Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	80	13.5/21.2	1	30

STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON

STATE HIGHWAY

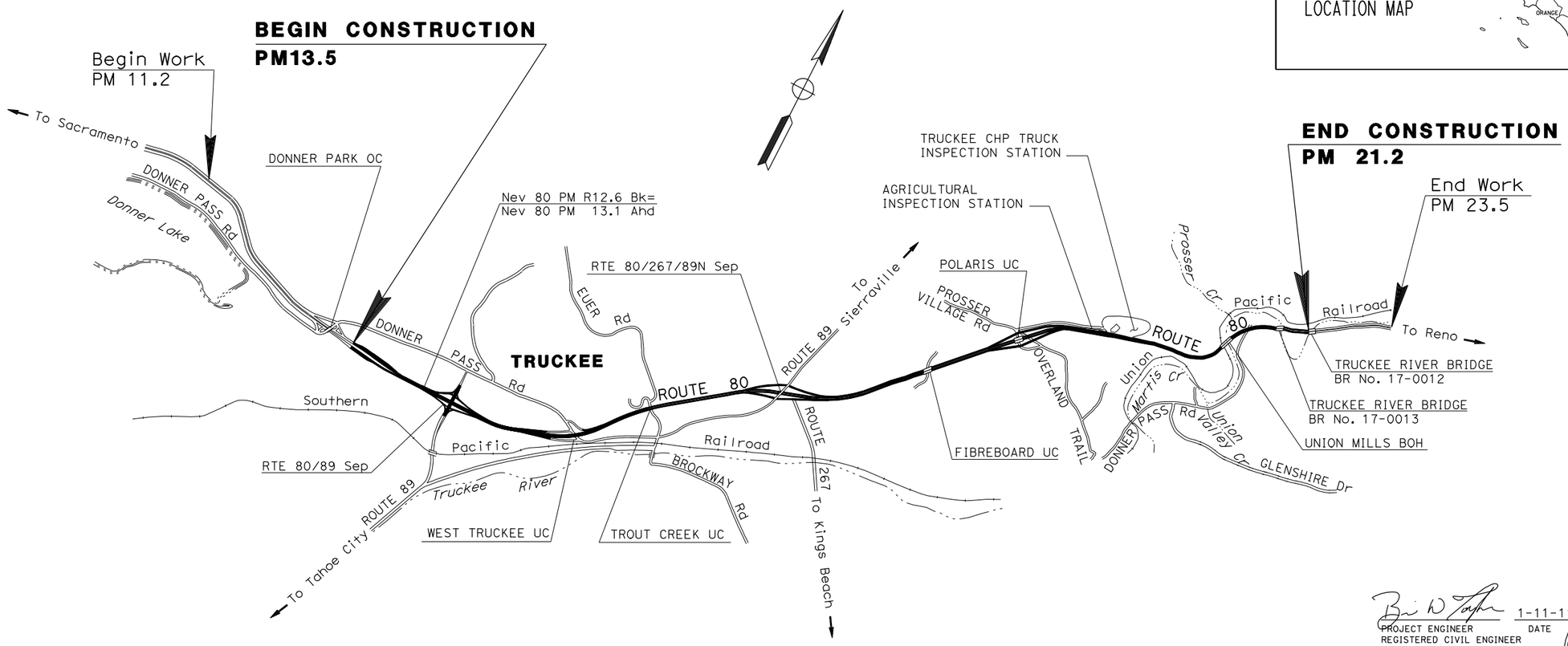
IN NEVADA COUNTY
IN AND NEAR TRUCKEE
FROM 0.3 MILE EAST OF DONNER PARK OVERCROSSING
TO TRUCKEE RIVER BRIDGE NUMBER 17-0012

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006

INDEX OF PLANS

SHEET No.	DESCRIPTION
1	TITLE AND LOCATION MAP
2	TYPICAL CROSS SECTIONS
3-10	CONSTRUCTION DETAILS
11	CONSTRUCTION AREA SIGNS
12	PAVEMENT DELINEATION QUANTITIES
13-15	SUMMARY OF QUANTITIES
16	ELECTRICAL
17-30	REVISED STANDARD PLANS

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



NO SCALE

PROJECT ENGINEER
REGISTERED CIVIL ENGINEER

1-11-11
DATE

REGISTERED PROFESSIONAL ENGINEER
BRIAN D. TOEPFER
No. C46278
Exp. 12-31-12
CIVIL
STATE OF CALIFORNIA

February 14, 2011
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 D. TOEPFER

DESIGN ENGINEER: BRIAN D. TOEPFER

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

CONTRACT No.	03-3M8304
PROJECT ID	0300000603

LAST REVISION 00-00-00

DATE PLOTTED => 18-FEB-2011
TIME PLOTTED => 07:53

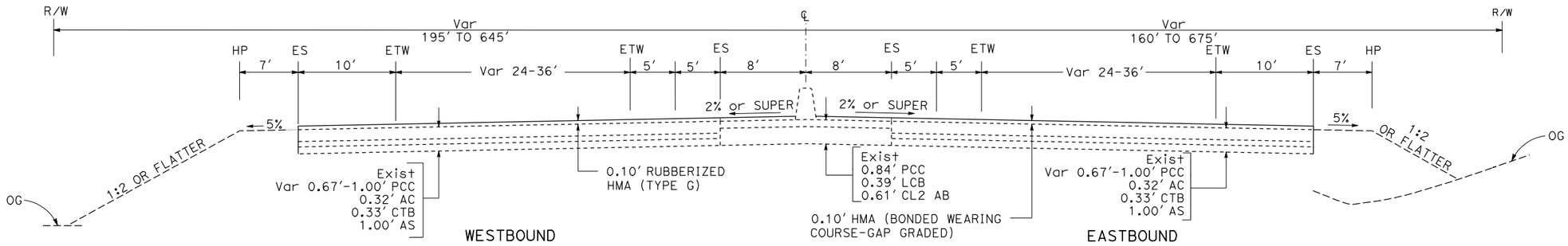
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	80	13.5/21.2	2	30

REGISTERED CIVIL ENGINEER 1-11-11 DATE

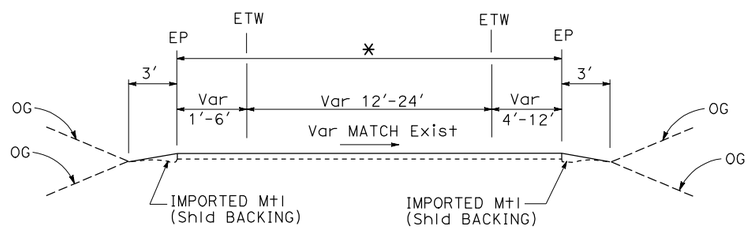
2-14-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER BRIAN D. TOEPFER No. C46278 Exp. 12/31/12 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.

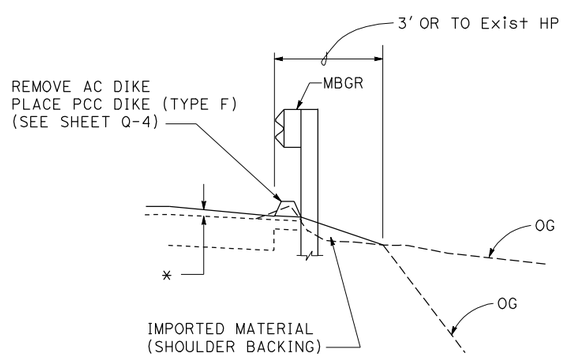


MAINLINE 80
ROUTE 80



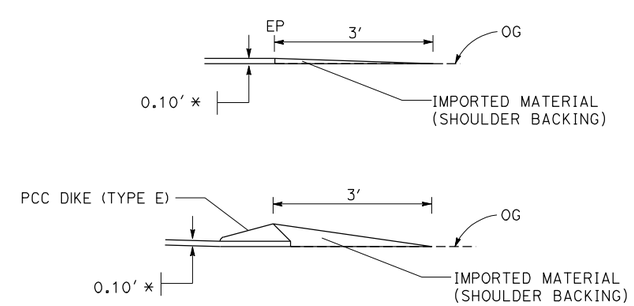
RAMPS

* EB - 0.10' HMA (BONDED WEARING COURSE-GAP GRADED)
WB - 0.10' RUBBERIZED HMA (TYPE G)



MBGR TYPICAL DETAIL

* EB - HMA (BONDED WEARING COURSE-GAP GRADED)
WB - RUBBERIZED HMA (TYPE G)



SHOULDER BACKING CONSTRUCTION

* EB - HMA (BONDED WEARING COURSE-GAP GRADED)
WB - RUBBERIZED HMA (TYPE G)

TYPICAL CROSS SECTIONS

NO SCALE

X-1

REVISED BY	DATE REVISED

CALCULATED-DESIGNED BY
CHECKED BY

FUNCTIONAL SUPERVISOR
BRIAN D. TOEPFER

ROBERT M. FLOYD II

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® MAINTENANCE ENGINEERING

LAST REVISION 00-00-00
DATE PLOTTED => 18-FEB-2011
TIME PLOTTED => 07:54

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	80	13.5/21.2	3	30

REGISTERED CIVIL ENGINEER 1-11-11 DATE

2-14-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER BRIAN D. TOEPFER No. C46278 Exp. 12/31/12 CIVIL STATE OF CALIFORNIA

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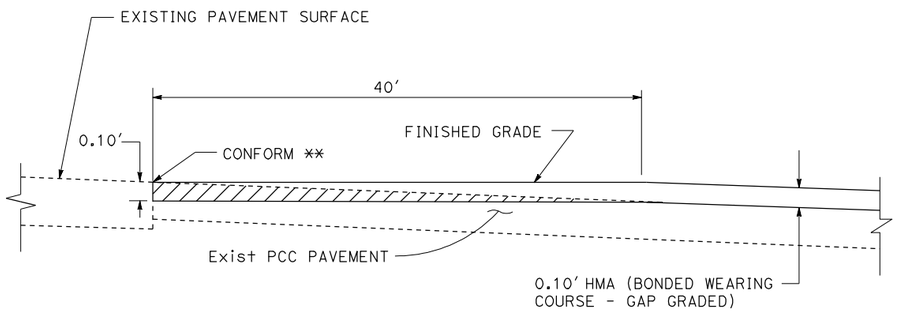
NOTES

1. EXISTING UTILITY FACILITIES HAVE NOT BEEN PLOTTED ON THESE PLANS.
2. FOR TRANSITION TAPER QUANTITIES SEE QUANTITY SHEET Q-1.

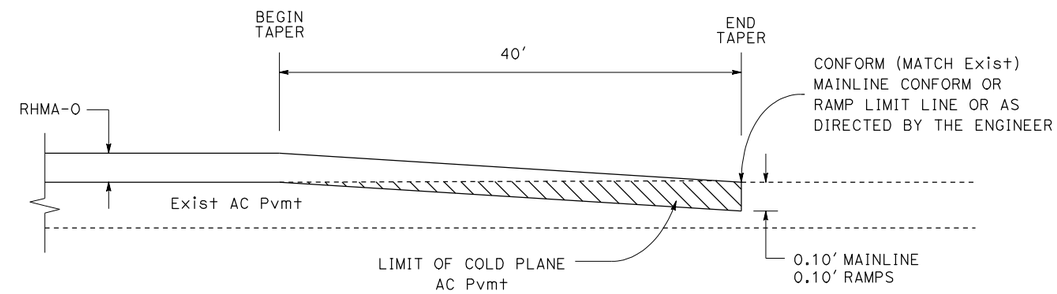
LEGEND

- LIMITS OF COLD PLANE ASPHALT CONCRETE PAVEMENT
- LIMITS OF PAVEMENT TRANSITION TAPER
- LIMITS OF COLD PLANE ASPHALT CONCRETE PAVEMENT



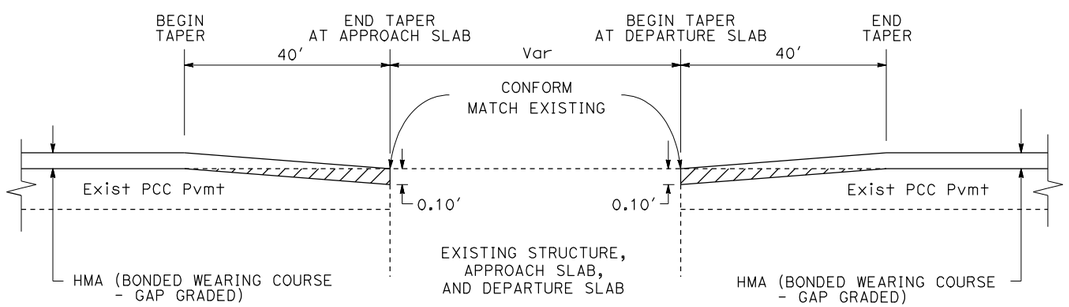
PAVEMENT TRANSITION TAPER EB (MAINLINE)

** BEGIN AND END OF CONSTRUCTION



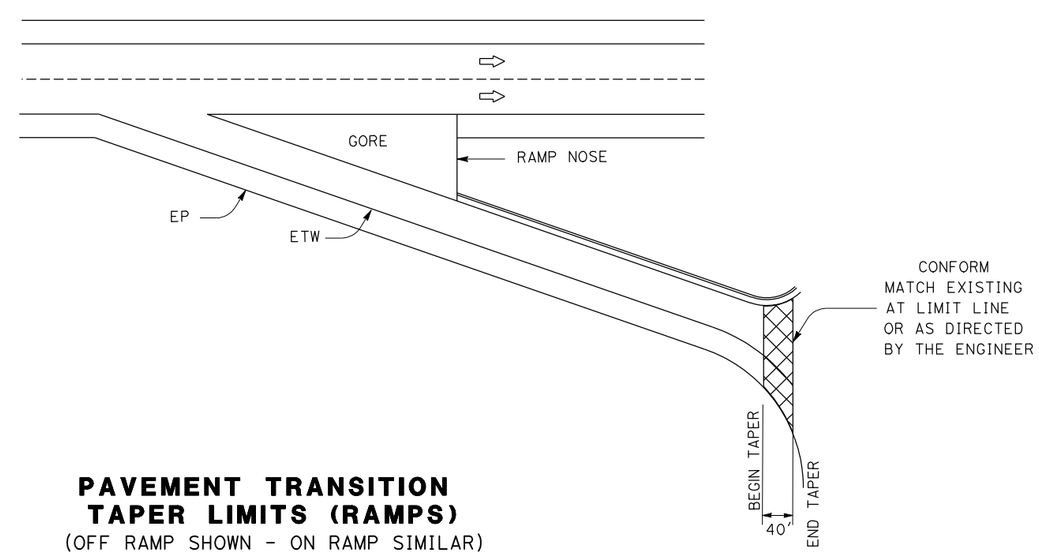
PAVEMENT TRANSITION TAPERS AT HMA (BONDED WEARING COURSE - GAP GRADED) RAMP CONFORMS

89 SOUTH EB OFF RAMP TO 89 SOUTH (EXIT 185)
80 EB ON RAMP FROM 89 SOUTH
80 EB OFF RAMP TO CENTRAL TRUCKEE (EXIT 186)
80 EB OFF RAMP TO TRUCKEE (EXIT 188A)
80 EB OFF RAMP TO 89/267 (EXIT 188B)
80 EB ON RAMP FROM 89/267
80 EB OFF RAMP TO OVERLAND TRAIL (EXIT 190)
80 EB ON RAMP FROM OVERLAND TRAIL



PAVING CONFORM AT STRUCTURES

ROUTE 80/89 SEPARATION (BRIDGE NUMBER 17-0029)
WEST TRUCKEE UC
TROUT CREEK UC
ROUTE 80 EB 267/89 SEPARATION
FIBREBOARD UC
POLARIS UC
UNION MILLS BRIDGE OH R
TRUCKEE RIVER (BRIDGE NUMBER 17-0013)
TRUCKEE RIVER (BRIDGE NUMBER 17-0012)



PAVEMENT TRANSITION TAPER LIMITS (RAMPS)

(OFF RAMP SHOWN - ON RAMP SIMILAR)

EASTBOUND ONLY

CONSTRUCTION DETAILS

NO SCALE

C-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: BRIAN D. TOEPFER
CALCULATED-DESIGNED BY
CHECKED BY
REVISED BY: ROBERT M. FLOYD II
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 18-FEB-2011
TIME PLOTTED => 07:54

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	80	13.5/21.2	4	30

REGISTERED CIVIL ENGINEER 1-11-11 DATE

2-14-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER BRIAN D. TOEPFER No. C46278 Exp. 12/31/12 CIVIL STATE OF CALIFORNIA

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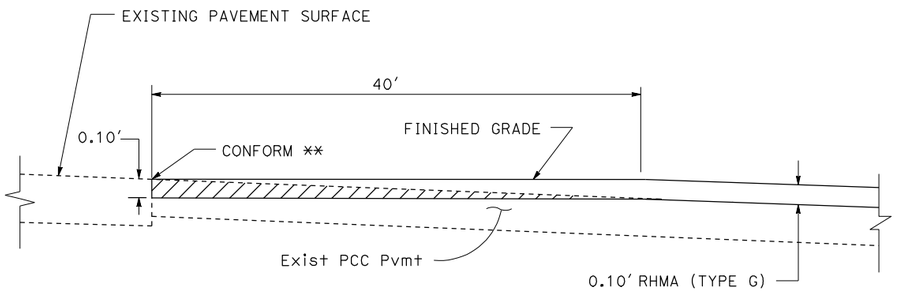
NOTES

1. EXISTING UTILITY FACILITIES HAVE NOT BEEN PLOTTED ON THESE PLANS.
2. FOR TRANSITION TAPER QUANTITIES SEE QUANTITY SHEET Q-1.

