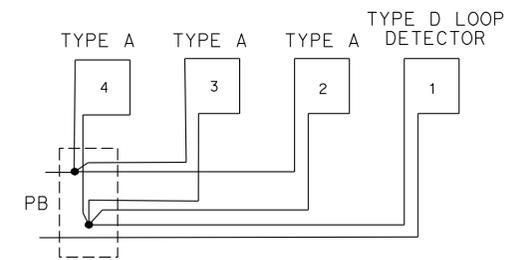




**CONSTRUCTION NOTES: (FOR SHEETS E-12 AND E-13 ONLY)**

1 EXISTING 120/240V, 1Ø, 3-WIRE, TYPE III-AF SERVICE EQUIPMENT ENCLOSURE WITH THE FOLLOWING CIRCUIT BREAKER:

AMPERES	VOLTS	POLES	NAMEPLATE	METER	PHOTOELECTRIC CONTROL TYPE
100	240	3	MAIN BREAKER	YES	-
70	120	1	TRAFFIC SIGNAL	YES	-
50	240	2	HIGHWAY LIGHTING 1	NO	IV
50	240	2	HIGHWAY LIGHTING 2	NO	IV
30	120	1	FLASHING BEACON 1	YES	-
30	120	1	FLASHING BEACON 2	YES	-
20	120	1	SPARE	-	-



**DETAIL A**  
**1D + 3A LOOP CONNECTION**  
NO SCALE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kin	41	R42.1/R44.9	202	246

03-02-11  
REGISTERED CIVIL ENGINEER DATE

5-23-11  
PLANS APPROVAL DATE

WILLIAM SUN  
No. C57664  
Exp. 12/31/11  
CIVIL  
STATE OF CALIFORNIA

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

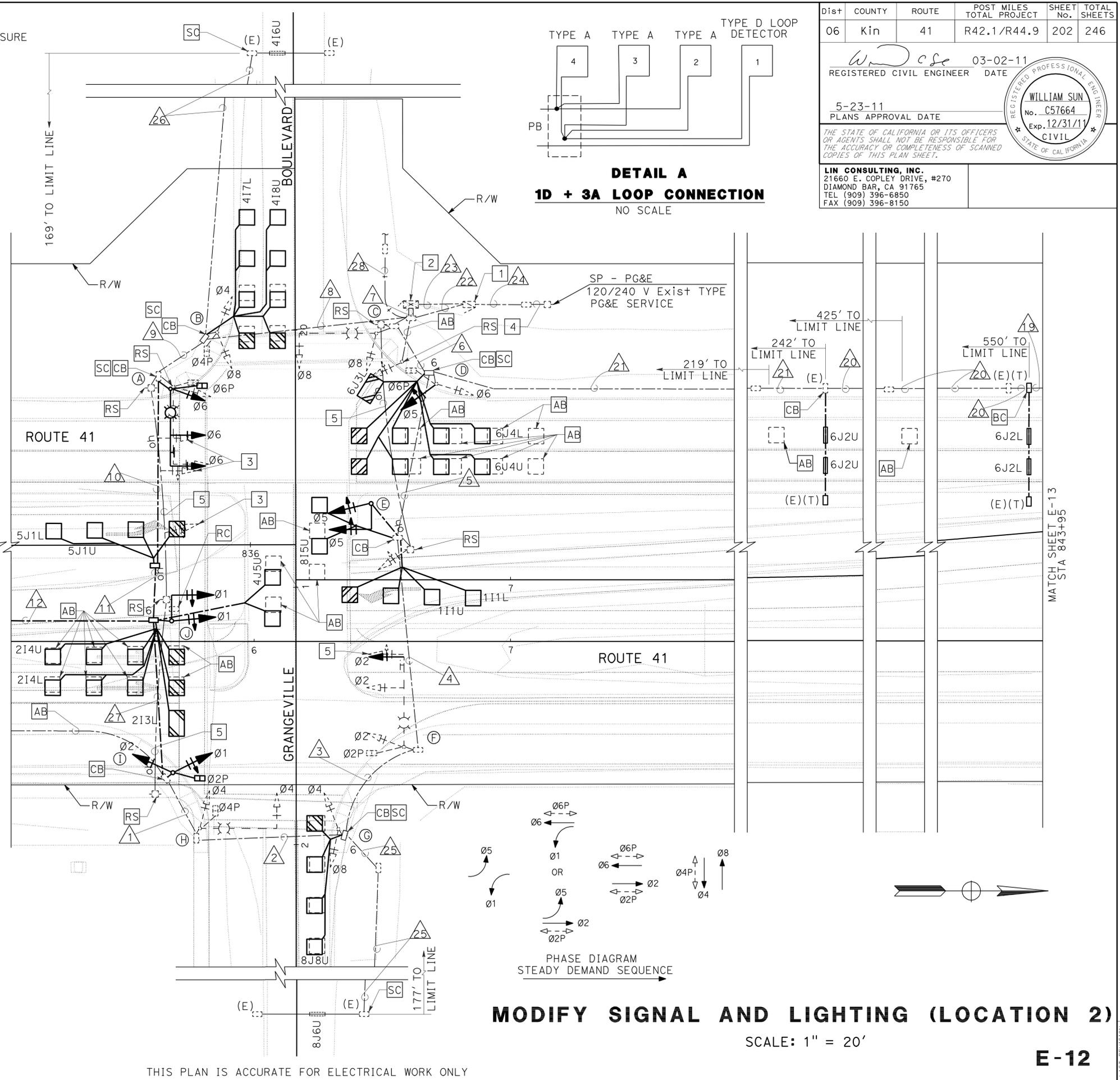
LIN CONSULTING, INC.  
21660 E. COPLEY DRIVE, #270  
DIAMOND BAR, CA 91765  
TEL (909) 396-6850  
FAX (909) 396-8150

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
Caltrans

REVISOR: RYAN WOO, WILLIAM SUN  
CHECKED BY: WILLIAM NASCIMENTO  
CONSULTANT SUPERVISOR: WILLIAM NASCIMENTO  
DESIGNED BY: WILLIAM NASCIMENTO

MATCH LINE SHEET E-13 STA 830+80

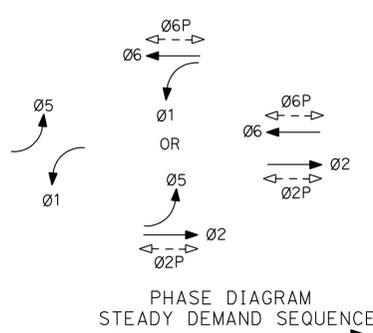
MATCH LINE SHEET E-13 STA 843+95



- 2 EXISTING MODEL 170E CONTROLLER ASSEMBLY WITH MODEL 332 CABINET.
- 3 RS EXISTING SIGNAL HEAD FROM STAGE 3 AS INDICATED.
- 4 PROTECT EXISTING CONDUIT AND CONDUCTORS IN-PLACE.
- 5 RC EXISTING TEMPORARY OH LINE FROM STAGE 3 AS INDICATED.
- 6 REMOVE EXISTING SIGNAL HEAD AS INDICATED.

**NOTES:**

- REMOVE EXISTING CABLES, CONDUCTORS AND DLC FROM THE EXISTING CONDUIT AND INSTALL NEW CABLES, CONDUCTORS AND DLC AS SPECIFIED ON CONDUIT RUN NUMBER AND SIZE ON SHEET E-14.
- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT DISTRICT OFFICE.
- SEE DETAIL A ON THIS SHEET FOR LOOP CONNECTION.



**MODIFY SIGNAL AND LIGHTING (LOCATION 2)**

SCALE: 1" = 20'

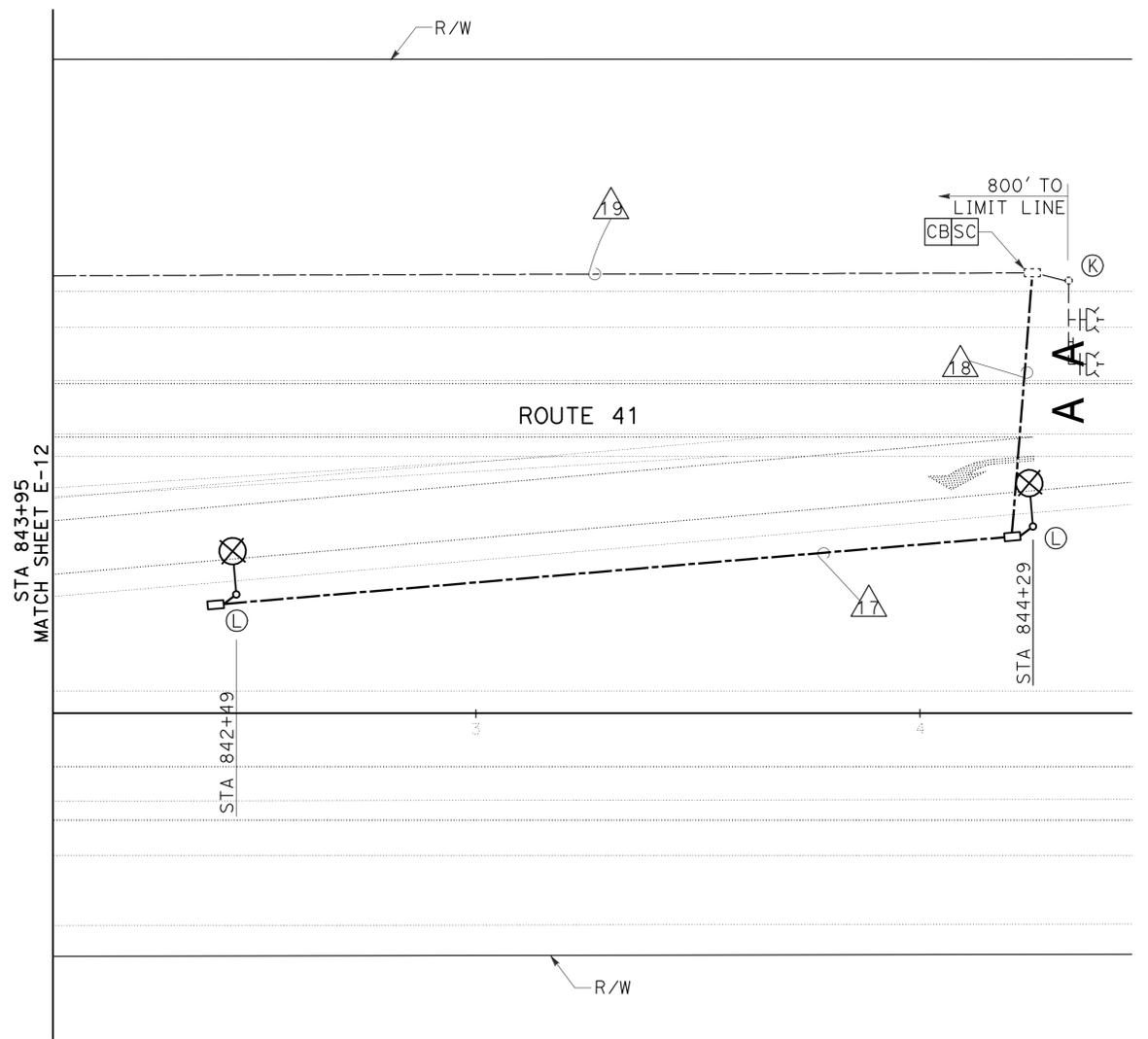
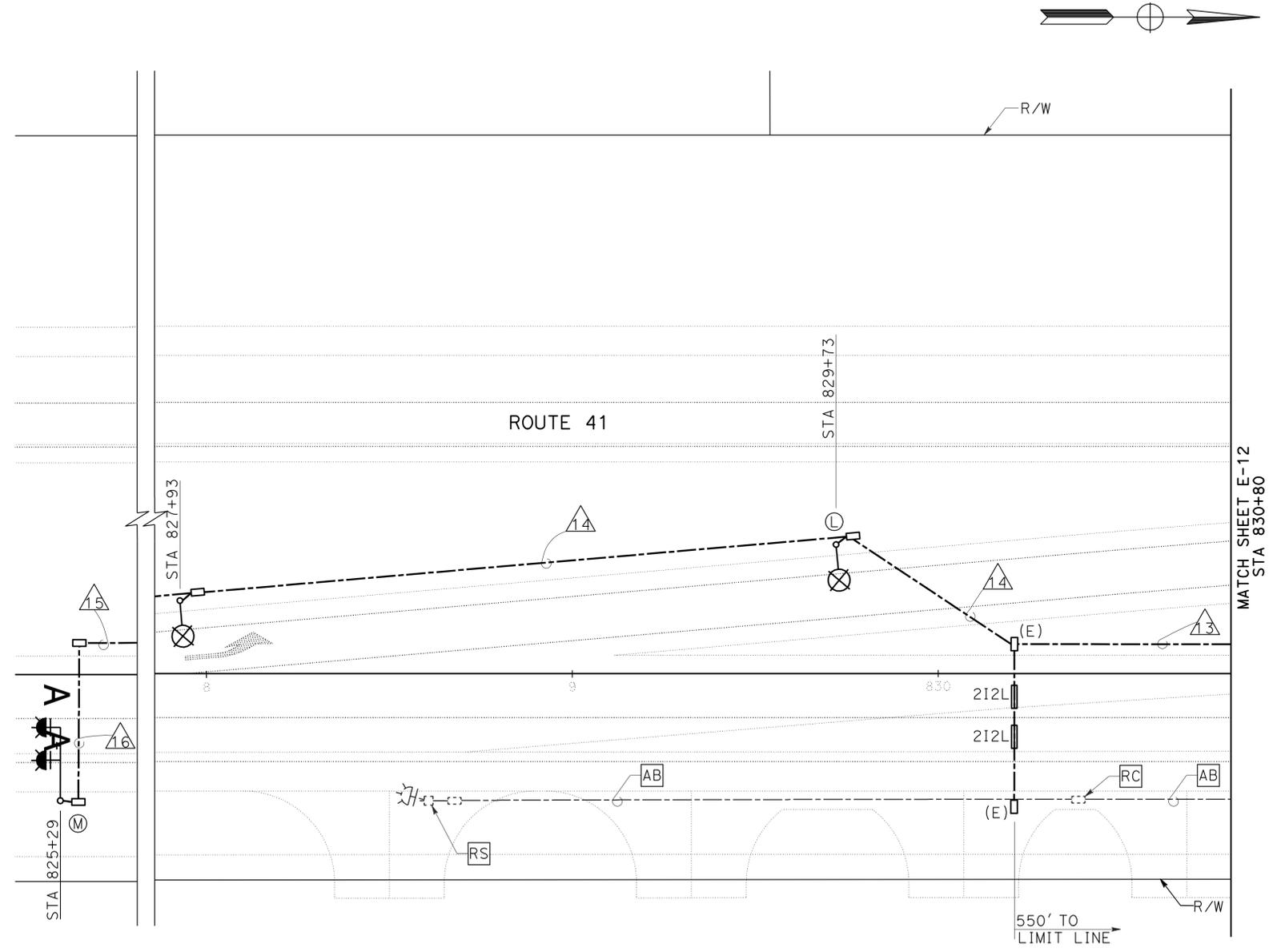
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 CONSULTANT - FUNCTIONAL SUPERVISOR: WILLIAM NASCIMENTO  
 CALCULATED/DESIGNED BY: RYAN WOO  
 CHECKED BY: WILLIAM SUN  
 REVISED BY: RYAN WOO  
 DATE REVISED: WILLIAM SUN

**NOTES: (THIS SHEET ONLY)**

1. FOR NOTES AND CONSTRUCTION NOTES, SEE SHEET E-12. FOR SCHEDULES, SEE SHEET E-14.
2. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kin	41	R42.1/R44.9	203	246

W. J. Case 03-02-11  
 REGISTERED CIVIL ENGINEER DATE  
 5-23-11  
 PLANS APPROVAL DATE  
 WILLIAM SUN  
 No. C57664  
 Exp. 12/31/11  
 CIVIL  
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.  
**LIN CONSULTING, INC.**  
 21660 E. COPLEY DRIVE, #270  
 DIAMOND BAR, CA 91765  
 TEL (909) 396-6850  
 FAX (909) 396-8150



**MODIFY SIGNAL AND LIGHTING (LOCATION 2)**  
 SCALE: 1" = 20'

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kin	41	R42.1/R44.9	204	246

*W. Case* 03-02-11  
 REGISTERED CIVIL ENGINEER DATE

5-23-11  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
**WILLIAM SUN**  
 No. C57664  
 Exp. 12/31/11  
 CIVIL  
 STATE OF CALIFORNIA

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

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### CONDUIT AND CONDUCTOR SCHEDULE

CONDUCTOR DESIGNATION			CONDUIT RUN NUMBER AND SIZE																												
CABLE TYPE	POLE	PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	
			3"E	3"E	3"E	3"E	3"E	3"E	2-3"E	3"E	3"E	3"	3"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	3"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	3"	1 1/2"
VEH-PED 12CSC	Ⓐ	6,6P	4	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Ⓑ	4,8,4P	6	-	-	-	-	-	1E	1E	1E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Ⓒ	8	6	-	-	-	-	-	1E	1E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Ⓓ	5, 6,6P	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Ⓔ	5	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Ⓕ	2,2P	-	-	-	1E	1E	1E	1E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Ⓖ	4,8	2	-	-	1E	1E	1E	1E	1E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Ⓗ	4,4P	2	-	1E	1E	1E	1E	1E	1E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Ⓙ	1,2,2P	4	1	1	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Ⓚ	1	-	-	-	-	-	-	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PPB 3CSC		<b>TOTAL</b>	1	1E	2E	3E	3E	3E	5E	1E	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
AWG		<b>CIRCUIT</b>	1	+1	+1	+1	+1	+1	+2	+2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
#2	SERVICE		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
#4	SIGNALS		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
#6	LIGHTING		-	2	2	2	2	2	-	-	2	2	2	2	2	2	-	-	2	2	2E	2E	2E	-	-	-	-	-	-	-	
#6	FLASHERS		-	-	-	-	-	2	-	2	2	2	2	2	2	2	2	-	-	2E	2E	2E	2E	-	-	-	-	-	-	-	
<b>DETECTORS-TYPE B DLC</b>																															
PHASE																															
Ø1			-	-	-	-	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ø2			-	-	-	-	-	-	3	3	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ø2M			-	-	-	-	-	-	2	2	2	2	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ø4			-	-	-	-	-	-	3	3	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ø4M			-	-	-	-	-	-	1E	1E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ø5			-	-	-	-	-	-	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ø6			-	-	-	-	-	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ø6M			-	-	-	-	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ø8			-	-	1	1	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Ø8M			-	-	1E	1E	1E	1E	1E	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		<b>TOTAL</b>	-	-	1E+1	1E+1	1E+4	1E+9	2E+19	1E+10	8	8	6	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

ALL CONDUITS, CABLES, CONDUCTORS, AND DLC ARE NEW UNLESS OTHERWISE NOTED.  
 E = EXISTING

### POLE AND EQUIPMENT SCHEDULE

No.	TYPE	STANDARD		VEH SIG MTG		PED SIG MTG	PPB		HPS LUM	SPECIAL REQUIREMENTS
		SMA	LMA	MAST ARM	POLE		Ø	ARROW		
Ⓐ	19-4-100 N	30' N	12' N	2 MAS N	SV-1-T N	SP-1-T N	4 N	←	200W N	-
Ⓑ	1-A	-	-	-	TV-2-T	SP-1-T	6	→	-	-
Ⓒ	19-2-80	30'	12'	MAS	SV-1-T	-	6	←	200W	-
Ⓓ	1-A	-	-	-	TV-2-T N	SP-1-T	-	-	-	-
Ⓔ	TYPE 33 N	19'-6" N	-	MAS N	SV-1-T N	-	-	-	-	-
Ⓕ	24-4-100 N	25' N	12' N	2 MAS N	SV-1-T N	SP-1-T N	-	-	200W N	-
Ⓖ	1-A	-	-	-	TV-2-T	-	2	→	-	R3-2 SIGN
Ⓗ	19-2-80	30'	12'	MAS	SV-1-T	SP-1-T	2	←	200W	-
Ⓙ	1-A N	-	-	-	TV-2-T N	SP-1-T N	4 N	→	-	-
Ⓚ	TYPE 33 N	19'-6" N	-	MAS N	SV-1-T N	-	-	-	-	-
Ⓛ	FLASHING BEACON	-	-	-	-	-	-	-	-	-
Ⓛ	TYPE 30 N	-	15' N	-	-	-	-	-	310W N	-
Ⓜ	9B N	18' N	-	-	-	-	-	-	-	W3-3 SIGN

ALL POLES AND EQUIPMENT ARE EXISTING UNLESS OTHERWISE NOTED.  
 N = NEW EQUIPMENT

## MODIFY SIGNAL AND LIGHTING (LOCATION 2)

NO SCALE

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY



USERNAME => frcarol  
 DGN FILE => 641600u0014.dgn

CU 06253

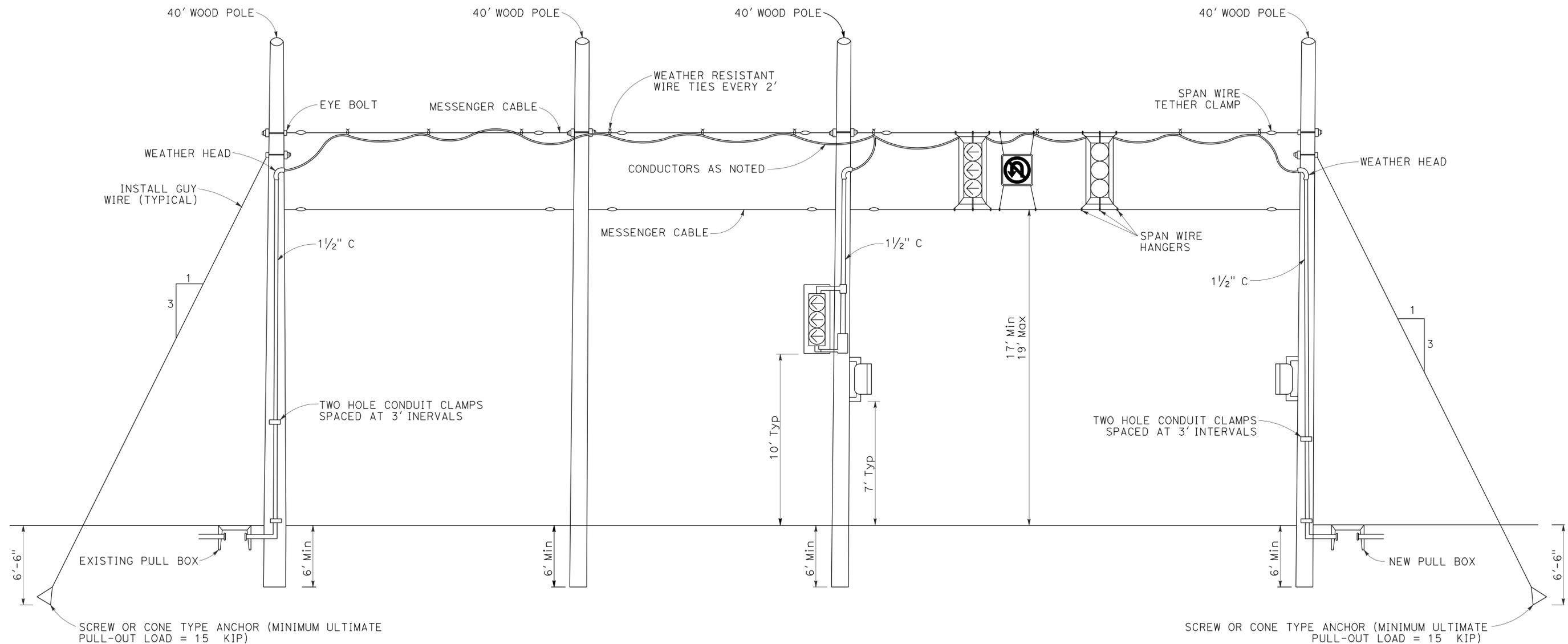
EA 416001

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 CONSULTANT: WILLIAM NASCIMENTO  
 SUPERVISOR: WILLIAM NASCIMENTO  
 DESIGNED BY: WILLIAM NASCIMENTO  
 CHECKED BY: WILLIAM NASCIMENTO  
 RYAN WOO  
 WILLIAM SUN  
 REVISIONS: (None listed)

LAST REVISION: 03-02-11  
 DATE PLOTTED => 25-MAY-2011  
 TIME PLOTTED => 1:31:42

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kin	41	R42.1/R44.9	205	246
			03-02-11		
W. D. Case			DATE		
REGISTERED CIVIL ENGINEER					
5-23-11			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>					
<b>LIN CONSULTING, INC.</b> 21660 E. COPLEY DRIVE, #270 DIAMOND BAR, CA 91765 TEL (909) 396-6850 FAX (909) 396-8150					

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGNED BY	RYAN WOO	REVISOR	WILLIAM SUN
Caltrans	CHECKED BY	WILLIAM SUN	DATE	
	CONSULTANT SUPERVISOR	WILLIAM NASCIMENTO		
	FUNCTIONAL SUPERVISOR			



**DETAIL A**  
**TEMPORARY SIGNAL AND LIGHTING INSTALLATION**

**MODIFY SIGNAL AND LIGHTING  
 (DETAILS)**

NO SCALE

**E-15**

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY



USERNAME => trcarol  
 DGN FILE => 641600u0015.dgn

CU 06253

EA 416001

BORDER LAST REVISED 4/11/2008

LAST REVISION DATE PLOTTED => 25-MAY-2011  
 03-02-11 TIME PLOTTED => 13:42

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kin	41	R42.1/R44.9	206	246

*W. D. Case* 03-02-11  
 REGISTERED CIVIL ENGINEER DATE

5-23-11  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 WILLIAM SUN  
 No. C57664  
 Exp. 12/31/11  
 CIVIL  
 STATE OF CALIFORNIA

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LIN CONSULTING, INC.  
 21660 E. COPLEY DRIVE, #270  
 DIAMOND BAR, CA 91765  
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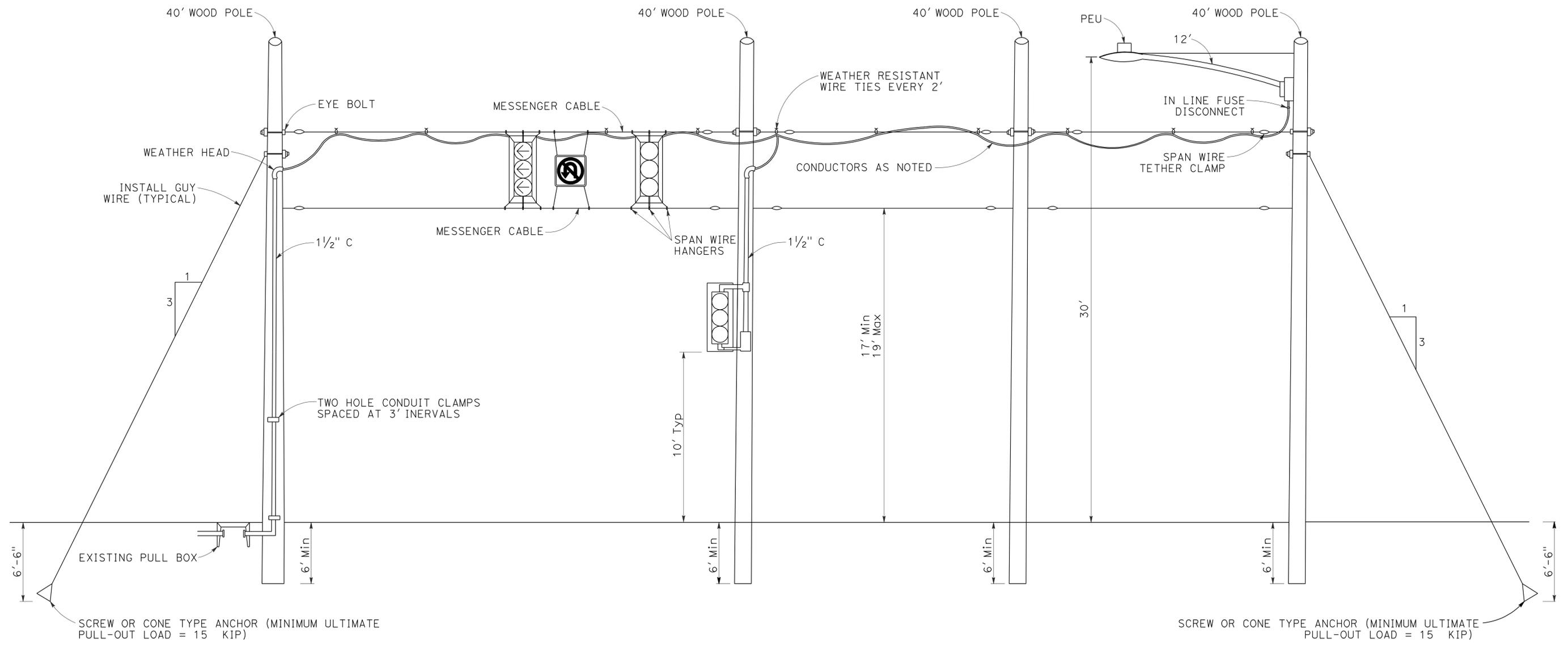
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**

CONSULTANT - FUNCTIONAL SUPERVISOR  
 WILLIAM NASCIMENTO

CALCULATED-DESIGNED BY  
 CHECKED BY

RYAN WOO  
 WILLIAM SUN

REVISED BY  
 DATE REVISED



**DETAIL B**  
**TEMPORARY SIGNAL AND LIGHTING INSTALLATION**

**MODIFY SIGNAL AND LIGHTING  
 (DETAILS)**

NO SCALE

**E-16**

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY



USERNAME => trcarol  
 DGN FILE => 641600ua016.dgn

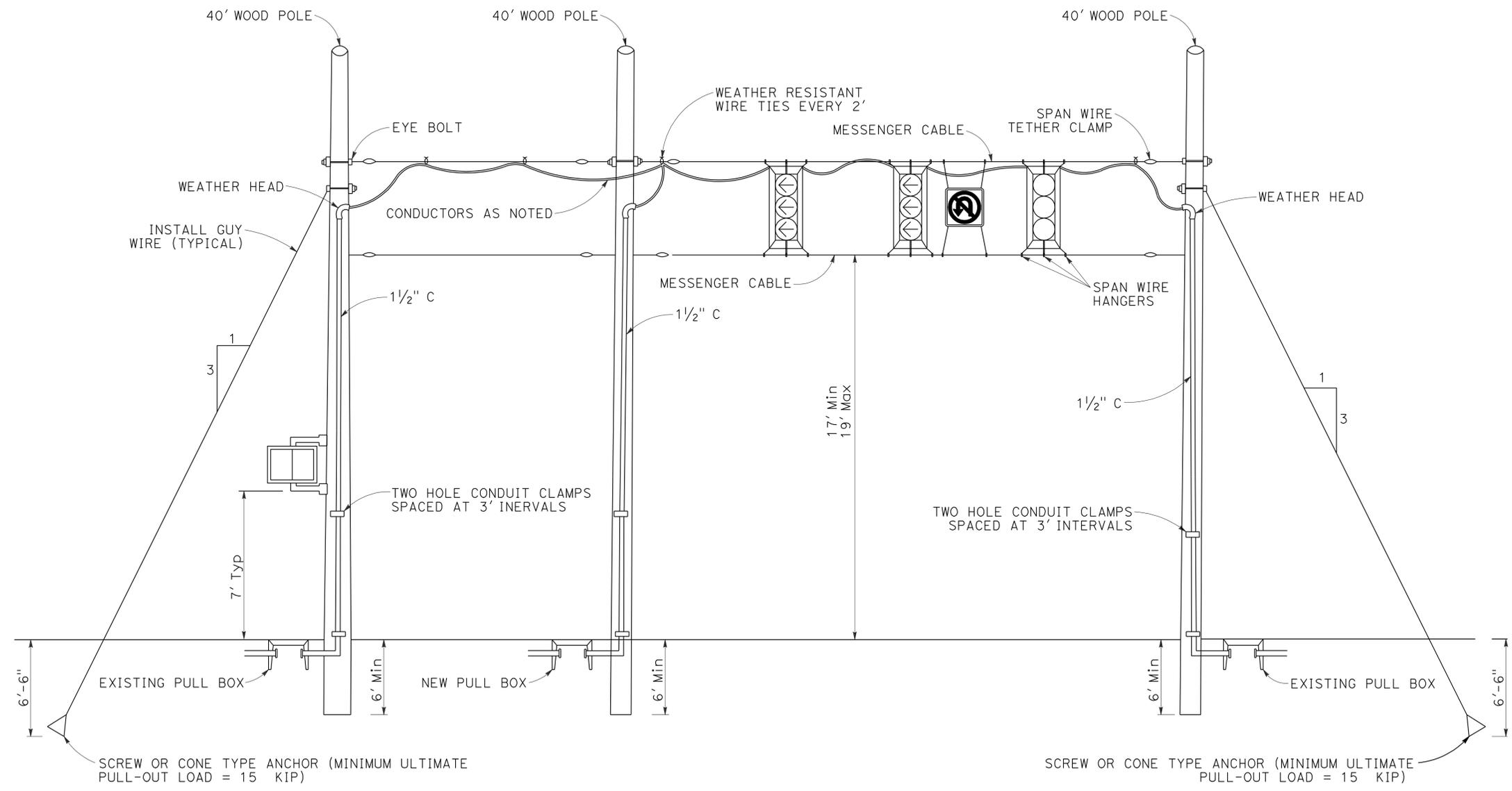
CU 06253

EA 416001

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kin	41	R42.1/R44.9	207	246

*W. Sun* 03-02-11  
 REGISTERED CIVIL ENGINEER DATE  
 5-23-11  
 PLANS APPROVAL DATE  
 REGISTERED PROFESSIONAL ENGINEER  
**WILLIAM SUN**  
 No. C57664  
 Exp. 12/31/11  
 CIVIL  
 STATE OF CALIFORNIA  
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

**LIN CONSULTING, INC.**  
 21660 E. COPLEY DRIVE, #270  
 DIAMOND BAR, CA 91765  
 TEL (909) 396-6850  
 FAX (909) 396-8150



**DETAIL C**  
**TEMPORARY SIGNAL AND LIGHTING INSTALLATION**

**MODIFY SIGNAL AND LIGHTING  
 (DETAILS)**

NO SCALE

**E-17**

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY



USERNAME => trcarol  
 DGN FILE => 641600uad017.dgn

CU 06253

EA 416001

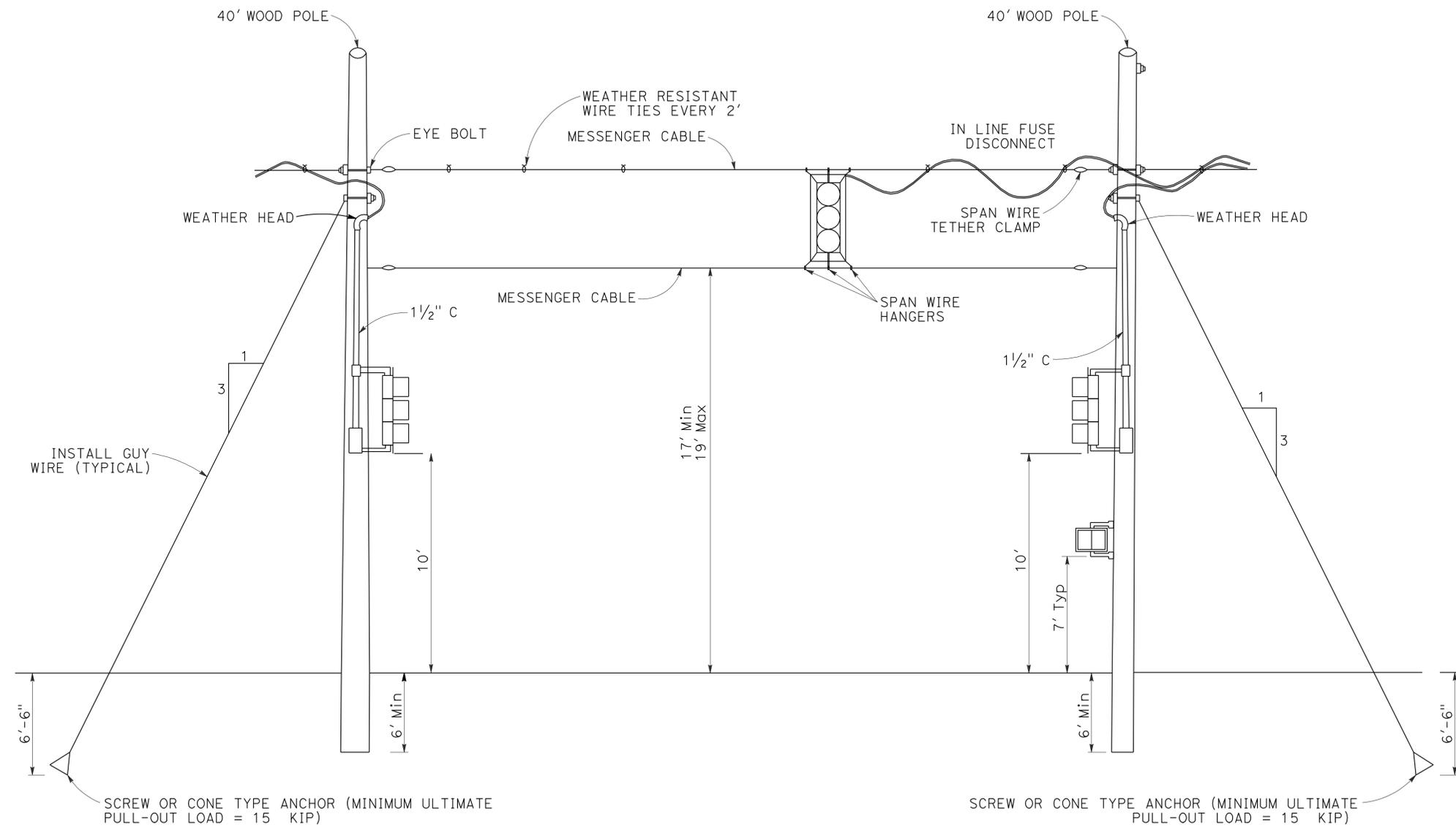
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGNED BY	REVISOR	DATE
<b>Caltrans</b>	RYAN WOO	WILLIAM SUN	
CONSULTANT - FUNCTIONAL SUPERVISOR	CHECKED BY		
WILLIAM NASCIMENTO			

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kin	41	R42.1/R44.9	208	246

*W. Sun* 03-02-11  
 REGISTERED CIVIL ENGINEER DATE  
 5-23-11  
 PLANS APPROVAL DATE  
 REGISTERED PROFESSIONAL ENGINEER  
**WILLIAM SUN**  
 No. C57664  
 Exp. 12/31/11  
 CIVIL  
 STATE OF CALIFORNIA  
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

**LIN CONSULTING, INC.**  
 21660 E. COPLEY DRIVE, #270  
 DIAMOND BAR, CA 91765  
 TEL (909) 396-6850  
 FAX (909) 396-8150

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT	FUNCTIONAL SUPERVISOR	CALCULATED-DESIGNED BY	REVISOR	DATE
<b>Caltrans</b>	WILLIAM NASCIMENTO	WILLIAM NASCIMENTO	RYAN WOO WILLIAM SUN	RYAN WOO WILLIAM SUN	



**DETAIL D**  
**TEMPORARY SIGNAL AND LIGHTING INSTALLATION**

**MODIFY SIGNAL AND LIGHTING  
 (DETAILS)**

NO SCALE

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kin	41	R42.1/R44.9	210	246

W. D. Case 03-02-11  
 REGISTERED CIVIL ENGINEER DATE

5-23-11  
 PLANS APPROVAL DATE

WILLIAM SUN  
 No. C57664  
 Exp. 12/31/11  
 CIVIL  
 STATE OF CALIFORNIA

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**LIN CONSULTING, INC.**  
 21660 E. COPLEY DRIVE, #270  
 DIAMOND BAR, CA 91765  
 TEL (909) 396-6850  
 FAX (909) 396-8150



**CONSTRUCTION NOTES: (FOR THIS SHEET ONLY)**

1. INSTALL 120/240 V, 1 Ø, 3-WIRE, TYPE III-AF SERVICE EQUIPMENT ENCLOSURE WITH THE FOLLOWING CIRCUIT BREAKER: CTID No. 06450410042921

AMPERES	VOLTS	POLES	NAMEPLATE	METER	PHOTOELECTRIC CONTROL TYPE
100	240	2	MAIN BREAKER	YES	-
30	240	2	CMS	YES	-
60	120	1	CMS CABINET	YES	-
20	120	1	TELEPHONE DEMARCATION CABINET	YES	-
30	120	1	SPARE	YES	-

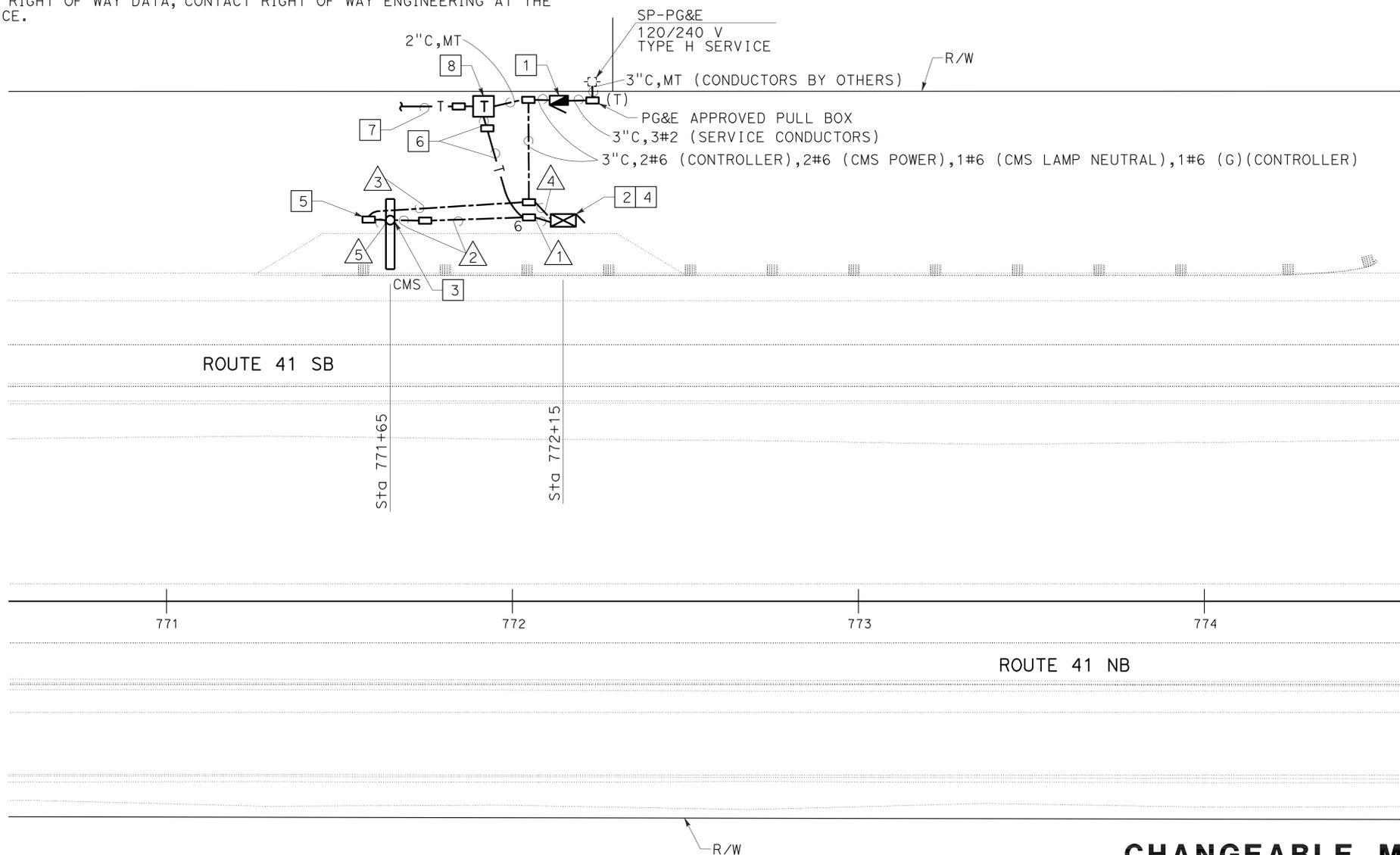
- 2. INSTALL STATE-FURNISHED MODEL 170 CONTROLLER ASSEMBLY. SEE E-21 FOR DETAILS.
- 3. INSTALL STATE-FURNISHED CMS MODEL 500. SEE E-21 FOR DETAILS.
- 4. INSTALL WIRELESS MODEM AND ANTENNA.
- 5. INSTALL GROUNDING ELECTRODE IN PULL BOX.
- 6. INSTALL 1½" C WITH 1 TELEPHONE CABLE FOR ALTERNATIVE COMMUNICATION USE.
- 7. INSTALL 2" C STUB OUT FOR FUTURE TELEPHONE CONNECTION.
- 8. INSTALL TYPE C TELEPHONE DEMARCATION CABINET.

