

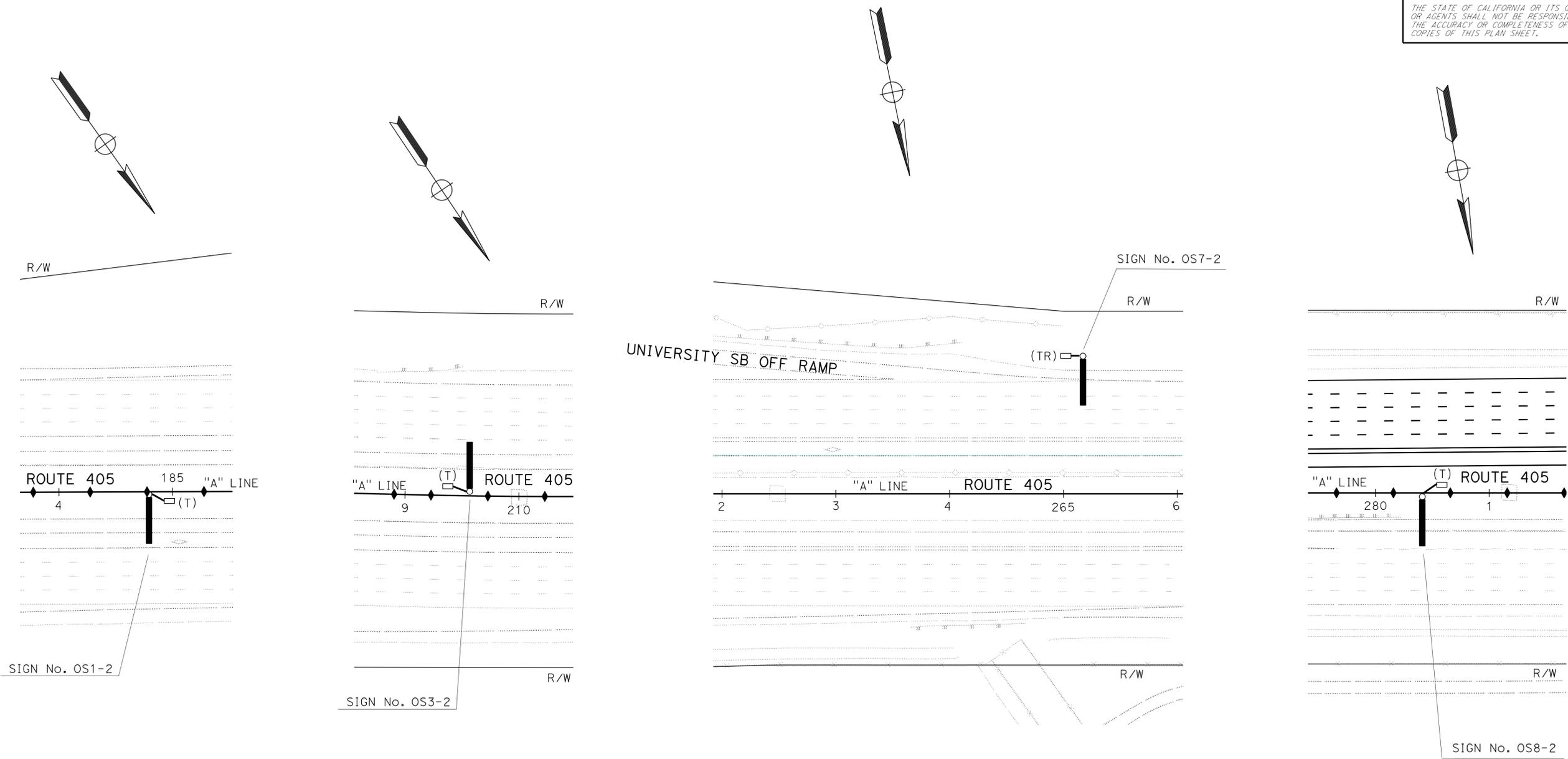
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	301	431

<i>Vanessa Van Truong</i>	06-21-16
REGISTERED ELECTRICAL ENGINEER	DATE
06-27-16 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:

- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- INSTALL 2" C, MT.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 CALCULATED/DESIGNED BY: SHAHRAM SHAHRIARI
 CHECKED BY:
 VANESSA TRUONG
 SHAHRAM SHAHRIARI
 REVISED BY: VANESSA TRUONG
 DATE REVISED:



FOR LEGEND, SEE SHEET E-2

SIGN ILLUMINATION SYSTEM
SCALE: 1" = 50'

LAST REVISION: DATE PLOTTED => 09-AUG-2016
 06-10-16 TIME PLOTTED => 14:07

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN

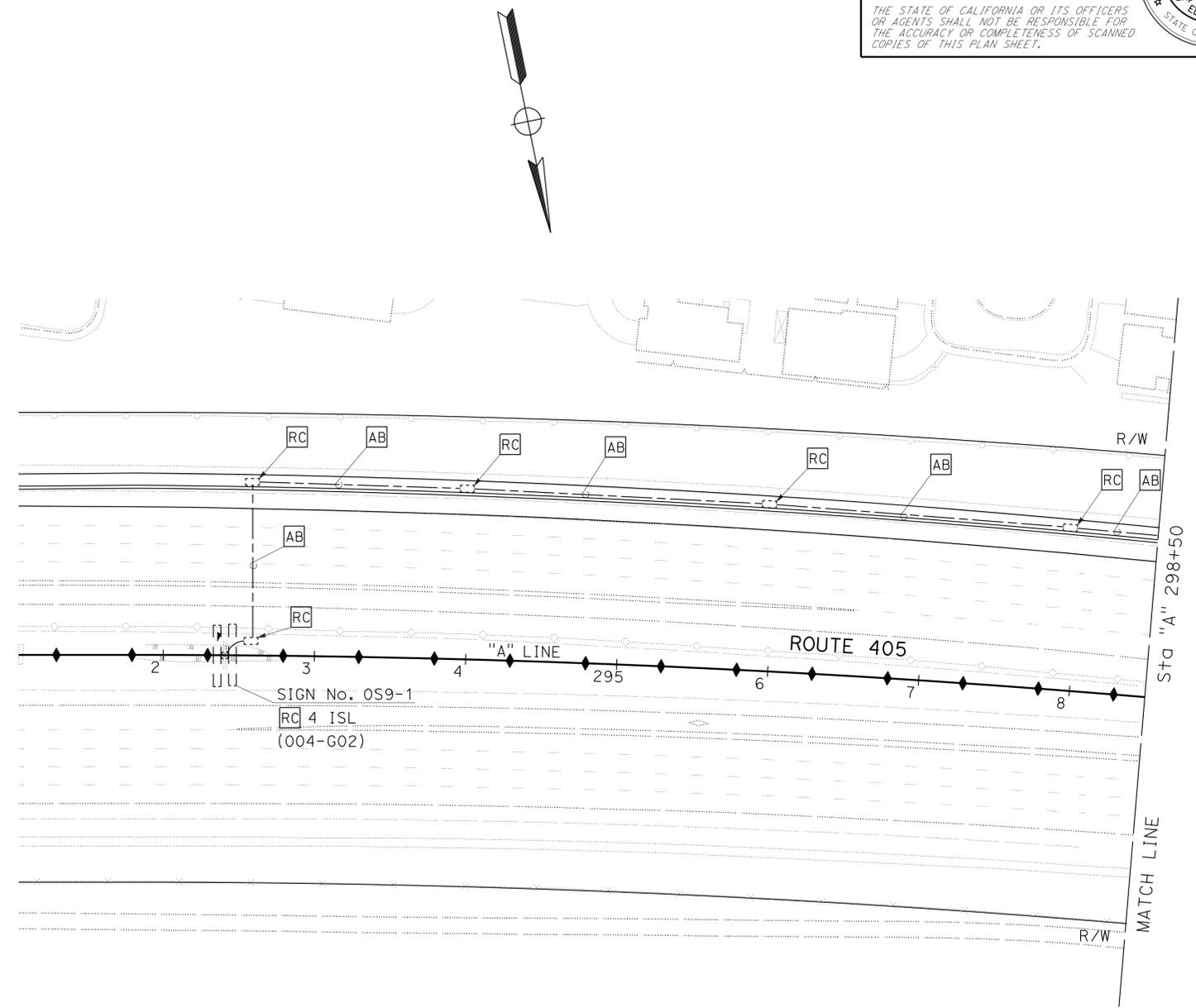
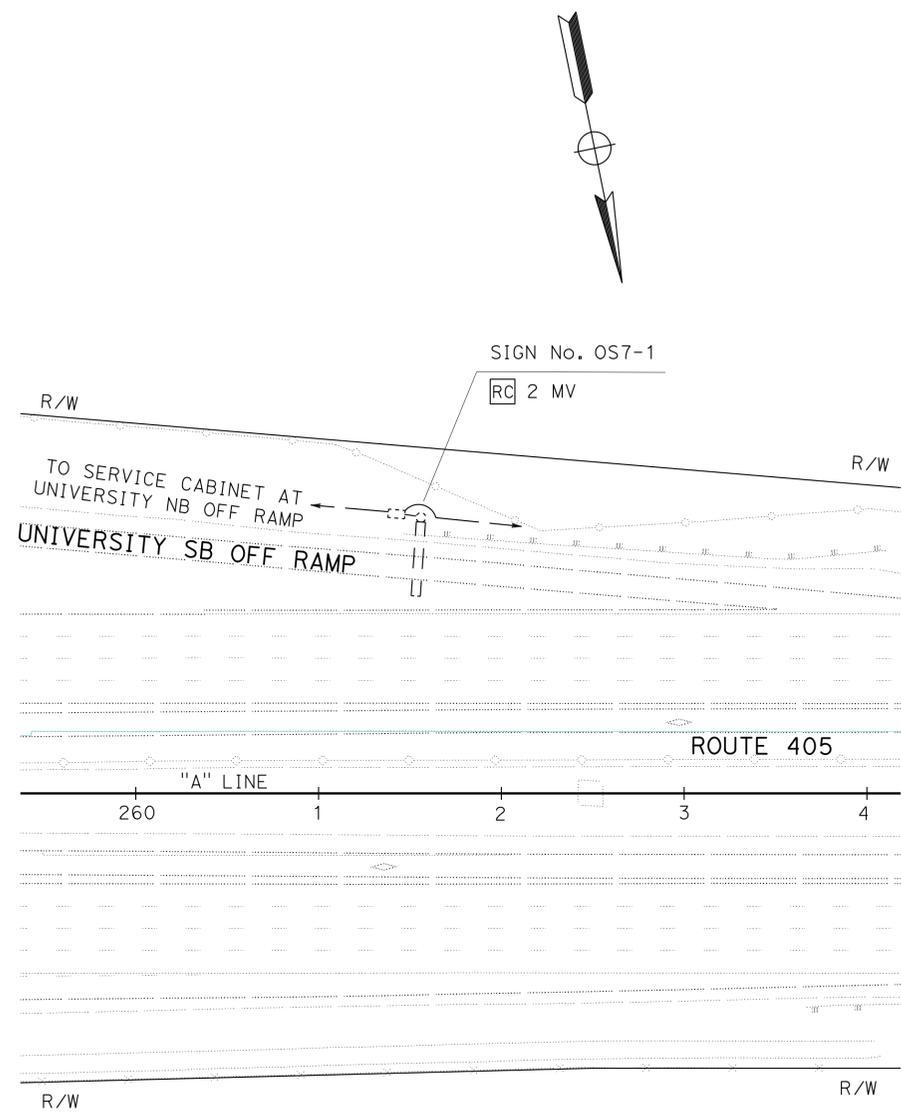
FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 CALCULATED/DESIGNED BY: SHAHRAM SHAHRIARI
 CHECKED BY: SHAHRAM SHAHRIARI
 VANESSA TRUONG
 REVISOR: SHAHRAM SHAHRIARI
 DATE: 06-21-16

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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	302	431

REGISTERED ELECTRICAL ENGINEER: *Vanessa Van Truong* 06-21-16
 No. E 13983
 PLANS APPROVAL DATE: 06-27-16
 Exp. 6/30/18
 REGISTERED PROFESSIONAL ENGINEER
 STATE OF CALIFORNIA
 ELECTRICAL

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.



(SIGN ILLUMINATION SYSTEM)

MODIFYING EXISTING ELECTRICAL SYSTEM
 SCALE: 1" = 50'

APPROVED FOR ELECTRICAL WORK ONLY

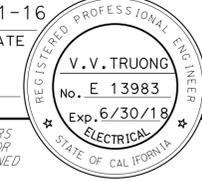
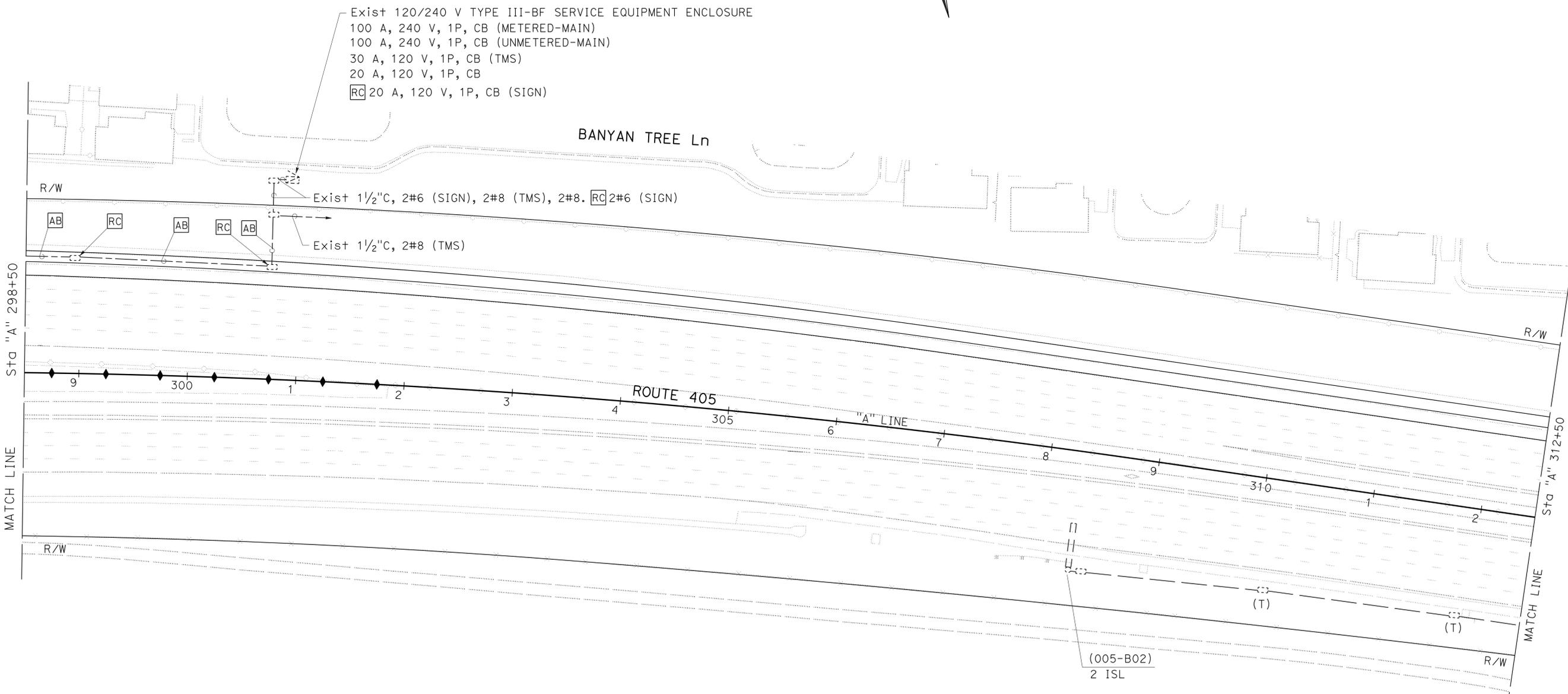
E-41

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 CHECKED BY: SHAHRAM SHAHRIARI
 VANESSA TRUONG
 SHAHRAM SHAHRIARI
 REVISOR: VANESSA TRUONG
 DATE: 06-21-16
 REVISOR: VANESSA TRUONG
 DATE: 06-27-16

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	303	431

Vanessa Van Truong 06-21-16
 REGISTERED ELECTRICAL ENGINEER DATE
 06-27-16
 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.

(SIGN ILLUMINATION SYSTEM)

MODIFYING EXISTING ELECTRICAL SYSTEM
 SCALE: 1" = 50'

APPROVED FOR ELECTRICAL WORK ONLY

E-42

LAST REVISION | DATE PLOTTED => 09-AUG-2016
 06-14-16 | TIME PLOTTED => 14:07

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 CALCULATED/DESIGNED BY: SHAHRAM SHAHRIARI
 CHECKED BY: SHAHRAM SHAHRIARI
 REVISIONS: VANESSA TRUONG, SHAHRAM SHAHRIARI

NOTES:

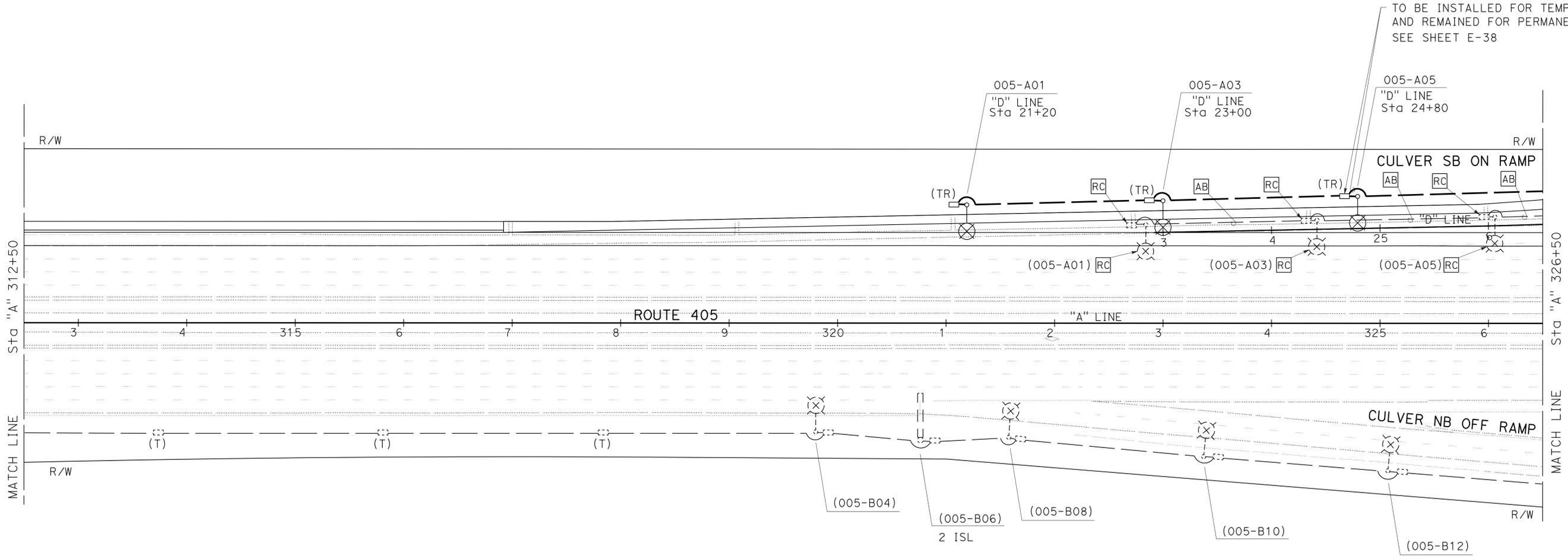
- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- INSTALL 2" C FOR NEW CONDUIT.
- SEE SHEET E-48 FOR WIRING DIAGRAM, CONDUCTOR SIZES AND NUMBER OF CONDUCTORS.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	304	431

06-21-16
 REGISTERED ELECTRICAL ENGINEER DATE
 06-27-16
 PLANS APPROVAL DATE

Vanessa Van Truong
 REGISTERED ELECTRICAL ENGINEER
 No. E 13983
 Exp. 6/30/18
 ELECTRICAL
 STATE OF CALIFORNIA

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



TO BE INSTALLED FOR TEMPORARY AND REMAINED FOR PERMANENT. SEE SHEET E-38

(LIGHTING SYSTEM)

FOR LEGEND, SEE SHEET E-2

MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1" = 50'

LAST REVISION | DATE PLOTTED => 09-AUG-2016 | 05-23-16 | TIME PLOTTED => 14:07

NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. INSTALL 2" C FOR NEW CONDUIT.
3. SEE SHEET E-48 FOR WIRING DIAGRAM, CONDUCTOR SIZES AND NUMBER OF CONDUCTORS.
4. MINIMUM 30' CLEARANCE IS REQUIRED FROM THE FACE OF FIXED OBJECT TO ETW.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	305	431

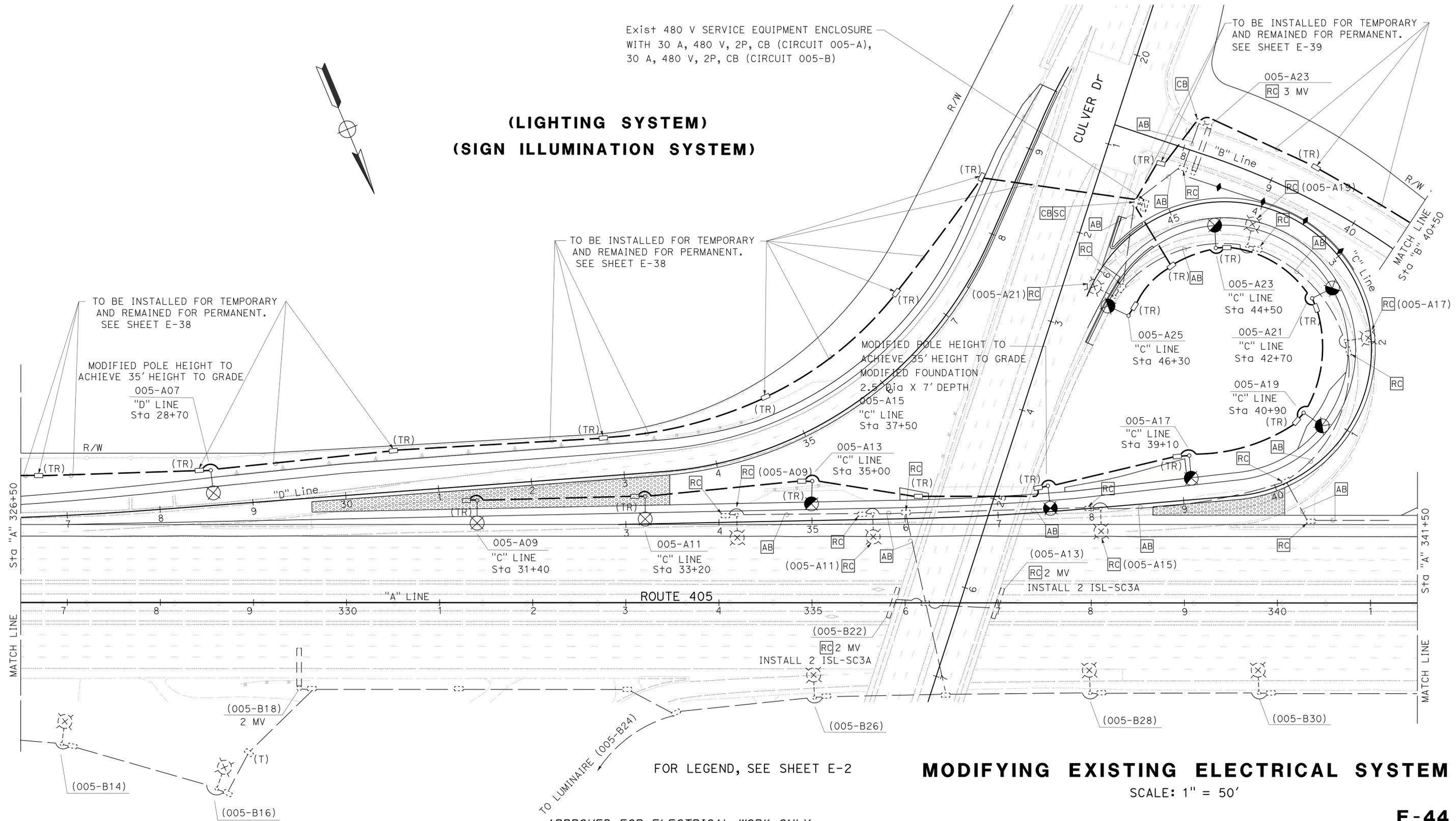
Vanessa Van Truong 06-21-16
 REGISTERED ELECTRICAL ENGINEER DATE

06-27-16
 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.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Electrical Design
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 VANESSA TRUONG
 SHAHRAM SHAHRIARI
 REVISIONS: REVISED BY VANESSA TRUONG, DATE REVISED: [blank]
 CALCULATED/DESIGNED BY: [blank], CHECKED BY: [blank]

(LIGHTING SYSTEM)
(SIGN ILLUMINATION SYSTEM)



FOR LEGEND, SEE SHEET E-2

MODIFYING EXISTING ELECTRICAL SYSTEM
 SCALE: 1" = 50'

APPROVED FOR ELECTRICAL WORK ONLY

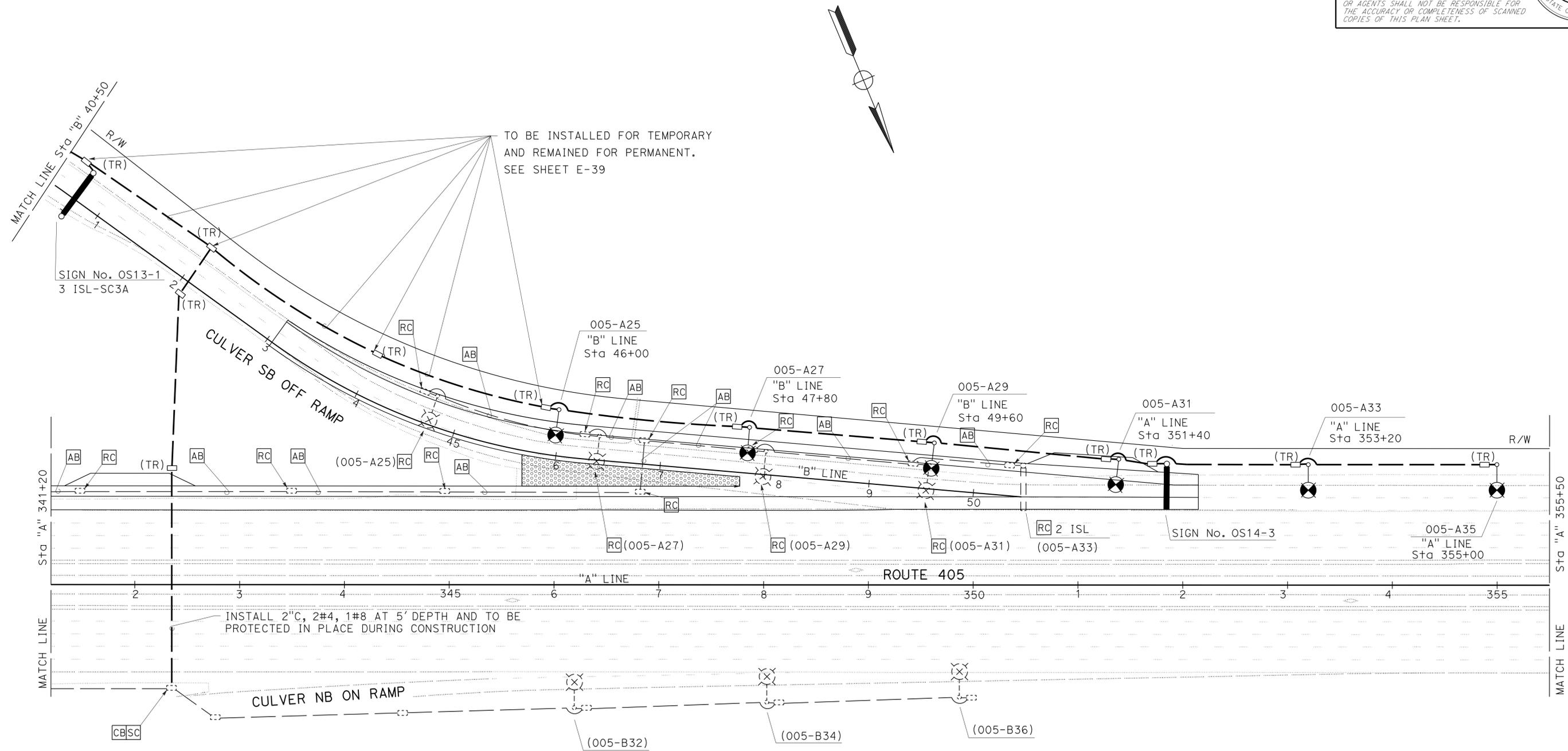
LAST REVISION: DATE PLOTTED => 09-AUG-2016 TIME PLOTTED => 14:07
 06-02-16

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	306	431

<i>Vanessa Van Truong</i> 06-21-16 REGISTERED ELECTRICAL ENGINEER DATE	
06-27-16 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.

- NOTES:**
- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
 - INSTALL 2" C FOR NEW CONDUIT.
 - SEE SHEET E-48 FOR WIRING DIAGRAM, CONDUCTOR SIZES AND NUMBER OF CONDUCTORS.



(LIGHTING SYSTEM)
(SIGN ILLUMINATION SYSTEM)

MODIFYING EXISTING ELECTRICAL SYSTEM

FOR LEGEND, SEE SHEET E-2

SCALE: 1" = 50'

APPROVED FOR ELECTRICAL WORK ONLY

E-45

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 CHECKED BY: SHAHRAM SHAHRIARI
 DESIGNED BY: VANESSA TRUONG
 REVISIONS: VANESSA TRUONG, SHAHRAM SHAHRIARI
 REVISED BY: VANESSA TRUONG, SHAHRAM SHAHRIARI
 DATE REVISED:

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	307	431

<i>Vanessa Van Truong</i>	06-21-16
REGISTERED ELECTRICAL ENGINEER	DATE
06-27-16	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
V. V. TRUONG
No. E 13983
Exp. 6/30/18
ELECTRICAL
STATE OF CALIFORNIA

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

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

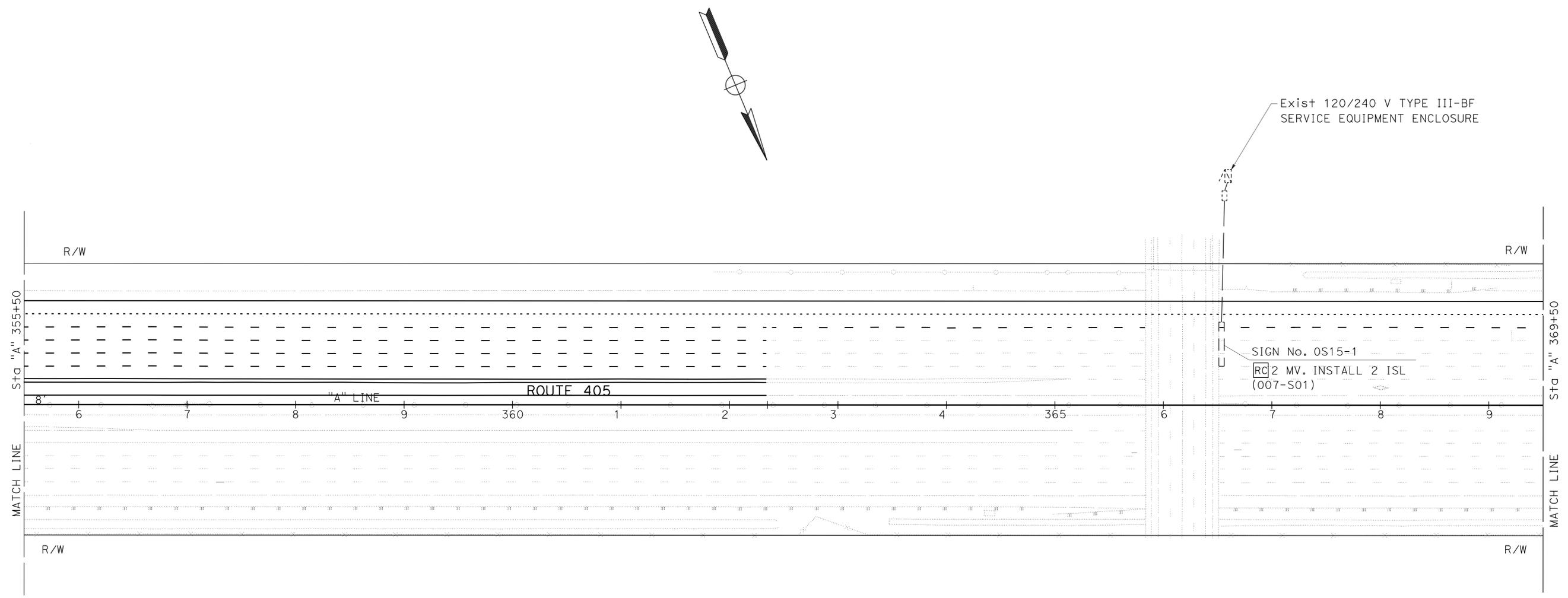
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR
SHAHRAM SHAHRIARI

CALCULATED/DESIGNED BY
CHECKED BY

VANESSA TRUONG
SHAHRAM SHAHRIARI

REVISED BY
DATE REVISED



(SIGN ILLUMINATION SYSTEM)

MODIFYING EXISTING ELECTRICAL SYSTEM
SCALE: 1" = 50'

E-46

APPROVED FOR ELECTRICAL WORK ONLY

NOTE:

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

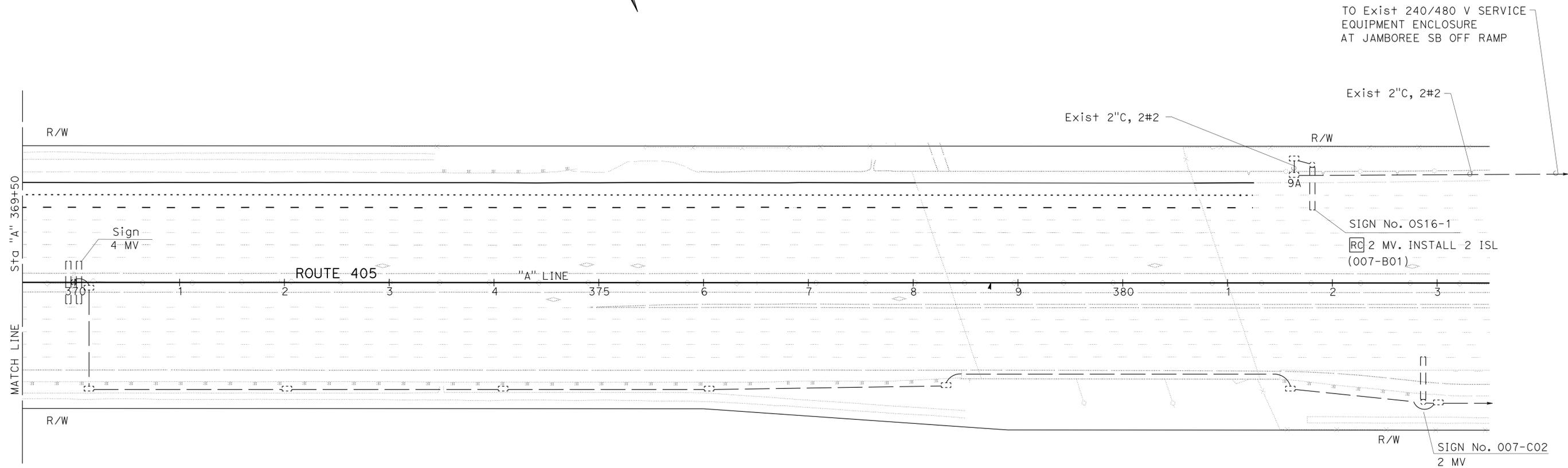
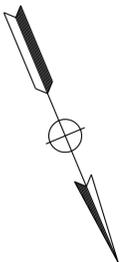
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	308	431

Vanessa Van Truong 06-21-16
 REGISTERED ELECTRICAL ENGINEER DATE

06-27-16
 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
V. V. TRUONG
 No. E 13983
 Exp. 6/30/18
 ELECTRICAL
 STATE OF CALIFORNIA



(SIGN ILLUMINATION SYSTEM)

MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1" = 50'

E-47

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR
Caltrans ELECTRICAL DESIGN	SHAHRAM SHAHRIARI	SHAHRAM SHAHRIARI	DATE
			REVISOR
			DATE

APPROVED FOR ELECTRICAL WORK ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	309	431

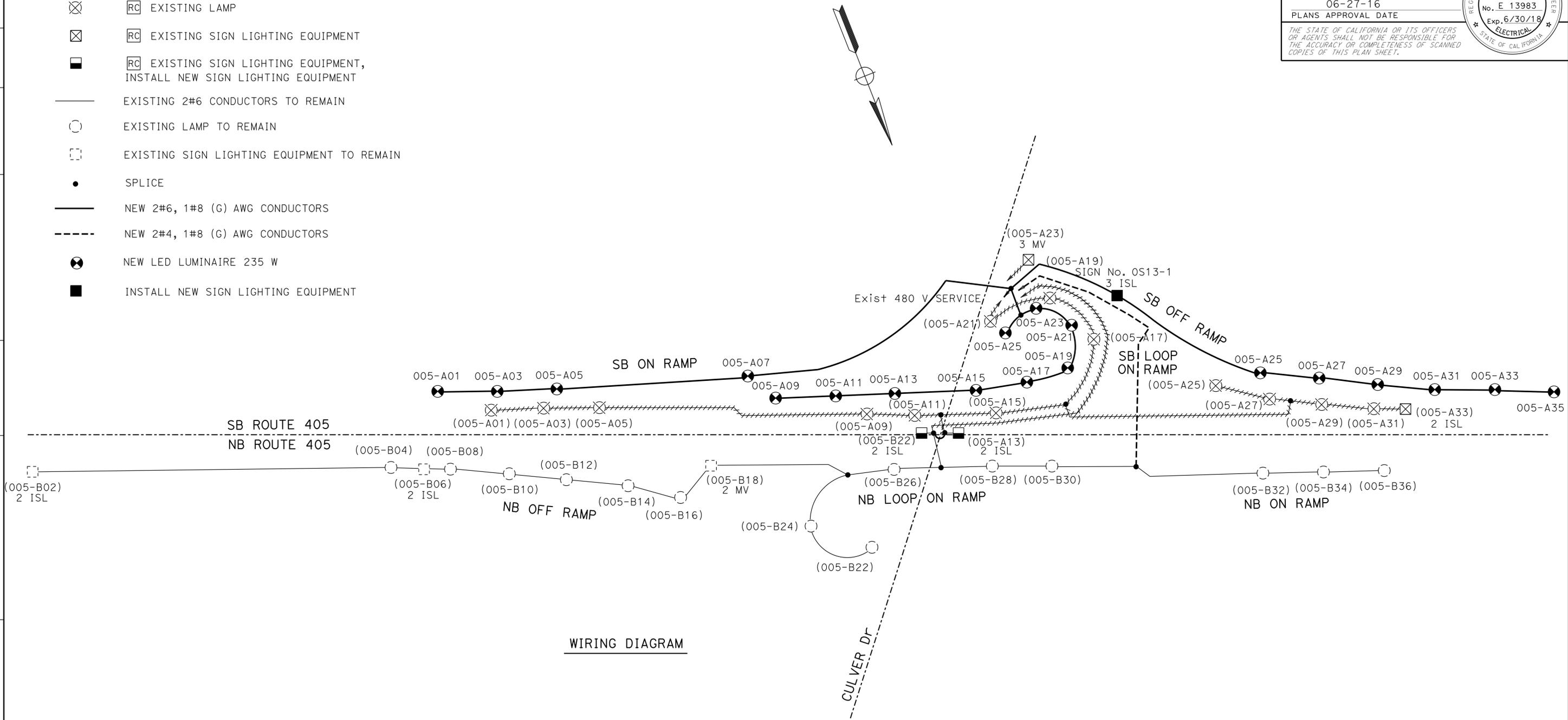
REGISTERED ELECTRICAL ENGINEER	DATE
<i>Vanessa Van Truong</i>	06-21-16
PLANS APPROVAL DATE	
	06-27-16

REGISTERED PROFESSIONAL ENGINEER
V. V. TRUONG
No. E 13983
Exp. 6/30/18
ELECTRICAL
STATE OF CALIFORNIA

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

WIRING DIAGRAM LEGEND

- #### RC EXISTING CONDUCTORS
- ⊗ RC EXISTING LAMP
- ⊗ RC EXISTING SIGN LIGHTING EQUIPMENT
- RC EXISTING SIGN LIGHTING EQUIPMENT, INSTALL NEW SIGN LIGHTING EQUIPMENT
- EXISTING 2#6 CONDUCTORS TO REMAIN
- EXISTING LAMP TO REMAIN
- EXISTING SIGN LIGHTING EQUIPMENT TO REMAIN
- SPLICE
- NEW 2#6, 1#8 (G) AWG CONDUCTORS
- - - NEW 2#4, 1#8 (G) AWG CONDUCTORS
- ⊗ NEW LED LUMINAIRE 235 W
- INSTALL NEW SIGN LIGHTING EQUIPMENT



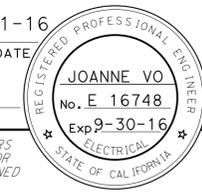
**(LIGHTING SYSTEM)
(SIGN ILLUMINATION SYSTEM)**

MODIFYING EXISTING ELECTRICAL SYSTEM
NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 CALCULATED/DESIGNED BY: SHAHRAM SHAHRIARI
 CHECKED BY: SHAHRAM SHAHRIARI
 VANESSA TRUONG
 REVISED BY: DATE REVISD:

APPROVED FOR ELECTRICAL WORK ONLY



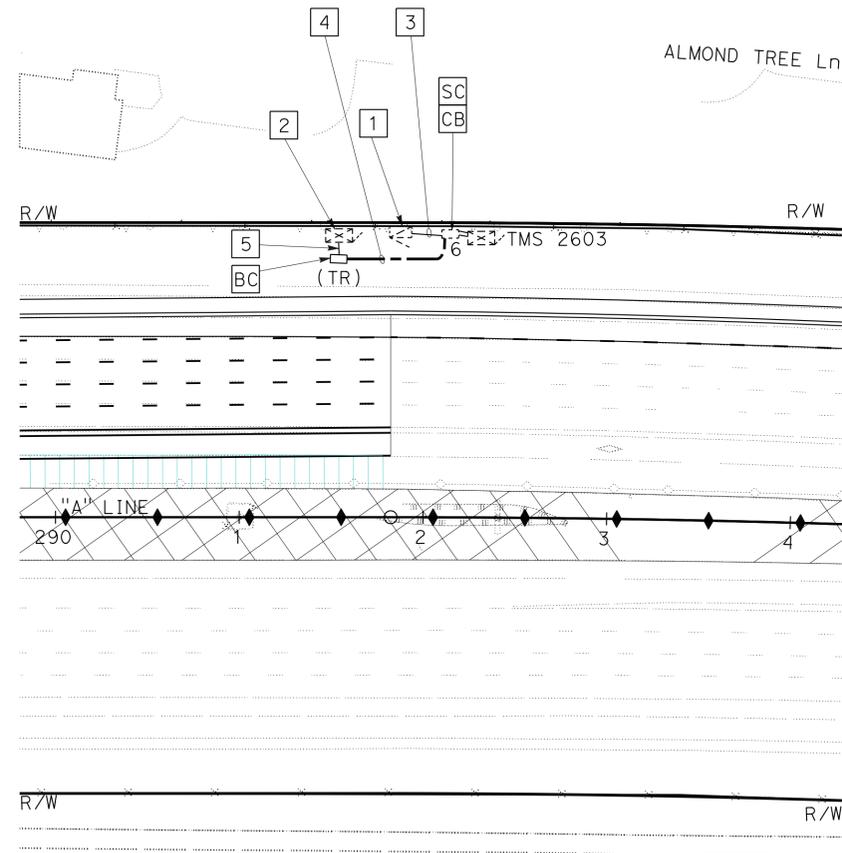
Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Orca	405	2.6/6.5	310	431
			06-21-16	REGISTERED ELECTRICAL ENGINEER DATE	
			06-27-16	PLANS APPROVAL DATE	
					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

NOTES: (THIS SHEET ONLY)

- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- FOR GENERAL NOTES, LEGEND AND ABBREVIATIONS, SEE SHEET E-1, E-2.

LEGEND: (THIS SHEET ONLY)

- EXISTING 120/240 V TYPE III-BF METERED SERVICE EQUIPMENT ENCLOSURE. ID No. 07-55-405-O-005.000 (SEE SHEET E-34 FOR REFERENCE)
100 A, 240 V, 2P, CB (MAIN)
30 A, 120 V, 1P, CB (TMS)
ADD 15 A, 120 V, 1P, CB (ICC 'B').
- EXISTING IRRIGATION CONTROLLER CABINET.
- EXISTING 2"C, 2#8 (TMS), 1#8 (G). ADD 2#8 (Irr).
- 2"C, 2#8 (Irr), 1#8 (G).
- Exist 2"C, ADD 2#8 (Irr), 1#8 (G).



(ELECTRIC SERVICE FOR IRRIGATION)

MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1" = 50'

E-49

APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR	DATE
Caltrans	SHAHRAM SHAHRIARI	JOANNE VO VANESSA TRUONG	JOANNE VO VANESSA TRUONG	
ELECTRICAL DESIGN				

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	311	431

06-21-16
 REGISTERED ELECTRICAL ENGINEER DATE

06-27-16
 PLANS APPROVAL DATE

JOANNE VO
 No. E 16748
 Exp 9-30-16

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.

MODIFYING EXISTING ELECTRICAL SYSTEM

SHEET No.	WOOD POLE	SET OF MVDS (DETAIL A SHEET E-4)
	EA	EA
E-3	2	2

MODIFYING EXISTING ELECTRICAL SYSTEM

SHEET No.	WOOD POLE	TYPE H RISER	48 SMFO OVERHEAD	2-4" COMMUNICATION CONDUIT	2-4 PAIR OF 1" INNERDUCTS	2"C	SPLICE VAULT
	EA	EA	LF	LF	LF	LF	EA
E-6	4	1	650	50	50	30	1
E-7	8		1400				
E-8	8		1400				
E-9	8		1300				
E-10	9		1600				
E-11	8	1	1250	50	50	30	2

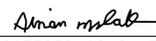
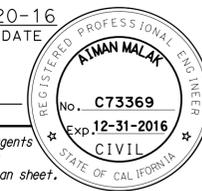
MODIFYING EXISTING ELECTRICAL SYSTEM

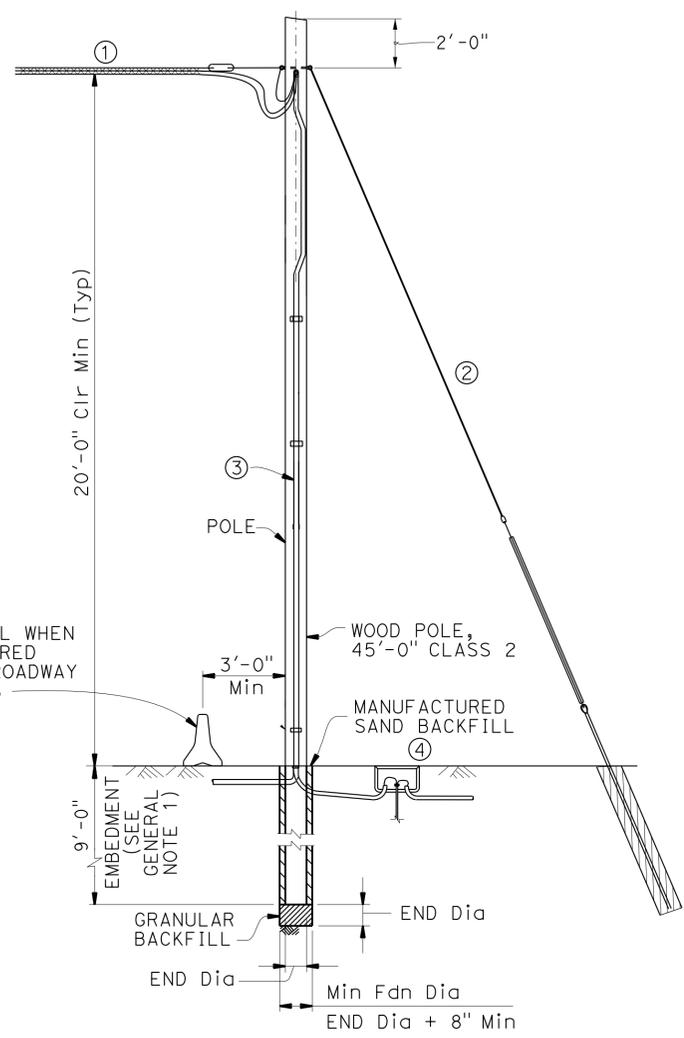
SHEET No.	2-4" COMMUNICATION CONDUIT	TRACER WIRE & WARNING TAPE	2-4 PAIR OF 1" INNERDUCTS	4 PAIR OF 1" INNERDUCTS	PULL TAPE	REMOVE Exist FO CONDUIT & CASE	TYPE A, TYPE B, TYPE C FO CABLES	SPLICE VAULT	TYPE 1 CONDUIT	TYPE D FO	No. 6 PB (COMMUNICATION)	No. 5 PB (COMMUNICATION)
	LF	LF	LF	LF	LF	LF	LF	EA	LF	LF	EA	EA
E-13				100	100		100					
E-14				1500	1500		1500					
E-15	550	550	550	820	1920	550	1920					
E-16	1400	1400	1400		2800	1400	2800	1	35	35	1	
E-17	1400	1400	1400		2800	1400	2800	1	35	35	1	
E-18	1300	1300	1300		2600	1300	2600				1	
E-19	1600	1600	1600		3200	1600	3200		500	1500	4	5
E-20	1250	1250	1250	250	2750	1250	2750				1	
E-21				920	920		920					

NOTE: ITEMS SHOWN IN TABLES ARE NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.

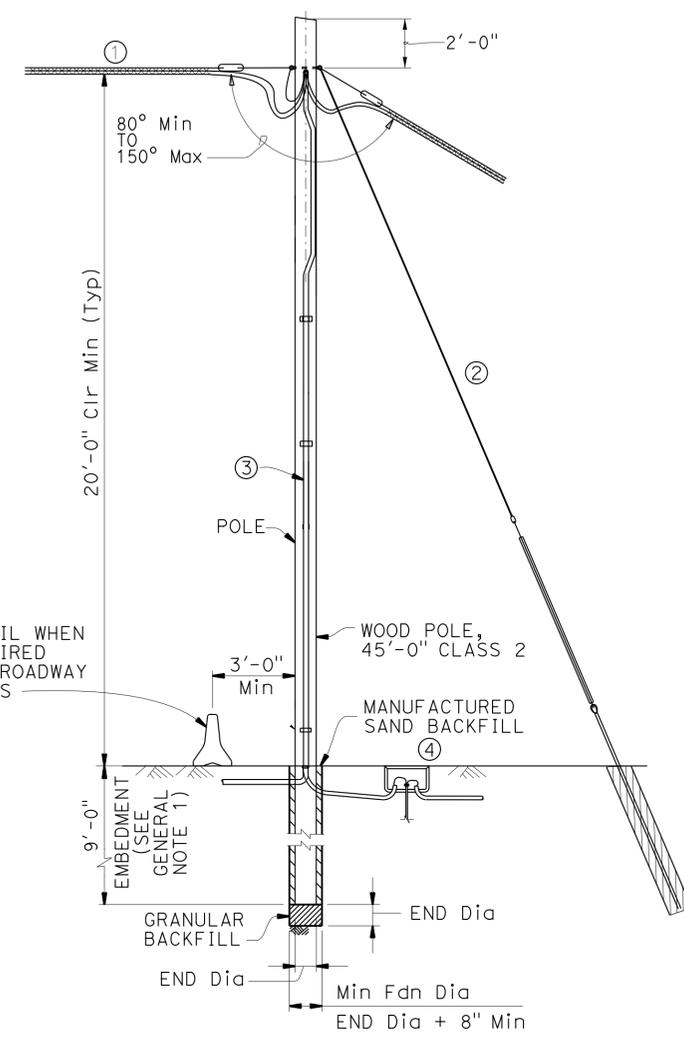
ELECTRICAL QUANTITIES

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 ELECTRICAL DESIGN
 SHAHRAM SHAHRIARI
 SUPERVISOR
 JOANNE VO
 VANESSA TRUONG
 DESIGNED BY
 CHECKED BY

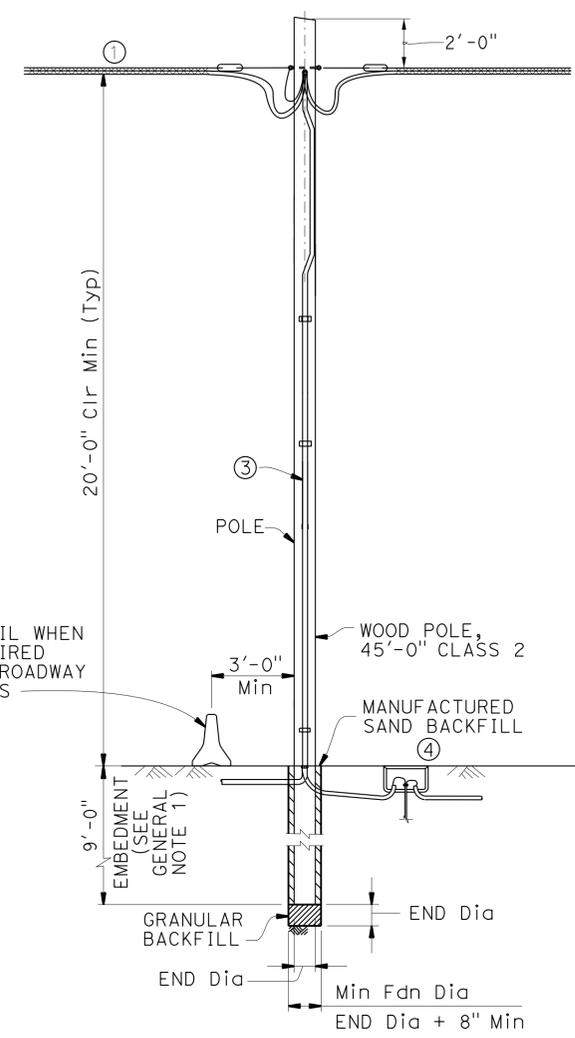
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Oran	405	2.6/6.5	313	431
			01-20-16	REGISTERED CIVIL ENGINEER DATE	
					
06-27-16			PLANS APPROVAL DATE		
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					
To get to the Caltrans web site, go to: http://www.dot.ca.gov					



WOOD POLE AT DEADEND



WOOD POLE AT CORNER



WOOD POLE AT TANGENT

- NOTES:**
1. Add 2'-0" for slopes above 1V:4H.
 2. Do not exceed the attachments shown.
 3. For poles with adjacent unbalanced horizontal spans, the shortest horizontal span must be at least 50% of the largest horizontal span.

Design: AASHTO Standard Specifications for Structural Support for Highway Signs, Luminaires and Traffic Signals, Sixth Edition (LTS-6).
GROUP LOAD COMBINATIONS:
 I Dead Load
 II Dead Load + Wind Load
 IV Fatigue: Not used

LOADING:
 Wind Loading: 85 mph (3-second gust)
 Wind Recurrence Interval: 10 years
 Combined height, exposure, and elevated terrain factor = 1.05
 (Exposure C, structure is not located on or over the top half of a ridge, hill, or escarpment)

BASIC DESIGN VALUES:
 Timber Poles: F_b = 1850 psi
 F_v = 110 psi
 F_{cp} = 230 psi
 F_c = 950 psi
 E = 1500 x 10³ psi

DESIGN WIRE BREAKING STRENGTHS:
 ASTM A475, Utilities Grade, 7 strand modified by termination efficiency factor of 0.8

- FOUNDATION DESIGN NOTES:**
1. Pole embedment depth design is based on Broms' approximate procedure as described in Article 13.6 of AASHTO LTS-6.
 2. Embedment depth is calculated based on following soil parameters,
 Cohesive Soil:
 Shear strength of soil c = 1500 psf.
 Cohesionless Soil:
 φ = 30 deg, γ = 120 pcf.
 Soil assumed to be unsaturated.
 3. An overload factor of 2.0 and an undercapacity factor of 0.7 were used for safety factor of 2.86.
 4. Allowable vertical bearing pressure at the end bearing of poles is 3000 psf at 6 feet or more embedment.
 5. Guy wire anchor minimum allowable tension capacity "Q_a" = 4100 lbs.

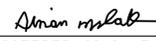
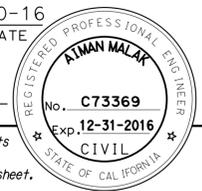
- ① Overhead bundle consisting of a 3/8"Ø messenger wire, 48 single mode fiber optic cable Max span 180'-0" and lashing wire.
- ② 3/8"Ø guy wire with white guy marker and strain insulator (for anchorage see "TEMPORARY WOOD POLES-DETAILS No. 2" SHEET).
- ③ Riser with weather head as required.
- ④ Pull box as required.
- ⑤ 12' luminaire with mast arm.
- ⑥ Overhead bundle consisting of a 3/8"Ø messenger wire, 2 #6 and lashing wire, Max span 180'-0".

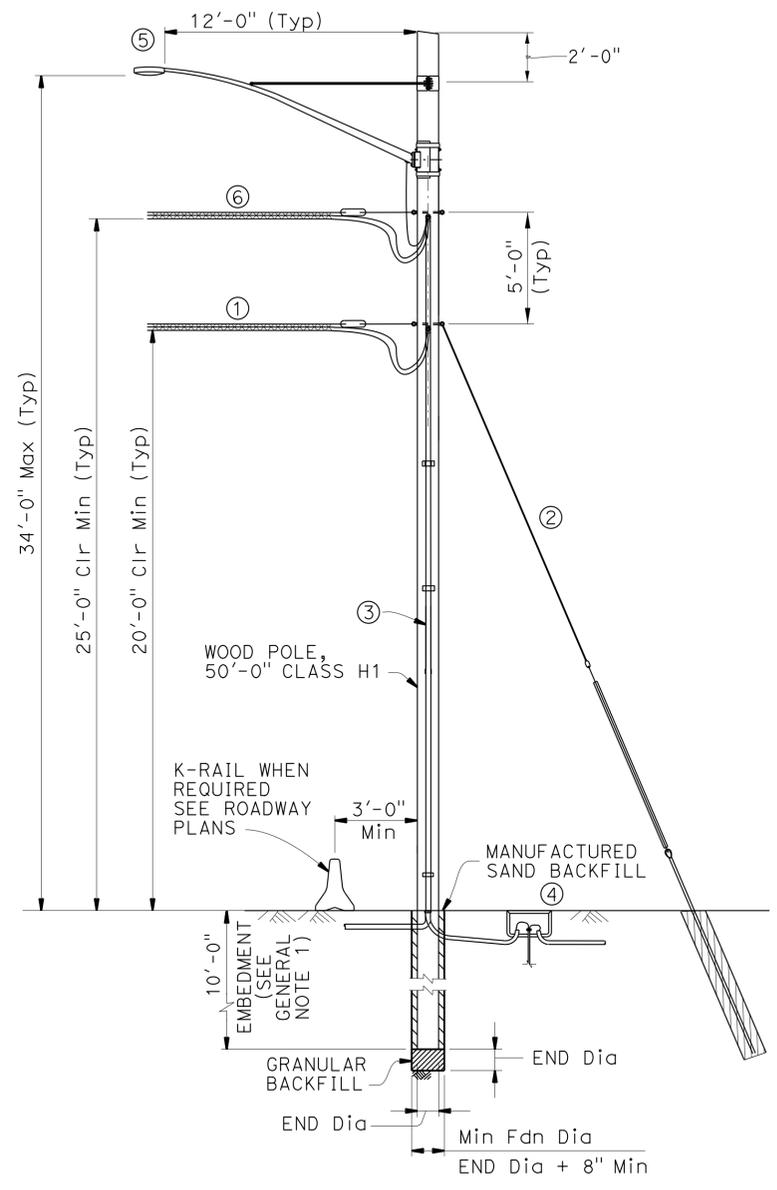
NOTE:
 THE CONTRACTOR MUST VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

NO SCALE

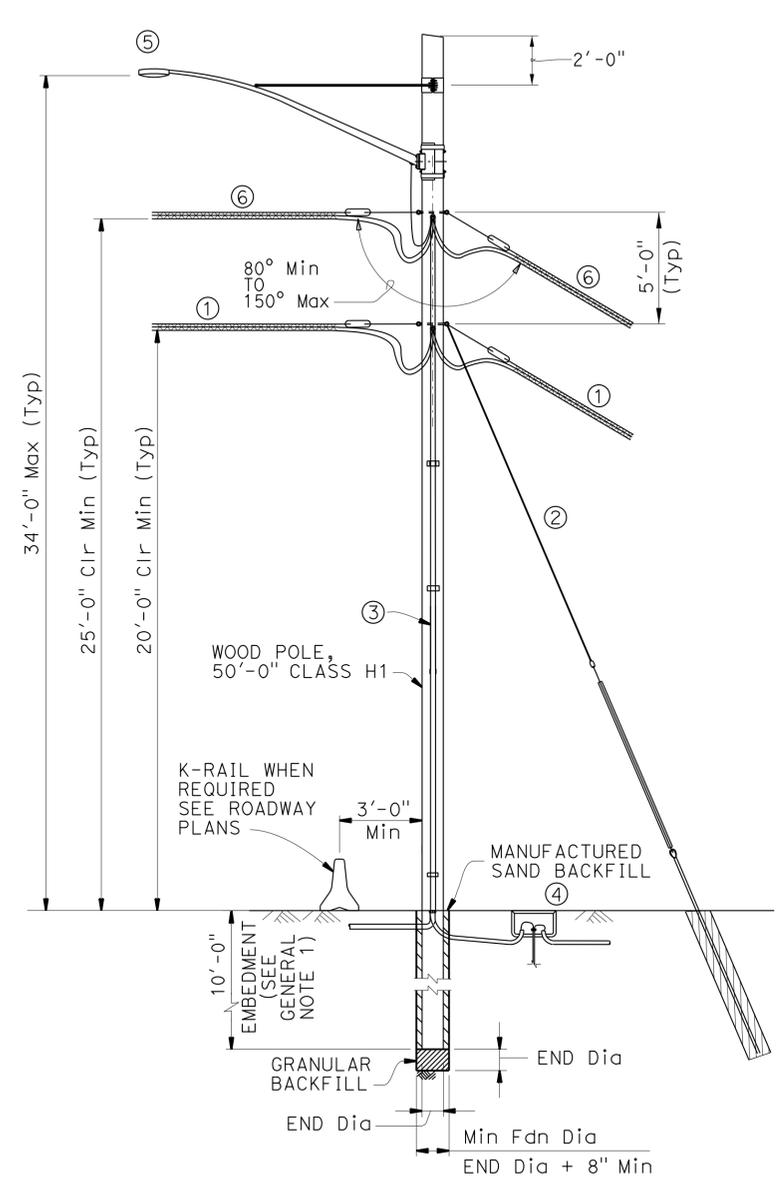
BRANCH CHIEF <u>DAVID A. NEUMANN</u>	DESIGN	BY A MALAK	CHECKED YU SONG	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES DESIGN AND TECHNICAL SERVICES SPECIAL DESIGNS BRANCH	BRIDGE NO.	N/A	TEMPORARY WOOD POLES GENERAL NOTES	SES-1
	DETAILS	BY H NGUYEN	CHECKED YU SONG			POST MILE	2.6/6.5		
	QUANTITIES	BY	CHECKED						
(ENGLISH) SPECIAL DESIGNS BRANCH BORDER SHEET (REV. 7-1-09)									
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS					UNIT: 3619 PROJECT NUMBER & PHASE: 1212000018		CONTRACT NO.: 12-0M3504		DISREGARD PRINTS BEARING EARLIER REVISION DATES
					0 1 2 3		REVISION DATES		SHEET 1 OF 9

USERNAME => s128284 DATE PLOTTED => 09-AUG-2016 TIME PLOTTED => 14:07

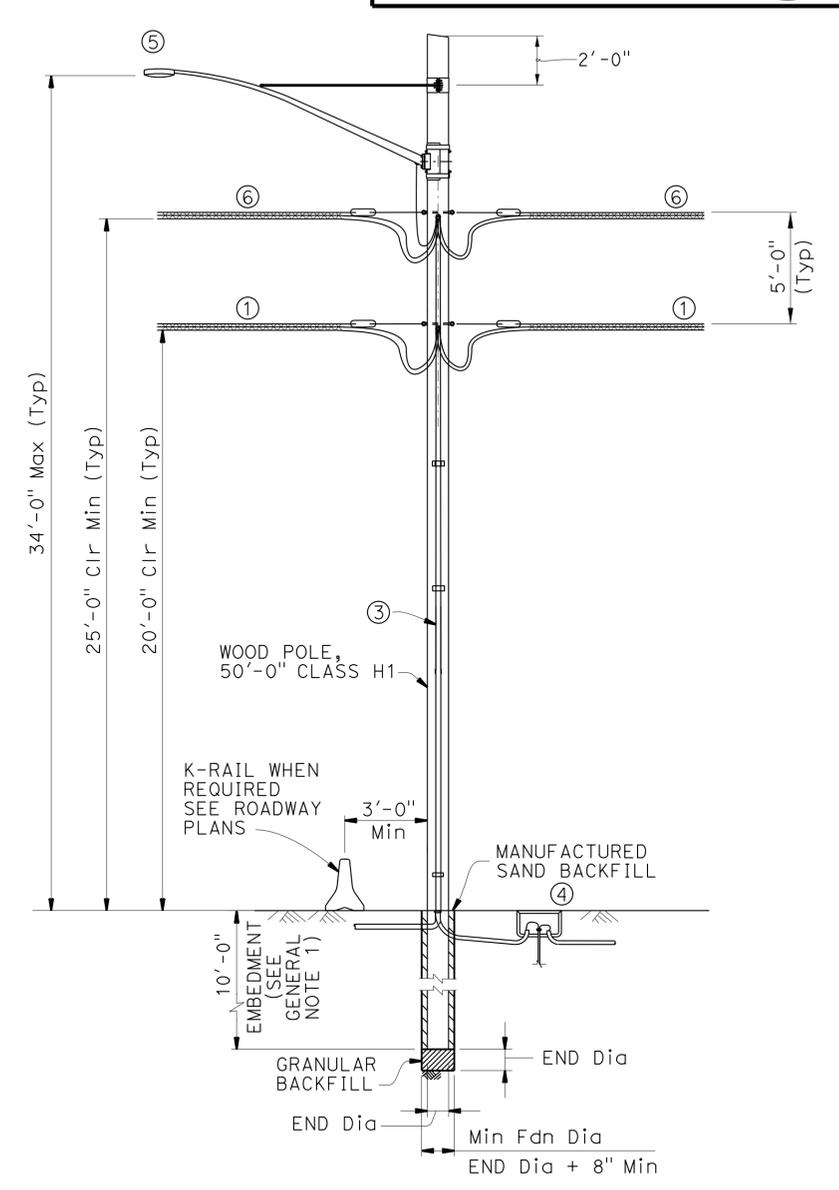
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Orca	405	2.6/6.5	314	431
			01-20-16	DATE	
REGISTERED CIVIL ENGINEER			DATE		
06-27-16			PLANS APPROVAL DATE		
			No. C73369 Exp. 12-31-2016 CIVIL STATE OF CALIFORNIA		
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.					



**WOOD POLE AT DEADEND
WITH LUMINAIRE**



**WOOD POLE AT CORNER
WITH LUMINAIRE**



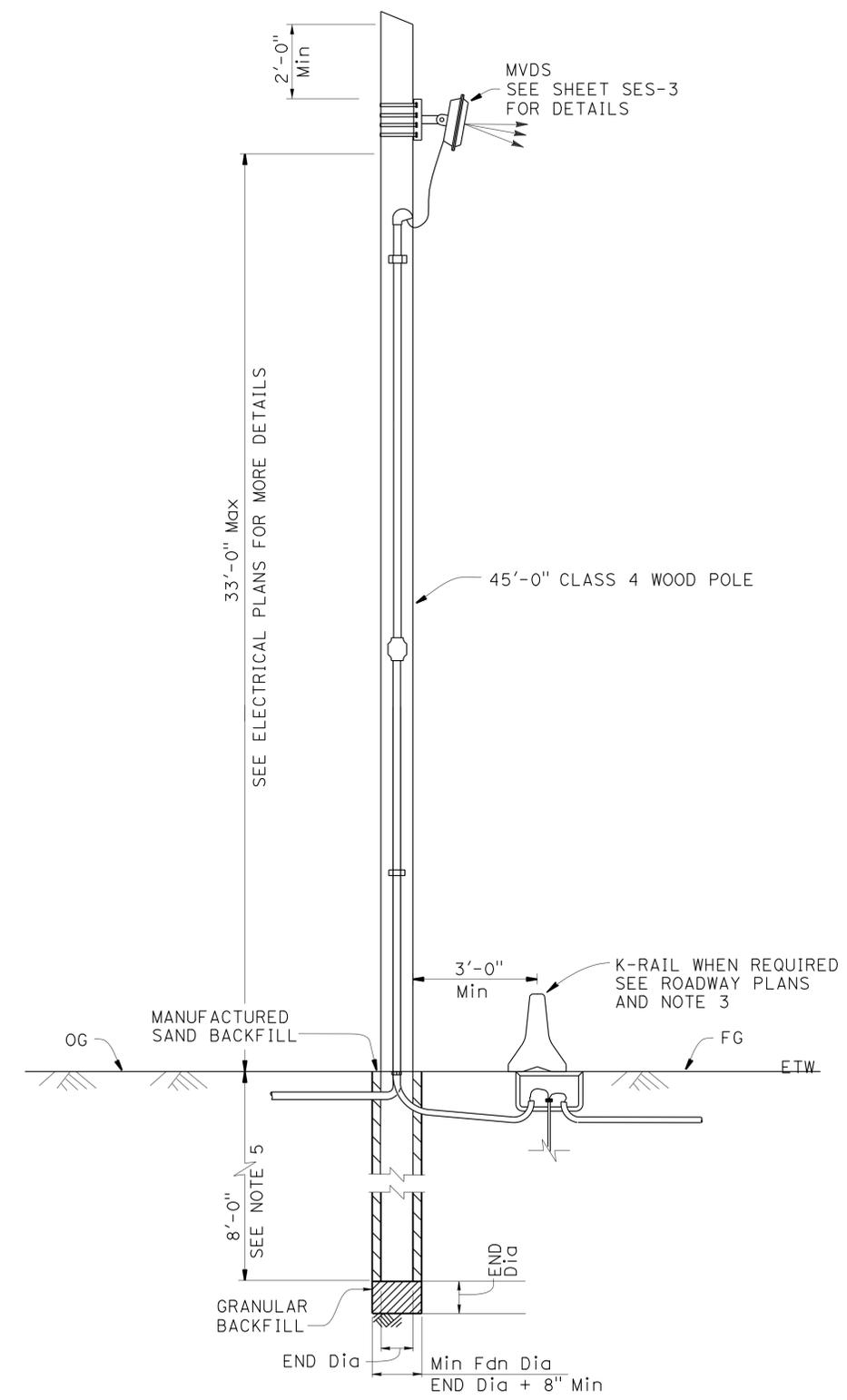
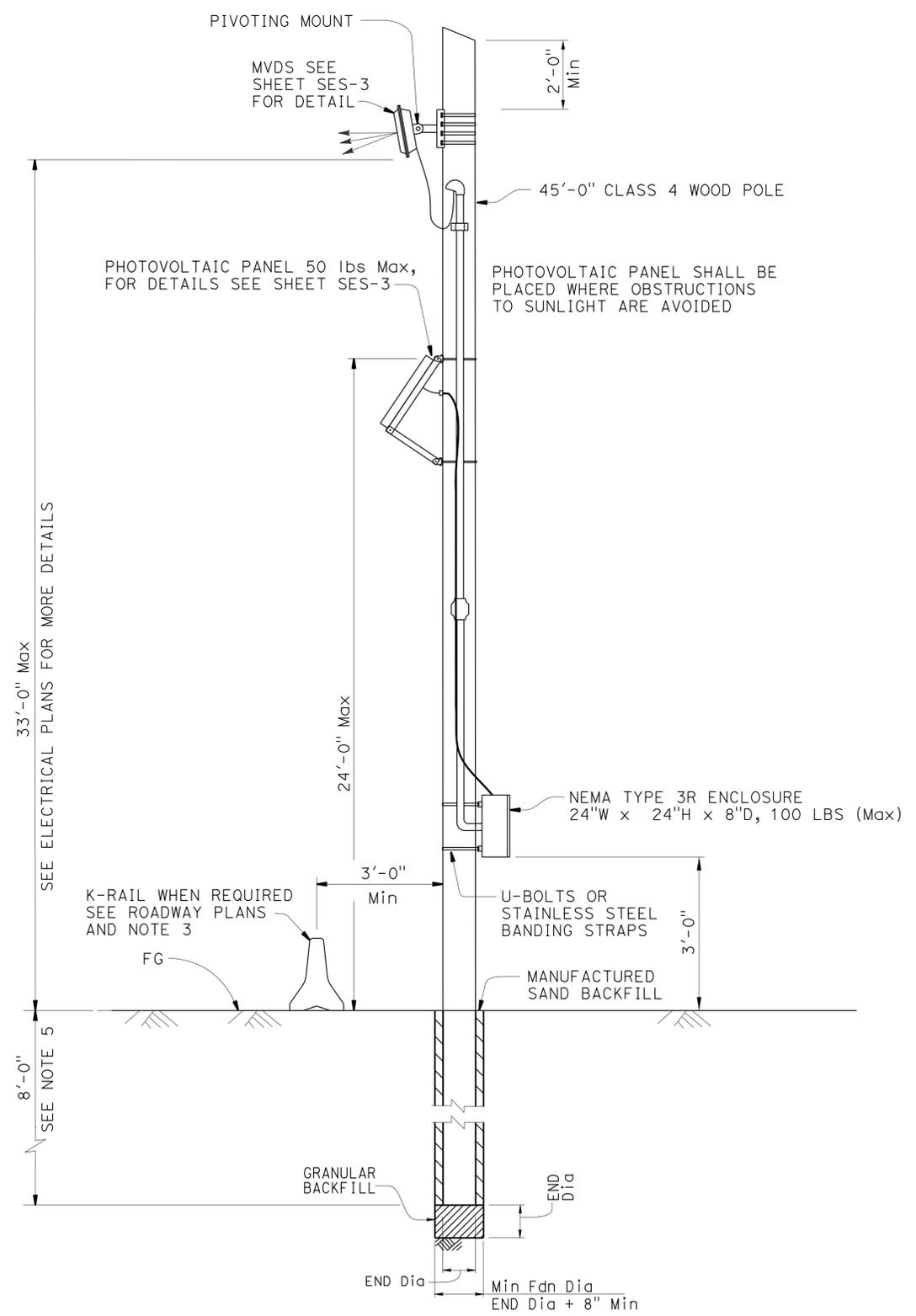
**WOOD POLE AT TANGENT
WITH LUMINAIRE**

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

NO SCALE

BRANCH CHIEF <u>DAVE NEUMANN</u>	DESIGN	BY A MALAK	CHECKED YU SONG	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES DESIGN AND TECHNICAL SERVICES SPECIAL DESIGNS BRANCH	BRIDGE NO.	N/A	TEMPORARY WOOD POLE WITH LUMINAIRE	SES-2
	DETAILS	BY H NGUYEN	CHECKED YU SONG			POST MILE	2.6/6.5		
	QUANTITIES	BY	CHECKED						

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Orca	405	2.6/6.5	315	431
			01-20-16	DATE	
			06-27-16	PLANS APPROVAL DATE	
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



WOOD POLE WITH MVDS AND PHOTOVOLTAIC PANEL

WOOD POLE WITH MVDS

NO SCALE

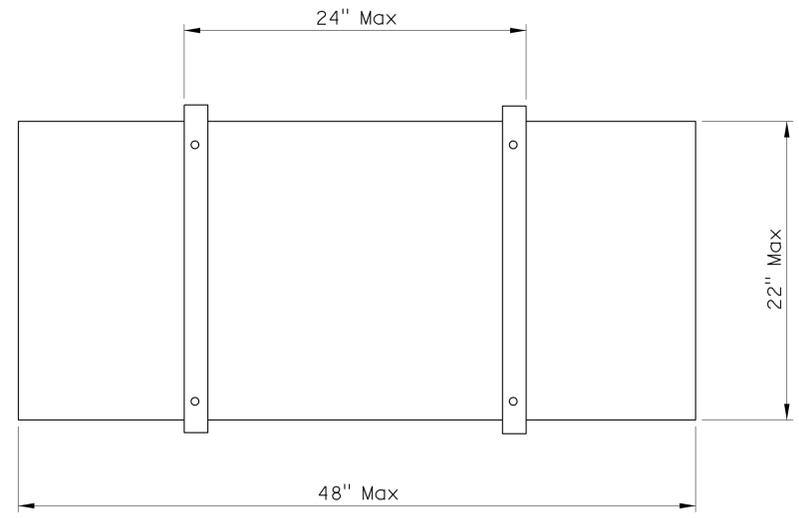
NOTE:
THE CONTRACTOR MUST VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

- NOTES:**
1. Mount all attachments with stainless steel straps or other manufacturers methods without drilling holes in pole, except as shown. Drilling through pole will require the Engineer's approval.
 2. See Sheet SES-3 for details.
 3. Pole shall be protected from traffic.
 4. Do not exceed the attachment shown.
 5. Add 2'-0" for slopes above 1V:4H.

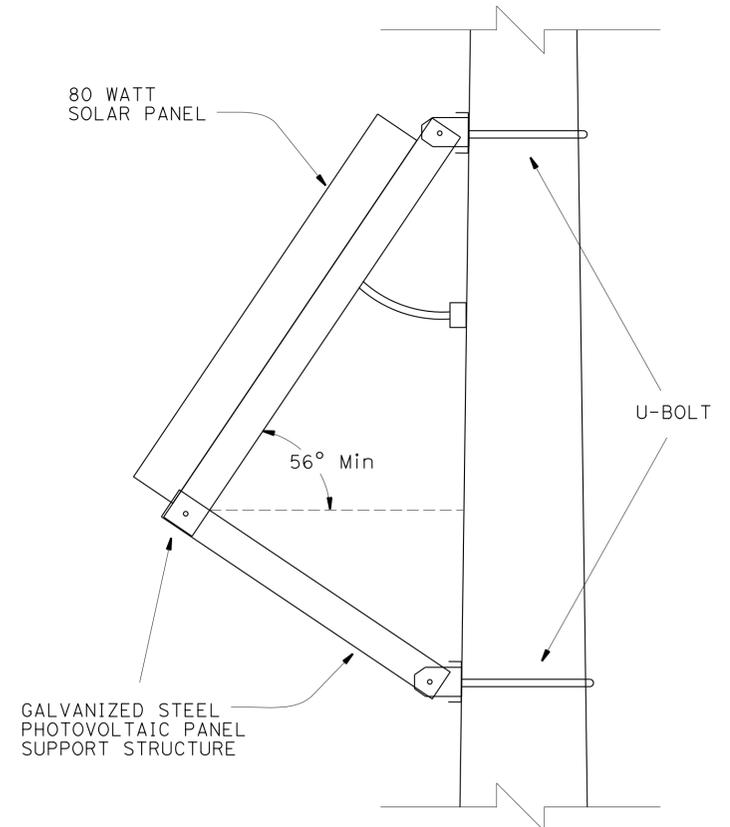
BRANCH CHIEF <u>DAVE NEUMANN</u>	DESIGN BY A MALAK	CHECKED YU SONG	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES DESIGN AND TECHNICAL SERVICES SPECIAL DESIGNS BRANCH	BRIDGE NO. N/A	TEMPORARY WOOD POLE MICROWAVE VEHICLE DETECTION SYSTEM	SES-3
	DETAILS BY H NGUYEN	CHECKED YU SONG			POST MILE 2.6/6.5		
	QUANTITIES BY	CHECKED					

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	Ora	405	2.6/6.5	316	431

Amir malak 01-20-16
 REGISTERED CIVIL ENGINEER DATE
 06-27-16
 PLANS APPROVAL DATE
 No. C73369
 Exp. 12-31-2016
 CIVIL
 STATE OF CALIFORNIA
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

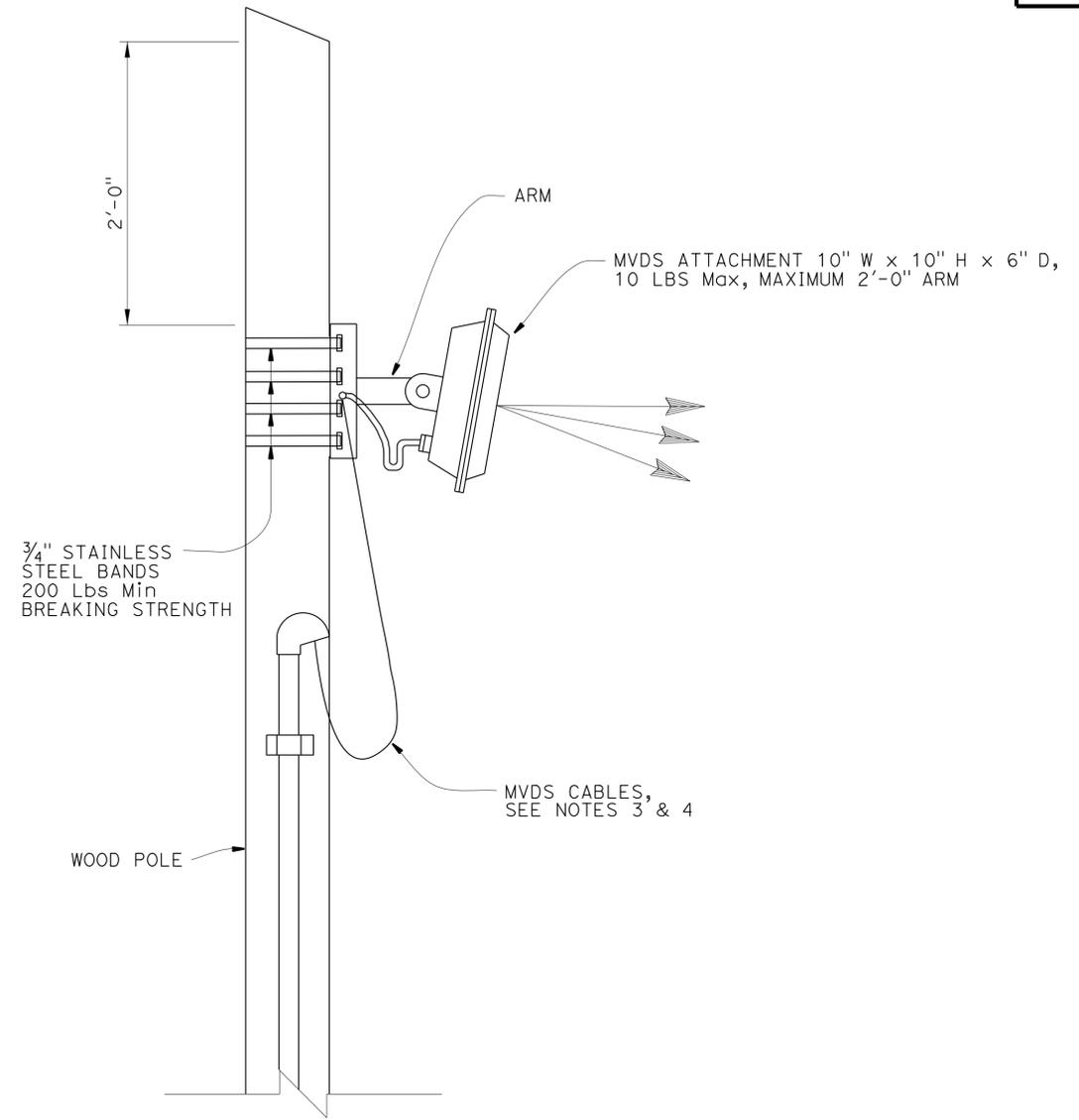


PHOTOVOLTAIC PANEL MOUNTING DETAIL



PHOTOVOLTAIC PANEL AND SUPPORT STRUCTURE

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



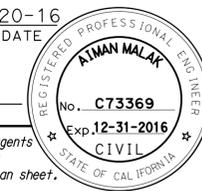
MVDS MOUNTING DETAIL

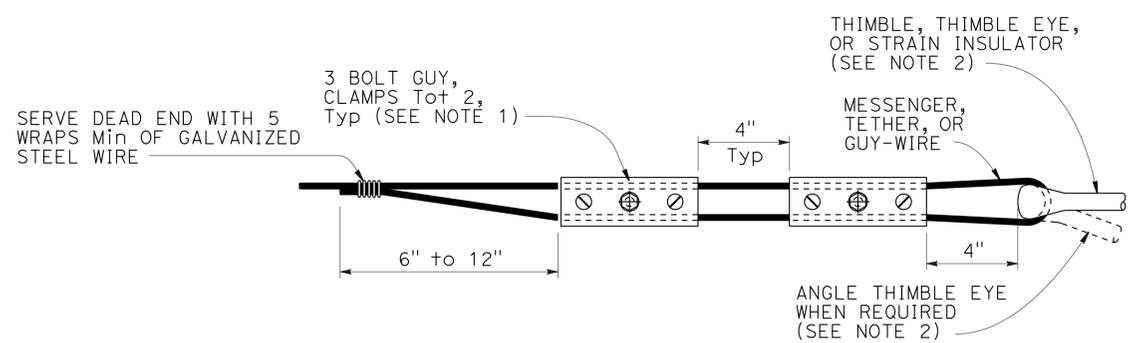
NOTES:

1. All mounting hardware shall be assembled and connected per the manufacturers recommendations.
2. Exact mounting location of MVDS attachment and bracket must be approved by the Engineer per manufacturer's recommendation.
3. MVDS cables must have a drip loop.
4. MVDS cables must run continuous and must not be twisted from the miscellaneous attachment. No splices shall be allowed.

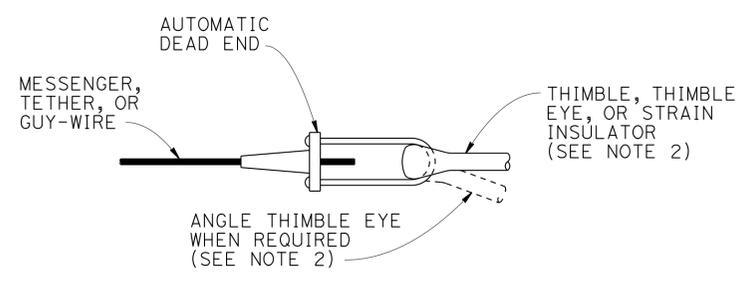
NO SCALE

BRANCH CHIEF <i>DAVID NEUMANN</i>	DESIGN	BY A MALAK	CHECKED YU SONG	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES DESIGN AND TECHNICAL SERVICES SPECIAL DESIGNS BRANCH B	BRIDGE NO.	N/A	MICROWARE VEHICLE DETECTION SYSTEM PV SOLAR PANEL & MVDS MOUNTING DETAIL	SES-4
	DETAILS	BY H NGUYEN	CHECKED YU SONG			POST MILE	2.6/6.5		
	QUANTITIES	BY X	CHECKED X						

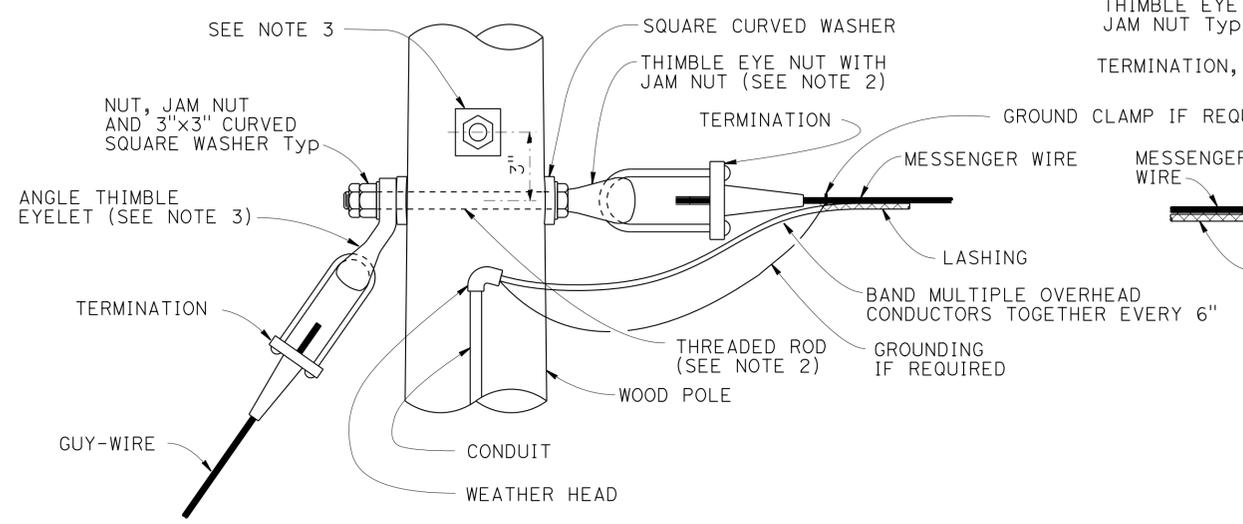
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Oran	405	2.6/6.5	317	431
		01-20-16			
REGISTERED CIVIL ENGINEER		DATE			
06-27-16		PLANS APPROVAL DATE			
					
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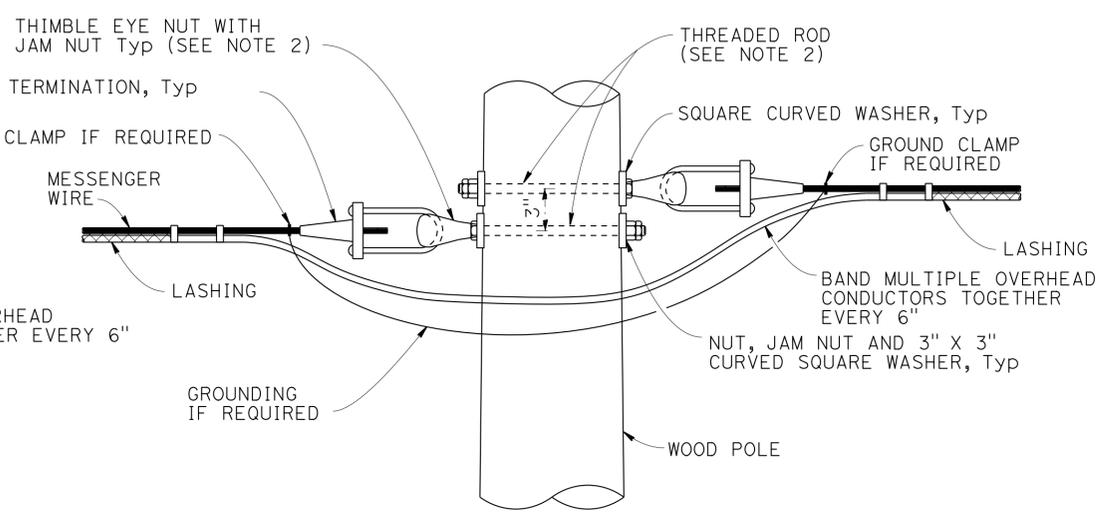
ALTERNATIVE TERMINATION OF MESSENGER WIRES USING GUY CLAMPS



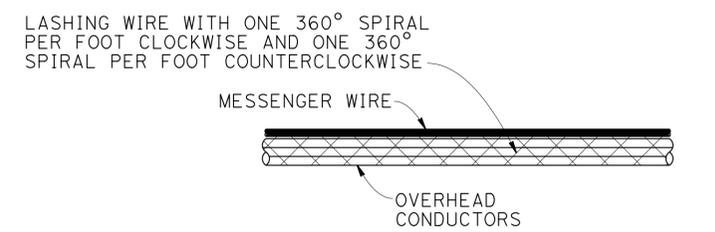
TERMINATION OF WIRES USING AUTOMATIC DEAD END



POLE AT DEAD END WITH GUY-WIRE CONNECTION

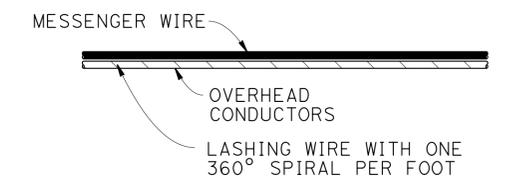


POLE AT TANGENT OR CORNER CONNECTION



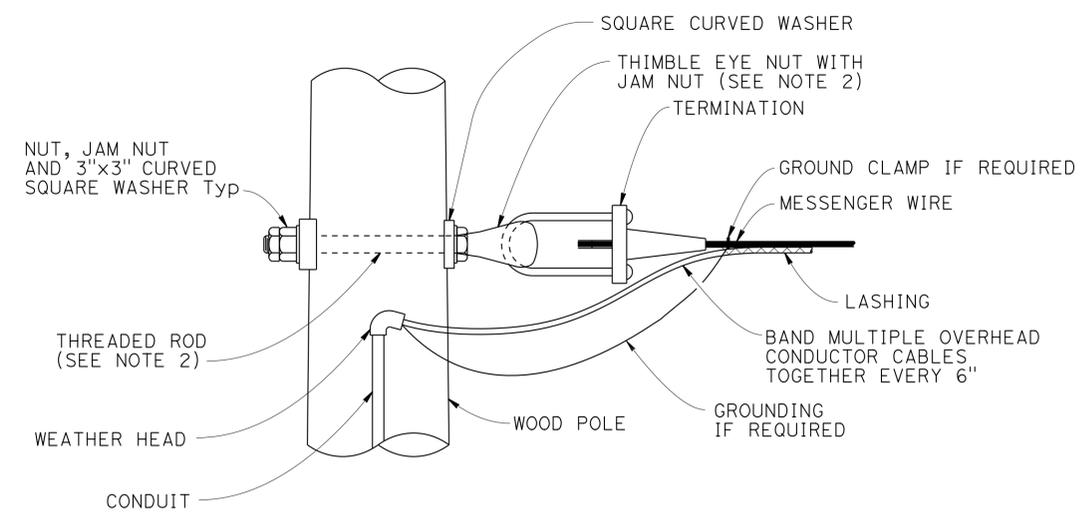
DOUBLE LASHING DETAIL

USE IF d_p IS GREATER THAN $1\frac{1}{2}$ "

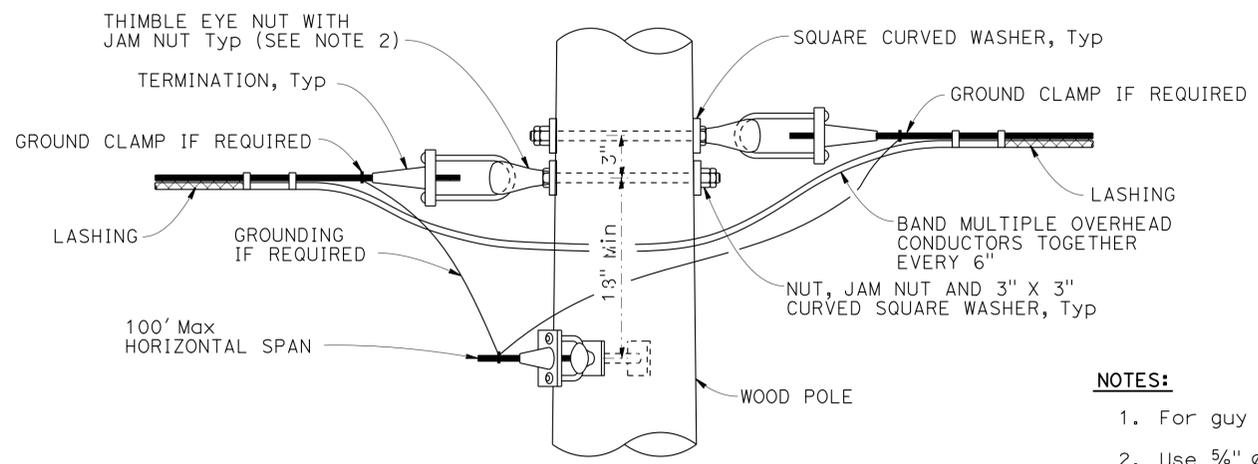


TYPICAL LASHING DETAIL

USE IF d_p IS $1\frac{1}{2}$ " OR LESS



POLE AT DEAD END CONNECTION



POLE AT JUNCTION CONNECTION

NOTES:

1. For guy wires use 3 clamps.
2. Use $\frac{5}{8}$ " ϕ except $\frac{3}{4}$ " ϕ at guyed wires
3. Install additional angle thimble eyelet at poles with two guy wires.

