

INDEX OF PLANS

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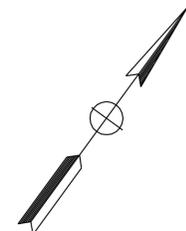
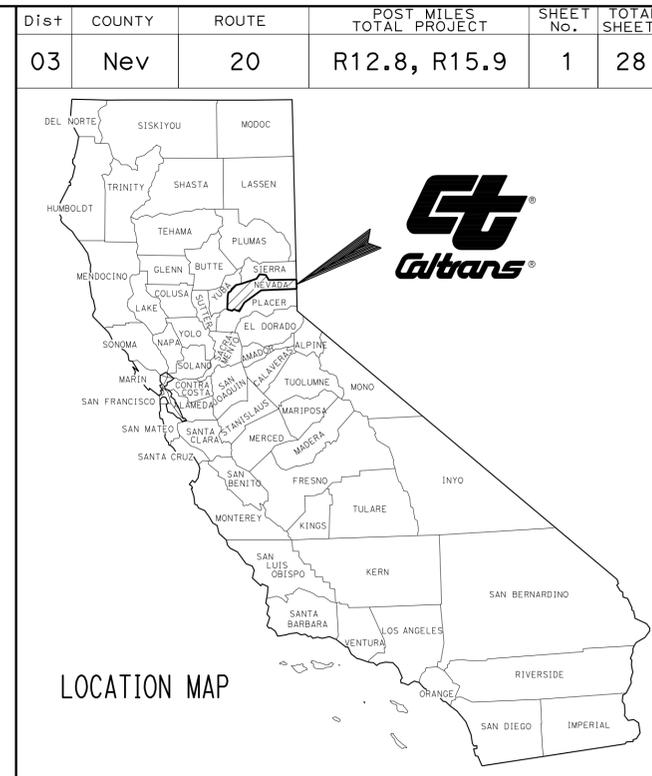
STRUCTURE PLANS

27-28	ROUTE 20 BRIDGES
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THE STANDARD PLANS LIST APPLICABLE TO THIS CONTRACT IS INCLUDED IN THE NOTICE TO BIDDERS AND SPECIAL PROVISIONS BOOK.

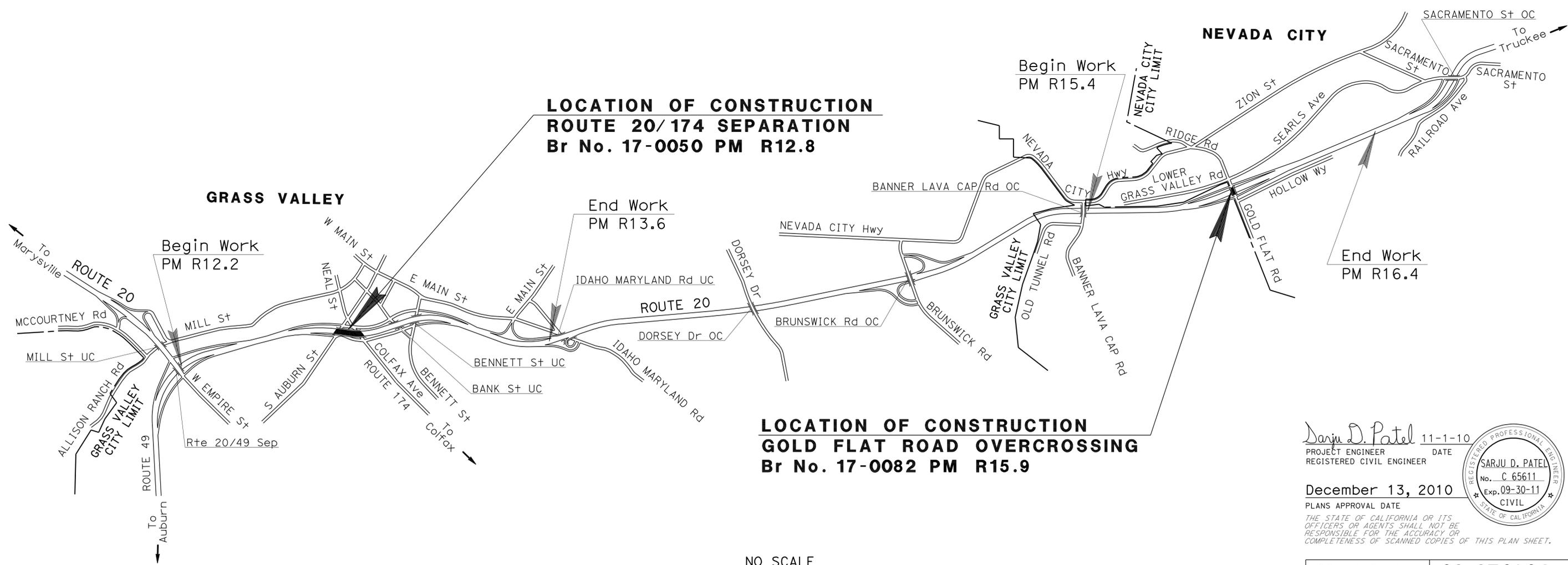
STATE OF CALIFORNIA BHNHS-P020(162)E
DEPARTMENT OF TRANSPORTATION
PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY
IN NEVADA COUNTY
IN GRASS VALLEY AND IN NEVADA CITY
AT ROUTE 20/174 SEPARATION
AND AT GOLD FLAT ROAD OVERCROSSING

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006



LOCATION OF CONSTRUCTION
ROUTE 20/174 SEPARATION
Br No. 17-0050 PM R12.8

LOCATION OF CONSTRUCTION
GOLD FLAT ROAD OVERCROSSING
Br No. 17-0082 PM R15.9



PROJECT MANAGER
SAMUEL JORDAN

DESIGN ENGINEER
ROBERT E. POLGAR

Sarju D. Patel 11-1-10
 PROJECT ENGINEER DATE
 REGISTERED CIVIL ENGINEER

December 13, 2010
 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.



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

NO SCALE

DATE PLOTTED => 23-MAY-2011 TIME PLOTTED => 15:02

NOTES:

- FOR COMPLETE RIGHT OF WAY AND ACCURATE ACCESS DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.
- UTILITY OWNERSHIP ON THIS PROJECT:
 ELECTRICAL - STATE OF CALIFORNIA (CALTRANS Elect)
 GAS - PACIFIC GAS & ELECTRIC (PG&E GAS)

ABBREVIATIONS:

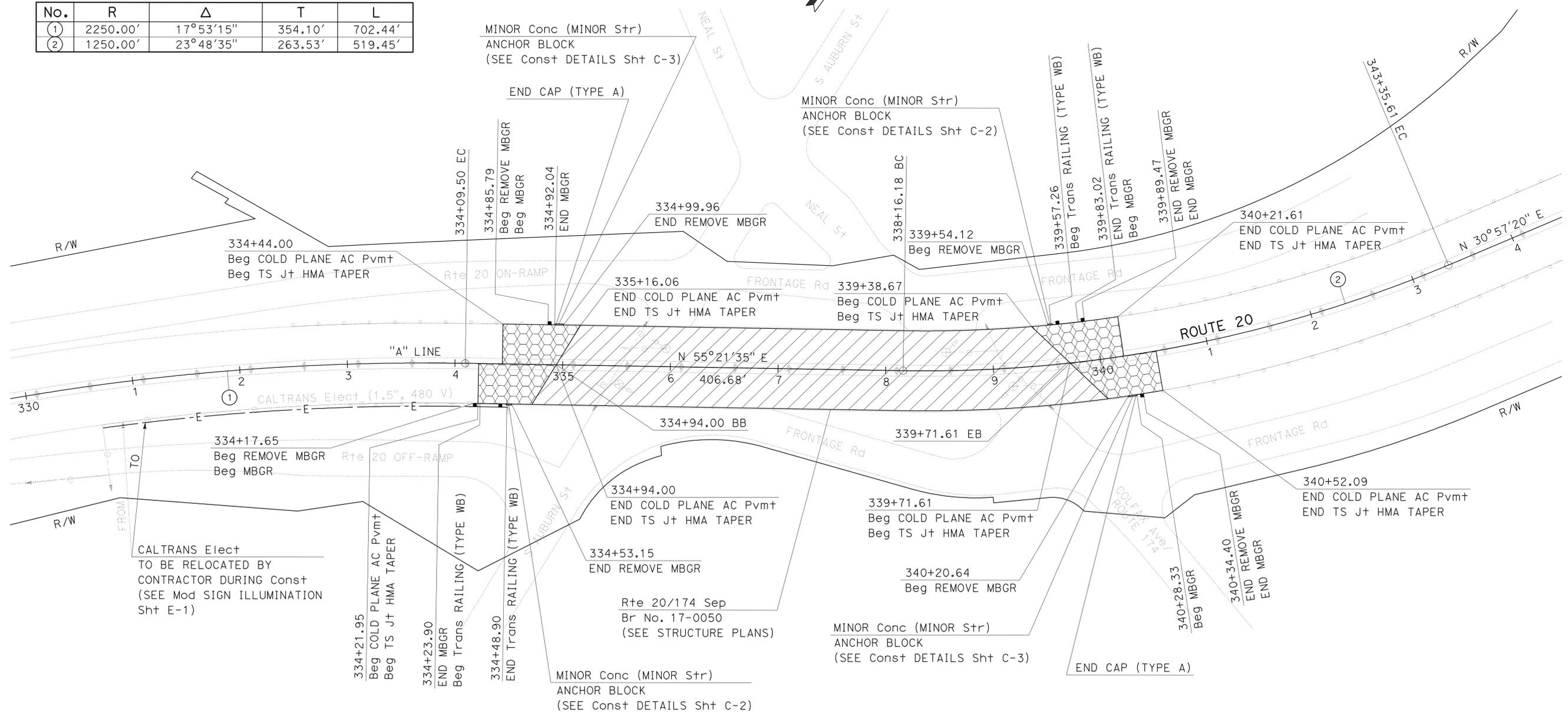
C & G - CURB AND GUTTER
 C, SW & CR - CURB, SIDEWALK AND CURB RAMP

LEGEND:

- LIMITS OF COLD PLANE AC Pvm+ AND TS J+ HMA TAPER
- LIMITS OF REMOVE AC Surf, PREPARE Br DECK SURFACE, AND PLACE POLYESTER Conc OVERLAY (SEE STRUCTURE PLANS FOR DETAILS)
- LIMITS OF PREPARE Br DECK SURFACE AND PLACE POLYESTER Conc OVERLAY (SEE STRUCTURE PLANS FOR DETAILS)

CURVE DATA

No.	R	Δ	T	L
①	2250.00'	17°53'15"	354.10'	702.44'
②	1250.00'	23°48'35"	263.53'	519.45'



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
 Sarju D. Patel
 W. Keith Mack
 Robert E. Polgar

LAYOUT
 SCALE: 1" = 50'

FUNCTIONAL SUPERVISOR	ROBERT E. POLGAR	CALCULATED/DESIGNED BY	SARJU D. PATEL	REVISOR	S. PATEL
CHECKED BY		DATE	07-30-10	DATE	09-01-10
DESIGNED BY	W. KEITH MACK	DATE	07-30-10	DATE	09-01-10

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

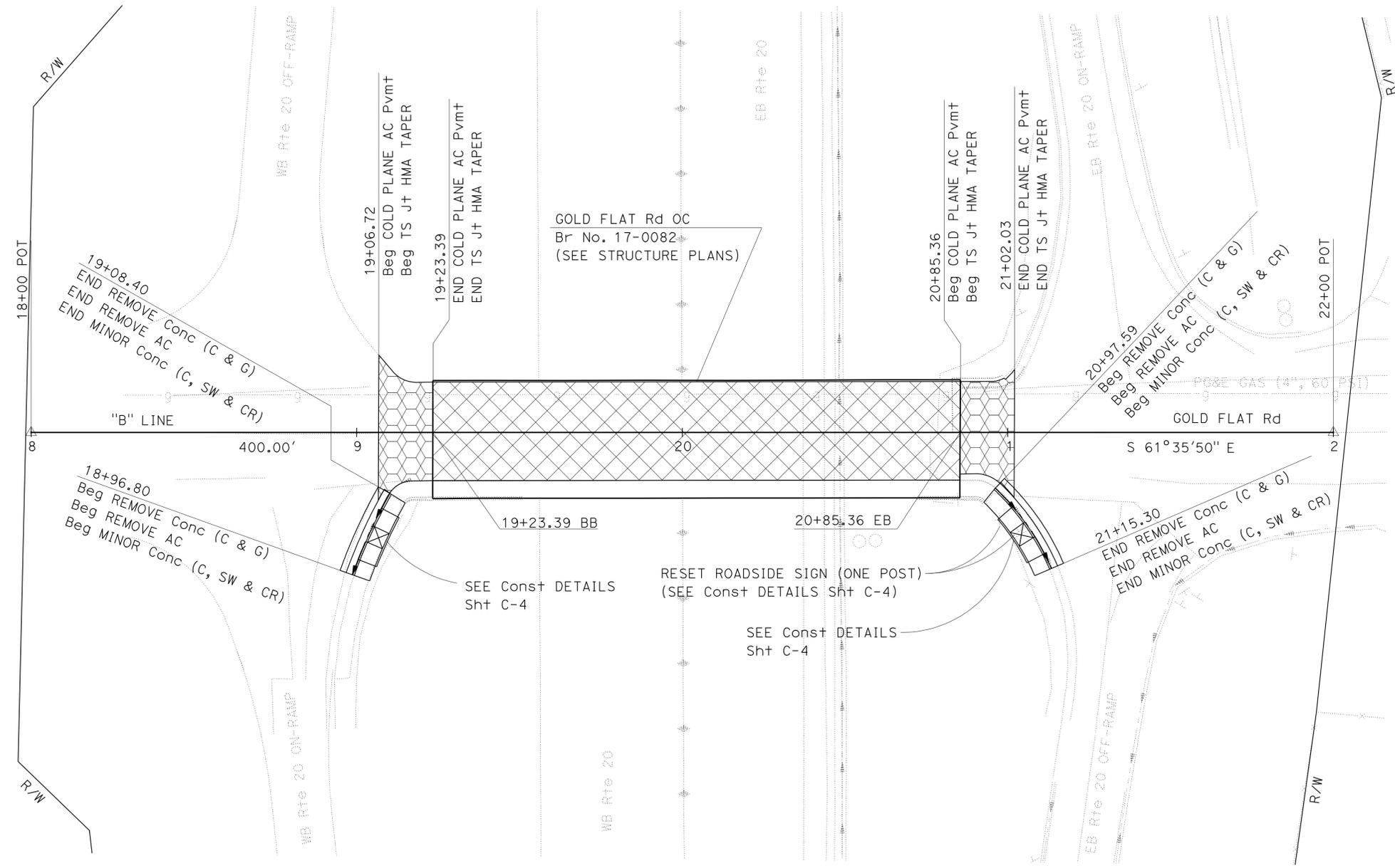
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	20	R12.8, R15.9	3	28

Sarju D. Patel
 REGISTERED CIVIL ENGINEER
 No. C. 65611
 Exp. 9-30-11
 CIVIL

11-1-10
 DATE

12-13-10
 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.



LAYOUT
 SCALE: 1" = 20'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN

FUNCTIONAL SUPERVISOR
 ROBERT E. POLGAR

CALCULATED/DESIGNED BY
 CHECKED BY

SARJU D. PATEL
 W. KEITH MACK

REVISED BY
 DATE REVISED

S. PATEL
 S. PATEL
 09-01-10
 07-30-10

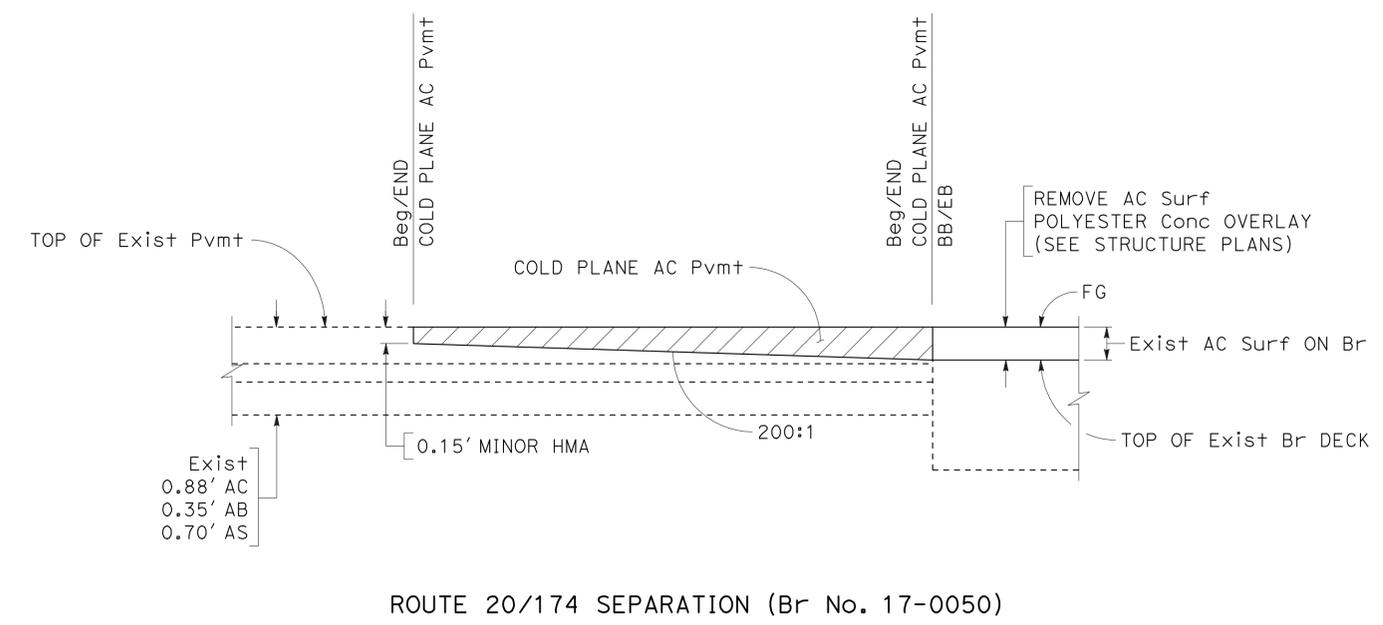
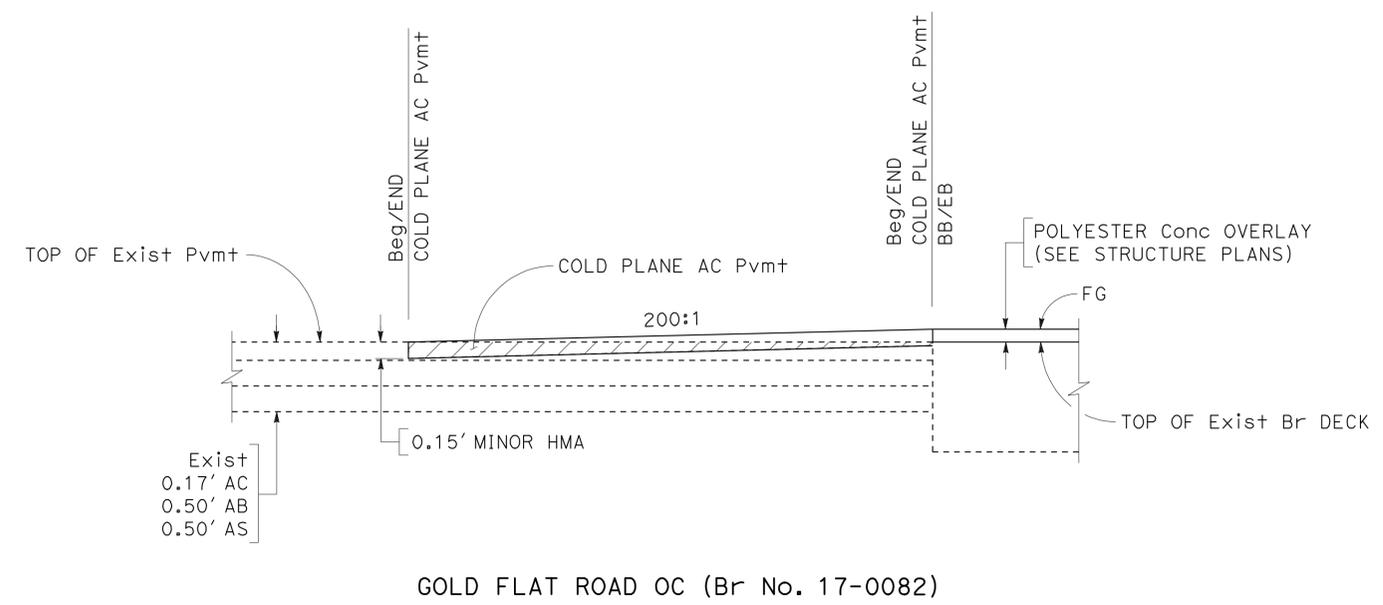
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Neu	20	R12.8, R15.9	4	28

Sarju D. Patel
 REGISTERED CIVIL ENGINEER DATE 11-1-10

12-13-10
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 SARJU D. PATEL
 No. C. 65611
 Exp. 9-30-11
 CIVIL
 STATE OF CALIFORNIA

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TRANSVERSE JOINT HMA TAPERS

CONSTRUCTION DETAILS

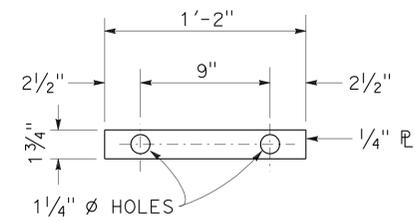
NO SCALE

C-1

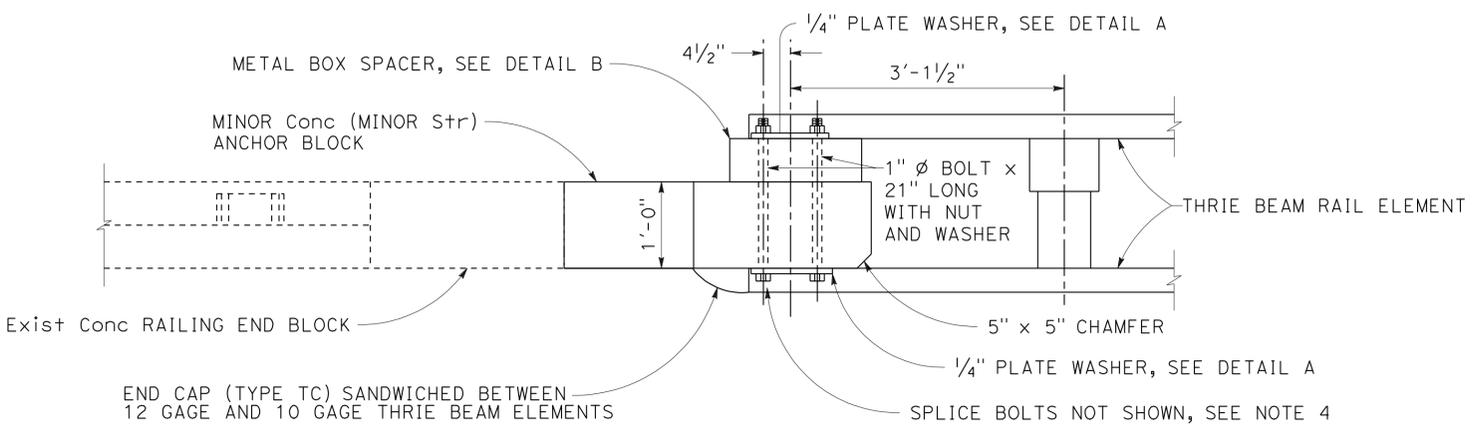
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	20	R12.8, R15.9	5	28
Sarju D. Patel REGISTERED CIVIL ENGINEER			11-1-10 DATE		
12-13-10 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

NOTES:

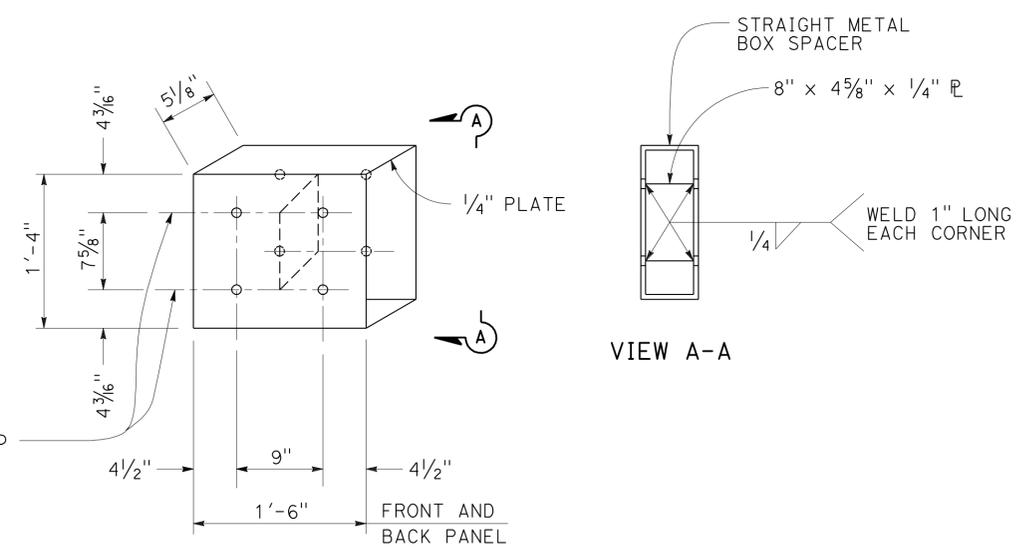
- FOR TRANSITION RAILING (TYPE WB) CONNECTION DETAILS NOT SHOWN, SEE STANDARD PLANS RSP A77J1 AND RSP A77J4.
- CONTRACTOR SHALL VERIFY DIMENSIONS IN THE FIELD BEFORE FABRICATING ANY END CONNECTION TO CONFORM WITH EXISTING PAVED CONDITIONS.
- ALL PLATES AND BOLTS ARE GALVANIZED.
- EXTERIOR SPLICE BOLT HOLES SHALL BE THE STANDARD 7/8" x 1/8" SLOT SIZE FOR RAIL SPLICES AT POST # T4 AND THE CONNECTION TO THE CONCRETE BARRIER OR RAILING INTERIOR SPLICE BOLT HOLES MAY BE INCREASED UP TO 1 1/8" Dia. WASHERS SHALL BE USED WITH SPLICE BOLTS ON BACK SIDE OF RAIL ELEMENT AT POST # T4 AND THE CONNECTION TO THE CONCRETE BARRIER OR RAILING.