**NOTE:**

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

**CONDUIT AND CONDUCTOR SCHEDULE**

CONDUCTOR DESIGNATION	1	2	3	4	5
#6 AWG (CONTROLLER)				2	
#6 AWG (G) (CONTROLLER)				1	
#6 AWG (G) (CMS)					1
CMS POWER (#6 AWG)			2		2
CMS LAMP NEUTRAL (#6 AWG)			1		1
SF HARNESS #4	1	1			
SF HARNESS #5	1	1			
TELEPHONE CABLE	1				
CONDUIT SIZE	3"	3"	3"	3"	3"



**CHANGEABLE MESSAGE SIGN SYSTEM**

SCALE: 1" = 20'

**E-20**

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY



USERNAME => trlim  
 DGN FILE => 641600u020.dgn

CU 06253

EA 416001

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 Caltrans®  
 CONSULTANT - FUNCTIONAL SUPERVISOR: WILLIAM NASCIMENTO  
 CALCULATED/DESIGNED BY: RYAN WOO  
 CHECKED BY: WILLIAM SUN  
 REVISED BY: [blank]  
 DATE REVISED: [blank]

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 CONSULTANT - FUNCTIONAL SUPERVISOR  
 WILLIAM NASCIMENTO  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 RYAN WOO  
 WILLIAM SUN  
 REVISED BY  
 DATE REVISED

**CONSTRUCTION NOTES: (FOR THIS SHEET ONLY)**

- CONSTRUCT A RAISED PORTLAND CEMENT CONCRETE PAD AROUND THE MODEL 334 CMS CABINET PER FOUNDATION DETAIL. FOR ADDITIONAL NOTES SEE CALTRANS STANDARD PLAN ES-3C.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kin	41	R42.1/R44.9	211	246

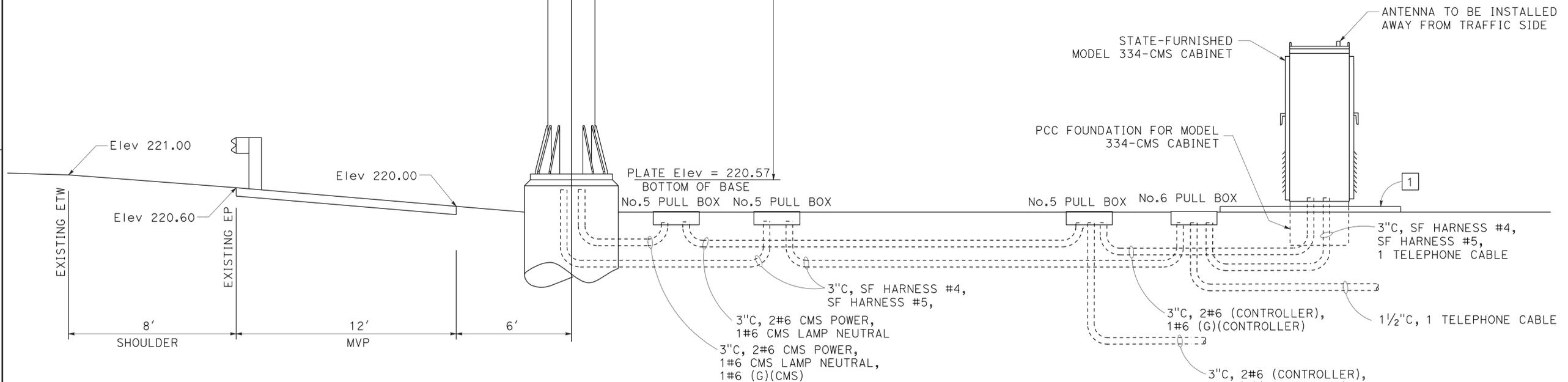
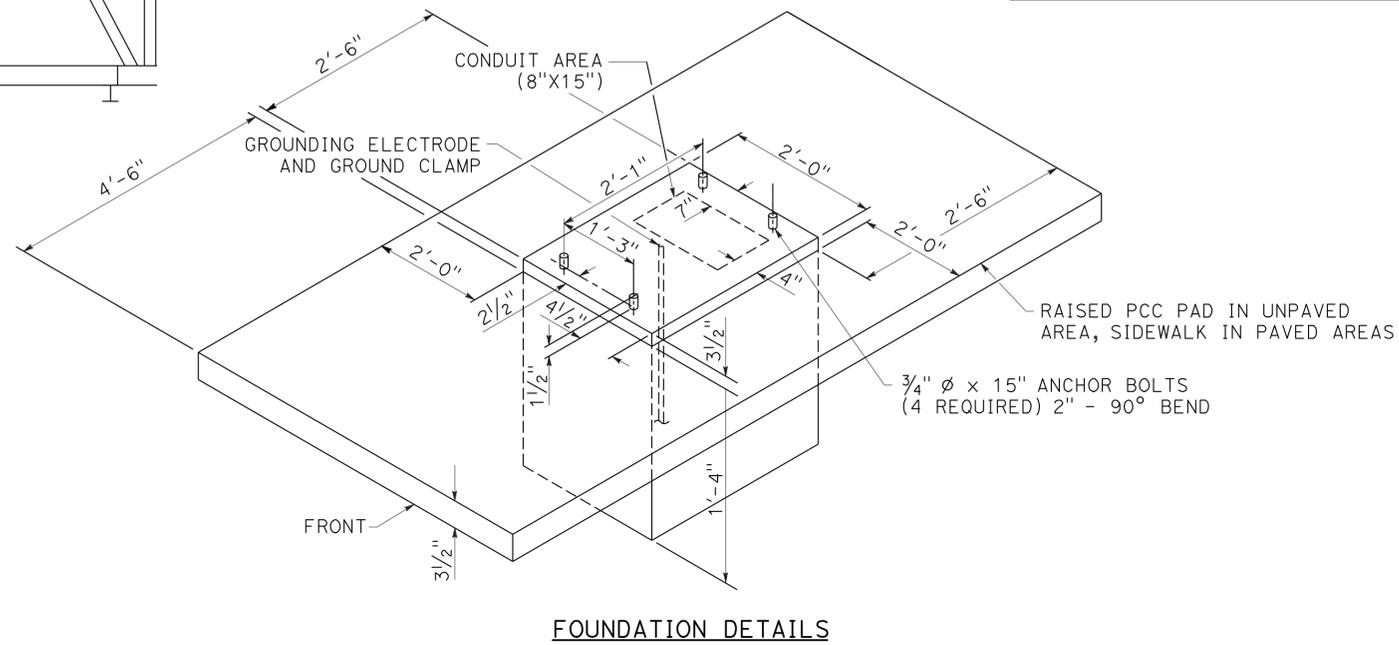
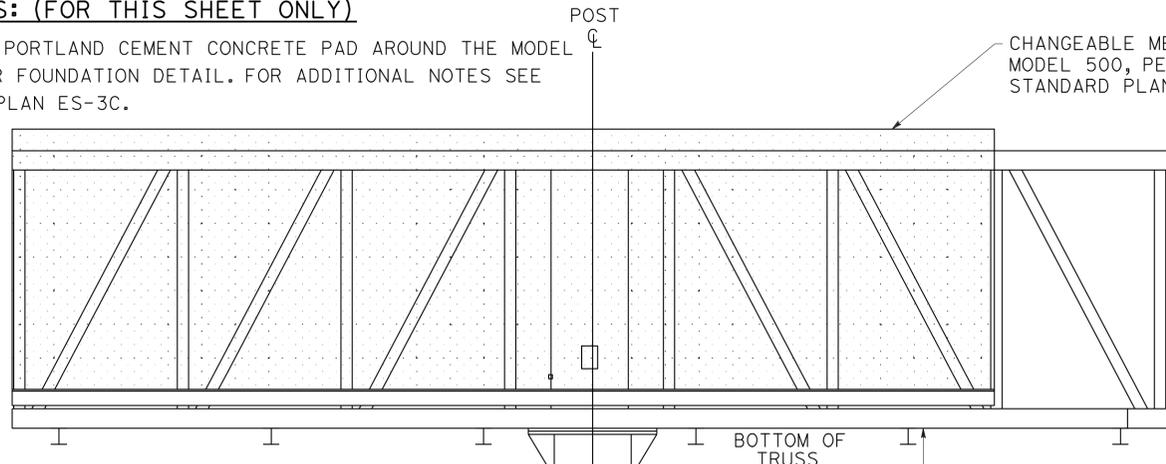
03-02-11  
 REGISTERED CIVIL ENGINEER DATE

5-23-11  
 PLANS APPROVAL DATE

WILLIAM SUN  
 No. C57664  
 Exp. 12/31/11  
 CIVIL  
 STATE OF CALIFORNIA

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LIN CONSULTING, INC.  
 21660 E. COPLEY DRIVE, #270  
 DIAMOND BAR, CA 91765  
 TEL (909) 396-6850  
 FAX (909) 396-8150



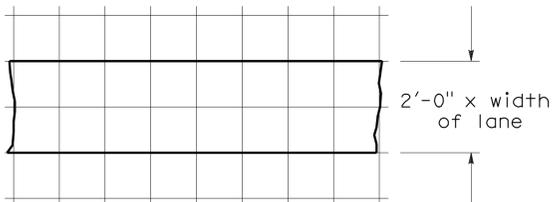
**CHANGEABLE MESSAGE SIGN AND CONTROL CABINET DETAILS**

**CHANGEABLE MESSAGE SIGN SYSTEM (DETAILS)**

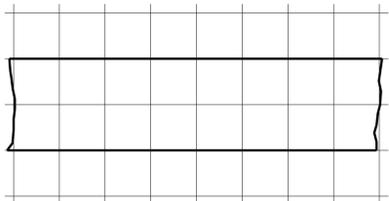
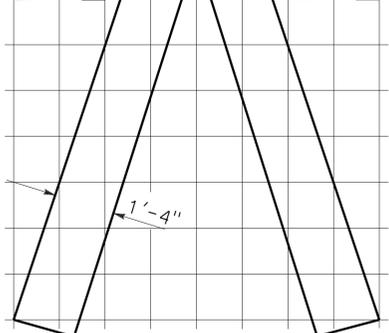
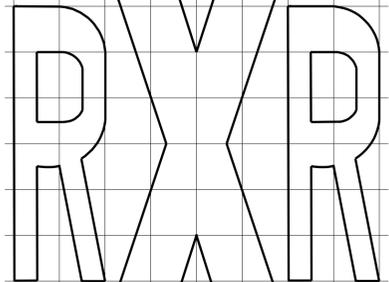
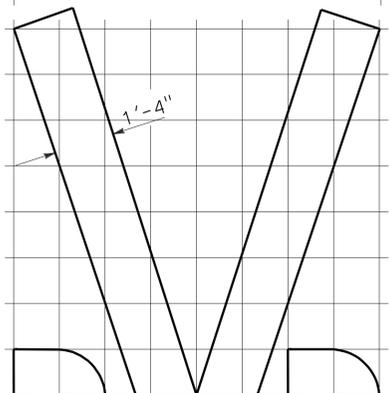
NO SCALE

**E-21**

To accompany plans dated 5-23-11



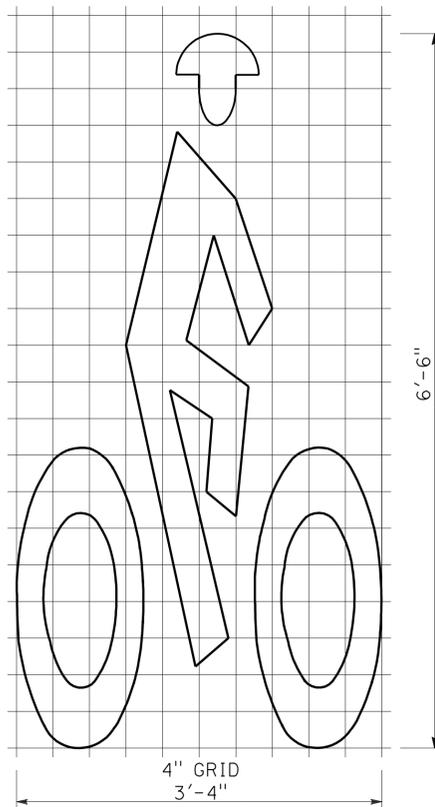
8'-0"



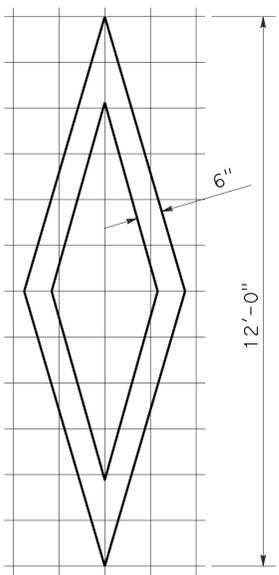
1'-0" GRID  
A=70 sq ft \*

**RAILROAD CROSSING SYMBOL**

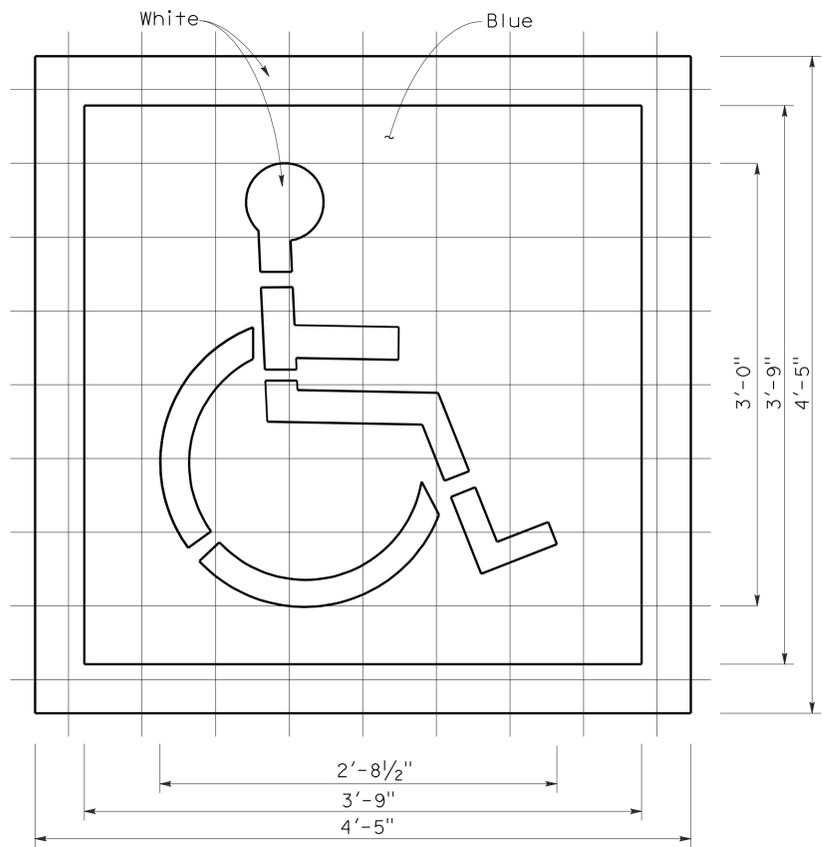
\*70 sq ft DOES NOT INCLUDE THE 2'-0" x VARIABLE WIDTH TRANSVERSE LINES.



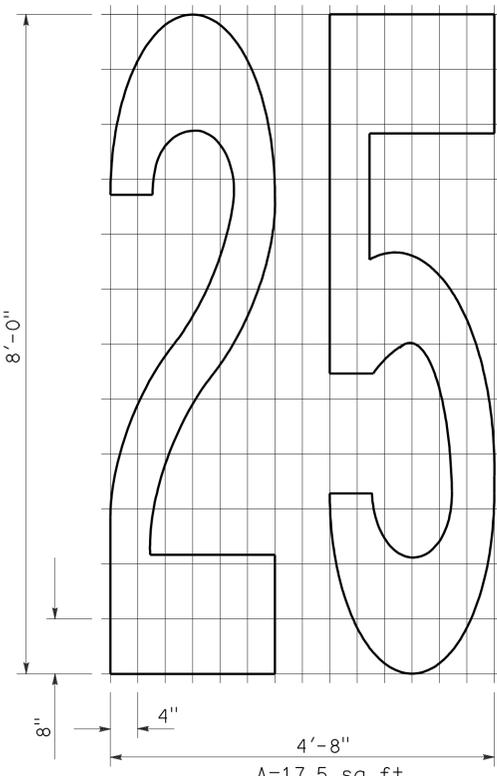
4" GRID  
3'-4"  
A=7 sq ft  
**BIKE LANE SYMBOL**



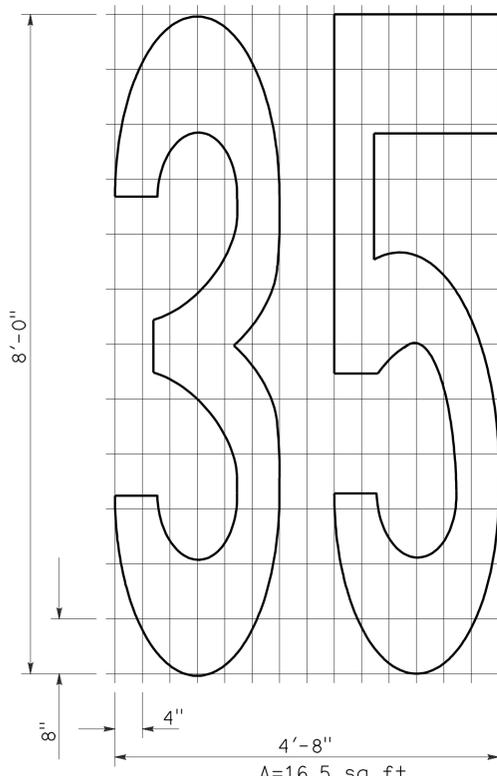
1'-0" GRID  
3'-3"  
A=11 sq ft  
**DIAMOND SYMBOL**



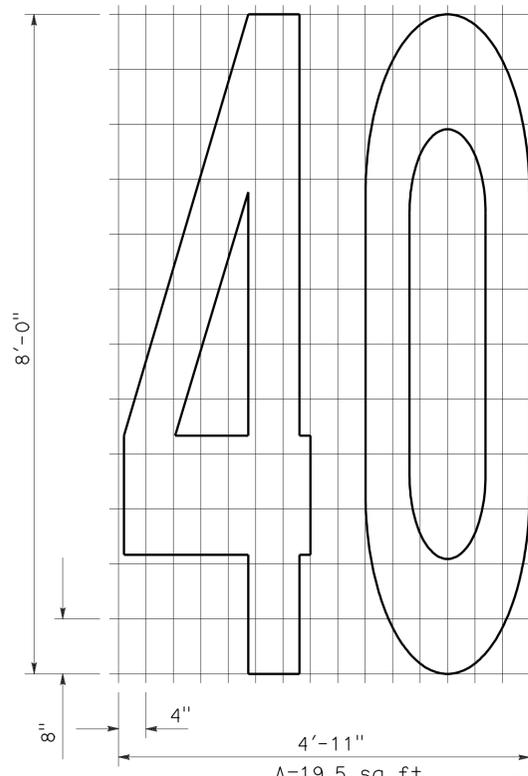
6" GRID  
A (White) = 9 sq ft  
A (Blue) = 14 sq ft  
**INTERNATIONAL SYMBOL OF ACCESSIBILITY MARKING**



4'-8"  
A=17.5 sq ft

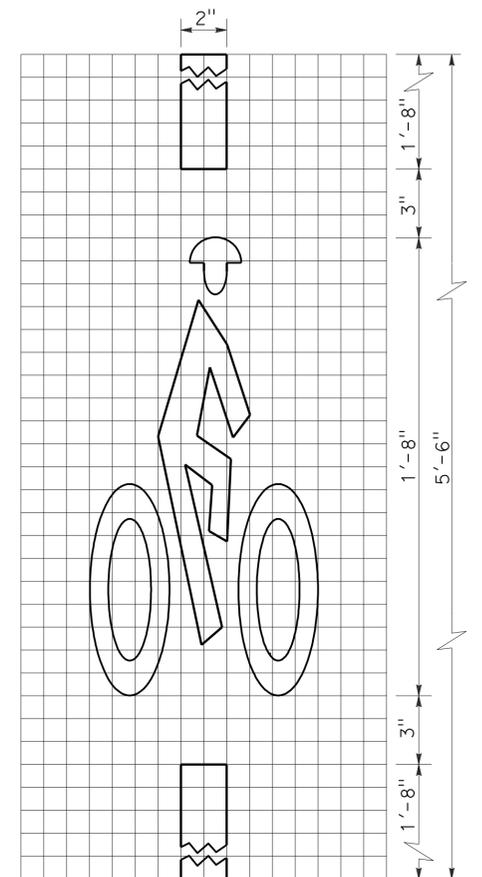


4'-8"  
A=16.5 sq ft



4'-11"  
A=19.5 sq ft

**NUMERALS**



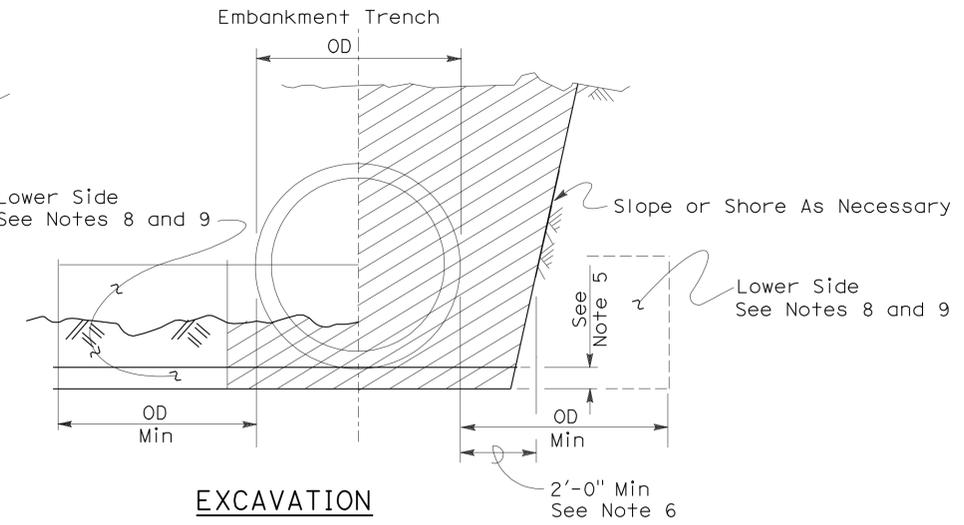
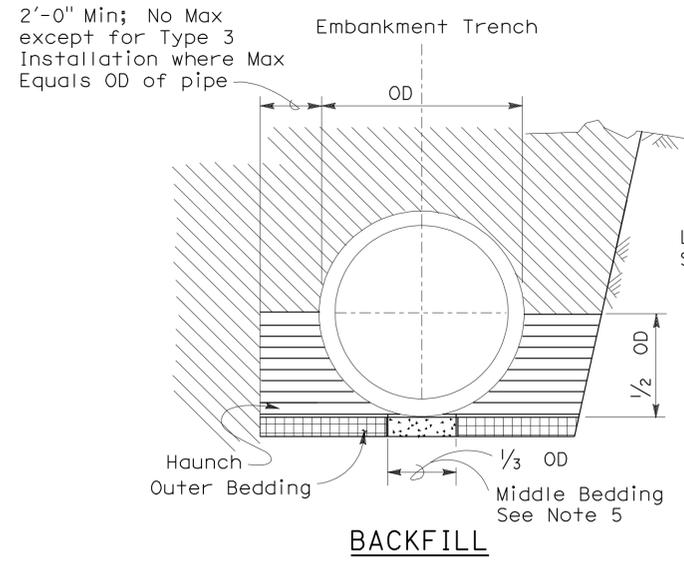
1" GRID  
10"  
A=2 sq ft  
**BICYCLE LOOP DETECTOR SYMBOL**

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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**PAVEMENT MARKINGS SYMBOLS AND NUMERALS**

NO SCALE

To accompany plans dated 5-23-11



- Roadway Embankment
- Structure Backfill (Culvert) See Note 6
- Structure Backfill (Culvert) See Note 6
- Loose Backfill
- Excavation Structure (Culvert)

**TYPE 1 INSTALLATION:**  
 The haunch and outer bedding shall be compacted to a minimum 90 percent relative compaction. In addition, the minimum sand equivalent in these areas shall be 30 and the maximum percentage passing the 75 μm sieve size shall be 12.

**TYPE 2 INSTALLATION:**  
 The haunch and outer bedding shall be compacted to a minimum 90 percent relative compaction. In addition, the minimum sand equivalent in these areas shall be 25.

**TYPE 3 INSTALLATION:**  
 The haunch and outer bedding shall be compacted to a minimum 85 percent relative compaction. 90 percent relative compaction will be required where the fill over the pipe is less than 4'-0" or 1/2 OD.

**NOTES:**

- Unless otherwise shown on the plans or specified in the special provision, the Contractor shall have the option of selecting the class of RCP and the type of installation to be used, provided the height of cover does not exceed the value shown for the RCP selected.  
 Example: 24" RCP culvert with maximum cover of 19'-0" the options are:  
 a) Class III or stronger with Installation Type 1.  
 b) Class III Special or stronger with Installation Type 2.  
 c) Class IV Special or stronger with Installation Type 3.  
 Cover is defined as the maximum vertical distance from top of the pipe to finished grade within the length of any given culvert.
- The class of RCP and Installation Type selected shall be the same throughout the length of any given culvert.
- The "length of any culvert" is defined as the culvert between:  
 a) Successive drainage structure (inlets, junction boxes, headwalls, etc.).  
 b) A drainage structure and the inlet or outlet end of the culvert.  
 c) The inlet and outlet end of the culvert when there are no intervening drainage structures.
- Oval and arch shaped RCP shall not be used.
- 1/25 OD Min, not less than 3".
- Slurry cement backfill may be substituted for backfill in the outer bedding and haunch areas. If slurry is used the outer and middle beddings shall be omitted. Prior to installation the soil under the middle 1/3 of the outside diameter of the pipe shall be softened by scarifying or other means to a minimum depth of 1/25 OD, but not less than 3". Where slurry cement backfill is used clear distance to trench wall may be reduced as set forth in Section 19-3.062 of the Standard Specifications.
- Backfill shall be placed full width of excavation except where dimensions are shown for backfill width or thickness. Dimensions shown are minimums.
- Lower side shall be suitable material as determined by the Engineer. Otherwise it shall be considered unsuitable as set forth in Section 19-2.02 of the Standard Specifications. See Note 9.
- Where the pipe is placed in a trench, if the trench walls are sloped at 5 vertical to 1 horizontal or steeper for at least 90 percent of the trench height or up to not less than 12" from the grading plane, the firmness of the soil in the lower side need not be considered.
- Non-reinforced precast concrete pipe sizes 3'-0" or smaller may be placed under installation Types 1, 2 or 3.

**INSTALLATION TYPE 1**

MINIMUM CLASS AND D-LOAD	COVER	
	108" Dia AND SMALLER	OVER 108" Dia
Class II 1000D	14.9'	12.9'
Class III 1350D	15.0' - 20.9'	13.0' - 18.9'
Class III Special 1700D	21.0' - 26.9'	19.0' - 24.9'
Class IV 2000D	27.0' - 31.9'	25.0' - 29.9'
Class IV Special 2500D	32.0' - 40.9'	30.0' - 38.9'
Class V 3000D	41.0' - 49.9'	39.0' - 46.9'
Class V Special 3600D	50.0' - 59.0'	47.0' - 58.0'

**INSTALLATION TYPE 2**

MINIMUM CLASS AND D-LOAD	COVER
Class II 1000D	9.9'
Class III 1350D	10.0' - 14.9'
Class III Special 1700D	15.0' - 19.9'
Class IV 2000D	20.0' - 24.9'
Class IV Special 2500D	25.0' - 31.9'
Class V 3000D	32.0' - 38.9'
Class V Special 3600D	39.0' - 47.0'

**INSTALLATION TYPE 3**

MINIMUM CLASS AND D-LOAD	COVER	
	48" Dia AND SMALLER	OVER 48" Dia
Class II 1000D	7.9'	5.9'
Class III 1350D	8.0' - 10.9'	6.0' - 8.9'
Class III Special 1700D	11.0' - 14.9'	9.0' - 12.9'
Class IV 2000D	15.0' - 17.9'	13.0' - 15.9'
Class IV Special 2500D	18.0' - 21.9'	16.0' - 19.9'
Class V 3000D	22.0' - 26.9'	20.0' - 24.9'
Class V Special 3600D	30.0' - 33.0'	25.0' - 31.0'

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

**EXCAVATION AND BACKFILL  
 CONCRETE PIPE CULVERTS**

NO SCALE

RSP A62DA DATED NOVEMBER 17, 2006 SUPERSEDES STANDARD PLAN A62DA DATED MAY 1, 2006 - PAGE 20 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP A62DA

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Kin	41	R42.1/R44.9	214	246

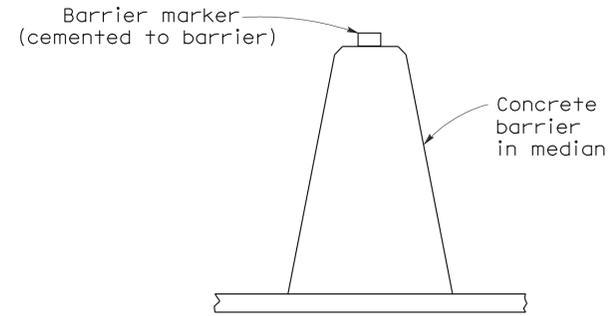
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

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

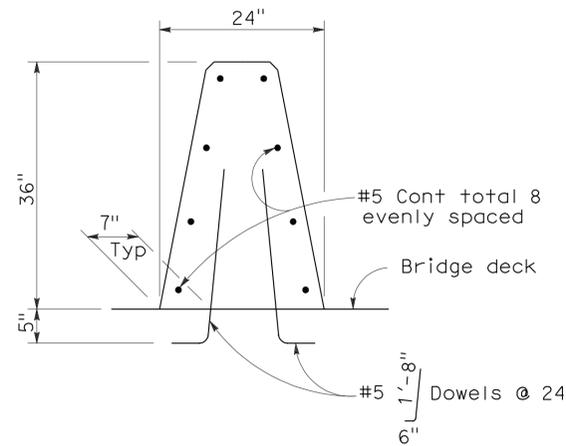
To accompany plans dated 5-23-11

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



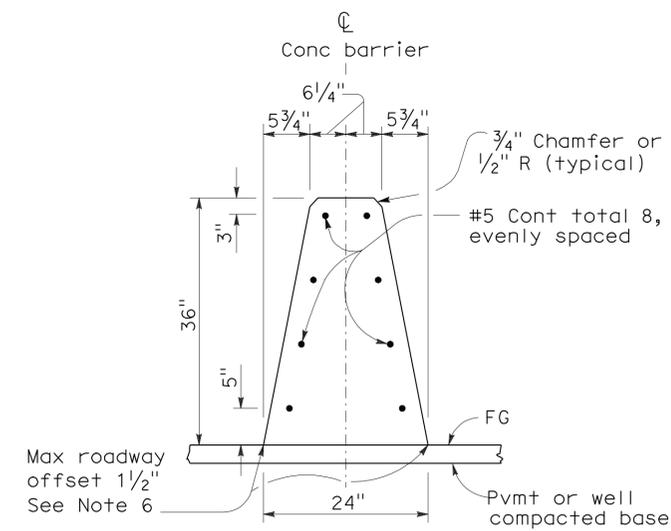
**CONCRETE BARRIER TYPE 60 DELINEATION**

See Notes 7 and 8



**CONCRETE BARRIER TYPE 60A**

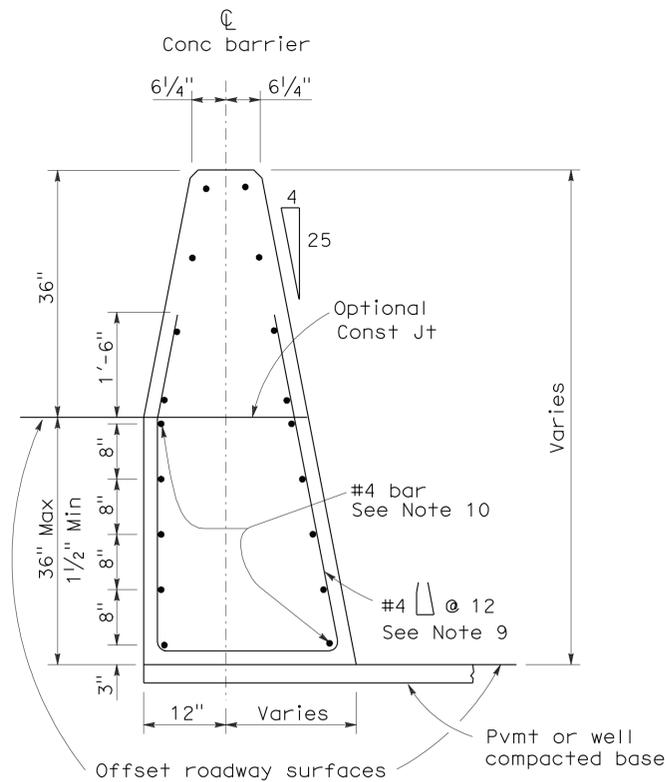
Details similar to Type 60 except as noted.



**CONCRETE BARRIER TYPE 60**

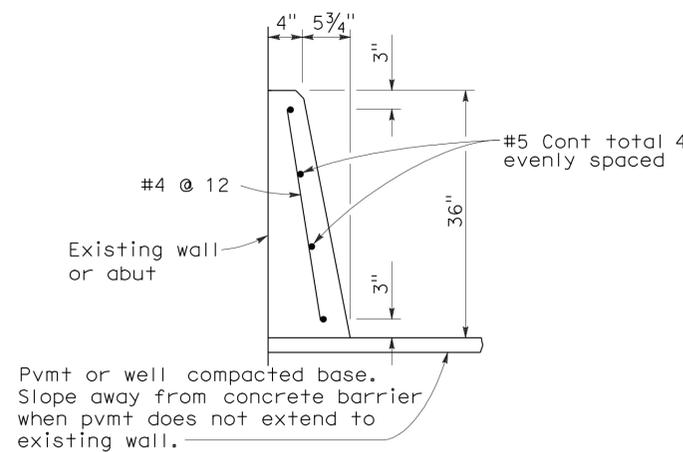
**NOTES:**

- See Standard Plan A76B for details of Concrete Barrier Type 60 end anchors, connection to structures and transitions to Concrete Barrier Type 50 and Concrete Barrier Type 60S.
- See Standard Plan A76C for Concrete Barrier Type 60 transitions at bridge column and sign pedestals.
- Where glare screen is required on Concrete Barrier Type 60, use Concrete Barrier Type 60G.
- Where the concrete barrier is added to the face of existing concrete structure, match existing weep holes.
- Expansion joints in concrete barrier shall be located at all deck, pavement and principal wall joints. Expansion joint filler material shall be the same size as joint or 1/2" minimum.
- Where roadway offset is greater than 1/2", see Concrete Barrier Type 60C.
- Barrier delineation to be used when required by the Special Provisions.
- Spacing of barrier markers to match spacing of raised pavement markers on the adjacent median edgeline pavement delineation.
- Reinforcing stirrup not required for roadway offsets less than 1'-0".
- For roadway surfaces offset greater than 1/2" to 3", no rebars required. For roadway surfaces offset greater than 3" to 8" use two #4 rebars at 3" above the lower roadway surface. For roadway surfaces offset greater than 8" to 12", use two #4 rebars at 3" above the lower roadway surface and two #4 rebars at 8" above the lower roadway surface. For roadway surfaces offset greater than 12" to 36", use two #4 rebars at 3" above the lower roadway surface and two #4 rebars at every 8" increment vertical spacing above the first two #4 rebars.



**CONCRETE BARRIER TYPE 60C**

Details similar to Type 60 except as noted. Concrete barrier end anchor when necessary. 36" roadway surfaces offset shown.



**CONCRETE BARRIER TYPE 60D**

**CONCRETE BARRIER TYPE 60**

NO SCALE

RSP A76A DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A76A DATED MAY 1, 2006 - PAGE 29 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A76A**

2006 REVISED STANDARD PLAN RSP A76A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Kin	41	R42.1/R44.9	215	246

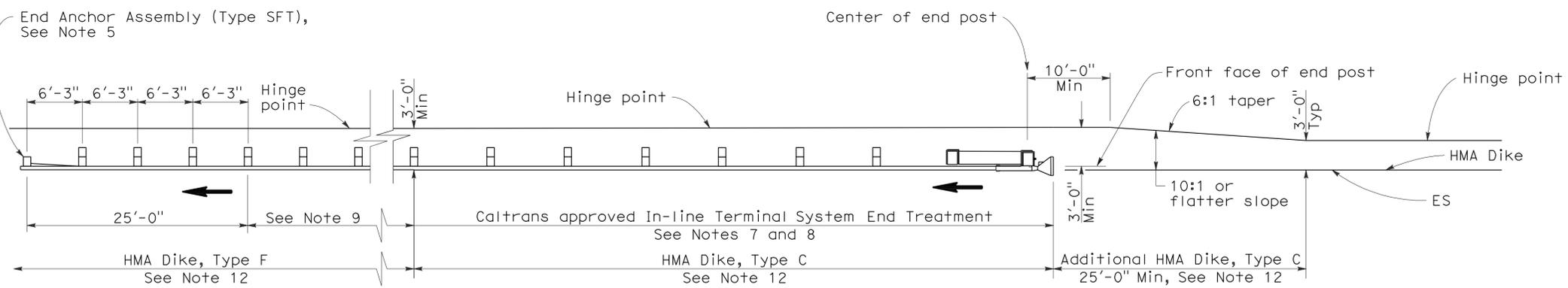
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

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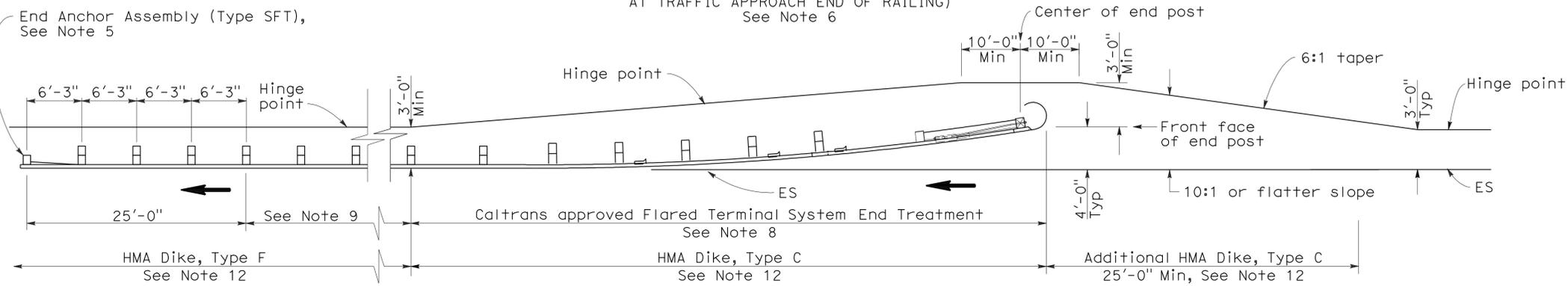
To accompany plans dated 5-23-11

2006 REVISED STANDARD PLAN RSP A77E1



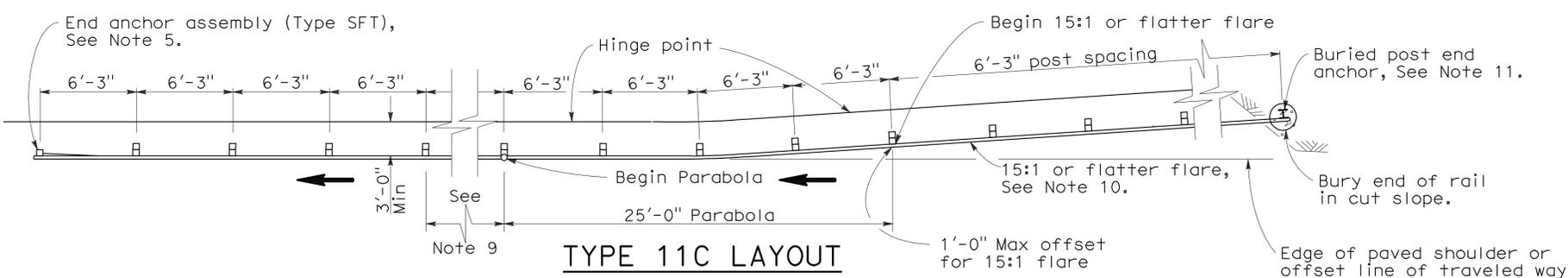
**TYPE 11A LAYOUT**

(EMBANKMENT GUARD INSTALLATION WITH IN-LINE END TREATMENT AT TRAFFIC APPROACH END OF RAILING)  
See Note 6



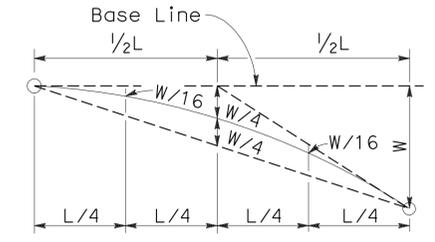
**TYPE 11B LAYOUT**

(EMBANKMENT GUARD RAILING INSTALLATION WITH FLARED END TREATMENT AT TRAFFIC APPROACH END OF RAILING)  
See Note 6

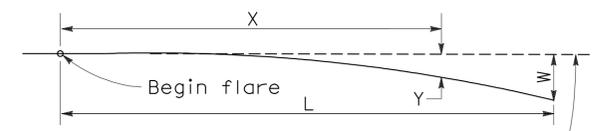


**TYPE 11C LAYOUT**

(EMBANKMENT GUARD RAILING INSTALLATION WITH BURIED END ANCHOR TREATMENT AT TRAFFIC APPROACH END OF RAILING)  
See Notes 6 and 12



**TYPICAL PARABOLIC LAYOUT**

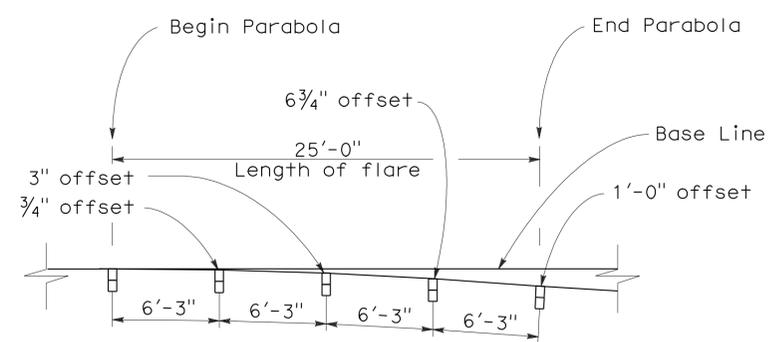


Base Line (Edge of paved shoulder or offset line of edge of traveled way)

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

Y = Offset from base line  
W = Maximum offset  
X = Distance along base line  
L = Length of flare

**PARABOLIC FLARE OFFSETS**



**TYPICAL FLARE OFFSETS FOR 1 FOOT MAX END OFFSET**

**NOTES:**

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1, and A77C2.
- Guard rail post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or recycled plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by  $\rightarrow$ .
- For End Anchor Assembly (Type SFT) details, see Standard Plan A77H1.
- Layout Types 11A, 11B or 11C are typically used where guard railing is recommended to shield embankment slopes and a crashworthy end treatment is required for only one direction of traffic.
- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height and side slope), construction of additional guard railing (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
- The 15:1 or flatter flare used with buried end anchors is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the buried post end anchor used with Type 11C Layout, see Standard Plan A77I2.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.

