

INDEX OF PLANS

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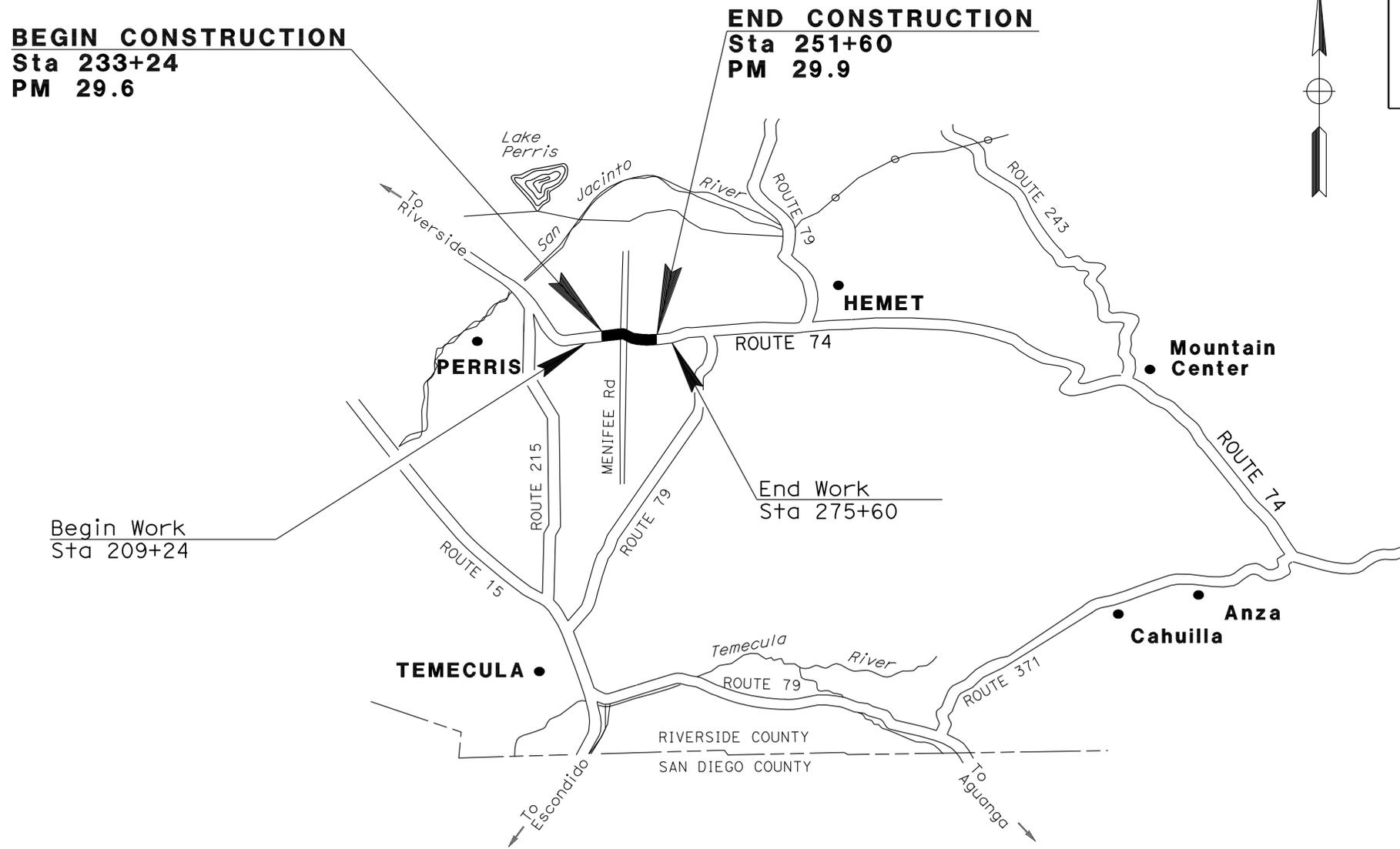
THE STANDARD PLANS LIST APPLICABLE TO THIS CONTRACT IS INCLUDED IN THE NOTICE TO BIDDERS AND SPECIAL PROVISIONS BOOK.

STATE OF CALIFORNIA ACHSNH-P074(055)E  
**DEPARTMENT OF TRANSPORTATION**  
**PROJECT PLANS FOR CONSTRUCTION ON**  
**STATE HIGHWAY**  
**IN RIVERSIDE COUNTY**  
**NEAR PERRIS AT**  
**ROUTE 74/MENIFEE ROAD INTERSECTION**

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006

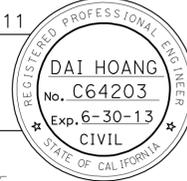
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	74	29.6/29.9	1	55

LOCATION MAP



PROJECT MANAGER  
XIAO ZHANG  
 DESIGN ENGINEER  
REZA TOOTOONCHI

PROJECT ENGINEER  
 REGISTERED CIVIL ENGINEER  
 DATE: 11-1-11  
**January 9, 2012**  
 PLANS APPROVAL DATE  
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



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

NO SCALE

CONTRACT No.	<b>08-0J1404</b>
PROJECT ID	<b>080000289</b>

DATE PLOTTED => 14-MAR-2012  
 TIME PLOTTED => 06:44  
 11-01-11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	74	29.6/29.9	2	55
 REGISTERED CIVIL ENGINEER			11-1-11	DATE	
1-9-12 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

**NOTES:**

- DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
- SUPERELEVATION AS SHOWN OR AS DIRECTED BY THE ENGINEER.
- EXACT LOCATION AND LIMIT OF SAWCUT LINES, CURB & GUTTER B2-6, BUS STOP ARE SHOWN ON THE LAYOUT SHEETS.
- LOCATIONS OF UTILITY (GAS, ELECTRIC, TELEPHONE & WATER) LINES SHOWN ON THESE PLANS ARE APPROXIMATE, PROTECT IN PLACE AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
- BUS STOP SEE CONSTRUCTION DETAIL C-5. FOR STEEL AND JOINTS WITHIN BUS STOP JPCP, PLACE DOWEL BARS IN SQUARE TRANSVERSE JOINTS OF THE NEW JPCP. INCLUDE PAVEMENT TRANSITION PANEL WHERE JPCP WILL ADJOIN HMA PAVEMENT, PER STD PLAN RSP P30. REFER TO STD PLANS RSP P1, P2, P10, P20 FOR DOWEL BARS AND JOINTS.
- CURBS (TYPE B2-6) SEE CALTRANS STANDARD PLAN A87A.
- Exist ROW OF TREES OUTSIDE RIGHT OF WAY ARE PROTECTED IN PLACE.
- ESTIMATES 41 TREES INSIDE RIGHT OF WAY ARE REMOVED AND PAID UNDER CLEARING AND GRUBBING.
- EXACT LOCATION TO REMOVE EXIST. CURB GUTTER, Exist CHAIN LINK FENCE SHOWN ON THE LAYOUT SHEETS.

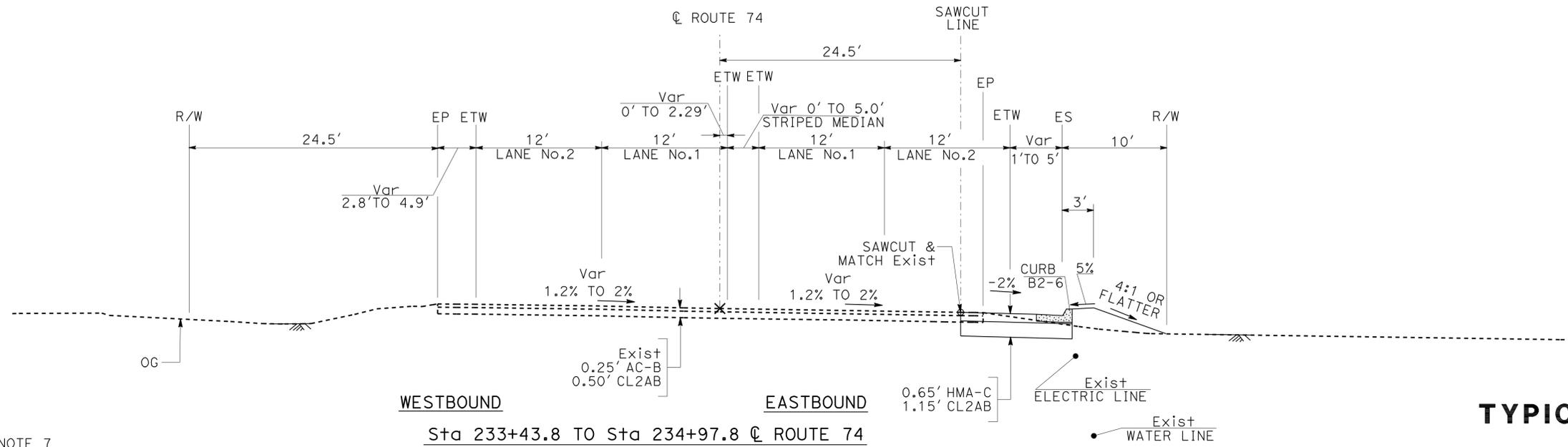
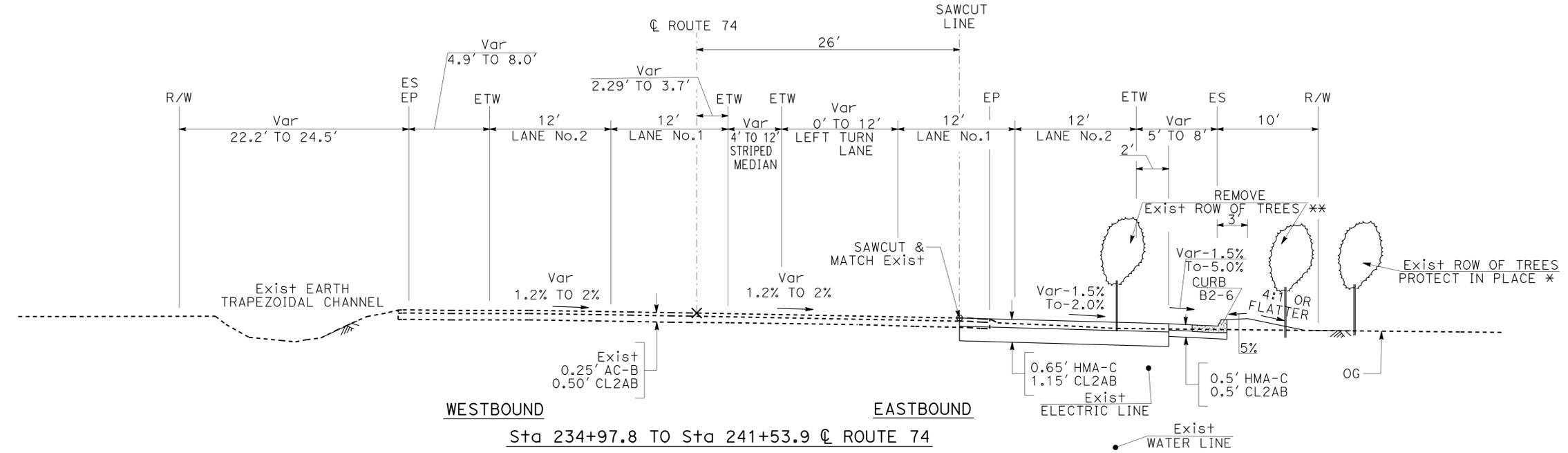
**DESIGN DESIGNATION (ROUTE 74)**

2009 ADT = 29,500, DHV = 2,440, DS = 60% EB, T(ADT) = 10% , T(DHV)= 5%  
 2029 ADT = 48,800, DHV = 3,900, DS = 57% EB, T(ADT) = 10% , T(DHV)= 3%  
 2049 ADT = 62,300, DHV = 5,000, DS = 56% EB, T(ADT) = 10% , T(DHV)= 3%  
 V = 45 MPH

TRAFFIC INDEX	INSIDE/OUTSIDE LANES	OUTSIDE SHOULDERS
10 YEAR	11.0	7.0
20 YEAR	12.5	8.0
40 YEAR	14.0	8.5

**ABBREVIATIONS:**

- ADT AVERAGE DAILY TRAFFIC
- CL2AB CLASS 2, AGGREGATE BASE
- DHV DESIGN HOUR VOLUME
- DS DIRECTIONAL SPLIT
- T TRUCK %

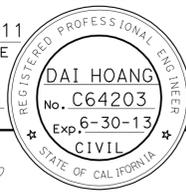


**TYPICAL CROSS SECTIONS**  
NO SCALE  
**X-1**

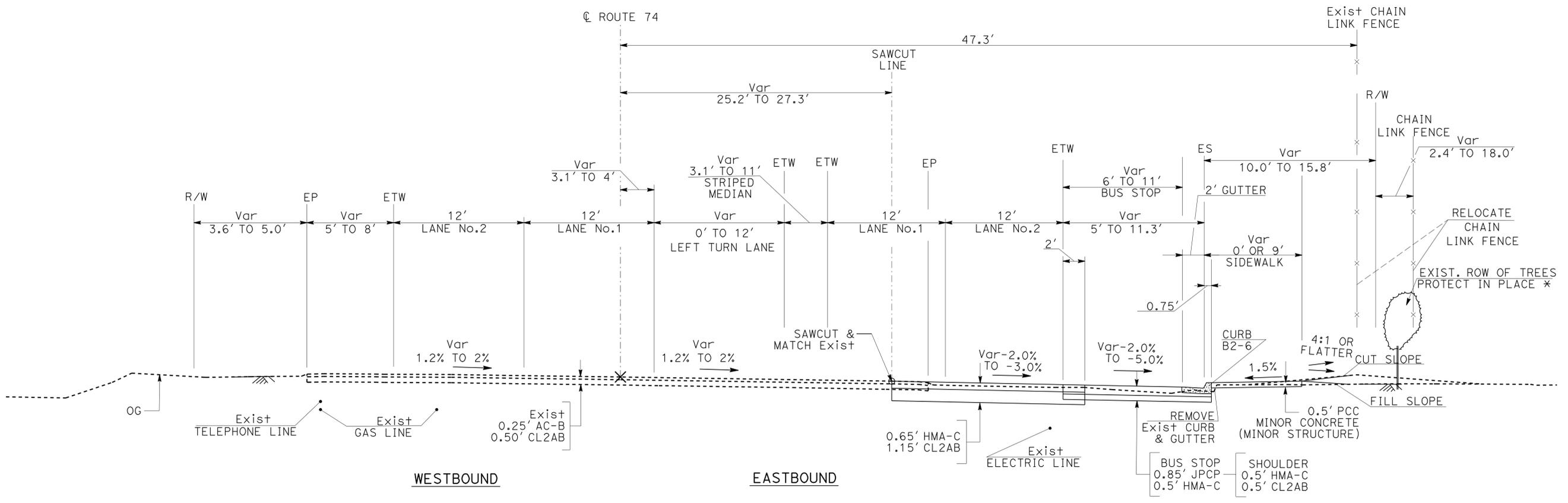
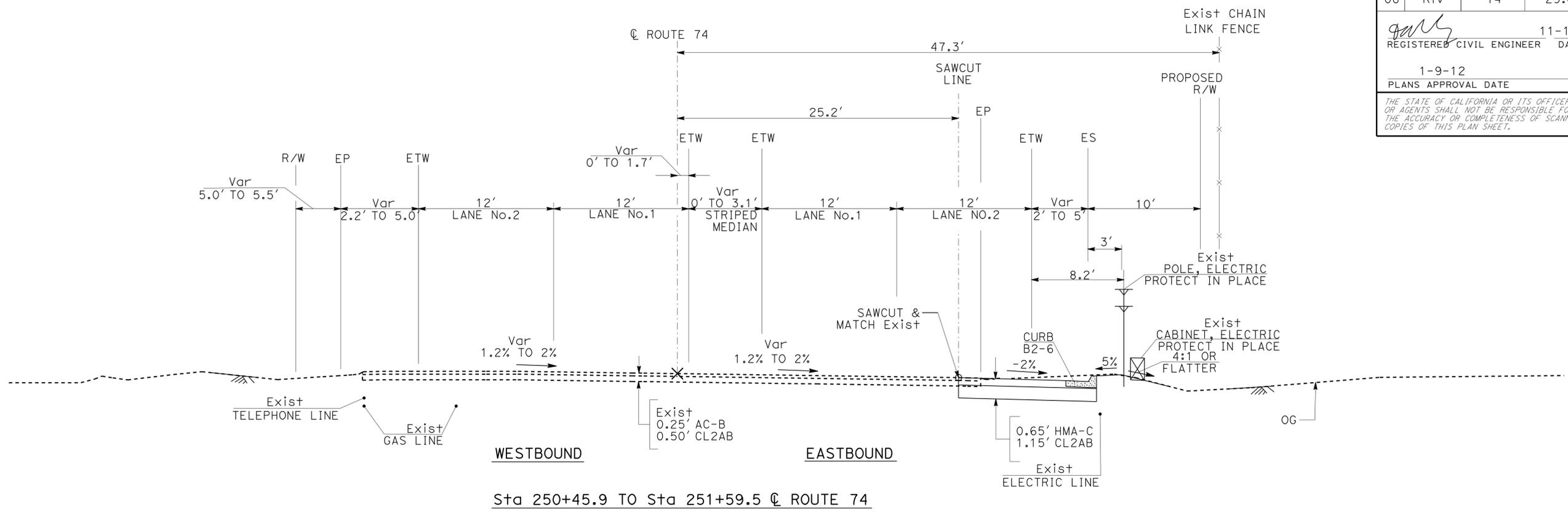
\* SEE NOTE 7  
 \*\* SEE NOTE 8

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 DESIGN  
 SERGIO E. AVILA  
 FUNCTIONAL SUPERVISOR  
 REZA TOOTOONCHI  
 DAI HOANG  
 REVISIONS: 11-1-11  
 DATE PLOTTED => 11-JAN-2012  
 TIME PLOTTED => 11:15

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	74	29.6/29.9	3	55
			11-1-11	REGISTERED CIVIL ENGINEER DATE	
			1-9-12	PLANS APPROVAL DATE	
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 FUNCTIONAL SUPERVISOR: SERGIO E. AVILA  
 CALCULATED/DESIGNED BY: [Blank]  
 CHECKED BY: [Blank]  
 DAI HOANG  
 REZA TOOTOONCHI  
 REVISED BY: [Blank] DATE: [Blank]



**TYPICAL CROSS SECTIONS**  
NO SCALE  
**X-2**

\* SEE NOTE 7 SHEET X-1

USERNAME => s114926  
DGN FILE => 80j140ca002.dgn



UNIT 2237

PROJECT NUMBER & PHASE

0800002891

LAST REVISION: DATE PLOTTED => 11-JAN-2012  
 TIME PLOTTED => 10:33

FUNCTIONAL SUPERVISOR  
 SERGIO E. AVILA

CALCULATED/DESIGNED BY  
 CHECKED BY

DAI HOANG  
 REZA TOOTOONCHI

REVISED BY  
 DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	74	29.6/29.9	4	55

REGISTERED CIVIL ENGINEER DATE 11-1-11  
 1-9-12  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
**DAI HOANG**  
 No. C64203  
 Exp. 6-30-13  
 CIVIL  
 STATE OF CALIFORNIA

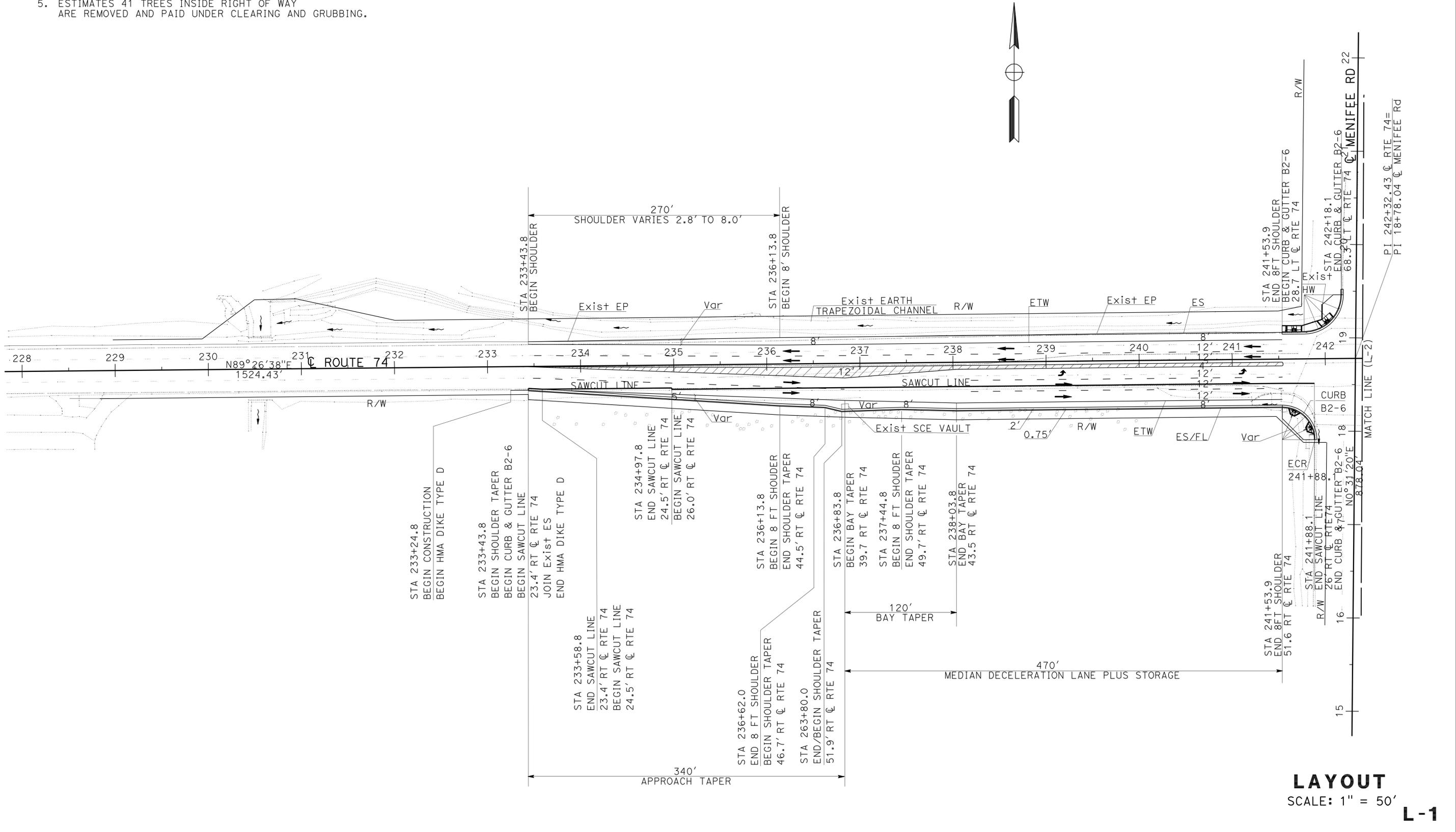
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

**NOTES:**

- FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- CURB RAMP DETAILS (CASE A & C) SEE CALTRANS STANDARD PLAN A88A AND CONSTRUCTION DETAIL C-4 AND C-8.
- YELLOW DETECTABLE WARNING SURFACE FOR ALL CURB RAMPS SHALL BE CONSTRUCTED WITH CONCRETE PAVERS.
- Exist ROW OF TREES OUTSIDE RIGHT OF WAY ARE PROPECTED IN PLACE.
- ESTIMATES 41 TREES INSIDE RIGHT OF WAY ARE REMOVED AND PAID UNDER CLEARING AND GRUBBING.

**LEGEND:**

- DIRECTION OF TRAVEL
- ↘ DIRECTION OF DRAINAGE FLOW
- ▨ STRIPED MEDIAN
- EXISTING TREES



**LAYOUT**  
 SCALE: 1" = 50'  
**L-1**



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	74	29.6/29.9	6	55

<i>[Signature]</i>	11-1-11
REGISTERED CIVIL ENGINEER	DATE
1-9-12	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER	DAI HOANG
No. C64203	
Exp. 6-30-13	
CIVIL	

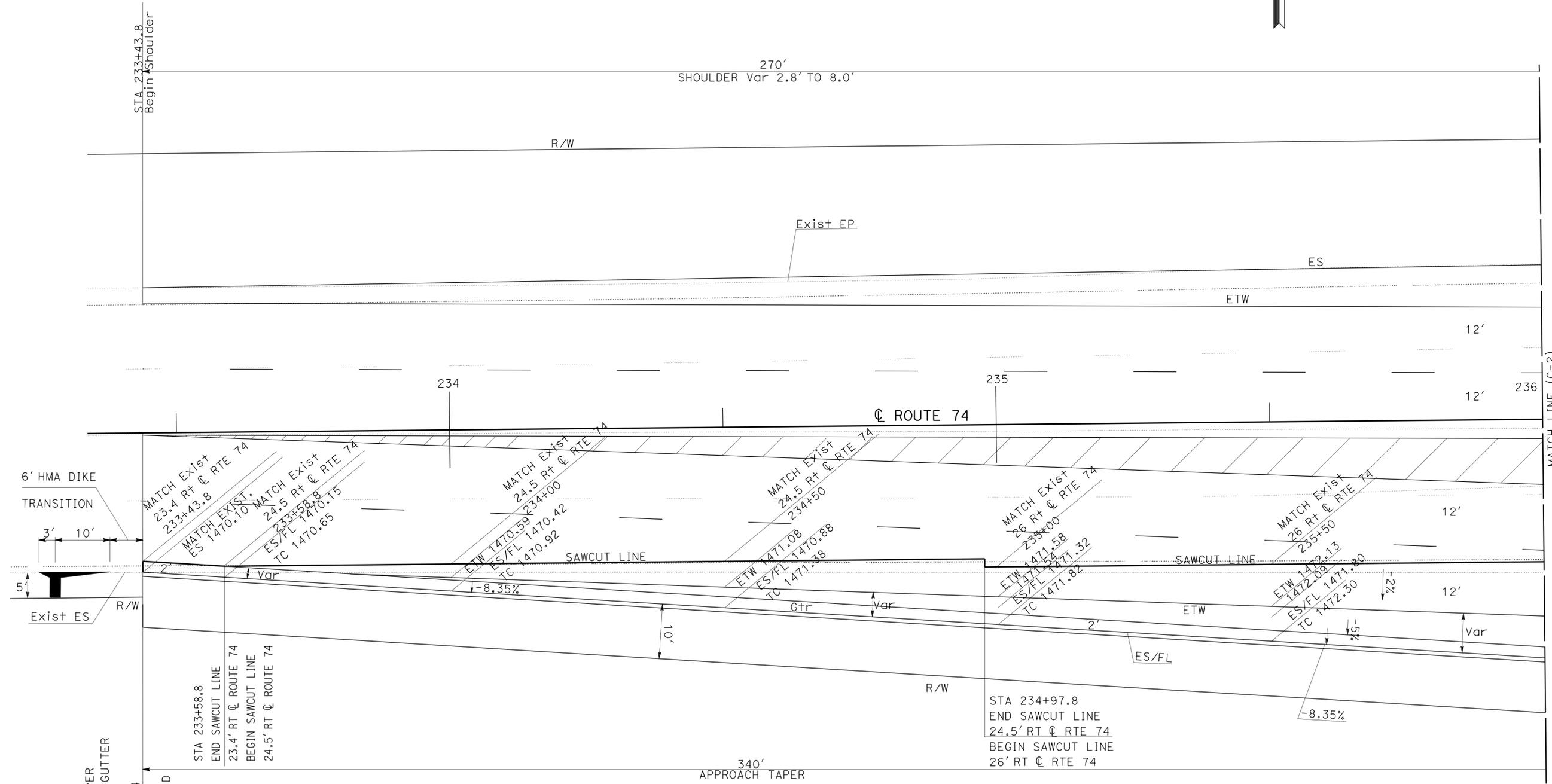
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

**NOTE:**

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



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN
FUNCTIONAL SUPERVISOR	SERGIO E. AVILA
CALCULATED/DESIGNED BY	CHECKED BY
DAI HOANG	REZA TOOTOONCHI
REVISED BY	DATE REVISED



STA 233+43.8  
 BEGIN SHOULDER TAPER  
 BEGIN B2-6 CURB & GUTTER  
 BEGIN SAWCUT LINE  
 23.4' RT @ ROUTE 74  
 JOIN Exist ES  
 END HMA DIKE TYPE D

STA 233+58.8  
 END SAWCUT LINE  
 23.4' RT @ ROUTE 74  
 BEGIN SAWCUT LINE  
 24.5' RT @ ROUTE 74

STA 234+97.8  
 END SAWCUT LINE  
 24.5' RT @ RTE 74  
 BEGIN SAWCUT LINE  
 26' RT @ RTE 74

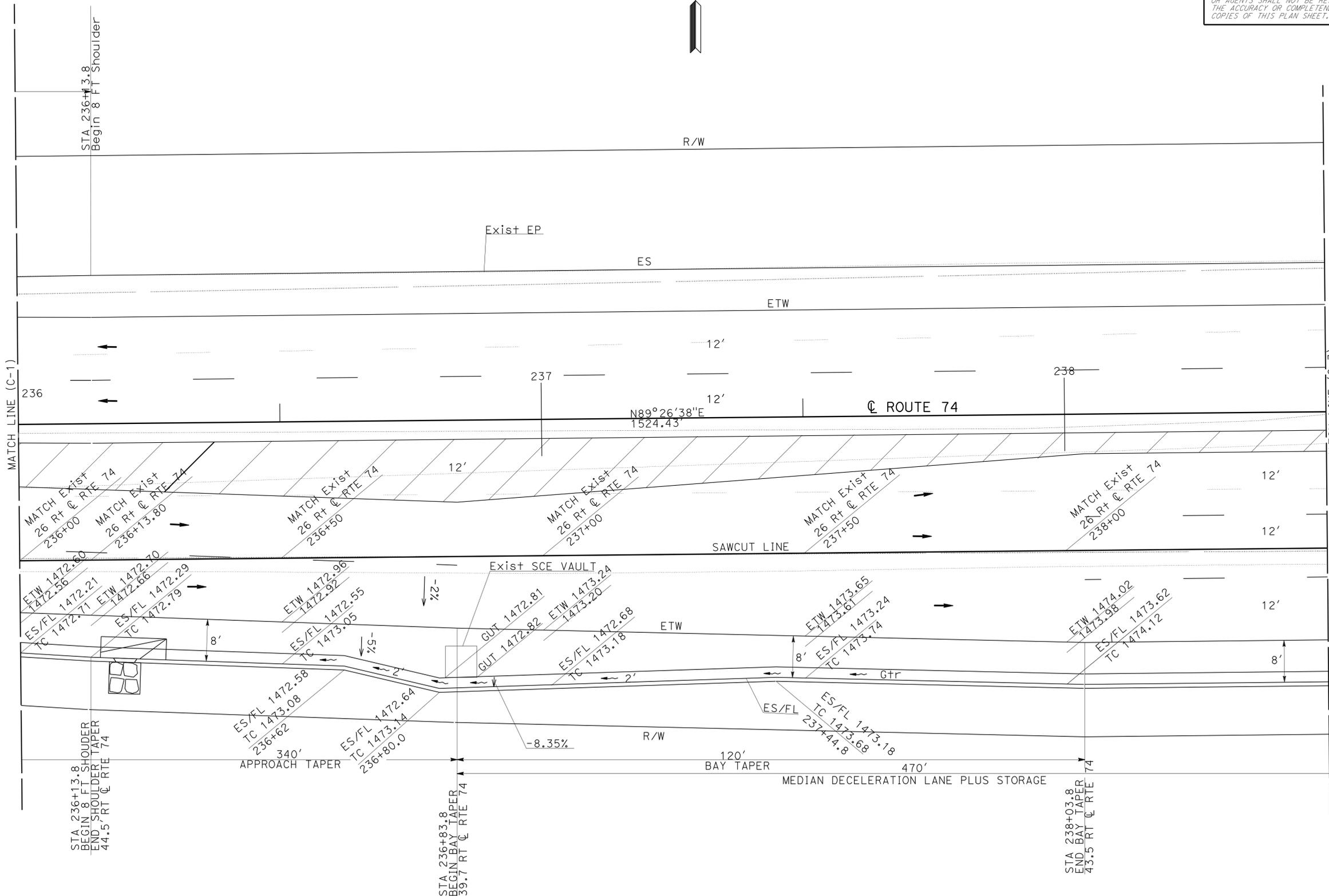
**CONSTRUCTION DETAILS**  
 SCALE 1" = 10'  
**C-1**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	74	29.6/29.9	7	55

11-1-11  
 REGISTERED CIVIL ENGINEER DATE  
 1-9-12  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
**DAI HOANG**  
 No. C64203  
 Exp. 6-30-13  
 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.



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

**CONSTRUCTION DETAILS**  
 SCALE 1" = 10'  
**C-2**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR	REVISION
<b>Caltrans</b>	SERGIO E. AVILA	CHECKED BY	DAI HOANG	DATE
<b>DESIGN</b>			REZA TOOTOONCHI	

USERNAME => s121614  
 DGN FILE => 80j140ga002.dgn



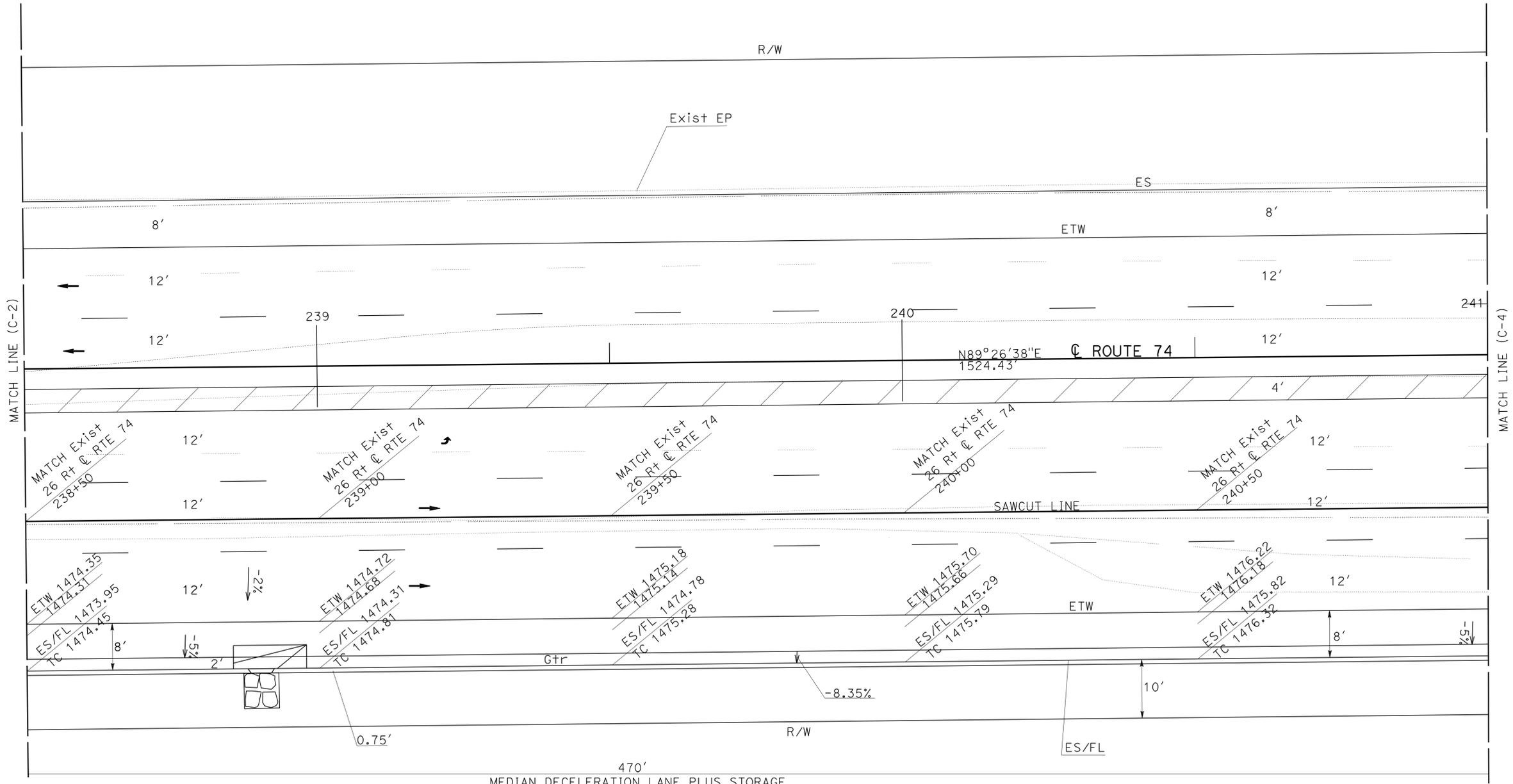
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 11-01-11 TIME PLOTTED => 12:37

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	74	29.6/29.9	8	55

11-1-11  
 REGISTERED CIVIL ENGINEER DATE  
 1-9-12  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 DAI HOANG  
 No. C64203  
 Exp. 6-30-13  
 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.



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

**CONSTRUCTION DETAILS**  
 SCALE 1"= 10'  
**C-3**

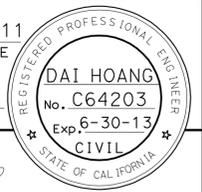
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN
FUNCTIONAL SUPERVISOR	SERGIO E. AVILA
CALCULATED/DESIGNED BY	CHECKED BY
DAI HOANG	REZA TOOTOONCHI
REVISOR	DATE
REVISOR	DATE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	74	29.6/29.9	9	55

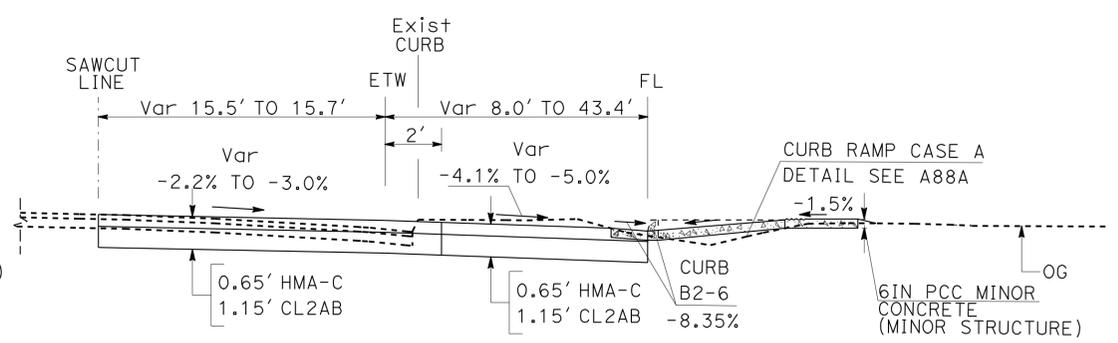
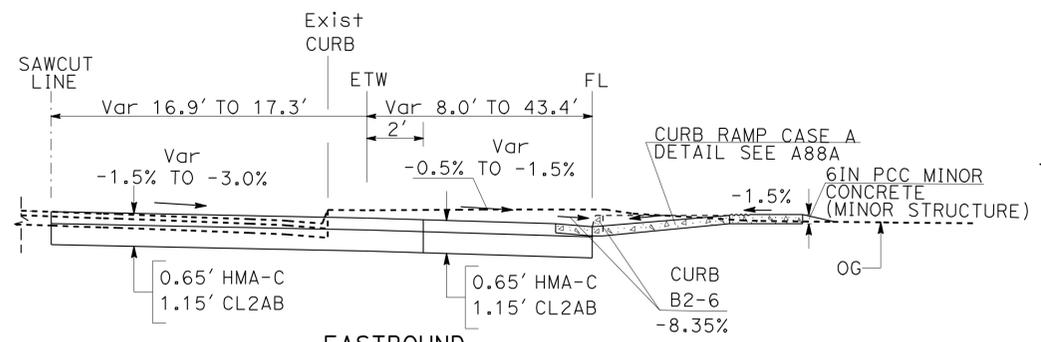
  

REGISTERED CIVIL ENGINEER	DATE
11-1-11	
1-9-12	
PLANS APPROVAL DATE	

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

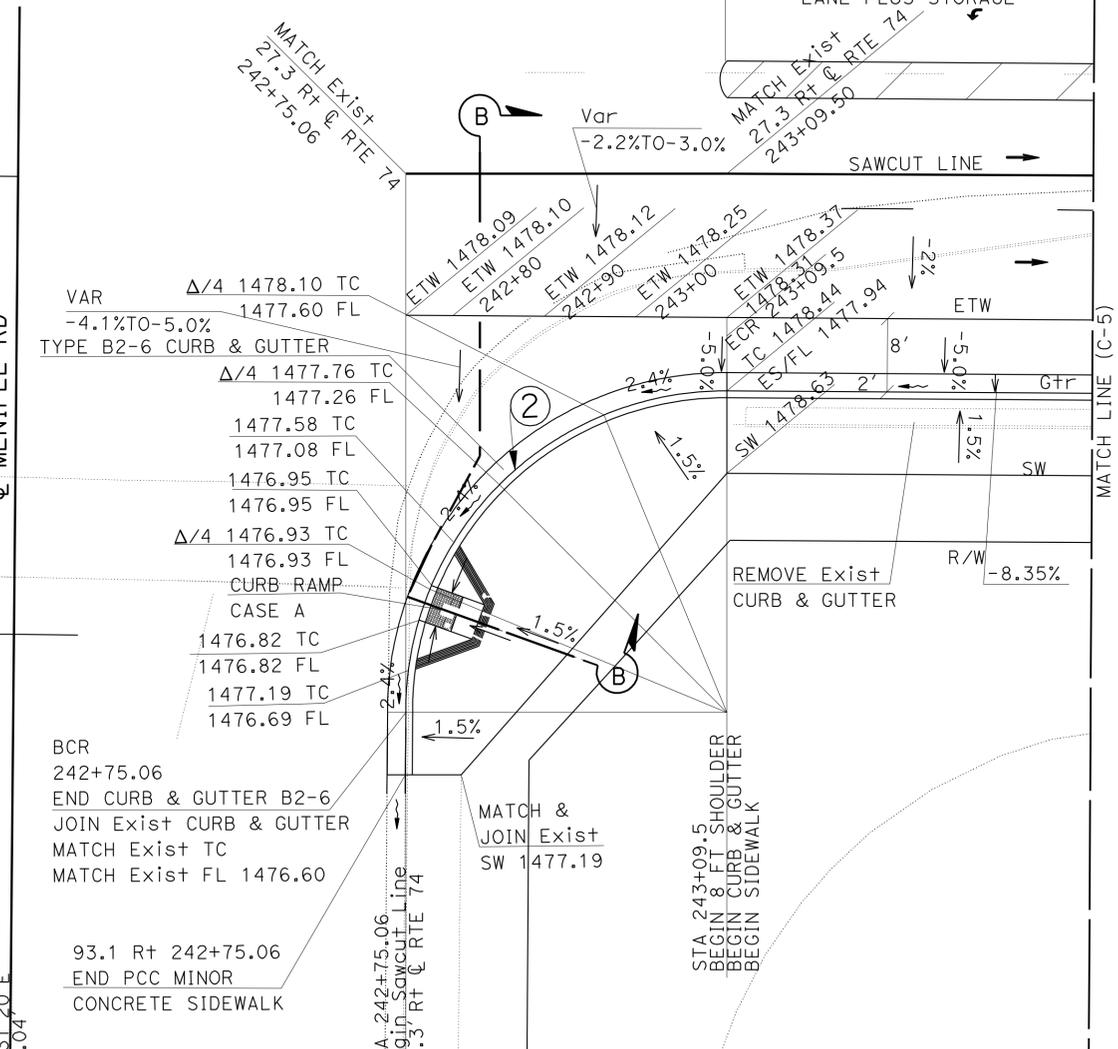
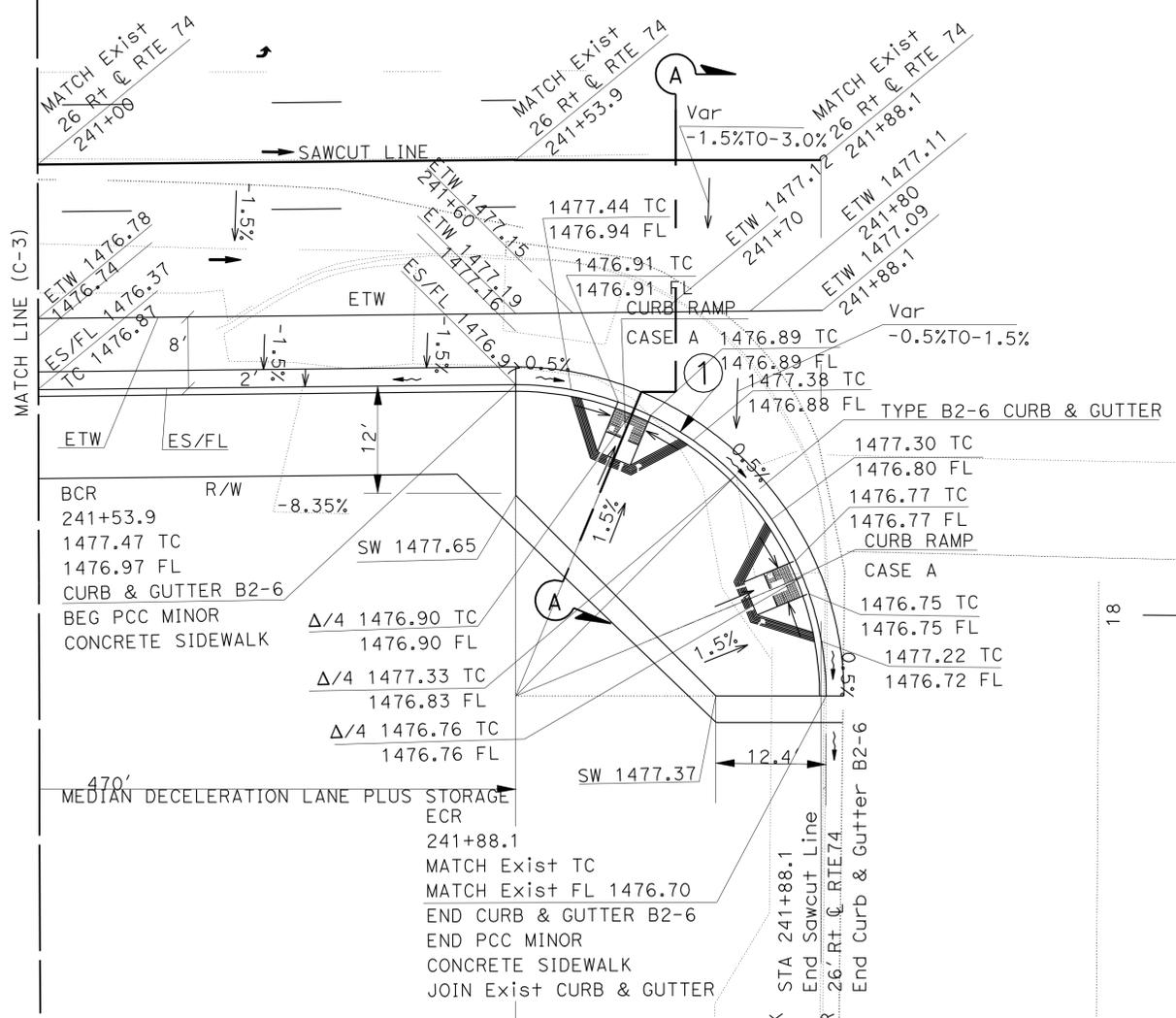


NOTE:  
YELLOW DETECTABLE WARNING SURFACE FOR ALL CURB RAMP  
SHALL BE CONSTRUCTED WITH CONCRETE PAVERS.



