

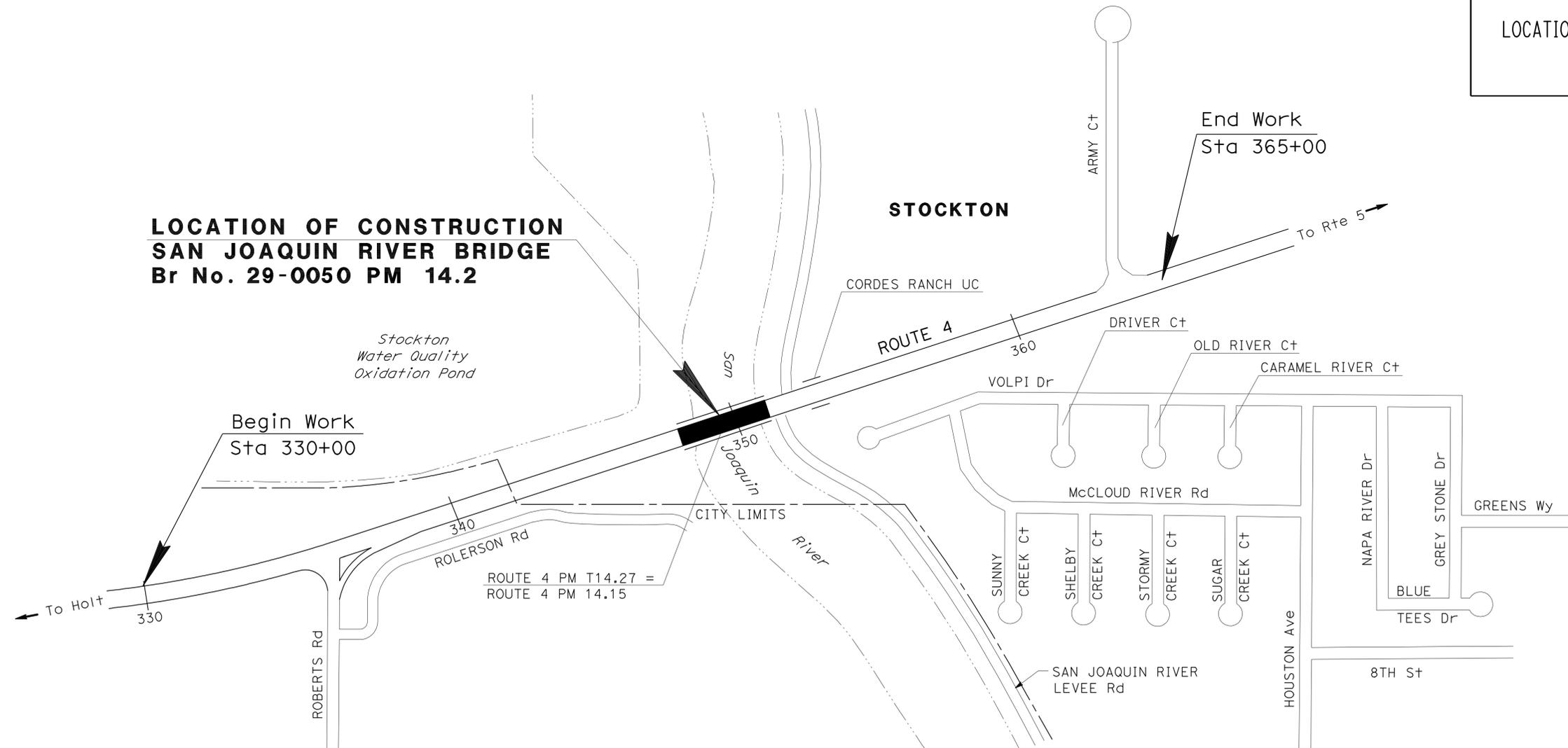
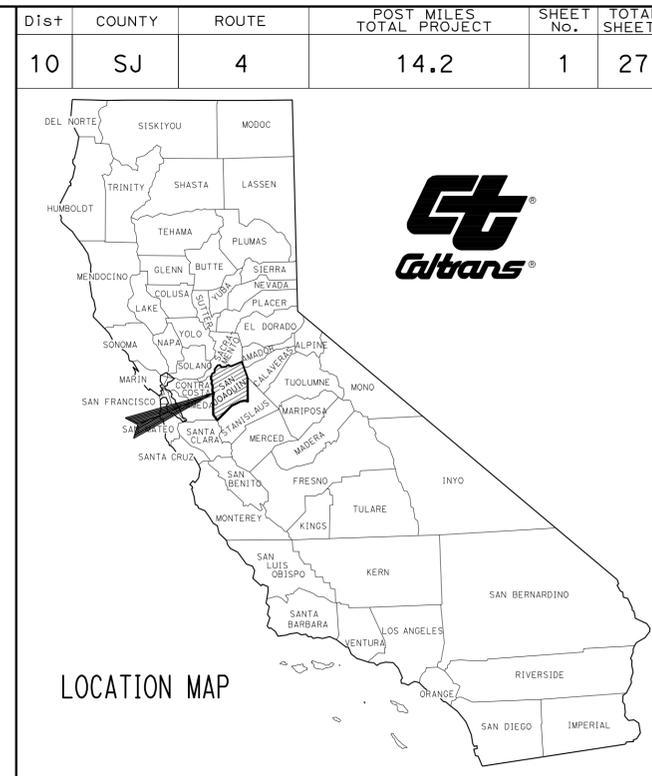
INDEX OF PLANS

SHEET No.	DESCRIPTION
1	TITLE AND LOCATION MAP
2	UTILITY PLAN
3-9	TRAFFIC HANDLING PLANS AND QUANTITIES
10	CONSTRUCTION AREA SIGNS AND SUMMARY OF QUANTITIES
11-14	ELECTRICAL PLANS
15-18	TEMPORARY WOOD POLE
19-27	REVISED STANDARD PLANS

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

STATE OF CALIFORNIA  
**DEPARTMENT OF TRANSPORTATION**  
**PROJECT PLANS FOR CONSTRUCTION ON**  
**STATE HIGHWAY**  
**IN SAN JOAQUIN COUNTY**  
**IN STOCKTON**  
**AT SAN JOAQUIN RIVER BRIDGE**

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006



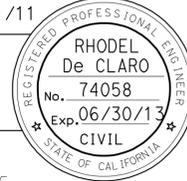
PROJECT MANAGER  
ALVIN MANGINDIN

DESIGN ENGINEER  
ALVIN MANGINDIN

*Rhodel De Claro* 11/21/11  
 PROJECT ENGINEER DATE  
 REGISTERED CIVIL ENGINEER

**January 23, 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.



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

NO SCALE

CONTRACT No.	<b>10-0V5904</b>
PROJECT ID	<b>1000020471</b>

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
10	SJ	4	14.2	2	27

Rhodel De Claro 11/21/11  
 REGISTERED CIVIL ENGINEER DATE  
 No. 74058  
 Exp. 6/30/13  
 CIVIL  
 STATE OF CALIFORNIA

1-23-12  
 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:**

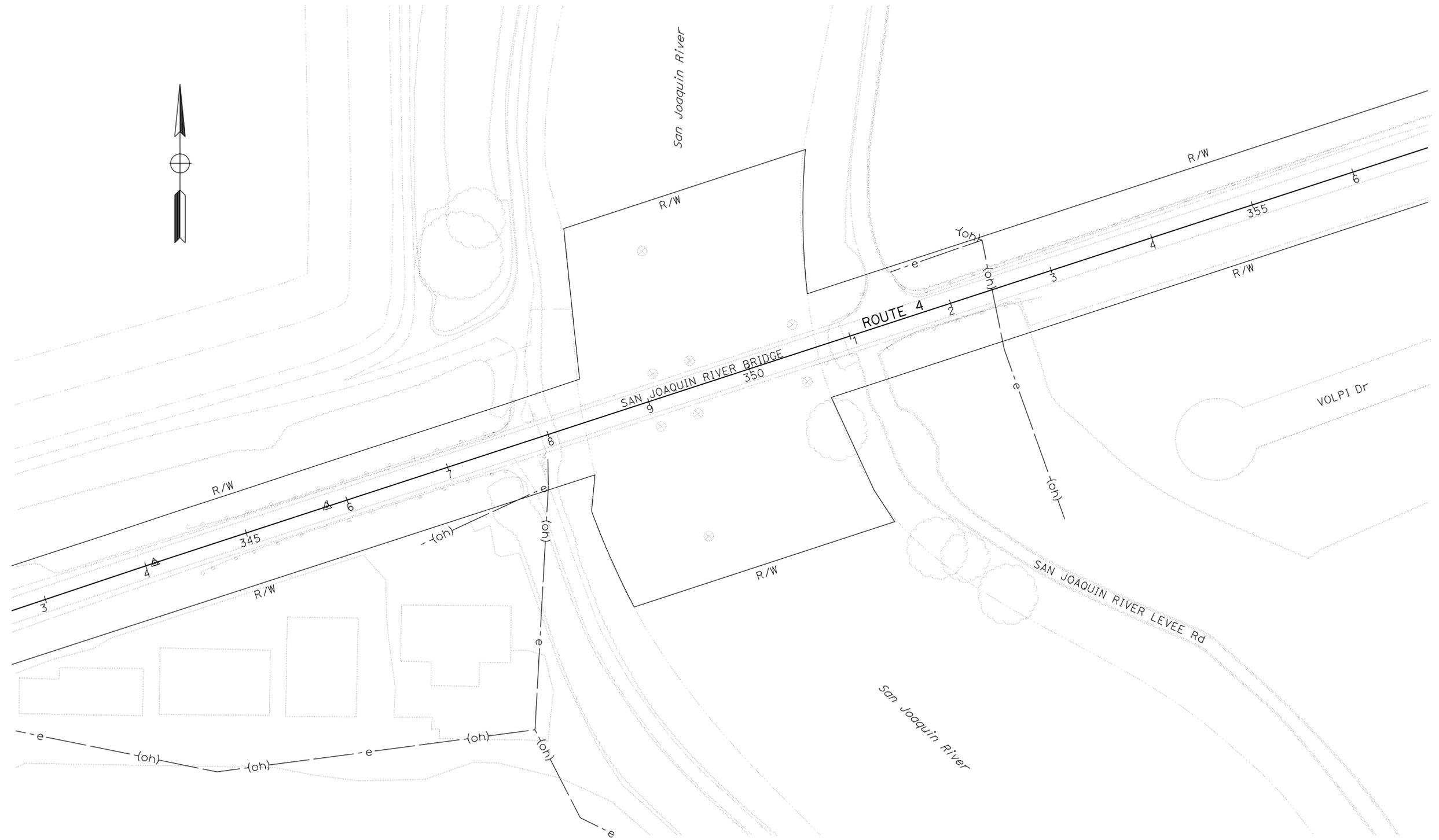
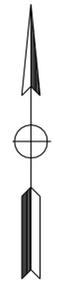
- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- LOCATION OF UTILITY FACILITIES ARE APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
- ALL UTILITIES ARE EXISTING UNLESS OTHERWISE SHOWN.

**LEGEND**

--e----- (oh)----- - PG&E ELECTRIC AERIAL

**ABBREVIATION**

PG&E- PACIFIC GAS AND ELECTRIC COMPANY



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

FUNCTIONAL SUPERVISOR  
 ALVIN MANGINDIN

CALCULATED/DESIGNED BY  
 CHECKED BY

RHODEL De CLARO  
 JOSE A ALICEA II

REVISED BY  
 DATE REVISED

RDC  
 10/03/11

APPROVED FOR UTILITY INFORMATION ONLY

**UTILITY PLAN**  
NO SCALE **U-1**

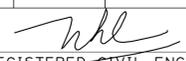
**LEGEND:**

-  - CONSTRUCT THIS STAGE
-  - TEMPORARY RAILING (TYPE K)
-  - TEMPORARY CRASH CUSHION ARRAY 'TS11'
-  - REMOVE YELLOW THERMOPLASTIC TRAFFIC STRIPE (HAZARDOUS WASTE)
-  - TEMPORARY TRAFFIC STRIPE (TAPE)
-  - TEMPORARY PAVEMENT MARKING (TAPE)
-  - CHANNELIZER (SURFACE MOUNTED)
-  - ROADSIDE SIGN
-  - CONSTRUCTION AREA SIGN No.
-  - INSTALL SIGN (STRAP AND SADDLE BRACKET METHOD)
-  - OBJECT MARKER (OM-3R OR OM-3L)
-  - DIRECTION OF TRAFFIC

**NOTES:**

1. EXACT SIGN LOCATIONS TO BE DETERMINED BY THE ENGINEER.
2. FOR ADDITIONAL CONSTRUCTION AREA SIGNS SEE CAS SHEET.
3. COVER ALL CONFLICTING ROADSIDE SIGNS.
4. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

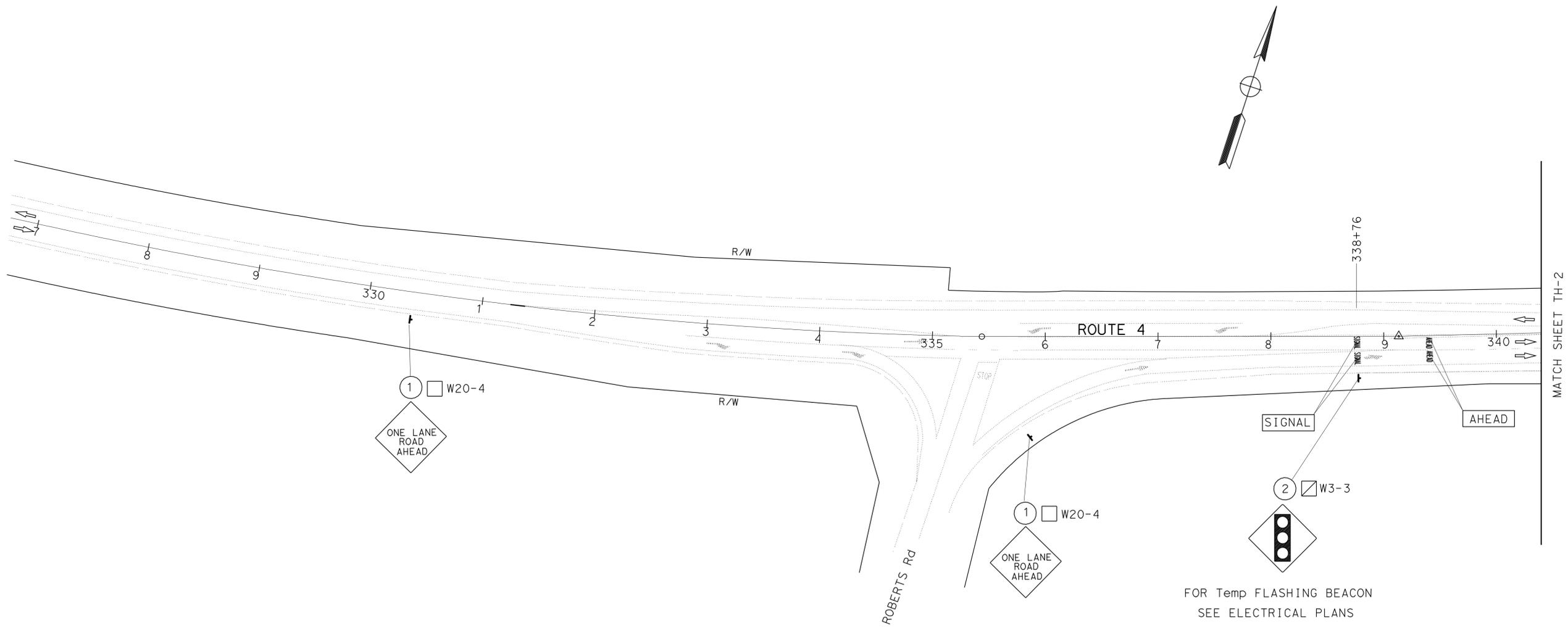
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
10	SJ	4	14.2	3	27

 11/21/11  
 REGISTERED CIVIL ENGINEER DATE

1-23-12  
 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  
 HUE NGUYEN  
 No. 74484  
 Exp. 12/31/11  
 CIVIL  
 STATE OF CALIFORNIA



FOR Temp FLASHING BEACON  
 SEE ELECTRICAL PLANS

**TRAFFIC HANDLING PLAN  
 STAGE 1**

SCALE: 1" = 50'

**TH-1**

APPROVED FOR TRAFFIC HANDLING WORK ONLY

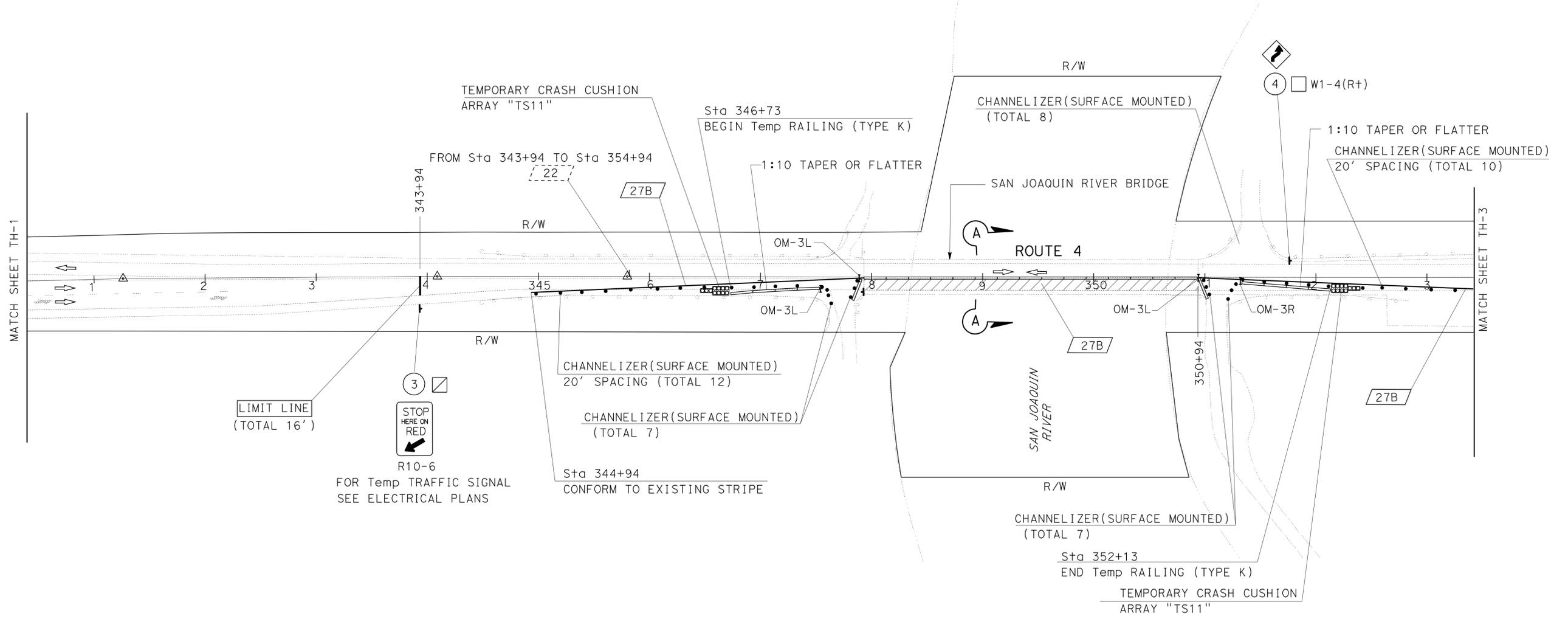
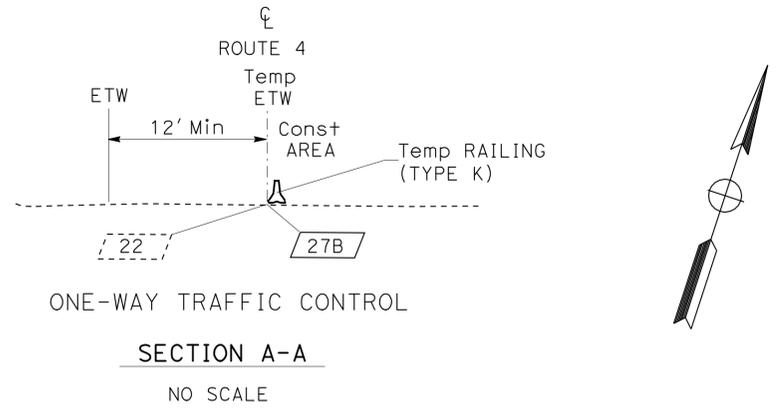
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** TRAFFIC DESIGN  
 FUNCTIONAL SUPERVISOR: MOHAMMED QATAMI  
 CALCULATED/DESIGNED BY: HUE NGUYEN  
 CHECKED BY: FERNANDO LOPEZ  
 REVISED BY: HN  
 DATE REVISED: 10/03/11

