

INDEX OF PLANS

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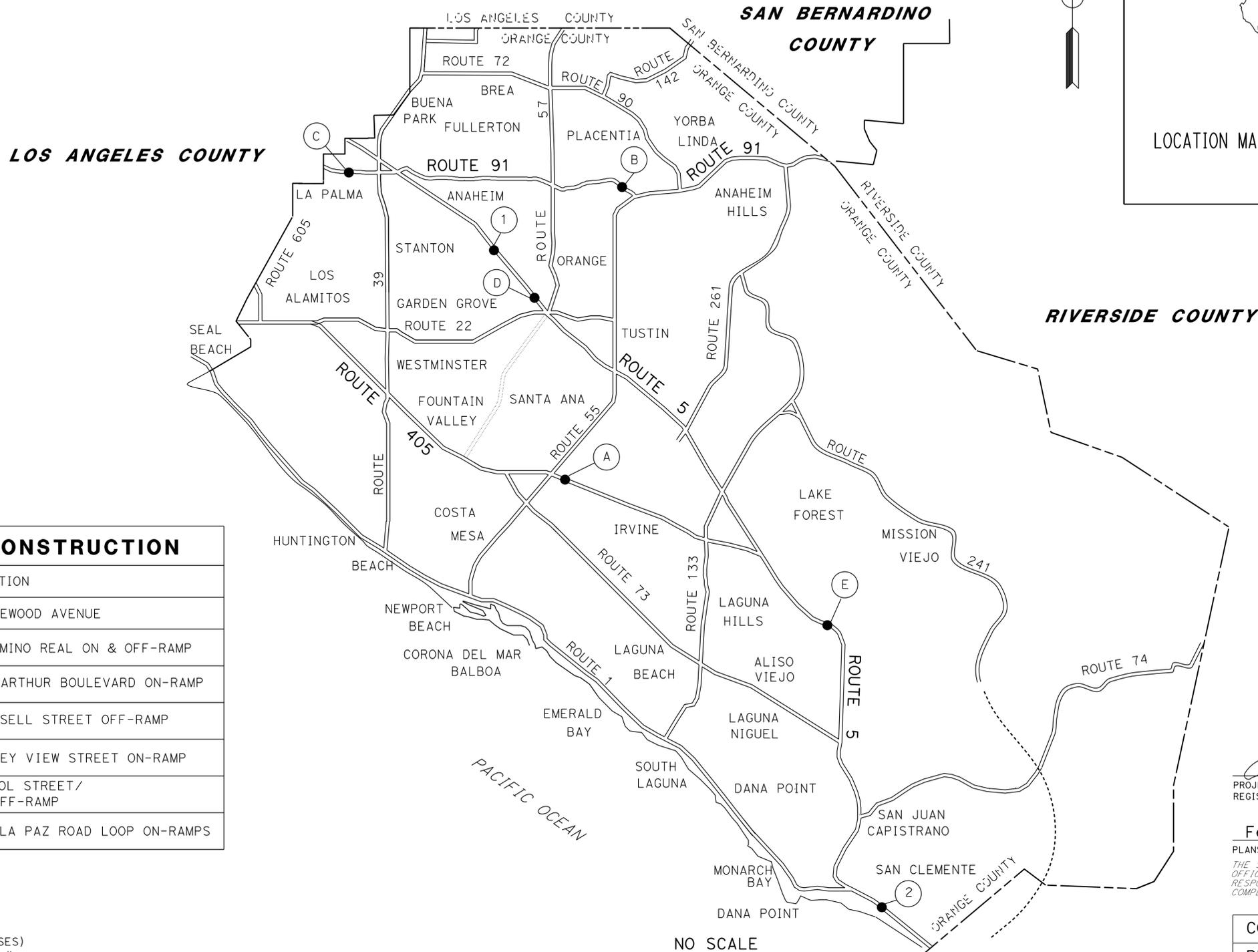
THE STANDARD PLANS LIST APPLICABLE TO THIS CONTRACT IS INCLUDED IN THE NOTICE TO BIDDERS AND SPECIAL PROVISIONS BOOK.

STATE OF CALIFORNIA  
**DEPARTMENT OF TRANSPORTATION**  
**PROJECT PLANS FOR CONSTRUCTION ON**  
**STATE HIGHWAY**  
**IN ORANGE COUNTY**  
**AT VARIOUS LOCATIONS**

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5, 91, 405	Var	1	36

LOCATION MAP



LOCATIONS OF CONSTRUCTION			
LOCATION	ROUTE	PM	DESCRIPTION
1	5	35.4	SB ROUTE 5 ORANGEWOOD AVENUE
2	5	1.8	NB ROUTE 5 EL CAMINO REAL ON & OFF-RAMP
A	405	7.8	NB ROUTE 405 MACARTHUR BOULEVARD ON-RAMP
B	91	7.2	EB ROUTE 91 GLASSELL STREET OFF-RAMP
C	91	R1.0	EB ROUTE 91 VALLEY VIEW STREET ON-RAMP
D	5	34.3	SB ROUTE 5 BRISTOL STREET/ LA VETA AVENUE OFF-RAMP
E	5	16.6	NB & SB ROUTE 5 LA PAZ ROAD LOOP ON-RAMPS

PROJECT ENGINEER  
 REGISTERED CIVIL ENGINEER

DATE 01/23/14

February 03, 14

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.



CONTRACT No.	<b>12-0M8404</b>
PROJECT ID	<b>1213000023</b>

PROJECT MANAGER  
**MASSOUD TAJIK**  
 DESIGN ENGINEER  
**ANH TRAN**

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

DATE PLOTTED => 06-FEB-2014 TIME PLOTTED => 14:54

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

**ABBREVIATIONS:**

- BU BURIED
- CCT COMCAST CABLE TELEVISION
- COAE CITY OF ANAHEIM ELECTRICAL
- COX COX COMMUNICATIONS
- CSDOOC COUNTY SANITATION DISTRICTS OF ORANGE COUNTY
- CSG CASING
- FO FIBER OPTIC
- ITEPS INTERNATIONAL TANK AND EQUIPMENT PROTECTION SERVICES
- KV KILOVOLT
- M MEDIUM PRESSURE
- MNWD MOULTON-NIGUEL WATER DISTRICT
- OCSD ORANGE COUNTY SANITATION DISTRICTS
- PACBEL PACIFIC BELL COMMUNICATIONS
- SCE SOUTHERN CALIFORNIA EDISON
- SCG SOUTHERN CALIFORNIA GAS
- TCG TELEPORT COMMUNICATION GROUP

PHAT TRAN	ANH TRAN	REVISOR	DATE
ANH TRAN	ANH TRAN	REVISOR	DATE
CALCULATED/DESIGNED BY	CHECKED BY	FUNCTIONAL SUPERVISOR	
		MASSOUD TAJIK	

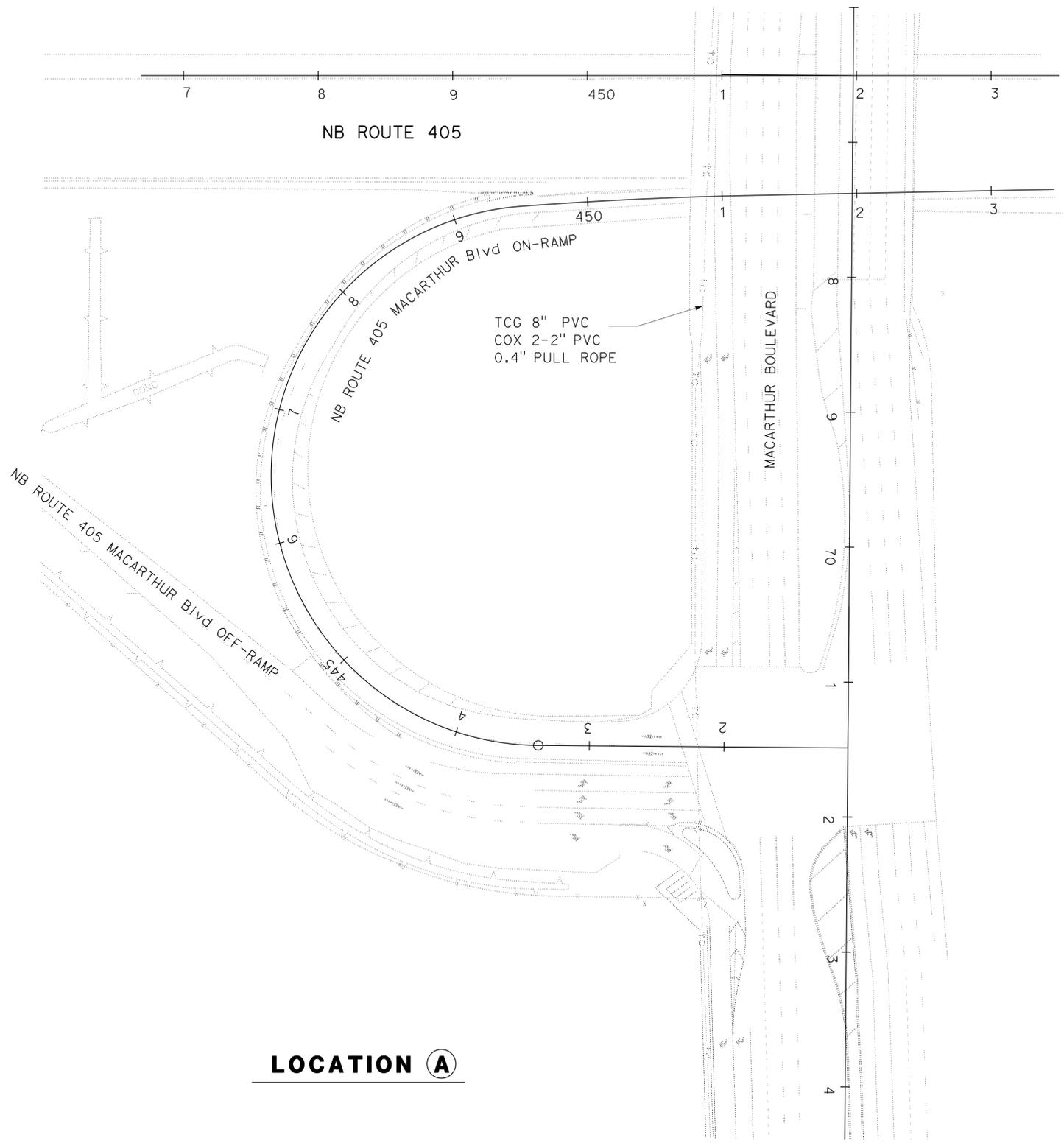
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5, 91, 405	Var	2	36

ANH P. TRAN  
 REGISTERED CIVIL ENGINEER  
 No. C 56206  
 Exp. 12/31/14  
 CIVIL

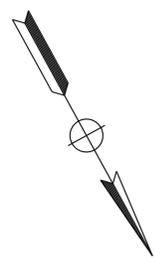
01/23/14  
 REGISTERED CIVIL ENGINEER DATE

02-03-14  
 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.



**LOCATION A**



APPROVED FOR UTILITY INFORMATION ONLY

**UTILITY PLAN**

NO SCALE

**U-1**

LAST REVISION | DATE PLOTTED => 06-FEB-2014  
 11-01-13 | TIME PLOTTED => 14:54

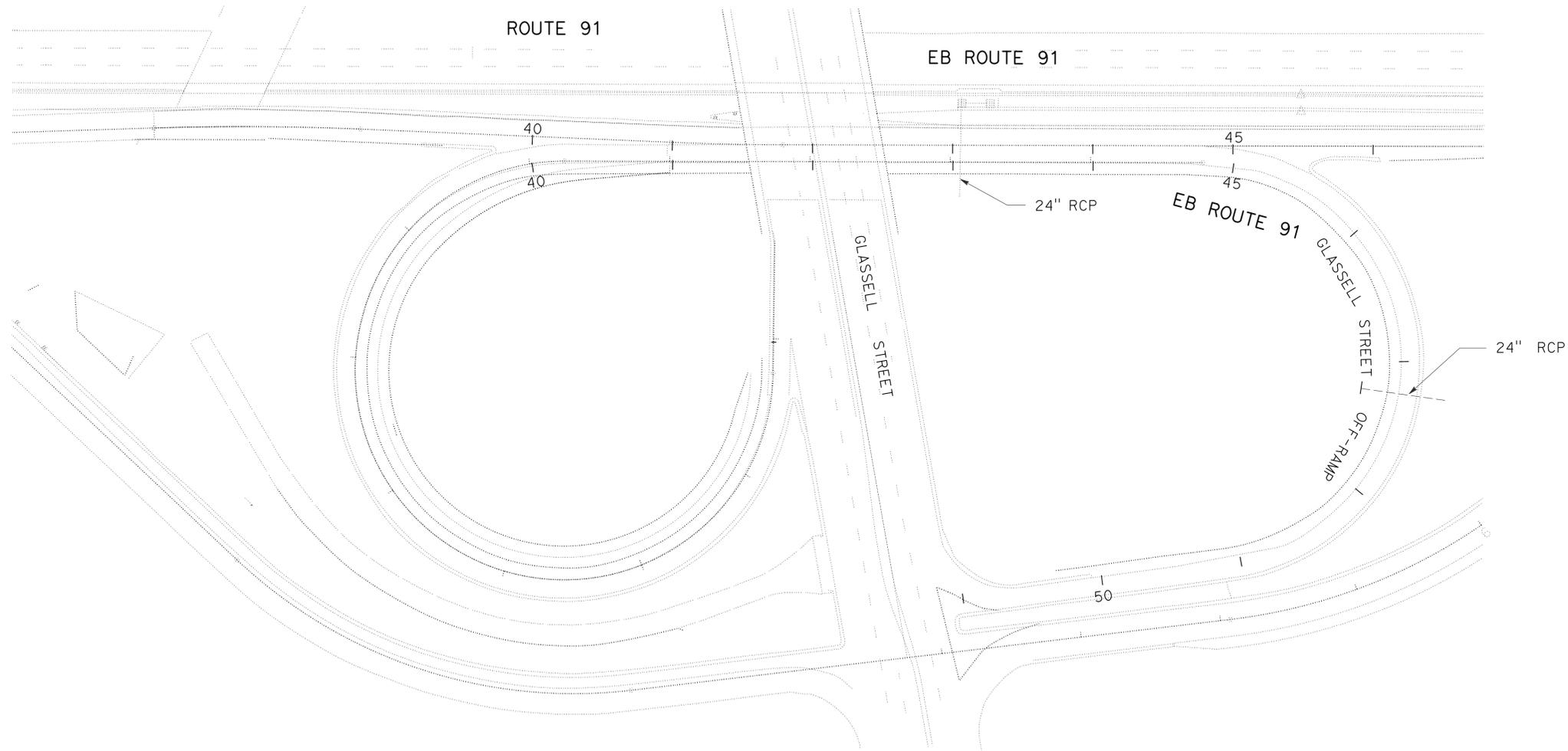
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5, 91, 405	Var	3	36

*Anh Tran* 01/23/14  
 REGISTERED CIVIL ENGINEER DATE

02-03-14  
 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  
**ANH P. TRAN**  
 No. C. 56206  
 Exp. 12/31/14  
 CIVIL  
 STATE OF CALIFORNIA



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	PHAT TRAN	REVISOR	ANH TRAN
<b>Caltrans</b> MAINTENANCE	MASSOUD TAJIK	CHECKED BY	ANH TRAN	DATE REVISOR	11-01-13

**LOCATION B**

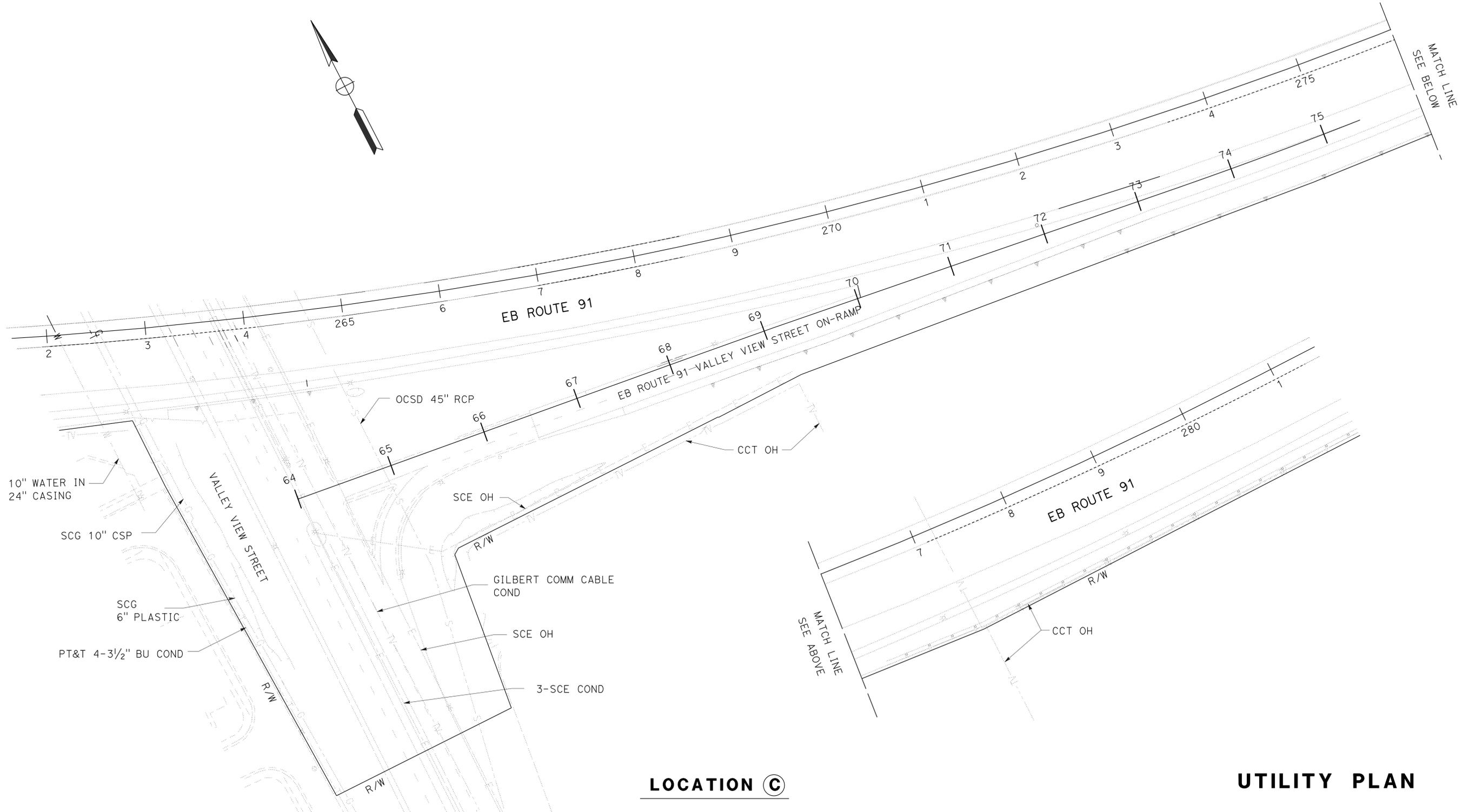
APPROVED FOR UTILITY INFORMATION ONLY

**UTILITY PLAN**

NO SCALE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5, 91, 405	Var	4	36
<i>Anh Tran</i> 01/23/14 REGISTERED CIVIL ENGINEER DATE			ANH P. TRAN No. C 56206 Exp. 12/31/14 CIVIL		
02-03-14 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>					

ANH TRAN	01-04-13
REVISOR	DATE
PHAT TRAN	ANH TRAN
CALCULATED/DESIGNED BY	CHECKED BY
FUNCTIONAL SUPERVISOR	MASSOUD TAJIK
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	<b>MAINTENANCE</b>



**LOCATION ©**

**UTILITY PLAN**

APPROVED FOR UTILITY INFORMATION ONLY

NO SCALE

**U-3**

LAST REVISION DATE PLOTTED => 06-FEB-2014 11-01-13 TIME PLOTTED => 14:54

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

FUNCTIONAL SUPERVISOR  
 MASSOUD TAJIK

CALCULATED-DESIGNED BY  
 CHECKED BY

PHAT TRAN  
 ANH TRAN

REVISED BY  
 DATE REVISED

ANH TRAN  
 01-04-13

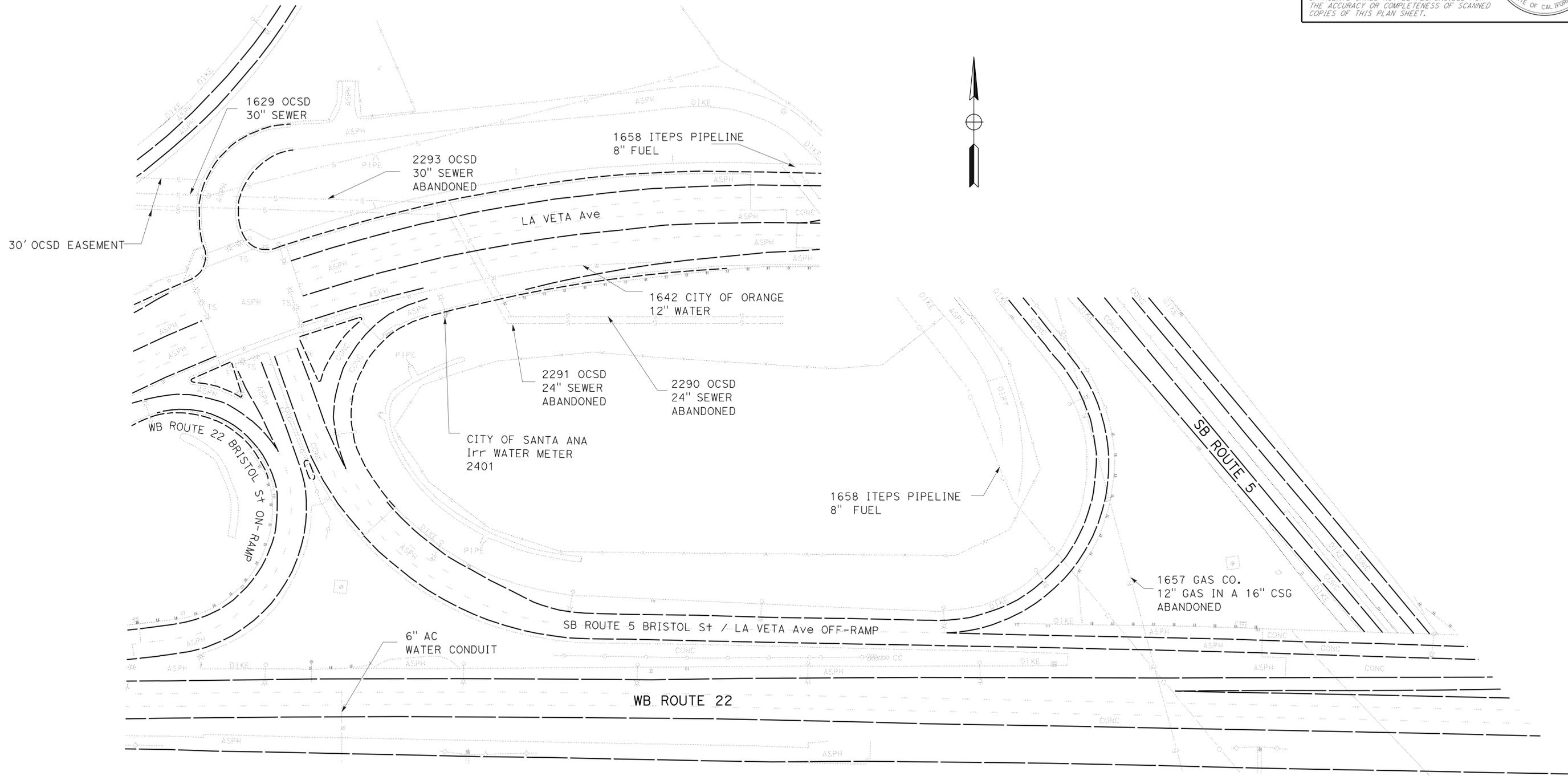
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5, 91, 405	Var	5	36

*Anh Tran* 01/23/14  
 REGISTERED CIVIL ENGINEER DATE

02-03-14  
 PLANS APPROVAL DATE

ANH P. TRAN  
 No. C 56206  
 Exp. 12/31/14  
 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.