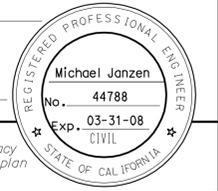
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING  
TYPICAL LAYOUTS FOR  
EMBANKMENTS**

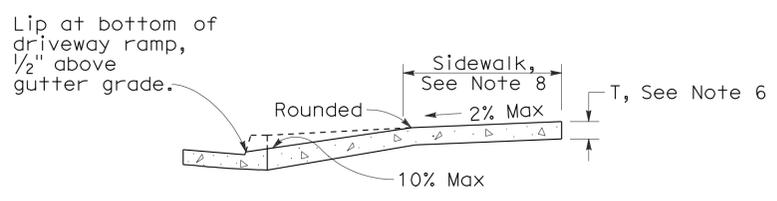
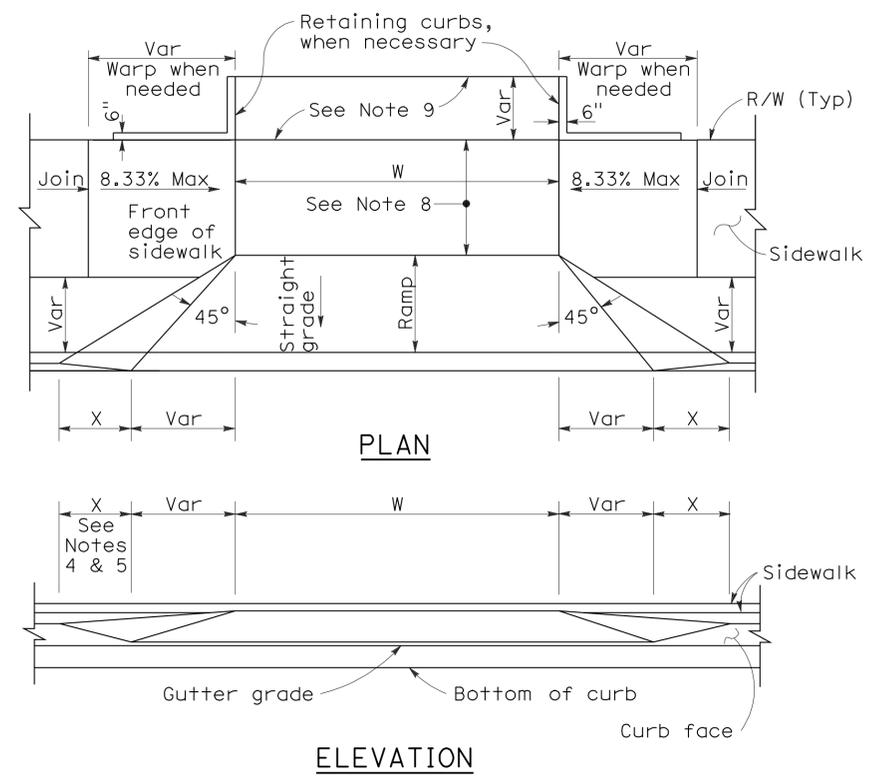
NO SCALE

RSP A77E1 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77E1  
DATED MAY 1, 2006 - PAGE 48 OF THE STANDARD PLANS BOOK DATED MAY 2006.

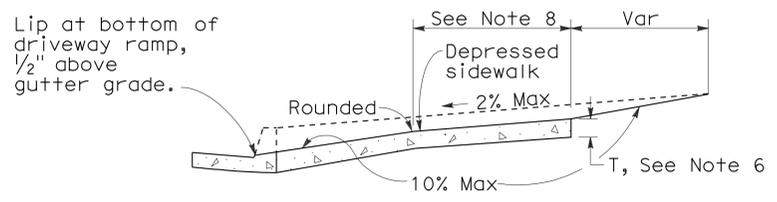
**REVISED STANDARD PLAN RSP A77E1**



To accompany plans dated 5-23-11



**CASE A**  
Typical driveway, sidewalk not depressed



**CASE B**  
Driveway with depressed sidewalk

**SECTIONS**

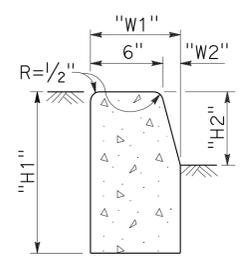
**CURB QUANTITIES**

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

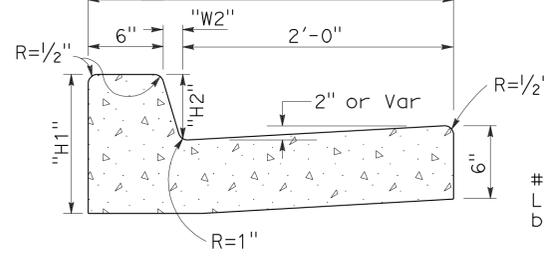
**TABLE A**

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

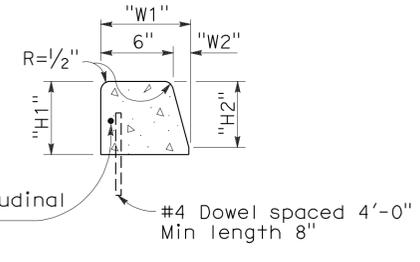
**DRIVEWAYS**



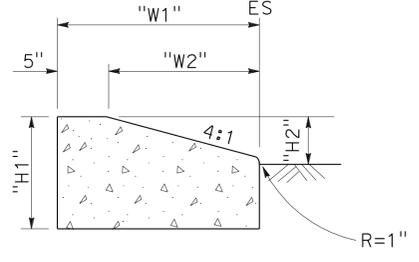
**TYPE A1 CURBS**  
See Table A



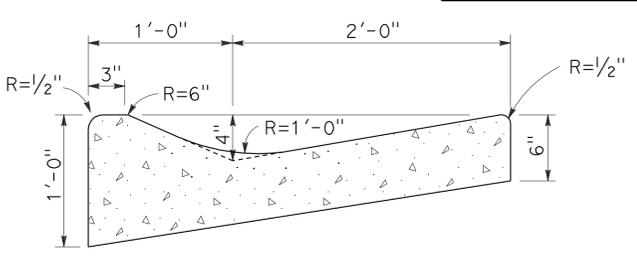
**TYPE A2 CURBS**  
See Table A



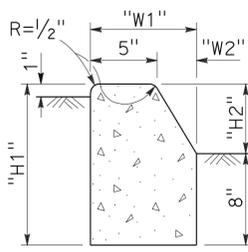
**TYPE A3 CURBS**  
Superimposed on existing pavement  
See Table A



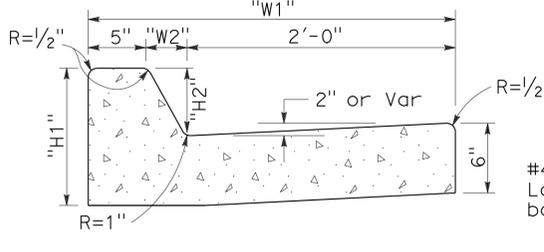
**TYPE D CURBS**  
See Table A



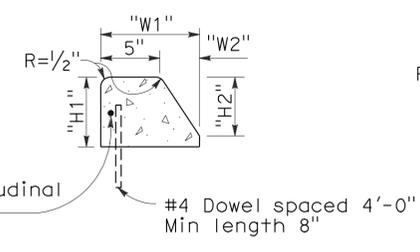
**TYPE E CURB**



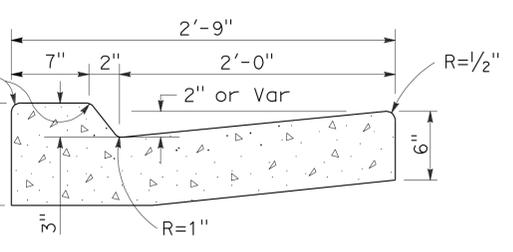
**TYPE B1 CURBS**  
See Table A



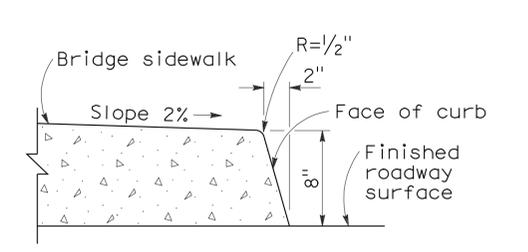
**TYPE B2 CURBS**  
See Table A



**TYPE B3 CURBS**  
Superimposed on existing pavement  
See Table A



**TYPE B4 CURBS**



**TYPE H CURB**  
On Bridges

**CURBS**

**NOTES:**

- Case A driveway section typically applies.
- Use Case B driveway section when ramp slopes would exceed 10% in Case A.
- Use Case B driveway section when sidewalk cross slope would exceed 2% in Case A.
- X=3'-0" except for curb heights over 10" where 4:1 slopes shall be used on curb slope.
- X is a variable when sidewalk is located where wheelchairs may traverse the surface. Slopes shall not exceed 8.33%.
- Sidewalk and ramp thickness "T" at driveway shall be 4" for residential and 6" for commercial.
- Difference in slope of the driveway ramp and the slope of a line between the gutter and a point on the roadway 5'-0" from gutter line shall not exceed 15%. Reduce driveway ramp slope, not gutter slope, where required.
- Minimum width of clear passageway for sidewalk shall be 4'-0".
- Retaining curbs and acquisition of construction easement may be necessary for narrow sidewalks or curb heights in excess of 6".
- Across the pedestrian route at curb ramp locations, the gutter pan slope shall not exceed 1" of depth for each 2'-0" of width.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**CURBS AND DRIVEWAYS**

NO SCALE

RSP A87A DATED NOVEMBER 17, 2006 SUPERSEDES STANDARD PLAN A87A  
DATED MAY 1, 2006 - PAGE 113 OF THE STANDARD PLANS BOOK DATED MAY 2006.

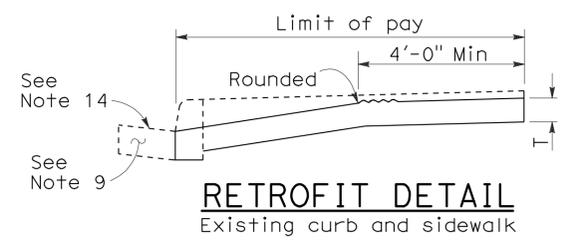
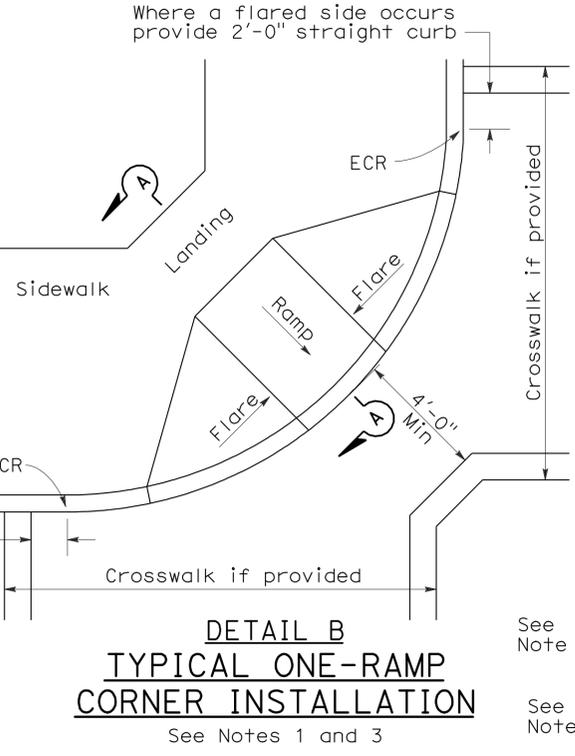
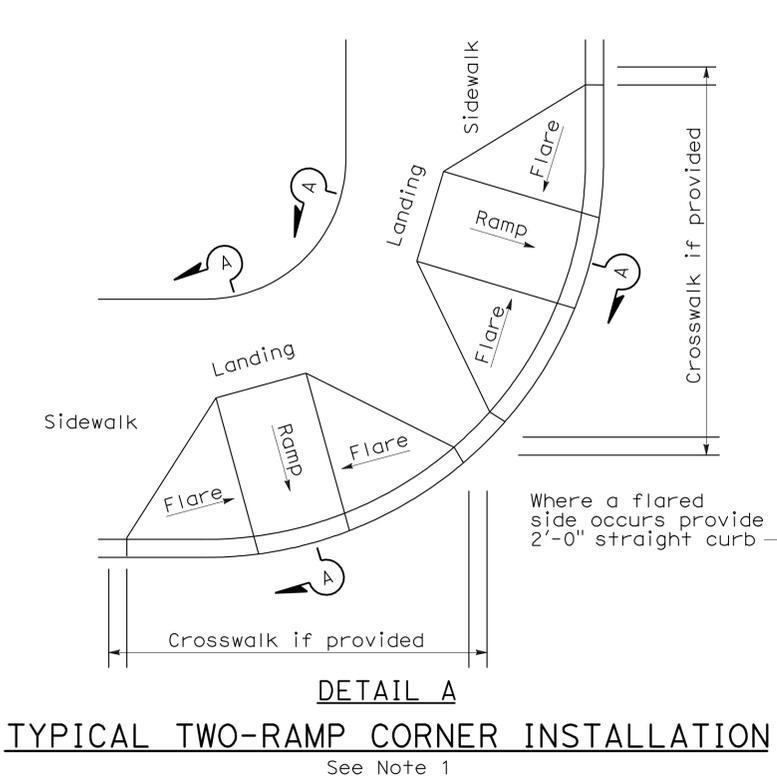
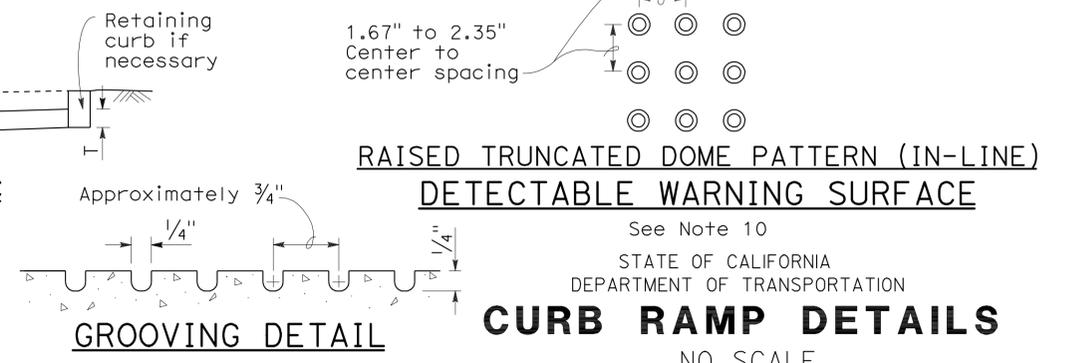
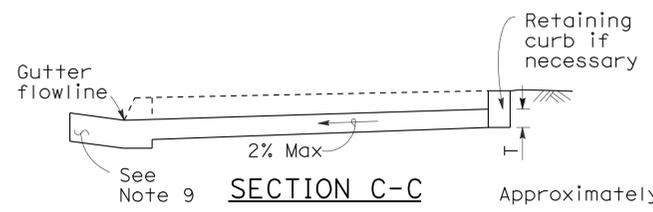
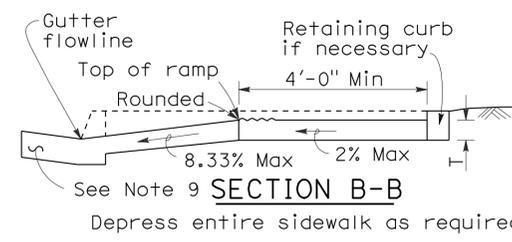
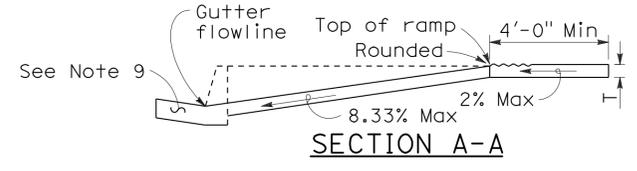
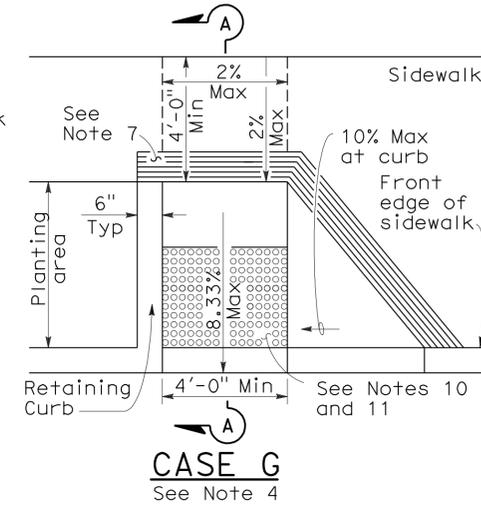
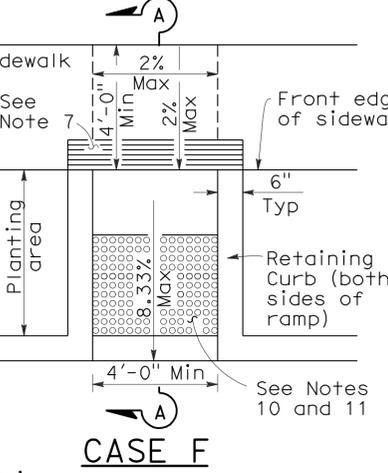
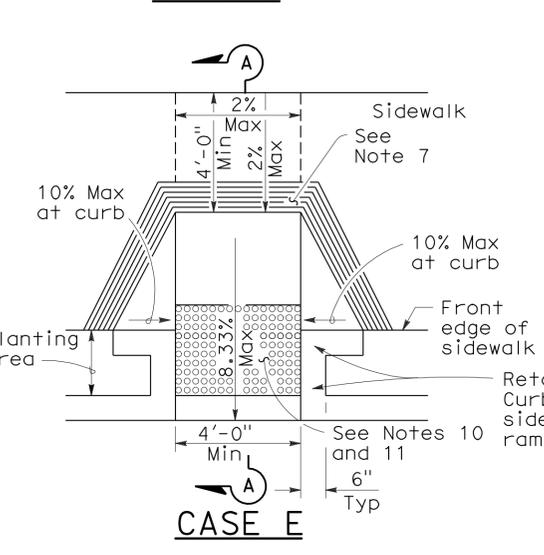
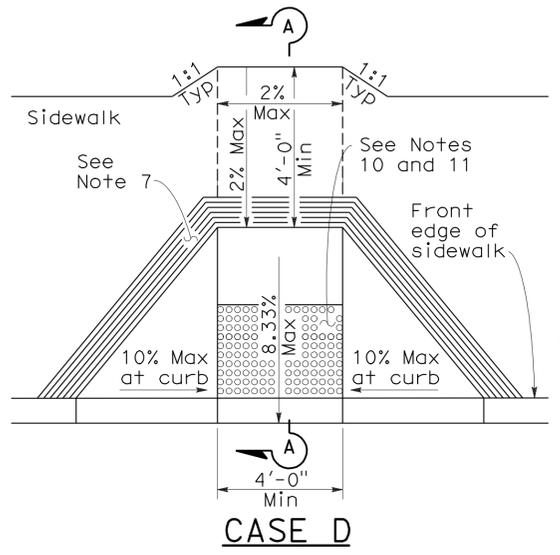
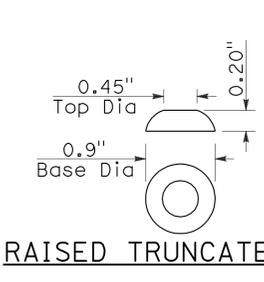
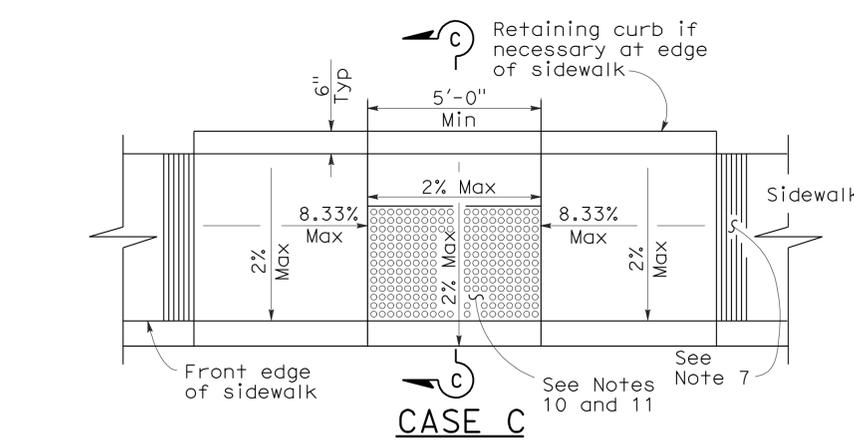
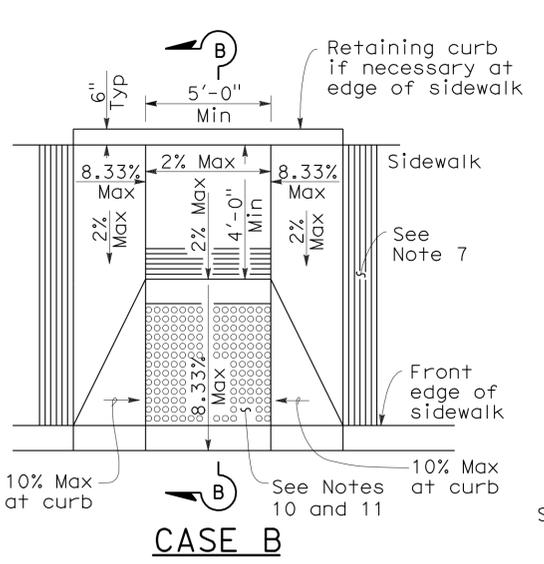
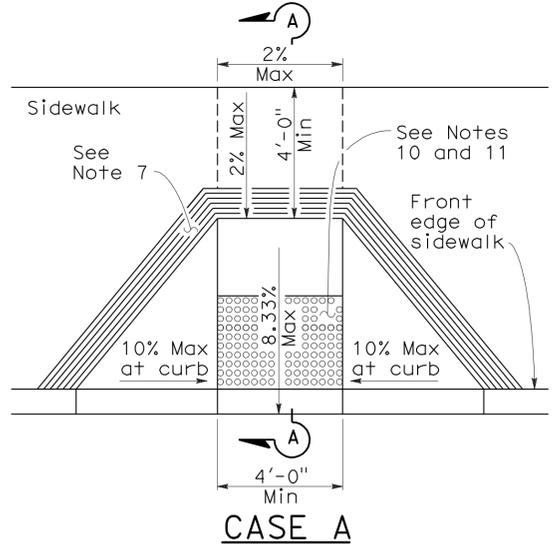
**REVISED STANDARD PLAN RSP A87A**

2006 REVISED STANDARD PLAN RSP A87A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Kin	41	R42.1/R44.9	217	246

*H. David Cordova*  
 REGISTERED CIVIL ENGINEER  
 September 1, 2006  
 PLANS APPROVAL DATE  
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

REGISTERED PROFESSIONAL ENGINEER  
**Hector David Cordova**  
 No. C41957  
 Exp. 3-31-08  
 CIVIL  
 STATE OF CALIFORNIA



**NOTES:**

- As site conditions dictate, Case A through Case G curb ramps may be used for corner installations similar to those shown in Detail A and Detail B. The case of curb ramps used in Detail A do not have to be the same. Case A through Case G curb ramps also may be used at mid block locations, as site conditions dictate.
- If distance from curb to back of sidewalk is too short to accommodate ramp and 4'-0" platform (landing) as shown in Case A, the sidewalk may be depressed longitudinally as in Case B, or C or may be widened as in Case D.
- When ramp is located in center of curb return, crosswalk configuration must be similar to that shown for Detail B.
- As site conditions dictate, the retaining curb side and the flared side of the Case G ramp shall be constructed in reversed position.
- If located on a curve, the sides of the ramp need not be parallel, but the minimum width of the ramp shall be 4'-0".
- Side slope of ramp flares vary uniformly from a maximum of 10% at curb to conform with longitudinal sidewalk slope adjacent to top of the ramp, except in Case C and Case F.
- The curb ramp shall be outlined, as shown, with a 1'-0" wide border with 1/4" grooves approximately 3/4" on center. See grooving detail.
- Transitions from ramps and landing to walks, gutters or streets shall be flush and free of abrupt changes.
- Maximum slopes of adjoining gutters, the road surface immediately adjacent to the curb ramp or accessible route shall not exceed 5 percent within 4'-0" of the top and bottom of the curb ramp.
- Curb ramps shall have a detectable warning surface that extends the full width and 3'-0" depth of the ramp. Detectable Warning Surfaces shall conform to the details on this plan and the requirements in the Special Provisions.
- The edge of the detectable warning surface nearest the street shall be between 6" and 8" from the gutter flowline.
- Sidewalk and ramp thickness, "T", shall be 3/2" minimum.
- Utility pull boxes, manholes, vaults and all other utility facilities within the boundaries of the curb ramp will be relocated or adjusted to grade by the owner prior to, or in conjunction with, curb ramp construction.
- For retrofit conditions, removal and replacement of curb apron will be at the Contractor's option, unless otherwise shown on project plans.

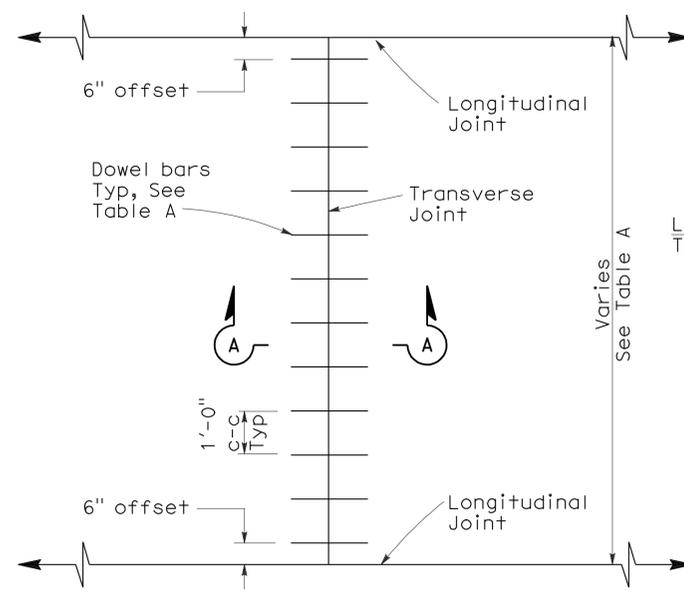
To accompany plans dated 5-23-11

**TYPICAL TWO-RAMP CORNER INSTALLATION**  
See Note 1

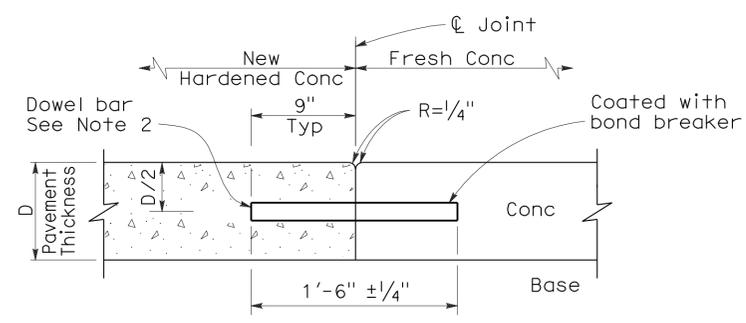
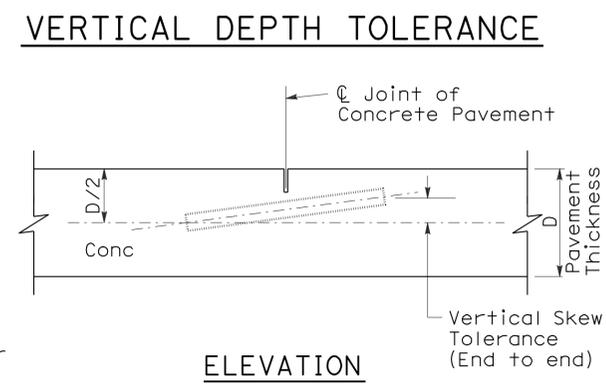
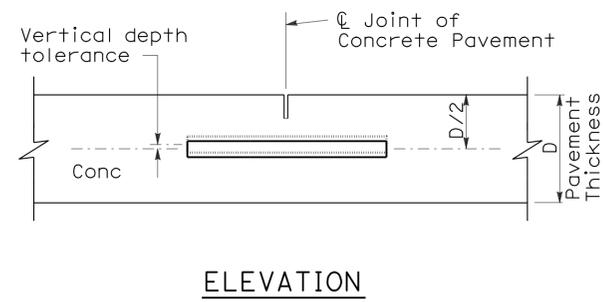
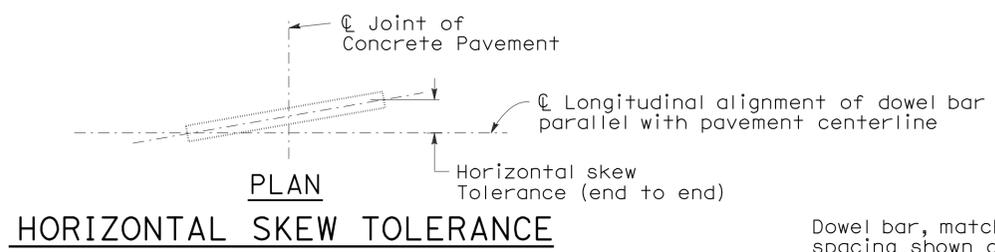
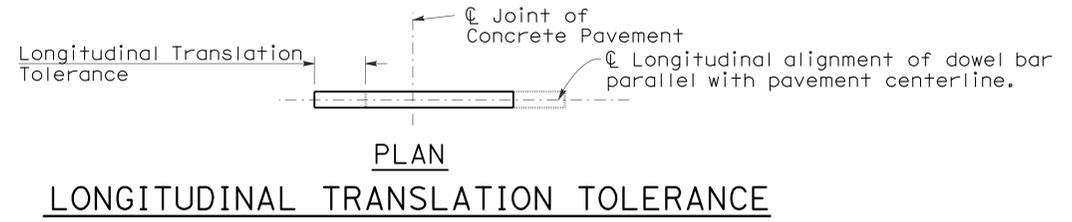
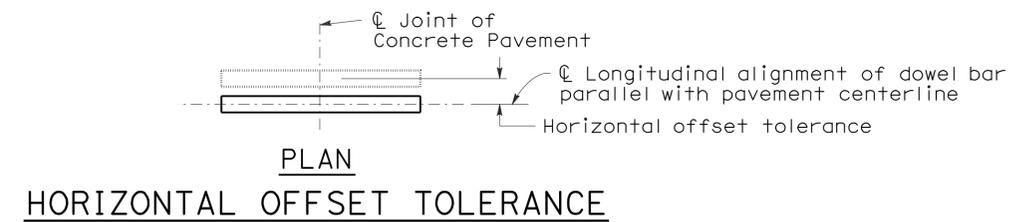
**TYPICAL ONE-RAMP CORNER INSTALLATION**  
See Notes 1 and 3

**RETROFIT DETAIL**  
Existing curb and sidewalk

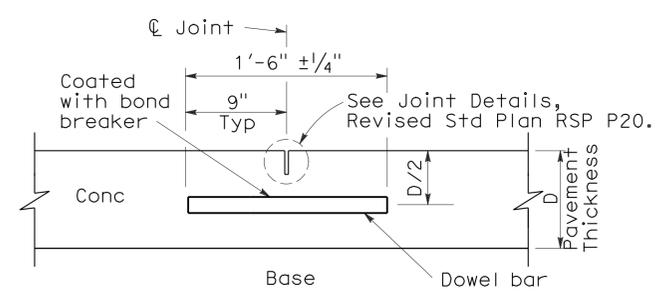
2006 REVISED STANDARD PLAN RSP A88A



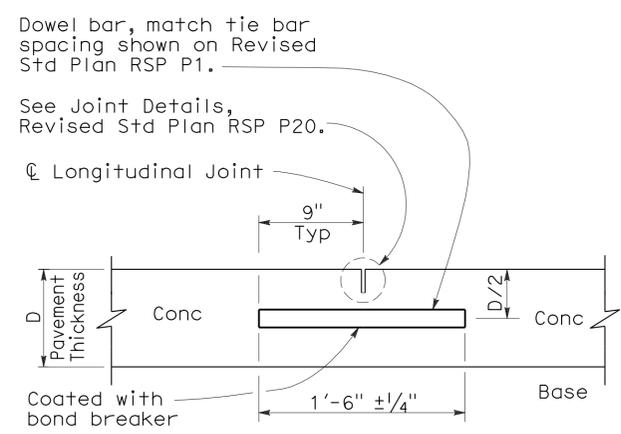
**TRANSVERSE JOINT DOWEL BAR LAYOUT**



**SECTION A-A TRANSVERSE CONSTRUCTION JOINT DETAIL**



**TRANSVERSE CONTRACTION JOINT**

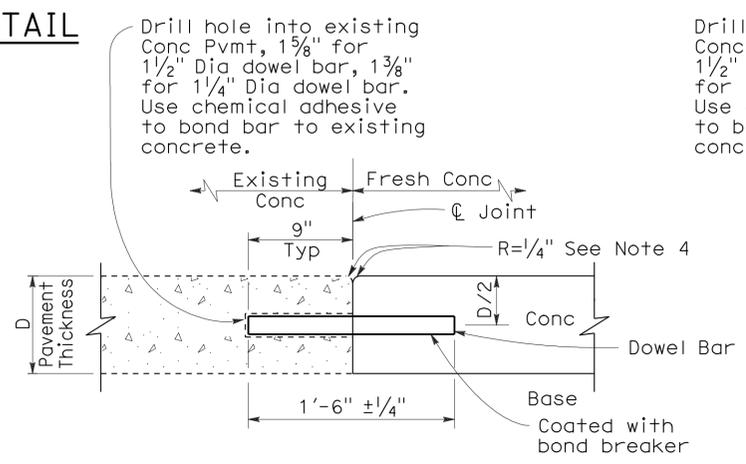


**LONGITUDINAL CONTRACTION JOINT WITH DOWEL BARS**

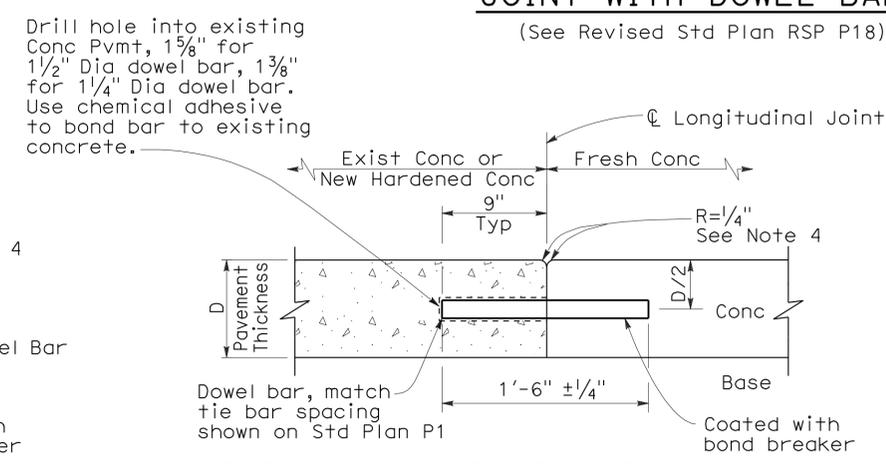
**TABLE A (See Note 3)**

Dowel Bar Transverse Spacing Table

Width between Longitudinal Joints	Number of Dowels between Longitudinal Joints
14'-0"	14
13'-0"	13
12'-0"	12
11'-0"	11
10'-0"	10
8'-0"	8
5'-0"	5
4'-0"	4



**TRANSVERSE CONSTRUCTION JOINT FOR EXISTING CONCRETE PAVEMENT**  
(Drill and bond locations)



**LONGITUDINAL CONSTRUCTION JOINT WITH DOWEL BARS**  
(See Revised Std Plan RSP P18)

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**CONCRETE PAVEMENT-DOWEL BAR DETAILS**

NO SCALE

RSP P10 DATED MAY 15, 2009 SUPERSEDES STANDARD PLAN P10 DATED MAY 1, 2006 - PAGE 124 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP P10**

2006 REVISED STANDARD PLAN RSP P10

**NOTE:**

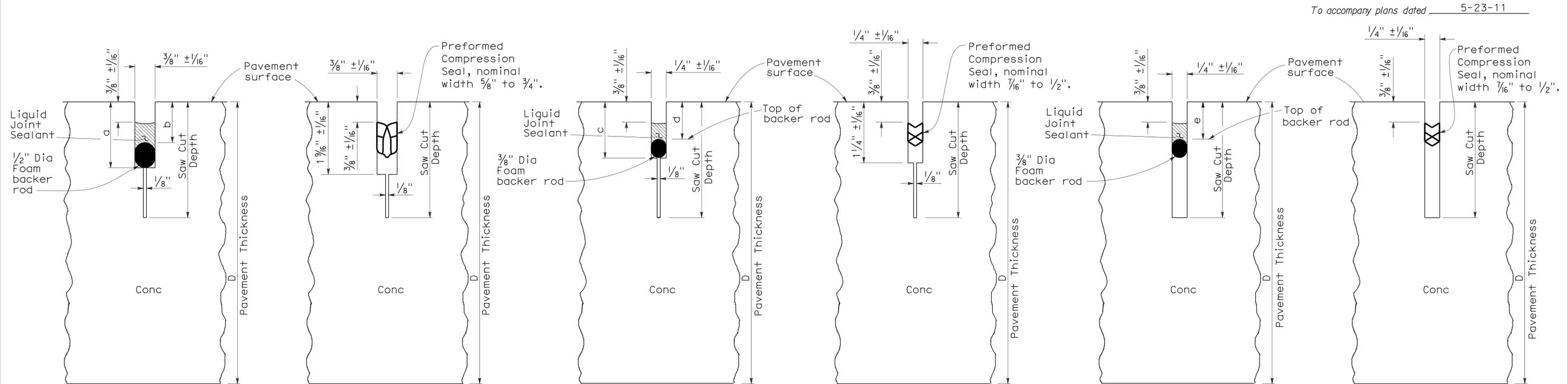
1. Tie bars, dowel bars, and reinforcement are not shown in joint seal details, see Revised Standard Plans RSP P1, RSP P3, RSP P10, RSP P35, RSP P45, or RSP P46 as applicable.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Kin	41	R42.1/R44.9	219	246

*William K. Farnbach*  
 REGISTERED CIVIL ENGINEER  
 No. C49042  
 Exp. 9-30-10  
 STATE OF CALIFORNIA

May 15, 2009  
 PLANS APPROVAL DATE

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LIQUID SEALANT      COMPRESSION SEAL      LIQUID SEALANT      COMPRESSION SEAL      LIQUID SEALANT      COMPRESSION SEAL

**TYPE A1**      **TYPE A2**      **TYPE B**

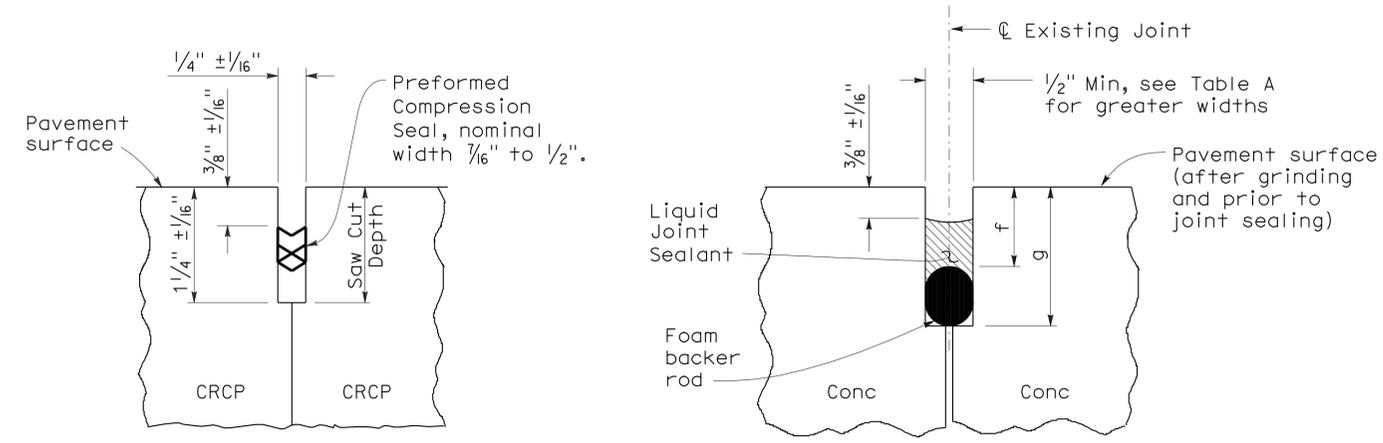
Transverse Contraction Joints      Longitudinal Contraction Joints      Longitudinal or Transverse Contraction Joint

**LIQUID SEALANT RESERVOIR DEPTH**

LIQUID SEALANT MATERIAL	3/8" Joint Width Type A1		1/4" Joint Width Type A2		1/4" Joint Width Type B
	DIMENSION		DIMENSION		DIMENSION
	a	b	c	d	e
SILICONE	1" ± 1/16"	5/8" ± 1/16"	15/16" ± 1/16"	9/16" ± 1/16"	9/16" ± 1/16"
ASPHALT RUBBER	1 3/16" ± 1/16"	3/4" ± 1/16"	1 1/16" ± 1/16"	11/16" ± 1/16"	11/16" ± 1/16"

**TABLE A (TYPE R JOINT)**

Sawn Joint Width	Backer Rod Diameter ± 1/16"	DIMENSION "f"	DIMENSION "g"
1"	1 5/16"	7/8"	2 1/4"
7/8"	1 3/16"	13/16"	2"
3/4"	1"	3/4"	1 3/4"
5/8"	7/8"	11/16"	1 1/2"
1/2"	11/16"	5/8"	1 1/4"



COMPRESSION SEAL      LIQUID SEALANT

**TYPE C**      **TYPE R**

Transverse and Longitudinal Construction Joints (For CRCP)      Retrofit Transverse and Longitudinal Joints

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**CONCRETE PAVEMENT-JOINT DETAILS**  
 NO SCALE

RSP P20 DATED MAY 15, 2009 SUPERSEDES STANDARD PLAN P20  
 DATED MAY 1, 2006 - PAGE 128 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP P20**

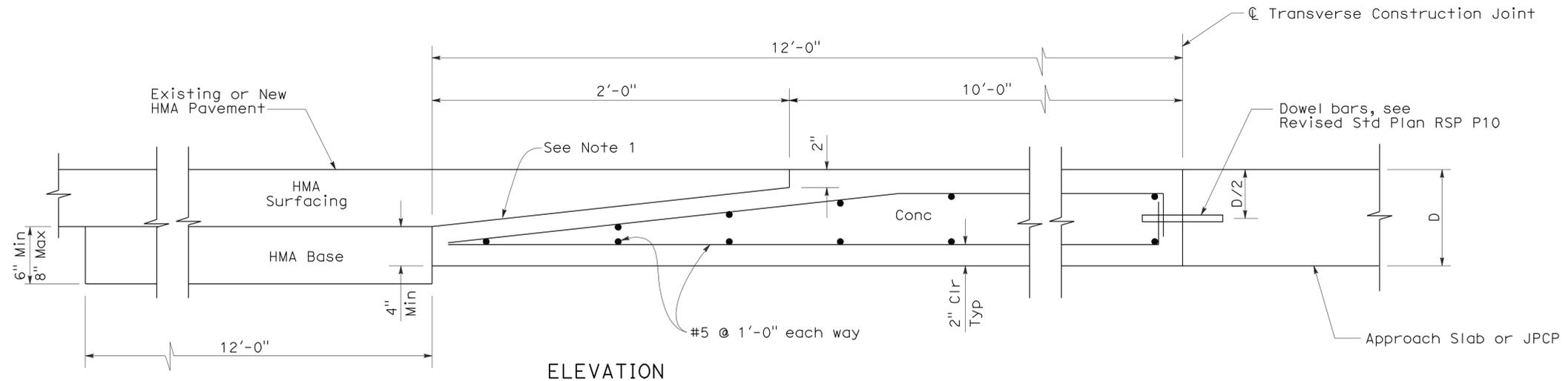
2006 REVISED STANDARD PLAN RSP P20

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Kin	41	R42.1/R44.9	220	246

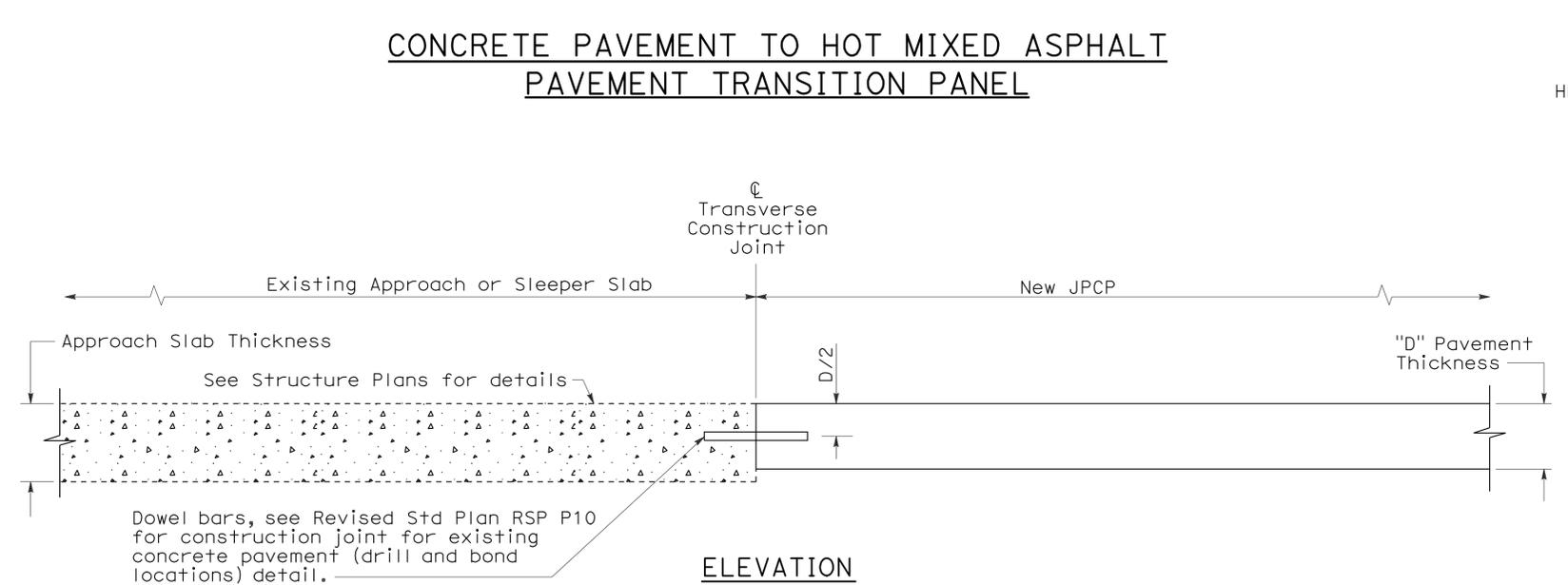
William K. Farnbach  
 REGISTERED CIVIL ENGINEER  
 No. C49042  
 Exp. 9-30-10  
 CIVIL  
 STATE OF CALIFORNIA

May 15, 2009  
 PLANS APPROVAL DATE

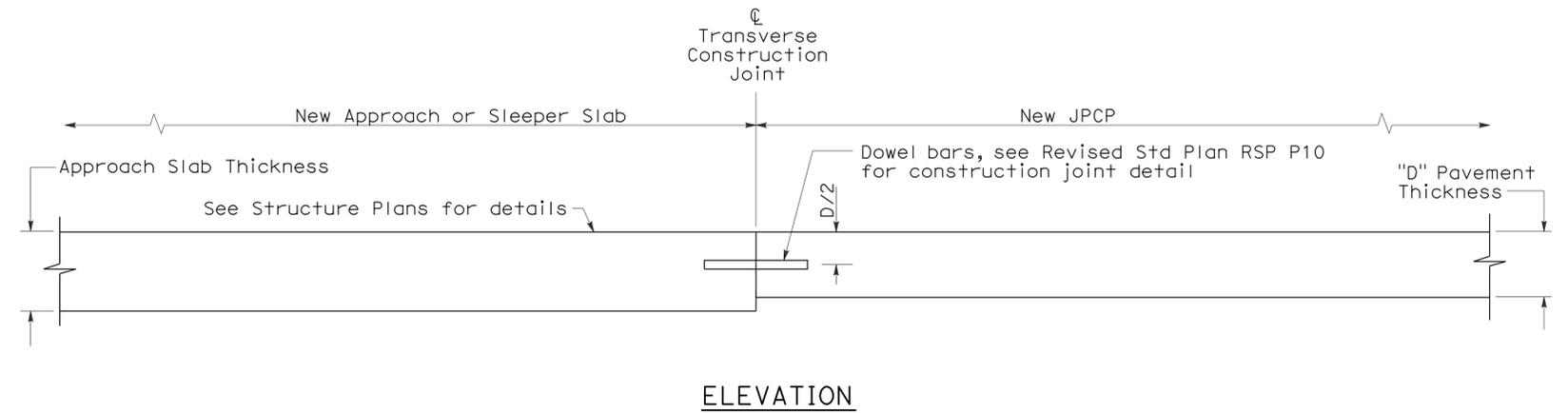
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**CONCRETE PAVEMENT TO HOT MIXED ASPHALT PAVEMENT TRANSITION PANEL**



**PAVEMENT END ANCHOR**



**CONCRETE PAVEMENT TRANSITION TO APPROACH OR SLEEPER SLAB**

**NOTE:**  
1. Heavy broom finish.

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

RSP P30 DATED MAY 15, 2009 SUPERSEDES STANDARD PLAN P30  
DATED MAY 1, 2006 - PAGE 129 OF THE STANDARD PLANS BOOK DATED MAY 2006.

