

INDEX OF PLANS

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

ACNH-P049(160)E

STATE OF CALIFORNIA  
**DEPARTMENT OF TRANSPORTATION**  
**PROJECT PLANS FOR CONSTRUCTION ON**  
**STATE HIGHWAY**  
**IN NEVADA COUNTY**  
**IN AND NEAR GRASS VALLEY**  
**FROM BEAR RIVER BRIDGE TO PINGREE ROAD**  
**AND FROM 0.4 MILE SOUTH OF CORNETTE WAY**  
**TO 0.2 MILE SOUTH OF ROUTE 20/49 SEPARATION**

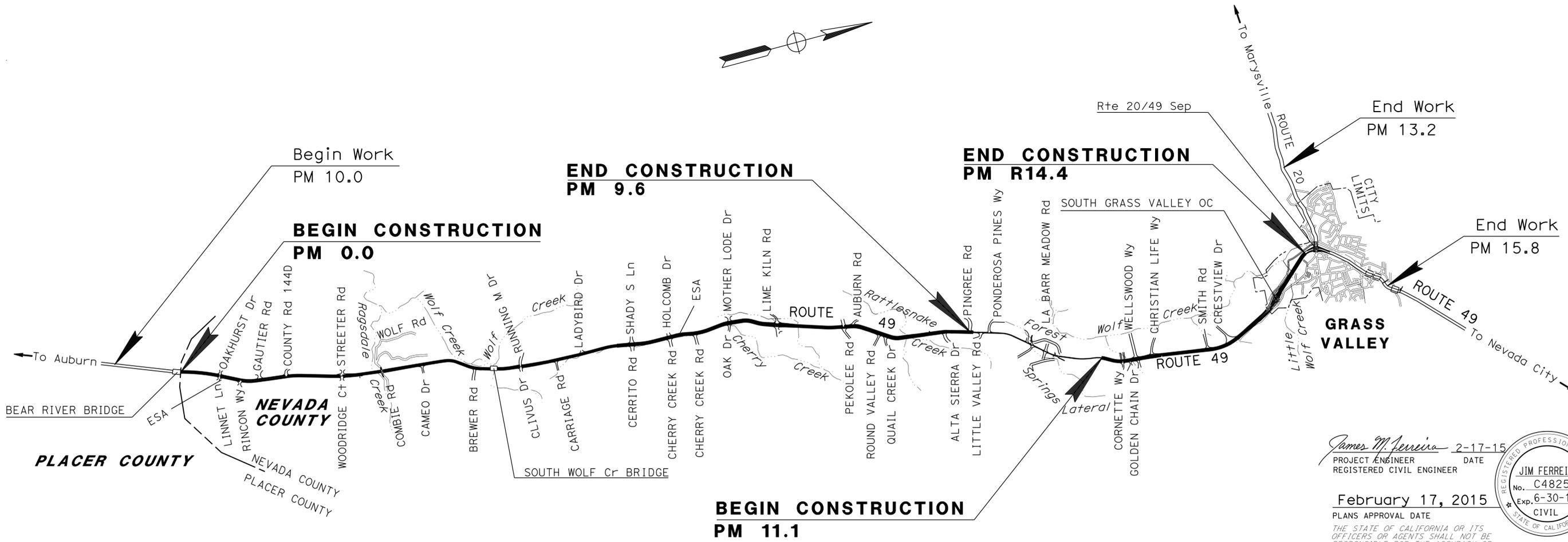
TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	1	58



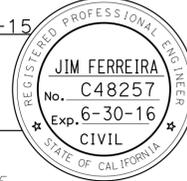


LOCATION MAP



PROJECT MANAGER  
**RONALD S. SYKES**  
 DESIGN MANAGER  
**RONALD S. SYKES**

*James M. Ferreira* 2-17-15  
 PROJECT ENGINEER DATE  
 REGISTERED CIVIL ENGINEER  
**February 17, 2015**  
 PLANS APPROVAL DATE  
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



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

NO SCALE

CONTRACT No.	<b>03-0G1504</b>
PROJECT ID	<b>0314000081</b>

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	2	58

James M. Ferreira 2-17-15	
REGISTERED CIVIL ENGINEER	DATE
2-17-15	
PLANS APPROVAL DATE	

JIM FERREIRA	
No. C48257	
Exp. 6-30-16	
CIVIL	

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

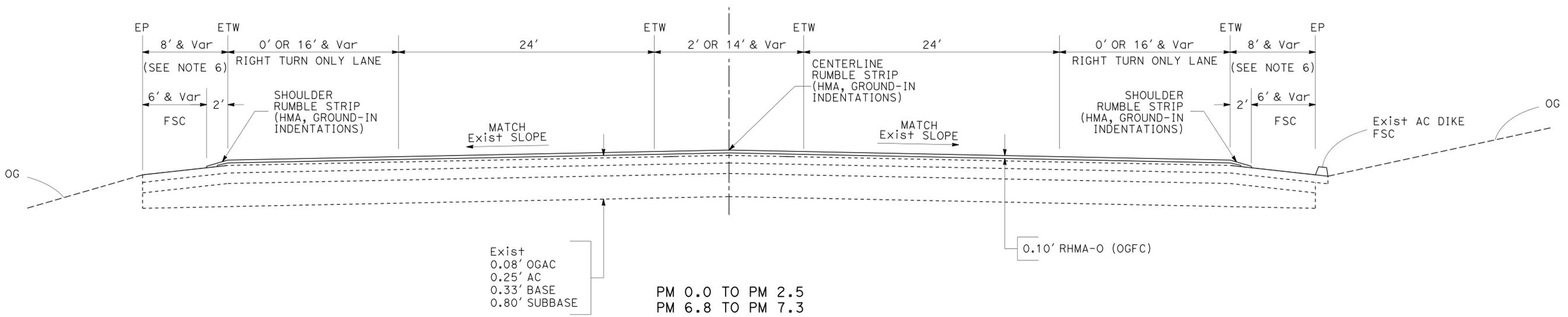
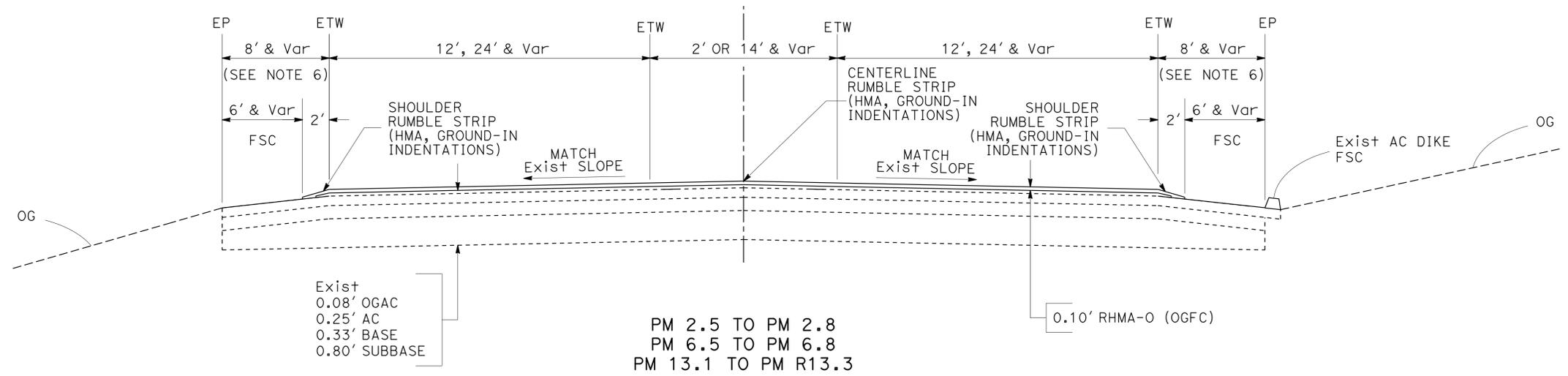
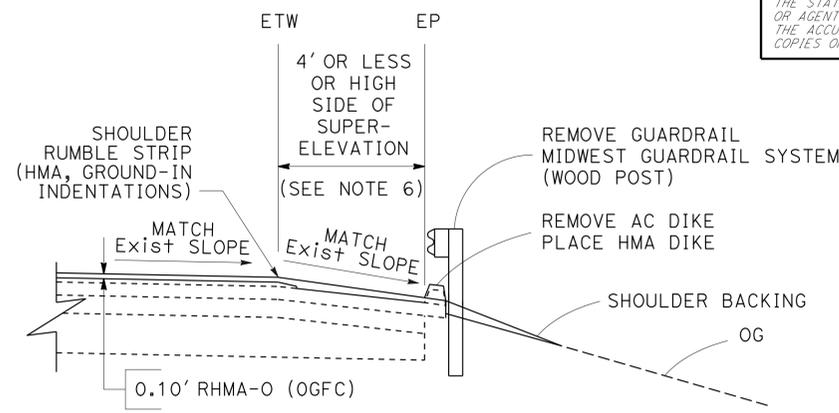
**NOTES:**

1. DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
2. EXACT LOCATIONS AND TYPES OF DIKE ARE SHOWN IN THE SUMMARY OF QUANTITIES.
3. EXISTING UTILITY FACILITIES HAVE NOT BEEN INCLUDED ON THESE PLANS.
4. FOR RUMBLE STRIP, SEE CONSTRUCTION DETAILS AND SUMMARY OF QUANTITIES.
5. FOR GUARDRAIL, SEE CONSTRUCTION DETAILS AND SUMMARY OF QUANTITIES.
6. PAVE FULL WIDTH OF ALL SHOULDERS 4' WIDE OR LESS AND ALL SHOULDERS ON HIGH SIDE OF SUPERELEVATION.

**ABBREVIATION:**

RHMA-O (OGFC) - RUBBERIZED HOT MIX ASPHALT-OPEN GRADED (OPEN GRADED FRICTION COURSE)  
 FSC - ASPHALTIC EMULSION (FOG SEAL COAT)

**PAVEMENT CLIMATE REGION**  
 LOW MOUNTAIN



**ROUTE 49**

**TYPICAL CROSS SECTIONS**

NO SCALE

**X-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** MAINTENANCE DESIGN

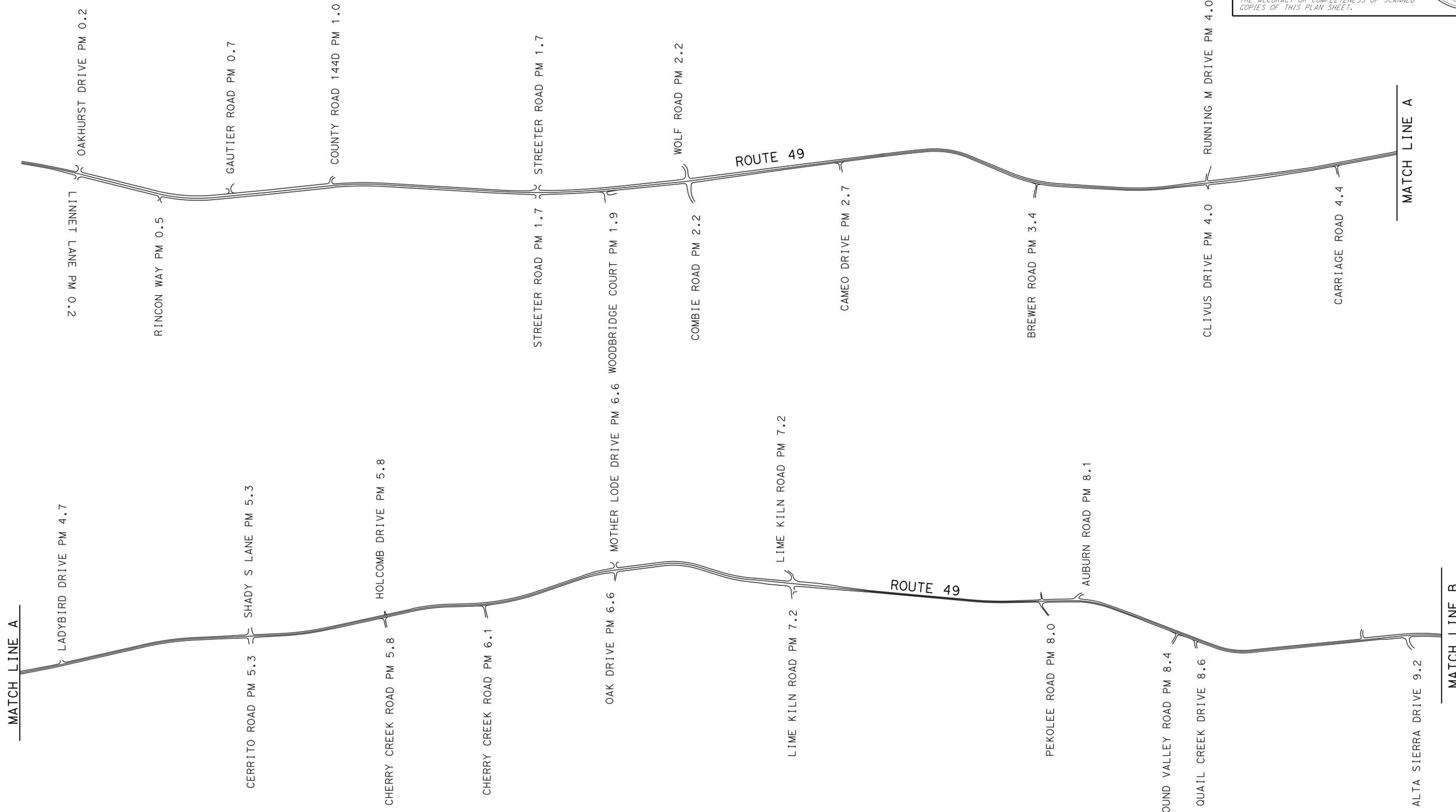
REVISOR: JIM FERREIRA, RONALD S. SYKES  
 CHECKED BY: RONALD S. SYKES  
 FUNCTIONAL SUPERVISOR: RONALD S. SYKES

LAST REVISION DATE PLOTTED => 13-FEB-2015  
 00-00-00 TIME PLOTTED => 12:19



**NOTE:**

1. EXISTING UTILITY FACILITIES HAVE NOT BEEN INCLUDED ON THESE PLANS.



**STREETS AND INTERSECTIONS KEY**

**CONSTRUCTION DETAILS**

NO SCALE

**C-1**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	4	58

James M. Ferreira 2-17-15  
 REGISTERED CIVIL ENGINEER DATE

2-17-15  
 PLANS APPROVAL DATE

JIM FERREIRA  
 No. C48257  
 Exp. 6-30-16  
 CIVIL

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**NOTE:**

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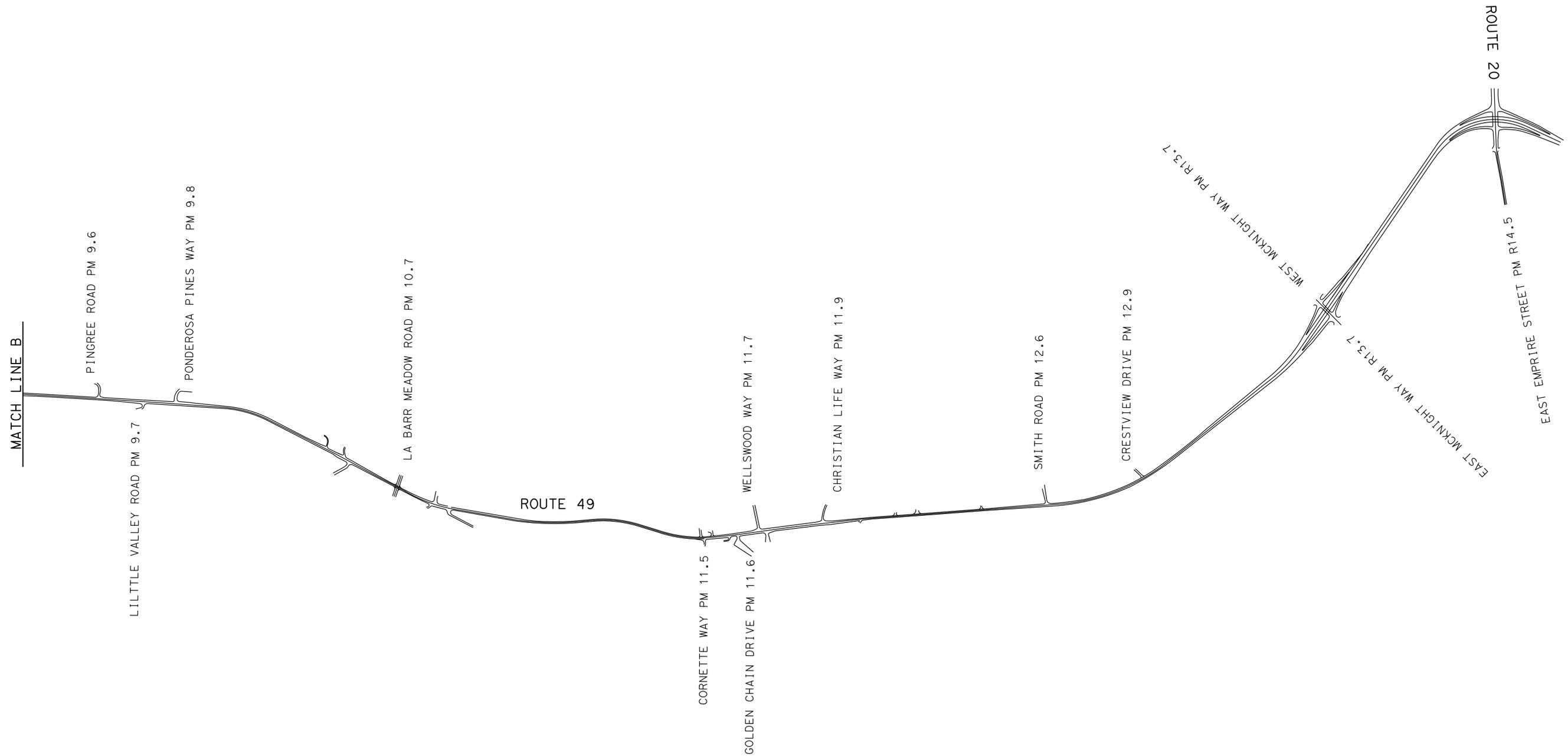
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	5	58

James M. Ferreira 2-17-15  
 REGISTERED CIVIL ENGINEER DATE

2-17-15  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 JIM FERREIRA  
 No. C48257  
 Exp. 6-30-16  
 CIVIL  
 STATE OF CALIFORNIA

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**STREETS AND INTERSECTIONS KEY**

**CONSTRUCTION DETAILS**

NO SCALE

**C-2**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	6	58
			James M. Ferreira 2-17-15 REGISTERED CIVIL ENGINEER DATE		
			2-17-15 PLANS APPROVAL DATE		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

**NOTE:**

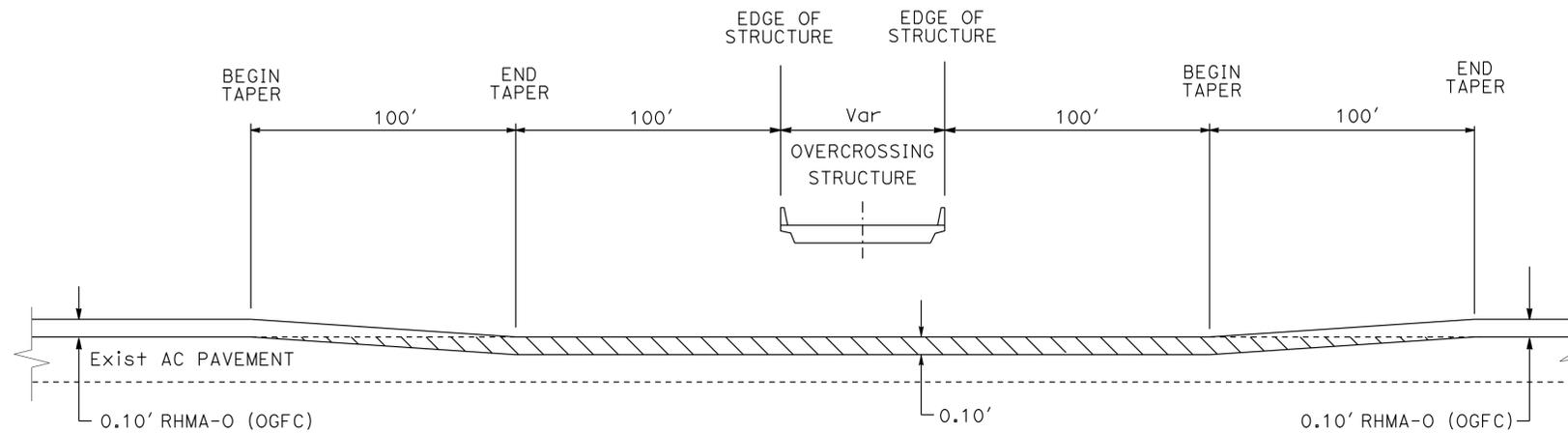
1. EXISTING UTILITY FACILITIES HAVE NOT BEEN INCLUDED ON THESE PLANS.

**ABBREVIATION:**

RHMA-0 (OGFC) = RUBBERIZED HOT MIX ASHALT-OPEN GRADED (OPEN GRADED FRICTION COURSE)

**LEGEND:**

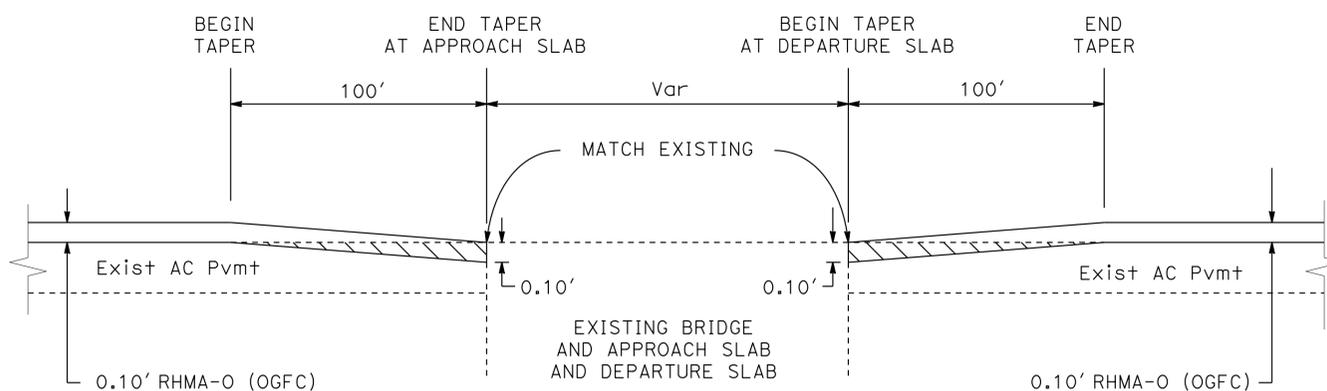
COLD PLANE ASPHALT CONCRETE PAVEMENT (0.10' Max)



PROFILE

**PAVING AT OVERCROSSING STRUCTURES**

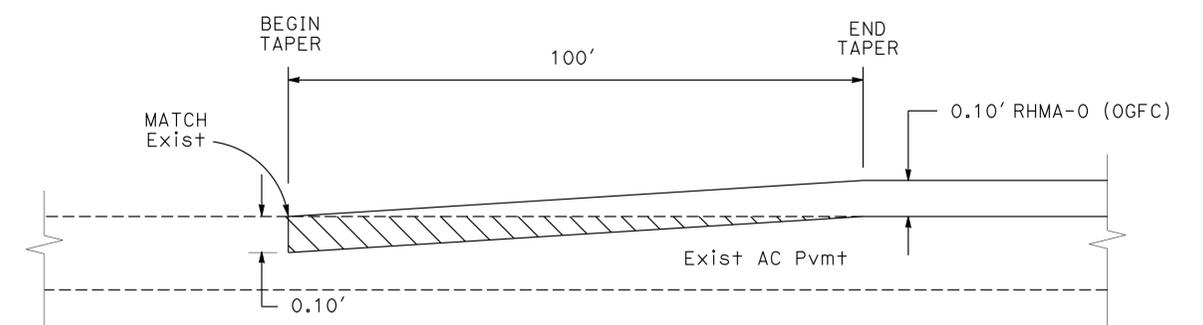
PM R13.66 SOUTH GRASS VALLEY OVERCROSSING (Br No. 17-0080)



PROFILE

**PAVING CONFORM AT BRIDGES**

PM 0.02 BEAR RIVER BRIDGE (Br No. 19-0022)  
 PM 3.61 SOUTH WOLF CREEK BRIDGE (Br No. 17-0005)



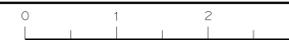
**MAINLINE PAVING CONFORM**

PM 9.6  
 PM 11.2  
 PM R14.4

**CONSTRUCTION DETAILS**

NO SCALE

**C-3**



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	7	58

James M. Ferreira 2-17-15  
REGISTERED CIVIL ENGINEER DATE

2-17-15  
PLANS APPROVAL DATE

JIM FERREIRA  
No. C48257  
Exp. 6-30-16  
CIVIL

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**NOTE:**

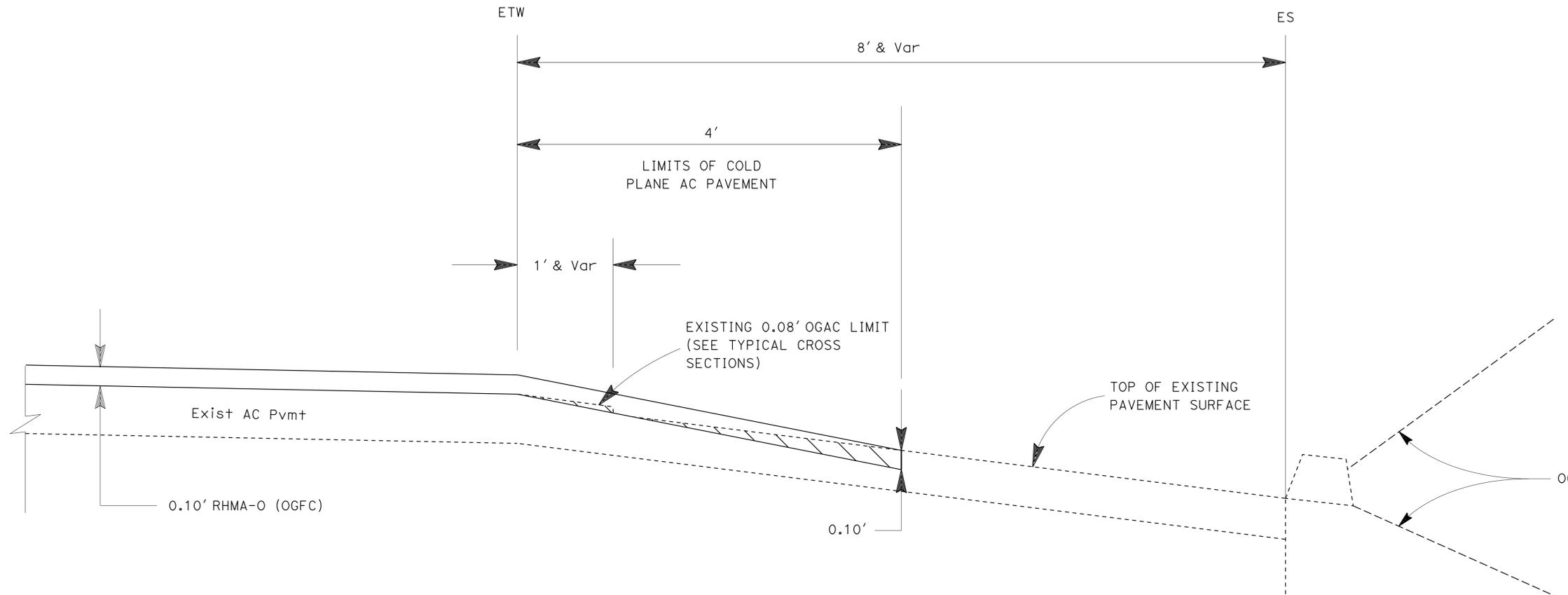
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**ABBREVIATION:**

RHMA-0 (OGFC) = RUBBERIZED HOT MIX ASHALT-OPEN GRADED  
(OPEN GRADED FRICTION COURSE)

**LEGEND:**

 COLD PLANE ASPHALT CONCRETE PAVEMENT (0.10' Max)



**OVERLAY EDGE DETAIL ON SHOULDERS OVER 4 FEET WIDE**

LEFT Shld PM 0.29 - 0.68	RIGHT Shld PM 0.00 - 0.36
LEFT Shld PM 0.80 - 0.92	RIGHT Shld PM 0.70 - 1.49
LEFT Shld PM 1.28 - 1.70	RIGHT Shld PM 1.83 - 1.85
LEFT Shld PM 1.81 - 2.20	RIGHT Shld PM 2.66 - 3.62
LEFT Shld PM 2.31 - 2.34	RIGHT Shld PM 3.64 - 3.82
LEFT Shld PM 3.17 - 3.30	RIGHT Shld PM 3.92 - 4.01
LEFT Shld PM 3.52 - 3.92	RIGHT Shld PM 4.34 - 4.39
LEFT Shld PM 4.04 - 4.24	RIGHT Shld PM 4.48 - 5.26
LEFT Shld PM 4.52 - 5.22	RIGHT Shld PM 5.31 - 5.69
LEFT Shld PM 5.39 - 5.68	RIGHT Shld PM 5.91 - 6.60
LEFT Shld PM 5.91 - 7.17	RIGHT Shld PM 8.48 - 8.53
LEFT Shld PM 7.18 - 7.32	RIGHT Shld PM 5.60 - 8.90
LEFT Shld PM 8.60 - 9.60	
LEFT Shld PM 11.10 - 12.44	RIGHT Shld PM 11.10 - 11.44
LEFT Shld PM 12.56 - 12.61	RIGHT Shld PM 11.58 - 12.45
LEFT OUTSIDE Shld PM 12.82 - 13.40	RIGHT Shld PM 12.59 - 12.81
LEFT MEDIAN Shld PM 13.25 - R13.40	RIGHT OUTSIDE Shld PM 12.91 - R13.48
LEFT OUTSIDE Shld PM R13.56 - R13.81	RIGHT MEDIAN Shld PM 12.25 - R13.48
LEFT MEDIAN Shld PM R13.56 - R13.81	RIGHT OUTSIDE Shld PM R13.53 - R13.76
LEFT OUTSIDE Shld PM R13.87 - R14.25	RIGHT MEDIAN Shld PM R13.53 - R13.76
LEFT MEDIAN Shld PM R13.87 - R14.25	RIGHT OUTSIDE Shld PM R13.94 - R14.24
LEFT OUTSIDE Shld PM R14.36 - R14.40	RIGHT MEDIAN Shld PM R13.94 - R14.24
LEFT MEDIAN Shld PM 14.36 - 14.40	RIGHT OUTSIDE Shld PM R14.31 - R14.40
	RIGHT MEDIAN Shld PM 14.31 - R14.4

**CONSTRUCTION DETAILS**

NO SCALE

**C-4**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

**Caltrans** MAINTENANCE DESIGN

FUNCTIONAL SUPERVISOR: RONALD S. SYKES

CHECKED BY: JIM FERREIRA

DESIGNED BY: RONALD S. SYKES

REVISOR: JIM FERREIRA

DATE: 2-17-15

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** MAINTENANCE DESIGN

FUNCTIONAL SUPERVISOR: RONALD S. SYKES  
 CALCULATED/DESIGNED BY: JIM FERREIRA  
 CHECKED BY: RONALD S. SYKES  
 REVISED BY: JIM FERREIRA  
 DATE REVISED: RONALD S. SYKES

**NOTE:**

1. EXISTING UTILITY FACILITIES HAVE NOT BEEN INCLUDED ON THESE PLANS.

**LEGEND:**

 RHMA-0 (OGFC)

**ABBREVIATION:**

RHMA-0 (OGFC) = RUBBERIZED HOT MIX ASHALT-OPEN GRADED (OPEN GRADED FRICTION COURSE)

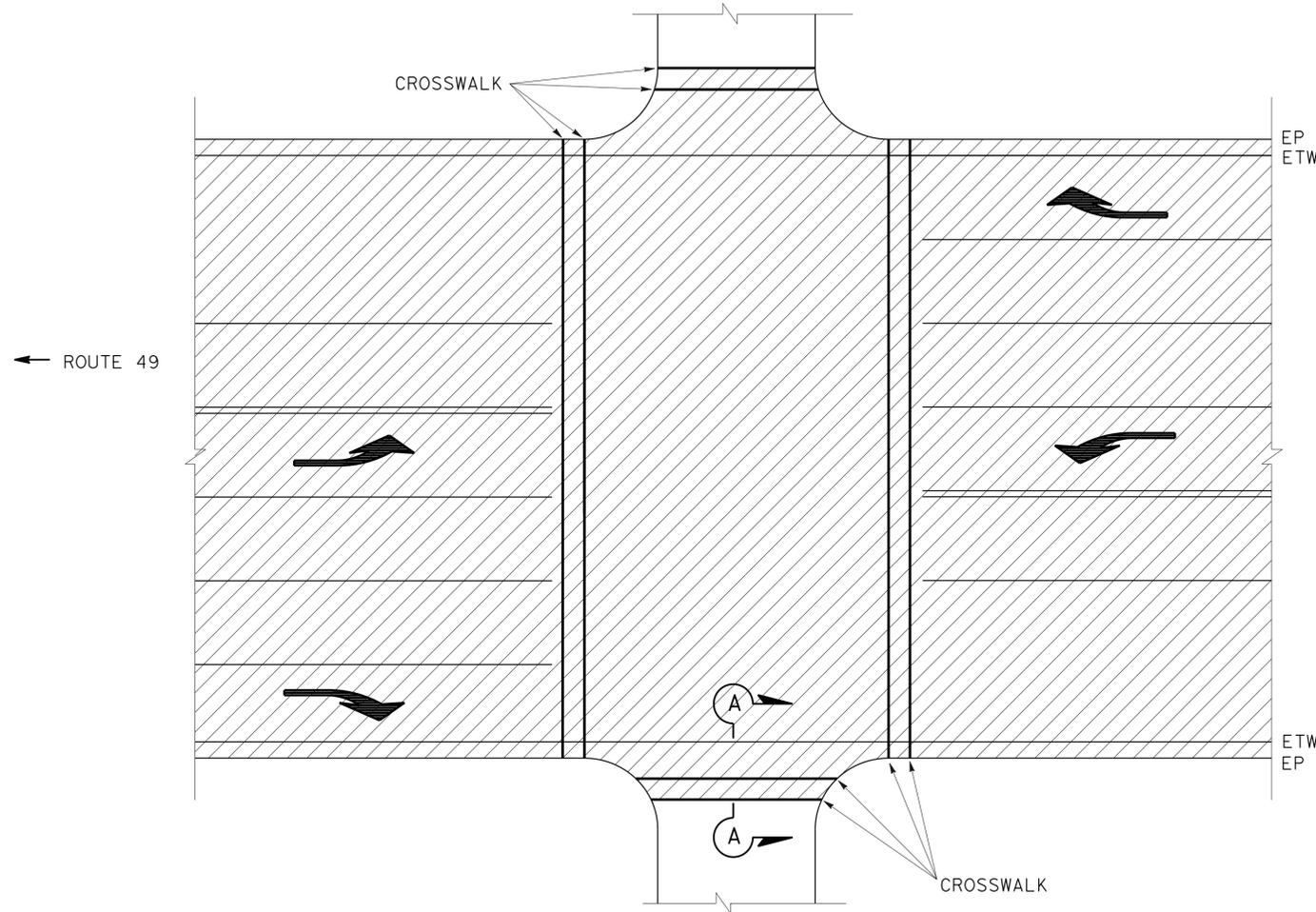
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	8	58

James M. Ferreira 2-17-15  
 REGISTERED CIVIL ENGINEER DATE

2-17-15  
 PLANS APPROVAL DATE

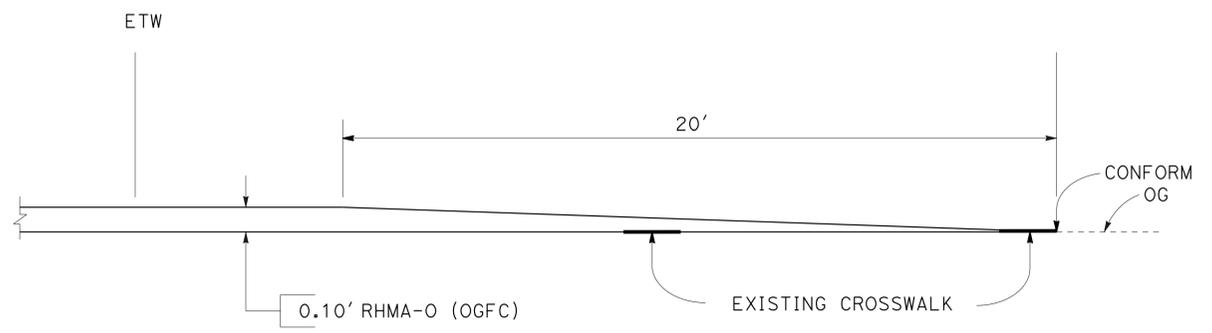
JIM FERREIRA  
 No. C48257  
 Exp. 6-30-16  
 CIVIL

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**SIGNALIZED INTERSECTION WITH CROSSWALKS AND LEFT AND RIGHT TURN LANES**

PM 2.20 LEFT WOLF ROAD  
 PM 2.20 RIGHT COMBIE ROAD



SECTION A-A

**CONSTRUCTION DETAILS**

NO SCALE

**C-5**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	9	58

James M. Ferreira 2-17-15  
REGISTERED CIVIL ENGINEER DATE

2-17-15  
PLANS APPROVAL DATE

JIM FERREIRA  
No. C48257  
Exp. 6-30-16  
CIVIL

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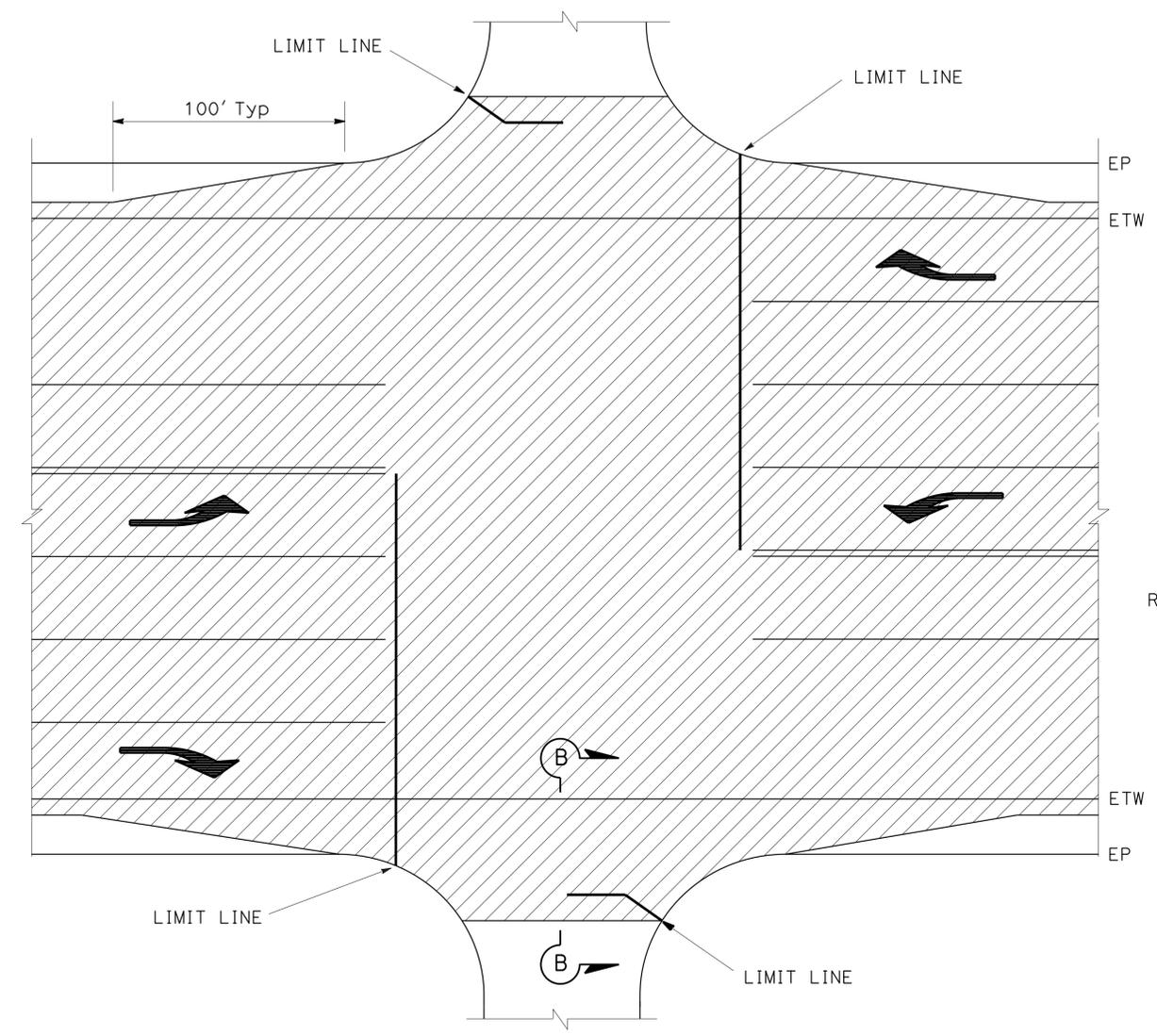
1. EXISTING UTILITY FACILITIES HAVE NOT BEEN INCLUDED ON THESE PLANS.