**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
10	SJ	4	14.2	4	27

REGISTERED CIVIL ENGINEER: *nhl* 11/21/11  
 DATE: 11/21/11  
 PLANS APPROVAL DATE: 1-23-12  
 REGISTERED PROFESSIONAL ENGINEER: HUE NGUYEN  
 No. 74484  
 Exp. 12/31/11  
 CIVIL  
 STATE OF CALIFORNIA

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



APPROVED FOR TRAFFIC HANDLING WORK ONLY

**TRAFFIC HANDLING PLAN**  
**STAGE 1**  
 SCALE: 1" = 50'  
**TH-2**

**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
10	SJ	4	14.2	5	27

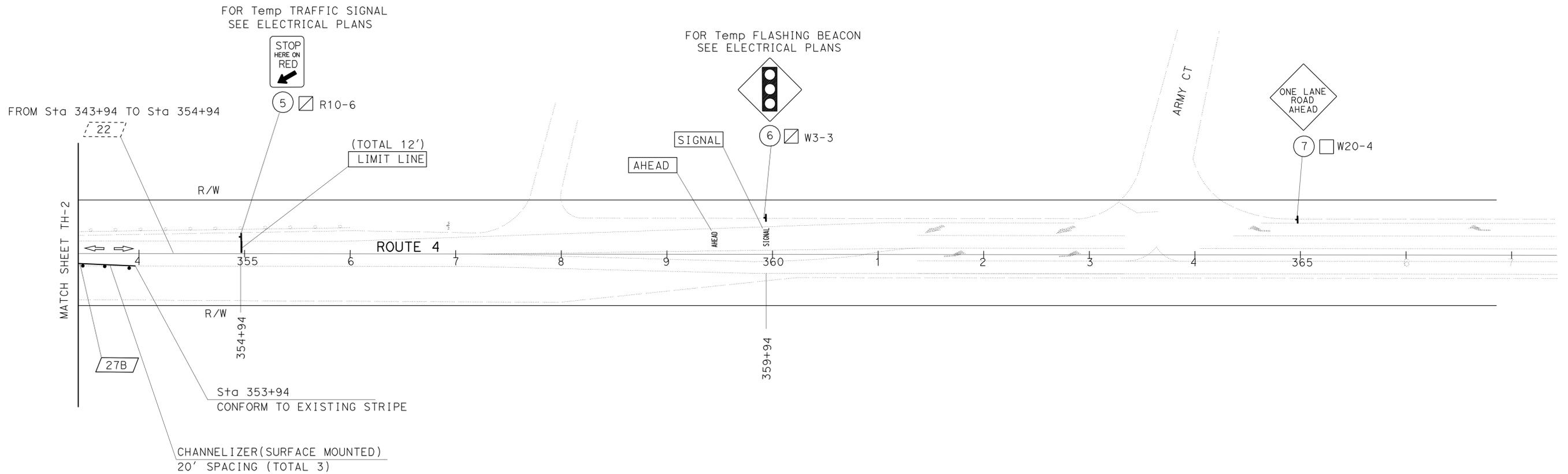
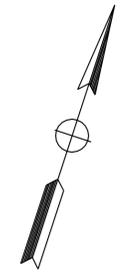
  

<i>nh</i>	11/21/11
REGISTERED CIVIL ENGINEER	DATE
1-23-12	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
HUE NGUYEN
No. 74484
Exp. 12/31/11
CIVIL
STATE OF CALIFORNIA

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



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

FUNCTIONAL SUPERVISOR  
MOHAMMED QATAMI

CALCULATED/DESIGNED BY  
CHECKED BY

HUE NGUYEN  
FERNANDO LOPEZ

REVISOR  
DATE

HN  
10/16/11

**TRAFFIC HANDLING PLAN**  
**STAGE 1**  
SCALE: 1" = 50'  
**TH-3**

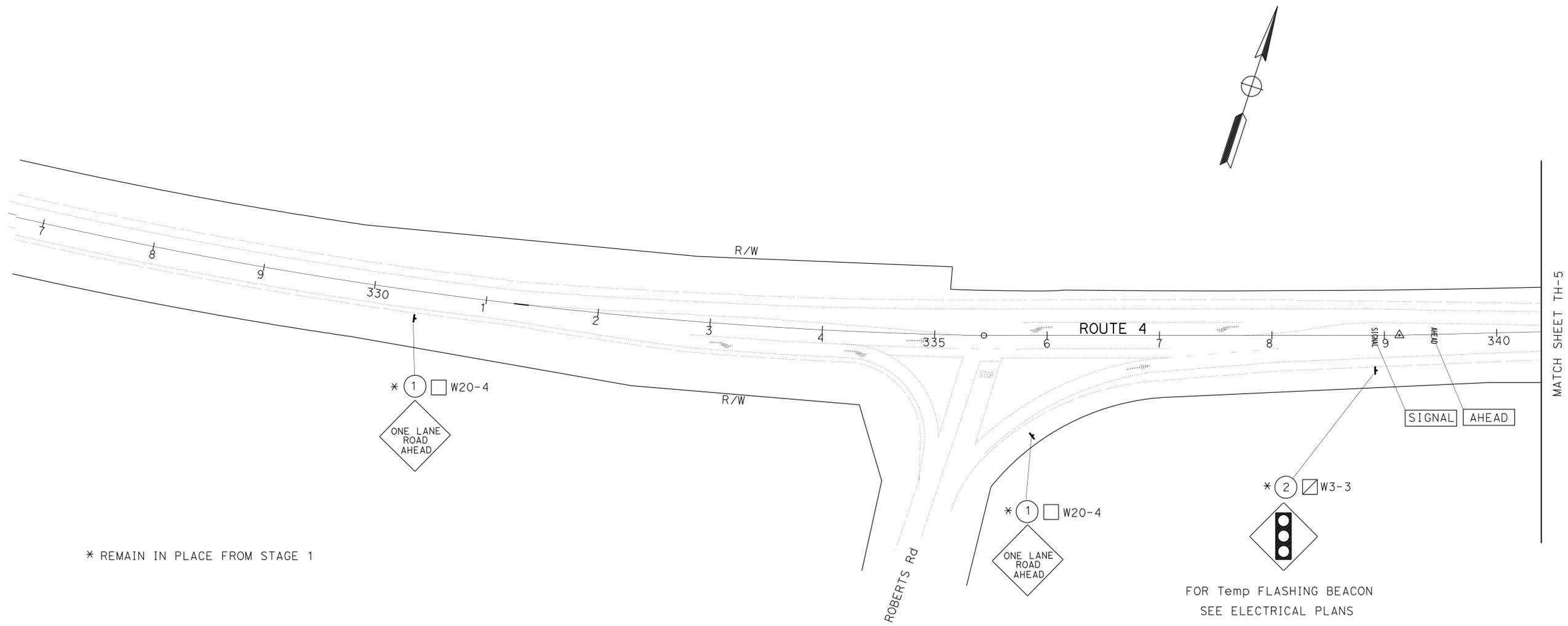
APPROVED FOR TRAFFIC HANDLING WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** TRAFFIC DESIGN  
 FUNCTIONAL SUPERVISOR: MOHAMMED QATAMI  
 CALCULATED/DESIGNED BY: HUE NGUYEN  
 CHECKED BY: FERNANDO LOPEZ  
 REVISED BY: HN  
 DATE REVISED: 9/30/11

**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
10	SJ	4	14.2	6	27

11/21/11  
 REGISTERED CIVIL ENGINEER DATE  
 1-23-12  
 PLANS APPROVAL DATE  
 HUE NGUYEN  
 No. 74484  
 Exp. 12/31/11  
 CIVIL  
 THE STATE OF CALIFORNIA OR ITS OFFICERS  
 OR AGENTS SHALL NOT BE RESPONSIBLE FOR  
 THE ACCURACY OR COMPLETENESS OF SCANNED  
 COPIES OF THIS PLAN SHEET.



**TRAFFIC HANDLING PLAN**  
**STAGE 2**  
 SCALE: 1" = 50'  
**TH-4**

APPROVED FOR TRAFFIC HANDLING WORK ONLY

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

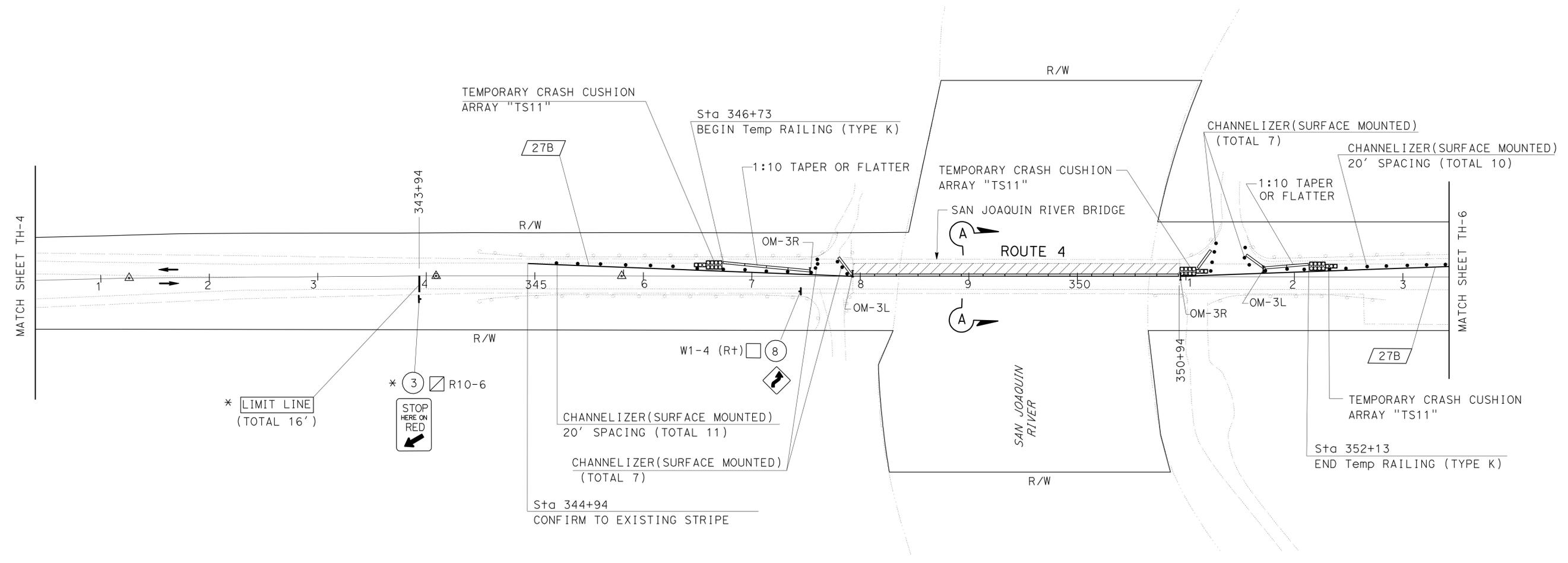
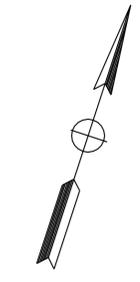
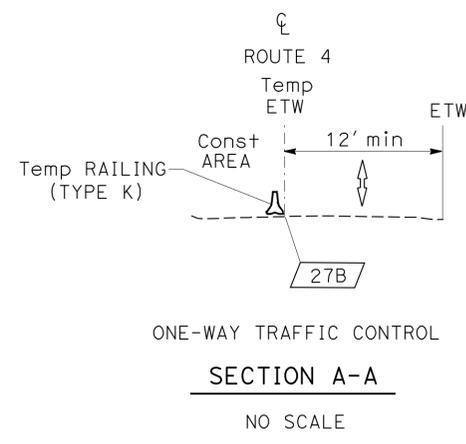
FUNCTIONAL SUPERVISOR	MOHAMMED OATAMI
CALCULATED/DESIGNED BY	CHECKED BY
HUE NGUYEN	FERNANDO LOPEZ
REVISOR	DATE
HN	9/30/11

**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
10	SJ	4	14.2	7	27

REGISTERED CIVIL ENGINEER DATE 11/21/11  
 HUE NGUYEN No. 74484 Exp. 12/31/11  
 PLANS APPROVAL DATE 1-23-12

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.



\* REMAIN IN PLACE FROM STAGE 1

APPROVED FOR TRAFFIC HANDLING WORK ONLY

**TRAFFIC HANDLING PLAN**  
**STAGE 2**  
 SCALE: 1" = 50'  
**TH-5**

LAST REVISION DATE PLOTTED => 27-JAN-2012 00-00-00 TIME PLOTTED => 08:56

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** TRAFFIC DESIGN  
 FUNCTIONAL SUPERVISOR: MOHAMMED QATAMI  
 CALCULATED/DESIGNED BY: HUE NGUYEN  
 CHECKED BY: DERNANDO LOPEZ  
 REVISED BY: HN  
 DATE REVISED: 9/30/11

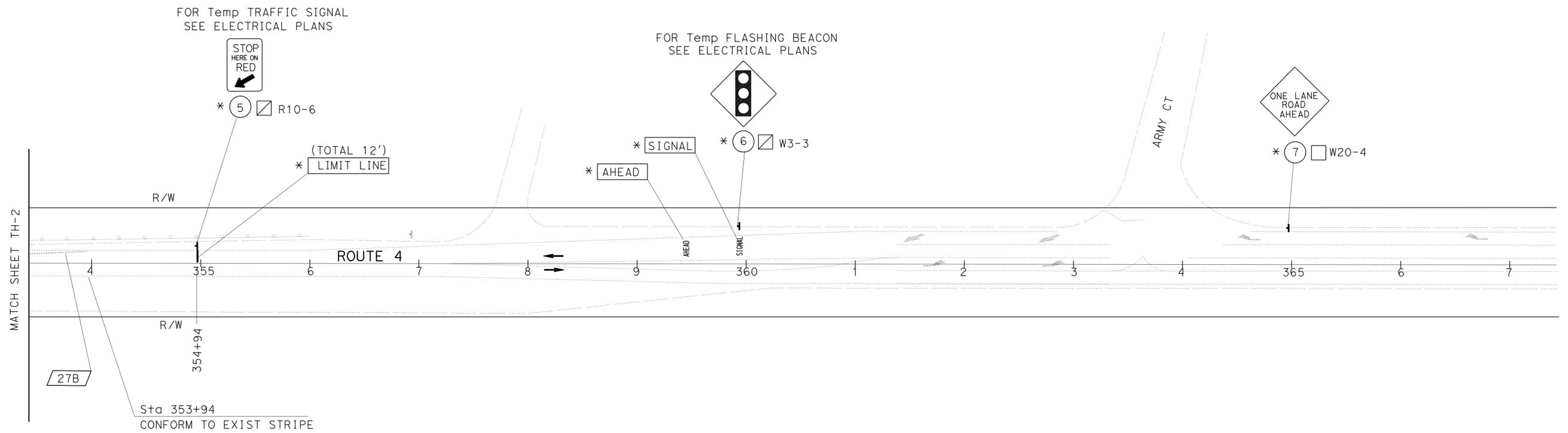
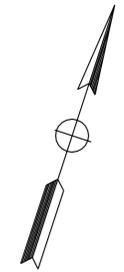
**NOTE:**  
 FOR ACCURATE RIGHT OF WAY DATA, CONTACT  
 RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
10	SJ	4	14.2	8	27

11/21/11  
 REGISTERED CIVIL ENGINEER DATE  
 1-23-12  
 PLANS APPROVAL DATE

HUE NGUYEN  
 No. 74484  
 Exp. 12/31/11  
 CIVIL  
 STATE OF CALIFORNIA

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



\* REMAIN IN PLACE FROM STAGE 1

**TRAFFIC HANDLING PLAN**  
**STAGE 2**  
 SCALE: 1" = 50' **TH-6**

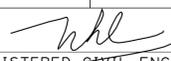
APPROVED FOR TRAFFIC HANDLING WORK ONLY

LAST REVISION DATE PLOTTED => 27-JAN-2012 00-00-00 TIME PLOTTED => 08:56

**NOTES:**

- SEE CONSTRUCTION AREA SIGNS, TRAFFIC HANDLING PLANS FOR ADDITIONAL CONSTRUCTION AREA SIGNS.
- (N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
10	SJ	4	14.2	9	27

 11/21/11  
 REGISTERED CIVIL ENGINEER DATE

1-23-12  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 HUE NGUYEN  
 No. 74484  
 Exp. 12/31/11  
 CIVIL  
 STATE OF CALIFORNIA

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

**STATIONARY MOUNTED CONSTRUCTION AREA SIGNS**

STAGE No.	SHEET No.	SIGN No.	SIGN CODE	SIGN MESSAGE	PANNEL SIZE	No. POST AND SIZE	No. OF SIGNS	REMARKS
							EA	
1	TH-1	①	W20-4	ONE LANE ROAD AHEAD	36" x 36"	1 - 4" x 4"	2	
		②	W3-3	SIGNAL AHEAD	36" x 36"		1	ON TEMP FLASHING BEACON
	TH-2	③	R10-6	STOP HERE ON RED	36" x 24"		1	ON TEMP TRAFFIC SIGNAL
		④	W1-4(R)	REVERSE CURVE RIGHT (SYMBOL)	30" x 30"	1 - 4" x 4"	1	
	TH-3	⑤	R10-6	STOP HERE ON RED	36" x 24"		1	ON TEMP TRAFFIC SIGNAL
		⑥	W3-3	SIGNAL AHEAD	36" x 36"		1	ON TEMP FLASHING BEACON
		⑦	W20-4	ONE LANE ROAD AHEAD	36" x 36"	1 - 4" x 4"	1	
2	TH-5	⑧	W1-4(R)	REVERSE CURVE RIGHT (SYMBOL)	30" x 30"	1 - 4" x 4"	1	
TOTAL							9	