**LOCATION D**

**UTILITY PLAN**

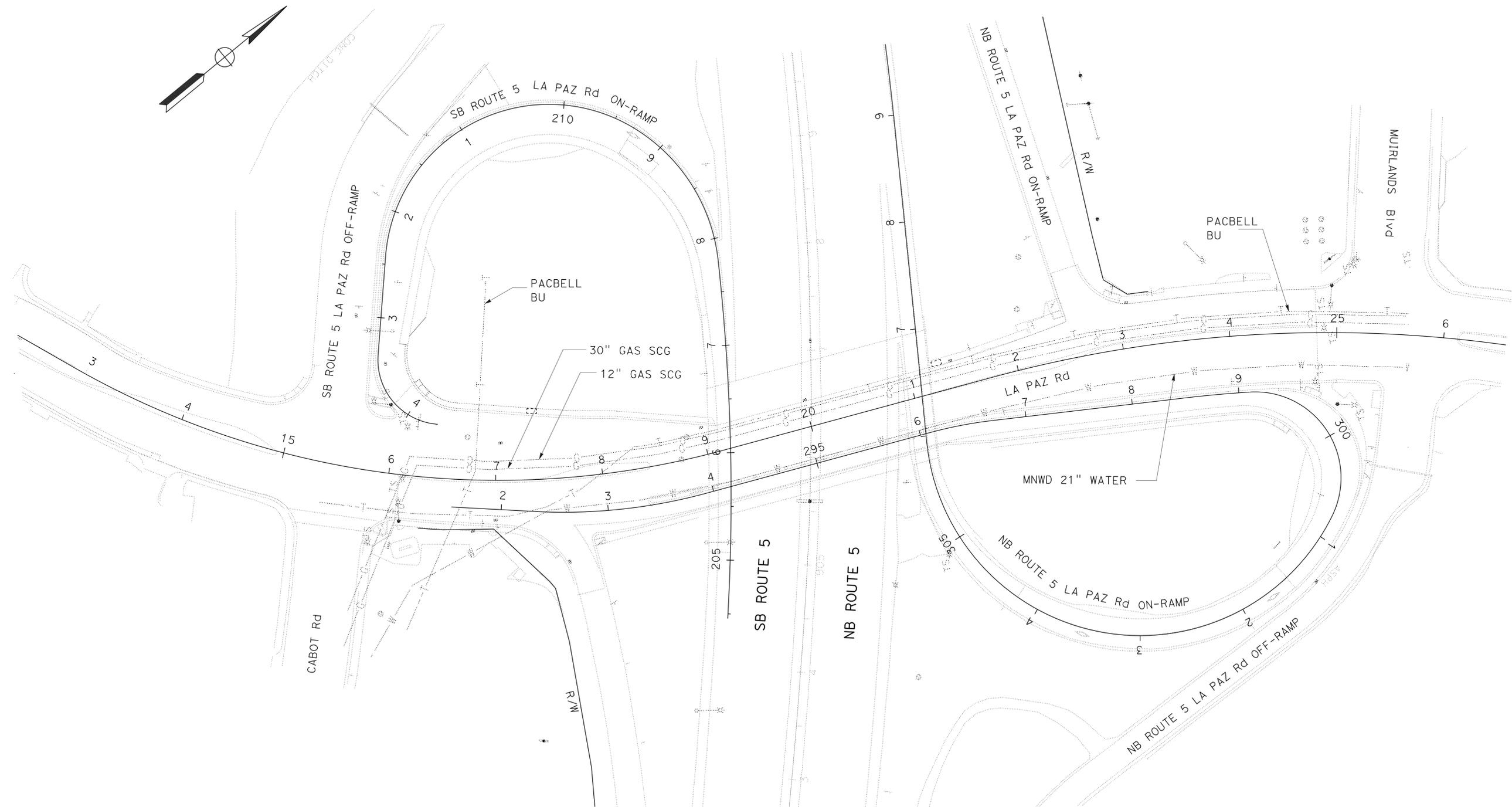
NO SCALE

APPROVED FOR UTILITY INFORMATION ONLY

**U-4**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	PHAT TRAN	REVISOR BY	ANH TRAN
<b>Caltrans</b> MAINTENANCE	MASSOUD TAJIK	CHECKED BY	ANH TRAN	DATE REVISED	11-01-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5, 91, 405	Var	6	36
<i>Anh Tran</i> 01/23/14 REGISTERED CIVIL ENGINEER DATE			ANH P. TRAN No. C 56206 Exp. 2/31/14 CIVIL STATE OF CALIFORNIA		
02-03-14 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>					



**LOCATION (E)**

**UTILITY PLAN**

NO SCALE

**U-5**

APPROVED FOR UTILITY INFORMATION ONLY

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

FUNCTIONAL SUPERVISOR  
 MASSOUD TAJIK

CALCULATED-DESIGNED BY  
 CHECKED BY

PHAT TRAN  
 ANH TRAN

REVISOR  
 ANH TRAN

DATE REVISOR  
 01-04-13

**NOTES:**

- CONSTRUCTION AREA SIGN LOCATIONS SHOWN ARE APPROXIMATE. EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.
- FOR ADDITIONAL QUANTITIES OF CONSTRUCTION AREA SIGNS SEE SHEET DEQ-1.

**LEGEND:**

- (X) CONSTRUCTION AREA SIGN NO.
- ┆ CONSTRUCTION AREA SIGN, 1-POST
- ┆ CONSTRUCTION AREA SIGN, 2-POST

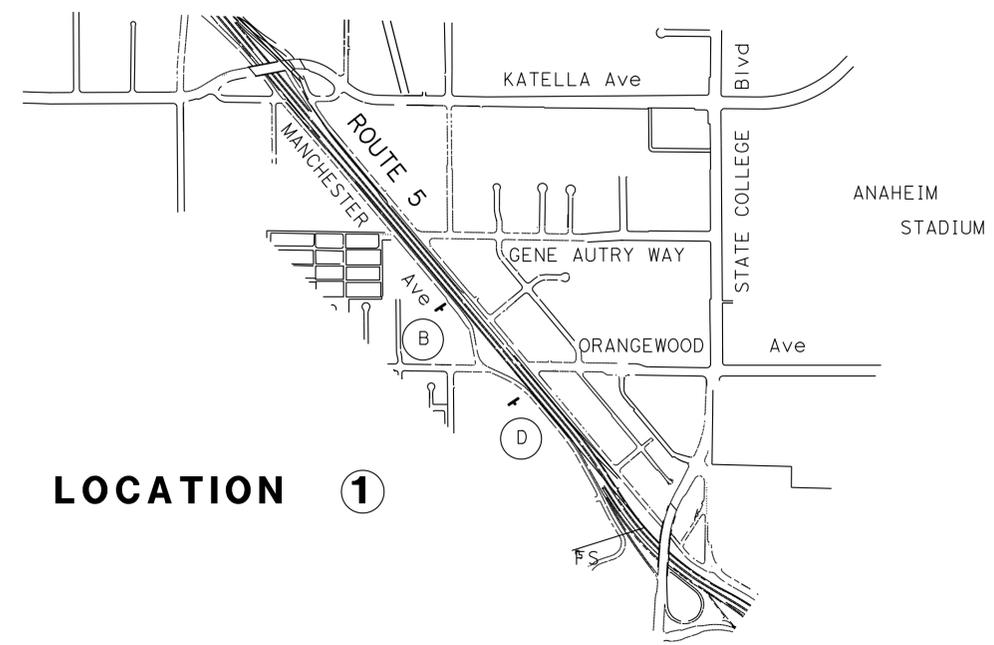
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5, 91, 405	Var	7	36

*Anh Tran* 01/23/14  
 REGISTERED CIVIL ENGINEER DATE

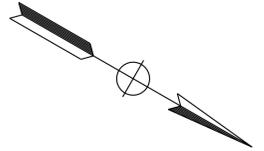
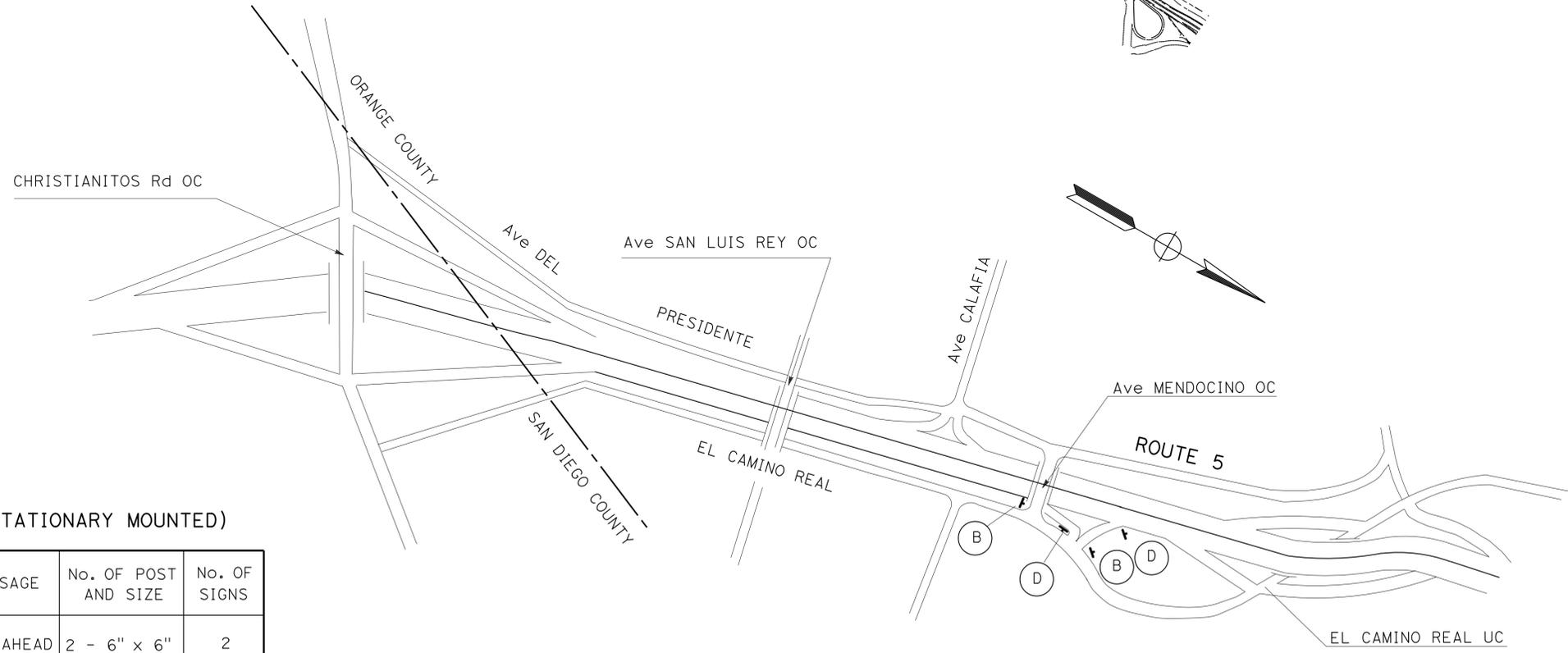
02-03-14  
 PLANS APPROVAL DATE

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  
 ANH P. TRAN  
 No. C 56206  
 Exp. 12/31/14  
 CIVIL  
 STATE OF CALIFORNIA



**LOCATION 1**



**LOCATION 2**

CONSTRUCTION AREA SIGNS (STATIONARY MOUNTED)

SIGN No.	TYPE	PANEL SIZE	SIGN MESSAGE	No. OF POST AND SIZE	No. OF SIGNS
(A)	W20-1	72" x 72"	ROAD WORK AHEAD	2 - 6" x 6"	2
(B)	W20-1	48" x 48"	ROAD WORK AHEAD	1 - 4" x 6"	6
(C)	G20-2	60" x 24"	END ROAD WORK	2 - 4" x 4"	4
(D)	G20-2	48" x 24"	END ROAD WORK	1 - 4" x 4"	5

**CONSTRUCTION AREA SIGNS**

NO SCALE

APPROVED FOR CONSTRUCTION AREA SIGNS WORK ONLY

**CS-1**

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

BORDER LAST REVISED 7/2/2010

USERNAME => s111173  
 DGN FILE => 12130000231a002.dgn

RELATIVE BORDER SCALE  
 1" = 15' IN INCHES

UNIT 3064

PROJECT NUMBER & PHASE

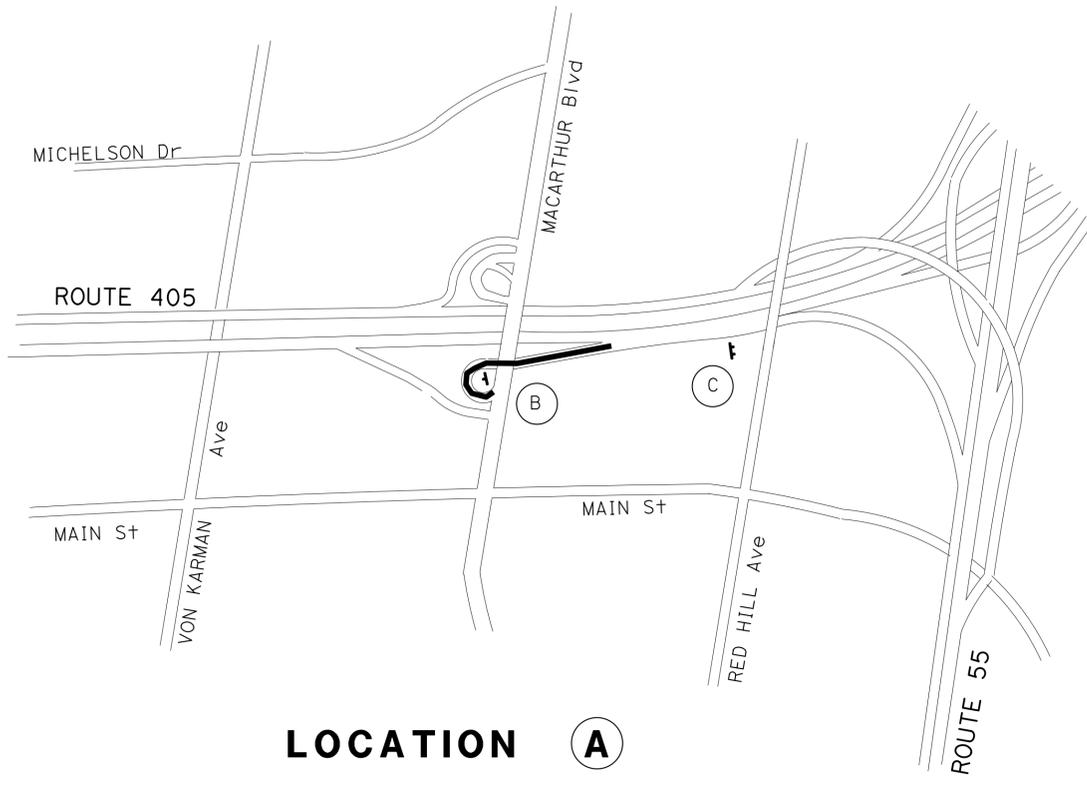
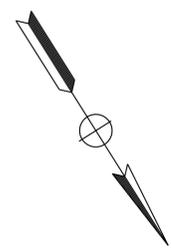
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**CS-2**

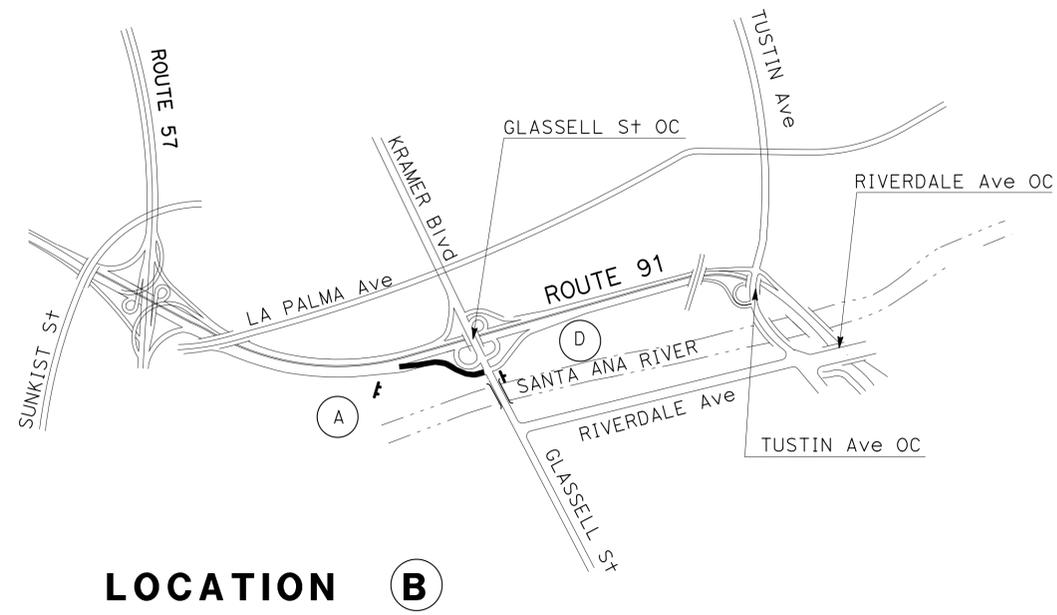
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5, 91, 405	Var	8	36

ANH P. TRAN  
 REGISTERED CIVIL ENGINEER DATE 01/23/14  
 PLANS APPROVAL DATE 02-03-14  
 No. C. 56206  
 Exp. 12/31/14  
 CIVIL  
 STATE OF CALIFORNIA

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



**LOCATION A**



**LOCATION B**

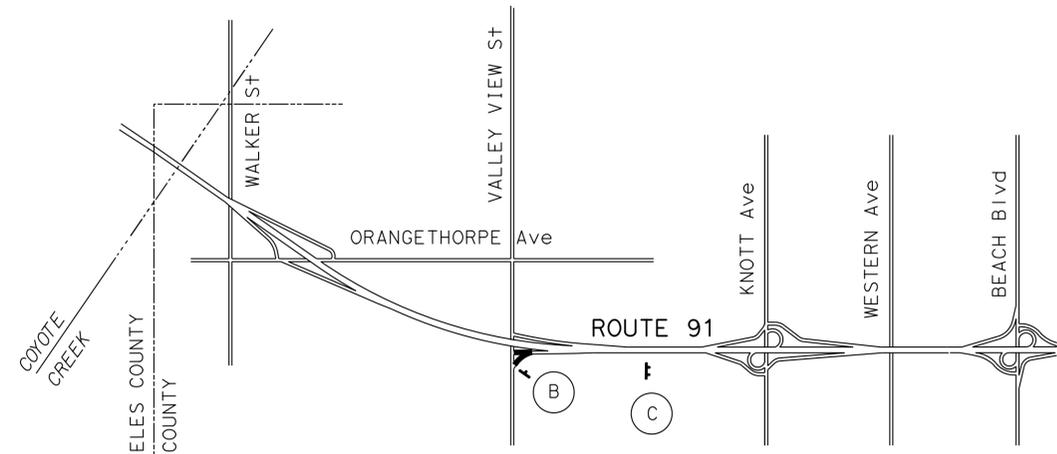
**CONSTRUCTION AREA SIGNS**  
 NO SCALE

APPROVED FOR CONSTRUCTION AREA SIGNS WORK ONLY

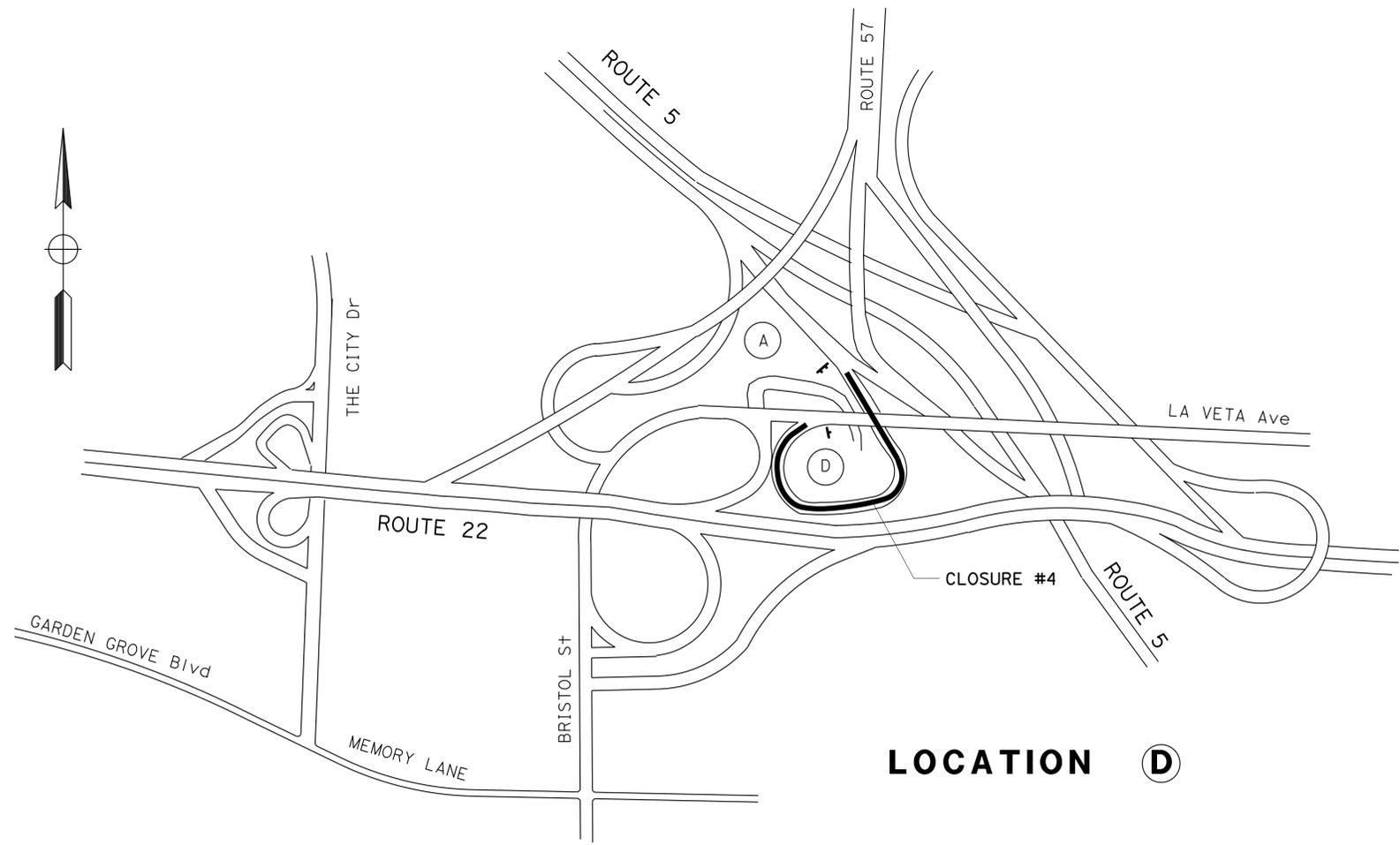
LAST REVISION | DATE PLOTTED => 06-FEB-2014  
 11-01-13 | TIME PLOTTED => 14:55

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION <b>Caltrans</b> MAINTENANCE	FUNCTIONAL SUPERVISOR	MASSOUD TAJIK	CALCULATED/DESIGNED BY	PHAT TRAN	REVISOR	ANH TRAN
			CHECKED BY	ANH TRAN	DATE REVISED	01-04-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5, 91, 405	Var	9	36
		ANH P. TRAN		01/23/14	
		REGISTERED CIVIL ENGINEER		DATE	
		02-03-14		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.					