**LEGEND:**

 RHMA-0 (OGFC)

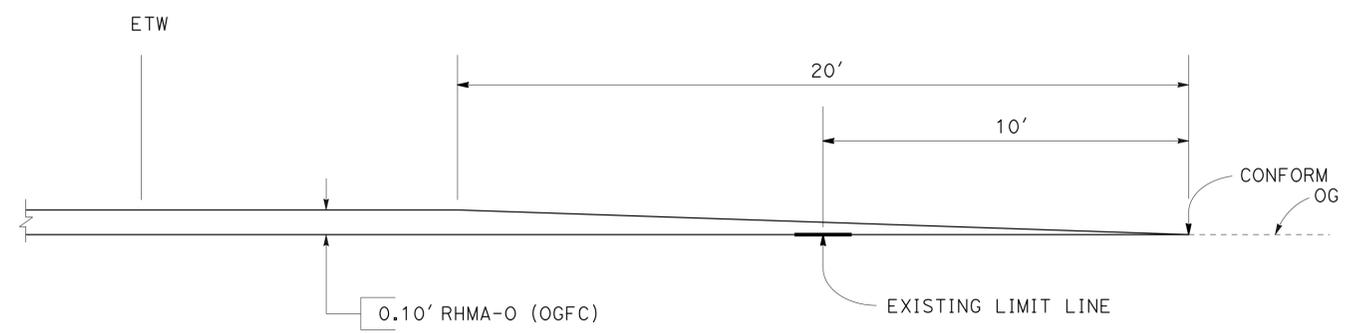
**ABBREVIATION:**

RHMA-0 (OGFC) = RUBBERIZED HOT MIX ASHALT-OPEN GRADED (OPEN GRADED FRICTION COURSE)



**SIGNALIZED INTERSECTION WITH LIMIT LINES AND LEFT AND RIGHT TURN LANES**

PM 7.15 LEFT LIME KILN ROAD  
PM 7.15 RIGHT LIME KILN ROAD



SECTION B-B

**CONSTRUCTION DETAILS**

NO SCALE

**C-6**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	REVISOR	DATE
<b>Caltrans</b> MAINTENANCE DESIGN	JIM FERREIRA	
FUNCTIONAL SUPERVISOR	DESIGNED BY	CHECKED BY
RONALD S. SYKES	RONALD S. SYKES	
	REVISOR	DATE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	10	58

*James M. Ferreira* 2-17-15  
 REGISTERED CIVIL ENGINEER DATE

2-17-15  
 PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER  
**JIM FERREIRA**  
 No. C48257  
 Exp. 6-30-16  
 CIVIL  
 STATE OF CALIFORNIA

**NOTE:**

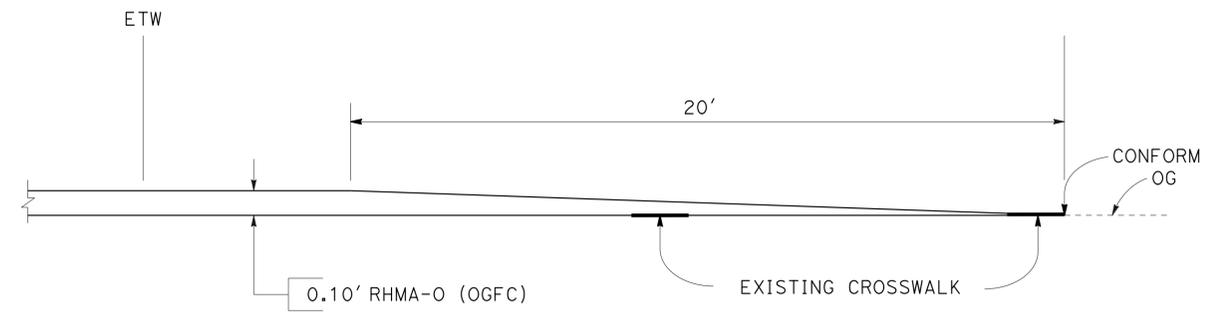
1. EXISTING UTILITY FACILITIES HAVE NOT BEEN INCLUDED ON THESE PLANS.

**LEGEND:**

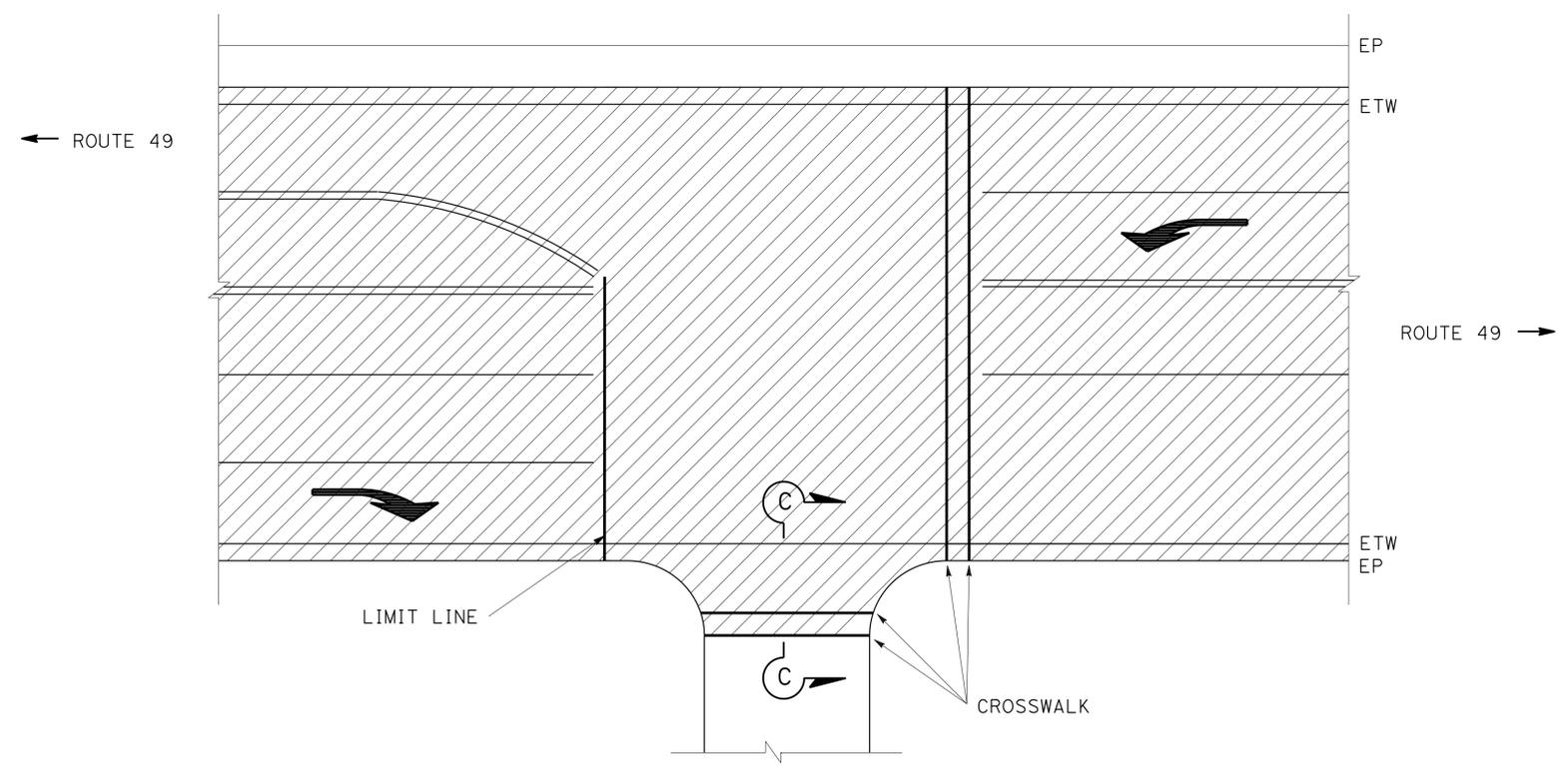
 RHMA-0 (OGFC)

**ABBREVIATION:**

RHMA-0 (OGFC) = RUBBERIZED HOT MIX ASHALT-OPEN GRADED (OPEN GRADED FRICTION COURSE)



SECTION C-C



**SIGNALIZED "T" INTERSECTION WITH CROSSWALKS, LIMIT LINES, AND LEFT AND RIGHT TURN LANES**

PM 9.2 RIGHT ALTA SIERRA DRIVE

**CONSTRUCTION DETAILS**

NO SCALE

**C-7**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR
<b>Caltrans</b> MAINTENANCE DESIGN	RONALD S. SYKES	JIM FERREIRA	RONALD S. SYKES
		CHECKED BY	DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	11	58

*James M. Ferreira* 2-17-15  
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2-17-15  
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REGISTERED PROFESSIONAL ENGINEER  
**JIM FERREIRA**  
 No. C48257  
 Exp. 6-30-16  
 CIVIL  
 STATE OF CALIFORNIA

**NOTE:**

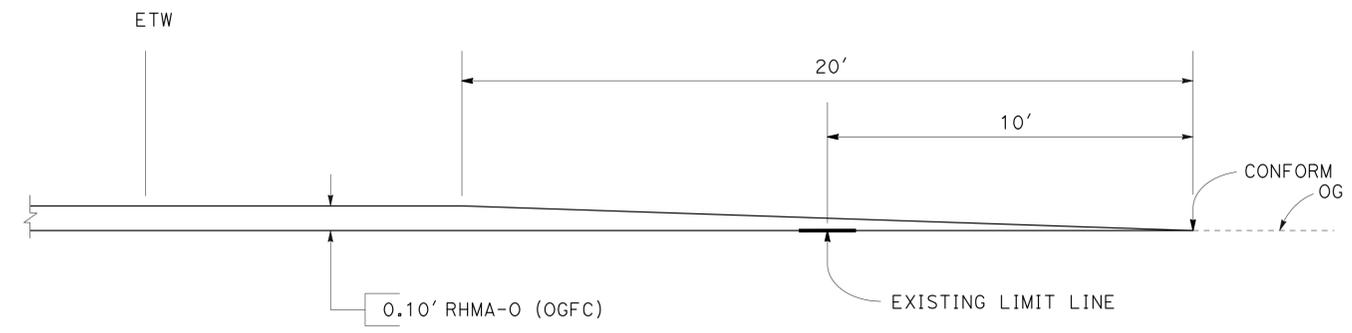
1. EXISTING UTILITY FACILITIES HAVE NOT BEEN INCLUDED ON THESE PLANS.

**LEGEND:**

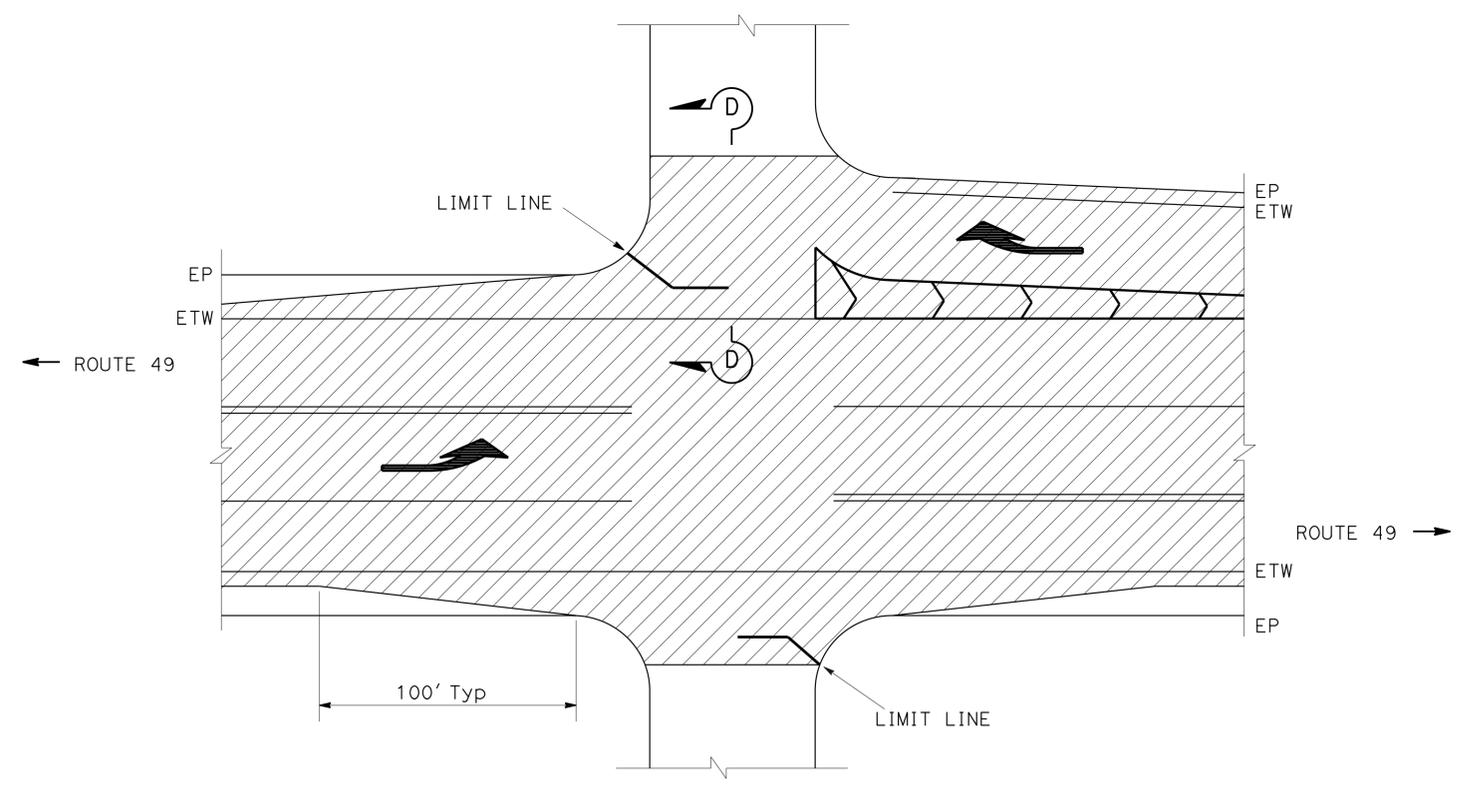
 RHMA-0 (OGFC)

**ABBREVIATION:**

RHMA-0 (OGFC) = RUBBERIZED HOT MIX ASHALT-OPEN GRADED (OPEN GRADED FRICTION COURSE)



SECTION D-D



**INTERSECTION WITH LEFT AND RIGHT TURN LANES**

- PM 0.2 LEFT OAKHURST DRIVE
- PM 1.7 LEFT STREETER ROAD
- PM 4.0 LEFT RUNNING M DRIVE

**CONSTRUCTION DETAILS**

NO SCALE

**C-8**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	DESIGNED BY	REVISOR
<b>Caltrans</b> MAINTENANCE DESIGN	RONALD S. SYKES	JIM FERREIRA	RONALD S. SYKES
	CHECKED BY	DATE	REVISION

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	12	58

*James M. Ferreira* 2-17-15  
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 2-17-15  
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REGISTERED PROFESSIONAL ENGINEER  
**JIM FERREIRA**  
 No. C48257  
 Exp. 6-30-16  
 CIVIL  
 STATE OF CALIFORNIA

**NOTE:**

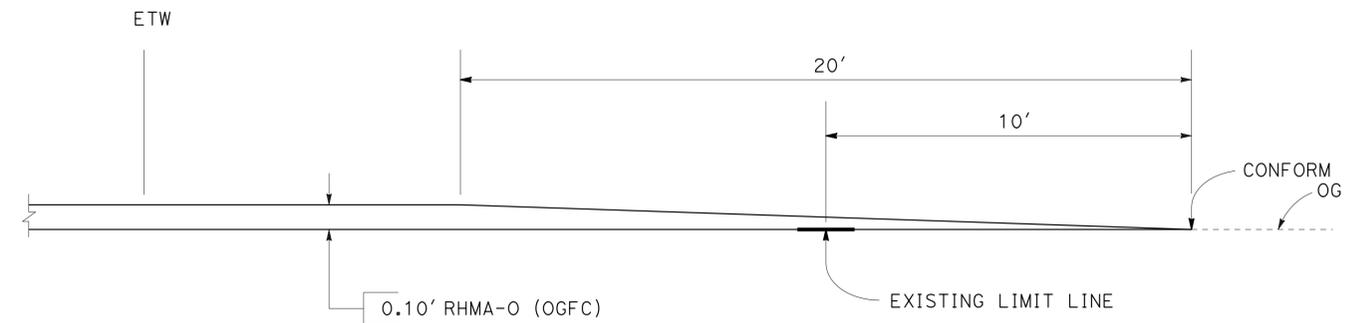
1. EXISTING UTILITY FACILITIES HAVE NOT BEEN INCLUDED ON THESE PLANS.

**LEGEND:**

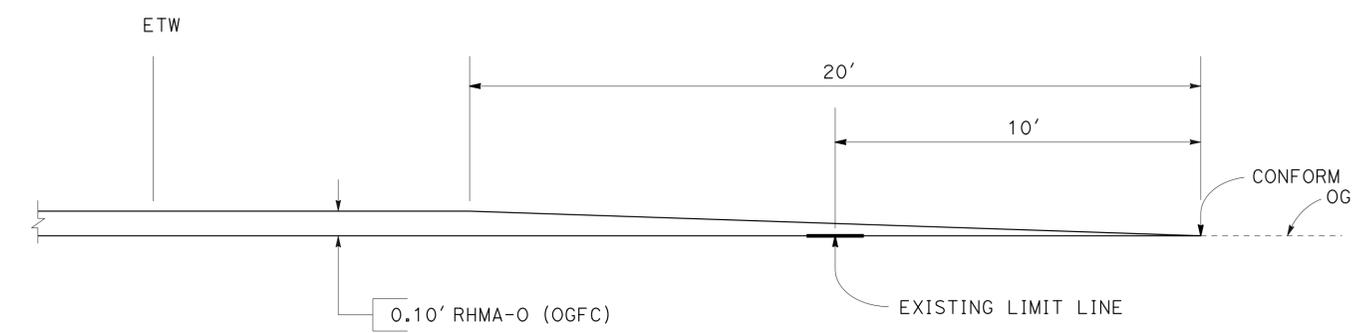


**ABBREVIATION:**

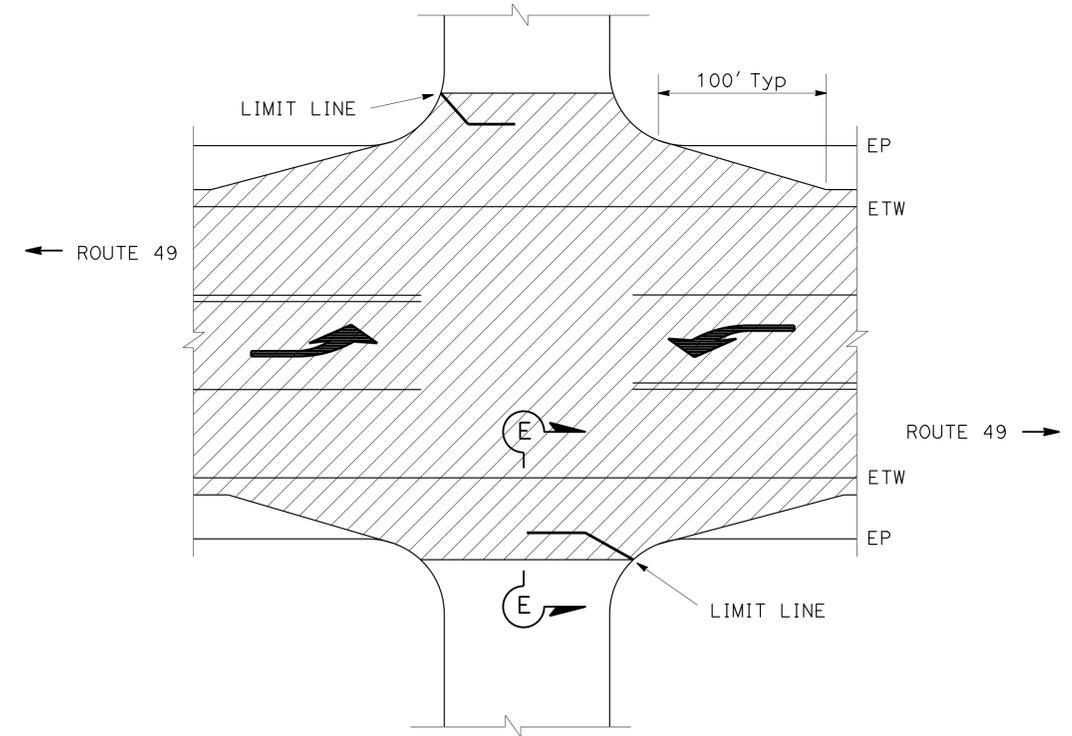
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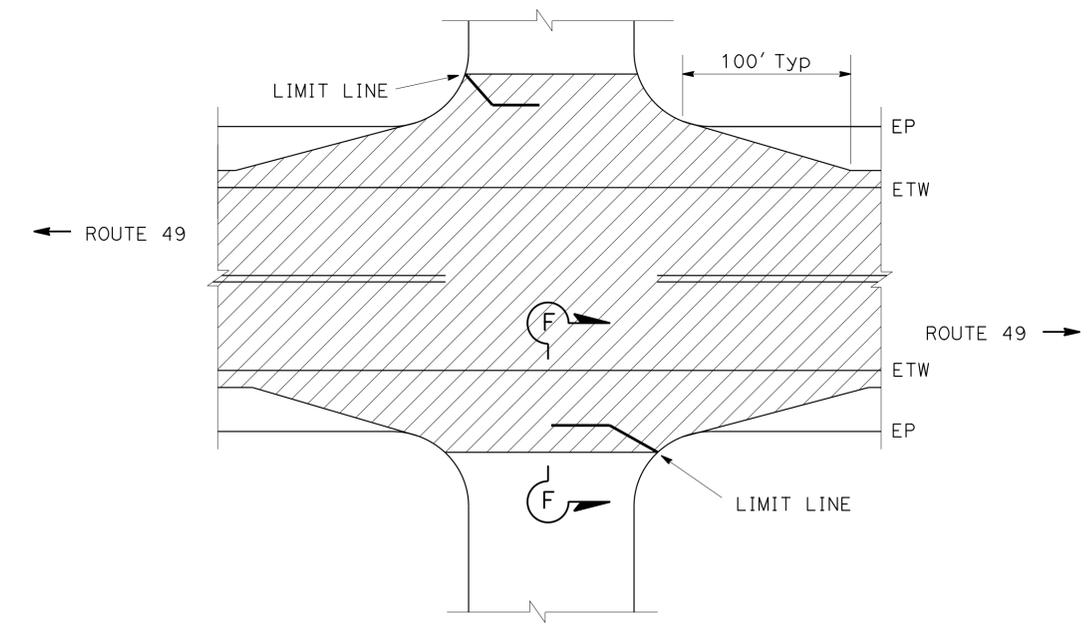
SECTION E-E



SECTION F-F



**INTERSECTION WITH LEFT TURN LANES**



**INTERSECTION WITH NO TURN LANES**

- |        |       |                   |         |       |                    |
|--------|-------|-------------------|---------|-------|--------------------|
| PM 0.2 | RIGHT | LINNET LANE       | PM 6.6  | LEFT  | MOTHER LODE DRIVE  |
| PM 3.4 | RIGHT | BREWER ROAD       | PM 6.6  | RIGHT | OAK DRIVE          |
| PM 4.0 | RIGHT | CLIVUS ROAD       | PM 11.6 | RIGHT | GOLDEN CHAIN DRIVE |
| PM 4.4 | RIGHT | CARRIAGE ROAD     | PM 11.7 | LEFT  | WELLSWOOD WAY      |
| PM 5.3 | LEFT  | SHADY S LANE      | PM 11.9 | LEFT  | CHRISTIAN LIFE WAY |
| PM 5.3 | RIGHT | CERRITO ROAD      | PM 12.6 | LEFT  | SMITH ROAD         |
| PM 5.8 | LEFT  | HOLCOMB DRIVE     | PM 12.9 | LEFT  | CRESTVIEW DRIVE    |
| PM 5.8 | RIGHT | CHERRY CREEK ROAD |         |       |                    |

- PM 1.7 RIGHT STREETER ROAD  
 PM 4.7 LEFT LADYBIRD DRIVE

**CONSTRUCTION DETAILS**

NO SCALE

**C-9**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** MAINTENANCE DESIGN  
 FUNCTIONAL SUPERVISOR: RONALD S. SYKES  
 DESIGNED BY: JIM FERREIRA  
 CHECKED BY: RONALD S. SYKES  
 REVISIONS: (None listed)  
 REVISION BY: (None listed)  
 DATE: (None listed)  
 REVISION DATE: (None listed)

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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JIM FERREIRA  
No. C48257  
Exp. 6-30-16  
CIVIL

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**NOTE:**

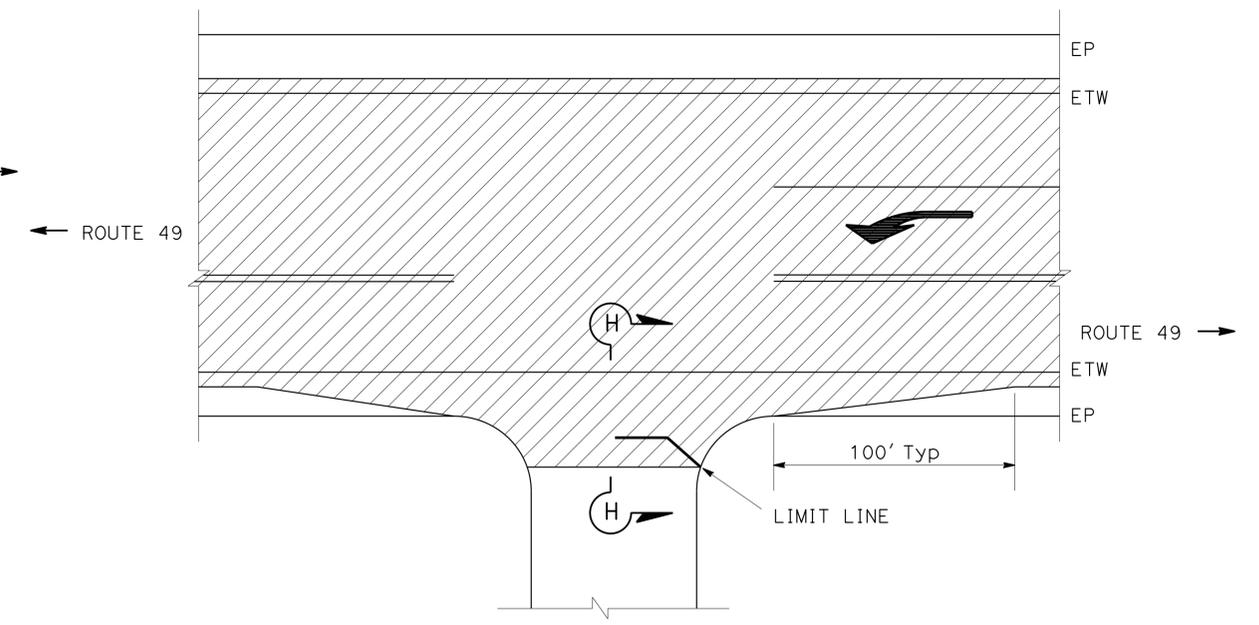
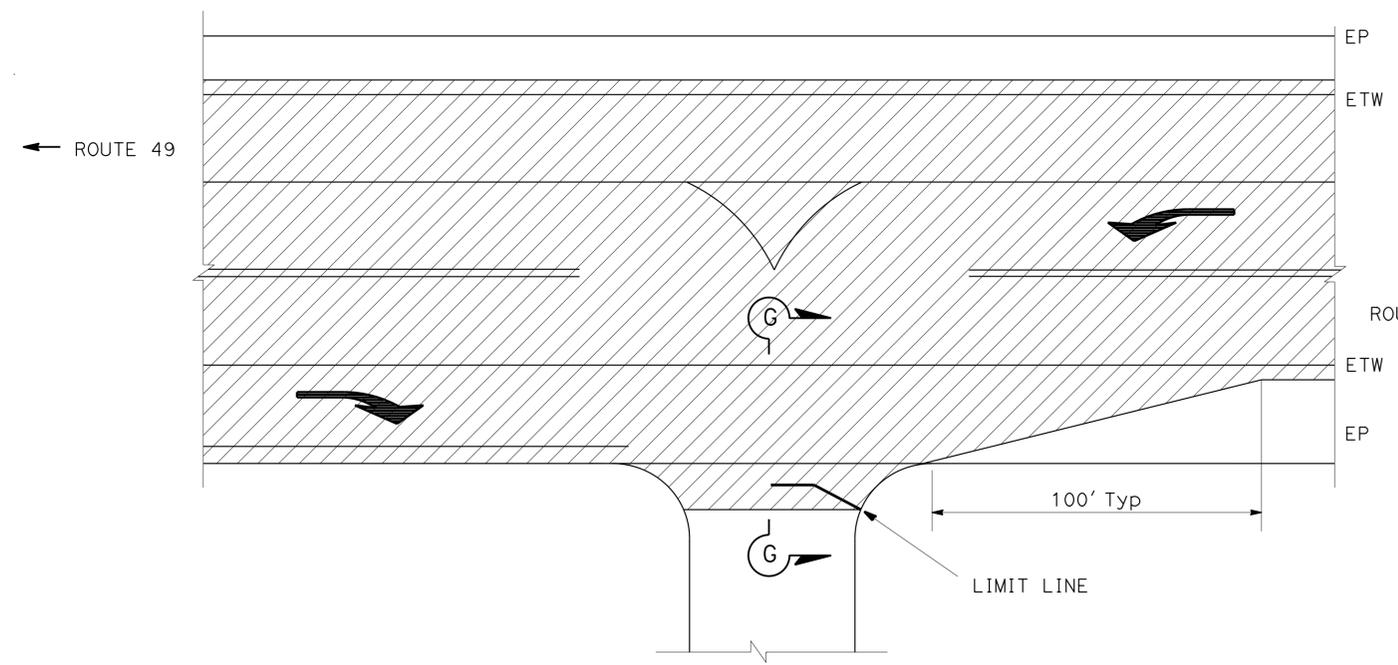
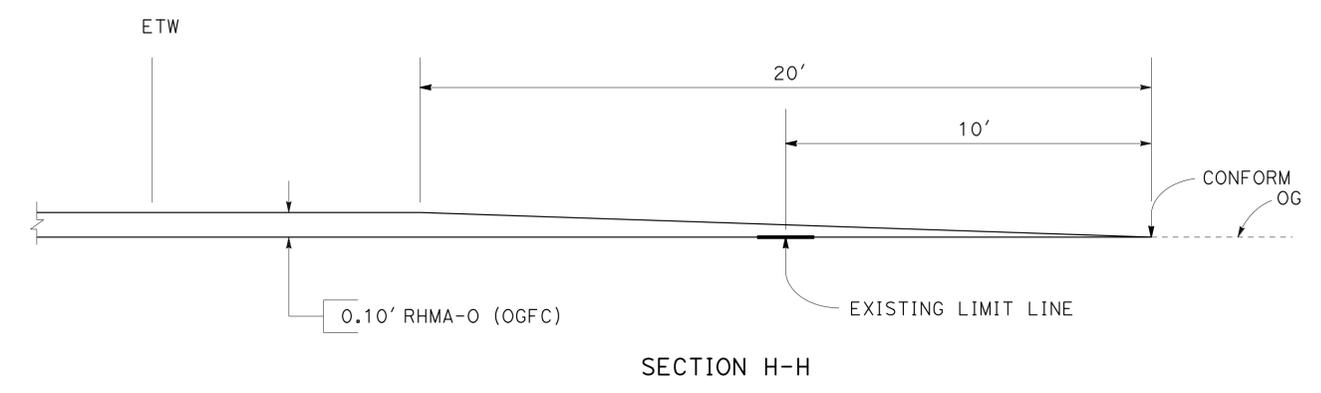
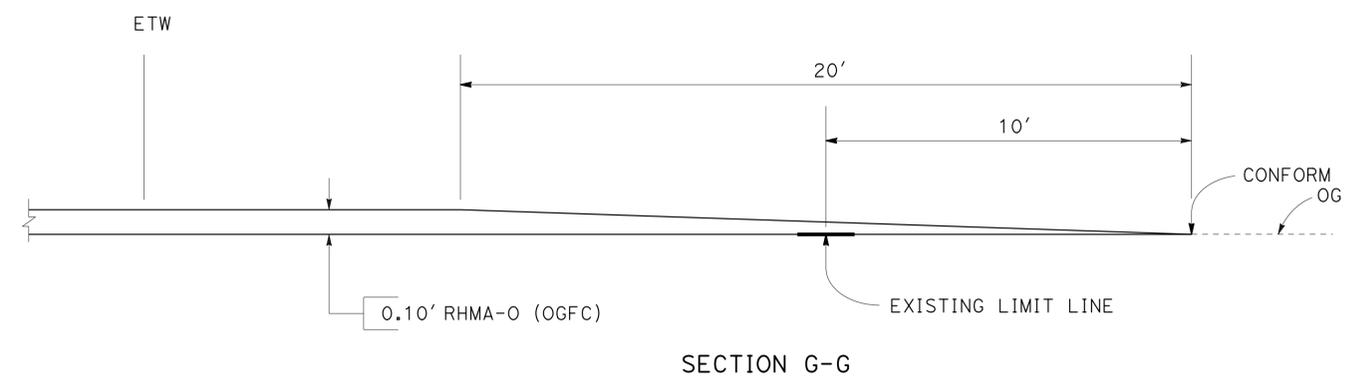
1. EXISTING UTILITY FACILITIES HAVE NOT BEEN INCLUDED ON THESE PLANS.

**LEGEND:**



**ABBREVIATION:**

RHMA-0 (OGFC) = RUBBERIZED HOT MIX ASHALT-OPEN GRADED (OPEN GRADED FRICTION COURSE)



- PM 0.5 RIGHT RINCON WAY
- PM 0.7 LEFT GAUTIER ROAD
- PM 1.9 RIGHT WOODBRIDGE COURT
- PM 2.7 RIGHT CAMEO DRIVE
- PM 8.1 LEFT AUBURN ROAD

PM 8.0 RIGHT PEKOLEE ROAD

**CONSTRUCTION DETAILS**

NO SCALE

**C-10**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
Caltrans® MAINTENANCE DESIGN

REVISOR BY DATE

JIM FERREIRA  
RONALD S. SYKES

CALCULATED/DESIGNED BY  
CHECKED BY

FUNCTIONAL SUPERVISOR  
RONALD S. SYKES

BORDER LAST REVISED 7/2/2010

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	14	58

*James M. Ferreira* 2-17-15  
 REGISTERED CIVIL ENGINEER DATE  
 2-17-15  
 PLANS APPROVAL DATE  
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER  
**JIM FERREIRA**  
 No. C48257  
 Exp. 6-30-16  
 CIVIL  
 STATE OF CALIFORNIA

**NOTE:**

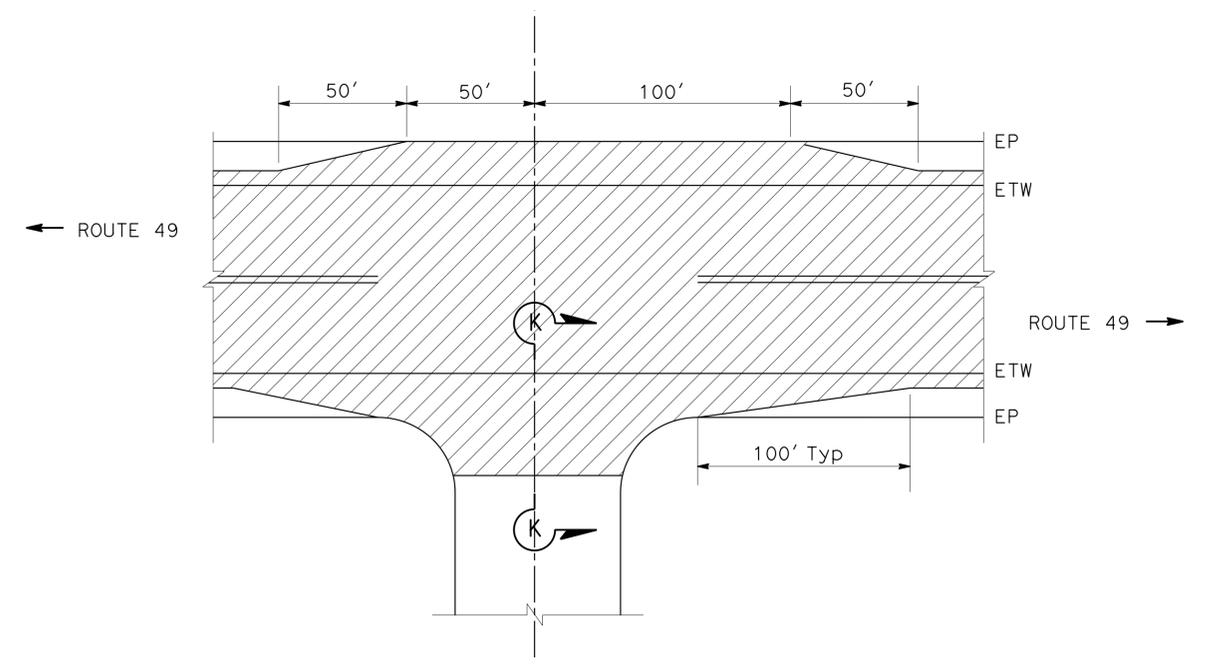
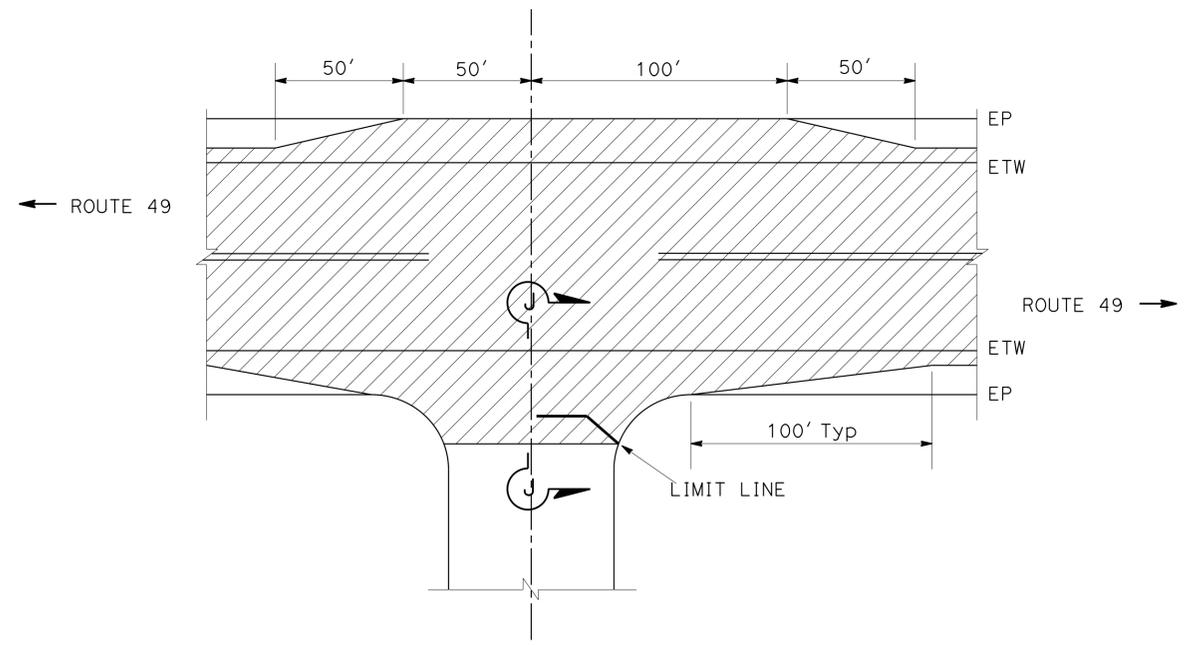
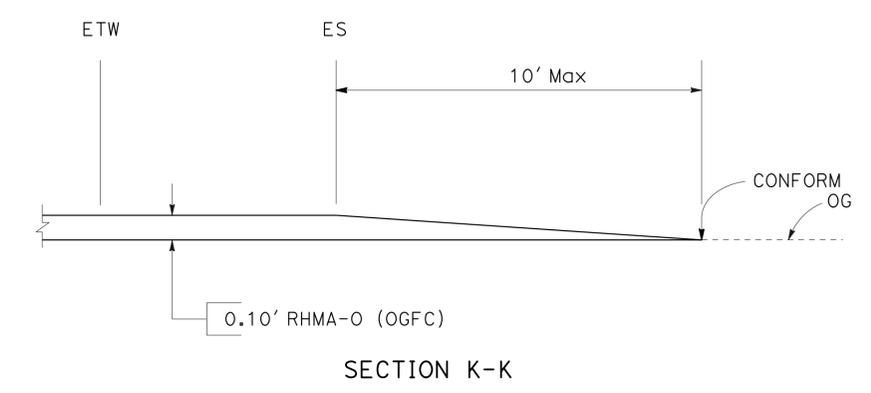
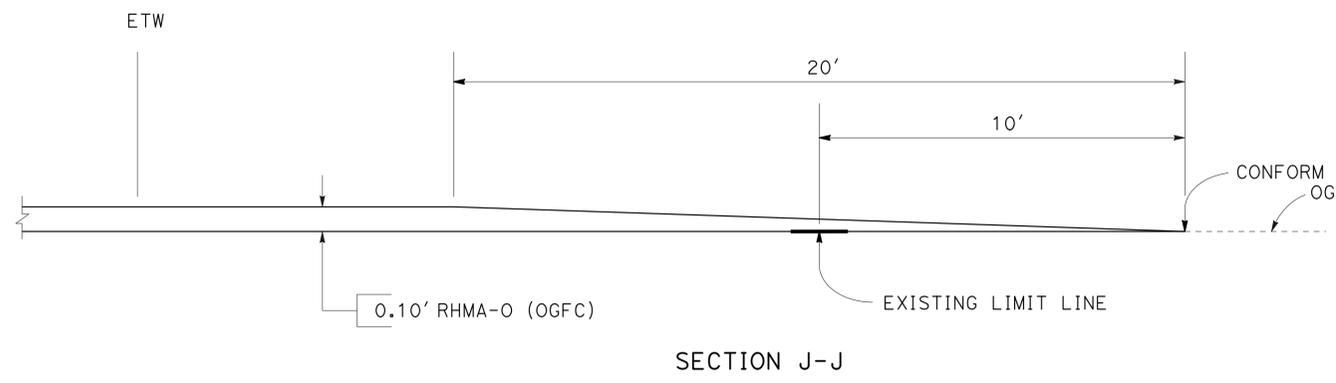
1. EXISTING UTILITY FACILITIES HAVE NOT BEEN INCLUDED ON THESE PLANS.