NO SCALE

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

BRANCH CHIEF <u>DAVID A. NEUMANN</u>	DESIGN	BY A MALAK	CHECKED YU SONG	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES DESIGN AND TECHNICAL SERVICES SPECIAL DESIGNS BRANCH B	BRIDGE NO.	N/A	TEMPORARY WOOD POLES DETAILS No. 1	SES-5
	DETAILS	BY H NGUYEN	CHECKED YU SONG			POST MILE	2.6/6.5		
	QUANTITIES	BY	CHECKED						

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	405	2.6/6.5	318	431

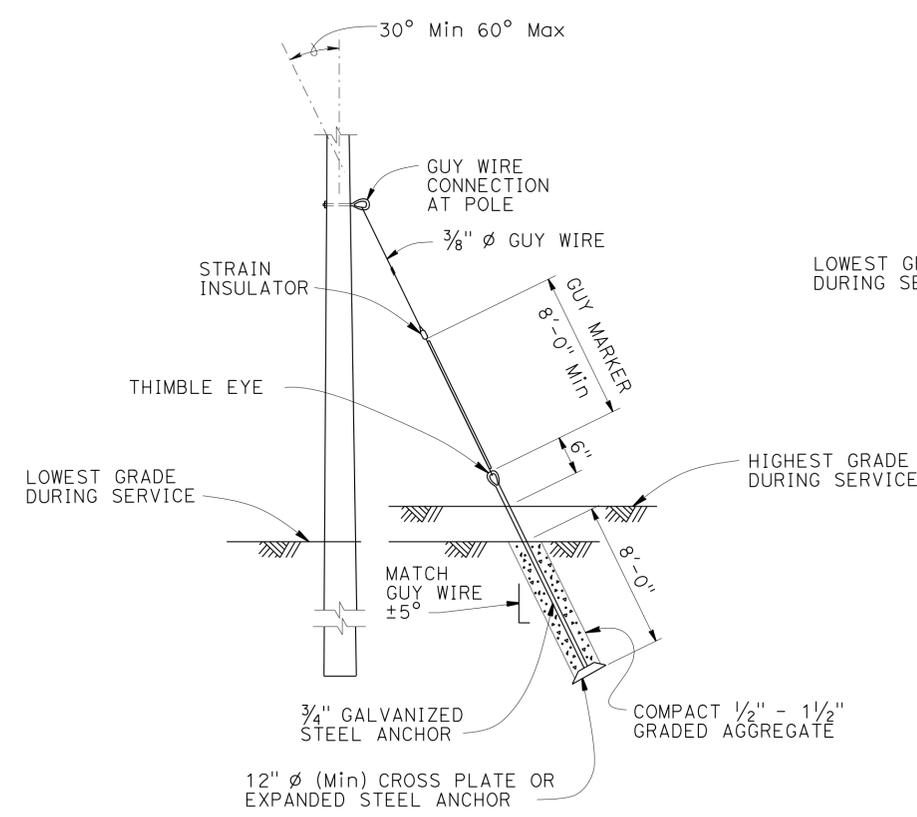
<i>Amman malak</i>	01-20-16
REGISTERED CIVIL ENGINEER	DATE
06-27-16	
PLANS APPROVAL DATE	

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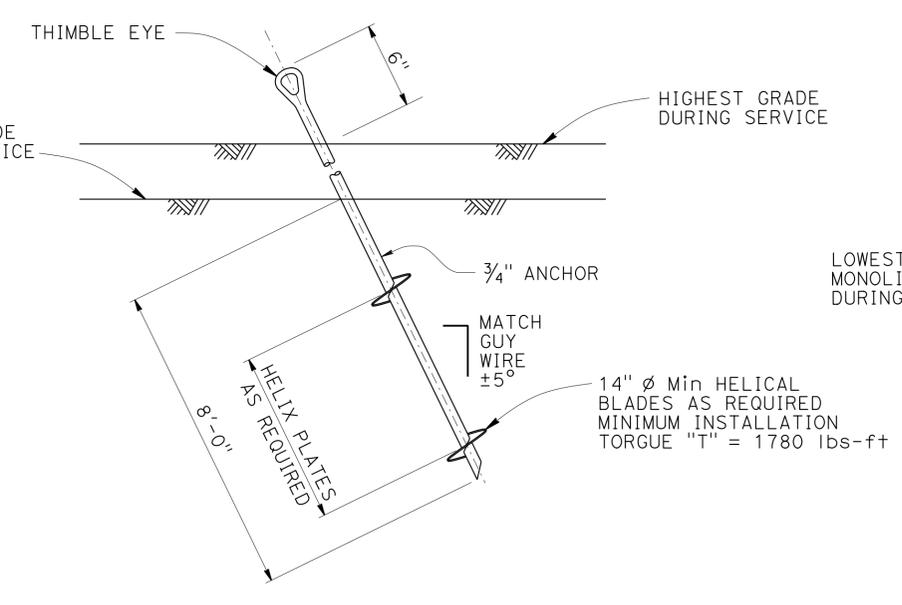
NOTE:

- For minimum allowable tension capacity of anchors see "Temporary Wood Poles - General Notes" sheet.

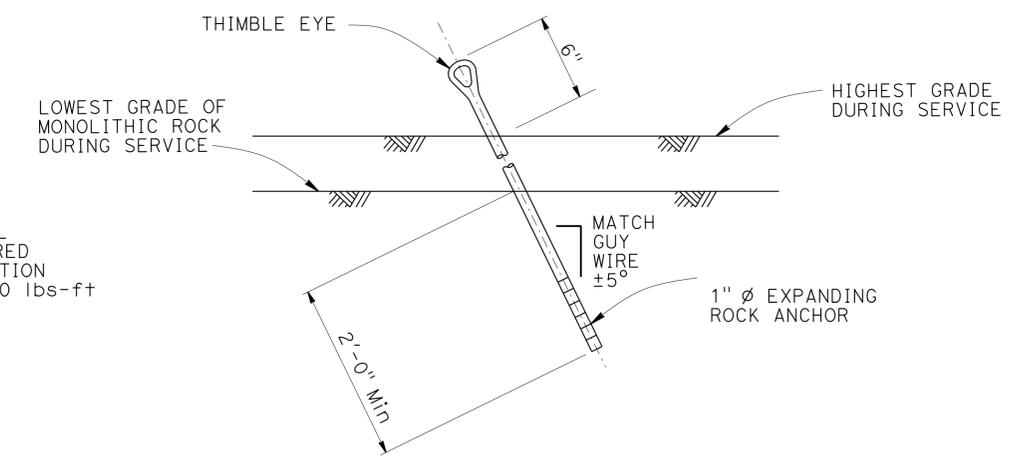


NOTE:
Helical anchor detail may be used in place of expanded steel anchors.

EXPANDED STEEL ANCHOR DETAIL



HELICAL ANCHOR DETAIL



EXPANDING ROCK ANCHOR DETAIL

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

NO SCALE

BRANCH CHIEF <u>DAVID A. NEUMANN</u>	DESIGN	BY A MALAK	CHECKED YU SONG	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES DESIGN AND TECHNICAL SERVICES SPECIAL DESIGNS BRANCH B	BRIDGE NO.	N/A	TEMPORARY WOOD POLES DETAILS No. 2	SES-6
	DETAILS	BY H NGUYEN	CHECKED YU SONG			POST MILE	2.6/6.5		
	QUANTITIES	BY	CHECKED						

(ENGLISH) SPECIAL DESIGNS BRANCH BORDER SHEET (REV. 7-1-09)

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

UNIT: 3619

PROJECT NUMBER & PHASE: 1212000018

CONTRACT NO.: 12-0M4904

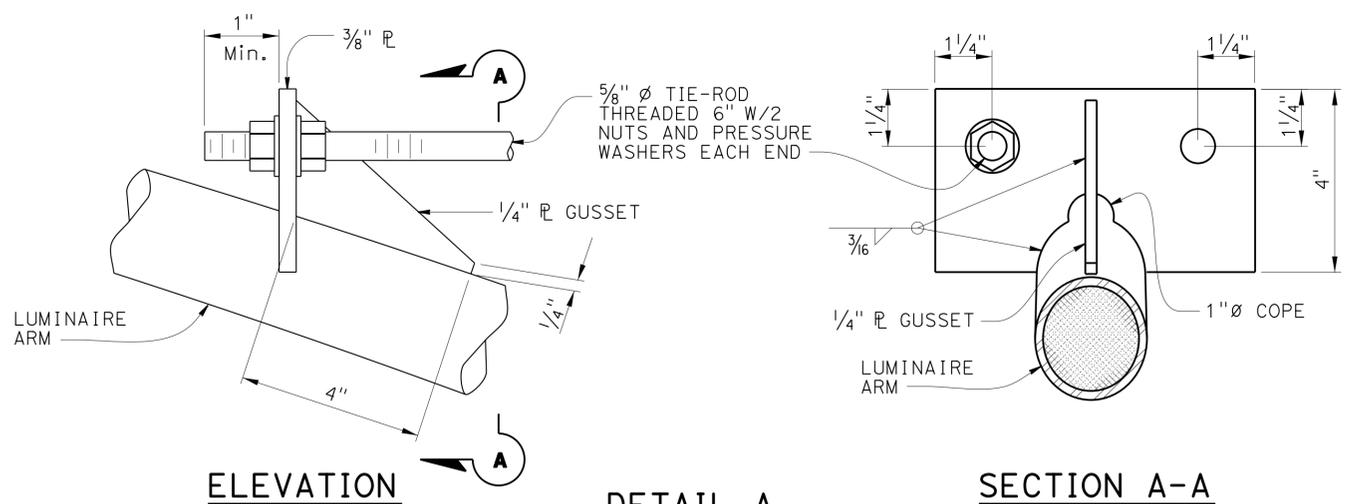
DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
10-7-15	6	9

FILE => spec_des_br_prj\2015sd\12-0m3504_1212000018u0057.dgn

USERNAME => s128284 DATE PLOTTED => 09-AUG-2016 TIME PLOTTED => 14:08

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	405	2.6/6.5	319	431
<i>Aman Malak</i> REGISTERED CIVIL ENGINEER DATE 01-20-16		No. C73369 Exp 12-31-2016 CIVIL STATE OF CALIFORNIA			
06-27-16 PLANS APPROVAL DATE		The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.			
To get to the Caltrans web site, go to: http://www.dot.ca.gov					



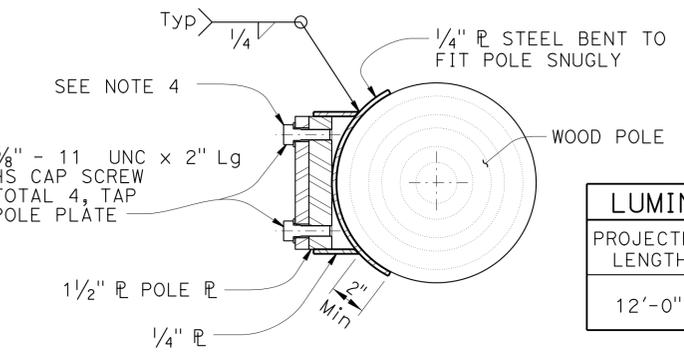
ELEVATION

**DETAIL A
TIE-ROD AT LUMINAIRE ARM**
NO SCALE

SECTION A-A

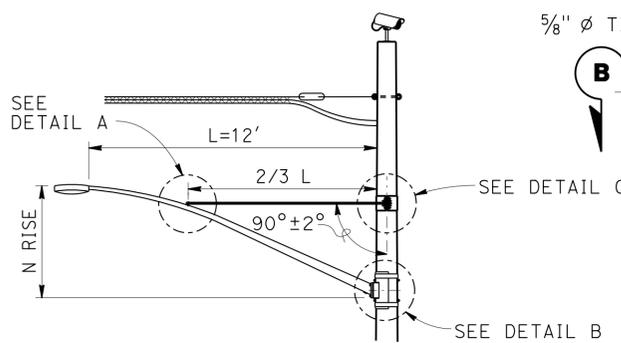
NOTES:

- Luminaire mast arms must be in compliance with Standard Plan ES-6D with noted modifications.
- Verify pole dimensions at tie-rod attachment height. Fabricate 8" flat bar with "L" Dimension to maintain an open gap between flanges in finished installation.
- Not all screw heads and bolt heads are shown for clarity.
- Mast arm not shown for clarity.

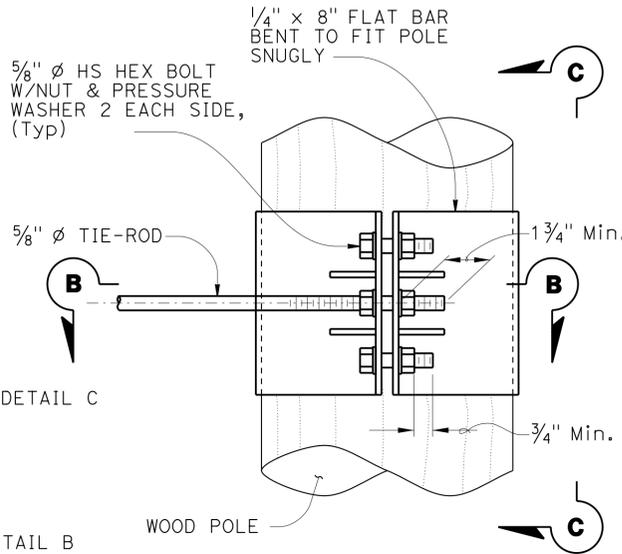


SECTION E-E

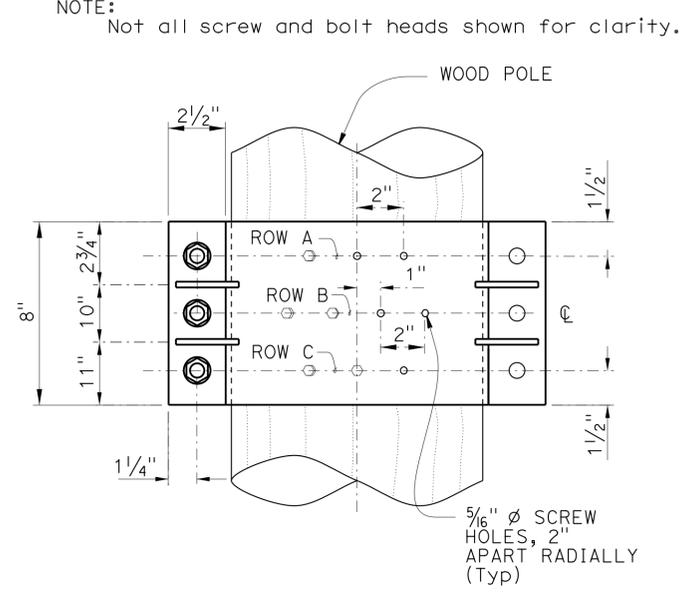
LUMINAIRE MAST ARM DATA			
PROJECTED LENGTH	N RISE	Min OD AT POLE	NOMINAL THICKNESS
12'-0"	4'-3"±	3 3/8"	0.1196"



LUMINAIRE MAST ARM

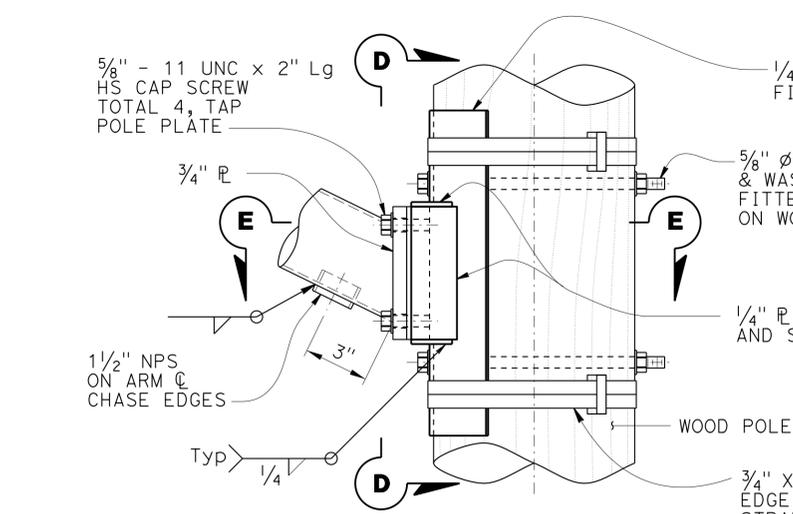


ELEVATION



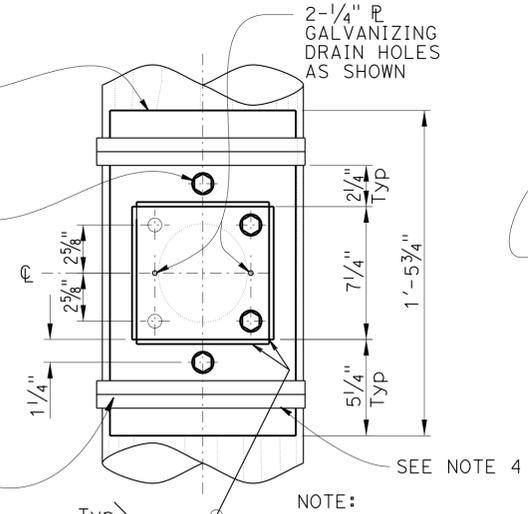
VIEW C-C

NOTE:
Not all screw and bolt heads shown for clarity.

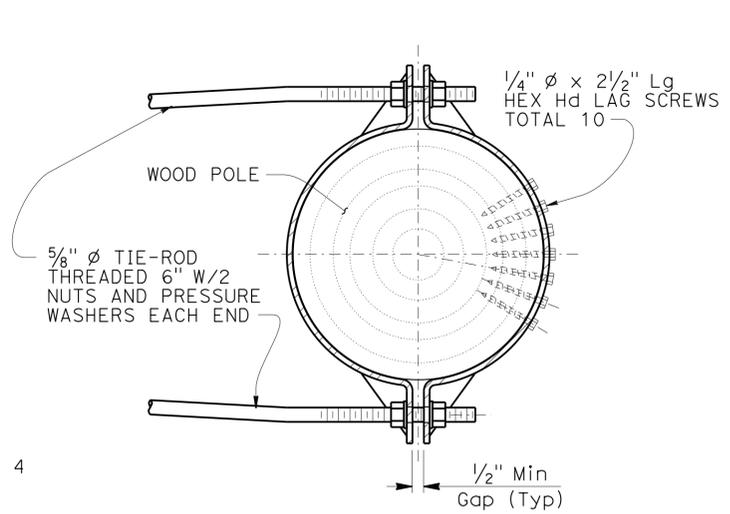


ELEVATION

**DETAIL B
ARM CONNECTION DETAILS**
NO SCALE

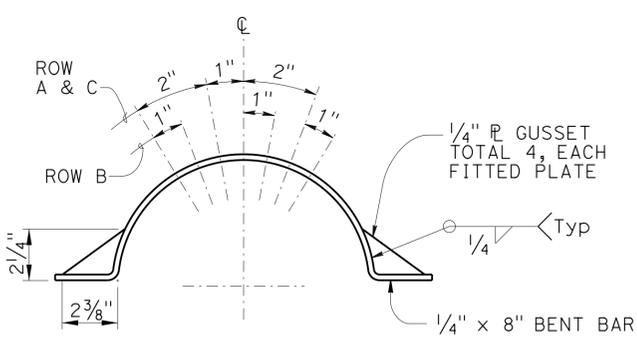


VIEW D-D



SECTION B-B

**DETAIL C
TIE-ROD AT POLE**
NO SCALE



LAG SCREW AND GUSSET PLATE LAYOUT

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

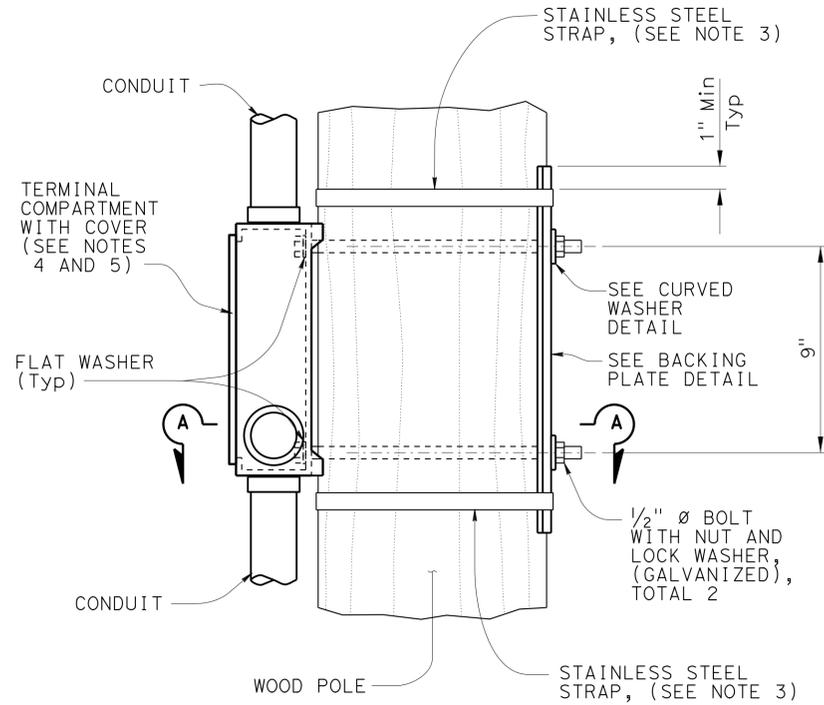
BRANCH CHIEF	DESIGN	BY A MALAK	CHECKED YU SONG
	DETAILS	BY H NGUYEN	CHECKED YU SONG
	QUANTITIES	BY	CHECKED

STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES DESIGN AND TECHNICAL SERVICES SPECIAL DESIGNS BRANCH	BRIDGE NO.	TEMPORARY WOOD POLES DETAILS No. 3	SES-7
DEPARTMENT OF TRANSPORTATION			N/A		
			POST MILE		

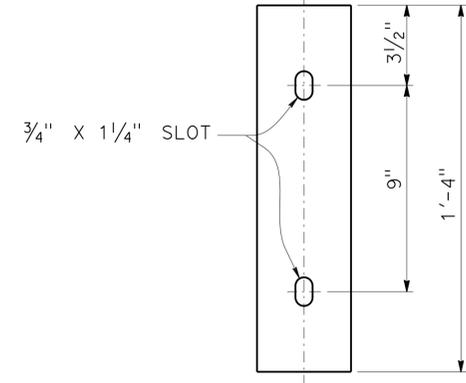
UNIT: 3619	PROJECT NUMBER & PHASE: 1212000018	CONTRACT NO.: 12-0M4904
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0 1 2 3	DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
11-5-15	7	9

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	405	2.6/6.5	320	431
<i>Alman malak</i> REGISTERED CIVIL ENGINEER DATE		01-20-16			
PLANS APPROVAL DATE		06-27-16			
No. C73369 Exp. 12-31-2016 CIVIL		REGISTERED PROFESSIONAL ENGINEER STATE OF CALIFORNIA			
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ELEVATION

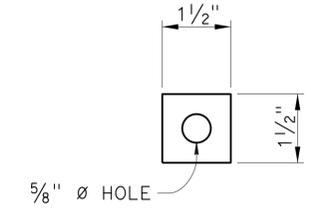


ELEVATION

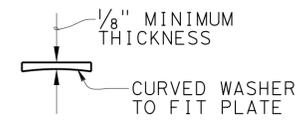


PLAN

**BACKING PLATE
DETAIL**



ELEVATION

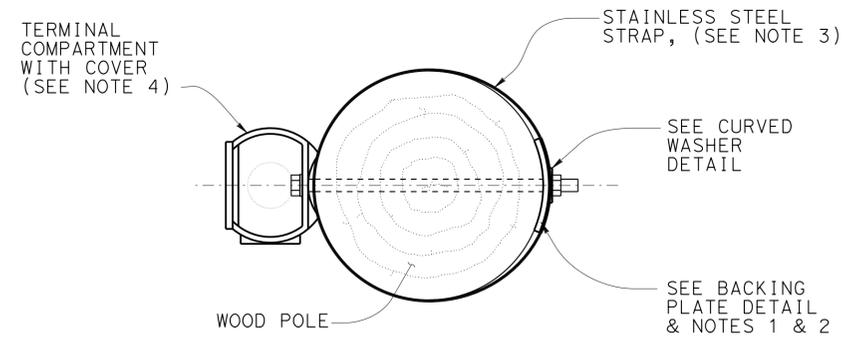


PLAN

**CURVED WASHER
DETAIL**

NOTES:

1. Verify pole dimensions at terminal compartment for fabrication of backing plate and curved washer.
2. Backing plate to be galvanized after fabrication.
3. 3/4" x 0.044" minimum, rounded edge stainless steel straps, double wrapped with 2" long bend under stainless steel strap buckle.
4. For miscellaneous details for signal mounting not shown see Standard Plan ES-4D.
5. If the terminal compartment has a cable entry guide on the rear face, remove the cable entry guide to a level that will not interfere with the wood post. Close any unused cable entry locations with raintight cap.



SECTION A-A

**SIDE MOUNTING
TERMINAL COMPARTMENT**

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

NO SCALE

BRANCH CHIEF <u>DAVID A. NEUMANN</u>	DESIGN	BY A MALAK	CHECKED YU SONG	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES DESIGN AND TECHNICAL SERVICES SPECIAL DESIGNS BRANCH B	BRIDGE NO.	N/A	TEMPORARY WOOD POLES DETAILS No. 4	SES-8
	DETAILS	BY H NGUYEN	CHECKED YU SONG			POST MILE	2.6/6.5		
	QUANTITIES	BY	CHECKED						

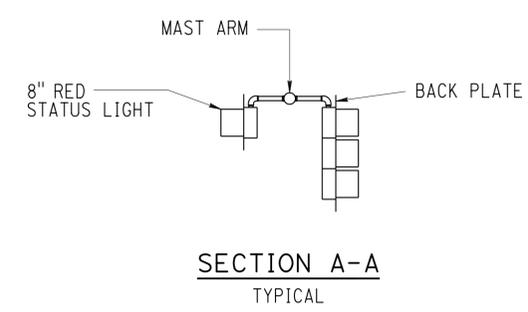
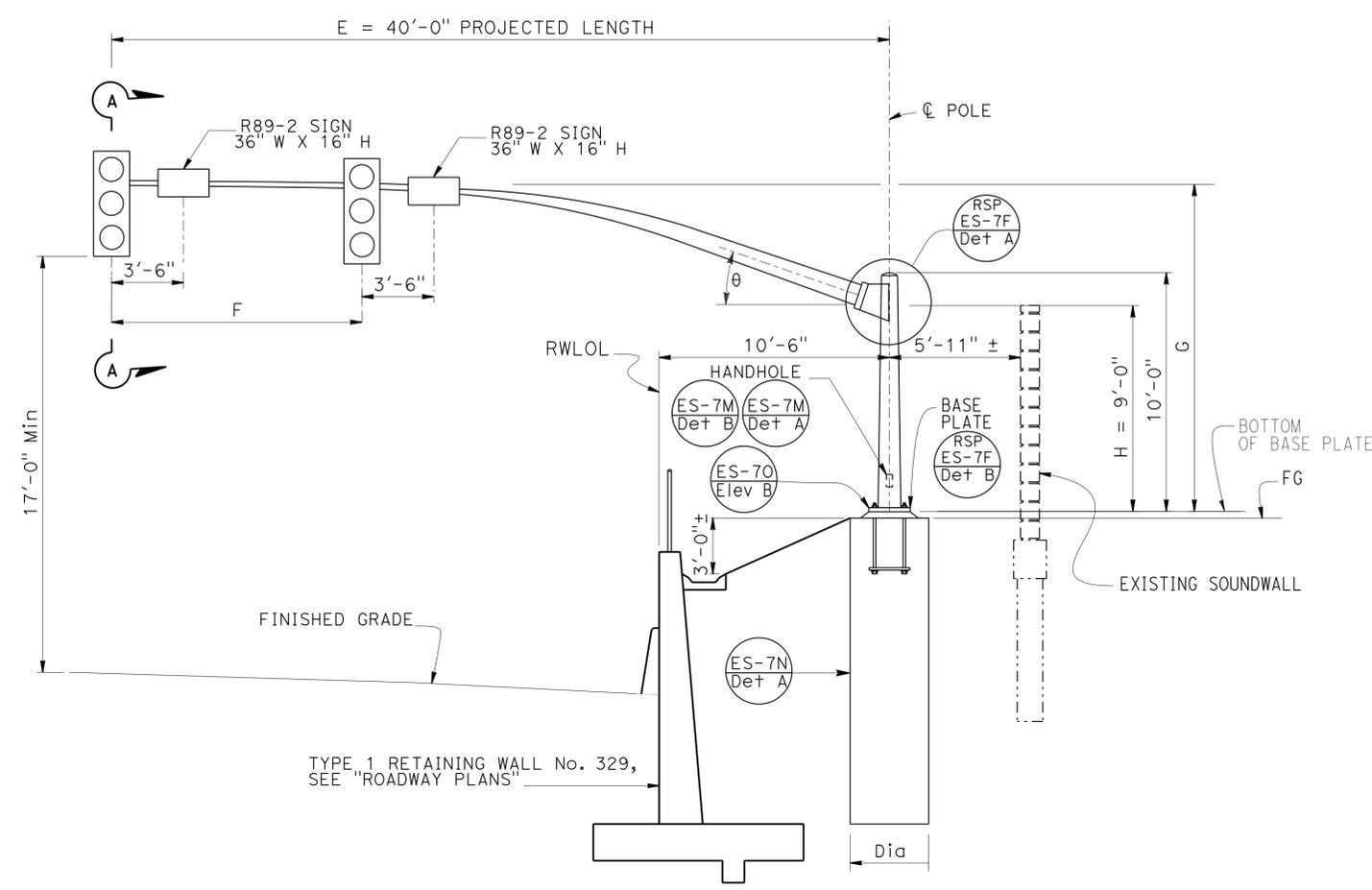
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	405	2.6/6.5	321	431

Eliseo Lopez 3/21/16
 REGISTERED CIVIL ENGINEER DATE

06-27-16
 PLANS APPROVAL DATE

No. **C72910**
 Exp. **12/31/16**
ELISEO LOPEZ
 REGISTERED PROFESSIONAL ENGINEER
 CIVIL
 STATE OF CALIFORNIA

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GENERAL NOTES:

SPECIFICATIONS

Design: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, Sixth Edition

LOADING

Wind Loading: 100 MPH (3-sec gust)

UNIT STRESSES

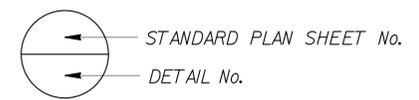
Structural Steel: $f_y = 55,000$ psi tapered steel tube
 $f_y = 50,000$ psi unless otherwise noted.
 Anchor bolts: $f_y = 55,000$ psi
 Reinforced Concrete: $f'_c = 3,600$ psi
 $f_y = 60,000$ psi

NOTES:

- For pole locations, see "ROADWAY PLANS".
- All steel must be galvanized after fabrication.
- During pole erection the post must be raked as necessary with the use of leveling nuts to provide a plumb pole axis.
- Foundation design is based on AASHTO LTS-6 article 13.6 Broms' approximate procedure assuming a cohesionless material. The angle of Internal friction used is 30 degrees and unit weight of soil used is 120 lbs/ft³.
- Handhole must be located on the down stream side of the traffic
- For Type 1 Retaining Wall No. 329 Stationing, see "ROADWAY PLANS". For Existing Soundwall, see "AS-BUILTS PLANS".
- For details not shown, see "2010 STANDARD PLANS" and "2010 REVISED STANDARD PLANS".

LEGEND:

- New Structure
- Existing Structure



SIGNAL MAST ARM DATA											
E PROJECTED LENGTH	F Min SPACING	G MOUNTING HEIGHT	H	Min OD AT POLE	THICKNESS	I BOLT CIRCLE	HS CAP SCREWS	J PLATE SIZE	K MAST ARM P THICKNESS	L POLE P THICKNESS	θ
40'-0"	12'-0"	16'-0"±	9'-0"	9 3/8"	0.2391"	13 1/2"	1 1/4"-7NC-3"	1'-1 1/2"	1 1/2"	1 3/4"	15°

POLE TYPE	POLE DATA			BASE PLATE DATA				CIDH PILE FOUNDATION			
	A HEIGHT	Min OD BASE	Min OD TOP	THICKNESS	C	BC = BOLT CIRCLE	THICKNESS	ANCHOR BOLT SIZE	DIAMETER	DEPTH	REINFORCED
27-4-100 (Modified)	10'-0"	14"	11 1/16"	0.3125"	23"	21"	3"	2 1/2" ϕ x 42"	3'-6"	13'-0"	YES

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

NO SCALE

BRANCH CHIEF JEFF WOODY	DESIGN BY E. LOPEZ	CHECKED J. JAUREGUI	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES DESIGN AND TECHNICAL SERVICES SPECIAL DESIGNS BRANCH A	BRIDGE NO. N/A	TYPE 27-4-100 MODIFIED SIGNAL HEAD WITH RED STATUS LIGHT POLE	SES-9
	DETAILS BY T. NGUYEN	CHECKED E. LOPEZ			POST MILE 2.6/6.5		
	QUANTITIES BY	CHECKED					

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

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

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

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	322	431

Grace M. Tsushima
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

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TO ACCOMPANY PLANS DATED 06-27-16

UNIT OF MEASUREMENT SYMBOLS:

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

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:

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

2010 REVISED STANDARD PLAN RSP A10B

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	323	431


 CERTIFIED ENGINEERING GEOLOGIST
 October 30, 2015
 PLANS APPROVAL DATE
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REGISTERED GEOLOGIST
 CHRIS A. RISDEN
 CERTIFIED ENGINEERING GEOLOGIST
 No. 2541
 Exp. 9-30-17
 STATE OF CALIFORNIA

CEMENTATION	
DESCRIPTION	CRITERIA
WEAK	CRUMBLES OR BREAKS WITH HANDLING OR LITTLE FINGER PRESSURE.
MODERATE	CRUMBLES OR BREAKS WITH CONSIDERABLE FINGER PRESSURE.
STRONG	WILL NOT CRUMBLE OR BREAK WITH FINGER PRESSURE.

ABBREVIATION:

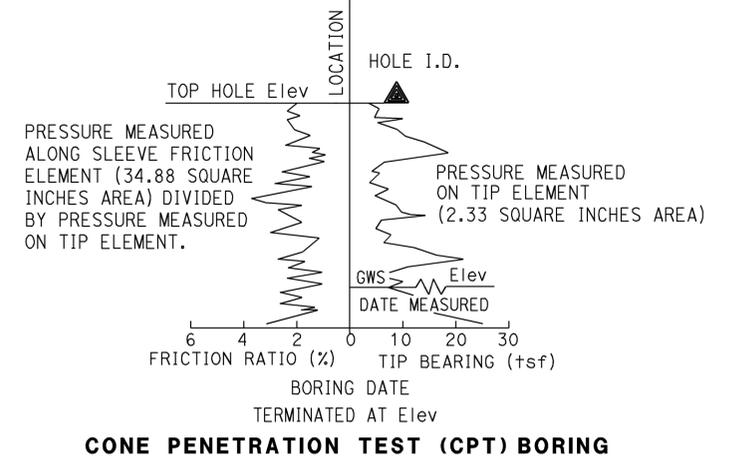
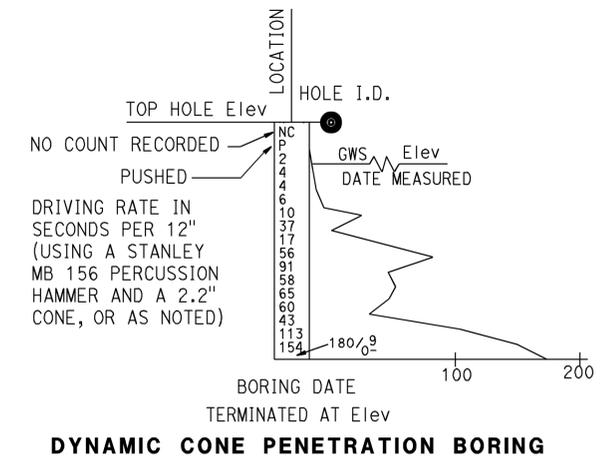
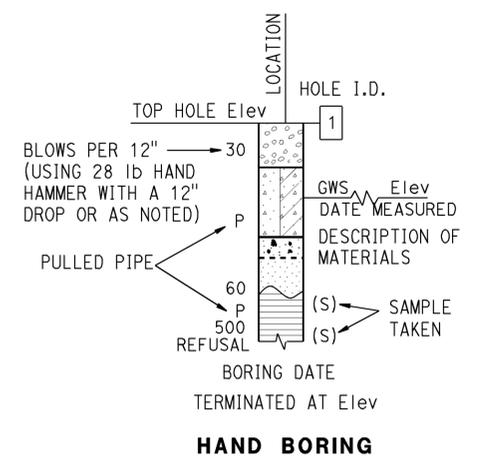
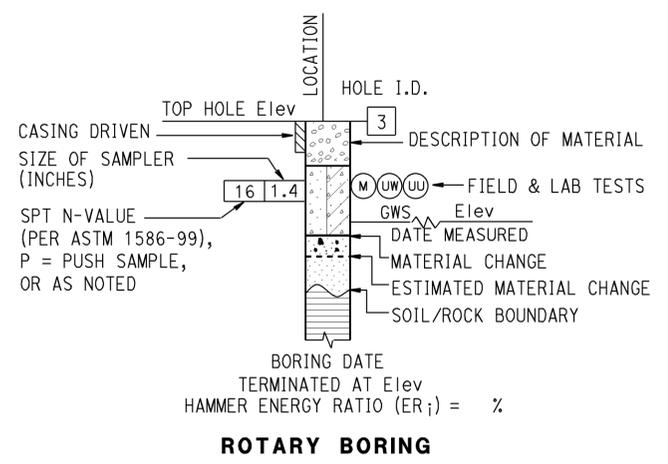
GWS = Ground Water Surface

TO ACCOMPANY PLANS DATED 06-27-16

BOREHOLE IDENTIFICATION		
SYMBOL	HOLE TYPE	DESCRIPTION
	A	AUGER BORING (HOLLOW OR SOLID STEM BUCKET)
	R	ROTARY DRILLED BORING (CONVENTIONAL)
	RW	ROTARY DRILLED WITH SELF-CASING WIRE-LINE
	RC	ROTARY CORE WITH CONTINUOUSLY-SAMPLED, SELF-CASING WIRE-LINE
	P	ROTARY PERCUSSION BORING (AIR)
	R	ROTARY DRILLED DIAMOND CORE
	RC	ROTARY DRILLED DIAMOND CORE, CONTINUOUSLY SAMPLED
	HD	HAND DRIVEN (1-INCH SOIL TUBE)
	HA	HAND AUGER
	D	DYNAMIC CONE PENETRATION BORING
	CPT	CONE PENETRATION TEST (ASTM D 5778)
	O	OTHER (NOTE ON LOTB)

Note: Size in inches.

CONSISTENCY OF COHESIVE SOILS				
DESCRIPTION	SHEAR STRENGTH (tsf)	POCKET PENETROMETER MEASUREMENT, PP, (tsf)	TORVANE MEASUREMENT, TV, (tsf)	VANE SHEAR MEASUREMENT, VS, (tsf)
VERY SOFT	LESS THAN 0.12	LESS THAN 0.25	LESS THAN 0.12	LESS THAN 0.12
SOFT	0.12 - 0.25	0.25 - 0.5	0.12 - 0.25	0.12 - 0.25
MEDIUM STIFF	0.25 - 0.5	0.5 - 1	0.25 - 0.5	0.25 - 0.5
STIFF	0.5 - 1	1 - 2	0.5 - 1	0.5 - 1
VERY STIFF	1 - 2	2 - 4	1 - 2	1 - 2
HARD	GREATER THAN 2	GREATER THAN 4	GREATER THAN 2	GREATER THAN 2



STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
LEGEND - SOIL (SHEET 1 OF 2)
 NO SCALE

2010 REVISED STANDARD PLAN RSP A10F

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	324	431

Chris A. Risden
 CERTIFIED ENGINEERING GEOLOGIST
 October 30, 2015
 PLANS APPROVAL DATE

REGISTERED GEOLOGIST
 CHRIS A. RISDEN
 CERTIFIED ENGINEERING GEOLOGIST
 No. 2541
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 STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 06-27-16

GROUP SYMBOLS AND NAMES					
GRAPHIC/SYMBOL	GROUP NAMES	GRAPHIC/SYMBOL	GROUP NAMES	GRAPHIC/SYMBOL	GROUP NAMES
	GW WELL-GRADED GRAVEL WELL-GRADED GRAVEL WITH SAND		CL LEAN CLAY LEAN CLAY WITH SAND LEAN CLAY WITH GRAVEL SANDY LEAN CLAY SANDY LEAN CLAY WITH GRAVEL GRAVELLY LEAN CLAY GRAVELLY LEAN CLAY WITH SAND		GW-GM WELL-GRADED GRAVEL WITH SILT WELL-GRADED GRAVEL WITH SILT AND SAND
	GP POORLY-GRADED GRAVEL POORLY-GRADED GRAVEL WITH SAND				
	GW-GC WELL-GRADED GRAVEL WITH CLAY (OR SILTY CLAY) WELL-GRADED GRAVEL WITH CLAY AND SAND (OR SILTY CLAY AND SAND)		CL-ML SILTY CLAY SILTY CLAY WITH SAND SILTY CLAY WITH GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY WITH GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY WITH SAND		GP-GM POORLY-GRADED GRAVEL WITH SILT POORLY-GRADED GRAVEL WITH SILT AND SAND
	GM SILTY GRAVEL SILTY GRAVEL WITH SAND		ML SILT SILT WITH SAND SILT WITH GRAVEL SANDY SILT SANDY SILT WITH GRAVEL GRAVELLY SILT GRAVELLY SILT WITH SAND		GP-GC POORLY-GRADED GRAVEL WITH CLAY (OR SILTY CLAY) POORLY-GRADED GRAVEL WITH CLAY AND SAND (OR SILTY CLAY AND SAND)
	GC-GM SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL WITH SAND		OL ORGANIC LEAN CLAY ORGANIC LEAN CLAY WITH SAND ORGANIC LEAN CLAY WITH GRAVEL SANDY ORGANIC LEAN CLAY SANDY ORGANIC LEAN CLAY WITH GRAVEL GRAVELLY ORGANIC LEAN CLAY GRAVELLY ORGANIC LEAN CLAY WITH SAND		GM SILTY GRAVEL SILTY GRAVEL WITH SAND
	SP POORLY-GRADED SAND POORLY-GRADED SAND WITH GRAVEL		OL ORGANIC LEAN CLAY ORGANIC LEAN CLAY WITH SAND ORGANIC LEAN CLAY WITH GRAVEL SANDY ORGANIC LEAN CLAY SANDY ORGANIC LEAN CLAY WITH GRAVEL GRAVELLY ORGANIC LEAN CLAY GRAVELLY ORGANIC LEAN CLAY WITH SAND		GC-GM SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL WITH SAND
	SW-SC WELL-GRADED SAND WITH CLAY (OR SILTY CLAY) WELL-GRADED SAND WITH CLAY AND GRAVEL (OR SILTY CLAY AND GRAVEL)		CH FAT CLAY FAT CLAY WITH SAND FAT CLAY WITH GRAVEL SANDY FAT CLAY SANDY FAT CLAY WITH GRAVEL GRAVELLY FAT CLAY GRAVELLY FAT CLAY WITH SAND		SP POORLY-GRADED SAND POORLY-GRADED SAND WITH GRAVEL
	SP-SC POORLY-GRADED SAND WITH CLAY (OR SILTY CLAY) POORLY-GRADED SAND WITH CLAY AND GRAVEL (OR SILTY CLAY AND GRAVEL)		MH ELASTIC SILT ELASTIC SILT WITH SAND ELASTIC SILT WITH GRAVEL SANDY ELASTIC SILT SANDY ELASTIC SILT WITH GRAVEL GRAVELLY ELASTIC SILT GRAVELLY ELASTIC SILT WITH SAND		SW-SM WELL-GRADED SAND WITH SILT WELL-GRADED SAND WITH SILT AND GRAVEL
	SC CLAYEY SAND CLAYEY SAND WITH GRAVEL		OH ORGANIC ELASTIC SILT ORGANIC ELASTIC SILT WITH SAND ORGANIC ELASTIC SILT WITH GRAVEL SANDY ORGANIC ELASTIC SILT SANDY ORGANIC ELASTIC SILT WITH GRAVEL GRAVELLY ORGANIC ELASTIC SILT GRAVELLY ORGANIC ELASTIC SILT WITH SAND		SP-SC POORLY-GRADED SAND WITH CLAY (OR SILTY CLAY) POORLY-GRADED SAND WITH CLAY AND GRAVEL (OR SILTY CLAY AND GRAVEL)
	PT PEAT		OL/OH ORGANIC SOIL ORGANIC SOIL WITH SAND ORGANIC SOIL WITH GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL WITH GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL WITH SAND		SM SILTY SAND SILTY SAND WITH GRAVEL

FIELD AND LABORATORY TESTING	
(C)	CONSOLIDATION (ASTM D2435)
(CL)	COLLAPSE POTENTIAL (ASTM D4546)
(CP)	COMPACTION CURVE (CTM 216)
(CR)	CORROSIVITY TESTING (CTM 643, CTM 422, CTM 417)
(CU)	CONSOLIDATED UNDRAINED TRIAXIAL (ASTM D4767)
(DS)	DIRECT SHEAR (ASTM D3080)
(EI)	EXPANSION INDEX (ASTM D4829)
(M)	MOISTURE CONTENT (ASTM D2216)
(OC)	ORGANIC CONTENT-% (ASTM D2974)
(P)	PERMEABILITY (CTM 220)
(PA)	PARTICLE SIZE ANALYSIS (ASTM D422)
(PI)	PLASTICITY INDEX (AASHTO T 90) LIQUID LIMIT (AASHTO T 89)
(PL)	POINT LOAD INDEX (ASTM D5731)
(PM)	PRESSURE METER
(R)	R-VALUE (CTM 301)
(SE)	SAND EQUIVALENT (CTM 217)
(SG)	SPECIFIC GRAVITY (AASHTO T 100)
(SL)	SHRINKAGE LIMIT (ASTM D4943)
(SW)	SWELL POTENTIAL (ASTM D4546)
(UC)	UNCONFINED COMPRESSION-SOIL (ASTM D2166) UNCONFINED COMPRESSION-ROCK (ASTM D7012 - METHOD C)
(UU)	UNCONSOLIDATED UNDRAINED TRIAXIAL (ASTM D2850)
(UW)	UNIT WEIGHT (ASTM D7263 - METHOD B)

APPARENT DENSITY OF COHESIONLESS SOILS	
DESCRIPTION	SPT N ₆₀ (BLOWS / 12 INCHES)
VERY LOOSE	0 - 5
LOOSE	5 - 10
MEDIUM DENSE	10 - 30
DENSE	30 - 50
VERY DENSE	GREATER THAN 50

MOISTURE	
DESCRIPTION	CRITERIA
DRY	NO DISCERNABLE MOISTURE
MOIST	MOISTURE PRESENT, BUT NO FREE WATER
WET	VISIBLE FREE WATER

PERCENT OR PROPORTION OF SOILS	
DESCRIPTION	CRITERIA
TRACE	PARTICLES ARE PRESENT BUT ESTIMATED TO BE LESS THAN 5%
FEW	5% - 10%
LITTLE	15% - 25%
SOME	30% - 45%
MOSTLY	50% - 100%

PARTICLE SIZE		
DESCRIPTION	SIZE	
BOULDER	GREATER THAN 12"	
COBBLE	3" - 12"	
GRAVEL	COARSE	3/4" - 3"
	FINE	1/5" - 3/4"
SAND	COARSE	1/16" - 1/5"
	MEDIUM	1/64" - 1/16"
	FINE	1/300" - 1/64"
SILT AND CLAY	LESS THAN 1/300"	

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
LEGEND - SOIL
(SHEET 2 OF 2)
 NO SCALE

RSP A10G DATED OCTOBER 30, 2015 SUPERSEDES STANDARD PLAN A10G DATED MAY 20, 2011 - PAGE 7 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A10G

2010 REVISED STANDARD PLAN RSP A10G

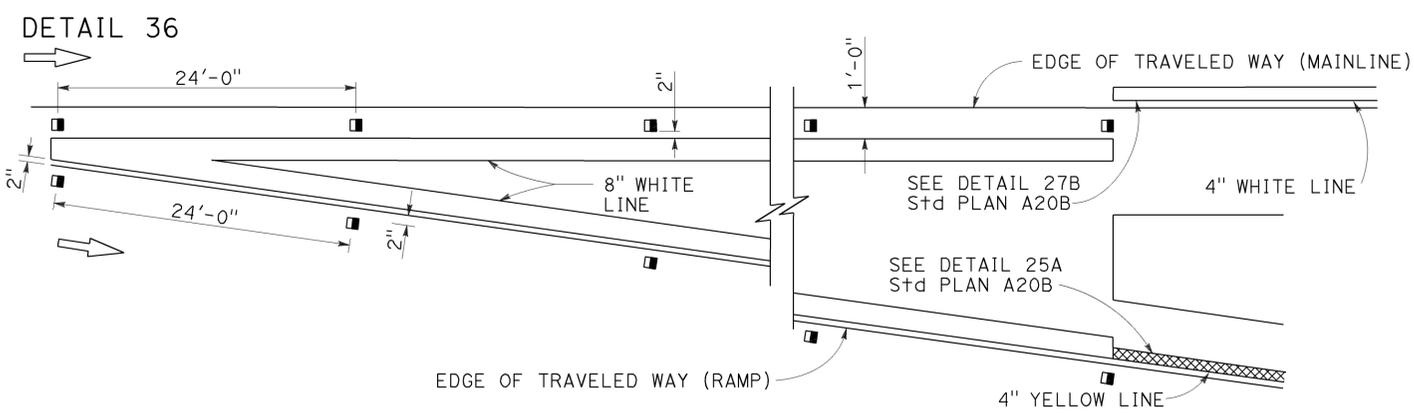
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	325	431

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

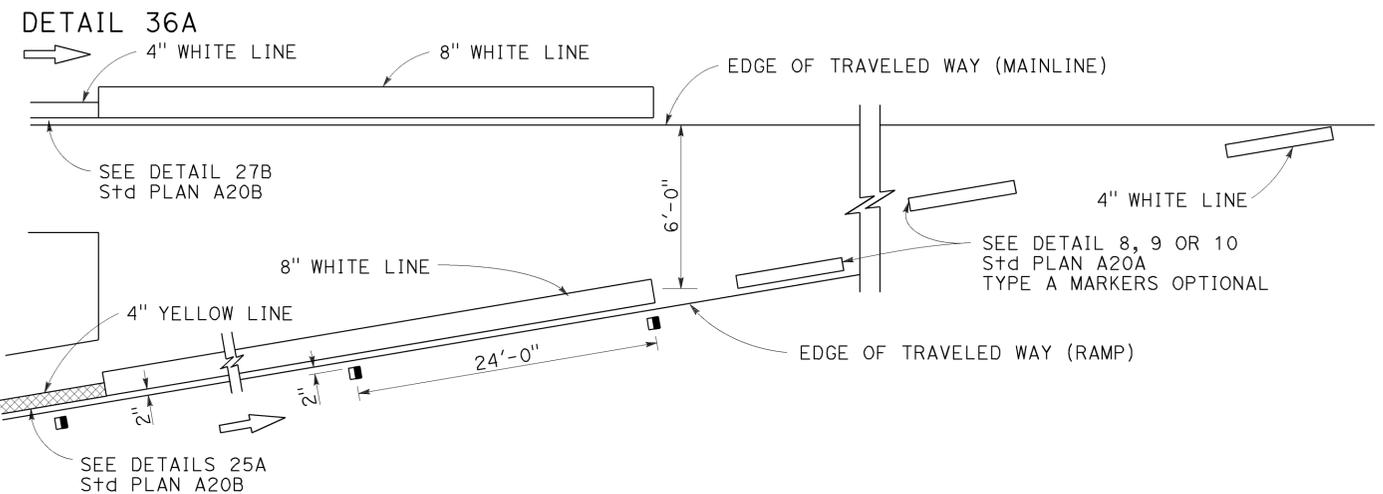
July 19, 2013
 PLANS APPROVAL DATE

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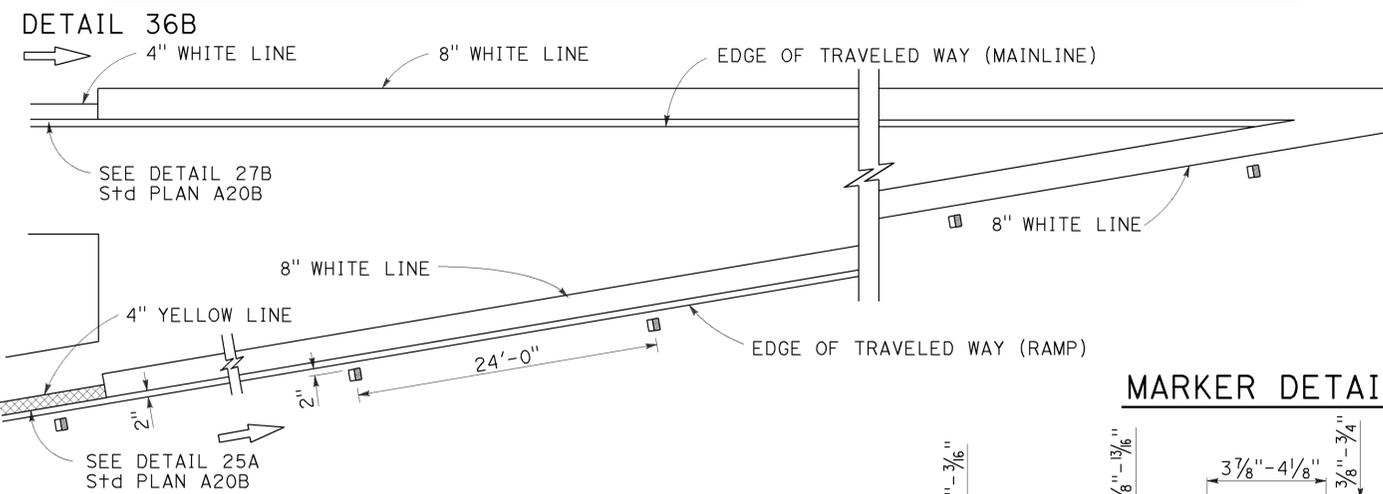
EXIT RAMP NEUTRAL AREA (GORE) TREATMENT



ENTRANCE RAMP NEUTRAL AREA (MERGE) TREATMENT



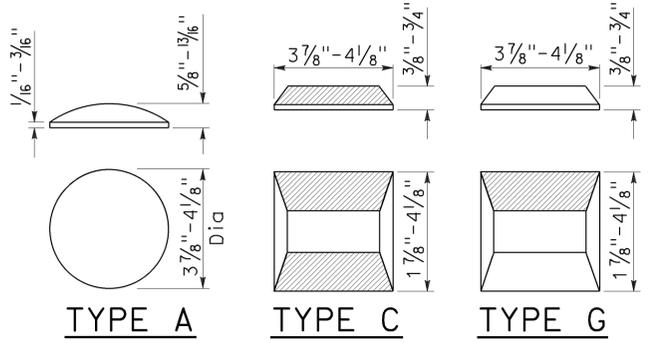
ENTRANCE RAMP NEUTRAL AREA (ACCELERATION LANE) TREATMENT



MARKER DETAILS

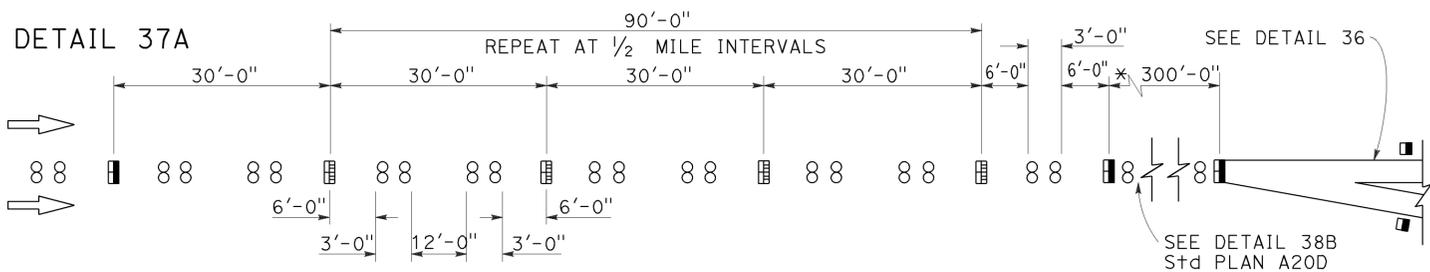
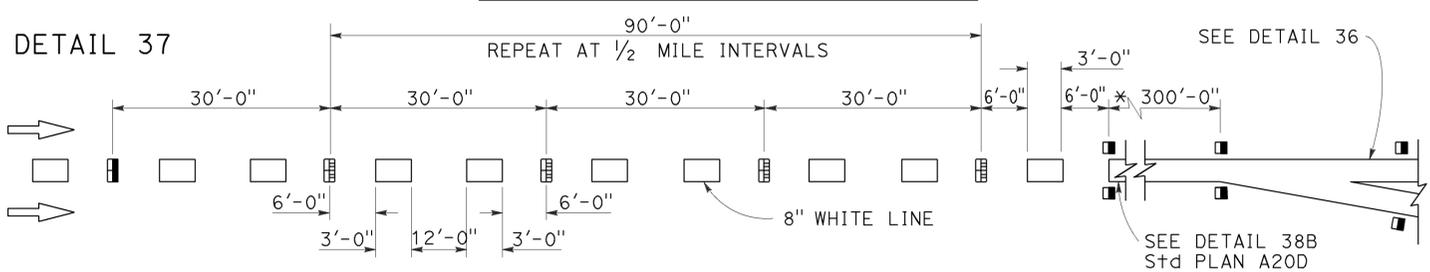
LEGEND:

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



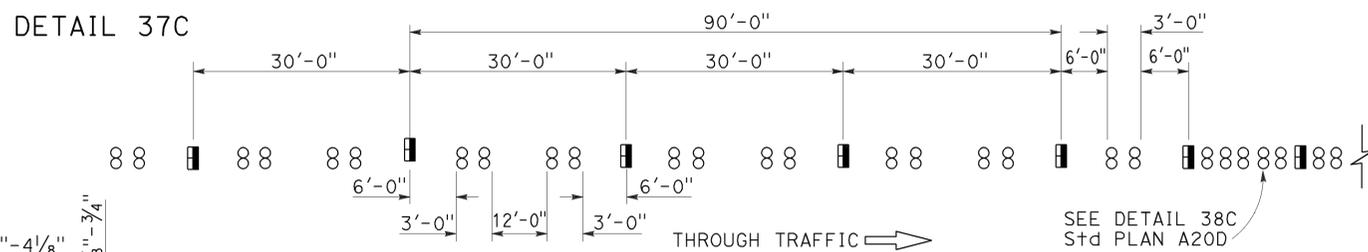
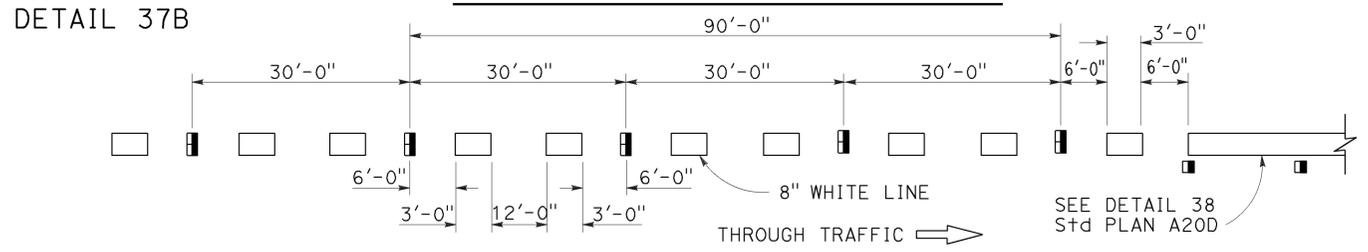
RETROREFLECTIVE FACE

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

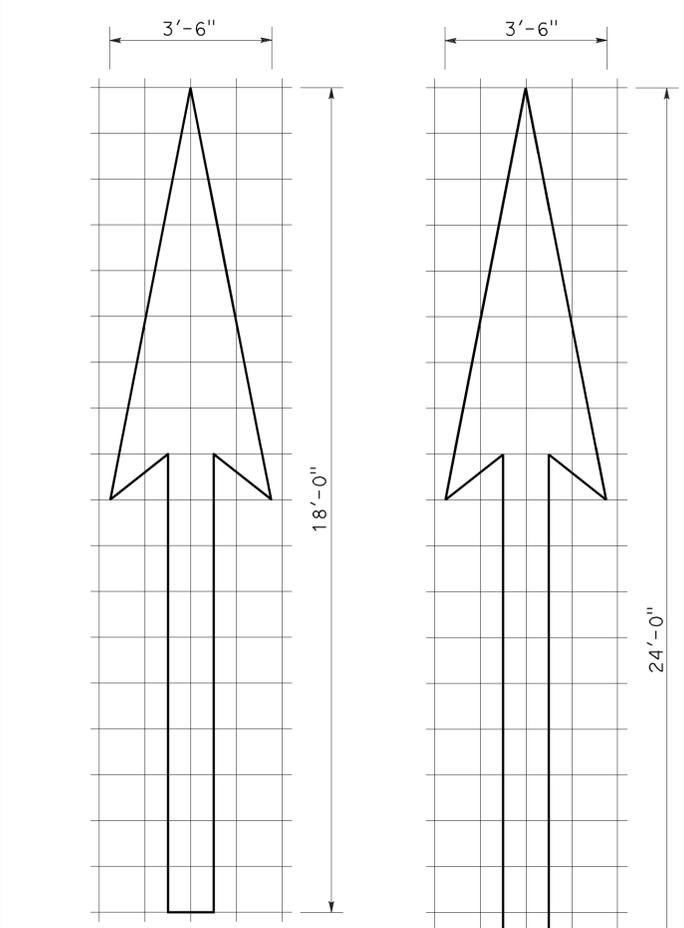
RSP A20C DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN A20C DATED MAY 20, 2011 - PAGE 11 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A20C

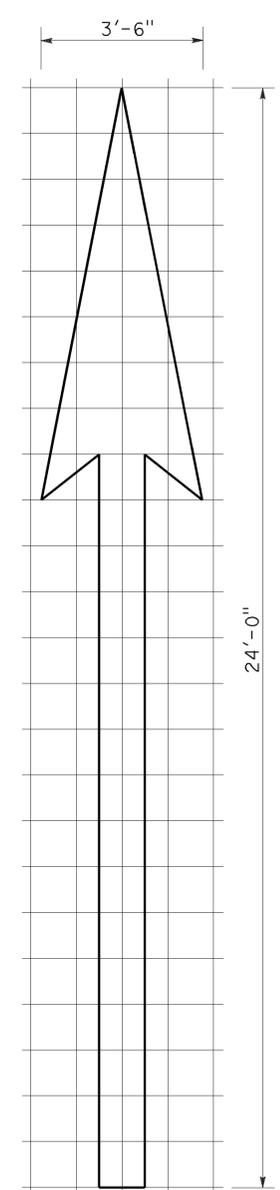
2010 REVISED STANDARD PLAN RSP A20C

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	326	431
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>					

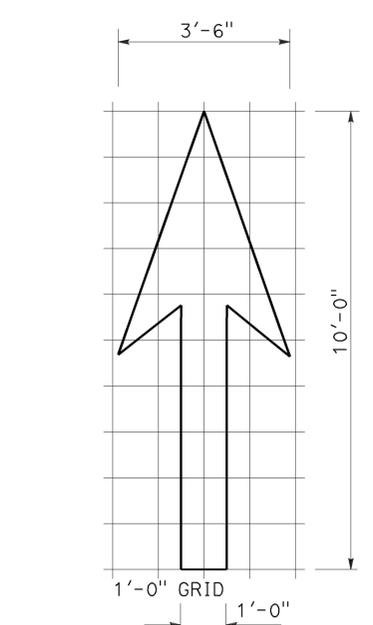
TO ACCOMPANY PLANS DATED 06-27-16



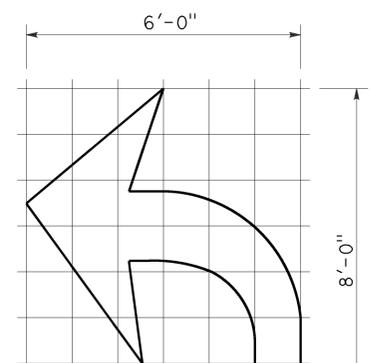
A=25 ft²
TYPE I 18'-0" ARROW



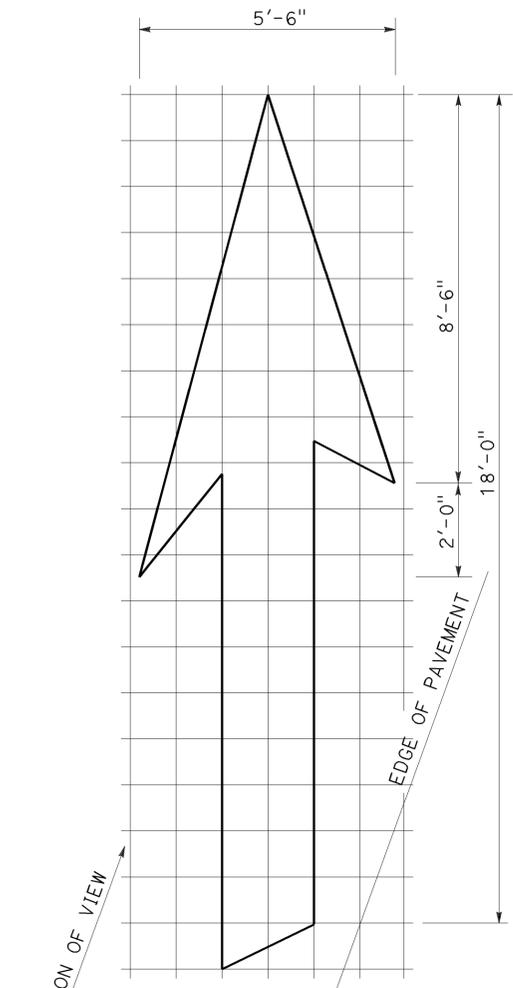
A=31 ft²
TYPE I 24'-0" ARROW



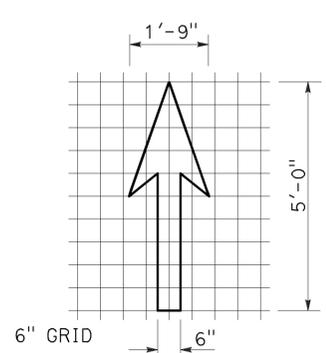
A=14 ft²
TYPE I 10'-0" ARROW



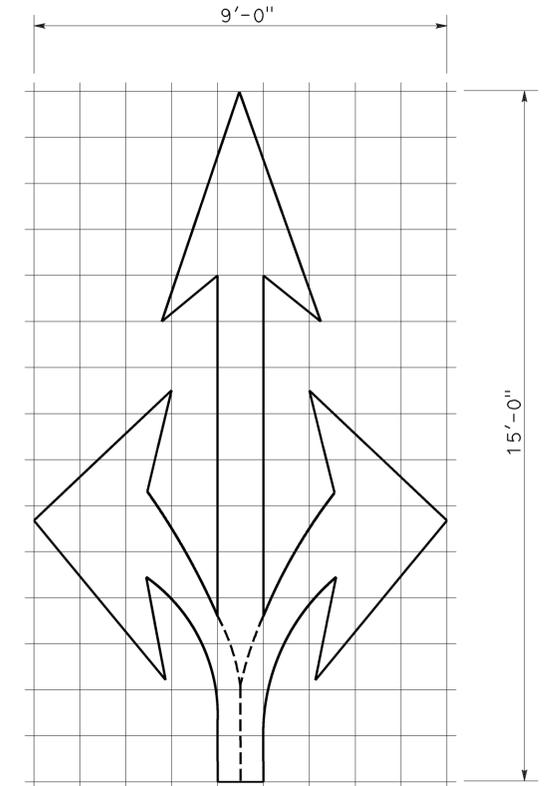
A=15 ft²
TYPE IV (L) ARROW
(For Type IV (R) arrow, use mirror image)



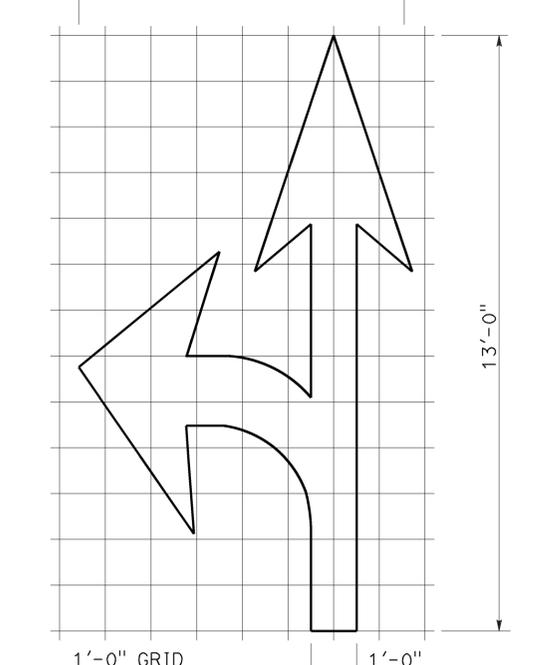
A=42 ft²
TYPE VI ARROW
Right lane drop arrow
(For left lane, use mirror image)



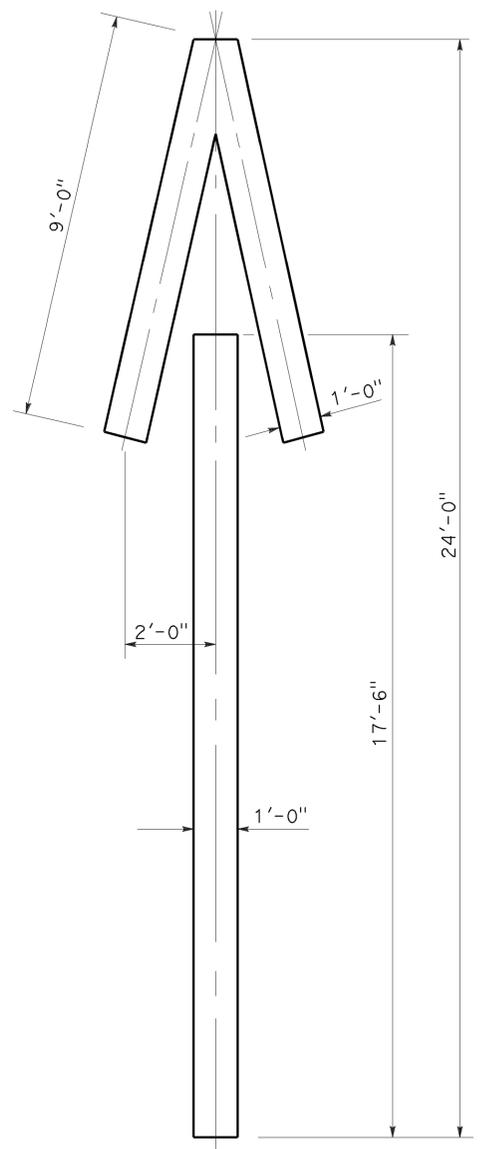
A=3.5 ft²
BIKE LANE ARROW



A=36 ft²
TYPE VIII ARROW



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



A=33 ft²
TYPE V ARROW

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

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

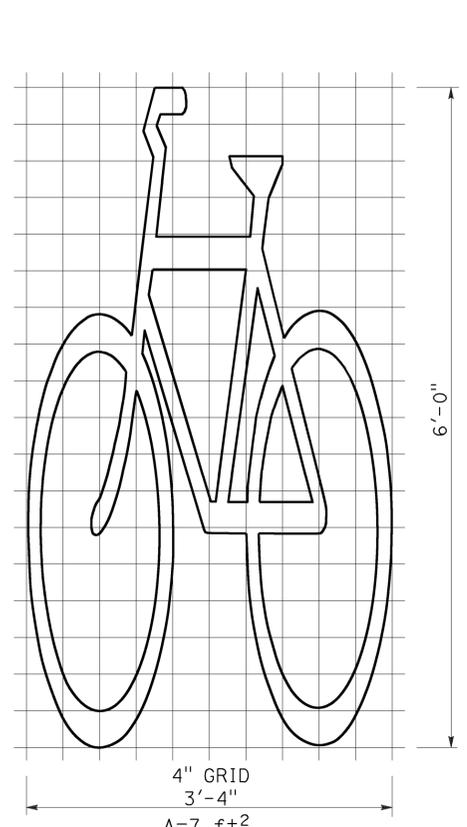
RSP A24A DATED APRIL 20, 2012 SUPERSEDES STANDARD PLAN A24A DATED MAY 20, 2011 - PAGE 13 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A24A

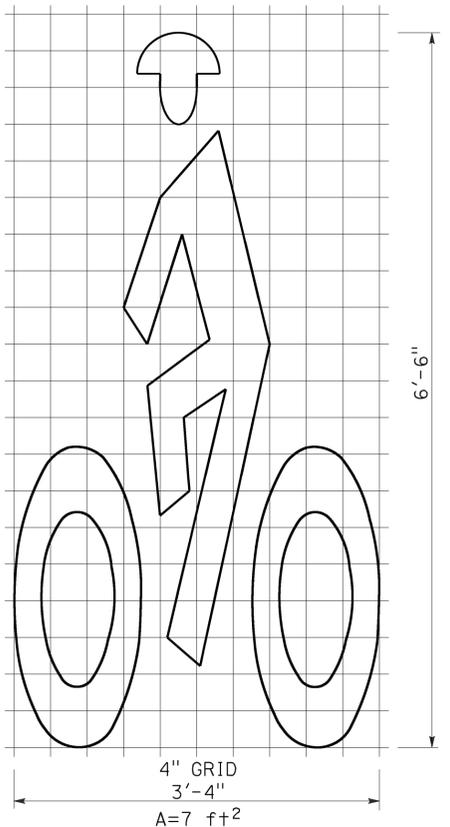
2010 REVISED STANDARD PLAN RSP A24A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	327	431
<i>Roberta L. McLaughlin</i> REGISTERED CIVIL ENGINEER					
October 19, 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>					
REGISTERED PROFESSIONAL ENGINEER Roberta L. McLaughlin No. C40375 Exp. 3-31-13 CIVIL STATE OF CALIFORNIA					

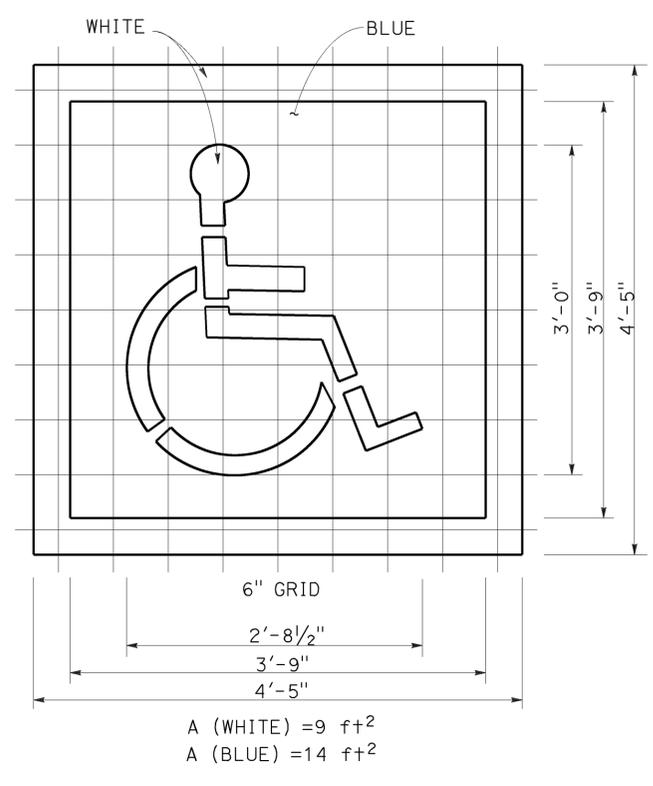
NOTE: TO ACCOMPANY PLANS DATED 06-27-16
Minor variations in dimensions may be accepted by the Engineer.



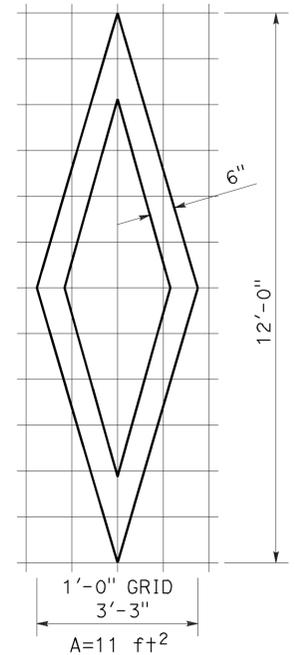
BIKE LANE SYMBOL WITHOUT PERSON



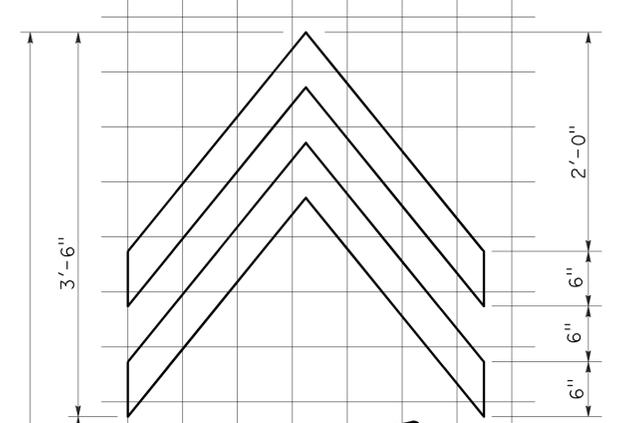
BIKE LANE SYMBOL WITH PERSON



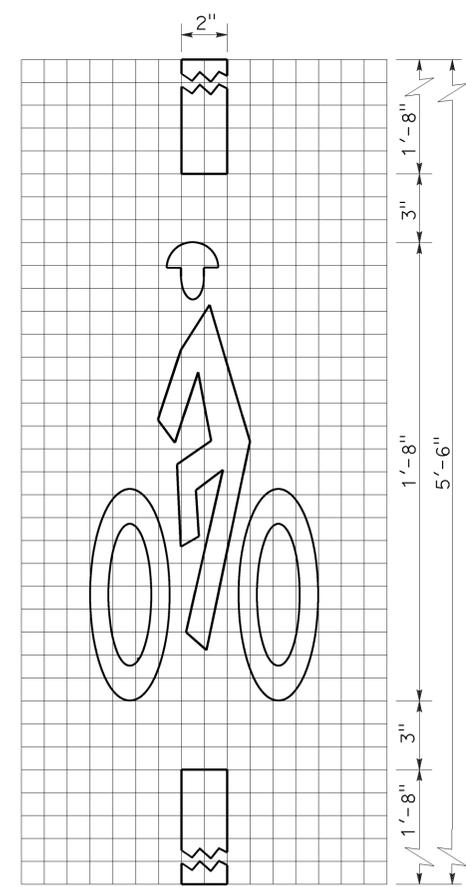
INTERNATIONAL SYMBOL OF ACCESSIBILITY (ISA) MARKING



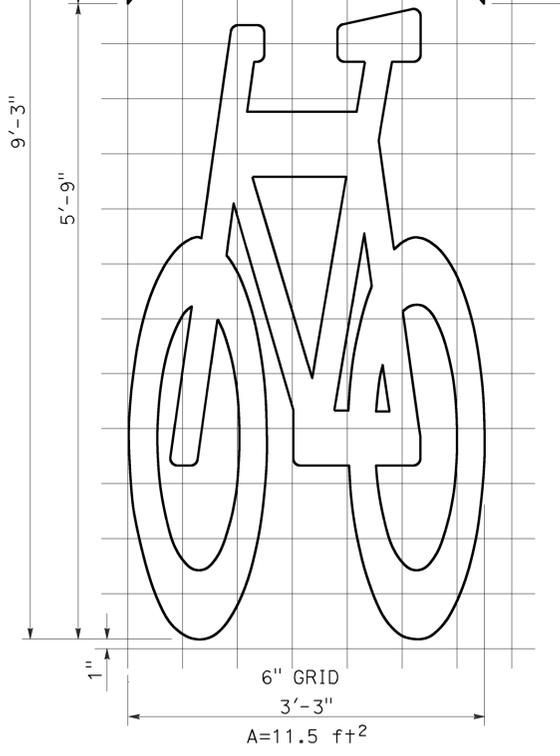
DIAMOND SYMBOL



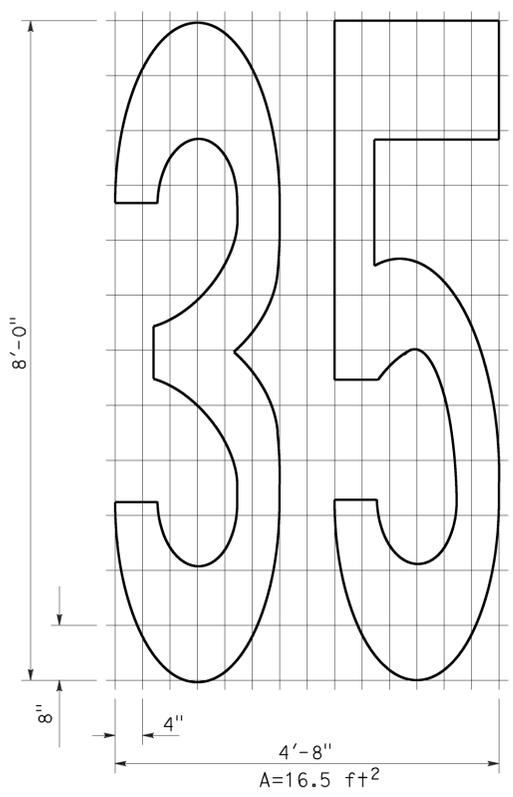
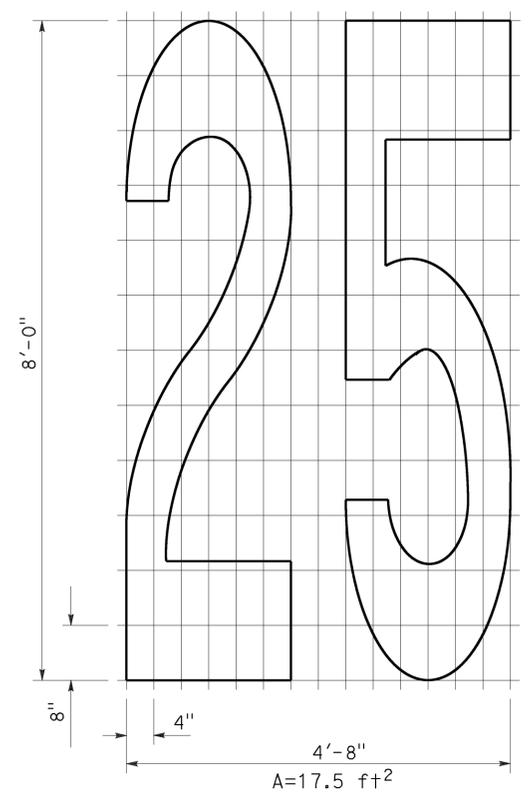
SHARED ROADWAY BICYCLE MARKING



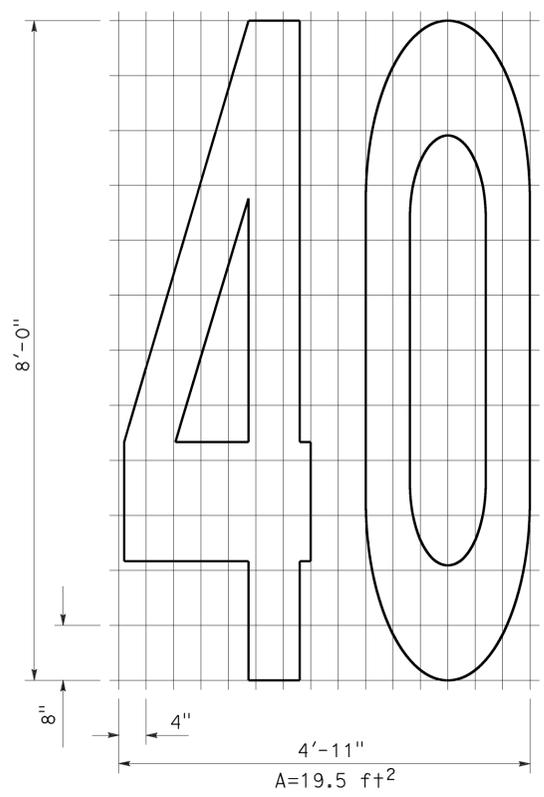
BICYCLE LOOP DETECTOR SYMBOL



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
PAVEMENT MARKINGS SYMBOLS AND NUMERALS
NO SCALE



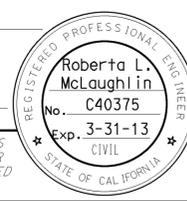
NUMERALS



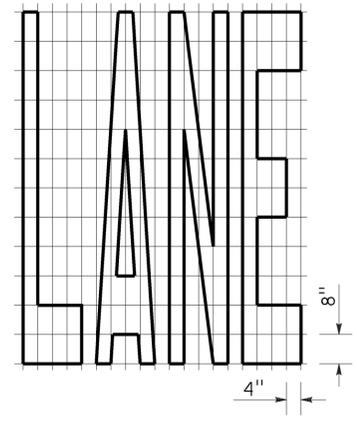
A=19.5 ft²

RSP A24C DATED OCTOBER 19, 2012 SUPERSEDES STANDARD PLAN A24C DATED MAY 20, 2011 - PAGE 15 OF THE STANDARD PLANS BOOK DATED 2010.

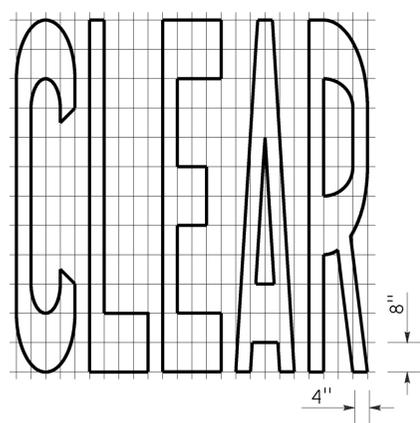
2010 REVISED STANDARD PLAN RSP A24C



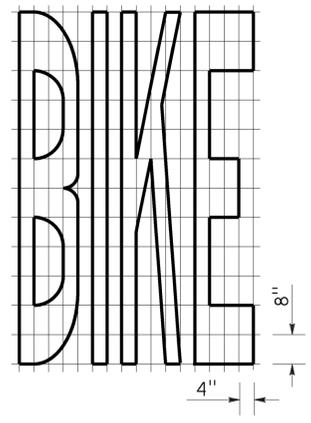
TO ACCOMPANY PLANS DATED 06-27-16



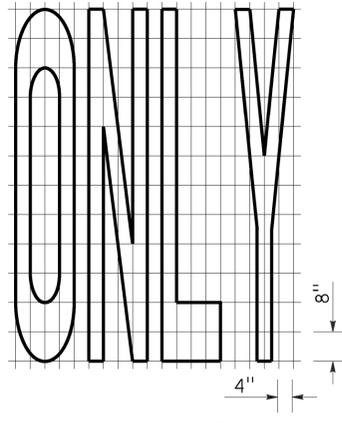
A=24 ft²



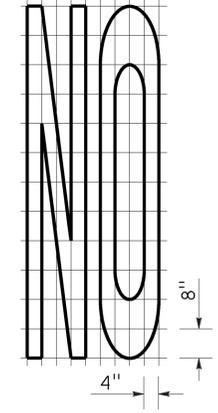
A=27 ft²



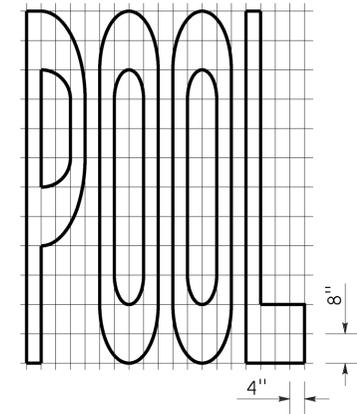
A=21 ft²



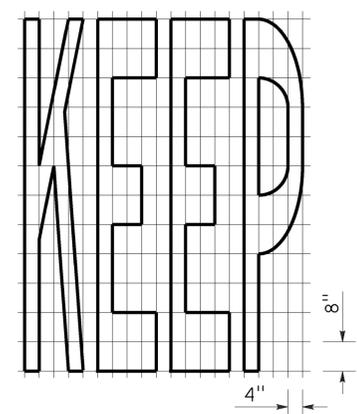
A=22 ft²



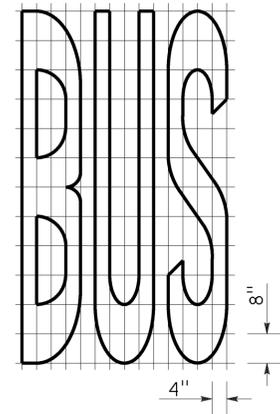
A=14 ft²



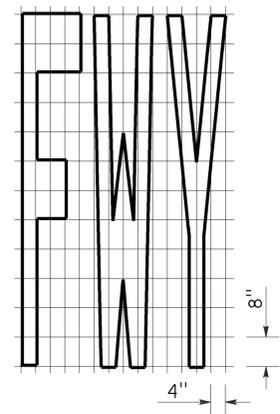
A=23 ft²



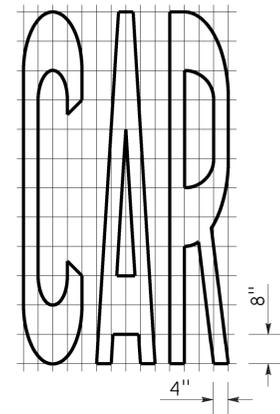
A=24 ft²



A=20 ft²

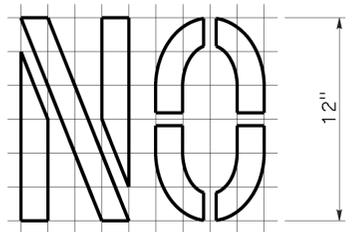


A=16 ft²



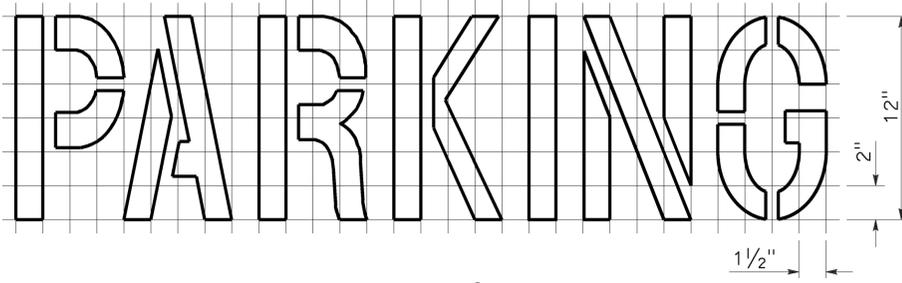
A=17 ft²

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



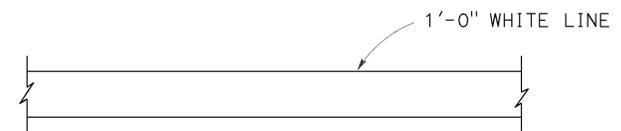
A=2 ft²

See Notes 6 and 7

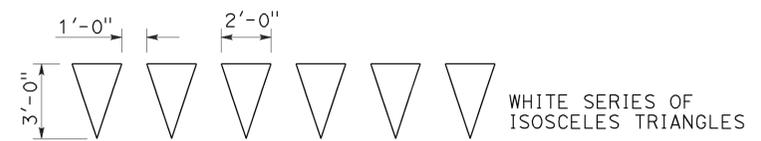


A=2 ft²

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
12	Ora	405	2.6/6.5	329	431

Roberta L. McLaughlin
REGISTERED CIVIL ENGINEER

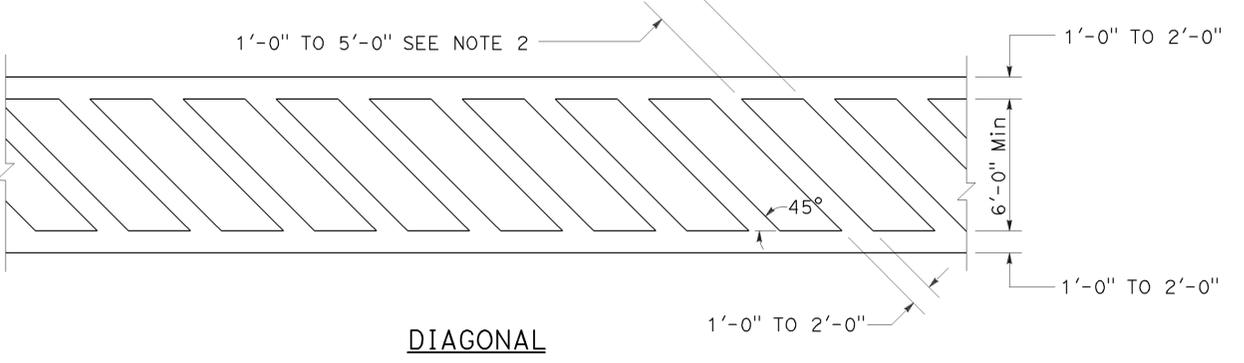
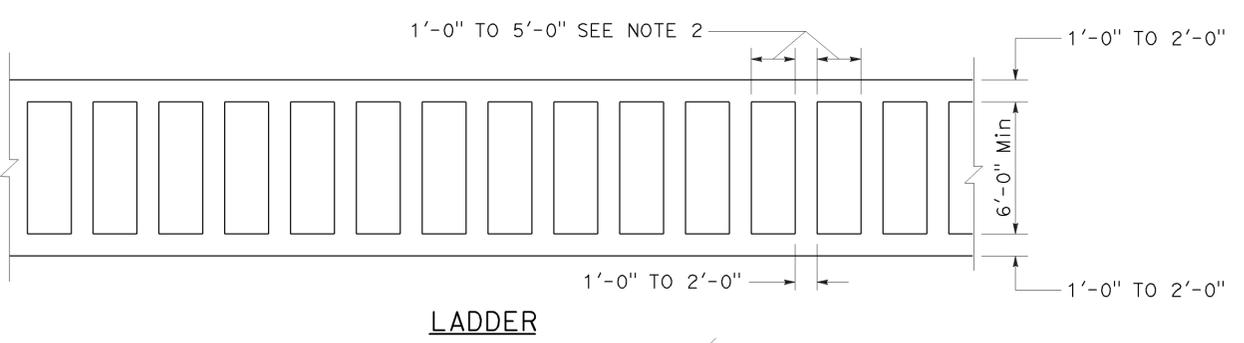
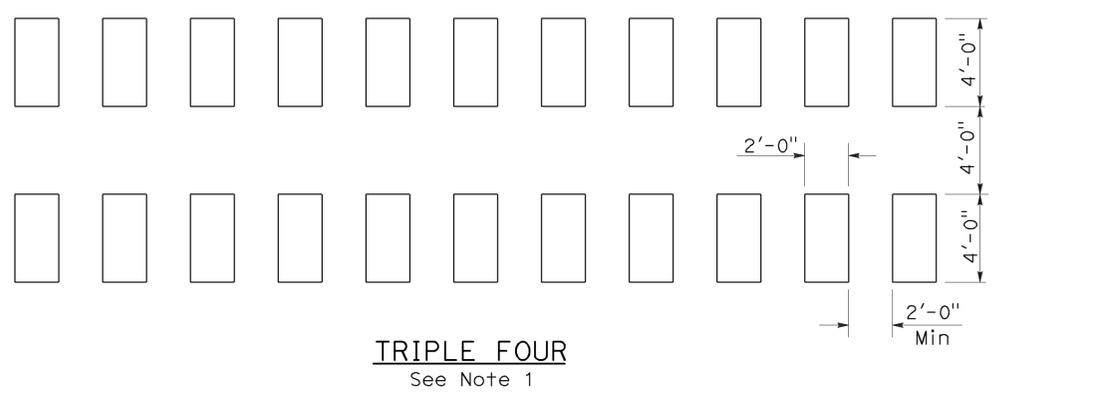
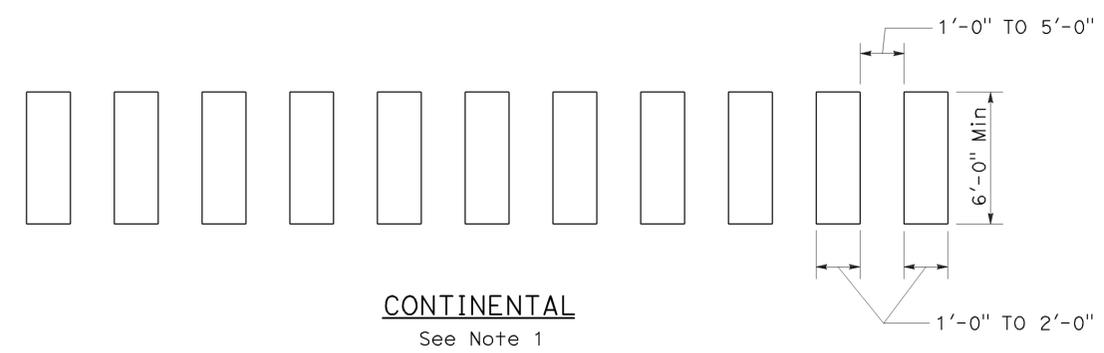
July 20, 2012
PLANS APPROVAL DATE

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

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TO ACCOMPANY PLANS DATED 06-27-16

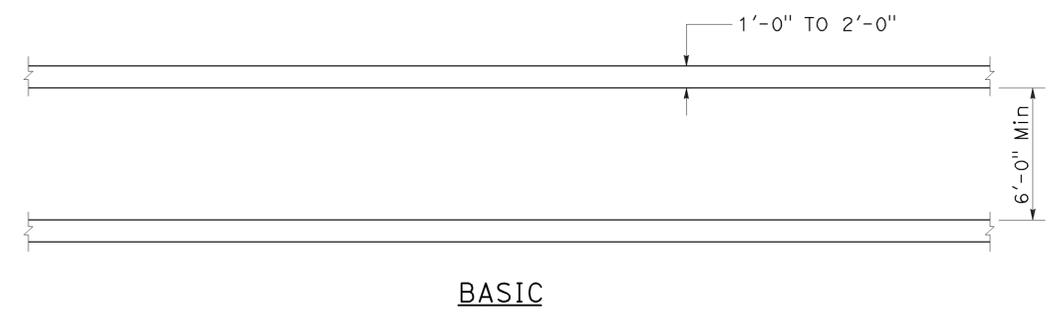
2010 REVISED STANDARD PLAN RSP A24F



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.