**LOCATION C**



**LOCATION D**

**CONSTRUCTION AREA SIGNS**

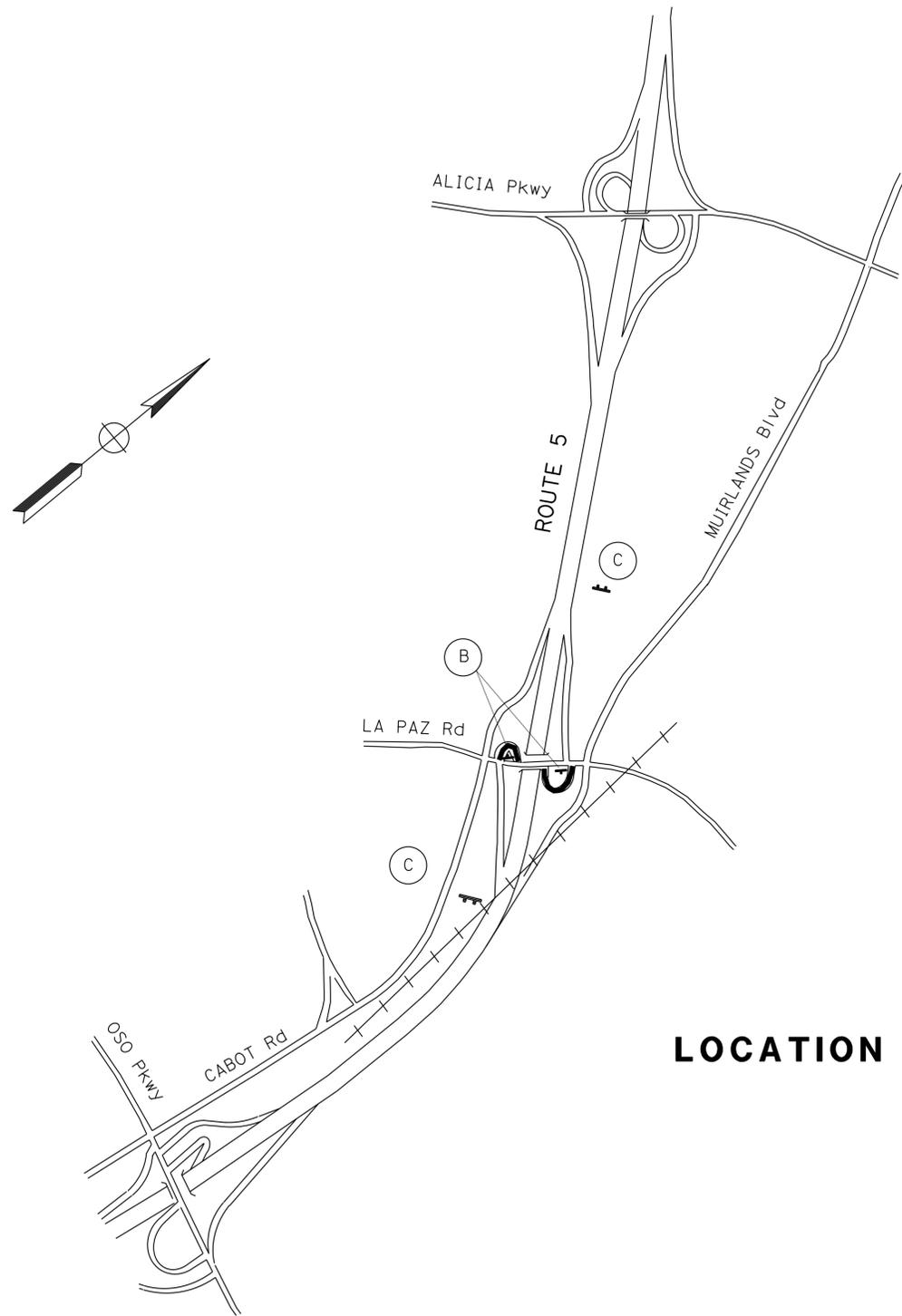
NO SCALE

APPROVED FOR CONSTRUCTION AREA SIGNS WORK ONLY

**CS-3**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION <b>Caltrans</b> MAINTENANCE	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	PHAT TRAN	REVISOR	ANH TRAN
	MASSOUD TAJIK	CHECKED BY	ANH TRAN	DATE REVISOR	01-04-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5, 91, 405	Var	10	36
		REGISTERED CIVIL ENGINEER		DATE	
		ANH P. TRAN		01/23/14	
		No. C. 56206		Exp. 12/31/14	
		CIVIL		STATE OF CALIFORNIA	
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					



**CONSTRUCTION AREA SIGNS**  
NO SCALE

APPROVED FOR CONSTRUCTION AREA SIGNS WORK ONLY

**CS-4**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5, 91, 405	Var	11	36
		<i>Anh Tran</i> 01/23/14 REGISTERED CIVIL ENGINEER DATE			
		02-03-14 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:**

DURING THE NB ROUTE 5 Ave MAGDALENA OFF-RAMP CLOSURE, THE PCMS SHOULD READ:

Ave MAGDALENA CLOSE  
USE EL CAMINO REAL

PCMS-1

Ave MAGDALENA CLOSE  
EXIT HERE

PCMS-2

**CLOSURE #1:**

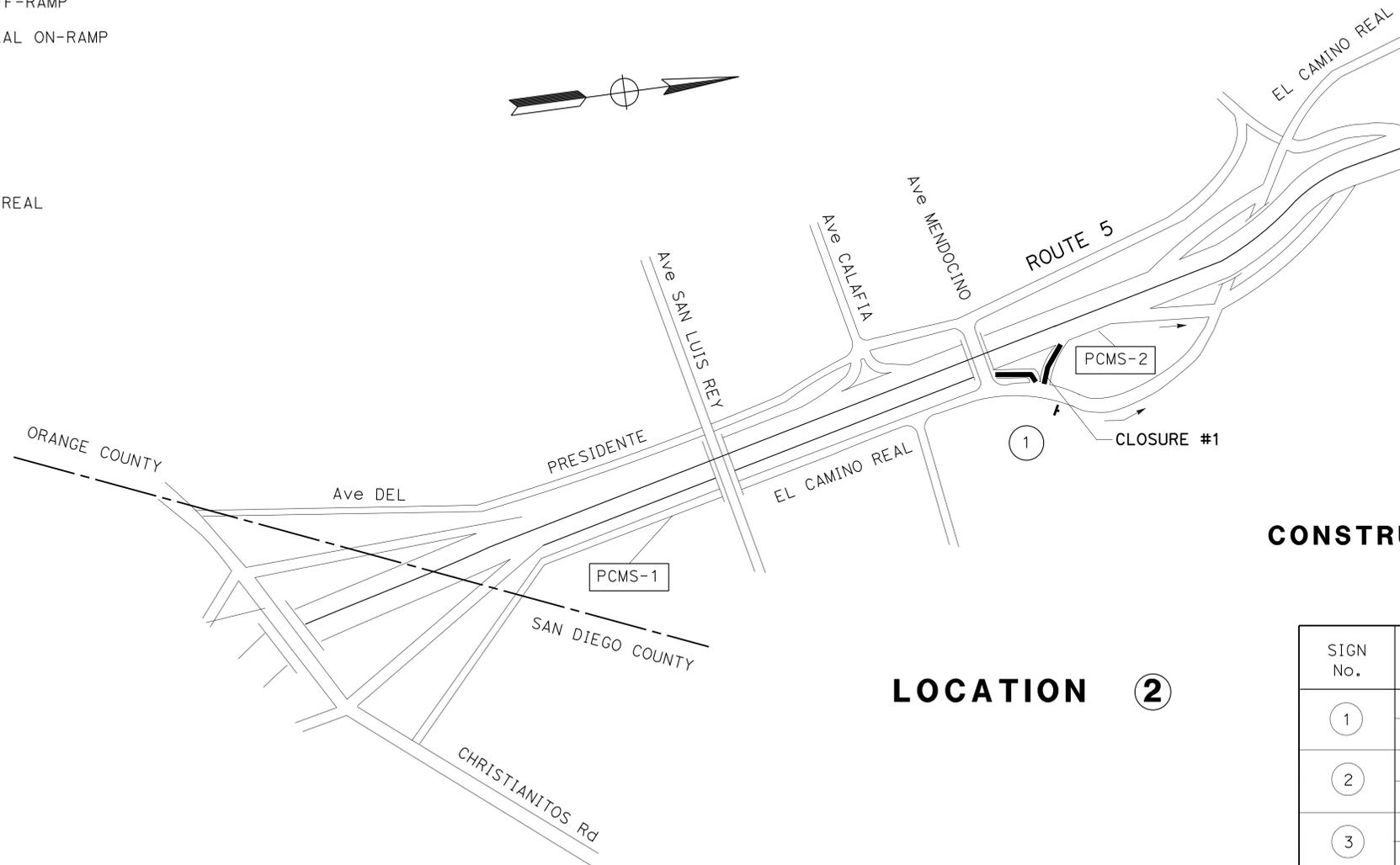
- 1 - NB ROUTE 5 Ave MAGDALENA OFF-RAMP
- 2 - NB ROUTE 5 Ave EL CAMINO REAL ON-RAMP

**DETOUR:**

- 1 - Exit EL CAMINO REAL
- 2 - CONTINUE NORTH ON EL CAMINO REAL

**LEGEND:**

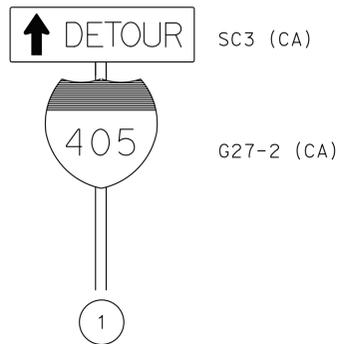
- (X) CONSTRUCTION DETOUR SIGN
- CONSTRUCTION AREA
- + CONSTRUCTION AREA SIGN, 1-POST
- DIRECTION OF TRAVEL
- PCMS PORTABLE CHANGEABLE MESSAGE SIGN



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

SIGN No.	SIGN CODE	No. OF POST AND SIZE	No. OF SIGNS
①	SC3 (CA)	1-4" X 6"	1
	G27-2 (CA)		
②	SC3 (CA)	1-4" X 6"	2
	D3		
③	M4-10 (L+)	1-4" X 6"	1
	D3		

**LOCATION ②**



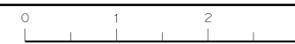
**DETOUR PLAN**

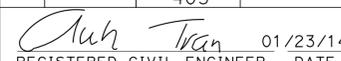
NO SCALE

APPROVED FOR DETOUR WORK ONLY

**DE-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** MAINTENANCE  
 FUNCTIONAL SUPERVISOR MASSOUD TAJIK  
 PHAT TRAN ANH TRAN  
 REVISOR ANH TRAN  
 REVISION DATE 01-04-13



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5, 91, 405	Var	12	36
			01/23/14	DATE	
REGISTERED CIVIL ENGINEER			DATE		
02-03-14			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:**

DURING THE SB ROUTE 5 LA VETA/BRISTOL S+ OFF-RAMP CLOSURE, THE PCMS SHOULD READ:

LA VETA/  
BRISTOL CLOSE  
USE W 22

PCMS-2

LA VETA/  
BRISTOL CLOSE  
EXIT HERE

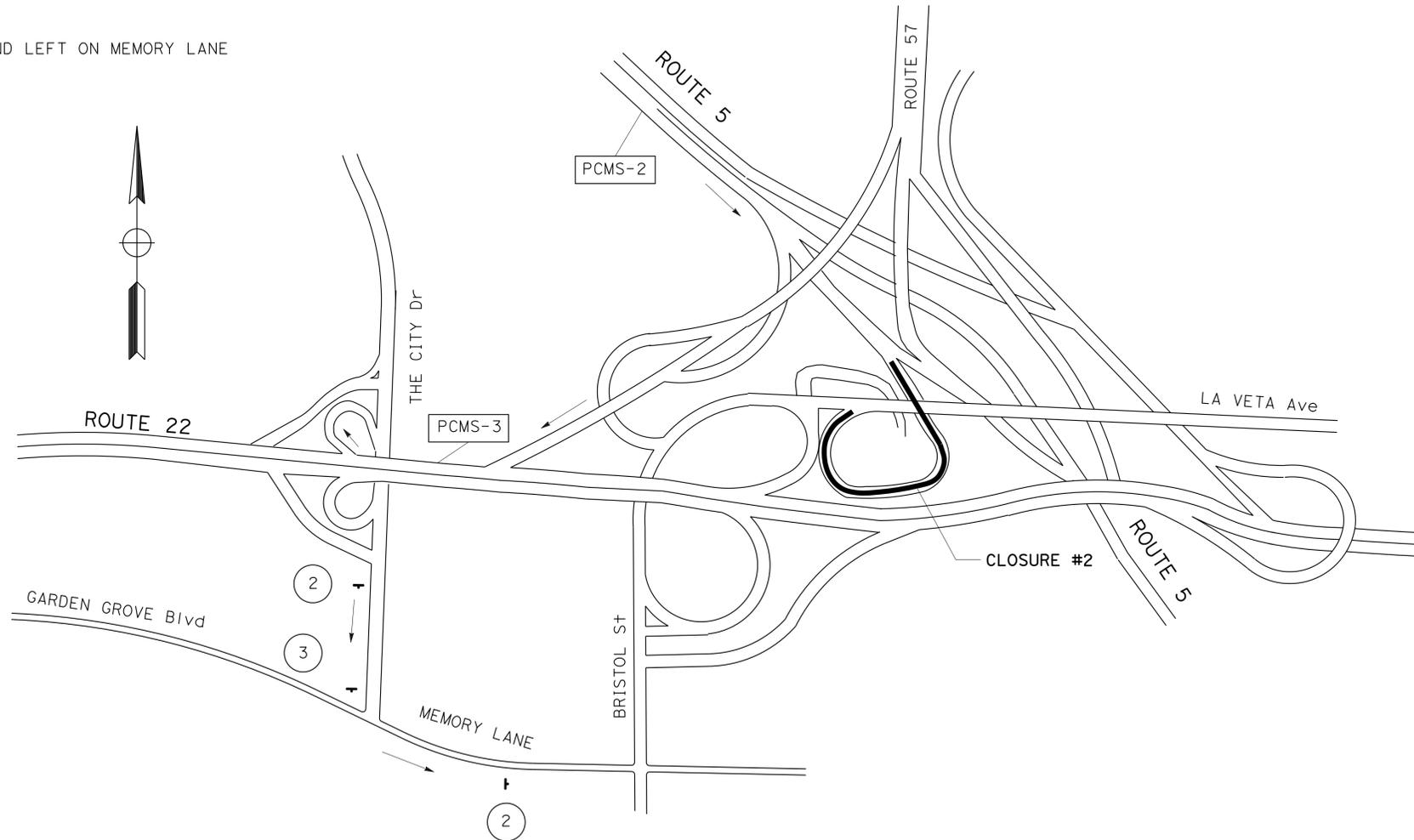
PCMS-3

**CLOSURE #2:**

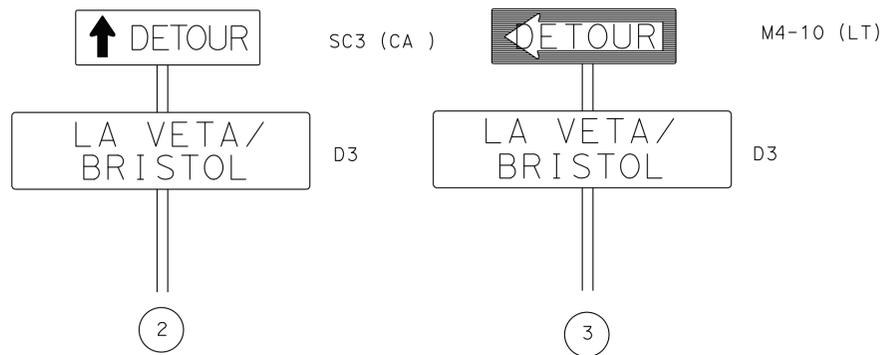
RAMP - SB ROUTE 5 LA VETA/BRISTOL S+ OFF-RAMP

**DETOUR:**

WB ROUTE 22, Exit+ THE CITY Dr AND LEFT ON MEMORY LANE



**LOCATION (D)**



**DETOUR PLAN**

NO SCALE

APPROVED FOR DETOUR WORK ONLY

**DE-2**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	MAINTENANCE
FUNCTIONAL SUPERVISOR	MASSOUD TAJIK
CALCULATED/DESIGNED BY	CHECKED BY
PHAT TRAN	ANH TRAN
REVISOR BY	DATE REVISED
AT	11-01-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5, 91, 405	Var	13	36

01/23/14  
REGISTERED ELECTRICAL ENGINEER DATE

02-03-14  
PLANS APPROVAL DATE

JOANNE VO  
No. E 16748  
Exp 9/30/14  
REGISTERED PROFESSIONAL ENGINEER 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:**

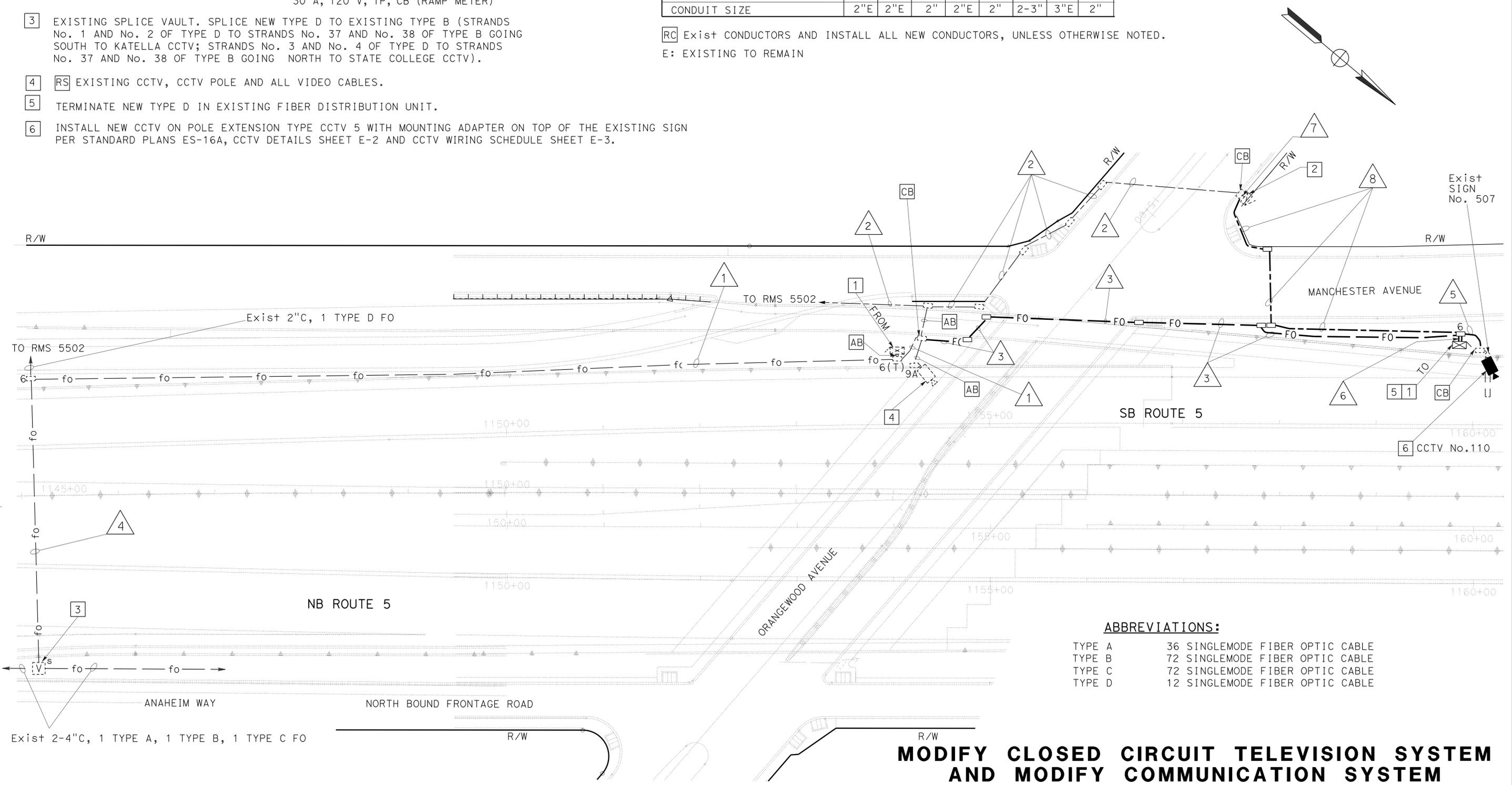
FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

**LEGEND (THIS SHEET ONLY):**

- 1 **RL** EXISTING MODEL 334 CCTV EQUIPMENT ENCLOSURE COMPLETE.
- 2 EXISTING 120/240 V TYPE III-CF METERED SERVICE EQUIPMENT ENCLOSURE. 100 A, 240 V, 2P, CB (MAIN)  
METER #1: ID No. 12-55-005-0-035.600 40 A, 240 V, 2P, CB (FREEWAY LIGHTING) 15 A, 120 V, 1P, CB (TELEPHONE) 30 A, 120 V, 1P, CB (CCTV) 15 A, 120 V, 1P, CB (PEC)  
METER #2: ID No. 12-55-005-0-035.601 30 A, 120 V, 1P, CB (CCTV) 30 A, 120 V, 1P, CB (RAMP METER)
- 3 EXISTING SPLICE VAULT. SPLICE NEW TYPE D TO EXISTING TYPE B (STRANDS No. 1 AND No. 2 OF TYPE D TO STRANDS No. 37 AND No. 38 OF TYPE B GOING SOUTH TO KATELLA CCTV; STRANDS No. 3 AND No. 4 OF TYPE D TO STRANDS No. 37 AND No. 38 OF TYPE B GOING NORTH TO STATE COLLEGE CCTV).
- 4 **RS** EXISTING CCTV, CCTV POLE AND ALL VIDEO CABLES.
- 5 TERMINATE NEW TYPE D IN EXISTING FIBER DISTRIBUTION UNIT.
- 6 INSTALL NEW CCTV ON POLE EXTENSION TYPE CCTV 5 WITH MOUNTING ADAPTER ON TOP OF THE EXISTING SIGN PER STANDARD PLANS ES-16A, CCTV DETAILS SHEET E-2 AND CCTV WIRING SCHEDULE SHEET E-3.

