMC & DIKE LIMITS
58			1.47	NB	CONCORD Ave UC (Br No. 28-0185R)	355	77	VCMC LIMITS
64R		R	1.95		MAINLINE/GORE OFF-RAMP TO GRANT St			VCMC LIMITS
66			2.27		ON-RAMP FROM GRANT St	430	92	VCMC LIMITS
70L			3.08		OFF-RAMP TO WB Rte 4/PORT CHICAGO Hwy	430	92	VCMC LIMITS
72L		L	3.37		Conn FROM NB Rte 242 TO EB Rte 4	430	92	VCMC LIMITS
71L			3.3		Conn FROM WB Rte 4 TO SB Rte 242	430	92	VCMC LIMITS
69L	242		2.73		ON-RAMP FROM OLIVERA Rd	25	11	VCMC LIMITS
67		R	2.28		OFF-RAMP TO GRANT St	200	46	VCMC LIMITS
61		L	1.71		OFF-RAMP TO CONCORD Ave (CONCORD OH OFF-RAMP)	1847	250	WB-31, MGS & CAT
62			1.7	SB	MAINLINE/CONCORD OH (Br No. 28-0186L)	1597	220	WB-31, MGS & CAT
63			1.6		MAINLINE/CONCORD Ave UC (Br No. 28-0185L)	515	109	VCMC & DIKE LIMITS
56S			0.78		MAINLINE/WILLOW PASS Rd UC (Br No. 28-0163L)	390	84	VCMC LIMITS
55S		R	0.78		MAINLINE/CLAYTON Rd UC (Br No. 28-0289)	515	109	VCMC LIMITS
54			0.66		ON-RAMP FROM CLAYTON Rd/MARKET St	390	84	VCMC LIMITS
75R			0.01	NB	VICTORY Hwy Sep (Br No. 28-0041R)	390	84	VCMC LIMITS
73	160		0.82		SAN JOAQUIN RIVER (ANTIOCH Br No. 28-0009)	515	109	VCMC & DIKE LIMITS
74R			0.01	SB	VICTORY Hwy Sep (Br No. 28-0041L)	430	92	VCMC LIMITS
SUBTOTAL						17793	3221	
TOTAL						33143	6489	

EROSION CONTROL QUANTITIES

ECQ-1

REVISED BY	AKM
DATE REVISED	5-11-15
CALCULATED-DESIGNED BY	ALEX MCDONALD
CHECKED BY	CHRIS PADICK
SENIOR LANDSCAPE ARCHITECT	DAVID W. YAM

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® WATER QUALITY

LAST REVISION => DATE PLOTTED => 14-JUL-2015
TIME PLOTTED => 10:45

BORDER LAST REVISED 7/2/2010
USERNAME => s141096
DGN FILE => 0414000246tg001.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0792
PROJECT NUMBER & PHASE 04140002461

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	51	128

m Noii 6/29/15
REGISTERED ELECTRICAL ENGINEER DATE

6-29-15
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Mahmood Noii — No. 13717 — Exp. 6-30-17 — ELECTRICAL — STATE OF CALIFORNIA

ELECTRICAL INDEX

GENERAL NOTES:

1. ELECTRICAL PLAN SHEETS SHOW ONLY PART OF THE EXISTING ELECTRICAL SYSTEM WHERE ELECTRICAL WORK IS REQUIRED.
2. UNLESS OTHERWISE INDICATED, EXISTING ELECTRICAL EQUIPMENT SHOWN ON THE PLANS TO REMAIN IN PLACE AND IN OPERATION.

ABBREVIATIONS:

CCU	CAMERA CONTROL UNIT
HCC	HYBRID CAMERA CABLE
MLC	MAGNETOMETER LEAD-IN CABLE
TC	TELEPHONE CABLE

LEGEND:

1. Exist 1½"C 2#6 (240 V, LIGHTING).
2. INSTALL 1½" C, 2#6 (240 V, LIGHTING).
3. Exist 1½"C, 2#6 (240 V, LIGHTING) TO REST OF LIGHTING SYSTEM.
4. NOT USED.
5. NOT USED.
6. NOT USED.
7. Exist LIGHTING PULL BOX TO REMAIN IN PLACE.
8. REPLACE Exist No. 6 TOS COMMUNICATION PULL BOX WITH NEW No. 6 PULL BOX. ADJUST NEW PULL BOX AS NEEDED.
9. NOT USED.
10. NOT USED.
11. Exist TWO 3"C, PT (FOR FUTURE TOS COMMUNICATION) AND ONE 3"C, 11 DLC, 1 TC.
12. Exist TWO 3"C, PT (FOR FUTURE TOS COMMUNICATION) AND ONE 3"C, 11 DLC, 1 TC TO Exist MODEL 170 CONTROLLER ASSEMBLY.
13. Exist 3"C, 11 DLC TO MAINLINE DETECTORS ON NORTHBOUND Rte 680.
14. Exist TWO 3"C, PT (FOR FUTURE TOS COMMUNICATION) AND ONE 3"C, 1 TC TO TDC.
15. Exist 3"C, PT.
16. Exist 3"C, 2#4 (120 V, CONTROLLER SERVICE), 2#10 (120 V, METER-ON SIGN), 4 DLC. REMOVE 2 DLC AND INSTALL NEW 2 DLC.
17. Exist 2"C, 2 TC.
18. Exist 2"C, 2#4 (120 V, CONTROLLER SERVICE) TO TYPE III-AF SERVICE EQUIPMENT ENCLOSURE No. (01441).
19. Exist 2"C, 2 DLC. REMOVE 2 DLC AND INSTALL NEW 2 DLC.
20. Exist 2"C, 2#10 (120 V, METER-ON SIGN), 2 DLC.
21. Exist 2"C, 2 TC, 2 DLC. REMOVE 2 DLC AND INSTALL NEW 2 DLC.
22. Exist 1½"C, 1 TC.
23. Exist 2"C, 2#10 (120 V, METER-ON SIGN).
24. Exist 1½"C, 1 TC TO TDC.
25. Exist 2"C, 2#10 (120 V, METER-ON SIGN) TO METER-ON SIGN.
26. Exist 2"C, 1 TC, 2 DLC. REMOVE 2 DLC AND INSTALL NEW 2 DLC.
27. Exist 2"C, 1 TC, 2 DLC IN Exist Conc BARRIER. REMOVE 2 DLC AND INSTALL NEW 2 DLC.
28. Exist 2"C, 1 TC, 2 DLC IN Exist Conc BARRIER. REMOVE Exist 1 TC, 2 DLC AND INSTALL NEW 2 DLC.
29. TAPE REMAINING END OF TC IN PULL BOX.
30. Exist 3", PT IN Exist Conc BARRIER.
31. Exist 1½"C, 1 TC. REMOVE Exist 1 TC.
32. Exist 2"C, 1 TC, 2 DLC. REMOVE Exist 1 TC, 2 DLC AND INSTALL NEW 2 DLC.
33. INSTALL NEW PULL BOX BEHIND NEW Conc BARRIER TRANSITION.
34. ABANDON Exist F-1 AND F-2 DETECTOR LOOPS. INSTALL NEW F-1 AND F-2 TYPE A DETECTOR LOOPS CENTERED IN EACH LANE.
35. Exist 1½"C, 1 TC IN Conc BARRIER OF Exist SOUND WALL.
36. Exist 3"C, PT IN Conc BARRIER OF Exist SOUND WALL.
37. TO Exist MODEL 170 CONTROLLER ASSEMBLY FOR TRAFFIC MONITORING STATION.
38. Exist PULL BOX LOCATED ADJACENT TO END OF Exist TYPE 25 Conc BARRIER.
39. Exist 2"C, 2#10 (120 V, METER-ON SIGN), 1 DLC TO Exist MODEL 170 CONTROLLER ASSEMBLY FOR RAMP METERING.
40. Exist SURFACE MOUNTED 2"C, 2#10 (120 V, METER-ON SIGN), 1 DLC ON SIDE OF Exist TYPE 25 Conc BARRIER.
41. ABANDON Exist Q-1 DETECTOR LOOP. INSTALL NEW TYPE A DETECTOR LOOP AT SAME LOCATION CENTERED IN LANE.
42. REMOVE Exist DLC (FOR DETECTOR Q-1) FROM Exist SURFACE MOUNTED 2"C, 2#10 (120 V, METER-ON SIGN), 1 DLC AT Exist PULL BOX LOCATED AT END OF Exist TYPE 25 Conc BARRIER. REINSTALL Exist DLC IN Exist SURFACE MOUNTED CONDUIT AFTER NEW SECTION OF CONDUIT IS CONNECTED TO IT.
43. INSTALL NEW PULL BOX BEHIND NEW CRASH CUSHION.
44. LOCATE PULL BOX WHERE Exist DLC (FOR DETECTOR Q-1) CAN BE REUSED IN PULL BOX.
45. INSTALL 1½"C, 2#10 (120 V, METER-ON SIGN).
46. RELOCATE Exist TYPE 1-B STANDARD WITH METER-ON SIGN BEHIND NEW CRASH CUSHION. ABANDON Exist FOUNDATION.
47. Exist 1½"C, 2#6 (240 V LIGHTING) IN Exist TYPE 25 Conc BARRIER.
48. Exist 1½"C, 1 DLC IN Exist TYPE 25 Conc BARRIER. REMOVE Exist 1 DLC AND INSTALL NEW 1 DLC.
49. REMOVE Exist HCC BETWEEN CCTV CAMERA AND CCU IN MODEL 334 CONTROLLER CABINET. FURNISH AND INSTALL NEW HCC WITH NEW CONNECTORS BETWEEN CCTV CAMERA AND CCU. FOR HCC AND CONNECTOR DETAILS, SEE SHEET E-9. SEE SHEET E-10 FOR CCTV SYSTEM BLOCK DIAGRAM.
50. Exist 1½"C, 1 HCC IN Exist TYPE 25 Conc BARRIER.
51. Exist 1½"C, 1 DLC IN Exist TYPE 25 Conc BARRIER.
52. INSTALL 1½"C, 1 HCC.
53. INSTALL 1½"C, 1 DLC.
54. Exist 1½"C, 1 HCC.
55. Exist 1½"C, 1 HCC. REMOVE Exist HCC AND INSTALL NEW HCC.
56. Exist 1½"C, 1 DLC. REMOVE Exist 1 DLC AND INSTALL NEW 1 DLC.
57. Exist 1½"C, 1 MLC, 3 DLC. REMOVE 1 DLC (DETECTOR F-1) AND INSTALL NEW 1 DLC.
58. Exist 1½"C, 1 DLC.

LIGHTING AND TRAFFIC OPERATIONS SYSTEM
(INDEX, LEGEND, ABBREVIATIONS AND NOTES)

E-1

REVISED BY	DATE REVISED
BO	1/2/15

CALCULATED-DESIGNED BY: BARON G. OWYEONG
CHECKED BY: MAHMOOD NOII
FUNCTIONAL SUPERVISOR: BEHZAD GOLEMOHAMMADI

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
ELECTRICAL

LAST REVISION | DATE PLOTTED => 14-JUL-2015
05-15-15 | TIME PLOTTED => 09:05

BORDER LAST REVISED 7/2/2010 | USERNAME => s141096 | DGN FILE => 0414000246ua001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0704 | PROJECT NUMBER & PHASE 04140002461

NOTE:

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

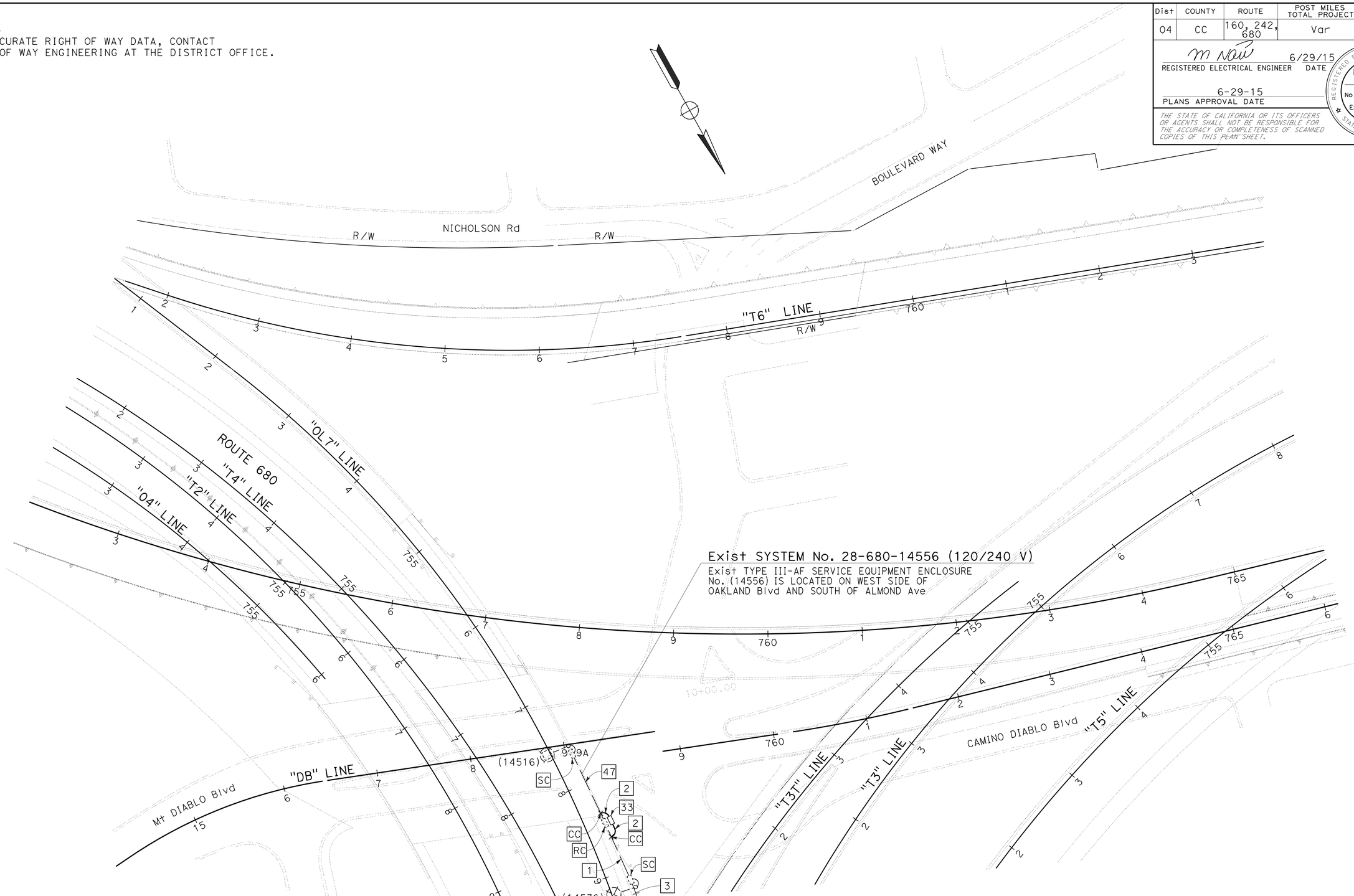
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	52	128

REGISTERED ELECTRICAL ENGINEER — DATE 6/29/15

Mahmood Noii
No. 13717
Exp. 6-30-17
ELECTRICAL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

6-29-15
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.



LOCATION No. 680-46R

APPROVED FOR ELECTRICAL WORK ONLY

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

LIGHTING

SCALE: 1" = 50'

E-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
ELECTRICAL

FUNCTIONAL SUPERVISOR: BEHZAD GOLEMOHAMMADI

CALCULATED-DESIGNED BY: BARON G. OWYEONG

CHECKED BY: MAHMOOD NOII

REVISED BY	DATE REVISED
BO	1/2/15

LAST REVISION | DATE PLOTTED => 14-JUL-2015
02-26-15 | TIME PLOTTED => 09:05

BORDER LAST REVISED 7/2/2010

USERNAME => s141096
DGN FILE => 0414000246ua002.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0704

PROJECT NUMBER & PHASE 04140002461

NOTE:

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	53	128

M Noii 6/29/15
REGISTERED ELECTRICAL ENGINEER DATE

6-29-15
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Mahmood Noii
No. 13717
Exp. 6-30-17
ELECTRICAL
STATE OF CALIFORNIA

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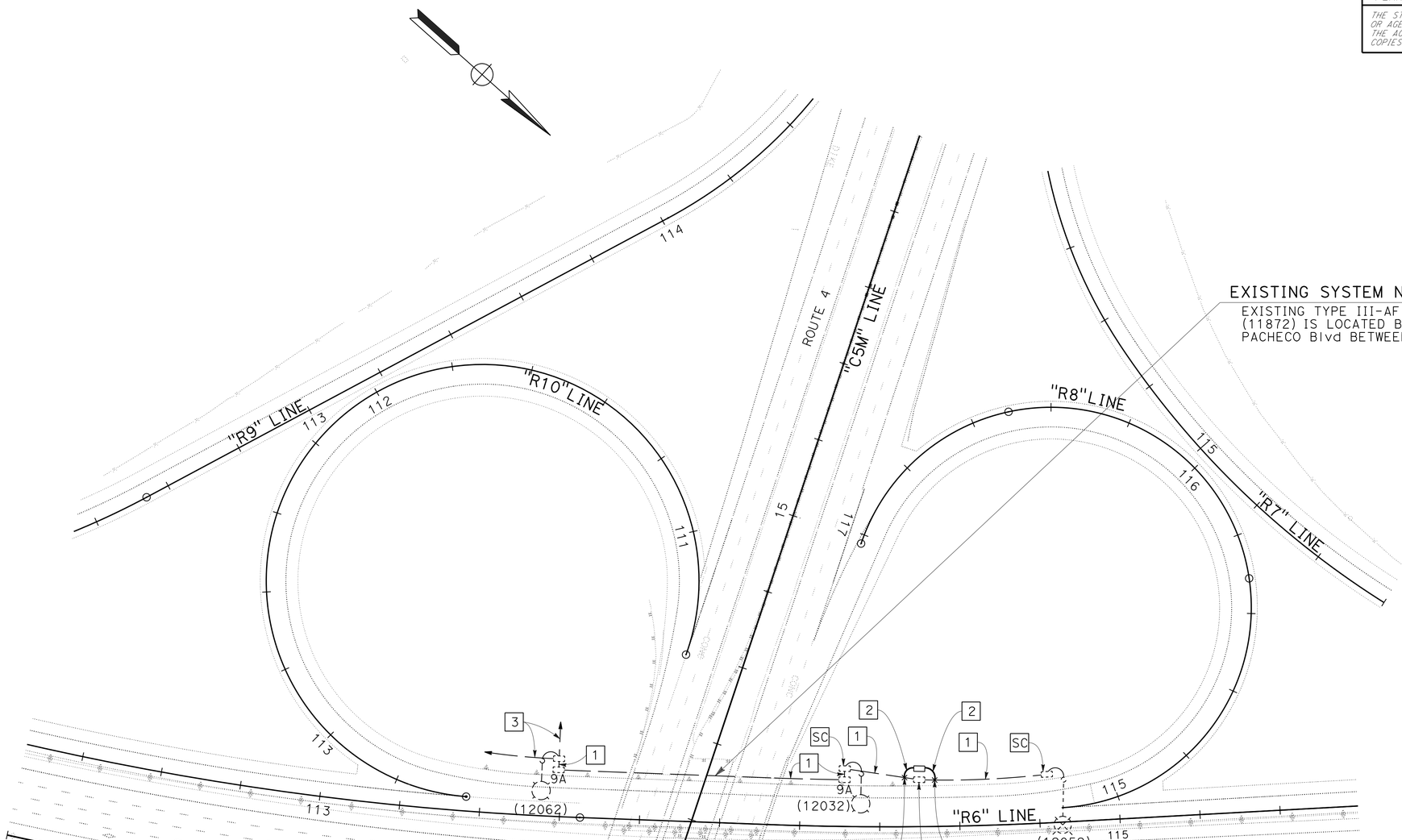

EXISTING SYSTEM No. 28-004-11872 (120/240 V)

EXISTING TYPE III-AF SERVICE EQUIPMENT ENCLOSURE No. (11872) IS LOCATED BEHIND SIDEWALK ON EAST SIDE OF PACHECO Blvd BETWEEN Rte 4 AND MUIR Rd

LOCATION No. 680-36

APPROVED FOR ELECTRICAL WORK ONLY

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

LIGHTING

SCALE: 1" = 50'

E-3

REVISED BY	BO		
DATE REVISED	1/2/15		
CALCULATED-DESIGNED BY	BARON G. OWYEONG		
CHECKED BY	MAHMOOD NOII		
FUNCTIONAL SUPERVISOR	BEHZAD GOLEMOHAMMADI		
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	ELECTRICAL		

LAST REVISION | DATE PLOTTED => 14-JUL-2015 | 05-15-15 | TIME PLOTTED => 09:05

BORDER LAST REVISED 7/2/2010 | USERNAME => s141096 | DGN FILE => 0414000246ua003.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0704 | PROJECT NUMBER & PHASE 04140002461

NOTE:

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	54	128

M Noii 6/29/15
REGISTERED ELECTRICAL ENGINEER DATE

6-29-15
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Mahmood Noii
No. 13717
Exp. 6-30-17
ELECTRICAL
STATE OF CALIFORNIA

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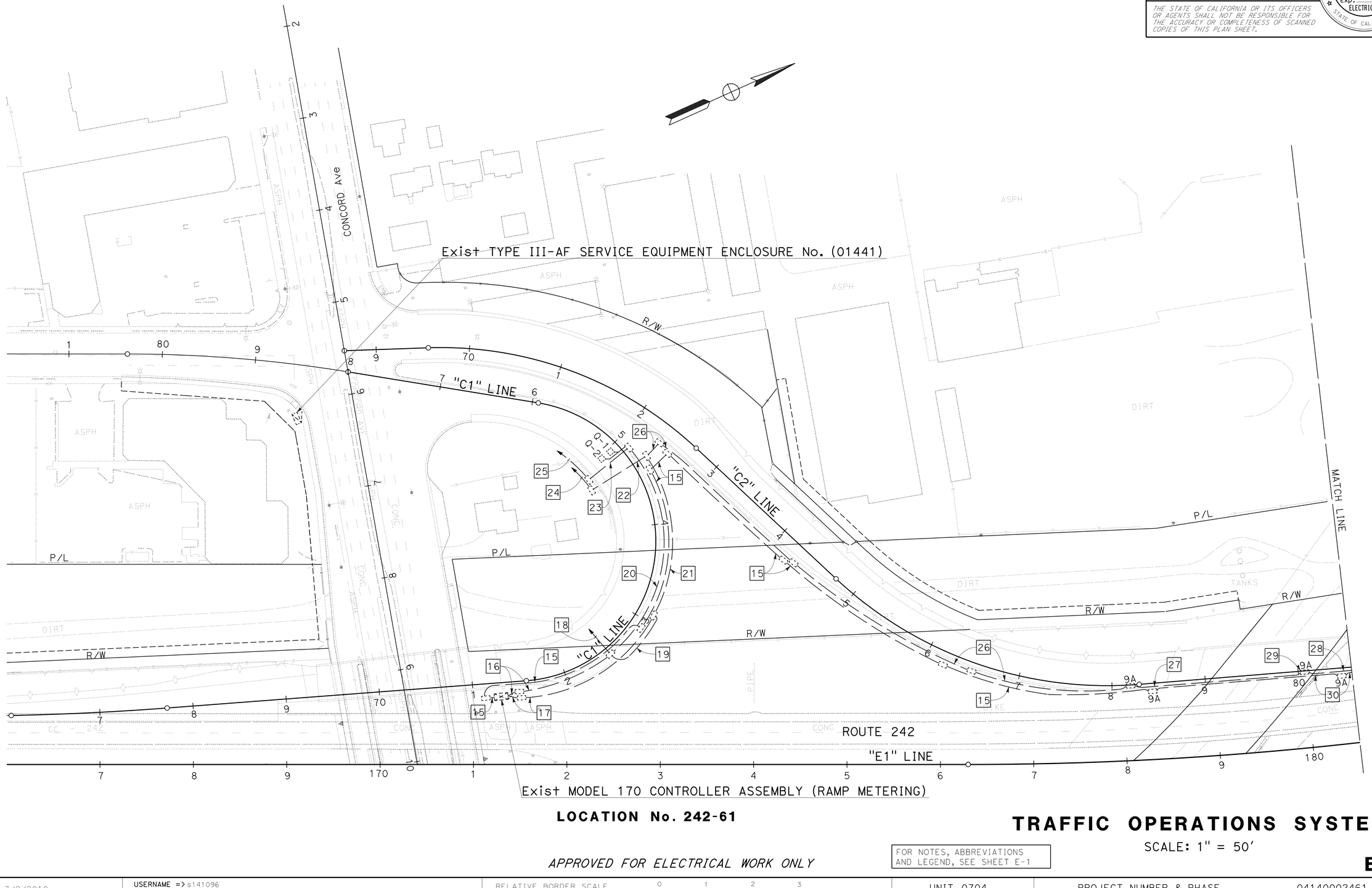


LOCATION No. 242-61

APPROVED FOR ELECTRICAL WORK ONLY

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

TRAFFIC OPERATIONS SYSTEM

SCALE: 1" = 50'

E-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
ELECTRICAL

FUNCTIONAL SUPERVISOR: BEHZAD GOLEMOHAMMADI

CALCULATED-DESIGNED BY: BARON G. OWYEONG
CHECKED BY: MAHMOOD NOII

REVISED BY: BO
DATE REVISED: 1/2/15

LAST REVISION DATE PLOTTED => 14-JUL-2015
TIME PLOTTED => 09:05
02-26-15

BORDER LAST REVISED 7/2/2010

USERNAME => s141096
DGN FILE => 0414000246ua004.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0704

PROJECT NUMBER & PHASE 04140002461

NOTE:

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

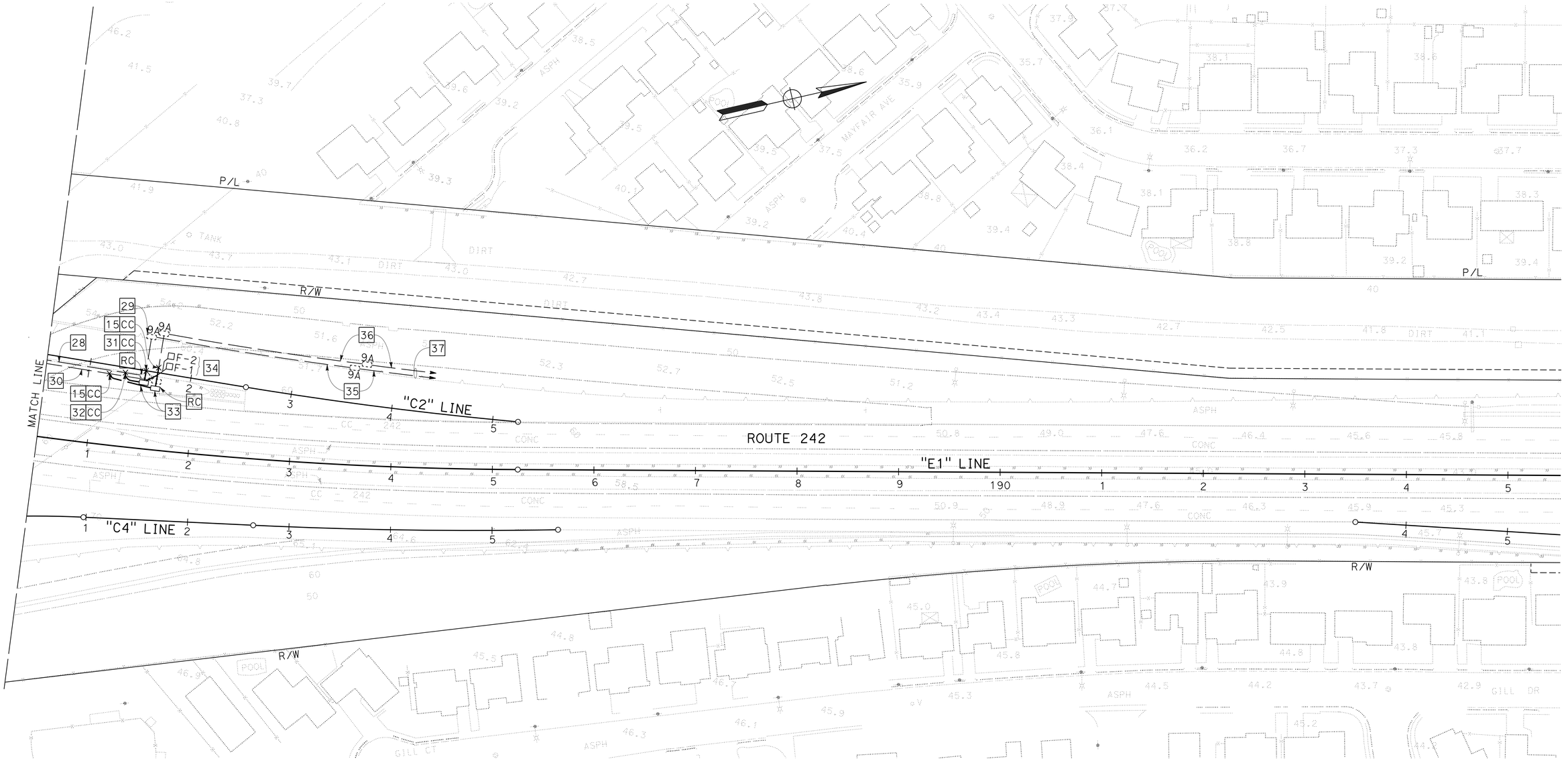
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	55	128

REGISTERED ELECTRICAL ENGINEER — DATE: 6/29/15

PLANS APPROVAL DATE: 6-29-15

Mahmood Noii
No. 13717
Exp. 6-30-17
ELECTRICAL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

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



LOCATION No. 242-61

TRAFFIC OPERATIONS SYSTEM

SCALE: 1" = 50'

APPROVED FOR ELECTRICAL WORK ONLY

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

E-5

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
ELECTRICAL

FUNCTIONAL SUPERVISOR: BEHZAD GOLEMOHAMMADI

CALCULATED-DESIGNED BY: BARON G. OWYEONG
CHECKED BY: MAHMOOD NOII

REVISED BY	DATE REVISED
BO	1/2/15

LAST REVISION — DATE PLOTTED => 14-JUL-2015
05-15-15 — TIME PLOTTED => 09:05

BORDER LAST REVISED 7/2/2010

USERNAME => s141096
DGN FILE => 0414000246ua005.dgn

RELATIVE BORDER SCALE IS IN INCHES: 0 1 2 3

UNIT 0704 | PROJECT NUMBER & PHASE 04140002461

NOTE:

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	56	128

REGISTERED ELECTRICAL ENGINEER — DATE: 6/29/15

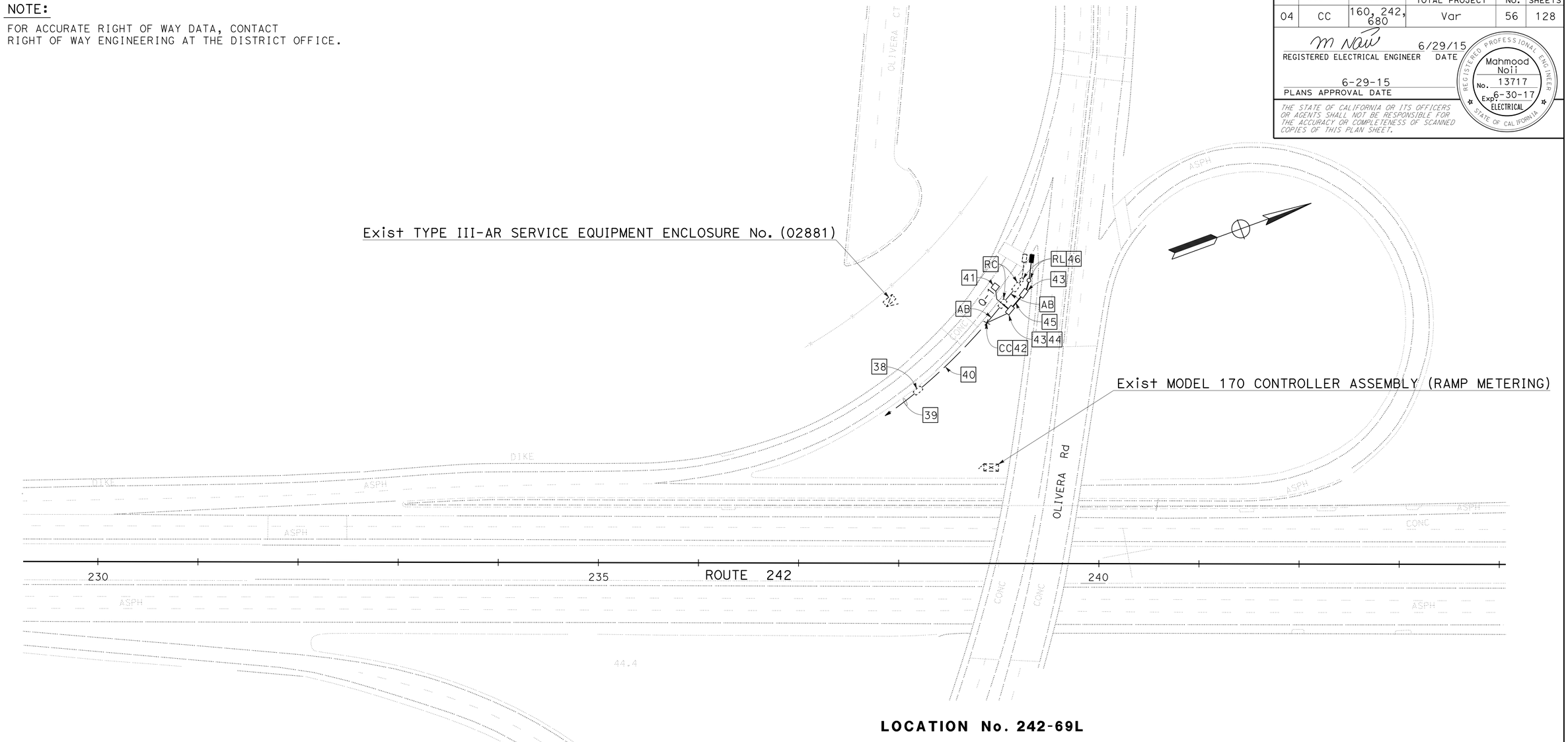
PLANS APPROVAL DATE: 6-29-15

REGISTERED PROFESSIONAL ENGINEER — Mahmood Noii — No. 13717 — Exp. 6-30-17 — ELECTRICAL — STATE OF CALIFORNIA

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

Exist TYPE III-AR SERVICE EQUIPMENT ENCLOSURE No. (02881)

Exist MODEL 170 CONTROLLER ASSEMBLY (RAMP METERING)



LOCATION No. 242-69L

APPROVED FOR ELECTRICAL WORK ONLY

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

TRAFFIC OPERATIONS SYSTEM

SCALE: 1" = 50'

E-6

REVISED BY	DATE REVISED
BO	1/2/15

CALCULATED-DESIGNED BY: BARON G. OWYEONG
CHECKED BY: MAHMOOD NOII

FUNCTIONAL SUPERVISOR: BEHZAD GOLEMOHAMMADI

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
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ELECTRICAL

LAST REVISION: DATE PLOTTED => 14-JUL-2015 TIME PLOTTED => 09:05
02-26-15

BORDER LAST REVISED 7/2/2010

USERNAME => s141096
DGN FILE => 04140002461ua006.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0704 | PROJECT NUMBER & PHASE 04140002461

NOTE:

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	57	128

REGISTERED ELECTRICAL ENGINEER — DATE: 6/29/15

Mahmood Noii
No. 13717
Exp. 6-30-17
ELECTRICAL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

6-29-15
PLANS APPROVAL DATE

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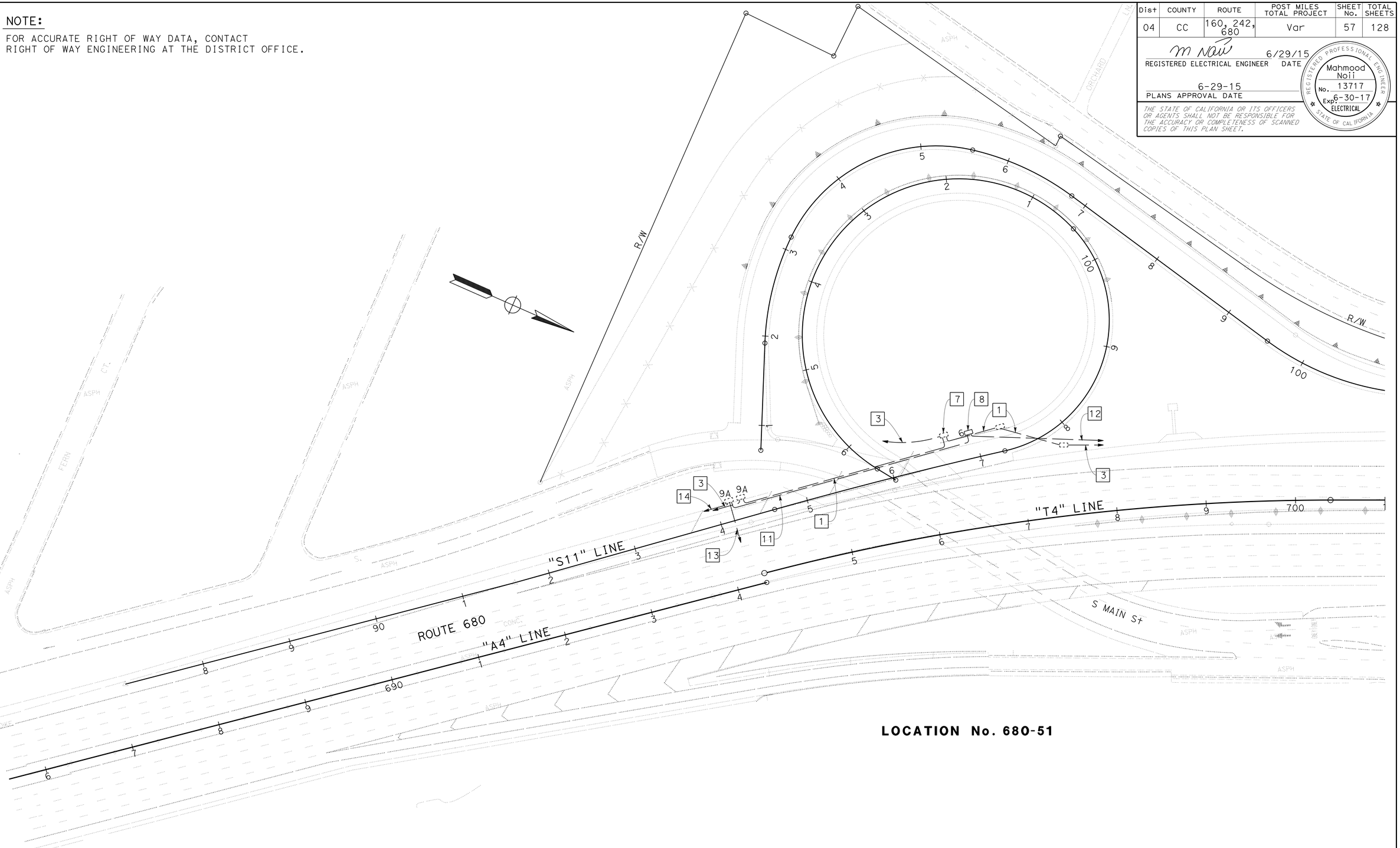

LOCATION No. 680-51

APPROVED FOR ELECTRICAL WORK ONLY

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

TRAFFIC OPERATIONS SYSTEM

SCALE: 1" = 50'

E-7

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
ELECTRICAL

FUNCTIONAL SUPERVISOR: BEHZAD GOLEMOHAMMADI

CALCULATED-DESIGNED BY: BARON G. OWYEONG

CHECKED BY: MAHMOOD NOII

REVISED BY	DATE REVISED
BO	1/2/15

LAST REVISION DATE PLOTTED => 14-JUL-2015
TIME PLOTTED => 09:05

BORDER LAST REVISED 7/2/2010

USERNAME => s141096
DGN FILE => 0414000246ua007.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0704

PROJECT NUMBER & PHASE 04140002461

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	58	128

REGISTERED ELECTRICAL ENGINEER — DATE 6/29/15

PLANS APPROVAL DATE 6-29-15

Mahmood Noii No. 13717 Exp. 6-30-17 ELECTRICAL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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NICHOLSON Rd

"T6" LINE

ROUTE 680 "T4" LINE

"OL7" LINE

"T2" LINE

"O4" LINE

"DB" LINE

"T3T" LINE

"T3" LINE

"T5" LINE

BOULEVARD WAY

CAMINO DIABLO Blvd

Mt DIABLO Blvd

OAKLAND Blvd

F-1

49 Exist MODEL 170 CONTROLLER ASSEMBLY

Exist TYPE III-AF SERVICE EQUIPMENT ENCLOSURE

SC 48 50 51 CC 52 53 33 49 RC 53 54 55 56 CC 52 58 55 57

LOCATION No. 680-46R

APPROVED FOR ELECTRICAL WORK ONLY

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

TRAFFIC OPERATIONS SYSTEM

SCALE: 1" = 50'

E-8

REVISED BY	DATE REVISED
BO	1/2/15

CALCULATED-DESIGNED BY: BARON G. OWYEONG

CHECKED BY: MAHMOOD NOII

FUNCTIONAL SUPERVISOR: BEHZAD GOLEMOHAMMADI

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans® ELECTRICAL

LAST REVISION: DATE PLOTTED => 14-JUL-2015 TIME PLOTTED => 09:05

05-15-15

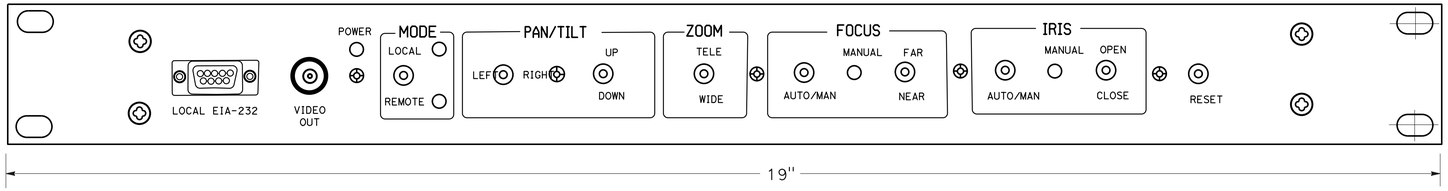
BORDER LAST REVISED 7/2/2010 | USERNAME => s141096 | DGN FILE => 0414000246ua008.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0704 | PROJECT NUMBER & PHASE 04140002461

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	59	128

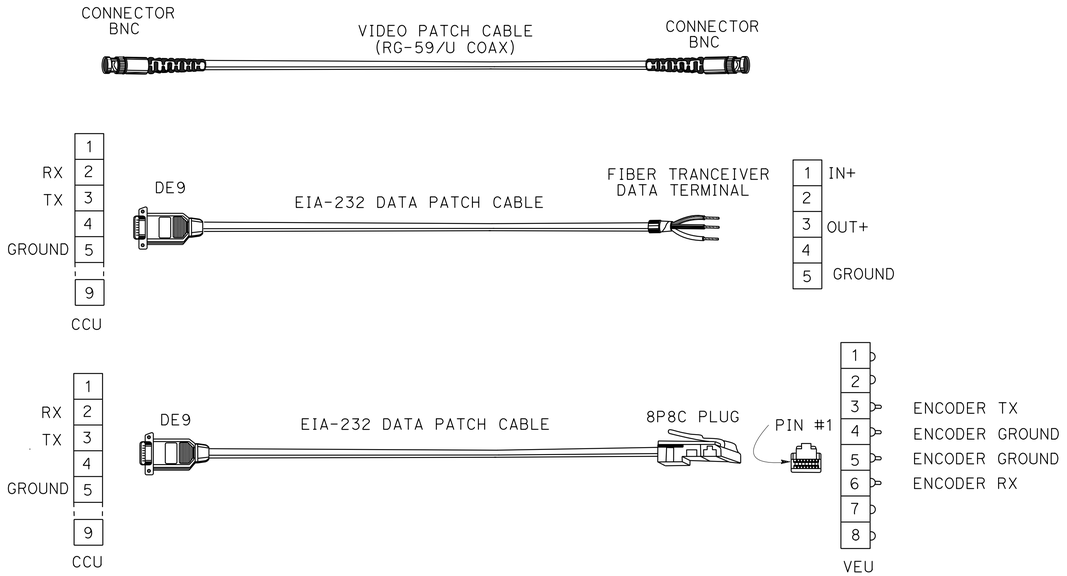
REGISTERED ELECTRICAL ENGINEER — 6/29/15 DATE

Mahmood Noii No. 13717 Exp. 6-30-17 ELECTRICAL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

6-29-15
PLANS APPROVAL DATE

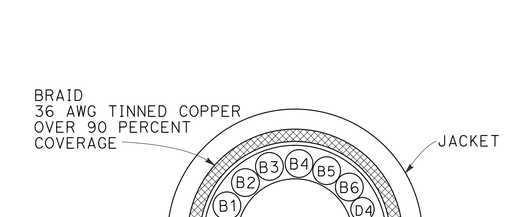


CCU FRONT PANEL LAYOUT

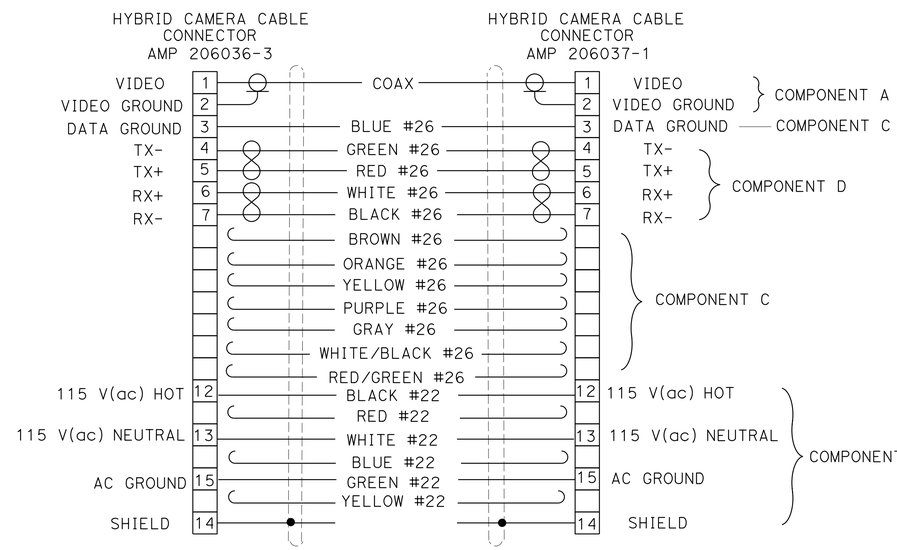


INTERFACE CABLE DETAILS

COMPONENT A



HYBRID CAMERA CABLE CROSS SECTION



COMPONENT	CONDUCTOR	DESCRIPTION
A	COAX	75 OHM, RG-59/U TYPE, STANDARD ANALOG VIDEO CABLE, 0.242" NOMINAL DIAMETER
B	6 CONDUCTOR	22 AWG, COPPER INSULATED CONDUCTOR, 0.048" NOMINAL DIAMETER, COLOR CODED: B1-BLACK, B2-RED, B3-GREEN, B4-WHITE, B5-BLUE, B6-YELLOW
C	8 CONDUCTOR	26 AWG, COPPER INSULATED CONDUCTOR, 0.037" NOMINAL DIAMETER, COLOR CODED: C1-BROWN, C2-BLUE, C3-ORANGE, C4-YELLOW, C5-PURPLE, C6-GRAY, C7-WHITE/BLACK, C8-RED/GREEN
D	4 CONDUCTOR	26 AWG, COPPER INSULATED CONDUCTOR, 0.037" NOMINAL DIAMETER, COLOR CODED: D1-BLACK & WHITE, D2-RED & GREEN

HYBRID CAMERA CABLE AND CONNECTORS DETAIL

ELECTRICAL DETAILS (CCTV MOUNTING DETAILS)

NO SCALE

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

E-9

REVISED BY	DATE REVISED
BO	1/2/15

CALCULATED-DESIGNED BY: BARON G. OWYEONG
CHECKED BY: MAHMOOD NOII
FUNCTIONAL SUPERVISOR: BEHZAD GOLEMOHAMMADI

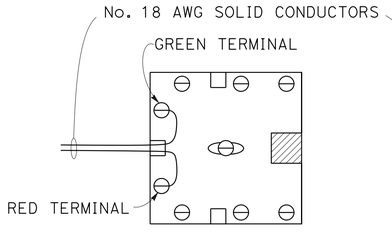
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
ELECTRICAL

LAST REVISION DATE PLOTTED => 14-JUL-2015
TIME PLOTTED => 09:05
02-25-15

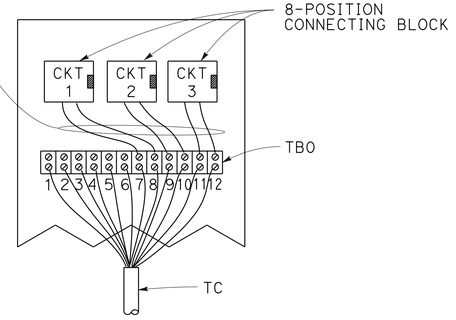
8-POSITION CONNECTING BLOCK		No. 18 AWG SOLID CONDUCTOR COLOR	TBO POSITION ASSIGMENT
CIRCUIT 1	GREEN TERMINAL	WHITE	7
	RED TERMINAL	BROWN	8
CIRCUIT 2	GREEN TERMINAL	WHITE	9
	RED TERMINAL	GRAY	10
CIRCUIT 3	GREEN TERMINAL	RED	11
	RED TERMINAL	BLUE	12

NOTES:

USE ONE CONNECTING BLOCK FOR EACH REQUIRED CIRCUIT FOR EACH LOCATION.

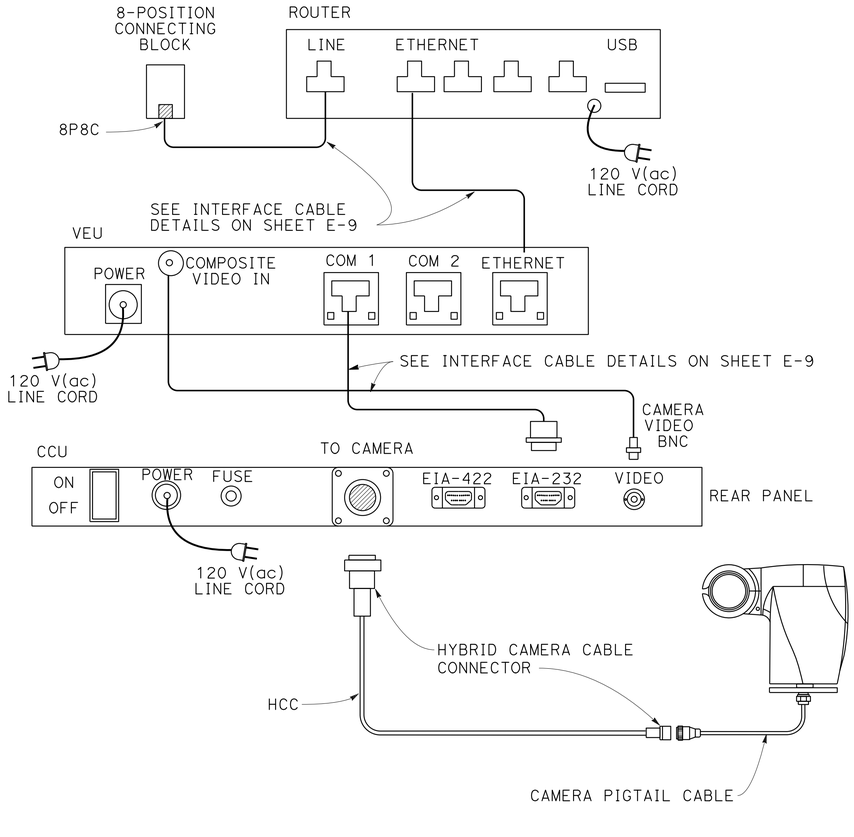


8-POSITION CONNECTING BLOCK

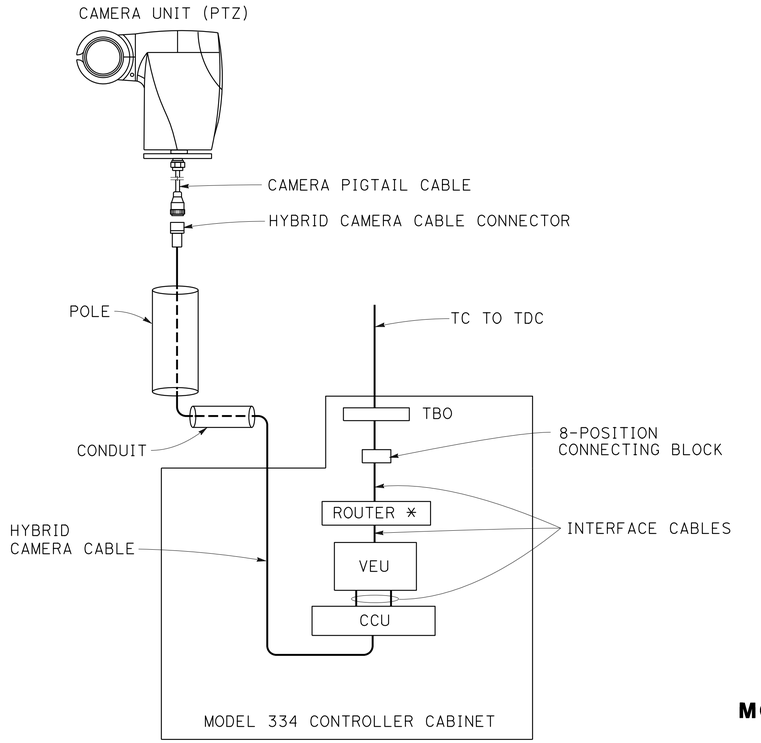


SERVICE PANEL FOR MODEL 334 CABINET

WIRING DETAIL FOR TELEPHONE CABLE INSIDE CONTROLLER CABINET



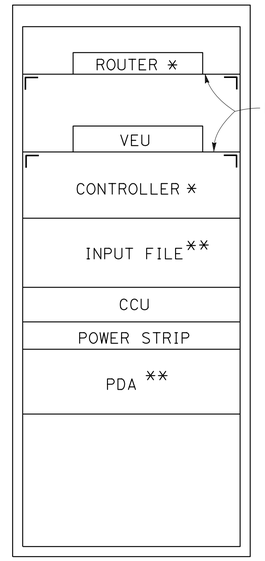
CCTV SYSTEM LAYOUT



CCTV SYSTEM BLOCK DIAGRAM

TC - TELEPHONE CABLE
HCC - HYBRID CAMERA CABLE
TBO - TERMINAL BLOCK O
PDA - POWER DISTRIBUTION ASSEMBLY
CCU - CAMERA CONTROL UNIT
VEU - VIDEO ENCODER UNIT

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



MODEL 334 CONTROLLER CABINET LAYOUT (FRONT VIEW)

* STATE-FURNISHED

** PDA AND INPUT FILE WILL BE INCLUDED ONLY WITH STATE-FURNISHED CONTROLLER CABINET.

ELECTRICAL DETAILS
(CCTV WITH TELEPHONE SERVICE)

NO SCALE

E-10

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	60	128

REGISTERED ELECTRICAL ENGINEER — DATE 6/29/15

PLANS APPROVAL DATE 6-29-15

Registered Professional Engineer — Mahmood Noii — No. 13717 — Exp. 6-30-17 — ELECTRICAL — State of California

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REVISED BY	DATE REVISED
BO	1/2/15

CALCULATED-DESIGNED BY: BARON G. OWYEONG
CHECKED BY: MAHMOOD NOII
FUNCTIONAL SUPERVISOR: BEHZAD GOLEMOHAMMADI

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
ELECTRICAL

LAST REVISION: DATE PLOTTED => 14-JUL-2015, TIME PLOTTED => 09:05, 02-25-15

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	61	128

m Noii 6/29/15
REGISTERED ELECTRICAL ENGINEER DATE

6-29-15
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Mahmood Noii
No. 13717
Exp. 6-30-17
ELECTRICAL
STATE OF CALIFORNIA

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

NOTE:

1. ITEMS SHOWN IN THE TABLES ARE NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.

LIGHTING

SHEET No.	LOCATION ID No.	PULL BOX	CONDUIT	CONDUCTOR
		No. 5	1½"	No. 6
		EA	LF	
E-2	46R	1	15	380
E-3	36	1	15	380

TRAFFIC OPERATIONS SYSTEM

SHEET No.	LOCATION ID No.	LOOP DETECTOR	PULL BOX		CONDUIT			CONDUCTOR			
		TYPE A	No. 5	No. 6	1½"	2"	3"	No. 10	No. 14	DLC	HCC
		EA			LF						
E-4	61									2520	
E-5	61	2	2			15	15			220	
E-6	69L	1	2		30	15		60	30		
E-7	51			1							
E-8	46R		1		30		15			420	320

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

ELECTRICAL QUANTITIES

E-11

CALCULATED-DESIGNED BY	BARON G. OWYEONG	REVISED BY	BO
CHECKED BY	MAHMOOD NOII	DATE REVISED	1/2/15
FUNCTIONAL SUPERVISOR	BEHZAD GOLEMOHAMMADI		

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
ELECTRICAL

LAST REVISION DATE PLOTTED => 14-JUL-2015
05-15-15 TIME PLOTTED => 09:05

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
Mtl	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

Oblr	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 Mtl	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
Tel	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	160, 242, 680	Var	62	128

Grace M. Tsushima
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Grace M. Tsushima — No. C49814 — Exp. 9-30-14 — CIVIL — STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 6-29-15

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
kip	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

2010 REVISED STANDARD PLAN RSP A10B

6-7-13

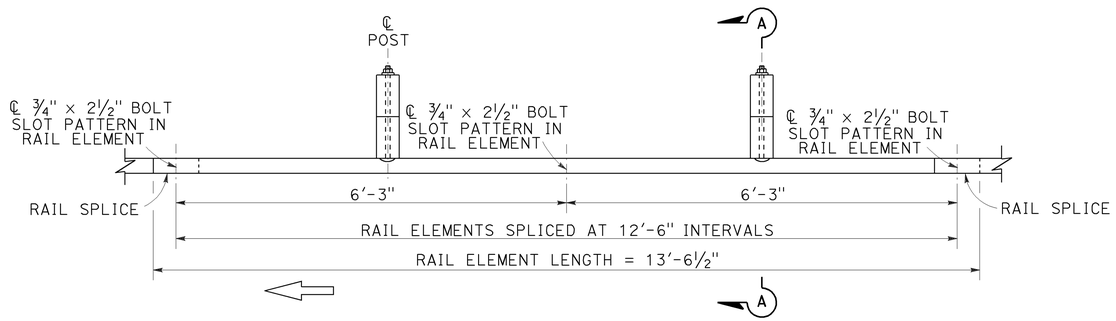
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	63	128

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

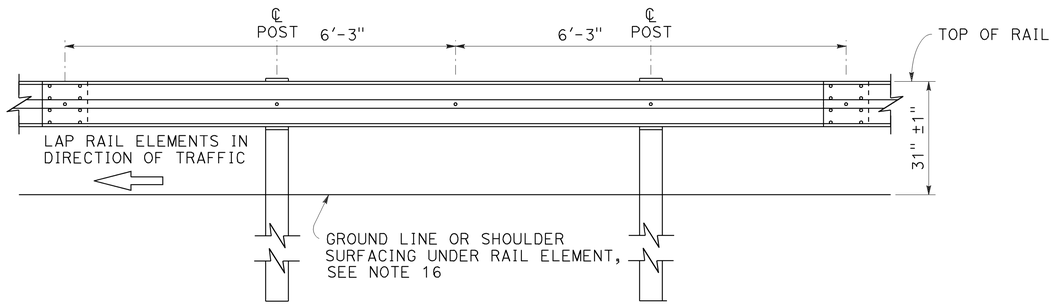
July 19, 2013
PLANS APPROVAL DATE

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

TO ACCOMPANY PLANS DATED 6-29-15

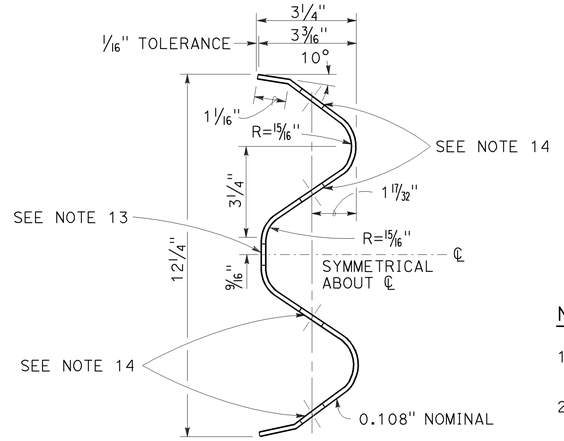


PLAN



ELEVATION

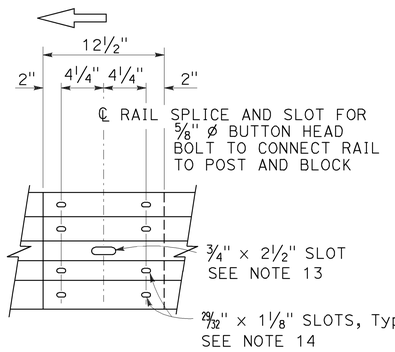
MIDWEST GUARDRAIL SYSTEM WITH WOOD POST AND BLOCKS



SECTION THRU RAIL ELEMENT

NOTES:

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



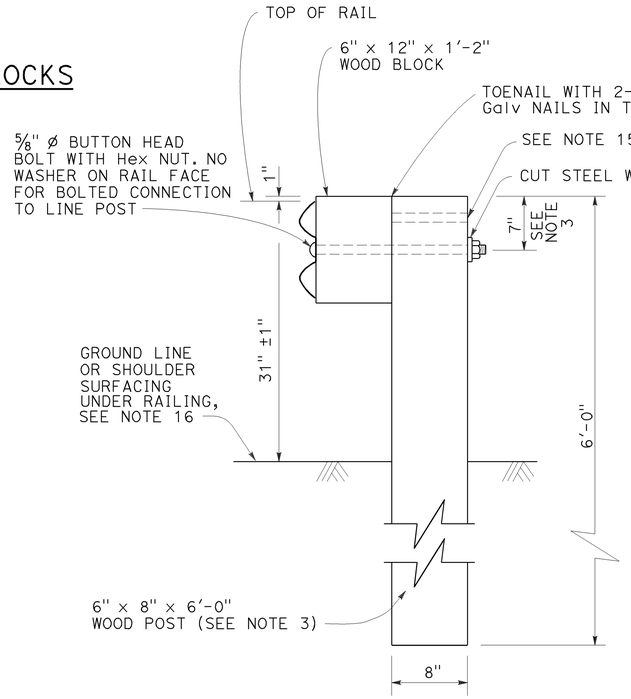
ELEVATION

RAIL ELEMENT SPLICE DETAIL

a) Connect the over lapped end of the rail elements with ⅝" ø × 1⅜" button head oval shoulder splice bolts inserted into the 29/32" × 1⅛" slots and bolted together with ⅝" ø recessed hex nuts. Recess of hex nut points toward rail element. A total of 8 bolts and nuts are to be used at each rail splice connection.

b) The ends of the rail elements are to be overlapped in the direction of traffic (see details).

c) Where end cap is to be attached to the end of a rail element, a total of 4 of the above described splice bolts and nuts are to be used.