EASTBOUND  
STA 241+53.9 TO STA 241+88.1 @ ROUTE 74  
SECTION A-A

EASTBOUND  
STA 242+75.06 TO STA 243+09.5 @ ROUTE 74  
SECTION B-B



CURVE DATA

No.	R	Δ	T	L
①	35.0	90°00'00"	35.0	54.98
②	35.0	90°24'21"	35.25	55.23

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

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
DESIGN  
FUNCTIONAL SUPERVISOR: SERGIO E. AVILA  
CALCULATED/DESIGNED BY: DAI HOANG  
CHECKED BY: REZA TOOTOONCHI  
REVISOR: REZA TOOTOONCHI  
DATE REVISOR: [blank]

USERNAME => s114926  
DGN FILE => 80j140ga004.dgn

RELATIVE BORDER SCALE  
IS IN INCHES



UNIT 2237

PROJECT NUMBER & PHASE

08000002891

CONSTRUCTION DETAILS  
SCALE 1"= 10'  
C-4

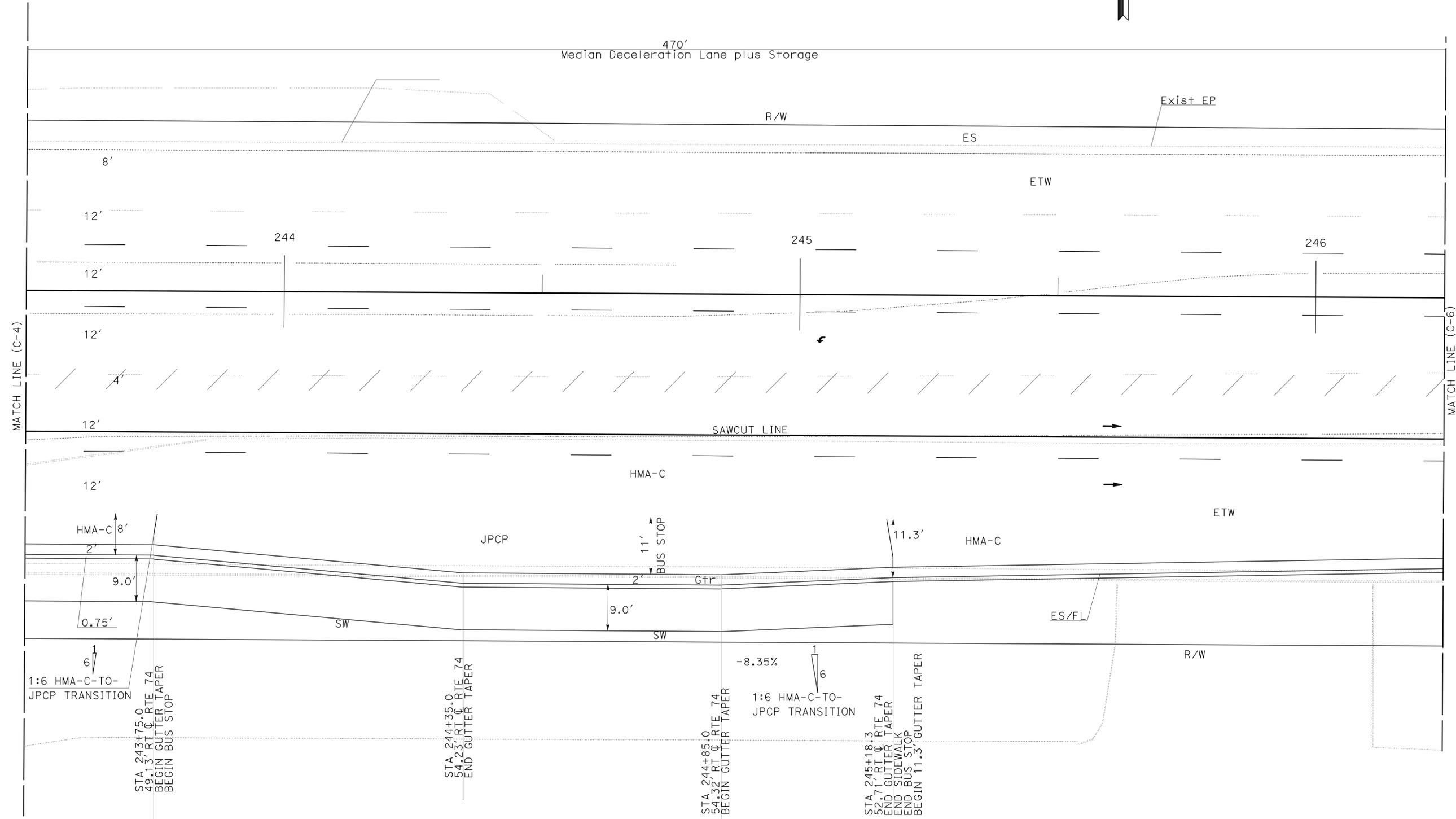
LAST REVISION: 11-01-11  
DATE PLOTTED => 11-JAN-2012  
TIME PLOTTED => 10:37

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	74	29.6/29.9	10	55

 11-1-11  
 REGISTERED CIVIL ENGINEER DATE  
 1-9-12  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
**DAI HOANG**  
 No. C64203  
 Exp. 6-30-13  
 CIVIL  
 STATE OF CALIFORNIA

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

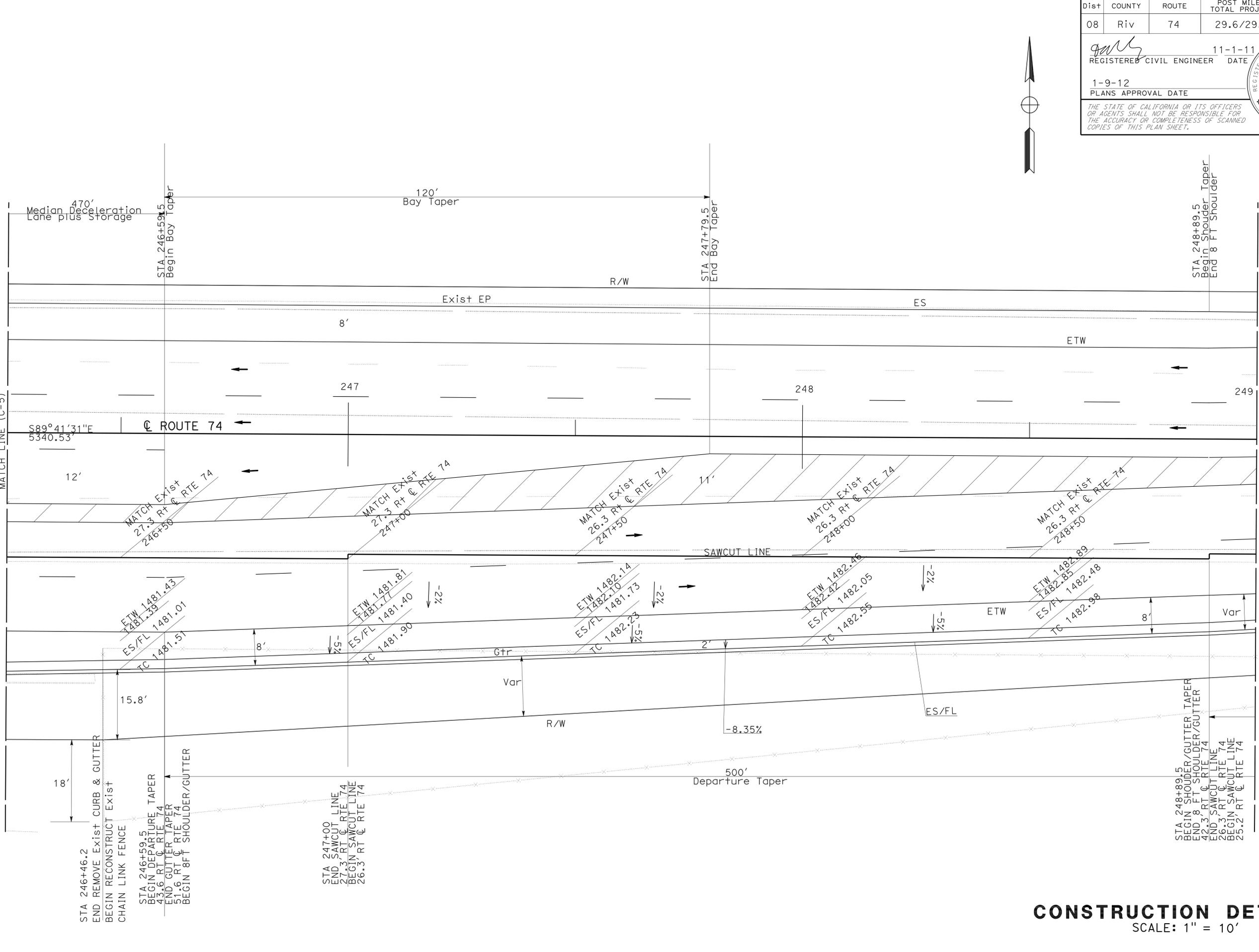


STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	DAI HOANG	REVISOR	REVISOR
		SERGIO E. AVILA	CHECKED BY	REZA TOOTOONCHI	DATE	DATE

**CONSTRUCTION DETAILS**  
 SCALE 1" = 10'  
**C-5**

LAST REVISION    DATE PLOTTED => 11-JAN-2012    TIME PLOTTED => 10:37

FUNCTIONAL SUPERVISOR	CHECKED BY	DAI HOANG	REVISOR	DATE
SERGIO E. AVILA	REZA TOOTOONCHI	DAI HOANG		
CALCULATED/DESIGNED BY	CHECKED BY	REZA TOOTOONCHI	REVISOR	DATE



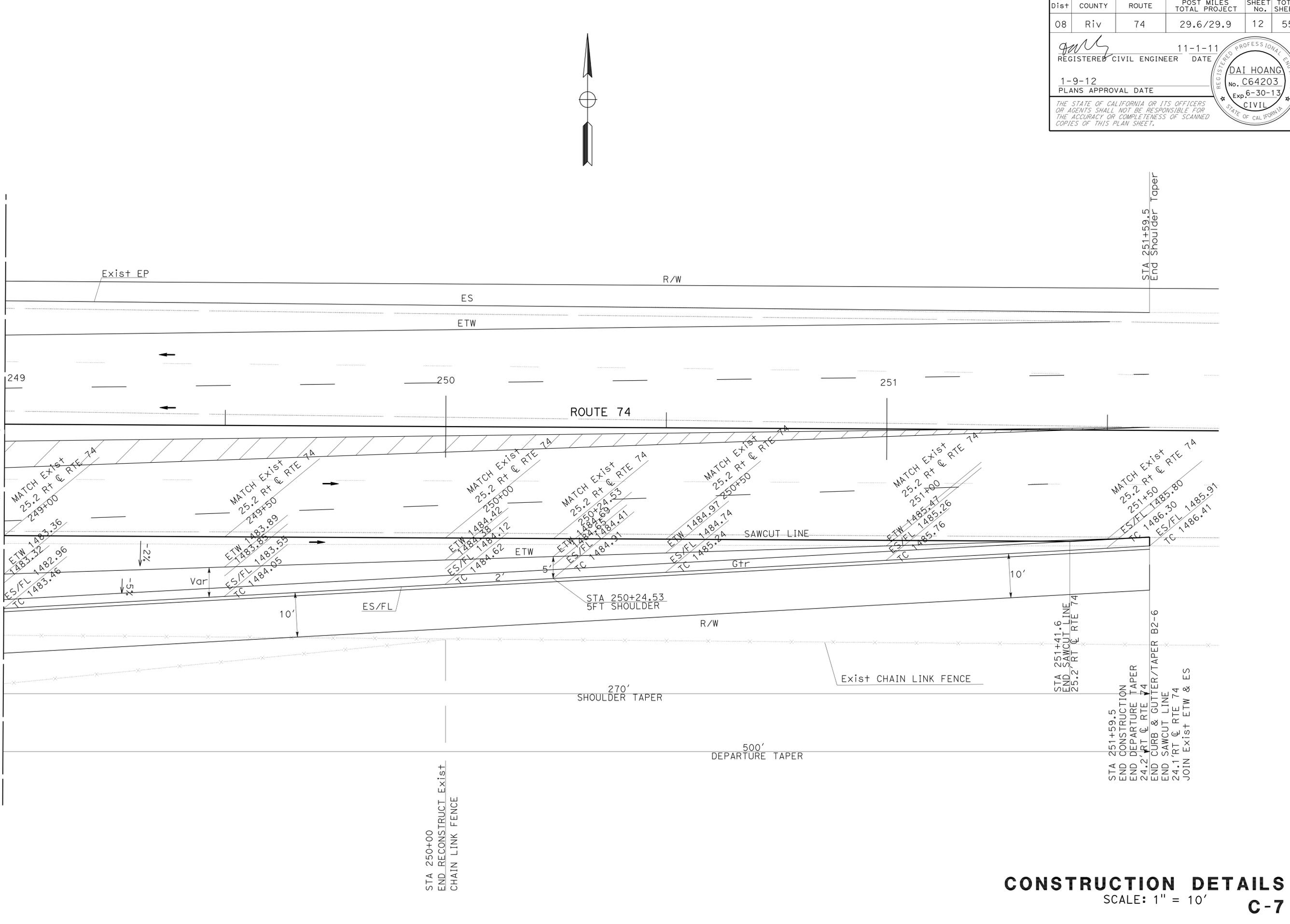
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	74	29.6/29.9	11	55

11-1-11 DATE  
 REGISTERED CIVIL ENGINEER  
 1-9-12 PLANS APPROVAL DATE  
 DAI HOANG  
 No. C64203  
 Exp. 6-30-13  
 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.



**CONSTRUCTION DETAILS**  
 SCALE: 1" = 10'  
**C-6**

FUNCTIONAL SUPERVISOR	DAI HOANG	REVISOR	REZA TOOTOONCHI
DESIGNED BY	DAI HOANG	DATE	
CHECKED BY	REZA TOOTOONCHI	DATE	
CALCULATED BY		REVISOR	REZA TOOTOONCHI
DESIGNED BY	DAI HOANG	DATE	
CHECKED BY	REZA TOOTOONCHI	DATE	



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	74	29.6/29.9	12	55

11-1-11  
 REGISTERED CIVIL ENGINEER DATE

1-9-12  
 PLANS APPROVAL DATE

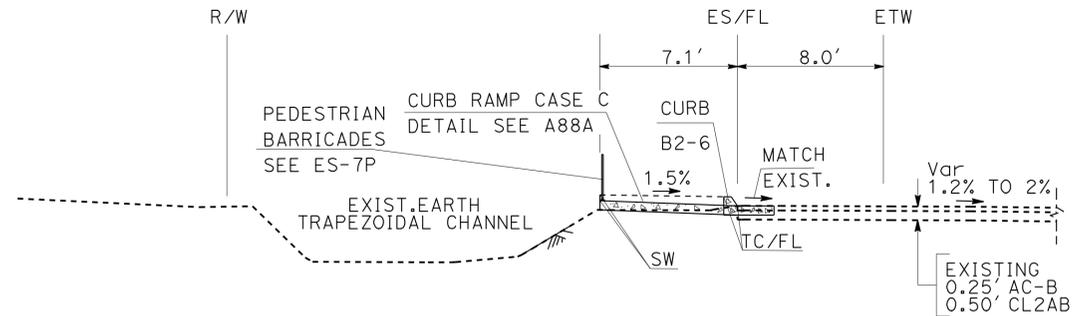
REGISTERED PROFESSIONAL ENGINEER  
**DAI HOANG**  
 No. C64203  
 Exp. 6-30-13  
 CIVIL  
 STATE OF CALIFORNIA

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



**CONSTRUCTION DETAILS**  
 SCALE: 1" = 10'  
**C-7**

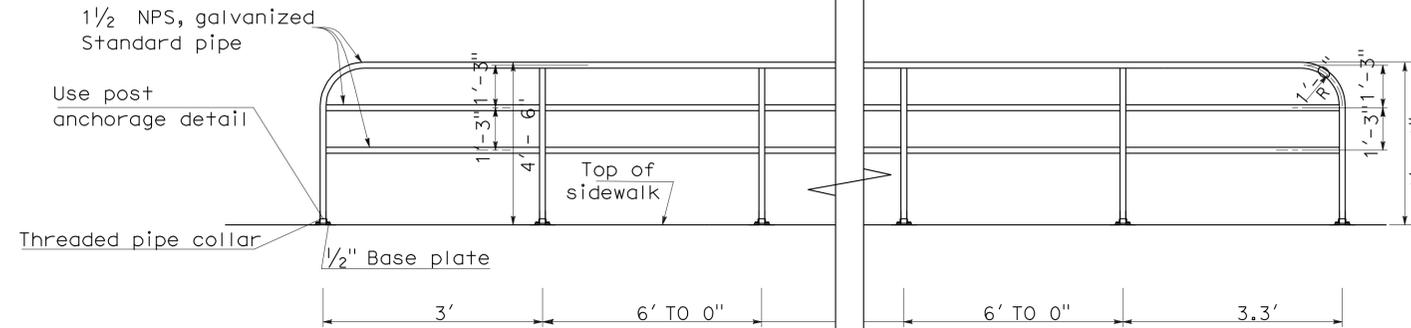
- NOTES:**
1. YELLOW DETECTABLE WARNING SURFACE FOR ALL CURB RAMP SHALL BE CONSTRUCTED WITH CONCRETE PAVERS.
  2. PEDESTRIAN BARRICADES SEE STD ES-7P.



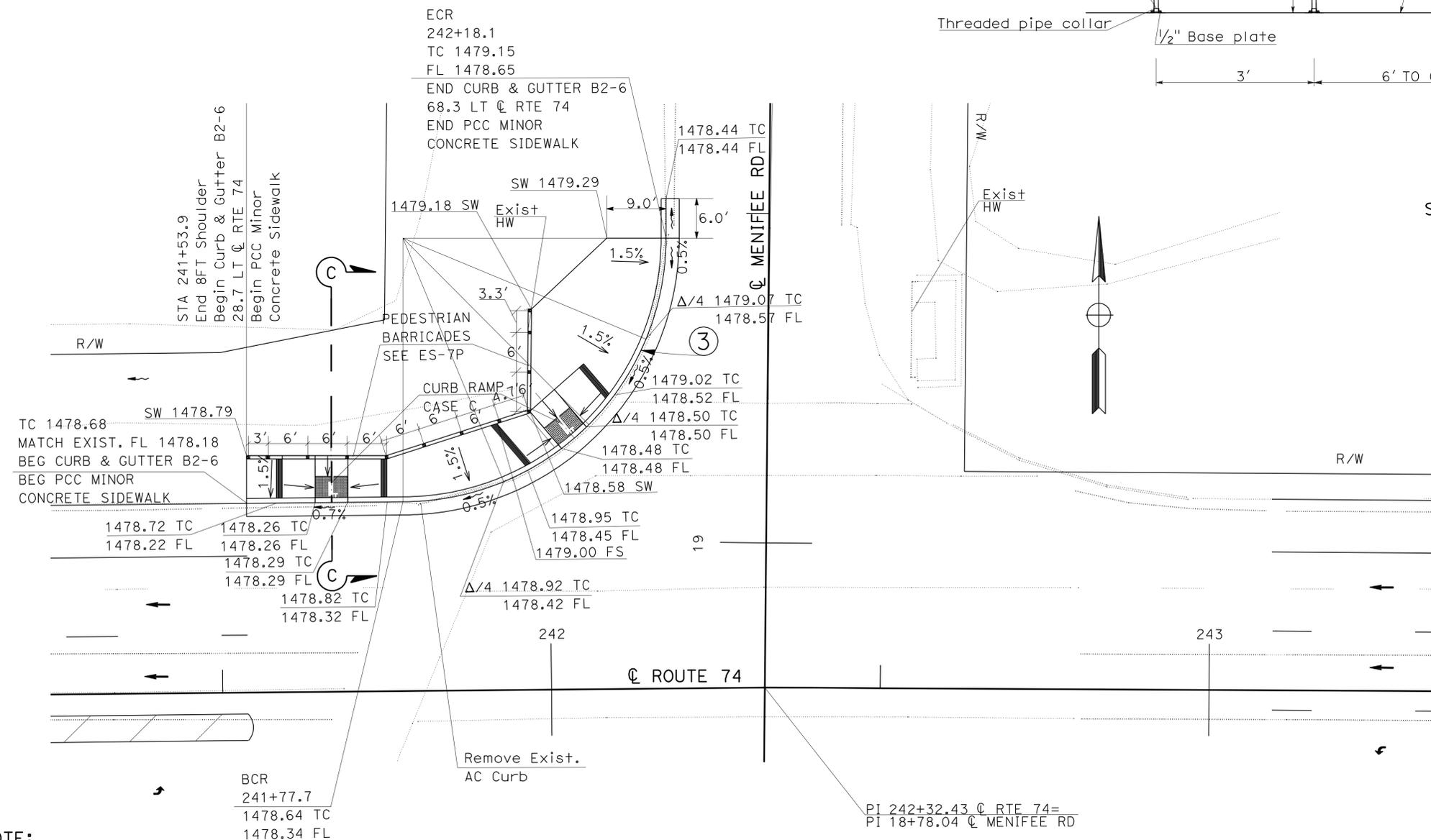
**CURVE DATA**

No.	R	Δ	T	L
(3)	40.0	90°00'23"	40.0	62.84

**SECTION C-C**



**PEDESTRIAN BARRICADES  
TYPE I (MODIFY)  
SEE ES-7P FOR MORE DETAILS  
NO SCALE**



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

**CONSTRUCTION DETAILS**  
SCALE: 1" = 10'  
**C-8**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	74	29.6/29.9	14	55

<i>[Signature]</i>	11-1-11
REGISTERED CIVIL ENGINEER	DATE
1-9-12	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER	DAI HOANG
No. C64203	
Exp. 6-30-13	
CIVIL	STATE OF CALIFORNIA

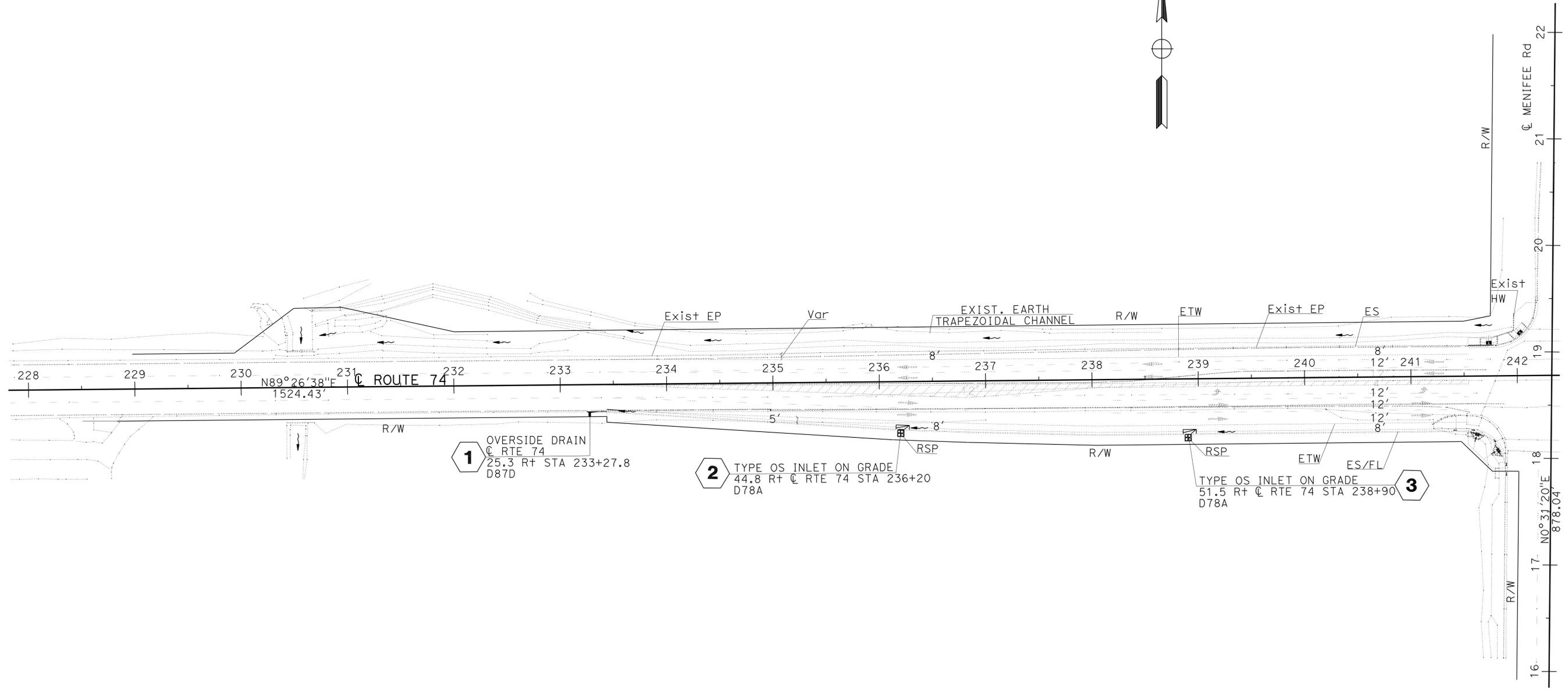
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**NOTES:**

1. FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. HMA OVERSIDE DRAIN. SEE DRAINAGE DETAIL DD-1 AND STANDARD PLAN D87D.
3. OS INLET ON GRADE. SEE DRAINAGE DETAIL DD-2, DD-3 AND STANDARD PLAN D78A

**LEGEND:**

- DRAINAGE SYSTEM No.
- RSP
- DIRECTION OF TRAVEL
- DIRECTION OF DRAINAGE FLOW
- STRIPED MEDIAN



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN
<b>Caltrans</b>	
FUNCTIONAL SUPERVISOR	SERGIO E. AVILA
CALCULATED/DESIGNED BY	CHECKED BY
DAI HOANG	REZA TOOTOONCHI
REVISED BY	DATE REVISED

APPROVED FOR DRAINAGE WORK ONLY

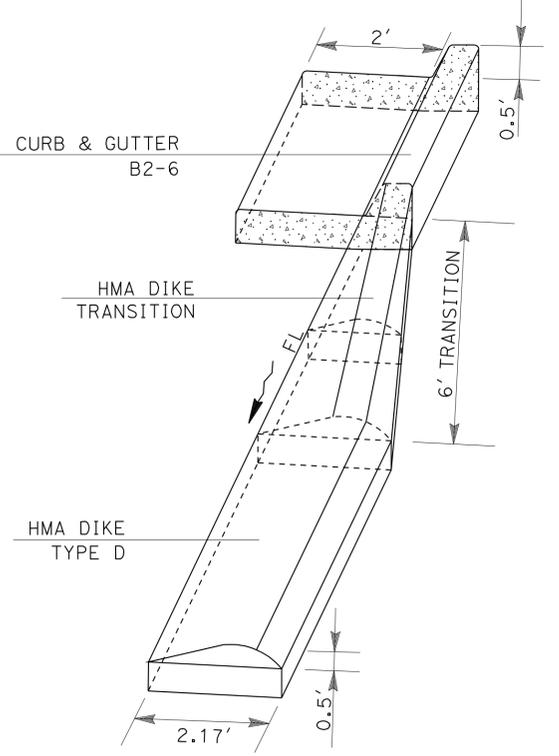
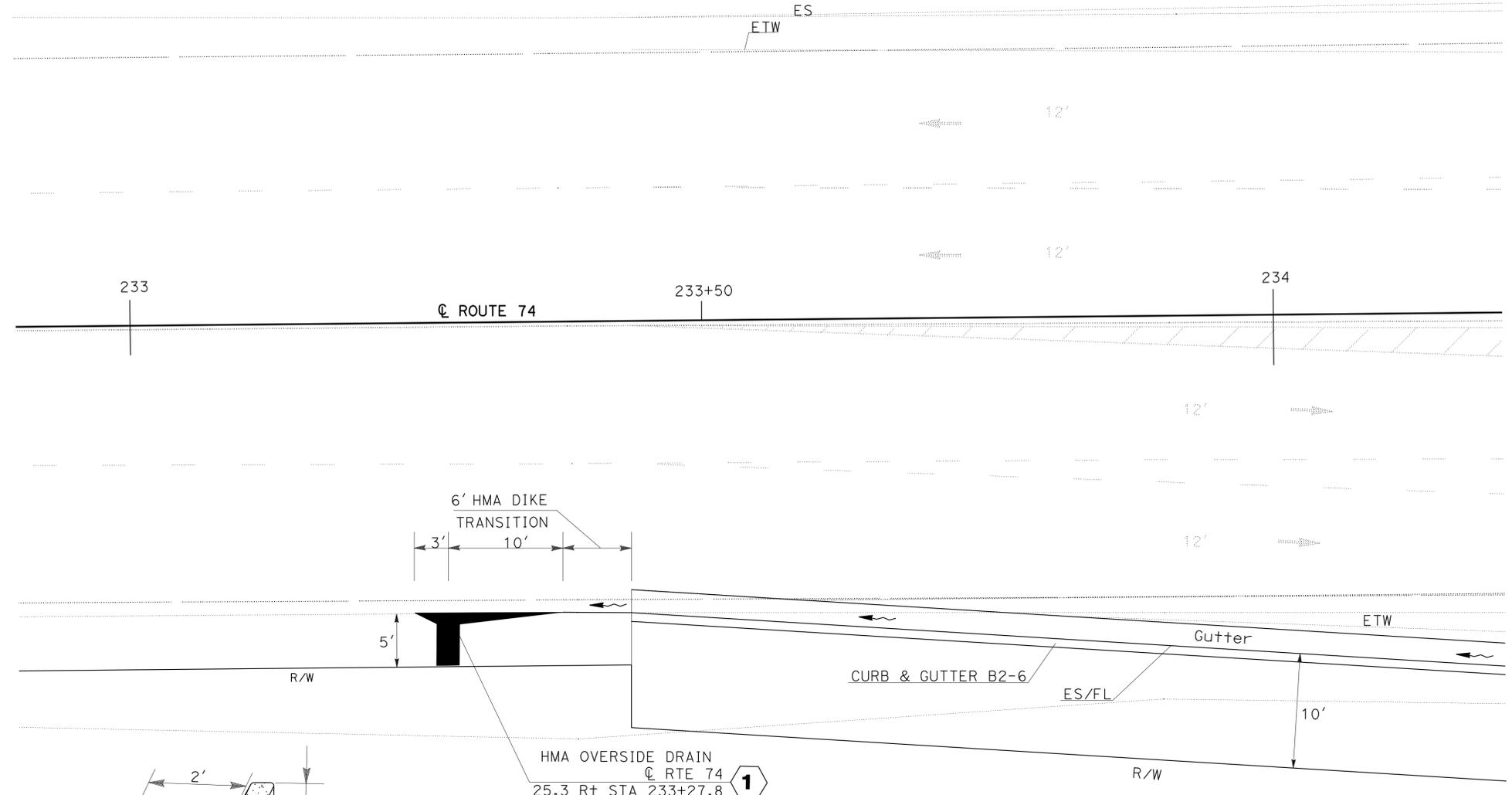
**DRAINAGE PLAN**  
SCALE: 1" = 50'  
**D-1**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	74	29.6/29.9	15	55

11-1-11  
 REGISTERED CIVIL ENGINEER DATE  
 1-9-12  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
**DAI HOANG**  
 No. C64203  
 Exp. 6-30-13  
 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.



**HMA DIKE TRANSITION DETAIL**



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 FUNCTIONAL SUPERVISOR: SERGIO E. AVILA  
 CALCULATED/DESIGNED BY: [blank]  
 CHECKED BY: [blank]  
 DAI HOANG  
 REZA TOOTOONCHI  
 REVISED BY: [blank]  
 DATE REVISED: [blank]

**DRAINAGE DETAILS**  
NO SCALE  
**DD-1**

LAST REVISION: [blank]  
 DATE PLOTTED => 11-JAN-2012  
 TIME PLOTTED => 12:34

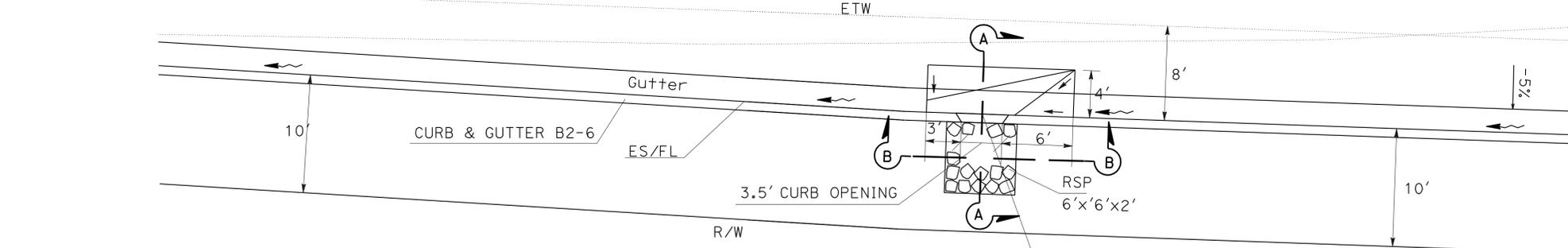
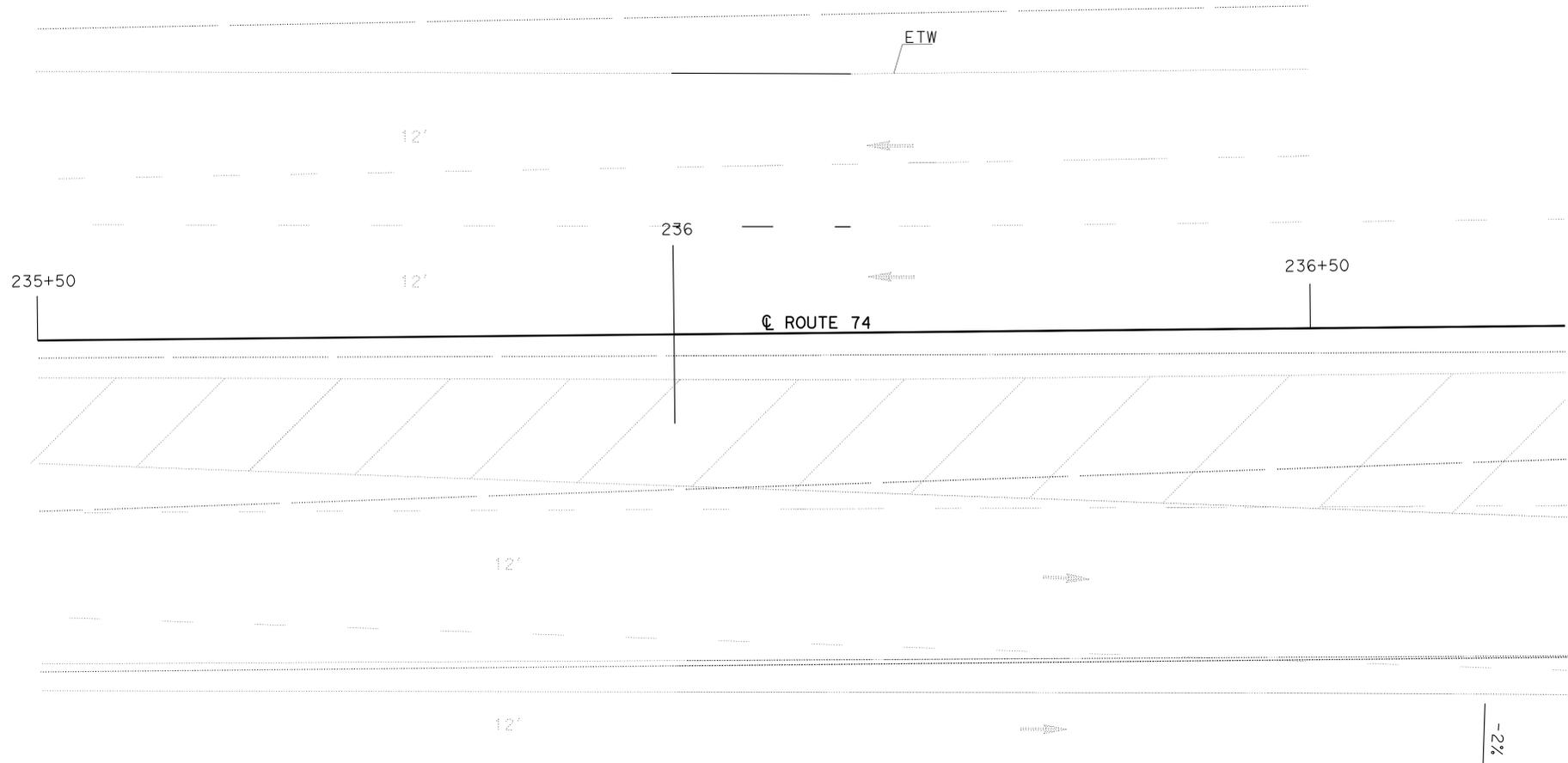
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	74	29.6/29.9	16	55

11-1-11  
 REGISTERED CIVIL ENGINEER DATE  
 1-9-12  
 PLANS APPROVAL DATE

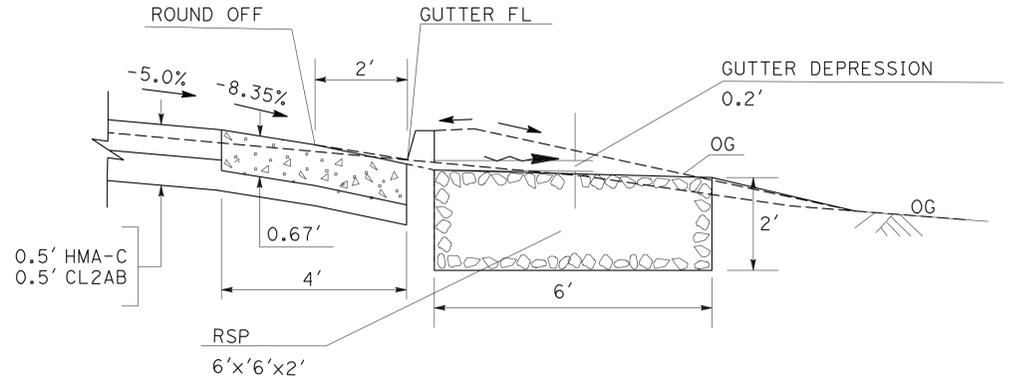
REGISTERED PROFESSIONAL ENGINEER  
**DAI HOANG**  
 No. C64203  
 Exp. 6-30-13  
 CIVIL  
 STATE OF CALIFORNIA

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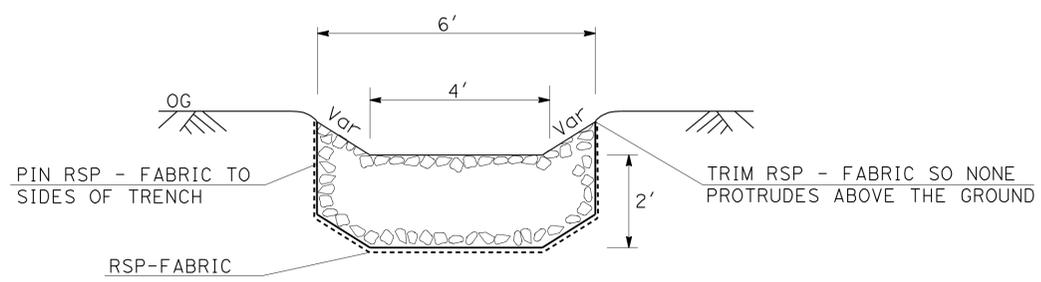
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 FUNCTIONAL SUPERVISOR: SERGIO E. AVILA  
 CALCULATED/DESIGNED BY: [ ] CHECKED BY: [ ]  
 DAI HOANG REZA TOOTOONCHI  
 REVISED BY: [ ] DATE REVISED: [ ]



TYPE OS INLET ON GRADE  
 44.8 RT CL RTE 74 STA 236+20  
 D78A



**SECTION A-A**



**SECTION B-B**

**DRAINAGE DETAILS**  
 NO SCALE  
**DD-2**

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

FUNCTIONAL SUPERVISOR: DAVID A GONZALEZ  
 CALCULATED/DESIGNED BY: DAVID A GONZALEZ  
 CHECKED BY: DAVID A GONZALEZ  
 REVISIONS: MICHAEL APANTE, DAVID A GONZALEZ  
 REVISOR: MICHAEL APANTE, DAVID A GONZALEZ  
 DATE: 11-1-11

**GENERAL NOTES: (THIS SHEET ONLY)**

- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT DISTRICT OFFICE.
- SEE SHEETS SES-1 THRU SES-5, SES-7 AND SES-8 FOR SIGNAL AND LIGHTING (TEMPORARY) WOODEN POLE DETAILS.
- OVERHEAD CONDUCTORS SHALL BE TIED ON MESSENGER CABLE WITH ULTRAVIOLET RESISTANT, SELF-CLINGING NYLON TIES, SPACED 3' APART MAXIMUM.
- PROVIDE GUY WIRES, GUY GUARDS AND ANCHOR AS REQUIRED. POLE GUY SHALL BE INSTALLED AS DIRECTED BY THE ENGINEER.
- ESTABLISH CONTINUOUS GROUND WITH SYSTEM GROUND TO ALL METAL PARTS IN THE SYSTEM BY BONDING JUMPERS AND CONDUITS.
- OVERHEAD ENTRANCE CONDUIT FITTING SHALL HAVE A DRIP LOOP.
- RS** 1 VIVDS, AND **RL** 3 VIVDS TO NEW SIGNAL POLES AT COMPLETION OF SIGNAL AND LIGHTING (TEMPORARY) (SEE SHEET E-3 FOR NEW LOCATION).
- RS** EXISTING CONTROLLER CABINET, BBS, AND 2070 CONTROLLER UNIT. **RC** OTHER MATERIALS AT COMPLETION OF SIGNAL AND LIGHTING (TEMPORARY) UNLESS OTHERWISE NOTED.