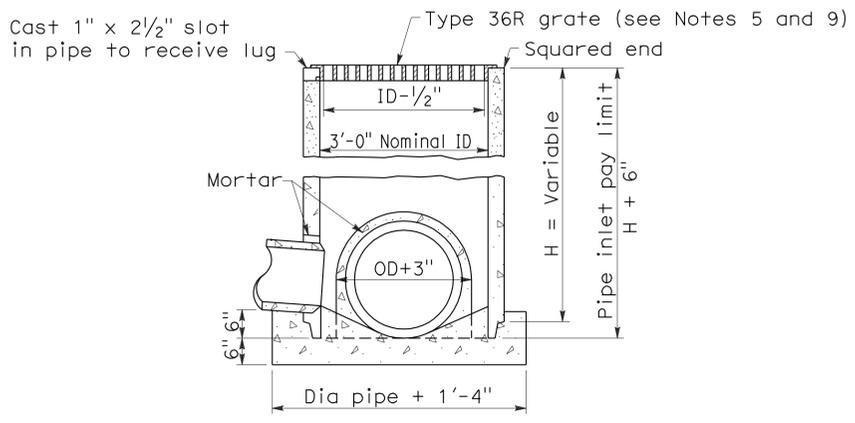
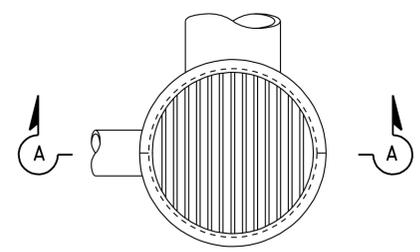
**REVISED STANDARD PLAN RSP P30**

2006 REVISED STANDARD PLAN RSP P30

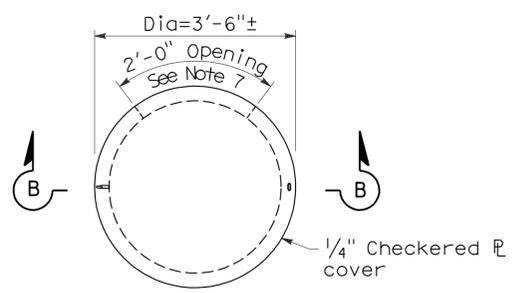
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Kin	41	R42.1/R44.9	221	246

Raymond Don Tsztso  
 REGISTERED CIVIL ENGINEER  
 June 6, 2008  
 PLANS APPROVAL DATE  
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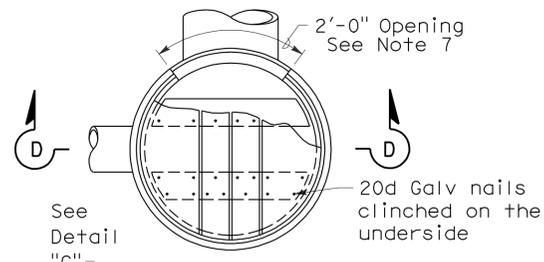
2006 REVISED STANDARD PLAN RSP D75B



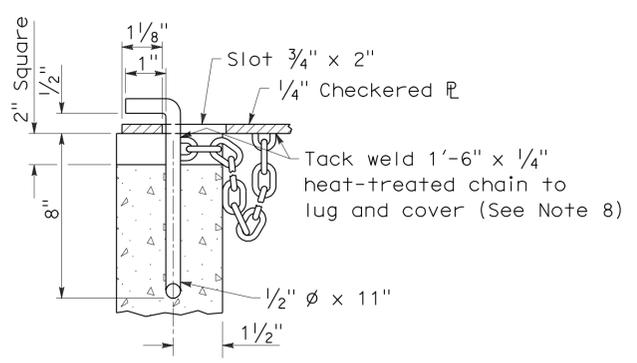
**SECTION A-A**  
**TYPE GCP**  
CONCRETE PIPE INLET WITH GRATE



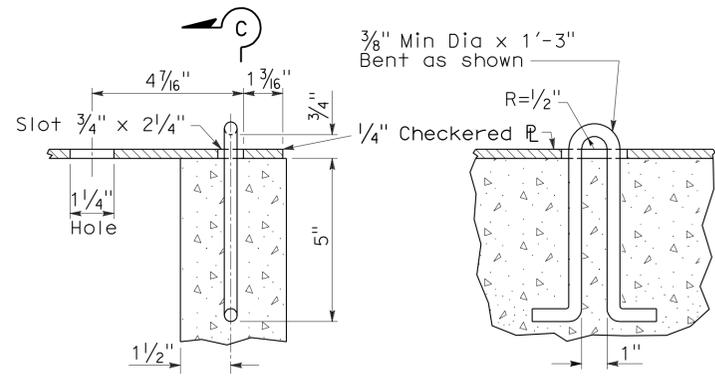
**SECTION B-B**  
**TYPE OCP or OCPI**  
CONCRETE PIPE INLET WITH STEEL COVER  
(See Note 6)



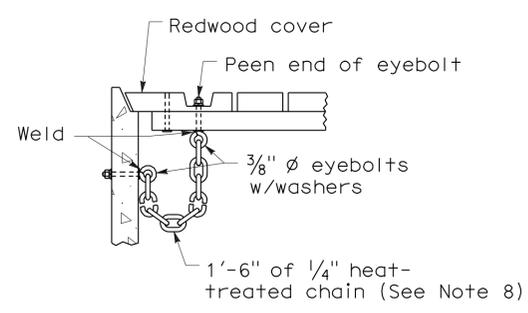
**SECTION D-D**  
**TYPE OCP or OCPI**  
CONCRETE PIPE INLET WITH REDWOOD COVER  
(See Notes 6 and 10)



**DETAIL "E"**



**SECTION C-C**  
**DETAIL "F"**



**DETAIL "G"**

**NOTES:**

- For details of steel pipe inlets, see Standard Plan D75A.
- For details of ladder and steps and when ladder or steps are required, see Standard Plan D75C.
- Inlet pipes shall not protrude into basin.
- Except for inlets used for junction boxes, basin floors shall have minimum slope of 4:1 from all directions toward outlet pipe, and a wood trowel finish.
- See Revised Standard Plan RSP D77A and Standard Plan D77B for Grate and Frame Details and Weights of Miscellaneous Iron and Steel.
- Designation of Type OCPI pipe inlets on plans indicates trash racks are to be furnished and installed on all side openings. See Standard Plan D75C for Trash Rack details.
- More than one side opening may be required. Location and number as ordered by the Engineer. Opening may be cast in pipe.
- Chain to be provided when specified.
- Place pipe so bars of grate will be parallel with main surface flow.
- Redwood covers shall only be placed at locations designated on the plans.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

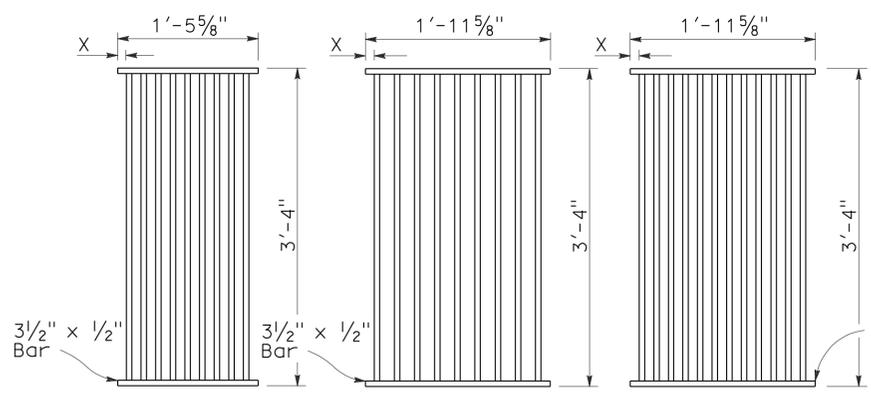
**CONCRETE PIPE INLETS**

NO SCALE

RSP D75B DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN D75B  
DATED MAY 1, 2006 - PAGE 153 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP D75B**

To accompany plans dated 5-23-11

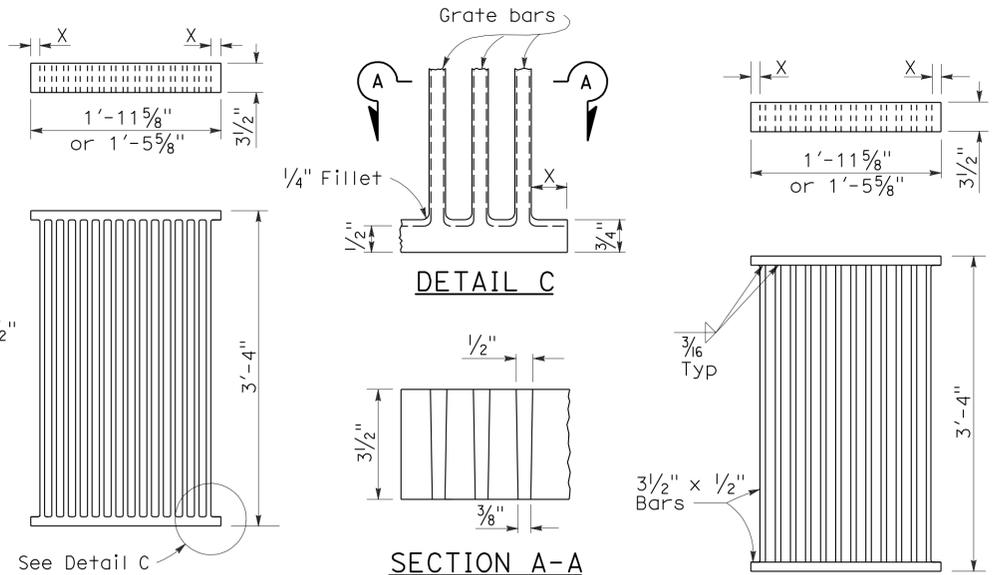


**RECTANGULAR GRATE DETAILS**  
(See table below)

**TYPE 18-9**  
1 3/8" Clear spacing. Use within the roadbed on highways where bicycles and pedestrians are excluded.

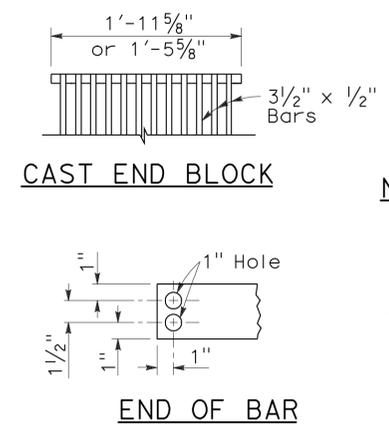
**TYPE 24-9**  
2" Clear spacing. Use in locations off the roadbed on all types of highways.

**TYPE 24-12**  
1 3/8" Clear spacing. Use within the roadbed on highways where bicycles and pedestrians are excluded.



**ALTERNATIVE CAST NODULAR IRON GRATE OR CAST STEEL GRATE**

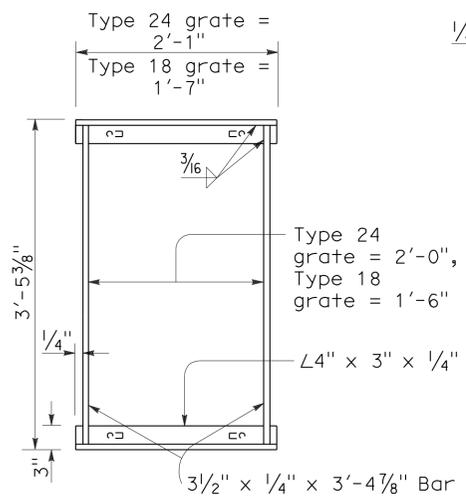
**ALTERNATIVE WELDED GRATE**



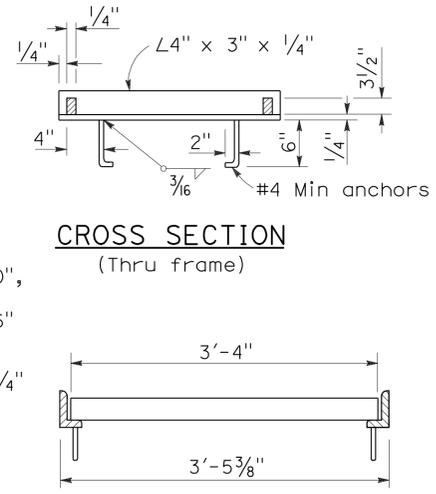
**CAST END BLOCK**

**END OF BAR**

- NOTES:**
1. Grate type numbers refer to approximate width of grate in inches and number of bars, respectively.
  2. Contractor has the option of using cast nodular iron, cast steel, welded, bolted, or cast end block grate.
  3. See Special Provisions for requirements pertaining to galvanizing or asphalt dipping of grates and frames.
  4. Rounded top of bars optional on all grates.
  5. Pipe inlets with a grate shall be placed so that bars parallel direction of principle surface flow.
  6. Full penetration butt welds may be substituted for the fillet welds on all anchors.
  7. Standard square, hexagon, round or equivalent headed anchors may be substituted for the right angle hooks on the anchors shown on this plan.
  8. Grate and frame weights are based on welded grates (weights of face angles, steps, protection bars, etc. are not included).

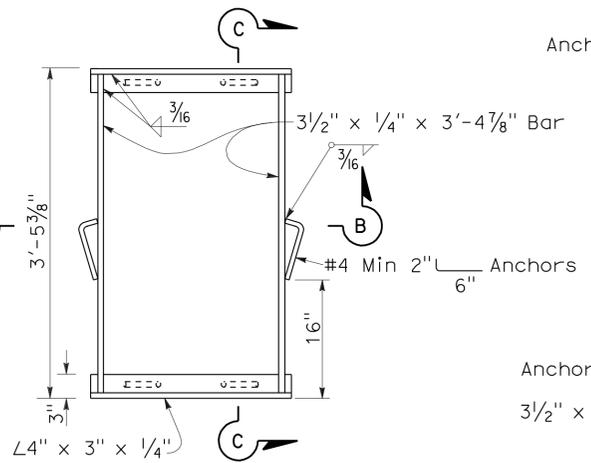


**TYPICAL FRAME**



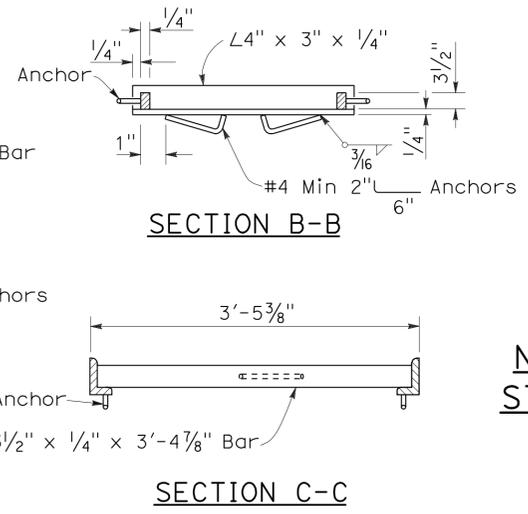
**CROSS SECTION (Thru frame)**

**LONGITUDINAL SECTION (Thru frame and grate)**



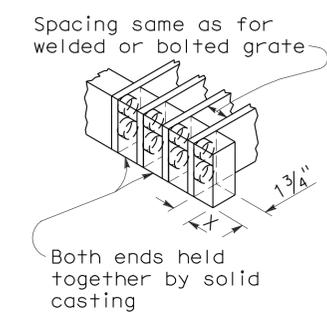
**TYPICAL FRAME**

**ALTERNATIVE ANCHOR FOR RECTANGULAR FRAME**  
(For details not shown, See Rectangular Frame Details)



**SECTION B-B**

**SECTION C-C**



**ALTERNATIVE CAST NODULAR IRON OR CAST STEEL END BLOCK GRATE**

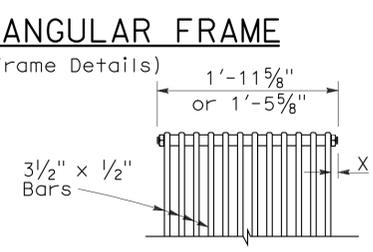
**RECTANGULAR FRAME DETAILS**  
(For all rectangular grates)

**GRATE BAR SPACING TABLE**

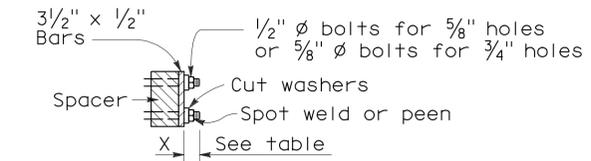
TYPE	NO. OF BARS	CLEAR BAR SPACING	X
18-9	9	1 3/8"	1 1/16"
24-9	9	2"	1 9/16"
24-12	12	1 3/8"	1 1/4"

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

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

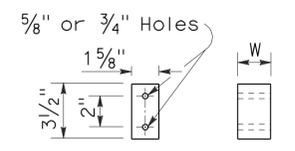


**BOLTED END BLOCK**

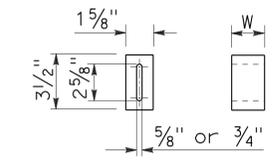


**BOLTING DETAIL**

**ALTERNATIVE BOLTED GRATE**



**BAR SPACER**



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

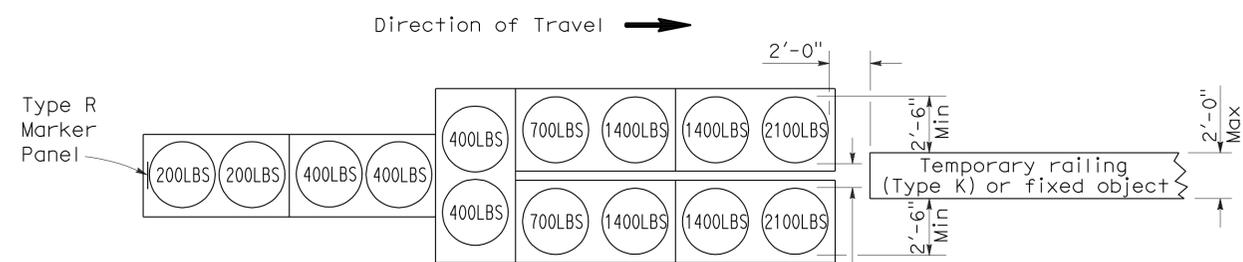
**BASIS FOR MISC IRON & STEEL FINAL PAY WEIGHTS FOR DRAINAGE INLETS**

(See General Notes, No 8)

2006 REVISED STANDARD PLAN RSP D77A

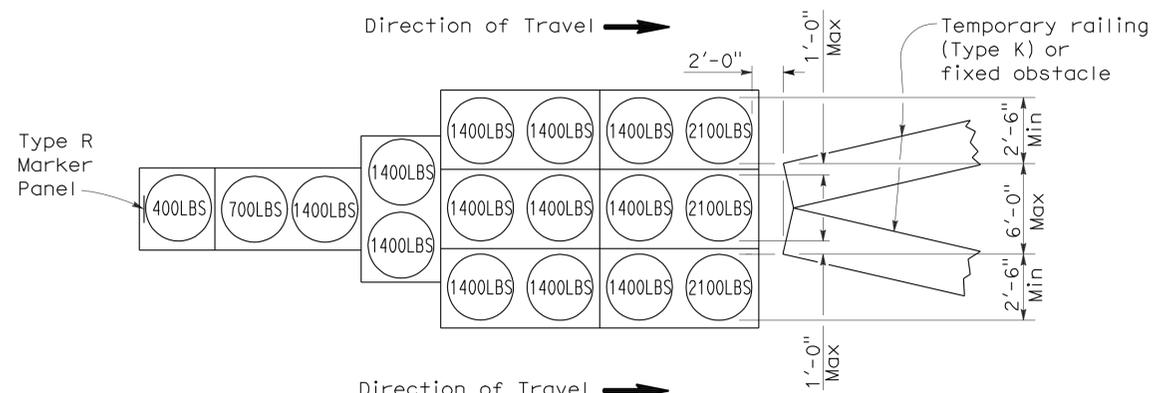
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
GRATE DETAILS  
NO SCALE  
RSP D77A DATED JANUARY 18, 2008 SUPERSEDES STANDARD PLAN D77A  
DATED MAY 1, 2006 - PAGE 155 OF THE STANDARD PLANS BOOK DATED MAY 2006.

To accompany plans dated 5-23-11



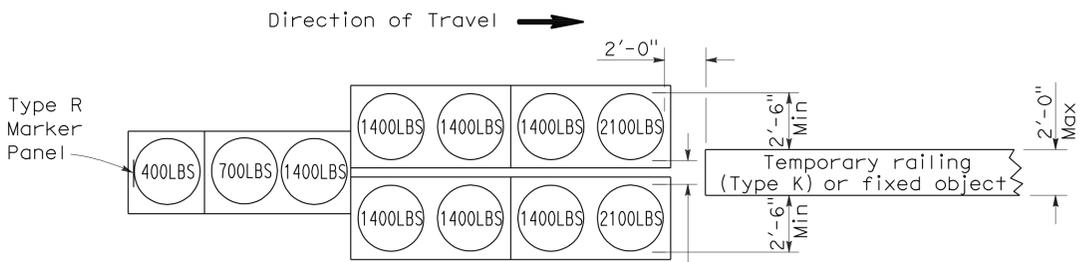
**ARRAY 'TU14'**

Approach speed 45 mph or more



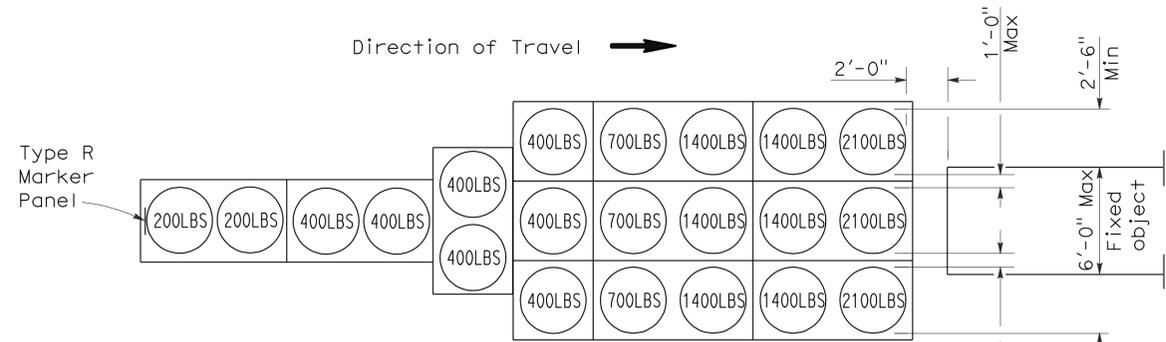
**ARRAY 'TU17'**

Approach speed less than 45 mph



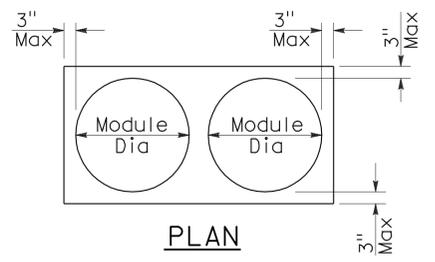
**ARRAY 'TU11'**

Approach speed less than 45 mph

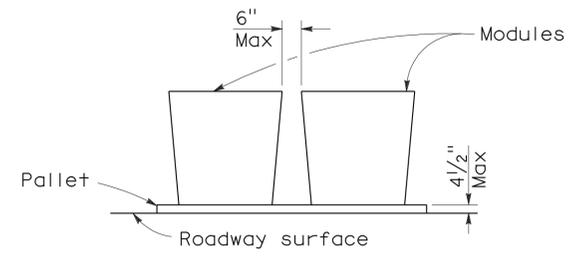


**ARRAY 'TU21'**

Approach speed 45 mph or more



**PLAN**



**ELEVATION**

**CRASH CUSHION PALLET DETAIL**

See Note 7

**NOTES:**

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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

**REVISED STANDARD PLAN RSP T1A**

2006 REVISED STANDARD PLAN RSP T1A

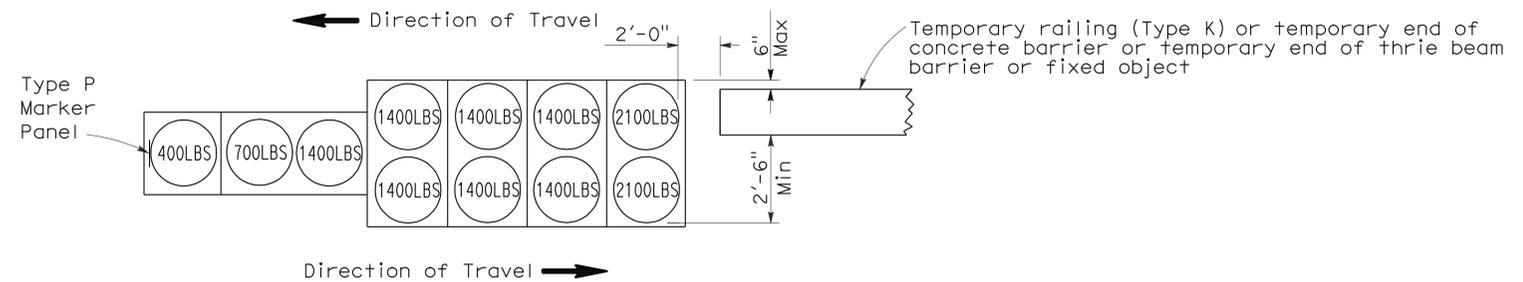
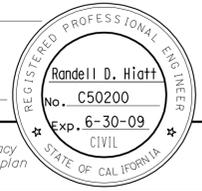
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Kin	41	R42.1/R44.9	224	246

Randell D. Hiatt  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

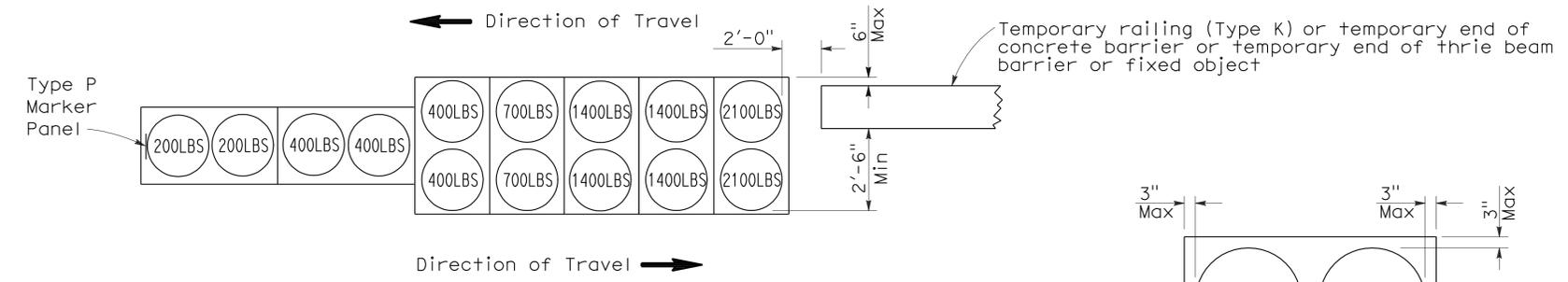
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 5-23-11



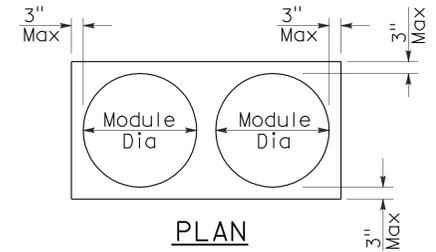
**ARRAY 'TB11'**

Approach speed less than 45 mph

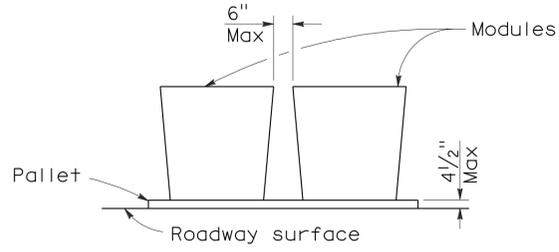


**ARRAY 'TB14'**

Approach speed 45 mph or more



PLAN



ELEVATION

**CRASH CUSHION PALLET DETAIL**

See Note 7

**NOTES:**

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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

**REVISED STANDARD PLAN RSP T1B**

2006 REVISED STANDARD PLAN RSP T1B

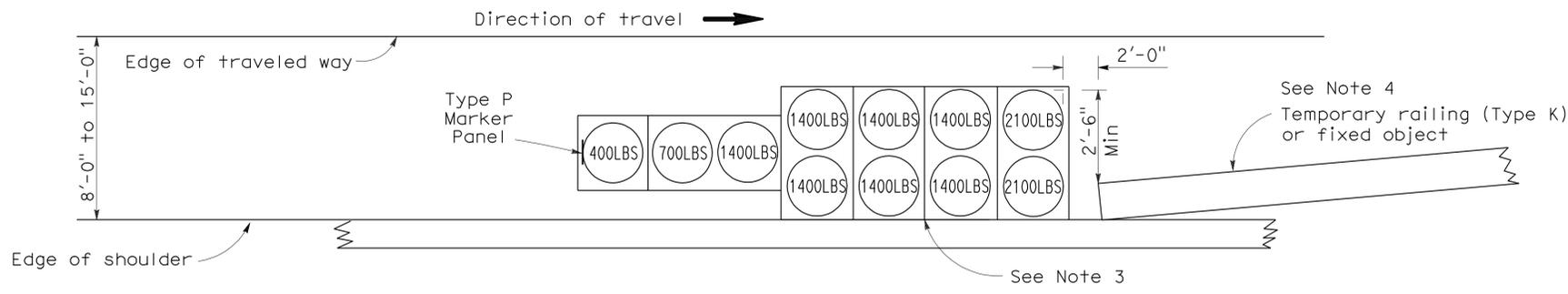
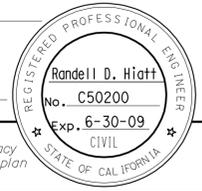
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Kin	41	R42.1/R44.9	225	246

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

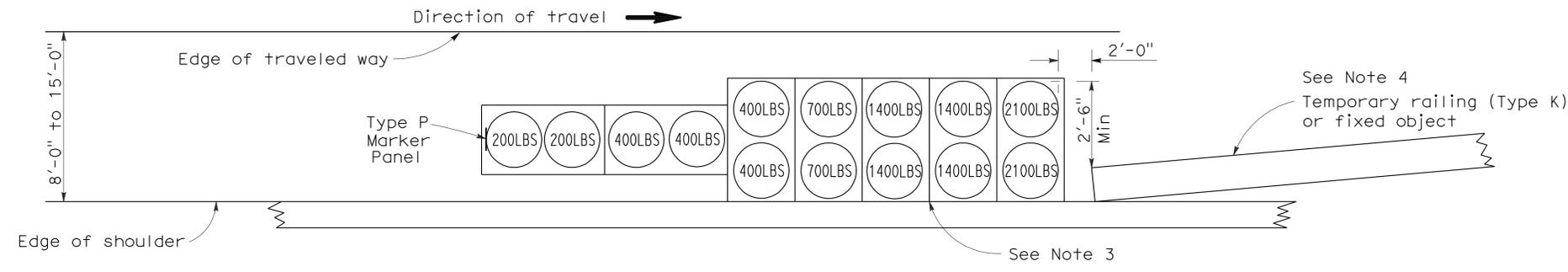
June 6, 2008  
PLANS APPROVAL DATE

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

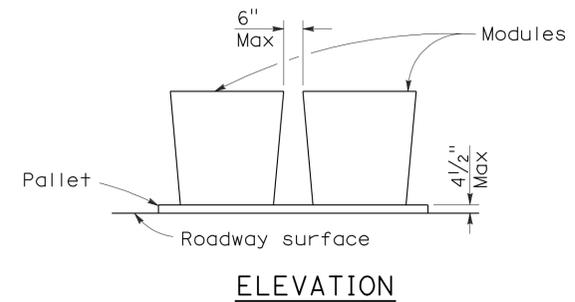
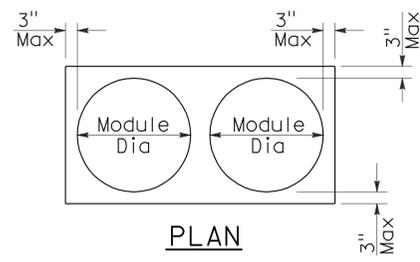
To accompany plans dated 5-23-11



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



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



**CRASH CUSHION PALLET DETAIL**  
See Note 11

**NOTES:**

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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**TEMPORARY CRASH CUSHION,  
SAND FILLED  
(SHOULDER INSTALLATIONS)**

NO SCALE  
RSP T2 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T2  
DATED MAY 1, 2006 - PAGE 213 OF THE STANDARD PLANS BOOK DATED MAY 2006.

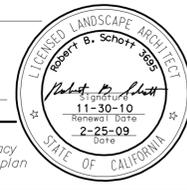
**REVISED STANDARD PLAN RSP T2**

2006 REVISED STANDARD PLAN RSP T2

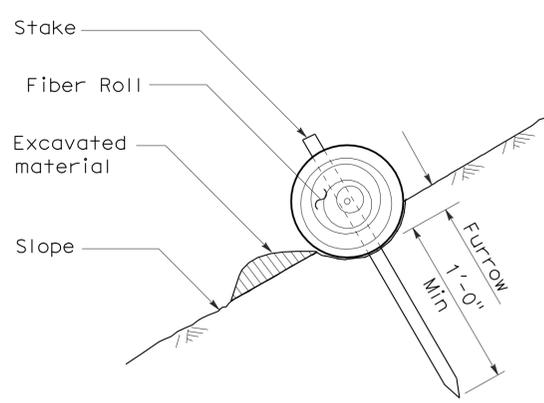


DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Kin	41	R42.1/R44.9	227	246

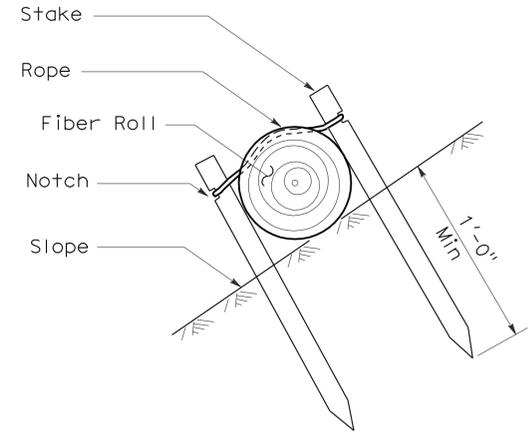
*Robert B. Schott*  
 LICENSED LANDSCAPE ARCHITECT  
 April 3, 2009  
 PLANS APPROVAL DATE  
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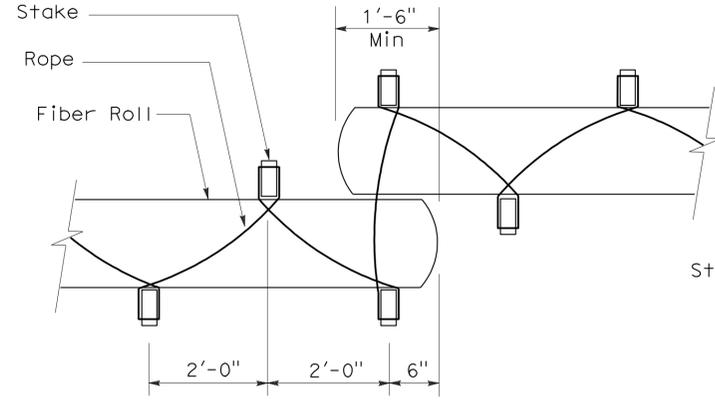
To accompany plans dated 5-23-11



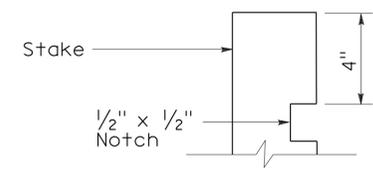
**SECTION**  
**TEMPORARY FIBER ROLL (TYPE 1)**



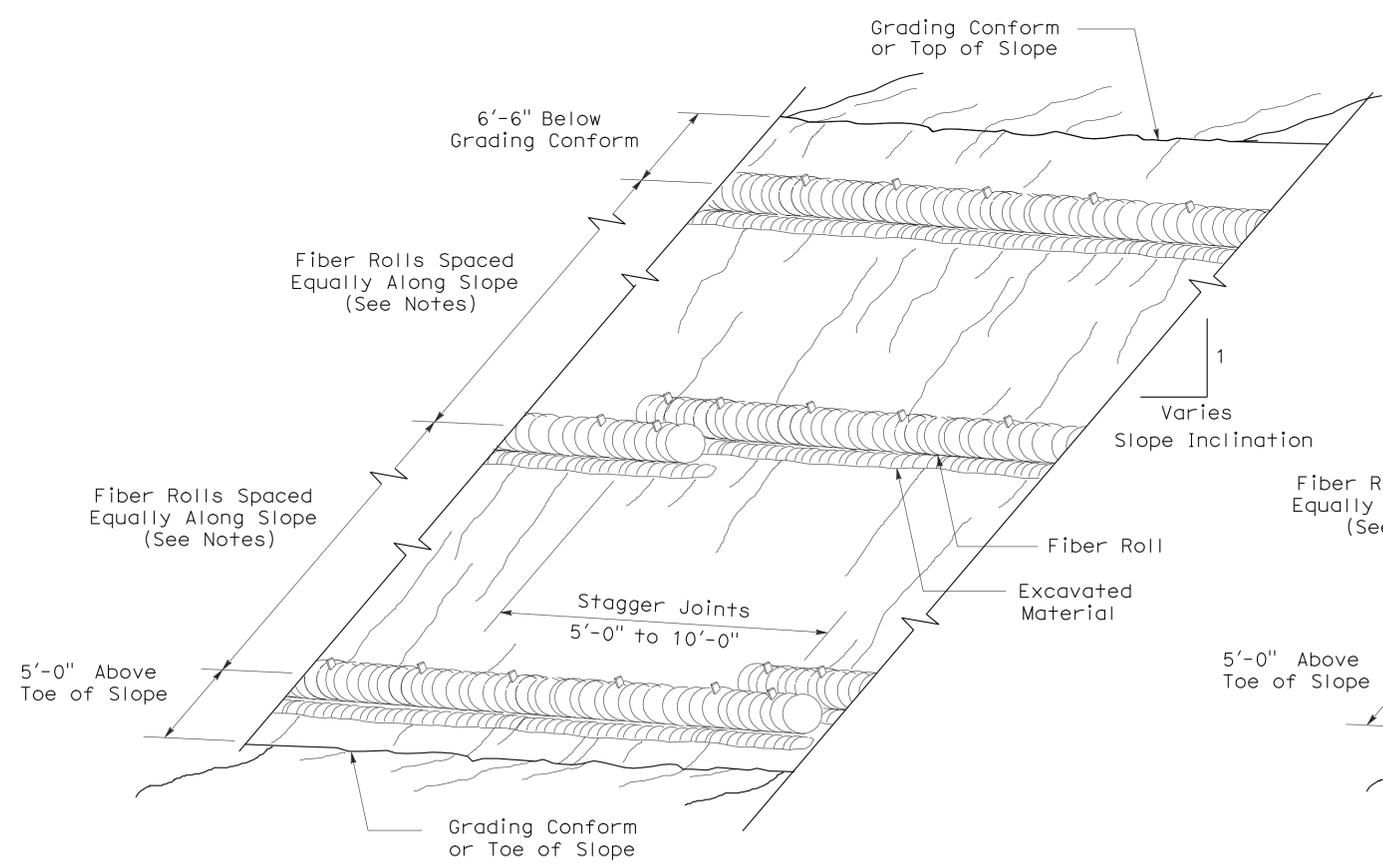
**SECTION**  
**TEMPORARY FIBER ROLL (TYPE 2)**



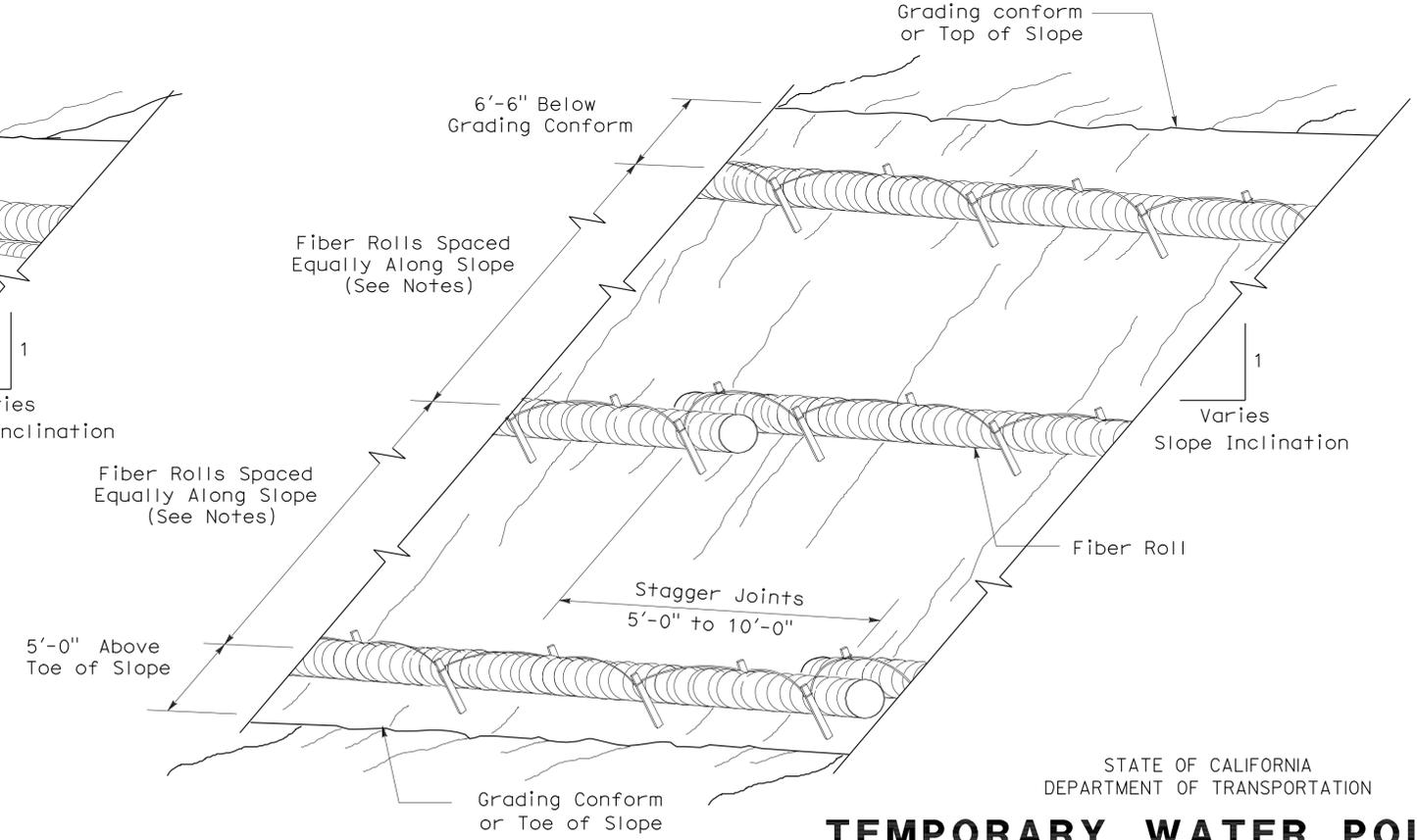
**PLAN**  
**ELEVATION**  
**STAKE NOTCH DETAIL**



- NOTES:**
1. Temporary fiber roll spacing varies depending upon slope inclination.
  2. Installations shown in the perspectives are for slope inclination of 10:1 and steeper.