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)

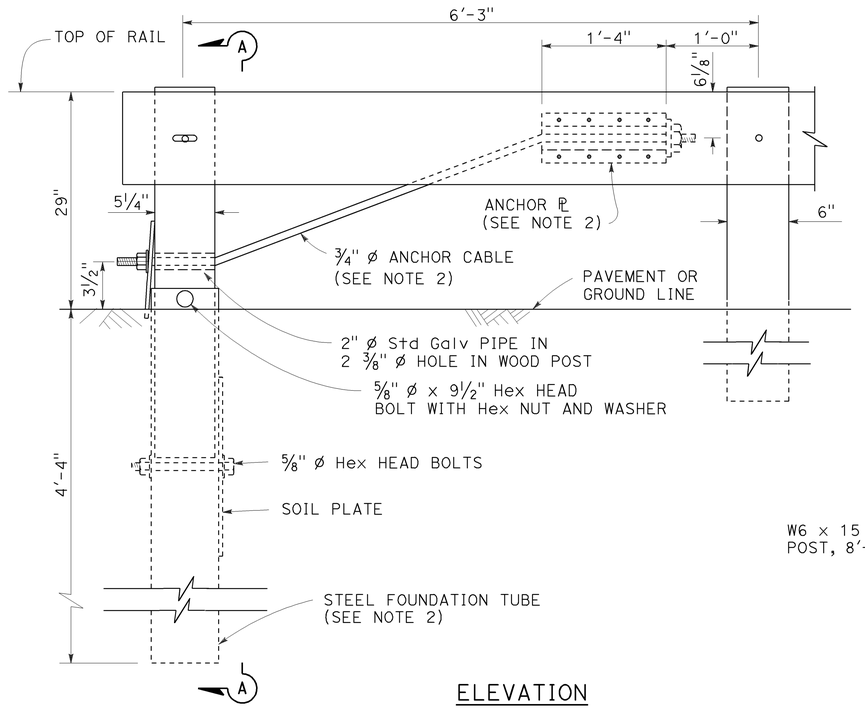
NO SCALE

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

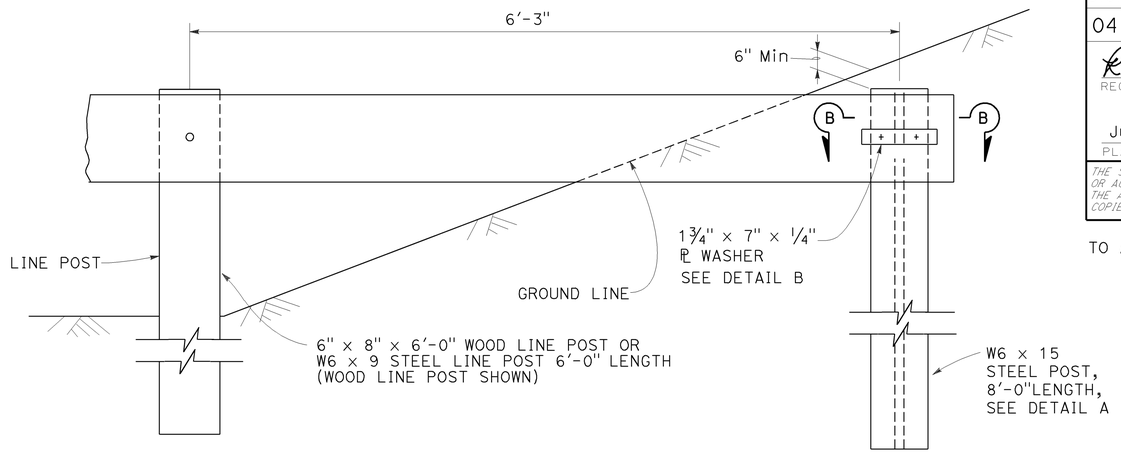
REVISED STANDARD PLAN RSP A77L1

2010 REVISED STANDARD PLAN RSP A77L1

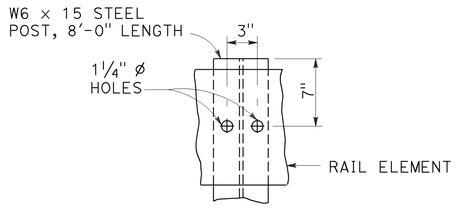
7-3-13



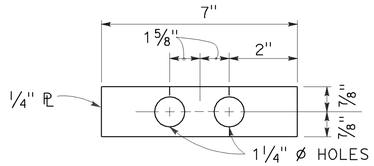
ELEVATION
END ANCHOR ASSEMBLY (TYPE SFT)



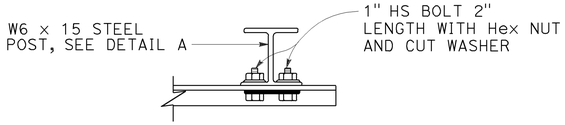
BURIED POST END ANCHOR



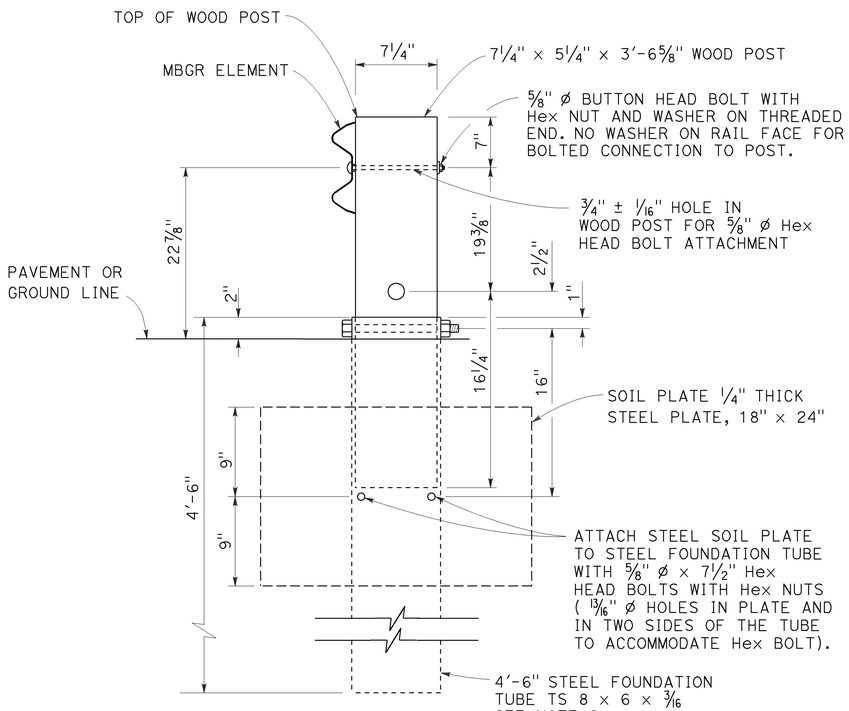
DETAIL A



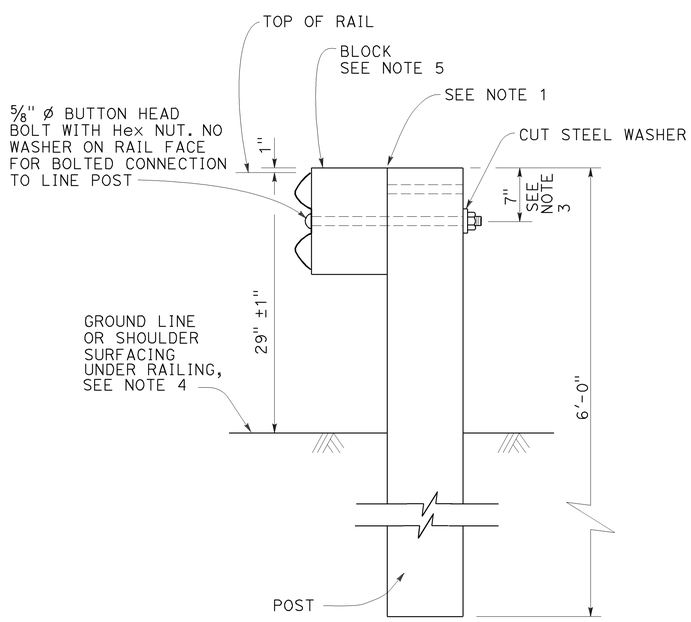
DETAIL B



SECTION B-B



SECTION A-A



TYPICAL LINE POST INSTALLATION

NOTES:

1. For wood post and wood block, toenail with 2-16d Galv nails in top of block. For steel post and notched wood or plastic block, notched face of block faces steel post.
2. A 6'-0" Length steel foundation tube, TS 8 x 6 x 3/16, without a soil plate, may be furnished and installed in place of the 4'-6" length steel foundation tube and soil plate shown, Minimum embadment of the 6'-0" length tube shall be 5'-9". A 5/8" ø Hex head bolt and nut shall be installed in the hole in the 6'-0" length tube to keep the wood post from dropping into the tube.
3. To connect railing to 27" terminal system end treatment, transition the top of railing height at a ratio of 120:1 to terminal system end treatment height plus one 12'-6" standard railing section at the transitioned height for a horizontal connection to the end treatment.
4. Install posts in soil.
5. See Revised Standard Plans RSP A77N1 and RSP A77N2 for details.
6. Holes excavation in the slope to construct the buried post end anchor shall be backfilled with selected earth, placed in layers approximately 1'-0" thick. Each layer shall be moistened and thoroughly compacted.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	64	128

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

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TO ACCOMPANY PLANS DATED 6-29-15

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

METAL BEAM GUARD RAILING RECONSTRUCT INSTALLATION

NO SCALE

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

REVISED STANDARD PLAN RSP A77L3

2010 REVISED STANDARD PLAN RSP A77L3

7-16-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	65	128

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
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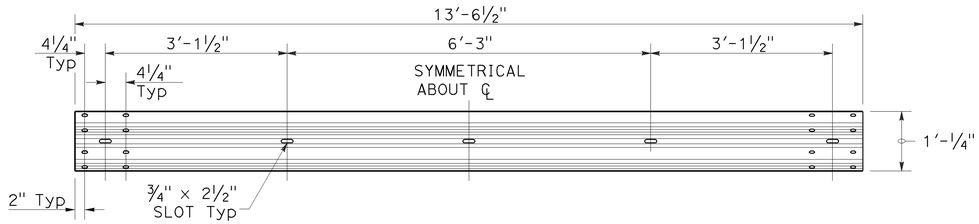
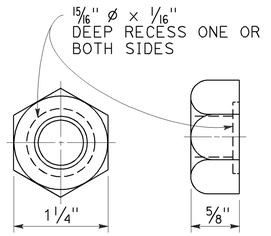
TO ACCOMPANY PLANS DATED 6-29-15



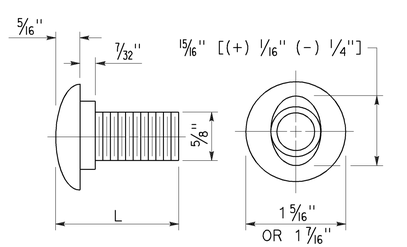
TYPICAL RAIL ELEMENT

NOTE:

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



⅝" ø RECESS NUT

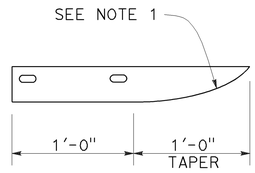


⅝" ø BUTTON HEAD BOLT

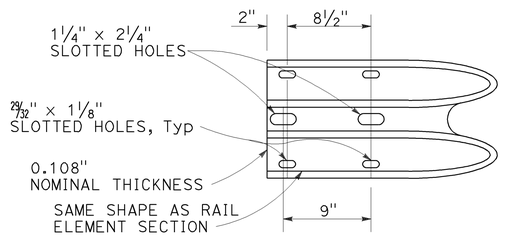
BUTTON HEAD BOLT

L	THREAD LENGTH
1⅜"	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
** 2¾"	2" Min THREAD LENGTH
** 19"	4" Min THREAD LENGTH

** For nested rail applications.



PLAN



ELEVATION

END CAP (TYPE A)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM STANDARD HARDWARE

NO SCALE

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

REVISED STANDARD PLAN RSP A77M1

2010 REVISED STANDARD PLAN RSP A77M1

7-3-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	66	128

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

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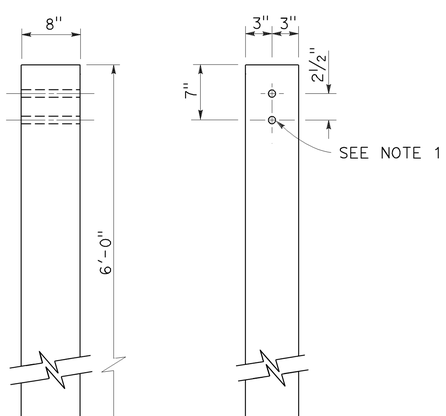
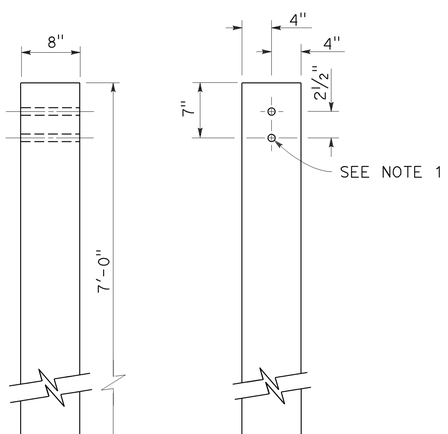
TO ACCOMPANY PLANS DATED 6-29-15



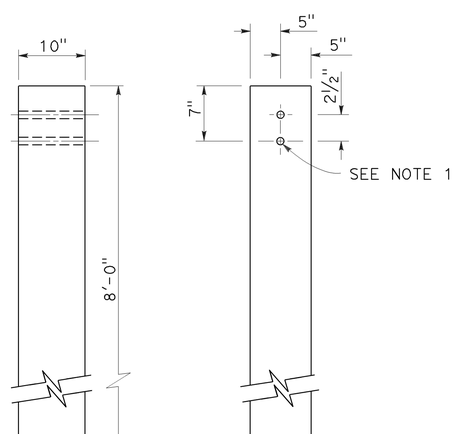
SIDE FRONT

6" x 8" WOOD POST
See Note 3



SIDE FRONT

8" x 8" WOOD POST
See Note 4

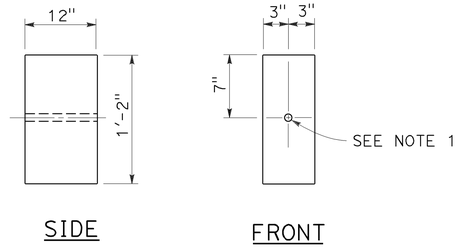


SIDE FRONT

10" x 10" WOOD POST
See Note 5

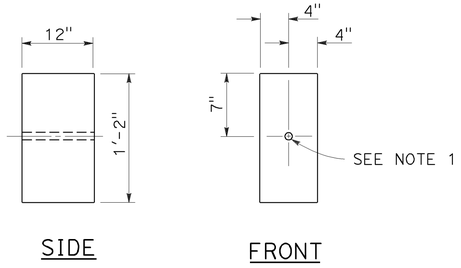
NOTES:

1. All holes in wood posts and blocks shall be ¾" 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.



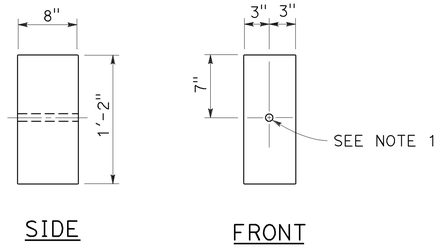
SIDE FRONT

6" x 12" WOOD BLOCK
See Note 3



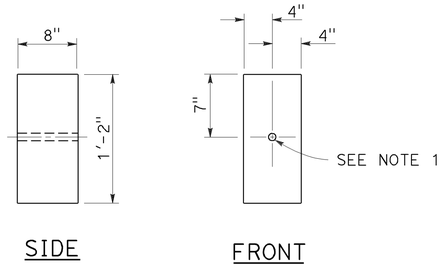
SIDE FRONT

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

7-3-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	67	128

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

November 15, 2013
PLANS APPROVAL DATE

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

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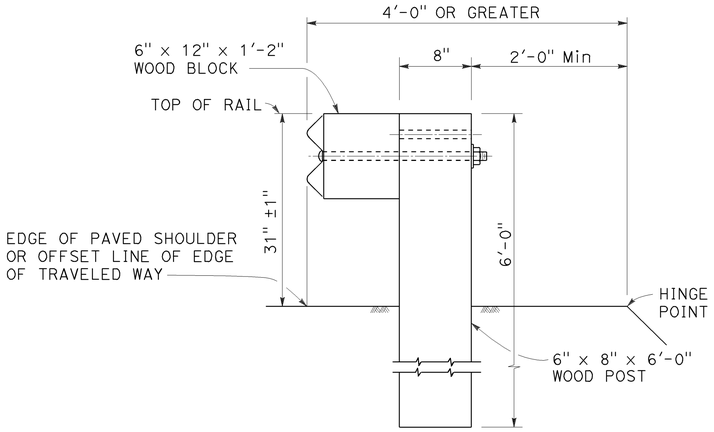
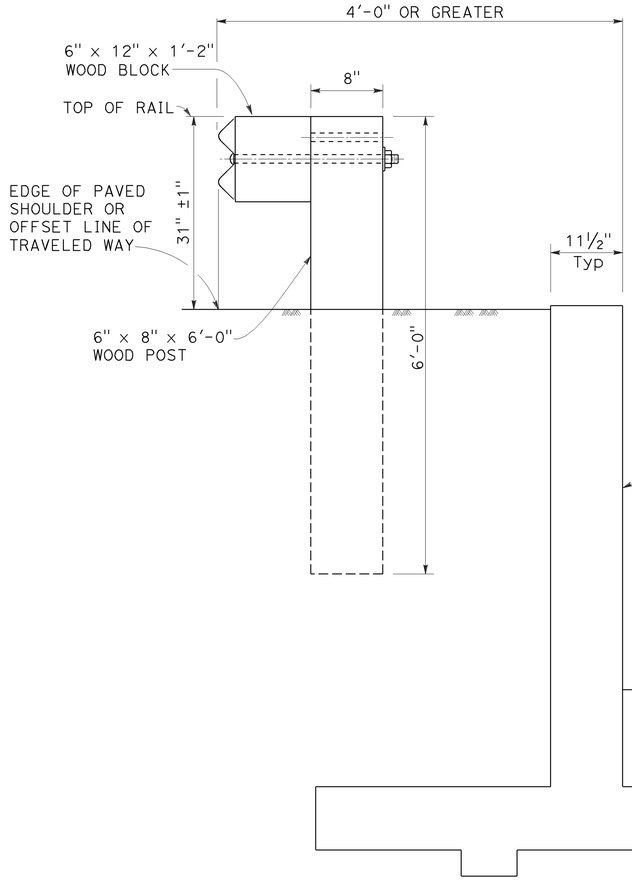
TO ACCOMPANY PLANS DATED 6-29-15



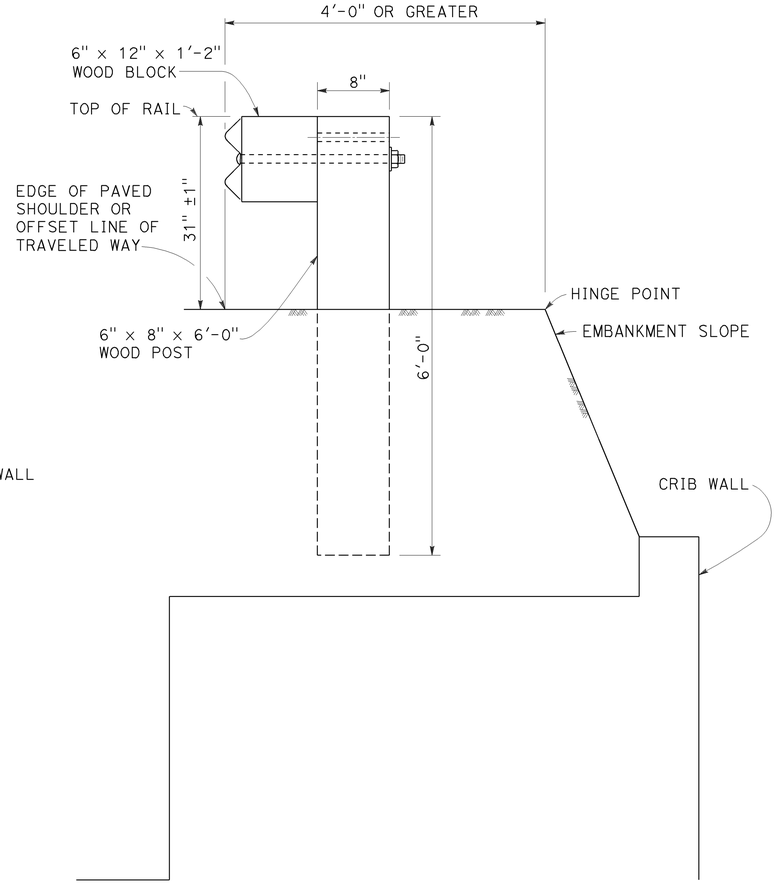
DETAIL A

TYPICAL ROADWAY INSTALLATION

See Note 1



DETAIL C



DETAIL D

INSTALLATION AT EARTH RETAINING WALLS

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

10-29-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	68	128

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
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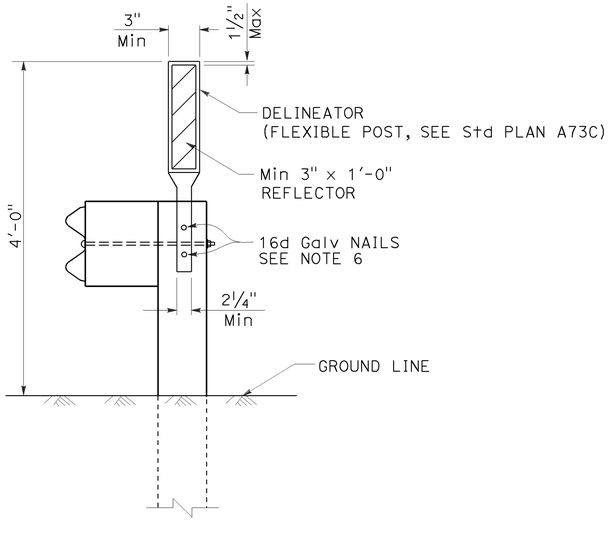
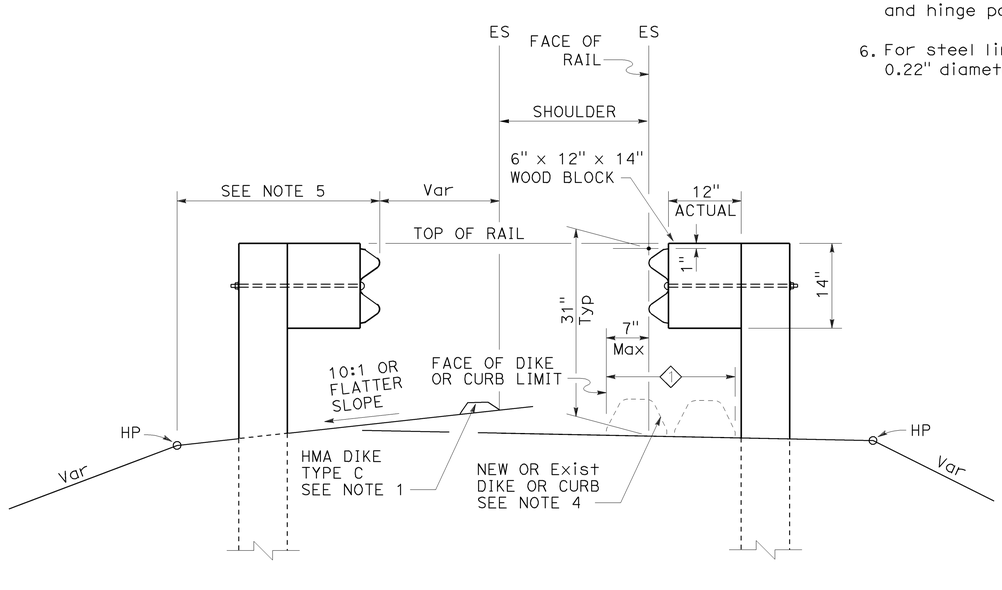
TO ACCOMPANY PLANS DATED 6-29-15

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 9/32" diameter holes.



MGS DELINEATION
See Note 3



DIKE POSITIONING
See Note 1

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

7-10-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	69	128

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
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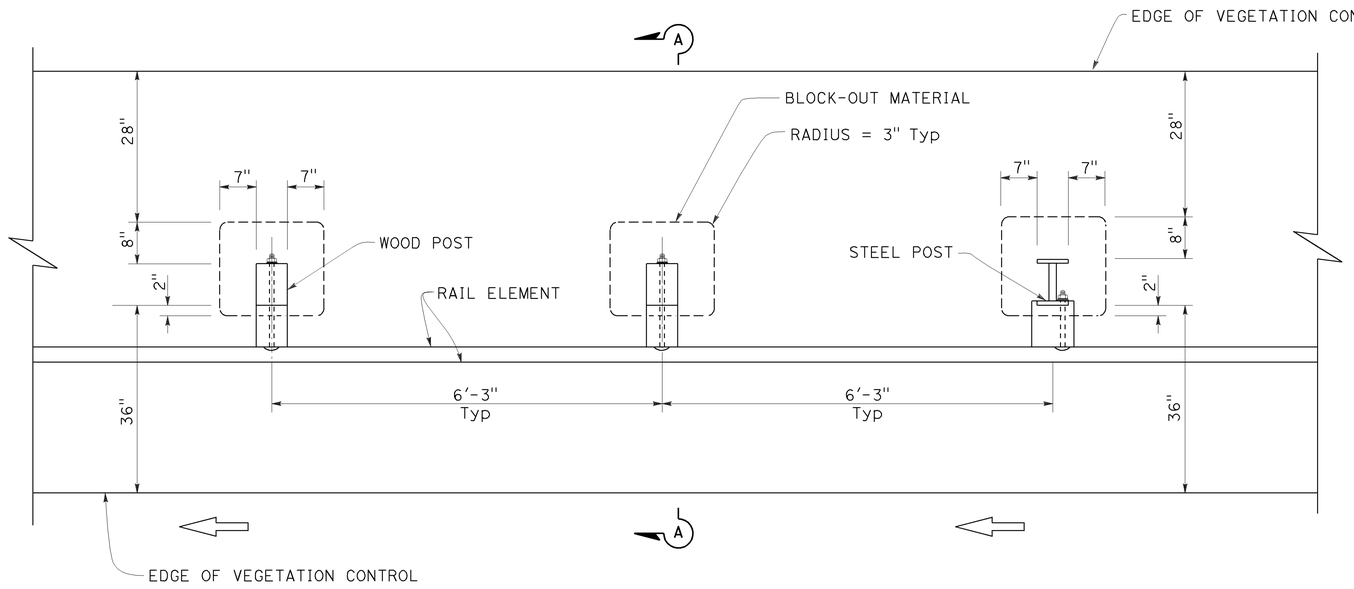
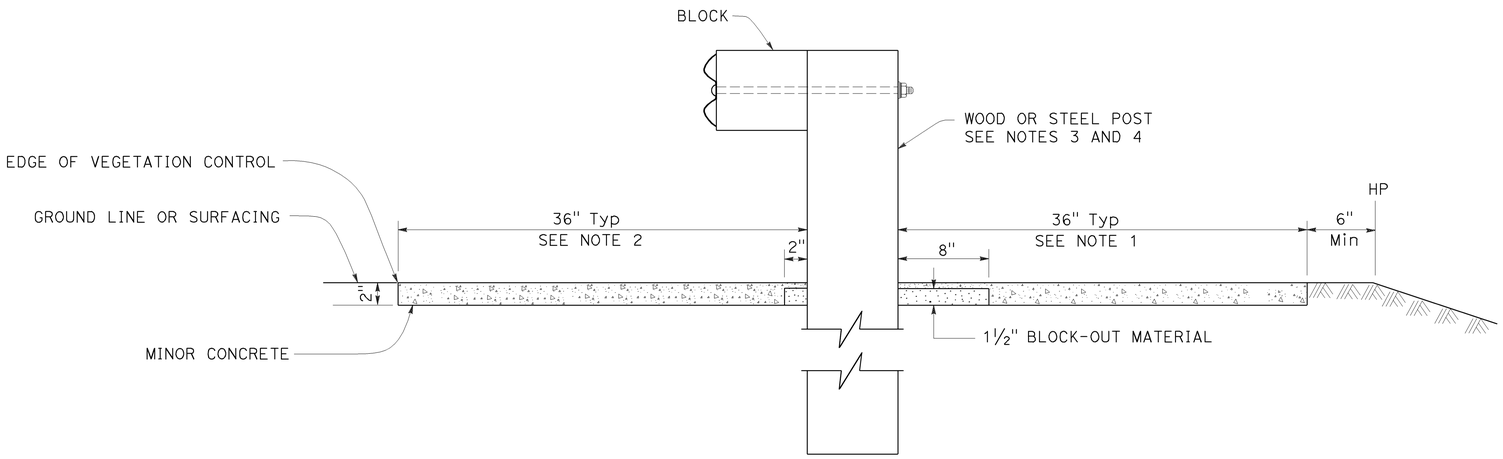
TO ACCOMPANY PLANS DATED 6-29-15



PLAN



SECTION A-A

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.

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

7-3-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	70	128

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
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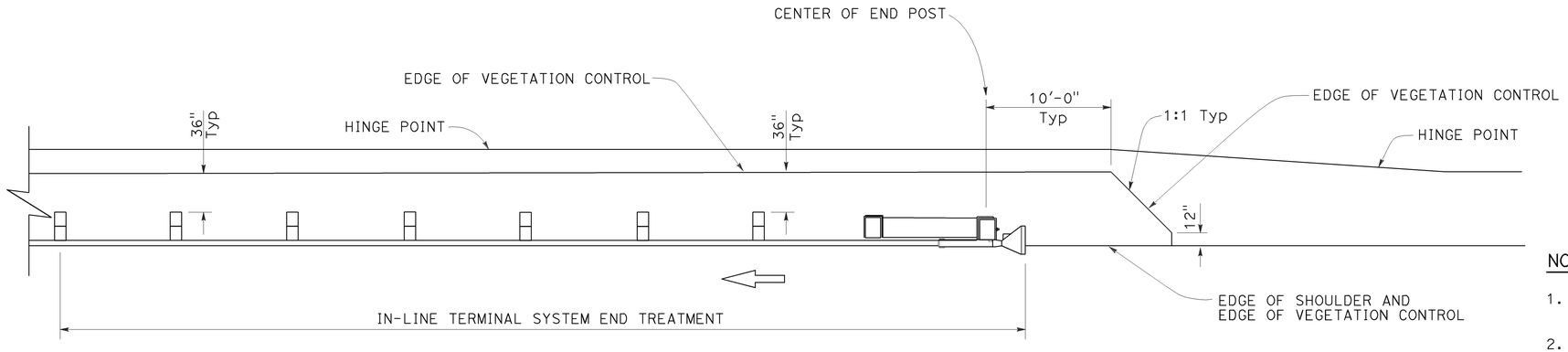
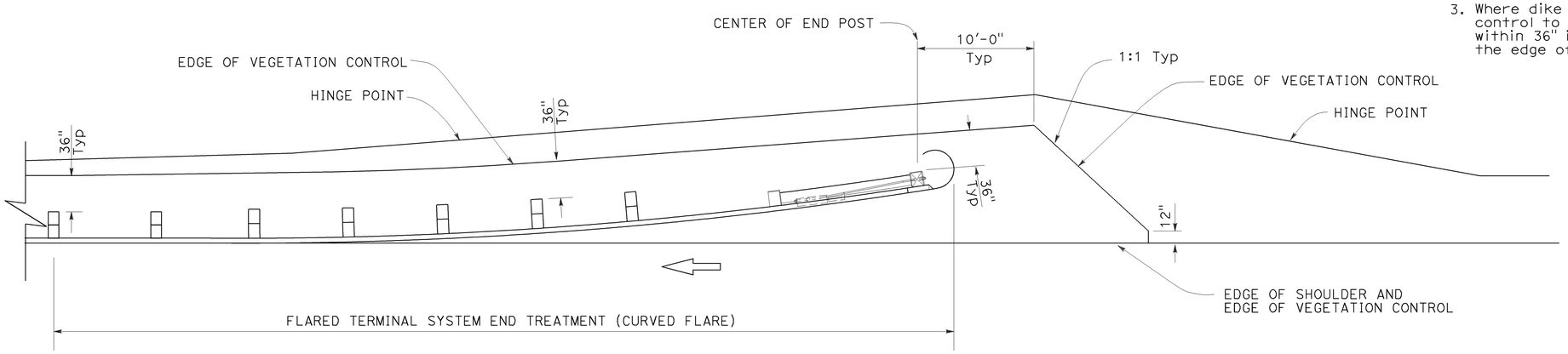
TO ACCOMPANY PLANS DATED 6-29-15



PLAN



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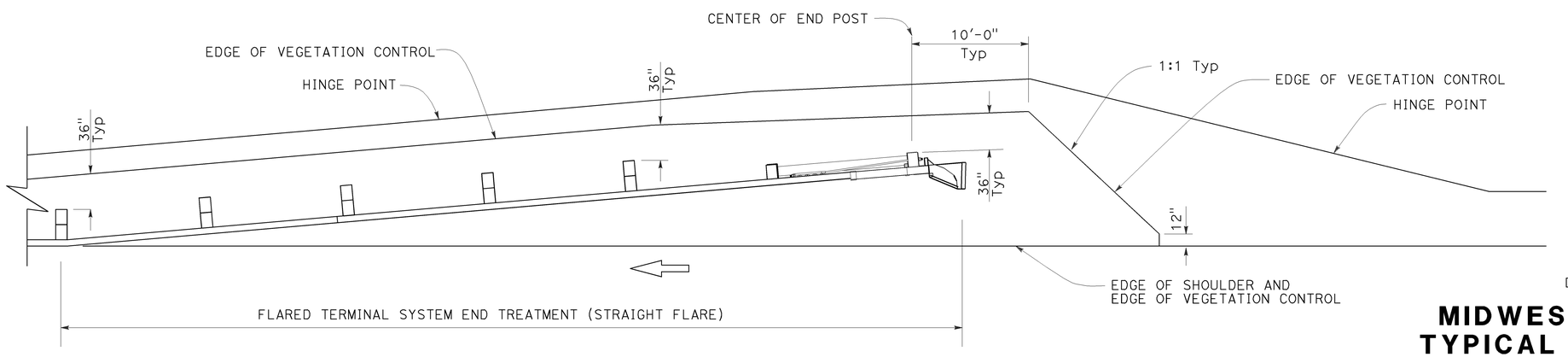

PLAN

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.