**PROJECT NOTES: (THIS SHEET ONLY)**

- TYPE 17-2-100 S+d (SEE SHEET SES-7)
- TYPE 1-A S+d (SEE SHEET SES-8)

**ABBREVIATIONS: (THIS SHEET ONLY)**

VIVDS = VIDEO IMAGE VEHICLE DETECTION SYSTEM

**LEGEND: (THIS SHEET ONLY)**

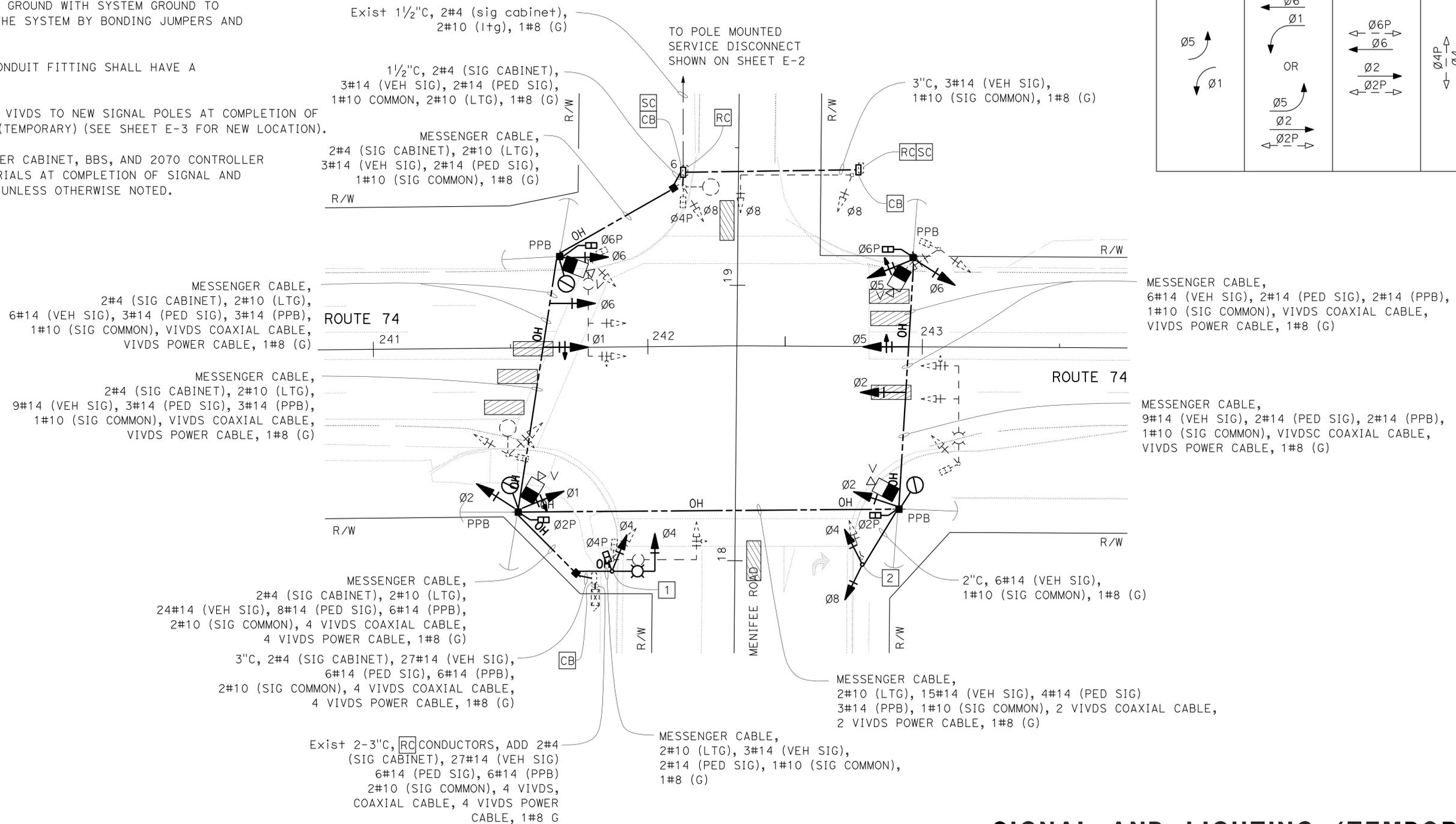
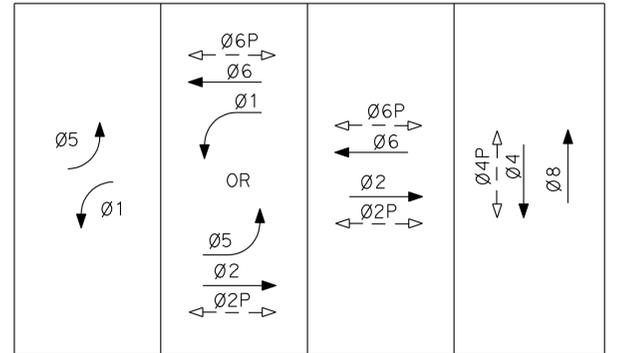
- WOOD POLE SECURED WITH GUY WIRE, ANCHOR ROD AND STEEL ANCHOR
- 300 W LIMINAIRE ON 15' LMA

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	74	29.6/29.9	17	55

REGISTERED ELECTRICAL ENGINEER: MICHAEL APANTE  
 No. E17164  
 Exp. 9/30/13  
 DATE: 11-1-11  
 PLANS APPROVAL DATE: 1-9-12

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

**PHASE DIAGRAM**



**SIGNAL AND LIGHTING (TEMPORARY)**  
 SCALE: 1" = 20'  
**E-1**

APPROVED FOR ELECTRICAL WORK ONLY

PROJECT NOTES: (THIS SHEET ONLY)

- 1 POLE-MOUNTED SOUTHERN CALIFORNIA EDISON METER ON STATE-OWNED WOOD POLE MENIFEE-ROMOLAND CALTRANS ID No. 08-56-074-0-029.800
- RC STATE-OWNED WOOD POLE, RC POLE-MOUNTED SERVICE ENCLOSURE.
- 2 RL EXISTING STREET NAME SIGN (SEE SHEET E-3 FOR NEW LOCATION).
- 3 RL (SEE SHEET E-3, NOTE 12, FOR NEW LOCATION).

SOUTHERN CALIFORNIA EDISON WOOD POLE No. 4233652E



GENERAL NOTES: (THIS SHEET ONLY)

- 1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- 2. AB ALL EXISTING LOOPS SHOWN ON THIS SHEET.

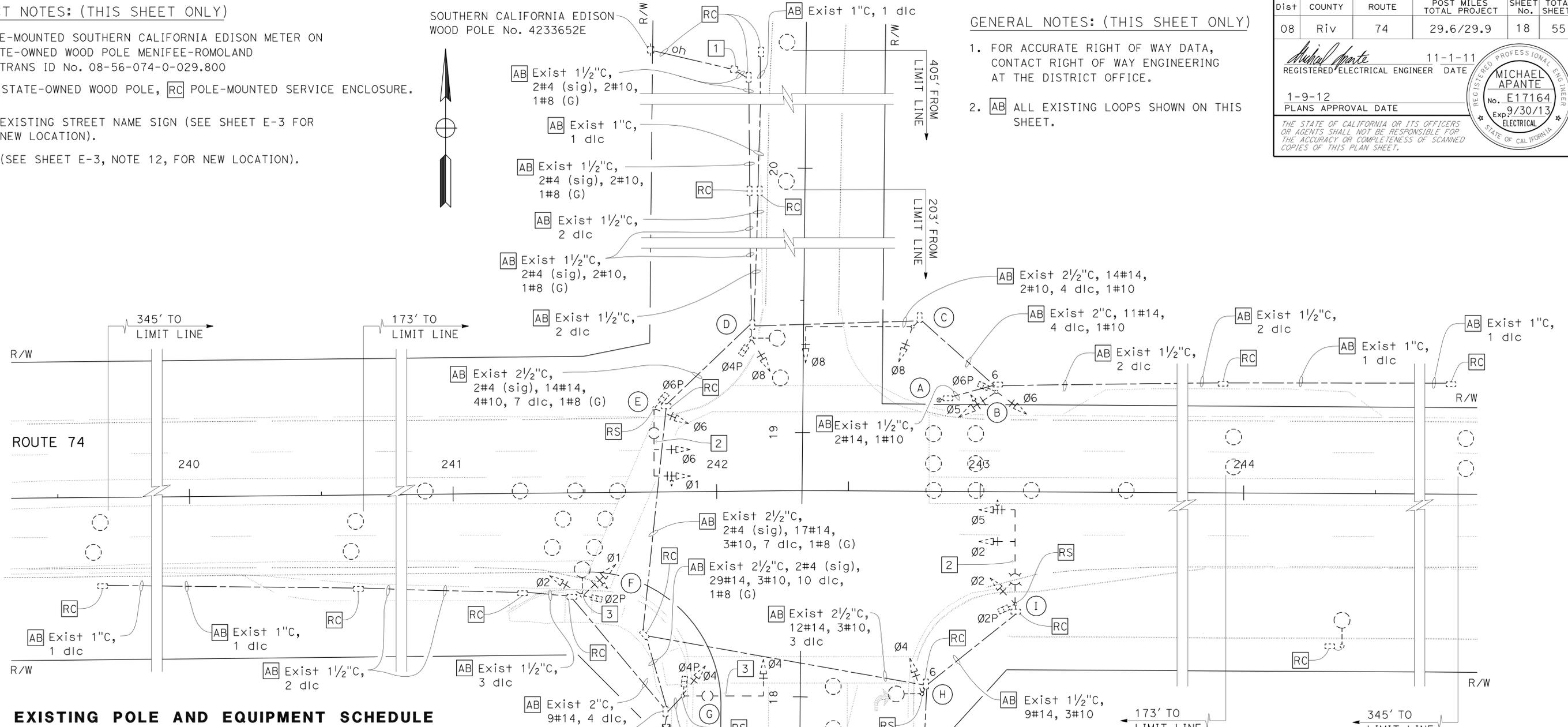
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	74	29.6/29.9	18	55

11-1-11  
REGISTERED ELECTRICAL ENGINEER DATE

1-9-12  
PLANS APPROVAL DATE

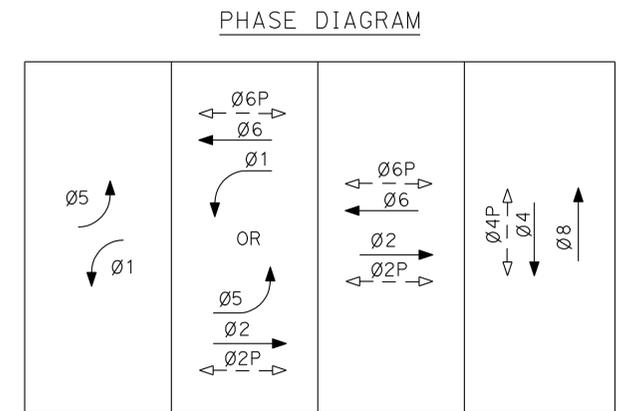
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER  
MICHAEL APANTE  
No. E17164  
Exp. 9/30/13  
ELECTRICAL  
STATE OF CALIFORNIA



EXISTING POLE AND EQUIPMENT SCHEDULE

No.	TYPE	STANDARD			VEHICLE SIGNAL MOUNTING			PEDESTRIAN SIGNAL		PPB		HPS LUMINAIRE (WATTS)
		SMA	LMA	Ø	MAST ARM	Ø	POLE	Ø	MOUNTING	Ø	ARROW	
(A)	PPB POST									6	→	
(B)	1-A				5 6	TV-2-T	6	SP-1-T				
(C)	27-4-80	40'		8	MAS	8	SV-1-T					
(D)	15TS		12'			8	SV-1-T	4	SP-1-T	6	→	200
(E)	19-4-80	35'	12'	1 6	MAS MAS	6	SV-1-T	6	SP-1-T	4	←	200
(F)	15TS		12'			1 2	SV-2-T	2	SP-1-T	4	→	200
(G)	17-2-80	30'	12'	4	MAS	4	SV-1-T	4	SP-1-T	2	←	200
(H)	15TS		12'			4	SV-1-T			2	→	200
(I)	19-4-80	35'	12'	2 5	MAS MAS	2	SV-1-T	2	SP-1-T			200



**MODIFY SIGNAL AND LIGHTING (REMOVAL)**  
SCALE: 1" = 20'  
**E-2**

APPROVED FOR ELECTRICAL WORK ONLY

REVISOR: MICHAEL APANTE  
DATE: 11-1-11  
DESIGNER: DAVID A GONZALEZ  
CHECKER: DAVID A GONZALEZ  
SUPERVISOR: DAVID A GONZALEZ  
DESIGNER: DAVID A GONZALEZ

PROJECT NOTES: (THIS SHEET ONLY)

1. INSTALL 120/240 V, TYPE III-CF SERVICE EQUIPMENT ENCLOSURE AS PER RSP ES-2C AND RSP ES-2F.  
  
 METER A: 100 A, 240 V, 2P, CB MAIN BREAKER (TC-1)  
 50 A, 120 V, 1P, CB (SIGNAL)  
 CTID No. 08-56-074-0-29.780-M  
 26025A MENIFEE ROAD, MENIFEE  
  
 METER B: 100 A, 240 V, 2P, CB MAIN BREAKER (LS-3)  
 20 A, 120 V, 1P, CB (LIGHTING)  
 15 A, 120 V, 1P, CB (LIGHTNG CONTROL)  
 15 A, 120 V, 1P, TEST SWITCH (LIGHTING CONTROL)  
 CTID No. 08-56-074-0-29.781-M  
 26025B MENIFEE ROAD, MENIFEE
2. INSTALL VIVDS (SEE SHEET SES-6).

GENERAL NOTES: (THIS SHEET ONLY)

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. TYPE 1-A FOUNDATION SHALL BE THE "ANCHOR BOLTS WITH SLEEVE NUTS" AS PER RSP ES-7B.
3. VIDEO DETECTION ZONES SHALL BE ESTABLISHED IN THE FIELD BY THE ENGINEER AND THE MANUFACTURER'S REPRESENTATIVE.

ABBREVIATIONS: (THIS SHEET ONLY)

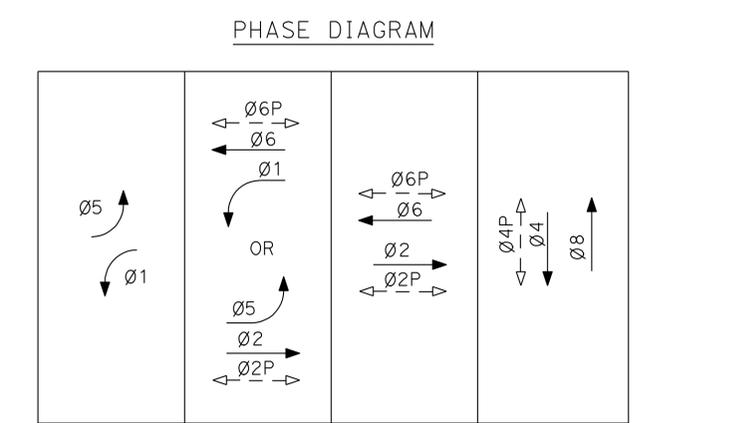
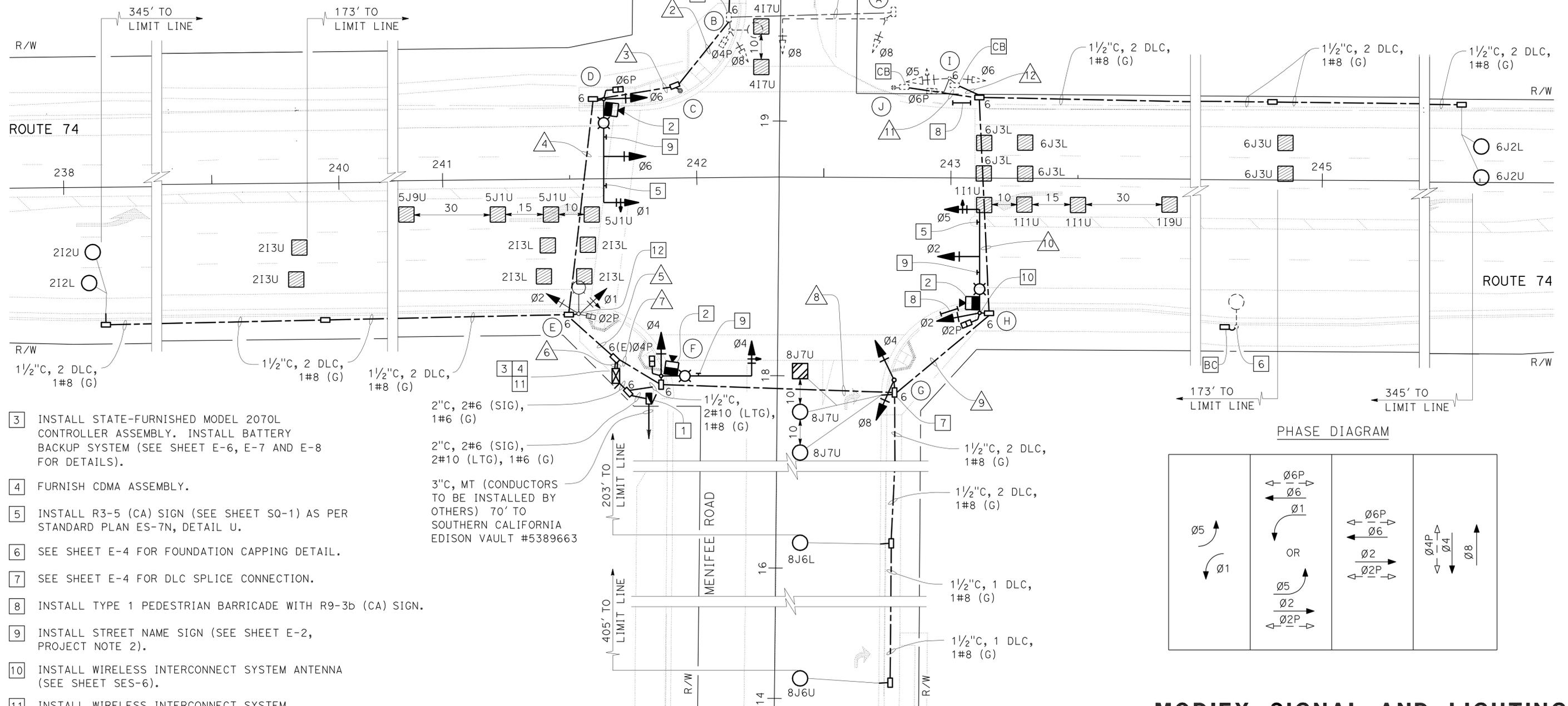
TC-1	TRAFFIC CONTROL RATE
LS-3	LIGHTING RATE
CTID	CALTRANS IDENTIFICATION
VIVDS	VIDEO IMATE VEHICLE DETECTION SYSTEM
CDMA	CODE DIVISION MULTIPLE ACCESS

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	74	29.6/29.9	19	55

11-1-11  
 REGISTERED ELECTRICAL ENGINEER DATE  
 1-9-12  
 PLANS APPROVAL DATE

Michael Apante  
 No. E17164  
 Exp. 9/30/13  
 ELECTRICAL  
 STATE OF CALIFORNIA

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



3. INSTALL STATE-FURNISHED MODEL 2070L CONTROLLER ASSEMBLY. INSTALL BATTERY BACKUP SYSTEM (SEE SHEET E-6, E-7 AND E-8 FOR DETAILS).
4. FURNISH CDMA ASSEMBLY.
5. INSTALL R3-5 (CA) SIGN (SEE SHEET SQ-1) AS PER STANDARD PLAN ES-7N, DETAIL U.
6. SEE SHEET E-4 FOR FOUNDATION CAPPING DETAIL.
7. SEE SHEET E-4 FOR DLC SPLICE CONNECTION.
8. INSTALL TYPE 1 PEDESTRIAN BARRICADE WITH R9-3b (CA) SIGN.
9. INSTALL STREET NAME SIGN (SEE SHEET E-2, PROJECT NOTE 2).
10. INSTALL WIRELESS INTERCONNECT SYSTEM ANTENNA (SEE SHEET SES-6).
11. INSTALL WIRELESS INTERCONNECT SYSTEM (SEE SHEET E-10) (FOR FUTURE USE).
12. RELOCATED (SEE SHEET E-2, PROJECT NOTE 3).

**MODIFY SIGNAL AND LIGHTING**  
 SCALE: 1" = 20'  
**E-3**

APPROVED FOR ELECTRICAL WORK ONLY

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

FUNCTIONAL SUPERVISOR: DAVID A GONZALEZ  
 CHECKED BY: DAVID A GONZALEZ  
 CALCULATED/DESIGNED BY: DAVID A GONZALEZ  
 REVISOR: MICHAEL APANTE  
 DATE REVISOR: DAVID A GONZALEZ

**PROPOSED POLE AND EQUIPMENT SCHEDULE**

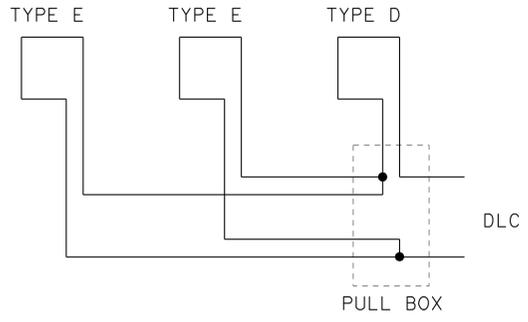
No.	STANDARD			VEHICLE SIGNAL MOUNTING			PEDESTRIAN SIGNAL		PPB		HPS LUMINAIRE (WATTS)	SPECIAL REQUIREMENTS
	TYPE	SMA	LMA	Ø	MAST ARM	Ø	POLE	Ø	MOUNTING	Ø		
(A)	27-4-80	40'		8	MAS	8	SV-1-T					
(B)	15TS		12'			8	SV-1-T	4	SP-1-T			RS PEDESTRIAN PUSH BUTTON ASSEMBLY
(C)	PPB POST (N)									6	←	
(D)	26-4-100 (N)	40' (N)	12' (N)	1 6	MAS (N) MAS (N)	6	SV-1-T (N)	6	SP-1-T (N)	4	←	200 MOUNT VIVDS ON LUMINAIRE MAST ARM
(E)	15TS		12'			1 2	SV-2-T	2	SP-1-T	4	→	200
(F)	24A-4-100 (N)	35' (N)	12' (N)	4	MAS (N)	4	SV-1-T (N)	4	SP-1-T (N)	2	←	310 MOUNT VIVDS ON LUMINAIRE MAST ARM
(G)	1-A (N)					4 8	TV-2-T (N)			2	→	
(H)	26A-4-100 (N)	40' (N)	12' (N)	2 5	MAS (N) MAS (N)	2	SV-1-T (N)	2	SP-1-T (N)			310 MOUNT VIVDS ON LUMINAIRE MAST ARM
(I)	1-A					5 6	TV-2-T	6	SP-1-T			
(J)	PPB POST									6	→	

NOTE: ALL EQUIPMENT ARE EXISTING UNLESS NOTED OTHERWISE  
(N) - NEW

**CONDUCTOR SCHEDULE**

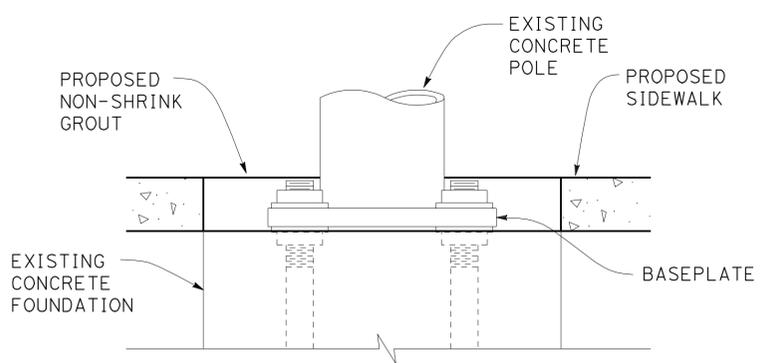
CABLE TYPE	S+D	PHASE	NUMBER OF CONDUCTORS																				
			RUN NUMBER																				
			1	2	3	4	5	6	7	8	9	10	11	12									
VEH-PED 12CSC	(A)	8	1	1	1	1	1	1															
	(B)	8,4P		1	1	1	1	1															
	(C)	6			1	1	1	1															
	(D)	1,6,6P	4				1	1	1	1													
	(E)	1,2,2P	4					1	1	1													
	(F)	4,4P	4						1	1	1												
	(G)	4,8	2							2	1	2	1	2	1								
	(H)	2,5,2P	2								1	1	1	1	1								
	(I)	5,6,6P									1	1	1	1	1	1							
	(J)	6										1	1	1	1	1	1	1	1	1	1	1	
TOTAL CABLES 12CSC/3CSC			1	2	2	3	4	3	9	6	5	3	4	2	2	1	1	1	1	1	1	1	
#10	STREET LIGHTING			2	2	2	2	2															
#8	GROUND		1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	
TYPE B DLC	Ø1																						
	Ø2									2	2												
	Ø3																						
	Ø4			1	1	1	1	1	1														
	Ø5																						
	Ø6										2	2	2	2	2								
	Ø7																						
	Ø8										3	3	3										
TOTAL DLCs PER RUN				1	1	1	3	8	5	5	5	2	2										
WIRELESS INTERCONNECT CABLE									1	1	1	1											
VIVDS COAXIAL CABLE							1	1	3	2	1	1											
VIVDS POWER CABLE							1	1	3	2	1	1											
CONDUIT SIZE			3"(E)	2"	2"	3"	2"	2"-4"	2"	3"	2"	3"	2"	3"	1 1/2"	1 1/2"							

NOTE: ALL EQUIPMENT ARE NEW UNLESS NOTED OTHERWISE  
(E) - EXISTING



**DLC SPLICE CONNECTION**

THREE PAIRS OF LOOP CONDUCTORS SPLICED TO ONE DLC



**FOUNDATION CAPPING DETAIL**

**MODIFY SIGNAL AND LIGHTING**

NO SCALE

**E-4**

APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL DESIGN A  
 FUNCTIONAL SUPERVISOR: DAVID A GONZALEZ  
 CALCULATED/DESIGNED BY: DAVID A GONZALEZ  
 REVISOR: MICHAEL APANTE  
 DATE REVISOR: DAVID A GONZALEZ

LAST REVISION DATE PLOTTED => 11-JAN-2012  
 11-01-11 TIME PLOTTED => 13:28



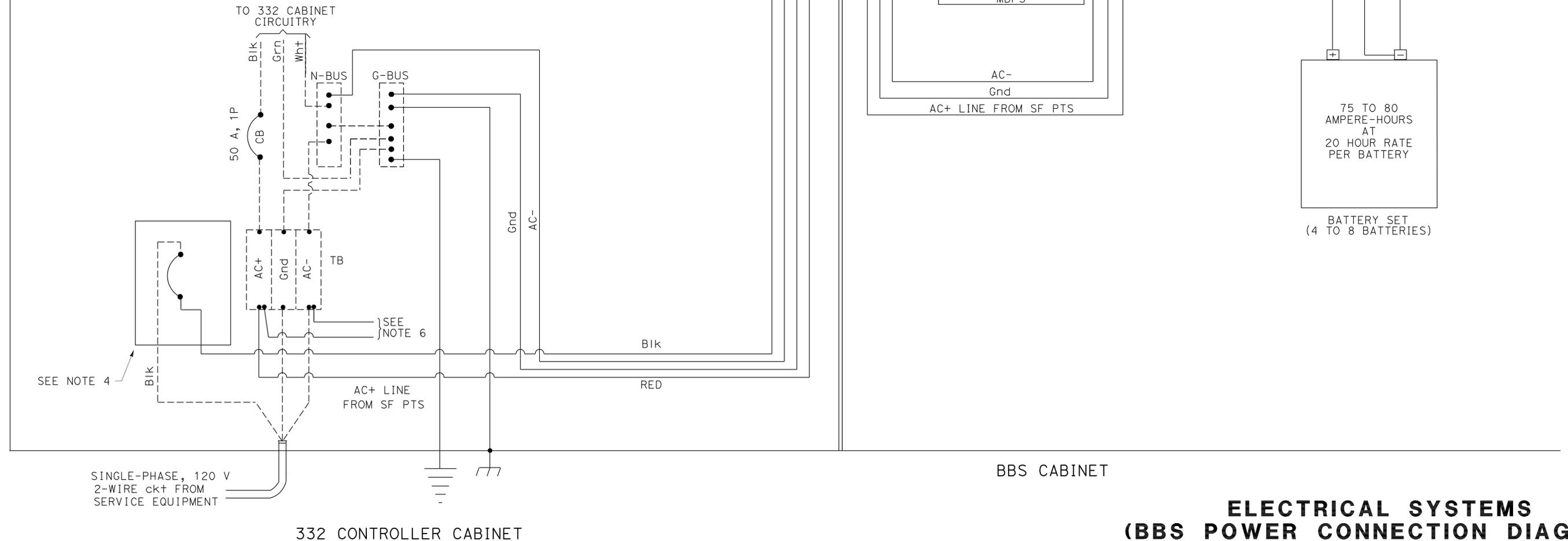


**LEGEND: (THIS SHEET ONLY)**

- PTS = POWER TRANSFER SWITCH
- UPS = UNINTERRUPTIBLE POWER SUPPLY
- UPSC = UNINTERRUPTIBLE POWER SUPPLY CONTROLLER
- UPSM = UPS MODE
- BP = BYPASS
- MBPS = MANUAL BYPASS SWITCH
- AC+ = UNGROUNDED CONDUCTOR
- AC- = GROUNDED CONDUCTOR
- C = COMMON
- Grn = GREEN
- Blk = BLACK
- Wh+ = WHITE
- SF = STATE-FURNISHED
- Batt = BATTERY
- Temp = TEMPERATURE
- TB = TERMINAL BOARD
- Cn+I = CONTROL
- Gnd = GROUND

**NOTES: (THIS SHEET ONLY)**

1. TYPE B REFERS TO THE BBS EQUIPMENT FROM MANUFACTURER B.
2. CASE-1 REFERS TO THE SITUATION WHEN THE ENTIRE BBS EQUIPMENT INCLUDING THE BATTERIES ARE INSTALLED IN THE BBS CABINET.
3. THE LOCATION OF THE 2" C NIPPLE WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.
4. THE CONTRACTOR SHALL FURNISH AND INSTALL A NEMA-1 ENCLOSURE WITH 30 A, 1P, 120/240 VOLTS RATED CIRCUIT BREAKER MANUFACTURED PER UL STANDARD 489.
5. A TEMPERATURE PROBE SHALL BE ATTACHED TO THE BATTERY BY TAPE OR ATTACHED TO THE NEGATIVE TERMINAL OF THE BATTERY.
6. THE ELECTRICAL POWER FOR THE COOLING FAN FOR THE BBS CABINET SHALL BE TAPPED FROM THE BOTTOM OF THE TB IN THE 332 CABINET.
7. THE CONTRACTOR SHALL PROVIDE A 9-WIRE WIRING HARNESS OR BUNDLED 9 MULTICOLOR CONDUCTORS, #18 AWG WIRES FROM THE RELAY ON THE INVERTER/CHARGER UNIT TO THE CONTROLLER. THE ENDS OF THE CONDUCTORS SHALL BE INSULATED WITH TAPE AND A SIX-FOOT COIL ON EACH END.



**ELECTRICAL SYSTEMS**  
**(BBS POWER CONNECTION DIAGRAM,**  
**TYPE B, CASE-1)**  
 NO SCALE

**E-7**

APPROVED FOR ELECTRICAL WORK ONLY



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL DESIGN A  
 FUNCTIONAL SUPERVISOR: DAVID A GONZALEZ  
 CALCULATED/DESIGNED BY: [blank]  
 CHECKED BY: [blank]  
 REVISIONS BY: THERESA A. GABRIEL, MICHAEL APANTE  
 DATE REVISION: [blank]

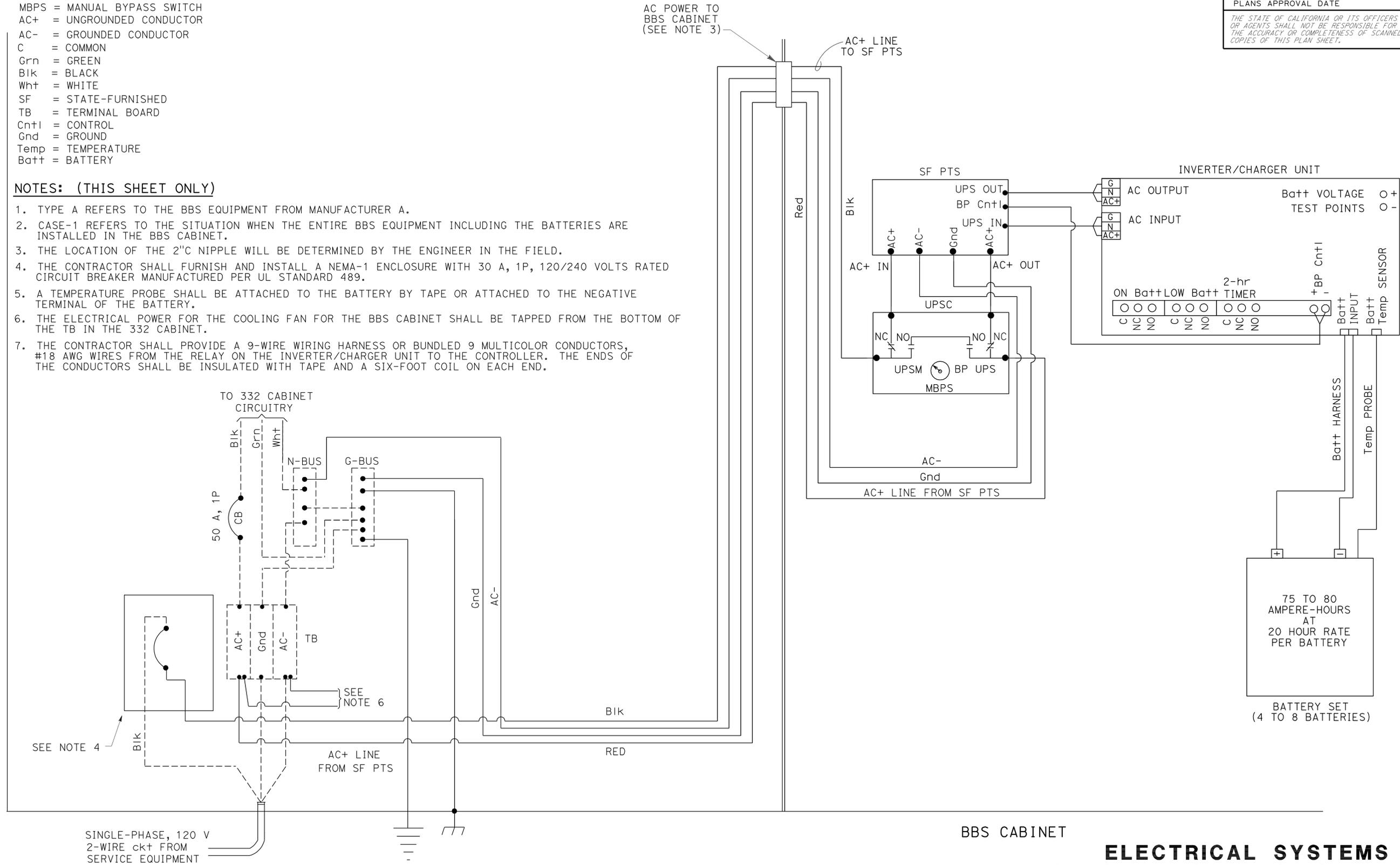
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 DATE PLOTTED => 11-JAN-2012  
 TIME PLOTTED => 09:12

**LEGEND: (THIS SHEET ONLY)**

- PTS = POWER TRANSFER SWITCH
- UPS = UNINTERRUPTIBLE POWER SUPPLY
- UPSC = UNINTERRUPTIBLE POWER SUPPLY CONTROLLER
- UPSM = UPS MODE
- BP = BYPASS
- MBPS = MANUAL BYPASS SWITCH
- AC+ = UNGROUNDED CONDUCTOR
- AC- = GROUNDED CONDUCTOR
- C = COMMON
- Grn = GREEN
- Blk = BLACK
- Wht = WHITE
- SF = STATE-FURNISHED
- TB = TERMINAL BOARD
- Cntl = CONTROL
- Gnd = GROUND
- Temp = TEMPERATURE
- Batt = BATTERY

**NOTES: (THIS SHEET ONLY)**

1. TYPE A REFERS TO THE BBS EQUIPMENT FROM MANUFACTURER A.
2. CASE-1 REFERS TO THE SITUATION WHEN THE ENTIRE BBS EQUIPMENT INCLUDING THE BATTERIES ARE INSTALLED IN THE BBS CABINET.
3. THE LOCATION OF THE 2" C NIPPLE WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.
4. THE CONTRACTOR SHALL FURNISH AND INSTALL A NEMA-1 ENCLOSURE WITH 30 A, 1P, 120/240 VOLTS RATED CIRCUIT BREAKER MANUFACTURED PER UL STANDARD 489.
5. A TEMPERATURE PROBE SHALL BE ATTACHED TO THE BATTERY BY TAPE OR ATTACHED TO THE NEGATIVE TERMINAL OF THE BATTERY.
6. THE ELECTRICAL POWER FOR THE COOLING FAN FOR THE BBS CABINET SHALL BE TAPPED FROM THE BOTTOM OF THE TB IN THE 332 CABINET.
7. THE CONTRACTOR SHALL PROVIDE A 9-WIRE WIRING HARNESS OR BUNDLED 9 MULTICOLOR CONDUCTORS, #18 AWG WIRES FROM THE RELAY ON THE INVERTER/CHARGER UNIT TO THE CONTROLLER. THE ENDS OF THE CONDUCTORS SHALL BE INSULATED WITH TAPE AND A SIX-FOOT COIL ON EACH END.



