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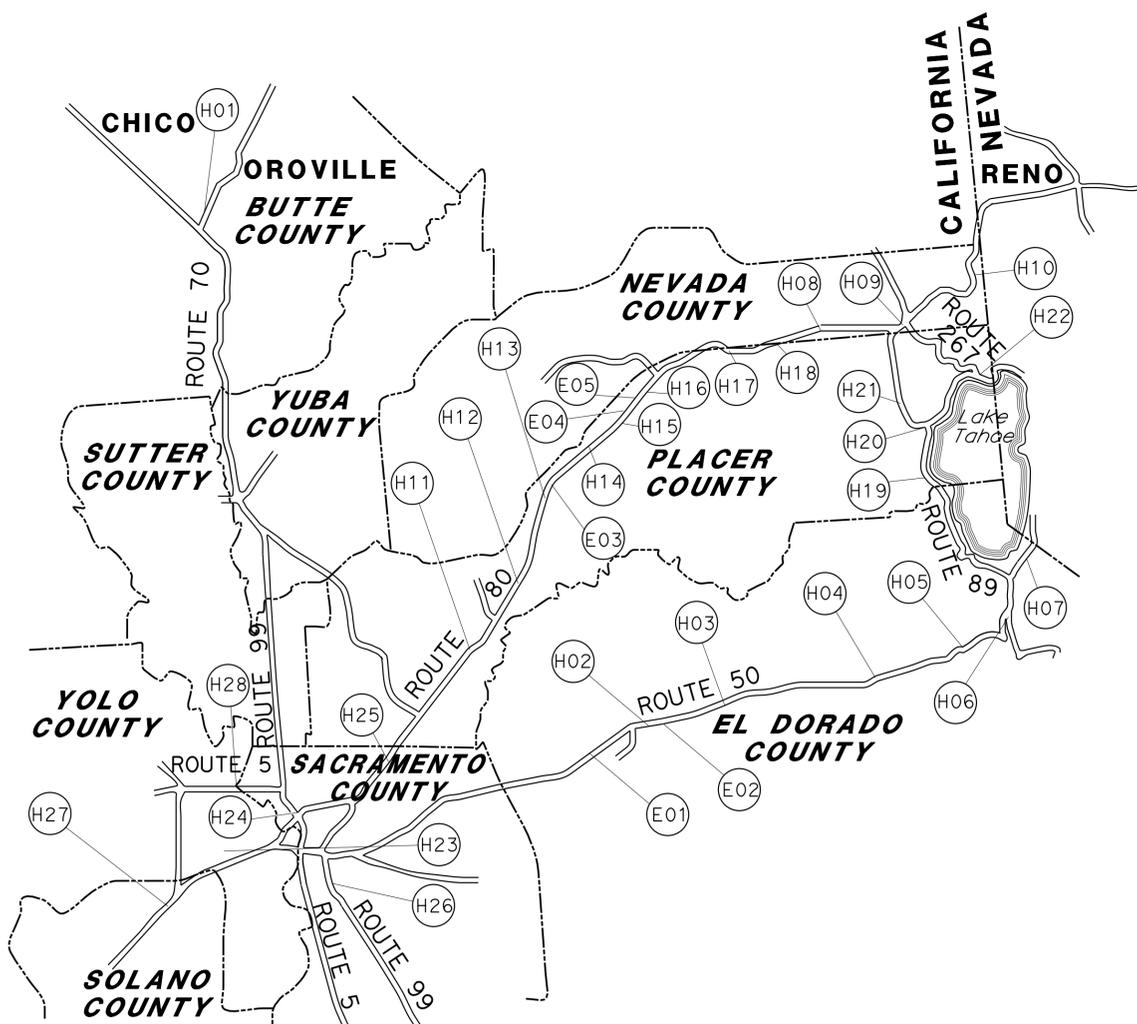
THE STANDARD PLANS LIST APPLICABLE TO THIS CONTRACT IS INCLUDED IN THE NOTICE TO BIDDERS AND SPECIAL PROVISIONS BOOK.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
PROJECT PLANS FOR CONSTRUCTION ON STATE HIGHWAY
IN BUTTE, EL DORADO, NEVADA, PLACER, SACRAMENTO, SOLANO, AND YOLO COUNTIES AT VARIOUS LOCATIONS

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010

ACST-000C(440)

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But,Ed,Nev,	5, 50, 70,	Var	1	48
04	Pla,Sac,etc.	80,89,etc.			

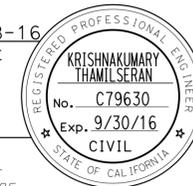


NOTE:
 THE TABLE OF LOCATIONS OF CONSTRUCTION IS SHOWN ON THE LOCATIONS OF CONSTRUCTION SHEET.

NO SCALE

PROJECT MANAGER
 JONATHAN PRAY
 DESIGN MANAGER
 KEN KEATON

T. Krishnakumary 4-18-16
 PROJECT ENGINEER DATE
 REGISTERED CIVIL ENGINEER



April 18, 2016
 PLANS APPROVAL DATE

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

CONTRACT No.	03-3F8204
PROJECT ID	0313000196

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

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN

REVISOR BY
 DATE

KRISHNA THAMILSERAN
 GARY DUGHY

CALCULATED-
 DESIGNED BY
 CHECKED BY

FUNCTIONAL SUPERVISOR
 KEN KEATON

**LOCATIONS OF CONSTRUCTION
 HIGHWAY ADVISORY RADIO (HAR)**

Loc No.	COUNTY	ROUTE	PM	DESCRIPTION	DIRECTION
H01	Bu+	70	21.9	70/191/149 Jct, OROVILLE	SOUTHBOUND
H02	ED	50	18.9	PLACEVILLE MAINTENANCE STATION	EASTBOUND
H03	ED	50	29.0	RIDGEWAY DRIVE, CAMINO	EASTBOUND
H04	ED	50	48.6	KYBURZ MAINTENANCE STATION	WESTBOUND
H05	ED	50	59.4	TWIN BRIDGES	EASTBOUND
H06	ED	50	70.6	Rte 89 So JUNCTION, MEYERS	WESTBOUND
H07	ED	50	78.0	RUFUS ALLEN AT PICKETT, S LAKE TAHOE	WESTBOUND
H08	Nev	80	5.6	DONNER SUMMIT REST STOP	WESTBOUND
H09	Nev	80	15.5	TRUCKEE MAINTENANCE STATION	EASTBOUND
H10	Nev	80	27.4	FLORISTON	EASTBOUND
H11	Pla	80	13.8	NEWCASTLE ROAD, NEWCASTLE	EASTBOUND
H12	Pla	80	23.4	CLIPPER GAP	WESTBOUND
H13	Pla	80	33.6	OLD COLFAX MAINTENANCE STATION	WESTBOUND
H14	Pla	80	41.8	GOLD RUN REST AREA	EASTBOUND
H15	Pla	80	46.9	BAXTER	EASTBOUND
H16	Pla	80	50.8	WHITMORE MAINTENANCE STATION	WESTBOUND
H17	Pla	80	63.5	CISCO OVERCROSSING	EASTBOUND
H18	Pla	80	69.6	KINGVALE MAINTENANCE STATION	WESTBOUND
H19	Pla	89	2.3	HOMWOOD SKI AT FAWN St/ W LAKE Blvd	SOUTHBOUND
H20	Pla	89	8.9	TAHOE CITY MAINTENANCE STATION	NORTHBOUND
H21	Pla	89	13.7	SQUAW VALLEY ROAD	NORTHBOUND
H22	Pla	267	9.9	KINGS BEACH	SOUTHBOUND
H23	Sac	50	7.8	BRADSHAW ROAD	EASTBOUND
H24	Sac	80	M2.5	80/5 JUNCTION	EASTBOUND
H25	Sac	80	15.9	ANTELOPE TRUCK SCALES	EASTBOUND
H26	Sac	99	20.9	47th AVENUE	SOUTHBOUND
H27	Soi	80	39.8	PEDRICK ROAD	EASTBOUND
H28	Yol	5	0.6	SACRAMENTO RIVER	EASTBOUND

**LOCATIONS OF CONSTRUCTION
 EXTINGUISHABLE MESSAGE SIGN (EMS)**

Loc No.	COUNTY	ROUTE	PM	DESCRIPTION	DIRECTION
E01	ED	50	16.0	FORNI Rd	EASTBOUND
E02	ED	50	21.1	NEWTOWN Rd	WESTBOUND
E03	Pla	80	33.8	Jct 174/80 SEPARATION	WESTBOUND
E04	Pla	80	47.5	EAST OF BAXTER Rd	WESTBOUND
E05	Pla	80	49.0	DRUM FOREBAY	EASTBOUND

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03 04	Bu+,Ed,Nev, Pla,Sac,etc.	5, 50, 70, 80, 89, etc.	Var	2	48

T. Krishnakumary 4-18-16
 REGISTERED CIVIL ENGINEER DATE

4-18-16
 PLANS APPROVAL DATE

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

REGISTERED PROFESSIONAL ENGINEER
 KRISHNAKUMARY THAMILSERAN
 No. C79630
 Exp. 9/30/16
 CIVIL
 STATE OF CALIFORNIA

LOCATIONS OF CONSTRUCTION

LC-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But,Ed,Nev,	5, 50, 70,			
04	Pla,Sac,etc,	80, 89, etc.	Var	3	48

T. Krishnakumar 4-18-16
 REGISTERED CIVIL ENGINEER DATE
 4-18-16
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 KRISHNAKUMAR THAMILSERAN
 No. C79630
 Exp. 9/30/16
 CIVIL
 STATE OF CALIFORNIA

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

NOTES:

- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- LOCATION OF CONSTRUCTION AREA SIGN IS APPROXIMATE. THE EXACT SIGN LOCATION TO BE DETERMINED BY THE ENGINEER.
- UTILITY OWNERSHIP:
 ELECTRIC - PACIFIC GAS & ELECTRIC (PG&E)
 FIBER OPTIC - AMERICAN TELEPHONE & TELEGRAPH (AT&T)
 TELEPHONE - AMERICAN TELEPHONE & TELEGRAPH (AT&T)
 WATER - EL DORADO IRRIGATION DISTRICT (EID)

LEGEND:

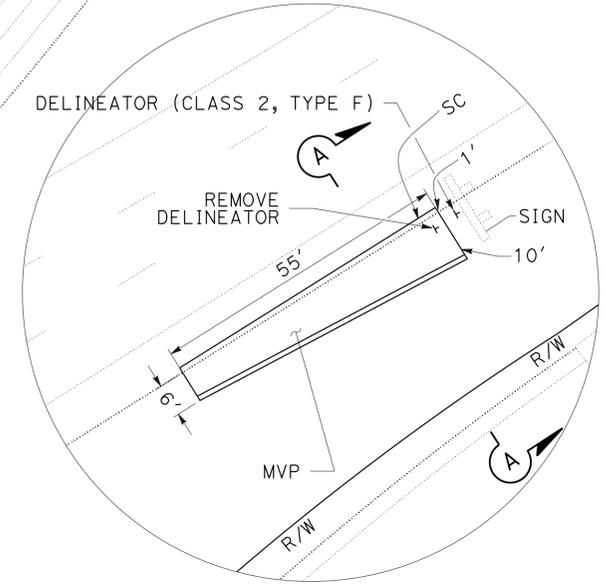
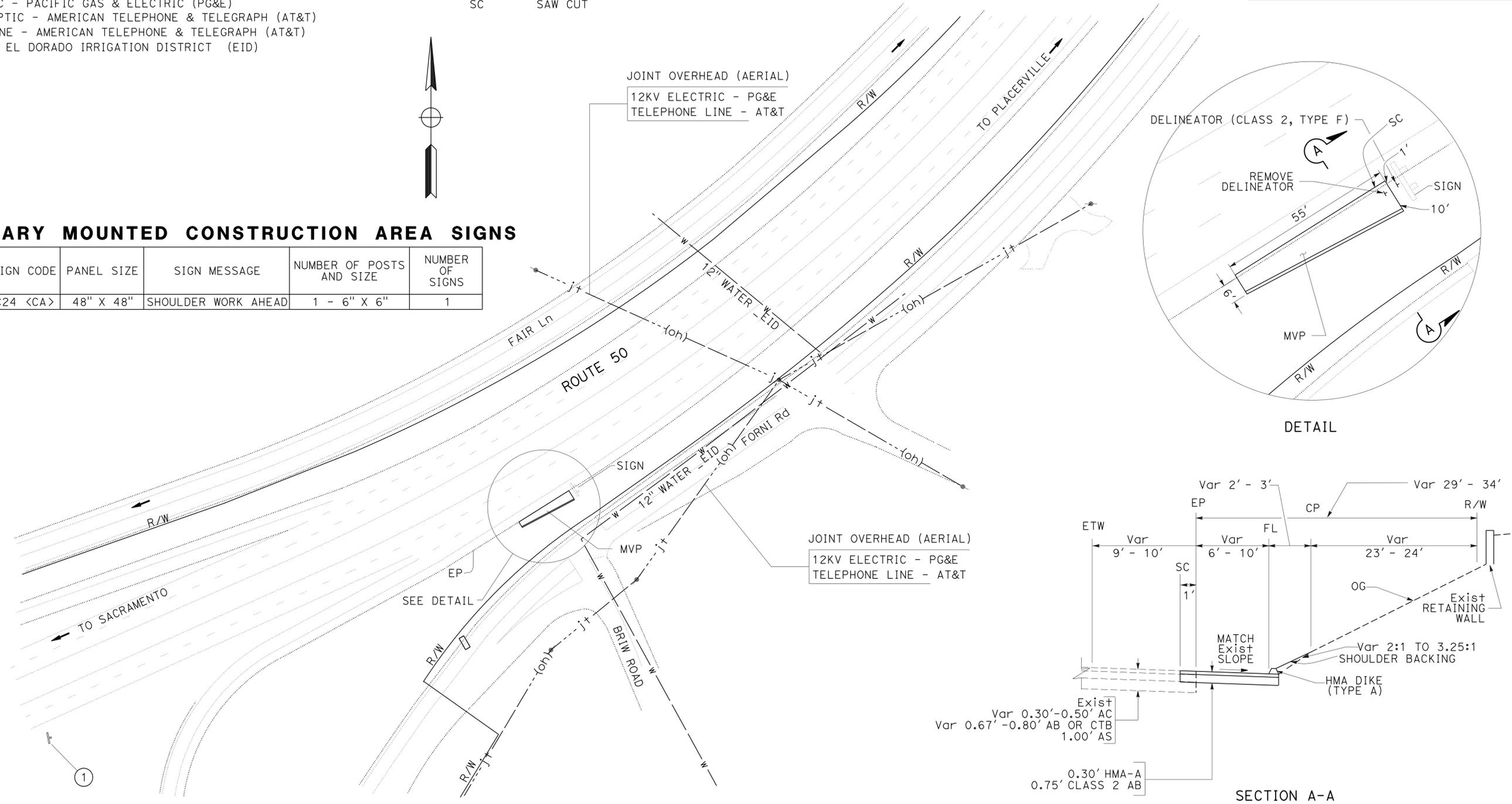
- JOINT POLE
- j+--- JOINT OVERHEAD (AERIAL) - EXISTING
- <C4> CALIFORNIA SIGN CODE

ABBREVIATIONS:

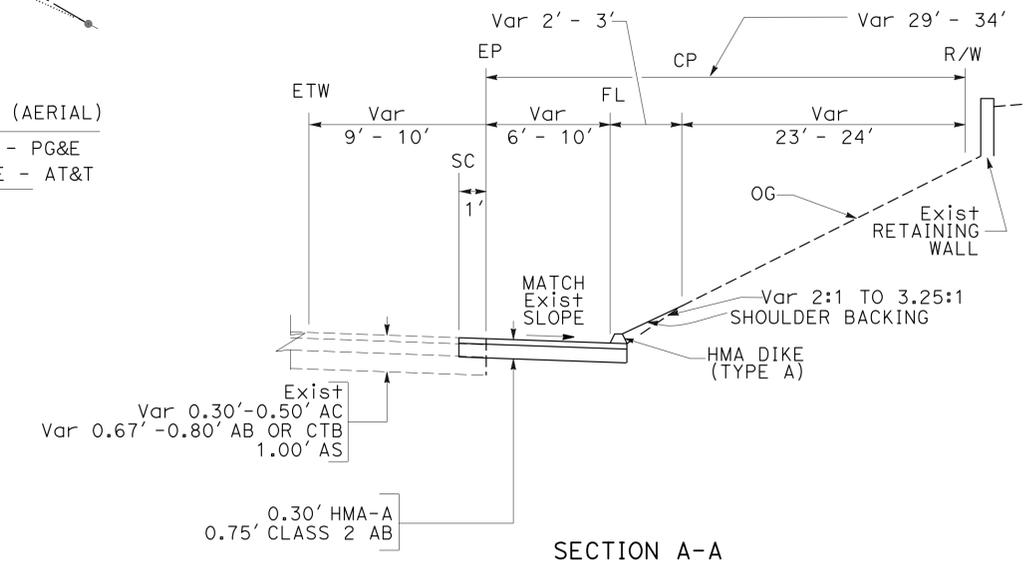
- HMA-A HOT MIX ASPHALT (TYPE A)
- SC SAW CUT

STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN No.	SIGN CODE	PANEL SIZE	SIGN MESSAGE	NUMBER OF POSTS AND SIZE	NUMBER OF SIGNS
(X) 1	C24 <CA>	48" X 48"	SHOULDER WORK AHEAD	1 - 6" X 6"	1



DETAIL



LOCATION No. E01 FORNI Rd (EB)

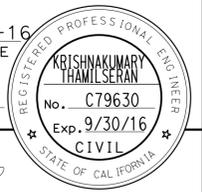
LAYOUT

SCALE: 1" = 50'

L-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN
 FUNCTIONAL SUPERVISOR: KEN KEATON
 CALCULATED/DESIGNED BY: GARY DUGH
 CHECKED BY: KRISHNA THAMILSERAN
 REVISED BY: DATE
 REVISIONS:

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03 04	But,Ed,Nev, Pla,Sac,etc	5, 50, 70, 80, 89, etc.	Var	4	48
T. Krishnakumar			4-18-16	REGISTERED CIVIL ENGINEER DATE	
4-18-16			PLANS APPROVAL DATE		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					



NOTES:

- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- LOCATION OF CONSTRUCTION AREA SIGN IS APPROXIMATE. THE EXACT SIGN LOCATION TO BE DETERMINED BY THE ENGINEER.

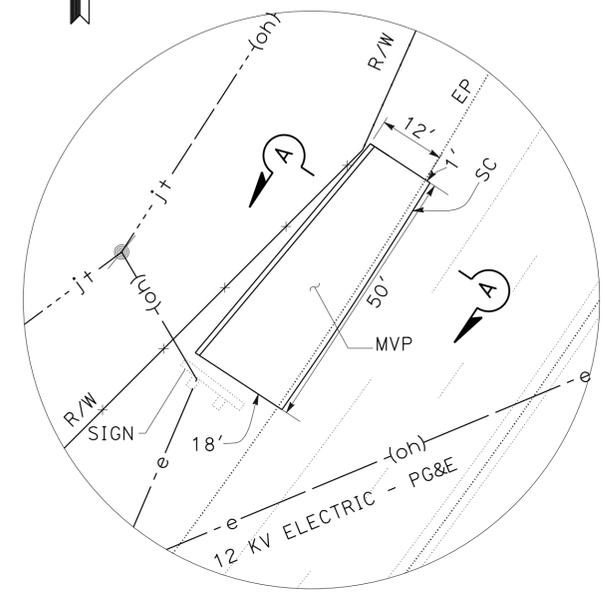
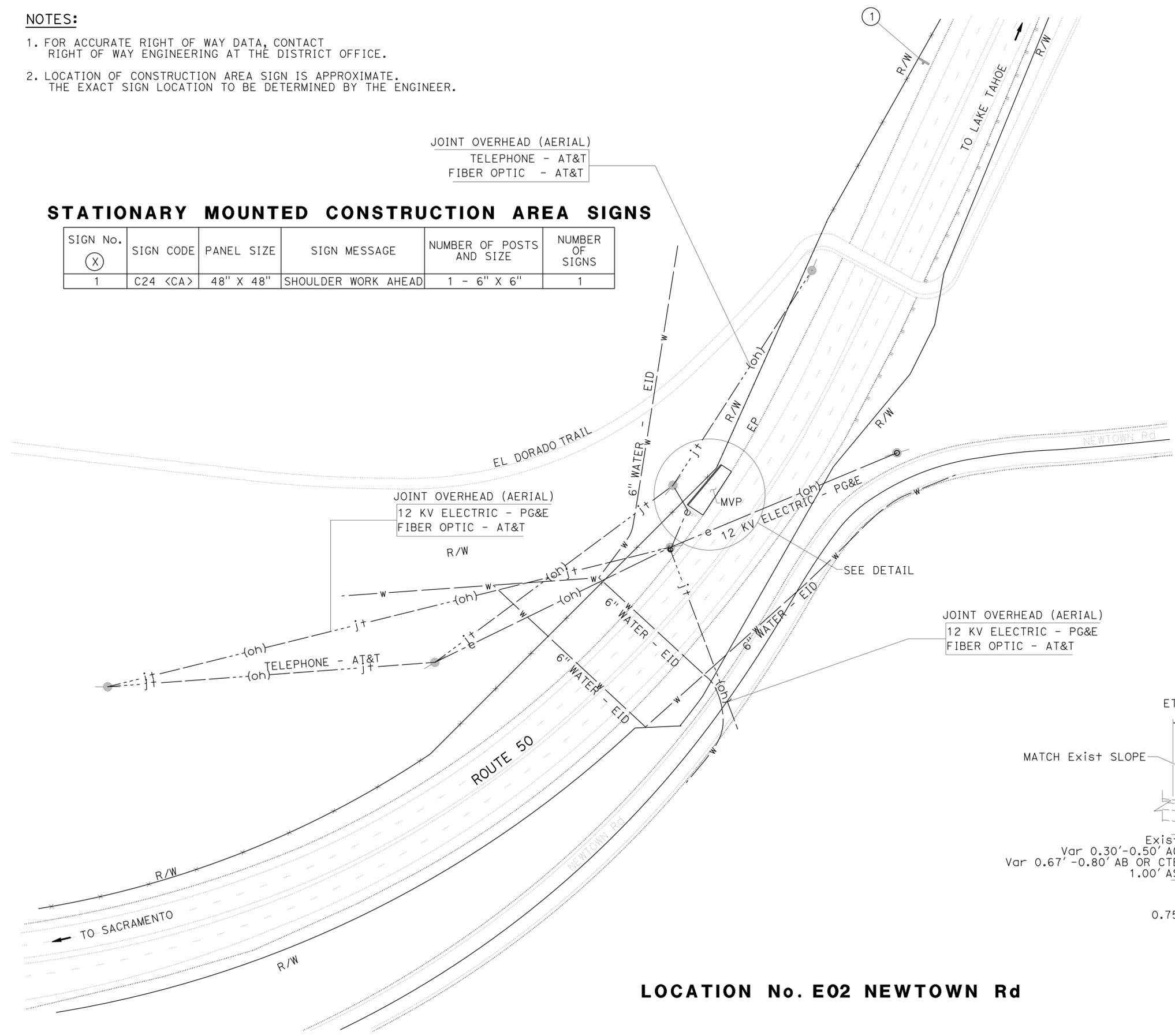
STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN No.	SIGN CODE	PANEL SIZE	SIGN MESSAGE	NUMBER OF POSTS AND SIZE	NUMBER OF SIGNS
(X) 1	C24 <CA>	48" X 48"	SHOULDER WORK AHEAD	1 - 6" X 6"	1

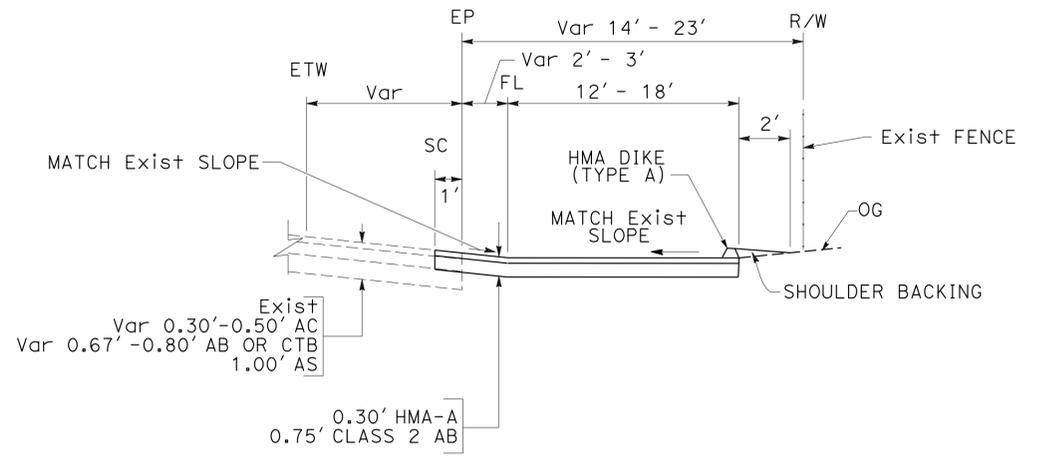
JOINT OVERHEAD (AERIAL)
TELEPHONE - AT&T
FIBER OPTIC - AT&T

JOINT OVERHEAD (AERIAL)
12 KV ELECTRIC - PG&E
FIBER OPTIC - AT&T

JOINT OVERHEAD (AERIAL)
12 KV ELECTRIC - PG&E
FIBER OPTIC - AT&T



DETAIL



LOCATION No. E02 NEWTOWN Rd

LAYOUT

SCALE 1" = 50'

L-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
DESIGN

FUNCTIONAL SUPERVISOR
KEN KEATON

CALCULATED/DESIGNED BY
CHECKED BY

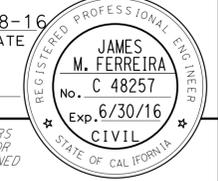
GARY DUGH
KRISHNA THAMILSERAN

REVISED BY
DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But,ED,Nev	5, 50, 70,	Var	5	48
04	Pla,Sac,etc	80, 89, etc.			

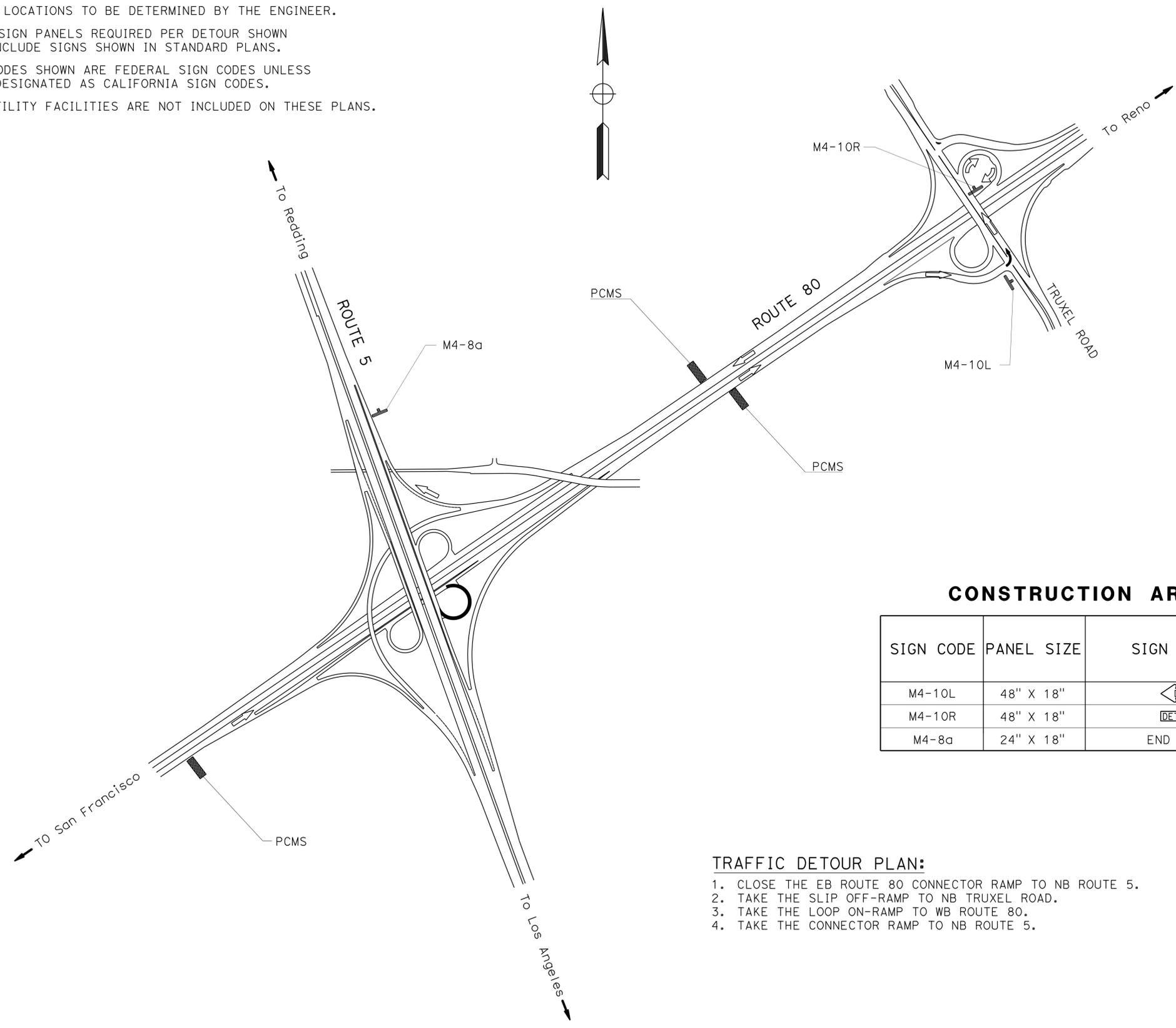
<i>James M. Ferreira</i>	4-18-16
REGISTERED CIVIL ENGINEER	DATE
4-18-16	
PLANS APPROVAL DATE	

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



NOTES:

1. EXACT SIGN LOCATIONS TO BE DETERMINED BY THE ENGINEER.
2. NUMBER OF SIGN PANELS REQUIRED PER DETOUR SHOWN DOES NOT INCLUDE SIGNS SHOWN IN STANDARD PLANS.
3. ALL SIGN CODES SHOWN ARE FEDERAL SIGN CODES UNLESS OTHERWISE DESIGNATED AS CALIFORNIA SIGN CODES.
4. EXISTING UTILITY FACILITIES ARE NOT INCLUDED ON THESE PLANS.



CONSTRUCTION AREA SIGNS

SIGN CODE	PANEL SIZE	SIGN MESSAGE	NUMBER OF SIGNS
M4-10L	48" X 18"	← DETOUR	1
M4-10R	48" X 18"	DETOUR →	1
M4-8a	24" X 18"	END DETOUR	1

TRAFFIC DETOUR PLAN:

1. CLOSE THE EB ROUTE 80 CONNECTOR RAMP TO NB ROUTE 5.
2. TAKE THE SLIP OFF-RAMP TO NB TRUXEL ROAD.
3. TAKE THE LOOP ON-RAMP TO WB ROUTE 80.
4. TAKE THE CONNECTOR RAMP TO NB ROUTE 5.

DETOUR FOR CLOSURE OF EB ROUTE 80 CONNECTOR RAMP TO NB ROUTE 5

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 FUNCTIONAL SUPERVISOR: JOYCE LOFTUS
 CALCULATED/DESIGNED BY: [blank]
 CHECKED BY: [blank]
 JIM FERREIRA
 JOHN KEBER
 REVISED BY: [blank]
 DATE REVISED: [blank]

APPROVED FOR MOTORIST INFORMATION WORK ONLY

MOTORIST INFORMATION PLAN
 NO SCALE
MI-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But,ED,Nev,	5, 50, 70,	Var	6	48
04	Pla,Sac,etc,	80, 89, etc,			

James M. Ferreira 4-18-16
 REGISTERED CIVIL ENGINEER DATE

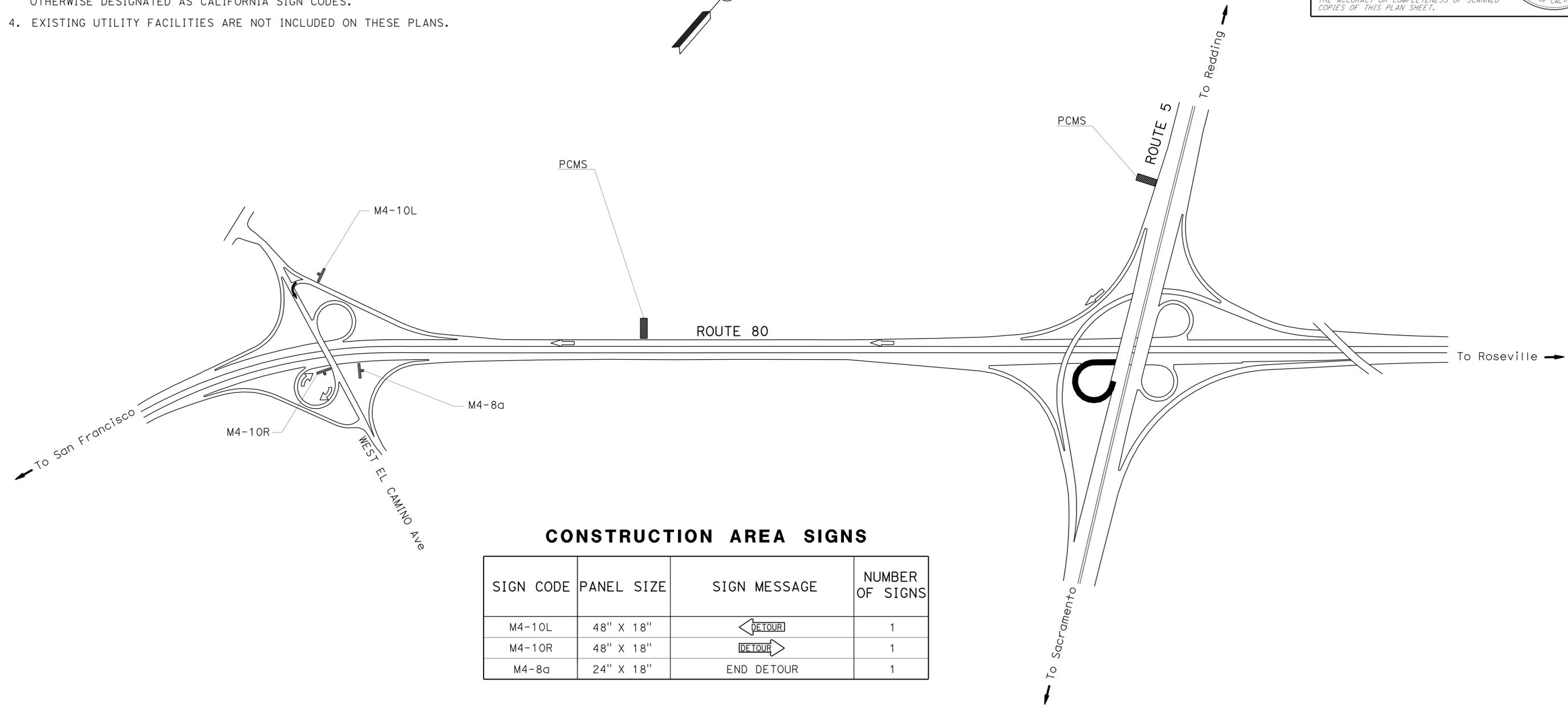
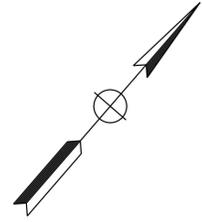
4-18-16
 PLANS APPROVAL DATE

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

REGISTERED PROFESSIONAL ENGINEER
 JAMES M. FERREIRA
 No. C 48257
 Exp. 6/30/16
 CIVIL
 STATE OF CALIFORNIA

NOTES

1. EXACT SIGN LOCATIONS TO BE DETERMINED BY THE ENGINEER.
2. NUMBER OF SIGN PANELS REQUIRED PER DETOUR SHOWN DOES NOT INCLUDE SIGNS SHOWN IN STANDARD PLANS.
3. ALL SIGN CODES SHOWN ARE FEDERAL SIGN CODES UNLESS OTHERWISE DESIGNATED AS CALIFORNIA SIGN CODES.
4. EXISTING UTILITY FACILITIES ARE NOT INCLUDED ON THESE PLANS.



CONSTRUCTION AREA SIGNS

SIGN CODE	PANEL SIZE	SIGN MESSAGE	NUMBER OF SIGNS
M4-10L	48" X 18"	← DETOUR	1
M4-10R	48" X 18"	DETOUR →	1
M4-8a	24" X 18"	END DETOUR	1

TRAFFIC DETOUR PLAN:

1. CLOSE THE SB ROUTE 5 CONNECTOR RAMP TO EB ROUTE 80.
2. TAKE THE CONNECTOR RAMP TO WB ROUTE 80.
3. TAKE THE SLIP OFF-RAMP TO SB ROUTE WEST EL CAMINO AVENUE.
4. TAKE THE LOOP ON-RAMP TO EB ROUTE 80.

