

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

FUNCTIONAL SUPERVISOR: LAI HONG CHIU  
 CHECKED BY: ELAINE WONG  
 DESIGNED BY: ALEX KHOO  
 REVISED BY: AK  
 DATE REVISED: 7/15/10

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

**ABBREVIATION:**  
 CTID CALTRANS IDENTIFICATION

- PROJECT NOTES:**
- INSTALL TYPE III-AF SERVICE EQUIPMENT ENCLOSURE. PROVIDE EQUIPMENT ITEMS ① THROUGH ⑨, ⑪ THROUGH ⑬, ⑯ THROUGH ⑲, AND ⑳ AS SHOWN ON E-4. ITEM ⑳ SHALL BE MARKED "FLASHING BEACON EB R+e 12" AND ITEM ㉔ SHALL BE MARKED "FLASHING BEACON WB R+e 12". SEE FOUNDATION DETAILS ON ES-2D. ITEMS NOT IN USE SHALL BE MARKED SPARE FOR FUTURE USE.
  - INSTALL TYPE 1-B STANDARD WITH PEU, SEE DETAILS ON ES-7N.

- PROJECT NOTES: (CONTINUED)**
- INSTALL No. 5 PULL BOX WITH COVER MARKED "CALTRANS/PG&E". **SC** BY PG&E. THIS IS A PG&E TERMINATION POINT.
  - INSTALL PULL BOX PER SERVICE UTILITY REQUIREMENTS. COVER SHALL BE MARKED "PG&E".
  - INSTALL 1½"C, 3#14 (120 V PEU).
  - INSTALL TYPE H SERVICE, CONDUIT BEND RADIUS SHALL MEET SERVICE UTILITY REQUIREMENT.
  - INSTALL 2"C, 3#2 (120 / 240 V SERVICE).
  - INSTALL 2"C, 2#6 (120 V SERVICE TO CONTROLLER), 2#6 (120 V FLASHING BEACON EB R+e 12), 2#6 (120 V FLASHING BEACON WB R+e 12), 2#8 (240 V LIGHTING).
  - INSTALL 2"C, 2#6 (120 V SERVICE TO CONTROLLER), 2#6 (120 V FLASHING BEACON EB R+e 12), 2#6 (120 V FLASHING BEACON WB R+e 12), 2#8 (240 V LIGHTING), 3#14 (120 V PEU).
  - INSTALL 3"C, MT, DEPTH TO MEET PG&E REQUIREMENTS.
  - INSTALL 2"C, MT.
  - EXISTING PG&E LIGHT TO BE REMOVED BY OTHERS WHEN INTERSECTION LIGHTING IS OPERATIONAL.
  - INSTALL 2"C, 2#6 (120 V FLASHING BEACON EB R+e 12).
  - INSTALL 3' x 6' LONG TYPE C LOOP, SEE DETAIL A ON E-3.
  - INSTALL 1½"C, 2#6 (120 V FLASHING BEACON WB R+e 12), 1 DLC.
  - INSTALL 2"C, 2#6 (120 V FLASHING BEACON WB R+e 12), ON EXISTING WHITMAN CREEK CULVERT WALL.

