

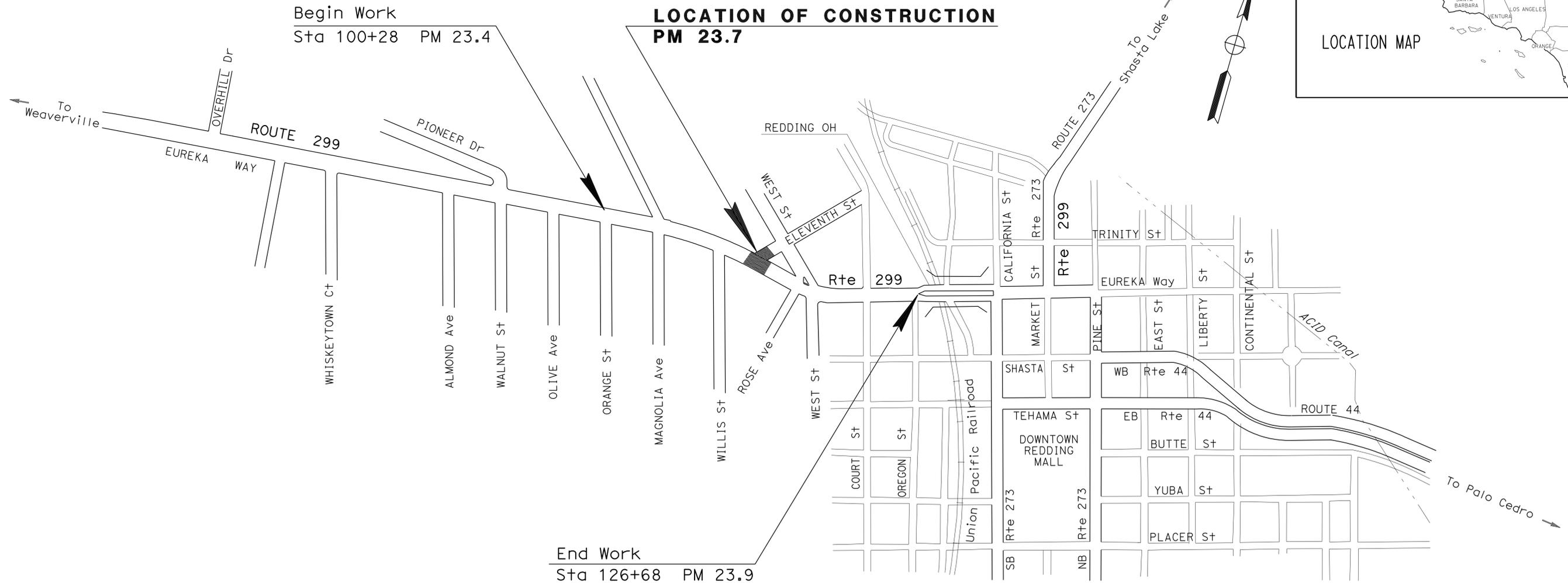
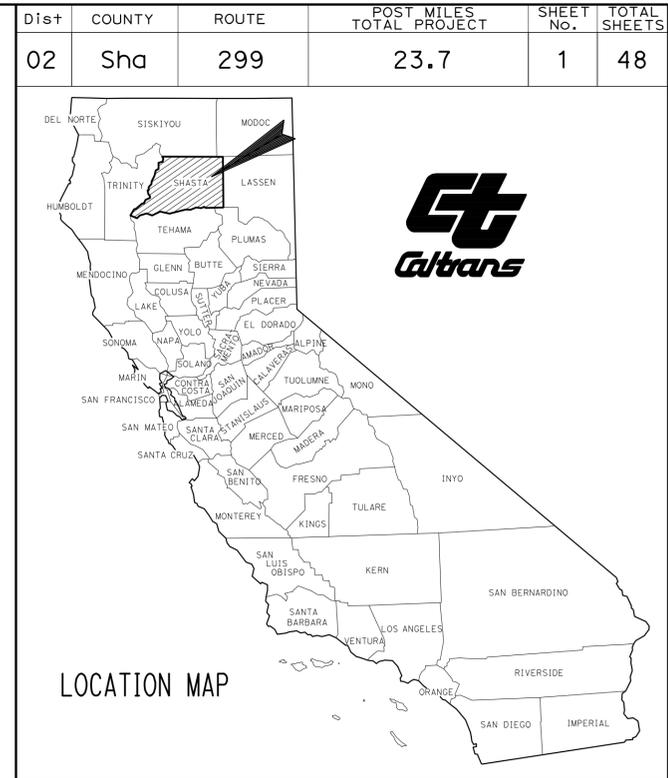
INDEX OF PLANS

| SHEET No. | DESCRIPTION                                       |
|-----------|---|
| 1         | TITLE AND LOCATION MAP                            |
| 2         | LAYOUTS   |
| 3-7       | CONSTRUCTION DETAILS                              |
| 8-9       | UTILITY PLANS                                     |
| 10        | CONSTRUCTION AREA SIGNS                           |
| 11        | DETOUR PLAN                                       |
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| 14-16     | SIGN PLANS, DETAILS AND QUANTITIES                |
| 17        | SUMMARY OF QUANTITIES                             |
| 18-26     | ELECTRICAL PLANS                                  |
| 27-48     | REVISED AND NEW STANDARD PLANS                    |

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

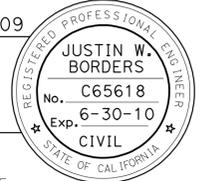
STATE OF CALIFORNIA **ACHSNHG-P299(159)E**  
**DEPARTMENT OF TRANSPORTATION**  
**PROJECT PLANS FOR CONSTRUCTION ON**  
**STATE HIGHWAY**  
**IN SHASTA COUNTY IN REDDING**  
**AT ELEVENTH STREET**

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006



PROJECT MANAGER  
**CHRIS HARVEY**  
 DESIGN ENGINEER  
**AL TRUJILLO**

*Justin W. Borders* 10-14-09  
 PROJECT ENGINEER DATE  
 REGISTERED CIVIL ENGINEER  
**November 16, 2009**  
 PLANS APPROVAL DATE  
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.



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

NO SCALE



USERNAME => trmikes1  
 DGN FILE => 21e480ab001.dgn

CONTRACT No. **02-1E4804**



| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|------|--------|-------|--------------------------|-----------|--------------|
| 02   | Sha    | 299   | 23.7                     | 3         | 48           |

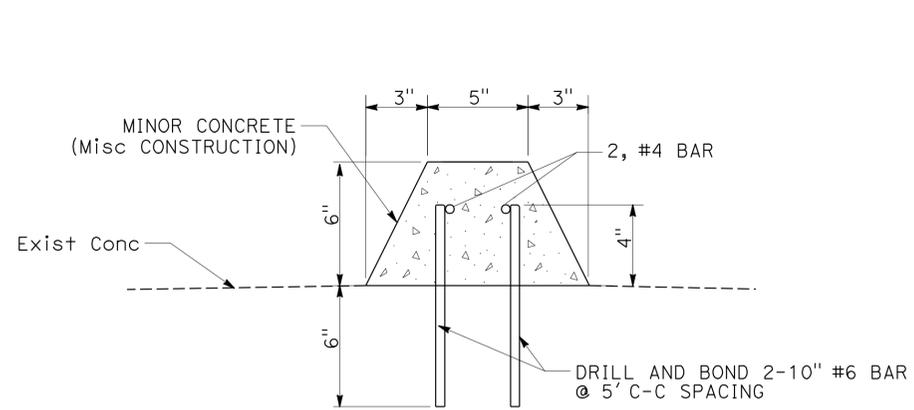
  

|   |  |
|---|--|
| <i>Justin W. Borders</i> 10-14-09<br>REGISTERED CIVIL ENGINEER DATE |  |
| 11-16-09<br>PLANS APPROVAL DATE                                     |  |

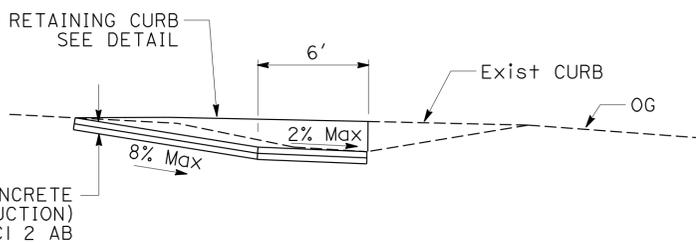
|  |
|--|
| REGISTERED PROFESSIONAL ENGINEER<br><b>JUSTIN W. BORDERS</b><br>No. C65618<br>Exp. 6-30-10<br>CIVIL<br>STATE OF CALIFORNIA |
|--|

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.