DETOUR FOR CLOSURE OF SB ROUTE 5 CONNECTOR RAMP TO EB ROUTE 80

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 FUNCTIONAL SUPERVISOR: JOYCE LOFTUS
 CALCULATED/DESIGNED BY: JIM FERREIRA
 CHECKED BY: JOHN KEBER
 REVISED BY: DATE
 REVISIONS:

APPROVED FOR MOTORIST INFORMATION WORK ONLY

MOTORIST INFORMATION PLAN
MI-2
 NO SCALE

LAST REVISION DATE PLOTTED => 08-JUN-2016
 00-00-00 TIME PLOTTED => 11:55

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN

FUNCTIONAL SUPERVISOR
 KEN KEATON

REVISOR
 KRISHNA THAMILSERAN
 GARY DUGH

REVISIONS
 REVISED BY
 DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03 04	But,Ed,Nev, Pla,Sac,etc	5, 50, 70, 80, 89, etc.	Var	7	48

T. Krishnakumary 4-18-16
 REGISTERED CIVIL ENGINEER DATE

4-18-16
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 KRISHNAKUMARY THAMILSERAN
 No. C79630
 Exp. 9/30/16
 CIVIL
 STATE OF CALIFORNIA

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ROADWAY QUANTITIES

Loc No.	COUNTY	ROUTE	PM	DIRECTION	ROADWAY EXCAVATION	HOT MIX ASPHALT (TYPE A)	CLASS 2 AGGREGATE BASE	TACK COAT	SHOULDER BACKING	DESCRIPTION
					CY	TON	CY	TON	TON	
E01	ED	50	16.0	EB	18.0	10	13	0.05	2.1	FORNI Rd
E02	ED	50	21.1	WB	30.0	17	21	0.08	1.9	NEWTOWN Rd
TOTAL					48.0	27	34	0.13	4.0	

PLACE HOT MIX ASPHALT DIKE

Loc No.	COUNTY	ROUTE	PM	PLACE HOT MIX ASPHALT DIKE (TYPE A)	MINOR HMA	DESCRIPTION
				LF	TON	
E01	ED	50	16.0	55	1.5	FORNI Rd
E02	ED	50	21.1	50	1.5	NEWTOWN Rd
TOTAL				105	3.0	

DELINEATORS

Loc No.	COUNTY	ROUTE	PM	DIRECTION	REMOVE DELINEATOR	DELINEATOR (CLASS 2) TYPE F
					EA	EA
E01	ED	50	16.0	EB	1	1
TOTAL					1	1

TEMPORARY FIBER ROLL

Loc No.	COUNTY	ROUTE	PM	DIRECTION	TEMPORARY FIBER ROLL
					LF
E01	ED	50	16.0	EB	100
E02	ED	50	21.1	WB	100
TOTAL					200

SUMMARY OF QUANTITIES
Q-1

LAST REVISION | DATE PLOTTED => 08-JUN-2016
 00-00-00 | TIME PLOTTED => 11:55

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03 04	But,Ed,Nev, Pla,Sac,etc	5, 50, 70, 80, 89, etc.	Var	8	48

H. Golban 4-18-16
REGISTERED ELECTRICAL ENGINEER DATE

4-18-16
PLANS APPROVAL DATE

HABIB GOLBAN
No. E17928
Exp. 09-30-16
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 (THIS SHEET ONLY):

- 1 RS HAR TRANSMITTER ASSEMBLY, POWER DISTRIBUTION ASSEMBLY, RF METER, MULTIPLE AC OUTLET STRIP, SEE SHEET E-10.
- 2 RC BATTERIES, SEE SHEET E-10.
- 3 INSTALL COMPONENTS AS PER DETAILS SEE SHEET E-11.
- 4 RS HAR ANTENNA AND ARRESTOR ENCLOSURE SEE SHEET E-10, INSTALL HAR ANTENNA, OMNI ANTENNA, AFC, ACC, ARRESTOR ENCLOSURE, 1#6 STRANDED BARE COPPER WIRE (GROUND) AND LOW LOSS FLEXIBLE COAXIAL CABLE PER DETAILS, SEE SHEET E-12.
- 5 RS HAR ANTENNA AND ARRESTOR ENCLOSURE SEE SHEET E-10, INSTALL HAR ANTENNA, DIRECTIONAL ANTENNA, AFC, ACC, ARRESTOR ENCLOSURE, 1#6 STRANDED BARE COPPER WIRE (GROUND) AND LOW LOSS FLEXIBLE COAXIAL CABLE PER DETAILS, SEE SHEET E-12.
- 6 RC 1#4 STRANDED BARE COPPER WIRE (GROUND). INSTALL 1#4 STRANDED BARE COPPER WIRE (GROUND) PER DETAIL, SEE SHEET E-12.
- 7 INSTALL HAR FIBERGLASS POLE PER DETAILS, SEE SHEET E-12.

ABBREVIATIONS:

AFC - ANTENNA FEED CABLE
 ACC - ANTENNA COAXIAL CABLE
 DIR - DIRECTION
 DSL - DIGITAL SUBSCRIBER LINE
 LAT - LATITUDE
 LON - LONGITUDE
 PA - PUBLIC ANNOUNCEMENT
 RF - RADIO FREQUENCY
 RPU - REMOTE PROCESSING UNIT
 SLI - SENSOR LEAD-IN CABLE
 WSEM - WIRELESS SERIAL ETHERNET MODEM
 BTR - MAC ADDRESS MATCHING TRAFFIC FLOW READER SYSTEM
 DEVICE SERVER - RS-232 SERIAL TO ETHERNET DEVICE SERVER

LOCATION No.	Co	ROUTE	POST MILES	DIR	LOCATION NAME	FREQUENCY	Ctid No. OF EXISTING SERVICES	LEGEND
H01	But	70	21.9	SB	Rte 70 OROVILLE, (JUNCTION 70/191)	AM 1580	03120700021870	1, 2, 3, 4, 6
H02	ED	50	18.9	EB	PLACERVILLE/ BEDFORD Ave	AM 1670	03250500018000	1, 2, 3, 4, 6
H03	ED	50	29.0	EB	CAMINO/ SAWMILL ROAD	AM 1670	0325050R028801	1, 2, 3, 4, 6, 7, SEE SHEET E-3
H04	ED	50	48.6	WB	KYBURZ MAINTENANCE STATION	AM 1670	03250500048701	1, 2, 3, 4, 6
H05	ED	50	59.4	EB	TWIN BRIDGES Rd	AM 1610	03250500059700	1, 2, 3, 5, 6, SEE SHEET E-4
H06	ED	50	70.6	WB	MEYERS/ Rte 89	AM 1610	03250500070600	1, 2, 3, 5, 6
H07	ED	50	78.0	WB	SOUTH LAKE TAHOE (RUFUS ALLEN Blvd)	AM 1610	03250500077500	1, 2, 3, 4, 6
H08	Nev	80	5.60	WB	DONNER SUMMIT	AM 1610	0317080R005600	1, 2, 3, 4, 6
H09	Nev	80	15.5	EB	TRUCKEE MAINTENANCE STATION	AM 1610	03170800015000	1, 2, 3, 4, 6
H10	Nev	80	27.4	EB	FLORISTON	AM 1610	03170800027290	1, 2, 3, 5, 6
H11	Pla	80	13.8	EB	NEWCASTLE Rd	AM 1580	03190800050700	1, 2, 3, 4, 6
H12	Pla	80	23.4	WB	CLIPPER GAP	AM 1580	03190800023429	1, 2, 3, 5, 6
H13	Pla	80	33.6	WB	OLD COLFAX MAINTENANCE STATION	AM 1670	03190800033132	1, 2, 3, 5, 6, SEE SHEET E-5
H14	Pla	80	41.8	EB	GOLD RUN REST AREA	AM 1670	03190800041750	1, 2, 3, 4, 6
H15	Pla	80	46.9	EB	BAXTER	AM 1610	03190800046935	1, 2, 3, 4, 6
H16	Pla	80	50.8	WB	WHITMORE MAINTENANCE STATION	AM 1610	03190800050700	1, 2, 3, 4, 6
H17	Pla	80	63.5	EB	CISCO OC	AM 1610	0319080R064212	1, 2, 3, 5, 6, 7, SEE SHEET E-6
H18	Pla	80	69.6	WB	KINGVALE MAINTENANCE STATION	AM 1390	03190800069166	1, 2, 3, 4, 6, SEE SHEET E-7
H19	Pla	89	2.3	SB	HOMEWOOD MT SKI @ RESORT FAWN DRIVE	AM 1610	03190890002240	1, 2, 3, 5, 6
H20	Pla	80	8.9	NB	TAHOE CITY MAINTENANCE STATION	AM 1610	03190890008920	1, 2, 3, 4, 6
H21	Pla	89	13.7	NB	SQUAW VALLEY Rd	AM 1610	03190890013720	1, 2, 3, 4, 6
H22	Pla	267	9.9	SB	KINGS BEACH	AM 1610	03192670009900	1, 2, 3, 4, 6
H23	Sac	50	7.8	EB	BRADSHAW Rd	AM 1670	0324050R007745	1, 2, 3, 4, 6
H24	Sac	80	M2.5	EB	80/5 JUNCTION	AM 1670	0324080M002552	1, 2, 3, 4, 6
H25	Sac	80	15.9	EB	ANTELOPE TRUCK SCALES	AM 1670	03240800015910	1, 2, 3, 5, 6
H26	Sac	99	20.9	SB	47TH Ave	AM 1670	03240990020861	1, 2, 3, 4, 6, SEE SHEET E-8
H27	SoI	80	39.8	EB	DIXON (DISTRICT 4)	AM 1670	04230800039800	1, 2, 3, 4, 6
H28	YoI	05	0.6	SB	ELKHORN/ SACRAMENTO RIVER	AM 1670	03220050000400	1, 2, 3, 4, 6, SEE SHEET E-9

HIGHWAY ADVISORY RADIO

MODIFYING EXISTING ELECTRICAL SYSTEM

E-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR
 MARY ANN HUDSPETH

CALCULATED/DESIGNED BY
 CHECKED BY

OANH D NGUYEN
 HABIB GOLBAN

REVISED BY
 DATE REVISED

LEGEND (THIS SHEET ONLY):

- 1 RC PANEL
INSTALL LED EMS PANEL.
- 2 RS CONTROLLER,
INSTALL NEW CONTROLLER AND ASSOCIATED WIRING.
- 3 RC FLASHING BEACON,
INSTALL NEW 12" LED YELLOW FLASHING BEACON WITH BACK PLATE.

LOCATION No.	Co	ROUTE	POST MILES	DIR	LOCATION NAME	FREQUENCY	Ctid No. OF EXISTING SERVICES	LEGEND
E03	Pla	80	33.8	WB	Jct 174/80 SEPERATION	AM 1670	03190800035100	1, 2, 3
E04	Pla	80	47.5	WB	BAXTER	AM 1610	03190800047360	1, 2, 3
E05	Pla	80	49.0	EB	DRUM FORBAY Rd	AM 1610	03190800046933	1, 2, 3

EXTINGUISHABLE MESSAGE SIGN

MODIFYING EXISTING ELECTRICAL SYSTEM

E-2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03 04	But,Ed,Nev, Pla,Sac,etc.	5, 50, 70, 80, 89, etc.	Var	9	48

H. Golban 4-18-16
 REGISTERED ELECTRICAL ENGINEER DATE

4-18-16
 PLANS APPROVAL DATE

HABIB GOLBAN
 No. E17928
 Exp. 09-30-16
 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.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But,Ed,Nev,	5, 50, 70,			
04	Pla,Sac,etc.	80, 89, etc.	Var	10	48

<i>H. Golban</i>	4-18-16
REGISTERED ELECTRICAL ENGINEER	DATE
4-18-16	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER	
HABIB GOLBAN	
No. E17928	
Exp. 09-30-16	
ELECTRICAL	

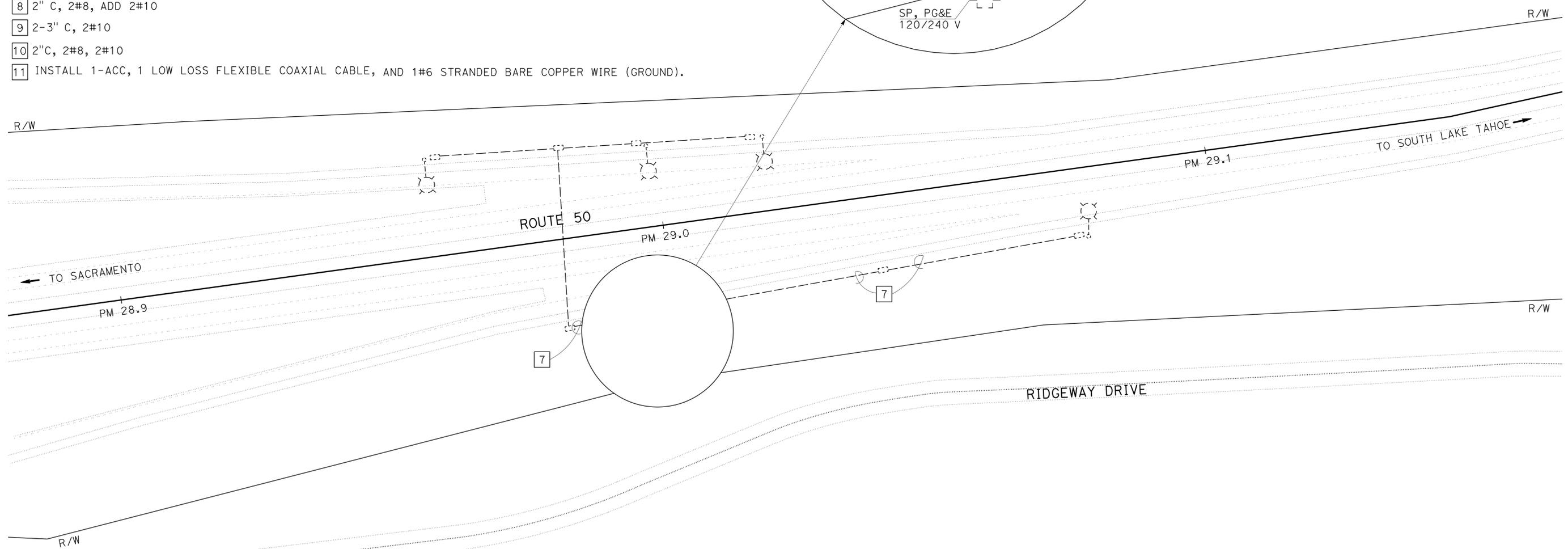
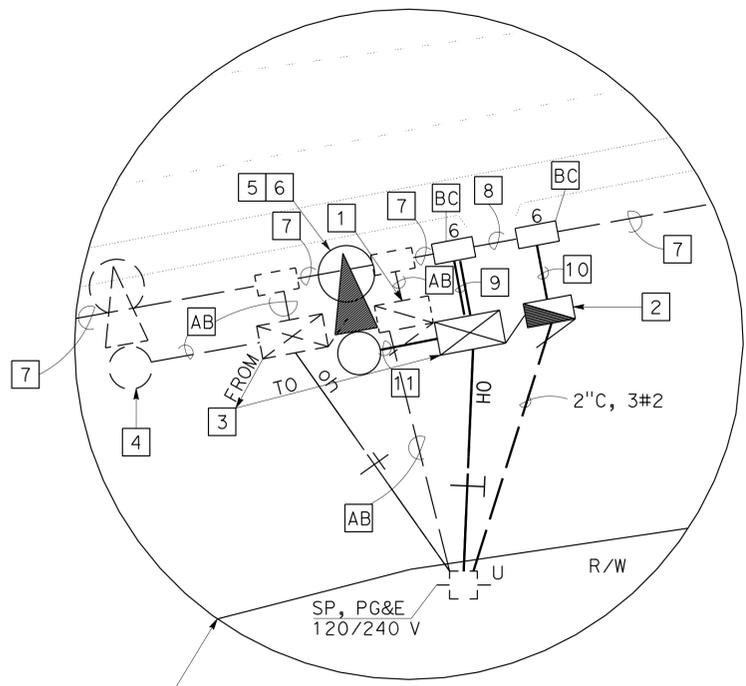
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTES:

- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- LOCATIONS OF WORK ARE FLEXIBLE AND MAY BE ADJUSTED TO MITIGATE ANY CONFLICTS WITH EXISTING UTILITY FACILITIES. EXISTING UTILITY FACILITIES ARE NOT INCLUDED ON THESE PLANS.

LEGEND (THIS SHEET ONLY):

- RC EXISTING TYPE III SERVICE EQUIPMENT ENCLOSURE No. 03-SP-C-25.
- INSTALL TYPE III-AF SERVICE EQUIPMENT ENCLOSURE Ctid No. 0325050R028801. PROVIDE ITEMS 1 THROUGH 8, ITEM 15, 16 20A, 18 "HAR", 20 THROUGH 23, PER RSP ES-2D.
- RL EXISTING MODEL 334 HAR CABINET AND INSTALL ON NEW FOUNDATION 30' FROM ETW.
- RC EXISTING WOOD POLE. AB GROUND RODS
- INSTALL HAR FIBERGLASS POLE, NEW LOCATION WILL BE DETERMINED BY FIELD ENGINEER. (SEE SES-1)
- AB EXISTING GROUND ROD, INSTALL NEW GROUND ROD FOR DETAIL SEE SHEET E-12.
- 2" C, 2#8
- 2" C, 2#8, ADD 2#10
- 2-3" C, 2#10
- 2" C, 2#8, 2#10
- INSTALL 1-ACC, 1 LOW LOSS FLEXIBLE COAXIAL CABLE, AND 1#6 STRANDED BARE COPPER WIRE (GROUND).



HIGHWAY ADVISORY RADIO
LOCATION H03
ROUTE 50 AT CAMINO / SAWMILL ROAD
ED-50-PM 29.0

MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1" = 50'

APPROVED FOR ELECTRICAL WORK ONLY

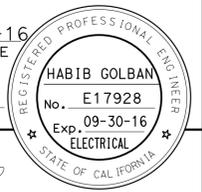
E-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	REVISOR
Caltrans ELECTRICAL DESIGN	MARY ANN HUDSPETH	OANH D NGUYEN
	CHECKED BY	DATE REVISOR
		HABIB GOLBAN

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But,Ed,Nev,	5, 50, 70,	Var	15	48
04	Pla,Sac,etc.	80, 89, etc.			

<i>H. Golban</i>	4-18-16
REGISTERED ELECTRICAL ENGINEER	DATE
4-18-16	
PLANS APPROVAL DATE	

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



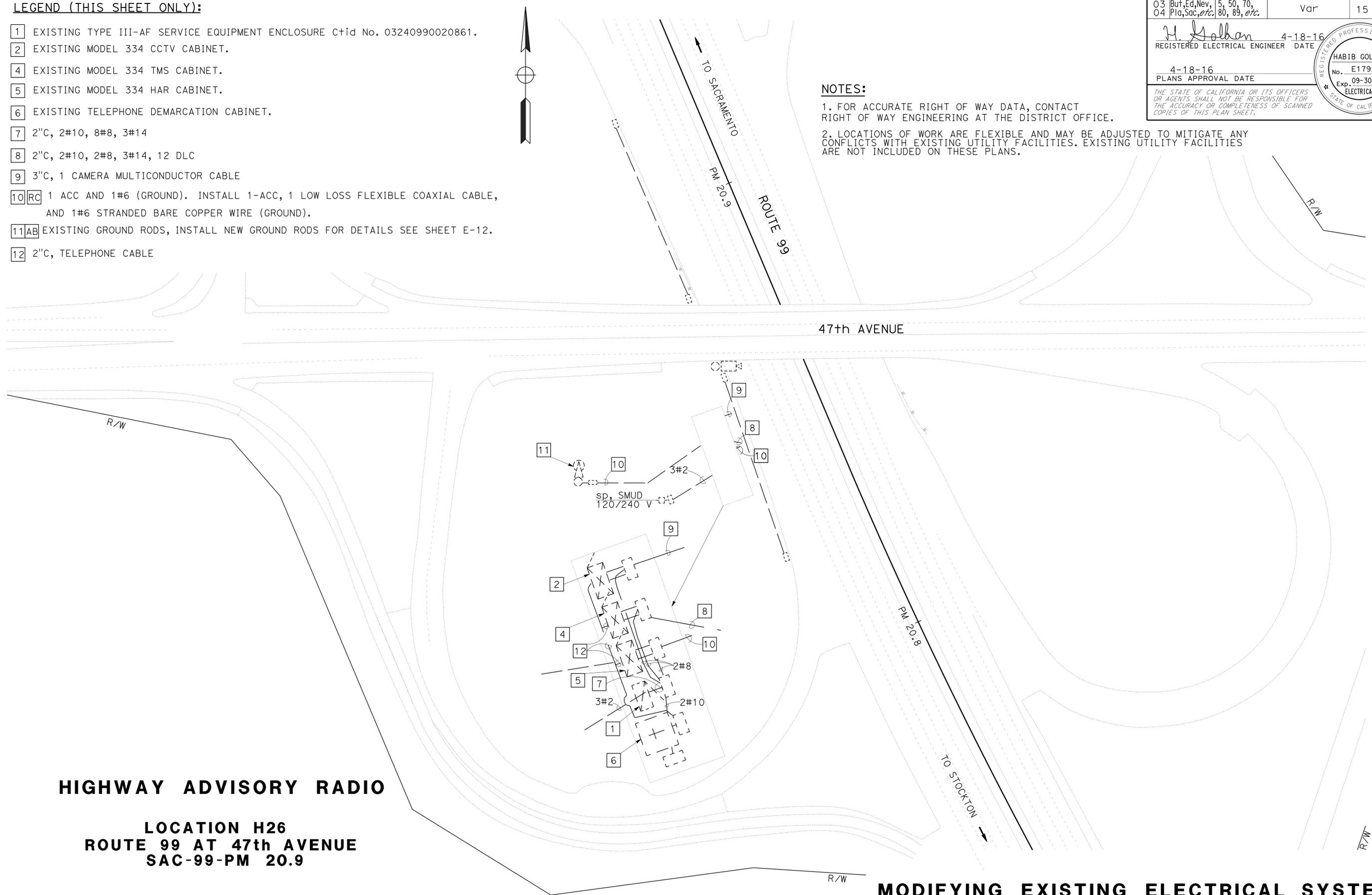
LEGEND (THIS SHEET ONLY):

- 1 EXISTING TYPE III-AF SERVICE EQUIPMENT ENCLOSURE Ctid No. 03240990020861.
- 2 EXISTING MODEL 334 CCTV CABINET.
- 4 EXISTING MODEL 334 TMS CABINET.
- 5 EXISTING MODEL 334 HAR CABINET.
- 6 EXISTING TELEPHONE DEMARCATION CABINET.
- 7 2"C, 2#10, 8#8, 3#14
- 8 2"C, 2#10, 2#8, 3#14, 12 DLC
- 9 3"C, 1 CAMERA MULTICONDUCTOR CABLE
- 10 RC 1 ACC AND 1#6 (GROUND). INSTALL 1-ACC, 1 LOW LOSS FLEXIBLE COAXIAL CABLE, AND 1#6 STRANDED BARE COPPER WIRE (GROUND).
- 11 AB EXISTING GROUND RODS, INSTALL NEW GROUND RODS FOR DETAILS SEE SHEET E-12.
- 12 2"C, TELEPHONE CABLE

NOTES:

- 1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- 2. LOCATIONS OF WORK ARE FLEXIBLE AND MAY BE ADJUSTED TO MITIGATE ANY CONFLICTS WITH EXISTING UTILITY FACILITIES. EXISTING UTILITY FACILITIES ARE NOT INCLUDED ON THESE PLANS.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR
Caltrans ELECTRICAL DESIGN	MARY ANN HUDSPETH	HABIB GOLBAN	OANH D NGUYEN
		CHECKED BY	DATE REVISED



HIGHWAY ADVISORY RADIO

**LOCATION H26
ROUTE 99 AT 47th AVENUE
SAC-99-PM 20.9**

MODIFYING EXISTING ELECTRICAL SYSTEM

SCALE: 1" = 50'

APPROVED FOR ELECTRICAL WORK ONLY

E-8

LAST REVISION | DATE PLOTTED => 08-JUN-2016
04-22-16 | TIME PLOTTED => 11:55

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: MARY ANN HUDSPETH
 CALCULATED/DESIGNED BY: OANH D NGUYEN
 CHECKED BY: HABIB GOLBAN
 REVISED BY: OANH D NGUYEN
 DATE REVISED: HABIB GOLBAN

NOTES:

- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- LOCATIONS OF WORK ARE FLEXIBLE AND MAY BE ADJUSTED TO MITIGATE ANY CONFLICTS WITH EXISTING UTILITY FACILITIES. EXISTING UTILITY FACILITIES ARE NOT INCLUDED ON THESE PLANS.

LEGEND (THIS SHEET ONLY):

- EXISTING TYPE III-AF SERVICE EQUIPMENT ENCLOSURE Ctid No. 03220050000400.
- EXISTING MODEL 334 HAR CABINET.
- AB GROUND RODS, INSTALL NEW GROUND RODS FOR DETAILS SEE SHEET E-12.
- RC 1 ACC AND 1#6 (GROUND). INSTALL 1-ACC, 1 LOW LOSS FLEXIBLE COAXIAL CABLE, AND 1#6 STRANDED BARE COPPER WIRE (GROUND).
- 2-3"C,2#8, 1#6, 1-ACC, RC 1 ACC AND 1#6 (GROUND). INSTALL 1-ACC, 1 LOW LOSS FLEXIBLE COAXIAL CABLE, AND 1#6 STRANDED BARE COPPER WIRE (GROUND).

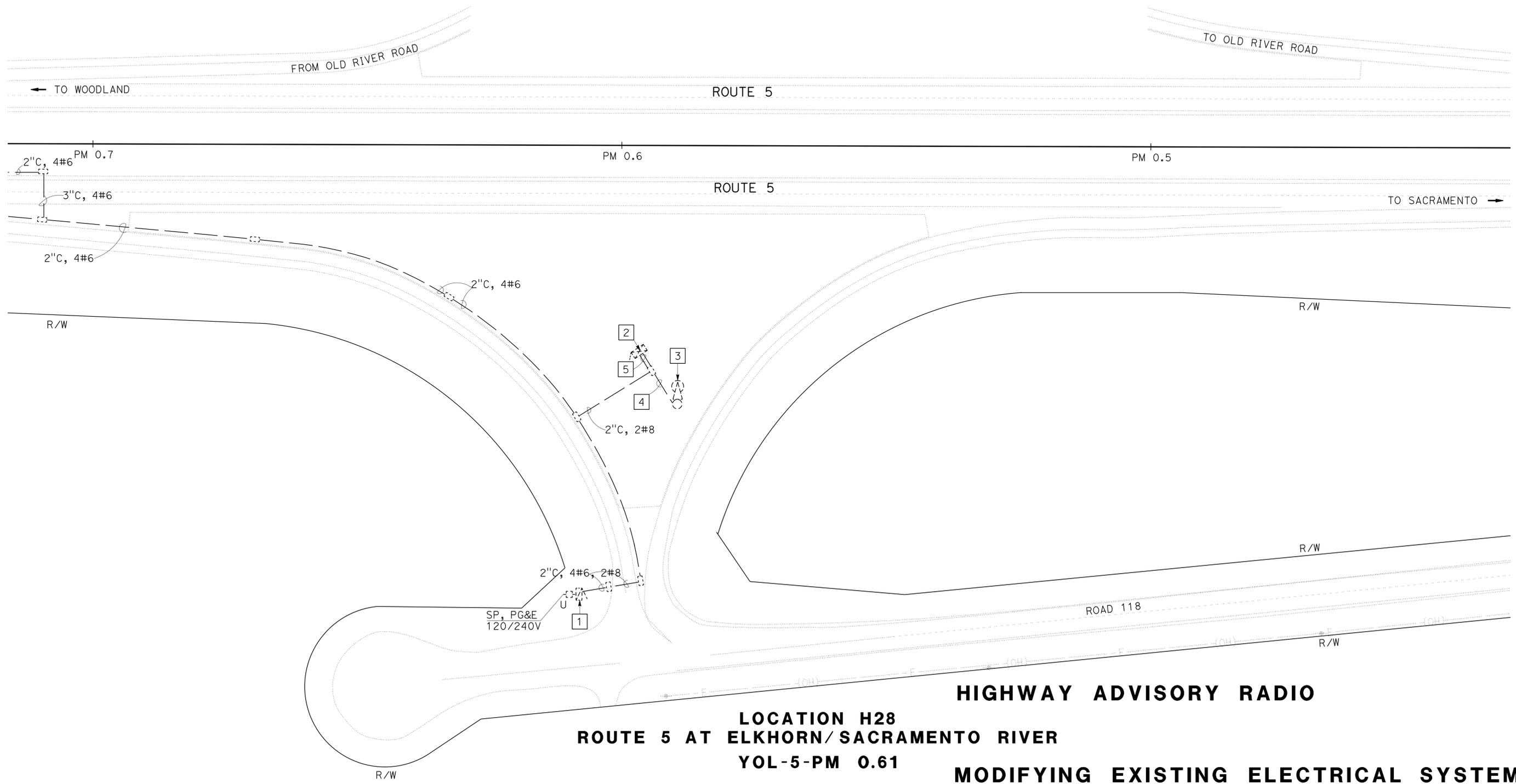
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03 04	But,Ed,Nev, Pla,Sac,etc.	5, 50, 70, 80, 89, etc.	Var	16	48

H. Golban 4-18-16
 REGISTERED ELECTRICAL ENGINEER DATE

4-18-16
 PLANS APPROVAL DATE

HABIB GOLBAN
 No. E17928
 Exp. 09-30-16
 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.



HIGHWAY ADVISORY RADIO
LOCATION H28
ROUTE 5 AT ELKHORN/SACRAMENTO RIVER
YOL-5-PM 0.61
MODIFYING EXISTING ELECTRICAL SYSTEM
 SCALE: 1" = 50'
 APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: MARY ANN HUDSPETH
 OANH D NGUYEN
 HABIB GOLBAN
 REVISIONS: [Table with columns for REVISION BY, DATE, and REVISION]

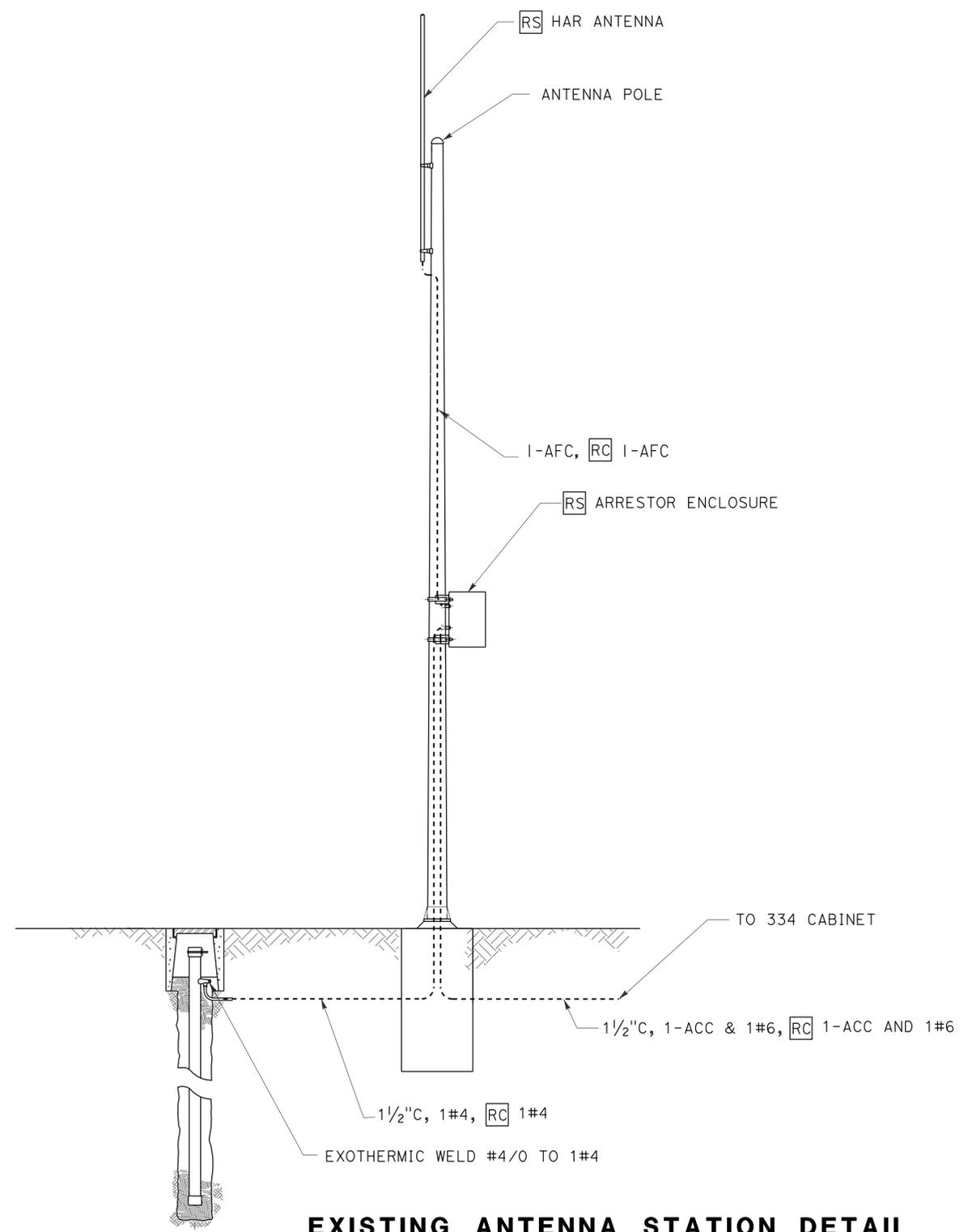
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03 04	But,Ed,Nev, Pla,Sac,etc.	5, 50, 70, 80, 89, etc.	Var	17	48

H. Golban 4-18-16
 REGISTERED ELECTRICAL ENGINEER DATE

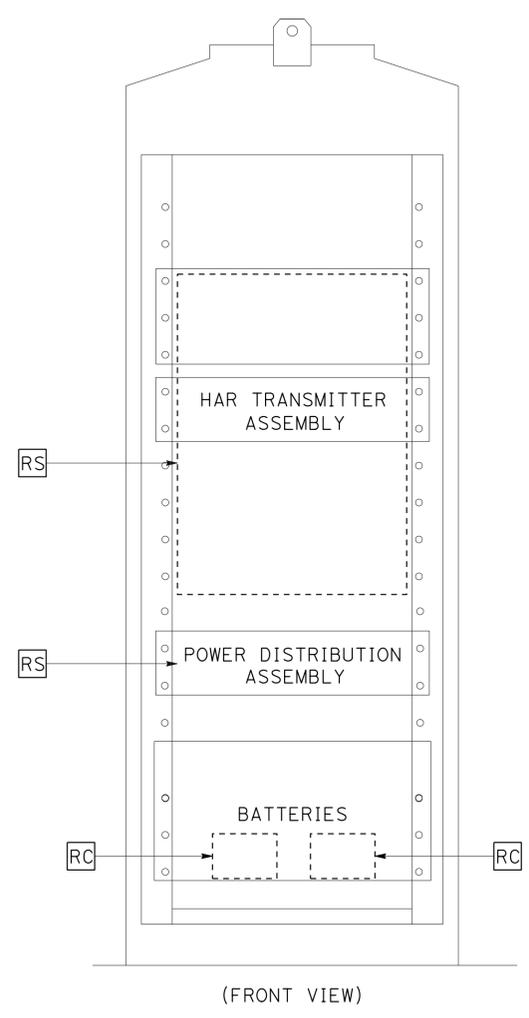
4-18-16
 PLANS APPROVAL DATE

HABIB GOLBAN
 No. E17928
 Exp. 09-30-16
 ELECTRICAL
 STATE OF CALIFORNIA

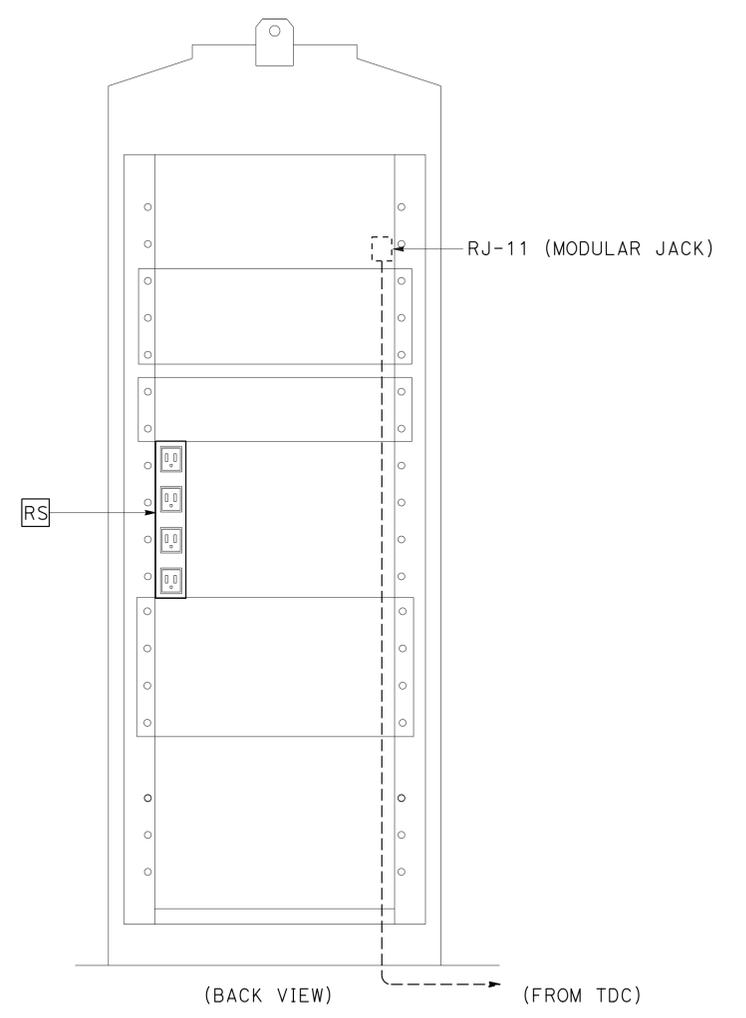
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