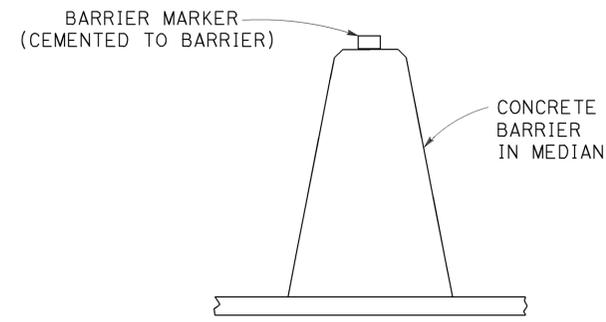
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	330	431

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

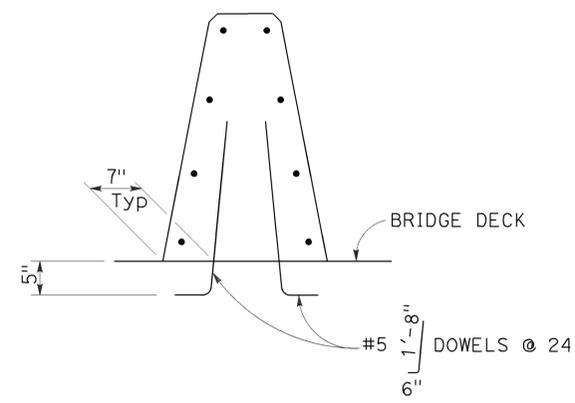
October 30, 2015
PLANS APPROVAL DATE

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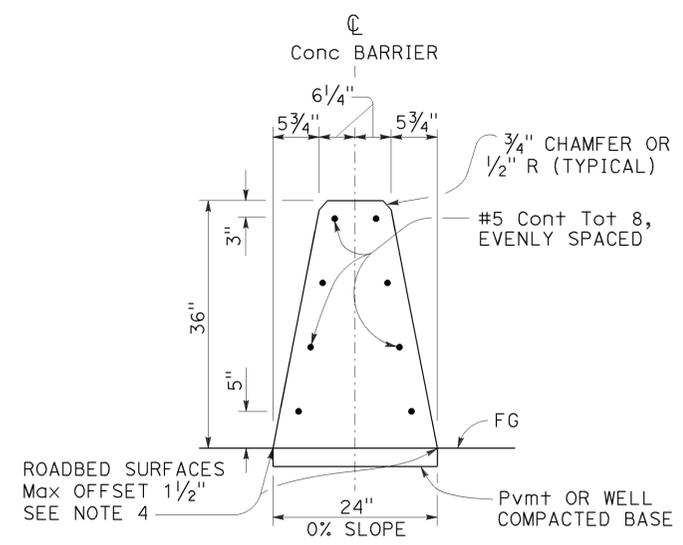
TO ACCOMPANY PLANS DATED 06-27-16



CONCRETE BARRIER TYPE 60 DELINEATION
See Note 5



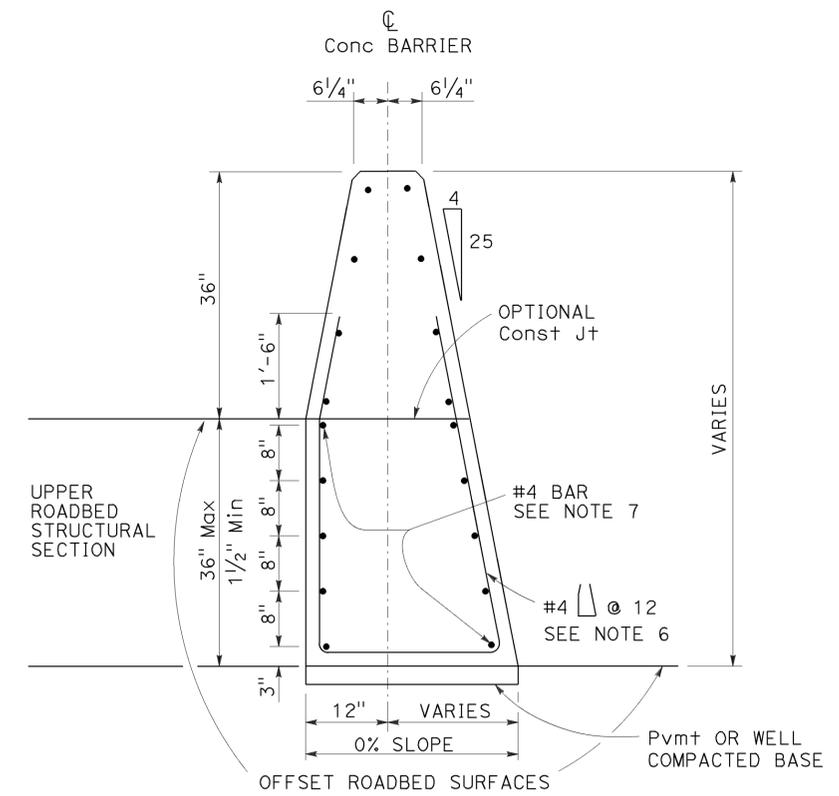
CONCRETE BARRIER TYPE 60A
Details similar to Type 60 except as noted.



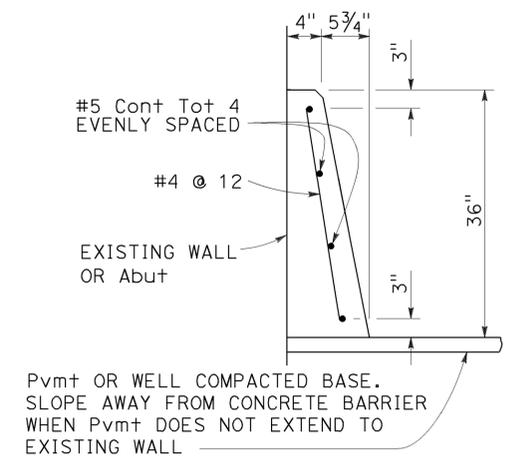
CONCRETE BARRIER TYPE 60

NOTES:

- See Standard Plan A76B for details of Concrete Barrier Type 60 end anchors, connection to structures and transitions to Concrete Barrier Type 50 and Concrete Barrier Type 60S.
- See Revised Standard Plan RSP A76C for Concrete Barrier Type 60 transitions at bridge column and sign pedestals.
- Where glare screen is required on Concrete Barrier Type 60, use Concrete Barrier Type 60G.
- Where roadbed offset is greater than 1 1/2", see Concrete Barrier Type 60C.
- See Project Plans for barrier delineation locations.
- Reinforcing stirrup not required for roadbed offsets less than 1'-0".
- For roadbed surfaces offset greater than 1 1/2" and less than or equal to 3", no reinforcement required. For roadbed surfaces offset greater than 3" and less than or equal to 8", use two #4 Reinf at 3" above the lower roadbed surface. For roadbed surfaces offset greater than 8" and less than or equal to 12", use two #4 Reinf at 3" above the lower roadbed surface and two #4 Reinf at 8" above the lower roadbed surface. For roadbed surfaces offset greater than 12" and less than or equal to 36", use two #4 Reinf at 3" above the lower roadbed surface and two #4 Reinf at every 8" increment vertical spacing above the first two #4 Reinf.



CONCRETE BARRIER TYPE 60C
Details similar to Type 60 except as noted.
Use concrete barrier end anchor when necessary.
36" roadbed surfaces offset shown.



CONCRETE BARRIER TYPE 60D

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
CONCRETE BARRIER TYPE 60
NO SCALE

RSP A76A DATED OCTOBER 30, 2015 SUPERSEDES STANDARD PLAN A76A DATED MAY 20, 2011 - PAGE 34 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A76A

2010 REVISED STANDARD PLAN RSP A76A

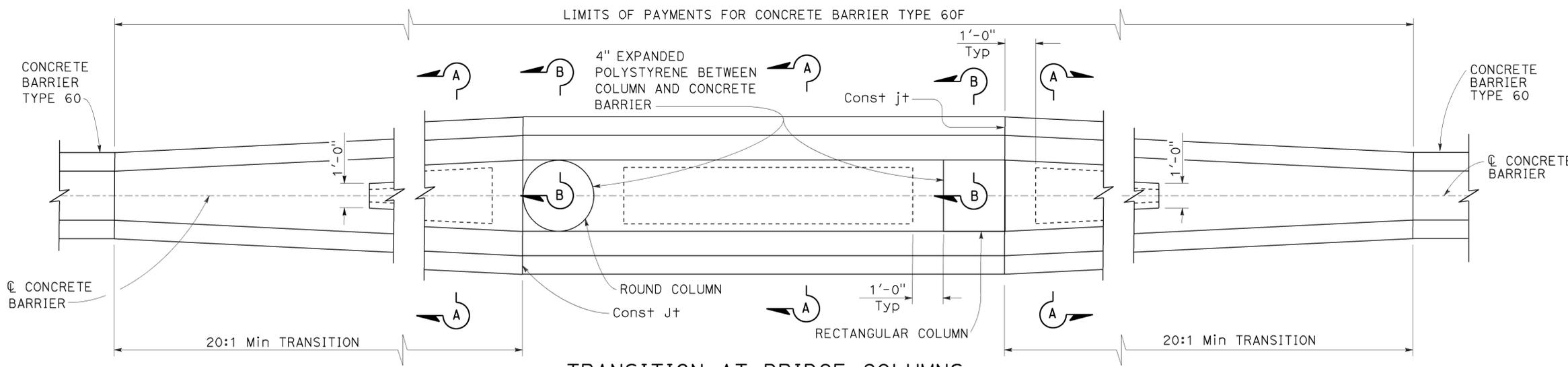
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	331	431

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

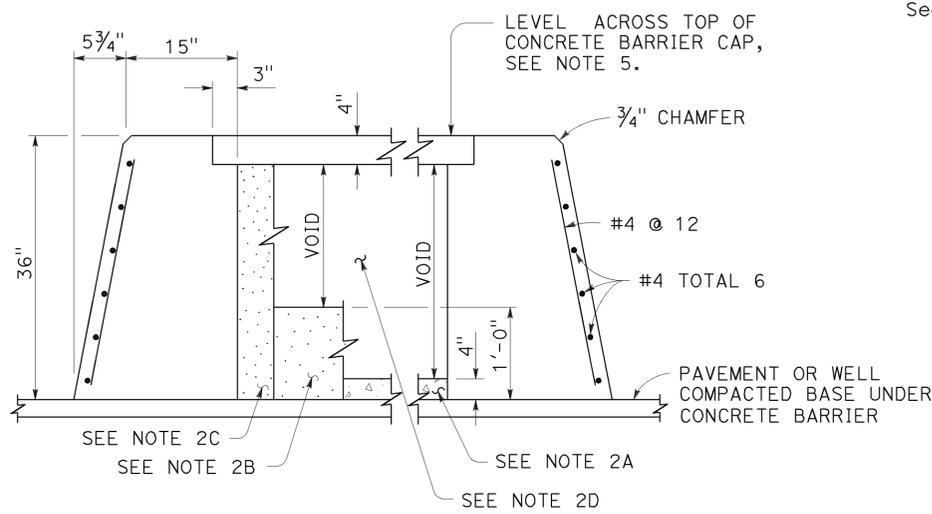
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 06-27-16

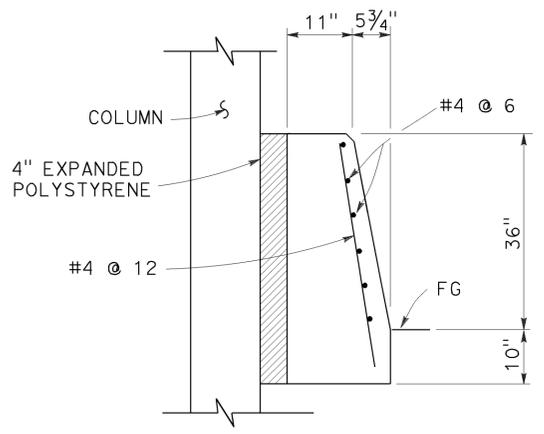


TRANSITION AT BRIDGE COLUMNS

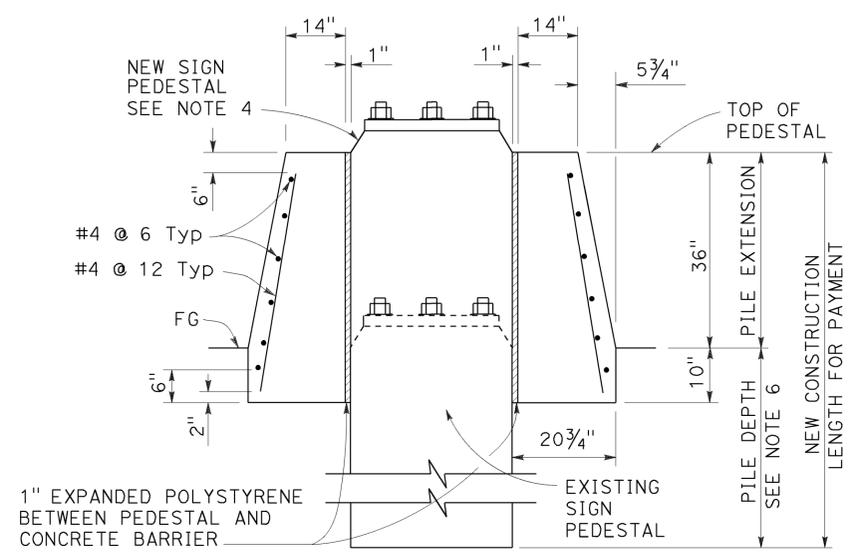
Concrete Barrier Type 60F
See Note 7



SECTION A-A



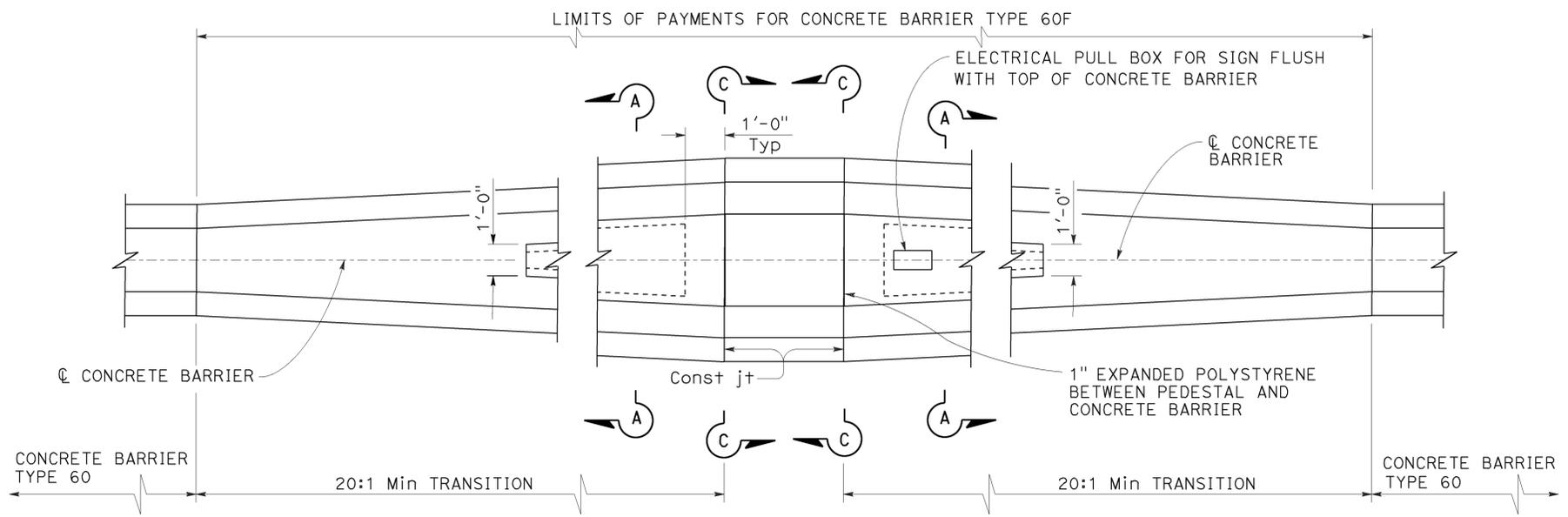
SECTION B-B



SECTION C-C

NOTES:

- See Standard Plan A76A for Concrete Barrier Type 60.
- Contractor options for fill between concrete barrier walls:
 - Place 4" PCC at base between concrete barrier walls.
 - Place 1'-0" of granular material at base between walls.
 - Place granular material from base to bottom of 4" cap.
 - Monolithic concrete with foam blockouts is not permitted.
- Reinforcing steel shall extend continuous through construction joints.
- See "Overhead Sign" plans for sign pedestal elevations on new construction.
- Adjust height of concrete barrier wall on low side of offset or superelevated roadways to provide level grade across top of concrete barrier cap.
- See Overhead Signs Standard Plan Pile Foundation Tables.
- All locations with limited shoulder width available for barrier, see Standard Plan A76F for use of Concrete Barrier Type 60GE.



TRANSITION AT SIGN PEDESTAL

Concrete Barrier Type 60F
See Note 7

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CONCRETE BARRIER TYPE 60F
NO SCALE

RSP A76C DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN A76C
DATED MAY 20, 2011 - PAGE 36 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A76C

2010 REVISED STANDARD PLAN RSP A76C

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	332	431

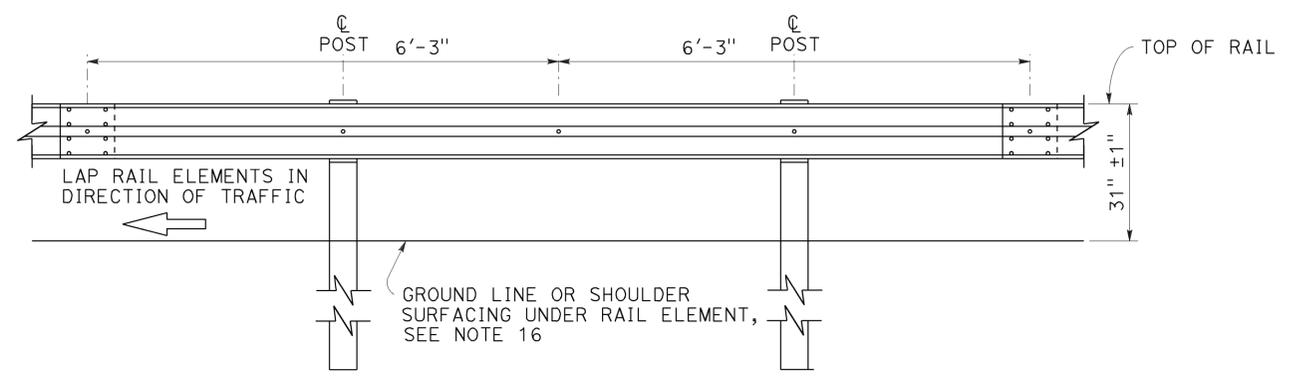
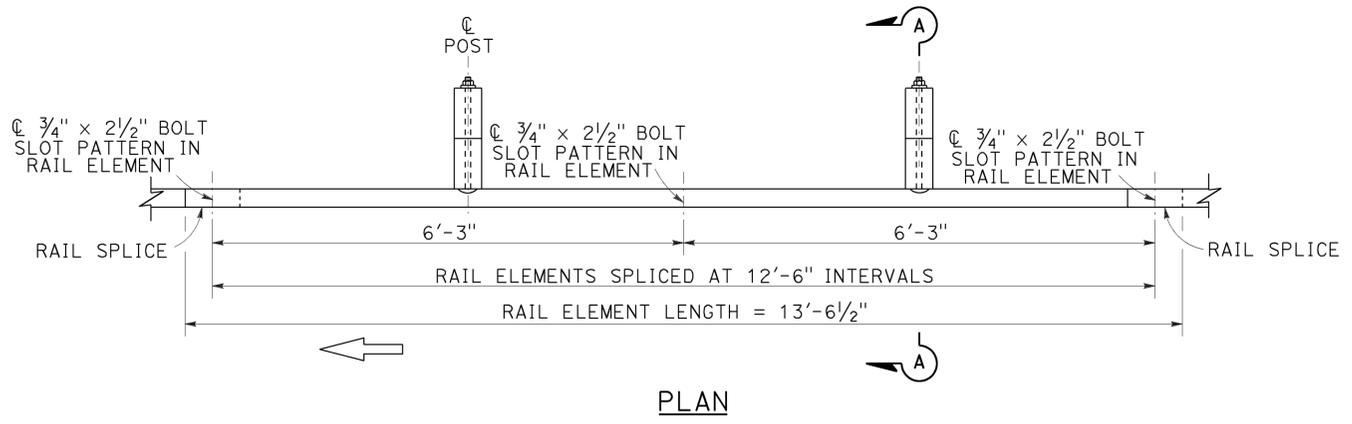
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

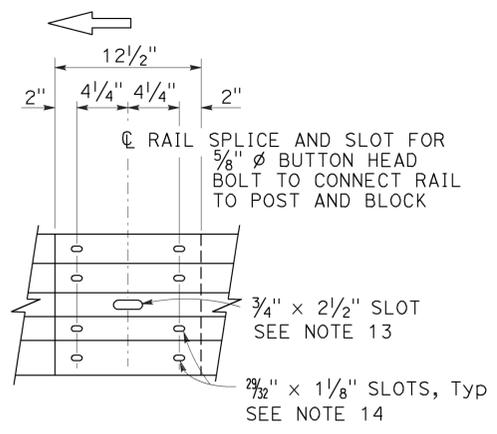
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

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

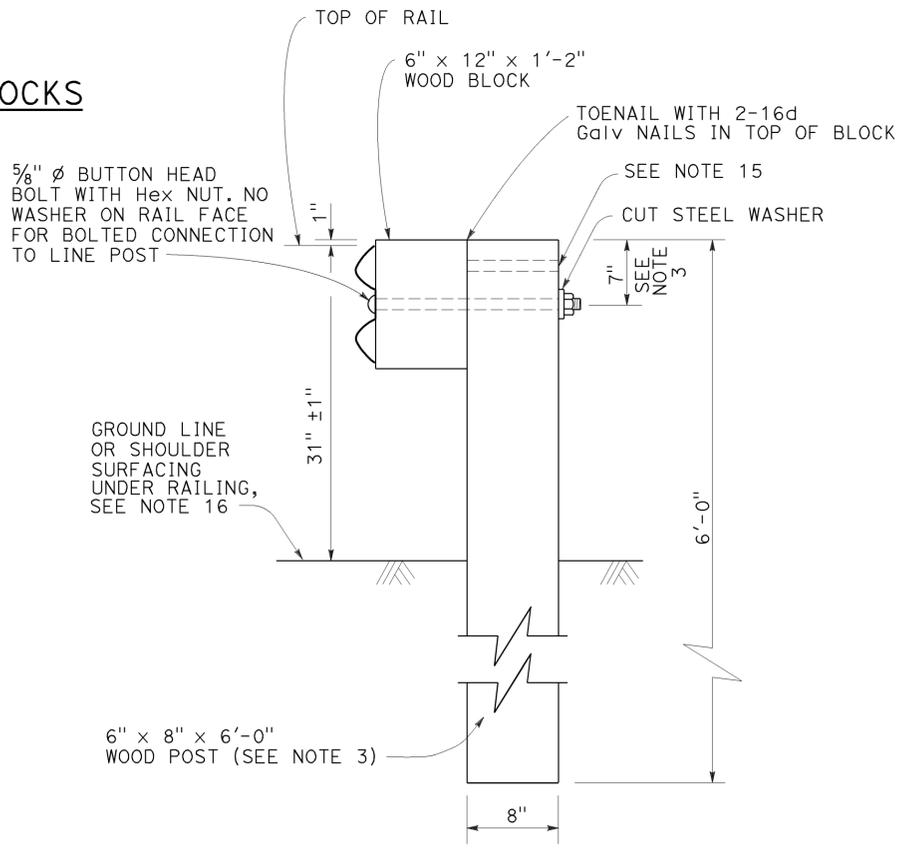
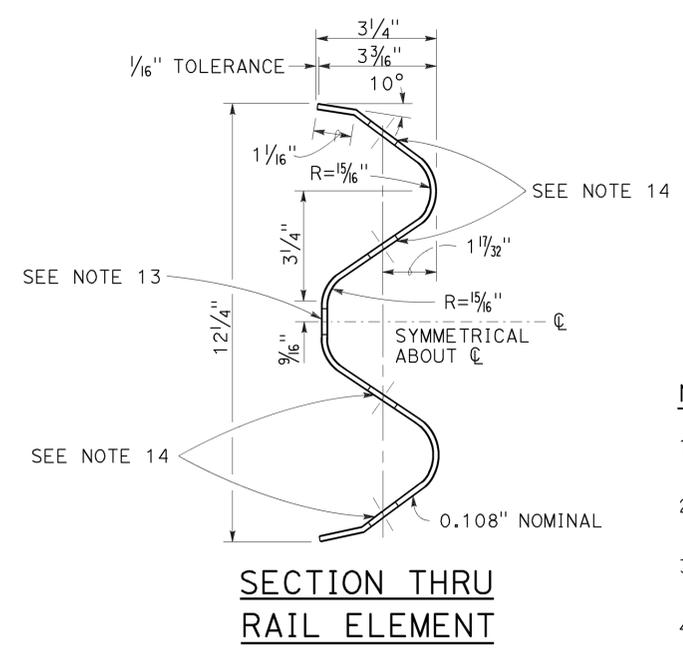
TO ACCOMPANY PLANS DATED 06-27-16



MIDWEST GUARDRAIL SYSTEM WITH WOOD POST AND BLOCKS



- Connect the over lapped end of the rail elements with $\frac{5}{8}$ " ϕ x $1\frac{3}{8}$ " button head oval shoulder splice bolts inserted into the $\frac{7}{32}$ " x $1\frac{1}{8}$ " slots and bolted together with $\frac{5}{8}$ " ϕ 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.

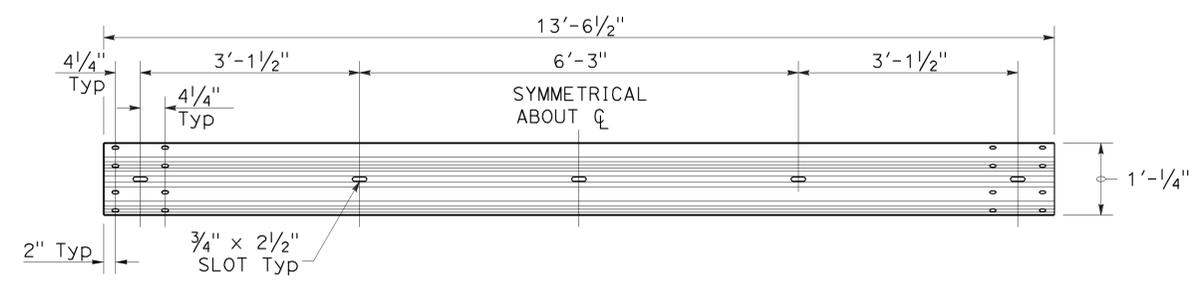
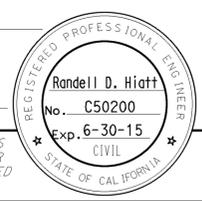
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**MIDWEST GUARDRAIL SYSTEM
STANDARD RAILING SECTION
(WOOD POST WITH
WOOD BLOCK)**

NO SCALE

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

REVISED STANDARD PLAN RSP A77L1

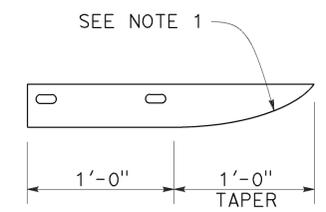
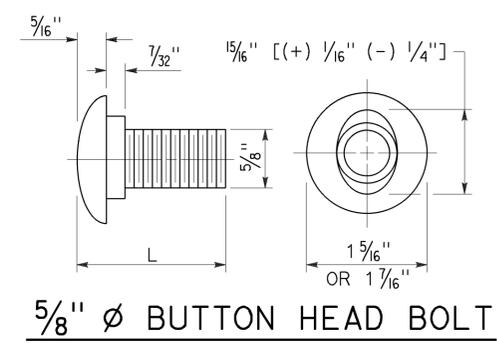
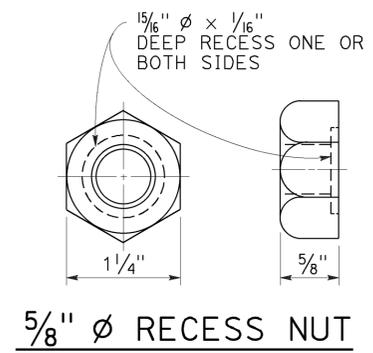
2010 REVISED STANDARD PLAN RSP A77L1



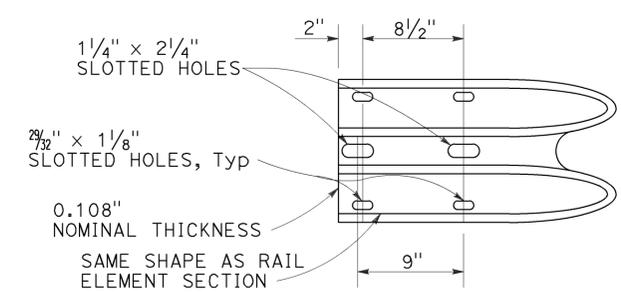
TYPICAL RAIL ELEMENT

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

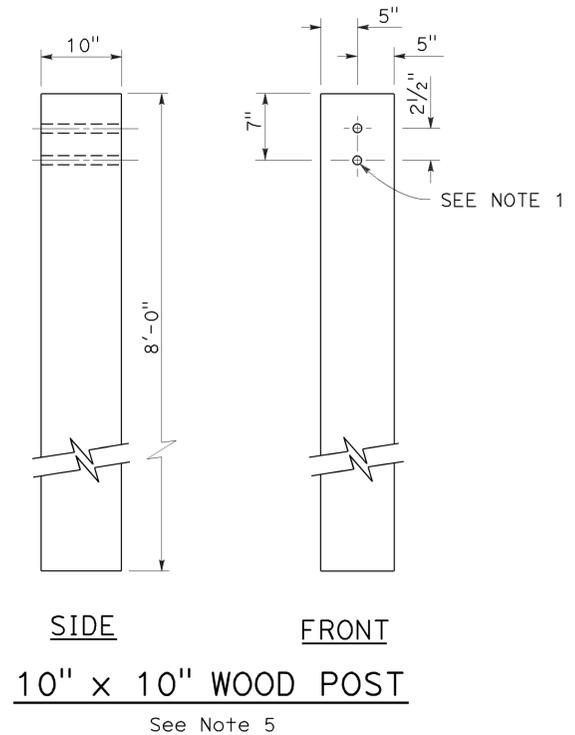
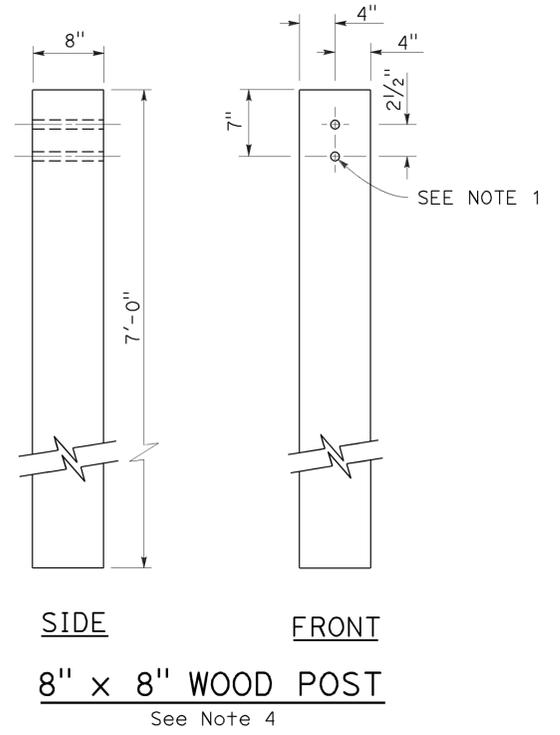
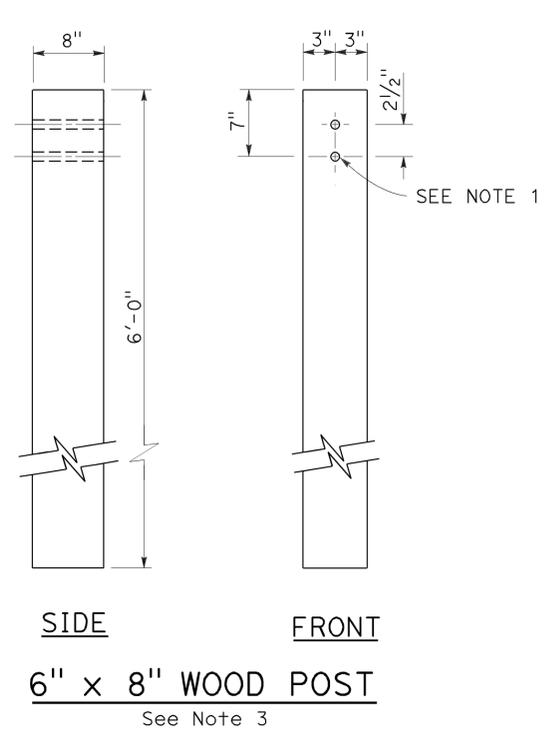
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	334	431

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

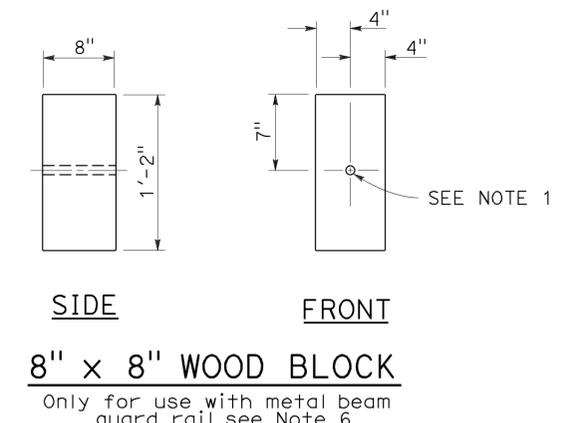
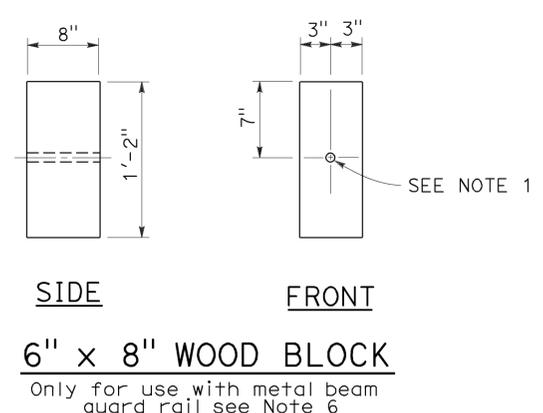
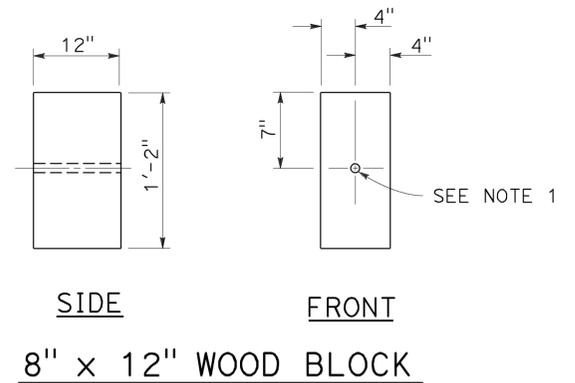
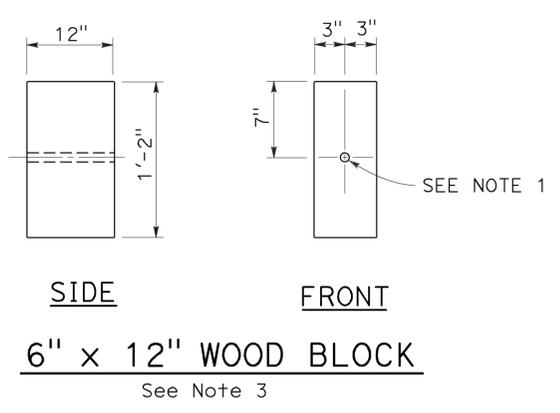
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TO ACCOMPANY PLANS DATED 06-27-16



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

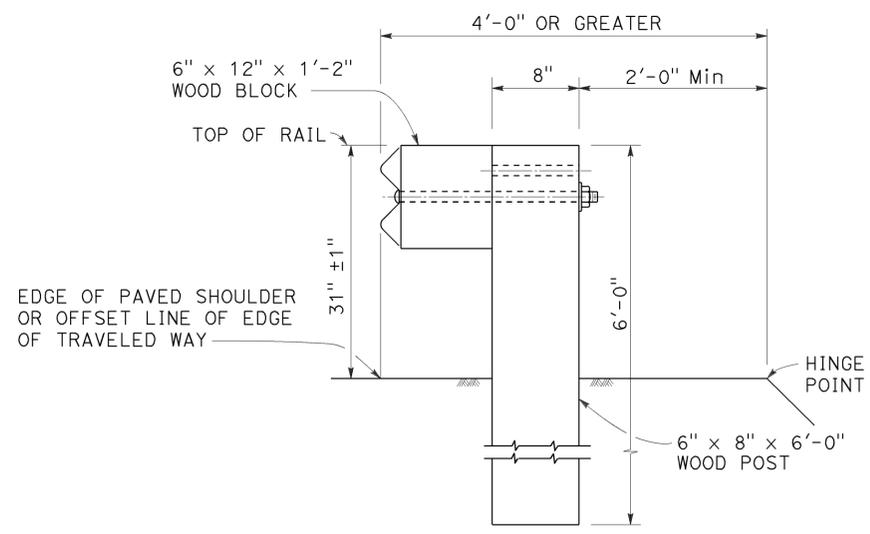
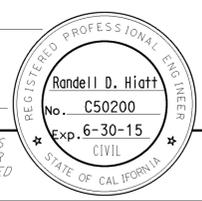
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	335	431

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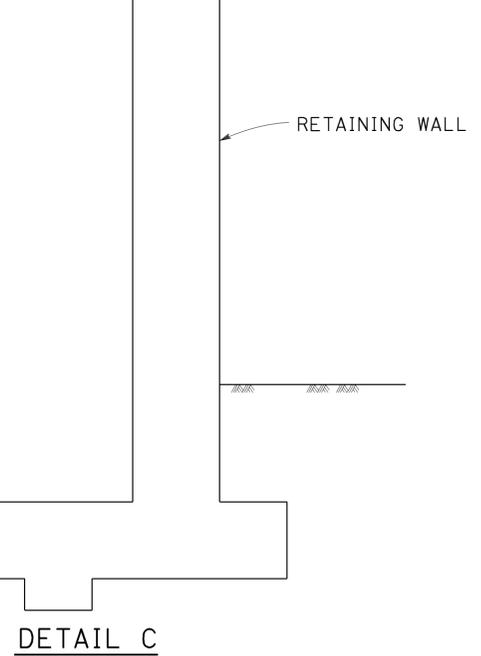
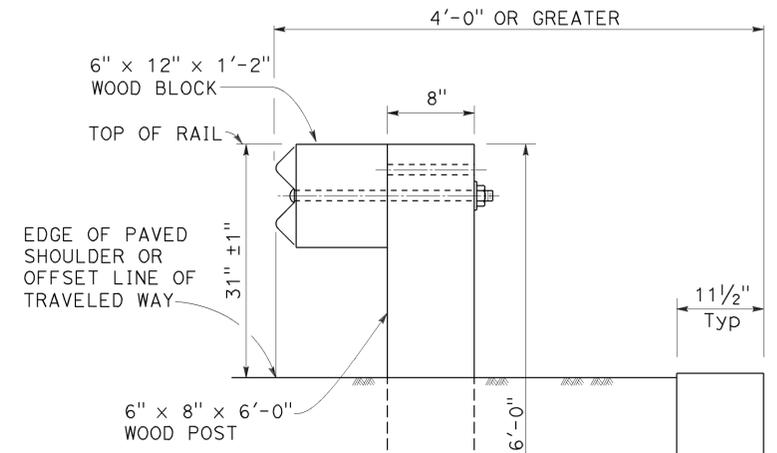
November 15, 2013
PLANS APPROVAL DATE

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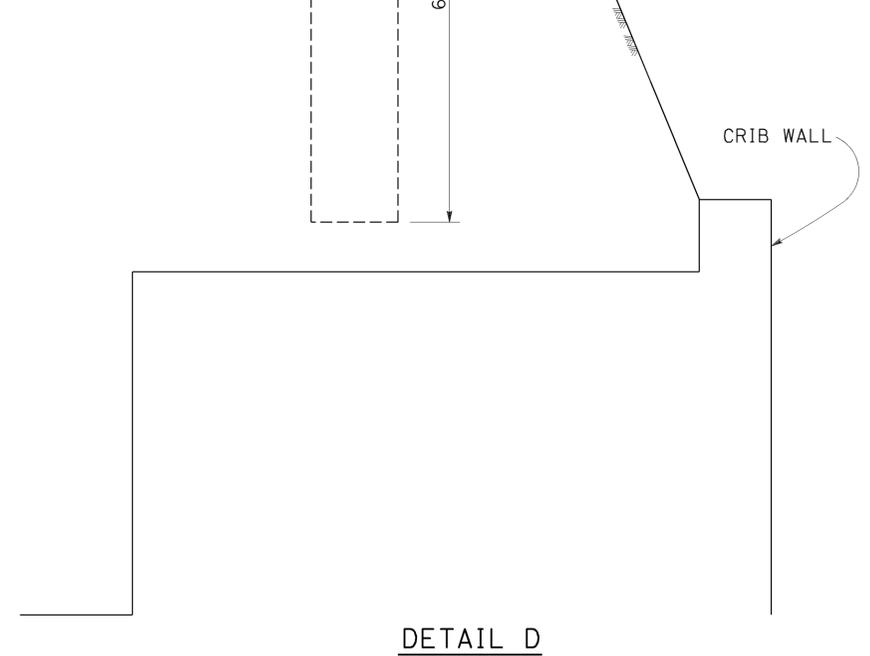
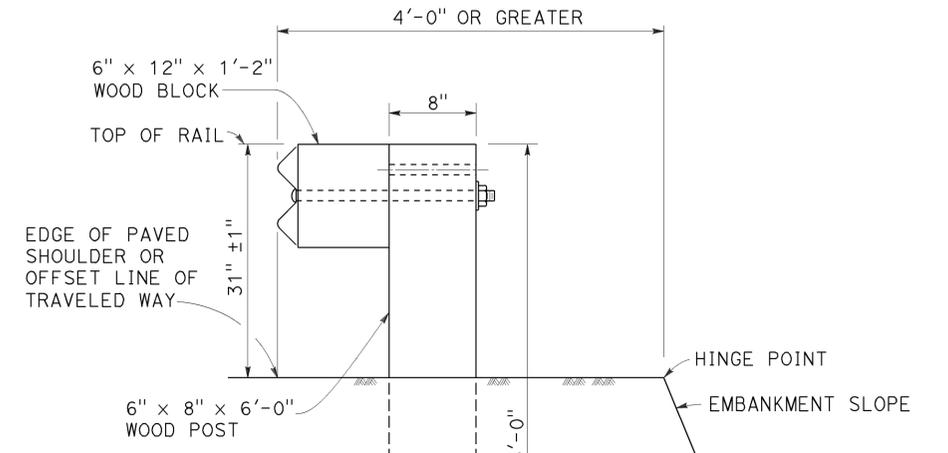
TO ACCOMPANY PLANS DATED 06-27-16



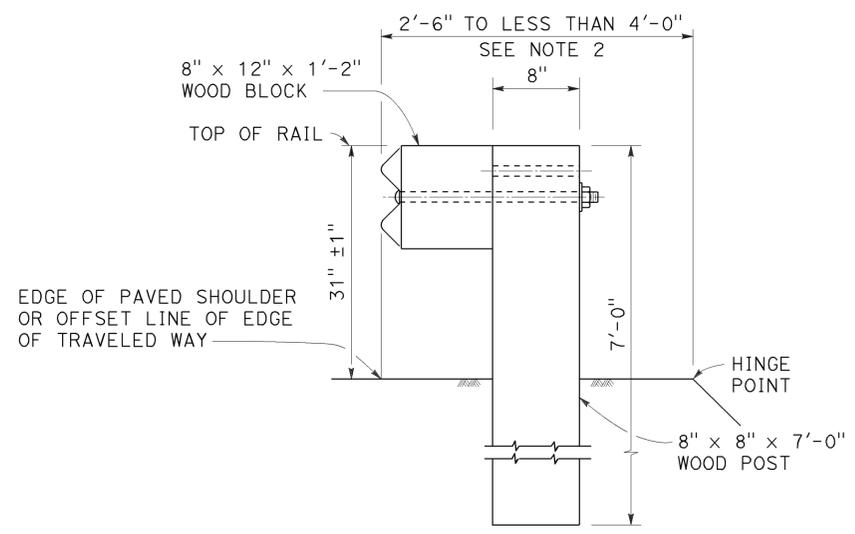
DETAIL A
TYPICAL ROADWAY
INSTALLATION
See Note 1



DETAIL C
INSTALLATION AT EARTH RETAINING WALLS



DETAIL D



DETAIL B
NARROW ROADWAY
INSTALLATION
See Note 1

POST EMBEDMENT

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

REVISED STANDARD PLAN RSP A77N3

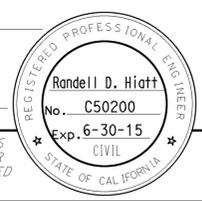
2010 REVISED STANDARD PLAN RSP A77N3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	336	431

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

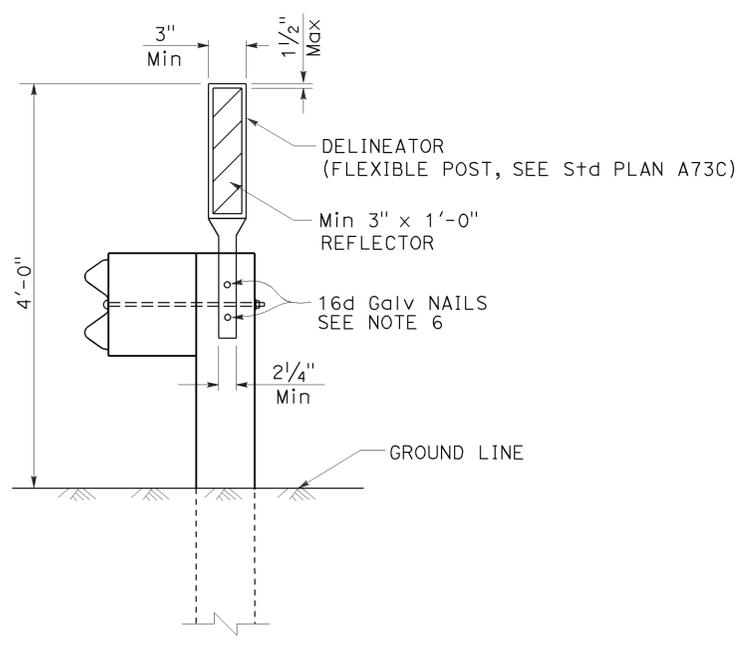
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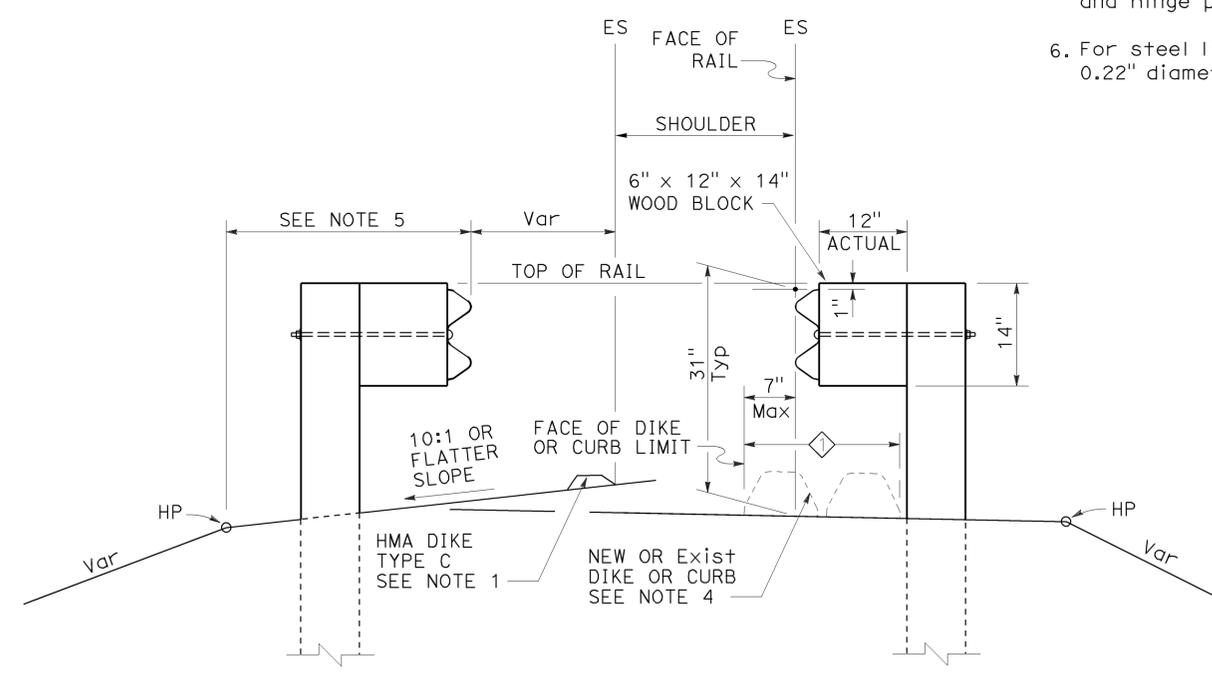
TO ACCOMPANY PLANS DATED 06-27-16

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
12	Ora	405	2.6/6.5	338	431

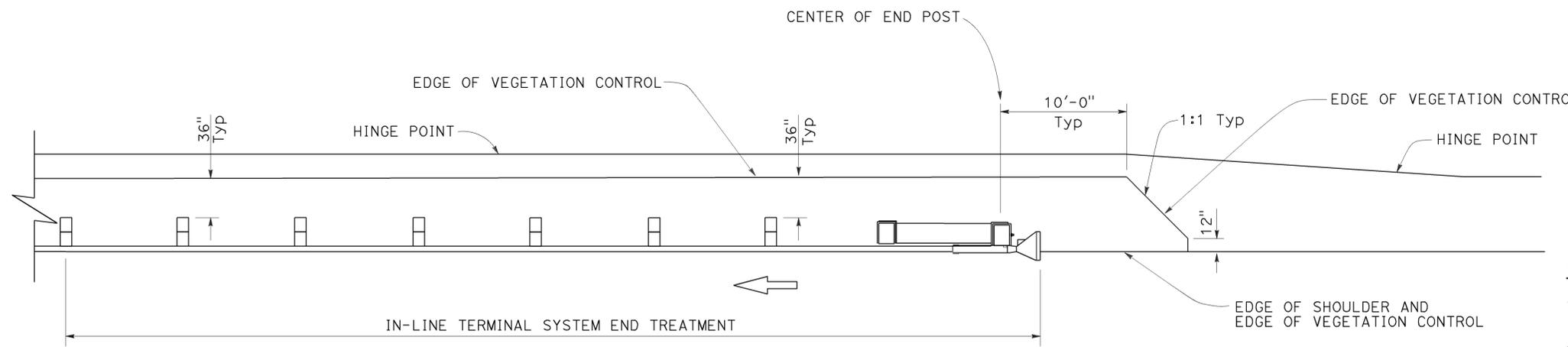
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REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

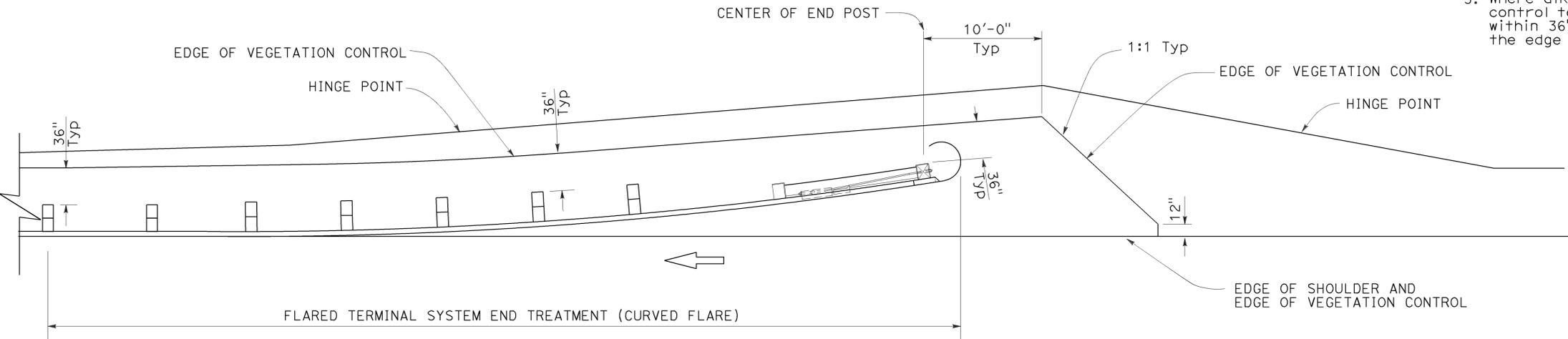
TO ACCOMPANY PLANS DATED 06-27-16



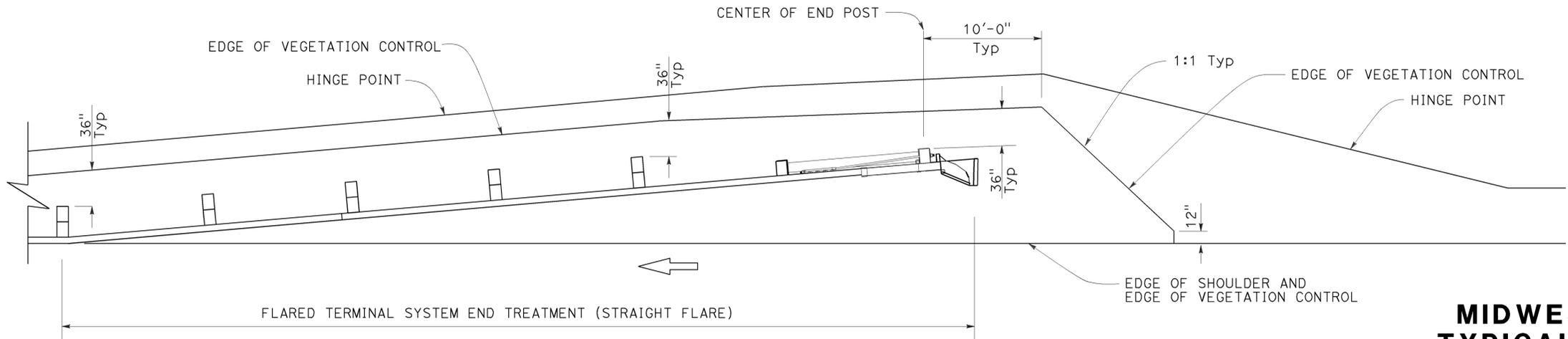
PLAN

NOTES:

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



PLAN



PLAN

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
TYPICAL VEGETATION CONTROL
FOR TERMINAL SYSTEM END TREATMENTS**

NO SCALE

RSP A77N6 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77N6

2010 REVISED STANDARD PLAN RSP A77N6

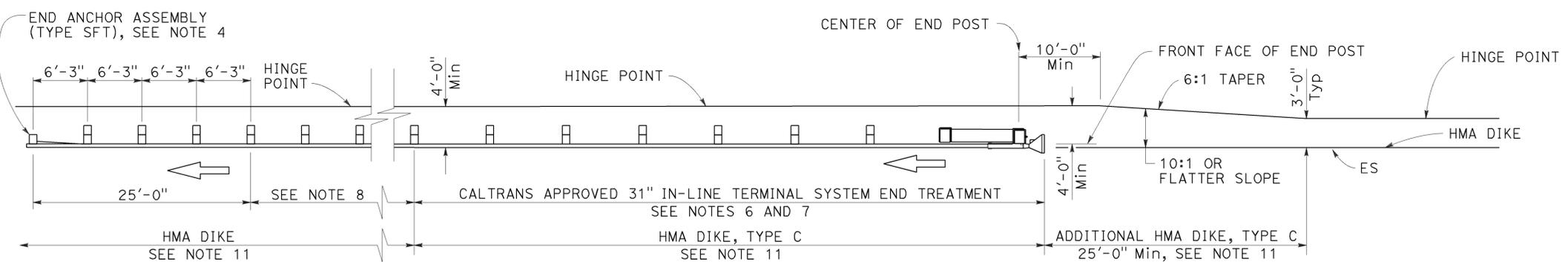
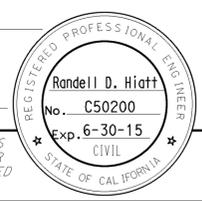
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	339	431

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REGISTERED CIVIL ENGINEER

November 15, 2013
PLANS APPROVAL DATE

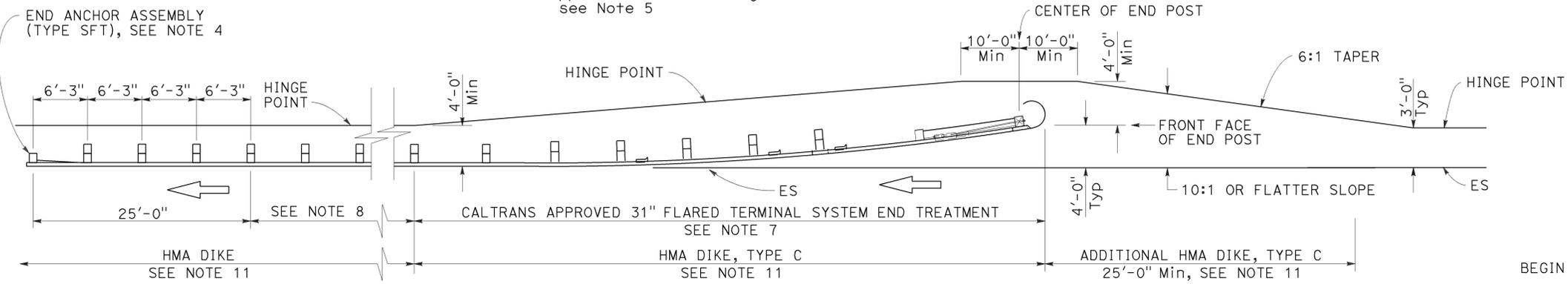
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TO ACCOMPANY PLANS DATED 06-27-16



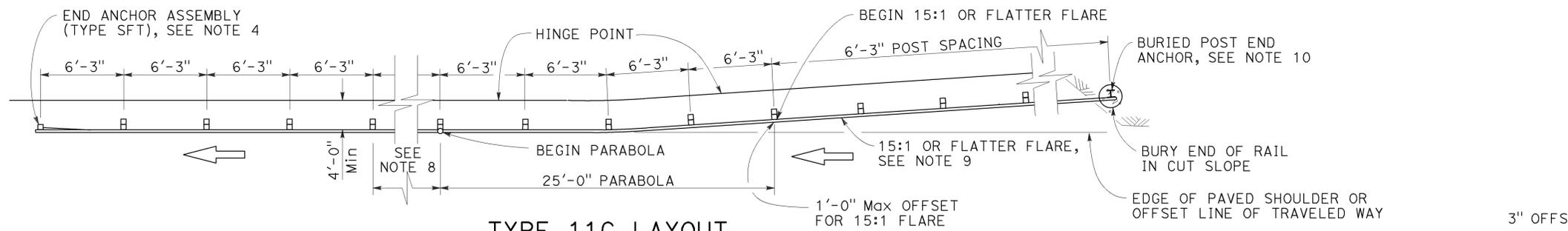
TYPE 11A LAYOUT

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



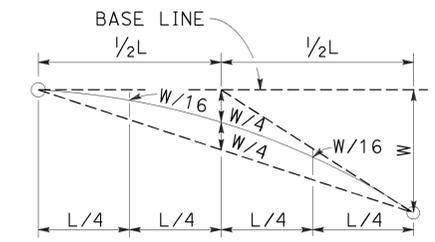
TYPE 11B LAYOUT

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

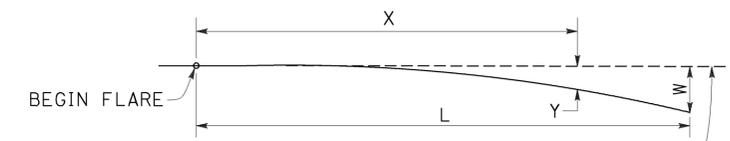


TYPE 11C LAYOUT

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



TYPICAL PARABOLIC LAYOUT

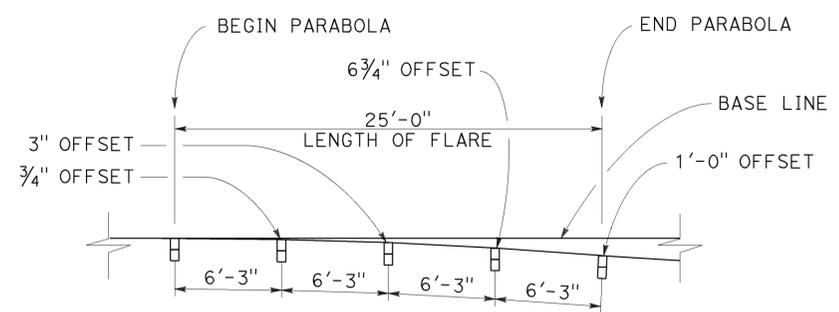


BASE LINE (EDGE OF PAVED SHOULDER OR OFFSET LINE OF EDGE OF TRAVELED WAY)

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

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

PARABOLIC FLARE OFFSETS



TYPICAL FLARE OFFSETS FOR 1 FOOT Max END OFFSET

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM TYPICAL LAYOUTS FOR EMBANKMENTS

NO SCALE

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

REVISED STANDARD PLAN RSP A77P1

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 recycled plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
- For End Anchor Assembly (Type SFT) details, see Revised Standard Plan RSP A77S1.
- Layout Types 11A, 11B or 11C are typically used where MGS is recommended to shield embankment slopes and a crashworthy end treatment is required for only one direction of traffic.
- 31" in-line terminal system end treatments are used where site conditions will not accommodate a 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.
- 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 11C Layout, see Revised Standard Plan RSP A77T2.
- Where placement of dike is required with MGS installations, see Revised Standard Plan RSP A77N4 for dike positioning details.

2010 REVISED STANDARD PLAN RSP A77P1

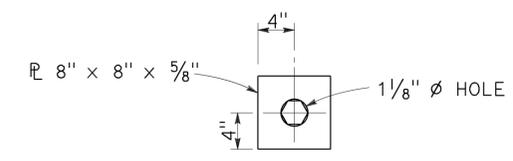
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	340	431

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

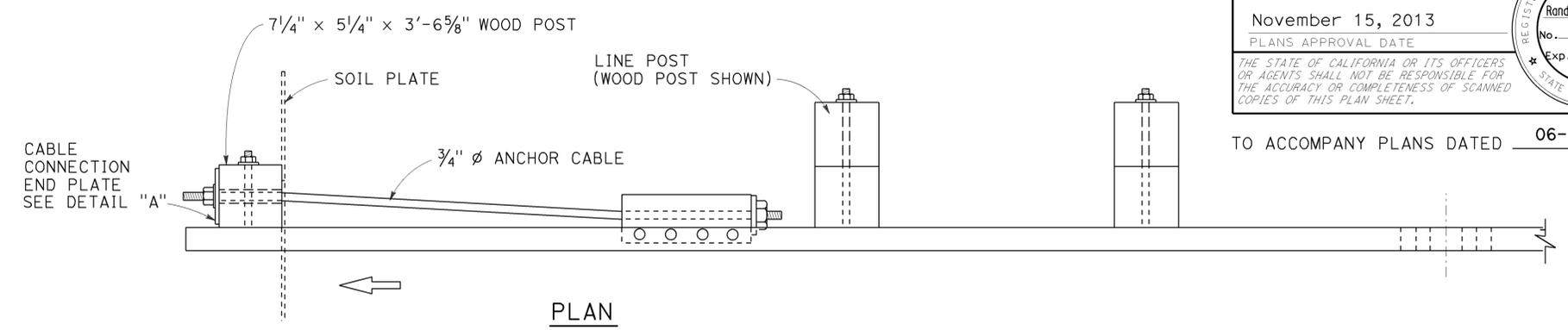
November 15, 2013
PLANS APPROVAL DATE

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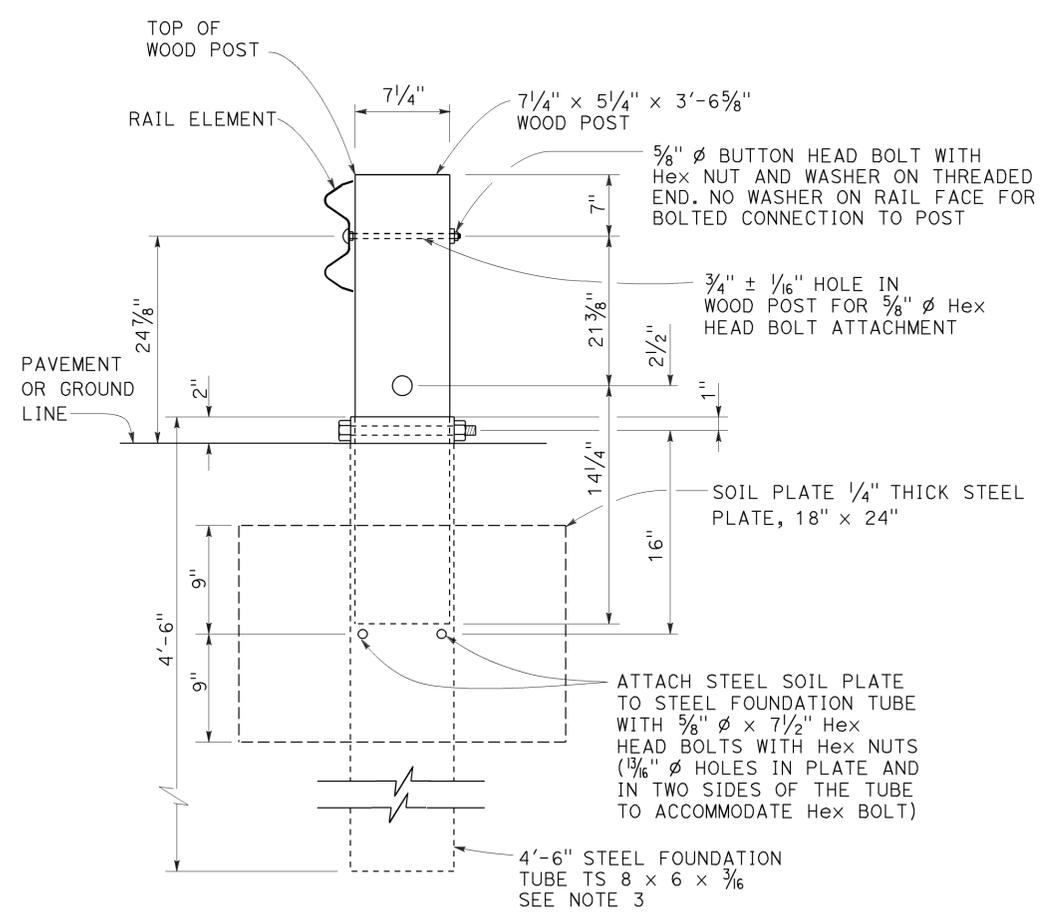
TO ACCOMPANY PLANS DATED 06-27-16



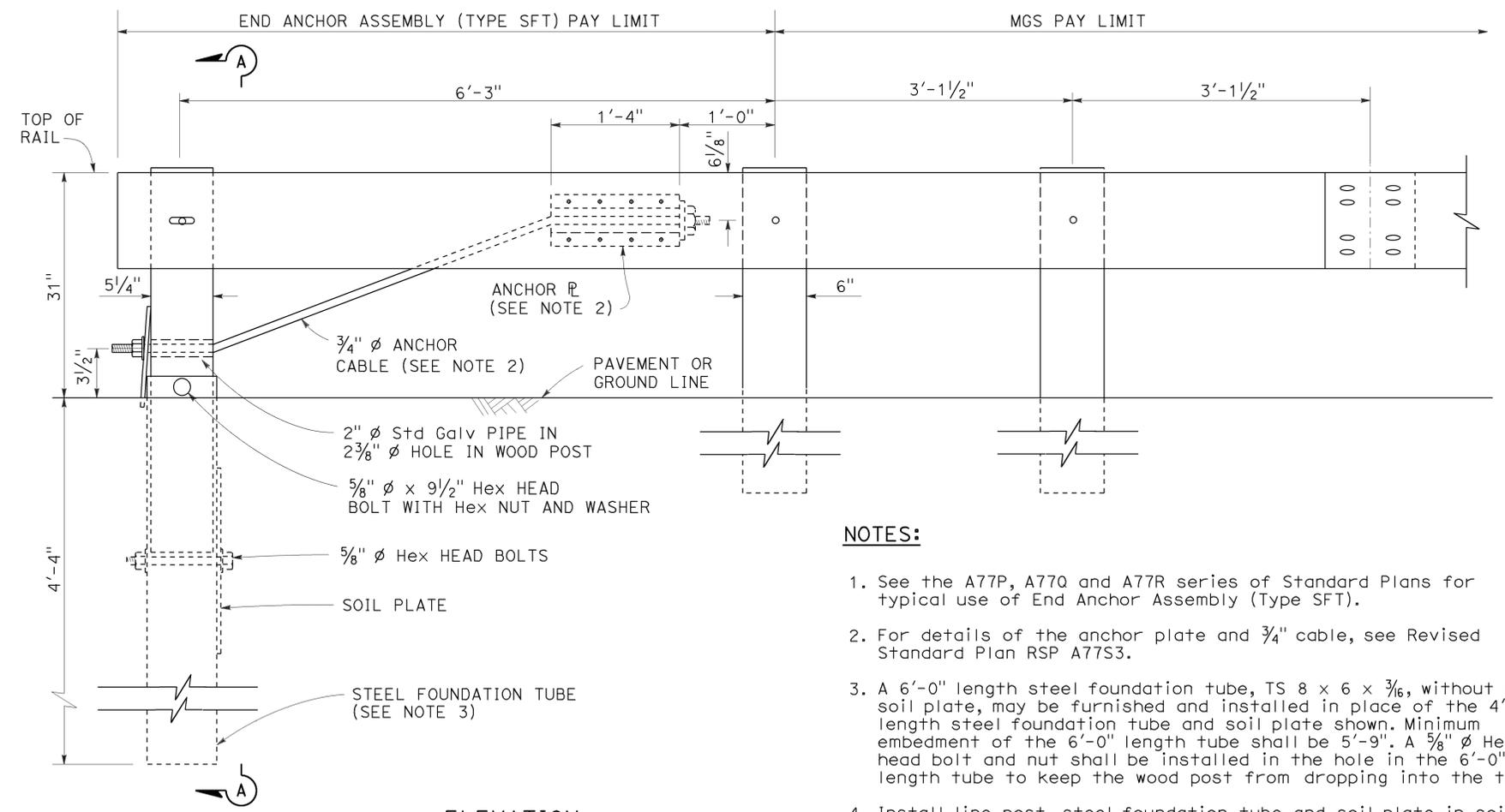
DETAIL "A"
CABLE CONNECTION
END PLATE



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

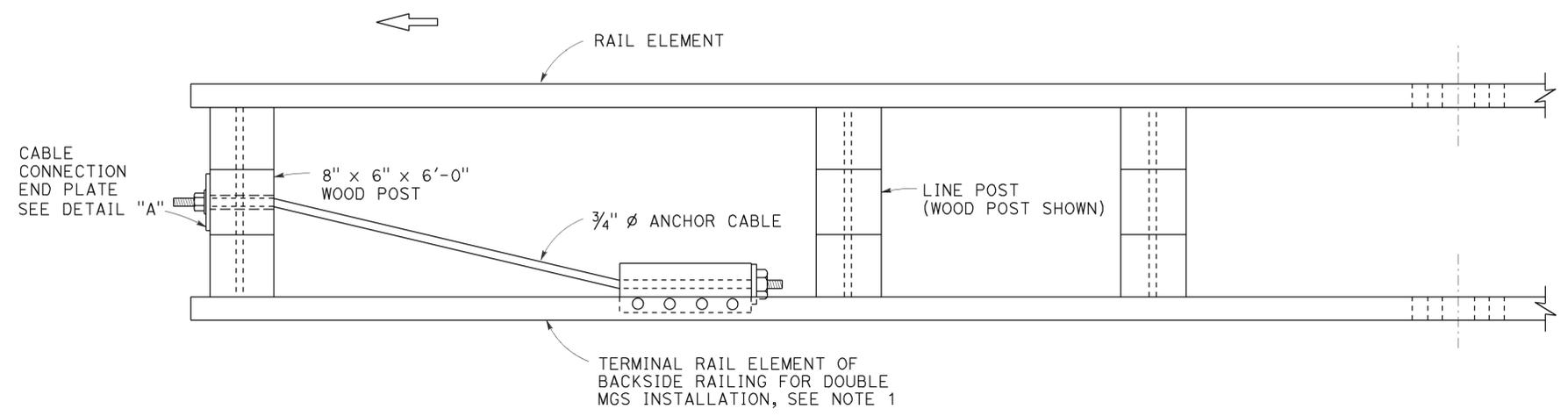
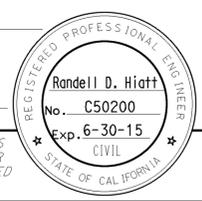
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	341	431

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

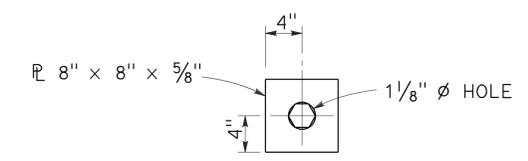
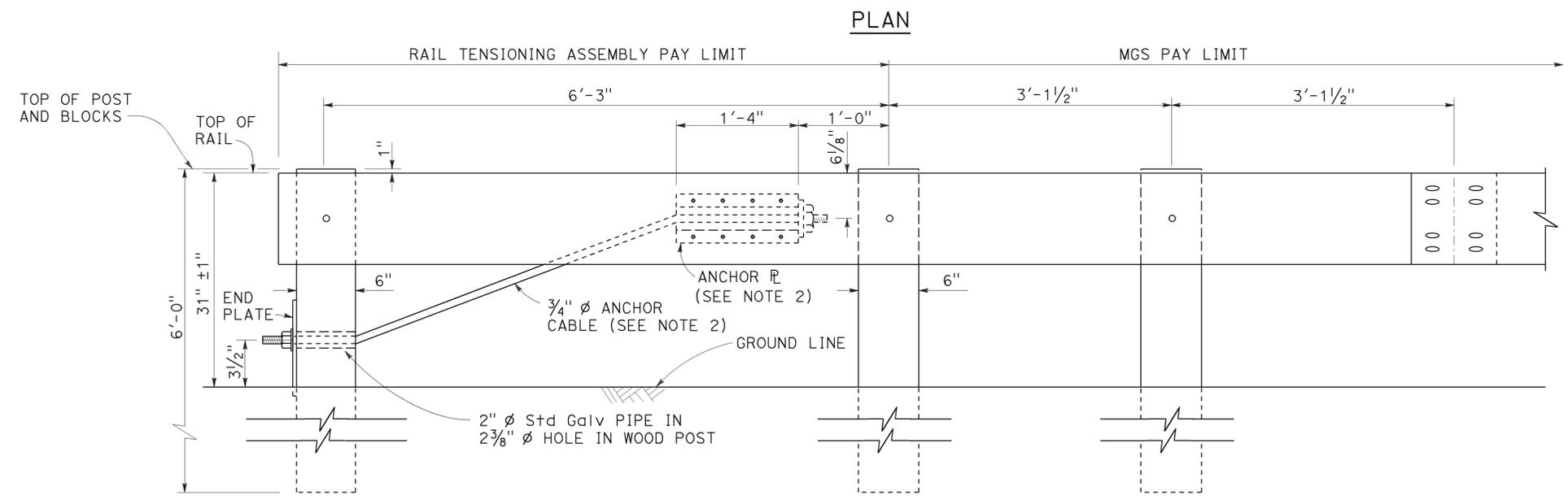
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TO ACCOMPANY PLANS DATED 06-27-16



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.



DETAIL "A"
CABLE CONNECTION
END PLATE

ELEVATION
RAIL TENSIONING
ASSEMBLY
See Note 1

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

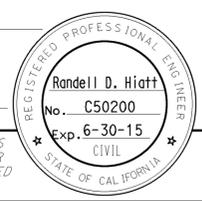
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	342	431

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

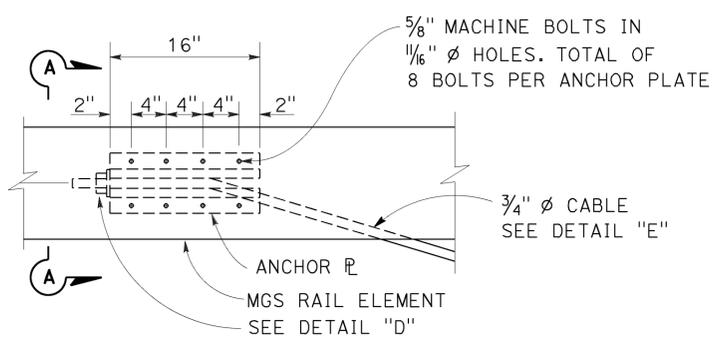
November 15, 2013
PLANS APPROVAL DATE

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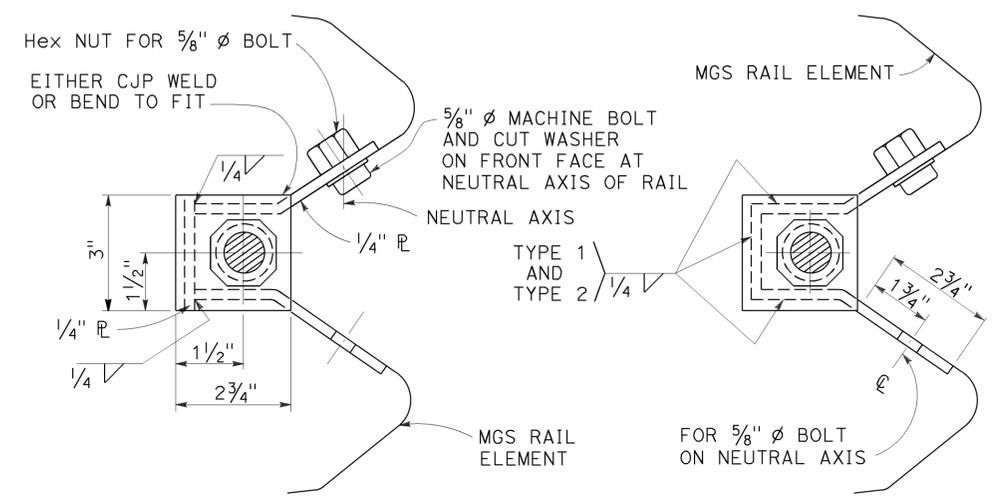
TO ACCOMPANY PLANS DATED 06-27-16



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

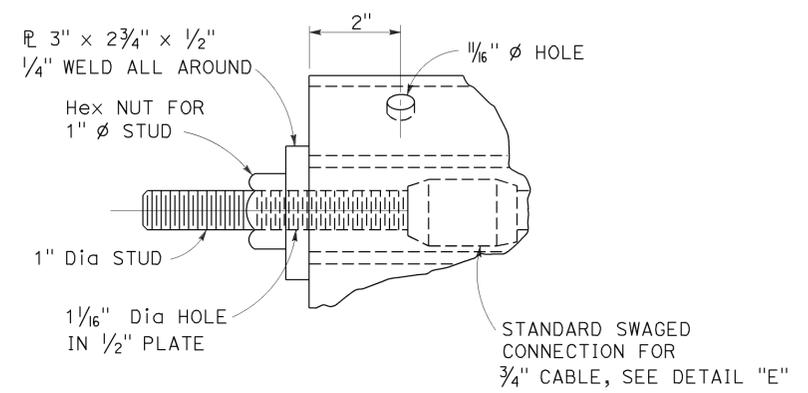


ANCHOR PLATE DETAIL
(MGS shown, TBB similar)

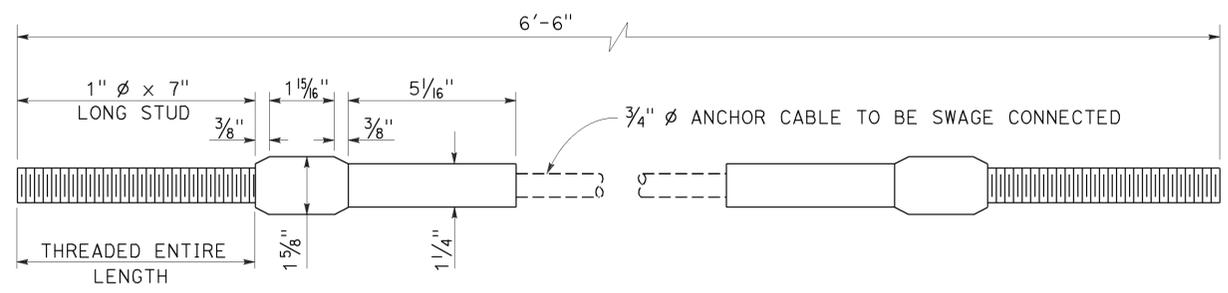


NOTE:
Dimensioning applies to both types.

SECTION A-A (ALTERNATIVE TYPE 1) **SECTION A-A (ALTERNATIVE TYPE 2)**



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
12	Ora	405	2.6/6.5	343	431

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

November 15, 2013
PLANS APPROVAL DATE

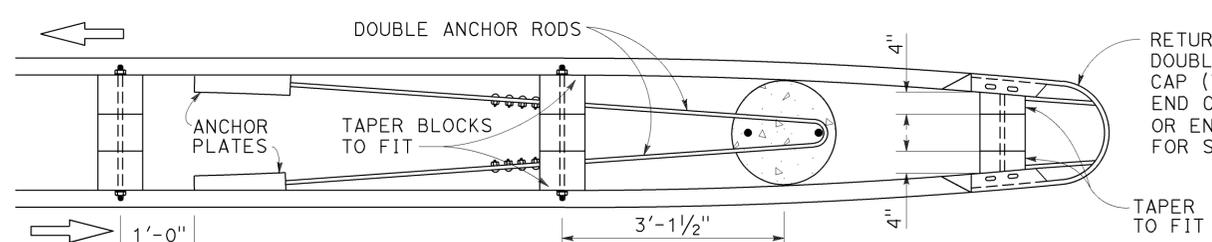
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

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

TO ACCOMPANY PLANS DATED 06-27-16

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.

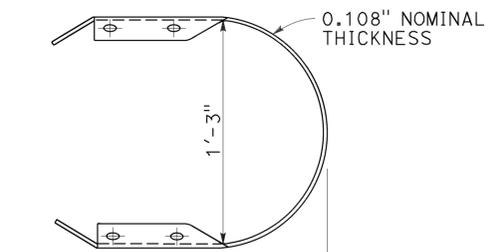


PLAN

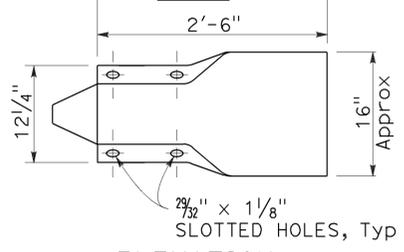
See Note 4

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

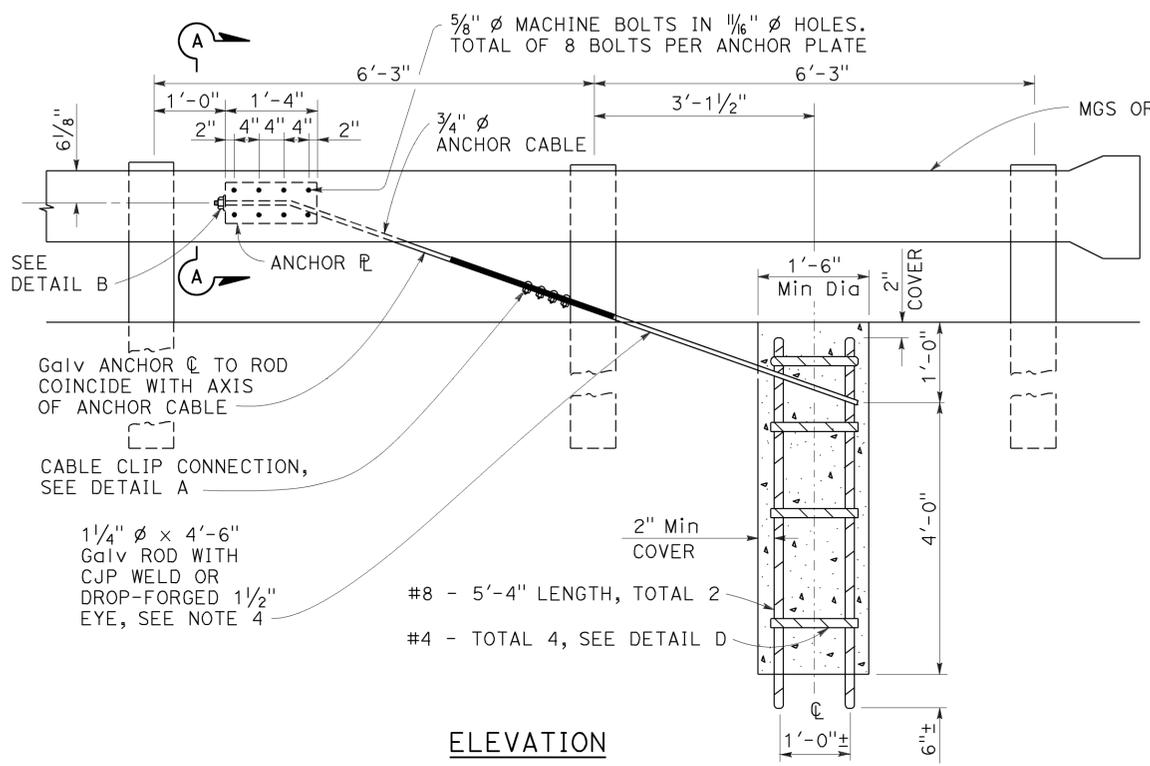


PLAN



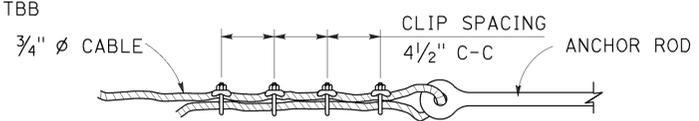
ELEVATION

RETURN CAP (TYPE A)



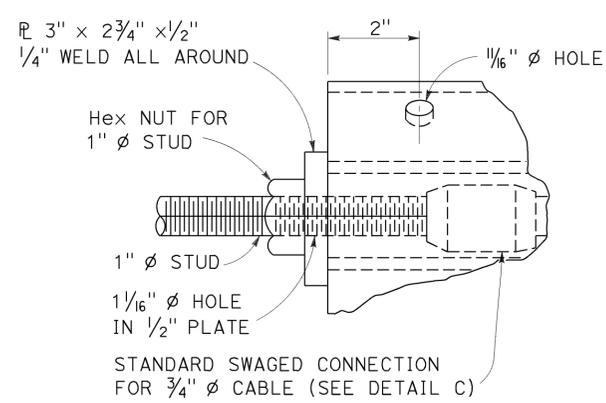
ELEVATION
END ANCHOR ASSEMBLY (TYPE CA)

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

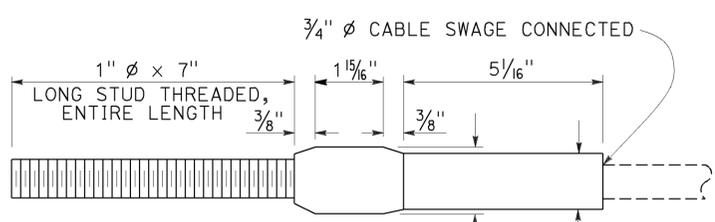


"U" bolts of clip on short end of cable only
"U" bolts tightened to 50 ft/lb torque

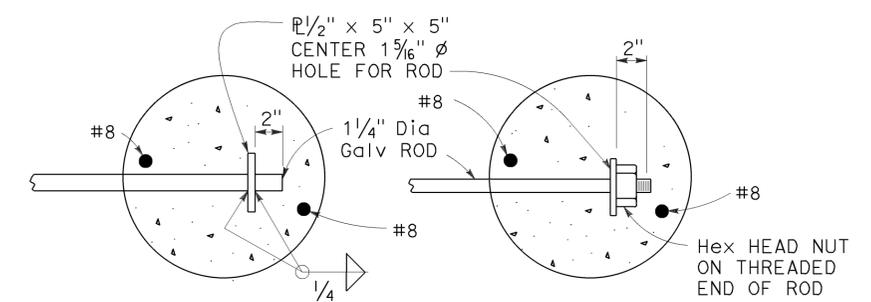
DETAIL A
CABLE CLIP CONNECTION



DETAIL B



DETAIL C
ANCHOR CABLE WITH SWAGED FITTING AND STUD

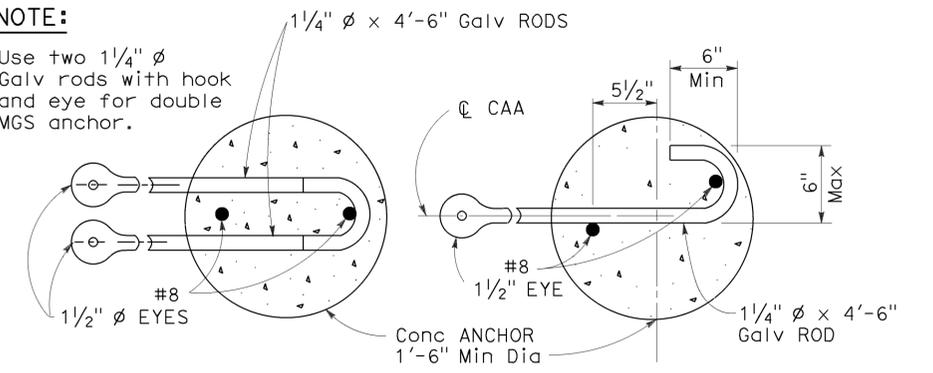


OPTIONAL ENDS ON SINGLE ANCHOR ROD

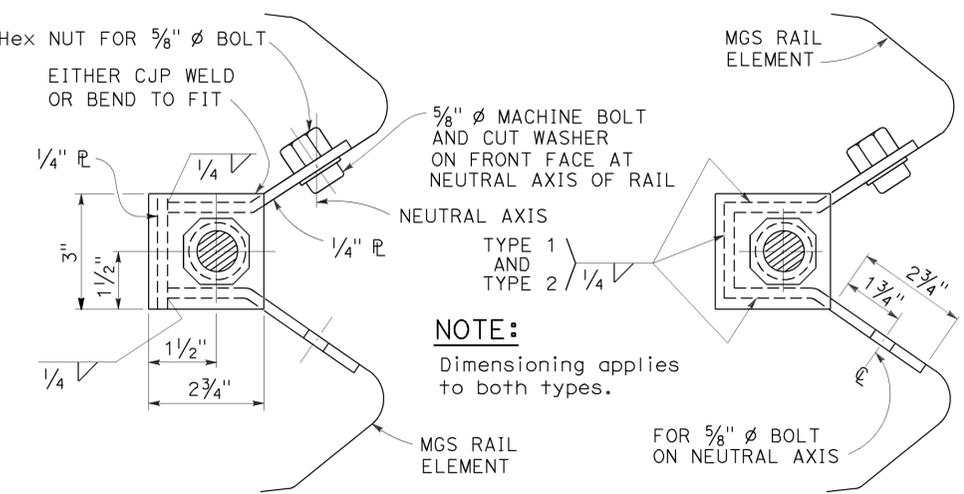
(Not to be used for double anchors)

NOTE:

Use two 1/4 inch diameter Galv rods with hook and eye for double MGS anchor.



DOUBLE ANCHOR ANCHOR RODS
SINGLE ANCHOR ANCHOR RODS

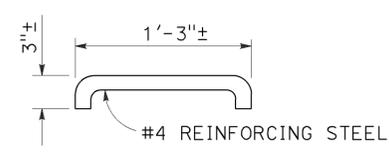


SECTION A-A
(Alternative Type 1)

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

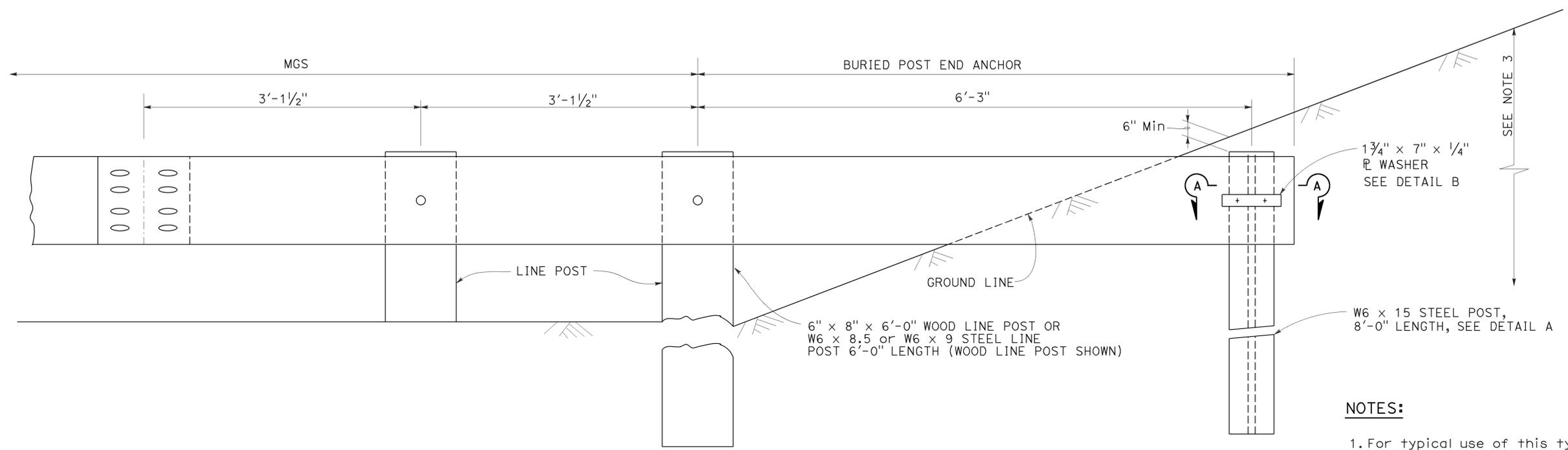
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	344	431

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.