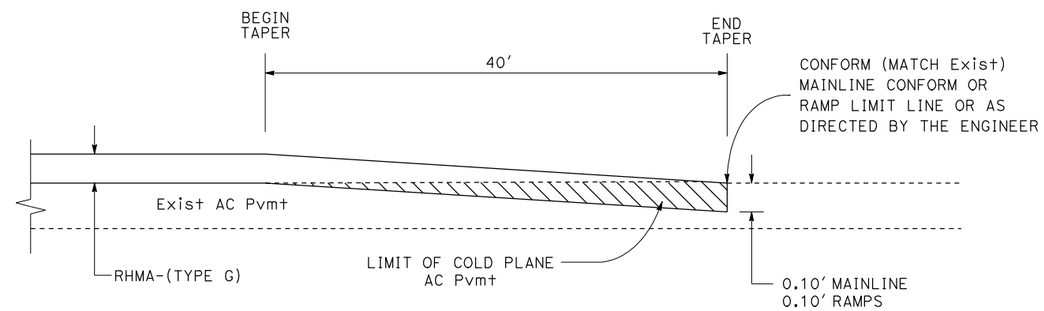
LEGEND

- LIMITS OF GRIND EXISTING CONCRETE PAVEMENT
- LIMITS OF PAVEMENT TRANSITION TAPER
- LIMITS OF COLD PLANE ASPHALT CONCRETE PAVEMENT



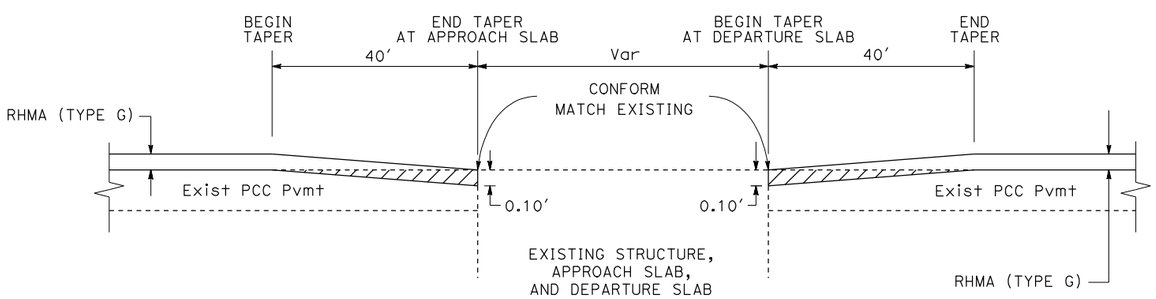
PAVEMENT TRANSITION TAPER WB (MAINLINE)

** BEGIN AND END OF CONSTRUCTION



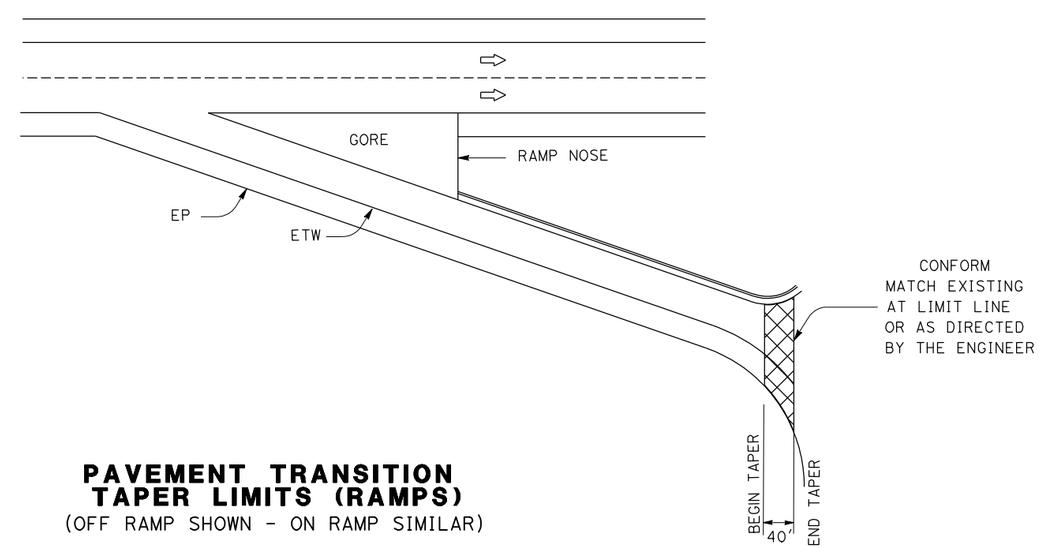
PAVEMENT TRANSITION TAPERS AT RUBBERIZED HMA (TYPE G) RAMP CONFORMS

80 WB ON RAMP FROM 89 SOUTH
80 WB OFF RAMP TO 89 SOUTH (EXIT 185)
80 WB ON RAMP FROM CENTRAL TRUCKEE
80 WB OFF RAMP TO CENTRAL TRUCKEE (EXIT 186)
80 WB OFF RAMP TO 89/267 (EXIT 188)
80 WB ON RAMP FROM OVERLAND TRAIL
80 WB OFF RAMP TO OVERLAND TRAIL (EXIT 190)



PAVING CONFORM AT STRUCTURES

ROUTE 80/89 SEPARATION (BRIDGE NUMBER 17-0029)
WEST TRUCKEE UC
TROUT CREEK UC
ROUTE 80 WB 267/89 SEPARATION
FIBREBOARD UC
POLARIS UC
UNION MILLS BRIDGE OH L
TRUCKEE RIVER (BRIDGE NUMBER 17-0013)
TRUCKEE RIVER (BRIDGE NUMBER 17-0012)



PAVEMENT TRANSITION TAPER LIMITS (RAMPS)

(OFF RAMP SHOWN - ON RAMP SIMILAR)

WESTBOUND ONLY

CONSTRUCTION DETAILS

NO SCALE

C-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING
FUNCTIONAL SUPERVISOR BRIAN D. TOEPFER
CALCULATED-DESIGNED BY
CHECKED BY
REVISED BY ROBERT M. FLOYD II
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 18-FEB-2011
TIME PLOTTED => 07:54

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	80	13.5/21.2	5	30

REGISTERED CIVIL ENGINEER 1-11-11 DATE

2-14-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER BRIAN D. TOEPFER No. C46278 Exp. 12/31/12 CIVIL STATE OF CALIFORNIA

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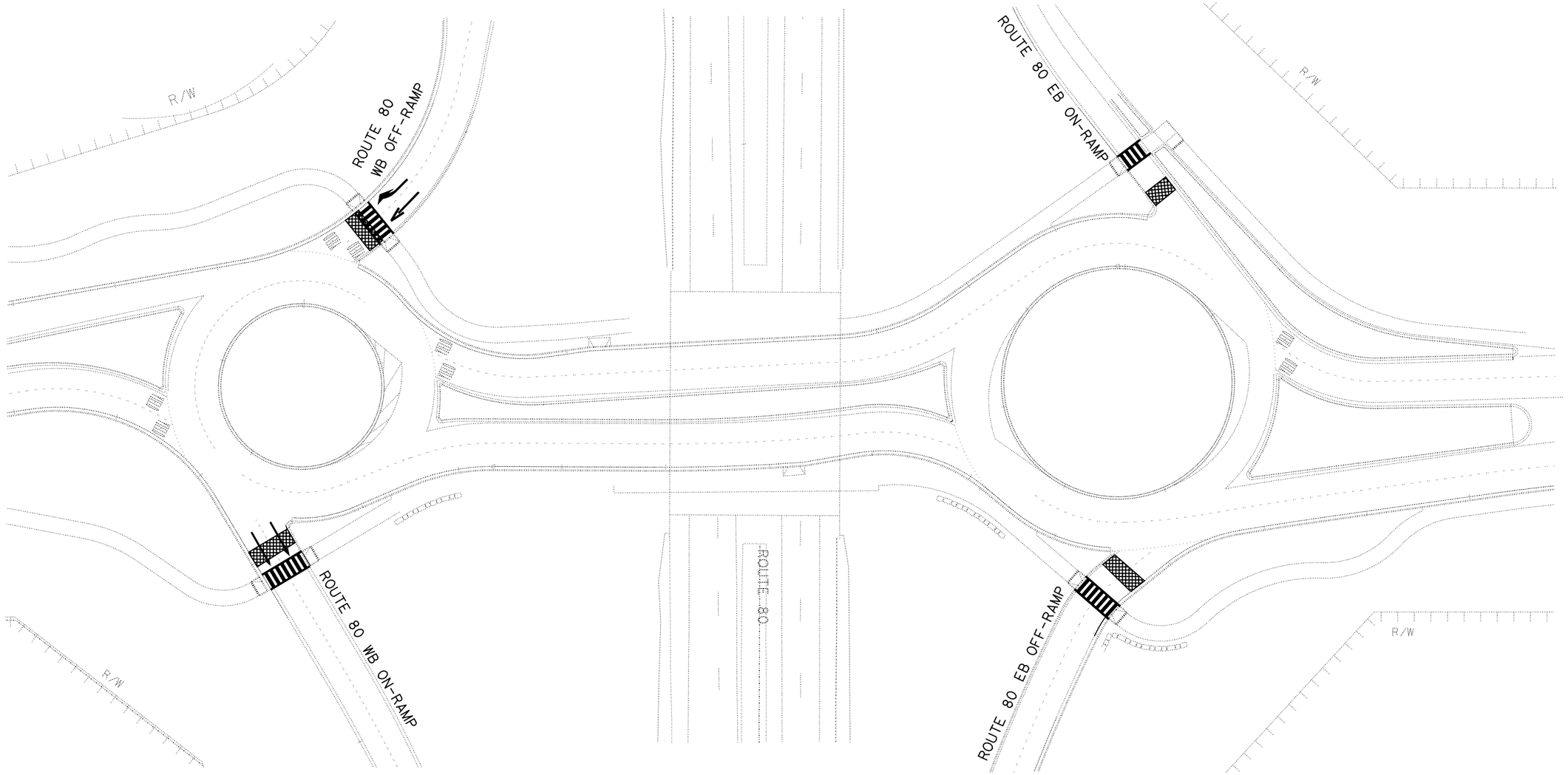
LEGEND

LIMITS OF PAVEMENT TRANSITION TAPER



89S ROUNDABOUT
RAMP CONFORMS

DETAIL AT EB/WB
ON AND OFF RAMPS
(FOR QUANTITIES SEE SHEET Q-1)

CONSTRUCTION DETAILS

NO SCALE

C-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: BRIAN D. TOEPFER

CALCULATED-DESIGNED BY: ROBERT M. FLOYD II
CHECKED BY:

REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 18-FEB-2011
TIME PLOTTED => 07:54

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	80	13.5/21.2	6	30

REGISTERED CIVIL ENGINEER 1-11-11 DATE

2-14-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER BRIAN D. TOEPFER No. C46278 Exp. 12/31/12 CIVIL STATE OF CALIFORNIA

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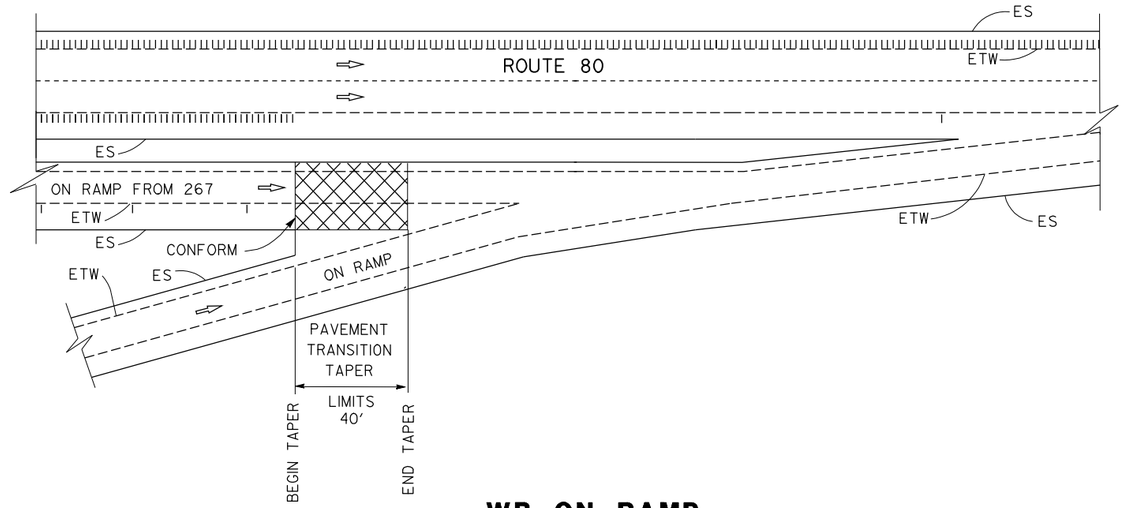
LEGEND

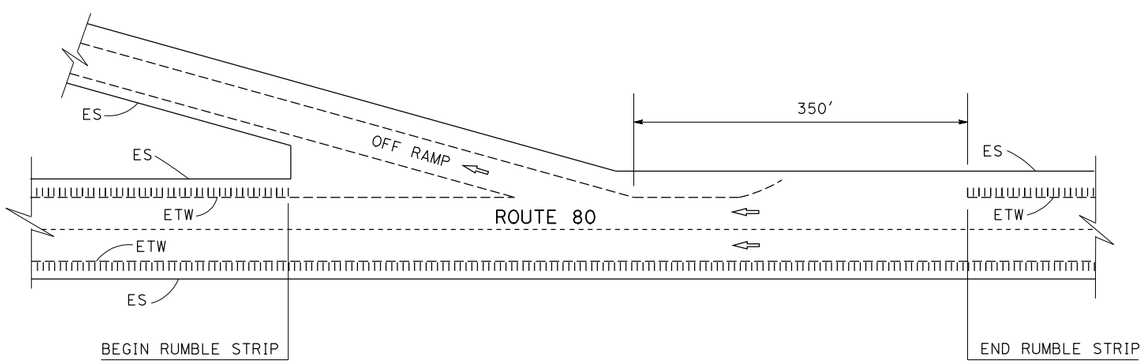
⇨ DIRECTION OF TRAFFIC

IIIIIIIIIIII SHOULDER RUMBLE STRIP (HMA, GROUND-IN INDENTATIONS)

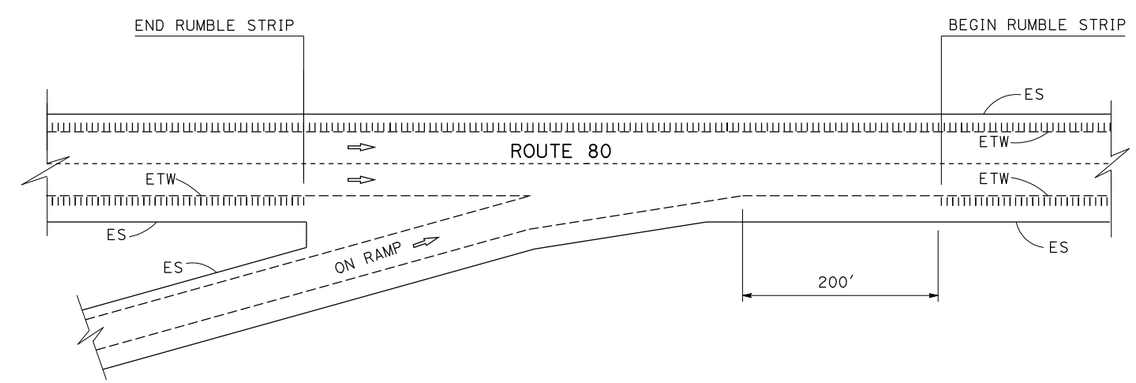


WB ON RAMP

DETAIL AT MERGE OF 2 RAMPS
WEST OF 89/80 SEPARATION (EXIT 188)



OFF RAMP



ON RAMP

RUMBLE STRIP DETAIL AT RAMPS

CONSTRUCTION DETAILS
NO SCALE

C-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: BRIAN D. TOEPFER

CALCULATED-DESIGNED BY: ROBERT M. FLOYD II
CHECKED BY

REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 18-FEB-2011
TIME PLOTTED => 07:54

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	80	13.5/21.2	7	30

REGISTERED CIVIL ENGINEER 1-11-11 DATE

2-14-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER BRIAN D. TOEPFER No. C46278 Exp. 12/31/12 CIVIL STATE OF CALIFORNIA

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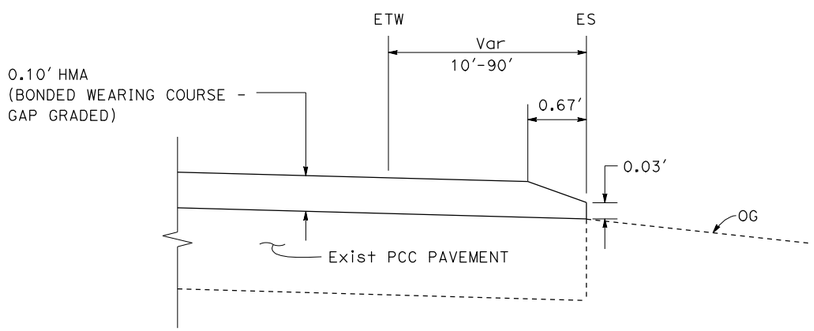
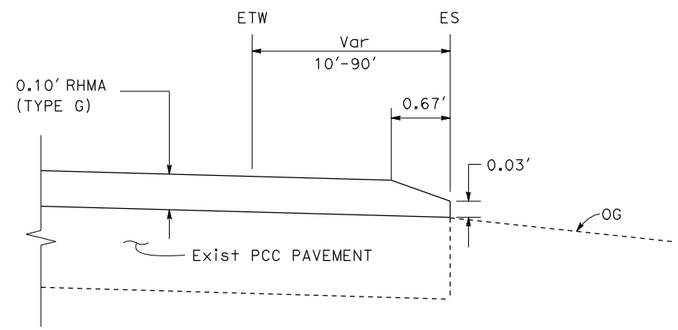
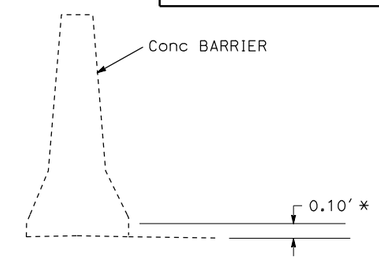


HMA CONFORM AT ES EASTBOUND

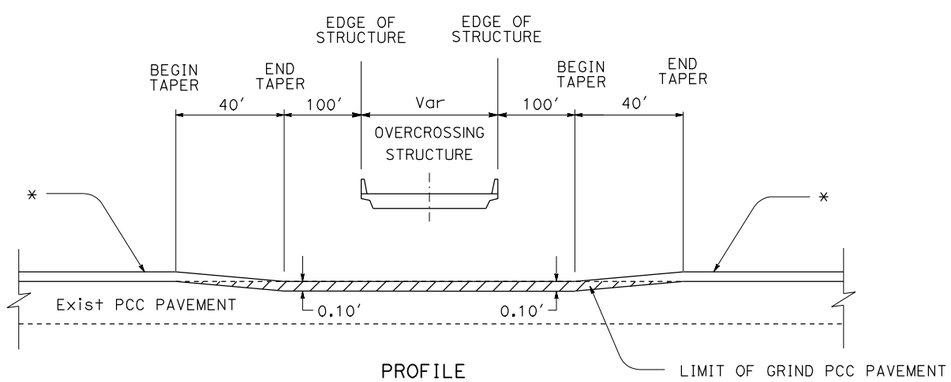


RHMA CONFORM AT ES WESTBOUND



PAVING DETAIL AT MEDIAN BARRIER

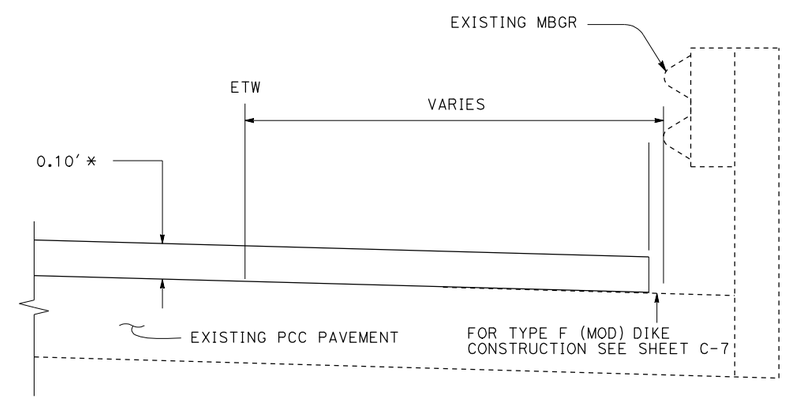
* EB - HMA (BONDED WEARING COURSE-GAP GRADED)
WB - RUBBERIZED HMA (TYPE G)