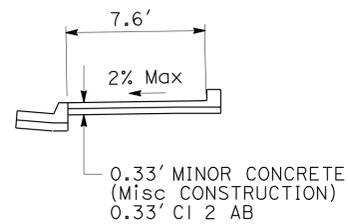


**CONCRETE CURB DETAIL**  
"A1" 109+58 TO 110+39

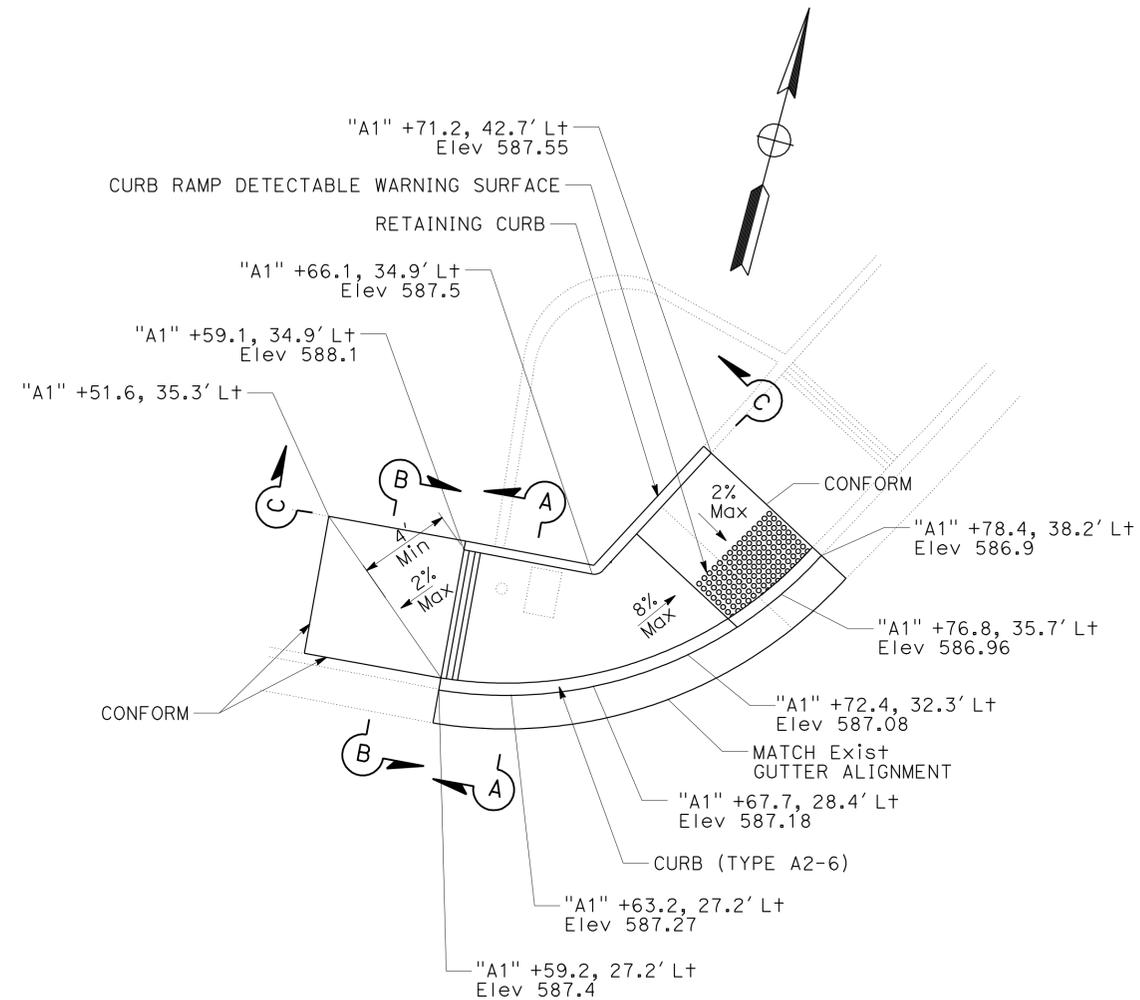
**LEGEND**  
 RECONSTRUCT ISLAND



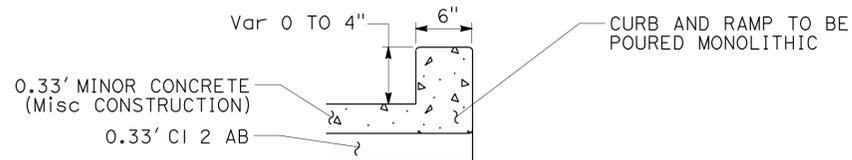
**SECTION C-C**



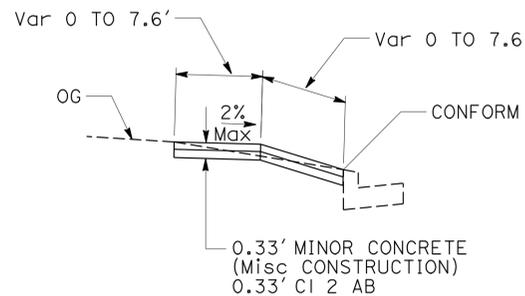
**SECTION A-A**



**PLAN RAMP A DETAIL**  
CASE C



**RETAINING CURB DETAIL**



**SECTION B-B**

**CONSTRUCTION DETAILS**  
NO SCALE  
**C-1**

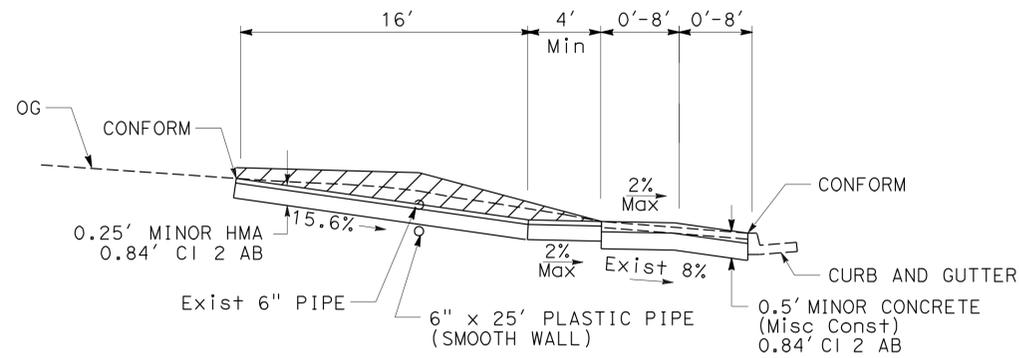
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 DESIGN  
 AL TRUJILLO  
 FUNCTIONAL SUPERVISOR  
 JUSTIN BORDERS  
 BILL LEHMAN  
 REVISOR  
 DATE REVISOR  
 DATE REVISOR

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|------|--------|-------|--------------------------|-----------|--------------|
| 02   | Sha    | 299   | 23.7                     | 4         | 48           |

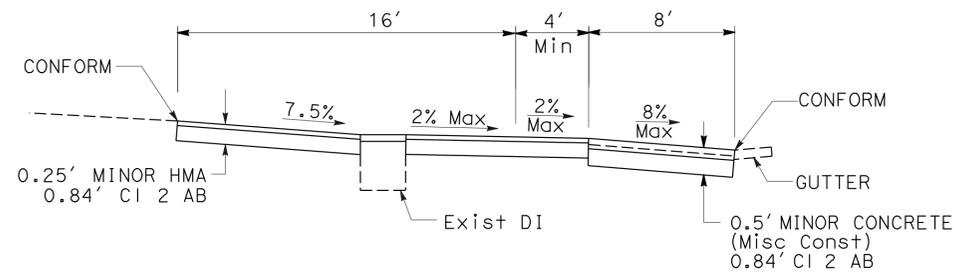
Justin W Borders 10-14-09  
 REGISTERED CIVIL ENGINEER DATE  
 11-16-09  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 JUSTIN W. BORDERS  
 No. C65618  
 Exp. 6-30-10  
 CIVIL  
 STATE OF CALIFORNIA

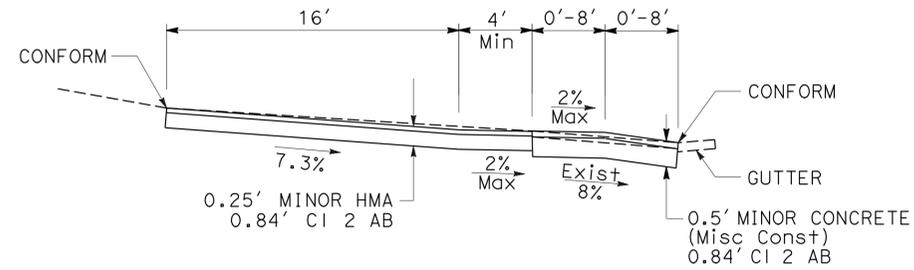
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.