**LEGEND:**

RHMA-0 (OGFC)

**ABBREVIATION:**

RHMA-0 (OGFC) = RUBBERIZED HOT MIX ASHALT-OPEN GRADED (OPEN GRADED FRICTION COURSE)



**"T" INTERSECTION  
NO LEFT OR RIGHT TURN LANES**

- PM 1.0 LEFT COUNTY ROAD 144D
- PM 6.1 RIGHT CHERRY CREEK ROAD
- PM 8.4 RIGHT ROUND VALLEY ROAD
- PM 8.6 RIGHT QUAIL CREEK ROAD
- PM 9.6 LEFT PINGREE ROAD

**CONSTRUCTION DETAILS**

NO SCALE

**C-11**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** MAINTENANCE DESIGN  
 FUNCTIONAL SUPERVISOR: RONALD S. SYKES  
 DESIGNED BY: JIM FERREIRA  
 CHECKED BY: RONALD S. SYKES  
 REVISIONS: (None listed)





Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	17	58

*James M. Ferreira* 2-17-15  
 REGISTERED CIVIL ENGINEER DATE

2-17-15  
 PLANS APPROVAL DATE

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

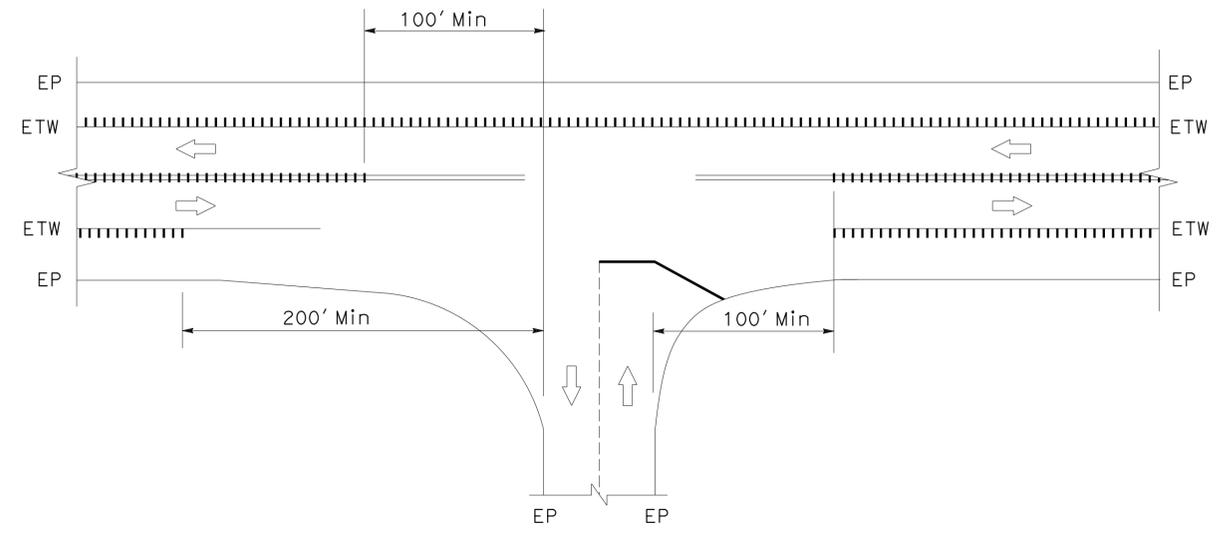
REGISTERED PROFESSIONAL ENGINEER  
**JIM FERREIRA**  
 No. C48257  
 Exp. 6-30-16  
 CIVIL  
 STATE OF CALIFORNIA

**NOTE:**

1. EXISTING UTILITY FACILITIES HAVE NOT BEEN INCLUDED ON THESE PLANS.

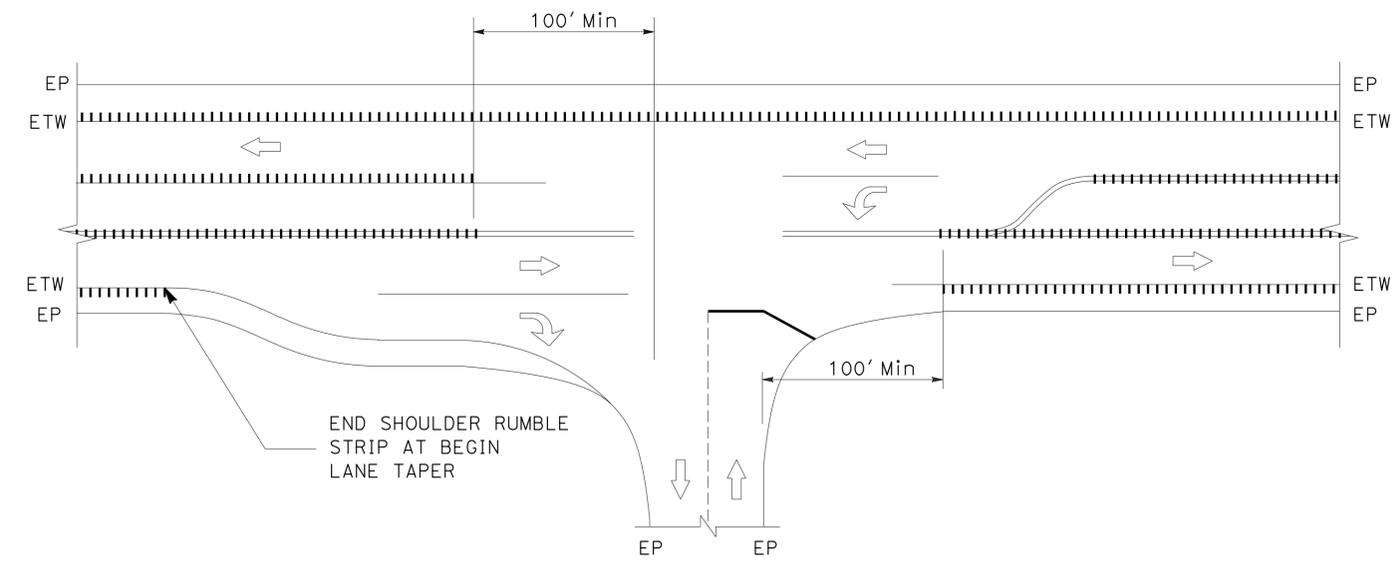
**LEGEND:**

- ===== CENTERLINE RUMBLE STRIP (HMA, GROUND-IN INDENTATIONS)
- SHOULDER RUMBLE STRIP (HMA, GROUND-IN INDENTATIONS)



**RUMBLE STRIP AT "T" INTERSECTION  
NO LEFT OR RIGHT TURN LANES**

- PM 1.0 LEFT COUNTY ROAD 144D
- PM 6.1 RIGHT CHERRY CREEK ROAD
- PM 8.4 RIGHT ROUND VALLEY ROAD
- PM 8.6 RIGHT QUAIL CREEK ROAD
- PM 9.6 LEFT PINGREE ROAD



**RUMBLE STRIP AT "T" INTERSECTION  
WITH LEFT AND RIGHT TURN LANES**

- PM 0.5 RIGHT RINCON WAY
- PM 0.7 LEFT GAUTIER ROAD
- PM 1.9 RIGHT WOODBRIDGE COURT
- PM 2.7 RIGHT CAMEO DRIVE
- PM 8.1 LEFT AUBURN ROAD

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** MAINTENANCE DESIGN  
 FUNCTIONAL SUPERVISOR: RONALD S. SYKES  
 JIM FERREIRA  
 RONALD S. SYKES  
 CALCULATED/DESIGNED BY: CHECKED BY:  
 REVISED BY: DATE REVISED:

**CONSTRUCTION DETAILS**

NO SCALE

**C-14**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	18	58

*James M. Ferreira* 2-17-15  
 REGISTERED CIVIL ENGINEER DATE  
 2-17-15  
 PLANS APPROVAL DATE

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

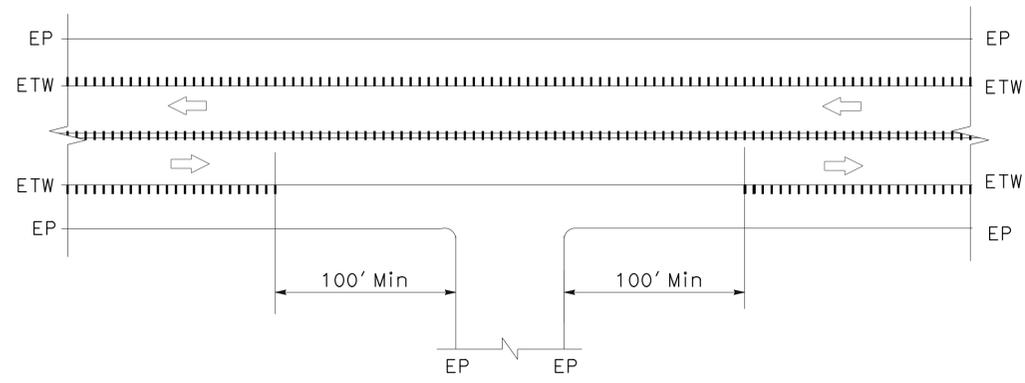
REGISTERED PROFESSIONAL ENGINEER  
**JIM FERREIRA**  
 No. C48257  
 Exp. 6-30-16  
 CIVIL  
 STATE OF CALIFORNIA

**NOTE:**

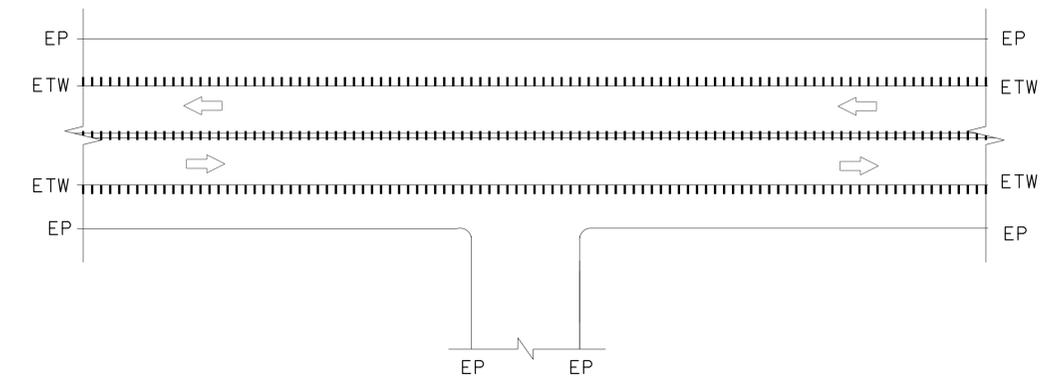
1. EXISTING UTILITY FACILITIES HAVE NOT BEEN INCLUDED ON THESE PLANS.

**LEGEND:**

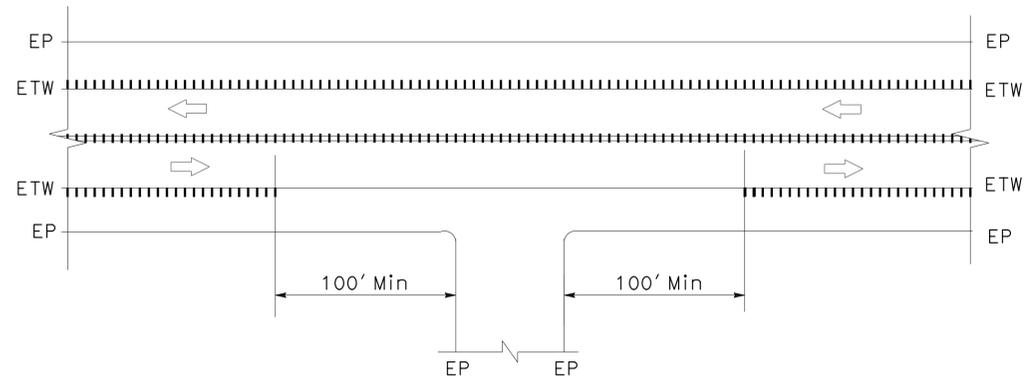
- +++++ CENTERLINE RUMBLE STRIP (HMA, GROUND-IN INDENTATIONS)
- TTTTT SHOULDER RUMBLE STRIP (HMA, GROUND-IN INDENTATIONS)



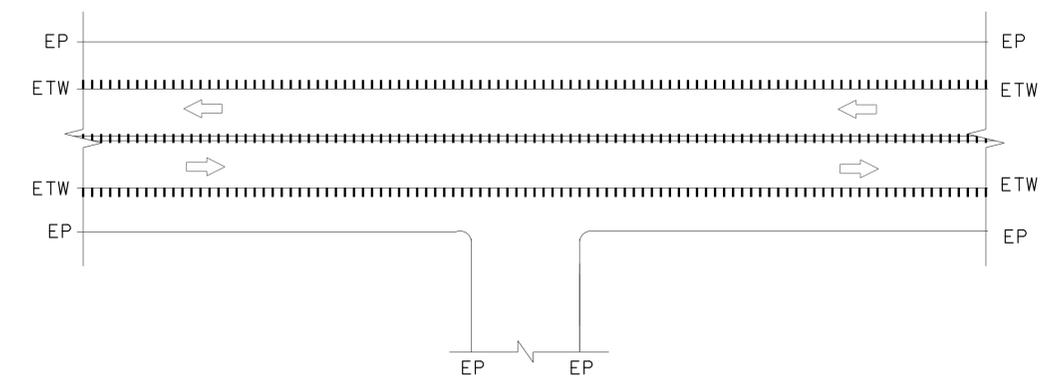
**RUMBLE STRIP AT PRIVATE ROAD  
WITH TWO OR MORE HOMES**



**RUMBLE STRIP AT PRIVATE ROAD  
WITH ONE OR LESS HOMES**



**RUMBLE STRIP AT COMMERCIAL DRIVEWAY**



**RUMBLE STRIP AT RESIDENTIAL DRIVEWAY**

**CONSTRUCTION DETAILS**

NO SCALE

**C-15**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	DESIGNED BY	REVISOR
<b>Caltrans</b> MAINTENANCE DESIGN	RONALD S. SYKES	JIM FERREIRA	RONALD S. SYKES
	CHECKED BY	DATE	REVISION



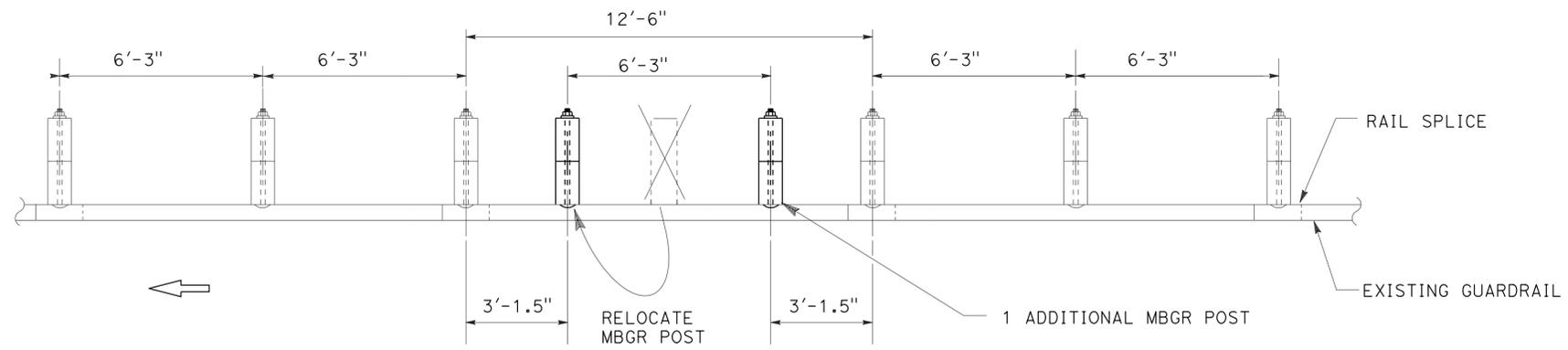
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	19	58

James M. Ferreira 2-17-15  
REGISTERED CIVIL ENGINEER DATE

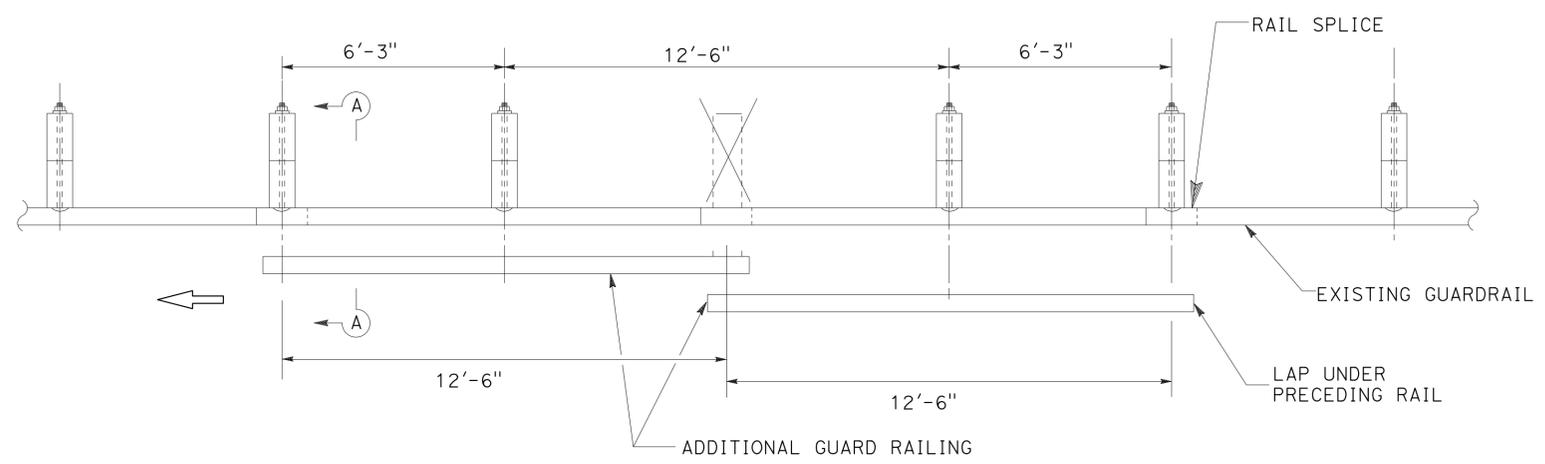
2-17-15  
PLANS APPROVAL DATE

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

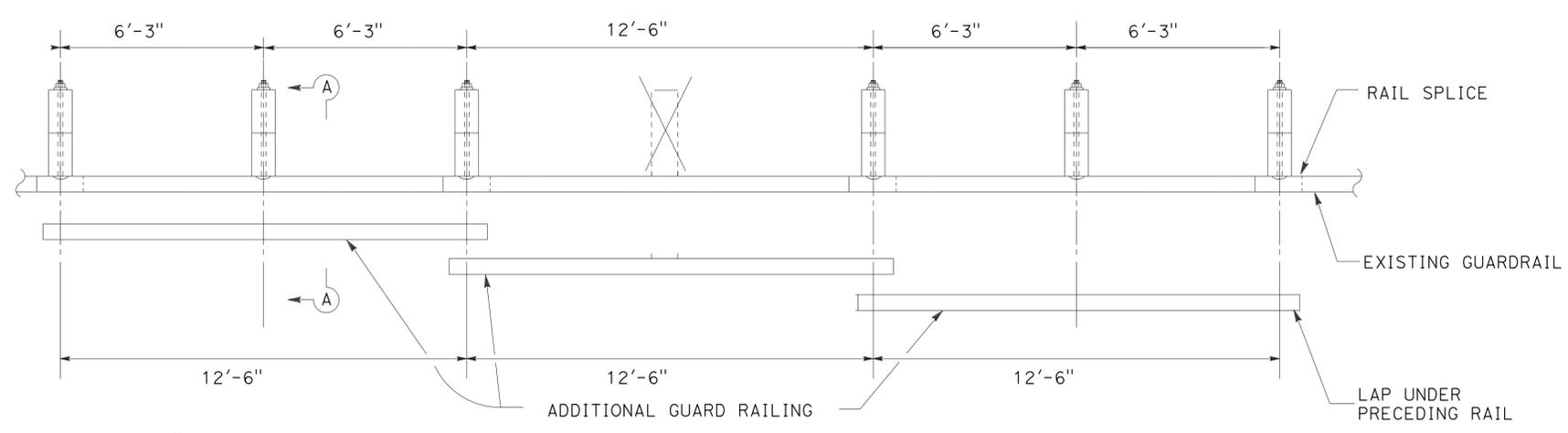
JIM FERREIRA  
No. C48257  
Exp. 6-30-16  
CIVIL  
STATE OF CALIFORNIA



**CASE 1**  
(ONE POST CONFLICT, MOVE THE POST AND ADD ONE POST)  
(NO NESTED RAIL REQUIRED)



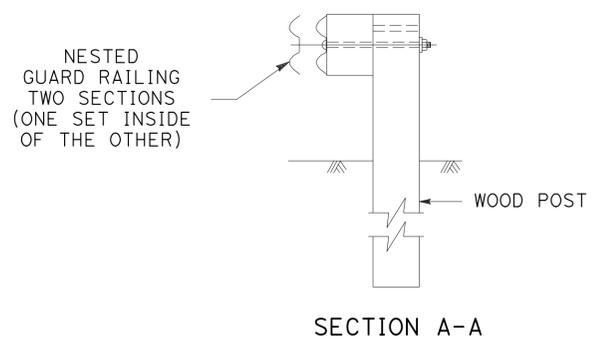
**CASE 2**  
(ONE POST OMITTED AT JUNCTION OF TWO ELEMENTS)  
(NEST TWO LENGTHS OF RAIL REQUIRED)



**CASE 3**  
(ONE POST OMITTED AT CENTER OF ELEMENT)  
(NEST THREE LENGTHS OF RAIL REQUIRED)  
(ONE ADDITIONAL POST MAY BE OMITTED SEE NOTE 3)

**NOTES:**

- EXISTING UTILITY FACILITIES HAVE NOT BEEN INCLUDED ON THESE PLANS.
- NEST ALL RAILS AT EXISTING RAIL LAPS.
- WHEN A POST IS REMOVED AND THE RAIL ELEMENTS ARE NESTED, THE NESTED ELEMENTS MUST BE SUPPORTED BY A MINIMUM OF TWO POSTS EACH SIDE OF THE MISSING POST OR ADD ADDITIONAL LENGTH OF NESTED ELEMENTS.
- USING CASE 3, A SECOND ADJACENT POST CAN BE REMOVED IF THE NESTED RAIL ELEMENTS ARE SUPPORTED BY A MINIMUM OF TWO POSTS EACH SIDE OF THE MISSING POSTS. THE TWO POST OPTION USES CASE 3 BUT IS NOT SHOWN.



**TYPICAL RAILING OVERLAP INSTALLATION AT POST**

**LONG SPAN NESTED GUARD RAILING**

**CONSTRUCTION DETAILS**

NO SCALE

**C-16**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** MAINTENANCE DESIGN

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	20	58

<i>James M. Ferreira</i>	2-17-15
REGISTERED CIVIL ENGINEER	DATE
2-17-15	
PLANS APPROVAL DATE	

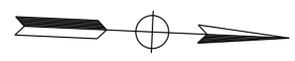
  

REGISTERED PROFESSIONAL ENGINEER
JIM FERREIRA
No. C48257
Exp. 6-30-16
CIVIL
STATE OF CALIFORNIA

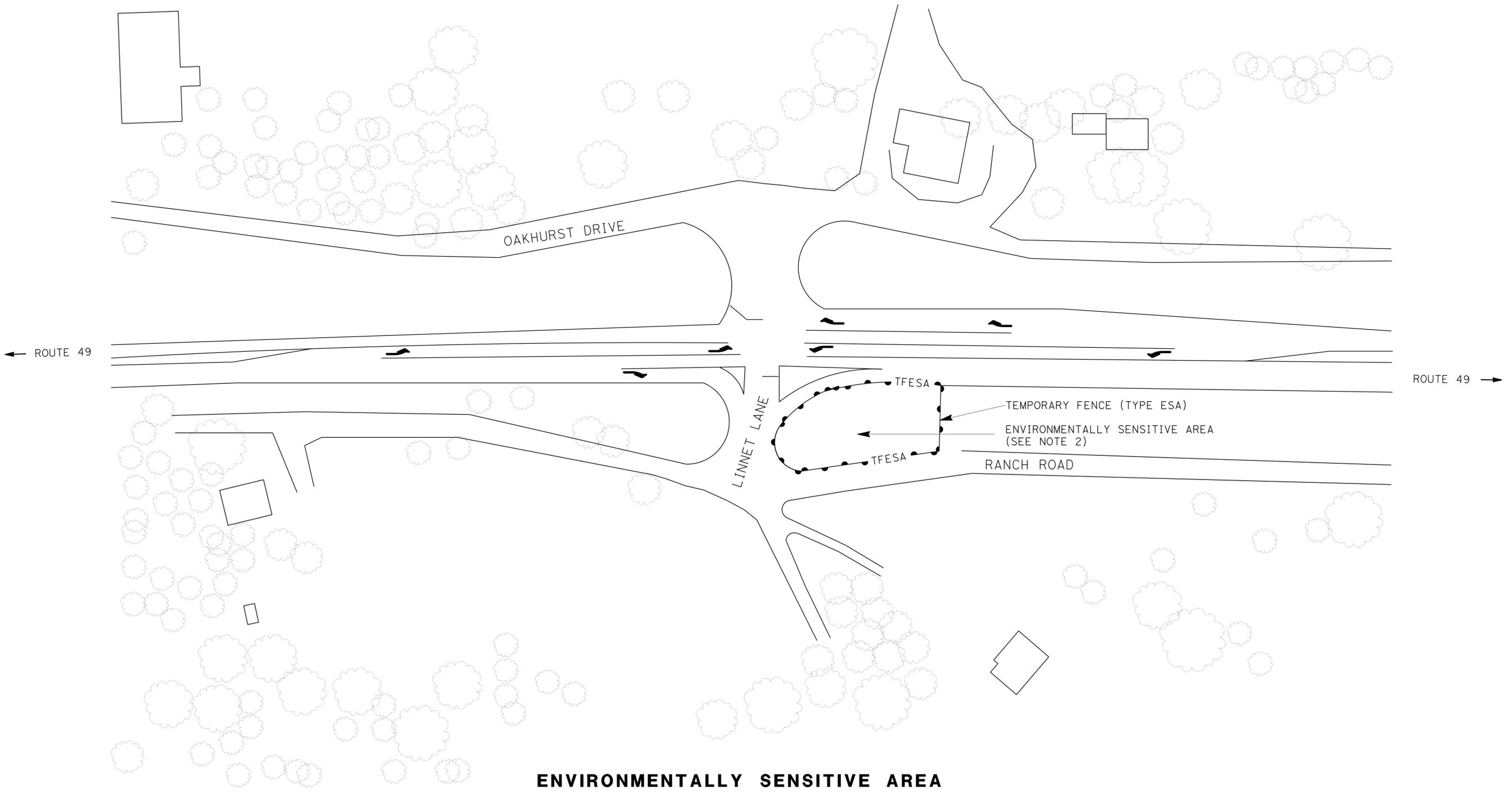
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**NOTES:**

- EXISTING UTILITY FACILITIES HAVE NOT BEEN INCLUDED ON THESE PLANS.
- EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
<b>Caltrans</b> MAINTENANCE DESIGN
FUNCTIONAL SUPERVISOR
RONALD S. SYKES
CALCULATED-DESIGNED BY
CHECKED BY
JIM FERREIRA
RONALD S. SYKES
REVISED BY
DATE REVISED



**ENVIRONMENTALLY SENSITIVE AREA**

OAKHURST DRIVE PM 0.2

**CONSTRUCTION DETAILS**

NO SCALE

**C-17**



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	21	58

<i>James M. Ferreira</i>	2-17-15
REGISTERED CIVIL ENGINEER	DATE
2-17-15	
PLANS APPROVAL DATE	

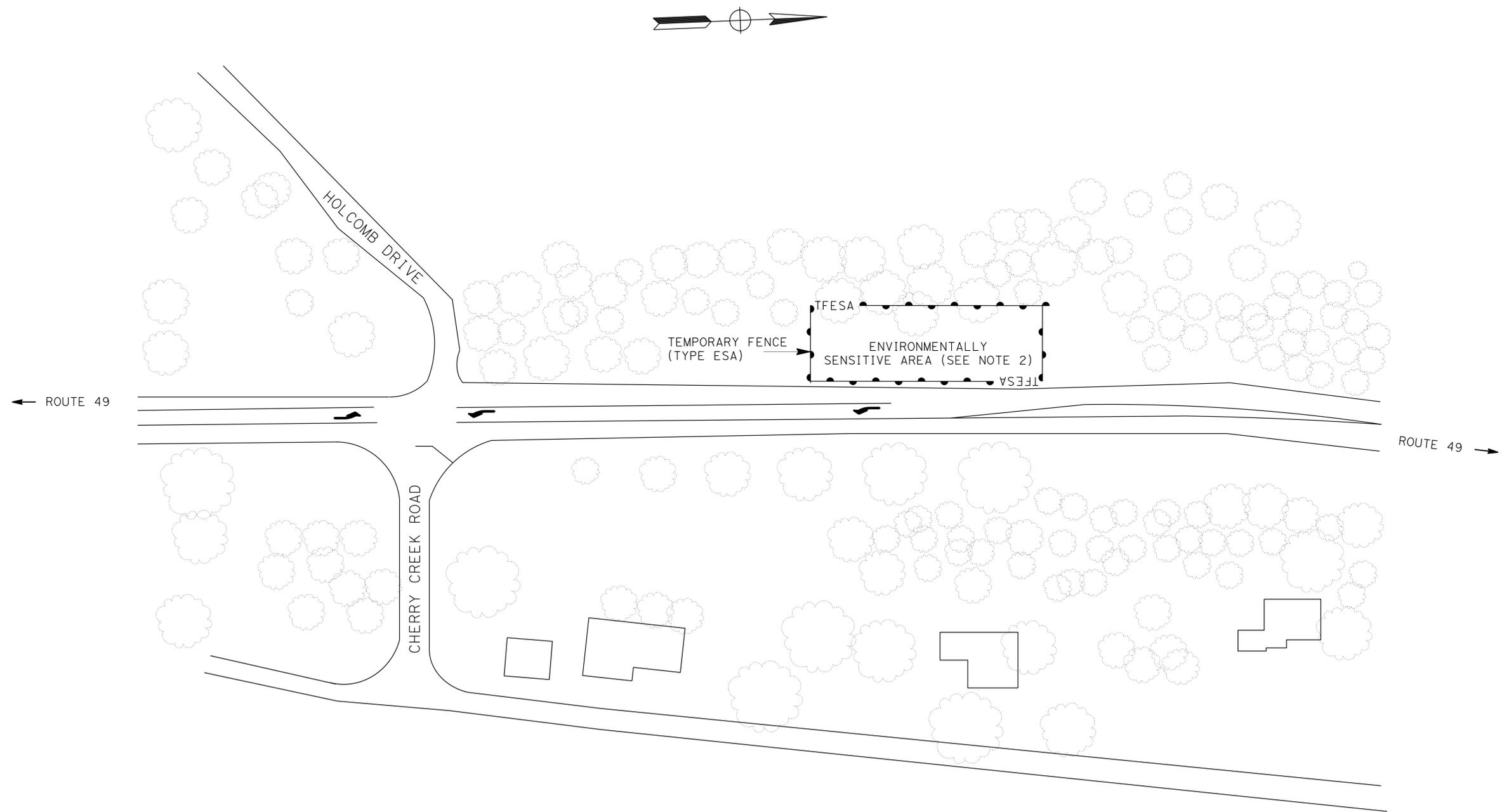
REGISTERED PROFESSIONAL ENGINEER
JIM FERREIRA
No. C48257
Exp. 6-30-16
CIVIL
STATE OF CALIFORNIA

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

**NOTES:**

- EXISTING UTILITY FACILITIES HAVE NOT BEEN INCLUDED ON THESE PLANS.
- EXACT LOCATIONS AS DETERMINED BY THE ENGINEER.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	JIM FERREIRA	REVISED BY
<b>Caltrans</b> MAINTENANCE DESIGN	RONALD S. SYKES	CHECKED BY	RONALD S. SYKES	DATE REVISED



**ENVIRONMENTALLY SENSITIVE AREA**

CHERRY CREEK ROAD PM 5.8

**CONSTRUCTION DETAILS**

NO SCALE

**C-18**



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	22	58

*Kris M. Albers* 2-17-15  
REGISTERED CIVIL ENGINEER DATE

2-17-15  
PLANS APPROVAL DATE

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

REGISTERED PROFESSIONAL ENGINEER  
Kris M. ALBERS  
No. 49986  
Exp. 6-30-15  
CIVIL  
STATE OF CALIFORNIA

**STATIONARY MOUNTED CONSTRUCTION AREA SIGNS**

SIGN LOCATION	FACING TRAFFIC				SIGN CODE	PANEL SIZE	SIGN MESSAGE	NUMBER OF POST AND SIZE	NUMBER OF SIGNS	
	DESCRIPTION	NB	SB	EB						WB
PIa-49 PM:11.06	1				CSP-1<CA>	60" x 30"	ROAD WORK NEXT 10 MILES	2 - 4" x 4"	1	
PIa-49 PM:11.16		1			G20-2	36" x 18"	END ROAD WORK	1 - 4" x 4"	1	
RIO OSO ROAD				1	W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1	
PIa-49 PM:11.24	1				C40(Mod)<CA>	72" x 42"	TRAFFIC FINES DOUBLED IN WORK ZONES	2 - 4" x 6"	1	
OAKHURST ROAD			1		W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1	
LINNET LANE				1	W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1	
RINCON WAY				1	W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1	
GAUTIER ROAD			1		W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1	
COUNTY ROAD 144			1		W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1	
STREETER ROAD			1		W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1	
WOODRIDGE DRIVE				1	W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1	
WOLF ROAD			1		W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1	
COMBIE ROAD				1	W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1	
CAMEO DRIVE				1	W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1	
BREWER ROAD				1	W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1	
RUNNING M DRIVE			1		W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1	
CLIVUS DRIVE				1	W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1	
CARRIAGE ROAD				1	W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1	
CERRITO ROAD				1	W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1	
HOLCOMB DRIVE			1		W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1	
CHERRY CREEK ROAD				1	W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1	
CHERRY CREEK ROAD				1	W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1	
OAK DRIVE			1	1	W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	2	
LIME KILN ROAD			1	1	W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	2	
PEKOLEE ROAD				1	W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1	
AUBURN ROAD			1		W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1	
ROUND VALLEY ROAD				1	W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1	
QUAIL CREEK DRIVE				1	W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1	
ALTA SIERRA DRIVE				1	W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1	
PINGREE ROAD			1		W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1	
LITTLE VALLEY ROAD				1	W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1	
PONDEROSA PINES WAY				1	W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1	
Nev-49 PM:9.84	1				G20-2	36" x 18"	END ROAD WORK	1 - 4" x 4"	1	
Nev-49 PM:9.96		1			C40(Mod)<CA>	48" x 36"	TRAFFIC FINES DOUBLED IN WORK ZONES	1 - 4" x 6"	1	
Nev-49 PM:10.00		1			CSP-1<CA>	60" x 30"	ROAD WORK NEXT 10 MILES	2 - 4" x 4"	1	

**NOTES:**

- SIGN LOCATIONS INDICATED ARE APPROXIMATE. EXACT SIGN LOCATION TO BE DETERMINED BY THE ENGINEER.
- ALL SIGN CODES SHOWN ARE FEDERAL SIGN CODES UNLESS OTHERWISE DESIGNATED AS A CALIFORNIA SIGN CODE.
- <CA> = CALIFORNIA SIGN CODE.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 FUNCTIONAL SUPERVISOR: NARAYAN SELWAL  
 JACK KEMMERLY / KRIS ALBERS  
 REVISOR BY / DATE REVISOR  
 CALCULATED/DESIGNED BY / CHECKED BY

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

**CONSTRUCTION AREA SIGNS**

**CS-1**

LAST REVISION: 8-19-14  
 DATE PLOTTED => 13-FEB-2015  
 TIME PLOTTED => 15:16

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	23	58

*Kris M. Albers* 2-17-15  
REGISTERED CIVIL ENGINEER DATE

2-17-15  
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
Kris M. Albers  
No. 49986  
Exp. 6-30-15  
CIVIL  
STATE OF CALIFORNIA