CONDUCTOR AND CONDUIT SCHEDULE									
AWG	CIRCUIT	1	2	3	4	5	6	7	8
#6	SERVICE (RM)		2E					2E	
#8	SERVICE (CCTV)						2	2	2
	GROUND					1	1		
MULTI-CONDUCTOR CABLE						1	1		
TYPE D FO		1		1	1/1E		1		
CONDUIT SIZE		2"E	2"E	2"	2"E	2"	2-3"	3"E	2"

**RC** Exist CONDUCTORS AND INSTALL ALL NEW CONDUCTORS, UNLESS OTHERWISE NOTED.  
E: EXISTING TO REMAIN



**ABBREVIATIONS:**

TYPE A	36 SINGLEMODE FIBER OPTIC CABLE
TYPE B	72 SINGLEMODE FIBER OPTIC CABLE
TYPE C	72 SINGLEMODE FIBER OPTIC CABLE
TYPE D	12 SINGLEMODE FIBER OPTIC CABLE

**MODIFY CLOSED CIRCUIT TELEVISION SYSTEM AND MODIFY COMMUNICATION SYSTEM**

SCALE: 1" = 50'

**E-1**

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

FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI  
DESIGNED BY: VANESSA TRUONG  
CHECKED BY: JOANNE VO  
REVISOR: VANESSA TRUONG  
DATE REVISOR: JOANNE VO



LAST REVISION DATE PLOTTED => 06-FEB-2014  
11-01-13 TIME PLOTTED => 14:55

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5, 91, 405	Var	14	36

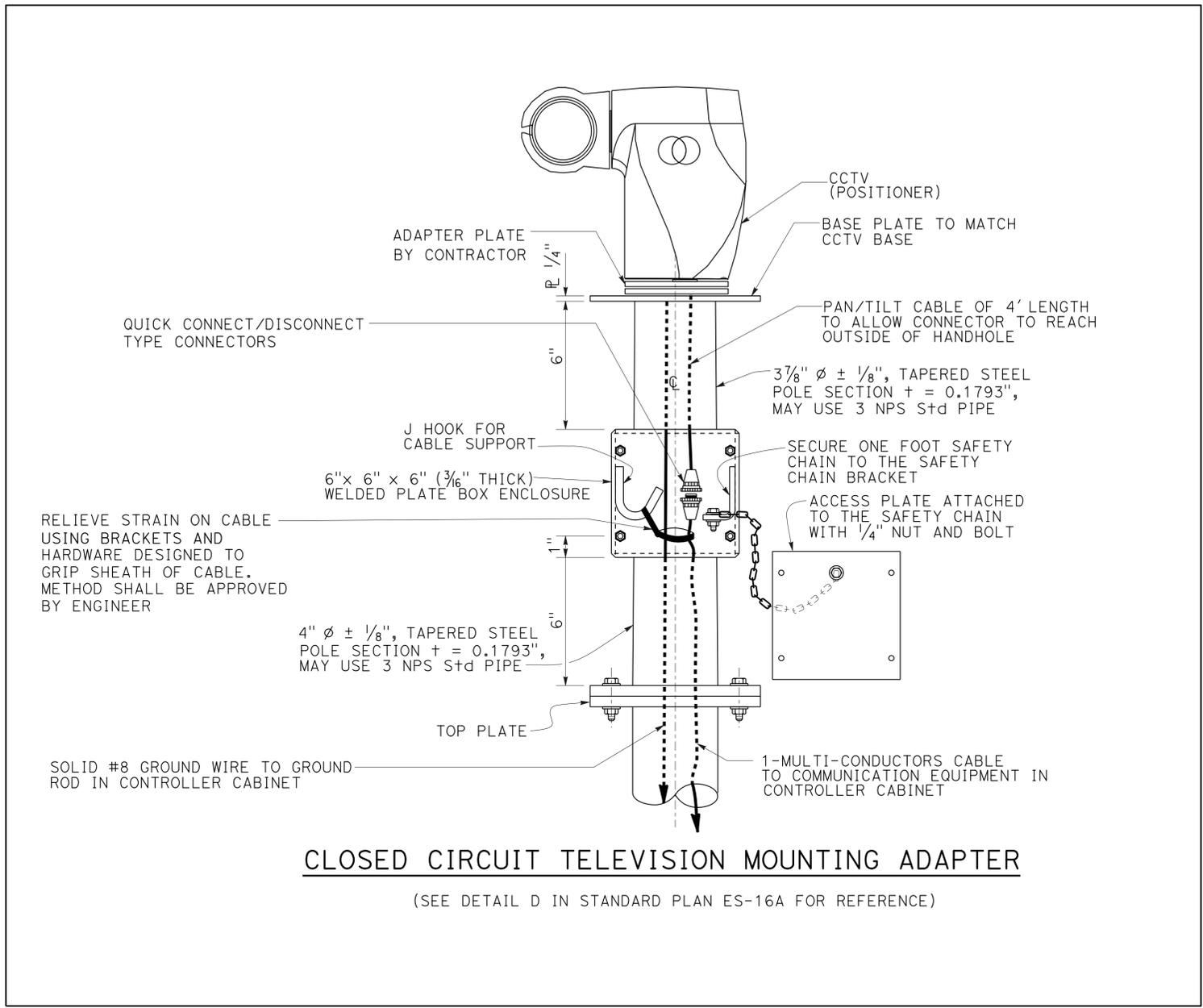
  

<i>Joanne Vo</i>	01/23/14
REGISTERED ELECTRICAL ENGINEER	DATE
02-03-14	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
JOANNE VO
No. E 16748
Exp 9/30/14
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.



**MODIFY CLOSED CIRCUIT TELEVISION SYSTEM  
AND MODIFY COMMUNICATION SYSTEM  
(DETAILS)**

NO SCALE

APPROVED FOR ELECTRICAL WORK ONLY

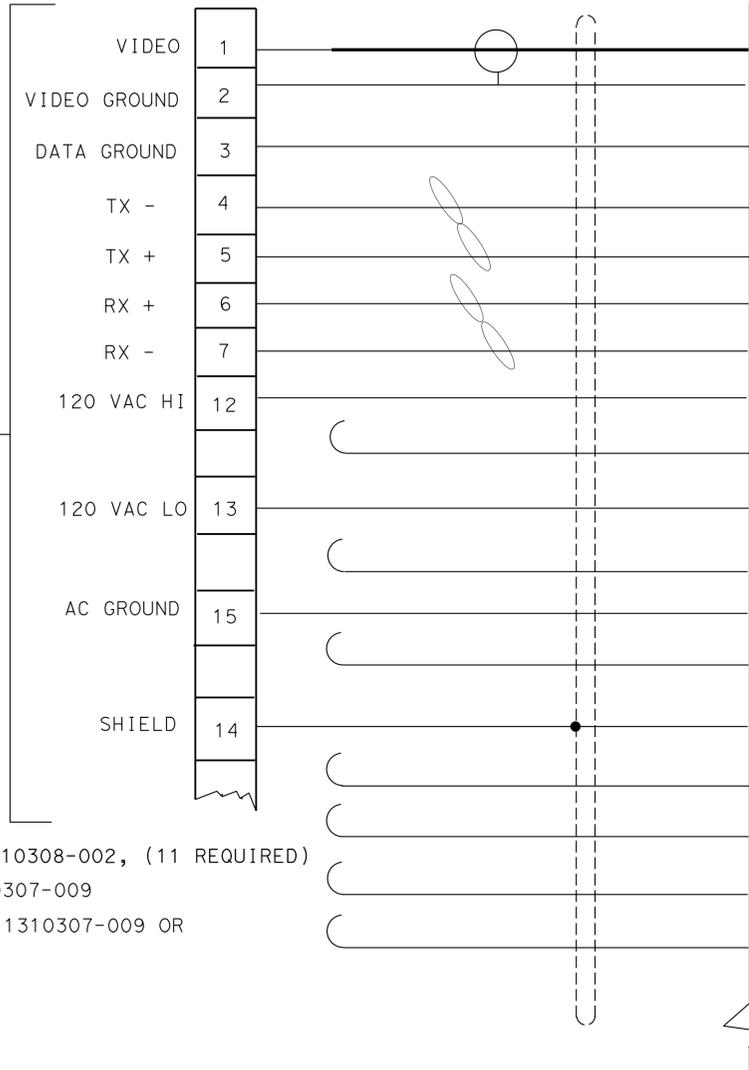
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
<b>Caltrans</b> ELECTRICAL DESIGN
FUNCTIONAL SUPERVISOR
SHAHRAM SHAHRIARI
CALCULATED/DESIGNED BY
CHECKED BY
JOANNE VO
VANESSA TRUONG
REVISOR
DATE
REVISION
DATE



ABBREVIATIONS: (THIS SHEET ONLY)

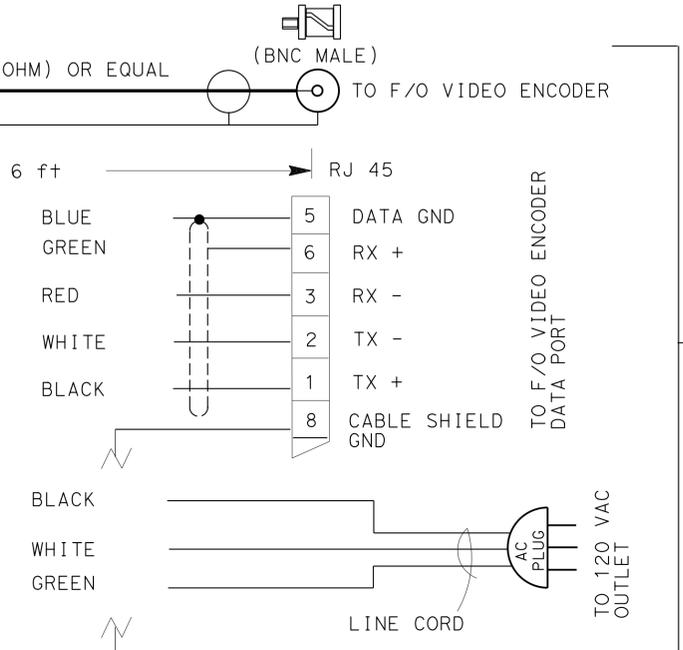
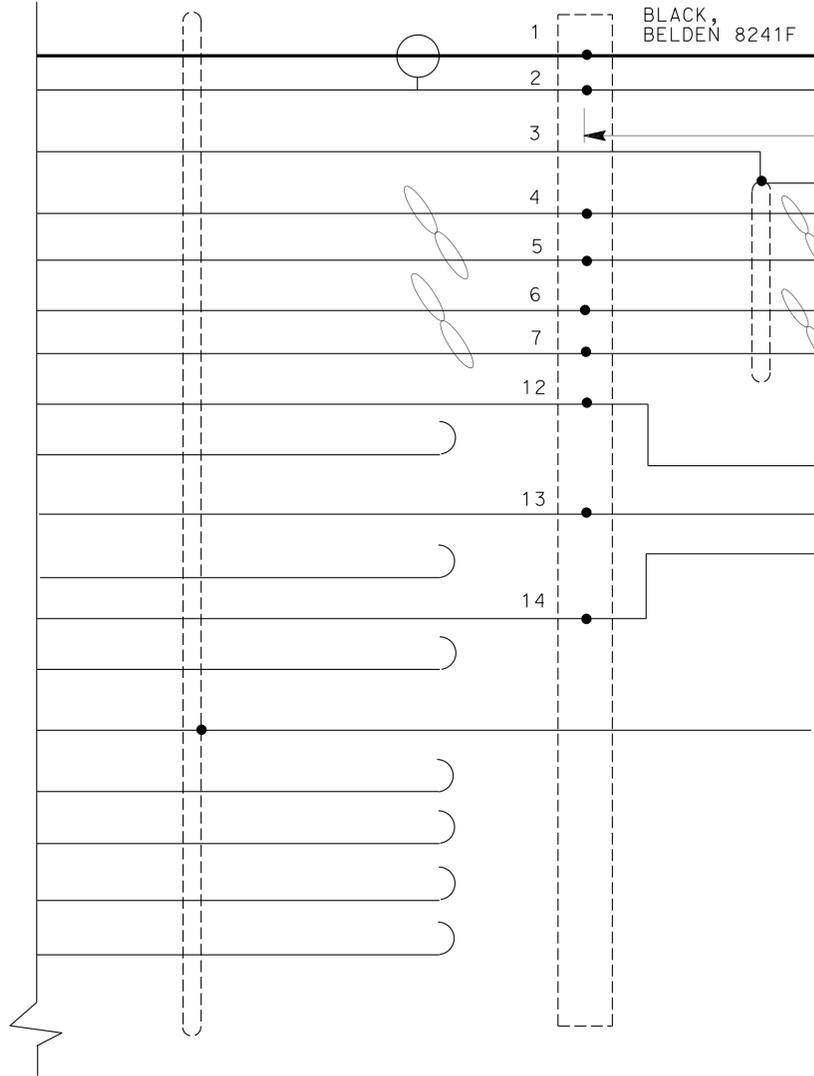
GND GROUND  
 RX RECEIVE  
 TX TRANSMIT

TO PAN/TILT CABLE



CONTACT P/N 1310308-002, (11 REQUIRED)  
 CLAMP P/N 1310307-009  
 CONNECTOR P/N 1310307-009 OR EQUIVALENTS

COAXIAL  
 BLUE  
 GREEN  
 RED  
 WHITE  
 BLACK  
 BLACK  
 RED  
 WHITE  
 BLUE  
 GREEN  
 YELLOW  
 SHIELD  
 ORANGE  
 YELLOW  
 WHITE/BLACK  
 RED/GREEN



TO CONTROLLER CABINET

LEGEND (THIS SHEET):

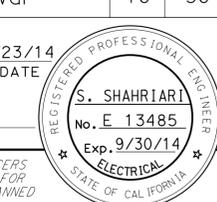
1. THE OVERALL CABLE SHIELD AND DRAIN WIRES SHALL BE PIGTAILED SOLDERED TO A MINIMUM 22 AWG BLACK WIRE ON THE CABINET SIDE.
2. EXPOSED SHIELD/SOLDER INTERFACE SHALL BE TAPED OR PROTECTED BY HEAT SHRINK TUBING.
3. THE GREEN GROUND WIRE SHALL BE TERMINATED TO THE CABINET GROUND BUS.
4. THE SHIELD SHALL ONLY BE GROUNDED AT THE CABINET END. DO NOT GROUND THE SHIELD AT THE CAMERA SIDE TO AVOID GROUND LOOPS.
5. ALL UNUSED CONDUCTORS ARE TO BE FOLDED BACK AND SECURELY TAPED. CONDUCTORS AT THE CCR SIDE SHALL BE PROPERLY PROTECTED AND DRESSED.
6. THE COAXIAL CABLE FOR VIDEO SHALL BE BELDEN 8241F OR EQUAL (75 OHM).
7. THE DATA CONDUCTORS SHALL BE THE 2 PAIR, TWISTED WITH OVERALL SHIELD, 26 AWG (FIXED HEIGHT CCTV)
8. THE POWER CONDUCTORS SHALL BE THE 3-CONDUCTOR, 26 AWG (FIXED HEIGHT CCTV)
9. INSTALL CABLE/CONDUCTOR WITHOUT SPLICES OR BREAK UNLESS OTHERWISE SHOWN.

**MODIFY CLOSED CIRCUIT TELEVISION SYSTEM AND MODIFY COMMUNICATION SYSTEM (DETAILS)**

NO SCALE

E-3

APPROVED FOR ELECTRICAL WORK ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5, 91, 405	Var	16	36
 REGISTERED ELECTRICAL ENGINEER DATE 01/23/14					
02-03-14 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:**

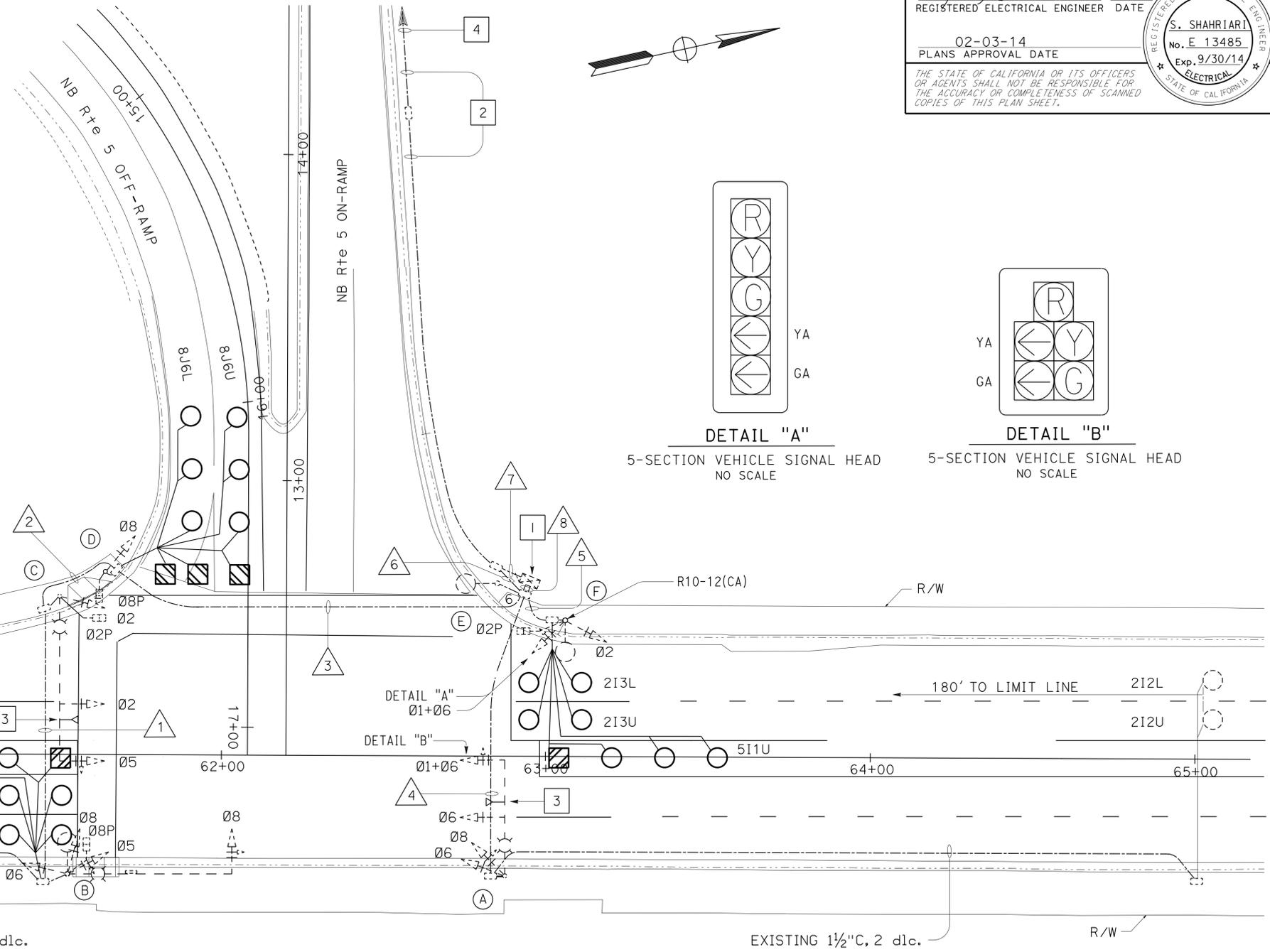
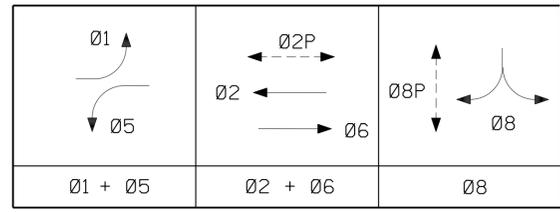
FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

**EXISTING CONDUCTOR AND CONDUIT SCHEDULE**

CONDUCTOR	CONDUCTOR RUN	1	2	3	4	5	6	7	8
12CSC	VEHICLE SIGNALS	2	3	4	2	1			7
3CSC	PPB	1	2	3					4
#6	SERVICE							2	
#10	LUMINAIRE	2	2	2	2	2	2		
#12	IISNS	2	2	2			2		
EVC			1	1	1				2
DLC	Ø1	1N	1N	1N					1N
	Ø2				2	2N			2 2N
	Ø5					1N			1N
	Ø6	2 2N	2 2N	2 2N					2 2N
	Ø8			2N					2N
TOTAL		2 3N	2 3N	2 5N	2	3N	2 2C	2 2C	4 8N
CONDUIT SIZE		3"C	2"C	3"C	3"C	2"C	2"C	2"C	2-4"C

N - NEW

**PHASE DIAGRAM**



EL CAMINO REAL

180' TO LIMIT LINE

EXISTING 1½"C, 2 dlc.

EXISTING 1½"C, 2 dlc.