DETAIL A

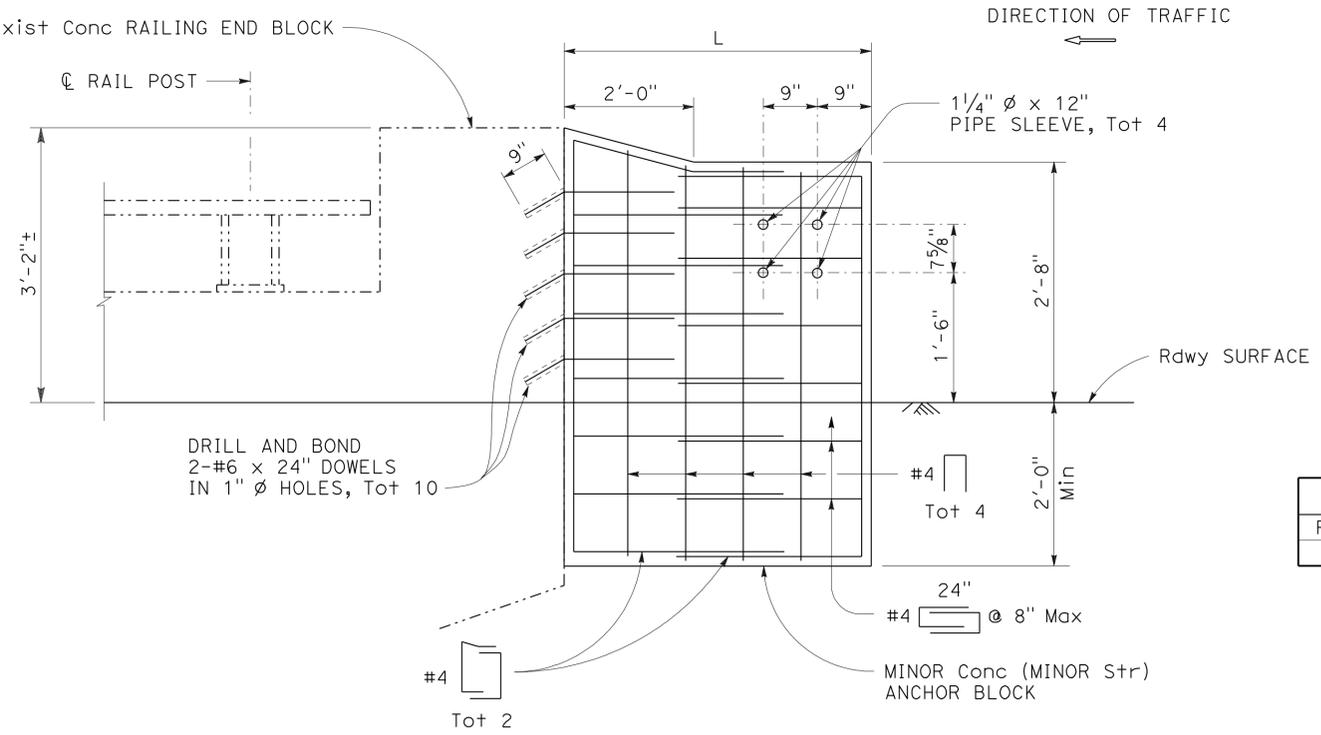


PLAN



VIEW A-A

DETAIL B



ELEVATION

LOCATION	Br No.	DIRECTION	L
Rte 20/174 Sep	17-0050	EB	5'-0"
	17-0050	WB	4'-2"

TRANSITION RAILING (TYPE WB) CONNECTION TO EXISTING APPROACH BRIDGE RAIL TYPE 9

CONSTRUCTION DETAILS

NO SCALE

C-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION DESIGN
 Sarju D. Patel
 W. Keith Mack
 Robert E. Polgar
 S. Patel
 S. Patel
 09-01-10
 07-30-10
 REVISIONS BY DATE REVISIONS BY DATE REVISIONS BY DATE REVISIONS BY DATE
 CALCULATED/DESIGNED BY CHECKED BY
 FUNCTIONAL SUPERVISOR
 USERNAME => rrcarol
 DGN FILE => 03000004691ga002.dgn
 RELATIVE BORDER SCALE IS IN INCHES
 UNIT 0306
 PROJECT NUMBER & PHASE
 03000004691

LAST REVISION: 10-04-10
 DATE PLOTTED => 15-DEC-2010
 TIME PLOTTED => 07:25

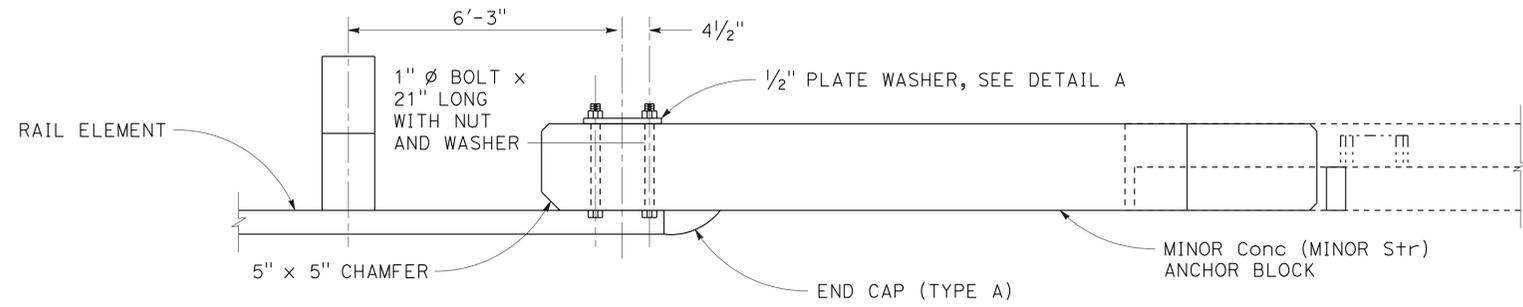
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	20	R12.8, R15.9	6	28

Sarju D. Patel
 REGISTERED CIVIL ENGINEER DATE 11-1-10
 12-13-10
 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.

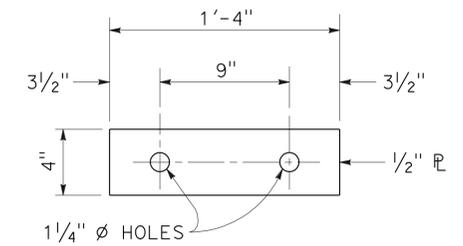
REGISTERED PROFESSIONAL ENGINEER
SARJU D. PATEL
 No. C. 65611
 Exp. 9-30-11
 CIVIL
 STATE OF CALIFORNIA

NOTES:

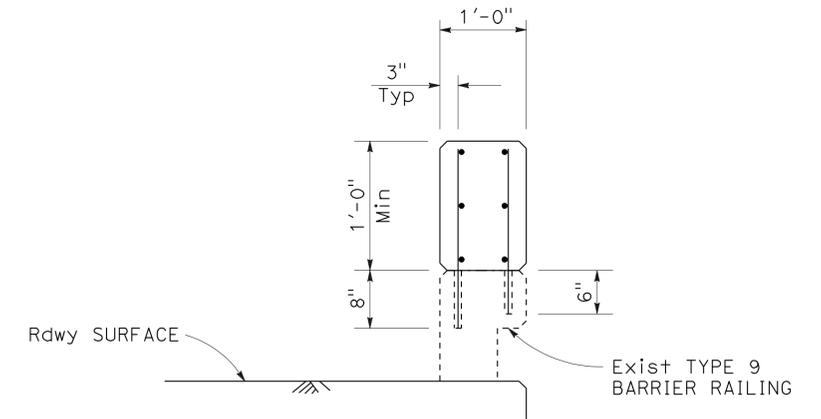
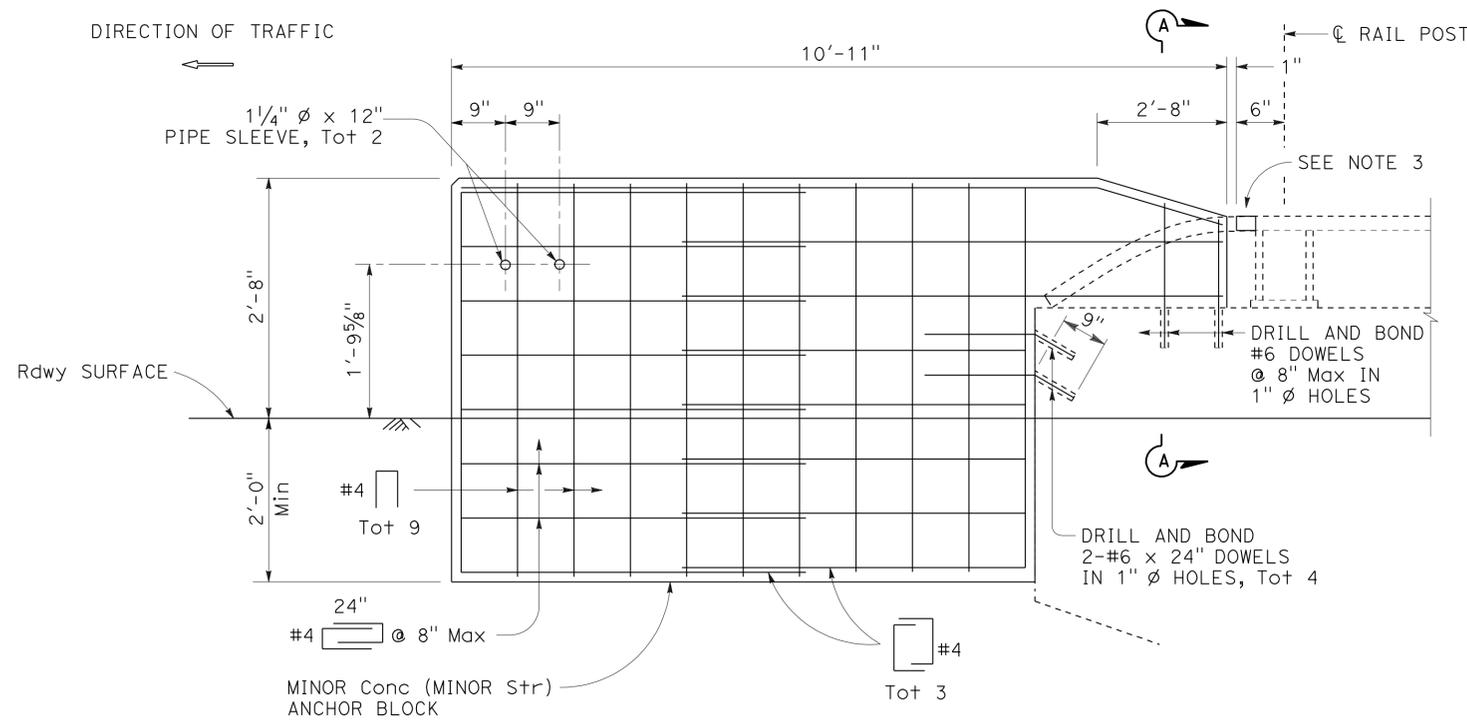
1. FOR METAL BEAM GUARD RAILING CONNECTION DETAILS NOT SHOWN, SEE STANDARD PLANS RSP A77J1.
2. ALL PLATES AND BOLTS ARE GALVANIZED.
3. CUT AND REPLACE THAT PORTION OF TUBULAR BRIDGE RAILING AS REQUIRED.



PLAN



DETAIL A



SECTION A-A

METAL BEAM GUARD RAILING CONNECTION TO EXISTING TRAILING BRIDGE RAIL TYPE 9

CONSTRUCTION DETAILS

NO SCALE

C-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN
 FUNCTIONAL SUPERVISOR ROBERT E. POLGAR
 CALCULATED/DESIGNED BY
 CHECKED BY
 SARJU D. PATEL W. KEITH MACK
 REVISED BY S. PATEL DATE REVISED 07-30-10
 S. PATEL 09-01-10

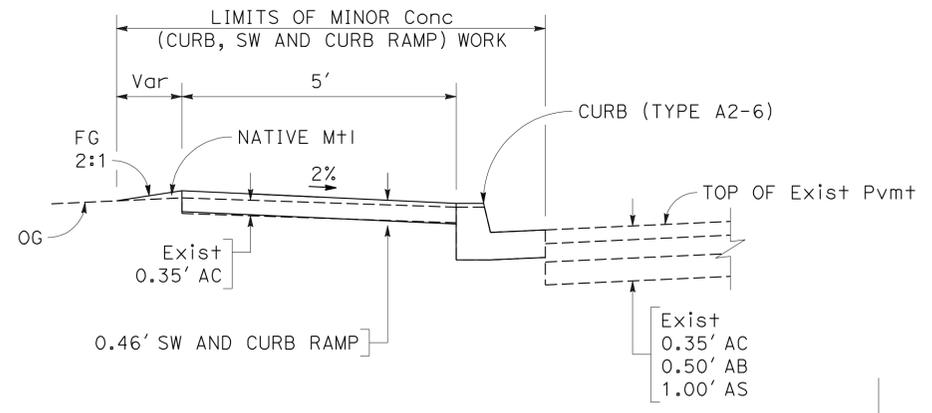
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	20	R12.8, R15.9	7	28

Sarju D. Patel
 REGISTERED CIVIL ENGINEER
 DATE 11-1-10
 PLANS APPROVAL DATE 12-13-10

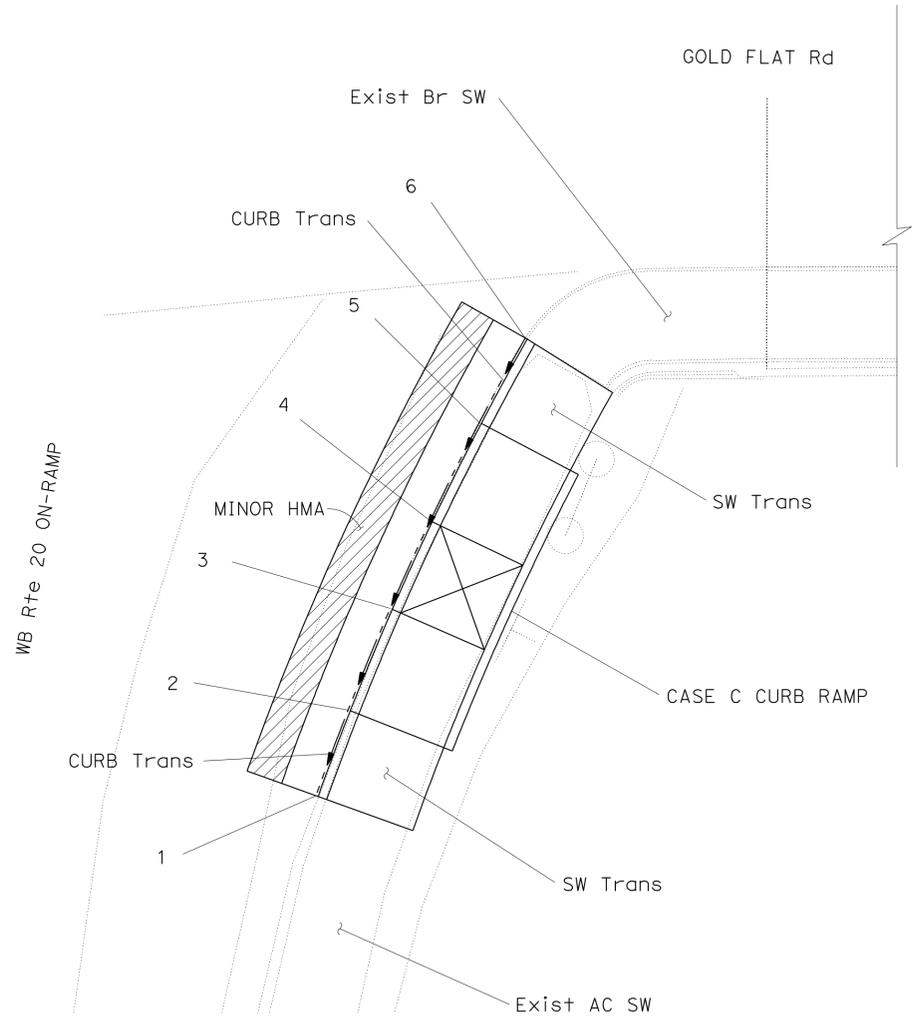
No. C 65611
 Exp. 9-30-11
 CIVIL

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:**
- FOR DETAILS NOT SHOWN, SEE STANDARD PLANS RSP A87A AND RSP A88A.
 - SIDEWALK AND CURB TRANSITIONS SHALL MATCH EXISTING SIDEWALK, CURB AND GUTTER.

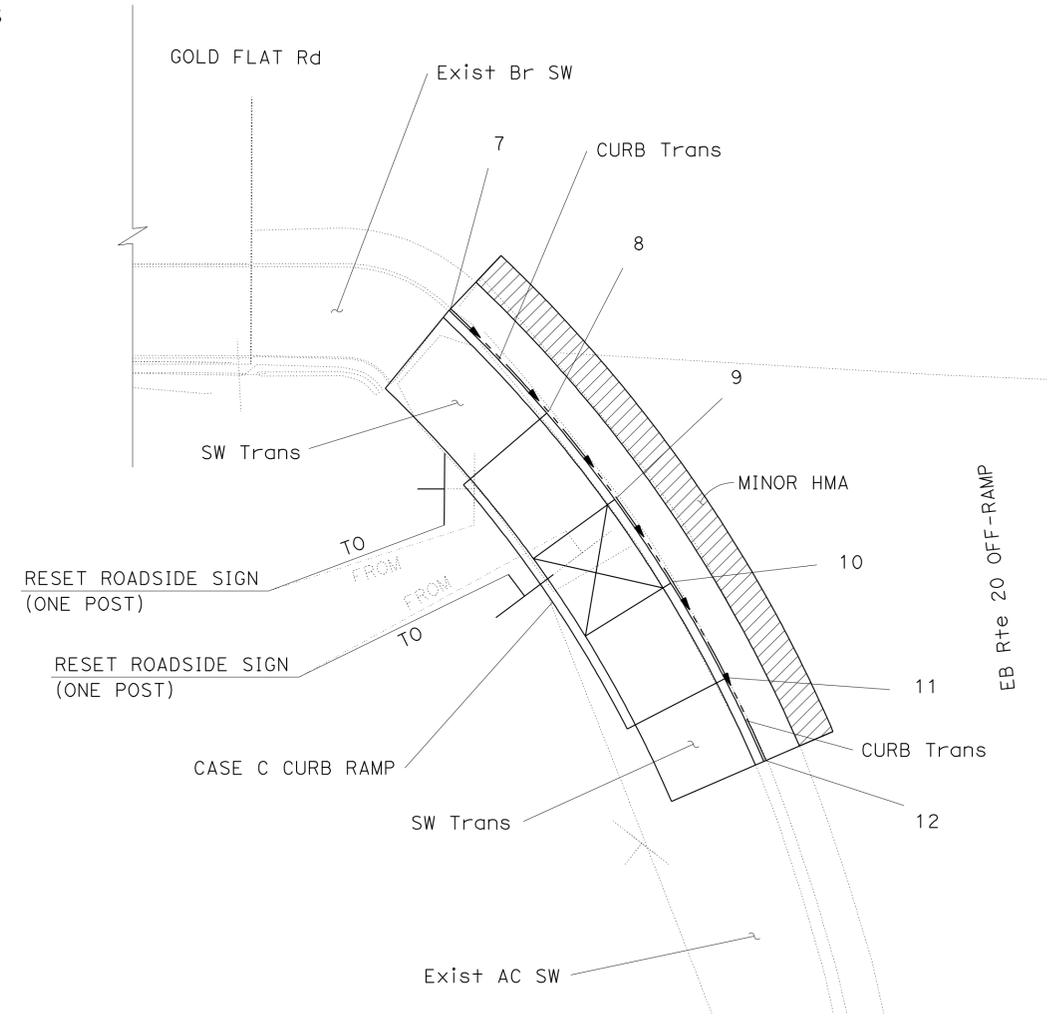


SIDEWALK WORK TYPICAL SECTION



CURB, SIDEWALK AND CURB RAMP DATA

POINT	STATION "B" LINE	OFFSET	FL Elev
1	18+98.68	43.62 Rt	MATCH Exist
2	19+00.44	38.94 Rt	2663.82
3	19+02.75	33.39 Rt	2664.02
4	19+04.93	28.62 Rt	2664.21
5	19+07.62	23.25 Rt	2664.46
6	19+10.14	18.63 Rt	MATCH Exist
7	20+96.22	17.04 Rt	MATCH Exist
8	21+01.57	22.66 Rt	2665.54
9	21+05.29	27.38 Rt	2665.40
10	21+08.36	31.95 Rt	2665.27
11	21+11.32	37.18 Rt	2665.18
12	21+13.46	41.70 Rt	MATCH Exist



MINOR CONCRETE (CURB, SIDEWALK AND CURB RAMP) DETAILS (GOLD FLAT Rd)

CONSTRUCTION DETAILS

NO SCALE

C-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN
 FUNCTIONAL SUPERVISOR: ROBERT E. POLGAR
 CALCULATED/DESIGNED BY: SARJU D. PATEL
 CHECKED BY: W. KEITH MACK
 REVISED BY: S. PATEL
 DATE REVISED: 07-30-10
 S. PATEL
 09-01-10