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

6-12-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	71	128

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

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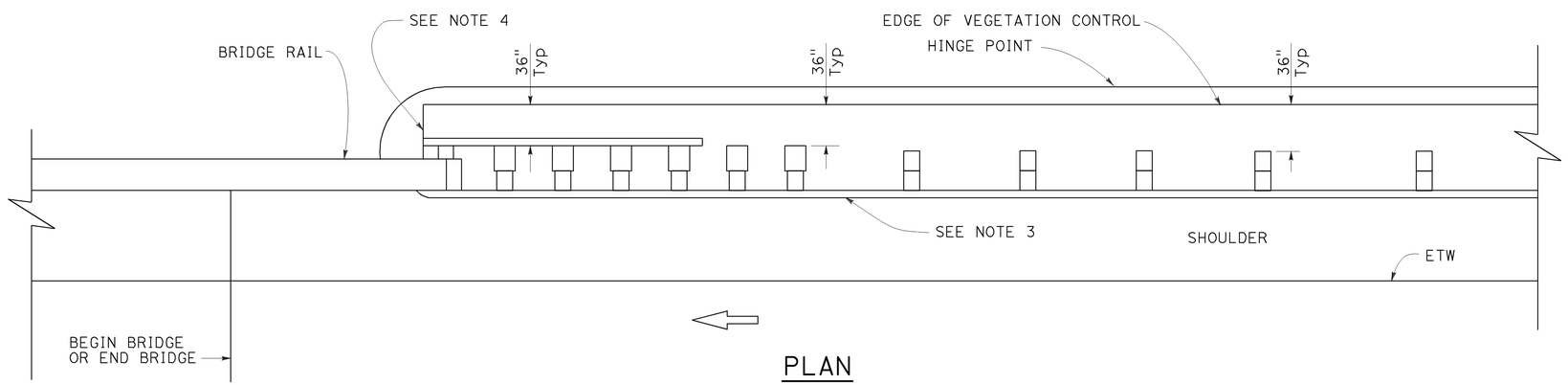
TO ACCOMPANY PLANS DATED 6-29-15



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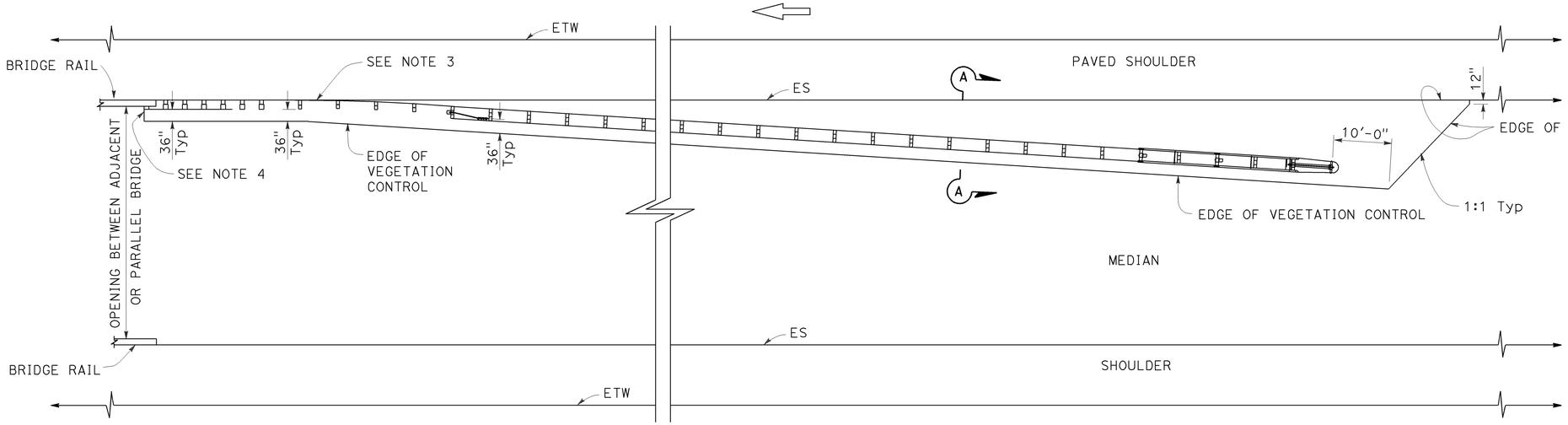

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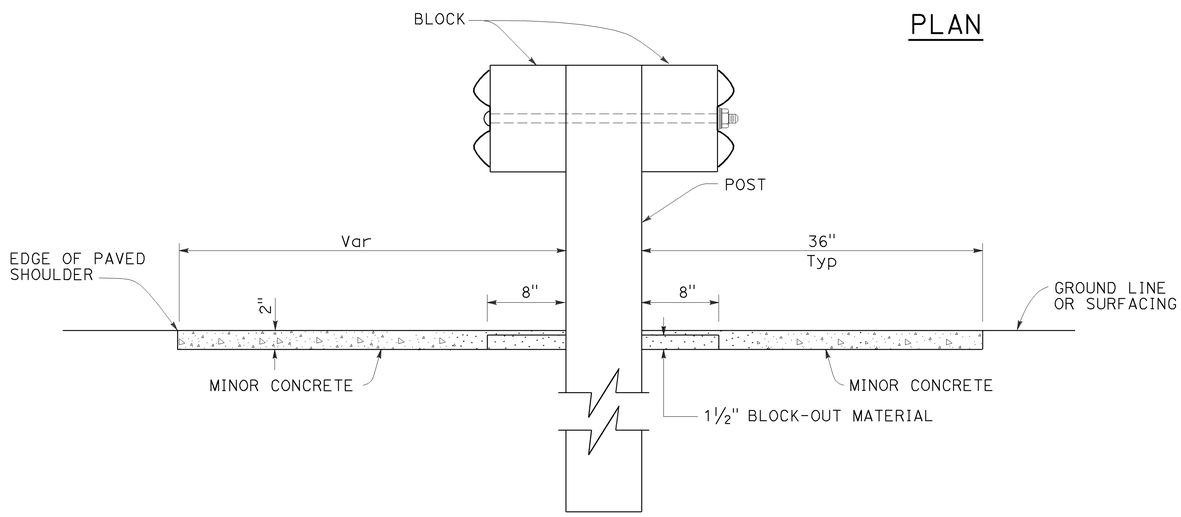

SECTION A-A

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL VEGETATION CONTROL AT STRUCTURE APPROACH

NO SCALE

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

REVISED STANDARD PLAN RSP A77N7

2010 REVISED STANDARD PLAN RSP A77N7

6-12-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	72	128

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

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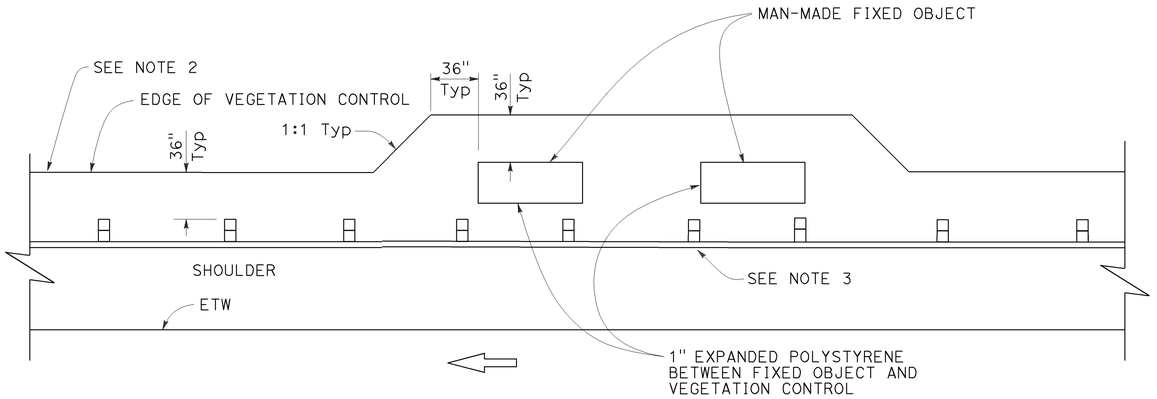
TO ACCOMPANY PLANS DATED 6-29-15

2010 REVISED STANDARD PLAN RSP A77N8

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

6-12-13

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.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	73	128

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
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No. C50200
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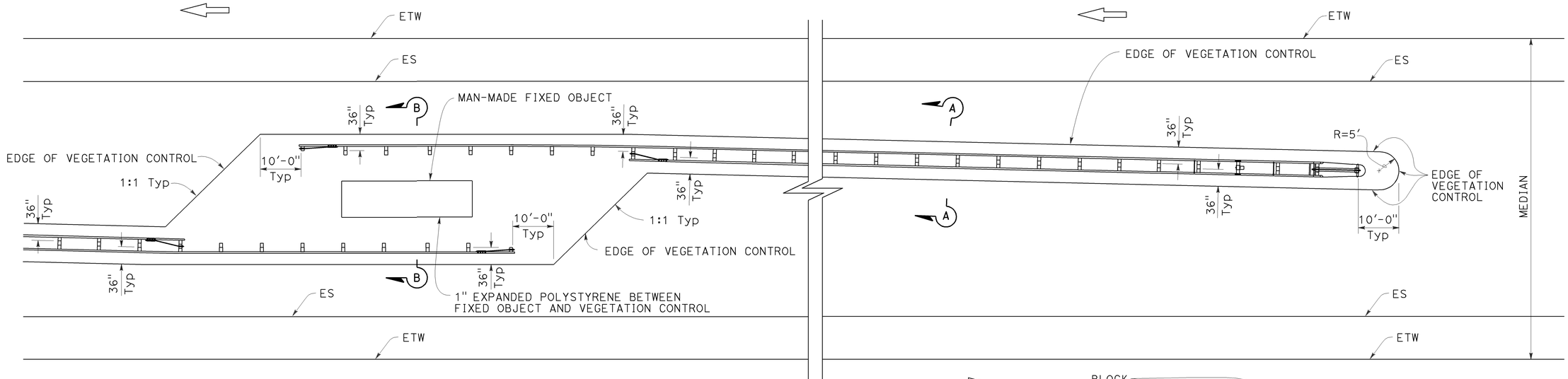
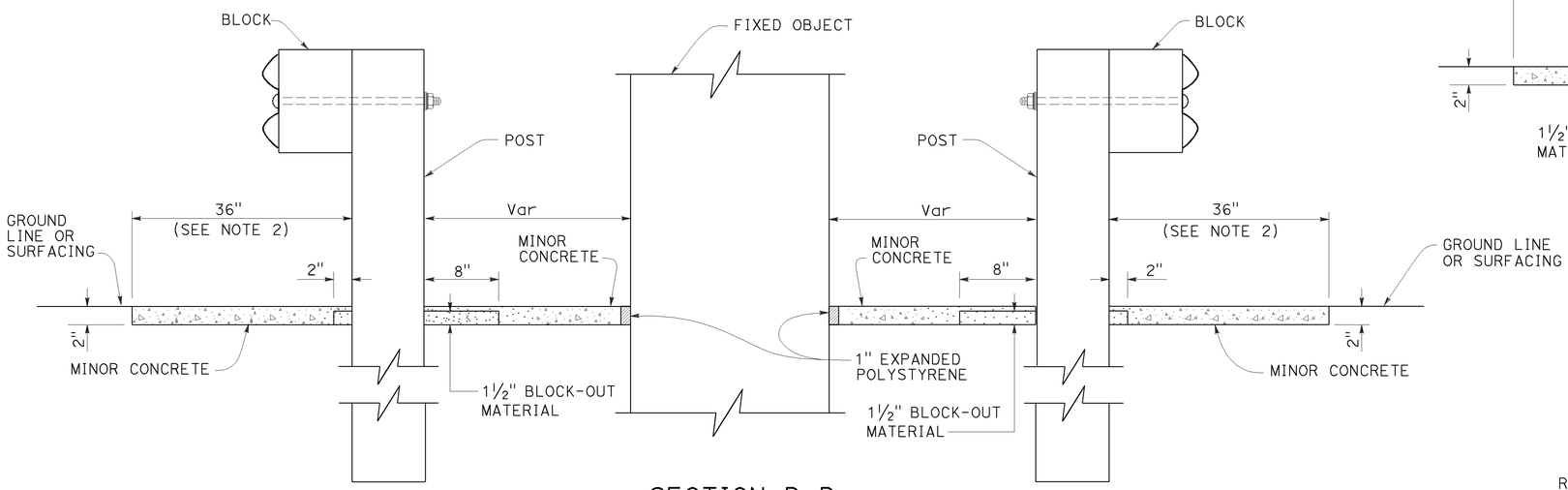
TO ACCOMPANY PLANS DATED 6-29-15

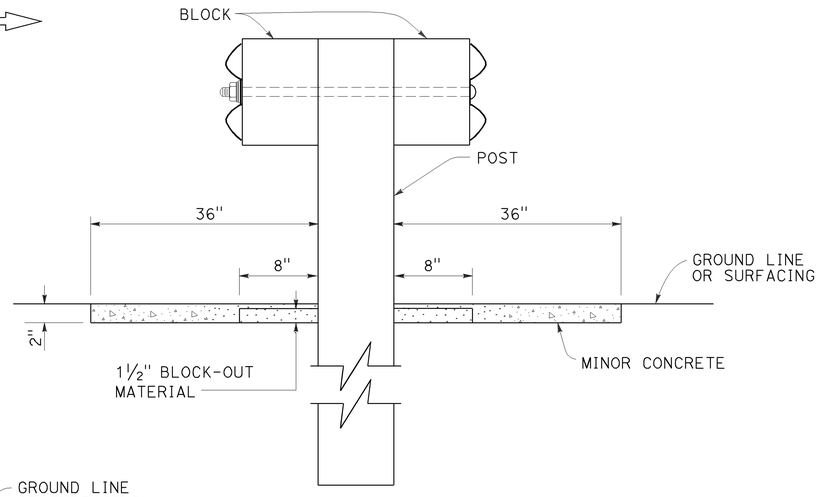


PLAN

Fixed object(s) in median



SECTION B-B



SECTION A-A

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL VEGETATION CONTROL AT FIXED OBJECT

NO SCALE

RSP A77N9 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77N9

2010 REVISED STANDARD PLAN RSP A77N9

6-12-13

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.

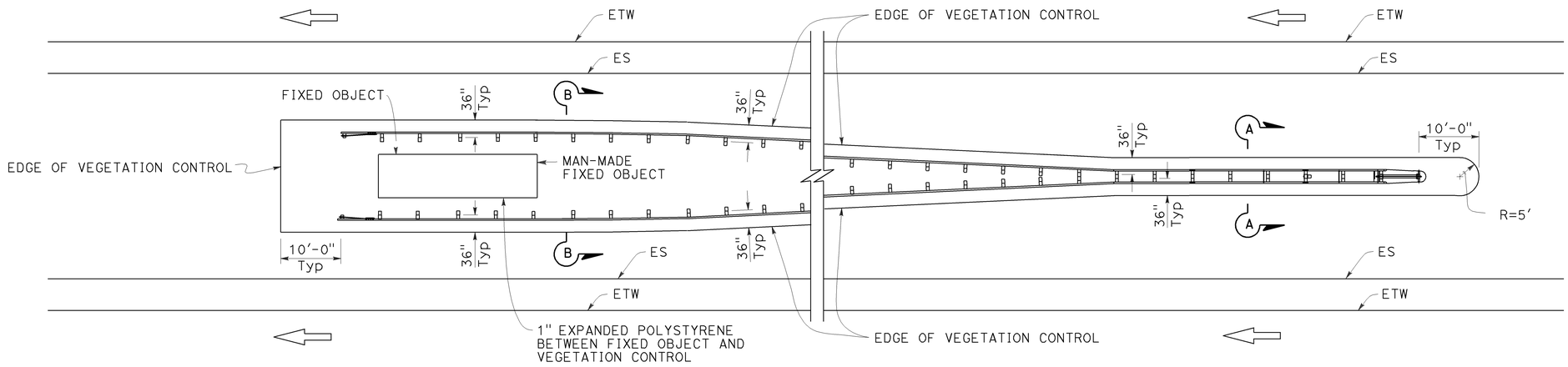
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	74	128

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

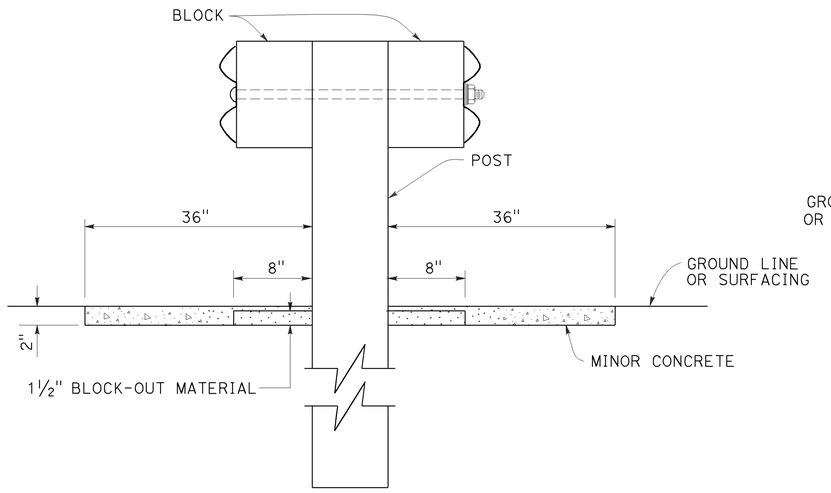
REGISTERED PROFESSIONAL ENGINEER — Randell D. Hiatt — No. C50200 — Exp. 6-30-15 — CIVIL — STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 6-29-15

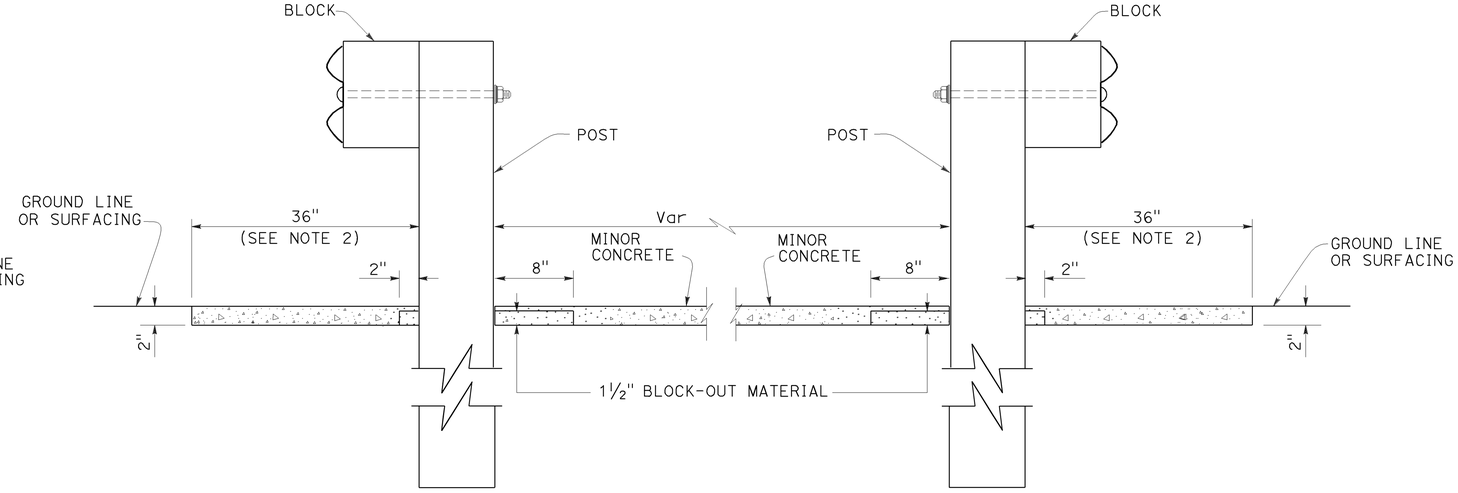


PLAN

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

6-12-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	75	128

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

November 15, 2013
PLANS APPROVAL DATE

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

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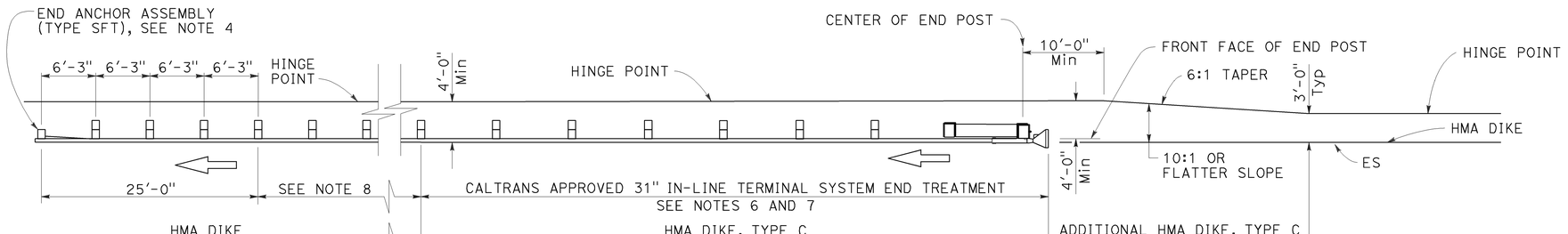
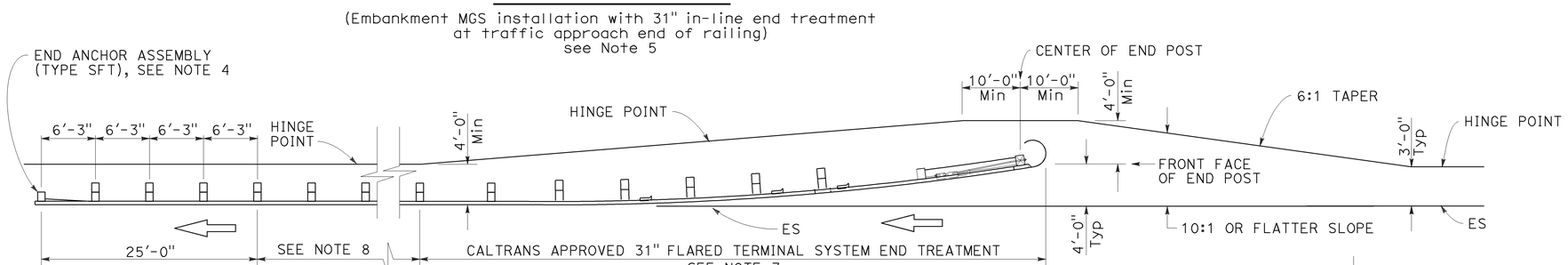
TO ACCOMPANY PLANS DATED 6-29-15



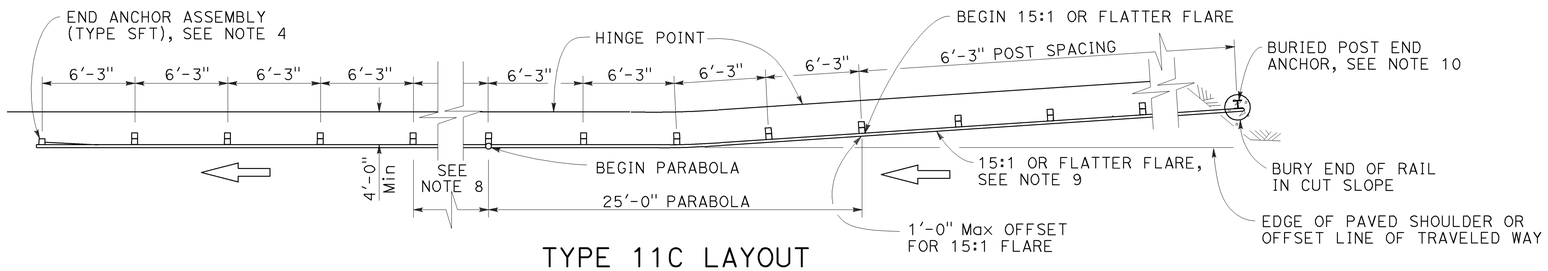
TYPE 11A LAYOUT

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



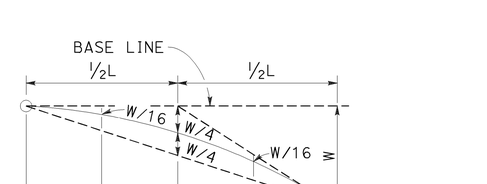
TYPE 11B LAYOUT

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

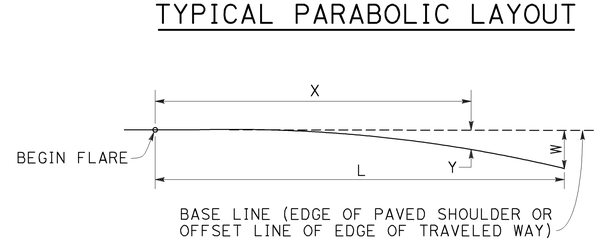


TYPE 11C LAYOUT

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



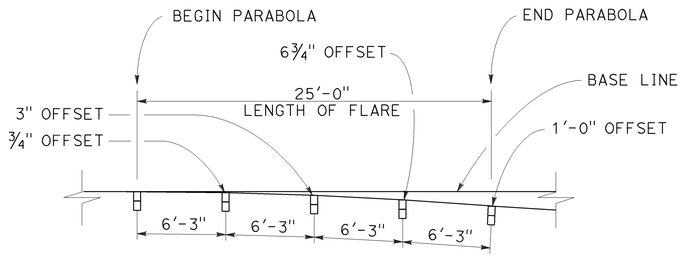
TYPICAL PARABOLIC LAYOUT



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

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

PARABOLIC FLARE OFFSETS



TYPICAL FLARE OFFSETS FOR 1 FOOT Max END OFFSET

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL LAYOUTS FOR EMBANKMENTS

NO SCALE

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

REVISED STANDARD PLAN RSP A77P1

2010 REVISED STANDARD PLAN RSP A77P1

10-4-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	76	128

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

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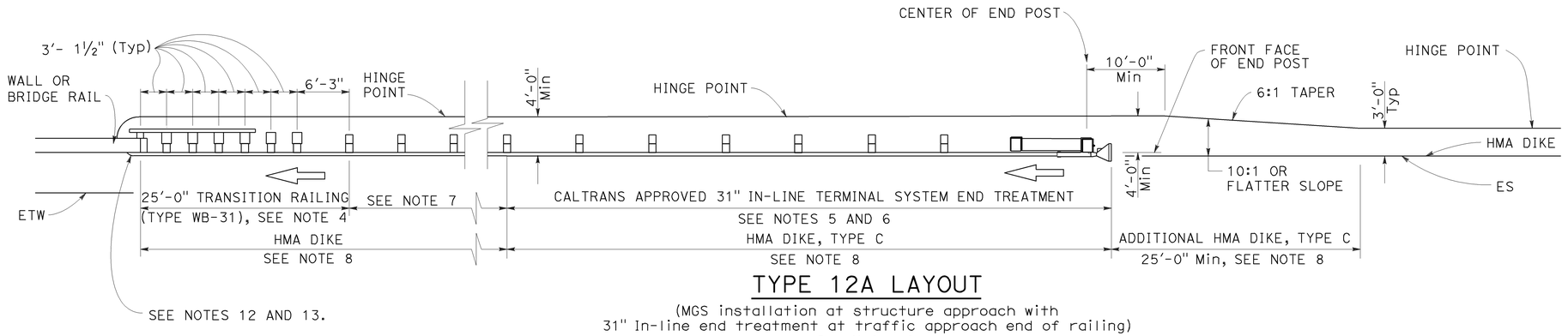
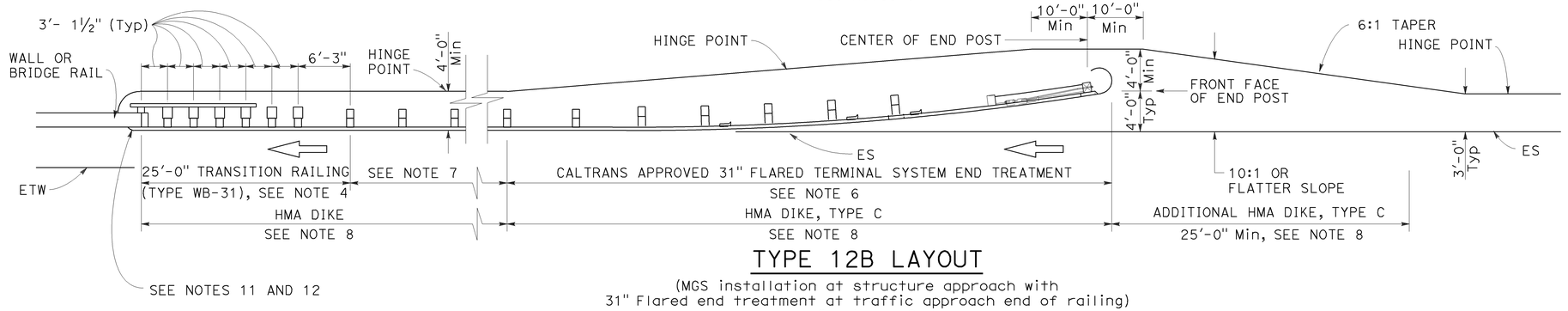
TO ACCOMPANY PLANS DATED 6-29-15



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:

1. Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
2. MGS post spacing to be 6'-3" center to center, except as otherwise noted.
3. Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 12" x 1'-2" wood blocks. W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
4. For Transition Railing (Type WB-31) details for Types 12A and 12B Layouts, see Revised Standard Plan RSP A77U4.
5. 31" in-line terminal system end treatments are used where site conditions will not accommodate a 31" flared end treatment.
6. The type 31" of terminal system end treatment to be used will be shown on the Project Plans.
7. 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.
8. Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77N4 for dike positioning details.
9. Type 12A or Type 12B Layouts are typically used:
   a. 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.
   b. 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.
   c. To the right of approaching traffic at the end of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.
   d. To the right of approaching traffic at the end of the structure on multilane freeways or expressways with decked median on the bridge.
10. 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.
11. 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.
12. 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

