

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE

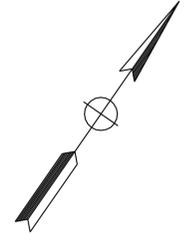
SENIOR LANDSCAPE ARCHITECT	T. CHRIS JOHNSON	CALCULATED/DESIGNED BY	J. PIETRZAK	REVISOR	
		CHECKED BY	T.C. JOHNSON	DATE	



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	50	67.6/72.9	201	246

  
 LICENSED LANDSCAPE ARCHITECT  
 No. 4457  
 2-25-13  
 PLANS APPROVAL DATE  
 Signature: Jeffrey L. Pietrzak  
 Renewal Date: 12-31-13  
 Date: 11-16-12  
 State of California

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

APPROVED FOR SOIL PREPARATION WORK ONLY

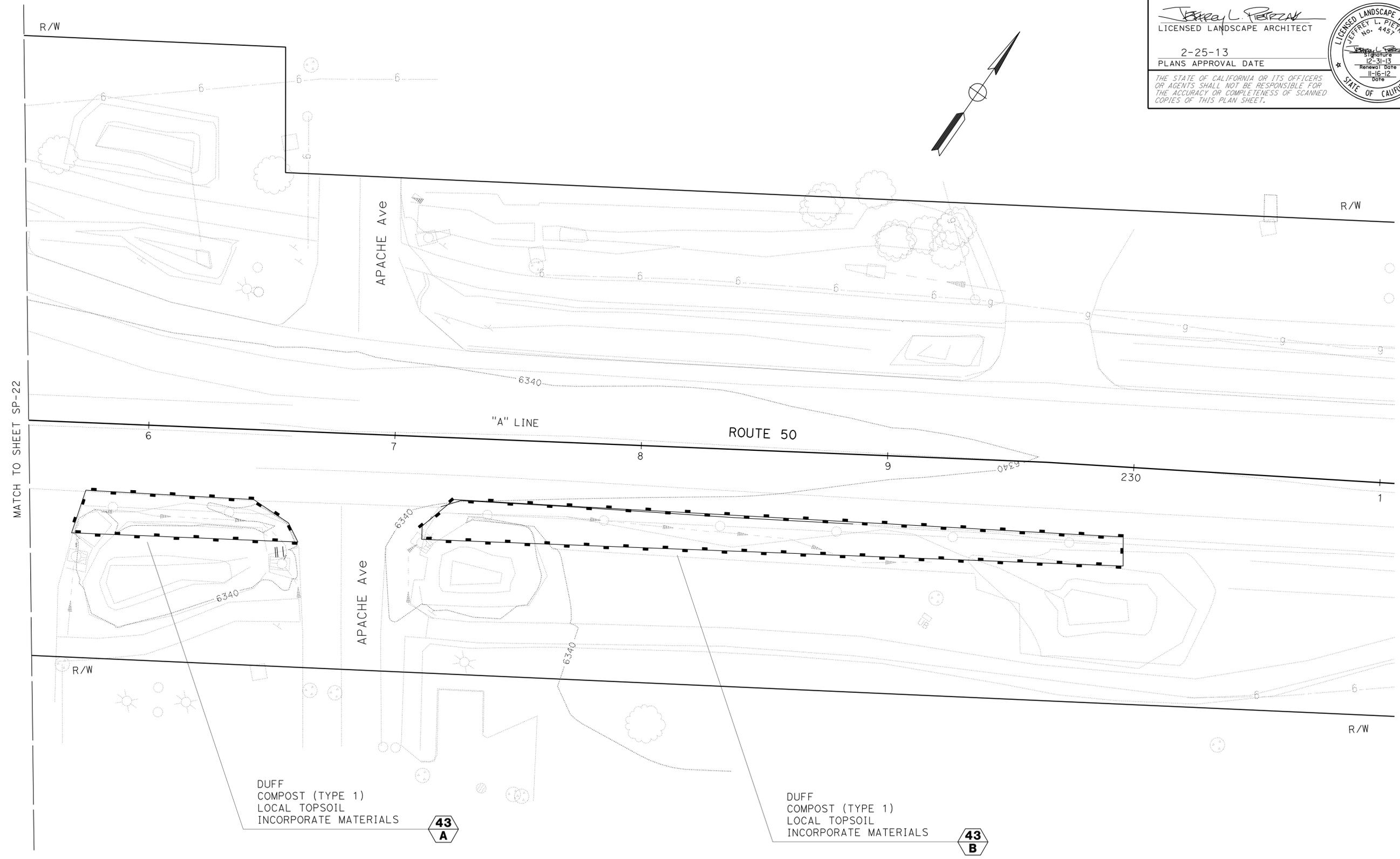
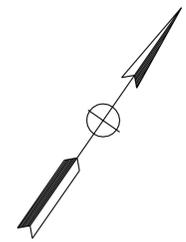
**SOIL PREPARATION**  
 SCALE: 1" = 20'  
**SP-22**

LAST REVISION | DATE PLOTTED => 26-FEB-2013 | 11-16-12 | TIME PLOTTED => 1:3:40

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	50	67.6/72.9	202	246

*Jeffrey L. Pietrzak*  
 LICENSED LANDSCAPE ARCHITECT  
 No. 4457  
 2-25-13  
 PLANS APPROVAL DATE

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT  
 T. CHRIS JOHNSON  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 J. PIETRZAK  
 T.C. JOHNSON  
 REVISED BY  
 DATE REVISED

**NOTE:**  
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APPROVED FOR SOIL PREPARATION WORK ONLY

**SOIL PREPARATION**  
 SCALE: 1" = 20'  
**SP-23**

LAST REVISION: DATE PLOTTED => 26-FEB-2013  
 11-16-12 TIME PLOTTED => 13:40

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	50	67.6/72.9	203	246

*Jeffrey L. Pietrzak*  
 LICENSED LANDSCAPE ARCHITECT  
 No. 4457

2-25-13  
 PLANS APPROVAL DATE

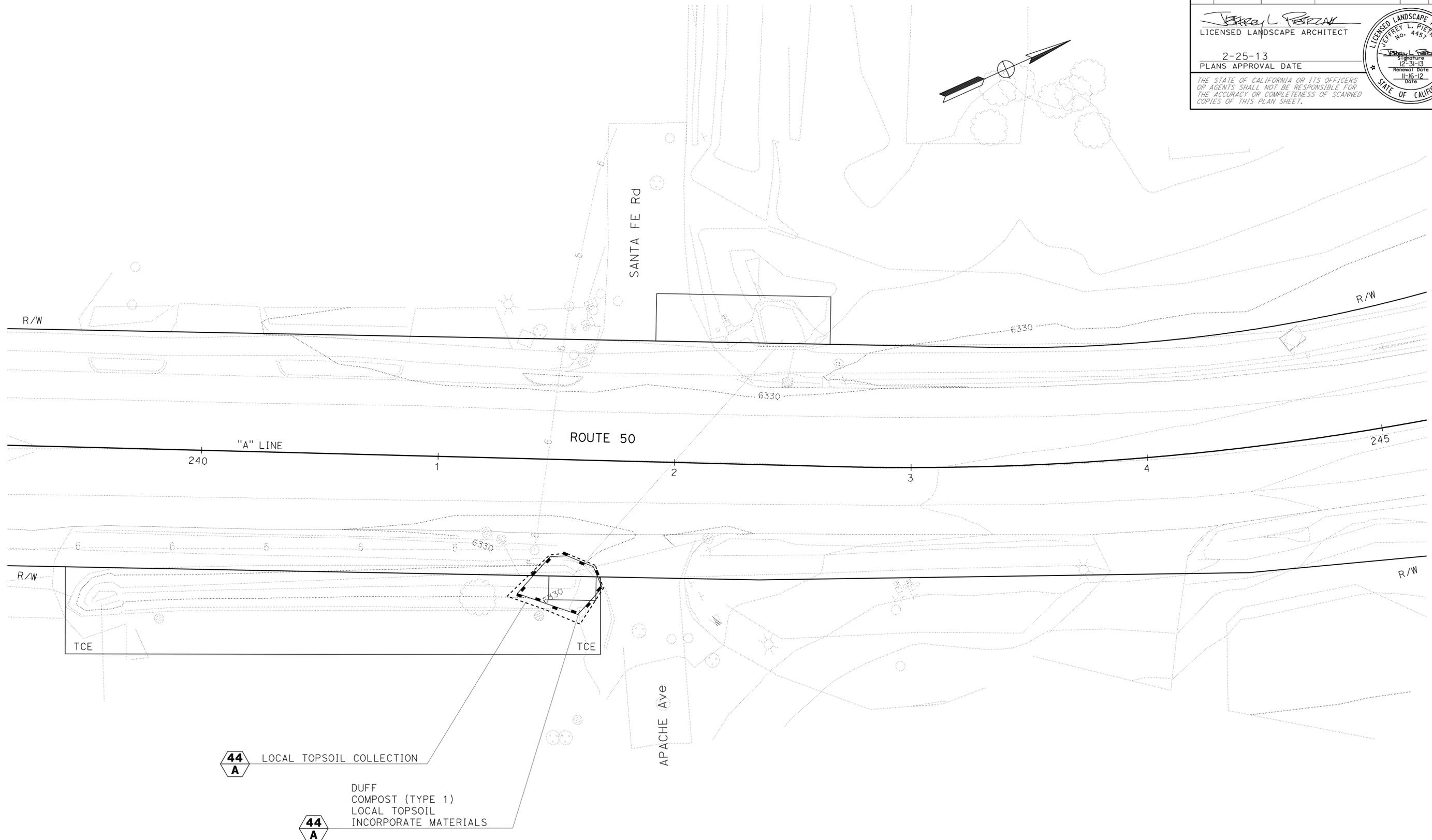
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE

SENIOR LANDSCAPE ARCHITECT  
 T. CHRIS JOHNSON

CALCULATED/DESIGNED BY  
 CHECKED BY  
 J. PIETRZAK  
 T.C. JOHNSON

REVISED BY  
 DATE REVISED



- 44 A** LOCAL TOPSOIL COLLECTION
- 44 A** DUFF COMPOST (TYPE 1) LOCAL TOPSOIL INCORPORATE MATERIALS

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

APPROVED FOR SOIL PREPARATION WORK ONLY

**SOIL PREPARATION**  
 SCALE: 1" = 20'  
**SP-24**

LAST REVISION | DATE PLOTTED => 26-FEB-2013  
 11-16-12 | TIME PLOTTED => 1:3:40

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	50	67.6/72.9	204	246

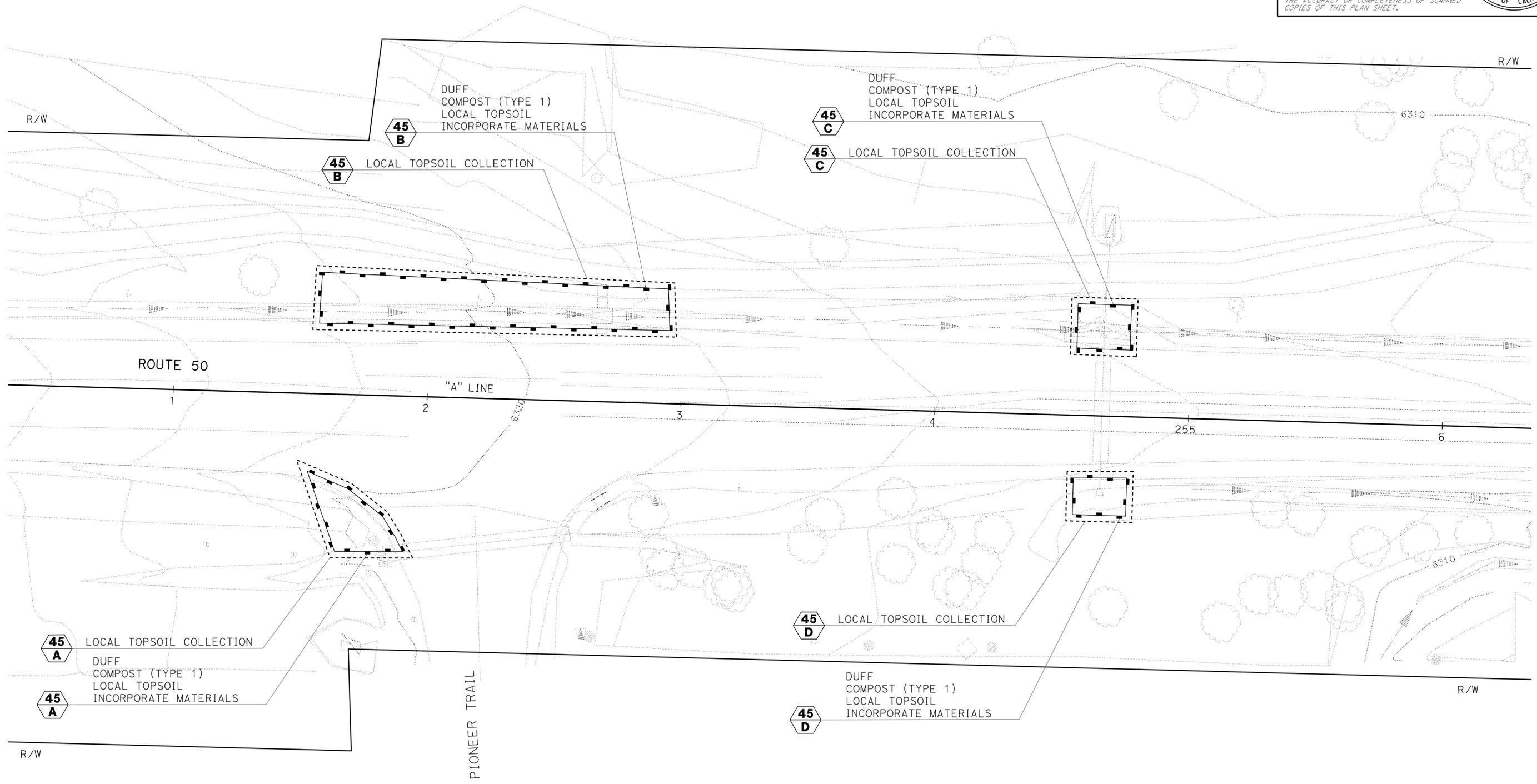
  
 LICENSED LANDSCAPE ARCHITECT  
 No. 4457  
 Signature Date: 12-31-13  
 Renewal Date: 11-15-12  
 State of California

2-25-13  
 PLANS APPROVAL DATE

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT: T. CHRIS JOHNSON  
 CALCULATED/DESIGNED BY: T. CHRIS JOHNSON  
 CHECKED BY: J. PIETRZAK  
 REVISED BY: T.C. JOHNSON  
 DATE REVISED:



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

APPROVED FOR SOIL PREPARATION WORK ONLY

**SOIL PREPARATION**  
 SCALE: 1" = 20'  
**SP-25**

LAST REVISION DATE PLOTTED => 26-FEB-2013 11-16-12 TIME PLOTTED => 13:41

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	50	67.6/72.9	205	246

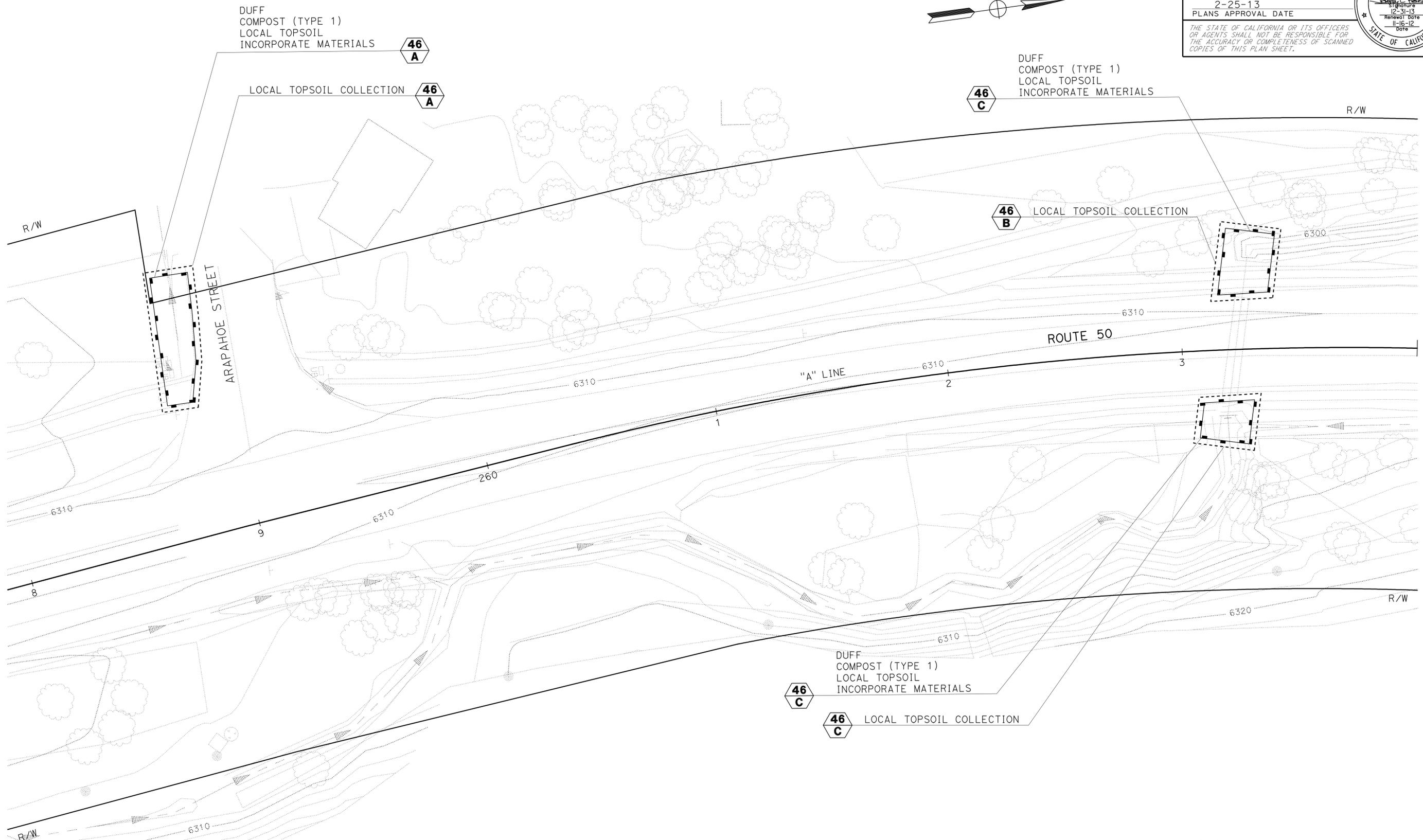
Signature: Jeffrey L. Pietrzak  
 LICENSED LANDSCAPE ARCHITECT  
 No. 4457  
 Signature Date: 12-31-13  
 Renewal Date: 11-16-12  
 State: CA  
 State of California

2-25-13  
 PLANS APPROVAL DATE

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT  
 T. CHRIS JOHNSON  
 J. PIETRZAK  
 T.C. JOHNSON  
 REVISOR BY  
 DATE REVISOR  
 CHECKED BY  
 DESIGNED BY



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

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**SOIL PREPARATION**  
 SCALE: 1" = 20'  
**SP-26**

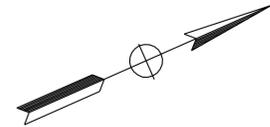
LAST REVISION DATE PLOTTED => 26-FEB-2013 11-16-12 TIME PLOTTED => 13:41

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	50	67.6/72.9	206	246

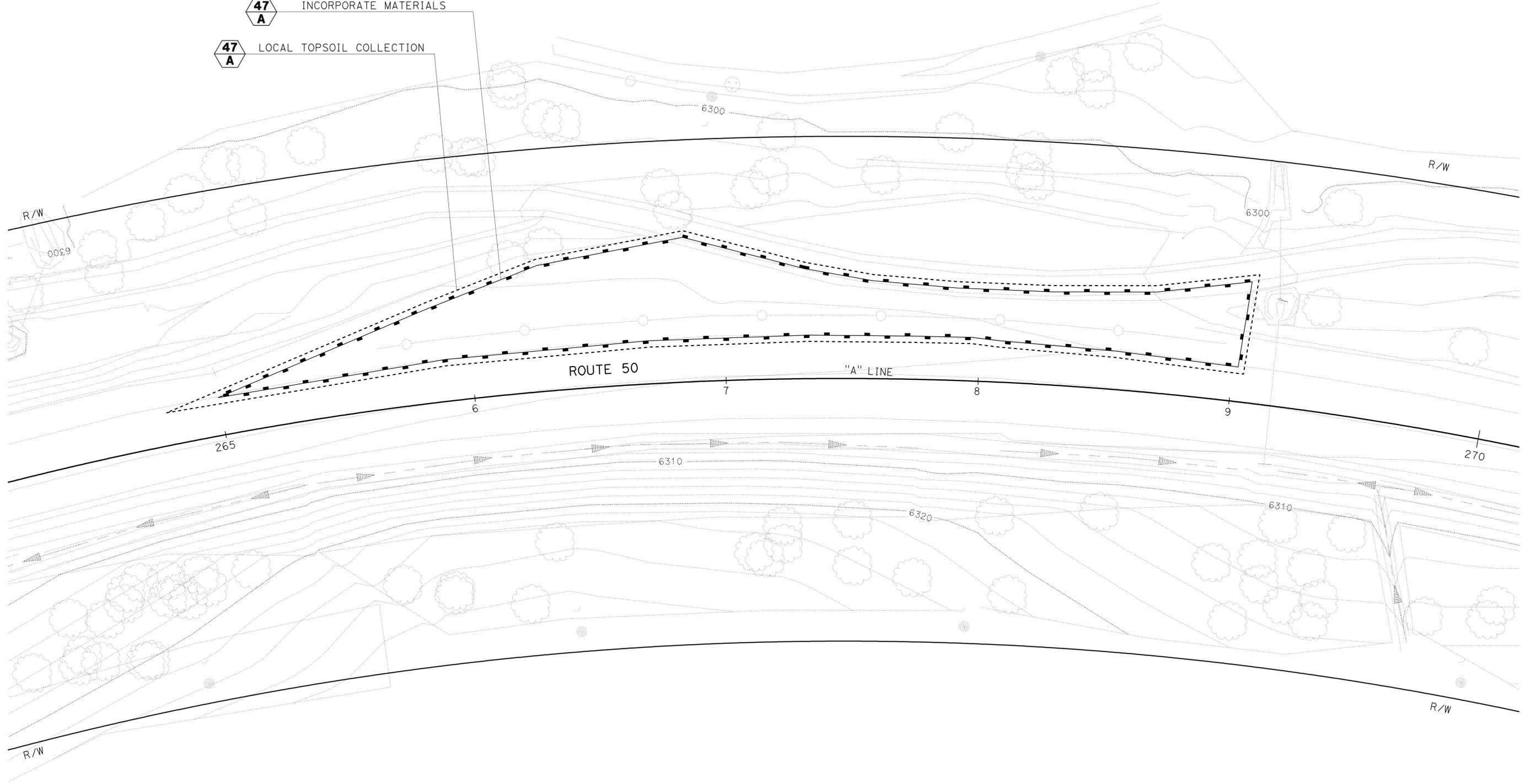
Signature: *Jeffrey L. Pietrzak*  
 LICENSED LANDSCAPE ARCHITECT  
 No. 4457  
 Signature Date: 12-31-13  
 Renewal Date: 11-16-12  
 State of California

2-25-13  
 PLANS APPROVAL DATE

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- DUFF  
 COMPOST (TYPE 1)  
 LOCAL TOPSOIL  
 INCORPORATE MATERIALS
- LOCAL TOPSOIL COLLECTION



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT T. CHRIS JOHNSON  
 CALCULATED/DESIGNED BY CHECKED BY  
 J. PIETRZAK T.C. JOHNSON  
 REVISED BY DATE REVISED  
 J. PIETRZAK

**NOTE:**  
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**SOIL PREPARATION**  
 SCALE: 1" = 20'  
**SP-27**

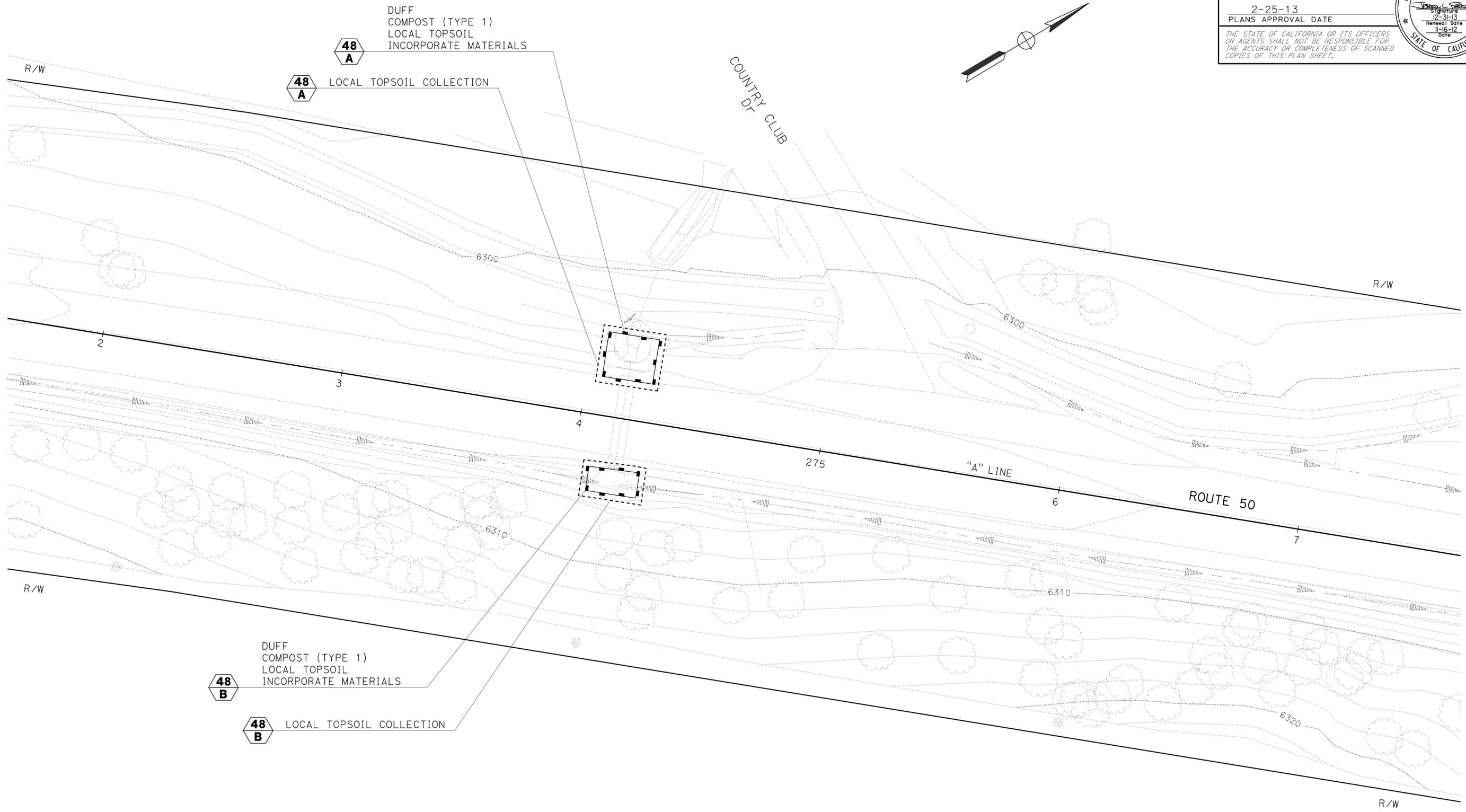
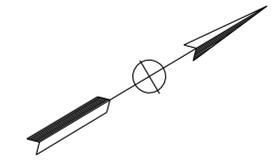
LAST REVISION DATE PLOTTED => 26-FEB-2013 11-16-12 TIME PLOTTED => 13:41

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	50	67.6/72.9	207	246

Signature: *Jeffrey L. Pietrzak*  
 LICENSED LANDSCAPE ARCHITECT  
 No. 4457  
 Signature Date: 12-31-13  
 Renewal Date: 11-16-12  
 Date: 2-25-13  
 PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT  
 JEFFREY L. PIETRZAK  
 No. 4457  
 STATE OF CALIFORNIA

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT  
 T. CHRIS JOHNSON  
 J. PIETRZAK  
 T.C. JOHNSON  
 REVISOR BY  
 DATE REVISOR  
 CALCULATED/DESIGNED BY  
 CHECKED BY

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

APPROVED FOR SOIL PREPARATION WORK ONLY

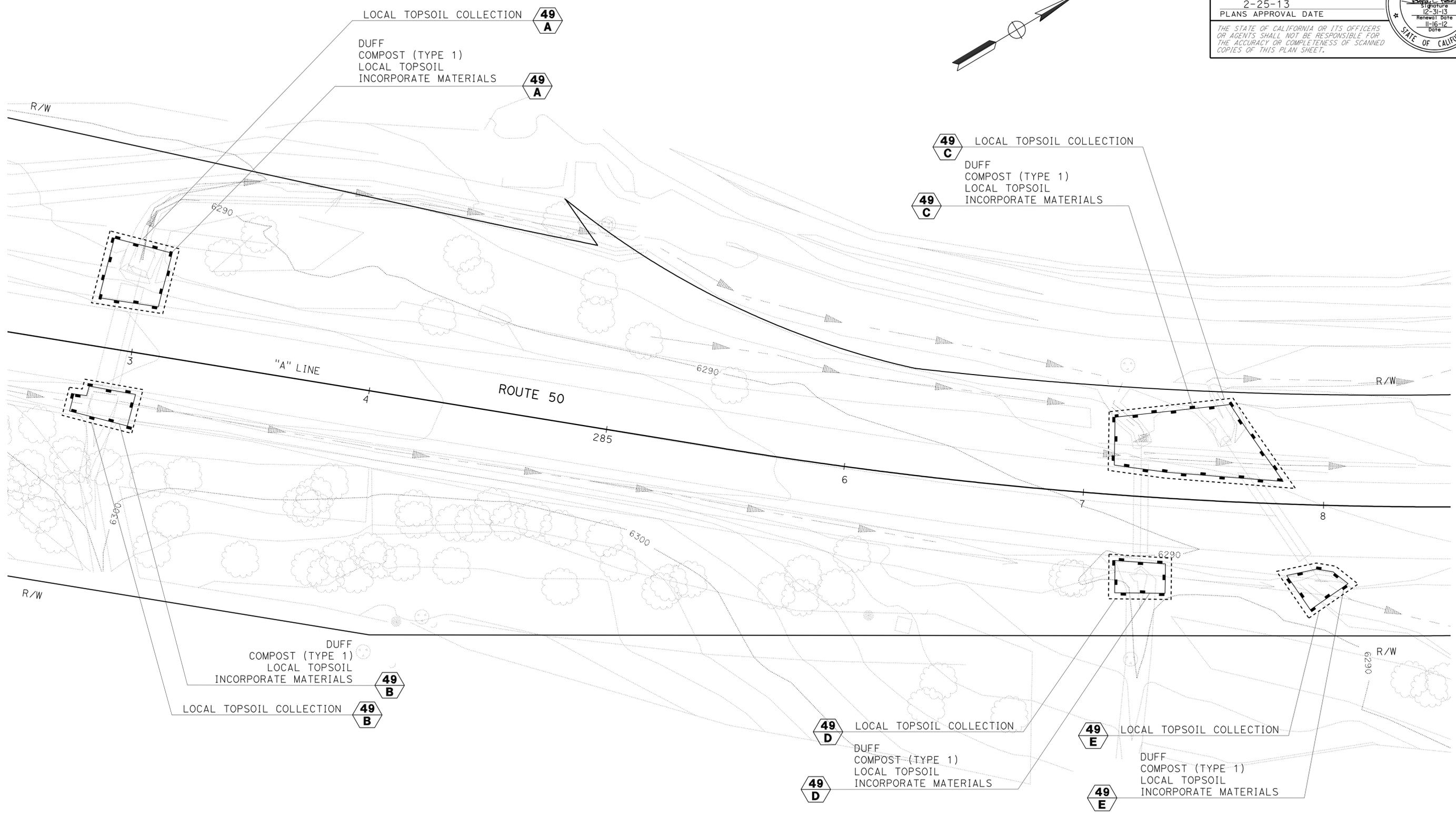
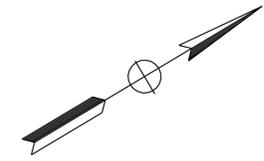
**SOIL PREPARATION**  
 SCALE: 1" = 20'  
**SP-28**