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

**STATIONARY MOUNTED CONSTRUCTION AREA SIGNS (CONTINUED)**

SIGN LOCATION DESCRIPTION	FACING TRAFFIC				SIGN CODE	PANEL SIZE	SIGN MESSAGE	NUMBER OF POST AND SIZE	NUMBER OF SIGNS
	NB	SB	EB	WB					
	Nev-49 PM:11.00	1							
Nev-49 PM:11.07		1			G20-2	36" x 18"	END ROAD WORK	1 - 4" x 4"	1
Nev-49 PM:11.07	1				C40(Mod)<CA>	72" x 42"	TRAFFIC FINES DOUBLED IN WORK ZONES	2 - 4" x 6"	1
CORNETTE WAY				1	W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1
GOLDEN CHAIN DRIVE				1	W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1
WELLSWOOD WAY			1		W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1
CHRISTIAN LIFE WAY			1		W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1
SMITH ROAD			1		W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1
CRESTVIEW DRIVE			1		W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1
NB ROUTE 49 EXIT RAMP TO McKNIGHT WAY/S AUBURN STREET	1				G20-2	36" x 18"	END ROAD WORK	1 - 4" x 4"	1
SB ROUTE 49 ENTRANCE RAMP FROM McKNIGHT WAY/S AUBURN STREET		1			W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1
NB ROUTE 49 ENTRANCE RAMP FROM McKNIGHT WAY/S AUBURN STREET	1				W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1
SB ROUTE 49 EXIT RAMP TO McKNIGHT WAY/S AUBURN STREET		1			G20-2	36" x 18"	END ROAD WORK	1 - 4" x 4"	1
NB ROUTE 49 EXIT RAMP TO EMPIRE St	1				G20-2	36" x 18"	END ROAD WORK	1 - 4" x 4"	1
SB ROUTE 49 ENTRANCE RAMP FROM ROUTE 20		1			W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1
SB ROUTE 20 EXIT RAMP TO EMPIRE St		1			G20-2	36" x 18"	END ROAD WORK	1 - 4" x 4"	1
Nev-20 PM:12.56			1		G20-2	36" x 18"	END ROAD WORK	1 - 4" x 4"	1
WB ROUTE 20 ENTRANCE RAMP FROM AUBURN STREET				1	W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	1
Nev-20 PM:12.81				1	C40(Mod)<CA>	72" x 42"	TRAFFIC FINES DOUBLED IN WORK ZONES	2 - 4" x 6"	1
Nev-20 PM:12.98				1	CSP-2<CA>	60" x 30"	ROAD WORK NEXT 3 MILES	2 - 4" x 4"	1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 FUNCTIONAL SUPERVISOR: NARAYAN SELWAL  
 CALCULATED/DESIGNED BY: JACK KEMMERLY, KRIS ALBERS  
 CHECKED BY: KRIS ALBERS  
 REVISED BY: [ ] DATE REVISED: [ ]

**CONSTRUCTION AREA SIGNS**

**CS-2**

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

DATE PLOTTED => 13-FEB-2015  
 TIME PLOTTED => 15:16

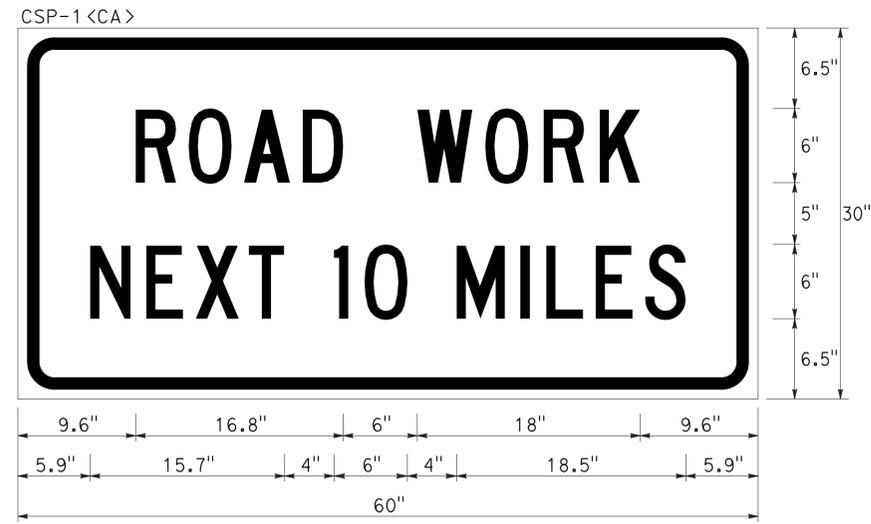
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	NeV	49	0.0/9.6, 11.1/R14.4	24	58

*Kris M. Albers* 2-17-15  
REGISTERED CIVIL ENGINEER DATE

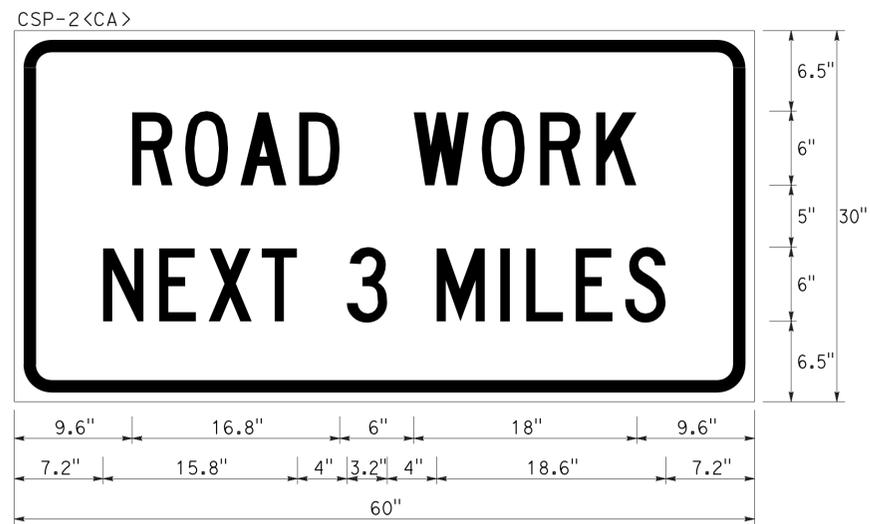
2-17-15  
PLANS APPROVAL DATE

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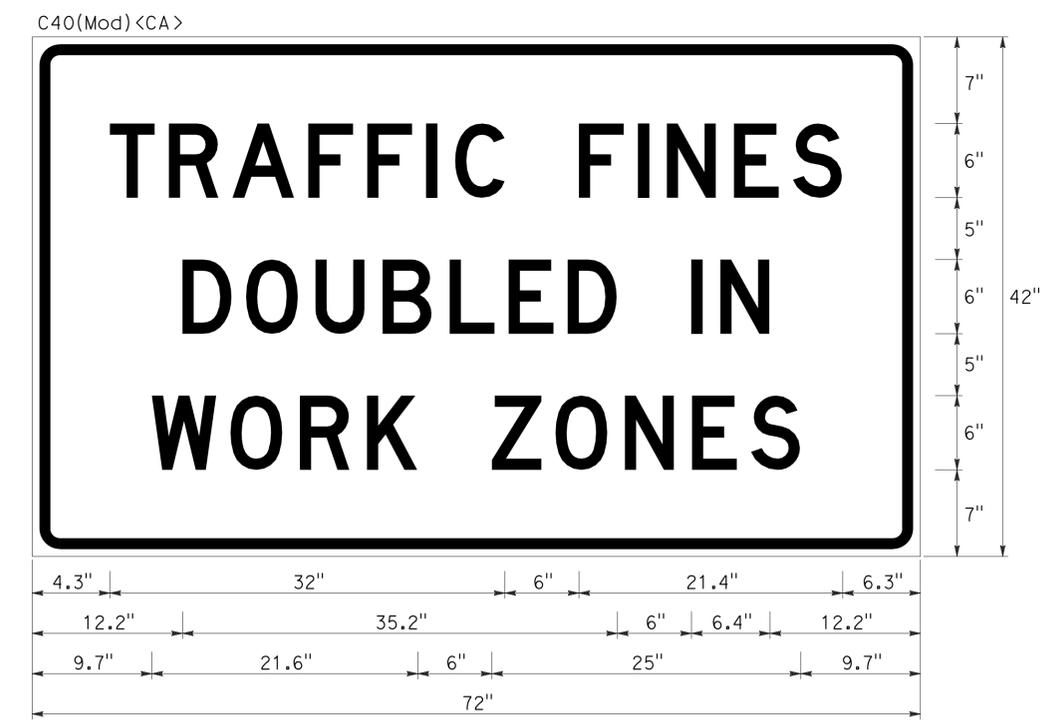
REGISTERED PROFESSIONAL ENGINEER  
KRIS M. ALBERS  
No. 49986  
Exp. 6-30-15  
CIVIL  
STATE OF CALIFORNIA



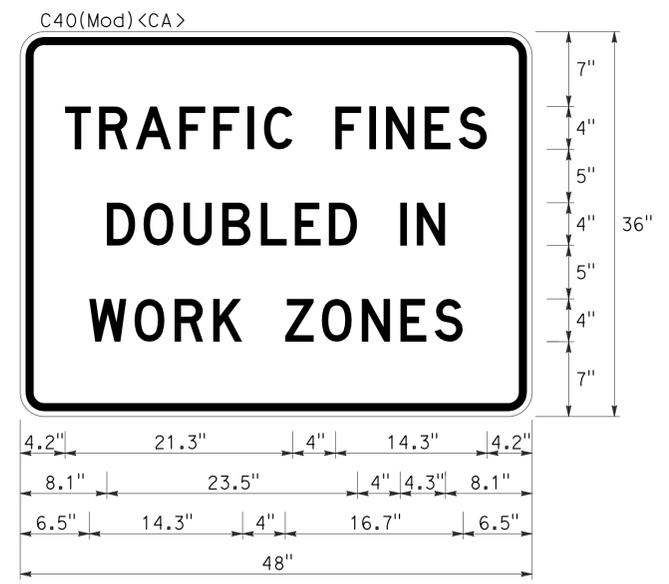
1" BORDER WITH 3" RADIUS and  $\frac{3}{4}$ " INDENT  
ORANGE BACKGROUND WITH  
BLACK LEGEND AND BORDER  
"ROAD WORK" C  
"NEXT 9 MILES" C



1" BORDER WITH 3" RADIUS and  $\frac{3}{4}$ " INDENT  
ORANGE BACKGROUND WITH  
BLACK LEGEND AND BORDER  
"ROAD WORK" C  
"NEXT 9 MILES" C



$\frac{7}{8}$ " BORDER WITH  $2\frac{1}{4}$ " RADIUS and  $\frac{5}{8}$ " INDENT  
RETROREFLECTIVE WHITE BACKGROUND  
WITH BLACK LEGEND AND BORDER  
"TRAFFIC FINES" D  
"DOUBLED IN" D  
"WORK ZONES" D



$\frac{3}{4}$ " BORDER WITH  $2\frac{1}{4}$ " RADIUS and  $\frac{1}{2}$ " INDENT  
RETROREFLECTIVE WHITE BACKGROUND  
WITH BLACK LEGEND AND BORDER  
"TRAFFIC FINES" D  
"DOUBLED IN" D  
"WORK ZONES" D

**SIGN DETAILS**

**CONSTRUCTION AREA SIGNS**

**CS-3**

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	REVISOR	DATE
TRAFFIC	NARAYAN SELWAL	JACK KEMMERLY	
		KRIS ALBERS	
	CHECKED BY	DESIGNED BY	

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	25	58

KRIS M. ALBERS 2-17-15  
 REGISTERED CIVIL ENGINEER DATE  
 2-17-15  
 PLANS APPROVAL DATE  
 No. 49986  
 Exp. 6-30-15  
 CIVIL  
 STATE OF CALIFORNIA

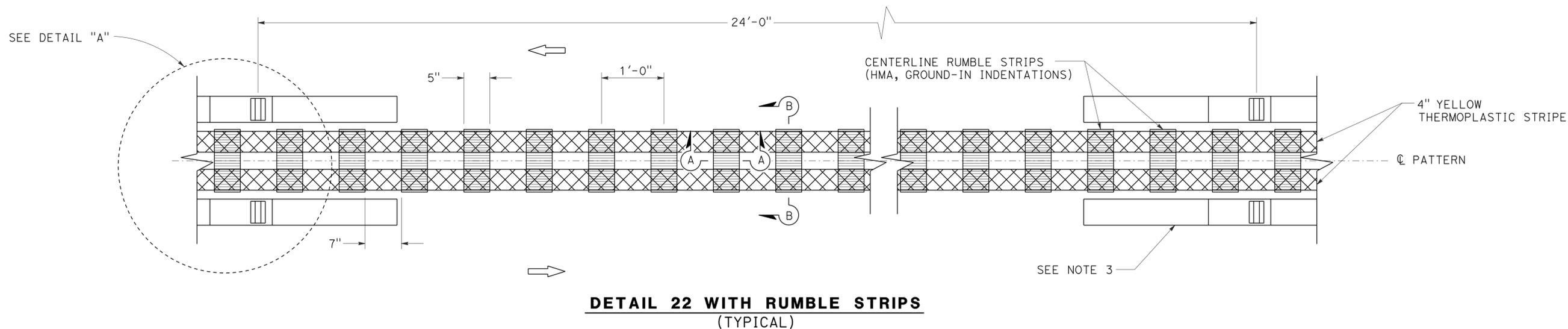
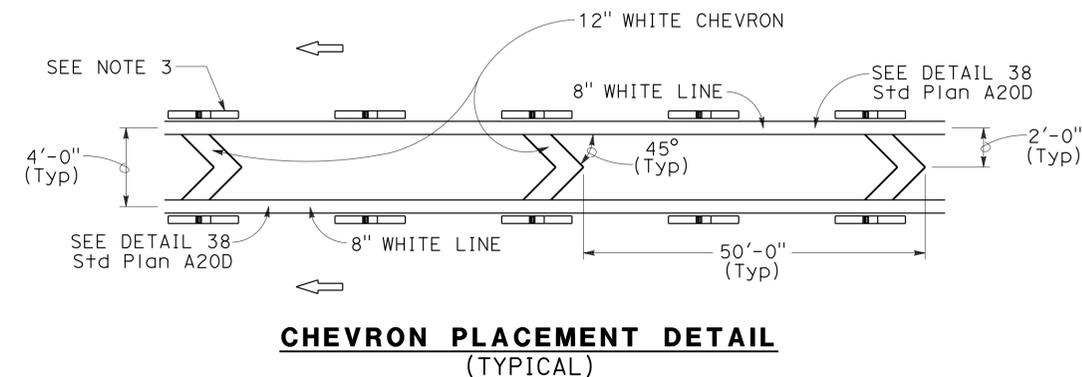
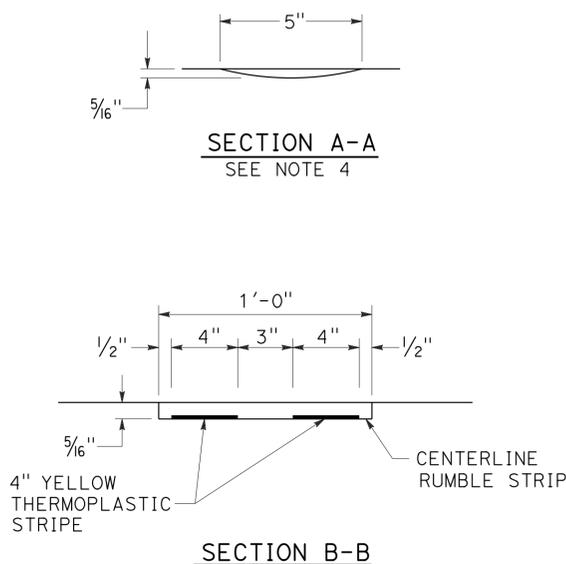
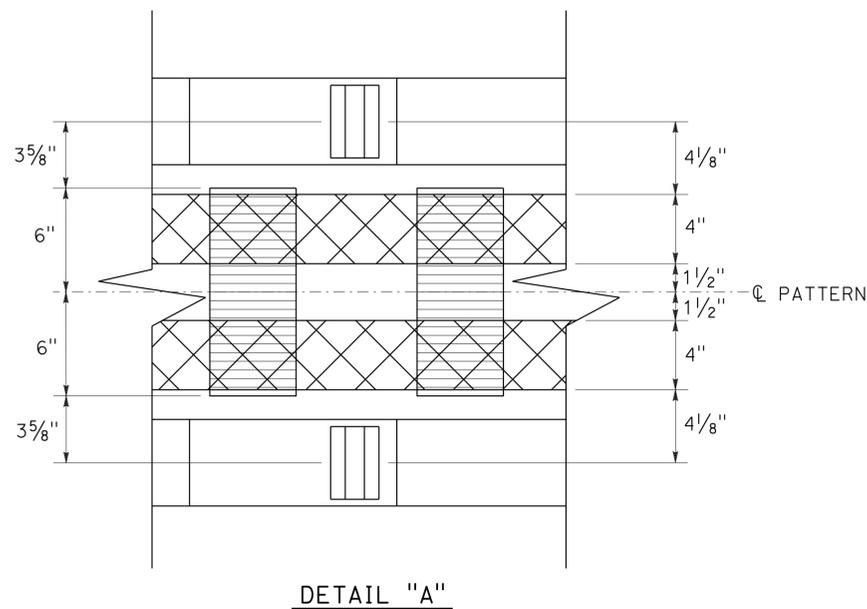
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 COPIES OF THIS PLAN SHEET.

**NOTES:**

- CENTERLINE RUMBLE STRIP SHALL BE CONSTRUCTED PRIOR TO INSTALLING FINAL TRAFFIC STRIPES.
- FOR ADDITIONAL RUMBLE STRIP INFORMATION, SEE CONSTRUCTION DETAILS SHEETS.
- FOR ADDITIONAL RECESSED RETROREFLECTIVE PAVEMENT MARKER INFORMATION, SEE STANDARD PLAN A20D.
- THE 4" YELLOW THERMOPLASTIC TRAFFIC STRIPE IS NOT SHOWN IN SECTION A-A.

**LEGEND**

-  TYPE D TWO-WAY YELLOW PAVEMENT MARKER (RETROREFLECTIVE-RECESSED)
-  TYPE G TWO-WAY YELLOW PAVEMENT MARKER (RETROREFLECTIVE-RECESSED)



**PAVEMENT DELINEATION  
DETAILS**  
NO SCALE

**PDD-1**

APPROVED FOR PAVEMENT DELINEATION WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 TRAFFIC  
 FUNCTIONAL SUPERVISOR: NARAYAN SELWAL  
 JACK KEMMERLY  
 KRIS ALBERS  
 REVISOR: JACK KEMMERLY  
 DATE: 7/2/2010  
 CHECKED BY: KRIS ALBERS  
 DESIGNED BY: JACK KEMMERLY  
 CALCULATED BY: KRIS ALBERS

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	26	58

*Kris M. Albers* 2-17-15  
REGISTERED CIVIL ENGINEER DATE

2-17-15  
PLANS APPROVAL DATE

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**THERMOPLASTIC PAVEMENT MARKING (EWNV)**

LOCATION	TYPE I(24') ARROW	TYPE III ARROW	TYPE V ARROW	TYPE VI ARROW	STOP	SIGNAL	AHEAD	BASIC CROSSWALK	12" WHITE CHEVRON	LIMIT LINE	LOCATION TOTAL
	SQFT	SQFT	SQFT	SQFT	SQFT	SQFT	SQFT	SQFT	SQFT	SQFT	SQFT
Nev-49 PM:0.00 TO Nev-49 PM:9.60	403	3,276		252	660	256	248	864	596	1,169	7,724
Nev-49 PM:11.20 TO Nev-49 PM:R14.40		420	165	126	110	64	62			120	1,067
TOTAL											8,791

**PAVEMENT DELINEATION QUANTITIES**

LOCATION	4" THERMOPLASTIC TRAFFIC STRIPE (EWNV)				4" THERMOPLASTIC TRAFFIC STRIPE (EWNV) (BROKEN 36-12)				4" THERMOPLASTIC TRAFFIC STRIPE (EWNV) (BROKEN 12-3)		4" THERMOPLASTIC TRAFFIC STRIPE (EWNV) (BROKEN 6-1)			8" THERMOPLASTIC TRAFFIC STRIPE (EWNV)			PAVEMENT MARKER (RETROREFLECTIVE-RECESSED)			
	DETAIL NUMBER				DETAIL NUMBER				DETAIL NUMBER		DETAIL NUMBER			DETAIL NUMBER			TYPE C	TYPE D	TYPE G	TYPE H
	22	25	27B	32	9	12	14A	32	27C		40			36	36A	38	EA	EA	EA	EA
Nev-49 PM:0.00 TO Nev-49 PM:9.60	114,412		97,278	9,210		41,971		9,210	3,620		110					18,372		5,252	1,640	
Nev-49 PM:11.20 TO Nev-49 PM:R14.40	28,576	14,492	36,345		792	14,353	720		802					1,266	792	1,671	20	1,192	477	302
SUBTOTAL	142,988	14,492	133,623	9,210	792	56,324	720	9,210						1,266	792	20,043	20	6,444	2,117	302
TOTAL	300,313				67,046				4,422		110			22,101			8,883			

**REMOVE THERMOPLASTIC PAVEMENT MARKING**

LOCATION	TYPE I(24') ARROW	TYPE III ARROW	TYPE V ARROW	TYPE VI ARROW	STOP	SIGNAL	AHEAD	BASIC CROSSWALK	12" WHITE CHEVRON	LIMIT LINE	LOCATION TOTAL
	SQFT	SQFT	SQFT	SQFT	SQFT	SQFT	SQFT	SQFT	SQFT	SQFT	SQFT
Nev-49 PM:0.00 TO Nev-49 PM:9.60	403	3,276		252	638	256	248	864	596	1,135	7,668
Nev-49 PM:11.20 TO Nev-49 PM:R14.40		420	165	126	66	64	62			80	983
TOTAL											8,651

**REMOVE THERMOPLASTIC TRAFFIC STRIPE**

LOCATION	DETAIL NUMBER			LOCATION TOTAL
	36	36A	38	
Nev-49 PM:0.00 TO Nev-49 PM:9.60				36,744
Nev-49 PM:11.20 TO Nev-49 PM:R14.40	2,532	1,584	3,322	7,438
TOTAL				44,182

**PAVEMENT DELINEATION  
QUANTITIES**

**PDQ-1**

**NOTE:**

1. EWNV = ENHANCED WET NIGHT VISIBILITY.
2. BASIC CROSSWALKS SHALL BE 1'-0" WIDE.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
FUNCTIONAL SUPERVISOR: NARAYAN SELWAL  
CALCULATED/DESIGNED BY: JACK KEMMERLY  
CHECKED BY: KRIS ALBERS  
REVISOR: KRIS ALBERS  
REVISIONS: 2-17-15

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	27	58

*James M. Ferreira* 2-17-15  
 REGISTERED CIVIL ENGINEER DATE  
 2-17-15  
 PLANS APPROVAL DATE

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### ROADWAY QUANTITIES

DESCRIPTION	POST MILE	SIDE	COLD PLANE ASPHALT CONCRETE PAVEMENT	SHOULDER BACKING	ASPHALTIC EMULSION (FOG SEAL COAT)	PREPAVING GRINDING DAY	RUBBERIZED HOT MIX ASPHALT-OPEN GRADED (OPEN GRADED FRICTION COURSE)	TACK COAT
			SQYD	TON	TON	EA	TON	TON
MAINLINE	0.0 - 9.6 & 11.1 - R14.4	BOTH		250	60	10	27,500	220
MAINLINE SHOULDERS	0.0 - 9.6 & 11.1 - R14.4	BOTH	42,270					
MAINLINE START CONFORM	0.00 - 0.02	BOTH	740					
MAINLINE BEGIN BRIDGE	3.59 - 3.61	BOTH	335					
MAINLINE END BRIDGE	3.64 - 3.66	BOTH	335					
MAINLINE MIDDLE CONFORM	9.58 - 9.60	BOTH	470					
MAINLINE MIDDLE CONFORM	11.10 - 11.12	BOTH	350					
MAINLINE BELOW OC	R13.64 - R13.68	BOTH	1740					
MAINLINE END CONFORM	R14.38 - R14.40	BOTH	760					
<b>TOTAL</b>			47,000	250	60	10	27,500	220

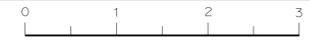
### MIDWEST GUARDRAIL SYSTEM

DESCRIPTION	POST MILE	SIDE L OR R	LAYOUT	TREATED WOOD WASTE	REMOVE GUARDRAIL	OBJECT MARKER (TYPE L-1)	MIDWEST GUARDRAIL SYSTEM (WOOD POST)	END ANCHOR ASSEMBLY (TYPE SFT)	ALTERNATIVE IN-LINE TERMINAL SYSTEM	ALTERNATIVE FLARED TERMINAL SYSTEM
				LB	LF	EA	LF	EA	EA	EA
MAINLINE	2.10 - 2.15	R	TYPE 11B	3100	240	1	170	1		1
MAINLINE	8.12 - 8.30	L	TYPE 11E	12,270	950	1	880			2
MAINLINE	9.06 - 9.20	R	TYPE 11E	8910	690	1	620			2
MAINLINE	9.24 - 9.33	R	TYPE 11E	5810	450	1	380			2
MAINLINE	11.40 - 11.50	L	TYPE 11H	6460	500		430		2	
MAINLINE	12.57 - 12.61	L	TYPE 11E	2070	160	1	90			2
MAINLINE	12.58 - 12.68	R	TYPE 11H	6840	530	1	460		1	1
MAINLINE	12.77 - 12.82	L	TYPE 11E	3100	240	1	170			2
MAINLINE	12.82 - 12.92	R	TYPE 11G	6840	530	1	460			2
<b>TOTAL</b>				55,400	4,290	8	3,660	1	3	14

### SUMMARY OF QUANTITIES

Q-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** MAINTENANCE DESIGN  
 FUNCTIONAL SUPERVISOR: RONALD S. SYKES  
 CALCULATED/DESIGNED BY: JIM FERREIRA  
 CHECKED BY: RONALD S. SYKES  
 REVISED BY: JIM FERREIRA  
 DATE REVISED:



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	28	58

*James M. Ferreira* 2-17-15  
REGISTERED CIVIL ENGINEER DATE

2-17-15  
PLANS APPROVAL DATE

JIM FERREIRA  
No. C48257  
Exp. 6-30-16  
CIVIL  
STATE OF CALIFORNIA

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### DIKE

DESCRIPTION	POST MILE	SIDE L OR R	REMOVE ASPHALT CONCRETE DIKE LF	PLACE HOT MIX ASPHALT DIKE				HOT MIX ASPHALT (TYPE A) TON
				(TYPE A)	(TYPE C)	(TYPE E)	(TYPE F)	
				LF	LF	LF	LF	
MAINLINE	0.32 - 0.44	R	620	620				16.74
MAINLINE	2.04 - 2.10	R	320					8.32
MAINLINE	2.10 - 2.11	R	60		60			0.46
MAINLINE	2.11 - 2.15	R	180				180	2.38
MAINLINE	2.14 - 2.17	R	120			120		3.12
MAINLINE	2.32 - 2.40	L	430			430		11.18
MAINLINE	2.40 - 2.42	L	110				110	1.45
MAINLINE	2.70 - 2.71	R	40			40		1.04
MAINLINE	3.30 - 3.51	L	1110	1110				29.97
MAINLINE	3.86 - 3.93	R	380			380		9.88
MAINLINE	3.95 - 4.02	L	350	350				9.45
MAINLINE	4.22 - 4.29	L	350	350				9.45
MAINLINE	4.38 - 4.43	L	270				270	3.56
MAINLINE	4.43 - 4.60	L	900	900				24.30
MAINLINE	5.20 - 5.34	L	740	740				19.98
MAINLINE	5.25 - 5.33	R	440			440		11.44
MAINLINE	5.36 - 5.41	L	270	270				7.29
MAINLINE	5.65 - 5.81	L	840	840				22.68
MAINLINE	6.58 - 7.16	R	3040			3040		79.04
MAINLINE	7.17 - 7.31	R	720			720		18.72
MAINLINE	8.12 - 8.30	L	950				950	12.54
MAINLINE	8.30 - 8.46	L	845	900				24.30
MAINLINE	8.35 - 8.43	R	400	400				10.80
MAINLINE	8.47 - 8.51	R	190			190		4.94
MAINLINE	8.52 - 8.56	R	190	190				5.13
MAINLINE	8.57 - 8.58	R	30			30		0.78
MAINLINE	8.90 - 9.00	R	530			530		13.78
MAINLINE	9.05 - 9.07	R	75		75			0.57
MAINLINE	9.06 - 9.20	R					690	9.11
MAINLINE	9.23 - 9.25	R	75		75			0.57
MAINLINE	9.25 - 9.33	R	400				400	5.28
MAINLINE	11.40 - 11.49	L	450				450	5.94
MAINLINE	11.49 - 11.51	L	75		75			0.57
MAINLINE	11.63 - 11.65	R	75		75			0.57
MAINLINE	11.64 - 11.69	R	240				240	3.17
MAINLINE	12.30 - 12.36	R	320				320	2.43
MAINLINE	12.40 - 12.55	L	800	880				23.76
MAINLINE	12.42 - 12.60	R	930	930				25.11
MAINLINE	12.57 - 12.59	R	75		75			0.57
MAINLINE	12.57 - 12.61	L	150			150		3.90
MAINLINE	12.58 - 12.68	R	500				500	3.80
MAINLINE	12.77 - 12.81	L	210				210	2.77
MAINLINE	12.81 - 12.82	L	75		75			0.57
<b>TOTAL</b>			18,875	8,480	510	6,390	4,320	451.41

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** MAINTENANCE DESIGN  
 FUNCTIONAL SUPERVISOR: RONALD S. SYKES  
 CALCULATED/DESIGNED BY: JIM FERREIRA  
 CHECKED BY: RONALD S. SYKES  
 REVISED BY: JIM FERREIRA  
 DATE REVISED:

## SUMMARY OF QUANTITIES

Q-2

LAST REVISION DATE PLOTTED => 13-FEB-2015  
 00-00-00 TIME PLOTTED => 12:19

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	29	58

*James M. Ferreira* 2-17-15  
 REGISTERED CIVIL ENGINEER DATE

2-17-15  
 PLANS APPROVAL DATE

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 OR AGENTS SHALL NOT BE RESPONSIBLE FOR  
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### TEMPORARY FENCE (TYPE ESA)

DESCRIPTION	POST MILE	SIDE	TEMPORARY FENCE (TYPE ESA)
			LF
MAINLINE	0.2	RIGHT	470
MAINLINE	5.8	LEFT	530
TOTAL			1,000

### RUMBLE STRIP QUANTITIES

DESCRIPTION	POST MILE	SIDE	SHOULDER RUMBLE STRIP (HMA, GROUND-IN INDENTATIONS)	CENTERLINE RUMBLE STRIP (HMA, GROUND-IN INDENTATIONS)
			STA	STA
MAINLINE LEFT SHOULDER	0.0 - 9.6 & 11.1 - R13.3	LEFT	680	
MAINLINE CENTERLINE	2.2 - 9.6 & 11.1 - R13.3	CENTER		570
MAINLINE RIGHT SHOULDER	0.0 - 9.6 & 11.1 - R13.3	RIGHT	680	
TOTAL			1,360	570

### TEMPORARY DRAINAGE INLET PROTECTION

DESCRIPTION	POST MILE	SIDE	DESCRIPTION	TEMPORARY DRAINAGE INLET PROTECTION
				EA
MAINLINE	2.2	LEFT	OVERSIDE DRAIN	1
MAINLINE	2.8	LEFT	OVERSIDE DRAIN	1
MAINLINE	3.5	LEFT	OVERSIDE DRAIN	1
MAINLINE	3.5	LEFT	OVERSIDE DRAIN	1
MAINLINE	4.5	LEFT	OVERSIDE DRAIN	1
MAINLINE	5.8	LEFT	OVERSIDE DRAIN	1
MAINLINE	5.9	LEFT	OVERSIDE DRAIN	1
MAINLINE	9.0	LEFT	OVERSIDE DRAIN	1
MAINLINE	9.6	LEFT	OVERSIDE DRAIN	1
TOTAL				9

### SUMMARY OF QUANTITIES

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** MAINTENANCE DESIGN  
 FUNCTIONAL SUPERVISOR: RONALD S. SYKES  
 CALCULATED/DESIGNED BY: JIM FERREIRA  
 CHECKED BY: RONALD S. SYKES  
 REVISED BY: JIM FERREIRA  
 DATE REVISED:

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

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

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

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	30	58

*Grace M. Tsushima*  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

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

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

TO ACCOMPANY PLANS DATED 2-17-15

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

**TABLE A**

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

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

**TABLE B**

SYMBOL USED	DEFINITIONS
ksi	KIPS PER SQUARE INCH
ksf	KIPS PER SQUARE FOOT
psi	POUNDS PER SQUARE INCH
psf	POUNDS PER SQUARE FOOT
lb/ft <sup>3</sup> , pcf	POUNDS PER CUBIC FOOT
tsf	TONS PER SQUARE FOOT
mph, MPH *	MILES PER HOUR
∅	NOMINAL DIAMETER
oz	OUNCE
lb	POUND
kíp	1,000 POUNDS
cal	CALORIE
ft	FOOT OR FEET
gal	GALLON

\* For use on a sign panel only

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**ABBREVIATIONS  
(SHEET 2 OF 2)**

NO SCALE

RSP A10B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN A10B  
DATED MAY 20, 2011 - PAGE 2 OF THE STANDARD PLANS BOOK DATED 2010.

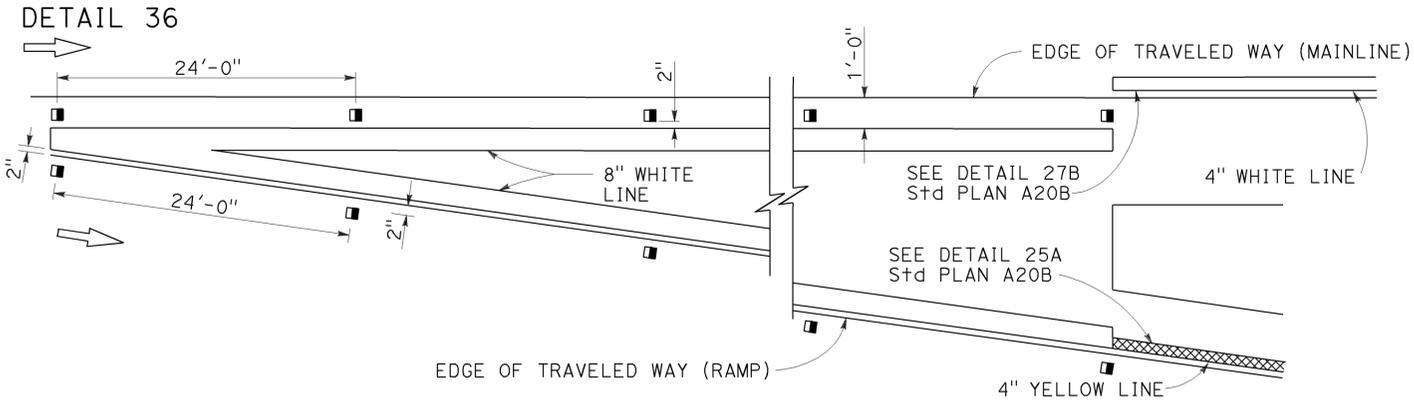
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	31	58

REGISTERED CIVIL ENGINEER  
 Roberta L. McLaughlin  
 No. C40375  
 Exp. 3-31-15  
 CIVIL  
 STATE OF CALIFORNIA

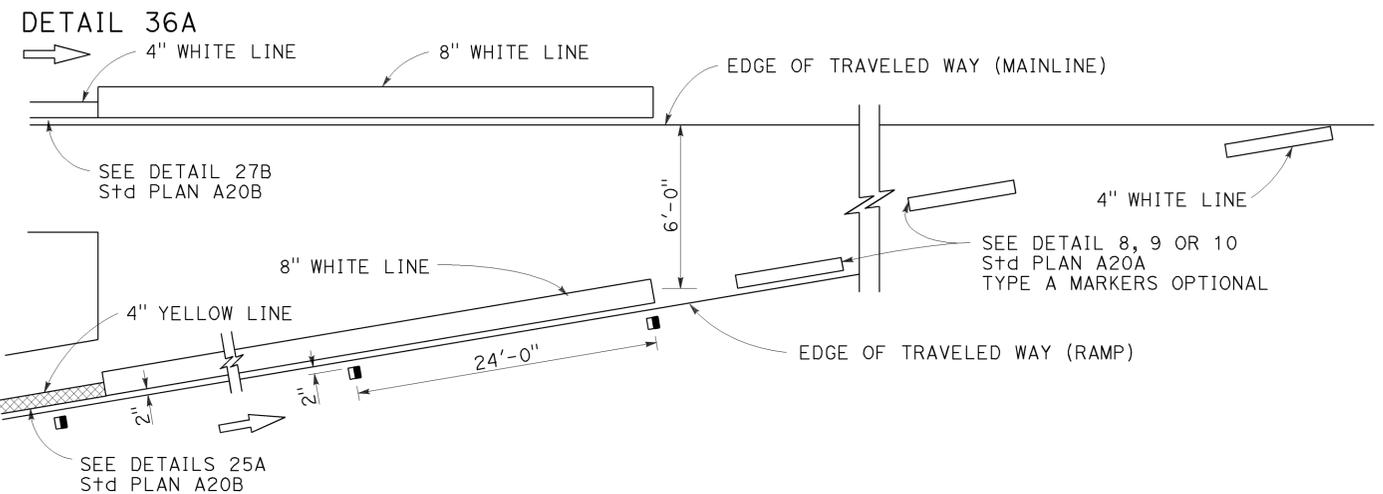
July 19, 2013  
 PLANS APPROVAL DATE

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

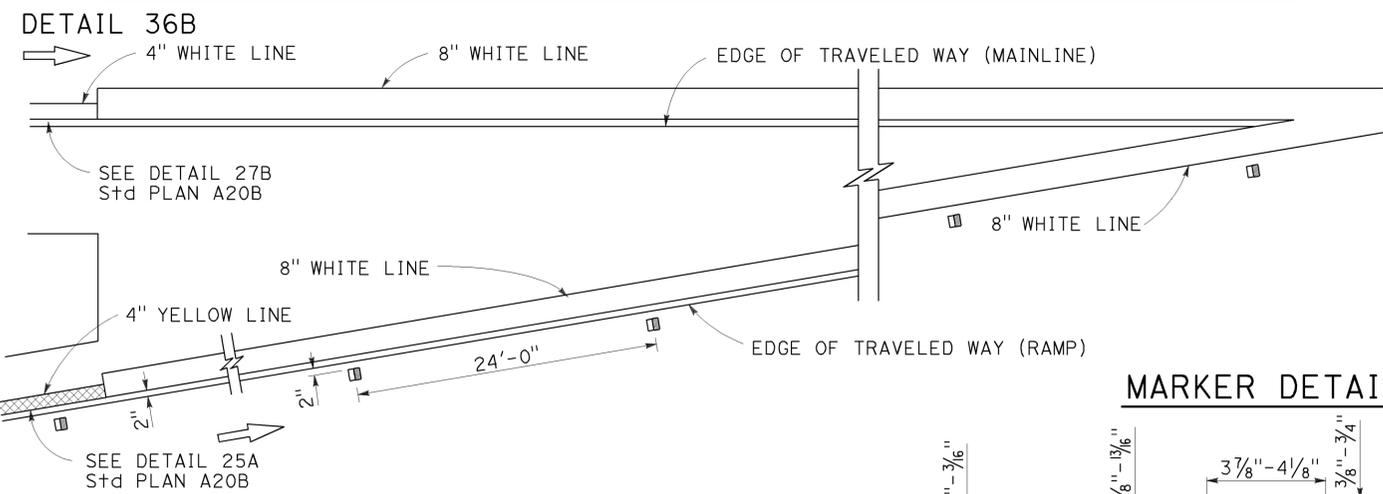
### EXIT RAMP NEUTRAL AREA (GORE) TREATMENT



### ENTRANCE RAMP NEUTRAL AREA (MERGE) TREATMENT



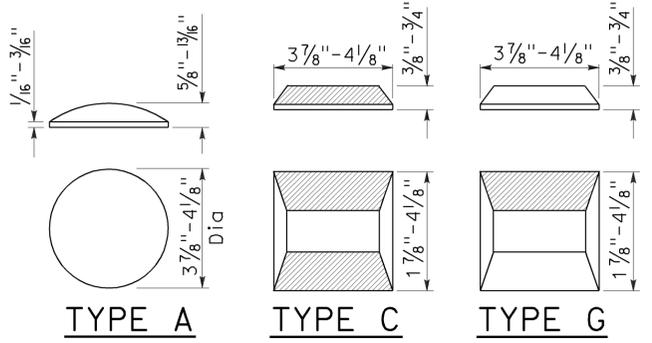
### ENTRANCE RAMP NEUTRAL AREA (ACCELERATION LANE) TREATMENT



### MARKER DETAILS

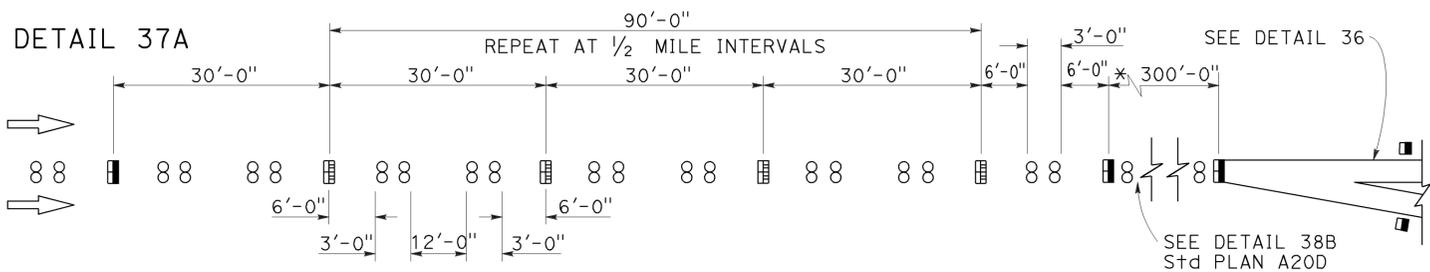
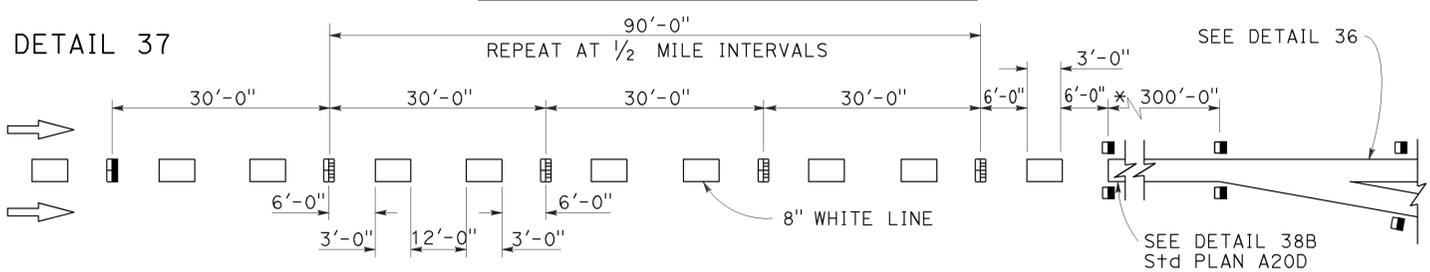
#### LEGEND:

- MARKERS
- TYPE A WHITE NON-REFLECTIVE
  - ◻ TYPE C RED-CLEAR RETROREFLECTIVE
  - TYPE G ONE-WAY CLEAR RETROREFLECTIVE



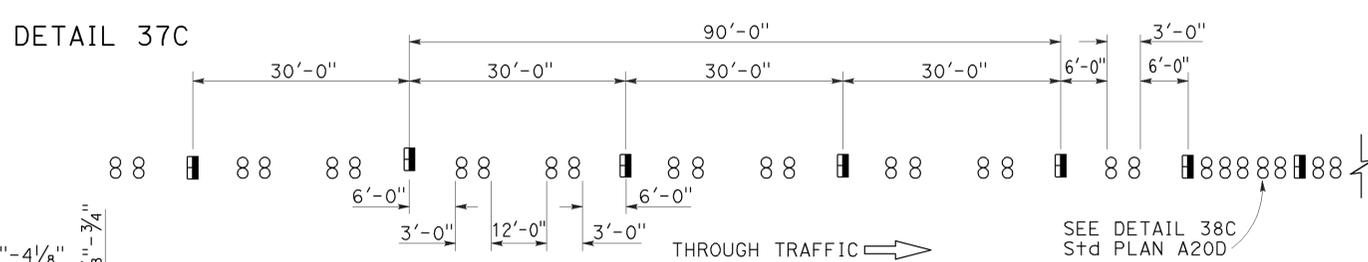
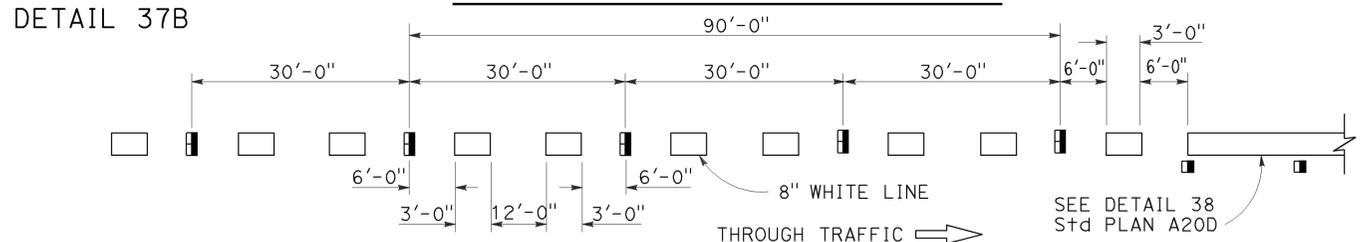
RETROREFLECTIVE FACE

### LANE DROP AT EXIT RAMP



\* The solid channelizing line shown may be omitted on short auxiliary lanes where weaving length is critical.