PAVING CONFORM AT OVERCROSSING STRUCTURES

89/80 SEPARATION (PM 16.29)

* EB - HMA (BONDED WEARING COURSE-GAP GRADED)
WB - RUBBERIZED HMA (TYPE G)



OVERLAY EDGE PAVING AT MBGR

* EB - HMA (BONDED WEARING COURSE-GAP GRADED)
WB - RUBBERIZED HMA (TYPE G)

CONSTRUCTION DETAILS

NO SCALE

C-5

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: BRIAN D. TOEPFER

CALCULATED-DESIGNED BY: ROBERT M. FLOYD II
CHECKED BY:

REVISED BY / DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 18-FEB-2011
TIME PLOTTED => 07:54

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	80	13.5/21.2	8	30

REGISTERED CIVIL ENGINEER 1-11-11 DATE

2-14-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER BRIAN D. TOEPFER No. C46278 Exp. 12/31/12 CIVIL STATE OF CALIFORNIA

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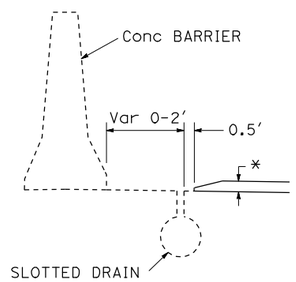
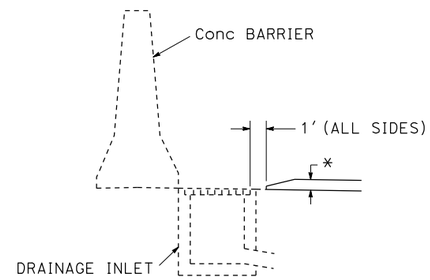


PAVING DETAIL AT SLOTTED DRAIN

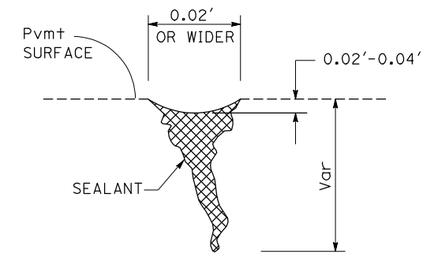
* EB - HMA (BONDED WEARING COURSE-GAP GRADED)
WB - RUBBERIZED HMA (TYPE G)



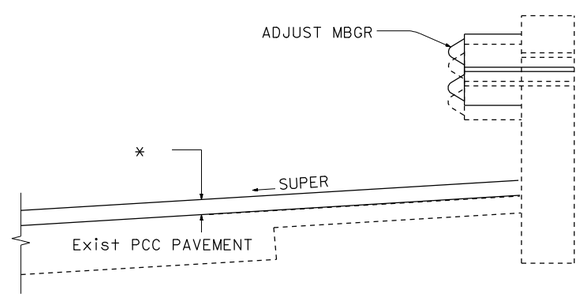
PAVING DETAIL AT DRAINAGE INLET

(FIELD VERIFY LOCATIONS)

* EB - HMA (BONDED WEARING COURSE-GAP GRADED)
WB - RUBBERIZED HMA (TYPE G)



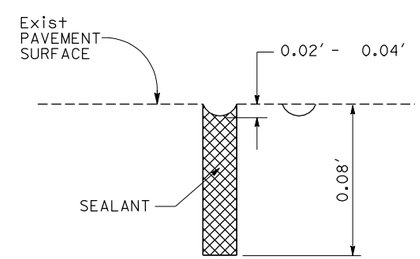
SEAL RANDOM CRACKS



PAVING LIMITS AT HIGH SIDE OF SUPER - EB ROUTE 80

EB 14.91-15.02 EB 18.27-18.31 EB 21.10-21.14
EB 15.32-15.51 EB 18.34-18.36 WB 15.55-15.59
EB 16.52-16.63 EB 18.48-18.60 WB 16.65-16.67
EB 16.69-16.86 EB 19.53-19.82 WB 20.34-20.50
EB 17.14-17.24 EB 20.37-20.45

* EB - HMA (BONDED WEARING COURSE-GAP GRADED)
WB - RUBBERIZED HMA (TYPE G)



REPLACE JOINT SEAL (EXISTING CONCRETE PAVEMENT)

CONSTRUCTION DETAILS

NO SCALE

C-6

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: BRIAN D. TOEPFER

CALCULATED-DESIGNED BY | CHECKED BY

ROBERT M. FLOYD II | REVISED BY | DATE REVISED

LAST REVISION 00-00-00 | DATE PLOTTED => 18-FEB-2011 | TIME PLOTTED => 07:54

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	80	13.5/21.2	9	30

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2-14-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER BRIAN D. TOEPFER No. C46278 Exp. 12/31/12 CIVIL STATE OF CALIFORNIA

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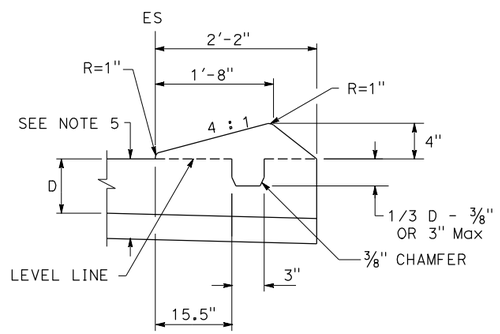
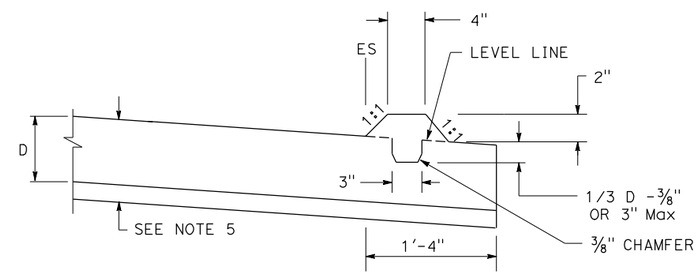
NOTES

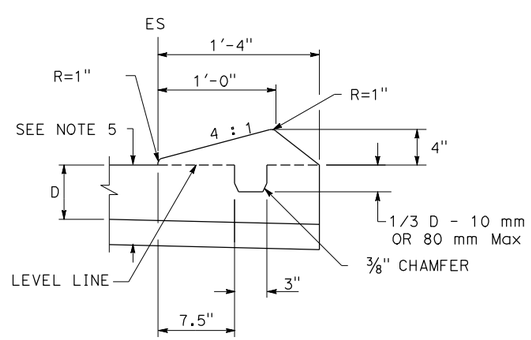
1. SHOULDER TRANSVERSE WEAKENED PLANE JOINTS SHALL BE EXTENDED THROUGH THE DIKE.
2. DOWELS SHALL BE PLACED IN THE TRANSVERSE WEAKENED PLANE JOINTS IN PORTLAND CEMENT CONCRETE SHOULDERS AND DIKES UNLESS OTHERWISE SPECIFIED IN THE SPECIAL PROVISIONS.
3. TRANSVERSE CONTACT (CONSTRUCTION) JOINTS SHALL BE INSTALLED AT THE END OF ALL PAVING OPERATIONS, AND ELSEWHERE IF ORDERED BY THE ENGINEER. THE LOCATION OF THE JOINT SHALL COINCIDE WITH THE SUCCESSIVE INTERVAL SPACING OF TRANSVERSE WEAKENED PLANE JOINTS WHEN TERMINATING PAVING OPERATIONS.
4. TRANSVERSE WEAKENED PLANE JOINTS AND TRANSVERSE CONTACT (CONSTRUCTION) JOINTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STD PLAN P18.
5. EXTEND PCC AND AC PAVEMENT BENEATH DIKE TO LIMITS SHOWN ON DETAIL.



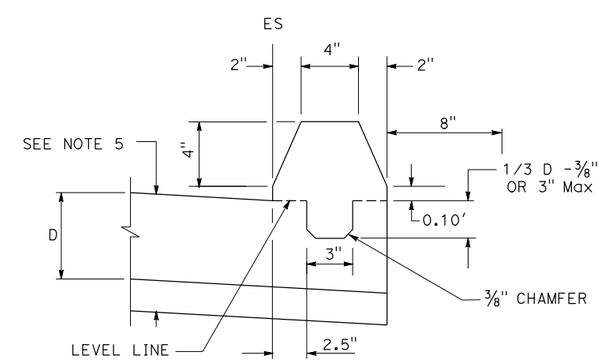
TYPE D
MOUNTABLE DIKE



TYPE C
LOW DIKE



TYPE E
MOUNTABLE DIKE



TYPE F (MOD)
USE UNDER MBGR

CONCRETE DIKES & CURBS

CONSTRUCTION DETAILS
NO SCALE

C-7

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: BRIAN D. TOEPFER
CALCULATED-DESIGNED BY / CHECKED BY
ROBERT M. FLOYD II
REVISED BY / DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 18-FEB-2011
TIME PLOTTED => 07:55

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	80	13.5/21.2	10	30

REGISTERED CIVIL ENGINEER 1-11-11 DATE

2-14-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER BRIAN D. TOEPFER No. C46278 Exp. 12/31/12 CIVIL STATE OF CALIFORNIA

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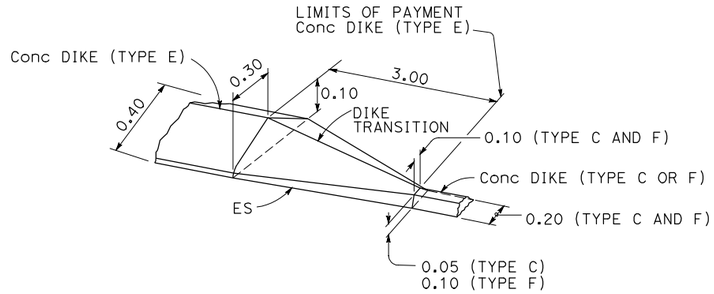
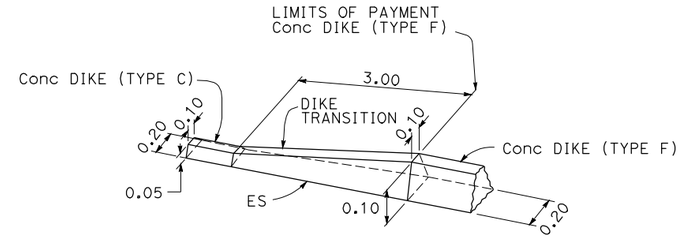


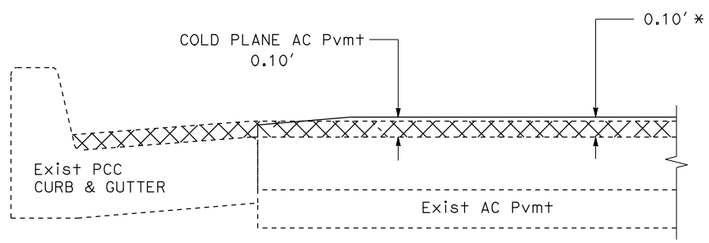
DIKE TRANSITION TYPE E TO TYPE C, F

(SEE QUANTITY SHEETS FOR LOCATION)



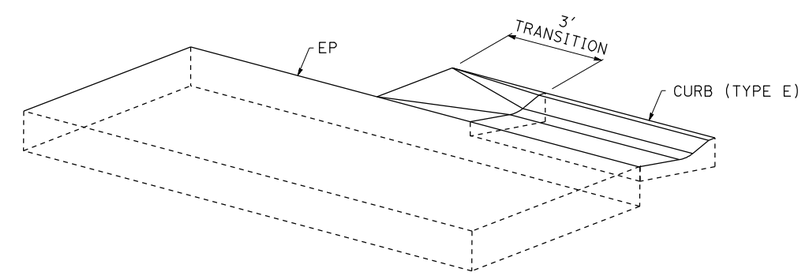
DIKE TRANSITION TYPE C TO TYPE F

(SEE LAYOUT SHEETS FOR LOCATION)



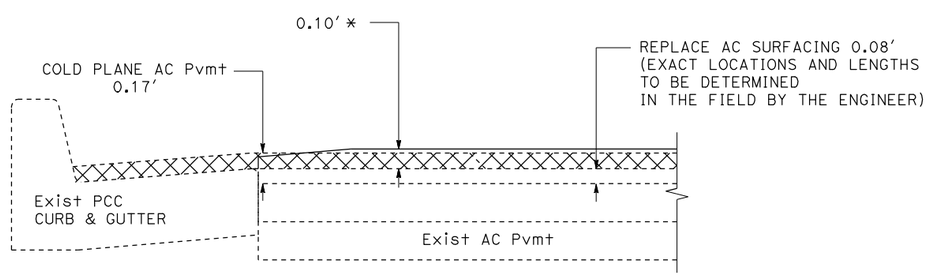
WEST TRUCKEE RAMP DETAIL

* EB - HMA (BONDED WEARING COURSE-GAP GRADED)
WB - RUBBERIZED HMA (TYPE G)



TRANSITION TO CURB (TYPE E)

(SEE QUANTITY SHEETS FOR LOCATION)



OVERLAND TRAIL RAMP DETAIL

* EB - HMA (BONDED WEARING COURSE-GAP GRADED)
WB - RUBBERIZED HMA (TYPE G)

CONSTRUCTION DETAILS

NO SCALE

C-8

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: BRIAN D. TOEPFER
CALCULATED-DESIGNED BY: ROBERT M. FLOYD II
CHECKED BY
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 18-FEB-2011
TIME PLOTTED => 07:55

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	80	13.5/21.2	11	30

REGISTERED CIVIL ENGINEER 1-11-11 DATE

2-14-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER BRIAN D. TOEPFER No. C46278 Exp. 12/31/12 CIVIL STATE OF CALIFORNIA

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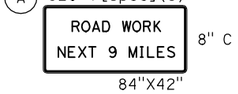
STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN LETTER	SIGN CODE FEDERAL	SIGN CODE CALIFORNIA	PANEL SIZE	SIGN MESSAGE	No. OF POST AND SIZE	NUMBER OF SIGNS
A	G20-1[Spec](9)		84" x 42"	ROAD WORK NEXT 9 MILES	2 - 4" x 6"	2
B		C40(Mod)	96" x 60"	TRAFFIC FINES DOUBLED IN WORK ZONES	2 - 6" x 6"	2
C	W20-1	C23	48" x 48"	ROAD WORK AHEAD	1 - 6" x 6"	13
D		C14	48" x 24"	END ROAD WORK	1 - 4" x 6"	14

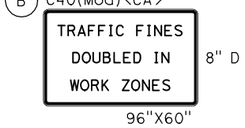
SIGN DETAILS

A G20-1[Spec](9)



RETROREFLECTIVE ORANGE BACKGROUND WITH BLACK LEGEND AND BORDER.

B C40(Mod)<CA>



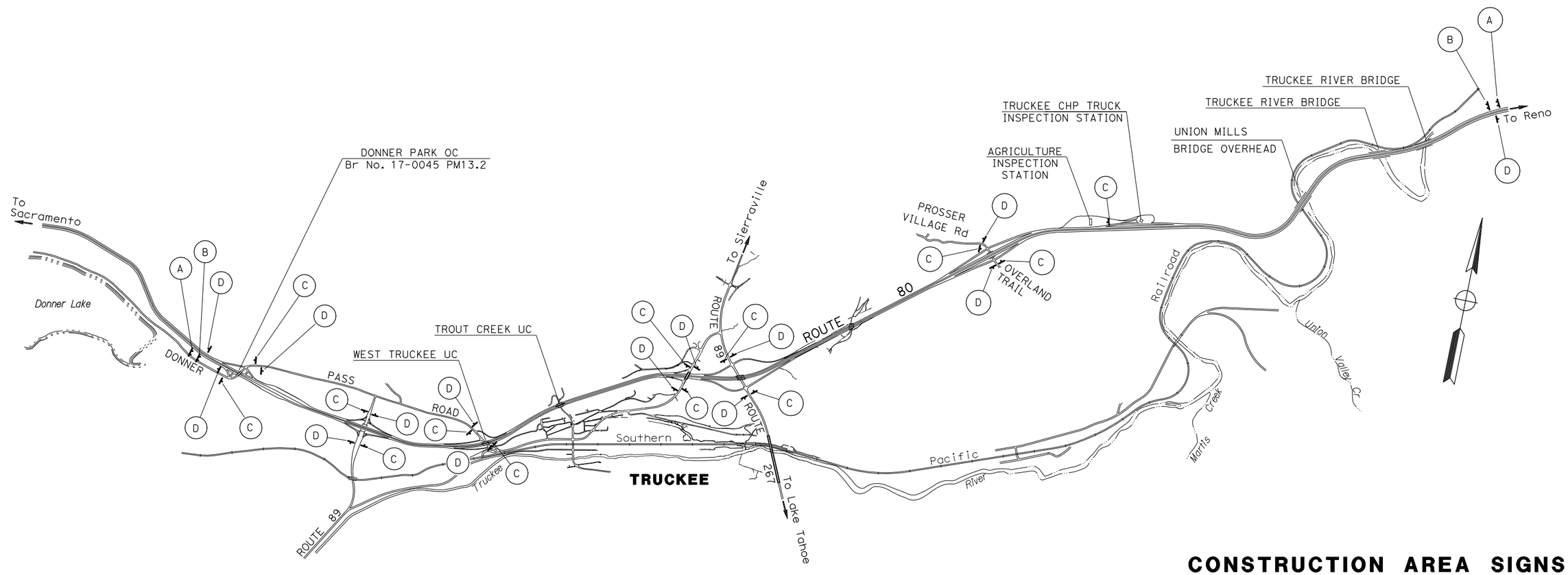
RETROREFLECTIVE WHITE BACKGROUND WITH BLACK LEGEND AND BORDER.

NOTES:

1. POST DIMENSIONS ARE NOMINAL.
2. EXACT SIGN LOCATIONS TO BE DETERMINED BY THE ENGINEER.
3. EXISTING UTILITY FACILITIES HAVE NOT BEEN PLOTTED ON THESE PLANS.