USERNAME => rrcarol
 DGN FILE => 03000004691ga004.dgn



UNIT 0306

PROJECT NUMBER & PHASE

03000004691

LAST REVISION: 10-04-10
 DATE PLOTTED => 15-DEC-2010
 TIME PLOTTED => 07:25

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	20	R12.8, R15.9	8	28

Sarju D. Patel
 REGISTERED CIVIL ENGINEER
 DATE 11-1-10

12-13-10
 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
SARJU D. PATEL
 No. C 65611
 Exp. 9-30-11
 CIVIL
 STATE OF CALIFORNIA

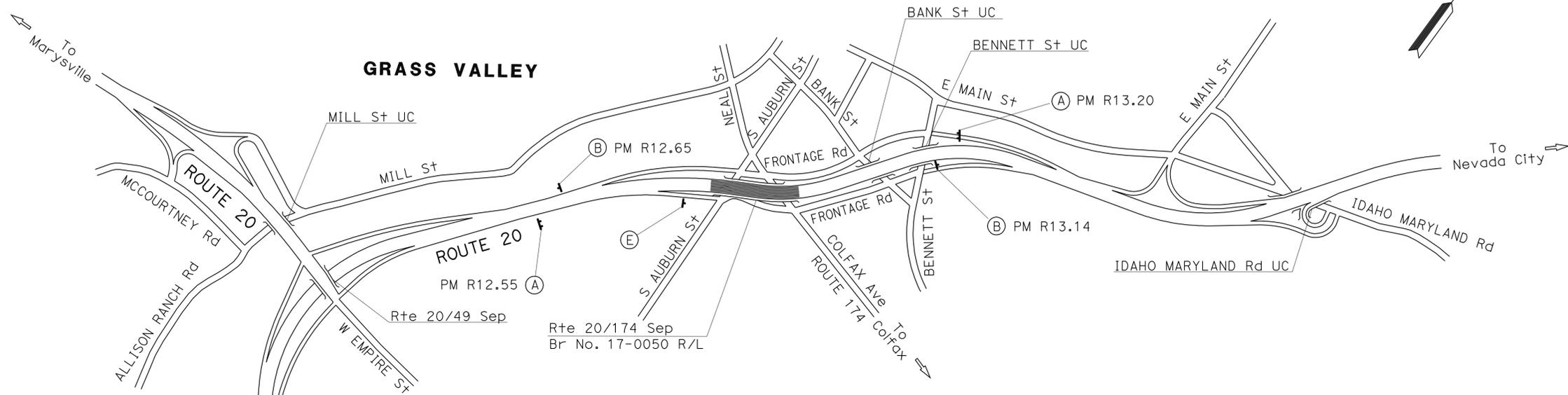
NOTES:

1. THIS PLAN ACCURATE FOR CONSTRUCTION AREA SIGN WORK ONLY.
2. EXACT SIGN LOCATIONS TO BE DETERMINED BY THE ENGINEER.

LEGEND:

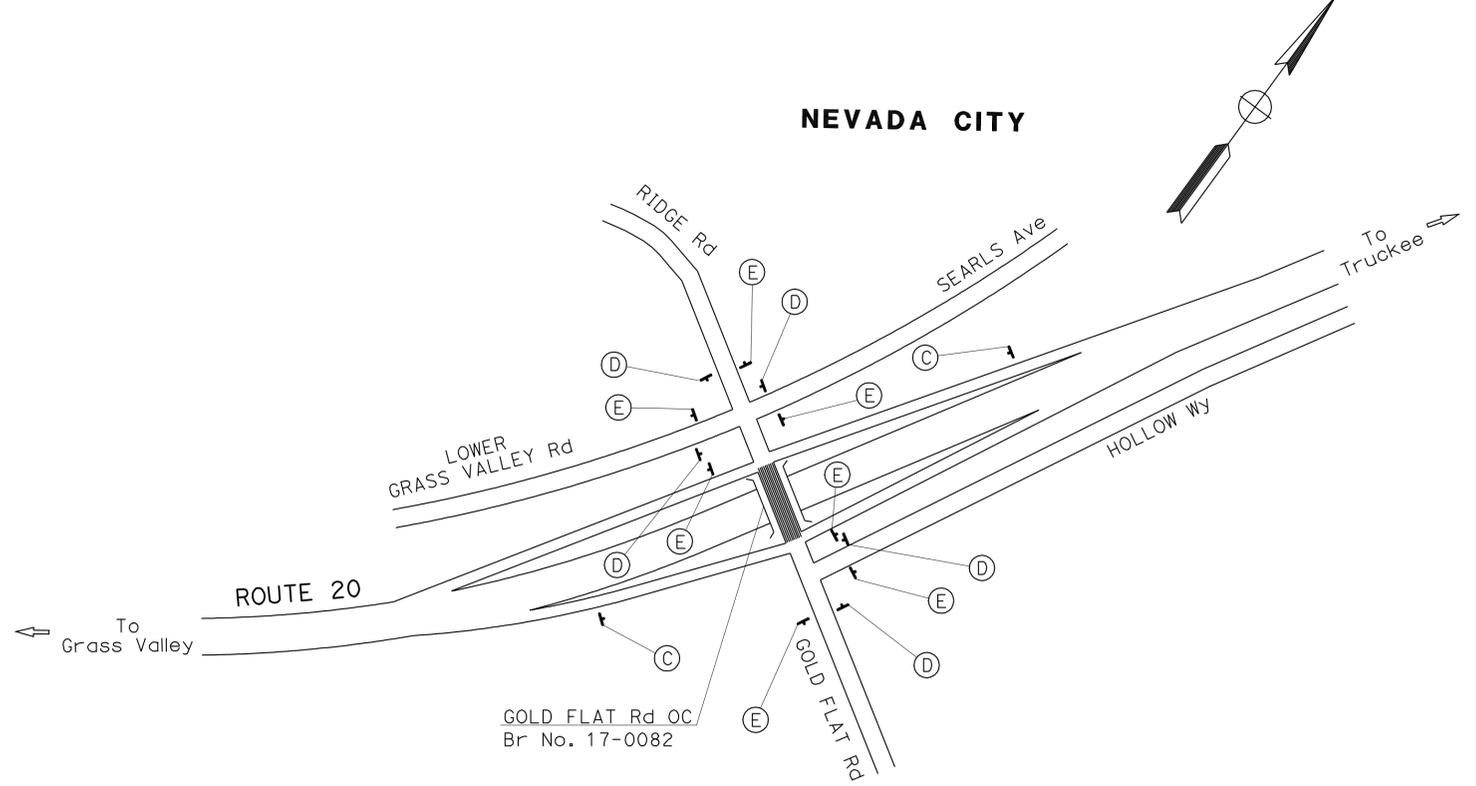
- † SIGN - SINGLE POST
- ‡ SIGN - DOUBLE POST

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION DESIGN
 Sarju D. Patel
 W. Keith Mack
 Robert E. Polgar



STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN LETTER	SIGN CODE	SIGN MESSAGE	PANEL SIZE	No. OF POSTS AND SIZE	No. OF SIGNS
(A)	W20-1	ROAD WORK AHEAD	60" x 60"	2 - 4" x 6"	2
(B)	C14(CA)	END ROAD WORK	48" x 24"	1 - 4" x 6"	2
(C)	W20-1	ROAD WORK AHEAD	48" x 48"	1 - 6" x 6"	2
(D)	W20-1	ROAD WORK AHEAD	36" x 36"	1 - 4" x 6"	5
(E)	G20-2	END ROAD WORK	36" x 18"	1 - 4" x 4"	8



CONSTRUCTION AREA SIGNS

NO SCALE

CS-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	20	R12.8, R15.9	9	28

Sarju D. Patel 11-1-10
REGISTERED CIVIL ENGINEER DATE

12-13-10
PLANS APPROVAL DATE

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NOTES:

1. (N) = NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.
2. STRIPING AND PAVEMENT MARKINGS TO REPLACE EXISTING. CONTRACTOR TO LOCATE STRIPING DETAIL CHANGE AND PAVEMENT MARKING LOCATIONS BEFORE OBLITERATION OF EXISTING STRIPES AND MARKINGS.

REMOVE THERMOPLASTIC TRAFFIC STRIPE

LOCATION	Br No.	DESCRIPTION	DETAIL No.	(N) DETAIL LENGTH	YELLOW (HAZARDOUS WASTE)	WHITE
					LF	
GOLD FLAT Rd OC	17-0082	CENTERLINE	21	162.0	324.0	
		L+ EDGELINE	27B	162.0		162.0
		R+ EDGELINE	27B	162.0		162.0
TOTAL					324.0	324.0

REMOVE THERMOPLASTIC PAVEMENT MARKING

LOCATION	Br No.	DESCRIPTION	AREA
			SQFT
GOLD FLAT Rd OC	17-0082	"STOP"	22.0
		LIMIT LINE	13.1
TOTAL			35.1

4" TWO-COMPONENT PAINT TRAFFIC STRIPE

LOCATION	Br No.	DIRECTION	DESCRIPTION	DETAIL No.	(N) DETAIL LENGTH	YELLOW	WHITE
						LF	
Rte 20/174 Sep	17-0050	WB	LANELINE	11	568.8		568.8
			L+ EDGELINE	24	570.7	570.7	
			R+ EDGELINE	27B	566.8		566.8
		EB	LANELINE	11	629.0		629.0
			L+ EDGELINE	24	626.8	626.8	
			R+ EDGELINE	27B	631.3		631.3
GOLD FLAT Rd OC	17-0082		CENTERLINE	21	162.0	324.0	
			L+ EDGELINE*	24	53.4	53.4	
			R+ EDGELINE	27B	162.0		324.0
SUBTOTAL						1574.9	2719.9
TOTAL						4294.8	

* L+ EDGELINE STRIPE ON WB Rte 20 ON-RAMP AND EB Rte 20 OFF-RAMP.

TWO-COMPONENT PAINT PAVEMENT MARKING

LOCATION	Br No.	DESCRIPTION	AREA
			SQFT
GOLD FLAT Rd OC	17-0082	"STOP"	22.0
		LIMIT LINE	13.1
TOTAL			35.1

PAVEMENT DELINEATION QUANTITIES

PDQ-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN
 FUNCTIONAL SUPERVISOR: ROBERT E. POLGAR
 CALCULATED/DESIGNED BY: SARJU D. PATEL
 CHECKED BY: W. KEITH MACK
 REVISED BY: S. PATEL
 DATE REVISED: 07-30-10
 S. PATEL
 09-01-10

LAST REVISION: 10-04-10
 DATE PLOTTED => 15-DEC-2010
 TIME PLOTTED => 07:25

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	20	R12.8, R15.9	10	28

Sarju D. Patel
REGISTERED CIVIL ENGINEER DATE 11-1-10

12-13-10
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
No. C. 65611
Exp. 9-30-11
CIVIL
STATE OF CALIFORNIA

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ROADWAY QUANTITIES

LOCATION	BRIDGE No.	STATION	COLD PLANE AC Pvm+		MINOR HMA
			SQYD	TON	
Rte 20/174 Sep	17-0050	"A" L+ 334+44.00 TO L+ 335+16.06	250.9	33.7	
		"A" L+ 339+38.67 TO L+ 340+21.61	267.5	36.6	
		"A" R+ 334+21.95 TO R+ 334+94.00	250.9	33.7	
		"A" R+ 339+71.61 TO R+ 340+52.09	271.6	37.0	
GOLD FLAT Rd OC	17-0082	"B" 19+06.72 TO 19+23.39	61.9	6.3	
		"B" 20+85.36 TO 21+02.03	56.3	5.7	
		TOTAL	1159.1	153.0	

REMOVE CONCRETE (CURB AND GUTTER)

LOCATION	BRIDGE No.	STATION ("B" LINE)	LENGTH	
			LF	
GOLD FLAT Rd OC	17-0082	R+ 18+96.80 TO R+ 19+08.40	27.5	
		R+ 20+97.59 TO R+ 21+15.30	30.3	
TOTAL			57.8	

REMOVE AC

LOCATION	BRIDGE No.	STATION ("B" LINE)	AREA
			SQYD
GOLD FLAT Rd OC	17-0082	R+ 18+96.80 TO R+ 19+08.40	14.1
		R+ 20+97.59 TO R+ 21+15.30	15.9
TOTAL			30.0

METAL BEAM GUARD RAILING

LOCATION	BRIDGE No.	STATION ("A" LINE)	REMOVE MBGR		TRANS RAILING (TYPE WB)	END CAP (TYPE A)
			LF	EA		
Rte 20/174 Sep	17-0050	L+ 334+85.79 TO L+ 334+99.96	14.2	6.3		1
		L+ 339+54.12 TO L+ 339+89.47	35.4	6.3	1	
		R+ 334+17.65 TO R+ 334+53.15	35.5	6.3	1	
		R+ 340+20.64 TO R+ 340+34.40	13.8	6.3		1
TOTAL			98.9	25.2	2	2

MINOR CONCRETE (CURB, SIDEWALK AND CURB RAMP)

LOCATION	BRIDGE No.	STATION ("B" LINE)	CURB (TYPE A2-6)	SIDEWALK	CURB RAMP (CASE C)
GOLD FLAT Rd OC	17-0082	R+ 18+96.80 TO R+ 19+08.40	1.75	0.61	1.30
		R+ 20+97.59 TO R+ 21+15.30	1.93	0.74	1.29
SUBTOTAL			3.68	1.35	2.59
TOTAL			7.62		

MINOR CONCRETE (MINOR STRUCTURE)

LOCATION	BRIDGE No.	STATION ("A" LINE)	VOLUME
			CY
Rte 20/174 Sep	17-0050	L+ 334+92.04 TO L+ 334+99.96	1.52
		L+ 339+54.12 TO L+ 339+58.29	0.74
		R+ 334+48.15 TO R+ 334+53.15	0.89
		R+ 340+20.64 TO R+ 340+28.33	1.52
TOTAL			4.67

RESET ROADSIDE SIGN (ONE POST)

LOCATION	BRIDGE No.	QUANTITY
		EA
GOLD FLAT Rd OC	17-0082	2
TOTAL		2

SUMMARY OF QUANTITIES

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

DESIGN

Caltrans

FUNCTIONAL SUPERVISOR: ROBERT E. POLGAR

REVISOR: SARJU D. PATEL, W. KEITH MACK

REVISIONS: S. PATEL 07-30-10, S. PATEL 09-01-10

DESIGNED BY: SARJU D. PATEL, W. KEITH MACK

CHECKED BY: W. KEITH MACK

DATE: 7/2/2010

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Nev	20	R12.8,R15.9	12	28

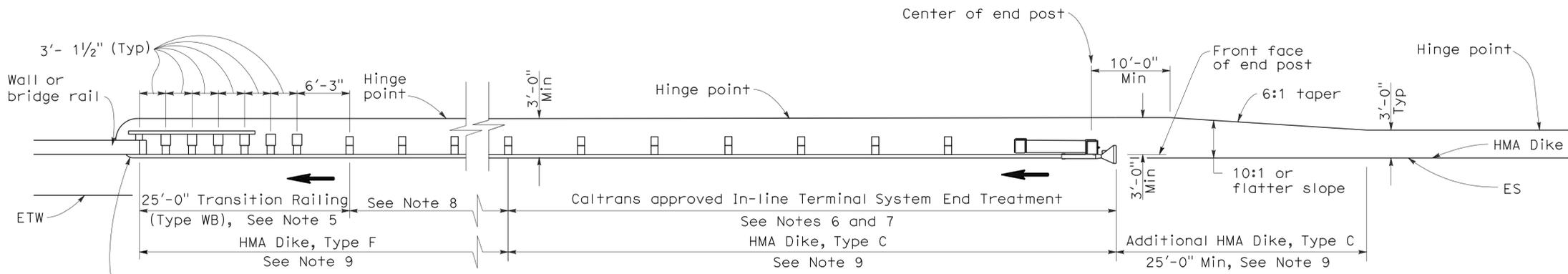
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

Randell D. Hiatt
REGISTERED PROFESSIONAL ENGINEER
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

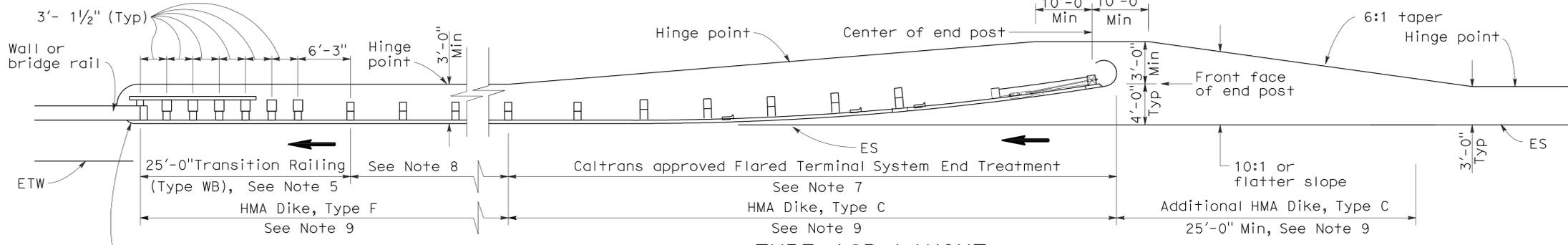
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To accompany plans dated 12-13-10



TYPE 12A LAYOUT

(GUARD RAILING INSTALLATION AT STRUCTURE APPROACH WITH AN IN-LINE END TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 10



TYPE 12B LAYOUT

(GUARD RAILING INSTALLATION AT STRUCTURE APPROACH WITH A FLARED END TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 10

NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard rail 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 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by \rightarrow .
- For Transition Railing (Type WB) details for Types 12A and 12B Layouts, see Standard Plan A77J4.
- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type 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.

- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 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 A77F3 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 A77J1 and RSP A77J2 and Connection Detail FF on Standard Plans A77K1 and A77K2.
- For additional details of a typical connection to walls or abutments, see Standard Plan A77J3.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TYPICAL LAYOUTS FOR
STRUCTURE APPROACH**

NO SCALE

RSP A77F1 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77F1
DATED MAY 1, 2006 - PAGE 54 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP A77F1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Nev	20	R12.8,R15.9	13	28

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

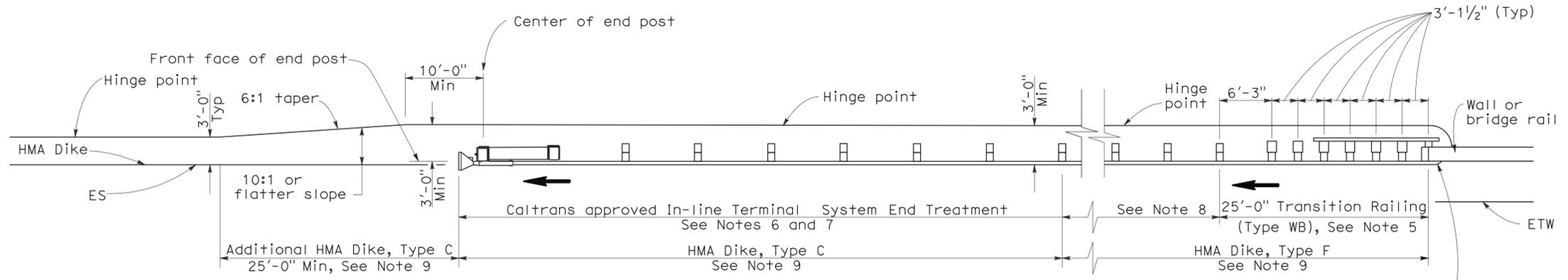
June 6, 2008
PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

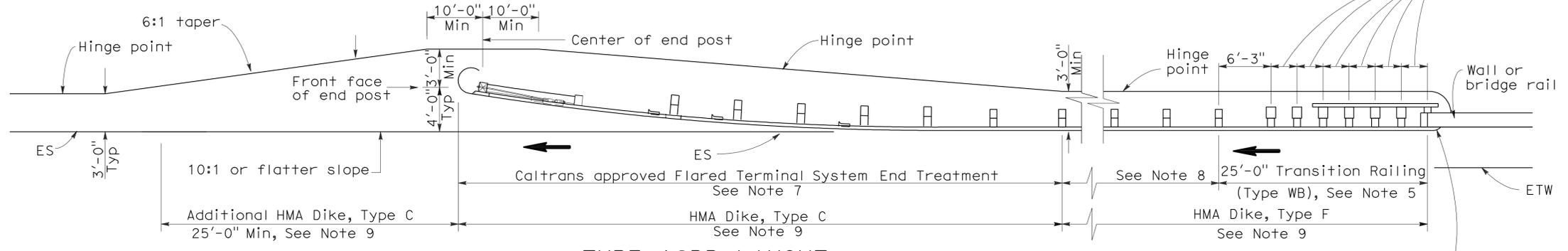
To accompany plans dated 12-13-10

2006 REVISED STANDARD PLAN RSP A77F4



TYPE 12AA LAYOUT

(GUARD RAILING INSTALLATION AT STRUCTURE DEPARTURE WITH AN IN-LINE END TREATMENT AT TRAILING END OF RAILING)
See Notes 9 and 10



TYPE 12BB LAYOUT

(GUARD RAILING INSTALLATION AT STRUCTURE DEPARTURE WITH A FLARED END TREATMENT AT TRAILING END OF RAILING)
See Notes 9 and 10

NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard rail 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 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" 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 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by ➡.
- For Transition Railing (Type WB) details for Types 12AA and 12BB Layouts, see Standard Plan A77J4.
- In-line Terminal System Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of 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 guard railing (a length equal to multiples of 12'-6" with 6'-3" post spacing) between the transition railing and end treatments.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 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 A77J2 and Connection Detail HH on Standard Plans A77k2.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TYPICAL LAYOUTS FOR
STRUCTURE DEPARTURE**

NO SCALE

RSP A77F4 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77F4
DATED MAY 1, 2006 - PAGE 57 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77F4

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Nev	20	R12.8,R15.9	14	28

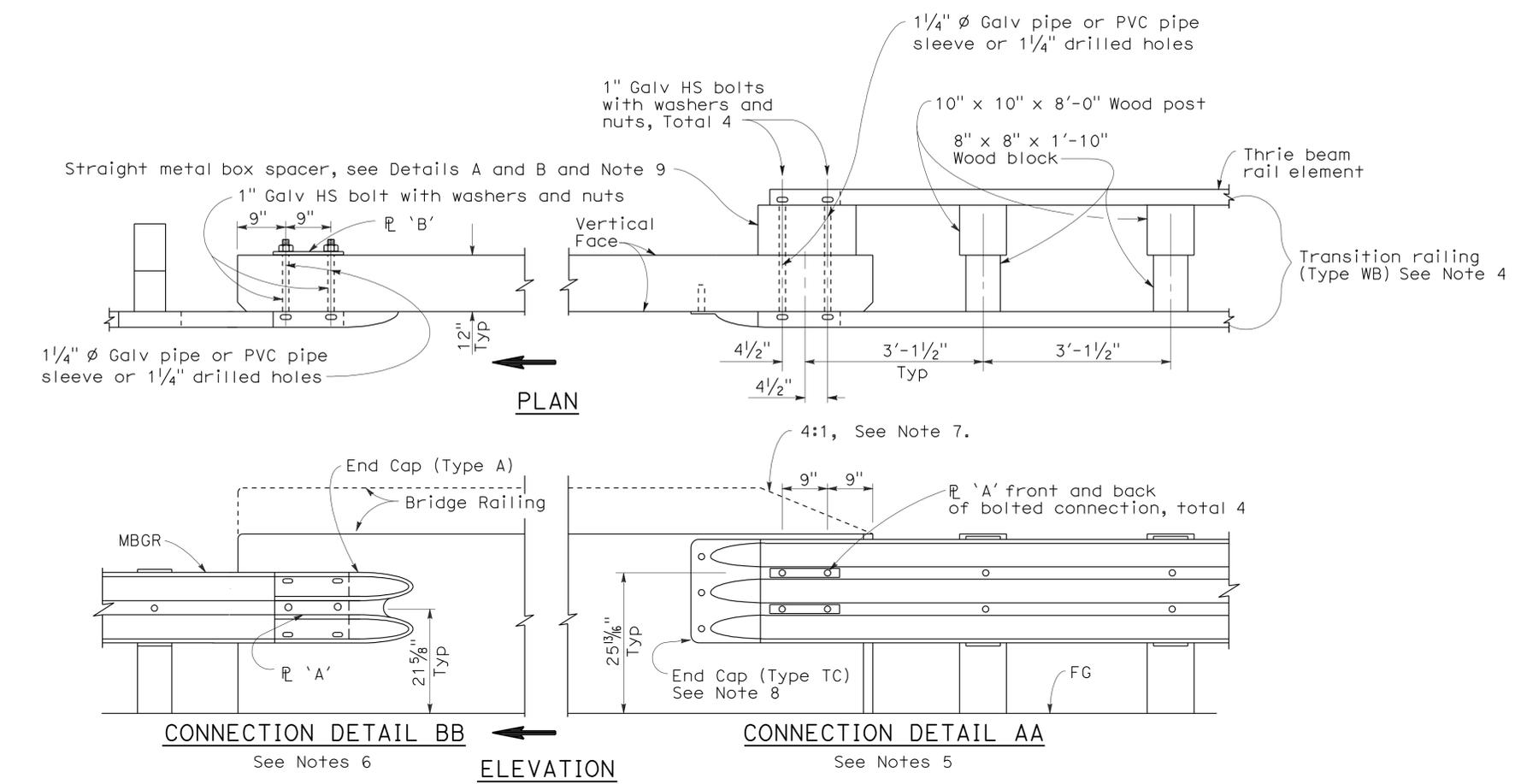
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