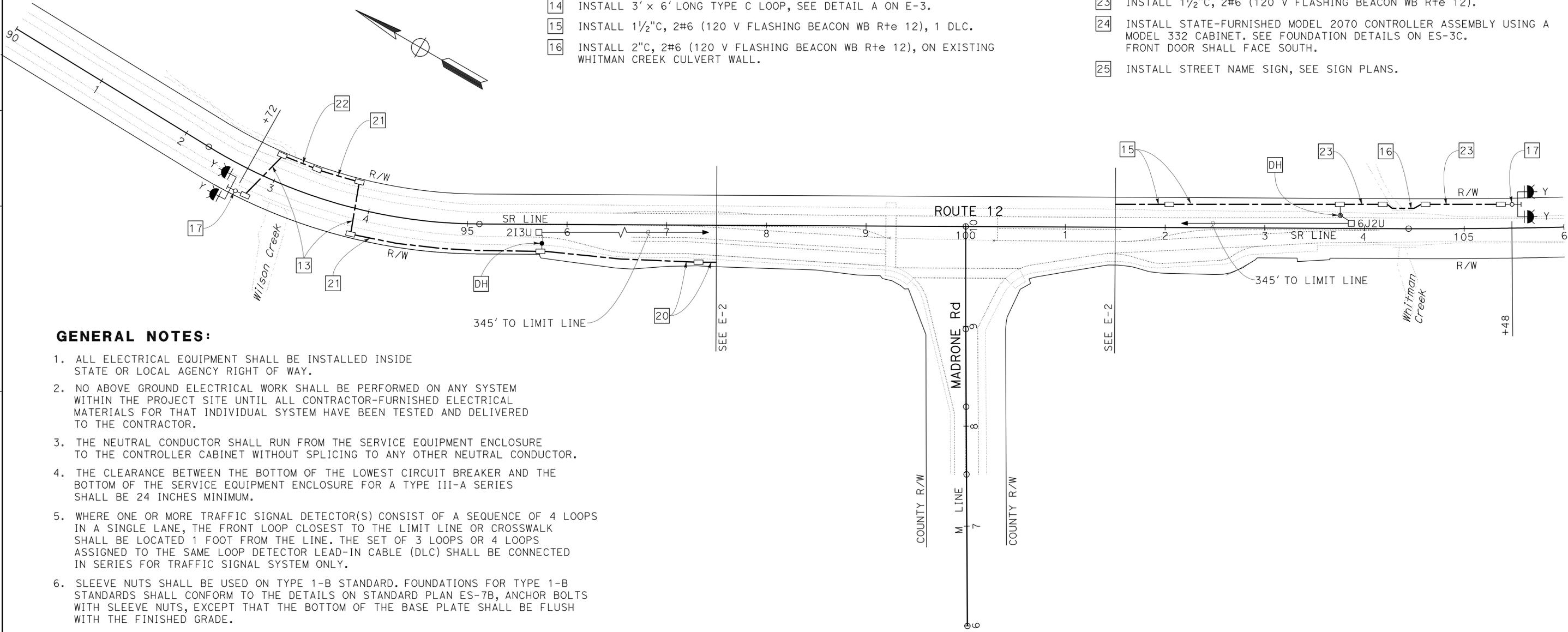
- PROJECT NOTES: (CONTINUED)**
- INSTALL TYPE 15-FBS STANDARD, ADVANCED FLASHING BEACON WITH SLIP BASE INSTALLATION DETAIL ON ES-7J.
  - INSTALL TYPE I PEDESTRIAN BARRICADE, SEE DETAIL ON ES-7P.
  - INSTALL 3½"C, 4 DLC, 2#6 (120 V FLASHING BEACON EB R+e 12).
  - INSTALL 1½"C, 1 DLC, 2#6 (120 V FLASHING BEACON EB R+e 12).
  - INSTALL 1½"C, 2#6 (120 V FLASHING BEACON EB R+e 12).
  - INSTALL 2"C, 2#6 (120 V FLASHING BEACON EB R+e 12), ON EXISTING WILSON CREEK CULVERT WALL.
  - INSTALL 1½"C, 2#6 (120 V FLASHING BEACON WB R+e 12).
  - INSTALL STATE-FURNISHED MODEL 2070 CONTROLLER ASSEMBLY USING A MODEL 332 CABINET. SEE FOUNDATION DETAILS ON ES-3C. FRONT DOOR SHALL FACE SOUTH.
  - INSTALL STREET NAME SIGN, SEE SIGN PLANS.