LEGEND

- SIGN - SINGLE POST
- SIGN - DOUBLE POST



CONSTRUCTION AREA SIGNS

NO SCALE

THIS PLAN ACCURATE FOR CONSTRUCTION AREA SIGN WORK ONLY

CS-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: BRIAN D. TOEPFER

CALCULATED-DESIGNED BY | CHECKED BY

ROBERT M. FLOYD II

REVISED BY | DATE REVISED

LAST REVISION 00-00-00 | DATE PLOTTED => 18-FEB-2011 | TIME PLOTTED => 07:55

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	80	13.5/21.2	12	30

REGISTERED CIVIL ENGINEER 2-17-11 DATE

2-14-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER JEFFREY S. JEWETT No. 49233 Exp. 9-30-12 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.

TWO COMPONENT PAINT TRAFFIC STRIPE

DETAIL NUMBER	LF
24	99,807
27B	102,057
TOTAL	201,864

4" THERMOPLASTIC TRAFFIC STRIPE (RECESSED, BROKEN 17 - 7)

DETAIL NUMBER	LF
8	5,914
TOTAL	5,914

8" THERMOPLASTIC TRAFFIC STRIPE (RECESSED, BROKEN 12-3)

DETAIL NUMBER	LF
37	6,331
TOTAL	6,331

NOTE: DETAIL 37 SHALL BE PLACED WITHOUT THE RETROREFLECTIVE PAVEMENT MARKERS.

4" THERMOPLASTIC TRAFFIC STRIPE (RECESSED, BROKEN 36 - 12)

DETAIL NUMBER	LF
11	89,631
TOTAL	89,631

TWO COMPONENT PAINT PAVEMENT MARKING

DESCRIPTION	NUMBER	SQFT
LIMIT LINE	6	271
CROSS WALK	4	535
INTERNATIONAL CROSSWALK	4	598
TYPE II ARROW	7 @ 45 SQFT	315
TYPE III ARROW	9 @ 42 SQFT	378
TYPE V ARROW	16 @ 33 SQFT	528
TYPE VI ARROW	6 @ 42 SQFT	252
"STOP"	13 @ 22 SQFT	286
"SIGNAL"	2 @ 32 SQFT	64
"AHEAD"	7 @ 31 SQFT	217
TOTAL		3,444

8" THERMOPLASTIC TRAFFIC STRIPE (RECESSED)

DETAIL NUMBER	LF
36	7,061
36A	2,281
38A	1,440
TOTAL	10,782

NOTE: DETAIL 36 AND 36A SHALL BE PLACED WITHOUT THE RETROREFLECTIVE PAVEMENT MARKERS.

PAVEMENT DELINEATION QUANTITIES

PDQ-1

REVISED BY	DATE REVISED
JEFFREY S. JEWETT	JEFFREY S. JEWETT

CALCULATED-DESIGNED BY: JEFFREY S. JEWETT
CHECKED BY: JEFFREY S. JEWETT

FUNCTIONAL SUPERVISOR: JOSEPH W. HORTON

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® MAINTENANCE ENGINEERING

LAST REVISION 00-00-00
DATE PLOTTED => 18-FEB-2011
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	80	13.5/21.2	13	30

REGISTERED CIVIL ENGINEER 1-11-11 DATE

2-14-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER BRIAN D. TOEPFER No. C46278 Exp. 12/31/12 CIVIL STATE OF CALIFORNIA

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NOTE: TRANSITION TAPER QUANTITIES INCLUDED

ROADWAY QUANTITIES

LOCATION DESCRIPTION POST MILE		DIRECTION	HMA (BONDED WEARING COURSE -GAP GRADED)	ASPHALTIC EMULSION MEMBRANE (BONDED WEARING-COURSE)	RUBBERIZED HOT MIX ASPHALT (GAP GRADED)	TACK COAT	COLD PLANE ASPHALT CONCRETE PAVEMENT	REPLACE ASPHALT CONCRETE SURFACING	GRIND EXISTING CONCRETE PAVEMENT
BEGIN	END		TON	TON	TON	TON	SQYD	CY	SQYD
13.50	14.16	EB ROUTE	1,446	15					366
EB ROUTE 80 OFF RAMP	ROUTE 89 SOUTH	EB ROUTE	225	3			156		
14.19	14.97	EB ROUTE	1,755	21					366
ROUTE 89 SOUTH	EB ROUTE 80 ON RAMP	EB ROUTE	216	3			133		
EB ROUTE 80 OFF RAMP	CENTRAL TRUCKEE	EB ROUTE	68	4			133		
15.01	15.48	EB ROUTE	1,102	13					346
15.48	16.29	EB ROUTE	1,562	20					824
EB ROUTE 80 OFF RAMP	ROUTE 89 NB	EB ROUTE	459	6			639		
16.29	16.61	EB ROUTE	622	9					844
16.63	17.33	EB ROUTE	1,388	17					346
17.35	18.28	EB ROUTE	1,782	22					334
EB ROUTE 80 OFF RAMP	OVERLAND TRAIL	EB ROUTE	203	3			2,101	114	
OVERLAND TRAIL	EB ROUTE 80 ON RAMP	EB ROUTE	178	2			1,420	75	
18.28	20.23	EB ROUTE	4,179	52					334
20.33	20.84	EB ROUTE	1,275	16					326
20.89	21.13	EB ROUTE	451	6					326
13.50	13.55	WB ROUTE			97	0.2			183
13.55	13.71	WB ROUTE			1,201	3.0			
13.71	13.74	WB ROUTE			178	0.5			
13.74	13.84	WB ROUTE			249	0.6			
13.84	14.16	WB ROUTE			714	1.8			183
ROUTE 89 SOUTH	WB ROUTE 80 ON RAMP	WB ROUTE			215	0.8	139		
14.19	14.97	WB ROUTE			1,703	4.2			366
WB ROUTE 80 OFF RAMP	ROUTE 89 SB	WB ROUTE			355	1.3	156		
CENTRAL TRUCKEE	WB ROUTE 80 ON RAMP	WB ROUTE			399	1.5	417		
15.01	15.48	WB ROUTE			1,015	2.5			346
WB ROUTE 80 OFF RAMP	CENTRAL TRUCKEE	WB ROUTE			225	0.9	256		
15.51	16.29	WB ROUTE			1,500	3.7			824
ROUTE 89 SB	WB ROUTE 80 ON RAMP	WB ROUTE			696	2.0	528		
16.33	16.60	WB ROUTE			521	1.5			844
16.64	17.33	WB ROUTE			1,320	3.3			346
17.36	18.26	WB ROUTE			1,743	4.3			334
OVERLAND TRAIL	WB ROUTE 80 ON RAMP	WB ROUTE			529	1.5	1,699	83	
18.28	18.67	WB ROUTE			758	1.9			171
WB ROUTE 80 OFF RAMP	OVERLAND TRAIL	WB ROUTE			240	0.9	2,324	127	
19.47	20.23	WB ROUTE			2,361	5.8			382
20.34	20.84	WB ROUTE			1,315	3.3			376
20.89	21.13	WB ROUTE			463	1.2			326
TOTAL			15,611	212	17,797	46.7	10,101	399	9,093

REVISED BY | DATE REVISED

ROBERT M. FLOYD II

CALCULATED-DESIGNED BY | CHECKED BY

FUNCTIONAL SUPERVISOR

BRIAN D. TOEPFER

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans® MAINTENANCE ENGINEERING

SUMMARY OF QUANTITIES

Q-1

LAST REVISION 00-00-00 | DATE PLOTTED => 18-FEB-2011 | TIME PLOTTED => 07:55

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	80	13.5/21.2	14	30

REGISTERED CIVIL ENGINEER 1-11-11 DATE

2-14-11
PLANS APPROVAL DATE

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METAL BEAM GUARDRAIL QUANTITIES

LOCATION DESCRIPTION POST MILE		DIRECTION	LAYOUT TYPE	ADJUST METAL BEAM GUARD RAILING	RECONSTRUCT METAL BEAM GUARD RAILING (WOOD POST)	ALTERNATIVE IN-LINE TERMINAL SYSTEM	ALTERNATIVE FLARED TERMINAL SYSTEM	OBJECT MARKER (TYPE L-1)	TRANSITION RAILING (TYPE WB)	END CAP (TYPE A)	END ANCHOR ASSEMBLY (SFT)
BEGIN	END			LF	LF	EA	EA	EA	EA	EA	EA
13.98	14.00	EB	16B		50		1	1			
14.15	14.21	EB	12B		291		1	1	1		
14.90	15.02	EB	12B		620		1	1	1		
15.32	15.52	EB	12B		1,056		1	1	1		
15.58	15.65	EB	12DD		350					1	1
15.88	15.90	EB	16B	106							
15.99	16.01	EB	16B	106							
16.51	16.62	EB	12B		581		1	1	1		
16.68	16.85	EB	12DD		898		1	1		1	1
17.14	17.36	EB	12B		1,162				1		
17.39	17.42	EB	12DD							1	1
18.07	18.08	EB	16A	53							
18.26	18.31	EB	12B		264		1	1	1		
18.34	18.36	EB	12DD		106					1	1
18.48	18.60	EB	11B		634		1	1			1
18.73	18.79	EB	11A		317						1
18.93	19.01	EB	11A		423						1
19.14	19.20	EB	11A	317	317	1					1
19.21	19.27	EB	11A	317	317	1					1
19.29	19.33	EB	11A		212	1					1
19.54	19.71	EB	11B	898		1					
19.77	19.82	EB	11B	264		1					
20.37	20.55	EB	12DD		898					1	1
20.83	20.86	EB	12B		159		1	1	1		
21.11	21.14	EB	12B		159		1	1	1		
14.11	14.12	WB	16B		106		1	1			
14.22	14.26	WB	12B		226		1	1	1		
14.59	14.61	WB	16B	106	106						
15.02	15.04	WB	12B		264		1	1	1		
15.55	15.60	WB	12A		159				1		
16.64	16.67	WB	12B		528		1	1			
17.24	17.34	WB	12DD			1				1	1
17.37	17.44	WB	12B	370	159				1		
18.25	18.28	WB	12DD							1	1
18.30	18.34	WB	12B	212							
18.33	18.46	WB	11B	687	68						
19.49	19.50	WB	16B		68						
19.68	19.70	WB	16B		792						
20.35	20.50	WB	12B		317		1	1	1		
20.78	20.84	WB	12DD		101					1	1
20.90	20.92	WB	12B				1	1	1		
TOTAL				3,436	11,708	6	16	16	14	8	14

SUMMARY OF QUANTITIES

Q-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: BRIAN D. TOEPFER

CALCULATED-DESIGNED BY | CHECKED BY

ROBERT M. FLOYD II

REVISED BY | DATE REVISED

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CONCRETE DIKE

POST MILE LIMITS/ DESCRIPTION			REMOVE ASPHALT CONCRETE DIKE	PLACE PORTLAND CEMENT CONCRETE DIKE TYPE				MINOR CONCRETE
				C	D	E	F	
BEGIN	END	SIDE	LF					CY
14.06	14.16	EB	300	38		254	263	5.8
14.19	14.32	EB	724			724		9.4
15.28	15.48	EB	1050	38			1,034	9.5
15.50	15.59	EB	476				479	4.3
15.59	15.61	EB	106	100				0.4
15.79	15.99	EB	860		1,004			29.4
17.09	17.31	EB	1162	52			1,162	10.7
17.32	17.37	EB	278			140	138	3.1
18.14	18.26	EB	860	68		456	207	8.1
18.29	18.37	EB	437			338	98	5.3
18.62	18.89	EB	350	68		913	304	14.9
18.89	18.96	EB	457	57		69	331	4.1
18.97	19.08	EB	178			592		7.7
19.09	19.15	EB	124	86			252	2.6
19.16	19.33	EB	802	76		339	455	8.8
19.48	19.65	EB	918	38			880	8.1
19.65	19.76	EB	150	38		14	215	2.3
20.31	20.49	EB	1301			73	994	10.0
20.77	20.84	EB	278	62		178	101	3.5
14.08	14.16	WB	425	38		425	160	7.1
14.19	14.23	WB	212	38			60	0.7
14.23	14.33	WB	540			528		6.9
14.51	14.59	WB	410			410		5.3
14.74	14.91	WB				1,130		14.7
16.38	16.42	WB	245		240			7.0
16.62	16.67	WB	205	69			140	1.5
17.23	17.32	WB	475				494	4.5
17.34	17.38	WB	334	56			278	2.7
18.16	18.25	WB	350			312	184	5.7
18.30	18.35	WB	126	38		237	88	4.0
20.34	20.49	WB	131				131	1.2
20.77	20.83	WB	148				148	1.3
20.89	20.91	WB	101	38			64	0.7
TOTAL			1,3533	998	1,244	7,132	8,660	211.6

RUMBLE STRIP

COUNTY	ROUTE	POST MILE LIMITS			SHOULDER RUMBLE STRIP (HMA, GROUND-IN INDENTATIONS)
		BEGIN	END	SIDE	STATION
Nev	80	13.50	14.16	EB	68
		14.17	14.97	EB	84
		15.00	15.48	EB	51
		15.51	16.60	EB	115
		16.64	17.33	EB	73
		17.36	18.26	EB	95
		18.28	20.23	EB	206
		20.34	20.84	EB	53
		20.90	21.13	EB	24
		21.19	21.20	EB	1
		13.50	14.16	WB	68
		14.17	14.97	WB	84
		15.00	15.48	WB	51
		15.51	16.60	WB	115
		16.64	17.33	WB	73
		17.36	18.26	WB	95
		18.28	20.23	WB	206
		20.34	20.84	WB	53
		20.90	21.18	WB	24
		21.19	21.20	WB	1
TOTAL					1,540

REPLACE JOINT SEAL (EXISTING CONCRETE PAVEMENT)

POST MILE LIMITS			
			LF
BEGIN	END		
18.95	20.23	WB	45,042
TOTAL			45,042

CRACK TREATMENT

POST MILE LIMITS			
			LNMI
BEGIN	END		
18.95	20.23	WB	4.52
TOTAL			4.52

IMPORTED MATERIAL (SHOULDER BACKING)

POST MILE LIMITS		
		TON
BEGIN	END	
13.50	21.20	4025
TOTAL		4025

GRIND EXISTING CONCRETE PAVEMENT

POST MILE LIMITS		WESTBOUND		
		LANE 1	LANE 2	LANE 3
BEGIN	END	SQYD (N)		
20.00	20.23	66	41	62
TOTAL		169		

(N) - FOR INFORMATION PURPOSES ONLY, FOR TOTALS SEE SHEET Q-1

REPLACE CONCRETE PAVEMENT (RAPID STRENGTH CONCRETE)

POST MILE LIMITS		WESTBOUND		
		LANE 1	LANE 2	LANE 3
BEGIN	END	CY		
20.00	20.23	15	9	14
TOTAL		38		

SUMMARY OF QUANTITIES

Q-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: BRIAN D. TOEPFER

CALCULATED-DESIGNED BY | CHECKED BY | REVISED BY | DATE REVISED: ROBERT M. FLOYD II

LAST REVISION 00-00-00 | DATE PLOTTED => 18-FEB-2011 | TIME PLOTTED => 07:55

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	80	13.5/21.2	16	30

REGISTERED ELECTRICAL ENGINEER 1-18-11 DATE

2-14-11
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER JASKARAN SINGH BOPARAI No. 15056 Exp. 12-31-11 ELECTRICAL STATE OF CALIFORNIA

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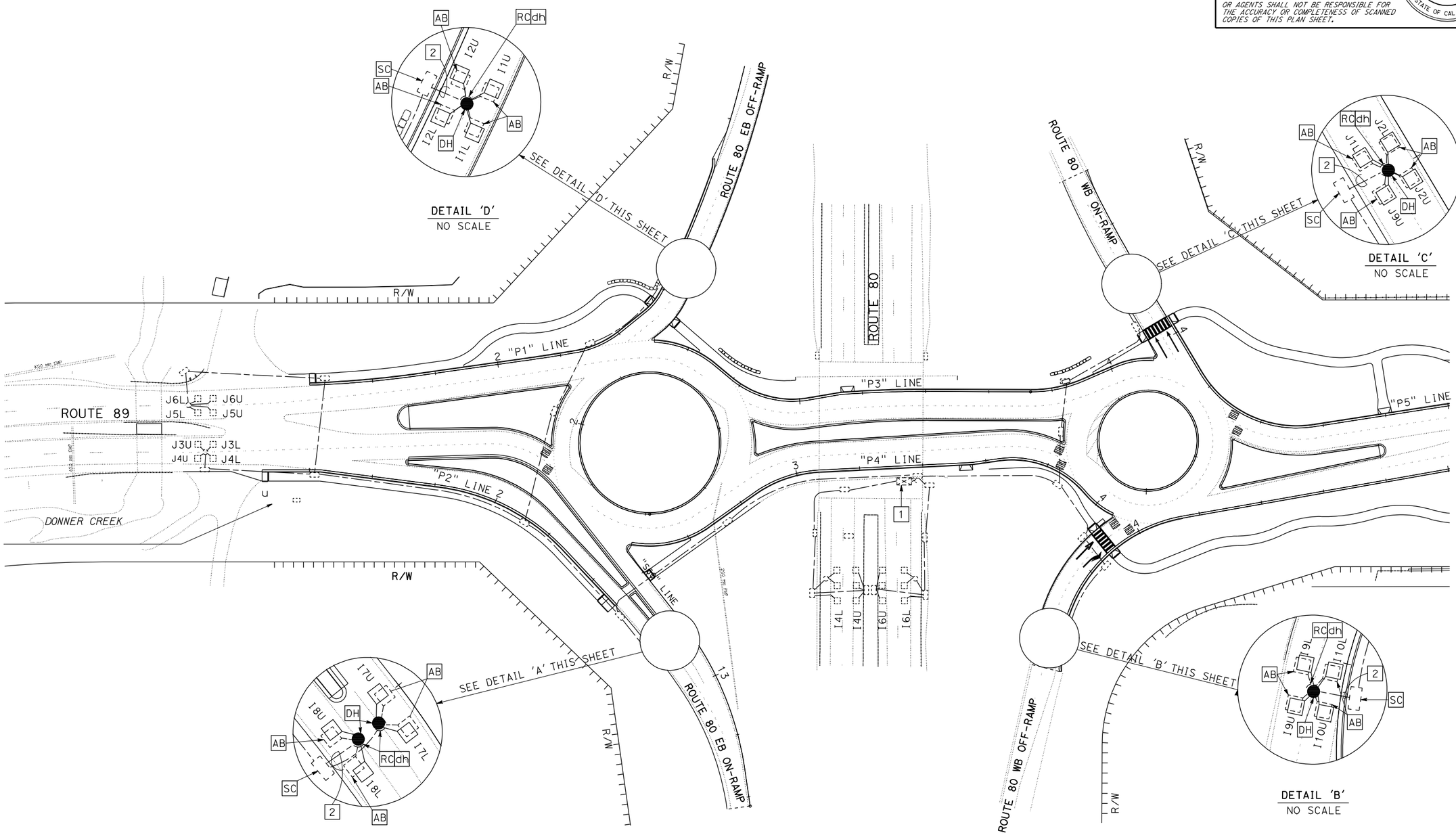
PROJECT NOTES (THIS SHEET ONLY)