**TRAFFIC HANDLING DELINEATION QUANTITIES**

STAGE No.	SHEET No.	STATION LIMIT	REMOVE YELLOW THERMOPLASTIC TRAFFIC STRIPE (HAZARDOUS WASTE)	REMOVE PAVEMENT MARKER	TEMPORARY TRAFFIC STRIPE (TAPE)	TEMPORARY PAVEMENT MARKING (TAPE)			CHANNELIZER (SURFACE-MOUNTED)	TEMPORARY RAILING (TYPE K)	TEMPORARY CRASH CUSHION MODULE	(N) OBJECT MARKER				
			Det 22 LF		EA	4" SOLID WHITE	LIMIT LINE	AHEAD				SIGNAL	EA	LF	EA	EA
1	TH-1 TO TH-3	Sta 338+76 TO Sta 359+94	2,200	94	900	28	93	96	39	500	22	4				
2	TH-4 TO TH-6	Sta 338+76 TO Sta 359+94			900				35	500	33	4				
SUBTOTAL			2,200	94	1,800	28	93	96	74	1,000	55					
TOTAL			2,200	94	1,800	217			74	1,000	55					

**TRAFFIC HANDLING QUANTITIES**  
**THQ-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** TRAFFIC DESIGN  
 FUNCTIONAL SUPERVISOR: MOHAMMED OATAMI  
 CALCULATED/DESIGNED BY: HUE NGUYEN  
 CHECKED BY: FERNANDO LOPEZ  
 REVISOR: HN  
 DATE REVISED: 11/16/11



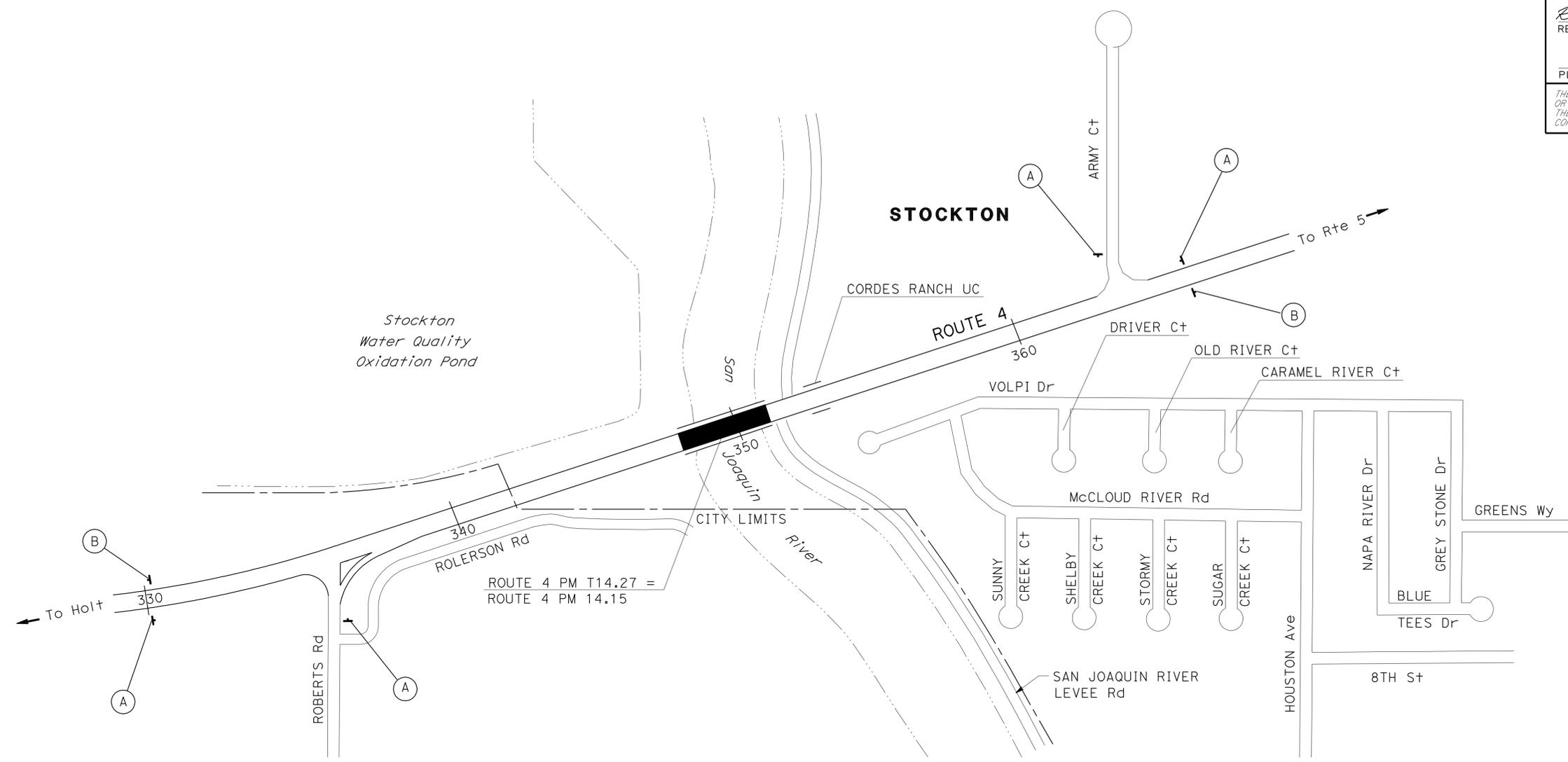
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
10	SJ	4	14.2	10	27

Rhodel DeClaro 11/21/11  
REGISTERED CIVIL ENGINEER DATE

1-23-12  
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  
**RHODEL De CLARO**  
No. 74058  
Exp. 6/30/13  
CIVIL  
STATE OF CALIFORNIA



**STATIONARY MOUNTED CONSTRUCTION AREA SIGNS**

SIGN	SIGN CODE	PANEL SIZE	No. OF POSTS AND SIZE	No. OF SIGNS	SIGN MESSAGE
(A)	W20-1	36" X 36"	1 - 4" x 6"	4	ROAD WORK AHEAD
(B)	G20-2	36" x 18"	1 - 4" x 6"	2	END ROAD WORK

NOTE: EXACT SIGN LOCATIONS TO BE DETERMINED BY THE ENGINEER.

**TRAFFIC MANAGEMENT SYSTEM ELEMENTS (EXISTING)**

PM	DIRECTION	LOCATION	TYPE	DESCRIPTION
14.04	EB	ROBERTS ISLAND ROAD	TMS	TRAFFIC MONITORING STATION
14.04	WB	ROBERTS ISLAND ROAD	TMS	TRAFFIC MONITORING STATION

NOTE: TRAFFIC MANAGEMENT SYSTEM ELEMENT LOCATIONS ARE APPROXIMATE.

**PAVEMENT DELINEATION ITEMS**

LOCATION (ROUTE 4)	THERMOPLASTIC TRAFFIC STRIPE (SPRAYABLE)	PAVEMENT MARKER (RETROREFLECTIVE)
	4" YELLOW	TYPE D
	DETAIL 22	DETAIL 22
	LF	EA
TOTAL	1100	94

**CONSTRUCTION AREA SIGNS AND SUMMARY OF QUANTITIES**

NO SCALE **CS-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - MAINTENANCE

FUNCTIONAL SUPERVISOR: ALVIN MANGINDIN

CALCULATED/DESIGNED BY: RHODEL De CLARO

CHECKED BY: JOSE A ALICEA II

REVISOR: RDC

DATE REVISED: 10/03/11

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
10	SJ	4	14.2	11	27

<i>Alvaro Araica</i>	11/21/11
REGISTERED ELECTRICAL ENGINEER	DATE
1-23-12	
PLANS APPROVAL DATE	

ALVARO ARAICA
No. 15558
Exp. 12/31/11
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.

**LEGEND: (FOR SHEETS E-1 AND E-2)**

- 1 120/240 V, 1Ø, 3-WIRE, TYPE A SERVICE, SEE DETAILS ON SHEET E-4.
- 2 STATE-FURNISHED MODEL 2070 CONTROLLER ASSEMBLY. FURNISH AND INSTALL BBS.
- 3 WOOD POLE WITH SIGNAL AND LIGHTING EQUIPMENT, SEE DETAIL A ON SHEET E-3.
- 4 WOOD POLE WITH TEMPORARY FLASHING BEACON INSTALLATION. SEE DETAIL B ON SHEET E-3.
- 5 WOOD POLE AS SHOWN ON THE PLANS TO CARRY MESSENGER CABLES, SIGNAL CABLES AND CONDUCTORS. SEE DETAIL C ON SHEET E-3.
- 6 SEE DETAIL E ON SHEET E-3.
- 7 LOOP DETECTORS SHALL HAVE FIVE TURNS.
- 8 SEE DETAIL D ON SHEET E-3.
- 9 CONDUIT SHALL BE ATTACHED TO THE OUTSIDE OF THE BRIDGE RAILING AND SECURED AT A DISTANCE OF NOT MORE THAN 10' INTERVALS.

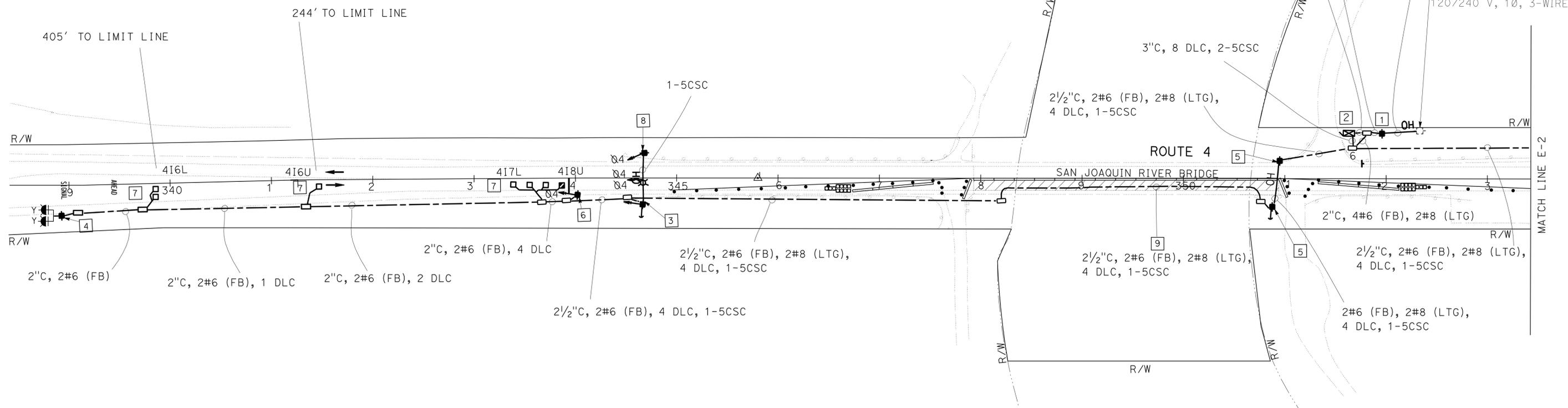
**ABBREVIATIONS:**

PG&E - PACIFIC GAS AND ELECTRIC COMPANY



**NOTES: (FOR SHEETS E-1 AND E-2)**

1. 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: ALI BAKHOUD  
 CALCULATED/DESIGNED BY: ALVARO ARAICA  
 CHECKED BY: JASPAL SINGH  
 REVISED BY: AA  
 DATE REVISED: 11/21/11

**TEMPORARY SIGNAL SYSTEM**  
**E-1**

SCALE: 1" = 50'

APPROVED FOR ELECTRICAL WORK ONLY

LAST REVISION: 10-25-11    DATE PLOTTED => 27-JAN-2012    TIME PLOTTED => 08:50

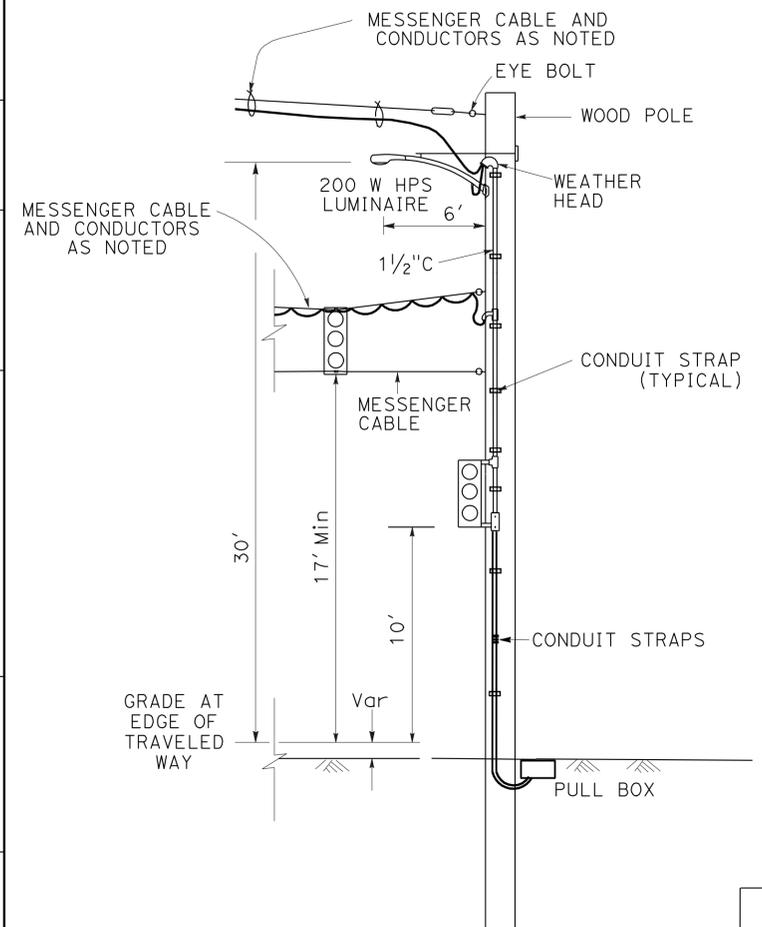


Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
10	SJ	4	14.2	13	27

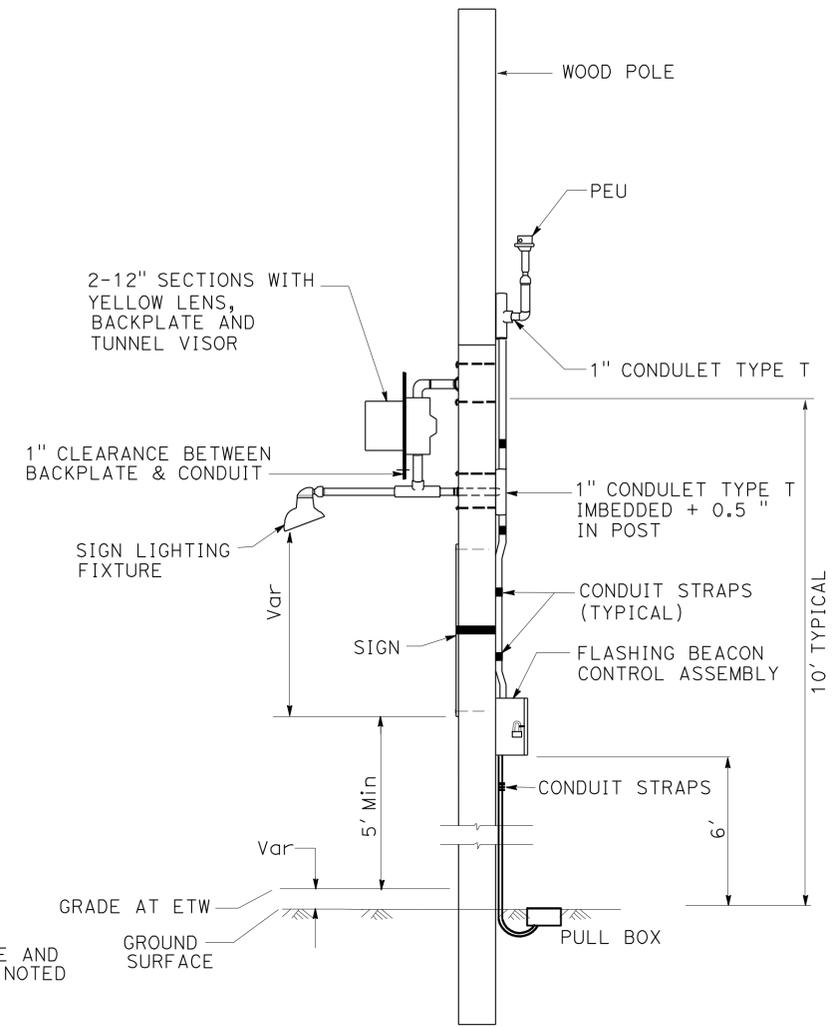
  

REGISTERED ELECTRICAL ENGINEER	DATE	11/21/11
ALVARO ARAICA	No.	15558
1-23-12	PLANS APPROVAL DATE	
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>		

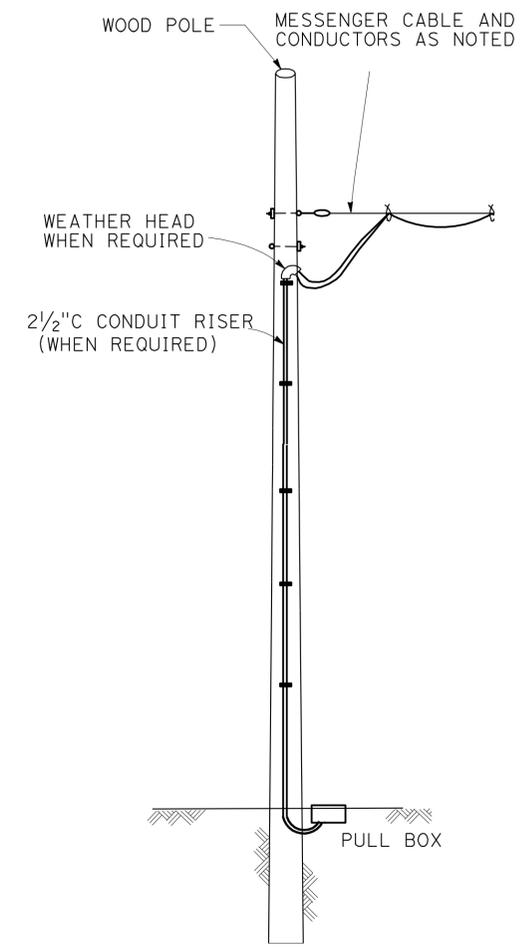
**NOTE:**  
 1. FOR NOTES AND LEGEND SEE SHEET E-1.  
 2. FOR POLE DETAILS, SEE SHEETS SES-1 THROUGH SES-4.