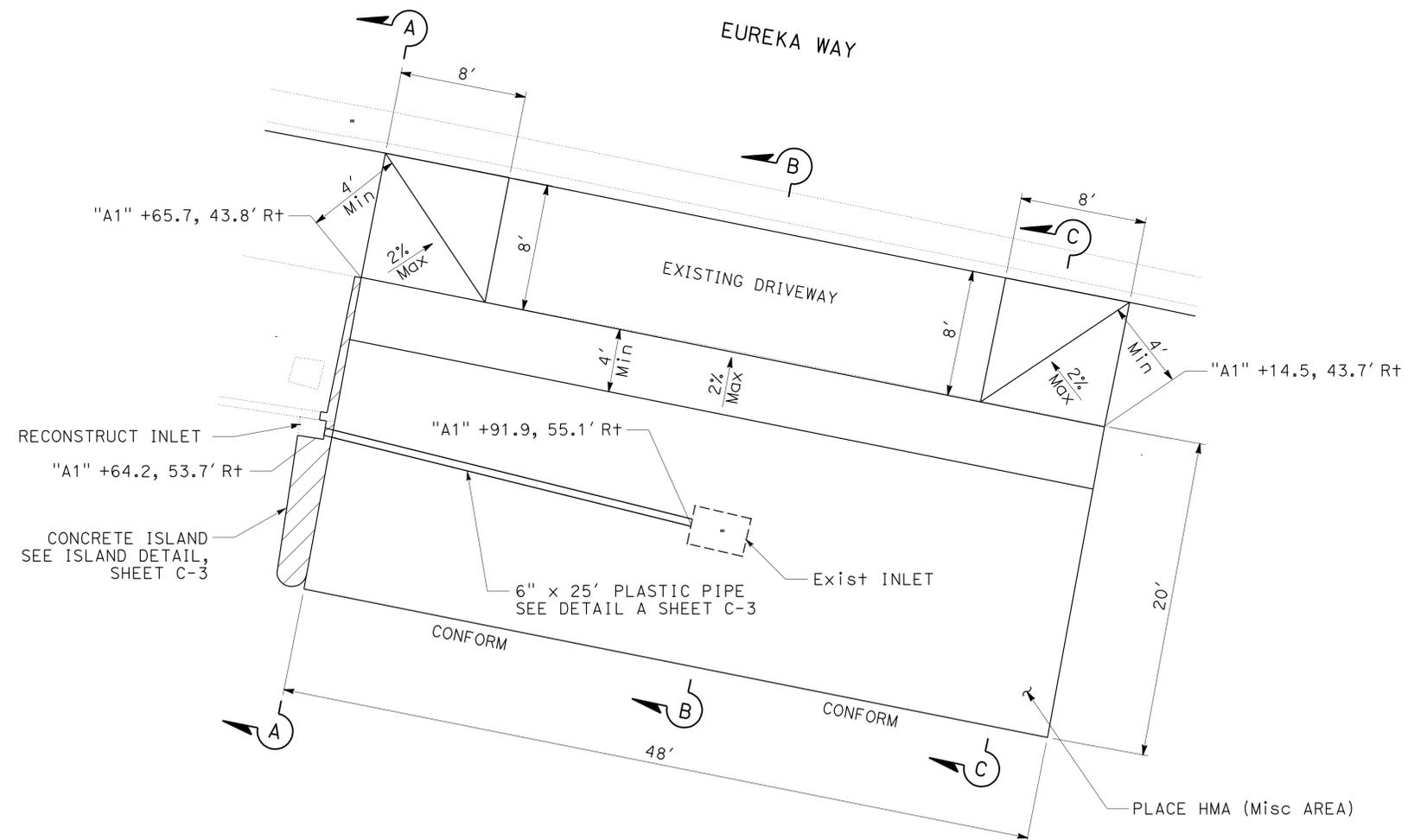
**SECTION A-A**



**SECTION B-B**



**SECTION C-C**



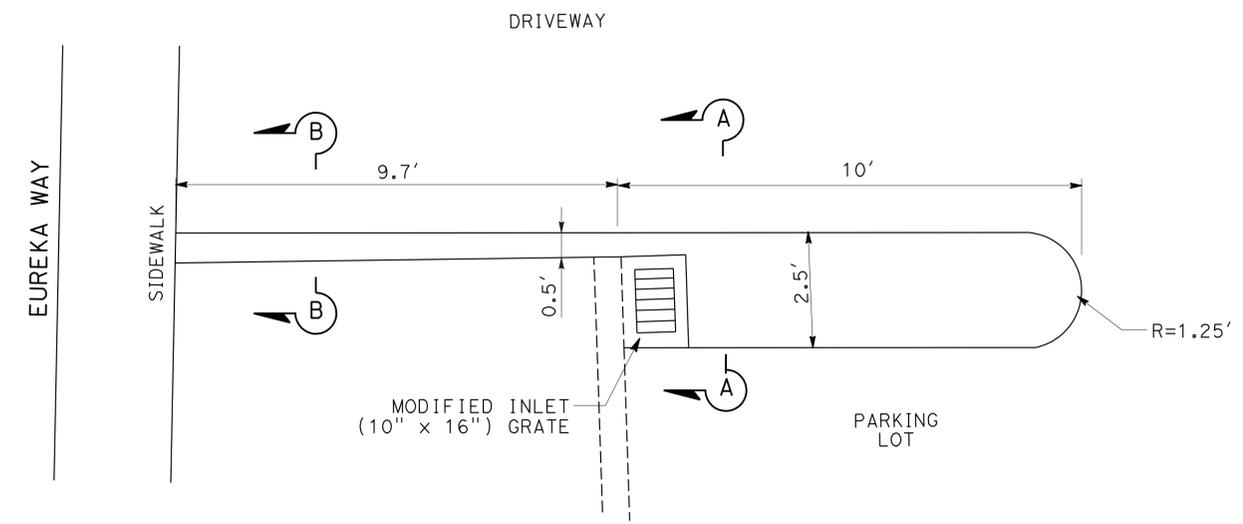
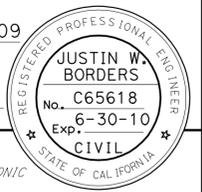
**DRIVEWAY AT BURGER KING**

**CONSTRUCTION DETAILS**  
NO SCALE

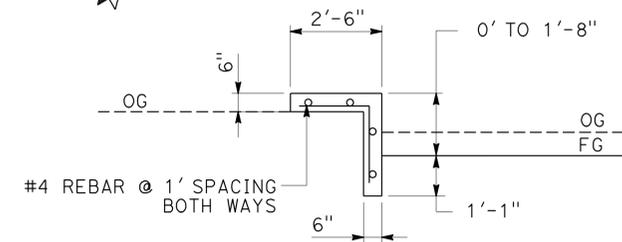
**C-2**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 Al Trujillo  
 DESIGN  
 BILL LEHMAN  
 JUSTIN BORDERS  
 REVISIONS: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48

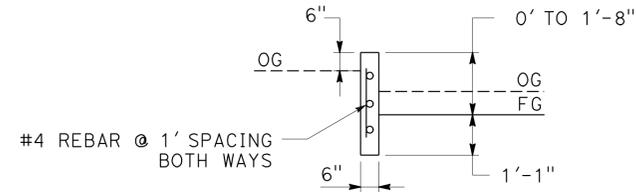
| Dist  | COUNTY | ROUTE  | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|--------|--|--------------------------|-----------|--------------|
| 02  | Sha    | 299  | 23.7                     | 5         | 48           |
|   |        | <i>Justin W Borders</i> 10-14-09<br>REGISTERED CIVIL ENGINEER DATE |                          |           |              |
|   |        | 11-16-09<br>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> |        |  |                          |           |              |