TO ACCOMPANY PLANS DATED 06-27-16

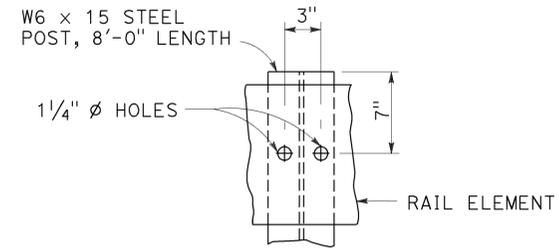


BURIED POST END ANCHOR

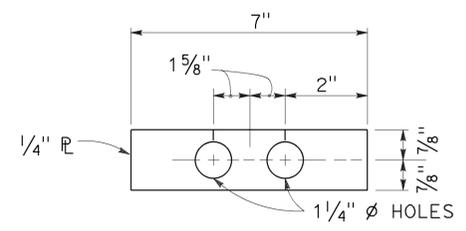
See Note 3

NOTES:

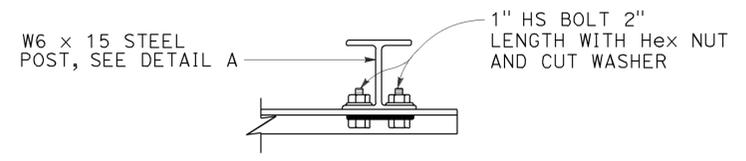
1. For typical use of this type of end anchor with MGS see the A77P, A77Q and A77R Series of the Standard Plans.
2. Holes excavation in the slope to construct the buried post end anchor shall be backfilled with selected earth, placed in layers approximately 1'-0" thick. Each layer shall be moistened 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

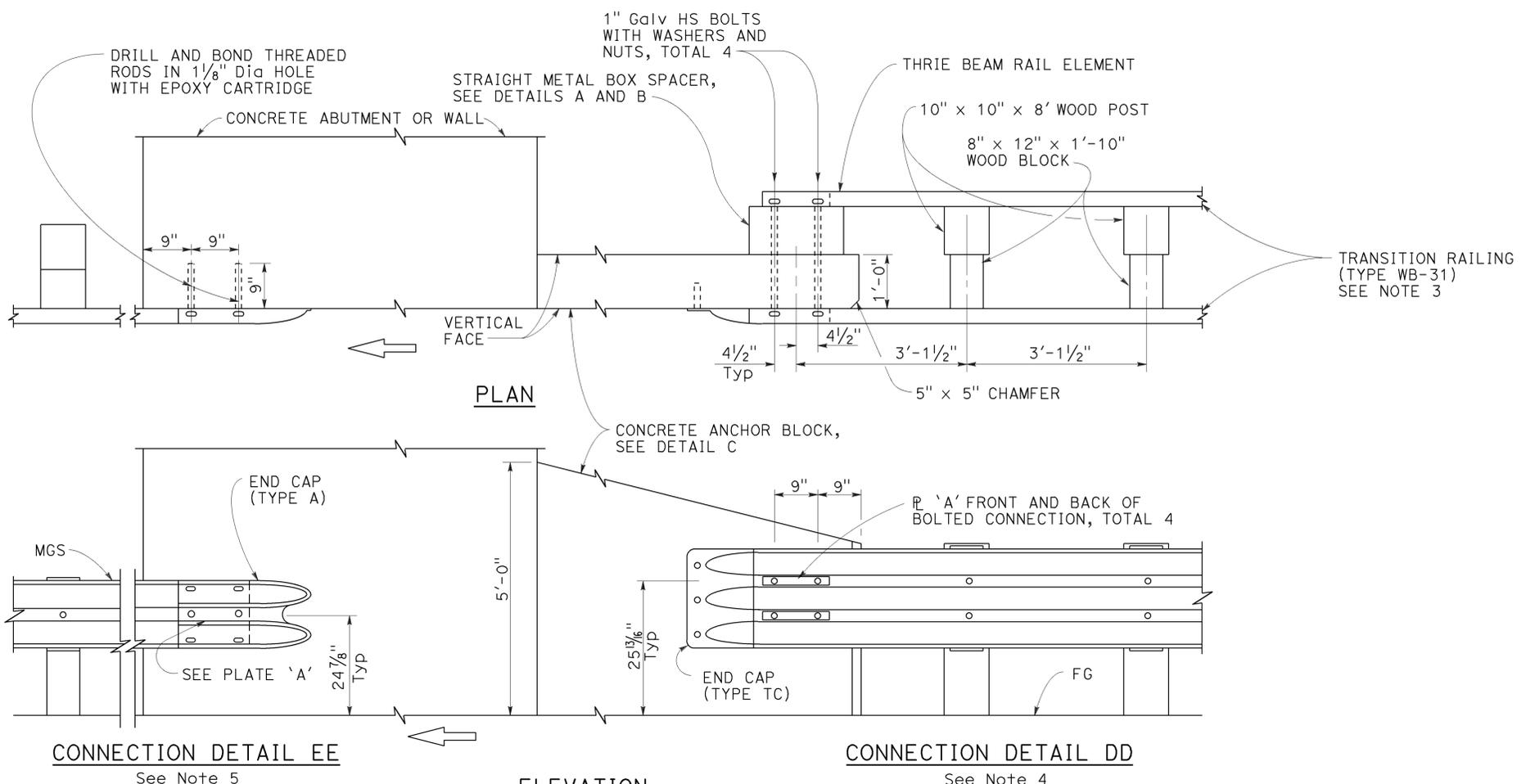
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	345	431

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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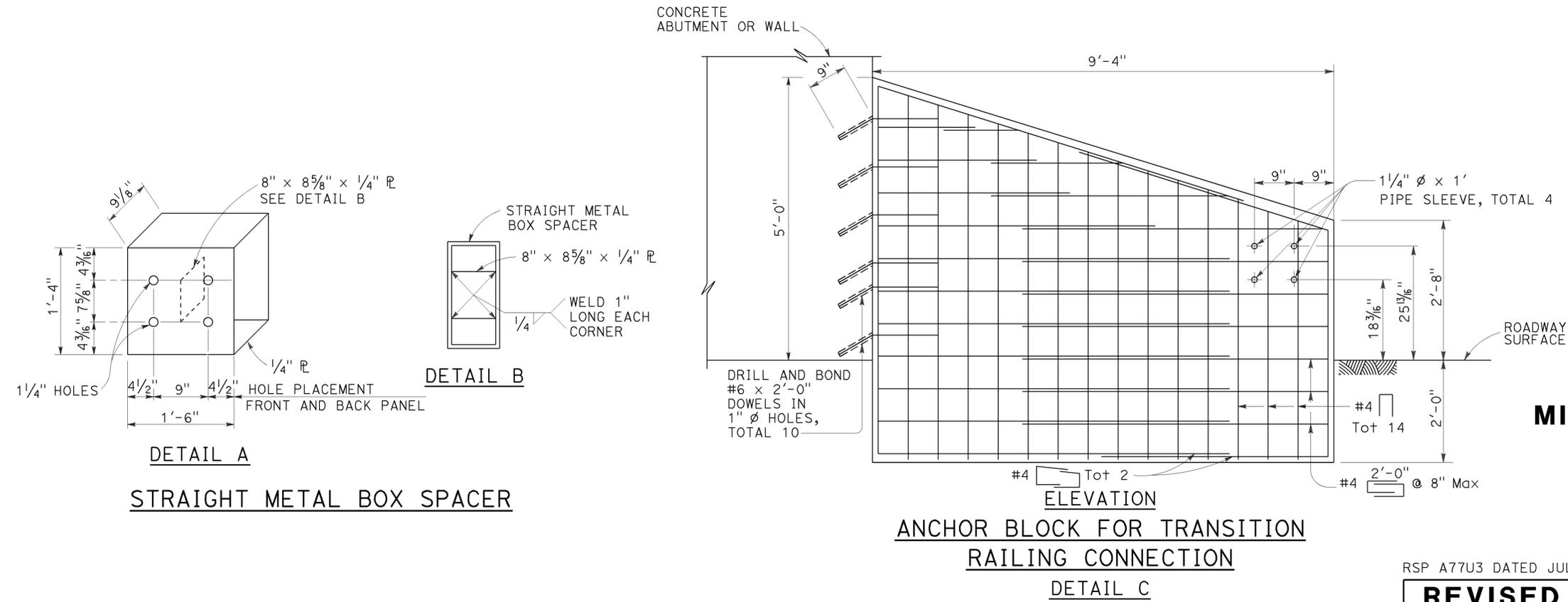
TO ACCOMPANY PLANS DATED 06-27-16



NOTES:

1. These connection details apply to abutments and walls.
2. Additional details of posts, blocks and hardware are shown on Revised Standard Plans RSP A77M1, RSP A77N1 and RSP A77N2.
3. For additional details of Transition Railing (Type WB-31), see Revised Standard Plan RSP A77U4. Transition Railing (Type WB-31) transitions the 12 gauge MGS railing section to a heavier gage nested thrie beam railing section which is connected to the concrete anchor block.
4. For typical use of Connection Details DD, see Layout Types 12A and 12B on Revised Standard Plan RSP A77Q1 and Layout Types 12C and 12D on Revised Standard Plan RSP A77Q2.
5. For typical use of Connection Detail EE, see Layout Type 12D on Revised Standard Plan RSP A77Q2 and Layout Type 12DD on Revised Standard Plan RSP A77Q5.

MIDWEST GUARDRAIL SYSTEM CONNECTION TO ABUTMENT OR WALL



RSP A77U3 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77U3

2010 REVISED STANDARD PLAN RSP A77U3

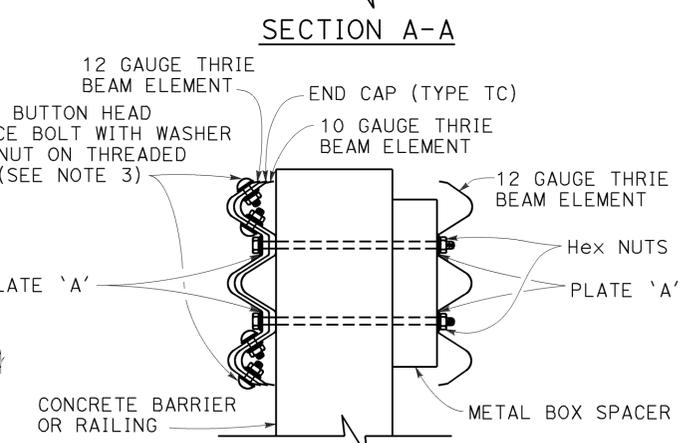
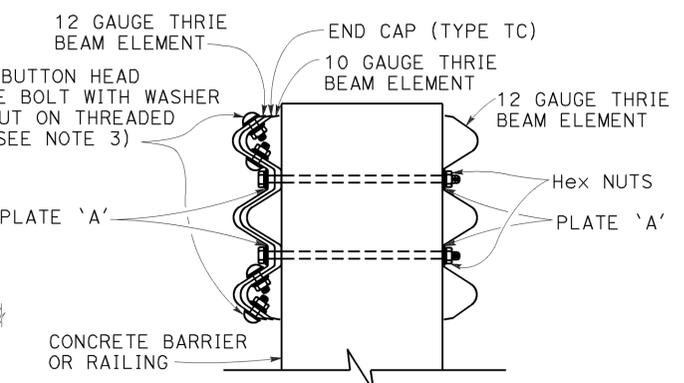
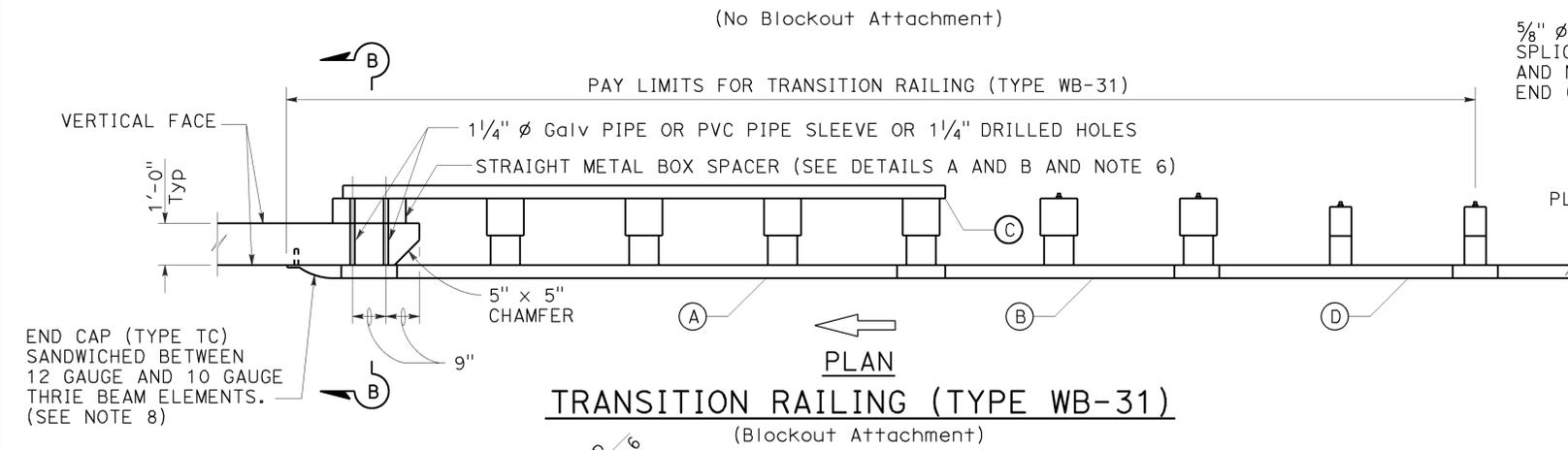
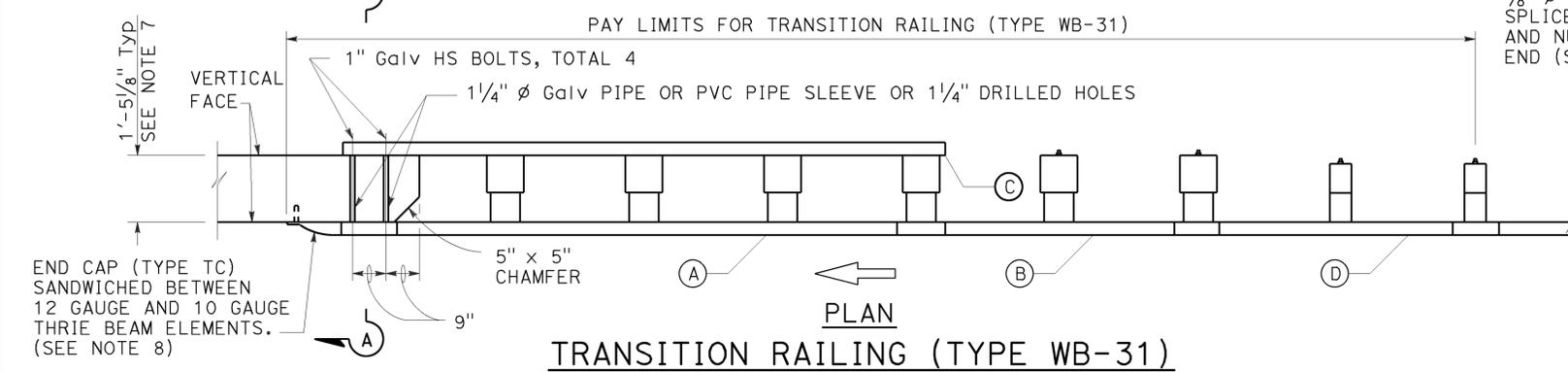
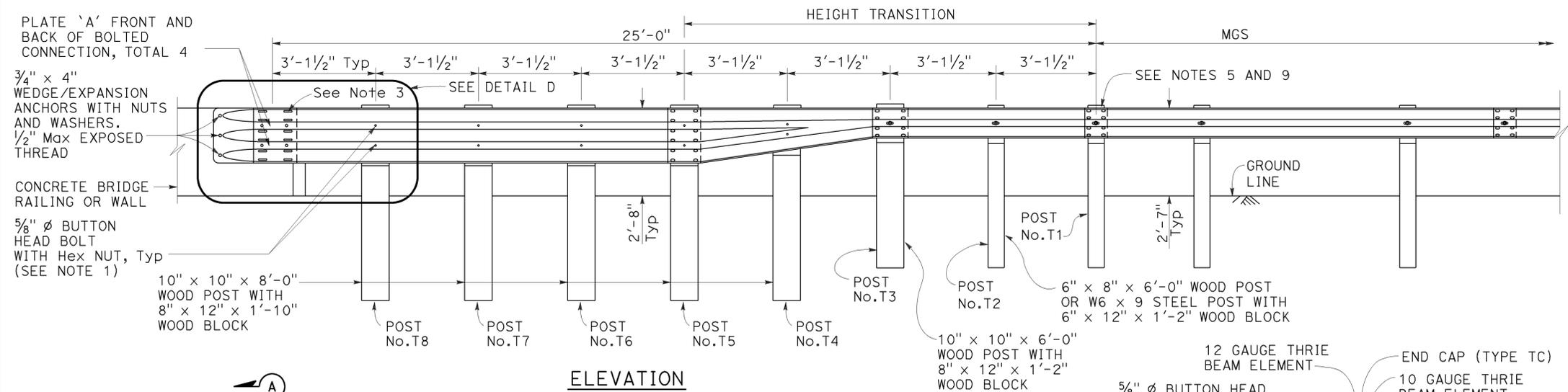
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	346	431

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

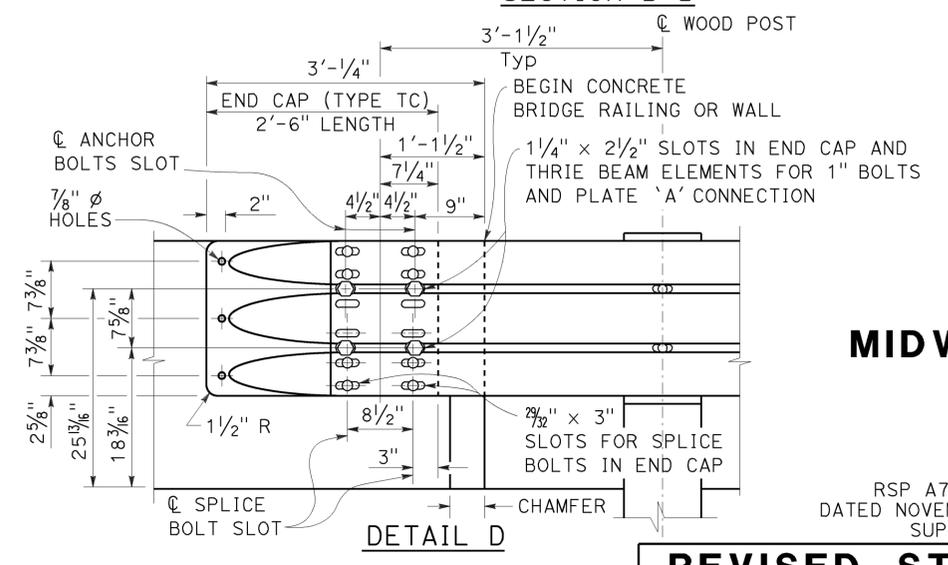
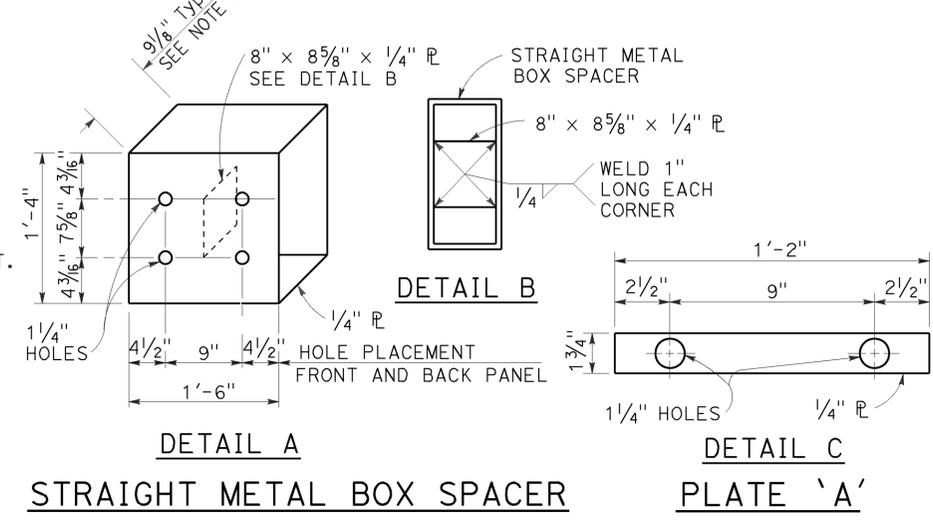
January 23, 2015
PLANS APPROVAL DATE

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



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



- NOTES:** TO ACCOMPANY PLANS DATED 06-27-16
1. Use 5/8" Ø Button head bolts and hex nuts for connections to posts. No washer on rail face for bolted connections to post.
 2. The nested rail elements, end cap, and 'W' beam to thrie beam element may be spliced together prior to bolting the elements to the wood post and concrete barrier or railing.
 3. Exterior splice bolt holes for rail element splices at Post No. T5 and the connection to the concrete barrier or railing shall be the standard 29/32" x 1 1/8" slot size. Interior splice bolt holes at these locations may be increased up to 1 1/4" Ø. Only the top 4 and the bottom 4 splice bolts with washers and nuts are required for rail splices at Post No. T5 and the connection to the concrete barrier or railing.
 4. The top elevation of Posts No. T2 through No. T7 shall not project more than 1" above the top elevation of the rail element.
 5. Typically, the railing connected to Transition Railing (Type WB-31) will be either standard railing section of MGS with height transition ratio of 150:1 or a Caltrans approved 31" end treatment attached to Post No. T1.
 6. The depth of the metal box spacer varies from the 9/8" to 1 1/2" and is dependent on the width of the concrete railing or wall. The combined dimension for the depth of the metal box spacer plus the width of railing or wall is typically 21 1/8". Where the space between the backside of the concrete railing or wall and the rear thrie beam element is less than 1 1/2", metal plates similar to Plate 'A' are to be used as spacers.
 7. Where the width of the concrete railing or wall is greater than 17 1/8", wood blocks are to be used to fill the space created between the backside of Posts No. T5 through No. T8 and the rear thrie beam element. These wood blocks shall be 8" in width and 1'-2" in length. The dimension between the front thrie beam element and the rear thrie beam element is to match the width of the concrete railing or wall.
 8. End cap may be installed over 12 gauge and 10 gauge thrie beam elements where transition railing is installed on the departure end of bridge railing.
 9. Conform standard railing section height to 31" at Post No. T1 using height transition ratio of 150:1.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

RSP A77U4 DATED JANUARY 23, 2015 SUPERSEDES RSP A77U4 DATED NOVEMBER 15, 2013 AND RSP A77U4 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77U4

2010 REVISED STANDARD PLAN RSP A77U4

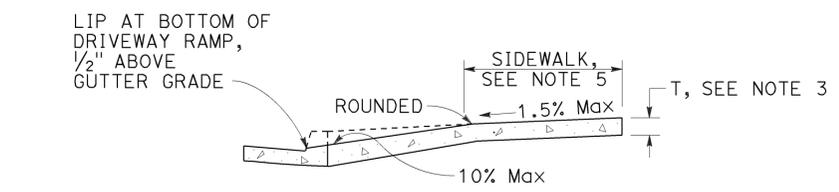
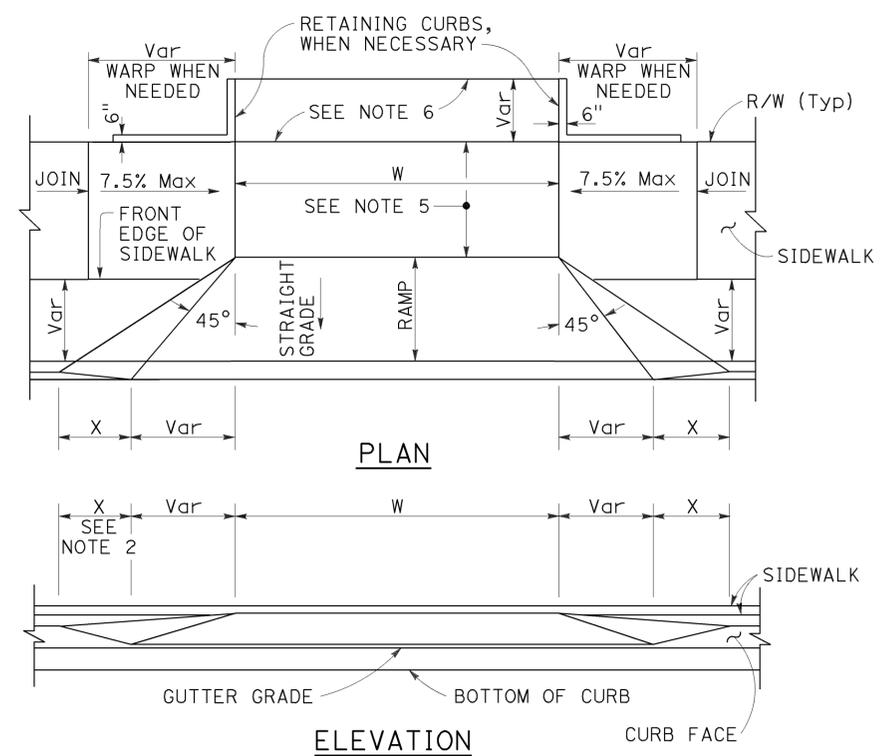
TO ACCOMPANY PLANS DATED 06-27-16

CURB QUANTITIES

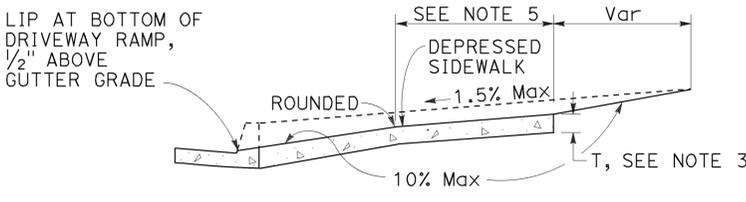
TYPE	CUBIC YARDS PER LINEAR FOOT
A1-6	0.02585
A1-8	0.03084
A2-6	0.05903
A2-8	0.06379
A3-6	0.01036
A3-8	0.01435
B1-4	0.02185
B1-6	0.02930
B2-4	0.05515
B2-6	0.06171
B3-4	0.00641
B3-6	0.01074
B4	0.05709
D-4	0.04083
D-6	0.06804
E	0.06661

TABLE A

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



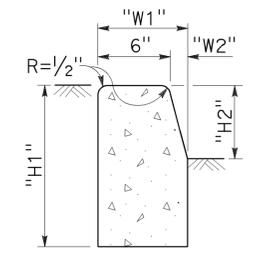
CASE A
Typical driveway, sidewalk not depressed



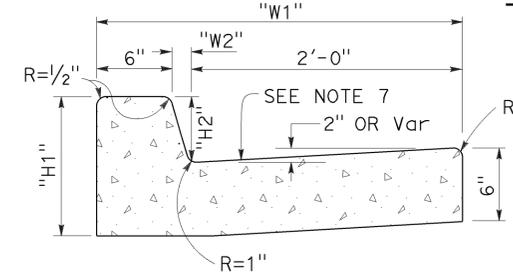
CASE B
Driveway with depressed sidewalk

SECTIONS

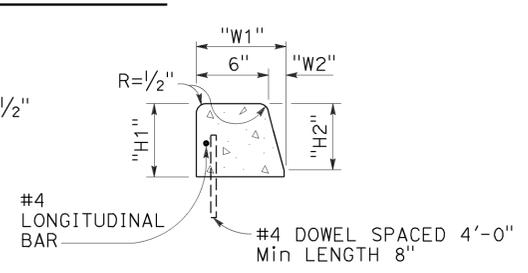
DRIVEWAYS



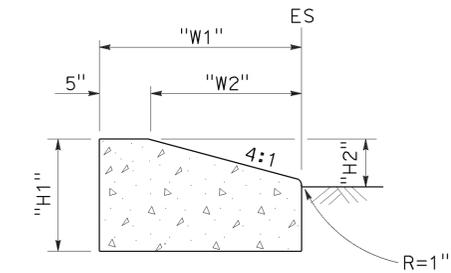
TYPE A1 CURBS
See Table A



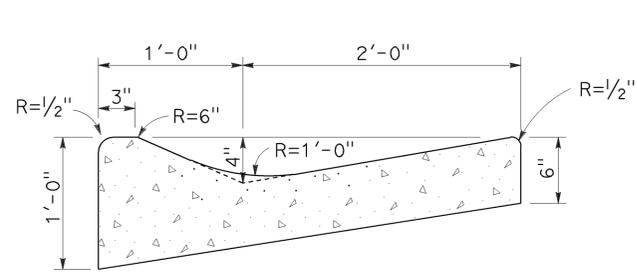
TYPE A2 CURBS
See Table A



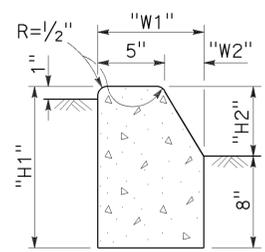
TYPE A3 CURBS
Superimposed on existing pavement
See Table A



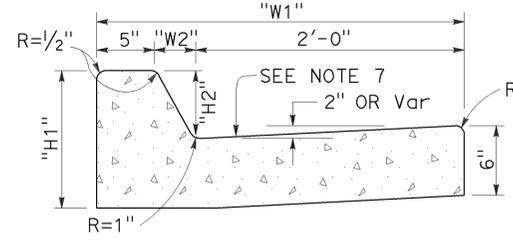
TYPE D CURBS
See Table A



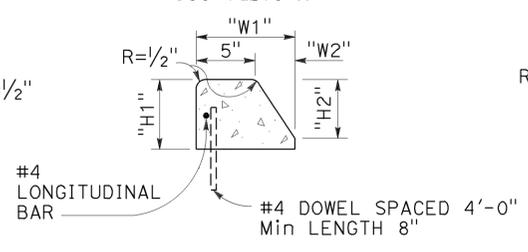
TYPE E CURB



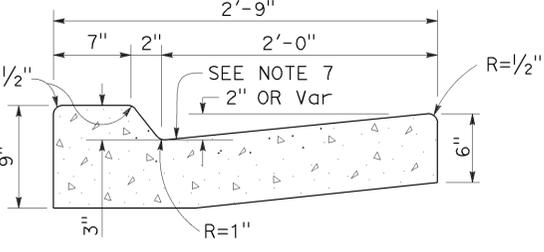
TYPE B1 CURBS
See Table A



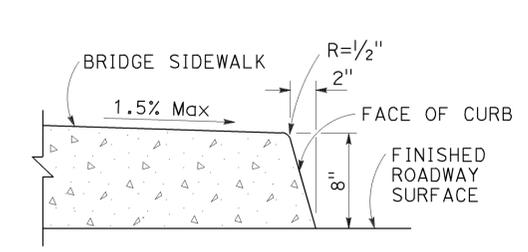
TYPE B2 CURBS
See Table A



TYPE B3 CURBS
Superimposed on existing pavement
See Table A



TYPE B4 CURBS



TYPE H CURB
On Bridges

CURBS

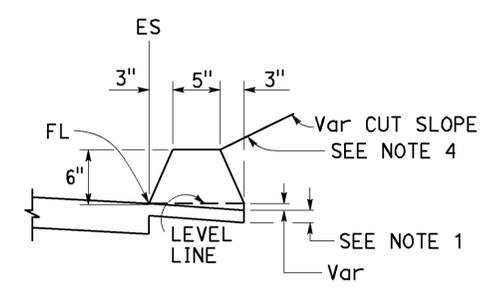
- NOTES:**
- Case A driveway section typically applies.
 - X=3'-0" except for curb heights over 10" where 4:1 slopes shall be used on curb slope.
 - Sidewalk and ramp thickness "T" at driveway shall be 4" for residential and 6" for commercial.
 - Difference in slope of the driveway ramp and the slope of a line between the gutter and a point on the roadway 5'-0" from gutter line shall not exceed 15%. Reduce driveway ramp slope, not gutter slope, where required.

- Minimum width of clear passageway for sidewalk shall be 4'-2".
- Retaining curbs and acquisition of construction easement may be necessary for narrow sidewalks or curb heights in excess of 6".
- Across the pedestrian route at curb ramp locations, the gutter pan slope shall not exceed 1" of depth for each 2'-0" of width.

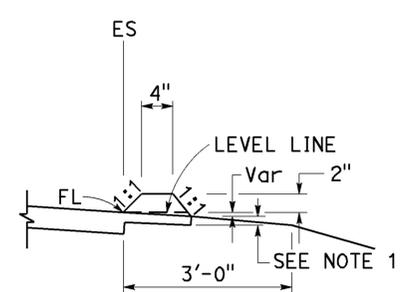
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
CURBS AND DRIVEWAYS
 NO SCALE

2010 REVISED STANDARD PLAN RSP A87A

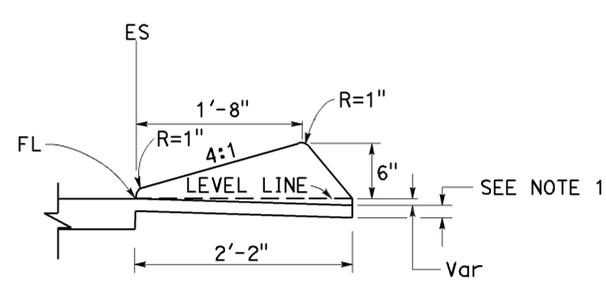
TO ACCOMPANY PLANS DATED 06-27-16



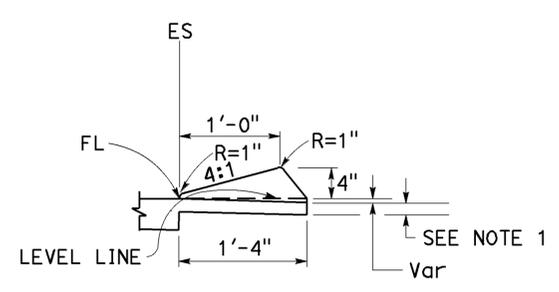
TYPE A
See Notes 3 and 5



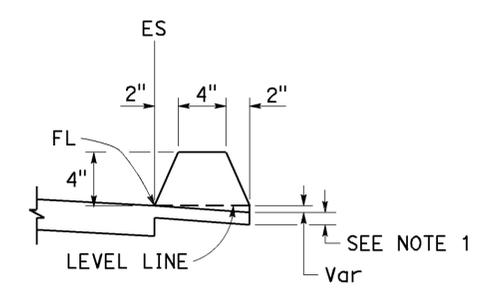
TYPE C



TYPE D

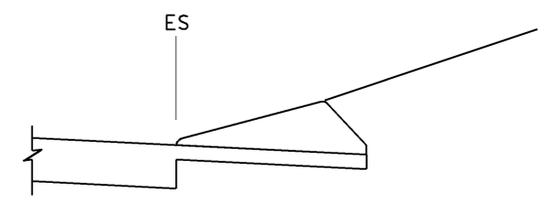


TYPE E

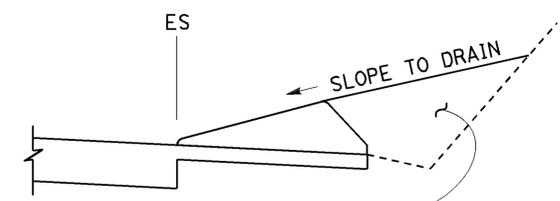


TYPE F
See Note 5

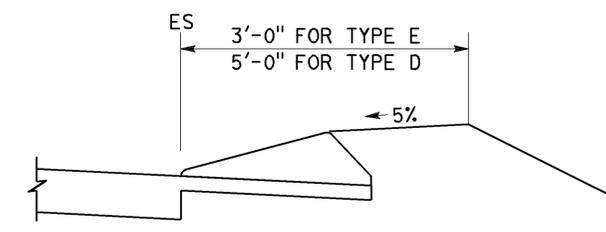
DIKES



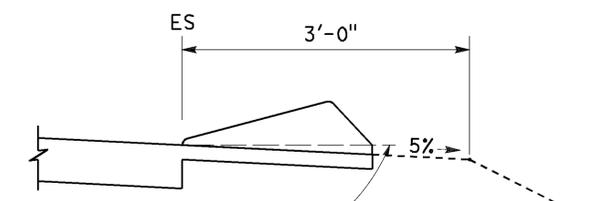
CASE C-1
Cut Slope



CASE C-2
Cut Slope



CASE F



CASE R
See Note 2

TYPE D AND E BACKFILL DETAILS

NOTES:

- 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.
- Case R applies to retrofit only projects where restrictive conditions do not provide enough width for Case F backfill.
- Type A dike only to be used where restrictive slope conditions do not provide enough width to use Type D or Type E dike.
- Fill and compact with excavated material to top of dike.
- Use Type A or F dike, where dike is required with guardrail installations. See Revised Standard Plan RSP A77N4 for dike positioning details. See Revised Standard Plan RSP A77N3 for hinge point offsets with guardrail.

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 JANUARY 15, 2016 SUPERSEDES RSP A87B DATED JULY 19, 2013 AND STANDARD PLAN A87B DATED MAY 20, 2011 - PAGE 120 OF THE STANDARD PLANS BOOK DATED 2010.

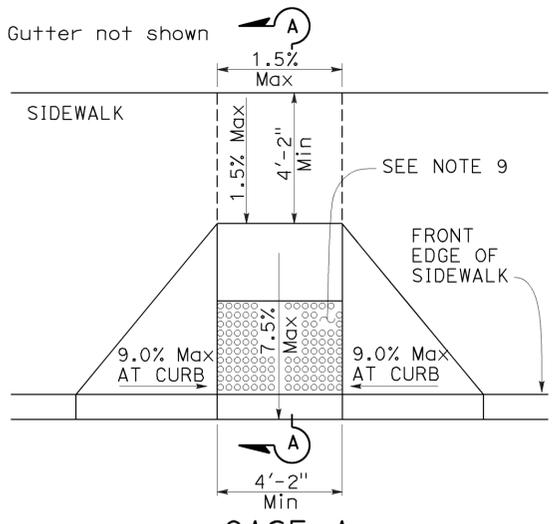
REVISED STANDARD PLAN RSP A87B

2010 REVISED STANDARD PLAN RSP A87B

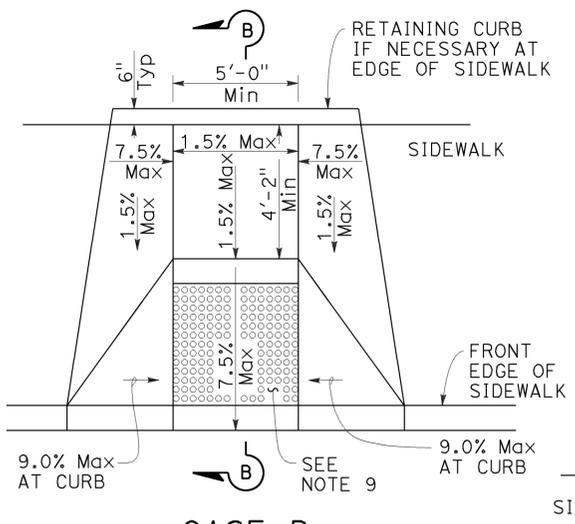
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	349	431

H. David Cordova
 REGISTERED CIVIL ENGINEER
 No. C41957
 Exp. 3-31-16
 CIVIL
 STATE OF CALIFORNIA

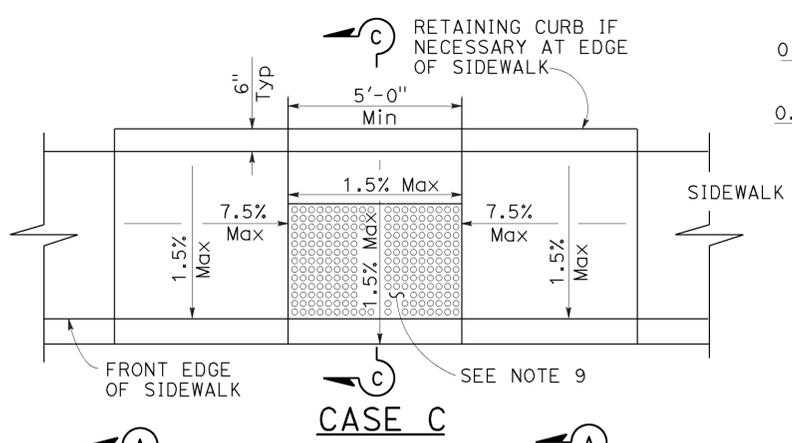
July 3, 2015
 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



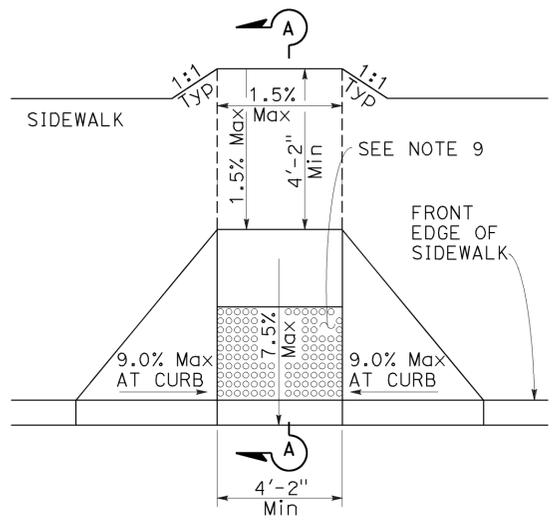
CASE A



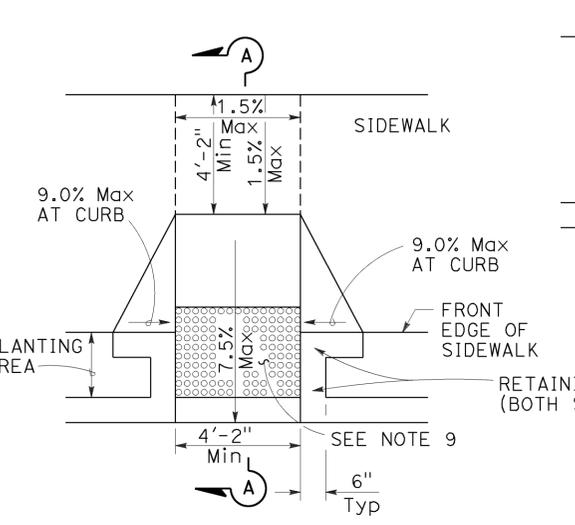
CASE B



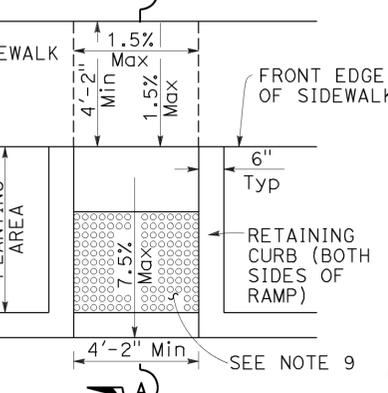
CASE C



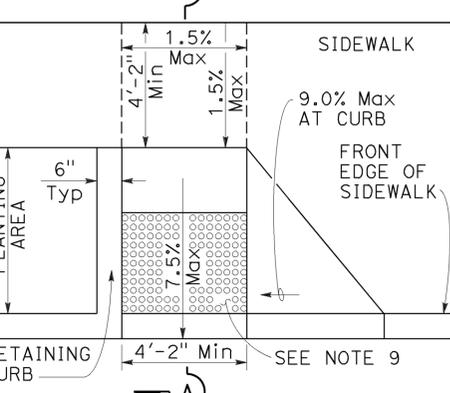
CASE D



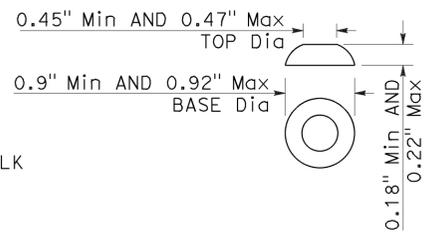
CASE E



CASE F



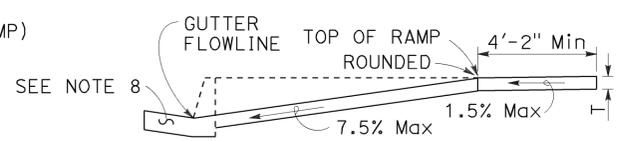
CASE G



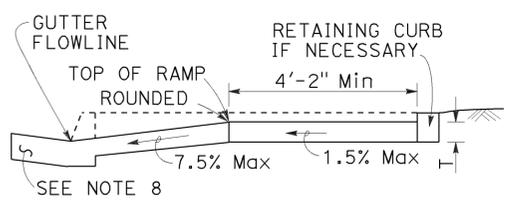
RAISED TRUNCATED DOME

NOTES:

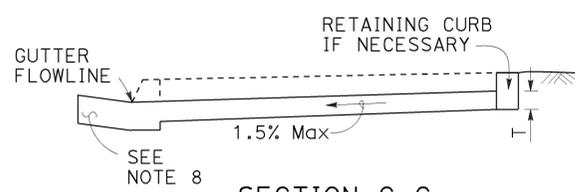
- As site conditions dictate, Case A through Case G curb ramps may be used for corner installations similar to those shown in Detail A and Detail B. The case of curb ramps used in Detail A do not have to be the same. Case A through Case G curb ramps also may be used at mid block locations, as site conditions dictate.
- If distance from curb to back of sidewalk is too short to accommodate ramp and 4'-2" platform (landing) as shown in Case A, the sidewalk may be depressed longitudinally as in Case B, or C or may be widened as in Case D.
- When ramp is located in center of curb return, crosswalk configuration must be similar to that shown for Detail B.
- As site conditions dictate, the retaining curb side and the flared side of the Case G ramp shall be constructed in reversed position.
- If located on a curve, the sides of the ramp need not be parallel, but the minimum width of the ramp shall be 4'-2".
- Side slope of ramp flares vary uniformly from a maximum of 9.0% at curb to conform with longitudinal sidewalk slope adjacent to top of the ramp, except in Case C and Case F.
- Transitions from ramps and landing to walks, gutters or streets shall be flush (no lip) and free of abrupt changes.
- Counter slopes of adjoining gutters and road surfaces immediately adjacent to and within 24 inches of the curb ramp shall not be steeper than 1:20 (5.0%). Gutter pan slope shall not exceed 1" of depth for each 2'-0" of width.
- Curb ramps shall have a detectable warning surface that extends the full width and 3'-0" depth of the ramp. A 4'-0" wide detectable warning surface may be used on a 4'-2" wide curb ramp. Detectable Warning Surfaces shall conform to the requirements in the Standard Specifications.
- Sidewalk and ramp thickness, "T", shall be 3/2" minimum.
- Utility pull boxes, manholes, vaults and all other utility facilities within the boundaries of the curb ramp will be relocated or adjusted to grade by the owner prior to, or in conjunction with, curb ramp construction.
- Detectable warning surface may have to be cut to allow removal of utility covers while maintaining full detectable warning width and depth.



SECTION A-A



SECTION B-B

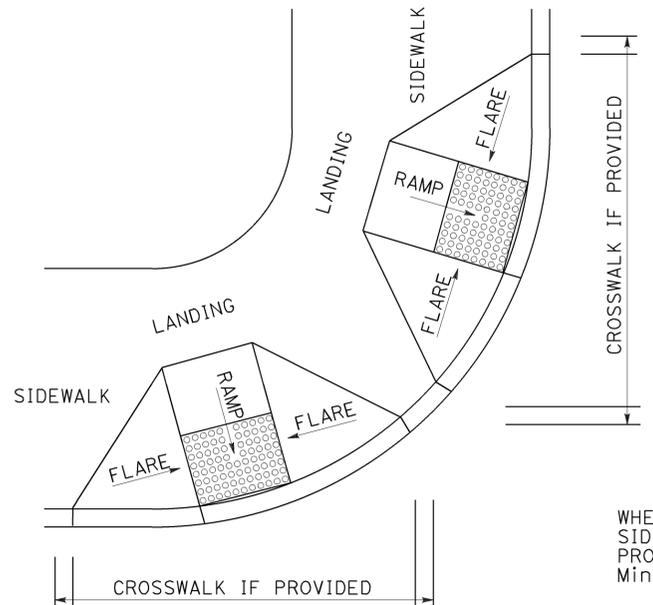


SECTION C-C



**RAISED TRUNCATED DOME PATTERN (IN-LINE)
DETECTABLE WARNING SURFACE**

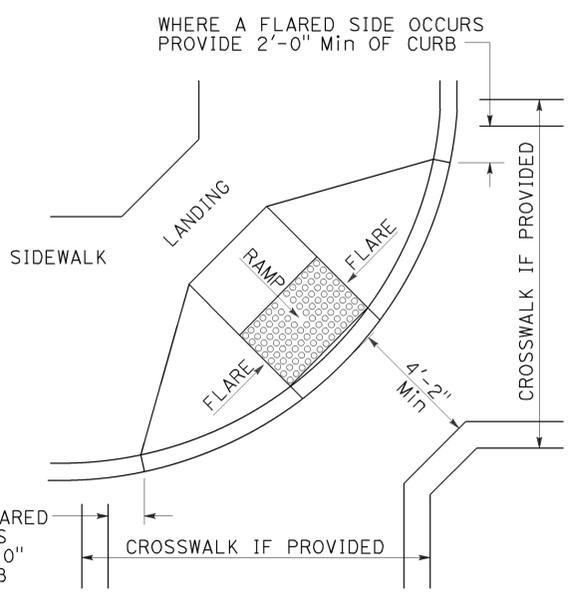
See Note 9



DETAIL A

**TYPICAL TWO-RAMP
CORNER INSTALLATION**

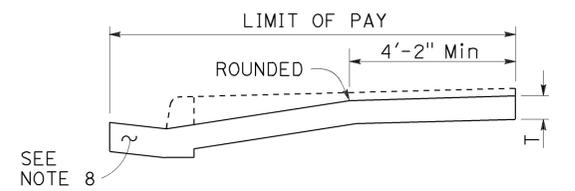
See Note 1



DETAIL B

**TYPICAL ONE-RAMP
CORNER INSTALLATION**

See Notes 1 and 3



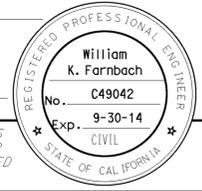
RETROFIT PAY LIMITS

Existing curb and sidewalk

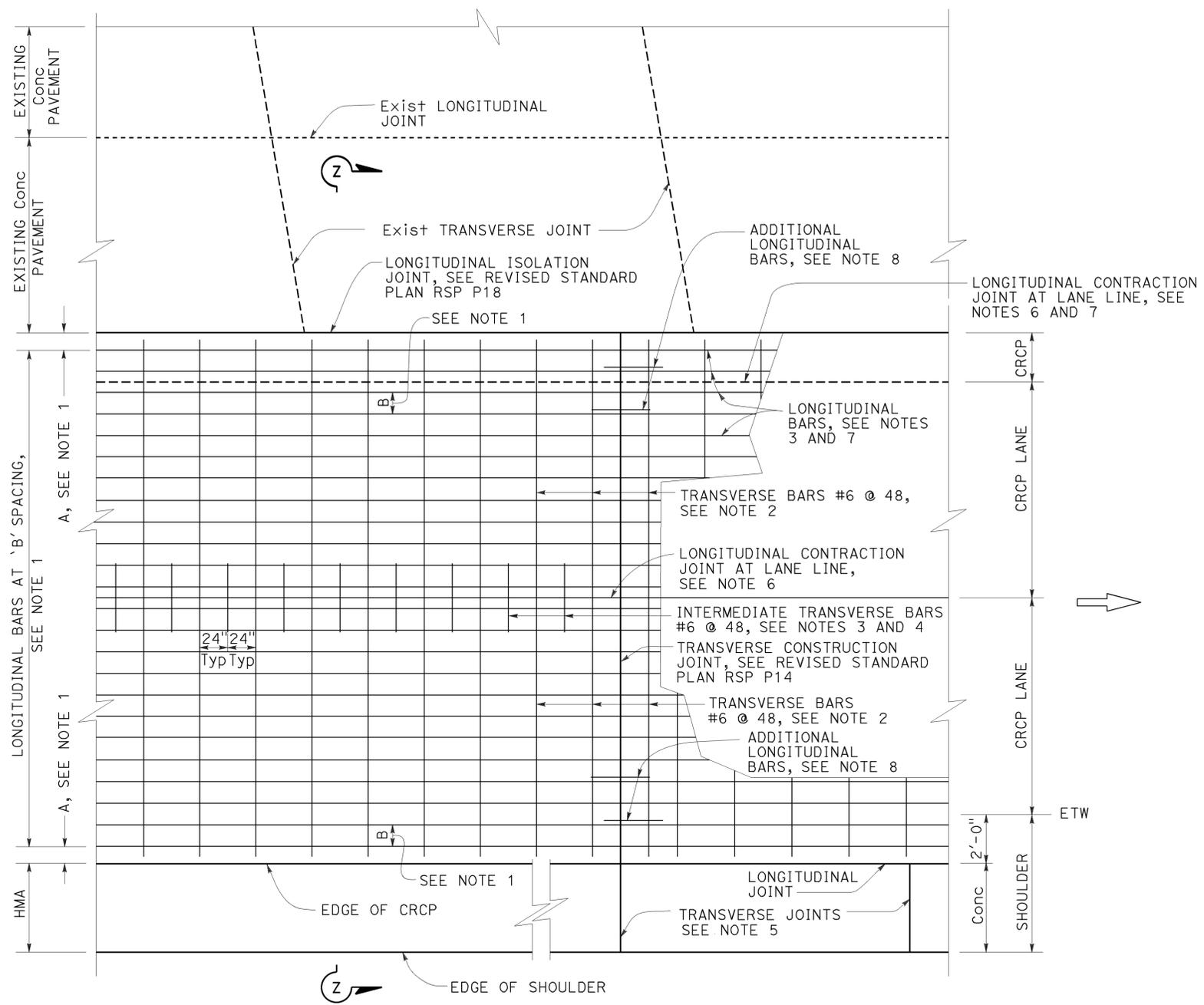
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
CURB RAMP DETAILS
NO SCALE

RSP A88A DATED JULY 3, 2015 SUPERSEDES RSP A88A DATED MARCH 21, 2014 AND RSP A88A DATED JULY 19, 2013 AND STANDARD PLAN A88A DATED MAY 20, 2011 - PAGE 121 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP A88A



TO ACCOMPANY PLANS DATED 06-27-16

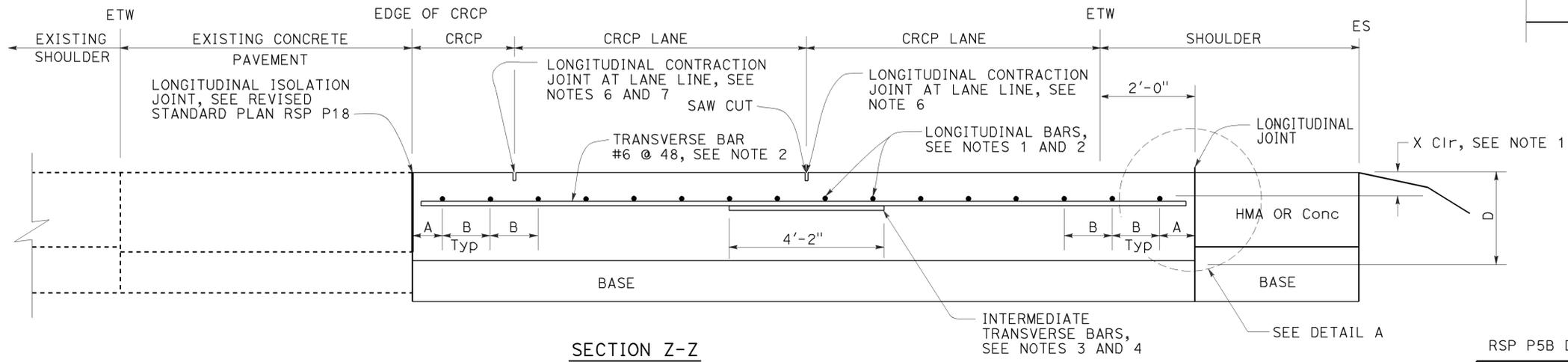
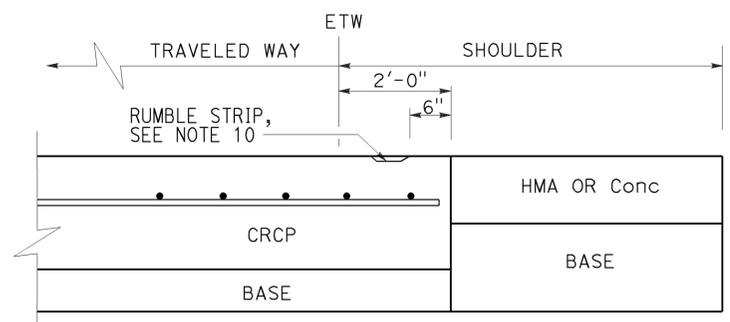


NOTES:

1. For longitudinal bar size, spacing and clearances, see Revised Standard Plan RSP P4.
2. The length of lap splices for bar reinforcement must be at least 25".
3. For tie bar and intermediate transverse bar details, see Revised Standard Plan RSP P16.
4. Place Intermediate transverse bars parallel to and in the same plane as transverse bars.
5. Construct transverse joints at right angle to the longitudinal joints in adjacent CRCP. Space joints at no less than 10' intervals and no more than 14' intervals. Match location of JPCP transverse joint with CRCP transverse construction joint, expansion joint or wide flange beam. Omit dowel bars.
6. For longitudinal contraction and construction joint details, see Revised Standard Plan RSP P16.
7. Do not construct longitudinal contraction joint when edge of new CRCP is less than 3'-3" from lane line.
8. For additional longitudinal bars detail, see Detail A on Revised Standard Plan RSP P14.
9. For longitudinal construction joint plan layout not shown, see Revised Standard Plan RSP P4. For tie bar details at longitudinal construction joint, see Revised Standard Plan RSP P16.
10. For limits of rumble strips, see Project Plans.

ABBREVIATION:

D = Thickness of CRCP



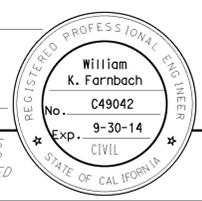
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**CONTINUOUSLY REINFORCED
 CONCRETE PAVEMENT
 (WIDENED LANE)
 LANE AND SHOULDER
 ADDITION OR REPLACEMENT**

NO SCALE

RSP P5B DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP P5B

2010 REVISED STANDARD PLAN RSP P5B



TO ACCOMPANY PLANS DATED 06-27-16

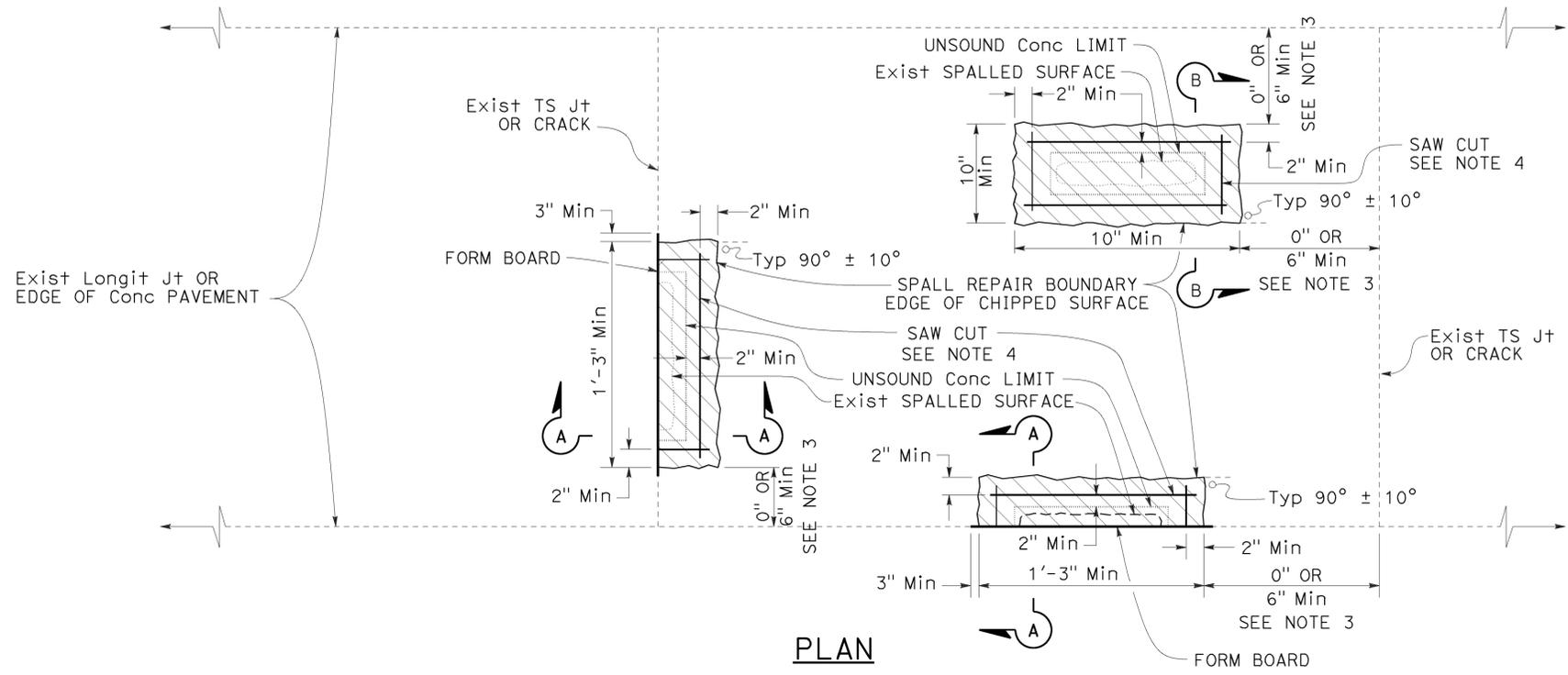
LEGEND



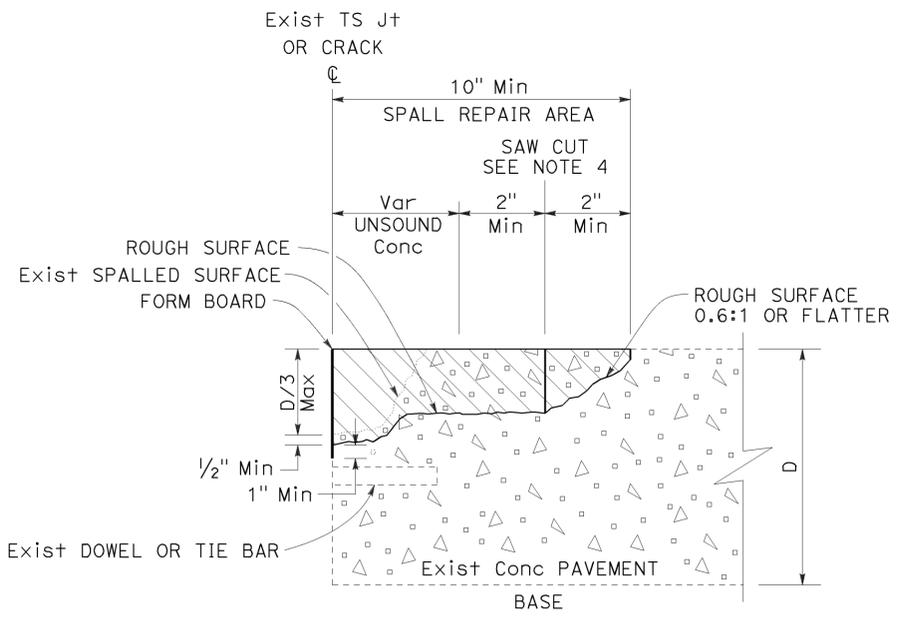
NOTES:

1. See Project Plans for spall repair locations.
2. Combine spall repair areas closer than 2' apart.
3. If the spall repair area is less than 6" from a joint, extend the repair to the joint.
4. Cut at least 2" beyond the rectangular limits of unsound concrete determined by the Engineer. Determine the saw cut depth using the following table:

Conc MATERIAL	SAW CUT DEPTH	
	Min	Max
FAST-SETTING	2"	3 1/2"
POLYESTER	1 1/2"	3 1/2"

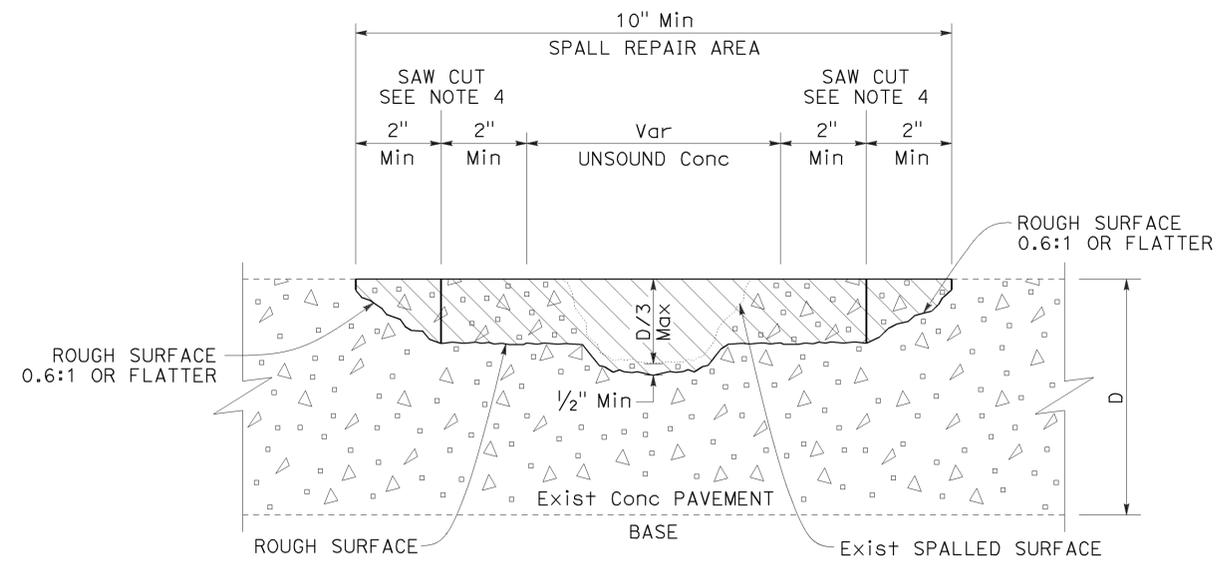


PLAN



SECTION A-A

JOINT, CRACK, OR EDGE OF CONCRETE PAVEMENT REPAIR



SECTION B-B

MISCELLANEOUS SPALL REPAIR

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

SPALL REPAIR

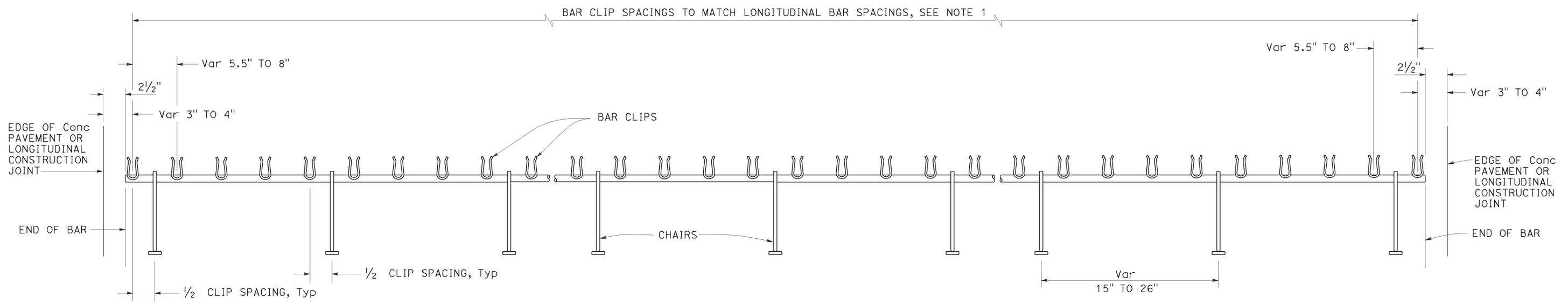
NO SCALE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	352	431

Flora Bautista
 REGISTERED CIVIL ENGINEER
 October 30, 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.

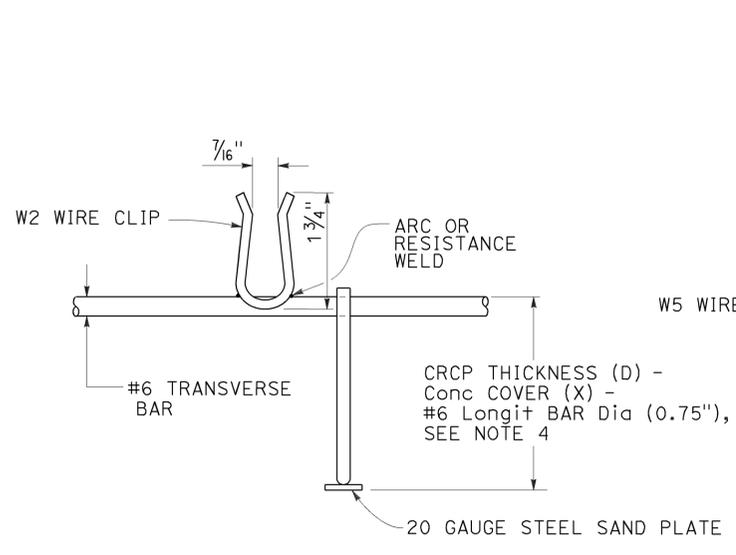
REGISTERED PROFESSIONAL ENGINEER
 Florante E. Bautista
 No. C54859
 Exp. 6-30-16
 CIVIL
 STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 06-27-16

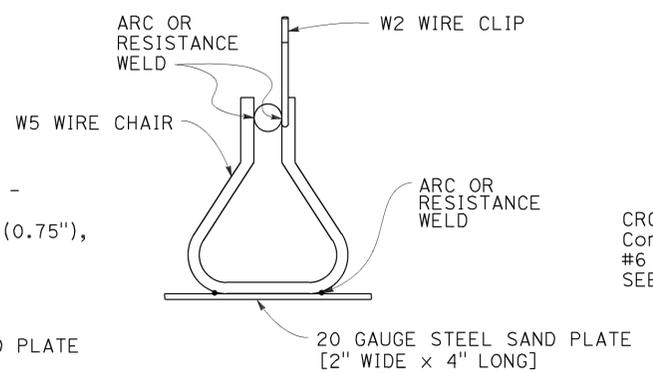


TRANSVERSE BAR ASSEMBLY

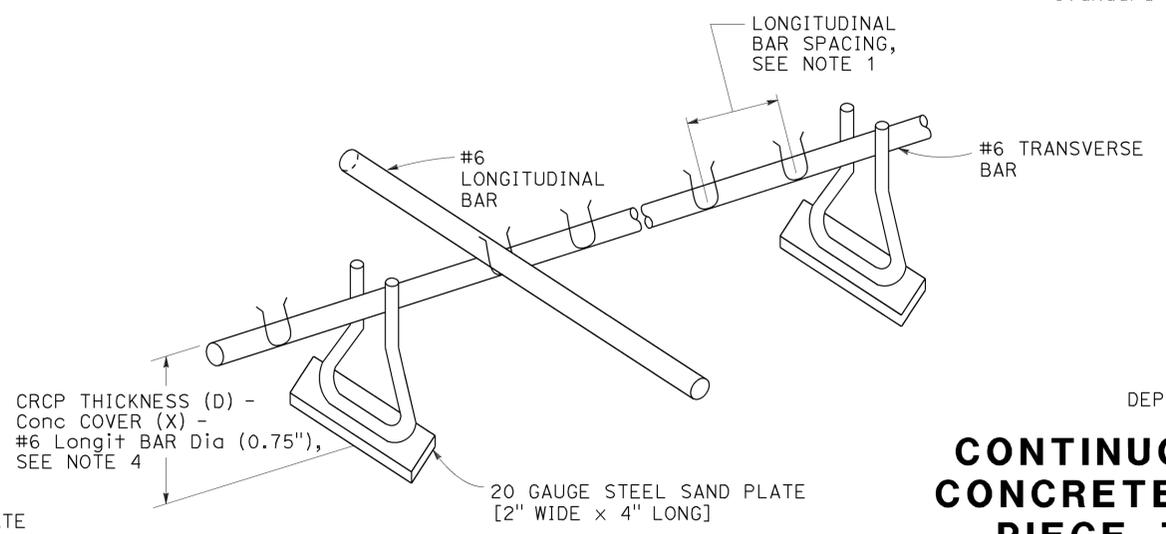
- NOTES:**
1. See Revised Standard Plan RSP P4 for spacing of longitudinal bars.
 2. Tensile strength of chair shall be at least 50,000 psi.
 3. Wire sizes shown are minimum required.
 4. For concrete cover (X), see Table 1 in Revised Standard Plan RSP P4.



#6 BAR CLIP DETAIL



CHAIR DETAIL



ISOMETRIC VIEW OF CHAIR ASSEMBLY

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**CONTINUOUSLY REINFORCED
CONCRETE PAVEMENT-SINGLE
PIECE TRANSVERSE BAR
ASSEMBLY**

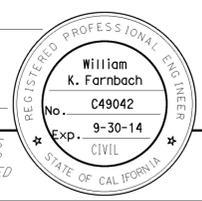
NO SCALE

RSP P13 DATED OCTOBER 30, 2015 SUPERSEDES RSP P13 DATED OCTOBER 19, 2012 AND STANDARD PLAN P13 DATED MAY 20, 2011 - PAGE 133 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP P13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	353	431

William K. Farnbach
 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.



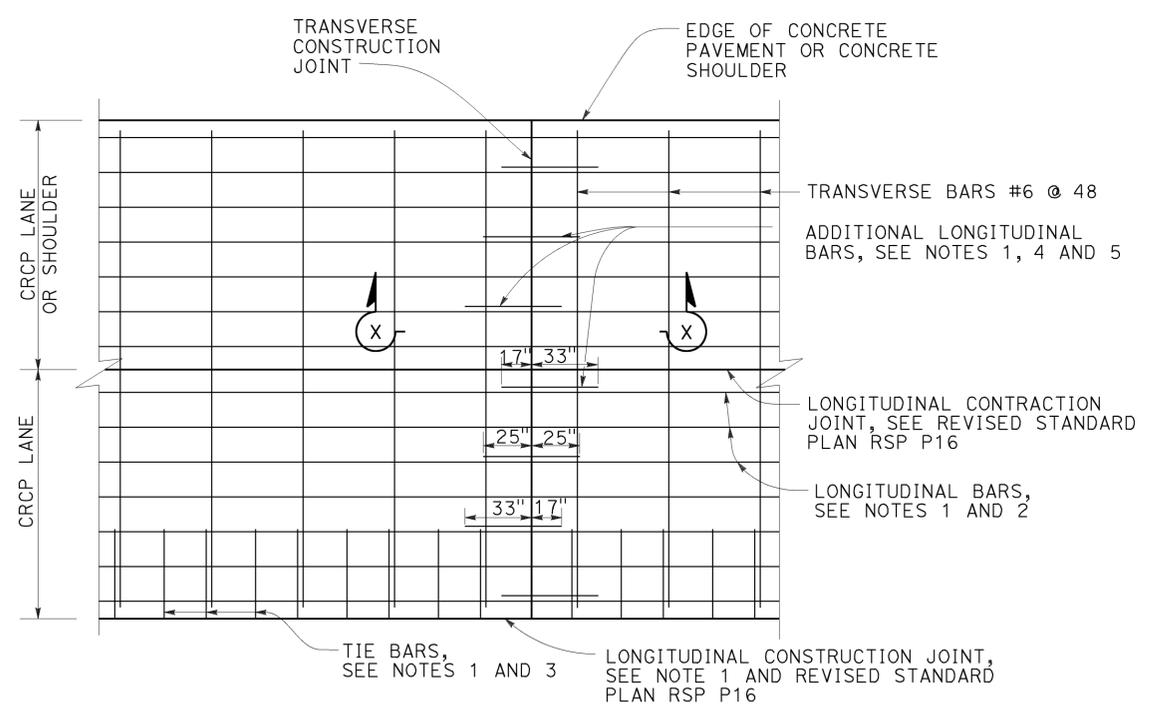
TO ACCOMPANY PLANS DATED 06-27-16

NOTES:

1. For longitudinal bar size, spacing and clearances, see Table 1 on Revised Standard Plan RSP P4.
2. The length of lap splices for bar reinforcement must be at least 25".
3. For tie bars in longitudinal construction joint, see Revised Standard Plan RSP P16.
4. Place additional longitudinal bars parallel to and in the same plane as the longitudinal bars.
5. Place additional longitudinal bars symmetrically about longitudinal construction joint.

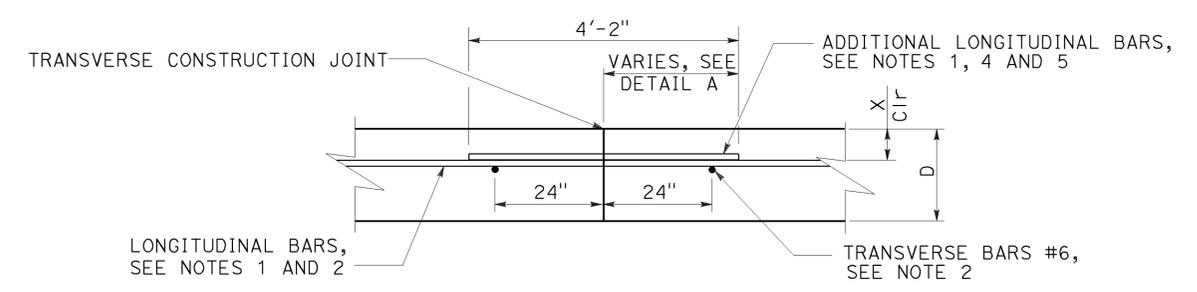
ABBREVIATION

D = Thickness of CRCP



DETAIL A

Additional longitudinal bars at transverse construction joint



SECTION X-X

TRANSVERSE CONSTRUCTION JOINT

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**CONTINUOUSLY REINFORCED
 CONCRETE PAVEMENT
 TRANSVERSE CONSTRUCTION JOINT**

NO SCALE

RSP P14 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP P14

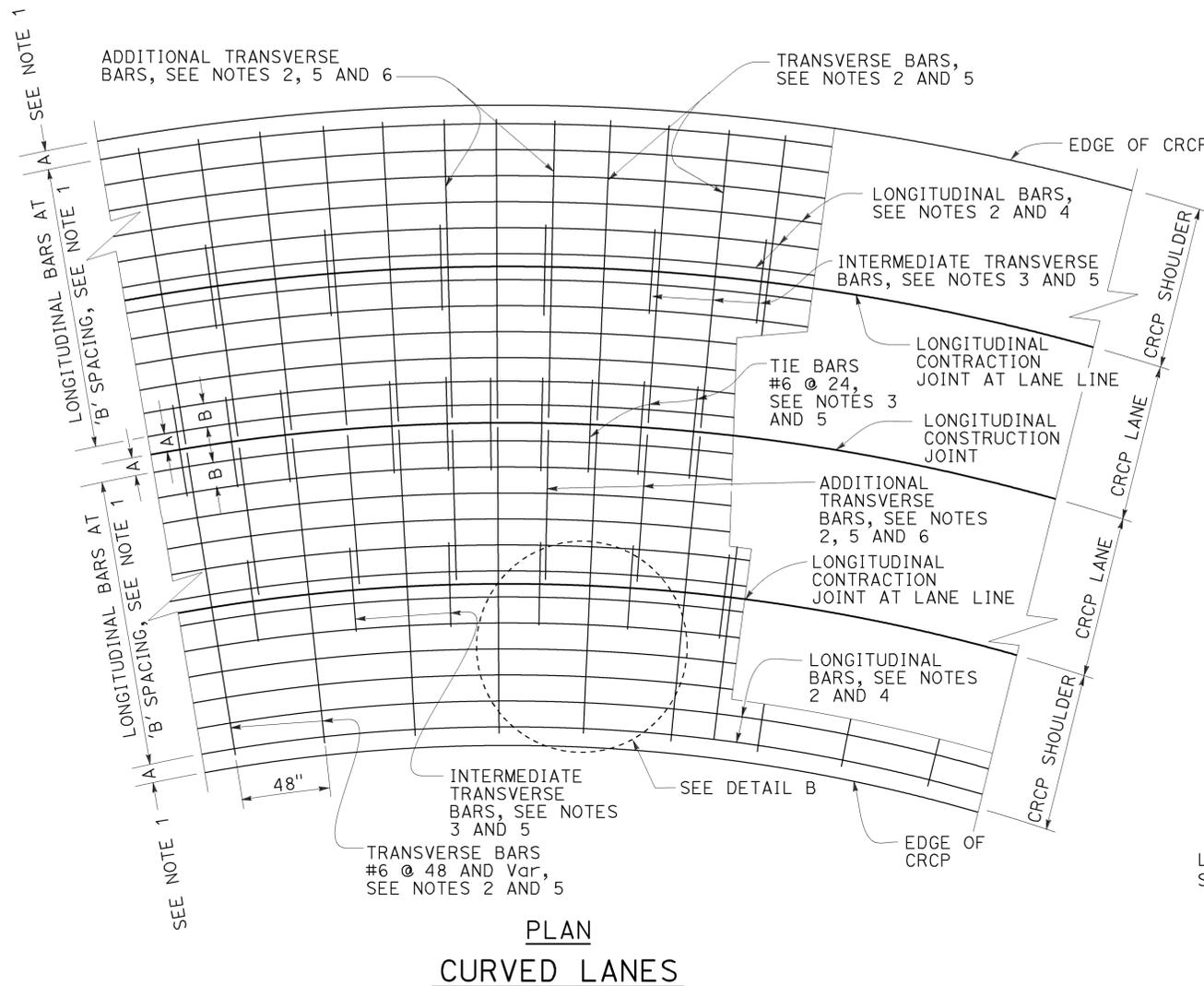
2010 REVISED STANDARD PLAN RSP P14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	354	431

REGISTERED CIVIL ENGINEER
 October 30, 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.

REGISTERED PROFESSIONAL ENGINEER
 Florante E. Bautista
 No. C54859
 Exp. 6-30-16
 CIVIL
 STATE OF CALIFORNIA

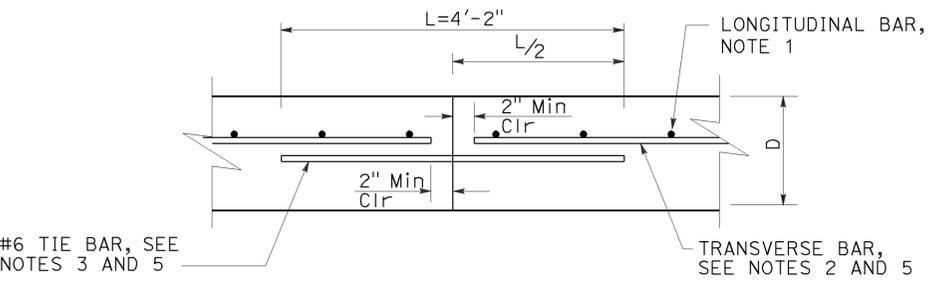
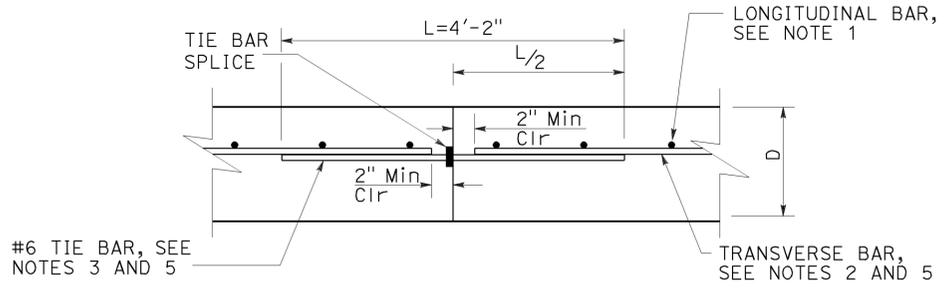
TO ACCOMPANY PLANS DATED 06-27-16



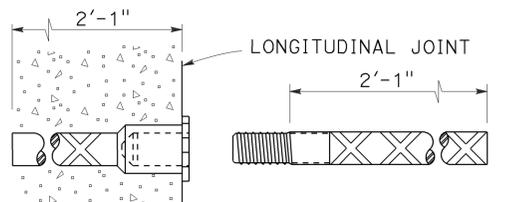
PLAN
CURVED LANES

- NOTES:**
1. For longitudinal bar spacing and clearances, see Table 1 on Revised Standard Plan RSP P4.
 2. The length of lap splices for bar reinforcement must be at least 25".
 3. Place tie bars and intermediate transverse bars parallel to and in the same plane as the transverse bars.
 4. Place longitudinal bars parallel to roadway curvature.
 5. Place transverse bars, additional transverse bars, tie bars and intermediate transverse bars perpendicular to the pavement curvature.
 6. Place additional transverse bars where required, see Detail B.
 7. The bottom of the saw cut must be at least 0.5" clear of any dowel bar, tie bar and bar reinforcement.

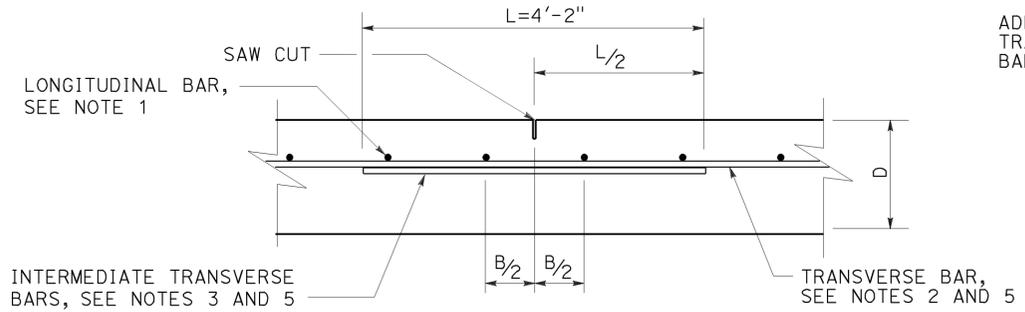
ABBREVIATION:
D = Thickness of CRCP



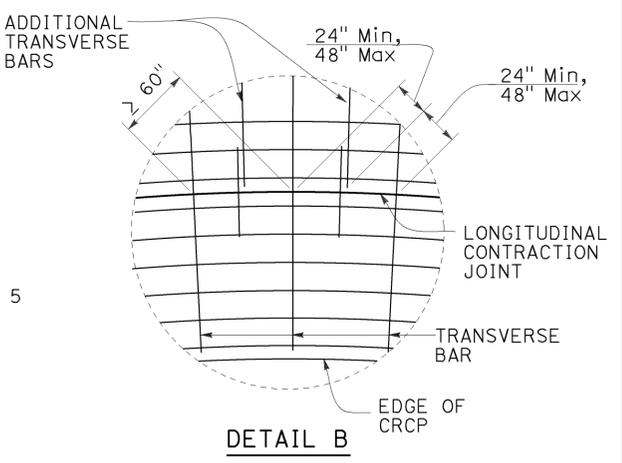
ALTERNATE
LONGITUDINAL CONSTRUCTION JOINT



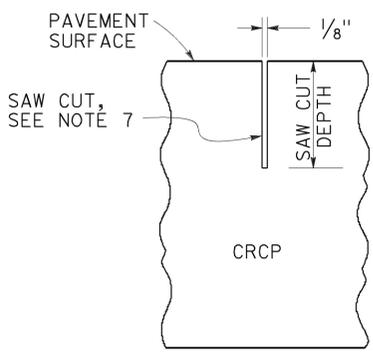
TIE BAR SPLICE COUPLER DETAIL



LONGITUDINAL CONTRACTION JOINT



DETAIL B



CONTRACTION JOINT SAW CUT DETAIL

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**CONTINUOUSLY REINFORCED
CONCRETE PAVEMENT
TIE BARS AND JOINT DETAILS**

NO SCALE

RSP P16 DATED OCTOBER 30, 2015 SUPPLEMENTS RSP P16 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

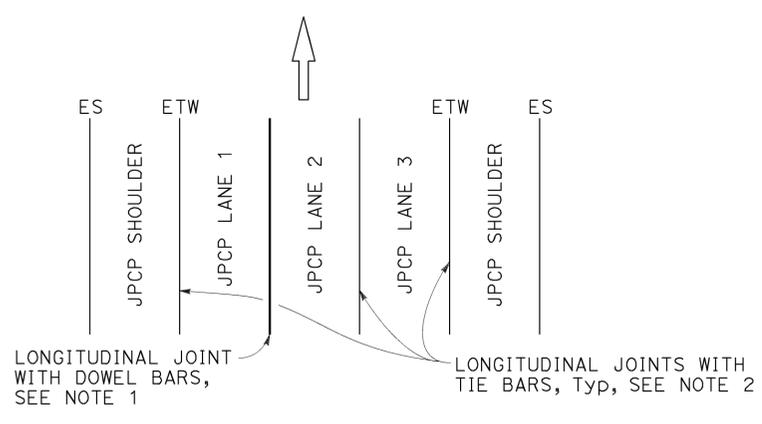
2010 REVISED STANDARD PLAN RSP P16

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	355	431

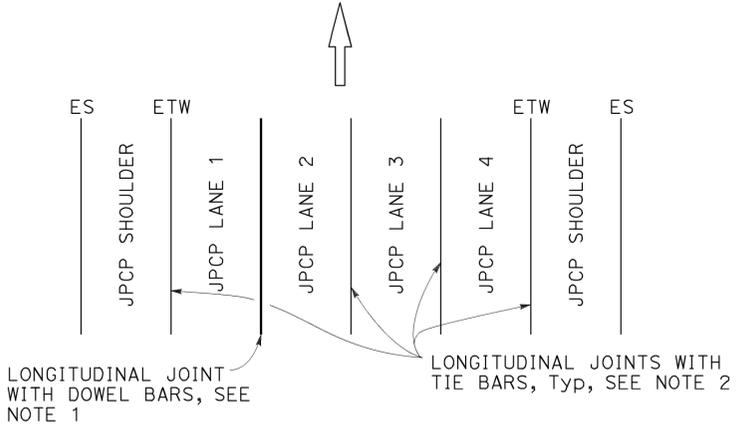
William K. Farnbach
 REGISTERED CIVIL ENGINEER
 July 19, 2013
 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



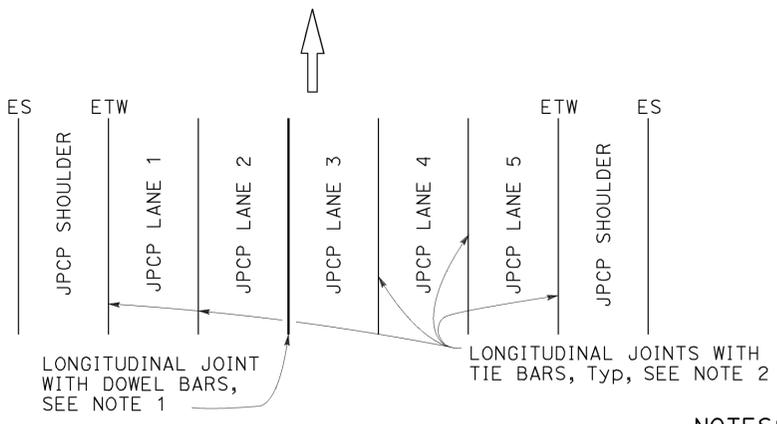
TO ACCOMPANY PLANS DATED 06-27-16



3 LANES WITH CONCRETE SHOULDERS
PLAN



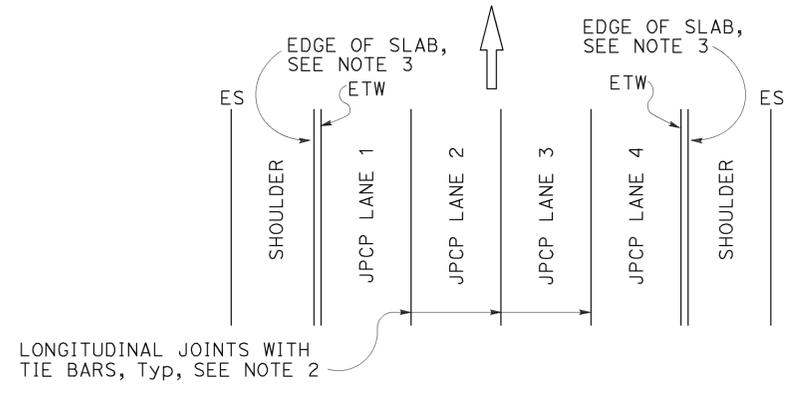
4 LANES WITH CONCRETE SHOULDERS
PLAN



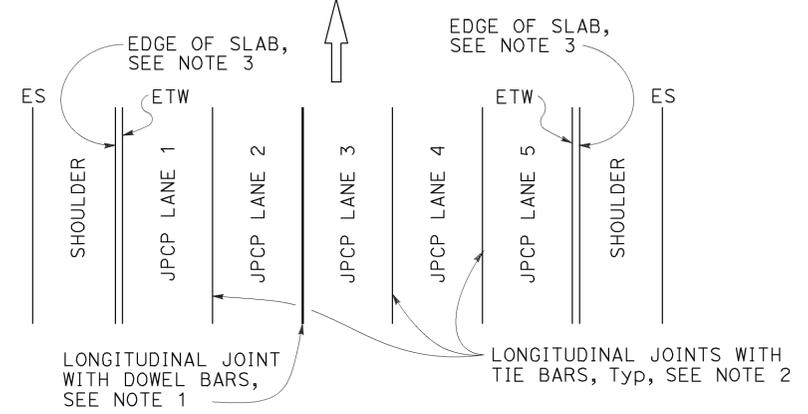
5 LANES WITH CONCRETE SHOULDERS
PLAN

NOTES:

- See Revised Standard Plan RSP P10 for longitudinal joint with dowel bars.
- See Revised Standard Plan RSP P15 for longitudinal joint with tie bars.
- S = Reservoir depth.
 $S = \frac{7}{8}'' \pm \frac{1}{16}''$ for asphalt rubber seals
 $S = \frac{9}{16}'' \pm \frac{1}{16}''$ for silicone seals
 Preformed compression seals must be $\frac{13}{16}''$ wide and $S = 1\frac{1}{16}'' \pm \frac{1}{16}''$

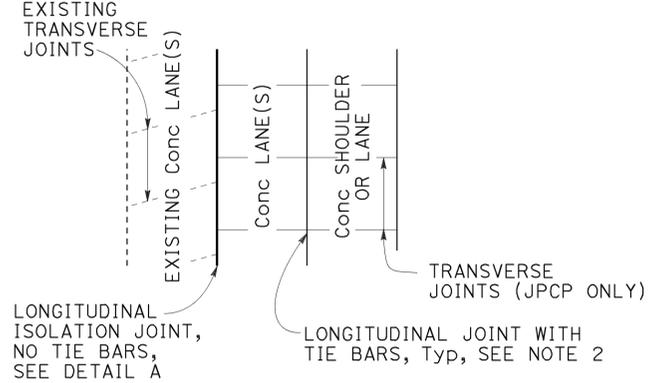


4 LANES OR LESS WITH AC SHOULDERS
PLAN



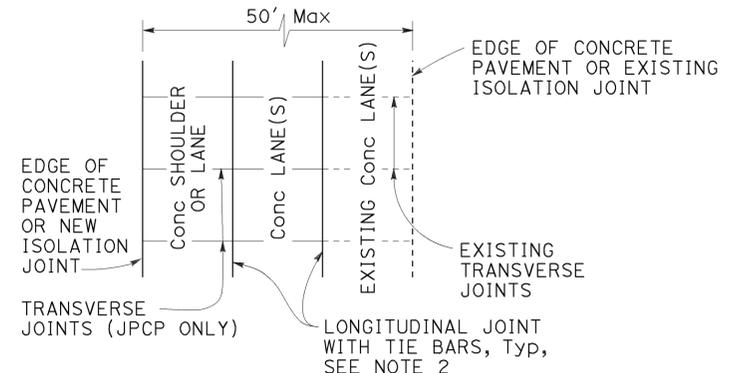
5 LANES WITH AC SHOULDERS
PLAN

NEW CONSTRUCTION
Location of Longitudinal Joints For JPCP



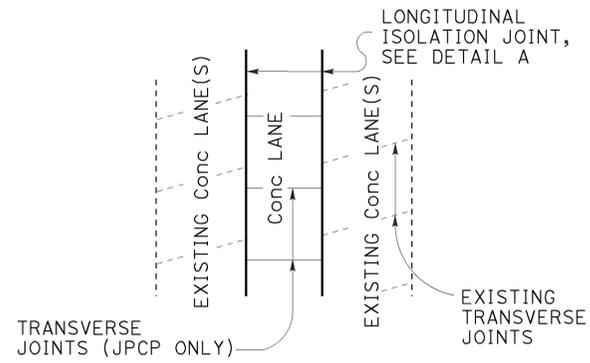
CASE 1
PLAN

Transverse Joints do not align between new and existing.



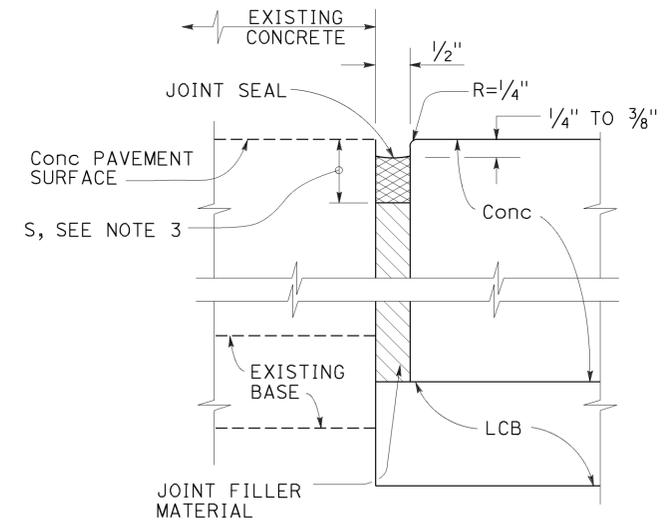
CASE 2
PLAN

Transverse Joints align between new and existing. (For JPCP only)



CASE 3 (INTERIOR LANE REPLACEMENT)
PLAN

Transverse Joints do not align between new and existing.