**PERSPECTIVE**  
**TEMPORARY FIBER ROLL (TYPE 1)**



**PERSPECTIVE**  
**TEMPORARY FIBER ROLL (TYPE 2)**

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

**TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY FIBER ROLL)**

NO SCALE

RSP T56 DATED APRIL 3, 2009 SUPERSEDES STANDARD PLAN T56 DATED MAY 1, 2006 - PAGE 232 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP T56**

2006 REVISED STANDARD PLAN RSP T56

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Kin	41	R42.1/R44.9	228	246

*Robert B. Schott*  
 LICENSED LANDSCAPE ARCHITECT  
 August 15, 2008  
 PLANS APPROVAL DATE  
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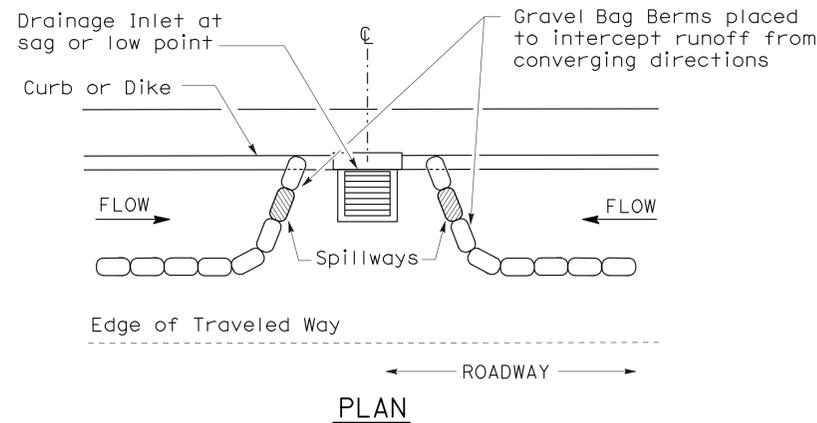
To accompany plans dated 5-23-11

2006 NEW STANDARD PLAN NSP T62

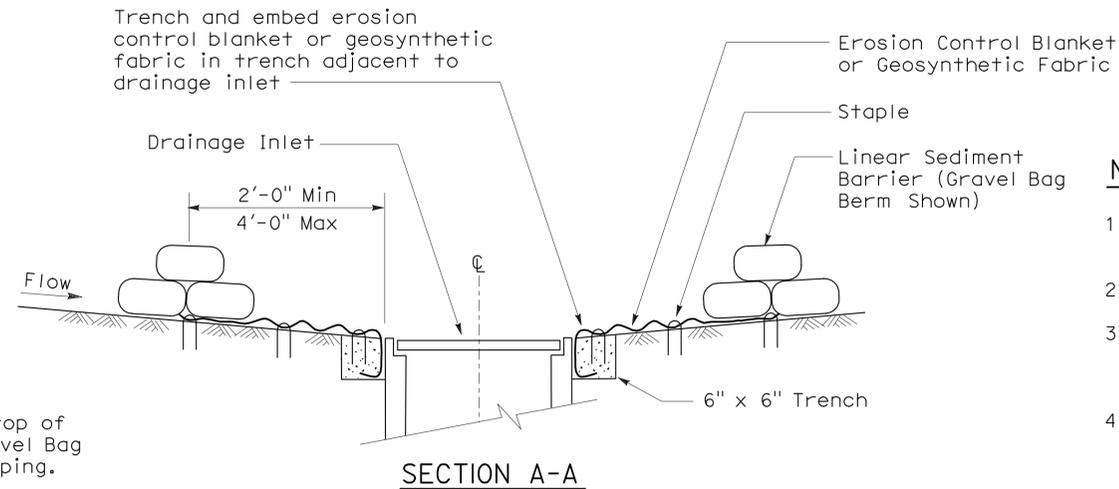
**GRAVEL BAG BERM (TYPE 3A) SPACING TABLE**

SLOPE OF ROADWAY (PERCENT)	1 to 3.9	4 to 5.9	6 to 7.9	8 to 10	10+
INTERVAL BETWEEN BERM	100'	75'	50'	25'	12'

For slope of less than 1%, install barriers only if erosion/sediment is prevalent



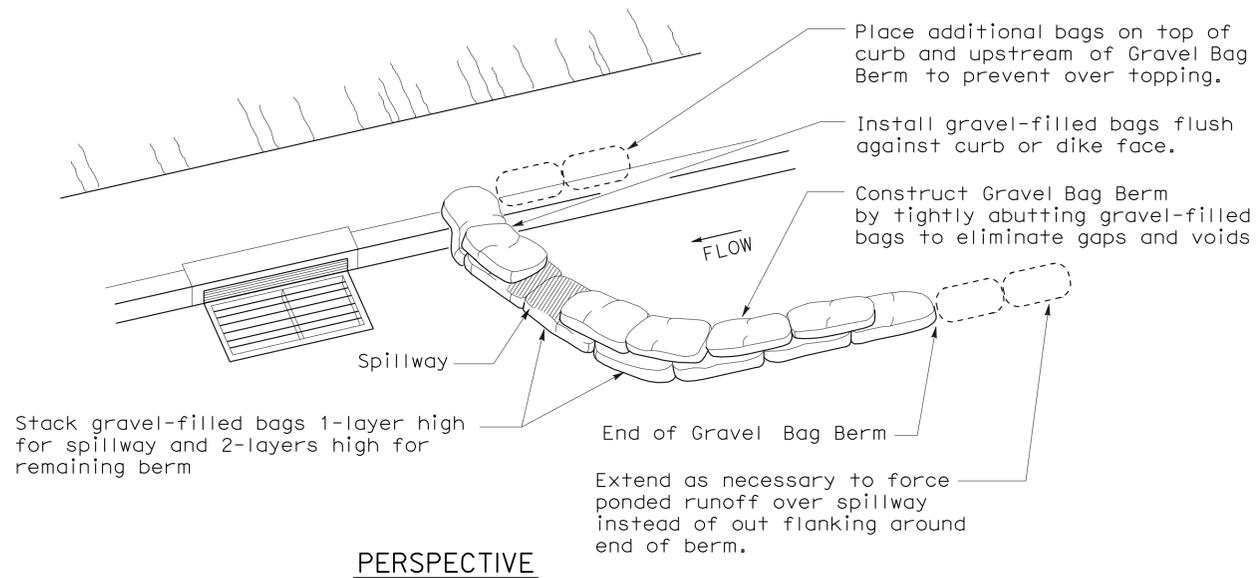
**PLAN**  
**CONFIGURATION FOR SAG POINT INLET**  
**(GRAVEL BAG BERM)**



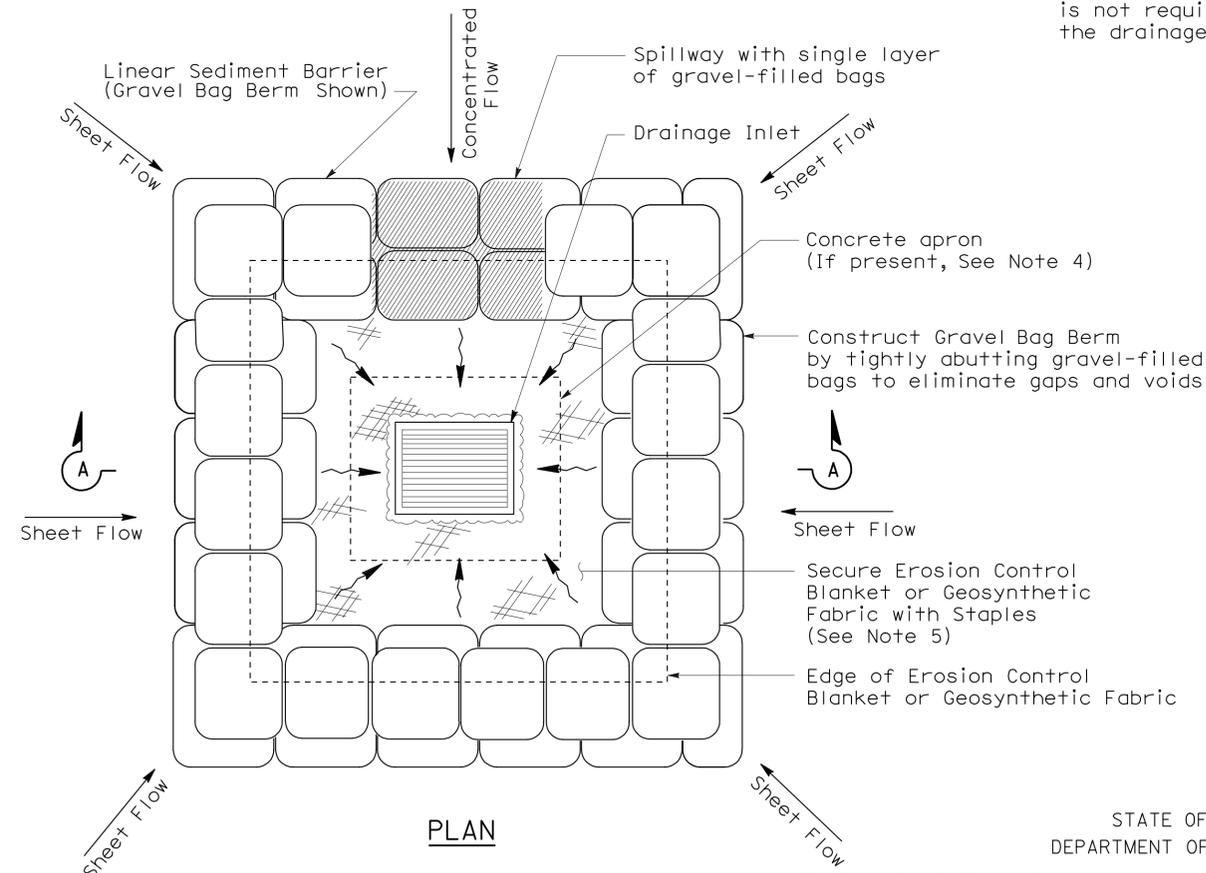
**SECTION A-A**

**NOTES:**

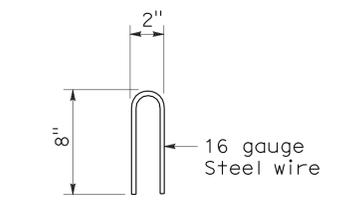
1. Place safety cones adjacent to drainage inlet protection.
2. Dimensions may vary to fit field conditions.
3. Install a minimum of 3 gravel bag berms upstream of each drainage inlet to be protected.
4. Position erosion control blanket or geosynthetic fabric at edge of concrete apron and secure in trench.
5. Erosion control blanket or geosynthetic fabric is not required if the area adjacent to the drainage inlet is vegetated or paved.



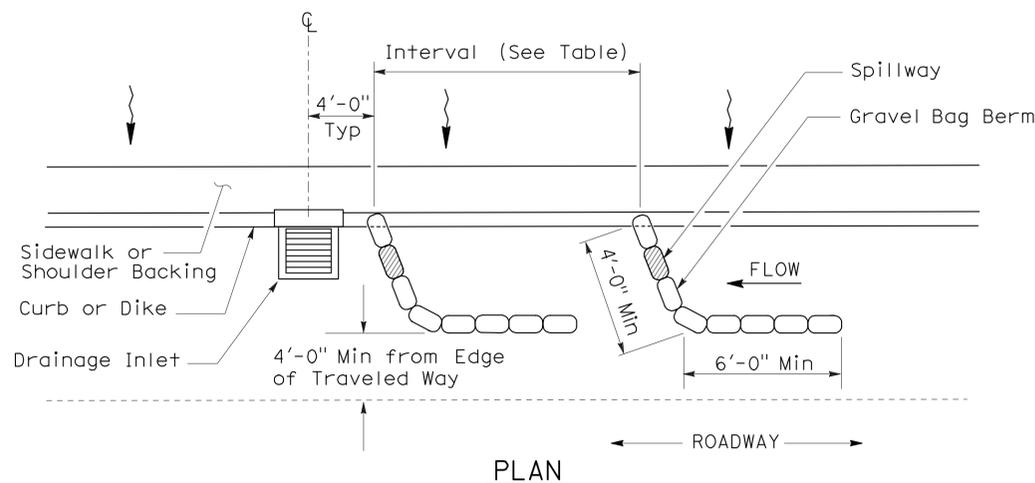
**PERSPECTIVE**



**PLAN**  
**TEMPORARY DRAINAGE**  
**INLET PROTECTION (TYPE 3B)**



**STAPLE DETAIL**



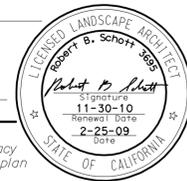
**PLAN**  
**TEMPORARY DRAINAGE**  
**INLET PROTECTION (TYPE 3A)**  
**(GRAVEL BAG BERM)**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**TEMPORARY WATER POLLUTION CONTROL DETAILS**  
**(TEMPORARY DRAINAGE INLET PROTECTION)**

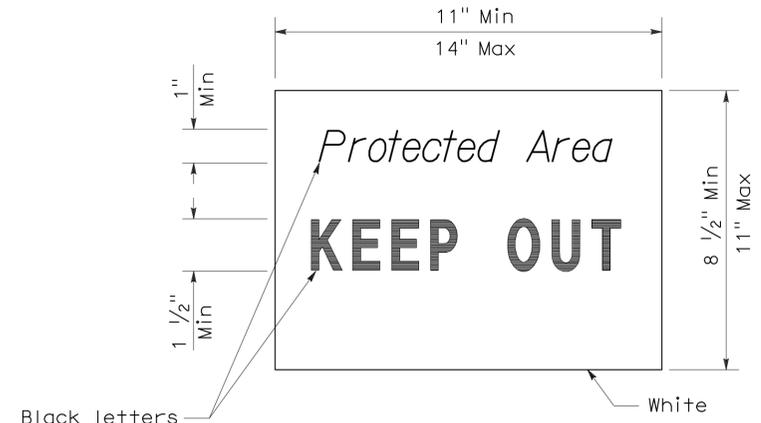
NO SCALE  
NSP T62 DATED AUGUST 15, 2008 SUPPLEMENTS  
THE STANDARD PLANS BOOK DATED MAY 2006.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Kin	41	R42.1/R44.9	229	246

*Robert B. Schott*  
 LICENSED LANDSCAPE ARCHITECT  
 April 3, 2009  
 PLANS APPROVAL DATE  
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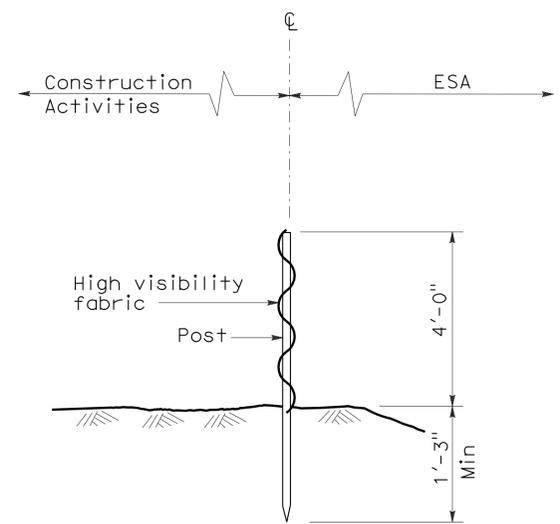
To accompany plans dated 5-23-11



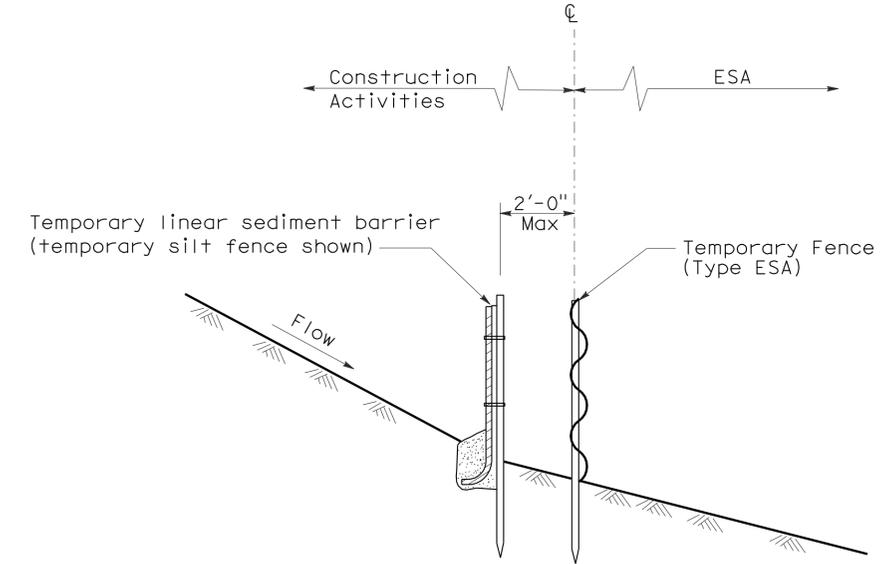
SIGN DETAIL

**NOTE:**

1. Temporary silt fence and temporary straw bale barrier shown for reference purposes only.

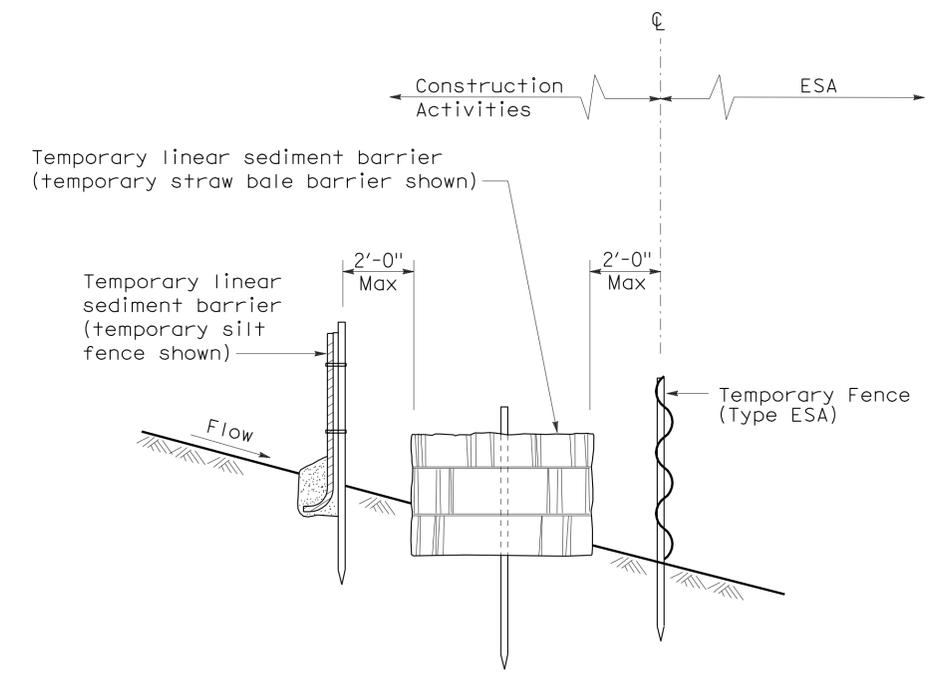


SECTION  
TEMPORARY FENCE (TYPE ESA)



SECTION  
PLACEMENT DETAIL  
FOR TEMPORARY LINEAR SEDIMENT BARRIER  
USED WITH TEMPORARY FENCE (TYPE ESA)

(See Note 1 )



SECTION  
PLACEMENT DETAIL  
FOR TEMPORARY SILT FENCE  
AND TEMPORARY STRAW BALE BARRIER  
USED WITH TEMPORARY FENCE (TYPE ESA)

(See Note 1 )

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**TEMPORARY WATER POLLUTION CONTROL DETAILS**  
**[TEMPORARY FENCE (TYPE ESA)]**

NO SCALE

NSP T65 DATED APRIL 3, 2009 SUPPLEMENTS  
THE STANDARD PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP T65

# ELECTROLIERS

STANDARD TYPES		
15, 15D		High mast light pole
15 STRUCTURE		Double Arm lighting standard
21, 21D STRUCTURE		Existing electrolier
30		Electrolier foundation (Future installation)
31		
32		
35		
36-20A		

**NOTES:**

- Luminaires shall be 310 W HPS when installed on Type 21, 21D, 30, 31, 32, 35 and 36-20A Standards, unless otherwise specified. Luminaires shall be 200 W HPS 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.
- Variations noted adjacent to symbol on project plans.

- Electrolier (see project notes or project plans)
- Luminaire on wood pole

## STANDARD NOTES:

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

# ABBREVIATIONS AND EQUIPMENT DESIGNATIONS

## PROPOSED EXISTING

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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Kin	41	R42.1/R44.9	230	246

*Jeffery G. McRae*  
REGISTERED ELECTRICAL ENGINEER

October 5, 2007  
PLANS APPROVAL DATE

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

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

To accompany plans dated 5-23-11

## SOFFIT AND WALL MOUNTED LUMINAIRES

- Pendant, 70 W HPS unless otherwise specified.
- Flush, 70 W HPS unless otherwise specified.
- Wall surface, 70 W HPS unless otherwise specified.
- Existing soffit or wall luminaire to remain unmodified.
- Existing soffit or wall luminaire to be modified as specified.

### NOTE:

Arrow indicates "street side" of luminaire.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

## ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

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

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

2006 REVISED STANDARD PLAN RSP ES-1A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Kin	41	R42.1/R44.9	231	246

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

October 5, 2007  
 PLANS APPROVAL DATE

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To accompany plans dated 5-23-11

### CONDUIT

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

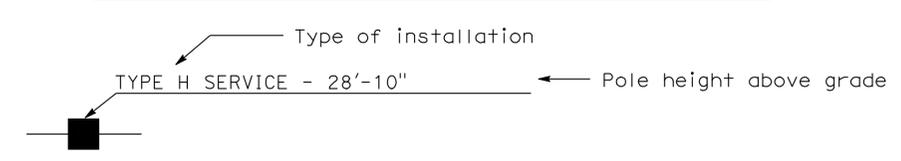
### SIGNAL EQUIPMENT

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

### SERVICE EQUIPMENT

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

### POLE-MOUNTED SERVICE DESIGNATION



### ILLUMINATED OVERHEAD SIGN

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

### SIGNAL EQUIPMENT Cont

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

### NOTES:

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

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

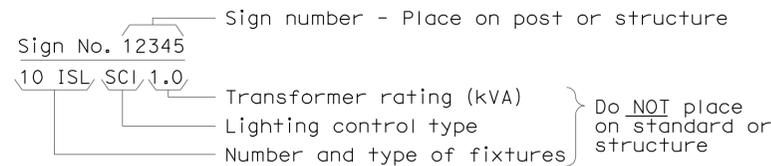
RSP ES-1B DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1B  
 DATED MAY 1, 2006 - PAGE 401 OF THE STANDARD PLANS BOOK DATED MAY 2006.

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

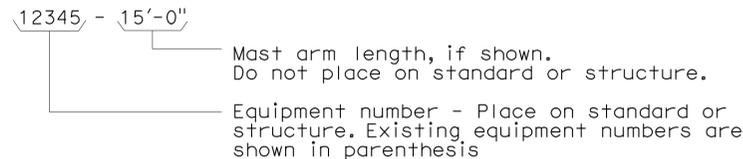
2006 REVISED STANDARD PLAN RSP ES-1B

### EQUIPMENT IDENTIFICATION

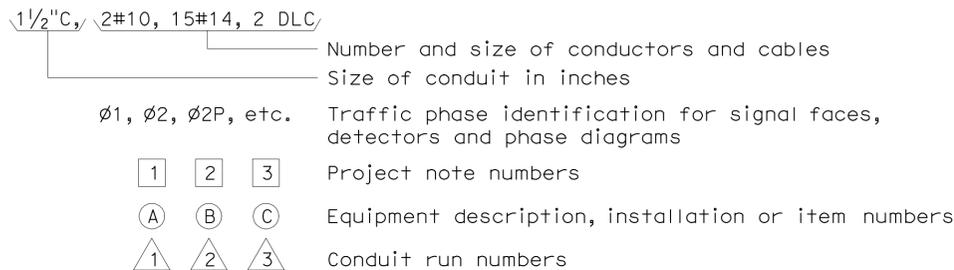
#### ILLUMINATED SIGN IDENTIFICATION NUMBER:



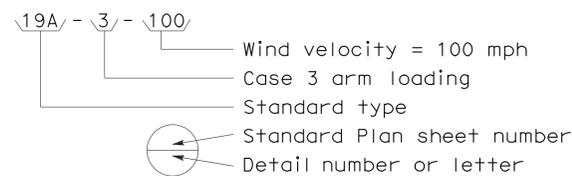
#### ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



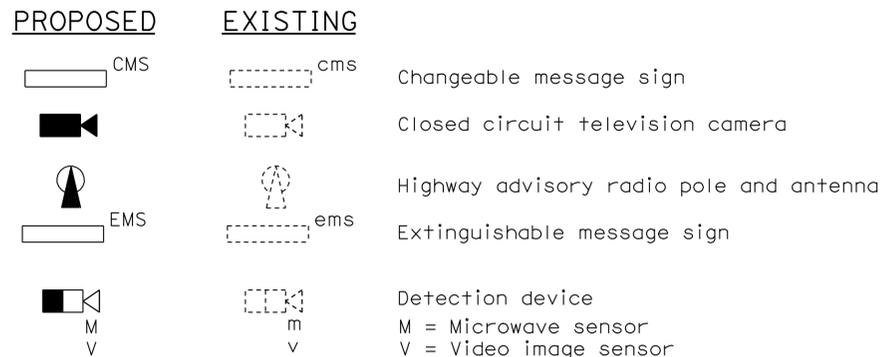
#### CONDUIT AND CONDUCTOR IDENTIFICATION:



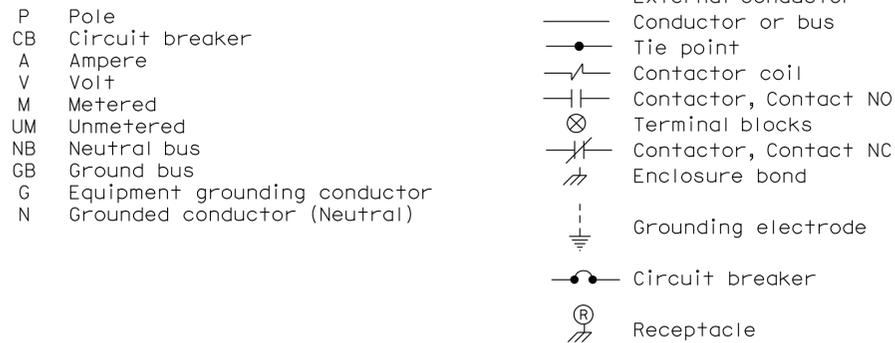
#### SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



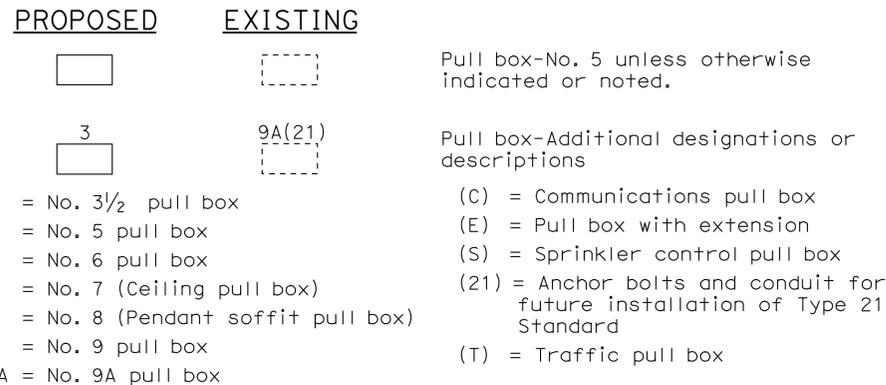
### MISCELLANEOUS EQUIPMENT



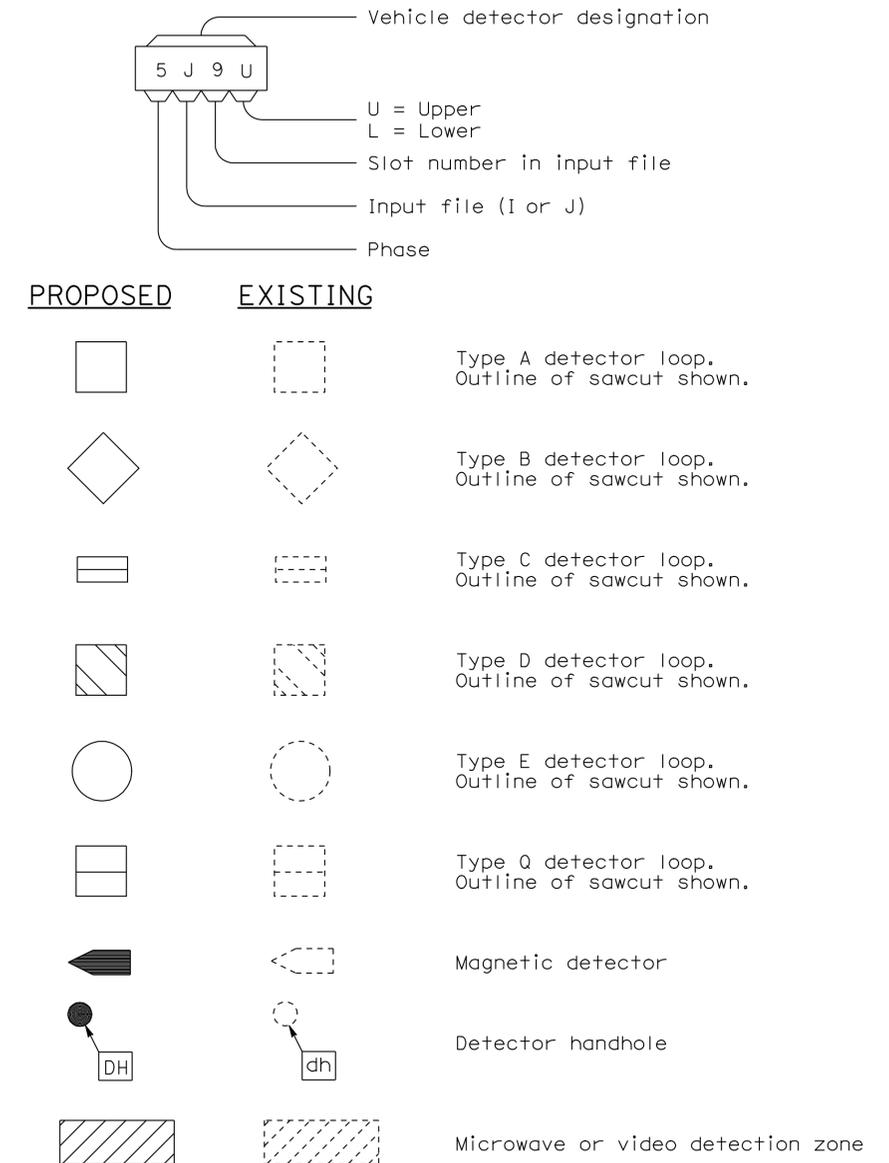
### WIRING DIAGRAM LEGEND



### PULL BOXES



### VEHICLE DETECTORS



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

NO SCALE

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

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

2006 REVISED STANDARD PLAN RSP ES-1C

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Kin	41	R42.1/R44.9	233	246

*Jeffery G. McRae*  
 REGISTERED ELECTRICAL ENGINEER

October 5, 2007  
 PLANS APPROVAL DATE

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

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

**NOTES-TYPE III SERVICE EQUIPMENT ENCLOSURES:**

1. Service equipment enclosure and metering equipment shall meet the requirements of the service utility. The meter area shall have a sealable, lockable, weathertight cover that can be removed without the use of tools.
2. Service equipment enclosures shall be factory wired and conform to NEMA standards.
3. Dimensions of service equipment enclosures shall meet the requirements of the service utility.
4. The dead front panels on Type III service equipment enclosures shall have a continuous stainless steel or aluminum piano hinge. The panel in front of the breakers shall be secured with a latch or captive screws. No live parts shall be mounted on the dead front panel.
5. The exterior door shall have provisions for padlocking. The padlock hole shall be a minimum diameter of  $\frac{1}{16}$ ".
6. Enclosures housing transformers of more than one kVA shall have effective screened ventilation louver of not less than 50 square inches. Screen shall be stainless steel No. 304, with a No. 10 size mesh. Framed screen shall be secured with at least four bolts.
7. Fasteners on the exterior of the enclosure shall be vandal-resistant and shall not be removable from the exterior. Exterior screws, nuts, bolts and washers shall be stainless steel.
8. Landing lugs for incoming service conductors shall be compatible with either copper or aluminum conductors sized to suit the conductors shown on the plan. Landing lugs shall be copper or tin-plated aluminum. Neutral bus shall be rated for 125 A and be suitable for copper or aluminum conductors unless otherwise specified. The terminal shall include but not be limited to:
  - a) Incoming terminals (landing lugs)
  - b) Neutral lugs
  - c) Solid neutral terminal strip
9. At least 6 standard single pole circuit breaker spaces,  $\frac{3}{4}$ " nominal, shall be provided for branch circuits. Circuit breaker interiors shall be copper. Interiors of enclosure shall accept plug-in or cable-in/cable-out circuit breakers.
10. Control wiring shall be 600 V, 14 stranded machine tool wire. Where subject to flexing, 19 strand wire shall be used.
11. Main bus shall be rated for 125 A and shall be tin-plated copper.
12. A plastic laminated wiring diagram shall be provided with brass mounting eyelets and attached to the inside of the enclosure and the wiring diagram shall be affixed to the interior with a UL or ETL approved method.

13. An engraved phenolic nameplate on the dead front panel indicating the function of each circuit or device shall be installed with stainless steel rivets or stainless steel screws:
  - a) Adjacent to the breaker or device with character size a minimum of  $\frac{1}{8}$ ".
  - b) At the top of the exterior door panel indicating State system number, voltage level and number of phases with character size a minimum of  $\frac{3}{16}$ ".
14. 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.
15. 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.
16. Foundation shall extend 2" minimum beyond edge of service equipment enclosure.
17. Internal bus, where shown, is typical only. Alternative design of proposed service equipment enclosure shall be submitted to the Engineer for approval.
18. 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.
19. 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.
20. Type III-AR and Type III-BR service equipment enclosures 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.
21. Minimum clearance shall be required for front and back of service equipment enclosure per National Electrical Code, Article 110.26, "Spaces About Electric Equipment (600 Volts, Nominal, or Less)."

To accompany plans dated 5-23-11

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS  
 (SERVICE EQUIPMENT NOTES  
 TYPE III SERIES)**

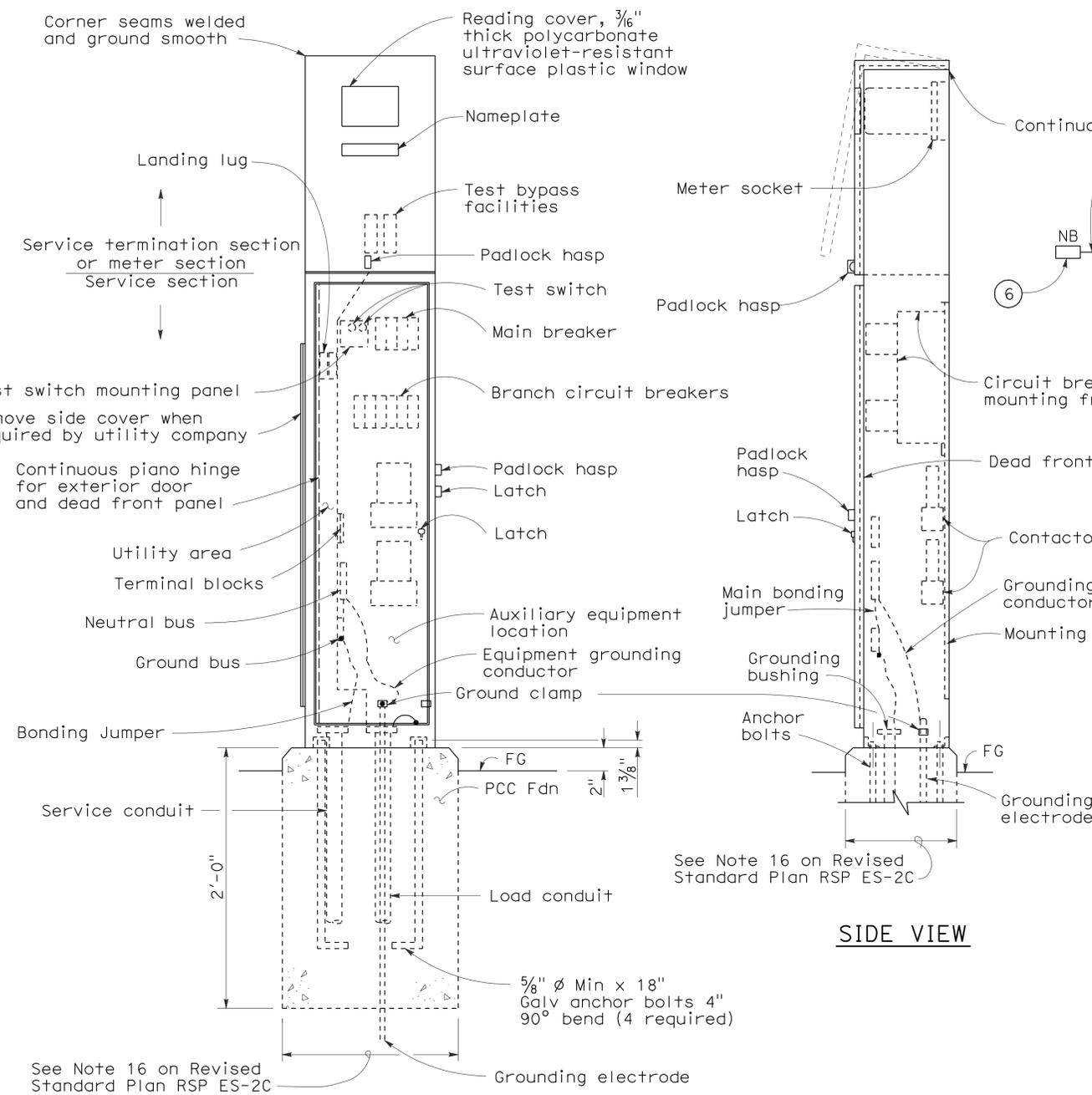
NO SCALE

RSP ES-2C DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-2C  
 DATED MAY 1, 2006 - PAGE 405 OF THE STANDARD PLANS BOOK DATED MAY 2006.