**BBS CABINET**  
**ELECTRICAL SYSTEMS**  
**(BBS POWER CONNECTION DIAGRAM,**  
**TYPE A, CASE-1)**  
 NO SCALE

APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL DESIGN A  
 FUNCTIONAL SUPERVISOR: DAVID A GONZALEZ  
 REVISIONS: THERESA A. GABIEL, MICHAEL APANTE, DAVID A GONZALEZ  
 CALCULATED/DESIGNED BY: CHECKED BY:

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	74	29.6/29.9	25	55

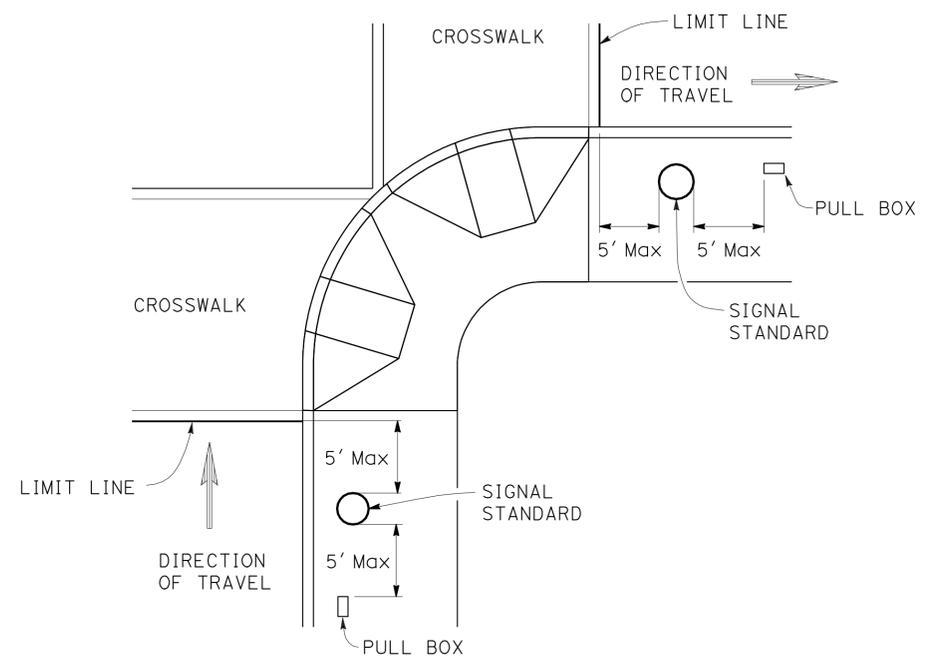
<i>Michael Apante</i>	11-28-11
REGISTERED ELECTRICAL ENGINEER	DATE
1-9-12	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
MICHAEL APANTE
No. E17164
Exp. 9/30/13
ELECTRICAL
STATE OF CALIFORNIA

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

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
<b>Caltrans</b> ELECTRICAL DESIGN A
FUNCTIONAL SUPERVISOR
DAVID A GONZALEZ
CALCULATED/DESIGNED BY
CHECKED BY
MICHAEL APANTE
DAVID A GONZALEZ
REVISOR BY
DATE REVISED



**PULL BOX AND SIGNAL STANDARD LOCATION DETAIL**

**MODIFY SIGNAL AND LIGHTING**

NO SCALE

**E-9**

APPROVED FOR ELECTRICAL WORK ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	74	29.6/29.9	26	55

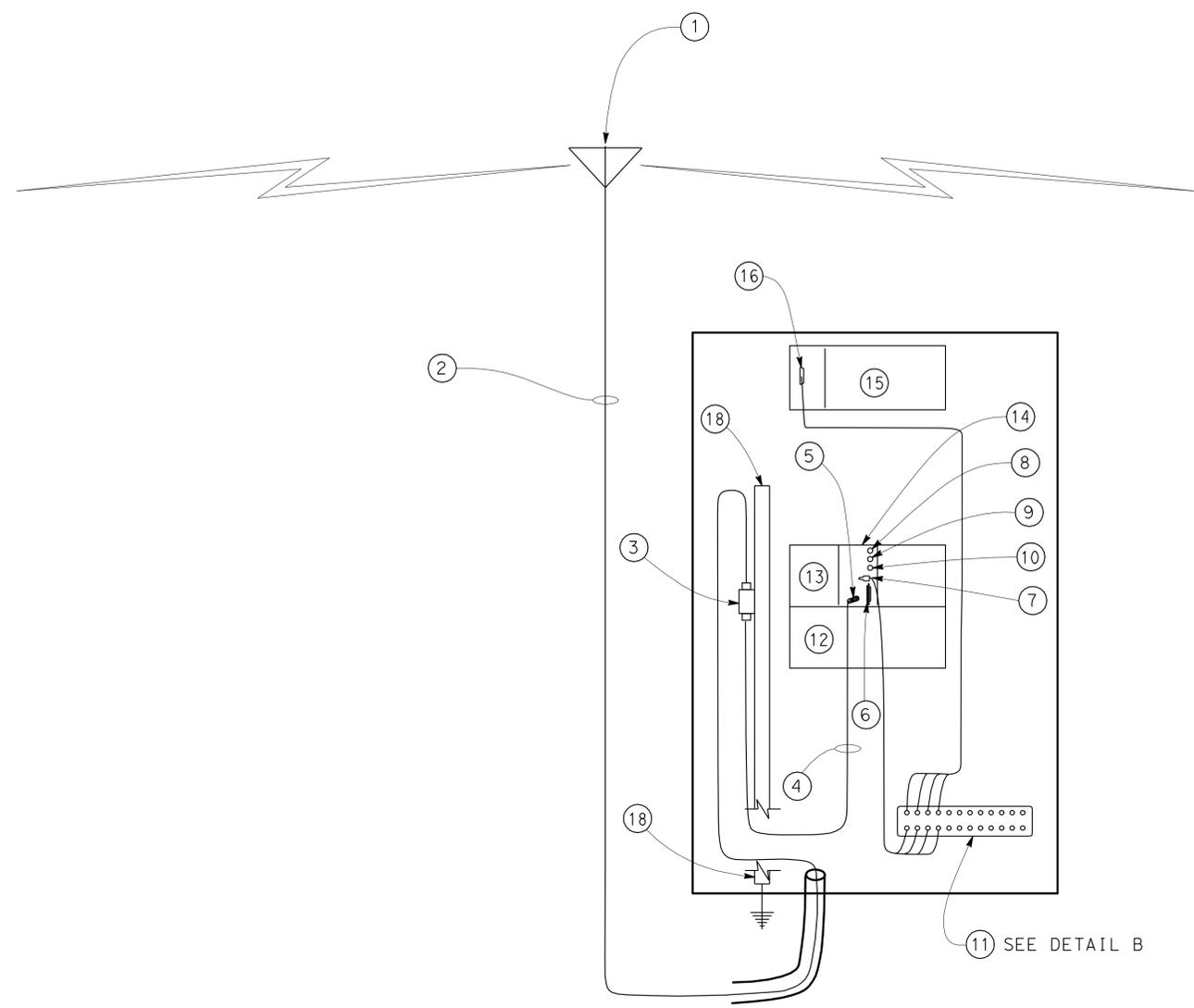
  

<i>Michael Apante</i>	11-28-11
REGISTERED ELECTRICAL ENGINEER	DATE
1-9-12	
PLANS APPROVAL DATE	

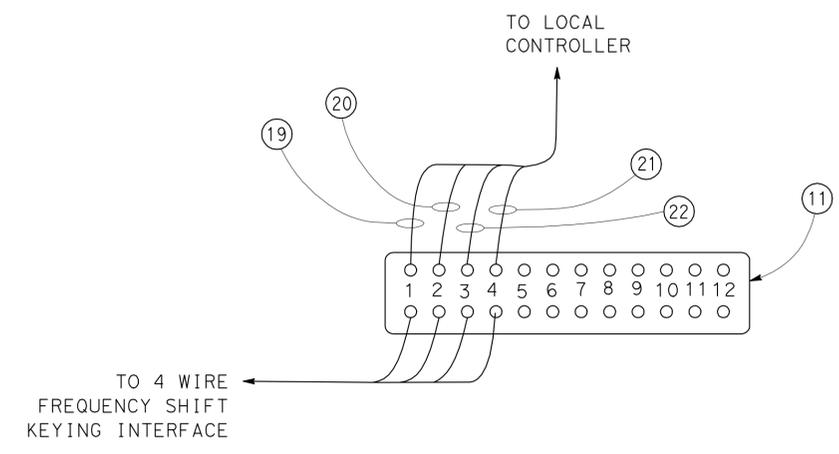
  

REGISTERED PROFESSIONAL ENGINEER
MICHAEL APANTE
No. E17164
Exp. 9/30/13
ELECTRICAL
STATE OF CALIFORNIA

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**TRAFFIC SIGNAL CABINET**



**DETAIL B**

**GENERAL NOTES: (THIS SHEET ONLY)**

- ① ANTENNA
- ② COAXIAL CABLE
- ③ LIGHTNING ARRESTOR
- ④ COAXIAL DROP CABLE
- ⑤ ANTENNA INPUT
- ⑥ DB9-F
- ⑦ 4-WIRE COMMUNICATION FREQUENCY SHIFT KEYING INTERFACE
- ⑧ TRANSMITTER INDICATOR
- ⑨ RECEIVER INDICATOR
- ⑩ POWER INDICATOR
- ⑪ TERMINAL BLOCK 0
- ⑫ INPUT J FILE
- ⑬ INPUT I FILE
- ⑭ RADIO TRANSCEIVER
- ⑮ LOCAL MODEL 2070L CONTROLLER WITH MODEL 400 MODEM
- ⑯ C2 PORT
- ⑰ NOT USED
- ⑱ RACK RAIL
- ⑲ C2 A (WHITE)
- ⑳ C2 B (BLACK)
- ㉑ C2 C (RED)
- ㉒ C2 E (GREEN)

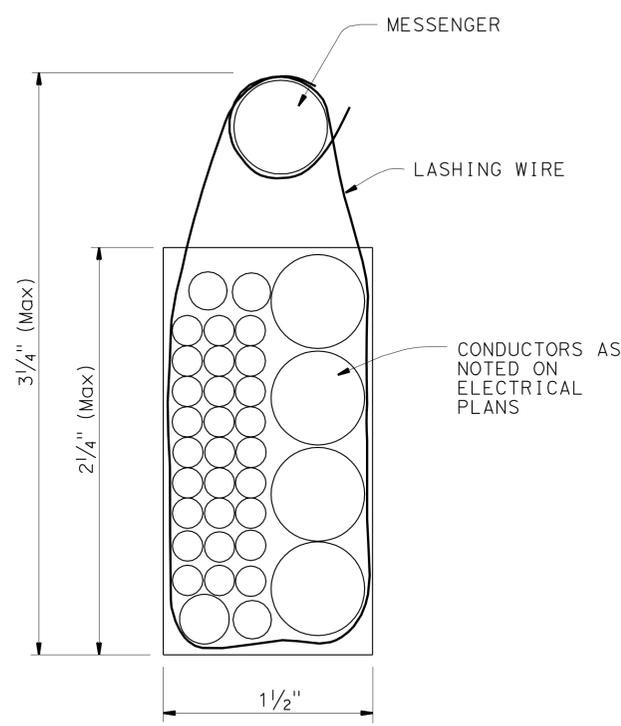
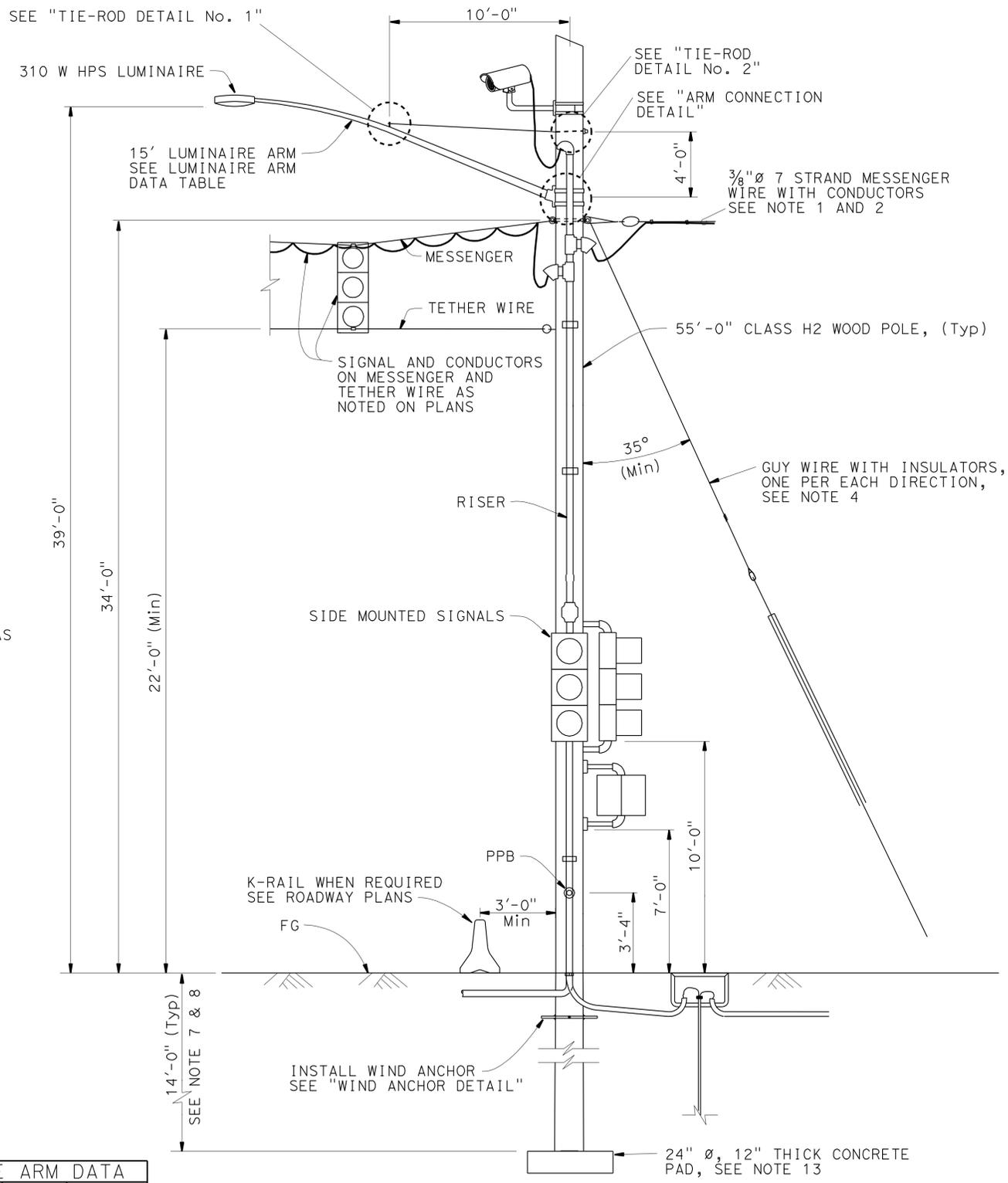
**MODIFY SIGNAL AND LIGHTING**

NO SCALE

**E-10**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL DESIGN A  
 FUNCTIONAL SUPERVISOR: DAVID A GONZALEZ  
 CALCULATED/DESIGNED BY: CHECKED BY:  
 MICHAEL APANTE  
 REVISED BY: DAVID A GONZALEZ  
 DATE REVISION:





**CONDUCTOR BUNDLING DETAIL**  
See Note 12

LUMINAIRE ARM DATA			
Projected Length	N Rise	Min OD At Pole	Thickness
15'-0"	4'-9"	4 1/4"	0.1196"

Refer to RSP ES-6A for Luminaire arm details

**TYPICAL WOOD POLE SUPPORT WITH LUMINAIRE**

NO SCALE

**GENERAL NOTES:**

**SPECIFICATIONS**

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

**LOADING**

Wind Loadings: 85 MPH

**UNIT STRESSES**

Timber Poles: Fb = 1850 psi Tapered treated round pole  
 Fv = 110 psi ASTM D2899 Standard  
 E = 1500 x 10<sup>3</sup> psi

**TREATMENT**

To conform with Section 86 Standard Specifications

**SPECIFICATIONS**

Caltrans Standard Specifications May 2006  
 ANSI Wood Poles  
 ASTM Utility Grade Wires

**NOTES:**

- All overhead cables shall be slack spanned with 22'-0" minimum overhead clearance.
- Conductors shall be suspended from span-wire as follows:  
 A) Main run 3/8" span-wire with 7% sag and 1/4" tether wire with 3% sag where required. No spare conductors allowed except as noted.
- Overhead line construction not specifically covered here shall conform with the provisions of General Order No. 95 of Public Utilities Commission.
- Wood poles shall be stabilized using guy wires, breast blocks or rakes at each dead end, corner, drop or line deviation more than 15° from straight line. The direction of the guy shall counteract the resultant of unbalanced force applied to pole. Where space or conflict prevent guy installation, a diagonal brace shall be used. The brace shall be wood and shall be connected to the pole by means to satisfy structural and electrical requirements. The direction of the brace shall counteract the resultant of unbalanced horizontal force of 5000 pounds (Min) applied to the pole.
- Guy shall be attached to pole as nearly as practical to the center of conductors load, or 3'-0" Max otherwise, See Note 4.
- All attachments shall be mounted with stainless steel straps or other manufacturers methods without drilling holes in pole, except as shown. Drilling through pole will require the Engineer's approval.
- Foundation design is based on AASHTO 2001 article 13.6 Broms' approximate procedure assuming a cohesionless material. The angle of Internal friction used is 30° and unit weight of soil used is 120 lb/ft<sup>3</sup>. The Contractor to verify actual soil condition.
- If pole is located on a steep slope add 2 feet extra for embedment.
- See Sheets SES-2 through SES-5 for details.
- For details not shown, see "2006 STANDARD PLANS" and "2006 REVISED STANDARD PLANS"
- All temporary poles support OH Conductors. Attach luminaire arm and/or combination of attachments as specified at locations where indicated on Electrical Sheets.
- All overhead conductors shall be bundled into 2 1/4" (Max) compacted shape. No loose conductors allowed. See Conductor Bundling Detail.
- For wood poles to carry 20 or more conductors use 12" thick concrete pad.

BRANCH CHIEF JAMES SAGAR

DESIGN	BY A MALAK	CHECKED T MARCHENKO
DETAILS	BY H NGUYEN	CHECKED A MALAK
QUANTITIES	BY	CHECKED X

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
 STRUCTURE DESIGN  
 SPECIAL DESIGN BRANCH

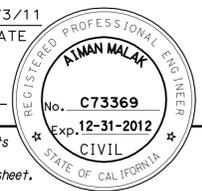
BRIDGE NO.	N/A
POST MILE	VAR

**SIGNAL AND LIGHTING (TEMPORARY)**  
**TEMPORARY WOOD POLE**

**SES-1**

USERNAME => s121614 DATE PLOTTED => 12-JAN-2012 TIME PLOTTED => 07:33

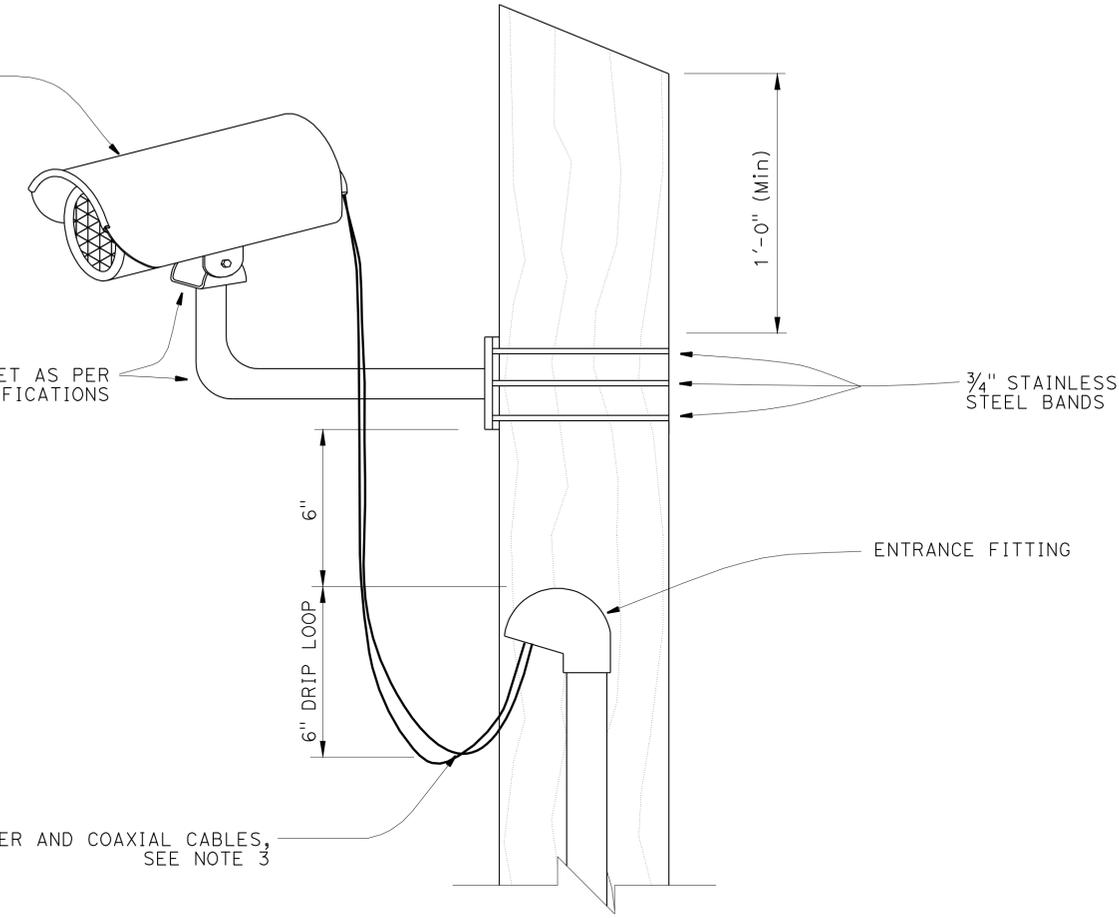
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08	Riv	70	29.6/29.9	28	55
<i>Aiman Malak</i> REGISTERED CIVIL ENGINEER			8/3/11 DATE		
1-9-12 PLANS APPROVAL DATE					
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MISCELLANEOUS ATTACHMENT, MAXIMUM EPA 1.0 SQUARE FOOT, 10 lb (Max), SEE NOTE 4, MAXIMUM 2'-0" ARM

MOUNTING BRACKET AS PER MANUFACTURER SPECIFICATIONS

POWER AND COAXIAL CABLES, SEE NOTE 3



**CAMERA MOUNTING DETAIL**

**NOTES:**

- Exact mounting location of miscellaneous attachment and bracket shall be approved by the Engineer per manufacturer's recommendation.
- Power and coaxial cables shall have a drip loop at the entrance into signal pole.
- Power and coaxial cables shall run continuous and shall not be twisted from the miscellaneous attachment to the controller cabinet. No splices shall be allowed.
- Use the manufacturer's Effective Projected Area (EPA) for miscellaneous attachment. The maximum EPA for each miscellaneous attachment shall be 1.0 square feet.
- Miscellaneous attachment shall be mounted using clamping devices approved by the Engineer per manufacturer's recommendations.

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

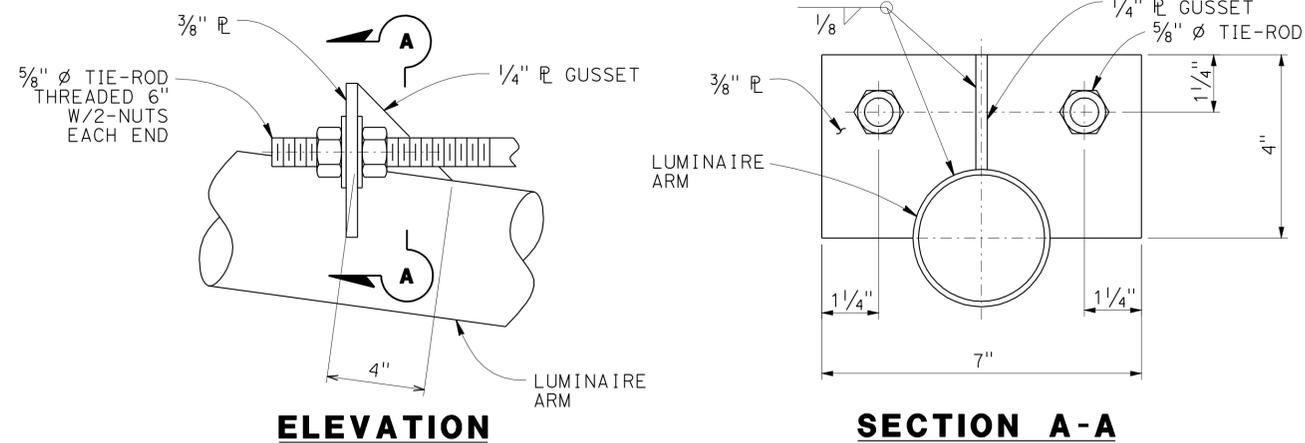
NO SCALE

<b>BRANCH CHIEF</b> <u>JAMES SAGAR</u>	DESIGN	BY A MALAK	CHECKED T MARCHENKO	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>SPECIAL DESIGN BRANCH</b>	BRIDGE NO.	<b>SIGNAL AND LIGHTING (TEMPORARY)</b> <b>CAMERA MOUNTING DETAILS</b>	<b>SES-2</b>
	DETAILS	BY H NGUYEN	CHECKED A MALAK			N/A		
	QUANTITIES	BY X	CHECKED X			POST MILE 29.6/29.9		

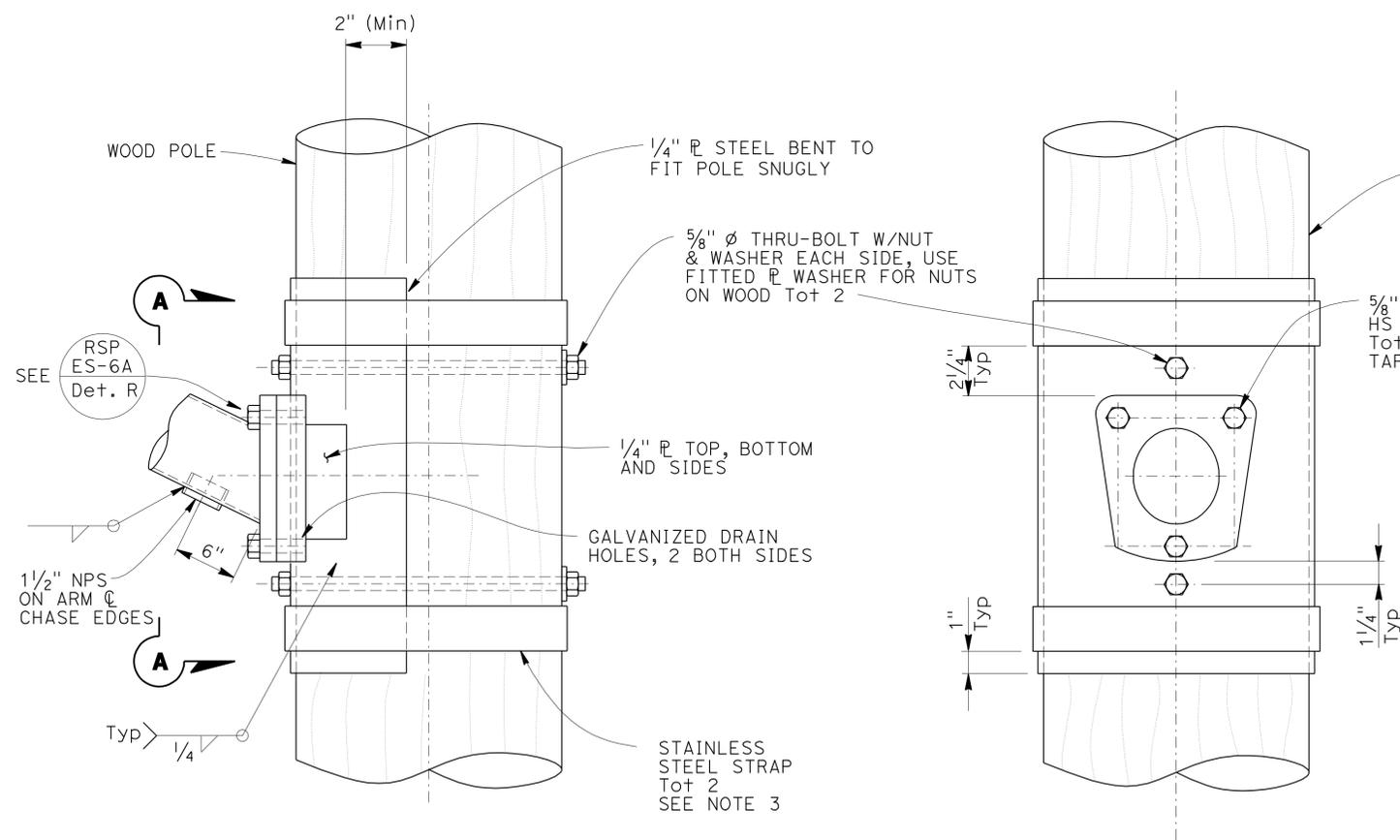
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	74	29.6/29.9	29	55
<i>Aiman Malak</i> REGISTERED CIVIL ENGINEER			8/3/11	DATE	
1-9-12				PLANS APPROVAL DATE	
No. C73369 Exp. 12-31-2012 CIVIL				REGISTERED PROFESSIONAL ENGINEER STATE OF CALIFORNIA	
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.					

**NOTES:**

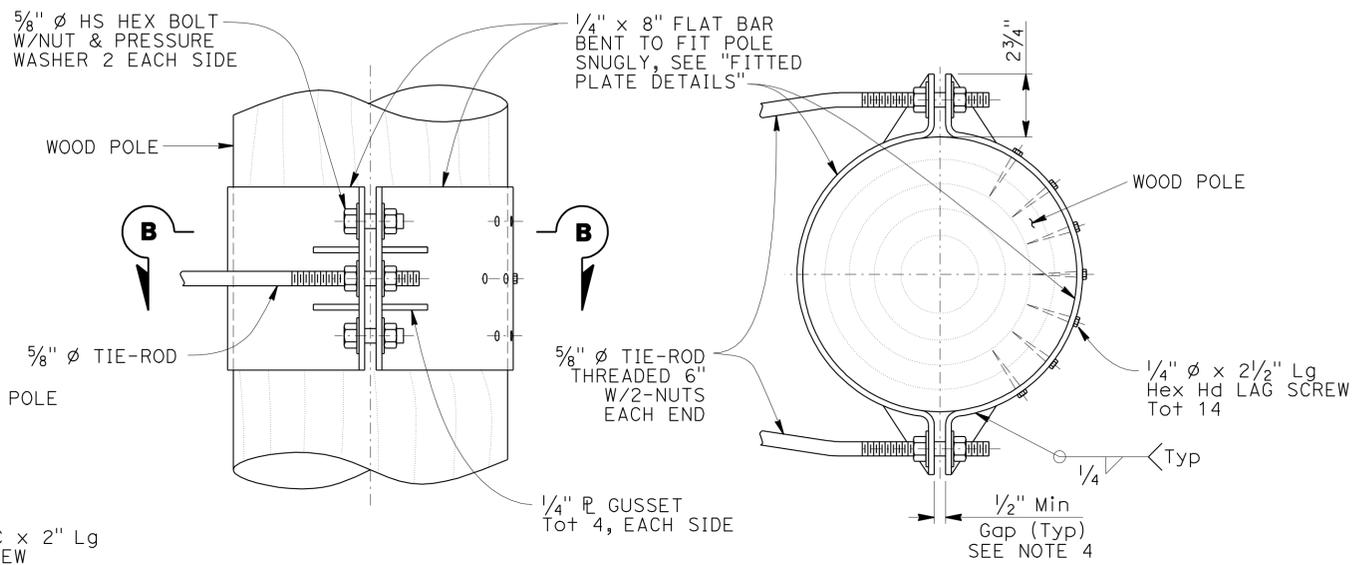
- All hardware and steel shall be galvanized after fabrication.
- Arm Base connection details shall be in compliance with Standard Plans Detail Sheet ES-6A with noted modifications.
- 3500 lb Min capacity strap system shall be used for top and bottom of plate.
- The Contractor to verify pole dimensions at Tie-Rod attachment height. Fabricate 8" flat bar with "L" Dimension to maintain an open gap between encasement in finished installation.



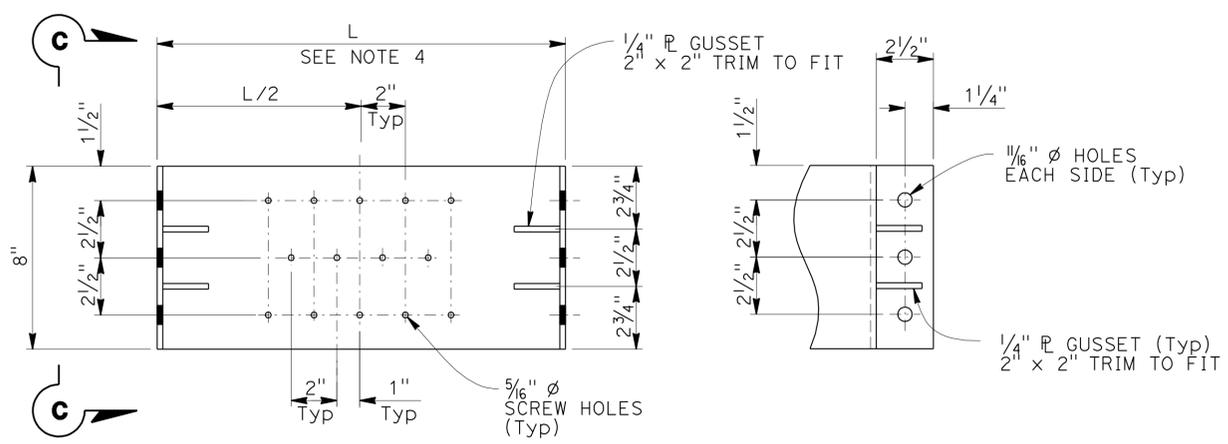
**TIE-ROD DETAIL No. 1**



**ARM CONNECTION DETAILS**



**TIE-ROD DETAIL No. 2**



**FITTED PLATE DETAILS**

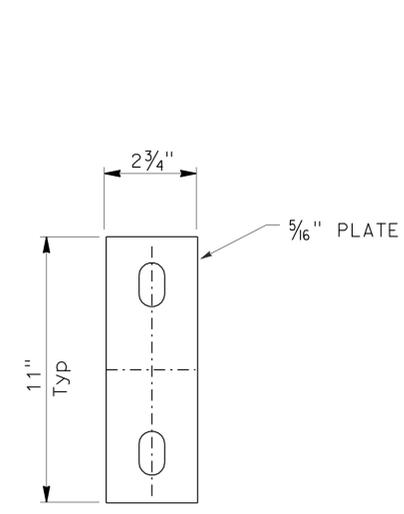
Note: 2 Required (1 w/screw holes, 1 without)

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

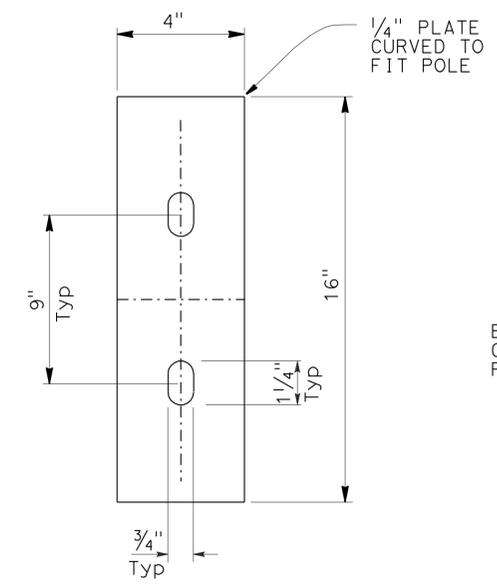
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	DETAILS	BY H NGUYEN	CHECKED A MALAK			N/A		
	QUANTITIES	BY	CHECKED X			POST MILE		

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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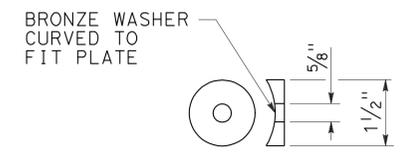
*Amman Malak* 8/3/11  
 REGISTERED CIVIL ENGINEER DATE  
 1-9-12  
 PLANS APPROVAL DATE  
 No. C73369  
 Exp. 12-31-2012  
 CIVIL  
 STATE OF CALIFORNIA  
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**COMPARTMENT PLATE (MOD)**

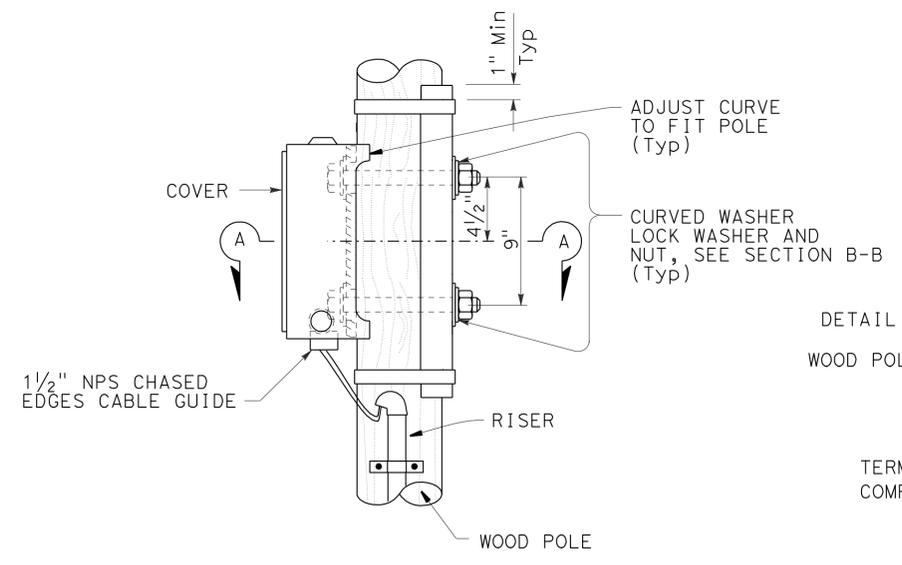


**BACKPLATE**

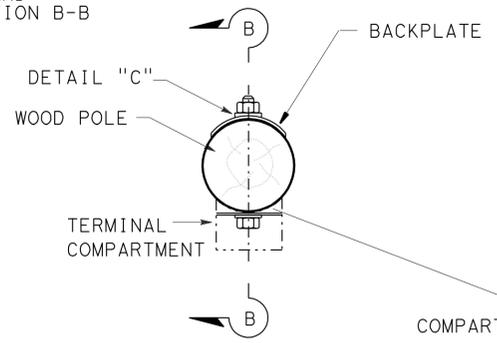


**DETAIL "C"**

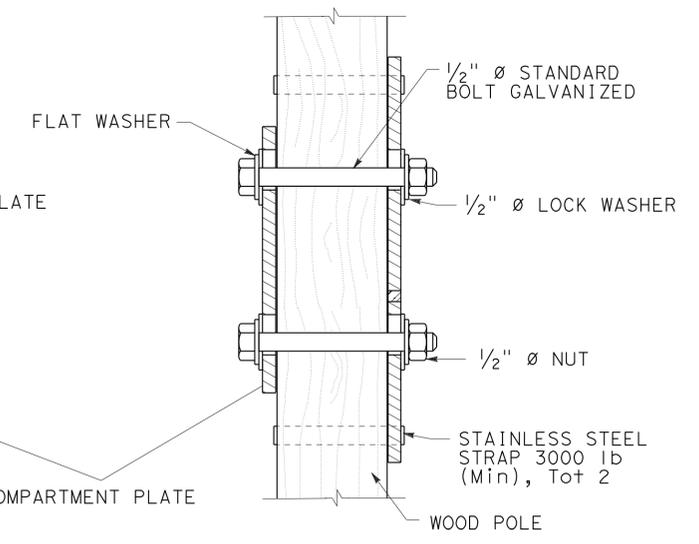
NOTE:  
 1. The Contractor to verify soil condition, slope, and adjust anchoring to satisfy basic design requirements Note 7 SES-1



**SIDE MOUNTING  
 TERMINAL COMPARTMENT**



**SECTION A-A**



**SECTION B-B**

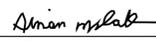
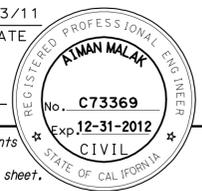
**SIGNAL HEADS AND MOUNTINGS**

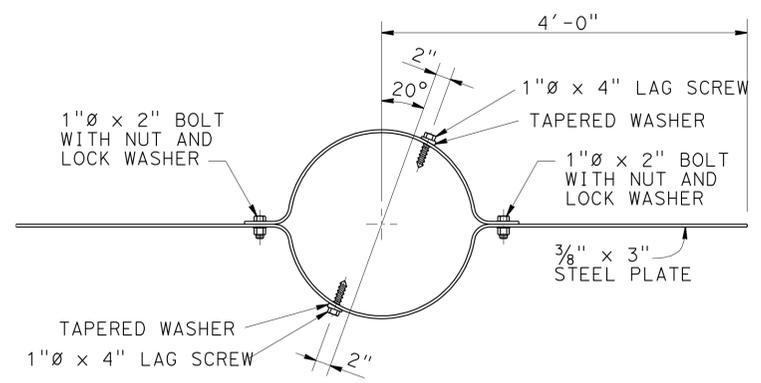
For Details Not Shown See RSP-ES-4D Sheet

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

NO SCALE

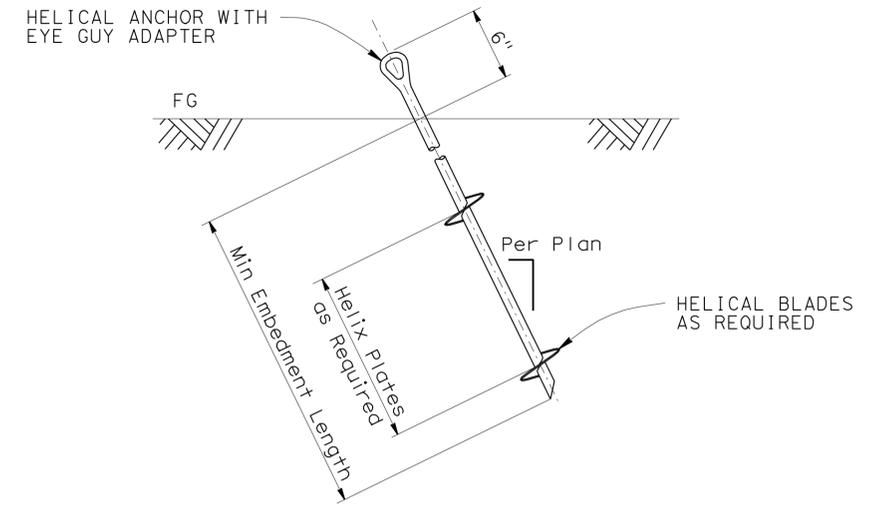
BRANCH CHIEF <u>JAMES SAGAR</u>	DESIGN	BY A MALAK	CHECKED T MARCHENKO	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN SPECIAL DESIGN BRANCH	BRIDGE NO.	SIGNAL AND LIGHTING (TEMPORARY)	SES-4
	DETAILS	BY H NGUYEN	CHECKED A MALAK			N/A		
	QUANTITIES	BY	CHECKED X			POST MILE		

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	74	29.6/29.9	31	55
			8/3/11		
REGISTERED CIVIL ENGINEER			DATE		
1-9-12			PLANS APPROVAL DATE		
					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



**WIND ANCHOR**

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



**ALTERNATIVE GUY WIRE INSTALLATION DETAIL**

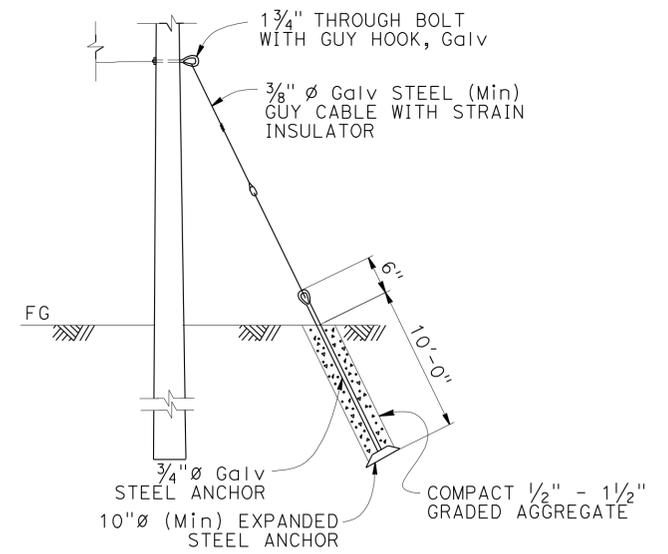
(See Helical Anchor Specifications Table)

HELICAL ANCHOR SPECIFICATIONS					
Anchor Location	Type	Helix Plate Diameter*	Allowable Min Tension Cap., "Q <sub>a</sub> "	Embedment Length (Min)	Installation Torque (Min)**, "T"
Typical	Tension	10"	2500 lb	10'-0"	420 Ft-lb

SPECIFICATION NOTES:

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

\* Number of helical plates is not specified; Contractors choice.  
 \*\* Adjust accordingly if required, See Note 3.



**GUY WIRE INSTALLATION DETAIL**

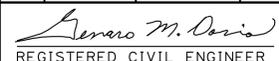
NOTE:  
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

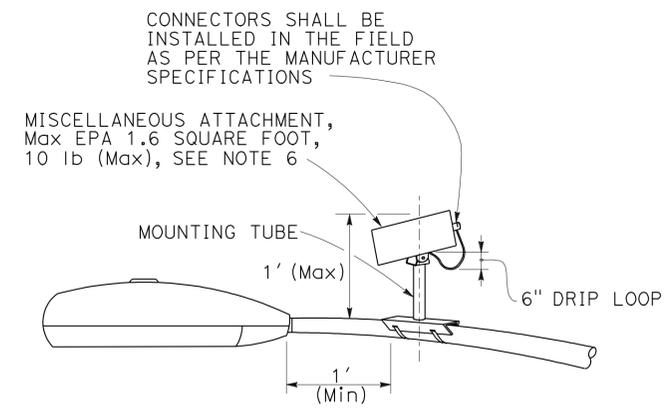
**NOTES:**

- Contractor to verify soil condition, slope, and adjust anchoring to satisfy basic design requirements per Note 7 on SES-1 sheet.
  - Use of alternative Guy Wire Installation Detail requires that the soil bearing capacity be verified by the installation Contractor.
  - Installation Contractor shall determine the most appropriate value for k<sub>t</sub> based on soil conditions and shall adjust the Min Installation Torque based on the revised k<sub>t</sub>. A k<sub>t</sub> value of 10 was assumed for the Min Installation Torque shown in the table.
- The Helical Installation torque Formula is Q<sub>u</sub> = k<sub>t</sub>\*T where,
- Q<sub>u</sub> = Q<sub>a</sub>\*FS = Ultimate Helical Anchor Capacity (LBs)  
 FS = Factor of Safety = 2.0  
 Q<sub>a</sub> = Allowable Helical Anchor Capacity (LBs)  
 k<sub>t</sub> = Empirical Torque Factor (ft<sup>-1</sup>)  
 T = Min Installation Torque (Ft-LBs)
- Requests made by Helical Anchor Installation Contractor to reduce the minimum embedment length and/or Helix diameter require Engineer's approval.
  - The Contractor shall locate and mark all of the substructures and utilities. Installation of anchors underneath utilities or subsurface structures is prohibited. Horizontal clearances of anchors shall be determined by Inspector during construction.