- GENERAL NOTES:**
- ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED INSIDE STATE OR LOCAL AGENCY RIGHT OF WAY.
  - NO ABOVE GROUND ELECTRICAL WORK SHALL BE PERFORMED ON ANY SYSTEM WITHIN THE PROJECT SITE UNTIL ALL CONTRACTOR-FURNISHED ELECTRICAL MATERIALS FOR THAT INDIVIDUAL SYSTEM HAVE BEEN TESTED AND DELIVERED TO THE CONTRACTOR.
  - THE NEUTRAL CONDUCTOR SHALL RUN FROM THE SERVICE EQUIPMENT ENCLOSURE TO THE CONTROLLER CABINET WITHOUT SPLICING TO ANY OTHER NEUTRAL CONDUCTOR.
  - THE CLEARANCE BETWEEN THE BOTTOM OF THE LOWEST CIRCUIT BREAKER AND THE BOTTOM OF THE SERVICE EQUIPMENT ENCLOSURE FOR A TYPE III-A SERIES SHALL BE 24 INCHES MINIMUM.
  - WHERE ONE OR MORE TRAFFIC SIGNAL DETECTOR(S) CONSIST OF A SEQUENCE OF 4 LOOPS IN A SINGLE LANE, THE FRONT LOOP CLOSEST TO THE LIMIT LINE OR CROSSWALK SHALL BE LOCATED 1 FOOT FROM THE LINE. THE SET OF 3 LOOPS OR 4 LOOPS ASSIGNED TO THE SAME LOOP DETECTOR LEAD-IN CABLE (DLC) SHALL BE CONNECTED IN SERIES FOR TRAFFIC SIGNAL SYSTEM ONLY.
  - SLEEVE NUTS SHALL BE USED ON TYPE 1-B STANDARD. FOUNDATIONS FOR TYPE 1-B STANDARDS SHALL CONFORM TO THE DETAILS ON STANDARD PLAN ES-7B, ANCHOR BOLTS WITH SLEEVE NUTS, EXCEPT THAT THE BOTTOM OF THE BASE PLATE SHALL BE FLUSH WITH THE FINISHED GRADE.
  - PEDESTRIAN SIGNAL FACE MODULES SHALL BE ACCESSIBLE PEDESTRIAN SIGNAL (APS) AND LED COUNTDOWN TYPE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	12	32.7/33.0	40	73

10-11-11  
 REGISTERED ELECTRICAL ENGINEER DATE  
 Elaine T. Wong  
 No. 13753  
 Exp. 6-30-13  
 ELECT  
 6-18-12  
 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.



**REVISED PER ADDENDUM No. 2 DATED OCTOBER 17, 2012**

APPROVED FOR ELECTRICAL WORK ONLY

**SIGNAL AND LIGHTING**

SCALE: 1" = 50'

**E-1**

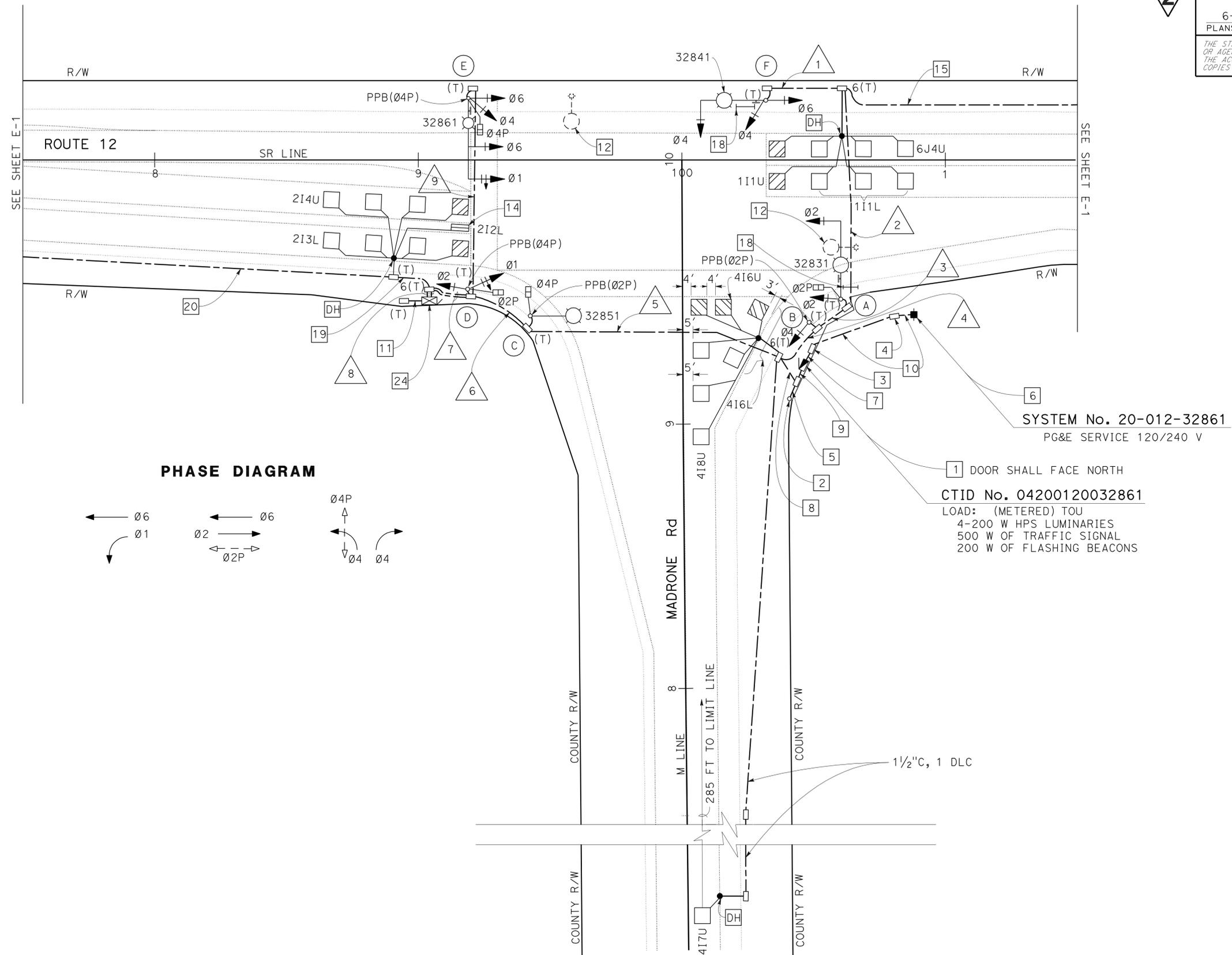
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	12	32.7/33.0	41	73