1. EXIST TYPE 334 C CONTROLLER CABINET
2. RC LOOP WIRE CONDUCTORS, INSTALL LOOP WIRE CONDUCTORS



MODIFY TRAFFIC MONITORING STATION

SCALE 1"= 50'

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY

E-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans TRAFFIC ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR: STEVEN S. LEE
CALCULATED-DESIGNED BY: OANH D. NGUYEN
CHECKED BY: JASKARAN BOPARAI
REVISED BY
DATE REVISED

LAST REVISION 00-00-00
DATE PLOTTED => 18-FEB-2011
TIME PLOTTED => 07:56

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Nev	80	13.5/21.2	17	30

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

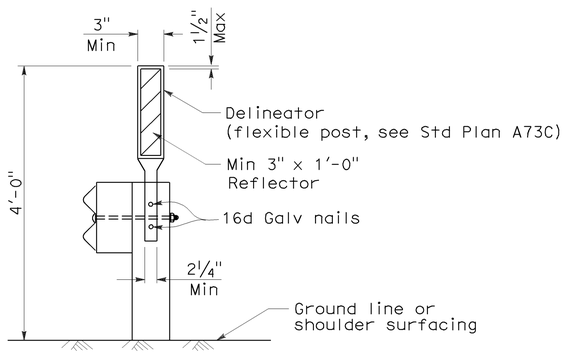
REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

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 2-14-11

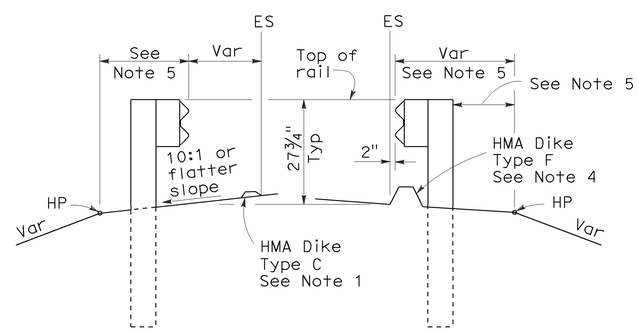
NOTES:

1. When necessary to place dike in front of face of guard railing, only Type C dike may be used. For dike details, see Standard Plan A87B.
2. For standard railing post embedment, see Standard Plans A77C3.
3. Guard railing delineation to be used where shown on the Project Plans.
4. When dike or curb is placed under guard railing, the maximum height of the dike or curb shall be 4". Mountable dike should not be used. For dike and curb details, see Revised Standard Plans RSP A87A and Standard Plan A87B.
5. For details of typical distance between the face of rail and hinge point, see Standard Plan A77C3.



GUARD RAILING DELINEATION

See Note 3



DIKE POSITIONING

See Note 1

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

METAL BEAM GUARD RAILING TYPICAL RAILING DELINEATION AND DIKE POSITIONING DETAILS

NO SCALE

RSP A77C4 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77C4
DATED MAY 1, 2006 - PAGE 47 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77C4

2006 REVISED STANDARD PLAN RSP A77C4

12-10-07

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Nev	80	13.5/21.2	18	30

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

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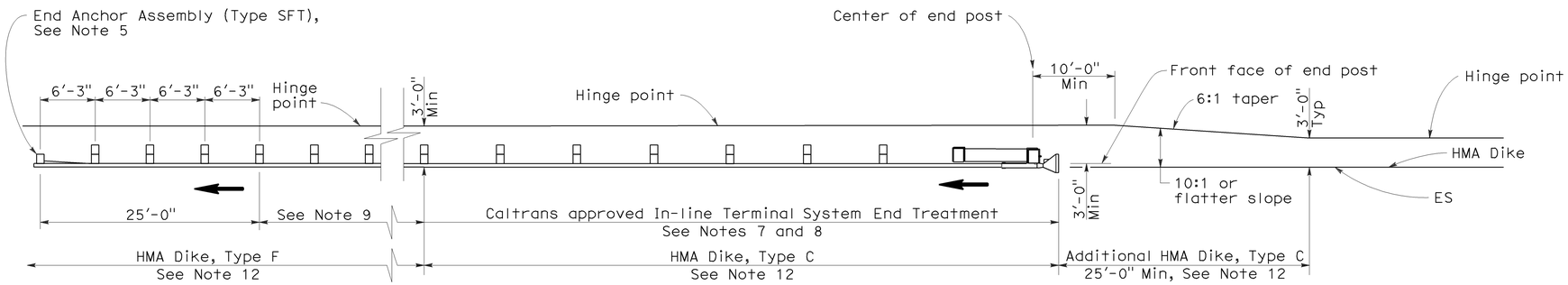
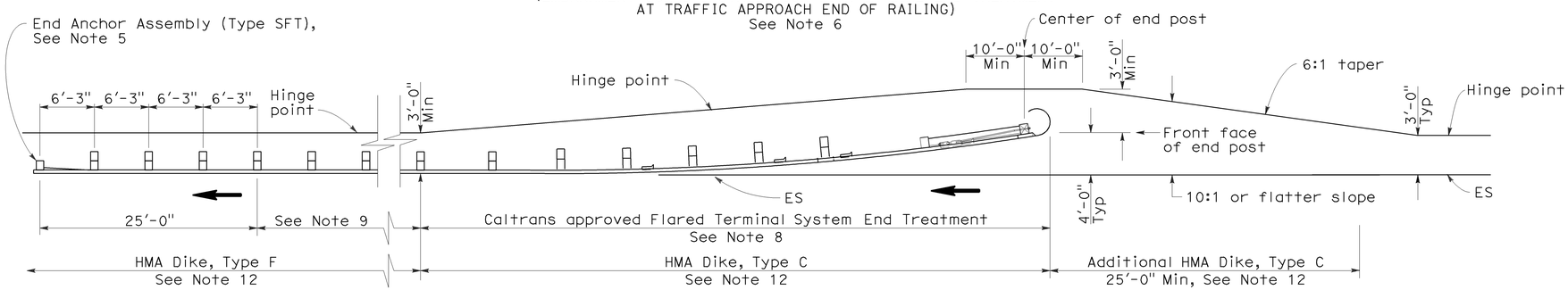
To accompany plans dated 2-14-11



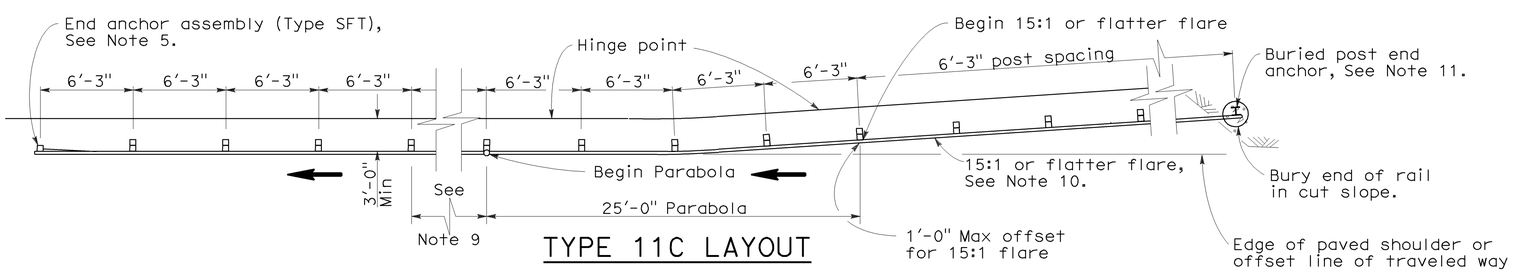
TYPE 11A LAYOUT

(EMBANKMENT GUARD INSTALLATION WITH IN-LINE END TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Note 6



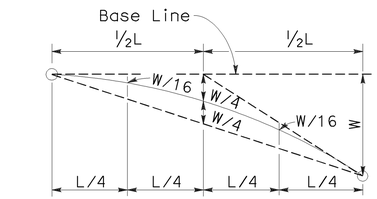
TYPE 11B LAYOUT

(EMBANKMENT GUARD RAILING INSTALLATION WITH FLARED END TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Note 6

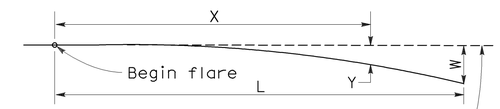


TYPE 11C LAYOUT

(EMBANKMENT GUARD RAILING INSTALLATION WITH BURIED END ANCHOR TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 6 and 12



TYPICAL PARABOLIC LAYOUT

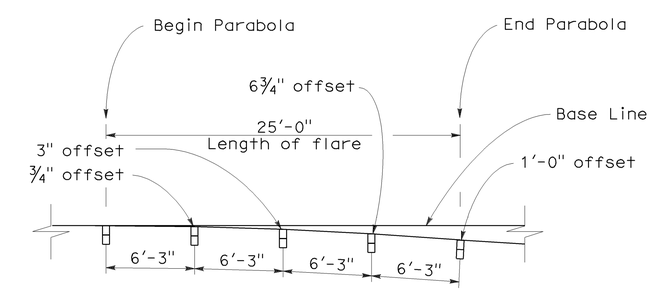


Base Line (Edge of paved shoulder or offset line of edge of traveled way)

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

Y = Offset from base line
W = Maximum offset
X = Distance along base line
L = Length of flare

PARABOLIC FLARE OFFSETS



TYPICAL FLARE OFFSETS FOR 1 FOOT MAX END OFFSET

NOTES:

1. Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1, and A77C2.
2. Guard rail post spacing to be 6'-3" center to center, except as otherwise noted.
3. Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 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 recycled plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
4. Direction of adjacent traffic indicated by ⟶.
5. For End Anchor Assembly (Type SFT) details, see Standard Plan A77H1.
6. Layout Types 11A, 11B or 11C are typically used where guard railing is recommended to shield embankment slopes and a crashworthy end treatment is required for only one direction of traffic.
7. In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
8. The type of terminal system end treatment to be used will be shown on the Project Plans.
9. Dependent on site conditions (embankment height and side slope), construction of additional guard railing (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
10. The 15:1 or flatter flare used with buried end anchors is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
11. For details of the buried post end anchor used with Type 11C Layout, see Standard Plan A77I2.
12. Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR EMBANKMENTS

NO SCALE

RSP A77E1 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77E1 DATED MAY 1, 2006 - PAGE 48 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77E1

2006 REVISED STANDARD PLAN RSP A77E1

12-10-07

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Nev	80	13.5/21.2	19	30

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

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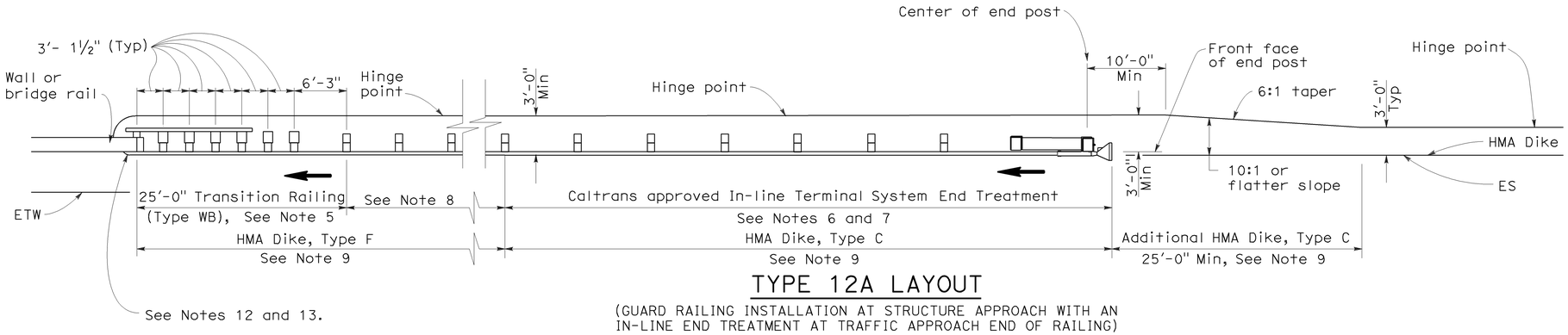
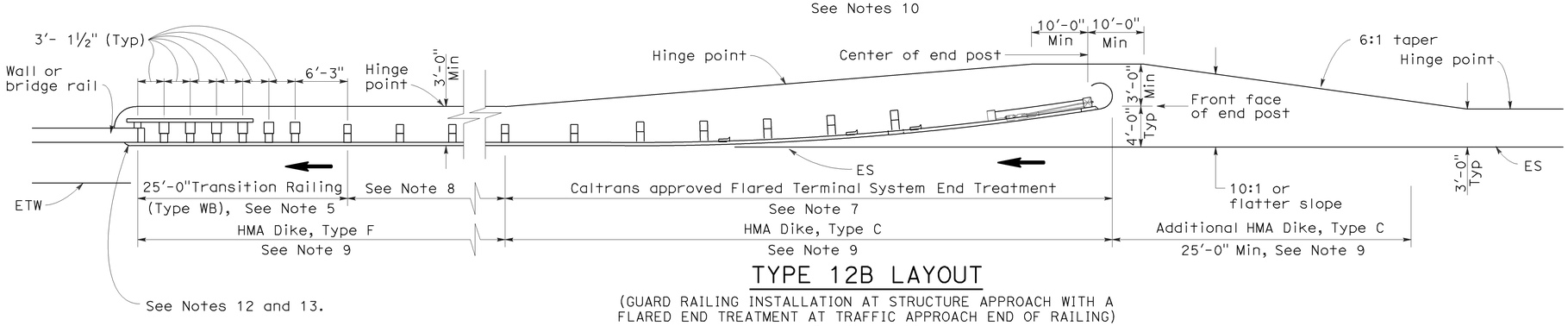
To accompany plans dated 2-14-11



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:

1. Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
2. Guard rail post spacing to be 6'-3" center to center, except as otherwise noted.
3. Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 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.
4. Direction of adjacent traffic indicated by ➡.
5. For Transition Railing (Type WB) details for Types 12A and 12B Layouts, see Standard Plan A77J4.
6. In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
7. The type of terminal system end treatment to be used will be shown on the Project Plans.
8. 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.
9. Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.
10. Type 12A or Type 12B Layouts are typically used:
    a. To the right of approaching traffic, at the end of a structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
    b. To the left of approaching traffic, at the end of a structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
    c. To the right of approaching traffic at the end of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.
    d. To the right of approaching traffic at the end of the structure on multilane freeways or expressways with decked median on the bridge.
11. 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.
12. 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.
13. 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.

REVISED STANDARD PLAN RSP A77F1

2006 REVISED STANDARD PLAN RSP A77F1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Nev	80	13.5/21.2	20	30

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

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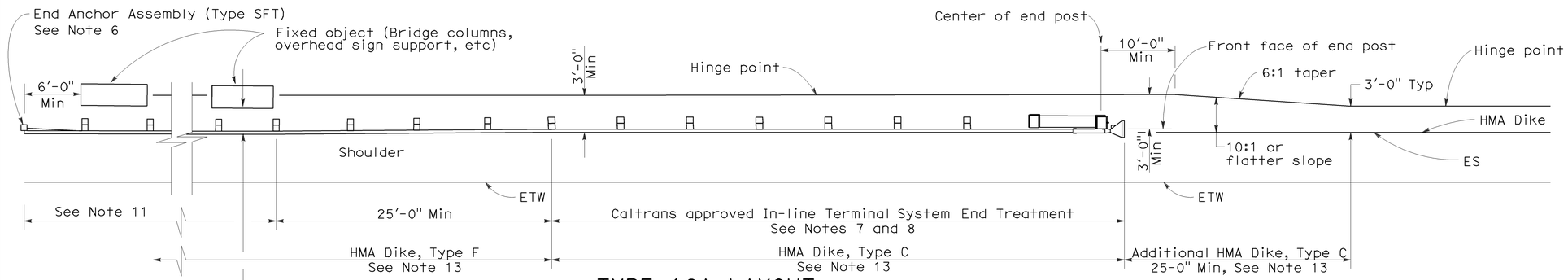
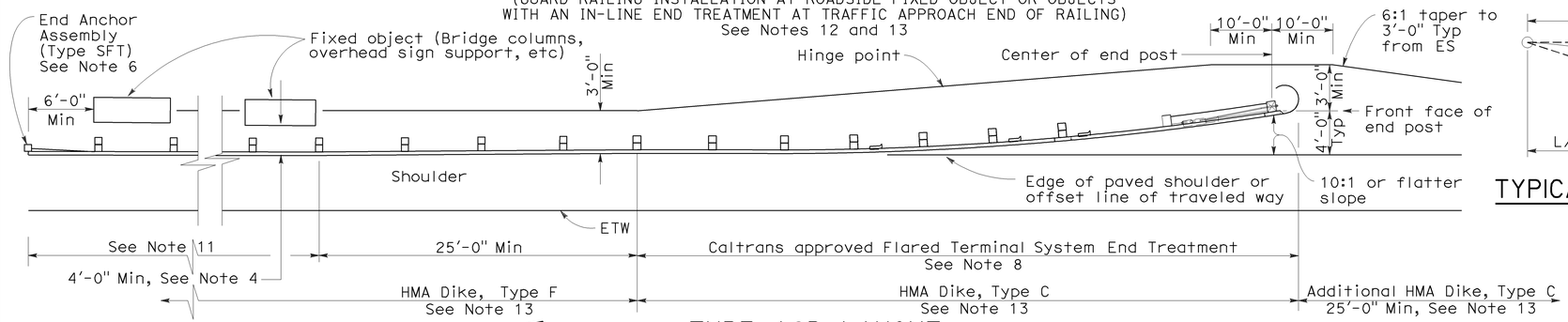
To accompany plans dated 2-14-11