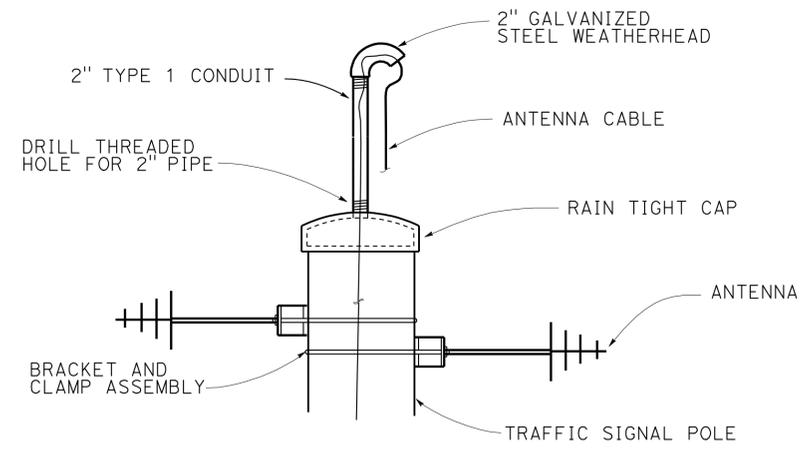
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BRANCH CHIEF <u>JAMES SAGAR</u>	DESIGN	BY A MALAK	CHECKED T MARCHENKO	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN SPECIAL DESIGN BRANCH	BRIDGE NO.	SIGNAL AND LIGHTING (TEMPORARY)	
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	QUANTITIES	BY	CHECKED X			POST MILE		VAR
							WOOD POLE DETAILS	SES-5

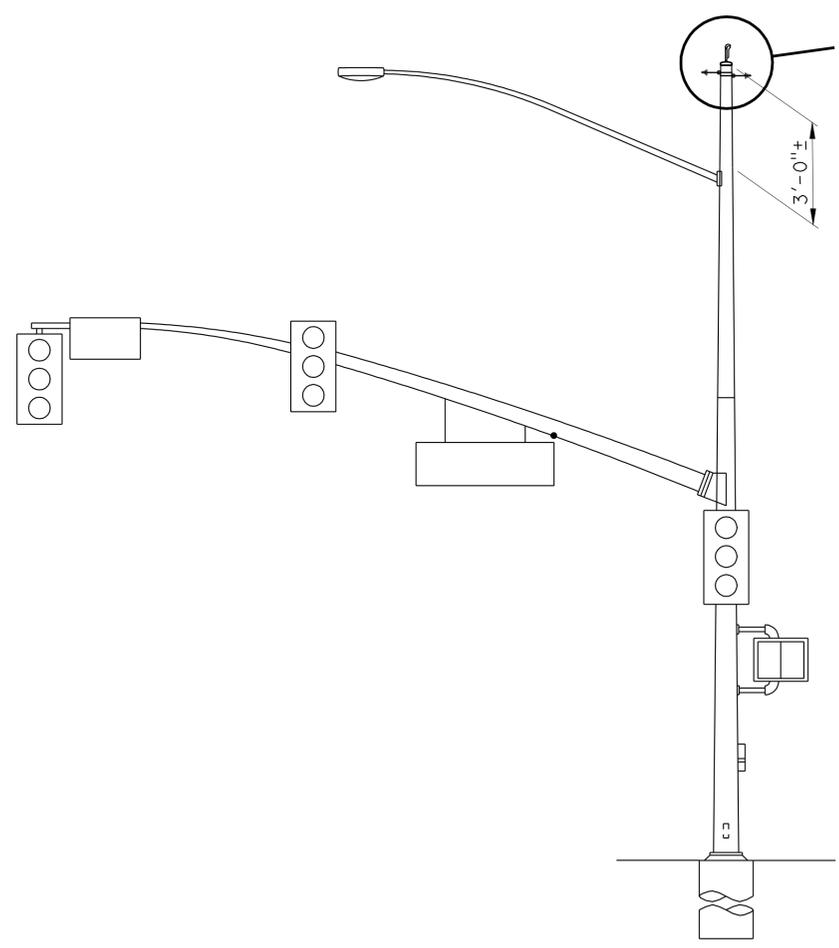
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	74	29.6/29.9	32	55
 REGISTERED CIVIL ENGINEER DATE					
1-9-12 PLANS APPROVAL DATE					
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**LUMINAIRE MAST ARM MOUNT**  
**DETAIL B**



**ANTENNA MOUNTING DETAIL**



**TYPE 26A-4-100 SIGNAL POLE MOUNT**  
**DETAIL D**

**NOTES:**

- Exact mounting location of miscellaneous attachment and bracket shall be approved by the Engineer per manufacturer's recommendation.
- Location of cable entrances on signal pole shall be a minimum of 1' from any flange or base plate.
- Hybrid cable entrances on signal pole shall be drilled for weathertight coupling as required.
- Hybrid cable shall have a drip loop at the entrance into signal pole, luminaire mast arm and signal mast arm.
- A single hybrid cable shall run continuous and shall not be twisted from the miscellaneous attachment to the controller cabinet. No splices shall be allowed.
- Use the manufacturer's Effective Projected Area (EPA) for miscellaneous attachment. The maximum EPA for each miscellaneous attachment shall be 1.6 square feet.
- Maximum of one miscellaneous attachment per mast arm.
- Miscellaneous attachments shall be mounted using clamping devices approved by the engineer per manufacturer's recommendations.
- Miscellaneous attachment shall be mounted using a minimum sign distance as called out on the 2006 Standard Plans.
- Maximum of four miscellaneous attachments per traffic signal structure.
- This camera mounting detail is for new signal and lighting poles, not existing poles
- See "ELECTRICAL PLANS" for exact locations.
- See STANDARD PLANS RSP ES-7F for SIGNAL LIGHTING DETAILS

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

**ELECTRICAL SYSTEMS  
(SIGNAL AND LIGHTING,  
MISCELLANEOUS ATTACHMENT)**

NO SCALE

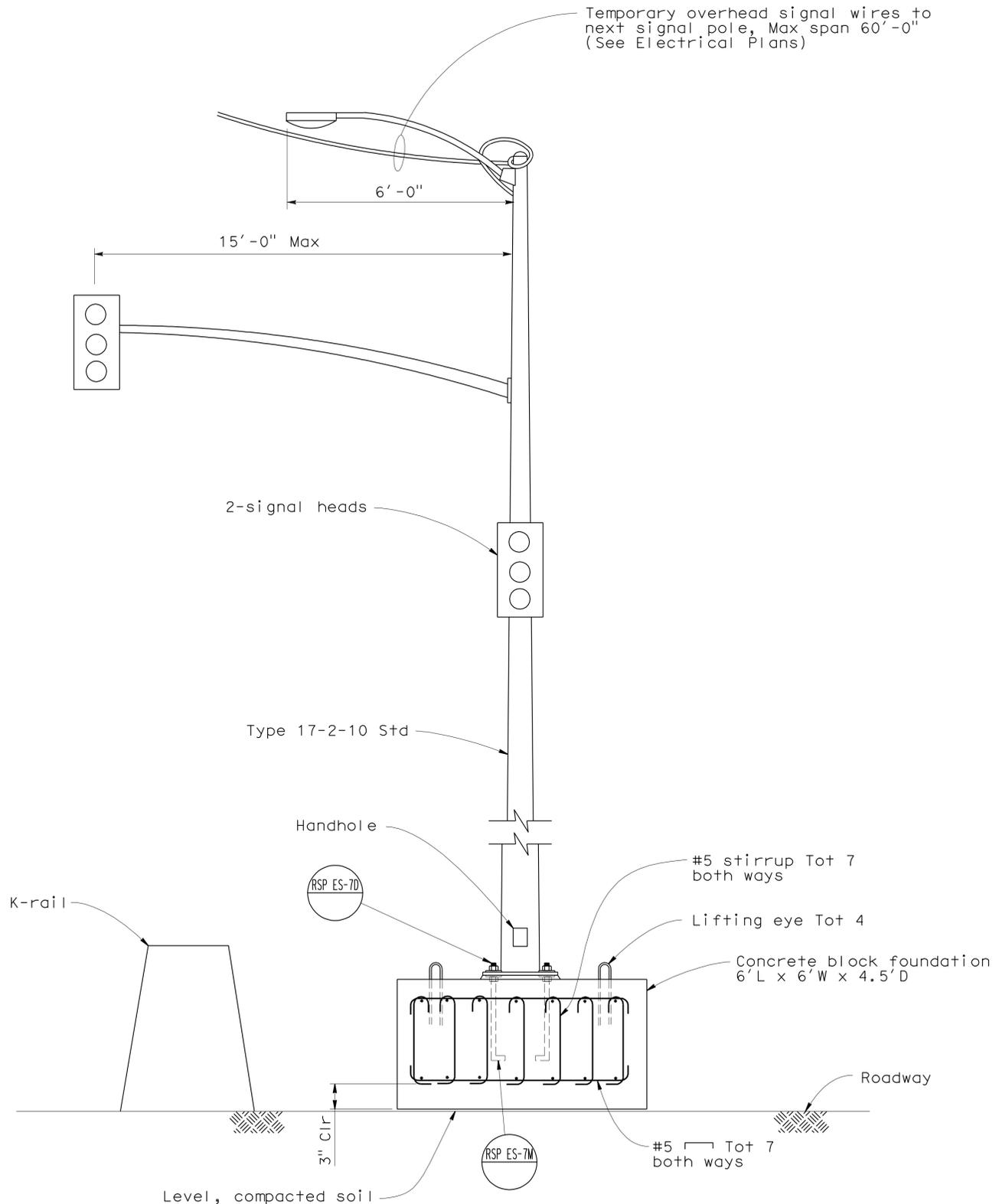
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	DETAILS	BY D W JUSTICE Jr	CHECKED G DORIA			N/A				
	QUANTITIES	BY X	CHECKED X			POST MILE			X	
STRUCTURES DESIGN SPECIAL DESIGN SHEET (ENGLISH) (REV. 09-01-10)				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0 1 2 3	UNIT: 3619 PROJECT NUMBER & PHASE: 0800000289	CONTRACT NO.: 08-0J1401	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 6 OF 8

USERNAME => s121614 DATE PLOTTED => 11-JAN-2012 TIME PLOTTED => 13:23

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	74	29.6/29.9	33	55

*Genaro M. Doria*  
REGISTERED CIVIL ENGINEER DATE \_\_\_\_\_  
1-9-12  
PLANS APPROVAL DATE \_\_\_\_\_  
No. C63583  
Exp. 9/30/12  
CIVIL  
STATE OF CALIFORNIA

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NOTES:

- 17-2-100 standard shall conform to standard plans RSP ES-7D (foundation excluded).
- 17-2-100 standard shall have a maximum of 2 signal heads and 2 ped heads mounted to the shaft and one head mounted at the end of mast arm.
- See "ELECTRICAL PLANS" for exact locations.

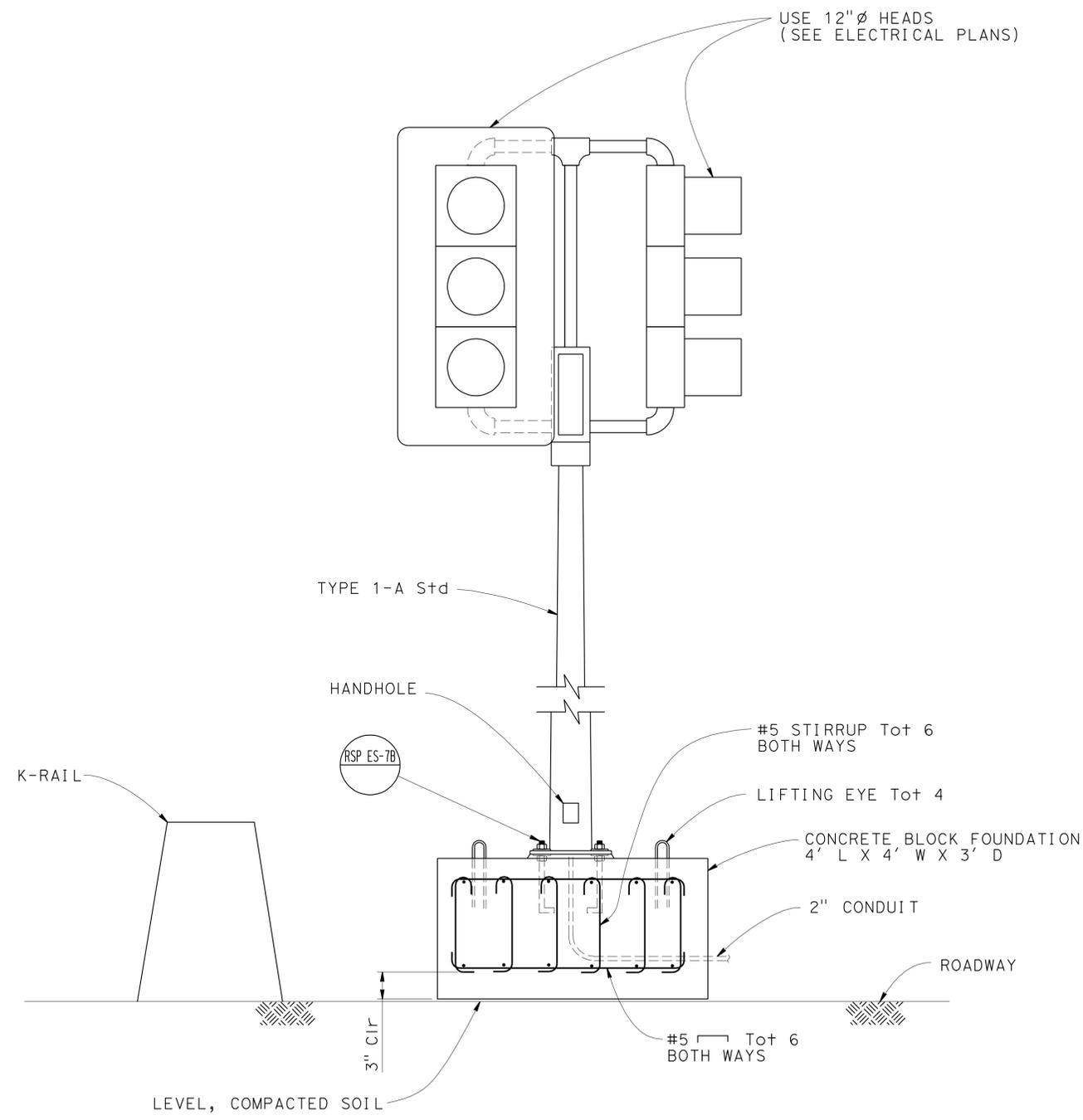
**TYPE 17-2-100 STANDARD**

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

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	DETAILS BY D W JUSTICE Jr	CHECKED G DORIA			POST MILE VAR		
	QUANTITIES BY	CHECKED					

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	74	29.6/29.9	34	55

  
 REGISTERED CIVIL ENGINEER DATE \_\_\_\_\_  
 1-9-12  
 PLANS APPROVAL DATE \_\_\_\_\_  
 No. C63583  
 Exp. 9/30/12  
 CIVIL  
 STATE OF CALIFORNIA  
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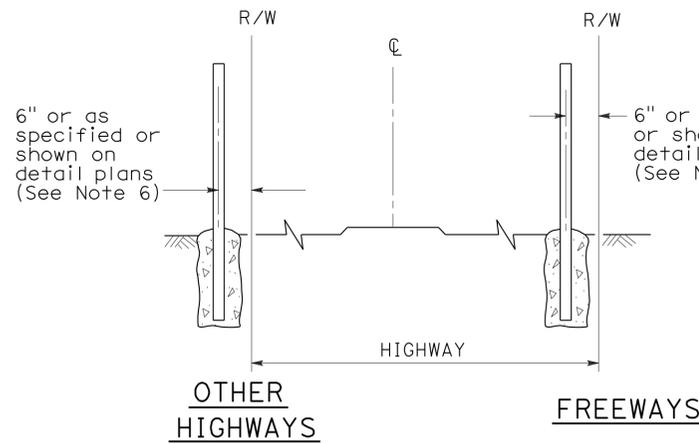


- NOTES:
1. 1-A standard shall conform to standard plans RSP ES-7B (foundation excluded).
  2. 1-A standard shall be have a maximum of 3 signal heads and 2 ped heads mounted to the shaft.
  3. See "ELECTRICAL PLANS" for exact locations.

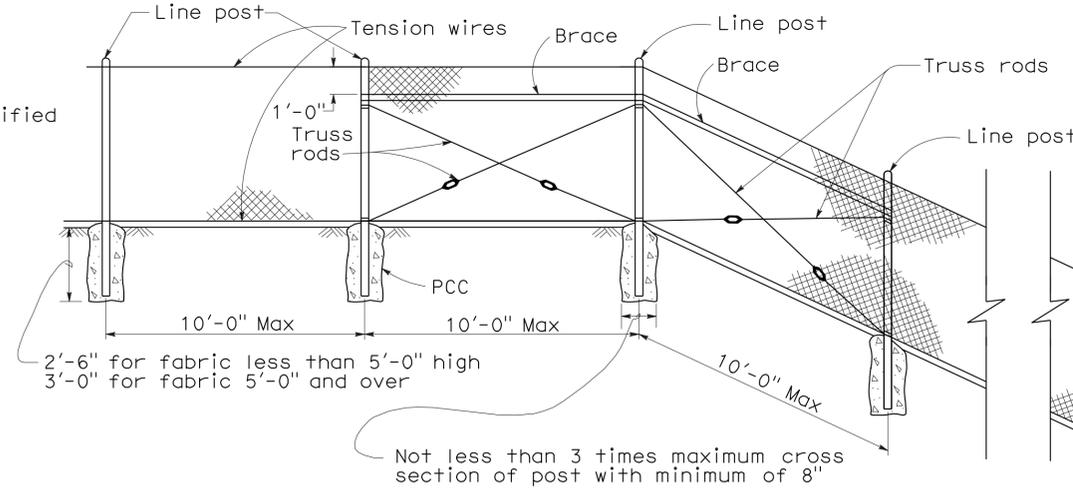
**TYPE 1-A STANDARD**

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

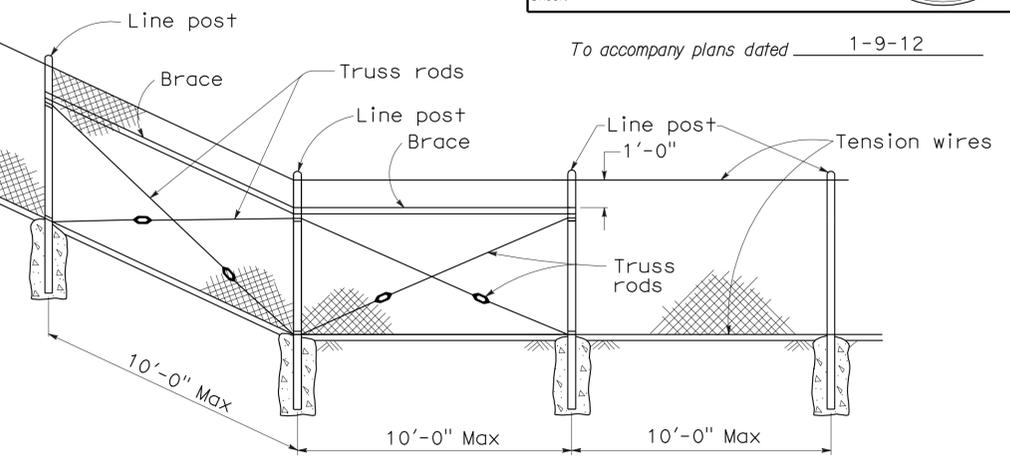
BRANCH CHIEF <u>JAMES SAGAR</u>	DESIGN	BY G DORIA	CHECKED K.C. LIU	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN SPECIAL DESIGN BRANCH	BRIDGE NO.	SIGNAL AND LIGHTING (TEMPORARY) TEMPORARY POLE DETAILS NO.2	SES-8
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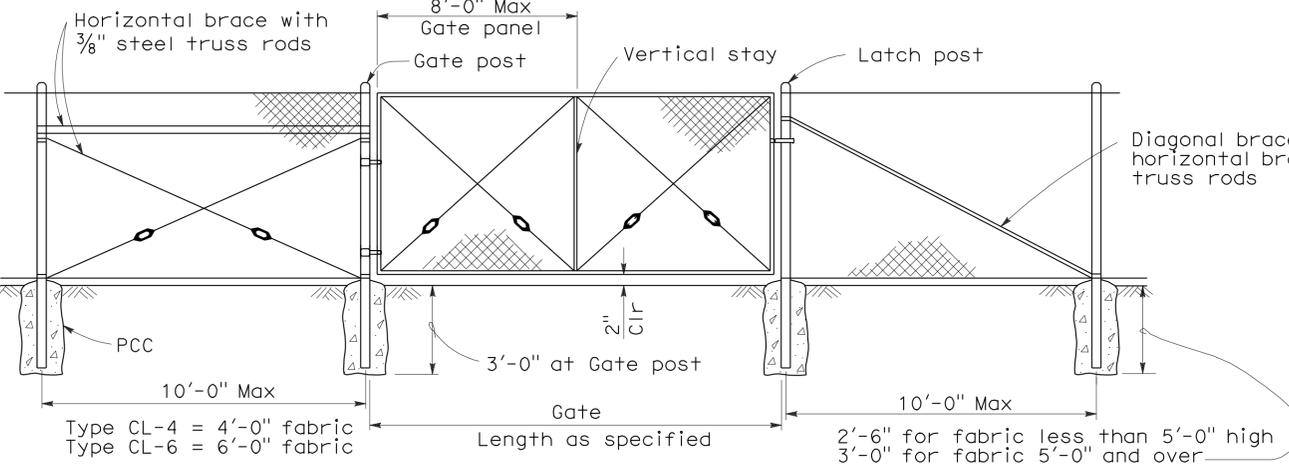
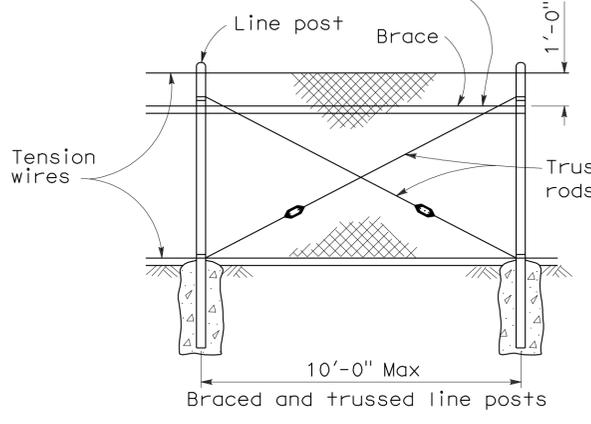
**FENCE LOCATION**



**CHAIN LINK FENCE ON SHARP BREAK IN GRADE**



Brace to be removed after all other fence construction is completed unless otherwise directed by the Engineer



**CHAIN LINK GATE INSTALLATION**

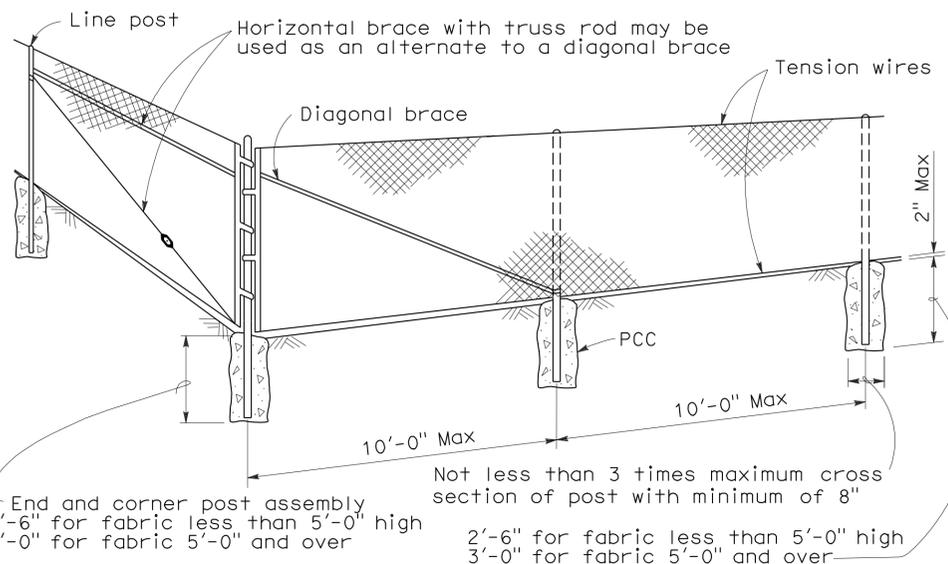
GATE POST			
FENCE HEIGHT	GATE WIDTHS	NOMINAL ID	WEIGHT PER FOOT
6'-0" and Less	Up thru 6'-0"	2 1/2"	4.95 LB
	Over 6'-0" thru 12'-0"	4"	10.79 LB
	Over 12'-0" thru 18'-0"	5"	14.62 LB
	Over 18'-0" to 24'-0" Max	6"	18.97 LB
Over 6'-0"	Up thru 6'-0"	3"	7.58 LB
	Over 6'-0" thru 12'-0"	5"	14.62 LB
	Over 12'-0" thru 18'-0"	6"	18.97 LB
	Over 18'-0" to 24'-0" Max	8"	28.55 LB

Above post dimensions and weights are minimums. Larger sizes may be used on approval of the Engineer.

**NOTES:**

- The below table shows examples of post and brace sections which may comply with the Specifications.
- Sections shown in the tables must also comply with the strength requirements and other provisions of the Specifications.
- Other sections which comply with the strength requirements and other provisions of the Specifications may be used on approval of the Engineer.
- Options exercised shall be uniform on any one project.
- Dimensions shown are nominal.
- Offset to be 2'-0" at monument locations, measured at right angles to R/W lines. Taper to achieve offset to be at least 20'-0" long.

FENCE HEIGHT	TYPICAL MEMBER DIMENSIONS (See Notes)									
	LINE POSTS			END, LATCH & CORNER POSTS			BRACES			
	ROUND ID	H	ROLL FORMED	ROUND ID	ROLL FORMED		ROUND ID	H	ROLL FORMED	
6' & less	1 1/2"	1 7/8" x 1 5/8"	1 7/8" x 1 5/8"	2"	3 1/2" x 3 1/2"	2" x 1 3/4"	1 1/4"	1 1/2" x 1 5/16"	1 5/8" x 1 1/4"	1 3/4" x 1 1/4"
Over 6'	2"	2 1/4" x 2"	2" x 1 3/4"	2 1/2"	3 1/2" x 3 1/2"	2 1/2" x 2 1/2"	1 1/4"	1 1/2" x 1 5/16"	1 5/8" x 1 1/4"	1 3/4" x 1 1/4"



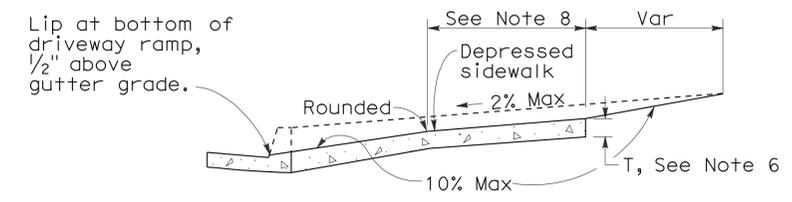
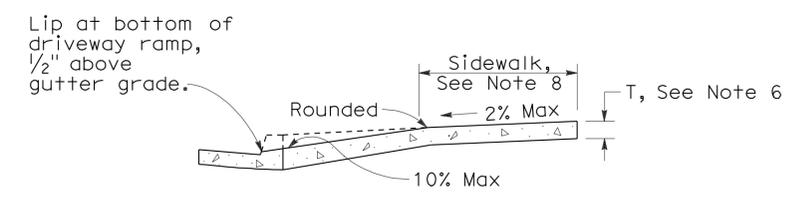
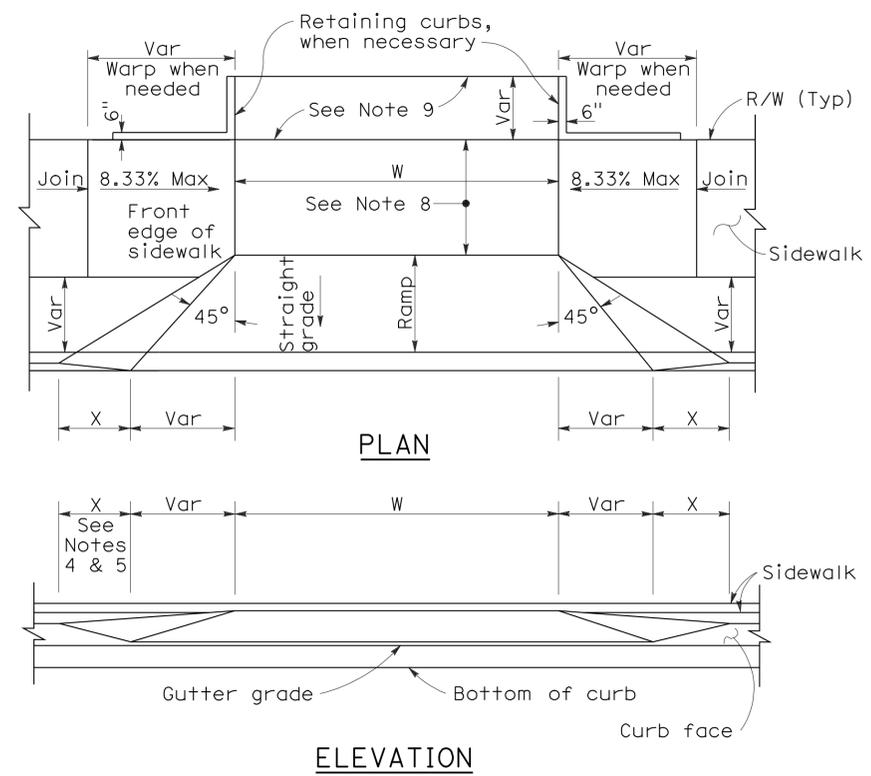
**CORNER POST**

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**CHAIN LINK FENCE**  
 NO SCALE

RSP A85 DATED JUNE 5, 2009 SUPERSEDES STANDARD PLAN A85  
 DATED MAY 1, 2006 - PAGE 111 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A85**

2006 REVISED STANDARD PLAN RSP A85



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

**CASE B**  
Driveway with depressed sidewalk

**SECTIONS**

**CURB QUANTITIES**

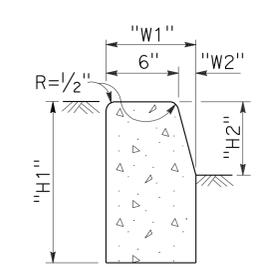
TYPE	CUBIC YARDS PER LINEAR FOOT
A1-6	0.02585
A1-8	0.03084
A2-6	0.05903
A2-8	0.06379
A3-6	0.01036
A3-8	0.01435
B1-4	0.02185
B1-6	0.02930
B2-4	0.05515
B2-6	0.06171
B3-4	0.00641
B3-6	0.01074
B4	0.05709
D-4	0.04083
D-6	0.06804
E	0.06661

**TABLE A**

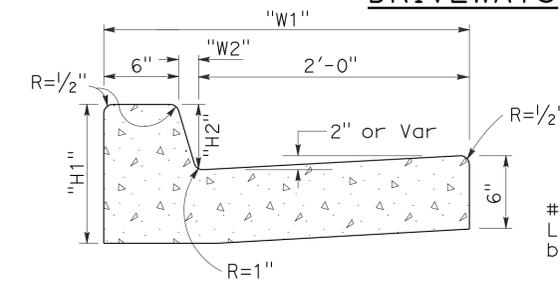
CURB TYPE	DIMENSIONS			
	"H1"	"H2"	"W1"	"W2"
A1-6	1'-2"	6"	7 1/2"	1 1/2"
A1-8	1'-4"	8"	8"	2"
A2-6	1'-0"	6"	2'-7 1/2"	1 1/2"
A2-8	1'-2"	8"	2'-8"	2"
A3-6	6"	5"	7 1/4"	1 1/4"
A3-8	8"	7"	7 3/4"	1 3/4"
B1-4	1'-0"	4"	7 1/2"	2 1/2"
B1-6	1'-2"	6"	9"	4"
B2-4	10"	4"	2'-7 1/2"	2 1/2"
B2-6	1'-0"	6"	2'-9"	4"
B3-4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

To accompany plans dated 1-9-12

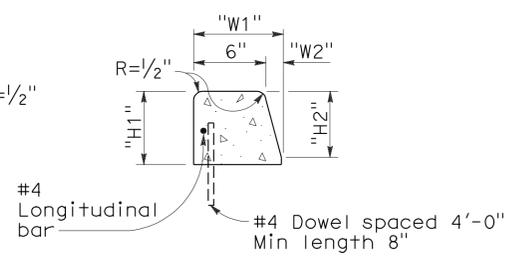
**DRIVEWAYS**



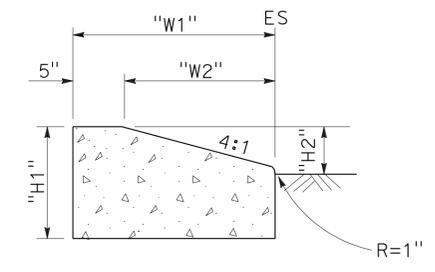
**TYPE A1 CURBS**  
See Table A



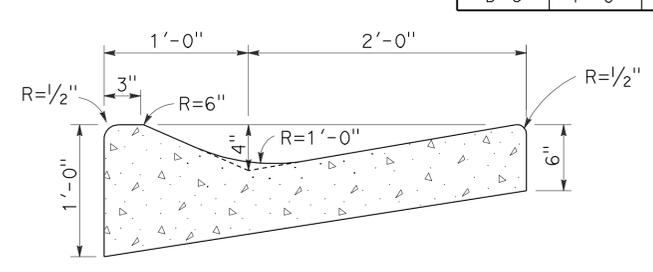
**TYPE A2 CURBS**  
See Table A



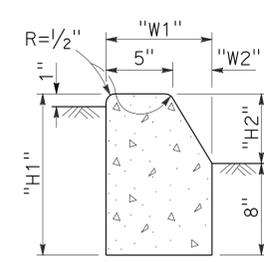
**TYPE A3 CURBS**  
Superimposed on existing pavement  
See Table A



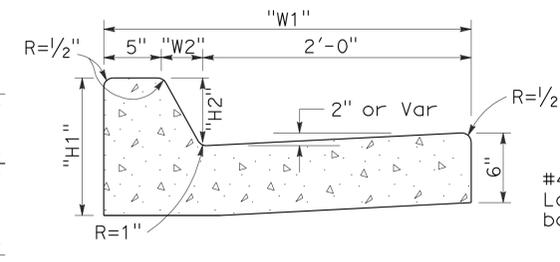
**TYPE D CURBS**  
See Table A



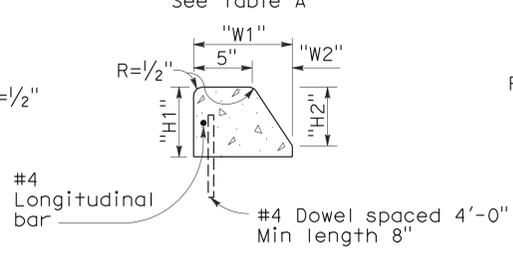
**TYPE E CURB**



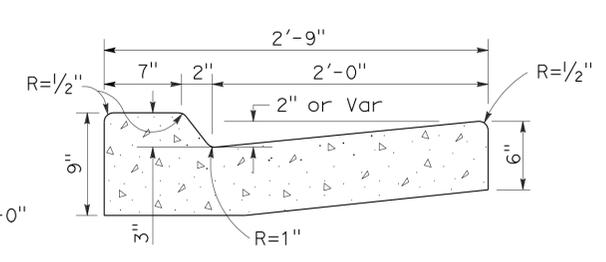
**TYPE B1 CURBS**  
See Table A



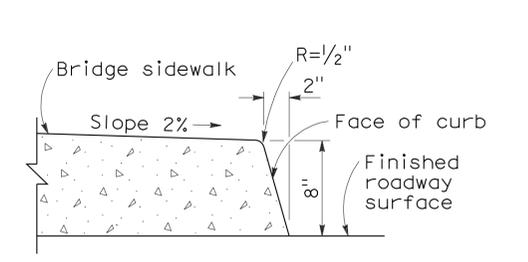
**TYPE B2 CURBS**  
See Table A



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



**TYPE B4 CURBS**



**TYPE H CURB**  
On Bridges

**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.

**CURBS**

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.

2006 REVISED STANDARD PLAN RSP A87A

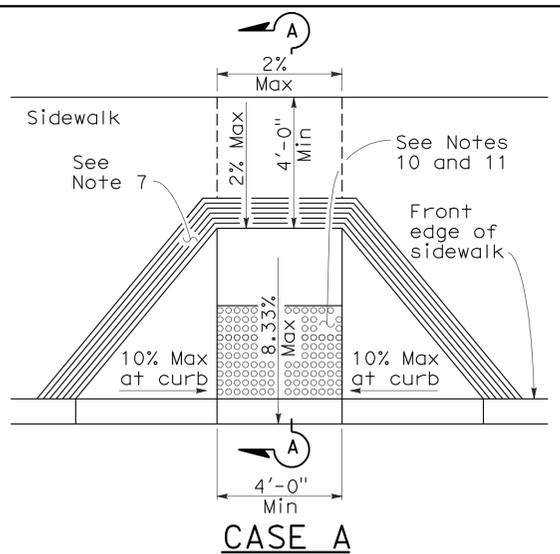
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Riv	74	29.6/29.9	37	55

H. David Cordova  
REGISTERED CIVIL ENGINEER

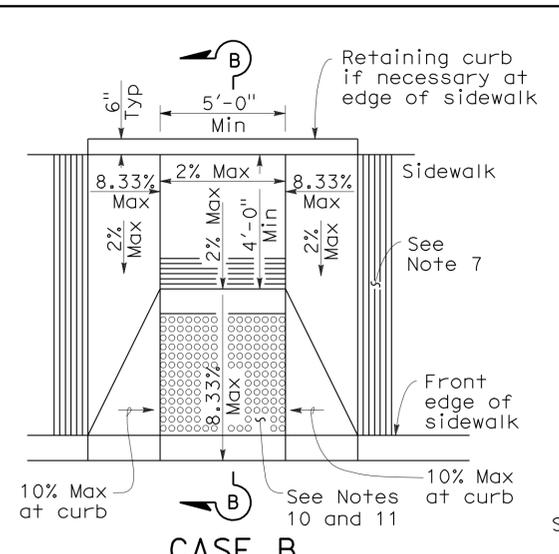
September 1, 2006  
PLANS APPROVAL DATE

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

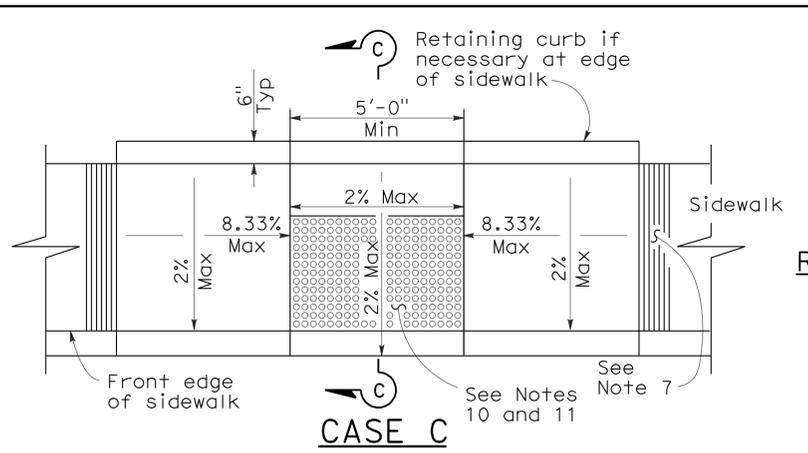
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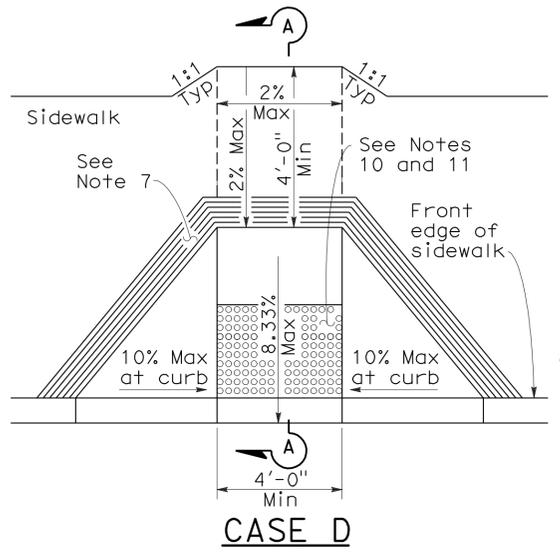
**CASE A**



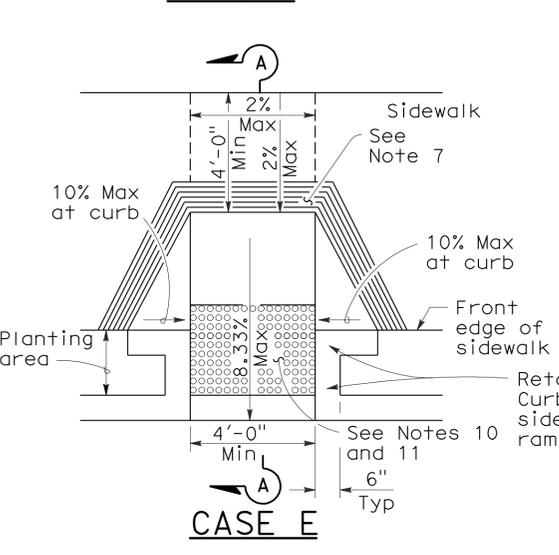
**CASE B**



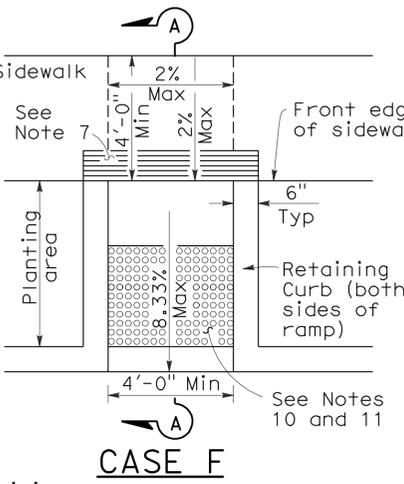
**CASE C**



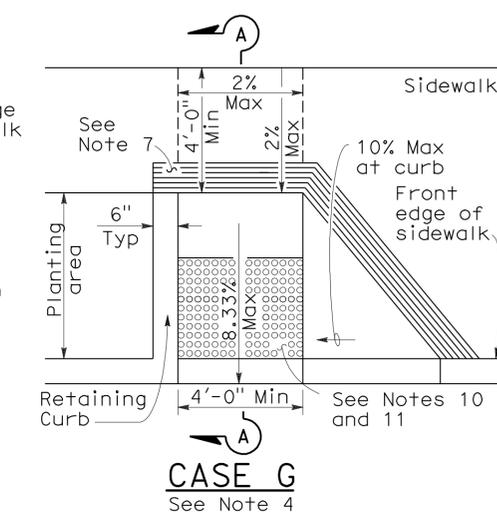
**CASE D**



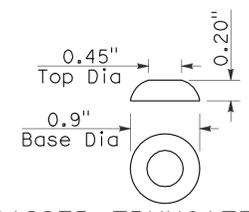
**CASE E**



**CASE F**



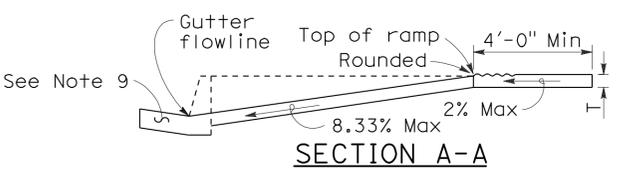
**CASE G**



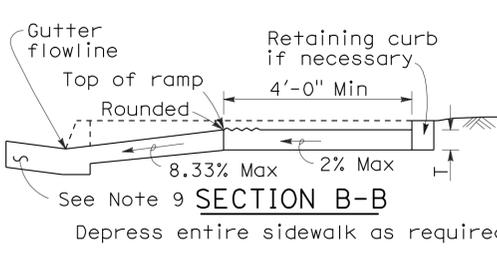
**RAISED TRUNCATED DOME**

**NOTES:**

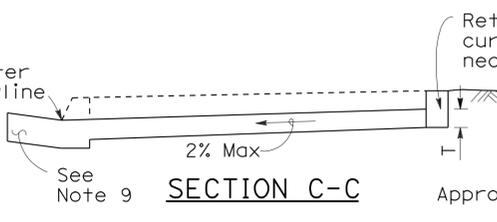
- As site conditions dictate, Case A through Case G curb ramps may be used for corner installations similar to those shown in Detail A and Detail B. The case of curb ramps used in Detail A do not have to be the same. Case A through Case G curb ramps also may be used at mid block locations, as site conditions 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.