2010 REVISED STANDARD PLAN RSP A77Q1

6-19-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	77	128

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

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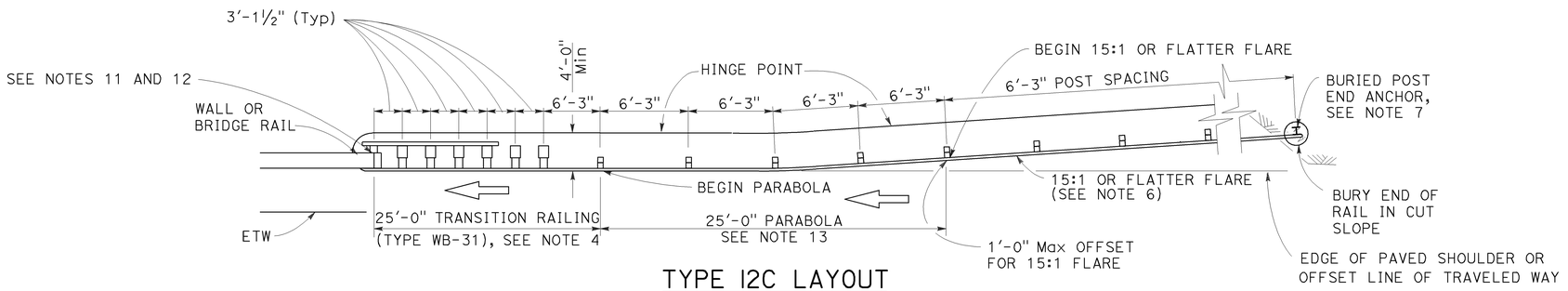
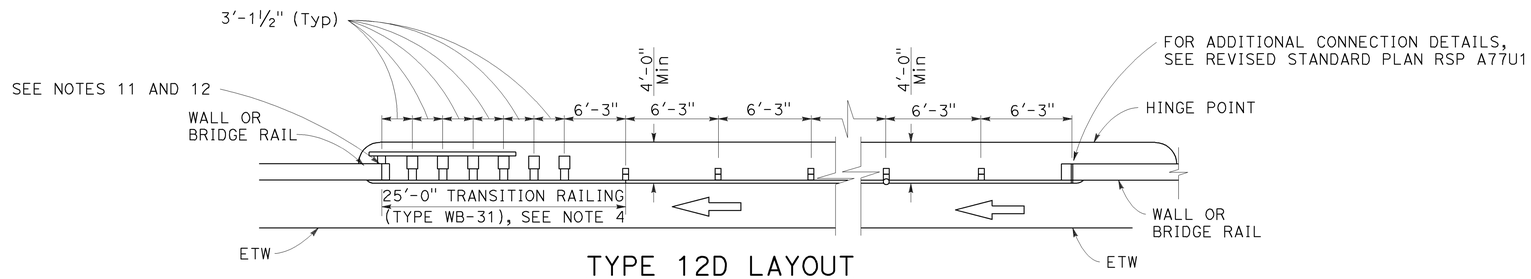
TO ACCOMPANY PLANS DATED 6-29-15



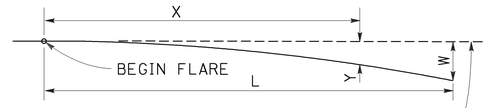
TYPE 12C LAYOUT

(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)

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

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

PARABOLIC FLARE OFFSETS

TYPICAL PARABOLIC LAYOUT

NOTES:

1. Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
2. MGS post spacing to be 6′-3" center to center, except as otherwise noted.
3. Except as noted, line posts are 6" x 8" x 6′-0" 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.
4. For Transition Railing (Type WB-31) details for Types 12C and 12D Layouts, see Revised Standard Plan RSP A77U4.
5. Type 12D layout is typically used where continous MGS is recommended between structures.
6. 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".
7. For details of the buried post end anchor used with Type 12C Layout, see Revised Standard Plan RSP A77T2.
8. Where placement of dike is required with MGS installations, see Revised Standard Plan RSP A77N4 for dike positioning details.
9. Type 12C Layout is typically used:
   a. 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.
   b. 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.
   c. To the right of approaching traffic at the end of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.
   d. To the right of approaching traffic at the end of the structure on multilane freeways or expressways with decked median on the bridge.
10. 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.
11. 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.
12. For additional details of a typical connection to walls or abutments, see Revised Standard Plan RSP A77U3.
13. 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

7-8-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	78	128

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

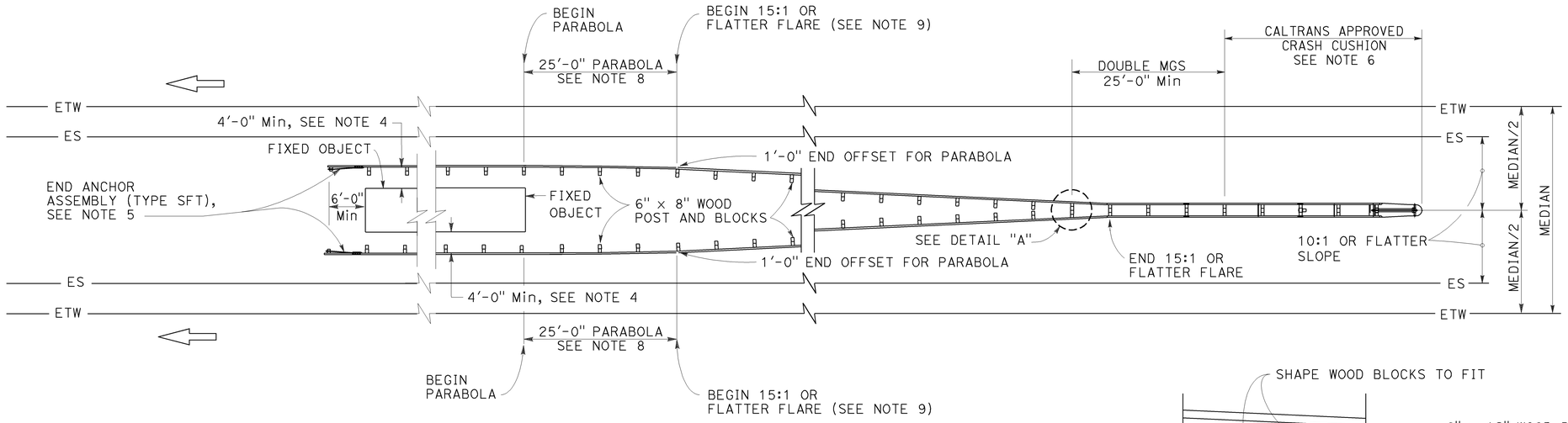
July 19, 2013
PLANS APPROVAL DATE

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

TO ACCOMPANY PLANS DATED 6-29-15

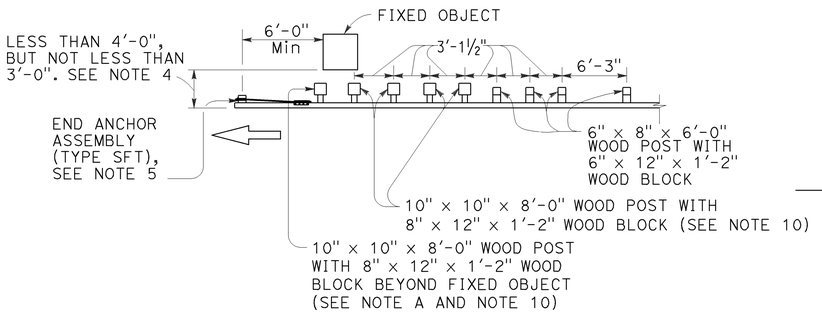
NOTES:

1. Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
2. MGS post spacing to be 6'-3" center to center, except as otherwise noted.
3. Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 12" x 1'-2" wood blocks. W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or 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.
4. 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).
5. For End Anchor Assembly (Type SFT) details, see Standard Plan RSP A77S1.
6. Type of crash cushion to be used will be shown on the Project Plans.
7. Type 15A layout is typically used on multilane freeways or expressways to shield fixed objects in the area between separated one-way roadbeds.
8. For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77P1.
9. The 15:1 or flatter flare is measured off of the edge of the traveled way.
10. 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".



TYPE 15A LAYOUT

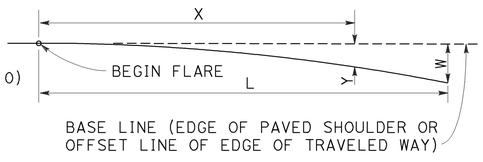
See Note 7



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'-1½" center to center spacing are to be used between fixed objects.

STRENGTHENED MIDWEST GUARDRAIL SYSTEM SECTIONS FOR FIXED OBJECT

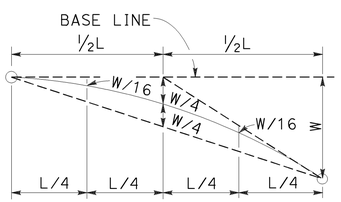
Use strengthened MGS sections with Type 15A layout where minimum clearance between the face of the MGS and the fixed object(s) is less than 4'-0", but not less than 3'-0". See Note 4.



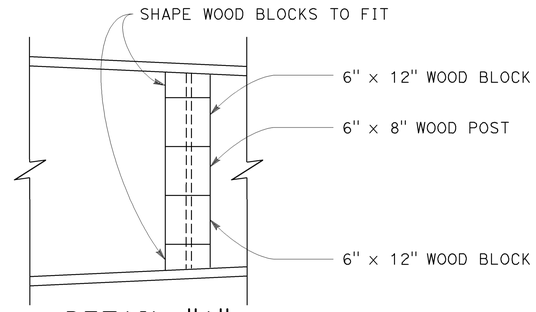
$$Y = \frac{WX^2}{L^2}$$

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

PARABOLIC FLARE OFFSETS



TYPICAL PARABOLIC LAYOUT



DETAIL "A"

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

2010 REVISED STANDARD PLAN RSP A77R2

6-20-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	79	128

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

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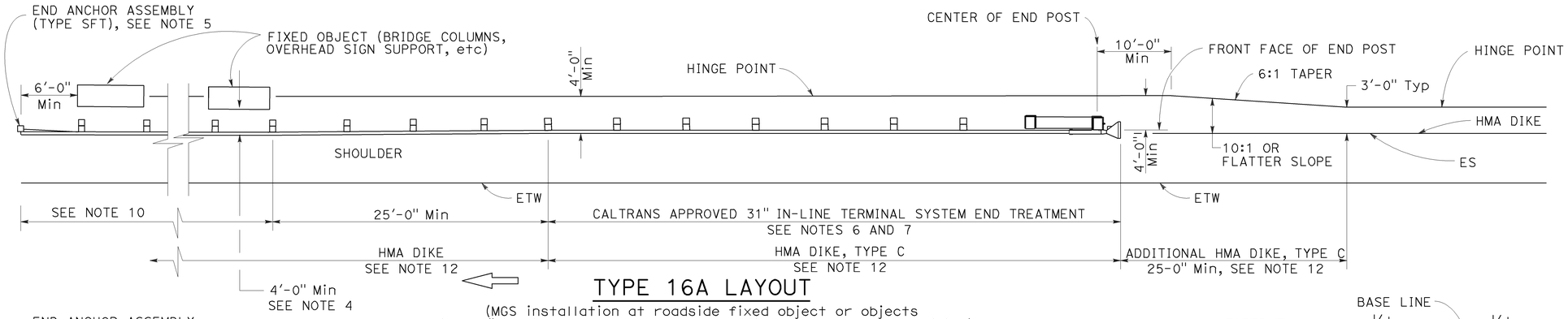
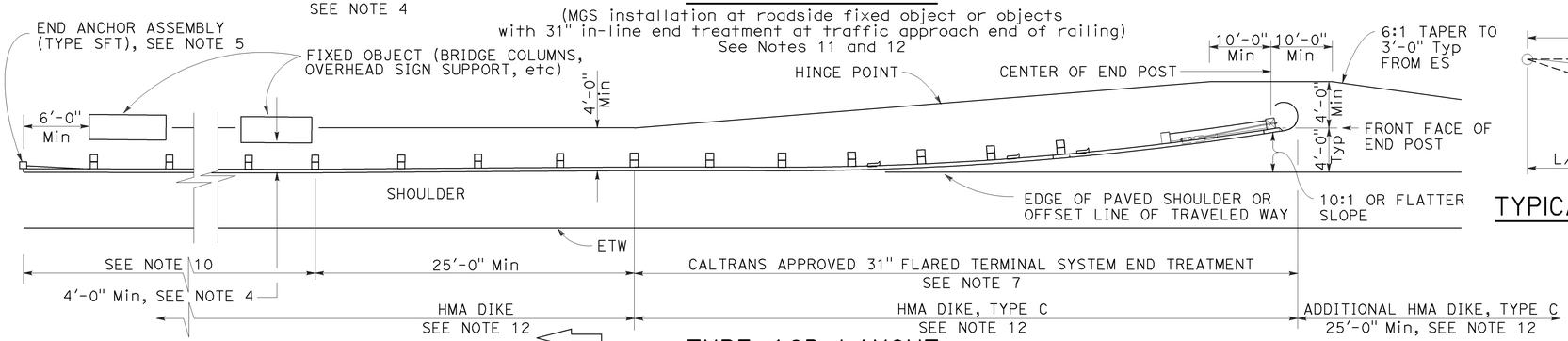
TO ACCOMPANY PLANS DATED 6-29-15



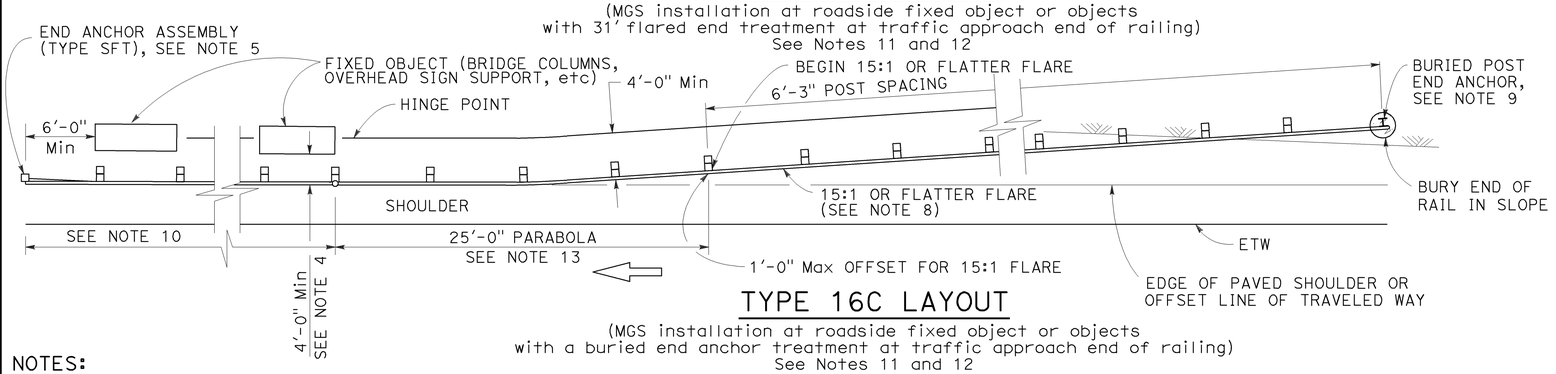
TYPE 16A LAYOUT

(MGS installation at roadside fixed object or objects with 31" in-line end treatment at traffic approach end of railing)
See Notes 11 and 12



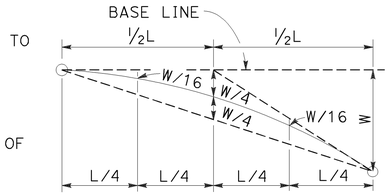
TYPE 16B LAYOUT

(MGS installation at roadside fixed object or objects with 31' flared end treatment at traffic approach end of railing)
See Notes 11 and 12

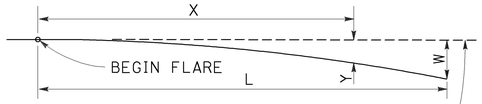


TYPE 16C LAYOUT

(MGS installation at roadside fixed object or objects with a buried end anchor treatment at traffic approach end of railing)
See Notes 11 and 12



TYPICAL PARABOLIC LAYOUT

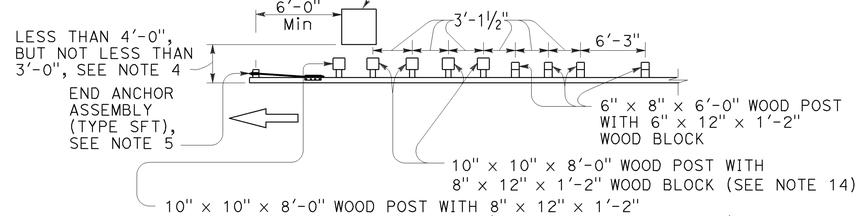


BASE LINE (EDGE OF PAVED SHOULDER OR OFFSET LINE OF EDGE OF TRAVELED WAY)

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

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

PARABOLIC FLARE OFFSETS



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'-1½" center to center spacing are to be used between fixed objects.

STRENGTHENED MIDWEST GUARDRAIL SYSTEM SECTIONS FOR FIXED OBJECT

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

NOTES:

1. Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
2. MGS post spacing to be 6'-3" center to center, except as otherwise noted.
3. Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 12" x 1'-2" wood blocks. W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or 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.
4. A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object located directly behind MGS sections with post spacing 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).
5. For End Anchor Assembly (Type SFT) details, see Revised Standard Plan RSP A77S1.
6. 31" in-line terminal system end treatments are used where site conditions will not accommodate a 31" flared end treatment.
7. The type of 31" terminal system to be used will be shown on the Project Plans.
8. The 15:1 or flatter flare used with Type 16C Layout is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of MGS within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
9. For details of the Buried Post End Anchor used with Type 16C Layout, see Revised Standard Plan RSP A77T2.
10. As site conditions dictate, construct additional MGS to shield fixed object(s). Additional MGS length equal to multiples of 12'-6". Post spacing at 6'-3" except as specified in Note 4.
11. Layout Types 16A, 16B or 16C are typically used where MGS is recommended to shield roadside fixed object(s) and a crashworthy 31" end treatment is required for only one direction of traffic.
12. Where placement of dike is required with MGS, see Revised Standard Plan RSP A77N4 for dike positioning details.
13. For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77P1.
14. W6 x 15 steel post, 8'-0" in length, with 8" x 12" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 12" x 1'-2" wood block shown in the detail "Strengthened Midwest Guardrail System Sections for Fixed Object".

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL LAYOUTS FOR ROADSIDE FIXED OBJECTS

NO SCALE

RSP A77R3 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77R3

6-20-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	80	128

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

November 15, 2013
PLANS APPROVAL DATE

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

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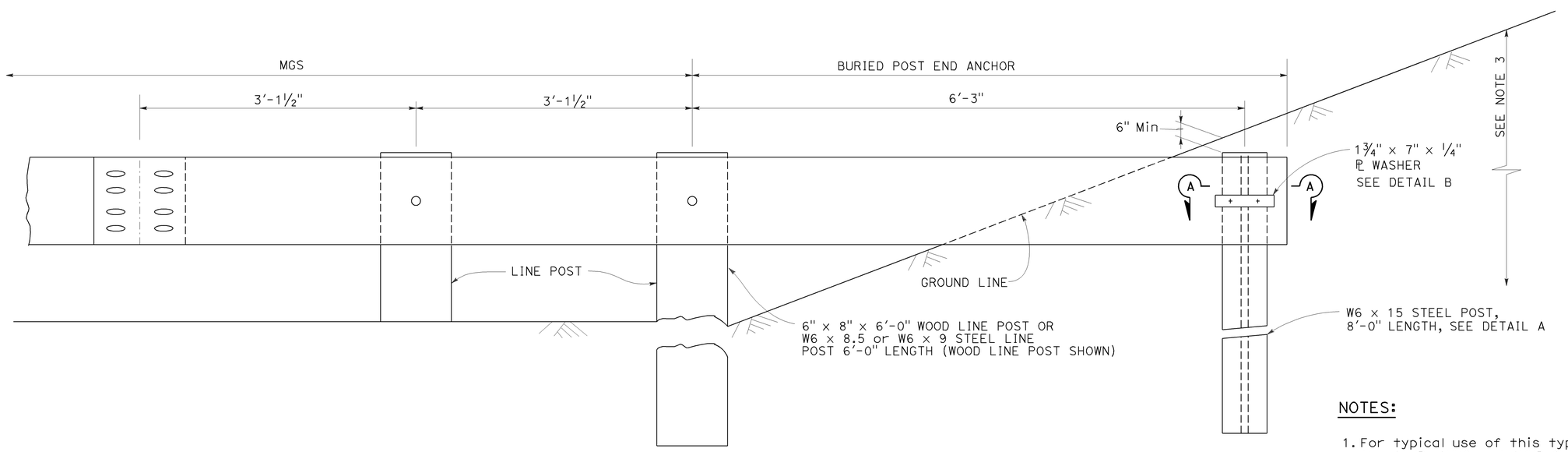
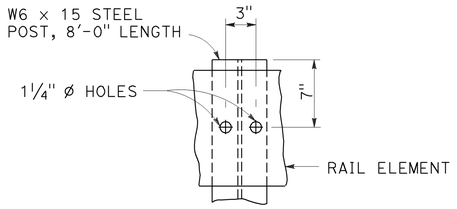
TO ACCOMPANY PLANS DATED 6-29-15

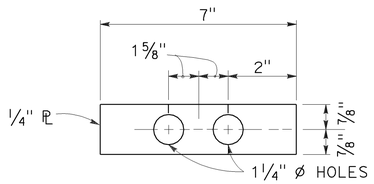


BURIED POST END ANCHOR

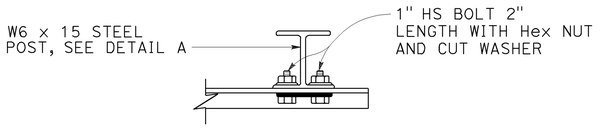
See Note 3



DETAIL A



DETAIL B



SECTION A-A

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.

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

10-4-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	81	128

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

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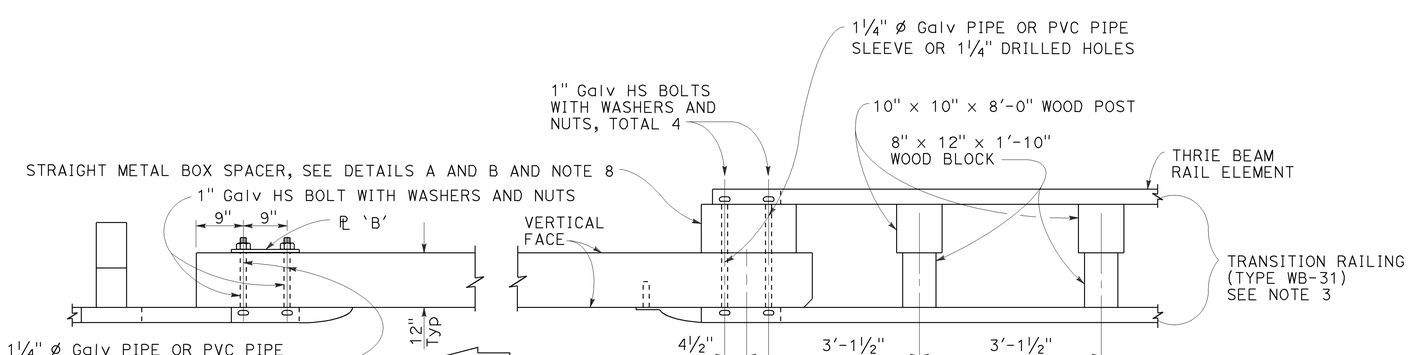
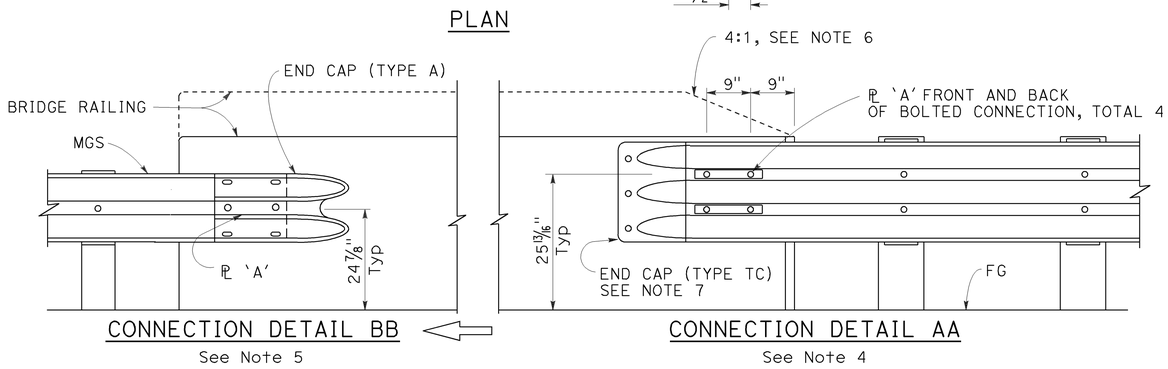
TO ACCOMPANY PLANS DATED 6-29-15



PLAN



CONNECTION DETAIL BB
See Note 5

CONNECTION DETAIL AA
See Note 4

ELEVATION

MIDWEST GUARDRAIL SYSTEM CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK

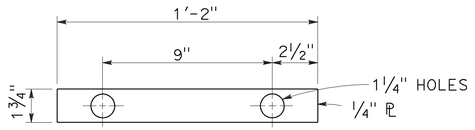


PLATE 'A'

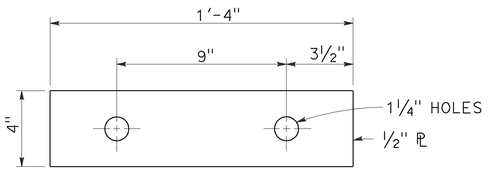
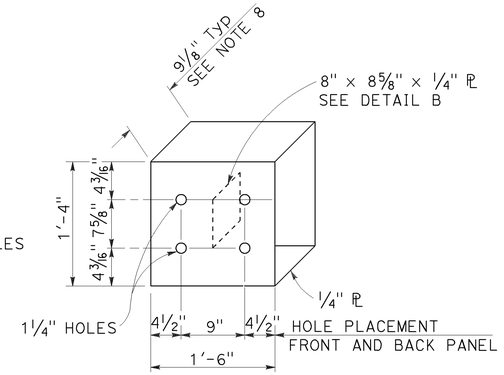
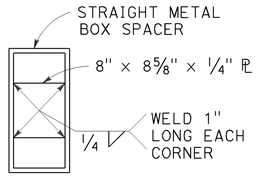


PLATE 'B'
(For backside of connection BB)



DETAIL A



DETAIL B

STRAIGHT METAL BOX SPACER

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.

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

7-8-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	82	128

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

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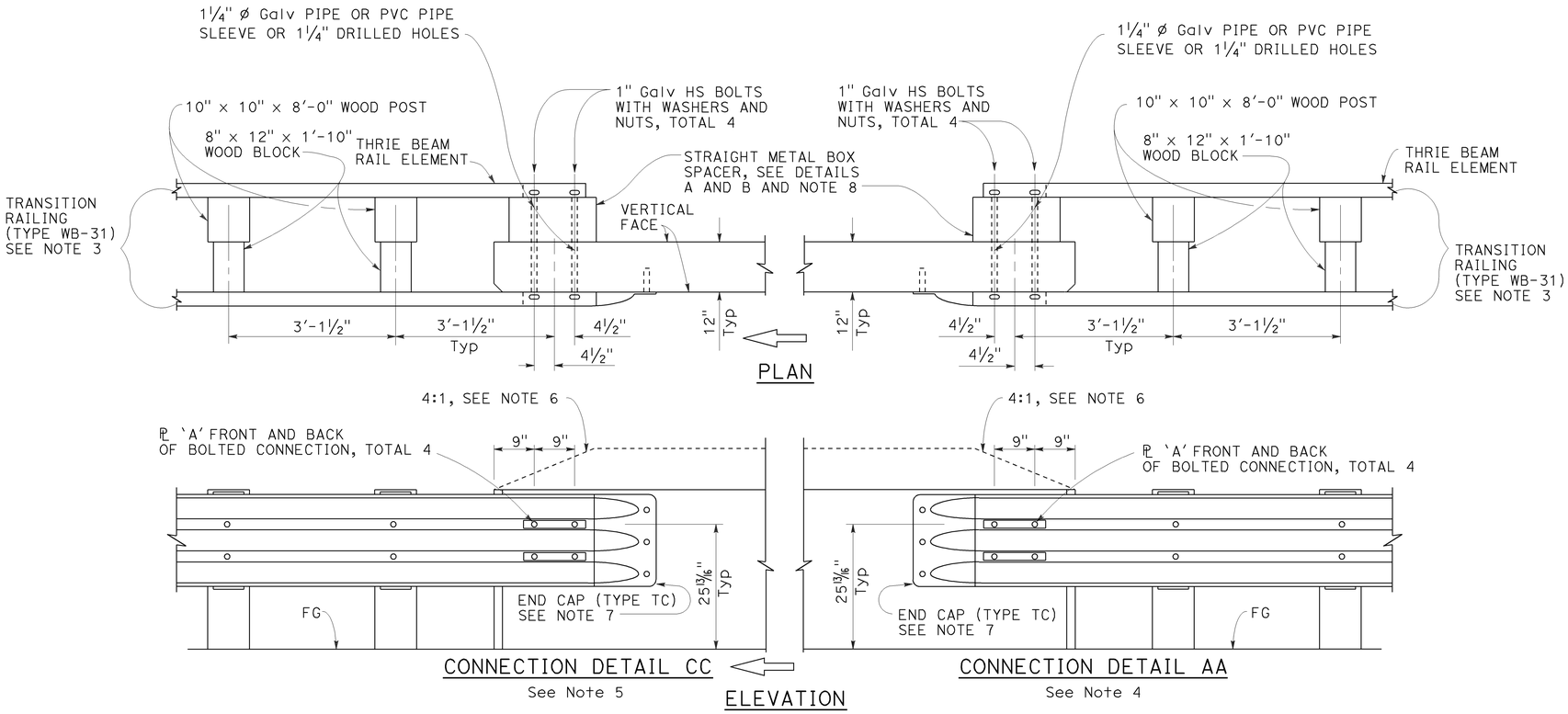
TO ACCOMPANY PLANS DATED 6-29-15



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.