DETAIL "A"
ISOLATION JOINT

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**CONCRETE PAVEMENT
LANE SCHEMATICS
AND ISOLATION JOINT DETAIL**

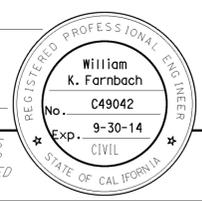
NO SCALE

LANE/SHOULDER ADDITION OR RECONSTRUCTION
For JPCP and CRCP

RSP P18 DATED JULY 19, 2013 SUPERSEDES RSP P18 DATED APRIL 20, 2012 AND STANDARD PLAN P18 DATED MAY 20, 2011 - PAGE 135 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP P18

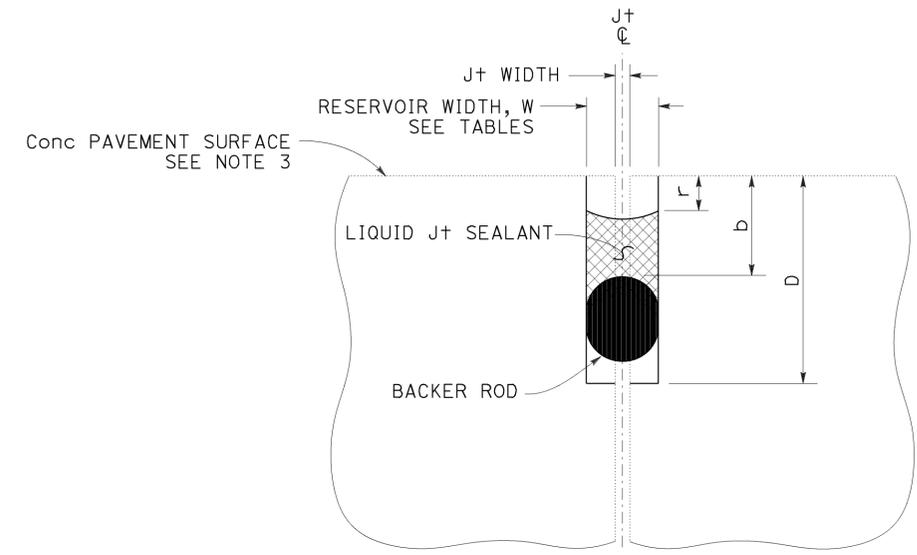
2010 REVISED STANDARD PLAN RSP P18



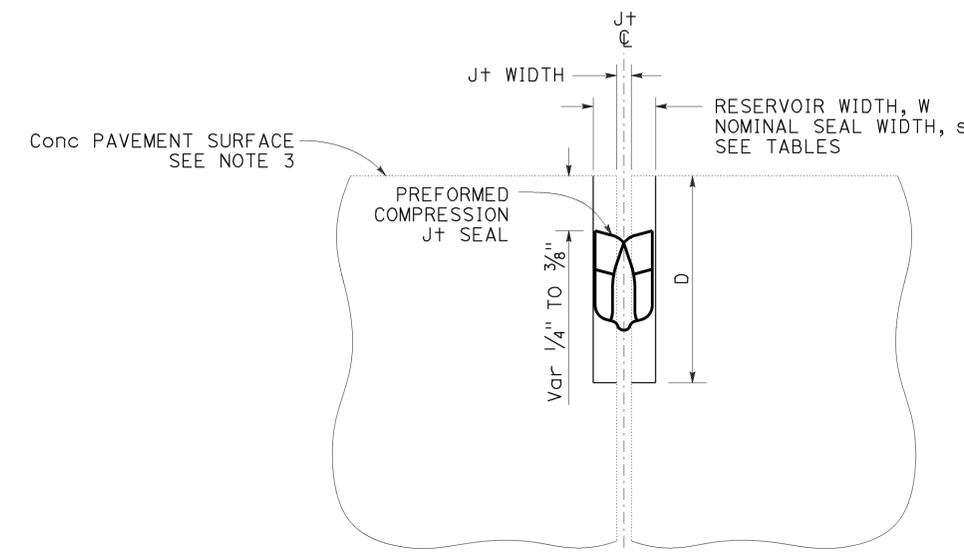
TO ACCOMPANY PLANS DATED 06-27-16

NOTES:

1. Details do not apply to isolation joints and longitudinal construction joints.
2. Tie bars, dowel bars, and bar reinforcement are not shown.
3. Depths are measured from the final concrete pavement surface elevation after any grinding.



LIQUID JOINT SEALANT



PREFORMED COMPRESSION JOINT SEAL

Const SEASON	Min RESERVOIR WIDTH * W ± 1/16"
WINTER	1/4"
SPRING	3/8"
SUMMER	
FALL	

* Minimum reservoir width for replace joint seal = existing joint width + 1/8"

RESERVOIR WIDTH W ± 1/16"	LIQUID JOINT SEALANT DIMENSIONS					
	BACKER ROD NOMINAL Dia *	DEPTHS (ASPHALT RUBBER) **		DEPTHS (SILICONE)		
		RESERVOIR D ± 1/4"	BACKER ROD b ± 1/16"	RESERVOIR D ± 1/4"	BACKER ROD b ± 1/16"	RECESS r ± 1/16"
1/4"	3/8"	1 3/4"	7/8"	1 3/8"	1/2"	1/4"
3/8"	1/2"	1 7/8"	7/8"	1 1/2"	1/2"	1/4"
1/2"	3/4"	2"	7/8"	1 3/4"	9/16"	5/16"
5/8"	7/8"	2 1/4"	1"	2"	5/8"	5/16"
3/4"	1"	2 3/4"	1 1/8"	2 1/4"	3/4"	3/8"
7/8"	1 1/4"	3"	1 1/4"	2 1/2"	13/16"	3/8"
1"	1 1/2"	3 1/4"	1 3/8"	2 5/8"	7/8"	3/8"
1 1/8"	1 1/2"	3 1/2"	1 1/2"	2 13/16"	1"	1/2"

* Larger diameter backer rods may be substituted according to manufacturer recommendations if reservoir depth is increased equivalently.

** Asphalt rubber sealant recess depth "r" varies from 1/4" to 3/8"

RESERVOIR WIDTH W ± 1/16"	PREFORMED COMPRESSION JOINT SEAL DIMENSIONS	
	NOMINAL SEAL WIDTH s	RESERVOIR DEPTH D ± 1/4"
1/4"	7/16"	1 1/4"
3/8"	11/16"	1 1/16"
1/2"	13/16"	1 1/16"
5/8"	1"	1 7/8"
3/4"	1 1/4"	2 1/8"
7/8"	1 5/8"	2 5/8"
1"	1 9/8"	2 9/8"
1 1/8"	2"	2 7/8"

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

JOINT SEALS

NO SCALE

RSP P20 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN P20 DATED MAY 20, 2011 - PAGE 136 OF THE STANDARD PLANS BOOK DATED 2010.

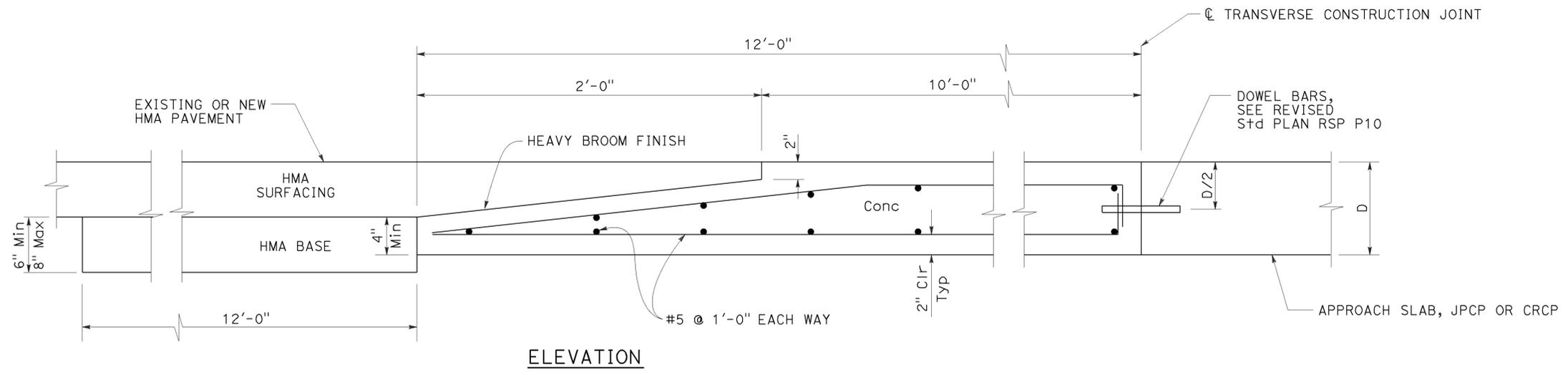
2010 REVISED STANDARD PLAN RSP P20

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	357	431

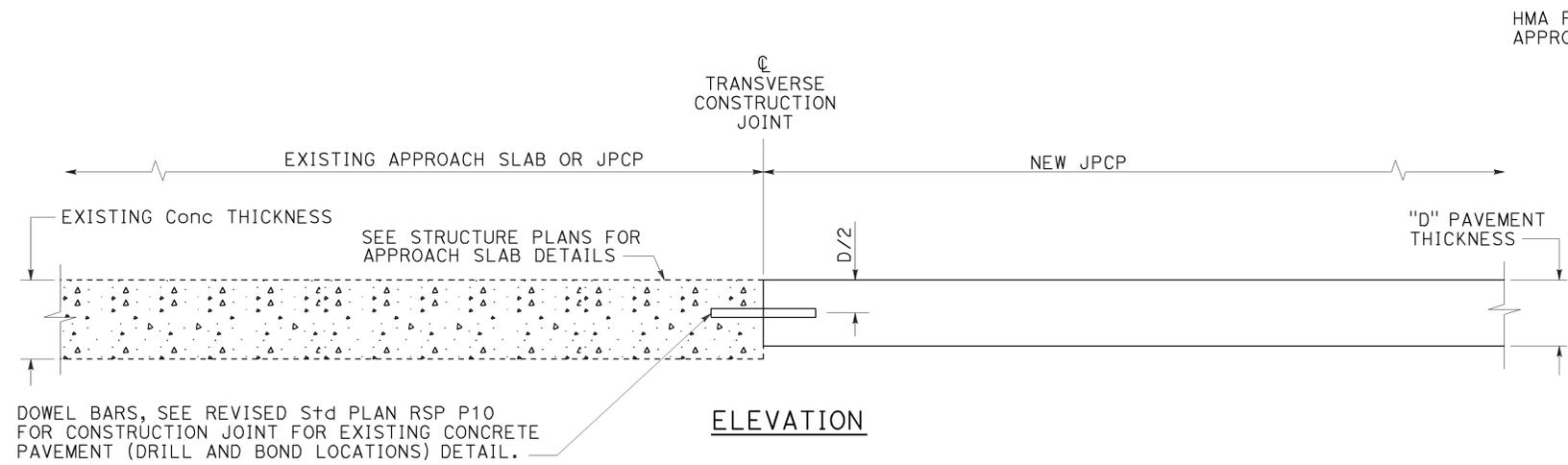
William K. Farnbach
 REGISTERED CIVIL ENGINEER
 July 19, 2013
 PLANS APPROVAL DATE
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REGISTERED PROFESSIONAL ENGINEER
 William K. Farnbach
 No. C49042
 Exp. 9-30-14
 CIVIL
 STATE OF CALIFORNIA

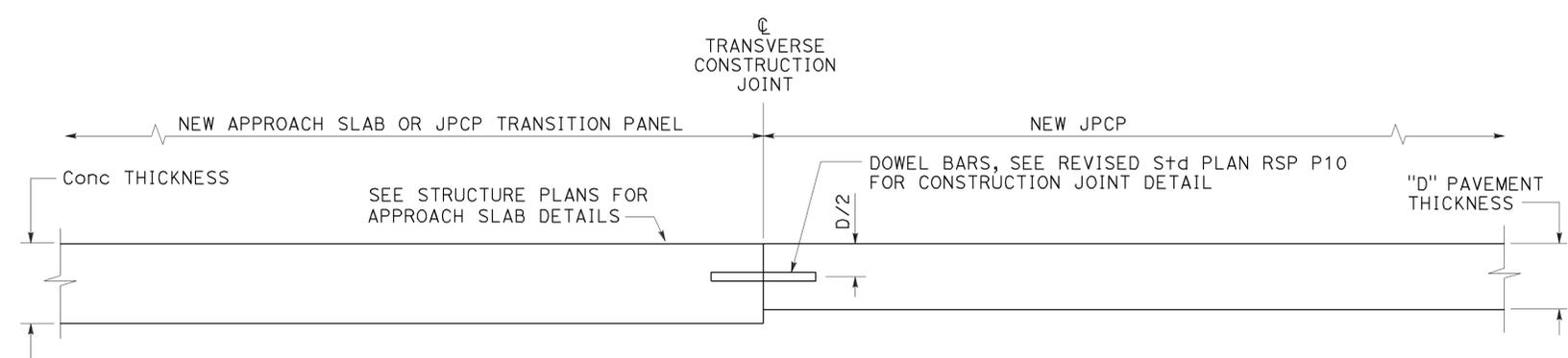
TO ACCOMPANY PLANS DATED 06-27-16



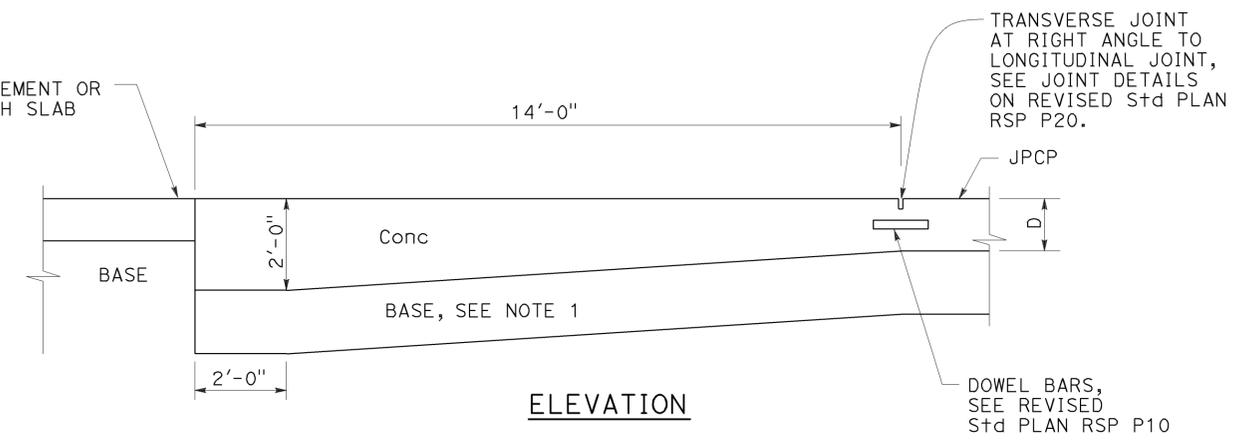
**CONCRETE PAVEMENT
TRANSITION PANEL**



TERMINAL JOINT TYPE 1
For Exist JPCP or Approach Slab



TERMINAL JOINT TYPE 2
For JPCP Transition Panel or Approach Slab



PAVEMENT END ANCHOR
For HMA Pvmt or Approach Slab

NOTE:
1. Maintain same base thickness as JPCP.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**CONCRETE PAVEMENT-
END PANEL
PAVEMENT TRANSITIONS**
NO SCALE

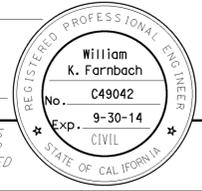
RSP P30 DATED JULY 19, 2013 SUPERSEDES RSP P30 DATED APRIL 20, 2012 AND STANDARD PLAN P30 DATED MAY 20, 2011 - PAGE 137 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP P30

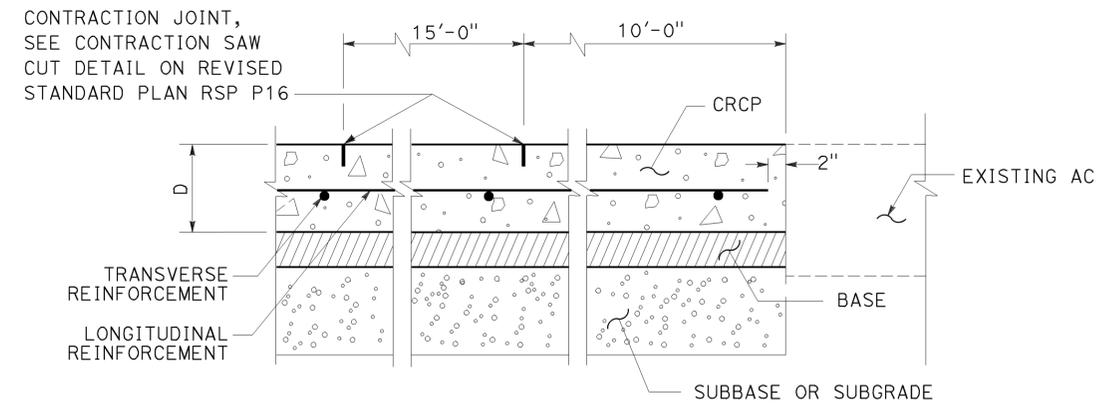
2010 REVISED STANDARD PLAN RSP P30

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	358	431

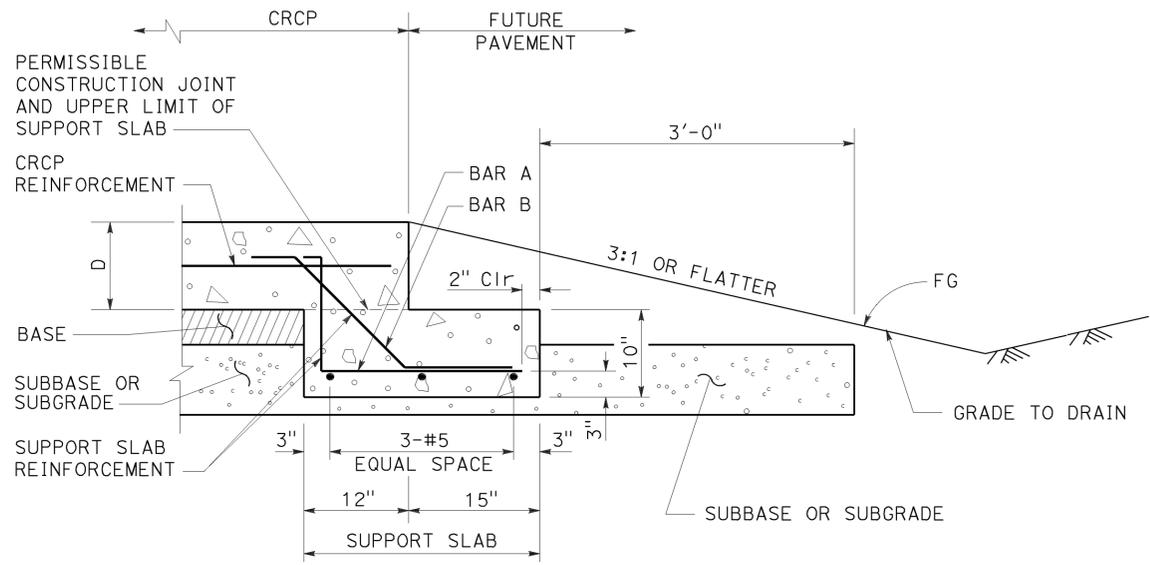
William K. Farnbach
 REGISTERED CIVIL ENGINEER
 July 19, 2013
 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



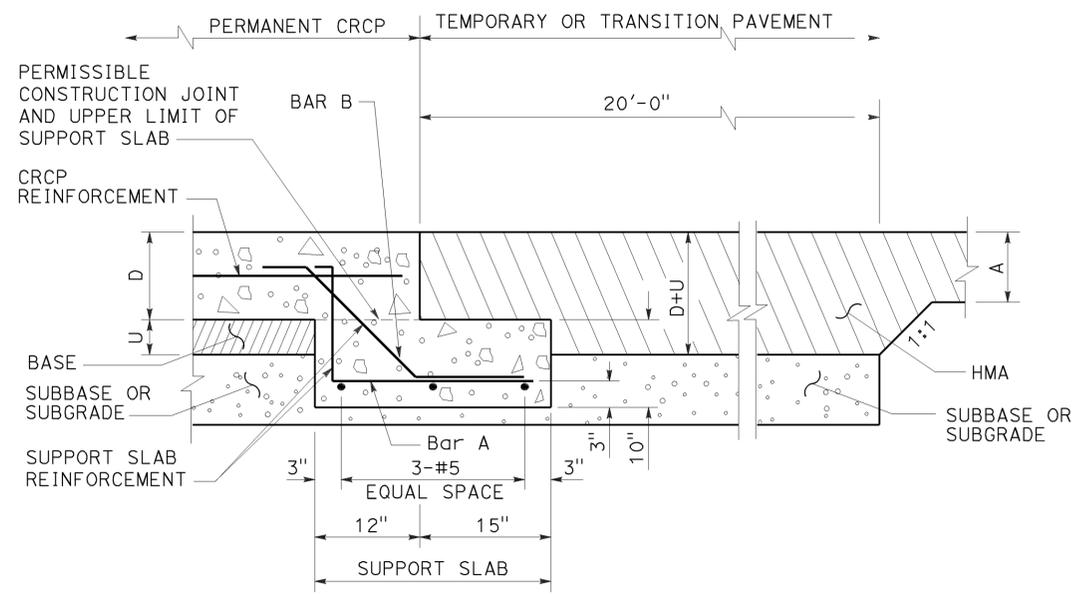
TO ACCOMPANY PLANS DATED 06-27-16



TERMINAL JOINT TYPE A
(For Existing AC)



TERMINAL JOINT TYPE B
(For Future Pavement)

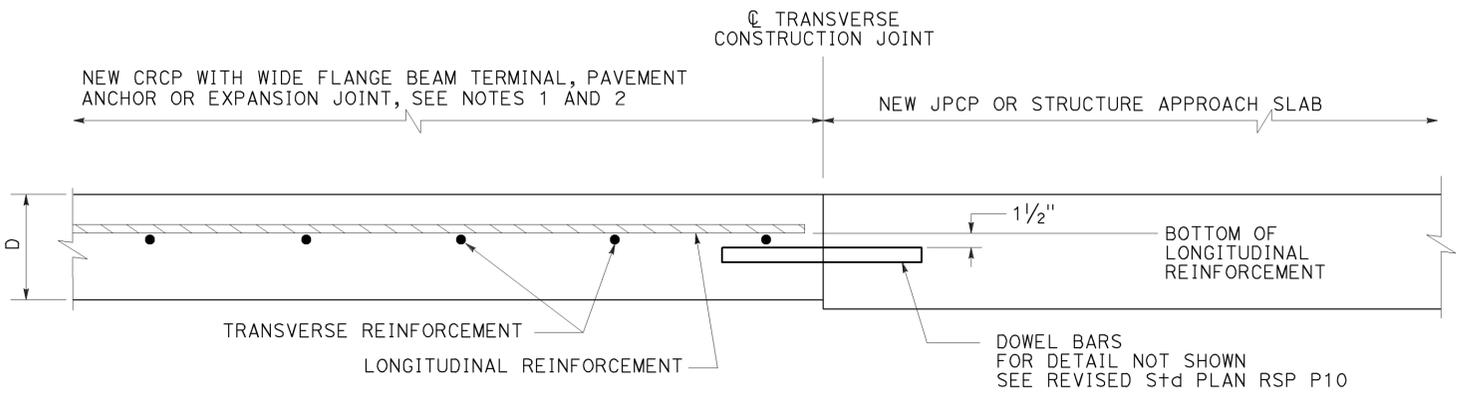


TERMINAL JOINT TYPE C
(For Temporary HMA Pavement)

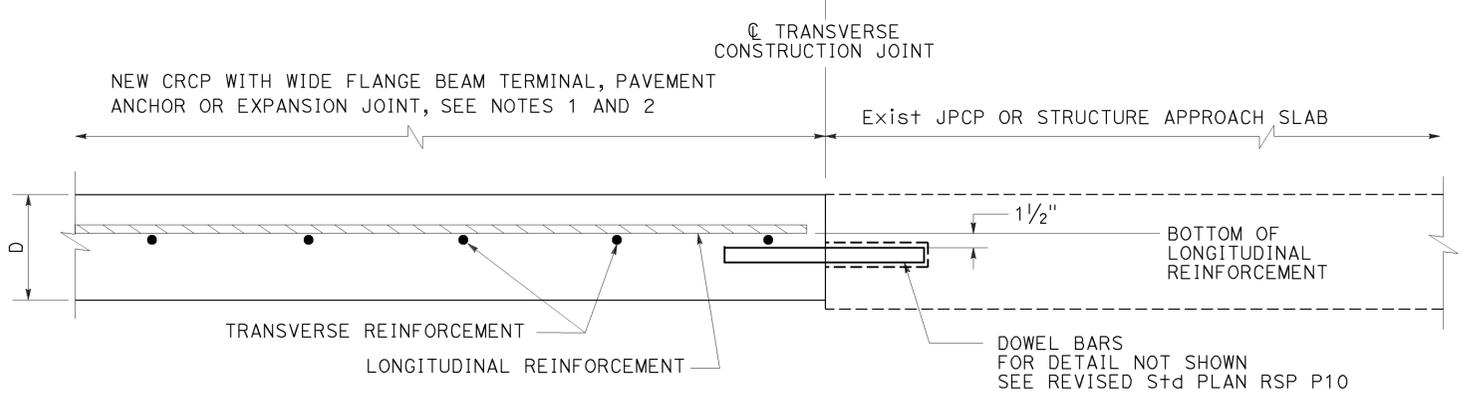
- NOTES:**
- For the locations of wide flange beam terminal, pavement anchors and expansion joints, see Projects Plans.
 - See Revised Standard Plans RSP P31B and RSP P32A.

ABBREVIATIONS

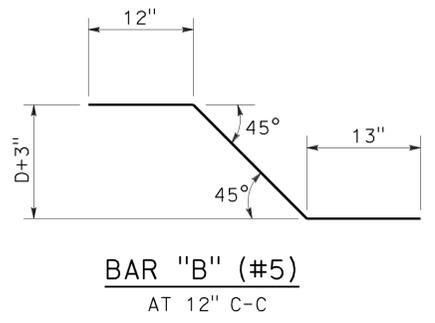
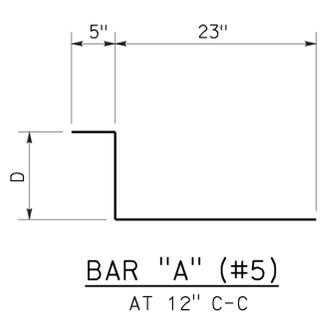
- D = Thickness of CRCP
 A = Depth of HMA as shown on Project Plans
 U = Thickness of Base



TERMINAL JOINT TYPE E
(For New JPCP or Structure Approach Slabs)



TERMINAL JOINT TYPE D
(For Existing JPCP or Structure Approach Slabs)



STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**CONTINUOUSLY REINFORCED
 CONCRETE PAVEMENT
 TERMINAL JOINT DETAILS**
 NO SCALE

RSP P31A DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN P31A DATED MAY 20, 2011 - PAGE 138 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP P31A

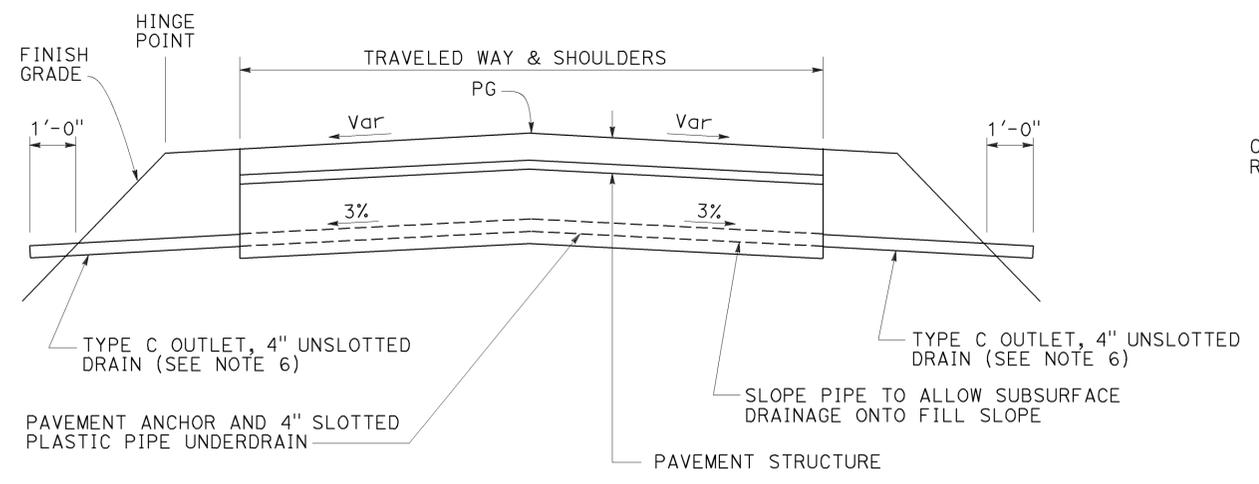
2010 REVISED STANDARD PLAN RSP P31A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	359	431

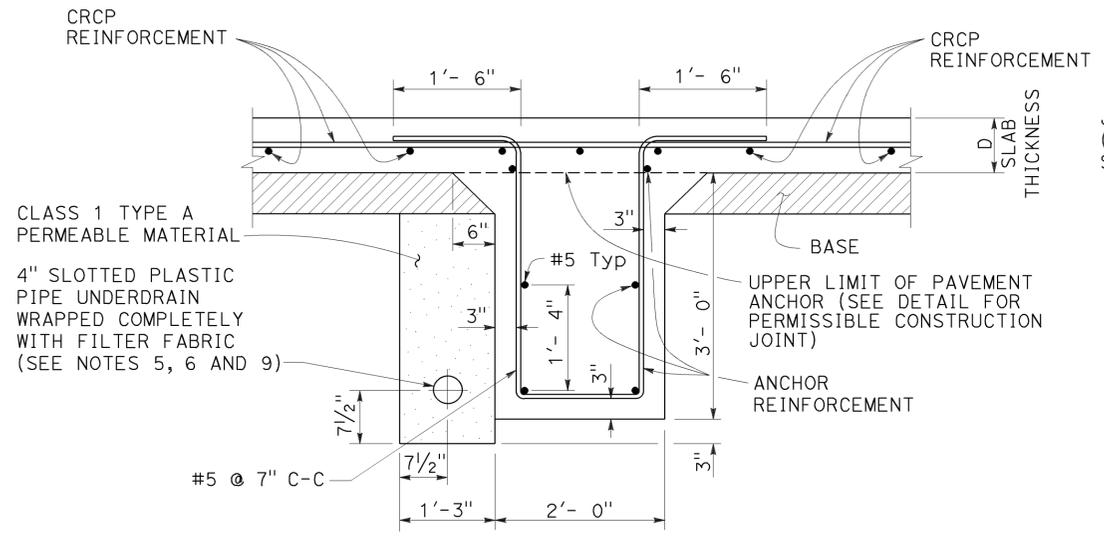
Florante E. Bautista
 REGISTERED CIVIL ENGINEER
 April 20, 2012
 PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



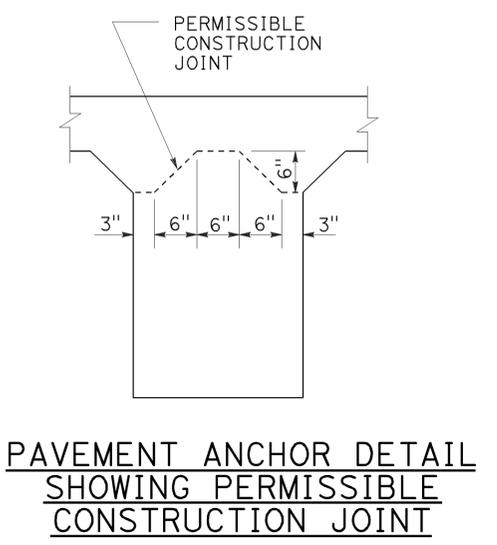
TO ACCOMPANY PLANS DATED 06-27-16



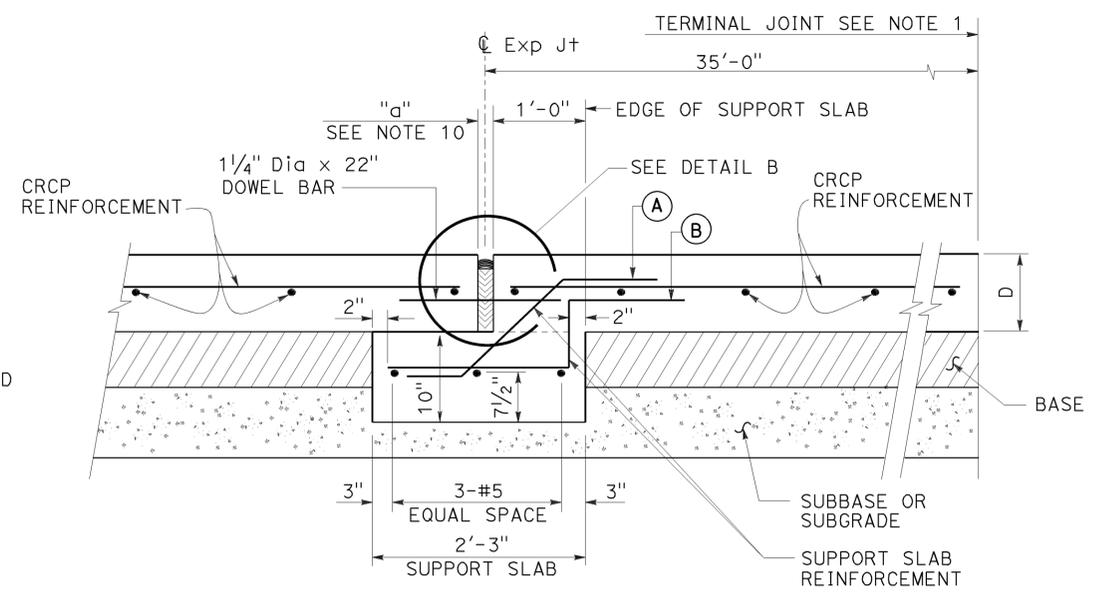
PAVEMENT ANCHOR PROFILE



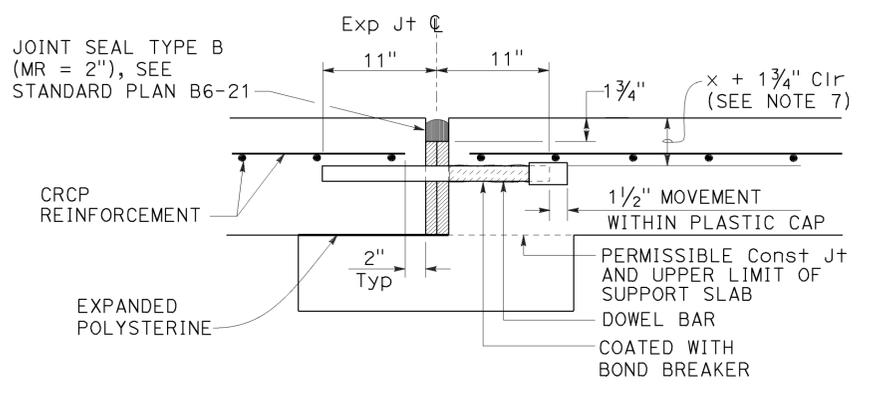
PAVEMENT ANCHOR



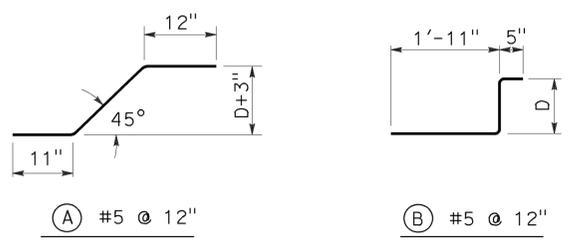
PAVEMENT ANCHOR DETAIL SHOWING PERMISSIBLE CONSTRUCTION JOINT



EXPANSION JOINT TYPE AN



DETAIL B
(For layout, tolerances, and other details not shown, see Revised Standard Plan RSP P10.)



REINFORCEMENT DETAIL

NOTES:

1. For the locations of the terminal joints, expansion joints and pavement anchors, see project plans.
2. The CRCP shall continue across the pavement anchor and expansion joints as shown.
3. Details of reinforcement, tie bars, and longitudinal joints (and if necessary, transverse construction joints) are shown on Revised Standard Plan RSP P4.
4. Transverse construction joints are not allowed within 20'-0" of the pavement anchor.
5. When placing pipe through concrete barrier, use 4" unslotted plastic pipe wrapped completely with 3/8" polystyrene.
6. See Standard Plan D99B for details not shown.
7. See Revised Standard Plan RSP P4 for "x".
8. D = thickness of CRCP
9. Place the 4" Slotted Plastic Pipe on the high side of the longitudinal grade.
10. See Standard Plan B6-21 for "a".

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**CONTINUOUSLY REINFORCED
CONCRETE PAVEMENT-
EXPANSION JOINT AND ANCHOR DETAILS**

NO SCALE

RSP P31B DATED APRIL 20, 2012 SUPERSEDES STANDARD PLAN P31B
DATED MAY 20, 2011 - PAGE 139 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP P31B

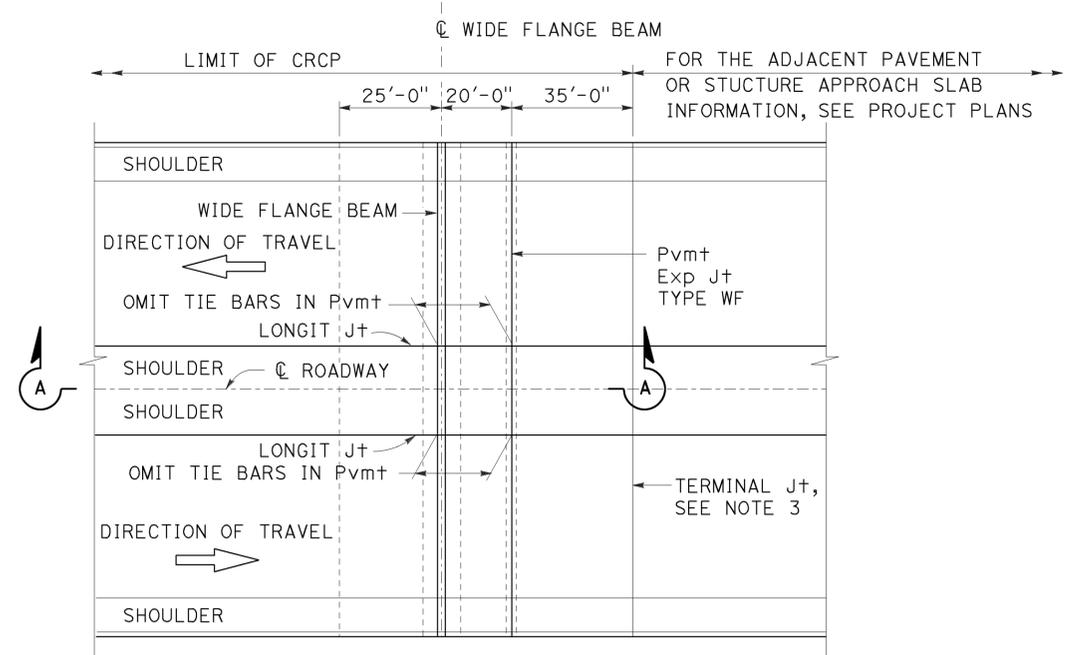
2010 REVISED STANDARD PLAN RSP P31B

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	360	431

Florante E. Bautista
 REGISTERED CIVIL ENGINEER
 April 20, 2012
 PLANS APPROVAL DATE
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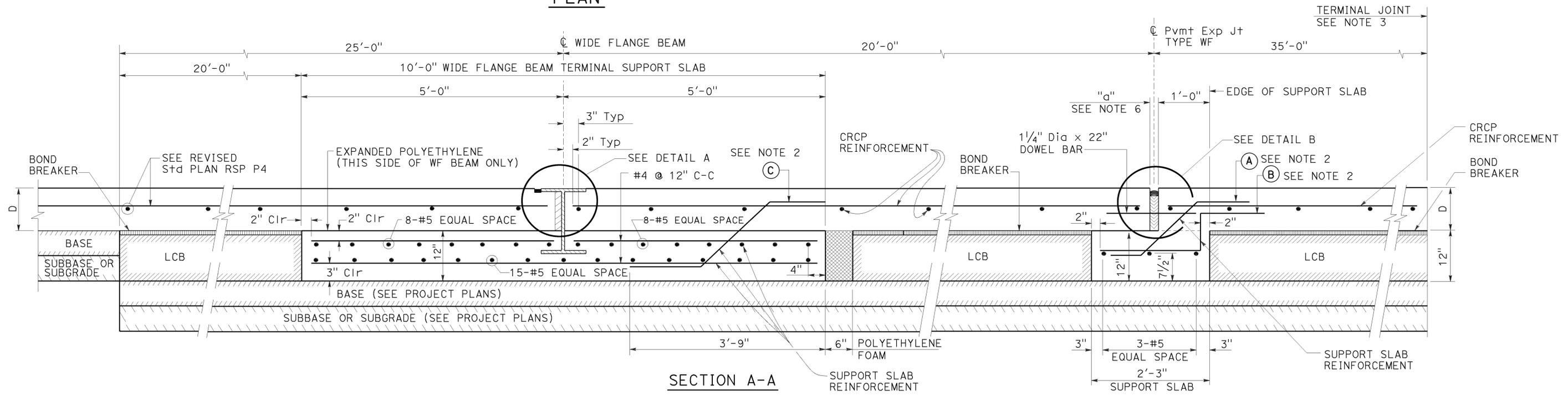
TO ACCOMPANY PLANS DATED 06-27-16



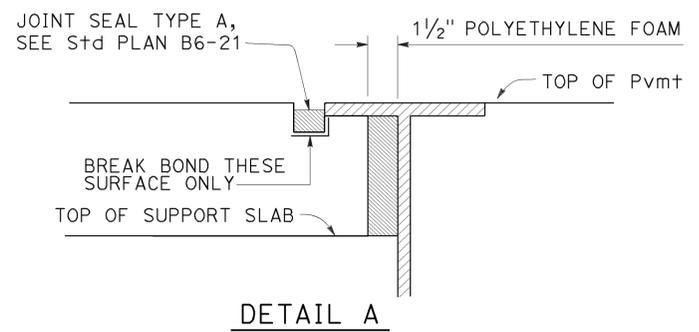
PLAN

NOTES:

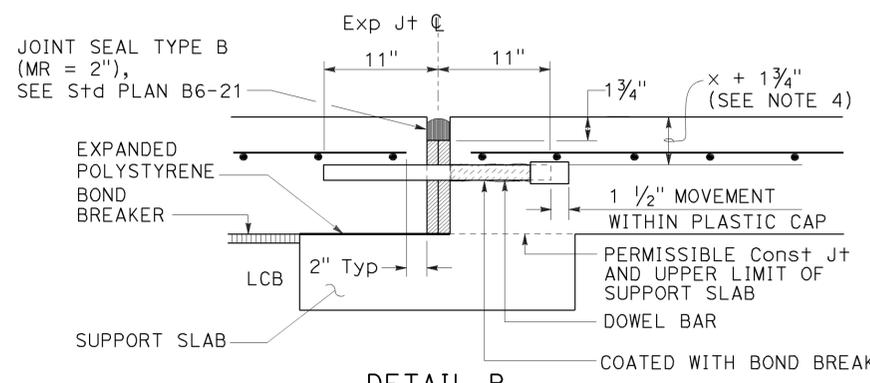
1. For additional details on reinforcement member quantities of the wide flange beam terminal and Pavement Expansion Joint Type WF, see Revised Standard Plan RSP P32B.
2. For reinforcement (A), (B), and (C) Details, see Revised Standard Plan RSP P32B.
3. For the Pavement Terminal Joint Details, see Standard Plan P31A. For Pavement Terminal Joint Type, see Project Plans.
4. See Revised Standard Plan RSP P4 for "x".
5. D = Thickness of CRCP
6. See Standard Plan B6-21 for "a".



SECTION A-A



DETAIL A



DETAIL B

For layout, tolerances, and other details not shown see Revised Std Plan RSP P10.

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**CONTINUOUSLY REINFORCED
 CONCRETE PAVEMENT -
 WIDE FLANGE BEAM TERMINALS**

NO SCALE

RSP P32A DATED APRIL 20, 2012 SUPERSEDES STANDARD PLAN P32A
 DATED MAY 20, 2011 - PAGE 140 OF THE STANDARD PLANS BOOK DATED 2010.
REVISED STANDARD PLAN RSP P32A

2010 REVISED STANDARD PLAN RSP P32A

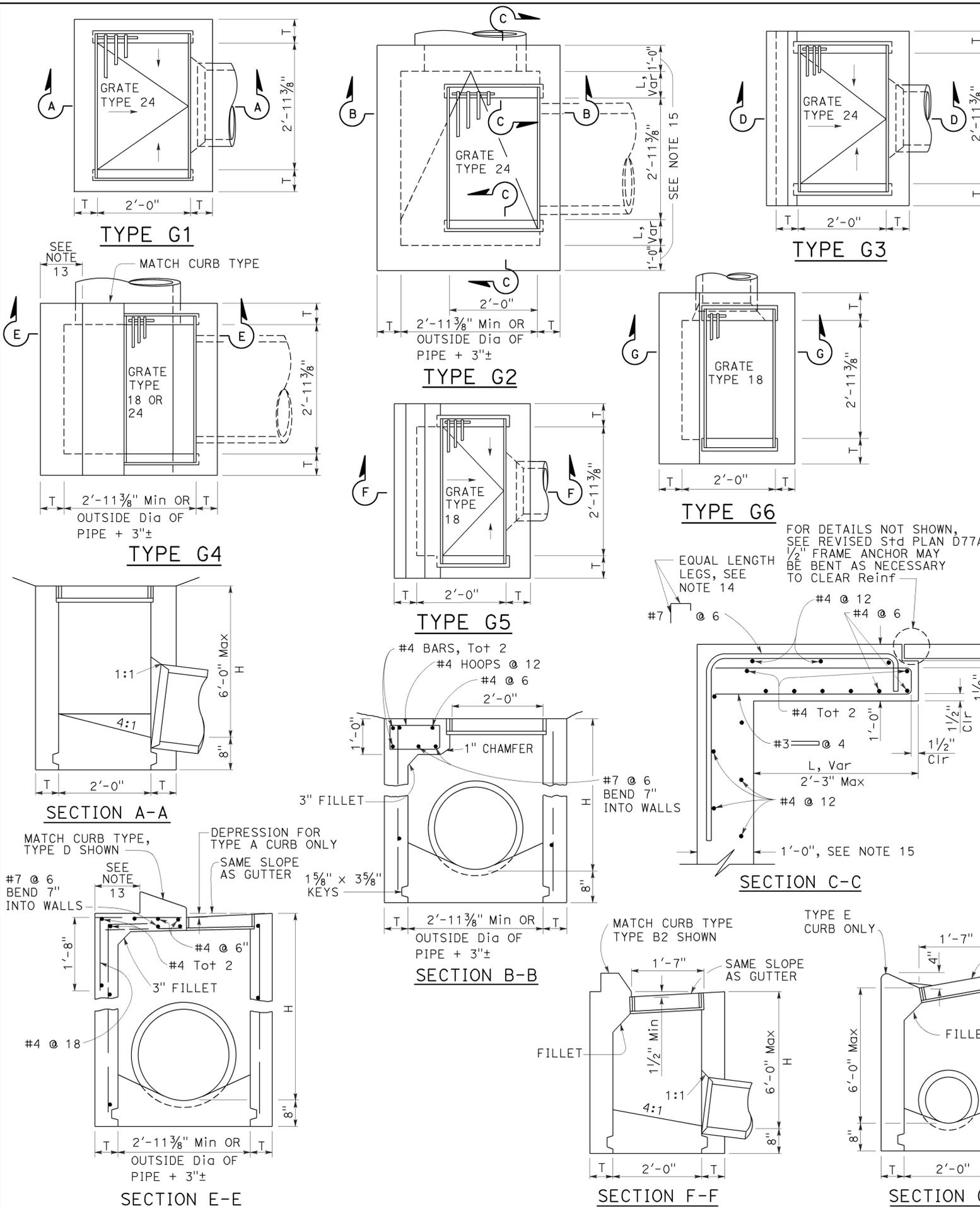
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	361	431

Glenn DeCou
REGISTERED CIVIL ENGINEER

October 19, 2012
PLANS APPROVAL DATE

Glenn DeCou
No. C34547
Exp. 9-30-13
CIVIL
STATE OF CALIFORNIA

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NOTES:

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

TABLE A

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

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

NOTE A:

Maximum allowable height 6'-0".

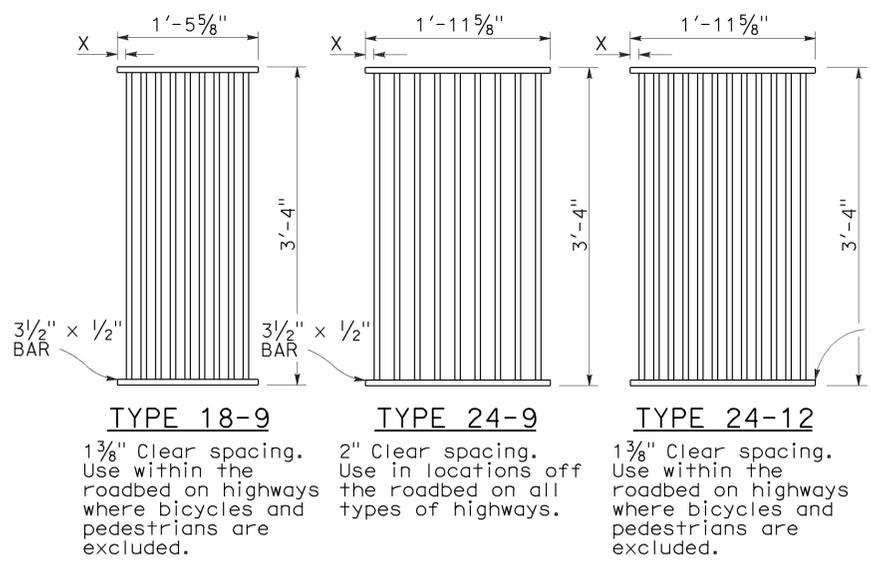
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DRAINAGE INLETS
NO SCALE

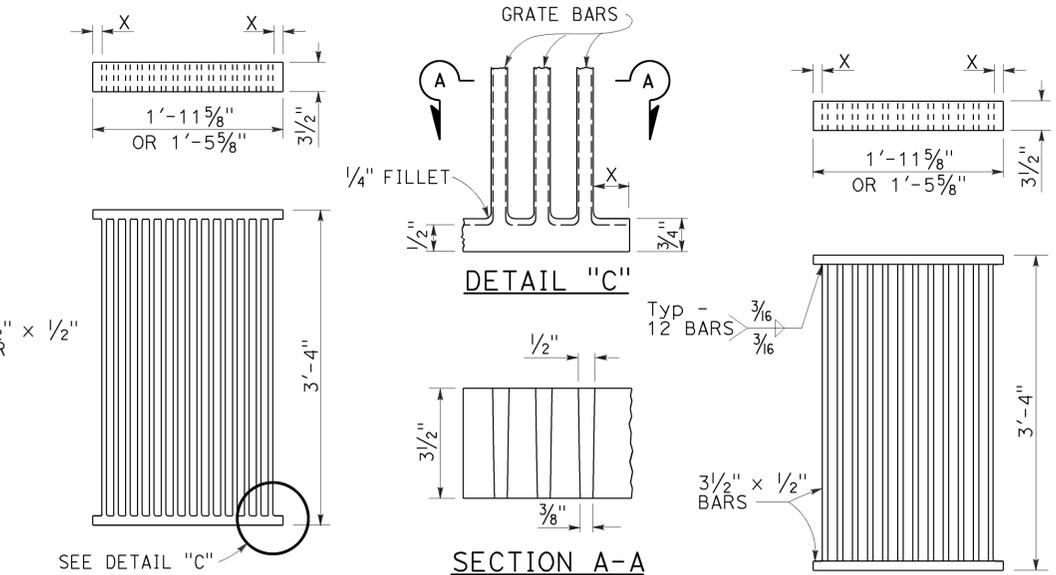
RSP D73 DATED OCTOBER 19, 2012 SUPERSEDES STANDARD PLAN D73 DATED MAY 20, 2011 - PAGE 156 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP D73

2010 REVISED STANDARD PLAN RSP D73

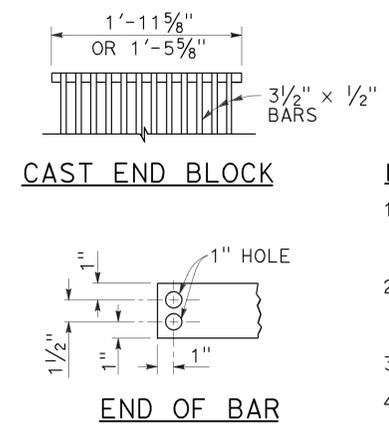


RECTANGULAR GRATE DETAILS
(See table below)



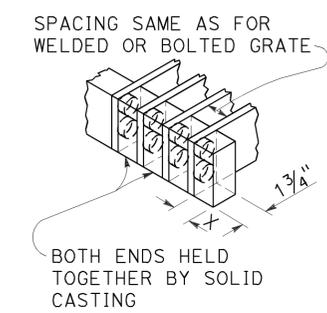
ALTERNATIVE CAST DUCTILE IRON GRATE OR CAST CARBON STEEL GRATE

ALTERNATIVE WELDED GRATE



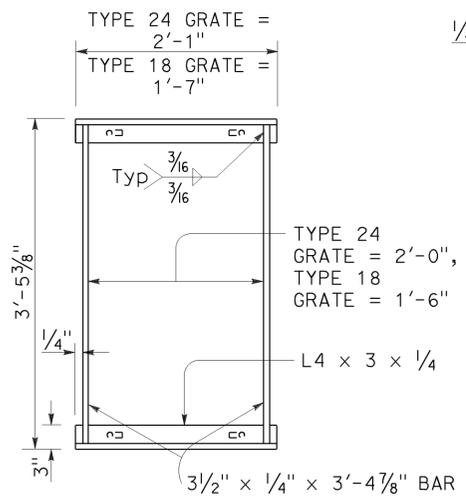
CAST END BLOCK

END OF BAR

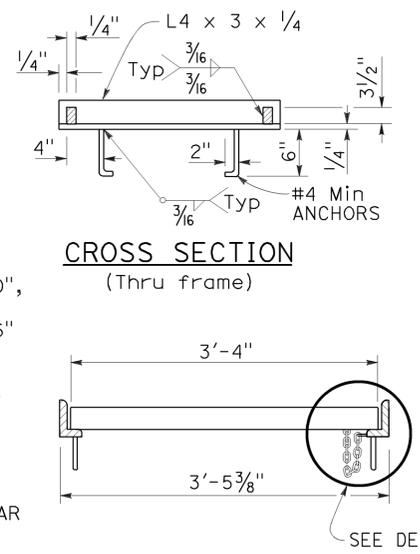


ALTERNATIVE CAST DUCTILE IRON OR CAST CARBON STEEL END BLOCK GRATE

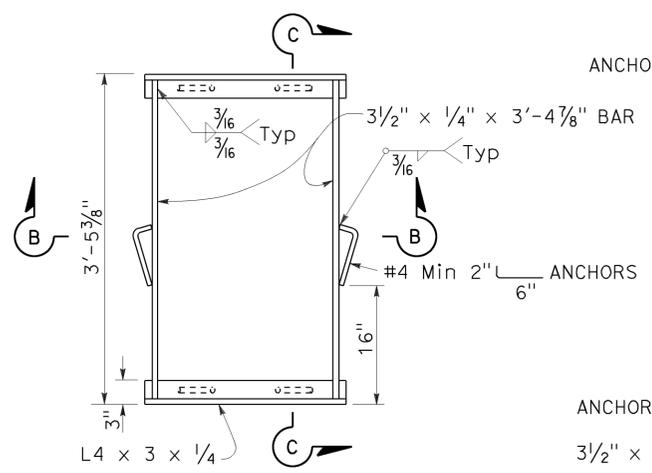
- NOTES:**
- Grate type numbers refer to approximate width of grate in inches and number of bars, respectively.
 - Contractor has the option of using cast ductile iron, cast carbon steel, welded, bolted, or cast end block grate.
 - Rounded top of bars optional on all grates.
 - Pipe inlets with a grate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



TYPICAL FRAME



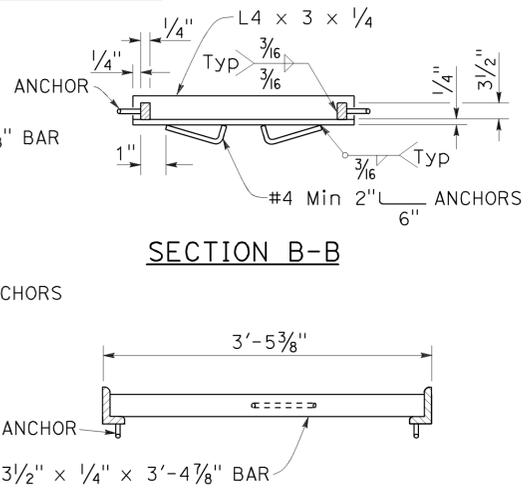
LONGITUDINAL SECTION
(Thru frame and grate)



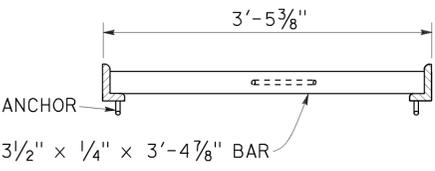
TYPICAL FRAME

ALTERNATIVE ANCHOR FOR RECTANGULAR FRAME

(For details not shown, See Rectangular Frame Details)



SECTION B-B



SECTION C-C

RECTANGULAR FRAME DETAILS

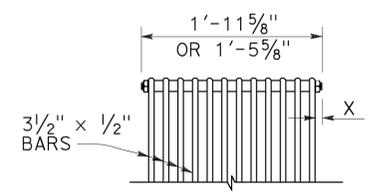
(For all rectangular grates)

GRATE BAR SPACING TABLE

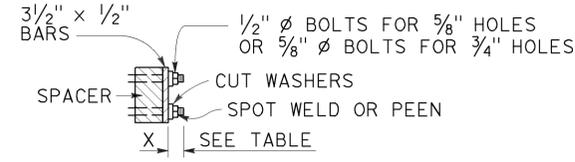
TYPE	NO. OF BARS	CLEAR BAR SPACING	X
18-9	9	1 3/8"	1 1/16"
24-9	9	2"	1 9/16"
24-12	12	1 3/8"	1 1/4"

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

INLET TYPE	GRATE TYPE	NO. OF GRATES	WEIGHT LB
GDO	24-12	2	634
GOL-7	24-12	1	326
GOL-10	24-12	1	326
G0,G1,G2,G3,G4 (TYPE 24)	24-9	1	263
	24-12	1	326
G4 (TYPE 18),G5,G6	18-9	1	249
GT1	18-9	2	498
GT2	18-9	2	498
GT3	24-12	2	652
GT4	24-12	2	652
TRASH RACK			22
GRATE CHAIN			3

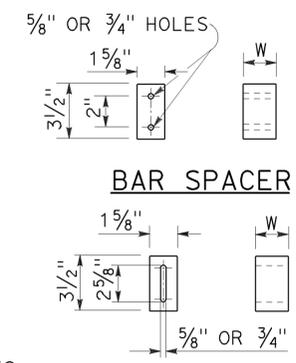


BOLTED END BLOCK



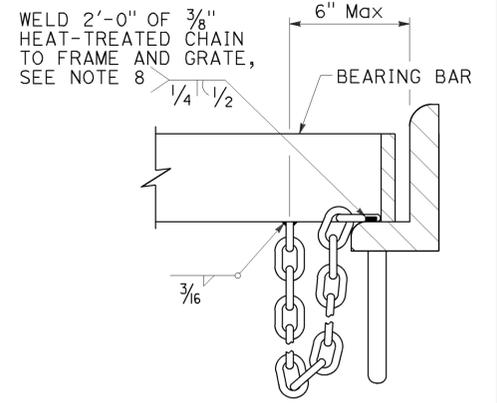
BOLTING DETAIL

ALTERNATIVE BOLTED GRATE



BAR SPACER

ALTERNATIVE SPACER
W = 1 3/8" or 2"



DETAIL "D"
(Steel grates only)

GRATE DETAILS No. 1

NO SCALE

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

(See Note 7)

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

REVISED STANDARD PLAN RSP D77A

2010 REVISED STANDARD PLAN RSP D77A

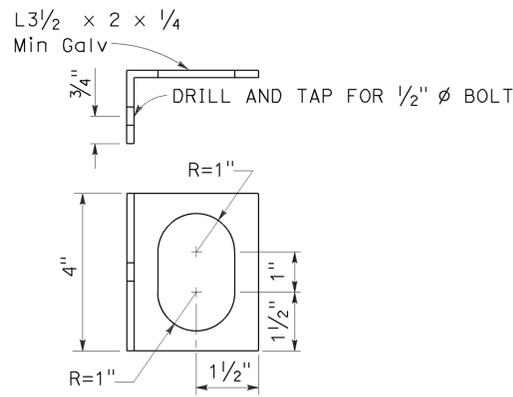
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	363	431

REGISTERED CIVIL ENGINEER
 Bruce D. Swanger
 No. C61257
 Exp. 6-30-17
 CIVIL
 STATE OF CALIFORNIA

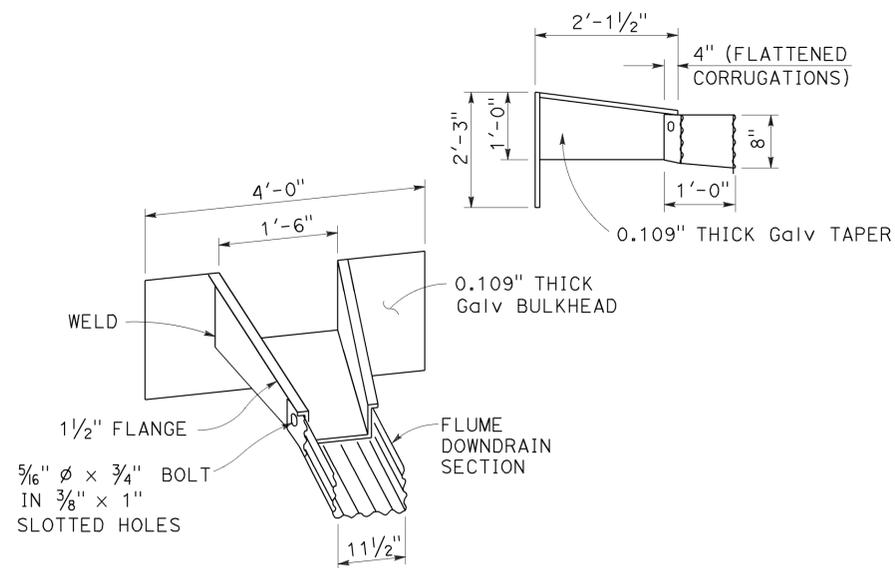
October 30, 2015
 PLANS APPROVAL DATE

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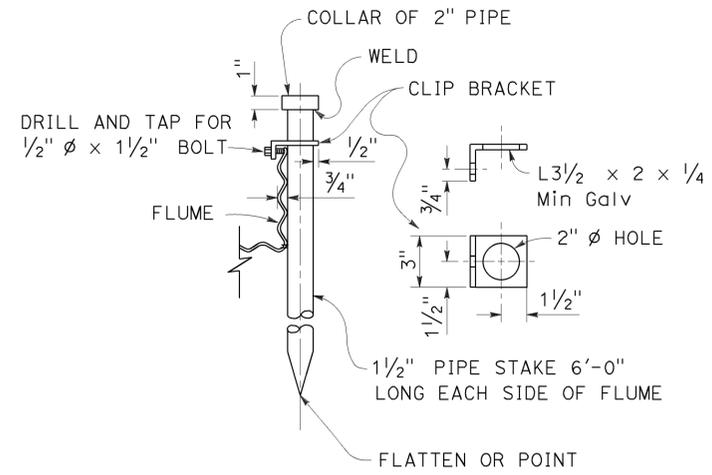
TO ACCOMPANY PLANS DATED 06-27-16



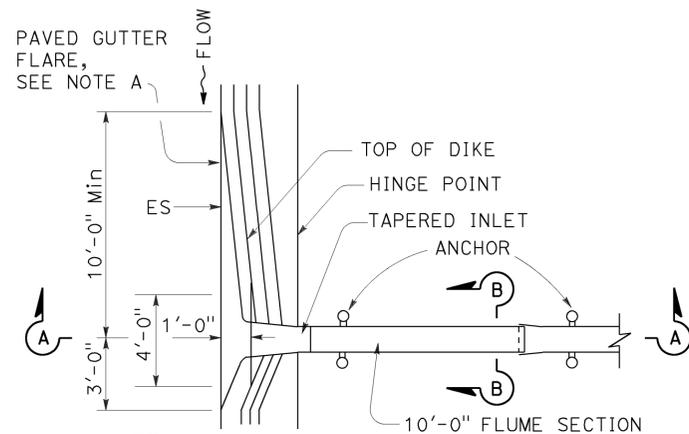
ALTERNATIVE CLIP BRACKET DETAIL



TAPERED INLET

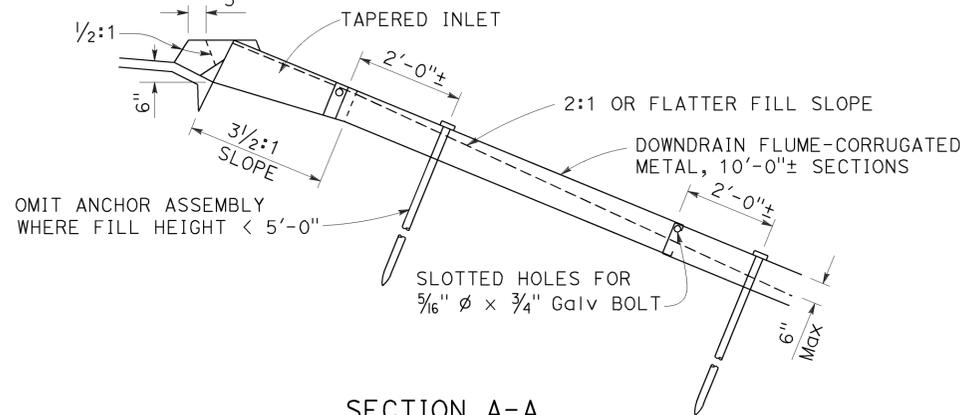


PIPE STAKE ANCHOR DETAIL

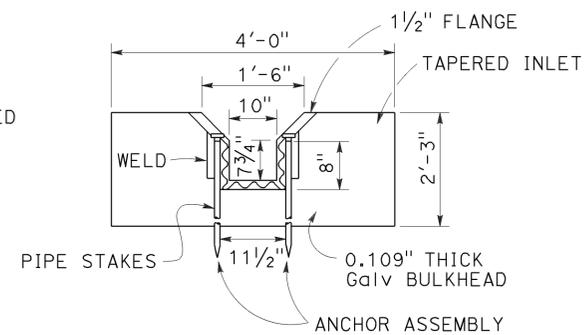


NOTE A
In sag location, use 10'-0" length of paved gutter flare on both sides of inlet.

PLAN

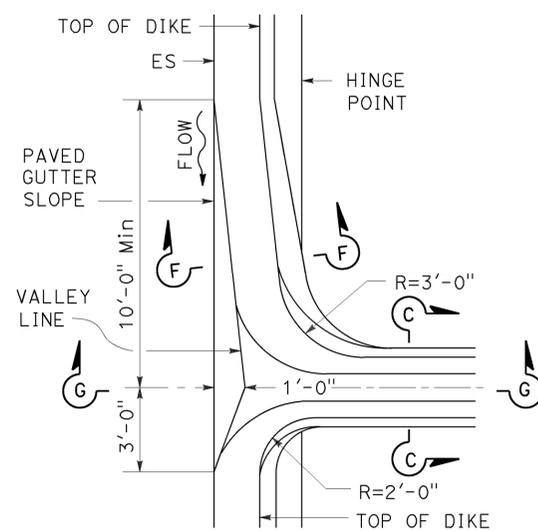


SECTION A-A



SECTION B-B

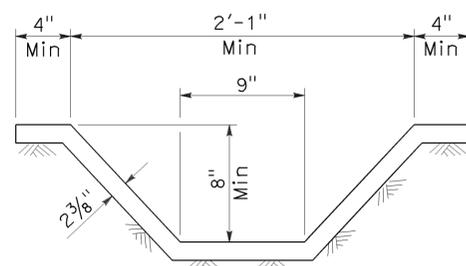
TAPERED INLET AND FLUME DOWNDRAIN



PLAN

MOUNTABLE DIKE

HOT MIX ASPHALT OVERSIDE DRAINS

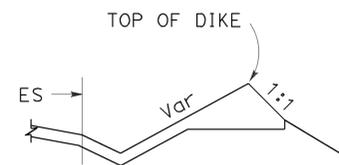


SECTION C-C

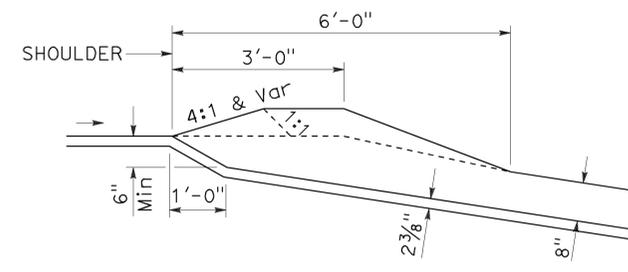
See Note 1

NOTE:

1. Cross section of slope ditch may be semicircular, vee or trapezoidal.



SECTION F-F



SECTION G-G

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
OVERSIDE DRAINS
 NO SCALE

RSP D87D DATED OCTOBER 30, 2015 SUPERSEDES STANDARD PLAN D87D DATED MAY 20, 2011 - PAGE 185 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP D87D

2010 REVISED STANDARD PLAN RSP D87D

Gregory A. Balzer
 LICENSED LANDSCAPE ARCHITECT

July 19, 2013
 PLANS APPROVAL DATE

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TO ACCOMPANY PLANS DATED 06-27-16

2010 REVISED STANDARD PLAN RSP H1

A

AB AGGREGATE BASE
 ABS ACRYLONITRILE-BUTADIENE-STYRENE
 AC ASPHALT CONCRETE
 ACC ARMOR-CLAD CONDUCTORS
 Adj ADJACENT/ADJUSTABLE
 AIC AUXILIARY IRRIGATION CONTROLLER
 Alt ALTERNATIVE
 AMEND AMENDMENT
 ARV AIR RELEASE VALVE
 AUTO AUTOMATIC
 AUX AUXILIARY
 AVB ATMOSPHERIC VACUUM BREAKER

B

B&B BALLED AND BURLAPPED
 B/B BRASS/BRONZE
 B/B/PL BRASS/BRONZE/PLASTIC
 B/PL BRASS/PLASTIC
 BFM BONDED FIBER MATRIX
 Bit Ctd BITUMINOUS COATED
 BP BOOSTER PUMP
 BPA BACKFLOW PREVENTER ASSEMBLY
 BPE BACKFLOW PREVENTER ENCLOSURE
 BV BALL VALVE

C

C CONDUIT
 CAP CORRUGATED ALUMINUM PIPE
 CARV COMBINATION AIR RELEASE VALVE
 CB COUPLING BAND
 CCA CAM COUPLER ASSEMBLY
 CEC CONTROLLER ENCLOSURE CABINET
 CHDPE CORRUGATED HIGH DENSITY POLYETHYLENE
 CL CHAIN LINK
 CNC CONTROL AND NEUTRAL CONDUCTORS
 Conc CONCRETE
 CP COPPER PIPE
 CS COMPOST SOCK
 CSP CORRUGATED STEEL PIPE
 CST CENTER STRIP
 CV CHECK VALVE

D

Dia DIAMETER
 DIP DUCTILE IRON PIPE
 DIT DRIP IRRIGATION TUBING
 DG DECOMPOSED GRANITE
 DN DIAMETER NOMINAL
 DVA DRIP VALVE ASSEMBLY

E

EC EROSION CONTROL
 ECTC EROSION CONTROL TECHNOLOGY COUNCIL
 Elect ELECTRIC/ELECTRICAL
 Elev ELEVATION
 ELL ELBOW
 ENCL ENCLOSURE
 EP EDGE OF PAVEMENT
 ES EDGE OF SHOULDER
 EST END STRIP
 ESTB ESTABLISHMENT
 ETW EDGE OF TRAVELED WAY

F

F FULL CIRCLE
 F/P FULL/PART CIRCLE
 FCV FLOW CONTROL VALVE
 FERT FERTILIZER
 FG FINISHED GRADE
 FH FLEXIBLE HOSE
 FIPT FEMALE IRON PIPE THREAD
 FIS FERTILIZER INJECTOR SYSTEM
 FL FLOW LINE
 FR FIBER ROLL
 FS FLOW SENSOR
 FSC FLOW SENSOR CABLE
 FV FLUSH VALVE

G

Galv GALVANIZED
 GARV GARDEN VALVE
 GARVA GARDEN VALVE ASSEMBLY
 GM GRAVEL MULCH
 GPH GALLONS PER HOUR
 GPM GALLONS PER MINUTE
 GSP GALVANIZED STEEL PIPE
 GV GATE VALVE

H

H HALF CIRCLE
 HDPE HIGH DENSITY POLYETHYLENE
 HP HORSEPOWER/HINGE POINT
 HPL HIGH PRESSURE LINE
 Hwy HIGHWAY

I

IC IRRIGATION CONTROLLER
 ICC IRRIGATION CONTROLLER(S)
 IN CONTROLLER ENCLOSURE CABINET
 ID INSIDE DIAMETER
 IFS IRRIGATION FILTRATION SYSTEM
 IPS IRON PIPE SIZE
 IPT IRON PIPE THREAD
 Irr IRRIGATION

L

L LENGTH

M

Max MAXIMUM
 MBGR METAL BEAM GUARD RAILING
 MCV MANUAL CONTROL VALVE
 MIC MASTER IRRIGATION CONTROLLER
 Min MINIMUM
 MIPT MALE IRON PIPE THREAD
 Misc MISCELLANEOUS
 MtI MATERIAL
 MVP MAINTENANCE VEHICLE PULLOUT

N

NCN NO COMMON NAME
 NL NOZZLE LINE
 No. NUMBER
 NPT NATIONAL PIPE THREAD

O

O/C ON CENTER
 OD OUTSIDE DIAMETER
 OL OVERLAP

P

P PART CIRCLE
 PB PULL BOX
 PCC PORTLAND CEMENT CONCRETE
 PE POLYETHYLENE
 Pkt+ PACKET
 PL PLASTIC
 PLS PURE LIVE SEED
 PLT PLANT/PLANTING
 PLT ESTB PLANT ESTABLISHMENT
 PM POST MILE
 PR PRESSURE RATED
 PRLV PRESSURE RELIEF VALVE
 PRV PRESSURE REGULATING VALVE
 PVC POLYVINYL CHLORIDE
 Pvm+ PAVEMENT

Q

Q QUARTER CIRCLE
 QCV QUICK COUPLING VALVE

NOTE:
 For additional abbreviations,
 see Standard Plans A10A and A10B.

R

R RADIUS
 RCP REINFORCED CONCRETE PIPE
 RCV REMOTE CONTROL VALVE
 RCVM REMOTE CONTROL VALVE (MASTER)
 RCVMF REMOTE CONTROL VALVE (MASTER) W/FLOW SENSOR
 RCVP REMOTE CONTROL VALVE W/PRESSURE REGULATOR
 RCW RECYCLED WATER
 RECP ROLLED EROSION CONTROL PRODUCT
 REQ REQUIRED
 RICS REMOTE IRRIGATION CONTROL SYSTEM
 R/W RIGHT OF WAY

S

S SLIP
 SCH SCHEDULE
 SF STATE-FURNISHED
 Shld SHOULDER
 Sq SQUARE
 SST SIDE STRIP
 Sta STATION
 Std STANDARD
 SW SIDEWALK/SOUND WALL

T

T THIRD CIRCLE/THREAD
 TLS TRUCK LOADING STANDPIPE
 TQ THREE QUARTER CIRCLE
 TRM TURF REINFORCEMENT MAT
 TT TWO-THIRDS CIRCLE
 TWSA TREE WELL SPRINKLER ASSEMBLY
 Typ TYPICAL

U

UG UNDERGROUND

W

W WIDTH
 W/ WITH
 WM WATER METER
 WS WYE STRAINER
 WSA WYE STRAINER ASSEMBLY
 WSP WELDED STEEL PIPE
 WWM WELDED WIRE MESH

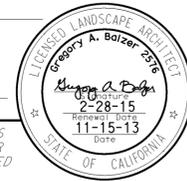
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**LANDSCAPE AND
 EROSION CONTROL ABBREVIATIONS**
 NO SCALE

RSP H1 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN H1
 DATED MAY 20, 2011 - PAGE 218 OF THE STANDARD PLANS BOOK DATED 2010.

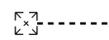
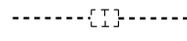
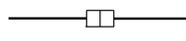
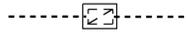
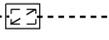
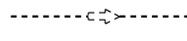
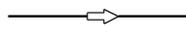
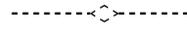
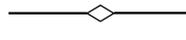
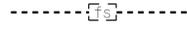
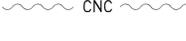
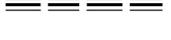
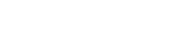
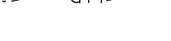
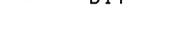
REVISED STANDARD PLAN RSP H1

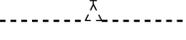
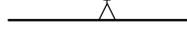
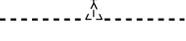
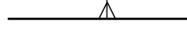
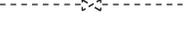
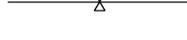
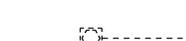
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	365	431

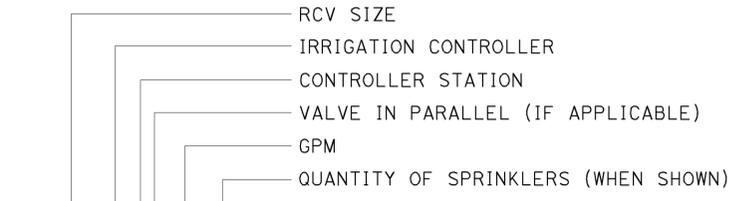

 LICENSED LANDSCAPE ARCHITECT
 November 15, 2013
 PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



TO ACCOMPANY PLANS DATED 06-27-16

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

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



VALVE CODE

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

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

REVISED STANDARD PLAN RSP H2

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
LANDSCAPE AND EROSION CONTROL SYMBOLS
NO SCALE

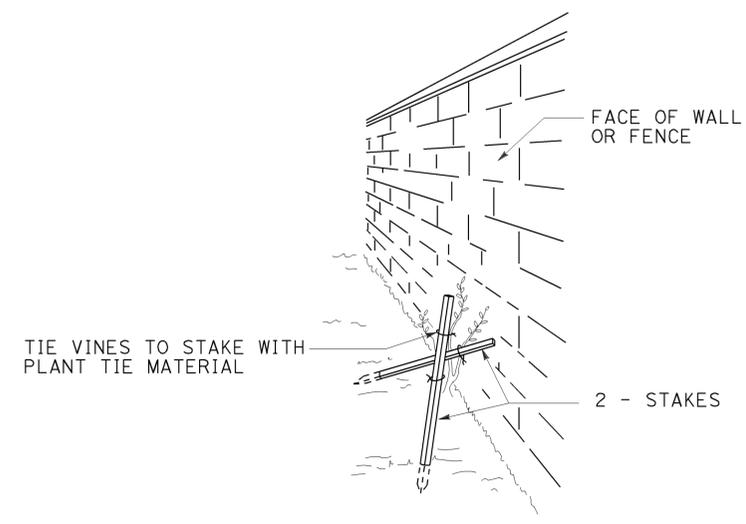
2010 REVISED STANDARD PLAN RSP H2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	366	431

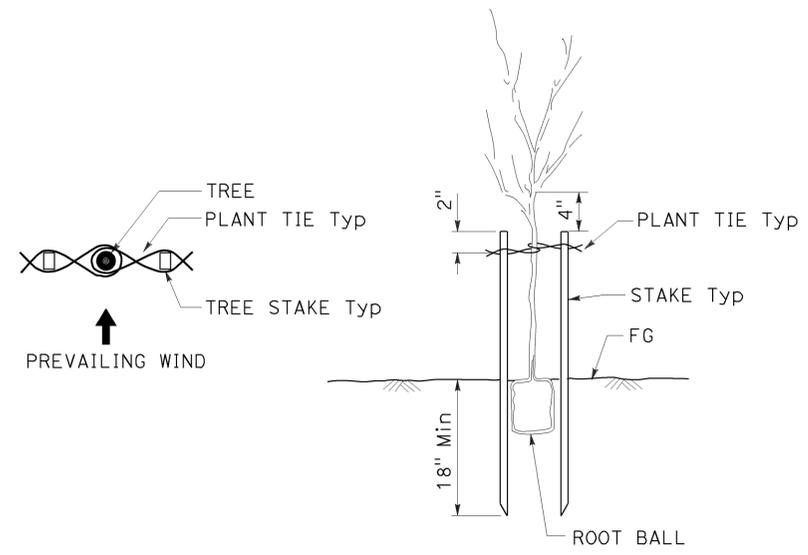
Gregory A. Balzer
 LICENSED LANDSCAPE ARCHITECT
 July 19, 2013
 PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



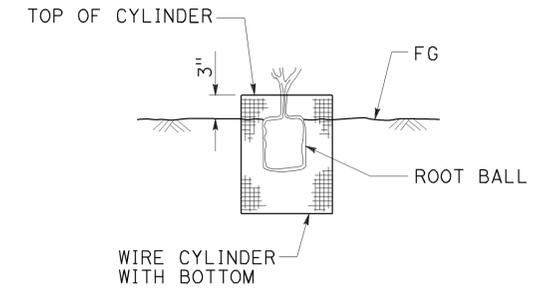
TO ACCOMPANY PLANS DATED 06-27-16



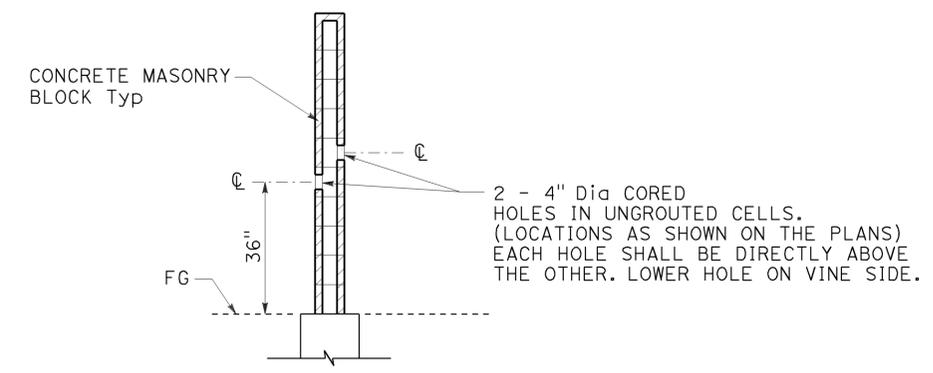
**PERSPECTIVE
VINE STAKING**



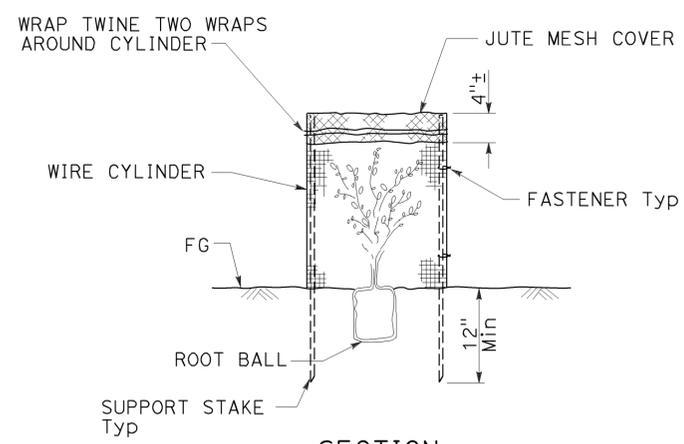
TREE STAKING



**SECTION
ROOT PROTECTOR**



**SECTION
CORE HOLE (VINE)**



**SECTION
FOLIAGE PROTECTOR**

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
LANDSCAPE DETAILS
 NO SCALE

RSP H4 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN H4
 DATED MAY 20, 2011 - PAGE 221 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP H4

2010 REVISED STANDARD PLAN RSP H4

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	367	431

Gregory A. Balzer
 LICENSED LANDSCAPE ARCHITECT

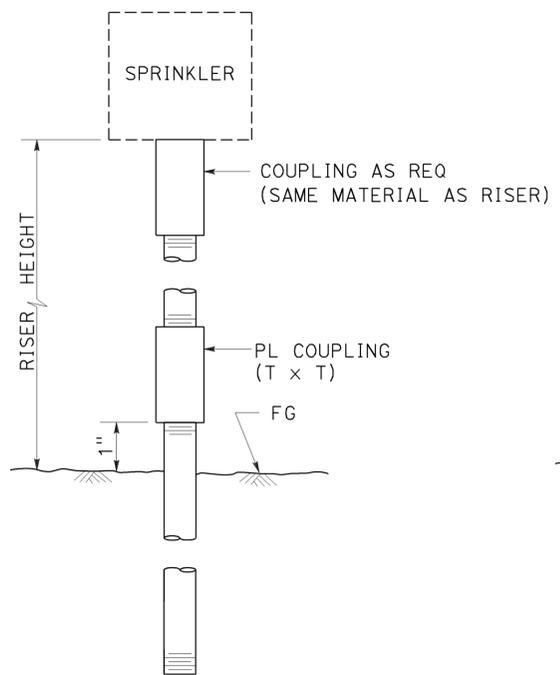
July 19, 2013
 PLANS APPROVAL DATE

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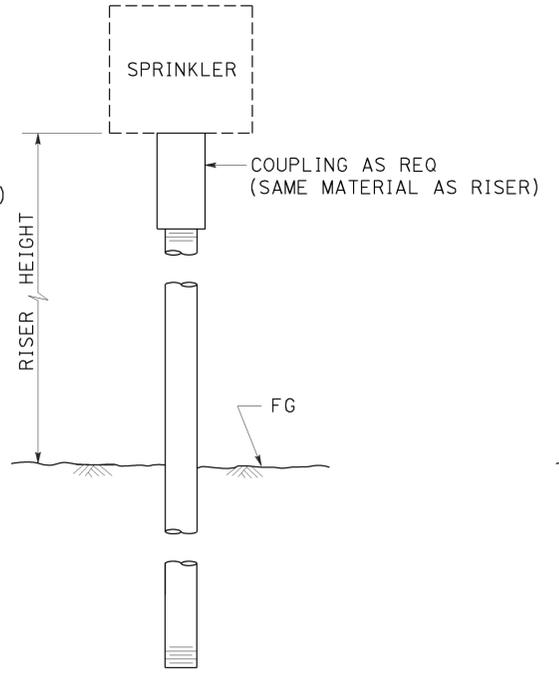
TO ACCOMPANY PLANS DATED 06-27-16

2-28-15
 7-19-13
 Date

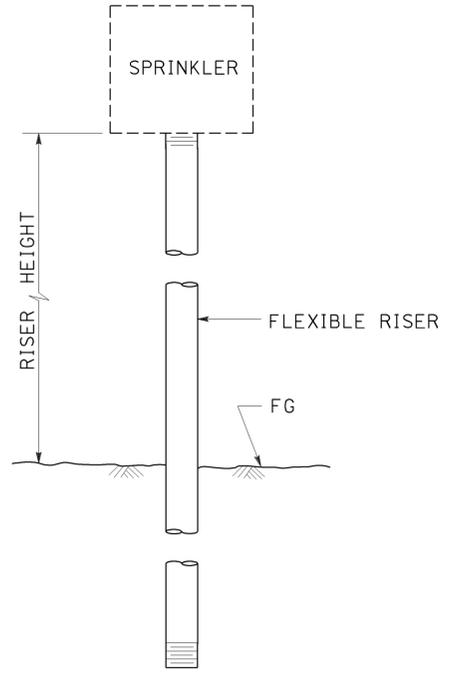
2010 REVISED STANDARD PLAN RSP H5



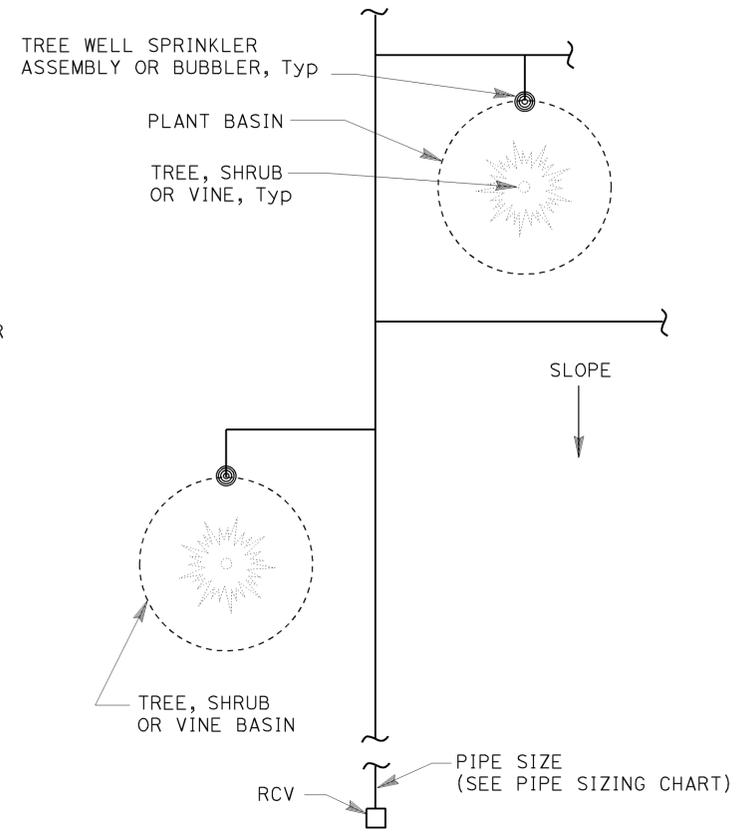
ELEVATION
 RISER SPRINKLER
 ASSEMBLY TYPE I



ELEVATION
 RISER SPRINKLER
 ASSEMBLY TYPE II

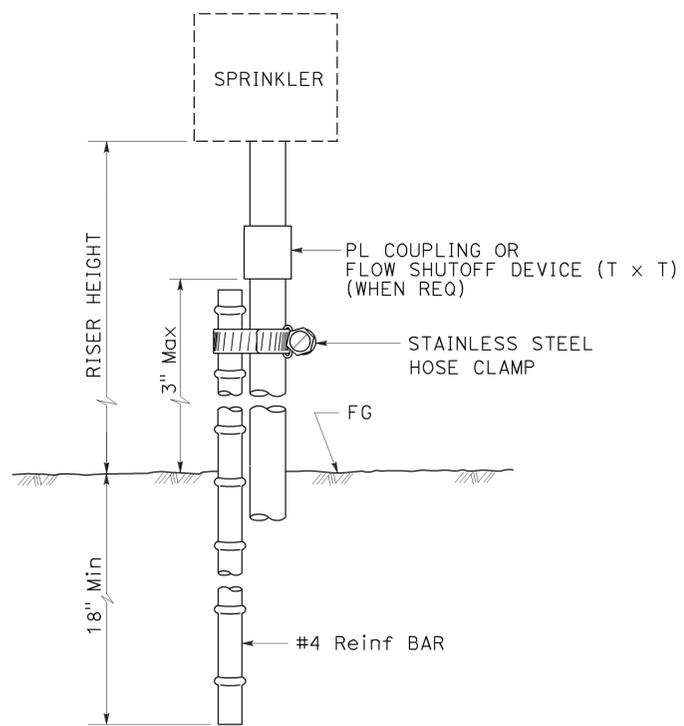


ELEVATION
 RISER SPRINKLER
 ASSEMBLY TYPE III

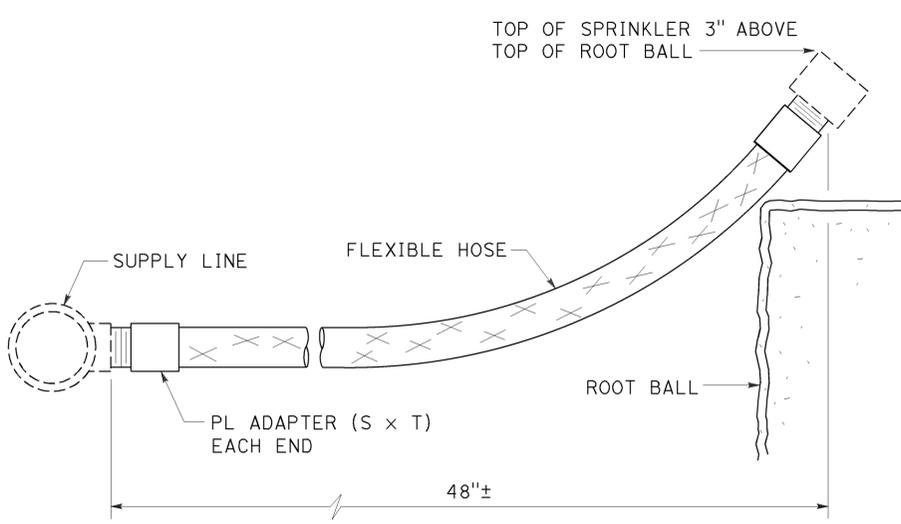


PLAN

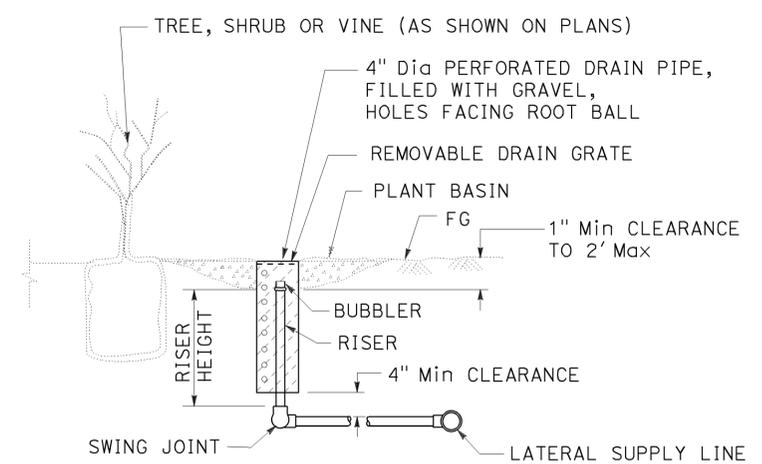
- NOTES:**
1. Install tree well sprinkler assembly on up-hill side of plant when on slope.
 2. Install bubbler within basin.