**EXISTING POLE AND EQUIPMENT SCHEDULE**

No.	STANDARD			VEH SIG MTG		PED SIGNAL	PPB	HPS LUMINAIRE	SPECIAL REQUIREMENTS
	Type	SMA	LMA	Mast Arm	Pole	MTG	Ø	ARROW	
(A)	24-3-100	35'	12'	MAT MAS	SV-2-T			200 W	
(B)	29-5-100	55'	12'	MAT	SV-3-T	SP-1-T	8	→	200 W EL CAMINO REAL
(C)	29-5-100	50'	12'	MAT MAS	SV-1-T	SP-1-T	8	←	200 W
(D)	1-A				TV-1-T	SP-1-T	2	→	
(E)	15TS		12'				2	←	200 W
(F)	15TS		12'		SV-2-T	SP-1-T			200 W

**LEGEND: (THIS SHEET)**

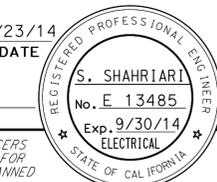
- 1 EXISTING DEPARTMENT-FURNISHED MODEL 2070L CONTROLLER ASSEMBLY IN MODEL 332 CABINET WITH BATTERY BACK-UP SYSTEM.
- 2 EXISTING 2"C, 2#6 (SIGNALS), 2#10 (LIGHTING), 2#12 (IISNS).
- 3 EXISTING CITY-FURNISHED EVD.
- 4 TO EXISTING SERVICE ENCLOSURE AT CUL-DE-SAC ON AVENIDA SAN GABRIEL. METER ID# 1255005001.254 (SDG&E)

**MODIFY SIGNAL AND LIGHTING**

SCALE: 1" = 20'

**E-4**

APPROVED FOR ELECTRICAL WORK ONLY

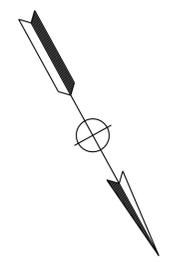
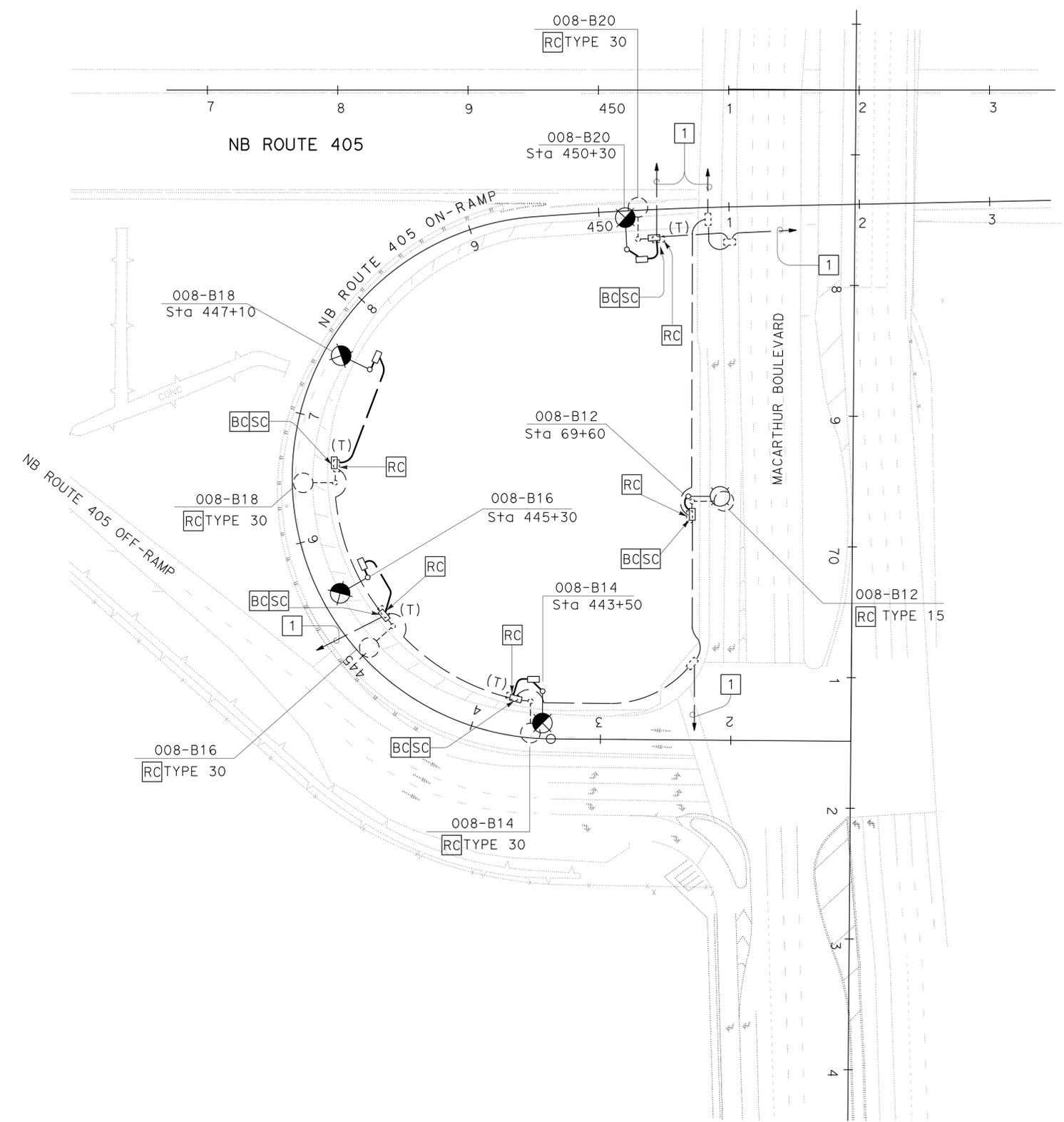
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5, 91, 405	Var	17	36
 REGISTERED ELECTRICAL ENGINEER			DATE	01/23/14	
PLANS APPROVAL DATE 02-03-14					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

**NOTES: (THIS SHEET)**

- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- INSTALL 2" C WITH 2#6, UNLESS OTHERWISE NOTED.
- INSTALL TYPE 32 STANDARDS 30' FROM ETW.

**LEGEND: (THIS SHEET)**

1 FOR CONTINUATION, SEE WIRING DIAGRAM ON SHEET E-10.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	REVISOR	DATE
<b>Caltrans</b> ELECTRICAL DESIGN	SHAHRAM SHAHRIARI	ANTHONY C FERNANDEZ	
	CHECKED BY	DESIGNED BY	DATE
	VANESSA TRUONG	ANTHONY C FERNANDEZ	
		REVISOR	DATE
		ANTHONY C FERNANDEZ	

**MODIFY LIGHTING LOCATION A**

SCALE: 1" = 50'

APPROVED FOR ELECTRICAL WORK ONLY

**E-5**

**NOTES: (THIS SHEET)**

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. INSTALL 2" C WITH 2#6, UNLESS OTHERWISE NOTED.
3. INSTALL TYPE 32 STANDARDS 30' FROM ETW.
4. INSTALL TYPE 31 STANDARDS 20' FROM ETW.

**LEGEND: (THIS SHEET)**

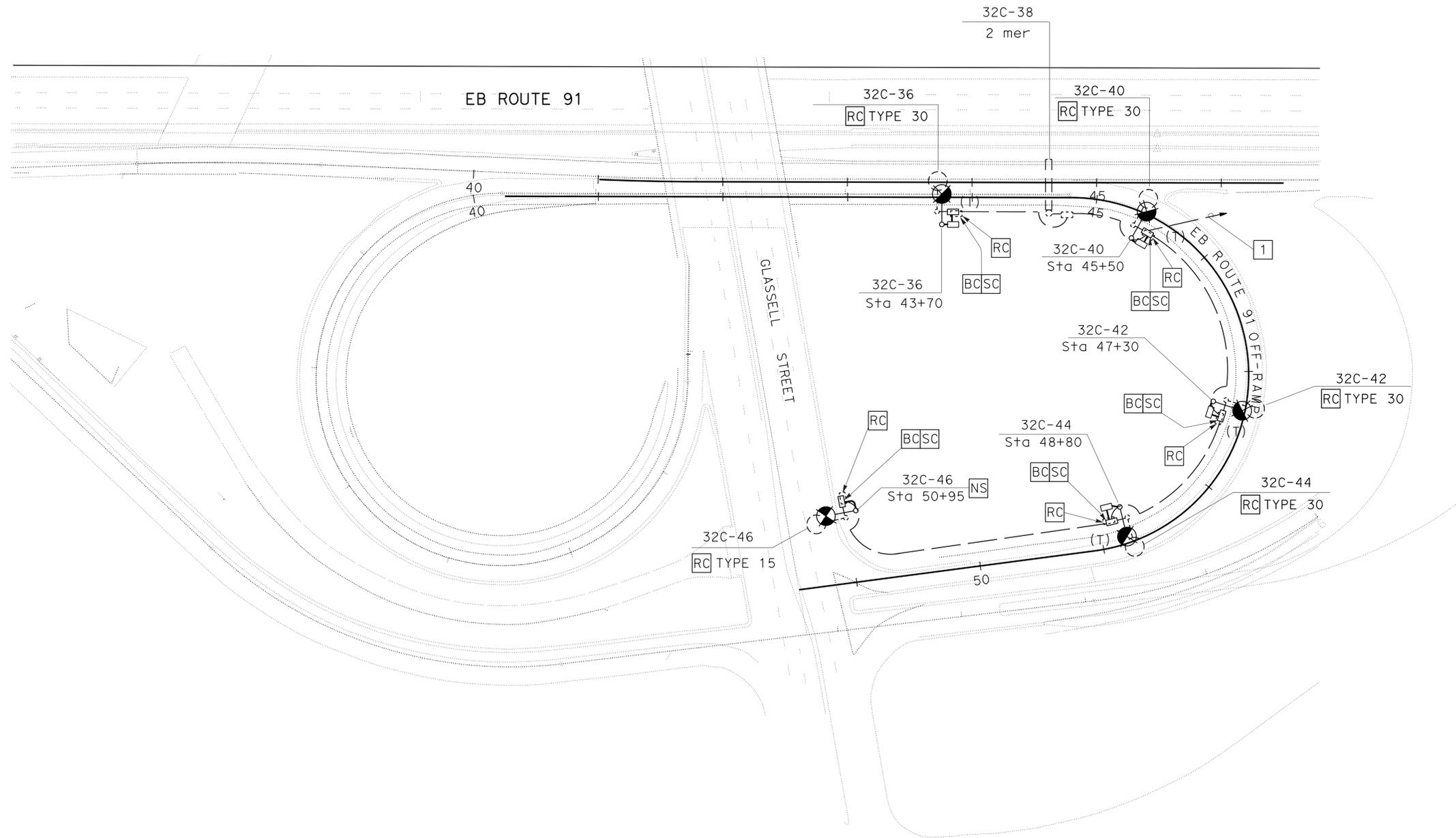
- 1 FOR CONTINUATION, SEE WIRING DIAGRAM ON SHEET E-11.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5, 91, 405	Var	18	36

REGISTERED ELECTRICAL ENGINEER DATE 01/23/14  
 S. SHAHRIARI  
 No. E 13485  
 Exp. 9/30/14  
 ELECTRICAL  
 STATE OF CALIFORNIA

PLANS APPROVAL DATE 02-03-14

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.

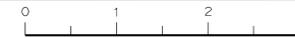


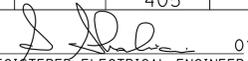
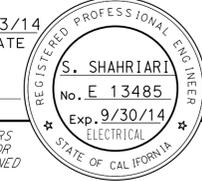
**MODIFY LIGHTING  
 LOCATION (B)**  
 SCALE: 1" = 50'

APPROVED FOR ELECTRICAL WORK ONLY

**E-6**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR
<b>Caltrans</b> ELECTRICAL DESIGN	SHAHRIARI	SHAHRIARI	ANTHONY C FERNANDEZ
	SHAHRAM	CHECKED BY	VANESSA TRUONG
			DATE REVISED



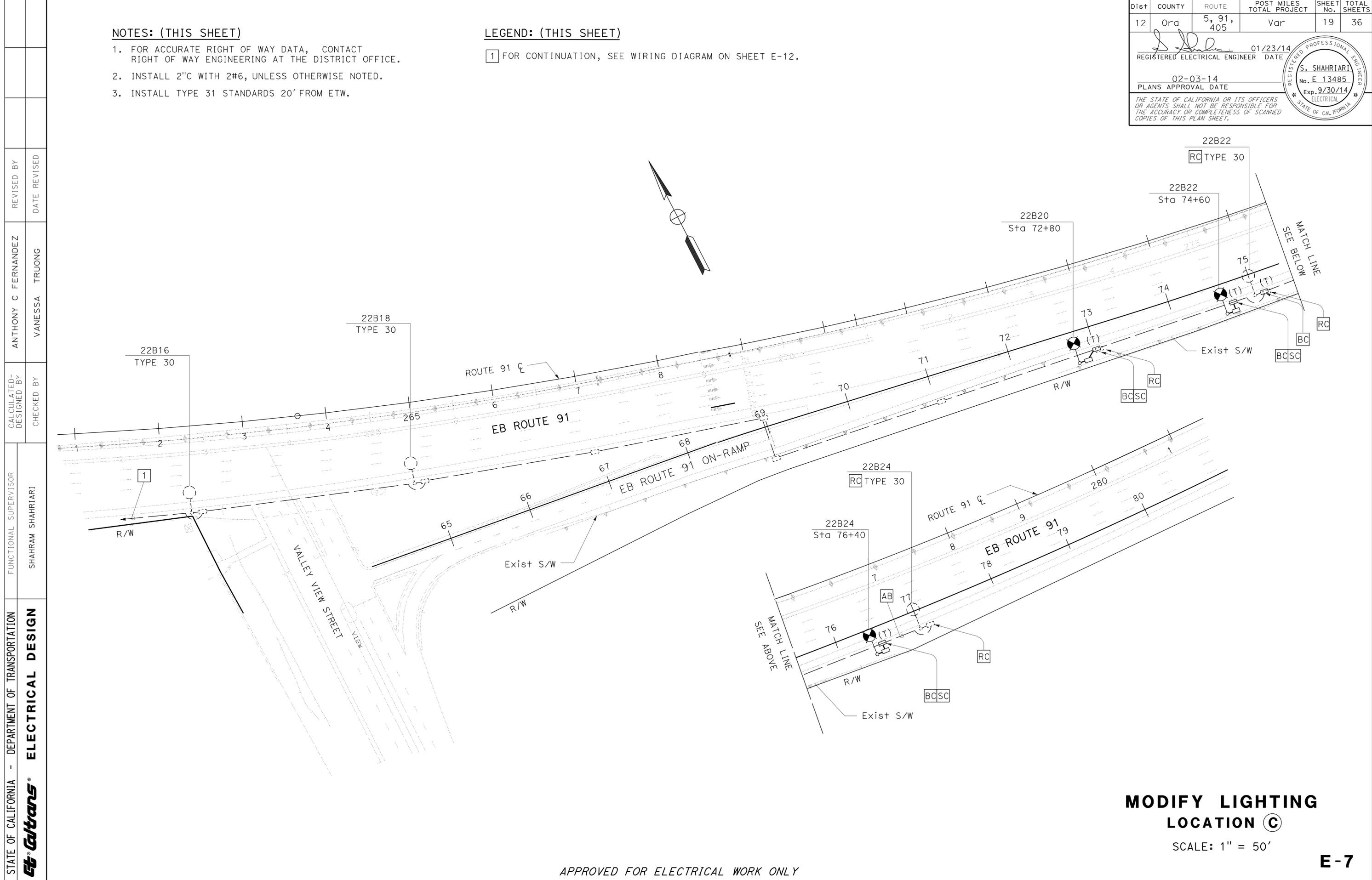
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5, 91, 405	Var	19	36
 REGISTERED ELECTRICAL ENGINEER DATE 01/23/14					
02-03-14			PLANS APPROVAL DATE		
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

**NOTES: (THIS SHEET)**

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. INSTALL 2" C WITH 2#6, UNLESS OTHERWISE NOTED.
3. INSTALL TYPE 31 STANDARDS 20' FROM ETW.

**LEGEND: (THIS SHEET)**

- 1 FOR CONTINUATION, SEE WIRING DIAGRAM ON SHEET E-12.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR
<b>Electrans</b>	SHAHRAM SHAHRIARI	CHECKED BY	DATE REVISED
<b>ELECTRICAL DESIGN</b>		ANTHONY C FERNANDEZ	
		VANESSA TRUONG	

**MODIFY LIGHTING LOCATION C**

SCALE: 1" = 50'

**E-7**

APPROVED FOR ELECTRICAL WORK ONLY



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5, 91, 405	Var	20	36

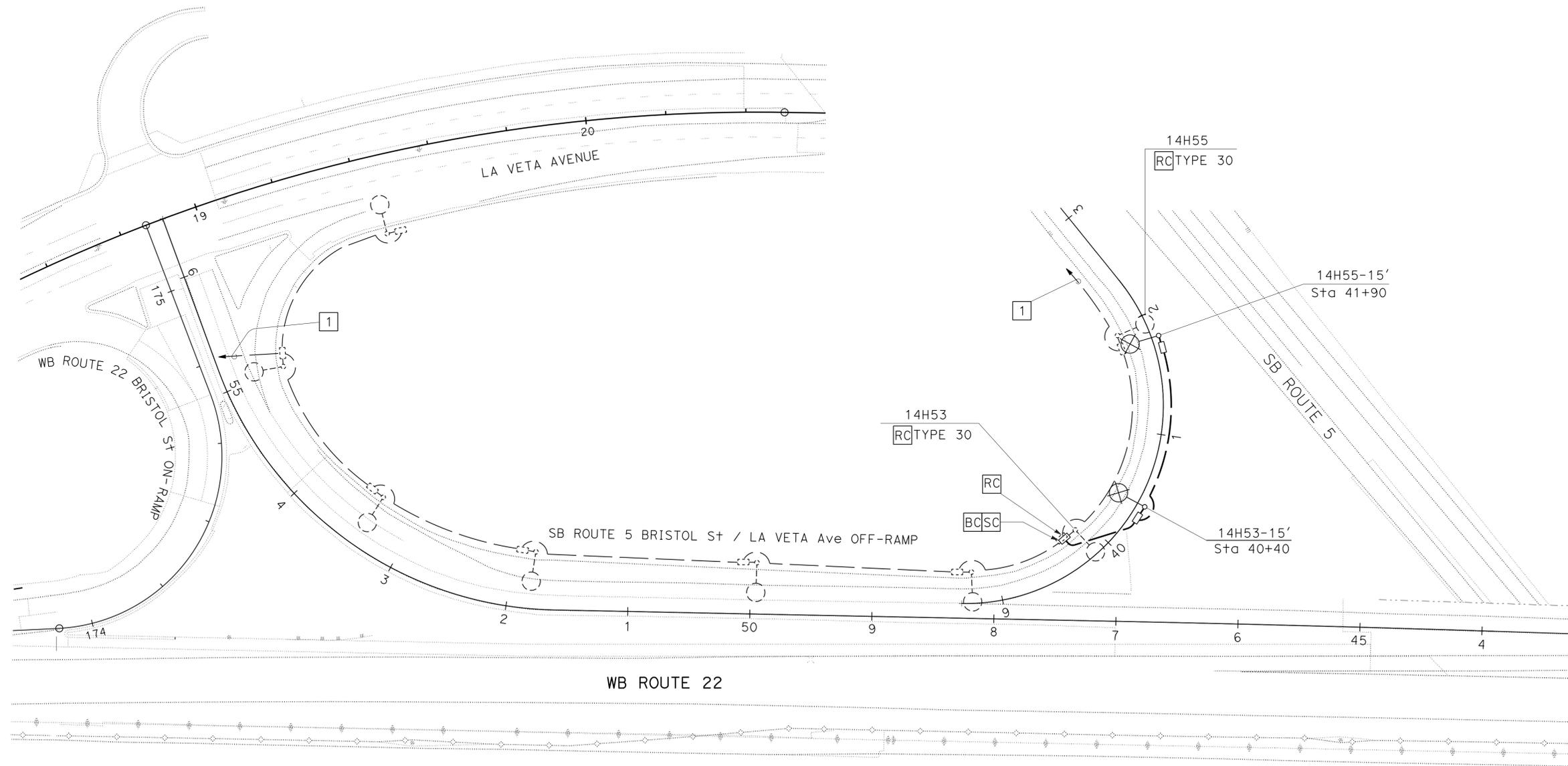
REGISTERED ELECTRICAL ENGINEER DATE 01/23/14  
 PLANS APPROVAL DATE 02-03-14  
 S. SHAHRIARI No. E 13485 Exp. 9/30/14 ELECTRICAL  
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

**NOTES: (THIS SHEET)**

- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- INSTALL 2"C WITH 2#6, UNLESS OTHERWISE NOTED.

**LEGEND: (THIS SHEET)**

1 FOR CONTINUATION, SEE WIRING DIAGRAM ON SHEET E-13.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL DESIGN  
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI  
 CHECKED BY: VANESSA TRUONG  
 DESIGNED BY: ANTHONY C FERNANDEZ  
 REVISIONS: (None listed)

**MODIFY LIGHTING**  
**LOCATION (D)**  
 SCALE: 1" = 50'

APPROVED FOR ELECTRICAL WORK ONLY



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5, 91, 405	Var	21	36

<i>S. Shahriari</i>	01/23/14
REGISTERED ELECTRICAL ENGINEER	DATE
02-03-14	
PLANS APPROVAL DATE	

S. SHAHRIARI	
No. E 13485	
Exp. 9/30/14	
ELECTRICAL	

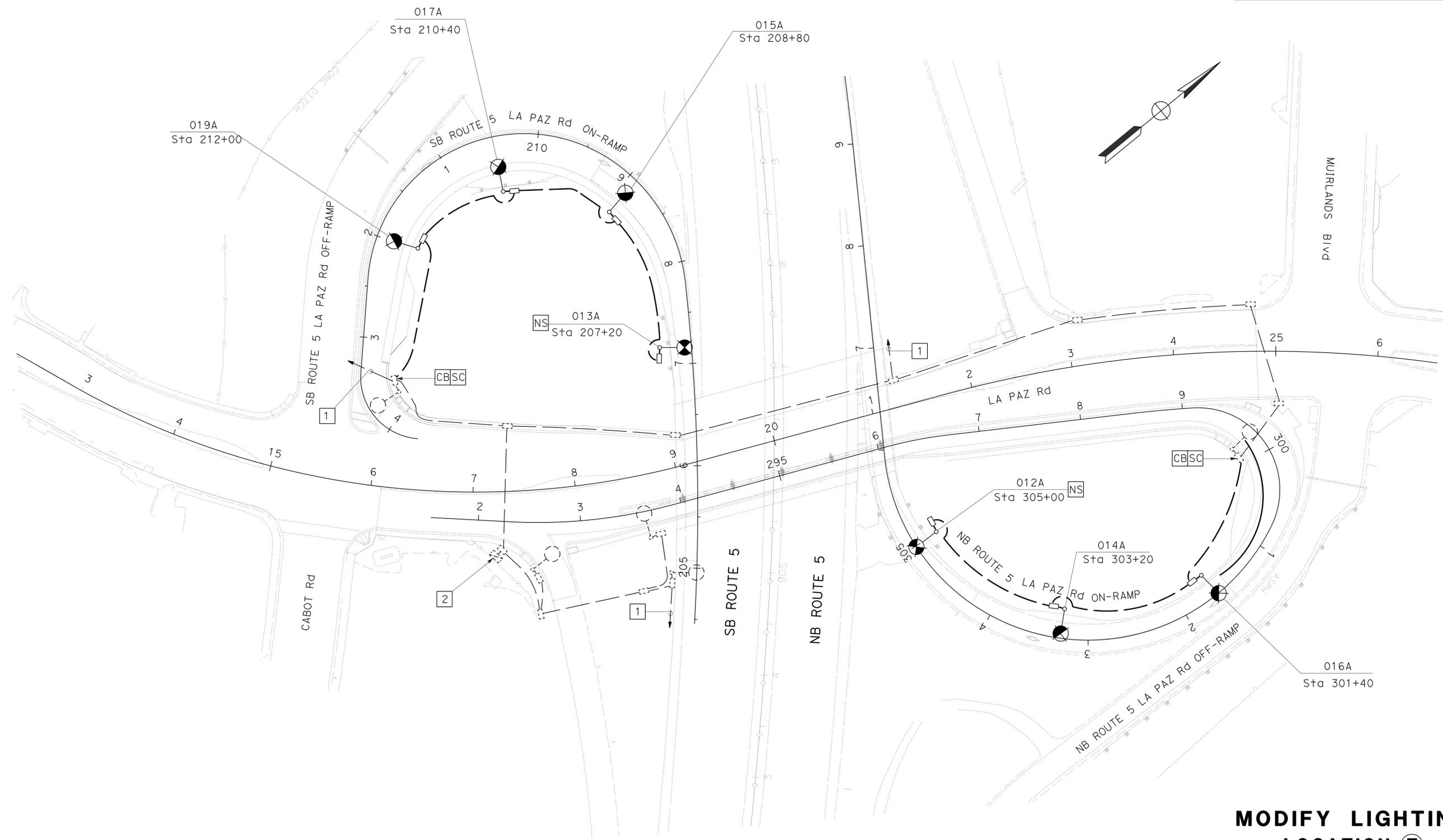
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

**NOTES: (THIS SHEET)**

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. INSTALL 2" C WITH 2#6, UNLESS OTHERWISE NOTED.
3. INSTALL TYPE 32 STANDARDS 30' FROM ETW.
4. INSTALL TYPE 31 STANDARDS 20' FROM ETW.