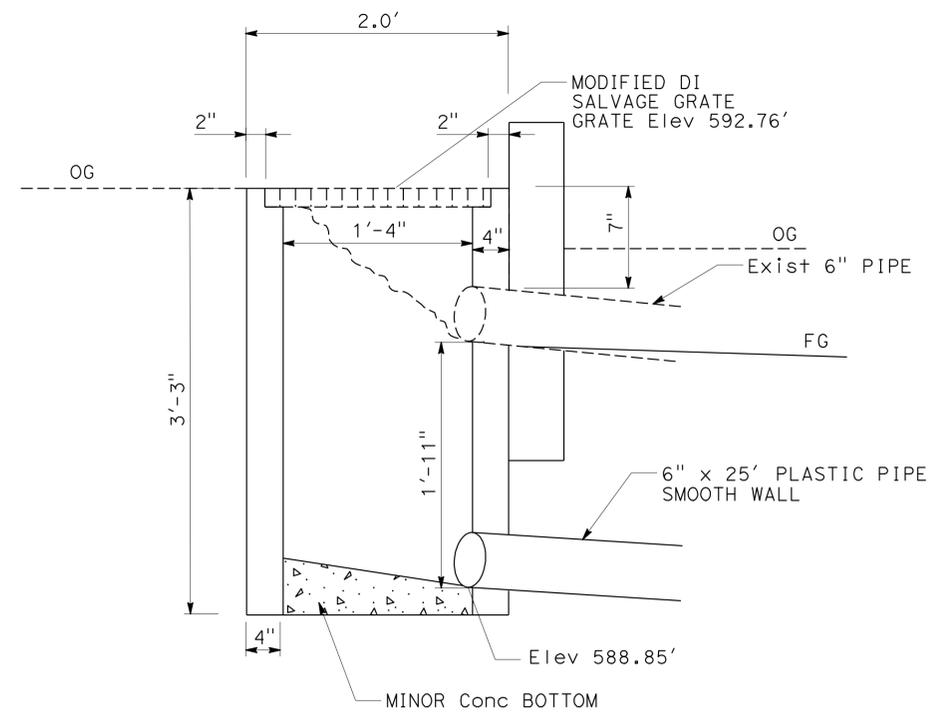
**ISLAND DETAIL**



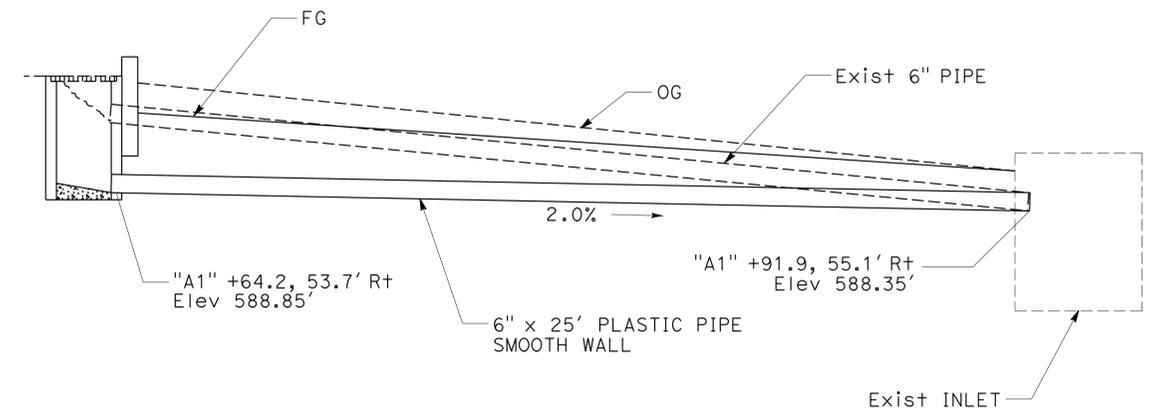
**SECTION A-A**



**SECTION B-B**



**RECONSTRUCT INLET DETAIL**



**DETAIL A**

**CONSTRUCTION DETAILS**

NO SCALE

**C-3**

|  |                       |        |
|--|-----------------------|--------|
| STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION | FUNCTIONAL SUPERVISOR | DESIGN |
| <i>Caltrans</i>                                    | AL TRUJILLO           |        |
| PROJECT: 21e480ga003.dgn                           | DESIGNED BY           |        |
|  | CHECKED BY            |        |
|  | REVISOR               |        |
|  | DATE                  |        |
|  | REVISOR               |        |
|  | DATE                  |        |







| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
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|                                |  |
|--------------------------------|--|
| Justin W Borders 10-14-09      |  |
| REGISTERED CIVIL ENGINEER DATE |  |
| 11-16-09                       |  |
| PLANS APPROVAL DATE            |  |

|                                  |  |
|----------------------------------|--|
| REGISTERED PROFESSIONAL ENGINEER |  |
| JUSTIN W. BORDERS                |  |
| No. C65618                       |  |
| Exp. 6-30-10                     |  |
| CIVIL                            |  |

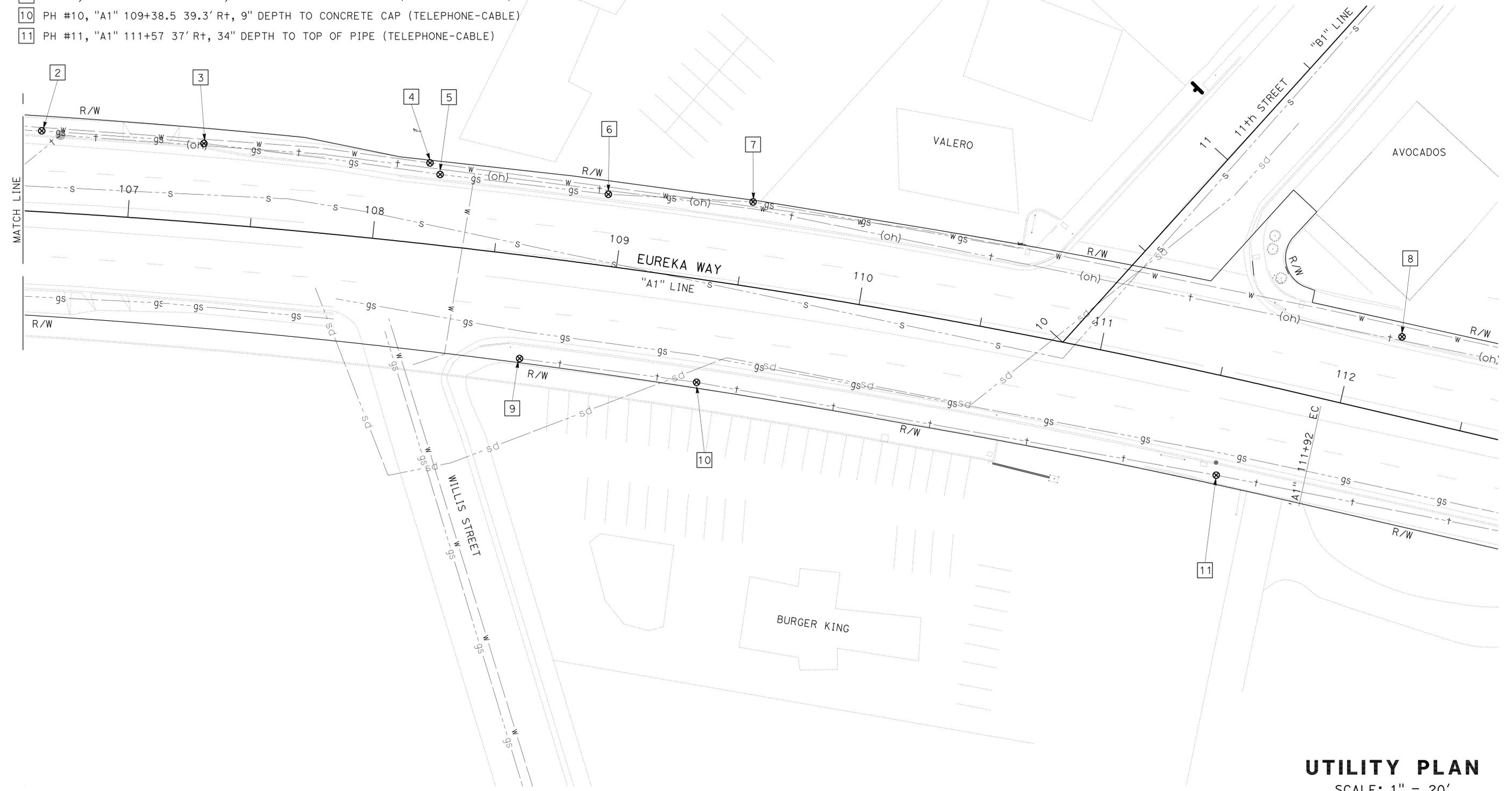
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.