Randell D. Hiatt
REGISTERED PROFESSIONAL ENGINEER
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

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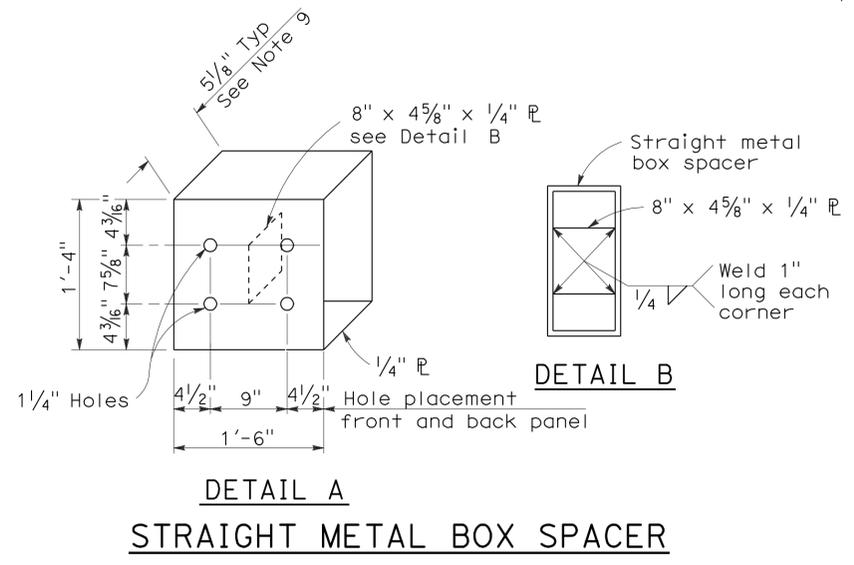
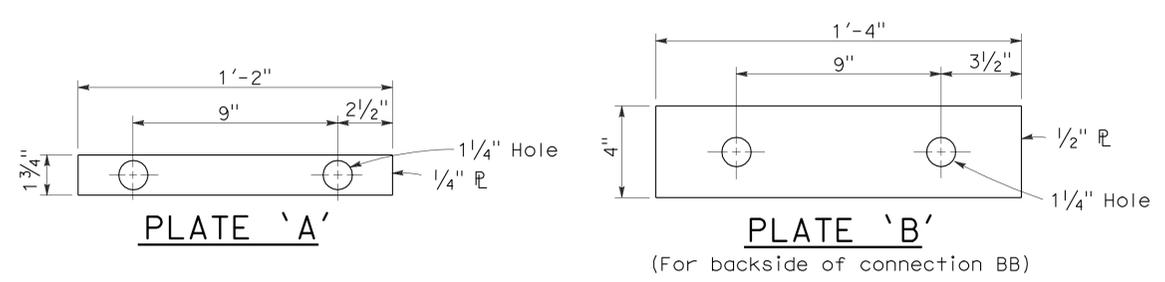
To accompany plans dated 12-13-10



GUARD RAILING CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK

NOTES:

1. See Revised Standard Plan RSP A77J2 for additional connection details to bridges without sidewalks.
2. Additional details of posts, blocks and hardware are shown on Standard Plan A77B1, A77C1 and A77C2.
3. Direction of adjacent traffic indicated by \rightarrow .
4. For additional details of Transition Railing (Type WB), see Standard Plan A77J4. Transition Railing (Type WB) transitions the 12 gage w-beam standard railing section of guard railing to a heavier gage nested thrie beam railing section which is connected to the concrete bridge railing.
5. For typical use of Connection Detail AA, see Layout Types 12A and 12B on Revised Standard Plan RSP A77F1, Layout Types 12C and 12D on Standard Plan A77F2, and Layout Type 12E on Revised Standard Plan RSP A77F3.
6. For typical use of Connection Detail BB, see Layout Type 12D (structure departure railing connection) on Standard Plan A77F2 and Layout Type 12DD on Standard Plan A77F5.
7. 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.
8. For details of End Cap (Type TC), see Standard Plan A77J4.
9. See Standard Plan A77J4 for additional details regarding depth dimension for straight metal box spacer.



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
METAL BEAM GUARD RAILING CONNECTIONS TO BRIDGE RAILINGS WITHOUT SIDEWALKS DETAILS No.1

NO SCALE
RSP A77J1 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77J1
DATED MAY 1, 2006 - PAGE 72 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP A77J1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Nev	20	R12.8,R15.9	15	28

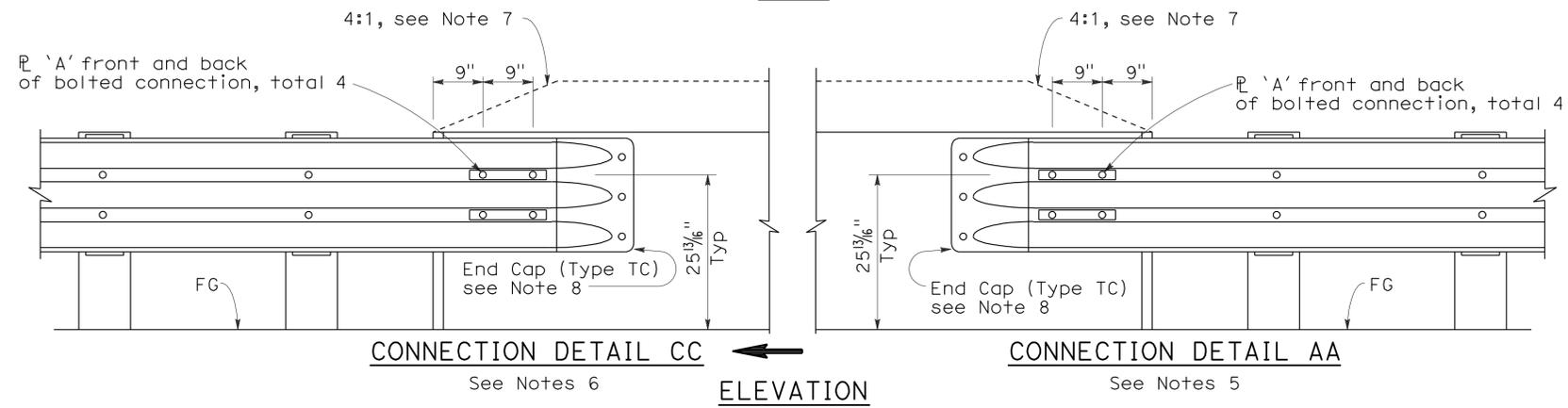
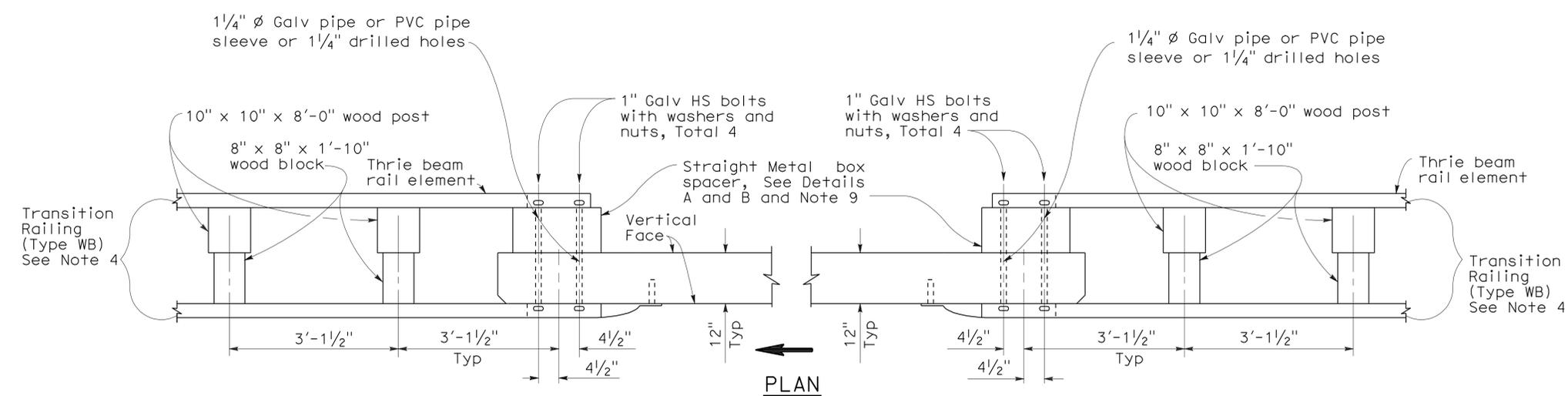
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

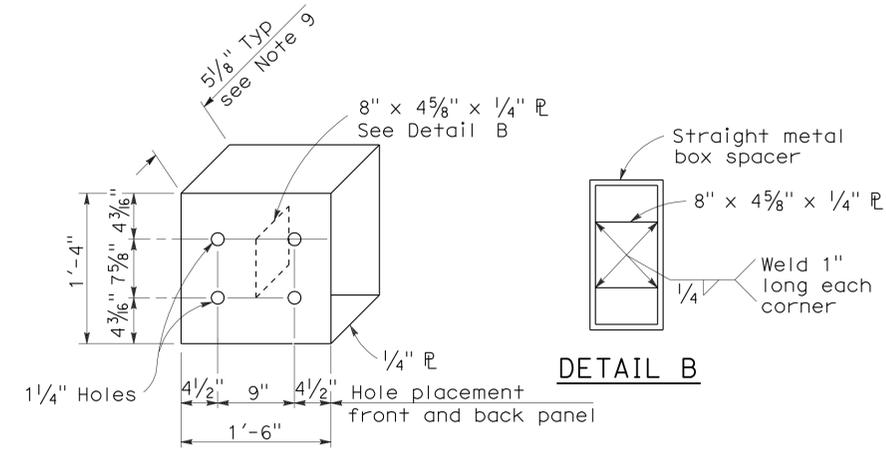
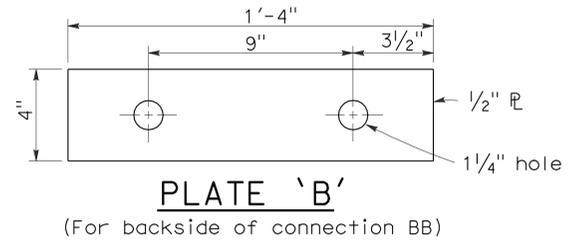
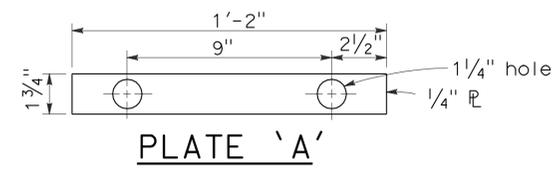
To accompany plans dated 12-13-10



GUARD RAILING CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK

NOTES:

1. See Revised Standard Plan RSP A77J1 for additional connection details to bridges without sidewalks.
2. Additional details of posts, blocks and hardware are shown on Standard Plan A77B1, A77C1 and A77C2.
3. Direction of adjacent traffic indicated by →.
4. For additional details of Transition Railing (Type WB), see Standard Plan A77J4. Transition Railing (Type WB) transitions the 12 gage w-beam standard railing section of guard railing to a heavier gage nested thrie beam railing section which is connected to the concrete bridge railing.
5. For typical use of Connection Detail AA, see Layout Types 12A and 12B on Revised Standard Plan RSP A77F1, Layout Types 12C and 12D on Standard Plan A77F2, and Layout Type 12E on Revised Standard Plan RSP A77F3.
6. For typical use of Connection Detail CC, see Layout Types 12AA and 12BB on Standard Plan A77F4 and Layout Type 12CC on Standard Plan A77F5.
7. 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.
8. For details of End Cap (Type TC), see Standard Plans A77J4.
9. See Standard Plans A77J4 for additional details regarding depth dimension for straight metal box spacer.



**DETAIL A
STRAIGHT METAL BOX SPACER**

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
CONNECTIONS TO BRIDGE RAILINGS
WITHOUT SIDEWALKS DETAILS No.2**

NO SCALE
RSP A77J2 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77J2
DATED MAY 1, 2006 - PAGE 73 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77J2

2006 REVISED STANDARD PLAN RSP A77J2

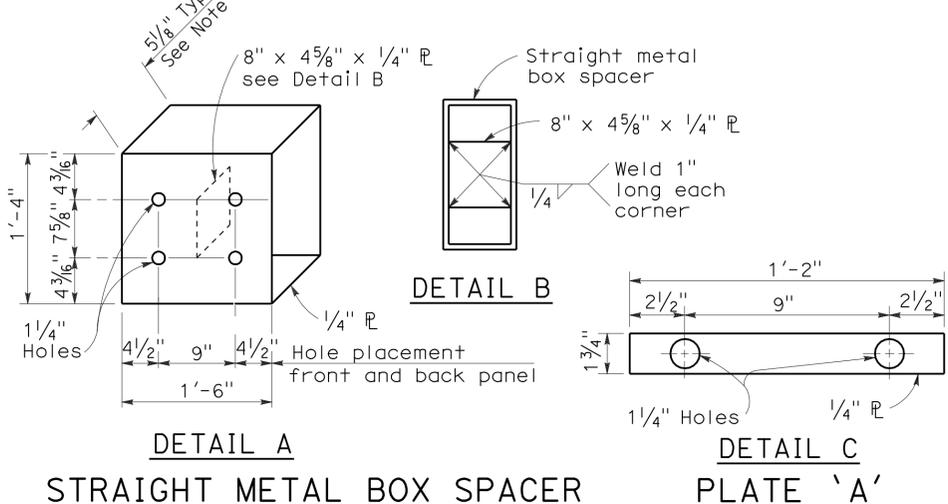
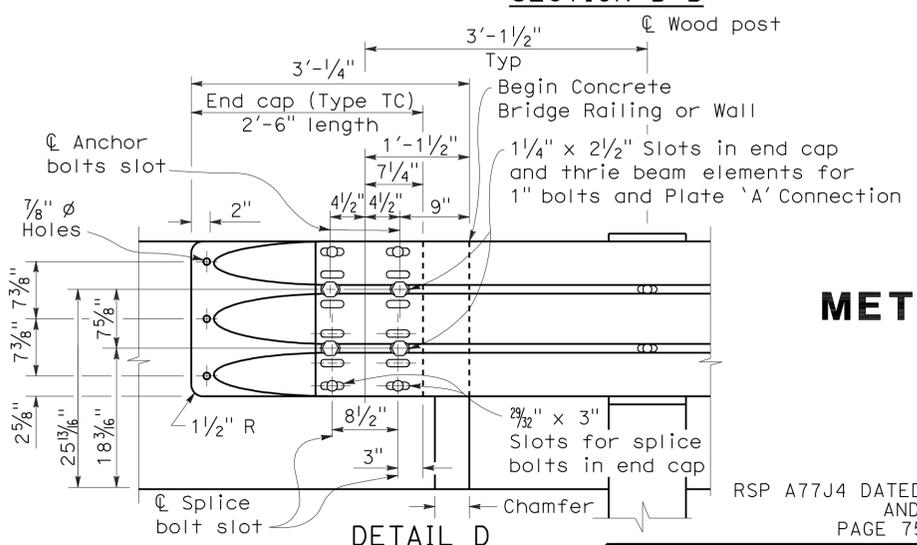
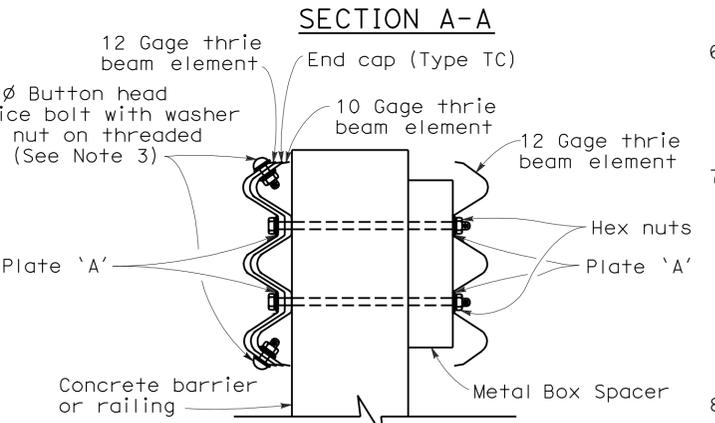
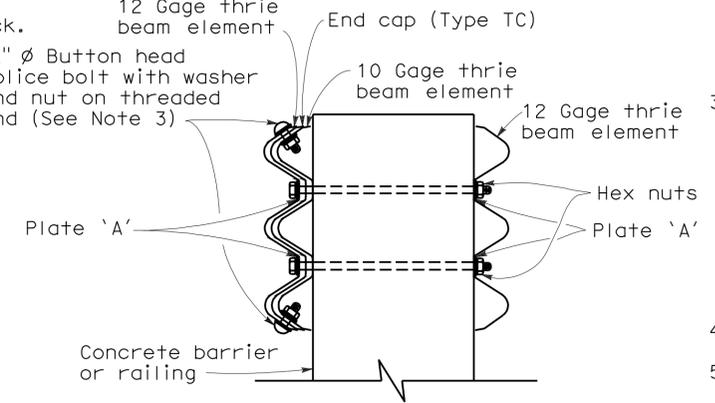
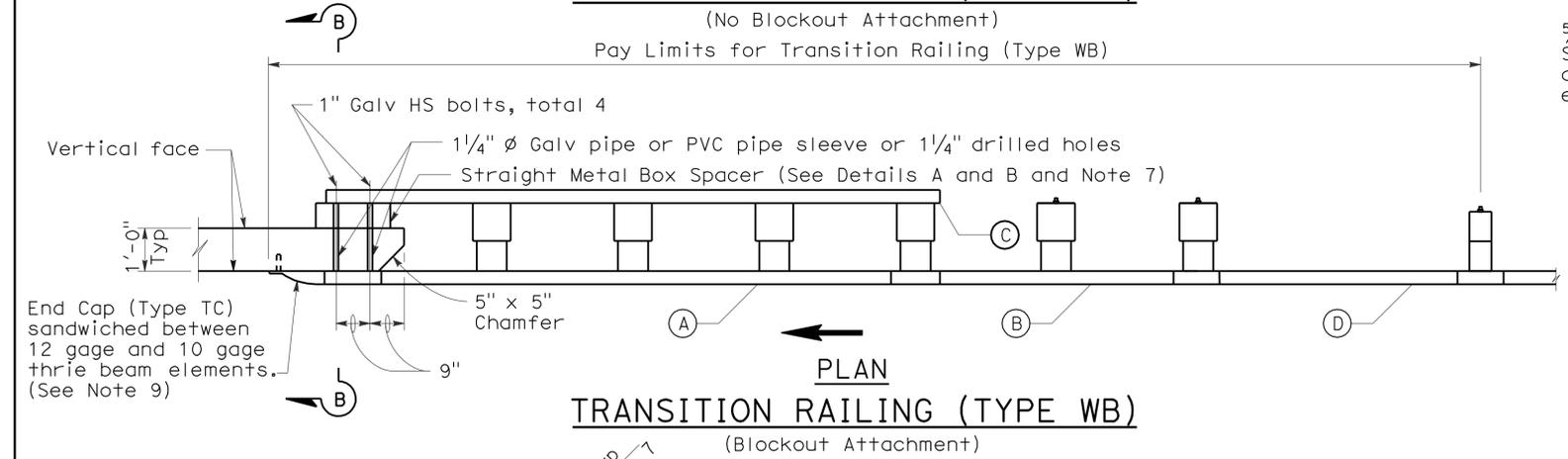
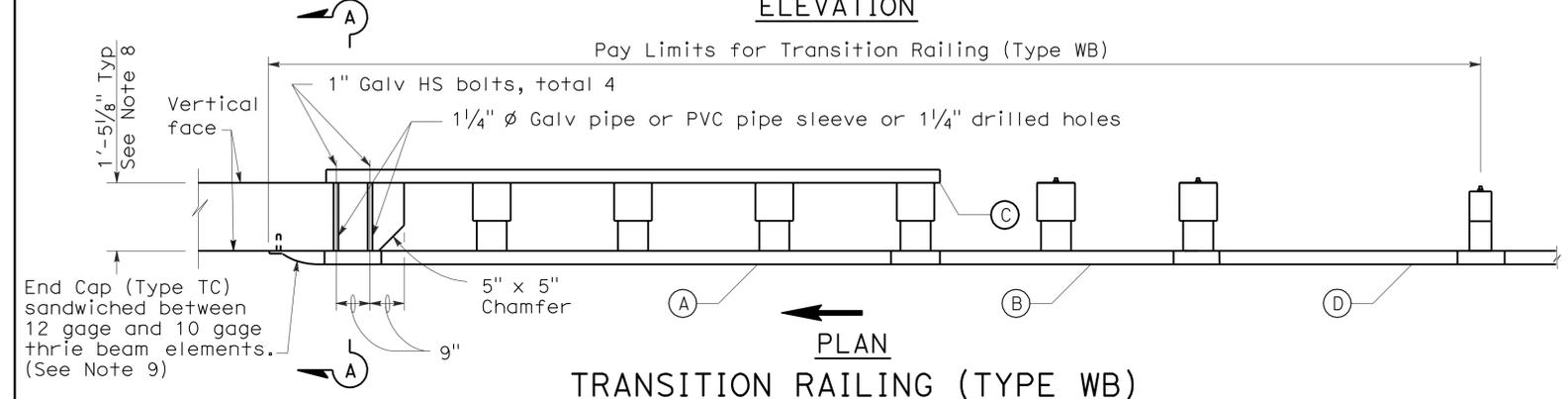
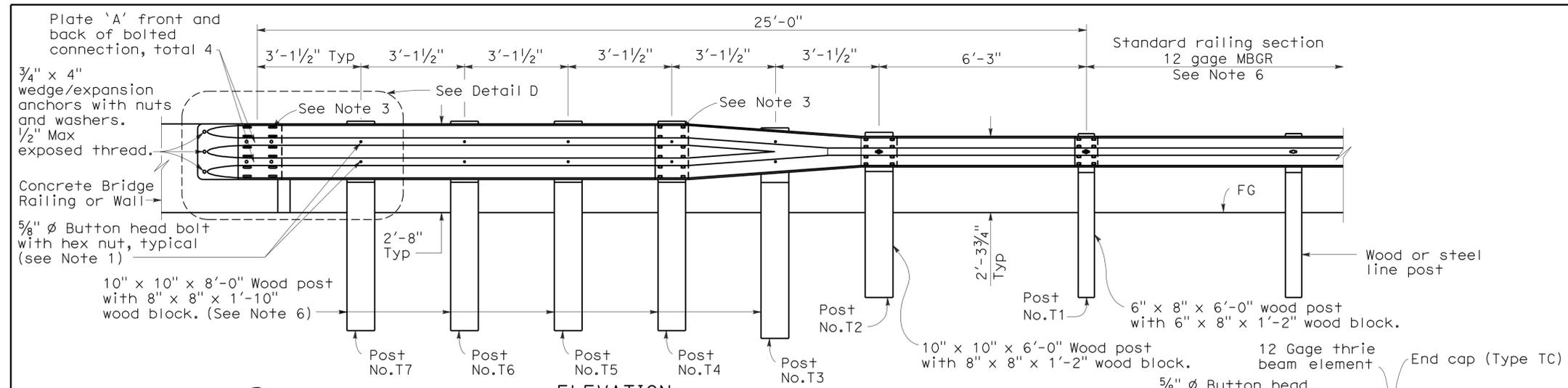
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Nev	20	R12.8,R15.9	16	28