**LEGEND: (THIS SHEET)**

- 1 FOR CONTINUATION, SEE WIRING DIAGRAM ON SHEET E-14.
- 2 EXISTING 240/480V TYPE III-DF SERVICE EQUIPMENT ENCLOSURE TO REMAIN.  
 100 A, 480 V, 2P, CB MAIN BREAKER  
 40 A, 480 V, 2P, CB LIGHTING  
 15 A, 240 V, 1P, CB PEC

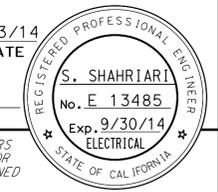


**MODIFY LIGHTING LOCATION (E)**  
 SCALE: 1" = 50'

APPROVED FOR ELECTRICAL WORK ONLY

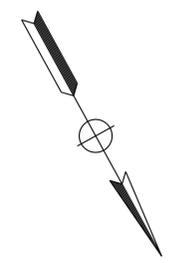
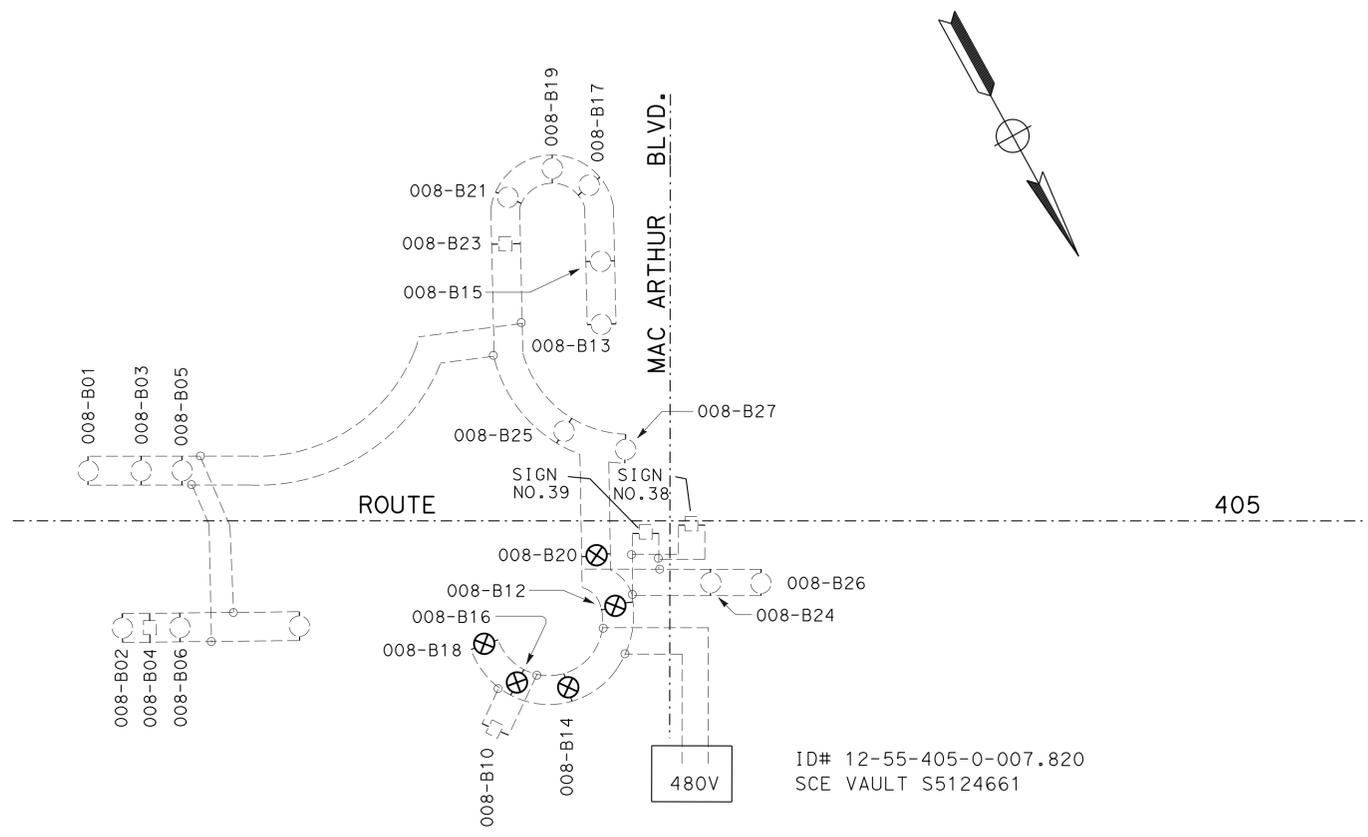
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR
<b>Caltrans</b> ELECTRICAL DESIGN	SHAHRAM SHAHRIARI	CHECKED BY	DATE REVISED
		ANTHONY C FERNANDEZ	
		VANESSA TRUONG	

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5, 91, 405	Var	22	36
 REGISTERED ELECTRICAL ENGINEER			01/23/14	DATE	
PLANS APPROVAL DATE			02-03-14		
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: (THIS SHEET)**

- EXISTING LUMINAIRE TO REMAIN.
- EXISTING SIGN ILLUMINATION TO REMAIN.
- EXISTING #6 CONDUCTORS TO REMAIN.
- ⊗ [RR] EXISTING LED LUMINAIRE ROADWAY 2. INSTALL ON NEW STANDARD.
- EXISTING SPLICE



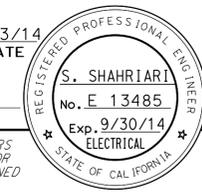
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	REVISOR	DATE
<b>Caltrans</b> ELECTRICAL DESIGN	SHAHRIARI	ANTHONY C FERNANDEZ	
	SHAHRAM	VANESSA TRUONG	
	CHECKED BY	DESIGNED BY	

APPROVED FOR ELECTRICAL WORK ONLY

**MODIFY LIGHTING  
WIRING DIAGRAM**  
NO SCALE

**E-10**

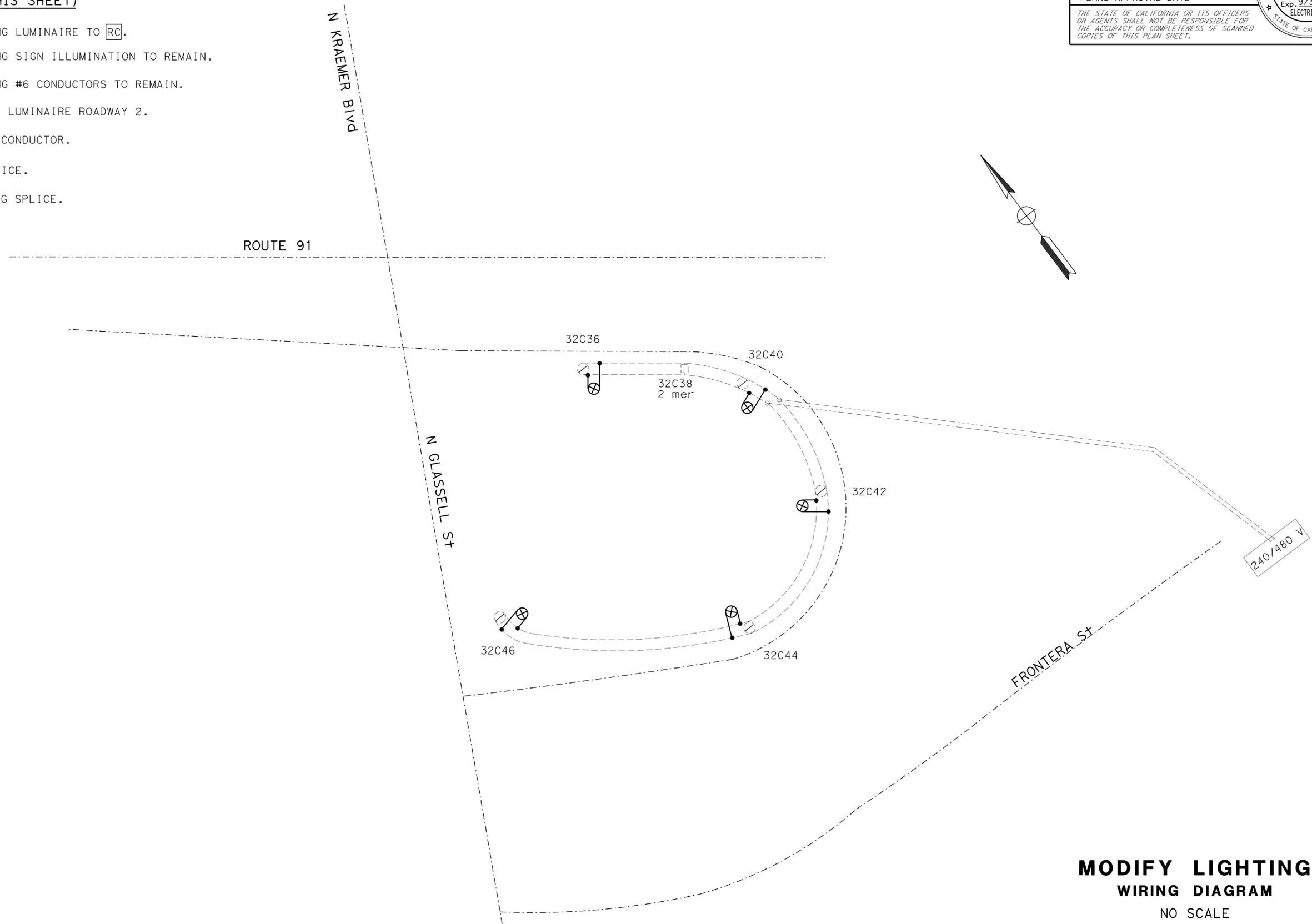
LAST REVISION    DATE PLOTTED => 06-FEB-2014    TIME PLOTTED => 14:55

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5, 91, 405	Var	23	36
 REGISTERED ELECTRICAL ENGINEER DATE 01/23/14					
PLANS APPROVAL DATE 02-03-14					
<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>					

**LEGEND: (THIS SHEET)**

-  EXISTING LUMINAIRE TO RC.
-  EXISTING SIGN ILLUMINATION TO REMAIN.
-  EXISTING #6 CONDUCTORS TO REMAIN.
-  NEW LED LUMINAIRE ROADWAY 2.
-  NEW #6 CONDUCTOR.
-  NEW SPLICE.
-  EXISTING SPLICE.

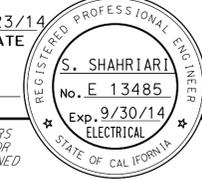
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISED BY
<b>Caltrans</b> ELECTRICAL DESIGN	SHAHRAM SHAHRIARI	CHECKED BY	ANTHONY C FERNANDEZ
			VANESSA TRUONG
			DATE REVISED



**MODIFY LIGHTING WIRING DIAGRAM**  
NO SCALE

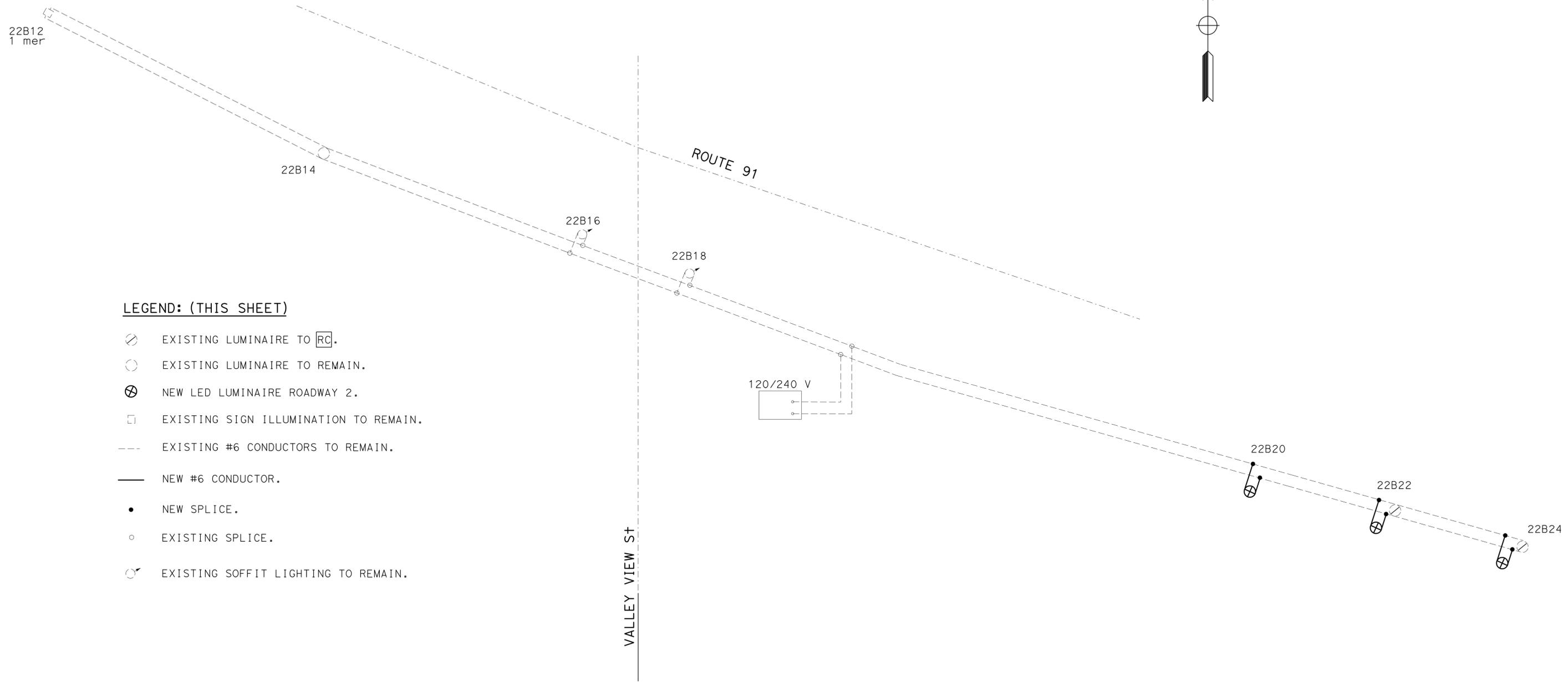
APPROVED FOR ELECTRICAL WORK ONLY

LAST REVISION | DATE PLOTTED => 06-FEB-2014  
 11-01-13 | TIME PLOTTED => 14:55

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5, 91, 405	Var	24	36
 REGISTERED ELECTRICAL ENGINEER			DATE	01/23/14	
PLANS APPROVAL DATE			02-03-14		
					
<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>					



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	ANTHONY C FERNANDEZ	REVISOR BY	
<b>Caltrans</b> ELECTRICAL DESIGN	SHAHRAM SHAHRIARI	CHECKED BY	VANESSA TRUONG	DATE REVISED	



- LEGEND: (THIS SHEET)**
-  EXISTING LUMINAIRE TO RC.
  -  EXISTING LUMINAIRE TO REMAIN.
  -  NEW LED LUMINAIRE ROADWAY 2.
  -  EXISTING SIGN ILLUMINATION TO REMAIN.
  -  EXISTING #6 CONDUCTORS TO REMAIN.
  -  NEW #6 CONDUCTOR.
  -  NEW SPLICE.
  -  EXISTING SPLICE.
  -  EXISTING SOFFIT LIGHTING TO REMAIN.

**MODIFY LIGHTING  
WIRING DIAGRAM**  
NO SCALE

APPROVED FOR ELECTRICAL WORK ONLY

LAST REVISION | DATE PLOTTED => 06-FEB-2014  
11-01-13 | TIME PLOTTED => 14:55

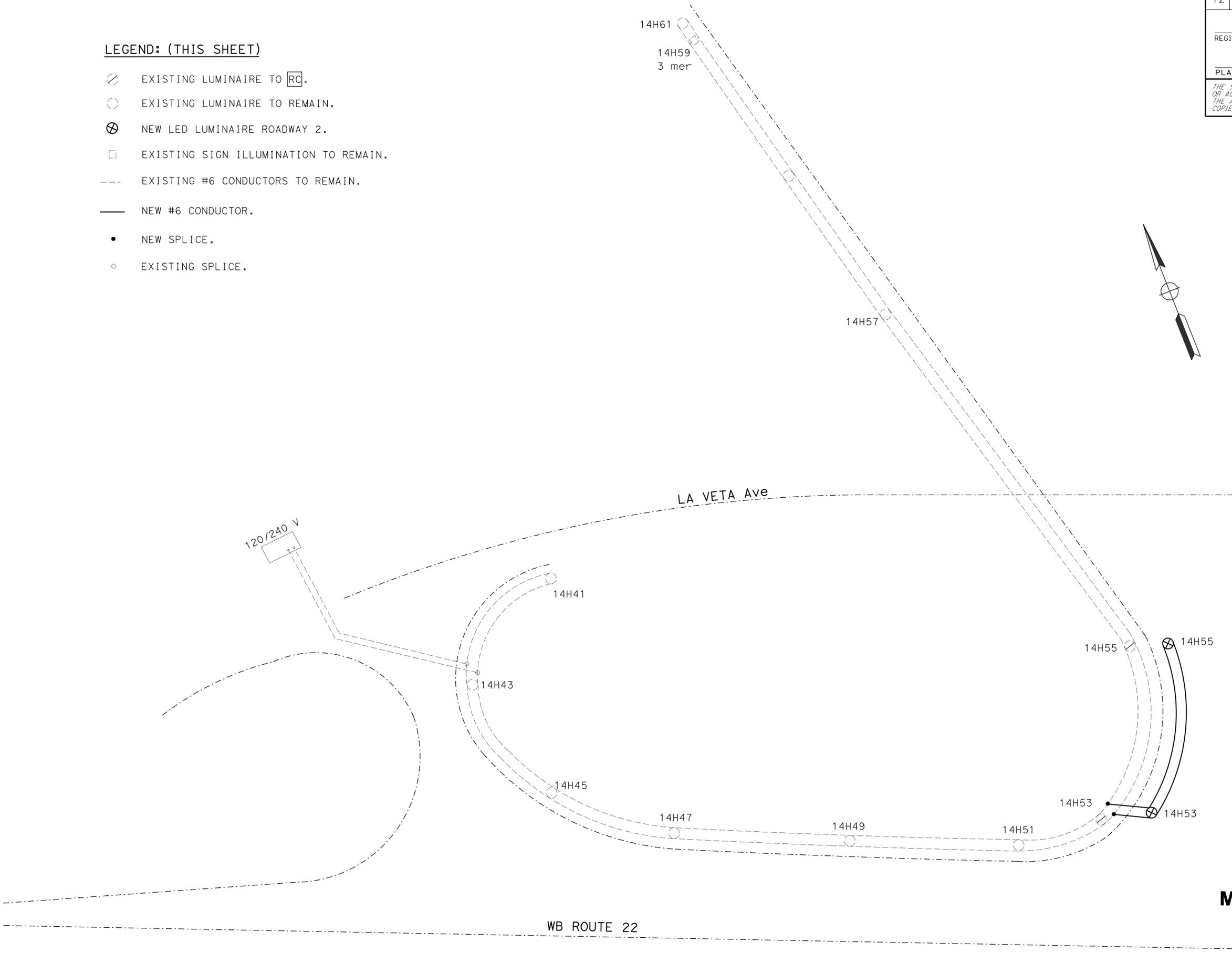
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5, 91, 405	Var	25	36

S. Shahriari 01/23/14  
 REGISTERED ELECTRICAL ENGINEER DATE  
 02-03-14  
 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.

**LEGEND: (THIS SHEET)**

- ⊗ EXISTING LUMINAIRE TO RC.
- EXISTING LUMINAIRE TO REMAIN.
- ⊗ NEW LED LUMINAIRE ROADWAY 2.
- EXISTING SIGN ILLUMINATION TO REMAIN.
- EXISTING #6 CONDUCTORS TO REMAIN.
- NEW #6 CONDUCTOR.
- NEW SPLICE.
- EXISTING SPLICE.

ANTHONY C FERNANDEZ	REVISOR	DATE
VANESSA TRUONG	REVISOR	DATE
SHAHRAM SHAHRIARI	DESIGNER	DATE
SHAHRAM SHAHRIARI	CHECKER	DATE

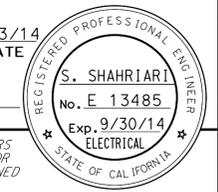


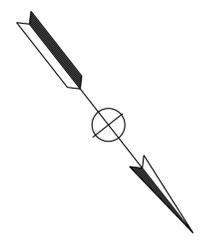
**MODIFY LIGHTING  
WIRING DIAGRAM**  
NO SCALE

APPROVED FOR ELECTRICAL WORK ONLY

**E-13**

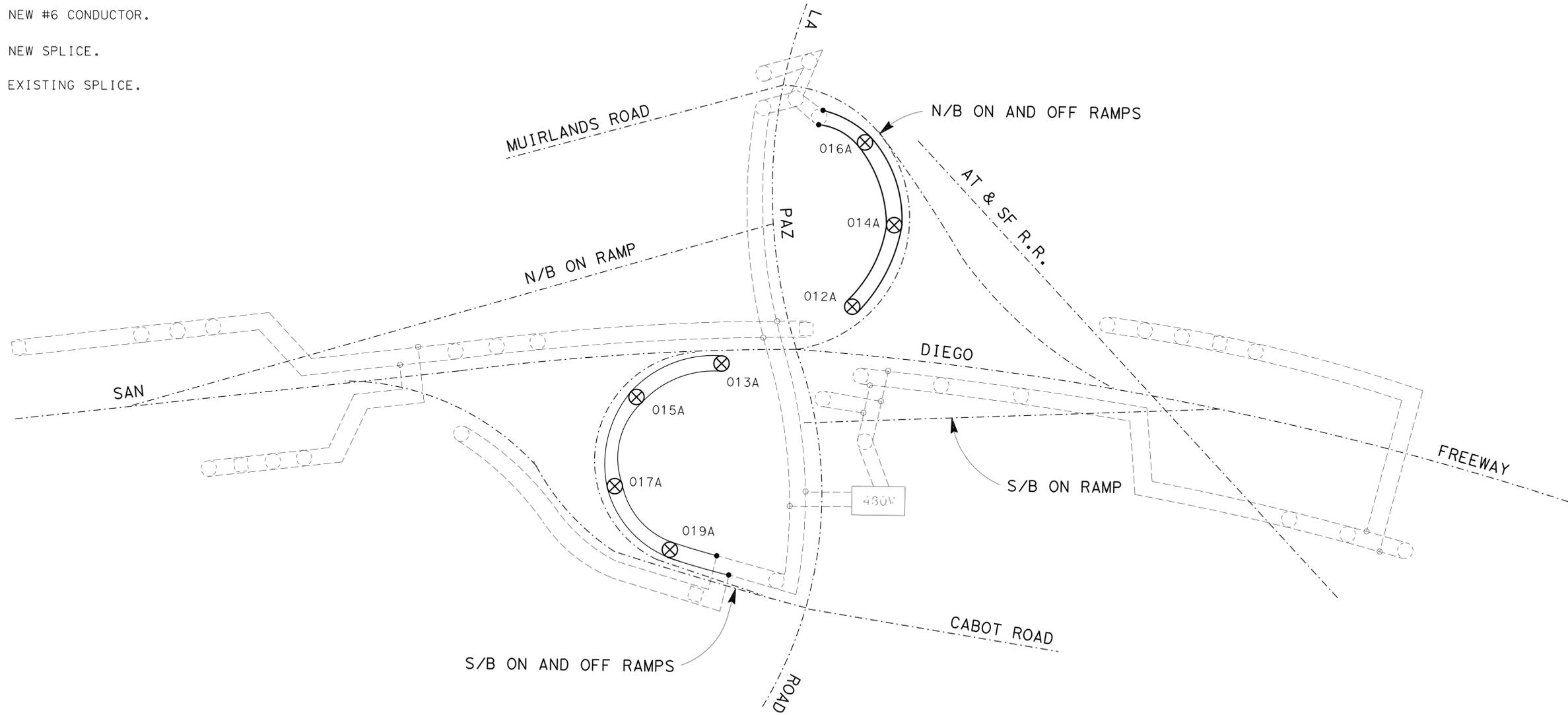
LAST REVISION 11-01-13 | DATE PLOTTED => 06-FEB-2014 | TIME PLOTTED => 14:55

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5, 91, 405	Var	26	36
 REGISTERED ELECTRICAL ENGINEER			DATE	01/23/14	
PLANS APPROVAL DATE			02-03-14		
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: (THIS SHEET)**

- EXISTING LUMINAIRE TO REMAIN.
- EXISTING SIGN ILLUMINATION TO REMAIN.
- EXISTING CONDUCTORS TO REMAIN.
- ⊗ NEW LED LUMINAIRE ROADWAY 2.
- NEW #6 CONDUCTOR.
- NEW SPLICE.
- EXISTING SPLICE.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	DESIGNED BY	REVISOR
<b>Caltrans</b> ELECTRICAL DESIGN	SHAHRIARI	ANTHONY C FERNANDEZ	DATE
	SHAHRAM	VANESSA TRUONG	REVISOR
			DATE
			REVISOR
			DATE

**MODIFY LIGHTING  
WIRING DIAGRAM**  
NO SCALE

**E-14**

APPROVED FOR ELECTRICAL WORK ONLY

LAST REVISION | DATE PLOTTED => 06-FEB-2014  
11-01-13 | TIME PLOTTED => 14:55

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5, 91, 405	Var	27	36

REGISTERED ELECTRICAL ENGINEER DATE: 01/23/14  
 S. SHAHRIARI  
 No. E. 13485  
 Exp. 9/30/14  
 PLANS APPROVAL DATE: 02-03-14

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**NOTE:**  
ELECTRICAL QUANTITIES ARE SHOWN FOR INFORMATION ONLY, NOT A SEPARATE PAY ITEM.