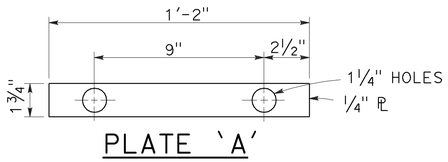


PLATE 'A'

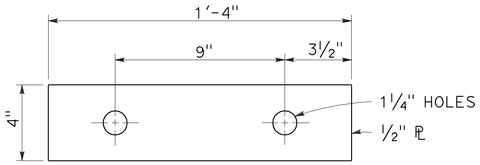
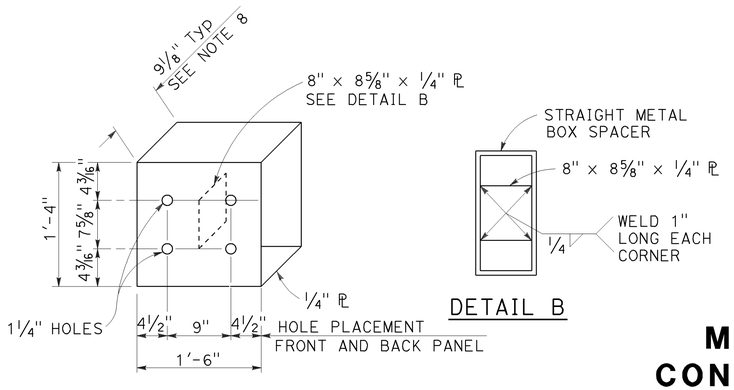


PLATE 'B'
(For backside of connection BB)



DETAIL A

STRAIGHT METAL BOX SPACER

DETAIL B

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

6-20-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	83	128

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

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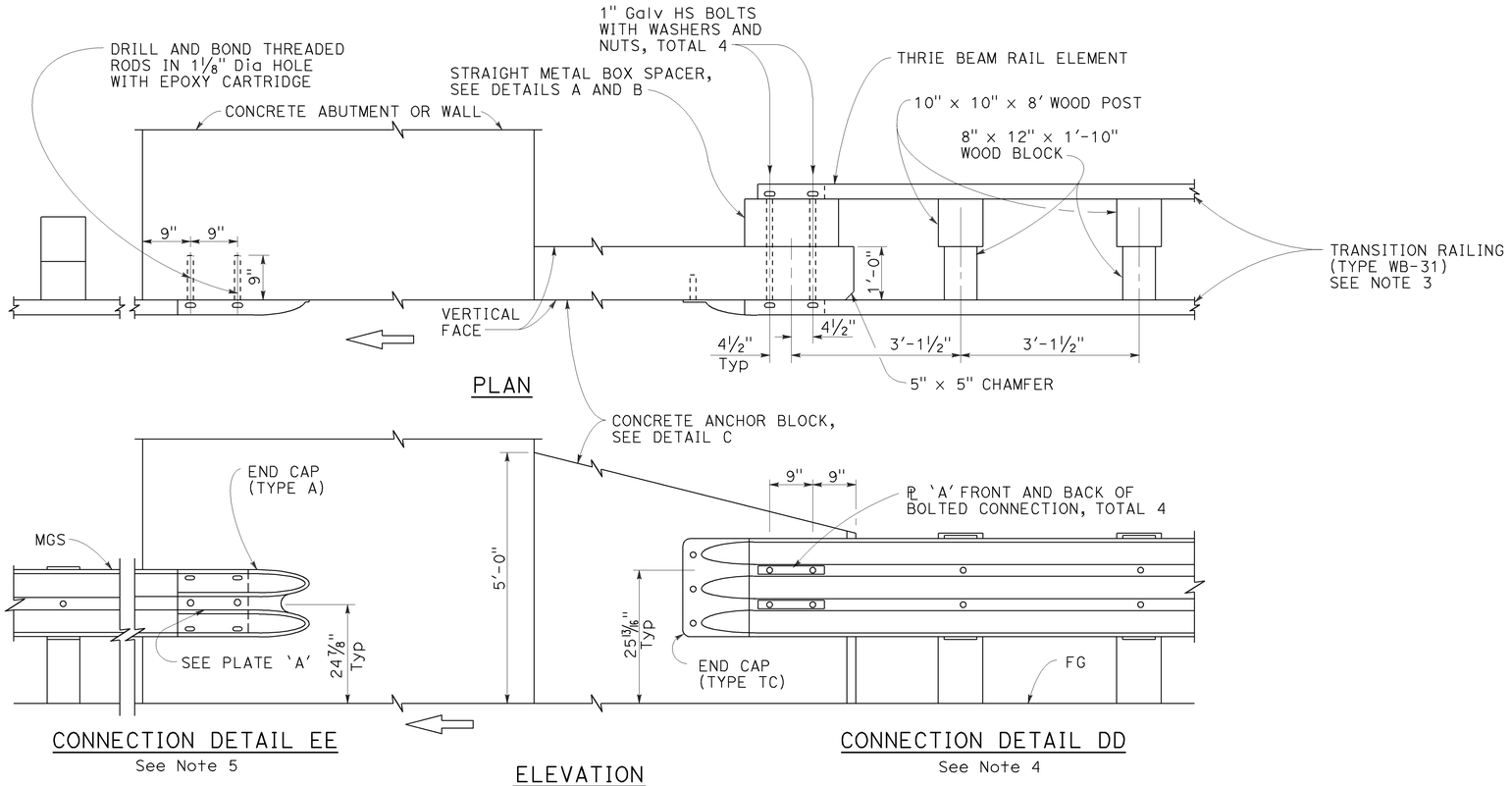
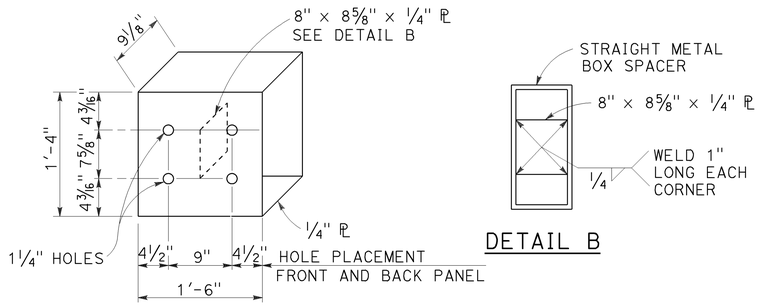
TO ACCOMPANY PLANS DATED 6-29-15



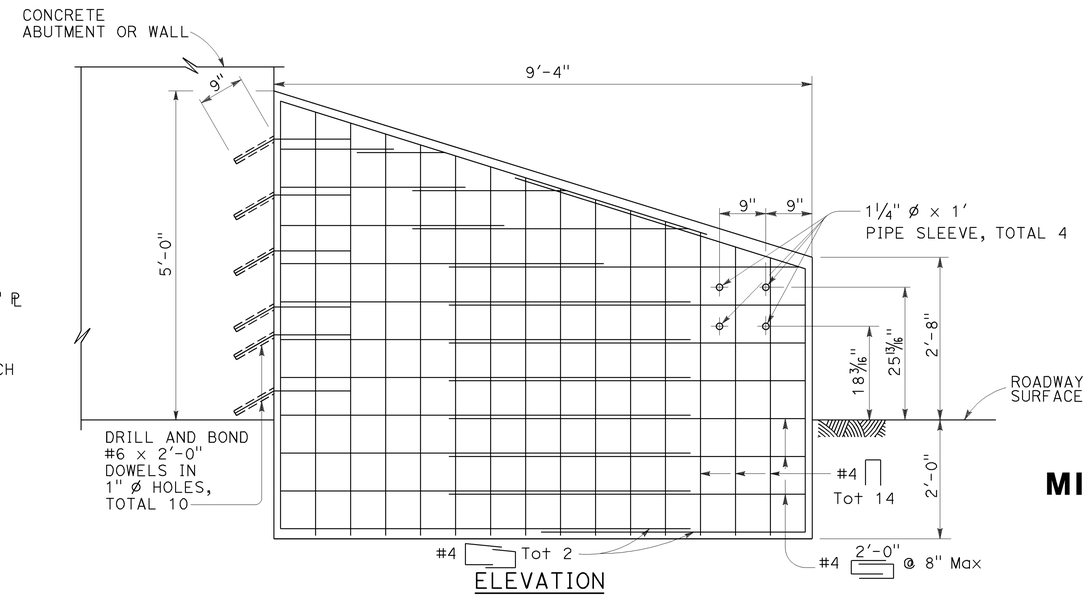
MIDWEST GUARDRAIL SYSTEM CONNECTION TO ABUTMENT OR WALL

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 railingsection 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.

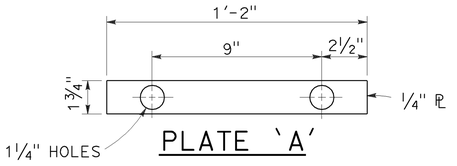


STRAIGHT METAL BOX SPACER



ANCHOR BLOCK FOR TRANSITION RAILING CONNECTION

DETAIL C



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

7-8-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	84	128

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

January 23, 2015
PLANS APPROVAL DATE

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

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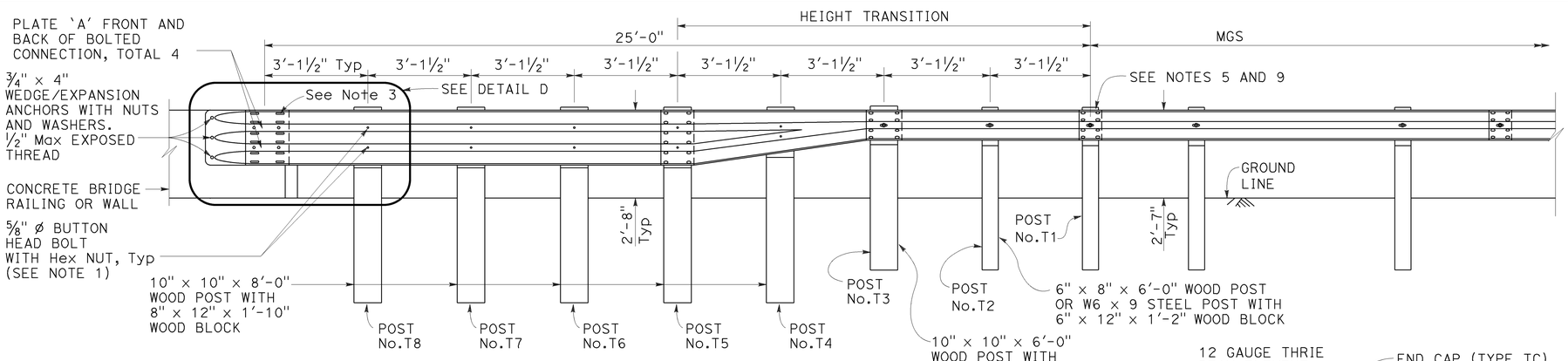
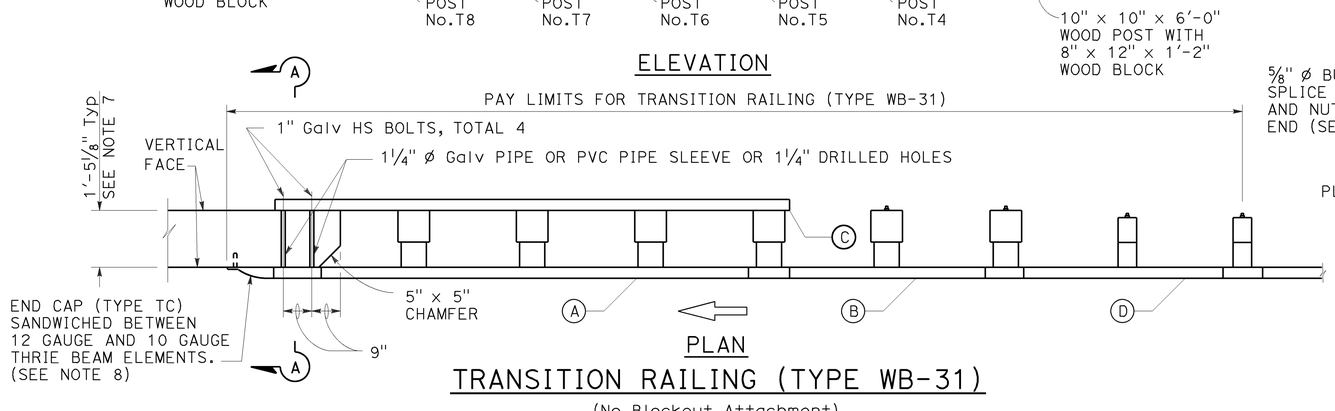
2010 REVISED STANDARD PLAN RSP A77U4



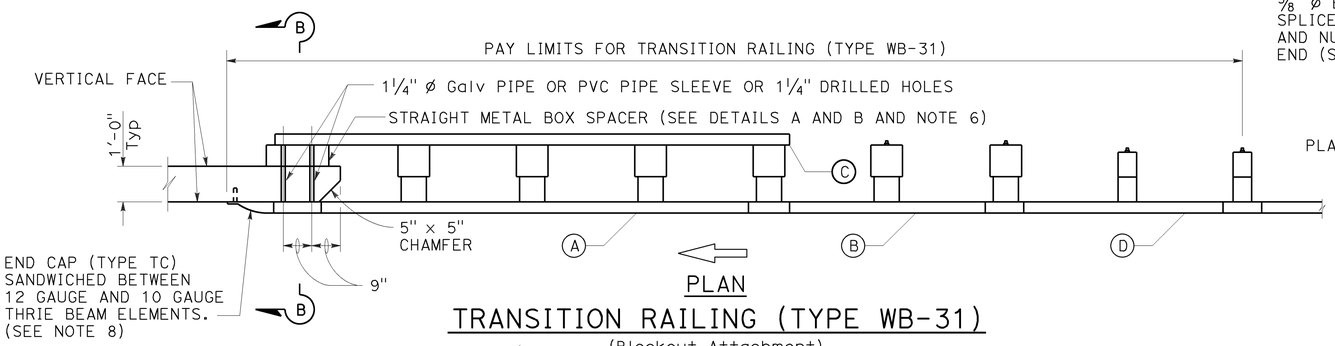
ELEVATION



PLAN

TRANSITION RAILING (TYPE WB-31)

(No Blockout Attachment)



PLAN

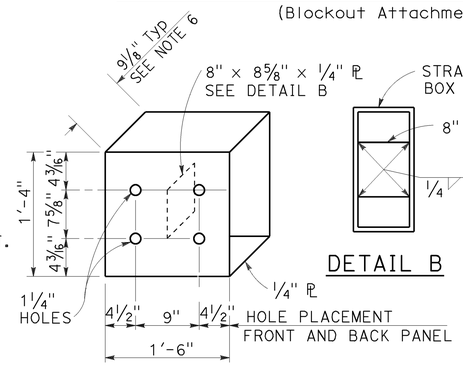
TRANSITION RAILING (TYPE WB-31)

(Blockout Attachment)

LEGEND:

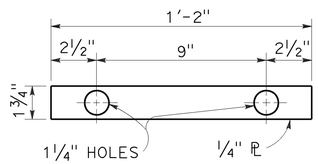
- (A) NESTED THRIE BEAM ELEMENTS (ONE 12 GAUGE ELEMENT NESTED OVER ONE 10 GAUGE ELEMENT).
- (B) ONE ASYMMETRICAL 10 GAUGE "W" BEAM TO THRIE BEAM ELEMENT.
- (C) ONE 12 GAUGE THRIE BEAM ELEMENT.
- (D) ONE 10 GAUGE "W" BEAM RAIL ELEMENT (7'-3½"LENGTH)

10 GAUGE = 0.138" THICK
12 GAUGE = 0.108" THICK



DETAIL A

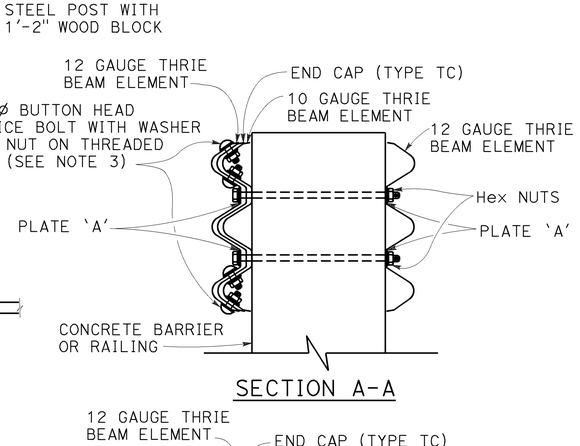
DETAIL B



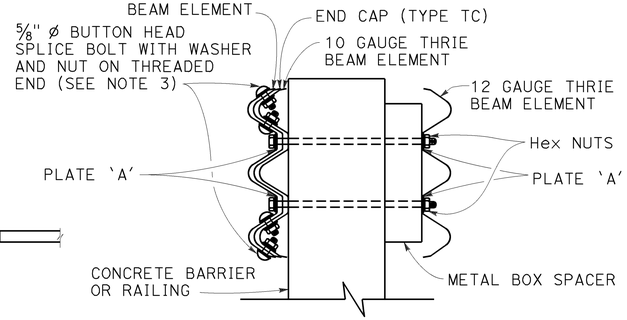
DETAIL C

STRAIGHT METAL BOX SPACER

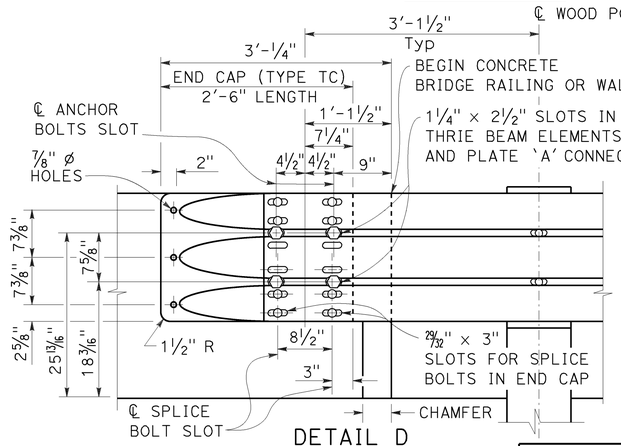
PLATE 'A'



SECTION A-A



SECTION B-B



DETAIL D

NOTES:

TO ACCOMPANY PLANS DATED 6-29-15

1. Use ⅝" ø 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 1⅛" slot size. Interior splice bolt holes at these locations may be increased up to 1¼" ø. 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 9⅛" to 1½" 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 21⅛". Where the space between the backside of the concrete railing or wall and the rear thrie beam element is less than 1½", 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 17⅛", 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

1-8-15

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	85	128

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

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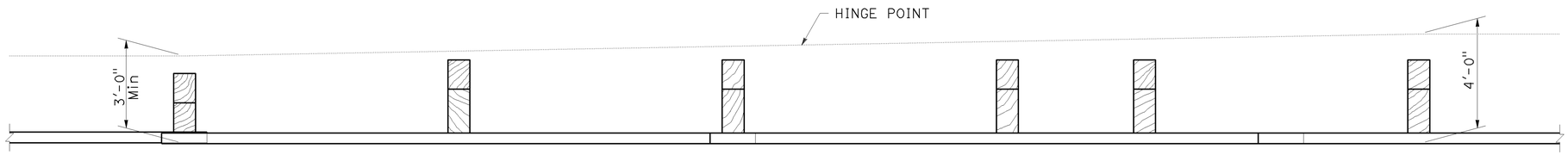
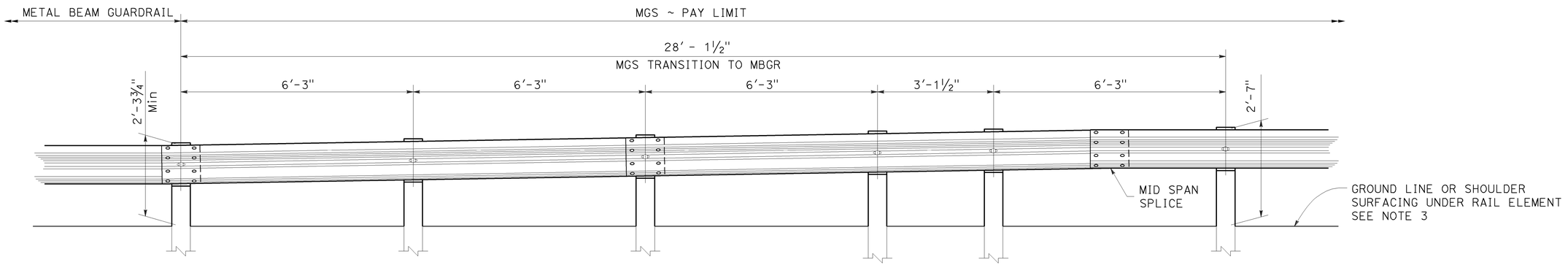
TO ACCOMPANY PLANS DATED 6-29-15

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

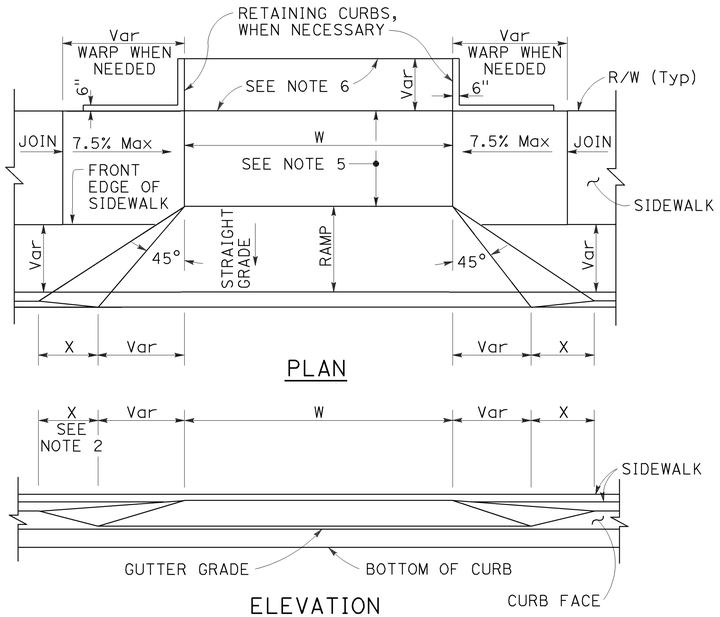
NO SCALE

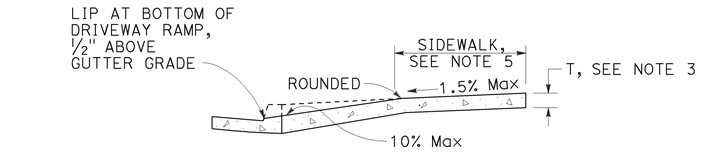
RSP A77U5 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77U5

2010 REVISED STANDARD PLAN RSP A77U5

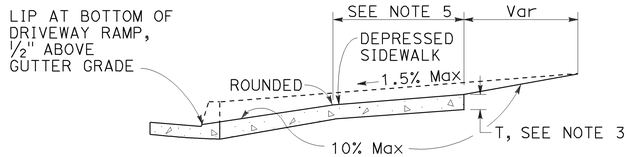
6-20-13





CASE A

Typical driveway, sidewalk not depressed



CASE B

Driveway with depressed sidewalk

SECTIONS

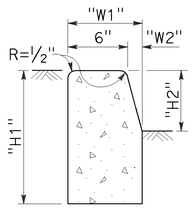
TABLE A

CURB TYPE	DIMENSIONS			
	"H1"	"H2"	"W1"	"W2"
A1-6	1'-2"	6"	7½"	1½"
A1-8	1'-4"	8"	8"	2"
A2-6	1'-0"	6"	2'-7½"	1½"
A2-8	1'-2"	8"	2'-8"	2"
A3-6	6"	5"	7¼"	1¼"
A3-8	8"	7"	7¾"	1¾"
B1-4	1'-0"	4"	7½"	2½"
B1-6	1'-2"	6"	9"	4"
B2-4	10"	4"	2'-7½"	2½"
B2-6	1'-0"	6"	2'-9"	4"
B3-4	4"	3"	7"	2"
B3-6	6"	5"	8½"	3½"
D-4	10"	4"	1'-6"	1'-1"
D-6	1'-0"	6"	2'-2"	1'-9"

CURB QUANTITIES

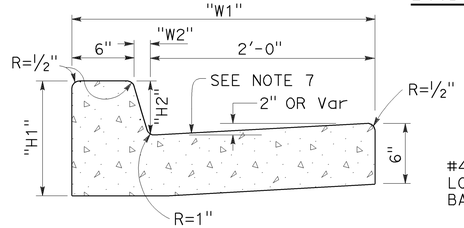
TYPE	CUBIC YARDS PER LINEAR FOOT
A1-6	0.02585
A1-8	0.03084
A2-6	0.05903
A2-8	0.06379
A3-6	0.01036
A3-8	0.01435
B1-4	0.02185
B1-6	0.02930
B2-4	0.05515
B2-6	0.06171
B3-4	0.00641
B3-6	0.01074
B4	0.05709
D-4	0.04083
D-6	0.06804
E	0.06661

DRIVEWAYS



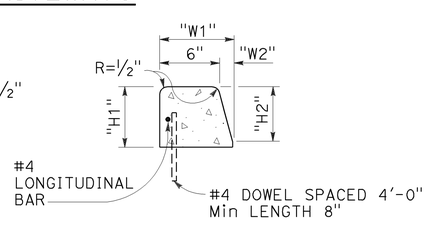
TYPE A1 CURBS

See Table A



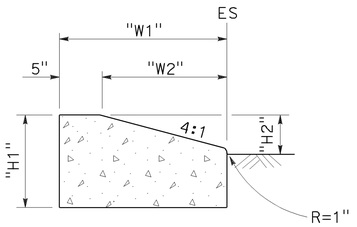
TYPE A2 CURBS

See Table A



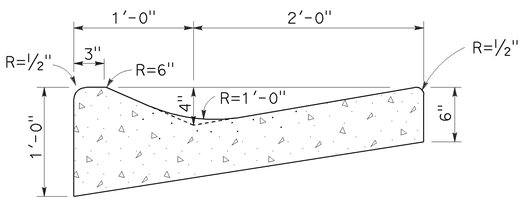
TYPE A3 CURBS

Superimposed on existing pavement
See Table A

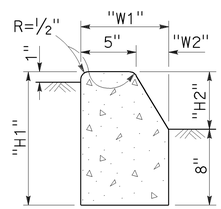


TYPE D CURBS

See Table A

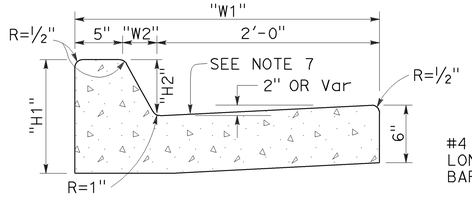


TYPE E CURB



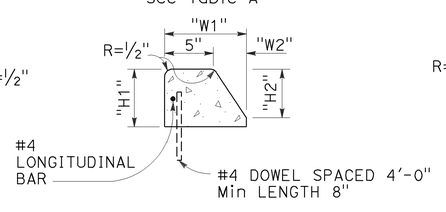
TYPE B1 CURBS

See Table A



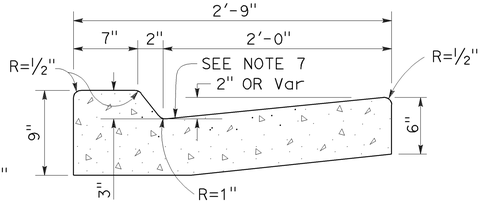
TYPE B2 CURBS

See Table A

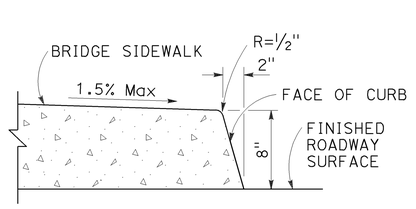


TYPE B3 CURBS

Superimposed on existing pavement
See Table A



TYPE B4 CURBS



TYPE H CURB

On Bridges

CURBS

NOTES:

1. Case A driveway section typically applies.
2. X=3'-0" except for curb heights over 10" where 4:1 slopes shall be used on curb slope.
3. Sidewalk and ramp thickness "T" at driveway shall be 4" for residental and 6" for commercial.
4. Difference in slope of the driveway ramp and the slope of a line between the gutter and a point on the roadway 5'-0" from gutter line shall not exceed 15%. Reduce driveway ramp slope, not gutter slope, where required.
5. Minimum width of clear passageway for sidewalk shall be 4'-2".
6. Retaining curbs and acquisition of construction easement may be necessary for narrow sidewalks or curb heights in excess of 6".
7. Across the pedestrian route at curb ramp locations, the gutter pan slope shall not exceed 1" of depth for each 2'-0" of width.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	86	128

REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Michael Janzen
No. 44788
Exp. 03-31-14
CIVIL
STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 6-29-15

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CURBS AND DRIVEWAYS

NO SCALE

RSP A87A DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN A87A
DATED MAY 20, 2011 - PAGE 119 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A87A

2010 REVISED STANDARD PLAN RSP A87A

7-8-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	87	128

REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Michael Janzen
No. 44788
Exp. 03-31-14
CIVIL
STATE OF CALIFORNIA

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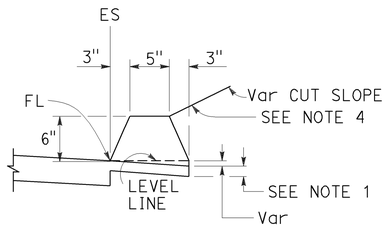
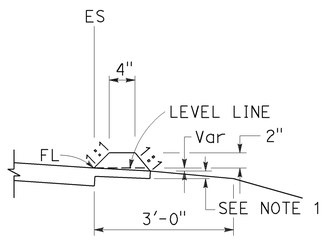
TO ACCOMPANY PLANS DATED 6-29-15

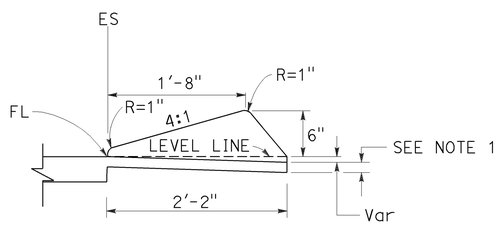
2010 REVISED STANDARD PLAN RSP A87B



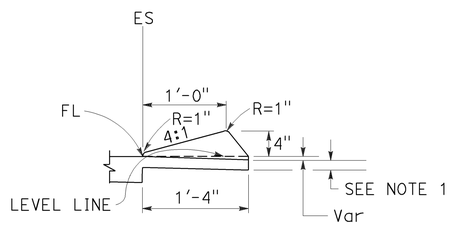
TYPE A
See Note 3



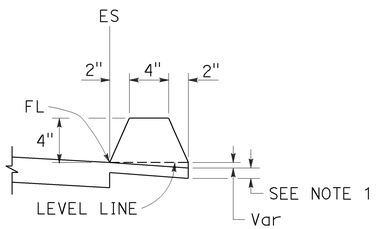
TYPE C



TYPE D

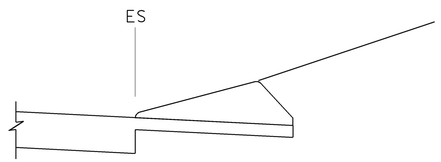


TYPE E

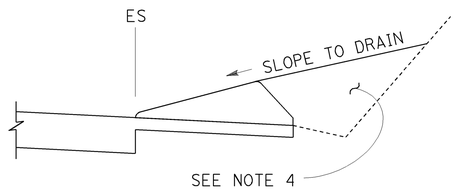


TYPE F
See Note 5

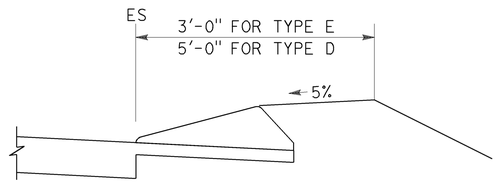
DIKES



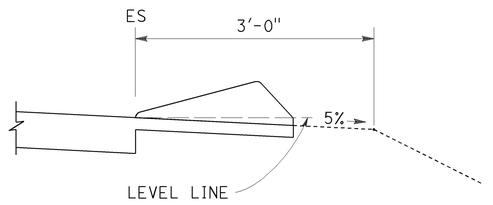
CASE C-1
Cut Slope



CASE C-2
Cut Slope



CASE F



CASE R
See Note 2

TYPE D AND E BACKFILL DETAILS

NOTES:

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

DIKE QUANTITIES

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

Quantities based on 5% cross slope.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

HOT MIX ASPHALT DIKES

NO SCALE

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

REVISED STANDARD PLAN RSP A87B

6-27-13

TO ACCOMPANY PLANS DATED 6-29-15

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	88	128

Glenn DeCou
REGISTERED CIVIL ENGINEER

October 19, 2012
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Glenn DeCou — No. C34547 — Exp. 9-30-13 — CIVIL — STATE OF CALIFORNIA

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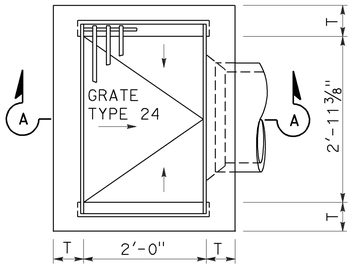
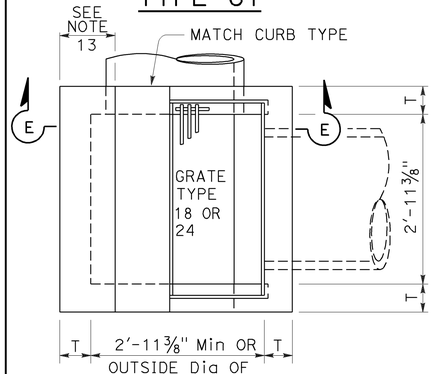
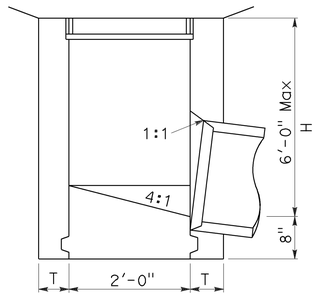