ELEVATION
 RISER SPRINKLER
 ASSEMBLY TYPE IV



ELEVATION
 RISER SPRINKLER
 ASSEMBLY TYPE V



SECTION
 TREE WELL SPRINKLER ASSEMBLY

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

LANDSCAPE DETAILS

NO SCALE

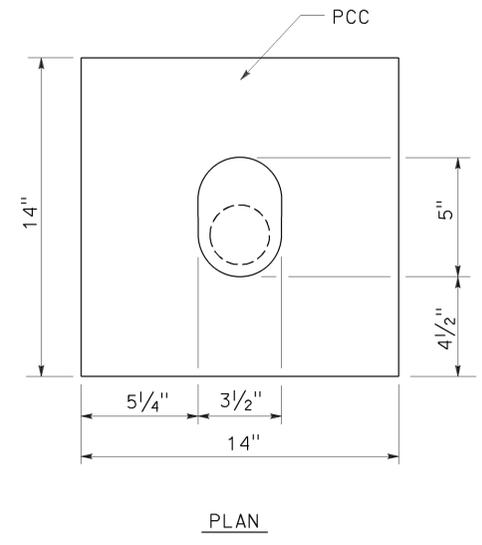
RSP H5 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN H5
 DATED MAY 20, 2011 - PAGE 222 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP H5

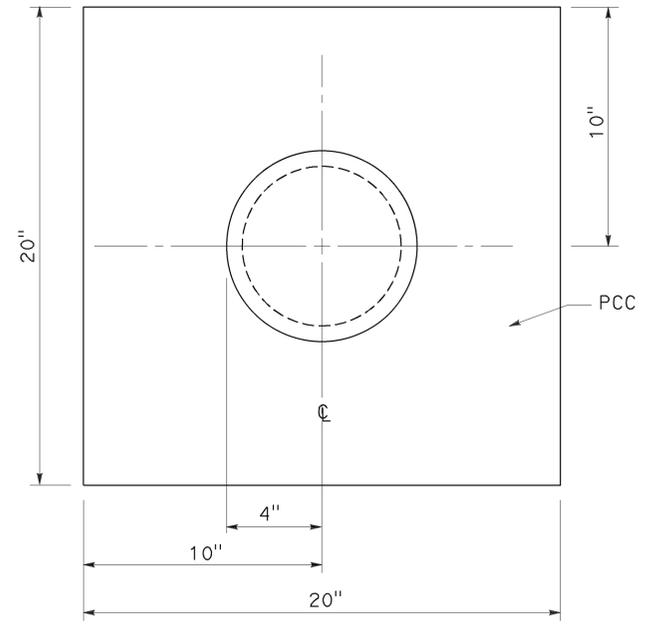
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	368	431

Gregory A. Balzer
 LICENSED LANDSCAPE ARCHITECT
 July 19, 2013
 PLANS APPROVAL DATE
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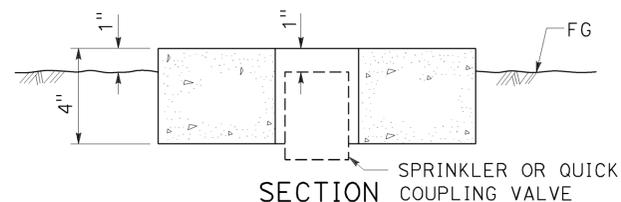
TO ACCOMPANY PLANS DATED 06-27-16



PLAN

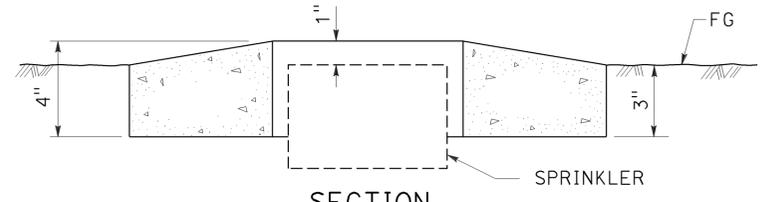


PLAN



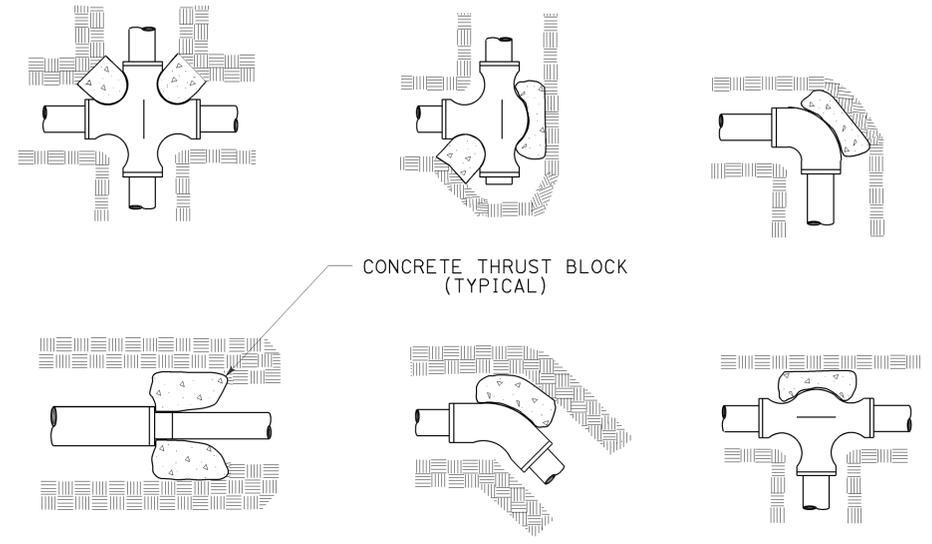
SECTION

SPRINKLER PROTECTOR TYPE I

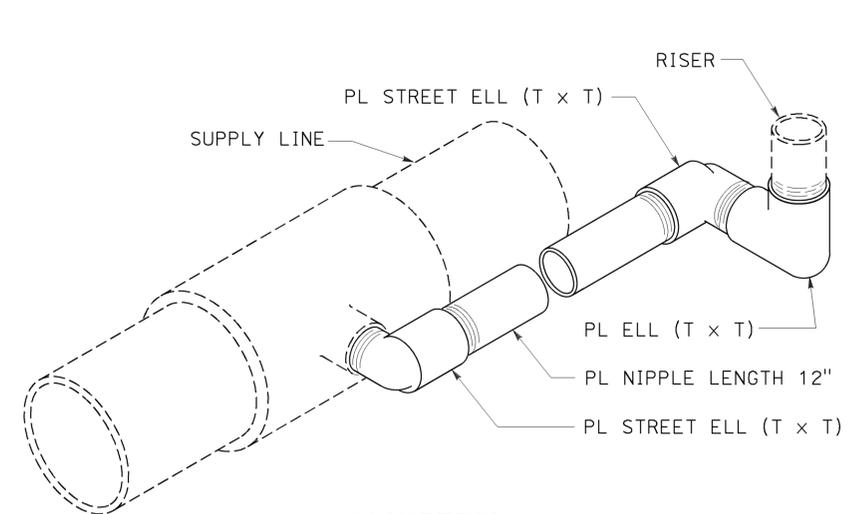


SECTION

SPRINKLER PROTECTOR TYPE II

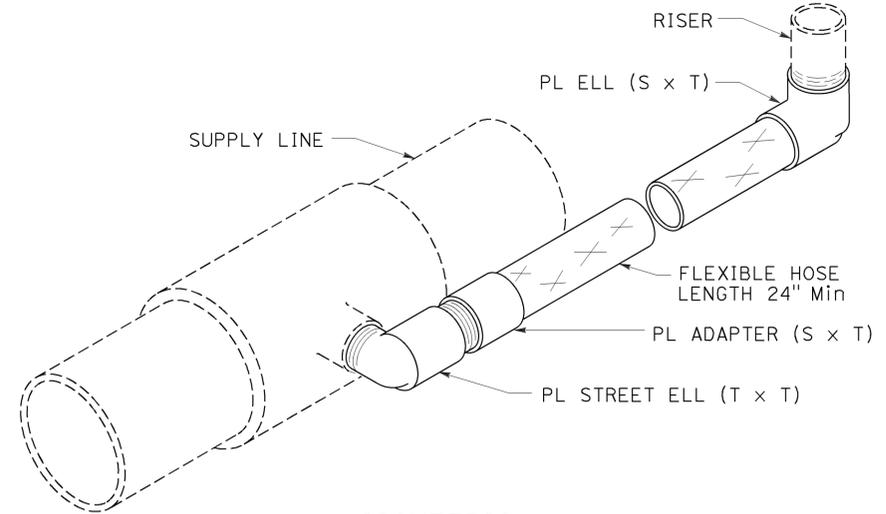


TYPICAL THRUST BLOCKS



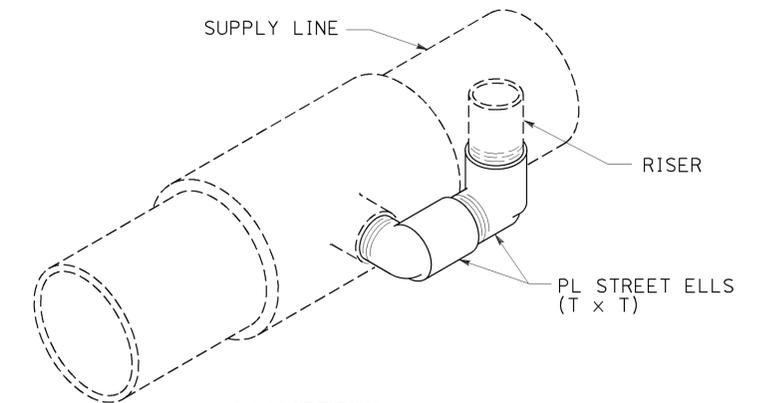
ISOMETRIC

POP-UP SPRINKLER ASSEMBLY TYPE I



ISOMETRIC

POP-UP SPRINKLER ASSEMBLY TYPE II



ISOMETRIC

POP-UP SPRINKLER ASSEMBLY TYPE III

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
LANDSCAPE DETAILS

NO SCALE

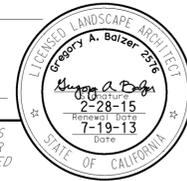
RSP H6 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN H6 DATED MAY 20, 2011 - PAGE 223 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP H6

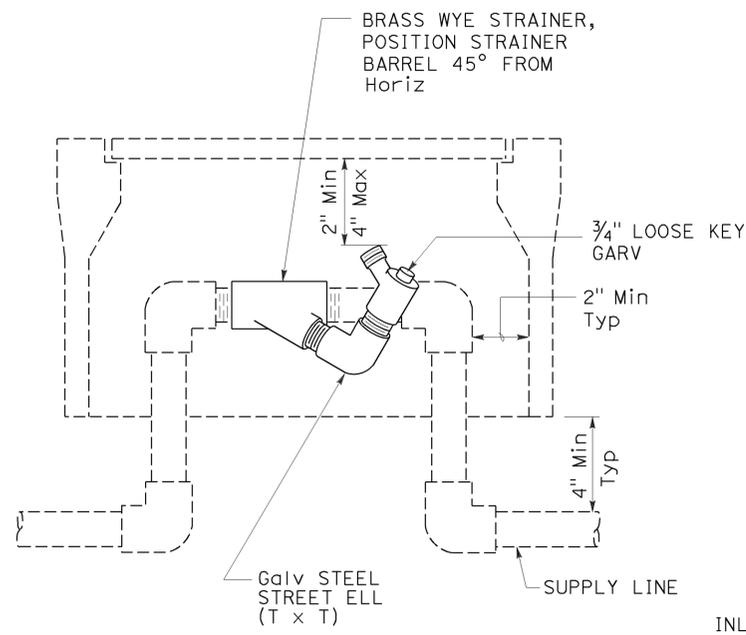
2010 REVISED STANDARD PLAN RSP H6

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	369	431

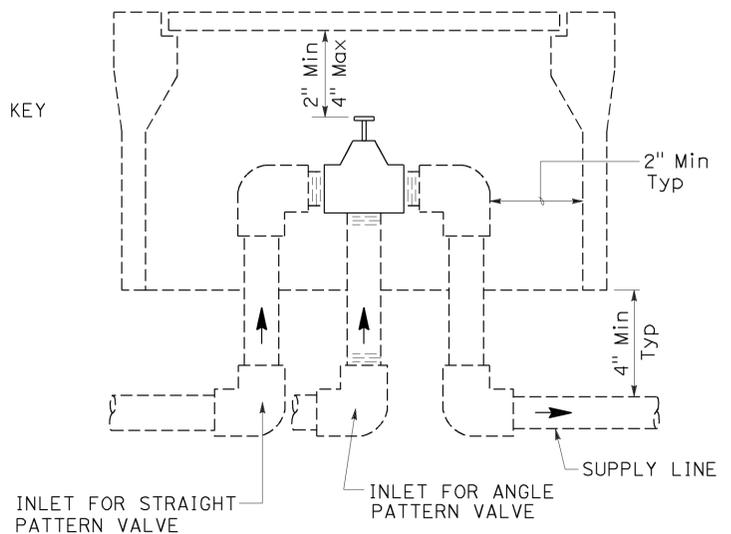
Gregory A. Balzer
 LICENSED LANDSCAPE ARCHITECT
 July 19, 2013
 PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



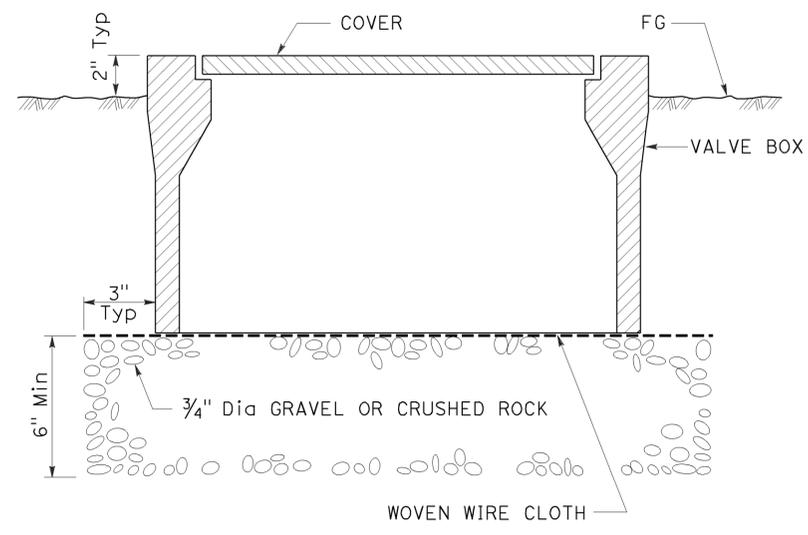
TO ACCOMPANY PLANS DATED 06-27-16



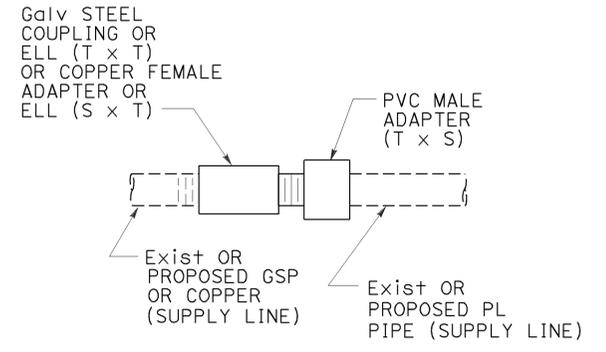
ELEVATION
WYE STRAINER ASSEMBLY



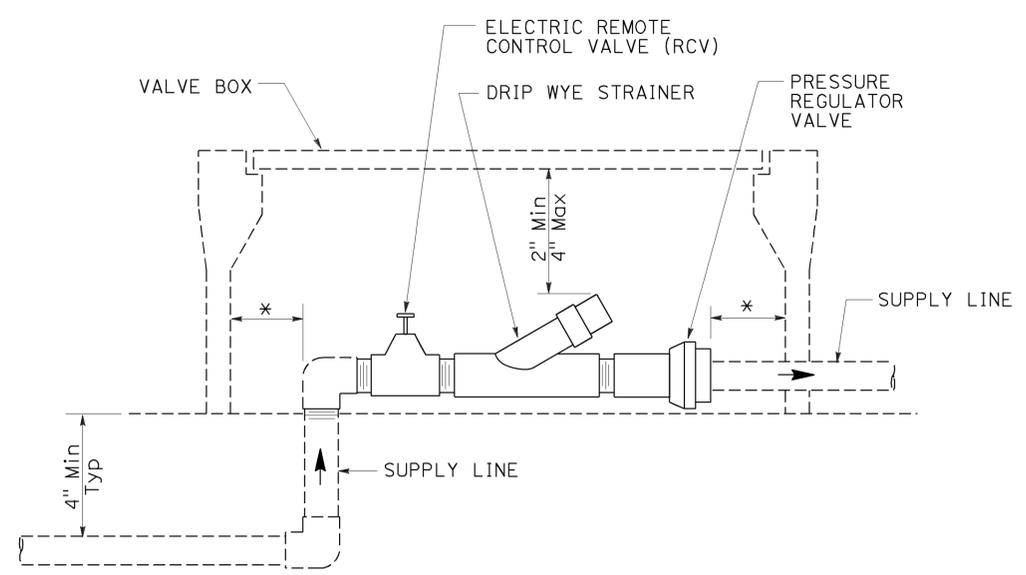
ELEVATION
VALVE



SECTION
VALVE BOX



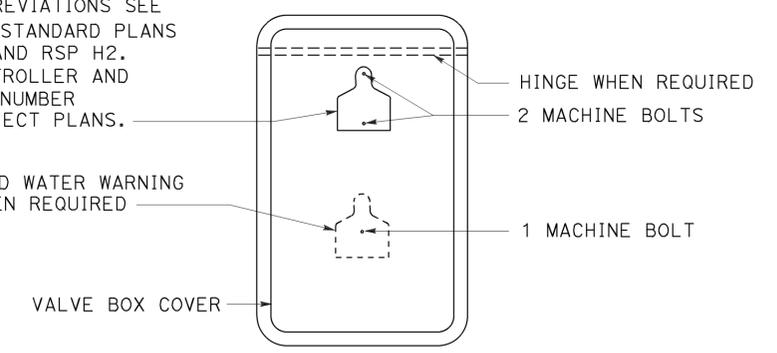
GALVANIZED OR COPPER PIPE CONNECTION TO PLASTIC PIPE



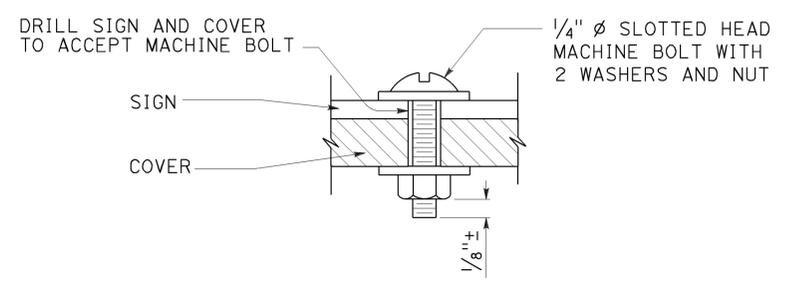
ELEVATION
DRIP VALVE ASSEMBLY

IDENTIFICATION LABEL:
FOR ABBREVIATIONS SEE
REVISED STANDARD PLANS
RSP H1 AND RSP H2.
FOR CONTROLLER AND
STATION NUMBER
SEE PROJECT PLANS.

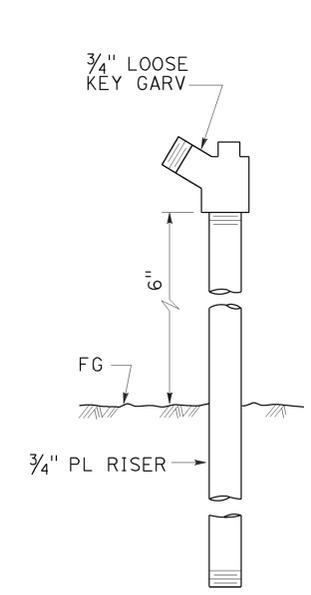
RECYCLED WATER WARNING
SIGN WHEN REQUIRED



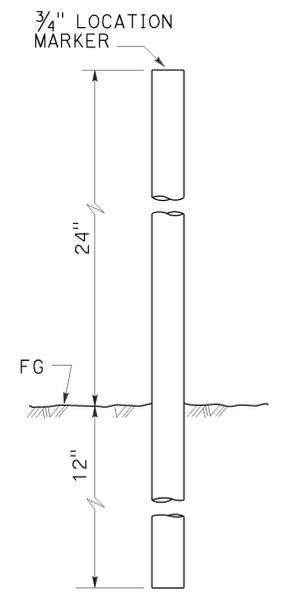
PLAN



SECTION
VALVE BOX IDENTIFICATION



ELEVATION
GARDEN VALVE ASSEMBLY



ELEVATION
LOCATION MARKER

LANDSCAPE DETAILS

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

NO SCALE

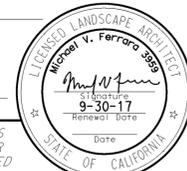
RSP H7 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN H7
DATED MAY 20, 2011 - PAGE 224 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP H7

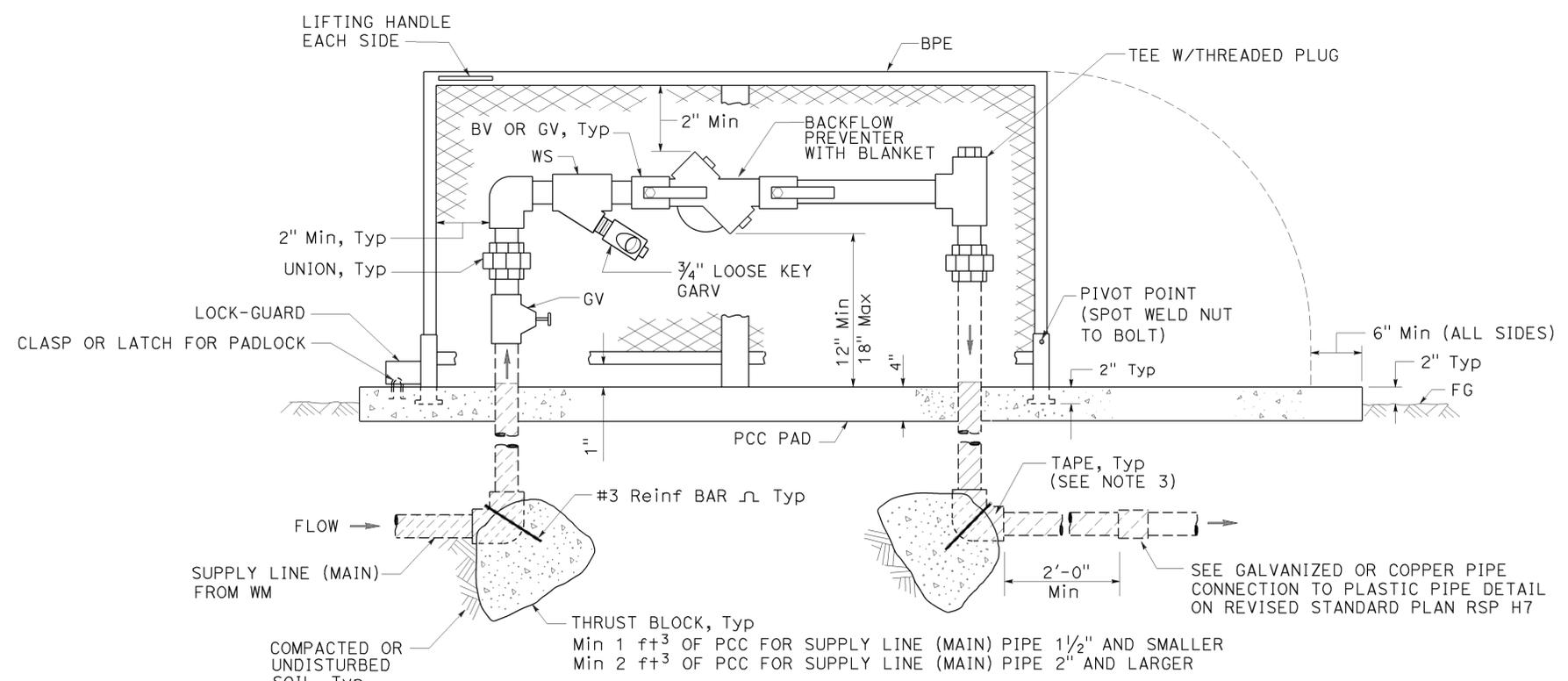
2010 REVISED STANDARD PLAN RSP H7

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	370	431

October 30, 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.



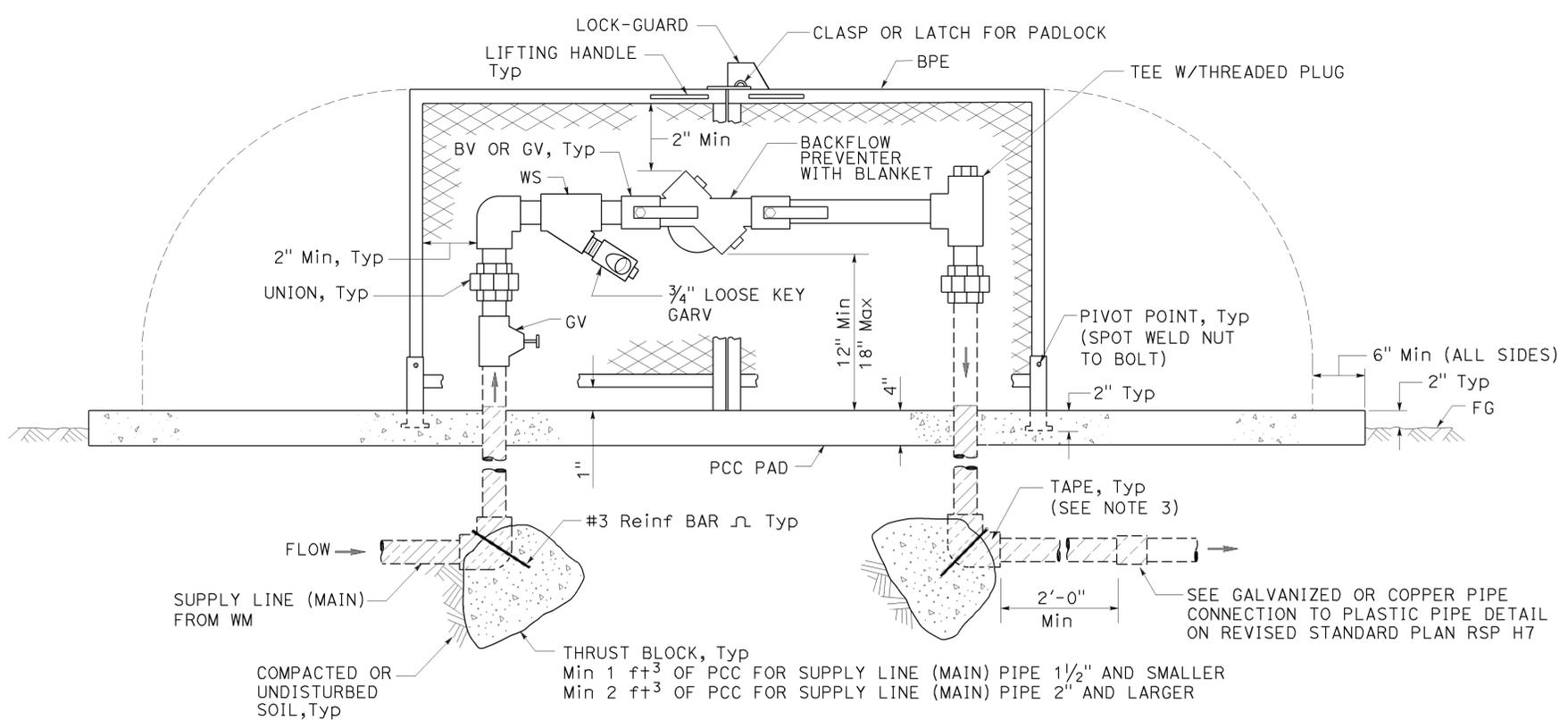
TO ACCOMPANY PLANS DATED 06-27-16



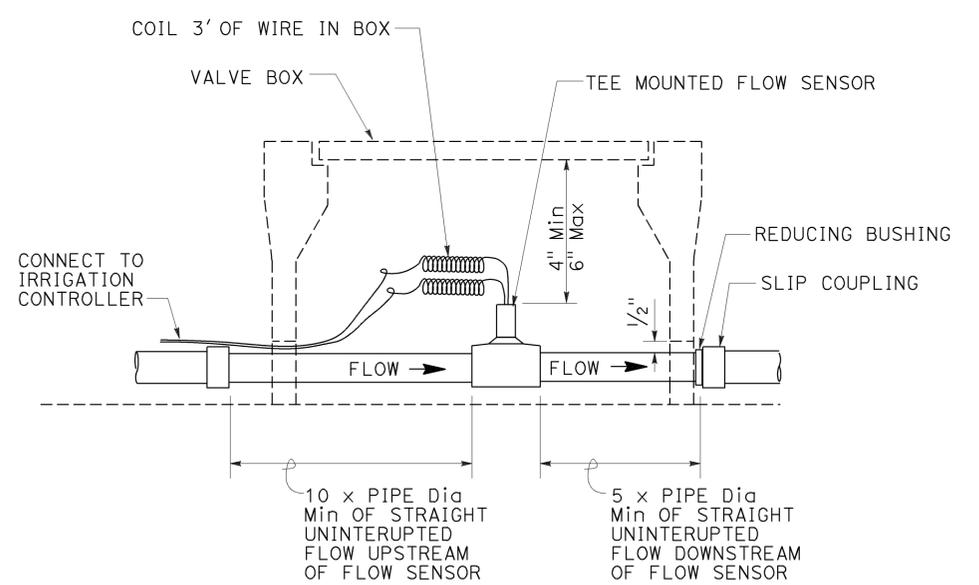
ELEVATION
BACKFLOW PREVENTER ASSEMBLY
 IN ONE PIECE ENCLOSURE

NOTES:

1. Wye strainer and fittings must be the same size as the backflow preventer shown on the plans.
2. Backflow preventer assembly manifold pipe must be the same pipe as the supply line (main) pipe to be installed from the water meter to the backflow preventer assembly.
3. All metal in contact with soil and Portland Cement Concrete must be wrapped with 2" wide plastic backed adhesive polyethylene tape 20 mil thick with 1/2" overlap.



ELEVATION
BACKFLOW PREVENTER ASSEMBLY
 IN TWO PIECE ENCLOSURE



SECTION
FLOW SENSOR

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
LANDSCAPE DETAILS
 NO SCALE

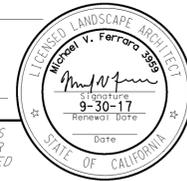
RSP H8 DATED OCTOBER 30, 2015 SUPERSEDES RSP H8 DATED JULY 19, 2013 AND STANDARD PLAN H8 DATED MAY 20, 2011 - PAGE 225 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP H8

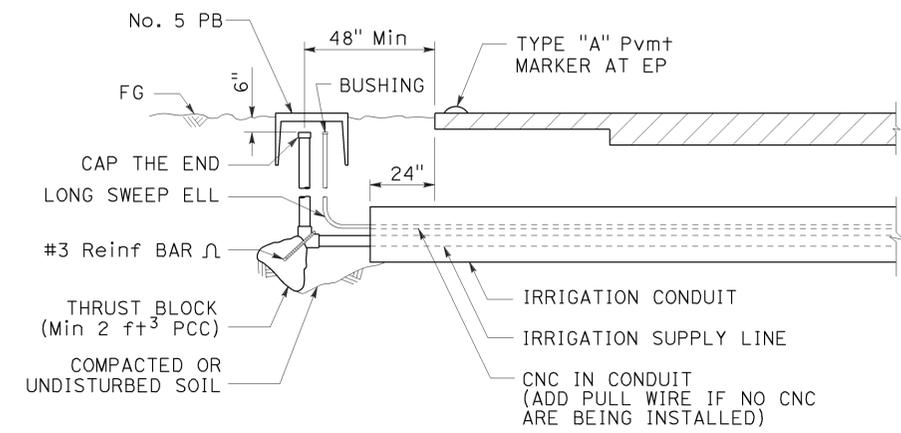
2010 REVISED STANDARD PLAN RSP H8

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	371	431

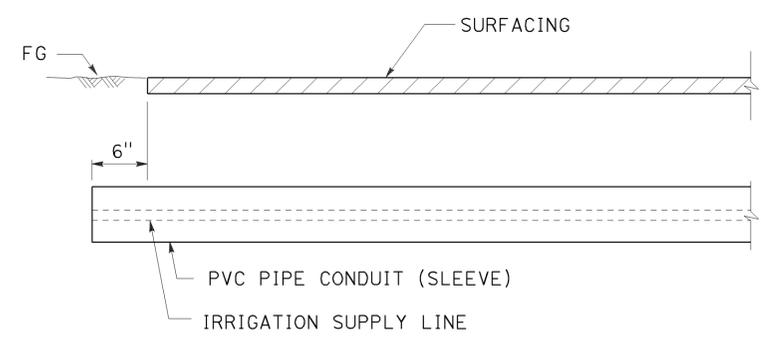
Signature: *Michael V. Ferraro*
 LICENSED LANDSCAPE ARCHITECT
 April 15, 2016
 PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



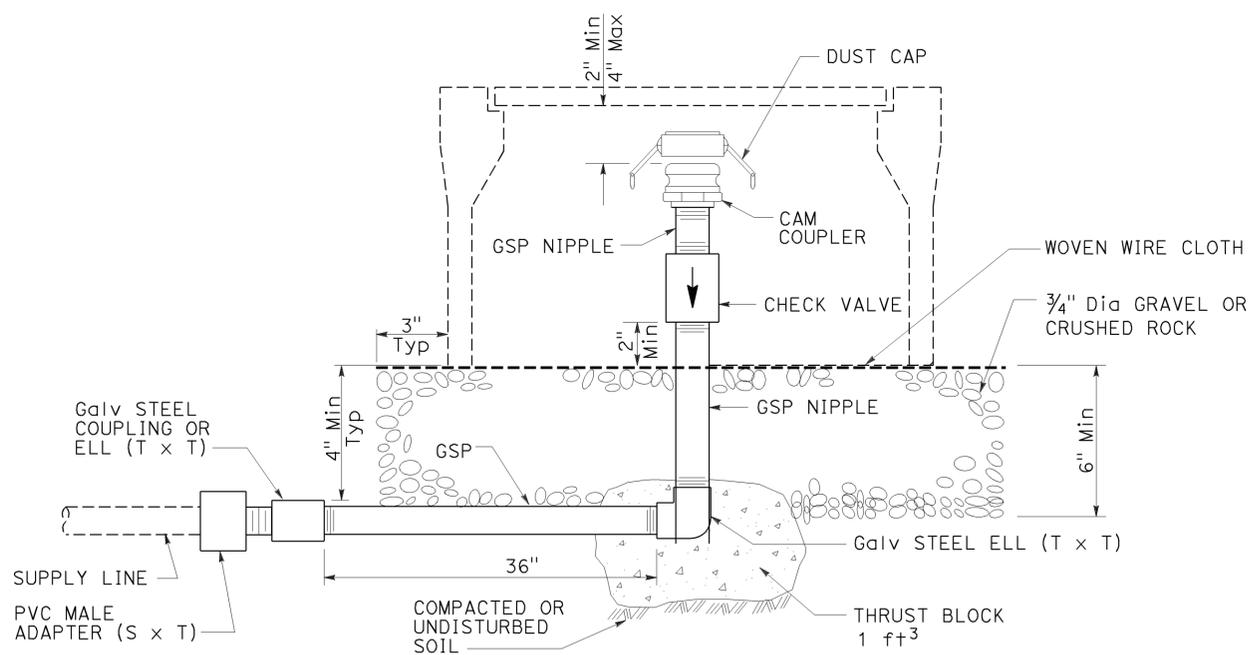
TO ACCOMPANY PLANS DATED 06-27-16



SECTION
IRRIGATION CONDUIT
UNDER TRAVELED WAY



SECTION
PVC PIPE CONDUIT (SLEEVE)
UNDER SIDEWALKS, DRIVEWAYS AND PATHS



ELEVATION
CAM COUPLER ASSEMBLY

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
LANDSCAPE DETAILS
NO SCALE

RSP H9 DATED APRIL 15, 2016 SUPERSEDES RSP H9 DATED JULY 19, 2013 AND STANDARD PLAN H9 DATED MAY 20, 2011 - PAGE 226 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP H9

2010 REVISED STANDARD PLAN RSP H9

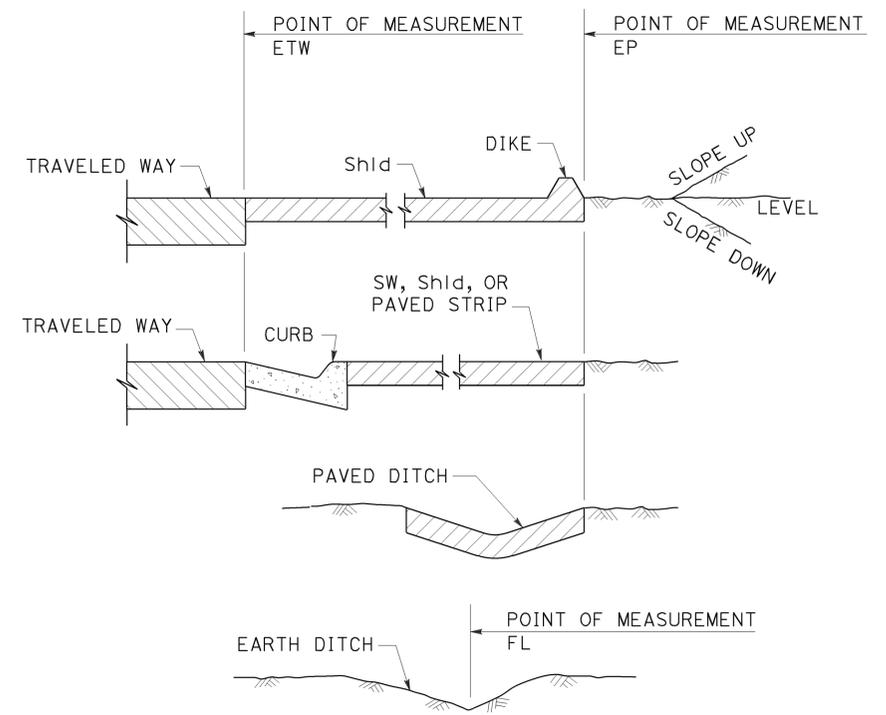
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	372	431

Gregory A. Balzer
 LICENSED LANDSCAPE ARCHITECT

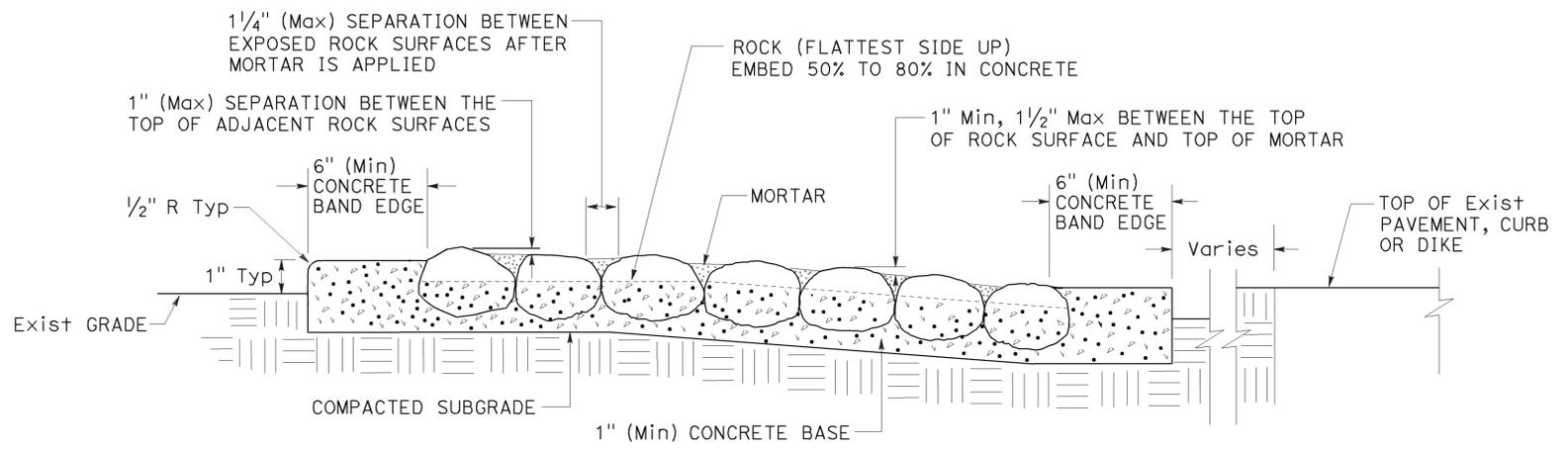
July 19, 2013
 PLANS APPROVAL DATE

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

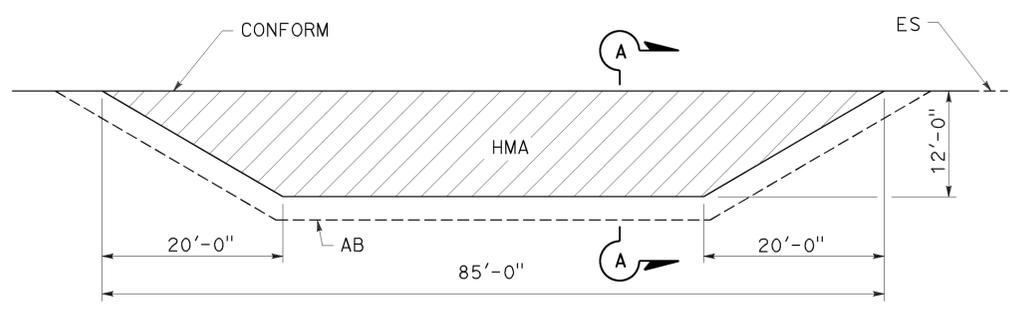
TO ACCOMPANY PLANS DATED 06-27-16



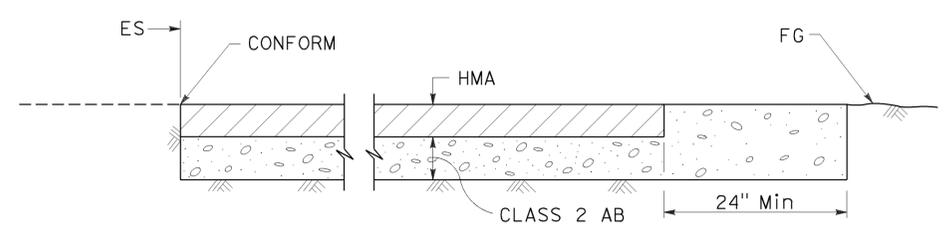
**SECTION
POINTS OF MEASUREMENT**



**SECTION
ROCK BLANKET**



PLAN



**SECTION A-A
MAINTENANCE VEHICLE PULLOUT**

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

LANDSCAPE DETAILS

NO SCALE

RSP H9A DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP H9A

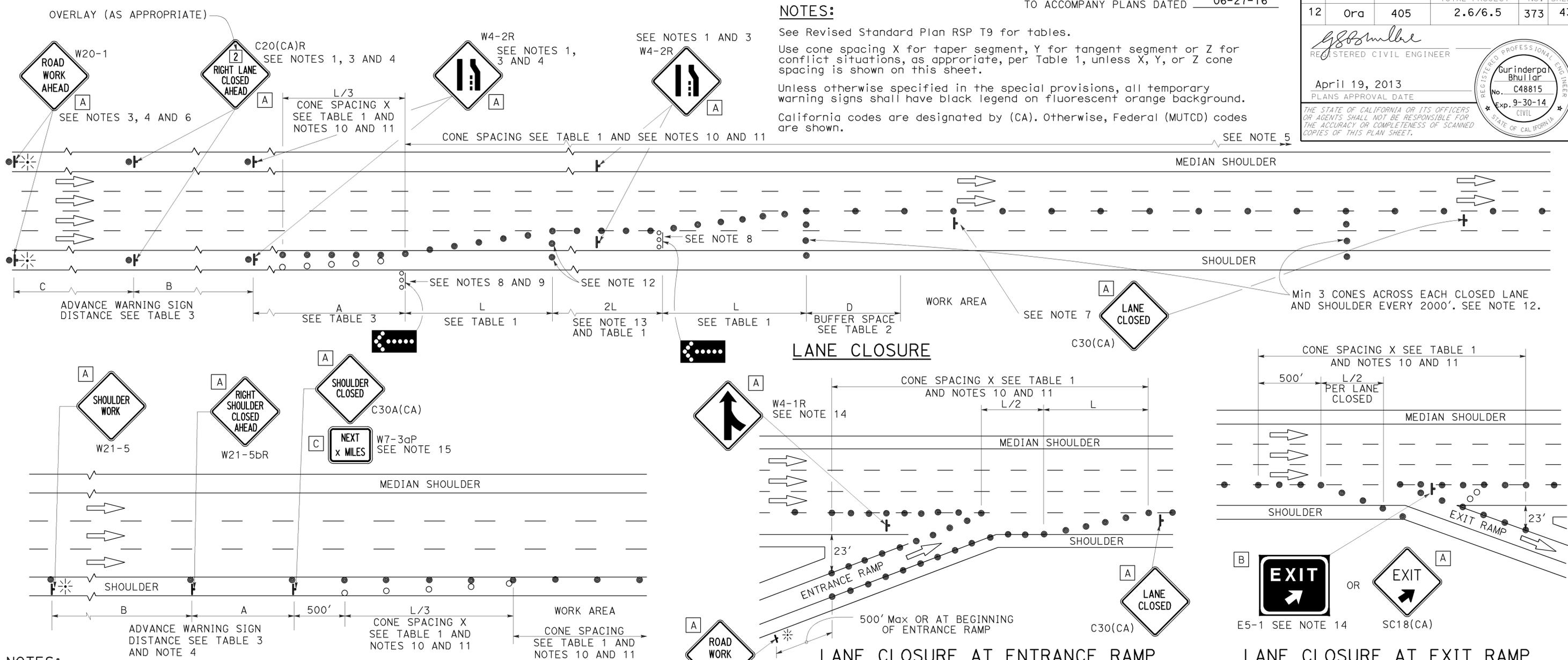
2010 REVISED STANDARD PLAN RSP H9A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	373	431

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.

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:

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

SHOULDER CLOSURE

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

LANE CLOSURE AT ENTRANCE RAMP

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

LEGEND

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

SIGN PANEL SIZE (Min)

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

TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE ON FREEWAYS AND EXPRESSWAYS

NO SCALE

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

REVISED STANDARD PLAN RSP T10

2010 REVISED STANDARD PLAN RSP T10

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
12	Ora	405	2.6/6.5	374	431

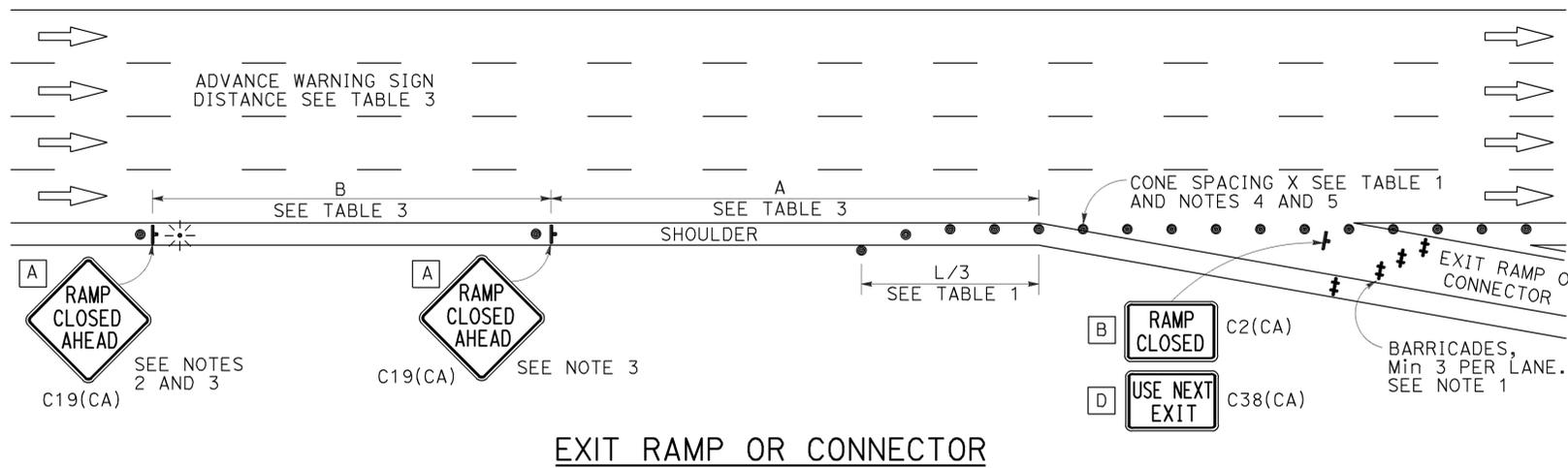
Gurinderpal Bhullar
 REGISTERED CIVIL ENGINEER
 April 19, 2013
 PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

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

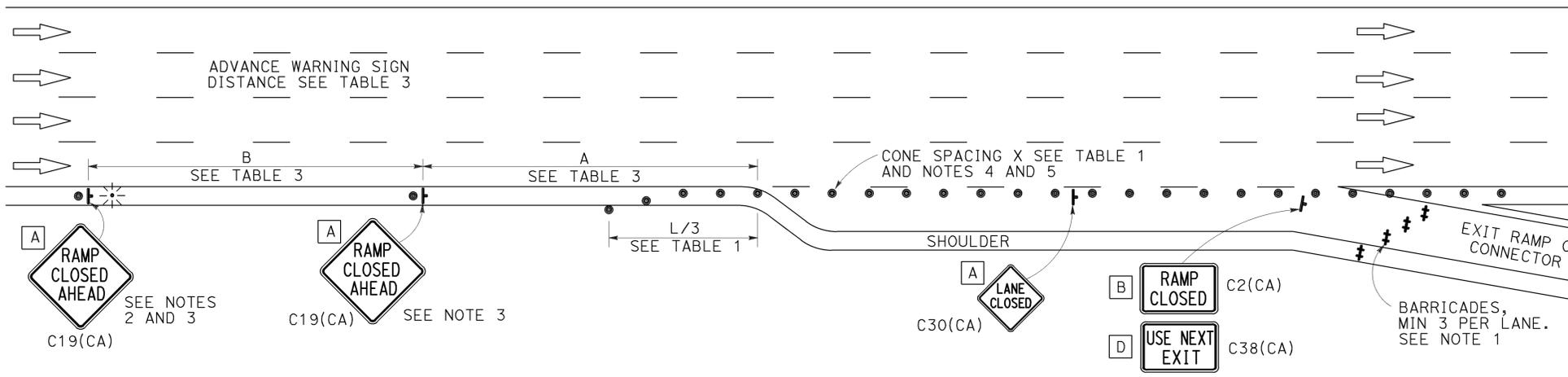
TO ACCOMPANY PLANS DATED 06-27-16

NOTES:

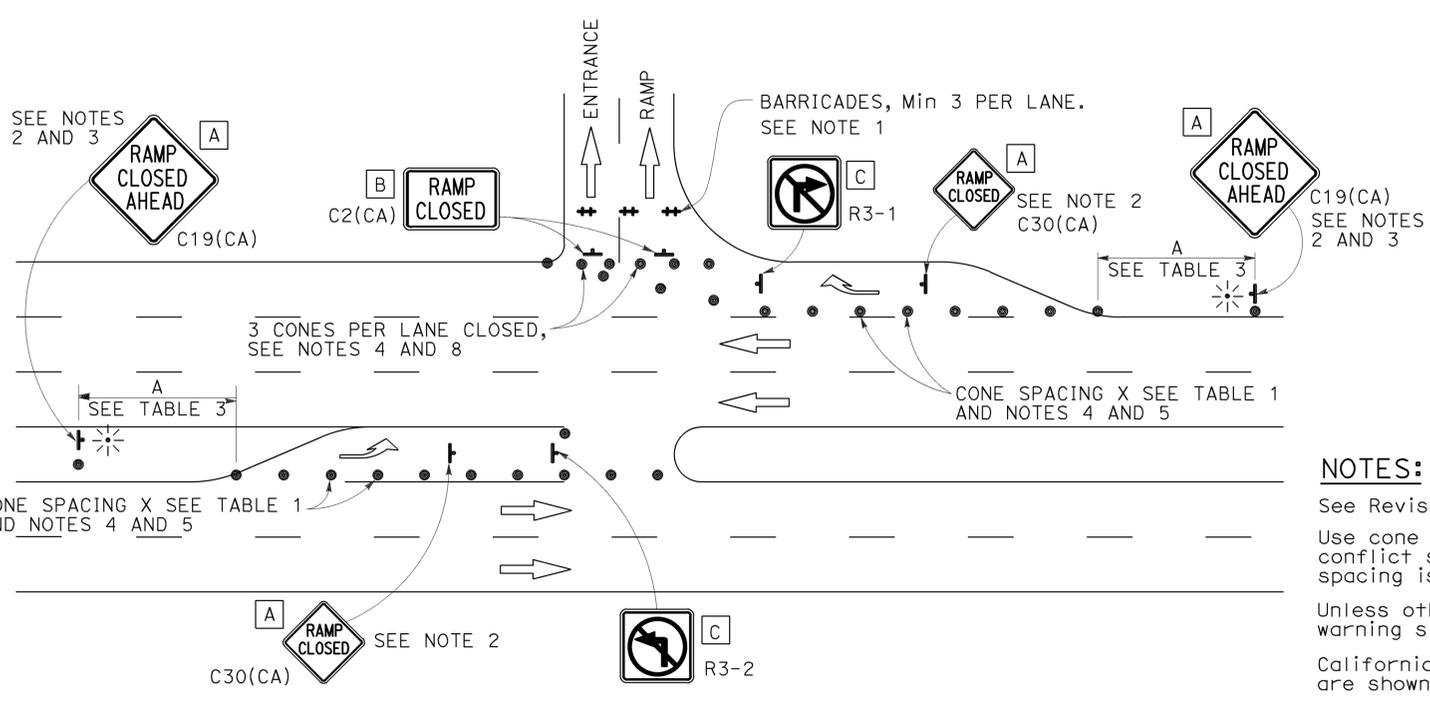
- Barricades shall be Type I, II, or III for closures lasting one week or less and Type III for closures lasting longer than one week.
- In addition to placing the C19(CA) "RAMP CLOSED AHEAD" and C30(CA) "RAMP CLOSED" signs, black on orange overlay plates with the word "CLOSED" may be mounted, as directed 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.



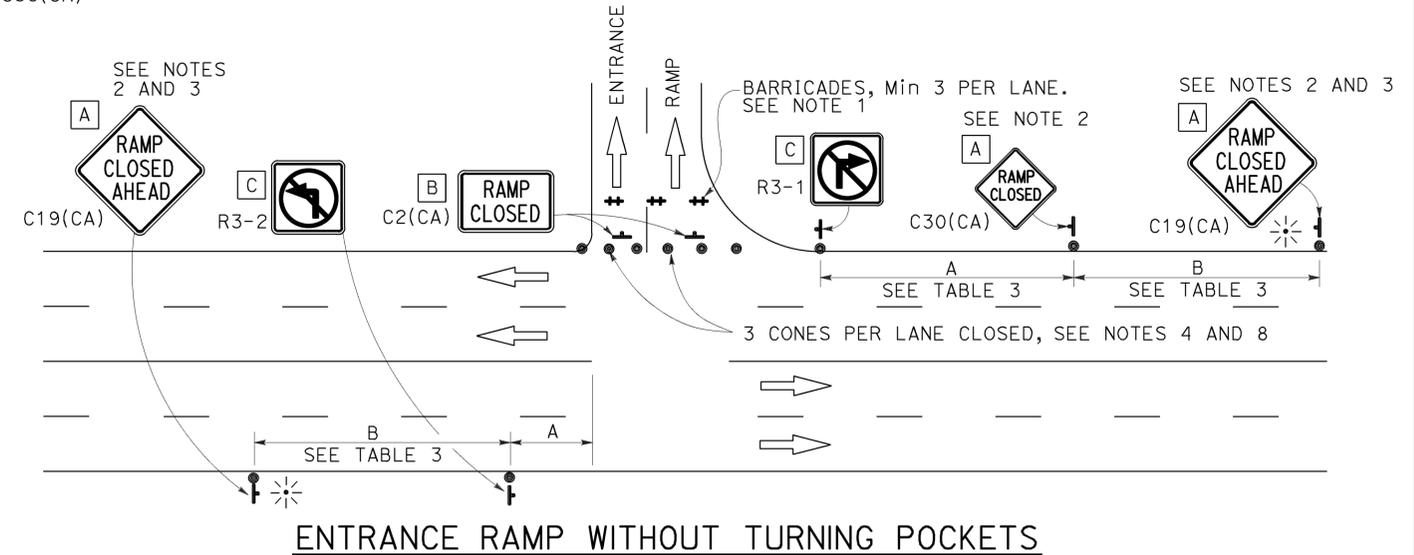
EXIT RAMP OR CONNECTOR



EXIT RAMP OR CONNECTOR WITH ADDITIONAL LANE



ENTRANCE RAMP WITH TURNING POCKETS



ENTRANCE RAMP WITHOUT TURNING POCKETS

NOTES:

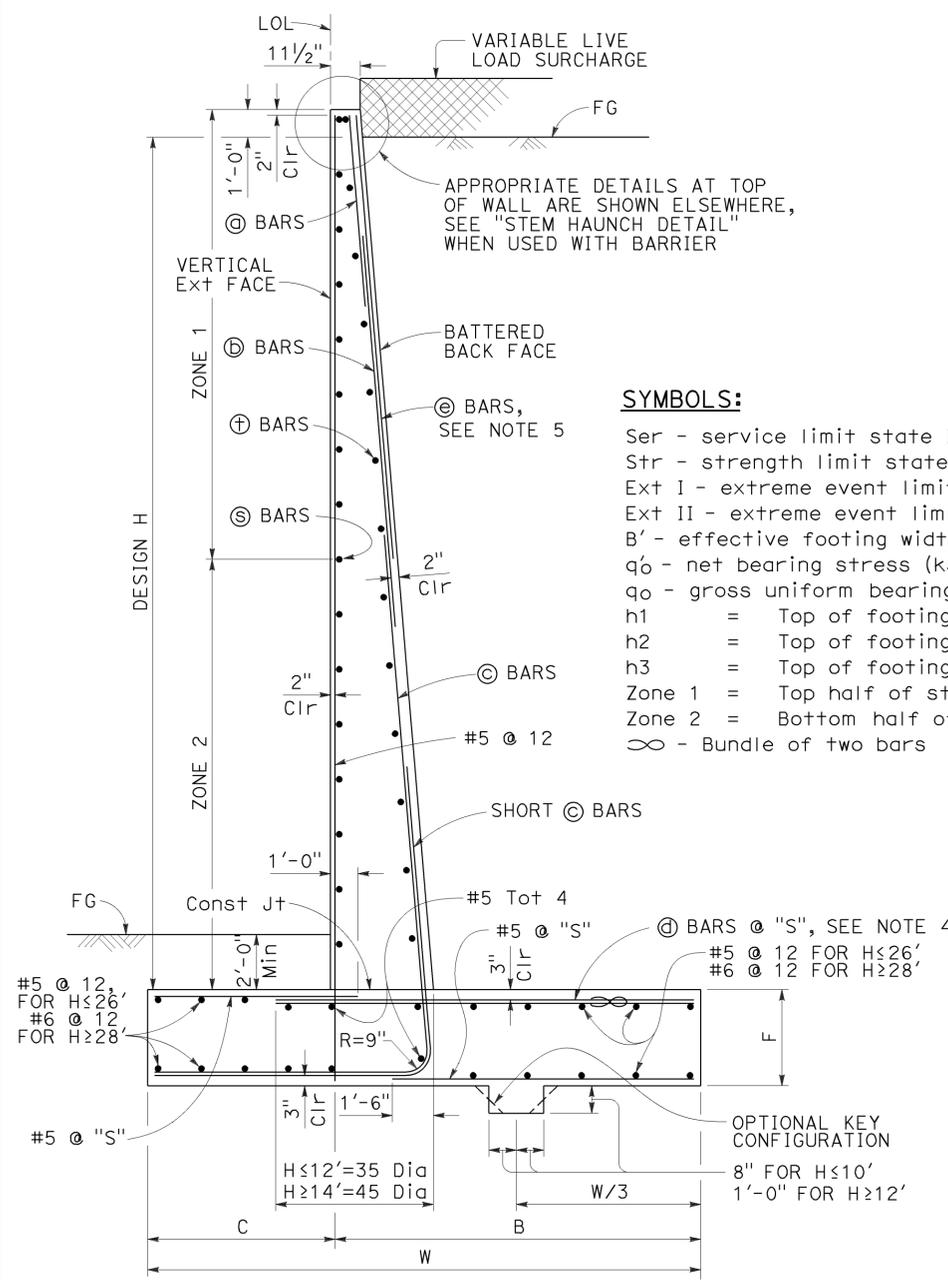
- See Revised Standard Plan RSP T9 for tables.
- Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as appropriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.
- Unless otherwise specified in the special provisions, all temporary warning 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

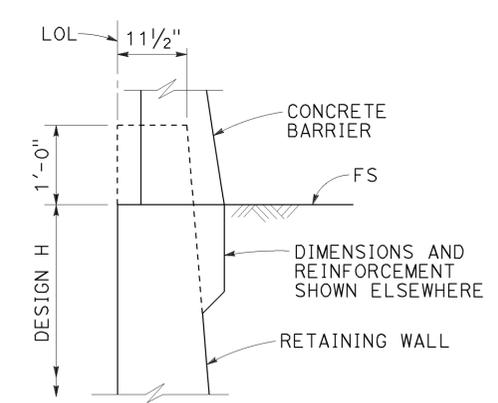
RSP T14 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T14 DATED MAY 20, 2011 - PAGE 242 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T14

2010 REVISED STANDARD PLAN RSP T14



TYPICAL SECTION



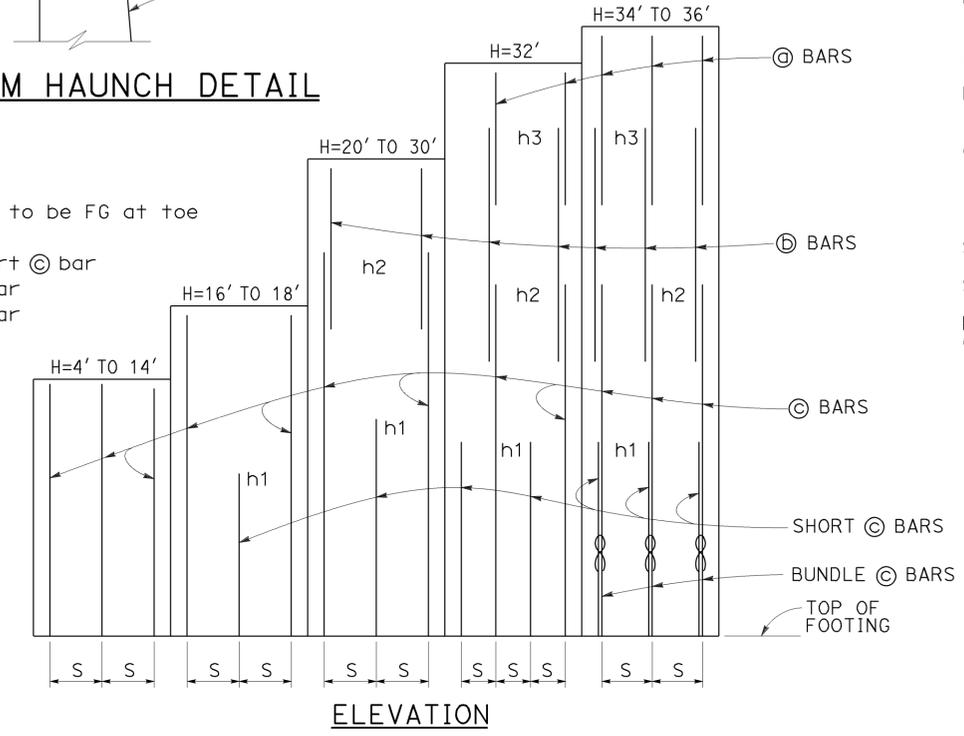
STEM HAUNCH DETAIL

DESIGN CONDITIONS:

Design H may be exceeded by 6" before going to the next size. Special footing design is required where foundation material is incapable of supporting bearing stress listed in the table.

SYMBOLS:

- Ser - service limit state I
- Str - strength limit state I
- Ext I - extreme event limit state I
- Ext II - extreme event limit state II
- B' - effective footing width (ft)
- q₀ - net bearing stress (ksf), OG assumed to be FG at toe
- q_o - gross uniform bearing stress (ksf)
- h₁ = Top of footing to top of short ⊙ bar
- h₂ = Top of footing to top of ⊕ bar
- h₃ = Top of footing to top of ⊖ bar
- Zone 1 = Top half of stem height
- Zone 2 = Bottom half of stem height
- ∞ - Bundle of two bars



ELEVATION

DESIGN NOTES:

- TO ACCOMPANY PLANS DATED 06-27-16
- DESIGN: AASHTO LRFD Bridge Design Specifications, 4th Edition with California Amendments
 - LS: Varied surcharge on level ground surface
 - DC: Stem Architectural Treatment of thickness up to 6" of concrete (75 psf) considered
 - CT: 54 kip transverse force applied at H_e = 32', distributed over 10 feet at the top of wall and 1:1 distribution down and outward. Distribution below footing taken no less than 40'.
 - SEISMIC: k_h = 0.2, k_v = 0.0
 - SOIL: φ = 34°, γ = 120 pcf
 - REINFORCED CONCRETE: f'c = 3,600 psi, fy = 60,000 psi
 - LOAD COMBINATIONS AND LIMIT STATES:
 - Service I Q = 1.00DC+1.00EV+1.00EH+1.00LS
 - Strength I Q = αDC+βEV+γEH+1.75LS
 - Extreme I Q = 1.00DC+1.00EV+1.00EH+1.00EQD+1.00EQE
 - Extreme II Q = 1.00DC+1.00EV+1.00EH+1.00CT
 - Where:
 - Q: Force Effects
 - α: 1.25 or 0.90, Whichever Controls Design
 - β: 1.35 or 1.00, Whichever Controls Design
 - γ: 1.50 or 0.90, Whichever Controls Design
 - DC: Dead Load of Structure Components
 - EH: Horizontal Earth Fill Pressure
 - EV: Vertical Earth Pressure from Earth Fill Weight
 - LS: Live Load Surcharge
 - EQE: Seismic Earth Pressure
 - EQD: Soil and Structural and Nonstructural Components Inertia
 - CT: Vehicular Collision Force

NOTES:

1. For details not shown and drainage notes see RSP B3-5
2. For wall stem joint details see B0-3 3-3 and B0-3 3-4
3. At ⊙ bars:
 - H ≤ 6', no splices are allowed within 1'-8" above the top of footing.
 - H > 6', no splices are allowed within H/4 above the top of footing.
4. Bundle ⊕ bars for H = 34' & 36'.
5. Provide #6 @ 10" x 15'-0" ⊕ bars over a distance of 8'-0" measured from all expansion joints, begin wall and end wall locations. For H ≤ 14', hook ⊕ bar into footing and reduce bar length as needed to maintain Min CLR cover.

DESIGN H	4'	6'	8'	10'	12'	14'	16'	18'	20'	22'	24'	26'	28'	30'	32'	34'	36'
W	6'-10"	7'-0"	7'-3"	7'-7"	8'-4"	9'-7"	10'-9"	12'-0"	13'-3"	14'-6"	15'-9"	17'-1"	18'-5"	19'-10"	21'-2"	22'-7"	24'-0"
C	2'-2"	2'-3"	2'-3"	2'-4"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-5"	6'-0"	6'-6"	7'-2"	7'-8"	8'-2"	9'-0"
B	4'-8"	4'-9"	5'-0"	5'-3"	5'-10"	6'-7"	7'-3"	8'-0"	8'-9"	9'-6"	10'-4"	11'-1"	11'-11"	12'-8"	13'-6"	14'-5"	15'-0"
F	1'-4"	1'-4"	1'-4"	1'-4"	1'-6"	1'-8"	1'-8"	1'-9"	1'-9"	1'-11"	2'-2"	2'-5"	2'-10"	3'-3"	3'-6"	4'-0"	4'-3"
BATTER	1/2: 12	1/2: 12	1/2: 12	1/2: 12	1/2: 12	1/2: 12	1/2: 12	1/2: 12	1/2: 12	1/2: 12	5/8: 12	5/8: 12	3/4: 12	7/8: 12	1: 12	1: 12	1: 12
SPACING "S"	9"	9"	9"	9"	9"	7"	6"	5"	6"	6"	6"	6"	6"	6"	6"	10"	8"
⊙ BARS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
⊕ BARS	-	-	-	-	-	-	-	-	#7	#7	#7	#7	#7	#7	#7	#7	#7
⊖ BARS	#6	#6	#6	#6	#6	#6	#7	#7	#8	#9	#9	#10	#10	#10	#11	#11	#11
⊕ BARS	#5	#5	#6	#6	#6	#6	#9	#8	#8	#9	#9	#10	#10	#10	#11	#11	#11
h ₁	-	-	-	-	-	-	5'-9"	5'-10"	8'-0"	9'-0"	10'-1"	11'-0"	12'-1"	13'-0"	13'-0"	12'-7"	11'-6"
h ₂	-	-	-	-	-	-	-	-	10'-5"	13'-0"	14'-7"	17'-6"	19'-0"	20'-5"	19'-0"	18'-0"	20'-2"
h ₃	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21'-2"	21'-10"	24'-0"
ZONE 1 ⊖ BARS	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12
ZONE 2 ⊖ BARS	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#6 @ 12	#6 @ 12	#6 @ 12	#7 @ 12	#7 @ 12
ZONE 1 ⊕ BARS	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12
ZONE 2 ⊕ BARS	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12	#5 @ 12	#5 @ 12	#5 @ 12
Ser: B', q ₀	6.8, 0.7	6.5, 1.0	6.2, 1.3	6.0, 1.6	6.3, 2.0	7.5, 2.1	8.6, 2.2	9.8, 2.3	11.0, 2.4	12.1, 2.5	13.2, 2.8	14.4, 2.9	15.5, 3.1	16.8, 3.3	18.0, 3.5	19.2, 3.7	20.6, 3.7
Str: B', q _o	6.6, 1.6	5.0, 1.8	3.6, 2.3	3.0, 3.3	3.2, 4.0	4.3, 3.8	5.3, 3.7	6.4, 3.7	7.4, 3.8	8.2, 4.1	9.0, 4.4	9.9, 4.6	10.7, 4.9	11.7, 5.2	12.6, 5.4	13.6, 5.8	14.6, 5.9
Ext I: B', q _o	5.2, 1.1	4.7, 1.5	3.9, 2.2	3.1, 3.4	2.8, 4.8	3.2, 5.3	3.6, 5.7	4.1, 6.1	4.6, 6.4	5.0, 6.9	5.3, 7.6	5.8, 8.1	6.1, 8.9	6.7, 9.4	7.1, 10.0	7.5, 10.7	8.2, 10.9
Ext II: B', q _o	2.6, 2.2	2.7, 2.6	2.8, 3.1	2.9, 3.6	3.7, 3.6	5.2, 3.3	6.7, 3.1	8.3, 3.0	9.8, 3.0	11.2, 3.1	12.5, 3.2	13.9, 3.4	15.2, 3.6	16.7, 3.8	18.0, 4.0	19.3, 4.2	20.8, 4.3

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
RETAINING WALL TYPE 1 (CASE 1)
NO SCALE

RSP B3-1A DATED APRIL 20, 2012 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP B3-1A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	376	431

Gary Wang
REGISTERED CIVIL ENGINEER

April 20, 2012
PLANS APPROVAL DATE

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

TO ACCOMPANY PLANS DATED 06-27-16

2010 REVISED STANDARD PLAN RSP B3-5

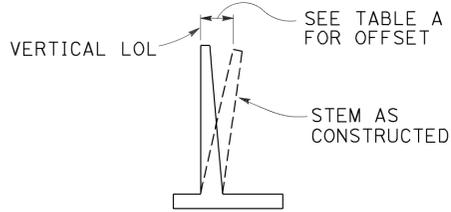
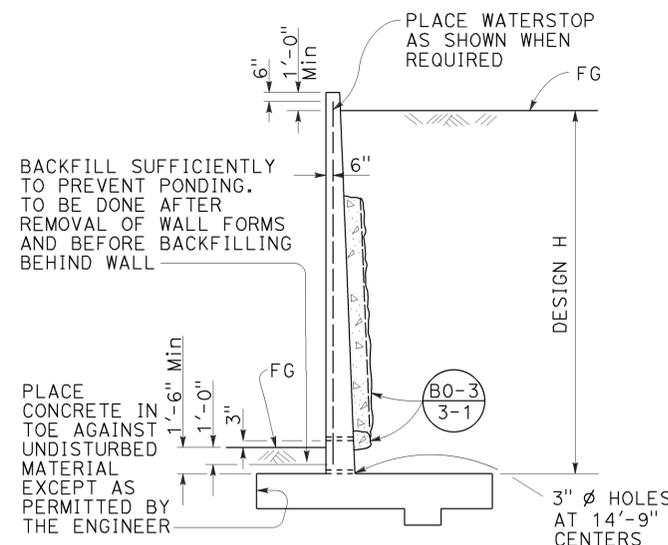
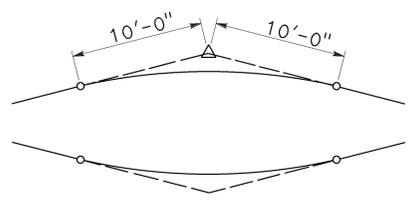


TABLE A

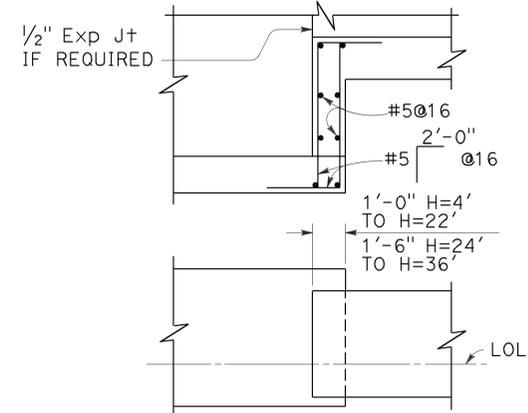
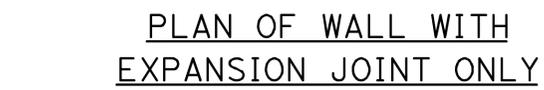
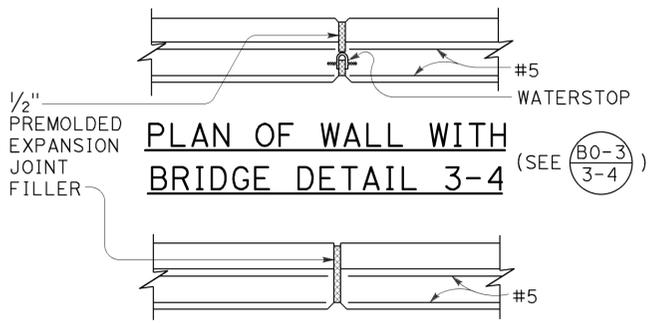
H	OFFSET
4'-12'	H/200
14'-16'	H/160
18'-20'	H/140
22'-24'	H/130
26'-36'	2 1/2"

APPROXIMATE WALL OFFSET VALUES

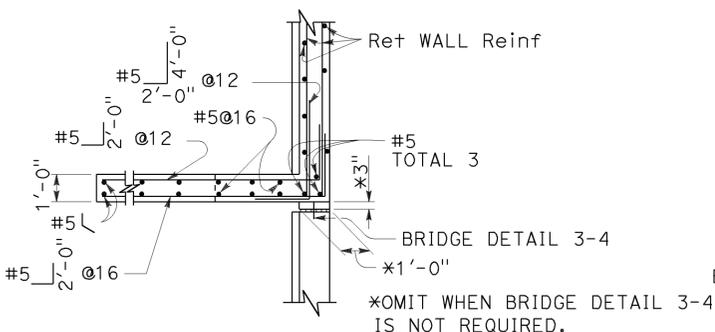
Values for offsetting forms to be determined by the Engineer.



DESIGN AND DRAINAGE

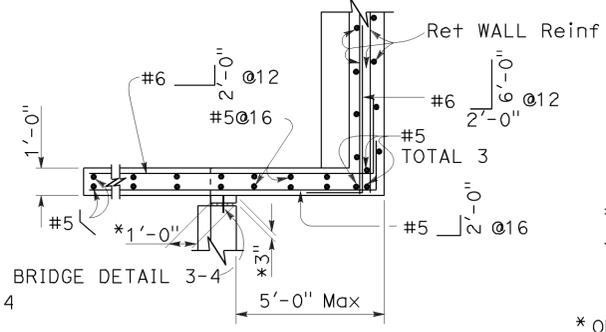


FOOTING STEP



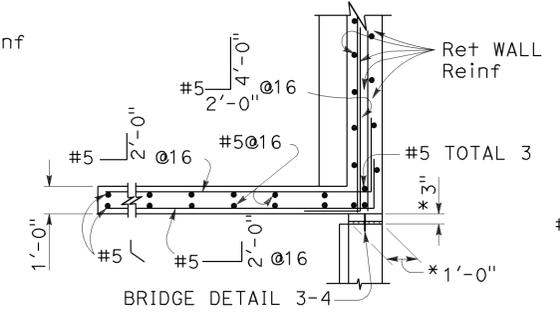
PLAN

(For return wall Type "A")



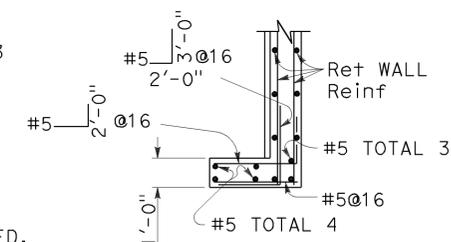
PLAN

(For return wall Type "B")



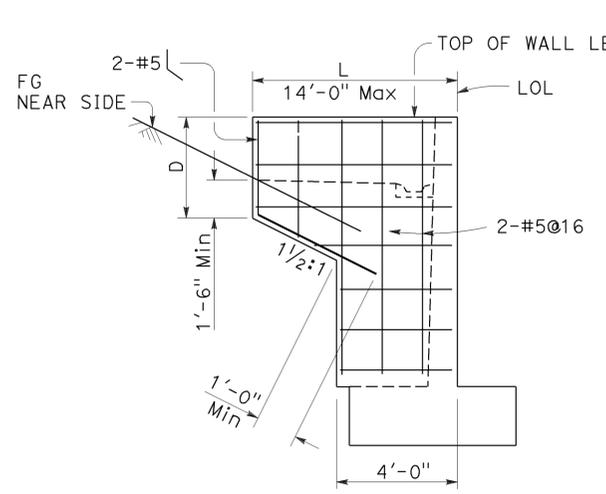
PLAN

(For return wall Type "C")



PLAN

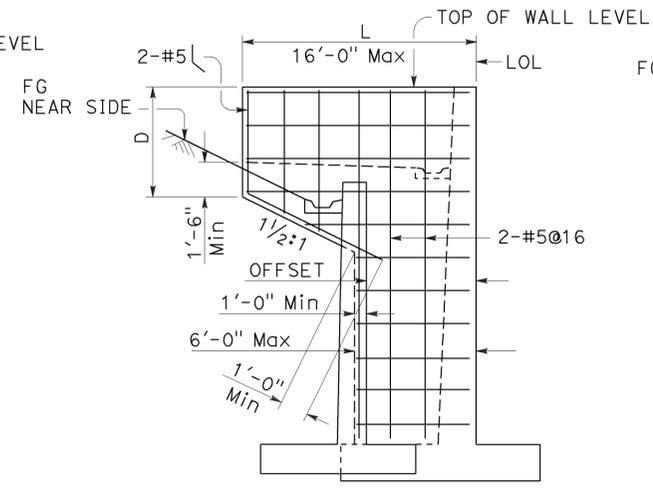
(For return wall Type "D")



ELEVATION

RETURN WALL TYPE "A"

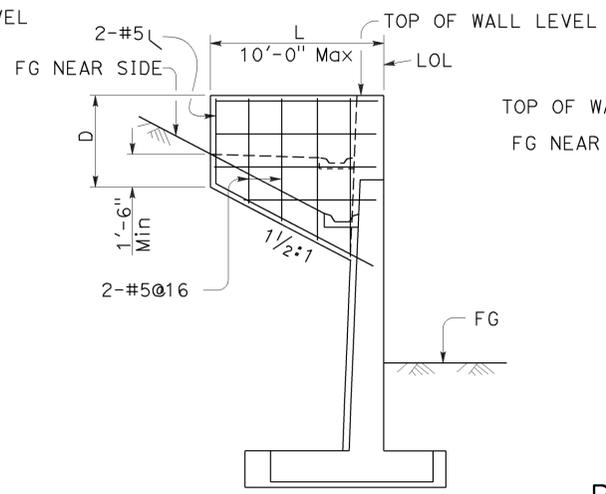
Use where H=8' or less



ELEVATION

RETURN WALL TYPE "B"

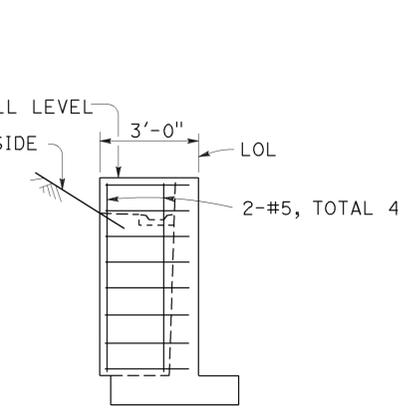
Use where H=10' or more on offset walls



ELEVATION

RETURN WALL TYPE "C"

Use where H=10' or more on straight walls



ELEVATION

RETURN WALL TYPE "D"

Use where H=6' or less

DESIGN CONDITIONS:

Design "H" may be exceeded by 6" before going to the next size. Special footing design is required where foundation material is incapable of supporting bearing stress listed in table

Return wall not required unless shown elsewhere

DESIGN NOTES:

DESIGN: AASHTO LRFD Bridge Design Specifications, 4th edition with California Amendments

LIVE LOAD: Surcharge on level ground surface

SOIL: $\phi = 34^\circ$
 $\gamma = 120$ pcf

REINFORCED CONCRETE: $f_y = 60,000$ psi
 $f_c' = 3,600$ psi

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

RETAINING WALL DETAILS No. 1

NO SCALE

RSP B3-5 DATED APRIL 20, 2012 SUPERSEDES STANDARD PLAN B3-5 DATED MAY 20, 2011 - PAGE 277 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP B3-5

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	377	431

Gary Wang
REGISTERED CIVIL ENGINEER

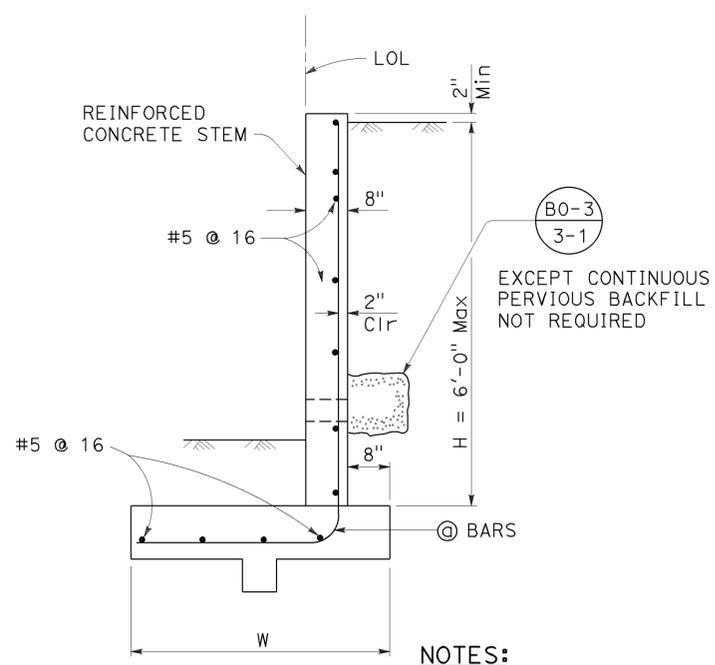
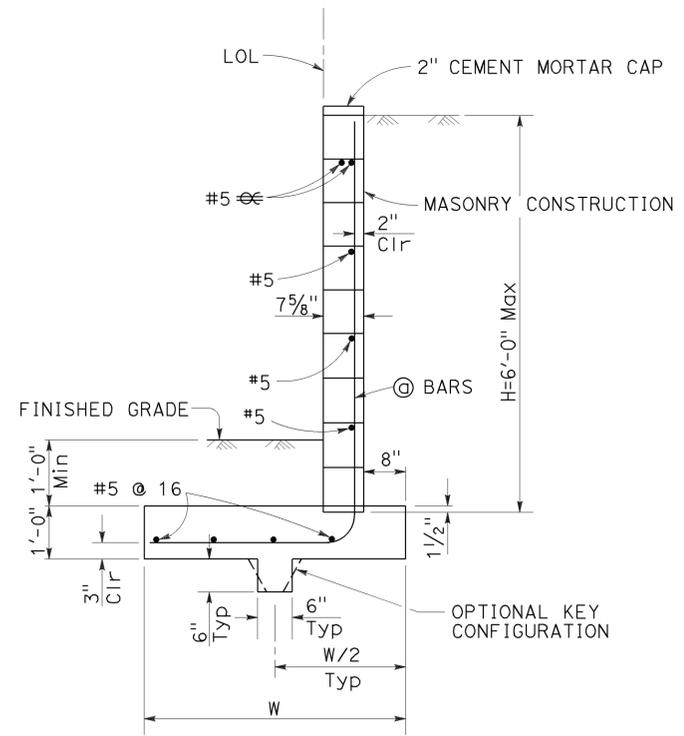
April 20, 2012
PLANS APPROVAL DATE

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

REGISTERED PROFESSIONAL ENGINEER
No. C58298
Exp. 6-30-12
CIVIL
STATE OF CALIFORNIA

SYMBOLS:

Ser - service limit state I
 Str - strength limit state I
 Ext - extreme event limit state I
 B' - effective footing width (ft)
 q_o - net bearing stress (ksf), OG assumed to be FG at toe
 q_o - gross uniform bearing stress (ksf)



TYPE 6A WALL

NOTES:

- For details not shown at "6B", see "6A", similarly, for details not shown at "6A", see "6B".
- Design loading for both Type "6A" and "6B" is as shown at "6B".
- Type 6 retaining wall shall be limited to use for walls of Design H of 6'-0" or less.
- Where traffic is adjacent to the top of wall, guard railing should be set back from the top front face of wall at least 4'-0" or 5'-0", dependent on wall type.
- For reinforced concrete wall stem joint details, See (B0-3/3-3) and (B0-3/3-4).
- No splices are allowed on @ bars.
- See "Retaining Wall Type 6 Details" sheet for Elevation View and Footing Step Details.

DESIGN NOTES:

TO ACCOMPANY PLANS DATED 06-27-16

DESIGN: AASHTO LRFD Bridge Design Specifications, 4th Edition with California Amendments
 Building Code Requirements for Masonry Structures (TMS 402-08/ACI 530-08/ASCE 5-08)

LS: 240 psf surcharge on level ground surface as limited by Guard Railing location

SEISMIC: k_h = 0.2
 k_v = 0.0

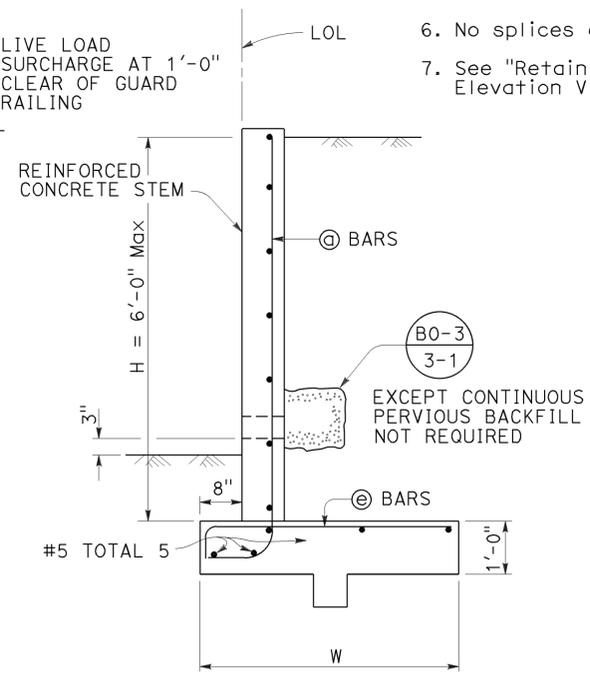
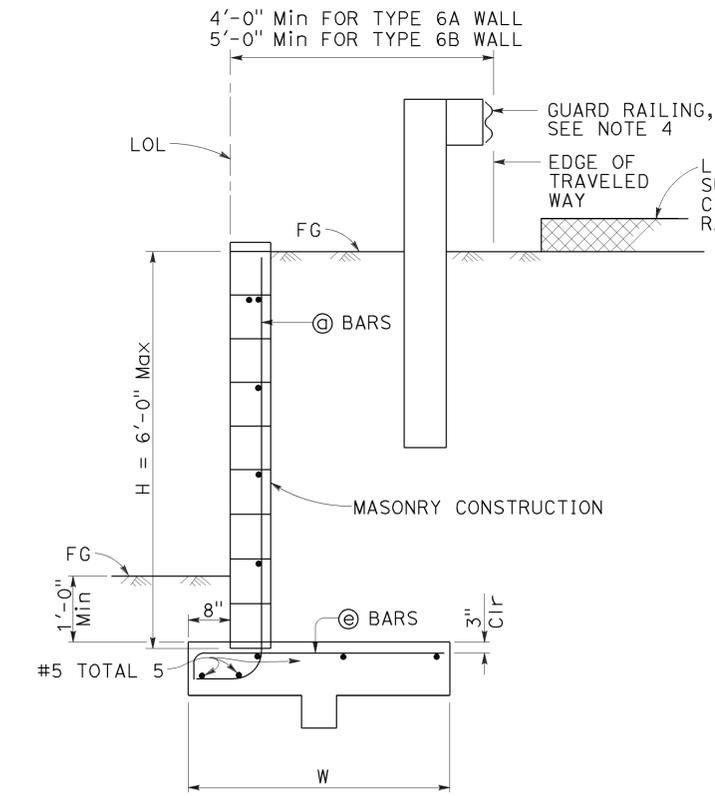
SOIL: φ = 34°
 γ = 120 pcf

REINFORCED CONCRETE: f'_c = 3,600 psi
 f_y = 60,000 psi

REINFORCED MASONRY: f_m' = 1,500 psi
 f_y = 60,000 psi

LOAD COMBINATIONS AND LIMIT STATES:
 Service I Q = 1.00DC+1.00EV+1.00EH+1.00LS
 Strength I Q = αDC+βEV+ηEH+1.75LS
 Extreme I Q = 1.00DC+1.00EV+1.00EH+1.00EQD+1.00EQE

Where:
 Q: Force Effects
 α: 1.25 or 0.90, Whichever Controls Design
 β: 1.35 or 1.00, Whichever Controls Design
 η: 1.50 or 0.90, Whichever Controls Design
 DC: Dead Load of Structure Components
 EH: Horizontal Earth Fill Pressure
 EV: Vertical Earth Pressure from Earth Fill Weight
 LS: Live Load Surcharge
 EQE: Seismic Earth Pressure
 EQD: Soil and Structural and Nonstructural Components Inertia



TYPE 6B WALL

TYPE 6A WALL - TABLE OF REINFORCING STEEL, DIMENSIONS AND DATA

DESIGN H	3'-4"	4'-0"	4'-8"	5'-4"	6'-0"
W	3'-0"	3'-3"	3'-8"	4'-2"	4'-8"
@ BARS	#5 @ 16	#5 @ 16	#5 @ 16	#5 @ 16	#5 @ 16
Ser: B', q _o	2.8, 0.2	3.0, 0.3	3.4, 0.3	3.8, 0.3	4.3, 0.3
Str: B', q _o	2.7, 0.6	2.9, 0.7	3.2, 0.7	3.6, 0.7	3.3, 0.6
Ext: B', q _o	1.7, 0.8	1.6, 0.9	1.7, 1.0	2.0, 1.0	2.1, 1.0

TYPE 6B WALL - TABLE OF REINFORCING STEEL, DIMENSIONS AND DATA

DESIGN H	3'-4"	4'-0"	4'-8"	5'-4"	6'-0"
W	3'-0"	3'-9"	4'-0"	4'-6"	4'-9"
@ BARS	#5 @ 16	#5 @ 16	#5 @ 16	#5 @ 16	#5 @ 16
@ BARS	#5 @ 16	#5 @ 16	#5 @ 16	#5 @ 16	#5 @ 16
Ser: B', q _o	2.6, 0.4	3.4, 0.4	2.7, 0.8	3.1, 0.8	3.2, 1.0
Str: B', q _o	2.6, 0.8	3.3, 0.9	1.7, 1.6	2.1, 1.6	2.0, 1.8
Ext: B', q _o	1.5, 1.1	2.0, 1.1	2.0, 1.4	2.2, 1.5	2.1, 1.9

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
RETAINING WALL TYPE 6 (CASE 1)
 NO SCALE

RSP B3-7A DATED APRIL 20, 2012 SUPPLEMENTS THE
 STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP B3-7A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	378	431

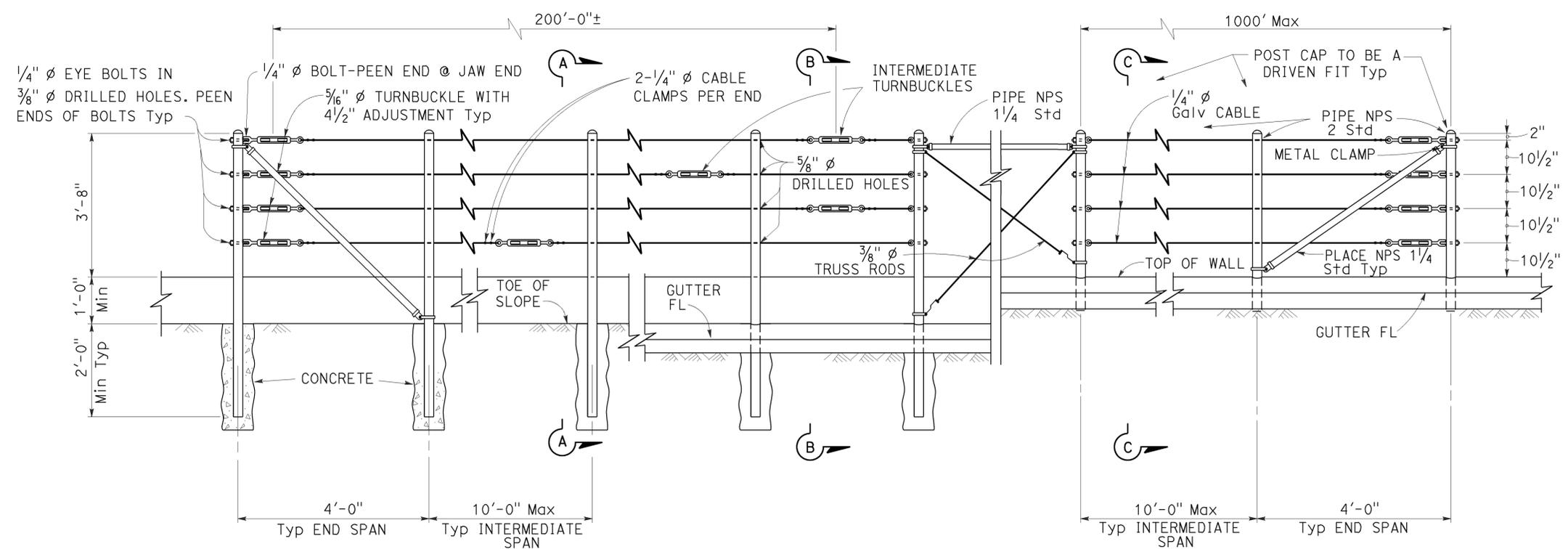
REGISTERED CIVIL ENGINEER

October 21, 2011
PLANS APPROVAL DATE

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

TO ACCOMPANY PLANS DATED 06-27-16

REGISTERED PROFESSIONAL ENGINEER
Tillat Satter
No. C42892
Exp. 3-31-12
CIVIL
STATE OF CALIFORNIA

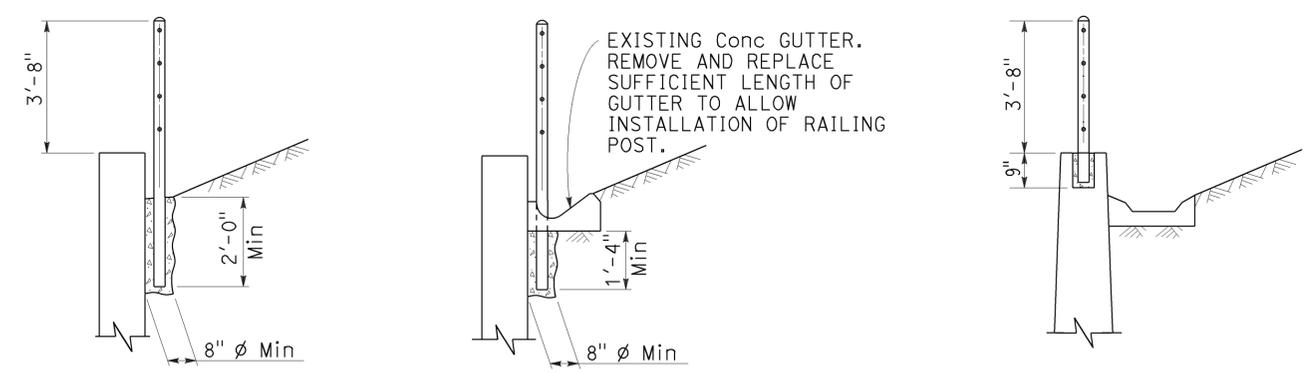


EXISTING WALL (WITHOUT GUTTER) Existing RETAINING WALL (WITH GUTTER) Existing RETAINING WALL (WITH GUTTER) New construction

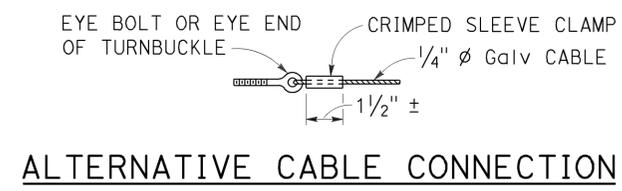
ELEVATION

NOTES:

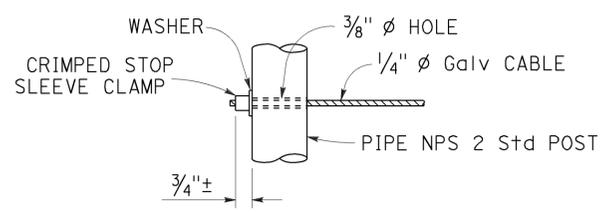
1. Maximum distance between turnbuckles shall be 200'-0"±.
2. Intermediate turnbuckles to be placed in adjacent spans.
3. Cable shall not be spliced between intermediate turnbuckles and end posts.
4. Posts to be vertical.
5. Alignment of holes in posts may vary to conform to slope of top of retaining wall.
6. The Contractor shall verify all dependent dimensions in the field before ordering or fabricating any material.
7. Line posts shall be braced horizontally and trussed diagonally in both directions at intervals not to exceed 1000'.
8. Post pockets to be centered in top of wall.
9. Typical end spans, braced in both directions, shall be constructed at changes in line where the angle of deflection is 15° or more.
10. Provide thimbles at all cable loops.