### MODIFY CLOSED CIRCUIT TELEVISION SYSTEM AND MODIFY COMMUNICATION SYSTEM

SHEET No.	2" CONDUIT	#8 AWG	#5 PULL BOX	#6 PULL BOX	CCTV CAMERA	VIDEO CABLE	TYPE D FOC	CCTV POLE TYPE 5
E-1	900	1800	6	1	1	50	2000	1

### MODIFY SIGNAL AND LIGHTING

SHEET No.	DLC	TYPE E LOOP DETECTOR	TYPE D LOOP DETECTOR
E-4	1100	20	5

### MODIFY LIGHTING

SHEET No.	2" CONDUIT	#6 AWG	#5 PULL BOX	#5(T) PULL BOX	ROADWAY 2 LED	TYPE 15 Std	TYPE 30 Std	TYPE 31 Std	TYPE 32 Std
E-5	125	300	5	4	1				4
E-6	125	300	5	4	5			1	4
E-7	75	200	3	4	3			3	
E-8	250	600	3		2		2		
E-9	1100	2400	7		7			2	5
TOTAL	1675	3800	23	12	17	1	2	6	13

## ELECTRICAL QUANTITIES

**E-15**

APPROVED FOR ELECTRICAL WORK ONLY

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

LAST REVISION: 11-01-13 DATE PLOTTED => 06-FEB-2014 TIME PLOTTED => 14:55

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

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

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

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,91, 405'	var	28	36

*Grace M. Tsushima*  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

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

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

TO ACCOMPANY PLANS DATED 02-03-14

**UNIT OF MEASUREMENT SYMBOLS:**

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

**TABLE A**

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

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

**TABLE B**

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

\* For use on a sign panel only

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**ABBREVIATIONS  
(SHEET 2 OF 2)**

NO SCALE

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

TO ACCOMPANY PLANS DATED 02-03-14

TABLE 1

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

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

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

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

TABLE 2

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

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

TABLE 3

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

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

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**TRAFFIC CONTROL SYSTEM TABLES  
 FOR LANE AND RAMP CLOSURES**

NO SCALE

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

**REVISED STANDARD PLAN RSP T9**

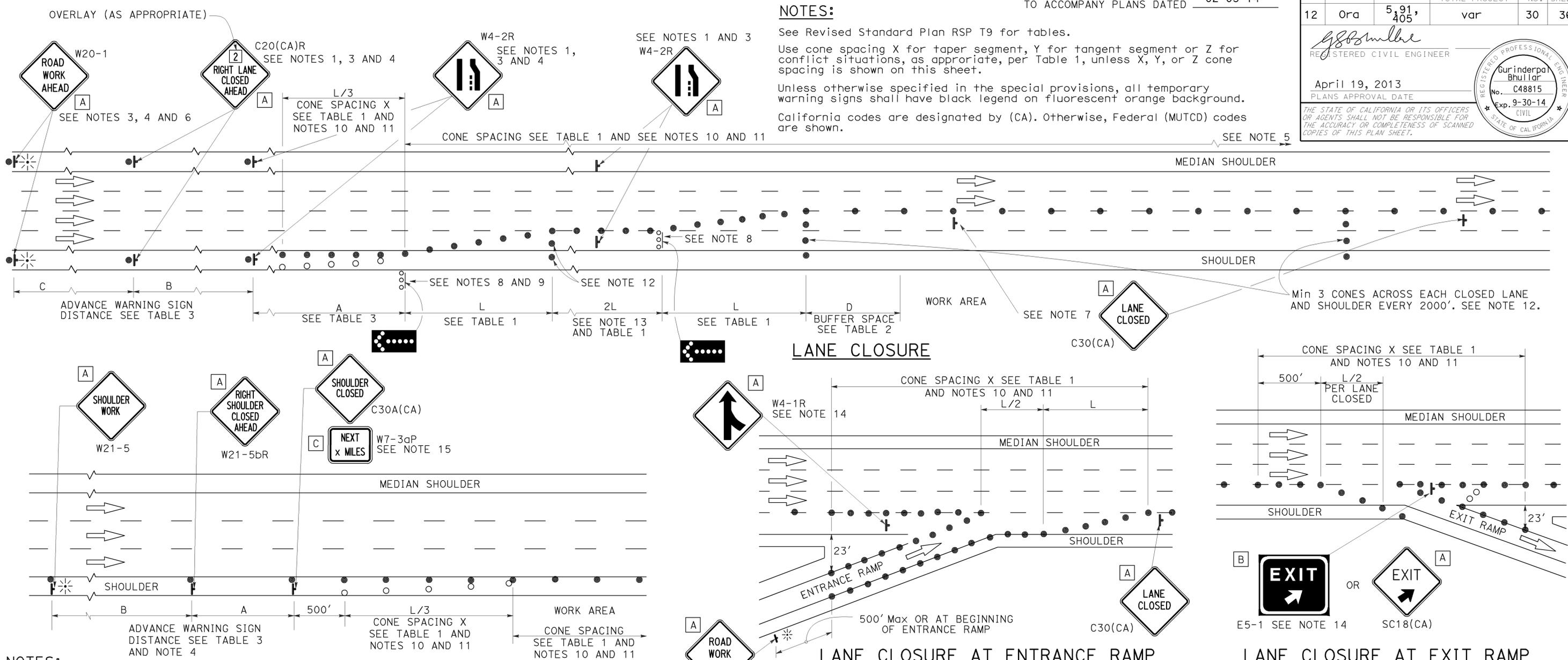
2010 REVISED STANDARD PLAN RSP T9

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,91, 405'	var	30	36

REGISTERED CIVIL ENGINEER  
 April 19, 2013  
 PLANS APPROVAL DATE

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



- NOTES:**
- Median lane closures shall conform to the details as shown except that C20(CA)L and W4-2L signs shall be used.
  - At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closures.
  - Duplicate sign installations are not required:
    - On opposite shoulder if at least one-half of the available lanes remain open to traffic.
    - In the median if the width of the median shoulder is less than 8' and the outside lanes are to be closed.
  - 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.
  - 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**
- 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) "NEXT x MILES" sign for the first advance warning sign.
  - Place a C30(CA) sign every 2000' throughout length of lane closure.
  - One flashing arrow sign for each lane closed. The flashing arrow signs shall be Type I.
  - 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.
  - All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
  - Portable delineators, placed at one-half the spacing indicated for traffic cones may be used instead of cones for daytime closures only.

- 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.
- 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.
- Unless otherwise specified in the special provisions, the E5-1 or SC18(CA) and W4-1 signs shall be used as shown.
- 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"

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

**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	5,91, 405'	var	31	36

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

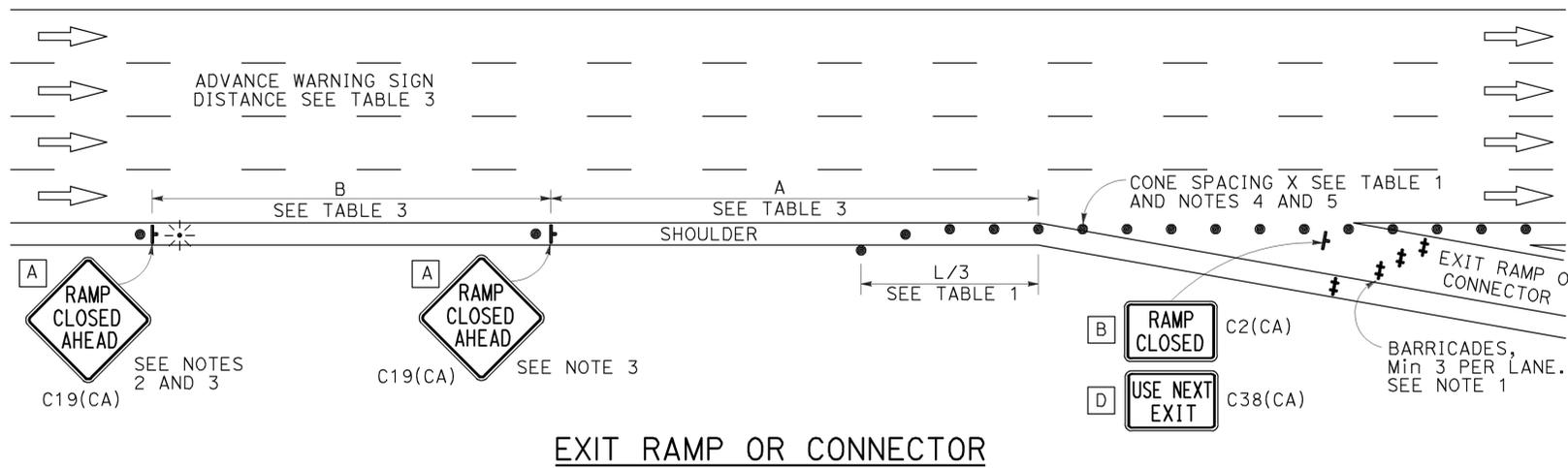
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REGISTERED PROFESSIONAL ENGINEER  
 Gurinderpal Bhullar  
 No. C48815  
 Exp. 9-30-14  
 CIVIL  
 STATE OF CALIFORNIA

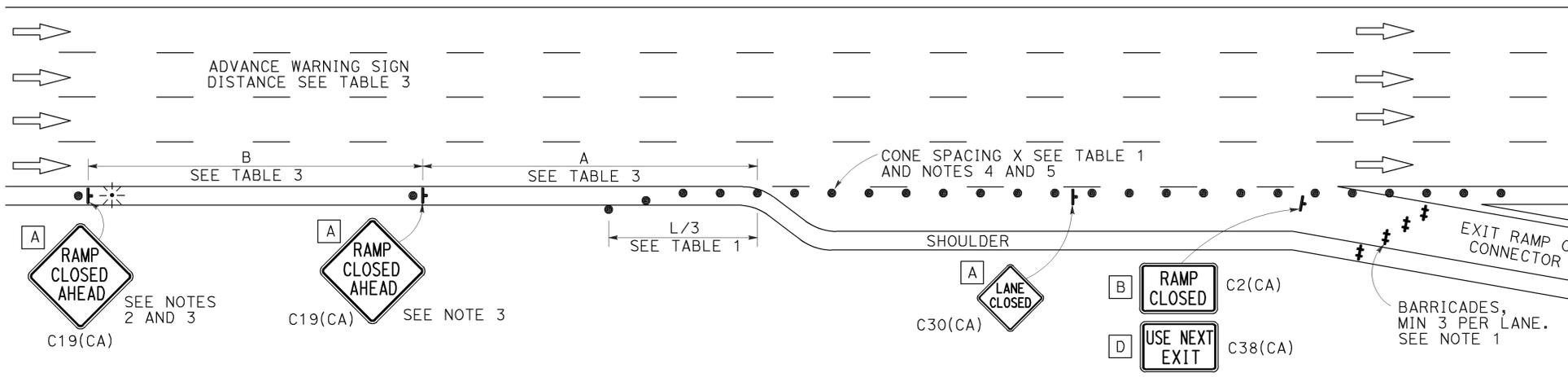
TO ACCOMPANY PLANS DATED 02-03-14

## NOTES:

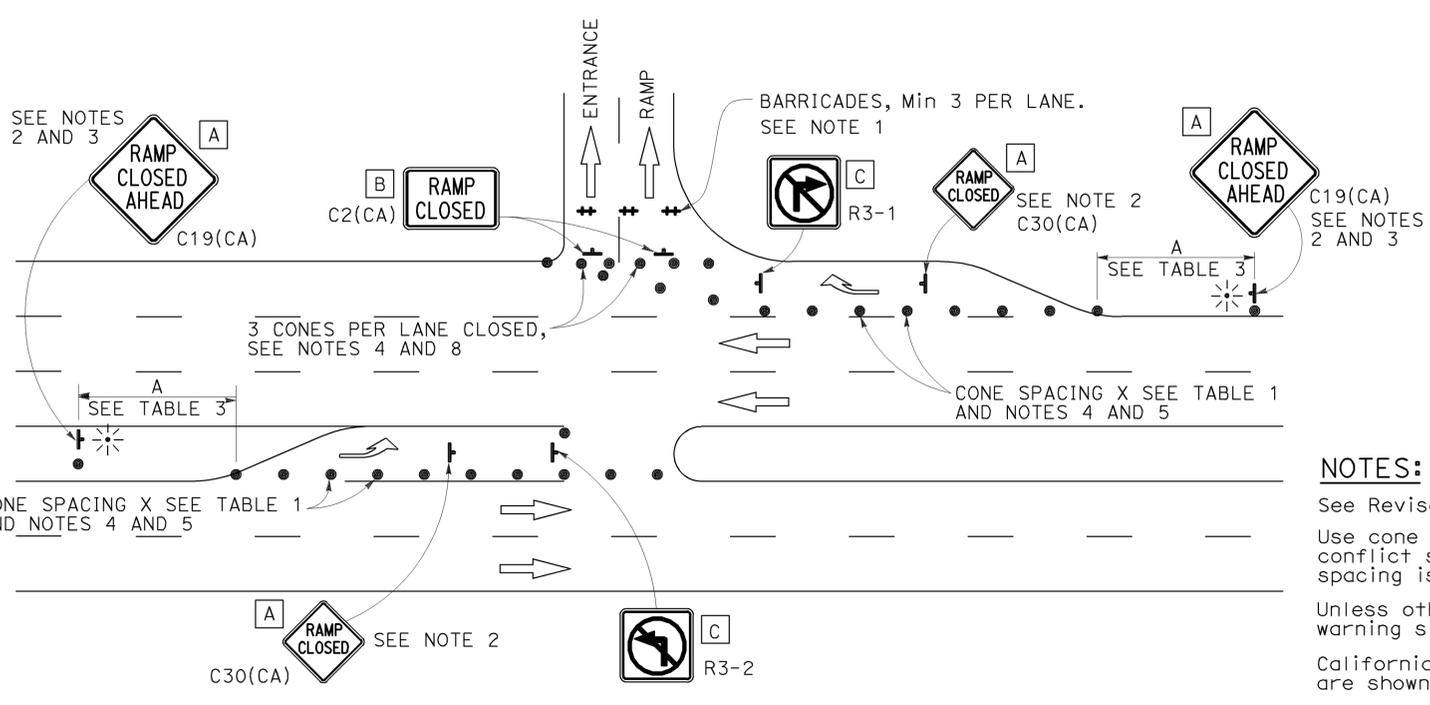
- Barricades shall be Type I, II, or III for closures lasting one week or less and Type III for closures lasting longer than one week.
- In addition to placing the C19(CA) "RAMP CLOSED AHEAD" and C30(CA) "RAMP CLOSED" signs, black on orange overlay plates with the word "CLOSED" may be mounted, as directed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



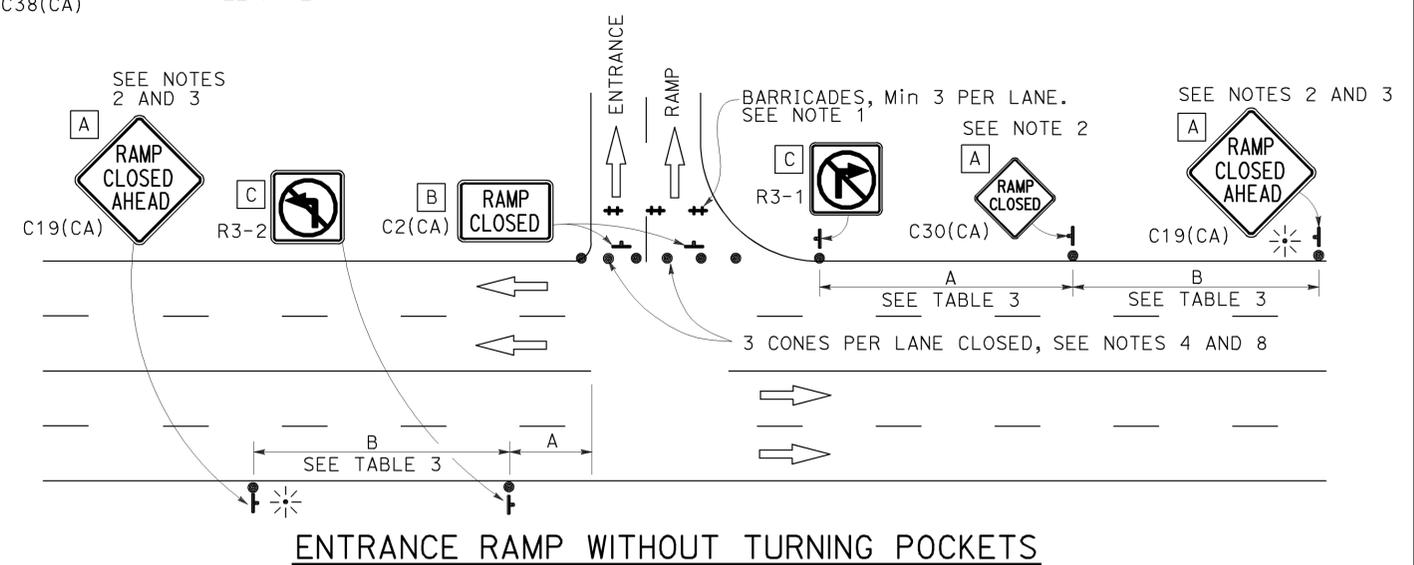
EXIT RAMP OR CONNECTOR



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

**LEGEND:**

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

**ABBREVIATIONS**

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	5,91, 405	var	32	36

Theresa Gabriel  
REGISTERED ELECTRICAL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

Theresa  
Aziz Gabriel  
No. E15129  
Exp. 6-30-14  
ELECTRICAL  
STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 02-03-14

**SOFFIT AND WALL MOUNTED LUMINAIRES**

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

**NOTE:**  
Arrow indicates "street side" of luminaire.

COMMONLY USED SYMBOLS FOR UNITED STATES CUSTOMARY UNITS OF MEASUREMENT:

SYMBOL USED	DEFINITIONS
$\Omega$	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
$\mu$	MICRO
P	PICO
HZ	HERTZ

**MISCELLANEOUS ELECTROLIERS**

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

- NOTES:**
- HPS luminaires shall be 310 W HPS when installed on Type 21, 21D, 30, 31 and 32 Standards, unless otherwise specified. HPS luminaires shall be 200 W when installed on other type standards or poles, unless otherwise specified.
  - 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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS  
(LEGEND AND ABBREVIATIONS)**

NO SCALE

RSP ES-1A DATED JULY 19, 2013 SUPERSEDES 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	5,91, 405	var	33	36

Theresa Gabriel  
REGISTERED ELECTRICAL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

Theresa Aziz Gabriel  
No. E15129  
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TO ACCOMPANY PLANS DATED 02-03-14

**CONDUIT**

**SIGNAL EQUIPMENT**

NEW	EXISTING	
---	---	LIGHTING CONDUIT, UNLESS OTHERWISE INDICATED OR NOTED
---	---	TRAFFIC SIGNAL CONDUIT
---C---	---c---	COMMUNICATION CONDUIT
---T---	---t---	TELEPHONE CONDUIT
---F---	---f---	FIRE ALARM CONDUIT
---FO---	---fo---	FIBER OPTIC CONDUIT
---	---	CONDUIT TERMINATION
		CONDUIT RISER ATTACHED TO THE STRUCTURE OR SERVICE POLE

NEW	EXISTING	
		PEDESTRIAN SIGNAL HEAD "C" INDICATES COUNTDOWN PEDESTRIAN 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)

**SIGNAL EQUIPMENT Cont**

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

**SERVICE EQUIPMENT**

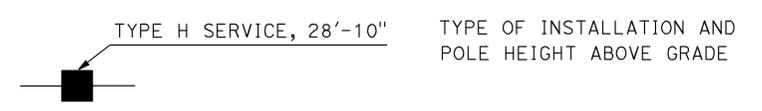
NEW	EXISTING	
---OH---	---oh---	OVERHEAD LINES
		WOOD POLE, "U" INDICATES UTILITY OWNED
		POLE GUY WITH ANCHOR
		UTILITY TRANSFORMER - GROUND MOUNTED
		SERVICE EQUIPMENT ENCLOSURE TYPE. DOOR INDICATES FRONT OF ENCLOSURE
		TELEPHONE DEMARCATION CABINET

		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

**NOTES:**

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

**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

**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

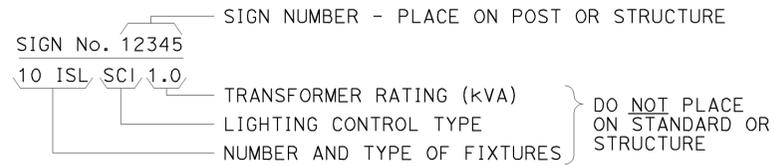
RSP ES-1B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-1B DATED MAY 20, 2011 - PAGE 426 OF THE STANDARD PLANS BOOK DATED 2010.