**SECTION A-A**



**SECTION B-B**



**SECTION C-C**

1.67" to 2.35"  
Center to  
center spacing

**RAISED TRUNCATED DOME PATTERN (IN-LINE)  
DETECTABLE WARNING SURFACE**

See Note 10

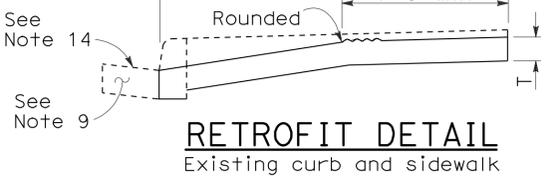
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**CURB RAMP DETAILS**

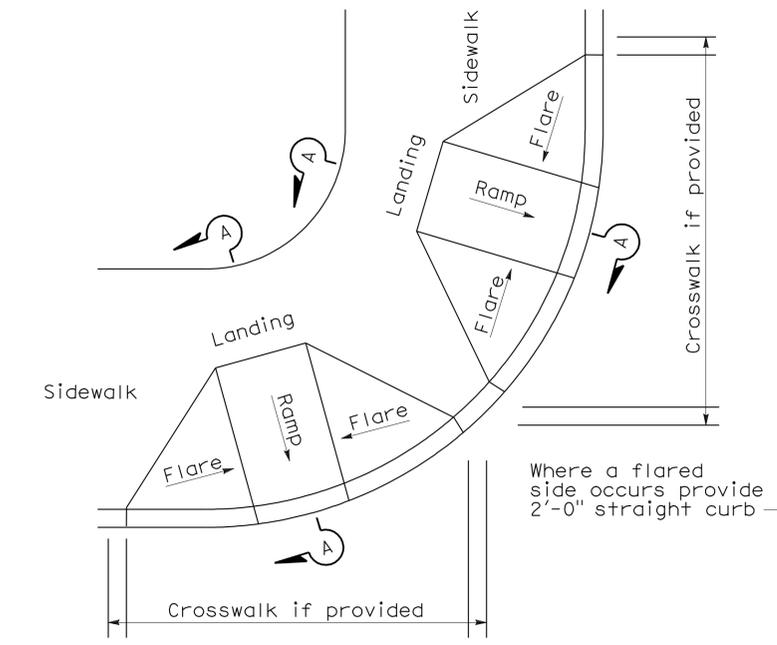
NO SCALE



**GROOVING DETAIL**



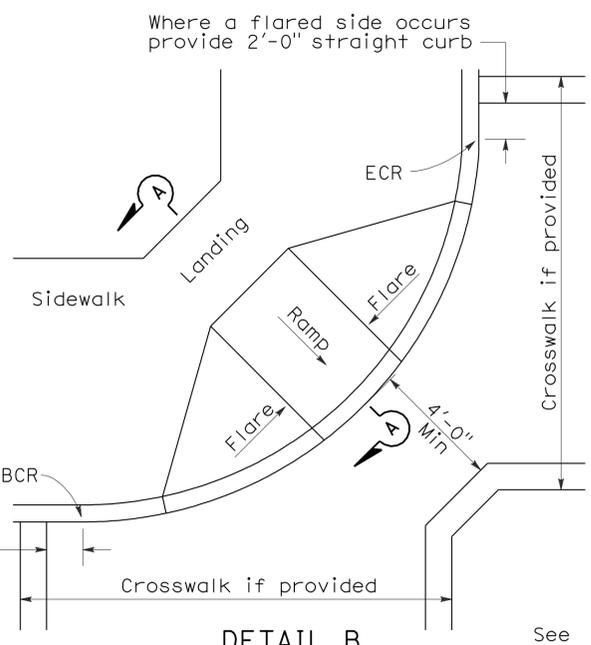
**RETROFIT DETAIL**



**DETAIL A**

**TYPICAL TWO-RAMP CORNER INSTALLATION**

See Note 1



**DETAIL B  
TYPICAL ONE-RAMP  
CORNER INSTALLATION**

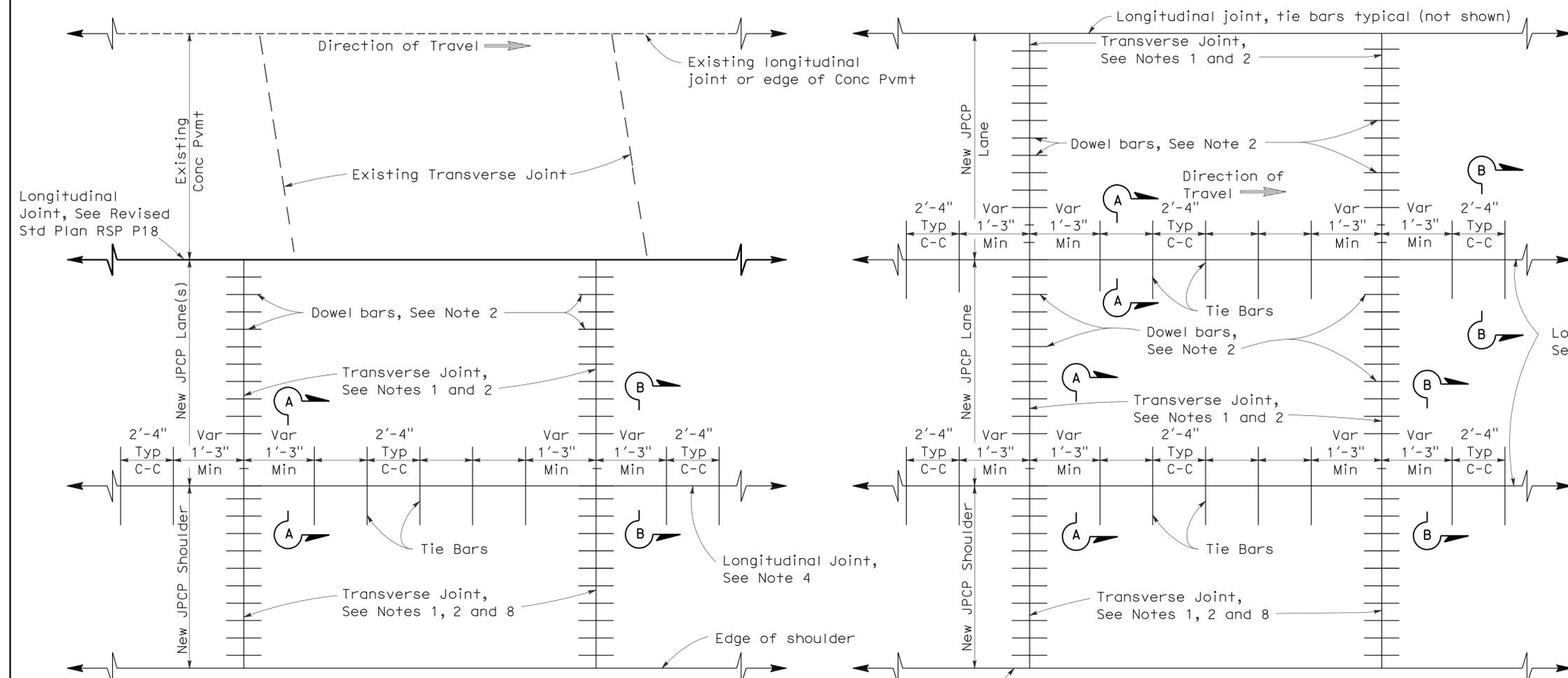
See Notes 1 and 3

2006 REVISED STANDARD PLAN RSP A88A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Riv	74	29.6/29.9	38	55

William K. Farnbach  
 REGISTERED CIVIL ENGINEER  
 May 15, 2009  
 PLANS APPROVAL DATE  
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 REGISTERED PROFESSIONAL ENGINEER  
 William K. Farnbach  
 No. C49042  
 Exp. 9-30-10  
 CIVIL  
 STATE OF CALIFORNIA

To accompany plans dated 1-9-12



**PLAN**  
**LANE/SHOULDER ADDITION OR RECONSTRUCTION**

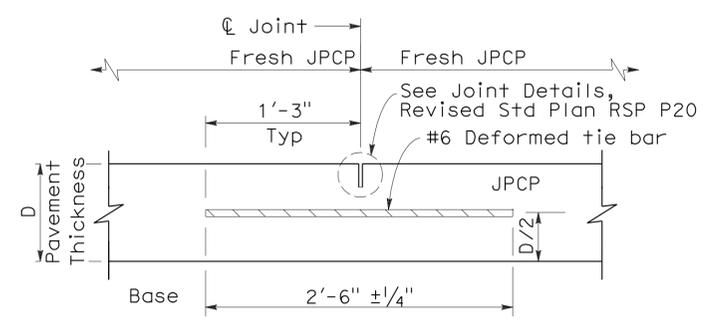
See Notes 6 and 7

**PLAN**  
**NEW CONSTRUCTION**

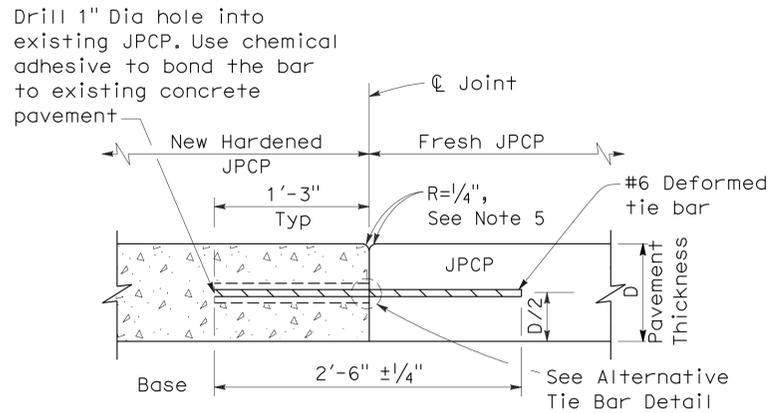
See Notes 6 and 7

**NOTES:**

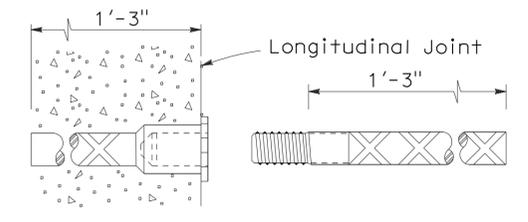
1. Transverse joints shall be constructed at right angles to the longitudinal pavement joints in new jointed plain concrete pavement and spaced at successive repeated intervals of 12', 15', 13' and 14'.
2. For transverse joint and dowel bar details not shown, See Revised Standard Plan RSP P10.
3. Construct longitudinal contraction joints as shown in Section A-A when more than one lane or shoulder widths are placed at one time. If constructing one lane at a time, use longitudinal construction joint, as shown in Section B-B.
4. For additional longitudinal joint details, see Revised Standard Plan RSP P18.
5. If fresh concrete is placed adjacent to existing concrete, the top corner of the new hardened concrete does not need to be rounded to the 1/4" radius as shown.
6. Joint spacing patterns do not apply to intersections.
7. Details can also apply to inside widening.
8. Dowel bars may be omitted from shoulders when the shoulder cross slope is not the same as the adjacent traffic lane.



**SECTION A-A**  
**LONGITUDINAL CONTRACTION JOINT**



**SECTION B-B**  
**LONGITUDINAL CONSTRUCTION JOINT**



**ALTERNATIVE TIE BAR SPLICE DETAIL**  
(Splice Coupler)

**TIE BAR DETAILS**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**JOINTED PLAIN  
CONCRETE PAVEMENT**

NO SCALE

RSP P1 DATED MAY 15, 2009 SUPERSEDES STANDARD PLAN P1  
DATED MAY 1, 2006 - PAGE 119 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP P1**

2006 REVISED STANDARD PLAN RSP P1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Riv	74	29.6/29.9	39	55

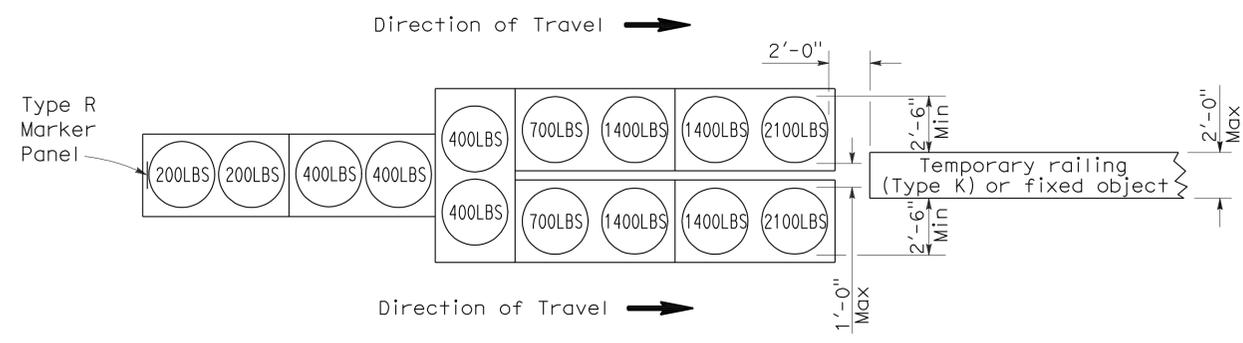
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

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

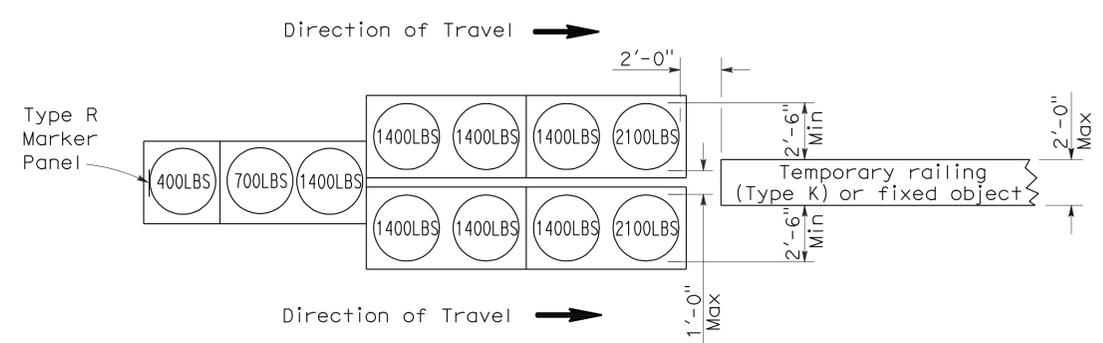
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To accompany plans dated 1-9-12



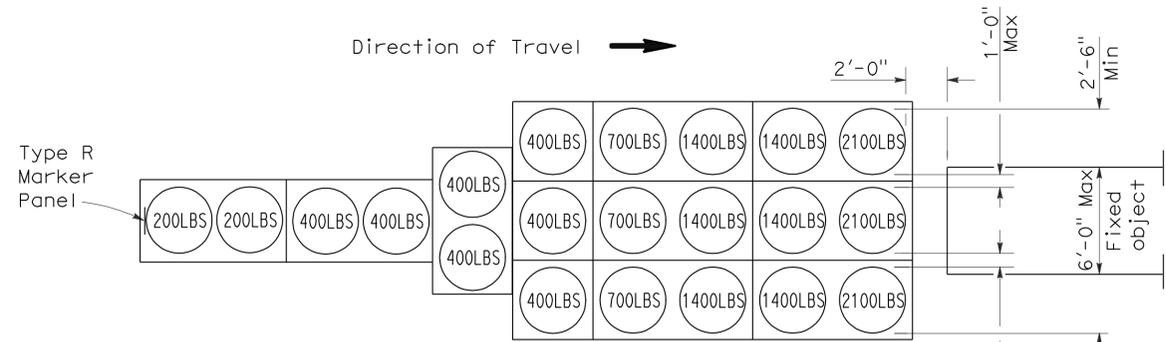
**ARRAY 'TU14'**

Approach speed 45 mph or more



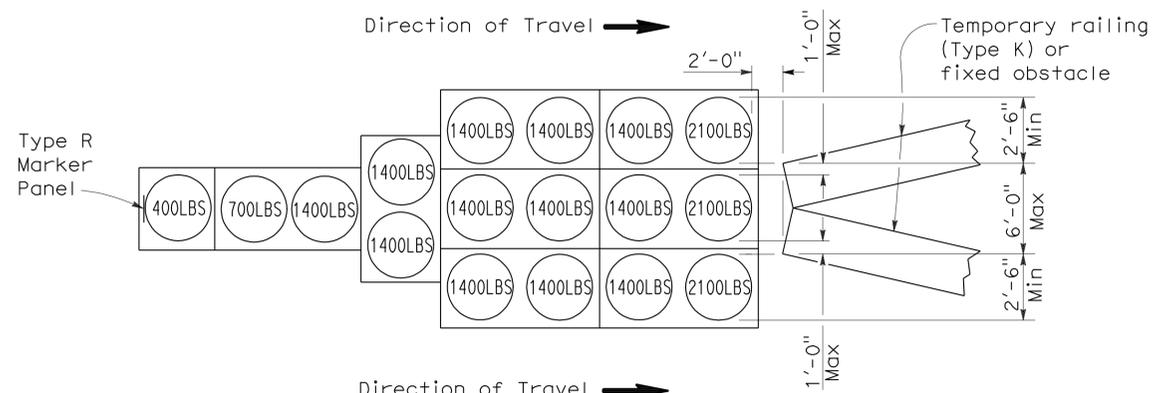
**ARRAY 'TU11'**

Approach speed less than 45 mph



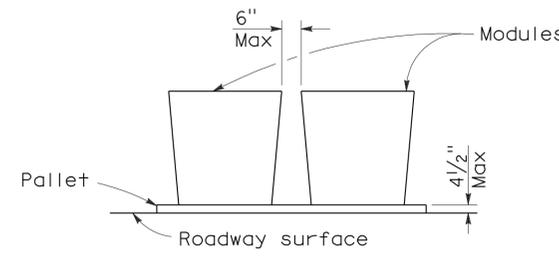
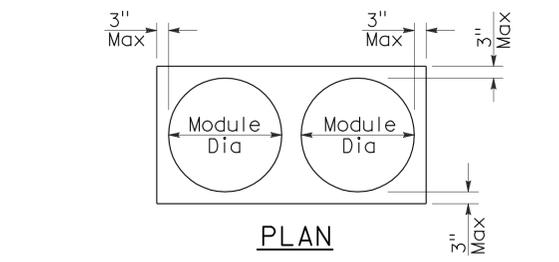
**ARRAY 'TU21'**

Approach speed 45 mph or more



**ARRAY 'TU17'**

Approach speed less than 45 mph



**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
08	Riv	74	29.6/29.9	40	55

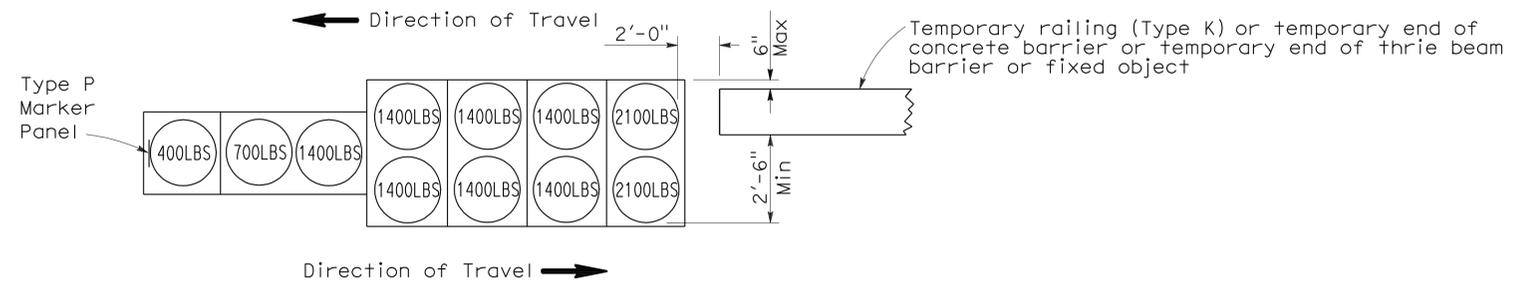
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

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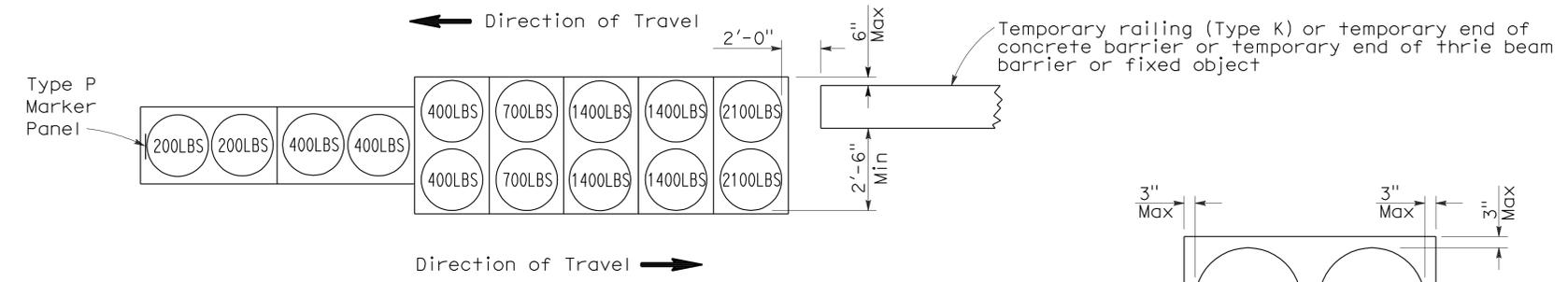
REGISTERED PROFESSIONAL ENGINEER  
Randell D. Hiatt  
No. C50200  
Exp. 6-30-09  
CIVIL  
STATE OF CALIFORNIA

To accompany plans dated 1-9-12



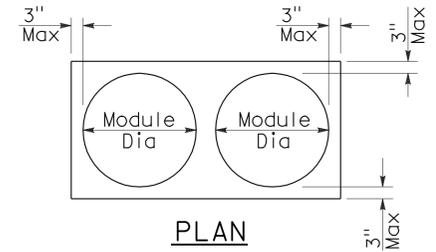
**ARRAY 'TB11'**

Approach speed less than 45 mph

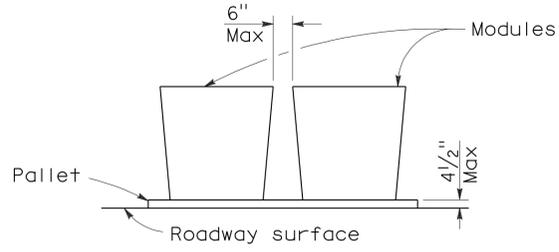


**ARRAY 'TB14'**

Approach speed 45 mph or more



PLAN



ELEVATION

**CRASH CUSHION PALLET DETAIL**

See Note 7

**NOTES:**

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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

**REVISED STANDARD PLAN RSP T1B**

2006 REVISED STANDARD PLAN RSP T1B

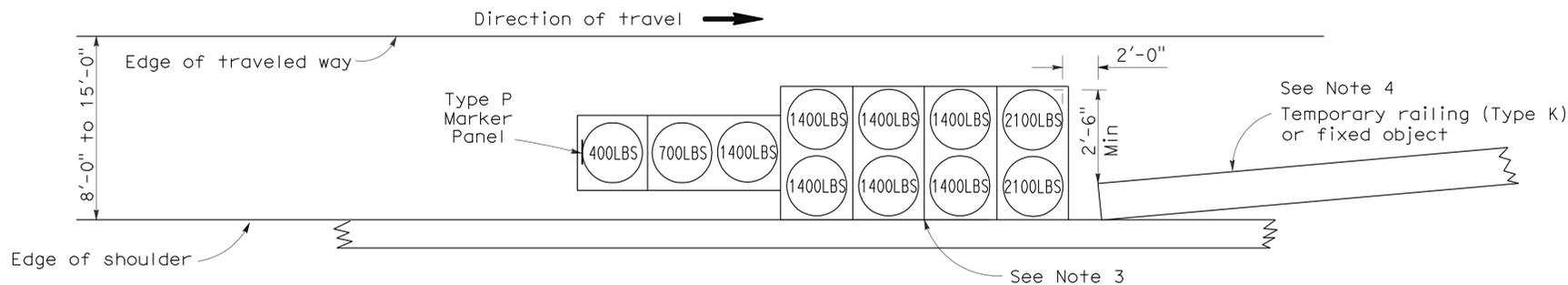
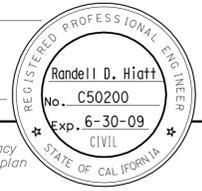
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Riv	74	29.6/29.9	41	55

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

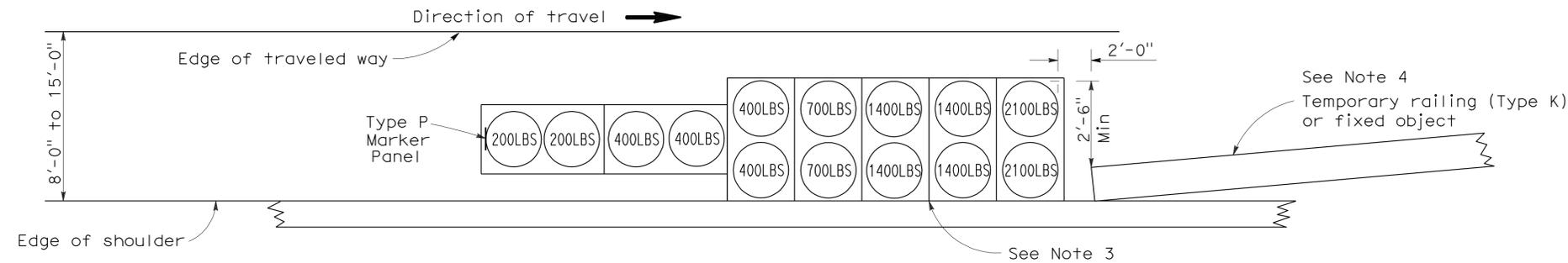
June 6, 2008  
PLANS APPROVAL DATE

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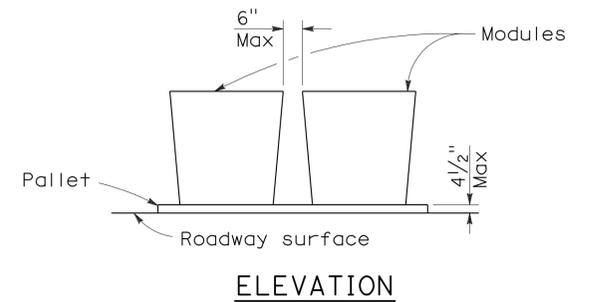
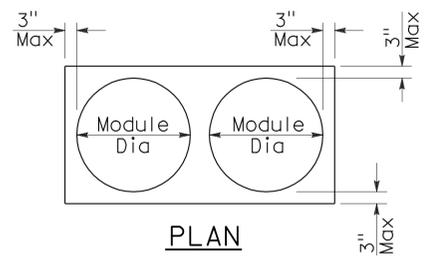
To accompany plans dated 1-9-12



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



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



**CRASH CUSHION PALLET DETAIL**  
See Note 11

**NOTES:**

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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

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

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

**REVISED STANDARD PLAN RSP T2**

2006 REVISED STANDARD PLAN RSP T2

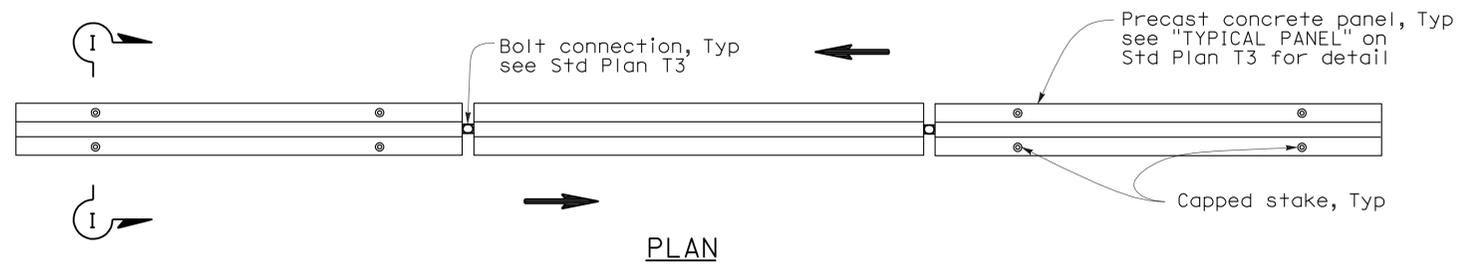
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
08	Riv	74	29.6/29.9	42	55

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

May 20, 2011  
PLANS APPROVAL DATE

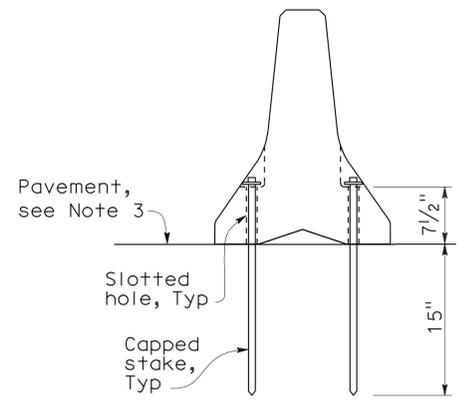
*The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

To accompany plans dated 1-9-12



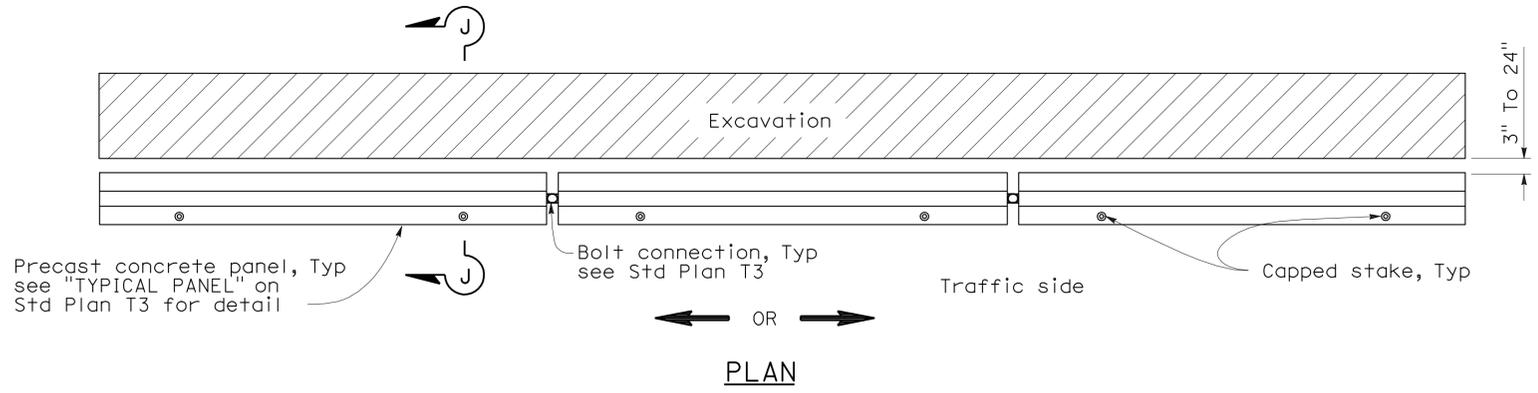
**RAILING STAKING CONFIGURATION FOR TWO-WAY TRAFFIC**

See Note 1



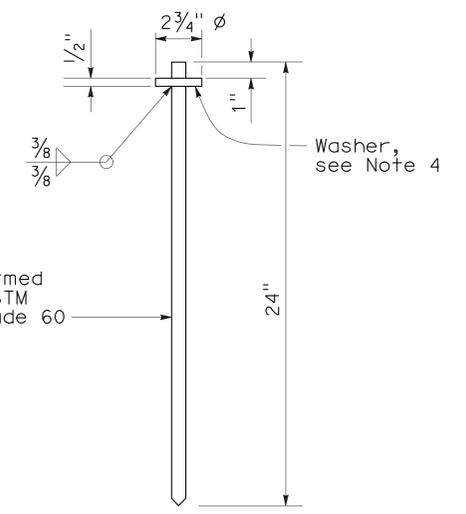
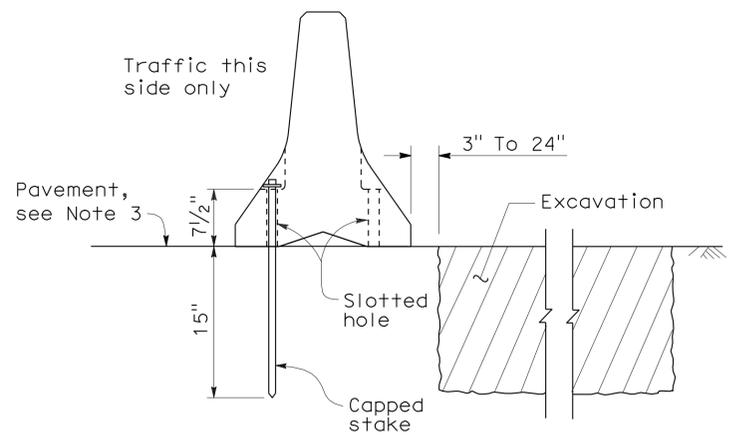
**NOTES:**

1. Where Type K Temporary Railing is placed as a temporary or long term barrier in two-way traffic on highways with less than 24" from the edge of traveled way, use four capped stakes per every other panel with end panels staked.
2. Where Type K Temporary Railing is placed 3" to 24" from the edge of an excavation on highways, use two capped stakes per panel along the traffic side.
3. Staked Type K Temporary Railing must be supported by at least 4" thick concrete, hot mix asphalt or existing asphalt concrete pavement.
4. The minimum yield strength for the washer must be 60,000 psi.
5. Direction of adjacent traffic indicated by  $\Rightarrow$ .



**RAILING STAKING CONFIGURATION ADJACENT TO AN EXCAVATION**

See Note 2



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**TEMPORARY RAILING  
(TYPE K)**

NO SCALE

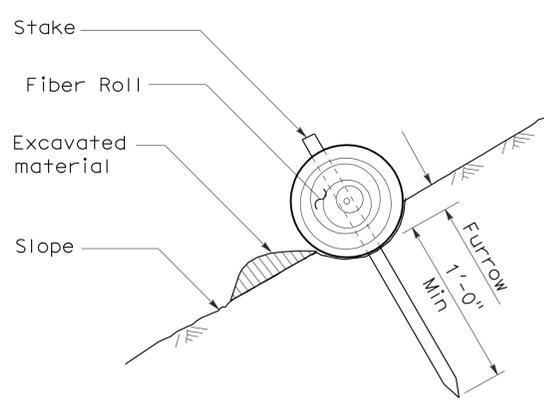
NSP T3A DATED MAY 20, 2011 SUPPLEMENTS  
THE STANDARD PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP T3A

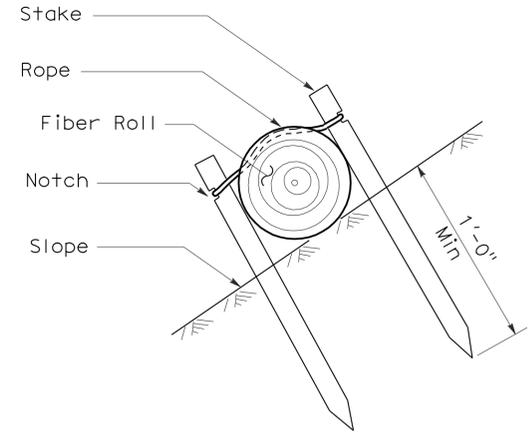
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Riv	74	29.6/29.9	43	55

*Robert B. Schott*  
 LICENSED LANDSCAPE ARCHITECT  
 April 3, 2009  
 PLANS APPROVAL DATE  
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

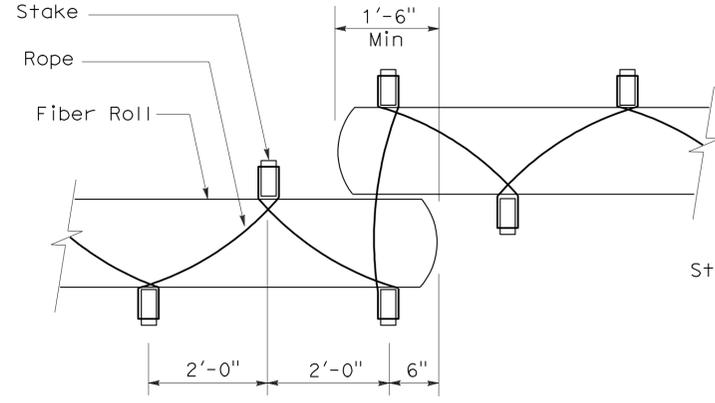
To accompany plans dated 1-9-12



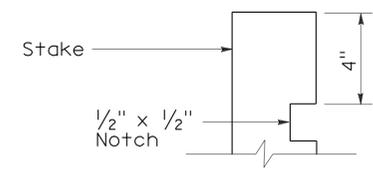
**SECTION**  
**TEMPORARY FIBER ROLL**  
**(TYPE 1)**



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

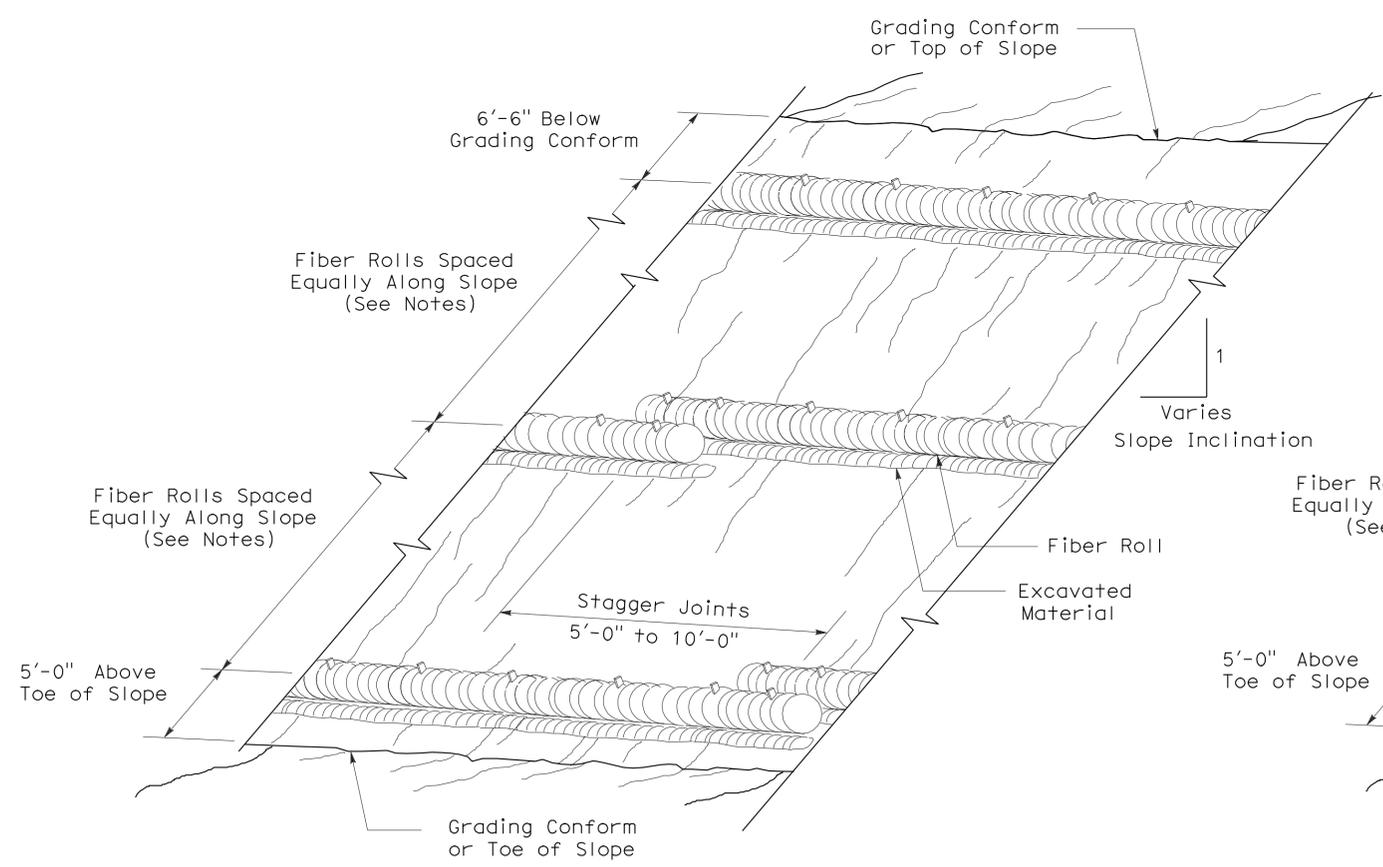


**PLAN**  
**TEMPORARY FIBER ROLL**  
**(TYPE 2)**

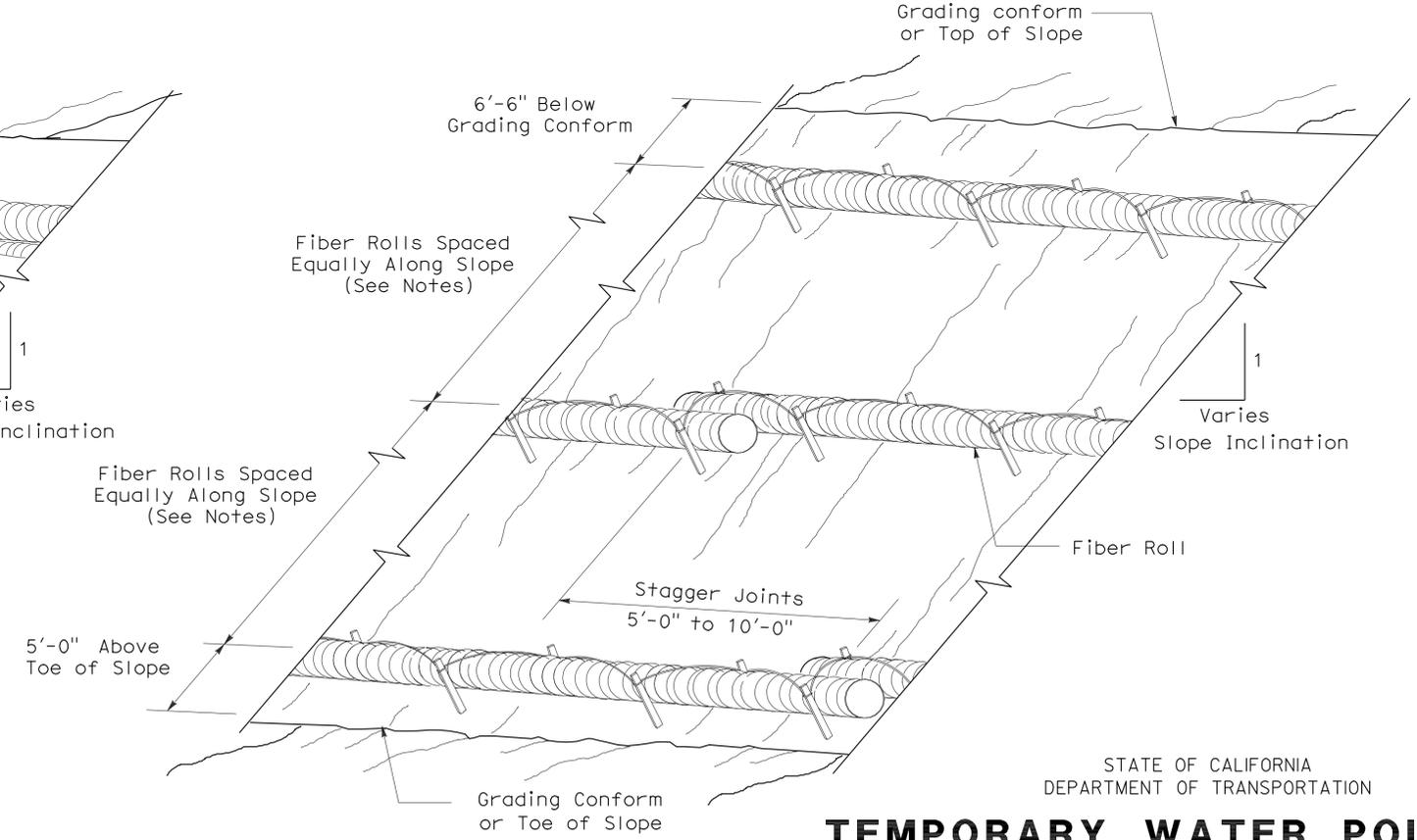


**ELEVATION**  
**STAKE NOTCH DETAIL**

- 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

# ELECTROLIERS

STANDARD TYPES	Symbol	Description
15, 15D		High mast light pole
15 STRUCTURE		Double Arm lighting standard
21, 21D STRUCTURE		Existing electrolier
30		Electrolier foundation (Future installation)
31		<b>NOTES:</b> 1. 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. 2. Luminaires shall be the cutoff type, ANSI Type III medium cutoff lighting distribution, unless otherwise specified. 3. Variations noted adjacent to symbol on project plans.
32		
35		
36-20A		

- 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
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
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
08	Riv	74	29.6/29.9	44	55

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 1-9-12

## 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
08	Riv	74	29.6/29.9	45	55

*Jeffrey G. McRae*  
 REGISTERED ELECTRICAL ENGINEER  
 October 5, 2007  
 PLANS APPROVAL DATE  
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REGISTERED PROFESSIONAL ENGINEER  
 Jeffrey G. McRae  
 No. E14512  
 Exp. 6-30-08  
 ELECTRICAL  
 STATE OF CALIFORNIA

### CONDUIT

PROPOSED	EXISTING	
---	---	Lighting Conduit, unless otherwise indicated or noted
---	---	Traffic signal conduit
-C-	-c-	Communication conduit
-T-	-t-	Telephone conduit
-F-	-f-	Fire alarm conduit
-FO-	-fo-	Fiber optic conduit
---	---	Conduit termination
		Conduit riser 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	
---OH---	---oh---	Overhead lines
		Wood pole "U" indicates utility owned
		Pole guy with anchor
		Utility transformer - ground mounted
		Service equipment enclosure type
		Service equipment enclosure door indicates front of enclosure
		Telephone demarcation cabinet

### POLE-MOUNTED SERVICE DESIGNATION



### ILLUMINATED OVERHEAD SIGN

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

### SIGNAL EQUIPMENT Cont

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

### NOTES:

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

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

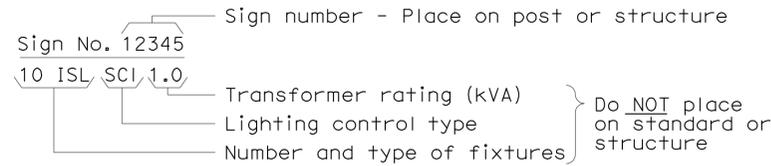
RSP ES-1B DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1B  
 DATED MAY 1, 2006 - PAGE 401 OF THE STANDARD PLANS BOOK DATED MAY 2006.