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 5, 2009
PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA



- LEGEND**
- (A) Nested thrie beam elements (one 12 gage element nested over one 10 gage element).
 - (B) One 10 gage "W" beam to thrie beam element.
 - (C) One 12 gage thrie beam element.
 - (D) One 10 gage "W" beam rail element (7'-3 1/2" length)
- 10 gage = 0.135" thick
12 gage = 0.108" thick

- NOTES:** To accompany plans dated 12-13-10
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. T4 and the connection to the concrete barrier or railing shall be the standard 29/32" x 1 1/8" slot size. Interior splice bolt holes at these locations may be increased up to 1 1/4" ø. Only the top 2 and the bottom 2 splice bolts with washers and nuts are required for rail splices at Post No. T4 and the connection to the concrete barrier or railing.
 4. Direction of adjacent traffic indicated by →.
 5. The top elevation of Post Nos. T2 through T7 shall not project more than 1" above the top elevation of the rail element.
 6. Typically, the railing connected to Transition Railing (Type WB) will be either standard railing section of metal beam guard railing or an approved Caltrans end treatment attached to Post No. T1.
 7. The depth of the metal box spacer varies from the 5 1/8" to 1 1/2" and is dependent on the width of the concrete railing or wall. The combined dimension for the depth of the metal box spacer plus the width of railing or wall is typically 17 1/8". Where the space between the backside of the concrete railing or wall and the rear thrie beam element is less than 1 1/2", metal plates similar to Plate 'A' are to be used as spacers.
 8. 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. 4 through No. 7 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.
 9. End cap may be installed over 12 gage and 10 gage thrie beam elements where transition railing is installed on the departure end of bridge railing.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TRANSITION RAILING
(TYPE WB)**

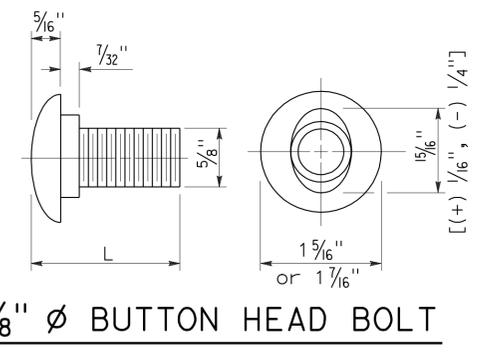
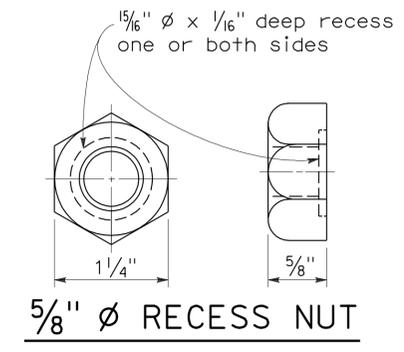
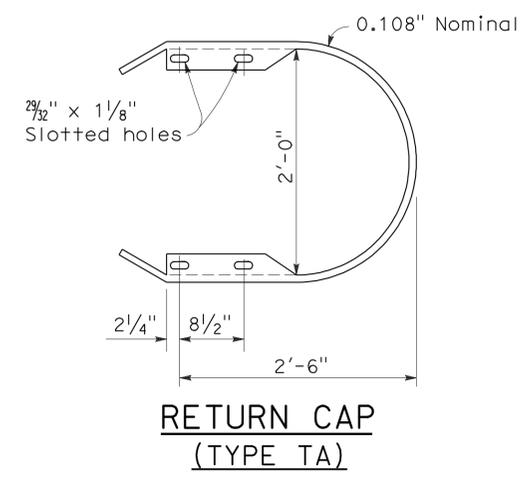
NO SCALE

RSP A77J4 DATED JUNE 5, 2009 SUPERSEDES RSP A77J4 DATED JUNE 6, 2008
AND STANDARD PLAN A77J4 DATED MAY 1, 2006 -
PAGE 75 OF THE STANDARD PLANS BOOK DATED MAY 2006.

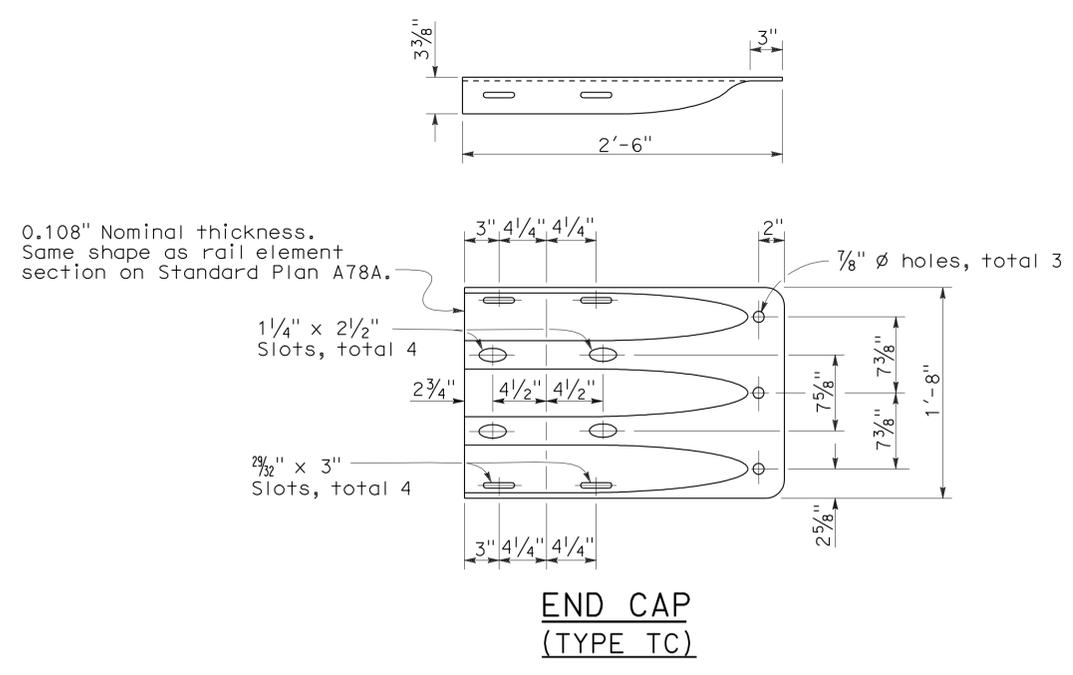
REVISED STANDARD PLAN RSP A77J4

2006 REVISED STANDARD PLAN RSP A77J4

To accompany plans dated 12-13-10



L	THREAD LENGTH
1 1/4"	full thread length
2"	full thread length
9/2"	4" Min thread length
18"	4" Min thread length



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**THRIE BEAM BARRIER
STANDARD HARDWARE DETAILS**

NO SCALE

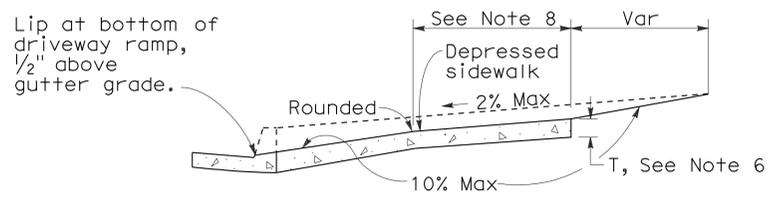
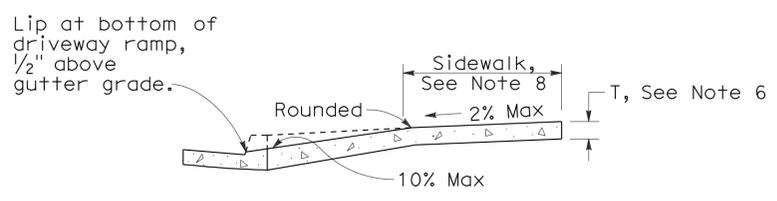
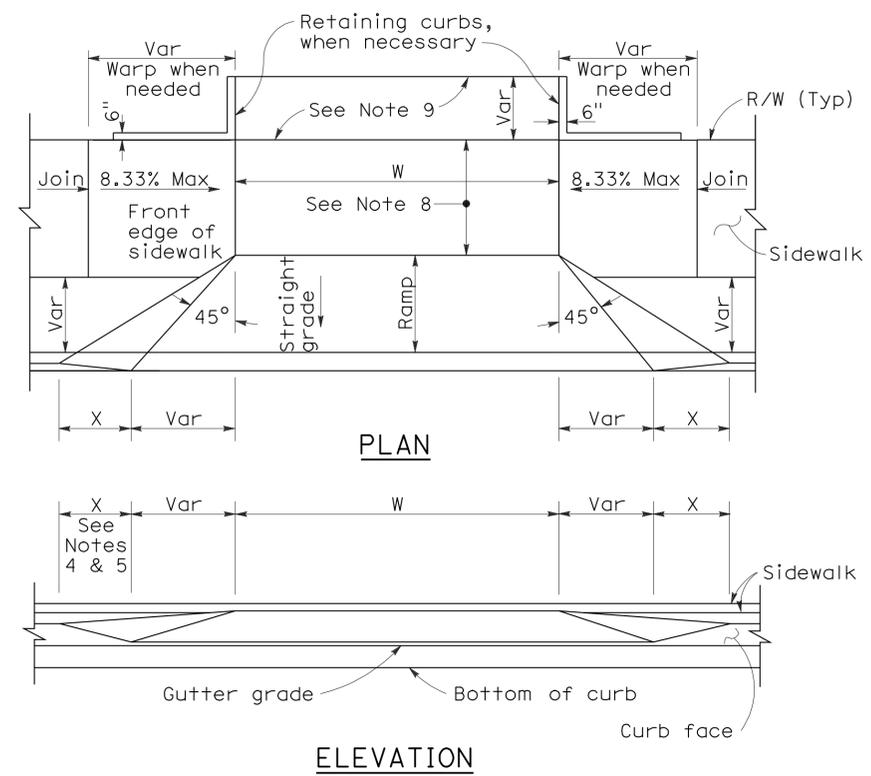
RSP A78C1 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A78C1
DATED MAY 1, 2006 - PAGE 85 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP A78C1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Nev	20	R12.8,R15.9	18	28

REGISTERED CIVIL ENGINEER
 November 17, 2006
 PLANS APPROVAL DATE
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REGISTERED PROFESSIONAL ENGINEER
 Michael Janzen
 No. 44788
 Exp. 03-31-08
 CIVIL
 STATE OF CALIFORNIA



CASE A

Typical driveway, sidewalk not depressed

CASE B

Driveway with depressed sidewalk

SECTIONS

CURB QUANTITIES

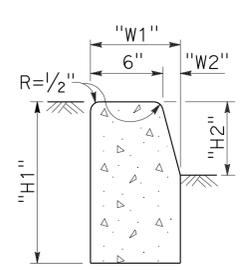
TYPE	CUBIC YARDS PER LINEAR FOOT
A1-6	0.02585
A1-8	0.03084
A2-6	0.05903
A2-8	0.06379
A3-6	0.01036
A3-8	0.01435
B1-4	0.02185
B1-6	0.02930
B2-4	0.05515
B2-6	0.06171
B3-4	0.00641
B3-6	0.01074
B4	0.05709
D-4	0.04083
D-6	0.06804
E	0.06661

TABLE A

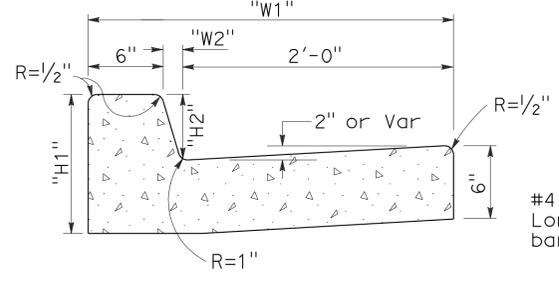
CURB TYPE	DIMENSIONS			
	"H1"	"H2"	"W1"	"W2"
A1-6	1'-2"	6"	7 1/2"	1 1/2"
A1-8	1'-4"	8"	8"	2"
A2-6	1'-0"	6"	2'-7 1/2"	1 1/2"
A2-8	1'-2"	8"	2'-8"	2"
A3-6	6"	5"	7 1/4"	1 1/4"
A3-8	8"	7"	7 3/4"	1 3/4"
B1-4	1'-0"	4"	7 1/2"	2 1/2"
B1-6	1'-2"	6"	9"	4"
B2-4	10"	4"	2'-7 1/2"	2 1/2"
B2-6	1'-0"	6"	2'-9"	4"
B3-4	4"	3"	7"	2"
B3-6	6"	5"	8 1/2"	3 1/2"
D-4	10"	4"	1'-6"	1'-1"
D-6	1'-0"	6"	2'-2"	1'-8"

To accompany plans dated 12-13-10

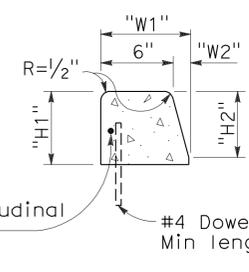
DRIVEWAYS



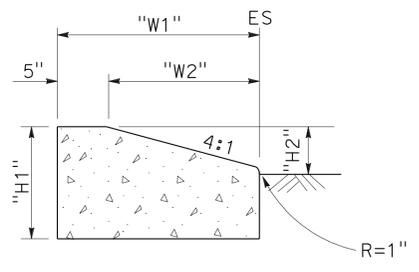
TYPE A1 CURBS
See Table A



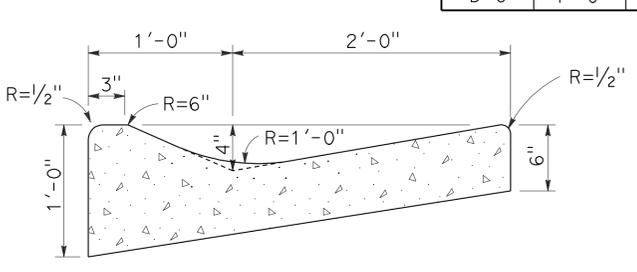
TYPE A2 CURBS
See Table A



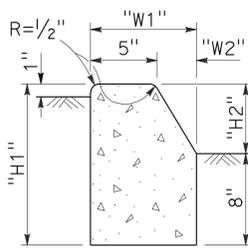
TYPE A3 CURBS
Superimposed on existing pavement
See Table A



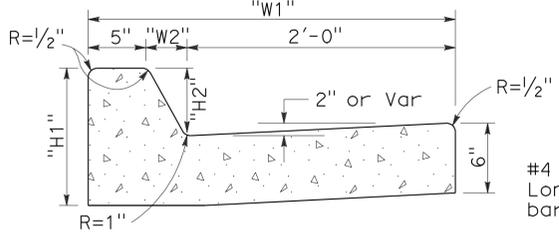
TYPE D CURBS
See Table A



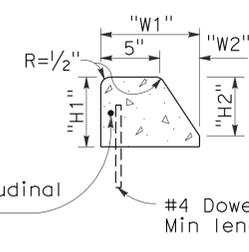
TYPE E CURB



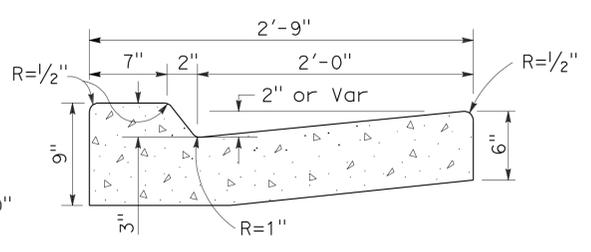
TYPE B1 CURBS
See Table A



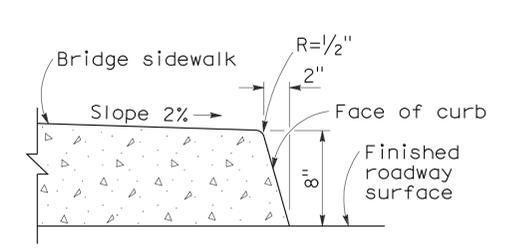
TYPE B2 CURBS
See Table A



TYPE B3 CURBS
Superimposed on existing pavement
See Table A



TYPE B4 CURBS



TYPE H CURB
On Bridges

NOTES:

- Case A driveway section typically applies.
- Use Case B driveway section when ramp slopes would exceed 10% in Case A.
- Use Case B driveway section when sidewalk cross slope would exceed 2% in Case A.
- X=3'-0" except for curb heights over 10" where 4:1 slopes shall be used on curb slope.
- X is a variable when sidewalk is located where wheelchairs may traverse the surface. Slopes shall not exceed 8.33%.
- Sidewalk and ramp thickness "T" at driveway shall be 4" for residential and 6" for commercial.
- Difference in slope of the driveway ramp and the slope of a line between the gutter and a point on the roadway 5'-0" from gutter line shall not exceed 15%. Reduce driveway ramp slope, not gutter slope, where required.
- Minimum width of clear passageway for sidewalk shall be 4'-0".
- Retaining curbs and acquisition of construction easement may be necessary for narrow sidewalks or curb heights in excess of 6".
- Across the pedestrian route at curb ramp locations, the gutter pan slope shall not exceed 1" of depth for each 2'-0" of width.

CURBS

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CURBS AND DRIVEWAYS

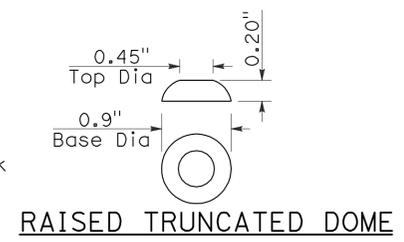
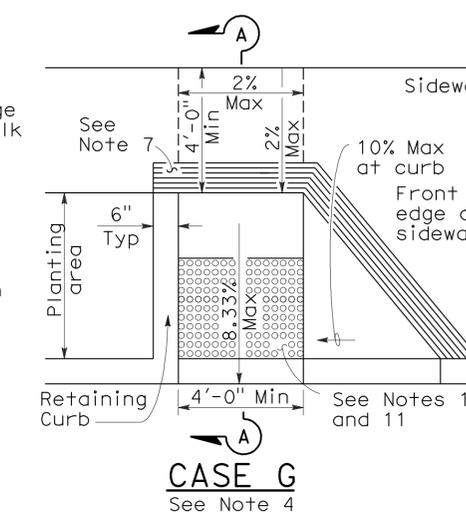
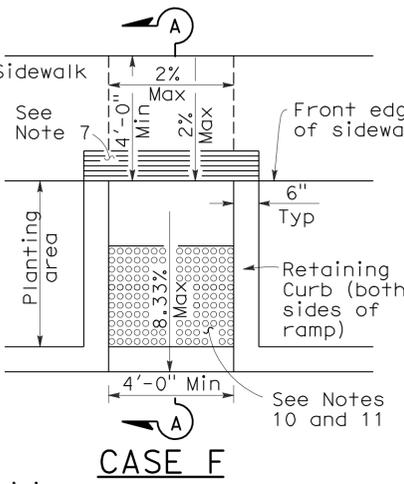
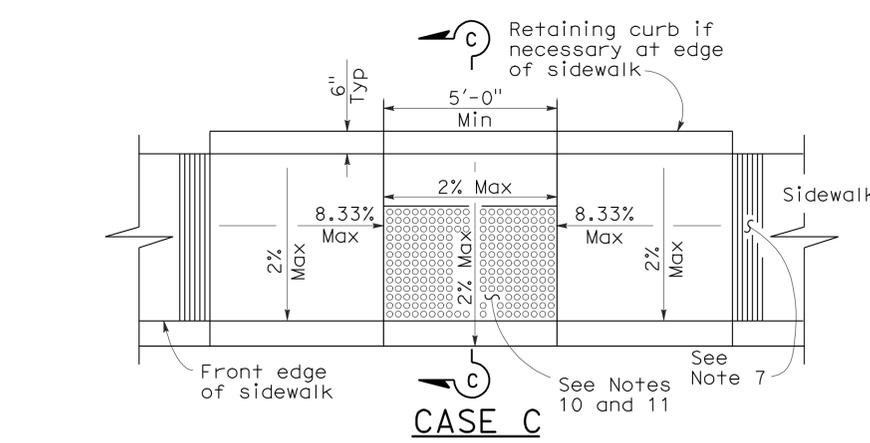
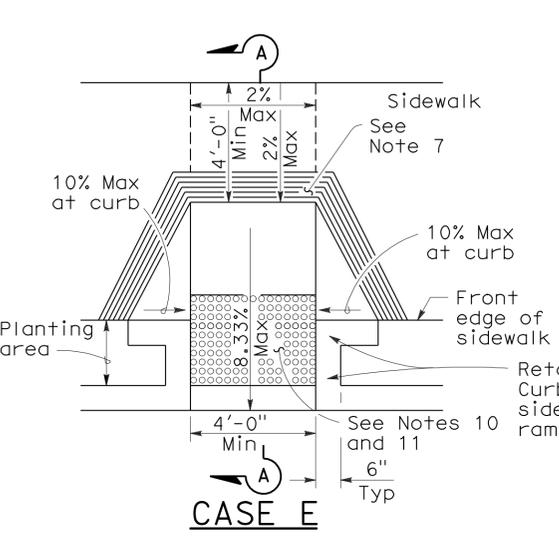
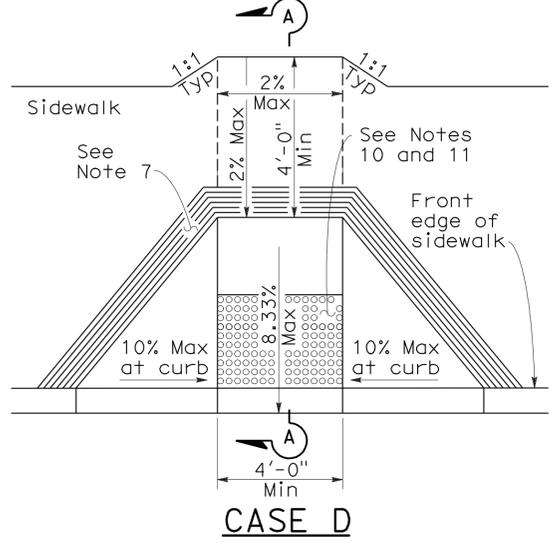
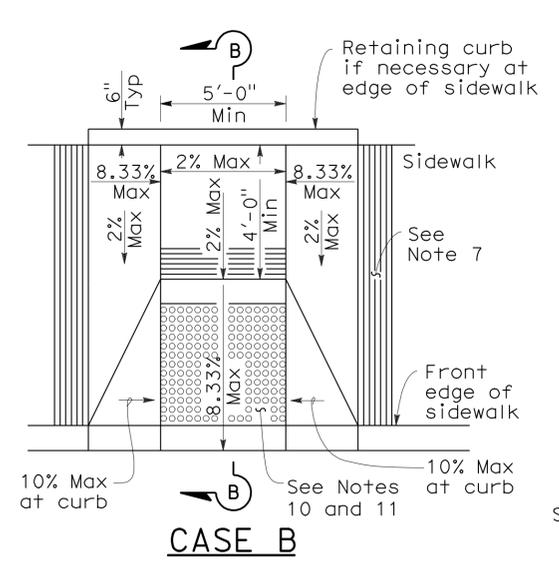
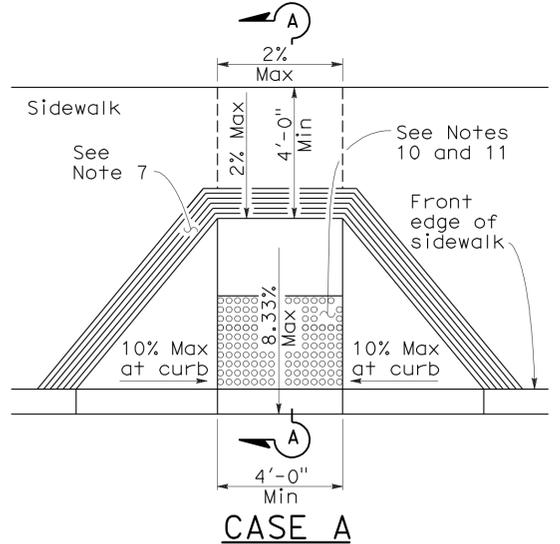
NO SCALE