EXISTING ANTENNA STATION DETAIL



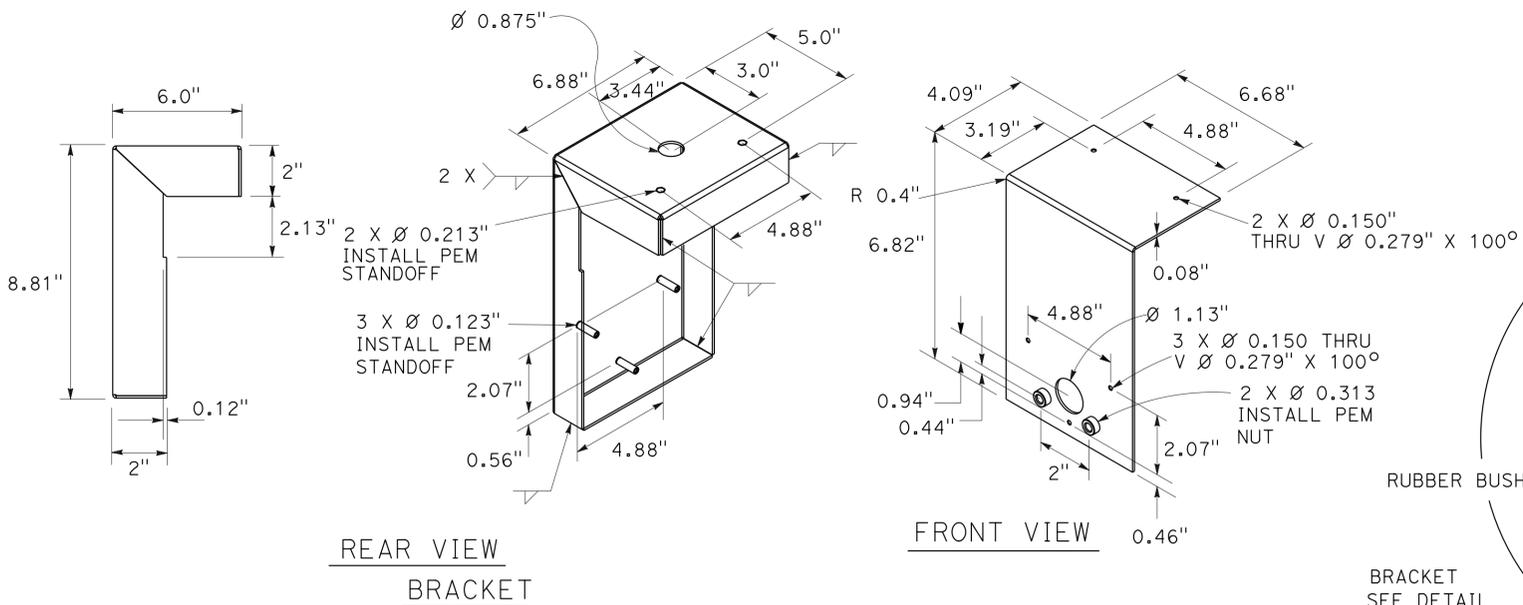
**EXISTING MODEL 334 HAR CONTROLLER CABINET
 DETAIL (TYPICAL)
 DETAIL A**



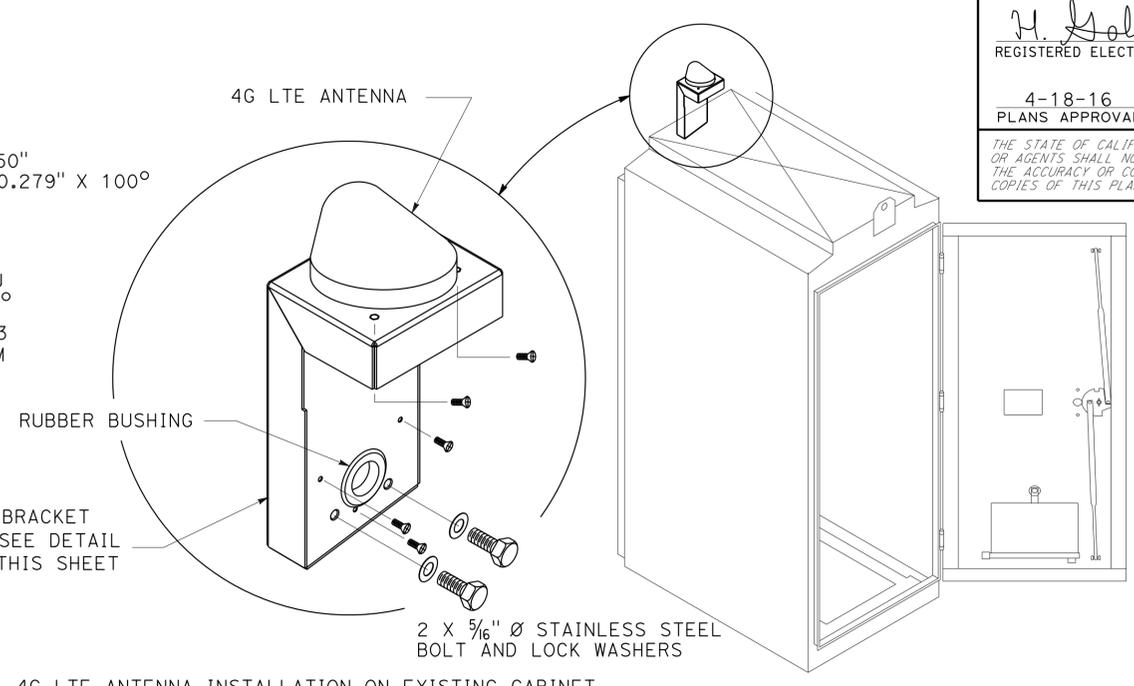
HIGHWAY ADVISORY RADIO

**MODIFYING EXISTING ELECTRICAL SYSTEM
 E-10**

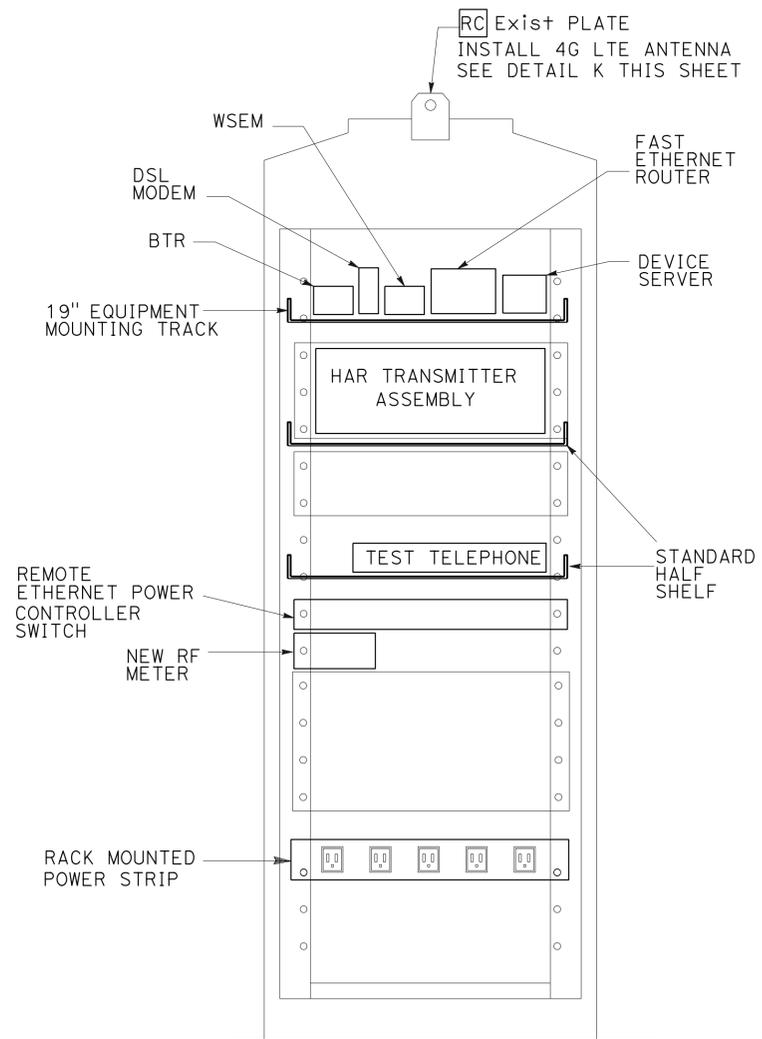
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03 But,Ed,Nev, 04 Pla,Soc,etc.	5, 50, 70, 80, 89, etc.	Var	18	48	
<i>H. Golban</i> REGISTERED ELECTRICAL ENGINEER DATE			4-18-16 PLANS APPROVAL DATE		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.			REGISTERED PROFESSIONAL ENGINEER HABIB GOLBAN No. E17928 Exp. 09-30-16 ELECTRICAL STATE OF CALIFORNIA		



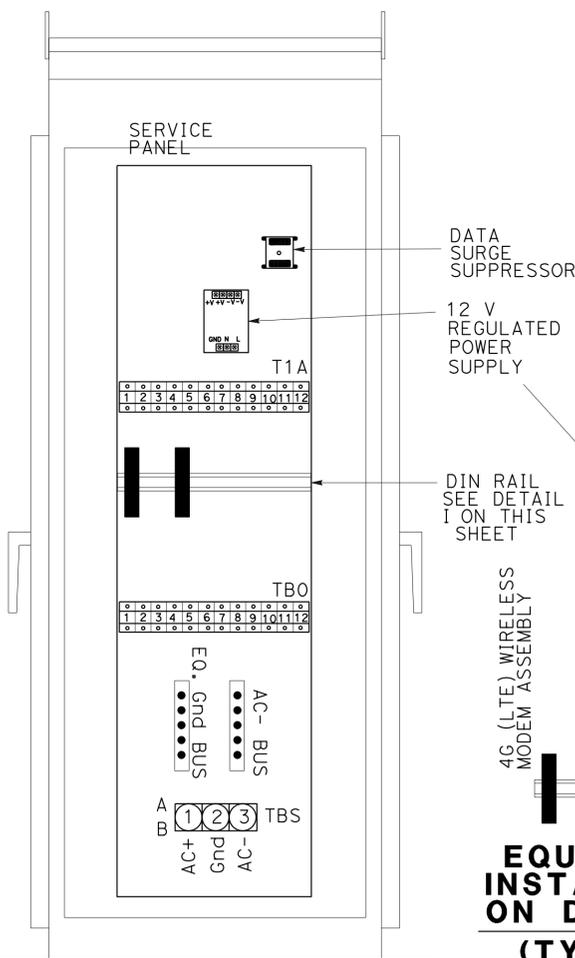
REAR VIEW BRACKET
 * THE CONTRACTOR SHALL SUBMIT A PROTOTYPE OF BRACKET TO THE ENGINEER FOR APPROVAL.



4G LTE ANTENNA INSTALLATION ON EXISTING CABINET
DETAIL K

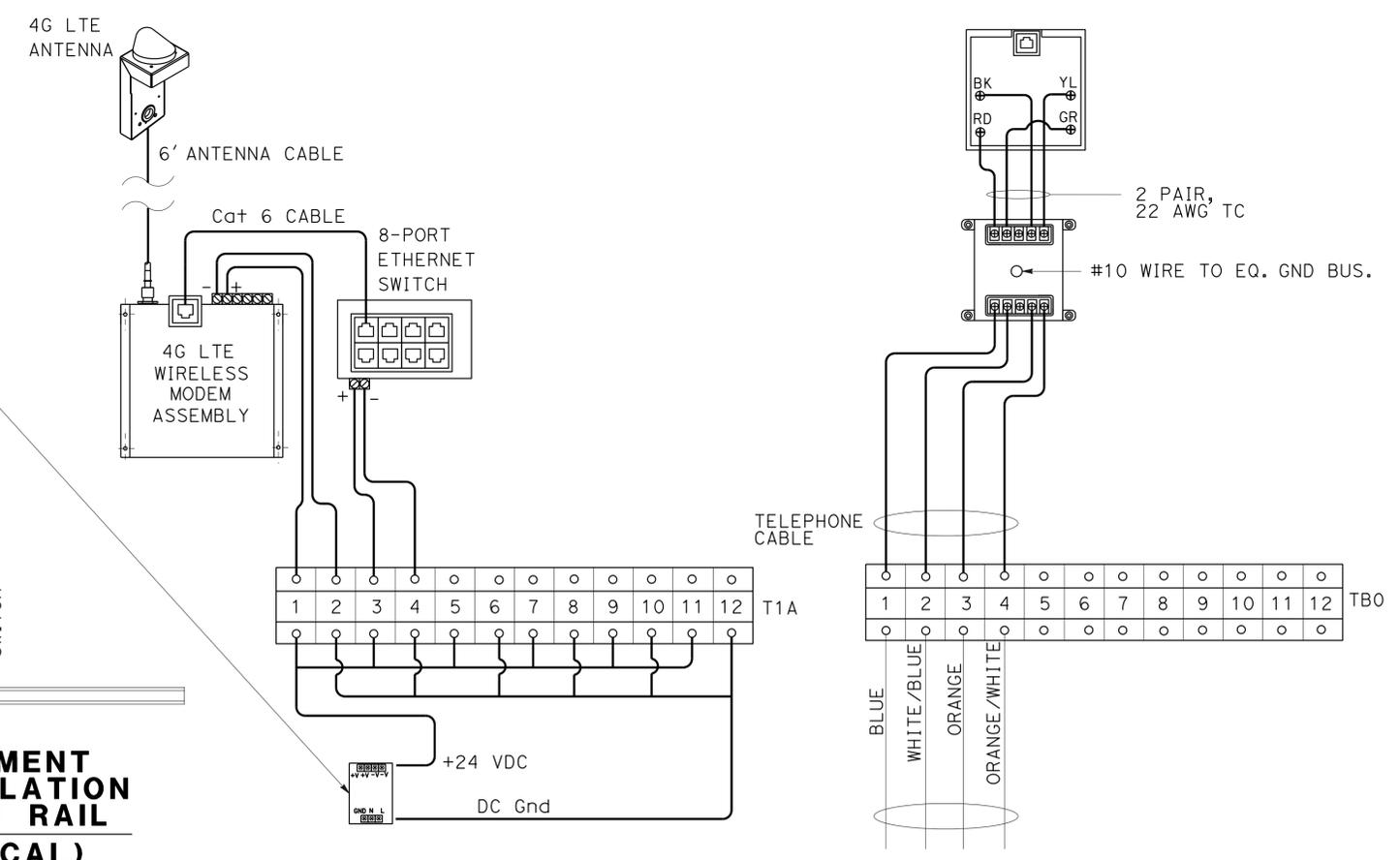


(FRONT VIEW)
MODEL 334 HAR CONTROLLER CABINET
DETAIL (TYPICAL)
DETAIL D



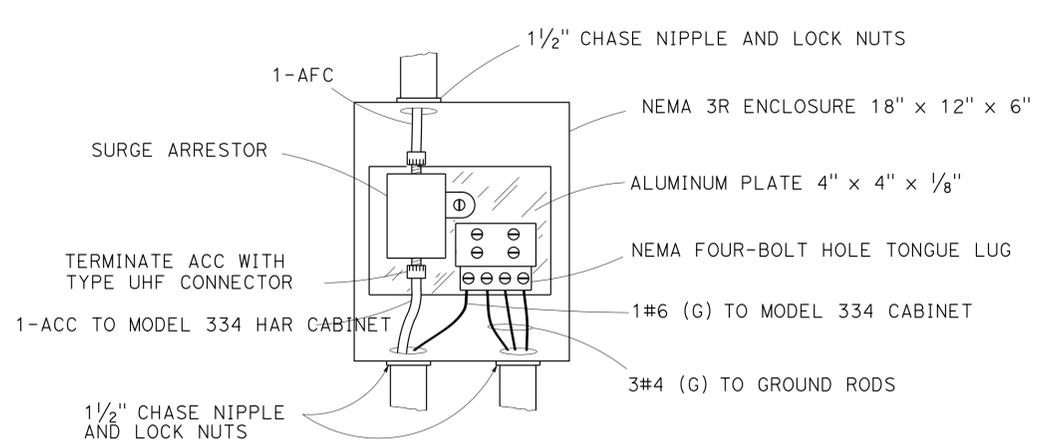
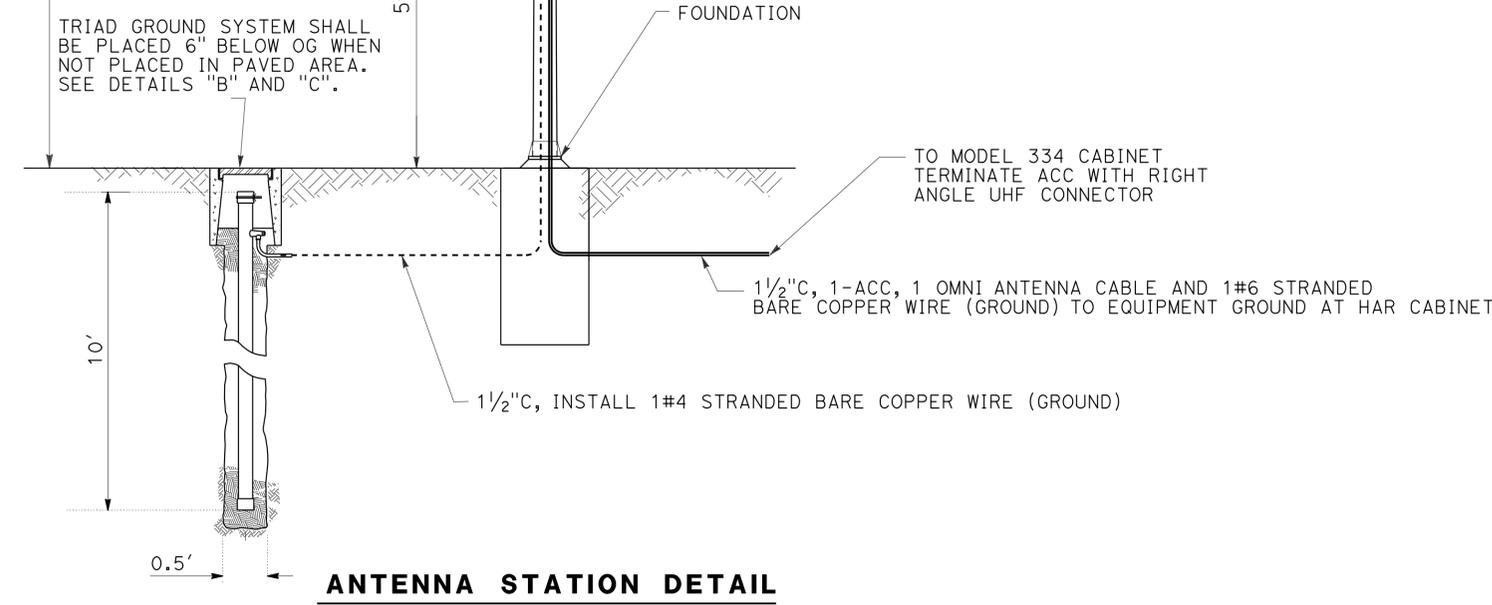
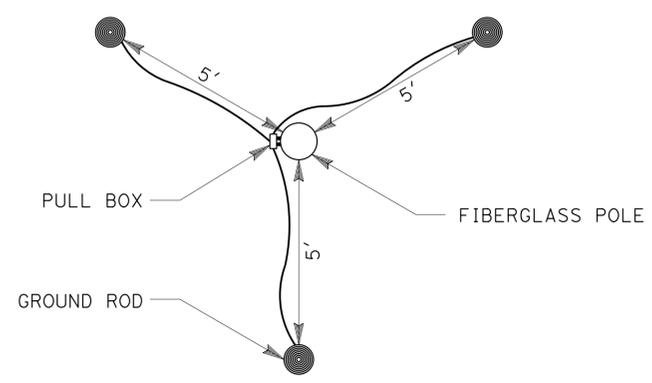
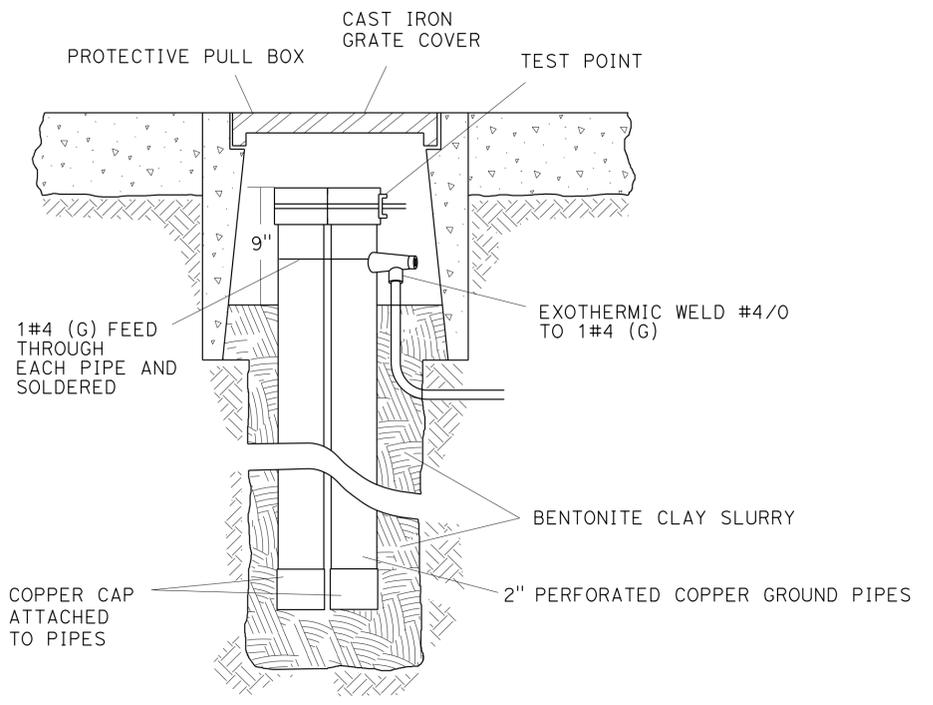
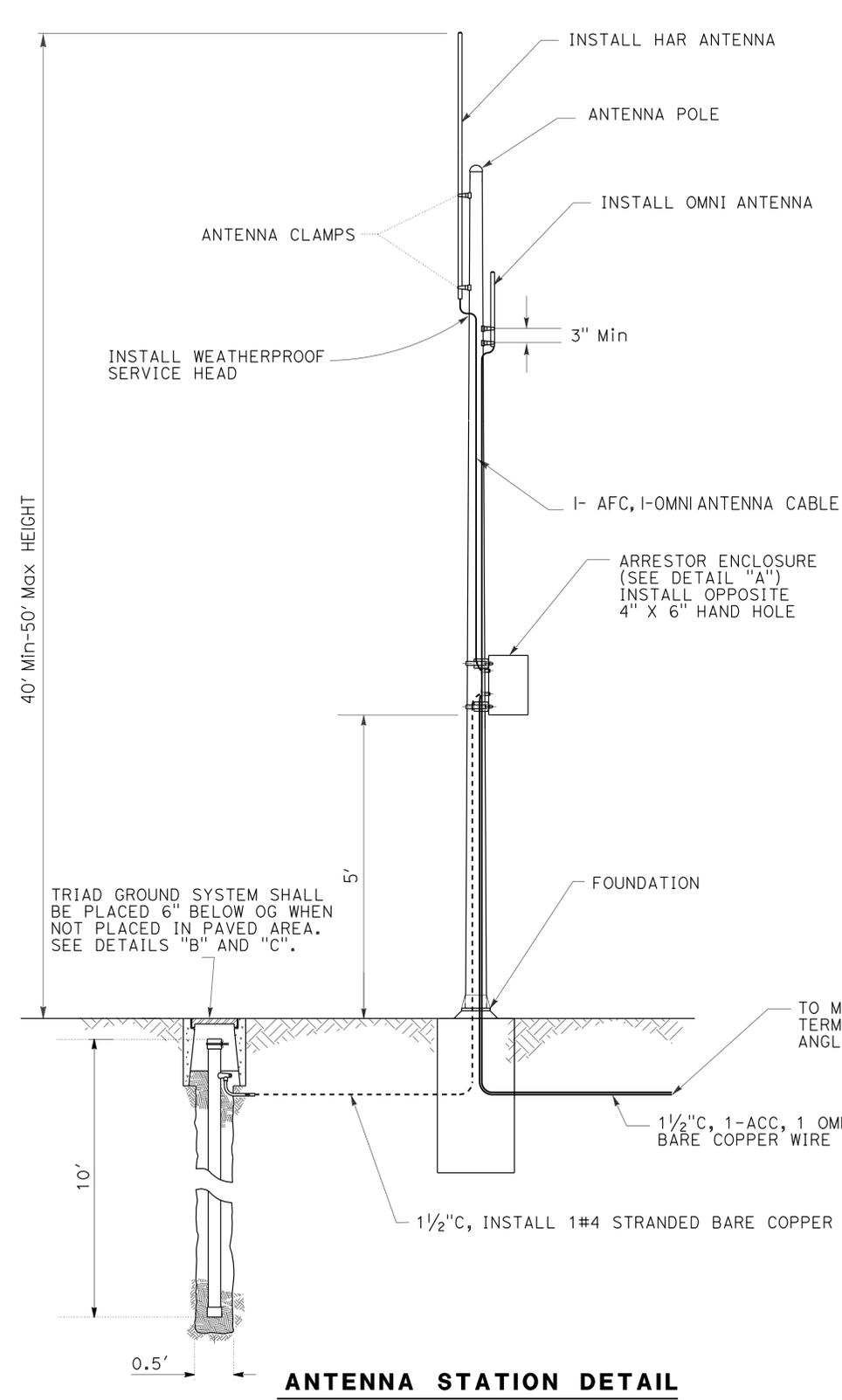
(SIDE VIEW)
EQUIPMENT INTERCONNECTION
(TYPICAL)
DETAIL H

EQUIPMENT INSTALLATION ON DIN RAIL
(TYPICAL)
DETAIL I



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR MARY ANN HUDSPETH
 CALCULATED/DESIGNED BY OANH D NGUYEN
 CHECKED BY HABIB GOLBAN
 REVISED BY OANH D NGUYEN
 DATE REVISOR
 DATE REVISOR

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03 But,Ed,Nev, 04 Pla,Sac,etc.	5, 50, 70, 80, 89, etc.	Var	19	48	
H. Golban REGISTERED ELECTRICAL ENGINEER			4-18-16	DATE	
4-18-16 PLANS APPROVAL DATE					
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					



ANTENNA AND GROUND ROD INSTALLATION DETAILS

ELECTRICAL DETAILS

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: MARY ANN HUDSPETH
 CALCULATED/DESIGNED BY: OANH D NGUYEN
 CHECKED BY: HABIB GOLBAN
 REVISED BY: OANH D NGUYEN
 DATE REVIS: HABIB GOLBAN

x
x
x
x
x
x
x
x
x

LAST REVISION DATE PLOTTED => 08-JUN-2016
 04-22-16 TIME PLOTTED => 11:55

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03 04	But,Ed,Nev, Pla,Sac,etc	5, 50, 70, 80, 89, etc.	Var	20	48

H. Golban 4-18-16
REGISTERED ELECTRICAL ENGINEER DATE

4-18-16
PLANS APPROVAL DATE

HABIB GOLBAN
No. E17928
Exp. 09-30-16
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.

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

MODIFYING EXISTING ELECTRICAL SYSTEM

LOCATION No.	TRANSMITTER ASSEMBLY	DC POWER SUPPLY	RF METER	MULTIPLE AC OUTLET STRIP	HAR ANTENNA	OMNI ANTENNA	DIRECTIONAL ANTENNA	HAR FIBERGLASS POLE	MODEL 334 CABINET	SERVICE EQUIPMENT ENCLOSURE	TRANSFORMER	ARRESTOR ENCLOSURE	GROUND	No 6 PULL BOX	TELEPHONE DEMARCATION CABINET
	(EA)	(EA)	(EA)	(EA)	(EA)	(EA)	(EA)	(EA)	(EA)	(EA)	(EA)	(EA)	(EA)	(EA)	(EA)
H01	1	1	1	1	1	1						1			
H02	1	1	1	1	1	1						1			
H03	1	1	1	1	1	1		1		1		1	1	2	
H04	1	1	1	1	1	1						1			
H05	1	1	1	1	1	1	1					1	1		
H06	1	1	1	1	1	1	1					1			
H07	1	1	1	1	1	1						1			
H08	1	1	1	1	1	1						1			
H09	1	1	1	1	1	1						1			
H10	1	1	1	1	1	1	1					1			
H11	1	1	1	1	1	1						1			
H12	1	1	1	1	1	1	1					1			
H13	1	1	1	1	1	1	1					1	1		
H14	1	1	1	1	1	1						1			
H15	1	1	1	1	1	1						1			
H16	1	1	1	1	1	1						1			
H17	1	1	1	1	1	1	1	1	1		1	1	1		1
H18	1	1	1	1	1	1						1	1		
H19	1	1	1	1	1	1	1					1			
H20	1	1	1	1	1	1						1			
H21	1	1	1	1	1	1						1			
H22	1	1	1	1	1	1						1			
H23	1	1	1	1	1	1						1			
H24	1	1	1	1	1	1						1			
H25	1	1	1	1	1	1	1					1			
H26	1	1	1	1	1	1						1	1		
H27	1	1	1	1	1	1						1			
H28	1	1	1	1	1	1						1	1		

MODIFYING EXISTING ELECTRICAL SYSTEM

LOCATION No.	EMS PANEL	FLASHING BEACON
	(EA)	(EA)
E03	1	2
E04	1	2
E05	1	2

ELECTRICAL QUANTITIES

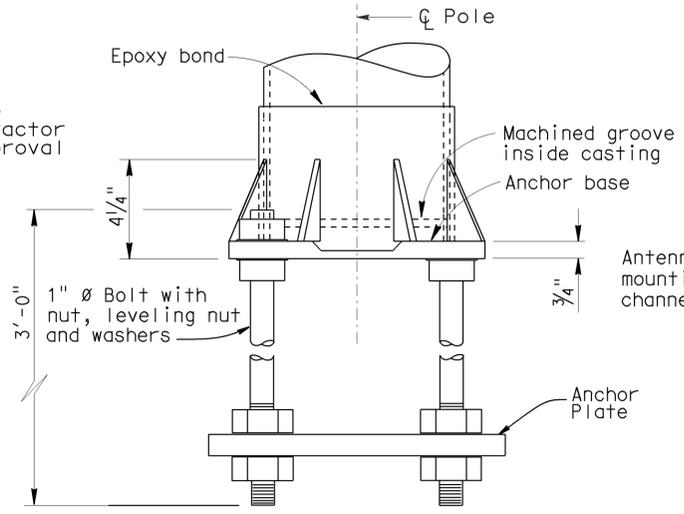
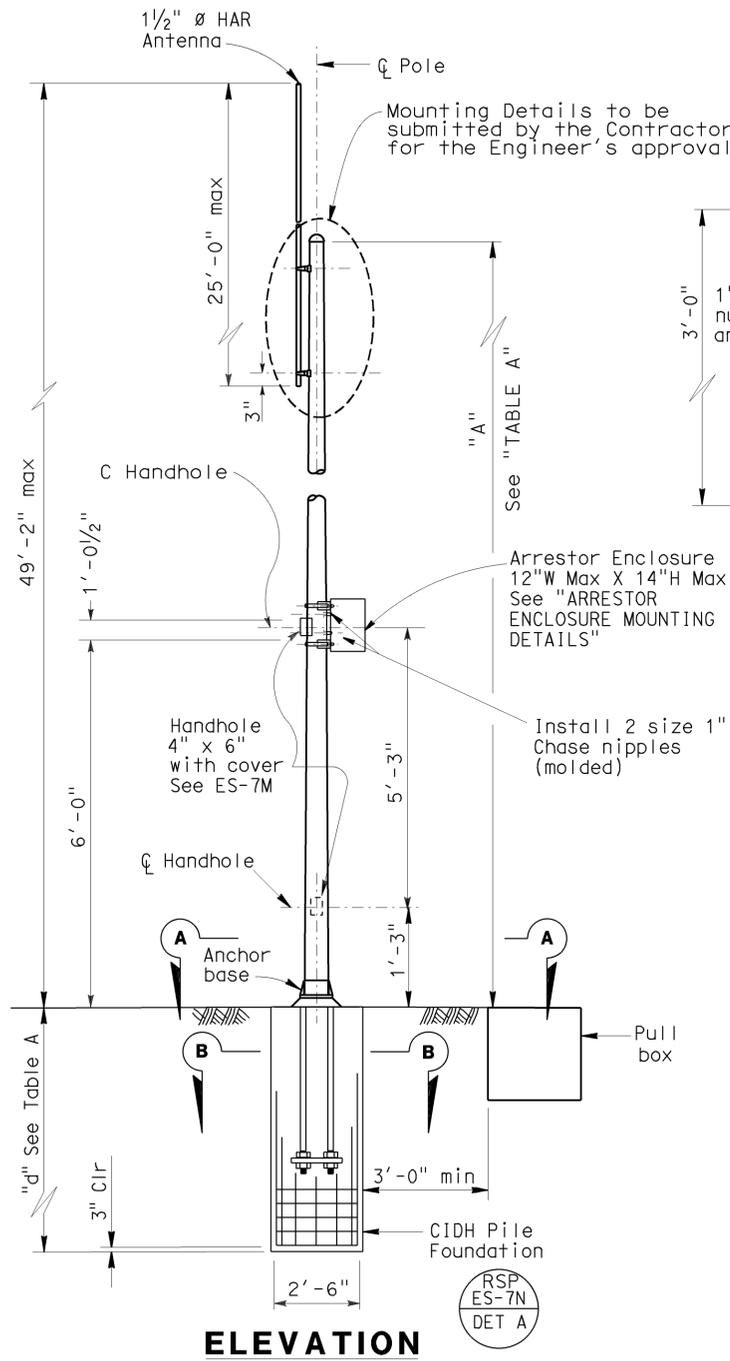
E-13

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR MARY ANN HUDSPETH
 CALCULATED/DESIGNED BY
 OANH D NGUYEN
 HABIB GOLBAN
 REVISOR BY DATE
 REVISOR BY DATE

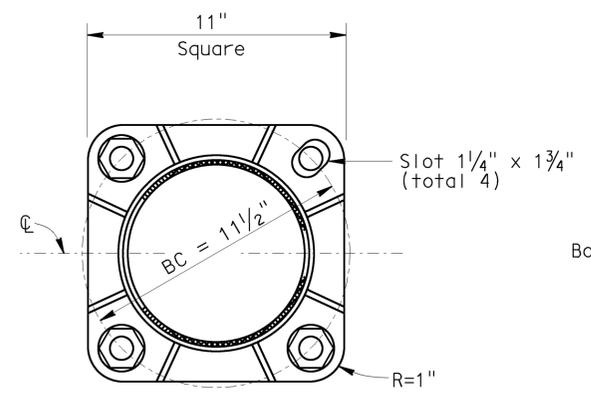
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	But,Ed,Nev, Plg,Sac,etc.	5, 50, 70, 80, 89, ect.	Var	21	48
<i>Eliseo Lopez</i> REGISTERED CIVIL ENGINEER			4-5-16 DATE		
			4-18-16 PLANS APPROVAL DATE		
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					

Fiberglass Pole Type	Pole Data			Weight LBS	Anchor Base			"d" 2'-6" ϕ CIDH Pile	
	"A" Height	Min. O.D.			Thickness "t"	Anchor Bolts		Level Ground	Sloping Ground
		Base	Top			Size	Bolt Circle		
21F	34'-9 1/2"	8 1/2"	4 13/16"	185	3/4"	1" ϕ x 36"	11 1/2"	7'-0"	9'-0"

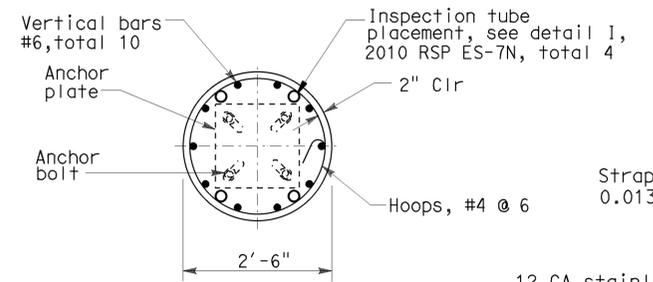
Attachment	Mounting Height	Weight Limits (Max)
HAR Antenna	Top of pole as shown on plans	18 Lbs
Arrestor Enclosure	6'-0" Max bottom Clr	16 Lbs



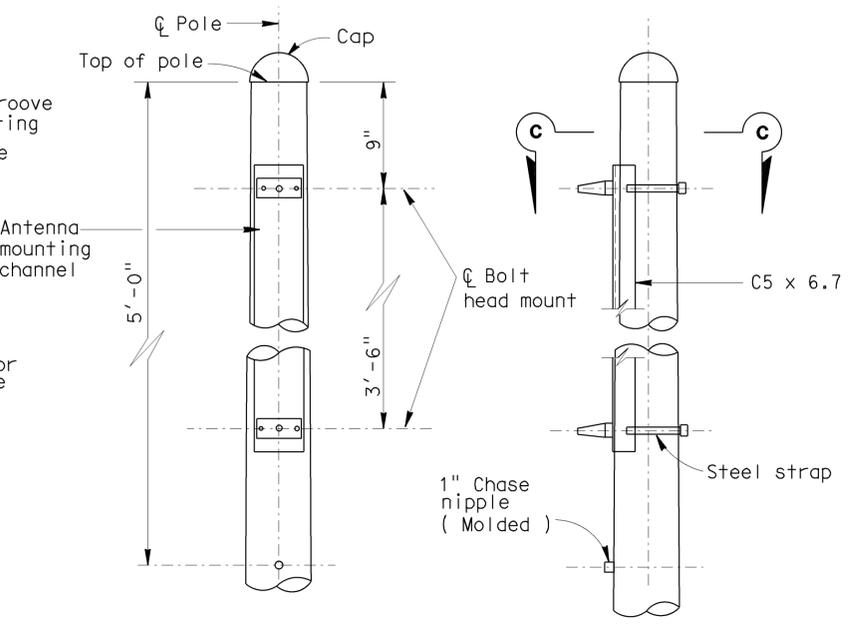
STEEL ANCHOR BASE ELEVATION



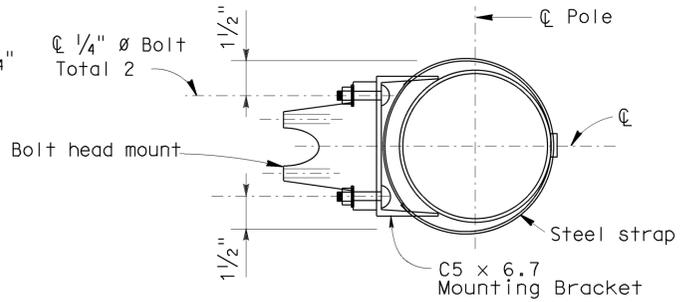
SECTION A-A



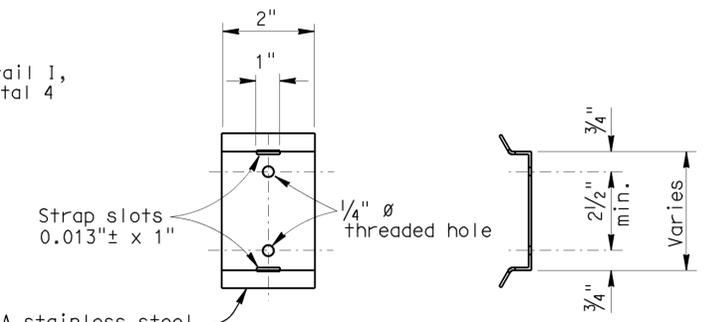
SECTION B-B



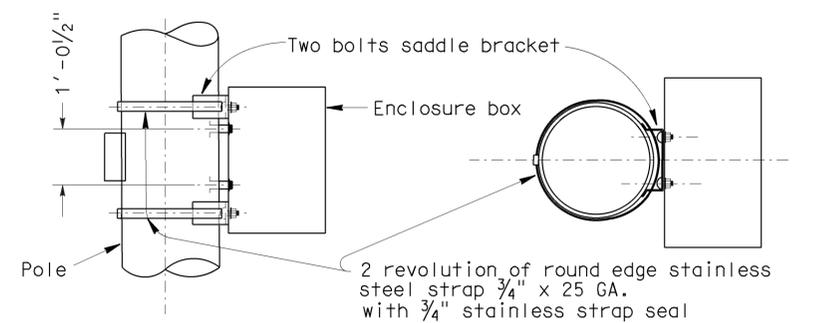
SECTION C-C



SECTION B-B



SADDLE BRACKET



ELEVATION PLAN VIEW

ARRESTOR ENCLOSURE MOUNTING DETAILS

GENERAL NOTES:

SPECIFICATIONS

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

LOADING

Wind Loading: 80 MPH (3-sec gust)

UNIT STRESSES

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

NOTES:

1. The Contractor must verify all controlling field dimensions before ordering or fabricating any material.
2. During pole erection, the post shall be raked as necessary with the use of leveling nuts to provide a plumb pole.
3. For locations, see "Roadway plans".
4. HAR antenna must be placed plumb.
5. All connections to fiberglass pole to be epoxy bond, except when noted otherwise.
6. Bolt and connections to be specified for loading of 80 mph in conformance with LTS-6.
7. Foundation design is based on AASHTO LTS-6 article 13.6 Broms' approximate procedure assuming a cohesionless material. The angle of internal friction used is 30 degrees and unit weight of soil used is 120 lbs/ft³.
8. CIDH Pile Foundation was analyzed only for overturning moment resistance.