NOTE:  
1. FOR COMPLETE RIGHT OF WAY DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

**SHEET NOTES:**

- 2 PH #2, "A1" 106+62 34.3' Lt, 24" DEPTH TO TOP OF PIPE (GAS LINE)
- 3 PH #3, "A1" 107+28.6 33.8' Lt, 21" DEPTH TO TOP OF PIPE (GAS LINE)
- 4 PH #4, "A1" 108+19.9 34.8' Lt, 14" DEPTH TO TOP OF PIPE (WATER LINE)
- 5 PH #5, "A1" 108+24.5 30.6' Lt, 31" DEPTH TO CONCRETE CAP (GAS LINE)
- 6 PH #6, "A1" 108+93 1.1' Lt, 26" DEPTH TO TOP OF PIPE (GAS LINE)
- 7 PH #7, "A1" 109+50 36.6' Lt, 12" DEPTH TO TOP OF PIPE (GAS LINE)
- 8 PH #8, "A1" 112+18.3 34.6' Lt, 46" DEPTH TO TOP OF PIPE EMPTY CONDUIT
- 9 PH #9, "A1" 108+65.1 39.7' Rt, 36" DEPTH TO TOP OF PIPE (TELEPHONE-CABLE)
- 10 PH #10, "A1" 109+38.5 39.3' Rt, 9" DEPTH TO CONCRETE CAP (TELEPHONE-CABLE)
- 11 PH #11, "A1" 111+57 37' Rt, 34" DEPTH TO TOP OF PIPE (TELEPHONE-CABLE)



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 FUNCTIONAL SUPERVISOR: AL TRUJILLO  
 CALCULATED/DESIGNED BY: JUSTIN BORDERS  
 REVISOR: BILL LEHMAN  
 DATE REVISOR: [blank]

**UTILITY PLAN**  
SCALE: 1" = 20'  
**U-2**

THIS PLAN ACCURATE FOR UTILITY WORK ONLY



USERNAME =>trmikesl  
DGN FILE =>21e480ka002.dgn

CU 03 242 EA 1E4801

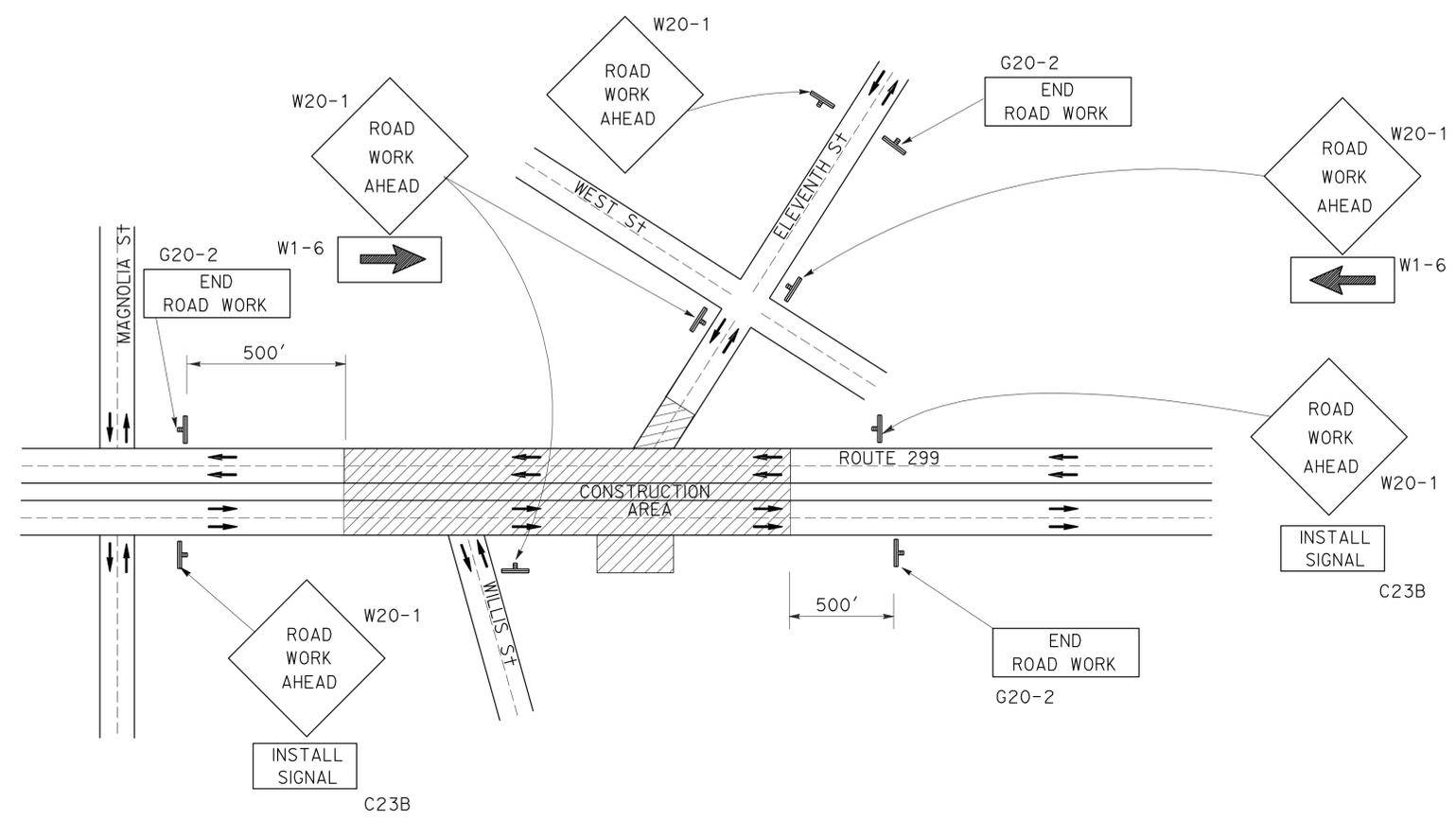
| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
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| 02   | Sha    | 299   | 23.7                     | 10        | 48           |

Justin W. Borders 10-14-09  
 REGISTERED CIVIL ENGINEER DATE  
 11-16-09  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 JUSTIN W. BORDERS  
 No. C65618  
 Exp. 6-30-10  
 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.

NOTE:  
1. ALL ADVANCE WARNING SIGNS SHALL BE 48" x 48" MINIMUM.

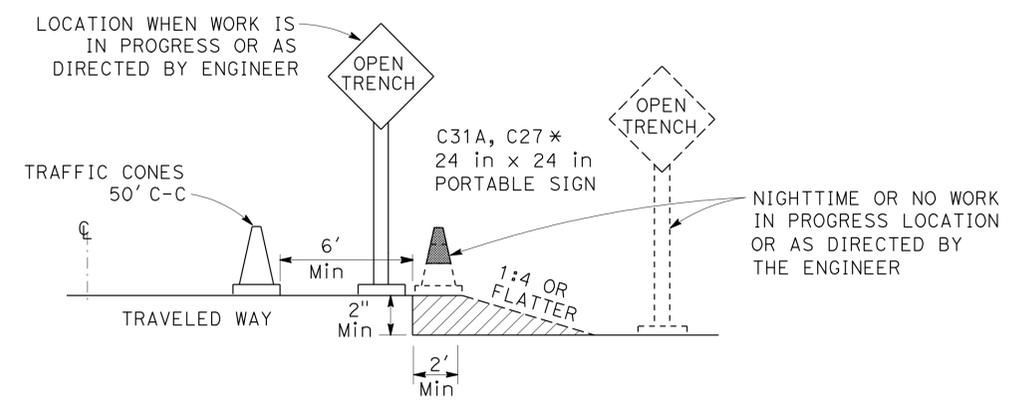


**CONSTRUCTION AREA SIGNS**

**STATIONARY MOUNTED CONSTRUCTION AREA SIGNS**

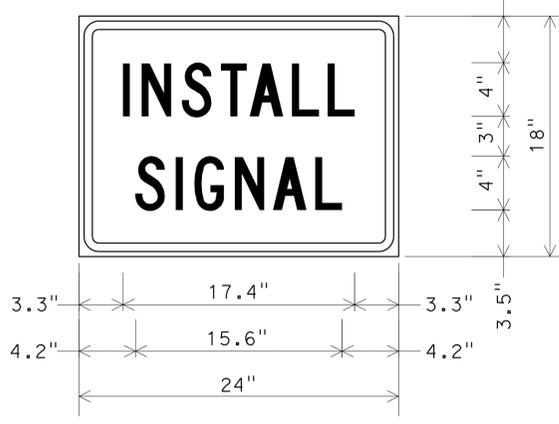
| CODE  | PANEL SIZE | SIGN MESSAGE    | No. AND SIZE OF POSTS | EACH |
|-------|------------|-----------------|-----------------------|------|
| W20-1 | 48" x 48"  | ROAD WORK AHEAD | 1-4" x 6"             | 6    |
| G20-2 | 36" x 18"  | END ROAD WORK   | 1-4" x 4"             | 3    |
| W1-6R | 48" x 24"  | ARROW SYMBOL    |                       | 2    |
| W1-6L | 48" x 24"  | ARROW SYMBOL    |                       | 1    |
| C23B  | 24" x 18"  | INSTALL SIGNAL  |                       | 2    |

NOTE: EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.