2006 REVISED STANDARD PLAN RSP A87A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Nev	20	R12.8,R15.9	19	28

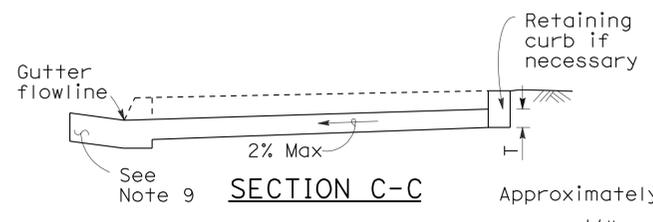
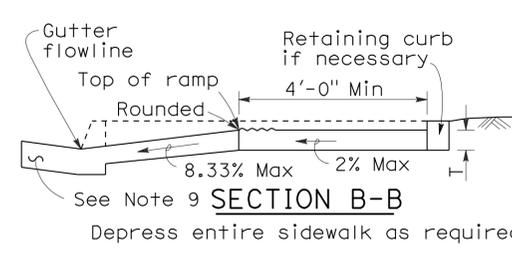
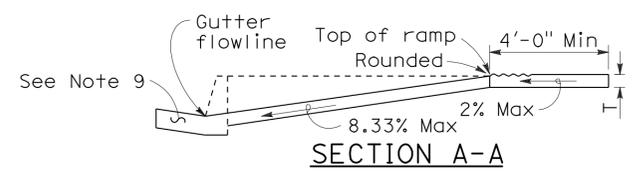
H. David Cordova
 REGISTERED CIVIL ENGINEER
 September 1, 2006
 PLANS APPROVAL DATE
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REGISTERED PROFESSIONAL ENGINEER
 Hector David Cordova
 No. C41957
 Exp. 3-31-08
 CIVIL
 STATE OF CALIFORNIA



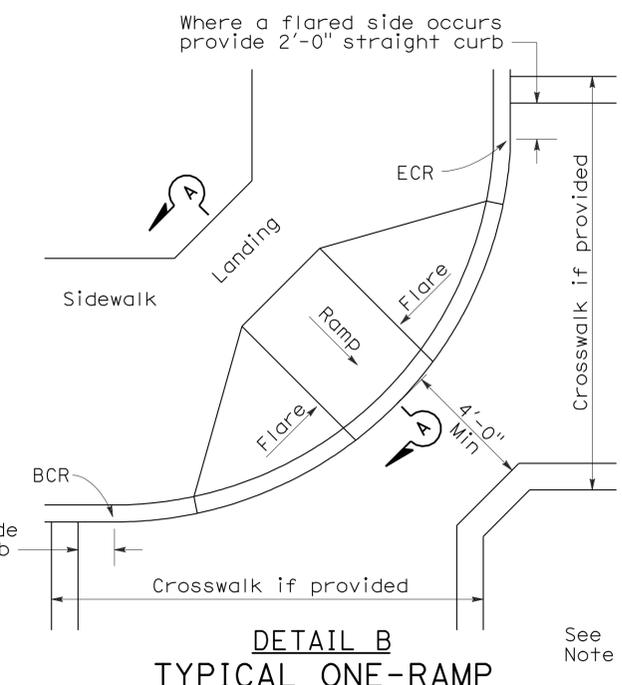
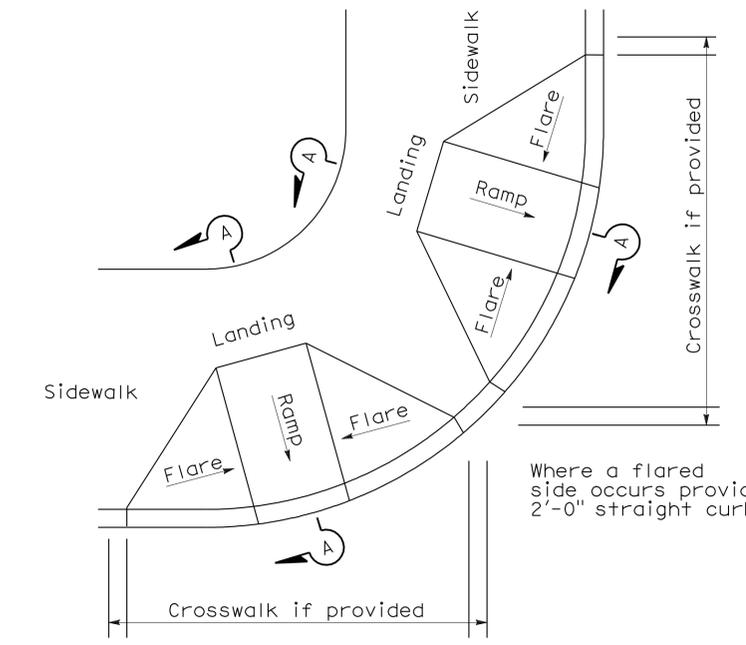
NOTES:

- As site conditions dictate, Case A through Case G curb ramps may be used for corner installations similar to those shown in Detail A and Detail B. The case of curb ramps used in Detail A do not have to be the same. Case A through Case G curb ramps also may be used at mid block locations, as site conditions dictate.
- If distance from curb to back of sidewalk is too short to accommodate ramp and 4'-0" platform (landing) as shown in Case A, the sidewalk may be depressed longitudinally as in Case B, or C or may be widened as in Case D.
- When ramp is located in center of curb return, crosswalk configuration must be similar to that shown for Detail B.
- As site conditions dictate, the retaining curb side and the flared side of the Case G ramp shall be constructed in reversed position.
- If located on a curve, the sides of the ramp need not be parallel, but the minimum width of the ramp shall be 4'-0".
- Side slope of ramp flares vary uniformly from a maximum of 10% at curb to conform with longitudinal sidewalk slope adjacent to top of the ramp, except in Case C and Case F.
- The curb ramp shall be outlined, as shown, with a 1'-0" wide border with 1/4" grooves approximately 3/4" on center. See grooving detail.
- Transitions from ramps and landing to walks, gutters or streets shall be flush and free of abrupt changes.
- Maximum slopes of adjoining gutters, the road surface immediately adjacent to the curb ramp or accessible route shall not exceed 5 percent within 4'-0" of the top and bottom of the curb ramp.
- Curb ramps shall have a detectable warning surface that extends the full width and 3'-0" depth of the ramp. Detectable Warning Surfaces shall conform to the details on this plan and the requirements in the Special Provisions.
- The edge of the detectable warning surface nearest the street shall be between 6" and 8" from the gutter flowline.
- Sidewalk and ramp thickness, "T", shall be 3/2" minimum.
- Utility pull boxes, manholes, vaults and all other utility facilities within the boundaries of the curb ramp will be relocated or adjusted to grade by the owner prior to, or in conjunction with, curb ramp construction.
- For retrofit conditions, removal and replacement of curb apron will be at the Contractor's option, unless otherwise shown on project plans.



DETECTABLE WARNING SURFACE

CURB RAMP DETAILS
NO SCALE



TYPICAL TWO-RAMP CORNER INSTALLATION
See Note 1

TYPICAL ONE-RAMP CORNER INSTALLATION
See Notes 1 and 3

RETROFIT DETAIL
Existing curb and sidewalk

2006 REVISED STANDARD PLAN RSP A88A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Nev	20	R12.8,R15.9	20	28

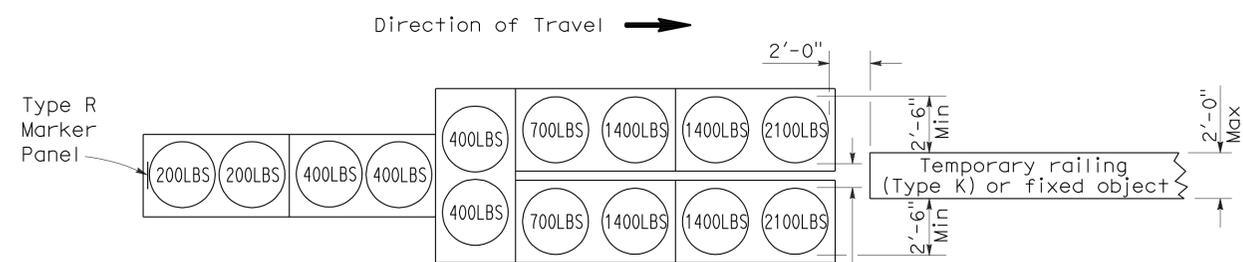
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

Randell D. Hiatt
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

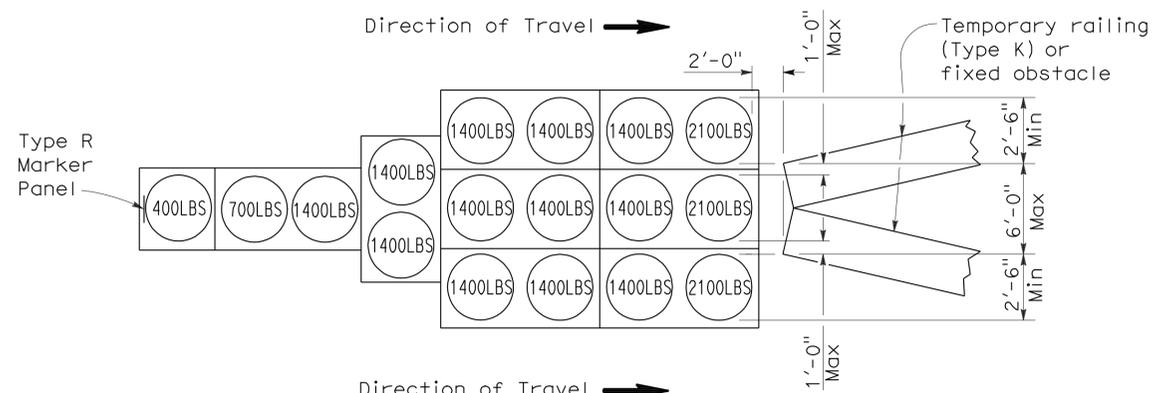
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To accompany plans dated 12-13-10



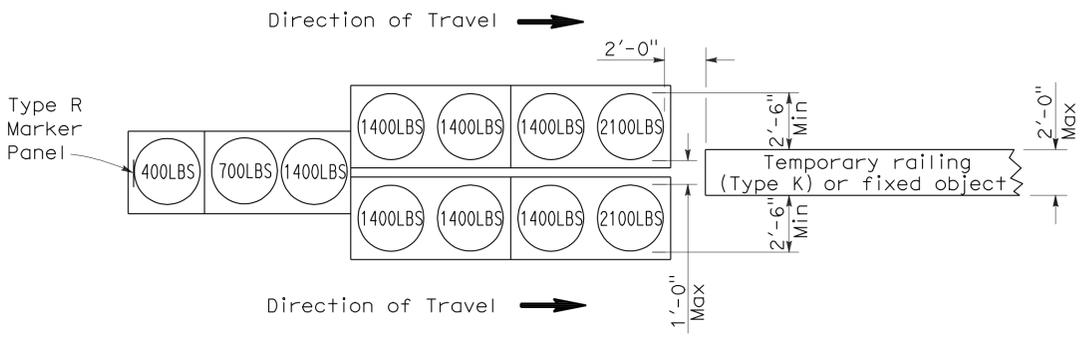
ARRAY 'TU14'

Approach speed 45 mph or more



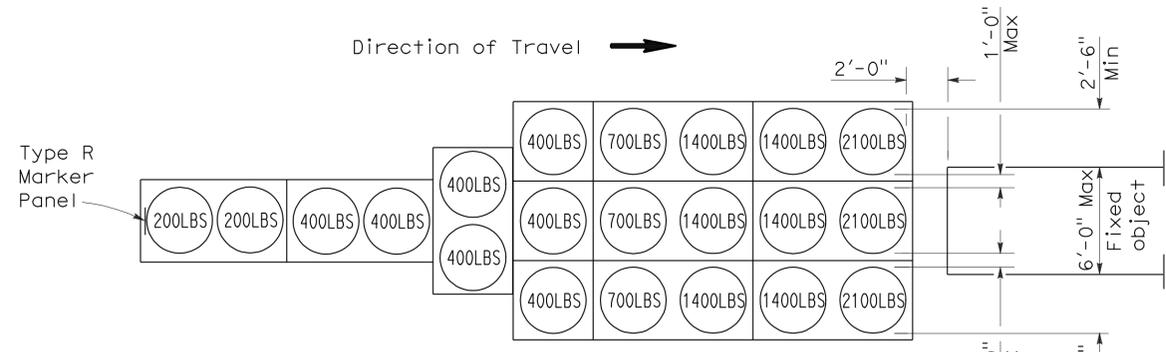
ARRAY 'TU17'

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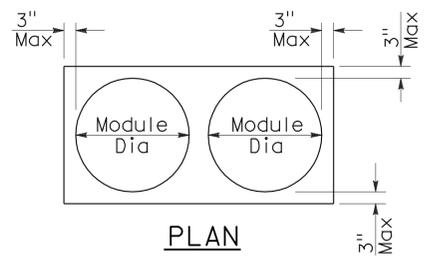
ARRAY 'TU11'

Approach speed less than 45 mph

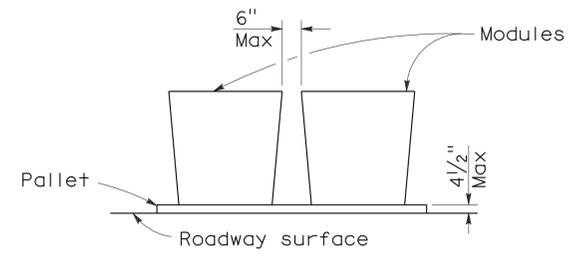


ARRAY 'TU21'

Approach speed 45 mph or more



PLAN



ELEVATION

CRASH CUSHION PALLET DETAIL

See Note 7

NOTES:

1. (XXX) Indicates sand filled module location and weight of sand in pounds for each module. Module spacing is based on the greater diameter of the module.
2. All sand weights are nominal.
3. Temporary crash cushion arrays shall not encroach on the traveled way.
4. Place the top of Type R marker panel 1" below the module lid.
5. Refer to Standard Plan A73B for marker details.
6. Approach speeds indicated conform to NCHRP 350 Report criteria.
7. Use of pallets is optional.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**TEMPORARY CRASH CUSHION,
SAND FILLED
(UNIDIRECTIONAL)**

NO SCALE

RSP T1A DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T1A
DATED MAY 1, 2006 - PAGE 211 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP T1A

2006 REVISED STANDARD PLAN RSP T1A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
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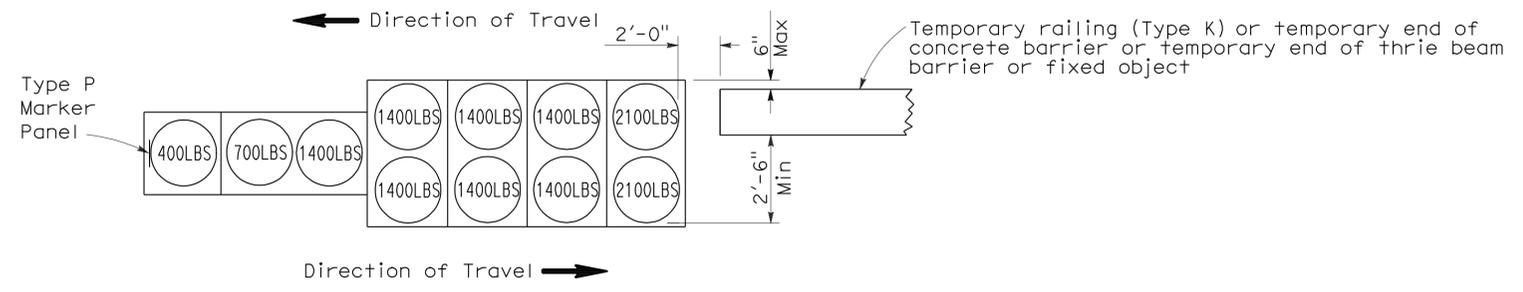
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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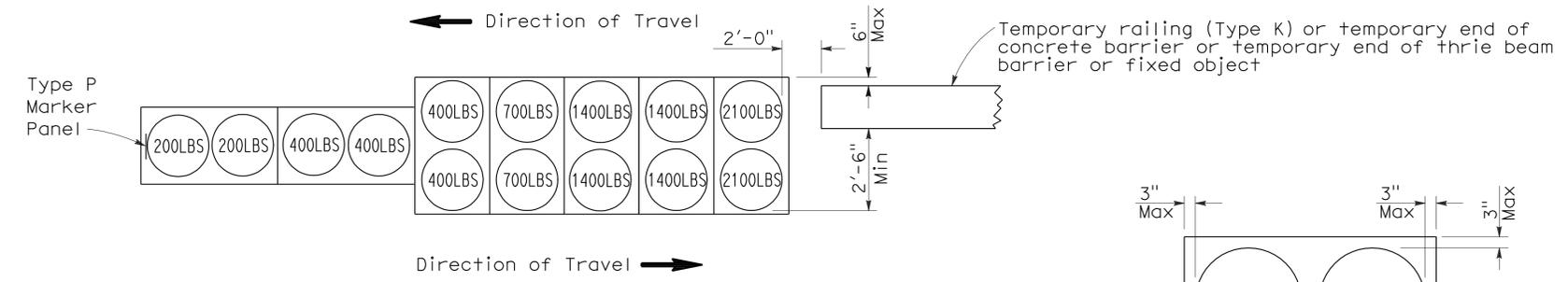
REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

To accompany plans dated 12-13-10



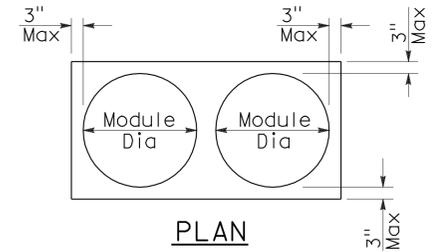
ARRAY 'TB11'

Approach speed less than 45 mph

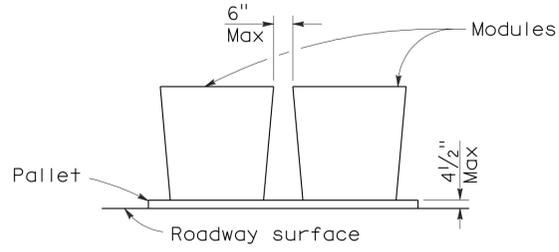


ARRAY 'TB14'

Approach speed 45 mph or more



PLAN



ELEVATION

CRASH CUSHION PALLET DETAIL

See Note 7

NOTES:

1. (XXX) Indicates sand filled module location and weight of sand in pounds for each module. Module spacing is based on the greater diameter of the module.
2. All sand weights are nominal.
3. Temporary crash cushion arrays shall not encroach on the traveled way.
4. Place the Type P marker panel so that the bottom of the panel rests upon the pallet.
5. Refer to Standard Plan A73B for marker details.
6. Approach speeds indicated conform to NCHRP 350 Report criteria.
7. Use of pallets is optional.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**TEMPORARY CRASH CUSHION,
SAND FILLED
(BIDIRECTIONAL)**

NO SCALE

RSP T1B DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T1B
DATED MAY 1, 2006 - PAGE 212 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP T1B

2006 REVISED STANDARD PLAN RSP T1B

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Nev	20	R12.8,R15.9	22	28

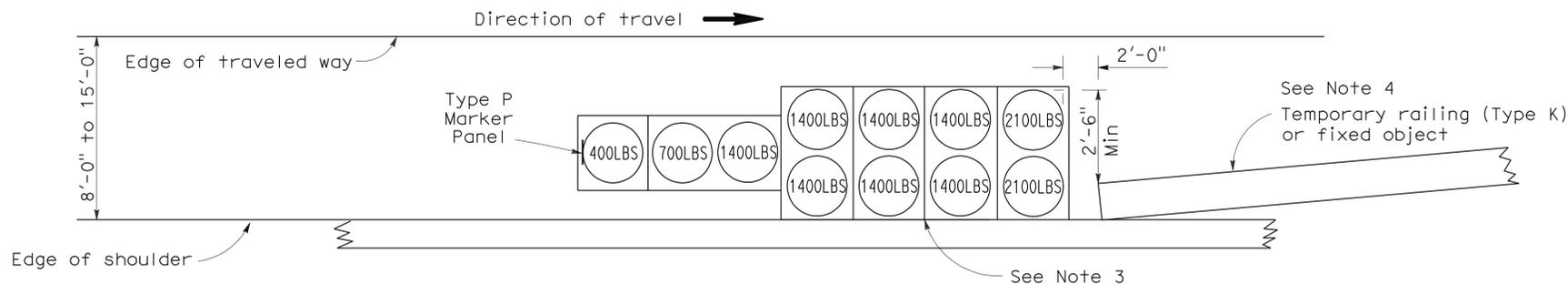
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

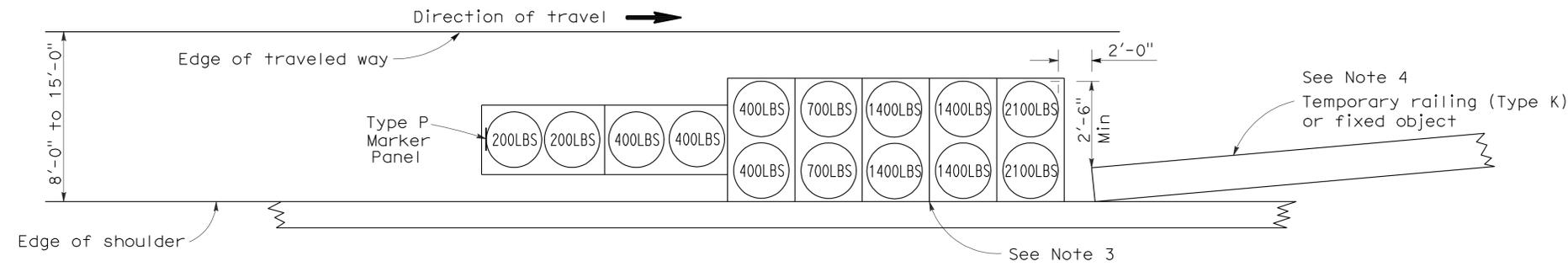
Randell D. Hiatt
REGISTERED PROFESSIONAL ENGINEER
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

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To accompany plans dated 12-13-10



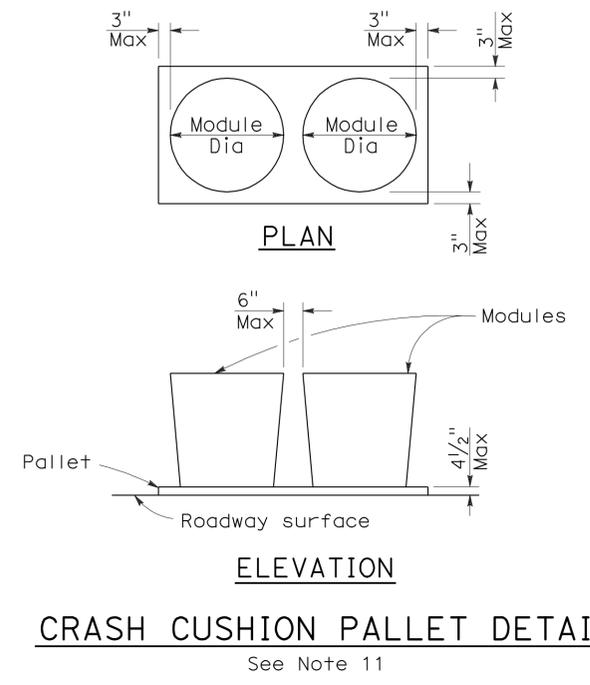
ARRAY 'TS11'
Approach speed less than 45 mph
See Note 9



ARRAY 'TS14'
Approach speed 45 mph or more
See Note 9

NOTES:

1. (XXX) Indicates sand filled module location and weight of sand in pounds for each module. Module spacing is based on the greater diameter of the module.
2. All sand weights are nominal.
3. The temporary crash cushion arrays shown on this plan shall be used only in locations where there will be traffic on one side of the temporary crash cushion array.
4. If the fixed object or approach end of the temporary railing is less than 15'-0" from the edge of traveled way, a temporary crash cushion is required in a construction or work zone.
5. Temporary crash cushion arrays shall not encroach on the traveled way.
6. Arrays for median shoulders shall conform to details shown on this plan for outside shoulders.
7. Place the Type P marker panel so that the bottom of the panel rests upon the pallet and faces traffic.
8. Refer to Standard Plan A73B for marker details.
9. For shoulder widths less than 8'-0", appropriate approved crash cushion protection, other than sand filled modules, shall be provided at fixed objects and at approach ends of temporary railing. The specific type of crash cushion shall be as shown on the project plans or as specified in the Special Provisions, or if not shown on the project plans or specified in the Special Provisions, shall be as approved by the Engineer.
10. Approach speeds indicated conform to NCHRP 350 Report criteria.
11. Use of pallets is optional.