### LANE DROP AT INTERSECTIONS

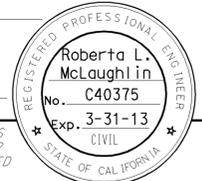


STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**PAVEMENT MARKERS  
 AND TRAFFIC LINE  
 TYPICAL DETAILS**  
 NO SCALE

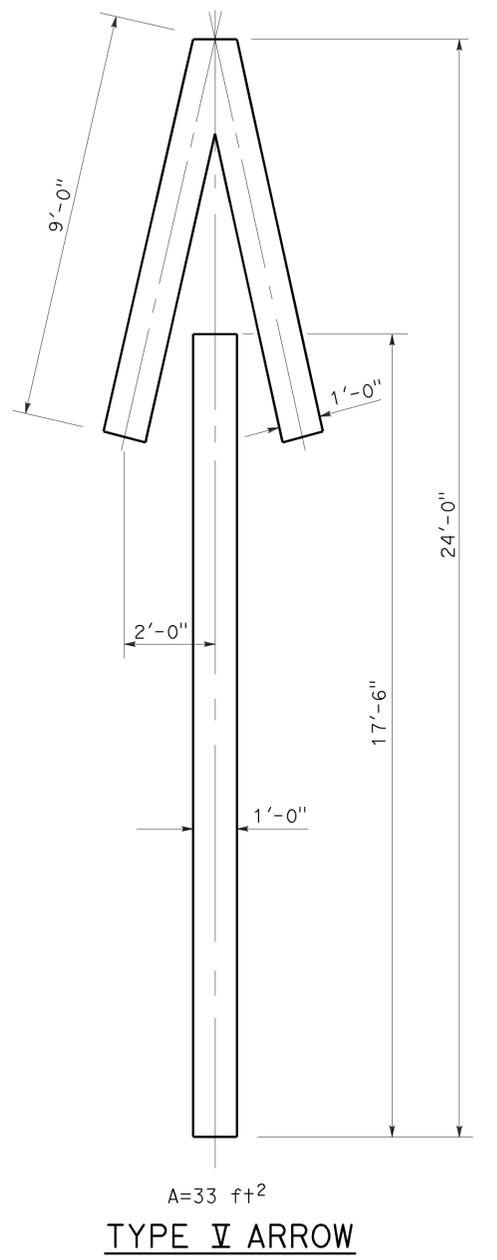
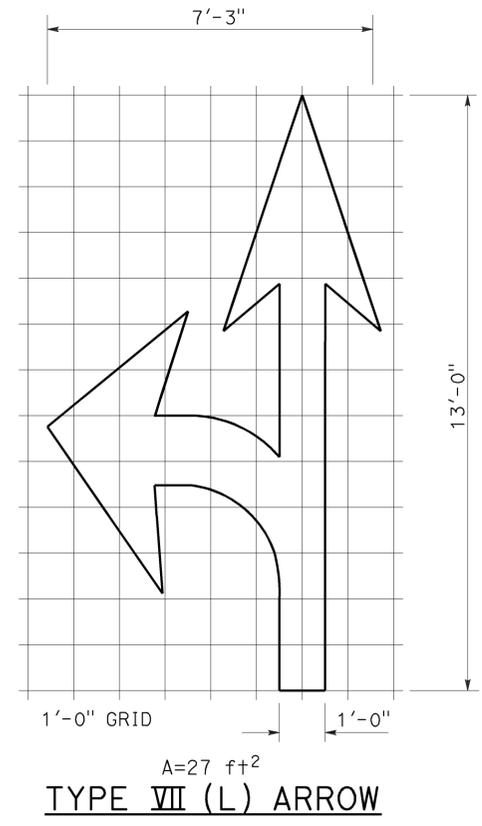
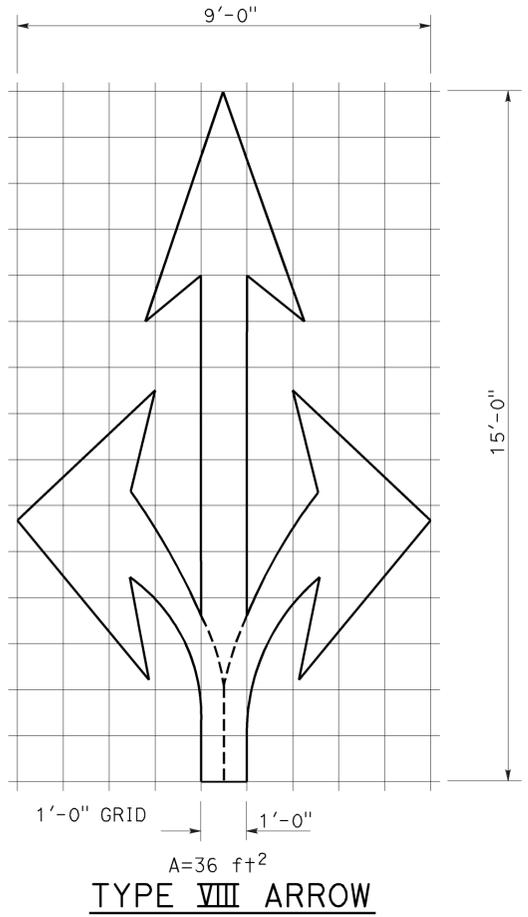
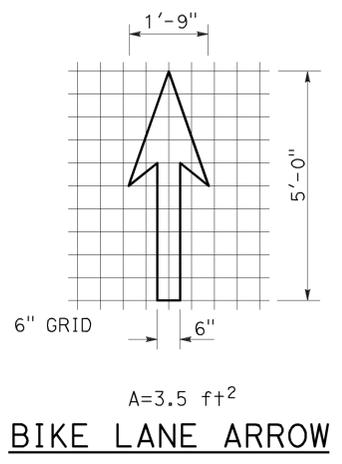
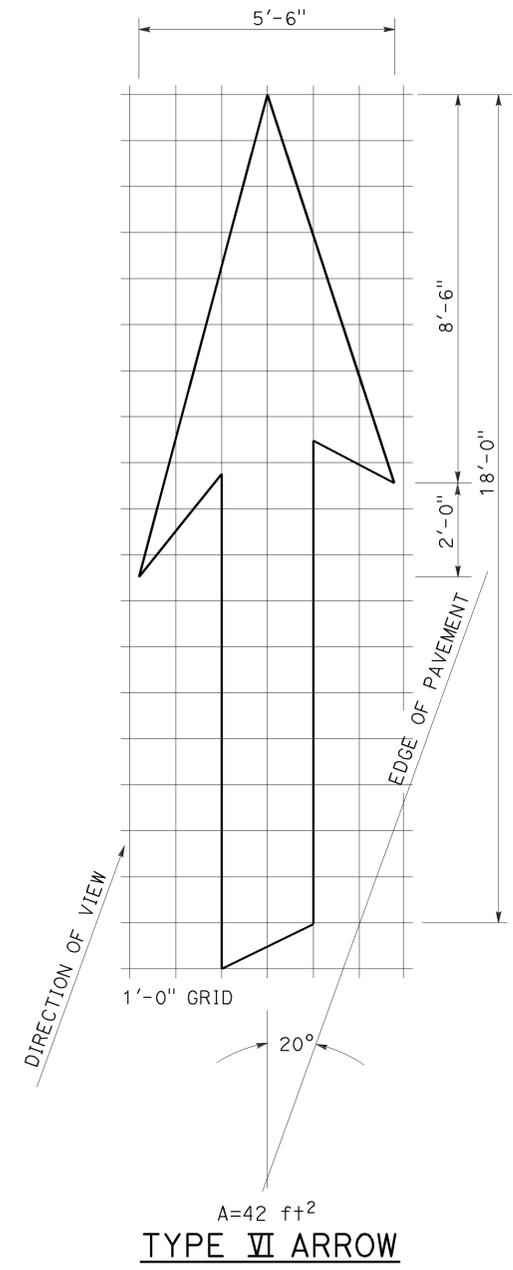
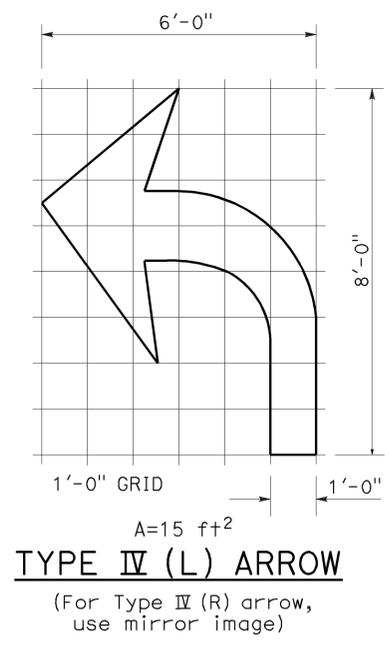
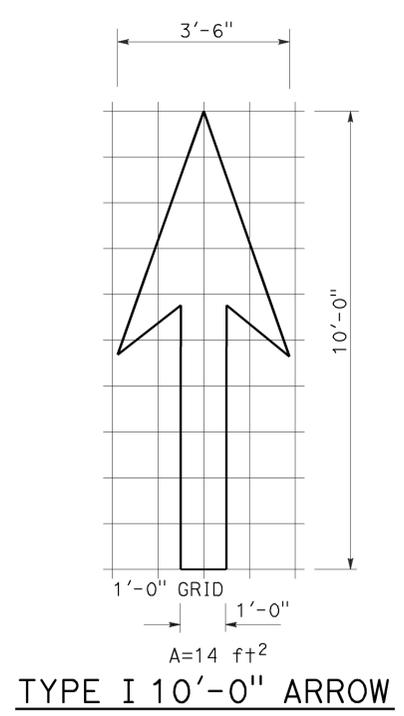
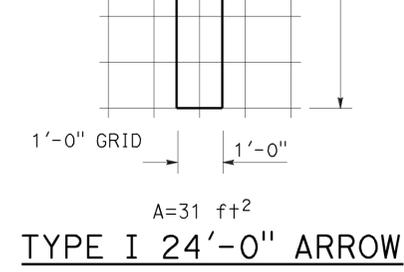
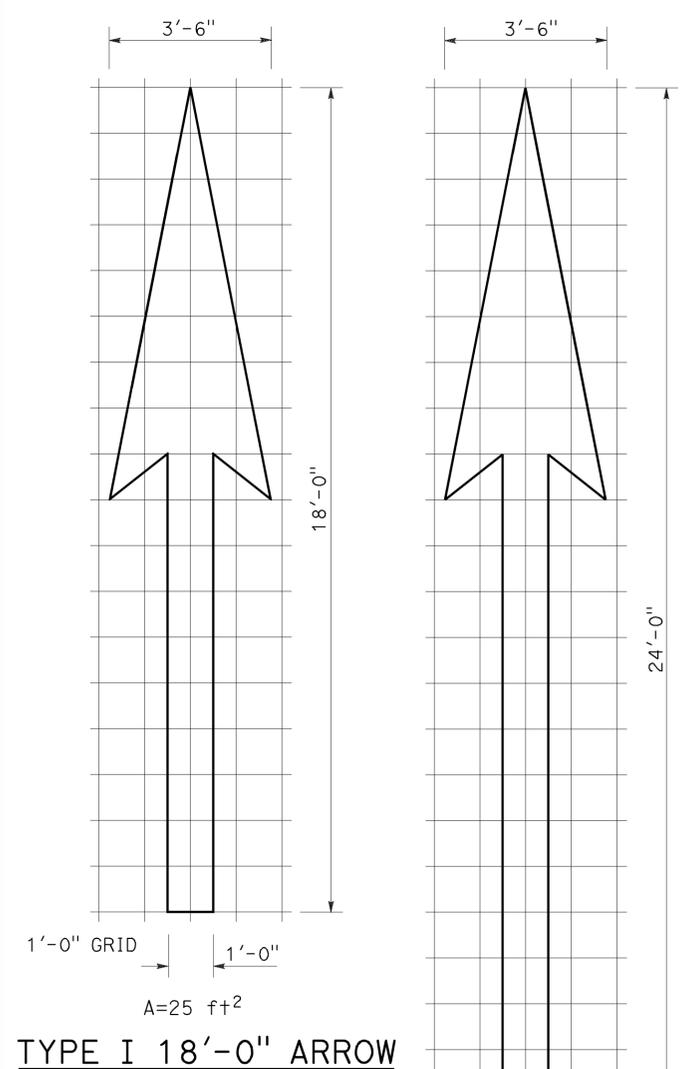
RSP A20C DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN A20C  
 DATED MAY 20, 2011 - PAGE 11 OF THE STANDARD PLANS BOOK DATED 2010.

### REVISED STANDARD PLAN RSP A20C

2010 REVISED STANDARD PLAN RSP A20C

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	32	58
 REGISTERED CIVIL ENGINEER					
April 20, 2012 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>					

TO ACCOMPANY PLANS DATED 2-17-15

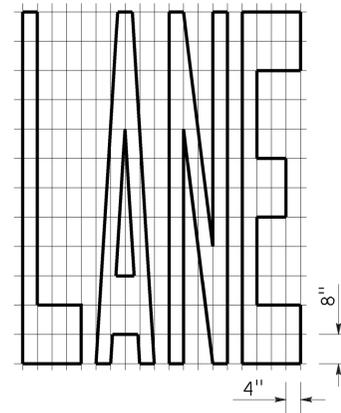


**NOTE:**  
Minor variations in dimensions may be accepted by the Engineer.

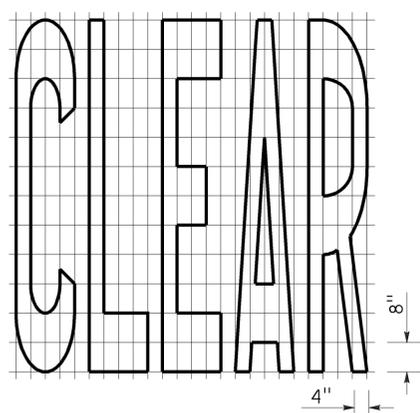
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**PAVEMENT MARKINGS  
ARROWS**  
NO SCALE

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

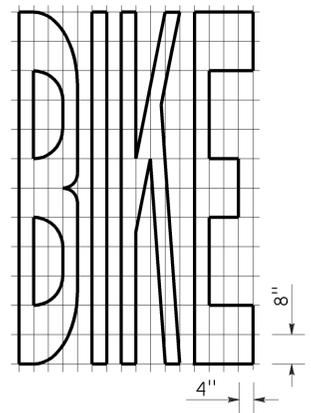
TO ACCOMPANY PLANS DATED 2-17-15



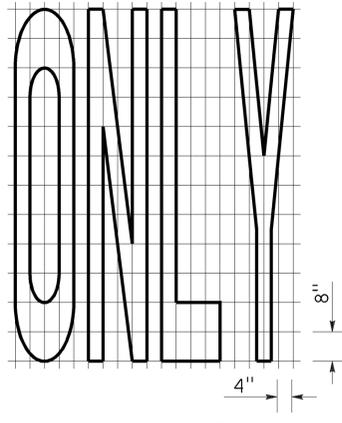
A=24 ft<sup>2</sup>



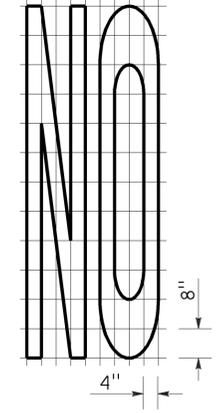
A=27 ft<sup>2</sup>



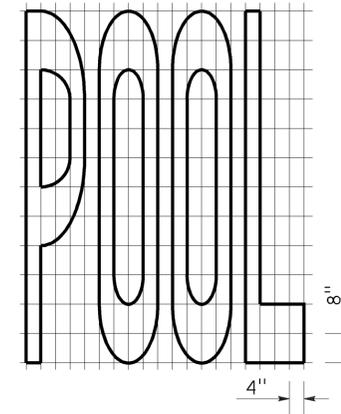
A=21 ft<sup>2</sup>



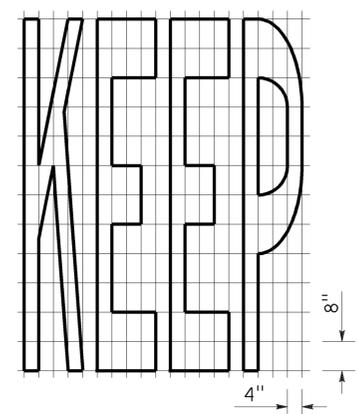
A=22 ft<sup>2</sup>



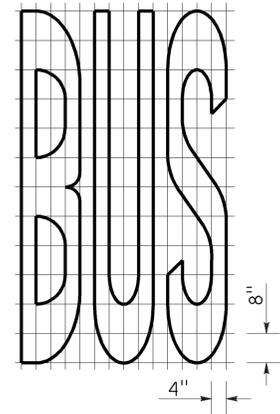
A=14 ft<sup>2</sup>



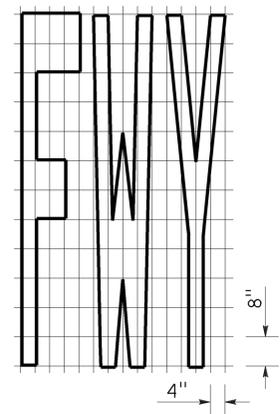
A=23 ft<sup>2</sup>



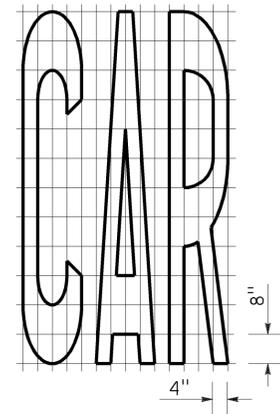
A=24 ft<sup>2</sup>



A=20 ft<sup>2</sup>

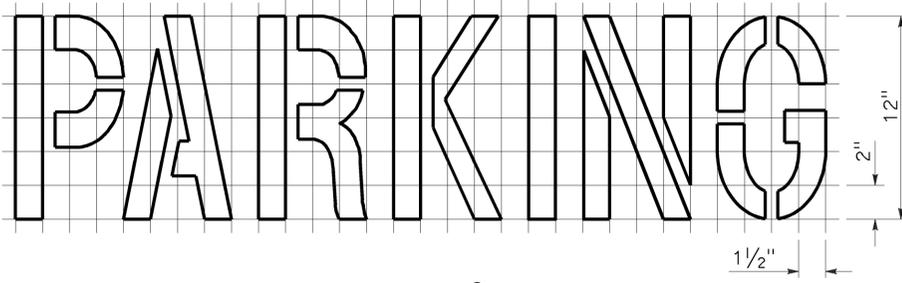
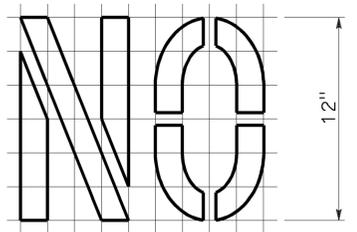


A=16 ft<sup>2</sup>

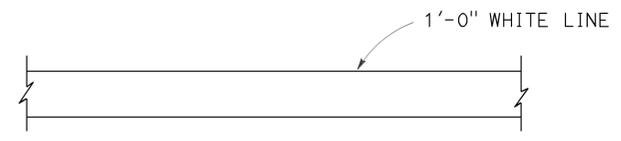


A=17 ft<sup>2</sup>

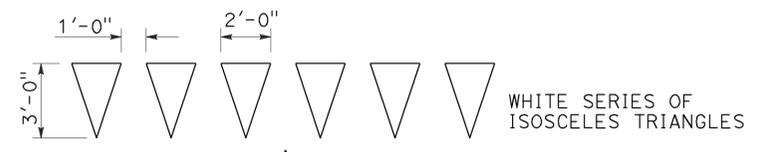
WORD MARKINGS			
ITEM	ft <sup>2</sup>	ITEM	ft <sup>2</sup>
LANE	24	NO	14
POOL	23	BIKE	21
CAR	17	BUS	20
CLEAR	27	ONLY	22
KEEP	24	FWY	16



A=2 ft<sup>2</sup>  
See Notes 6 and 7



LIMIT LINE (STOP LINE)



YIELD LINE

**NOTES:**

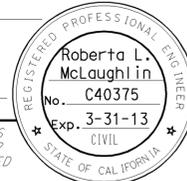
1. If a message consists of more than one word, it should read "UP", i.e., the first word should be nearest the driver.
2. The space between words should be at least four times the height of the characters for low speed roads, but not more than ten times the height of the characters. The space may be reduced appropriately where there is limited space because of local conditions.
3. Minor variations in dimensions may be accepted by the Engineer.
4. Portions of a letter, number or symbol may be separated by connecting segments not to exceed 2" in width.
5. The words "NO PARKING" pavement marking is to be used for parking facilities. For typical locations of markings, see Standard Plans A90A and A90B.
6. The words "NO PARKING", shall be painted in white letters no less than 1'-0" high on a contrasting background and located so that it is visible to traffic enforcement officials.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**PAVEMENT MARKINGS  
WORDS, LIMIT AND YIELD LINES**  
NO SCALE

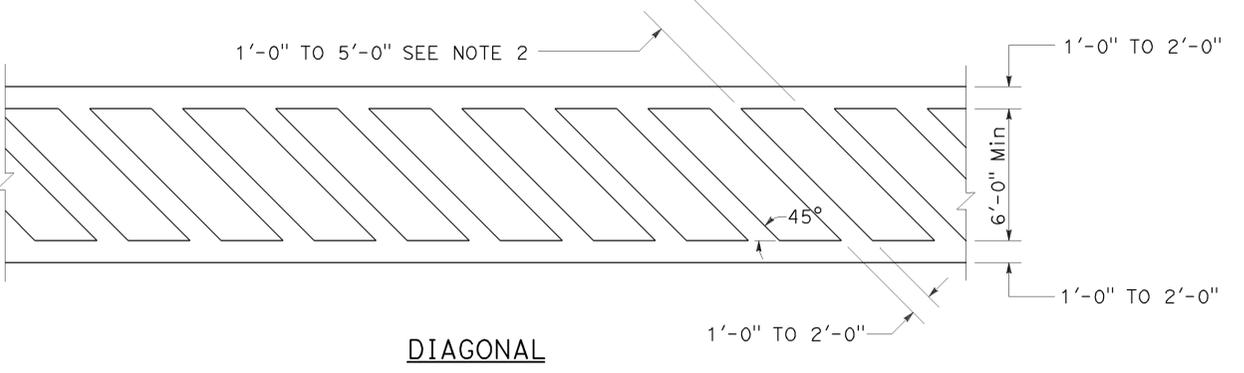
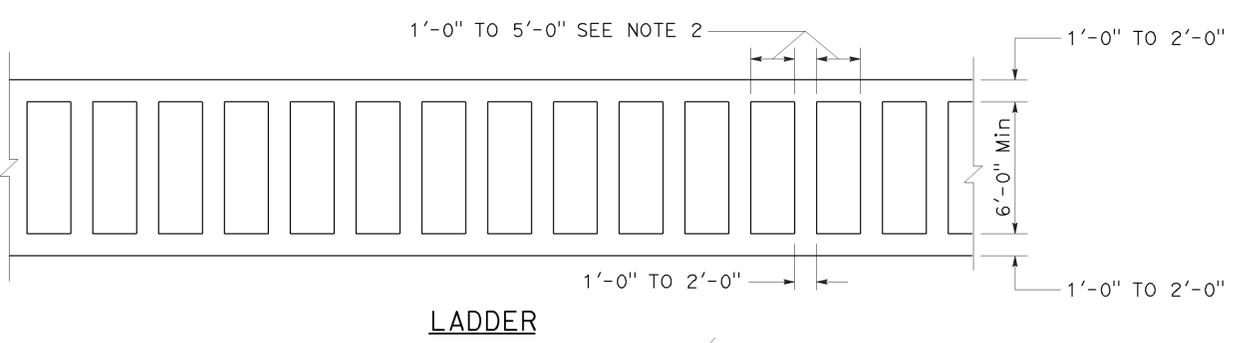
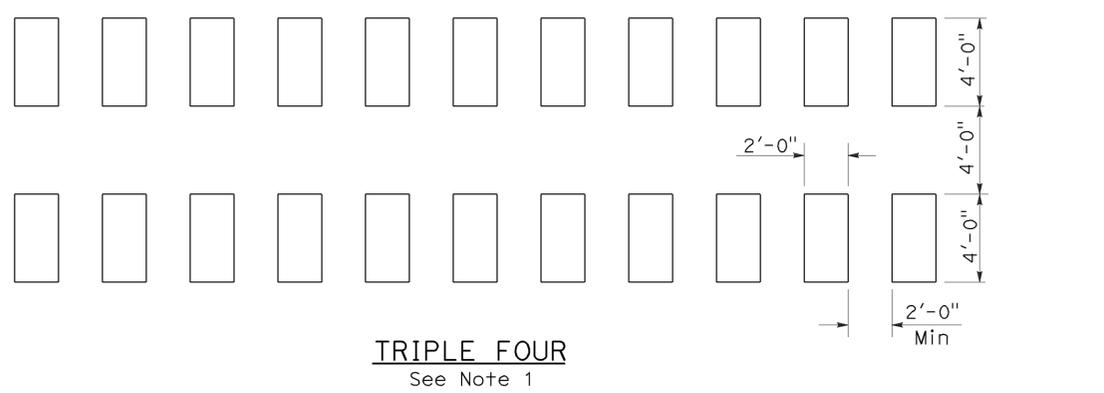
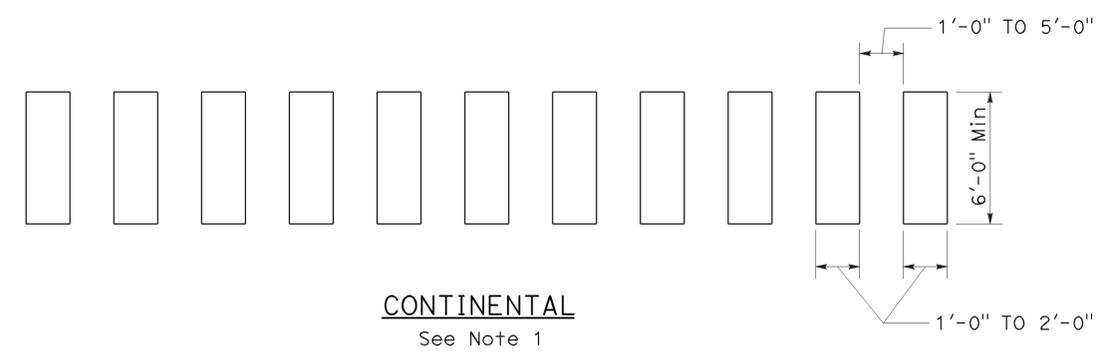
RSP A24E DATED JULY 20, 2012 SUPERSEDES STANDARD PLAN A24E  
DATED MAY 20, 2011 - PAGE 17 OF THE STANDARD PLANS BOOK DATED 2010.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Nev	49	0.0/9.6 11.1/R14.4	34	58

 REGISTERED CIVIL ENGINEER		
July 20, 2012 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>		

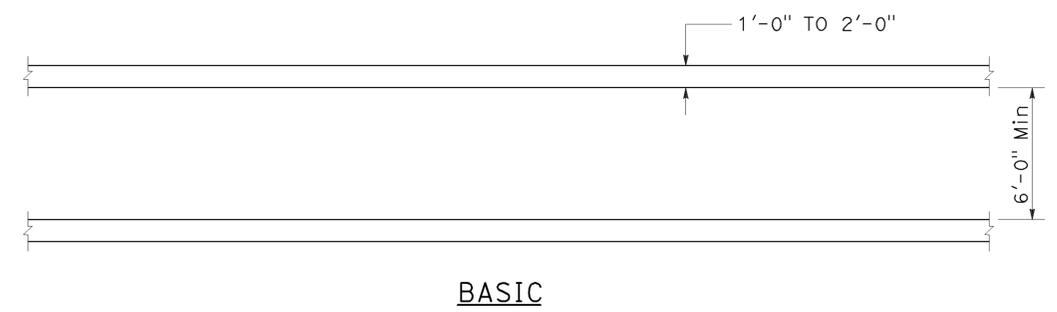
TO ACCOMPANY PLANS DATED 2-17-15



**HIGHER VISIBILITY CROSSWALKS**

**NOTES:**

1. Spaces between markings should be placed in wheel tracks of each lane.
2. Spacings not to exceed 2.5 times width of longitudinal line.
3. All crosswalk markings must be white except for those near schools must be yellow.



**BASIC**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**PAVEMENT MARKINGS  
CROSSWALKS**

NO SCALE  
RSP A24F DATED JULY 20, 2012 SUPPLEMENTS THE  
STANDARD PLANS BOOK DATED 2010.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	35	58

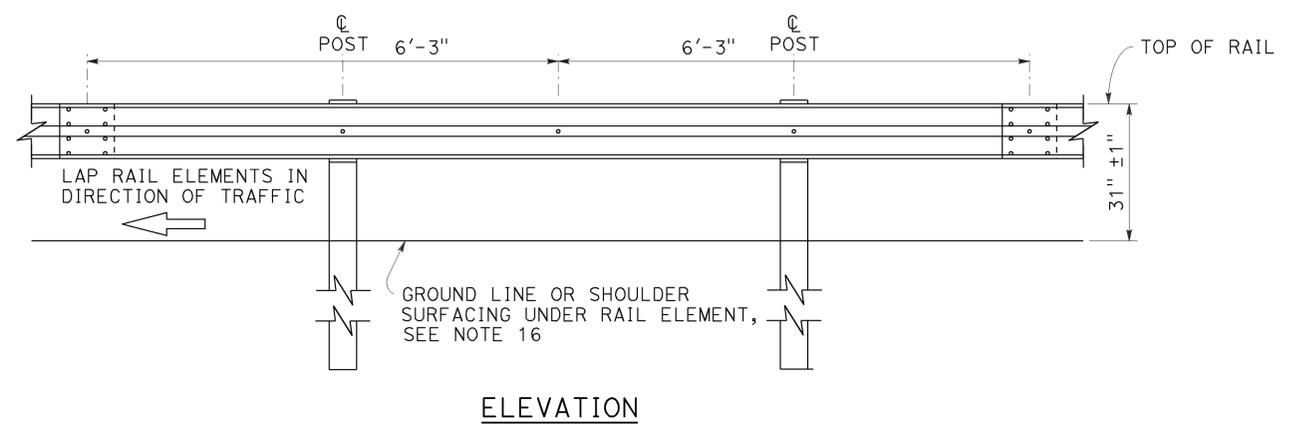
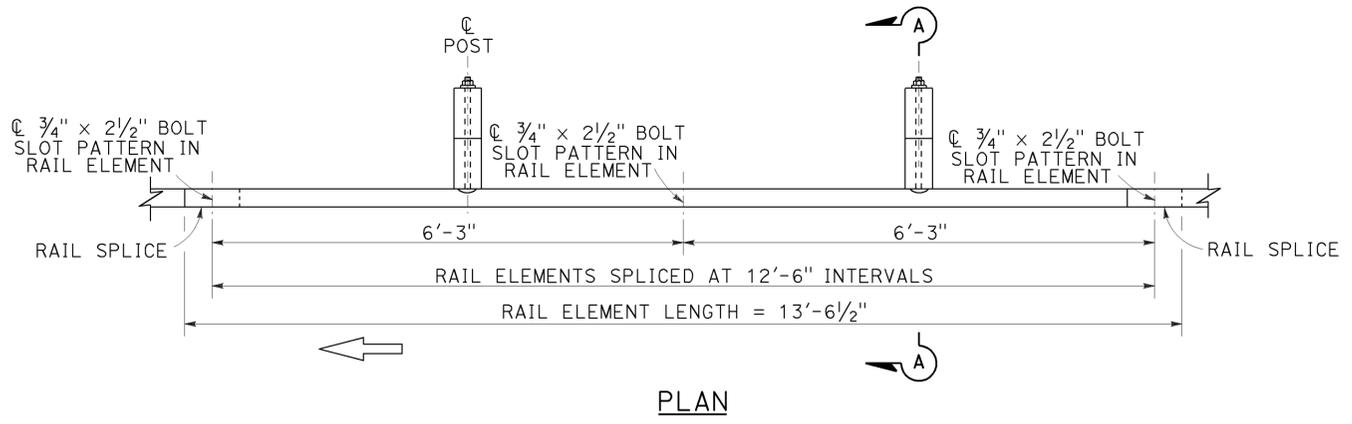
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

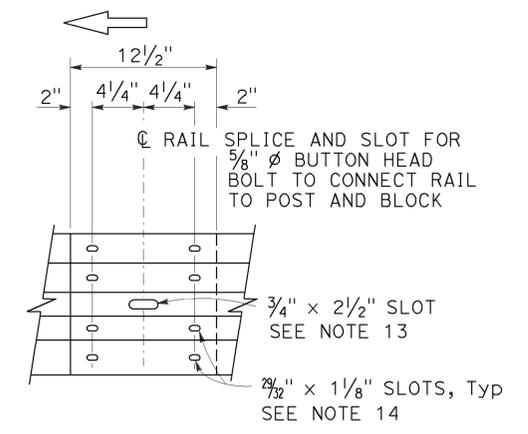
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

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

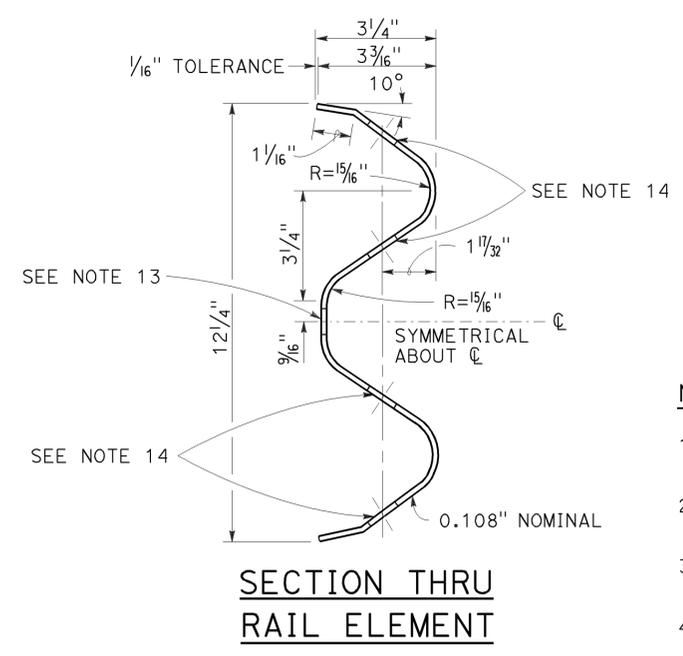
TO ACCOMPANY PLANS DATED 2-17-15



**MIDWEST GUARDRAIL SYSTEM WITH WOOD POST AND BLOCKS**

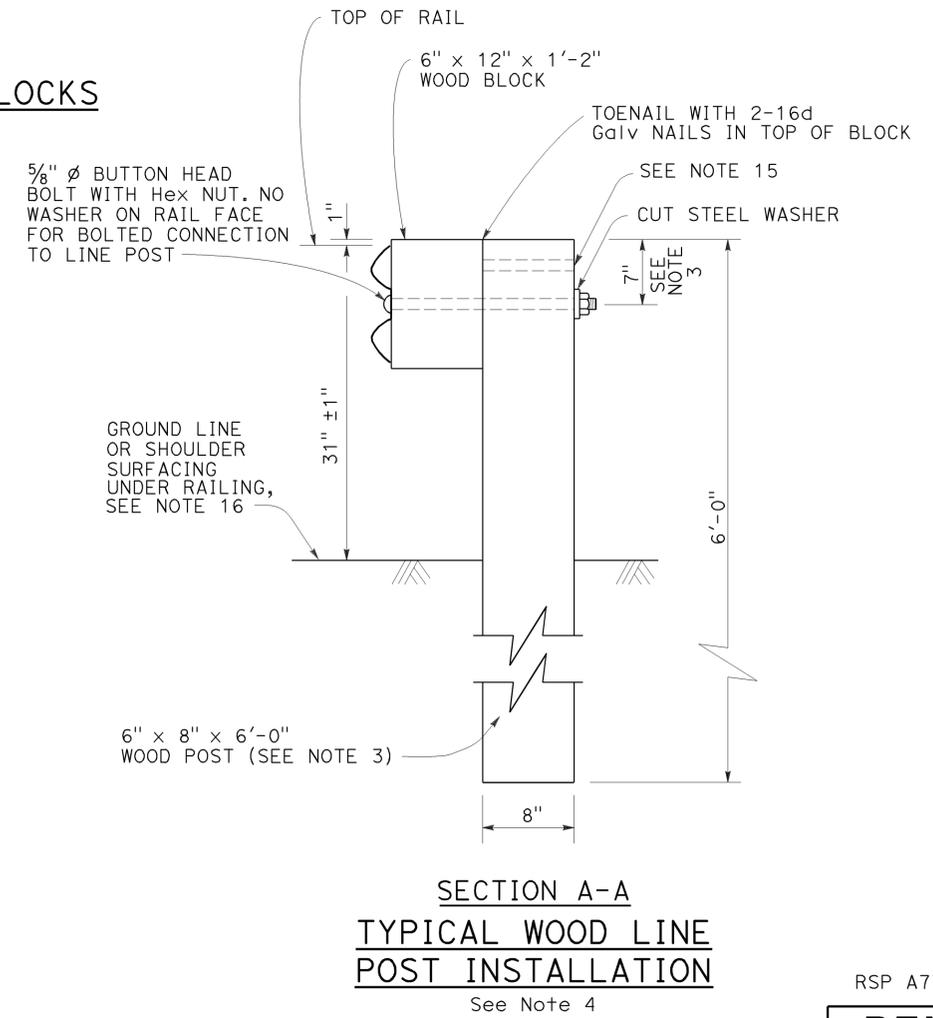


- Connect the over lapped end of the rail elements with  $\frac{5}{8}$ "  $\phi$   $\times$   $1\frac{3}{8}$ " button head oval shoulder splice bolts inserted into the  $\frac{7}{32}$ "  $\times$   $1\frac{1}{8}$ " slots and bolted together with  $\frac{5}{8}$ "  $\phi$  recessed hex nuts. Recess of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