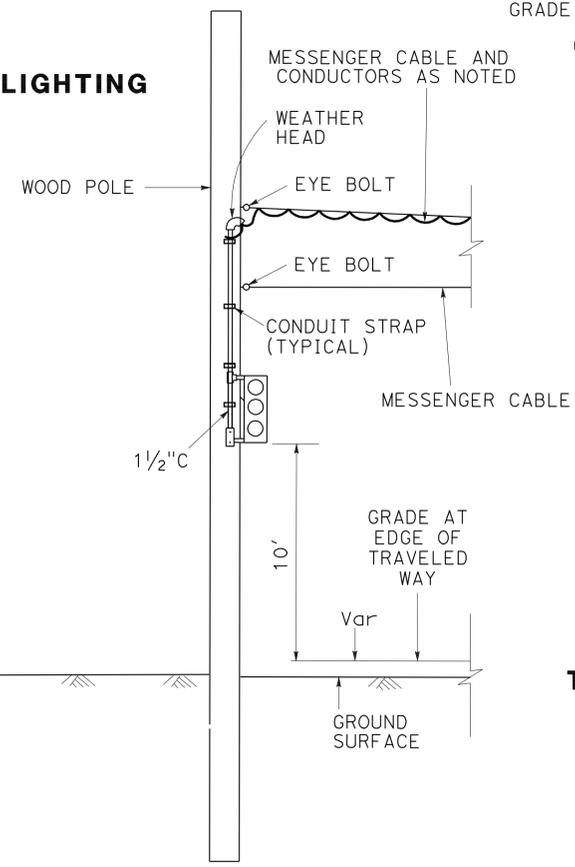
**TEMPORARY SIGNAL AND LIGHTING  
 INSTALLATION  
 DETAIL A**



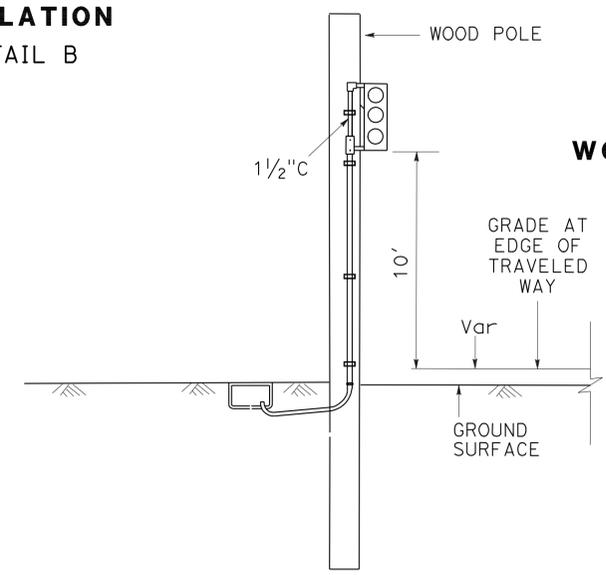
**TEMPORARY FLASHING BEACON  
 INSTALLATION  
 DETAIL B**



**TEMPORARY  
 WOOD POLE INSTALLATION  
 DETAIL C**



**TEMPORARY SIGNAL  
 INSTALLATION  
 DETAIL D**



**TEMPORARY SIGNAL  
 AT LIMIT LINE  
 INSTALLATION  
 DETAIL E**

**TEMPORARY SIGNAL SYSTEM**

NO SCALE

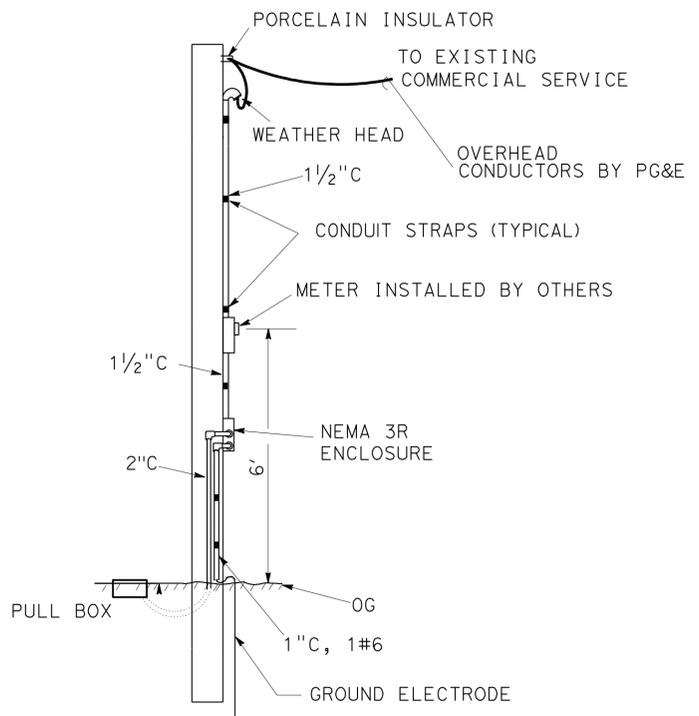
**E-3**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL DESIGN  
 FUNCTIONAL SUPERVISOR: ALI BAKHOUD  
 REVISIONS: AA 11/21/11  
 DESIGNED BY: ALVARO ARAICA  
 CHECKED BY: JASPAL SINGH  
 REVISIONS: JAS 11/21/11  
 DESIGNED BY: ALVARO ARAICA  
 CHECKED BY: JASPAL SINGH

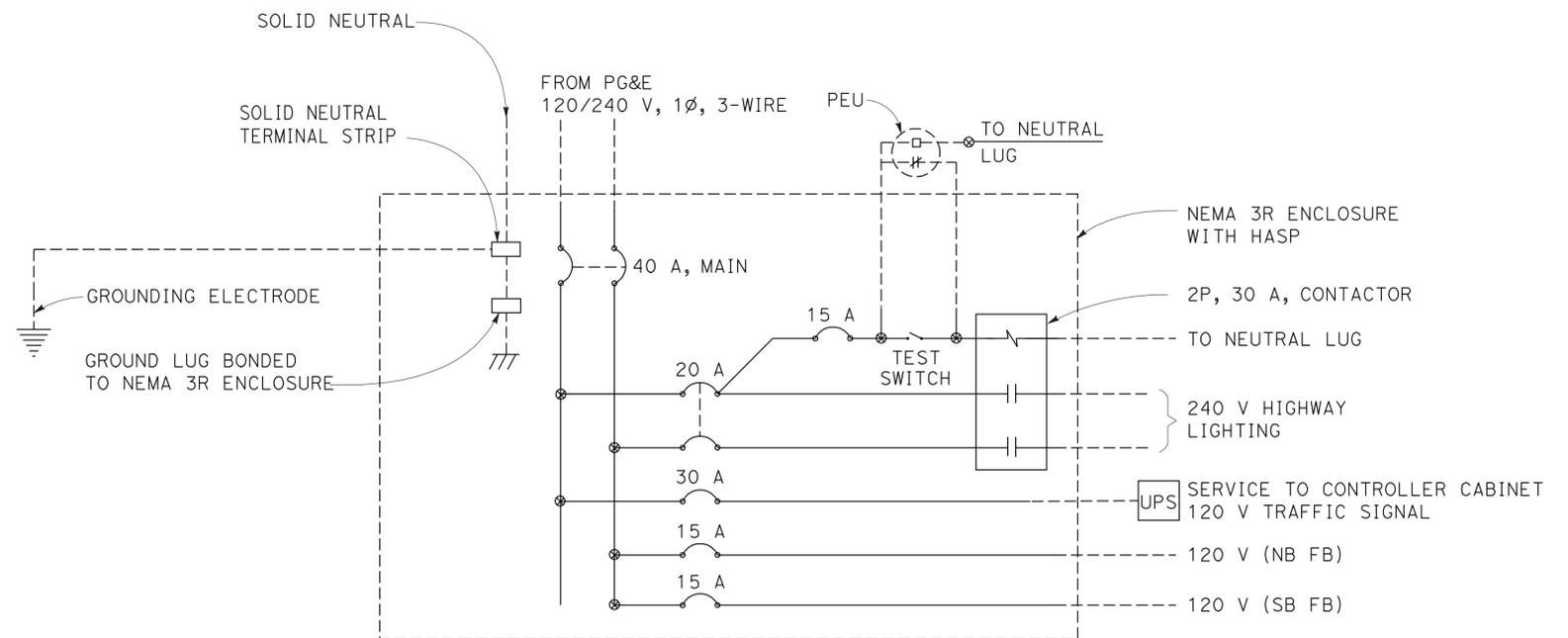
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL DESIGN  
 FUNCTIONAL SUPERVISOR: ALI BAKHDOUD  
 REVISIONS: AA 11/21/11  
 DESIGNED BY: ALVARO ARAICA  
 CHECKED BY: JASPAL SINGH  
 DESIGNED BY: ALVARO ARAICA  
 CHECKED BY: JASPAL SINGH  
 REVISIONS: AA 11/21/11  
 DESIGNED BY: ALVARO ARAICA  
 CHECKED BY: JASPAL SINGH

**NOTE:**  
 1. FOR NOTES AND LEGEND SEE SHEET E-1.  
 1. FOR POLE DETAILS, SEE SHEETS SES-1 THROUGH SES-4.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
10	SJ	4	14.2	14	27
REGISTERED ELECTRICAL ENGINEER			DATE	11/21/11	
1-23-12			PLANS APPROVAL DATE		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					



**TEMPORARY SERVICE INSTALLATION**



PROVIDE ITEMS SHOWN IN THIS DIAGRAM  
 SEE RSP ES-2C AND RSP ES-2D FOR MORE INFORMATION.

120/240 V  
**SERVICE WIRING DIAGRAM**

**TEMPORARY SIGNAL SYSTEM**  
 NO SCALE

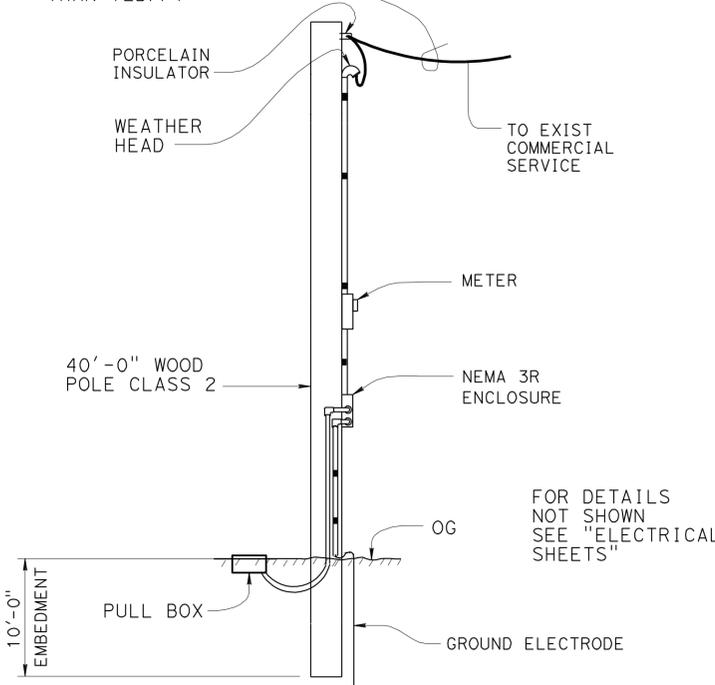
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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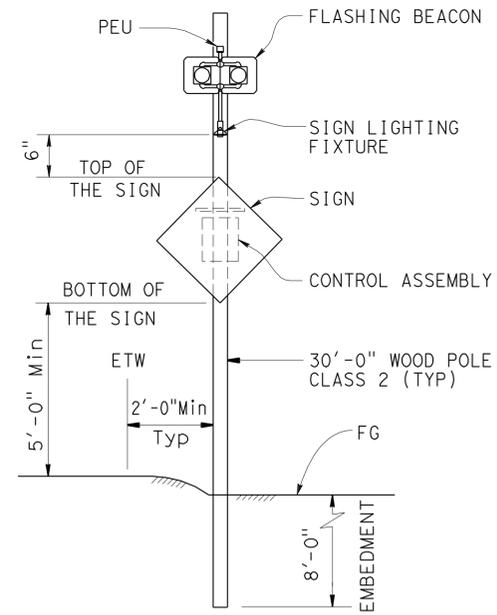
<i>Victor O. Lopez</i> REGISTERED CIVIL ENGINEER DATE 7-13-11		REGISTERED PROFESSIONAL ENGINEER No. C61373 Exp. 6/30/13 CIVIL STATE OF CALIFORNIA
PLANS APPROVAL DATE 1-23-12		

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.

SEE NOTE 1 & 13, CONDUCTORS SHALL BE SECURED AND BUNDLED TO NOT EXCEED A VERTICAL CLUSTERED DIMENSION OF 1.5" AND SHALL NOT WEIGH MORE THAN 1LB/FT

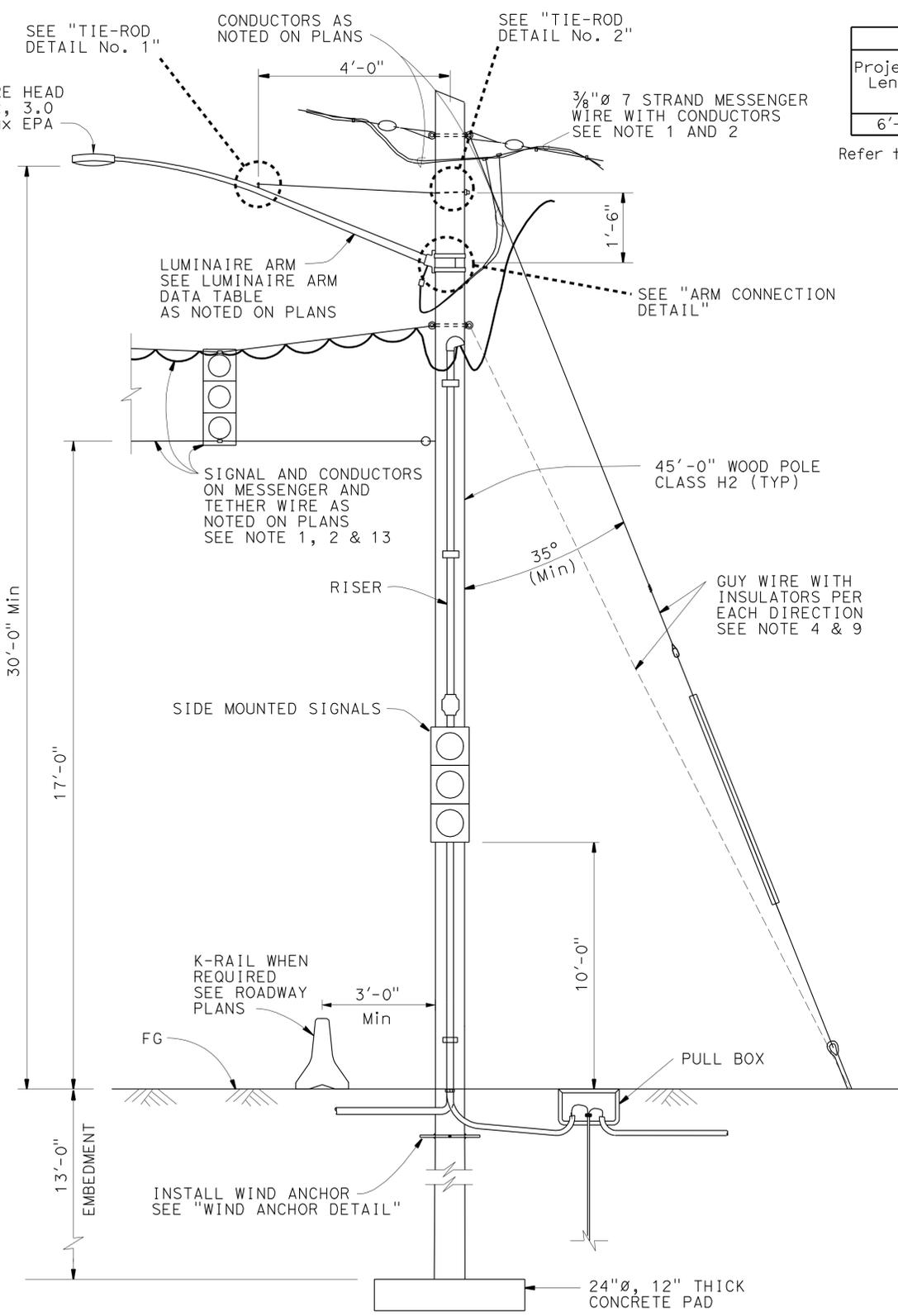


**TEMPORARY SERVICE INSTALLATION**



**ADVANCED FLASHING BEACON WITH SIGN AND SIGN LIGHTING**

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



**TYPICAL WOOD POLE SUPPORT WITH LUMINAIRE**

NO SCALE

LUMINAIRE ARM DATA			
Projected Length	N Rise	Min OD At Pole	Thickness
6'-0"	2'-0"	3/4"	0.1196"

Refer to ES-6D for Luminaire arm details

**GENERAL NOTES:**

**SPECIFICATIONS**

Design: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals dated 2001.

**LOADING**

Wind Loadings: 85 MPH

**UNIT STRESSES**

Timber Poles: Fb = 1850 Tapered treated round pole  
Fv = 110 psi ASTM D2899 Standard

**TREATMENT**

E = 1500 x 10<sup>3</sup> psi

To conform with Section 86 Standard Specifications

**SPECIFICATIONS**

Caltrans Standard Specifications May 2006  
ANSI Wood Poles  
Utility Grade Wires

**NOTES:**

- All overhead cables shall be slack spanned with 25'-0" minimum overhead clearance (Unless otherwise noted).
- Conductors shall be suspended from span-wire as follows:  
A) Main run 3/8" span-wire with 5.5% ± 0.5% sag and 1/4" tether wire with 5.5% ± 0.5% sag where required. No spare conductors allowed except as noted.
- Overhead line construction not specifically covered here shall conform with the provisions of General Order No. 95 of Public Utilities Commission.
- Wood poles shall be stabilized using guy wires, breast blocks or rakes at each dead end, corner, drop or line deviation more than 15° from straight line. The direction of the guy shall counteract the resultant of unbalanced force applied to pole. Where space or conflict prevent guy installation, a diagonal brace shall be used. The brace shall be wood and shall be connected to the pole by means to satisfy structural and electrical requirements. The direction of the brace shall counteract the resultant of unbalanced horizontal force of 6000 pounds (Min) applied to the pole, per "GUY WIRE INSTALLATION DETAIL A".
- Guy wires shall be attached to pole as nearly as practical to the center of conductors load, or 3'-0" Max otherwise, See Note 4.
- All attachments shall be mounted 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.
- Foundation design is based on AASHTO 2001 article 13.6 Broms' approximate procedure assuming a cohesionless material. The angle of internal friction used is 30° and unit weight of soil used is 120 lb/ft<sup>3</sup>. The Contractor to verify actual soil condition.
- If pole is located on a steep slope add 2 feet extra for embedment.
- See Sheets SES-2 & SES-4 for details.
- For details not shown, see "2006 STANDARD PLANS" and "2006 REVISED STANDARD PLANS"
- All temporary poles support OH Conductors. Attach luminaire arm and/or combination of attachments as specified at locations where indicated on Electrical Sheets. For electrical details not shown see Electrical sheets.
- Attachments shown on pole apply as noted on Plans.
- Maximum span 60'-0". Overhead conductors with tethered signals and 100' maximum span for overhead conductors from existing commercial service.