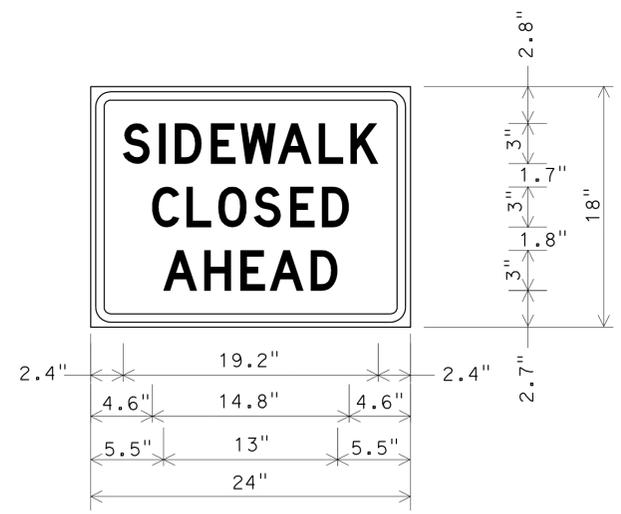
**OPEN TRENCH SIGNING AND MARKING**

\* PLACE AT 50' INTERVALS THROUGH THE OPEN TRENCH AREA ALTERNATE C27 (OPEN TRENCH) AND C31A (NO SHOULDER) SIGNS



1.5" RADIUS, 5/8" BORDER, 3/8" INDENT, BLACK ON ORANGE;  
[INSTALL] C;  
[SIGNAL] C;

**SIGN DETAIL A**



1.5" RADIUS, 5/8" BORDER, 3/8" INDENT, BLACK ON WHITE;  
[SIDEWALK] D;  
[CLOSED] D;  
[AHEAD] D;

**SIGN DETAIL B**

**CONSTRUCTION AREA SIGNS**

NO SCALE

**CS-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 DESIGN  
 AL TRUJILLO  
 FUNCTIONAL SUPERVISOR  
 JUSTIN BORDERS  
 BILL LEHMAN  
 REVISOR  
 DATE REVISOR  
 DATE REVISOR  
 DATE REVISOR

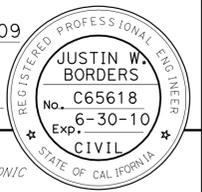
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|                                |          |
|--------------------------------|----------|
| <i>Justin W. Borders</i>       | 10-14-09 |
| REGISTERED CIVIL ENGINEER DATE |          |
| 11-16-09                       |          |
| PLANS APPROVAL DATE            |          |

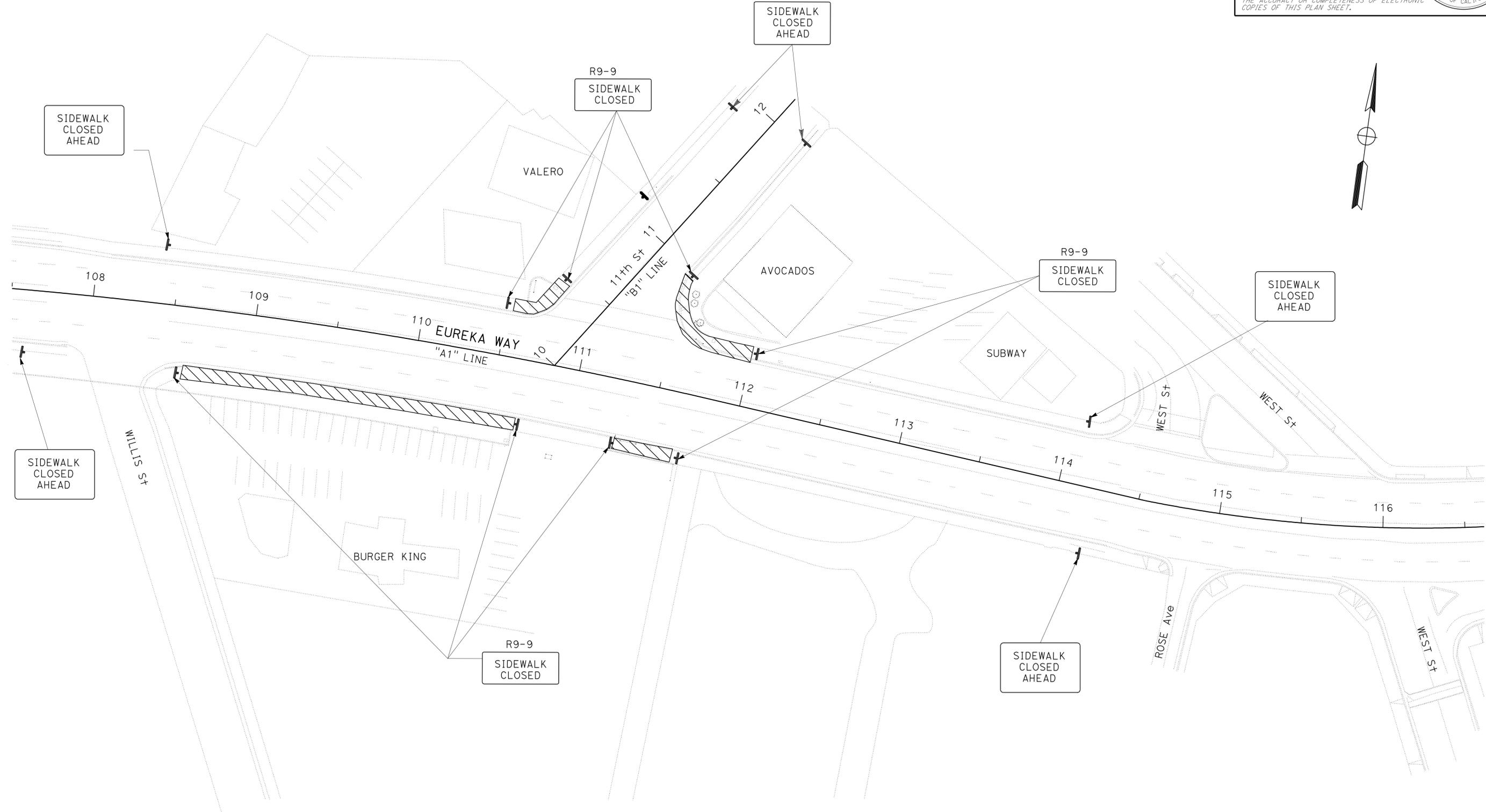
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NOTES:  
 1. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.  
 2. SIDEWALK CLOSED ON ONE SIDE OF ROUTE 299 AT A TIME.

**LEGEND**

WORK AREA



P:\proj2\02\1E480\plans\pse\21e480mg001.dgn  
 STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 FUNCTIONAL SUPERVISOR: AL TRUJILLO  
 CHECKED BY: JUSTIN BORDERS  
 REVISIONS: BILL LEHMAN, JUSTIN BORDERS, REVISED BY, DATE REVISED

THIS PLAN ACCURATE FOR DETOUR WORK (PEDESTRIAN) ONLY

**DETOUR PLAN (PEDESTRIAN)**  
 SCALE: 1" = 30' **DE-1**





|      |        |       |                          |           |              |
|------|--------|-------|--------------------------|-----------|--------------|
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 PLANS APPROVAL DATE