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

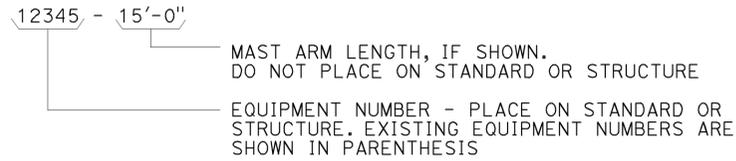
2010 REVISED STANDARD PLAN RSP ES-1B

### EQUIPMENT IDENTIFICATION

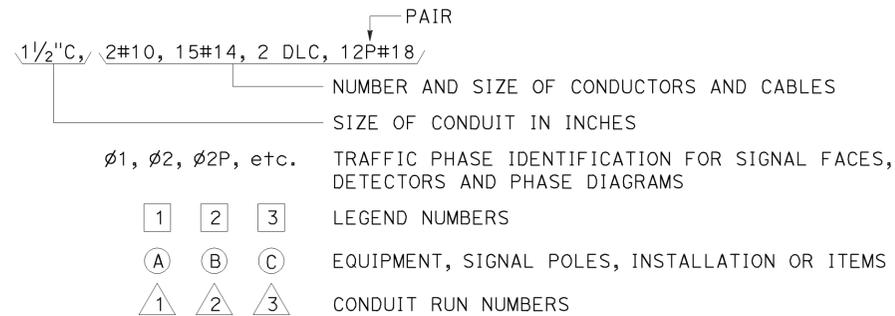
#### ILLUMINATED SIGN IDENTIFICATION NUMBER:



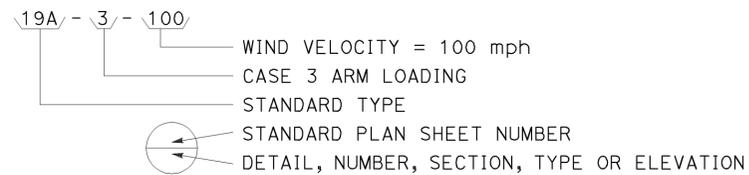
#### ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



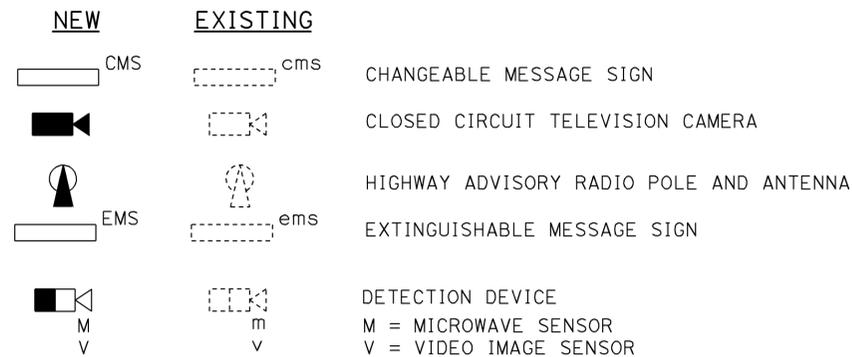
#### CONDUIT AND CONDUCTOR IDENTIFICATION:



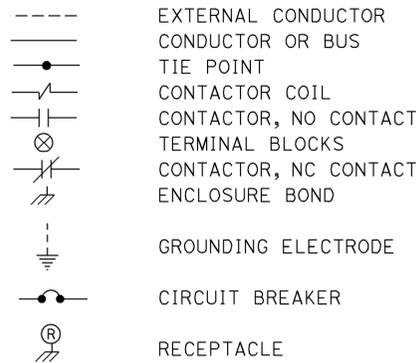
#### SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



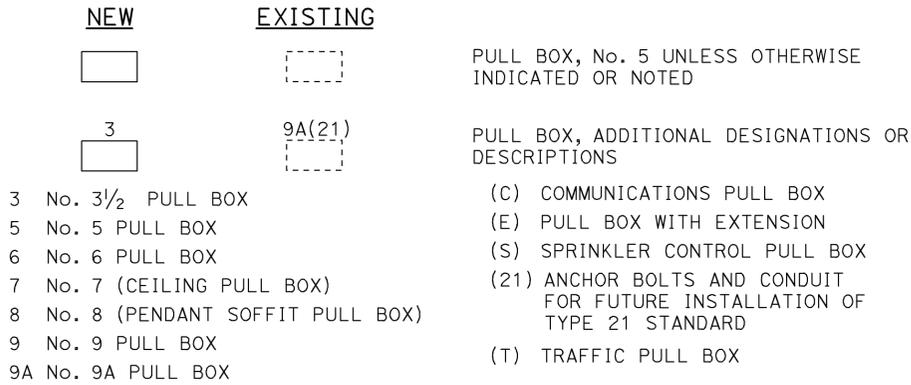
### MISCELLANEOUS EQUIPMENT



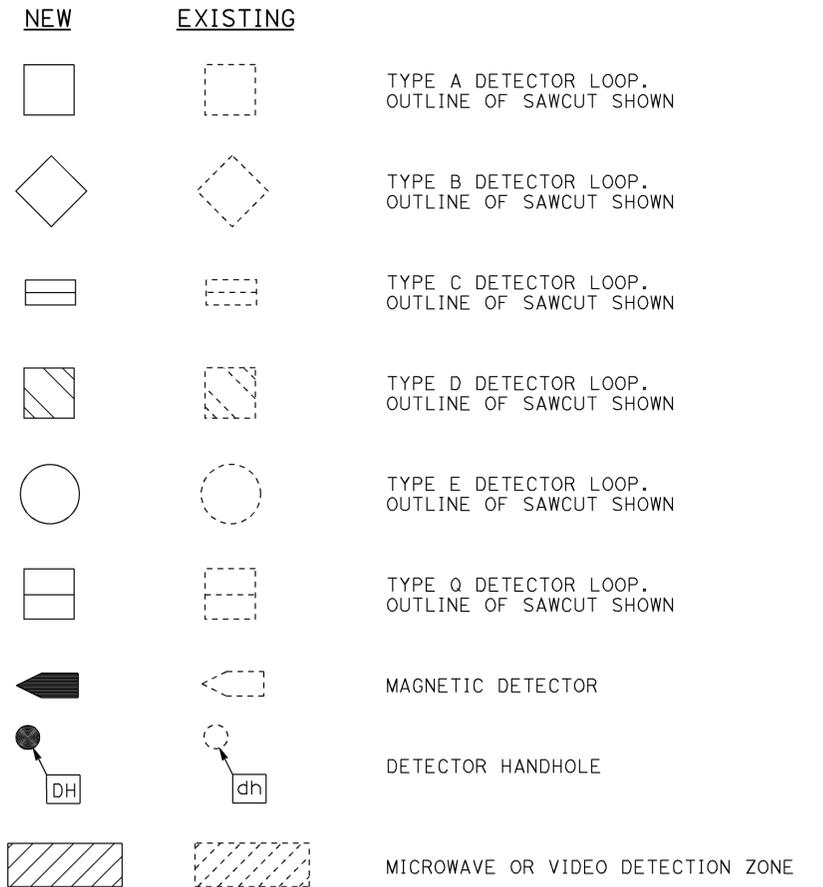
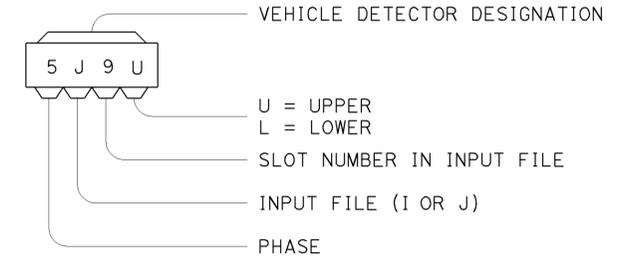
### WIRING DIAGRAM LEGEND



### PULL BOXES



### VEHICLE DETECTORS



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

## ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

NO SCALE

RSP ES-1C DATED JULY 19, 2013 SUPERSEDES 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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	5,914, 405	var	35	36

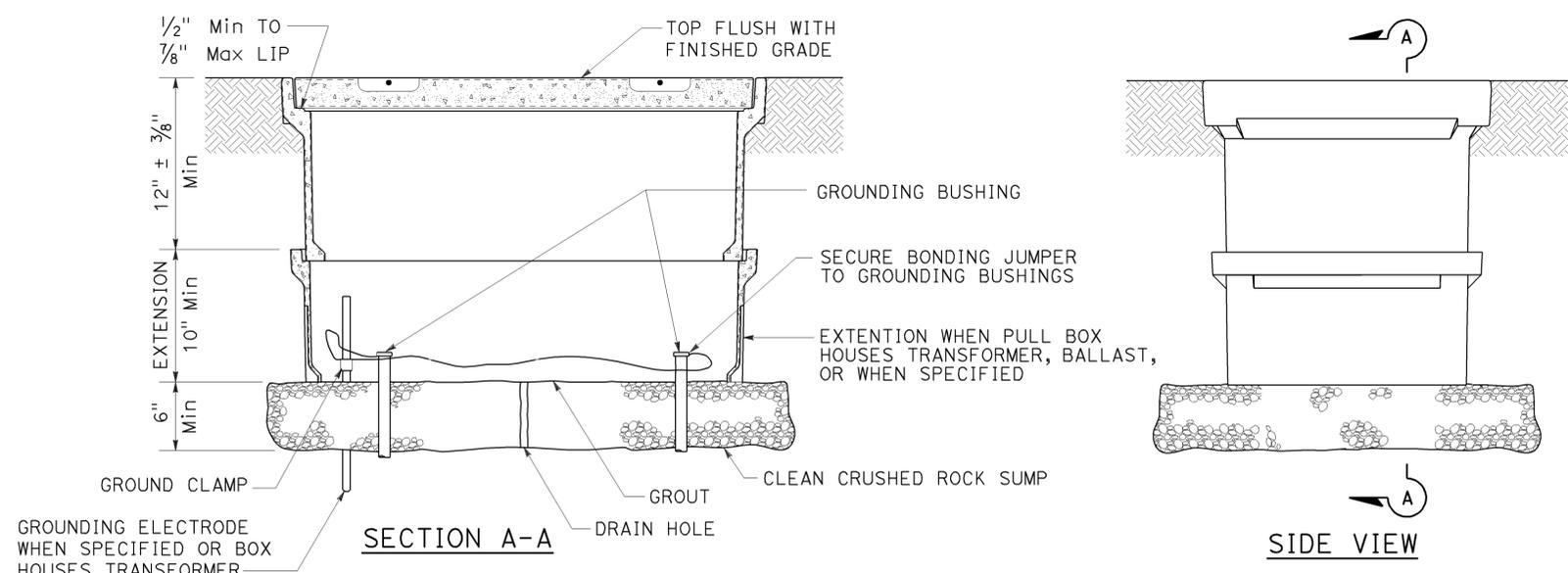
Theresa Gabriel  
REGISTERED ELECTRICAL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

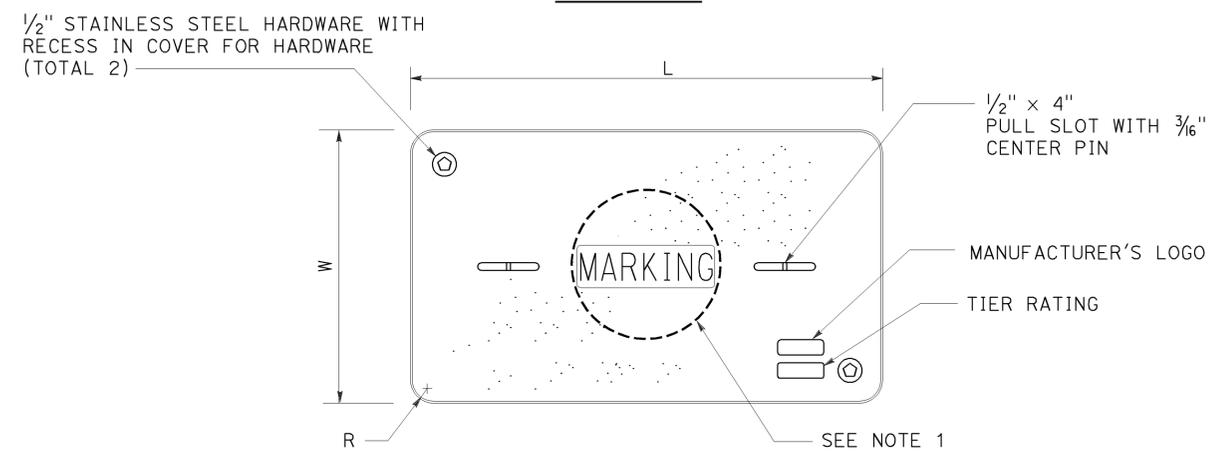
Theresa Aziz Gabriel  
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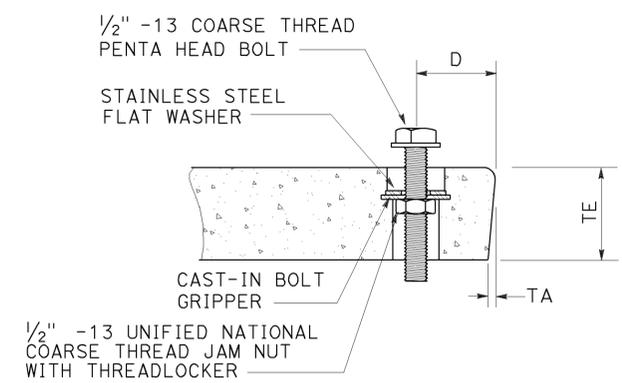
TO ACCOMPANY PLANS DATED 02-03-14



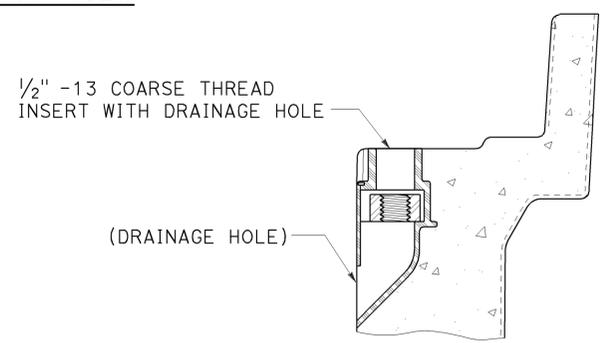
**INSTALLATION DETAILS**  
**DETAIL A**



**COVER TOP VIEW**



**TYPICAL COVER CAPTIVE BOLT**  
**OR SIMILAR**



**TYPICAL THREADED INSERT**  
**OR SIMILAR**

**NOTES:**

- Pull box covers shall be marked as follows: "SERVICE" Service circuits between service point and service disconnect; "SPRINKLER-CONTROL" sprinkler control circuits, 50 V or less; "CALTRANS" on all pull boxes, except pull boxes marked "SPRINKLER-CONTROL"; and "TELEPHONE" Telephone service;
  - No. 3½ pull box.
    - "SIGNAL" - Traffic signal circuits with or without lighting or sign lighting circuits.
    - "LIGHTING" - Lighting or sign lighting circuits where voltage is under 600 V.
  - No. 5, 6, 9 or 9A pull box.
    - "TRAFFIC SIGNAL" - Traffic signal circuits with or without lighting or sign lighting circuits.
    - "LIGHTING" - Lighting or sign lighting circuits where voltage is under 600 V.
    - "LIGHTING-HIGH VOLTAGE" - Lighting or sign lighting circuits where voltage is above 600 V.
    - "IRRIGATION" - Circuits to irrigation controller 120 V or more.
    - "RAMP METER" - Ramp meter circuits.
    - "COUNT STATION" - Count or speed monitor circuits.
    - "COMMUNICATIONS" - Communication circuits.
    - "TOS COMMUNICATIONS" - TOS communication line.
    - "TOS POWER" - TOS power.
    - "TDC POWER" - Telephone demarcation cabinet power.
    - "CCTV" - Closed circuit television circuits.
    - "TMS" - Traffic monitoring station circuits.
    - "CMS" - Changeable message sign circuits.
    - "HAR" - Highway advisory radio circuits.
    - "BOOSTER PUMP" - Booster pump circuit.
- The nominal dimensions of the opening in which the cover sets shall be the same as the cover dimensions except the length and width dimensions shall be 1/8" greater.
- Covers and boxes shall be interchangeable with California standard male and female gages. When interchanged with a standard male or female gage, the top surfaces shall be flush within 1/8". Top outside radius of covers and pull boxes shall have a 1/8" radius.
- Pull box extension may be another pull box as long as the bottom edge of the pull box can fit into the cover opening.
- All dimensions for the cover for non-traffic pull box are nominal values.

DIMENSION TABLE										
PULL BOX	PULL BOX			COVER						
	MINIMUM DEPTH BOX	MINIMUM DEPTH EXTENSION	MAXIMUM WEIGHT	L	W	R	TE	TA	D	MAXIMUM WEIGHT
No. 3½	12"	N/A	40 lb	1' - 3 3/8"	10 1/8"	1 3/8"	2"	1/8"	1 3/4"	30 lb
No. 5	12"	10"	55 lb	1' - 11 1/4"	1' - 1 3/4"	1 3/8"	2"	1/8"	1 3/4"	60 lb
No. 6	12"	10"	70 lb	2' - 6 1/2"	1' - 5 1/2"	1 3/8"	2"	1/8"	2"	85 lb

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS**  
**(NON-TRAFFIC PULL BOX)**  
NO SCALE

RSP ES-8A DATED JULY 19, 2013 SUPERSEDES RSP ES-8A DATED JANUARY 20, 2012 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP ES-8A**

2010 REVISED STANDARD PLAN RSP ES-8A

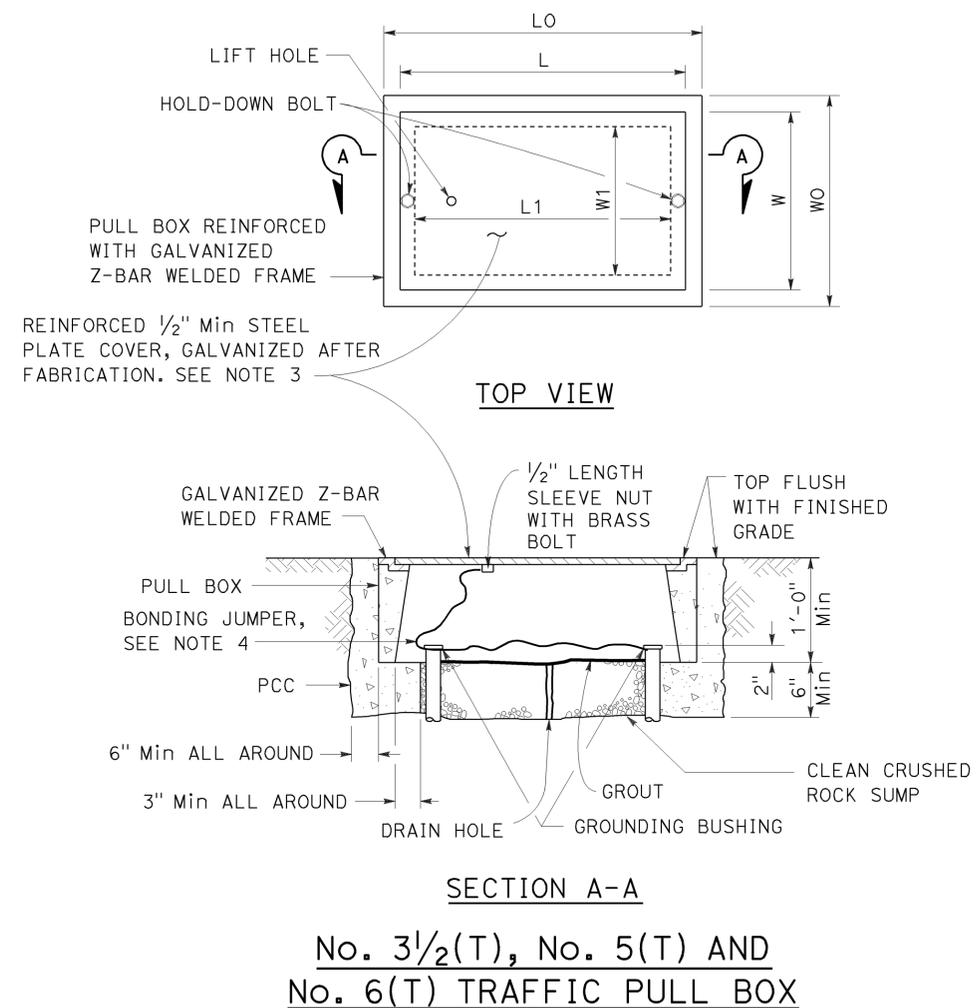
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	5,914, 405	var	36	36

Theresa Gabriel  
 REGISTERED ELECTRICAL ENGINEER  
 July 19, 2013  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 Theresa Aziz Gabriel  
 No. E15129  
 Exp. 6-30-14  
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 STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 02-03-14



**NOTES:**

- Traffic pull box shall be provided with steel cover and special concrete footing. Steel cover shall have embossed non-skid pattern.
- Steel reinforcing shall be as regularly used in the standard products of the respective manufacturer.
- Pull box covers shall be marked as follows: "SERVICE" Service circuits between service point and service disconnect; "SPRINKLER-CONTROL" Sprinkler control circuits, 50 V or less; "CALTRANS" On all pull boxes, except pull boxes marked "SPRINKLER-CONTROL"; and "TELEPHONE" Telephone service.
  - No. 3 1/2(T) pull box.
    - "SIGNAL" - Traffic signal circuits with or without lighting or sign lighting circuits.
    - "LIGHTING" - Lighting or sign lighting circuits where voltage is under 600 V.
  - No. 5(T) or 6(T) pull box.
    - "TRAFFIC SIGNAL" - Traffic signal circuits with or without lighting or sign lighting circuits.
    - "LIGHTING" - Lighting or sign lighting circuits where voltage is under 600 V.
    - "LIGHTING-HIGH VOLTAGE" - Lighting or sign lighting circuits where voltage is above 600 V.
    - "IRRIGATION" - Circuits to irrigation controller 120 V or more.
    - "RAMP METER" - Ramp meter circuits.
    - "COUNT STATION" - Count or speed monitor circuits.
    - "COMMUNICATION" - Communication circuits.
    - "TOS COMMUNICATIONS" - TOS communications line.
    - "TOS POWER" - TOS power.
    - "TDC POWER" - Telephone demarcation cabinet power.
    - "CCTV" - Closed circuit television circuits.
    - "TMS" - Traffic monitoring station circuits.
    - "CMS" - Changeable message sign circuits.
    - "HAR" - Highway advisory radio circuits.
    - "BOOSTER PUMP" - Booster pump circuit.
- Bonding jumper for metal covers shall be 3' long, minimum.
- The nominal dimensions of the opening in which the cover sets shall be the same as the cover dimensions except the length and width dimensions shall be 1/8" greater.
- Covers and boxes shall be interchangeable with California standard male and female gages. When interchanged with a standard male or female gage, the top surfaces shall be flush within 1/8".

PULL BOX	PULL BOX						COVER				
	MINIMUM * THICKNESS	MINIMUM DEPTH BOX AND EXTENSION	W0	L0	L1	W1	L **	W **	R	EDGE THICKNESS	EDGE TAPER
No. 3 1/2(T)	1 1/2"	1'-0"	1'-5"± 1"	1'-8 3/8"±	1'-2 1/2"±	10 5/8"± 1"	1'-8"±	1'-1 3/4"±	0"	1/2"	NONE
No. 5(T)	1 3/4"	1'-0"	1'-11 1/2"± 1"	2'-5 1/2"±	1'-7"±	1'-1"± 1"	2'-3"±	1'-4"±	0"	1/2"	NONE
No. 6(T)	2"	1'-0"	2'-6"± 1"	2'-11 1/2"±	1'-11 1/2"±	1'-5"± 1"	2'-9"±	1'-8"±	0"	1/2"	NONE

\* EXCLUDING CONDUIT WEB \*\* TOP DIMENSION

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
 (TRAFFIC PULL BOX)**  
 NO SCALE

RSP ES-8B DATED JULY 19, 2013 SUPERSEDES RSP ES-8B DATED JANUARY 20, 2012 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP ES-8B**

2010 REVISED STANDARD PLAN RSP ES-8B