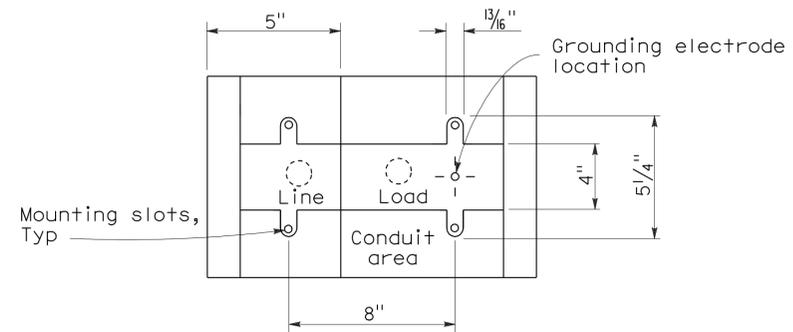
**REVISED STANDARD PLAN RSP ES-2C**

2006 REVISED STANDARD PLAN RSP ES-2C

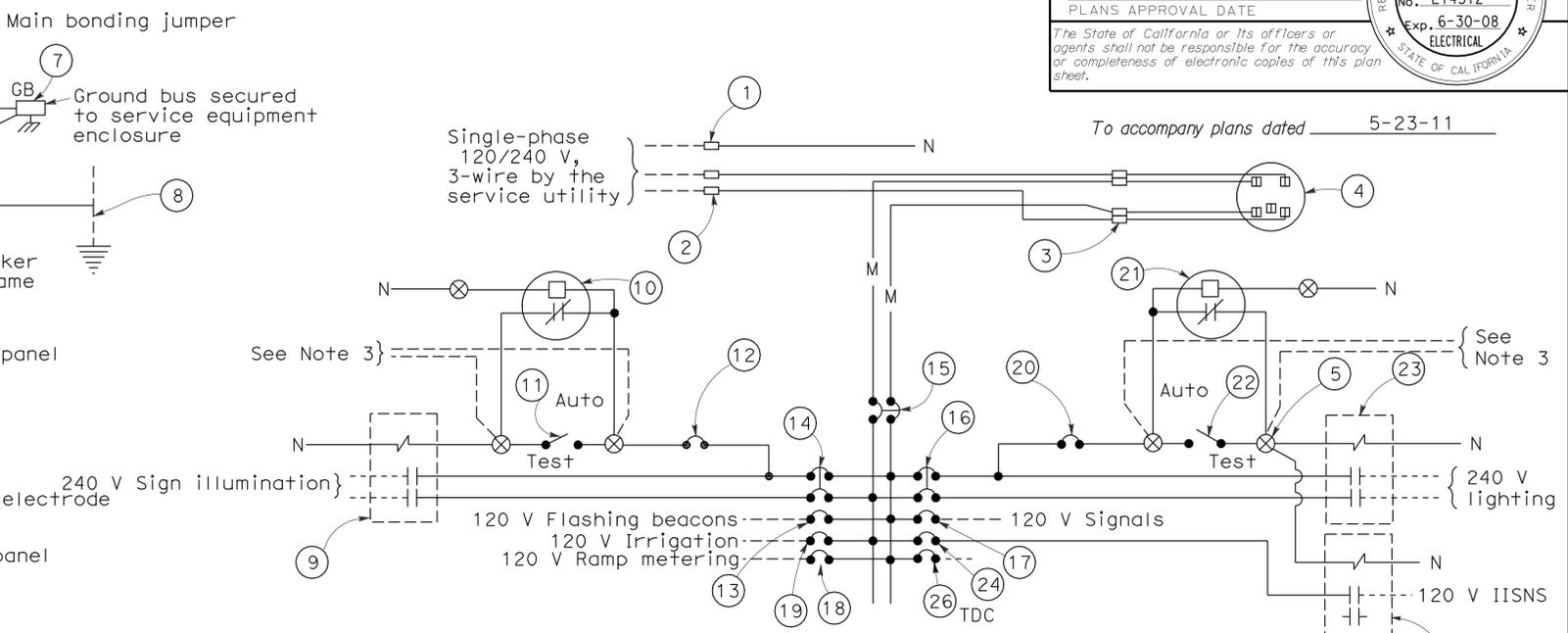
2006 REVISED STANDARD PLAN RSP ES-2D



**TYPE III-AF SERVICE EQUIPMENT ENCLOSURE (TYPICAL)**



**BASE FOR TYPE III-A SERVICE EQUIPMENT ENCLOSURE**



**120/240 V SERVICE WIRING DIAGRAM (TYPICAL)**

TYPE III-A SERVICE (120/240 V) EQUIPMENT LEGEND					
ITEM No.	COMPONENT	NAME PLATE DESCRIPTION	ITEM No.	COMPONENT	NAME PLATE DESCRIPTION
1	Neutral lug		14	30 A, 240 V, 2P, CB	Sign Illumination
2	Landing lug (Note 6)		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	Photoelectric unit (Note 7)	
9	30 A, 2PNO Contactor	Sign Illumination	22	15 A, 1P, Test switch	Lighting Test Switch
10	Photoelectric unit (Note 7)		23	60 A, 2PNO 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, 2PNO Contactor	IISNS
13	15 A, 120 V, 1P, CB	Flashing Beacon	26	20 A, 120 V, 1P, CB	Telephone Demarcation Cabinet

- NOTES: (FOR SERVICE EQUIPMENT ENCLOSURE)**
- Voltage ratings of service equipment shall conform to the service voltages indicated on the plans.
  - Unless otherwise indicated on the plans, service equipment items shall be provided for each service equipment enclosure as shown.
  - Connect to remote test switch mounted on lighting standards, sign post or structure when required.
  - Items No. 1 and 6 shall be isolated from the service equipment enclosure.
  - Meter sockets shall be 5 clip type.
  - The landing lug shall be suitable for multiple conductors.
  - Type I photoelectric control shall be used unless otherwise indicated on the plans.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS (SERVICE EQUIPMENT AND TYPICAL WIRING DIAGRAM, TYPE III - A SERIES)**

NO SCALE

RSP ES-2D DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-2D DATED MAY 1, 2006 - PAGE 406 OF THE STANDARD PLANS BOOK DATED MAY 2006.

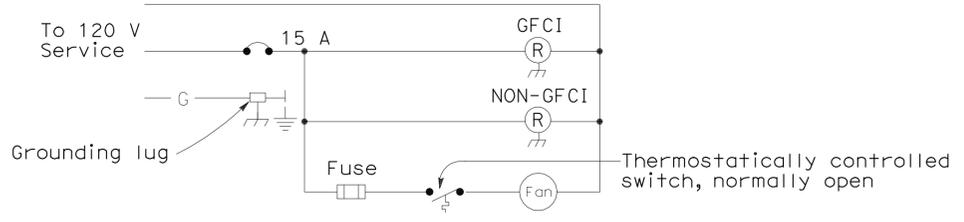
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Kin	41	R42.1/R44.9	235	246

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

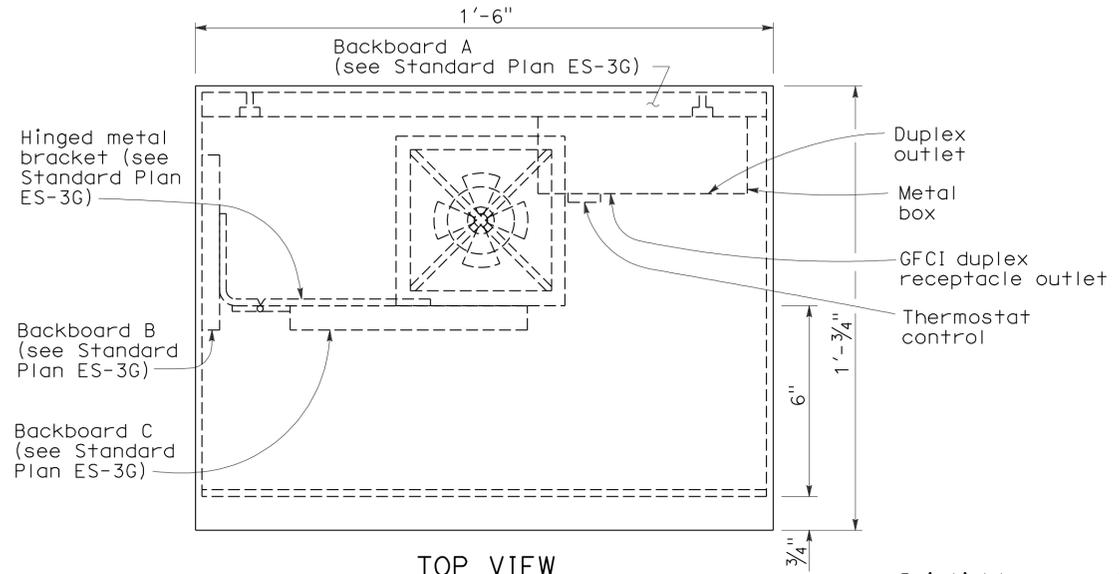
October 5, 2007  
 PLANS APPROVAL DATE

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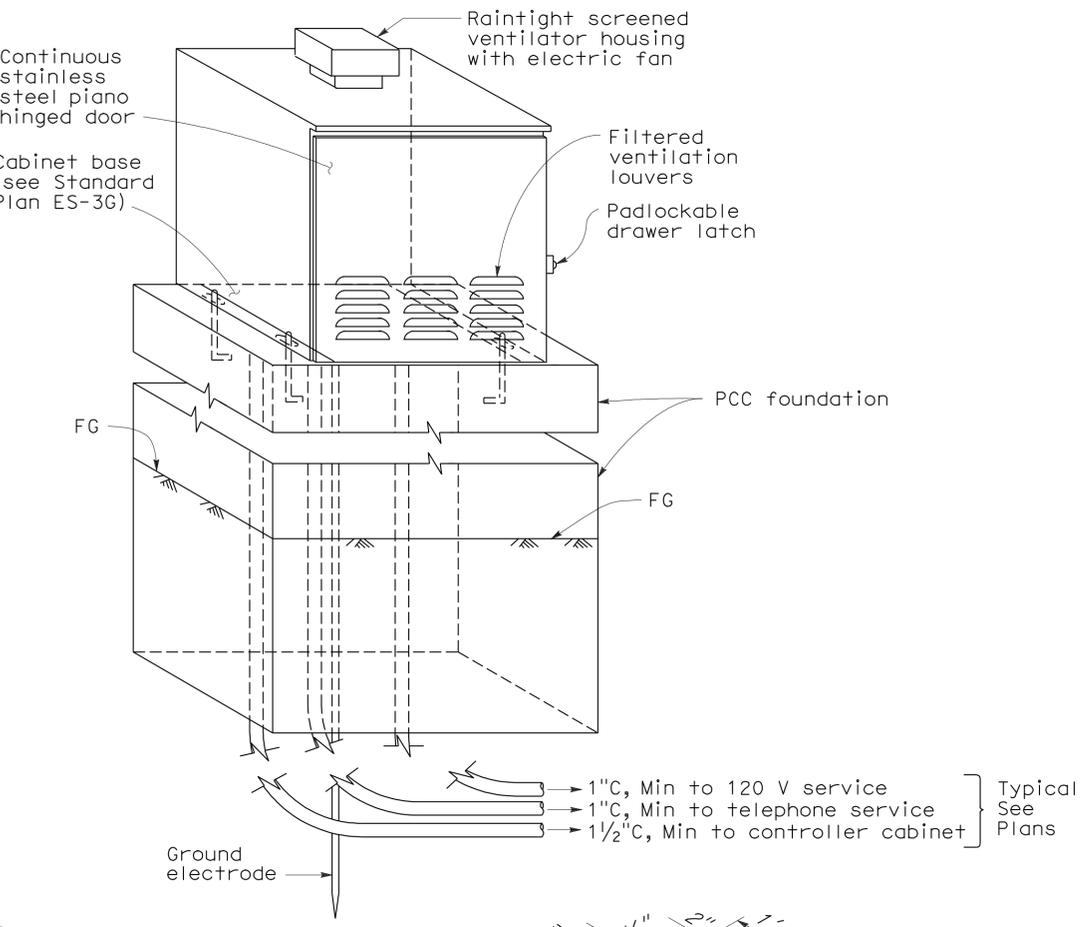
To accompany plans dated 5-23-11



WIRING DIAGRAM

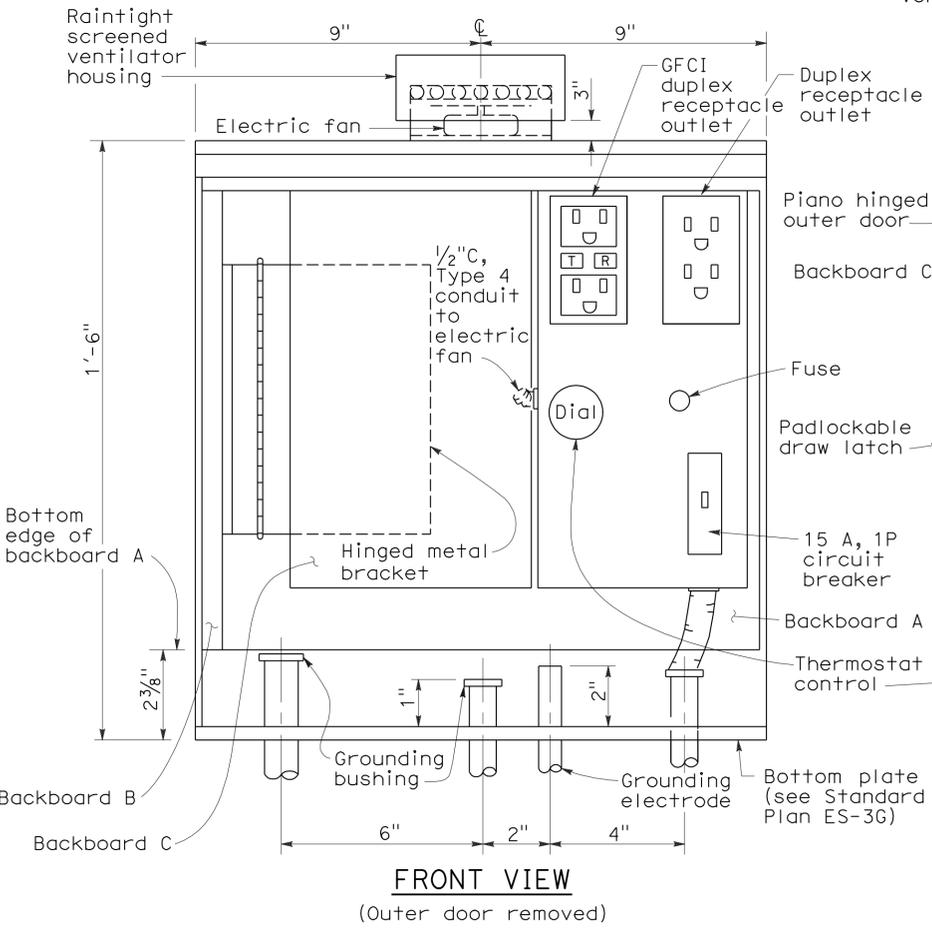


TOP VIEW

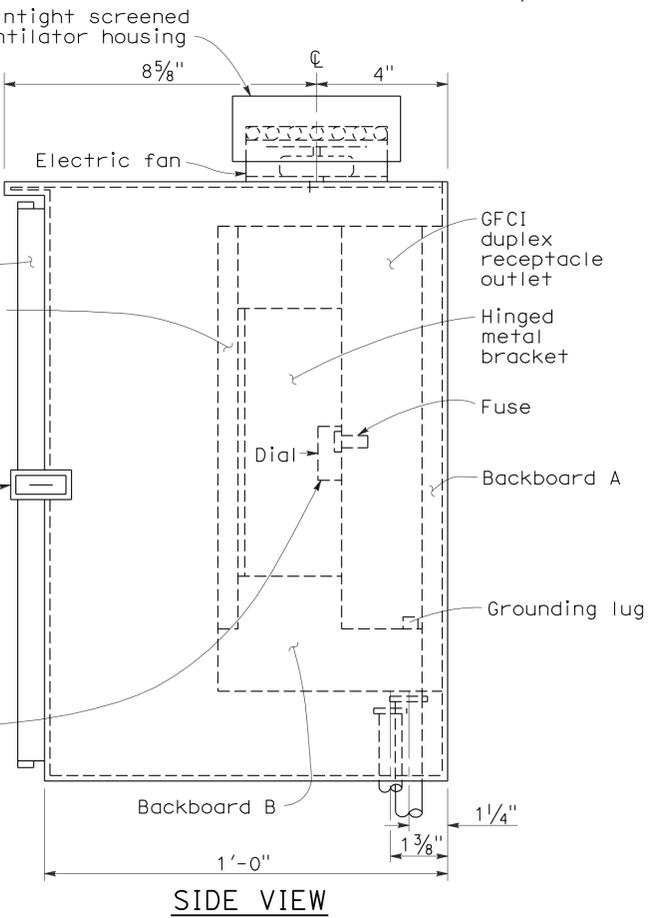


NOTES:

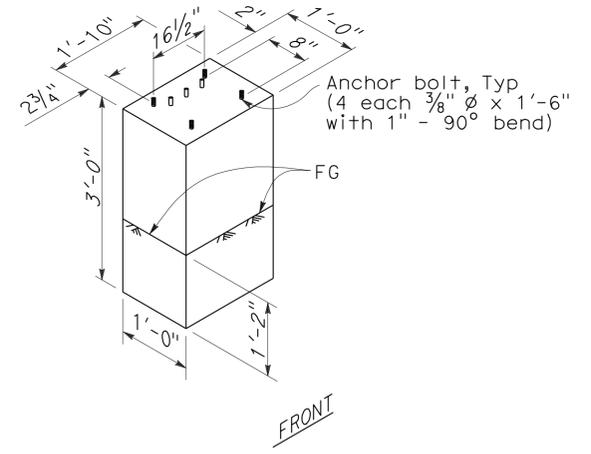
- Telephone demarcation cabinet shall be furnished with mounting boards, thermostat, fan, outlet box, circuit breaker and outlet plate. Dimensions are nominal.
- An approved mastic or caulking compound shall be placed on the foundation prior to placing the cabinet to seal openings between bottom of cabinet and foundation.
- In unpaved areas, a raised PCC pad shall be placed in front of the telephone demarcation cabinet. Pad shall be 1'-10" x 3'-0" x 4" thick, with 2" above the finished grade.
- All conduits shall be bonded to the enclosure.
- Telephone demarcation cabinet:
  - Material shall be anodized aluminum (1/8" thick).
  - Fabrication shall conform to the requirements of the Standard Specifications.
  - Ventilation louvers shall be located in door.
  - Door shall be lockable with padlock.
  - Fan shall be mounted in a ventilator housing.
  - Fan capacity shall be at least 25 cubic feet per minute.
  - Fan shall be thermostatically controlled and adjustable to turn on between 80°F and 130°F.
  - Fan circuit shall be fused at 175 percent of the fan motor capacity.
- Hardware for fastening of mounting boards:
  - Fasten backboard A and backboard B to telephone demarcation cabinet with 3/16" ø x 3/4" stainless steel carriage bolts (8 required).
  - Fasten hinged metal bracket to backboard B and backboard C to hinged metal bracket with number No. 10 x 3/4" wood screws (9 required).



FRONT VIEW  
(Outer door removed)



SIDE VIEW



FOUNDATION DETAILS

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
(TELEPHONE DEMARICATION  
CABINET, TYPE C)**

NO SCALE

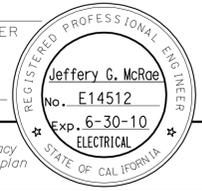
RSP ES-3F DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-3F  
DATED MAY 1, 2006 - PAGE 415 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP ES-3F**

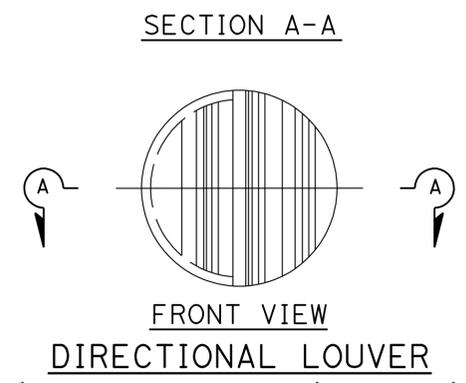
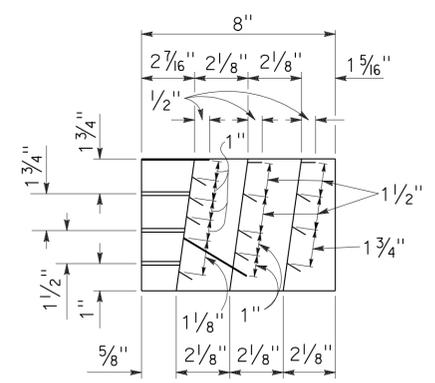
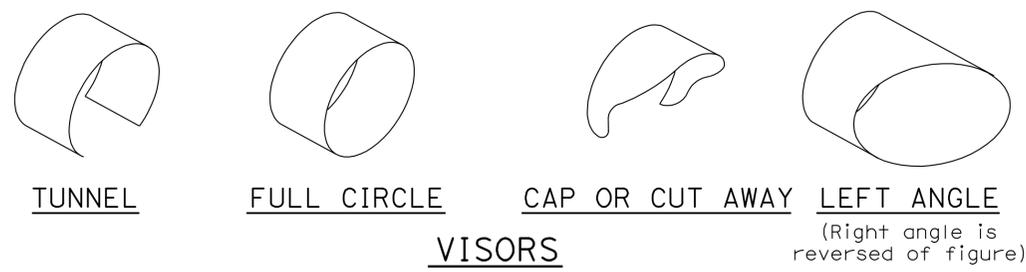
2006 REVISED STANDARD PLAN RSP ES-3F

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Kin	41	R42.1/R44.9	236	246

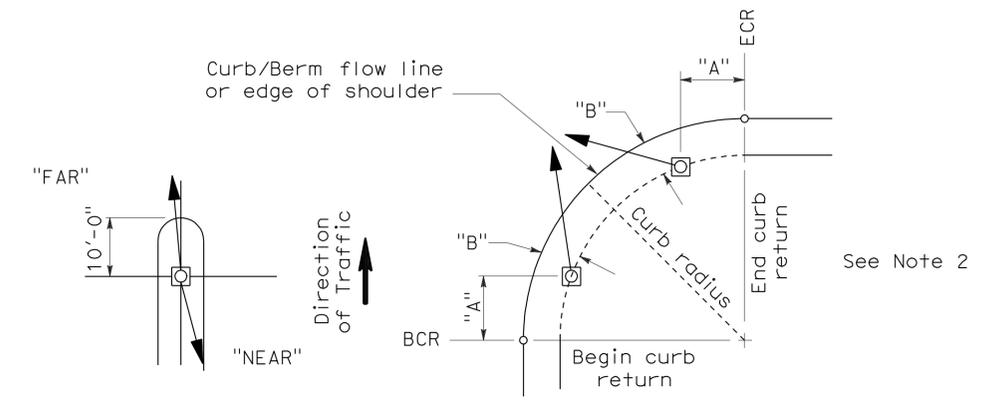
Jeffrey G. McRae  
 REGISTERED ELECTRICAL ENGINEER  
 June 6, 2008  
 PLANS APPROVAL DATE  
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To accompany plans dated 5-23-11

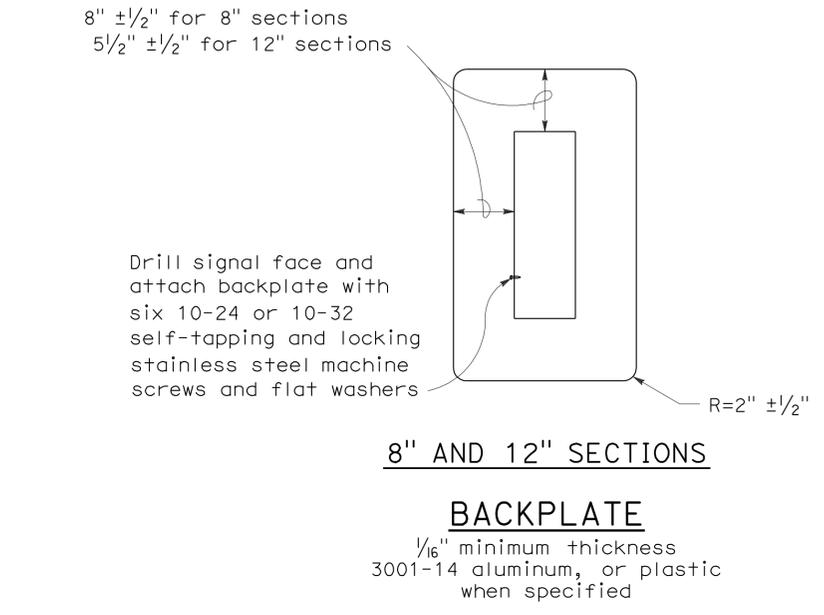


**DIRECTIONAL LOUVER**  
 Directional louvers shall be oriented as directed by the Engineer and secured in place with one plated brass machine screw and nut.

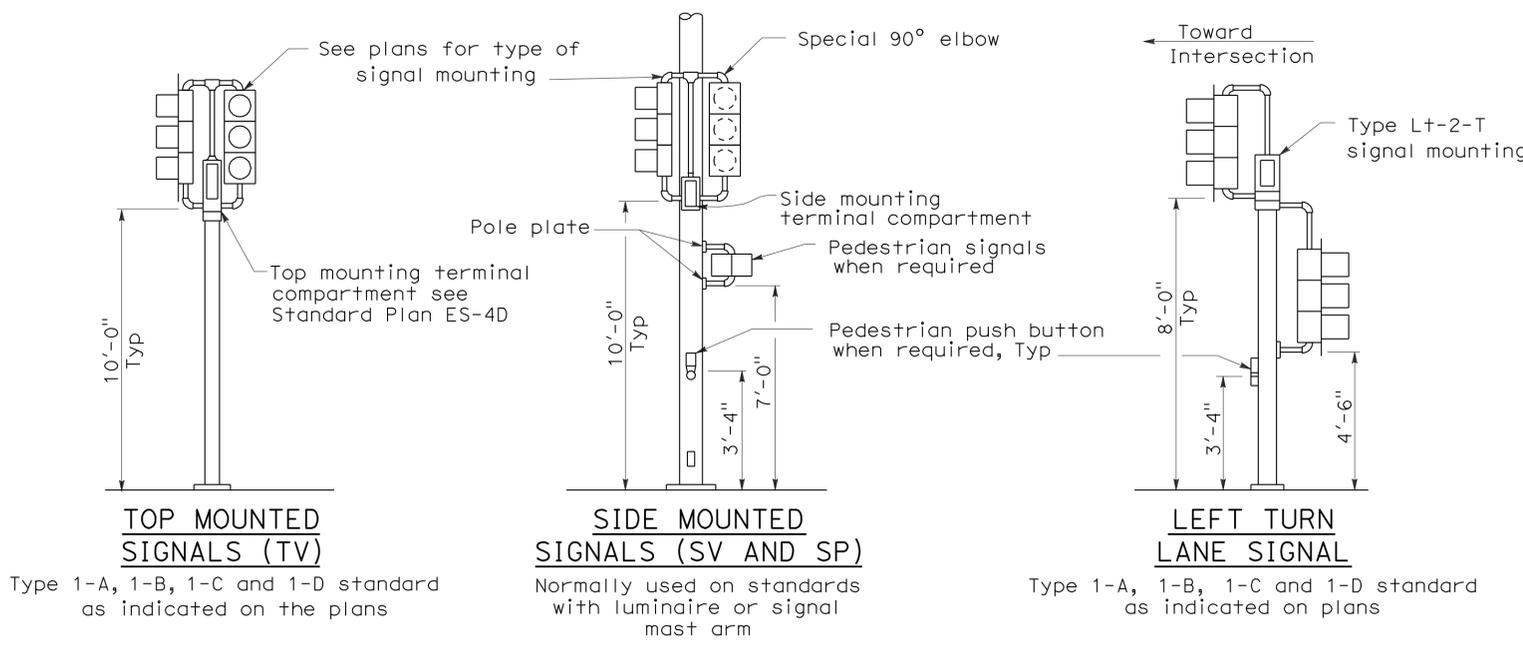


- NOTES:**
1. Typical signal pole placement unless dimensioned on plans.
  2. For "A" and "B" dimensions, see Pole Schedule, or as directed by the Engineer.

**SIGNAL STANDARD PLACEMENT DIMENSIONS AND EQUIPMENT LOCATIONS**



**8" AND 12" SECTIONS**  
**BACKPLATE**  
 1/16" minimum thickness  
 3001-14 aluminum, or plastic when specified

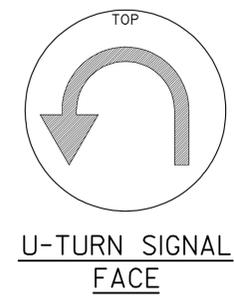


**TYPICAL SIGNAL INSTALLATIONS**

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

Normally used on standards with luminaire or signal mast arm

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



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

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

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

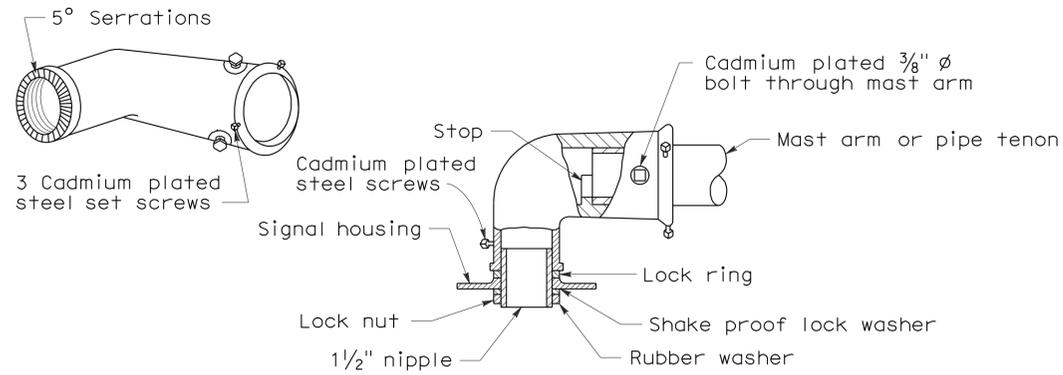
2006 REVISED STANDARD PLAN RSP ES-4C

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Kin	41	R42.1/R44.9	237	246

Jeffrey G. McRae  
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 No. E14512  
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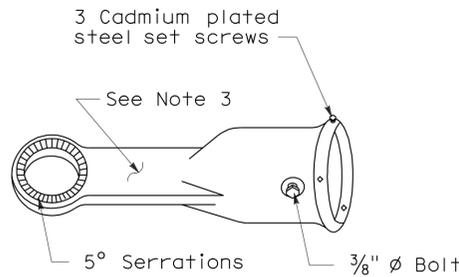
June 6, 2008  
 PLANS APPROVAL DATE

To accompany plans dated 5-23-11



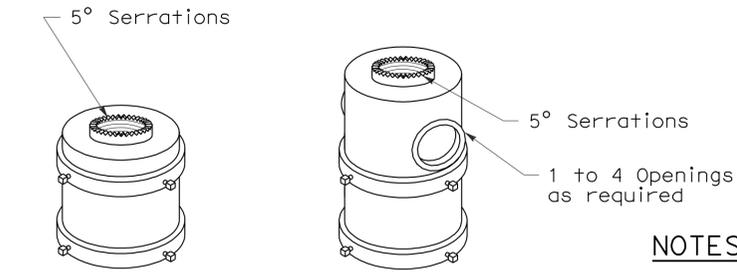
**MAST ARM MOUNTING - TYPE "MAT"**

For 2 NPS pipe, see Note 1.



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

For 2 NPS pipe. See Note 1.

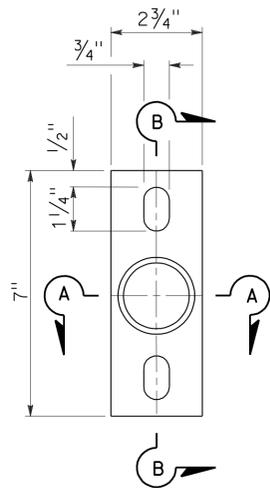


For one mounting For multiple mountings

**TOP MOUNTINGS**

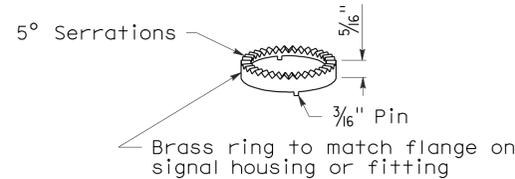
For 4 NPS pipe, see Note 2.

**SIGNAL SLIP FITTERS**



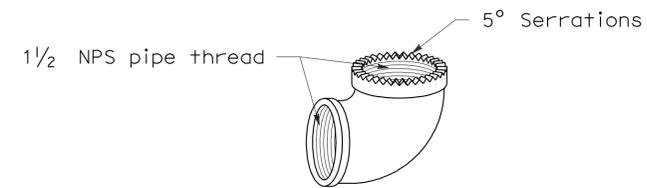
**POLE PLATE**

For side mountings



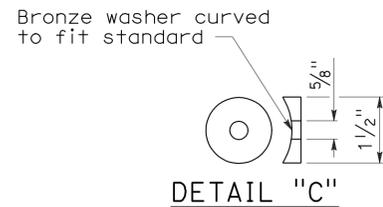
**LOCK RING**

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



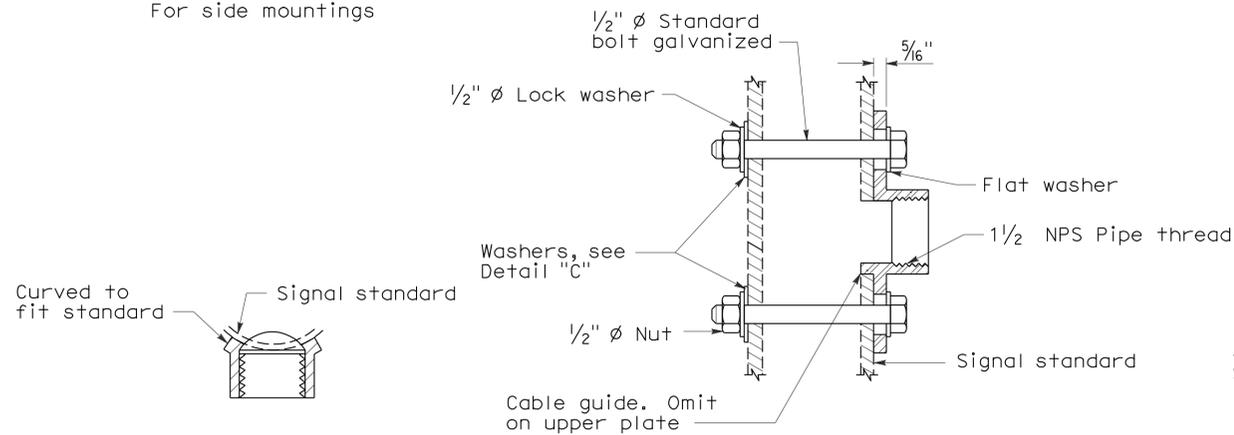
**SPECIAL 90° ELBOW**

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



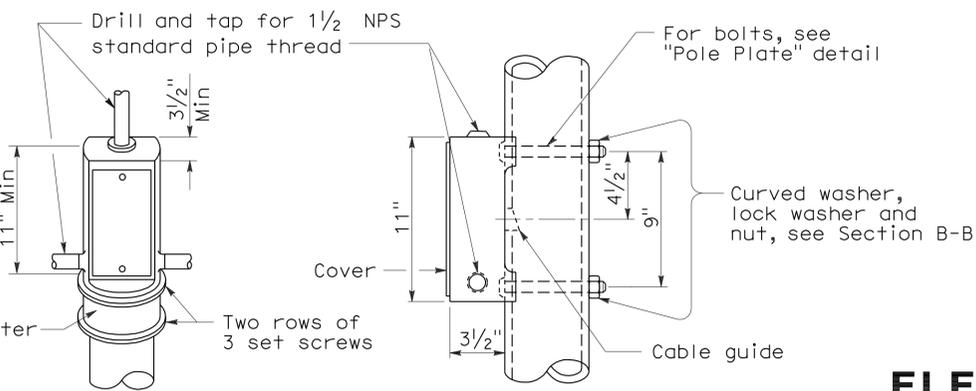
**DETAIL "C"**

**MISCELLANEOUS MOUNTING HARDWARE**



**SECTION A-A**

**SECTION B-B**



**TOP MOUNTING**

**SIDE MOUNTING**

**TERMINAL COMPARTMENTS**

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

NO SCALE

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

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

2006 REVISED STANDARD PLAN RSP ES-4D

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Kin	41	R42.1/R44.9	238	246

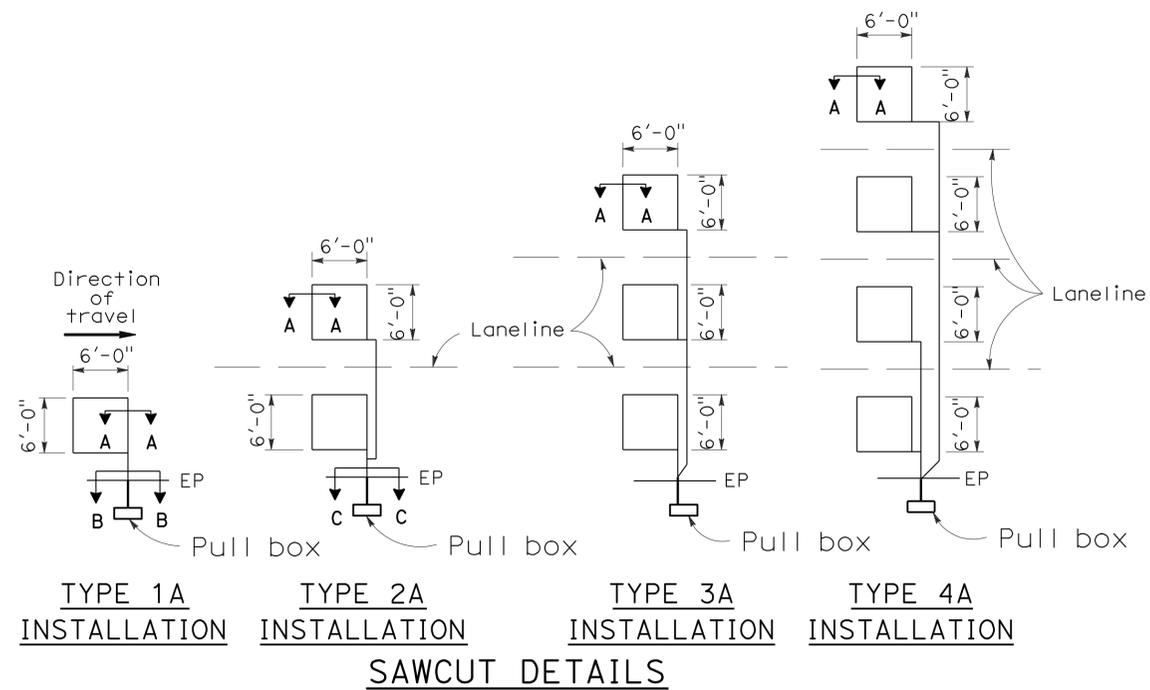
*Jeffery G. McRae*  
 REGISTERED ELECTRICAL ENGINEER  
 No. E14512  
 Exp. 6-30-08  
 ELECTRICAL  
 STATE OF CALIFORNIA

October 5, 2007  
 PLANS APPROVAL DATE

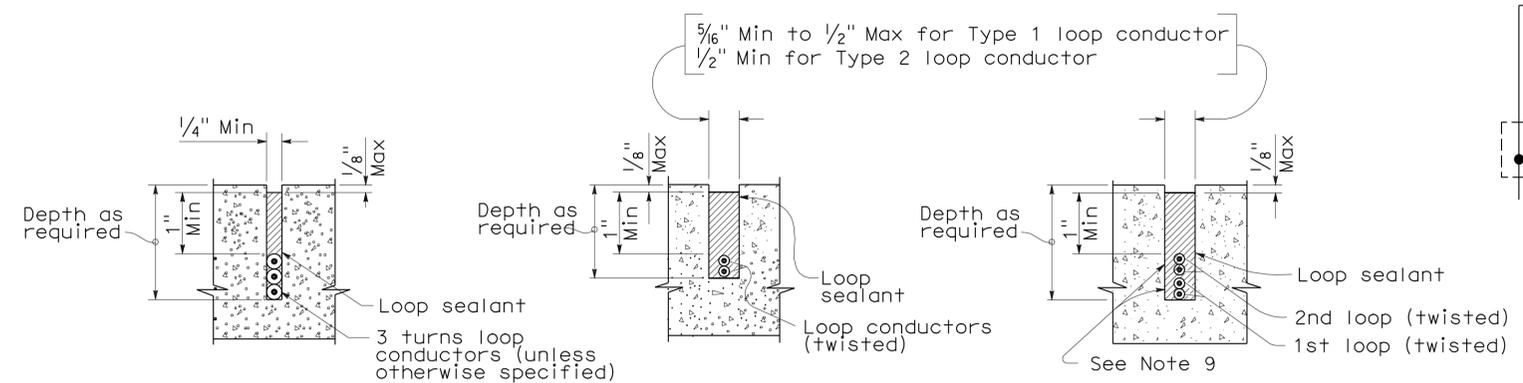
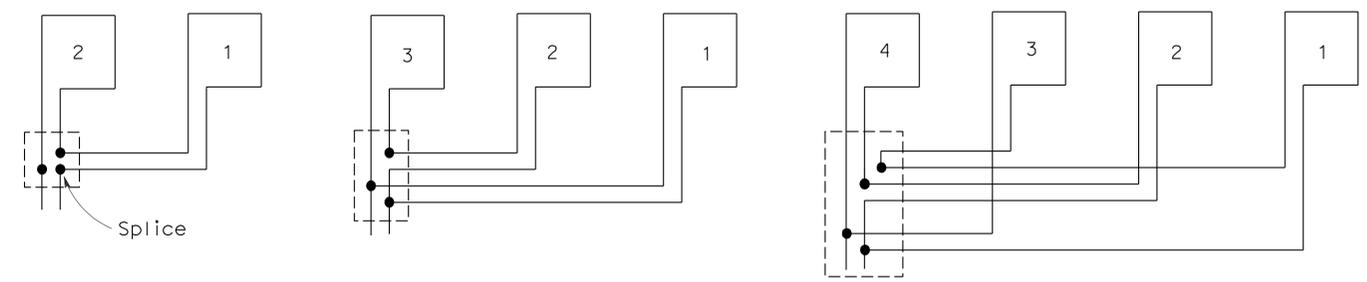
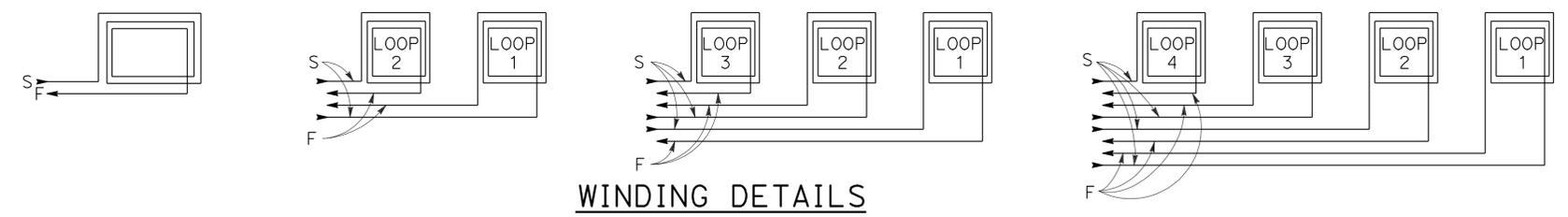
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## LOOP INSTALLATION PROCEDURE

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



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



## ELECTRICAL SYSTEMS (DETECTORS)

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

NO SCALE

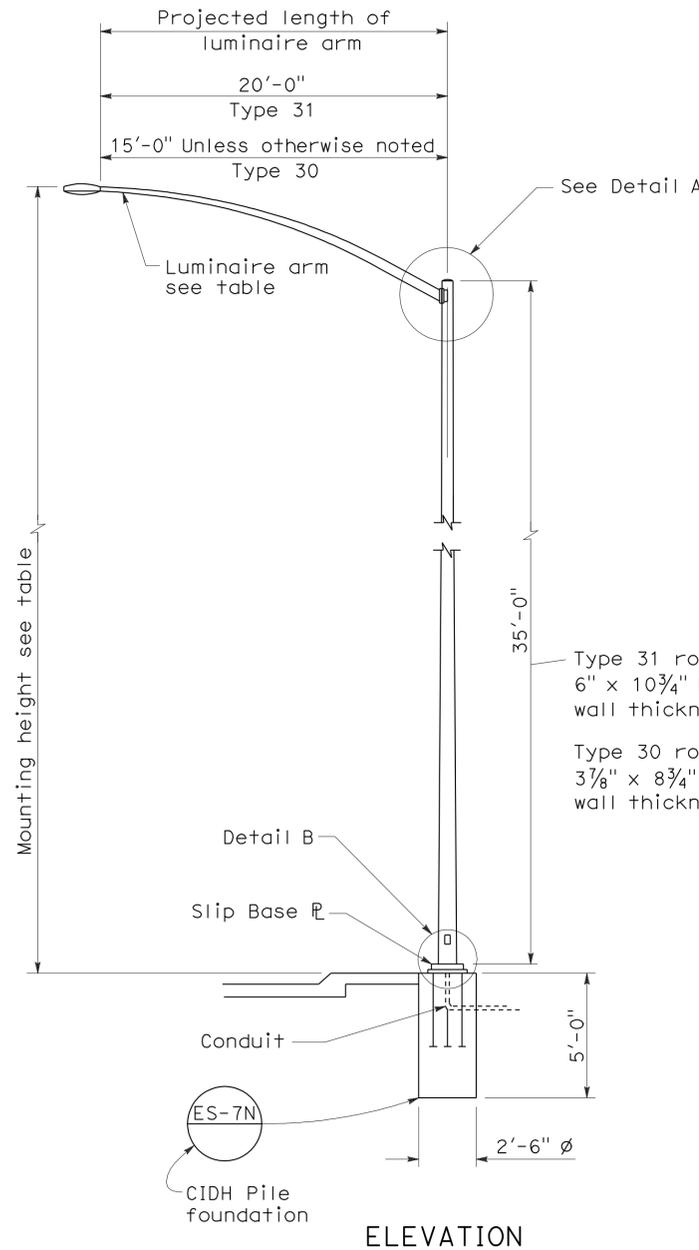
RSP ES-5A DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-5A DATED MAY 1, 2006 - PAGE 423 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP ES-5A

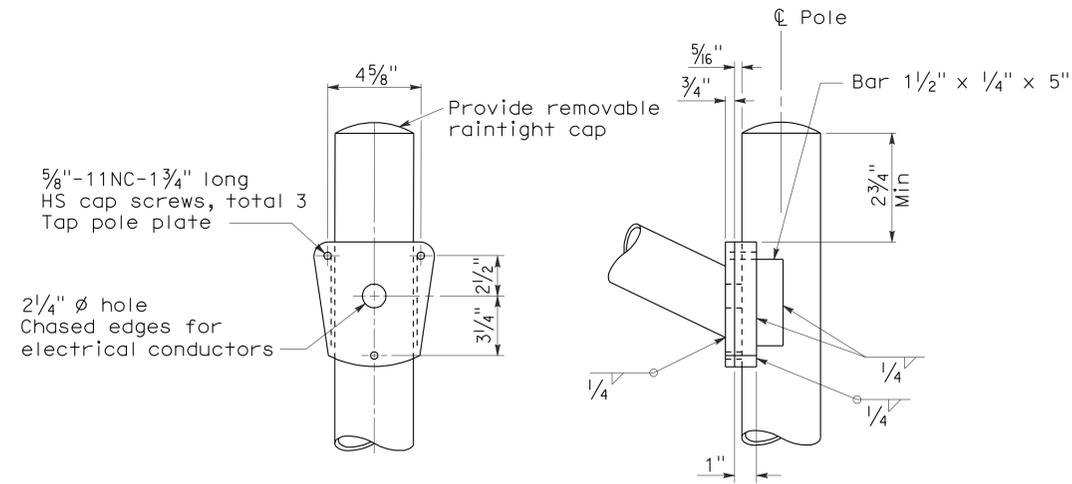
**LUMINAIRE ARM DATA**

PROJECTED LENGTH	THICKNESS	MINIMUM OD @ POLE	MOUNTING HEIGHT
* 6'-0"	0.1196"	3/4"	36'-9"±
8'-0"		3/2"	37'-3"±
10'-0"		3 3/4"	38'-0"±
12'-0"		3 3/4"	39'-0"±
15'-0"		4 1/4"	39'-6"±
** 20'-0"	0.1793"	5"	37'-0"±

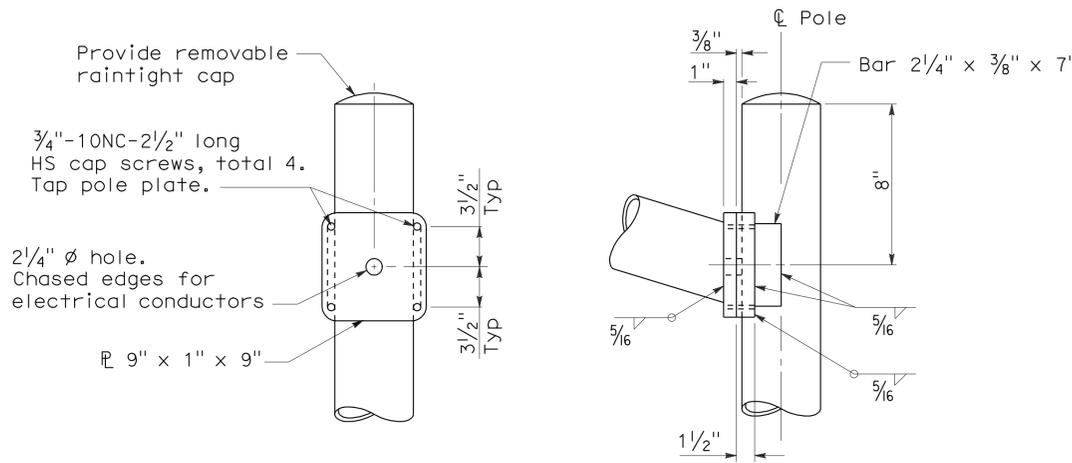
\* Type 30 - arm length 6'-0" - 15'-0" maximum  
 \*\* Type 31 - arm lengths 20'-0"



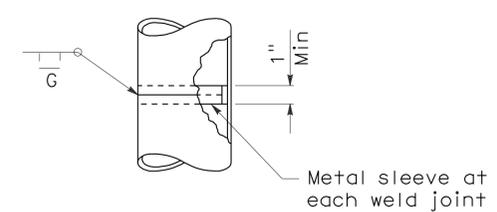
**ELEVATION**



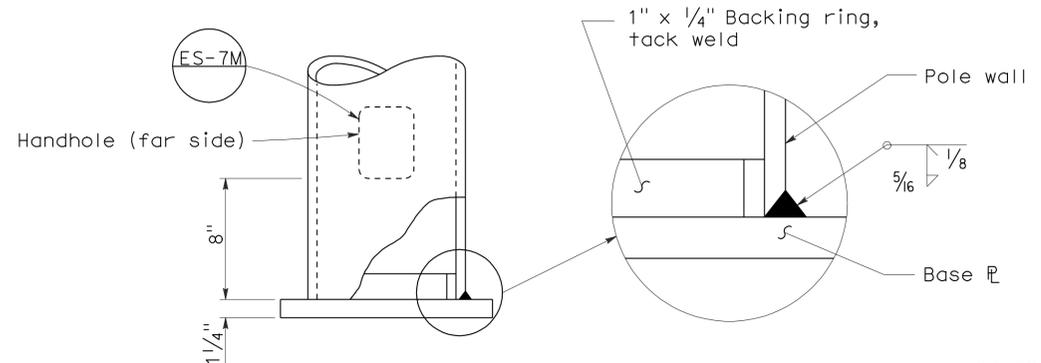
**DETAIL A - TYPE 30**



**DETAIL A - TYPE 31**



**POLE SPLICE**



**DETAIL B**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Kin	41	R42.1/R44.9	239	246

Stanley P. Johnson  
 REGISTERED CIVIL ENGINEER

January 18, 2008  
 PLANS APPROVAL DATE

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

To accompany plans dated 5-23-11

**NOTES:**

- Sheet steel shall have a minimum yield of 48,000 psi.
- For slip base details see Standard Plan ES-6F.
- For Type 30 fixed base use Type 15 base plate, and foundation shown on Revised Standard Plan RSP ES-6A. Use 1 1/4" Dia x 3'-6" x 4" anchor bolts.
- For Type 31 fixed base use Type 32 base plate, anchor bolts and foundation on Standard Plan ES-6G.
- Handhole shall be located on downstream side of traffic unless noted otherwise on plans.
- For additional general notes refer to Standard Plan ES-7M.