BRANCH CHIEF	DESIGN	BY V LOPEZ	CHECKED N KANEPATHIPILLAI
	DETAILS	BY A R DUDSAK	CHECKED N KANEPATHIPILLAI
	QUANTITIES	BY	CHECKED

STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES DESIGN AND TECHNICAL SERVICES SPECIAL DESIGNS BRANCH	BRIDGE NO. N/A	POST MILE Varies	TEMPORARY WOOD POLE SIGNAL & LIGHTING	SES-1
DEPARTMENT OF TRANSPORTATION						

PROJECT NUMBER & PHASE: 1000020471-1	CONTRACT NO.: 10-0V5901
--------------------------------------	-------------------------

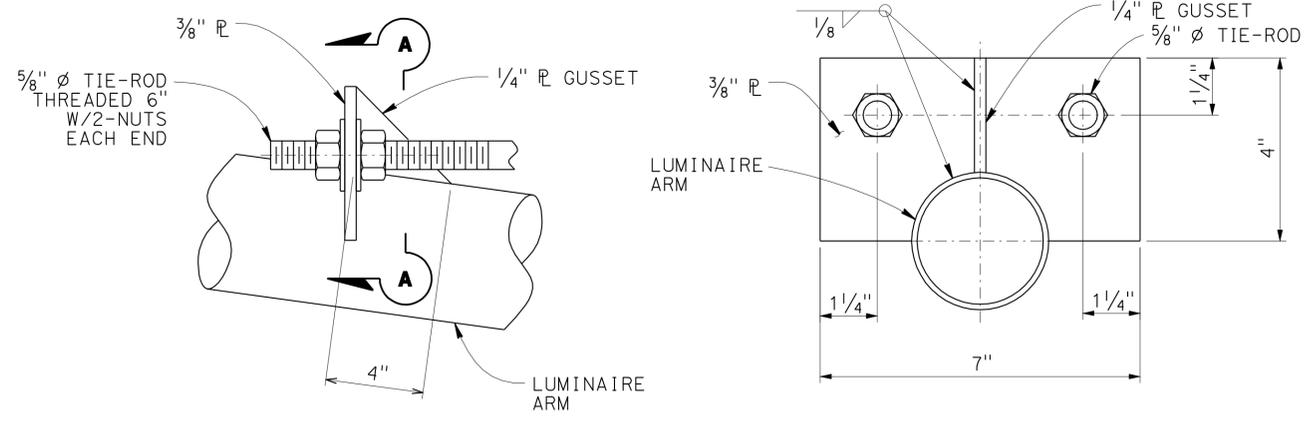
STRUCTURES DESIGN SPECIAL DESIGN SHEET (ENGLISH) (REV. 09-01-10)	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	UNIT: 3619	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET	OF
	0 1 2 3	PROJECT NUMBER & PHASE: 1000020471-1 CONTRACT NO.: 10-0V5901		7-8-11 1-17-12	1	4

USERNAME => s114640 DATE PLOTTED => 27-JAN-2012 TIME PLOTTED => 09:26

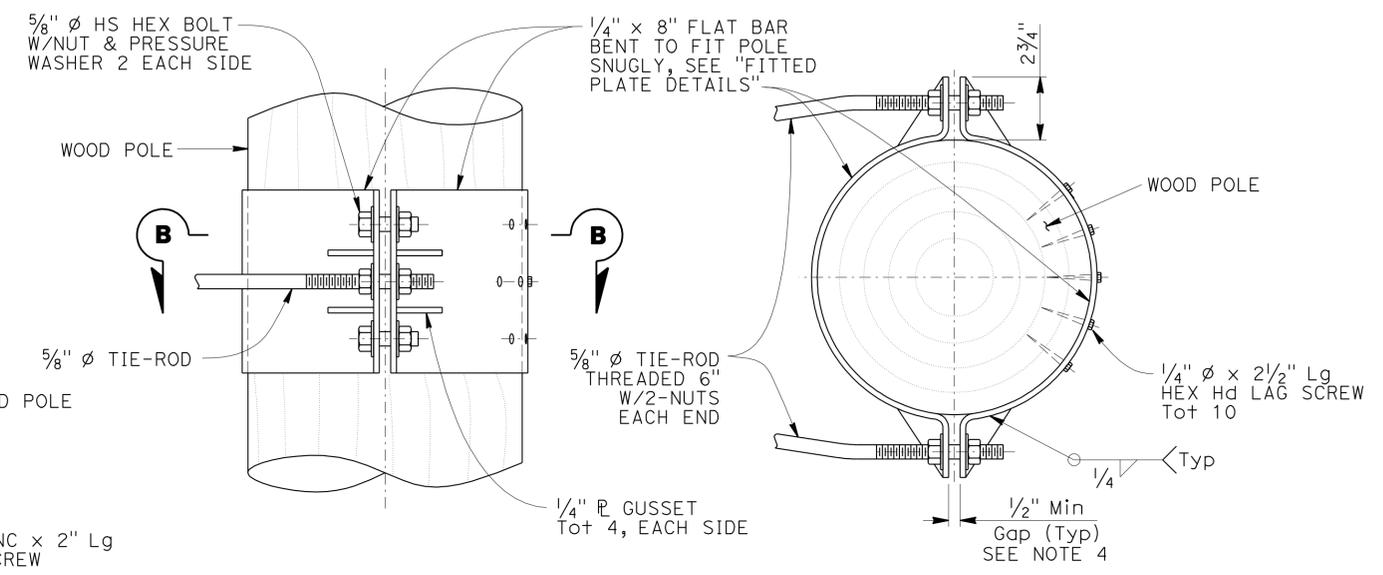
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
10	SJ	4	14.2	16	27
<i>Victor O. Lopez</i> REGISTERED CIVIL ENGINEER DATE 7-13-11			No. C61373 Exp. 6/30/13 CIVIL STATE OF CALIFORNIA		
PLANS APPROVAL DATE 1-23-12					
<i>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</i>					

**NOTES:**

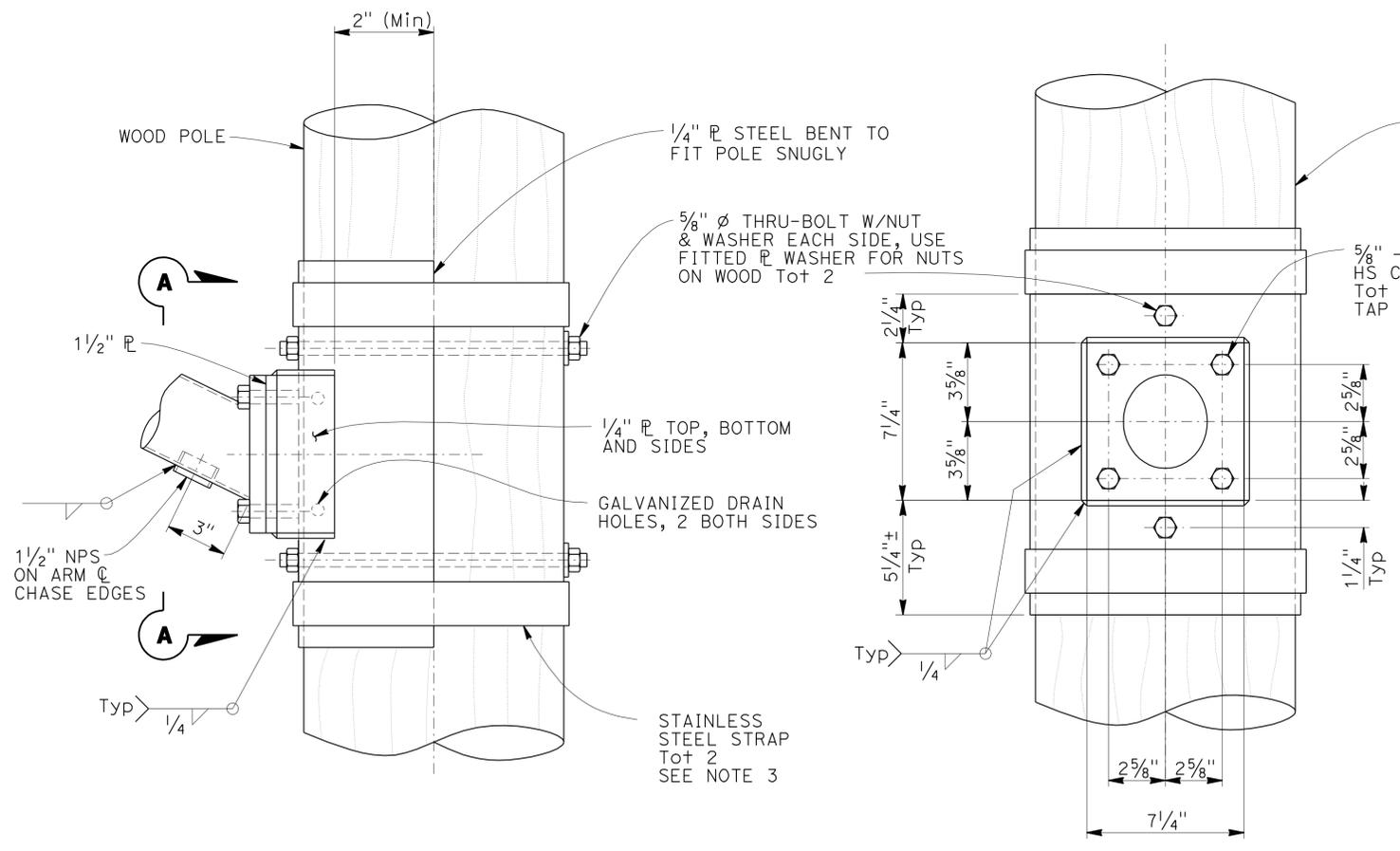
- All hardware and steel shall be galvanized after fabrication.
- Arm Base connection details shall be in compliance with Standard Plans Detail Sheet ES-6D with noted modifications.
- 2000 LB Min capacity strap system shall be used for top and bottom of plate.
- The Contractor to verify pole dimensions at Tie-Rod attachment height. Fabricate 8" flat bar with "L" Dimension to maintain an open gap between encasement in finished installation.



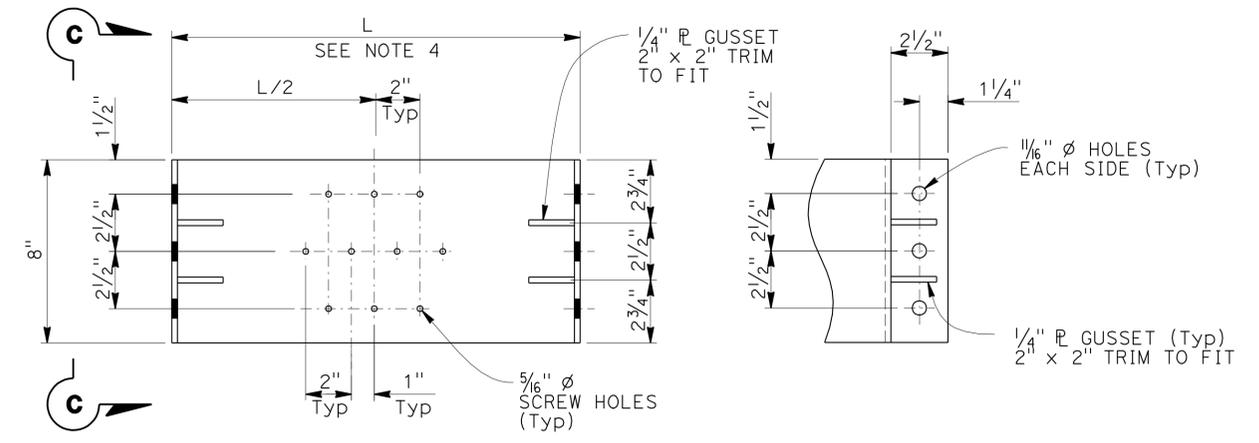
**ELEVATION SECTION A-A**  
**TIE-ROD DETAIL No. 1**



**ELEVATION SECTION B-B**  
**TIE-ROD DETAIL No. 2**



**ELEVATION VIEW A-A**  
**ARM CONNECTION DETAILS**



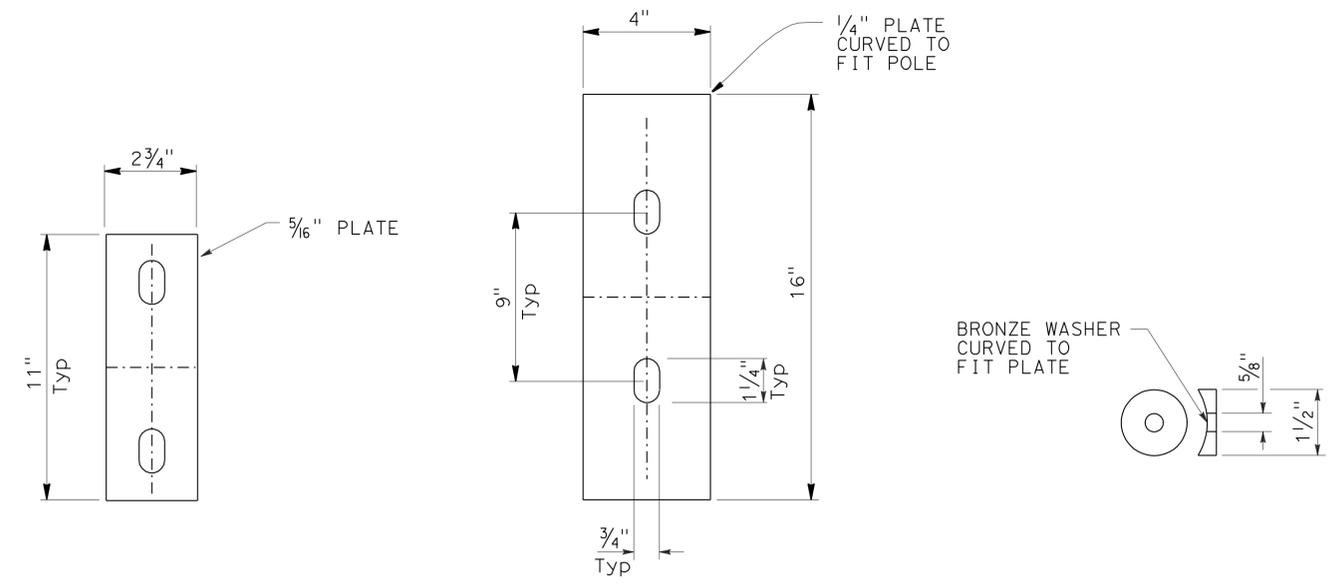
**ELEVATION SECTION C-C**  
**FITTED PLATE DETAILS**  
 Note: 2 Required (1 w/screw holes, 1 without)

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

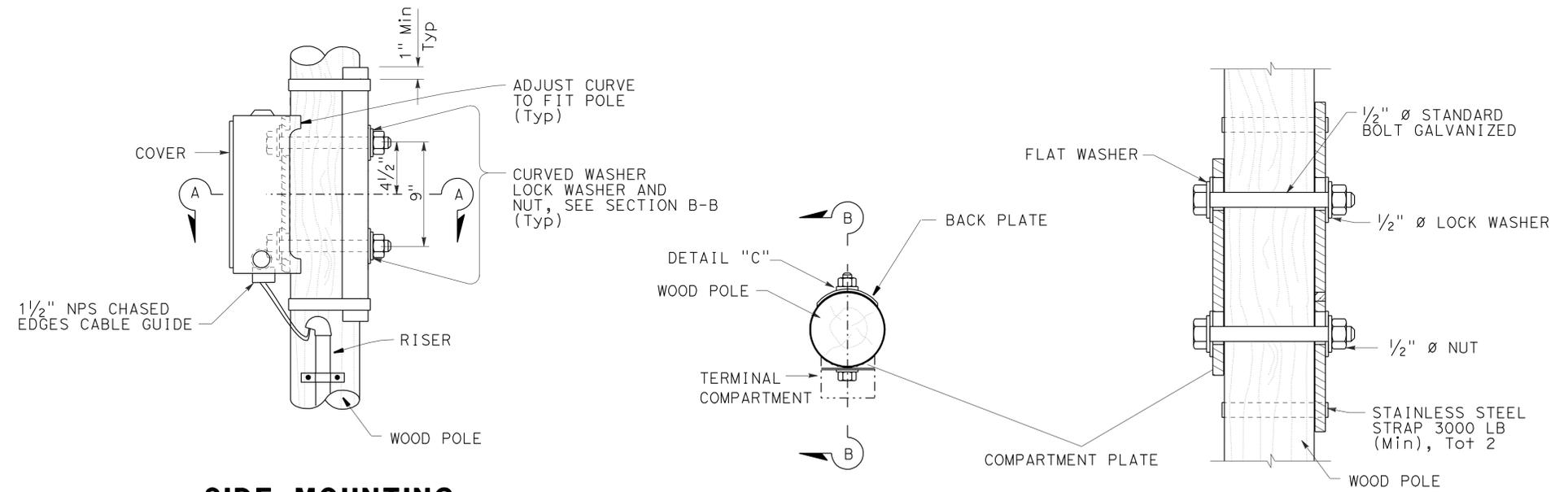
NO SCALE

BRANCH CHIEF JAMES SAGAR	DESIGN BY V LOPEZ	CHECKED N KANEPATHIPILLAI	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES DESIGN AND TECHNICAL SERVICES SPECIAL DESIGNS BRANCH	BRIDGE NO. N/A	TEMPORARY WOOD POLE WOOD POLE DETAILS No. 1	SES-2
	DETAILS BY A R DUDSAK	CHECKED N KANEPATHIPILLAI			POST MILE Varies		
	QUANTITIES BY	CHECKED					

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
10	SJ	4	14.2	17	27
<i>Victor O. Lopez</i> REGISTERED CIVIL ENGINEER			7-13-11 DATE		
1-23-12 PLANS APPROVAL DATE					
REGISTERED PROFESSIONAL ENGINEER VICTOR O. LOPEZ No. C61373 Exp. 6/30/13 CIVIL STATE OF CALIFORNIA					
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**COMPARTMENT PLATE (MOD)      BACK PLATE      DETAIL "C"**



**SIDE MOUNTING TERMINAL COMPARTMENT      SECTION A-A      SECTION B-B**

**SIGNAL HEADS AND MOUNTINGS**  
For Details Not Shown See RSP-ES-4D Sheet

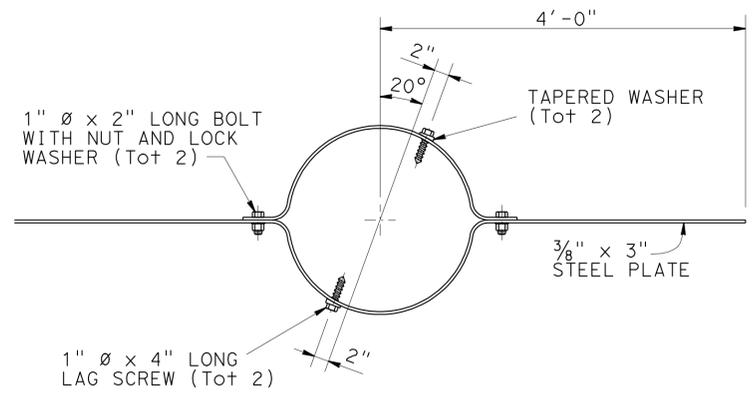
NOTE:  
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

NO SCALE

BRANCH CHIEF JAMES SAGAR	DESIGN	BY V LOPEZ	CHECKED N KANEPATHIPILLAI	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES DESIGN AND TECHNICAL SERVICES SPECIAL DESIGNS BRANCH	BRIDGE NO.	TEMPORARY WOOD POLE WOOD POLE DETAILS No. 2	SES-3
	DETAILS	BY A R DUDSAK	CHECKED N KANEPATHIPILLAI			N/A		
	QUANTITIES	BY	CHECKED			Varies		