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

STANDARD PLAN SHEET No.

DETAIL No.

BRANCH CHIEF JEFF WOODY	DESIGN BY E. LOPEZ	CHECKED M. LICHA	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES DESIGN AND TECHNICAL SERVICES SPECIAL DESIGNS BRANCH A	BRIDGE NO. N/A	ELECTRICAL SYSTEMS	SES-1
	DETAILS BY T. NGUYEN	CHECKED M. LICHA			POST MILE 29.0/63.5		
QUANTITIES BY		CHECKED	UNIT: 3619 PROJECT NUMBER & PHASE: 0313000196-1		CONTRACT NO.: 03-3F8201	REVISION DATES	SHEET 1 OF 1
(ENGLISH) SPECIAL DESIGNS BRANCH BORDER SHEET (REV. 4-1-14)			ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		DISREGARD PRINTS BEARING EARLIER REVISION DATES		

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

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

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

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03 04	But, Ed, Nev, Pla, Sac, etc.	5, 50, 70, 80, 89, etc.	Var	22	48

Grace M. Tsushima
 REGISTERED CIVIL ENGINEER

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

July 19, 2013
PLANS APPROVAL DATE

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TO ACCOMPANY PLANS DATED 4-18-16

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 ³ , pcf	POUNDS PER CUBIC FOOT
tsf	TONS PER SQUARE FOOT
mph, MPH *	MILES PER HOUR
ø	NOMINAL DIAMETER
oz	OUNCE
lb	POUND
kíp	1,000 POUNDS
cal	CALORIE
ft	FOOT OR FEET
gal	GALLON

* For use on a sign panel only

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

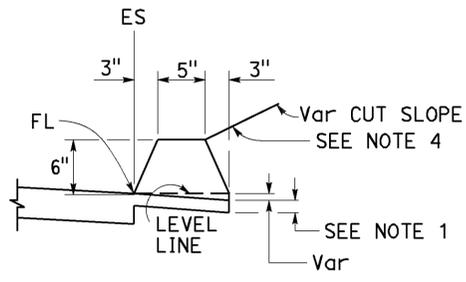
**ABBREVIATIONS
(SHEET 2 OF 2)**

NO SCALE

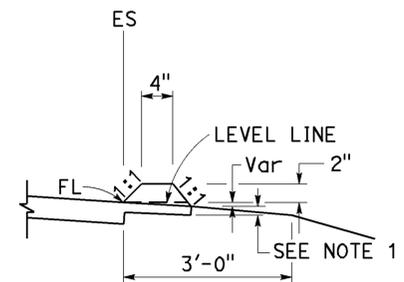
RSP A10B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN A10B
DATED MAY 20, 2011 - PAGE 2 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP A10B

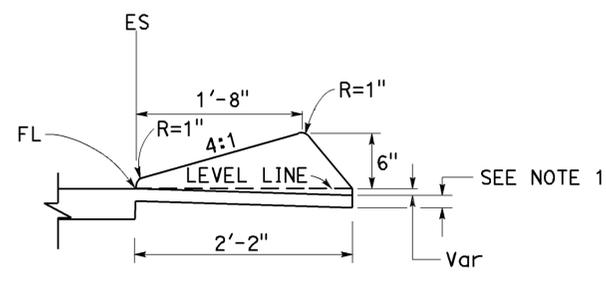
TO ACCOMPANY PLANS DATED 4-18-16



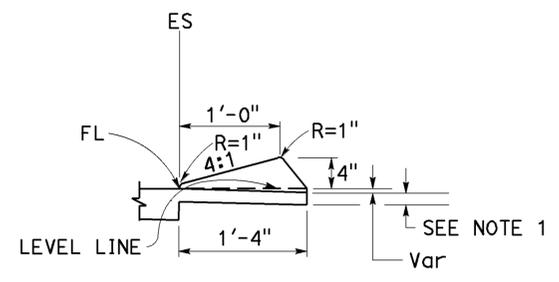
TYPE A
See Notes 3 and 5



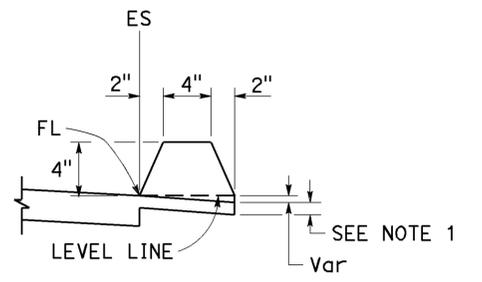
TYPE C



TYPE D

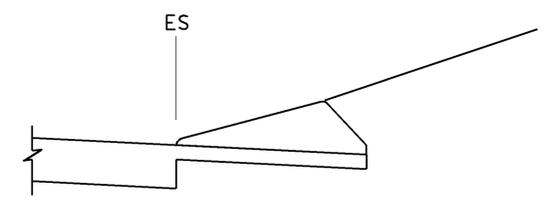


TYPE E

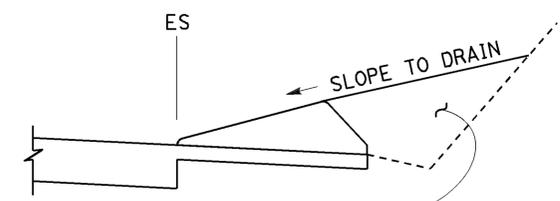


TYPE F
See Note 5

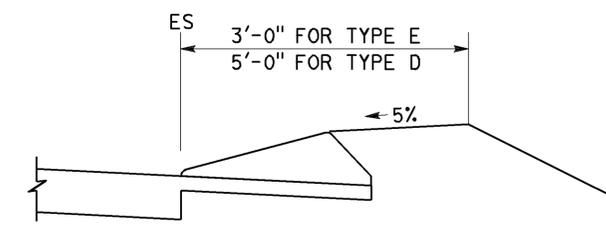
DIKES



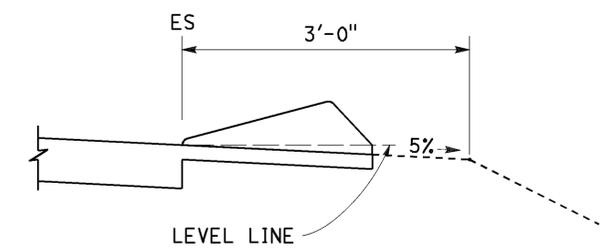
CASE C-1
Cut Slope



CASE C-2
Cut Slope



CASE F



CASE R
See Note 2

TYPE D AND E BACKFILL DETAILS

NOTES:

- For HMA shoulders only, extend top layer of HMA placed on the shoulder under dike with no joint at the ES. For projects with OGFC shoulders, do not extend OGFC under dike. See project plans for modified dike detail.
- Case R applies to retrofit only projects where restrictive conditions do not provide enough width for Case F backfill.
- Type A dike only to be used where restrictive slope conditions do not provide enough width to use Type D or Type E dike.
- Fill and compact with excavated material to top of dike.
- Use Type A or F dike, where dike is required with guardrail installations. See Revised Standard Plan RSP A77N4 for dike positioning details. See Revised Standard Plan RSP A77N3 for hinge point offsets with guardrail.

DIKE QUANTITIES

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

Quantities based on 5% cross slope.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

HOT MIX ASPHALT DIKES

NO SCALE

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

REVISED STANDARD PLAN RSP A87B

2010 REVISED STANDARD PLAN RSP A87B

TO ACCOMPANY PLANS DATED 4-18-16

TABLE 1

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

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

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

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

TABLE 2

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

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

TABLE 3

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

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

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

**TRAFFIC CONTROL SYSTEM TABLES
 FOR LANE AND RAMP CLOSURES**

NO SCALE

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

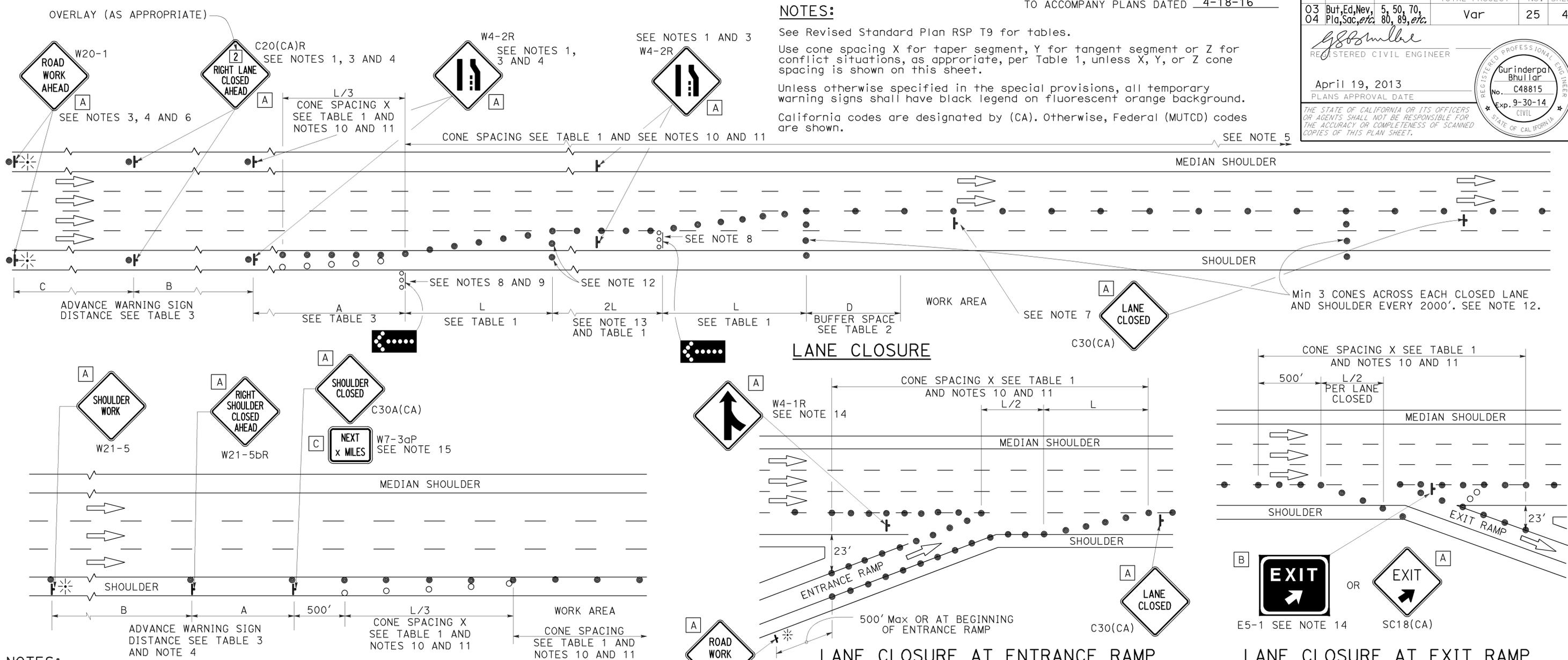
2010 REVISED STANDARD PLAN RSP T9

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03 04	But,Ed,Nev, Pla,Sac,etc	5, 50, 70, 80, 89, etc	Var	25	48

REGISTERED CIVIL ENGINEER
 April 19, 2013
 PLANS APPROVAL DATE

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2010 REVISED STANDARD PLAN RSP T10



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

6. If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT _____ MILES", use a C20(CA)L and W4-2L signs shall be used.
7. Place a C30(CA) sign every 2000' throughout length of lane closure.
8. One flashing arrow sign for each lane closed. The flashing arrow signs shall be Type I.
9. A minimum 1500' of sight distance shall be provided where possible for vehicles approaching the first flashing arrow sign. Lane closures shall not begin at top of crest vertical curve or on a horizontal curve.
10. All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
11. Portable delineators, placed at one-half the spacing indicated for traffic cones may be used instead of cones for daytime closures only.

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

LEGEND

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

SIGN PANEL SIZE (Min)

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

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 DEPARTMENT OF TRANSPORTATION

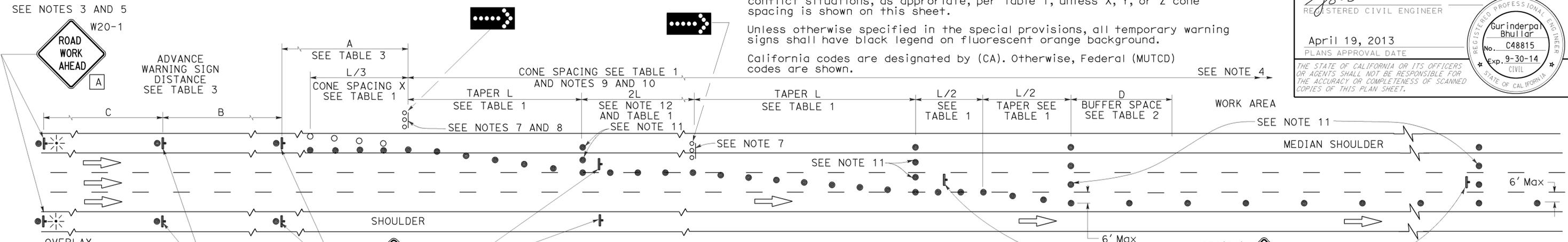
TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE ON FREEWAYS AND EXPRESSWAYS

NO SCALE

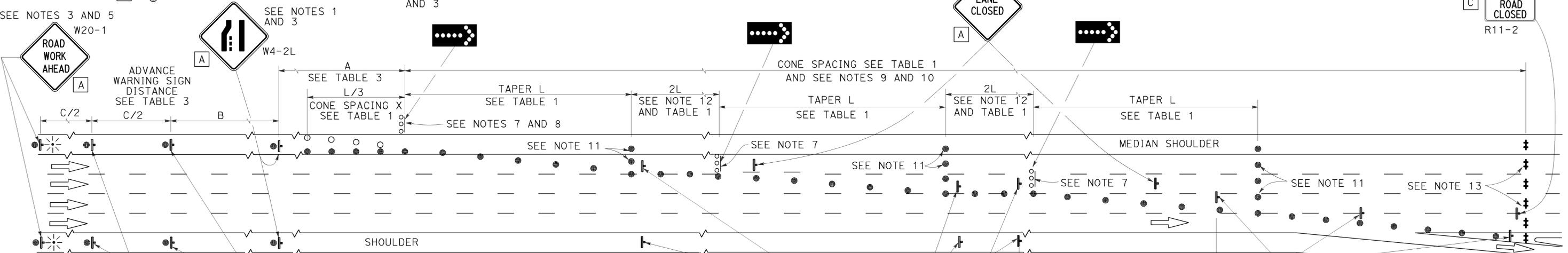
RSP T10 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T10 DATED MAY 20, 2011 - PAGE 237 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T10

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.



LANE CLOSURE WITH PARTIAL SHOULDER USE



COMPLETE CLOSURE

NOTES:

- Lane closures on the right side using partial median shoulder as a traffic lane shall conform to the details as shown except that C20(CA)R and W4-2R signs shall be used.
- At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closures.
- 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.
- If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT ___ MILES", use a C20(CA) sign for the first advance warning sign.
- 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 the 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 With Partial Shoulder Use" 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.
- A minimum of Two Type II or III barricades shall be placed across each closed lane and shoulder at the location shown and every 2000' within the complete closure area. Within the complete closure area, the transverse alignment of the barricades on the closed shoulder may be shifted from the transverse alignment to provide access to the work.
- When specified in the special provisions, a W20-2 "DETOUR AHEAD" sign is to be used in place of the W20-3 "FREEWAY CLOSED AHEAD" sign.

SIGN PANEL SIZE (Min)

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

LEGEND

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

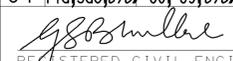
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**TRAFFIC CONTROL SYSTEM
FOR LANE CLOSURES ON
FREEWAYS AND EXPRESSWAYS**
NO SCALE

RSP T10A DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T10A DATED MAY 20, 2011 - PAGE 238 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T10A

2010 REVISED STANDARD PLAN RSP T10A

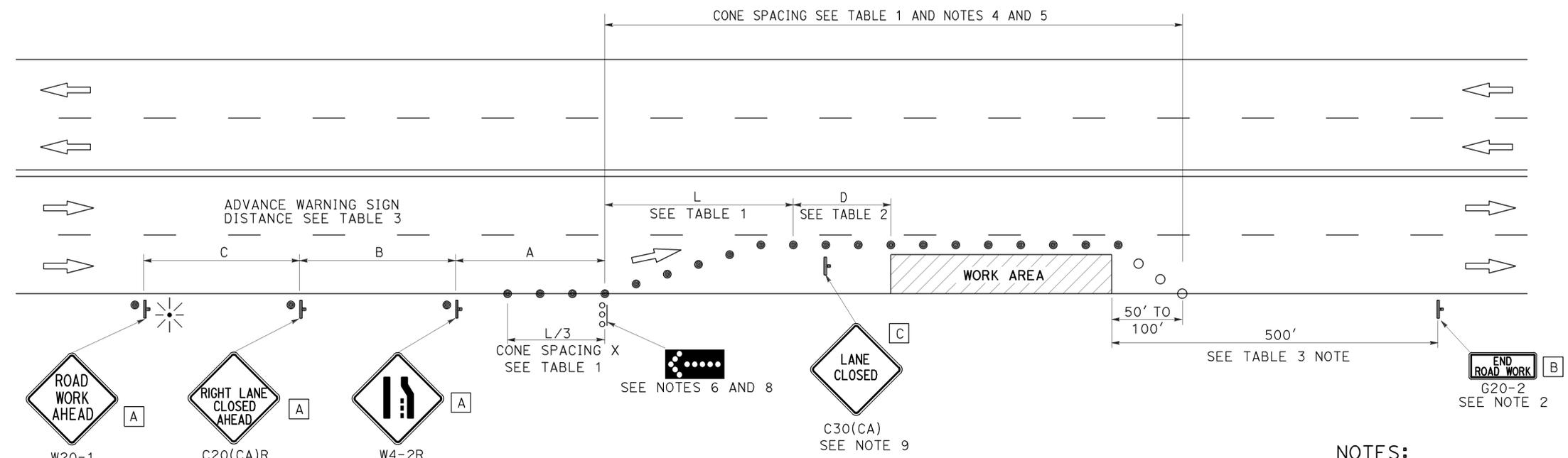
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03 04	But,Ed,New, Pla,Sac,etc	5, 50, 70, 80, 89, etc	Var	27	48


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 April 19, 2013
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TO ACCOMPANY PLANS DATED 4-18-16



TYPICAL LANE CLOSURE

NOTES:

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

NOTES:

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

LEGEND

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

SIGN PANEL SIZE (Min)

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

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

NO SCALE

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

REVISED STANDARD PLAN RSP T11

2010 REVISED STANDARD PLAN RSP T11

NOTES:

See Revised Standard Plan RSP T9 for tables.

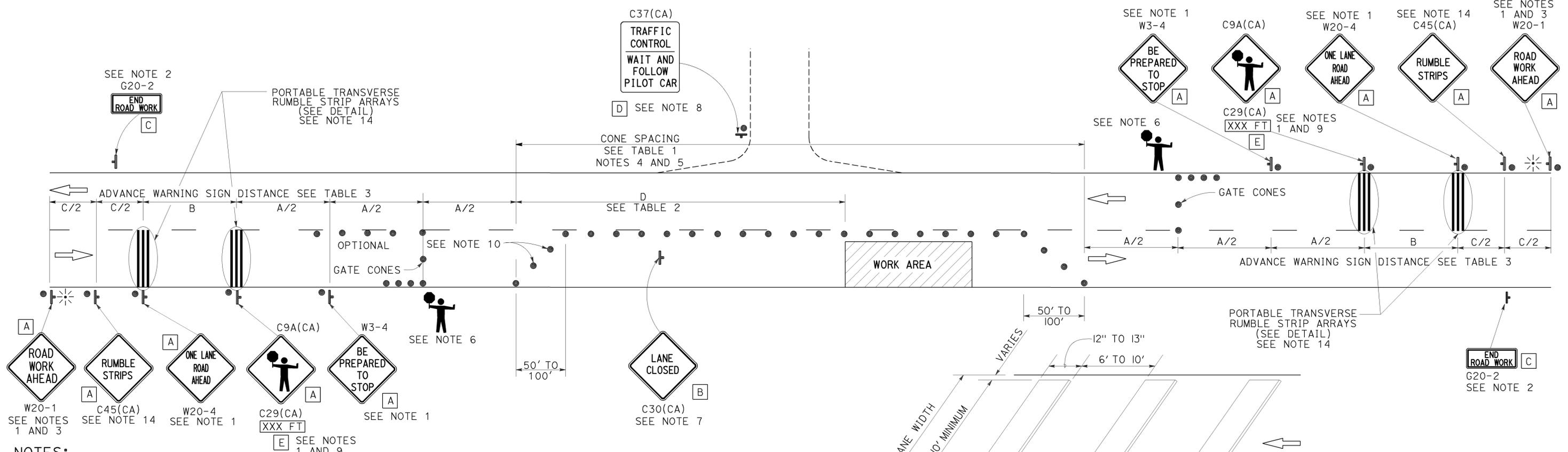
Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as appropriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.

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

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

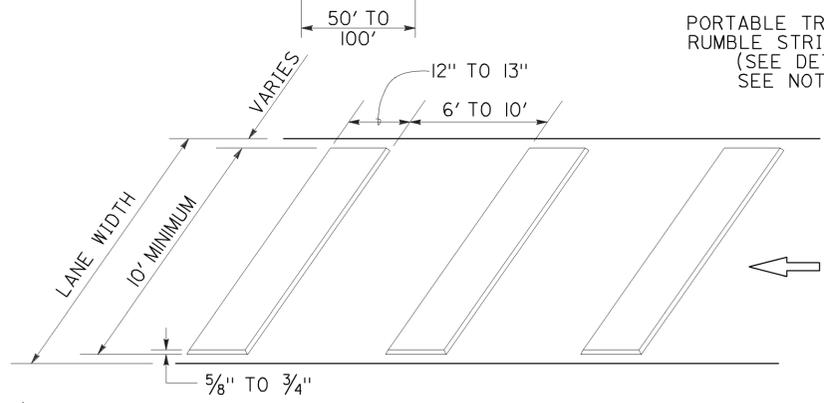
TYPICAL LANE CLOSURE WITH REVERSIBLE CONTROL

TO ACCOMPANY PLANS DATED 4-18-16



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

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



SIGN PANEL SIZE (Min)

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

LEGEND

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

TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE ON TWO LANE CONVENTIONAL HIGHWAYS

NO SCALE

RSP T13 DATED OCTOBER 30, 2015 SUPERSEDES RSP T13 DATED OCTOBER 17, 2014, RSP T13 DATED JULY 18, 2014 AND RSP T13 DATED APRIL 19, 2013 AND STANDARD PLAN T13 DATED MAY 20, 2011 - PAGE 241 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP T13

TYPICAL RAMP CLOSURES

SIGN PANEL SIZE (Min)

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

LEGEND

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03 04	But,Ed,New, Pla,Sac,etc	5, 50, 70, 80, 89, etc	Var	29	48

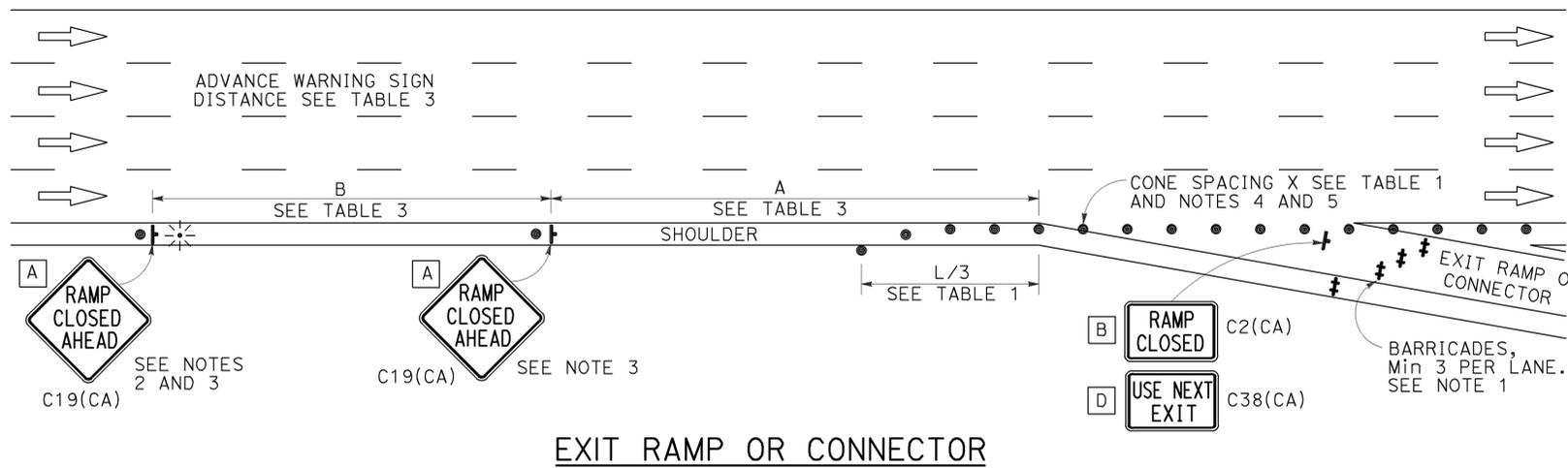
Gurinderpal Bhullar
 REGISTERED CIVIL ENGINEER
 April 19, 2013
 PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

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

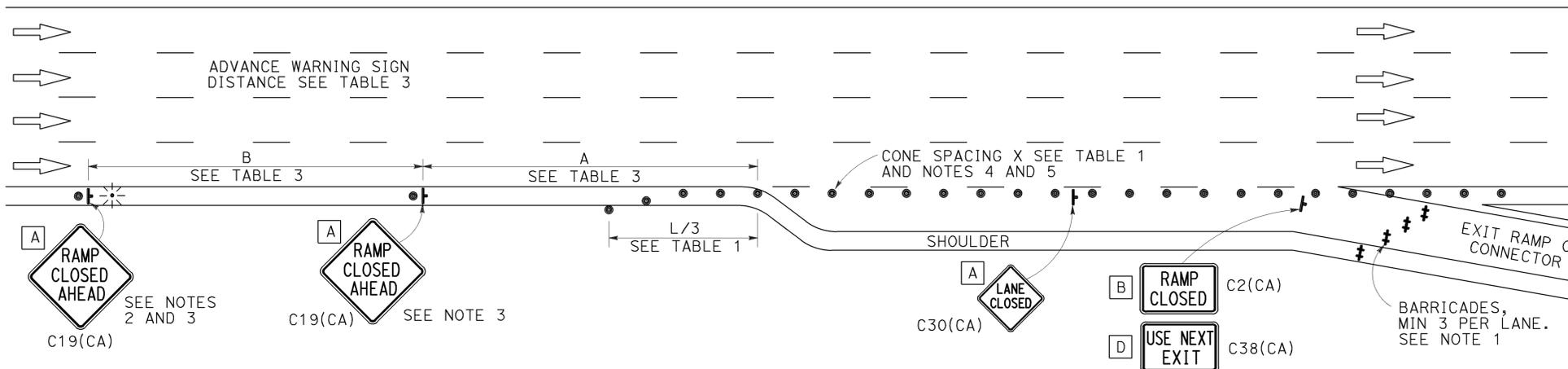
TO ACCOMPANY PLANS DATED 4-18-16

NOTES:

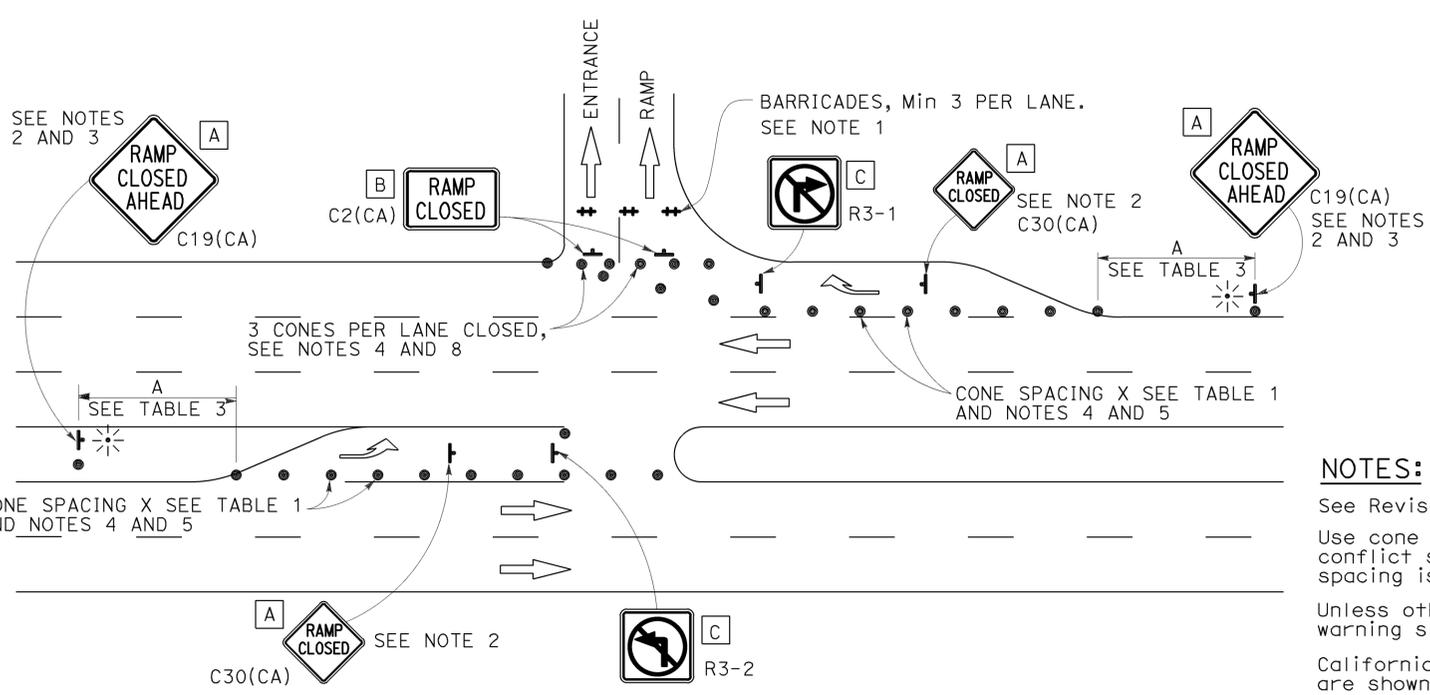
- Barricades shall be Type I, II, or III for closures lasting one week or less and Type III for closures lasting longer than one week.
- In addition to placing the C19(CA) "RAMP CLOSED AHEAD" and C30(CA) "RAMP CLOSED" signs, black on orange overlay plates with the word "CLOSED" may be mounted, as directed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



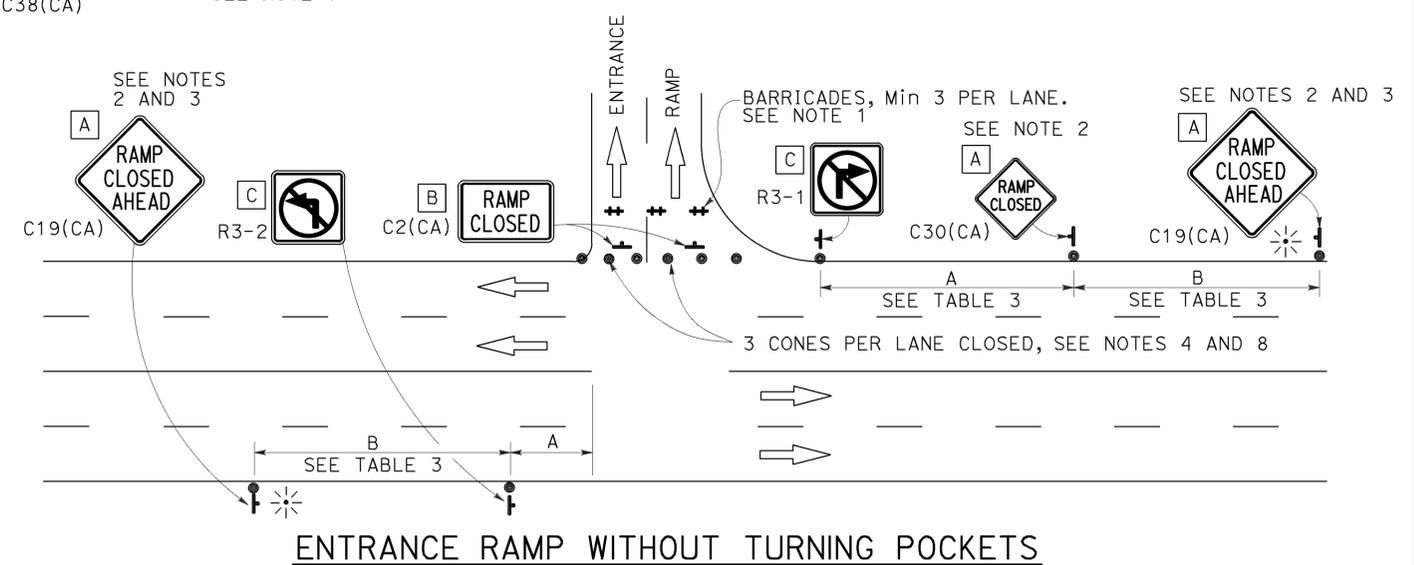
EXIT RAMP OR CONNECTOR



EXIT RAMP OR CONNECTOR WITH ADDITIONAL LANE



ENTRANCE RAMP WITH TURNING POCKETS



ENTRANCE RAMP WITHOUT TURNING POCKETS

NOTES:

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

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

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

2010 REVISED STANDARD PLAN RSP T14

LEGEND:

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

ABBREVIATIONS

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

MISCELLANEOUS ELECTROLIERS

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

NOTES:

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

STANDARD ELECTROLIER

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03 04	But,Ed,New, Pla,Sac,etc	5, 50, 70, 80, 89, etc	Var	30	48
 REGISTERED ELECTRICAL ENGINEER Theresa Gabriel No. E15129 Exp. 6-30-16 ELECTRICAL STATE OF CALIFORNIA					
October 30, 2015 PLANS APPROVAL DATE					
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					

TO ACCOMPANY PLANS DATED 4-18-16

SOFFIT AND WALL-MOUNTED LUMINAIRES

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

NOTE:

Arrow indicates "street side" of luminaire.