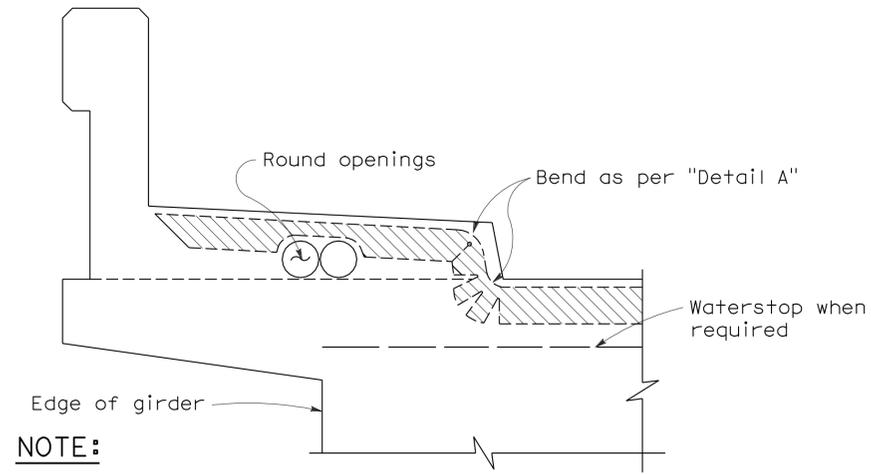
CRASH CUSHION PALLET DETAIL
See Note 11

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**TEMPORARY CRASH CUSHION,
SAND FILLED
(SHOULDER INSTALLATIONS)**

NO SCALE
RSP T2 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T2
DATED MAY 1, 2006 - PAGE 213 OF THE STANDARD PLANS BOOK DATED MAY 2006.

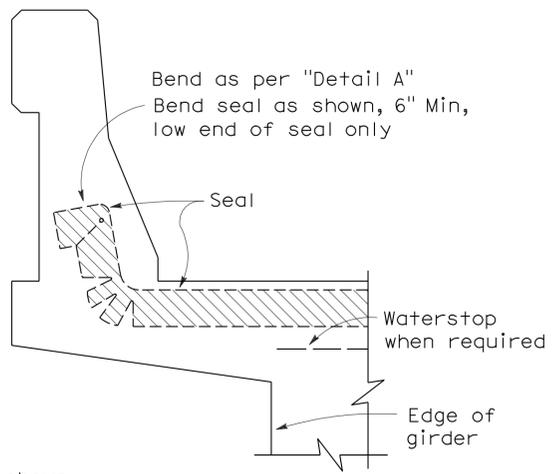
REVISED STANDARD PLAN RSP T2

2006 REVISED STANDARD PLAN RSP T2

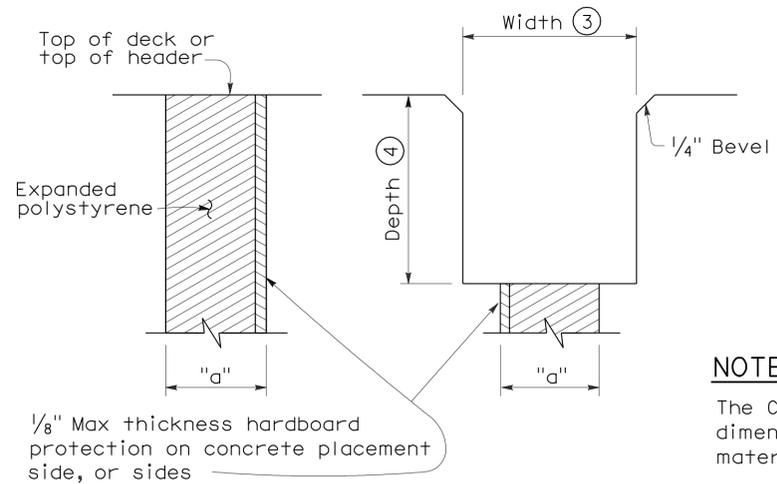


NOTE:
 Type "B" seal shown. Type "A" seals to conform to the general path of seal shown, cuts for bending not required. Bend Type "A" seals 3" up into curb or barrier rail on only the low end of the seal.

CONCRETE BARRIER AND SIDEWALK



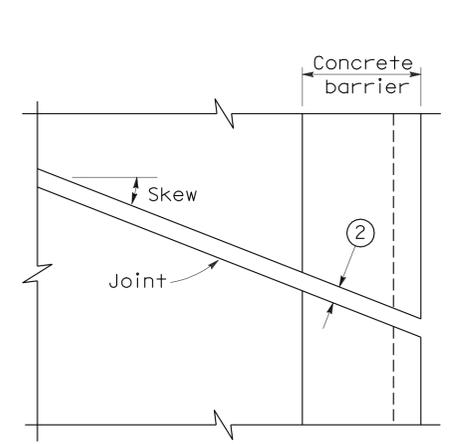
CONCRETE BARRIER



FORMING DETAIL SAWCUT DETAIL

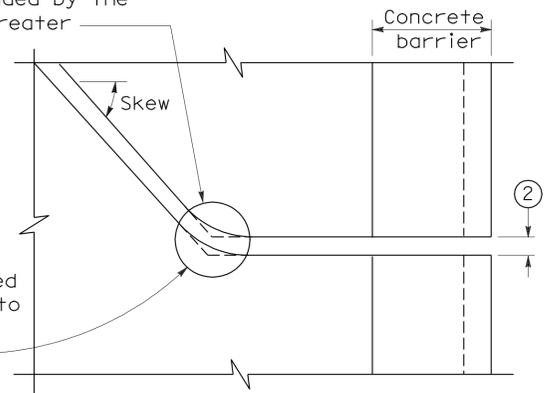
NOTE:
 The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

JOINT SEALS DETAILS



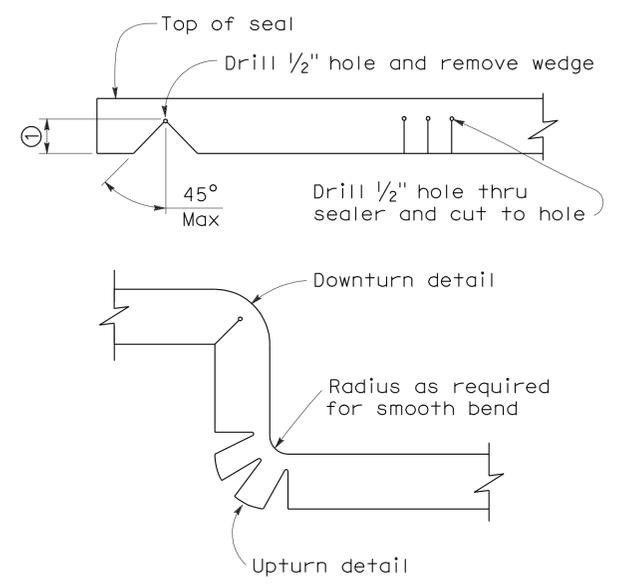
PLAN OF JOINT (SKEW ≤ 20°)

Min ϕ radius to be 4 times uncompressed width of seal or as recommended by the manufacturer, whichever is greater



PLAN OF JOINT (SKEW > 20°)

In lieu of saw cutting, this area may be blocked out and reconstructed to match saw cutting on both sides.



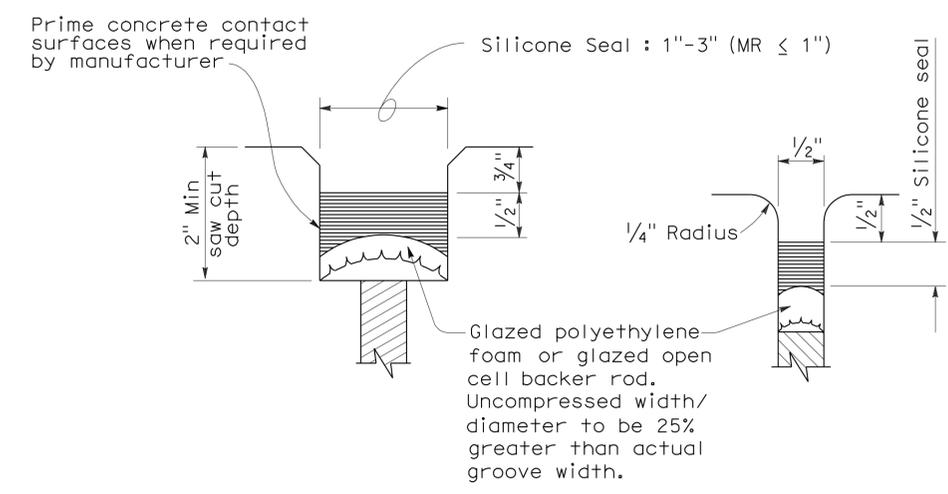
DETAIL A

- NOTES:**
- Make smooth cuts from the bottom of seal to 1 1/2" clear of top leaving at least one complete cell between the top of the cut and top of the seal. When necessary cut back of seal to clear conduit and round openings.
 - Opening in barrier to match width of sawn deck joint.
 - Sawcut groove widths shall be as ordered by the Engineer.
 - Depth of sawcut: Type A - Depth to be 2" minimum.
 Type B - Depth to be equal to or greater than the depth of seal measured along the contact surface, when compressed to minimum width position (W₂) plus dimensions shown.
 - MR (movement rating) as shown on other plan sheets.
 - Other depths must be approved by the Engineer.

DIMENSIONS "a" OF JOINT REQUIRED

Movement Rating (MR) (5)	Bridge Type	"a" Dimension		
		Deck Concrete Placed		
		Winter	Fall-Spring	Summer
2"	All except CIP/PS	1 1/2"	1 1/4"	3/4"
	CIP/PS	1 1/4"	1"	1/2"
1 1/2"	All except CIP/PS	1 1/4"	1"	1/2"
	CIP/PS	1"	3/4"	1/2"
1"	All except CIP/PS	1"	3/4"	1/2"
	CIP/PS	3/4"	1/2"	1/2"
1/2"	All except CIP/PS	3/4"	3/4"	1/2"
	CIP/PS	1/2"	1/2"	1/2"

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
JOINT SEALS
(MAXIMUM MOVEMENT RATING = 2")
 NO SCALE

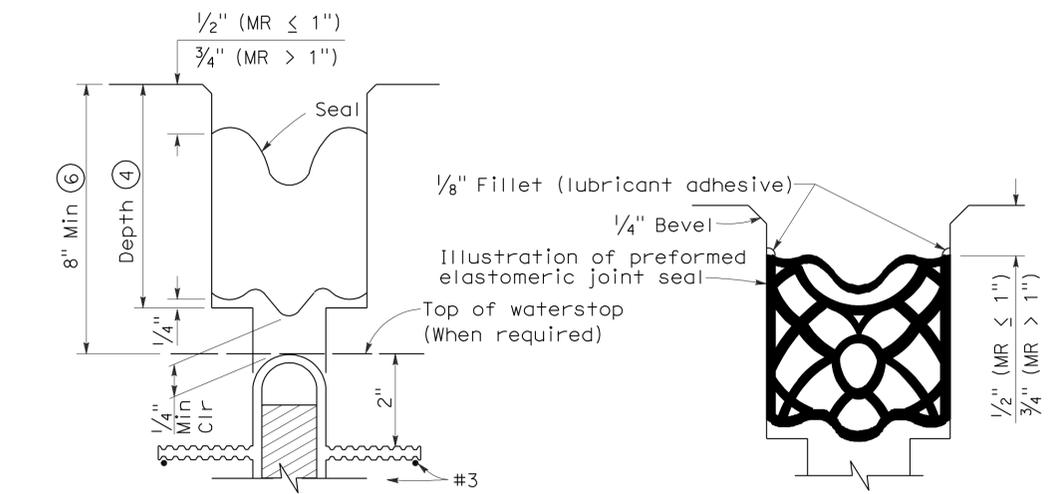


TYPE A SEAL

Movement rating : Silicone = 1" Max

TYPE AL SEAL

Longitudinal joints only



TYPE B JOINT SEAL IN MINIMUM WIDTH POSITION (W₂)

TYPE B SEAL

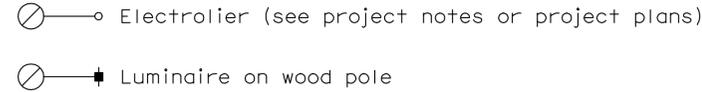
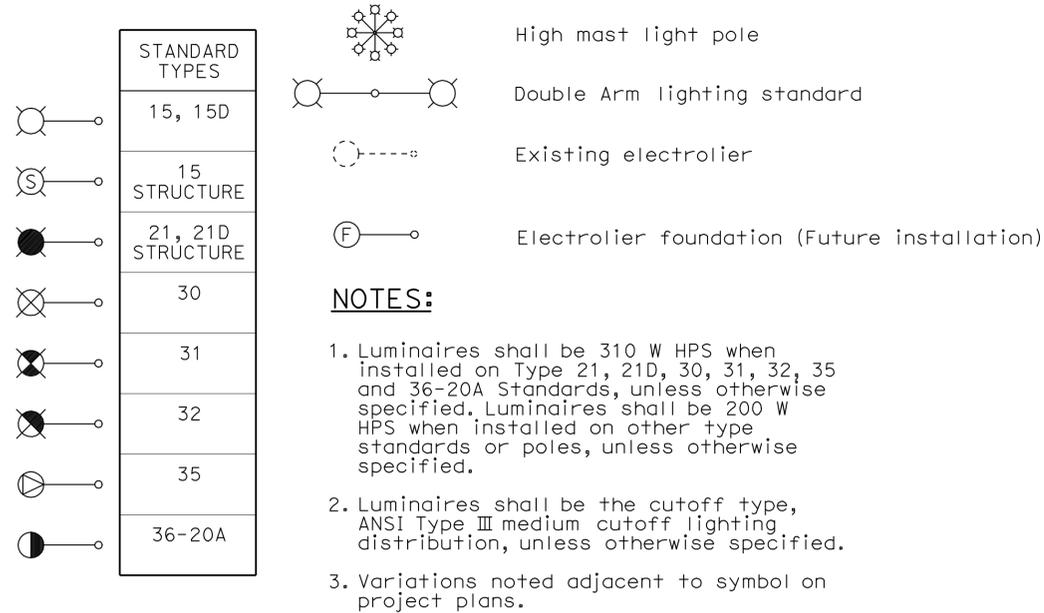
Movement Rating ≤ 2"

RSP B6-21 DATED OCTOBER 5, 2007 SUPERSEDES STANDARD PLAN B6-21 DATED MAY 1, 2006 - PAGE 258 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP B6-21

2006 REVISED STANDARD PLAN RSP B6-21

ELECTROLIERS



STANDARD NOTES:

- AB** Abandon. If applied to conduit, remove conductors.
- BC** Install pull box in existing conduit run.
- BP** Pedestrian barricade, type as indicated on plan.
- CB** Install conduit into existing pull box.
- CC** Connect new and existing conduit. Remove existing conductors and install conductors as indicated.
- CF** Conduit to remain for future use. Remove conductors. Install pull wire or rope.
- DH** Detector handhole.
- FA** Foundation to be abandoned.
- IS** Install sign on signal mast arm.
- NS** No slip base on standard.
- PEC** Photoelectric control.
- PEU** Photoelectric unit.
- RC** Equipment or material to be removed and become the property of the Contractor.
- RE** Remove electrolier, fuses and ballast. Tape ends of conductors.
- RL** Relocate equipment.
- RR** Remove and reuse equipment.
- RS** Remove and salvage equipment.
- SC** Splice new to existing conductors.
- SD** Service disconnect.
- SF** Standard to remain for future use. Remove luminaire, pole conductors, fuses and ballast.
- TSP** Telephone service point.

ABBREVIATIONS AND EQUIPMENT DESIGNATIONS

PROPOSED EXISTING

BBS	bbs	Battery backup system
BC	bc	Bolt circle
C	C	Conduit
CCTV	cctv	Closed circuit television
CKT	ckt	Circuit
CMS	cms	Changeable message sign
DLC	dlc	Loop detector lead-in cable
EMS	ems	Extinguishable message sign
EVC	evc	Emergency vehicle cable
EVD	evd	Emergency vehicle detector
FB	fb	Flashing beacon
FBCA	fbca	Flashing beacon control assembly
FBS	fbs	Flashing beacon with slip base
FO	fo	Fiber optic
G	G	Ground (Equipment Grounding Conductor)
GFCI	GFCI	Ground fault circuit interrupt
HAR	har	Highway advisory radio
HEX	hex	Hexagonal
HPS	hps	High pressure sodium
IISNS	iisns	Internally illuminated street name sign
ISL	isl	Induction sign lighting
LED	led	Light emitting diode
LMA	lma	Luminaire mast arm
LPS	lps	Low pressure sodium
LTG	ltg	Lighting
LUM	lum	Luminaire
MAT	mat	Mast arm mounting vehicle signal faces, top attachment
MAS	mas	Mast arm mounting vehicle signal faces, side attachment
MAS-4A	mas-4A	Mast arm mounting vehicle signal faces, side attachment - 4 signal section
MAS-4B	mas-4B	
MAS-4C	mas-4C	
MAS-5A	mas-5A	Mast arm mounting vehicle signal faces, side attachment - 5 signal section
MAS-5B	mas-5B	
MC	mc	Mercury contactor
M/M	m/m	Multiple to multiple transformer
MT	mt	Conduit with pull wire or rope only
MTG	mtg	Mounting
	mv	Mercury vapor lighting fixture
N	N	Neutral (Grounded Conductor)
NC	NC	Normally closed
NO	NO	Normally open
PB	pb	Pull box
PEC	pec	Photoelectric control (Type I, II, III, IV or V as shown)
PED	ped	Pedestrian
PEU	peu	Photoelectric unit
PPB	ppb	Pedestrian push button
RL		Relocated equipment
RM	rm	Ramp metering
SB	sb	Slip base
SIC	sic	Signal interconnect cable
SIG	sig	Signal
SMA	sma	Signal mast arm
SNS	sns	Street name sign
SP	sp	Service point
TDC	tdc	Telephone demarcation cabinet
TMS	tms	Traffic monitoring station
TOS	tos	Traffic Operations System
VEH	veh	Vehicle
XFMR	xfmr	Transformer
COMM	comm	Communication
RWIS	rwis	Roadway weather information system

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Nev	20	R12.8,R15.9	24	28

Jeffery G. McRae
REGISTERED ELECTRICAL ENGINEER

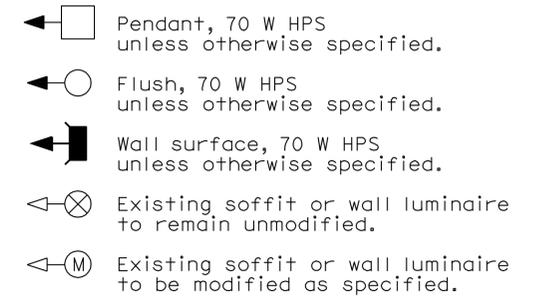
October 5, 2007
PLANS APPROVAL DATE

Jeffery G. McRae
No. E14512
Exp. 6-30-08
ELECTRICAL
STATE OF CALIFORNIA

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To accompany plans dated 12-13-10

SOFFIT AND WALL MOUNTED LUMINAIRES



NOTE:

Arrow indicates "street side" of luminaire.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

RSP ES-1A DATED OCTOBER 5, 2007 SUPERSEDES STANDARD PLAN ES-1A DATED MAY 1, 2006 - PAGE 400 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-1A

2006 REVISED STANDARD PLAN RSP ES-1A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Nev	20	R12.8,R15.9	25	28

Jeffery G. McRae
 REGISTERED ELECTRICAL ENGINEER
 No. E14512
 Exp. 6-30-08
 ELECTRICAL
 STATE OF CALIFORNIA

October 5, 2007
 PLANS APPROVAL DATE

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

To accompany plans dated 12-13-10

CONDUIT

PROPOSED	EXISTING	
		Lighting Conduit, unless otherwise indicated or noted
		Traffic signal conduit
		Communication conduit
		Telephone conduit
		Fire alarm conduit
		Fiber optic conduit
		Conduit termination
		Conduit riser in/on structure or service pole

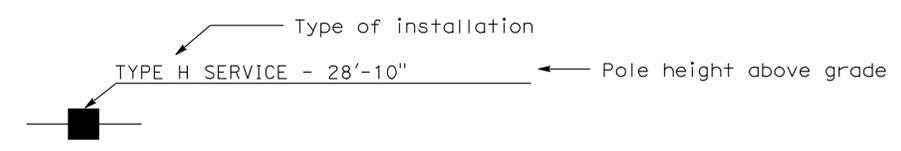
SIGNAL EQUIPMENT

PROPOSED	EXISTING	
		Pedestrian signal face
		Pedestrian push button post
		Pedestrian barricade
		Vehicle signal face (with backplate, 3-Section: red, yellow and green)
		Vehicle signal face with angle visors
		Modifications of basic symbols: "L" indicates all non-arrow sections louvered "LG" indicates louvered green section only "PV" indicates 12" programmed visibility sections "8" indicates all 8" sections (only when specified)
		Type 15TS and Vehicle signal face
		Vehicle signal face with red, yellow and green left arrow sections
		Vehicle signal face with red and yellow sections and up green arrow
		Vehicle signal face (5 Section) with red, yellow and green sections and yellow and green right arrows
		Type 1 Standard and attached vehicle signal faces
		Standard with signal mast arm only and attached vehicle signal faces and internally illuminated street name sign
		Type 33 Standard, Left-turn vehicle signal face and sign
		Standard with luminaire and signal mast arms and attached vehicle signal faces
		Cantilever flashing beacon Type 9 Frame, with a sign unless otherwise specified or indicated
		Type 15-FBS Standard with two vehicle signal face sections with lens, backplate and visor with a sign
		Flashing beacon. One vehicle signal face section with lens, backplate and visor. "R" indicates red indication, "Y" indicates yellow indication
		Controller assembly. Door indicates front of cabinet

SERVICE EQUIPMENT

PROPOSED	EXISTING	
		Overhead lines
		Wood pole "U" indicates utility owned
		Pole guy with anchor
		Utility transformer - ground mounted
		Service equipment enclosure type
		Service equipment enclosure door indicates front of enclosure
		Telephone demarcation cabinet

POLE-MOUNTED SERVICE DESIGNATION



ILLUMINATED OVERHEAD SIGN

PROPOSED	EXISTING	
		Overhead sign - Single post
		Overhead sign - Two post
		Overhead sign - Mounted on structure
		Overhead sign with electrolier

SIGNAL EQUIPMENT Cont

PROPOSED	EXISTING	
		Guard post
		Type 1 Standard with "Meter On" sign
		Emergency Vehicle detector

NOTES:

- All signal sections shall be 12" unless shown otherwise.
- Signal heads shall be provided with backplates unless shown otherwise.
- Signal indication shall be LED.