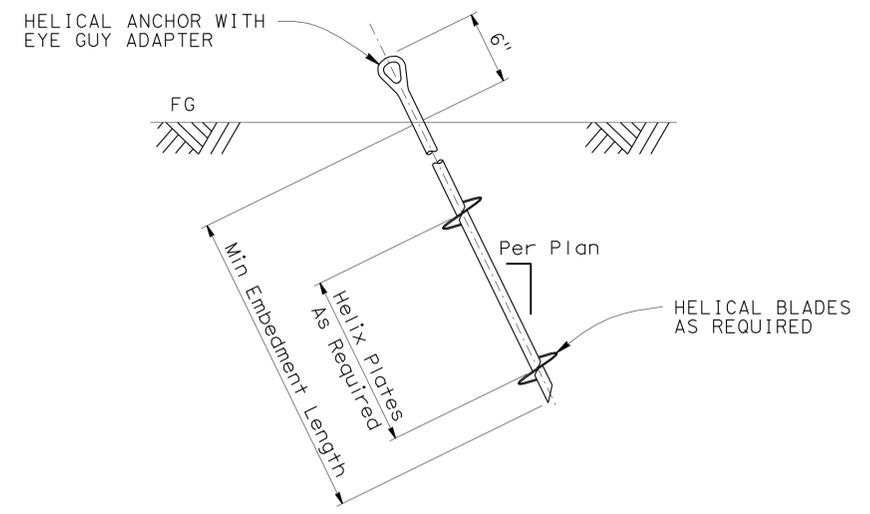
USERNAME => s114640    DATE PLOTTED => 27-JAN-2012    TIME PLOTTED => 09:26

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
10	SJ	4	14.2	18	27
<i>Victor Lopez</i> REGISTERED CIVIL ENGINEER			7-13-11 DATE		
1-23-12			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>					



**WIND ANCHOR**

To be installed perpendicular to mast arms and 2'-0" Min below grade



**ALTERNATIVE GUY WIRE INSTALLATION DETAIL**

(See Helical Anchor Specifications Table)

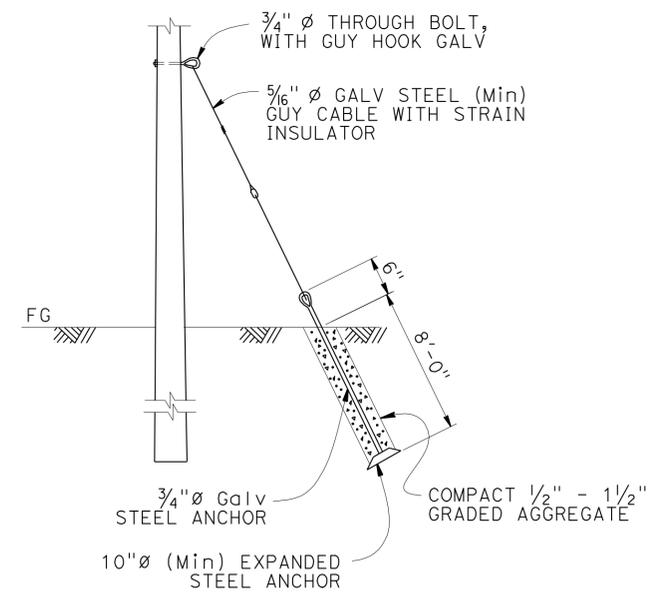
HELICAL ANCHOR SPECIFICATIONS					
Anchor Location	Type	Helix Plate Diameter*	Allowable Min Tension Cap., "Q <sub>a</sub> "	Embedment Length (Min)	Installation Torque (Min)**, "T"
Detail "A"	Tension	10"	3,000 Lb	9'-0"	800 Ft-Lb

SPECIFICATION NOTES:

- During installation the torque will be continuously monitored and recorded. If a drop in torque is recorded, the anchor must then continue to be inserted past the soft soil layer until Minimum Installation Torque is achieved.
- Anchors and Hardware to be installed per the manufacturers specifications.

\* Number of helical plates is not specified; Contractors choice.

\*\* Adjust accordingly if required, See Note 3.



**GUY WIRE INSTALLATION DETAIL (A)**

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

NO SCALE

BRANCH CHIEF JAMES SAGAR	DESIGN BY V LOPEZ	CHECKED N KANEPATHIPILLAI	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES DESIGN AND TECHNICAL SERVICES SPECIAL DESIGNS BRANCH	BRIDGE NO. N/A	TEMPORARY WOOD POLE WOOD POLE DETAILS No. 3	SES-4
	DETAILS BY A R DUDSAK	CHECKED N KANEPATHIPILLAI			POST MILE Varies		
	QUANTITIES BY	CHECKED					

USERNAME => s114640 DATE PLOTTED => 27-JAN-2012 TIME PLOTTED => 09:26

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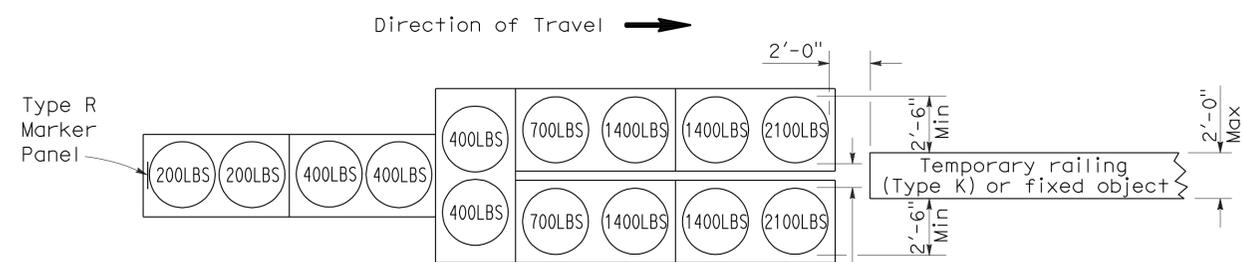
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

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

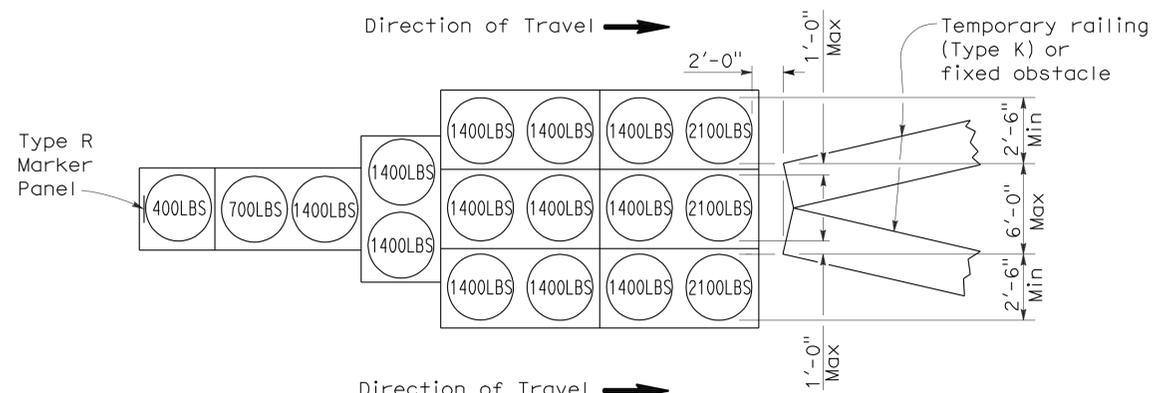
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 1-23-12



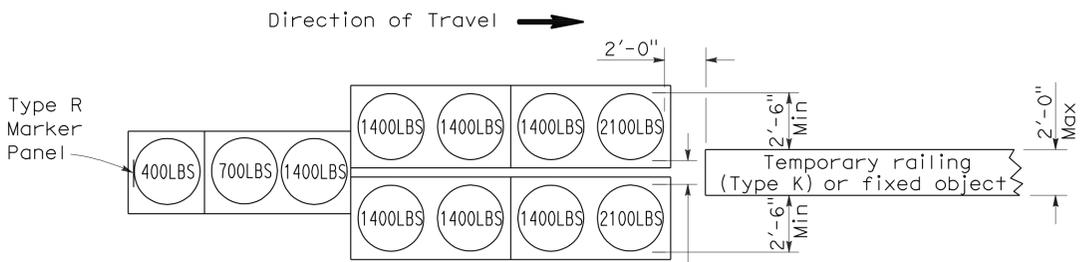
**ARRAY 'TU14'**

Approach speed 45 mph or more



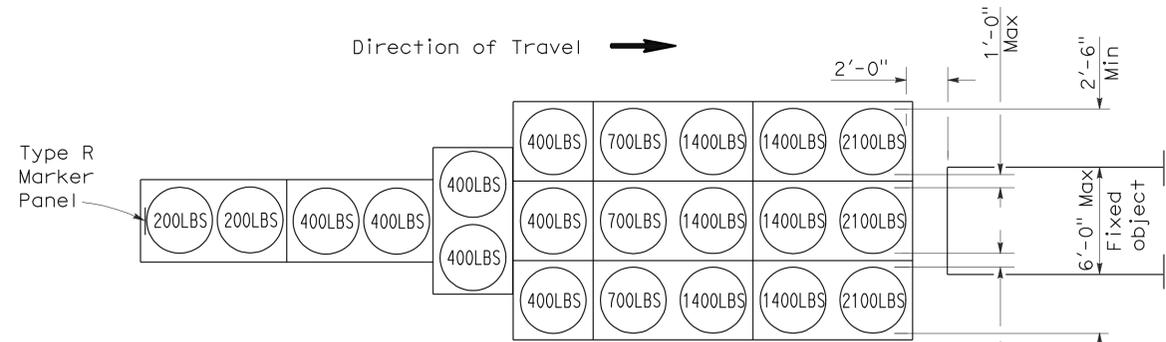
**ARRAY 'TU17'**

Approach speed less than 45 mph



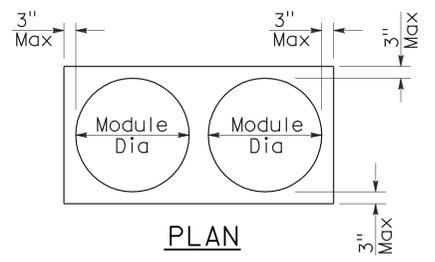
**ARRAY 'TU11'**

Approach speed less than 45 mph

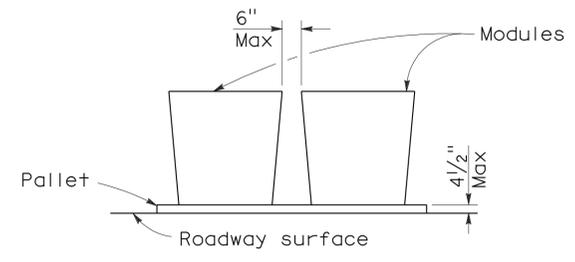


**ARRAY 'TU21'**

Approach speed 45 mph or more



**PLAN**



**ELEVATION**

**CRASH CUSHION PALLET DETAIL**

See Note 7

**NOTES:**

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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

**REVISED STANDARD PLAN RSP T1A**

2006 REVISED STANDARD PLAN RSP T1A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
10	SJ	4	14.2	20	27

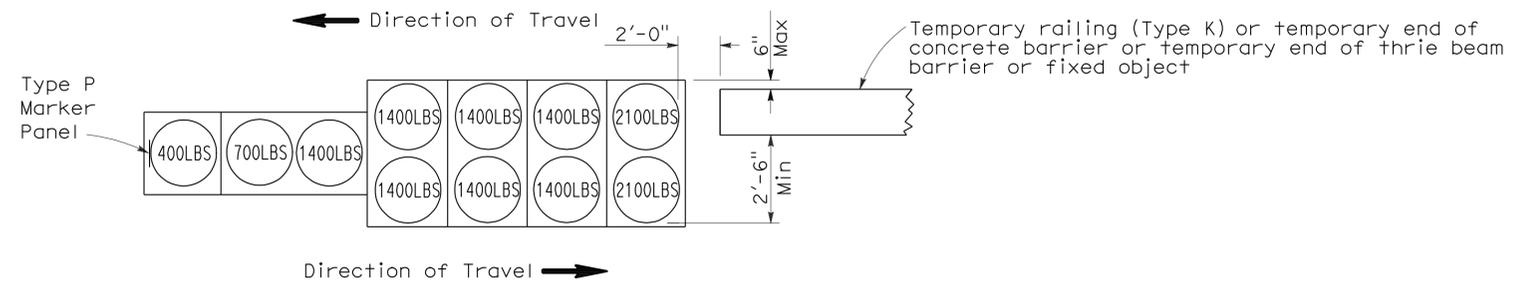
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

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

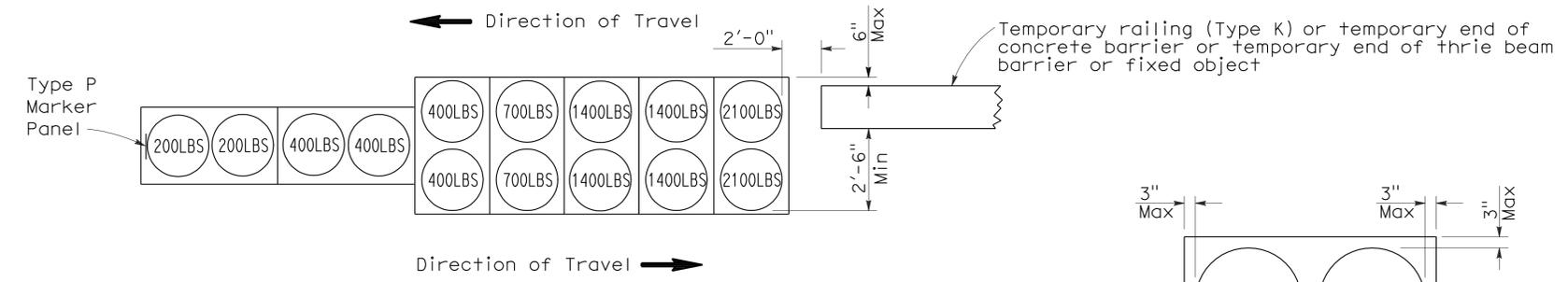
REGISTERED PROFESSIONAL ENGINEER  
Randell D. Hiatt  
No. C50200  
Exp. 6-30-09  
CIVIL  
STATE OF CALIFORNIA

To accompany plans dated 1-23-12



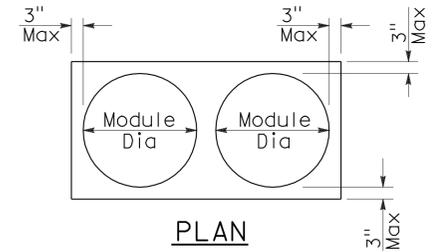
**ARRAY 'TB11'**

Approach speed less than 45 mph

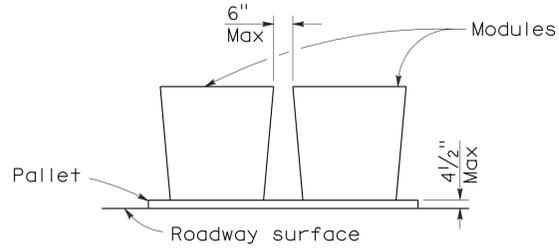


**ARRAY 'TB14'**

Approach speed 45 mph or more



PLAN



ELEVATION

**CRASH CUSHION PALLET DETAIL**

See Note 7

**NOTES:**

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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

**REVISED STANDARD PLAN RSP T1B**

2006 REVISED STANDARD PLAN RSP T1B

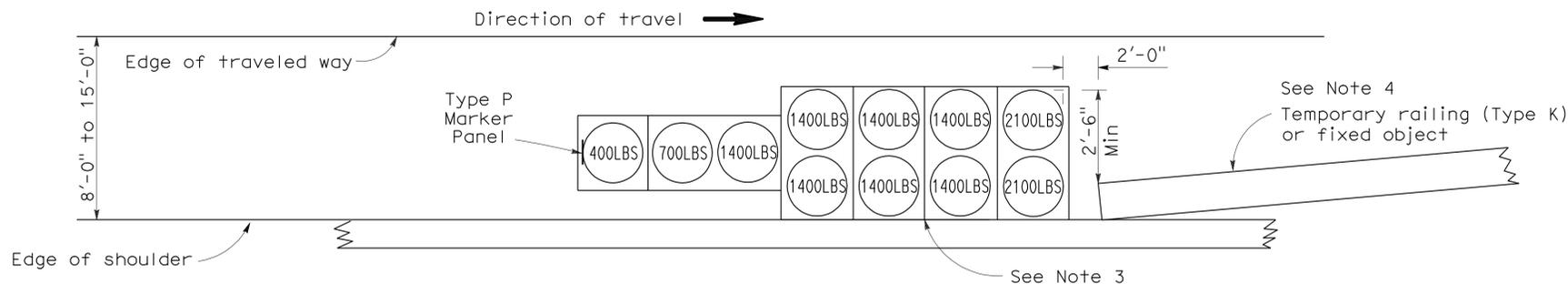
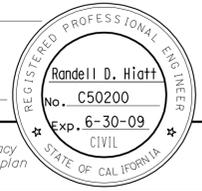
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
10	SJ	4	14.2	21	27

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

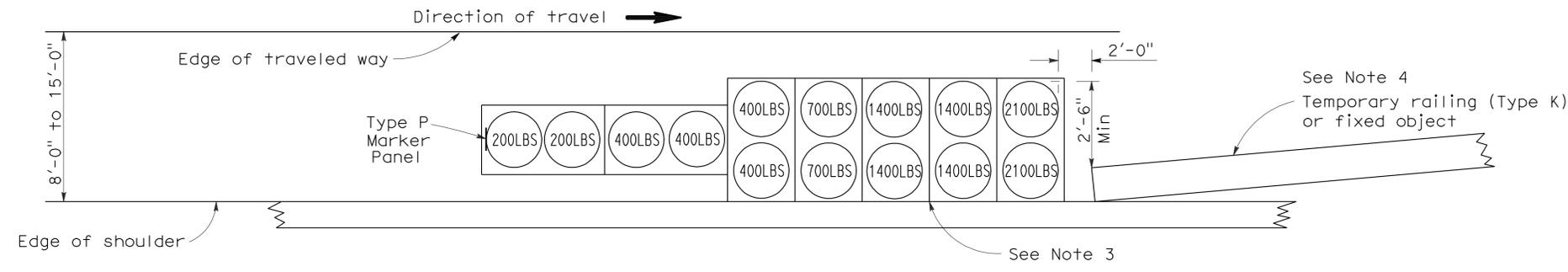
June 6, 2008  
PLANS APPROVAL DATE

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

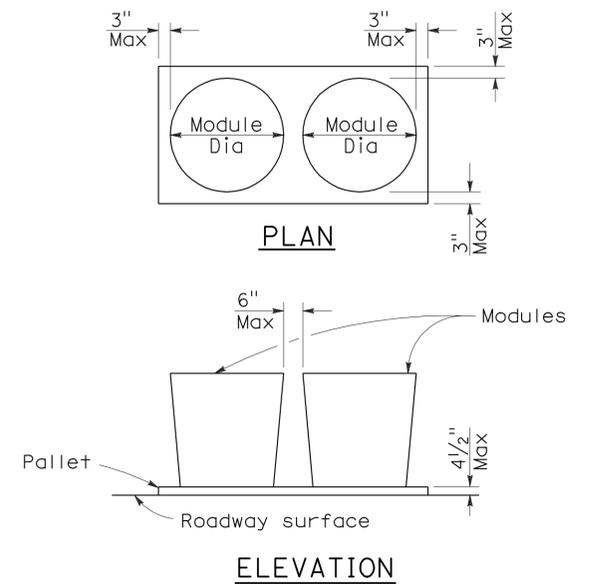
To accompany plans dated 1-23-12



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



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



**CRASH CUSHION PALLET DETAIL**  
See Note 11

**NOTES:**

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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**TEMPORARY CRASH CUSHION,  
SAND FILLED  
(SHOULDER INSTALLATIONS)**