COMMONLY USED SYMBOLS FOR UNITED STATES CUSTOMARY UNITS OF MEASUREMENT:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

NO SCALE

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

REVISED STANDARD PLAN RSP ES-1A

2010 REVISED STANDARD PLAN RSP ES-1A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03 04	But,Ed,New, Pla,Sac,etc	5, 50, 70, 80, 89, etc	Var	31	48

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

October 30, 2015
PLANS APPROVAL DATE

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

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

TO ACCOMPANY PLANS DATED 4-18-16

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
		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

SERVICE EQUIPMENT

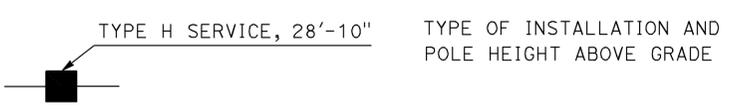
NEW	EXISTING	
---OH---	---oh---	OVERHEAD LINES
		WOOD POLE, "U" INDICATES UTILITY OWNED
		POLE GUY WITH ANCHOR
		UTILITY TRANSFORMER - GROUND MOUNTED
		SERVICE EQUIPMENT ENCLOSURE TYPE. DOOR INDICATES FRONT OF ENCLOSURE
		TELEPHONE DEMARCATON CABINET

		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

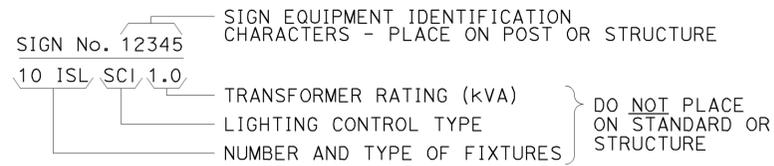
RSP ES-1B DATED OCTOBER 30, 2015 SUPERSEDES RSP ES-1B DATED JULY 19, 2013 AND STANDARD PLAN ES-1B DATED MAY 20, 2011 - PAGE 426 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-1B

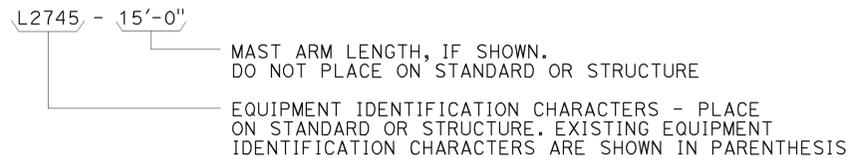
2010 REVISED STANDARD PLAN RSP ES-1B

EQUIPMENT IDENTIFICATION

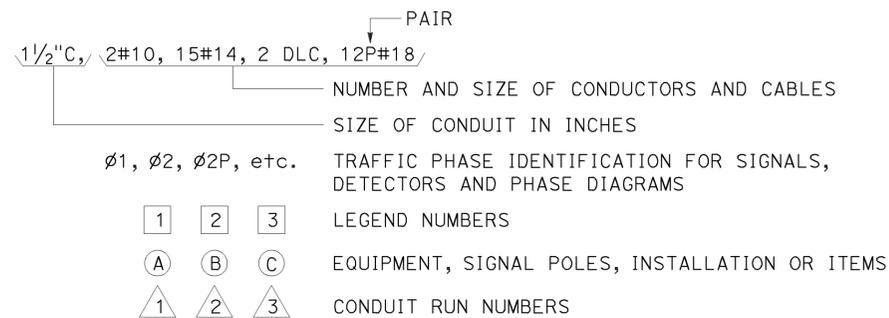
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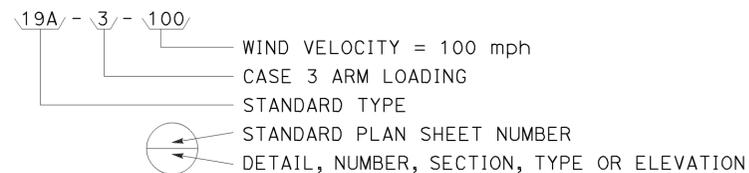
ELECTROLIER OR EQUIPMENT IDENTIFICATION:



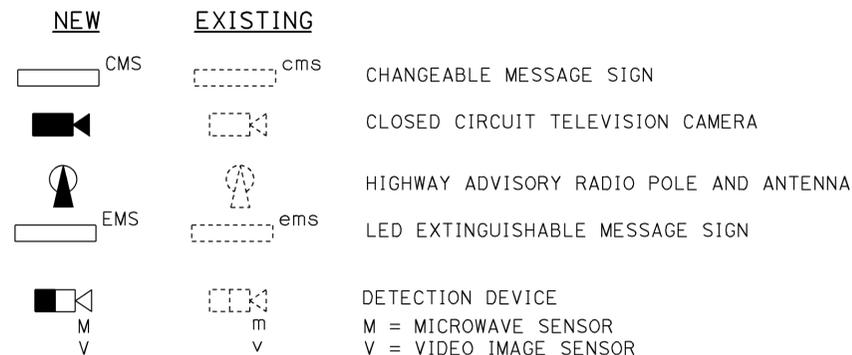
CONDUIT AND CONDUCTOR IDENTIFICATION:



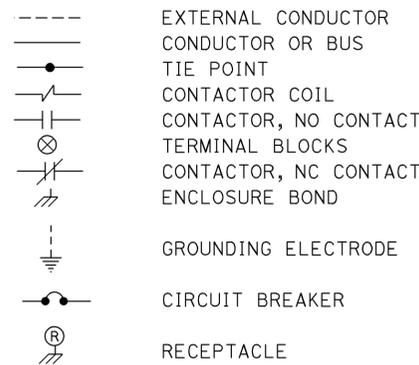
SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



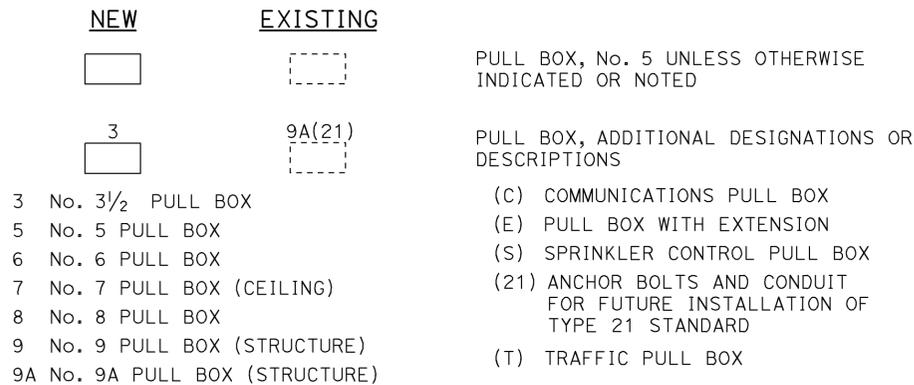
MISCELLANEOUS EQUIPMENT



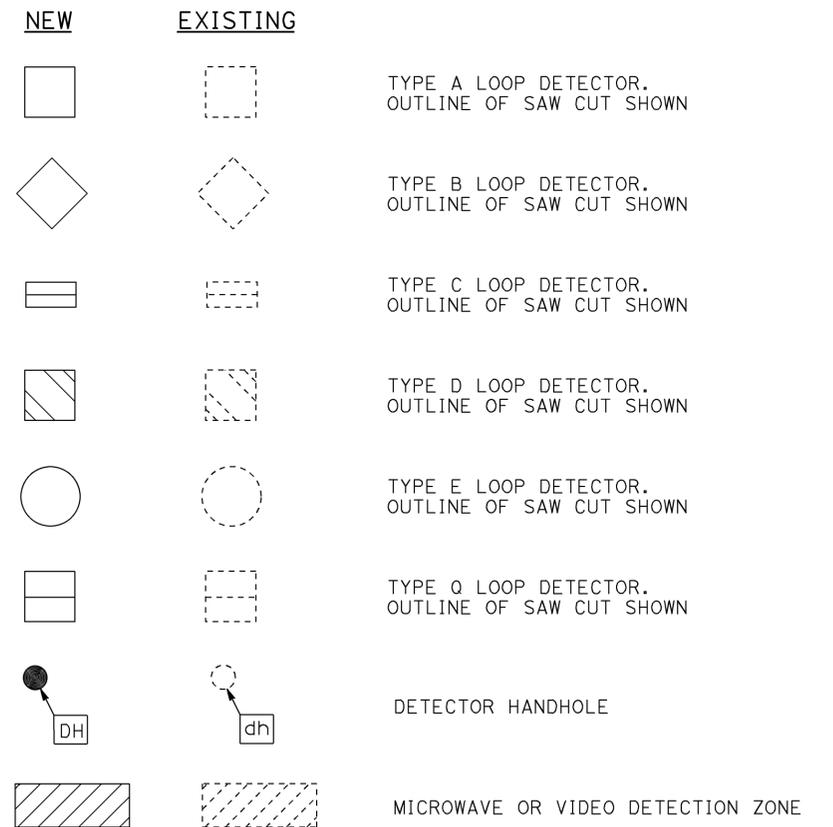
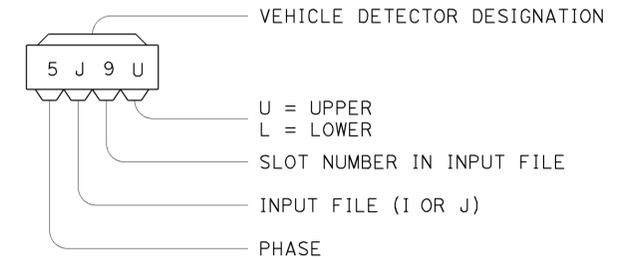
WIRING DIAGRAM LEGEND



PULL BOXES



VEHICLE DETECTORS



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

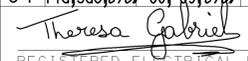
ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

NO SCALE

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

REVISED STANDARD PLAN RSP ES-1C

2010 REVISED STANDARD PLAN RSP ES-1C

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03 04	But,Ed,Nev, Pla,Sac,etc	5, 50, 70, 80, 89, etc	Var	33	48
 REGISTERED ELECTRICAL ENGINEER					
October 30, 2015 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



TO ACCOMPANY PLANS DATED 4-18-16

NOTES:

1. The plan shows the approximate location of devices within the enclosure. Components may be rearranged, however, the "working" clearances within the service equipment enclosure shall be maintained.
2. In unpaved areas a raised portland cement concrete pad 2'-0" x 4" x width of foundation shall be constructed in front of new service equipment enclosure installation. Pad shall be set to elevation of foundation.
3. Plug-in circuit breakers may be mounted in the vertical or horizontal position. Cable-in/cable-out circuit breakers shall be mounted in the vertical position.
4. Type III-AF and Type III-BF service equipment enclosures shall have the meter viewing windows located on the front side of the service equipment enclosures.
5. Type III-AR and Type III-BR service equipment enclosure shall be similarly constructed as Type III-AF and Type III-BF respectively, except the meter viewing windows shall be located on the back side of the service equipment enclosures.

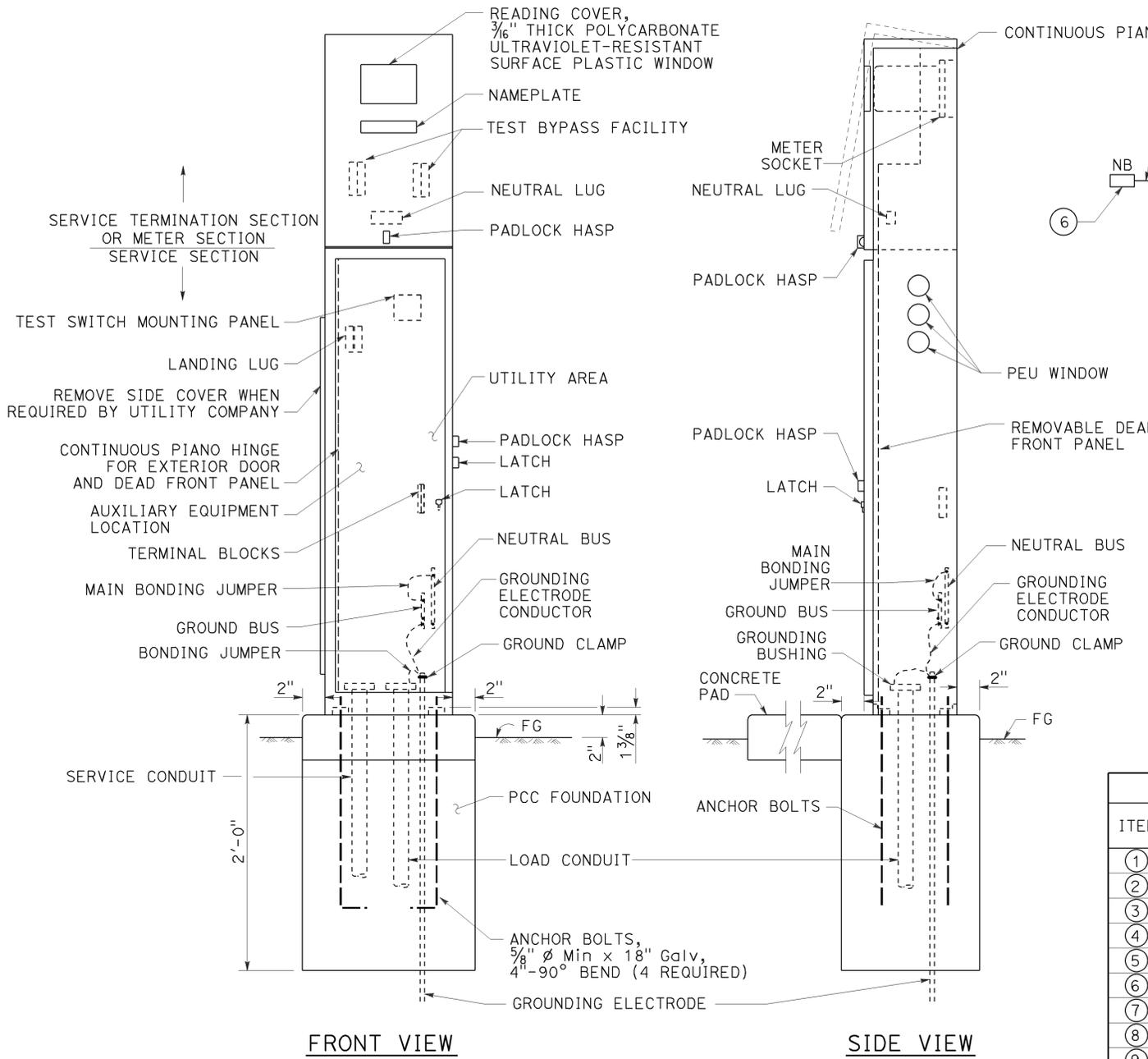
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
(SERVICE EQUIPMENT ENCLOSURE
NOTES TYPE III SERIES)**

NO SCALE

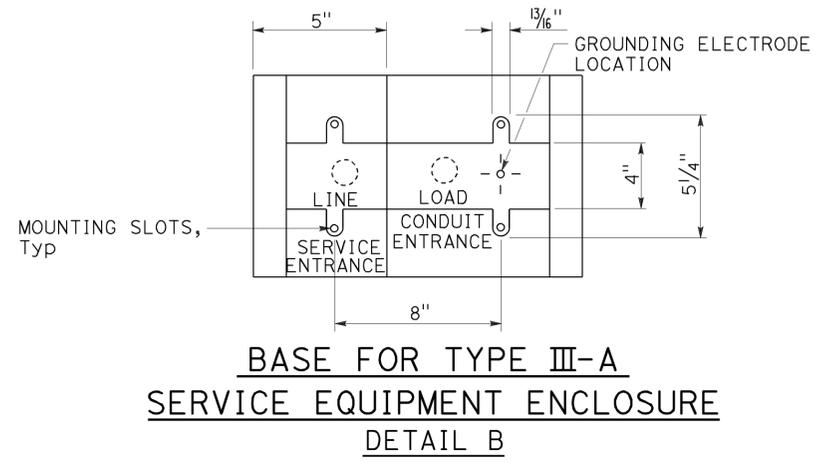
RSP ES-2C DATED OCTOBER 30, 2015 SUPERSEDES STANDARD PLAN ES-2C DATED
MAY 20, 2011 - PAGE 430 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-2C

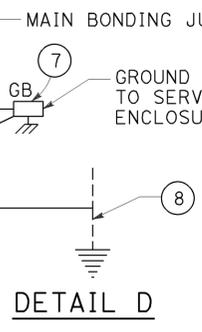
2010 REVISED STANDARD PLAN RSP ES-2C



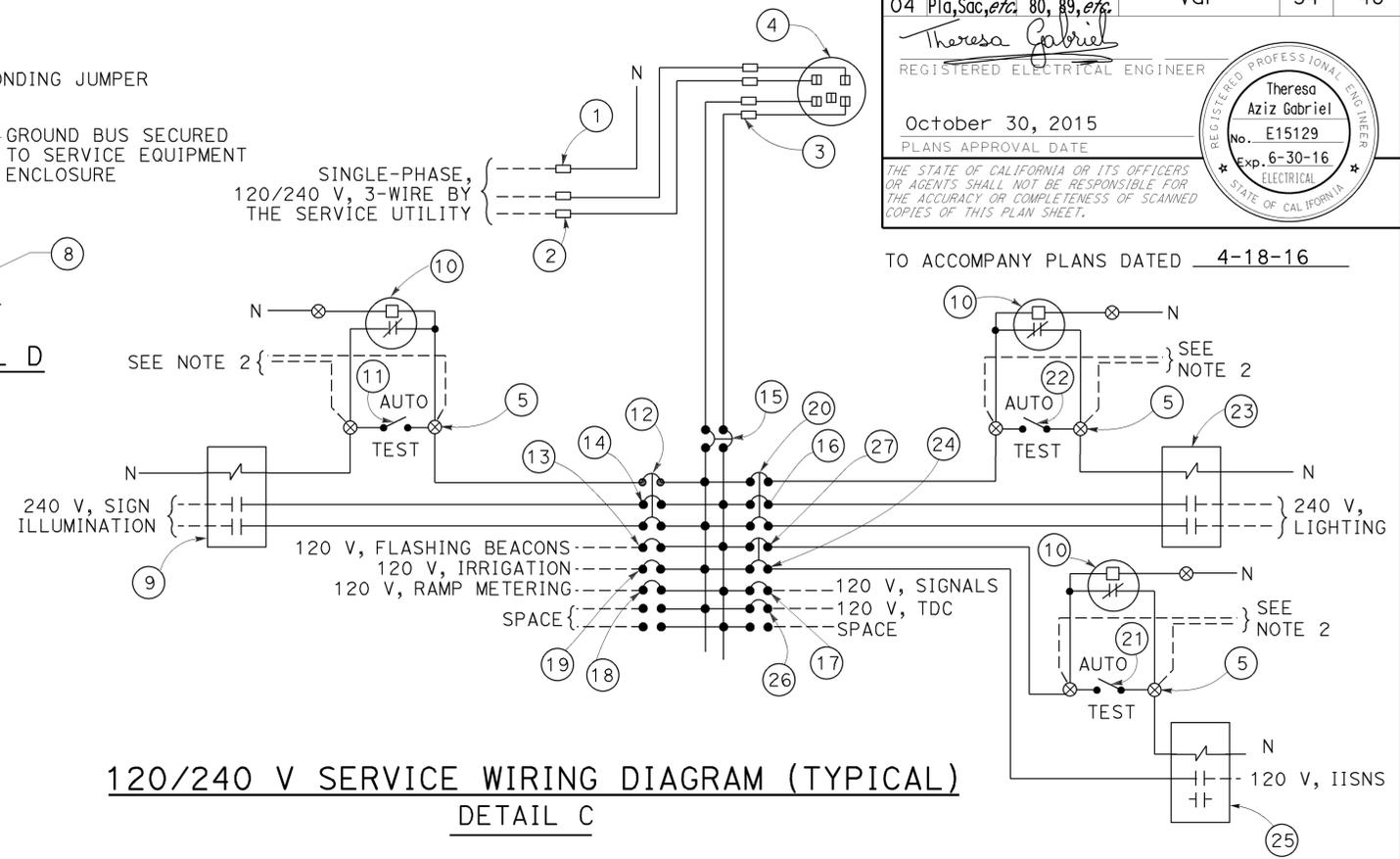
TYPE III-AF SERVICE EQUIPMENT ENCLOSURE (TYPICAL)
DETAIL A



BASE FOR TYPE III-A SERVICE EQUIPMENT ENCLOSURE
DETAIL B



DETAIL D



120/240 V SERVICE WIRING DIAGRAM (TYPICAL)
DETAIL C

TYPE III-A SERVICE EQUIPMENT ENCLOSURE LEGEND (120/240 V)					
ITEM	COMPONENT	NAMEPLATE DESCRIPTION	ITEM	COMPONENT	NAMEPLATE DESCRIPTION
①	NEUTRAL LUG		⑭	30 A, 240 V, 2P, CB	SIGN ILLUMINATION
②	LANDING LUG		⑮	100 A, 240 V, 2P, CB	MAIN BREAKER
③	TEST BYPASS FACILITY		⑯	30 A, 240 V, 2P, CB	LIGHTING
④	METER SOCKET AND SUPPORT		⑰	50 A, 120 V, 1P, CB	SIGNALS
⑤	TERMINAL BLOCKS		⑱	30 A, 120 V, 1P, CB	RAMP METERING
⑥	NEUTRAL BUS		⑲	20 A, 120 V, 1P, CB	IRRIGATION
⑦	GROUND BUS		⑳	15 A, 120 V, 1P, CB	LIGHTING CONTROL
⑧	GROUNDING ELECTRODE		㉑	15 A, 1P, TEST SWITCH	IISNS TEST SWITCH
⑨	30 A, 2P, NO CONTACTOR	SIGN ILLUMINATION	㉒	15 A, 1P, TEST SWITCH	LIGHTING TEST SWITCH
⑩	PHOTOELECTRIC UNIT (NOTE 4)	PEU	㉓	60 A, 2P, NO CONTACTOR	LIGHTING
⑪	15 A, 1P, TEST SWITCH	SIGN ILLUMINATION TEST SWITCH	㉔	15 A, 120 V, 1P, CB	IISNS
⑫	15 A, 120 V, 1P, CB	SIGN ILLUMINATION CONTROL	㉕	30 A, 2P, NO CONTACTOR	IISNS
⑬	15 A, 120 V, 1P, CB	FLASHING BEACON	㉖	20 A, 120 V, 1P, CB	TELEPHONE DEMARCATION CABINET
			㉗	15 A, 120 V, 1P, CB	IISNS CONTROL

NOTES:

1. Unless otherwise indicated on the plans, service equipment items shall be provided for each service equipment enclosure as shown.
2. Connect to remote test switch mounted on lighting standards, sign post or structure when required.
3. Items ① and ⑥ shall be isolated from the service equipment enclosure.
4. Type I photoelectric control shall be used unless otherwise indicated on the plans.
5. Item ⑫, ⑳ and ㉗ shall be ganged operated CB.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
(SERVICE EQUIPMENT ENCLOSURE
AND TYPICAL WIRING DIAGRAM,
TYPE III-A SERIES)**
NO SCALE

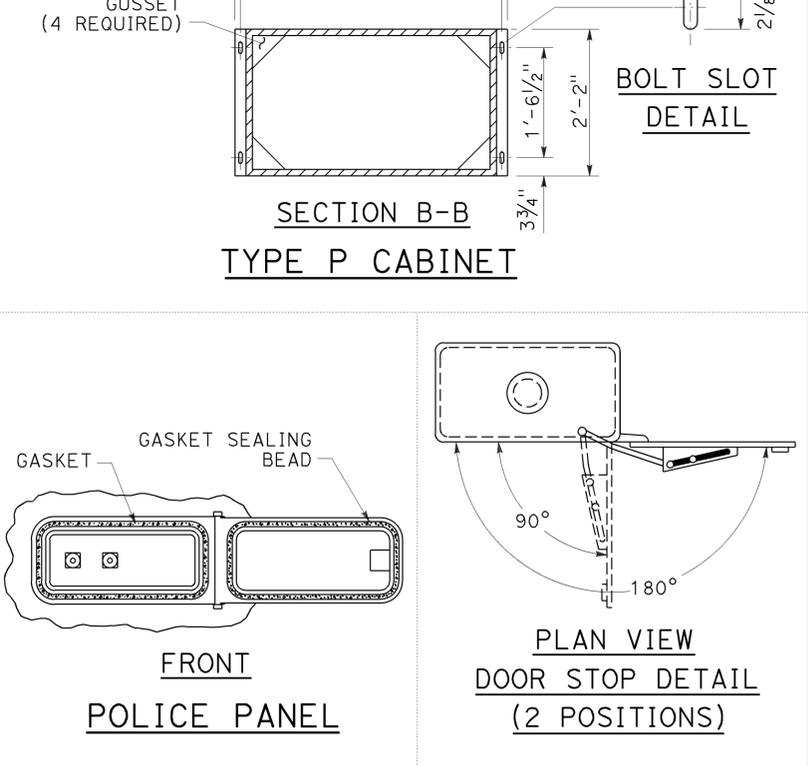
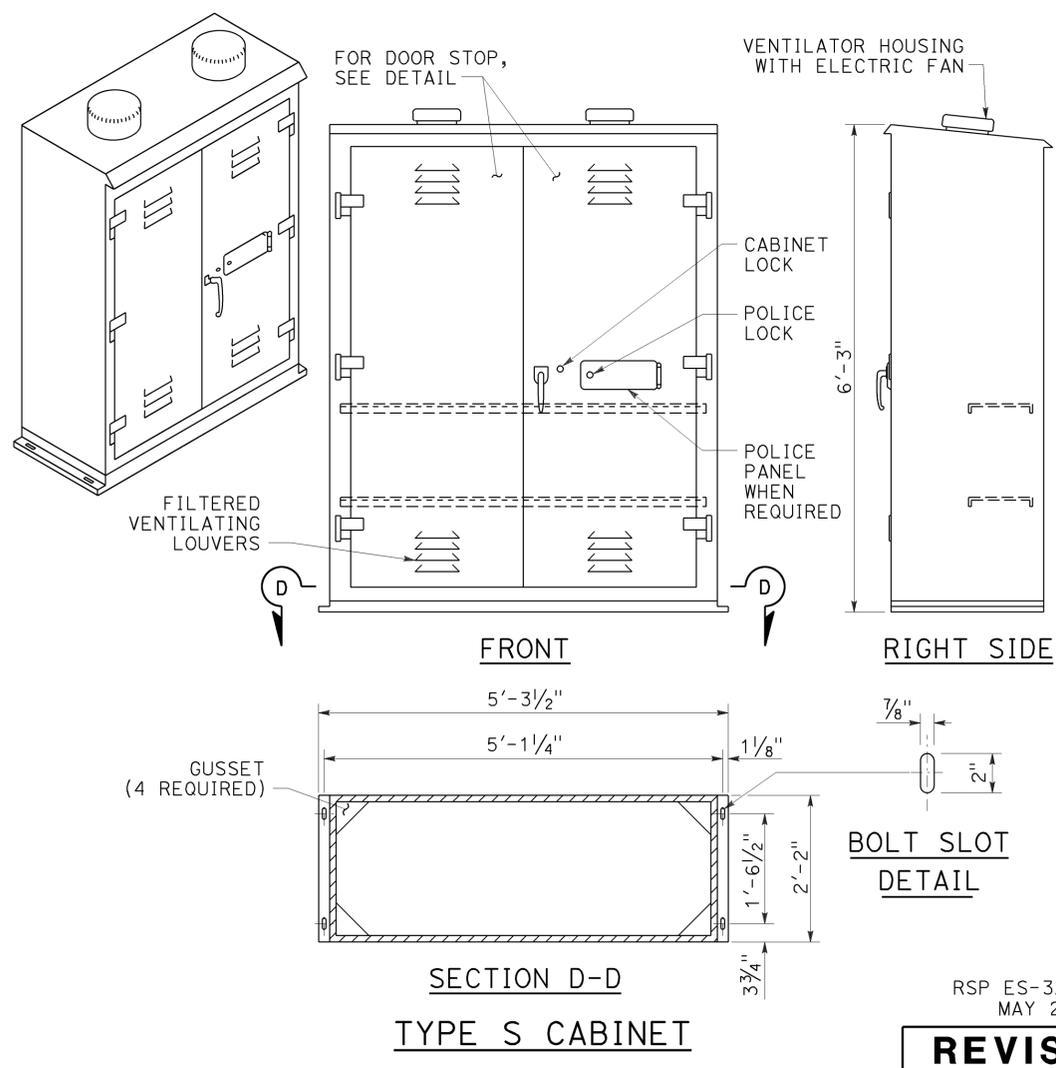
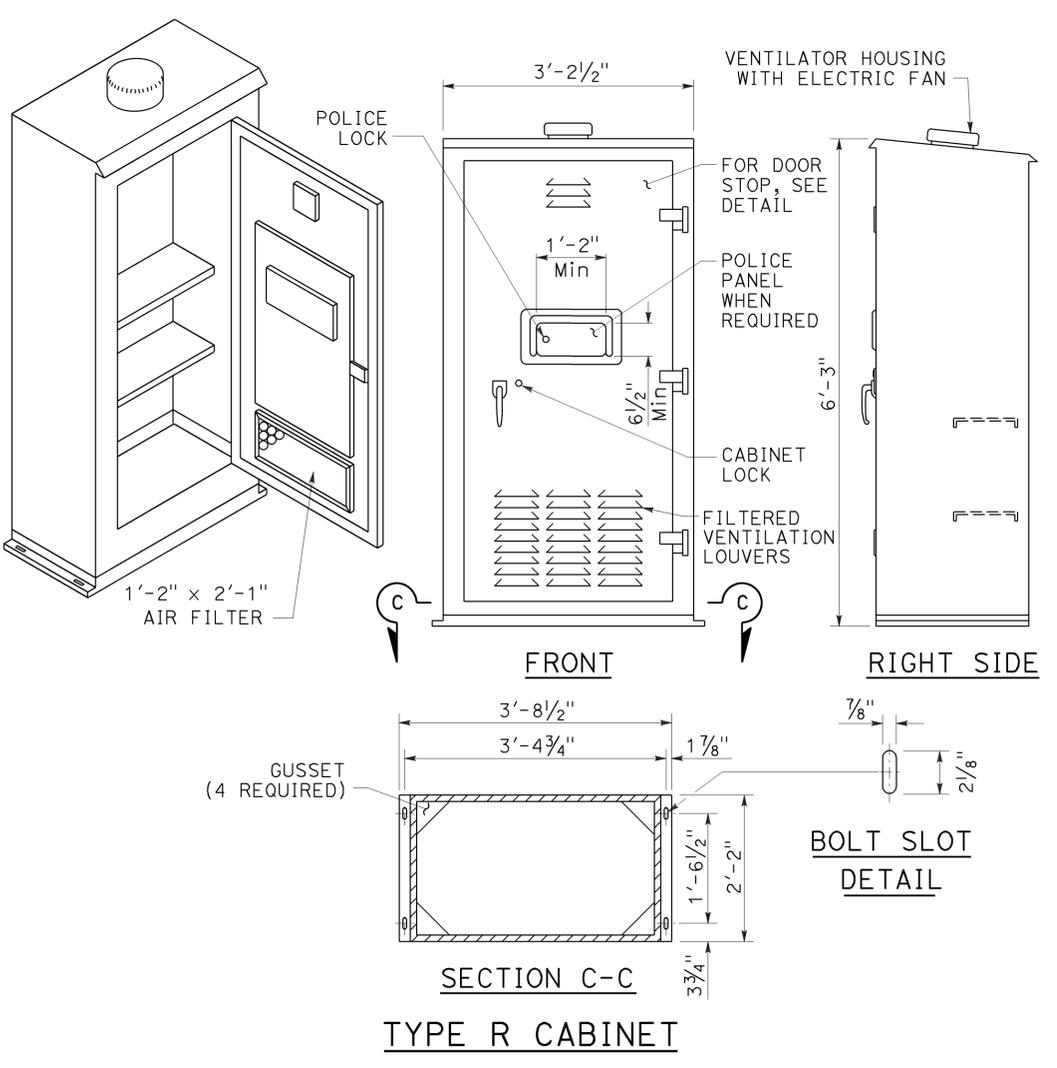
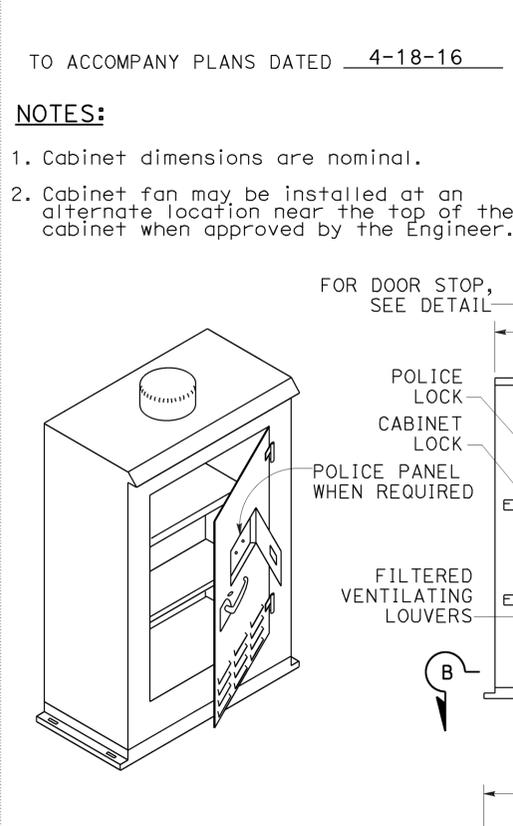
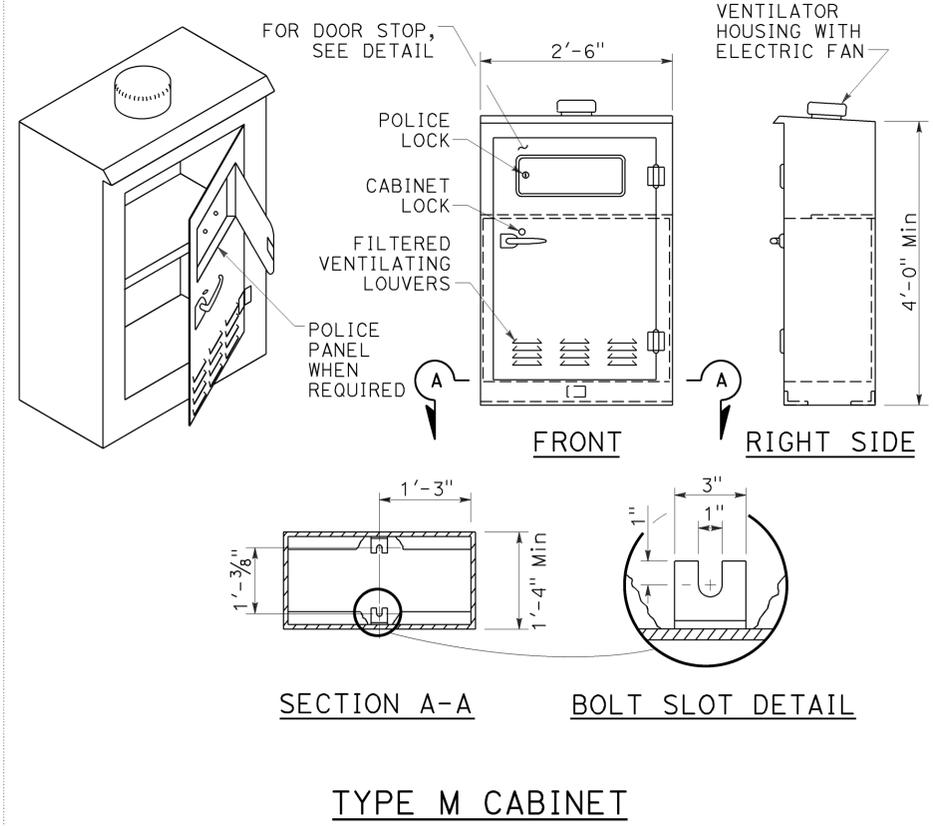
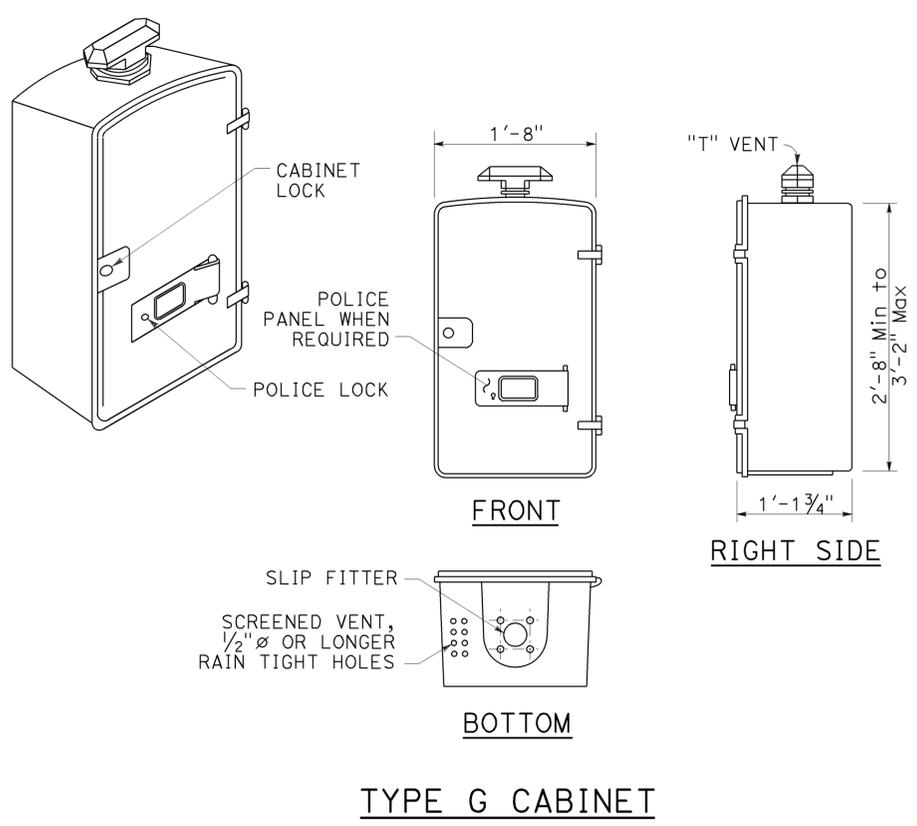
RSP ES-2D DATED OCTOBER 30, 2015 SUPERSEDES STANDARD PLAN ES-2D DATED MAY 20, 2011 - PAGE 431 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-2D

2010 REVISED STANDARD PLAN RSP ES-2D

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But,Ed,Nev, 04	5, 50, 70, 80, 89, etc.	Var	35	48
Theresa Gabriel REGISTERED ELECTRICAL ENGINEER October 30, 2015 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>					

2010 REVISED STANDARD PLAN RSP ES-3A



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS
(CONTROLLER CABINET
DETAILS)**

NO SCALE

RSP ES-3A DATED OCTOBER 30, 2015 SUPERSEDES STANDARD PLAN ES-3A DATED MAY 20, 2011 - PAGE 435 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-3A

NOTES:

1. Type G, M, P, R, S and Model 336L cabinets shall be installed with the back toward the nearest lane of traffic.
2. In unpaved areas, a raised portland cement concrete pad shall be constructed in front of each controller cabinet. The pad shall be 3'-0" x 3'-0" x 4" for a Type G cabinet and shall be 3'-0" x 4" thick x width of foundation for Type M, P, R, S and Model 336L cabinets.
3. The steel pedestal, base plate and bolt circle for Type G cabinet shall be the same as that shown for a Type 1-C Standard (see RSP ES-7B). Pedestal shall be 2'-1" to 2'-6" in length. Anchor bolts shall be 3/4" x 1'-6" with a 2" - 90° bend. Four bolts required per cabinet.
4. Type G cabinet shall be provided with a slipfitter to permit mounting an 4 1/2" outside diameter pedestal. Slipfitter shall be bolted to bottom of the cabinet.
5. A 1" drain shall be provided through the foundation of a Type M or Model 336L cabinet. Drain pipe shall be screened.
6. Cabinet shelves shall be adjustable for vertical spacing and shall be removable. Type M, P, R and S cabinets shall be provided with a minimum of two shelves.
7. Controller units, plug-mounted equipment, shelf-mounted equipment and wall-mounted equipment shall be located to permit safe and easy removal or replacement without removing any other piece of equipment.
8. Where telephone interconnect is required, a minimum of 5" clear vertical space shall be provided inside the cabinet for the equipment.
9. Telephone interconnect conductors shall be enclosed in a 3/4" C or larger conduit through the foundation. Type 4 conduit shall be used to separate telephone and power conductors in cabinets or pedestals.
10. Anchor bolts for Type M, P, R, S and Model 336L cabinets shall be 3/4" ø x 1'-6" with a 2" - 90° bend.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03 04	But,Ed,Nev, Pla,Sac,etc	5, 50, 70, 80, 89, etc	Var	36	48

