

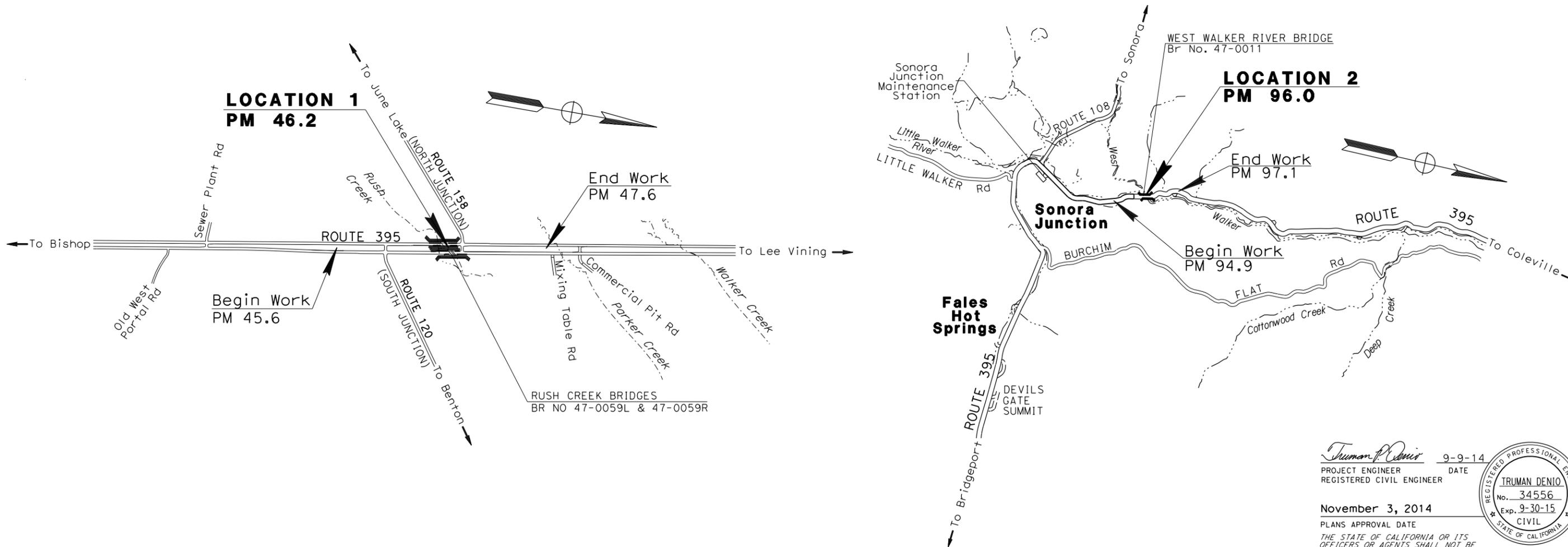
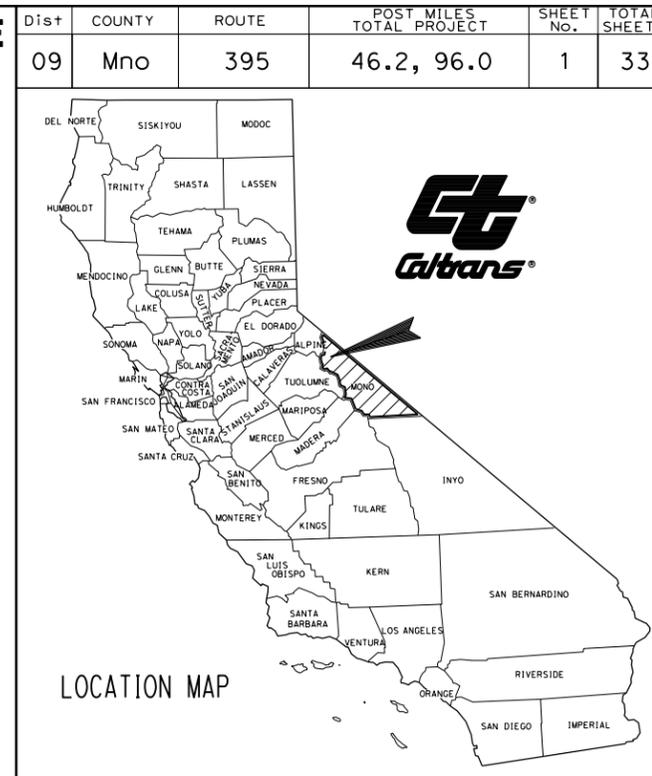
INDEX OF PLANS

SHEET No.	DESCRIPTION
1	TITLE AND LOCATION MAP
2-3	LAYOUTS
4-6	CONSTRUCTION DETAILS
7-8	CONSTRUCTION AREA SIGNS
9-13	STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN
14	SUMMARY OF QUANTITIES
15-33	REVISED STANDARD PLANS

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

STATE OF CALIFORNIA **ACHSNHP-P395(250)E**
DEPARTMENT OF TRANSPORTATION
PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY
IN MONO COUNTY
NEAR LEE VINING
AT RUSH CREEK BRIDGE
AND NEAR SONORA JUNCTION
AT WEST WALKER RIVER BRIDGE

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010



NO SCALE

Truman Denio 9-9-14
 PROJECT ENGINEER DATE
 REGISTERED CIVIL ENGINEER
 November 3, 2014
 PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



PROJECT MANAGER
BRIAN MCELWAIN
 DESIGN ENGINEER
TRUMAN DENIO

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

DATE PLOTTED => 12/8/2014
 TIME PLOTTED => 10:09:39 AM
 LAST REVISION 09-09-14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mno	395	46.2, 96.0	2	33

<i>Truman Denio</i>		9-9-14
REGISTERED CIVIL ENGINEER	DATE	
11-3-14		
PLANS APPROVAL DATE		

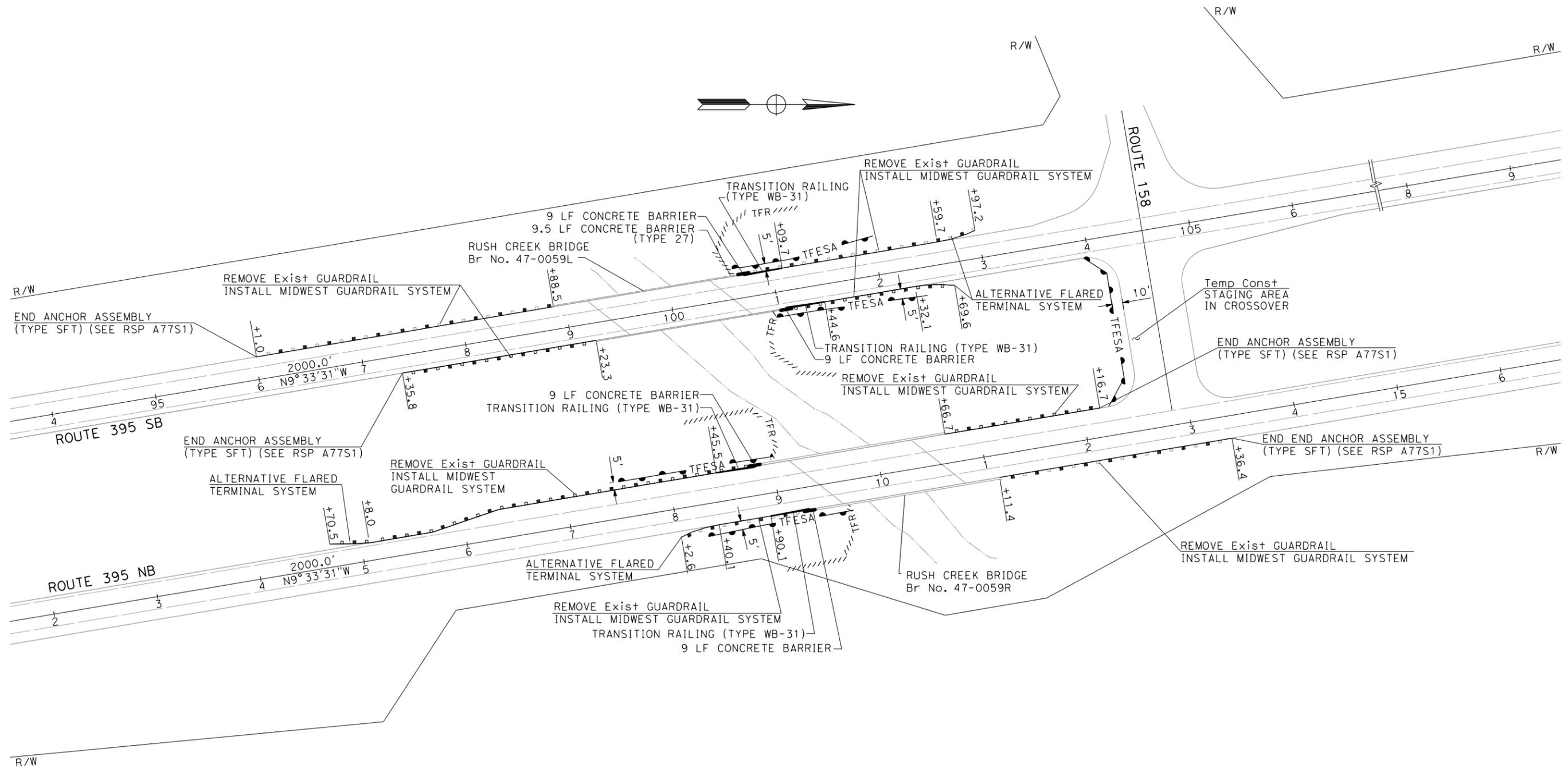
REGISTERED PROFESSIONAL ENGINEER	TRUMAN DENIO
No. 34556	
Exp. 9-30-15	
CIVIL	

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

NOTES:
 1. CL HIGHWAY STATIONING:
 STA 10+00 = MIDSPAN OF BRIDGE NB.
 STA 100+00 = MIDSPAN OF BRIDGE SB.
 2. FOR ACCURATE RIGHT OF WAY DATA,
 CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans PROJECT COORDINATION

FUNCTIONAL SUPERVISOR: TRUMAN DENIO
 CHECKED BY: TRUMAN DENIO
 CALCULATED/DESIGNED BY: TRUMAN DENIO
 REVISED BY: TRUMAN DENIO
 DATE REVISED: TRUMAN DENIO



LOCATION 1 PM 46.2

LAYOUT
 SCALE: 1"=50' L-1

LAST REVISION DATE PLOTTED => 10/30/2014
 09-09-14 TIME PLOTTED => 3:46:33 PM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mno	395	46.2, 96.0	3	33

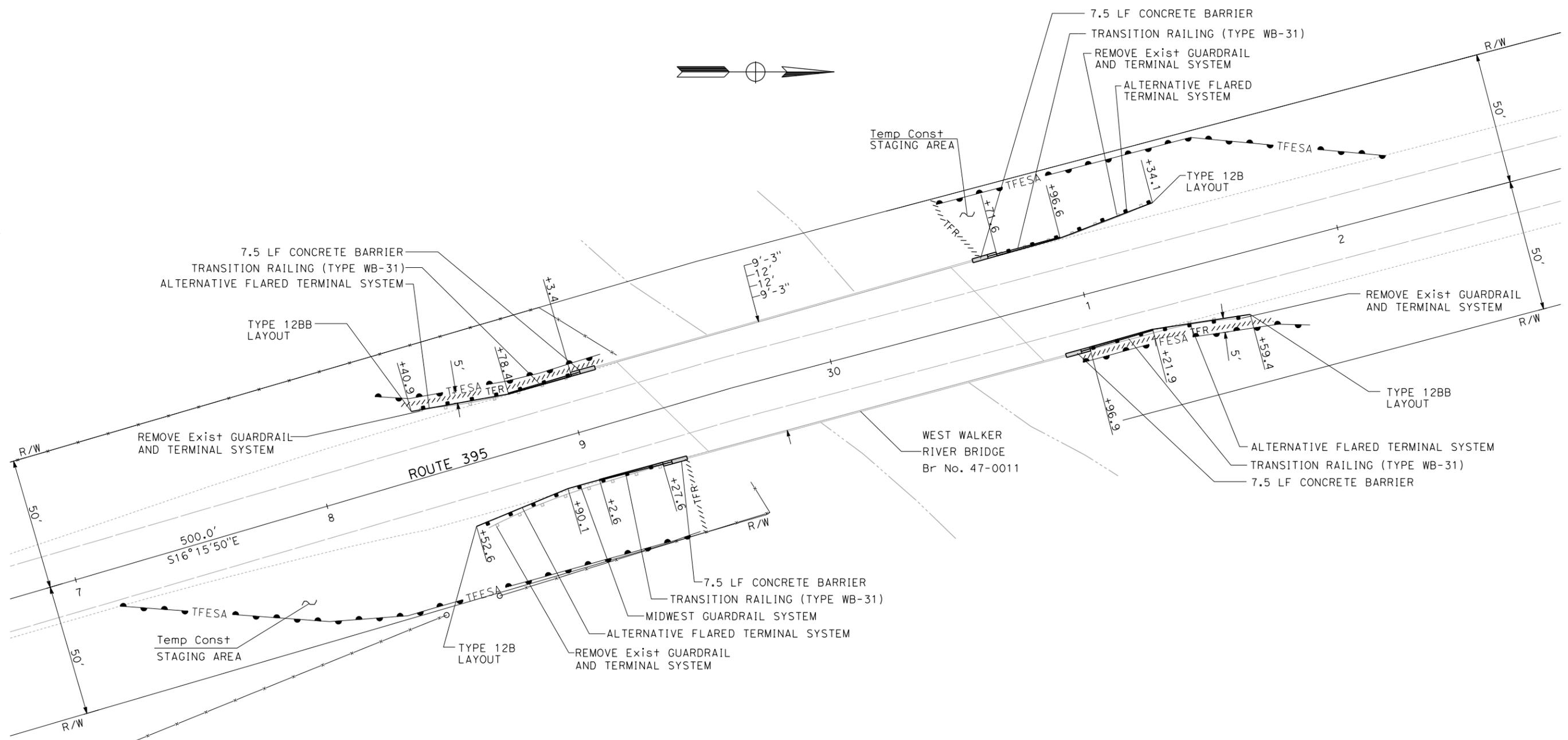
<i>Truman Denio</i>		9-9-14
REGISTERED CIVIL ENGINEER	DATE	
11-3-14		
PLANS APPROVAL DATE		

REGISTERED PROFESSIONAL ENGINEER	TRUMAN DENIO
No. 34556	Exp. 9-30-15
CIVIL	

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

NOTES:
1. CL HIGHWAY STATIONING:
STA 30+00 = MIDSPAN OF BRIDGE.
2. FOR ACCURATE RIGHT OF WAY DATA,
CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR
Caltrans PROJECT COORDINATION	TRUMAN DENIO	CHECKED BY	KONSTANTIN GREKOV
			TRUMAN DENIO
			DATE REVISOR

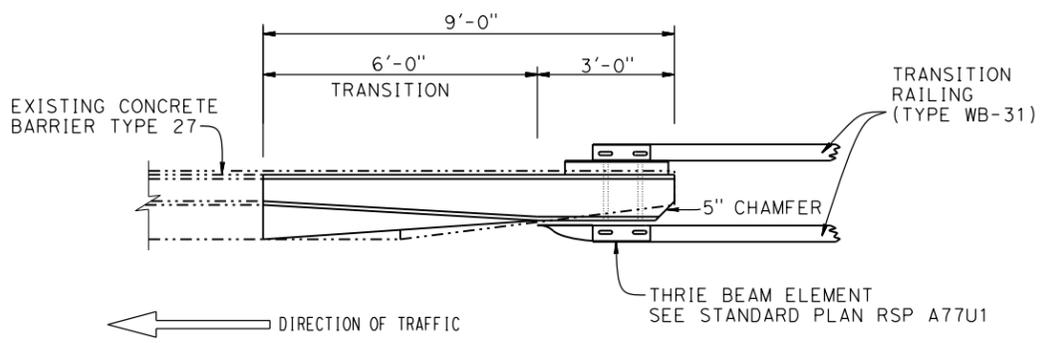
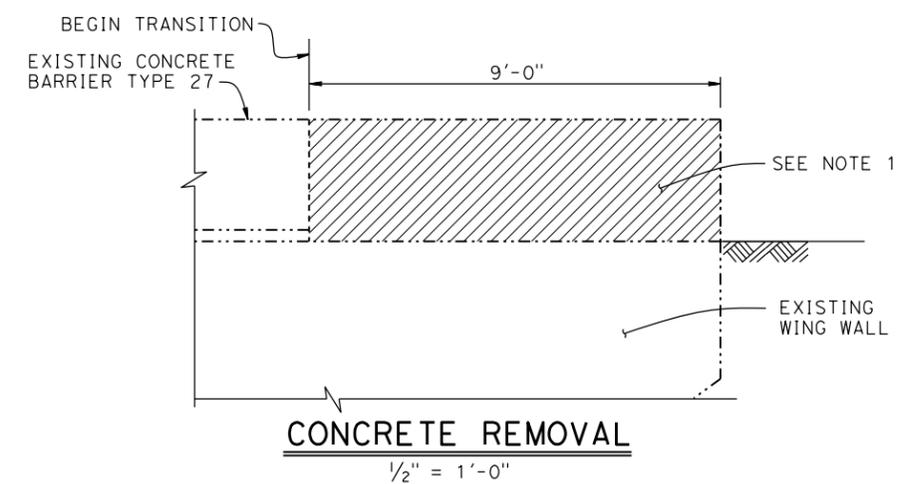


LOCATION 2 PM 96.0

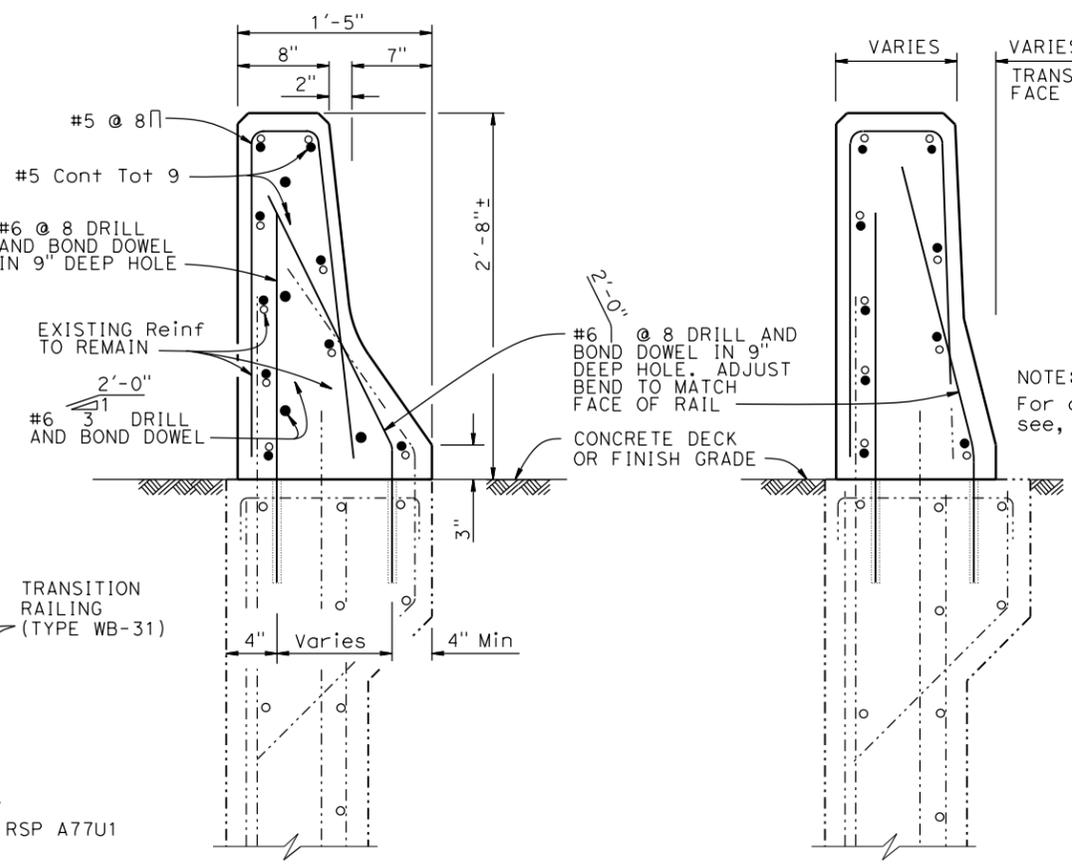
LAYOUT
SCALE: 1"=20' L-2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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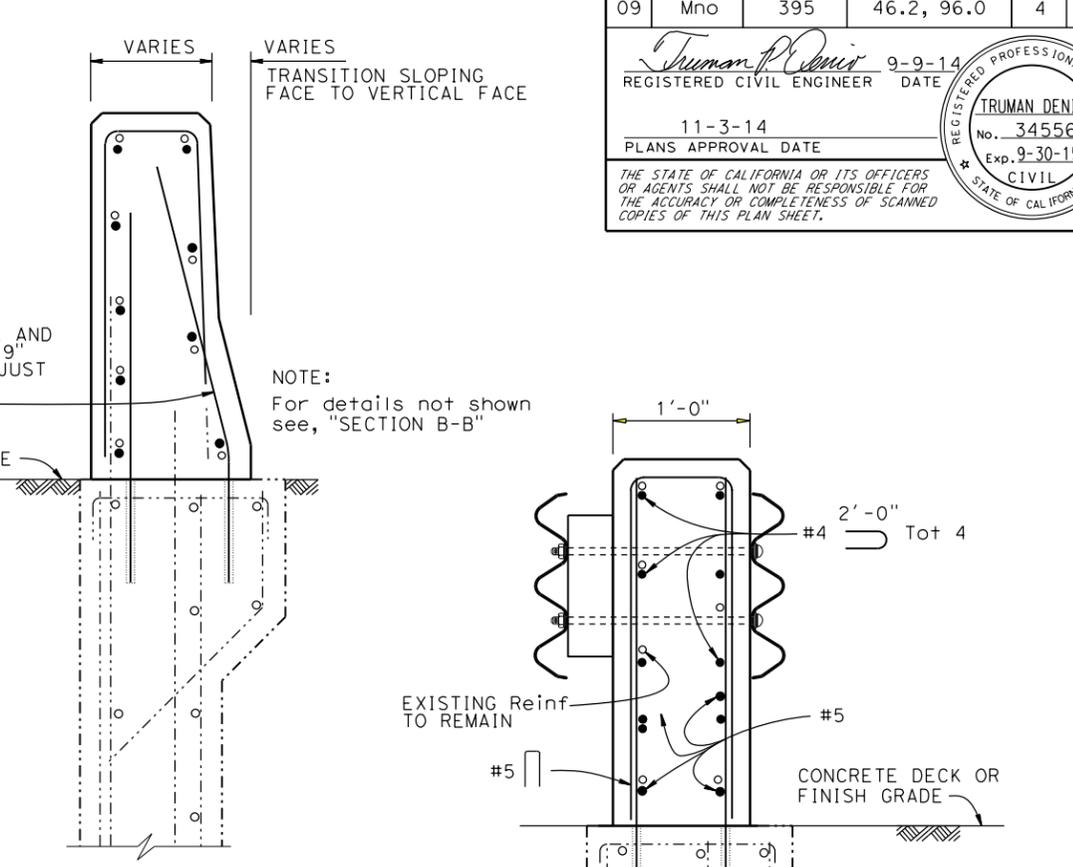
REGISTERED CIVIL ENGINEER	DATE 9-9-14
11-3-14	
PLANS APPROVAL DATE	
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>	



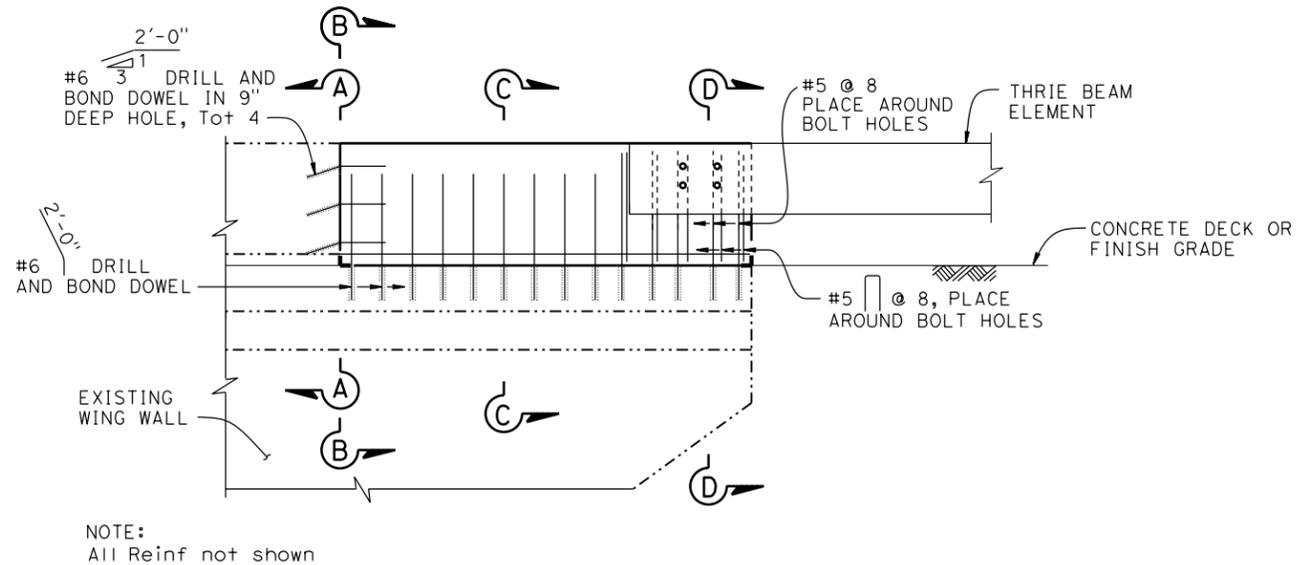
PLAN
1/2" = 1'-0"