LAST REVISION DATE PLOTTED => 26-FEB-2013 11-16-12 TIME PLOTTED => 13:41

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	50	67.6/72.9	208	246

Signature: *Jeffrey L. Pietrzak*  
 LICENSED LANDSCAPE ARCHITECT  
 No. 4457  
 Signature Date: 12-31-13  
 Renewal Date: 11-15-12  
 Date: \_\_\_\_\_  
 PLANS APPROVAL DATE: 2-25-13

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT: T. CHRIS JOHNSON  
 CALCULATED/DESIGNED BY: T. CHRIS JOHNSON  
 CHECKED BY: T.C. JOHNSON  
 REVISED BY: J. PIETRZAK  
 DATE REVISED: \_\_\_\_\_

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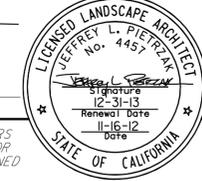
APPROVED FOR SOIL PREPARATION WORK ONLY

**SOIL PREPARATION**  
 SCALE: 1" = 20'  
**SP-29**

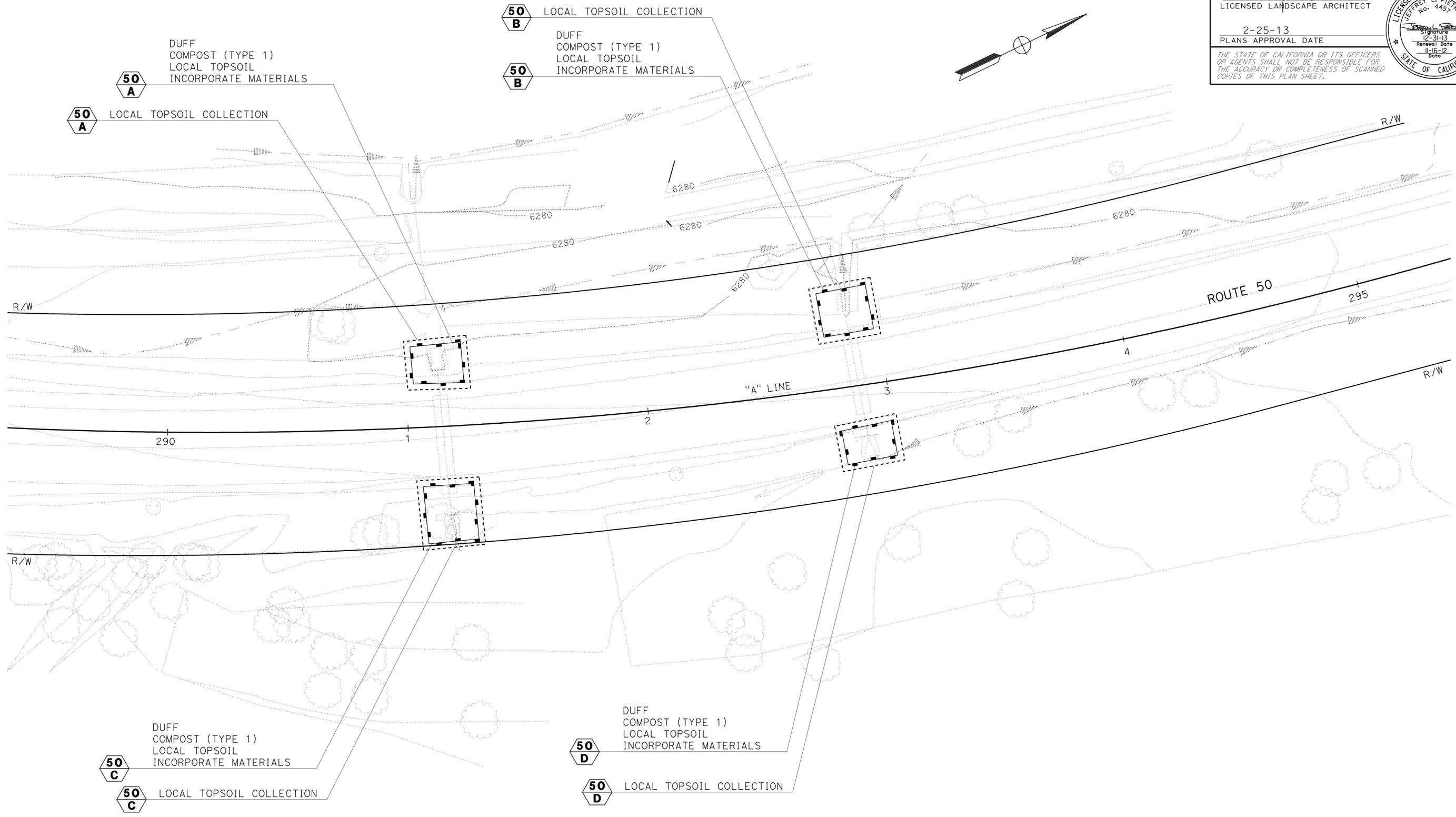
LAST REVISION: DATE PLOTTED => 26-FEB-2013  
 TIME PLOTTED => 1:31:41

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	50	67.6/72.9	209	246

  
 LICENSED LANDSCAPE ARCHITECT  
 No. 4457  
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 SENIOR LANDSCAPE ARCHITECT  
 T. CHRIS JOHNSON  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 J. PIETRZAK  
 T.C. JOHNSON  
 REVISED BY  
 DATE REVISED



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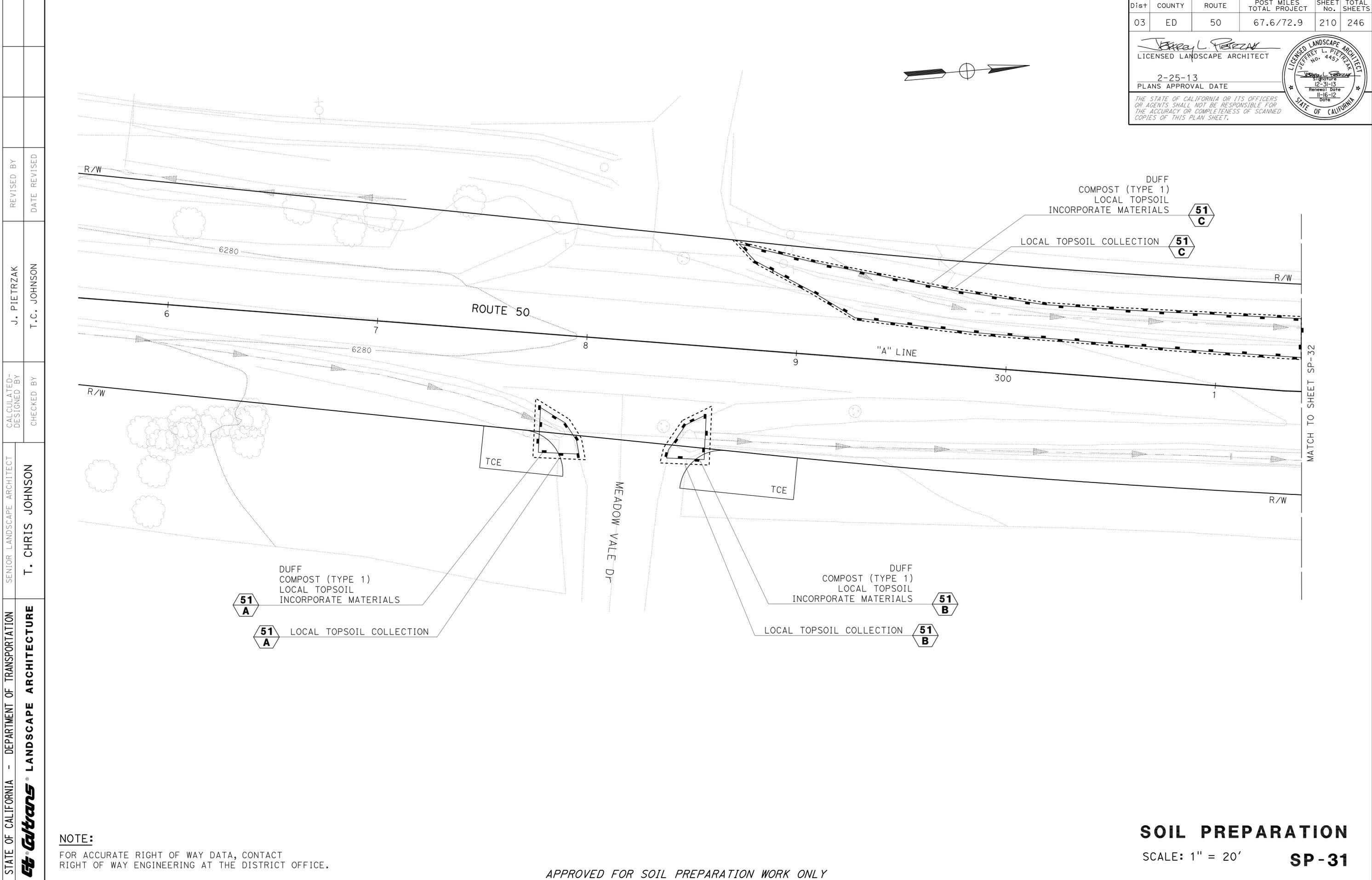
**SOIL PREPARATION**  
 SCALE: 1" = 20'  
**SP-30**

LAST REVISION DATE PLOTTED => 26-FEB-2013 11-16-12 TIME PLOTTED => 13:55

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	50	67.6/72.9	210	246

2-25-13  
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE

SENIOR LANDSCAPE ARCHITECT: T. CHRIS JOHNSON  
 J. PIETRZAK  
 T.C. JOHNSON  
 REVISOR: J. PIETRZAK  
 DATE: T.C. JOHNSON  
 CHECKED BY: T. CHRIS JOHNSON  
 DESIGNED BY: T. CHRIS JOHNSON

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

APPROVED FOR SOIL PREPARATION WORK ONLY

**SOIL PREPARATION**  
 SCALE: 1" = 20'  
**SP-31**

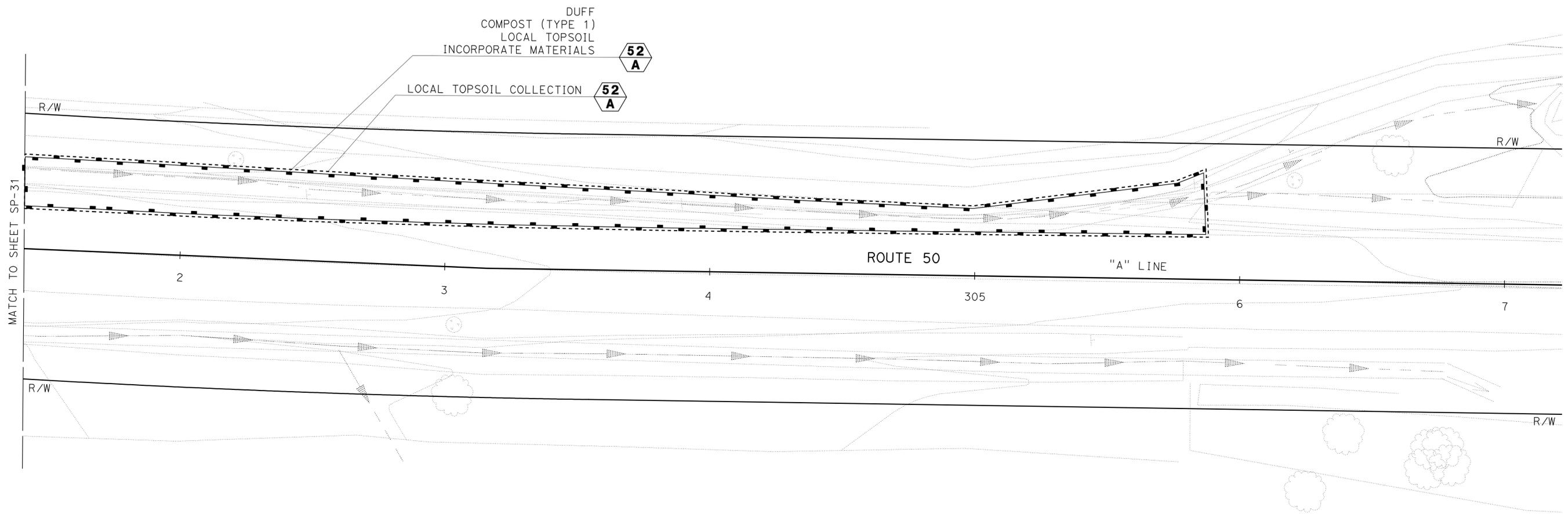
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	50	67.6/72.9	211	246

  
 LICENSED LANDSCAPE ARCHITECT  
 2-25-13  
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**Caltrans** LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT  
 T. CHRIS JOHNSON  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 J. PIETRZAK  
 T.C. JOHNSON  
 REVISED BY  
 DATE REVISED



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**SOIL PREPARATION**  
 SCALE: 1" = 20'  
**SP-32**

LAST REVISION    DATE PLOTTED => 26-FEB-2013  
 11-16-12    TIME PLOTTED => 1:3:55

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	50	67.6/72.9	212	246

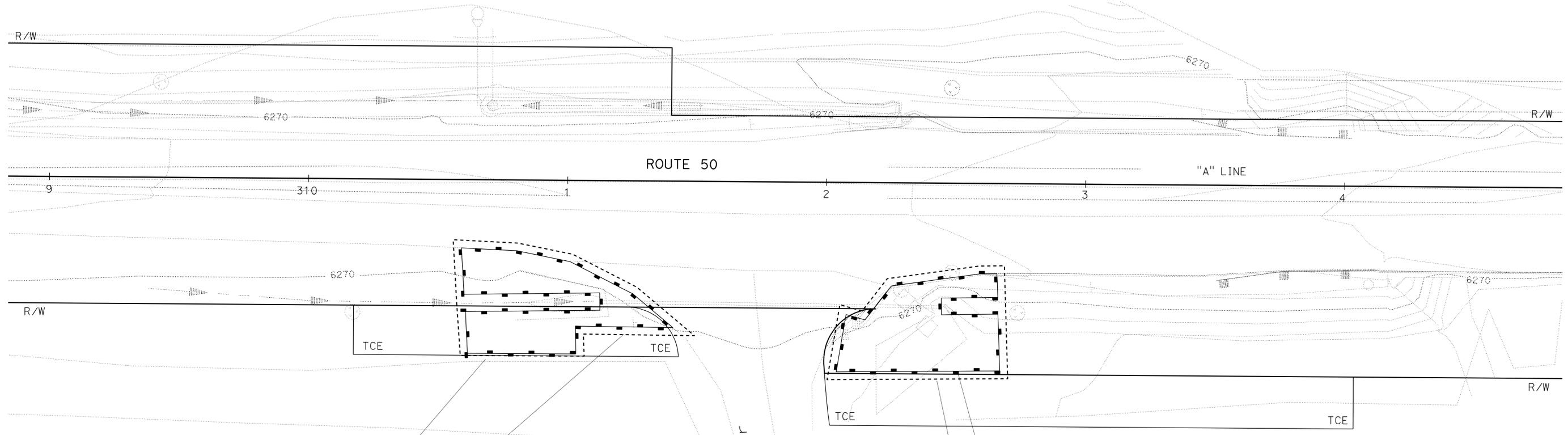
  
 LICENSED LANDSCAPE ARCHITECT  
 No. 4457  
 Signature Date: 12-31-13  
 Renewal Date: 11-16-12  
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2-25-13  
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** LANDSCAPE ARCHITECTURE  
 SENIOR LANDSCAPE ARCHITECT  
 T. CHRIS JOHNSON  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 J. PIETRZAK  
 T.C. JOHNSON  
 REVISED BY  
 DATE REVISED



**53 A** DUFF COMPOST (TYPE 1)  
 LOCAL TOPSOIL INCORPORATE MATERIALS  
**53 A** LOCAL TOPSOIL COLLECTION

DUFF COMPOST (TYPE 1)  
 LOCAL TOPSOIL INCORPORATE MATERIALS **53 B**  
 LOCAL TOPSOIL COLLECTION **53 B**

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**SOIL PREPARATION**  
 SCALE: 1" = 20'  
**SP-33**

LAST REVISION DATE PLOTTED => 26-FEB-2013 11-16-12 TIME PLOTTED => 13:55

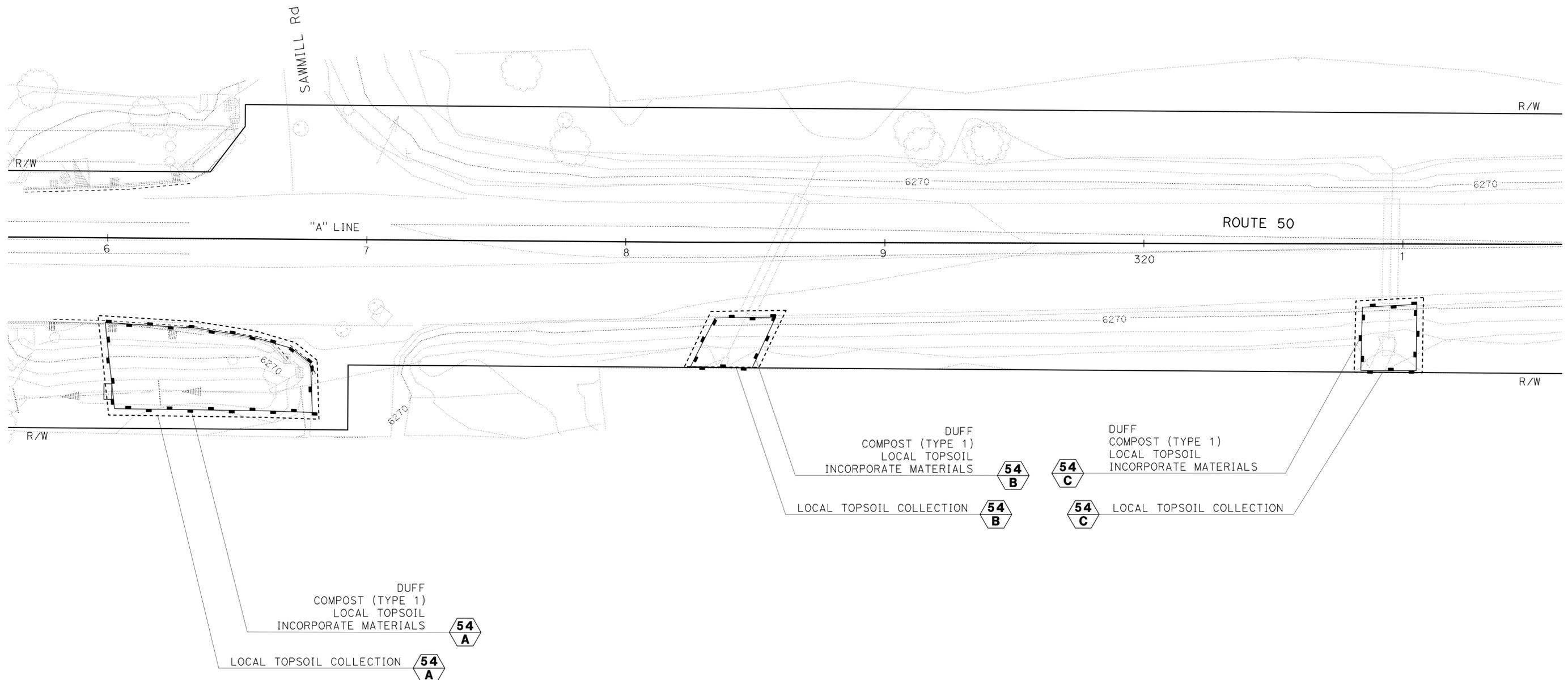
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	50	67.6/72.9	213	246

*Jeffrey L. Pietrzak*  
 LICENSED LANDSCAPE ARCHITECT  
 No. 4457  
 Signature: *Jeffrey L. Pietrzak*  
 12-31-13  
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 T.C. JOHNSON  
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 J. PIETRZAK  
 REVISIONS  
 DATE  
 REVISIONS  
 DATE



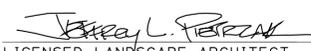
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**SOIL PREPARATION**  
 SCALE: 1" = 20'  
**SP-34**

LAST REVISION: DATE PLOTTED => 26-FEB-2013      TIME PLOTTED => 1:31:55

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	50	67.6/72.9	214	246

  
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### LOCAL TOPSOIL COLLECTION

SP SHEET	LOCATION	(N)
		LOCAL TOPSOIL (3" COLLECTION DEPTH) CY
1	A	4.5
1	B	2.5
2	A	3.4
2	B	3.2
3	A	2.3
3	B	1.9
4	A	105.7
5	A	3.3
6	A	48.1
7	A	80.4
7	B	34.1
11	A	35.1
12	A	39.8
12	B	52.8
13	A	15.6
13	B	29.2
13	C	25.3
14	A	34.1
16	A	16.9
17	A	61.5
18	A	88.9
18	B	25.9
18	C	28.7
19	A	7.7
19	B	2.4
24	A	14.9
25	A	5.2
25	B	22.2
25	C	3.2
25	D	2.6
26	A	7
26	B	4.9
26	C	3
27	A	90.2
28	A	3.3
28	B	1.8
29	A	5.3
29	B	2.4
29	C	13.9
29	D	2.2
29	E	1.9
30	A	2.9
30	B	3.3
30	C	4.3
30	D	2.5
31	A	2.4
31	B	2.1
31	C	48.1
32	A	71.0
33	A	21.6
33	B	18.3
34	A	20.7
34	B	5.9
34	C	5.4

(N) NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.

### DUFF, COMPOST (TYPE 1), LOCAL TOPSOIL, INCORPORATE MATERIALS QUANTITIES

SP SHEET	LOCATION	DUFF	(N) COMPOST (TYPE 1)	(N) LOCAL TOPSOIL	INCORPORATE MATERIALS
		SQFT	SQFT	SQFT	SQFT
1	A	487	487	487	487
1	B	273	273	273	273
2	A	362	362	362	362
2	B	349	349	349	349
3	A	252	252	252	252
3	B	209	209	209	209
4	A	5761	5761	5761	5761
5	A	361	361	361	361
6	A	1971	1971	1971	1971
7	A	4379	4379	4379	4379
7	B	3684	3684	3684	3684
9	A	4929	4929	4929	4929
11	A	3496	3496	3496	3496
12	A	3525	3525	3525	3525
12	B	5450	5450	5450	5450
13	A	1684	1684	1684	1684
13	B	3157	3157	3157	3157
13	C	--	2667	2667	2667
14	A	--	3170	3170	3170
16	A	--	1424	1424	1424
16	B	--	6640	6640	6640
17	A	--	6643	6643	6643
17	B	--	3383	3383	3383
18	A	--	3366	3366	3366
18	B	--	2802	2802	2802
18	C	--	3096	3096	3096
19	A	--	829	829	829
19	B	--	264	264	264
20	A	--	2441	2441	2441
20	B	--	3807	3807	3807

(N) NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.

SP SHEET	LOCATION	DUFF	(N) COMPOST (TYPE 1)	(N) LOCAL TOPSOIL	INCORPORATE MATERIALS
		SQFT	SQFT	SQFT	SQFT
20	C	--	5274	5274	5274
21	A	--	10030	10030	10030
22	A	--	6181	6181	6181
23	A	--	1321	1321	1321
23	B	--	3781	3781	3781
24	A	--	1604	1604	1604
25	A	--	560	560	560
25	B	--	2396	2396	2396
25	C	--	340	340	340
25	D	--	281	281	281
26	A	--	759	759	759
26	B	--	526	526	526
26	C	--	326	326	326
27	A	--	9742	9742	9742
28	A	--	361	361	361
28	B	--	190	190	190
29	A	--	569	569	569
29	B	--	260	260	260
29	C	--	1497	1497	1497
29	D	--	242	242	242
29	E	--	207	207	207
30	A	--	313	313	313
30	B	--	358	358	358
30	C	--	460	460	460
30	D	--	275	275	275
31	A	--	254	254	254
31	B	--	229	229	229
31	C	--	4623	4623	4623
32	A	--	6727	6727	6727
33	A	--	2329	2329	2329
34	A	--	2239	2239	2239
34	B	--	463	463	463
34	C	--	588	588	588
TOTAL		40,329	146,166	146,166	146,166

(N) NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.

### SOIL PREPARATION

SEQUENCE	ITEM	MATERIAL		DEPTH
		DESCRIPTION	TYPE	
STEP 1	DUFF	DUFF	MEDIUM	2"
STEP 2	COMPOST (TYPE 1)	COMPOST	COARSE	4"
STEP 3	LOCAL TOPSOIL	LOCAL TOPSOIL	LOCAL	3"
STEP 4	INCORPORATE MATERIALS	DUFF, COMPOST, LOCAL TOPSOIL		18"

### SOIL PREPARATION QUANTITIES SPQ-1



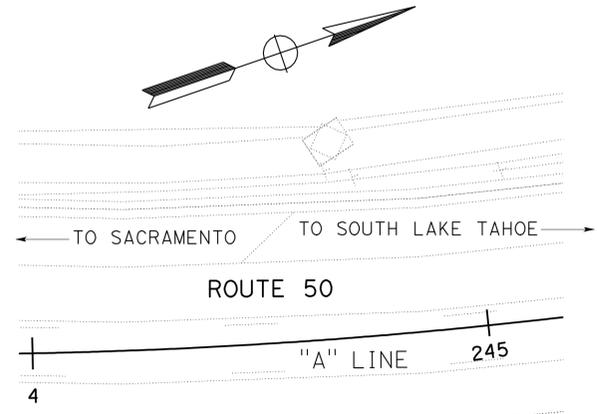


Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	50	67.6/72.9	216	246
<i>Jaskaran Boparai</i> REGISTERED ELECTRICAL ENGINEER DATE 11/16/12			2-25-13 PLANS APPROVAL DATE		
REGISTERED PROFESSIONAL ENGINEER <i>JASKARAN BOPARAI</i> No. E15056 Exp. 12/31/13 ELECTRICAL STATE OF CALIFORNIA			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.		