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

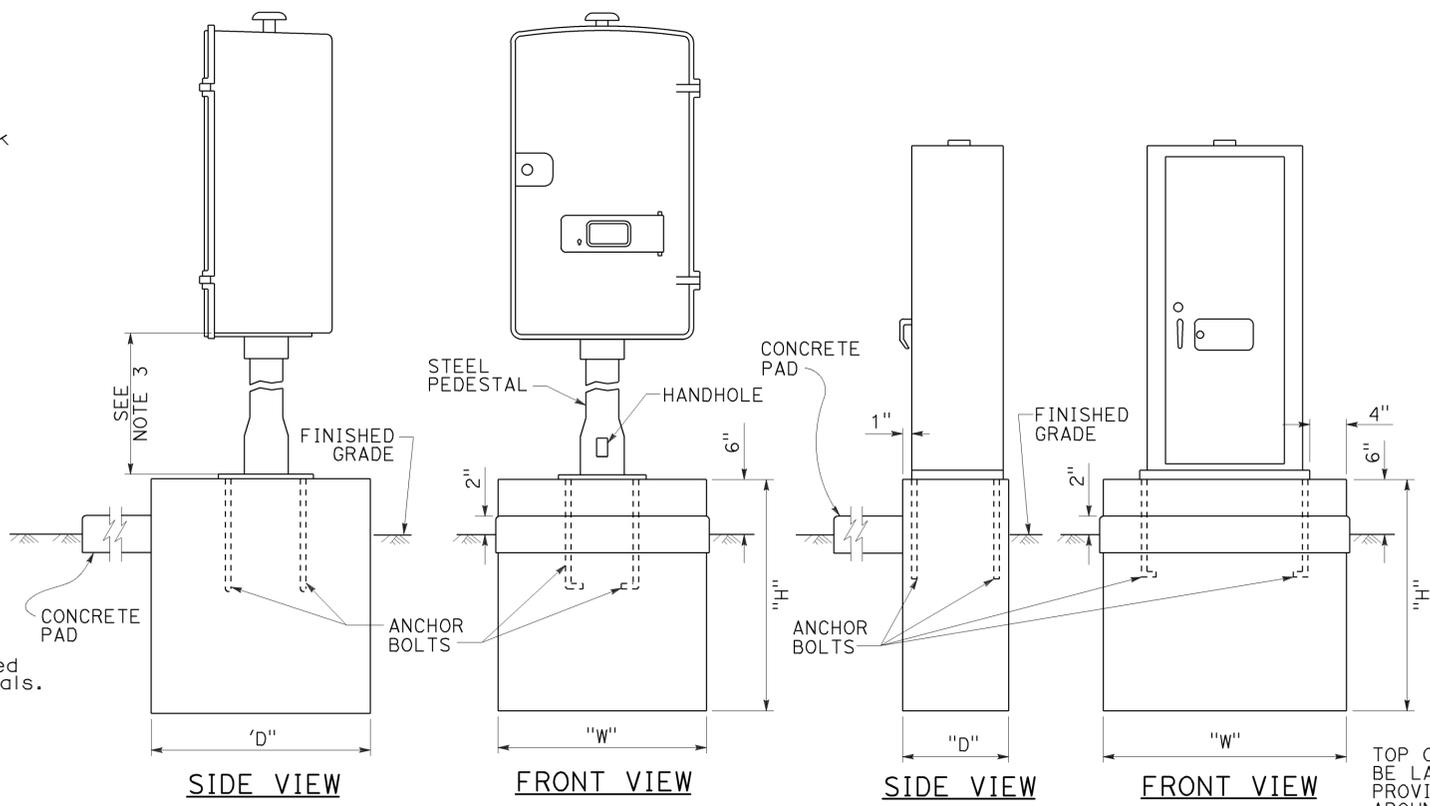
April 15, 2016
PLANS APPROVAL DATE

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

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

TO ACCOMPANY PLANS DATED 4-18-16

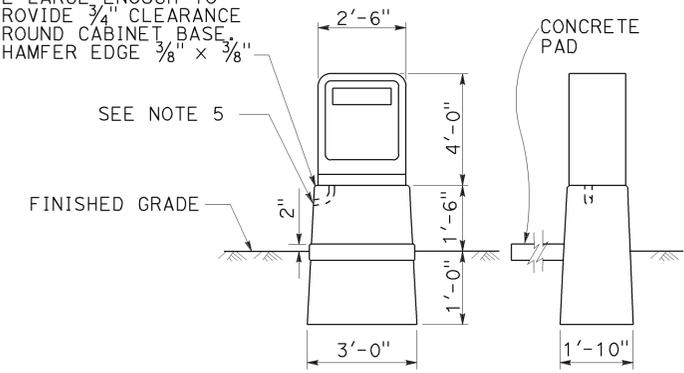
CABINET TYPE	FOUNDATION		
	"W"	"H"	"D"
G	2'-0"	3'-6"	2'-0"
M	3'-2"	2'-6"	1'-6"
P	4'-4 1/2"	1'-6"	2'-4"
R	4'-2"	1'-6"	2'-4"
S	5'-11 1/2"	1'-6"	2'-4"



**FOUNDATION FOR TYPE G CABINET
DETAIL A**

**FOUNDATION FOR TYPE P, R AND S CABINETS
DETAIL B**

TOP OF PEDESTAL SHALL BE LARGE ENOUGH TO PROVIDE 3/4" CLEARANCE AROUND CABINET BASE. CHAMFER EDGE 3/8" x 3/8"



**FRONT VIEW SIDE VIEW
PEDESTAL FOUNDATION FOR TYPE M OR MODEL 336L CABINET
DETAIL C**

NOTES:

- A. Material: 0.188" thickness aluminum plate.
- B. Adapter for Type P or Type R cabinet foundation.
- C. Adapter for Type M cabinet foundation.
- D. Mounting bolts shall be 3/8" ø minimum size.

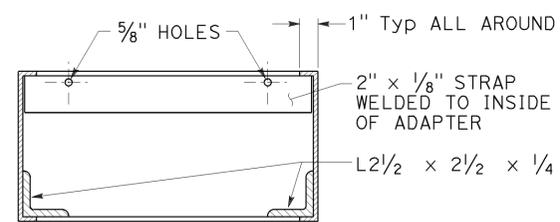
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS
(CONTROLLER CABINET ADAPTER, FOUNDATIONS, AND PAD DETAILS)**

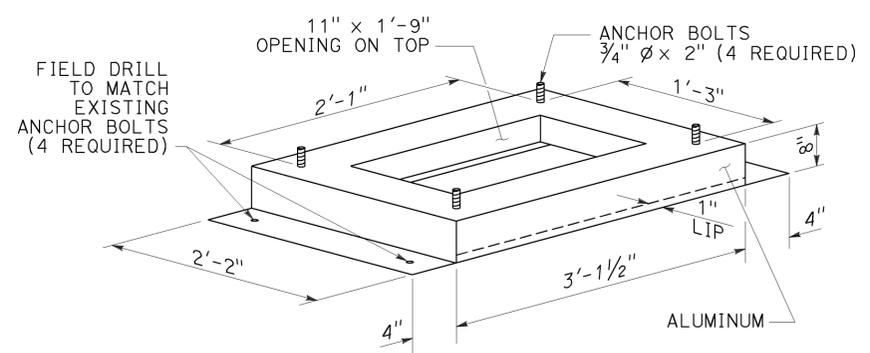
NO SCALE

RSP ES-3B DATED APRIL 15, 2016 SUPERSEDES RSP ES-3B DATED OCTOBER 30, 2015 AND STANDARD PLAN ES-3B DATED MAY 20, 2011 - PAGE 436 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-3B

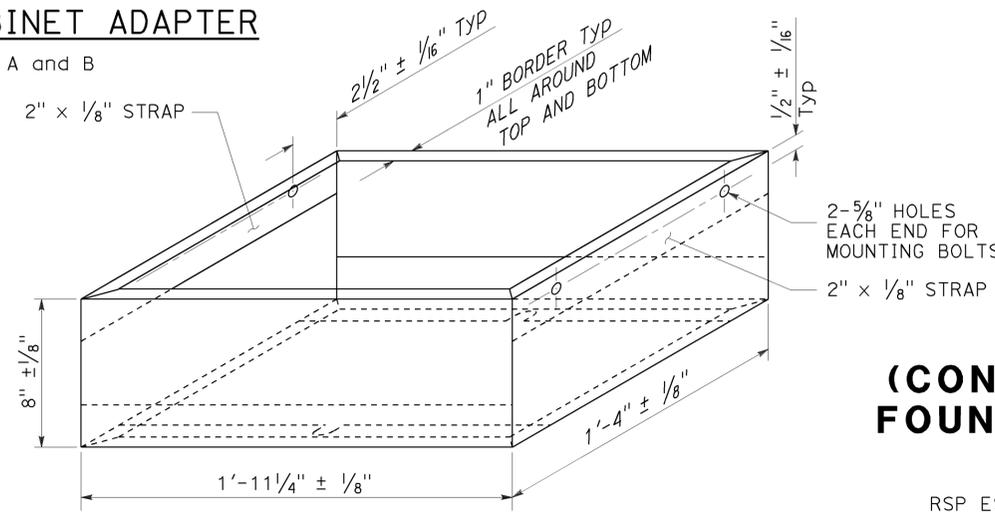


SECTION A-A



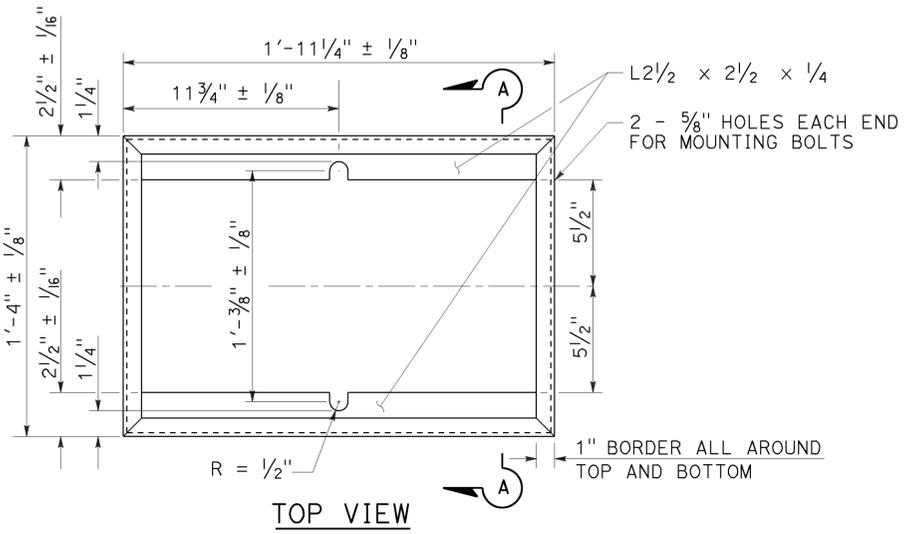
TYPE PR CABINET ADAPTER

See Notes A and B



TYPE M CABINET ADAPTER

See Notes A, C, and D



TOP VIEW

2010 REVISED STANDARD PLAN RSP ES-3B

NOTES:

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

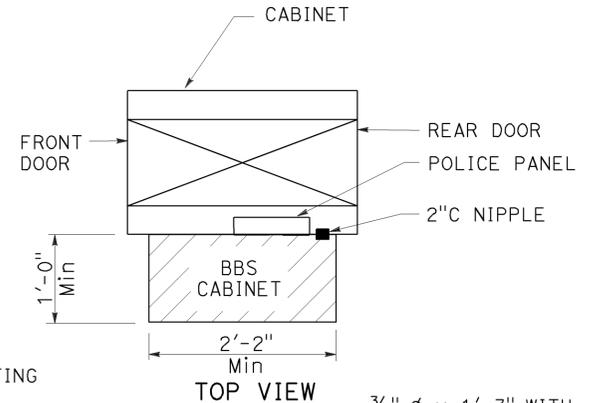
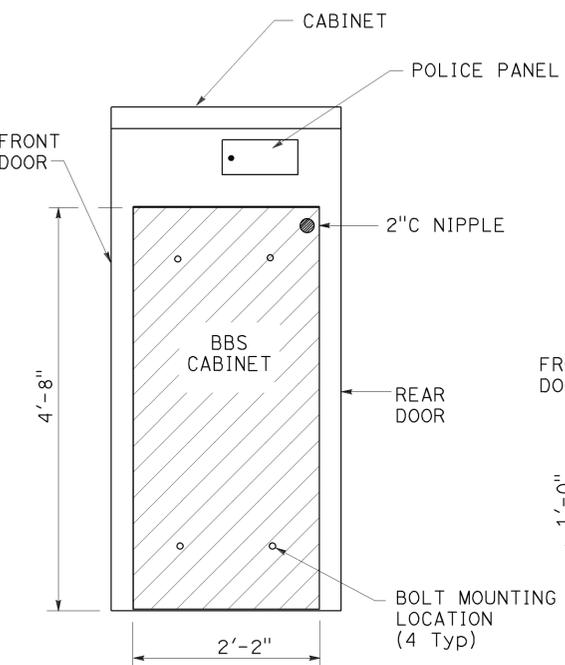
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03 04	But,Ed,New, Pla,Sac,etc	5, 50, 70, 80, 89, etc	Var	37	48

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

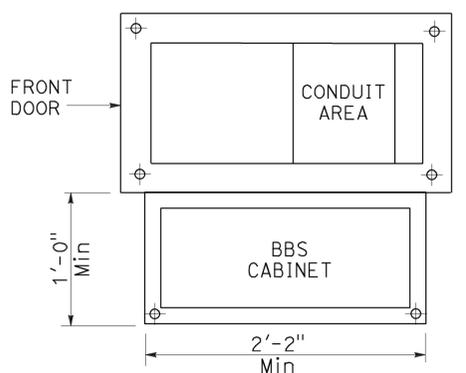
April 15, 2016
PLANS APPROVAL DATE

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

TO ACCOMPANY PLANS DATED 4-18-16



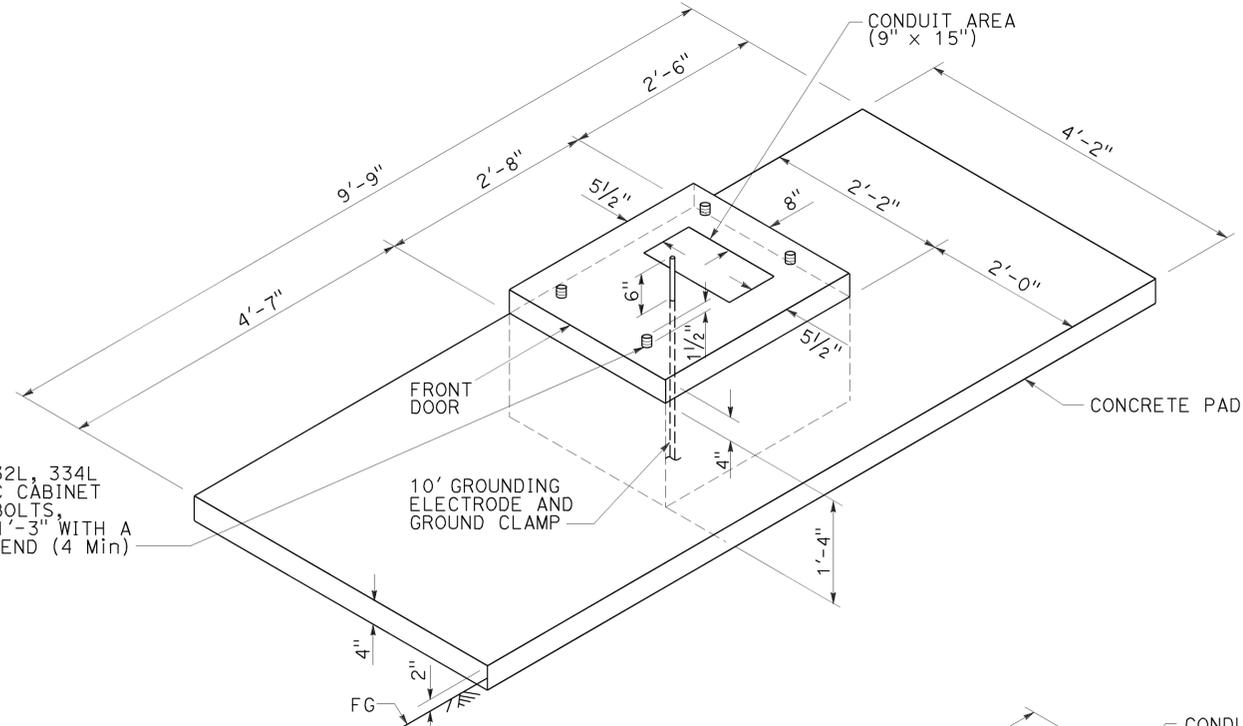
BBS CABINET MOUNTED TO THE MODEL 332L CABINET



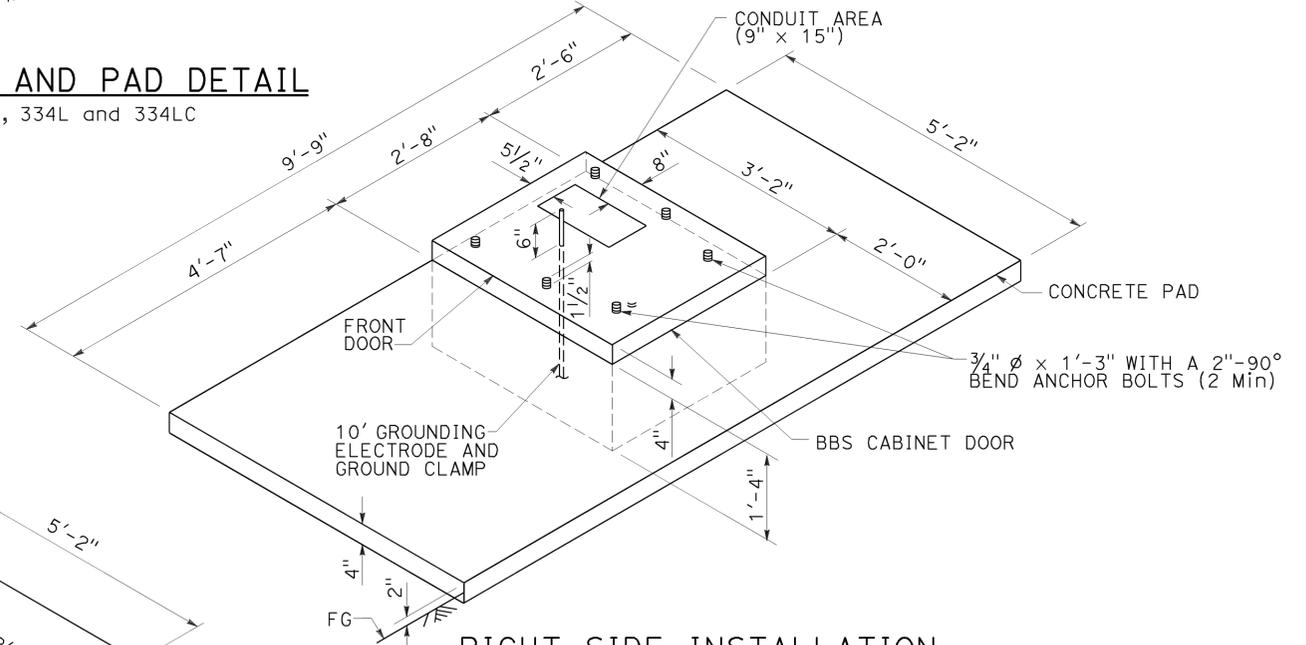
BASE PLAN FOR BBS MOUNTED TO THE MODEL 332L CABINET

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

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

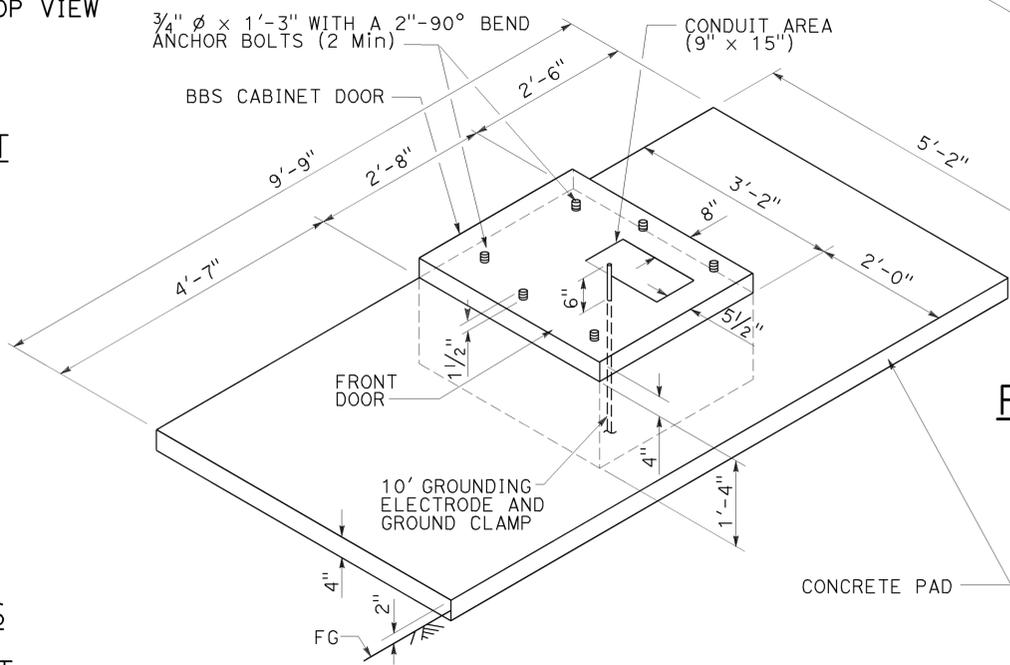


FOUNDATION AND PAD DETAIL
Model 332L, 334L and 334LC



RIGHT SIDE INSTALLATION
DETAIL B

MODIFIED MODEL 332L CABINET
FOUNDATION DETAIL FOR BATTERY BACKUP SYSTEM



LEFT SIDE INSTALLATION
DETAIL A

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

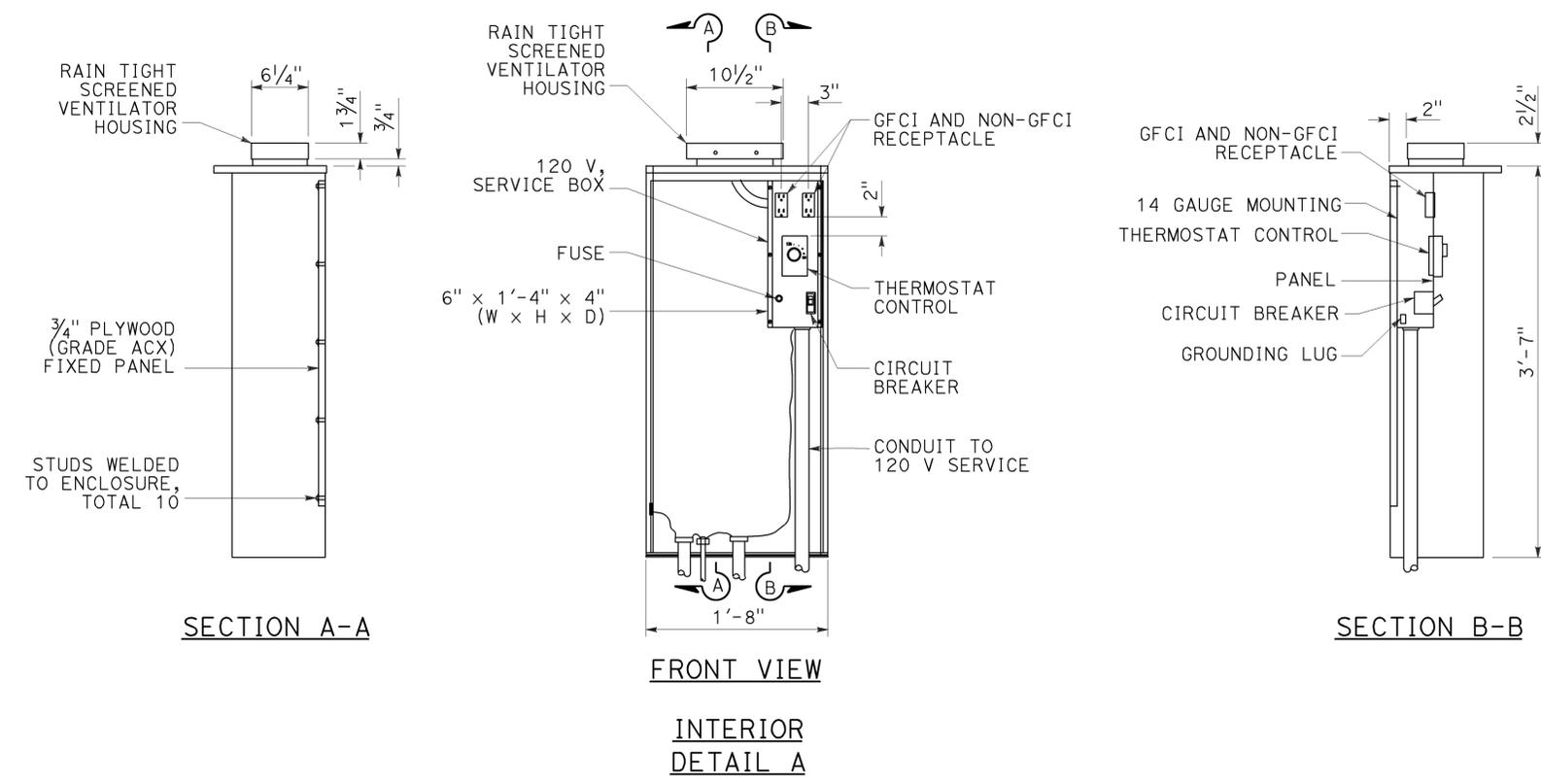
ELECTRICAL SYSTEMS
(CONTROLLER CABINET
FOUNDATION AND PAD DETAILS)

NO SCALE

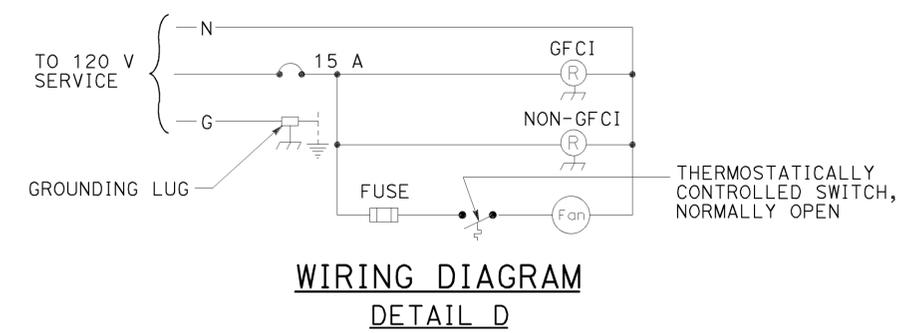
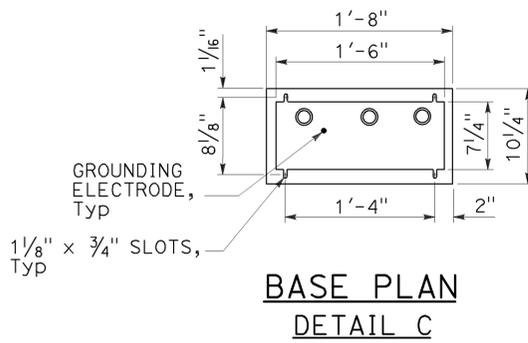
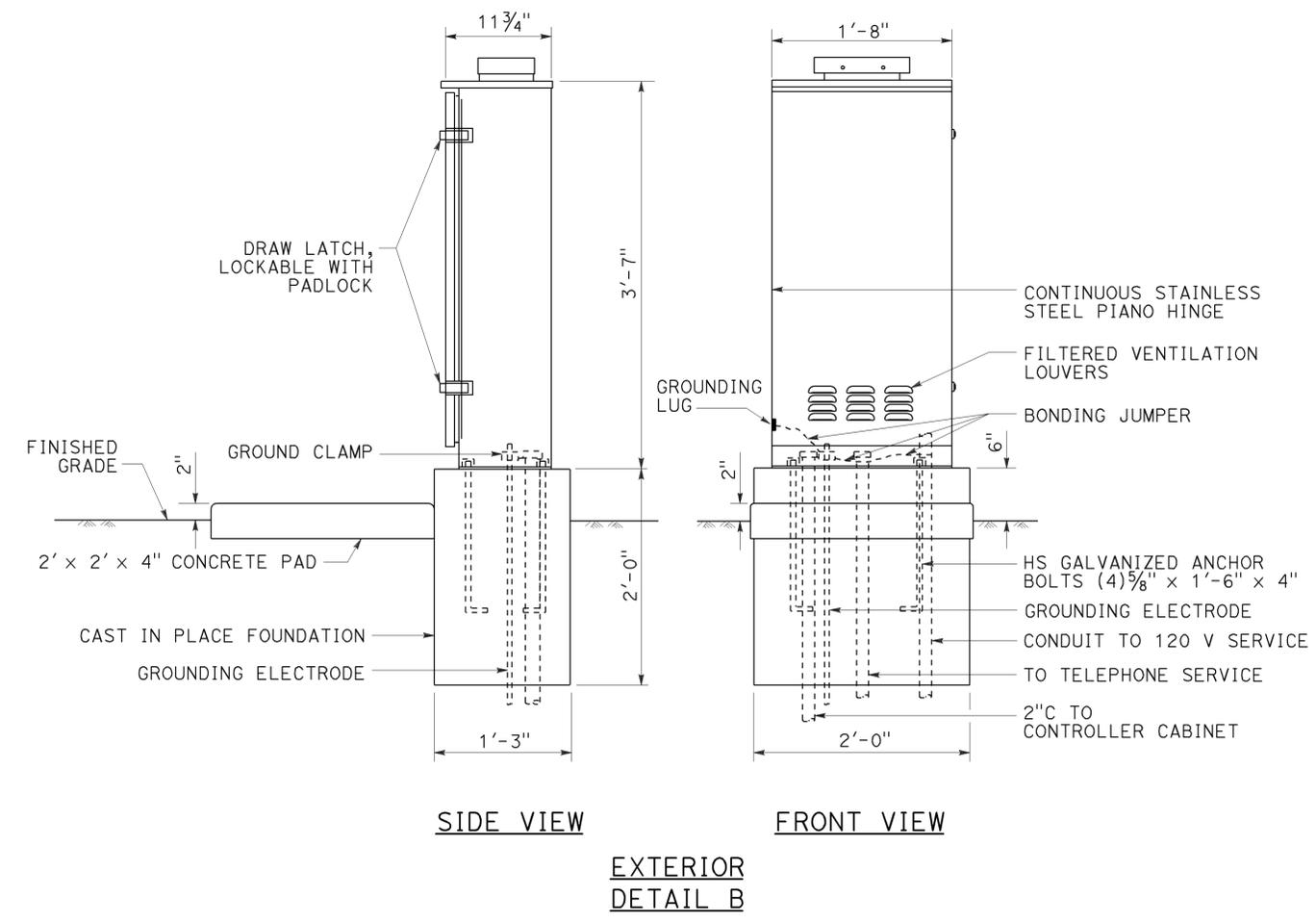
RSP ES-3C DATED APRIL 15, 2016 SUPERSEDES RSP ES-3C DATED OCTOBER 30, 2015 AND STANDARD PLAN ES-3C DATED MAY 20, 2011 - PAGE 437 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-3C

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03 04	But,Ed,New, Pla,Sac,etc	5, 50, 70, 80, 89, etc	Var	38	48
<i>Theresa Gabriel</i> REGISTERED ELECTRICAL ENGINEER April 15, 2016 PLANS APPROVAL DATE <small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
TO ACCOMPANY PLANS DATED <u>4-18-16</u>					



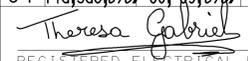
NOTE:
1. Dimensions are nominal.



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
(TELEPHONE DEMARCATION
CABINET, TYPE B)**
NO SCALE

RSP ES-3E DATED APRIL 15, 2016 SUPERSEDES RSP ES-3E
DATED OCTOBER 30, 2015 AND STANDARD PLAN ES-3E DATED
MAY 20, 2011 - PAGE 439 OF THE STANDARD PLANS BOOK DATED 2010.