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
 (SYMBOLS AND ABBREVIATIONS)**
 NO SCALE

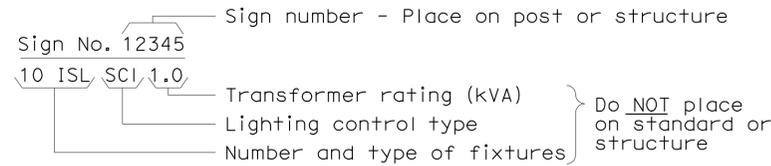
RSP ES-1B DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1B
 DATED MAY 1, 2006 - PAGE 401 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-1B

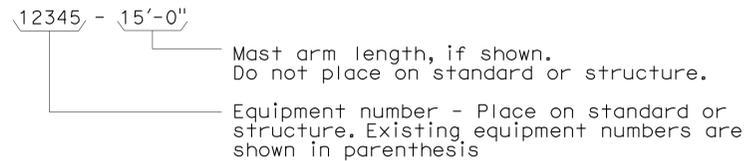
2006 REVISED STANDARD PLAN RSP ES-1B

EQUIPMENT IDENTIFICATION

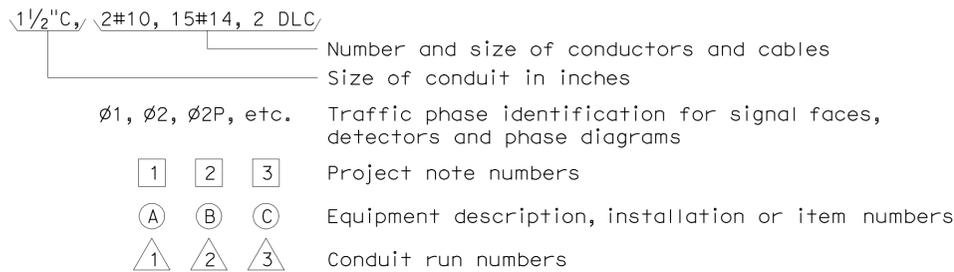
ILLUMINATED SIGN IDENTIFICATION NUMBER:



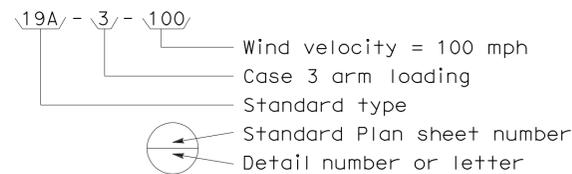
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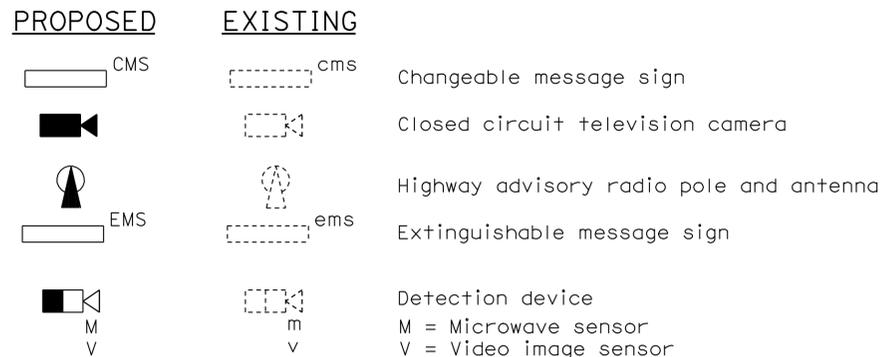
CONDUIT AND CONDUCTOR IDENTIFICATION:



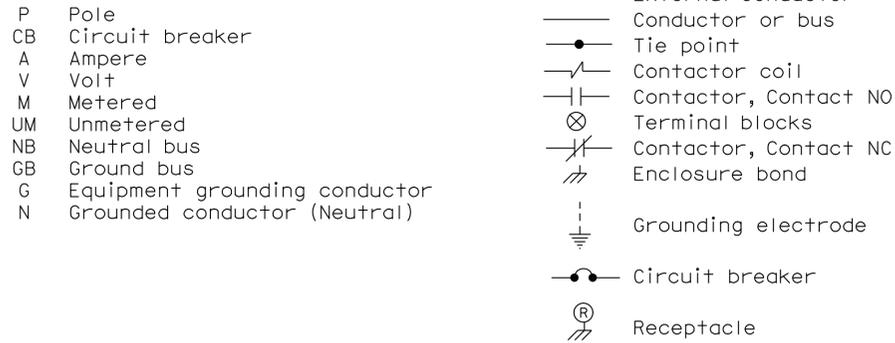
SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



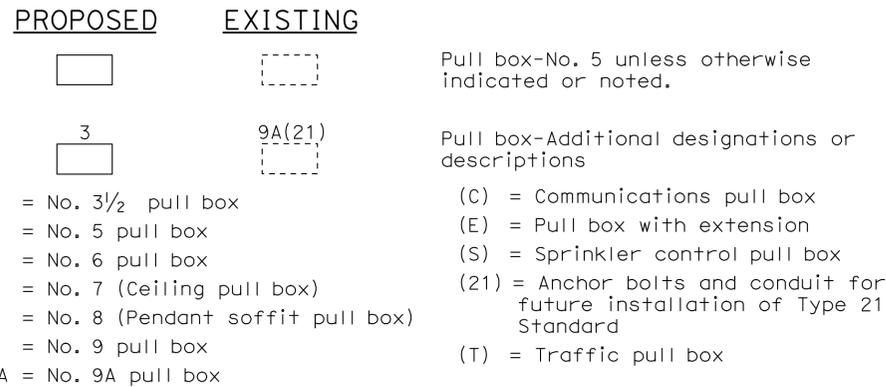
MISCELLANEOUS EQUIPMENT



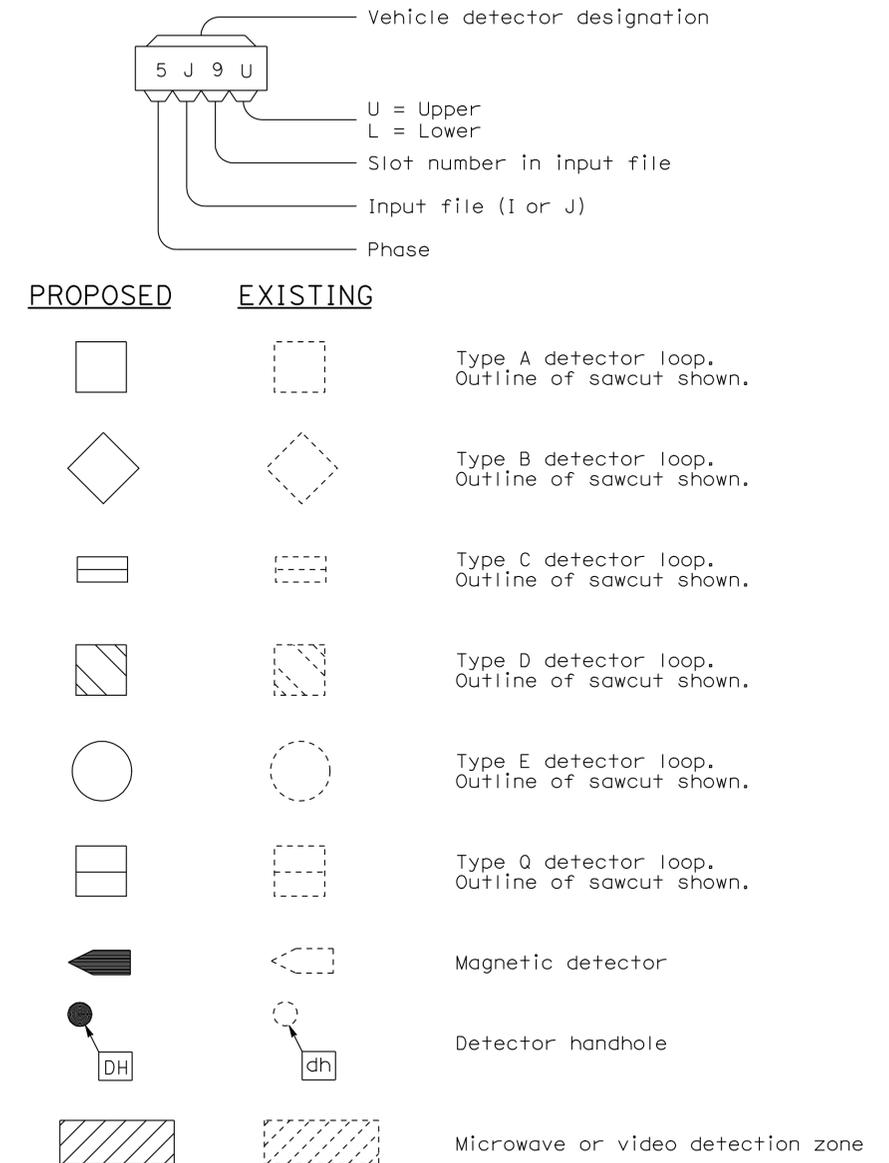
WIRING DIAGRAM LEGEND



PULL BOXES



VEHICLE DETECTORS



STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

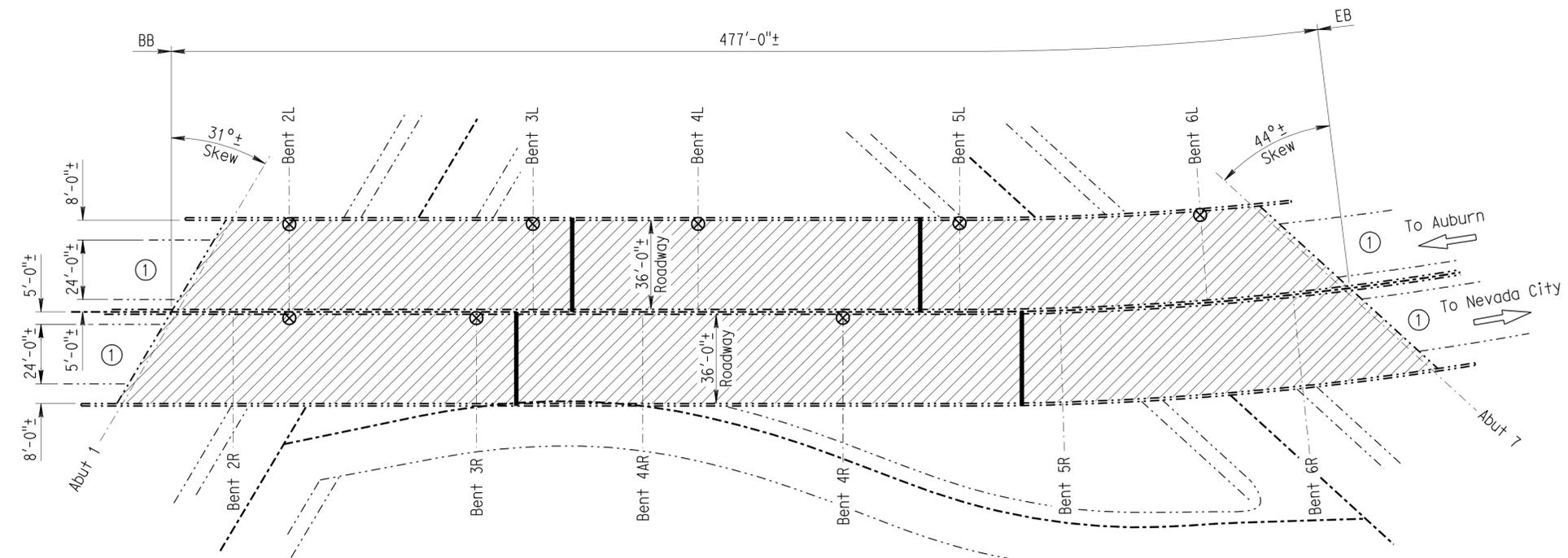
NO SCALE

RSP ES-1C DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1C
 DATED MAY 1, 2006 - PAGE 402 OF THE STANDARD PLANS BOOK DATED MAY 2006.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Nev	20	R12.8, R15.9	27	28

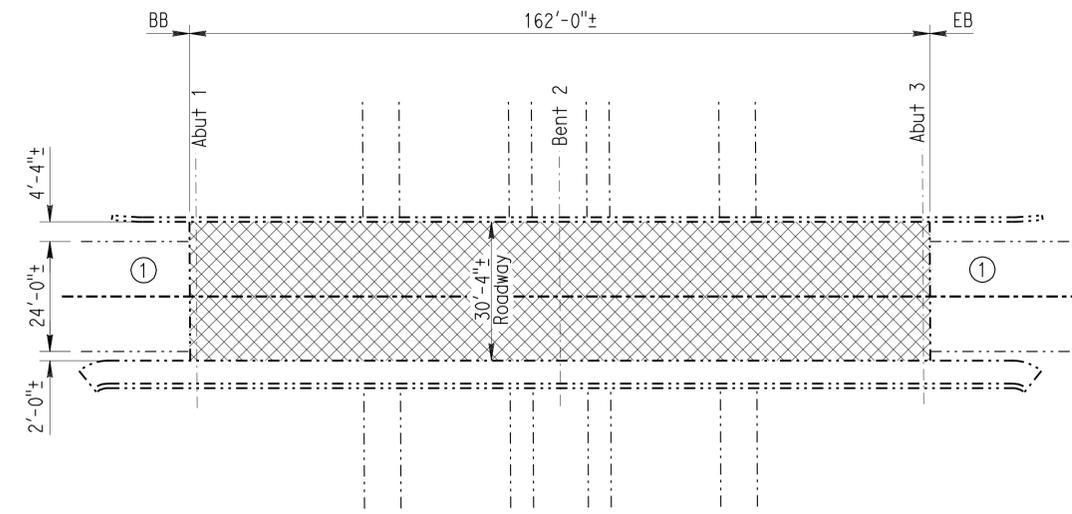
Charles R. Hutchinson
 REGISTERED CIVIL ENGINEER DATE 10-5-10
 12-13-10
 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER
 CHARLES R. HUTCHINSON
 No. C 54226
 Exp. 12-31-10
 CIVIL
 STATE OF CALIFORNIA



ROUTE 20/174 SEPARATION
 BR NO. 17-0050, ROUTE 20, PM 12.85
 1' = 30'

QUANTITIES	
REMOVE ASPHALT CONCRETE SURFACING	33,900 SQFT
REMOVE UNSOUND CONCRETE	86 CF
PREPARE CONCRETE BRIDGE DECK SURFACE	33,900 SQFT
CLEAN EXPANSION JOINT	152 LF
RAPID SETTING CONCRETE (PATCH)	86 CF
FURNISH POLYESTER CONCRETE OVERLAY	10,200 CF
PLACE POLYESTER CONCRETE OVERLAY	33,900 SQFT
JOINT SEAL (MR 1 1/2")	114 LF
JOINT SEAL (MR 2")	38 LF
PUBLIC SAFETY PLAN	LUMP SUM



GOLD FLAT ROAD OVERCROSSING
 BR NO. 17-0082, ROUTE 20, PM 15.92
 1' = 20'

QUANTITIES	
REMOVE UNSOUND CONCRETE	13 CF
PREPARE CONCRETE BRIDGE DECK SURFACE	4,900 SQFT
RAPID SETTING CONCRETE (PATCH)	13 CF
FURNISH POLYESTER CONCRETE OVERLAY	500 CF
PLACE POLYESTER CONCRETE OVERLAY	4,900 SQFT

- NOTES: (APPLY TO ALL SHEETS)**
- Indicates existing structure.
 - THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.
 - ① STANDARD PLAN SHEET NUMBER
 - ② DETAIL NUMBER
- NOTES: (APPLY TO THIS SHEET ONLY)**
- Indicates limits of remove existing 3"± depth AC surface, deck seal membrane, prepare concrete bridge deck surface, remove unsound concrete, patch with rapid setting concrete and place a 3"± polyester concrete overlay. For details see "DECK REPAIR TABLE" on JOINT SEAL & DECK REPAIR DETAILS sheet.
 - Indicates limits of prepare concrete bridge deck surface, remove unsound concrete, patch with rapid setting concrete and place a 1" minimum polyester concrete overlay. For details see "DECK REPAIR TABLE" on JOINT SEAL & DECK REPAIR DETAILS sheet.
 - Indicates limits of remove existing joint seal and place new joint seal. For details see JOINT SEAL & DECK REPAIR DETAILS sheet.
 - ① See "Road Plans" for remove existing pavement surface to conform to new deck or approach slab grades.
 - ⊗ Approximate location of down drains to be cleaned out.

INDEX TO PLANS

SHEET NO.	TITLE
1	GENERAL PLAN NO. 1
2	JOINT SEAL & DECK REPAIR DETAILS

STANDARD PLANS DATED MAY 2006

SHEET NO.	TITLE
A10A	ACRONYMS AND ABBREVIATIONS (SHEET 1 OF 2)
A10B	ACRONYMS AND ABBREVIATIONS (SHEET 2 OF 2)

 10-5-10 DESIGN ENGINEER	DESIGN	BY F. Espinoza	CHECKED P. Gagnier	LAYOUT	BY M. Hallstrom	CHECKED P. Gagnier	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF MAINTENANCE STRUCTURE MAINTENANCE DESIGN	BRIDGE NO.	VARIOUS	ROUTE 20 BRIDGES GENERAL PLAN NO. 1
	DETAILS	BY M. Hallstrom	CHECKED P. Gagnier	SPECIFICATIONS	BY F. Espinoza	CHECKED P. Gagnier			POST MILE	VARIES	
QUANTITIES	BY F. Espinoza	CHECKED P. Gagnier					CU 03	EA 3E0601	DISREGARD PRINTS BEARING EARLIER REVISION DATES	11-19-09	SHEET 1 OF 2

STRUCTURES MAINTENANCE GENERAL PLAN & DETAIL SHEET (ENGLISH) (REV. 10/17/07)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS: 0 1 2 3

FILE => 03-3e0601_01gp1.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Nev	20	R12.8, R15.9	28	28

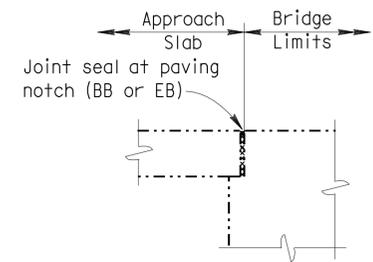
10-5-10
 REGISTERED CIVIL ENGINEER DATE
 12-13-10
 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS
 SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR
 COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER
 CHARLES R. HUTCHINSON
 No. C 54226
 Exp. 12-31-10
 CIVIL
 STATE OF CALIFORNIA

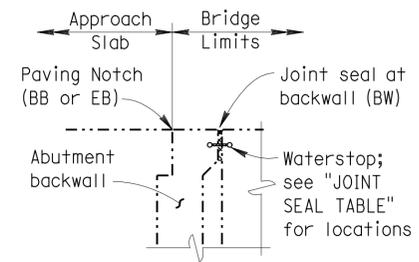
JOINT SEAL TABLE								
BRIDGE NUMBER	LOCATION	MINIMUM "MR" (inches)	APPROXIMATE LENGTH (feet)	EXISTING WATERSTOP	APPROX DEPTH TO CLEAN EXPANSION JOINT (inches)	APPROX DEPTH OF JOINT SPALLS (inches)	APPROX WIDTH OF JOINT SPALLS (inches)	APPROX LENGTH OF JOINT SPALLS (inches)
17-0050L	Hinge Span 3	1 1/2	38.2	No	11 1/2	3	6	5
	Hinge Span 4	1 1/2	38.2	No	11 1/2	3	6	5
17-0050R	Hinge Span 3	1 1/2	38.2	No	11 1/2	3	6	5
	Hinge Span 5	2	38.2	No	11 1/2	3	6	5

DECK REPAIR TABLE REMOVE UNSOUND CONCRETE AND RAPID SETTING CONCRETE (PATCH)			
BRIDGE NAME	BRIDGE NUMBER	APPROXIMATE AREA DAMAGED (ft ²)	APPROXIMATE DEPTH (INCHES)
ROUTE 20/174 SEPARATION	17-0050	338.7	3.0
GOLD FLAT ROAD OCERCROSSING	17-0082	49.0	3.0

LEGEND:
 BB = Paving notch at beginning of bridge
 EB = Paving notch at end of bridge

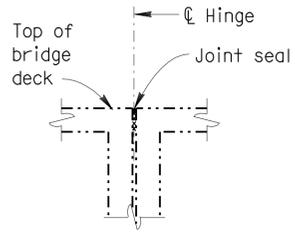


DIAPHRAGM ABUTMENT

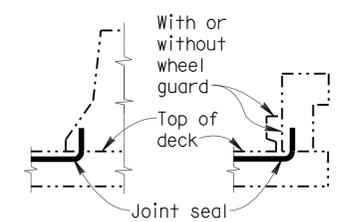


**ABUTMENT WITH BACKWALL
JOINT SEAL LOCATION**

NO SCALE



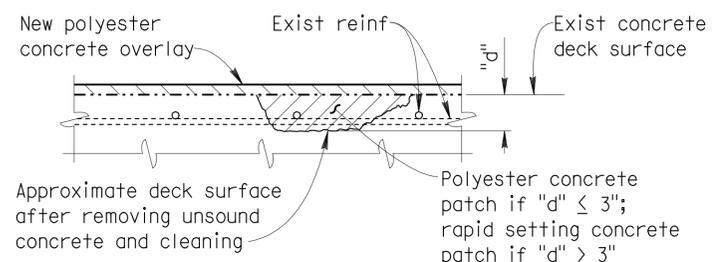
BENT



BARRIER RAIL

JOINT SEAL AT LOW SIDE OF DECK

Details shown for illustration purposes only. For use only where deck joint matches the barrier rail joint.
 NO SCALE



DECK REPAIR DETAIL

NO SCALE
 Locations to be determined by the Engineer.
 Reinforcement may be encountered during deck concrete removal.

DECK DRAINS	
LOCATION	NUMBER
EB	3 EA
WB	5 EA
TOTAL	8 EA

- The following notes apply to JOINT SEAL TYPE B:
- Seal must satisfy both minimum Movement Rating (MR) and minimum W1 requirements.
 - Minimum W1 is the calculated maximum width of the joint based on field measurements. After the joints have been cleaned, minimum W1 is to be calculated by the Engineer.
 - W1 shall be the smaller of the values determined as follows:
 - 0.85 times the manufacturer's designed minimum uncompressed width of the seal.
 - The width of the seal on the third successive test cycle of the pressure deflection test, when compressed to an average pressure of 3 psi.
 - Bend Type B joint seal 6" up into curb or rail on the low side of the deck where deck joint matches curb or rail joint.
 - For details not shown see 