**NOTE:**

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

09-24-12	REVISOR	NATHAN DEKENS	FUNCTIONAL SUPERVISOR	STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
09-24-12	DATE REVISED	JASKARAN S. BOPARAI	NELSON LEE	ELECTRICAL DESIGN
	CHECKED BY			
	DESIGNED BY			



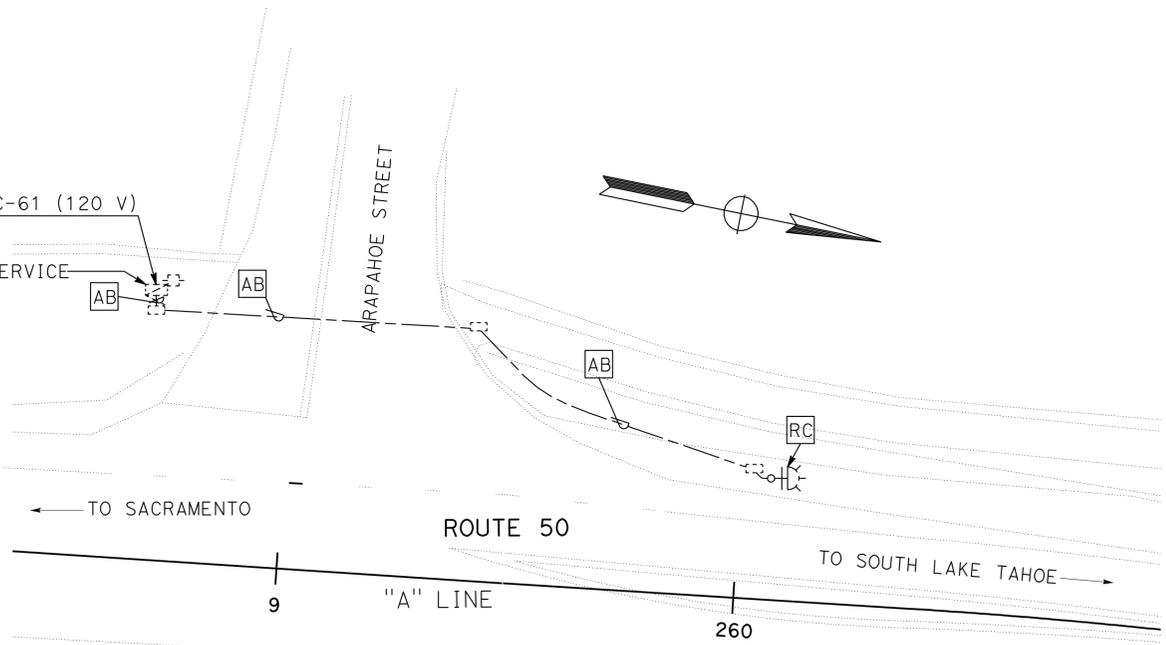
Exist SERVICE No. 03-SP-C-60 (120 V)  
 CTID 03250500071300

Exist POLE MOUNTED SERVICE

ADVANCED FLASHING BEACON EASTBOUND APPROACH

Exist SERVICE No. 03-SP-C-61 (120 V)  
 CTID 03250500071600

Exist POLE MOUNTED SERVICE



ADVANCED FLASHING BEACON WESTBOUND APPROACH

**MODIFY SIGNAL AND LIGHTING**

SCALE: 1" = 20'

**E-2**

APPROVED FOR ELECTRICAL WORK ONLY









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

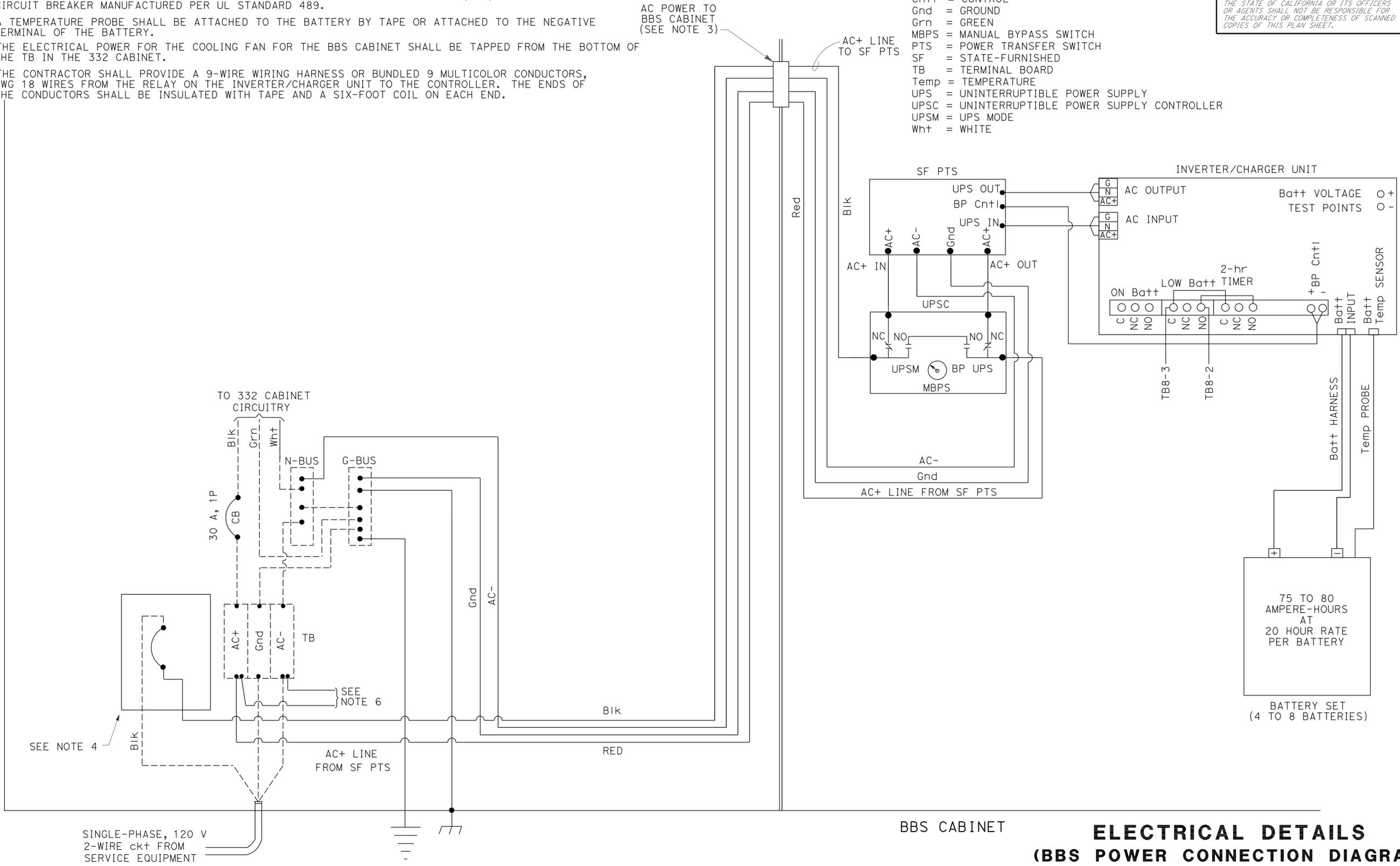
- TYPE A REFERS TO THE BBS EQUIPMENT FROM MANUFACTURER A.
- CASE-1 REFERS TO THE SITUATION WHEN THE ENTIRE BBS EQUIPMENT INCLUDING THE BATTERIES ARE INSTALLED IN THE BBS CABINET.
- THE LOCATION OF THE 2" C NIPPLE WILL BE DETERMINED BY THE ENGINEER IN THE FIELD.
- THE CONTRACTOR SHALL FURNISH AND INSTALL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

**ABBREVIATIONS: (FOR THIS SHEET ONLY)**

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	50	67.6/72.9	221	246

REGISTERED CIVIL ENGINEER: *Jaskaran Boparai* DATE: 1-29-13  
 PLANS APPROVAL DATE: 2-25-13  
 No. E15056  
 Exp. 12/31/13  
 ELECTRICAL  
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



332 CONTROLLER CABINET

BBS CABINET

**ELECTRICAL DETAILS  
 (BBS POWER CONNECTION DIAGRAM,  
 TYPE A, CASE-1)**

NO SCALE

**E-7**

APPROVED FOR ELECTRICAL WORK ONLY

**NOTES: (FOR 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, AWG 18 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.

**ABBREVIATIONS: (FOR THIS SHEET ONLY)**

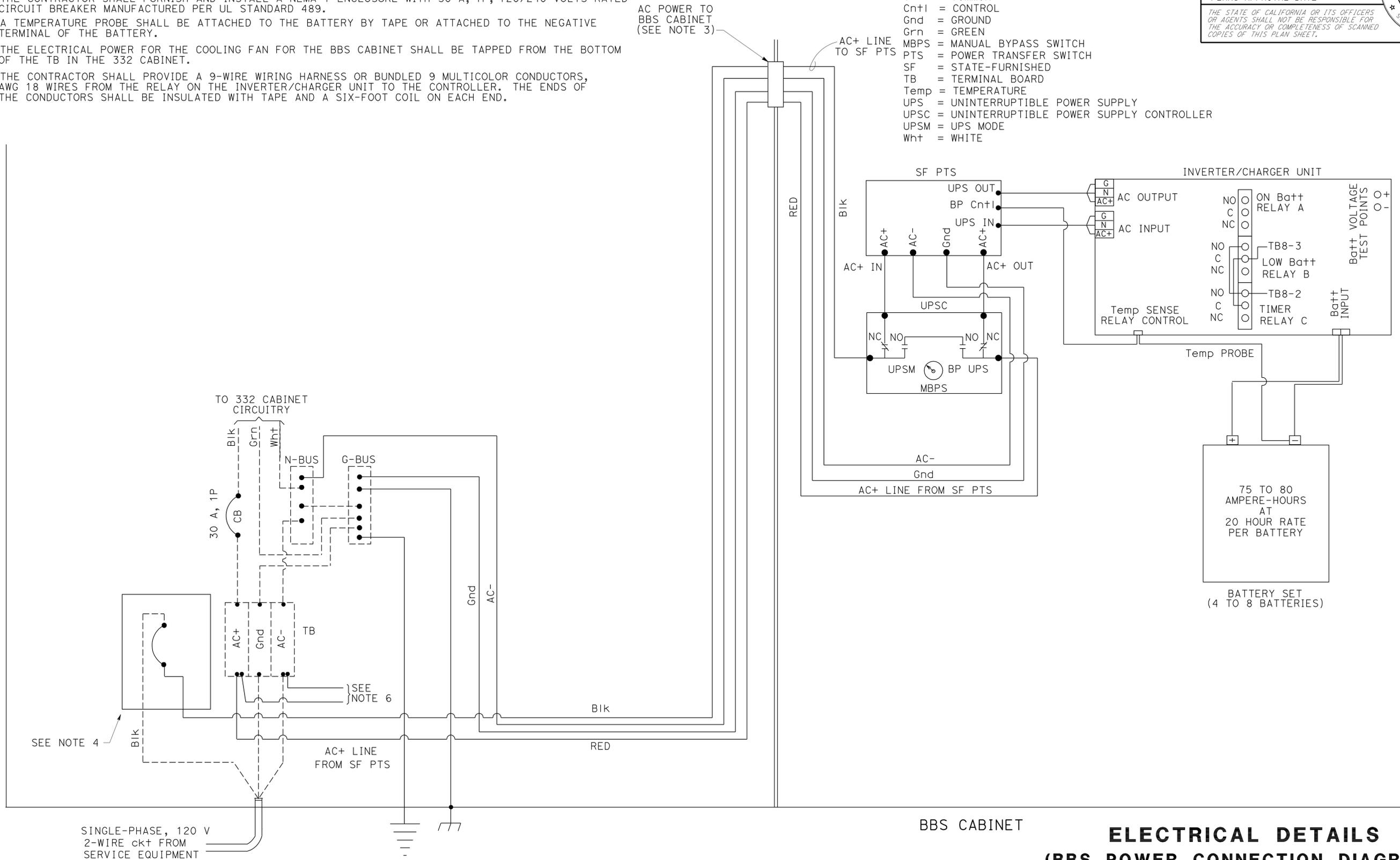
- AC+ = UNGROUNDED CONDUCTOR
- AC- = GROUNDED CONDUCTOR
- Batt+ = BATTERY
- Blk = BLACK
- BP = BYPASS
- C = COMMON
- Cntl = CONTROL
- Gnd = GROUND
- Grn = GREEN
- MBPS = MANUAL BYPASS SWITCH
- PTS = POWER TRANSFER SWITCH
- SF = STATE-FURNISHED
- TB = TERMINAL BOARD
- Temp = TEMPERATURE
- UPS = UNINTERRUPTIBLE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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	50	67.6/72.9	222	246

Jaskaran Boparai  
 REGISTERED CIVIL ENGINEER DATE 1-29-13  
 2-25-13  
 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  
 JASKARAN BOPARAI  
 No. E15056  
 Exp. 12/31/13  
 ELECTRICAL  
 STATE OF CALIFORNIA



**ELECTRICAL DETAILS**  
**(BBS POWER CONNECTION DIAGRAM, TYPE B, CASE-1)**

NO SCALE

STATE OF CALIFORNIA	DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	DESIGNED BY	REVISIONS	DATE
<b>Caltrans</b>	ELECTRICAL DESIGN	NELSON LEE	NATHAN DEKENS	09-24-12	09-24-12
			JASKARAN S. BOPARAI		

**NOTES:**

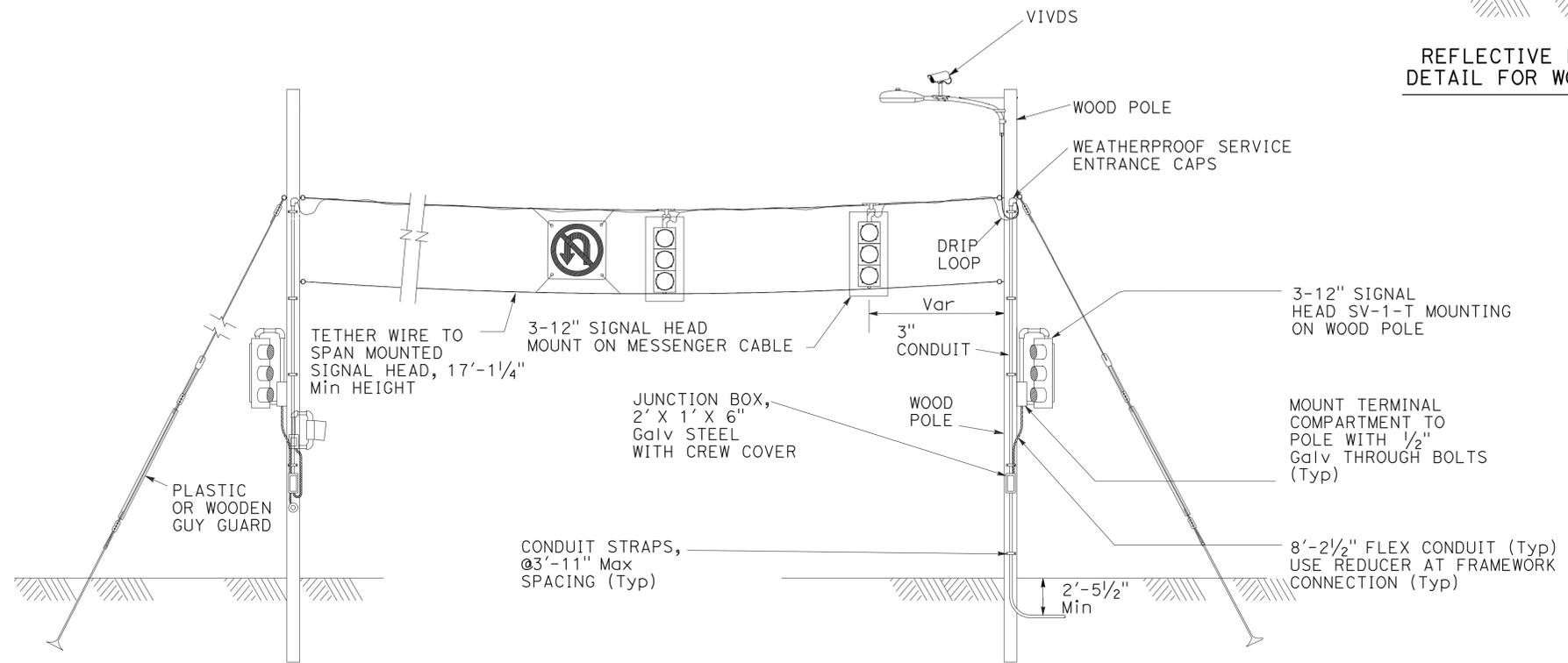
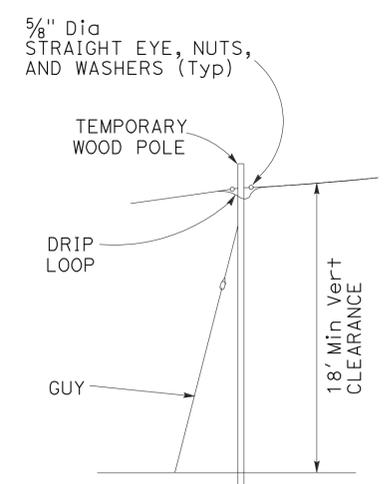
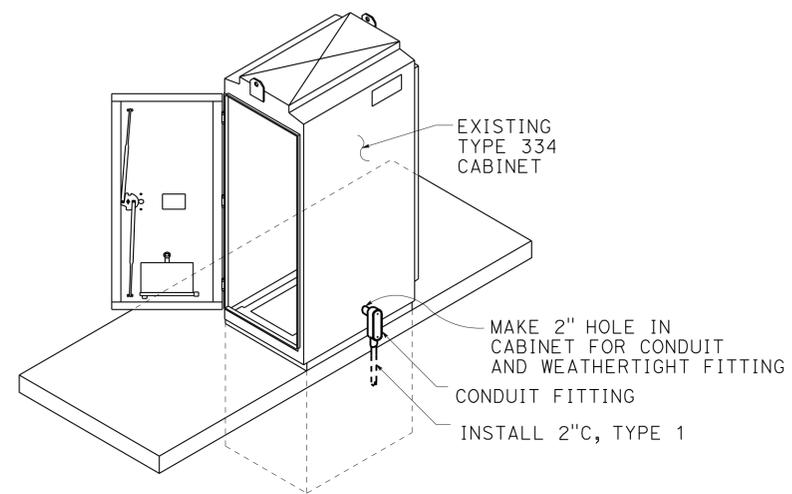
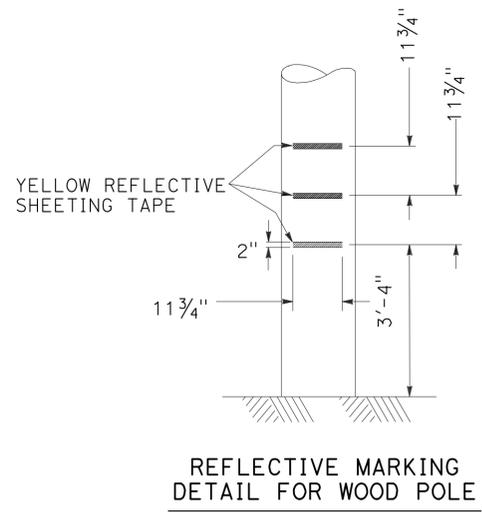
1. ALL METALLIC CONDUITS, BOLTS STRAPS AND Misc HARDWARE SHALL BE GALVANIZED.
2. BACKPLATES ARE REQUIRED ON ALL SIGNAL FACES.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	50	67.6/72.9	223	246

Jaskaran Boparai 11/16/12  
 REGISTERED ELECTRICAL ENGINEER DATE  
 2-25-13  
 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  
 JASKARAN BOPARAI  
 No. E15056  
 Exp. 12/31/13  
 ELECTRICAL  
 STATE OF CALIFORNIA

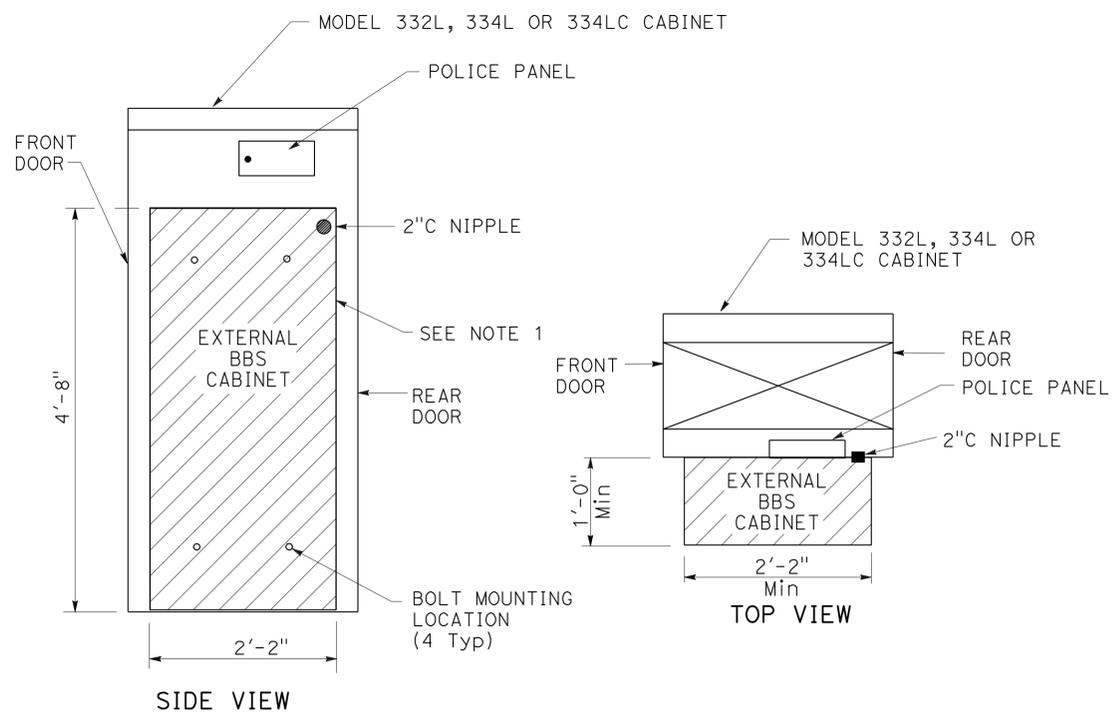
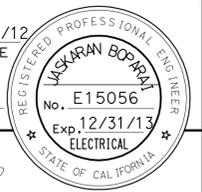


**ELECTRICAL DETAILS**

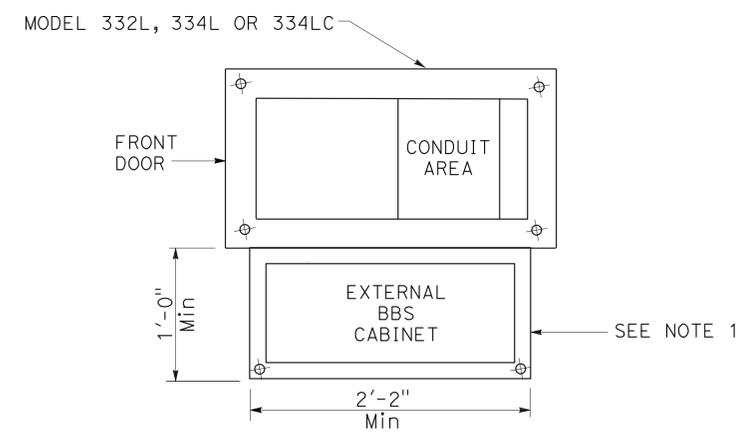
NO SCALE

**E-9**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	50	67.6/72.9	224	246
<i>Jaskaran Boparai</i> REGISTERED ELECTRICAL ENGINEER DATE 11/16/12			2-25-13 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.					



**EXTERNAL BBS CABINET MOUNTED TO THE MODEL 332L, 334L OR 334LC CABINET**

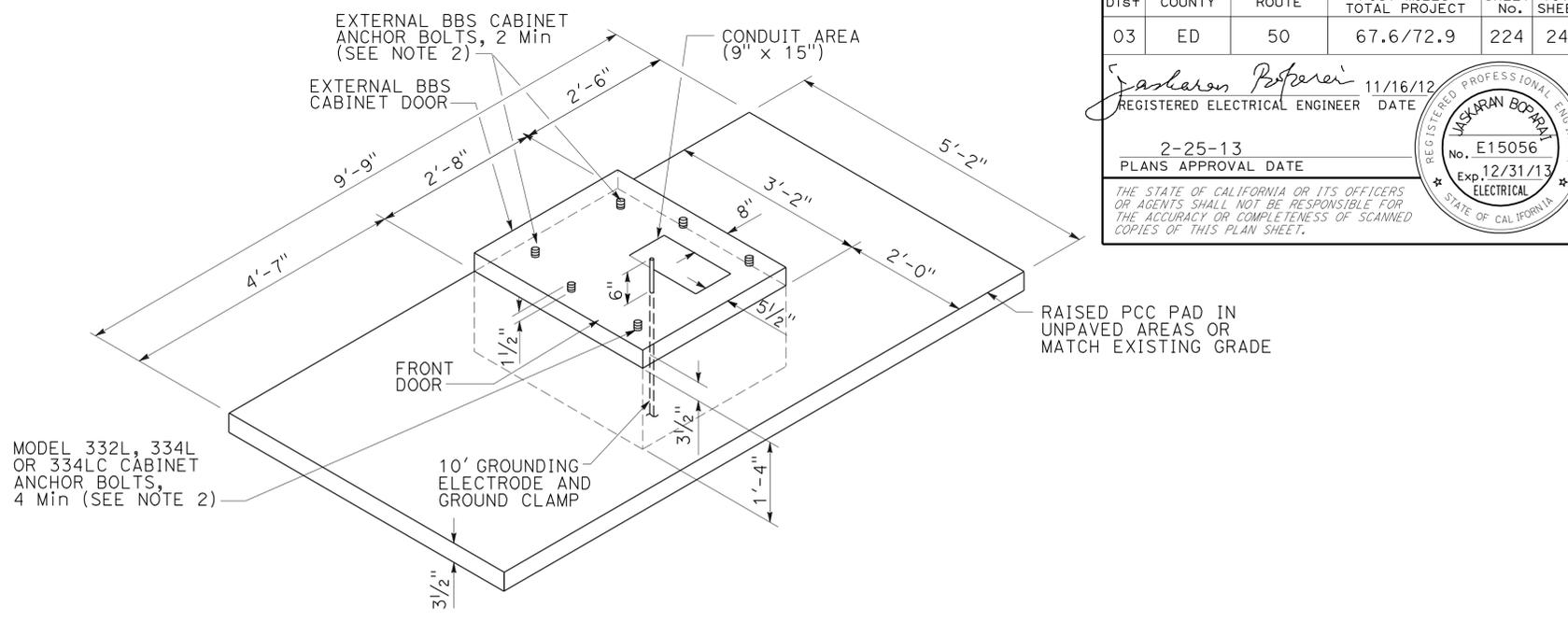


**BASE PLAN FOR BBS MOUNTED TO THE MODEL 332L, 334L OR 334LC CABINET**

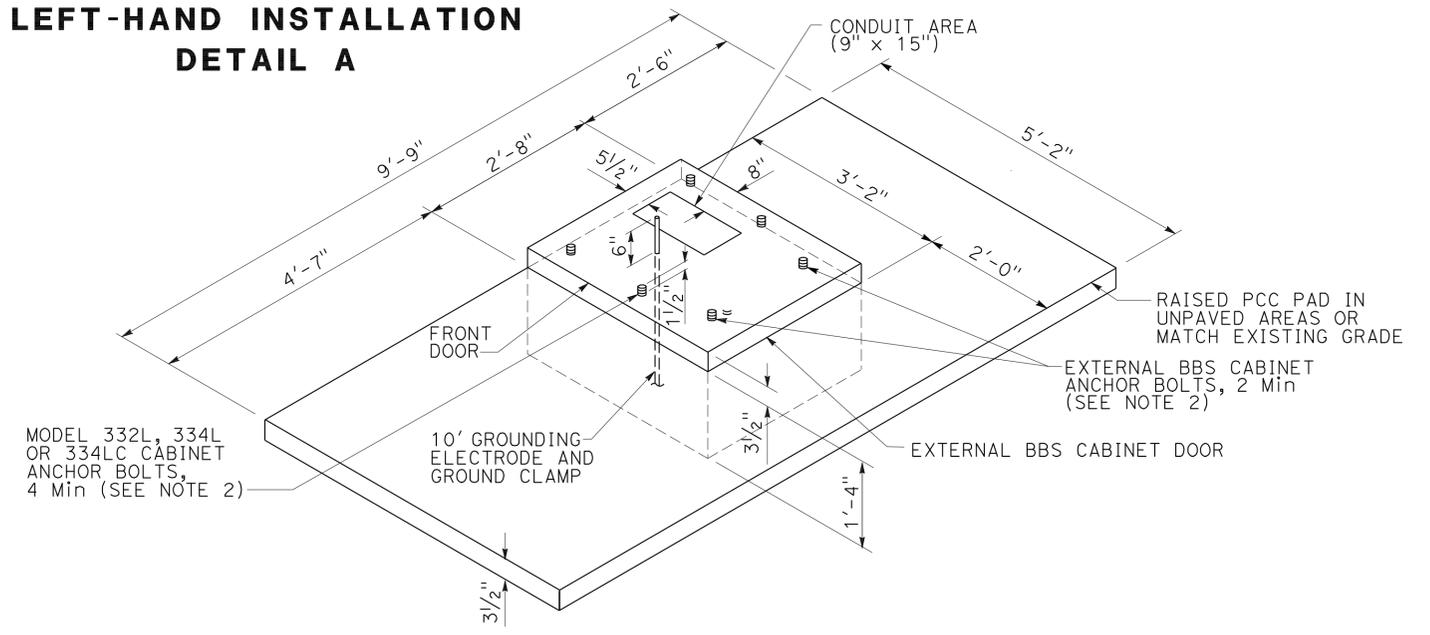
(FOR DIMENSIONS AND DETAILS NOT SHOWN, SEE SHEET A6-1 TO A6-4, CABINET HOUSING DETAILS OF THE TRANSPORTATION ELECTRICAL EQUIPMENT SPECIFICATION (TEES))

**NOTES: (THIS SHEET ONLY)**

1. THE EXTERNAL BBS CABINET SHALL BE MOUNTED TO THE MODEL 332L, 334L OR 334LC CABINET WITH FOUR 18-8 STAINLESS STEEL Hex HEAD, FULLY-THREADED, 3/8"-16 x 1" BOLTS; TWO WASHERS PER BOLT, DESIGNED FOR 3/8" BOLTS AND ARE 18-8 STAINLESS STEEL, 1" OUTSIDE DIAMETER, ROUND, AND FLAT; AND ONE K-LOCK NUT PER BOLT THAT IS 18-8 STAINLESS STEEL AND A Hex-NUT. THE ENGINEER WILL HAVE TO APPROVE THE BOLT MOUNTING LOCATION PRIOR TO INSTALLATION.
2. THE ANCHOR BOLTS SHALL BE 3/4" Dia x 15" WITH A 2"-90° BEND. THE CABINET MANUFACTURER'S SPECIFICATION SHALL DETERMINE THE LOCATION OF THE ANCHOR BOLTS IN THE FOUNDATION. THE ENGINEER WILL HAVE TO APPROVE THE ANCHOR BOLTS AND ITS LOCATION IN THE FOUNDATION PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR SHALL VERIFY THE DIMENSIONS OF THE BBS CABINET PRIOR TO CONSTRUCTING THE FOUNDATION OF THE Std MODEL 332L, 334L OR 334LC CABINET FOUNDATION. THE ENGINEER WILL HAVE TO APPROVE ANY NECESSARY DEVIATIONS PRIOR TO CONSTRUCTION.
4. ALL DIMENSIONS ARE NOMINAL.



**LEFT-HAND INSTALLATION DETAIL A**



**RIGHT-HAND INSTALLATION DETAIL B**

**MODIFIED MODEL 332L, 334L OR 334LC CABINET FOUNDATION DETAIL FOR BATTERY BACKUP SYSTEM (BBS)**  
 (FOR ADDITIONAL NOTES, SEE SHEET ES-3C OF THE STANDARD PLANS FOR MODEL 332L, 334L OR 334LC CABINETS)

**ELECTRICAL SYSTEMS (BATTERY BACKUP SYSTEM FOUNDATION DETAILS)**

NO SCALE

**E-10**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - ELECTRICAL DESIGN  
 FUNCTIONAL SUPERVISOR: NELSON LEE  
 CALCULATED/DESIGNED BY: JASKARAN S. BOPARAI  
 CHECKED BY: NATHAN DEKENS  
 REVISED BY: DATE  
 REVISIONS:

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	50	67.6/72.9	225	246

Jaskaran Boparai  
 REGISTERED ELECTRICAL ENGINEER DATE 1-29-13  
 2-25-13  
 PLANS APPROVAL DATE

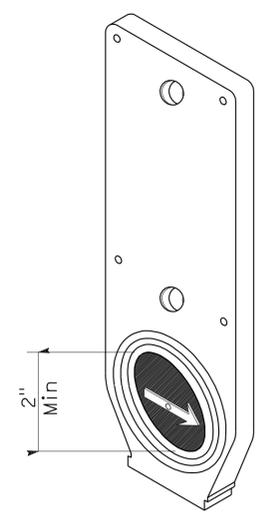
REGISTERED PROFESSIONAL ENGINEER  
 JASKARAN BOPARAI  
 No. E15056  
 Exp. 12/31/13  
 ELECTRICAL  
 STATE OF CALIFORNIA

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.