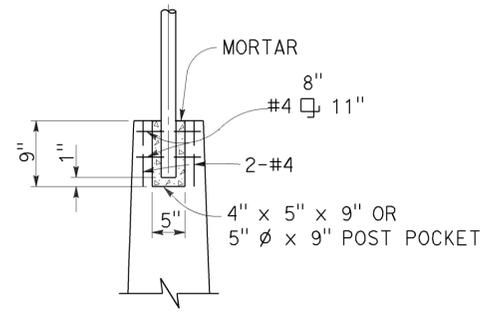
SECTION A-A Existing SECTION B-B Existing SECTION C-C New construction



ALTERNATIVE CABLE CONNECTION



ALTERNATIVE DEAD END ANCHORAGE



POST POCKET

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
CABLE RAILING

NO SCALE

RSP B11-47 DATED OCTOBER 21, 2011 SUPERSEDES STANDARD PLAN B11-47 DATED MAY 20, 2011 - PAGE 293 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP B11-47

INSTRUCTIONS TO FABRICATOR

PROJECT PLANS SHOW:

1. Sign structure location.
2. Length of structure frame.
3. Panel size and locations on structure.
4. Walkway length for two post signs.
5. Post type and height to bottom of frame.
6. Base plate elevation.
7. Footing elevation or location of pile foundation.
8. Photoelectric unit location if required.

REFER TO THE FOLLOWING STANDARD PLANS FOR DETAILS NOT SHOWN ON PROJECT PLANS:

Sheet No. SHEET NAME

- S1 Overhead Signs-Truss, Instructions and Examples
- S2 Overhead Signs-Truss, Single Post Type, Post Types II to IX
- S3 Overhead Signs-Truss, Single Post Type, Base Plate and Anchorage Details
- S4 Overhead Signs-Truss, Single Post Type, Structural Frame Members Details No. 1
- S5 Overhead Signs-Truss, Single Post Type, Structural Frame Members Details No. 2
- S6 Overhead Signs-Truss, Gusset Plate Details
- S8 Overhead Signs-Truss, Single Post Type, Round Pedestal Pile Foundation
- S9 Overhead Signs-Truss, Two Post Type, Post Types I-S through VII-S
- S10 Overhead Signs-Truss, Two Post Type, Base Plate and Anchorage Details
- S11 Overhead Signs-Truss, Two Post Type, Structural Frame Members
- S12 Overhead Signs-Truss, Structural Frame Details
- S13 Overhead Signs-Truss, Frame Juncture Details
- S15 Overhead Signs-Truss, Two Post Type, Round Pedestal Pile Foundation
- S16 Overhead Signs, Walkway Details No. 1
- S17 Overhead Signs, Walkway Details No. 2
- S17A Overhead Signs, Walkway Details No. 3
- S18 Overhead Signs, Walkway Safety Railing Details
- S19 Overhead Signs-Truss, Sign Mounting Details, Laminated Panel-Type A
- S20 Overhead Signs, Steel Frames, Removable Sign Panel Frames
- S21 Overhead Signs, Removable Sign Panel Frames, Mounting Details
- S22 Overhead Signs-Truss, Removable Sign Panel Frames, 9'-2" and 10'-0" Sign Panels

WALKWAY BRACKETS:

Space all walkway brackets maintaining uniform spacing where possible. Maximum spacing shall not exceed 5'-6".

LIGHTING FIXTURE SUPPORTS:

Where distance from walkway bracket to end of sign panel exceeds 1'-4", extend lighting fixture supports to next walkway bracket. See Example No. 2.

WALKWAY AND SAFETY RAILING:

Walkway to be continuous for entire length of frame for single post signs. For two post signs, see Project Plans. Safety railing to protect entire walkway, but continuous for no more than 11'-0" in one unit.



NOTES:

1. Signs are shown and dimensioned looking in the direction of traffic. Double faced signs are shown and dimensioned looking ahead along stationing.
2. Mandatory dimension limit.

GENERAL NOTES:

LOADING:

WIND LOADING:

Normal to face of sign: 40.3 psf on 100% Truss surface area (i.e. 100% panel coverage).

Transverse to face of sign: 20% of normal force.

WALKWAY LOADING:

Dead load +500 LB concentrated live load.

UNIT STRESSES:

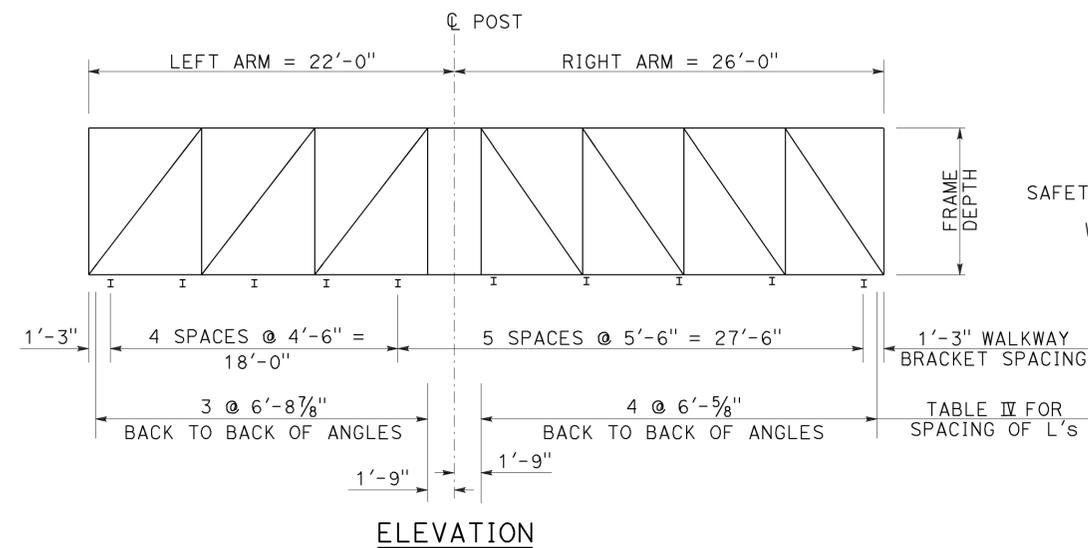
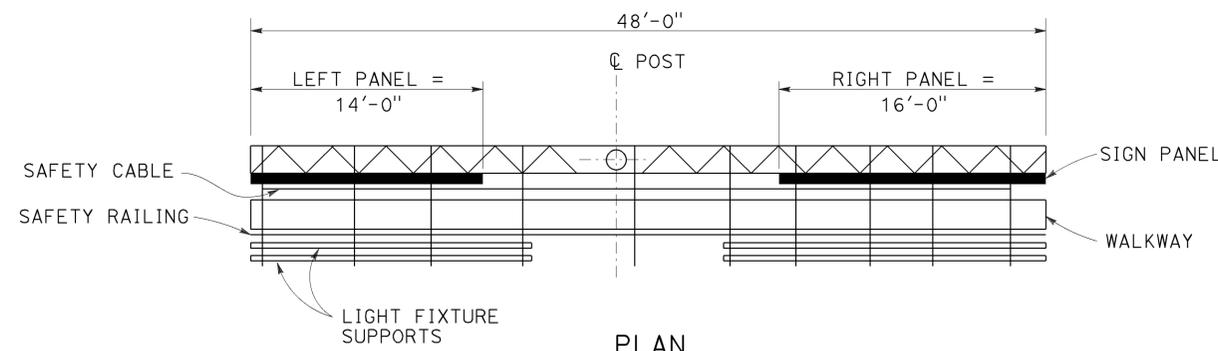
STRUCTURAL STEEL: $f_y = 36,000$ psi
 REINFORCED CONCRETE: $f_y = 60,000$ psi
 $f'_c = 3600$ psi
 FOOTING SOIL PRESSURE: 2.5 ksf (spread footing)

MINIMUM CLEARANCE

Vertical roadway clearance 18'-0" (bottom of walkway system)

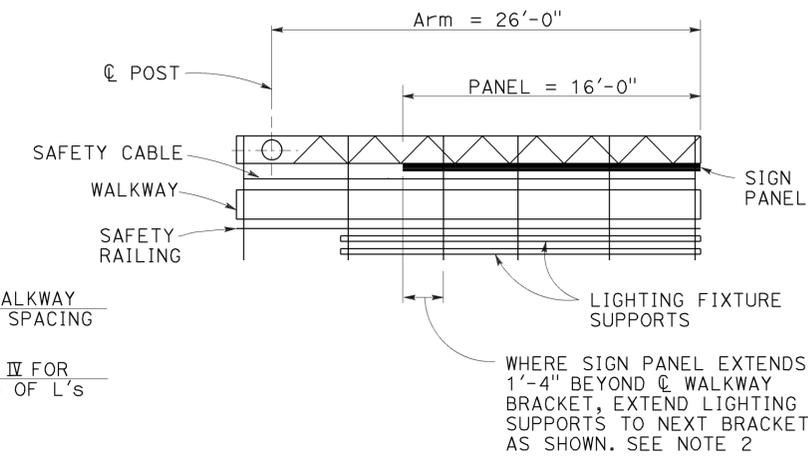
WELDING:

All welding continuous unless otherwise noted on the plans.



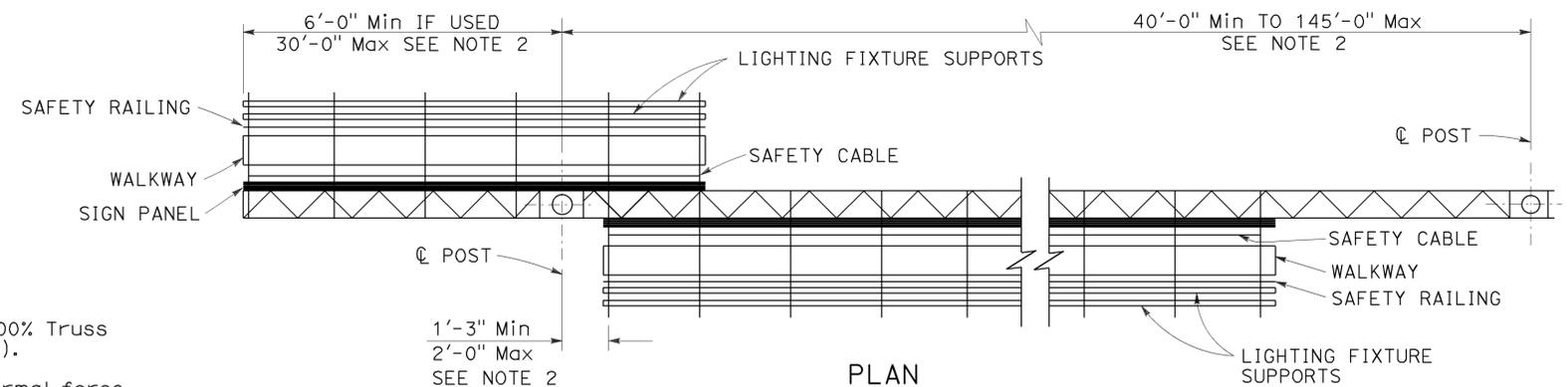
UNBALANCED SINGLE POST TYPE

Example No. 1



CANTILEVER SINGLE POST TYPE

Example No. 2



TWO POST TYPE WITH CANTILEVER (PART DOUBLE-FACED)

Example No. 3

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

OVERHEAD SIGNS-TRUSS INSTRUCTIONS AND EXAMPLES

NO SCALE

RSP S1 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN S1 DATED MAY 20, 2011 - PAGE 334 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP S1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	379	431

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.

TO ACCOMPANY PLANS DATED 06-27-16

2010 REVISED STANDARD PLAN RSP S1

TABLE XV

POST TYPE	PIPE		CAP PLATE SIZE FOR CHORD L's 5 x 5	CAP PLATE SIZE FOR CHORD L's 6 x 6	ROUND PEDESTAL					SQUARE PEDESTAL					SPREAD FOOTING						
	NPS	THICKNESS			PEDESTAL SIZE Dia	VERTICAL EQUALLY SPACED TOTAL	J-BARS BAR SIZE	SPIRAL BAR SIZE	PITCH	PEDESTAL SIZE SQUARE	VERTICAL EQUALLY SPACED TOTAL	J-BARS BAR SIZE	# OF BARS EA FACE	HOOP BAR SIZE	SPACING	(SEE NOTE 2)					
	REINFORCEMENT		WIDTH													LONGITUDINAL		FOOTING STIRRUPS			
														TOP	BOTTOM	TOP	BOTTOM				
II	14	1/2"	2'-0" x 2'-0" x 1"	2'-2" x 2'-2" x 1"	5'-3"	16	#10	#5	3 1/2"	5'-3"	16	#10	5	#5	3 1/2"	12'-0" x 14'-0" x 2'-6"	14-#6	14-#7	13-#9	13-#9	#5 @ 12
III	16		2'-2" x 2'-2" x 1"	2'-4" x 2'-4" x 1"												12'-0" x 14'-0" x 2'-6"	15-#6	15-#7			
IV	18		2'-4" x 2'-4" x 1"	2'-6" x 2'-6" x 1"												12'-0" x 14'-0" x 2'-6"	15-#6	15-#7			
V	20		2'-6" x 2'-6" x 1"	2'-8" x 2'-8" x 1"												13'-0" x 14'-0" x 2'-6"	15-#6	15-#7	14-#9	14-#9	
VI	24		2'-10" x 2'-10" x 1"	3'-0" x 3'-0" x 1"	5'-9"		#11			5'-9"		#11				13'-0" x 16'-0" x 2'-6"	17-#7	17-#7		14-#11	
VII	24	3/4"														13'-0" x 17'-0" x 2'-6"	18-#7	18-#7			
VIII	24	3/32"														13'-0" x 18'-0" x 2'-6"	19-#7	19-#7			
IX	24	3/32"														13'-0" x 18'-0" x 2'-6"	19-#7	19-#7			

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	380	431

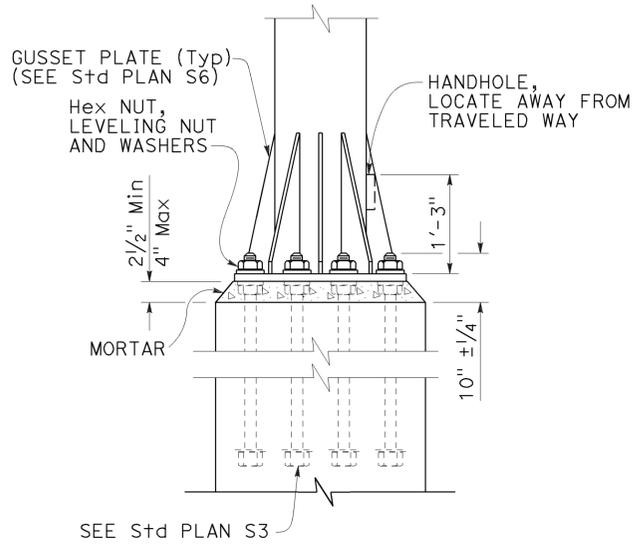
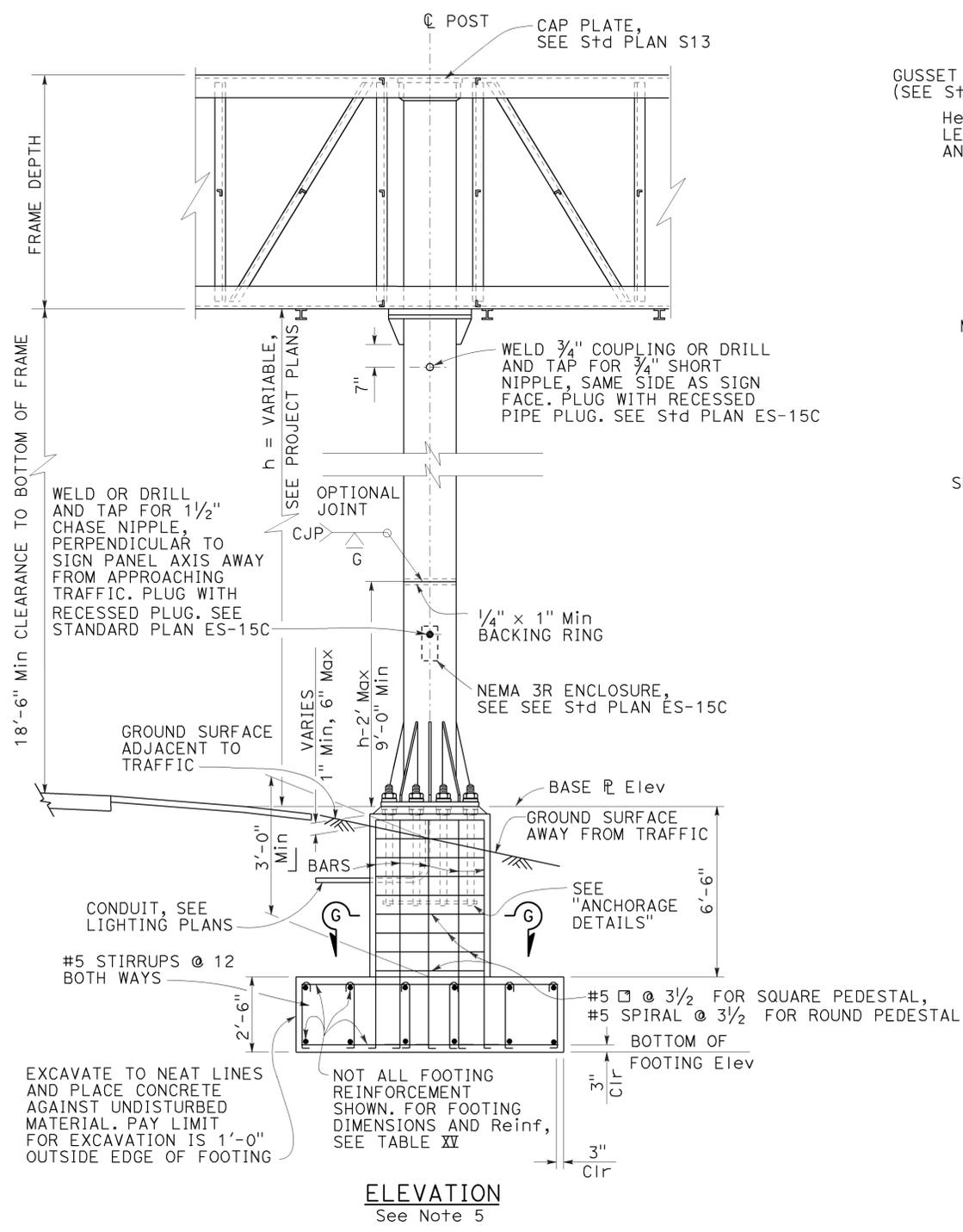
Stanley P. Johnson
REGISTERED CIVIL ENGINEER

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.

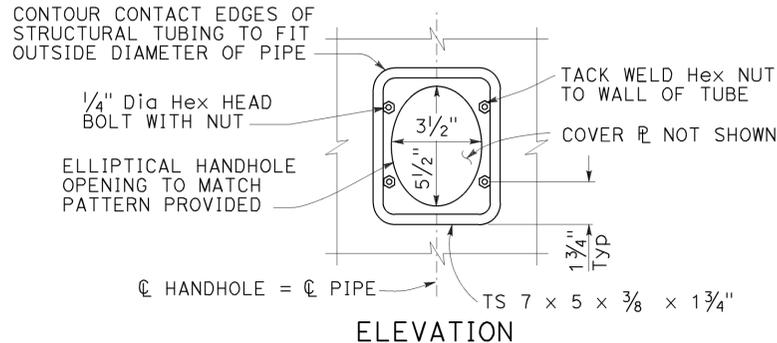
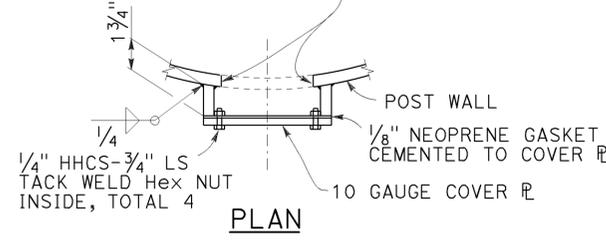
Stanley P. Johnson
REGISTERED PROFESSIONAL ENGINEER
No. C57793
Exp. 3-31-14
CIVIL
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 06-27-16



ELEVATION ANCHORAGE DETAILS

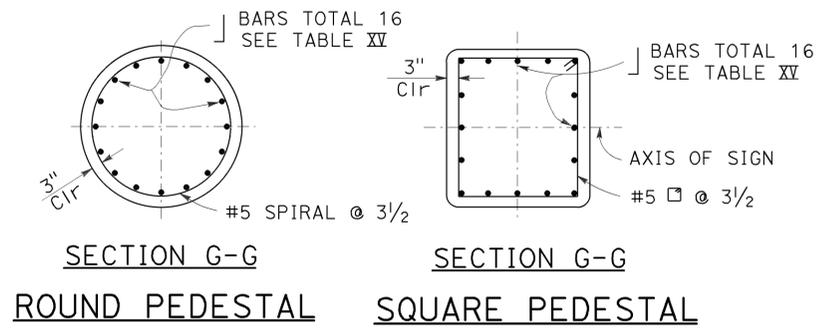
GRIND EDGES SMOOTH, ROUGHNESS OF EDGES NO GREATER THAN 1000 MICROINCHES



TYPICAL DETAILS OF HANDHOLE AND COVER

NOTES:

1. For "General Notes", see Revised Standard Plan RSP S1.
2. Longer side of footing (longitudinal) shall be normal to axis of sign.
3. Backfill shall be in place prior to erection of post.
4. Thread upper 10" of anchor bolts and galvanize upper 1'-0".
5. Spread footing with square pedestal foundation shown, use Pile Foundation when shown on the Project Plans. For pile foundation details, see Standard Plan S8.
6. Anchor plates may be retained with hexagon nut or formed head as alternatives to details shown.
7. On single post sign structures, the post shall be raked out of plumb, with the use of the leveling nuts to make the bottom of the sign frame level.
8. At final position of post all top and bottom nuts shall be tightened against base plate.
9. When foundation is located on a steep slope with exposed face of concrete adjacent to traffic, see "Detail C" on Standard Plan S8, as applicable.
10. Slope protection required when indicated on the Project Plans.



SECTION G-G ROUND PEDESTAL SECTION G-G SQUARE PEDESTAL

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**OVERHEAD SIGNS-TRUSS
SINGLE POST TYPE
POST TYPES II THROUGH IX**
NO SCALE

RSP S2 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN S2 DATED MAY 20, 2011 - PAGE 335 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP S2

2010 REVISED STANDARD PLAN RSP S2

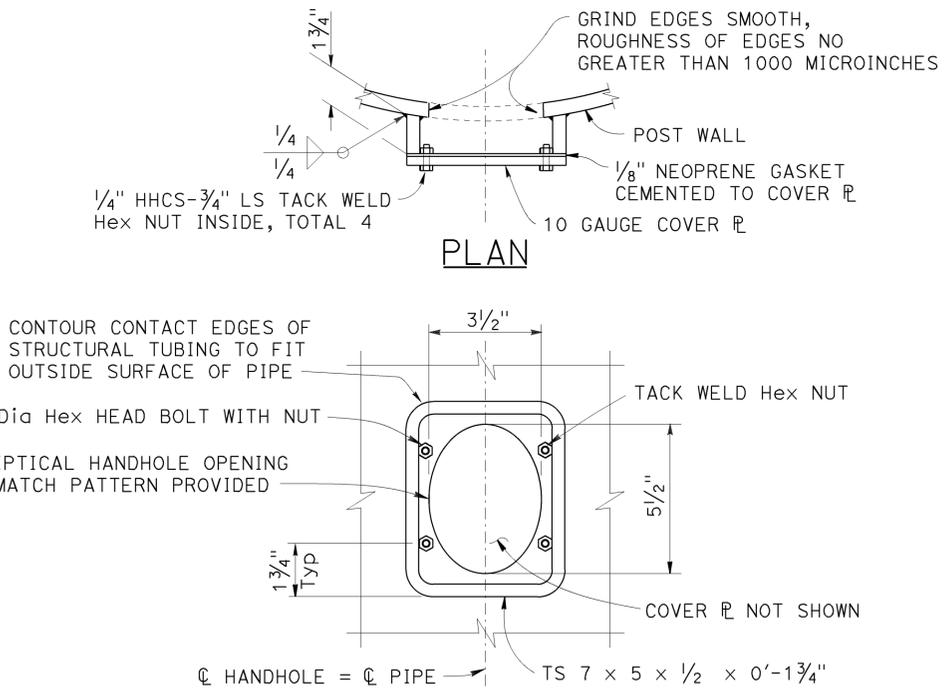
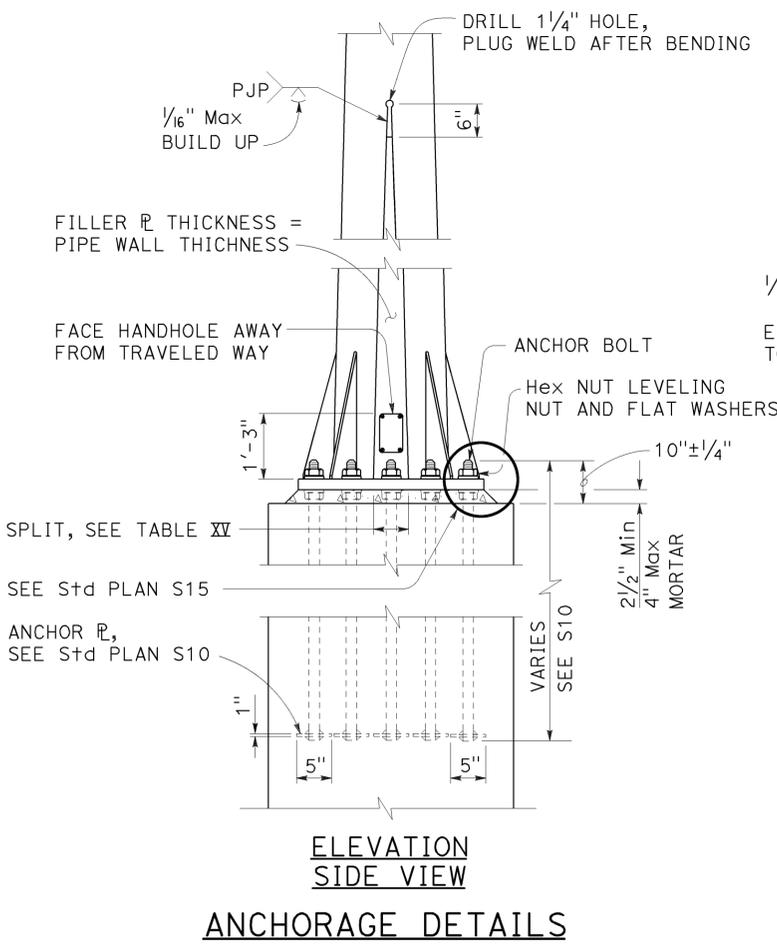
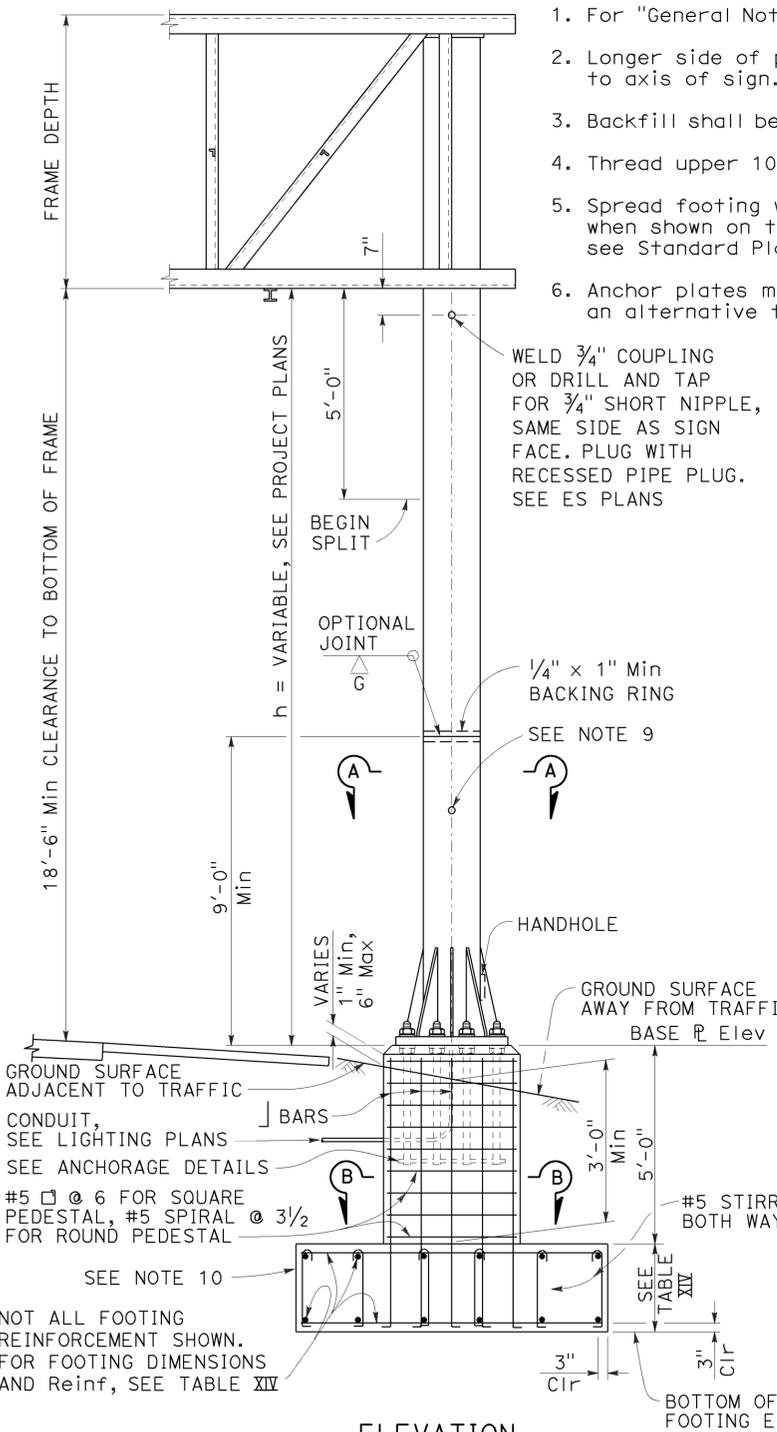
NOTES:

- For "General Notes", see Revised Standard Plan RSP S1.
- Longer side of post and footing (longitudinal) shall be normal to axis of sign.
- Backfill shall be in place prior to erection of post.
- Thread upper 10" of anchor bolts and galvanize upper 1'-0".
- Spread footing with square pedestal shown, use pile foundation when shown on the Project Plans. For pile foundation details, see Standard Plan S15.
- Anchor plates may be retained with Hex nut or formed head as an alternative to details shown.

- When foundation is located on a steep slope with exposed face of concrete adjacent to traffic, see "Detail C" on Standard Plan S15.
- Slope protection required when indicated on Project Plans.
- Weld coupling or drill and tap for 1/2" C chase nipple, perpendicular to sign panel axis away from approaching traffic. Plug with recessed pipe plug. See Standard Plan ES-15C.
- Excavate to neat lines and place concrete against undisturbed material.

TABLE XIV

POST TYPE	PIPE			ROUND PEDESTAL					SQUARE PEDESTAL					SPREAD FOOTING						
	NPS	THICKNESS	SPLIT	PEDESTAL SIZE Dia	VERTICAL J-BARS		SPIRAL			PEDESTAL SIZE SQUARE	VERTICAL J-BARS		HOOP		(SEE NOTE 2)	REINFORCEMENT				FOOTING STIRRUPS
					EQUALLY SPACED TOTAL	BAR SIZE	BAR SIZE	PITCH	EQUALLY SPACED TOTAL		BAR SIZE	# OF BARS EA FACE	BAR SIZE	SPACING		WIDTH TOP	WIDTH BOTTOM	LONGITUDINAL TOP	LONGITUDINAL BOTTOM	
I-S	14	1/2"	5"	5'-3"	16	#10	#5	3 1/2"	5'-3"	16	#10	5	#5	6"		7'-0" x 13'-0" x 2'-6"	14-#6	14-#7	10-#9	
II-S	16		6"												7'-0" x 13'-0" x 2'-6"	14-#6	14-#7	10-#9	10-#9	
III-S	18		7"												7'-0" x 13'-0" x 2'-6"	14-#6	14-#7	11-#9	11-#9	
IV-S	20		8"												8'-0" x 14'-0" x 2'-6"	15-#7	15-#7	12-#9	12-#11	
V-S	24		8"	5'-9"		#11			5'-9"		#11				8'-0" x 16'-0" x 3'-0"	17-#7	17-#7	12-#9	12-#11	
VI-S	24	3 1/32"	10"	5'-9"		#11			5'-9"		#11				9'-0" x 17'-0" x 3'-0"	18-#7	18-#7	12-#9	12-#11	
VII-S	24	3 1/32"	10"	5'-9"		#11			5'-9"		#11				10'-0" x 18'-0" x 3'-0"	19-#7	19-#7	13-#9	13-#11	



**OVERHEAD SIGNS-TRUSS
TWO POST TYPE
POST TYPES I-S THROUGH VII-S
NO SCALE**

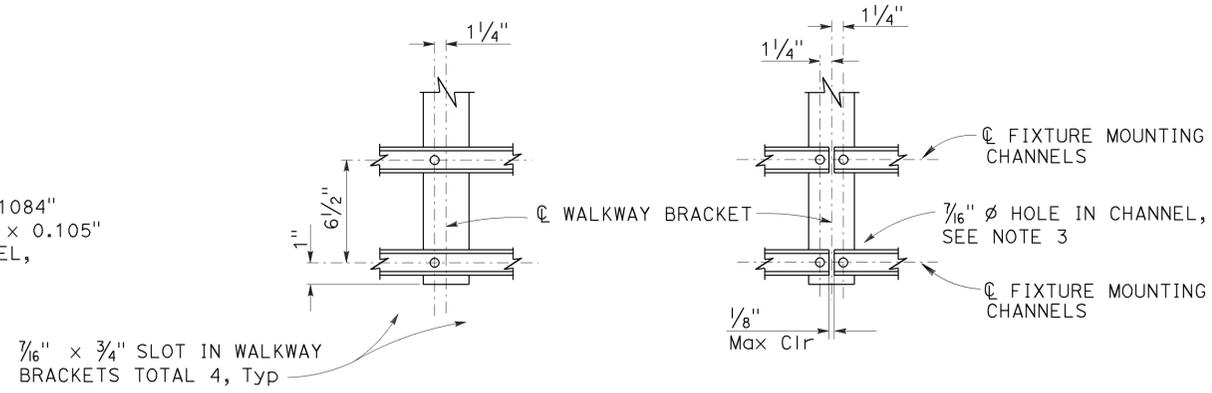
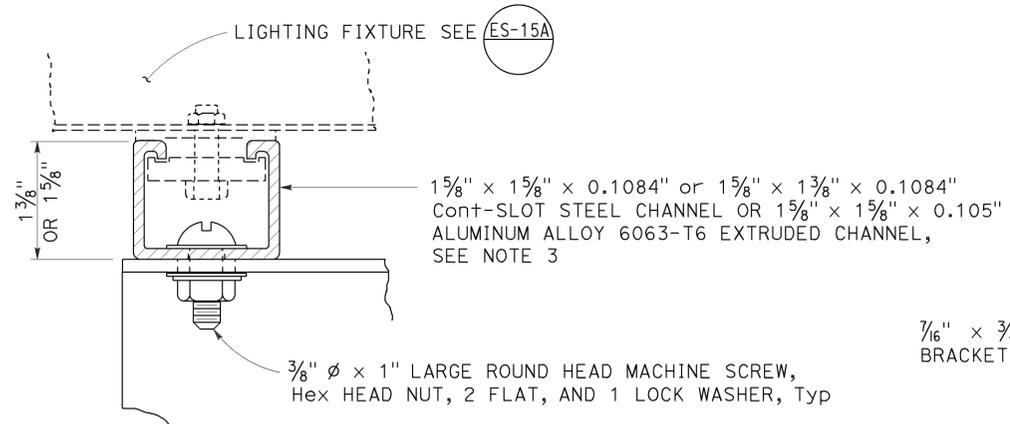
RSP S9 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN S9 DATED MAY 20, 2011 - PAGE 342 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP S9

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	382	431

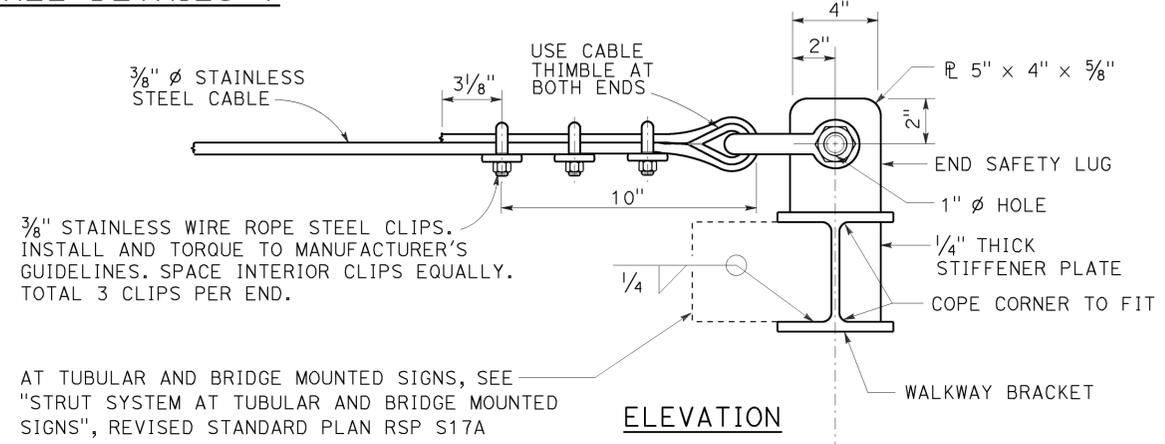
REGISTERED CIVIL ENGINEER
Jeffrey B. Woody
 October 30, 2015
 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.
 REGISTERED PROFESSIONAL ENGINEER
 Jeffrey B. Woody
 No. C41260
 Exp. 3-31-17
 CIVIL
 STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 06-27-16



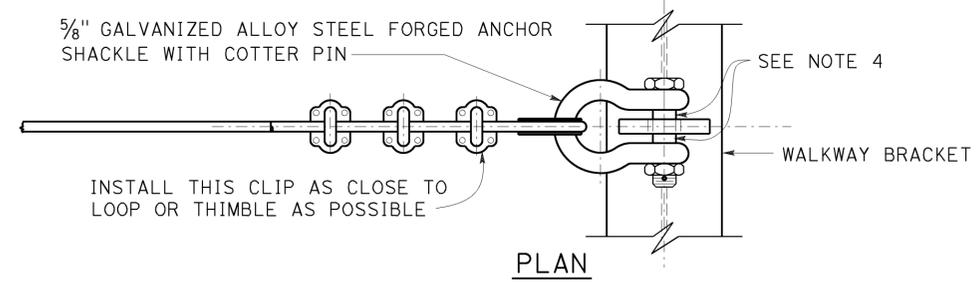
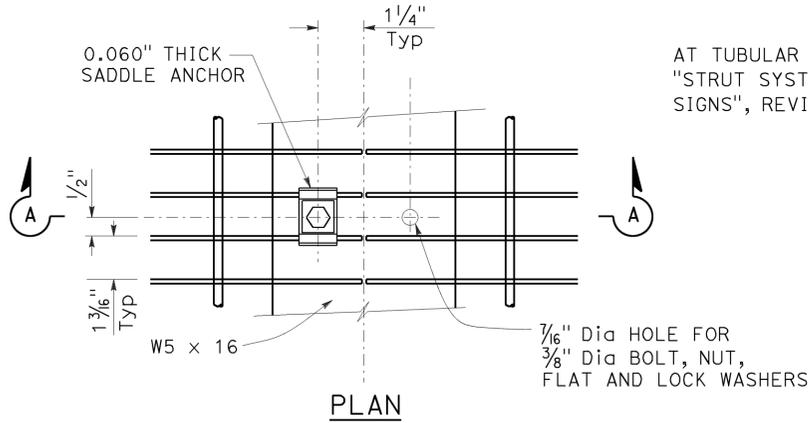
LIGHTING FIXTURE MOUNTING CHANNEL DETAILS 1

TYPICAL CONNECTION CONNECTION AT SPLICE
 LIGHTING FIXTURE MOUNTING CHANNEL DETAILS 2

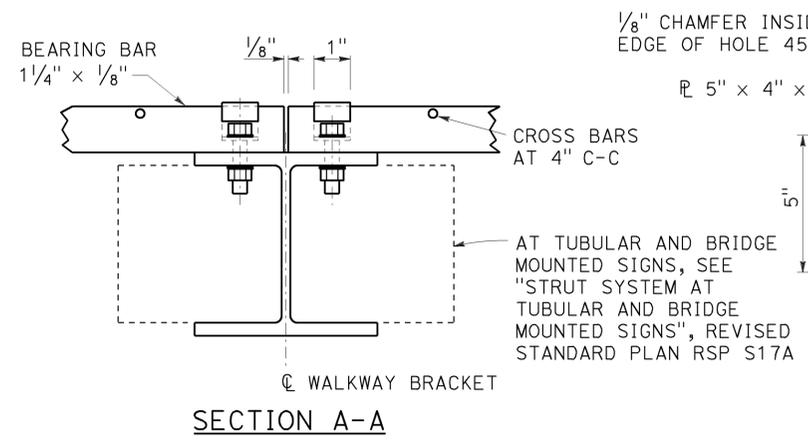


NOTES:

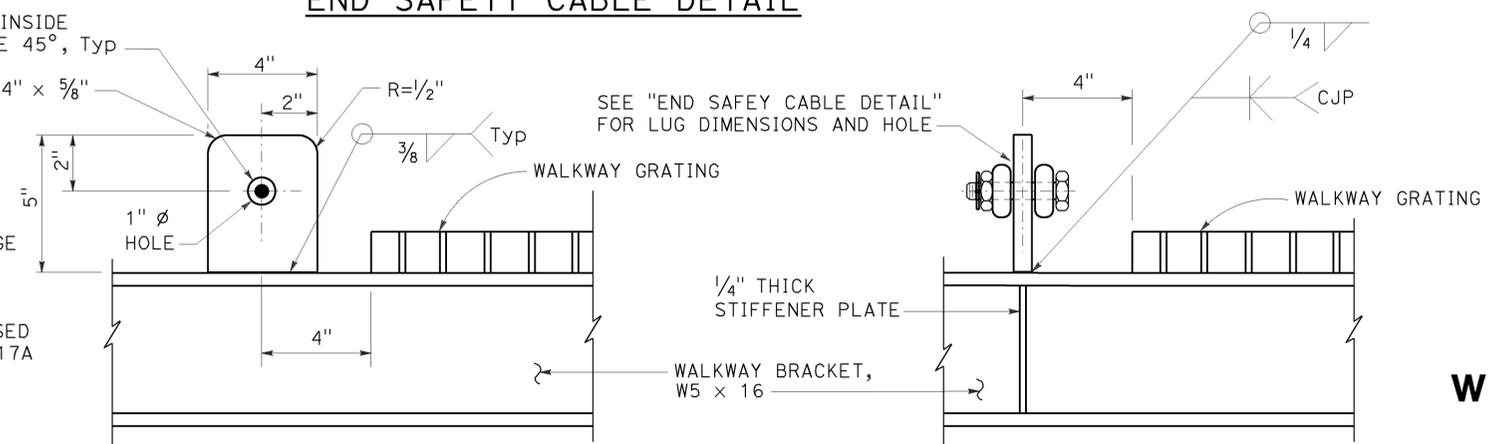
1. Welded type grating shall have 1 1/4" x 1/8" bearing bars at 1 3/8" centers with 1/4" diameter (or equal) cross bars at 4" centers. If mechanical lock grating is used, it shall be equal in strength to the welded type. Alternate hold-down clips may be submitted for approval.
2. Walkway grating and light fixture mounting channels to be continuous (no splices) over as many walkway brackets as practical and consistent with fabrication, ease of handling and assembly.
3. Contractor may substitute 1 5/8" x 1 5/8" x .1084" cont-slot steel channel with pre-punched slots not larger than 1 1/2" x 3". Slots shall be at bottom of channel and shall be parallel to channel. Slots shall be spaced not closer than 4" center to center.
4. Place an equal amount of washers on each side to align cable with end lug without restricting shackle bolt rotation or contacting cable.



END SAFETY CABLE DETAIL



WALKWAY GRATING DETAILS
 Shown at splice



STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**OVERHEAD SIGNS
 WALKWAY DETAILS No. 2**
 NO SCALE

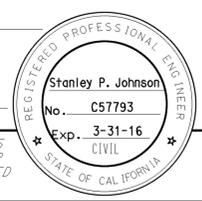
RSP S17 DATED OCTOBER 30, 2015 SUPERSEDES STANDARD PLAN S17 DATED MAY 20, 2011 - PAGE 350 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP S17

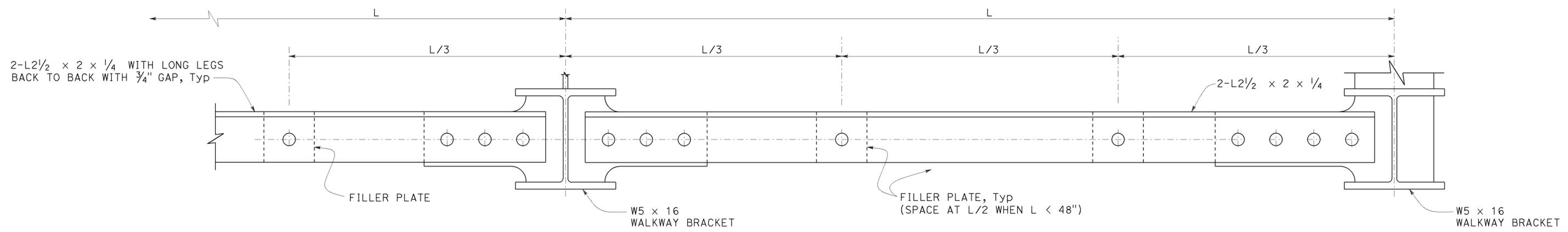
2010 REVISED STANDARD PLAN RSP S17

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	383	431

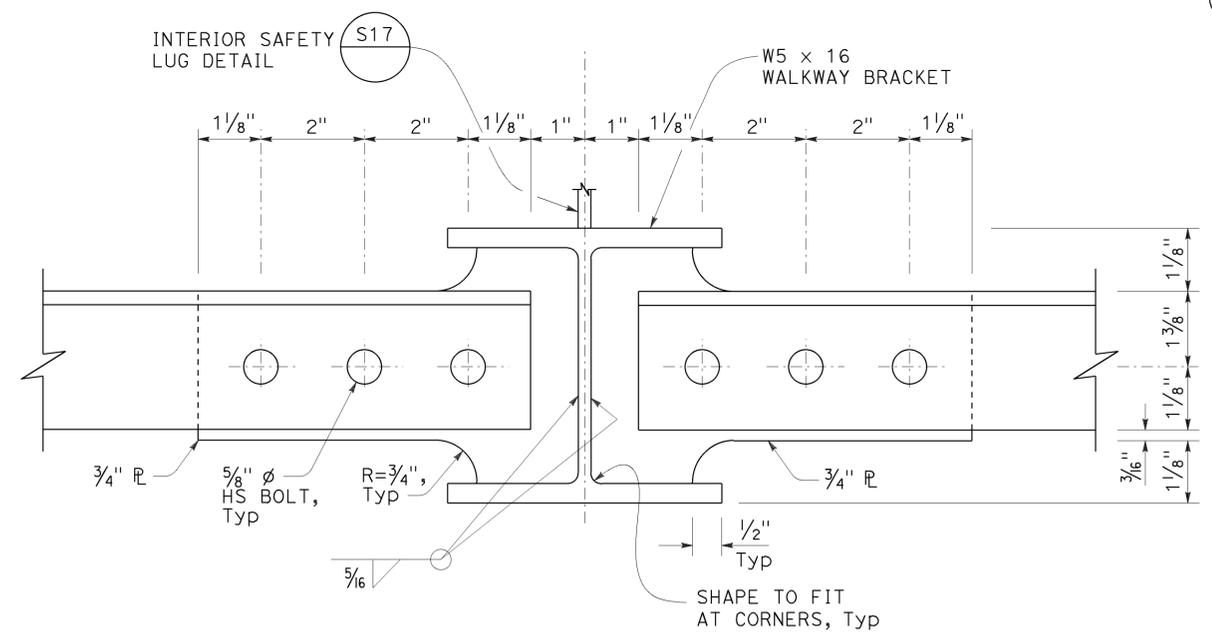
Stanley P. Johnson
 REGISTERED CIVIL ENGINEER
 October 30, 2015
 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



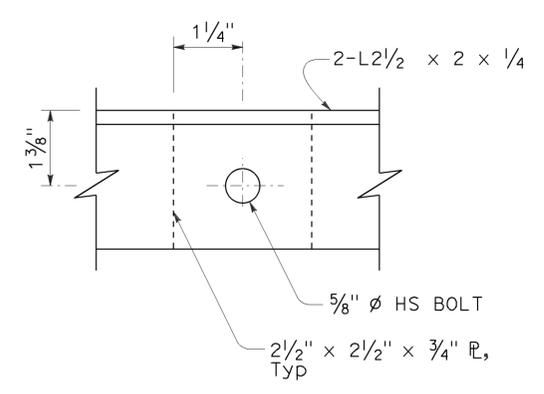
TO ACCOMPANY PLANS DATED 06-27-16



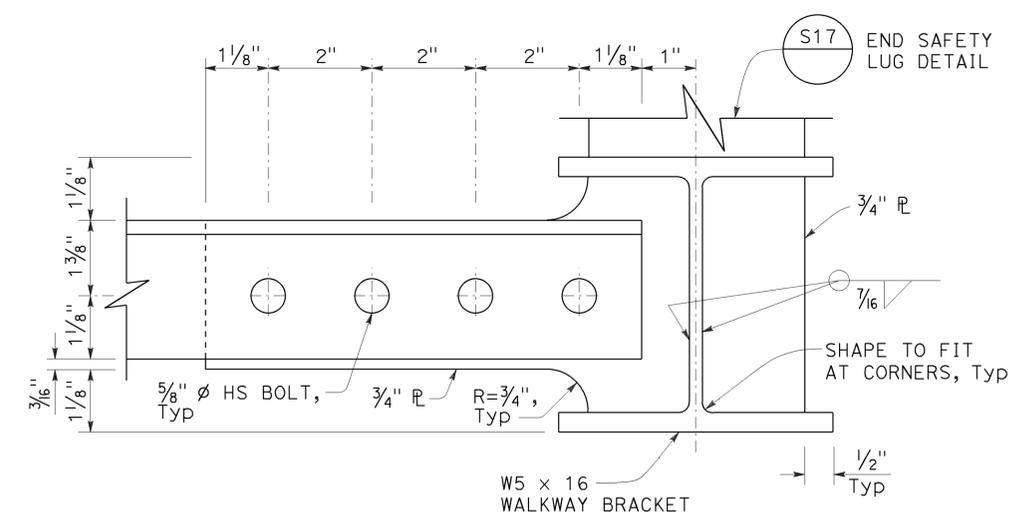
STRUT SYSTEM AT TUBULAR AND BRIDGE MOUNTED SIGNS
 (Continuous between end safety lug locations)



INTERIOR SAFETY LUG LOCATION



FILLER PLATE



END SAFETY LUG LOCATION

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**OVERHEAD SIGNS
 WALKWAY DETAILS No. 3**
 NO SCALE

RSP S17A DATED OCTOBER 30, 2015 SUPERSEDES STANDARD PLAN S17A DATED MAY 20, 2011 - PAGE 351 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP S17A

2010 REVISED STANDARD PLAN RSP S17A

LEGEND:

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

ABBREVIATIONS

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

MISCELLANEOUS ELECTROLIERS

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

NOTES:

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

STANDARD ELECTROLIER

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	384	431

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

October 30, 2015
PLANS APPROVAL DATE

Theresa Gabriel
REGISTERED PROFESSIONAL ENGINEER
No. E15129
Exp. 6-30-16
ELECTRICAL
STATE OF CALIFORNIA

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

TO ACCOMPANY PLANS DATED 06-27-16

SOFFIT AND WALL-MOUNTED LUMINAIRES

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

NOTE:
Arrow indicates "street side" of luminaire.

COMMONLY USED SYMBOLS FOR UNITED STATES CUSTOMARY UNITS OF MEASUREMENT:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

NO SCALE

RSP ES-1A DATED OCTOBER 30, 2015 SUPERSEDES RSP ES-1A DATED JULY 19, 2013 AND STANDARD PLAN ES-1A DATED MAY 20, 2011 - PAGE 425 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-1A

2010 REVISED STANDARD PLAN RSP ES-1A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	385	431

Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 October 30, 2015
 PLANS APPROVAL DATE

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TO ACCOMPANY PLANS DATED 06-27-16

CONDUIT

NEW	EXISTING	
		LIGHTING CONDUIT, UNLESS OTHERWISE INDICATED OR NOTED
		TRAFFIC SIGNAL CONDUIT
		COMMUNICATION CONDUIT
		TELEPHONE CONDUIT
		FIRE ALARM CONDUIT
		FIBER OPTIC CONDUIT
		CONDUIT TERMINATION
		CONDUIT RISER ATTACHED TO THE STRUCTURE OR SERVICE POLE

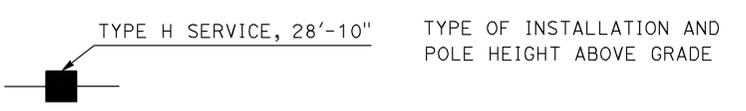
SIGNAL EQUIPMENT

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

SERVICE EQUIPMENT

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

POLE-MOUNTED SERVICE DESIGNATION



FLASHING BEACON

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

SIGNAL EQUIPMENT Cont

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

NOTES:

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

ILLUMINATED OVERHEAD SIGN

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

NO SCALE

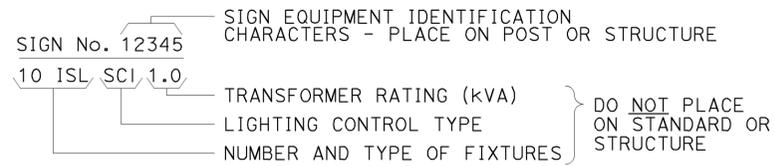
RSP ES-1B DATED OCTOBER 30, 2015 SUPERSEDES RSP ES-1B DATED JULY 19, 2013 AND STANDARD PLAN ES-1B DATED MAY 20, 2011 - PAGE 426 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-1B

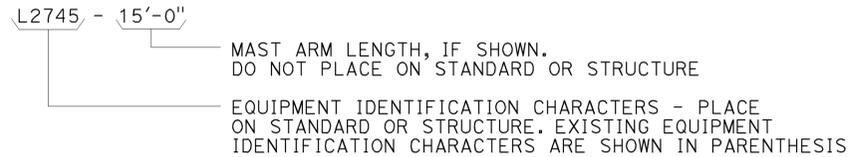
2010 REVISED STANDARD PLAN RSP ES-1B

EQUIPMENT IDENTIFICATION

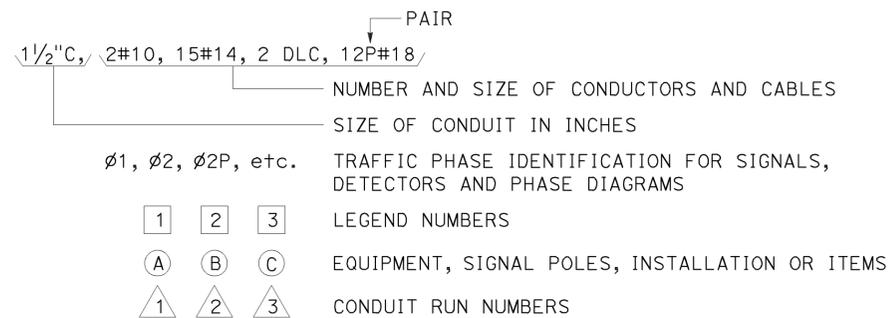
ILLUMINATED SIGN IDENTIFICATION:



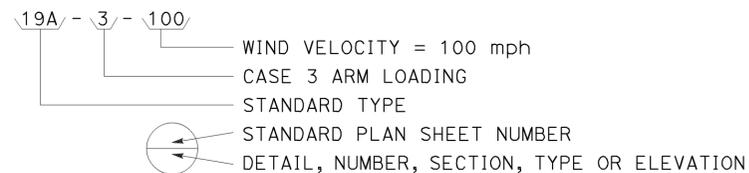
ELECTROLIER OR EQUIPMENT IDENTIFICATION:



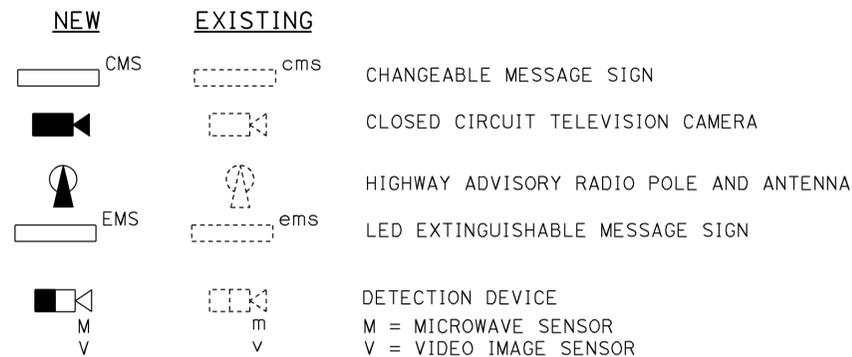
CONDUIT AND CONDUCTOR IDENTIFICATION:



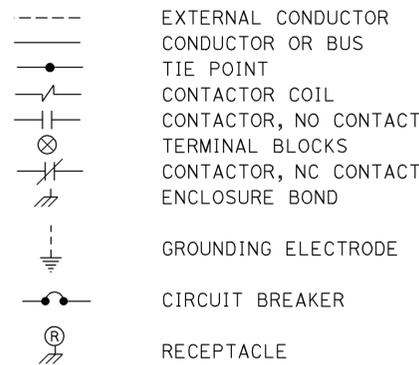
SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



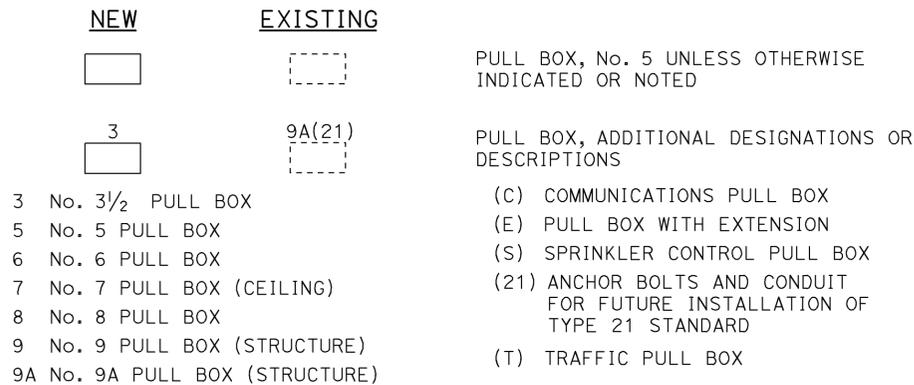
MISCELLANEOUS EQUIPMENT



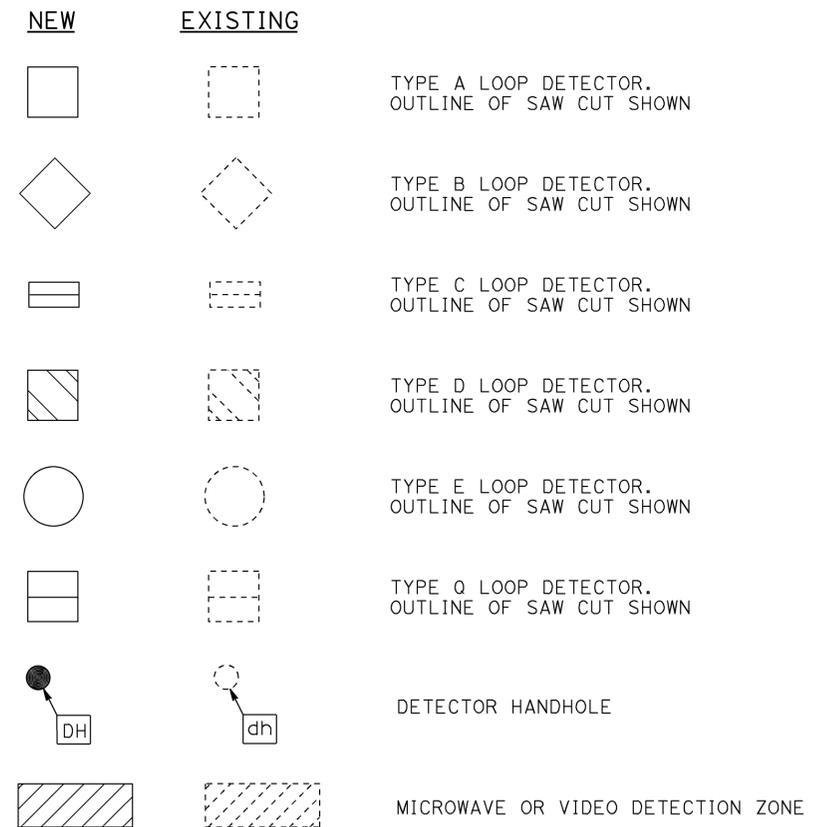
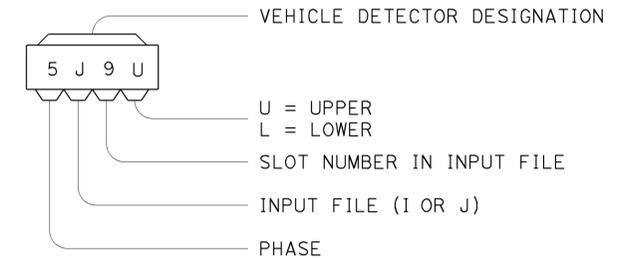
WIRING DIAGRAM LEGEND



PULL BOXES



VEHICLE DETECTORS



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

NO SCALE

RSP ES-1C DATED APRIL 15, 2016 SUPERSEDES RSP ES-1C DATED OCTOBER 30, 2015 AND RSP ES-1C DATED JULY 19, 2013 AND STANDARD PLAN ES-1C DATED MAY 20, 2011 - PAGE 427 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-1C

2010 REVISED STANDARD PLAN RSP ES-1C

NOTES:

1. Controller units, plug-mounted equipment, shelf-mounted equipment and wall-mounted equipment shall be located to permit safe and easy removal or replacement without removing any other piece of equipment.
2. Cabinet fan may be installed at an alternate location near the top of the cabinet when approved by the Engineer.
3. Where telephone interconnect is required, a minimum of 5" clear vertical space shall be provided inside the cabinet for the equipment.
4. Telephone interconnect conductors shall be enclosed in a 3/4" or larger conduit through the foundation. Type 4 conduit shall be used to separate telephone and power conductors in cabinets.

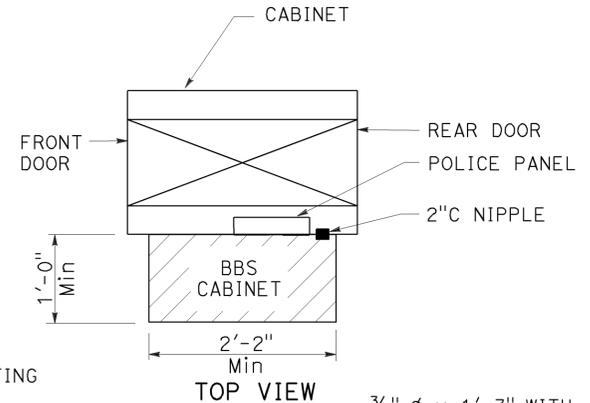
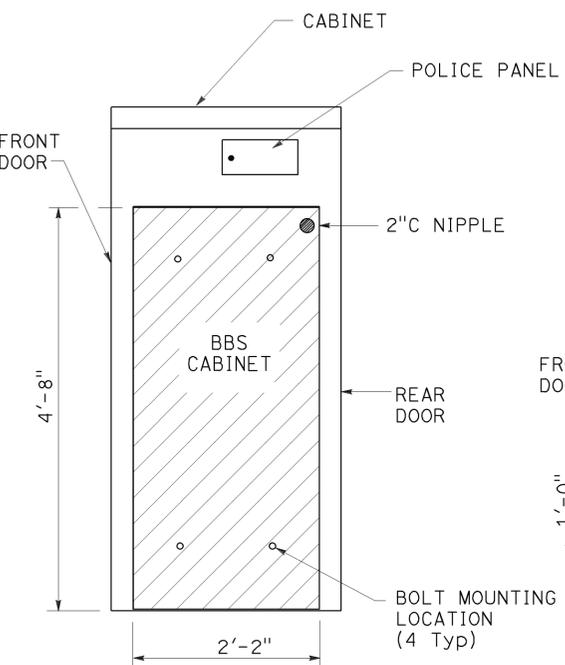
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	387	431

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

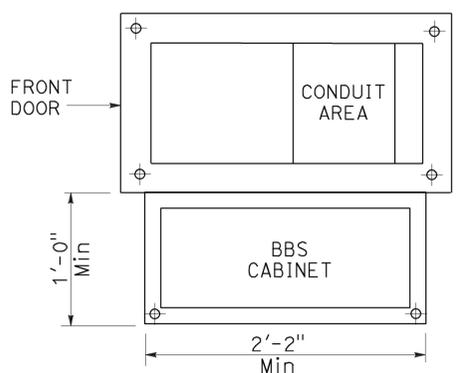
April 15, 2016
PLANS APPROVAL DATE

Theresa Aziz Gabriel
No. E15129
Exp. 6-30-16
ELECTRICAL
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 06-27-16



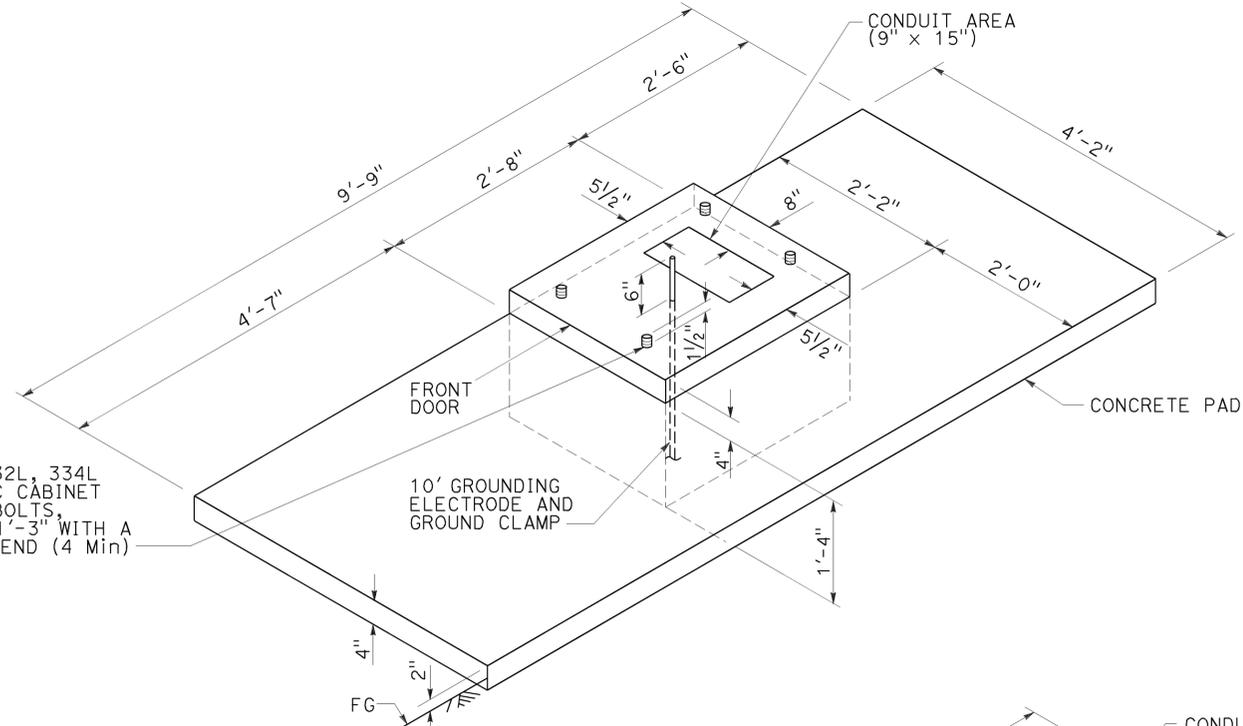
BBS CABINET MOUNTED TO THE MODEL 332L CABINET



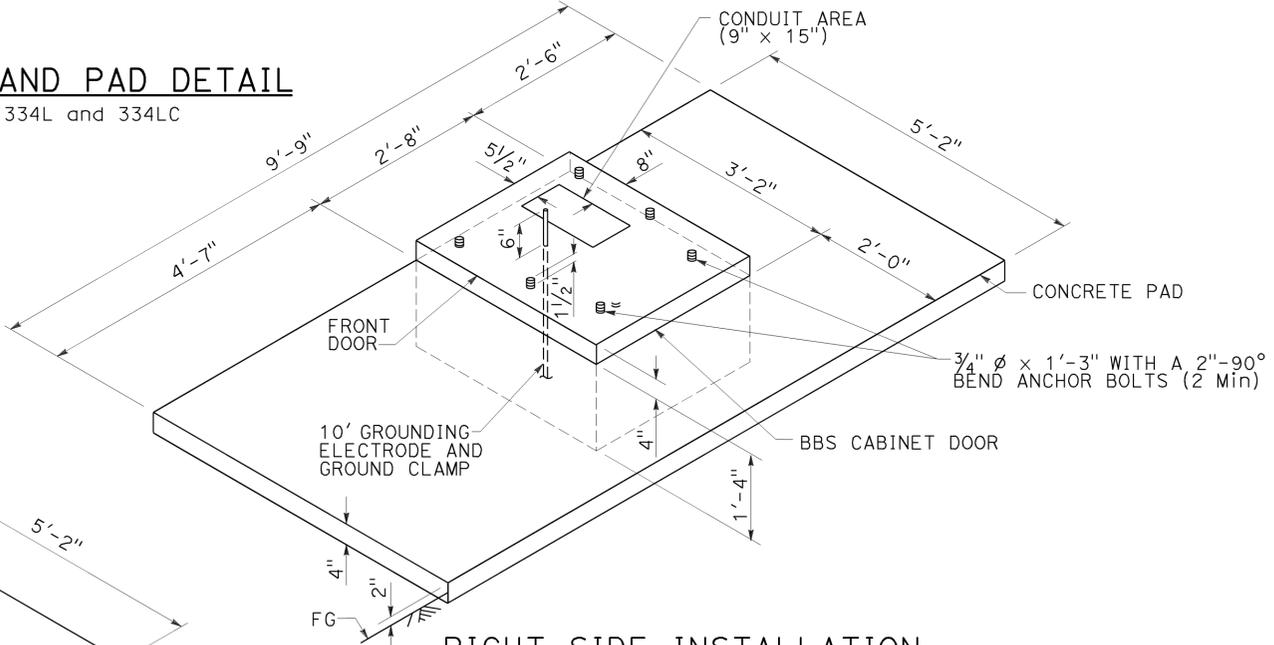
BASE PLAN FOR BBS MOUNTED TO THE MODEL 332L CABINET

(FOR DIMENSIONS AND DETAILS NOT SHOWN, SEE CABINET HOUSING DETAILS OF THE TRANSPORTATION ELECTRICAL EQUIPMENT SPECIFICATION (TEES))

MODEL 332L, 334L OR 334LC CABINET ANCHOR BOLTS, 3/4" Ø x 1'-3" WITH A 2"-90° BEND (4 Min)

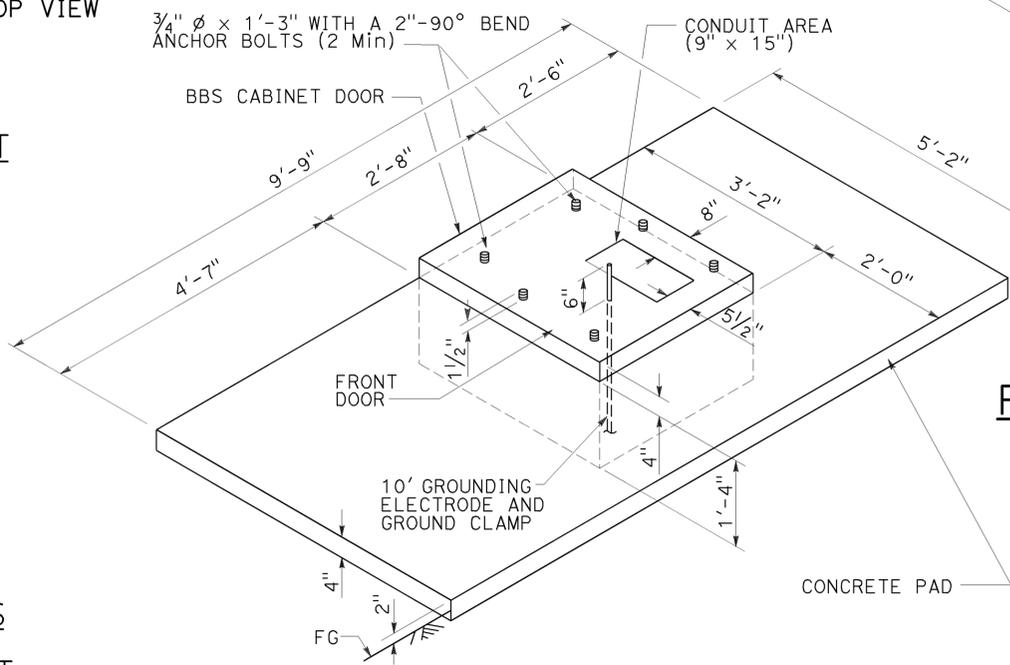


FOUNDATION AND PAD DETAIL
Model 332L, 334L and 334LC



RIGHT SIDE INSTALLATION
DETAIL B

MODIFIED MODEL 332L CABINET
FOUNDATION DETAIL FOR BATTERY BACKUP SYSTEM



LEFT SIDE INSTALLATION
DETAIL A

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS
(CONTROLLER CABINET
FOUNDATION AND PAD DETAILS)

NO SCALE

RSP ES-3C DATED APRIL 15, 2016 SUPERSEDES RSP ES-3C DATED OCTOBER 30, 2015 AND STANDARD PLAN ES-3C DATED MAY 20, 2011 - PAGE 437 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-3C

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	388	431

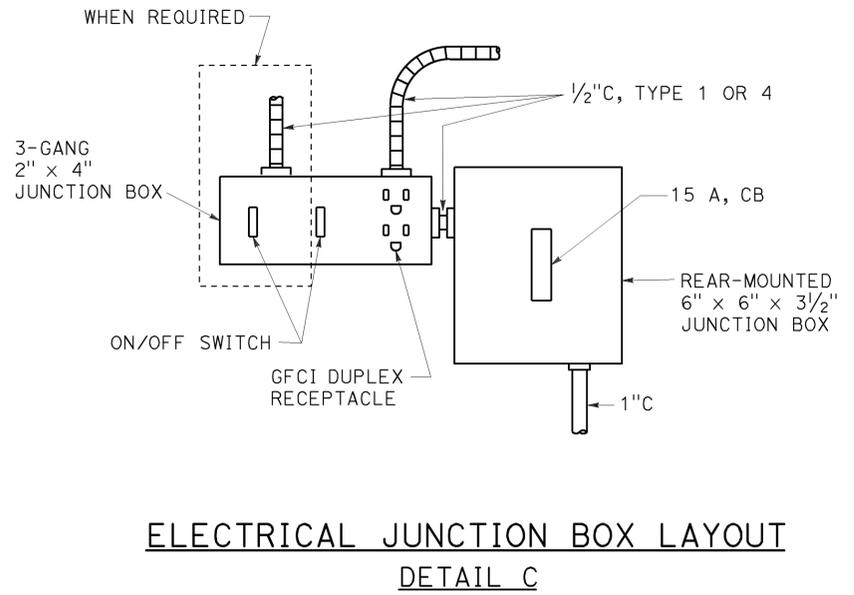
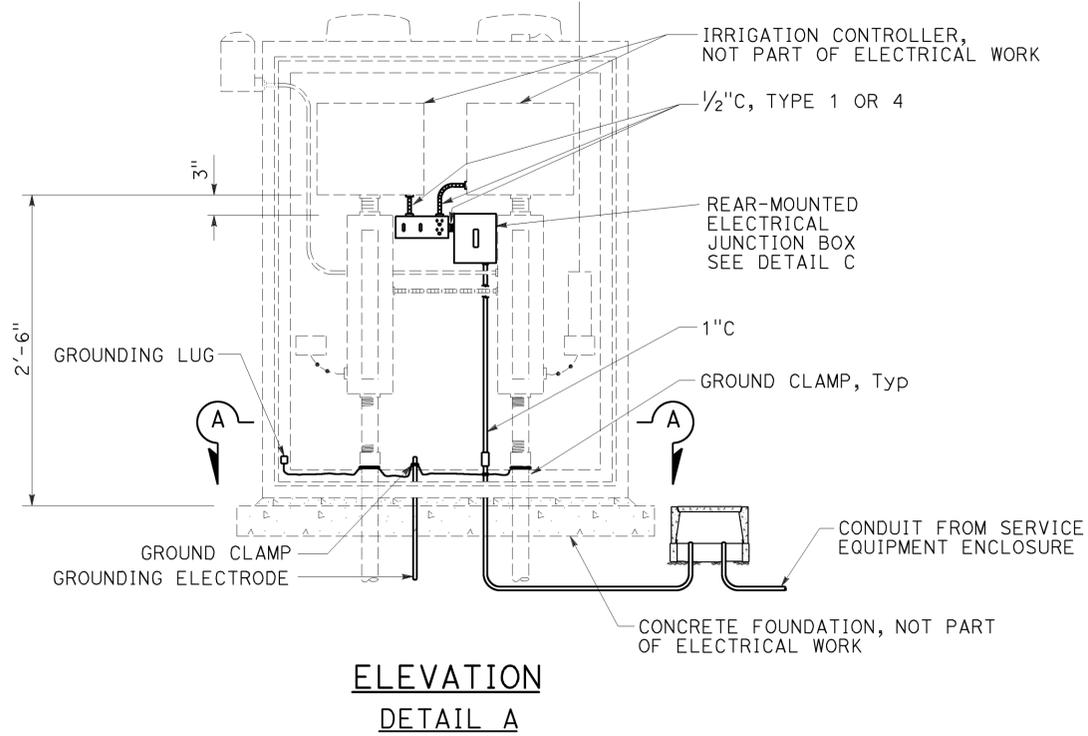
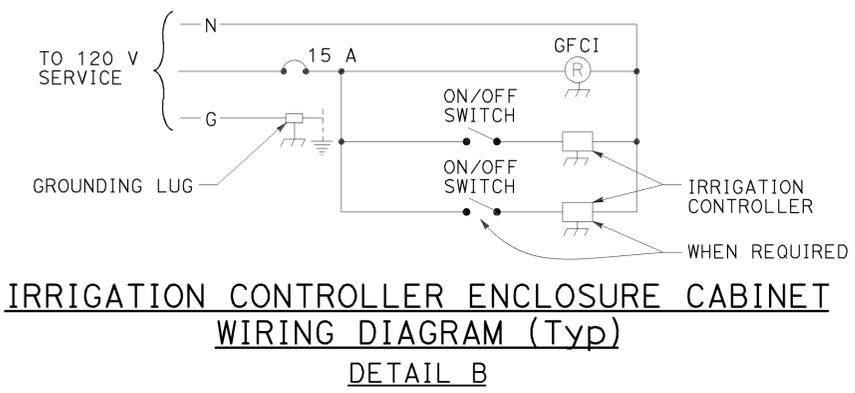
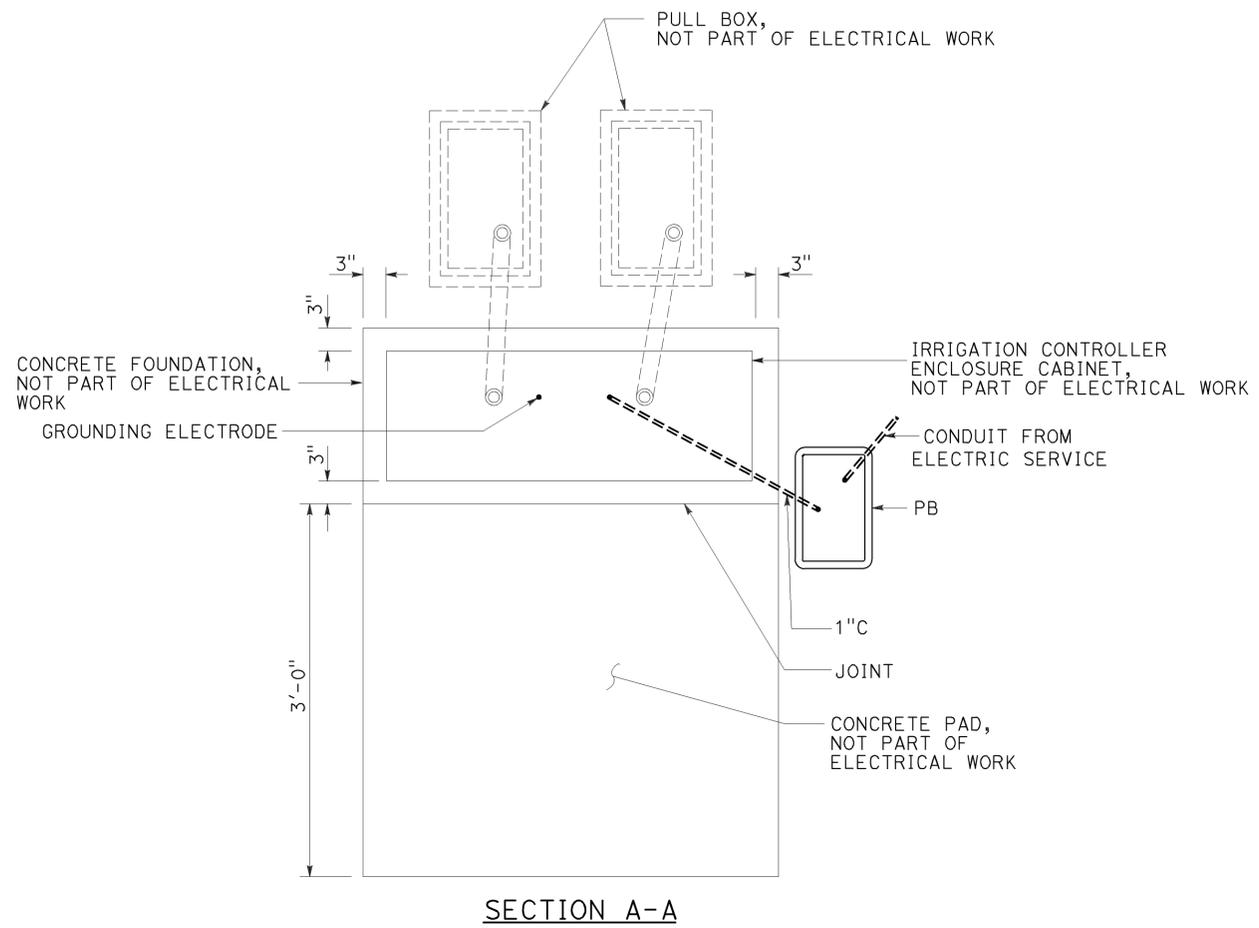
Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 October 30, 2015
 PLANS APPROVAL DATE

Theresa Aziz Gabriel
 No. E15129
 Exp. 6-30-16
 ELECTRICAL
 STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 06-27-16

- NOTES:**
- See Standard Plan H10 for other details.
 - Underground electrical work done prior to foundation installation.



STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS
 (IRRIGATION CONTROLLER
 ENCLOSURE CABINET)**

NO SCALE

RSP ES-3H DATED OCTOBER 30, 2015 SUPERSEDES STANDARD PLAN ES-3H DATED MAY 20, 2011 - PAGE 442 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-3H

2010 REVISED STANDARD PLAN RSP ES-3H

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	389	431

Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 October 30, 2015
 PLANS APPROVAL DATE

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TO ACCOMPANY PLANS DATED 06-27-16

PLAN VIEW OF OTHER
SIDE MOUNTINGS

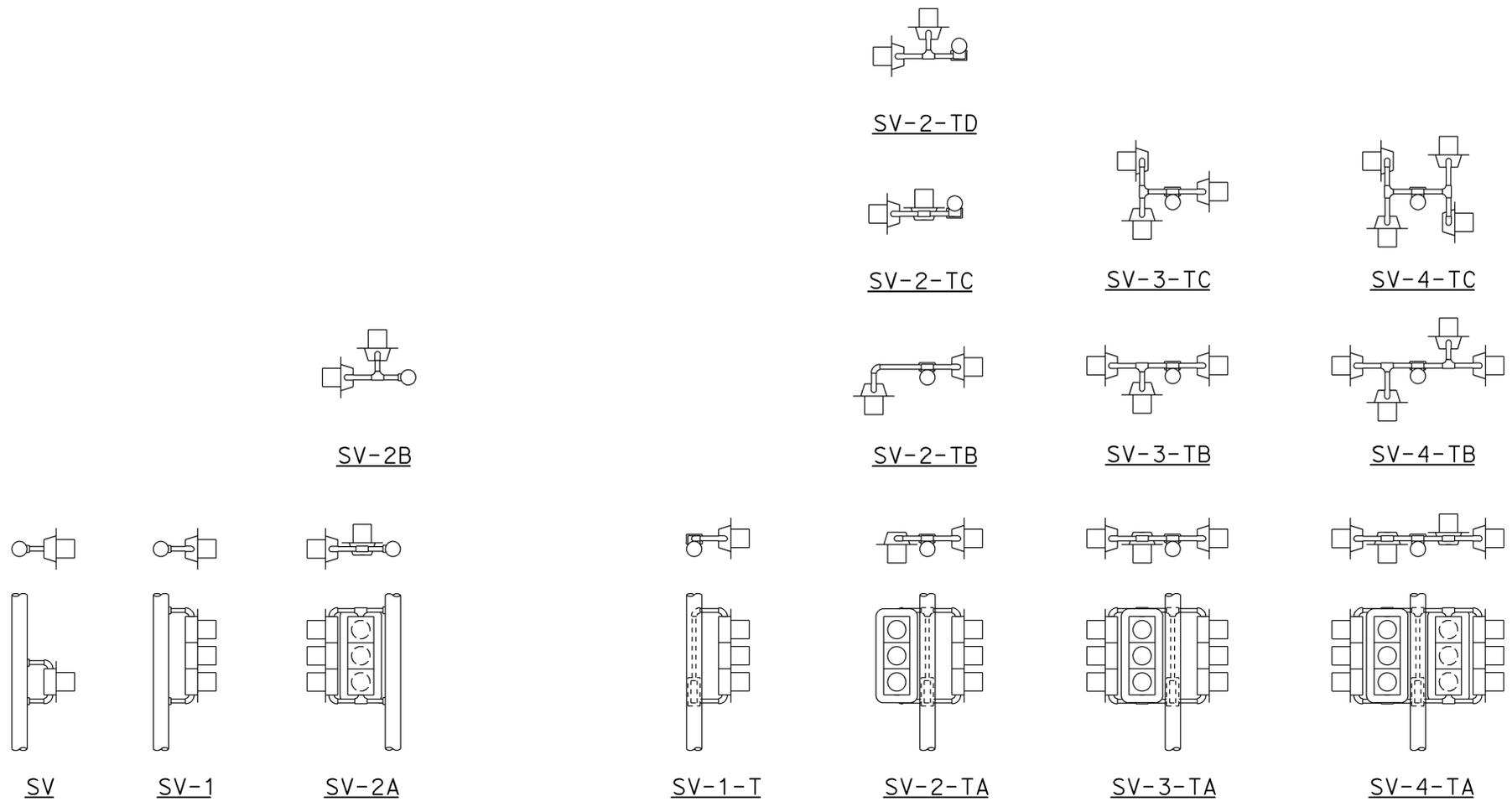
ABBREVIATIONS:

- SV SIDE MOUNTED SIGNAL HEADS
- T TERMINAL COMPARTMENT
- TV TOP MOUNTED SIGNAL HEADS
- 1, 2, 3, 4 NUMBER OF SIGNAL FACES
(3 - SECTION, UNLESS OTHERWISE INDICATED)
- A, B, C, D CONFIGURATION OF SIGNALS

NOTES:

1. Mountings shall be oriented to provide maximum horizontal clearance to adjacent roadway.
2. Bracket arms shall be long enough to permit proper alignment of signals and backplate installation.
3. See Revised Standard Plans RSP ES-4D and RSP ES-4E for attachment fitting details.

PLAN VIEW OF
TOP MOUNTINGS



SIDE MOUNTINGS

TOP MOUNTINGS

**ELECTRICAL SYSTEMS
(SIGNAL HEADS AND MOUNTINGS)**

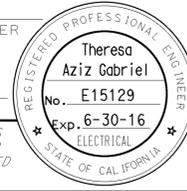
NO SCALE

RSP ES-4A DATED OCTOBER 30, 2015 SUPERSEDES RSP ES-4A DATED JULY 19, 2013 AND STANDARD PLAN ES-4A DATED MAY 20, 2011 - PAGE 443 OF THE STANDARD PLANS BOOK DATED 2010.

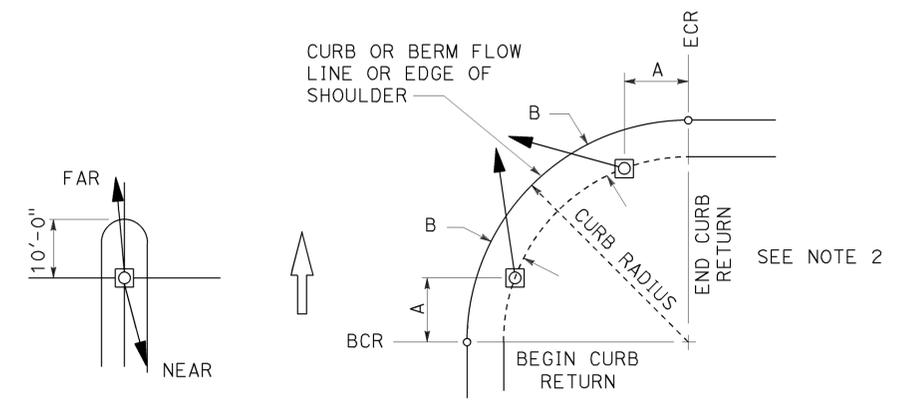
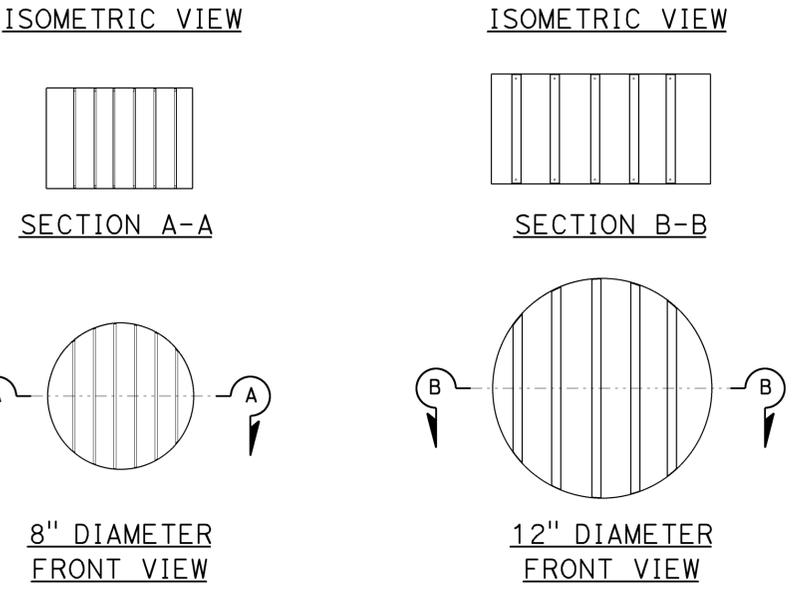
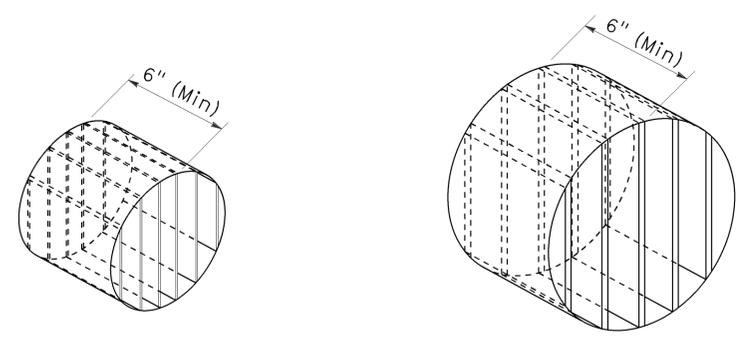
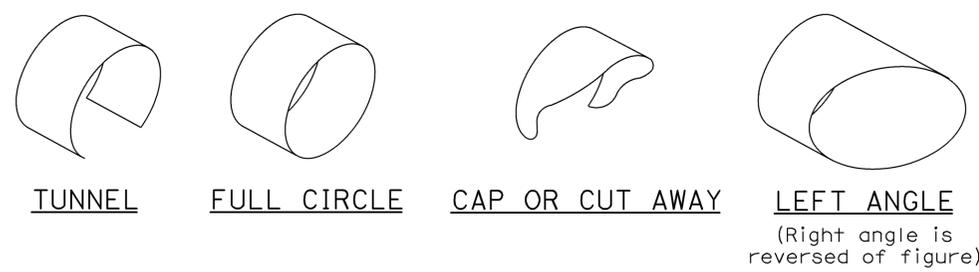
REVISED STANDARD PLAN RSP ES-4A

2010 REVISED STANDARD PLAN RSP ES-4A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	390	431
<i>Theresa Gabriel</i> REGISTERED ELECTRICAL ENGINEER October 30, 2015 PLANS APPROVAL DATE					
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TO ACCOMPANY PLANS DATED 06-27-16

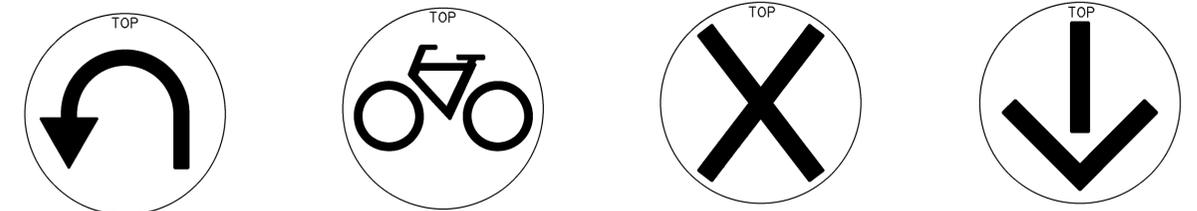
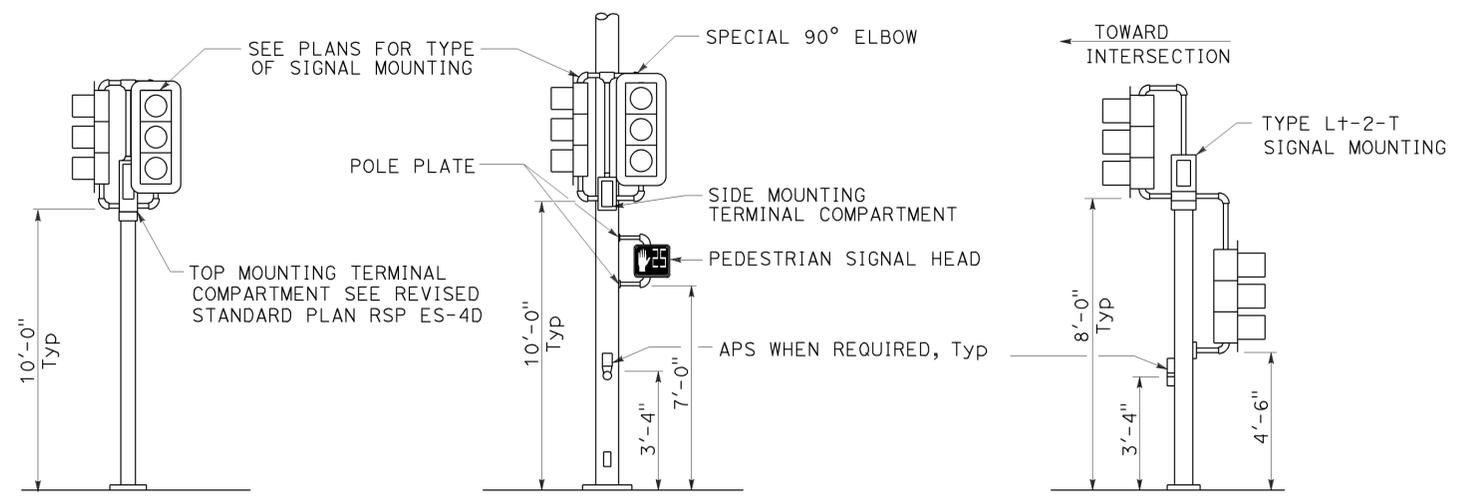


- NOTES:**
1. Typical signal pole placement unless dimensioned on plans.
 2. For A and B dimensions, see Pole Schedule.