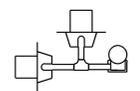
2010 REVISED STANDARD PLAN RSP ES-3E

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03 04	But,Ed,New, Pla,Sac,etc	5, 50, 70, 80, 89, etc	Var	39	48
 REGISTERED ELECTRICAL ENGINEER					
October 30, 2015 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

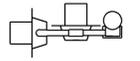


TO ACCOMPANY PLANS DATED 4-18-16

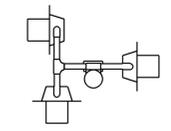
2010 REVISED STANDARD PLAN RSP ES-4A



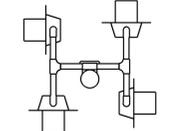
SV-2-TD



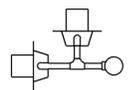
SV-2-TC



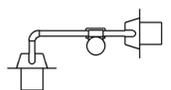
SV-3-TC



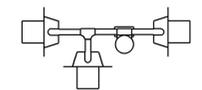
SV-4-TC



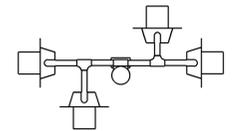
SV-2B



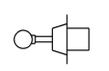
SV-2-TB



SV-3-TB



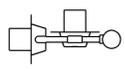
SV-4-TB



SV



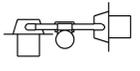
SV-1



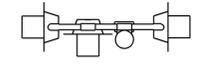
SV-2A



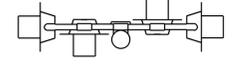
SV-1-T



SV-2-TA



SV-3-TA



SV-4-TA

SIDE MOUNTINGS

PLAN VIEW OF OTHER SIDE MOUNTINGS

ABBREVIATIONS:

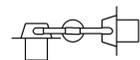
- SV SIDE MOUNTED SIGNAL HEADS
- T TERMINAL COMPARTMENT
- TV TOP MOUNTED SIGNAL HEADS
- 1, 2, 3, 4 NUMBER OF SIGNAL FACES
(3 - SECTION, UNLESS OTHERWISE INDICATED)
- A, B, C, D CONFIGURATION OF SIGNALS

NOTES:

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



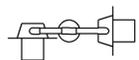
TV-1



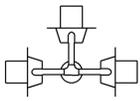
TV-2



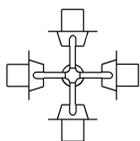
TV-1-T



TV-2-T



TV-3-T



TV-4-T

TOP MOUNTINGS

PLAN VIEW OF TOP MOUNTINGS

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

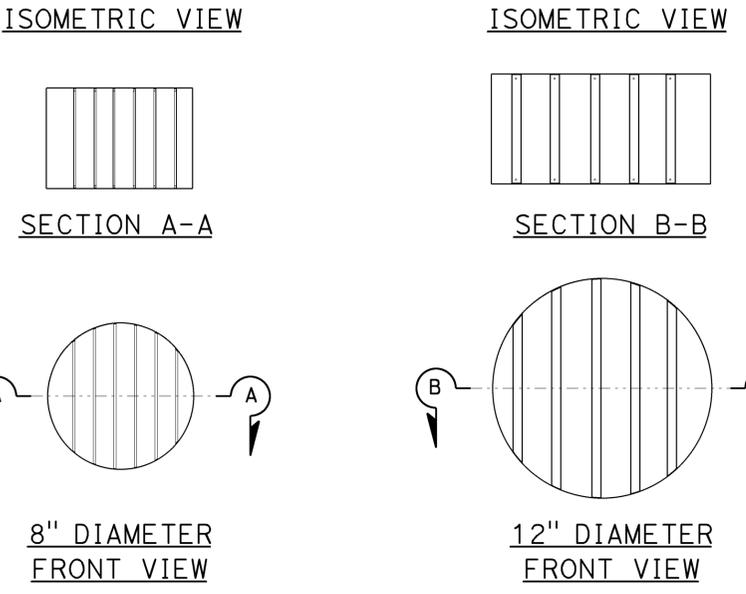
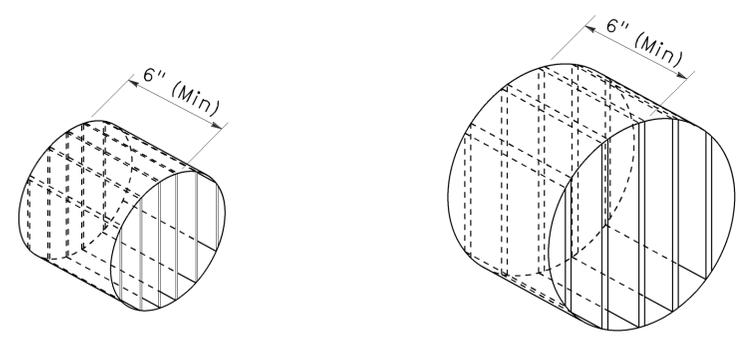
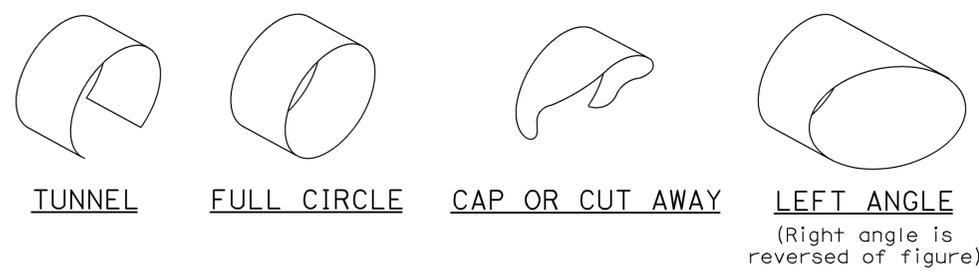
NO SCALE

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

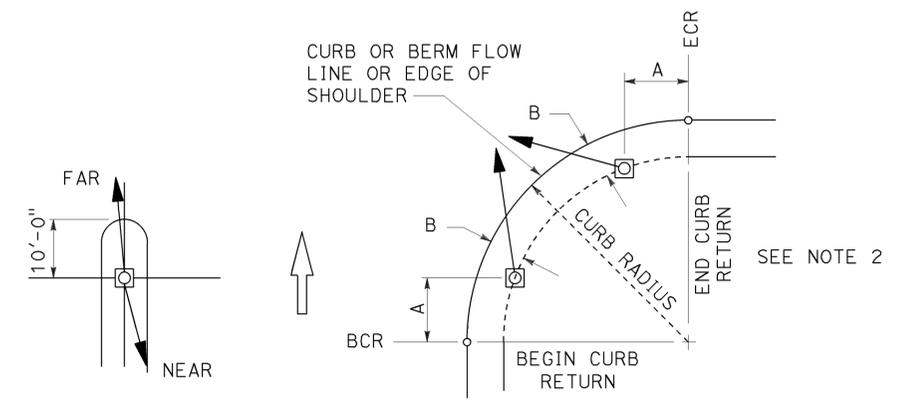
REVISED STANDARD PLAN RSP ES-4A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03 04	But,Ed,Nev, Pla,Sac,etc	5, 50, 70, 80, 89, etc	Var	40	48
Theresa Gabriel REGISTERED ELECTRICAL ENGINEER October 30, 2015 PLANS APPROVAL DATE <small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

TO ACCOMPANY PLANS DATED 4-18-16

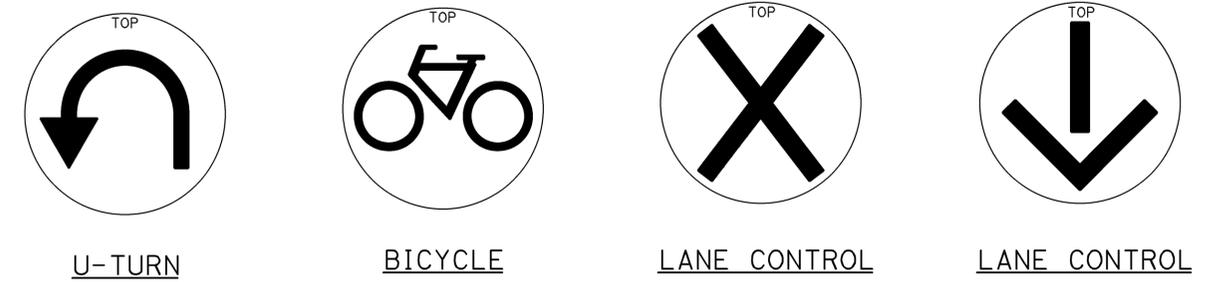
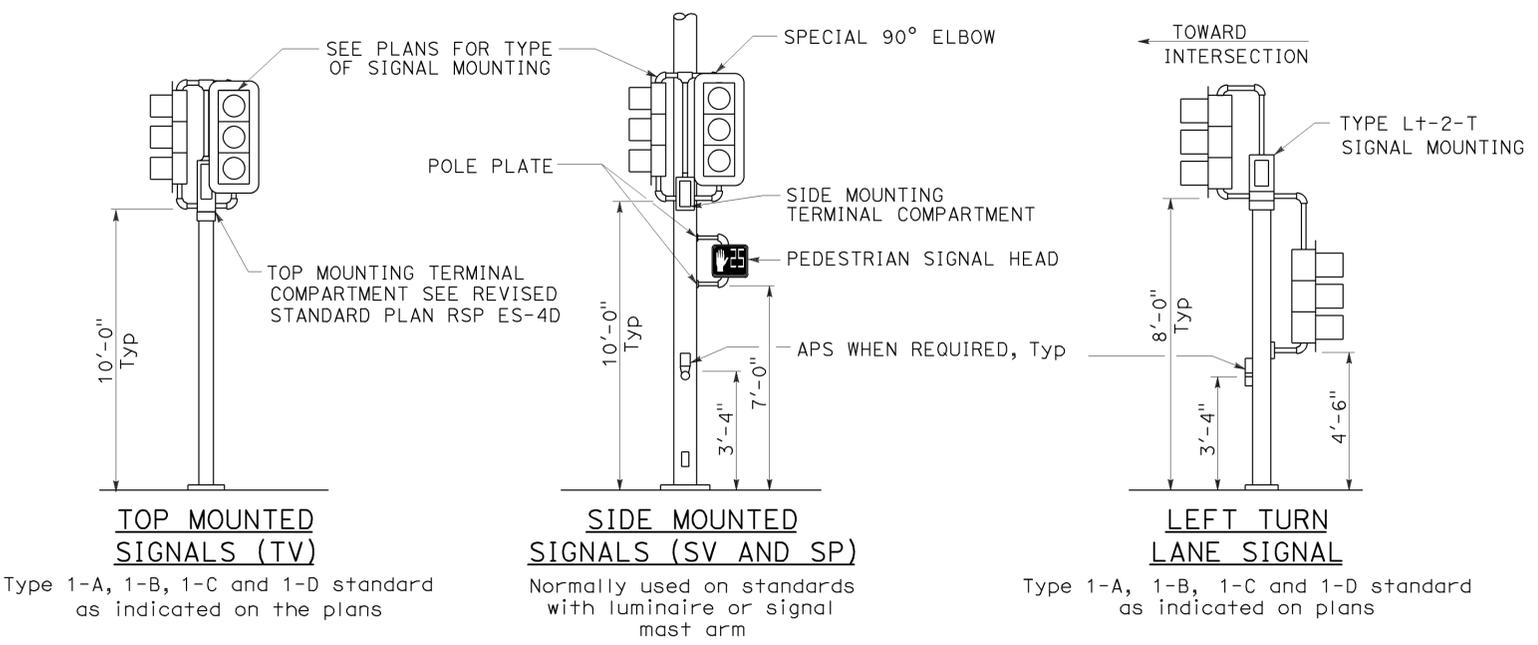
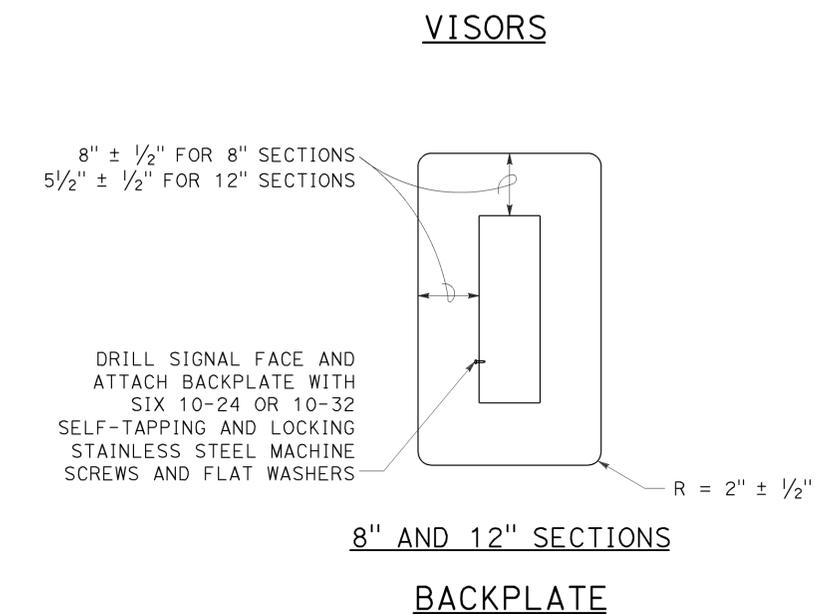


DIRECTIONAL LOUVER
 Directional louvers shall be oriented and secured in place with one plated brass machine screw and nut.



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

SIGNAL STANDARD PLACEMENT DIMENSIONS AND EQUIPMENT LOCATIONS



SIGNAL FACES

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
ELECTRICAL SYSTEMS (SIGNAL HEADS AND MOUNTINGS)
 NO SCALE

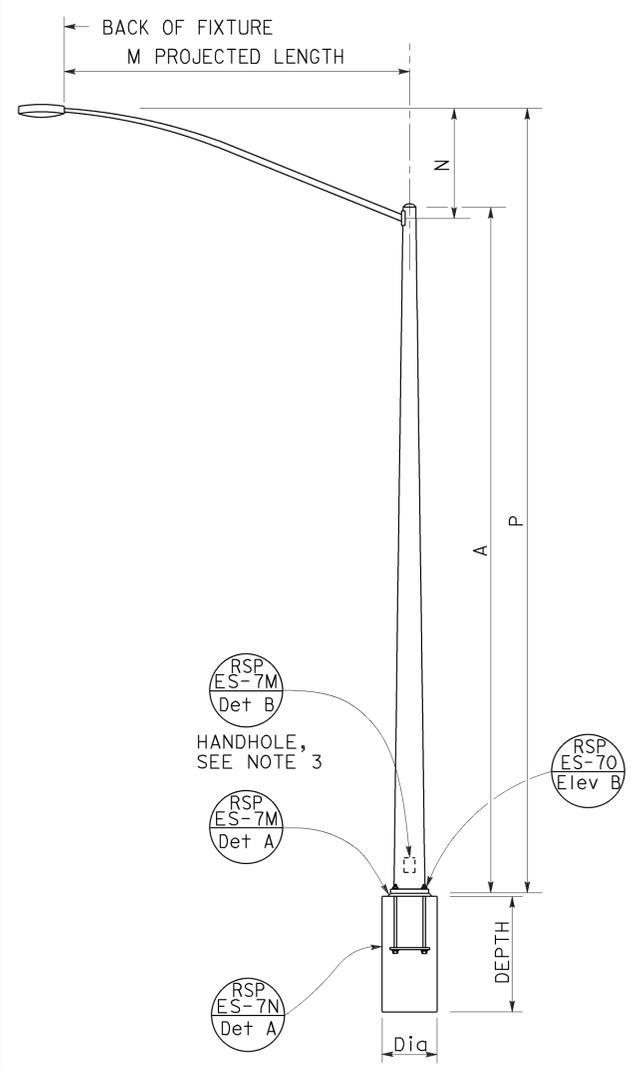
TYPICAL SIGNAL HEAD INSTALLATIONS

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

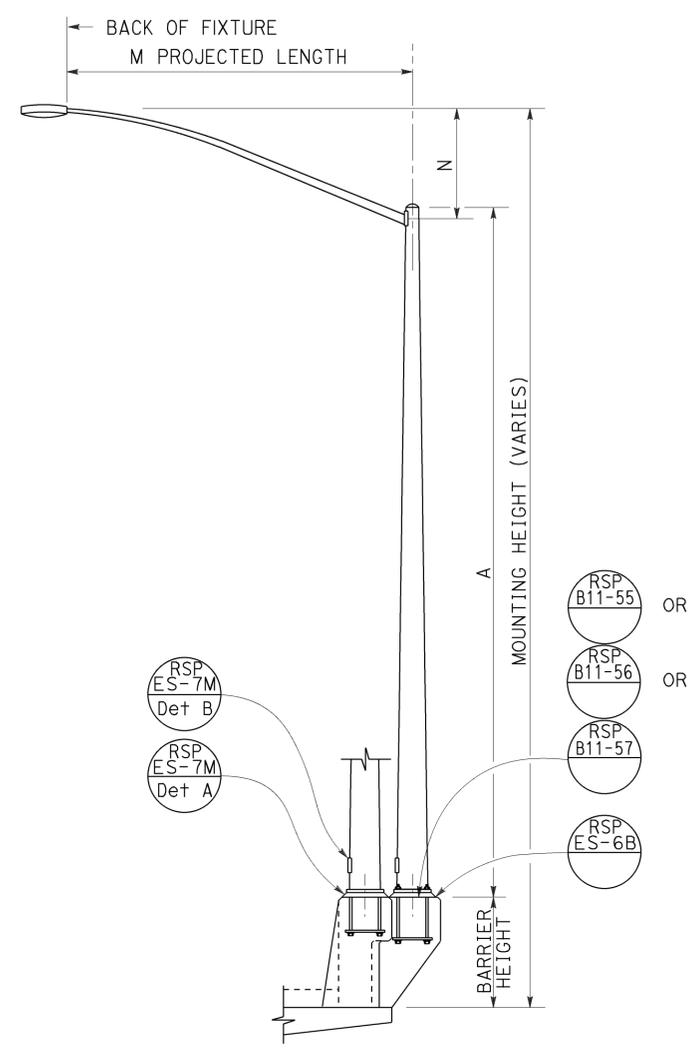
REVISED STANDARD PLAN RSP ES-4C

2010 REVISED STANDARD PLAN RSP ES-4C

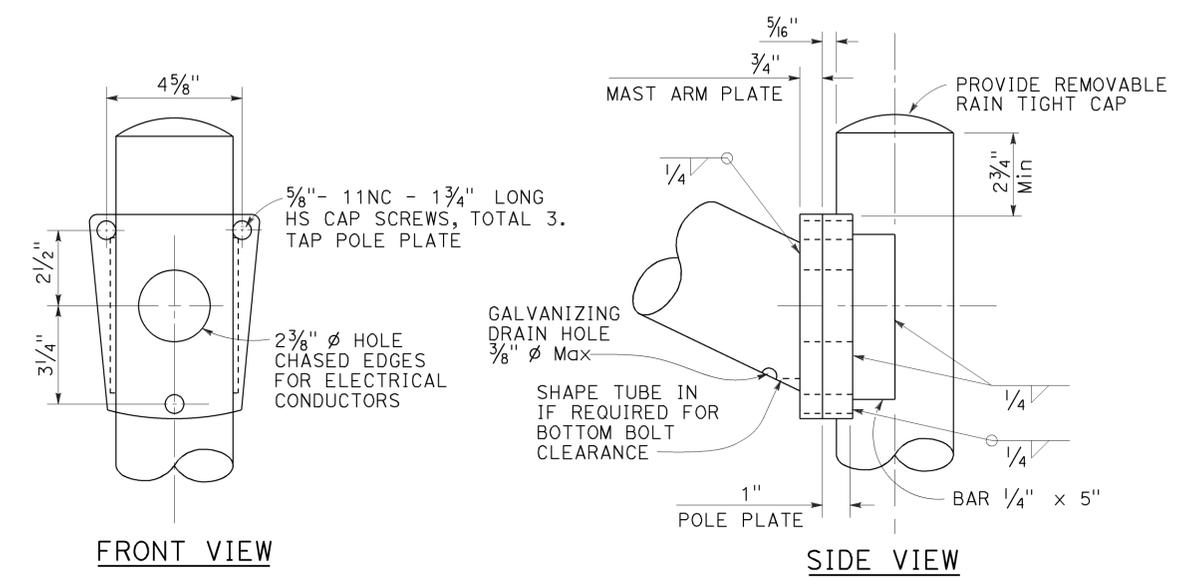
TO ACCOMPANY PLANS DATED 4-18-16



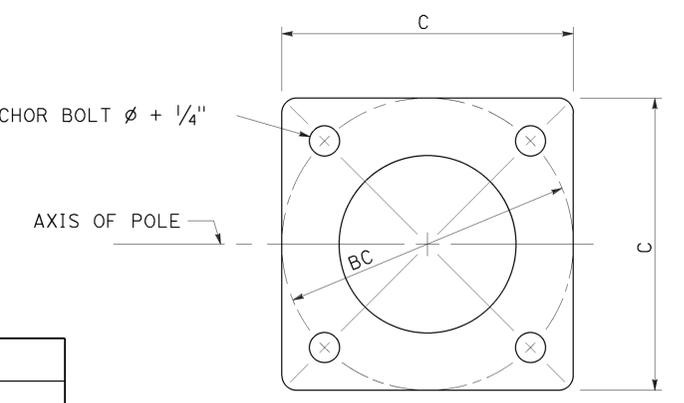
**TYPE 15 AND TYPE 21
ELEVATION A**



**TYPE 15 AND TYPE 21 BARRIER RAIL MOUNTED
ELEVATION B**



**LUMINAIRE MAST ARM CONNECTION
DETAIL R**



**BASE PLATE
DETAIL A**

POLE TYPE	POLE DATA			BASE PLATE DATA			CIDH PILE FOUNDATION		
	A HEIGHT	Min OD BASE	WALL THICKNESS TOP	C	BC = BOLT CIRCLE	THICKNESS	ANCHOR BOLT SIZE	Diq	DEPTH
15	30'-0"	8"	0.1196"	1'-0"	1'-0"	1 1/2"	1" ϕ x 36" *	2'-6"	6'-0"
21	35'-0"	8 5/8"	0.1793"	1'-0"	1'-0"	2"	1 1/4" ϕ x 36" *	2'-6"	7'-0"

* FOR BARRIER RAIL BOLTS, SEE REVISED STANDARD PLAN RSP ES-6B.

M PROJECTED LENGTH	N RISE	Min OD AT POLE	NOMINAL THICKNESS	P	
				TYPE 15	TYPE 21
6'-0"	2'-0" \pm	3 1/4"	0.1196"	31'-6" \pm	36'-6" \pm
8'-0"	2'-6" \pm	3 1/2"		32'-0" \pm	37'-0" \pm
10'-0"	3'-3" \pm	3 3/8"		32'-9" \pm	37'-9" \pm
12'-0"	4'-3" \pm	3 7/8"		33'-9" \pm	38'-9" \pm
15'-0"	4'-9" \pm	4 1/4"		34'-3" \pm	39'-3" \pm

NOTES:

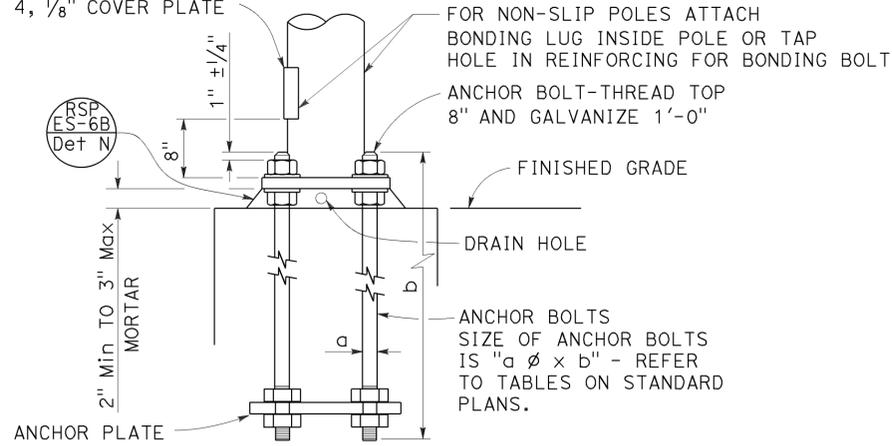
- Indicates mast arm length to be used unless otherwise noted on the plans.
- For Type 15-SB, use Type 15 standard with Type 30 slip base plate details, see Revised Standard Plan RSP ES-6F.
- Handhole shall be located on the downstream side of traffic.
- For additional notes and details, see Revised Standard Plans RSP ES-7M and RSP ES-7N.

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
 (LIGHTING STANDARD,
 TYPES 15 AND 21)**
 NO SCALE

RSP ES-6A DATED JULY 15, 2016 SUPERSEDES RSP ES-6A
 DATED OCTOBER 30, 2015 AND STANDARD PLAN ES-6A DATED MAY 20, 2011 -
 PAGE 452 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-6A

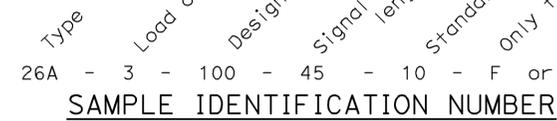
4" x 6 1/2" ROUNDED RECTANGLE HANDHOLE REINFORCED WITH RING WELDED TO OUTSIDE OF POLE. SEE NOTE 4, 1/8" COVER PLATE



HANDHOLE AND ANCHORAGE
DETAIL A

IDENTIFICATION NUMBER

1. Attach a stamped metal tag with pole's identification number above the handhole. 1/4" high number, minimum.
2. Attach a stamped metal tag with mast arm's identification number to the bottom of the signal mast arm near the pole plate. 1/4" high number, minimum.



SAMPLE IDENTIFICATION NUMBER

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	But,Ed,Nev,	5, 50, 70,	Var	42	48
04	Pla,Sac,etc.	80, 89, etc.			

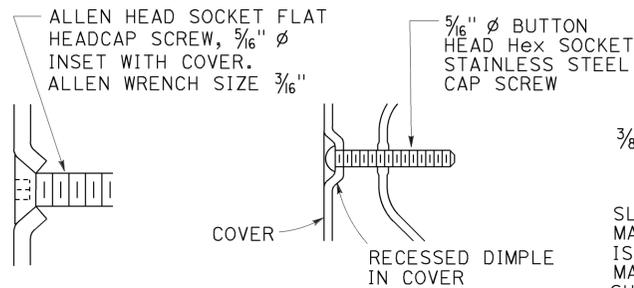
Stanley P. Johnson
REGISTERED CIVIL ENGINEER

July 15, 2016
PLANS APPROVAL DATE

Stanley P. Johnson
No. C57793
Exp. 3-31-18
CIVIL
STATE OF CALIFORNIA

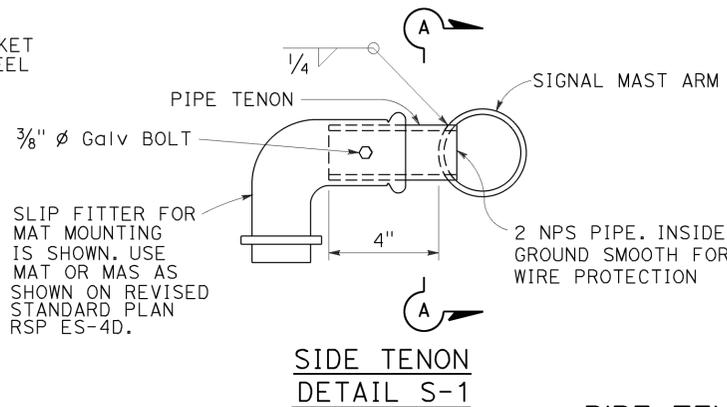
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 4-18-16

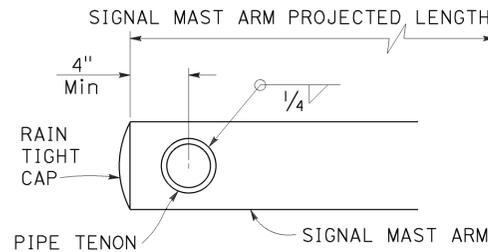


TYPICAL DETAIL
DETAIL B-1

ALTERNATIVE DETAIL
DETAIL B-2



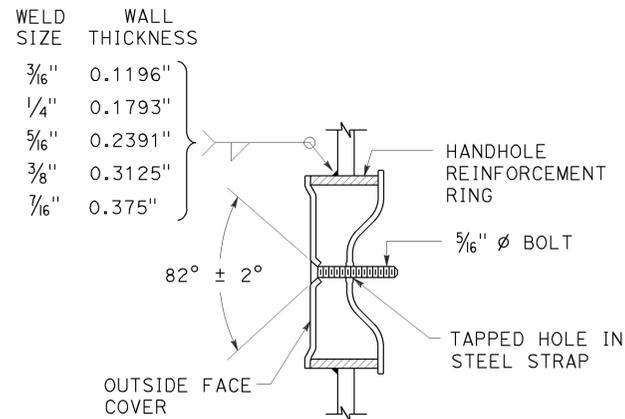
SIDE TENON
DETAIL S-1



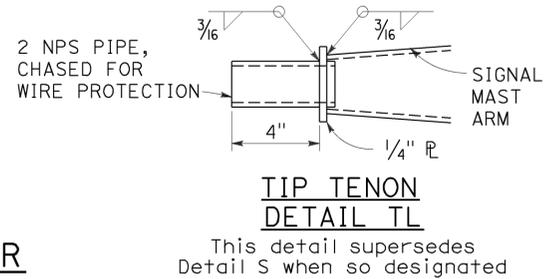
SECTION A-A

NOTES:

1. Provide a Hex nut, leveling nut and 2 washers for each bolt.
2. Luminaire mast arms shall be round, tapered steel tubes, taper of 0.1375" to 0.143-inch per foot with an end section 2 3/8" OD for mounting hardware. Extensions of 2 NPS Standard pipe and 7" long may be used at the option of the manufacturer. When low pressure sodium luminaires are required, the extension shall be 1'-3".
3. Signal mast arms shall be round, tapered steel tubes, maximum taper 0.143-inch per foot.
4. Handhole reinforcement ring shall be 1/4" x 2" for 0.1196" to 0.2391" thick poles, 3/8" x 2" for 0.3125" to 0.375" thick poles.
5. Handholes shall be located on the downstream side of traffic.
6. Detail F, fatigue resistant weld, is required at socket welded signal mast arm plate and pole base plate.
7. Cap screws shall be tightened by the turn-of-nut method 1/3 turn from a snug tight condition. No washer will be required.
8. Outside diameter, wall thickness, and corresponding section properties of poles and mast arms as shown in the Standard Plans are minimums. Unless otherwise specified, alternative sections shall require approval by the Engineer.
9. Design: AASHTO Standard Specifications for Structural Support for Highway Signs, Luminaires, and Traffic Signals, 6th Edition. Basic Wind Speed = 100 mph (3 seconds gust). Yearly Mean Wind Velocity = 15.6 mph.
10. Materials (Structural steel):
fy = 55,000 psi (tapered steel tube and anchor bolts)
fy = 50,000 psi (unless otherwise noted)
11. Materials (Reinforced concrete):
f'c = 3,625 psi
fy = 60,000 psi



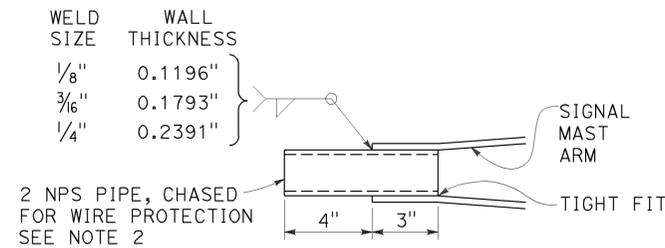
TAMPER RESISTANT HANDHOLE COVER
DETAIL B



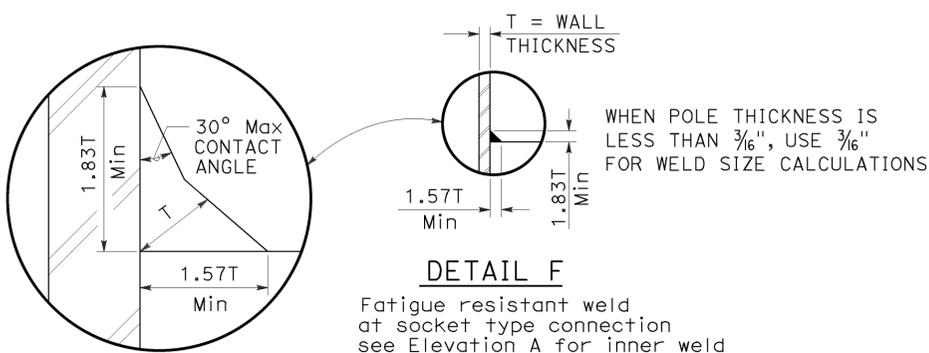
TIP TENON
DETAIL TL

This detail supersedes Detail S when so designated

PIPE TENONS
DETAIL S

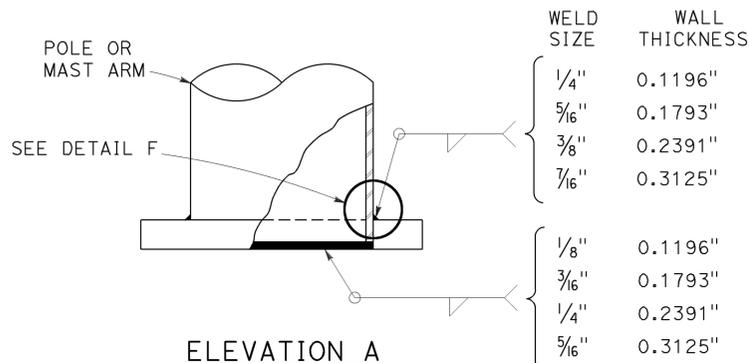


TIP TENON
DETAIL TS



DETAIL F

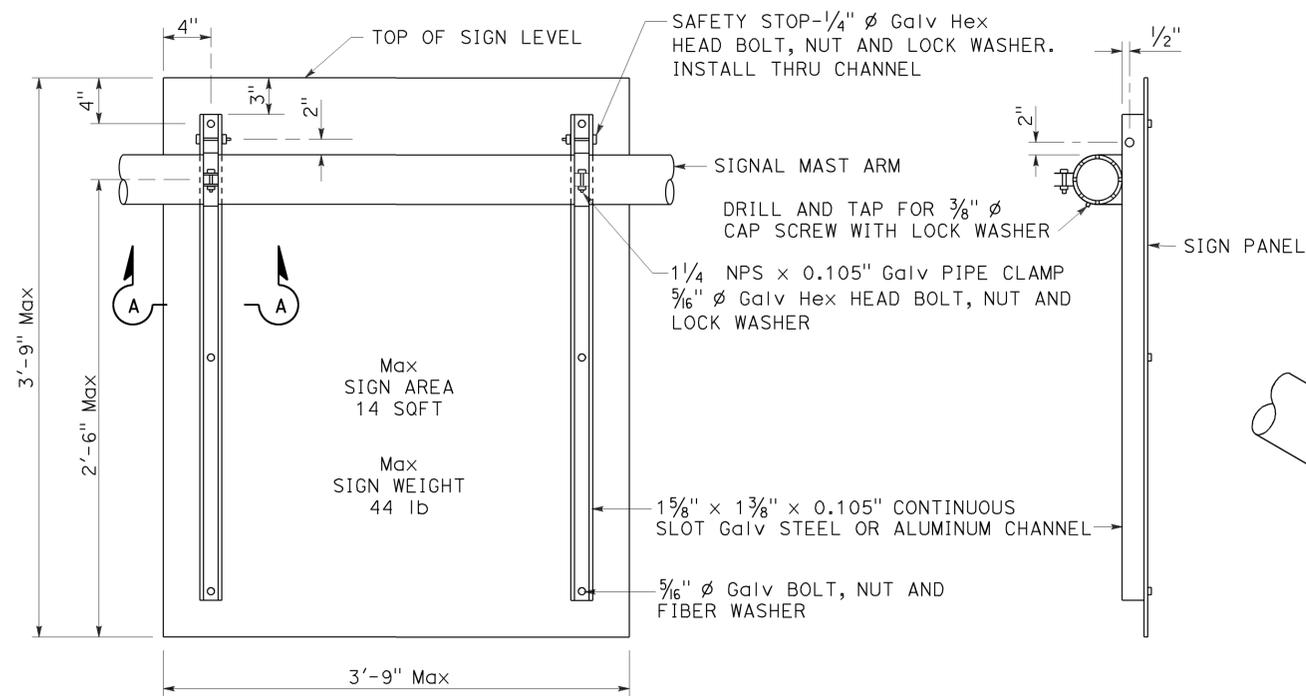
Fatigue resistant weld at socket type connection see Elevation A for inner weld



ELEVATION A

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
ELECTRICAL SYSTEMS
(SIGNAL AND LIGHTING STANDARD,
DETAIL No. 1)
NO SCALE

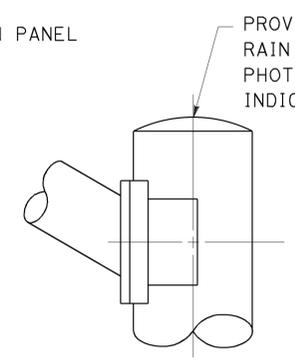
RSP ES-7M DATED JULY 15, 2016 SUPERSEDES RSP ES-7M DATED OCTOBER 30, 2015 AND STANDARD PLAN ES-7M DATED MAY 20, 2011 - PAGE 474 OF THE STANDARD PLANS BOOK DATED 2010.



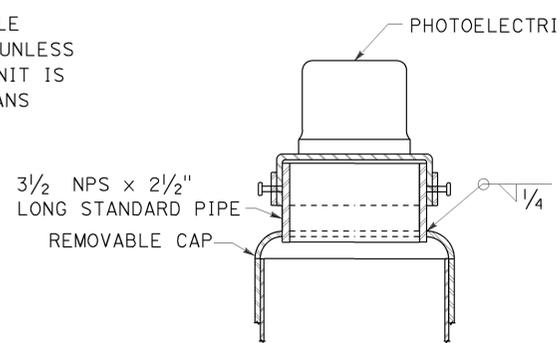
REAR VIEW

SIDE VIEW

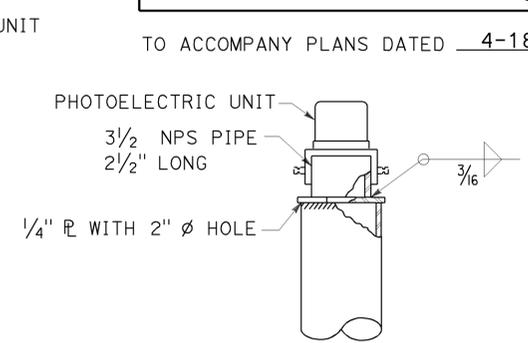
SIGN MOUNTING DETAILS
DETAIL U



STANDARD TOP
DETAIL B-1

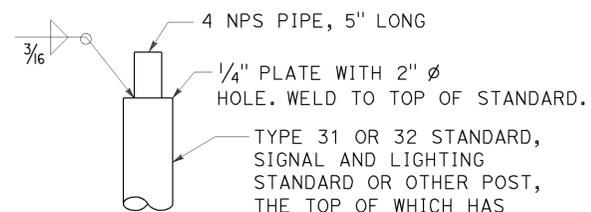


MOUNTING ADAPTER FOR
PHOTOELECTRIC UNIT
DETAIL B-2

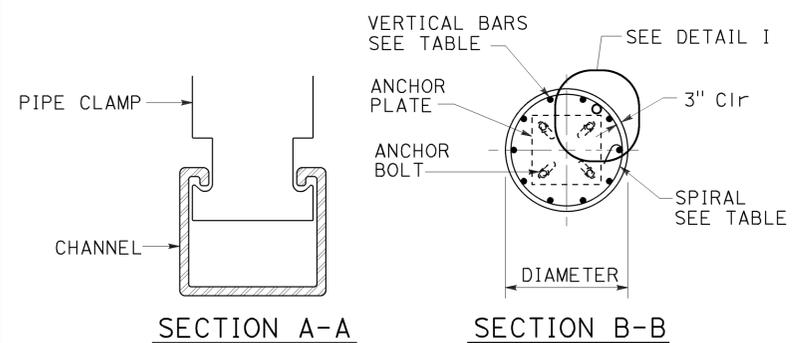


ALTERNATIVE
MOUNTING ADAPTER
DETAIL B-3

POLE TOP DETAILS
DETAIL B

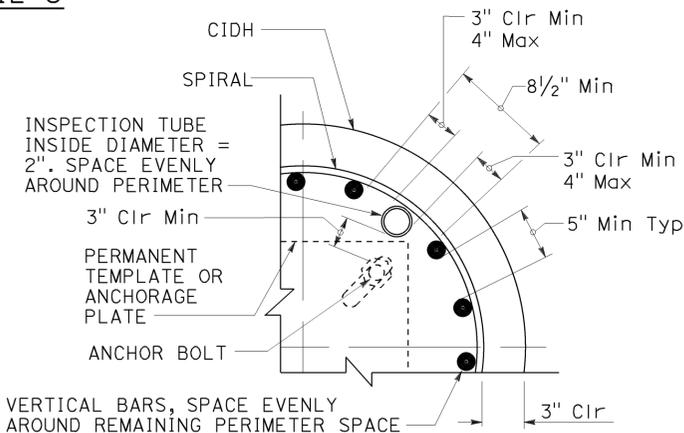


DETAIL C-1



SECTION A-A

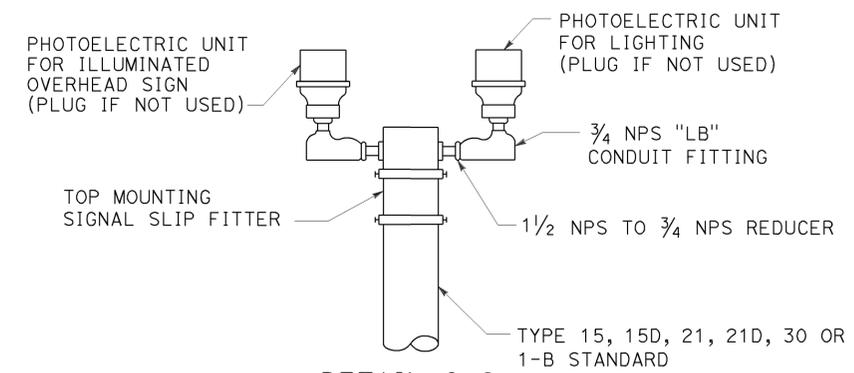
SECTION B-B



INSPECTION TUBE PLACEMENT
DETAIL I

CIDH REINFORCING AND INSPECTION TUBE SCHEDULE			
CIDH DIAMETER	VERTICAL BARS	SPIRAL	INSPECTION TUBE
2 ft	8-#5	#4 AT 6	2
2.5 ft	10-#6		4*
3 ft	12-#7		4
3.5 ft	14-#8	#5 AT 6	4
4 ft	18-#9	2-#4 AT 7	5
4.5 ft	18-#9	2-#5 AT 7	5
5 ft	22-#10	2-#5 AT 7	6
6 ft	26-#11	2-#6 AT 7	7

* FOR SLIP BASE VERSIONS WITH 3 ANCHOR BOLTS USE 3 INSPECTION TUBES.