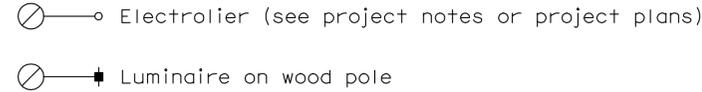
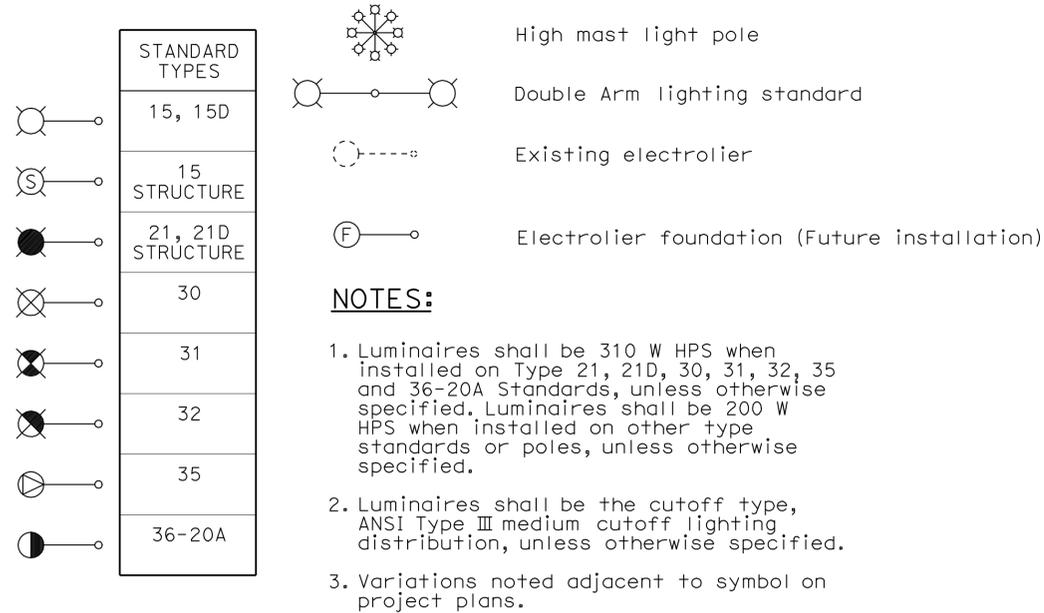
NO SCALE

RSP T2 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T2  
DATED MAY 1, 2006 - PAGE 213 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP T2**

2006 REVISED STANDARD PLAN RSP T2

# ELECTROLIERS



## STANDARD NOTES:

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

# ABBREVIATIONS AND EQUIPMENT DESIGNATIONS

## PROPOSED EXISTING

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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
10	SJ	4	14.2	22	27

*Jeffery G. McRae*  
REGISTERED ELECTRICAL ENGINEER

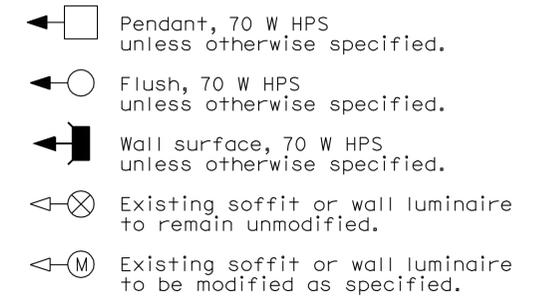
October 5, 2007  
PLANS APPROVAL DATE

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

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To accompany plans dated 1-23-12

## SOFFIT AND WALL MOUNTED LUMINAIRES



### NOTE:

Arrow indicates "street side" of luminaire.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

## ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

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

**REVISED STANDARD PLAN RSP ES-1A**

2006 REVISED STANDARD PLAN RSP ES-1A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
10	SJ	4	14.2	23	27

*Jeffery G. McRae*  
 REGISTERED ELECTRICAL ENGINEER  
 October 5, 2007  
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REGISTERED PROFESSIONAL ENGINEER  
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 STATE OF CALIFORNIA

### CONDUIT

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

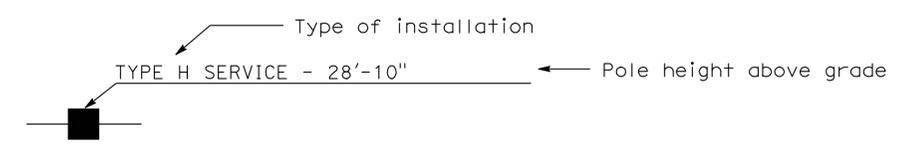
### SIGNAL EQUIPMENT

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

### SERVICE EQUIPMENT

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

### POLE-MOUNTED SERVICE DESIGNATION



### ILLUMINATED OVERHEAD SIGN

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

### SIGNAL EQUIPMENT Cont

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

### NOTES:

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

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

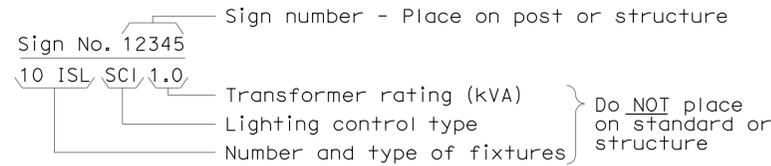
RSP ES-1B DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1B  
 DATED MAY 1, 2006 - PAGE 401 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP ES-1B**

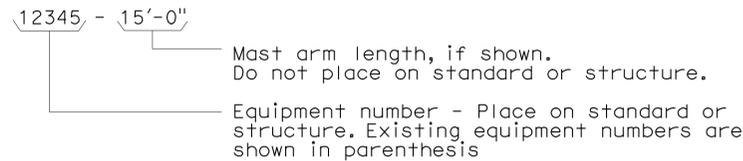
2006 REVISED STANDARD PLAN RSP ES-1B

### EQUIPMENT IDENTIFICATION

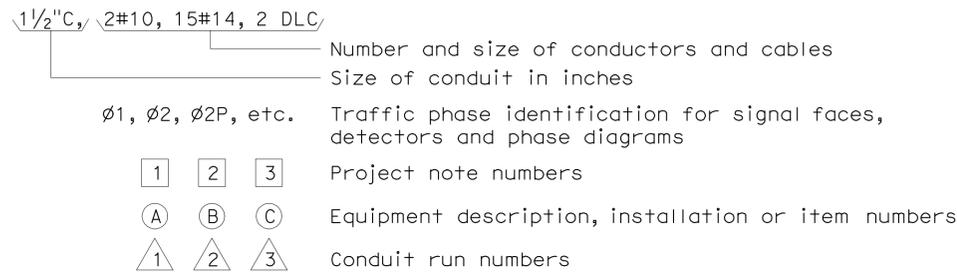
#### ILLUMINATED SIGN IDENTIFICATION NUMBER:



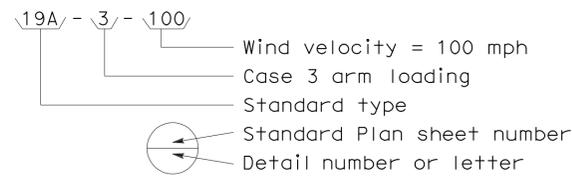
#### ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



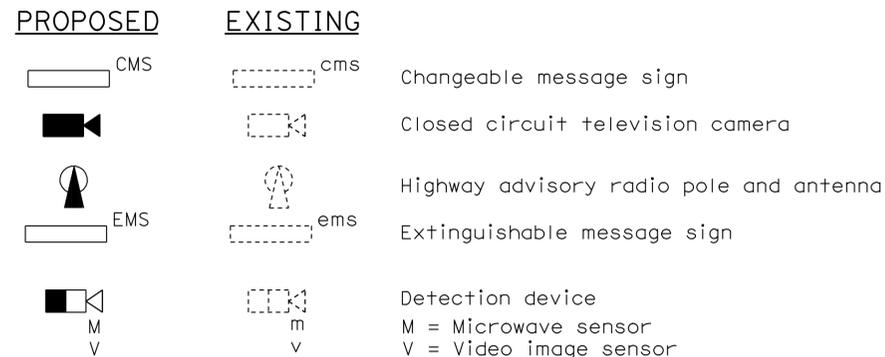
#### CONDUIT AND CONDUCTOR IDENTIFICATION:



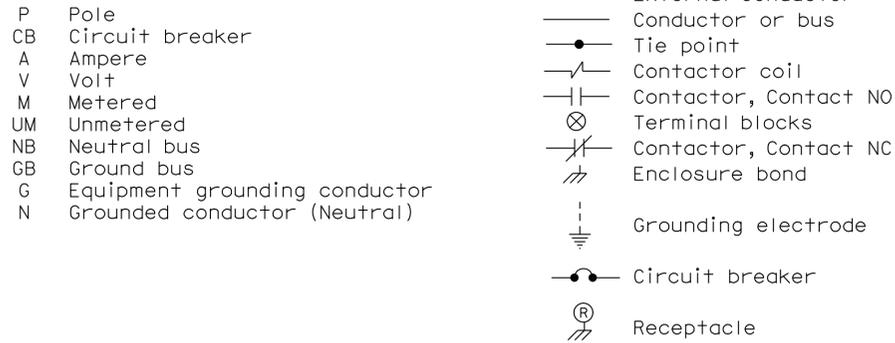
#### SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



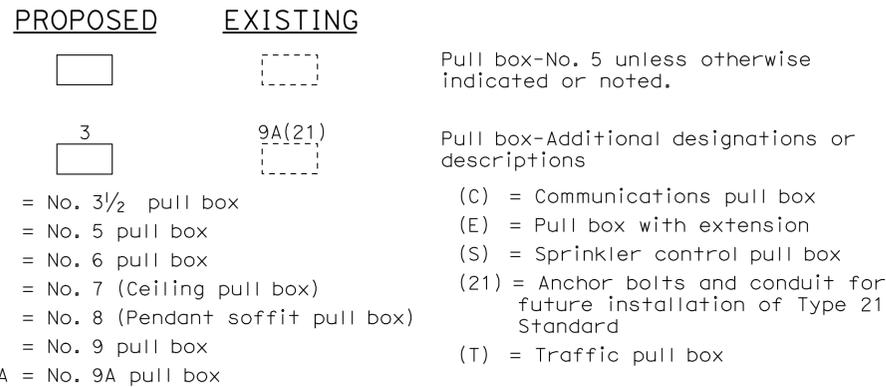
### MISCELLANEOUS EQUIPMENT



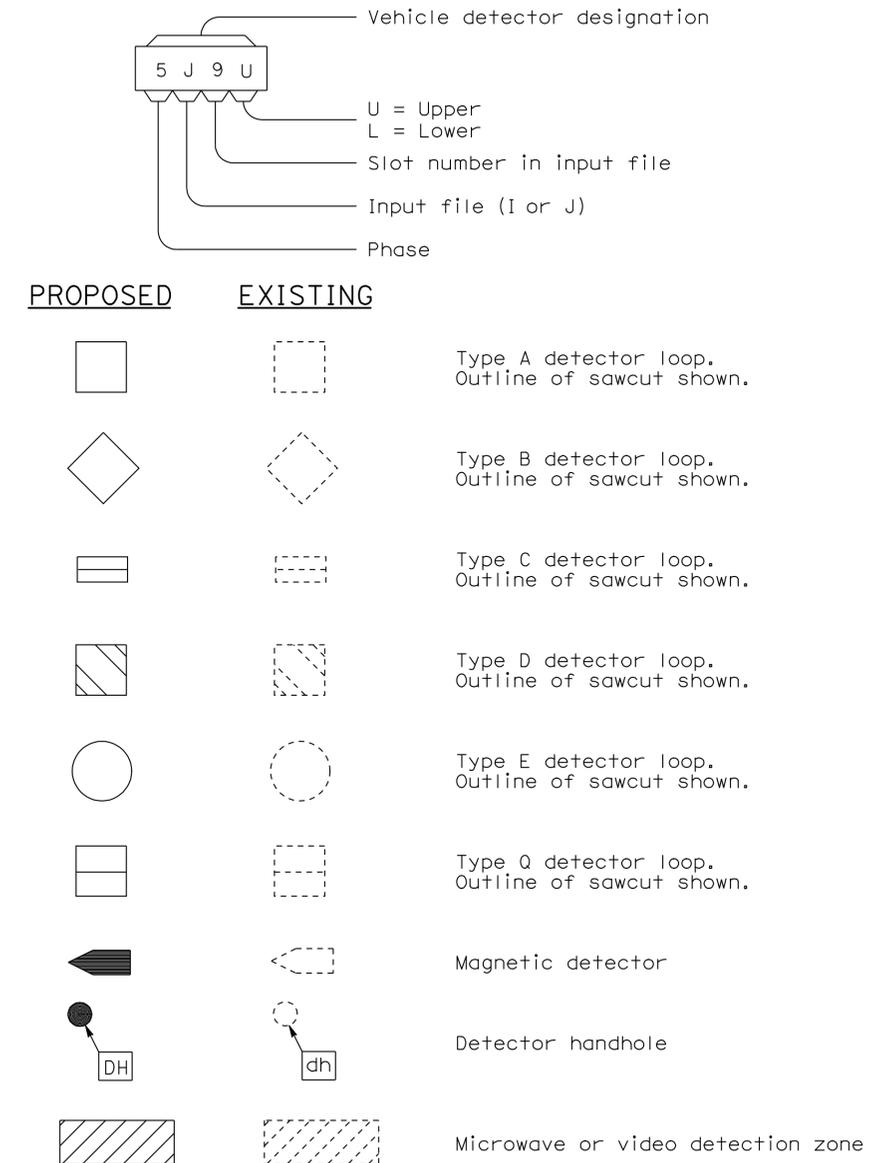
### WIRING DIAGRAM LEGEND



### PULL BOXES



### VEHICLE DETECTORS



STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
 (SYMBOLS AND ABBREVIATIONS)**

NO SCALE

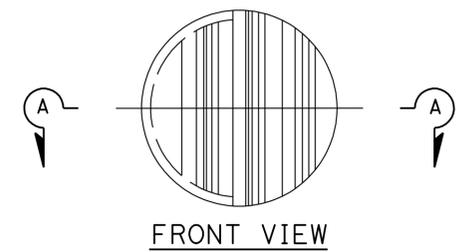
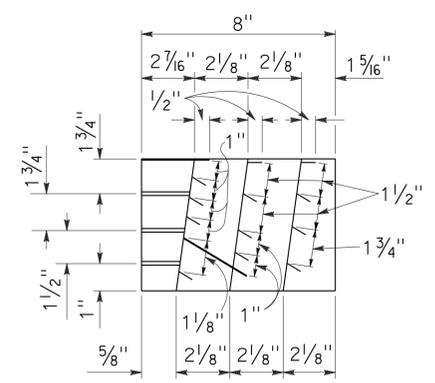
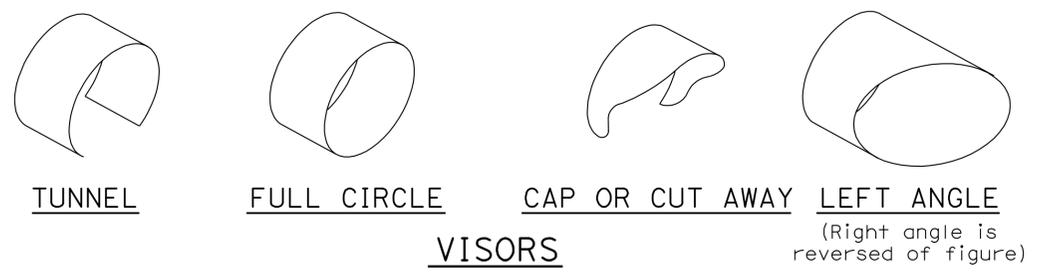
RSP ES-1C DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1C  
 DATED MAY 1, 2006 - PAGE 402 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP ES-1C**

2006 REVISED STANDARD PLAN RSP ES-1C

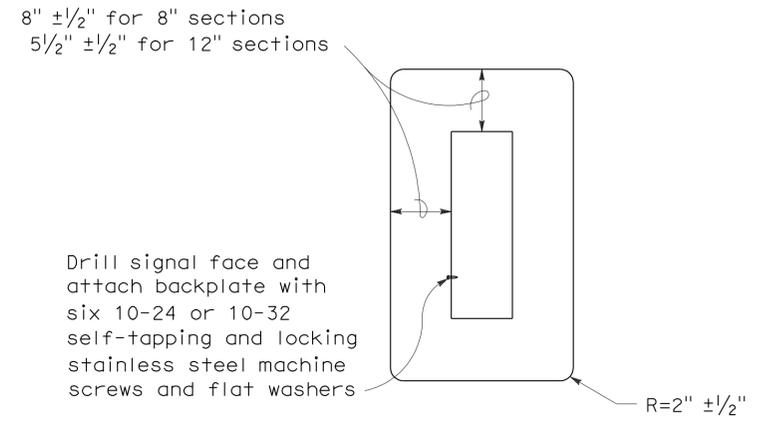
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
10	SJ	4	14.2	25	27

Jeffrey G. McRae  
 REGISTERED ELECTRICAL ENGINEER  
 June 6, 2008  
 PLANS APPROVAL DATE  
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 REGISTERED PROFESSIONAL ENGINEER  
 Jeffrey G. McRae  
 No. E14512  
 Exp. 6-30-10  
 ELECTRICAL  
 STATE OF CALIFORNIA



**DIRECTIONAL LOUVER**

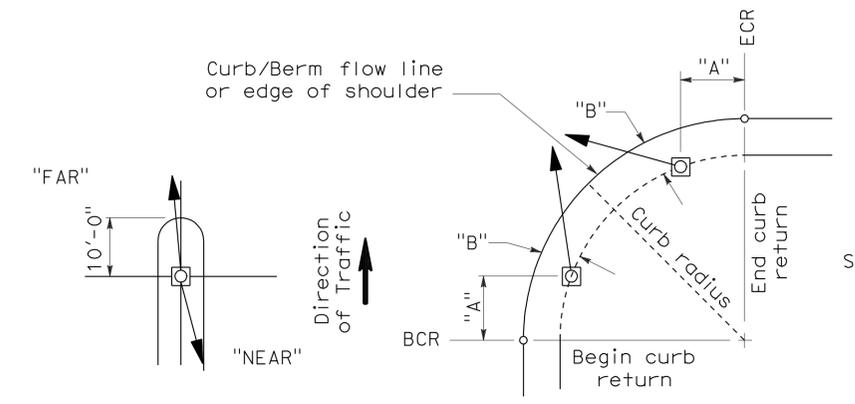
Directional louvers shall be oriented as directed by the Engineer and secured in place with one plated brass machine screw and nut.