DIRECTIONAL LOUVER

Directional louvers shall be oriented and secured in place with one plated brass machine screw and nut.

SIGNAL STANDARD PLACEMENT DIMENSIONS AND EQUIPMENT LOCATIONS



SIGNAL FACES

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (SIGNAL HEADS AND MOUNTINGS)

NO SCALE

RSP ES-4C DATED OCTOBER 30, 2015 SUPERSEDES RSP ES-4C DATED JULY 19, 2013 AND STANDARD PLAN ES-4C DATED MAY 20, 2011 - PAGE 445 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-4C

2010 REVISED STANDARD PLAN RSP ES-4C

TYPICAL SIGNAL HEAD INSTALLATIONS

Type 1-A, 1-B, 1-C and 1-D standard as indicated on the plans

Normally used on standards with luminaire or signal mast arm

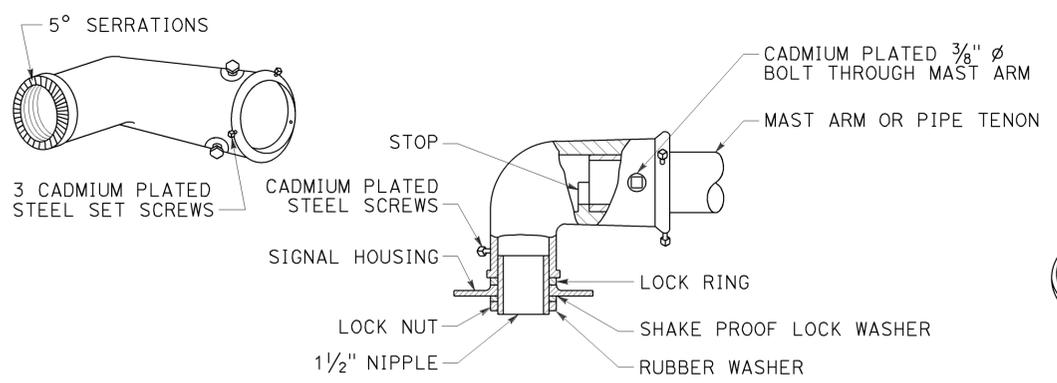
Type 1-A, 1-B, 1-C and 1-D standard as indicated on plans

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	391	431

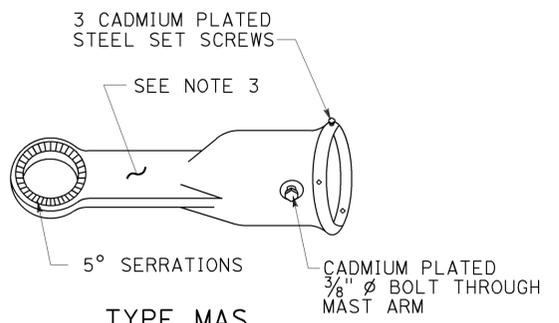
Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 October 30, 2015
 PLANS APPROVAL DATE
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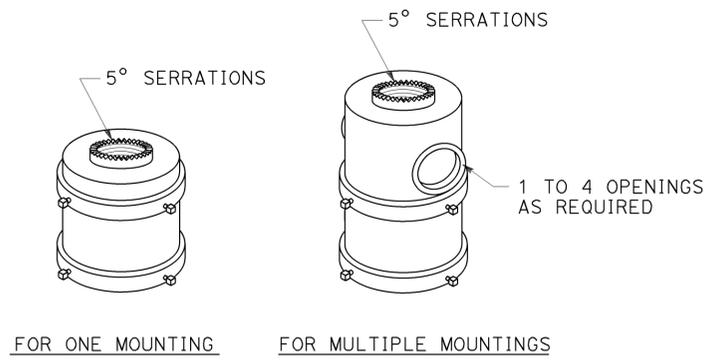
TO ACCOMPANY PLANS DATED 06-27-16



TYPE MAT
MAST ARM MOUNTING
For 2 NPS pipe, see Note 1.

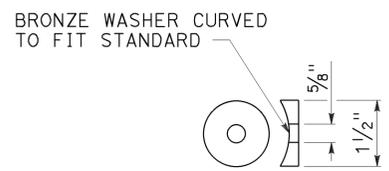


TYPE MAS
MAST ARM MOUNTING
For 2 NPS pipe, see Note 1.

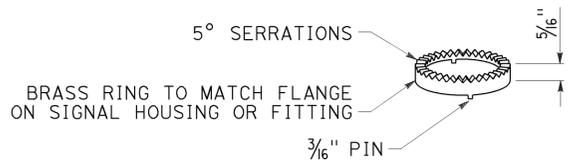


TOP MOUNTINGS
For 4 NPS pipe, see Note 2.

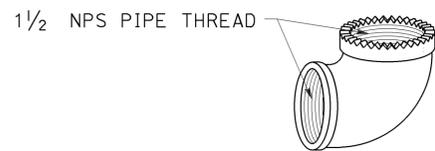
SIGNAL SLIP FITTERS



DETAIL C



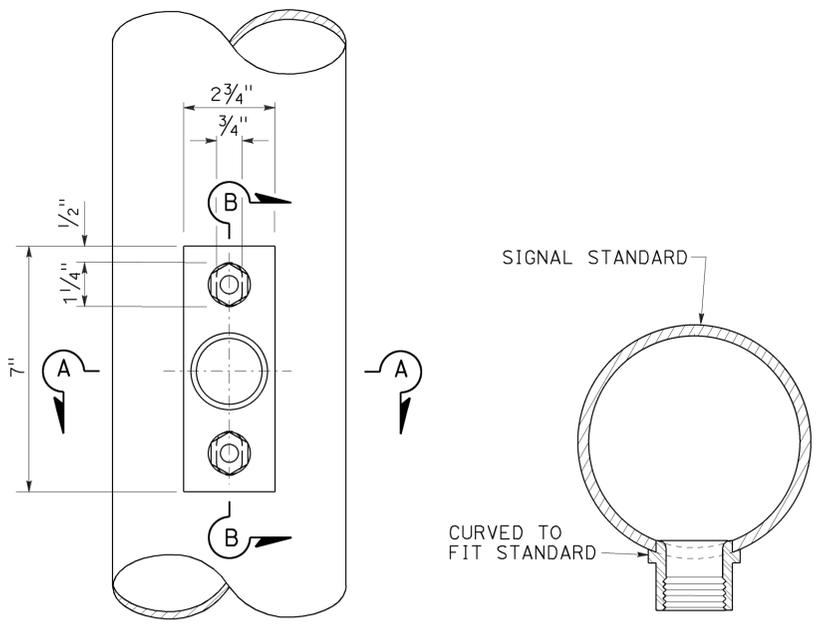
LOCK RING
Use where locking ring is not integral with signal housing or fitting.



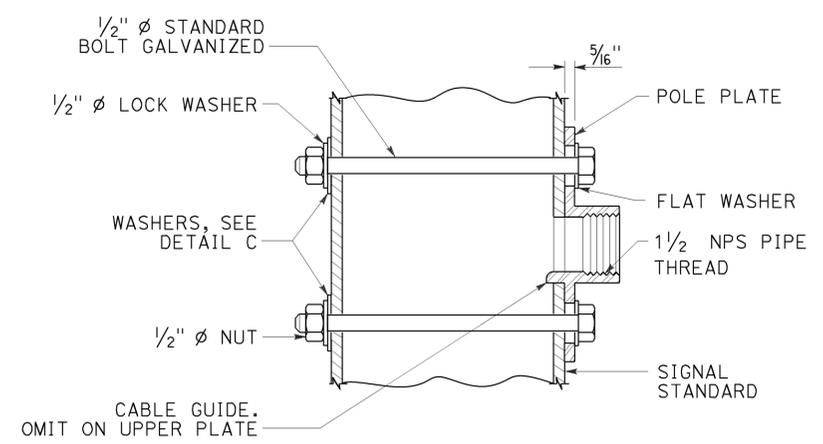
SPECIAL 90° ELBOW
One for each signal head, except those with special slip fitter mounting

- NOTES:**
- After mast arm signal has been plumbed and secured, drill $\frac{1}{16}$ " hole through mast arm tenon in line with slip fitter hole. Place a cadmium plated $\frac{3}{8}$ " ϕ galvanized bolt with washer under bolt head through hole and secure with washer, nut, and locknut. Seal openings between mast arm mountings and mast arm with mastic.
 - (A) Threaded top mounted slip fitter openings shall be $1\frac{1}{2}$ NPS.
(B) Serrations in fittings shall match those on bottom of signal heads or in lock ring.
(C) Top opening shall be offset when backplate is used.
 - Wireway shall have a cross section area of 0.95 square inch minimum. Minimum width of $\frac{1}{2}$ ".

MISCELLANEOUS MOUNTING HARDWARE

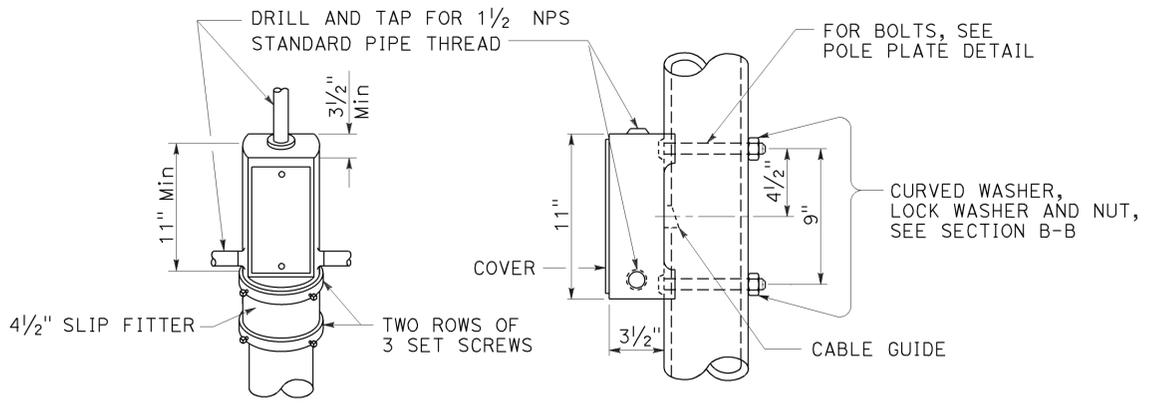


TOP VIEW **SECTION A-A**



SECTION B-B

POLE PLATE FOR SIDE MOUNTED SIGNAL HEAD WITHOUT TERMINAL COMPARTMENT



TOP MOUNTING **SIDE MOUNTING**
TERMINAL COMPARTMENT

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
ELECTRICAL SYSTEMS
(SIGNAL HEAD MOUNTING)
NO SCALE

RSP ES-4D DATED OCTOBER 30, 2015 SUPERSEDES STANDARD PLAN ES-4D DATED MAY 20, 2011 - PAGE 446 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-4D

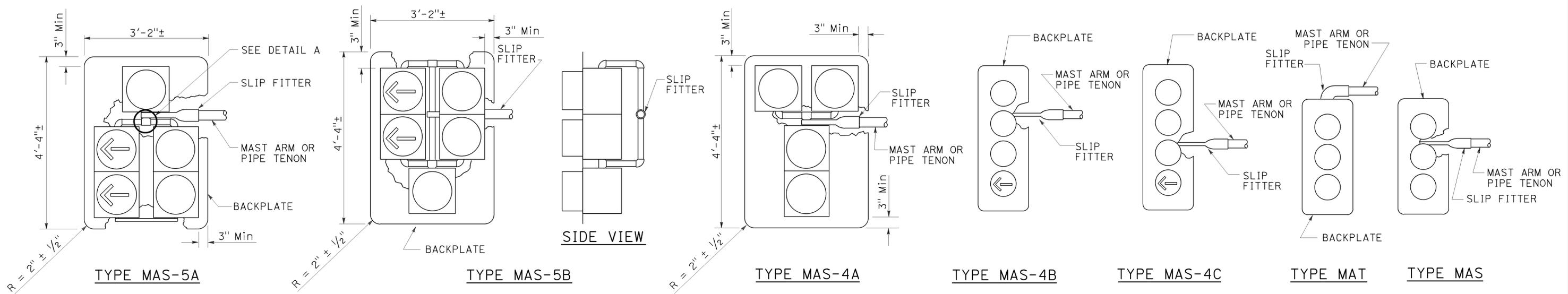
2010 REVISED STANDARD PLAN RSP ES-4D

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	392	431

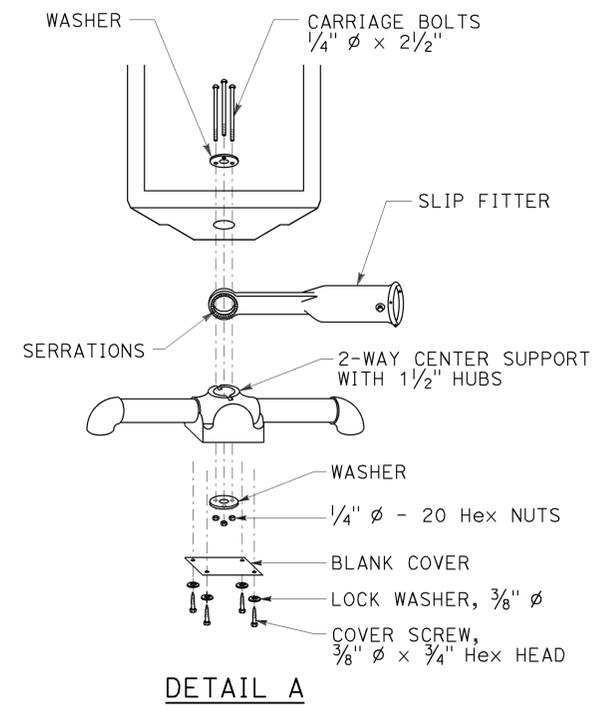
Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 Theresa
 Aziz Gabriel
 No. E15129
 Exp. 6-30-16
 ELECTRICAL
 STATE OF CALIFORNIA

October 30, 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.

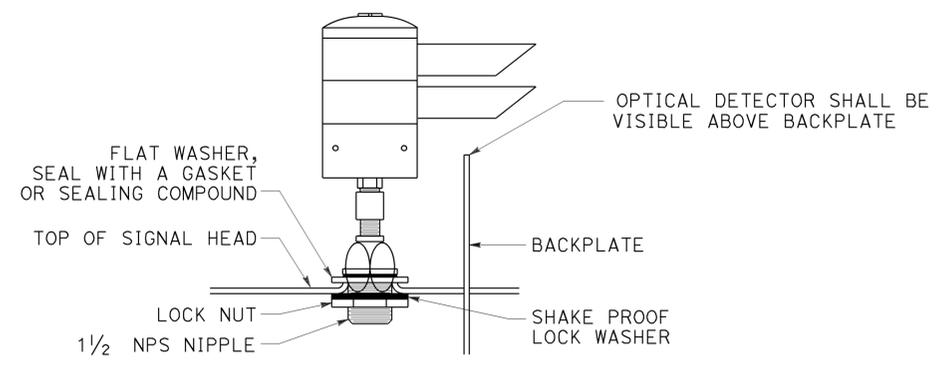
TO ACCOMPANY PLANS DATED 06-27-16



MAST ARM MOUNTINGS



DETAIL A



**OPTICAL DETECTOR MOUNTING FOR
EMERGENCY VEHICLE DETECTION**

DETAIL B

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
 (SIGNAL HEADS AND
 OPTICAL DETECTOR MOUNTING)**
 NO SCALE

RSP ES-4E DATED OCTOBER 30, 2015 SUPERSEDES RSP ES-4E DATED JULY 19, 2013 AND STANDARD PLAN ES-4E DATED MAY 20, 2011 - PAGE 447 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-4E

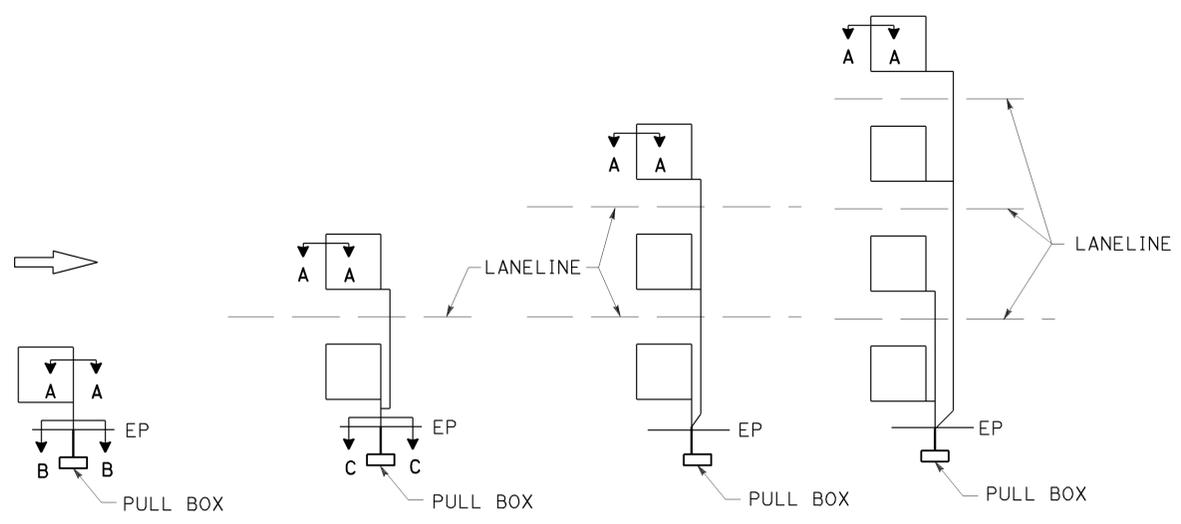
2010 REVISED STANDARD PLAN RSP ES-4E

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	393	431

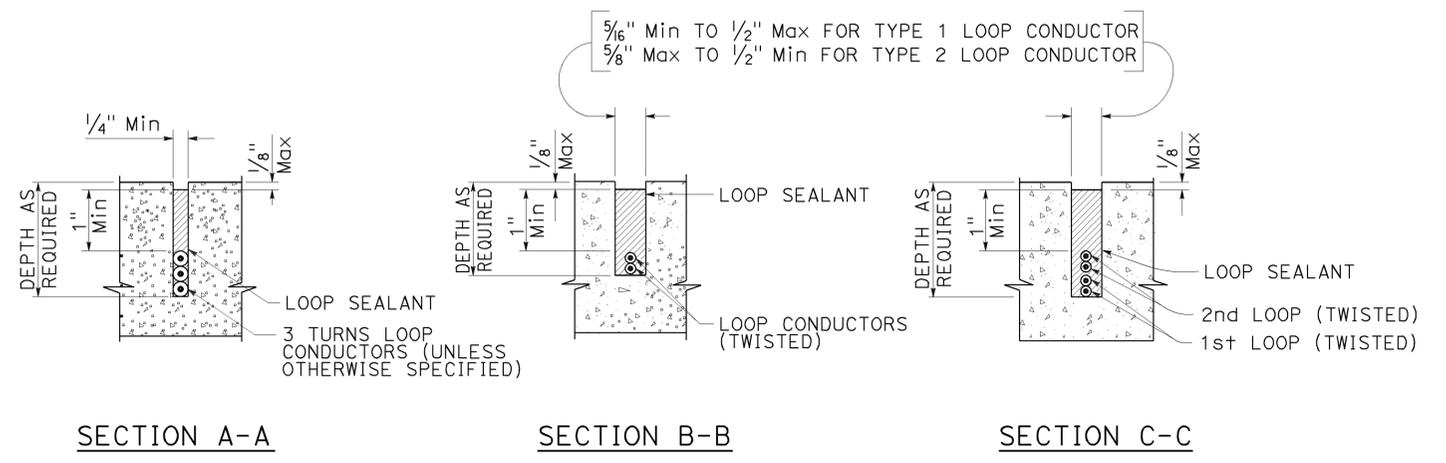
Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 April 15, 2016
 PLANS APPROVAL DATE
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TO ACCOMPANY PLANS DATED 06-27-16

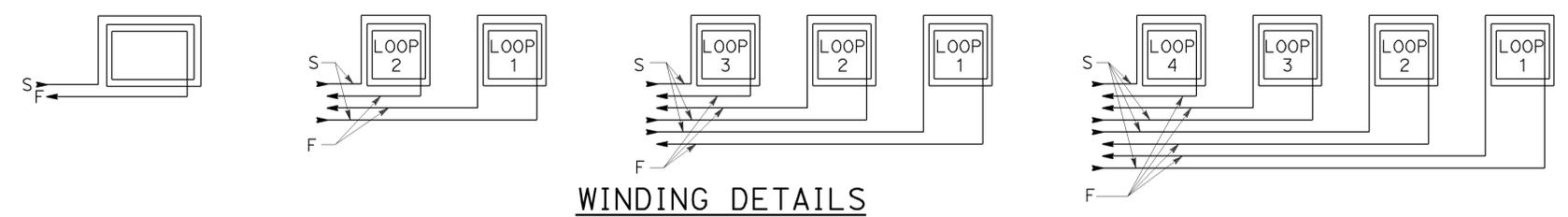


SAW CUT DETAILS
Type A loop detector configurations illustrated



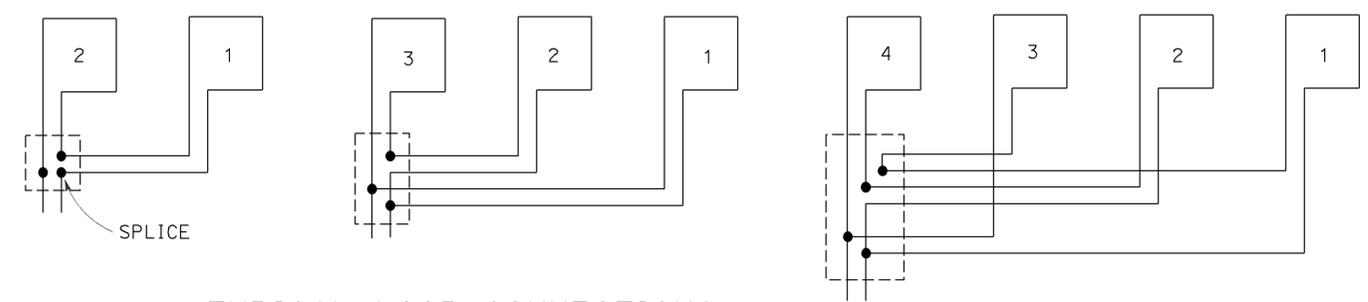
SECTION A-A **SECTION B-B** **SECTION C-C**

SLOT DETAILS - TYPE 1 AND TYPE 2 LOOP CONDUCTOR



WINDING DETAILS

ABBREVIATIONS:
 S - START
 F - FINISH



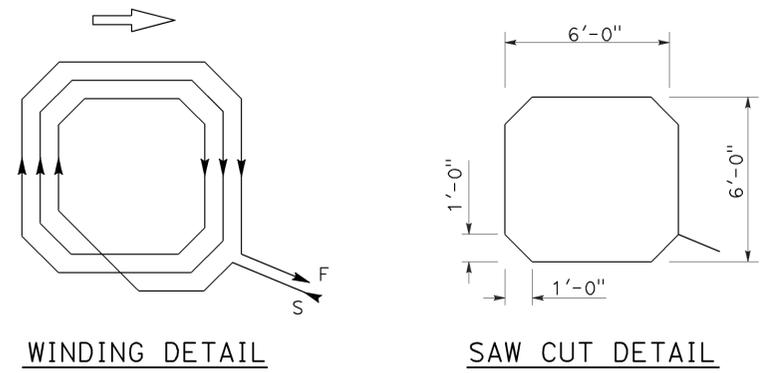
TYPICAL LOOP CONNECTIONS
Dashed lines represent the pull box

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
 (LOOP DETECTORS)**
 NO SCALE

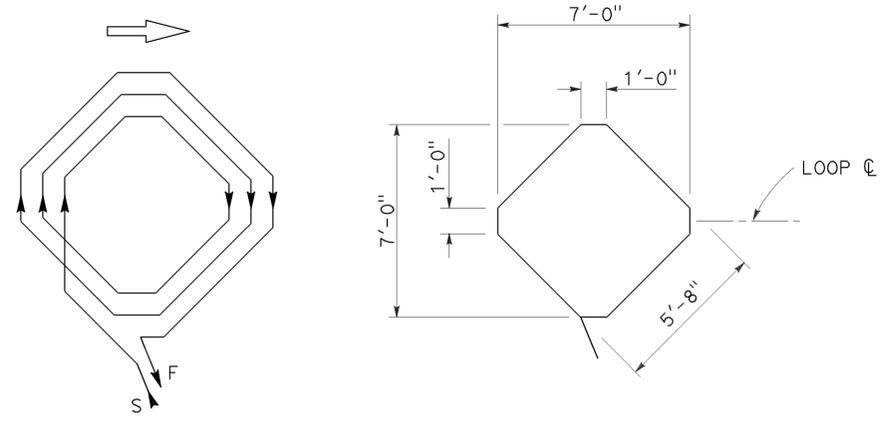
RSP ES-5A DATED APRIL 15, 2016 SUPERSEDES RSP ES-5A DATED OCTOBER 30, 2015 AND STANDARD PLAN ES-5A DATED MAY 20, 2011 - PAGE 448 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-5A

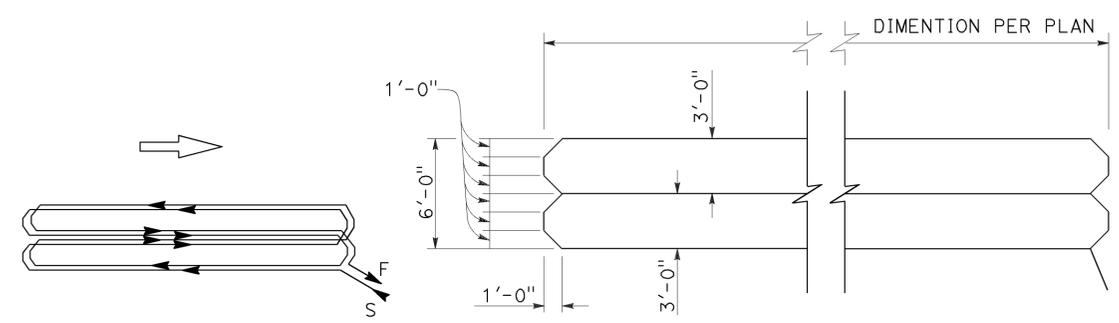
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	394	431
<i>Theresa Gabriel</i> REGISTERED ELECTRICAL ENGINEER April 15, 2016 PLANS APPROVAL DATE <small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
TO ACCOMPANY PLANS DATED <u>06-27-16</u>					



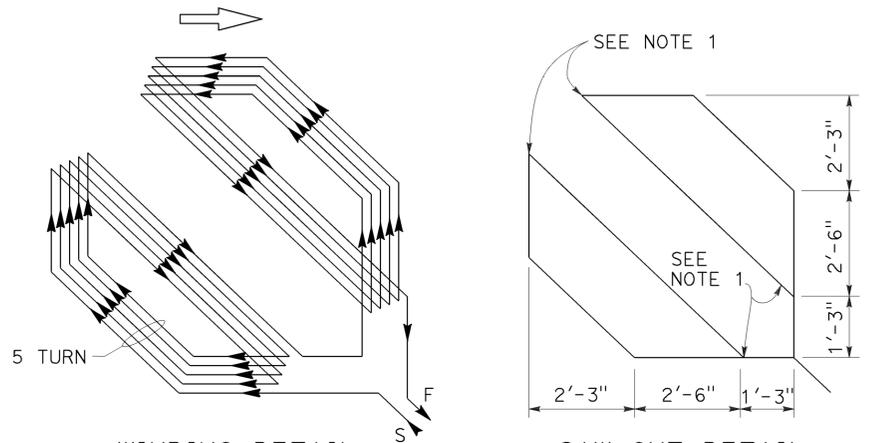
WINDING DETAIL
SAW CUT DETAIL
TYPE A LOOP DETECTOR CONFIGURATION



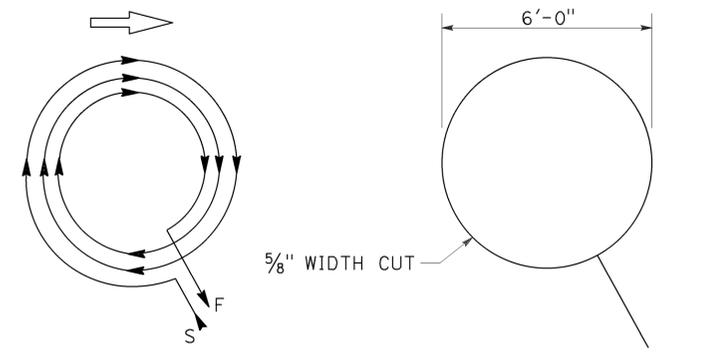
WINDING DETAIL
SAW CUT DETAIL
TYPE B LOOP DETECTOR CONFIGURATION



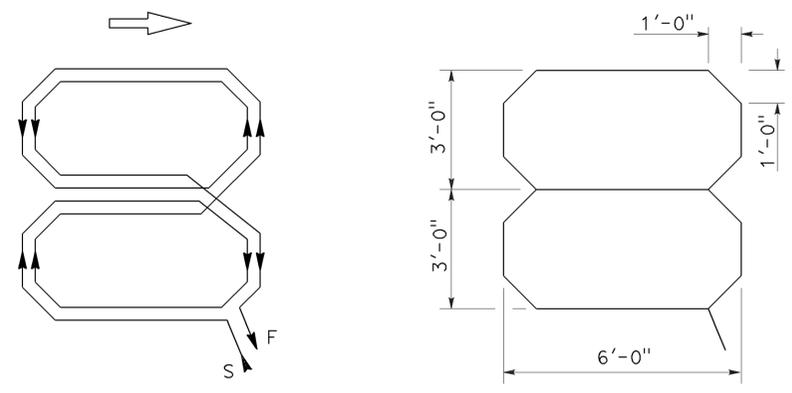
WINDING DETAIL
SAW CUT DETAIL
TYPE C LOOP DETECTOR CONFIGURATION



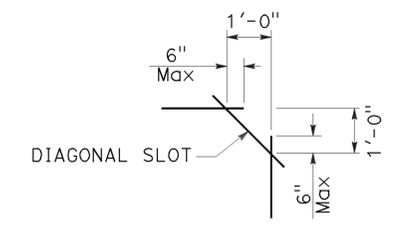
WINDING DETAIL
SAW CUT DETAIL
TYPE D LOOP DETECTOR CONFIGURATION



WINDING DETAIL
SAW CUT DETAIL
TYPE E LOOP DETECTOR CONFIGURATION



WINDING DETAIL
SAW CUT DETAIL
TYPE Q LOOP DETECTOR CONFIGURATION



PLAN VIEW OF DIAGONAL SLOT AT CORNERS

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (DETECTORS)
NO SCALE

- NOTES:**
1. Round corners of acute angle saw cuts to prevent damage to conductors.
 2. Typical distance separating loops from edge to edge is 10' for Type A, B, D and E installation in single lane.
 3. Use Type D loops for limit line detection and bicycle lanes.

RSP ES-5B DATED APRIL 15, 2016 SUPERSEDES RSP ES-5B DATED OCTOBER 30, 2015 AND RSP ES-5B DATED JULY 19, 2013 AND STANDARD PLAN ES-5B DATED MAY 20, 2011 - PAGE 449 OF THE STANDARD PLANS BOOK DATED 2010.

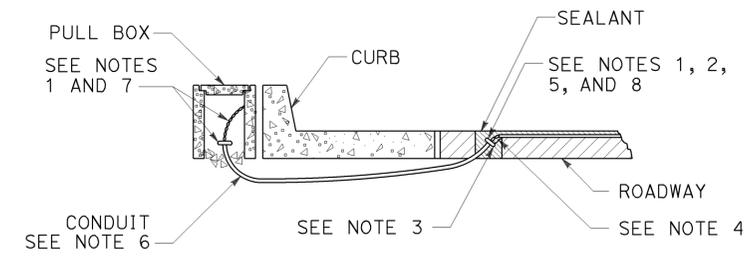
2010 REVISED STANDARD PLAN RSP ES-5B

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	395	431

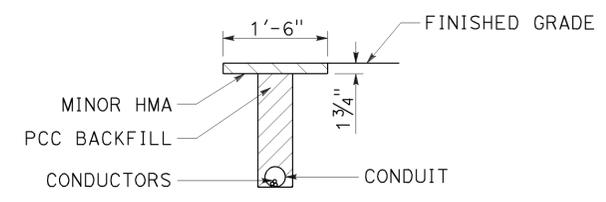
Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 October 30, 2015
 PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER
 Theresa Aziz Gabriel
 No. E15129
 Exp. 6-30-16
 ELECTRICAL
 STATE OF CALIFORNIA

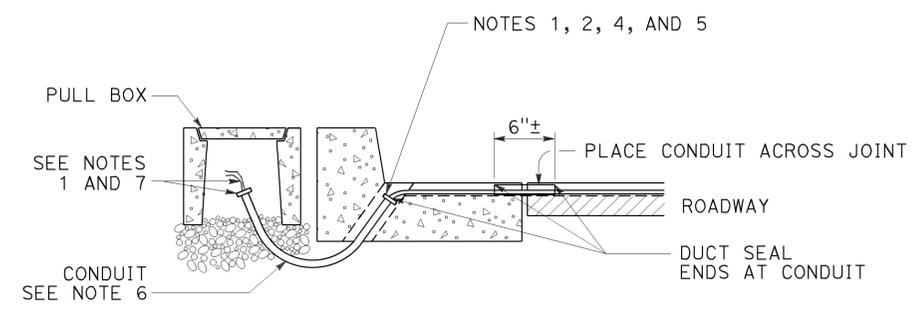
TO ACCOMPANY PLANS DATED 06-27-16



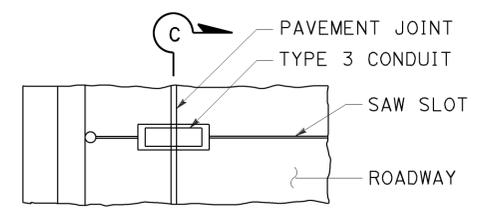
TYPE A
CURB TERMINATION DETAIL



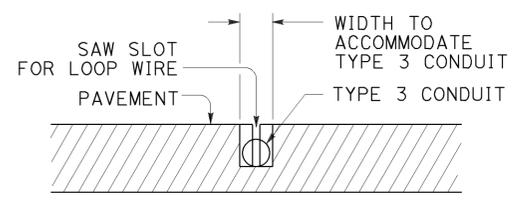
"T" TRENCH
DETAIL T



CROSS SECTION

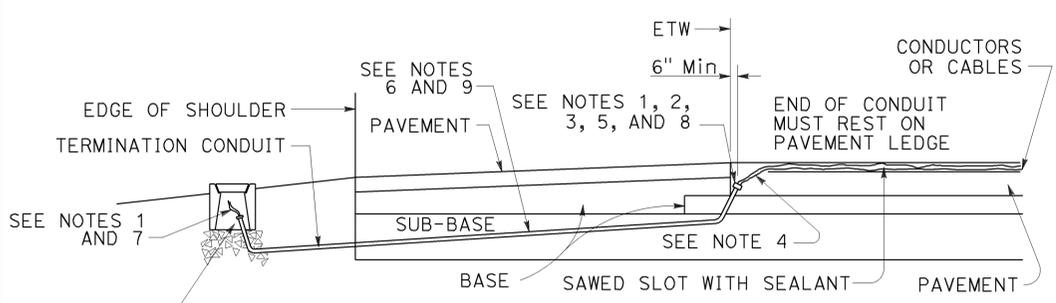


PLAN VIEW

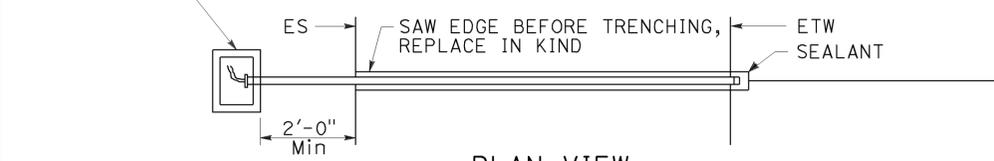


SECTION C-C

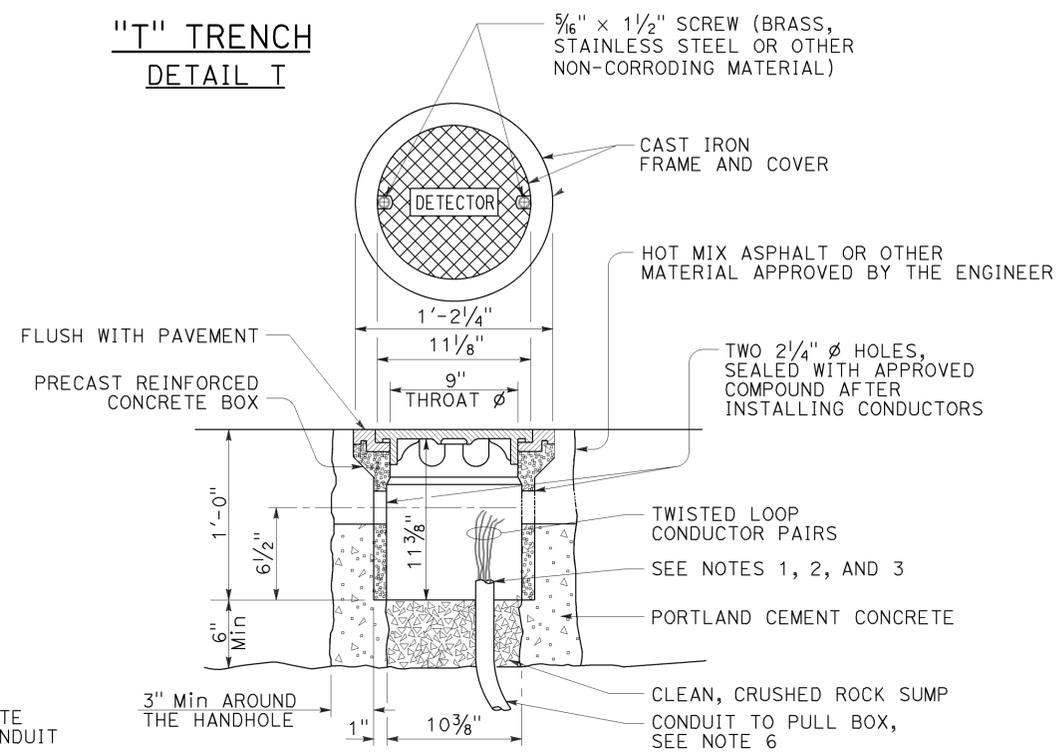
TYPE B
CURB TERMINATION DETAIL



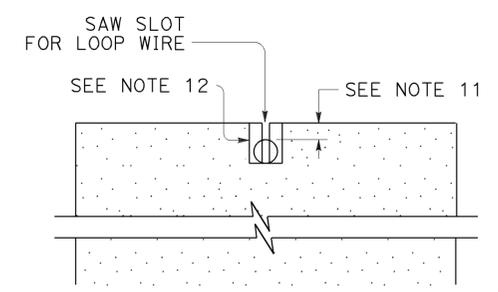
CROSS SECTION



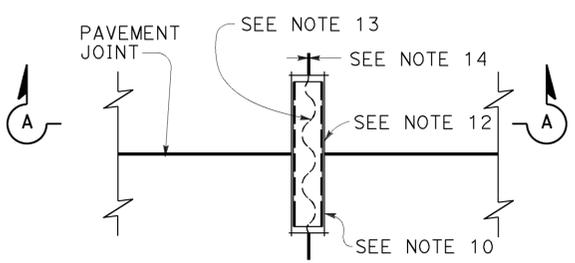
PLAN VIEW
SHOULDER TERMINATION DETAILS



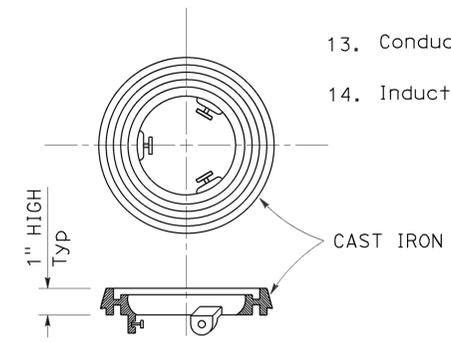
DETECTOR HANDHOLE DETAIL



SECTION A-A



PLAN VIEW
TYPICAL LOOP LEAD-IN DETAIL
AT PAVEMENT JOINT



LOCKING GRADE RING

NOTES:

- Bushing shall be used at end of conduit.
- Tape detector conductors or cables 3" each side of bushings.
- Install duct seal compound to each end of termination conduit before installing sealant.
- Round all sharp edges where detector conductors or cables have to pass.
- End of conduit shall be 3/8" below roadway surface.
- Conduit size Loop conductors
 1"C minimum 1 to 2 pairs
 1 1/2"C minimum 3 to 4 pairs
 2"C minimum 5 or more pairs
- Splice detector conductors or cables to detector lead-in-cable.
- Location of detector handhole when shown on plans.
- When the shoulder and traveled way are paved with the same material and there is no joint between them, the conduit shall extend only 2'-0" into the shoulder pavement.
- 3/4"C, Type 3 conduit 6" long minimum, plug both ends with duct compound to keep out sealant.
- 1/2" Minimum between top of conduit and pavement surface.
- Sawcut shall not exceed 1" in width and 1/8" longer than conduit to be installed.
- Conductors with 1/2" minimum slack inside conduit.
- Inductive loop detector saw slot.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS
(CURB AND SHOULDER TERMINATION,
TRENCH, AND HANDHOLE DETAILS)

NO SCALE

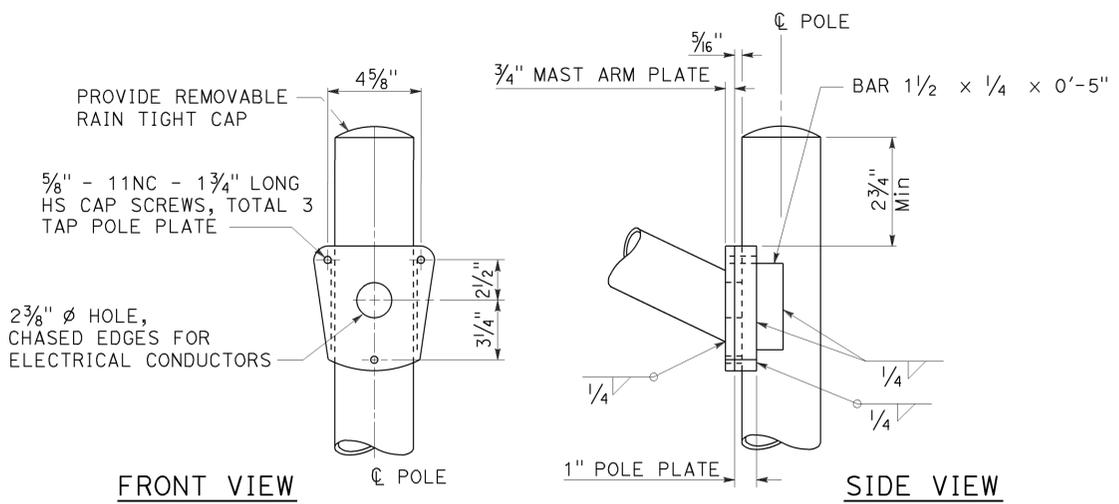
RSP ES-5D DATED OCTOBER 30, 2015 SUPERSEDES RSP ES-5D DATED JULY 19, 2013 AND STANDARD PLAN ES-5D DATED MAY 20, 2011 - PAGE 451 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-5D

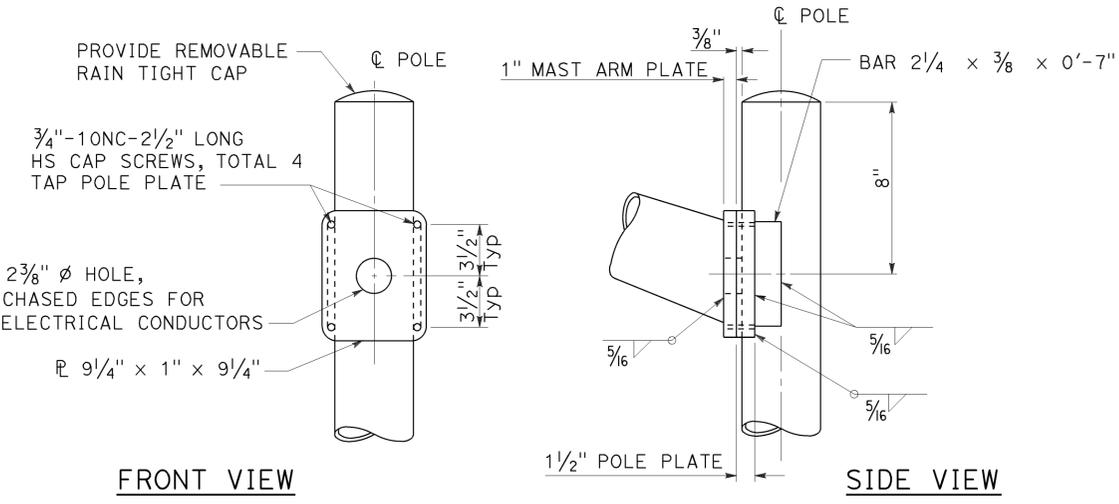
2010 REVISED STANDARD PLAN RSP ES-5D

LUMINAIRE MAST ARM DATA			
PROJECTED LENGTH	THICKNESS	MINIMUM OD AT POLE	MOUNTING HEIGHT
* 6'-0"	0.1196"	3 1/4"	36'-9"±
* 8'-0"		3 1/2"	37'-3"±
* 10'-0"		3 3/4"	38'-0"±
* 12'-0"		4 1/4"	39'-0"±
** 20'-0"	0.1793"	5"	37'-0"±

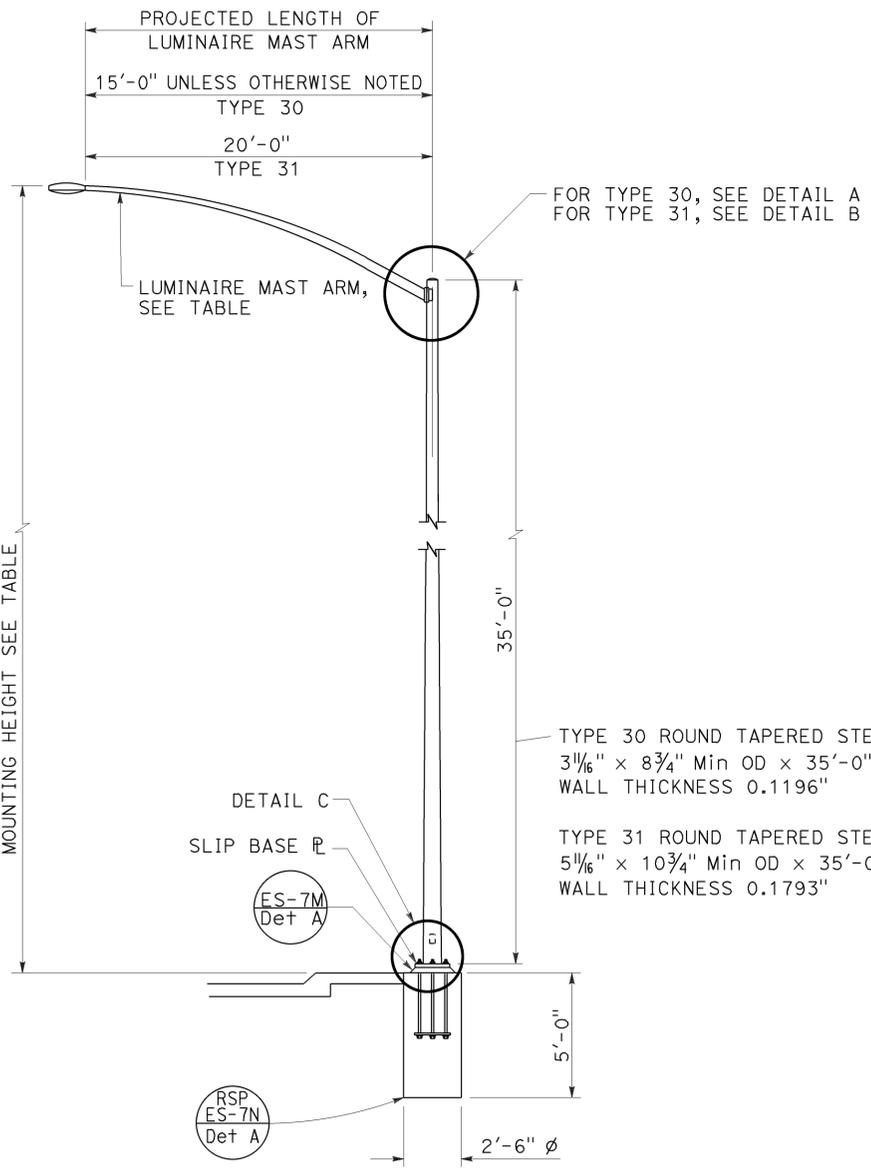
* TYPE 30
** TYPE 31



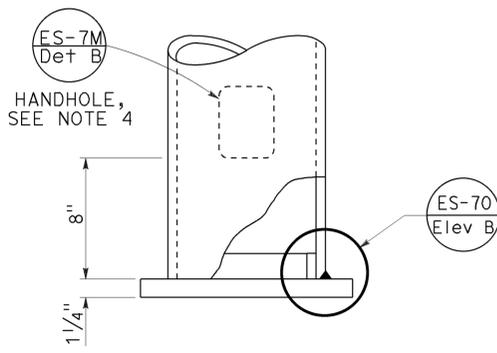
**TYPE 30
DETAIL A**



**TYPE 31
DETAIL B**



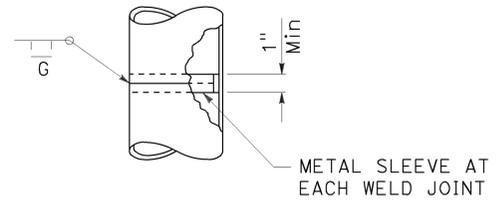
ELEVATION A



DETAIL C

NOTES:

1. For slip base plate details, see Revised Standard Plan RSP ES-6F.
2. For Type 30 fixed base use Type 15 base plate and foundation shown on Revised Standard Plan RSP ES-6A. Use 1 1/4" Dia x 3'-6" anchor bolts.
3. For Type 31 fixed base use Type 32 base plate, anchor bolts and foundation on Revised Standard Plan RSP ES-6G.
4. Handhole shall be located on the downstream side of traffic.
5. For additional notes and details, see Revised Standard Plans RSP ES-7M and RSP ES-7N.



POLE SPLICE

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
(LIGHTING STANDARD,
TYPES 30 AND 31)**

NO SCALE

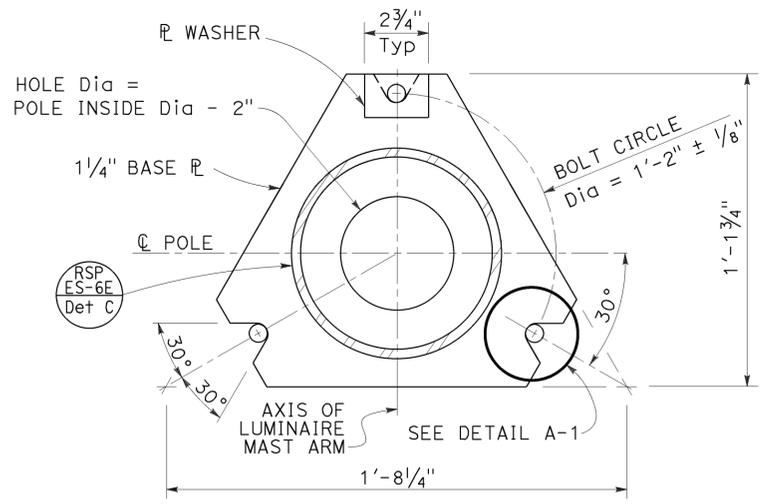
RSP ES-6E DATED OCTOBER 30, 2015 SUPERSEDES STANDARD PLAN ES-6E DATED MAY 20, 2011 - PAGE 456 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-6E

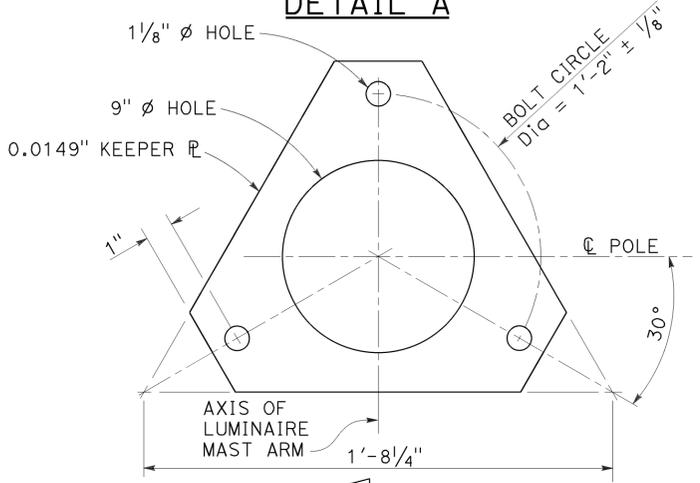
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	397	431

Stanley P. Johnson
 REGISTERED CIVIL ENGINEER
 October 30, 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.

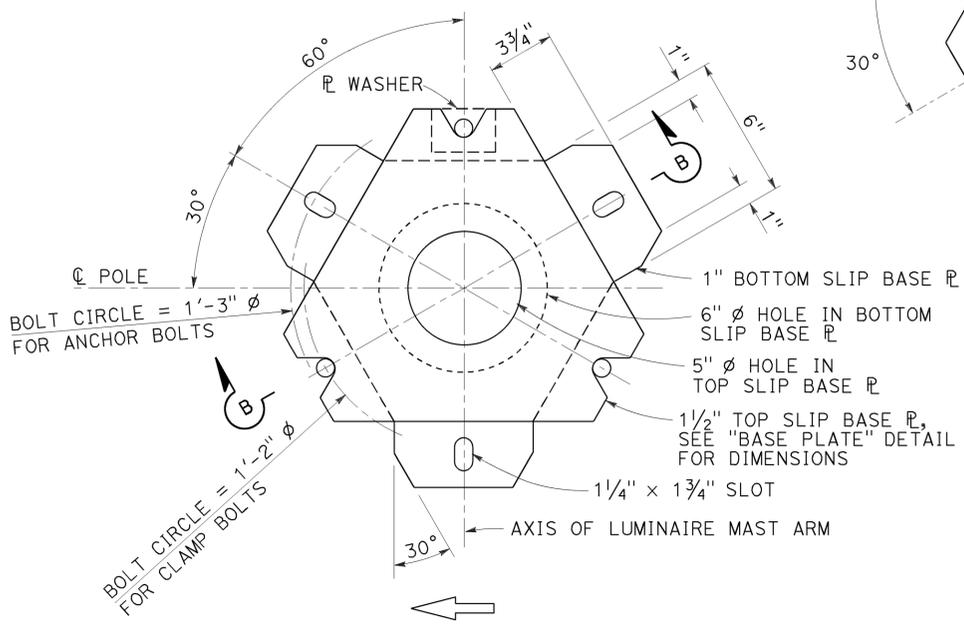
REGISTERED PROFESSIONAL ENGINEER
 Stanley P. Johnson
 No. C57793
 Exp. 3-31-16
 CIVIL
 STATE OF CALIFORNIA



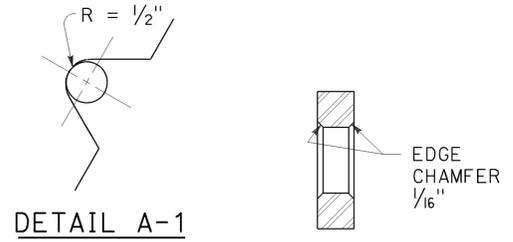
**BASE PLATE
DETAIL A**



**KEEPER PLATE
DETAIL B**

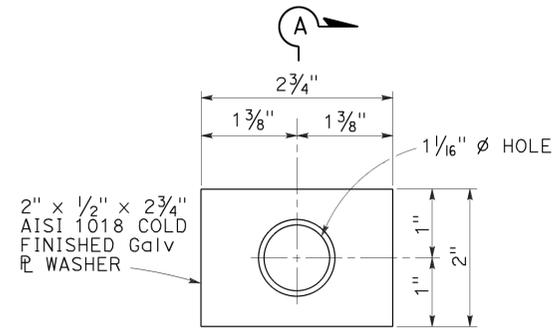


**BOTTOM PLATE
DETAIL C**

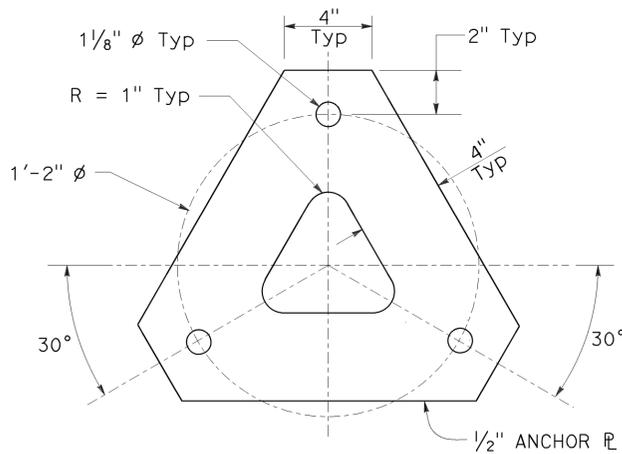


DETAIL A-1

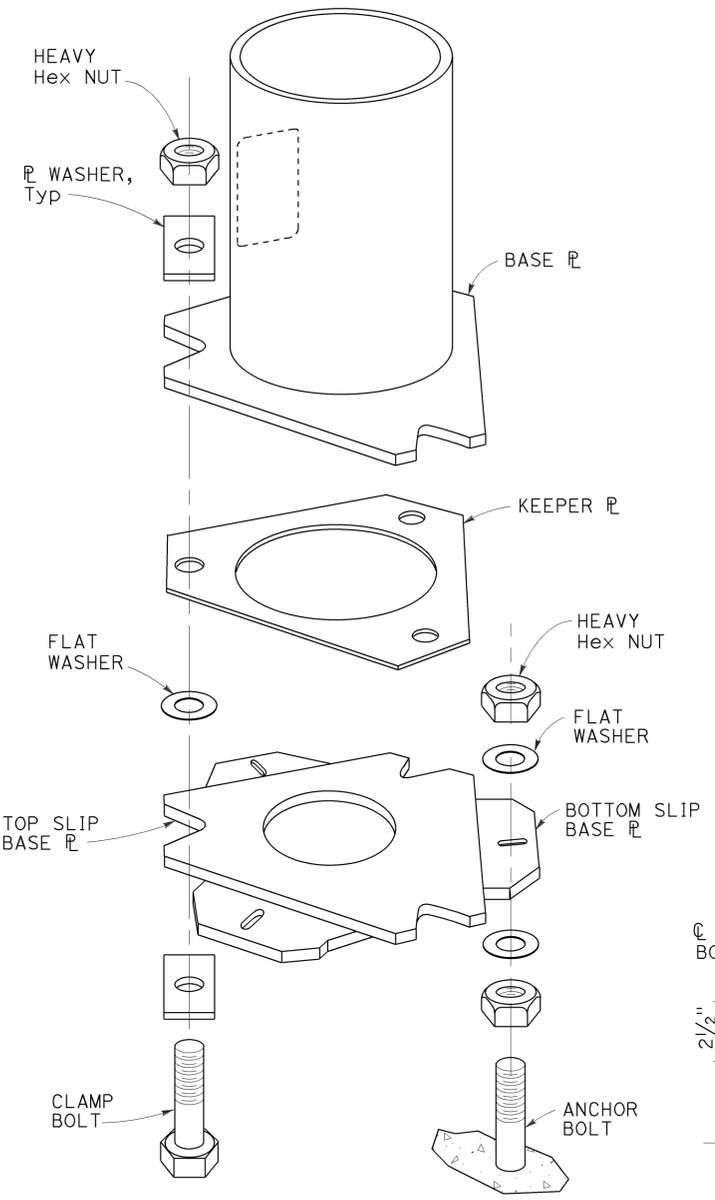
SECTION A-A



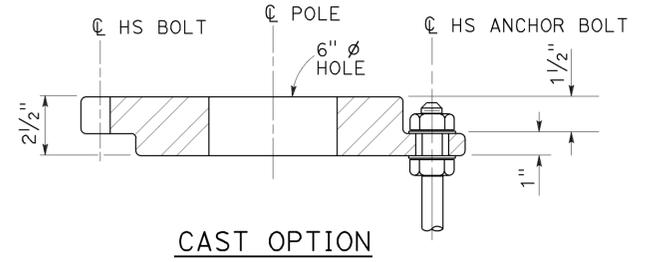
**PLATE WASHER
DETAIL D**



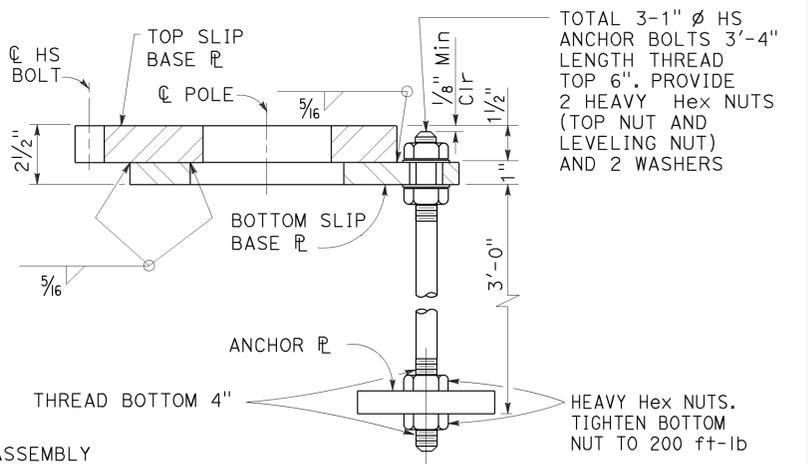
**ANCHOR PLATE
DETAIL E**



**SLIP BASE DETAIL
DETAIL F**

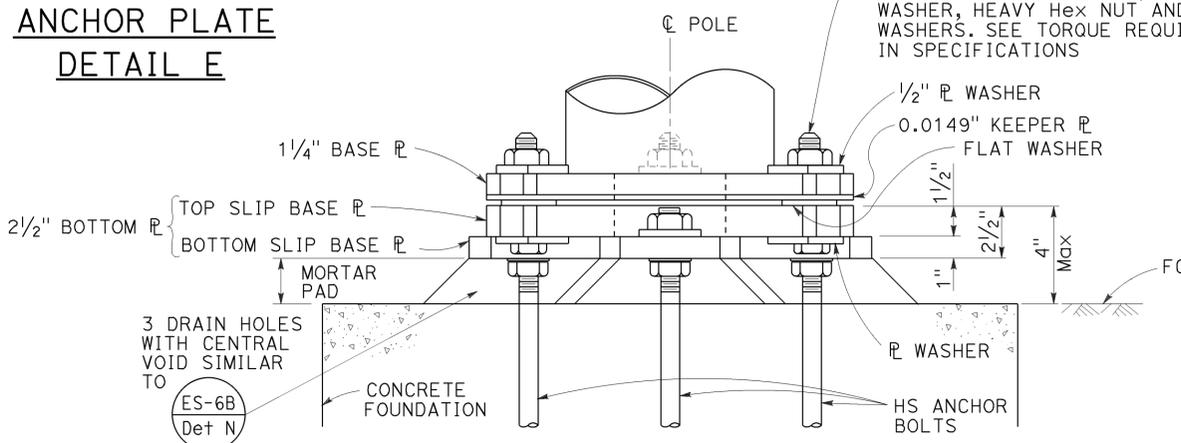


CAST OPTION



WELDED OPTION

SECTION B-B



**SLIP BASE
ELEVATION A**

NOTES:

TO ACCOMPANY PLANS DATED 06-27-16

1. 1" ϕ HS anchor bolts. For clamp bolts, see specifications.
2. Conduit shall not protrude more than 2" above top of foundation.
3. Handhole shall be located on the downstream side of traffic.
4. For Type 30 fixed base and for Type 31 fixed base, see Notes 3 and 4 on Revised Standard Plan RSP ES-6E.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS
(LIGHTING STANDARD,
SLIP BASE PLATE)**

NO SCALE

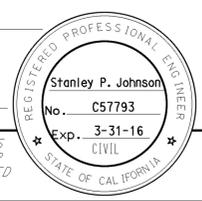
RSP ES-6F DATED OCTOBER 30, 2015 SUPERSEDES STANDARD PLAN ES-6F DATED MAY 20, 2011 - PAGE 457 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-6F

2010 REVISED STANDARD PLAN RSP ES-6F

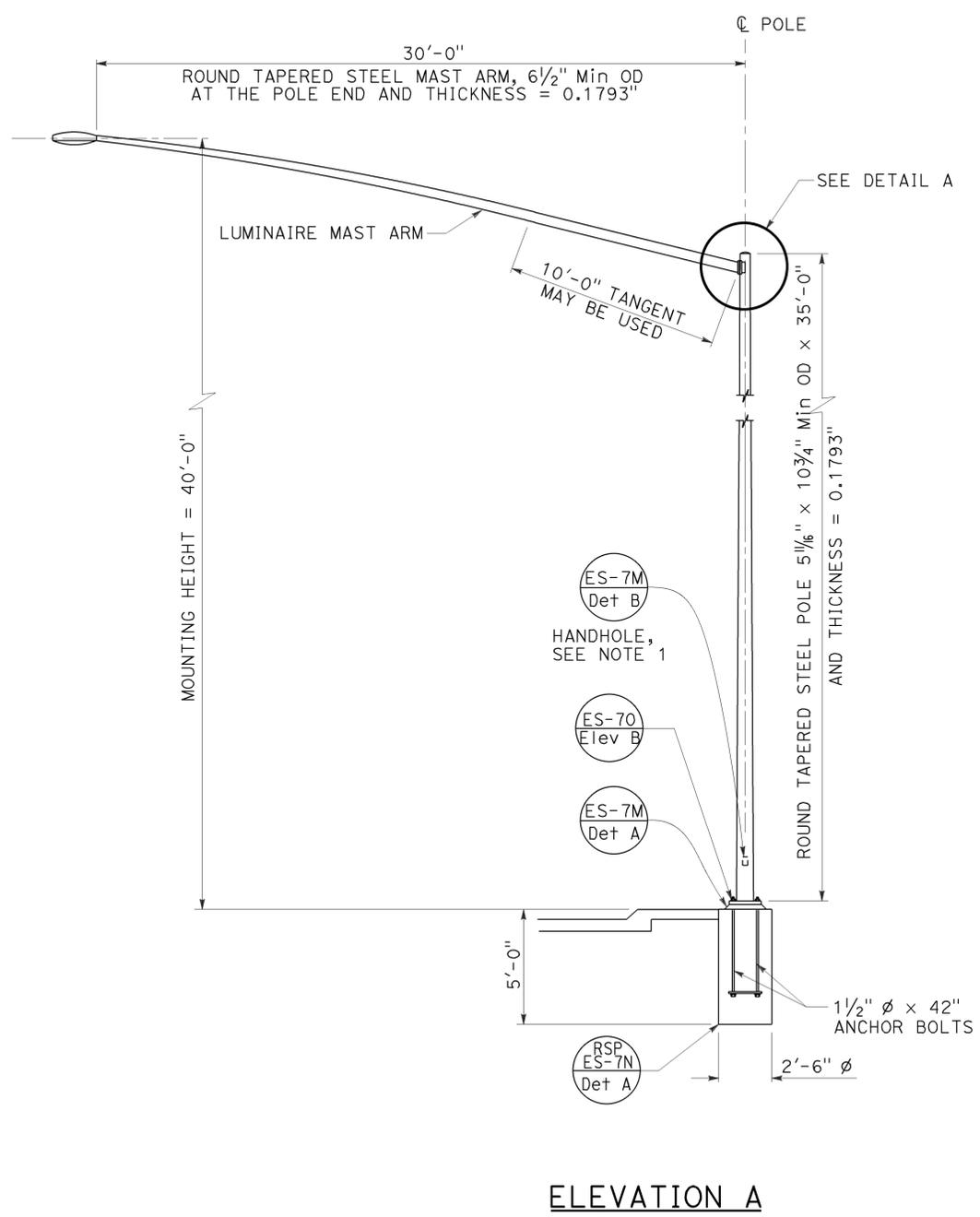
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	405	2.6/6.5	398	431

Stanley P. Johnson
 REGISTERED CIVIL ENGINEER
 October 30, 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.

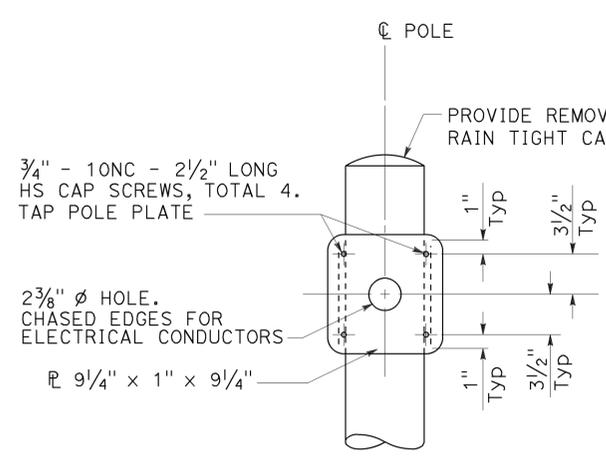


TO ACCOMPANY PLANS DATED 06-27-16

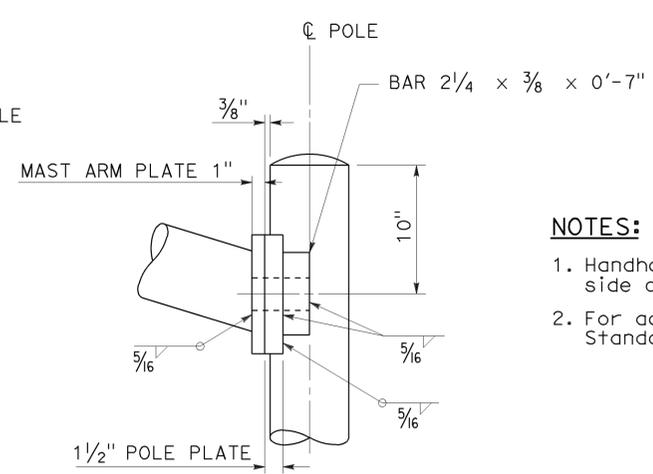
- NOTES:**
1. Handhole shall be located on the downstream side of traffic.
 2. For additional notes and details, see Revised Standard Plans RSP ES-7M and RSP ES-7N.



ELEVATION A

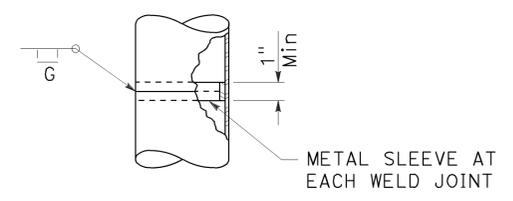


FRONT VIEW

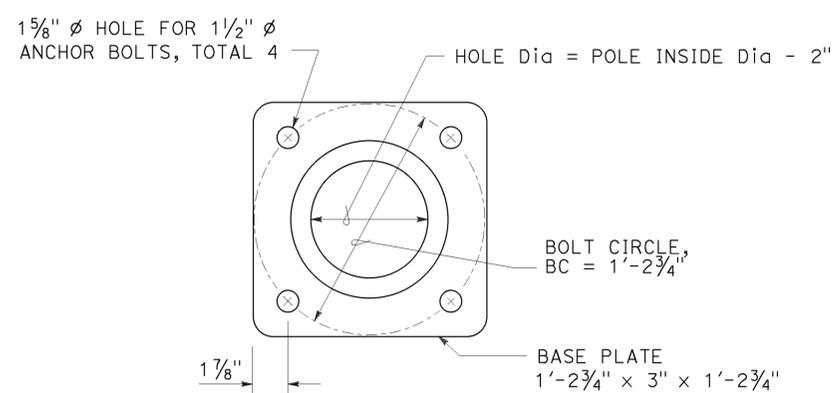


SIDE VIEW

DETAIL A



**POLE SPLICE
DETAIL B**



**BASE PLATE DETAIL
DETAIL C**

PLAN

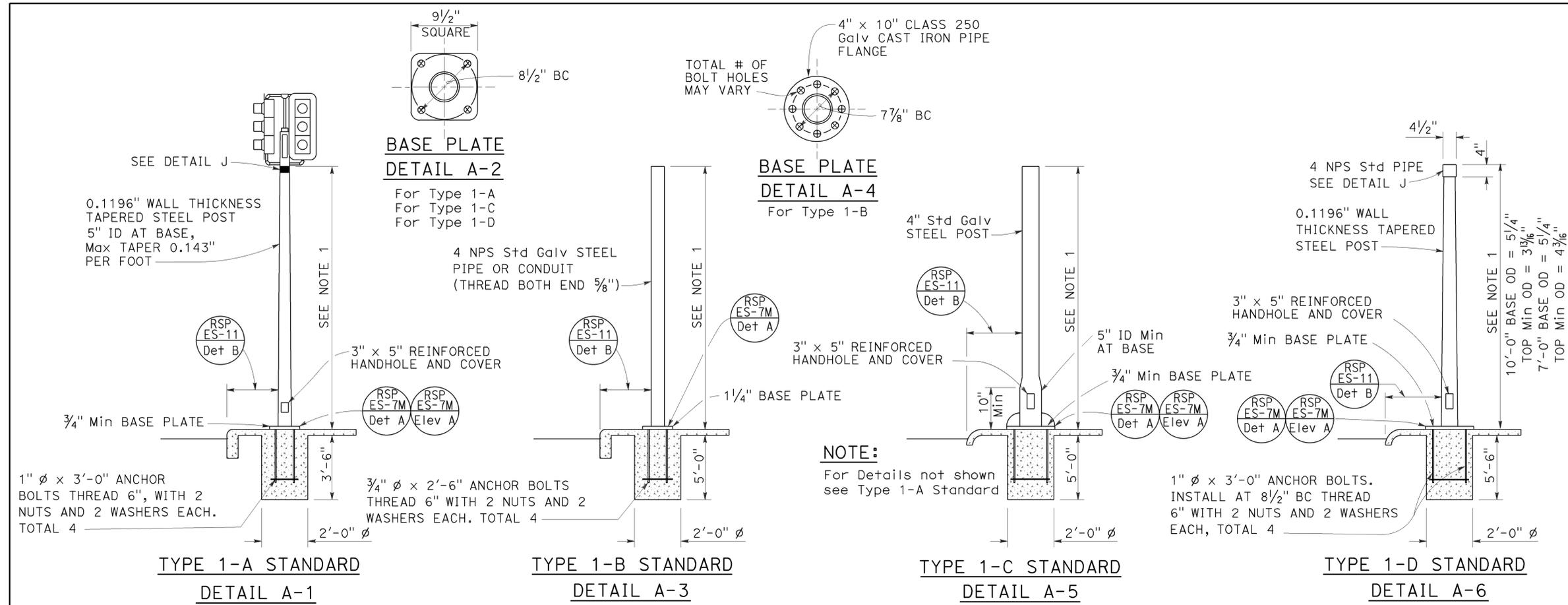
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
(LIGHTING STANDARD,
TYPE 32)**

NO SCALE

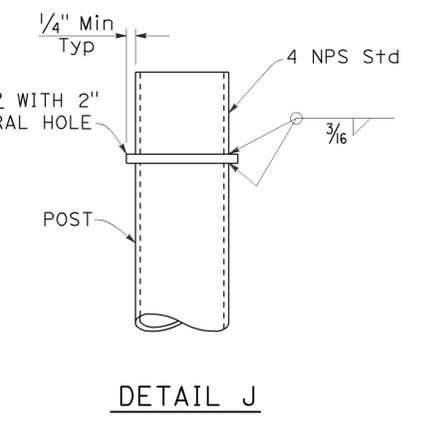
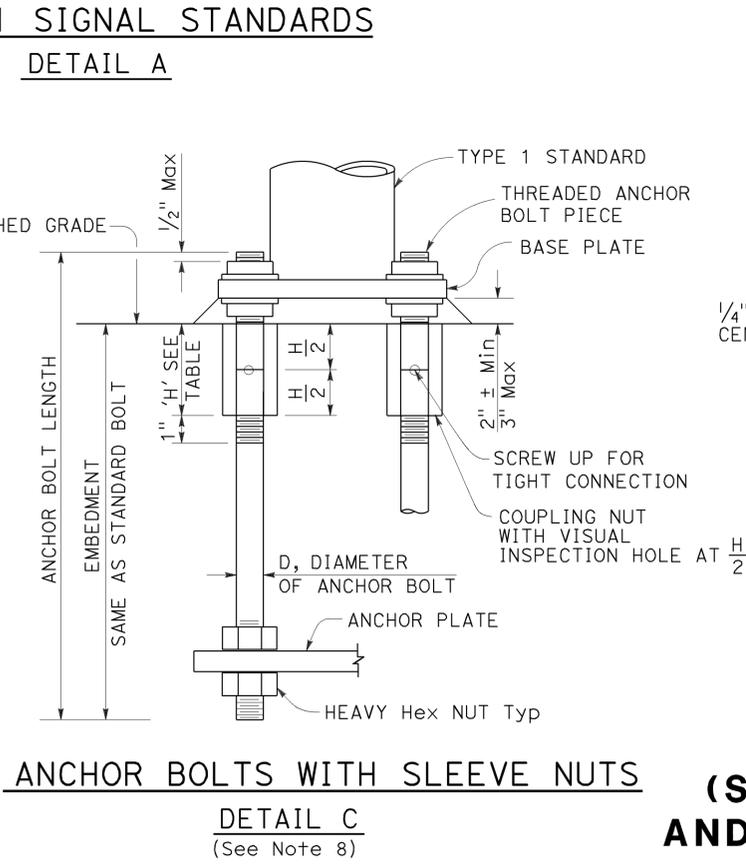
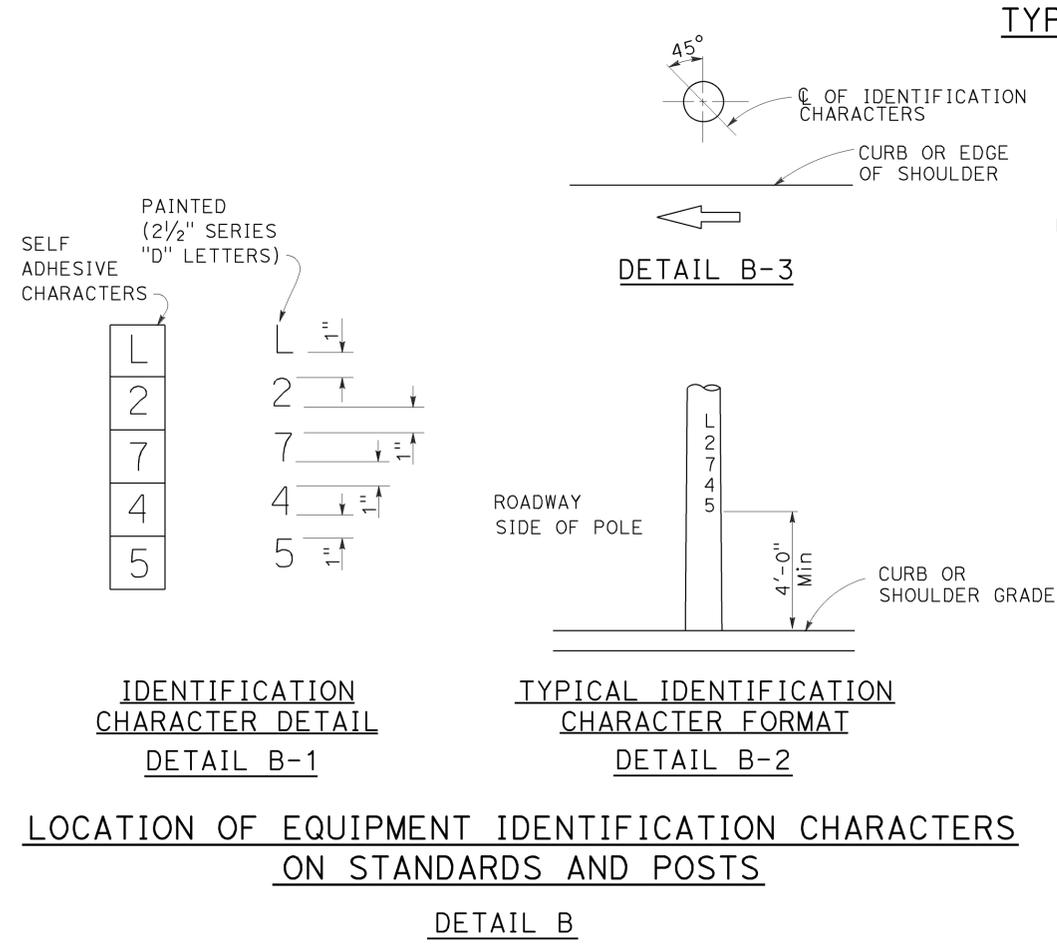
RSP ES-6G DATED OCTOBER 30, 2015 SUPERSEDES STANDARD PLAN ES-6G DATED MAY 20, 2011 - PAGE 458 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-6G

2010 REVISED STANDARD PLAN RSP ES-7B



- NOTES:**
- Standards shall be 10'-0" \pm 2" for vehicle signals and 7'-0" \pm 2" for pedestrian signals unless shorter pole is noted on project plans.
 - Top of standards shall be 4 1/2" OD.
 - Conduits shall extend 2" maximum above finished surface of foundation and for Types 1-A, 1-C and 1-D shall be sloped toward handhole.
 - Anchor bolts shall be bonded to conduit or grounding conductor.
 - For additional notes and details, see Revised Standard Plans RSP ES-7M and RSP ES-7N.
 - Pour foundation concrete against undisturbed soil.
 - For standards with handhole, locate in the downstream side of traffic.
 - Coupling nuts to be used only when shown or specified on project plans.

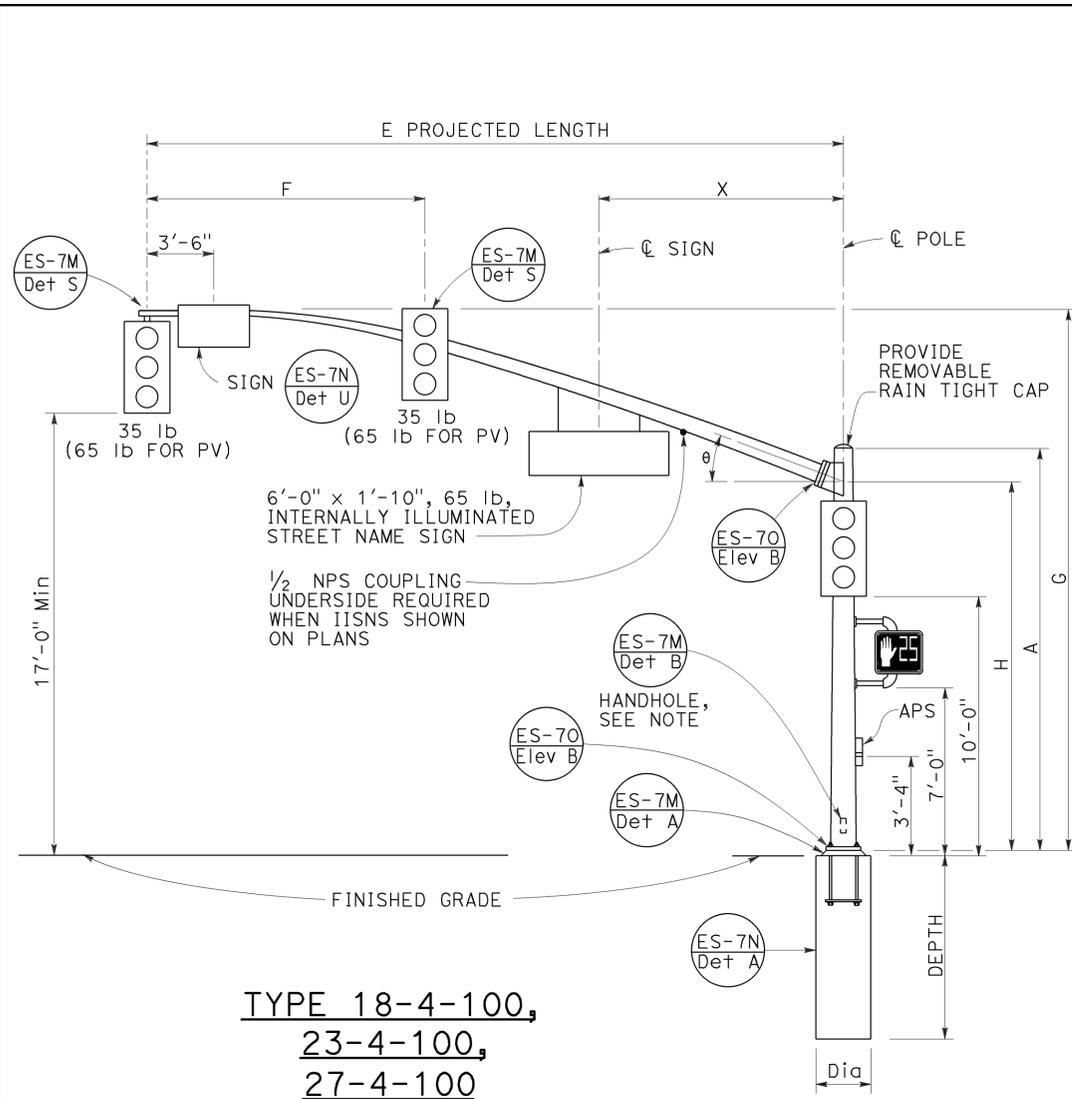


BOLT DIAMETER	NUT TABLE THICKNESS 'H'
3/4"	2 1/4"
1"	3"

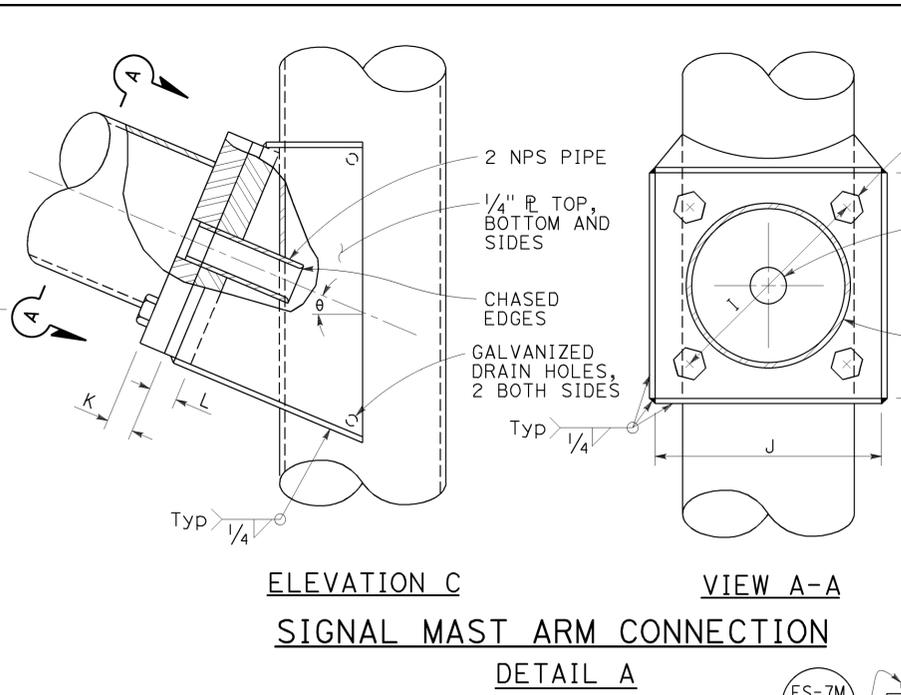
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS
(SIGNAL AND LIGHTING STANDARD, TYPE 1
AND EQUIPMENT IDENTIFICATION CHARACTERS)**

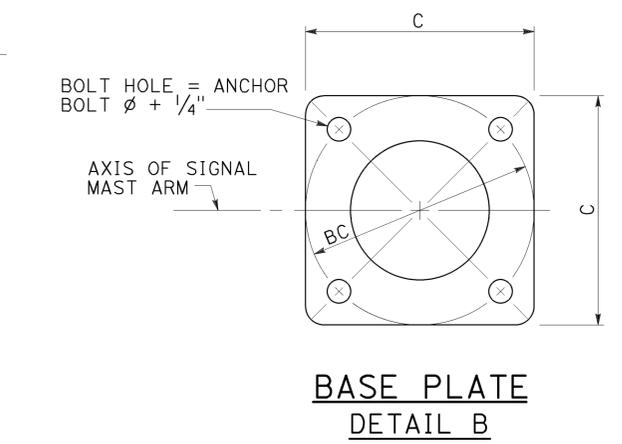
NO SCALE
RSP ES-7B DATED OCTOBER 30, 2015 SUPERSEDES STANDARD PLAN ES-7B DATED MAY 20, 2011 - PAGE 463 OF THE STANDARD PLANS BOOK DATED 2010.



**TYPE 18-4-100,
 23-4-100,
 27-4-100
 ELEVATION A**

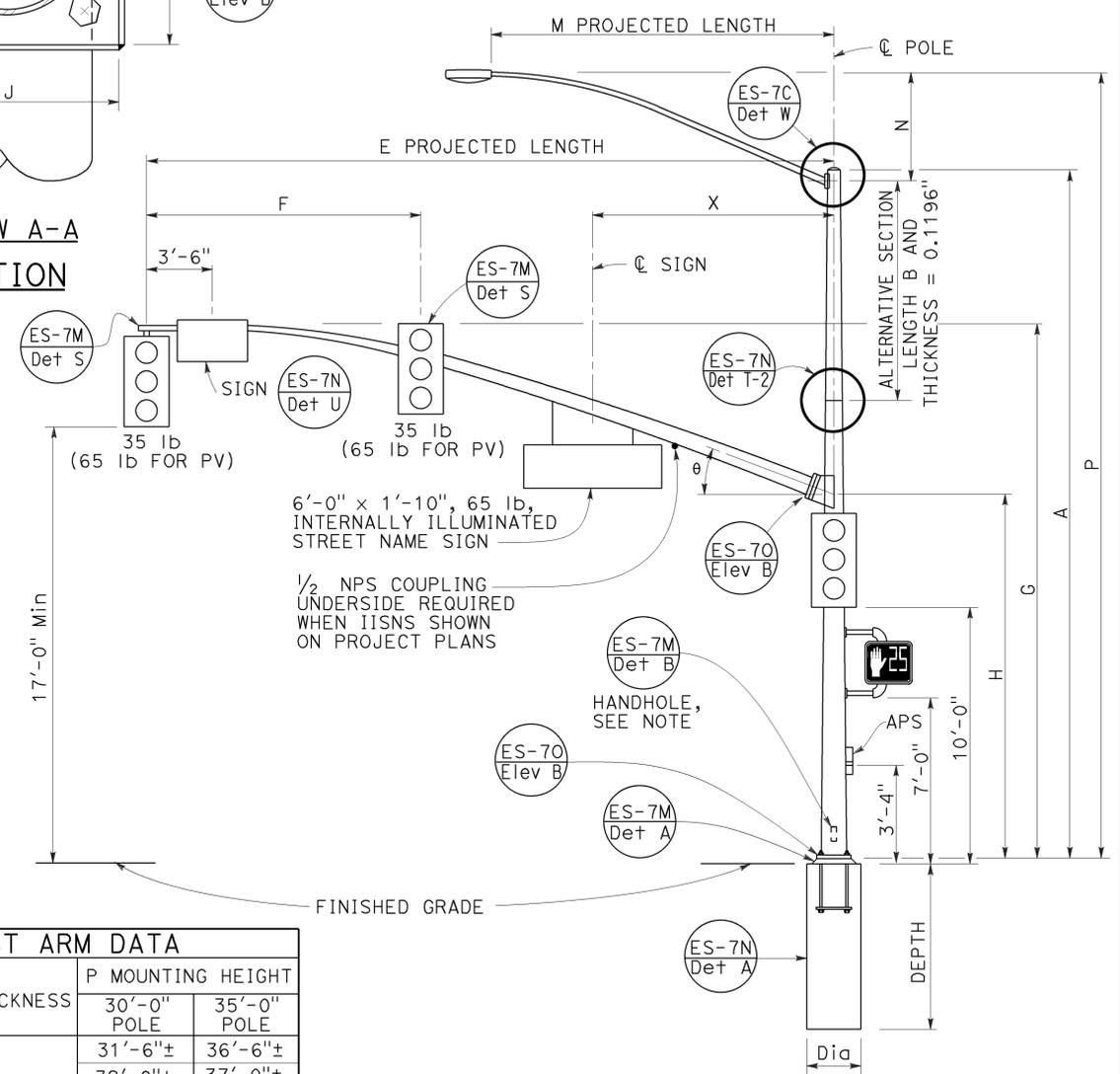


**ELEVATION C
 SIGNAL MAST ARM CONNECTION
 DETAIL A**



**BASE PLATE
 DETAIL B**

NOTE:
 Handhole shall be located on the downstream side of traffic.



**TYPE 19-4-100, 19A-4-100,
 24-4-100, 24A-4-100,
 26-4-100, 26A-4-100
 ELEVATION B**

E PROJECTED LENGTH	F Min SPACING	G MOUNTING HEIGHT	H	Min OD AT POLE	THICKNESS	I BOLT CIRCLE	HS CAP SCREWS	J PLATE SIZE	K MAST ARM THICKNESS	L POLE R THICKNESS	θ	X Max
25'-0"	10'-0"	22'-8"±	16'-0"	7 3/8"	0.2391"	12"	1 1/4"-7NC-3"	1'-0"	1 1/4"	1 1/2"	23°	10'-6"
30'-0"	12'-0"	23'-0"±		8"								
35'-0"	14'-0"	23'-0"±		8 1/16"								
40'-0"	15'-0"	23'-8"±		9 3/8"								
45'-0"				10 1/4"		13 1/2"	1'-1 1/2"	1 1/2"	1 3/4"	15°	13'-0"	

M PROJECTED LENGTH	N RISE	Min OD AT POLE	THICKNESS	P MOUNTING HEIGHT	
				30'-0" POLE	35'-0" POLE
6'-0"	2'-0"±	3 1/4"	0.1196"	31'-6"±	36'-6"±
8'-0"	2'-6"±	3 1/2"		32'-0"±	37'-0"±
10'-0"	3'-3"±	3 7/8"		32'-9"±	37'-9"±
12'-0"	4'-3"±			33'-9"±	38'-9"±
15'-0"	4'-9"±	4 1/4"		34'-3"±	39'-3"±

POLE TYPE	LOAD CASE	WIND VELOCITY (mph)	POLE DATA					BASE PLATE DATA				CIDH PILE FOUNDATION						
			A HEIGHT	Min OD		THICKNESS	ALTERNATIVE SECTION			C	BC = BOLT CIRCLE	THICKNESS	ANCHOR BOLT SIZE	LUMINAIRE MAST ARM	SIGNAL MAST ARM	Dia	DEPTH	REINFORCED
				BASE	TOP		B LENGTH	BOTTOM	TOP									
18-4-100	4	100	17'-0"	12 1/8"	9 1/16"	NONE	1'-7"	1'-5 1/2"	3"	2" ø x 42"	NONE	25'-0", 30'-0"	3'-0"	11'-0"	YES			
19-4-100			30'-0"		7 1/16"	10'-0"										9 1/8"	7 1/16"	
19A-4-100			35'-0"		6 15/16"	15'-0"										6 15/16"		
23-4-100			17'-0"	9 9/16"	NONE	23"	21"	2 1/2" ø x 42"	NONE	40'-0", 45'-0"	3'-6"	12'-0"	YES					
24-4-100			30'-0"	7 11/16"	10'-0"									9 1/8"	7 11/16"			
24A-4-100			35'-0"	6 15/16"	15'-0"									6 15/16"				
26-4-100			30'-0"	8 3/16"	10'-0"	9 5/8"	8 3/16"	23"	21"	3"	2" ø x 42"	NONE	NONE	NONE	NONE	NONE	NONE	
26A-4-100			35'-0"	7 7/16"	15'-0"	7 7/16"												
27-4-100			17'-0"	10 1/16"	NONE	NONE												

[] INDICATES MAST ARM LENGTH TO BE USED UNLESS OTHERWISE NOTED ON PLANS.

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
 (SIGNAL AND LIGHTING STANDARD,
 CASE 4 SIGNAL MAST ARM LOADING,
 WIND VELOCITY=100 MPH AND SIGNAL
 MAST ARM LENGTHS 25' TO 45')**
 NO SCALE

RSP ES-7F DATED OCTOBER 30, 2015 SUPERSEDES RSP ES-7F DATED JULY 19, 2013 AND
 ES-7F DATED MAY 20, 2011 - PAGE 467 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-7F

2010 REVISED STANDARD PLAN RSP ES-7F