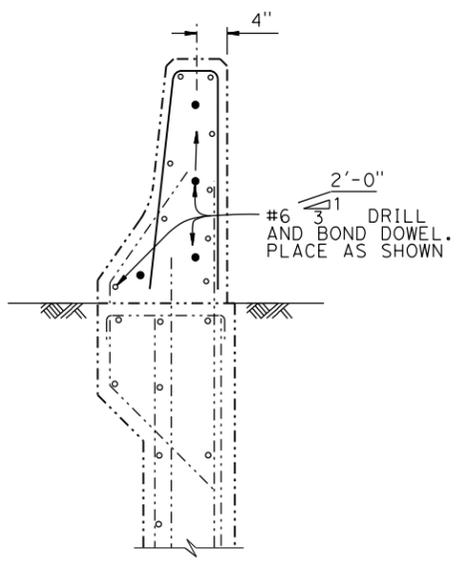
SECTION B-B
1/2" = 1'-0"



SECTION C-C
1/2" = 1'-0"



ELEVATION
1/2" = 1'-0"



SECTION A-A
1" = 1'-0"

- NOTES:**
1. Cut and remove the portion of Concrete Barrier Type 27 as required. Existing reinforcement to remain.
 2. Wingwall reinforcement to remain.
- LEGEND:**
- Indicates existing structure
 - Indicates new construction
 - ▨ Concrete removal
 - Indicates Existing Reinforcement

NOTE:
The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

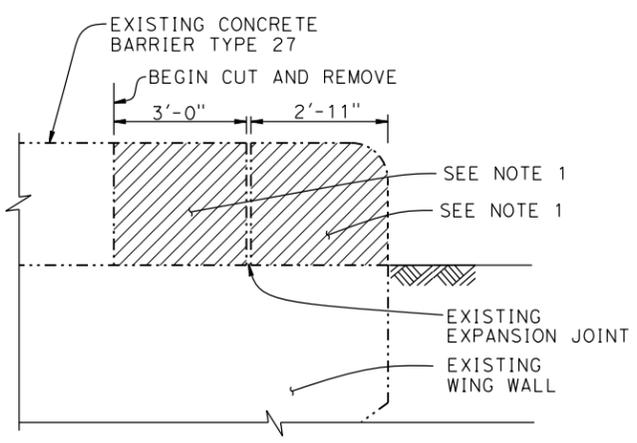
**CONCRETE BARRIER
LOCATION 1 PM 46.2
Rt, SB; Lt & Rt, NB**

**CONSTRUCTION DETAILS
NO SCALE
C-1**

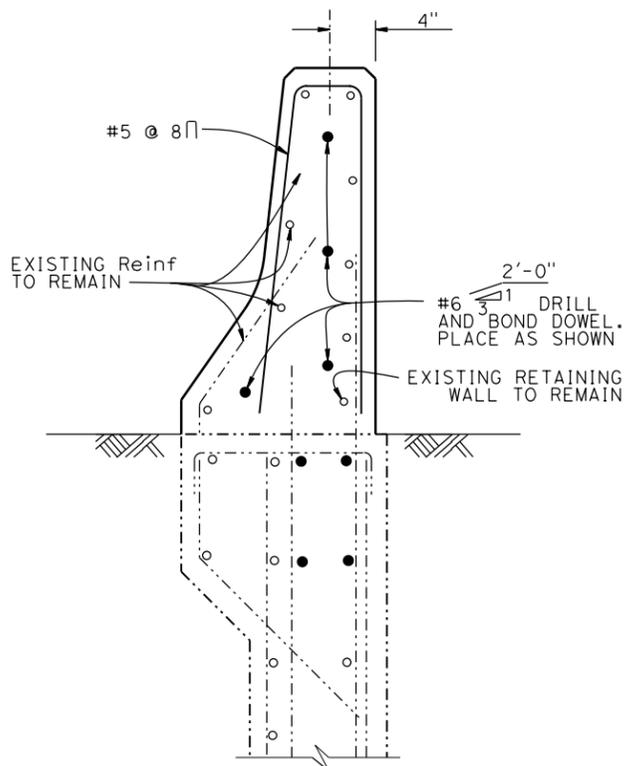
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans PROJECT COORDINATION
 FUNCTIONAL SUPERVISOR: TRUMAN DENIO
 CALCULATED/DESIGNED BY: TRUMAN DENIO
 CHECKED BY:
 REVISED BY: KONSTANTIN GREKOV
 DATE REVISED: TRUMAN DENIO

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mno	395	46.2, 96.0	5	33

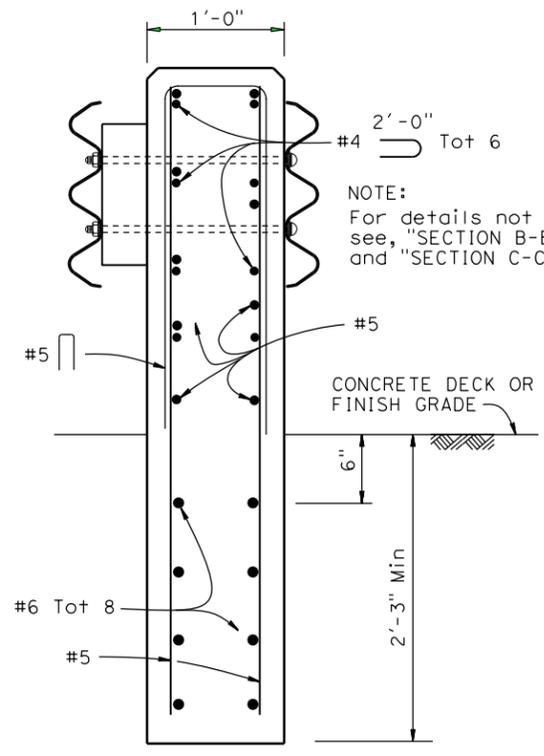
REGISTERED CIVIL ENGINEER	DATE 9-9-14
11-3-14	
PLANS APPROVAL DATE	
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>	



CONCRETE REMOVAL
1/2" = 1'-0"



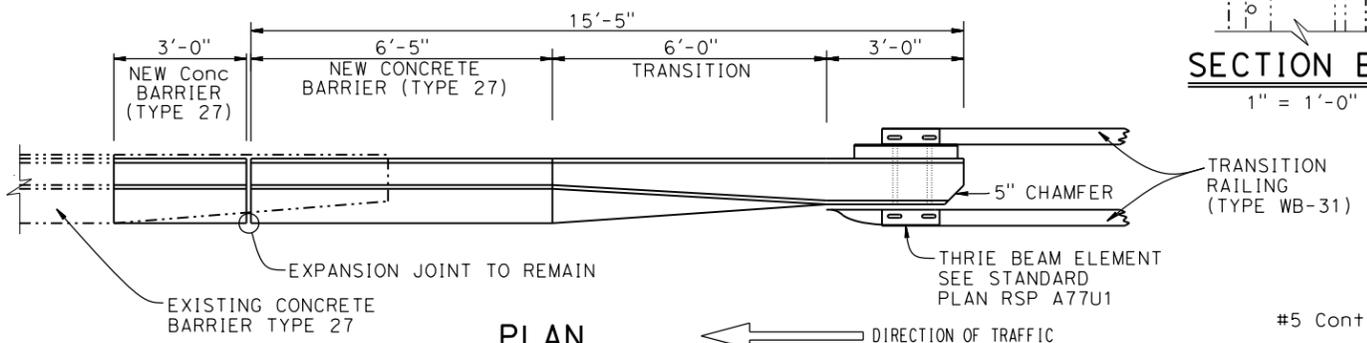
SECTION E-E
1" = 1'-0"



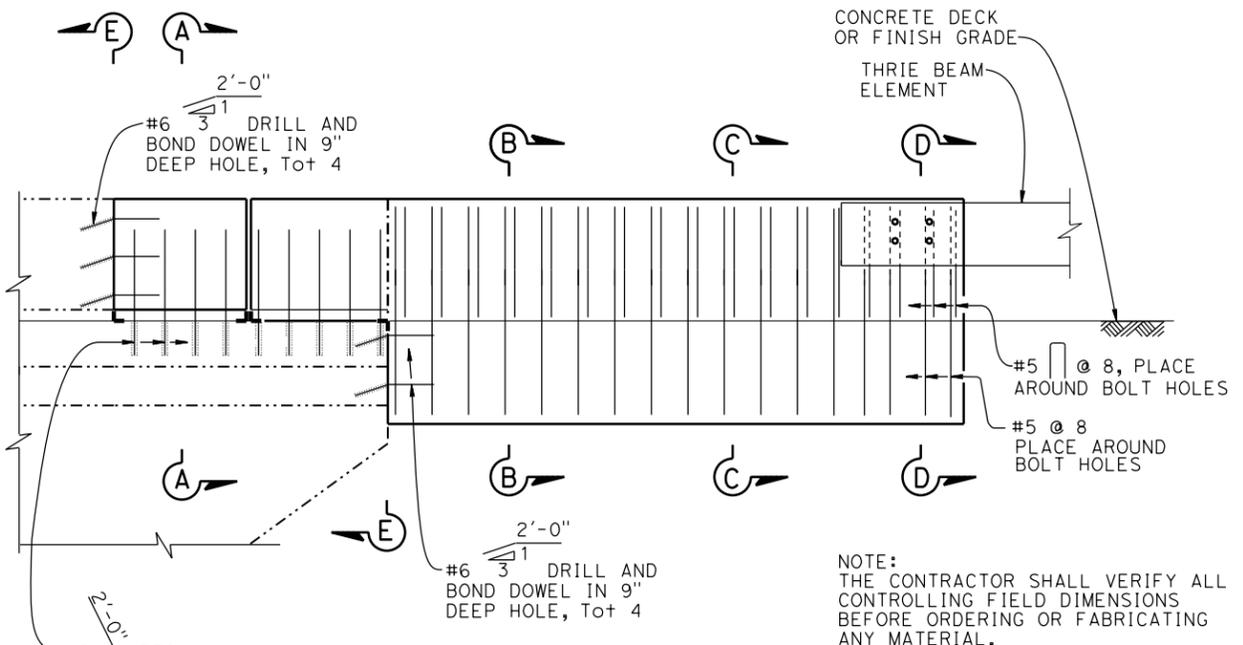
SECTION D-D
1/2" = 1'-0"

- LEGEND:**
- Indicates existing structure
 - Indicates new construction
 - ▨ Concrete removal
 - Indicates Existing Reinforcement

- NOTES:**
- Cut and remove the portion of Concrete Barrier Type 27. Existing reinforcement to remain as designated. Existing expansion joint to remain.
 - Wingwall reinforcement to remain.

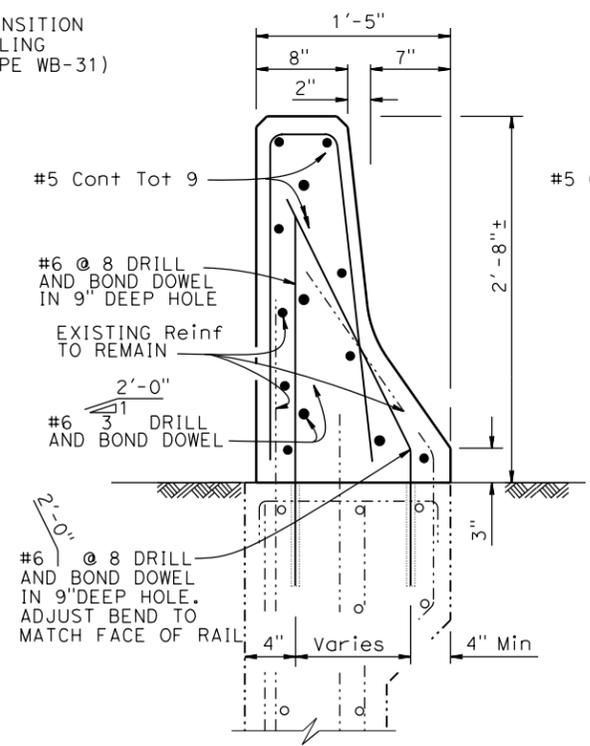


PLAN
1/2" = 1'-0"

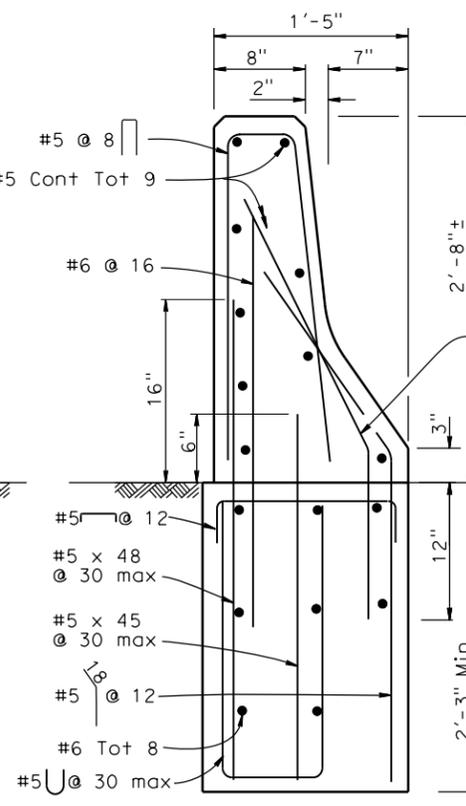


ELEVATION
1/2" = 1'-0"

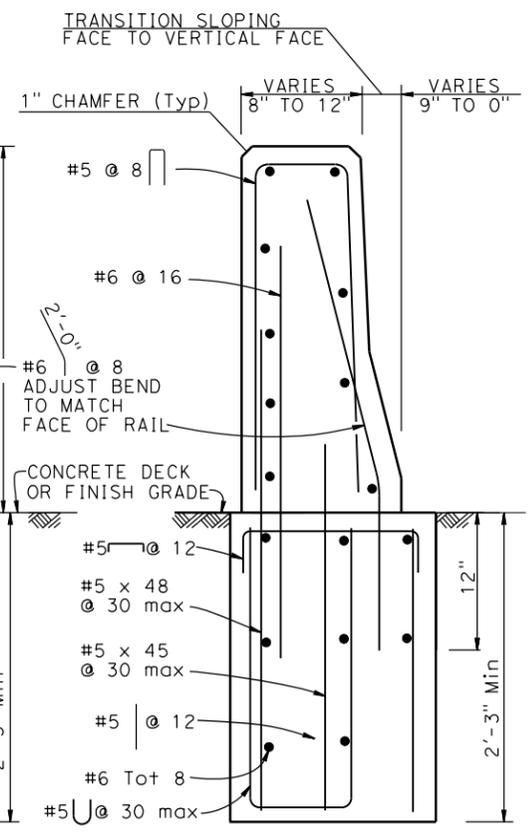
NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.



SECTION A-A
1/2" = 1'-0"



SECTION B-B
1/2" = 1'-0"



SECTION C-C
1/2" = 1'-0"

CONCRETE BARRIER
Sta 100+66 Lt, SB
LOCATION 1 PM 46.2

CONSTRUCTION DETAILS
C-2
NO SCALE

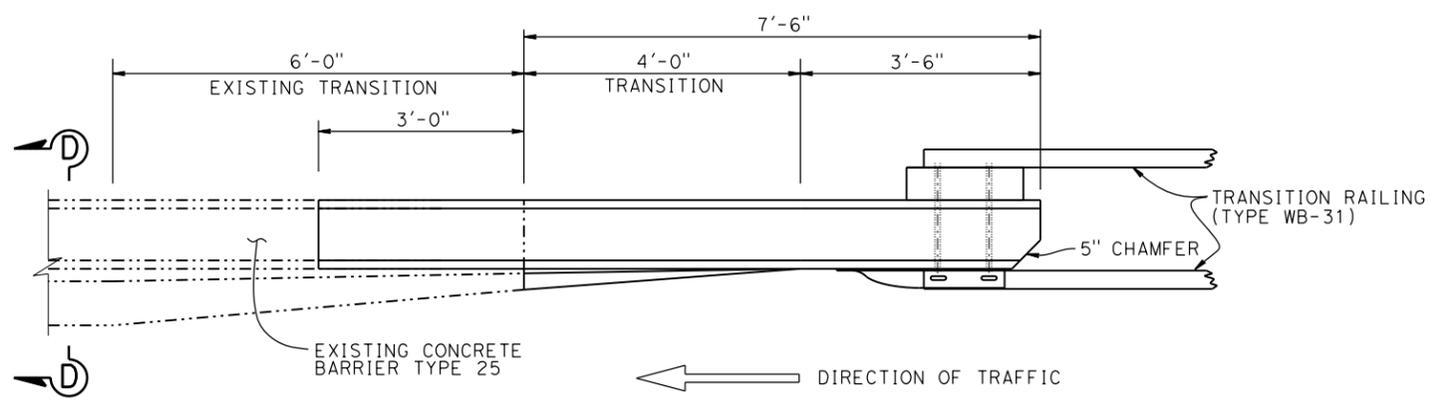
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans PROJECT COORDINATION
 FUNCTIONAL SUPERVISOR: TRUMAN DENIO
 CALCULATED/DESIGNED BY: TRUMAN DENIO
 CHECKED BY:
 REVISED BY: KONSTANTIN GREKOV
 DATE REVISED: TRUMAN DENIO

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mno	395	46.2, 96.0	6	33

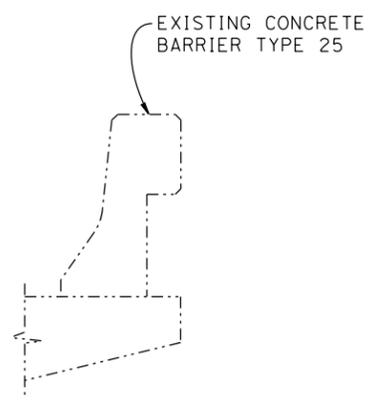
<i>Truman Denio</i>		9-9-14
REGISTERED CIVIL ENGINEER	DATE	
11-3-14		
PLANS APPROVAL DATE		

REGISTERED PROFESSIONAL ENGINEER	TRUMAN DENIO
No. 34556	Exp. 9-30-15
CIVIL	
STATE OF CALIFORNIA	

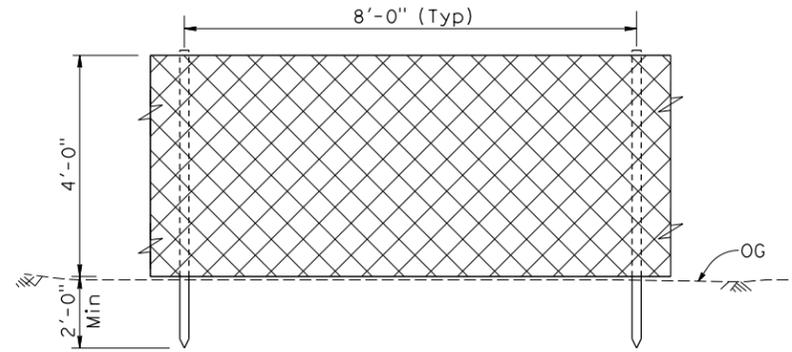
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



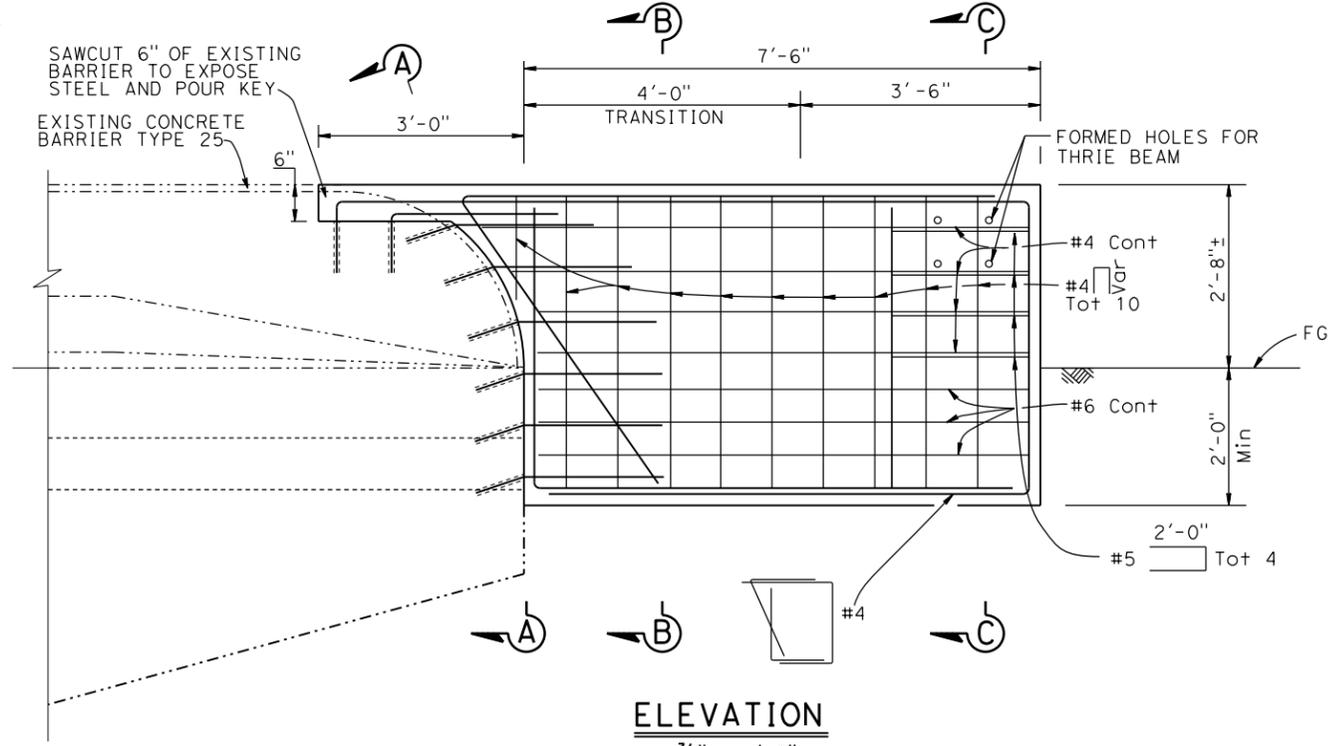
PLAN
3/4" = 1'-0"



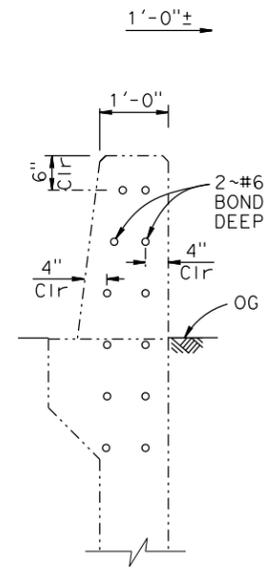
SECTION D-D
CONCRETE BARRIER TYPE 25
3/4" = 1'-0"



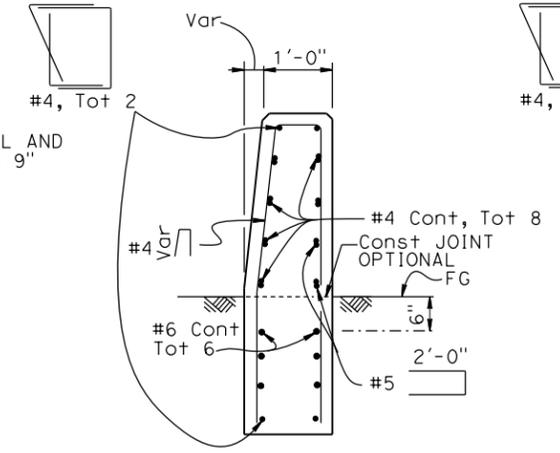
TEMPORARY FENCE
(TYPE ESA) DETAIL (TYPICAL)
(SELF SUPPORTING)



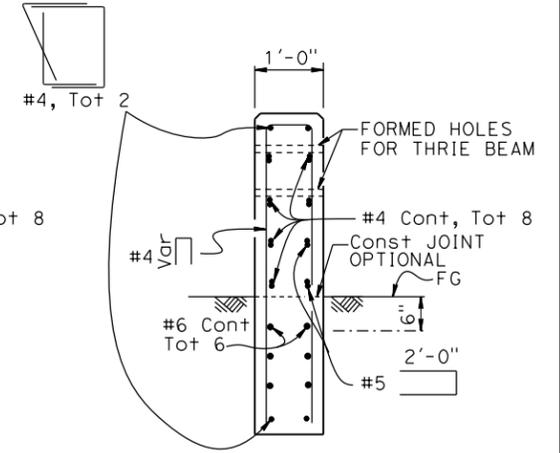
ELEVATION
3/4" = 1'-0"



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



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



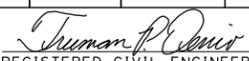
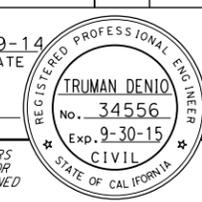
SECTION C-C
3/4" = 1'-0"

NOTE:
The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

CONCRETE BARRIER
LOCATION 2 PM 96.0

CONSTRUCTION DETAILS
NO SCALE
C-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - PROJECT COORDINATION
 FUNCTIONAL SUPERVISOR: TRUMAN DENIO
 CALCULATED/DESIGNED BY: TRUMAN DENIO
 CHECKED BY:
 REVISED BY: KONSTANTIN GREKOV
 DATE REVISED: TRUMAN DENIO