10-11-11  
REGISTERED ELECTRICAL ENGINEER DATE  
6-18-12  
PLANS APPROVAL DATE

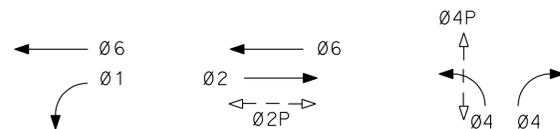
Elaine T. Wong  
No. 13753  
Exp. 6-30-13  
ELECT

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.

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



**PHASE DIAGRAM**



SYSTEM No. 20-012-32861  
PG&E SERVICE 120/240 V

1 DOOR SHALL FACE NORTH  
CTID No. 04200120032861  
LOAD: (METERED) TOU  
4-200 W HPS LUMINARIES  
500 W OF TRAFFIC SIGNAL  
200 W OF FLASHING BEACONS

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	REVISOR	DATE
<b>Caltrans</b>	LAI HONG CHIU	ALEX KHOO	7/15/10
<b>ELECTRICAL</b>		ELAINE WONG	

**2** REVISED PER ADDENDUM No. 2 DATED OCTOBER 17, 2012

APPROVED FOR ELECTRICAL WORK ONLY

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET E-1

**SIGNAL AND LIGHTING**

SCALE: 1" = 20'

**E-2**

# CONDUCTOR SCHEDULE

CONDUCTOR DESIGNATION	NUMBER OF CONDUCTORS											
	RUN NUMBER											
	1	2	3	4	5	6	7	8	9	10	11	12
<b>No. 14 CONDUCTORS</b>												
Ø1							3	3	3			
Ø2			3	3	3	3	6	6				
Ø4	3	3	3	3	3	3	6	6	3			
Ø6	3	3	3	3	3	3	6	6	3			
<b>No. 6 CONDUCTORS</b>												
Ø2P			2	2	2	2	2	2				
Ø4P						2	4	4	2			
PPB(Ø2P)				1	1	1	1	1				
PPB(Ø4P)							1	1	1			
PPB NEUTRAL				1	1	1	1	1	1			
SPARES	3	3	3	3	3	3	6	6	3			
TOTAL No. 14	9	9	14	16	16	18	36	36	16			
<b>No. 8 CONDUCTORS</b>												
SERVICE TO CONTROLLER					2	2	2	2				
SIGNAL NEUTRAL	1	1	1	1	1	1	2	2	1			
120 V FLASHING BEACON EB Rte 12					2	2	2					
120 V FLASHING BEACON WB Rte 12		2	2	2								
TOTAL No. 6	1	3	3	3	5	5	6	4	1			
<b>No. 8 CONDUCTORS</b>												
240 V LIGHTING	2	2	2	2	2	2			2			
TOTAL No. 8	2	2	2	2	2	2			2			
<b>DETECTOR CABLES</b>												
111L		1	1	1	1	1	1	1				
111U		1	1	1	1	1	1	1				
212L								1				
213L								1				
213U								1				
214U								1				
416L					1	1	1	1				
416U					1	1	1	1				
417U					1	1	1	1				
418U					1	1	1	1				
6J2U		1	1	1	1	1	1	1				
6J4U		1	1	1	1	1	1	1				
TOTAL CABLES	4	4	4	8	8	8	12					
<b>CONDUIT SIZE (INCHES)</b>												
	3/2	3/2	3/2	3/2	3/2	3/2	3/2	3/2				