DUAL PHOTOELECTRIC UNIT MOUNTING DETAIL
DETAIL C

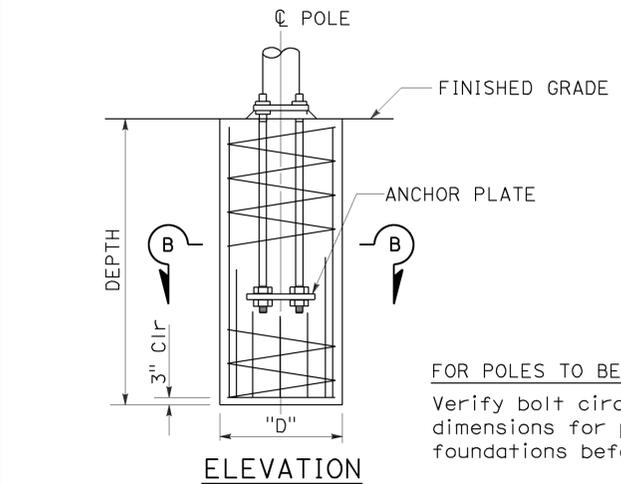
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS
(SIGNAL AND LIGHTING STANDARD,
DETAIL No. 2)**

NO SCALE

RSP ES-7N DATED JULY 15, 2016 SUPERSEDES RSP ES-7N DATED OCTOBER 30, 2015 AND STANDARD PLAN ES-7N DATED MAY 20, 2011 - PAGE 475 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-7N

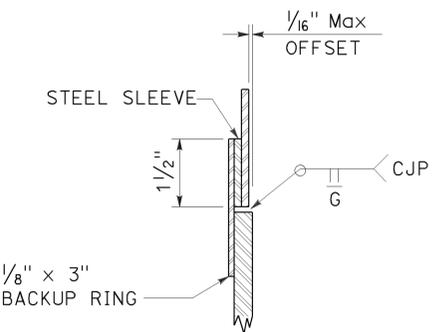


ELEVATION

CAST-IN-DRILLED-HOLE PILE FOUNDATION,
REINFORCED PILE
DETAIL A

FOR POLES TO BE INSTALLED ON EXISTING FOUNDATION:
Verify bolt circles, anchor bolt sizes and dependent dimensions for poles to be installed on existing foundations before fabricating the poles.

FOR UNIFORM TUBE THICKNESS
DETAIL T-1



AT TUBE THICKNESS CHANGE
DETAIL T-2

POLE SPLICES
DETAIL T

2010 REVISED STANDARD PLAN RSP ES-7N

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03 04	But,Ed,Nev, Pla,Sac,etc	5, 50, 70, 80, 89, etc	Var	44	48

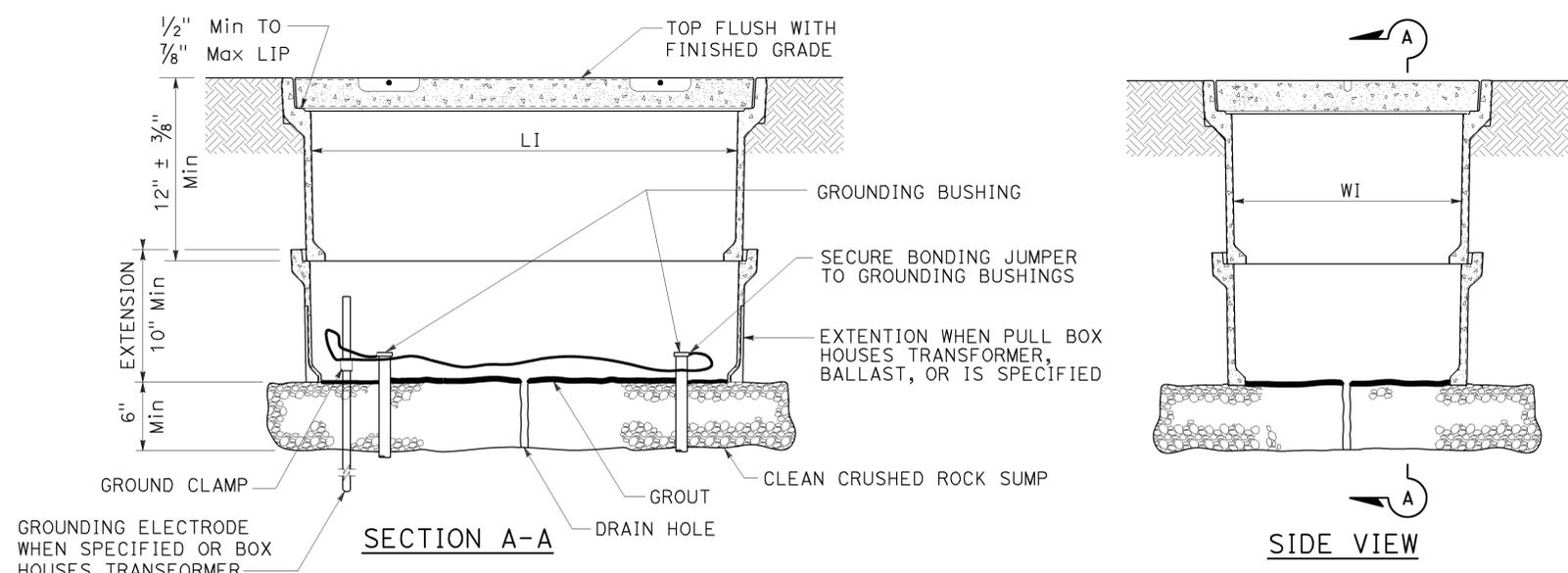
Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

April 15, 2016
PLANS APPROVAL DATE

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

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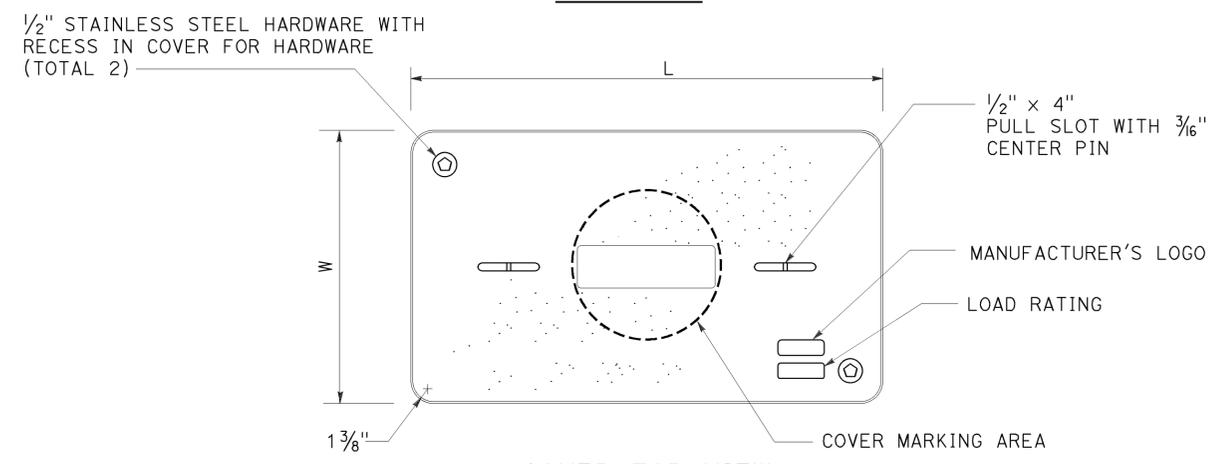
TO ACCOMPANY PLANS DATED 4-18-16



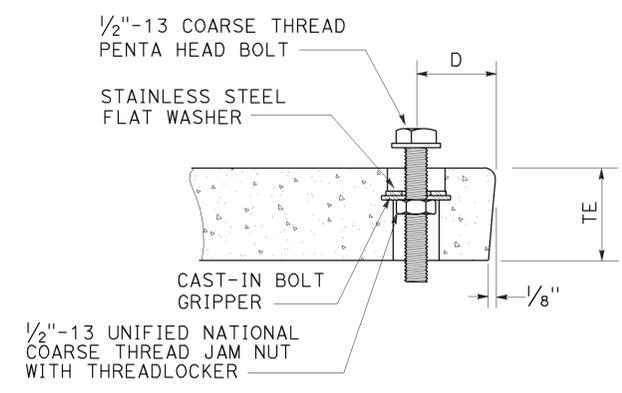
INSTALLATION DETAILS
DETAIL A

NOTES:

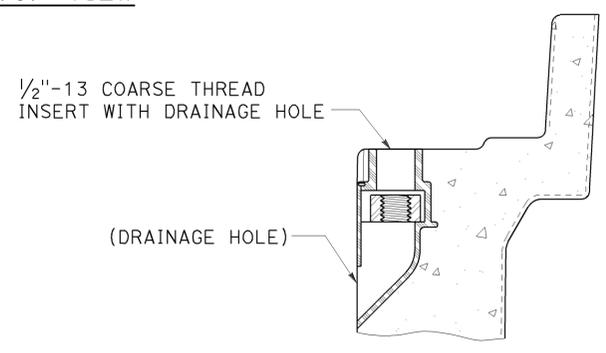
1. The nominal dimensions of the opening in which the cover sets shall be the same as the cover dimensions except the length and width dimensions shall be 1/8" greater.
2. Covers and boxes shall be interchangeable with California standard male and female gages. When interchanged with a standard male 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.
3. Dimensions for the cover for non-traffic pull box are nominal values.



COVER TOP VIEW



TYPICAL COVER CAPTIVE BOLT
OR SIMILAR



TYPICAL THREADED INSERT
OR SIMILAR

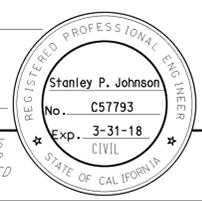
DIMENSION TABLE										
PULL BOX	PULL BOX			COVER						
	MINIMUM DEPTH BOX	MINIMUM DEPTH EXTENSION	MINIMUM WEIGHT	LI Min	WI Min	TE	D	L	W	MINIMUM WEIGHT
No. 3 1/2	12"	N/A	40 lb	1' - 3"	9"	1 3/4"	1 3/4"	1'-3 1/4" - 1'-3 3/8"	10" - 10 1/8"	30 lb
No. 5	12"	10"	55 lb	1' - 8"	11"	2"	1 3/4"	1'-11 1/4"	1'-1 3/4"	60 lb
No. 6	12"	10"	70 lb	2' - 4 1/4"	1' - 3 1/4"	2"	2"	2'-6 1/2"	1'-5 1/2"	85 lb

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

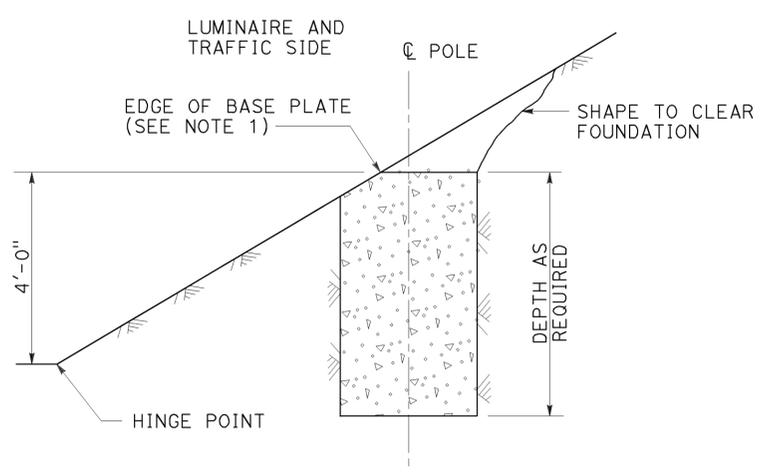
RSP ES-8A DATED APRIL 15, 2016 SUPERSEDES RSP ES-8A
DATED OCTOBER 30, 2015 AND RSP ES-8A DATED JULY 19, 2013 AND RSP ES-8A
DATED JANUARY 20, 2012 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-8A

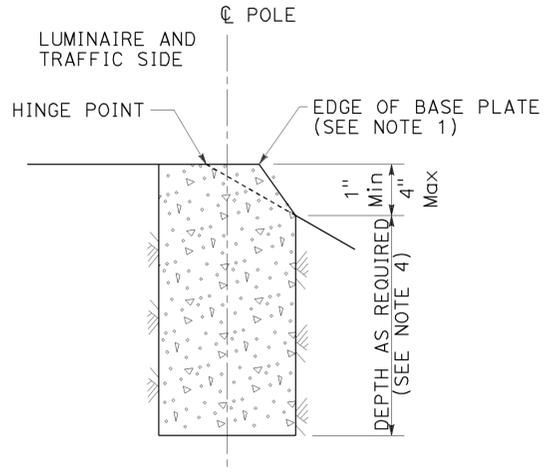
2010 REVISED STANDARD PLAN RSP ES-8A



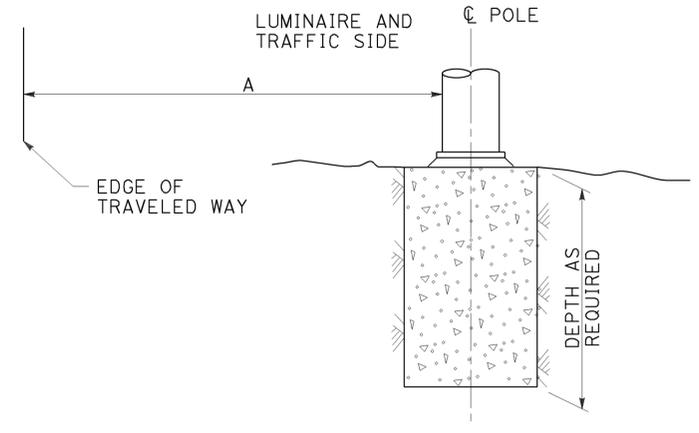
TO ACCOMPANY PLANS DATED 4-18-16



**CUT SLOPES
STEEPER THAN 4:1,
LESS THAN 2:1
DETAIL A-1**
See Note 2 and 3



**FILL SLOPES
STEEPER THAN 4:1,
LESS THAN 2:1
DETAIL A-2**
See Note 2 and 3



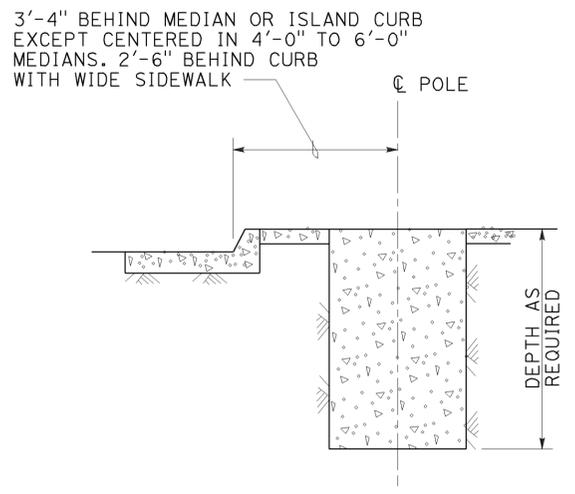
**FLAT SECTIONS, CUT OR FILL SLOPES
4:1 OR FLATTER
DETAIL A-3**
See Note 2

STANDARD TYPE	SETBACK (DIMENSION A)
32	30'-0" (Min)
31	20'-0" (Min)
15, 15D, 15-SB, 21, 21D, 30	ARM LENGTH (Min)

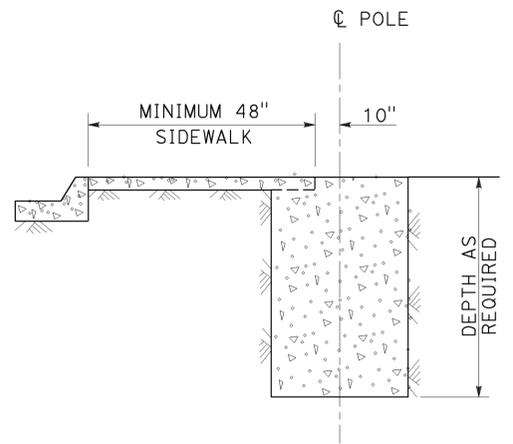
**FOUNDATIONS ADJACENT TO ALL ROADWAYS EXCEPT
IN SIDEWALK, MEDIAN AND ISLAND AREAS
DETAIL A**

NOTES:

1. Where a portion of the foundation is above grade, the top edges shall have a 1" chamfer.
2. Slopes shall be horizontal to vertical ratio (Horizontal : Vertical).
3. Horizontal setbacks on cut and fill slopes steeper than 4:1 shall not exceed the distance shown for flat sections.
4. CIDH embedment depth shall be increased beyond standard depths by the diameter of the CIDH.



**MEDIAN, ISLAND
OR WIDE SIDEWALK
DETAIL B-1**
7' Wide and wider



**NARROW SIDEWALK
DETAIL B-2**
Less than 7' wide

**FOUNDATIONS IN SIDEWALK, MEDIAN AND ISLAND AREAS
DETAIL B**

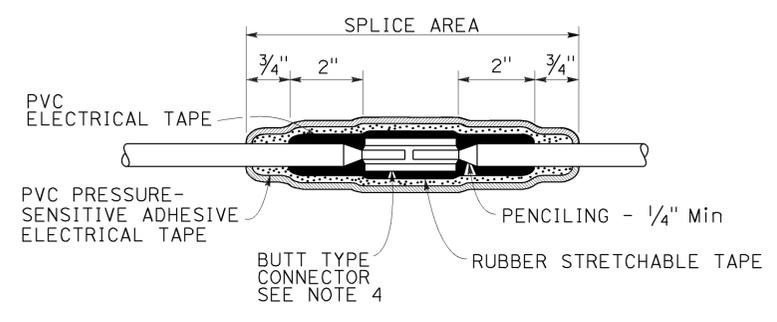
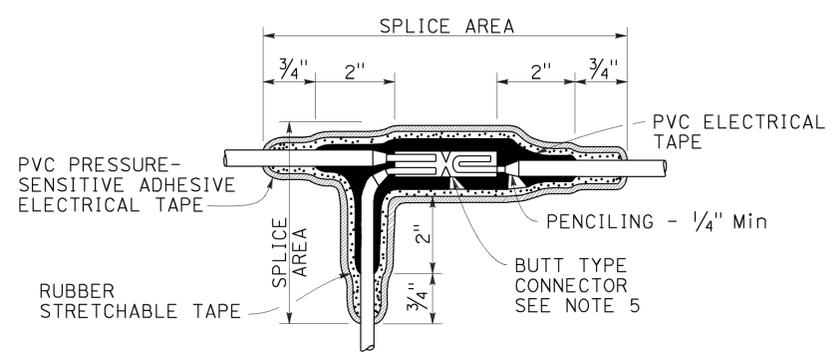
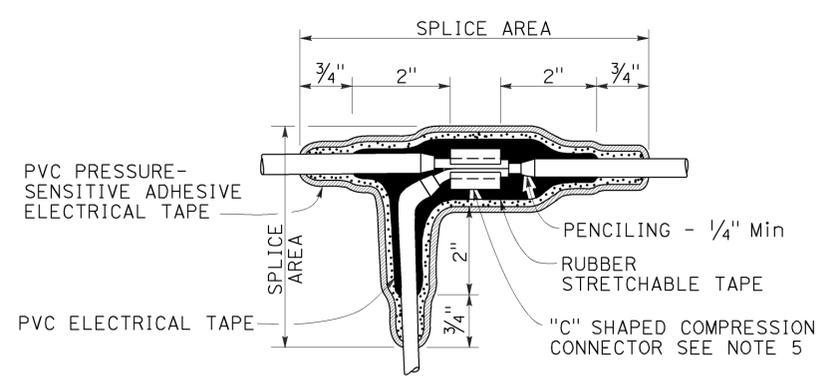
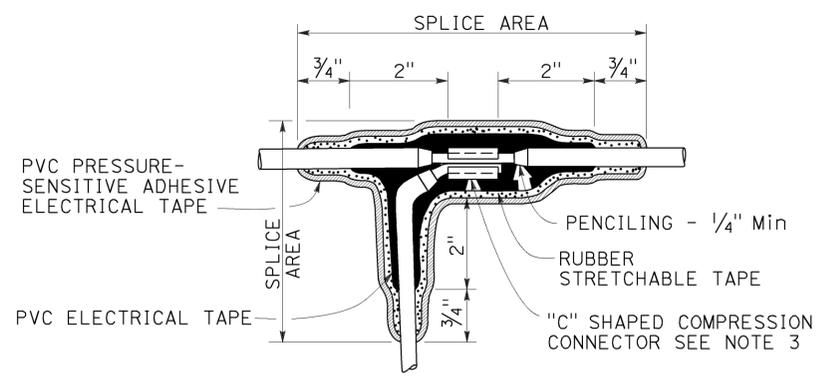
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
(FOUNDATION INSTALLATIONS)**
NO SCALE

RSP ES-11 DATED JULY 15, 2016 SUPERSEDES RSP ES-11 DATED JULY 19, 2013 AND STANDARD PLAN ES-11 DATED MAY 20, 2011 - PAGE 488 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03 04	But,Ed,New, Pla,Sac,etc	5, 50, 70, 80, 89, etc	Var	46	48
<i>Theresa Gabriel</i> REGISTERED ELECTRICAL ENGINEER April 15, 2016 PLANS APPROVAL DATE <small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
REGISTERED PROFESSIONAL ENGINEER Theresa Aziz Gabriel No. E15129 Exp. 6-30-16 ELECTRICAL STATE OF CALIFORNIA					

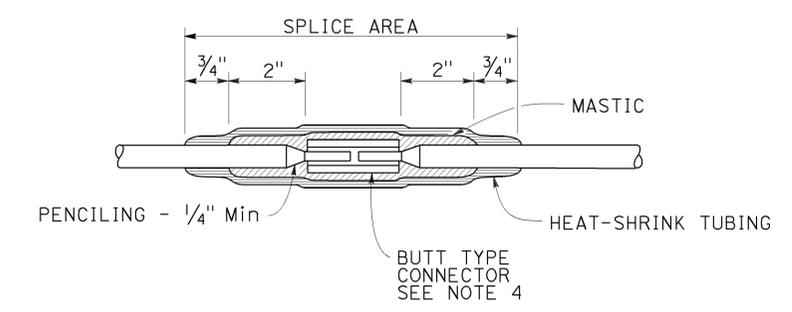
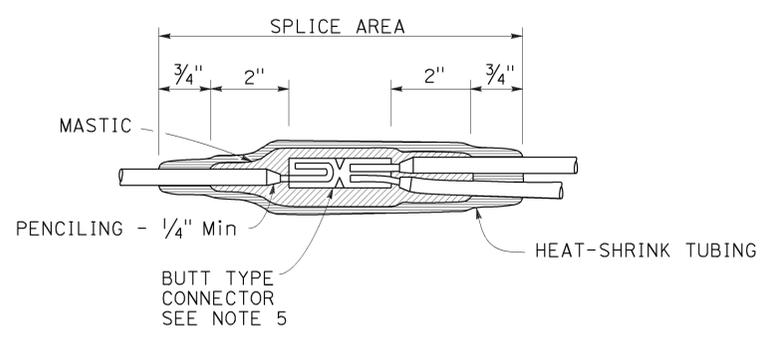
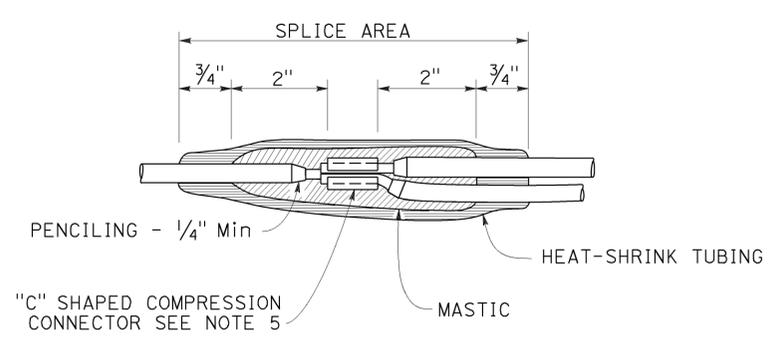
TO ACCOMPANY PLANS DATED 4-18-16



NOTES:

1. Dimensions are minimum.
2. Rubber tapes shall be rolled after application.
3. Between 1 free-end and 1 through conductor.
4. Between 2 free-end conductors.
5. Between 3 free-end conductors.

TYPICAL SPLICE INSULATION METHOD B



TYPICAL SPLICE INSULATION HEAT-SHRINK TUBING

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
 (SPLICE INSULATION METHODS DETAILS)**

NO SCALE
 RSP ES-13A DATED APRIL 15, 2016 SUPERSEDES RSP ES-13A DATED OCTOBER 30, 2015 AND
 STANDARD PLAN ES-13A DATED MAY 20, 2011 - PAGE 491 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-13A

2010 REVISED STANDARD PLAN RSP ES-13A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03 04	But,Ed,Nev, Pla,Sac,etc	5, 50, 70, 80, 89, etc	Var	47	48

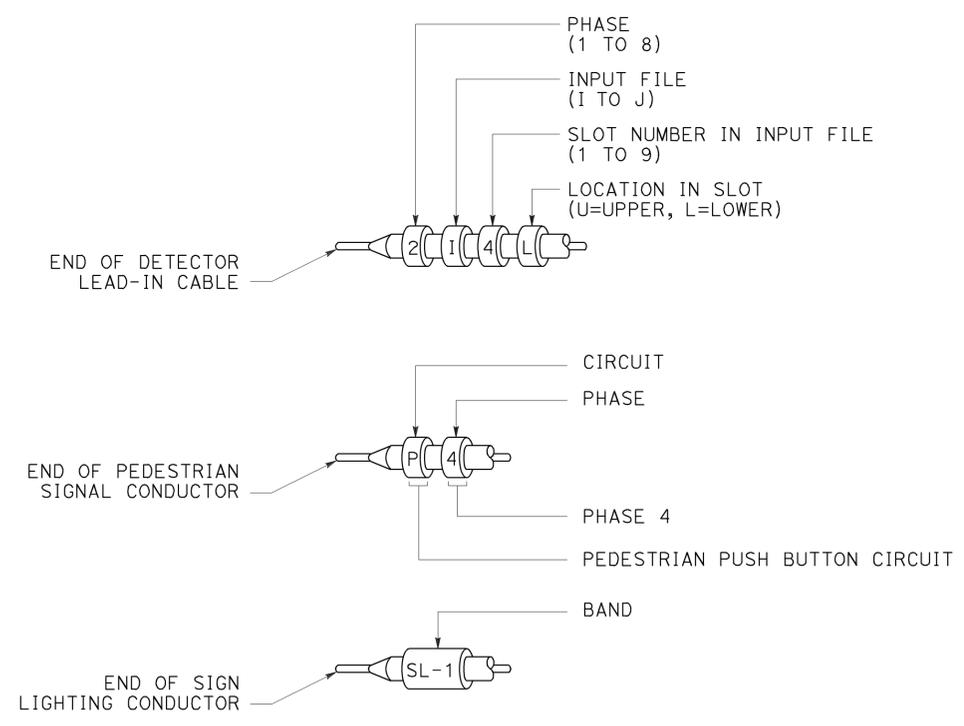
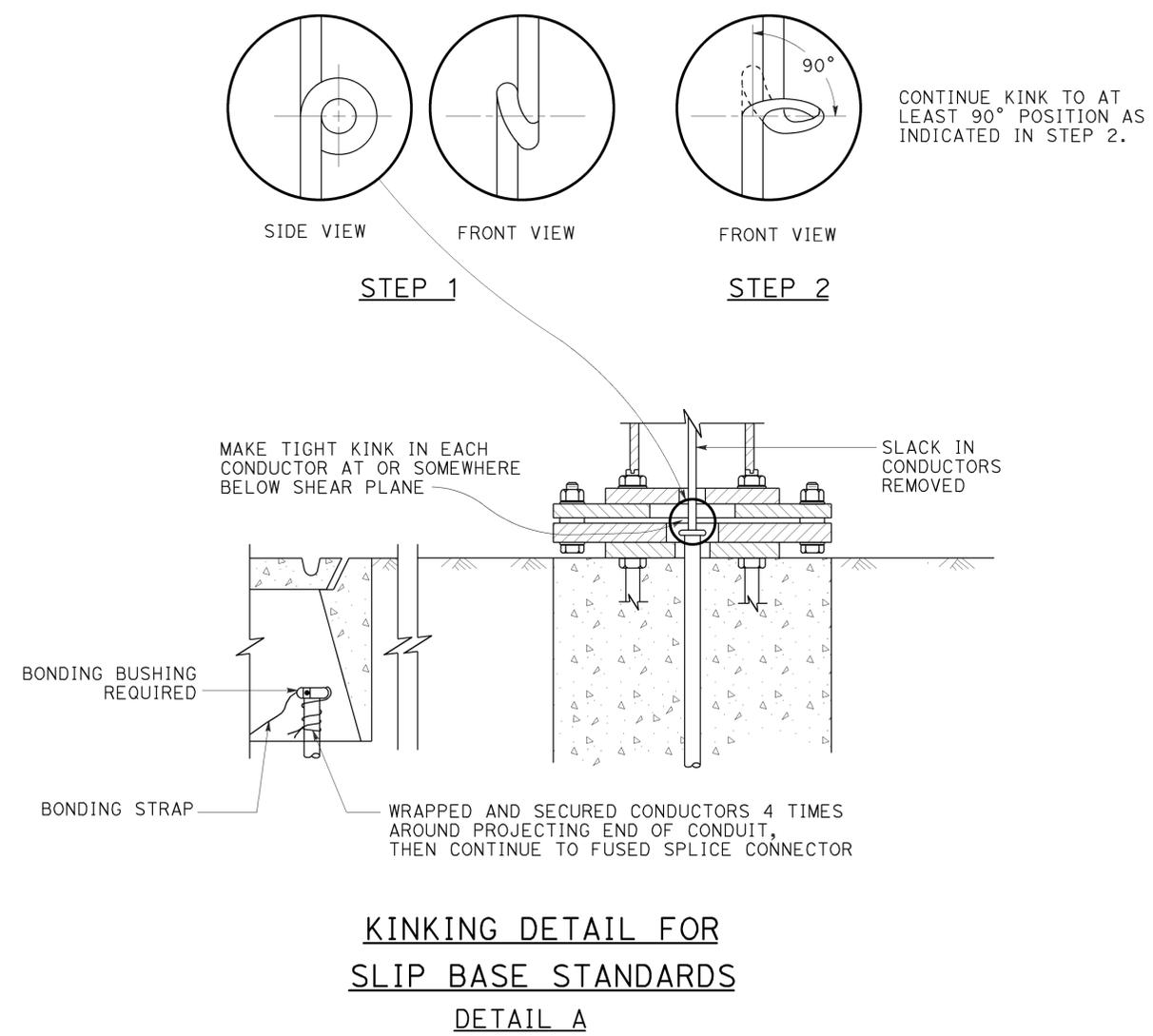
Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 April 15, 2016
 PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 4-18-16

CIRCUIT VOLTAGE	FUSE VOLTAGE RATING	FUSE CURRENT RATING						
		HPS LAMP BALLAST		LOW PRESSURE SODIUM BALLAST	INDUCTION SIGN LIGHTING	SINGLE PHASE (TWO WIRE) TRANSFORMERS (PRIMARY SIDE)		
		70 W	100 W	180 W	85 W	1 KVA	2 KVA	3 KVA
120 V	250 V	5 A	5 A	5 A	5 A	10 A	20 A	30 A
240 V	250 V	5 A	5 A	5 A	5 A	6 A	10 A	20 A
480 V	500-600 V	5 A	5 A	3 A	1 A (SEE NOTE 2)	3 A	6 A	10 A

- NOTES:**
1. Primary lines of multiple ballasts shall be provided with fused connectors. Fuse ratings shall be as noted above.
 2. See Revised Standard Plan RSP ES-15D, Type SC3 control.

FUSE RATINGS FOR FUSED CONNECTORS



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
(FUSE RATING, KINKING AND BANDING DETAIL)**
NO SCALE

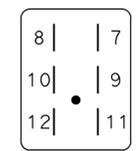
RSP ES-13B DATED APRIL 15, 2016 SUPERSEDES STANDARD PLAN ES-13B DATED MAY 20, 2011 - PAGE 492 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-13B

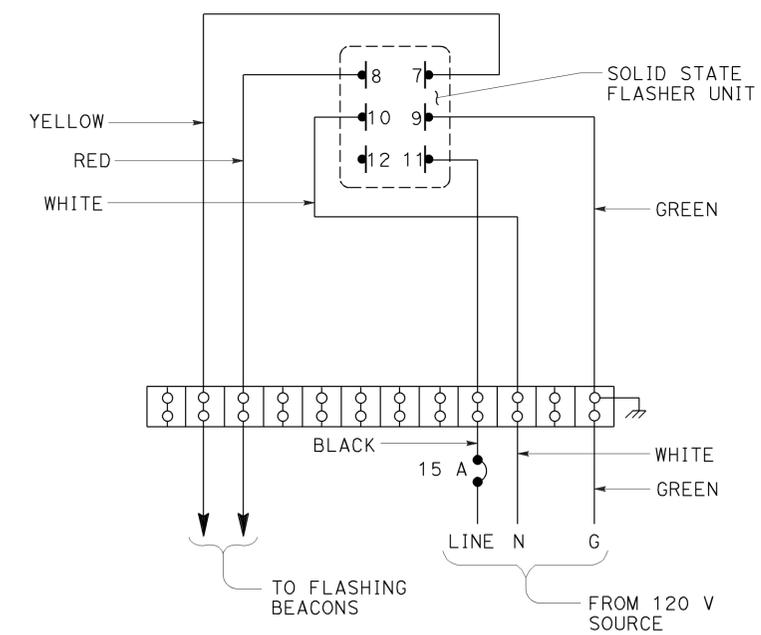
TO ACCOMPANY PLANS DATED 4-18-16

THE FLASHER SHALL MATE WITH A CINCH-JONES SOCKET S-406-SB OR EQUAL AND CONNECTED AS FOLLOWS:

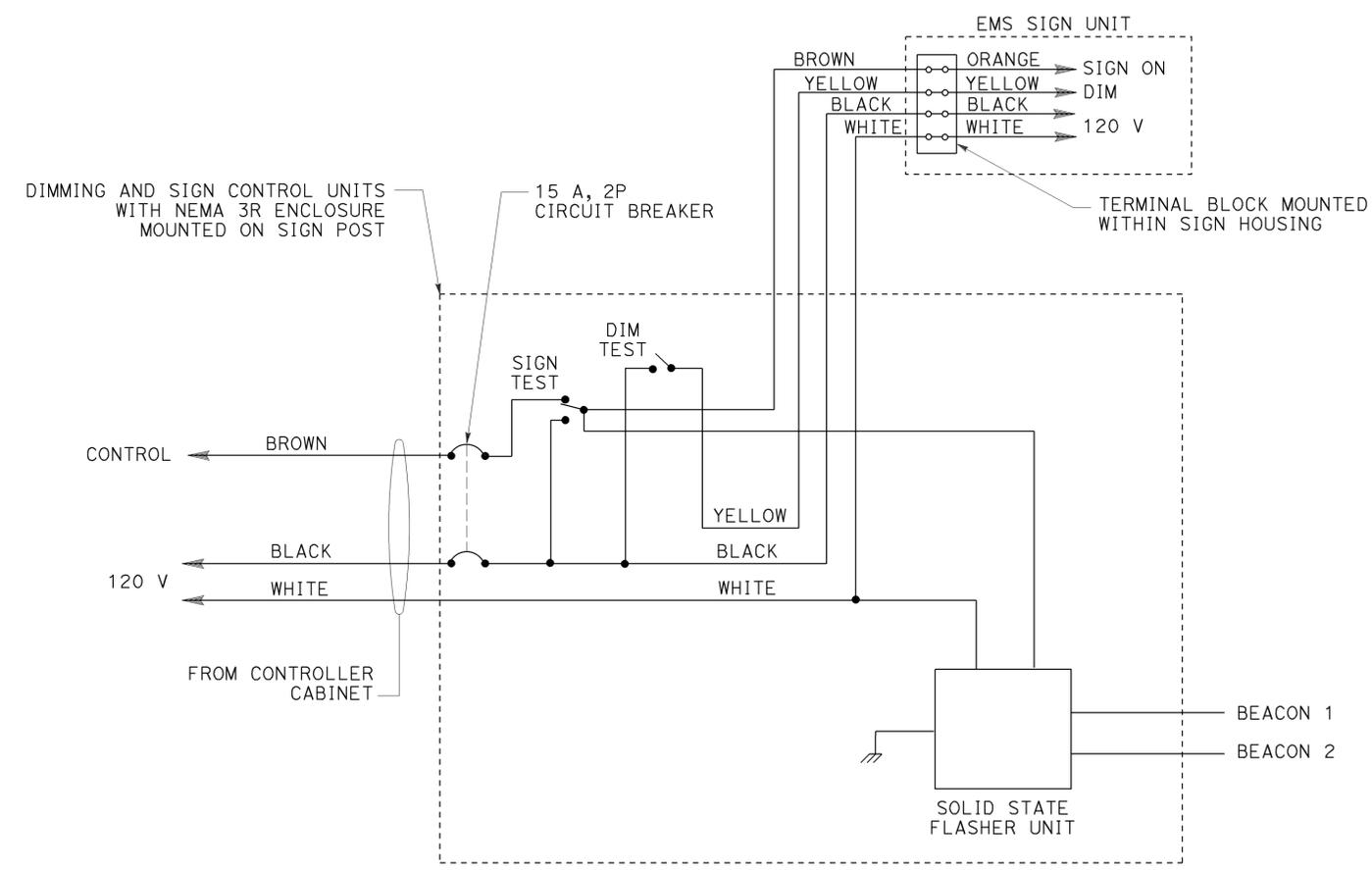
PIN	CIRCUIT	PIN	CIRCUIT
7	LOAD	10	NEUTRAL
8	LOAD	11	LINE
9	CHASSIS GROUND	12	NOT USED



**CONNECTOR SOCKET
SOLID STATE FLASHER UNIT**



**WIRING DIAGRAM
FLASHING BEACON CONTROL ASSEMBLY
DETAIL B**



**WIRING DIAGRAM
LED EXTINGUISHABLE MESSAGE SIGN
DETAIL A**

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
(CONTROL ASSEMBLY
WIRING DIAGRAMS)**
NO SCALE

RSP ES-14B DATED APRIL 15, 2016 SUPERSEDES STANDARD PLAN ES-14B DATED MAY 20, 2011 - PAGE 494 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-14B