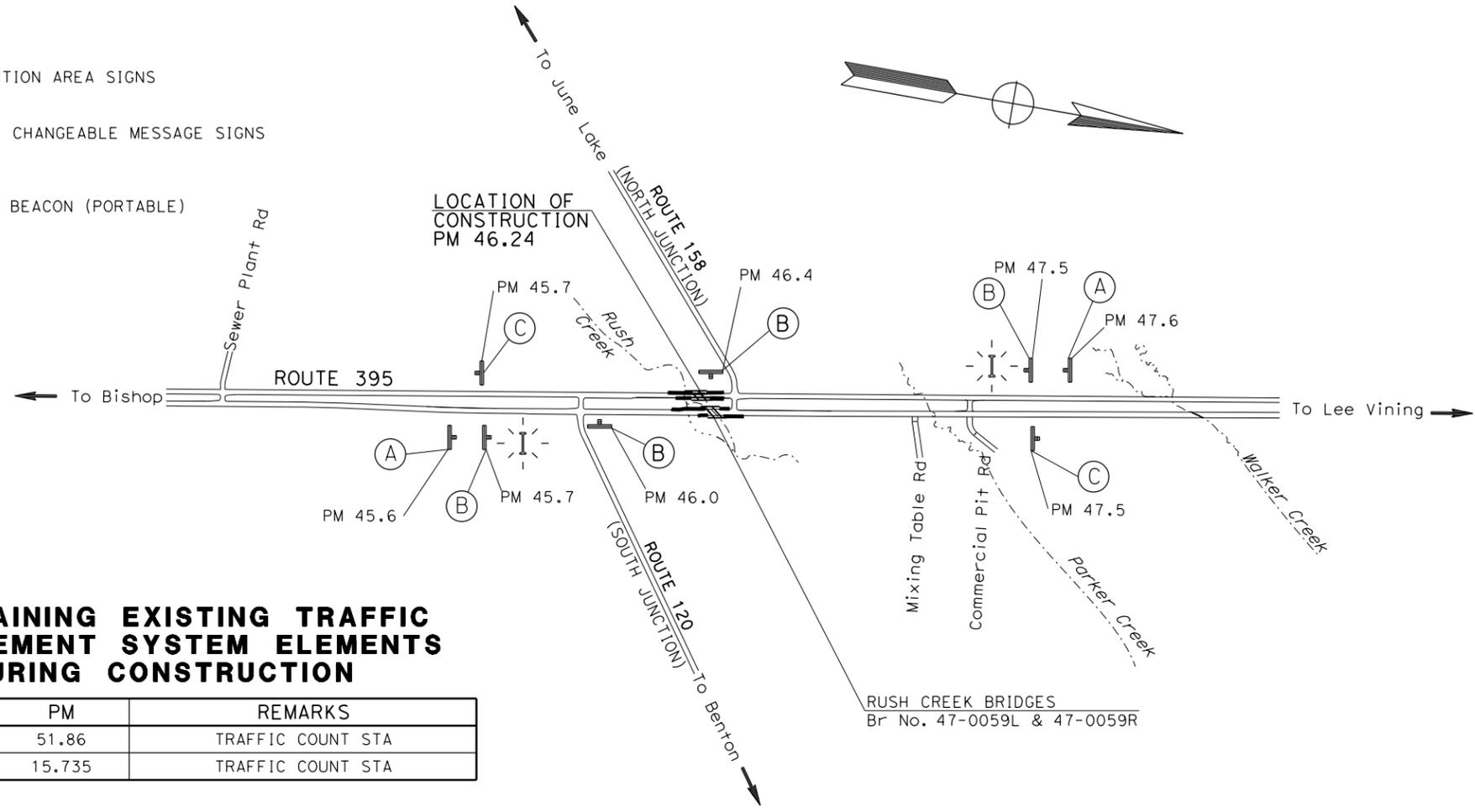
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mno	395	46.2, 96.0	7	33
 REGISTERED CIVIL ENGINEER DATE 9-9-14					
11-3-14 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

NOTES:

1. LOCATIONS OF CONSTRUCTION AREA SIGNS SHOWN ARE APPROXIMATE. EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.
2. FOR ADDITIONAL CONSTRUCTION AREA SIGNS, SEE SHEETS CS-2, AND SC-5

LEGEND:

-  - CONSTRUCTION AREA SIGNS
-  - PORTABLE CHANGEABLE MESSAGE SIGNS
-  - FLASHING BEACON (PORTABLE)



PORTABLE CHANGEABLE MESSAGE SIGNS

STAGE 1			
SOUTHBOUND TRAFFIC		NORTHBOUND TRAFFIC	
FIRST FRAME	SECOND FRAME	FIRST FRAME	SECOND FRAME
REDUCE SPEED	LEFT LANE CLOSED AHEAD	ROAD WORK AHEAD	REDUCE SPEED
STAGE 2			
SOUTHBOUND TRAFFIC		NORTHBOUND TRAFFIC	
FIRST FRAME	SECOND FRAME	FIRST FRAME	SECOND FRAME
ROAD WORK AHEAD	SHOULDER CLOSED AHEAD	ROAD WORK AHEAD	SHOULDER CLOSED AHEAD

NOTES:

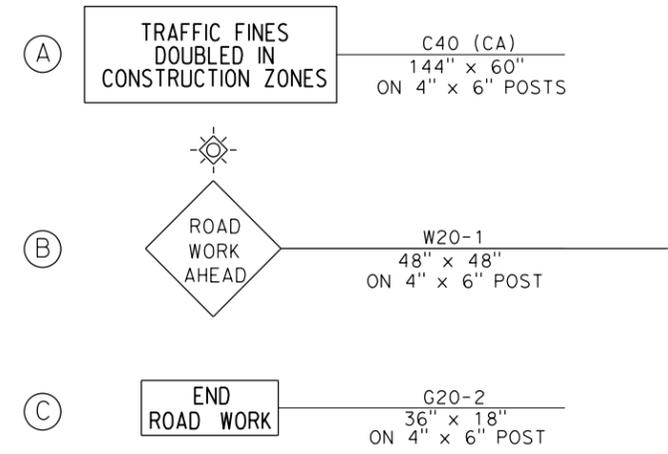
1. PORTABLE CHANGEABLE MESSAGE SIGN LOCATIONS TO BE CONFIRMED BY THE ENGINEER BEFORE ACTUAL DETOUR.
2. ALTERNATE MESSAGES MUST BE APPROVED BY THE ENGINEER.
3. MESSAGE MAY BE ALTERED BY THE ENGINEER.
4. WHEN CONSTRUCTION OPERATIONS ARE NOT ACTIVELY IN PROGRESS, PORTABLE CHANGEABLE MESSAGE SIGNS SHALL NOT DISPLAY A MESSAGE UNLESS DIRECTED BY THE ENGINEER.

MAINTAINING EXISTING TRAFFIC MANAGEMENT SYSTEM ELEMENTS DURING CONSTRUCTION

ROUTE	PM	REMARKS
120	51.86	TRAFFIC COUNT STA
158	15.735	TRAFFIC COUNT STA

STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

TYPE	SIGN PANEL		POSTS						
	LEFT	RIGHT	CODE	SIZE	MESSAGE	SIZE	SINGLE	DOUBLE	NUMBER OF SIGNS
(A)	X		C40(CA)	144" x 60"	TRAFFIC FINES DOUBLED IN CONSTRUCTION ZONES	4" x 6"		X	1
(B)	X		W20-1	48" x 48"	ROAD WORK AHEAD	4" x 6"	X		1
(C)	X		G20-2	36" x 18"	END ROAD WORK	4" x 6"	X		1
(B)		X	W20-1	48" x 48"	ROAD WORK AHEAD	4" x 6"	X		1
(B)	X		W20-1	48" x 48"	ROAD WORK AHEAD	4" x 6"	X		1
(C)		X	G20-2	36" x 18"	END ROAD WORK	4" x 6"	X		1
(B)	X		W20-1	48" x 48"	ROAD WORK AHEAD	4" x 6"	X		1
(A)	X		C40(CA)	144" x 60"	TRAFFIC FINES DOUBLED IN CONSTRUCTION ZONES	4" x 6"		X	1



LOCATION 1 PM 46.2

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY.

CONSTRUCTION AREA SIGNS CS-1
NO SCALE

LAST REVISION DATE PLOTTED => 10/31/2014 09-09-14 TIME PLOTTED => 9:29:40 AM

NOTES:

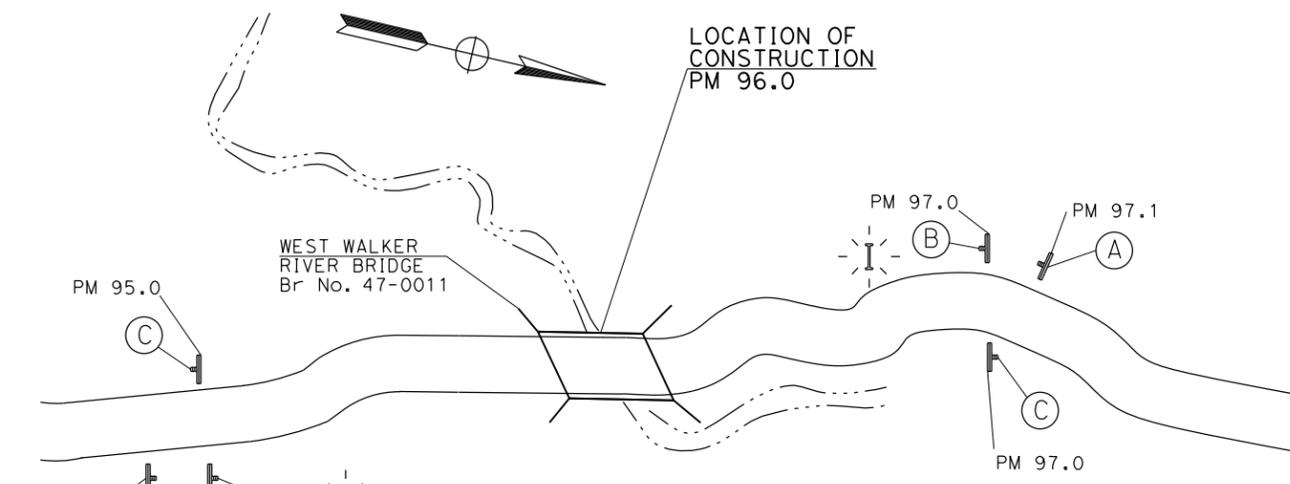
1. LOCATIONS OF CONSTRUCTION AREA SIGNS SHOWN ARE APPROXIMATE. EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.
2. FOR ADDITIONAL CONSTRUCTION AREA SIGNS, SEE SHEETS CS-1, AND SC-5

PORTABLE CHANGEABLE MESSAGE SIGNS

STAGE 1			
SOUTHBOUND TRAFFIC		NORTHBOUND TRAFFIC	
FIRST FRAME	SECOND FRAME	FIRST FRAME	SECOND FRAME
REDUCE SPEED	SHOULDER CLOSED AHEAD	ROAD WORK AHEAD	REDUCE SPEED
STAGE 2			
SOUTHBOUND TRAFFIC		NORTHBOUND TRAFFIC	
FIRST FRAME	SECOND FRAME	FIRST FRAME	SECOND FRAME
ROAD WORK AHEAD	REDUCE SPEED	ROAD WORK AHEAD	SHOULDER CLOSED AHEAD

NOTES:

1. PORTABLE CHANGEABLE MESSAGE SIGN LOCATIONS TO BE CONFIRMED BY THE ENGINEER BEFORE ACTUAL DETOUR.
2. ALTERNATE MESSAGES MUST BE APPROVED BY THE ENGINEER.
3. MESSAGE MAY BE ALTERED BY THE ENGINEER.
4. WHEN CONSTRUCTION OPERATIONS ARE NOT ACTIVELY IN PROGRESS, PORTABLE CHANGEABLE MESSAGE SIGNS SHALL NOT DISPLAY A MESSAGE UNLESS DIRECTED BY THE ENGINEER.



DETAIL A

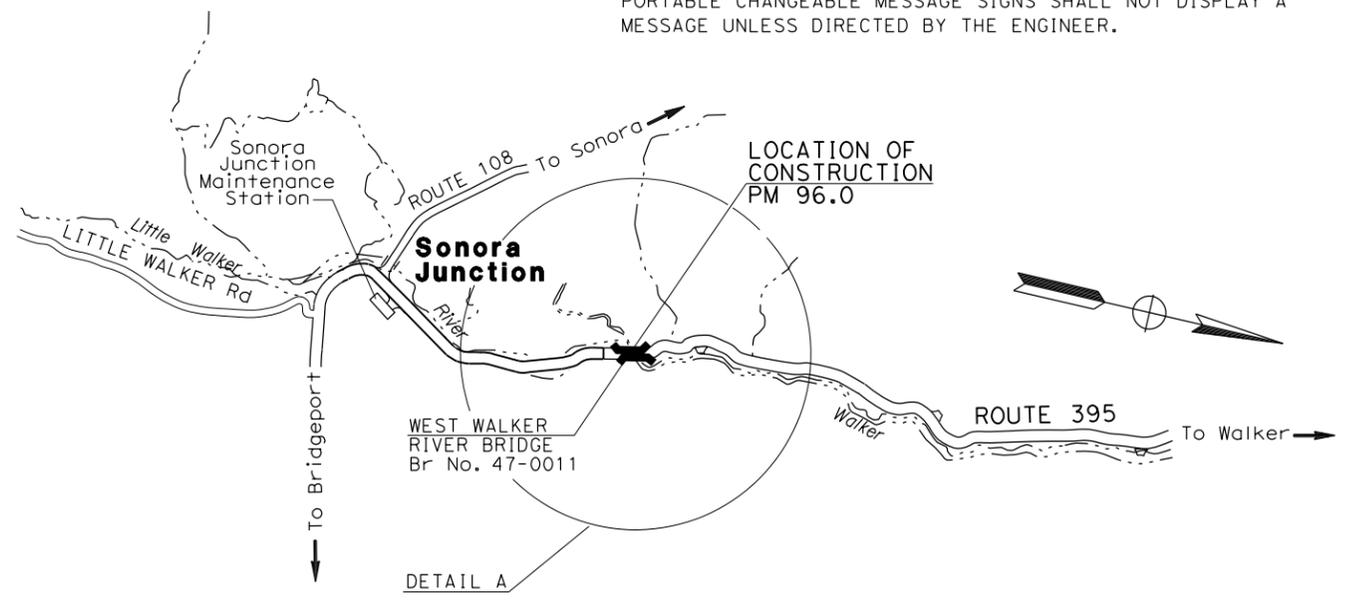
STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

TYPE	SIGN PANEL		POSTS						
	LEFT	RIGHT	CODE	SIZE	MESSAGE	SIZE	SINGLE	DOUBLE	NUMBER OF SIGNS
(A)	X		C40(CA)	144" x 60"	TRAFFIC FINES DOUBLED IN CONSTRUCTION ZONES	4" x 6"	X		1
(B)		X	W20-1	48" x 48"	ROAD WORK AHEAD	4" x 6"		X	1
(C)	X		G20-2	36" x 18"	END ROAD WORK	4" x 6"	X		1
(C)		X	G20-2	36" x 18"	END ROAD WORK	4" x 6"		X	1
(B)	X		W20-1	48" x 48"	ROAD WORK AHEAD	4" x 6"	X		1
(A)	X		C40(CA)	144" x 60"	TRAFFIC FINES DOUBLED IN CONSTRUCTION ZONES	4" x 6"	X		1

(A) **TRAFFIC FINES DOUBLED IN CONSTRUCTION ZONES**
 C40 (CA)
 144" x 60"
 ON 4" x 6" POSTS

(B) **ROAD WORK AHEAD**
 W20-1
 48" x 48"
 ON 4" x 6" POST

(C) **END ROAD WORK**
 G20-2
 36" x 18"
 ON 4" x 6" POST



LOCATION 2 PM 96.0

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY.

CONSTRUCTION AREA SIGNS CS-2
NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - PROJECT COORDINATION
 LAST REVISION: 09-09-14 DATE PLOTTED => 10/31/2014 TIME PLOTTED => 9:32:21 AM

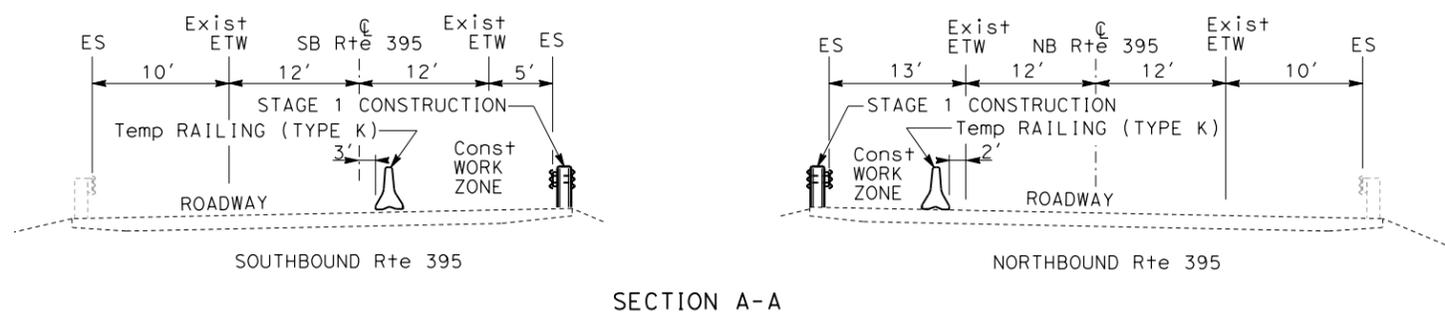
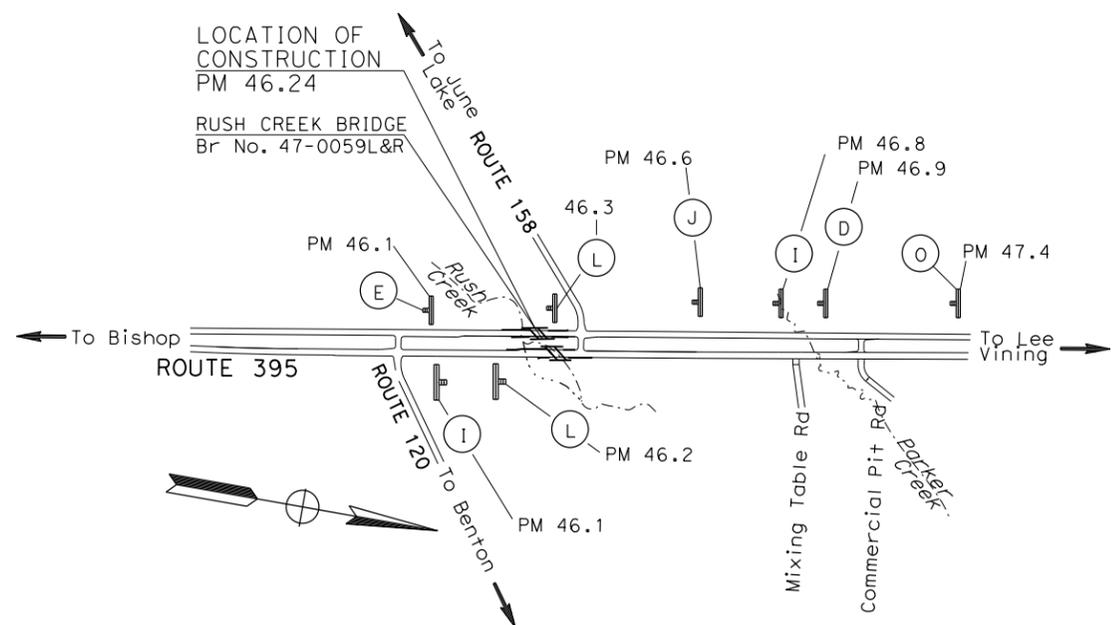
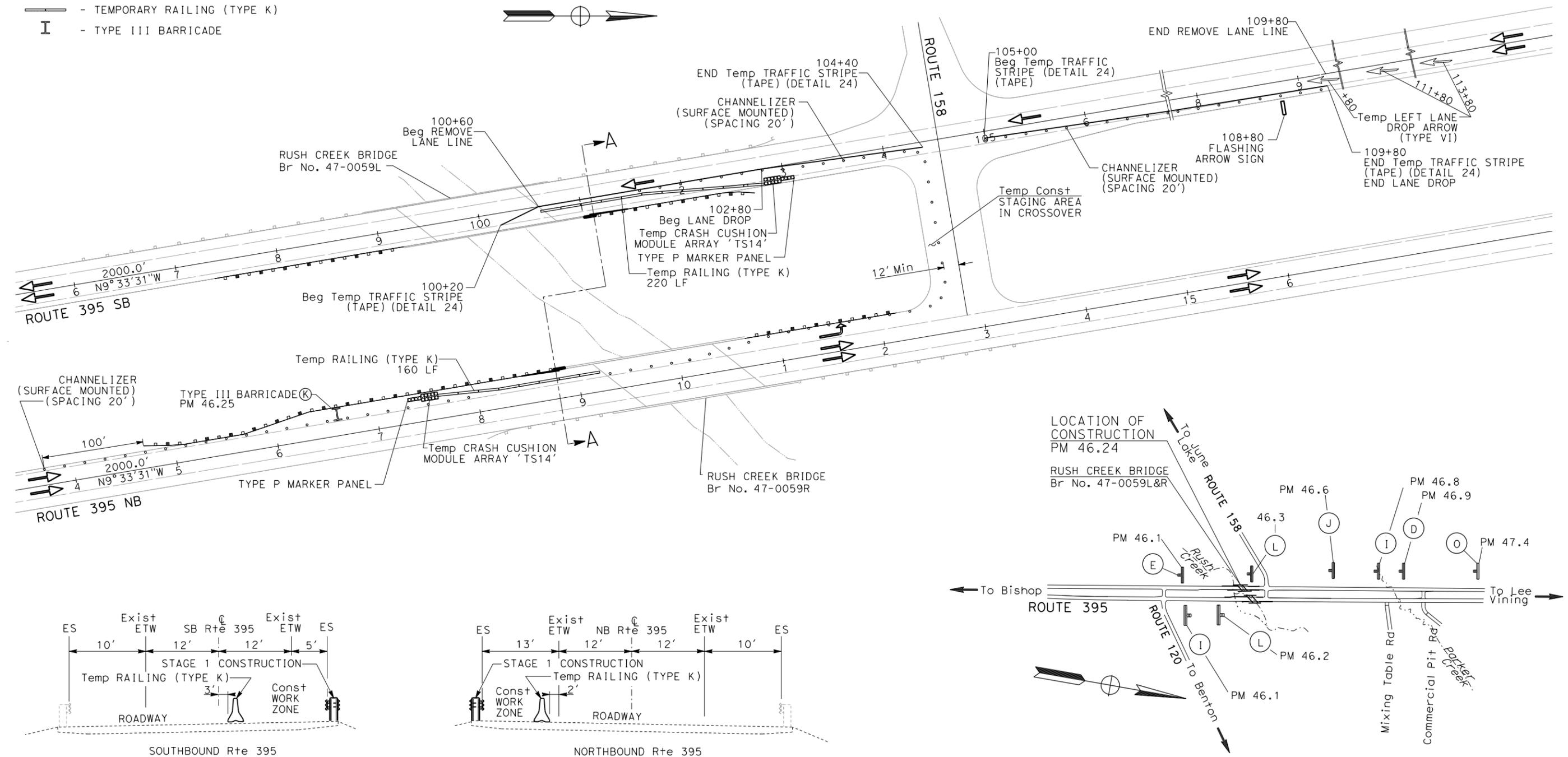
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mno	395	46.2, 96.0	9	33

REGISTERED CIVIL ENGINEER	DATE 9-9-14
PLANS APPROVAL DATE 11-3-14	
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>	

- NOTES:**
1. EXACT LOCATIONS OF CONSTRUCTION AREA SIGNS TO BE DETERMINED BY THE ENGINEER.
 2. FOR SIGN DETAILS SEE SHEET SC-5
 3. FOR ADDITIONAL CONSTRUCTION AREA SIGNS SEE CONSTRUCTION AREA SIGNS SHEETS.

- LEGEND:**
- ➔ - TRAFFIC FLOW DIRECTION
 - - CHANNELIZER (SURFACE MOUNTED)
 - (X) - STATIONARY MOUNTED CONSTRUCTION AREA SIGN
 - - TEMPORARY RAILING (TYPE K)
 - I - TYPE III BARRICADE

- STAGE 1**
1. INSTALL TEMPORARY RAILING (TYPE K), CRASH CUSHIONS & CHANNELIZERS.
 2. PLACE STAGE 1 TRAFFIC HANDLING.
 3. CUT & REMOVE 6' EXIST CONCRETE BARRIER.
 4. CONSTRUCT NEW TRANSITION CONCRETE BARRIER (TYPE 27).
 5. INSTALL "WB-31" TRANSITION RAILING.
 6. REPLACE EXIST GUARDRAIL TO MEET THE CURRENT STANDARDS.
 7. REMOVE STAGE 1 TRAFFIC HANDLING.
 8. REMOVE TEMPORARY RAILING (TYPE K), CRASH CUSHIONS & CHANNELIZERS.



LOCATION 1 STAGE 1

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING ONLY.

STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN
NO SCALE
SC-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - PROJECT COORDINATION

FUNCTIONAL SUPERVISOR: TRUMAN DENIO
 CALCULATED/DESIGNED BY: KONSTANTIN GREKOV
 CHECKED BY: TRUMAN DENIO
 REVISIONS: REVISED BY: TRUMAN DENIO, DATE: 11-3-14

LAST REVISION: DATE PLOTTED => 10/31/2014
 09-09-14 TIME PLOTTED => 9:59:35 AM

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mno	395	46.2, 96.0	10	33

<i>Truman Denio</i>		9-9-14
REGISTERED CIVIL ENGINEER	DATE	
11-3-14		
PLANS APPROVAL DATE		

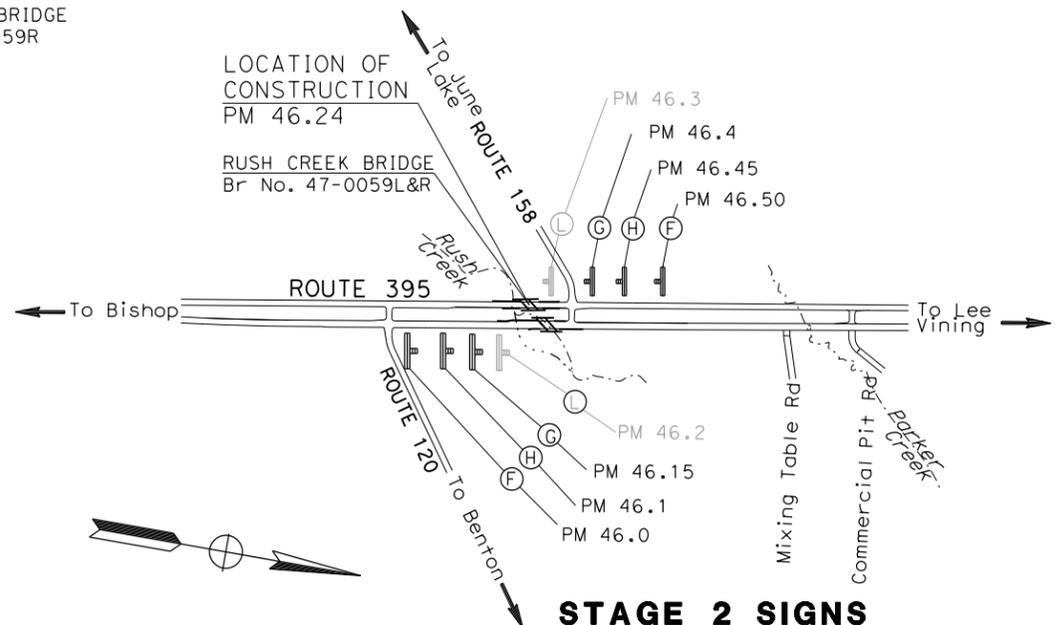
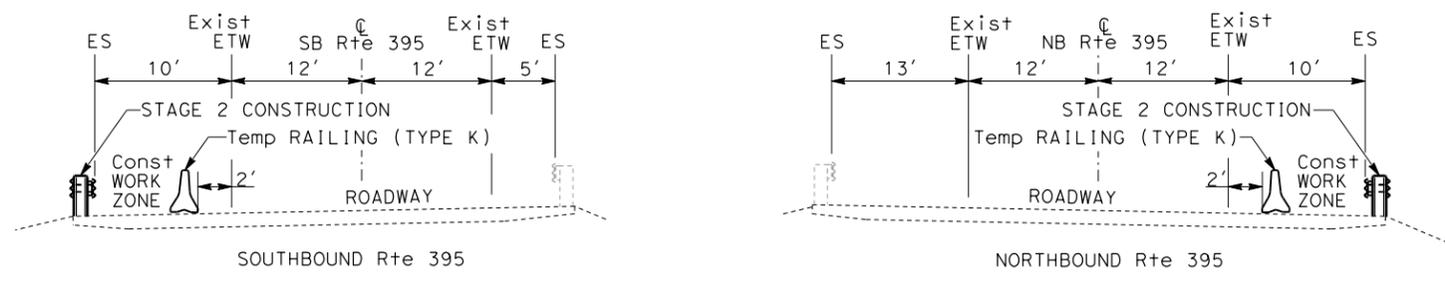
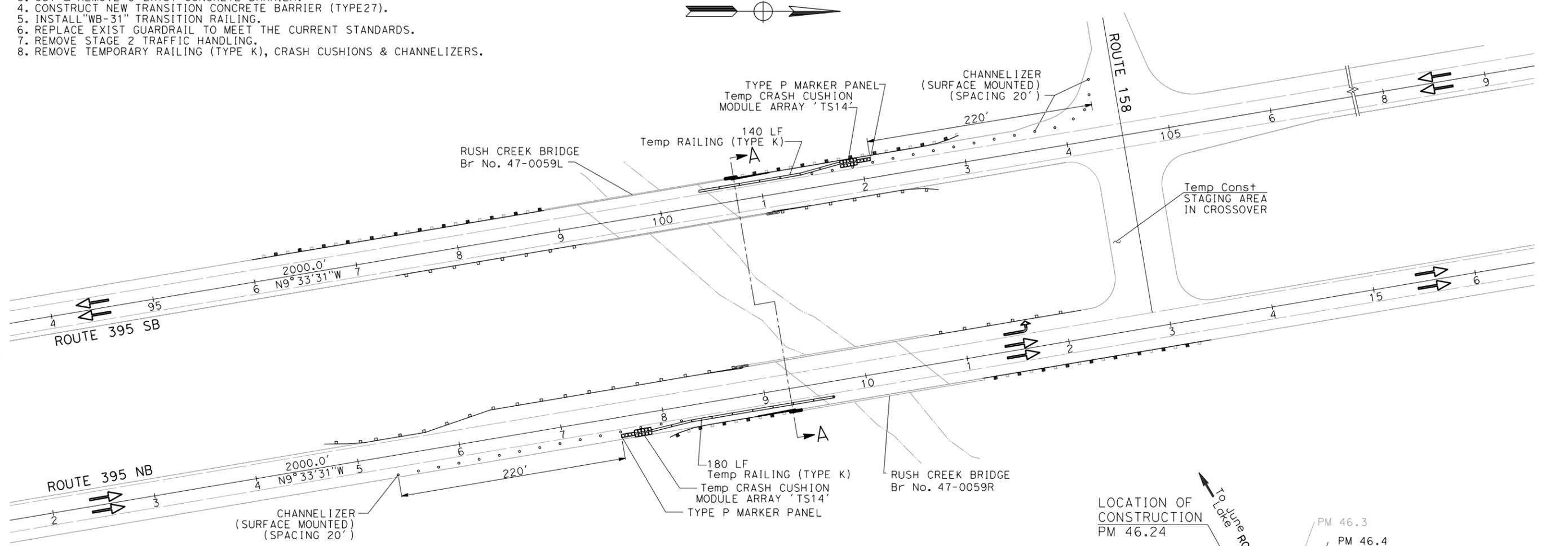
REGISTERED PROFESSIONAL ENGINEER	TRUMAN DENIO
No. 34556	Exp. 9-30-15
CIVIL	
STATE OF CALIFORNIA	

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.

- NOTES:**
1. EXACT LOCATIONS OF CONSTRUCTION AREA SIGNS TO BE DETERMINED BY THE ENGINEER.
 2. FOR SIGN DETAILS SEE SHEET SC-5

- STAGE 2**
1. INSTALL TEMPORARY RAILING (TYPE K), CRASH CUSHIONS & CHANNELIZERS.
 2. PLACE STAGE 2 TRAFFIC HANDLING.
 3. CUT & REMOVE 6' EXIST CONCRETE BARRIER.
 4. CONSTRUCT NEW TRANSITION CONCRETE BARRIER (TYPE 27).
 5. INSTALL "WB-31" TRANSITION RAILING.
 6. REPLACE EXIST GUARDRAIL TO MEET THE CURRENT STANDARDS.
 7. REMOVE STAGE 2 TRAFFIC HANDLING.
 8. REMOVE TEMPORARY RAILING (TYPE K), CRASH CUSHIONS & CHANNELIZERS.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	PROJECT COORDINATION	FUNCTIONAL SUPERVISOR	TRUMAN DENIO	CALCULATED-DESIGNED BY	TRUMAN DENIO	REVISOR	KONSTANTIN GREKOV	REVISOR	TRUMAN DENIO	DATE	05-29-13
--	----------------------	-----------------------	--------------	------------------------	--------------	---------	-------------------	---------	--------------	------	----------



LOCATION 1 STAGE 2

APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING ONLY.

STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN
NO SCALE
SC-2

LAST REVISION DATE PLOTTED => 10/30/2014 09-09-14 TIME PLOTTED => 4:22:12 PM

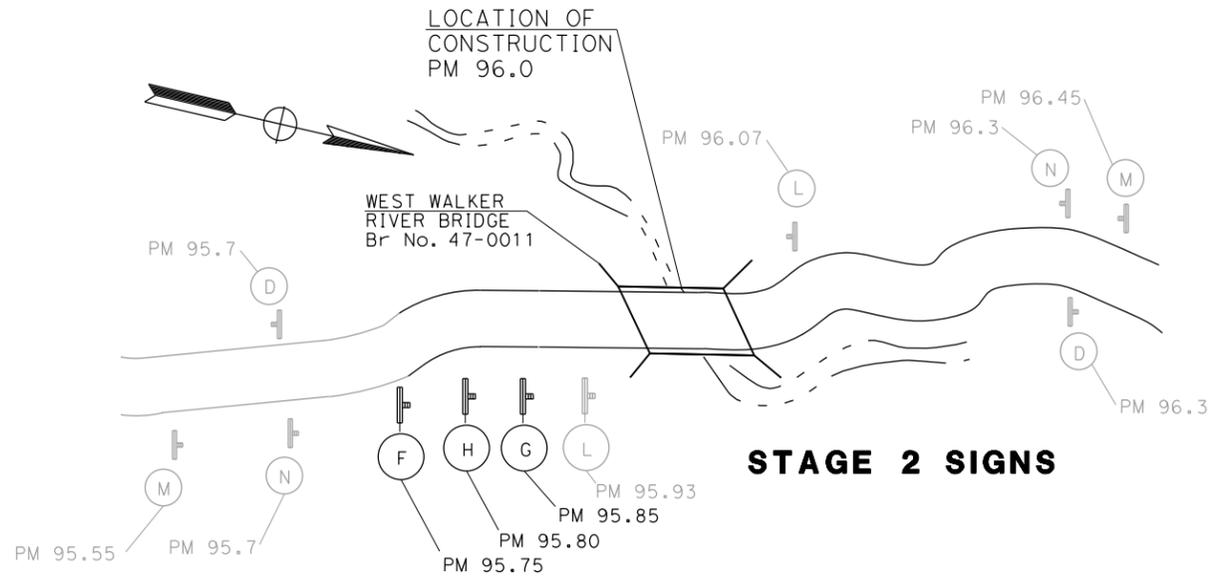
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mno	395	46.2, 96.0	12	33

<i>Truman Denio</i>		9-9-14
REGISTERED CIVIL ENGINEER	DATE	
11-3-14		
PLANS APPROVAL DATE		

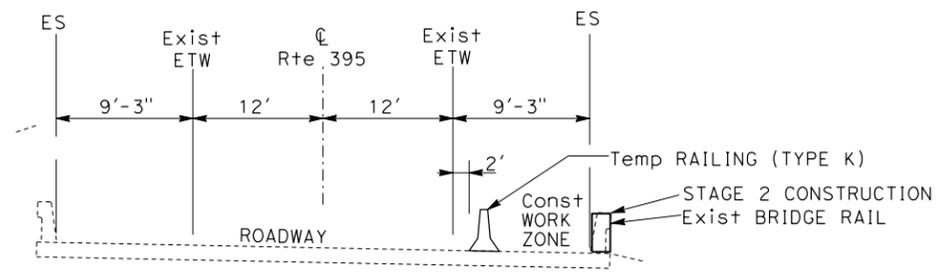
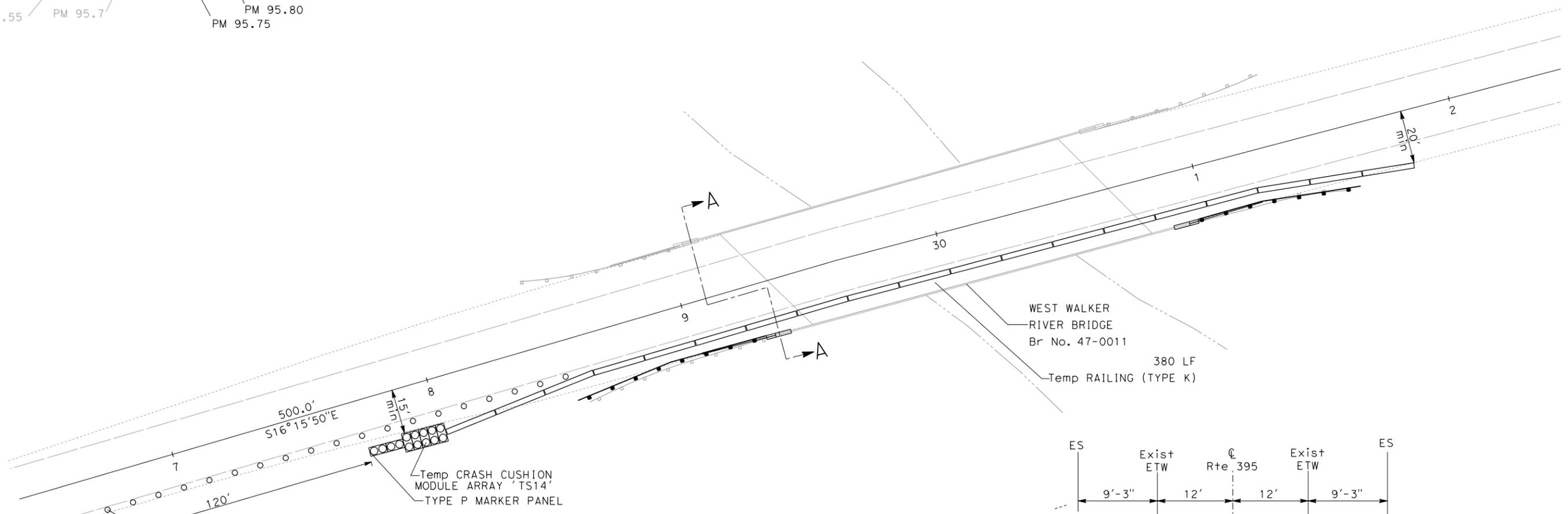
REGISTERED PROFESSIONAL ENGINEER	TRUMAN DENIO
No. 34556	Exp. 9-30-15
CIVIL	
STATE OF CALIFORNIA	

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.

NOTES:
 1. EXACT LOCATIONS OF CONSTRUCTION AREA SIGNS TO BE DETERMINED BY THE ENGINEER.
 2. FOR SIGN DETAILS SEE SHEET SC-5



STAGE 2 SIGNS



- STAGE 2**
1. INSTALL TEMPORARY RAILING (TYPE K), CRASH CUSHIONS & CHANNELIZERS.
 2. PLACE STAGE 2 TRAFFIC HANDLING.
 3. REMOVE Exist "W" TRANSITION RAILING.
 4. CONSTRUCT CONCRETE BARRIER TRANSITION.
 5. INSTALL "WB-31" TRANSITION RAILING.
 6. REPLACE Exist GUARDRAIL & FLARED TERMINAL SYSTEM.
 7. REMOVE STAGE TRAFFIC HANDLING.
 8. REMOVE TEMPORARY RAILING (TYPE K), CRASH CUSHIONS & CHANNELIZERS.

LOCATION 2 STAGE 2

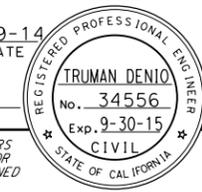
APPROVED FOR STAGE CONSTRUCTION AND TRAFFIC HANDLING ONLY.

STAGE CONSTRUCTION AND TRAFFIC HANDLING PLAN SC-4
 NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	TRUMAN DENIO
Caltrans PROJECT COORDINATION	CALCULATED-DESIGNED BY	
	CHECKED BY	
	REVISOR	TRUMAN DENIO
	DATE REVISED	05-30-13
	RK	

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mno	395	46.2, 96.0	14	33


 REGISTERED CIVIL ENGINEER DATE 9-9-14
 11-3-14
 PLANS APPROVAL DATE

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

TEMPORARY FENCE (TYPE ESA)

LOCATION DESCRIPTION	STA	SIDE	LF
LOCATION 1 NB APPROACH	7+50 TO 9+00	L+	150
	8+20 TO 9+70	R+	150
LOCATION 1 SB APPROACH	100+50 TO 102+00	L+	150
	100+90 TO 102+40	R+	150
LOCATION 1 STAGING AREA	12+44 NB;104+15 SB		150
LOCATION 2 APPROACH	28+20 TO 29+20	L+	100
	29+35	R+	250
LOCATION 2 DEPARTURE	30+60	L+	200
	30+90 TO 31+70	R+	100
TOTAL			1400

TEMPORARY RAILING (TYPE K)

LOCATION DESCRIPTION	STA	LF
LOCATION 1 STAGE 1	NB 7+60 TO 9+20	L+ 160
	SB 100+60 TO 102+80	R+ 220
LOCATION 1 STAGE 2	NB 7+90 TO 9+70	R+ 180
	SB 100+40 TO 101+80	L+ 140
LOCATION 2 STAGE 1	SB 28+20 TO 31+80	L+ 360
LOCATION 2 STAGE 2	NB 28+00 TO 31+80	R+ 380
TOTAL		1440

CHANNELIZER (SURFACE MOUNTED)

LOCATION DESCRIPTION	STA	LF
LOCATION 1 STAGE 1	NB 3+70 TO 12+70	L+ 45
	SB 101+60 TO 104+40	R+ 19
LOCATION 1 STAGE 2	SB 105+00 TO 109+80	R+ 25
	NB 5+35 TO 8+15	L+ 15
LOCATION 1 STAGE 2	SB 101+50 TO 104+30	L+ 17
LOCATION 2 STAGE 1	SB 31+40 TO 33+30	L+ 20
LOCATION 2 STAGE 2	NB 26+50 TO 28+50	R+ 21
TOTAL		162

FLASHING BEACON (PORTABLE)

LOCATION DESCRIPTION	EA
SEE SHEET CS-1	4
SEE SHEET CS-2	2
TOTAL	6

TEMPORARY WATER POLLUTION CONTROL

LOCATION DESCRIPTION	Temp Conc WASH OUT	TEMPORARY FIBER ROLL		
	No. (N)	STA	SIDE	LF
LOCATION 1 NB APPROACH	1	8+20 TO 9+00	L+	150
		9+00 TO 10+70	R+	150
LOCATION 1 SB APPROACH	1	100+50 TO 101+35	L+	150
		100+90 TO 101+50	R+	150
LOCATION 2 APPROACH	1	28+30 TO 29+20	L+	100
		29+40	R+	50
LOCATION 2 DEPARTURE	1	30+50 TO 30+65	L+	50
		30+90 TO 31+80	R+	100
TOTAL				900

TEMPORARY PAVEMENT MARKING (TAPE)

LOCATION 1 STAGE 1 DESCRIPTION	SQFT
LEFT LANE DROP ARROW TYPE VI, STA 109+80	42
LEFT LANE DROP ARROW TYPE VI, STA 111+80	42
LEFT LANE DROP ARROW TYPE VI, STA 113+80	42
TOTAL	126

TEMPORARY TRAFFIC STRIPE (TAPE)

LOCATION 1 STAGE 1	DETAIL 24
	LF
Sta 100+20 TO 104+40	420
Sta 105+00 TO 109+80	480
TOTAL	900

TREATED WOOD WASTE

LOCATION DESCRIPTION	WOOD POSTS & WOOD BLOCKS		
	EA(N)	LB	
1 NB	APPROACH L+	67	5,153.8
	APPROACH R+	25	2,287.2
	DEPARTURE L+	25	1,638.1
	DEPARTURE R+	37	2,457.1
1 SB	APPROACH L+	37	3,106.2
	APPROACH R+	31	2,696.7
	DEPARTURE L+	47	3,139.7
	DEPARTURE R+	31	2,047.6
2 NB	APPROACH R+	15	1,604.6
	DEPARTURE R+	13	1,468.1
	APPROACH L+	13	1,468.1
	DEPARTURE L+	13	1,468.1
TOTAL			28,535.5

REMOVE PAINTED TRAFFIC STRIPE

LOCATION 1 STAGE 1	LF
Sta 100+60 TO 109+80	920
TOTAL	920

TEMPORARY CRASH CUSHION MODULE

LOCATION DESCRIPTION	STA	EA
LOCATION 1 STAGE 1	NB 7+30 TO 7+60	L+ 14
LOCATION 1 STAGE 1	SB 102+80 TO 103+10	R+ 14
LOCATION 1 STAGE 2	NB 7+60 TO 7+90	R+ 14
LOCATION 1 STAGE 2	SB 101+80 TO 102+10	L+ 14
LOCATION 2 STAGE 1	SB 31+80 TO 32+10	L+ 14
LOCATION 2 STAGE 2	NB 27+70 TO 28+00	R+ 14
TOTAL		84

PAINT TRAFFIC STRIPE (2-COAT)

LOCATION 1 STAGE 1	DETAIL 11
	LF
Sta 100+60 TO 104+40	380
Sta 105+00 TO 109+80	480
TOTAL	860

FLASHING ARROW SIGN

LOCATION DESCRIPTION	STA	EA
LOCATION 1 STAGE 1	SB 108+80 SEE SHEET SC-1	R+ 1
TOTAL		1

RAILING

LOCATION DESCRIPTION	CONCRETE BARRIER		CONCRETE BARRIER (TYPE 27)		TRANSITION RAILING (TYPE WB-31)		ALTERNATIVE FLARED TERMINAL SYSTEM			MIDWEST GUARDRAIL SYSTEM (STEEL POST)		REMOVE CONCRETE	REMOVE GUARDRAIL	END ANCHOR ASSEMBLY (TYPE SFT)		
	No. (N)	LF	No. (N)	LF	EA	LF (N)	STA	LF (N)	EA	STA	LF	LF	LF	EA		
1 NB	APPROACH	L+	1	9.0							5+08.0 TO 8+45.5	337.5	9	400.0		
		R+	1	9.0							8+40.1 TO 8+90.1	50.0	9	112.5		
	DEPARTURE	L+										10+66.7 TO 12+16.7	150.0		150.0	1
		R+										11+11.4 TO 13+36.4	225.0		225.0	1
1 SB	APPROACH	L+	1	9.0	1	9.5	1	25.0	1	102+59.7 TO 102+97.2	37.5	1	101+09.7 TO 102+59.7	150.0	6	212.5
		R+	1	9.0			1	25.0	1	102+32.1 TO 102+69.6	37.5	1	101+44.6 TO 102+32.1	87.5	9	150.0
	DEPARTURE	L+										96+01.0 TO 98+88.5	287.5		287.5	1
		R+										97+35.8 TO 99+23.3	187.5		187.5	1
2 NB	APPROACH	R+	1	7.5			1	25.0	1	28+52.6 TO 28+90.1	37.5	1	28+90.1 TO 29+02.6	12.5		75.0
		R+	1	7.5			1	25.0	1	31+21.9 TO 31+59.4	37.5	1				62.5
	DEPARTURE	L+	1	7.5			1	25.0	1	30+96.6 TO 31+34.1	37.5	1				62.5
		L+	1	7.5			1	25.0	1	28+40.9 TO 28+78.4	37.5	1				62.5
TOTAL			66.0		9.5		8		8			1487.5	33	1987.5	4	

SUMMARY OF QUANTITIES Q-1

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

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

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

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mno	395	46.2, 96.0	15	33

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 11-03-14

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

TABLE A

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

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

TABLE B

SYMBOL USED	DEFINITIONS
ksi	KIPS PER SQUARE INCH
ksf	KIPS PER SQUARE FOOT
psi	POUNDS PER SQUARE INCH
psf	POUNDS PER SQUARE FOOT
lb/ft ³ , pcf	POUNDS PER CUBIC FOOT
tsf	TONS PER SQUARE FOOT
mph, MPH *	MILES PER HOUR
ø	NOMINAL DIAMETER
oz	OUNCE
lb	POUND
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.