**NOTES:**

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



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

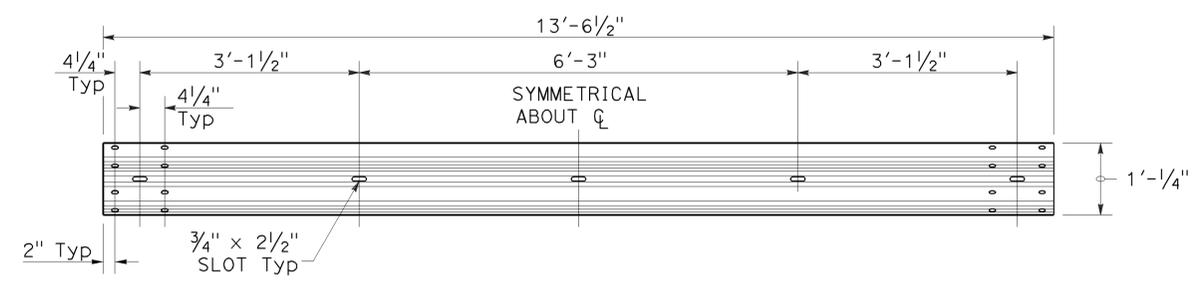
NO SCALE

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

**REVISED STANDARD PLAN RSP A77L1**

2010 REVISED STANDARD PLAN RSP A77L1

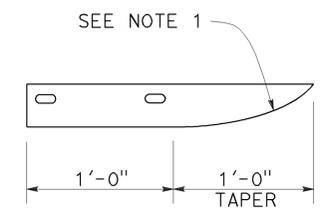
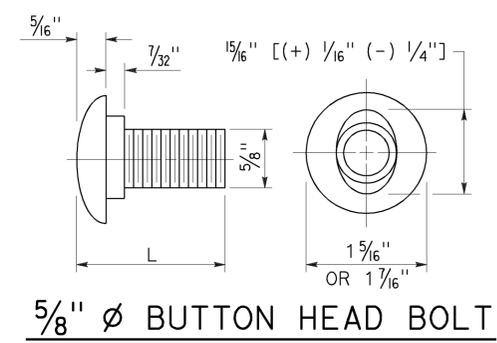
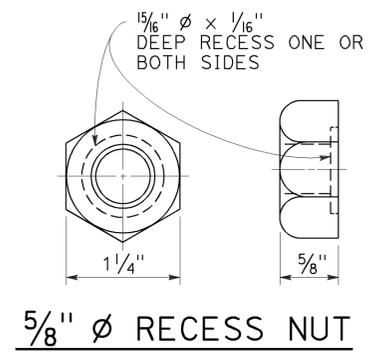
TO ACCOMPANY PLANS DATED 2-17-15



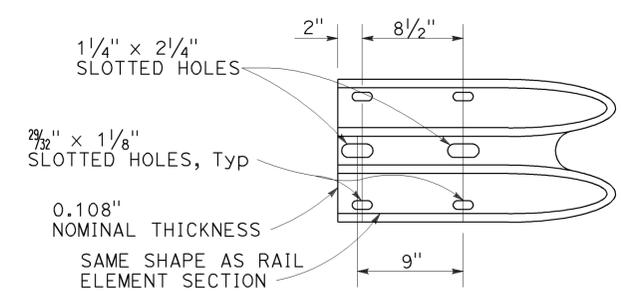
TYPICAL RAIL ELEMENT

**NOTE:**

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



PLAN



ELEVATION  
END CAP  
(TYPE A)

BUTTON HEAD BOLT

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

\*\* For nested rail applications.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM  
STANDARD HARDWARE**

NO SCALE

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

**REVISED STANDARD PLAN RSP A77M1**

2010 REVISED STANDARD PLAN RSP A77M1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	37	58

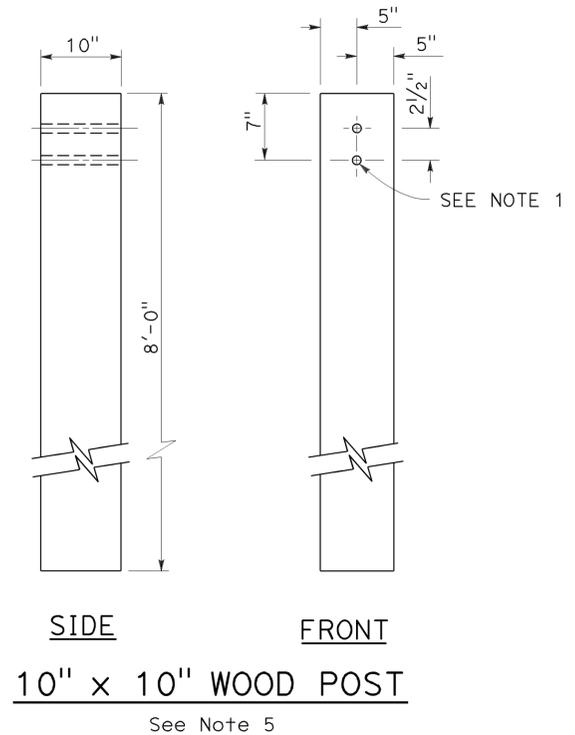
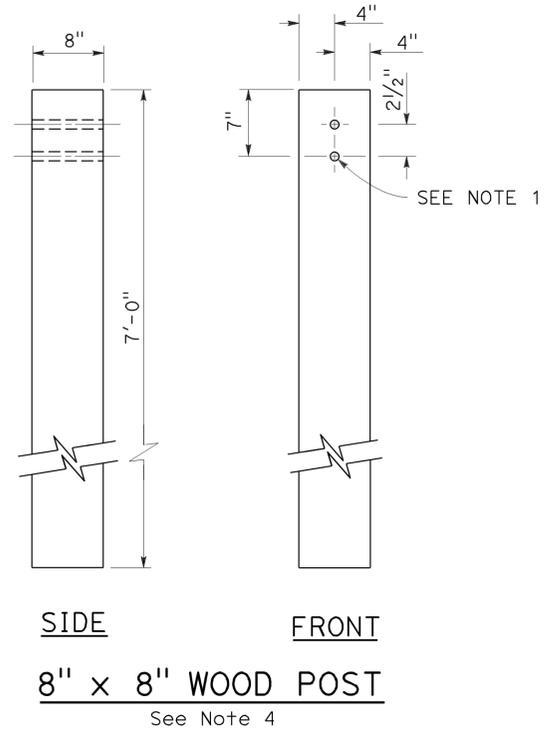
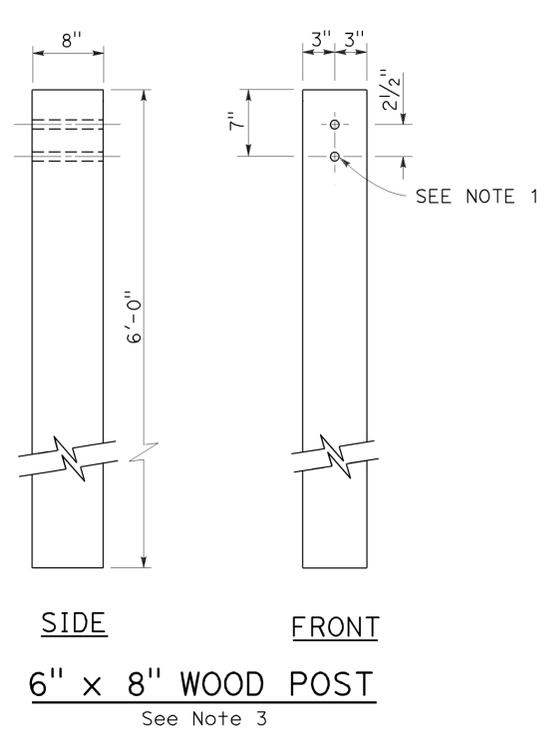
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

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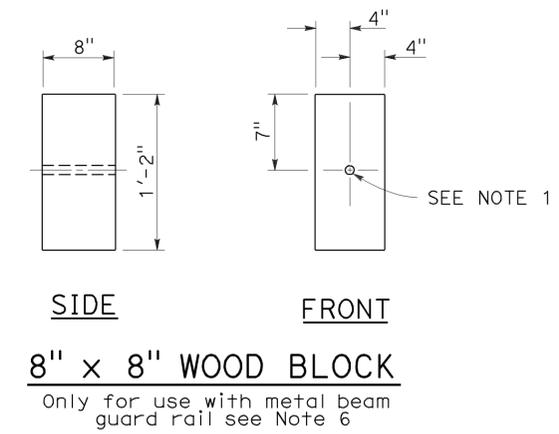
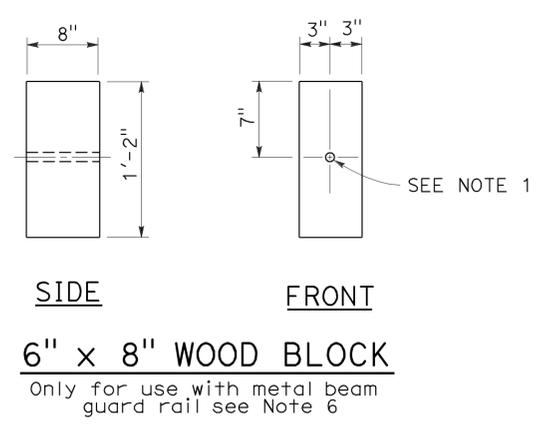
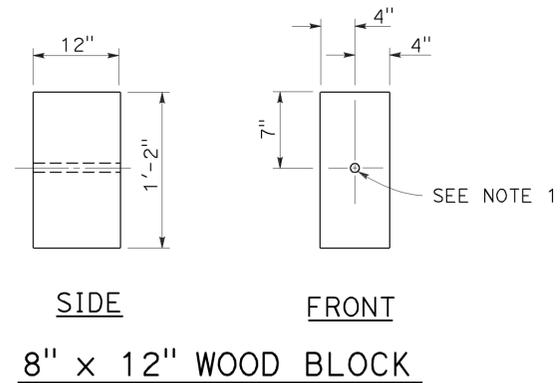
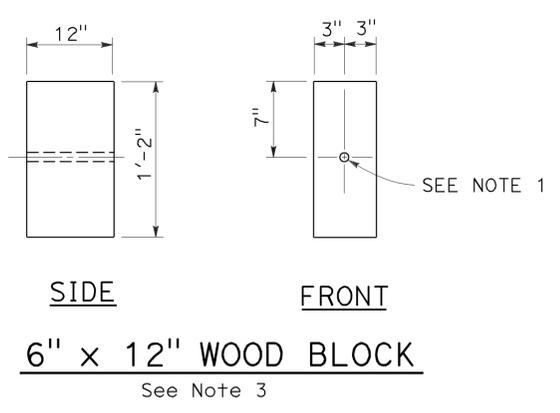
REGISTERED PROFESSIONAL ENGINEER  
Randell D. Hiatt  
No. C50200  
Exp. 6-30-15  
CIVIL  
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 2-17-15



**NOTES:**

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



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

**REVISED STANDARD PLAN RSP A77N1**

2010 REVISED STANDARD PLAN RSP A77N1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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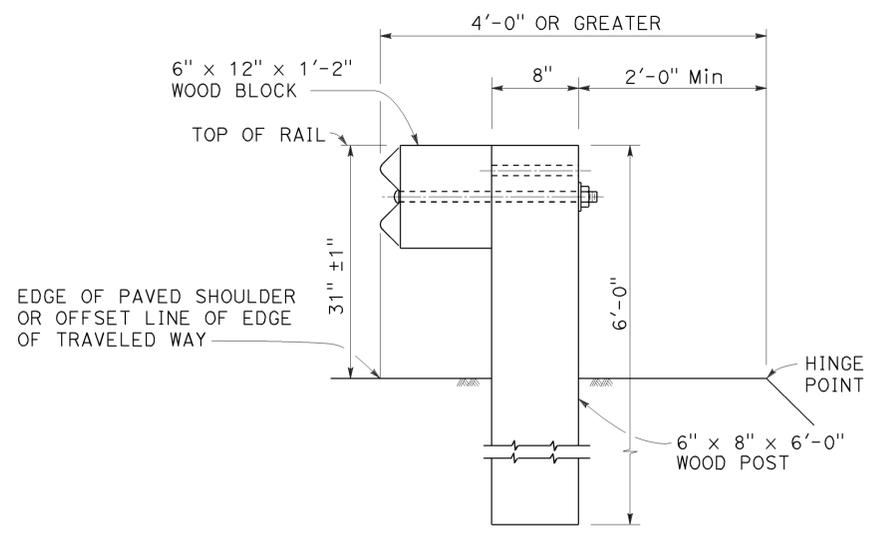
Randell D. Hiatt  
REGISTERED CIVIL ENGINEER

November 15, 2013  
PLANS APPROVAL DATE

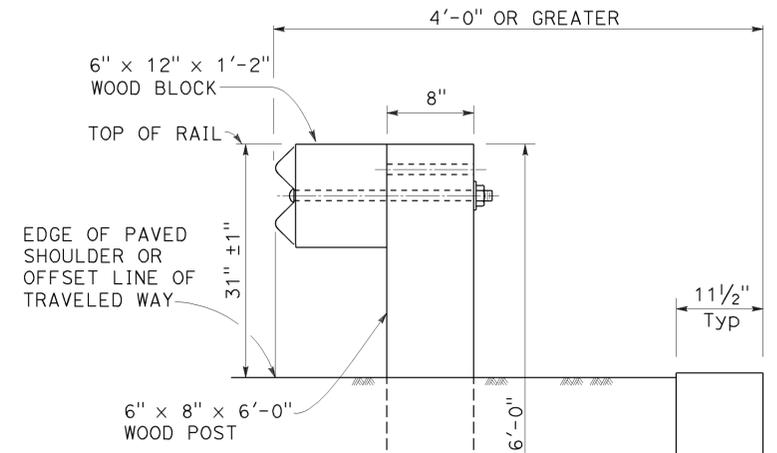
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Randell D. Hiatt  
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STATE OF CALIFORNIA

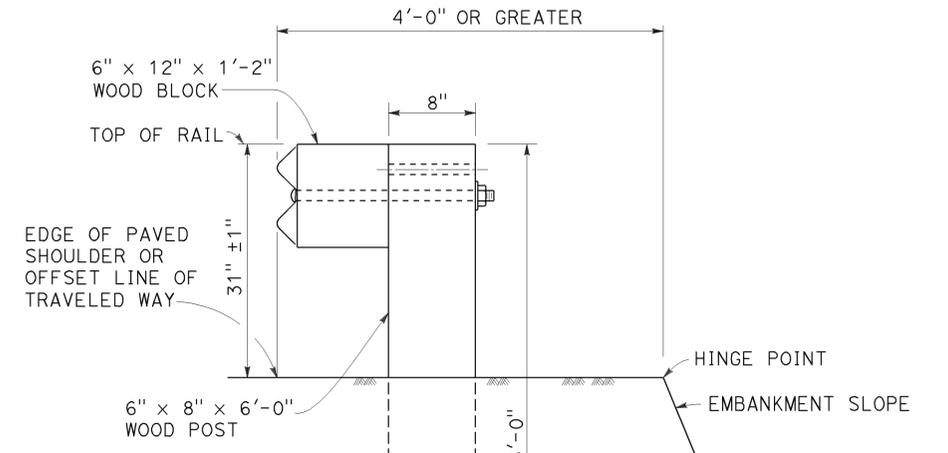
TO ACCOMPANY PLANS DATED 2-17-15



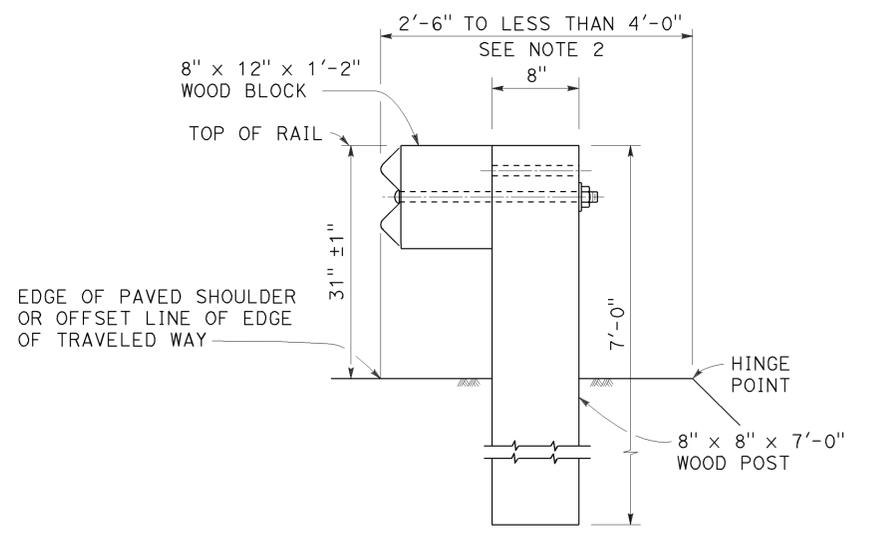
**DETAIL A**  
**TYPICAL ROADWAY**  
**INSTALLATION**  
See Note 1



**DETAIL C**



**DETAIL D**



**DETAIL B**  
**NARROW ROADWAY**  
**INSTALLATION**  
See Note 1

**POST EMBEDMENT**

**INSTALLATION AT EARTH RETAINING WALLS**

**NOTES:**

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

STATE OF CALIFORNIA  
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**MIDWEST GUARDRAIL SYSTEM**  
**TYPICAL LINE POST**  
**EMBEDMENT AND**  
**HINGE POINT OFFSET DETAILS**

NO SCALE

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

**REVISED STANDARD PLAN RSP A77N3**

2010 REVISED STANDARD PLAN RSP A77N3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	39	58

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

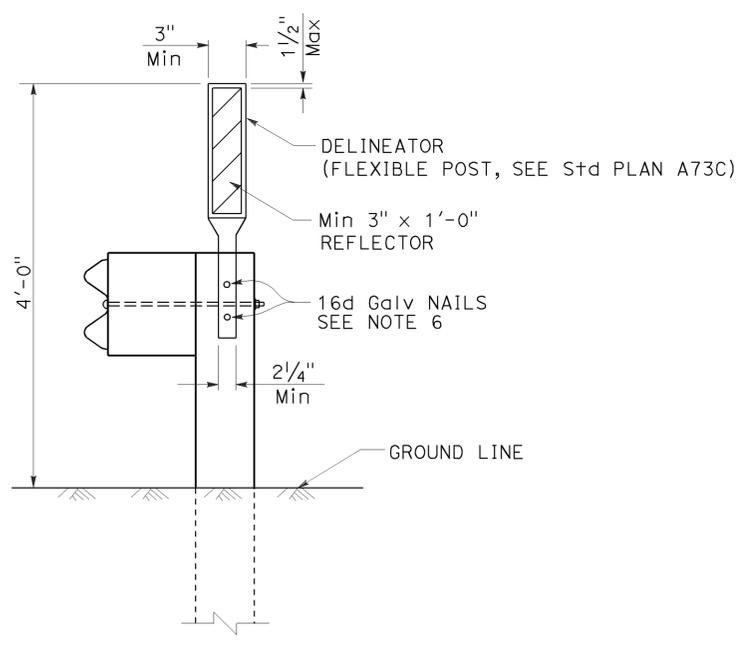
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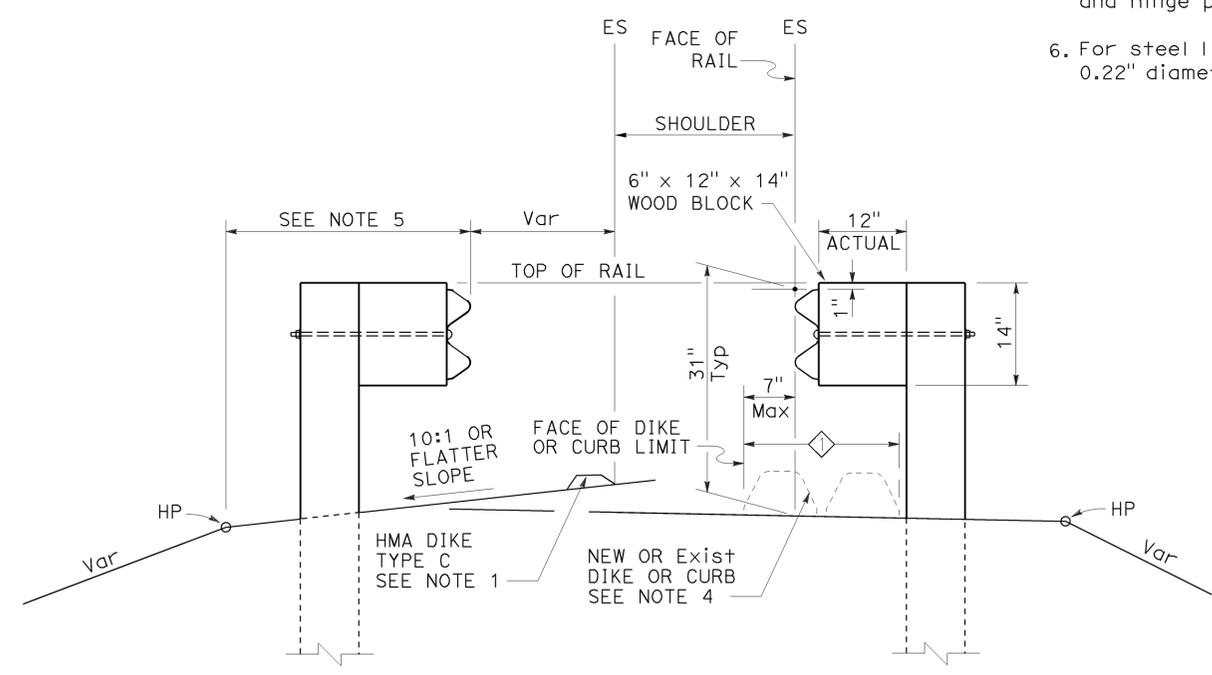
TO ACCOMPANY PLANS DATED 2-17-15

**NOTES:**

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



**MGS DELINEATION**  
See Note 3



**DIKE POSITIONING**  
See Note 1

◇ PERMISSIBLE DIKE OR CURB PLACEMENT AREA

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

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

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

**REVISED STANDARD PLAN RSP A77N4**

2010 REVISED STANDARD PLAN RSP A77N4



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	41	58

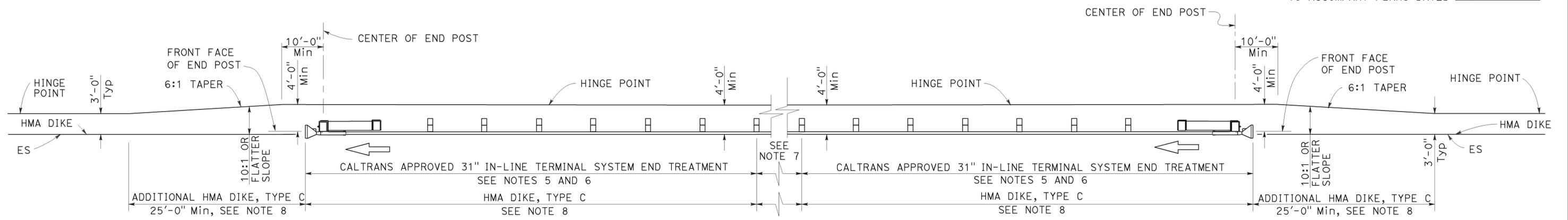
Randell D. Hiatt  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

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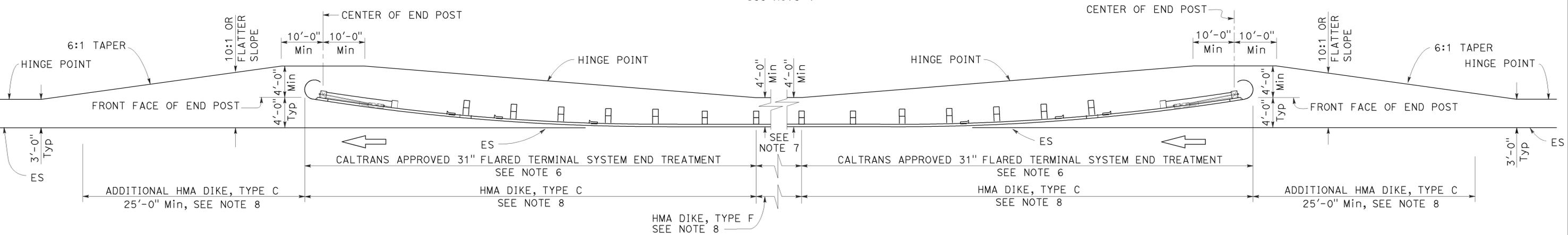
REGISTERED PROFESSIONAL ENGINEER  
Randell D. Hiatt  
No. C50200  
Exp. 6-30-15  
CIVIL  
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 2-17-15



**TYPE 11D LAYOUT**

(Embankment MGS installation with 31" in-line end treatment at each end of railing)  
See Note 4



**TYPE 11E LAYOUT**

(Embankment MGS installation with 31" flared end treatment at each end of railing)  
See Note 4

**NOTES:**

1. Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
2. MGS post spacing to be 6'-3" center to center, except as otherwise noted.
3. Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 12" x 1'-2" wood blocks. W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
4. Layout Types 11D through 11L, shown on the A77P Series of Standard Plans, are typically used where MGS is recommended to shield embankment slopes and a crashworthy 31" end treatment is required for both directions of traffic.
5. 31" in-line terminal system end treatments are used where site conditions will not accommodate a flared end treatment.
6. The type of 31" terminal system end treatment to be used will be shown on the Project Plans.
7. Dependent on site conditions (embankment height and side slope), construction of additional MGS (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
8. Where placement of dike is required with MGS installations, see Revised Standard Plan RSP A77N4 for dike positioning details.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM  
TYPICAL LAYOUTS FOR  
EMBANKMENTS**

NO SCALE

RSP A77P2 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77P2**

2010 REVISED STANDARD PLAN RSP A77P2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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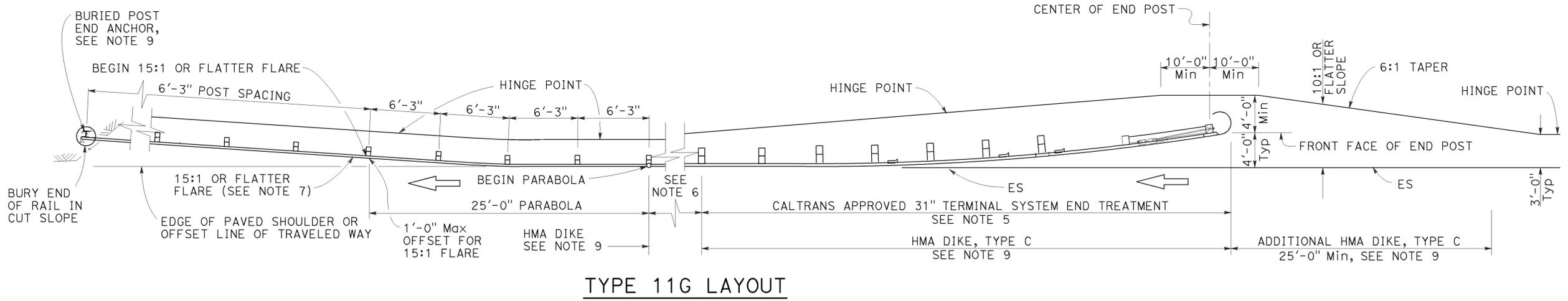
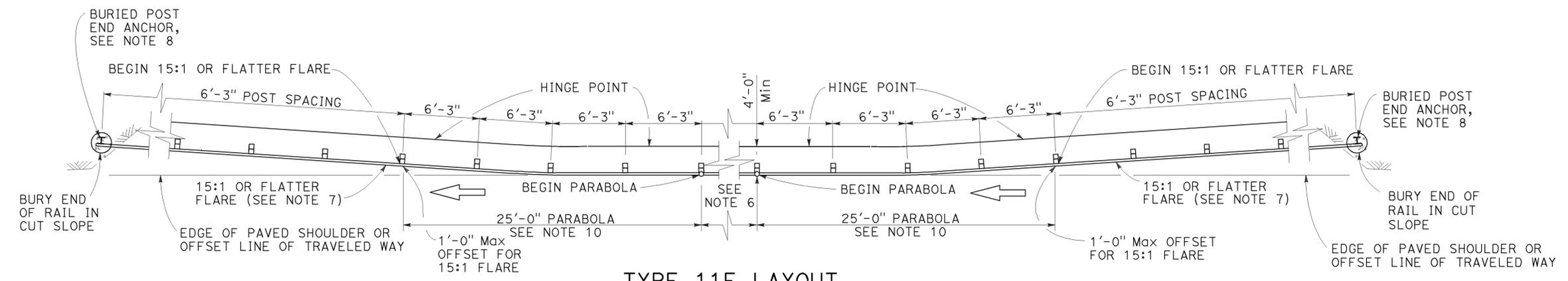
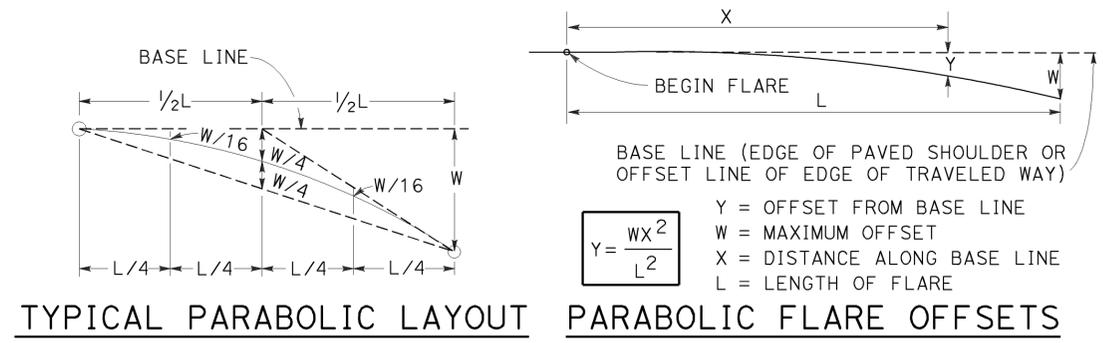
Randell D. Hiatt  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

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

TO ACCOMPANY PLANS DATED 2-17-15



**NOTES:**

- Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
- MGS post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 12" x 1'-2" wood blocks. W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
- Layout Types 11D through 11L, shown on the A77P Series of Standard Plans, are typically used where MGS is recommended to shield embankment slopes and a crashworthy 31" end treatment is required for both directions of traffic.
- The type of 31" terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height and side slope), construction of additional MGS (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
- The 15:1 or flatter flare used with buried end anchors is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of MGS within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the buried post end anchor used with Type 11F and 11G Layouts, see Revised Standard Plan RSP A77T2.
- Where placement of dike is required with MGS installations, see Revised Standard Plan RSP A77N4 for dike positioning details.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77P1.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM  
TYPICAL LAYOUTS FOR  
EMBANKMENTS**

NO SCALE

RSP A77P3 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77P3**

2010 REVISED STANDARD PLAN RSP A77P3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	43	58

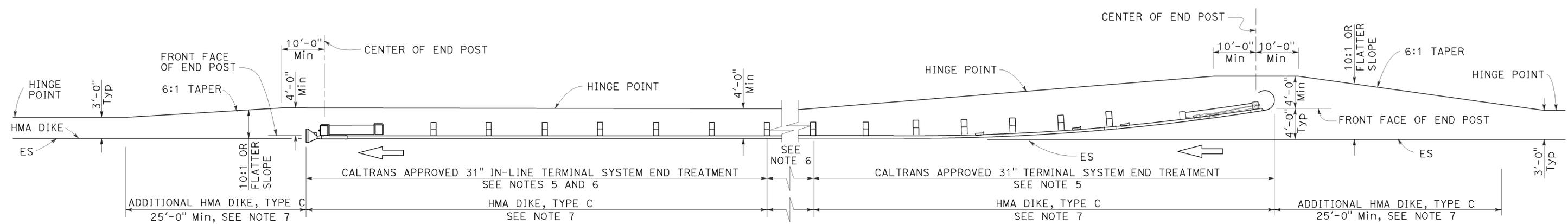
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Randell D. Hiatt  
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Exp. 6-30-15  
CIVIL  
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 2-17-15



**TYPE 11H LAYOUT**

(Embankment MGS installation with 31" flared end treatment and 31" in-line treatment at the ends of railing)  
See Notes 4 and 7

**NOTES:**

1. Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
2. MGS post spacing to be 6'-3" center to center, except as otherwise noted.
3. Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 12" x 1'-2" wood blocks, W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
4. Layout Types 11D through 11L, shown on the A77P Series of Standard Plans, are typically used where MGS is recommended to shield embankment slopes and a crashworthy 31" end treatment is required for both directions of traffic.
5. The type of 31" terminal system end treatment to be used will be shown on the Project Plans.
6. Dependent on site conditions (embankment height and side slope), construction of additional MGS (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
7. Where placement of dike is required with MGS installations, see Revised Standard Plan RSP A77N4 for dike positioning details.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM  
TYPICAL LAYOUTS FOR  
EMBANKMENTS**

NO SCALE

2010 REVISED STANDARD PLAN RSP A77P4

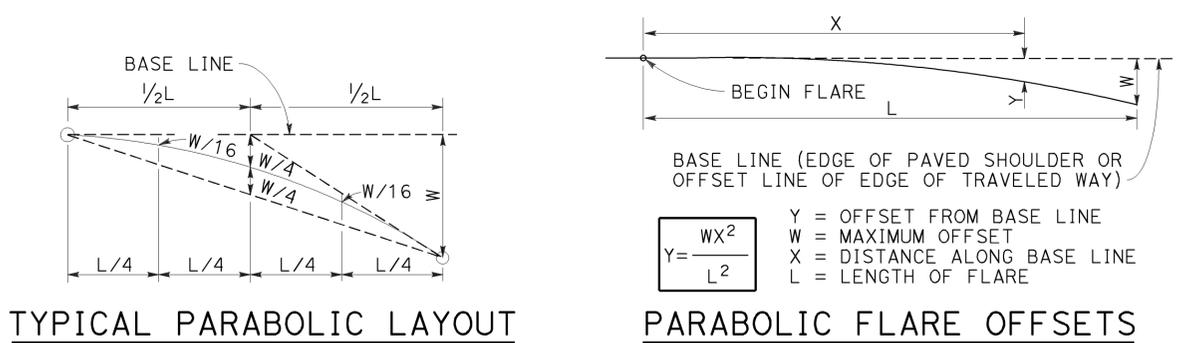
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	44	58

Randell D. Hiatt  
REGISTERED CIVIL ENGINEER

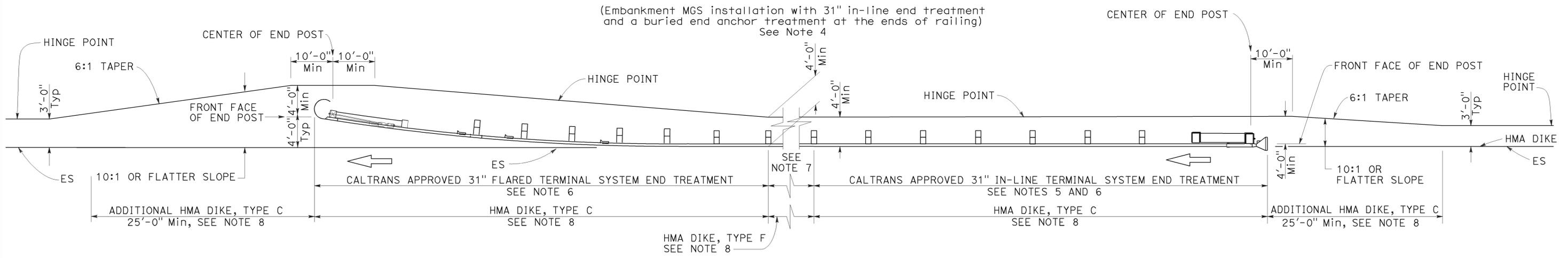
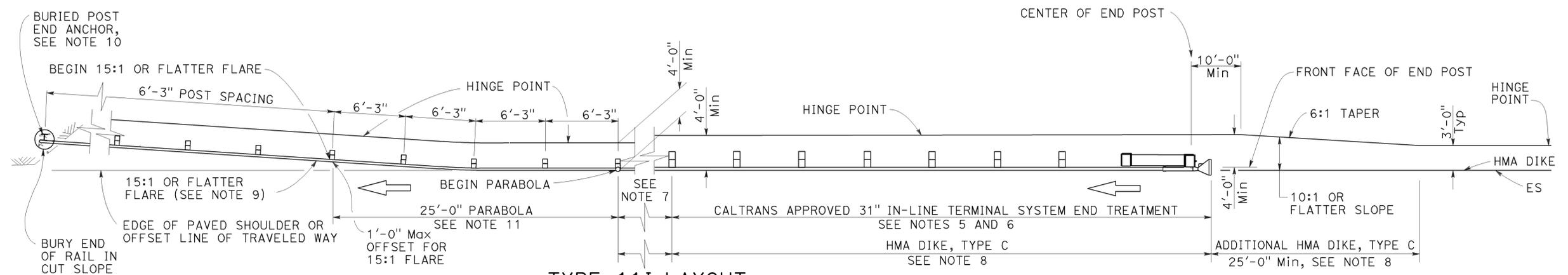
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Randell D. Hiatt  
No. C50200  
Exp. 6-30-15  
CIVIL  
STATE OF CALIFORNIA



TO ACCOMPANY PLANS DATED 2-17-15



**NOTES:**

- Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
- MGS post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 12" x 1'-2" wood blocks, W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
- Layout Types 11D through 11L, shown on the A77P Series of Standard Plans, are typically used where MGS is recommended to shield embankment slopes and a crashworthy 31" end treatment is required for both directions of traffic.
- 31" in-line terminal system end treatments are used where site conditions will not accommodate a 31" flared end treatment.
- The type of 31" terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height and side slope), construction of additional MGS (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
- Where placement of dike is required with MGS installations, see Revised Standard Plan RSP A77N4 for dike positioning details.
- The 15:1 or flatter flare used with buried end anchors is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of MGS within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the buried post end anchor used with Type 11I Layout, see Revised Standard Plan RSP A77T2.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77P1.