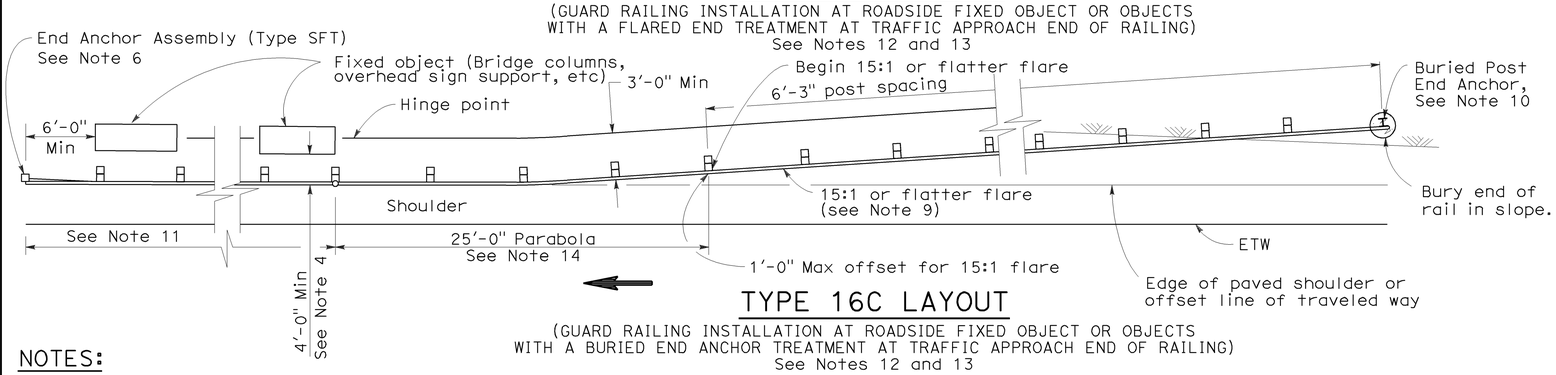
TYPE 16A LAYOUT

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH AN IN-LINE END TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 12 and 13



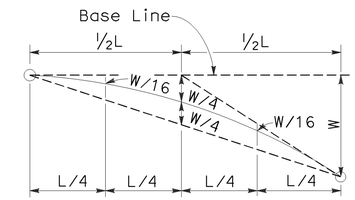
TYPE 16B LAYOUT

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH A FLARED END TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 12 and 13

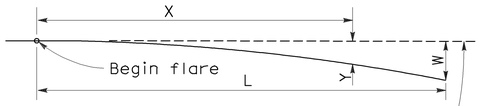


TYPE 16C LAYOUT

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH A BURIED END ANCHOR TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 12 and 13



TYPICAL PARABOLIC LAYOUT

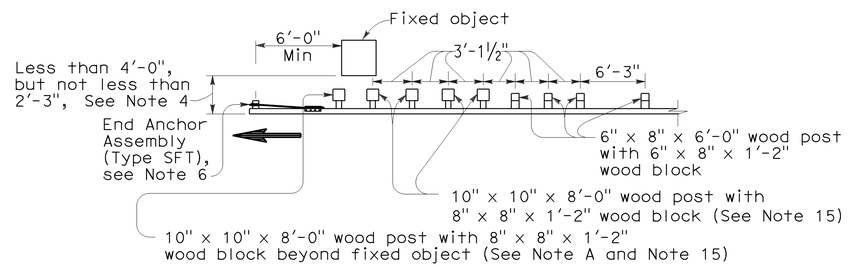


Base Line (Edge of paved shoulder or offset line of edge of traveled way)

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

Y = Offset from base line
W = Maximum offset
X = Distance along base line
L = Length of flare

PARABOLIC FLARE OFFSETS



NOTE A: For a series of fixed objects (bridge columns, overhead sign supports, etc.) additional 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood blocks at 3'-1½" center to center spacing are to be used between fixed objects.

STRENGTHENED RAILING SECTIONS FOR FIXED OBJECT

Use strengthened railing sections with Types 16A, 16B or 16C Layouts where minimum clearance between the face of the guard railing and fixed object(s) is less than 4'-0", but not less than 2'-3". See Note 4

NOTES:

1. Line post, blocks and hardware to be used are shown on Revised Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
2. Guard railing post spacing to be 6'-3" center to center, except as otherwise noted.
3. Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 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 line posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
4. A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object located directly behind standard guard railing sections with post spacing of 6'-3". Construct guard railing as shown in the detail "Strengthened Railing Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 2'-3". Where the clearance is less than 2'-3", a concrete wall or barrier should be constructed to shield the fixed object(s).
5. Direction of adjacent traffic indicated by ⟶.
6. For End Anchor Assembly (Type SFT) details, see Standard Plan A77H1.
7. In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
8. The type of terminal system to be used will be shown on the Project Plans.
9. The 15:1 or flatter flare used with Type 16C Layout is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
10. For details of the Buried Post End Anchor used with Type 16C Layout, see Standard Plan A77I2.
11. As site conditions dictate, construct additional guard railing to shield fixed object(s). Additional guard railing length equal to multiples of 12'-6". Post spacing at 6'-3" except as specified in Note 4.
12. Layout Types 16A, 16B or 16C are typically used where guard railing is recommended to shield roadside fixed object(s) and a crashworthy end treatment is required for only one direction of traffic.
13. Where placement of dike is required with guard railing, see Revised Standard Plan RSP A77C4 for dike positioning details.
14. For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77E1.
15. W6 x 15 steel post, 8'-0" in length, with 8" x 8" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood block shown in the "Strengthened Railing Sections Detail".

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR ROADSIDE FIXED OBJECTS

NO SCALE

RSP A77G3 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77G3 DATED MAY 1, 2006 - PAGE 61 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77G3

2006 REVISED STANDARD PLAN RSP A77G3

12-10-07

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Nev	80	13.5/21.2	21	30

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 5, 2009
PLANS APPROVAL DATE

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

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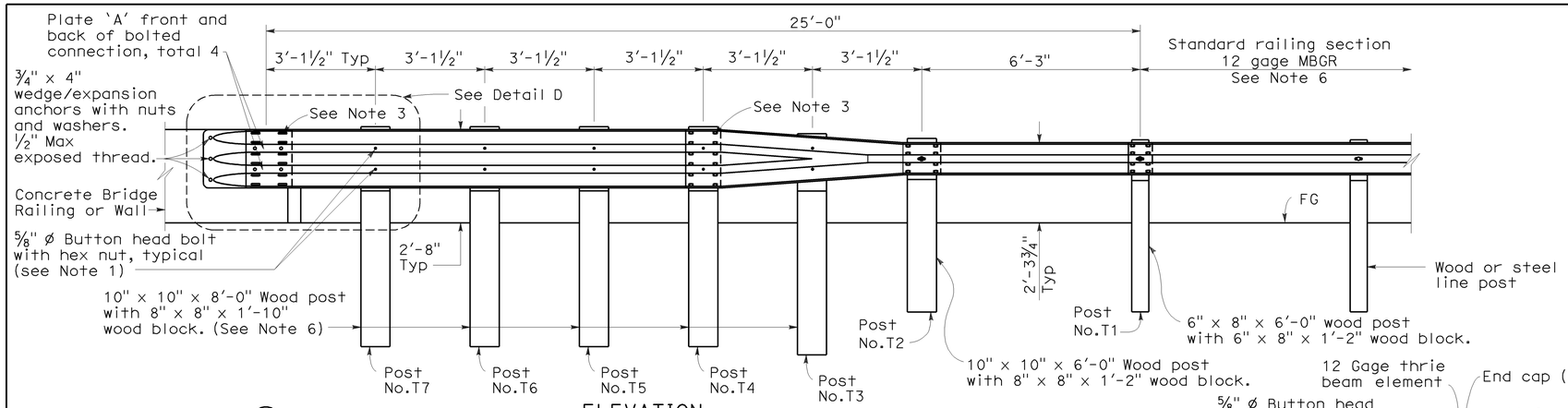
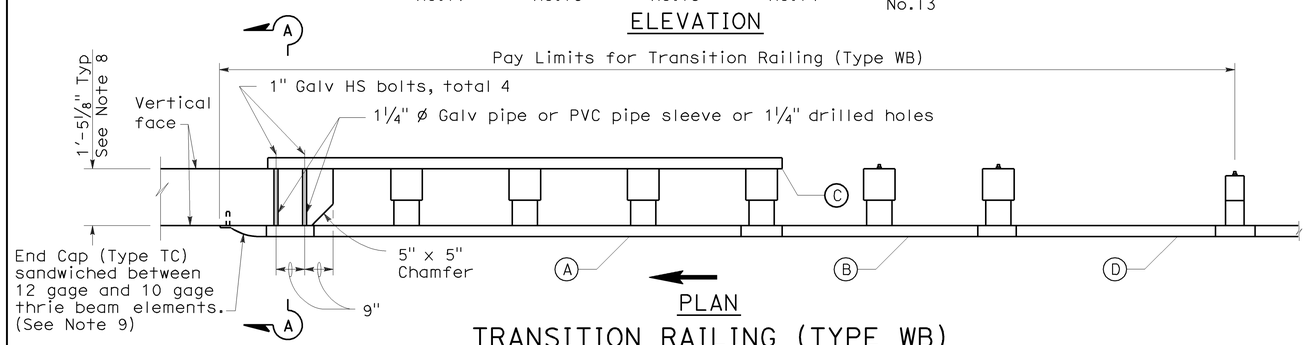


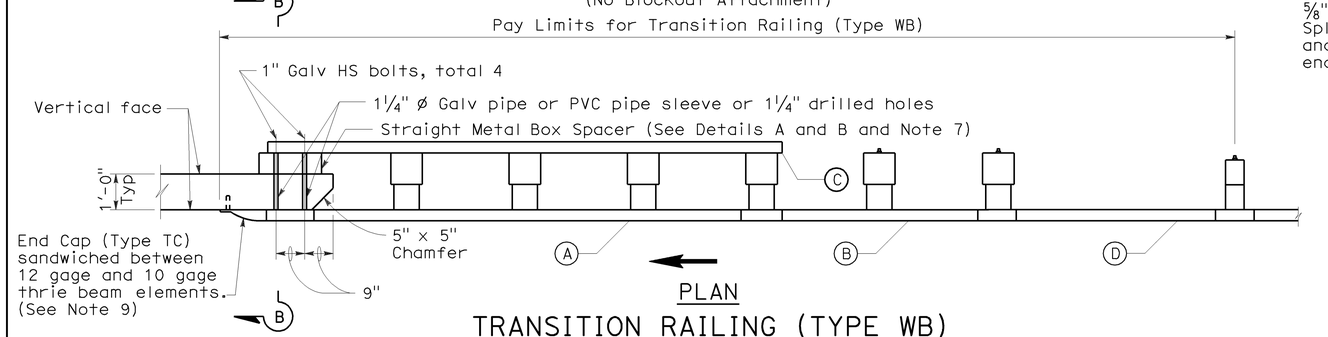
ELEVATION



PLAN

TRANSITION RAILING (TYPE WB)

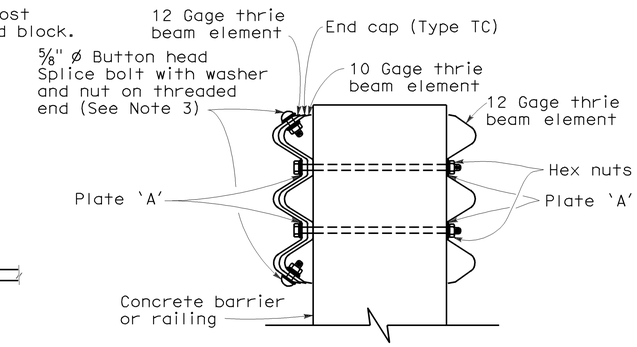
(No Blockout Attachment)



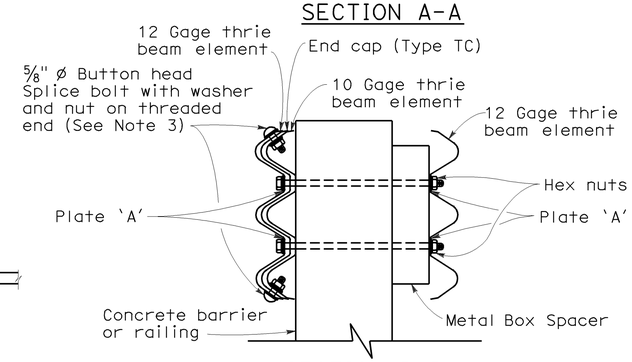
PLAN

TRANSITION RAILING (TYPE WB)

(Blockout Attachment)



SECTION A-A



SECTION B-B

NOTES:

To accompany plans dated 2-14-11

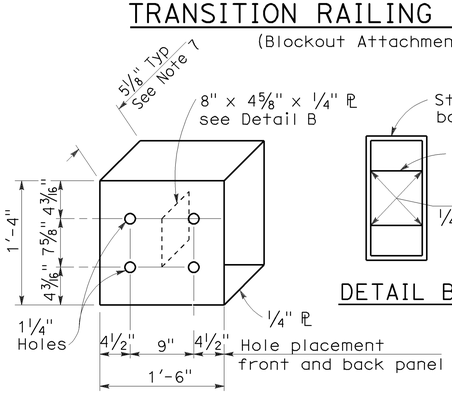
1. Use 5/8 " ø Button head bolts and hex nuts for connections to posts. No washer on rail face for bolted connections to post.
2. The nested rail elements, end cap, and 'W' beam to thrie beam element may be spliced together prior to bolting the elements to the wood post and concrete barrier or railing.
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.

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'-3½" length)

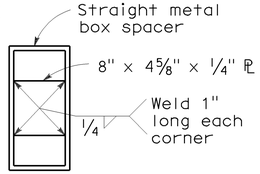
10 gage = 0.135" thick

12 gage = 0.108" thick

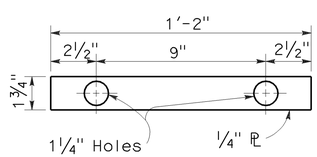


DETAIL A

STRAIGHT METAL BOX SPACER

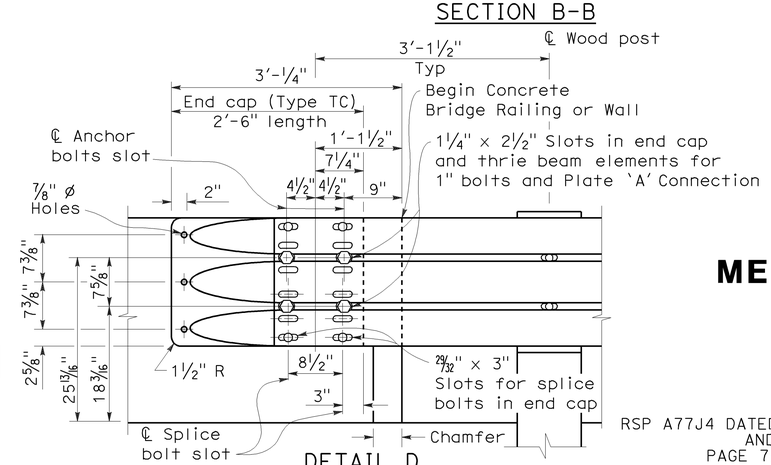


DETAIL B



DETAIL C

PLATE 'A'



DETAIL D

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

5-14-09

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Nev	80	13.5/21.2	22	30

REGISTERED ELECTRICAL ENGINEER

October 5, 2007
PLANS APPROVAL DATE

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

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 2-14-11

ELECTROLIERS

STANDARD TYPES
15, 15D
15 STRUCTURE
21, 21D STRUCTURE
30
31
32
35
36-20A

High mast light pole

Double Arm lighting standard

Existing electrolier

Electrolier foundation (Future installation)

NOTES:

1. Luminaires shall be 310 W HPS when installed on Type 21, 21D, 30, 31, 32, 35 and 36-20A Standards, unless otherwise specified. Luminaires shall be 200 W HPS when installed on other type standards or poles, unless otherwise specified.
2. Luminaires shall be the cutoff type, ANSI Type III medium cutoff lighting distribution, unless otherwise specified.
3. Variations noted adjacent to symbol on project plans.

Electrolier (see project notes or project plans)

Luminaire on wood pole

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

SOFFIT AND WALL MOUNTED LUMINAIRES

Pendant, 70 W HPS unless otherwise specified.

Flush, 70 W HPS unless otherwise specified.

Wall surface, 70 W HPS unless otherwise specified.

Existing soffit or wall luminaire to remain unmodified.

Existing soffit or wall luminaire to be modified as specified.

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	80	13.5/21.2	23	30

REGISTERED ELECTRICAL ENGINEER

October 5, 2007
PLANS APPROVAL DATE

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

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 2-14-11

CONDUIT

PROPOSED	EXISTING	
		Lighting Conduit, unless otherwise indicated or noted
		Traffic signal conduit
C	c	Communication conduit
T	t	Telephone conduit
F	f	Fire alarm conduit
FO	fo	Fiber optic conduit
		Conduit termination (RSP ES-9A C)
R	r	Conduit riser in/on structure or service pole

SERVICE EQUIPMENT

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

POLE-MOUNTED SERVICE DESIGNATION

Type of installation

TYPE H SERVICE - 28'-10" ← Pole height above grade

ILLUMINATED OVERHEAD SIGN

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

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
PV	PV	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
R	Y	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

SIGNAL EQUIPMENT Cont

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

NOTES:

1. All signal sections shall be 12" unless shown otherwise.
2. Signal heads shall be provided with backplates unless shown otherwise.
3. 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

7-10-07

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Nev	80	13.5/21.2	24	30

Jeffery G. McRae
REGISTERED ELECTRICAL ENGINEER

October 5, 2007
PLANS APPROVAL DATE

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

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To accompany plans dated 2-14-11

EQUIPMENT IDENTIFICATION

ILLUMINATED SIGN IDENTIFICATION NUMBER:

Sign No. 12345 — Sign number - Place on post or structure

10 ISL SCI 1.0

- 1.0 — Transformer rating (kVA)
- SCI — Lighting control type
- ISL — Number and type of fixtures

Do NOT place on standard or structure

ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:

12345 - 15'-0"

- 15'-0" — Mast arm length, if shown. Do not place on standard or structure.
- 12345 — Equipment number - Place on standard or structure. Existing equipment numbers are shown in parenthesis

CONDUIT AND CONDUCTOR IDENTIFICATION:

1½"C, 2#10, 15#14, 2 DLC

- 2#10, 15#14, 2 DLC — Number and size of conductors and cables
- 1½"C — Size of conduit in inches

Ø1, Ø2, Ø2P, etc.	Traffic phase identification for signal faces, detectors and phase diagrams
1 2 3	Project note numbers
A B C	Equipment description, installation or item numbers
1 2 3	Conduit run numbers

SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):

19A - 3 - 100

- 100 — Wind velocity = 100 mph
- 3 — Case 3 arm loading
- 19A — Standard type
- Standard Plan sheet number
- Detail number or letter

MISCELLANEOUS EQUIPMENT

PROPOSED	EXISTING	
CMS	cms	Changeable message sign
		Closed circuit television camera
		Highway advisory radio pole and antenna
EMS	ems	Extinguishable message sign
M V	m v	Detection device M = Microwave sensor V = Video image sensor

WIRING DIAGRAM LEGEND

P	Pole
CB	Circuit breaker
A	Ampere
V	Volt
M	Metered
UM	Unmetered
NB	Neutral bus
GB	Ground bus
G	Equipment grounding conductor
N	Grounded conductor (Neutral)

- External conductor
- Conductor or bus
- Tie point
- Contactor coil
- Contactor, Contact NO
- Terminal blocks
- Contactor, Contact NC
- Enclosure bond
- Grounding electrode
- Circuit breaker
- Receptacle

PULL BOXES

PROPOSED EXISTING

Pull box-No. 5 unless otherwise indicated or noted.