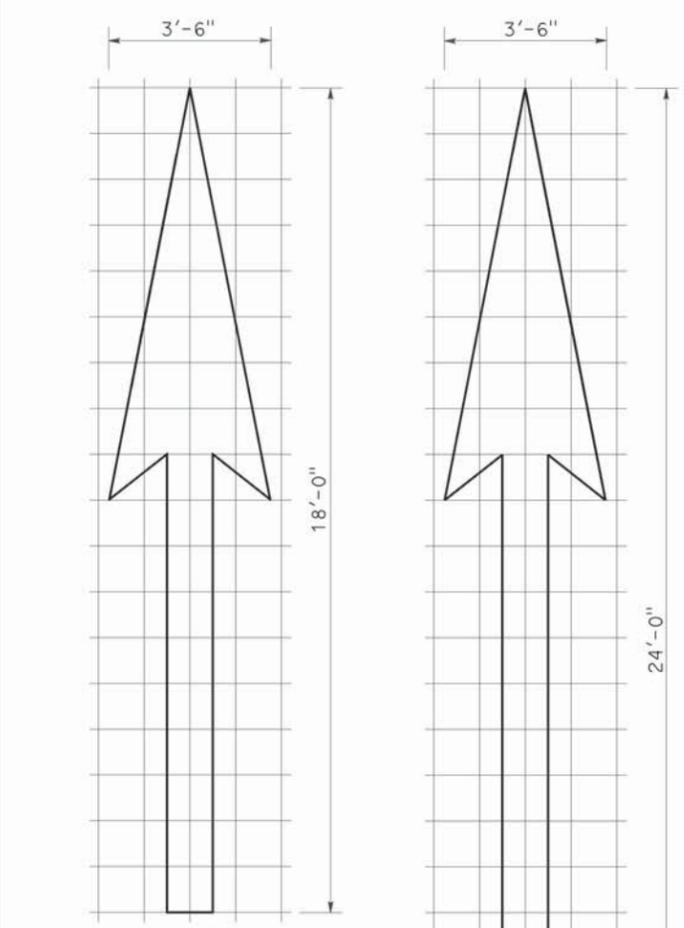
2010 REVISED STANDARD PLAN RSP A10B

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mno	395	46.2, 96.0	16	33

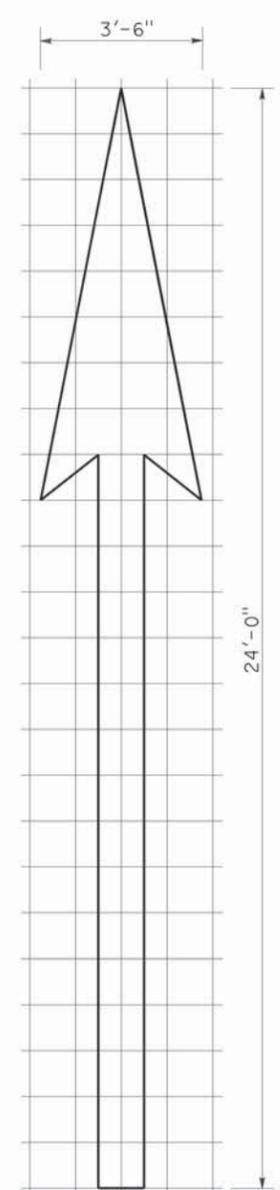
Robert L. McLaughlin
 REGISTERED CIVIL ENGINEER
 April 20, 2012
 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER
 Robert L. McLaughlin
 No. C40375
 Exp. 3-31-13
 CIVIL
 STATE OF CALIFORNIA

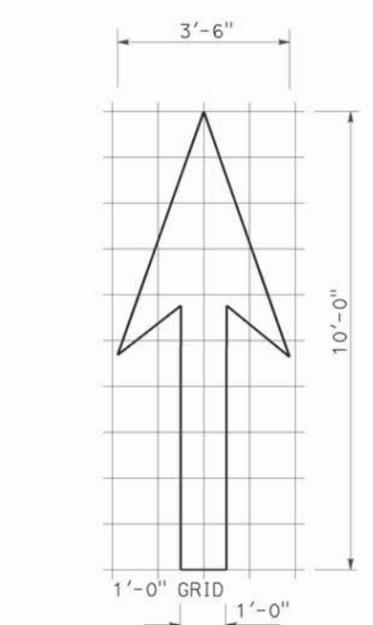
TO ACCOMPANY PLANS DATED 11-03-14



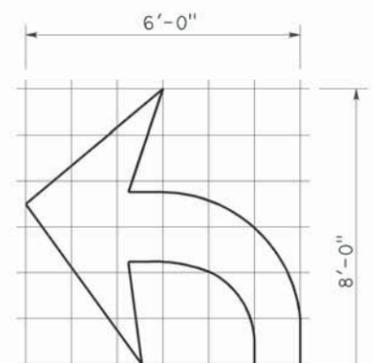
A=25 ft²
TYPE I 18'-0" ARROW



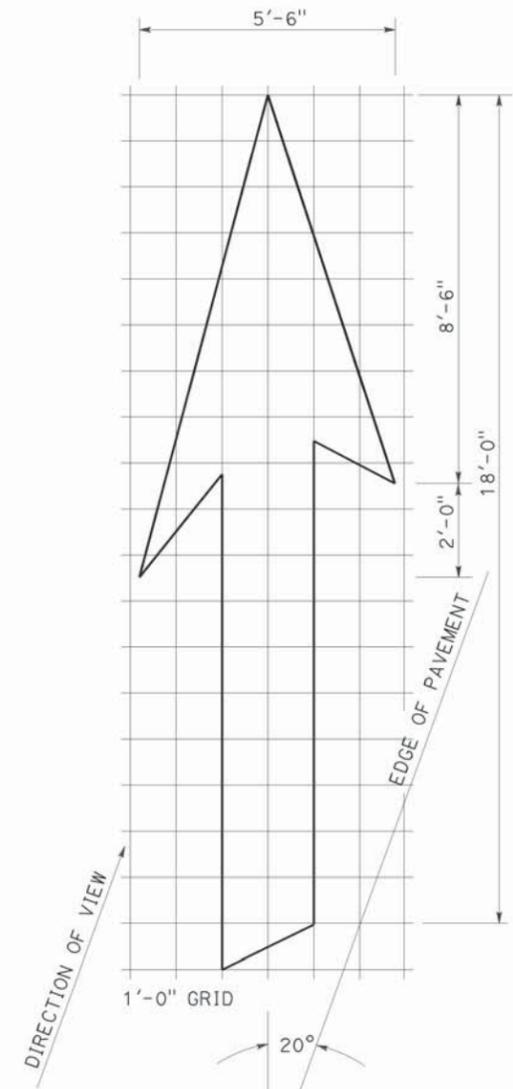
A=31 ft²
TYPE I 24'-0" ARROW



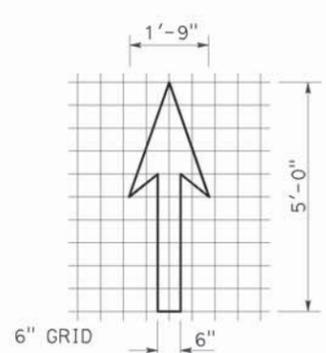
A=14 ft²
TYPE I 10'-0" ARROW



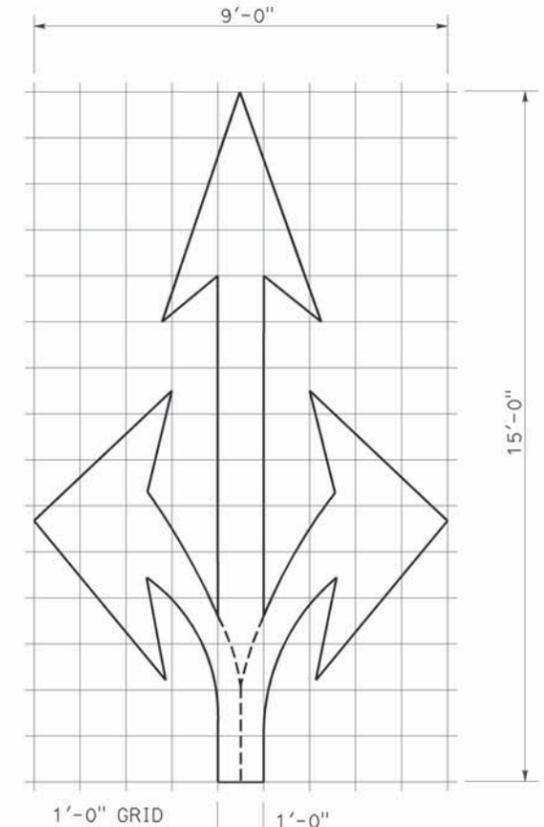
A=15 ft²
TYPE IV (L) ARROW
 (For Type IV (R) arrow, use mirror image)



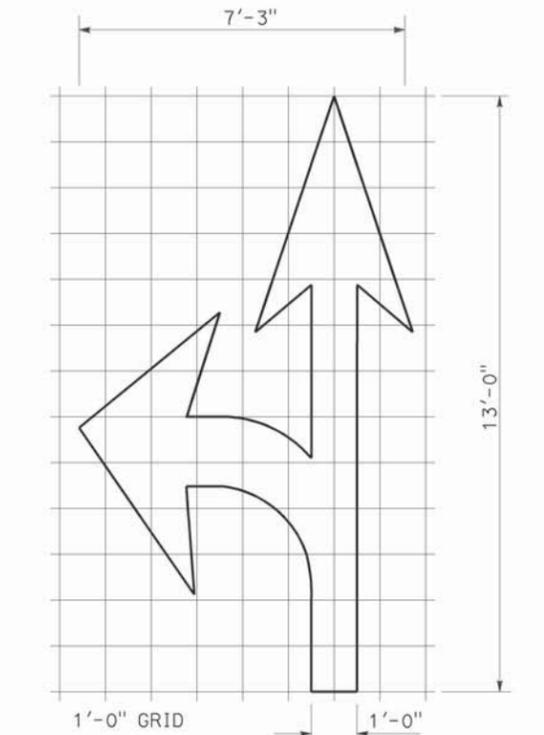
A=42 ft²
TYPE VI ARROW
 Right lane drop arrow
 (For left lane, use mirror image)



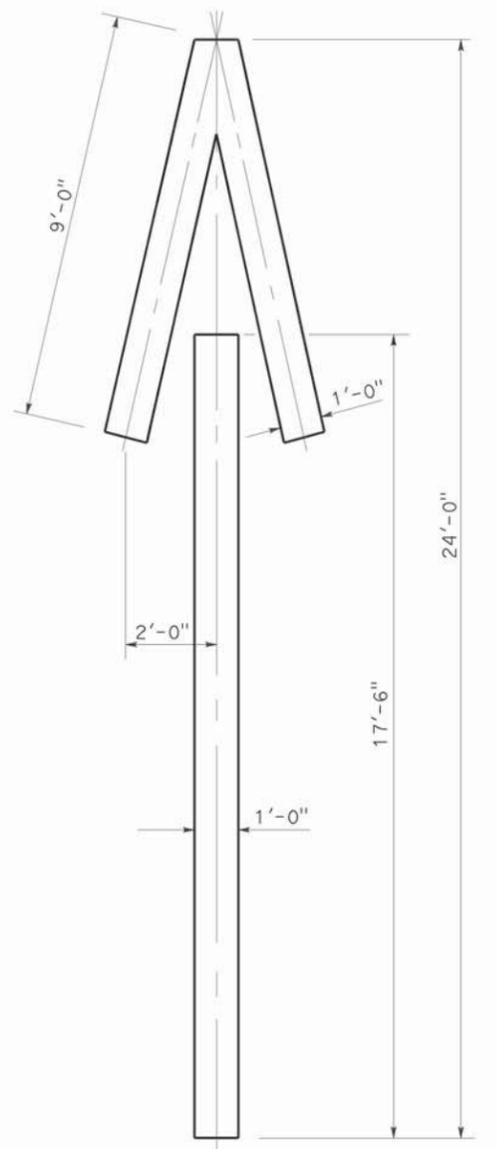
A=3.5 ft²
BIKE LANE ARROW



A=36 ft²
TYPE VIII ARROW



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



A=33 ft²
TYPE V ARROW

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

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

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

REVISED STANDARD PLAN RSP A24A

2010 REVISED STANDARD PLAN RSP A24A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mno	395	46.2, 96.0	17	33

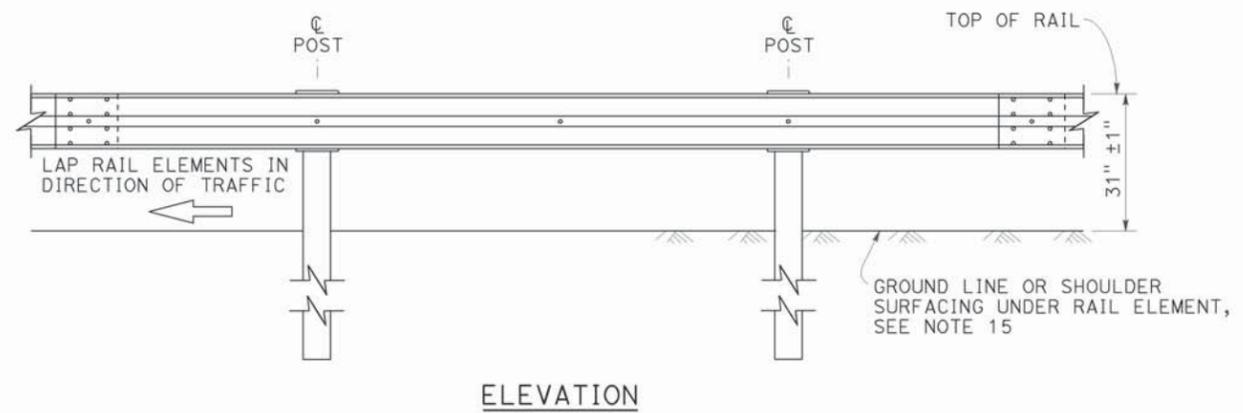
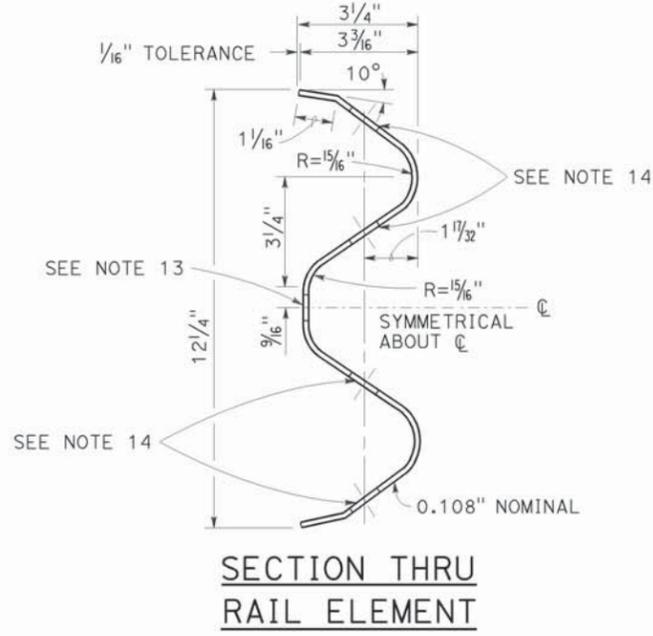
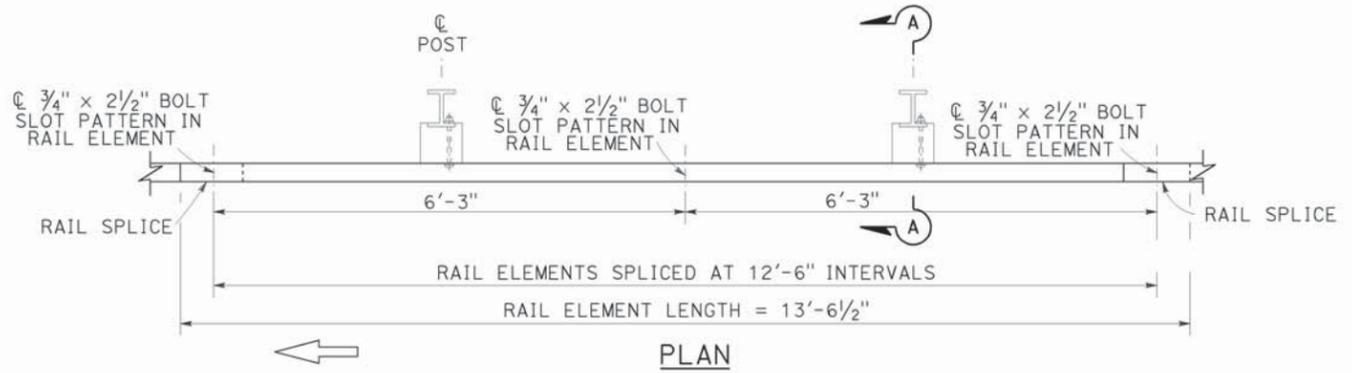
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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TO ACCOMPANY PLANS DATED 11-03-14

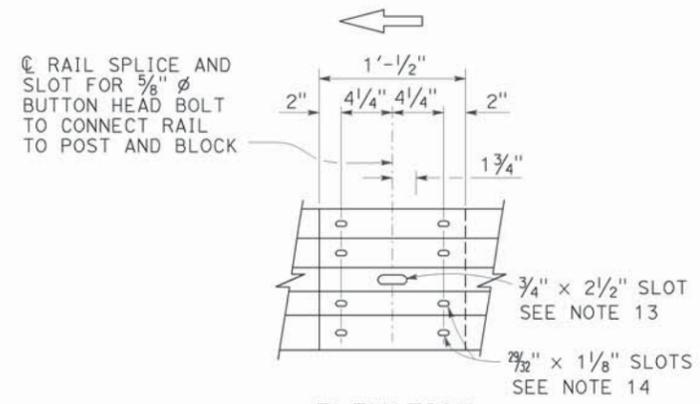
2010 REVISED STANDARD PLAN RSP A77L2



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

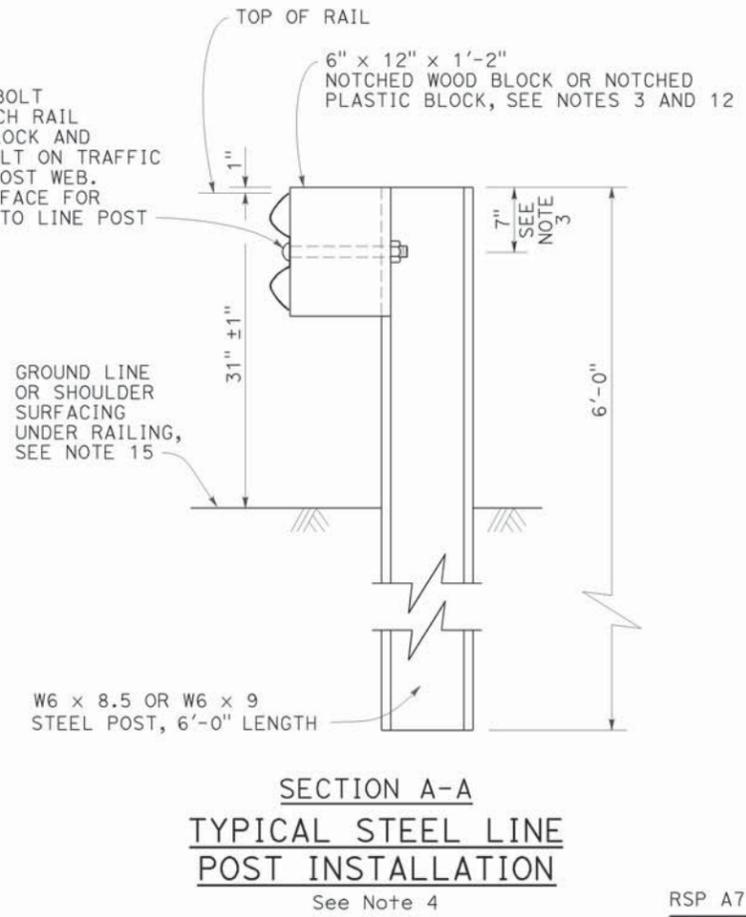
NOTES:

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



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

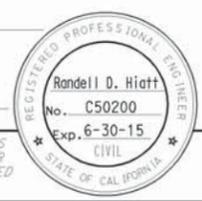
5/8" ø BUTTON HEAD BOLT WITH Hex NUT. ATTACH RAIL ELEMENT TO WOOD BLOCK AND STEEL POST WITH BOLT ON TRAFFIC APPROACH SIDE OF POST WEB. NO WASHER ON RAIL FACE FOR BOLTED CONNECTION TO LINE POST



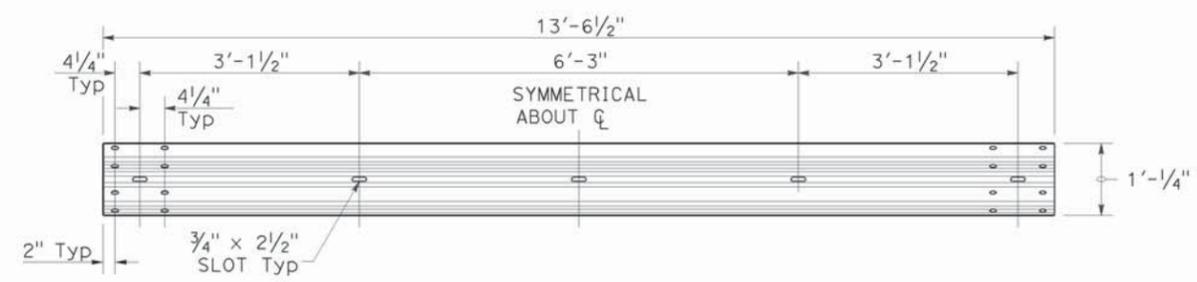
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE



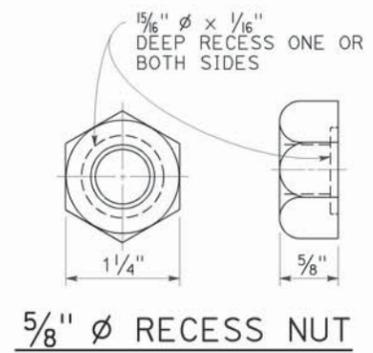
TO ACCOMPANY PLANS DATED 11-03-14



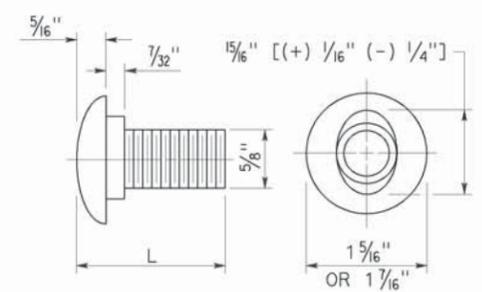
TYPICAL RAIL ELEMENT

NOTE:

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



5/8" Ø RECESS NUT

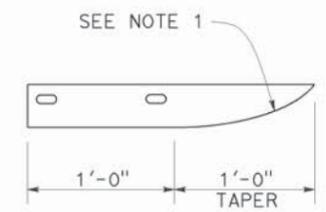


5/8" Ø BUTTON HEAD BOLT

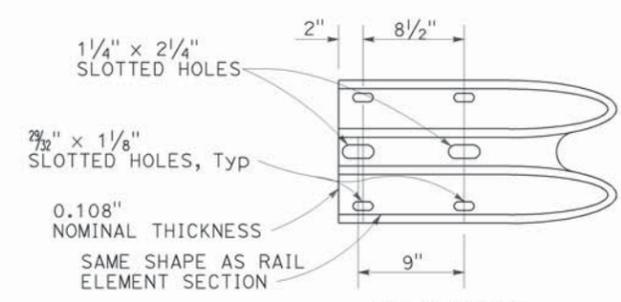
BUTTON HEAD BOLT

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

** For nested rail applications.



PLAN



ELEVATION
END CAP
(TYPE A)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
STANDARD HARDWARE**

NO SCALE

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

2010 REVISED STANDARD PLAN RSP A77M1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mno	395	46.2, 96.0	19	33

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

November 15, 2013
PLANS APPROVAL DATE

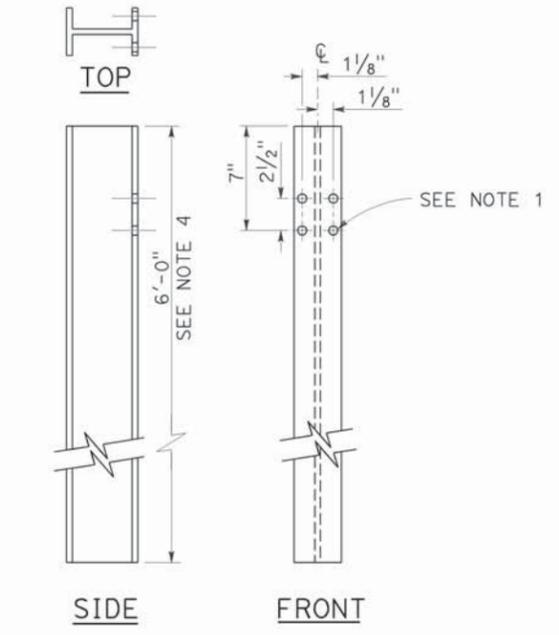
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REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

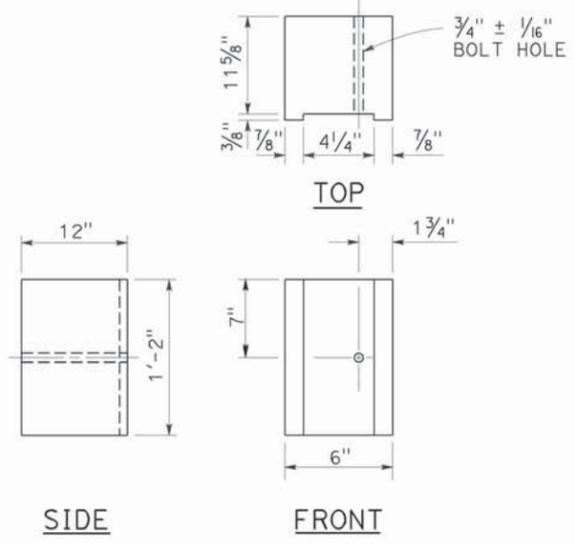
TO ACCOMPANY PLANS DATED 11-03-14

NOTES:

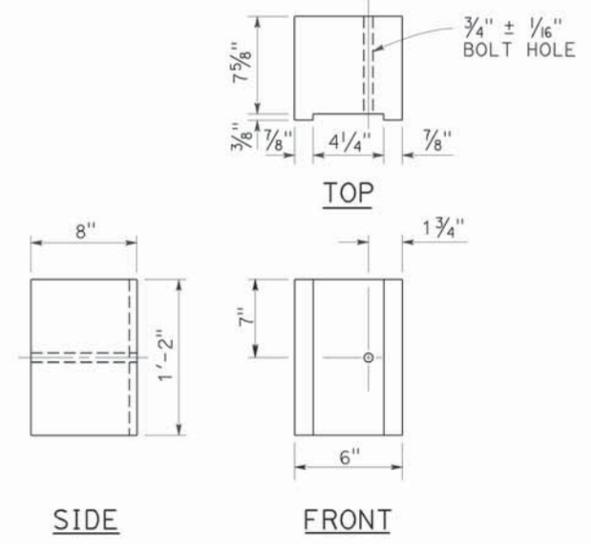
1. All holes in steel post shall be 1 3/16" Dia maximum.
2. Dimensions shown for wood block are nominal.
3. Notched face of block faces steel post.
4. 6'-0" length posts to be used for typical roadway installation. See Revised Standard Plan RSP A77N3.
5. See Revised Standard Plan RSP A77L3 for use of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



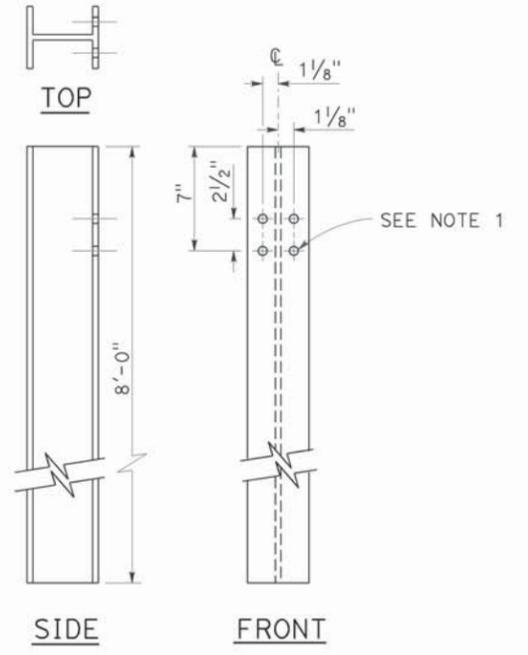
**W6 x 9 OR W6 x 8.5
STEEL POST**
See Note 4