**8" AND 12" SECTIONS**

**BACKPLATE**

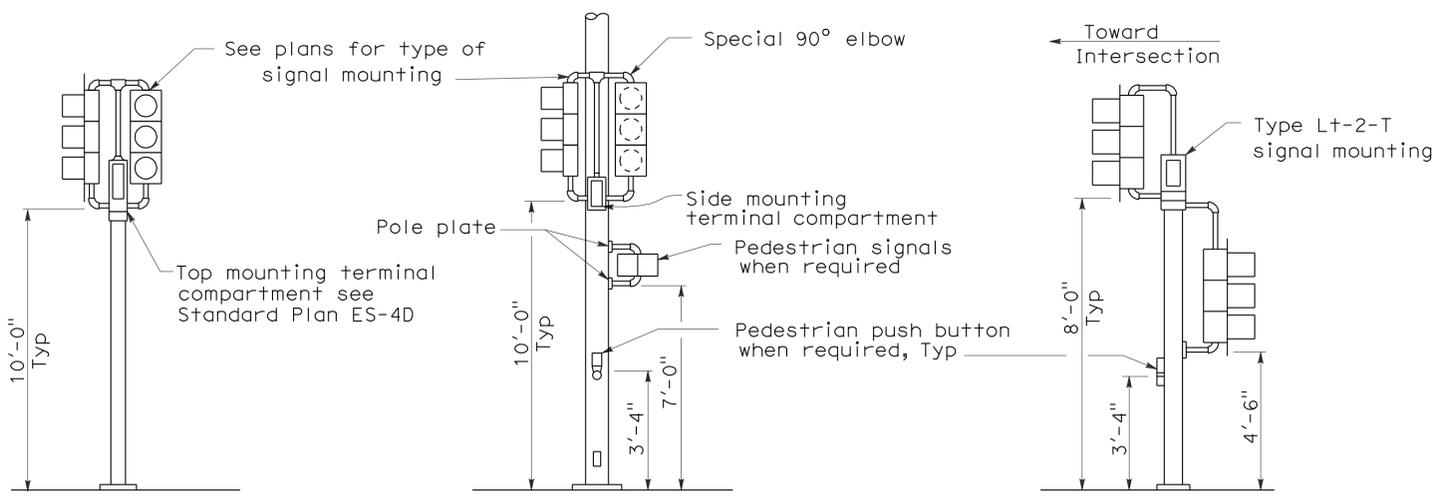
1/16" minimum thickness  
 3001-14 aluminum, or plastic when specified



**NOTES:**

1. Typical signal pole placement unless dimensioned on plans.
2. For "A" and "B" dimensions, see Pole Schedule, or as directed by the Engineer.

**SIGNAL STANDARD PLACEMENT DIMENSIONS AND EQUIPMENT LOCATIONS**



**TOP MOUNTED SIGNALS (TV)**

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

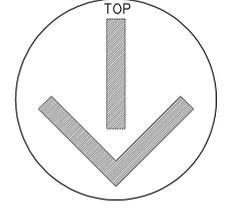
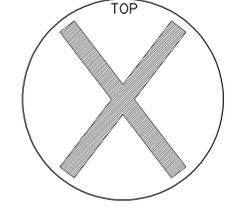
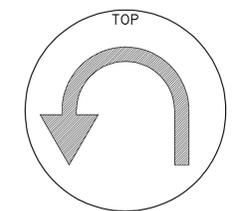
**SIDE MOUNTED SIGNALS (SV AND SP)**

Normally used on standards with luminaire or signal mast arm

**LEFT TURN LANE SIGNAL**

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

**TYPICAL SIGNAL INSTALLATIONS**



STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS (SIGNAL HEADS AND MOUNTINGS)**

NO SCALE

RSP ES-4C DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN ES-4C DATED MAY 1, 2006 - PAGE 420 OF THE STANDARD PLANS BOOK DATED MAY 2006.

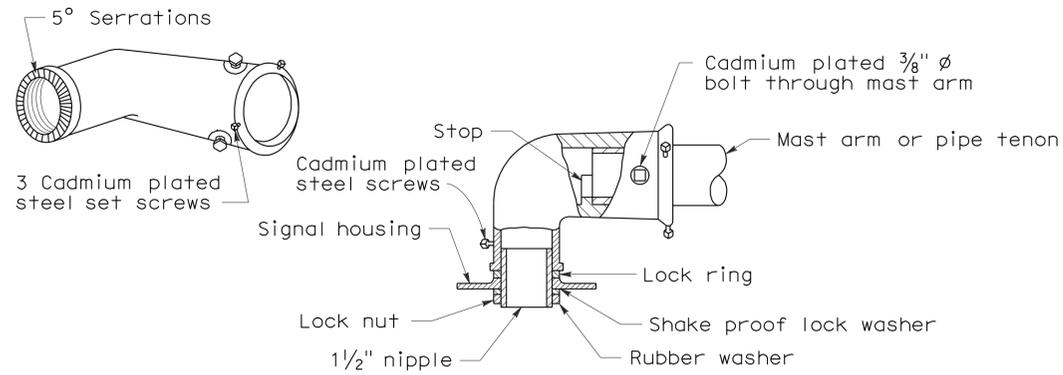
**REVISED STANDARD PLAN RSP ES-4C**

2006 REVISED STANDARD PLAN RSP ES-4C

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
10	SJ	4	14.2	26	27

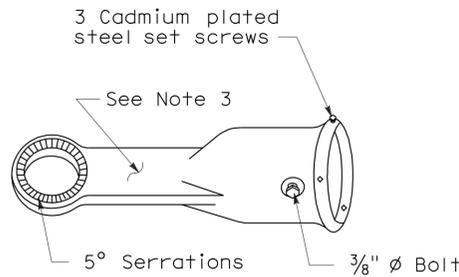
Jeffrey G. McRae  
 REGISTERED ELECTRICAL ENGINEER  
 June 6, 2008  
 PLANS APPROVAL DATE  
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To accompany plans dated 1-23-12



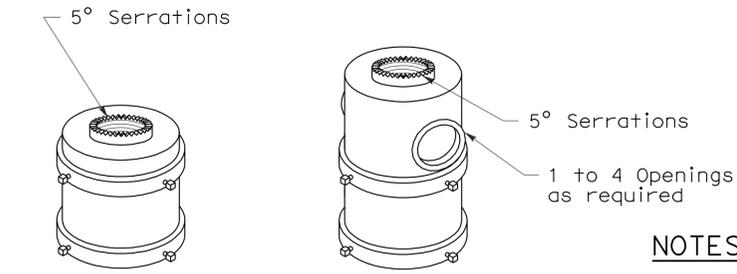
**MAST ARM MOUNTING - TYPE "MAT"**

For 2 NPS pipe, see Note 1.



**MAST ARM MOUNTING - TYPE "MAS"**

For 2 NPS pipe. See Note 1.

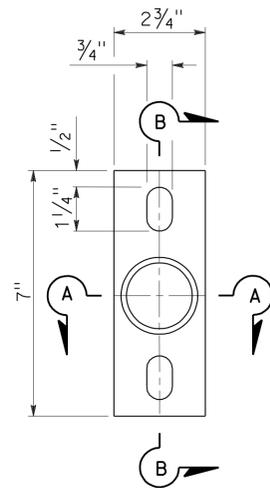


For one mounting For multiple mountings

**TOP MOUNTINGS**

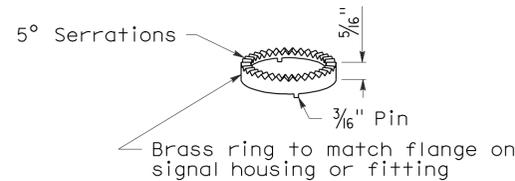
For 4 NPS pipe, see Note 2.

**SIGNAL SLIP FITTERS**



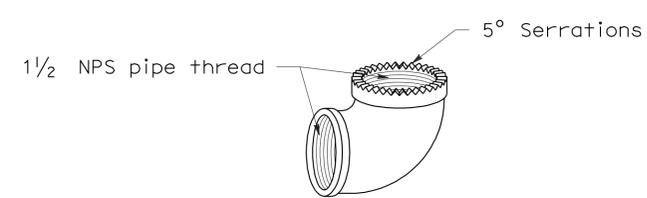
**POLE PLATE**

For side mountings



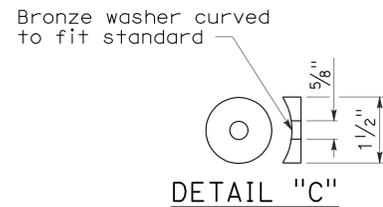
**LOCK RING**

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



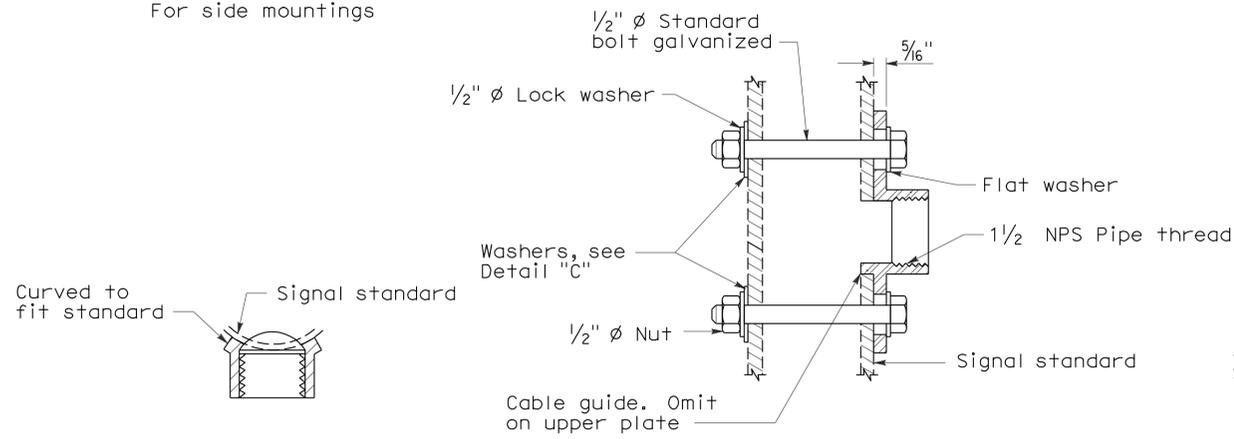
**SPECIAL 90° ELBOW**

One for each signal head, except those with special slip fitter mounting



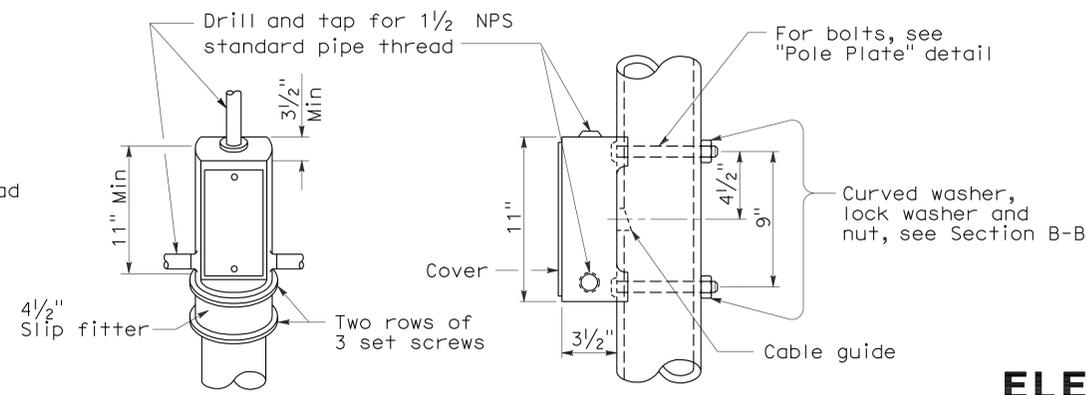
**DETAIL "C"**

**MISCELLANEOUS MOUNTING HARDWARE**



**SECTION A-A**

**SECTION B-B**



**TOP MOUNTING**

**SIDE MOUNTING**

**TERMINAL COMPARTMENTS**

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

NO SCALE

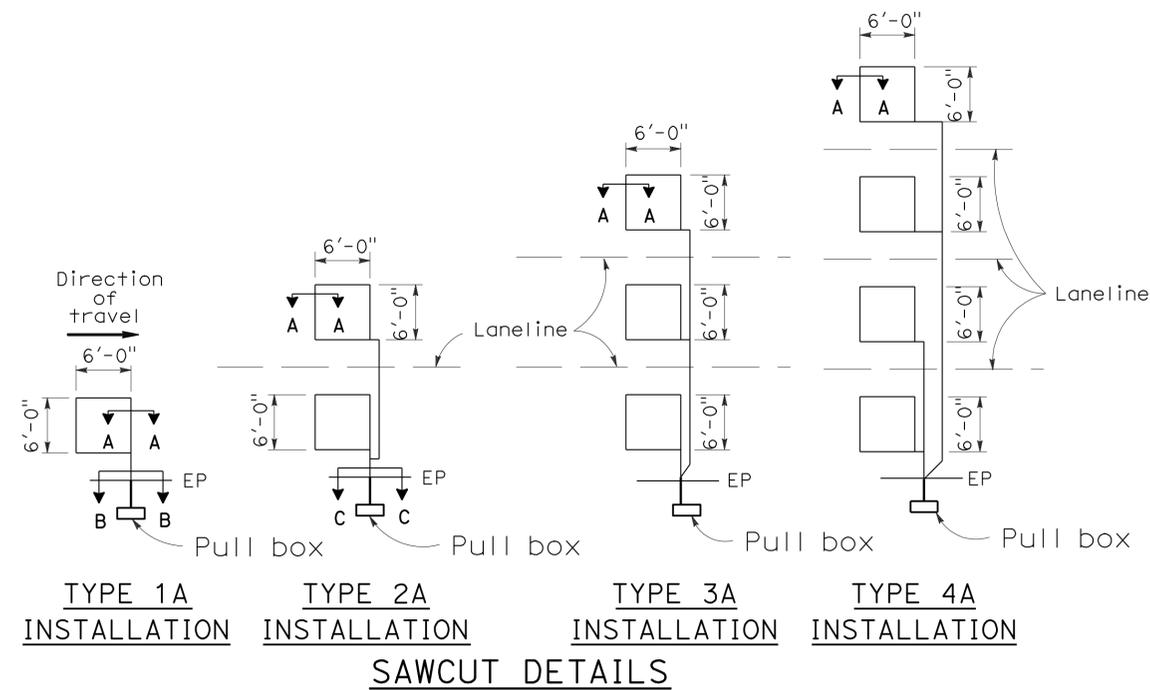
RSP ES-4D DATED June 6, 2008 SUPERSEDES STANDARD PLAN ES-4D DATED MAY 1, 2006 - PAGE 421 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP ES-4D**

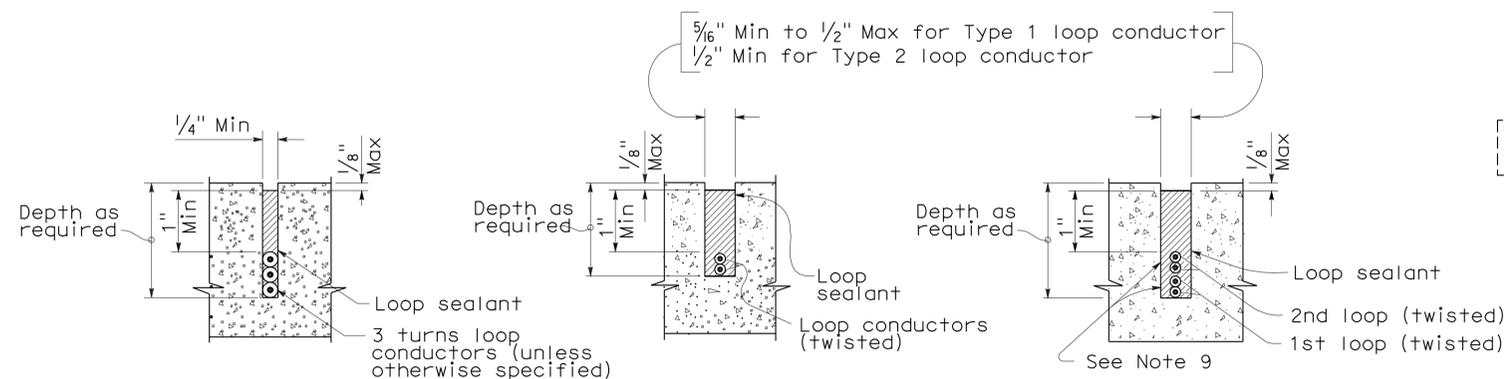
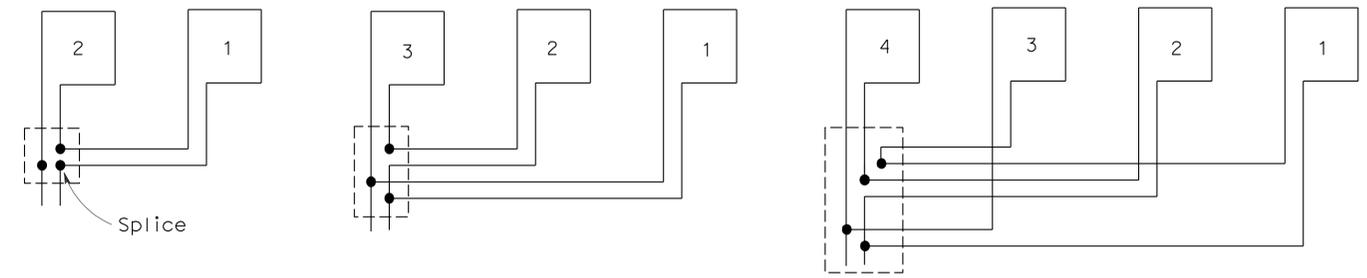
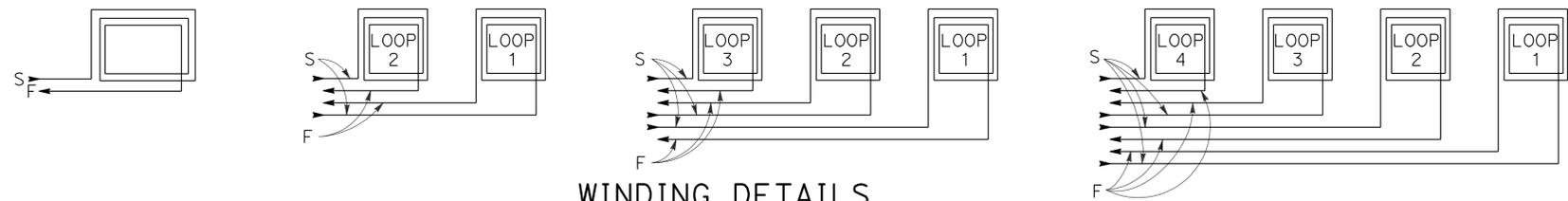
2006 REVISED STANDARD PLAN RSP ES-4D

# LOOP INSTALLATION PROCEDURE

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



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



**SECTION A-A SECTION B-B SECTION C-C**  
**SLOT DETAILS - TYPE 1 AND TYPE 2 LOOP CONDUCTOR**

## ELECTRICAL SYSTEMS (DETECTORS)

NO SCALE

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

**REVISED STANDARD PLAN RSP ES-5A**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
10	SJ	4	14.2	27	27

*Jeffery G. McRae*  
 REGISTERED ELECTRICAL ENGINEER  
 October 5, 2007  
 PLANS APPROVAL DATE  
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To accompany plans dated 1-23-12

2006 REVISED STANDARD PLAN RSP ES-5A