3 — 9A(21)

Pull box-Additional designations or descriptions

- 3 = No. 3½ pull box
- 5 = No. 5 pull box
- 6 = No. 6 pull box
- 7 = No. 7 (Ceiling pull box)
- 8 = No. 8 (Pendant soffit pull box)
- 9 = No. 9 pull box
- 9A = No. 9A pull box

- (C) = Communications pull box
- (E) = Pull box with extension
- (S) = Sprinkler control pull box
- (21) = Anchor bolts and conduit for future installation of Type 21 Standard
- (T) = Traffic pull box

VEHICLE DETECTORS

5 J 9 U

- U = Upper
- L = Lower
- Slot number in input file
- Input file (I or J)
- Phase

PROPOSED	EXISTING	
		Type A detector loop. Outline of sawcut shown.
		Type B detector loop. Outline of sawcut shown.
		Type C detector loop. Outline of sawcut shown.
		Type D detector loop. Outline of sawcut shown.
		Type E detector loop. Outline of sawcut shown.
		Type Q detector loop. Outline of sawcut shown.
		Magnetic detector
DH	dh	Detector handhole
		Microwave or video detection zone

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.

REVISED STANDARD PLAN RSP ES-1C

2006 REVISED STANDARD PLAN RSP ES-1C

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Nev	80	13.5/21.2	25	30

REGISTERED ELECTRICAL ENGINEER

October 5, 2007
PLANS APPROVAL DATE

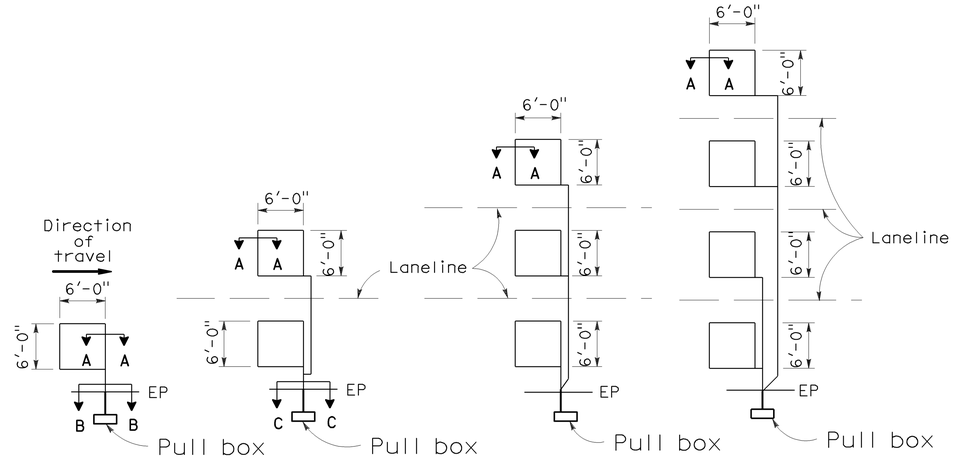
REGISTERED PROFESSIONAL ENGINEER Jeffery G. McRae No. E14512 Exp. 6-30-08 ELECTRICAL STATE OF CALIFORNIA

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 2-14-11

LOOP INSTALLATION PROCEDURE

1. Loops shall be centered in lanes.
2. Saw slots in pavement for loop conductors as shown in details.
3. Distance between side of loop and a lead-in saw cut from adjacent detectors shall be 2'-0" minimum. Distance between lead-in saw cuts shall be 6" minimum.
4. Bottom of saw slot shall be smooth with no sharp edges.
5. Slots shall be washed until clean, blown out and thoroughly dried before installing loop conductors.
6. Adjacent loops on the same sensor unit channel shall be wound in opposite directions.
7. Identify and tag loop circuit pairs in the pull box with loop number, start (S) and finish (F) of conductor. Identify and tag lead-in-cable with sensor number and phase.
8. Install loop conductor in slot using a 3/16" to 1/4" thick wood paddle. Hold loop conductors with wood paddles (at the bottom of the sawed slot) during sealant placement.
9. No more than 2 twisted pairs shall be installed in one sawed slot.
10. Allow additional 5'-0" of slack length of conductor for the lead-in run to pull box.
11. The additional length of each conductor for each loop shall be twisted together into a pair (6 turns per 3'-4" minimum) before being placed in the slot and conduit leading to pull box.
12. Test each loop circuit for continuity, circuit resistance and insulation resistance at the pull box before filling slots.
13. Fill slots as shown in details.
14. Splice loop conductors to lead-in-cable. Splices shall be soldered.
15. End of lead-in-cable and Type 2 loop conductor shall be waterproofed prior to installing in conduit to prevent moisture from entering the cable.
16. Lead-in-cable shall not be spliced between the pull box and the controller cabinet terminals.
17. Test each loop circuit for continuity, circuit resistance and insulation resistance at the controller cabinet location.
18. Where loop conductors are not to be spliced to a lead-in-cable, the ends of the conductors shall be taped and waterproofed with electrical insulating coating.

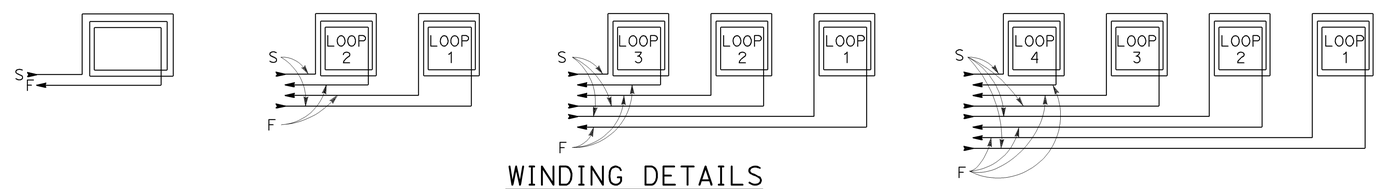


TYPE 1A INSTALLATION | TYPE 2A INSTALLATION | TYPE 3A INSTALLATION | TYPE 4A INSTALLATION

SAWCUT DETAILS

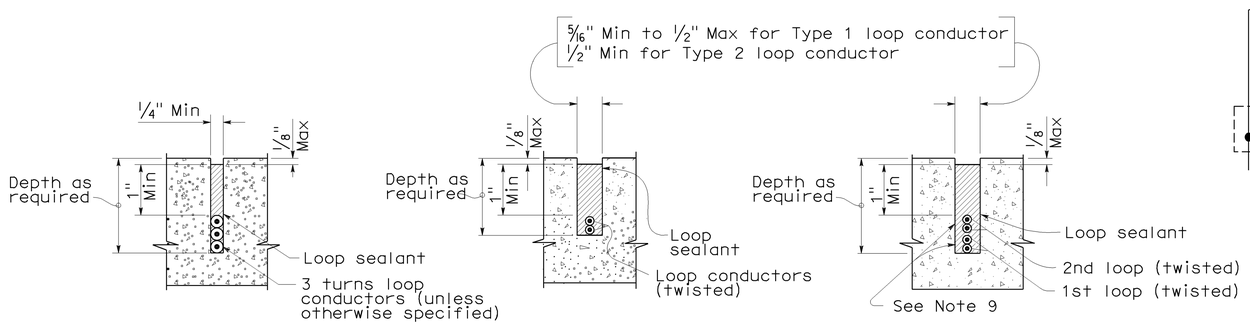
(Type A loop detector configurations illustrated)

1. 1A thru 4A = 1 Type A loop configuration in each lane.
2. 1B thru 4B = 1 Type B loop configuration in each lane.
3. 1C = 1 Type C loop configuration entering lanes as required.
4. 1D thru 4D = 1 Type D loop configuration in each lane.
5. 1E thru 4E = 1 Type E loop configuration in each lane.
6. 1Q thru 4Q = 1 Type Q loop configuration in each lane. (Use Type A, B, C, D, E or Q loop detector configurations only when specified or shown on plans)



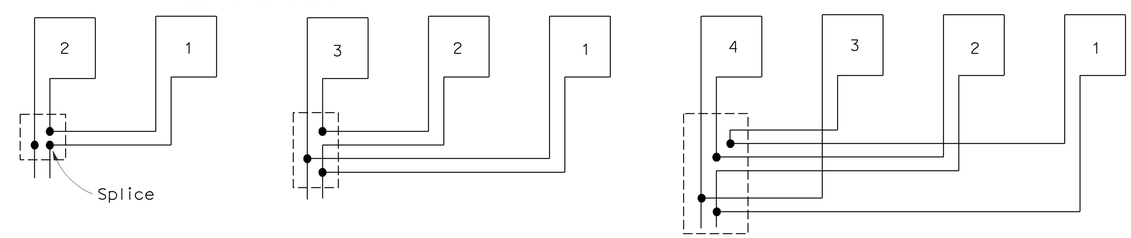
WINDING DETAILS

See Notes 6 and 7



SECTION A-A | SECTION B-B | SECTION C-C

SLOT DETAILS - TYPE 1 AND TYPE 2 LOOP CONDUCTOR



TYPICAL LOOP CONNECTIONS

(Dashed lines represent the pull box)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (DETECTORS)

NO SCALE

RSP ES-5A DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-5A DATED MAY 1, 2006 - PAGE 423 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-5A

2006 REVISED STANDARD PLAN RSP ES-5A

8-17-07

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Nev	80	13.5/21.2	26	30

William K. Farnbach
REGISTERED CIVIL ENGINEER

May 15, 2009
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER William K. Farnbach No. C49042 Exp. 9-30-10 CIVIL STATE OF CALIFORNIA

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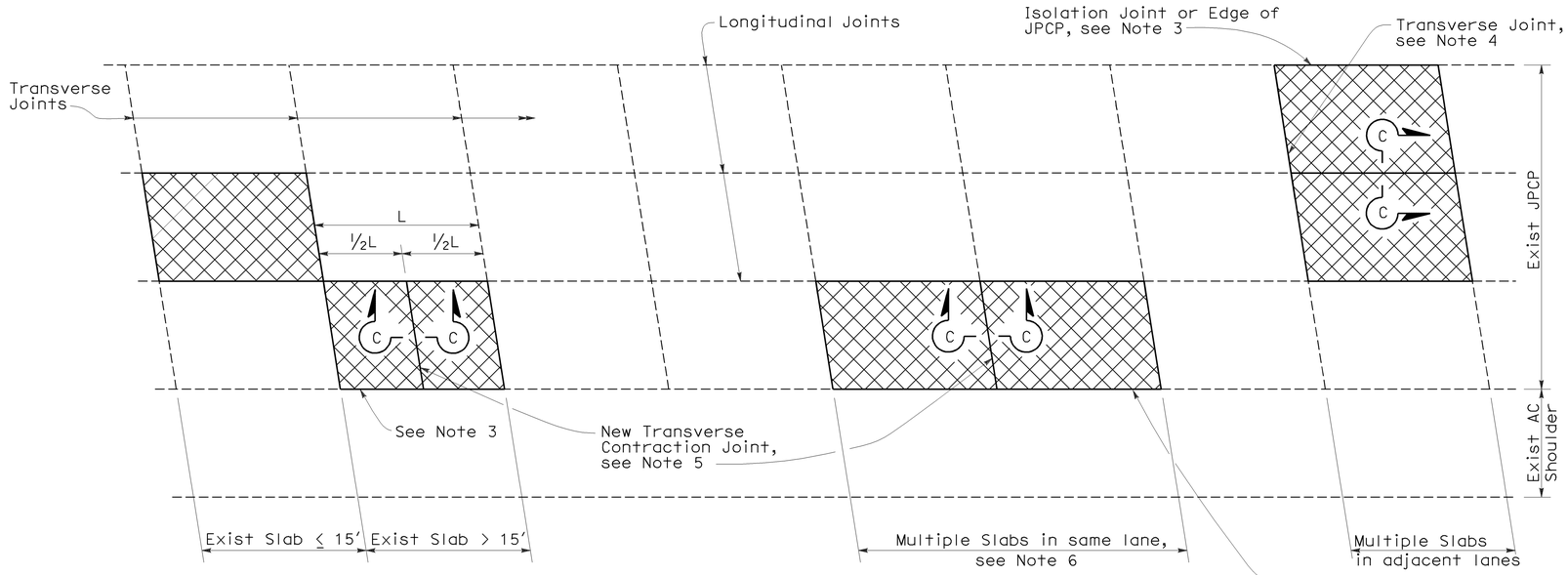
To accompany plans dated 2-14-11



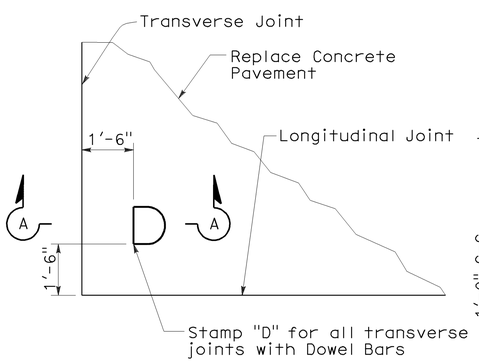
PLAN

NOTES:

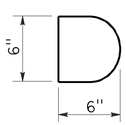
1. For details not shown, see Revised Standard Plan RSP P10.
2. Where the existing outer shoulder pavement is asphalt concrete pavement, the "a" dimension shall be 1′-0" and the "b" dimension shall be 2′-0".
3. Side forms shall be used where edge of pavement is adjacent to asphalt concrete.
4. For detail, see Transverse Construction Joint for existing concrete pavement detail on Revised Standard Plan RSP P10.
5. Transverse joint to match skew of existing joint. Omit dowel bars.
6. This Standard Plan only applicable when replacing multiple slabs in the same lane is less than 100′.

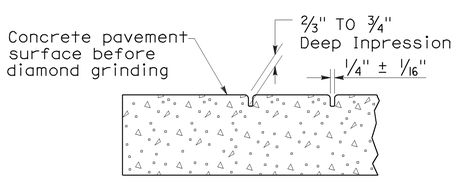
LEGEND

Replace Concrete Pavement (See Slab Layout Detail)

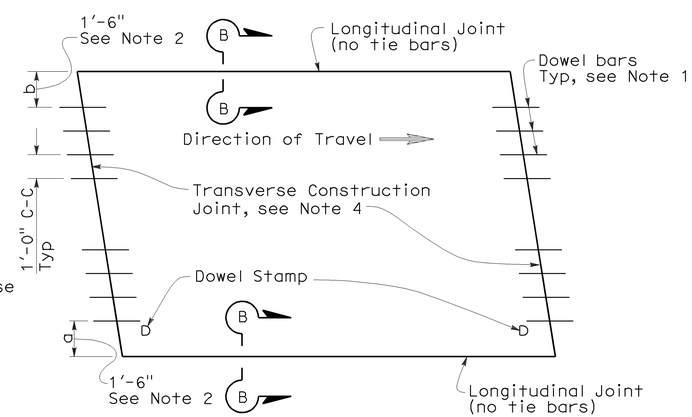


DOWEL STAMP DETAIL

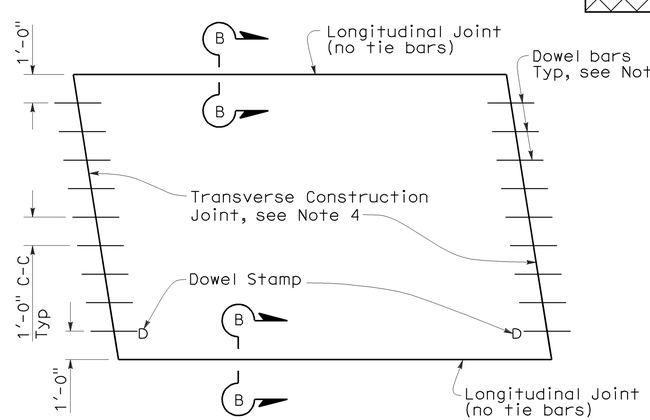




SECTION A-A

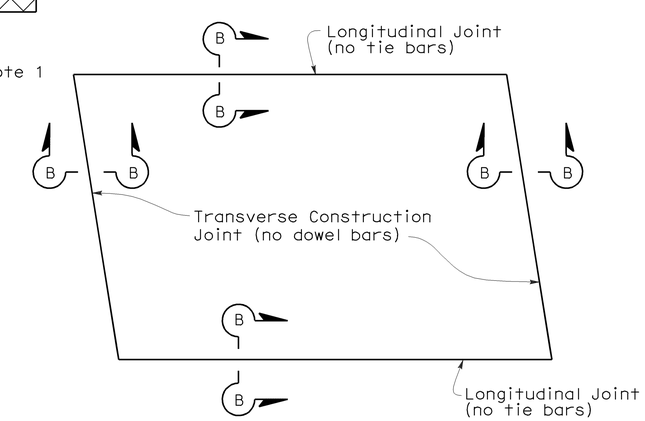


TYPE I
(traffic lane lines match longitudinal joints)

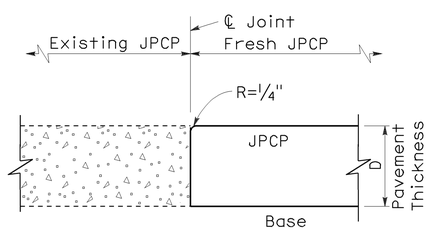


TYPE II
(traffic lane lines do not match longitudinal joints)

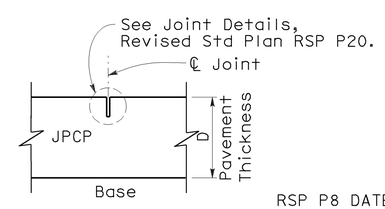
SLAB LAYOUT



TYPE III
(for short term repairs < 5 yrs design life or for slab replacements with a cracking and seating operation)



SECTION B-B



SECTION C-C

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

JOINTED PLAIN CONCRETE PAVEMENT-INDIVIDUAL SLAB REPLACEMENT

NO SCALE

RSP P8 DATED MAY 15, 2009 SUPERSEDES RSP P8 DATED SEPTEMBER 1, 2006 AND STANDARD PLAN P8 DATED MAY 1, 2006 - PAGE 123 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP P8

2006 REVISED STANDARD PLAN RSP P8

5-8-09

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Nev	80	13.5/21.2	27	30

William K. Farnbach
REGISTERED CIVIL ENGINEER

June 5, 2009
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
William K. Farnbach
No. C49042
Exp. 9-30-10
CIVIL
STATE OF CALIFORNIA