RSP A77P5 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

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

2010 REVISED STANDARD PLAN RSP A77P5

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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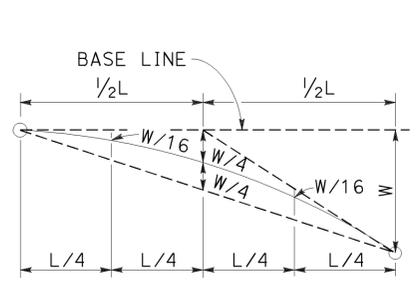
Randell D. Hiatt  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

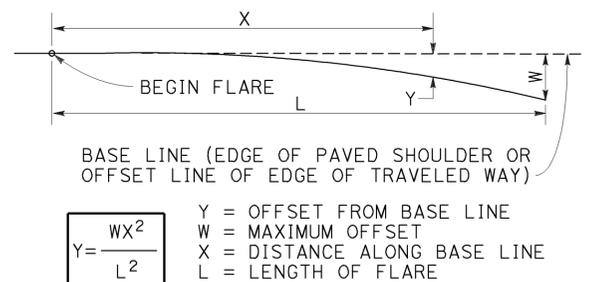
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Randell D. Hiatt  
No. C50200  
Exp. 6-30-15  
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TO ACCOMPANY PLANS DATED 2-17-15



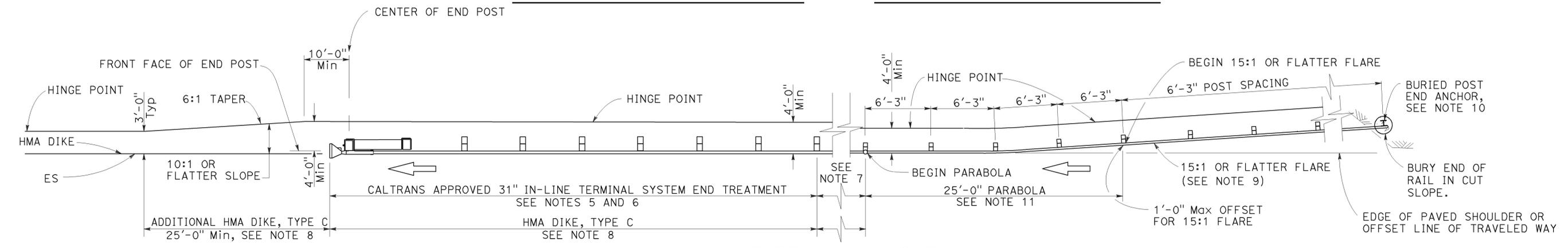
**TYPICAL PARABOLIC LAYOUT**



**PARABOLIC FLARE OFFSETS**

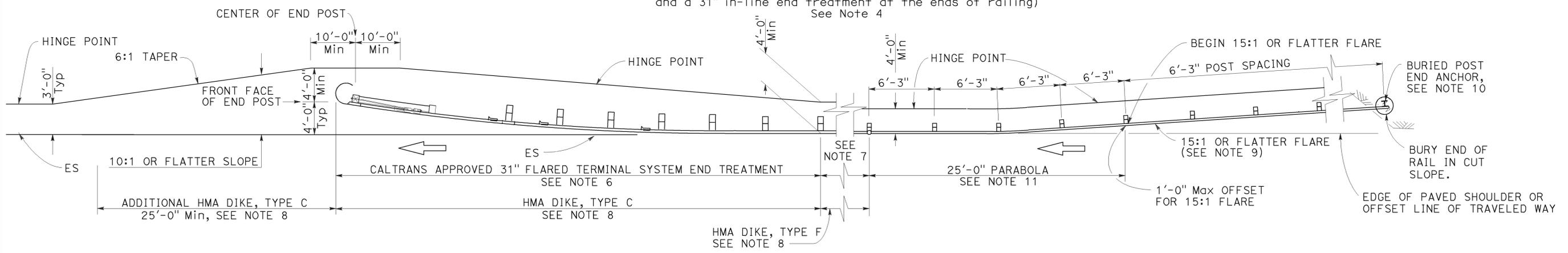
$$Y = \frac{WX^2}{L^2}$$

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



**TYPE 11K LAYOUT**

(Embankment MGS installation with a buried end anchor treatment and a 31" in-line end treatment at the ends of railing)  
See Note 4



**TYPE 11L LAYOUT**

(Embankment MGS installation with a buried end anchor treatment and a 31" flared end treatment at the ends of railing)  
See Note 4

**NOTES:**

- Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
- MGS post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 12" x 1'-2" wood blocks. W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
- Layout Types 11D through 11L, shown on the A77P Series of Standard Plans, are typically used where MGS is recommended to shield embankment slopes and a crashworthy 31" end treatment is required for both directions of traffic.
- 31" in-line terminal system end treatments are used where site conditions will not accommodate a 31" flared end treatment.
- The type of 31" terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height and side slope), construction of additional MGS (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
- Where placement of dike is required with MGS installations, see Revised Standard Plan RSP A77N4 for dike positioning details.
- The 15:1 or flatter flare used with buried end anchors is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of MGS within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the buried post end anchor used with Type 11K and 11L Layouts, see Revised Standard Plan RSP A77T2.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77P1.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM  
TYPICAL LAYOUTS FOR  
EMBANKMENTS**

NO SCALE

RSP A77P6 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP A77P6

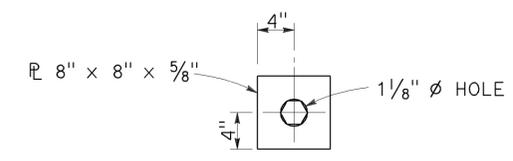
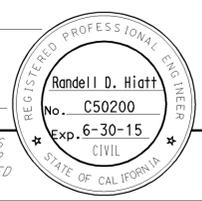
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	46	58

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

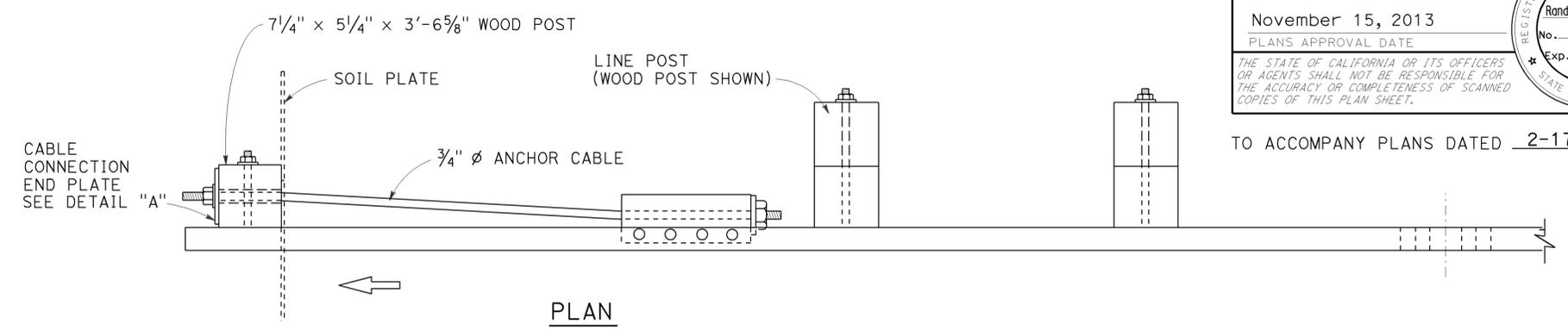
November 15, 2013  
PLANS APPROVAL DATE

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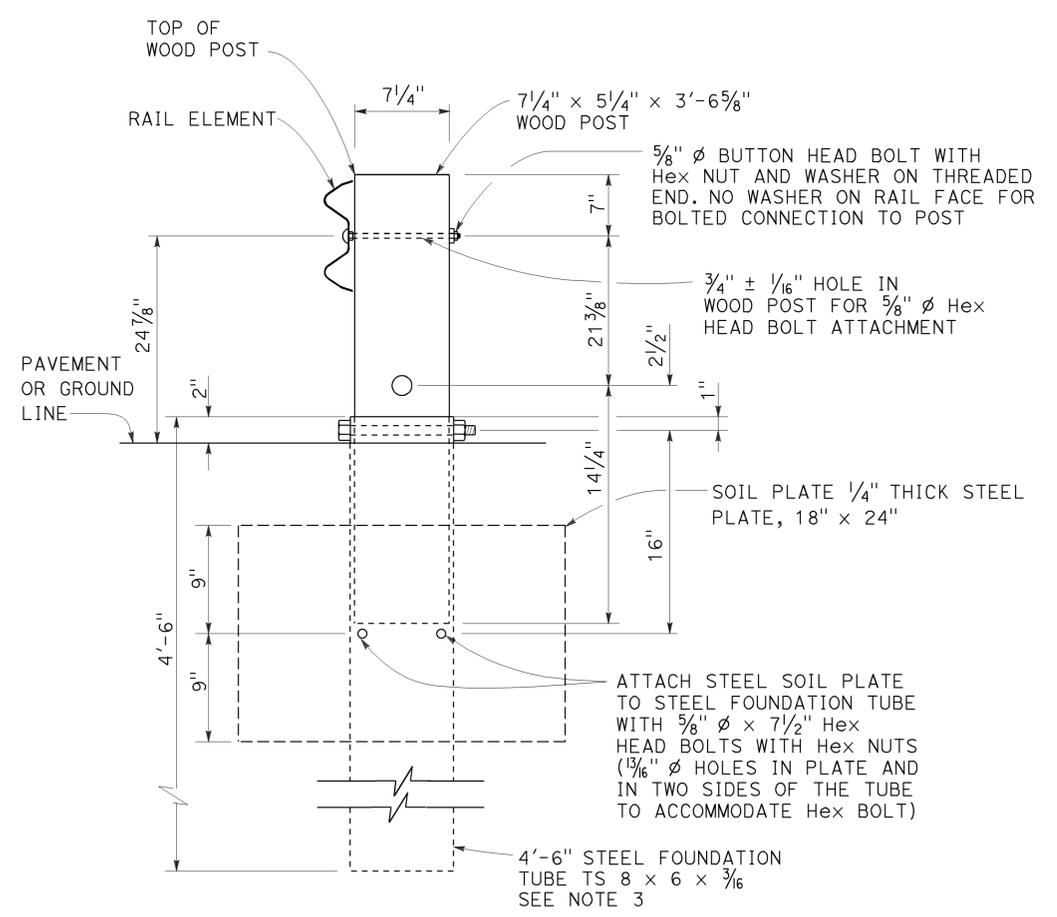
TO ACCOMPANY PLANS DATED 2-17-15



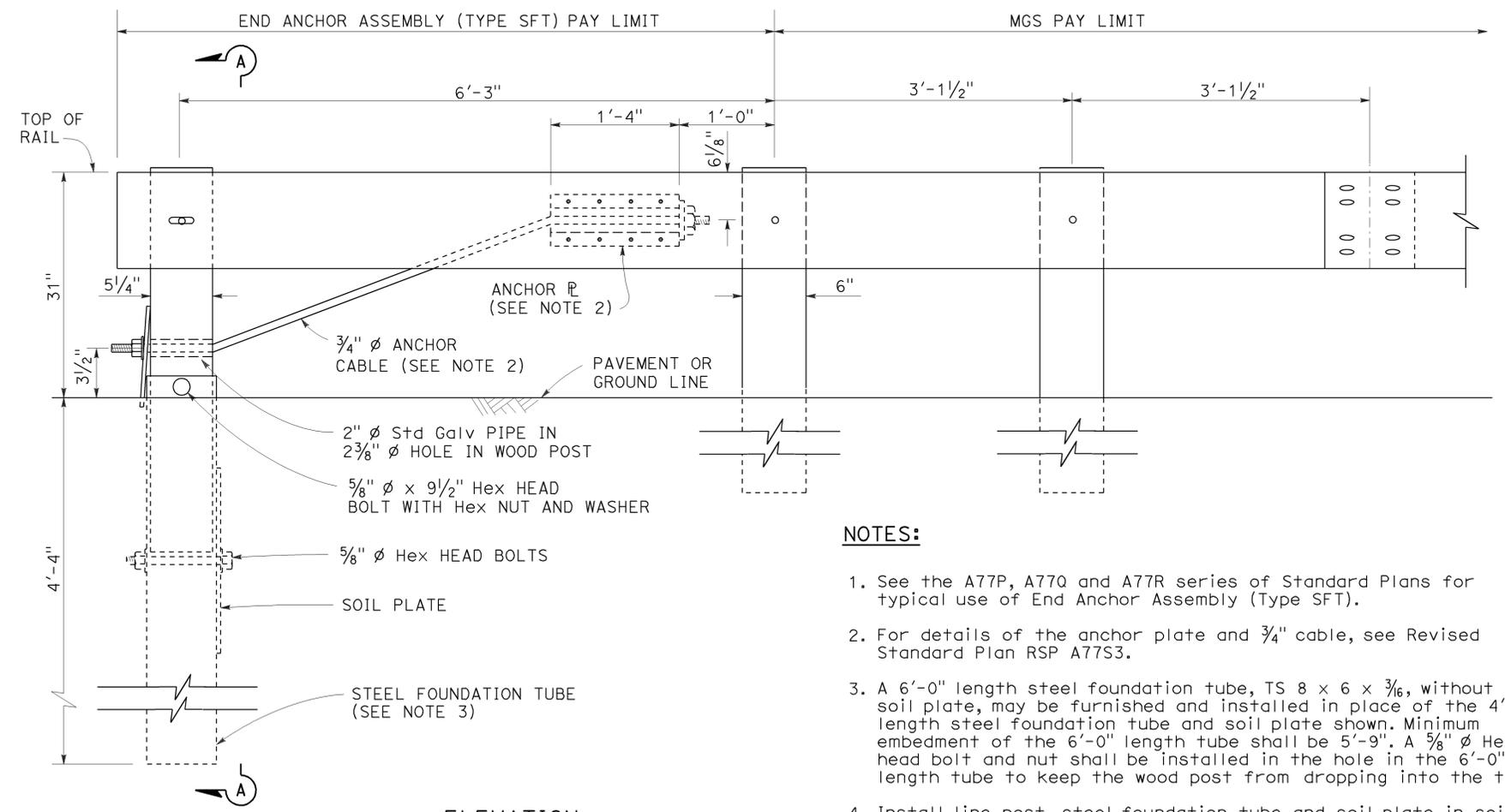
**DETAIL "A"**  
**CABLE CONNECTION**  
**END PLATE**



**PLAN**



**SECTION A-A**



**ELEVATION**

**END ANCHOR**  
**ASSEMBLY (TYPE SFT)**  
See Note 1

**NOTES:**

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

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

NO SCALE

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

**REVISED STANDARD PLAN RSP A77S1**

2010 REVISED STANDARD PLAN RSP A77S1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	47	58

Randell D. Hiatt  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

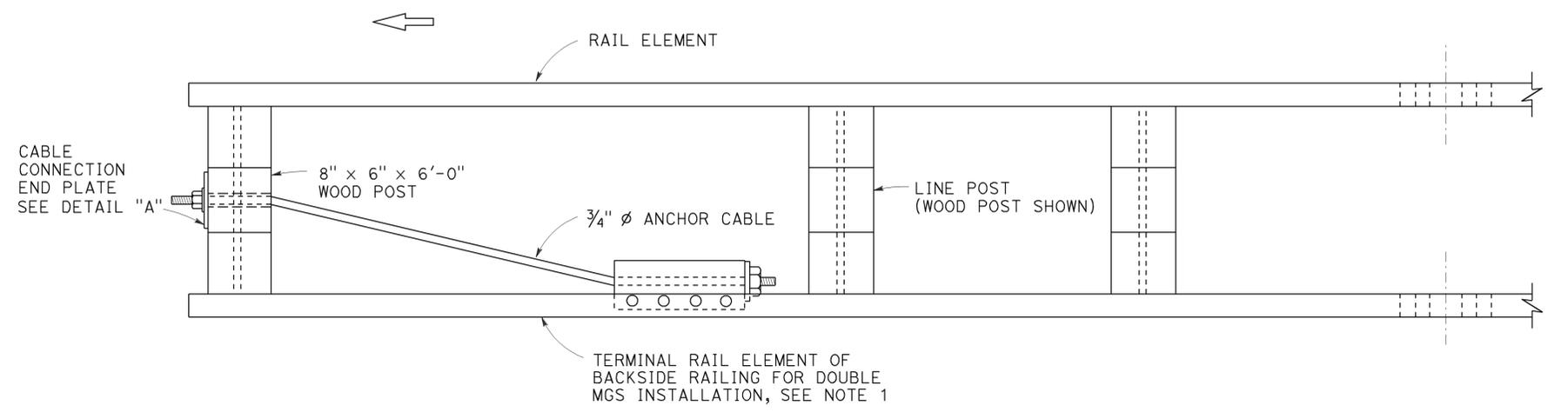
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

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

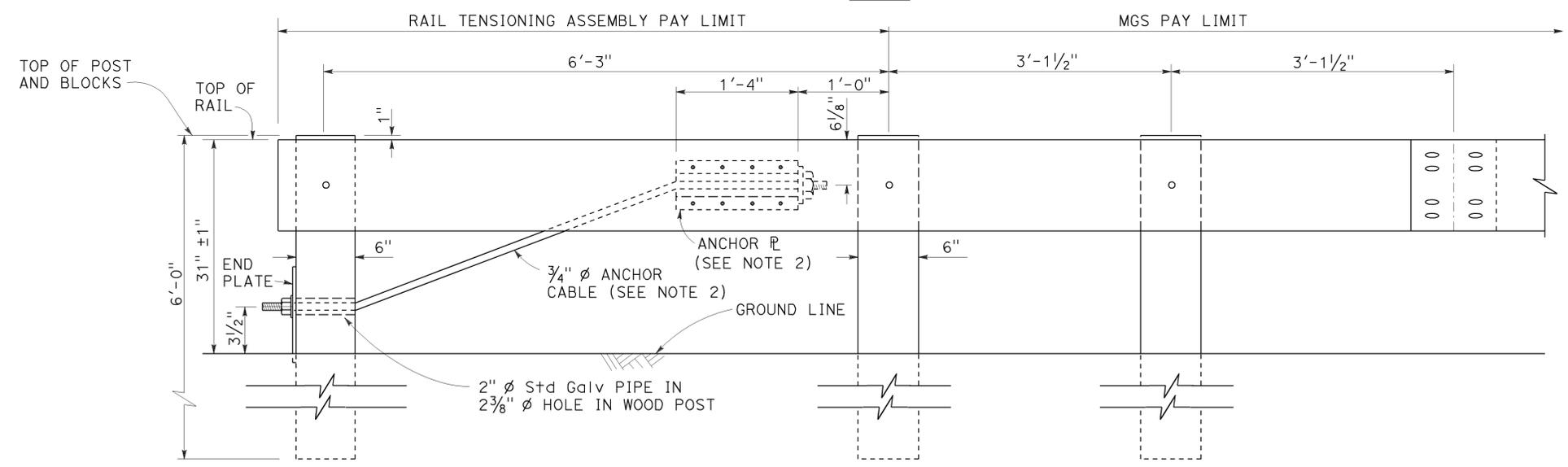
TO ACCOMPANY PLANS DATED 2-17-15

**NOTES:**

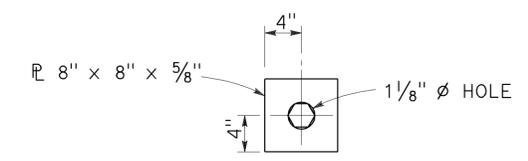
1. See Revised Standard Plans RSP A77Q3 and RSP A77R1 for typical use of rail tensioning assembly.
2. For details of the anchor plate and 3/4" cable, see Revised Standard Plan RSP A77S3.



**PLAN**



**ELEVATION**  
**RAIL TENSIONING**  
**ASSEMBLY**  
See Note 1



**DETAIL "A"**  
**CABLE CONNECTION**  
**END PLATE**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM**  
**RAIL TENSIONING ASSEMBLY**

NO SCALE

RSP A77S2 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77S2**

2010 REVISED STANDARD PLAN RSP A77S2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	48	58

Randell D. Hiatt  
REGISTERED CIVIL ENGINEER

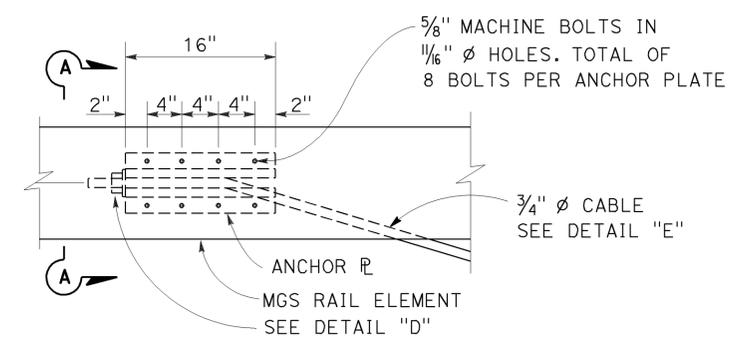
November 15, 2013  
PLANS APPROVAL DATE

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

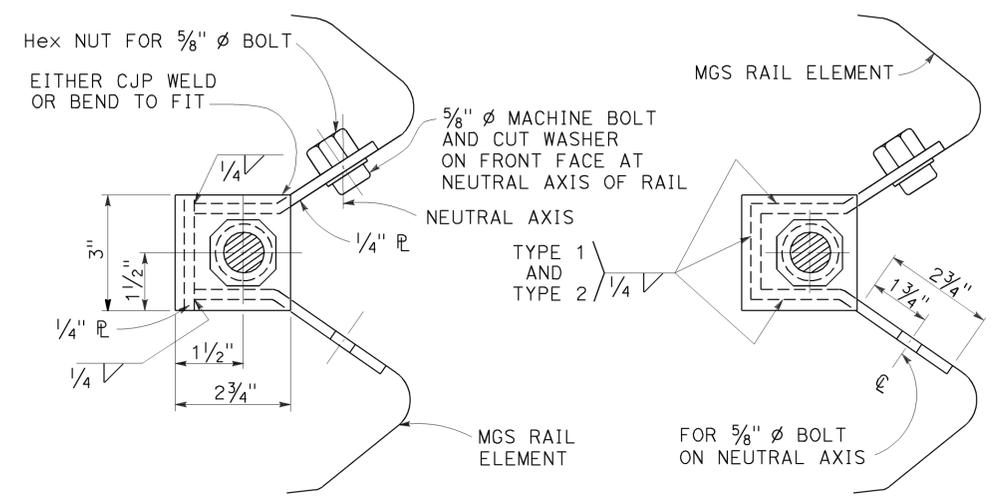
Randell D. Hiatt  
No. C50200  
Exp. 6-30-15  
CIVIL  
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 2-17-15

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



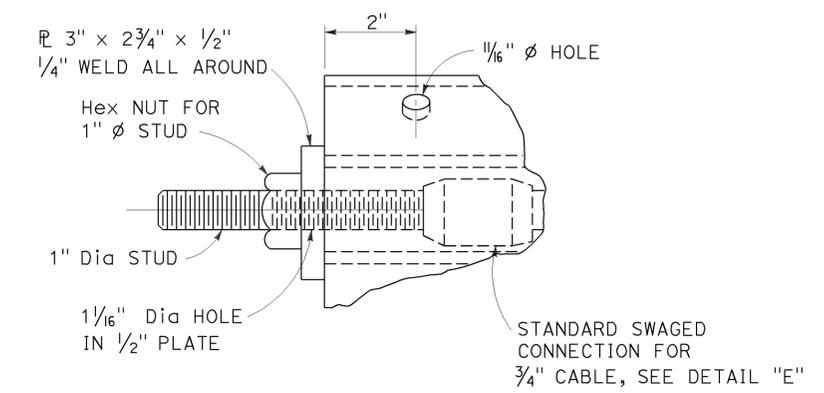
**ANCHOR PLATE DETAIL**  
(MGS shown, TBB similar)



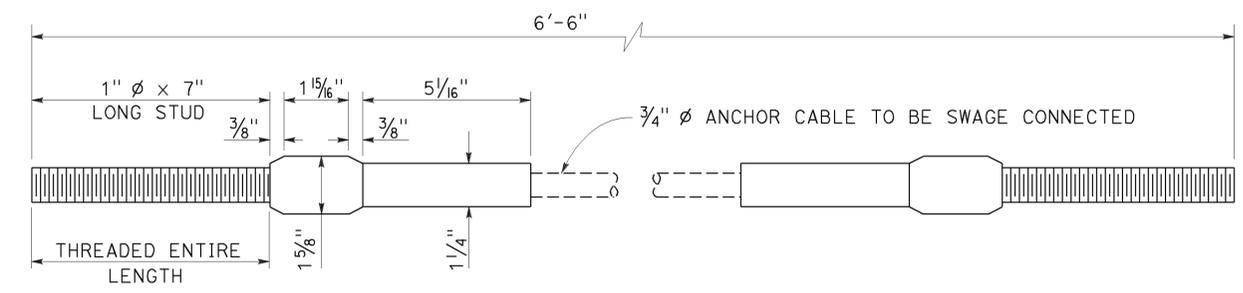
**SECTION A-A (ALTERNATIVE TYPE 1)**

**SECTION A-A (ALTERNATIVE TYPE 2)**

**NOTE:**  
Dimensioning applies to both types.



**DETAIL "D"**



**ANCHOR CABLE WITH SWAGED FITTING AND STUD DETAIL "E"**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

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

NO SCALE  
RSP A77S3 DATED NOVEMBER 15, 2013 SUPERSEDES RSP A77S3 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP A77S3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	49	58

**Randell D. Hiatt**  
REGISTERED CIVIL ENGINEER

November 15, 2013  
PLANS APPROVAL DATE

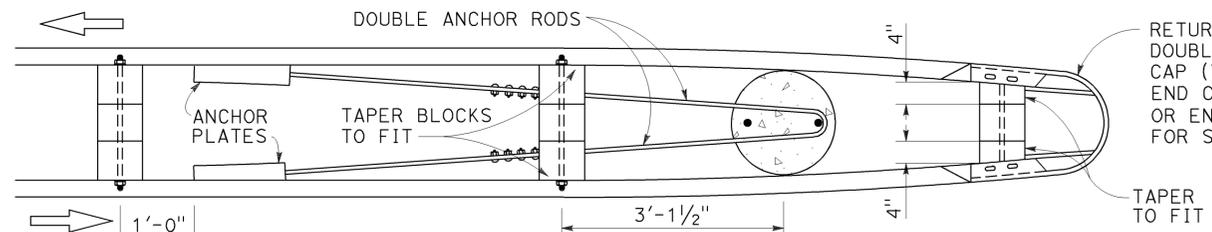
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

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

TO ACCOMPANY PLANS DATED 2-17-15

**NOTES:**

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

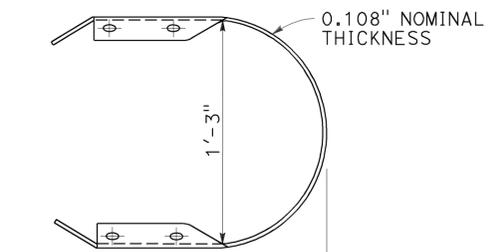


**PLAN**

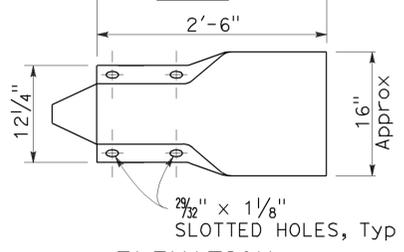
See Note 4

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

TAPER TO FIT

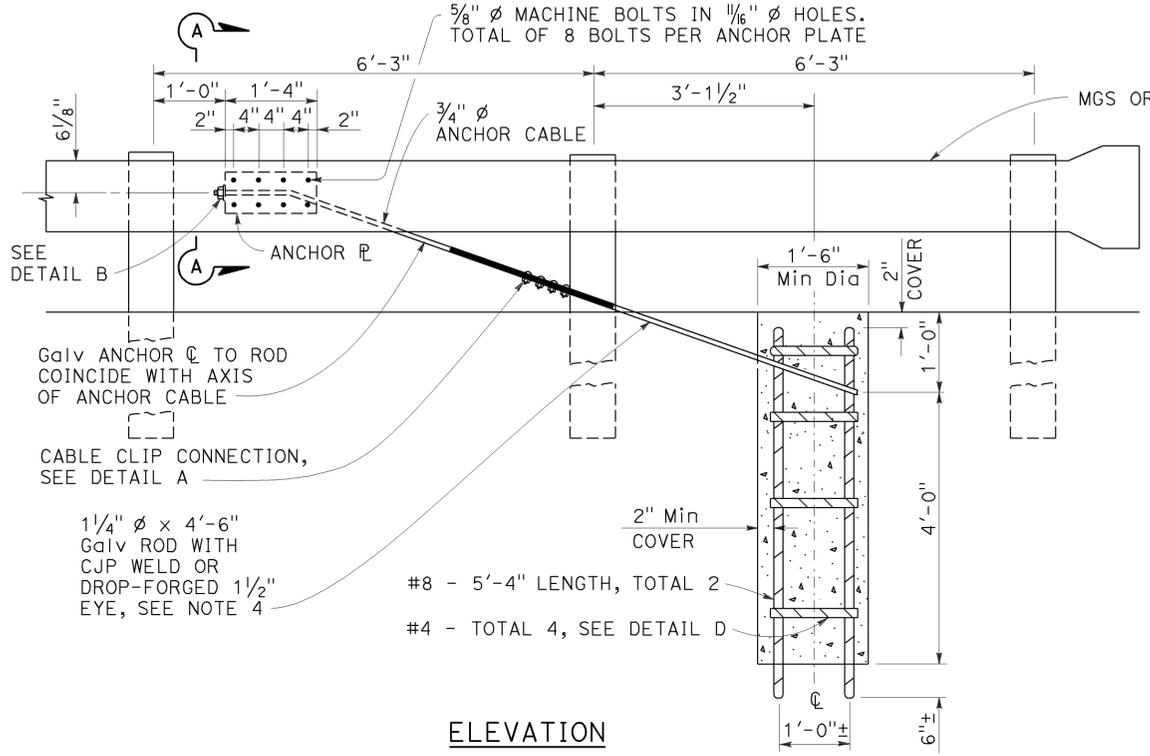


**PLAN**



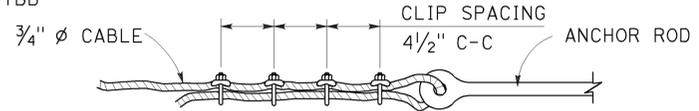
**ELEVATION**

**RETURN CAP (TYPE A)**



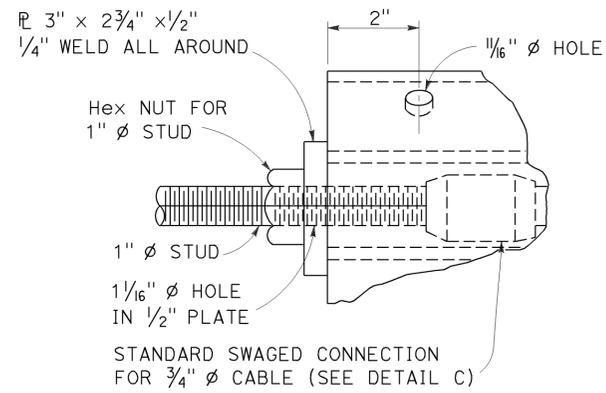
**ELEVATION**  
**END ANCHOR ASSEMBLY (TYPE CA)**

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



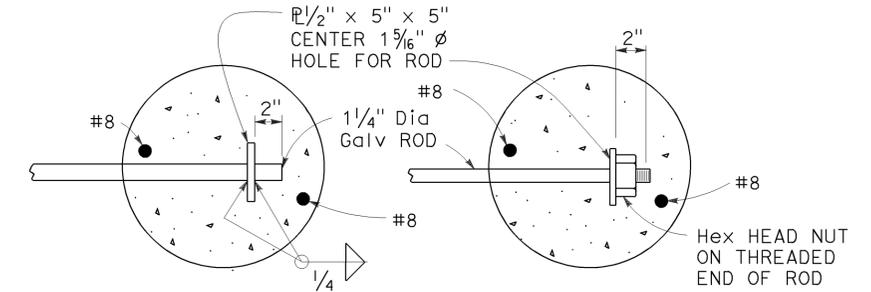
**DETAIL A**  
**CABLE CLIP CONNECTION**

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



**DETAIL B**

STANDARD SWAGED CONNECTION FOR 3/4"  $\phi$  CABLE (SEE DETAIL C)

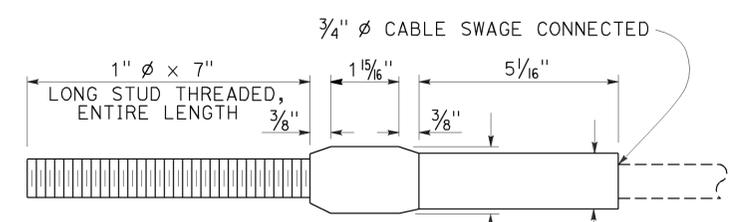


**OPTIONAL ENDS ON SINGLE ANCHOR ROD**

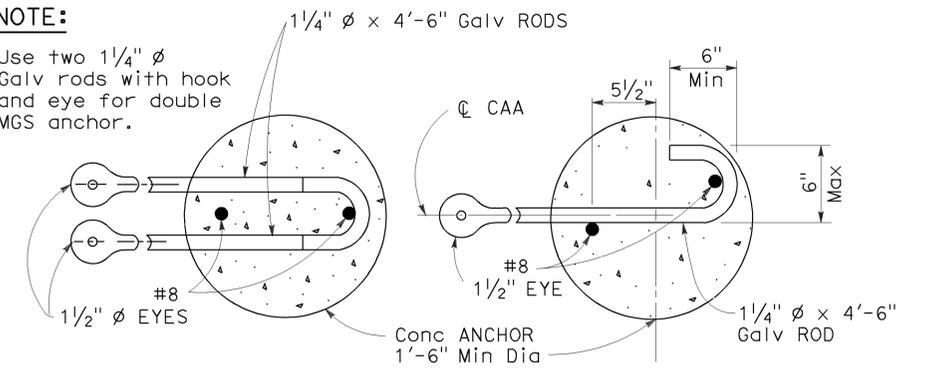
(Not to be used for double anchors)

**NOTE:**

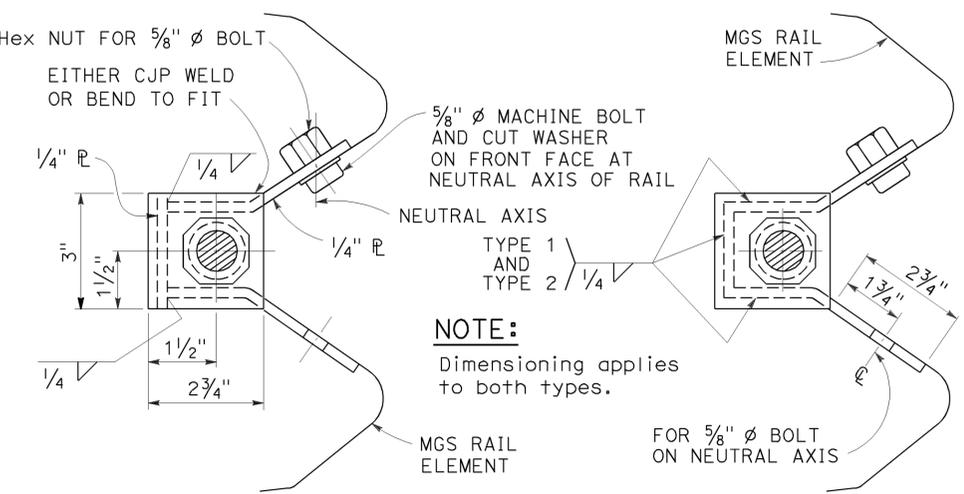
Use two 1/4"  $\phi$  Galv rods with hook and eye for double MGS anchor.



**DETAIL C**  
**ANCHOR CABLE WITH SWAGED FITTING AND STUD**



**DOUBLE ANCHOR ANCHOR RODS**  
**SINGLE ANCHOR ANCHOR RODS**

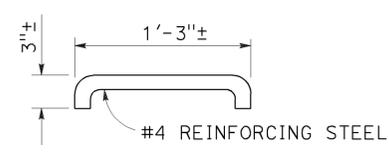


**SECTION A-A**  
(Alternative Type 1)

**SECTION A-A**  
(Alternative Type 2)

**ANCHOR PLATE DETAILS**

**NOTE:**  
Dimensioning applies to both types.



**DETAIL D**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**METAL RAILING END ANCHOR ASSEMBLY (TYPE CA)**

NO SCALE

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

**REVISED STANDARD PLAN RSP A77T1**

2010 REVISED STANDARD PLAN RSP A77T1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	50	58

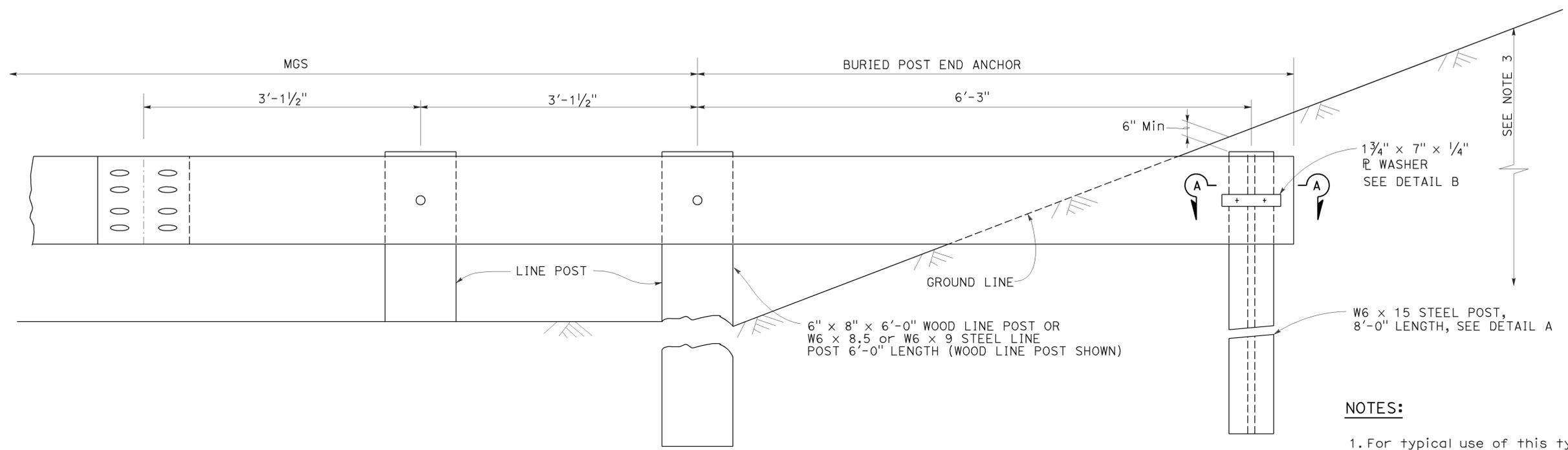
Randell D. Hiatt  
REGISTERED CIVIL ENGINEER

November 15, 2013  
PLANS APPROVAL DATE

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

TO ACCOMPANY PLANS DATED 2-17-15

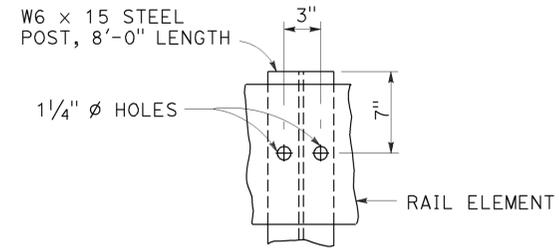


**BURIED POST END ANCHOR**

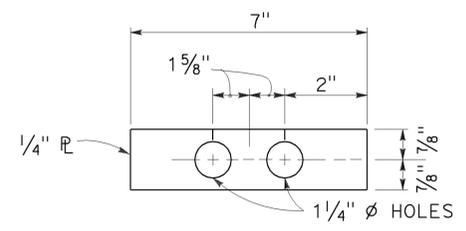
See Note 3

**NOTES:**

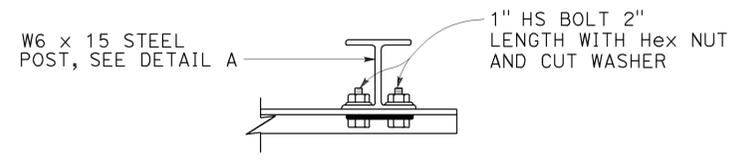
1. For typical use of this type of end anchor with MGS see the A77P, A77Q and A77R Series of the Standard Plans.
2. Holes excavation in the slope to construct the buried post end anchor shall be backfilled with selected earth, placed in layers approximately 1'-0" thick. Each layer shall be moistened and thoroughly compacted.
3. The buried post end anchor shall only be constructed at those locations where the slope perpendicular to the roadway is non-traversable.