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS  
 (LIGHTING STANDARD  
 TYPES 30 AND 31)**

NO SCALE

RSP ES-6E DATED JANUARY 18, 2008 SUPERCEDES STANDARD PLAN ES-6E  
 DATED MAY 1, 2006 - PAGE 430 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP ES-6E**

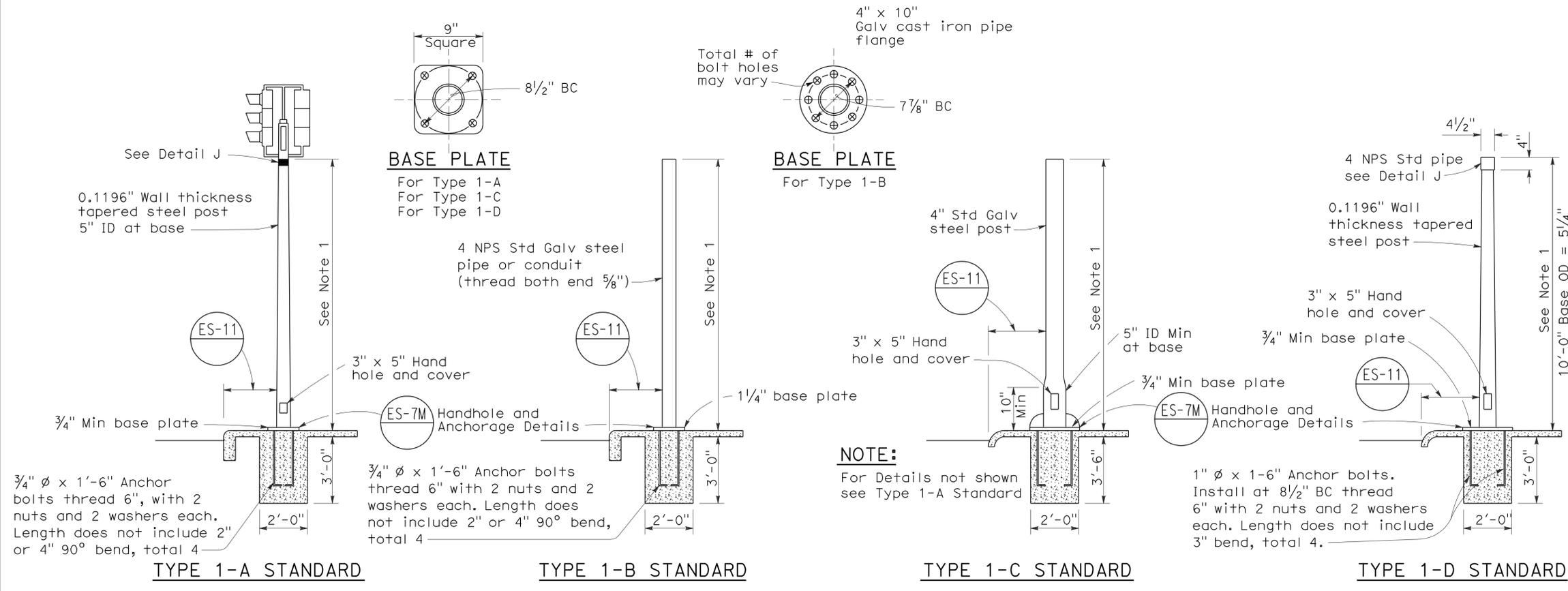
2006 REVISED STANDARD PLAN RSP ES-6E

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Kin	41	R42.1/R44.9	240	246

Stanley P. Johnson  
 REGISTERED CIVIL ENGINEER  
 October 5, 2007  
 PLANS APPROVAL DATE  
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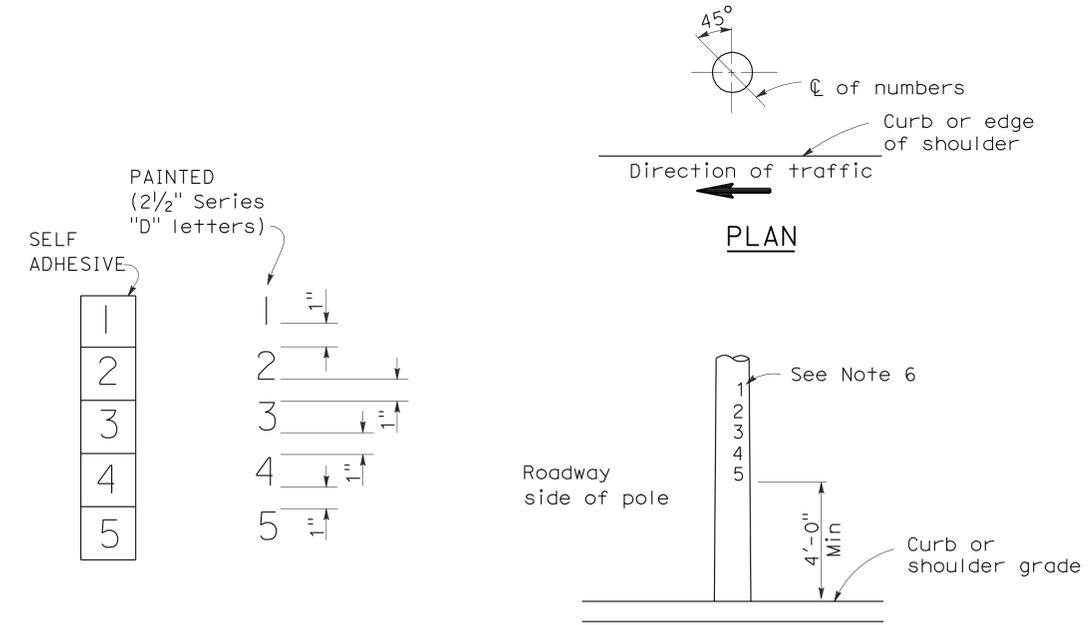
REGISTERED PROFESSIONAL ENGINEER  
 Stanley P. Johnson  
 No. C57793  
 Exp. 3-31-08  
 CIVIL  
 STATE OF CALIFORNIA

To accompany plans dated 5-23-11

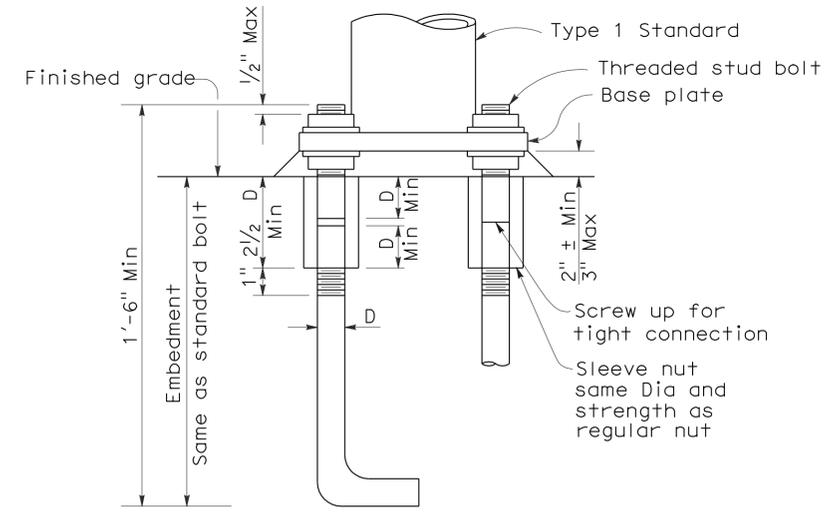


- NOTES:**
- Standards shall be 10'-0" ± 2" for vehicle signals and 7'-0" ± 2" for pedestrian signals unless otherwise noted on plans.
  - Top of standards shall be 4 1/2" OD.
  - Conduits shall extend 2" maximum above finished surface of foundation and for Types 1-A, 1-C and 1-D shall be sloped toward handhole.
  - Anchor bolts shall be bonded to conduit or grounding conductor.
  - Conduit between standard and adjacent pull box shall be 2" minimum.
  - Paint numbers on roadway side facing traffic when electrolier or post is left of direction of traffic.

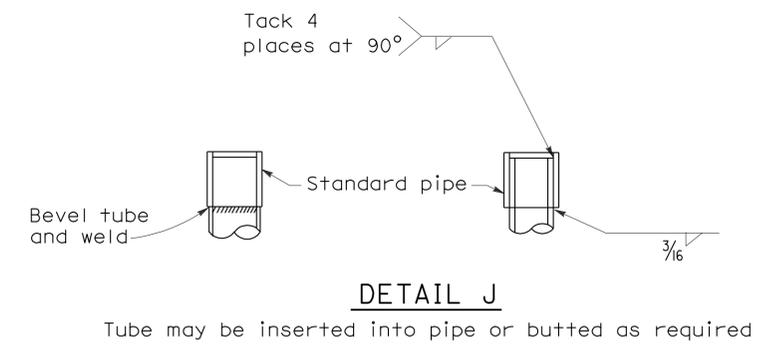
**TYPE 1 SIGNAL STANDARDS**



**LOCATION OF EQUIPMENT NUMBERS ON STANDARDS AND POSTS**



**ANCHOR BOLTS WITH SLEEVE NUTS**  
 Sleeve nuts to be used only when shown or specified on Project Plans  
 D = Diameter of anchor bolt



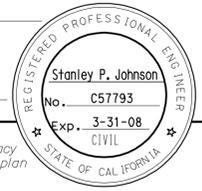
**ELECTRICAL SYSTEMS (SIGNAL AND LIGHTING STANDARD TYPE 1 STANDARD AND EQUIPMENT NUMBERING)**

NO SCALE

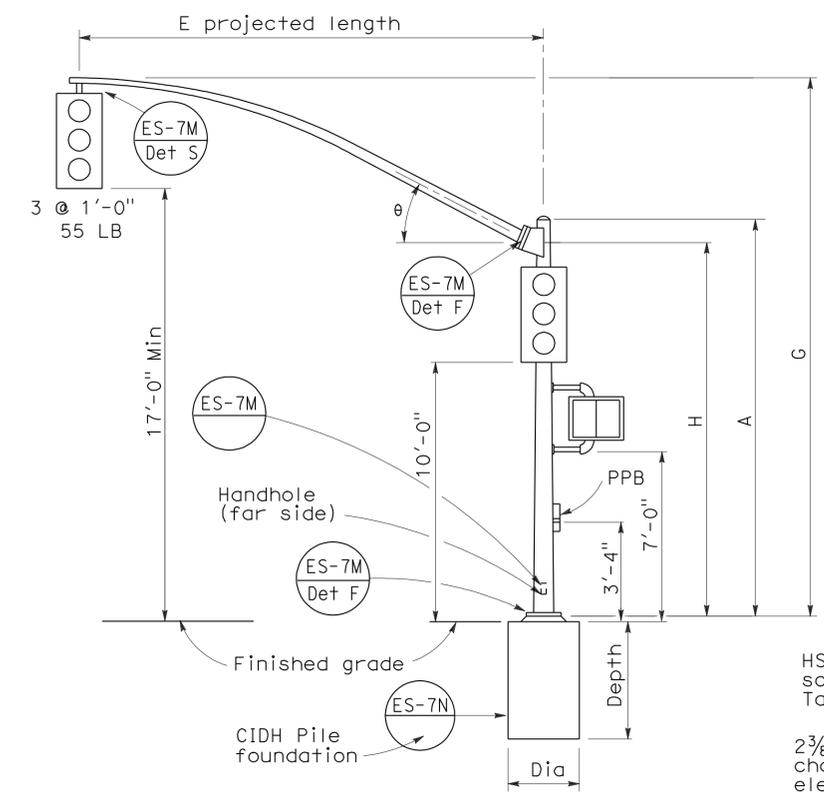
RSP ES-7B DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-7B DATED MAY 1, 2006 - PAGE 438 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP ES-7B**

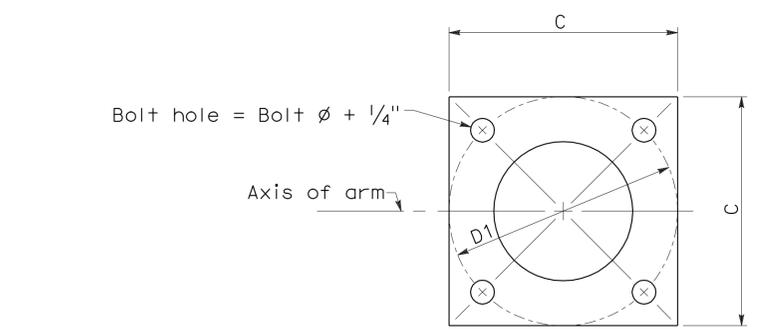
2006 REVISED STANDARD PLAN RSP ES-7B



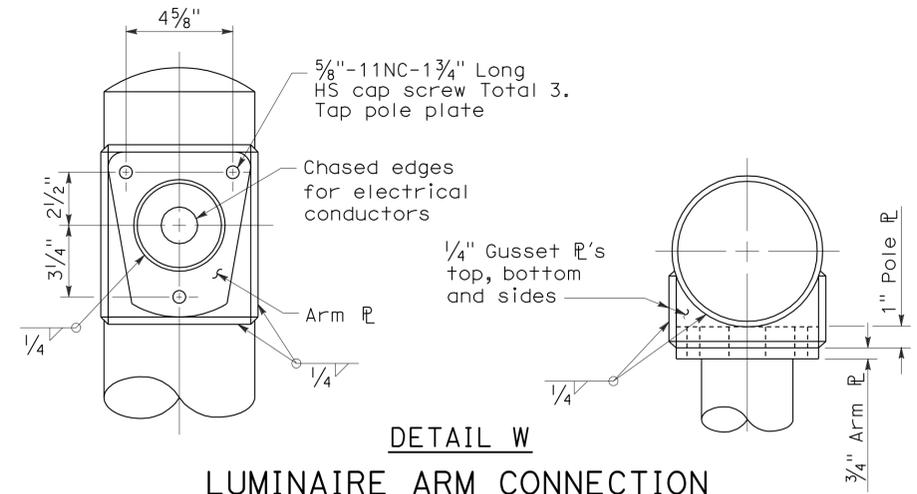
To accompany plans dated 5-23-11



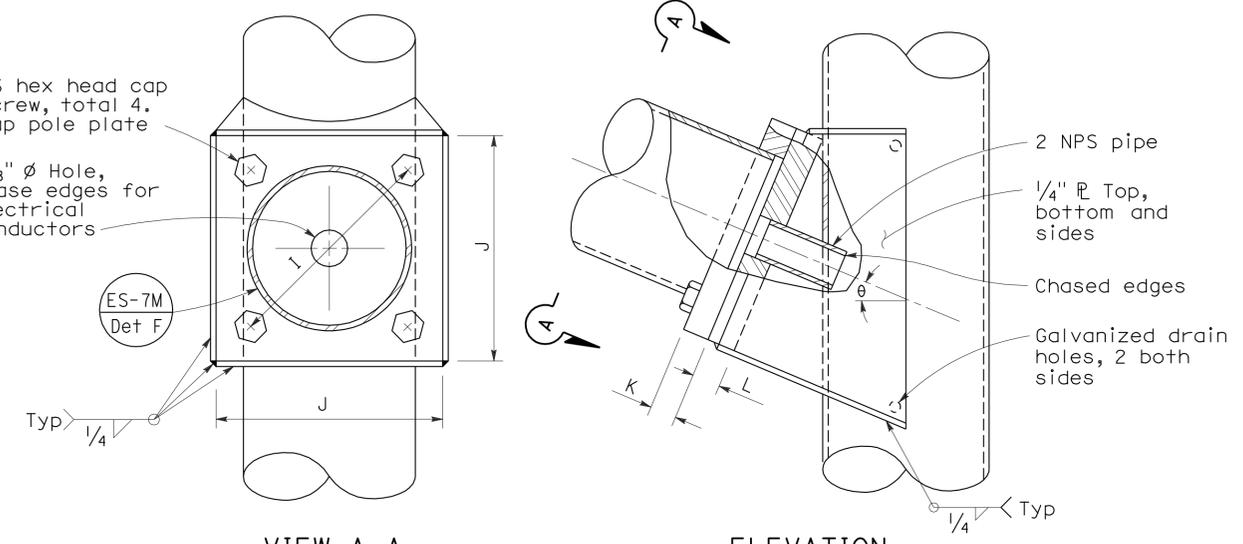
**ELEVATION**  
TYPE 16-1-100, 18-1-100



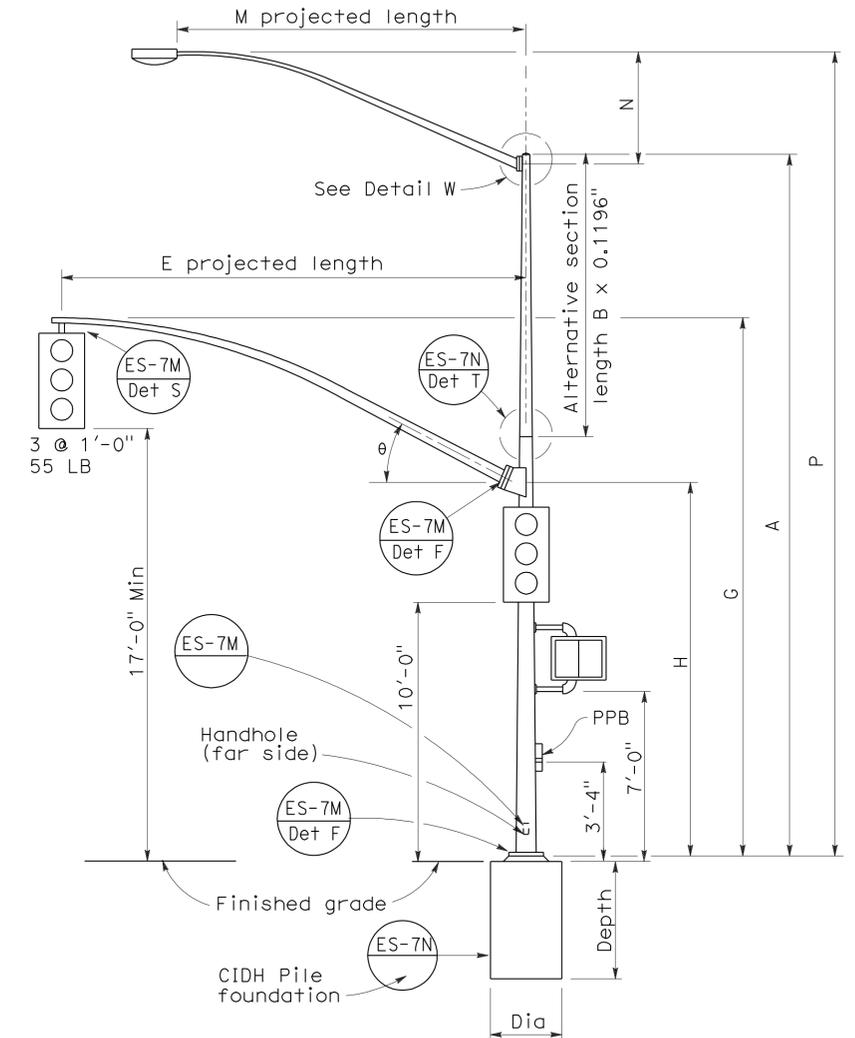
**BASE PLATE**



**DETAIL W**  
LUMINAIRE ARM CONNECTION



**VIEW A-A**  
SIGNAL ARM CONNECTION DETAILS



**ELEVATION**  
TYPE 19-1-100, 19A-1-100

E Projected Length	G Mounting Height	H	Min OD At Pole	Thickness	I Bolt Circle	HS Cap Screws	J Plate size	K Arm ø Thickness	L Pole ø Thickness	θ
15'-0"	21'-8"±	17'-6"	7"	0.1196"	12"	1 1/4"-7NC-3"	1'-0"	1 1/4"	1 1/2"	23°
20'-0"	21'-8"±	7 7/8"								
25'-0"	22'-8"±	7 5/8"								
30'-0"	23'-0"±	8"								

M Projected Length	N Rise	Min OD at Pole	Thickness	P Mounting Height	
				30'-0" Pole	35'-0" Pole
6'-0"	2'-0"±	3 1/4"	0.1196"	31'-6"±	36'-6"±
8'-0"	2'-6"±	3 1/2"		32'-0"±	37'-0"±
10'-0"	3'-3"±	3 3/8"		32'-9"±	37'-9"±
12'-0"	4'-3"±	3 7/8"		33'-9"±	38'-9"±
15'-0"	4'-9"±	4 1/4"		34'-3"±	39'-3"±

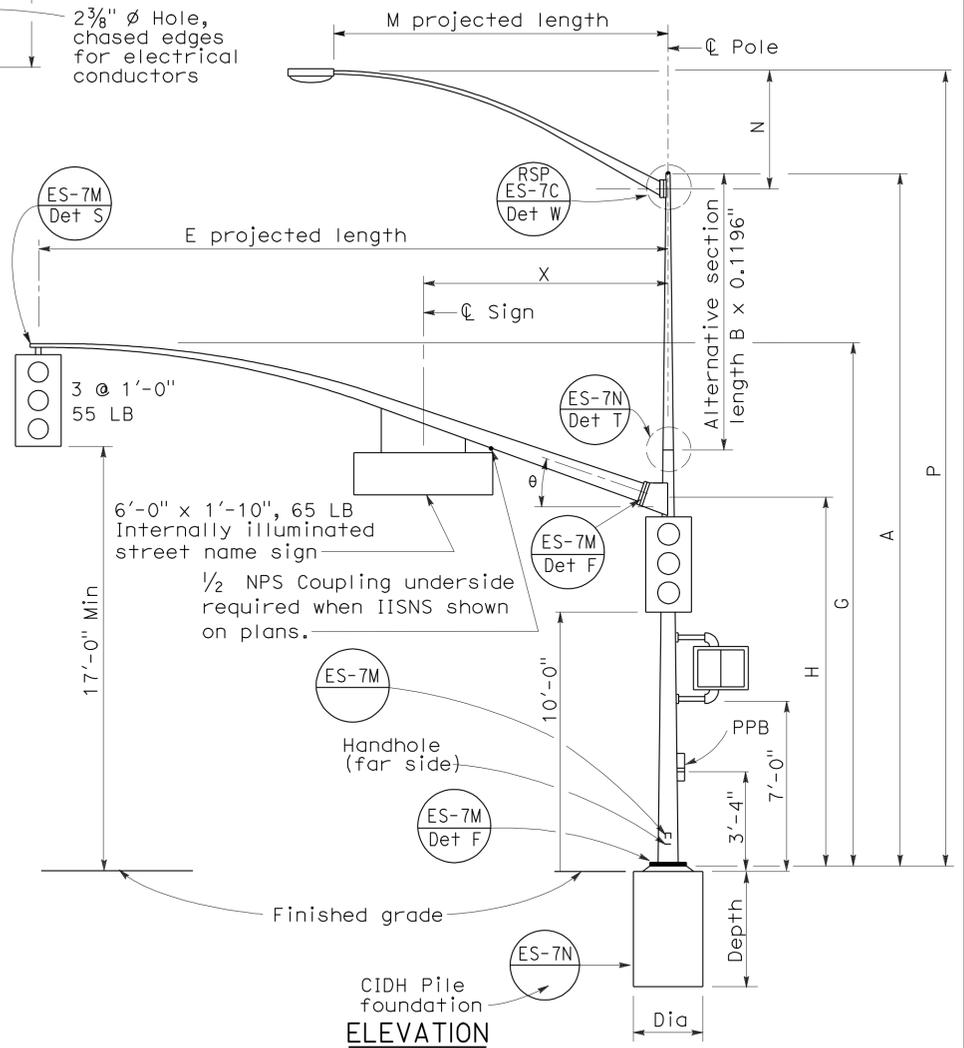
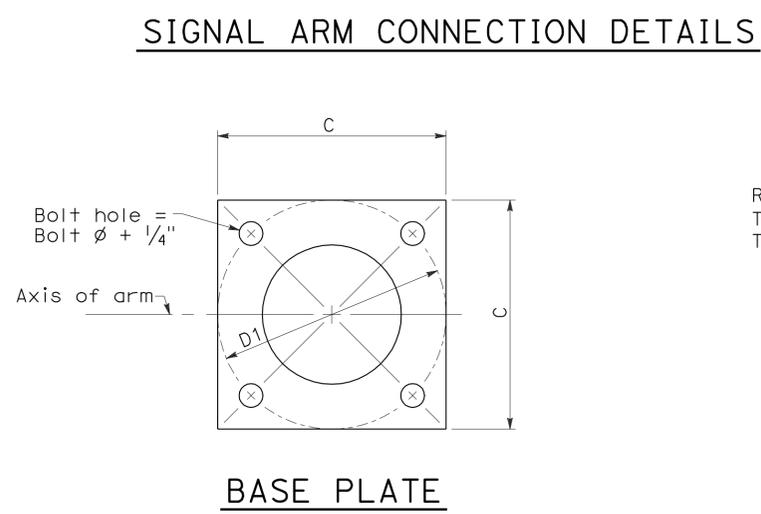
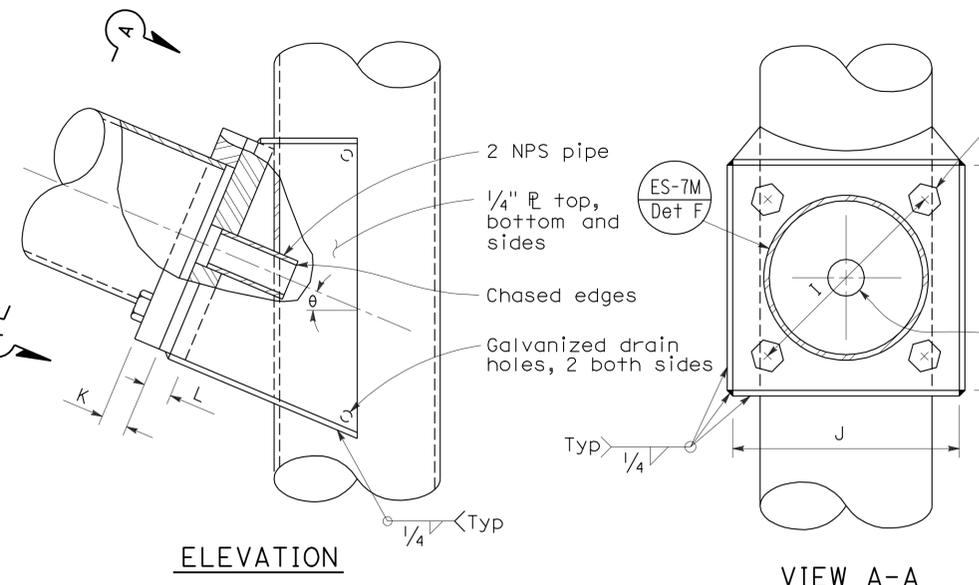
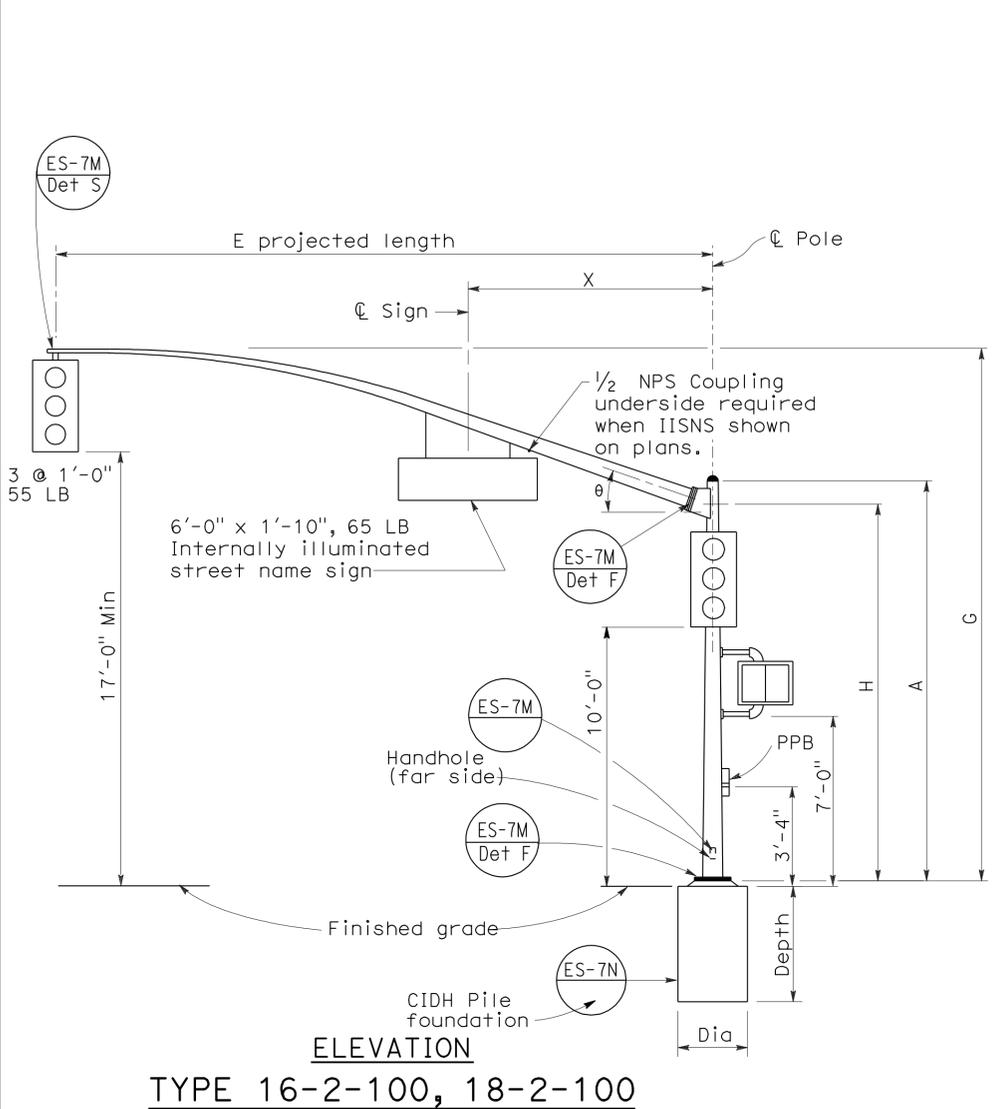
Pole Type	Load Case	Wind Velocity mph	POLE DATA					BASE PLATE DATA					CIDH PILE FOUNDATION						
			A Height	Min OD		Thickness	Alternative Section			C	D1 Bolt Circle	Thickness	Anchor Bolts		Luminaire Arm	Signal Arm	Diameter	Depth	Reinforced
				Base	Top		B Length	Bottom	Top				Size						
16-1-100	1	100	18'-6"	8 1/4"	0.1793"	None			1'-6"	1'-5 1/2"	1 1/4"	1 1/2" ø x 42" x 6"		None	15'-0"	2'-6"	7'-2"	Yes	
18-1-100			17'-0"	8 7/16"		None								None	20'-0"				
19-1-100			30'-0"	6 5/8"		10'-0"	8"	6 5/8"						6'-15' [12'-0"]	25'-0"				
19A-1-100			35'-0"	5 1/16"		15'-0"	5 1/16"	6'-15' [15'-0"]						30'-0"					

□ Indicates arm length to be used unless otherwise noted on plans.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS**  
**(SIGNAL AND LIGHTING STANDARD**  
**CASE 1 ARM LOADING**  
**WIND VELOCITY = 100 MPH**  
**ARM LENGTHS 15' TO 30')**

NO SCALE  
RSP ES-7C DATED JUNE 15, 2007 SUPERSEDES STANDARD PLAN ES-7C  
DATED MAY 1, 2006 - PAGE 439 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP ES-7C



E Projected Length	G Mounting Height	H	Min OD At Pole	Thickness	I Bolt Circle	HS Cap Screws	J Plate Size	K Arm R Thickness	L Pole R Thickness	θ	X Max
15'-0"	21'-8"±	17'-6"	6 5/8"	0.1793"	12"	1 1/4"-7NC-3"	1'-0"	1 1/4"	1 1/2"	23°	10'-6"
20'-0"	21'-8"±	17'-0"	6 5/8"								
25'-0"	22'-8"±	16'-0"	7 5/16"	0.1793"	12"	1 1/4"-7NC-3"	1'-0"	1 1/4"	1 1/2"	23°	10'-6"
30'-0"	23'-0"±		8"								

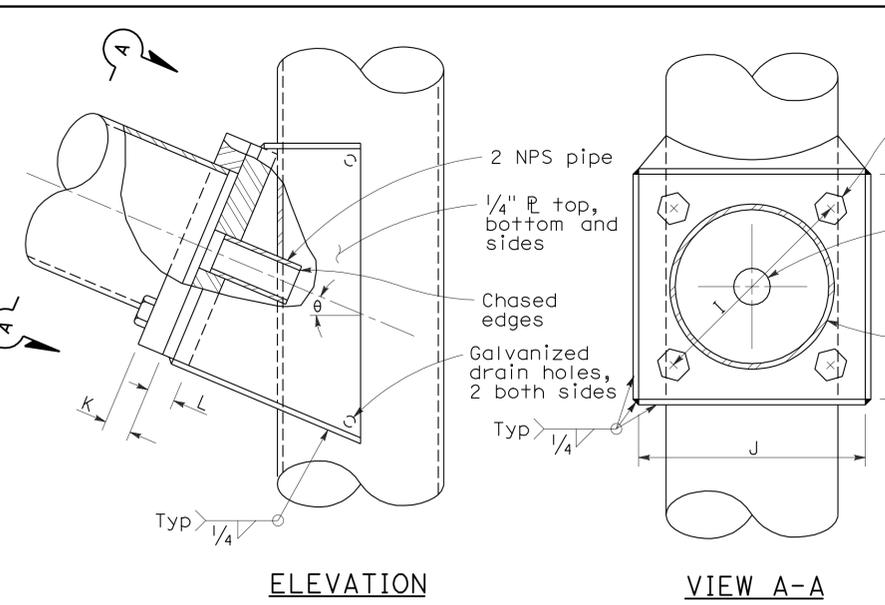
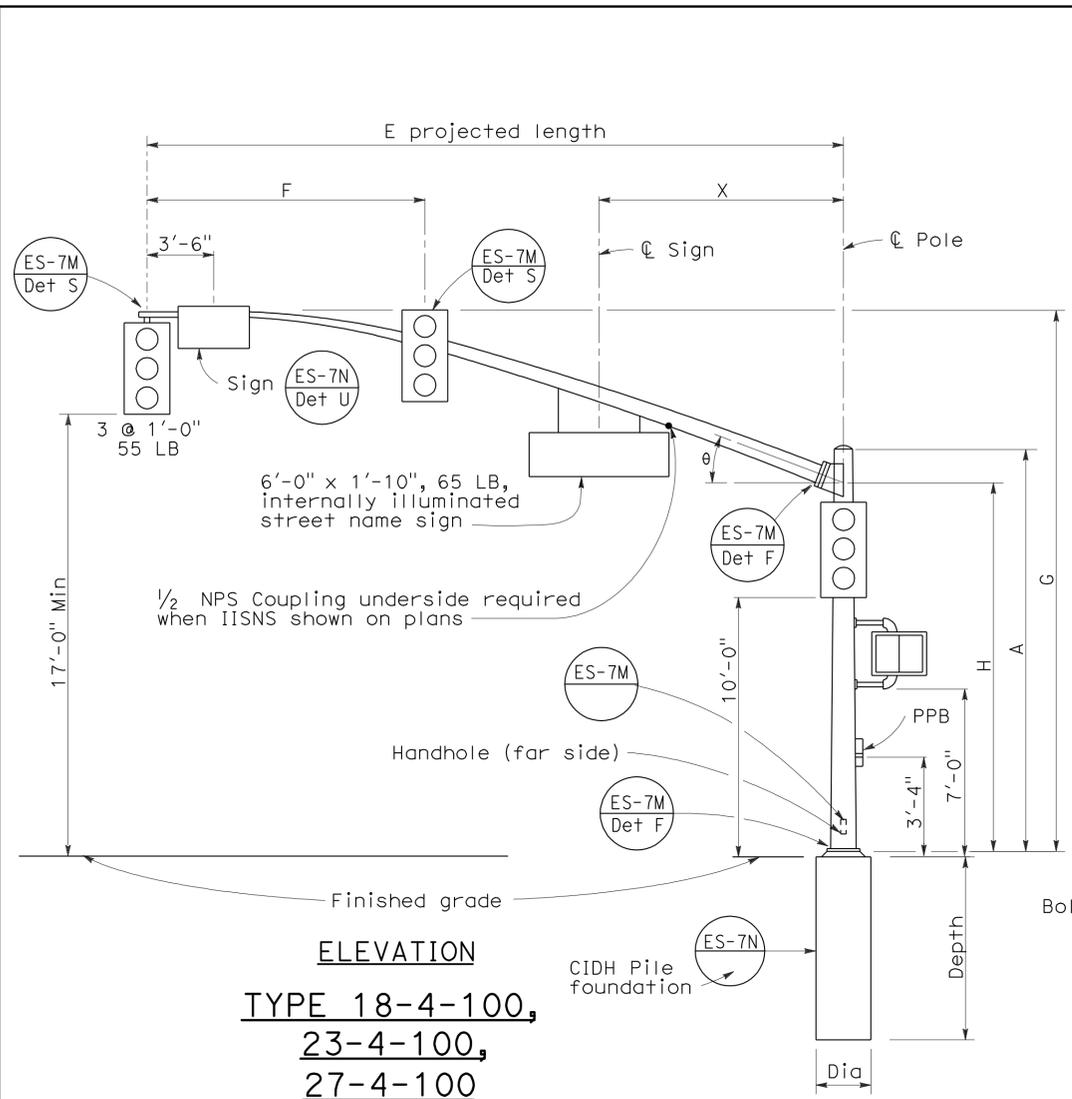
M Projected Length	N Rise	Min OD at Pole	Thickness	P Mounting Height
6'-0"	2'-0"±	3/4"	0.1196"	30'-0" Pole
8'-0"	2'-6"±	3/2"		31'-6"± Pole
10'-0"	3'-3"±	3 7/8"	0.1196"	32'-0"± Pole
12'-0"	4'-3"±	4'-3"±		32'-9"± Pole
15'-0"	4'-9"±	4 1/4"	0.1196"	33'-9"± Pole
				34'-3"± Pole

Pole Type	Load Case	Wind Velocity mph	POLE DATA				BASE PLATE DATA				Anchor Bolts Size	Luminaire Arm	Signal Arm	CIDH PILE FOUNDATION				
			A Height	Min OD		Thickness	Alternative Section		C	D1 Bolt Circle				Thickness	Diameter	Depth	Reinforced	
				Base	Top		B Length	Bottom										Top
16-2-100	2	100	18'-6"	10 3/4"	0.1793"	None	8"	6 5/8"	1'-6"	1'-5 1/2"	1 1/2"	2"φ x 42" x 6"	None	15'-0", 20'-0"	2'-6"	7'-2"	Yes	
17-2-100			30'-0"			10'-0"												6 5/8"
17A-2-100			35'-0"			15'-0"												5 15/16"
18-2-100			17'-0"			None												8 7/16"
19-2-100			30'-0"			10'-0"												6 5/8"
19A-2-100			35'-0"			15'-0"												5 15/16"

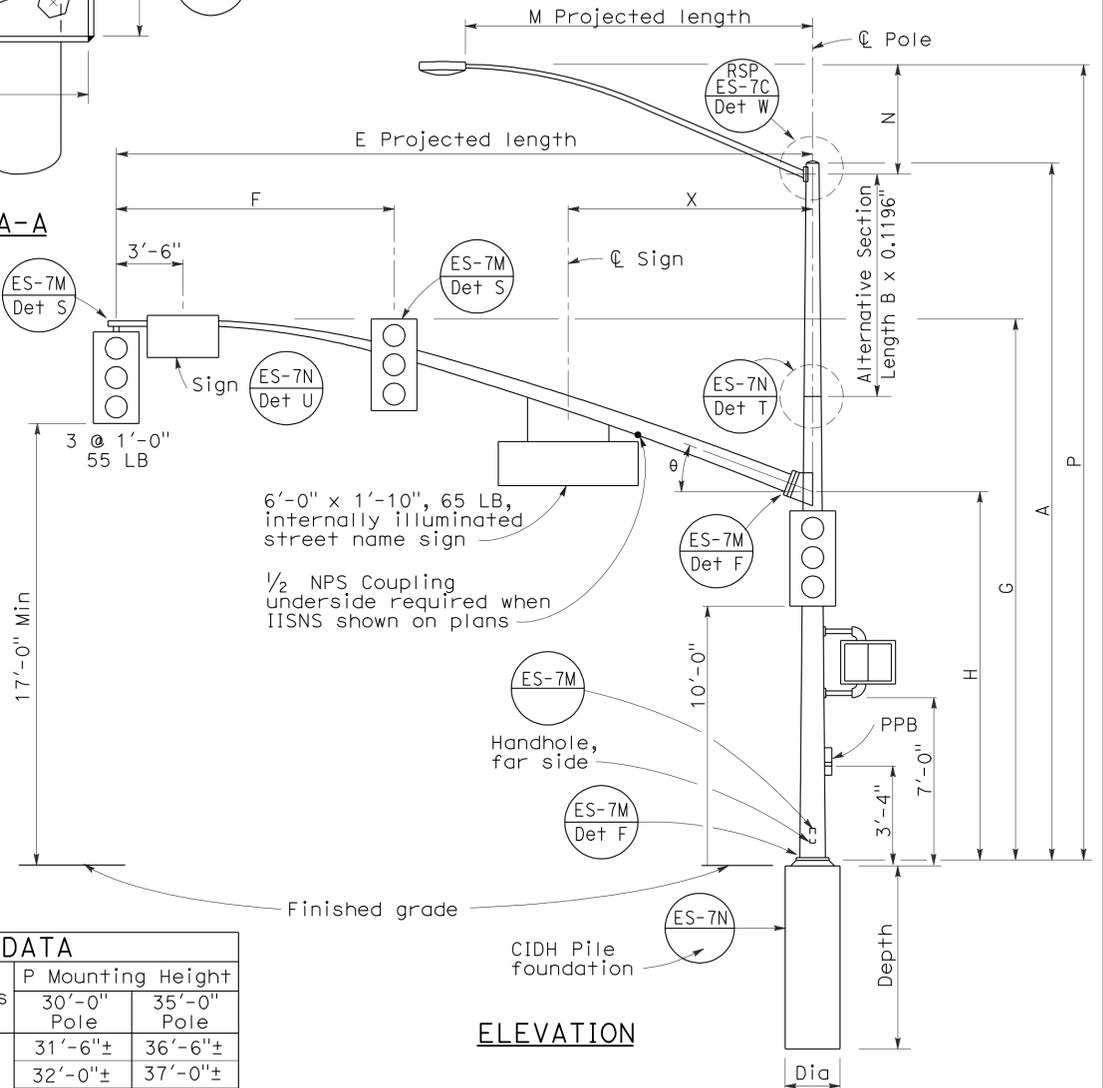
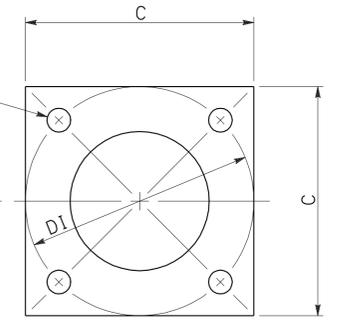
□ Indicates arm length to be used unless otherwise noted on plans.