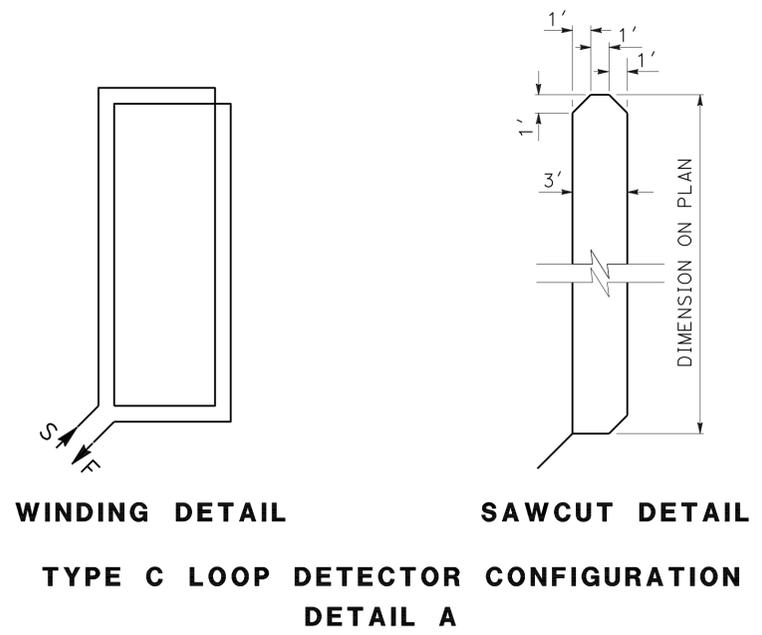
TWO-3/2"

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Son	12	32.7/33.0	42	73

Elaine Wong 10-11-11  
 REGISTERED ELECTRICAL ENGINEER DATE  
 6-18-12  
 PLANS APPROVAL DATE

Elaine T. Wong  
 No. 13753  
 Exp. 6-30-13  
 ELECT

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.



**WINDING DETAIL**                      **SAWCUT DETAIL**

**TYPE C LOOP DETECTOR CONFIGURATION DETAIL A**

LOCATION	STANDARD			VEH. SIGNAL MOUNTING		PED SIGNAL MOUNTING	PPB Ø	HPS LUMINAIRE (WATTS)	SPECIAL REQUIREMENT *
	TYPE	SMA (FEET)	LMA (FEET)	MAST ARM	POLE				
(A)	19-4-100	30	15	MAS	SV-1-T	SP-1-T		200	[25]
(B)	1-B				TV-1-T		2P		
(C)	15TS		15			SP-1-T	2P	200	INSTALL FOUNDATION PER ES-7A EXCEPT 3 FEET DIAMETER.
(D)	1-B				TV-2-T	SP-1-T	4P		
(E)	19-4-100	30	15	MAS MAS	SV-2-TB	SP-1-T	4P	200	[25]
(F)	19-4-100	25	15	MAS	SV-2-TB			200	[25]

\* OTHER REQUIREMENTS ARE COVERED BY NOTES, LEGEND, SPECIAL PROVISIONS, AND STANDARD SPECIFICATIONS. FOR TYPE OF STANDARD, VEHICLE AND PEDESTRIAN SIGNAL MOUNTING, SEE STANDARD PLANS.

**2** REVISED PER ADDENDUM No. 2 DATED OCTOBER 17, 2012

**SIGNAL AND LIGHTING**  
**(CONDUCTOR, POLE AND EQUIPMENT SCHEDULES)**

**E-3**