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### PAVEMENT DELINEATION QUANTITIES

| STATION               | L+/R+ | THERMOPLASTIC TRAFFIC STRIPE (SPRAYABLE) |           |           |            |           |           | REMOVE TRAFFIC STRIPE | THERMOPLASTIC PAVEMENT MARKING | PAVEMENT MARKER (RETROREFLECTIVE) |        |        | COMMENTS          |
|-----------------------|-------|--|-----------|-----------|------------|-----------|-----------|-----------------------|--------------------------------|-----------------------------------|--------|--------|-------------------|
|                       |       | DETAIL 12                                | DETAIL 21 | DETAIL 22 | DETAIL 25A | DETAIL 27 | DETAIL 32 | DETAIL 38             |                                | TYPE D                            | TYPE G | TYPE H |                   |
|                       |       | LF                                       | LF        | LF        | LF         | LF        | LF        | LF                    | LF                             | SQFT                              | EA     | EA     |                   |
| "A1" 108+50 TO 109+39 |       |  |           |           |            |           | 178       |                       |                                | 10                                |        |        |                   |
| "A1" 108+50 TO 110+50 |       | 400                                      |           |           |            |           |           |                       |                                |                                   | 10     |        |                   |
| "A1" 109+39 TO 109+58 |       |  |           | 38        |            |           |           |                       |                                | 4                                 |        |        |                   |
| "A1" 109+39 TO 112+05 | R+    |  |           |           |            |           |           | 266                   |                                |                                   |        |        |                   |
| "A1" 109+58 TO 110+39 |       |  |           |           | 162        |           |           |                       |                                |                                   |        | 9      |                   |
| "A1" 109+58 TO 112+55 | L+    |  |           |           |            |           |           | 297                   |                                |                                   |        |        |                   |
| "A1" 109+89 TO 110+45 | R+    |  |           |           |            |           | 56        |                       |                                |                                   | 3      |        |                   |
| "A1" 109+93           | R+    |  |           |           |            |           |           |                       | 15                             |                                   |        |        | TYPE IV (L) ARROW |
| "A1" 110+48           | R+    |  |           |           |            |           |           |                       | 52                             |                                   |        |        | LIMIT LINE        |
| "A1" 110+49 TO 111+34 | R+    |  |           |           |            |           |           | 85                    |                                |                                   |        |        |                   |
| "A1" 110+50 TO 111+46 | L+    |  |           |           |            |           |           | 96                    |                                |                                   |        |        |                   |
| "A1" 110+82           | R+    |  |           |           |            |           |           |                       | 25                             |                                   |        |        | TYPE I ARROW      |
| "A1" 110+90           | R+    |  | 20        |           |            |           |           |                       |                                |                                   |        |        |                   |
| "A1" 110+92           | R+    |  |           |           |            |           |           |                       | 12                             |                                   |        |        | LIMIT LINE        |
| "A1" 111+00           | R+    |  |           |           |            |           |           |                       | 36                             |                                   |        |        | TYPE VIII ARROW   |
| "A1" 111+30 TO 111+51 |       |  |           |           |            |           |           |                       | 70                             |                                   |        |        | CROSSWALK         |
| "A1" 111+43 TO 111+64 |       |  |           |           |            |           |           |                       | 70                             |                                   |        |        | CROSSWALK         |
| "A1" 111+47 TO 112+55 | R+    | 108                                      |           |           |            |           |           |                       |                                |                                   | 5      |        |                   |
| "A1" 111+51 TO 112+05 | R+    |  |           |           |            | 54        |           |                       |                                |                                   |        | 2      |                   |
| "A1" 111+55 TO 112+05 | L+    |  |           |           |            |           |           | 50                    |                                |                                   | 3      |        |                   |
| "A1" 111+59 TO 112+55 | L+    | 96                                       |           |           |            |           |           |                       |                                |                                   | 5      |        |                   |
| "A1" 112+00           |       |  |           |           |            |           |           |                       | 15                             |                                   |        |        | TYPE IV (L) ARROW |
| "A1" 112+05 TO 112+55 | R+    |  |           |           |            |           | 50        |                       |                                | 3                                 |        |        |                   |
| "B1" 10+41 TO 10+91   | L+    |  |           |           |            |           |           | 50                    |                                |                                   | 3      |        |                   |
| "B1" 10+57            | L+    |  |           |           |            |           |           |                       | 27                             |                                   |        |        | TYPE VII ARROW    |
| "B1" 10+87            | L+    |  |           |           |            |           |           |                       | 15                             |                                   |        |        | TYPE IV (R) ARROW |
| SUBTOTAL              |       | 604                                      | 20        | 38        | 162        | 54        | 228       | 156                   | 744                            | 337                               | 17     | 29     | 11                |
| TOTAL                 |       |  |           |           | 1262       |           |           |                       | 744                            | 337                               |        | 57     |                   |

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DESIGN  
 AL TRUJILLO  
 BILL LEHMAN  
 JUSTIN BORDERS  
 REVISOR BY  
 DATE REVISOR  
 CALCULATED-DESIGNED BY  
 CHECKED BY  
 FUNCTIONAL SUPERVISOR  
 AL TRUJILLO

### PAVEMENT DELINEATION QUANTITIES PDQ-1

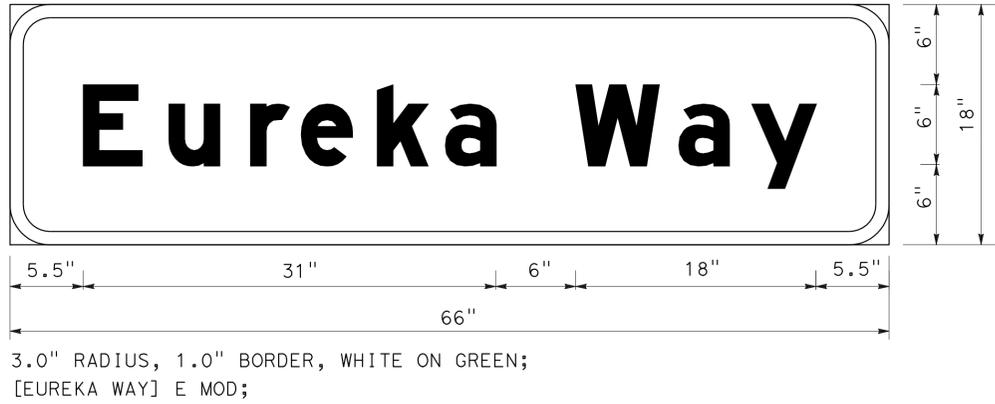
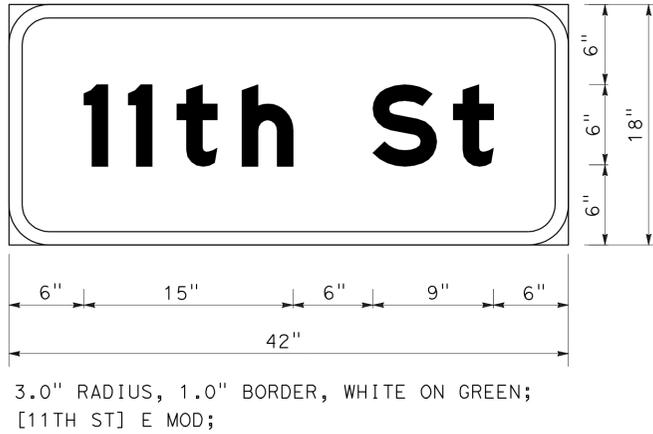


STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** DESIGN  
 FUNCTIONAL SUPERVISOR: AL TRUJILLO  
 CALCULATED-DESIGNED BY: BILL LEHMAN  
 CHECKED BY: JUSTIN BORDERS  
 REVISED BY: [ ] DATE REVISED: [ ]

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|------|--------|-------|--------------------------|-----------|--------------|
| 02   | Sha    | 299   | 23.7                     | 15        | 48           |

Justin W Borders 10-14-09  
 REGISTERED CIVIL ENGINEER DATE  
 11-16-09  
 PLANS APPROVAL DATE

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



**SIGN DETAILS**  
 NO SCALE **SD-2**





| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|------|--------|-------|--------------------------|-----------|--------------|
| 02   | Sha    | 299   | 23.7                     | 18        | 48           |

*J. Hannigan* 10-14-09  
 REGISTERED ELECTRICAL ENGINEER  
 No. E13665  
 Exp. 6/30/11  
 11-16-09  
 PLANS APPROVAL DATE  
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

**SHEET NOTES:**

- 1 Exist 3"C, 2-3csc, 2-12csc, 2 dlc, ADD 1 SIC.
- 2 Exist 4"C, 4-3csc, 4-12csc, 2#8, 1#8g, 2 vivds cable, 1 evd cable, 2 dlc, ADD 1 SIC.
- 3 Exist 2-4"C, 8-3csc, 8-12csc, 2#6, 1#6g, 4 vivds cable, 2 evd cable, 4 dlc, ADD 1 SIC.
- 4 INSTALL CONDUIT UNDERNEATH THE GUTTER PAN USING THE TRENCHING IN PAVEMENT METHOD.