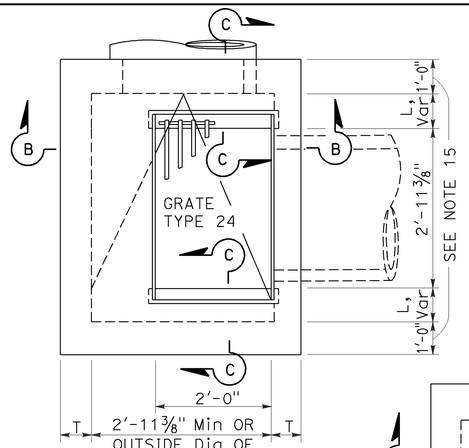
TYPE G1



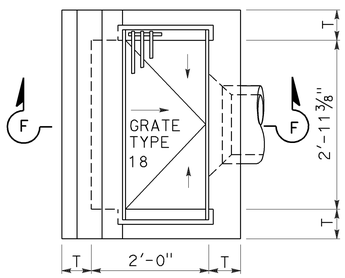
TYPE G4



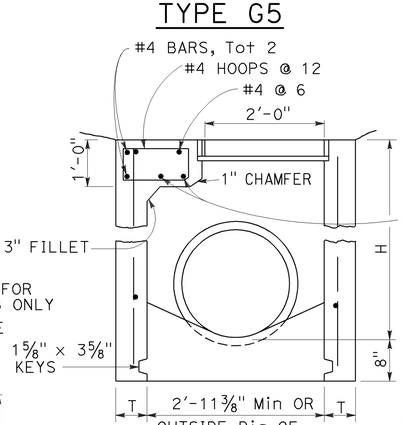
SECTION A-A



TYPE G2

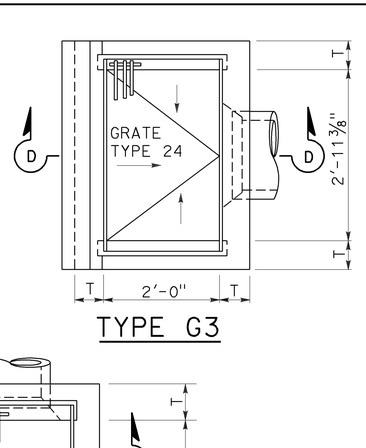


TYPE G5

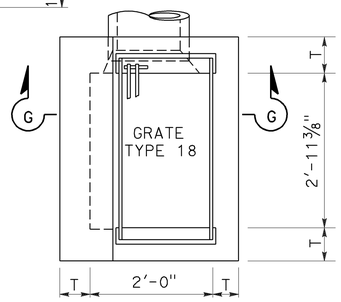


SECTION B-B

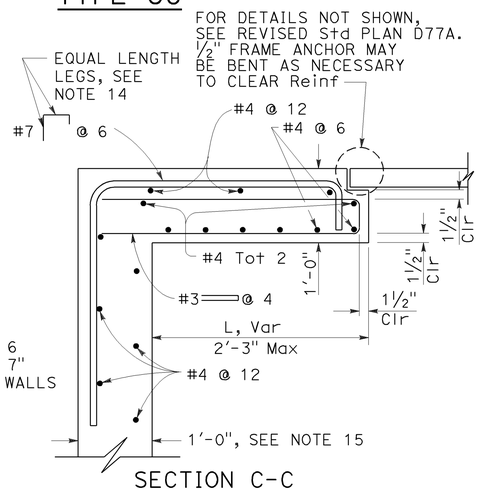
SECTION E-E



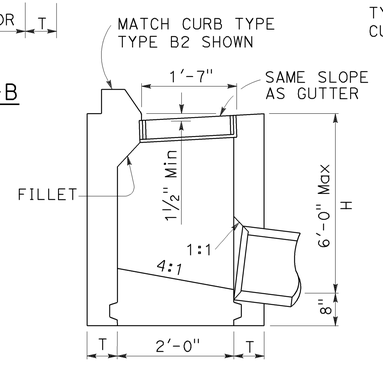
TYPE G3



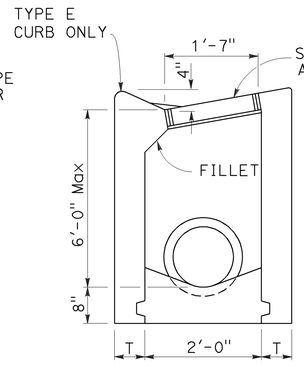
TYPE G6



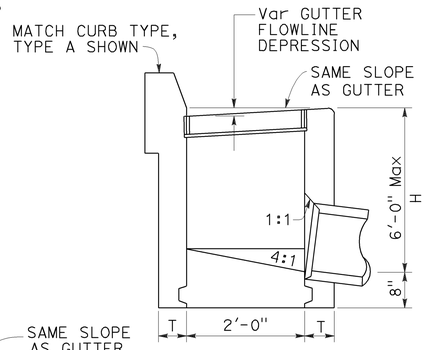
SECTION C-C



SECTION F-F



SECTION G-G



SECTION D-D

NOTES:

1. "H" is the difference in elevation between the outlet pipe flow line and the normal gutter grade line undepressed.
2. For "T" wall thickness, see Table A below.
3. Wall reinforcing not required when "H" is 8'-0" or less and the unsupported width or length is 7'-0" or less. Walls exceeding these limits shall be reinforced with #4 bars @ 1'-6" ± centers placed 1½" clear to inside of box unless otherwise shown.
4. Inlet bottom reinforcing not required. See Standard Plan D74C for alternative reinforced bottom and alternative half round bottom.
5. Steps-None required where "H" is less than 2'-6". Where "H" is 2'-6" or more, install steps with lowest rung 1'-0" above the floor and highest rung not more than 6" below top of inlet. The distance between steps shall not exceed 1'-0" and shall be uniform throughout the length of the wall. Place steps in the wall without an opening. Steps inserts may be substituted for the bar steps. Step inserts shall comply with State Industrial Safety requirements. See Standard Plan D74C for step details.
6. Details shown apply to both metal and concrete pipe.
7. Pipe(s) can be placed in any wall.
8. Curb section shall match adjacent curb.
9. Basin floors shall have wood trowel finish and a minimum slope of 12:3 from all directions toward outlet pipe.
10. Set inlet so that grate bars are parallel to direction of principal surface flow.
11. See Revised Standard Plans D77A and D77B for grate and frame details and weights of miscellaneous iron and steel.
12. See Standard Plan D78A for gutter depression details.
13. This dimenison will vary with different grates, curbs types, box width and wall thickness.
14. Bar may be rotated as necessary to clear opening. Where "L" is 6" or less, bar may be omitted.
15. Where "L" is 6" or less, wall thickness shall be as shown in Table A.
16. Cast-in-place inlets to be formed around all pipes/stubs intersecting the inlet, and concrete poured in one continuous operation. Precast inlets shall have mortared connections conforming to details for Type GCP Inlet shown on Standard Plan D75B. See Standard Specifications for mortar composition.

TABLE A

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

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

NOTE A:

Maximum allowable height 6'-0".

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DRAINAGE INLETS

NO SCALE

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

REVISED STANDARD PLAN RSP D73

2010 REVISED STANDARD PLAN RSP D73

7-19-12

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	89	128

Raymond Don Tsztoo
REGISTERED CIVIL ENGINEER

April 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Raymond Don Tsztoo — No. C37332 — Exp. 6-30-14 — CIVIL — STATE OF CALIFORNIA

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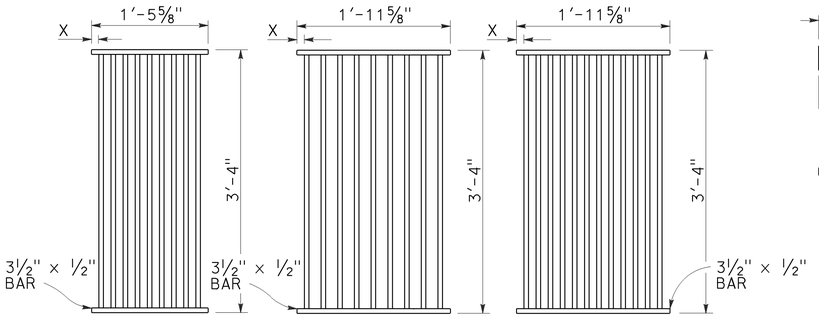
TO ACCOMPANY PLANS DATED 6-29-15



TYPE 18-9

1⅜" Clear spacing. Use within the roadbed on highways where bicycles and pedestrians are excluded.

TYPE 24-9

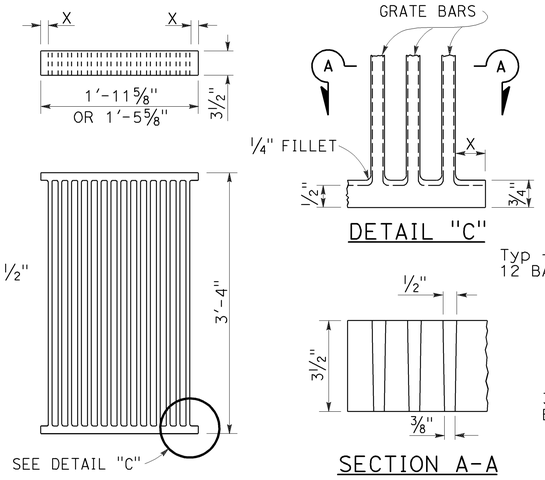
2" Clear spacing. Use in locations off the roadbed on all types of highways.

TYPE 24-12

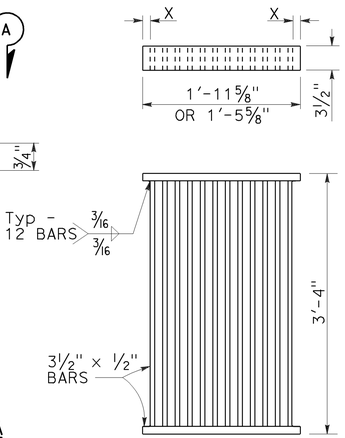
1⅜" Clear spacing. Use within the roadbed on highways where bicycles and pedestrians are excluded.

RECTANGULAR GRATE DETAILS

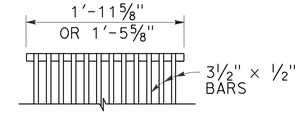
(See table below)



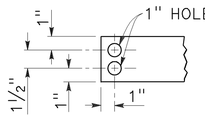
ALTERNATIVE CAST DUCTILE IRON GRATE OR CAST CARBON STEEL GRATE



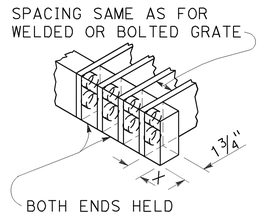
ALTERNATIVE WELDED GRATE



CAST END BLOCK



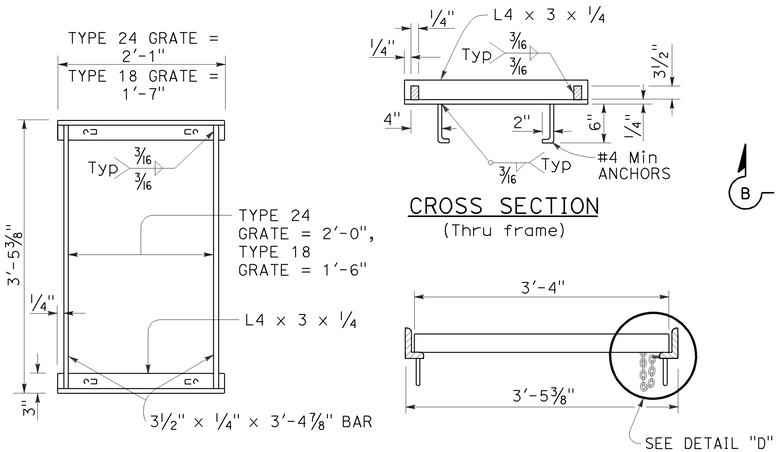
END OF BAR



ALTERNATIVE CAST DUCTILE IRON OR CAST CARBON STEEL END BLOCK GRATE

NOTES:

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



TYPICAL FRAME

CROSS SECTION

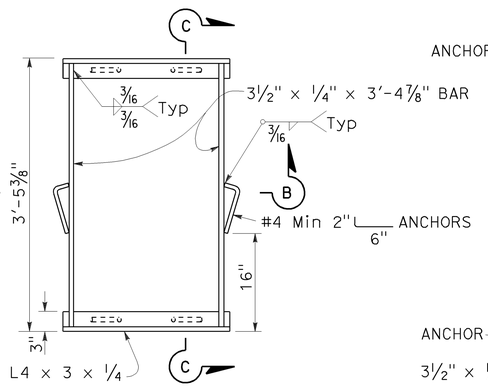
(Thru frame)

LONGITUDINAL SECTION

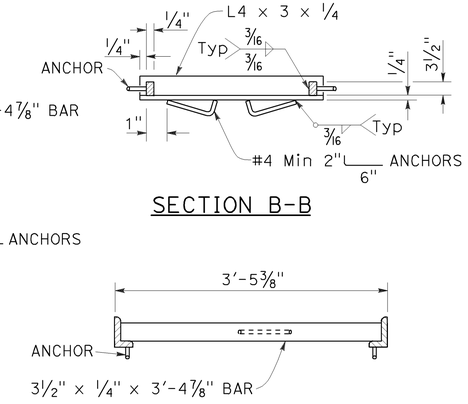
(Thru frame and grate)

RECTANGULAR FRAME DETAILS

(For all rectangular grates)



TYPICAL FRAME



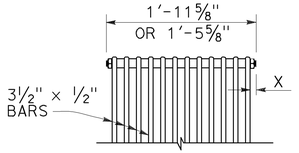
SECTION B-B

SECTION C-C

ALTERNATIVE ANCHOR FOR RECTANGULAR FRAME

(For details not shown, See Rectangular Frame Details)

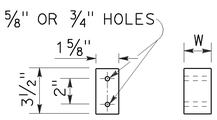
INLET TYPE	GRATE TYPE	No. OF GRATES	WEIGHT LB
GDO	24-12	2	634
GOL-7	24-12	1	326
GOL-10	24-12	1	326
GO,G1,G2,G3,G4 (TYPE 24)	24-9	1	263
	24-12	1	326
G4 (TYPE 18),G5,G6	18-9	1	249
GT1	18-9	2	498
GT2	18-9	2	498
GT3	24-12	2	652
GT4	24-12	2	652
TRASH RACK			22
GRATE CHAIN			3



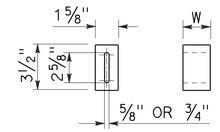
BOLTED END BLOCK

BOLTING DETAIL

ALTERNATIVE BOLTED GRATE

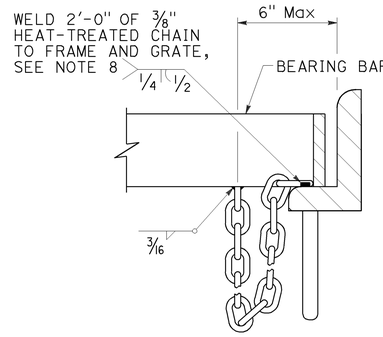


BAR SPACER



ALTERNATIVE SPACER

W = 1⅜" or 2"



DETAIL "D"

(Steel grates only)

GRATE BAR SPACING TABLE

TYPE	No. OF BARS	CLEAR BAR SPACING	X
18-9	9	1⅜"	1 1/16"
24-9	9	2"	1 9/16"
24-12	12	1⅜"	1¼"

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

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

(See Note 7)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

GRATE DETAILS No. 1

NO SCALE

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

REVISED STANDARD PLAN RSP D77A

2010 REVISED STANDARD RSP D77A

4-4-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	90	128

Gregory A. Balzer
LICENSED LANDSCAPE ARCHITECT

July 19, 2013
PLANS APPROVAL DATE

Gregory A. Balzer 2015 — LICENSED LANDSCAPE ARCHITECT — Gregory A. Balzer — 10 — Expiration Date 2-28-15 — Renewal Date 7-19-13 — Date — STATE OF CALIFORNIA

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

TO ACCOMPANY PLANS DATED 6-29-15

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
Mtl	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
Pvmt	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

6-28-13

EXISTING	NEW	ITEM DESCRIPTION
		WATER METER (WM)
		BACKFLOW PREVENTER ASSEMBLY (BPA)
		BACKFLOW PREVENTER ENCLOSURE (BPE)
		BOOSTER PUMP (BP)
		TRUCK LOADING STANDPIPE (TLS)
	FS	FLOW SENSOR (FS)
		MASTER IRRIGATION CONTROLLER (MIC)
		AUXILIARY IRRIGATION CONTROLLER (AIC)
		IRRIGATION CONTROLLER (IC) IRRIGATION CONTROLLER (IC) (BATTERY) IRRIGATION CONTROLLER (IC) (SOLAR) IRRIGATION CONTROLLER (IC) (TWO WIRE) IRRIGATION CONTROLLER(S) IN CONTROLLER ENCLOSURE CABINET (ICC)
acc	ACC	ARMOR-CLAD CONDUCTORS (ACC)
cnc	CNC	CONTROL AND NEUTRAL CONDUCTORS (CNC)
		IRRIGATION CONDUIT
		EXTEND IRRIGATION CONDUIT
dip	DIP	DUCTILE IRON PIPE (SUPPLY LINE) (MAIN) (DIP)
		GALVANIZED STEEL PIPE (SUPPLY LINE) (MAIN) (GSP)
		GALVANIZED STEEL PIPE (SUPPLY LINE) (LATERAL) (GSP)
		PLASTIC PIPE (SUPPLY LINE) (MAIN)
		PLASTIC PIPE (SUPPLY LINE) (LATERAL)
cp	CP	COPPER PIPE (SUPPLY LINE)
dit	DIT	DRIP IRRIGATION TUBING
		REMOTE CONTROL VALVE (RCV) REMOTE CONTROL VALVE (MASTER) (RCVM) REMOTE CONTROL VALVE (MASTER) W/FLOW METER (RCVMF)
		REMOTE CONTROL VALVE W/PRESSURE REGULATOR (RCVP)
		EXISTING MANUAL CONTROL VALVE (MCV)
		DRIP VALVE ASSEMBLY (DVA)
		WYE STRAINER ASSEMBLY (WSA)

EXISTING	NEW	ITEM DESCRIPTION
		GATE VALVE (GV)
		BALL VALVE (BV)
		QUICK COUPLING VALVE (QCV)
		CAM COUPLER ASSEMBLY (CCA)
		GARDEN VALVE ASSEMBLY (GARVA)
		PRESSURE REGULATING VALVE (PRV)
		PRESSURE RELIEF VALVE (PRLV)
		FLOW CONTROL VALVE (FCV)
		COMBINATION AIR RELEASE VALVE (CARV)
		CHECK VALVE (CV)
		FLUSH VALVE (FV)
		EXISTING NOZZLE LINE W/TURNING UNION
		EXISTING IRRIGATION SYSTEM
		EXISTING IRRIGATION SYSTEM TO BE REMOVED
		CHAIN LINK GATE
		QUICK COUPLING VALVE W/SPRINKLER PROTECTOR
3	3	SPRINKLER W/SPRINKLER PROTECTOR
	C	CONNECT TO EXISTING SYSTEM
		CAP
		CAP EXISTING
	FR	FIBER ROLL
	CS	COMPOST SOCK

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	91	128

LICENSED LANDSCAPE ARCHITECT

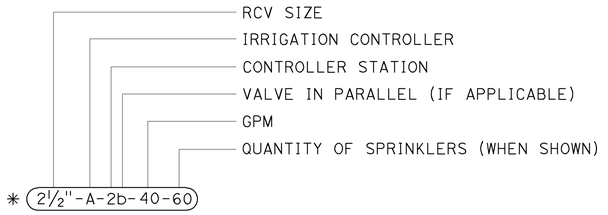
November 15, 2013
PLANS APPROVAL DATE

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

LICENSED LANDSCAPE ARCHITECT — Gregory A. Balzer — 2516 — Date 2-28-15 — Renewal Date 11-15-13 — STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 6-29-15

2010 REVISED STANDARD PLAN RSP H2



VALVE CODE

* VALVE CODES FOR EXISTING VALVES ARE SHOWN IN A DASHED ENCLOSURE.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

LANDSCAPE AND EROSION CONTROL SYMBOLS

NO SCALE

RSP H2 DATED NOVEMBER 15, 2013 SUPERSEDES RSP H2 DATED JULY 19, 2013 AND STANDARD PLAN H2 DATED MAY 20, 2011 - PAGE 219 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP H2

10-9-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	92	128

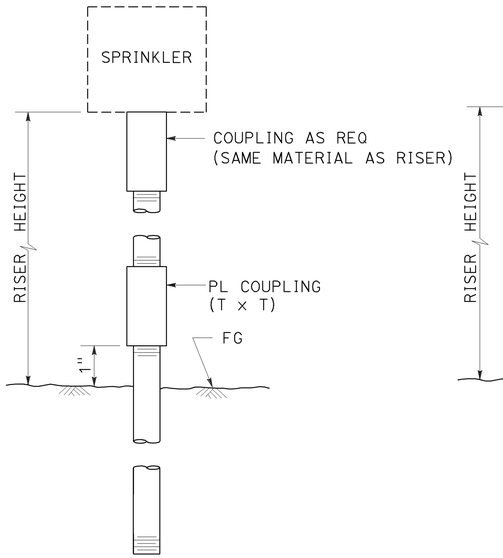
LICENSED LANDSCAPE ARCHITECT

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.

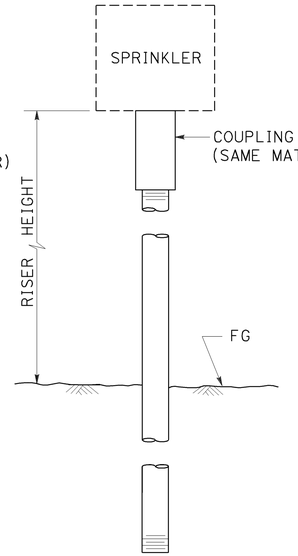
LICENSED LANDSCAPE ARCHITECT — Gregory A. Balzer 2016 — 10 Renewal 2-28-15 — Renewal Date 7-19-13 — Date — STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 6-29-15



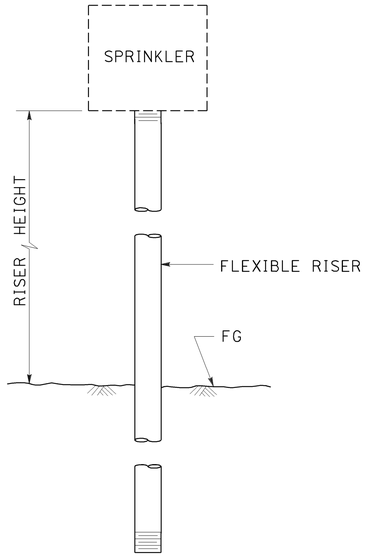
ELEVATION

RISER SPRINKLER ASSEMBLY TYPE I



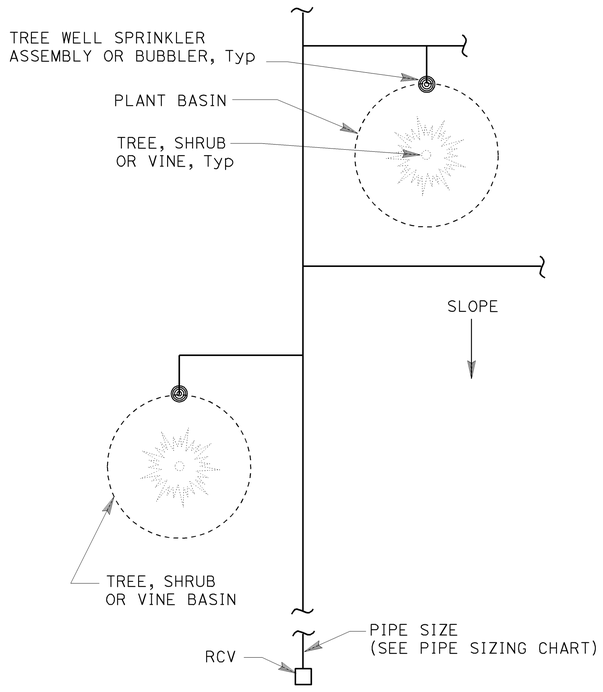
ELEVATION

RISER SPRINKLER ASSEMBLY TYPE II



ELEVATION

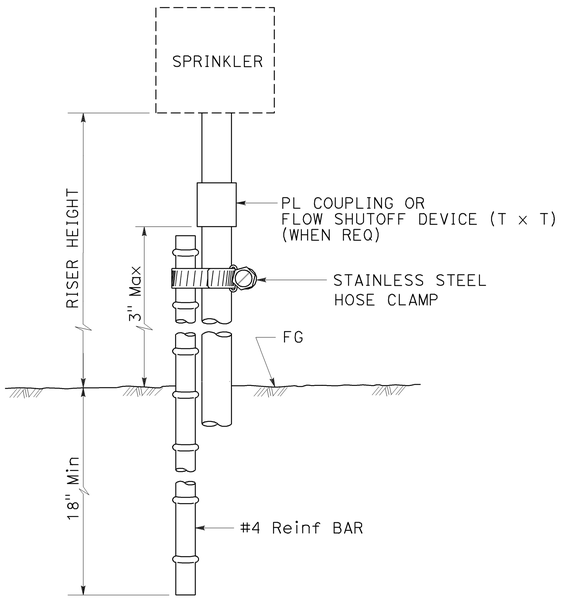
RISER SPRINKLER ASSEMBLY TYPE III



PLAN

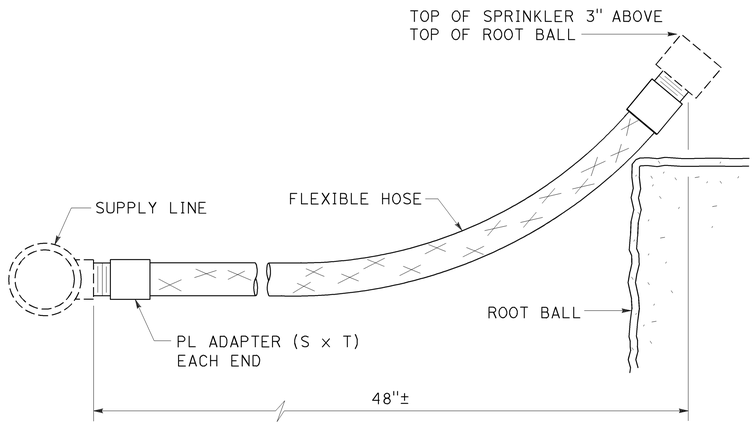
NOTES:

1. Install tree well sprinkler assembly on up-hill side of plant when on slope.
2. Install bubbler within basin.



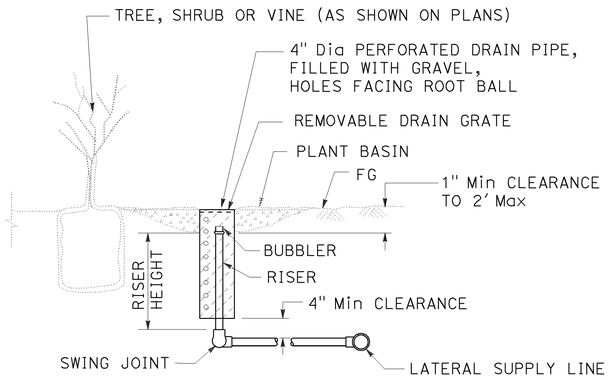
ELEVATION

RISER SPRINKLER ASSEMBLY TYPE IV



ELEVATION

RISER SPRINKLER ASSEMBLY TYPE V



SECTION

TREE WELL SPRINKLER ASSEMBLY

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

LANDSCAPE DETAILS

NO SCALE

RSP H5 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN H5
DATED MAY 20, 2011 - PAGE 222 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP H5

2010 REVISED STANDARD PLAN RSP H5

6-28-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	93	128

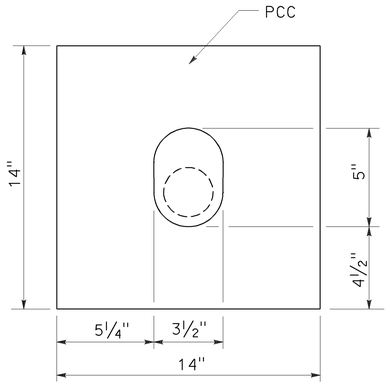
Gregory A Balzer
LICENSED LANDSCAPE ARCHITECT

July 19, 2013
PLANS APPROVAL DATE

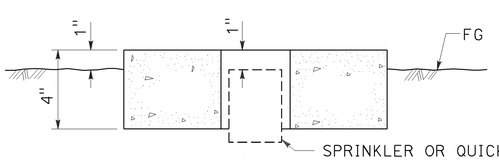
Gregory A. Balzer 2015
10-31-14
Renewal Date
2-28-15
Renewal Date
7-19-13
Date
LICENSED LANDSCAPE ARCHITECT
STATE OF CALIFORNIA

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

TO ACCOMPANY PLANS DATED 6-29-15

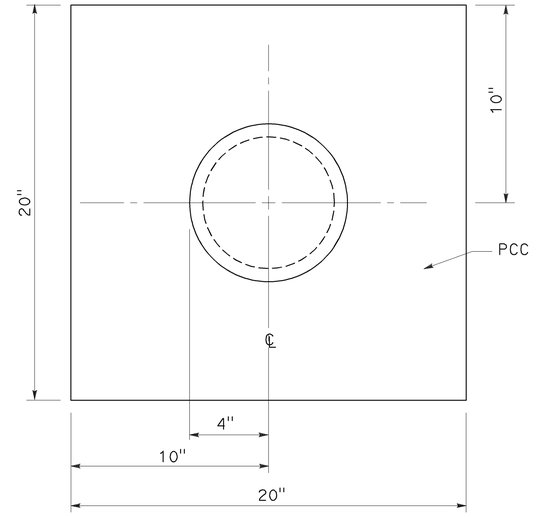


PLAN

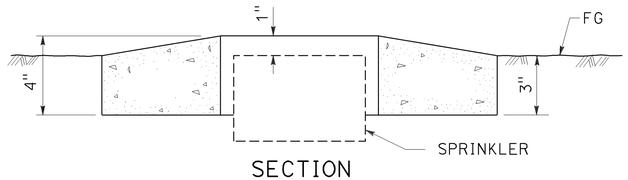


SECTION

SPRINKLER PROTECTOR TYPE I

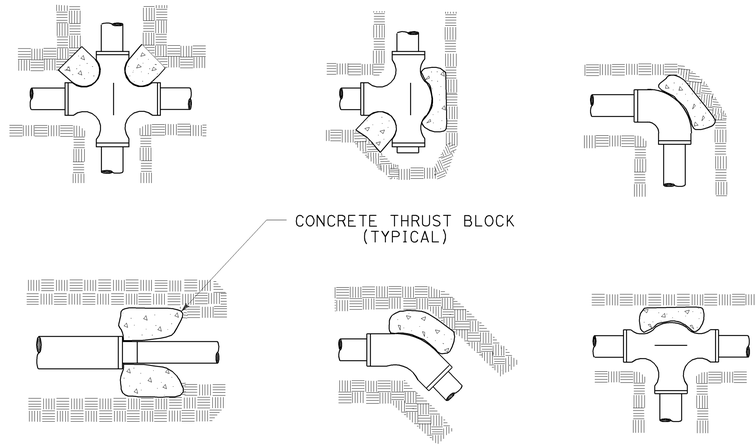


PLAN

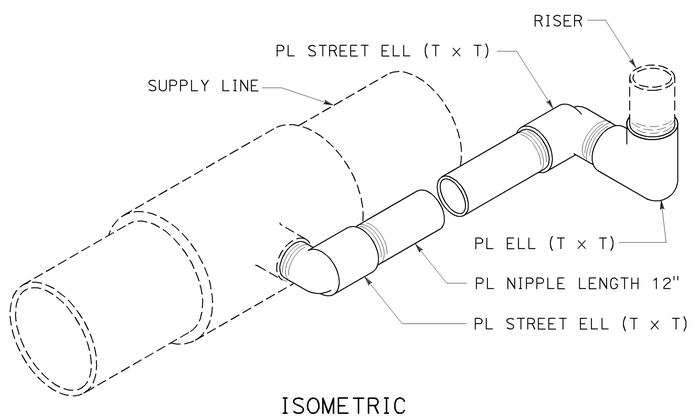


SECTION

SPRINKLER PROTECTOR TYPE II

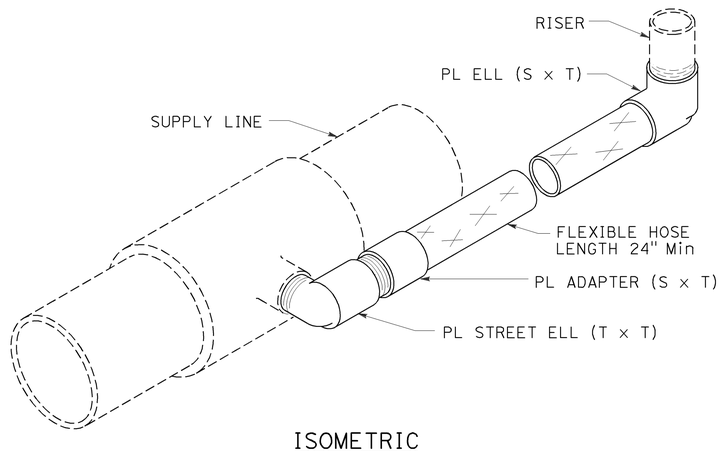


TYPICAL THRUST BLOCKS



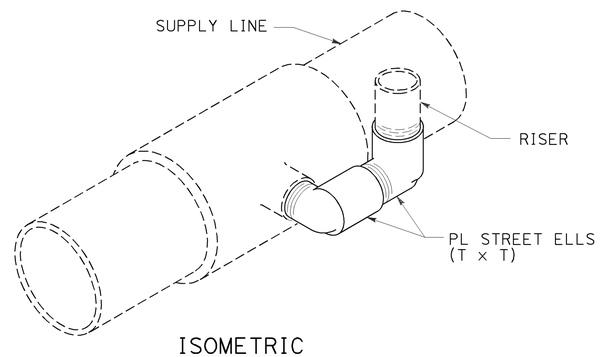
ISOMETRIC

POP-UP SPRINKLER ASSEMBLY TYPE I



ISOMETRIC

POP-UP SPRINKLER ASSEMBLY TYPE II



ISOMETRIC

POP-UP SPRINKLER ASSEMBLY TYPE III

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

LANDSCAPE DETAILS

NO SCALE

RSP H6 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN H6
DATED MAY 20, 2011 - PAGE 223 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP H6