LEFT      RIGHT      BOTH

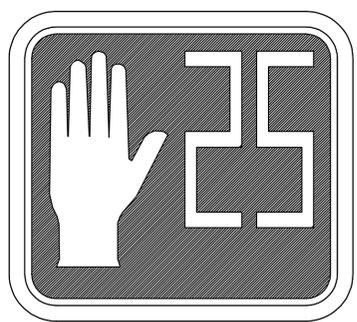
PEDESTRIAN PUSH BUTTON SIGNS (R10-3)  
DETAIL A



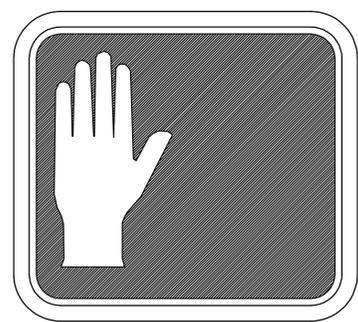
ACCESSIBLE PEDESTRIAN SIGNAL  
PEDESTRIAN PUSH BUTTON DETAIL  
DETAIL B



PERSON WALKING INTERVAL



FLASHING UPRAISED HAND INTERVAL



STEADY UPRAISED HAND INTERVAL

PEDESTRIAN SIGNAL FACE  
DETAIL C

**ELECTRICAL DETAILS**

NO SCALE

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

FUNCTIONAL SUPERVISOR  
 NELSON LEE

CALCULATED-DESIGNED BY  
 CHECKED BY

NATHAN DEKENS  
 JASKARAN S. BOPARAI

REVISED BY  
 DATE REVISED

09-24-12  
 09-24-12

## SIGNAL AND LIGHTING (TEMPORARY)

SHEET No.	(N)	(N)	(N)	(N)	(N)	(N)	(N)	(N)	(N)	(N)
	No. 5 PB	No. 6(E) PB	No. 8 CONDUCTOR	No. 10 CONDUCTOR	No. 14 CONDUCTOR	VIVDS CABLE	2" TYPE 1 PVC CONDUIT	3" TYPE 1 PVC CONDUIT	TEMPORARY SERVICE	TYPE 2070 CONTROLLER WITH BBS
EA	EA	FT	FT	FT	FT	FT	FT	FT	EA	EA
E-3	10	1	4360	1030	4090	290	1585	120	1	1

## MODIFY SIGNAL AND LIGHTING (TEMPORARY)

SHEET No.	(N)	(N)	(N)	(N)	(N)	(N)	(N)	(N)	(N)	(N)
	TEMPORARY WOOD POLE	TEMPORARY SIGNAL HEAD	TEMPORARY POLE MOUNTED SIGNAL HEAD	TEMPORARY POLE MOUNTED 15 FT LUMINARE ARM	TEMPORARY 200 W HPS HEAD	TEMPORARY FLASHING BEACON HEAD	TEMPORARY VIVDS CAMERA	TEMPORARY GUY WIRE ANCHOR	3/8" MESSENGER WIRE	
EA	EA	EA	EA	EA	EA	EA	EA	EA	FT	
E-3	9	4	7	4	4	2	8	13	1000	

## LIGHTING

SHEET No.	(N)	(N)	(N)	(N)	(N)	(N)	(N)	(N)	(N)
	No. 5 PB	No. 6(E) PB	No. 4 CONDUCTOR	No. 8 CONDUCTOR	2" TYPE 1 PVC CONDUIT	3" TYPE 1 PVC CONDUIT	TYPE III-AF SERVICE	TYPE 15 LIGHTING STANDARD	165 W LED LAMP
EA	EA	FT	FT	FT	FT	EA	EA	EA	
E-6	2	1	150	300	150	50	1	2	2

(N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	50	67.6/72.9	226	246

*Jaskaran Boparai* 11/16/12  
 REGISTERED ELECTRICAL ENGINEER DATE

2-25-13  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
**JASKARAN BOPARAI**  
 No. E15056  
 Exp. 12/31/13  
 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.

LAST REVISION DATE PLOTTED => 26-FEB-2013  
 09-24-12 TIME PLOTTED => 15:15

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	50	67.6/72.9	227	246

Jaskaran Boparai 11/16/12  
 REGISTERED ELECTRICAL ENGINEER DATE

2-25-13  
 PLANS APPROVAL DATE

No. E15056  
 Exp. 12/31/13  
 ELECTRICAL

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

### MODIFY SIGNAL AND LIGHTING

	(N)	(N)	(N)	(N)	(N)	(N)	(N)	(N)	(N)
	No. 5 PB	No. 5(T) PB	No. 6(E) PB	DETECTOR HANDHOLE	No. 8 CONDUCTOR	No. 10 CONDUCTOR	No. 14 CONDUCTOR	12CSC CABLE	3CSC CABLE
SHEET No.	EA	EA	EA	EA	FT	FT	FT	FT	FT
E-4	6	9	2	5	4360	160	160	525	185

### MODIFY SIGNAL AND LIGHTING

	(N)	(N)	(N)	(N)	(N)	(N)	(N)	(N)	(N)	(N)	(N)	(N)
	ETR CABLE	CAT5E CABLE	DLC CABLE	TYPE A LOOP	2" TYPE 1 PVC CONDUIT	3" TYPE 1 PVC CONDUIT	4" TYPE 1 PVC CONDUIT	TYPE III-AF SERVICE	TYPE 2070 CONTROLLER WITH BBS	ETHERNET SECURITY ROUTER	8 PORT ETHERNET SWITCH	TDC CABINET
SHEET No.	FT	FT	FT	EA	FT	FT	FT	EA	EA	EA	EA	EA
E-4	250	30	3160	7	1585	390	40	1	1	1	2	1

### MODIFY SIGNAL AND LIGHTING

	(N)	(N)	(N)	(N)	(N)
	FLASHING BEACON TYPE 15-FBS STANDARD	SIGNAL STANDARD TYPE 15TS	SIGNAL STANDARD TYPE 19-4-100	SIGNAL STANDARD TYPE 24-3-100	SIGNAL STANDARD TYPE 24-4-100
SHEET No.	EA	EA	EA	EA	EA
E-4	2	1	1	1	2

### MODIFY SIGNAL AND LIGHTING

	(N)	(N)	(N)	(N)	(N)	(N)	(N)	(N)
	SIGNAL FACE TYPE MAT	SIGNAL FACE TYPE MAS	SIGNAL HEAD TYPE SV-1-T	SIGNAL HEAD TYPE SV-2-TA	PEDESTRIAN SIGNAL TYPE SP-1-T	PPB	165 W LED LAMP	VIVDS CAMERA
SHEET No.	EA	EA	EA	EA	EA	EA	EA	EA
E-4	3	1	2	2	2	2	4	3

(N) - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY

## ELECTRICAL QUANTITIES

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	50	67.6/72.9	228	246

REGISTERED CIVIL ENGINEER  
 DATE 10/25/12  
 TAMERA S. MARCHENKO  
 No. C76837  
 Exp. 12/31/12  
 CIVIL  
 STATE OF CALIFORNIA

PLANS APPROVAL DATE 2-25-13

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.

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

Refer to ES-6A for Luminaire arm details

**GENERAL NOTES:**

Design: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals dated 2009 and 2010 Interim Revisions.

**LOADING**

Wind Loadings: 100 MPH  
 UNIT STRESSES  
 Timber Poles: Tapered treated round pole ASTM D2899 Standard  
 Fb = 1850 psi  
 Fv = 110 psi  
 E = 1500 x 10<sup>3</sup> psi

**TREATMENT**

To conform with Section 86 Standard Specifications

**GALVANIZING**

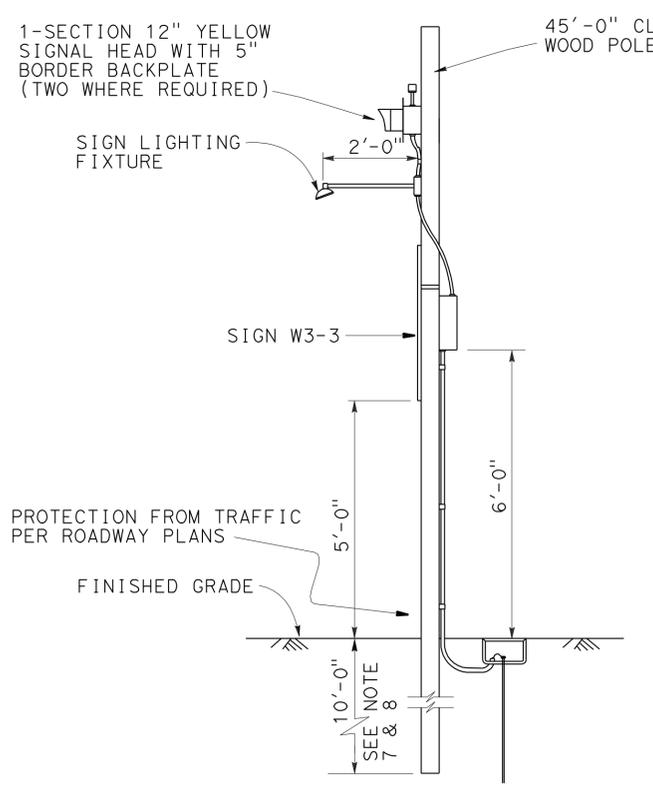
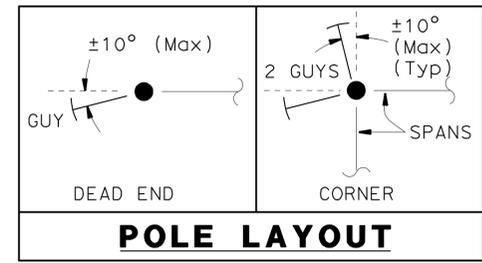
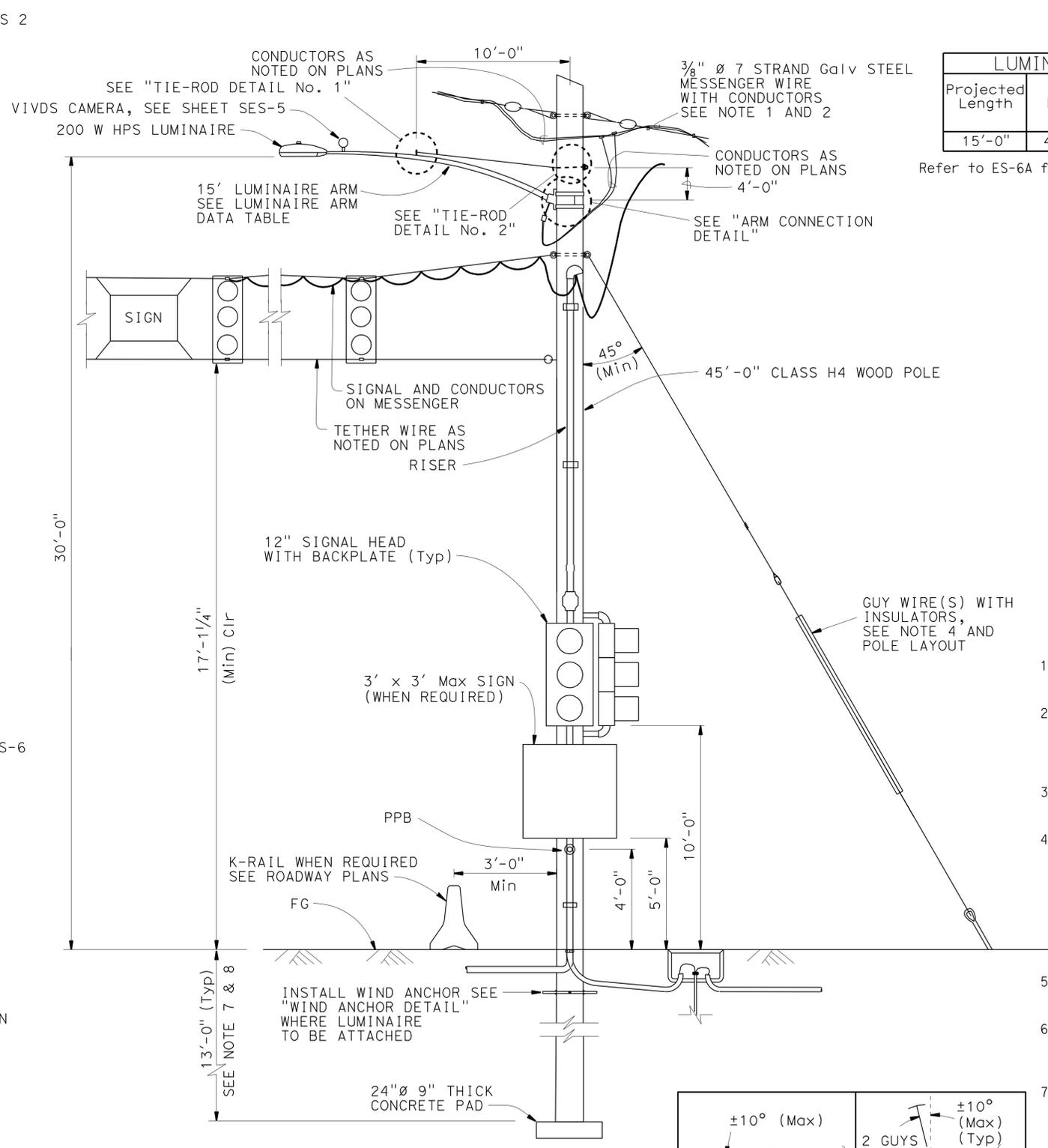
All steel or iron per Section 75 Standard Specification

**SPECIFICATIONS**

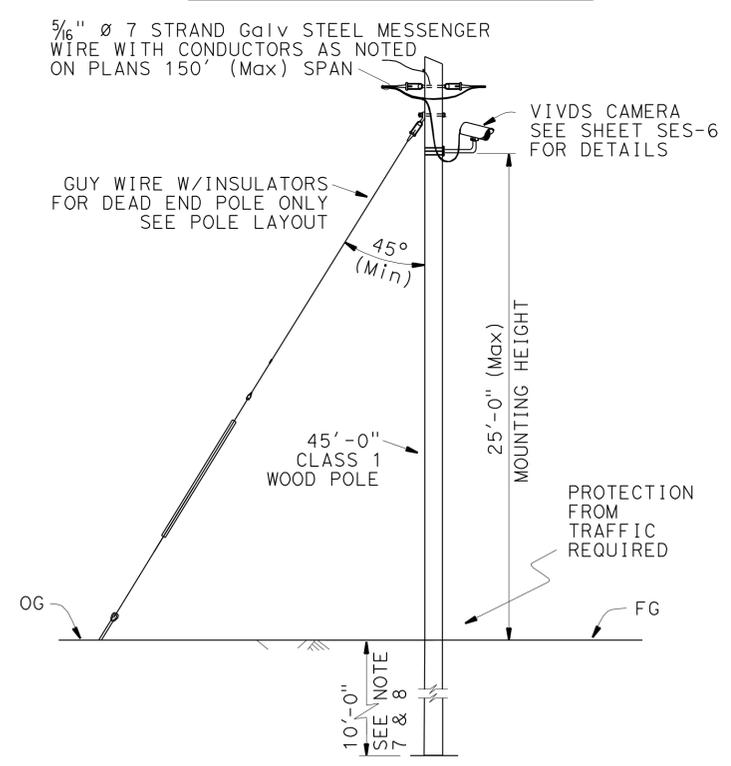
Caltrans Standard Specifications 2010  
 ANSI 05 Wood Poles  
 ASTM A475 Utility Grade Wires

**NOTES:**

- All overhead cables shall be slack spanned with 19'-0" minimum overhead clearance.
- Conductors shall be suspended from span-wire as follows:  
 A) Main run span-wire as shown with 5% + 0.5% sag.  
 B) 1/4" tether wire with 5% 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 4000 pounds (Min) applied to the pole.
- Guy wire 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 2009 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 shall verify actual soil condition.
- If pole is located on or near a steep slope add 2 feet extra for embedment.
- See Sheets SES-2 thru SES-6 for details.
- For details not shown, see "2010 STANDARD PLANS".
- Attach luminaire arm and combination of attachments as specified at locations where indicated on Electrical Sheets.



**WOOD POLE SUPPORT FOR FLASHING BEACON**



**WOOD POLE SUPPORT FOR CAMERA**

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

BRANCH CHIEF JAMES SAGAR	DESIGN	BY T MARCHENKO	CHECKED N K P / A MALAK
	DETAILS	BY H NGUYEN	CHECKED N K P / A MALAK
	QUANTITIES	BY	CHECKED

DESIGN	BY T MARCHENKO	CHECKED N K P / A MALAK
DETAILS	BY H NGUYEN	CHECKED N K P / A MALAK
QUANTITIES	BY	CHECKED

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES  
 DESIGN AND TECHNICAL SERVICES  
 SPECIAL DESIGNS BRANCH

BRIDGE NO.	N/A
POST MILE	67.6/72.9

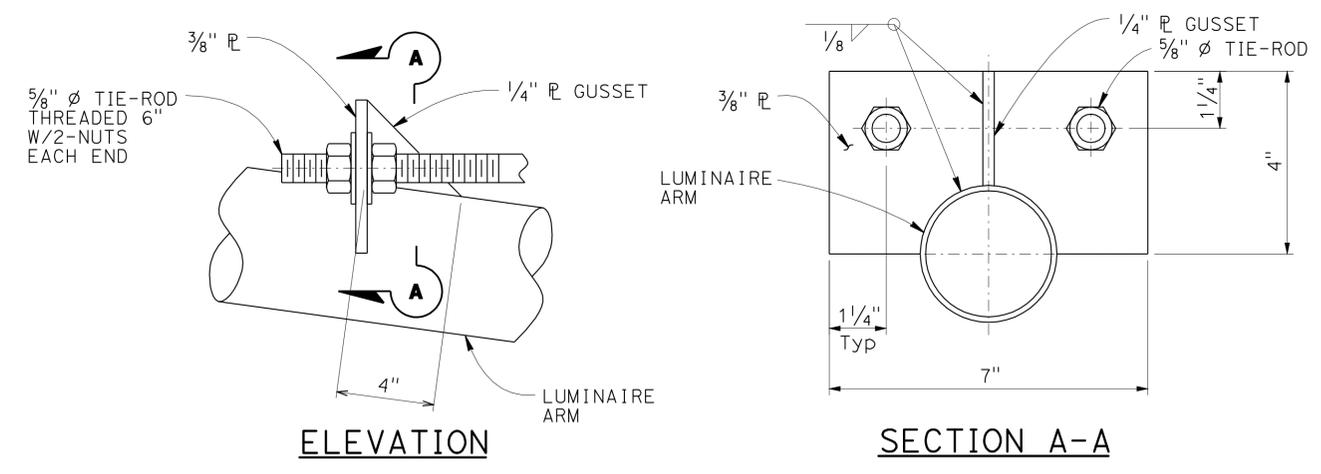
TEMPORARY SIGNAL AND LIGHTING  
 TEMPORARY WOOD POLE

SES-1

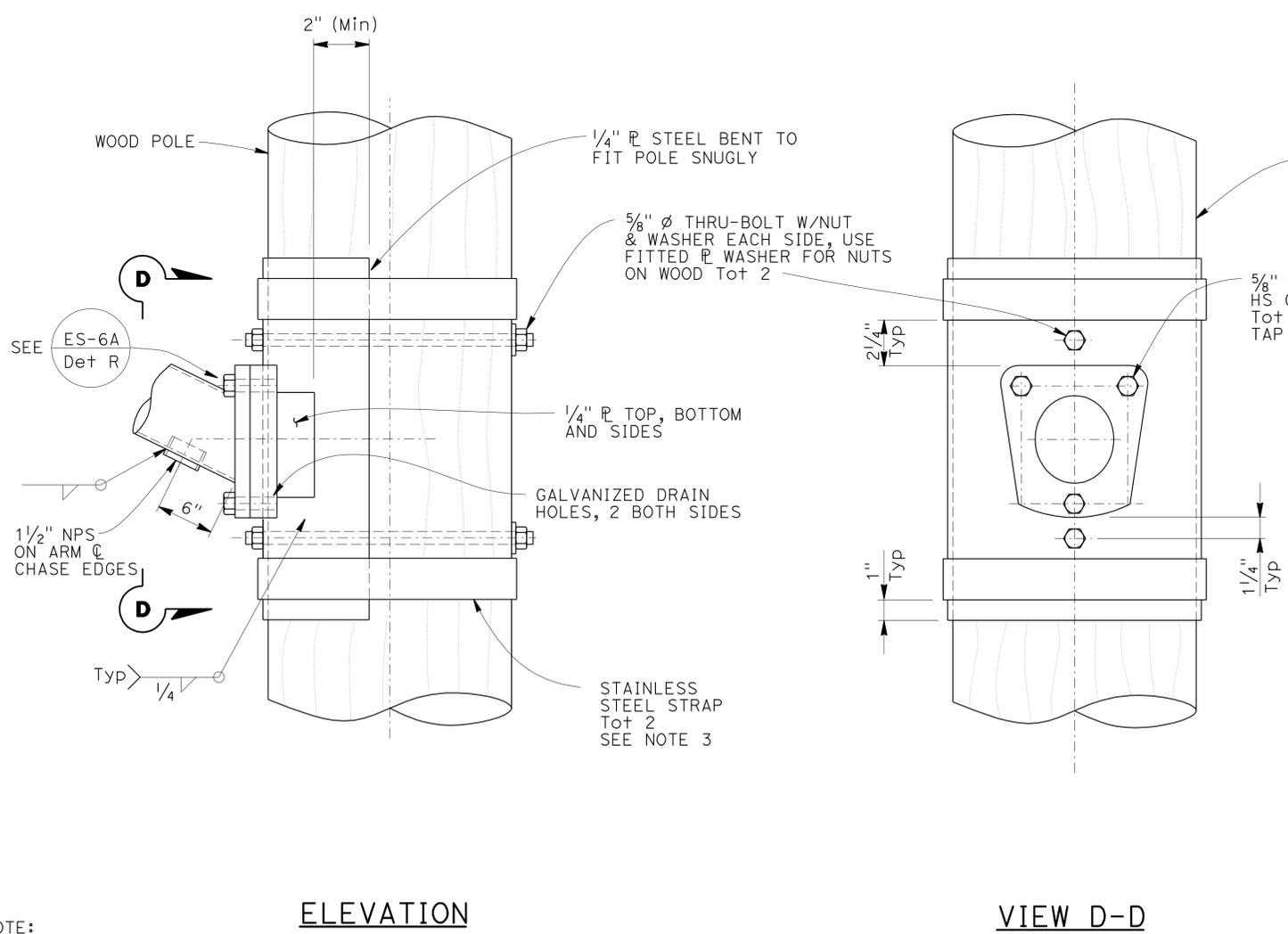
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	50	67.6/72.9	229	246
			8/21/12		
REGISTERED CIVIL ENGINEER			DATE		
2-25-13			PLANS APPROVAL DATE		
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					

**NOTES:**

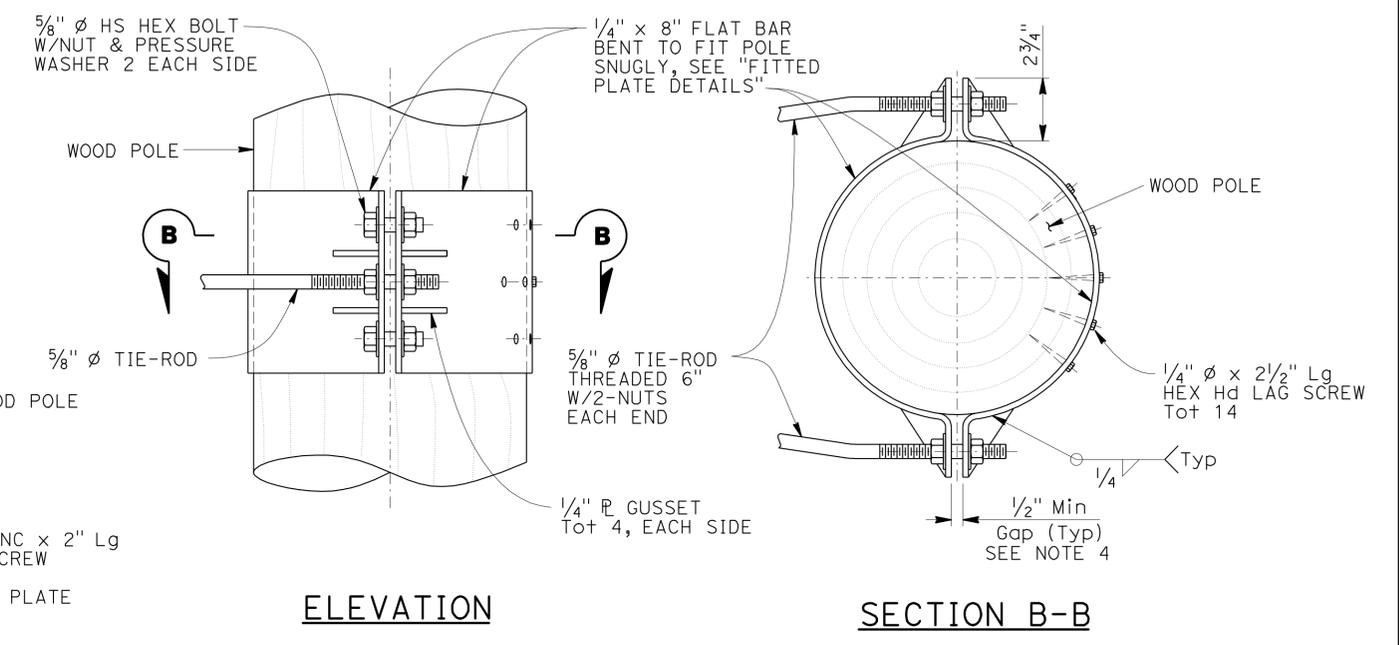
1. All hardware and steel shall be galvanized after fabrication.
2. Arm Base connection details shall be in compliance with Standard Plans Detail Sheet ES-6A with noted modifications.
3. 3500 lb Min capacity strap system shall be used for top and bottom of plate.
4. The Contractor shall verify pole dimensions at Tie-Rod attachment height. Fabricate 8" flat bar with "L" Dimension to maintain an open gap between encasement in finished installation.



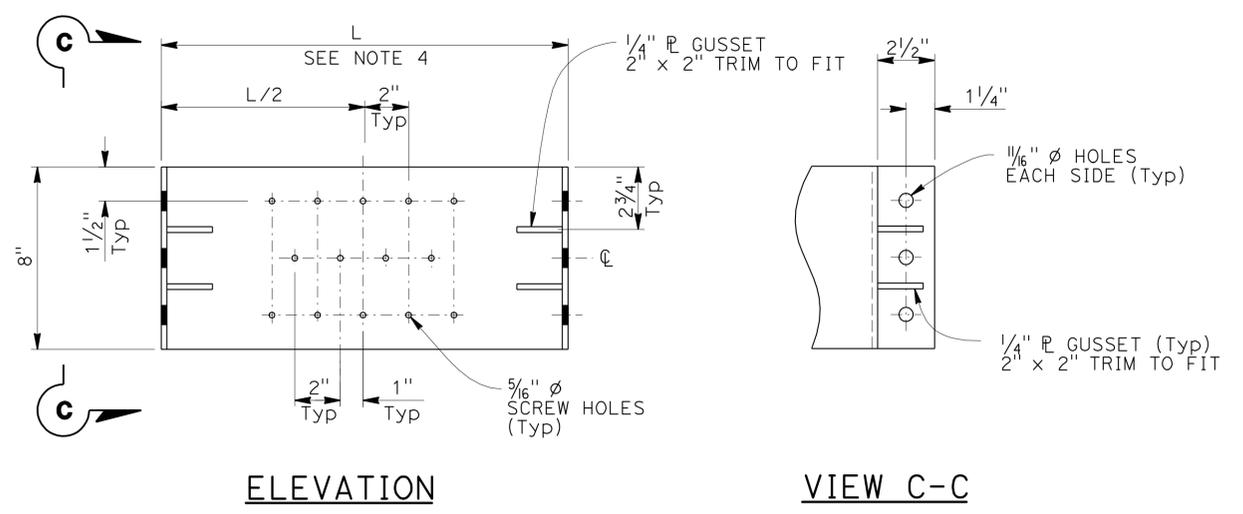
**TIE-ROD DETAIL No. 1**



**ARM CONNECTION DETAILS**



**TIE-ROD DETAIL No. 2**



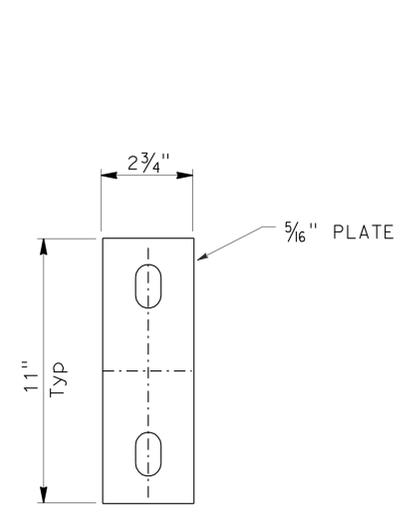
**FITTED PLATE DETAILS**  
Note: 2 Required (1 w/screw holes, 1 without)

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

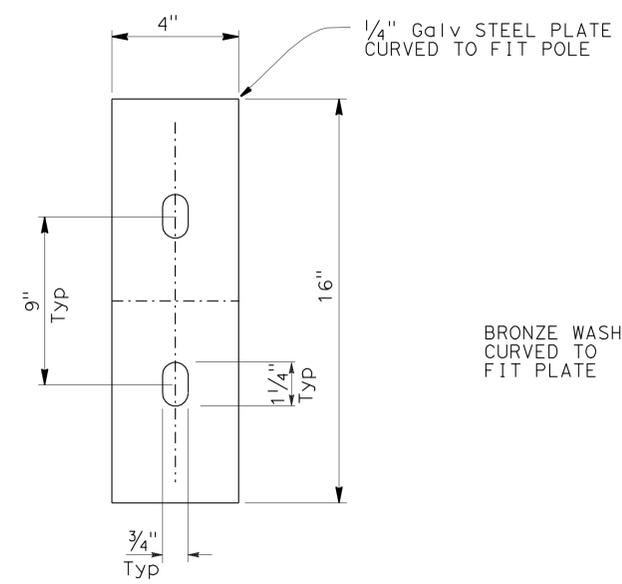
NO SCALE

BRANCH CHIEF <u>JAMES SAGAR</u>	DESIGN BY T MARCHENKO	CHECKED N KANEPATHIPILLAI	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES DESIGN AND TECHNICAL SERVICES <b>SPECIAL DESIGNS BRANCH</b>	BRIDGE NO. N/A	<b>TEMPORARY SIGNAL AND LIGHTING</b> <b>ARM MOUNTING DETAILS</b>	<b>SES-2</b>
	DETAILS BY H NGUYEN	CHECKED N KANEPATHIPILLAI			POST MILE 67.6/72.9		
	QUANTITIES BY	CHECKED X					

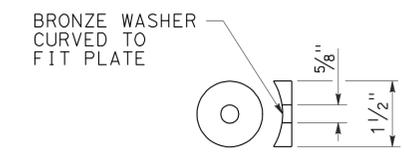
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
03	ED	50	67.6/72.9	230	246
REGISTERED CIVIL ENGINEER			DATE	8/21/12	
PLANS APPROVAL DATE			2-25-13		
REGISTERED PROFESSIONAL ENGINEER TAMARA S. MARCHENKO No. C76837 Exp. 12/31/12 CIVIL STATE OF CALIFORNIA					
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.					