TYPE 17-2-100, 17A-2-100, 19-2-100, 19A-2-100  
 STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
 (SIGNAL AND LIGHTING STANDARD  
 CASE 2 ARM LOADING  
 WIND VELOCITY=100 MPH  
 ARM LENGTHS 15' TO 30')**  
 NO SCALE  
 RSP ES-7D DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-7D  
 DATED MAY 1, 2006 - PAGE 440 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP ES-7D



**SIGNAL ARM CONNECTION DETAILS**



**ELEVATION**

SIGNAL ARM DATA												
E Projected Length	F Min Spacing	G Mounting Height	H	Min OD at Pole	Thickness	I Bolt Circle	HS Cap Screws	J Plate Size	K Arm P Thickness	L Pole P Thickness	θ	X Max
25'-0"	10'-0"	22'-8"±	16'-0"	7 5/16"	0.2391"	12"	1 1/4"-7NC-3"	1'-0"	1 1/4"	1 1/2"	23°	10'-6"
30'-0"	12'-0"	23'-0"±		8"								
35'-0"	14'-0"	23'-0"±		8 1/16"								
40'-0"	15'-0"	23'-0"±		9 3/8"								
45'-0"	15'-0"	23'-8"±		10 1/4"								
						13 1/2"		1'-1 1/2"	1 1/2"	1 3/4"	21°	
											15°	13'-0"

LUMINAIRE ARM DATA					
M Projected Length	N Rise	Min OD at Pole	Thickness	P Mounting Height	
				30'-0" Pole	35'-0" Pole
6'-0"	2'-0"±	3 1/4"	0.1196"	31'-6"±	36'-6"±
8'-0"	2'-6"±	3 1/2"		32'-0"±	37'-0"±
10'-0"	3'-3"±	3 7/8"		32'-9"±	37'-9"±
12'-0"	4'-3"±			33'-9"±	38'-9"±
15'-0"	4'-9"±	4 1/4"		34'-3"±	39'-3"±

Pole Type	Load Case	Wind Velocity mph	POLE DATA						BASE PLATE DATA				Luminaire Arm	Signal Arm	CIDH PILE FOUNDATION				
			A Height	Min OD		Thickness	Alternative Section			C	DI Bolt Circle	Thickness			Anchor Bolts Size	Dia	Depth	Reinforced	
				Base	Top		B Length	Bottom	Top										
18-4-100	4	100	17'-0"	12"	0.2391"	None	9 3/8"	8"	1'-6"	1'-6"	1 1/2"	2" Ø x 42" x 6"	None	25'-0", 30'-0"	3'-0"	9'-0"	Yes		
19-4-100			30'-0"			8"												None	8"
19A-4-100			35'-0"			7 5/16"												15'-0"	7 5/16"
23-4-100			17'-0"			9"												None	
24-4-100			30'-0"			8"												10'-0"	8"
24A-4-100			35'-0"	7 5/16"	15'-0"	7 5/16"													
26-4-100			30'-0"	8"	10'-0"	8 3/8"													
26A-4-100			35'-0"	7 5/16"	15'-0"	9 3/4"	7 1/16"												
27-4-100			17'-0"	9 3/4"	None														

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

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

RSP ES-7F DATED OCTOBER 5, 2007 SUPERCEDES RSP ES-7F DATED NOVEMBER 17, 2006 AND STANDARD PLAN ES-7F DATED MAY 1, 2006 - PAGE 442 OF THE STANDARD PLANS BOOK DATED MAY 2006.

□ Indicates arm length to be used unless otherwise noted on plans.

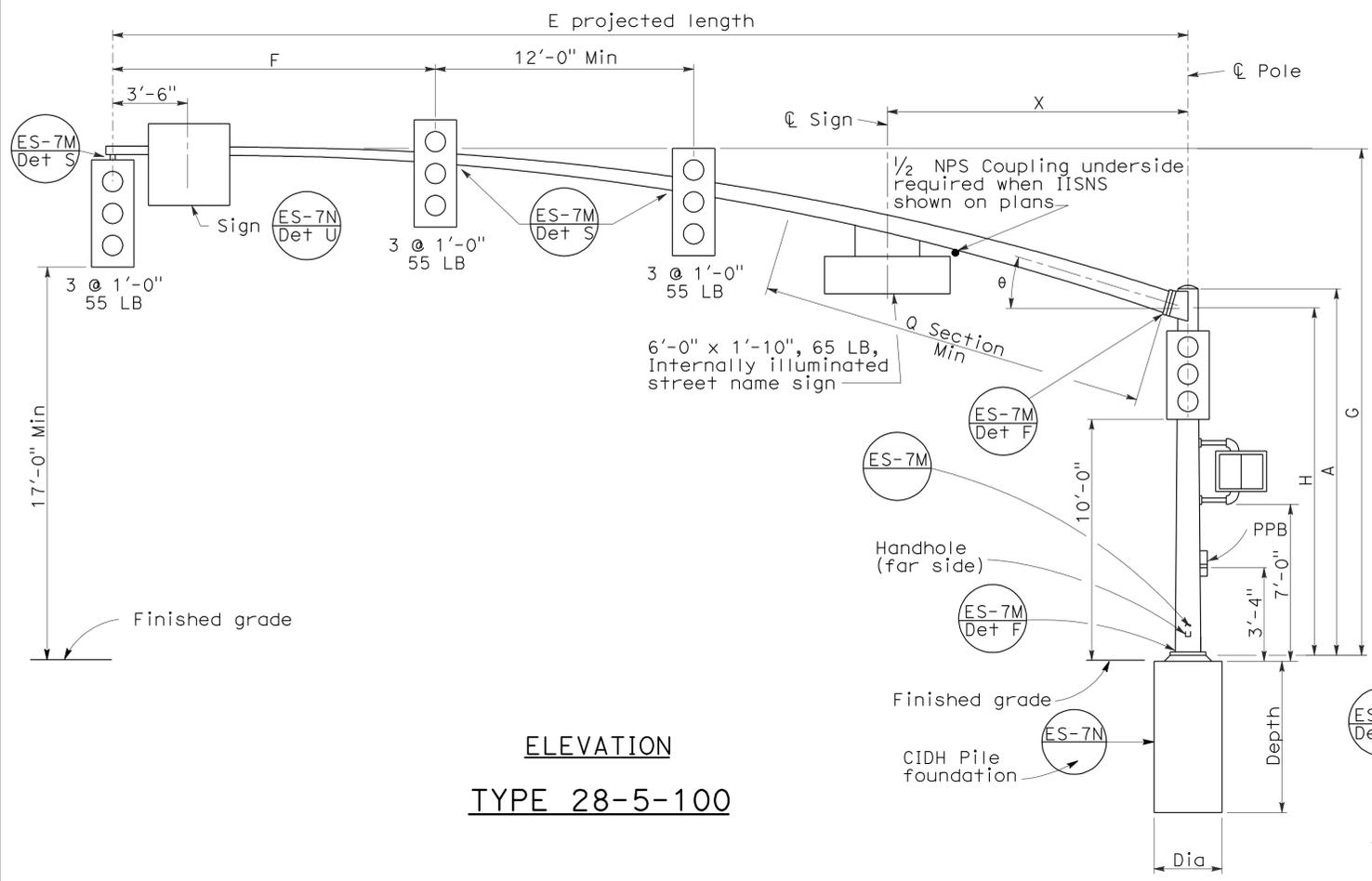
**REVISED STANDARD PLAN RSP ES-7F**

2006 REVISED STANDARD PLAN RSP ES-7F

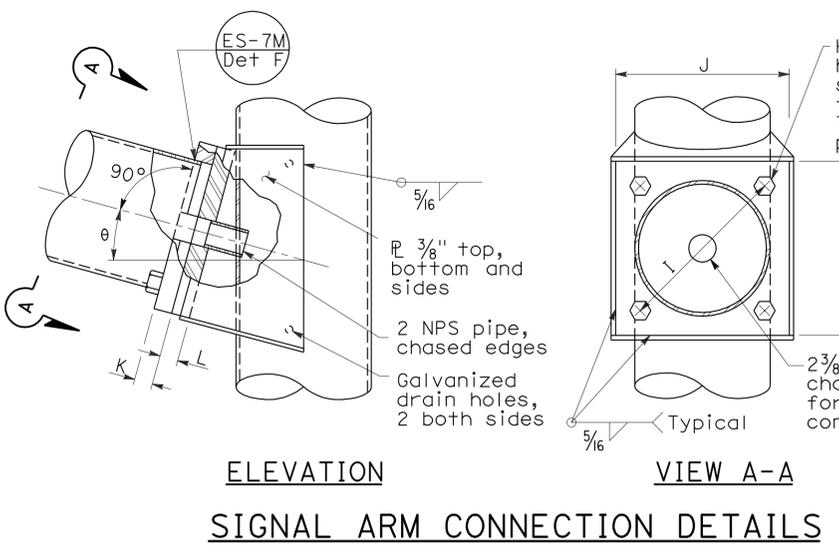
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Kin	41	R42.1/R44.9	244	246

Stanley P. Johnson  
 REGISTERED CIVIL ENGINEER  
 November 17, 2006  
 PLANS APPROVAL DATE  
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 To accompany plans dated 5-23-11

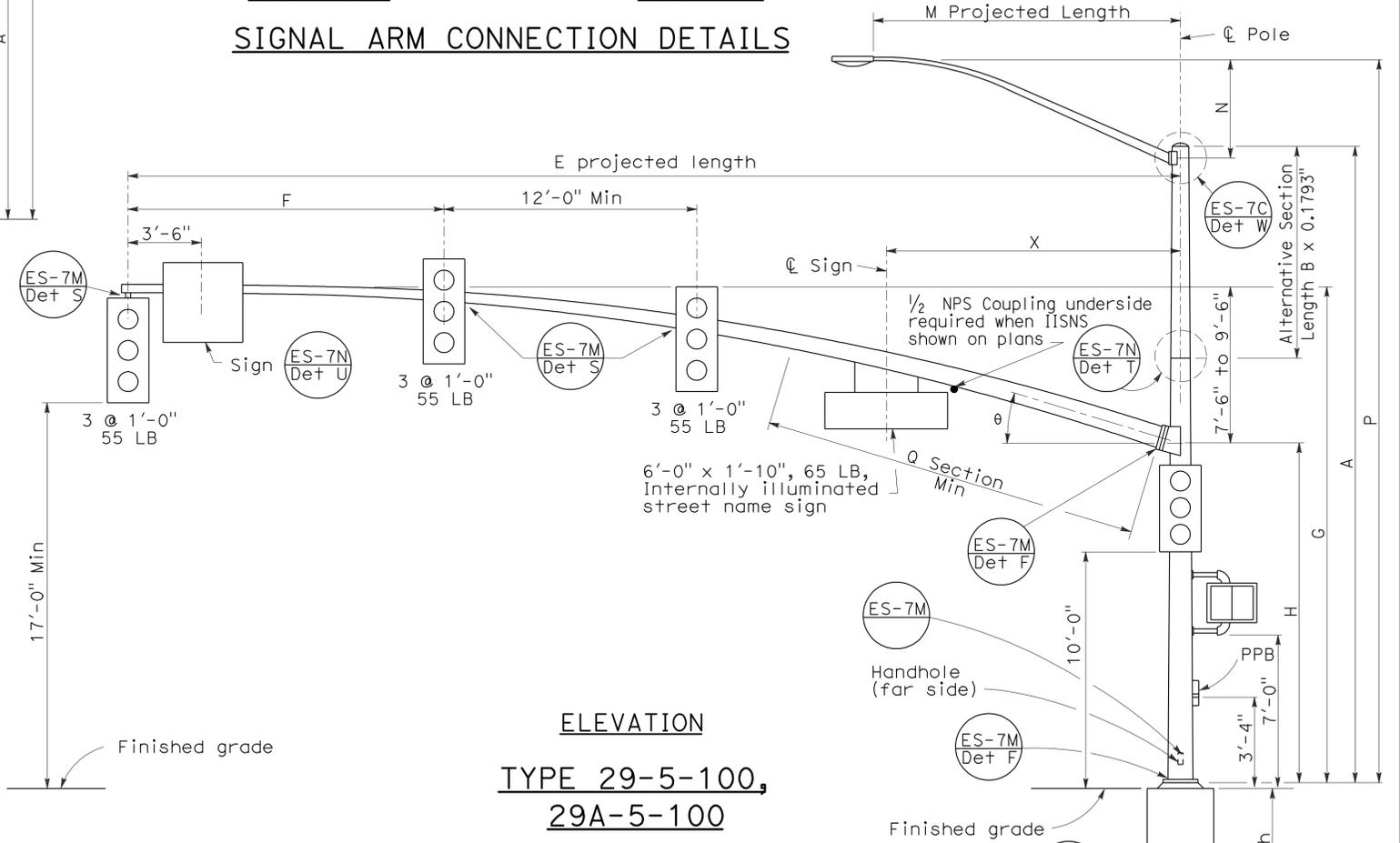
REGISTERED PROFESSIONAL ENGINEER  
 Stanley P. Johnson  
 No. C57793  
 Exp. 03-31-08  
 CIVIL  
 STATE OF CALIFORNIA



**ELEVATION**  
**TYPE 28-5-100**

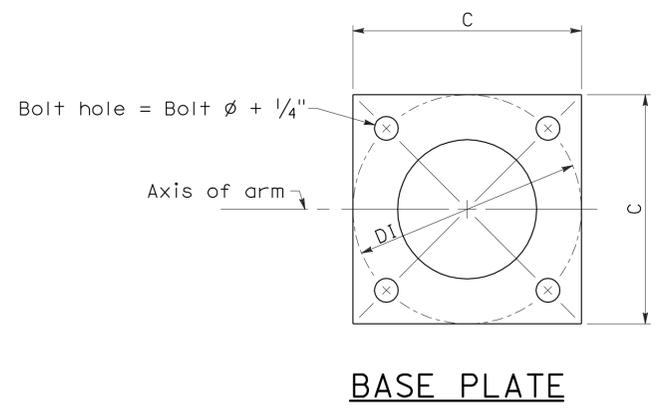


**ELEVATION**  
**VIEW A-A**  
**SIGNAL ARM CONNECTION DETAILS**



**ELEVATION**  
**TYPE 29-5-100,**  
**29A-5-100**

M Projected Length	N Rise	Min OD at Pole	Thickness	P Mounting Height
6'-0"	2'-0"±	3 1/4"	0.1196"	30'-0" Pole
8'-0"	2'-6"±	3 1/2"		31'-6"± Pole
10'-0"	3'-3"±	3 7/8"		32'-0"± Pole
12'-0"	4'-3"±	4 1/4"		32'-9"± Pole
15'-0"	4'-9"±	4 1/4"		33'-9"± Pole



**BASE PLATE**

E Projected Length	F Min Spacing	G Mounting Height	H	Min OD at Pole	Thickness	I Bolt Circle	HS Cap Screws	J Plate Size	K Arm Plate Thickness	L Pole Plate Thickness	θ	Q Section		X Max
												Length	Thickness	
50'-0" 55'-0"	15'-0"	23'-7"± to 25'-7"±	16'-0"	11 11/16" 1'-1/4"	0.1793"	16"	1 1/2"-6NC-3 1/4"	1'-4"	1 3/4"	1 3/4"	15°	18'-0" 23'-0"	0.2391"	14'-0"

Pole Type	Load Case	Wind Velocity mph	POLE DATA				BASE PLATE DATA				Luminaire Arm	Signal Arm	CIDH PILE FOUNDATION					
			A Height	Min OD		Thickness	C	DI Bolt Circle	Thickness	Anchor Bolts Size			Dia	Depth	Reinforced			
				Base	Top											Alternative Section B Length	Bottom	Top
28-5-100	5	100	17'-0"	14"	11 11/16"	21"	21"	1 3/4"	2" ø x 42" x 6"	None	6'-15' 15'-0"	50'-0", 55'-0"	3'-0"	9'-2"	Yes			
29-5-100			30'-0"		9 7/8"											10'-0"	11 1/4"	9 7/8"
29A-5-100			35'-0"		9 3/16"											15'-0"	9 3/16"	23"

□ Indicates arm length to be used unless otherwise noted on plans.

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS**  
**(SIGNAL AND LIGHTING STANDARD**  
**CASE 5 ARM LOADING**  
**WIND VELOCITY=100 MPH,**  
**ARM LENGTHS 50' TO 55')**  
 NO SCALE

RSP ES-7G DATED NOVEMBER 17, 2006 SUPERSEDES STANDARD PLAN ES-7G  
 DATED MAY 1, 2006 - PAGE 443 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP ES-7G**

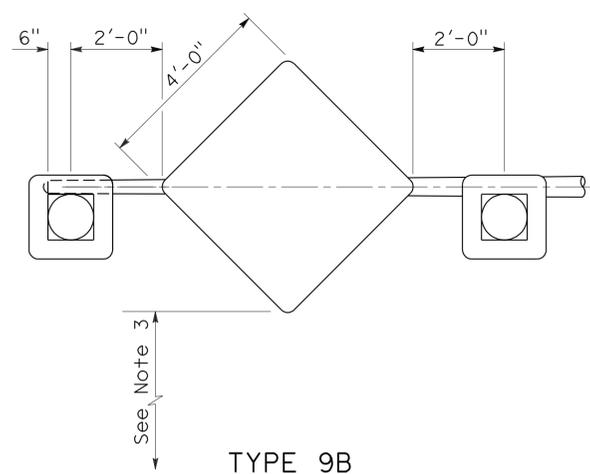
2006 REVISED STANDARD PLAN RSP ES-7G

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Kin	41	R42.1/R44.9	245	246

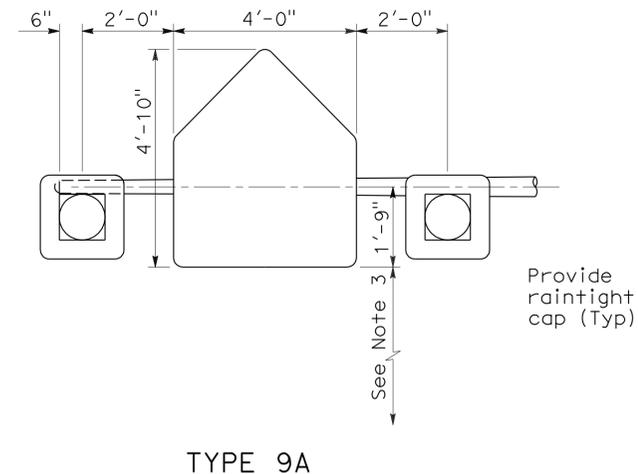
Stanley P. Johnson  
 REGISTERED CIVIL ENGINEER  
 No. C57793  
 Exp. 3-31-08  
 CIVIL  
 STATE OF CALIFORNIA

October 5, 2007  
 PLANS APPROVAL DATE

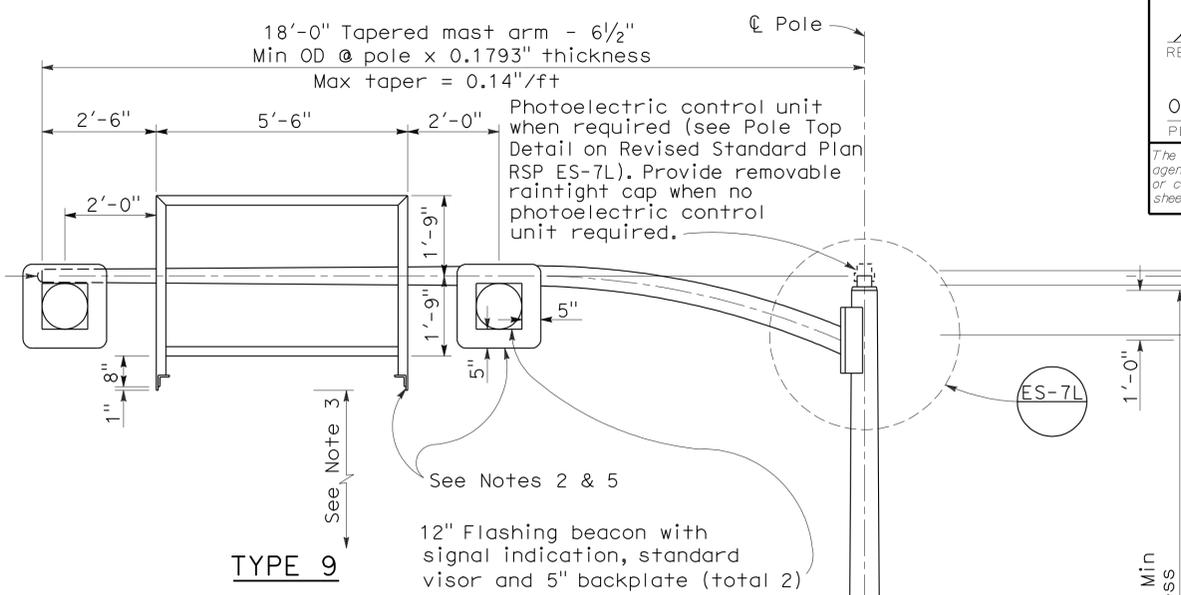
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



**TYPE 9B**



**TYPE 9A**

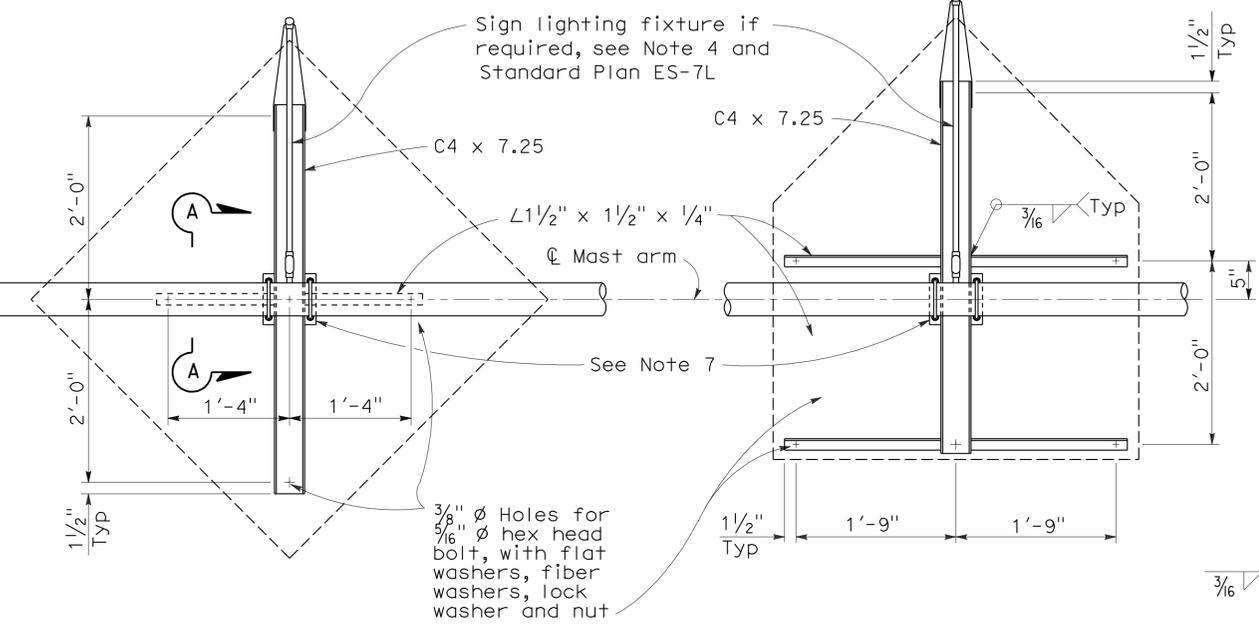


**TYPE 9**

To accompany plans dated 5-23-11

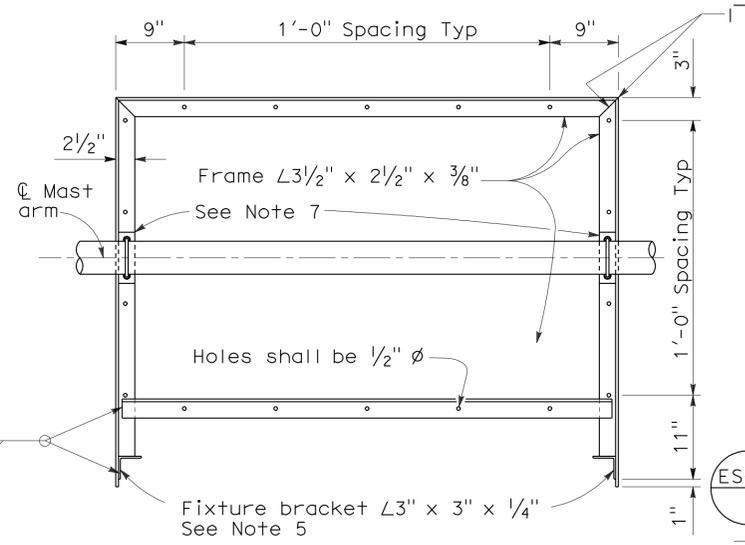
**NOTES:**

- Splices between fluorescent fixture sockets shall be waterproof.
- Install flashing beacons and sign frame. Flashing beacons shall be MAT mounted on pipe tenon. (See Standard Plan ES-7M, Detail S).
- Vertical clearance to be 17'-0" minimum between roadway and bottom of signal panel or lighting fixture bracket.
- Special provisions or plans will indicate when sign lighting fixture is required on Type 9A or 9B sign frames.
- Type 9 sign frames shall be provided with a 3'-0" fluorescent fixture. For fluorescent lighting details see Standard Plan ES-15B.
- Anchor bolts shall be ASTM A-307.
- See Revised Standard Plan RSP ES-7L for sign frame mounting details.



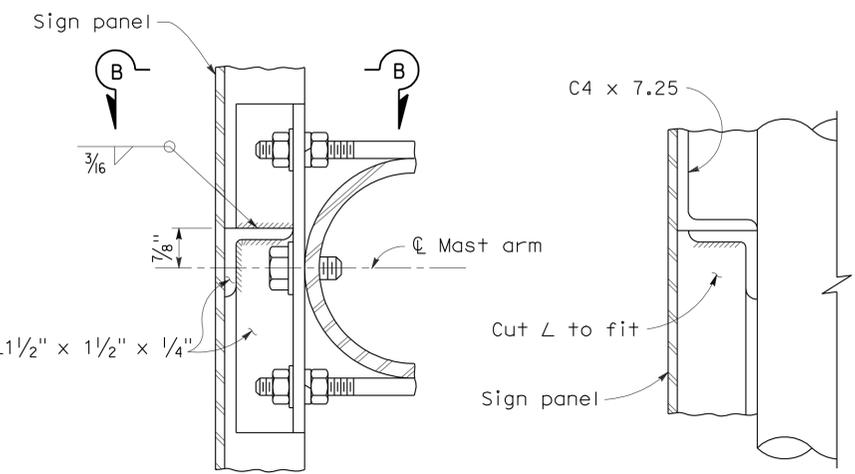
**TYPE 9B**

**TYPE 9A**



**TYPE 9**

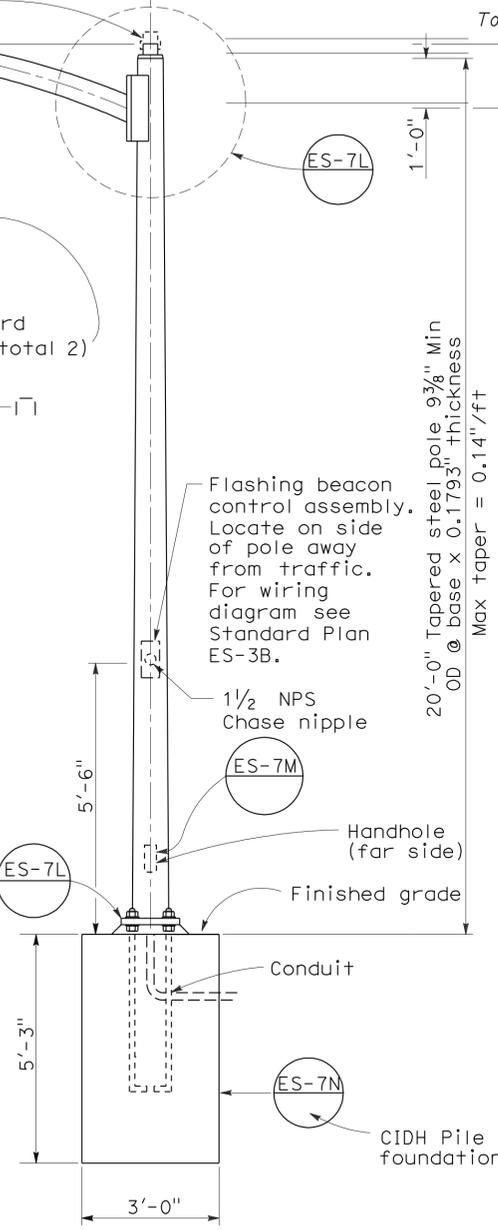
**FRAME DETAILS**



**SECTION A-A**

**SECTION B-B**

**TYPE 9B**



**ELEVATION**

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
 (SIGNAL AND LIGHTING STANDARD  
 CANTILEVER FLASHING BEACON  
 TYPES 9, 9A AND 9B)**

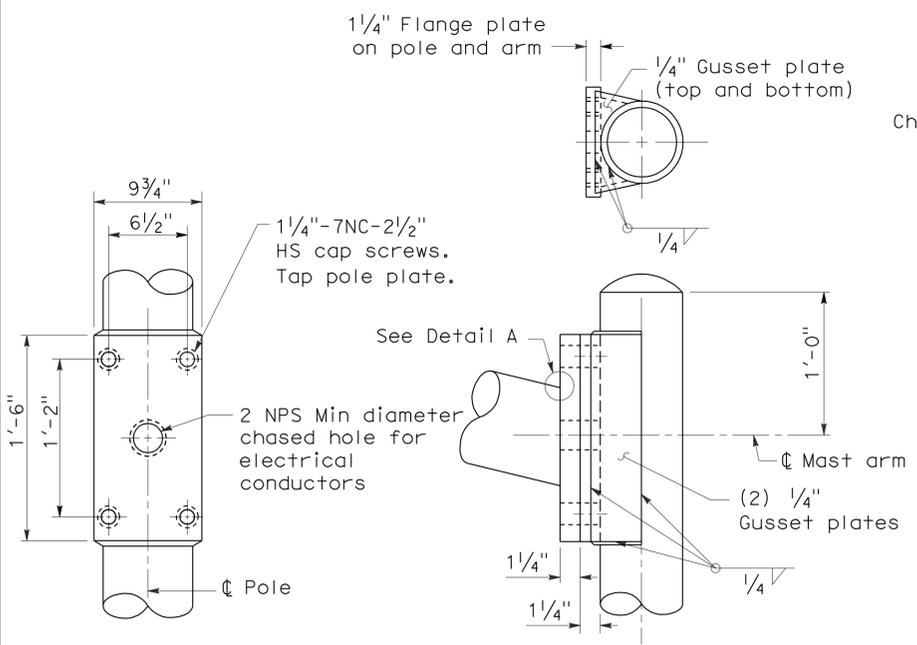
NO SCALE  
 RSP ES-7K DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-7K  
 DATED MAY 1, 2006 - PAGE 447 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**2006 REVISED STANDARD PLAN RSP ES-7K**

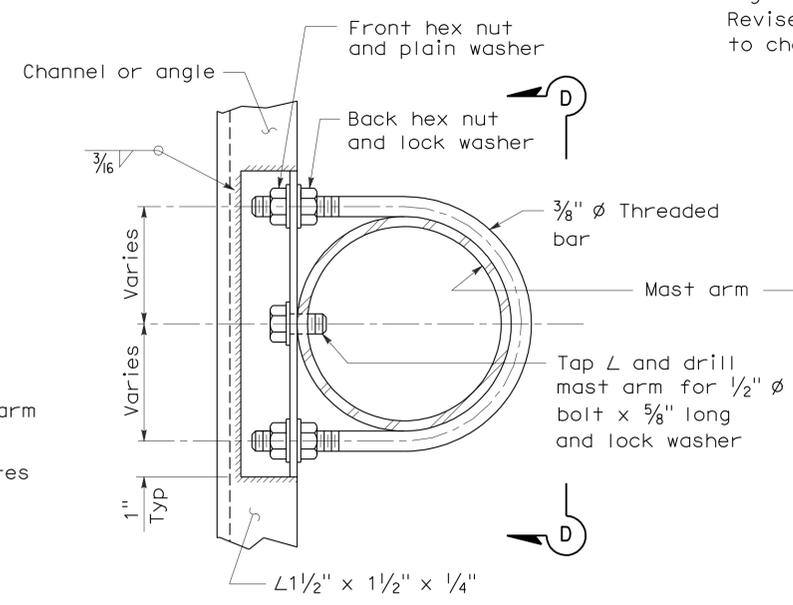
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Kin	41	R42.1/R44.9	246	246

Stanley P. Johnson  
 REGISTERED CIVIL ENGINEER  
 October 5, 2007  
 PLANS APPROVAL DATE  
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To accompany plans dated 5-23-11

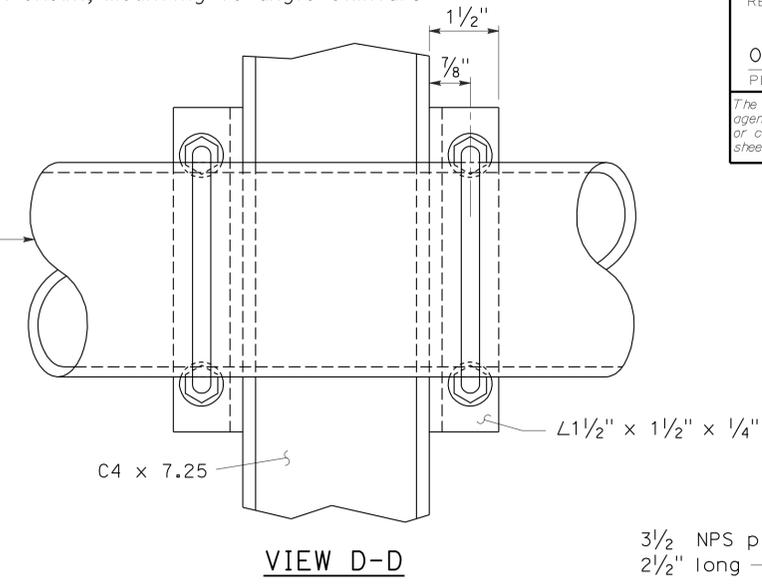


**MAST ARM CONNECTION DETAILS**

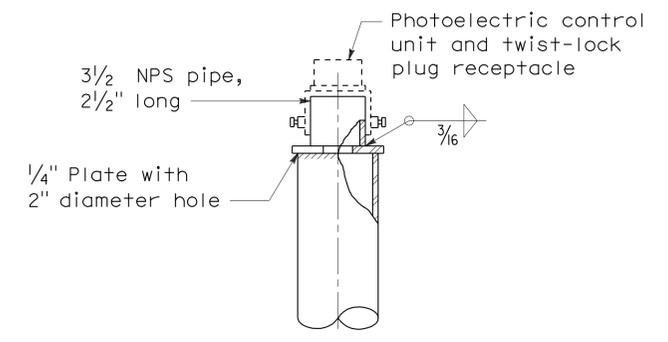


**NOTE:**  
Tighten front hex nuts first, then tighten back hex nuts.

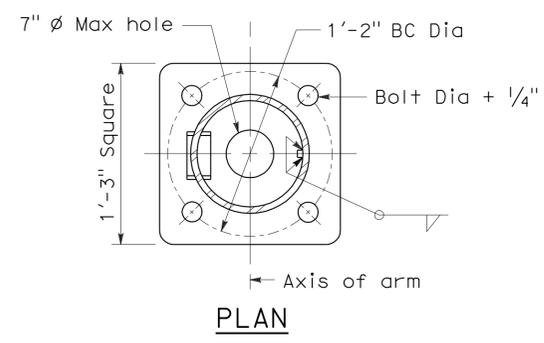
**SIGN FRAME MOUNTING DETAILS**  
All types



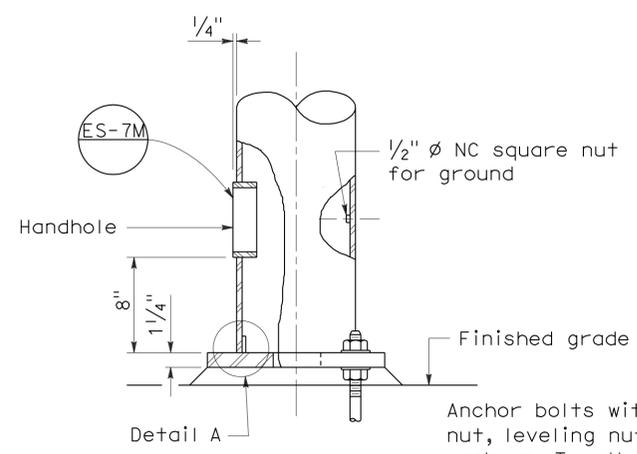
**VIEW D-D**



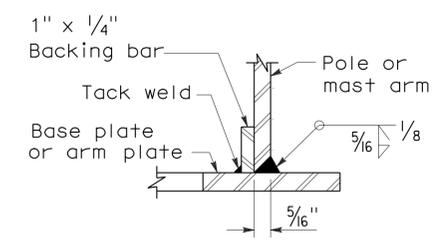
**POLE TOP DETAIL**



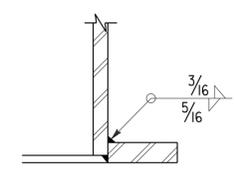
**PLAN**



**ELEVATION  
BASE PLATE AND  
ANCHORAGE DETAILS**

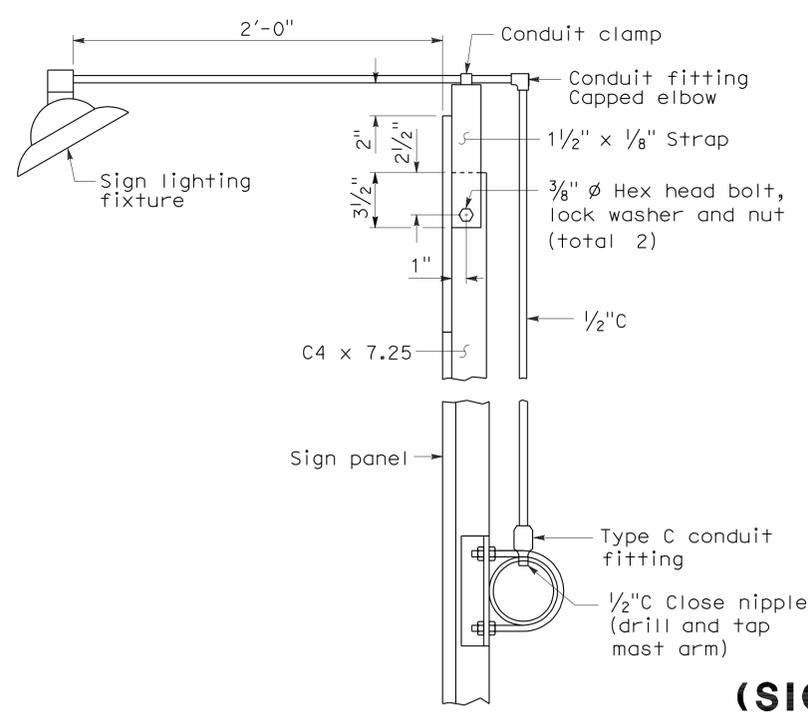


**DETAIL A**



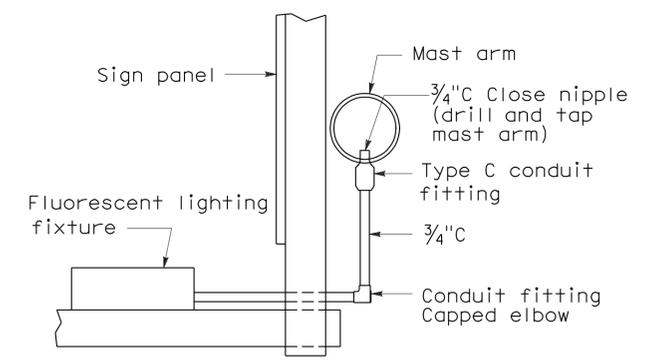
**ALTERNATIVE  
DETAIL A**

For pole-base plate only.



**SIGN LIGHTING FIXTURE  
TYPES 9A AND 9B**

See Note 4 on Revised Standard Plan RSP ES-7K.



**SIGN LIGHTING FIXTURE  
TYPE 9 FRAME**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS  
(SIGNAL AND LIGHTING STANDARD  
CANTILEVER FLASHING BEACON  
TYPES 9, 9A AND 9B)**

NO SCALE

RSP ES-7L DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-7L  
DATED MAY 1, 2006 - PAGE 448 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP ES-7L