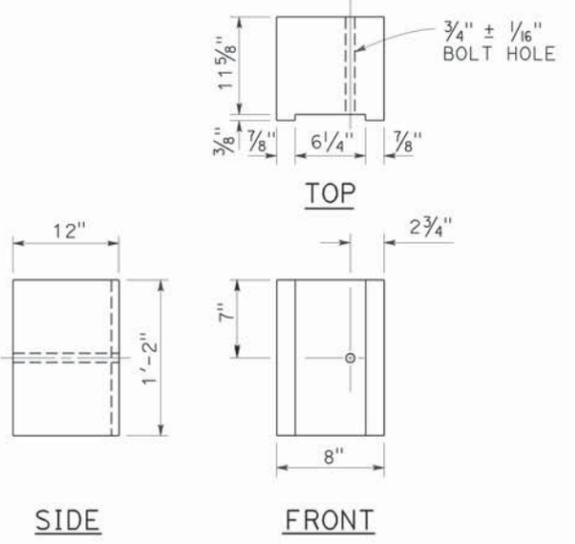
**6" x 12"
NOTCHED WOOD BLOCK**
See Notes 2 and 3



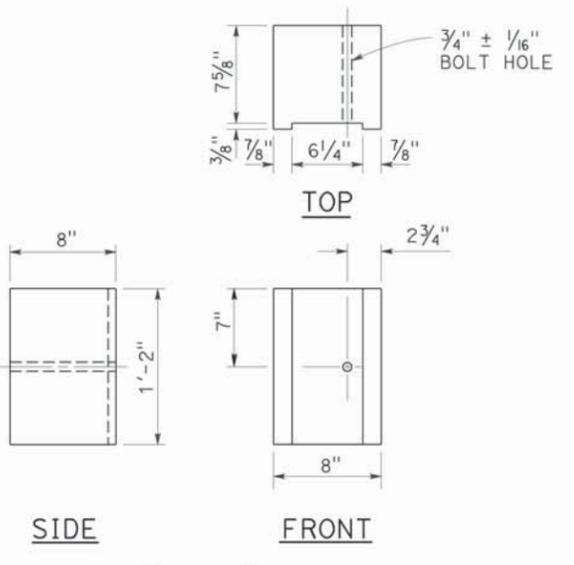
**6" x 8"
NOTCHED WOOD BLOCK**
Only for use with metal beam guard railing. See Note 5



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



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



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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE
RSP A77N2 DATED NOVEMBER 15, 2013 SUPERSEDES RSP A77N2
DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP A77N2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mno	395	46.2, 96.0	20	33

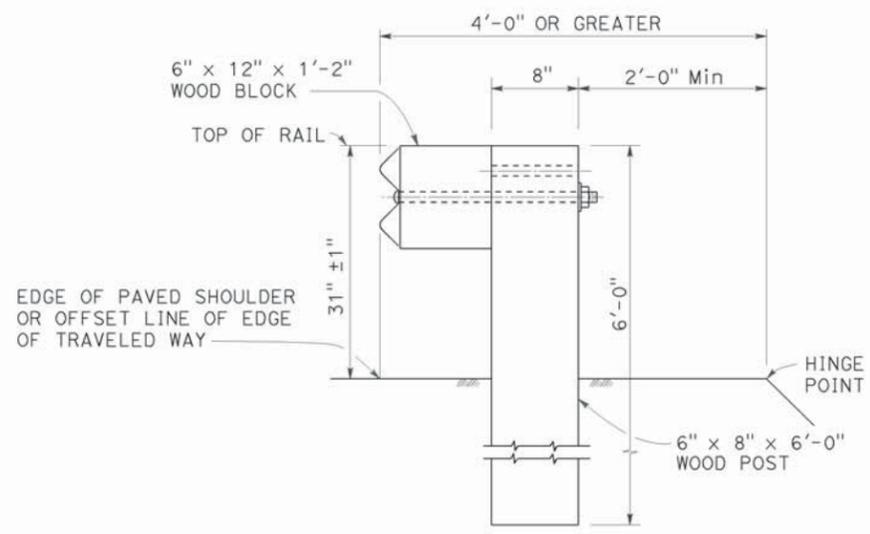
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

November 15, 2013
PLANS APPROVAL DATE

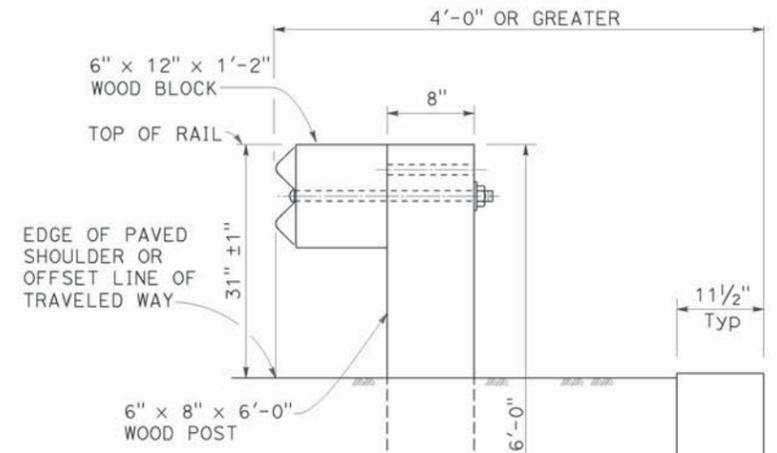
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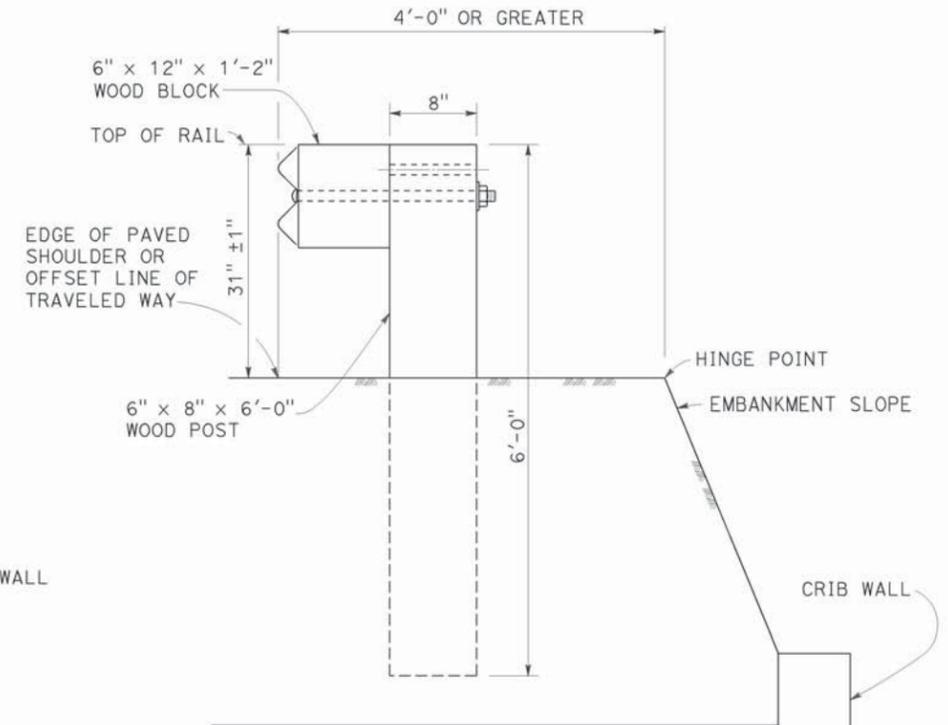
TO ACCOMPANY PLANS DATED 11-03-14



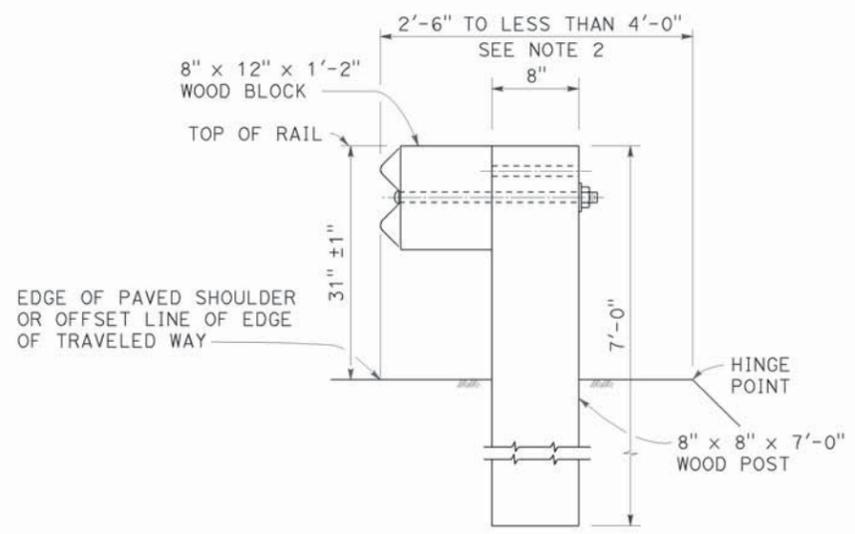
DETAIL A
TYPICAL ROADWAY
INSTALLATION
See Note 1



DETAIL C



DETAIL D



DETAIL B
NARROW ROADWAY
INSTALLATION
See Note 1

POST EMBEDMENT

INSTALLATION AT EARTH RETAINING WALLS

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

REVISED STANDARD PLAN RSP A77N3

2010 REVISED STANDARD PLAN RSP A77N3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mno	395	46.2, 96.0	21	33

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

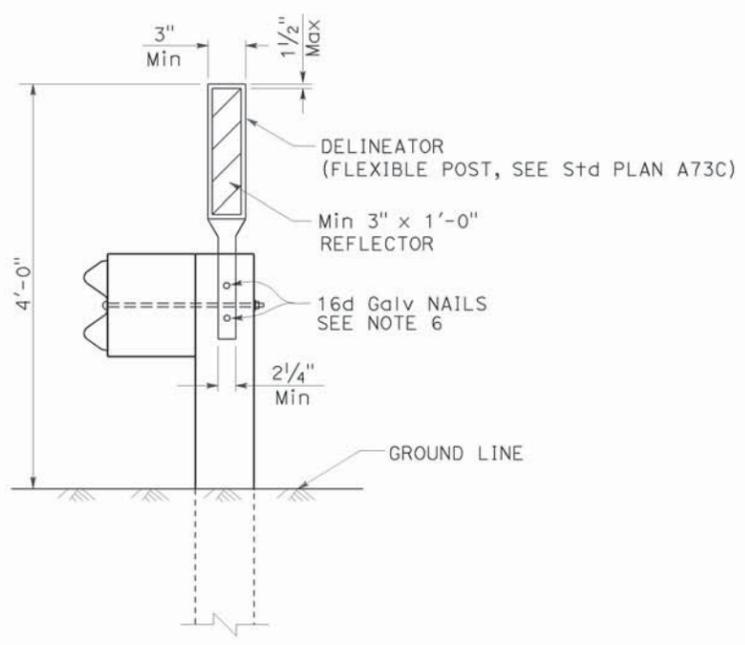
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STATE OF CALIFORNIA

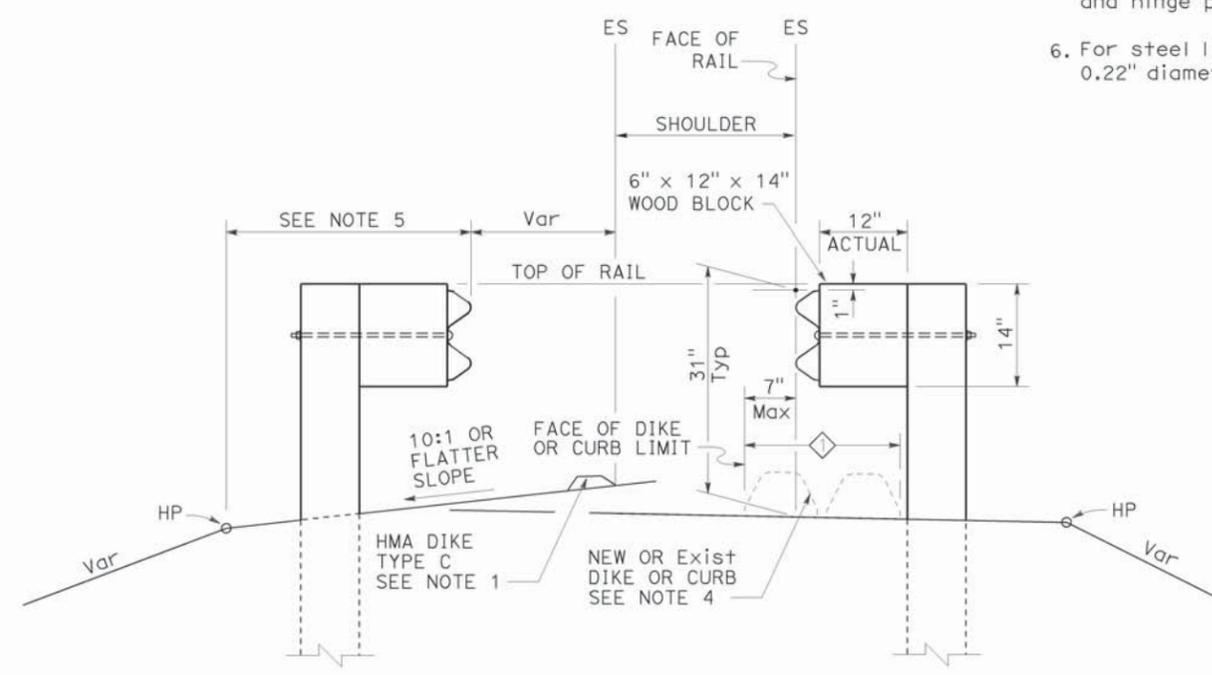
TO ACCOMPANY PLANS DATED 11-03-14

NOTES:

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



MGS DELINEATION
See Note 3



DIKE POSITIONING
See Note 1

◇ PERMISSIBLE DIKE OR CURB PLACEMENT AREA

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

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

2010 REVISED STANDARD PLAN RSP A77N4

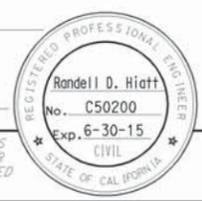
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mno	395	46.2, 96.0	22	33

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

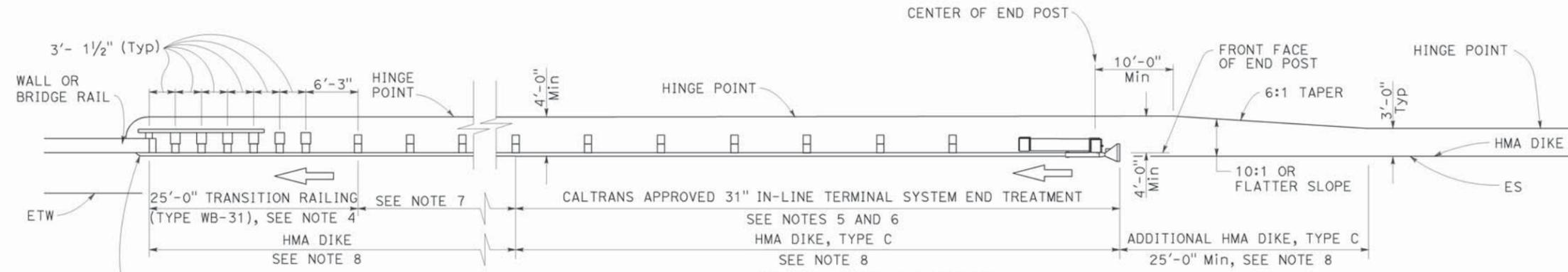
July 19, 2013
PLANS APPROVAL DATE

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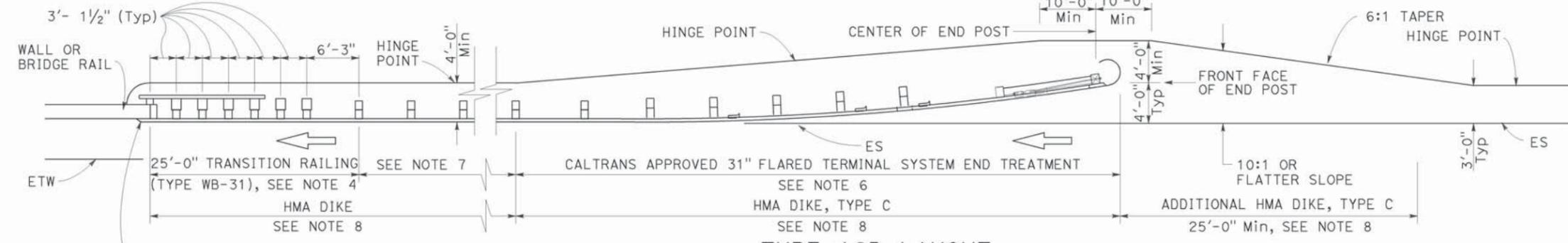


2010 REVISED STANDARD PLAN RSP A77Q1



TYPE 12A LAYOUT

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



TYPE 12B LAYOUT

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

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

REVISED STANDARD PLAN RSP A77Q1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mno	395	46.2, 96.0	23	33

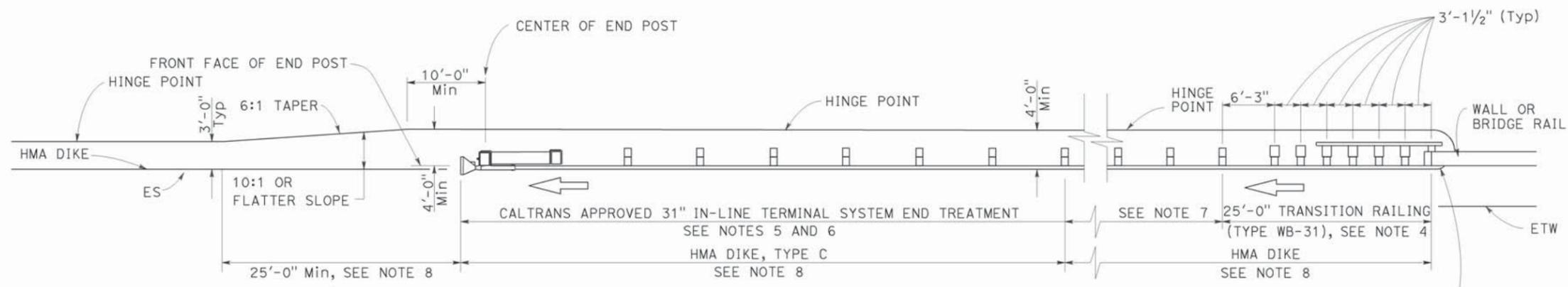
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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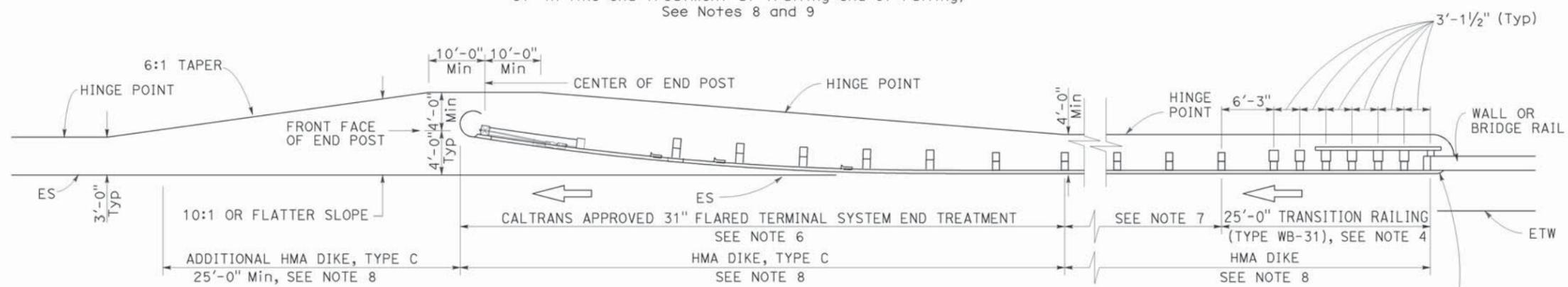
REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 11-03-14



TYPE 12AA LAYOUT

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



TYPE 12BB LAYOUT

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

NOTES:

- Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
- MGS post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 12" x 1'-2" wood blocks. W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
- For Transition Railing (Type WB-31) details for Types 12AA and 12BB Layouts, see Revised Standard Plan RSP A77U4.
- 31" in-line terminal system treatments are used where site conditions will not accommodate a 31" flared end treatment.
- The type of 31" terminal system to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height, side slopes, other fixed objects), it may be advisable to construct additional MGS (a length equal to multiples of 12'-6" with 6'-3" post spacing) between the transition railing and 31" end treatments.
- Where placement of dike is required with MGS installations, see Revised Standard Plan RSP A77N4 for dike positioning details.
- Type 12AA or Type 12BB Layouts are typically used to the right of traffic departing a structure on two-way conventional highways where the roadbed width across the structure is less than 40 feet.
- For additional details of typical connections to bridge rail, see Connection Detail CC on Revised Standard Plan RSP A77U2 and Connection Detail HH on Revised Standard Plan RSP A77V2.

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

RSP A77Q4 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77Q4

2010 REVISED STANDARD PLAN RSP A77Q4

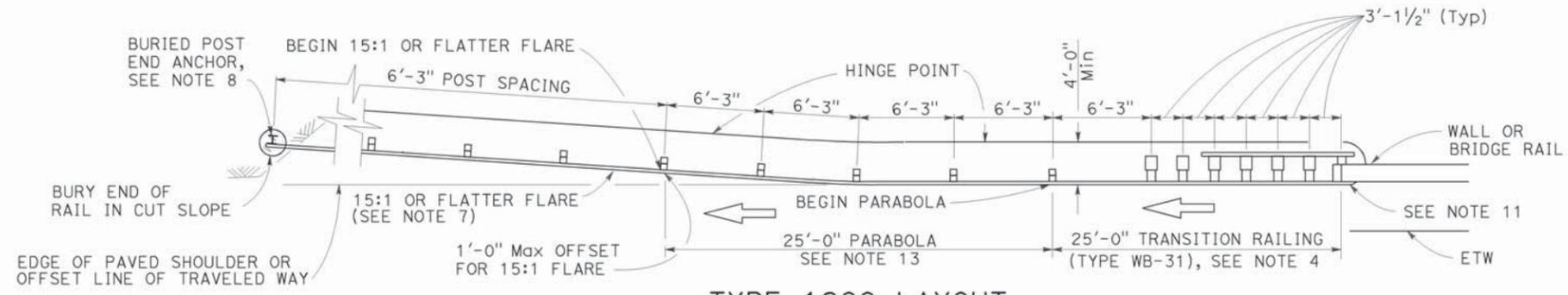
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mno	395	46.2, 96.0	24	33

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

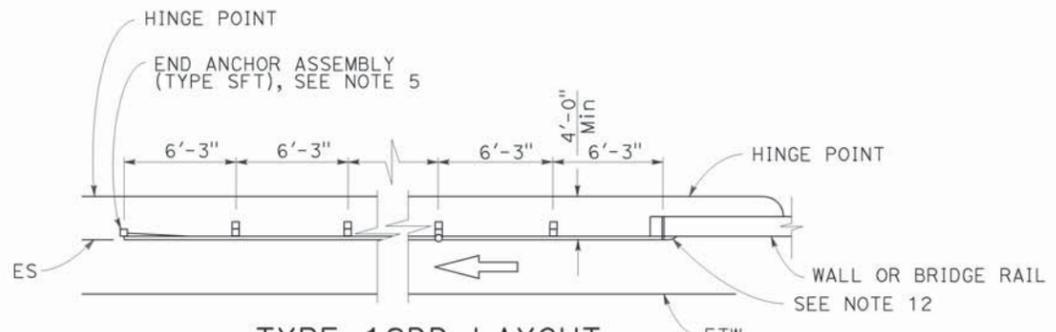
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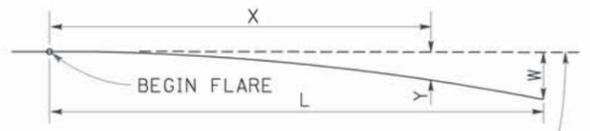
TYPE 12CC LAYOUT

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



TYPE 12DD LAYOUT

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

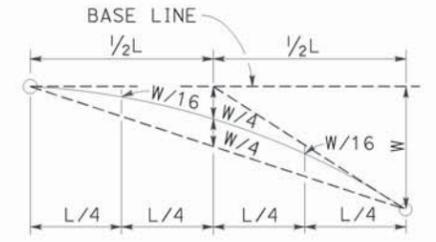


BASE LINE (EDGE OF PAVED SHOULDER OR OFFSET LINE OF EDGE OF TRAVELED WAY)

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

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

PARABOLIC FLARE OFFSETS



TYPICAL PARABOLIC LAYOUT

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

REVISED STANDARD PLAN RSP A77Q5

2010 REVISED STANDARD PLAN RSP A77Q5

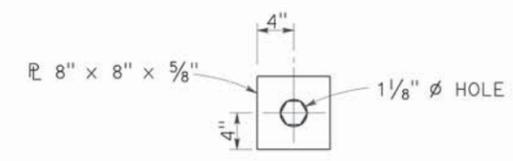
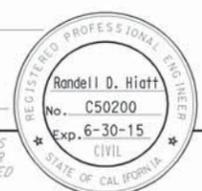
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mno	395	46.2, 96.0	25	33