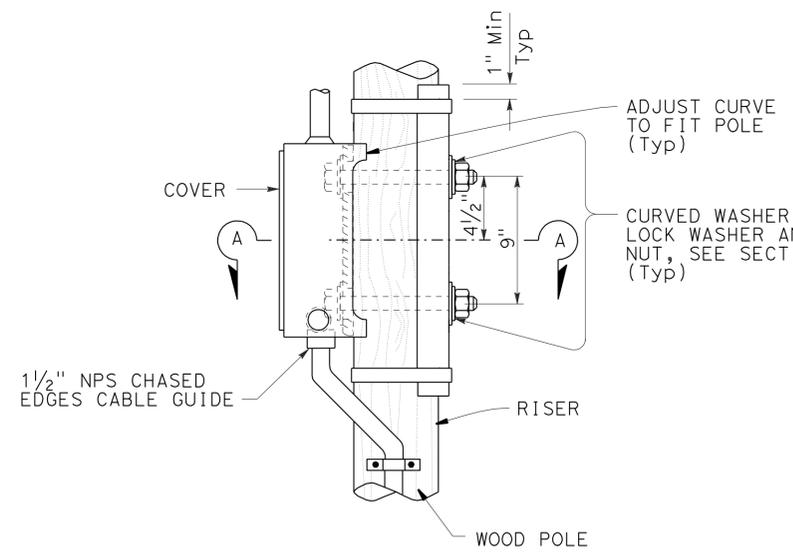
**COMPARTMENT PLATE (MOD)**



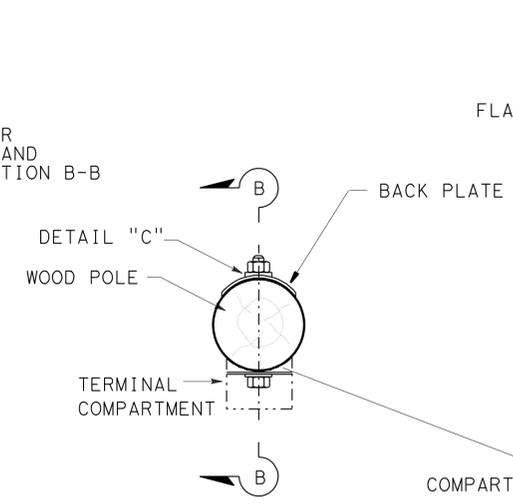
**BACK PLATE**



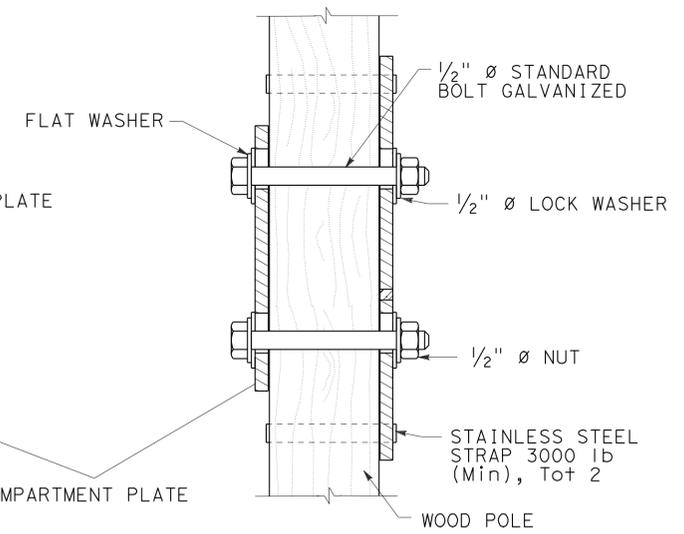
**DETAIL "C"**



**SIDE MOUNTING  
TERMINAL COMPARTMENT**



**SECTION A-A**



**SECTION B-B**

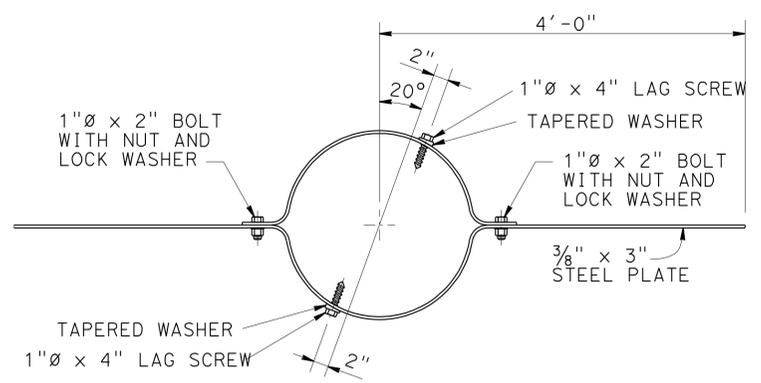
**SIGNAL HEAD MOUNTING**  
For Details Not Shown See ES-4D Sheet

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

NO SCALE

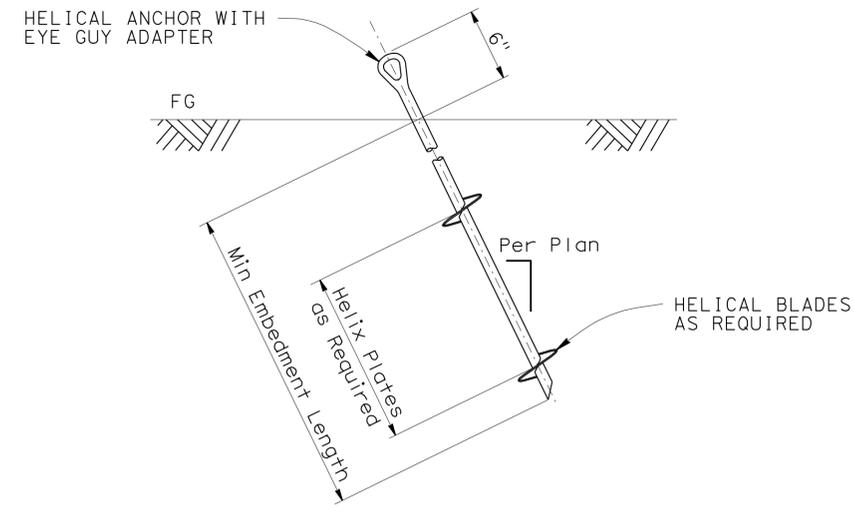
BRANCH CHIEF JAMES SAGAR	DESIGN	BY T MARCHENKO	CHECKED N KANEPATHIPILLAI	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES DESIGN AND TECHNICAL SERVICES SPECIAL DESIGNS BRANCH	BRIDGE NO.	N/A	TEMPORARY SIGNAL AND LIGHTING SIGNAL MOUNTING DETAILS	SES-3
	DETAILS	BY HUNG NGUYEN	CHECKED N KANEPATHIPILLAI			POST MILE	67.6/72.9		
	QUANTITIES	BY	CHECKED						

USERNAME => S123631 DATE PLOTTED => 26-FEB-2013 TIME PLOTTED => 15:18



**WIND ANCHOR**

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



**ALTERNATIVE GUY WIRE INSTALLATION DETAIL**

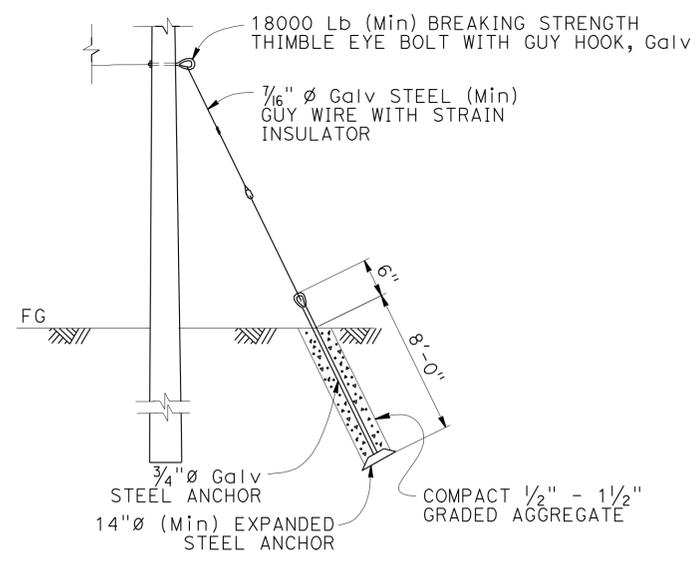
(See Helical Anchor Specifications Table)

HELICAL ANCHOR SPECIFICATIONS					
Anchor Location	Type	Helix Plate Diameter*	Allowable Min Tension Cap, "Q <sub>a</sub> "	Embedment Length (Min)	Installation Torque (Min)**, "T"
1 OR 2 GUYS SEE POLE LAYOUT ON SES-1	Tension	12"	5300 lb	8'-0"	1600 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 DETAILS**

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

**NOTES:**

- The Contractor shall 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 Contractor.
- The Contractor shall determine the most appropriate value for  $k_t$  based on soil conditions and shall adjust the Minimum Installation Torque based on the revised  $k_t$ . A  $k_t$  value of 10 was assumed for the Minimum Installation Torque shown in the table.  
 The Helical Installation torque formula is  $Q_u = k_t * T$  where,  
 $Q_u = Q_a * FS$  = Ultimate Helical Anchor Capacity (lb)  
 $FS$  = Factor of Safety = 3.0  
 $Q_a$  = Allowable Helical Anchor Capacity (lb)  
 $k_t$  = Empirical Torque Factor (ft<sup>-1</sup>)  
 $T$  = Min Installation Torque (ft-lb)
- Requests made by Helical Anchor Installation Contractor to reduce the minimum embedment length and Helix  $\phi$  diameter require the 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 the Engineer during construction.

NO SCALE

BRANCH CHIEF JAMES SAGAR	DESIGN	BY T MARCHENKO	CHECKED N KANEPATHIPILLAI	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES DESIGN AND TECHNICAL SERVICES SPECIAL DESIGNS BRANCH	BRIDGE NO.	N/A	TEMPORARY SIGNAL AND LIGHTING WOOD POLE ANCHORING DETAILS	SES-4
	DETAILS	BY H NGUYEN	CHECKED N KANEPATHIPILLAI			POST MILE	67.6/72.9		
	QUANTITIES	BY	CHECKED			UNIT: 3619	CONTRACT NO.: 03-1a7311		

(ENGLISH) SPECIAL DESIGNS BRANCH BORDER SHEET (REV. 7-1-09)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS: 0 1 2 3

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES: 8-1-12

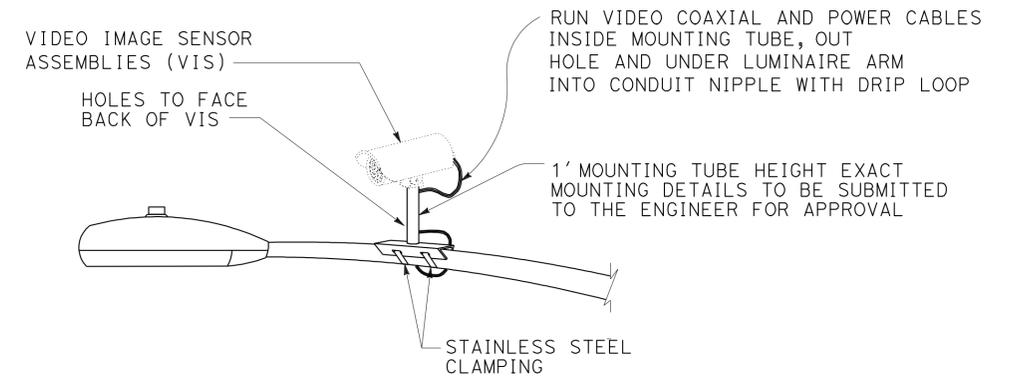
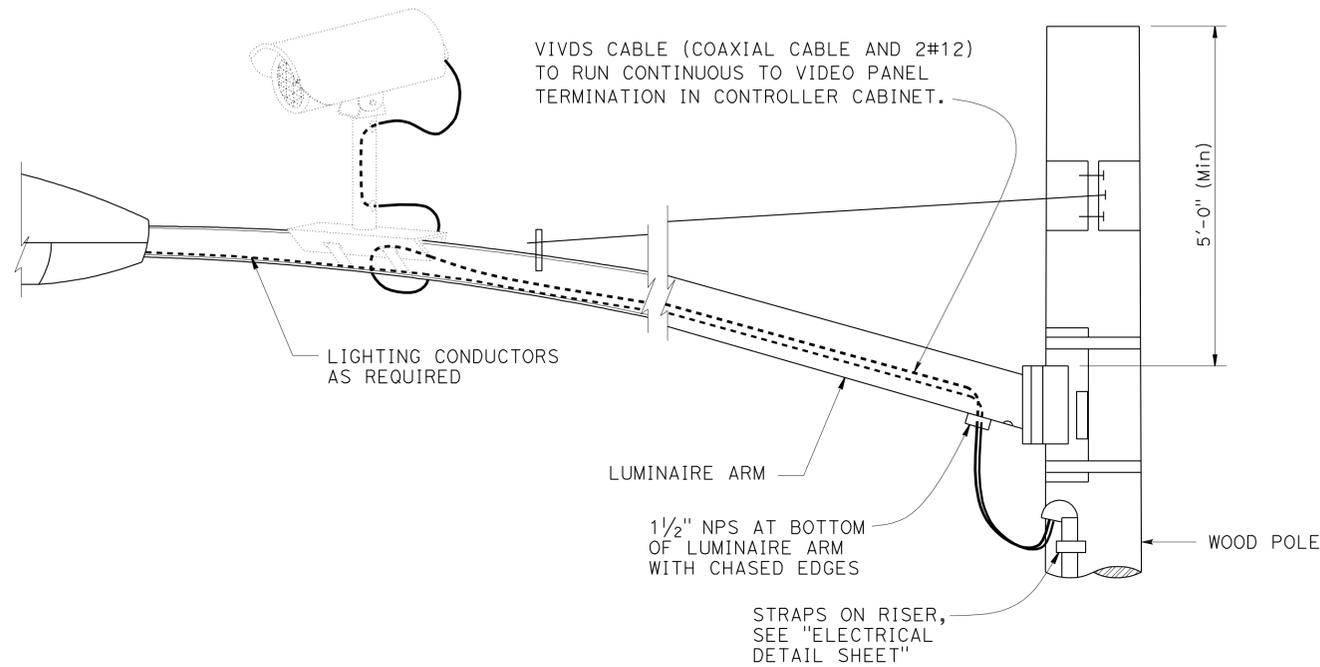
SHEET 4 OF 6

FILE => spec\_des\_br\_prj\2011sd\07-260701\03-1a7311\_ses04.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	50	67.6/72.9	232	246
			8/21/12		
REGISTERED CIVIL ENGINEER			DATE		
2-25-13			PLANS APPROVAL DATE		
TAMARA S. MARCHENKO			No. C76837		
			Exp. 12/31/12		
			CIVIL		
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.					

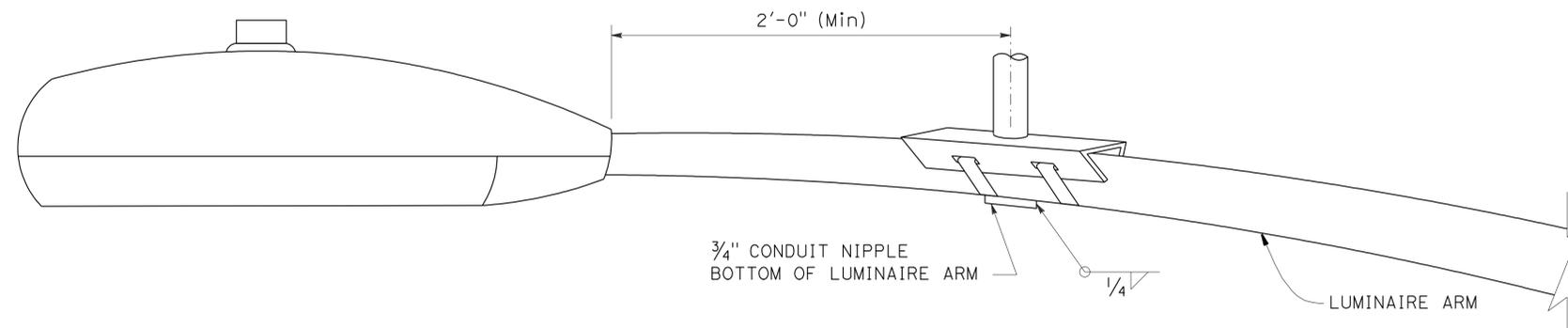
**NOTES:**

1. All metallic conduits, bolts straps and misc hardware shall be galvanized.
2. Elements (total VIVDS assembly) shall have a maximum weight of 10 lbs and a maximum effective pressure area of 1 square foot.
3. Maximum of 1 VIVDS element per luminaire arm.
4. This sheet applies only for steel luminaire arm newly installed on wood pole.



**CAMERA MOUNTING DETAILS**

NO SCALE



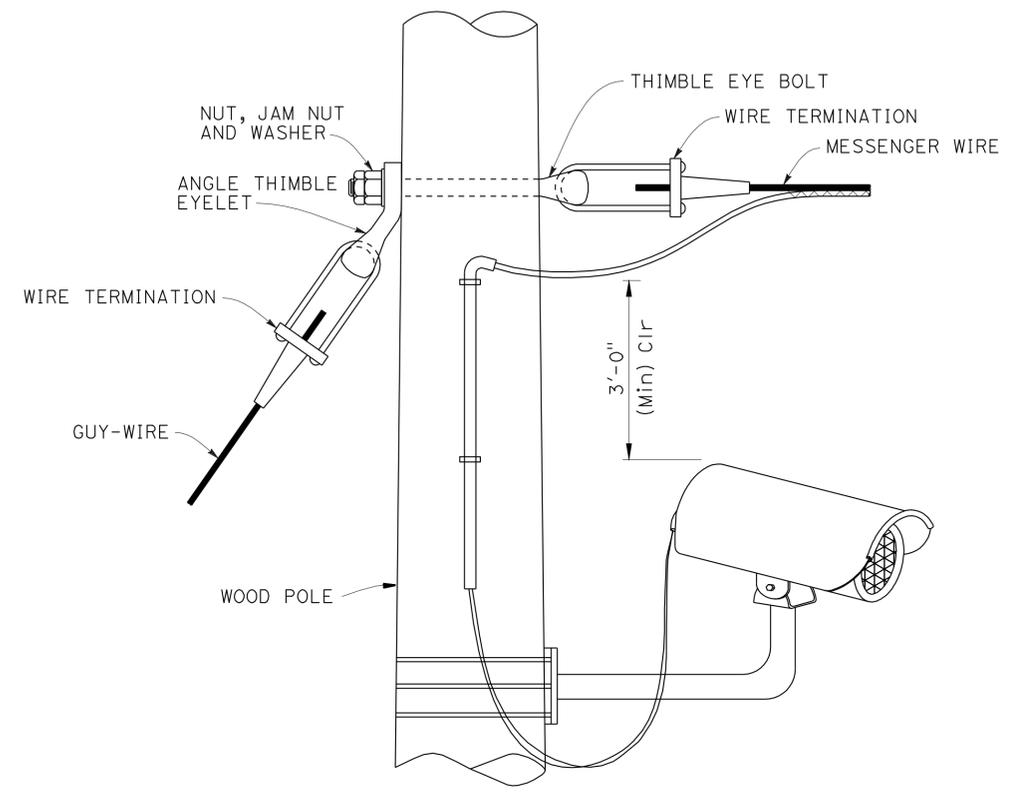
**DETAIL A**

NO SCALE

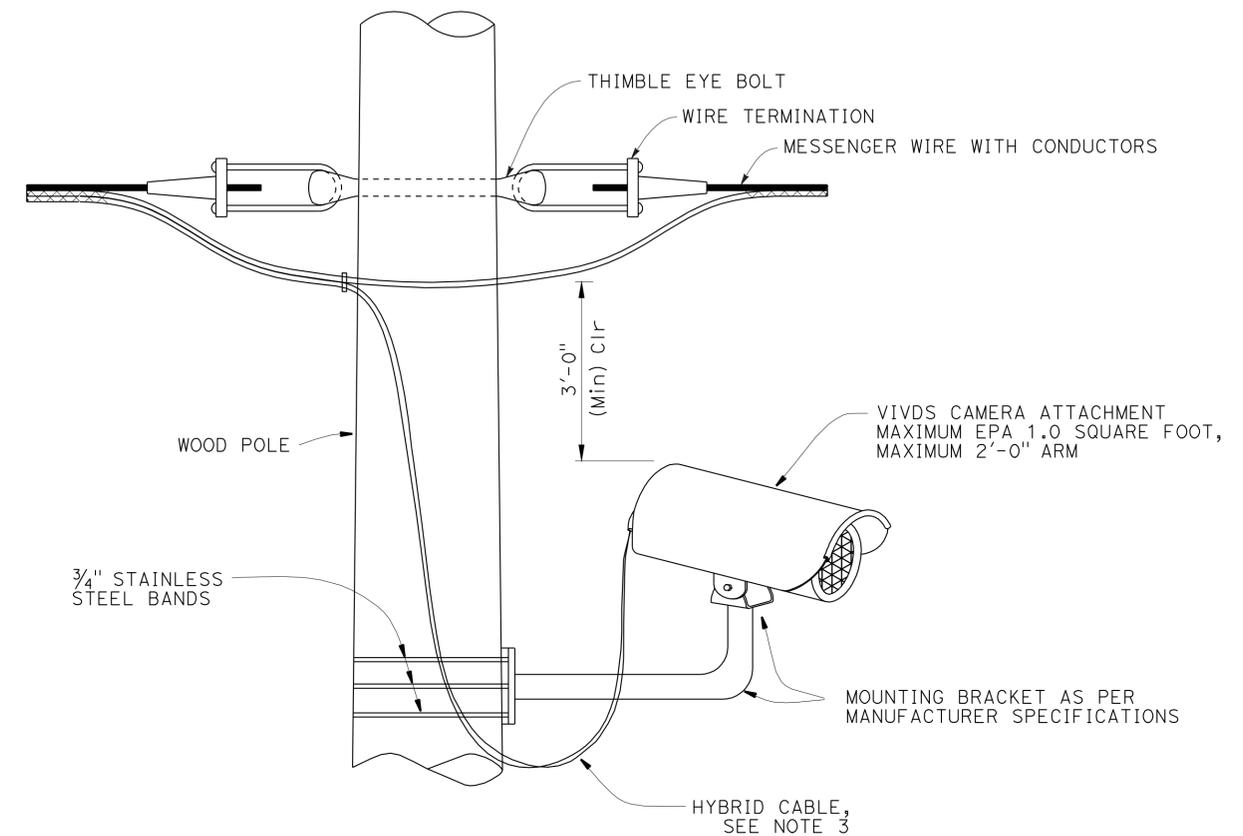
NOTE:  
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

BRANCH CHIEF JAMES SAGAR	DESIGN	BY T MARCHENKO	CHECKED N KANEPATHIPILLAI	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN SPECIAL DESIGN BRANCH	BRIDGE NO.	TEMPORARY SIGNAL AND LIGHTING CAMERA MOUNTING DETAILS	SES-5
	DETAILS	BY H NGUYEN	CHECKED N KANEPATHIPILLAI			N/A		
	QUANTITIES	BY	CHECKED X			POST MILE 67.6/72.9		

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	50	67.6/72.9	233	246
			REGISTERED CIVIL ENGINEER	DATE	10/25/12
			PLANS APPROVAL DATE	2-25-13	
<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>					



**CAMERA MOUNTING DETAIL AT C1**



**CAMERA MOUNTING DETAIL, (Typ)**

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

**NOTES:**

- Exact mounting location of camera attachment and bracket shall be approved by the Engineer per manufacturer's recommendation.
- Hybrid cable shall have a drip loop.
- Hybrid cable shall run continuous and shall not be twisted from the miscellaneous attachment. No splices shall be allowed.
- Use the manufacturer's Effective Projected Area (EPA) for VIVDS camera attachment. The maximum EPA for the attachment shall be 1.0 square feet.
- VIVDS CAMERA attachment shall be mounted using clamping devices approved by the Engineer per manufacturer's recommendations.

NO SCALE

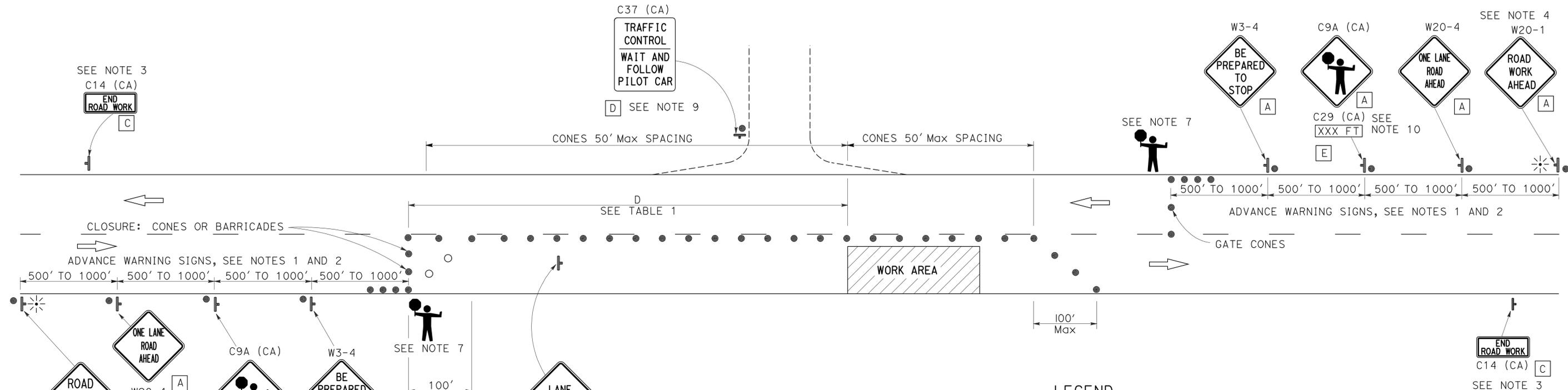
<b>BRANCH CHIEF</b> <u>JAMES SAGAR</u>	DESIGN	BY T MARCHENKO	CHECKED A MALAK	<b>STATE OF CALIFORNIA</b> DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN <b>SPECIAL DESIGN BRANCH</b>	BRIDGE NO.	N/A	<b>TEMPORARY SIGNAL SYSTEM</b> <b>VIVDS CAMERA MOUNTING DETAIL</b>	<b>SES-6</b>
	DETAILS	BY H NGUYEN	CHECKED A MALAK			POST MILE	67.6/72.9		
	QUANTITIES	BY X	CHECKED X						
STRUCTURES DESIGN SPECIAL DESIGN SHEET (ENGLISH) (REV. 09-01-10)									
				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		UNIT: 3619 PROJECT NUMBER & PHASE: 0300000213		CONTRACT NO.: 03-1a7311	
								DISREGARD PRINTS BEARING EARLIER REVISION DATES	
								REVISION DATES	
								SHEET 6 OF 6	

USERNAME => s119571 DATE PLOTTED => 28-FEB-2013 TIME PLOTTED => 13:32

**NOTES:**

Unless otherwise specified in the special provisions, all temporary warning signs shall have black legend on orange background. California code are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

**TYPICAL LANE CLOSURE WITH REVERSIBLE CONTROL**



**SIGN PANEL SIZE (MINIMUM)**

- A 48" x 48" - SPEED OF 45 mph OR MORE  
36" x 36" - SPEED LESS THAN 45 mph
- B 30" x 30"
- C 36" x 18"
- D 36" x 42"
- E 36" x 9"

**LEGEND**

- TRAFFIC CONE
- TRAFFIC CONE (OPTIONAL TAPER)
- ⊢ TEMPORARY SIGN
- ☁ PORTABLE FLASHING BEACON
- 🚧 FLAGGER

**TABLE 1**

APPROACH SPEED	MINIMUM D	DOWNGRADE MINIMUM D *		
		-3%	-6%	-9%
mph	ft	ft	ft	ft
25 AND BELOW	155	158	165	173
30	200	205	215	227
35	250	257	271	287
40	305	315	333	354
45	360	378	400	427
50	425	446	474	507
55	495	520	553	593
60	570	598	638	686
65	645	682	728	785

\* USE ON SUSTAINED DOWNGRADE STEEPER THAN -3 PERCENT AND LONGER THAN 1 MILE.

**NOTES:**

- Where approach speeds are low, advance warning signs may be placed at 300' spacing, and closer in urban areas.
- Each advance warning sign in each direction of travel shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
- A C14 (CA) "END ROAD WORK" sign, as appropriate, shall be placed at the end of the lane control unless the end of work area is obvious, or ends within a larger project's limits.
- If the W20-1 sign would follow within 2000' of a stationary W20-1 or C11 (CA) "ROAD WORK NEXT \_\_\_\_\_ MILES", use a W20-4 sign for the first advance warning sign.
- All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
- Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime closures only.
- Additional advance flaggers may be required. Flagger should stand in a conspicuous place, be visible to approaching traffic as well as approaching vehicles after the first vehicle has stopped. During the hours of darkness, the flagging-station and flagger shall be illuminated and clearly visible to approaching traffic. The illumination footprint of the lighting on the ground shall be at least 20' in diameter. Place a minimum of four cones at 50' intervals in advance of flagger station as shown.
- Place C30 (CA) "LANE CLOSED" sign at 500' to 1000' intervals throughout extended work areas. They are optional if the work area is visible from the flagger station.
- When a pilot car is used, place a C37 (CA) "TRAFFIC CONTROL-WAIT AND FOLLOW PILOT CAR" sign at all intersections within traffic control area. Signs shall be clean and visible at all times.
- An optional C29 (CA) sign may be placed below the C9A (CA) sign.
- Traffic cones or barricades may be placed on the optional taper as shown, barricades shall be Type I, II, or III.

**TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE ON TWO LANE CONVENTIONAL HIGHWAYS**

NO SCALE

**TCS-1**

REVISIONS: x, x, x, x, x  
 REVISOR: \_\_\_\_\_ DATE: \_\_\_\_\_  
 CALCULATED/DESIGNED BY: \_\_\_\_\_ CHECKED BY: \_\_\_\_\_  
 FUNCTIONAL SUPERVISOR: \_\_\_\_\_  
 DEPARTMENT OF TRANSPORTATION  
 STATE OF CALIFORNIA  
 Caltrans

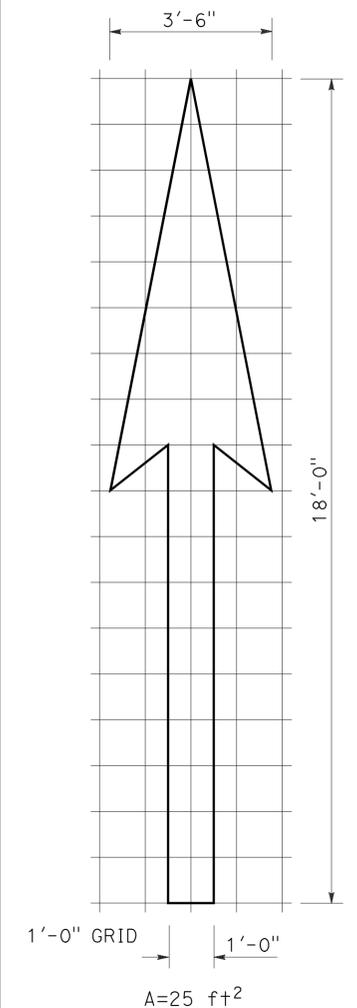


Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	50	67.6/72.9	236	246

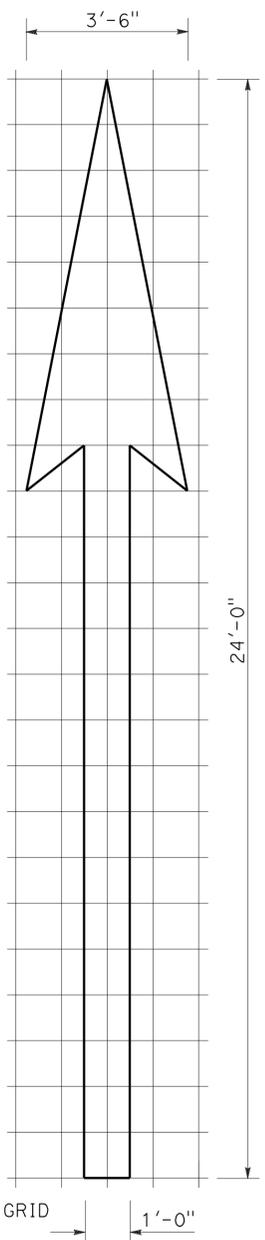
Roberto L. McLaughlin  
 REGISTERED CIVIL ENGINEER  
 April 20, 2012  
 PLANS APPROVAL DATE  
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER  
 Roberto L. McLaughlin  
 No. C40375  
 Exp. 3-31-13  
 CIVIL  
 STATE OF CALIFORNIA

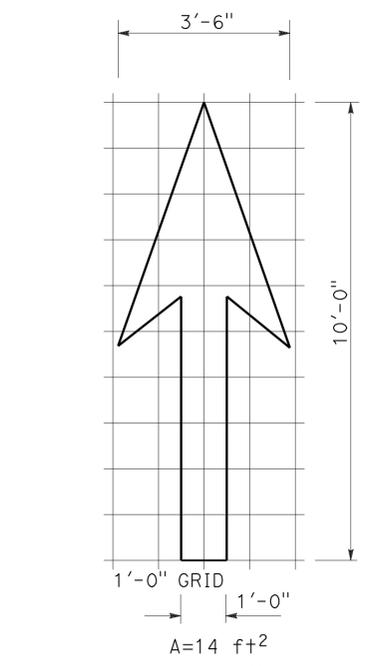
TO ACCOMPANY PLANS DATED 2-25-13



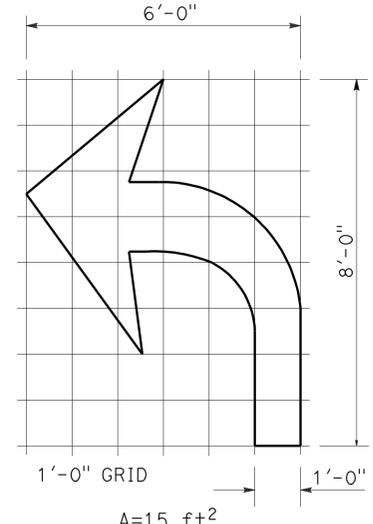
**TYPE I 18'-0" ARROW**



**TYPE I 24'-0" ARROW**

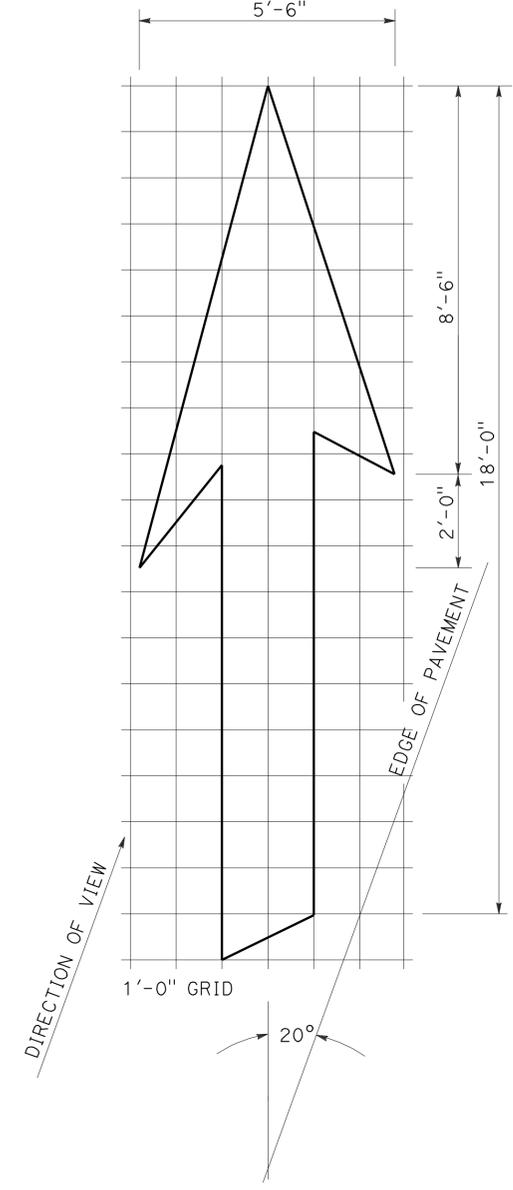


**TYPE I 10'-0" ARROW**



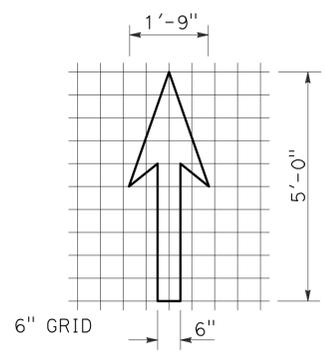
**TYPE IV (L) ARROW**

(For Type IV (R) arrow, use mirror image)

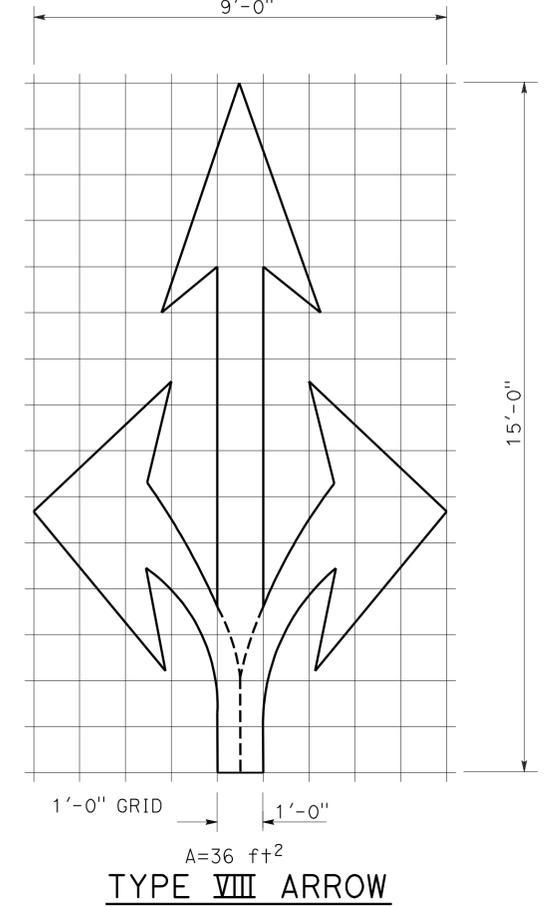


**TYPE VI ARROW**

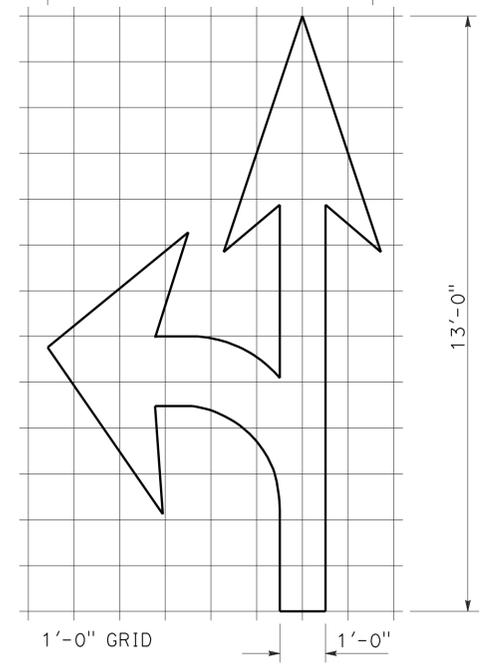
Right lane drop arrow  
(For left lane, use mirror image)



**BIKE LANE ARROW**

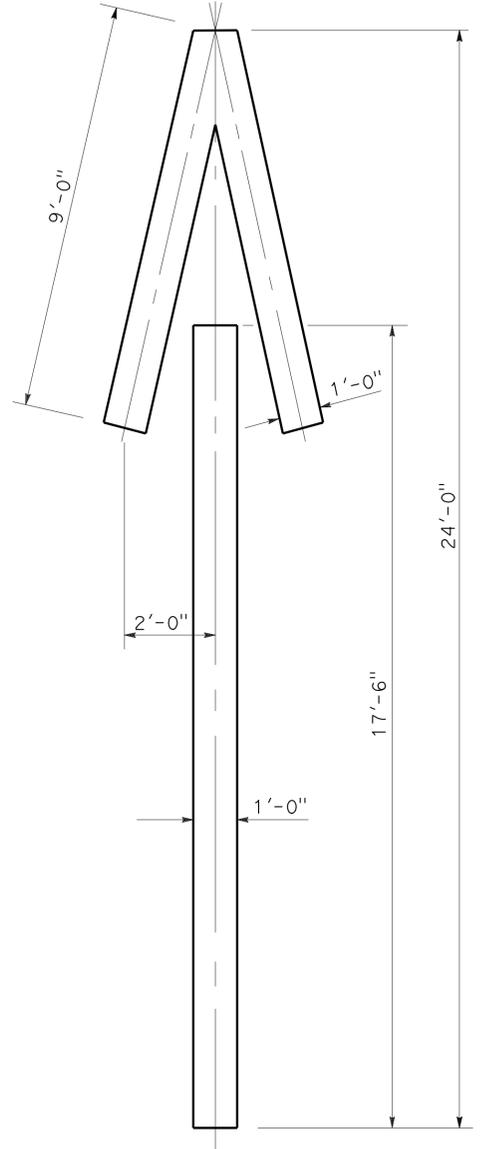


**TYPE VIII ARROW**



**TYPE VII (L) ARROW**

(For Type VII (R) arrow, use mirror image)



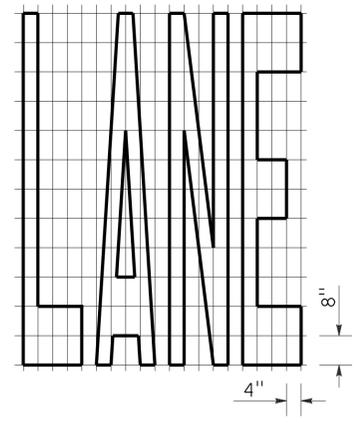
**TYPE V ARROW**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**PAVEMENT MARKINGS  
ARROWS**  
NO SCALE

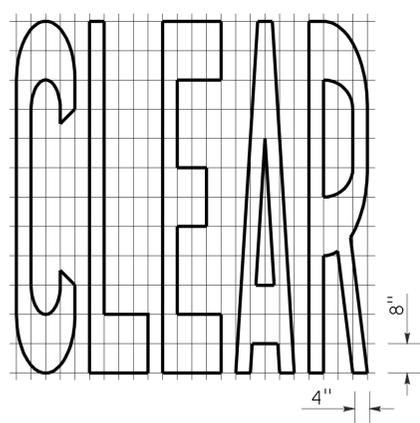
**NOTE:**  
Minor variations in dimensions may be accepted by the Engineer.

RSP A24A DATED APRIL 20, 2012 SUPERSEDES STANDARD PLAN A24A DATED MAY 20, 2011 - PAGE 13 OF THE STANDARD PLANS BOOK DATED 2010.

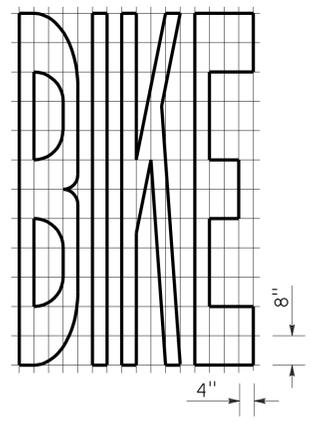
TO ACCOMPANY PLANS DATED 2-25-13



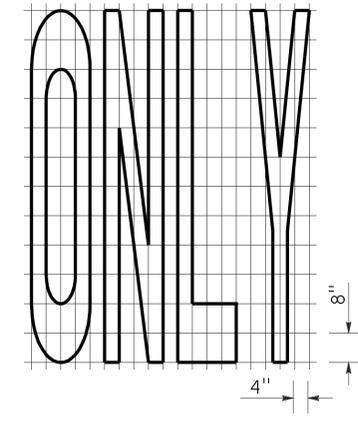
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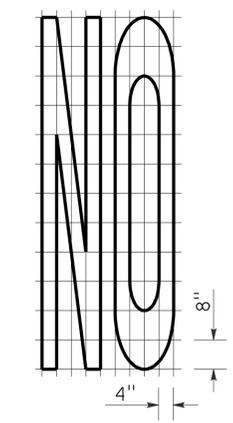
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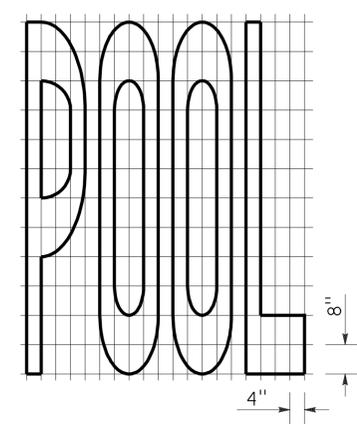
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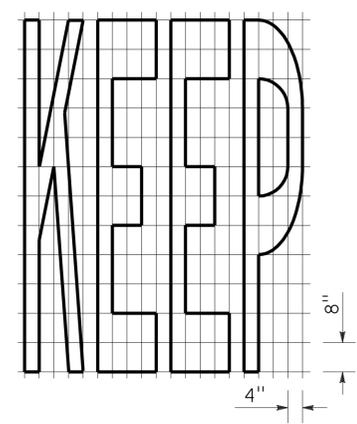
A=22 ft<sup>2</sup>



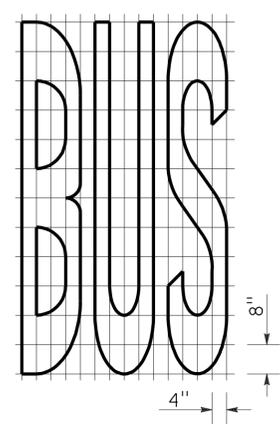
A=14 ft<sup>2</sup>



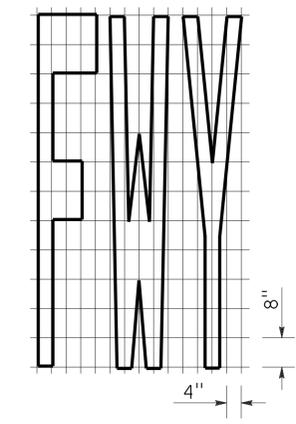
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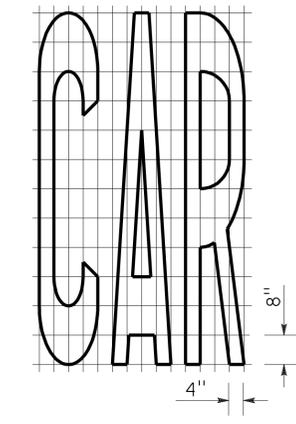
A=24 ft<sup>2</sup>



A=20 ft<sup>2</sup>

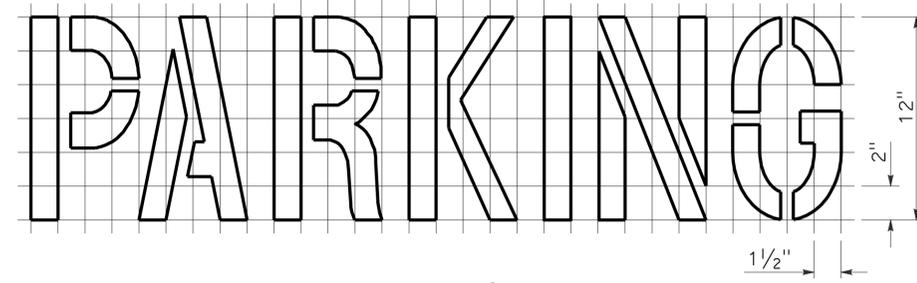
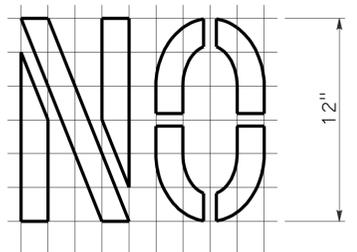


A=16 ft<sup>2</sup>

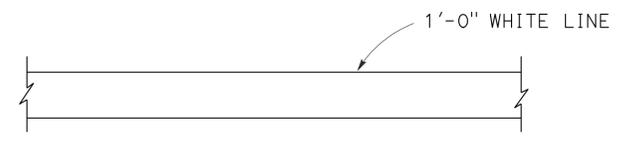


A=17 ft<sup>2</sup>

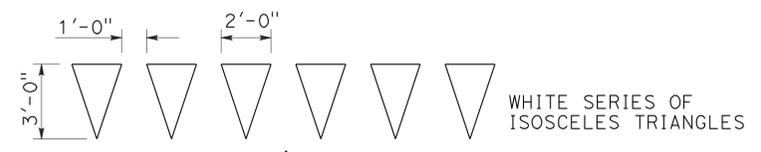
WORD MARKINGS			
ITEM	ft <sup>2</sup>	ITEM	ft <sup>2</sup>
LANE	24	NO	14
POOL	23	BIKE	21
CAR	17	BUS	20
CLEAR	27	ONLY	22
KEEP	24	FWY	16



A=2 ft<sup>2</sup>  
See Notes 6 and 7



LIMIT LINE (STOP LINE)



WHITE SERIES OF  
ISOSCELES TRIANGLES  
DIRECTION  
OF TRAVEL  
YIELD LINE

**NOTES:**

1. If a message consists of more than one word, it should read "UP", i.e., the first word should be nearest the driver.
2. The space between words should be at least four times the height of the characters for low speed roads, but not more than ten times the height of the characters. The space may be reduced appropriately where there is limited space because of local conditions.
3. Minor variations in dimensions may be accepted by the Engineer.
4. Portions of a letter, number or symbol may be separated by connecting segments not to exceed 2" in width.
5. The words "NO PARKING" pavement marking is to be used for parking facilities. For typical locations of markings, see Standard Plans A90A and A90B.
6. The words "NO PARKING", shall be painted in white letters no less than 1'-0" high on a contrasting background and located so that it is visible to traffic enforcement officials.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**PAVEMENT MARKINGS  
WORDS, LIMIT AND YIELD LINES**  
NO SCALE

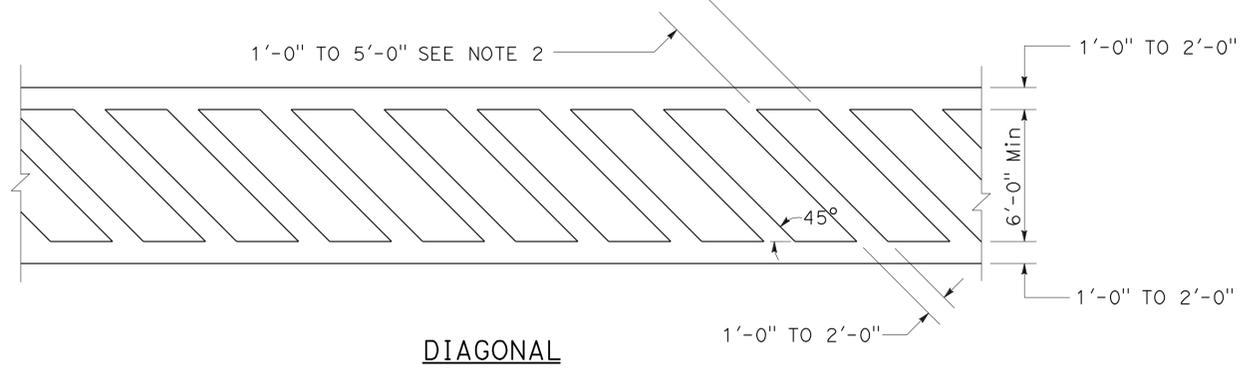
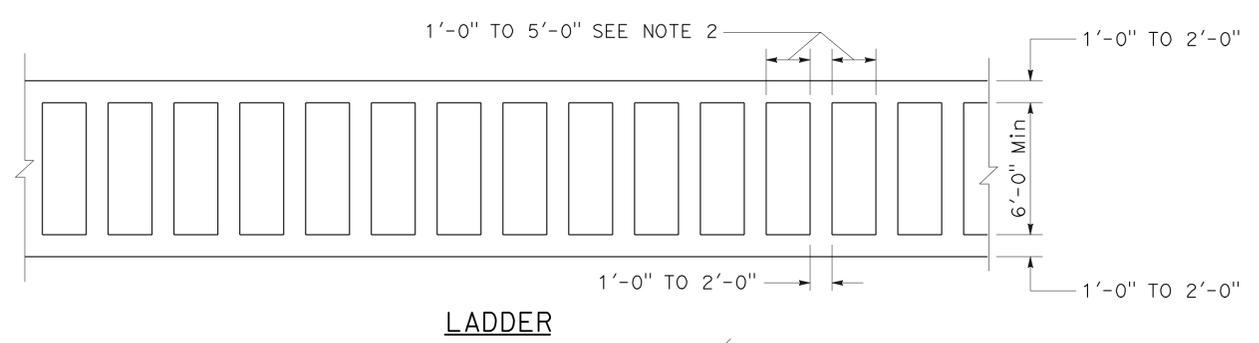
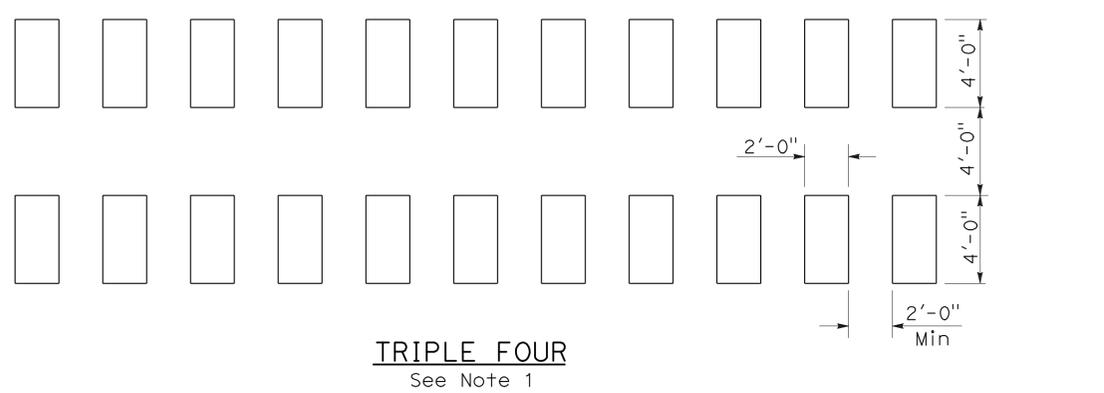
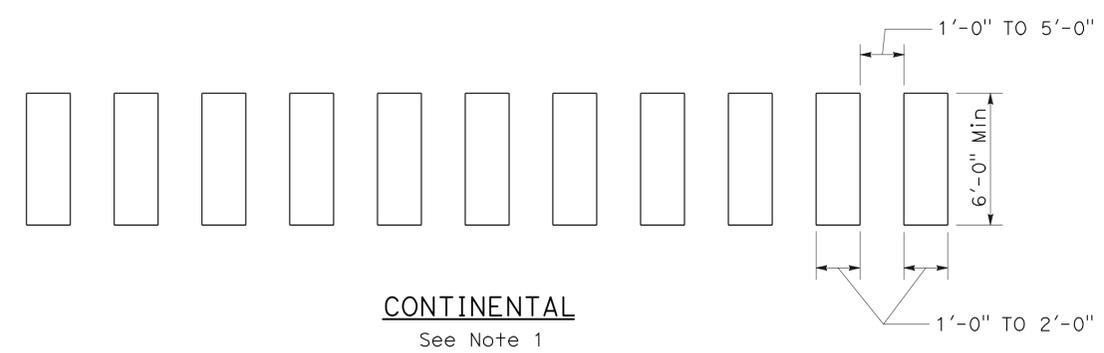
RSP A24E DATED JULY 20, 2012 SUPERSEDES STANDARD PLAN A24E  
DATED MAY 20, 2011 - PAGE 17 OF THE STANDARD PLANS BOOK DATED 2010.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	50	67.6/72.9	238	246

*Roberta L. McLaughlin*  
 REGISTERED CIVIL ENGINEER  
 July 20, 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.

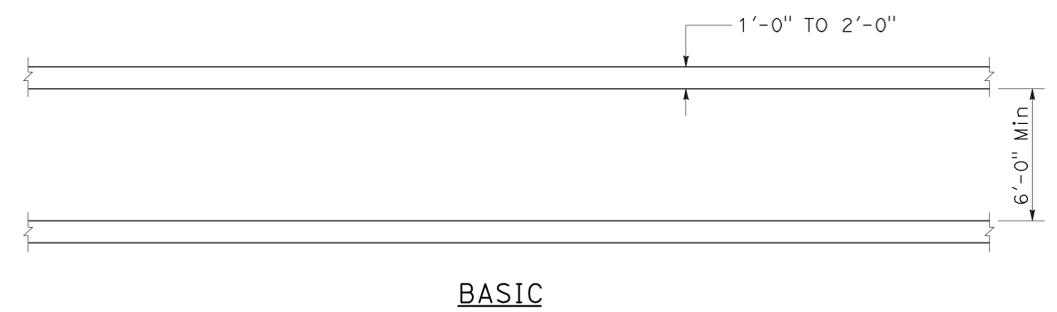
TO ACCOMPANY PLANS DATED 2-25-13



**HIGHER VISIBILITY CROSSWALKS**

**NOTES:**

1. Spaces between markings should be placed in wheel tracks of each lane.
2. Spacings not to exceed 2.5 times width of longitudinal line.
3. All crosswalk markings must be white except for those near schools must be yellow.



**BASIC**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**PAVEMENT MARKINGS  
CROSSWALKS**

NO SCALE  
RSP A24F DATED JULY 20, 2012 SUPPLEMENTS THE  
STANDARD PLANS BOOK DATED 2010.

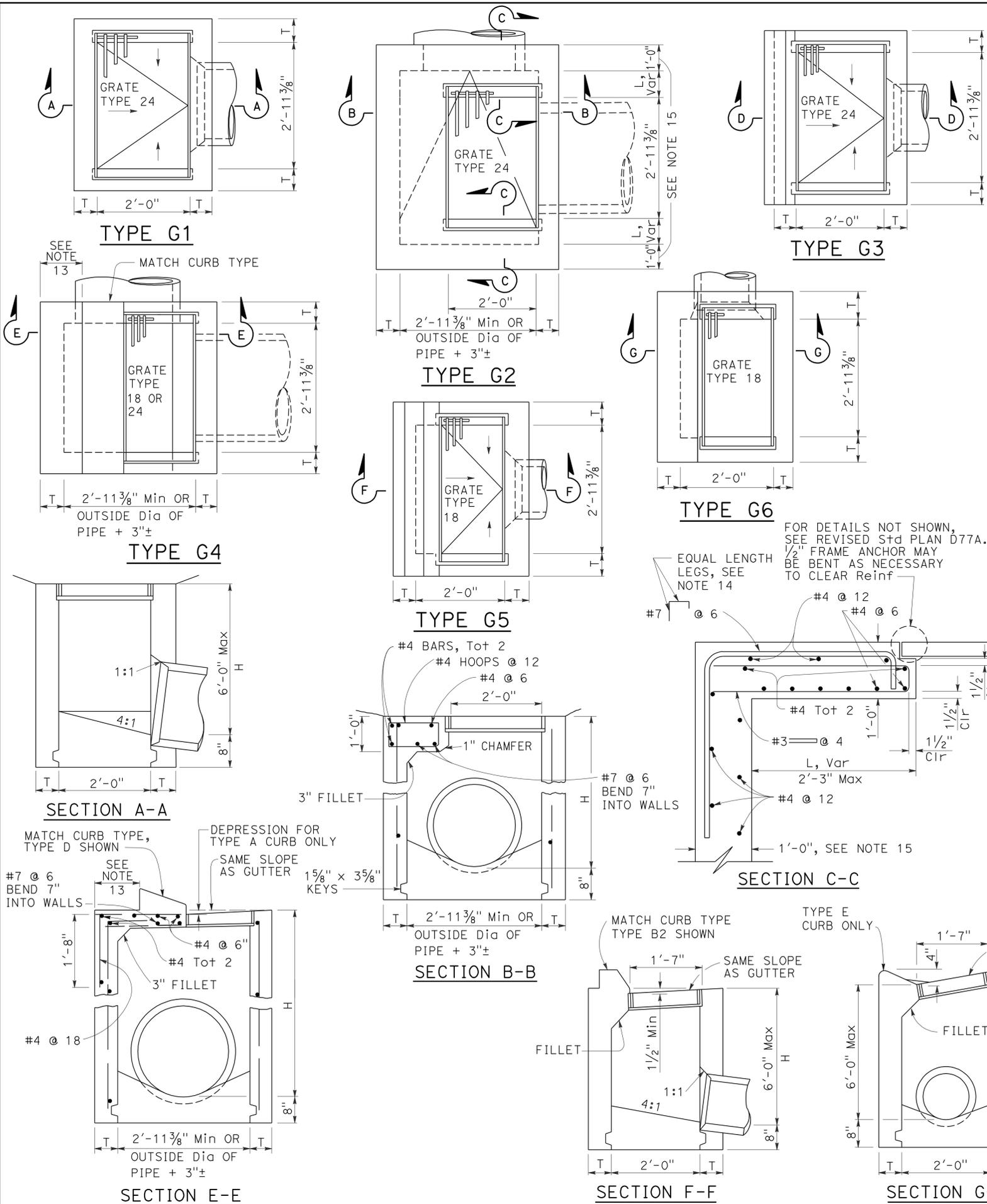
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	50	67.6/72.9	239	246

Glenn DeCou  
REGISTERED CIVIL ENGINEER

October 19, 2012  
PLANS APPROVAL DATE

Glenn DeCou  
No. C34547  
Exp. 9-30-13  
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:**

- "H" is the difference in elevation between the outlet pipe flow line and the normal gutter grade line undepressed.
- For "T" wall thickness, see Table A below.
- Wall reinforcing not required when "H" is 8'-0" or less and the unsupported width or length is 7'-0" or less. Walls exceeding these limits shall be reinforced with #4 bars @ 1'-6" ± centers placed 1/2" clear to inside of box unless otherwise shown.
- Inlet bottom reinforcing not required. See Standard Plan D74C for alternative reinforced bottom and alternative half round bottom.
- Steps-None required where "H" is less than 2'-6". Where "H" is 2'-6" or more, install steps with lowest rung 1'-0" above the floor and highest rung not more than 6" below top of inlet. The distance between steps shall not exceed 1'-0" and shall be uniform throughout the length of the wall. Place steps in the wall without an opening. Steps inserts may be substituted for the bar steps. Step inserts shall comply with State Industrial Safety requirements. See Standard Plan D74C for step details.
- Details shown apply to both metal and concrete pipe.
- Pipe(s) can be placed in any wall.
- Curb section shall match adjacent curb.
- Basin floors shall have wood trowel finish and a minimum slope of 12:3 from all directions toward outlet pipe.
- Set inlet so that grate bars are parallel to direction of principal surface flow.
- See Revised Standard Plans D77A and D77B for grate and frame details and weights of miscellaneous iron and steel.
- See Standard Plan D78A for gutter depression details.
- This dimension will vary with different grates, curbs types, box width and wall thickness.
- Bar may be rotated as necessary to clear opening. Where "L" is 6" or less, bar may be omitted.
- Where "L" is 6" or less, wall thickness shall be as shown in Table A.
- Cast-in-place inlets to be formed around all pipes/stubs intersecting the inlet, and concrete poured in one continuous operation. Precast inlets shall have mortared connections conforming to details for Type GCP Inlet shown on Standard Plan D75B. See Standard Specifications for mortar composition.