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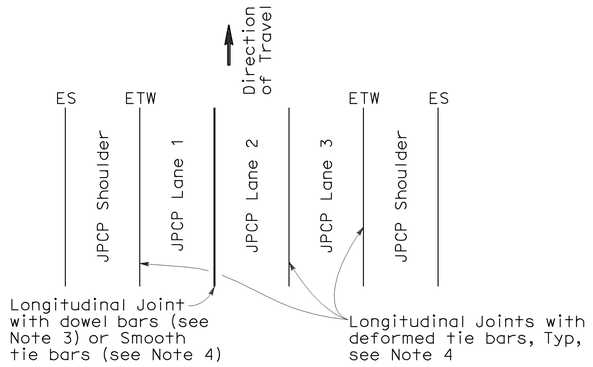
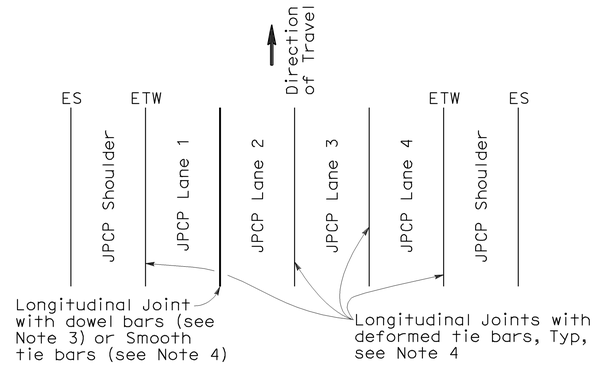
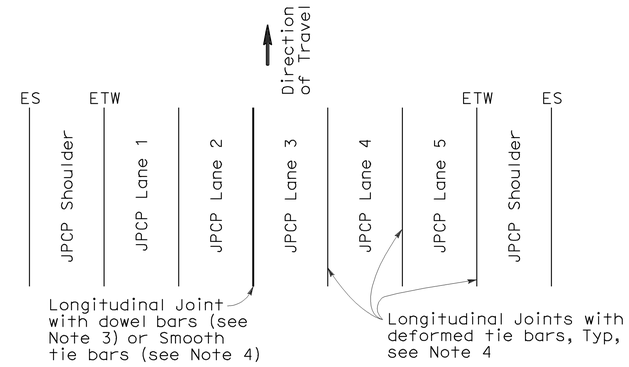
To accompany plans dated 2-14-11



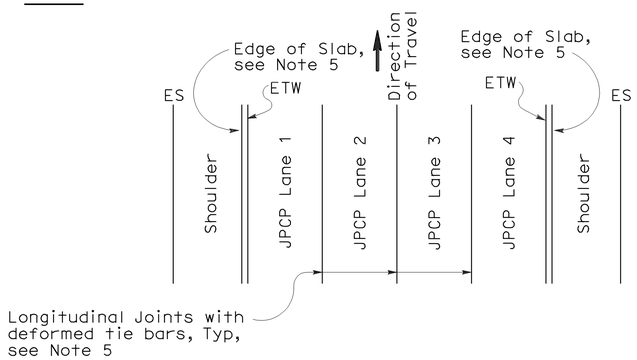
3 LANES WITH TIED CONCRETE SHOULDERS
PLAN



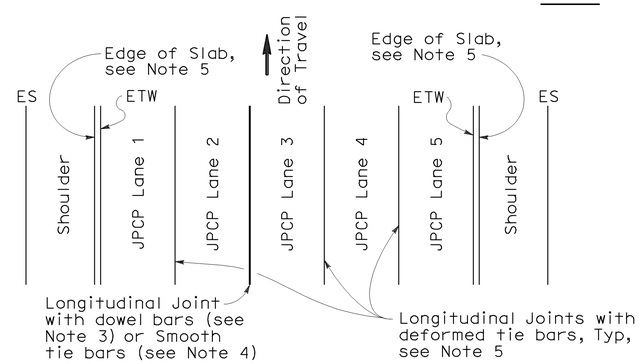
4 LANES WITH TIED CONCRETE SHOULDERS
PLAN



5 LANES WITH TIED CONCRETE SHOULDERS
PLAN



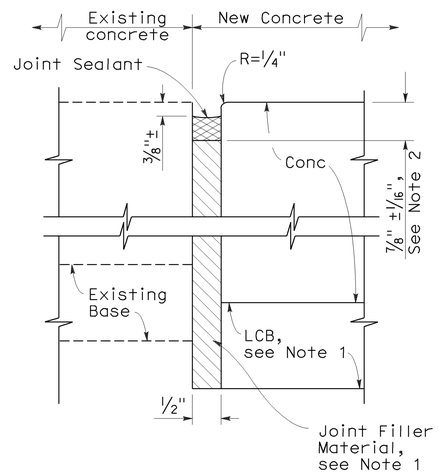
4 LANES OR LESS WITH WIDENED SLAB
PLAN



5 LANES WITH WIDENED SLAB
PLAN

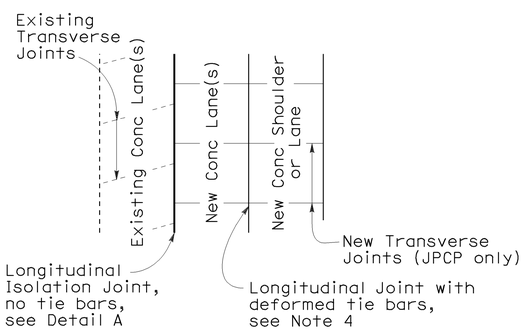
NEW CONSTRUCTION

Location of Longitudinal Joints
(For JPCP)



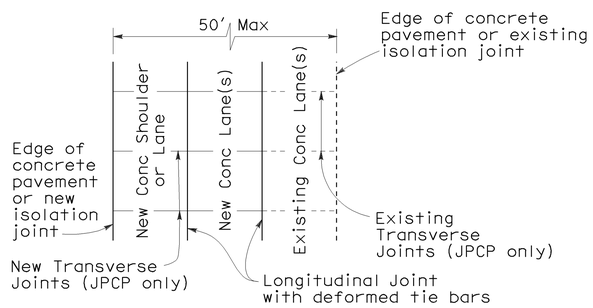
DETAIL A

ISOLATION JOINT



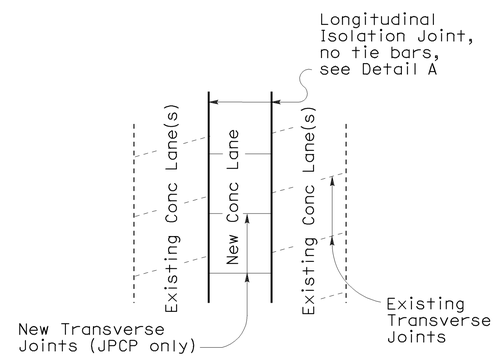
CASE 1
PLAN

Transverse Joints do not align between new and existing



CASE 2
PLAN

Transverse Joints align between new and existing



CASE 3 (INTERIOR LANE REPLACEMENT)
PLAN

Transverse Joints do not align between new and existing

LANE/SHOULDER ADDITION OR RECONSTRUCTION

(For JPCP and CRCP)

NOTES:

1. Where Lean Concrete Base is not used as base material, the joint filler material used for the longitudinal isolation joint shall only extend to the bottom of the new concrete slab. See Detail A.
2. Use 5/8" ±1/16" dimension for silicone sealant.
3. See Revised Standard Plan RSP P10 for longitudinal joint with dowel bars.
4. See Revised Standard Plan RSP P1.
5. See Revised Standard Plan RSP P2.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CONCRETE PAVEMENT-LANE SCHEMATICS AND ISOLATION JOINT DETAIL

NO SCALE

RSP P18 DATED JUNE 5, 2009 SUPERSEDES RSP P18 DATED MAY 15, 2009, RSP P18 DATED NOVEMBER 17, 2006 AND STANDARD PLAN P18 DATED MAY 1, 2006 - PAGE 127 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP P18

2006 REVISED STANDARD PLAN RSP P18

5-14-09

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Nev	80	13.5/21.2	28	30

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

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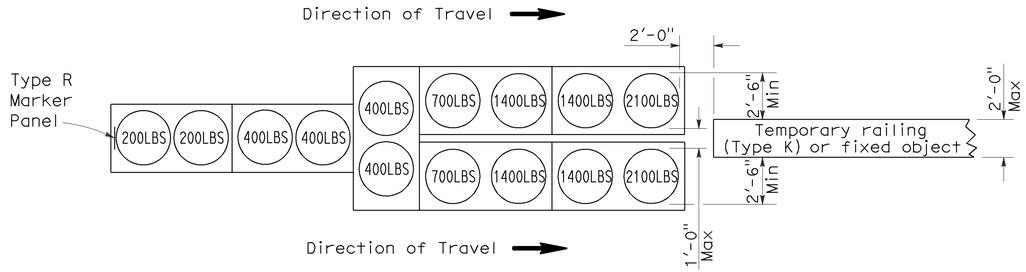
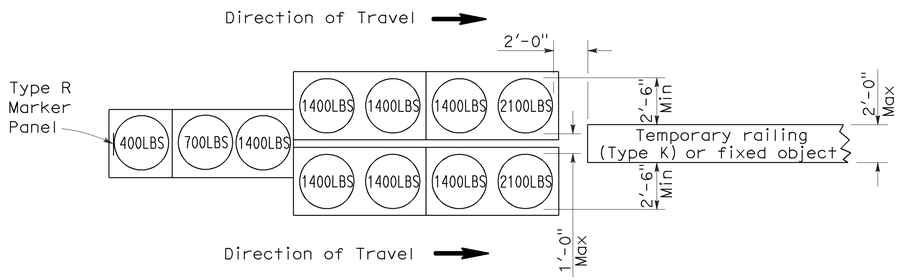
To accompany plans dated 2-14-11



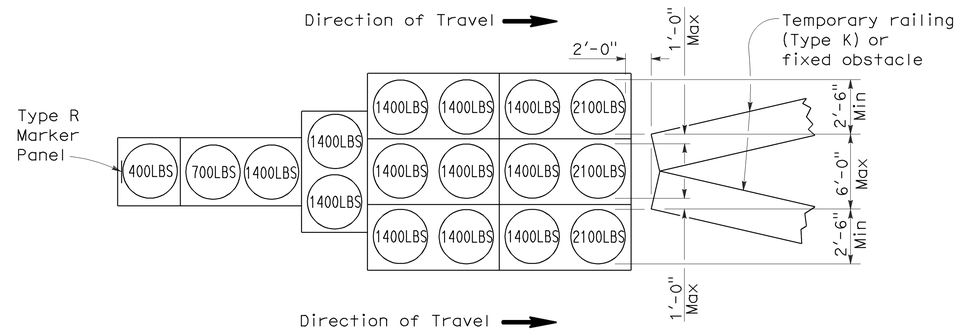
ARRAY 'TU14'

Approach speed 45 mph or more



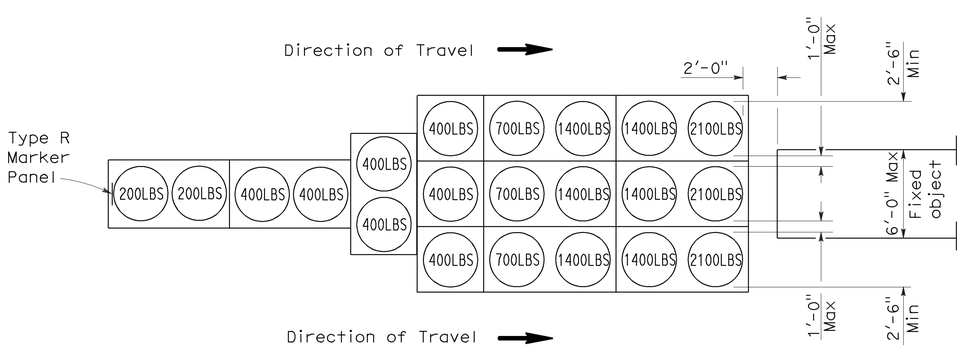
ARRAY 'TU11'

Approach speed less than 45 mph



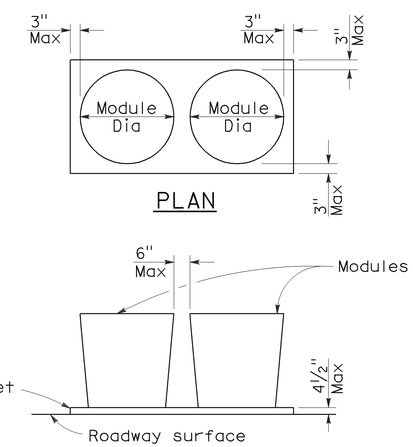
ARRAY 'TU17'

Approach speed less than 45 mph



ARRAY 'TU21'

Approach speed 45 mph or more



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

5-15-08

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Nev	80	13.5/21.2	29	30

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

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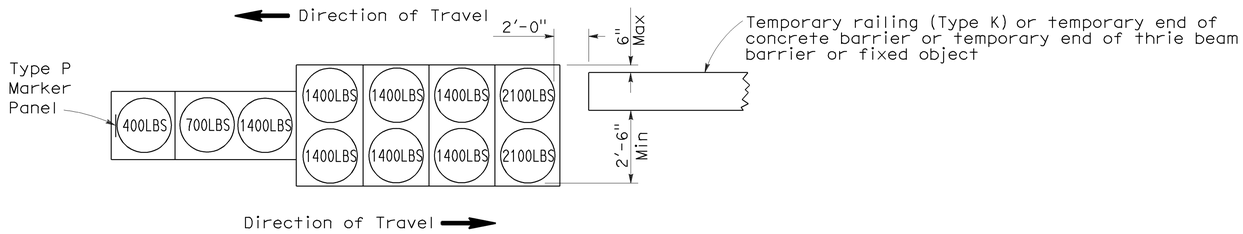
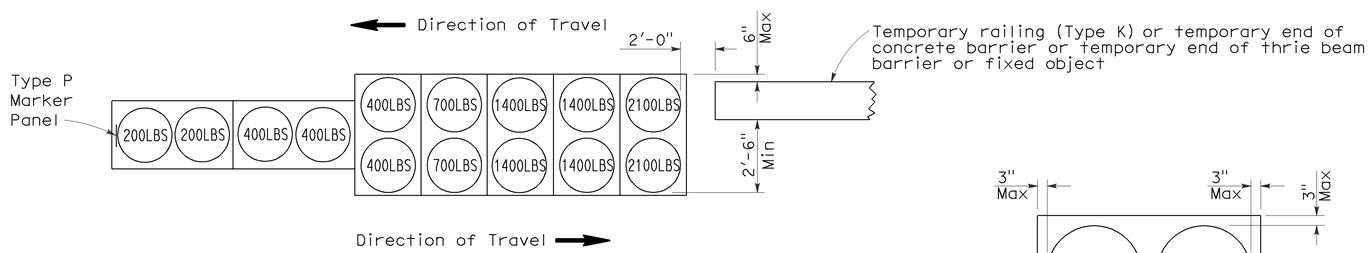
To accompany plans dated 2-14-11



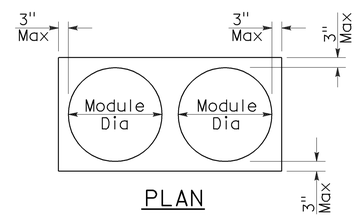
ARRAY 'TB11'

Approach speed less than 45 mph

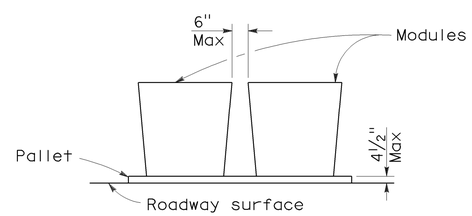


ARRAY 'TB14'

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

5-15-08

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Nev	80	13.5/21.2	30	30

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

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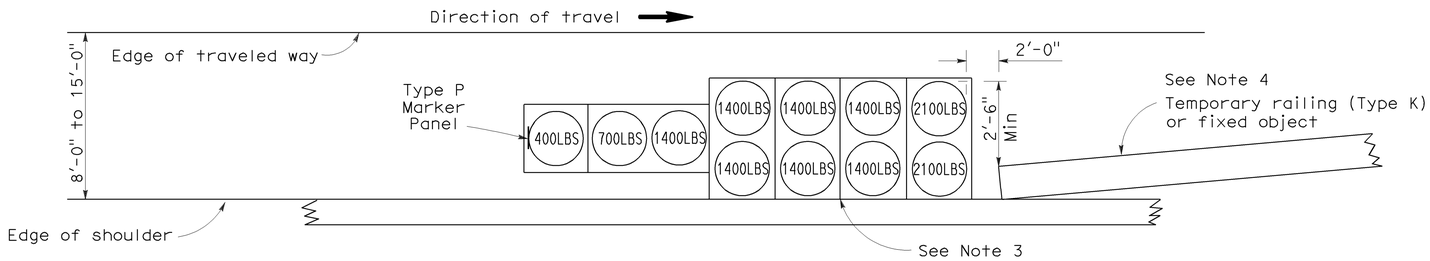
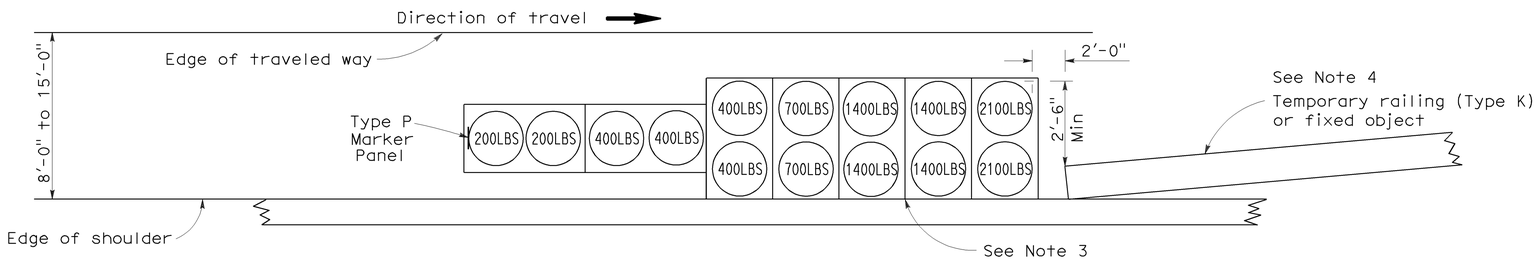
To accompany plans dated 2-14-11



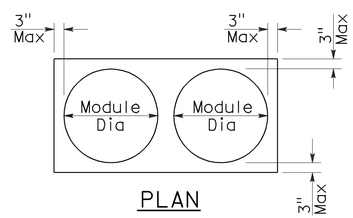
ARRAY 'TS11'

Approach speed less than 45 mph
See Note 9

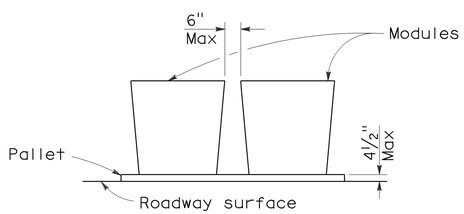


ARRAY 'TS14'

Approach speed 45 mph or more
See Note 9



PLAN



ELEVATION

CRASH CUSHION PALLET DETAIL

See Note 11

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.

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

5-15-08