2010 REVISED STANDARD PLAN RSP H6

6-28-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	94	128

Gregory A Balzer
LICENSED LANDSCAPE ARCHITECT

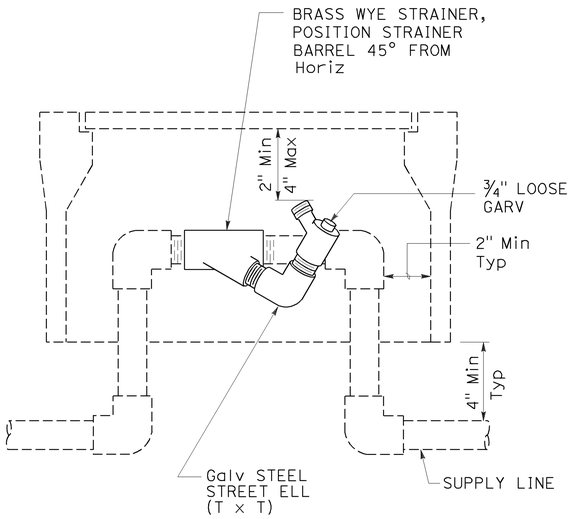
July 19, 2013
PLANS APPROVAL DATE

Gregory A. Balzer 2576 — 07-31-13 — Renewal Date 2-28-15 — Date 7-19-13 — LICENSED LANDSCAPE ARCHITECT — STATE OF CALIFORNIA

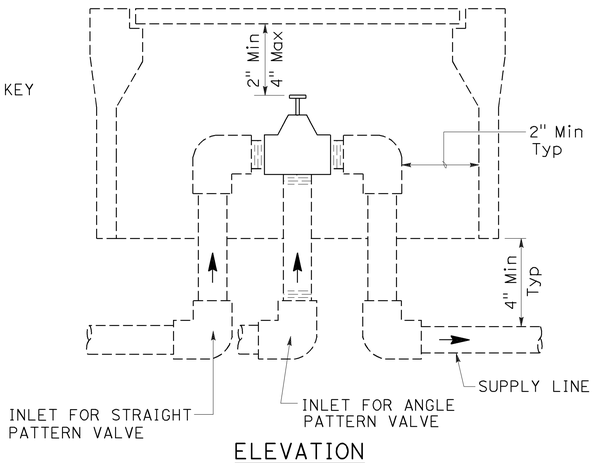
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 6-29-15

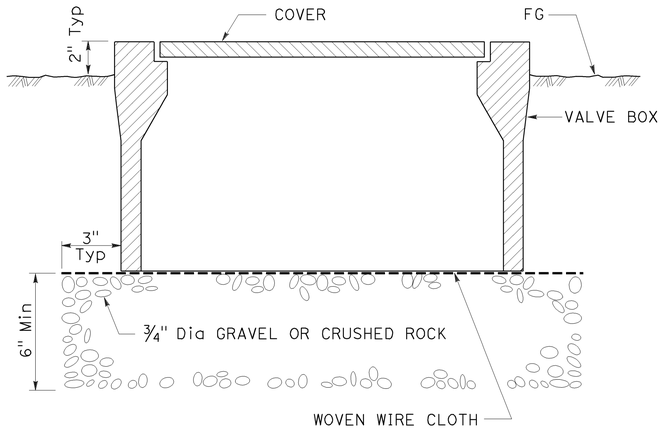
2010 REVISED STANDARD PLAN RSP H7



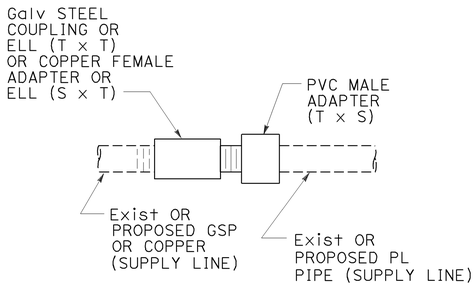
ELEVATION
WYE STRAINER ASSEMBLY



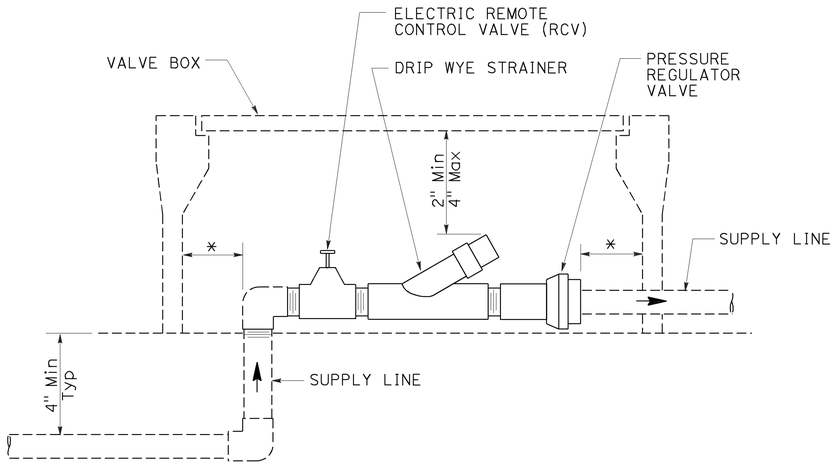
ELEVATION
VALVE



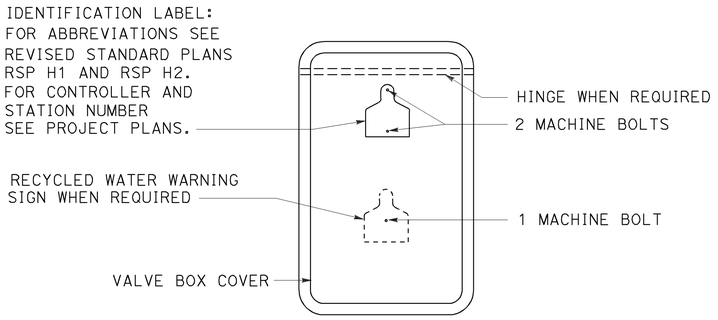
SECTION
VALVE BOX



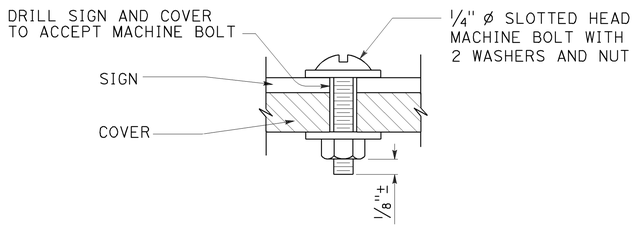
GALVANIZED OR COPPER PIPE CONNECTION TO PLASTIC PIPE



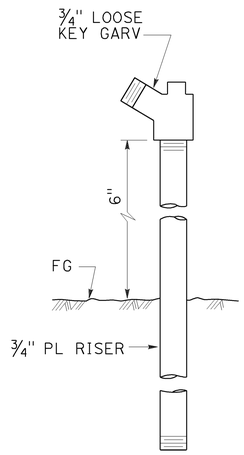
ELEVATION
DRIP VALVE ASSEMBLY



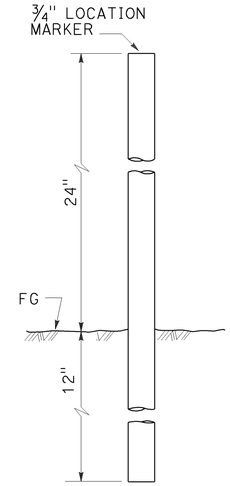
PLAN



SECTION
VALVE BOX IDENTIFICATION



ELEVATION
GARDEN VALVE ASSEMBLY



ELEVATION
LOCATION MARKER

GARDEN VALVE ASSEMBLY

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

LANDSCAPE DETAILS

NO SCALE

RSP H7 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN H7 DATED MAY 20, 2011 - PAGE 224 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP H7

6-20-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	95	128

REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

TO ACCOMPANY PLANS DATED 6-29-15

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		
					X	Y	Z **
	TANGENT 2L	MERGING L	SHIFTING L/2	SHOULDER L/3	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%
mph	ft	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 recommmended distances.

2010 REVISED STANDARD PLAN RSP T9

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SYSTEM TABLES FOR LANE AND RAMP CLOSURES

NO SCALE

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

REVISED STANDARD PLAN RSP T9

4-30-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	96	128

REGISTERED CIVIL ENGINEER

April 19, 2013
PLANS APPROVAL DATE

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

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 6-29-15

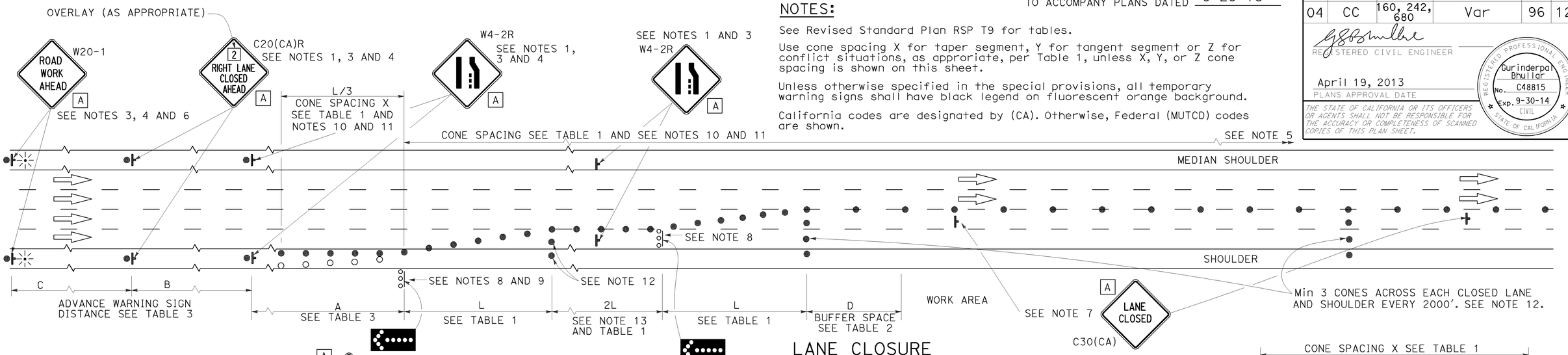
NOTES:

See Revised Standard Plan RSP T9 for tables.

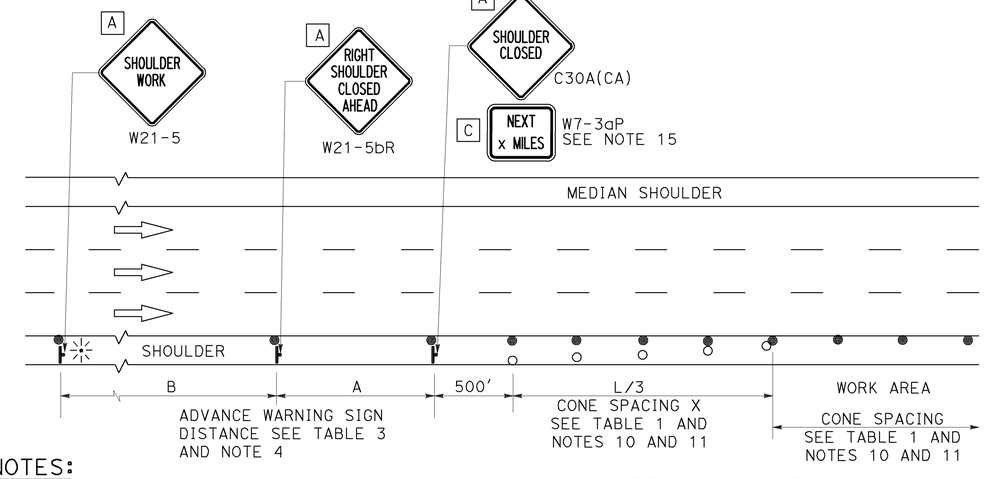
Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as approriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.

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

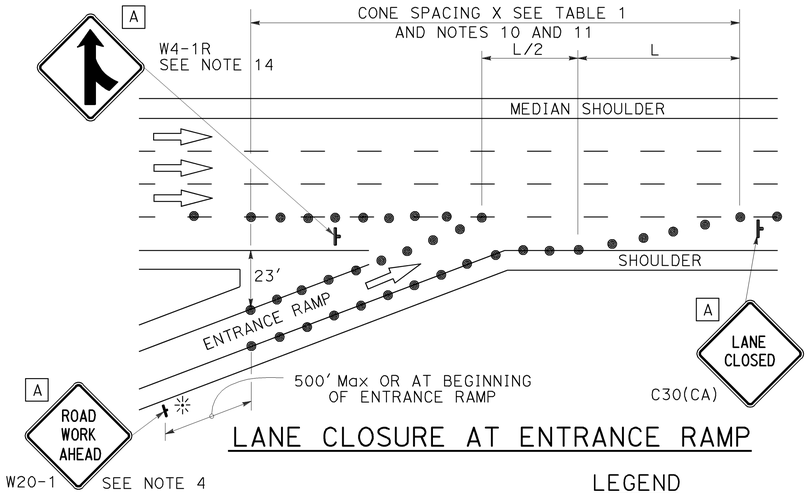
California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.



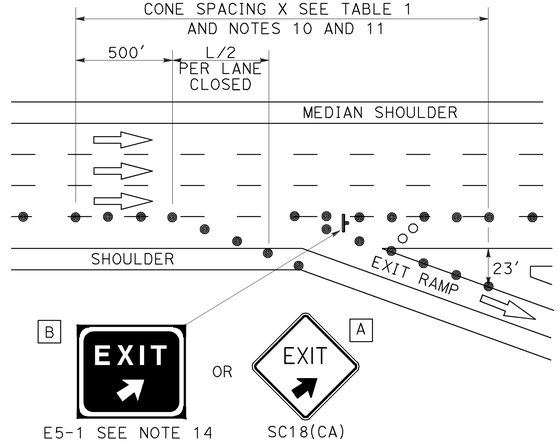
LANE CLOSURE



SHOULDER CLOSURE



LANE CLOSURE AT ENTRANCE RAMP



LANE CLOSURE AT EXIT RAMP

NOTES:

1. Median lane closures shall conform to the details as shown except that C20(CA)L and W4-2L signs shall be used.
2. At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closures.
3. Duplicate sign installations are not required:
   a) On opposite shoulder if at least one-half of the available lanes remain open to traffic.
   b) In the median if the width of the median shoulder is less than 8' and the outside lanes are to be closed.
4. Each advance warning sign on each side of the roadway shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
5. A G20-2 "END ROAD WORK" sign, with minimum size of 48" x 24" as appropriate, shall be placed at the end of the lane closure unless the end of work area is obvious or ends within a larger project's limits.
6. If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT _____ MILES", use a C20(CA) sign for the first advance warning sign.
7. Place a C30(CA) sign every 2000' throughout length of lane closure.
8. One flashing arrow sign for each lane closed. The flashing arrow signs shall be Type I.
9. A minimum 1500' of sight distance shall be provided where possible for vehicles approaching the first flashing arrow sign. Lane closures shall not begin at top of crest vertical curve or on a horizontal curve.
10. All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
11. Portable delineators, placed at one-half the spacing indicated for traffic cones may be used instead of cones for daytime closures only.
12. Unless otherwise specified in the special provisions, a minimum of 3 cones shall be placed transversely across each closed lane and shoulder at each location where a taper across a traffic lane ends and every 2000' as shown on the "Lane Closure" detail. Two Type II barricades may be used instead of the 3 cones. The transverse alignment of the cones or barricades on the closed shoulder may be shifted from the transverse alignment to provide access to the work.
13. Unless otherwise specified in the special provisions, the 2L tangent shown along lane lines shall be used between the L tapers required for each closed traffic lane.
14. Unless otherwise specified in the special provisions, the E5-1 or SC18(CA) and W4-1 signs shall be used as shown.
15. A W7-3aP "NEXT____MILES" plaque must be used if theshoulder 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

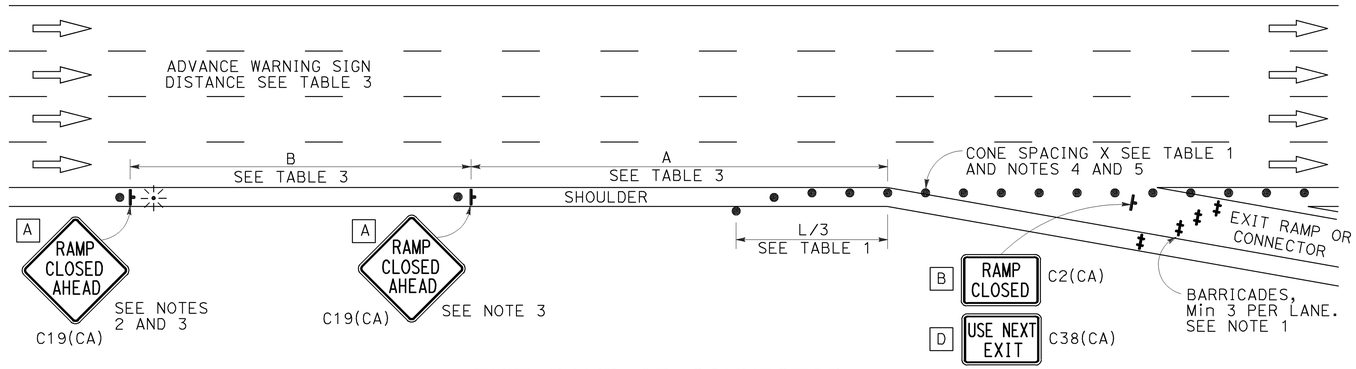
RSP T10 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T10 DATED MAY 20, 2011 - PAGE 237 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T10

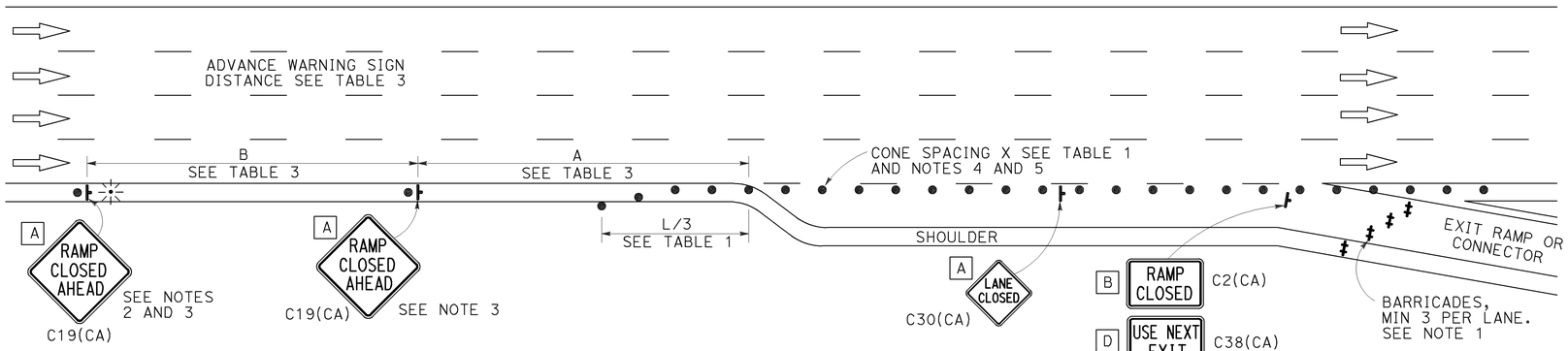
2010 REVISED STANDARD PLAN RSP T10

12-18-12

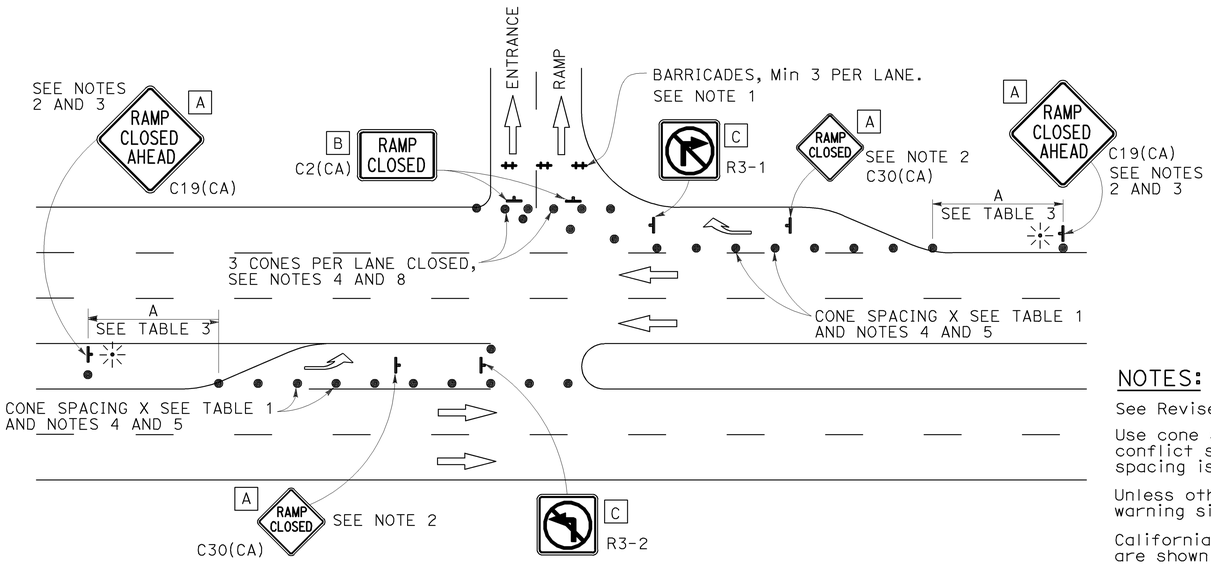
TYPICAL RAMP CLOSURES



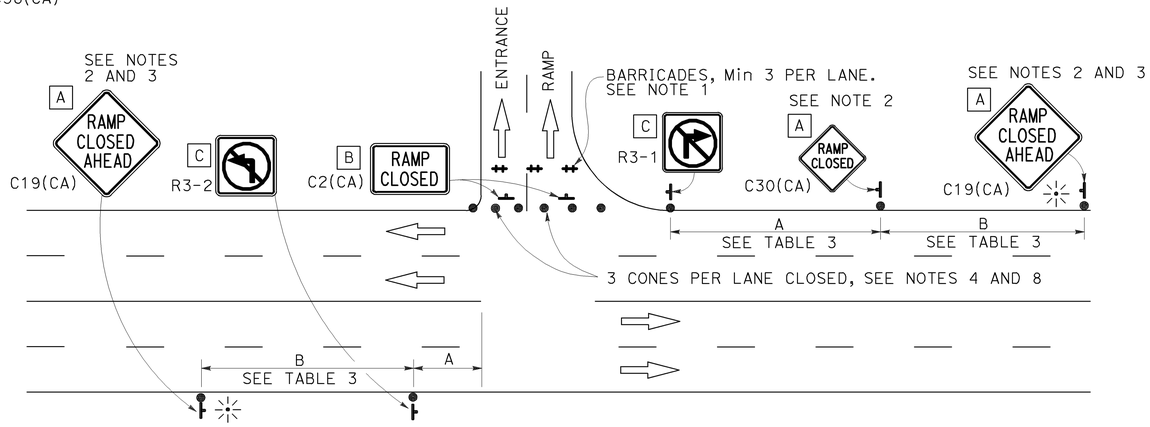
EXIT RAMP OR CONNECTOR



EXIT RAMP OR CONNECTOR WITH ADDITIONAL LANE



ENTRANCE RAMP WITH TURNING POCKETS



ENTRANCE RAMP WITHOUT TURNING POCKETS

SIGN PANEL SIZE (Min)

- A 48" × 48"
- B 48" × 30"
- C 36" × 36"
- D 48" × 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	160, 242, 680	Var	97	128

REGISTERED CIVIL ENGINEER

April 19, 2013
PLANS APPROVAL DATE

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

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

TO ACCOMPANY PLANS DATED 6-29-15

NOTES:

1. Barricades shall be Type I, II, or III for closures lasting one week or less and Type III for closures lasting longer than one week.
2. In addition to placing the C19(CA) "RAMP CLOSED AHEAD" and C30(CA) "RAMP CLOSED" signs, black on orange overlay plates with the word "CLOSED" may be mounted, as directed by the Engineer, on all guide signs that refer to the closed ramp. The letter size on the overlay shall be the same as the guide sign.
3. Each advance C19(CA) "RAMP CLOSED AHEAD" sign shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" × 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.

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 approriate, 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.

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

12-18-12

LEGEND:

AB	ABANDON. IF APPLIED TO CONDUIT, REMOVE CONDUCTORS
BC	INSTALL PULL BOX IN EXISTING CONDUIT RUN
BP	PEDESTRIAN BARRICADE, TYPE AS INDICATED ON PLAN
CB	INSTALL CONDUIT INTO EXISTING PULL BOX
CC	CONNECT NEW AND EXISTING CONDUIT. REMOVE EXISTING CONDUCTORS AND INSTALL CONDUCTORS AS INDICATED
CF	CONDUIT TO REMAIN FOR FUTURE USE. REMOVE CONDUCTORS. INSTALL PULL TAPE
DH	DETECTOR HANDHOLE
FA	FOUNDATION TO BE ABANDONED
IS	INSTALL SIGN ON SIGNAL MAST ARM
NS	NO SLIP BASE ON STANDARD
PEC	PHOTOELECTRIC CONTROL
PEU	PHOTOELECTRIC UNIT
RC	EQUIPMENT OR MATERIAL TO BE REMOVED AND BECOME THE PROPERTY OF THE CONTRACTOR
RE	REMOVE ELECTROLIER, FUSES AND BALLAST. TAPE ENDS OF CONDUCTORS
RL	RELOCATE EQUIPMENT
RR	REMOVE AND REUSE EQUIPMENT
RS	REMOVE AND SALVAGE EQUIPMENT
SC	SPLICE NEW TO EXISTING CONDUCTORS
SD	SERVICE DISCONNECT
TSP	TELEPHONE SERVICE POINT

ABBREVIATIONS

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	98	128

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

Theresa Aziz Gabriel No. E15129 Exp. 6-30-14 ELECTRICAL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

July 19, 2013
PLANS APPROVAL DATE

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

TO ACCOMPANY PLANS DATED 6-29-15

SOFFIT AND WALL MOUNTED LUMINAIRES

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

NOTE:
Arrow indicates "street side" of luminaire.

COMMONLY USED SYMBOLS FOR UNITED STATES CUSTOMARY UNITS OF MEASUREMENT:

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

MISCELLANEOUS ELECTROLIERS

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

NOTES:

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

STANDARD ELECTROLIER

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

NO SCALE

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

REVISED STANDARD PLAN RSP ES-1A

2010 REVISED STANDARD PLAN RSP ES-1A

7-15-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	99	128

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

Theresa Aziz Gabriel No. E15129 Exp. 6-30-14 ELECTRICAL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

July 19, 2013
PLANS APPROVAL DATE

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TO ACCOMPANY PLANS DATED 6-29-15

CONDUIT

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

SERVICE EQUIPMENT

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

POLE-MOUNTED SERVICE DESIGNATION

TYPE H SERVICE, 28'-10" — TYPE OF INSTALLATION AND POLE HEIGHT ABOVE GRADE

FLASHING BEACON

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

SIGNAL EQUIPMENT

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

SIGNAL EQUIPMENT Cont

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

NOTES:

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

ILLUMINATED OVERHEAD SIGN

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

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REVISED STANDARD PLAN RSP ES-1B

2010 REVISED STANDARD PLAN RSP ES-1B

7-15-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	CC	160, 242, 680	Var	100	128

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

Theresa Aziz Gabriel
No. E15129
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REGISTERED PROFESSIONAL ENGINEER
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EQUIPMENT IDENTIFICATION

ILLUMINATED SIGN IDENTIFICATION NUMBER:

SIGN No. 12345

10 ISL SCI 1.0

- SIGN NUMBER - PLACE ON POST OR STRUCTURE
- TRANSFORMER RATING (kVA)
- LIGHTING CONTROL TYPE
- NUMBER AND TYPE OF FIXTURES

} DO NOT PLACE ON STANDARD OR STRUCTURE

ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:

12345 - 15'-0"

- MAST ARM LENGTH, IF SHOWN. DO NOT PLACE ON STANDARD OR STRUCTURE
- EQUIPMENT NUMBER - PLACE ON STANDARD OR STRUCTURE. EXISTING EQUIPMENT NUMBERS ARE SHOWN IN PARENTHESIS

CONDUIT AND CONDUCTOR IDENTIFICATION:

1½"C, 2#10, 15#14, 2 DLC, 12P#18

- PAIR
- NUMBER AND SIZE OF CONDUCTORS AND CABLES
- SIZE OF CONDUIT IN INCHES
- ø1, ø2, ø2P, etc. — TRAFFIC PHASE IDENTIFICATION FOR SIGNAL FACES, DETECTORS AND PHASE DIAGRAMS
- 1 2 3 — LEGEND NUMBERS
- (A) (B) (C) — EQUIPMENT, SIGNAL POLES, INSTALLATION OR ITEMS
- 1 2 3 — CONDUIT RUN NUMBERS

SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):

19A - 3 - 100

- WIND VELOCITY = 100 mph
- CASE 3 ARM LOADING
- STANDARD TYPE
- STANDARD PLAN SHEET NUMBER
- DETAIL, NUMBER, SECTION, TYPE OR ELEVATION

MISCELLANEOUS EQUIPMENT

NEW	EXISTING	
CMS	cms	CHANGEABLE MESSAGE SIGN
		CLOSED CIRCUIT TELEVISION CAMERA
		HIGHWAY ADVISORY RADIO POLE AND ANTENNA
EMS	ems	EXTINGUISHABLE MESSAGE SIGN
M V	m v	DETECTION DEVICE M = MICROWAVE SENSOR V = VIDEO IMAGE SENSOR

WIRING DIAGRAM LEGEND

- EXTERNAL CONDUCTOR
- CONDUCTOR OR BUS
- TIE POINT
- CONTACTOR COIL
- CONTACTOR, NO CONTACT
- TERMINAL BLOCKS
- CONTACTOR, NC CONTACT
- ENCLOSURE BOND
- GROUNDING ELECTRODE
- CIRCUIT BREAKER
- RECEPTACLE

PULL BOXES

NEW	EXISTING	
		PULL BOX, No. 5 UNLESS OTHERWISE INDICATED OR NOTED
3	9A(21)	PULL BOX, ADDITIONAL DESIGNATIONS OR DESCRIPTIONS

3 No. 3½ PULL BOX
5 No. 5 PULL BOX
6 No. 6 PULL BOX
7 No. 7 (CEILING PULL BOX)
8 No. 8 (PENDANT SOFFIT PULL BOX)
9 No. 9 PULL BOX
9A No. 9A PULL BOX

(C) COMMUNICATIONS PULL BOX
(E) PULL BOX WITH EXTENSION
(S) SPRINKLER CONTROL PULL BOX
(21) ANCHOR BOLTS AND CONDUIT FOR FUTURE INSTALLATION OF TYPE 21 STANDARD
(T) TRAFFIC PULL BOX

VEHICLE DETECTORS

5 J 9 U

- VEHICLE DETECTOR DESIGNATION
- U = UPPER, L = LOWER
- SLOT NUMBER IN INPUT FILE
- INPUT FILE (I OR J)
- PHASE

NEW	EXISTING	
		TYPE A DETECTOR LOOP. OUTLINE OF SAWCUT SHOWN
		TYPE B DETECTOR LOOP. OUTLINE OF SAWCUT SHOWN
		TYPE C DETECTOR LOOP. OUTLINE OF SAWCUT SHOWN
		TYPE D DETECTOR LOOP. OUTLINE OF SAWCUT SHOWN
		TYPE E DETECTOR LOOP. OUTLINE OF SAWCUT SHOWN
		TYPE Q DETECTOR LOOP. OUTLINE OF SAWCUT SHOWN
		MAGNETIC DETECTOR
DH	dh	DETECTOR HANDHOLE
		MICROWAVE OR VIDEO DETECTION ZONE

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REVISED STANDARD PLAN RSP ES-1C

2010 REVISED STANDARD PLAN RSP ES-1C

7-11-13