**DETAIL A**



**DETAIL B**



**SECTION A-A**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM  
BURIED POST END ANCHOR**

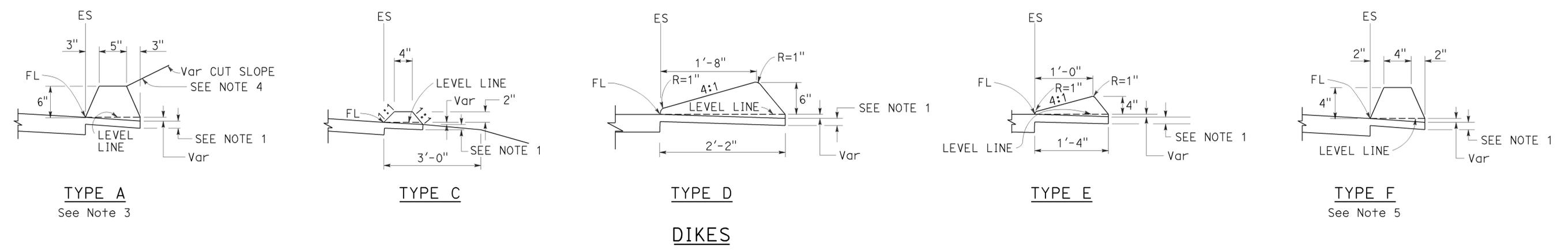
NO SCALE

RSP A77T2 DATED NOVEMBER 15, 2013 SUPERSEDES RSP A77T2 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77T2**

2010 REVISED STANDARD PLAN RSP A77T2

TO ACCOMPANY PLANS DATED 2-17-15



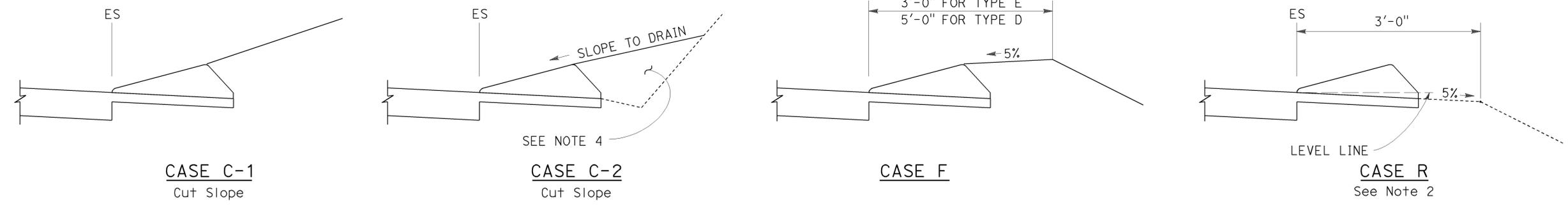
**TYPE A**  
See Note 3

**TYPE C**

**TYPE D**

**TYPE E**

**TYPE F**  
See Note 5



**CASE C-1**  
Cut Slope

**CASE C-2**  
Cut Slope

**CASE F**

**CASE R**  
See Note 2

**TYPE D AND E BACKFILL DETAILS**

**NOTES:**

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

**DIKE  
QUANTITIES**

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

Quantities based on 5% cross slope.

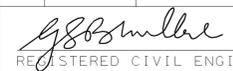
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**HOT MIX ASPHALT DIKES**  
NO SCALE

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

2010 REVISED STANDARD PLAN RSP A87B

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	52	58

  
 REGISTERED CIVIL ENGINEER  
 July 19, 2013  
 PLANS APPROVAL DATE



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TO ACCOMPANY PLANS DATED 2-17-15

TABLE 1

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

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

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

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

TABLE 2

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

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

TABLE 3

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

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

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

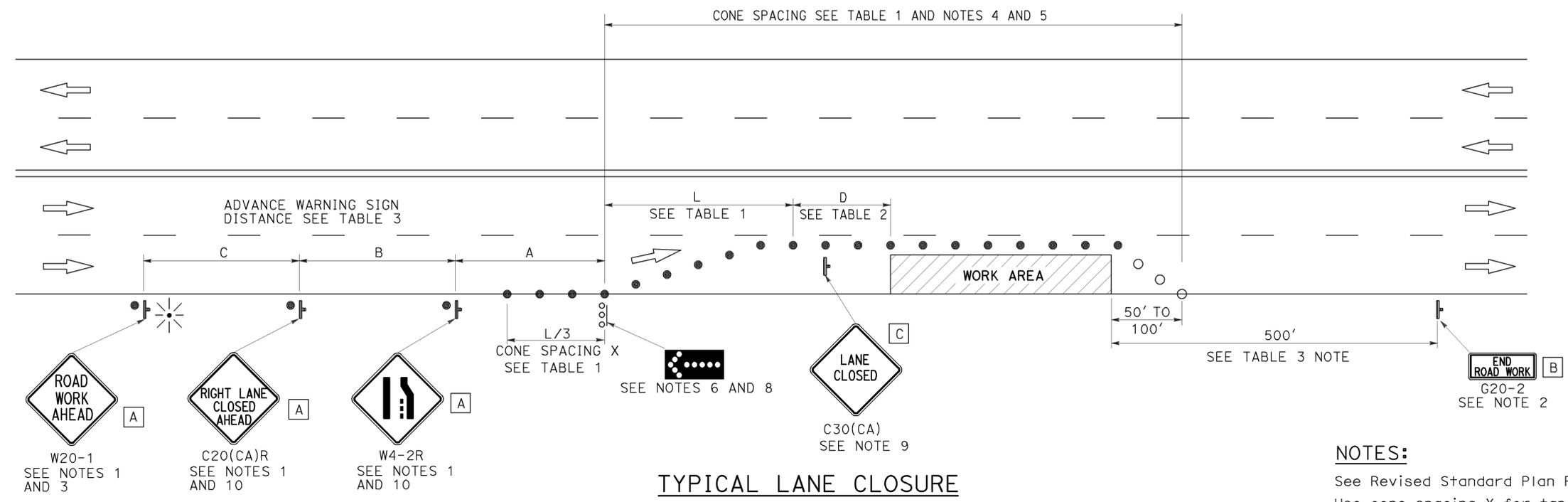
RSP T9 DATED JULY 19, 2013 SUPERSEDES RSP T9 DATED APRIL 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP T9**

2010 REVISED STANDARD PLAN RSP T9



TO ACCOMPANY PLANS DATED 2-17-15



TYPICAL LANE CLOSURE

NOTES:

- See Revised Standard Plan RSP T9 for tables.
- Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as appropriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.
- Unless otherwise specified in the special provisions, all temporary warning signs shall have black legend on fluorescent orange background.
- California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

NOTES:

- Each advance warning sign shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
- A G20-2 "END ROAD WORK" sign, as appropriate, shall be placed at the end of the lane closure unless the end of work area is obvious, or ends within a larger project's limits.
- If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT \_\_\_\_\_ MILES", use a C20(CA) sign for the first advance warning sign.
- All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
- Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime closures only.
- Flashing arrow sign shall be either Type I or Type II.
- For approach speeds over 50 mph, use the "Traffic Control System for Lane Closure On Freeways And Expressways" plan for lane closure details and requirements.
- A minimum 1500' of sight distance shall be provided where possible for vehicles approaching the first flashing arrow sign. Lane closures shall not begin at the top of crest vertical curve or on a horizontal curve.
- Place a C30(CA) sign every 2000' throughout length of lane closure.
- Median lane closures shall conform to the details as shown except that C20(CA)L and W4-2L signs shall be used.
- At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closure unless, otherwise directed by the Engineer.

LEGEND

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

SIGN PANEL SIZE (Min)

- A 48" x 48"
- B 36" x 18"
- C 30" x 30"

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**TRAFFIC CONTROL SYSTEM  
FOR LANE CLOSURE ON  
MULTILANE CONVENTIONAL  
HIGHWAYS**

NO SCALE

RSP T11 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T11 DATED MAY 20, 2011 - PAGE 239 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP T11**

2010 REVISED STANDARD PLAN RSP T11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	54	58

REGISTERED CIVIL ENGINEER  
 April 19, 2013  
 PLANS APPROVAL DATE  
 Gurinderpal Bhullar  
 No. C48815  
 Exp. 9-30-14  
 CIVIL  
 STATE OF CALIFORNIA  
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

**LEGEND**

- TRAFFIC CONE
- ⌋ TEMPORARY TRAFFIC CONTROL SIGN
- ⬢ FLASHING ARROW SIGN (FAS)
- FAS SUPPORT OR TRAILER
- ☀ PORTABLE FLASHING BEACON

**SIGN PANEL SIZE (Min)**

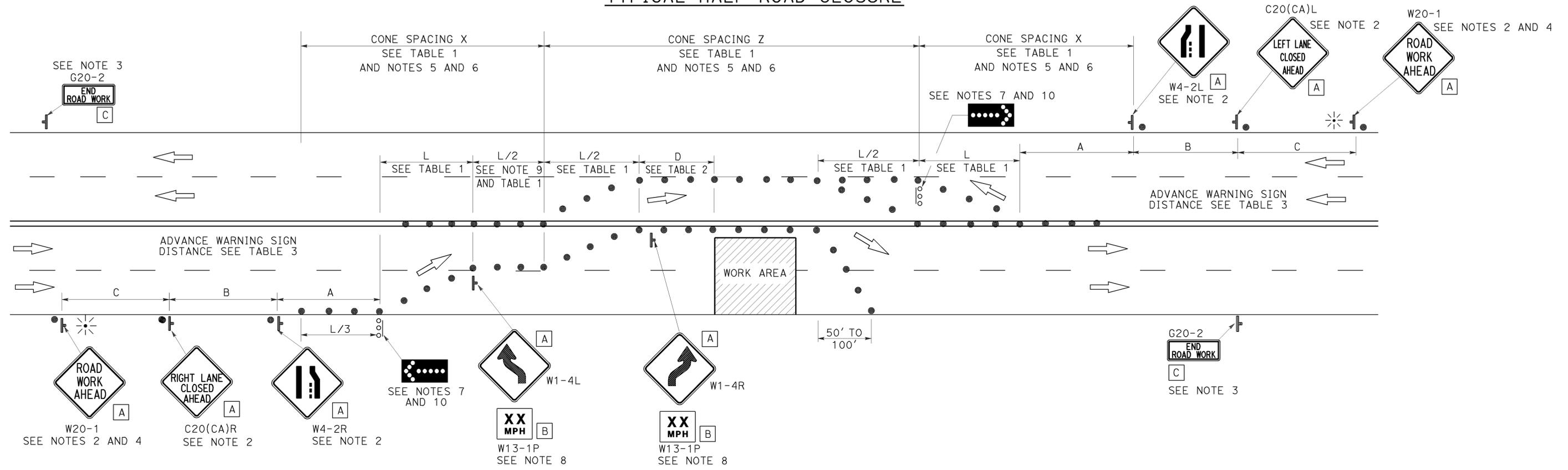
- A 48" x 48"
- B 24" x 24"
- C 36" x 18"

**NOTES:**

See Revised Standard Plan RSP T9 for tables.  
 Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as appropriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.  
 Unless otherwise specified in the special provisions, all temporary warning signs shall have black legend on fluorescent orange background.  
 California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

TO ACCOMPANY PLANS DATED 2-17-15

**TYPICAL HALF ROAD CLOSURE**



**NOTES:**

1. At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closure unless, otherwise directed by the Engineer.
2. Each advance warning sign in each direction of travel shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
3. A G20-2 "END ROAD WORK" sign, as appropriate, shall be placed at the end of the lane closure unless the end of work area is obvious, or ends within a larger project's limits.
4. If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT \_\_\_\_\_ MILES", use a C20(CA) sign for the first advance warning sign.
5. All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
6. Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime closures only.
7. Flashing arrow signs shall be either Type I or Type II.
8. Advisory speed will be determined by the Engineer. The W13-1P Plaque will not be required when advisory speed is more than the posted or maximum speed limit.
9. Unless otherwise specified in the special provisions, the tangent (L/2) shall be used.
10. A minimum 1500' of sight distance shall be provided where possible for vehicles approaching the first flashing arrow sign. Lane closures shall not begin at the top of crest vertical curve or on a horizontal curve.

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**TRAFFIC CONTROL SYSTEM  
 FOR HALF ROAD CLOSURE ON  
 MULTILANE CONVENTIONAL  
 HIGHWAYS AND EXPRESSWAYS**  
 NO SCALE

RSP T12 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T12  
 DATED MAY 20, 2011 - PAGE 240 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP T12**

2010 REVISED STANDARD PLAN RSP T12

**NOTES:**

See Revised Standard Plan RSP T9 for tables.

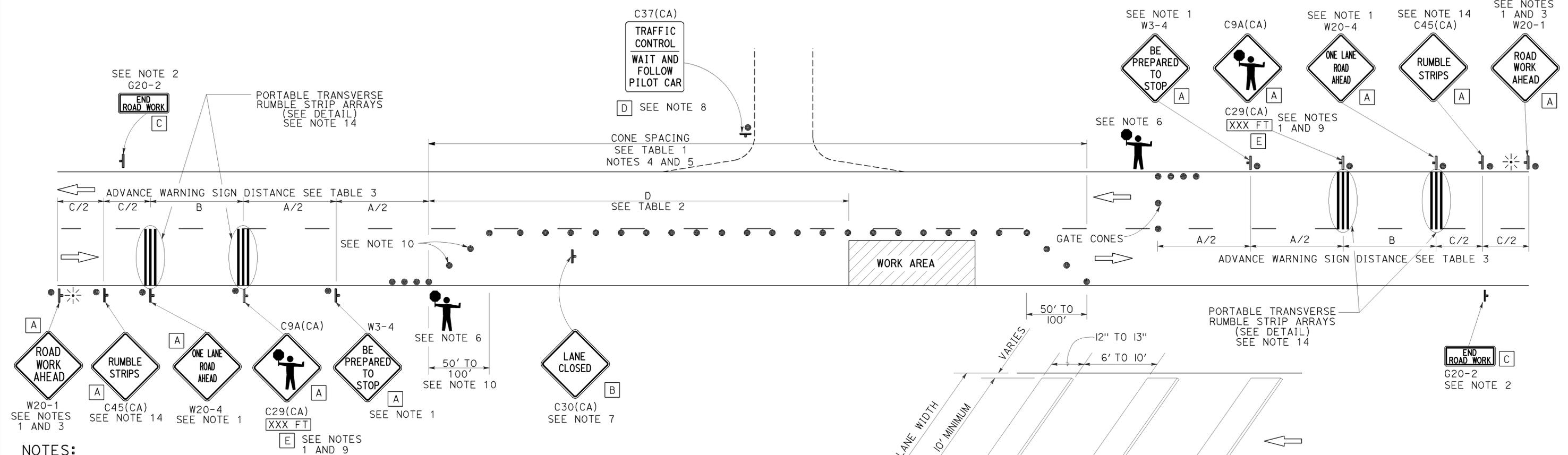
Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as appropriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.

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

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

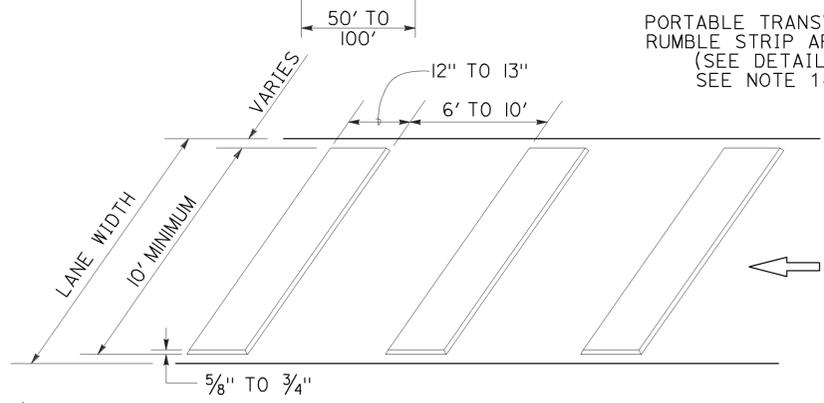
**TYPICAL LANE CLOSURE WITH REVERSIBLE CONTROL**

TO ACCOMPANY PLANS DATED 2-17-15



- NOTES:**
- Each advance warning sign in each direction of travel shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
  - A G20-2 "END ROAD WORK" sign, as appropriate, shall be placed at the end of the lane control unless the end of work area is obvious, or ends within a larger project's limits.
  - If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT \_\_\_\_\_ MILES", use a W20-4 sign for the first advance warning sign.
  - All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
  - Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime closures only.
  - Additional advance flaggers may be required. Flagger should stand in a conspicuous place, be visible to approaching traffic as well as approaching vehicles after the first vehicle has stopped. During the hours of darkness, the flagging-station and flagger shall be illuminated and clearly visible to approaching traffic. The illumination footprint of the lighting on the ground shall be at least 20' in diameter. Place a minimum of four cones at 50' intervals in advance of flagger station as shown.

- Place C30(CA) "LANE CLOSED" sign at 500' to 1000' intervals throughout extended work areas. They are optional if the work area is visible from the flagger station.
- When a pilot car is used, place a C37(CA) "TRAFFIC CONTROL-WAIT AND FOLLOW PILOT CAR" sign with black legend on white background at all intersections, driveways and alleys without a flagger within traffic control area. Signs shall be clean and visible at all times. Where traffic can not be effectively self-regulated, at least one flagger shall be used at each intersection within traffic control area.
- An optional C29(CA) sign may be placed below the C9A(CA) sign.
- Either traffic cones or barricades shall be placed on the taper. Barricades shall be Type I, II, or III.
- The color of the portable transverse rumble strips shall be black or orange. Use 2 arrays, each array shall consist of 3 rumble strips.
- Portable transverse rumble strips shall not be placed on sharp horizontal or vertical curves nor shall they be placed through pedestrian crossings.
- If the portable transverse rumble strips become out of alignment (skewed) by more than 6 inches, measured from one end to the other, they shall be readjusted to bring the placement back to the original location.
- Portable transverse rumble strips are not required if any one of the following conditions is satisfied:
  - Work duration occupies a location for four hours or less
  - Posted speed limit is below 45 MPH
  - Work is of emergency nature
  - Work zone is in snow or icy weather conditions



**PORTABLE TRANSVERSE RUMBLE STRIP ARRAY DETAIL**

**SIGN PANEL SIZE (Min)**

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

**LEGEND**

- TRAFFIC CONE
- ⊥ TEMPORARY TRAFFIC CONTROL SIGN
- ⚡ PORTABLE FLASHING BEACON
- 🚧 FLAGGER

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE ON TWO LANE CONVENTIONAL HIGHWAYS**

NO SCALE

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

2010 REVISED STANDARD PLAN RSP T13

# TYPICAL RAMP CLOSURES

## SIGN PANEL SIZE (Min)

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

## LEGEND

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	56	58

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

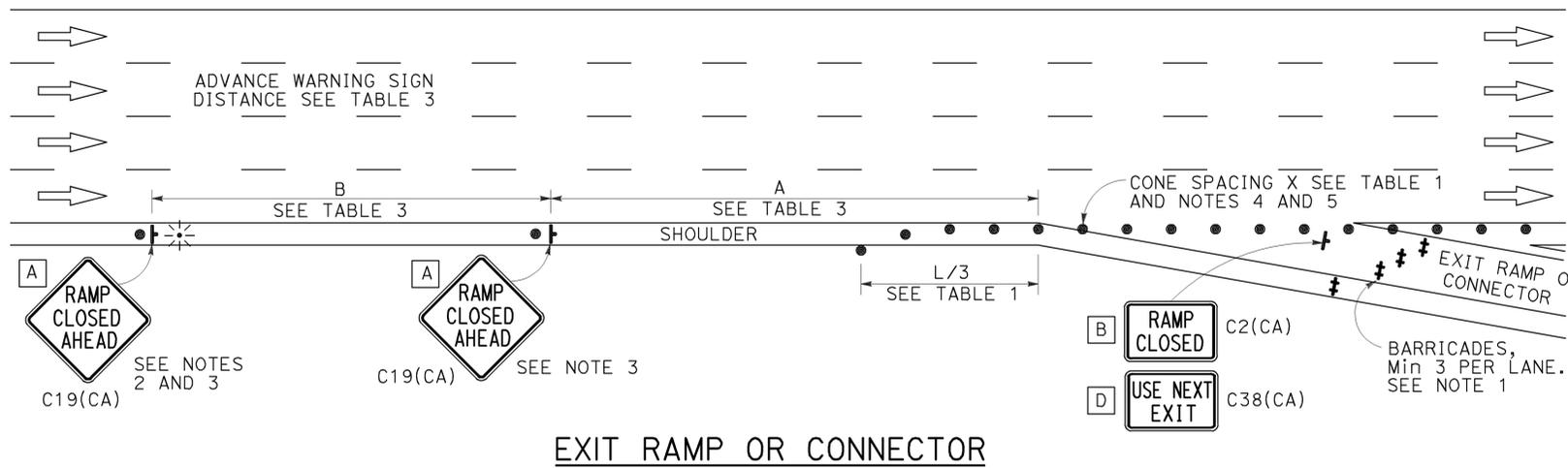
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

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

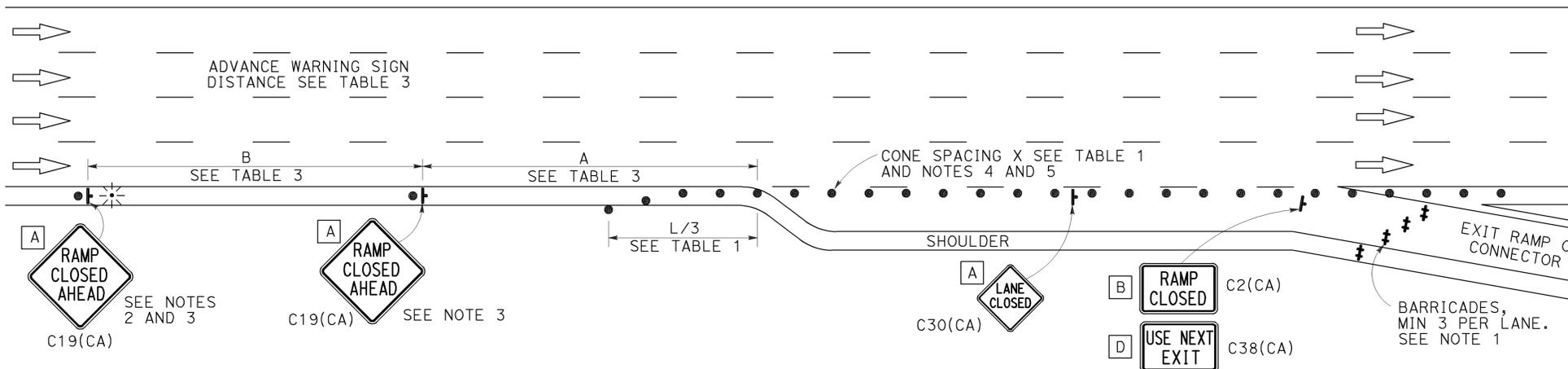
TO ACCOMPANY PLANS DATED 2-17-15

## NOTES:

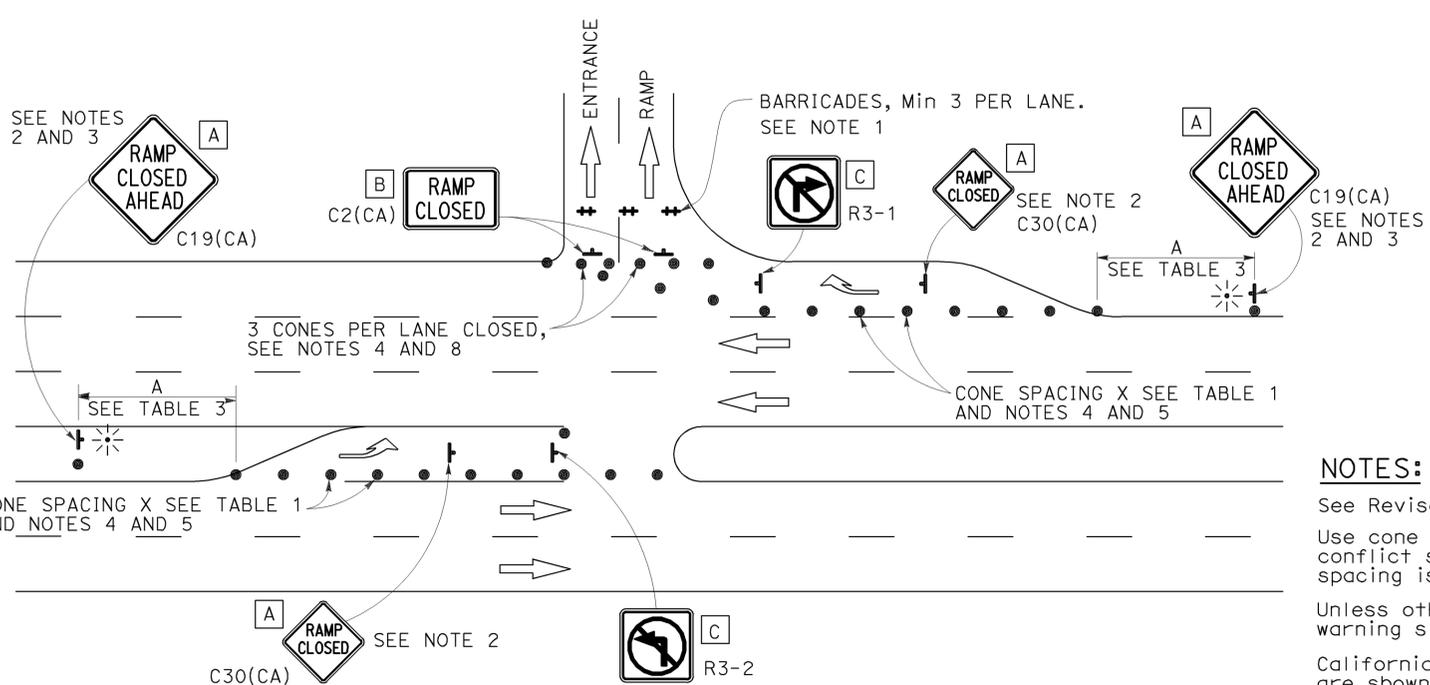
- Barricades shall be Type I, II, or III for closures lasting one week or less and Type III for closures lasting longer than one week.
- In addition to placing the C19(CA) "RAMP CLOSED AHEAD" and C30(CA) "RAMP CLOSED" signs, black on orange overlay plates with the word "CLOSED" may be mounted, as directed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



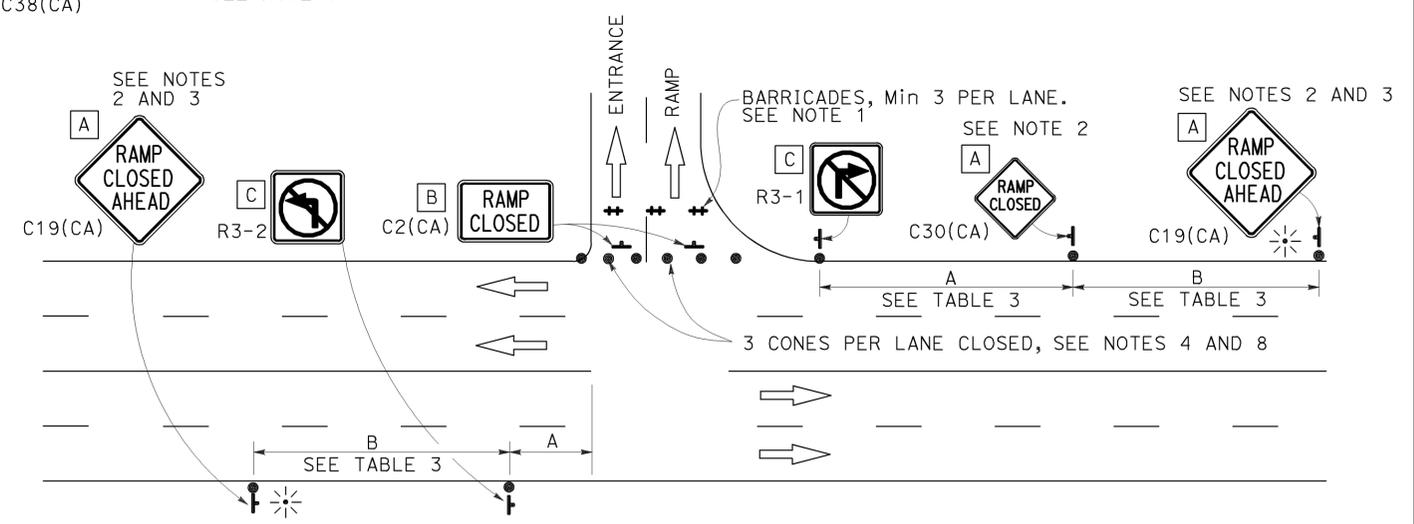
EXIT RAMP OR CONNECTOR



EXIT RAMP OR CONNECTOR WITH ADDITIONAL LANE



ENTRANCE RAMP WITH TURNING POCKETS



ENTRANCE RAMP WITHOUT TURNING POCKETS

## NOTES:

- See Revised Standard Plan RSP T9 for tables.
- Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as appropriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.
- Unless otherwise specified in the special provisions, all temporary warning signs shall have black legend on fluorescent orange background.
- California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

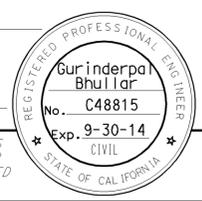
STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**TRAFFIC CONTROL SYSTEM  
 FOR RAMP CLOSURE**  
 NO SCALE

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

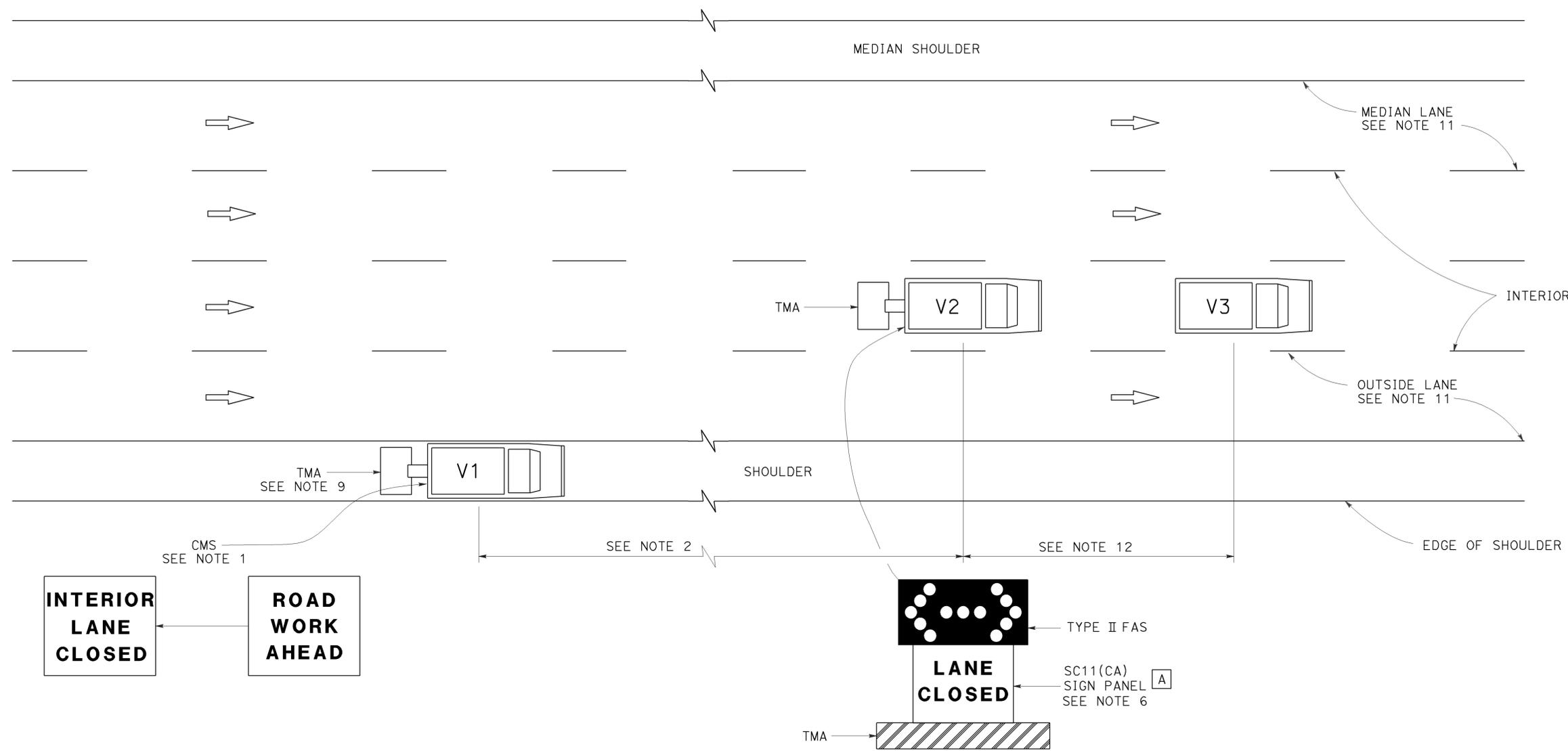
2010 REVISED STANDARD PLAN RSP T14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	Nev	49	0.0/9.6, 11.1/R14.4	57	58

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



TO ACCOMPANY PLANS DATED 2-17-15



SIGN PANEL SIZE (Min)

A 54" x 42"

LEGEND

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

MOVING LANE CLOSURE ON INTERIOR LANE OF MULTILANE HIGHWAYS

NOTES:

1. A changeable message sign shall be mounted on the rear of sign vehicle V1. The changeable message sign shall be sequenced to show the "ROAD WORK AHEAD" message first, followed by the "INTERIOR LANE CLOSED" message. The message "CENTER LANE CLOSED" may be used in place of the "INTERIOR LANE CLOSED" message.
2. If traffic queues develop, sign vehicle V1 should be positioned upstream from the end of queue. Sign vehicle V1 shall be positioned where highly visible when shoulders are not available.
3. A minimum sight distance of 1500' should be provided in advance of sign vehicle V1.
4. Sign vehicle V1 should remain at the beginning of horizontal or vertical curves until the other vehicles (V2 and V3) are far enough beyond the curve to resume the minimum sight distance of 1500'.
5. Vehicle-mounted sign panels shall have Type III or above retroreflective sheeting, black on white, or black on fluorescent orange, with 6" minimum series D letters per Caltrans sign specifications.
6. Shadow vehicle V2 shall be equipped with a truck-mounted attenuator. The sign panel shown and a Type II flashing arrow sign shall be mounted on the rear of shadow vehicle V2.
7. All vehicles used for lane closures shall be equipped with two-way radios, and the vehicle operators shall maintain communication during the work or application operation.
8. All vehicles shall be equipped with flashing or rotating amber lights.
9. If sign vehicle V1 encroaches into the traffic lane due to insufficient shoulder width, sign vehicle V1 shall be equipped with a truck-mounted attenuator. Sign vehicle V1 shall stay as close to the edge of shoulder as practicable.
10. Where workers would be on foot in the work area, a stationary type lane closure (Revised Standard Plan T10, T11 etc., as applicable) shall be used instead of this plan.
11. For moving lane closure on median lane or outside lane of multilane highways, use Revised Standard Plan T15.
12. The spacing between work vehicle(s) and the shadow vehicles, and between each shadow vehicle should be minimized to deter road users from driving in between.

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**TRAFFIC CONTROL SYSTEM  
 FOR MOVING LANE CLOSURE  
 ON MULTILANE HIGHWAYS**  
 NO SCALE

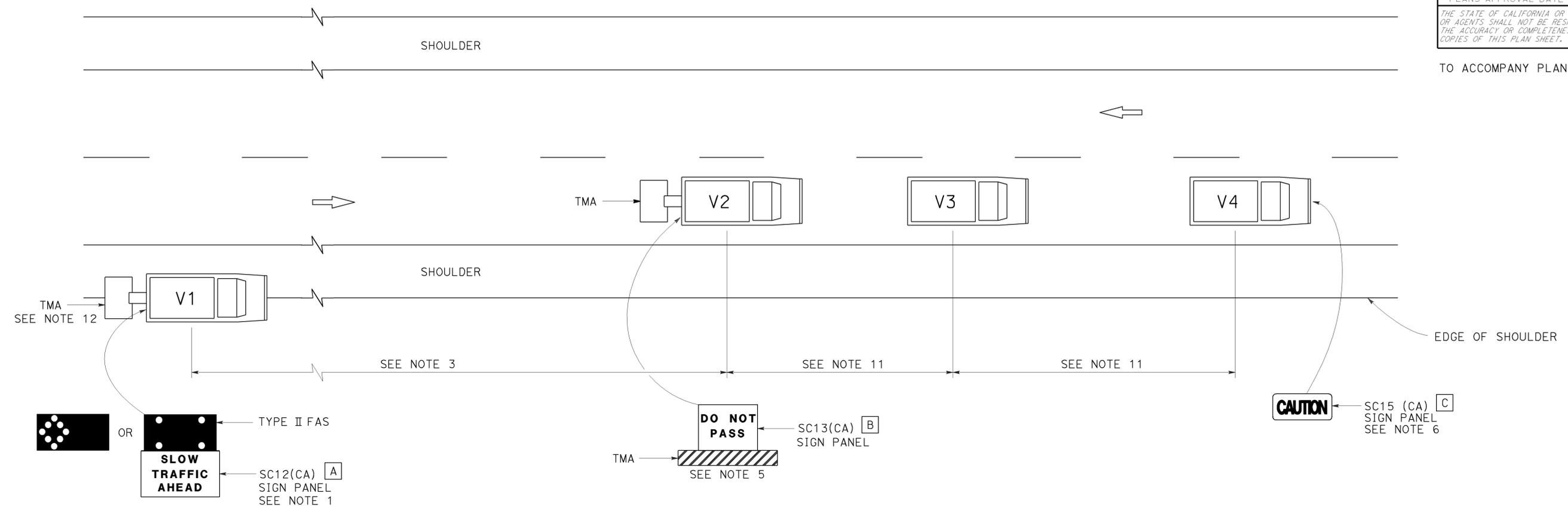
RSP T16 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T16 DATED MAY 20, 2011 - PAGE 244 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP T16**

2010 REVISED STANDARD PLAN RSP T16



TO ACCOMPANY PLANS DATED 2-17-15



**NOTES:**

1. Either a changeable message sign or a SC12(CA) "SLOW TRAFFIC AHEAD" sign shall be mounted on the rear of sign vehicle V1. The changeable message sign shall be sequenced to show the "CAUTION" message first, follow by the "SLOW TRAFFIC AHEAD" message. A Type II flashing arrow sign may be used with the SC12(CA) sign panel.
2. Sign vehicle V1 should be positioned where highly visible when shoulders are not available.
3. If traffic queues develop, sign vehicle V1 should be positioned upstream from the end of queue.
4. Vehicle-mounted sign panels shall have Type III or above retroreflective sheeting, black on white, or black on fluorescent orange, with 6" minimum series D letters per Caltrans sign specifications.
5. Shadow vehicle shall be equipped with a truck-mounted attenuator. The sign panel shown shall be mounted on the rear of shadow vehicle V2. The message "LANE CLOSED" may be used in place of the "DO NOT PASS" message.
6. The sign panel shown shall be mounted on the front of sign vehicle V4, facing opposing traffic.

7. All vehicles shall be equipped with flashing or rotating amber lights.
8. Sign vehicle V4 will not be required when the work and vehicles V2 and V3 are 2' or more from the centerline of the highway during the work or application operations.
9. All vehicles used for lane closures shall be equipped with two-way radios and the vehicle operators shall maintain communication during the work or application operation.
10. This plan shall not be used where workers would be on foot in the work area. Use a stationary type lane closure (Revised Standard Plan T13) for this condition.
11. Minimize spacing between vehicles V2 and V3 and vehicles V3 and V4 to deter road users from driving in between them.
12. If sign vehicle V1 encroaches into the traffic lane due to insufficient shoulder width, sign vehicle V1 shall be equipped with a truck-mounted attenuator. Sign vehicle V1 shall stay as close to the edge of shoulder as practicable.

**LEGEND**

- V1 SIGN VEHICLE
- V2 SHADOW VEHICLE
- V3 WORK/APPLICATION VEHICLE
- V4 SIGN VEHICLE
- TMA TRUCK-MOUNTED ATTENUATOR
-  FLASHING ARROW SIGN (FAS) IN FLASHING CAUTION MODE
-  FLASHING ARROW SIGN (FAS) IN ALTERNATING DIAMOND CAUTION

**SIGN PANEL SIZE (Min)**

- A** 72" x 42"
- B** 54" x 42"
- C** 54" x 24"

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**TRAFFIC CONTROL SYSTEM  
 FOR MOVING LANE CLOSURE  
 ON TWO LANE HIGHWAYS**  
 NO SCALE

RSP T17 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T17  
 DATED MAY 20, 2011 - PAGE 245 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP T17**

2010 REVISED STANDARD PLAN RSP T17