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

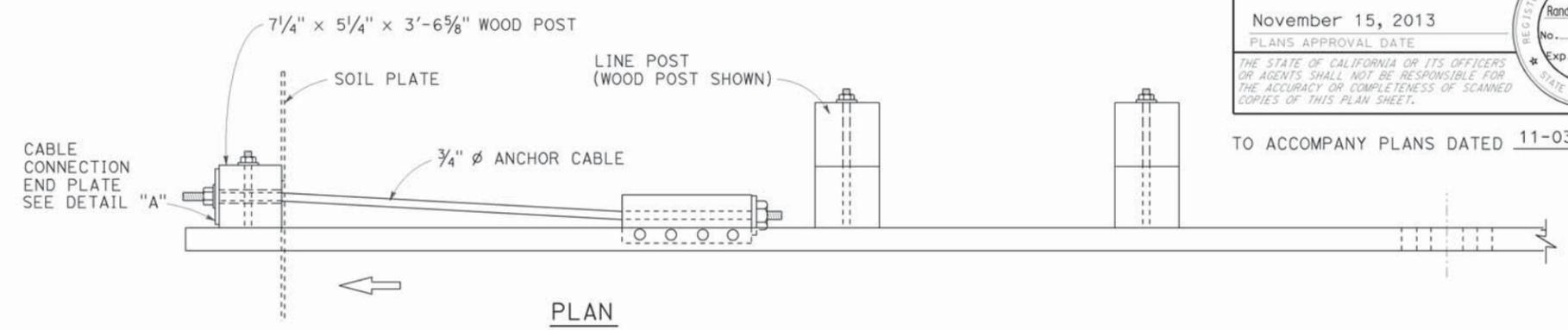
November 15, 2013
PLANS APPROVAL DATE

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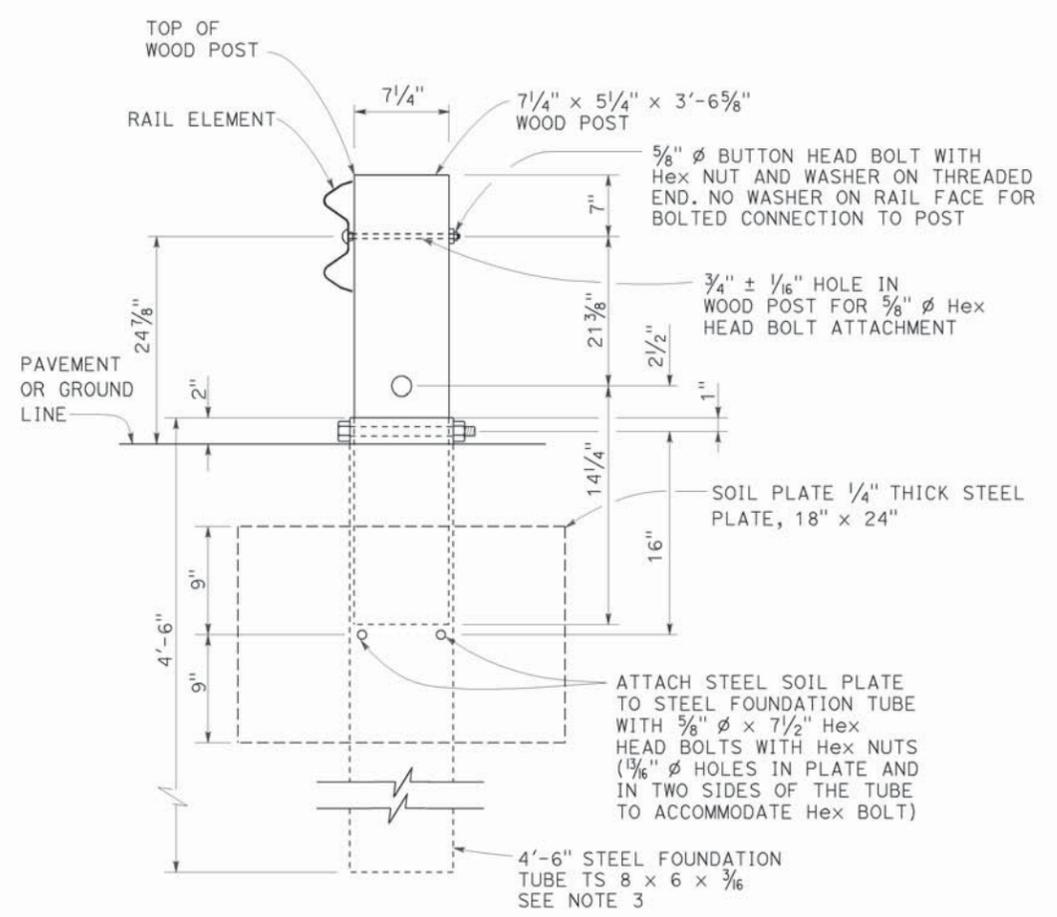
TO ACCOMPANY PLANS DATED 11-03-14



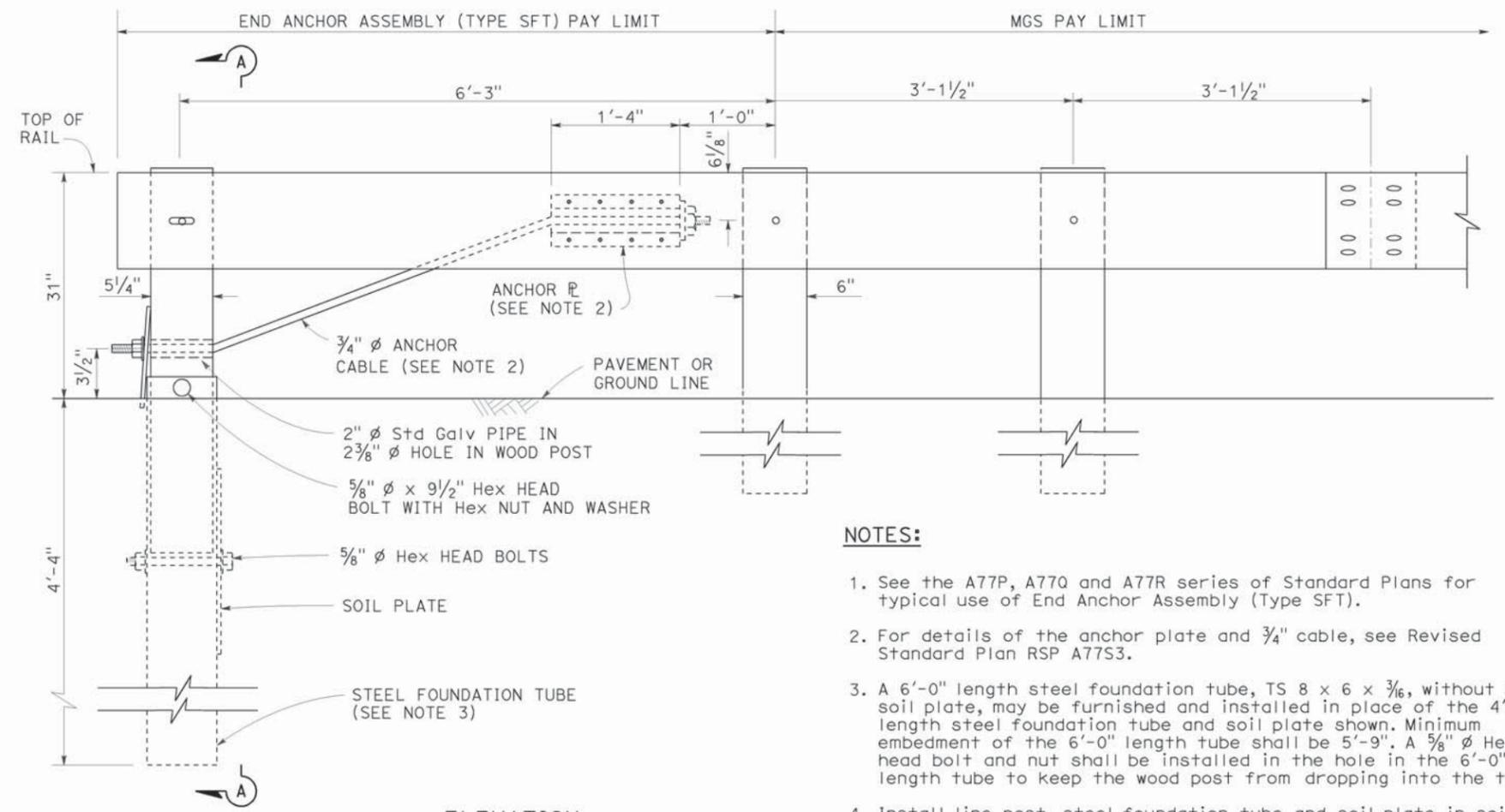
DETAIL "A"
CABLE CONNECTION
END PLATE



PLAN



SECTION A-A



ELEVATION

END ANCHOR
ASSEMBLY (TYPE SFT)
See Note 1

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
MIDWEST GUARDRAIL SYSTEM
END ANCHOR ASSEMBLY
(TYPE SFT)

NO SCALE

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

REVISED STANDARD PLAN RSP A77S1

2010 REVISED STANDARD PLAN RSP A77S1

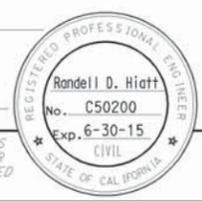
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mno	395	46.2, 96.0	26	33

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

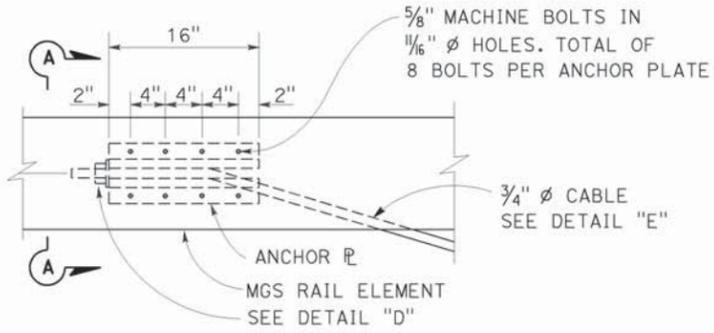
November 15, 2013
PLANS APPROVAL DATE

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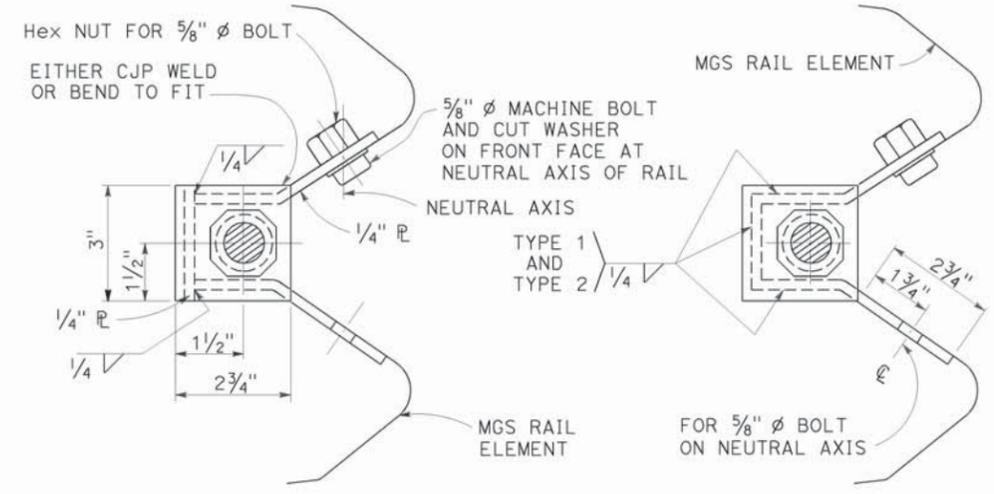
TO ACCOMPANY PLANS DATED 11-03-14



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



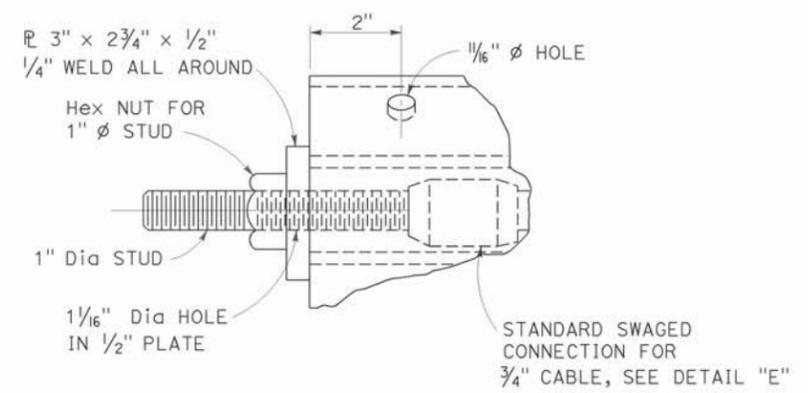
ANCHOR PLATE DETAIL
(MGS shown, TBB similar)



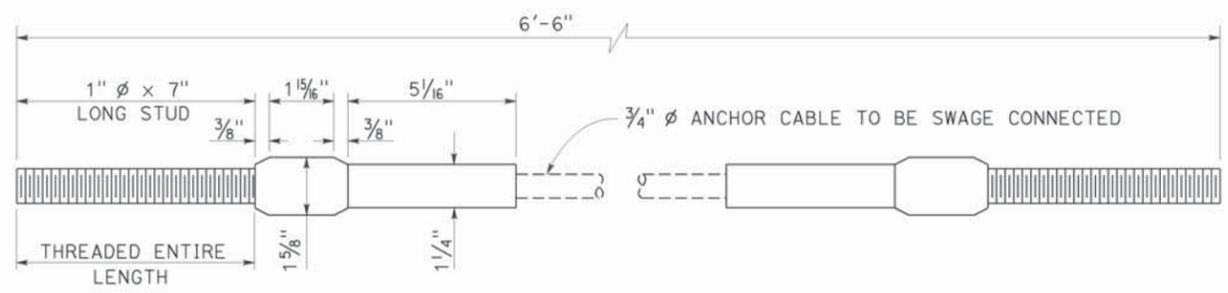
SECTION A-A (ALTERNATIVE TYPE 1)

SECTION A-A (ALTERNATIVE TYPE 2)

NOTE:
Dimensioning applies to both types.



DETAIL "D"



ANCHOR CABLE WITH SWAGED FITTING AND STUD
DETAIL "E"

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL RAILING
ANCHOR CABLE AND
ANCHOR PLATE DETAILS**

NO SCALE

RSP A77S3 DATED NOVEMBER 15, 2013 SUPERSEDES RSP A77S3 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP A77S3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mno	395	46.2, 96.0	27	33

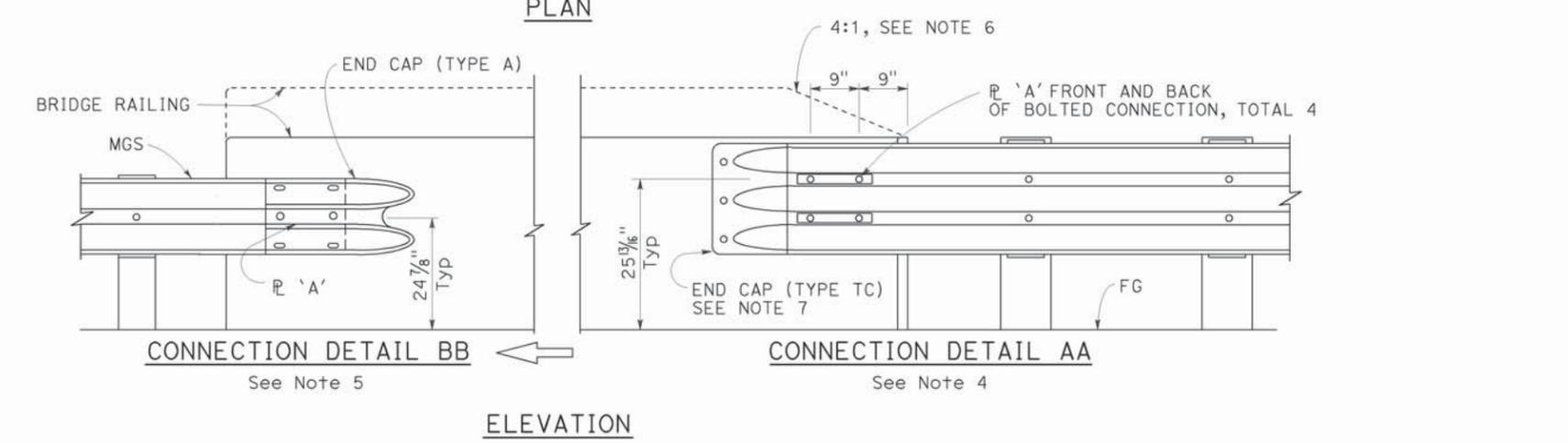
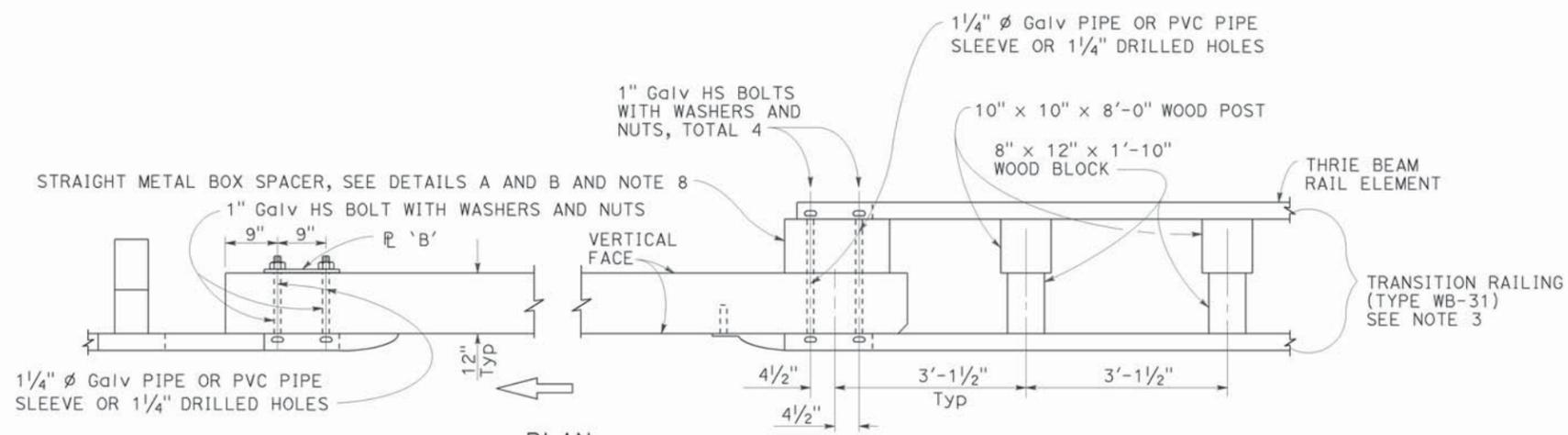
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

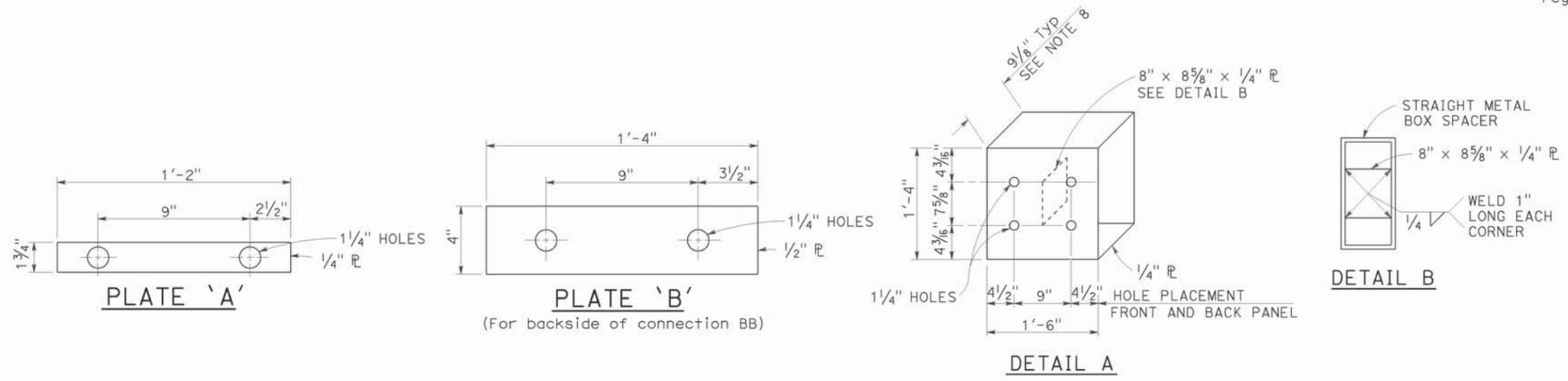
TO ACCOMPANY PLANS DATED 11-03-14



MIDWEST GUARDRAIL SYSTEM CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK

NOTES:

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



STRAIGHT METAL BOX SPACER

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

NO SCALE

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

REVISED STANDARD PLAN RSP A77U1

2010 REVISED STANDARD PLAN RSP A77U1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mno	395	46.2, 96.0	28	33

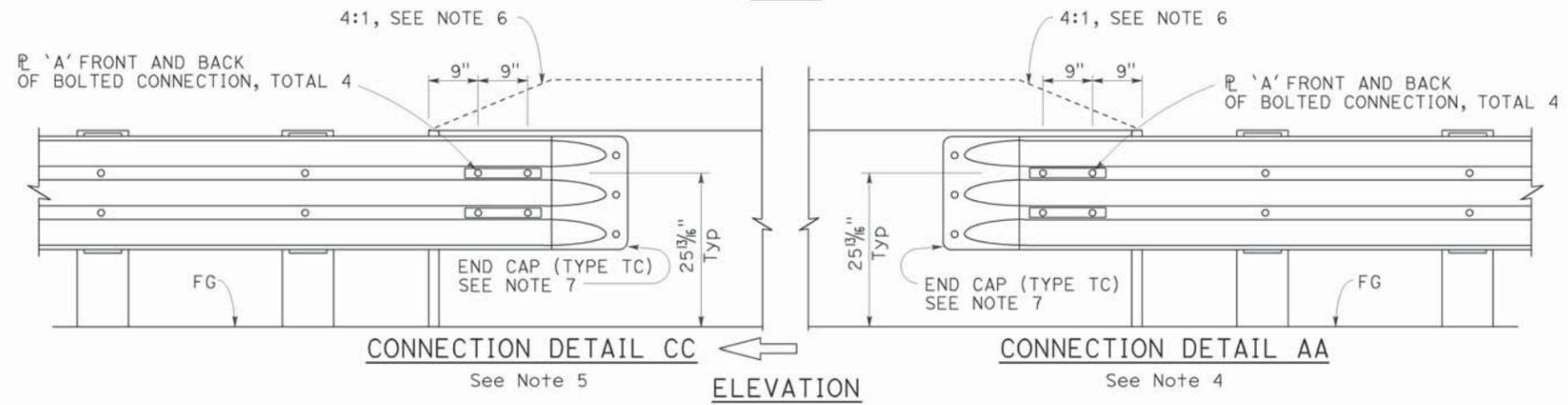
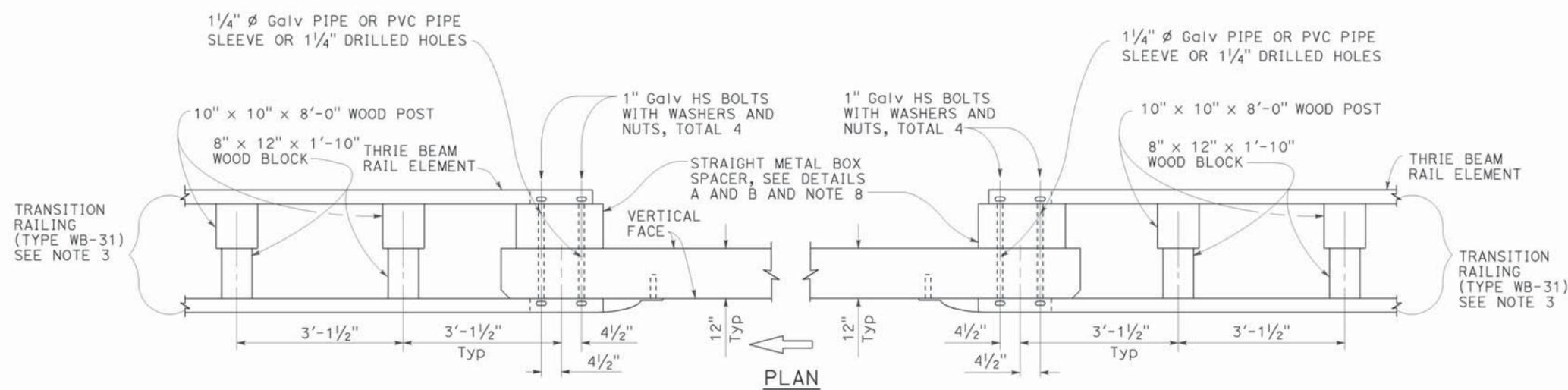
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

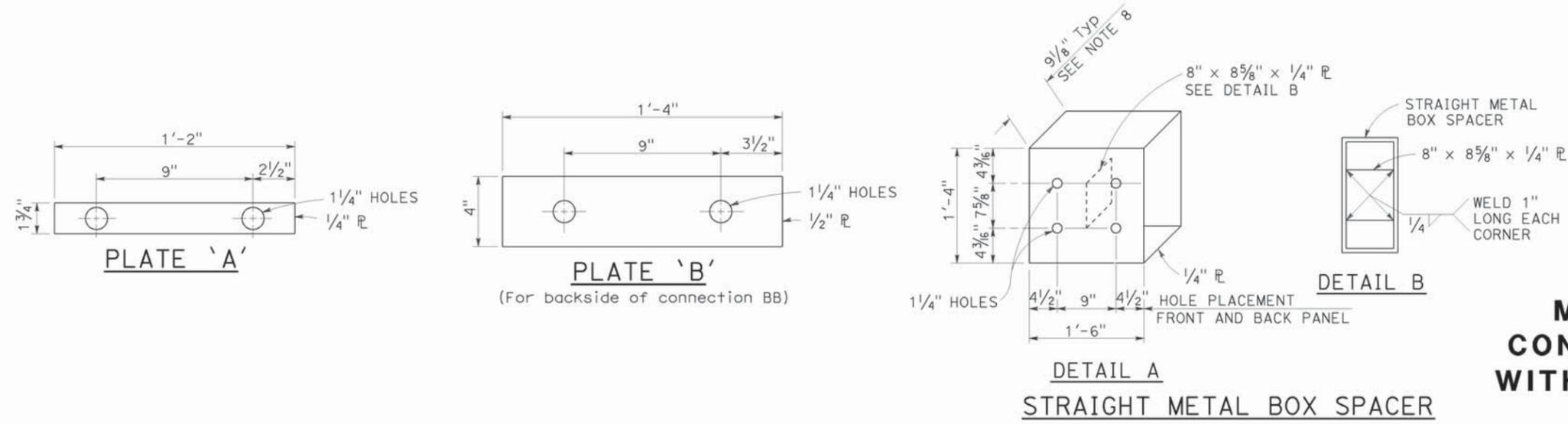
TO ACCOMPANY PLANS DATED 11-03-14



MIDWEST GUARDRAIL SYSTEM CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK

NOTES:

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



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

REVISED STANDARD PLAN RSP A77U2

2010 REVISED STANDARD PLAN RSP A77U2

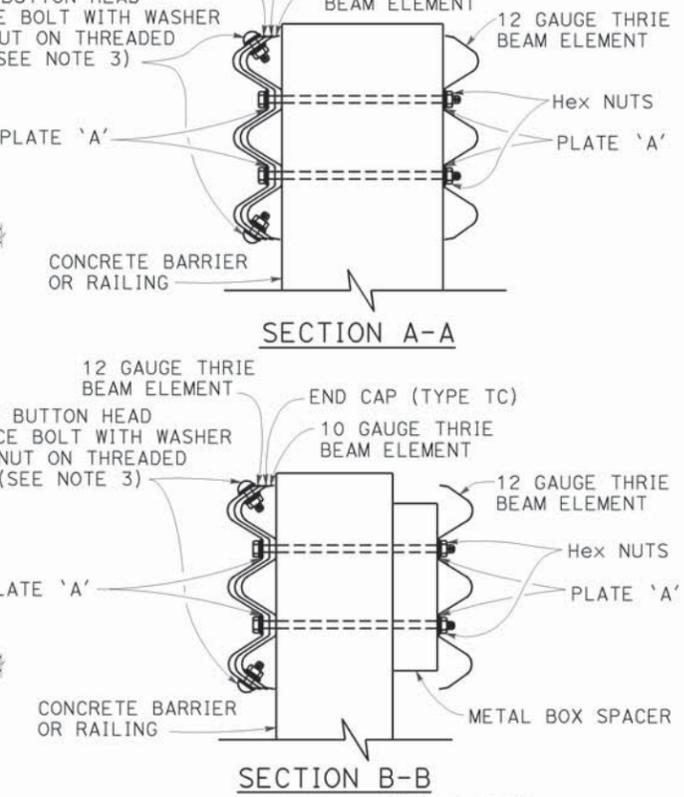
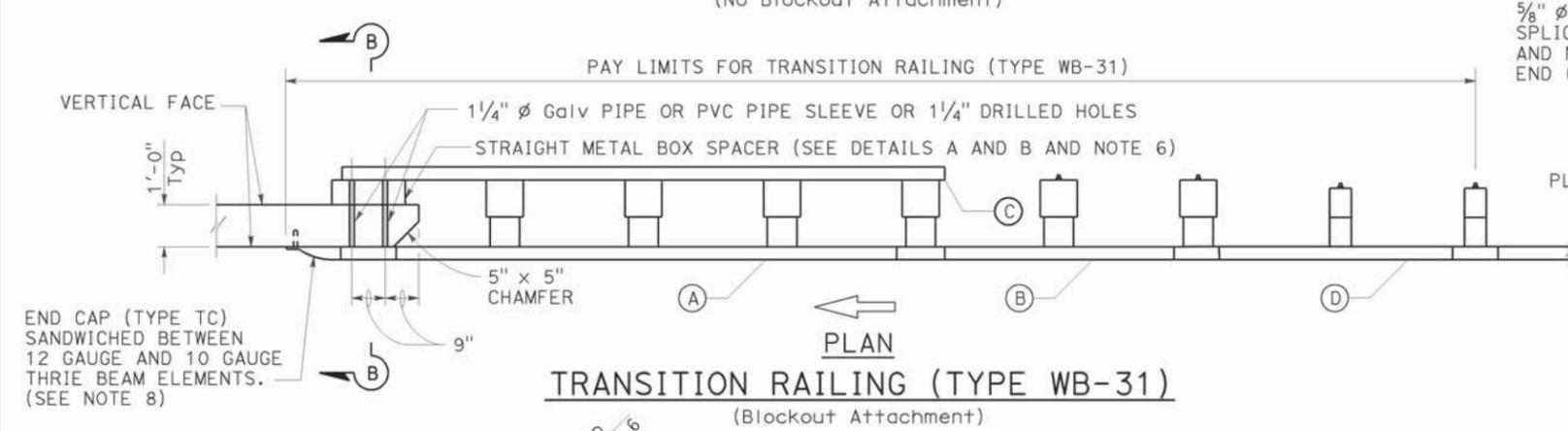
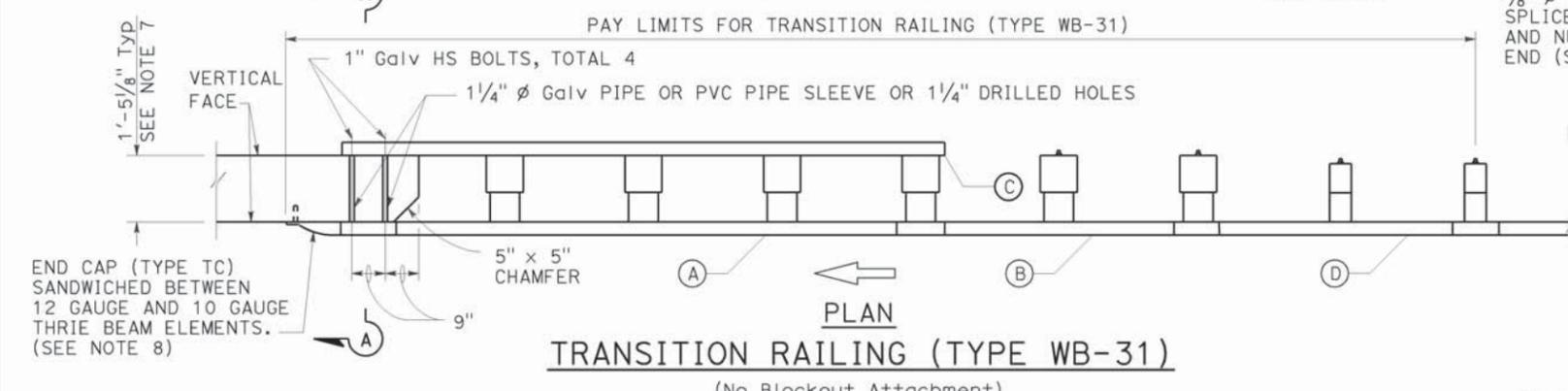
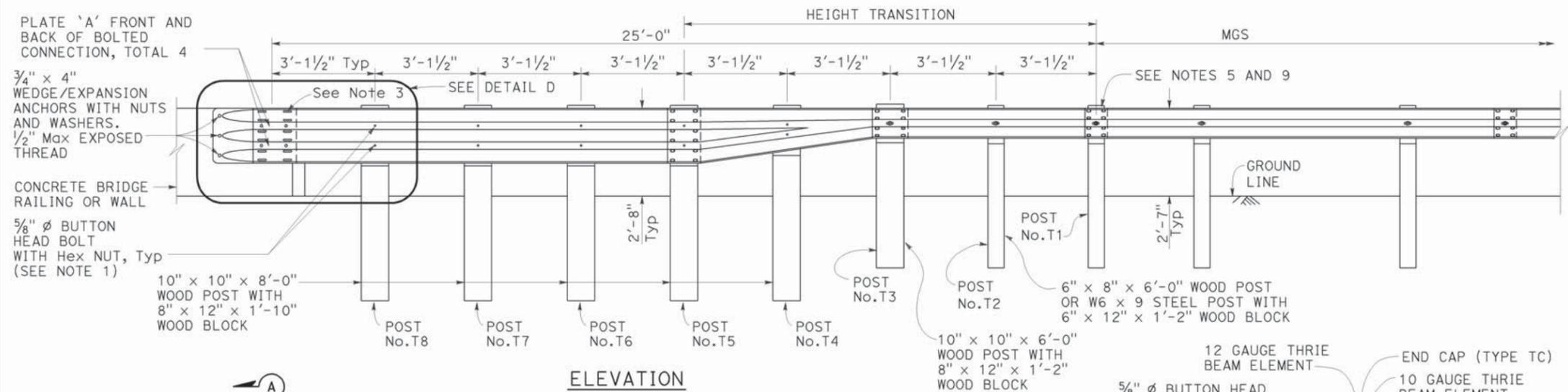
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mno	395	46.2, 96.0	29	33

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

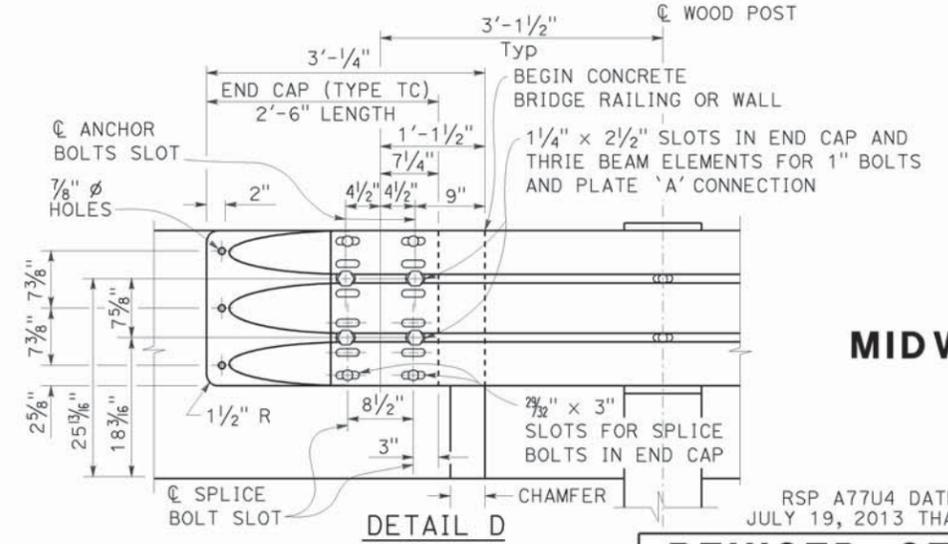
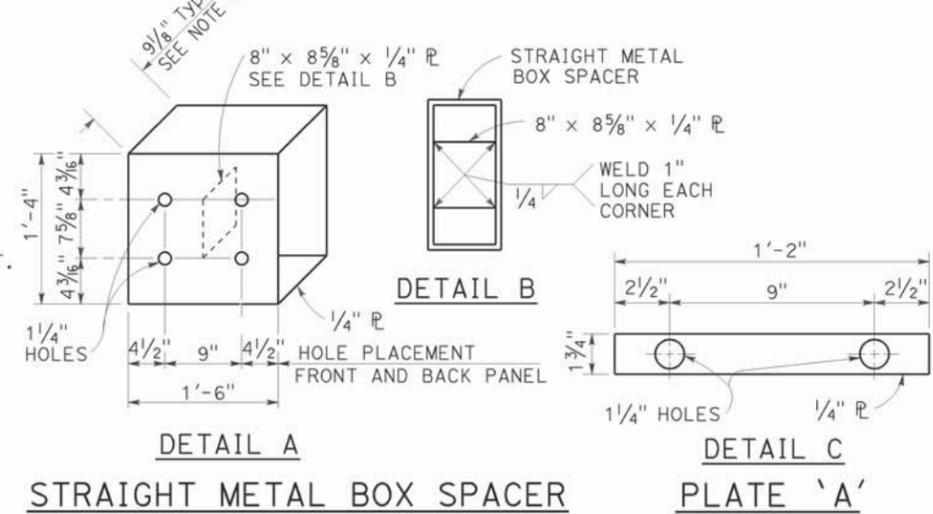
November 15, 2013
PLANS APPROVAL DATE

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



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



- NOTES:** TO ACCOMPANY PLANS DATED 11-03-14
1. Use 5/8" 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 3/2" x 1/8" slot size. Interior splice bolt holes at these locations may be increased up to 1/4" 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 9/8" to 1/2" and is dependent on the width of the concrete railing or wall. The combined dimension for the depth of the metal box spacer plus the width of railing or wall is typically 21 1/8". Where the space between the backside of the concrete railing or wall and the rear thrie beam element is less than 1/2", metal plates similar to Plate 'A' are to be used as spacers.
 7. Where the width of the concrete railing or wall is greater than 17 1/8", wood blocks are to be used to fill the space created between the backside of Posts No. T5 through No. T8 and the rear thrie beam element. These wood blocks shall be 8" in width and 1'-2" in length. The dimension between the front thrie beam element and the rear thrie beam element is to match the width of the concrete railing or wall.
 8. End cap may be installed over 12 gauge and 10 gauge thrie beam elements where transition railing is installed on the departure end of bridge railing.
 9. Conform standard railing section height to 31" at Post No. T1 using height transition ratio of 150:1.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

REVISED STANDARD PLAN RSP A77U4

2010 REVISED STANDARD PLAN RSP A77U4

TO ACCOMPANY PLANS DATED 11-03-14

TABLE 1

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

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

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

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

TABLE 2

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

* - Speed is posted speed limit, off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph
 ** - Longitudinal buffer space or flagger station spacing
 *** - Use on sustained downgrade steeper than -3 percent and longer than 1 mile.

TABLE 3

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

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

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**TRAFFIC CONTROL SYSTEM TABLES
 FOR LANE AND RAMP CLOSURES**
 NO SCALE

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

REVISED STANDARD PLAN RSP T9

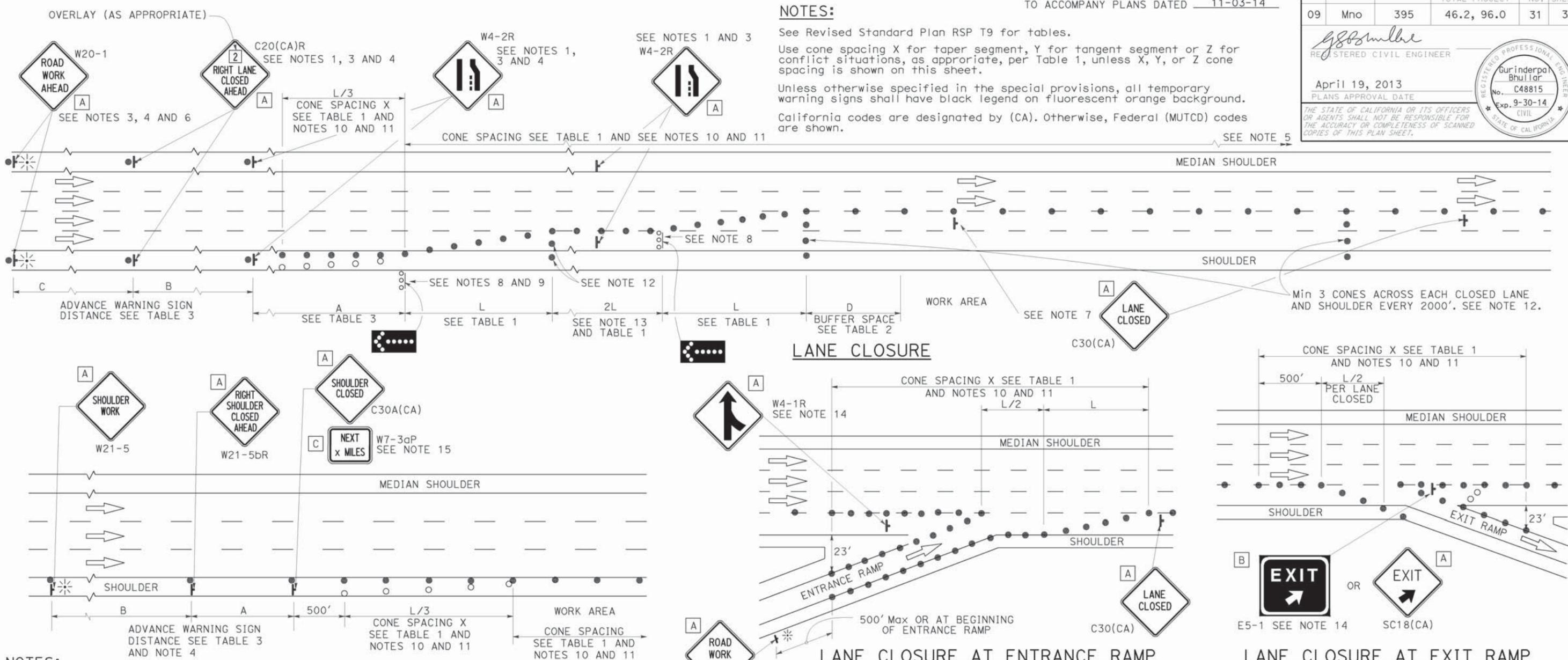
2010 REVISED STANDARD PLAN RSP T9

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mno	395	46.2, 96.0	31	33

REGISTERED CIVIL ENGINEER
 April 19, 2013
 PLANS APPROVAL DATE

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

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

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

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

LEGEND

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

SIGN PANEL SIZE (Min)

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

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

REVISED STANDARD PLAN RSP T10

2010 REVISED STANDARD PLAN RSP T10

NOTES:

See Revised Standard Plan RSP T9 for tables.

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

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

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
09	Mno	395	46.2, 96.0	32	33

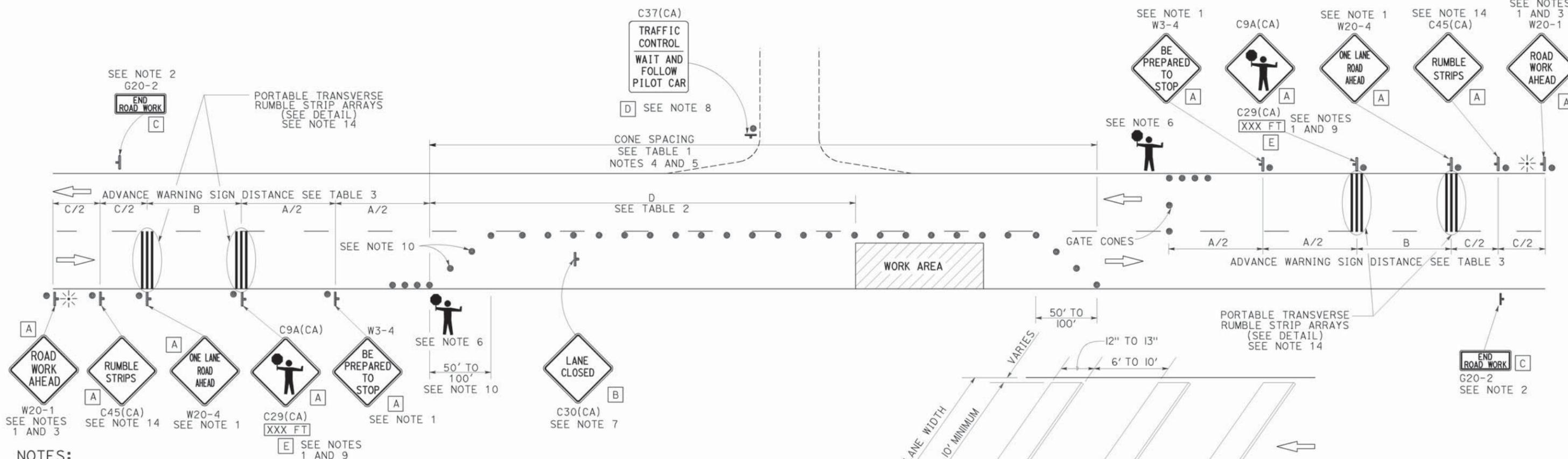
Devinder Singh
 REGISTERED CIVIL ENGINEER
 No. C50470
 Exp. 6-30-15
 CIVIL
 STATE OF CALIFORNIA

October 17, 2014
 PLANS APPROVAL DATE

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

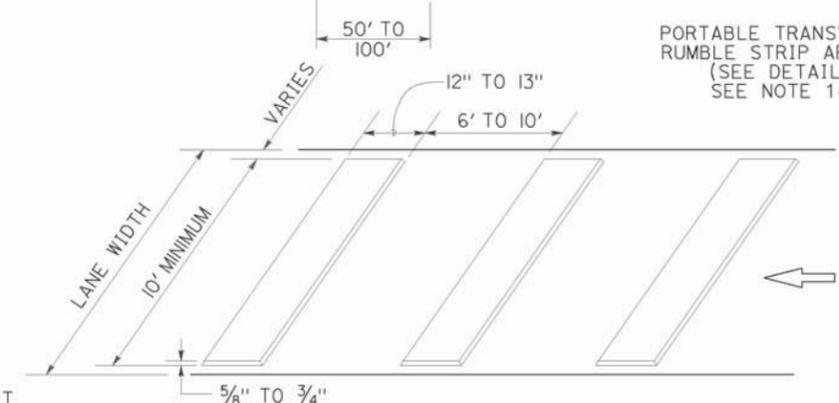
TYPICAL LANE CLOSURE WITH REVERSIBLE CONTROL

TO ACCOMPANY PLANS DATED 11-03-14



NOTES:

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



PORTABLE TRANSVERSE RUMBLE STRIP ARRAY DETAIL

SIGN PANEL SIZE (Min)

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

LEGEND

- TRAFFIC CONE
- ⊥ TEMPORARY TRAFFIC CONTROL SIGN
- ⊛ PORTABLE FLASHING BEACON
- ⋈ FLAGGER

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

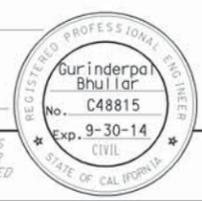
TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE ON TWO LANE CONVENTIONAL HIGHWAYS

NO SCALE

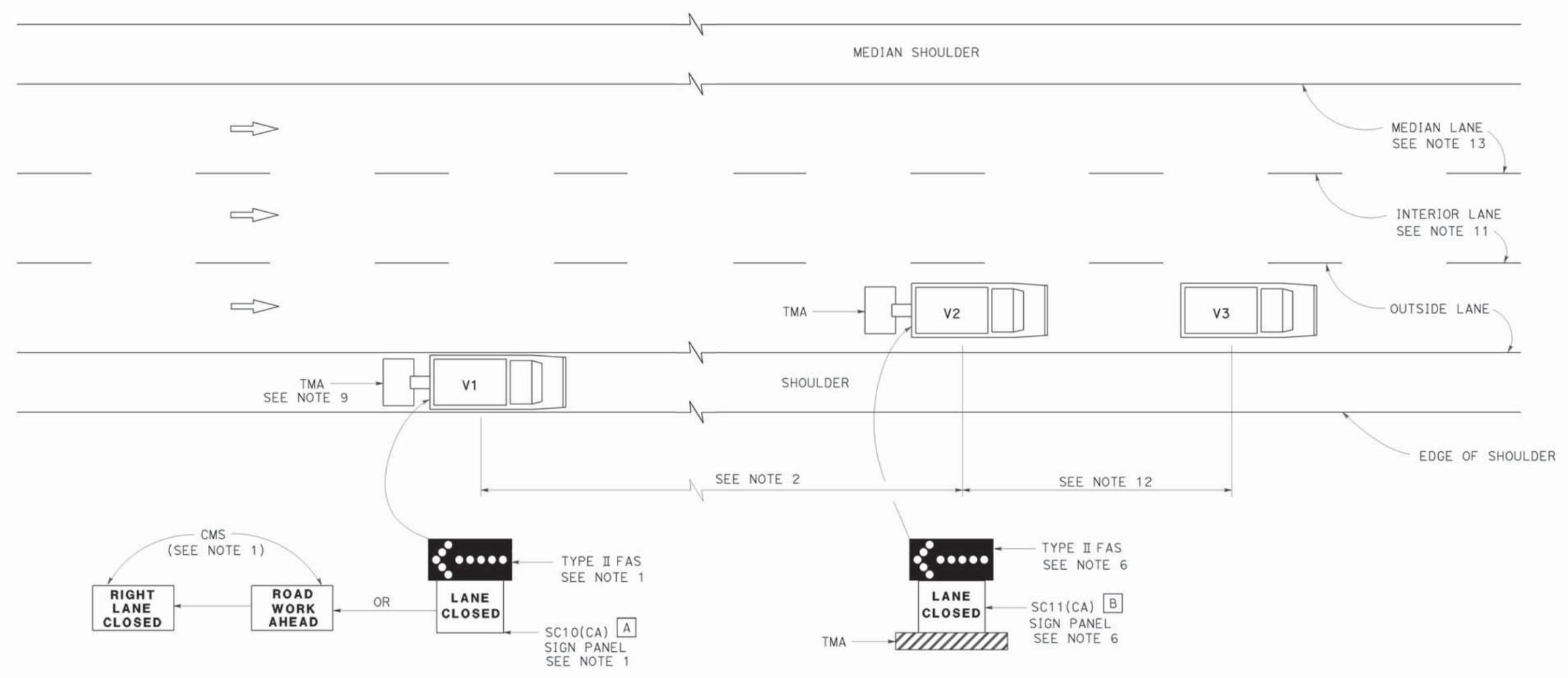
RSP T13 DATED OCTOBER 17, 2014 SUPERSEDES RSP T13 DATED JULY 18, 2014 AND RSP T13 DATED APRIL 19, 2013 AND STANDARD PLAN T13 DATED MAY 20, 2011 - PAGE 241 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T13

2010 REVISED STANDARD PLAN RSP T13



TO ACCOMPANY PLANS DATED 11-03-14



SIGN PANEL SIZE (Min)

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

LEGEND

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

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

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SYSTEM FOR MOVING LANE CLOSURE ON MULTILANE HIGHWAYS
NO SCALE

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

REVISED STANDARD PLAN RSP T15

2010 REVISED STANDARD PLAN RSP T15