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

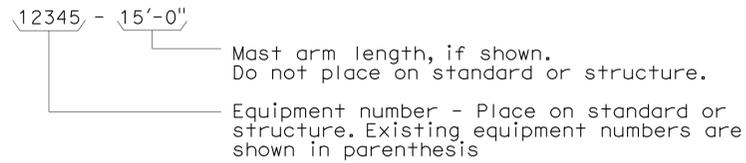
2006 REVISED STANDARD PLAN RSP ES-1B

### EQUIPMENT IDENTIFICATION

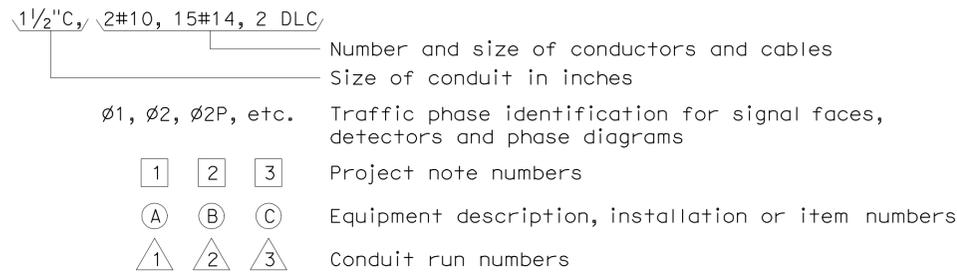
#### ILLUMINATED SIGN IDENTIFICATION NUMBER:



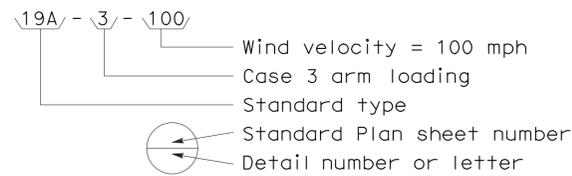
#### ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



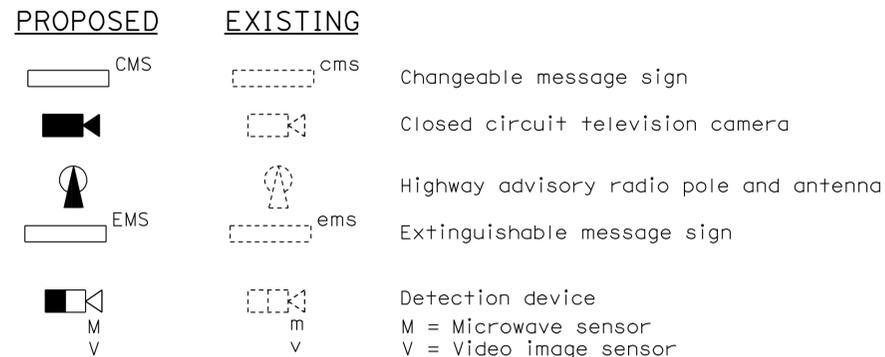
#### CONDUIT AND CONDUCTOR IDENTIFICATION:



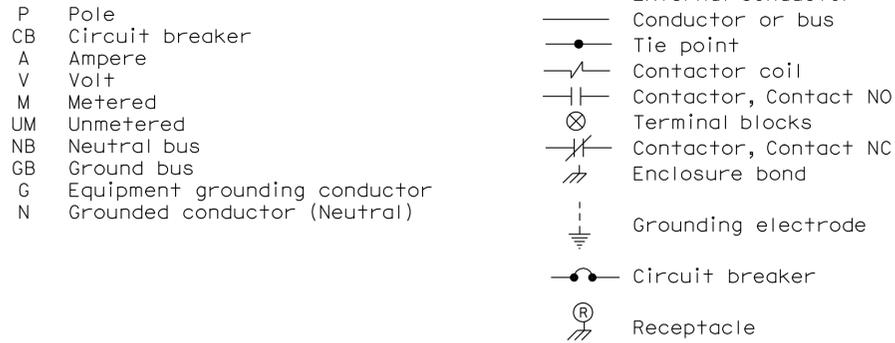
#### SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



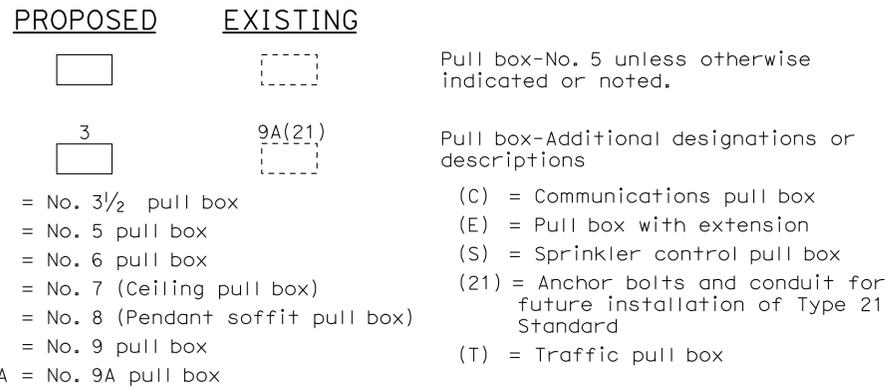
### MISCELLANEOUS EQUIPMENT



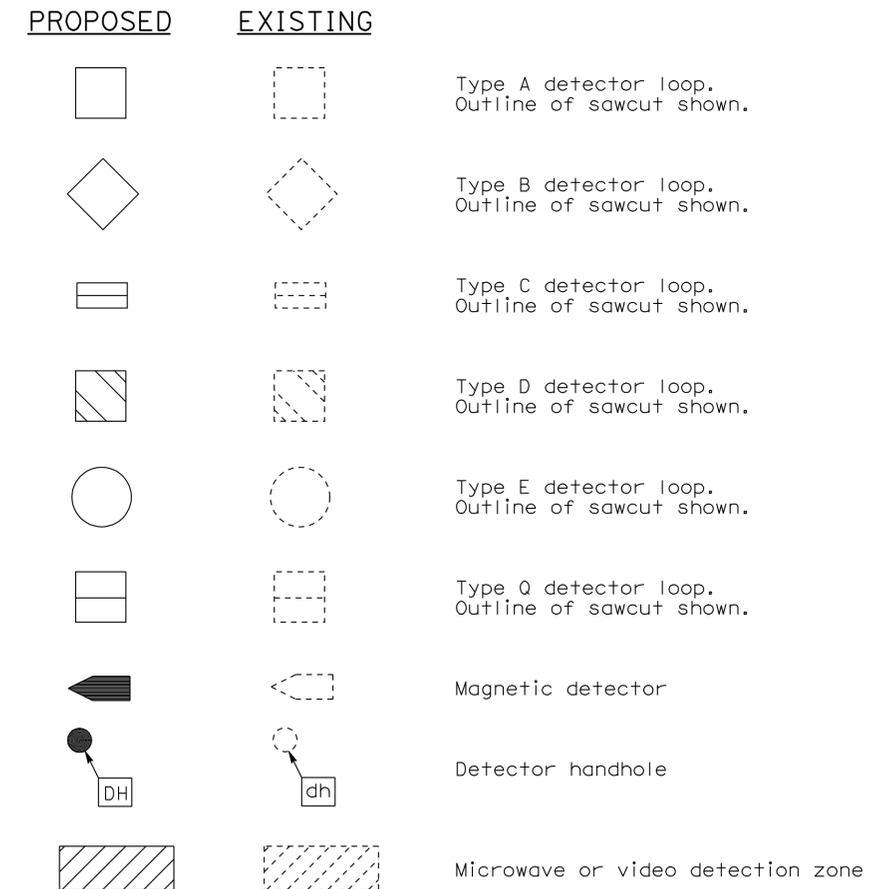
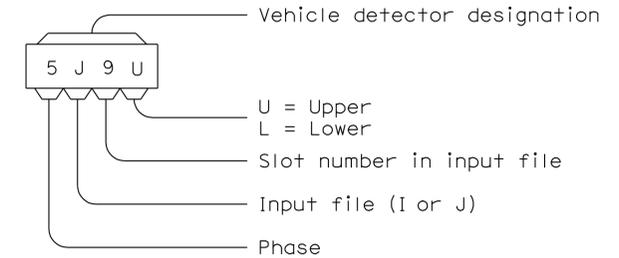
### WIRING DIAGRAM LEGEND



### PULL BOXES



### VEHICLE DETECTORS



STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

## ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

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

2006 REVISED STANDARD PLAN RSP ES-1C

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Riv	74	29.6/29.9	47	55

*Jeffery G. McRae*  
 REGISTERED ELECTRICAL ENGINEER

October 5, 2007  
 PLANS APPROVAL DATE

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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 1-9-12

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

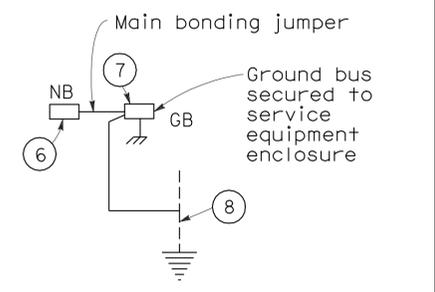
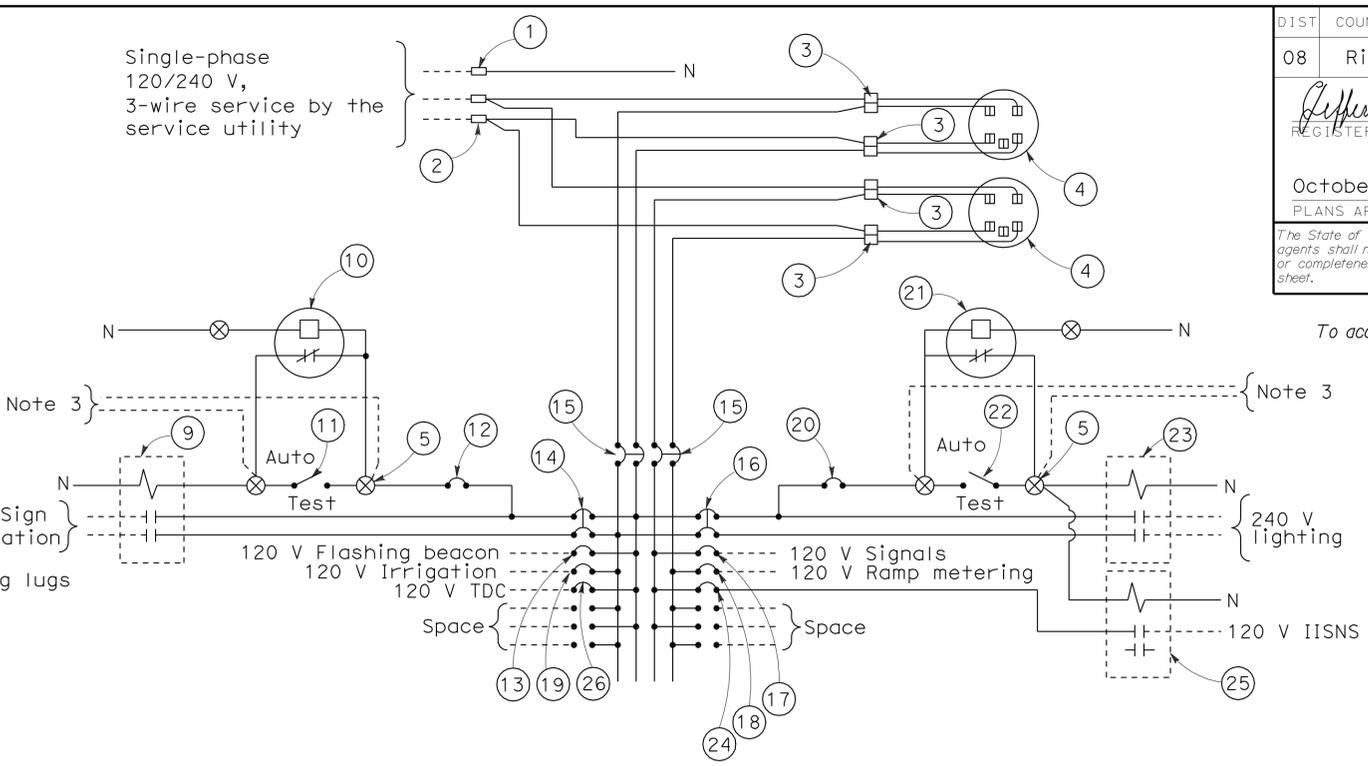
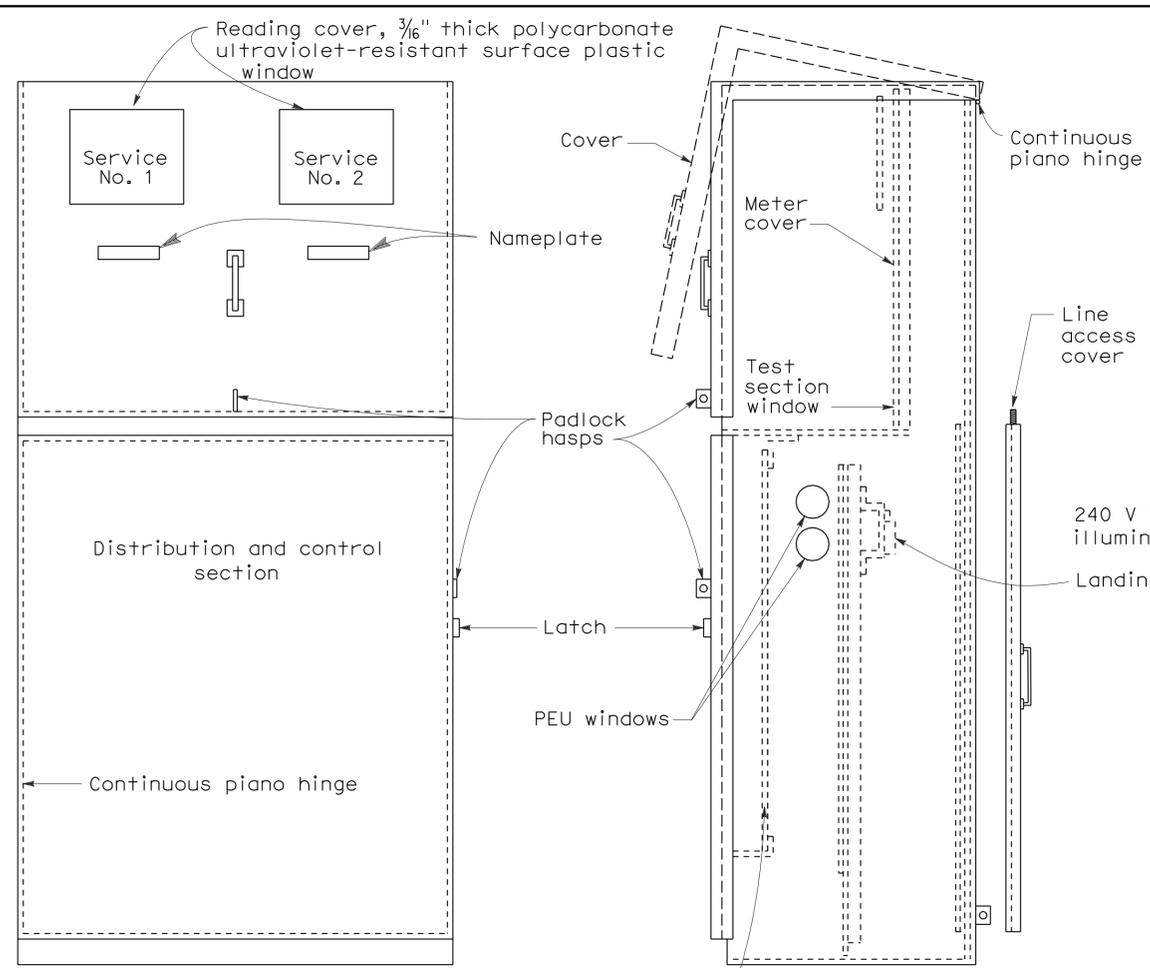
**ELECTRICAL SYSTEMS  
 (SERVICE EQUIPMENT NOTES  
 TYPE III SERIES)**

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



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

**TYPE III-CF SERVICE EQUIPMENT ENCLOSURE WITH PROVISIONS FOR TWO 100 A METERS (TYPICAL)**

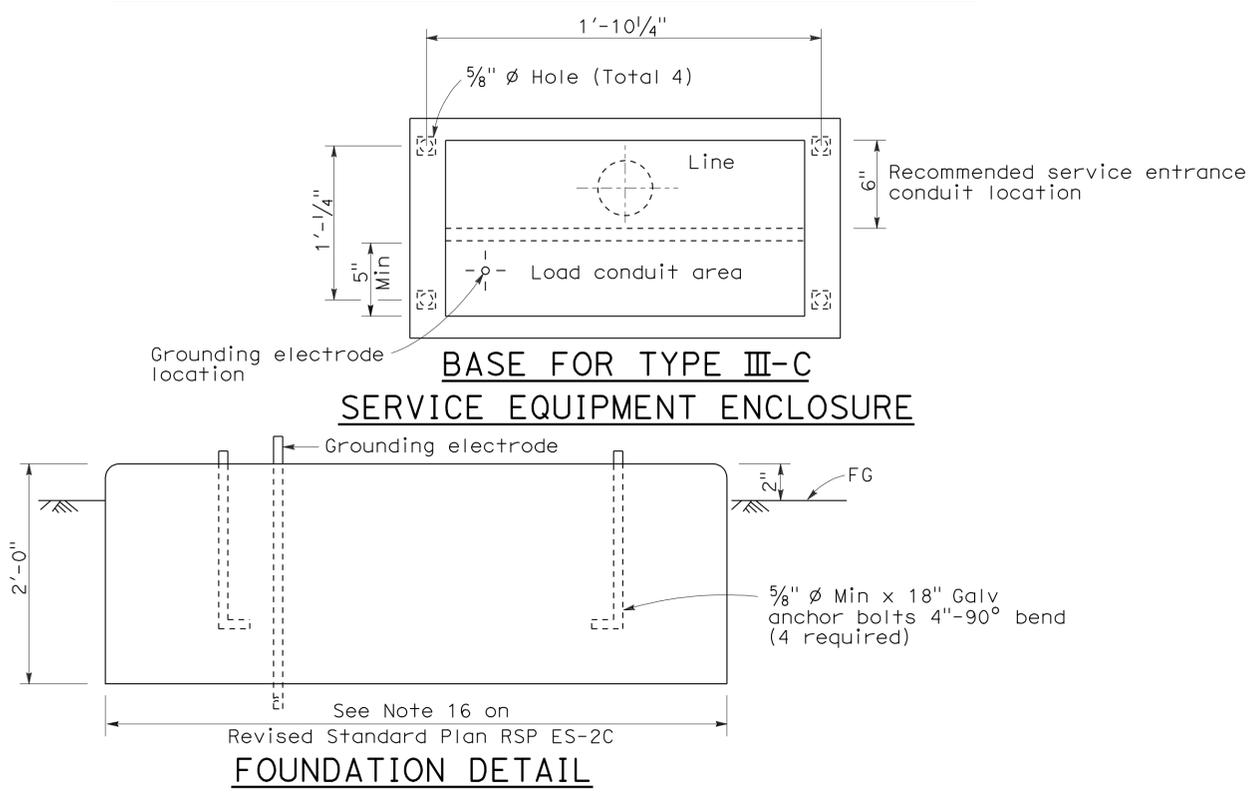
TYPE III-C SERVICE (120/240 V) EQUIPMENT LEGEND					
ITEM No.	COMPONENT	NAME PLATE DESCRIPTION	ITEM No.	COMPONENT	NAME PLATE DESCRIPTION
1	Neutral lug		14	30 A, 240 V, 2P, CB	Sign Illumination
2	Landing lug (Note 6)		15	100 A, 240 V, 2P, CB	Main Breaker
3	Test bypass facility		16	30 A, 240 V, 2P, CB	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 Control
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 - C SERIES)**  
 NO SCALE

RSP ES-2F DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-2F  
 DATED MAY 1, 2006 - PAGE 408 OF THE STANDARD PLANS BOOK DATED MAY 2006.



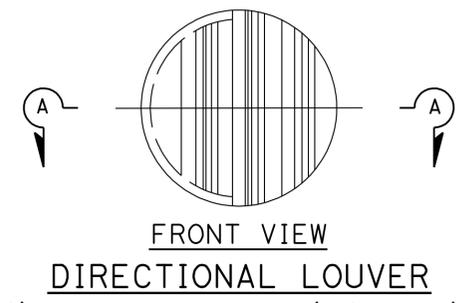
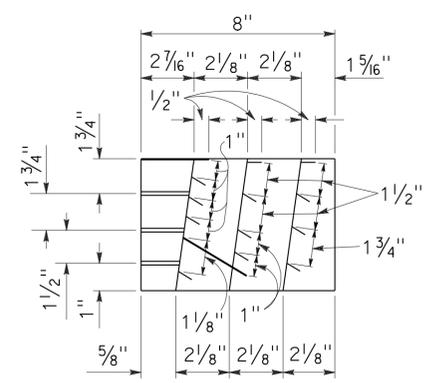
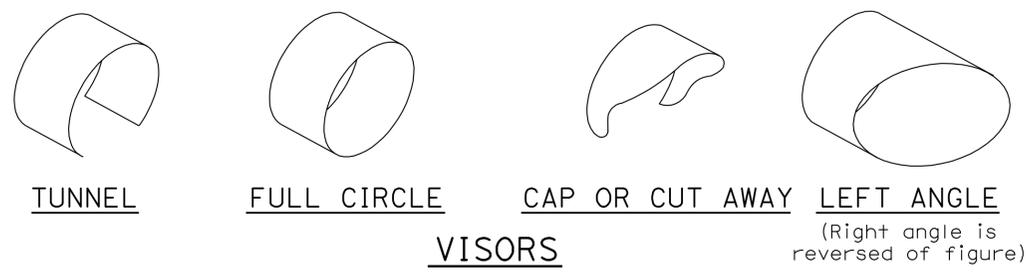
2006 REVISED STANDARD PLAN RSP ES-2F

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Riv	74	29.6/29.9	49	55

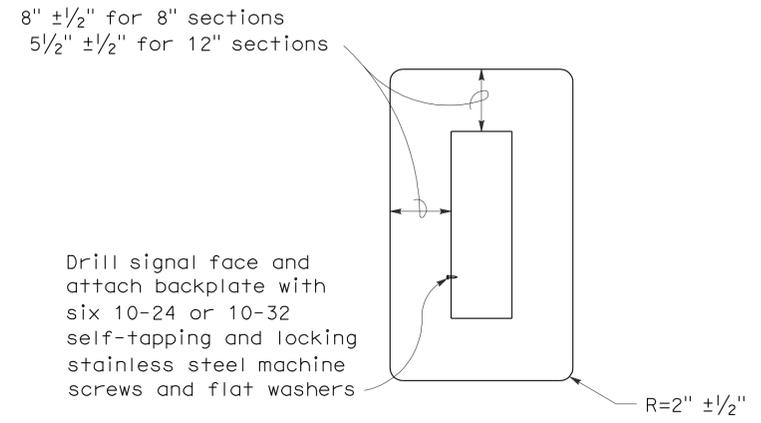
Jeffrey G. McRae  
 REGISTERED ELECTRICAL ENGINEER  
 No. E14512  
 Exp. 6-30-10  
 ELECTRICAL  
 STATE OF CALIFORNIA

June 6, 2008  
 PLANS APPROVAL DATE

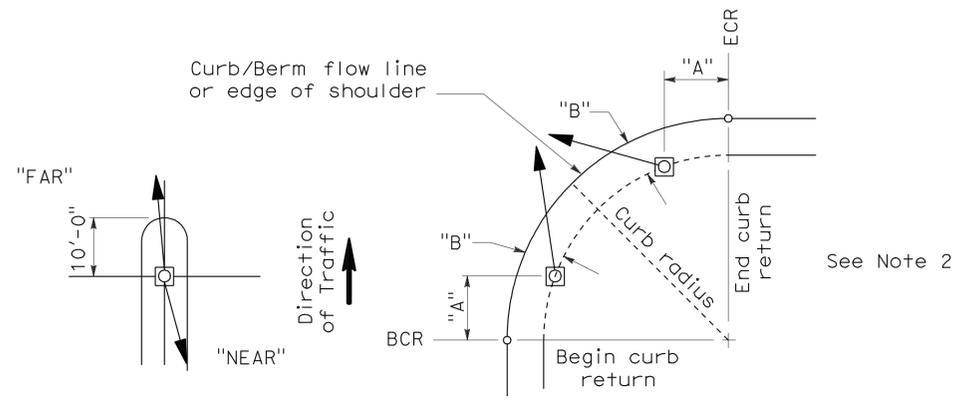
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



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

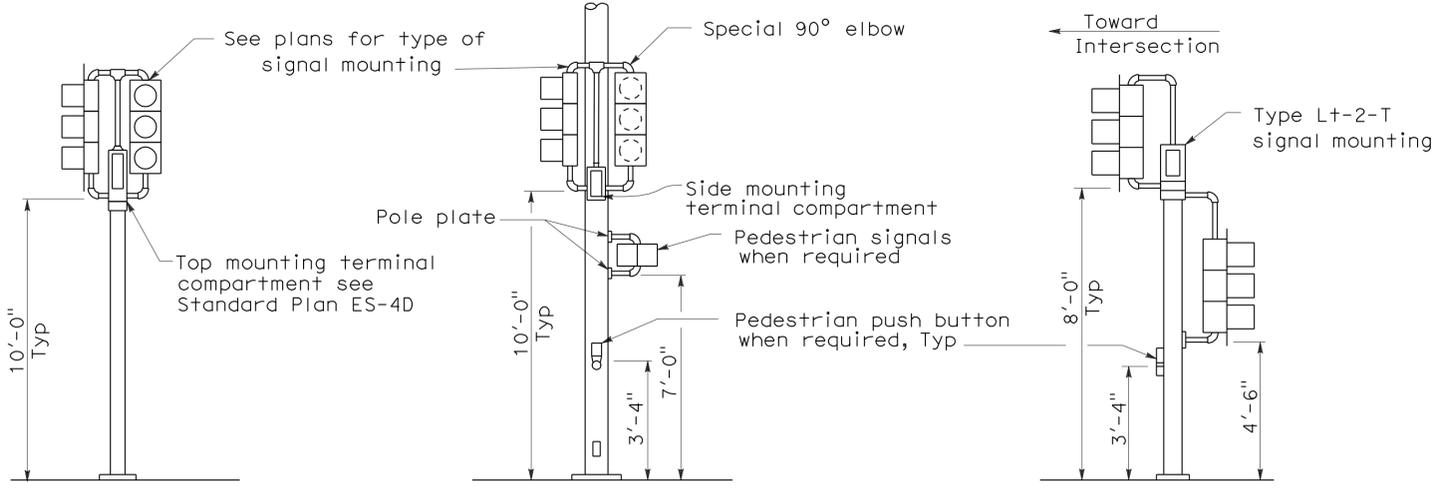


**8" AND 12" SECTIONS**  
**BACKPLATE**  
 1/16" minimum thickness  
 3001-14 aluminum, or plastic when specified



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

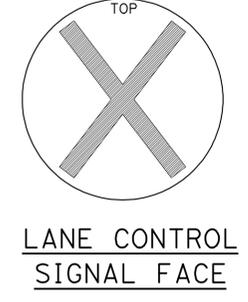
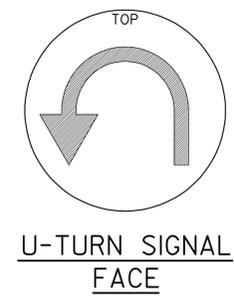
**SIGNAL STANDARD PLACEMENT DIMENSIONS AND EQUIPMENT LOCATIONS**



**TOP MOUNTED SIGNALS (TV)**  
 Type 1-A, 1-B, 1-C and 1-D standard as indicated on the plans

**SIDE MOUNTED SIGNALS (SV AND SP)**  
 Normally used on standards with luminaire or signal mast arm

**LEFT TURN LANE SIGNAL**  
 Type 1-A, 1-B, 1-C and 1-D standard as indicated on plans



**TYPICAL SIGNAL INSTALLATIONS**

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

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

2006 REVISED STANDARD PLAN RSP ES-4C

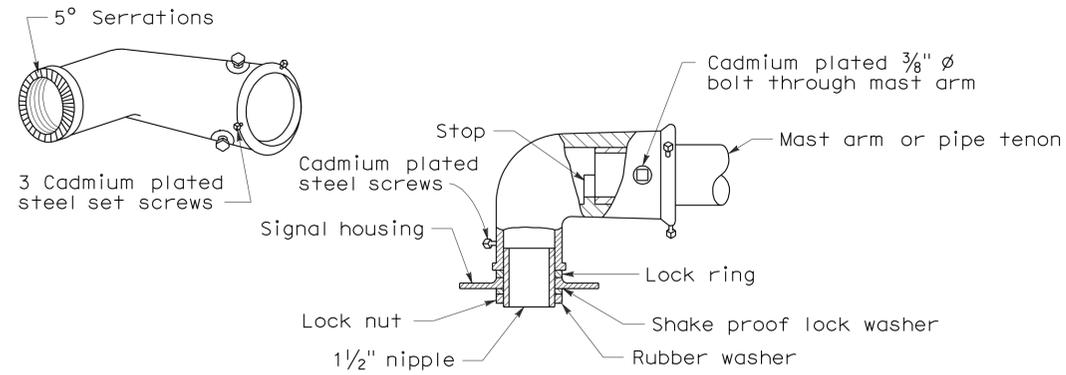
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Riv	74	29.6/29.9	50	55

Jeffrey G. McRae  
 REGISTERED ELECTRICAL ENGINEER  
 No. E14512  
 Exp. 6-30-10  
 ELECTRICAL  
 STATE OF CALIFORNIA

June 6, 2008  
 PLANS APPROVAL DATE

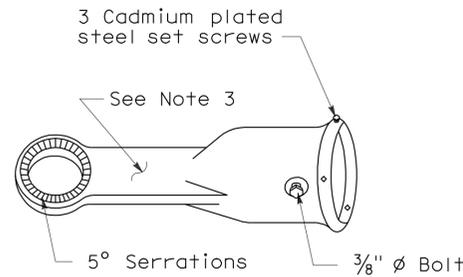
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 1-9-12



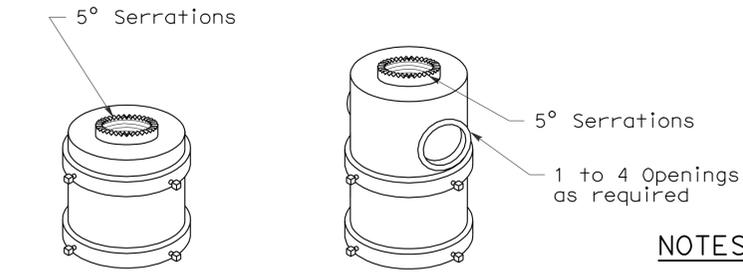
**MAST ARM MOUNTING - TYPE "MAT"**

For 2 NPS pipe, see Note 1.



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

For 2 NPS pipe. See Note 1.

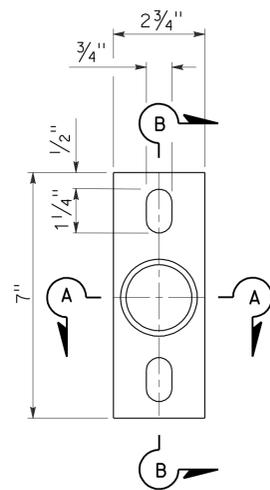


For one mounting For multiple mountings

**TOP MOUNTINGS**

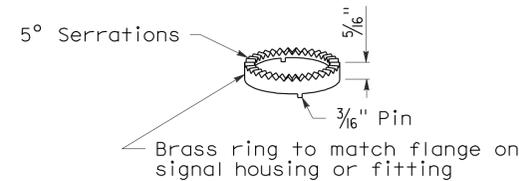
For 4 NPS pipe, see Note 2.