**TABLE A**

**CONCRETE QUANTITIES**

TYPE	H=3'-0" TO 8'-0" (T=6")		H=8'-1" TO 20'-0" (T=8")	
	H=3'-0" (CY)	ADDITIONAL PCC PER FOOT (CY)	H=8'-1" (CY)	ADDITIONAL PCC PER FOOT (CY)
G-1	0.95	0.220	See Note A	SEE NOTE A
G-2*	1.31	0.255	3.50	0.357
G-3	1.03	0.220	See Note A	SEE NOTE A
G-4* (TYPE 24)	1.27	0.255	3.48	0.357
G-4* (TYPE 18)	1.30	0.255	3.50	0.357
G-5	1.02	0.220	SEE NOTE A	SEE NOTE A
G-6	1.04	0.220	SEE NOTE A	SEE NOTE A

TABLE BASED ON 8" FLOOR SLAB. NO DEDUCTIONS ARE TO BE MADE TO THESE QUANTITIES BECAUSE OF PIPE OPENINGS, DIFFERENT FLOOR ALTERNATIVES OR DIFFERENT CURB TYPES. \* QUANTITIES FOR TYPE G-2 AND G-4 INLETS BASED ON THE MINIMUM INTERIOR DIMENSIONS.

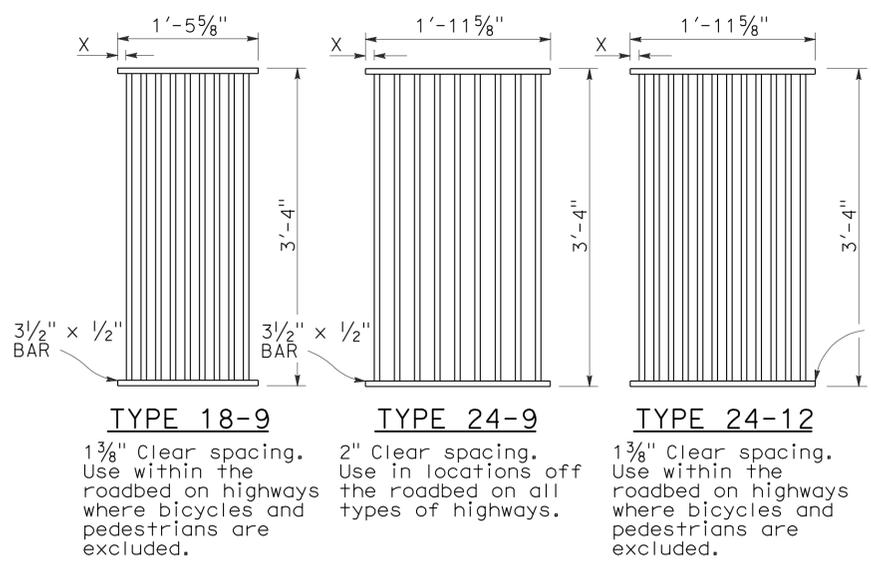
**NOTE A:**  
Maximum allowable height 6'-0".

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**DRAINAGE INLETS**  
NO SCALE

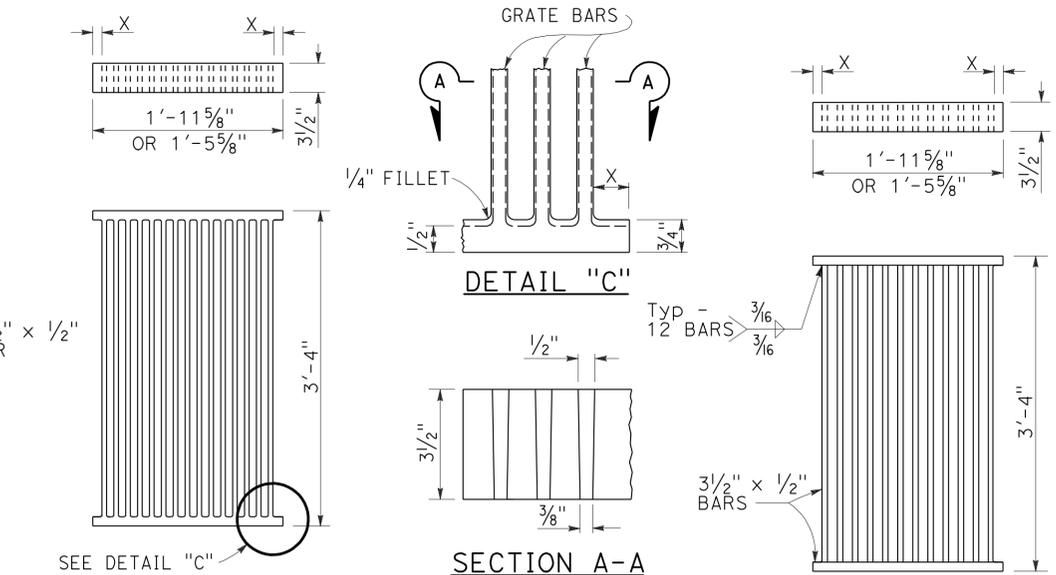
RSP D73 DATED OCTOBER 19, 2012 SUPERSEDES STANDARD PLAN D73 DATED MAY 20, 2011 - PAGE 156 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP D73**

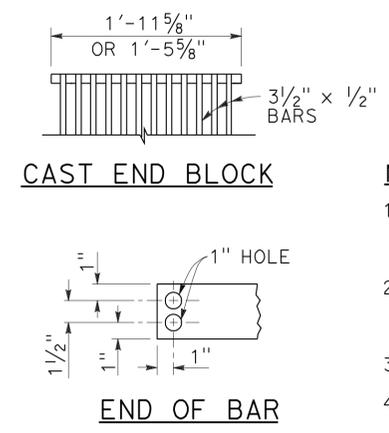
2010 REVISED STANDARD PLAN RSP D73



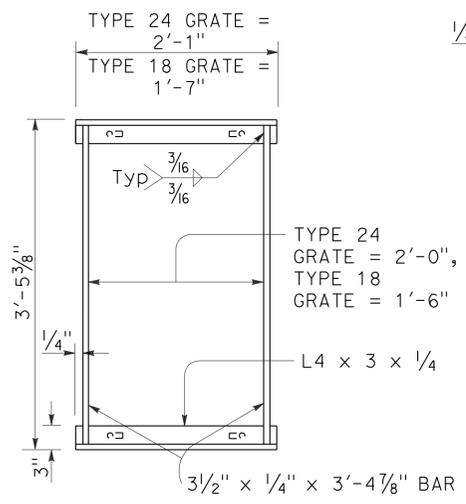
**RECTANGULAR GRATE DETAILS**  
(See table below)



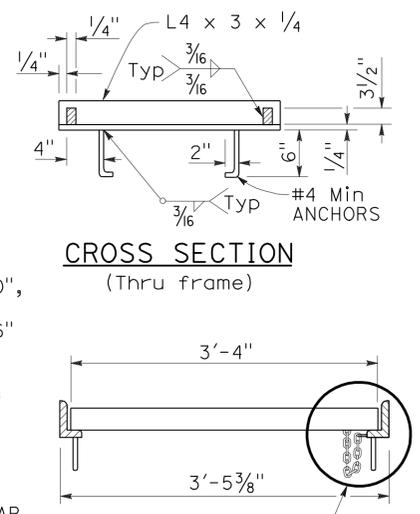
**ALTERNATIVE CAST DUCTILE IRON GRATE OR CAST CARBON STEEL GRATE**



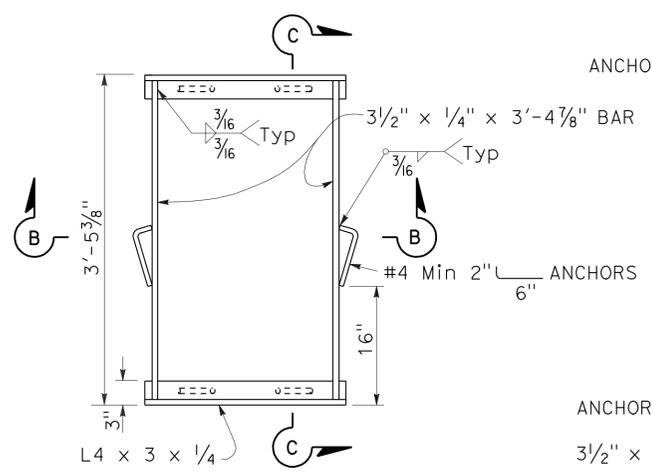
**ALTERNATIVE WELDED GRATE**



**TYPICAL FRAME**

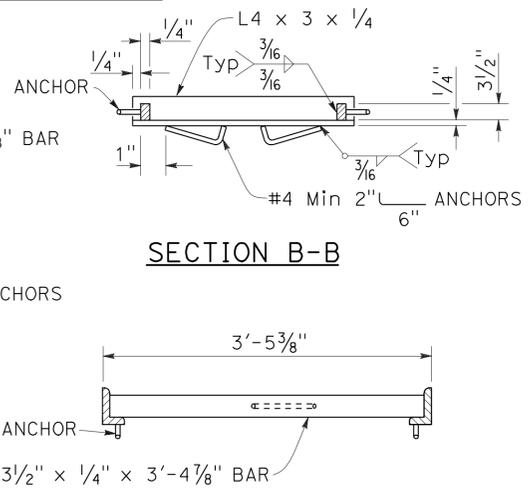


**CROSS SECTION (Thru frame)**  
**LONGITUDINAL SECTION (Thru frame and grate)**



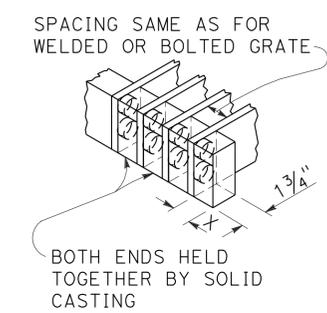
**TYPICAL FRAME**

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



**SECTION B-B**

**SECTION C-C**



**ALTERNATIVE CAST DUCTILE IRON OR CAST CARBON STEEL END BLOCK GRATE**

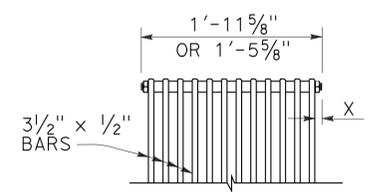
**RECTANGULAR FRAME DETAILS**  
(For all rectangular grates)

**GRATE BAR SPACING TABLE**

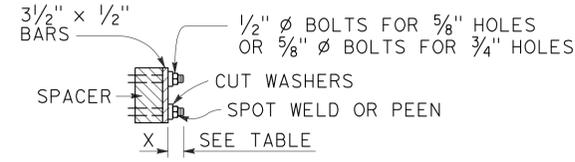
TYPE	NO. OF BARS	CLEAR BAR SPACING	X
18-9	9	1 3/8"	1 1/16"
24-9	9	2"	1 9/16"
24-12	12	1 3/8"	1 1/4"

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

INLET TYPE	GRATE TYPE	NO. OF GRATES	WEIGHT LB
GDO	24-12	2	634
GOL-7	24-12	1	326
GOL-10	24-12	1	326
G0,G1,G2,G3,G4 (TYPE 24)	24-9	1	263
	24-12	1	326
G4 (TYPE 18),G5,G6	18-9	1	249
GT1	18-9	2	498
GT2	18-9	2	498
GT3	24-12	2	652
GT4	24-12	2	652
TRASH RACK GRATE CHAIN			22
			3

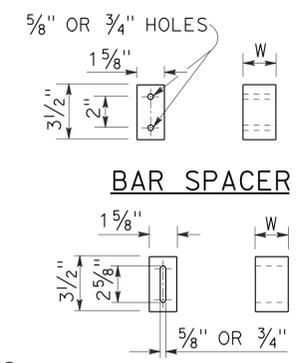


**BOLTED END BLOCK**



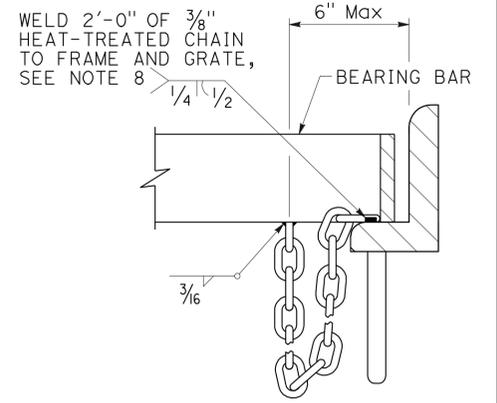
**BOLTING DETAIL**

**ALTERNATIVE BOLTED GRATE**



**BAR SPACER**

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



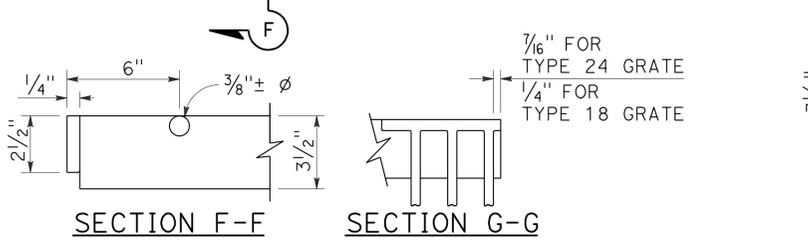
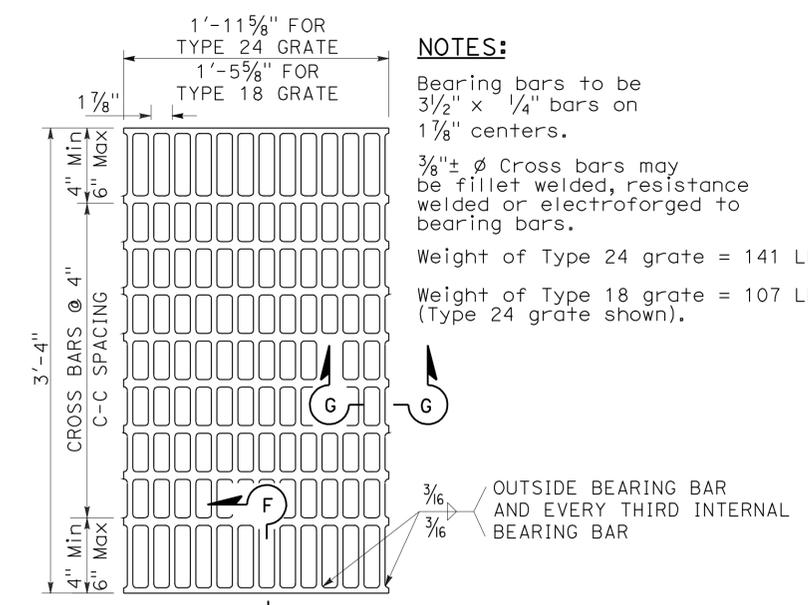
**DETAIL "D"**  
(Steel grates only)

**GRATE DETAILS**

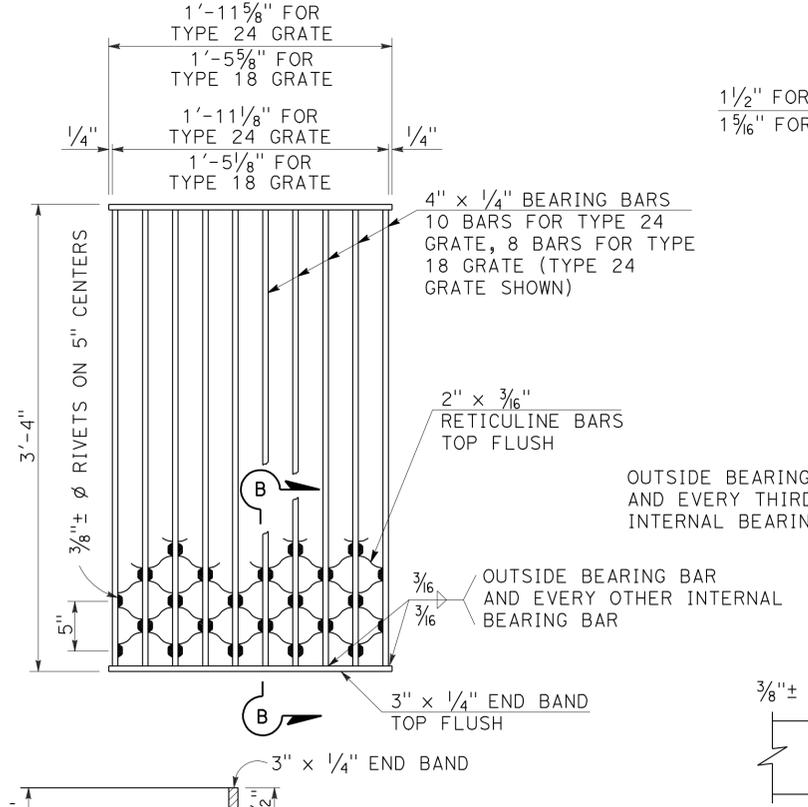
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
NO SCALE  
RSP D77A DATED JULY 20, 2012 SUPERSEDES STANDARD PLAN D77A  
DATED MAY 20, 2011 - PAGE 164 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP D77A

**BASIS FOR MISC IRON & STEEL FINAL PAY WEIGHTS FOR DRAINAGE INLETS**  
(See Note 7)

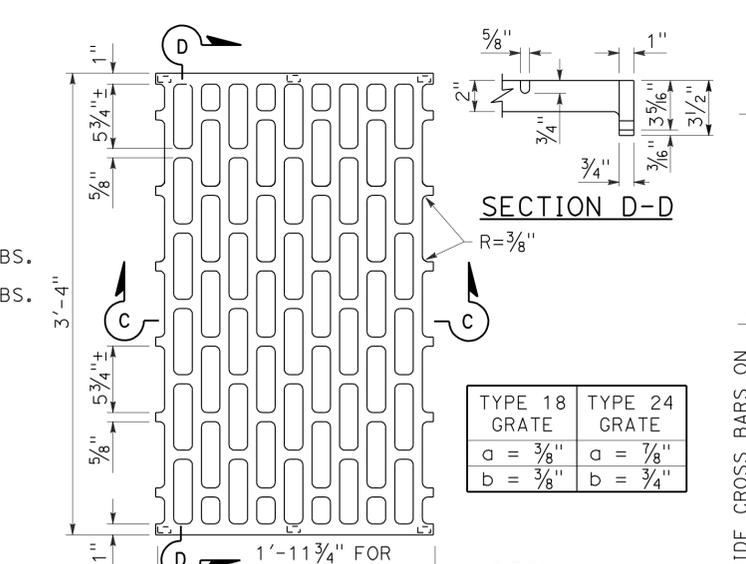


**TYPE 18-10 AND 24-13 GRATE**  
(Welded Steel)



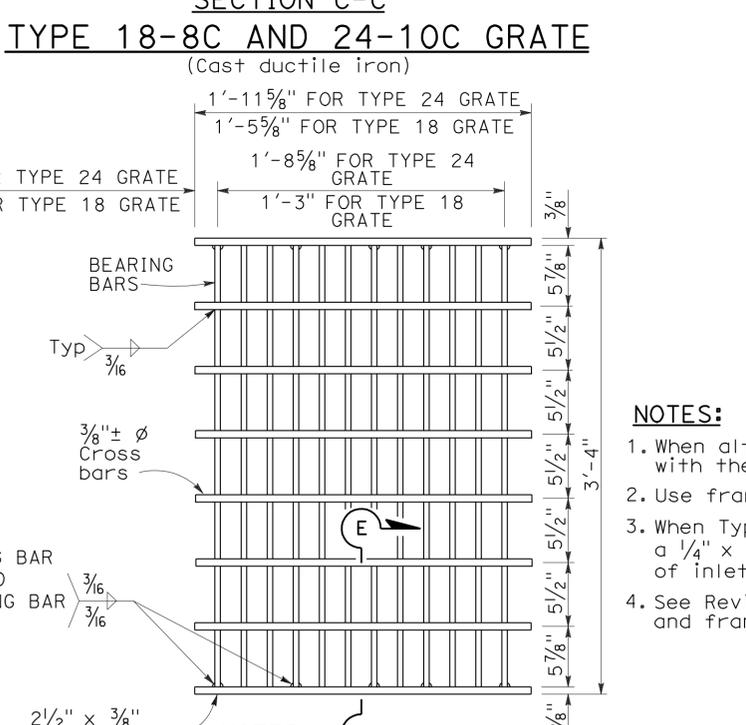
**SECTION B-B**  
**TYPE 18-8S AND 24-10S GRATE**  
(Welded Steel) Reticuline type

**NOTES:**  
Weight of Type 24 grate = 182 LBS.  
Weight of Type 18 grate = 145 LBS.



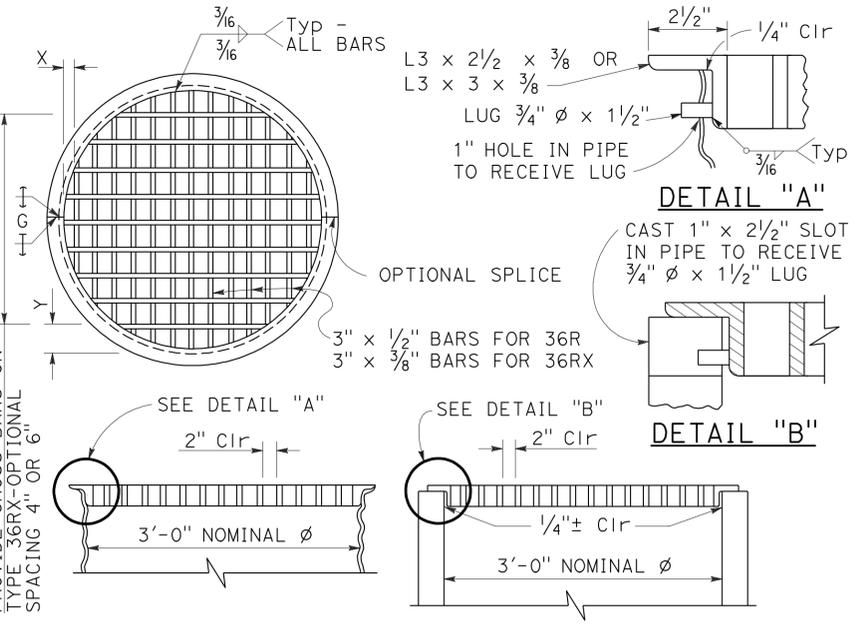
**SECTION C-C**  
**TYPE 18-8C AND 24-10C GRATE**  
(Cast ductile iron)

**NOTES:**  
Weight of Type 24 grate = 155 LBS.  
Weight of Type 18 grate = 130 LBS.  
On Type 18 grate omit center bearing point.



**SECTION E-E**  
**TYPE 18-9X AND 24-12X GRATE**  
(Welded Steel)

**NOTES:**  
Bearing bars to be 3/2" x 3/8" bars on 1 7/8" centers.  
12 Bars for Type 24 grate - 9 bars for Type 18 grates. (Type 24 grate shown).  
Weight of Type 24 grate = 192 LBS.  
Weight of Type 18 grate = 145 LBS.  
3/8" ± ∅ Cross bars may be fillet welded, resistance welded or electroforged to bearing bars.



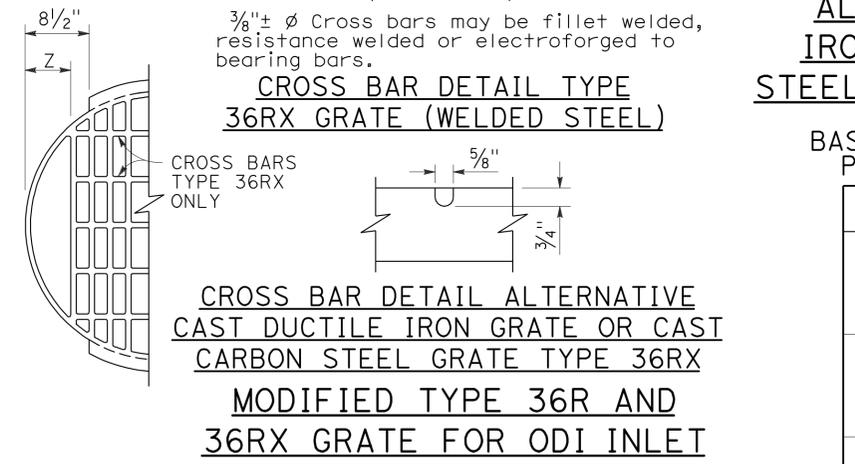
**TYPE 36R AND 36RX GRATE DETAILS**

**CROSS BAR DETAIL TYPE 36RX GRATE (WELDED STEEL)**

3/8" ± ∅ Cross bars may be fillet welded, resistance welded or electroforged to bearing bars.

3/8" ± ∅

1/8" Typ

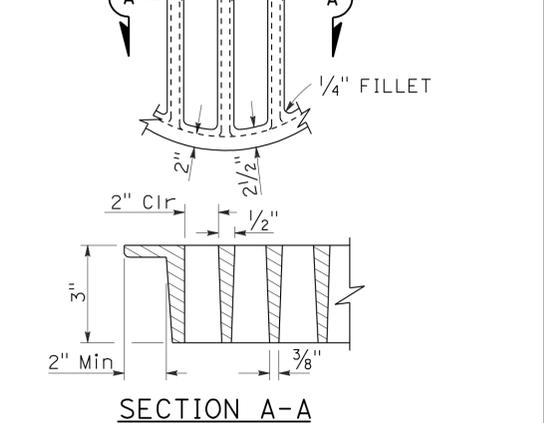


**NOTES:**  
1. When alternative grates are allowed - Final pay based on alternative with the lesser weight.  
2. Use frame shown on Standard Plan D74A, D74B or RSP D77A as appropriate.  
3. When Type 24-10S, 24-12X or 24-13 grates are used with GDO Inlets, a 1/4" x 3 1/2" x 3'-4 7/8" steel bar shall be welded across the center of inlet frame to separate the individual grates.  
4. See Revised Standard Plan RSP D77A for connecting chain to welded grate and frame. When chain is required, do not use cast ductile iron grate.

**GRATE BAR SPACING TABLE**

TYPE	NO. OF BARS	CLEAR BAR SPACING	X	Y		Z
				4" SPACING	6" SPACING	
36R	13	2"	2 1/8"	-	-	-
36RX (STEEL)	15	2"	9/16"	3 3/4"	5 3/4"	-
36RX (CAST)	13	2"	2 1/8"	3 3/4"	5 3/4"	-
36R Mod	12	2"	2 1/8"	-	-	5"
36RX Mod (STEEL)	13	2"	9/16"	3 3/4"	5 3/4"	5 1/16"
36RX Mod (CAST)	12	2"	2 1/8"	3 3/4"	5 3/4"	5"

TO ACCOMPANY PLANS DATED 2-25-13



**ALTERNATIVE CAST DUCTILE IRON GRATE OR CAST CARBON STEEL GRATE TYPE 36R AND 36RX**

BASIS FOR Misc IRON AND STEEL FINAL PAY WEIGHTS FOR DRAINAGE INLETS

INLET TYPE	GRATE TYPE	No. OF GRATES	WEIGHT LB
GDO (SEE NOTE 4)	24-10C	2	391
	24-10S	2	456
	24-12X	2	473
	24-13	2	374
G0, G0L, G1, G2, G3, G4 (TYPE 24)	24-10C	1	202
	24-10S	1	229
	24-12X	1	239
	24-13	1	188
G4 (TYPE 18) G5, G6	18-8S	1	187
	18-9X	1	187
GT1, GT2	18-8S	1	149
	18-8S	2	374
	18-9X	2	374
	18-10	2	298
GT3, GT4	24-10C	2	404
	24-10S	2	458
	24-12X	2	478
ODI	24-13	2	376
	36RX (Mod)	1	196
GMP, GCP, GCPI	36RX	1	215
ODI	36R (Mod)	1	220
GMP, GCP, GCPI	36R	1	236
TRASH RACK			22
GRATE CHAIN			3

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**BICYCLE TRAVERSABLE GRATE DETAILS**  
NO SCALE

RSP D77B DATED JULY 20, 2012 SUPERSEDES STANDARD PLAN D77B DATED MAY 20, 2011 - PAGE 165 OF THE STANDARD PLANS BOOK DATED 2010.

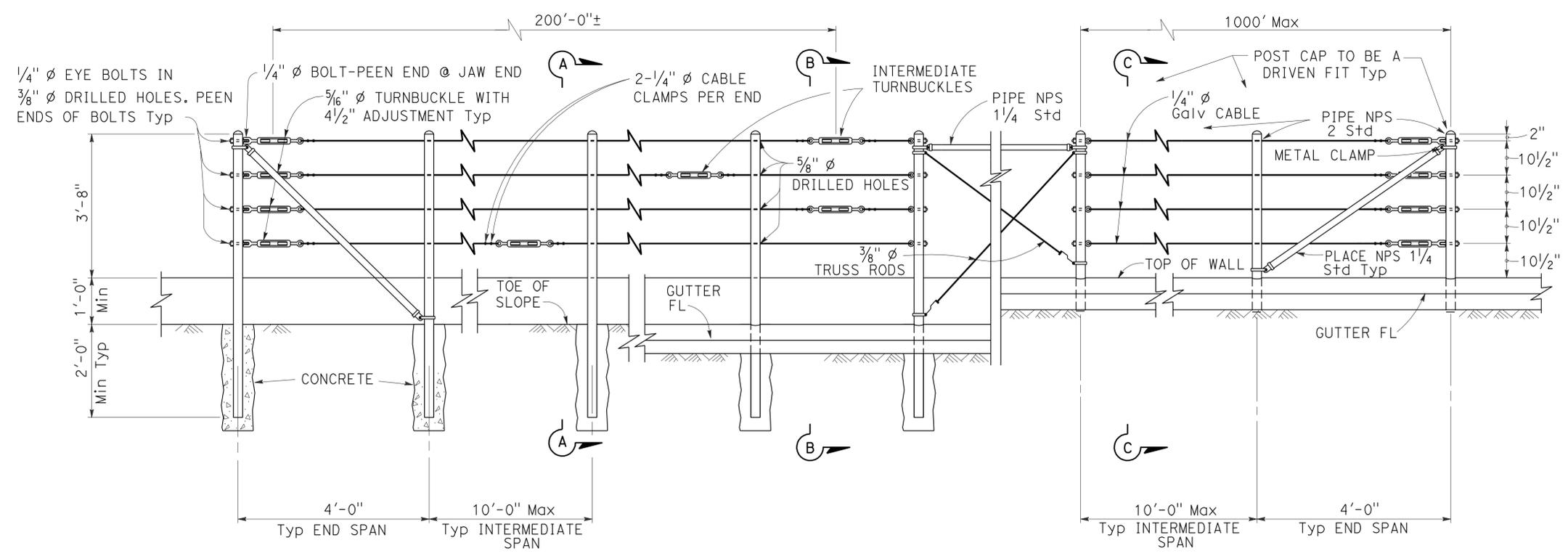
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	50	67.6/72.9	242	246

REGISTERED CIVIL ENGINEER

October 21, 2011  
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  
Tillat Satter  
No. C42892  
Exp. 3-31-12  
CIVIL  
STATE OF CALIFORNIA

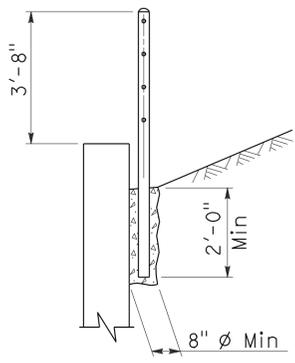


**EXISTING WALL (WITHOUT GUTTER)** Existing  
**RETAINING WALL (WITH GUTTER)** Existing  
**RETAINING WALL (WITH GUTTER)** New construction

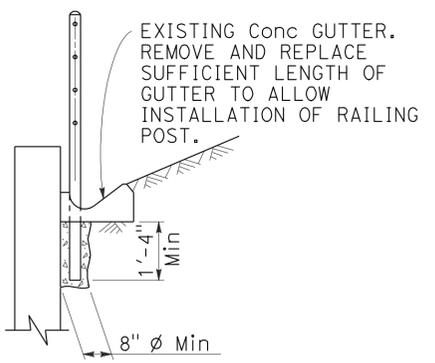
**ELEVATION**

**NOTES:**

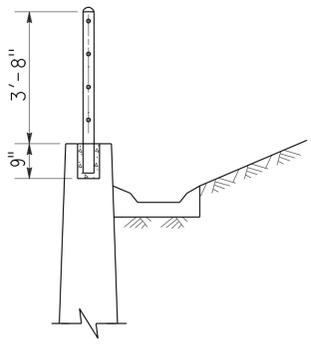
1. Maximum distance between turnbuckles shall be 200'-0"±.
2. Intermediate turnbuckles to be placed in adjacent spans.
3. Cable shall not be spliced between intermediate turnbuckles and end posts.
4. Posts to be vertical.
5. Alignment of holes in posts may vary to conform to slope of top of retaining wall.
6. The Contractor shall verify all dependent dimensions in the field before ordering or fabricating any material.
7. Line posts shall be braced horizontally and trussed diagonally in both directions at intervals not to exceed 1000'.
8. Post pockets to be centered in top of wall.
9. Typical end spans, braced in both directions, shall be constructed at changes in line where the angle of deflection is 15° or more.
10. Provide thimbles at all cable loops.