**SIGNAL SLIP FITTERS**



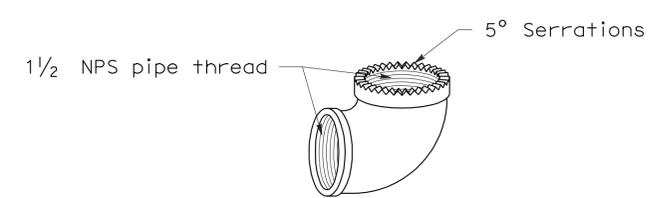
**POLE PLATE**

For side mountings



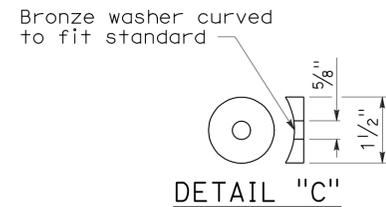
**LOCK RING**

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



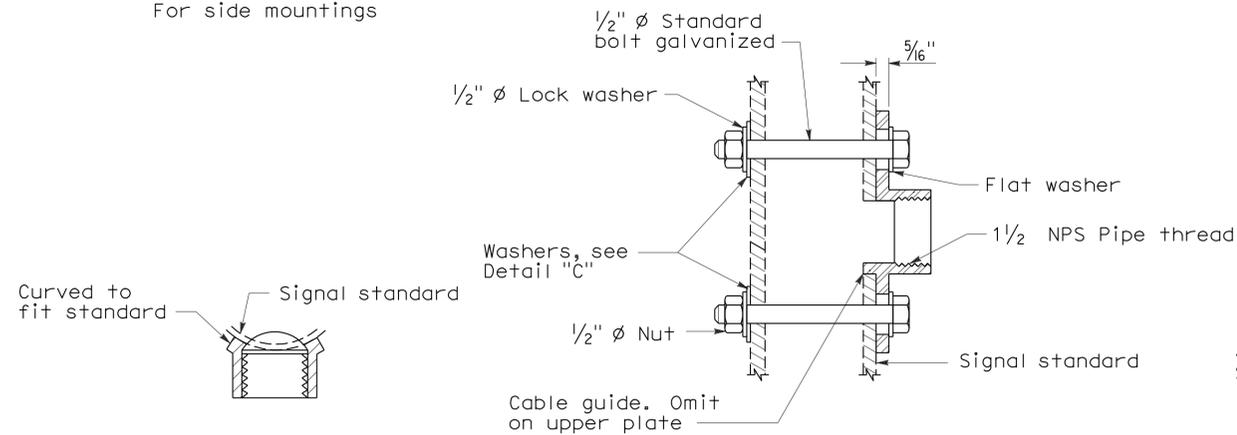
**SPECIAL 90° ELBOW**

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



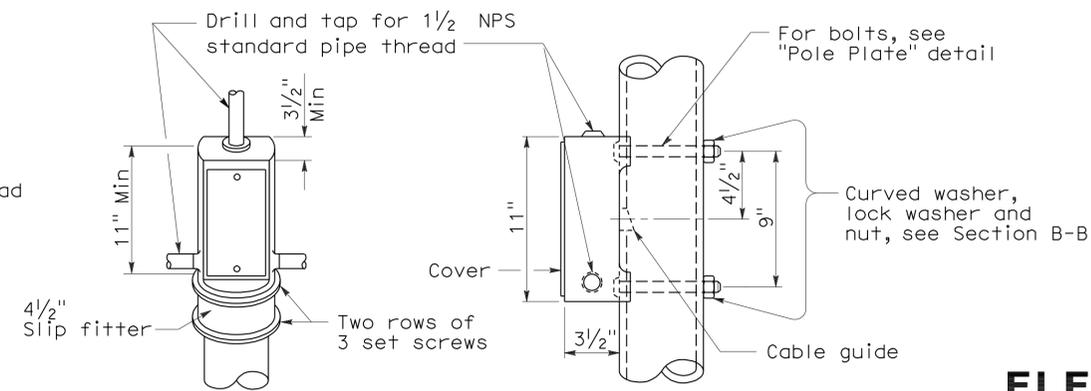
**DETAIL "C"**

**MISCELLANEOUS MOUNTING HARDWARE**



**SECTION A-A**

**SECTION B-B**



**TOP MOUNTING**

**SIDE MOUNTING**

**TERMINAL COMPARTMENTS**

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

NO SCALE

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

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

2006 REVISED STANDARD PLAN RSP ES-4D

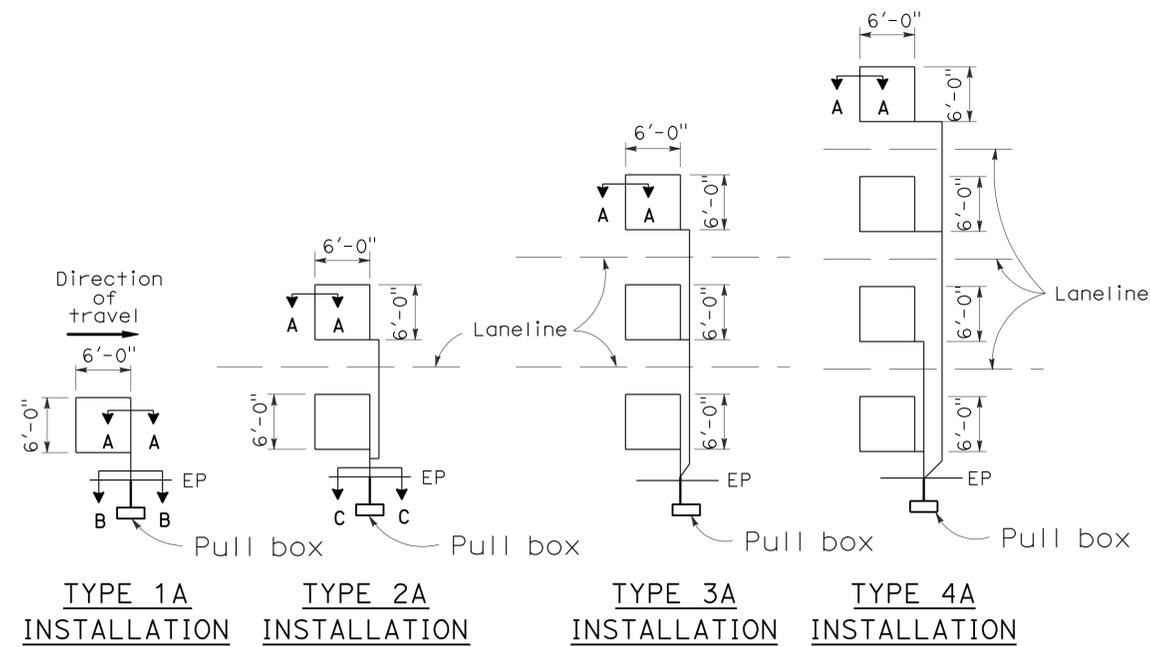
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Riv	74	29.6/29.9	51	55

*Jeffery G. McRae*  
 REGISTERED ELECTRICAL ENGINEER  
 October 5, 2007  
 PLANS APPROVAL DATE  
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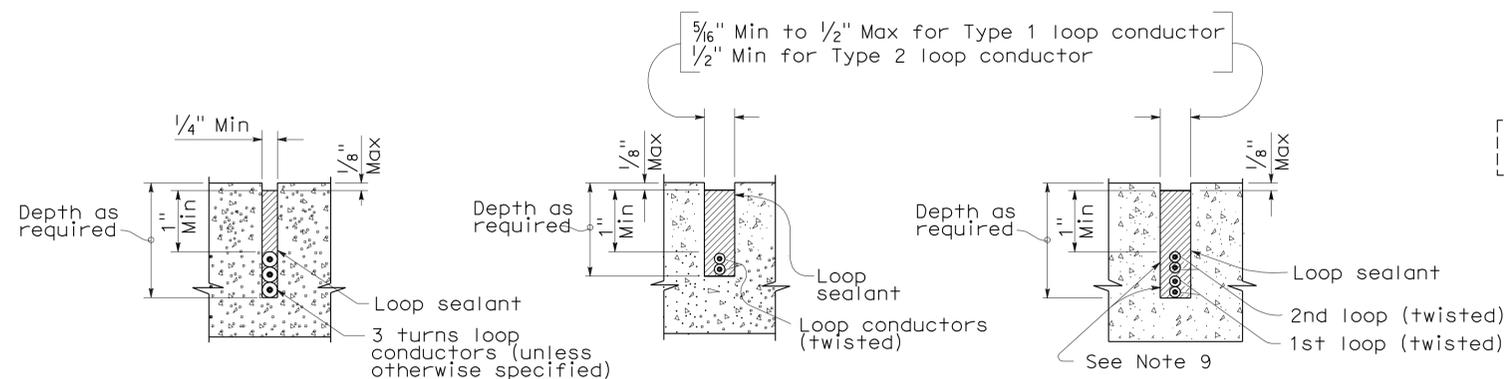
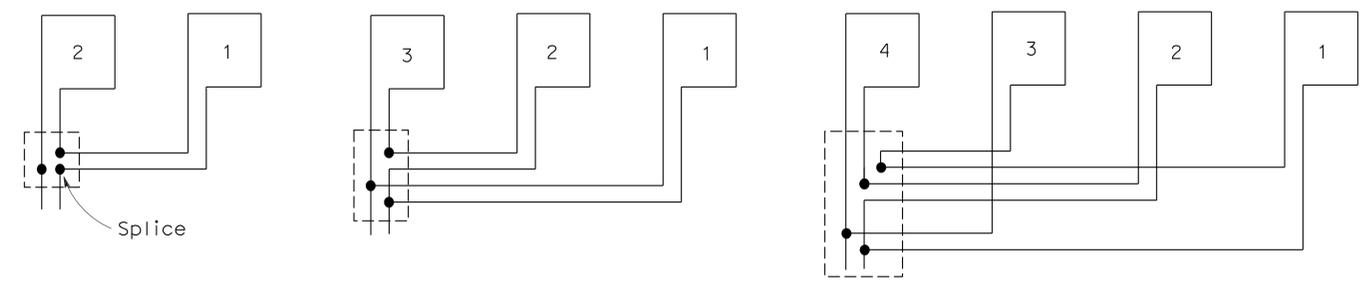
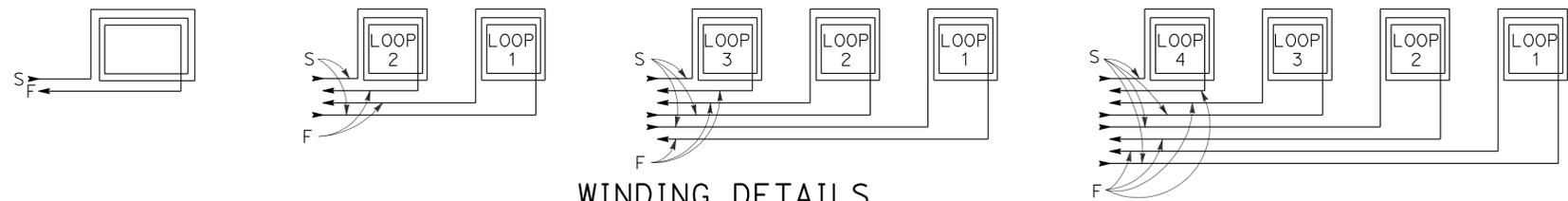
REGISTERED PROFESSIONAL ENGINEER  
*Jeffery G. McRae*  
 No. E14512  
 Exp. 6-30-08  
 ELECTRICAL  
 STATE OF CALIFORNIA

## 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

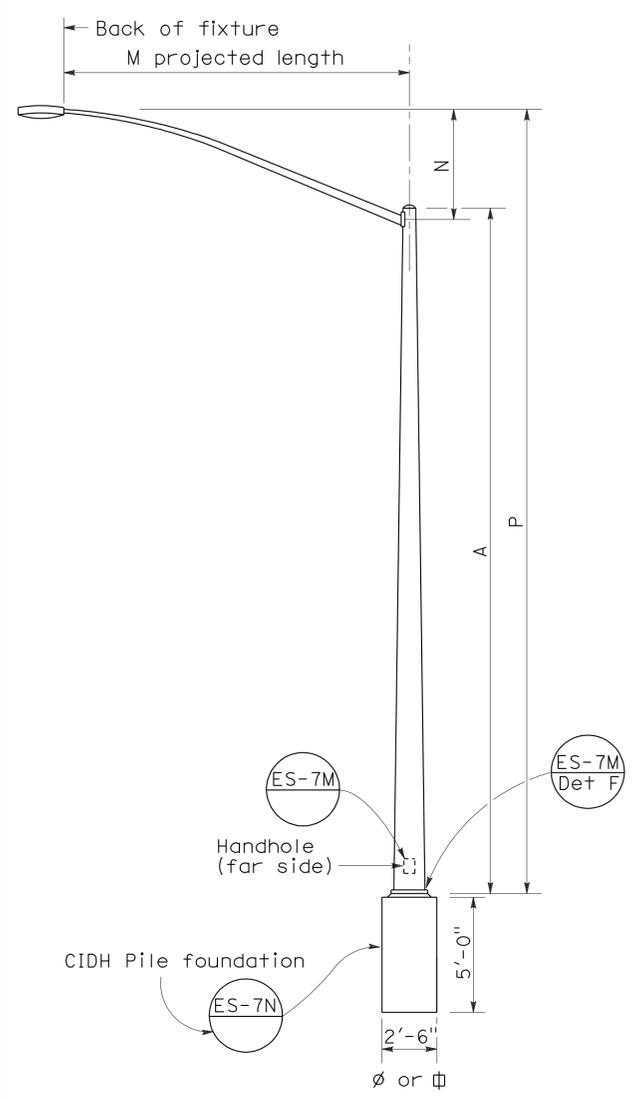
NO SCALE

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.

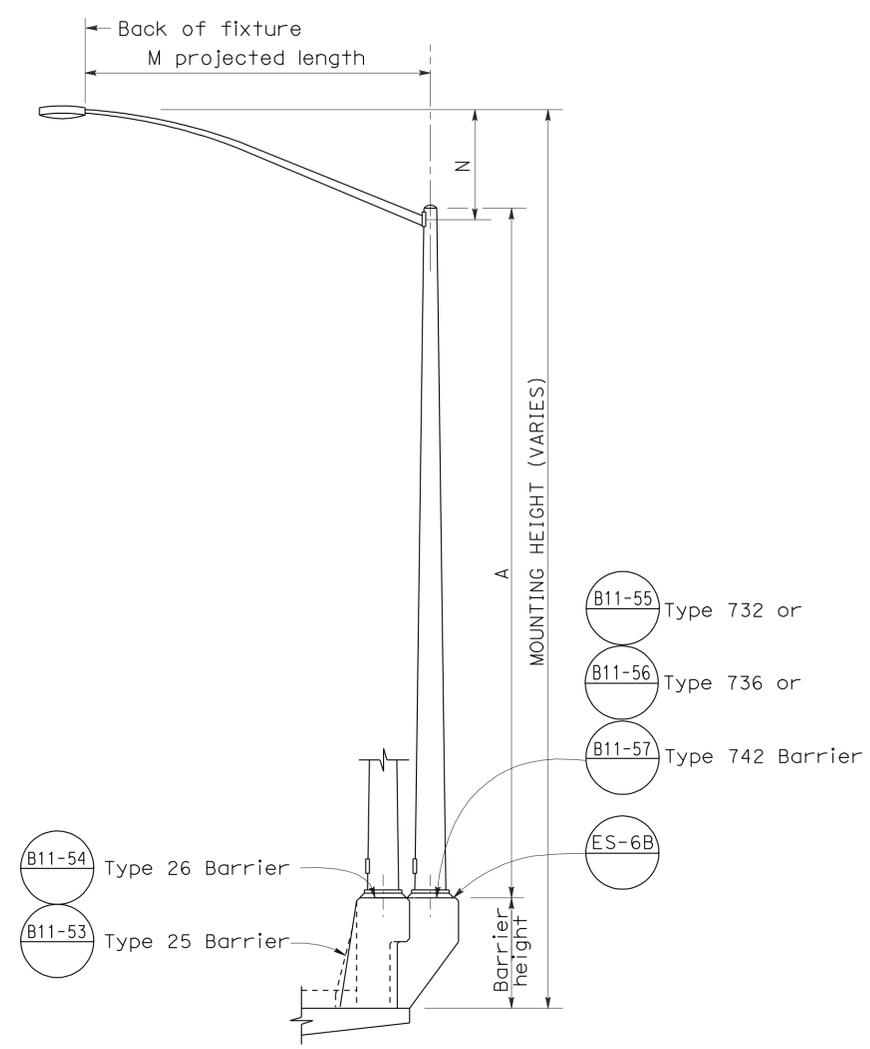
**REVISED STANDARD PLAN RSP ES-5A**

2006 REVISED STANDARD PLAN RSP ES-5A

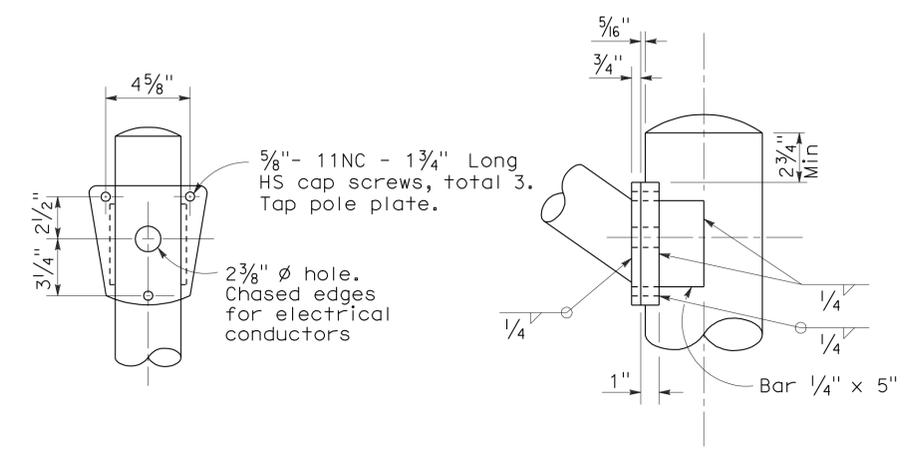
To accompany plans dated 1-9-12



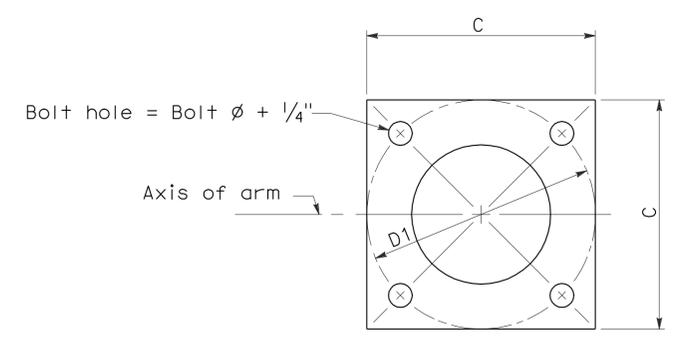
**ELEVATION**  
**TYPE 15 AND TYPE 21**



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



**DETAIL R**  
**LUMINAIRE ARM CONNECTION**



**BASE PLATE**

POLE TYPE	POLE DATA				BASE PLATE DATA				LUMINAIRE ARM
	A Height	Min OD Base	Min OD Top	Wall Thickness	C	D1 Bolt Circle	Thickness	Anchor Bolts Size	
15	30'	8"	3 7/8"	0.1196"	1'-0"	1'-0"	1"	1" $\phi$ x 3'-0" x 4"*	6' - 15' 12'
21	35'	8 5/8"	3 7/8"	0.1196"	1'-0"	1'-0"	1"	1 1/4" $\phi$ x 3'-0" x 4"*	6' - 15' 12'

M Projected Length	N Rise	Min OD At Pole	Nominal Thickness	LUMINAIRE ARM DATA	
				Type 15	Type 21
6'-0"	2'-0"±	3/4"	0.1196"	31'-6"±	36'-6"±
8'-0"	2'-6"±	3/2"	0.1196"	32'-0"±	37'-0"±
10'-0"	3'-3"±	3 7/8"	0.1196"	32'-9"±	37'-9"±
12'-0"	4'-3"±	3 7/8"	0.1196"	33'-9"±	38'-9"±
15'-0"	4'-9"±	4 1/4"	0.1196"	34'-3"±	39'-3"±

\* For barrier rail bolts, see Standard Plan ES-6B.

**NOTES:**

- Indicates arm length to be used unless otherwise noted on the plans.
- For Type 15-SB, use Type 15 standard with Type 30 slip base plate details, see Standard Plan ES-6F.
- For additional notes, see Standard Plan ES-7M and ES-7N.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS**  
**(LIGHTING STANDARD**  
**TYPES 15 AND 21)**

NO SCALE

RSP ES-6A DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-6A DATED MAY 1, 2006 - PAGE 427 OF THE STANDARD PLANS BOOK DATED MAY 2006.

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

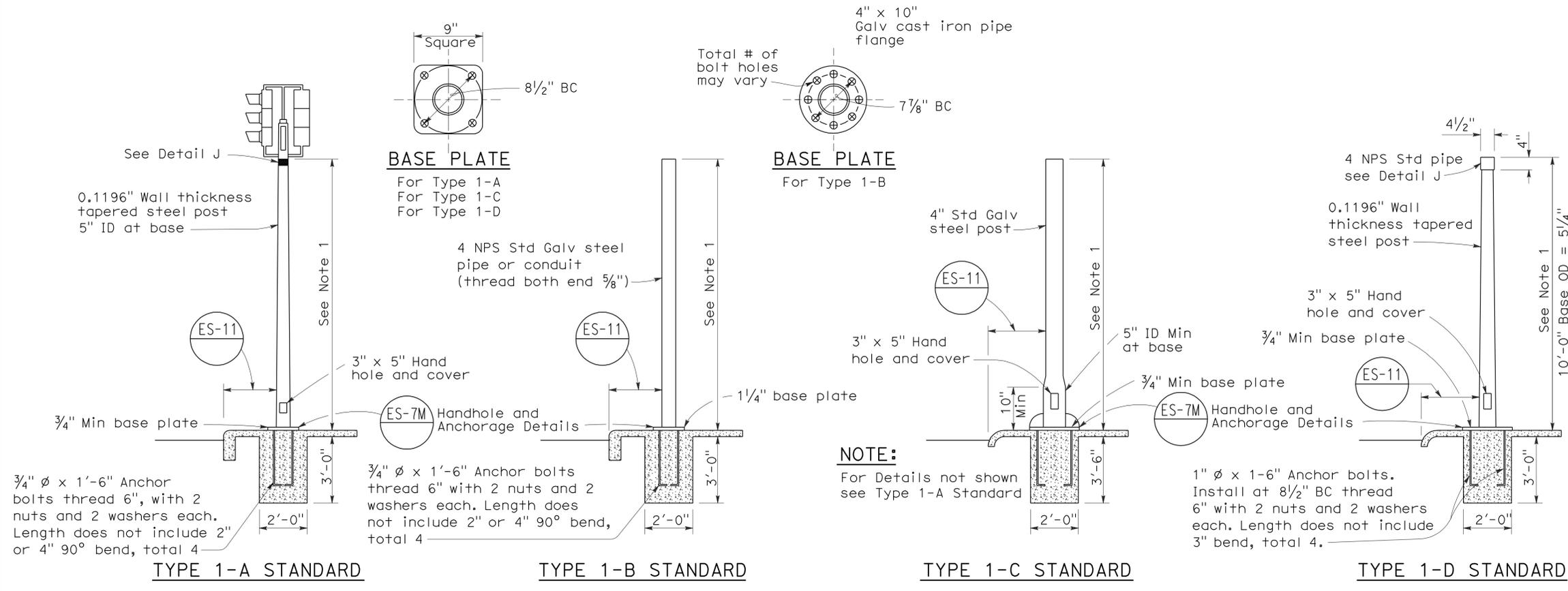
2006 REVISED STANDARD PLAN RSP ES-6A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Riv	74	29.6/29.9	53	55

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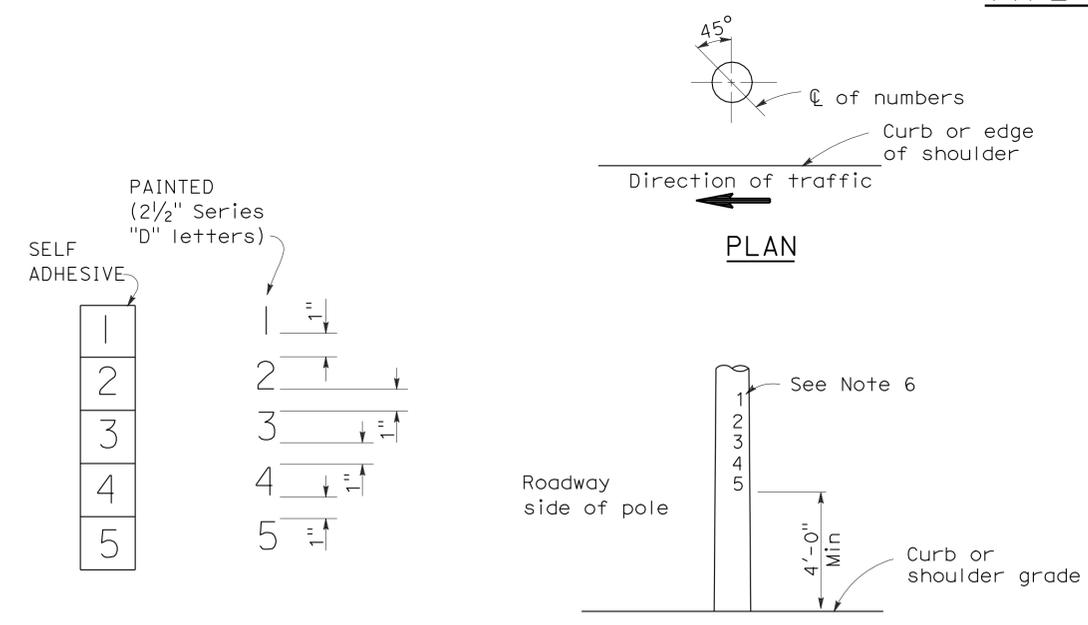
REGISTERED PROFESSIONAL ENGINEER  
 Stanley P. Johnson  
 No. C57793  
 Exp. 3-31-08  
 CIVIL  
 STATE OF CALIFORNIA

To accompany plans dated 1-9-12

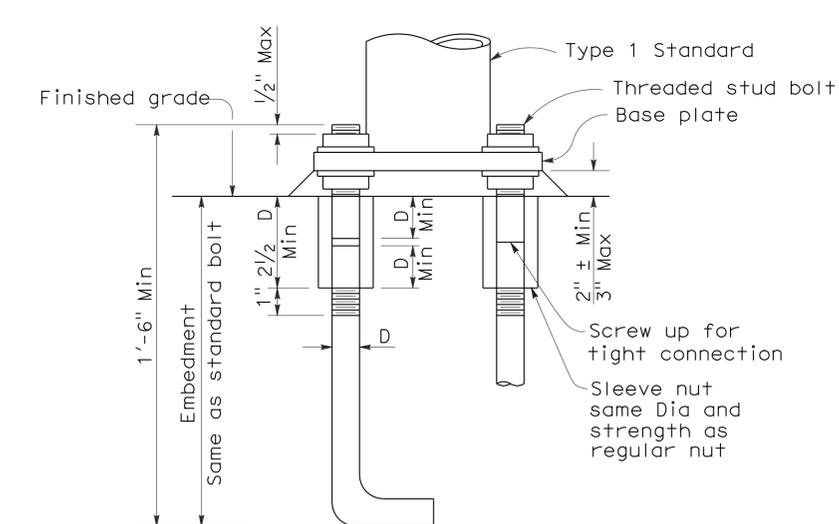


- NOTES:**
- Standards shall be 10'-0"  $\pm$  2" for vehicle signals and 7'-0"  $\pm$  2" for pedestrian signals unless otherwise noted on plans.
  - Top of standards shall be 4 1/2" OD.
  - Conduits shall extend 2" maximum above finished surface of foundation and for Types 1-A, 1-C and 1-D shall be 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**

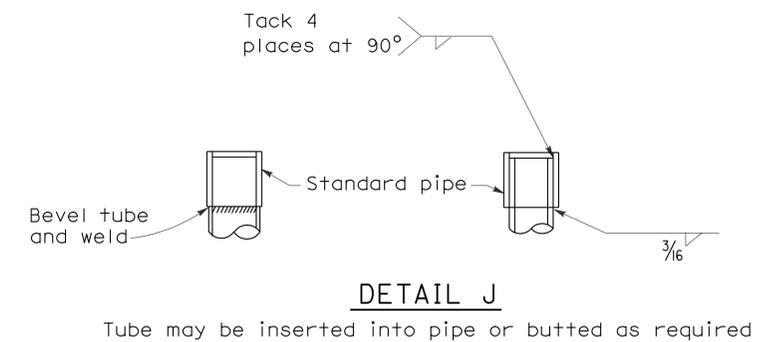


**LOCATION OF EQUIPMENT NUMBERS ON STANDARDS AND POSTS**



**ANCHOR BOLTS WITH SLEEVE NUTS**

Sleeve nuts to be used only when shown or specified on Project Plans  
D = Diameter of anchor bolt

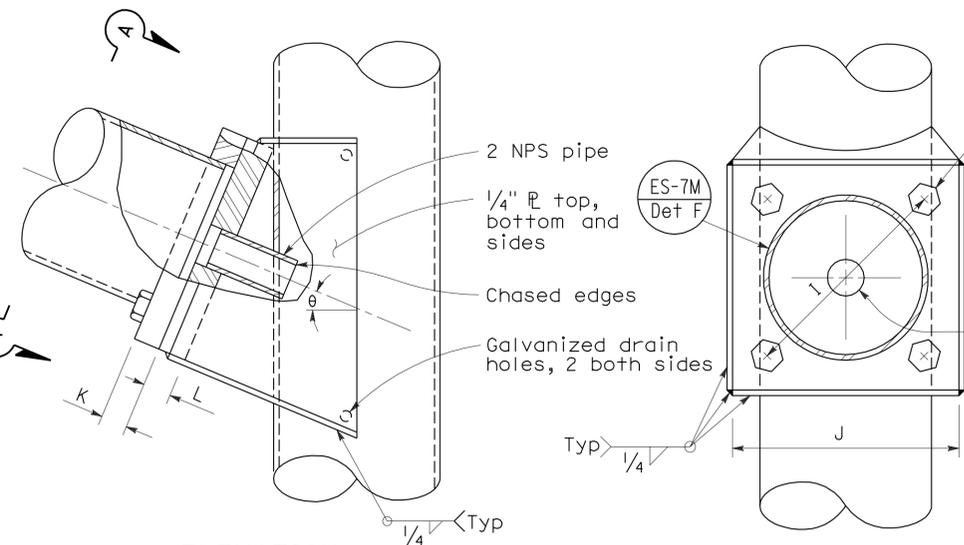
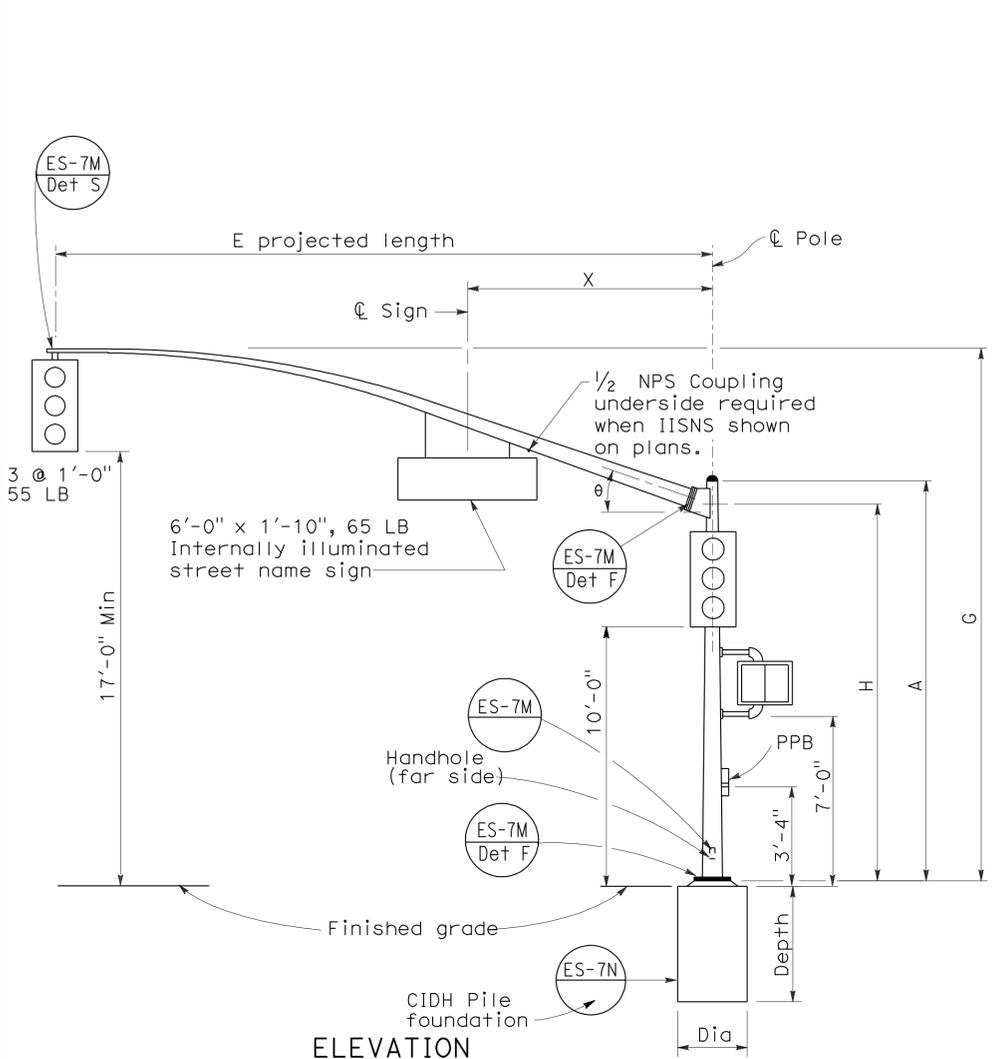


**ELECTRICAL SYSTEMS (SIGNAL AND LIGHTING STANDARD TYPE 1 STANDARD AND EQUIPMENT NUMBERING)**

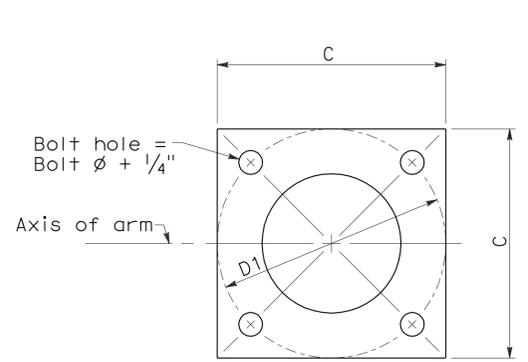
NO SCALE

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.

2006 REVISED STANDARD PLAN RSP ES-7B

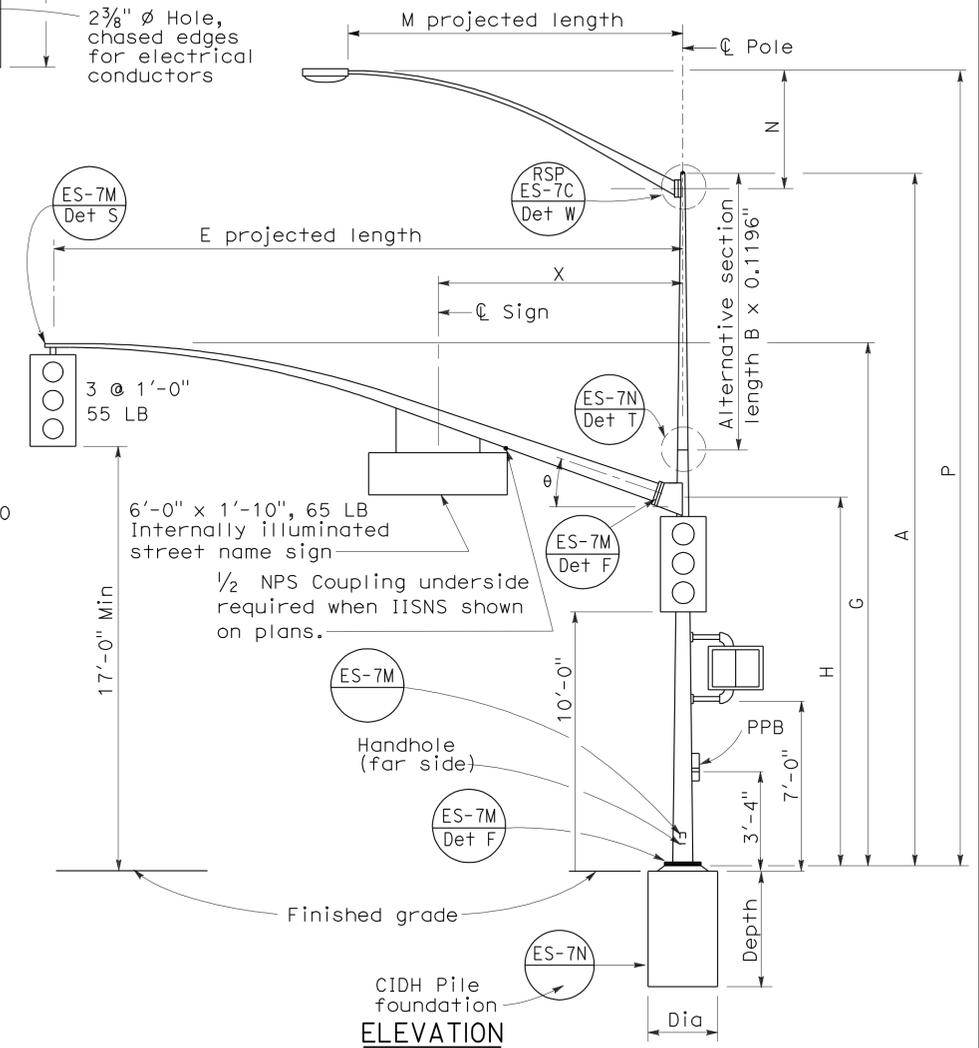


**SIGNAL ARM CONNECTION DETAILS**



**BASE PLATE**

**TYPE 16-2-100, 18-2-100**



**TYPE 17-2-100, 17A-2-100, 19-2-100, 19A-2-100**

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	theta	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"		35'-0" Pole
10'-0"	3'-3"±	3 7/8"	0.1196"	32'-0"±
12'-0"	4'-3"±	3 7/8"		37'-0"±
15'-0"	4'-9"±	4 1/4"	0.1196"	32'-9"±
				37'-9"±
				33'-9"±
				38'-9"±
				34'-3"±
				39'-3"±

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"ø x 42" x 6"	None	15'-0", 20'-0"	2'-6"	7'-2"	Yes	
17-2-100			30'-0"			10'-0"												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"	0.2391"	8"	5 5/16"												

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

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

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.

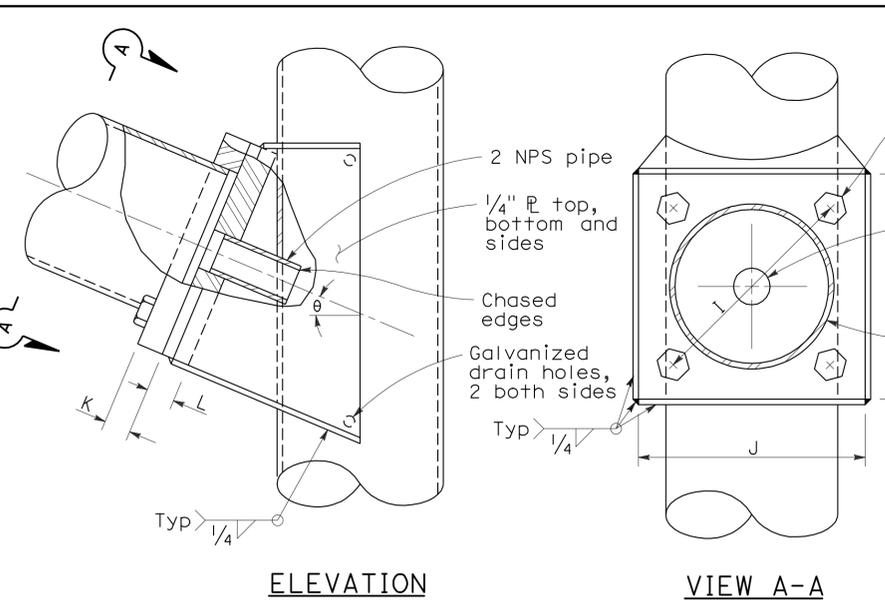
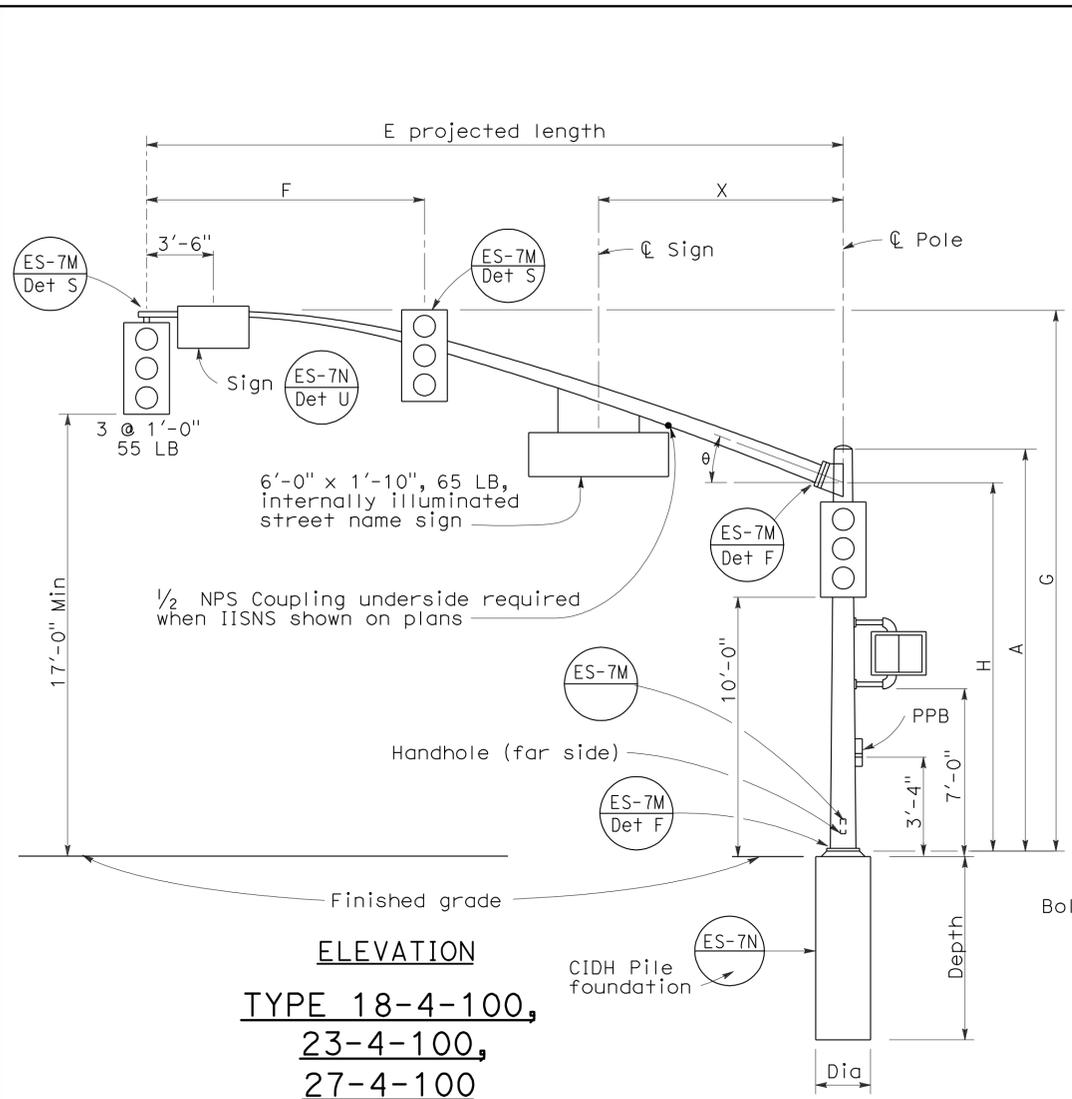
2006 REVISED STANDARD PLAN RSP ES-7D

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
08	Riv	74	29.6/29.9	55	55

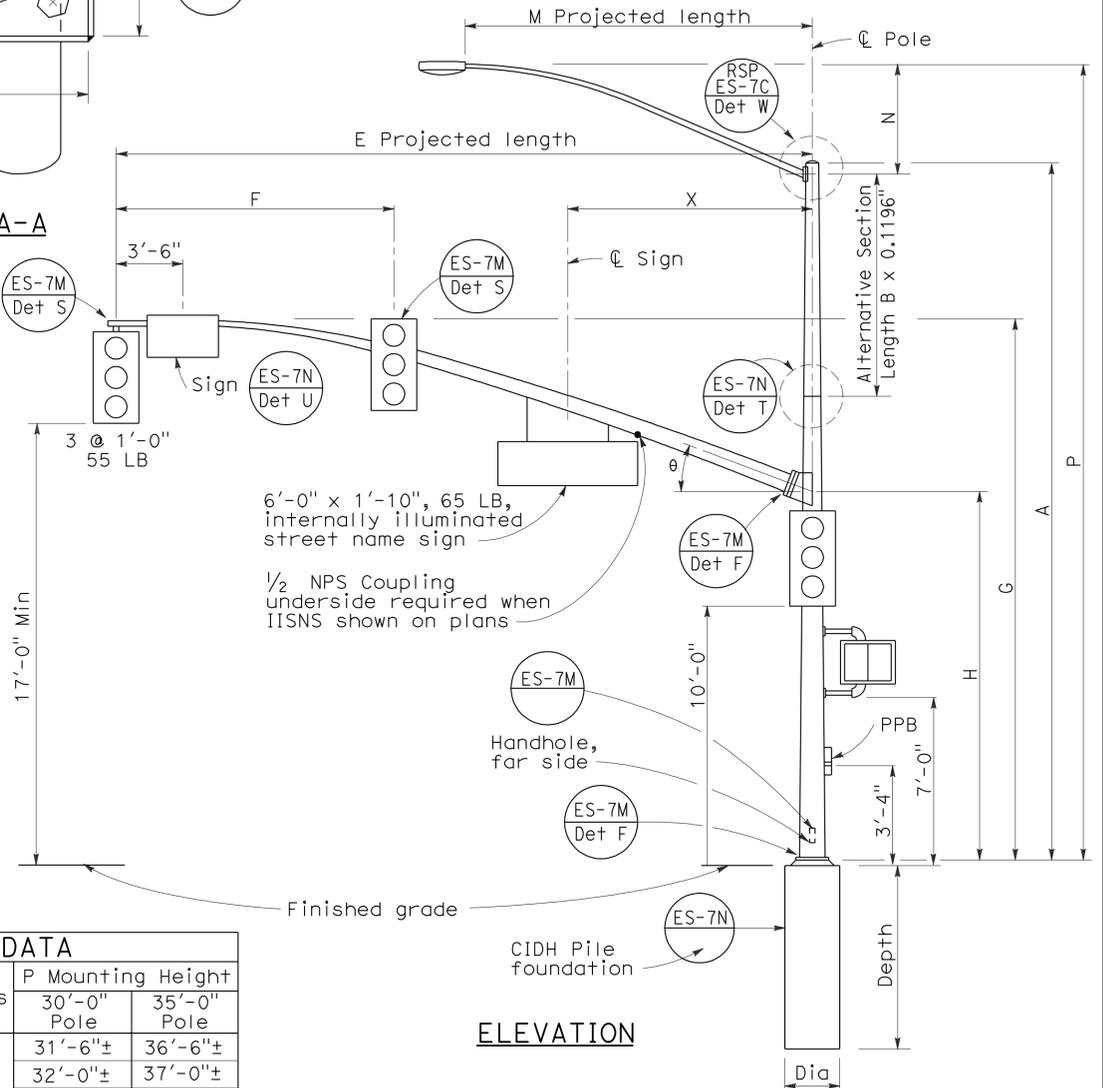
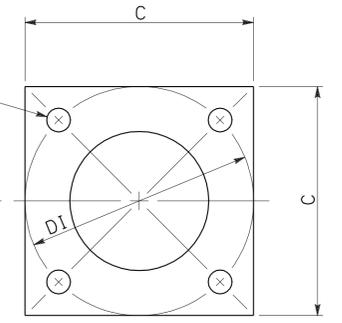
Stanley P. Johnson  
 REGISTERED CIVIL ENGINEER  
 October 5, 2007  
 PLANS APPROVAL DATE  
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To accompany plans dated 1-9-12

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 CIVIL  
 STATE OF CALIFORNIA



**SIGNAL ARM CONNECTION DETAILS**



**ELEVATION**

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

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"	8"										
35'-0"	14'-0"	8 1/16"										
40'-0"	15'-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"	15°	13'-0"

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"±	4"		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														

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