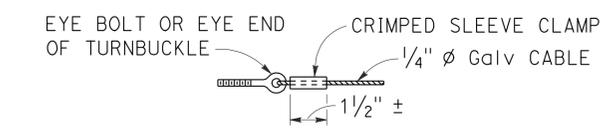
**SECTION A-A**  
Existing



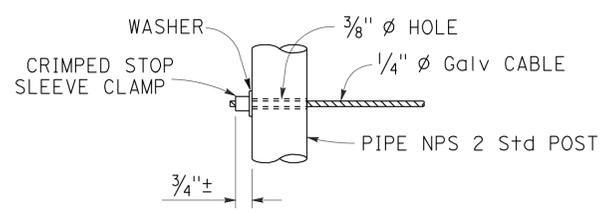
**SECTION B-B**  
Existing



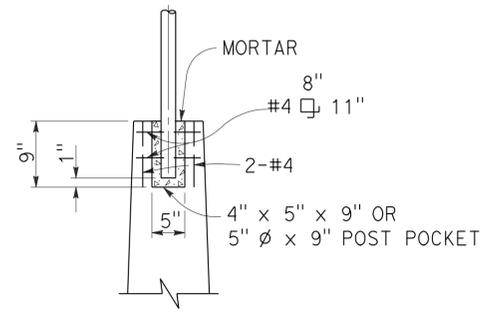
**SECTION C-C**  
New construction



**ALTERNATIVE CABLE CONNECTION**



**ALTERNATIVE DEAD END ANCHORAGE**



**POST POCKET**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**CABLE RAILING**

NO SCALE

RSP B11-47 DATED OCTOBER 21, 2011 SUPERSEDES STANDARD PLAN B11-47 DATED MAY 20, 2011 - PAGE 293 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP B11-47**

2010 REVISED STANDARD PLAN RSP B11-47

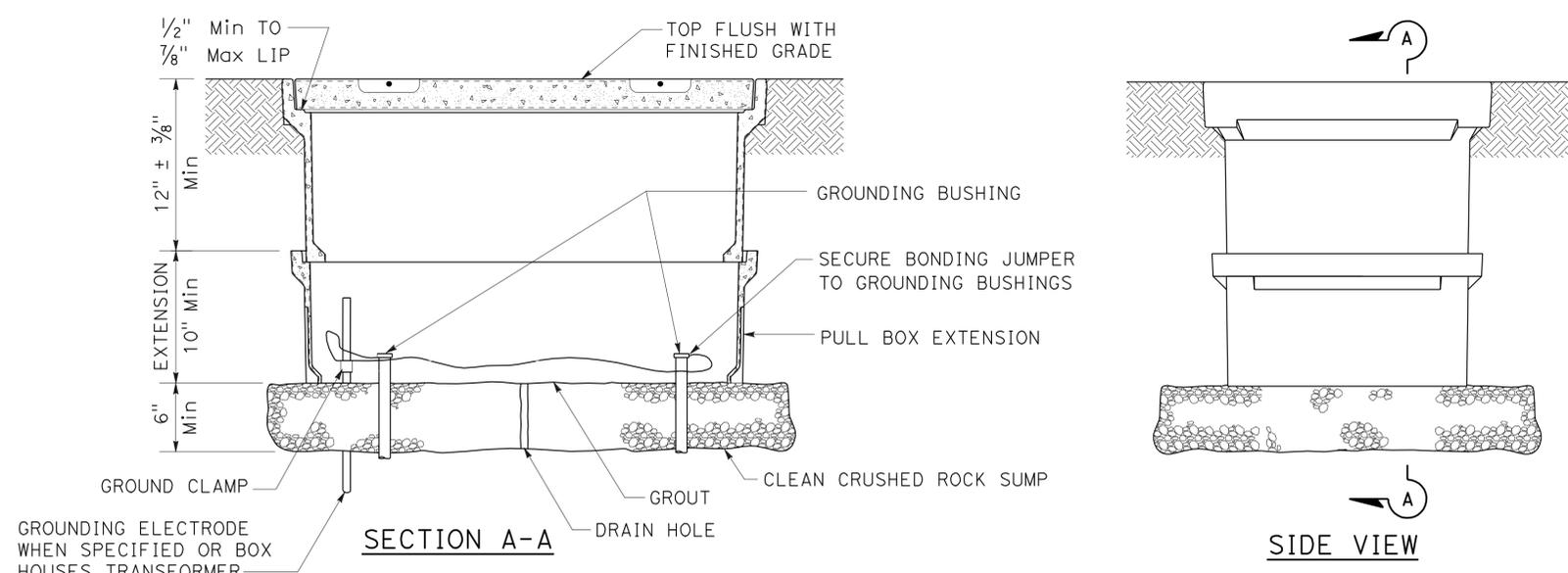
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	ED	50	67.6/72.9	243	246

Jeffrey G. McRae  
 REGISTERED ELECTRICAL ENGINEER  
 No. E14512  
 Exp. 6-30-12  
 ELECTRICAL  
 STATE OF CALIFORNIA

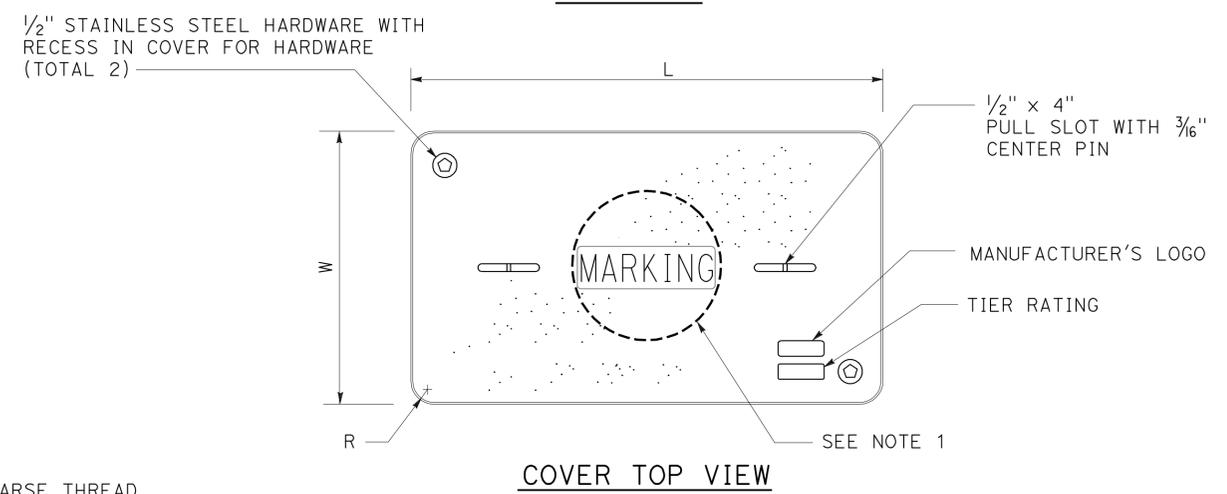
January 20, 2012  
 PLANS APPROVAL DATE

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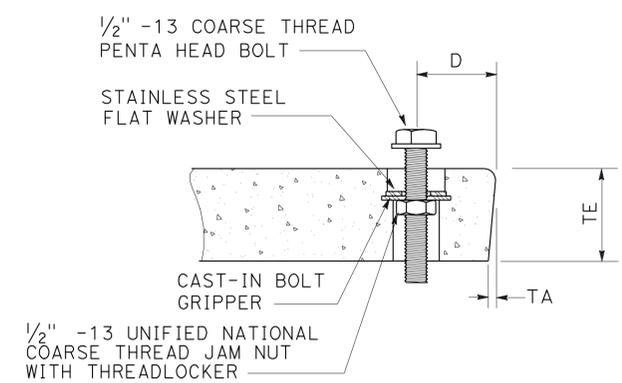
TO ACCOMPANY PLANS DATED 2-25-13



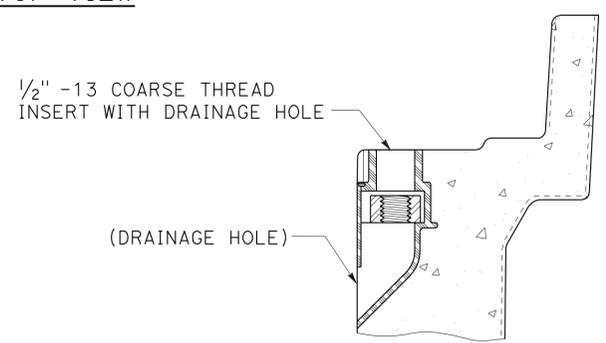
**INSTALLATION DETAILS**  
**DETAIL A**



**COVER TOP VIEW**



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



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

**NOTES ON PULL BOXES:**

1. Pull box covers must be marked as follows: "SERVICE" Service circuits between service point and service disconnect; "SPRINKLER-CONTROL" sprinkler control circuits, 50 V or less; "CALTRANS" on all pull boxes, except pull boxes marked "SPRINKLER-CONTROL"; and "TELEPHONE" Telephone service;
  - A) No. 3 1/2 pull box.
    - 1) "SIGNAL" - Traffic signal circuits with or without street or sign lighting circuits.
    - 2) "ST LIGHTING" - Street or sign lighting circuits where voltage is under 600 V.
  - B) No. 5, 6, 9 or 9A pull box.
    - 1) "TRAFFIC SIGNAL" - Traffic signal circuits with or without street or sign lighting circuits.
    - 2) "STREET LIGHTING" - Street or sign lighting circuits where voltage is under 600 V.
    - 3) "STREET LIGHTING-HIGH VOLTAGE" - Street or sign lighting circuits where voltage is above 600 V.
    - 4) "IRRIGATION" - Circuits to irrigation controller 120 V or more.
    - 5) "RAMP METER" - Ramp meter circuits.
    - 6) "COUNT STATION" - Count or speed monitor circuits.
    - 7) "COMMUNICATIONS" - Communication circuits.
    - 8) "TOS COMMUNICATIONS" - TOS communication line.
    - 9) "TOS POWER" - TOS power.
    - 10) "TDC POWER" - Telephone demarcation cabinet power.
    - 11) "CCTV" - Closed circuit television circuits.
    - 12) "TMS" - Traffic monitoring station circuits.
    - 13) "CMS" - Changeable message sign circuits.
    - 14) "HAR" - Highway advisory radio circuits.
2. The nominal dimensions of the opening in which the cover sets must be the same as the cover dimensions (L and W) plus 1/8" or greater.
3. Covers and boxes must be interchangeable with California Standard. When interchanged with a standard, the top surfaces must be flush within 1/8". Top outside radius of covers and pull boxes must have a 1/8" radius.
4. Pull box extension may be another pull box as long as the bottom edge of the pull box can fit into the cover opening.

**DIMENSION TABLE**

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

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

RSP ES-8A DATED JANUARY 20, 2012 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-8A

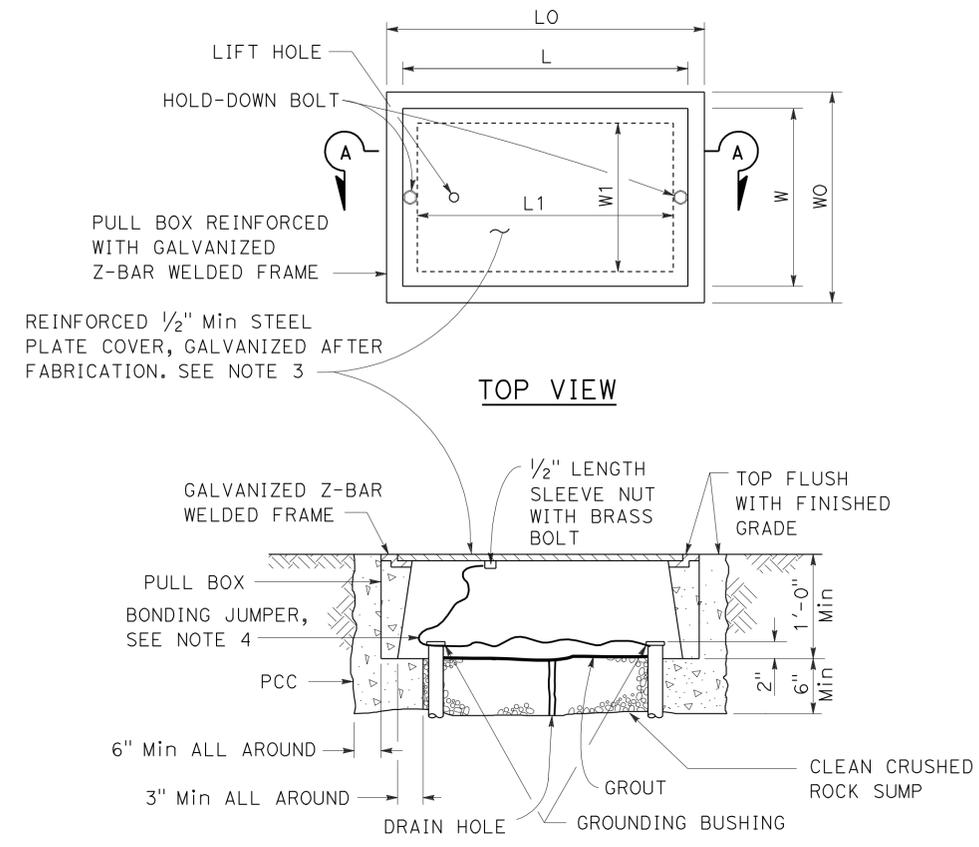
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
03	ED	50	67.6/72.9	244	246

Jeffrey G. McRae  
 REGISTERED ELECTRICAL ENGINEER  
 January 20, 2012  
 PLANS APPROVAL DATE

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TO ACCOMPANY PLANS DATED 2-25-13



**SECTION A-A**  
**No. 3 1/2(T), No. 5(T) AND**  
**No. 6(T) TRAFFIC PULL BOX**

**NOTES ON PULL BOXES:**

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

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

\* EXCLUDING CONDUIT WEB      \*\* TOP DIMENSION

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

RSP ES-8B DATED JANUARY 20, 2012 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

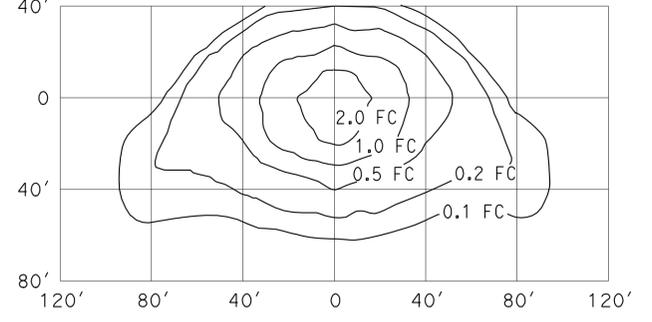
2010 REVISED STANDARD PLAN RSP ES-8B

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	50	67.6/72.9	245	246

*Jeffery G. McRae*  
 REGISTERED ELECTRICAL ENGINEER  
 July 20, 2012  
 PLANS APPROVAL DATE  
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TO ACCOMPANY PLANS DATED 2-25-13

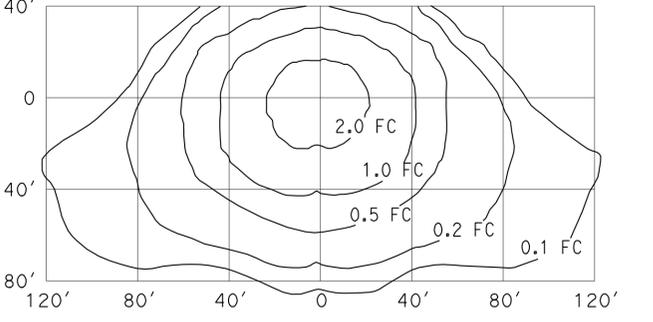
**ISOFOOTCANDLE CURVE - MINIMUM**



**TYPE III MEDIUM CUTOFF**

Cutoff Luminaire  
 34' Mounting Height  
 Lamp operated at 22,000 lm  
 200-W high pressure sodium lamp  
 ANSI Designation S66

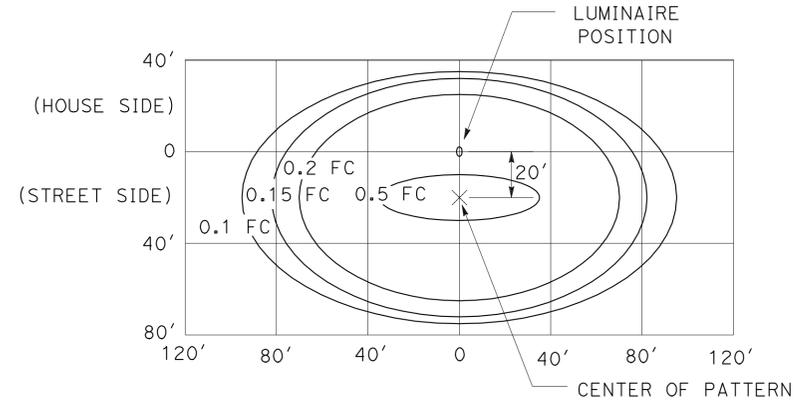
**ISOFOOTCANDLE CURVE - MINIMUM**



**TYPE III MEDIUM CUTOFF**

Cutoff Luminaire  
 40' Mounting Height  
 Lamp operated at 37,000 lm  
 310-W high pressure sodium lamp  
 ANSI Designation S67

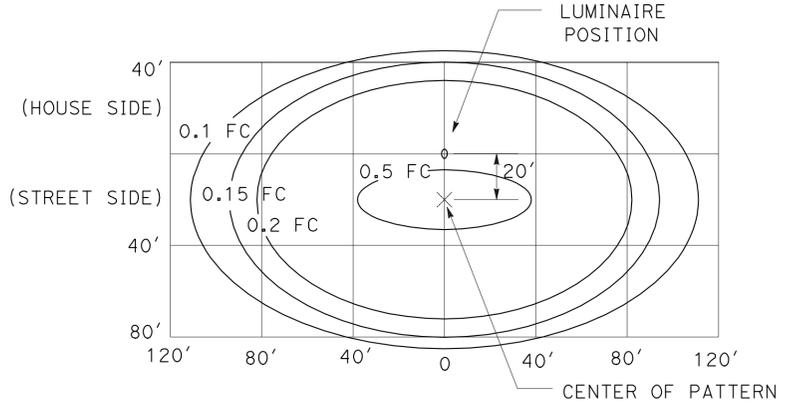
**ISOFOOTCANDLE CURVE - MINIMUM**



**LED LUMINAIRE ROADWAY 1**

200-W HPS Equivalent at 34' Mounting Height

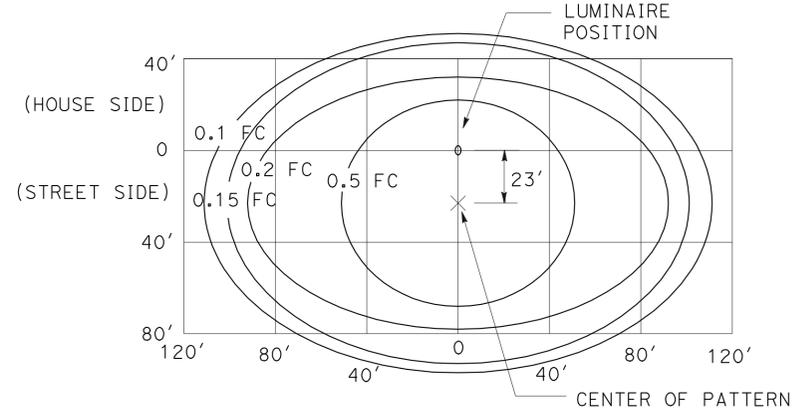
**ISOFOOTCANDLE CURVE - MINIMUM**



**LED LUMINAIRE ROADWAY 2**

310-W HPS Equivalent at 40' Mounting Height

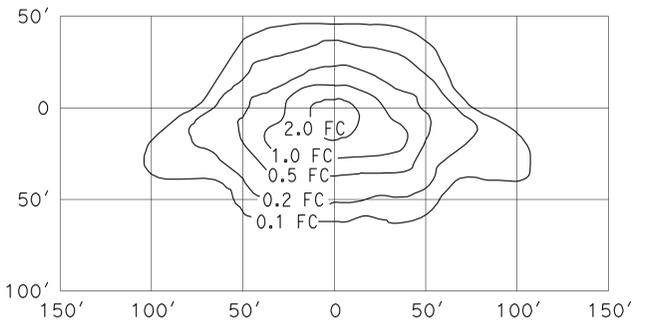
**ISOFOOTCANDLE CURVE - MINIMUM**



**LED LUMINAIRE ROADWAY 4**

400-W HPS Equivalent at 40' Mounting Height

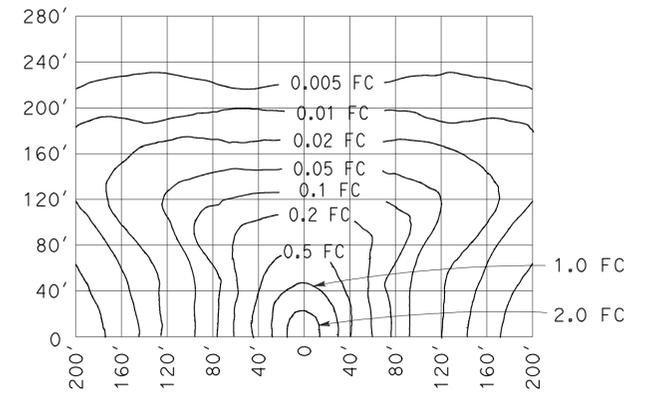
**ISOFOOTCANDLE CURVE - MINIMUM**



**TYPE III MEDIUM CUTOFF**

Cutoff Luminaire  
 30' Mounting Height  
 Lamp operated at 16,000 lm  
 150-W high pressure sodium lamp  
 ANSI Designation S55

**ISOFOOTCANDLE CURVE - MINIMUM**



**LOW PRESSURE SODIUM LUMINAIRE**

40' Mounting Height  
 Lamp operated at 33,000 lm  
 180-W low pressure sodium lamp

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS  
 (ISOFOOTCANDLE DIAGRAMS)**

NO SCALE

RSP ES-10A DATED JULY 20, 2012 SUPPLEMENTS THE  
 STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-10A

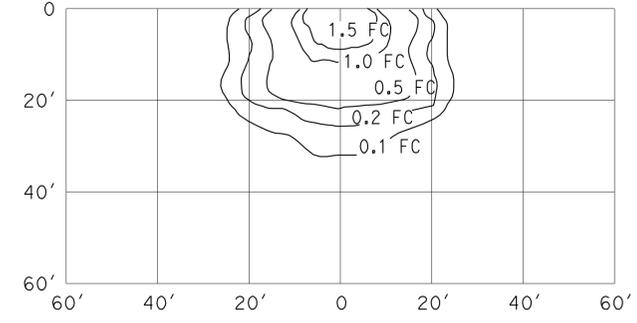
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
03	ED	50	67.6/72.9	246	246

*Jeffrey G. McRae*  
 REGISTERED ELECTRICAL ENGINEER  
 July 20, 2012  
 PLANS APPROVAL DATE  
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REGISTERED PROFESSIONAL ENGINEER  
 Jeffrey G. McRae  
 No. E14512  
 Exp. 6-30-14  
 ELECTRICAL  
 STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 2-25-13

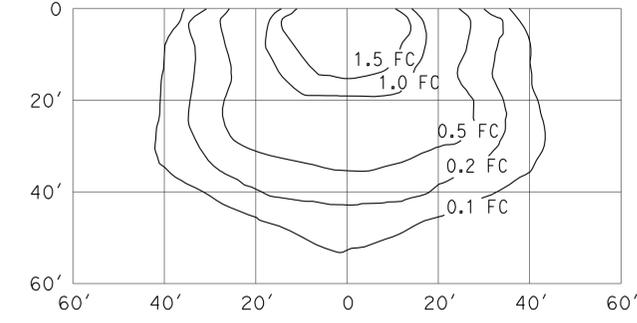
**ISOFOOTCANDLE CURVE - MINIMUM**



**WALL LUMINAIRE**

15' Mounting Height  
 Lamp operated at 5,800 lm  
 70-W high pressure sodium lamp  
 ANSI Designation S62

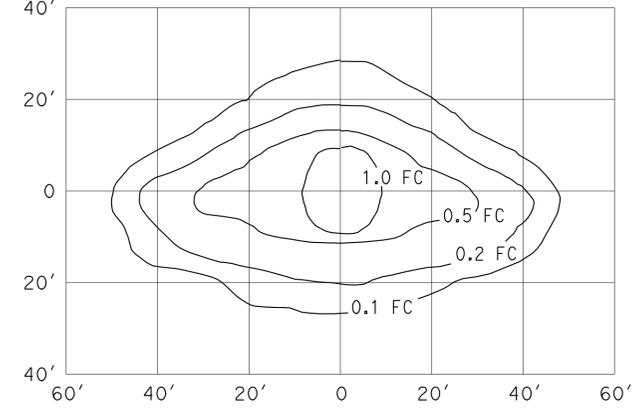
**ISOFOOTCANDLE CURVE - MINIMUM**



**WALL LUMINAIRE**

15' Mounting Height  
 Lamp operated at 9,500 lm  
 100-W high pressure sodium lamp  
 ANSI Designation S54

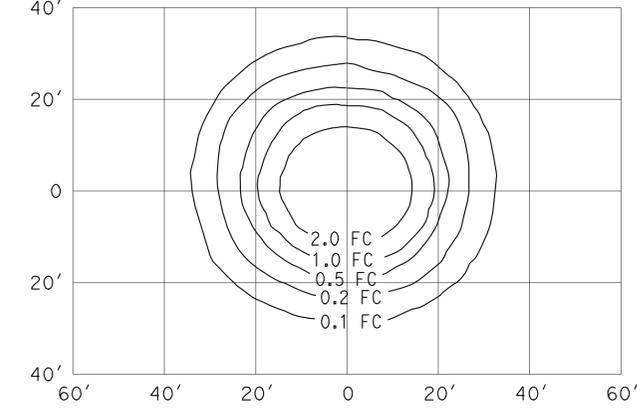
**ISOFOOTCANDLE CURVE - MINIMUM**



**PENDANT SOFFIT LUMINAIRE  
 TYPE III SHORT**

17' Mounting Height  
 Lamp operated at 5,800 lm  
 70-W high pressure sodium lamp  
 ANSI Designation S62

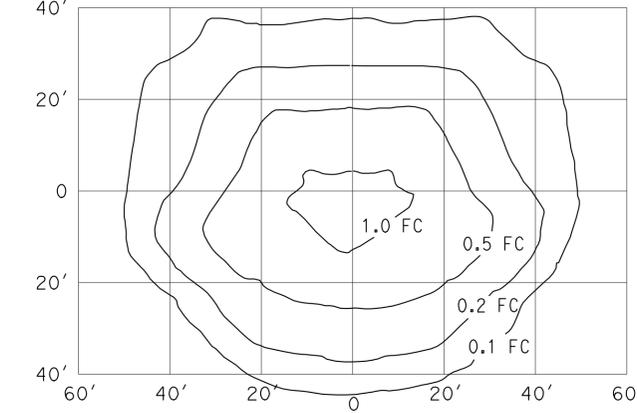
**ISOFOOTCANDLE CURVE - MINIMUM**



**PENDANT SOFFIT LUMINAIRE**

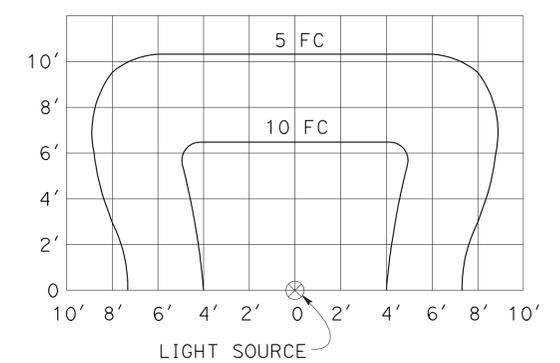
17' Mounting Height  
 Lamp operated at 5,800 lm  
 70-W high pressure sodium lamp  
 ANSI Designation S62

**ISOFOOTCANDLE CURVE - MINIMUM**



**FLUSH SOFFIT LUMINAIRE**

17' Mounting Height  
 Lamp operated at 5,800 lm  
 70-W high pressure sodium lamp  
 ANSI Designation S62



**SIGN LIGHTING FIXTURE  
 ISOFOOTCANDLE DIAGRAM**

**NOTES:**

- Curves represent the minimum footcandle (FC) of initial illumination on a 10'-0" x 20'-0" panel.
- The FC shown are with the fixture attached to the light fixture mounting channel which places the center of the source 4'-8" in front of panel and 1'-0" below the bottom edge.
- Applicable lamp: 85-W fluorescent phosphor coated induction lamp.

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS  
 (ISOFOOTCANDLE DIAGRAMS)**

NO SCALE

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 STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-10B