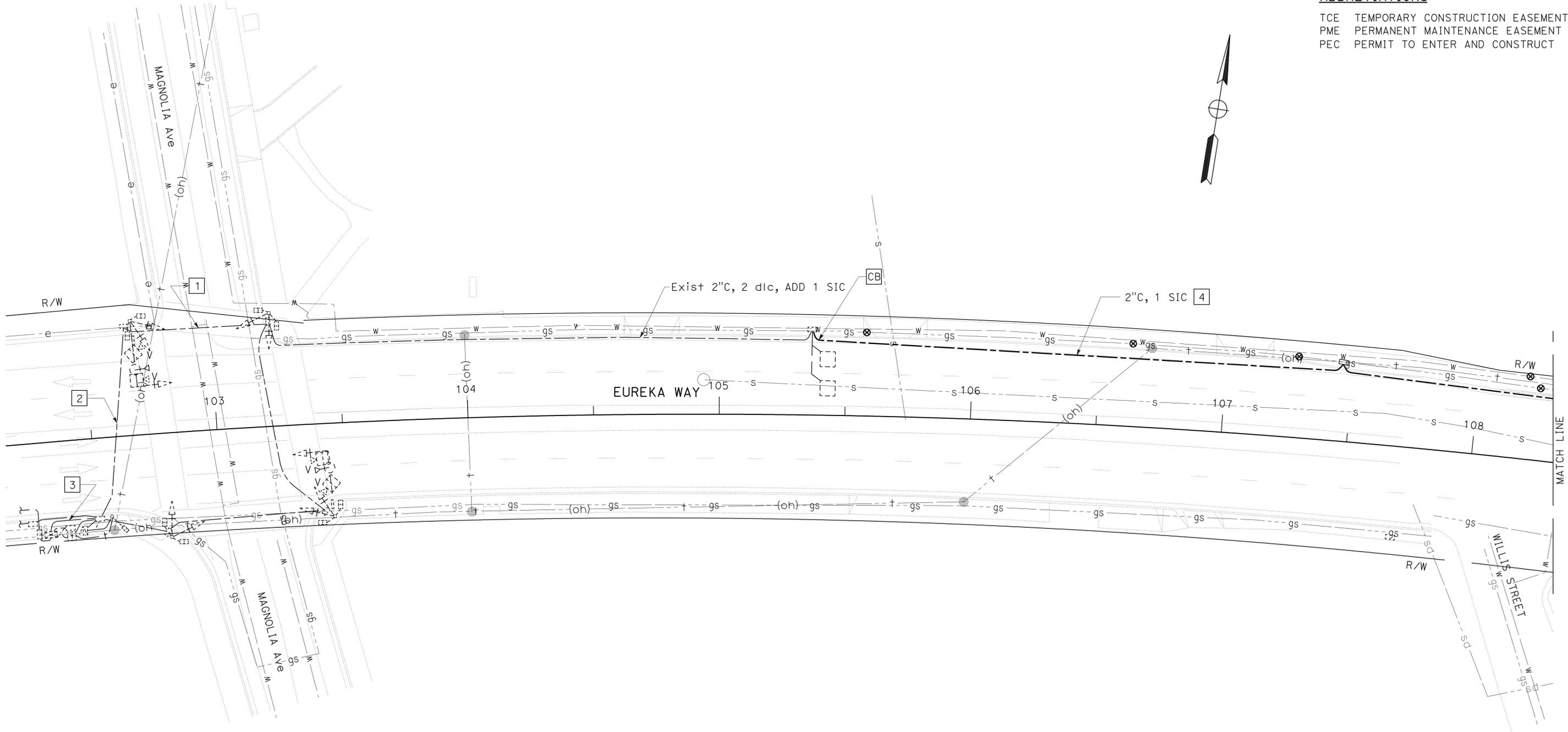
**LEGEND**

-  VIVDS DETECTION ZONE
- SF STATE-FURNISHED
- VIVDS VIDEO IMAGING VEHICLE DETECTION SYSTEM

NOTE:  
 1. FOR COMPLETE RIGHT OF WAY DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

**ABBREVIATIONS**

- TCE TEMPORARY CONSTRUCTION EASEMENT
- PME PERMANENT MAINTENANCE EASEMENT
- PEC PERMIT TO ENTER AND CONSTRUCT



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Electrical DESIGN**  
 FUNCTIONAL SUPERVISOR: ROB STINGER  
 CALCULATED/DESIGNED BY: JAMES M. HANNIGAN  
 CHECKED BY: JIM ELGIN  
 REVISED BY: [blank]  
 DATE REVISED: [blank]

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

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.



USERNAME => trmikesl  
 DGN FILE => 21e480ua001.dgn

CU 02 365  
 EA 1E4801



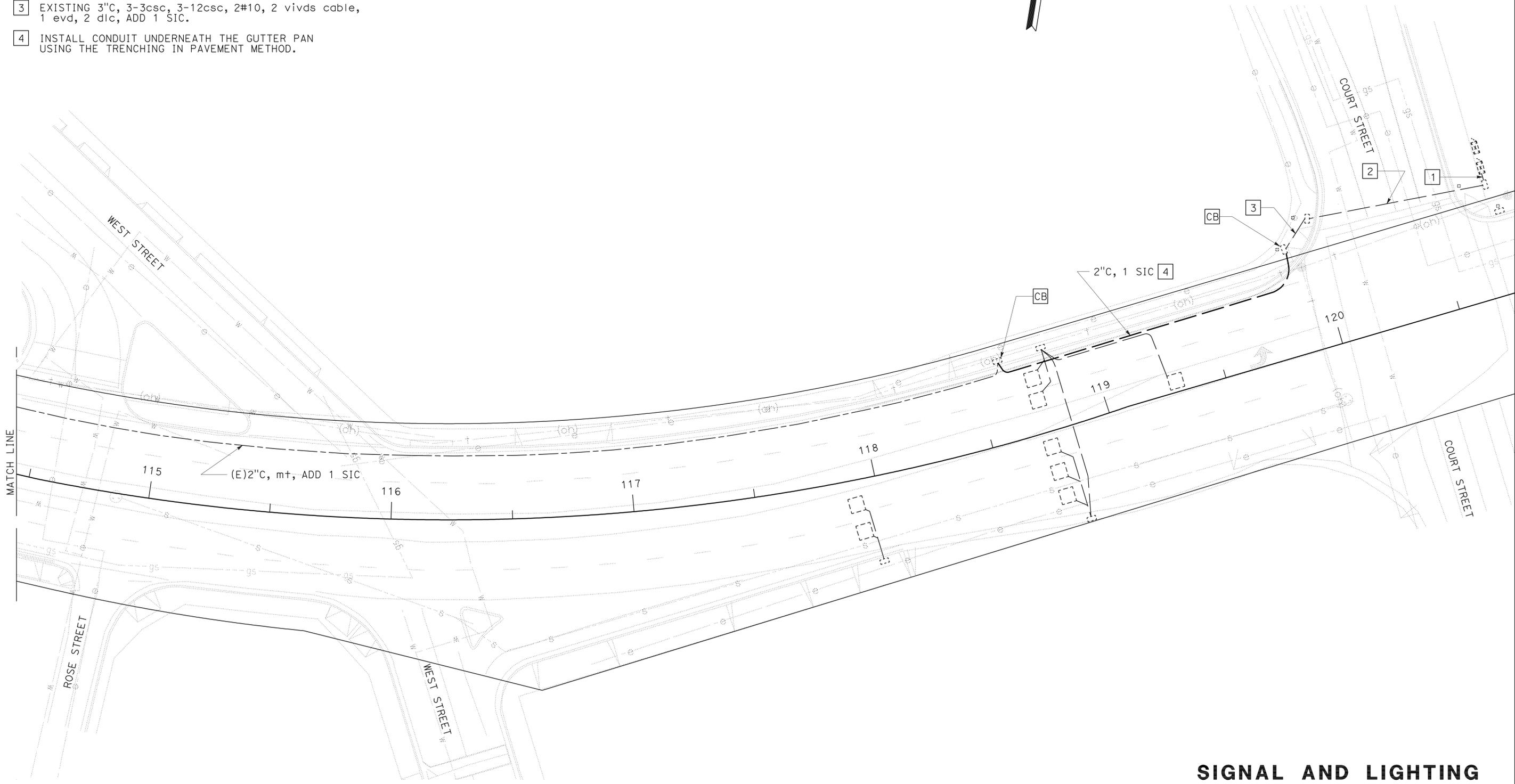
| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|------|--------|-------|--------------------------|-----------|--------------|
| 02   | Sha    | 299   | 23.7                     | 20        | 48           |

*J. Hannigan* 10-14-09  
 REGISTERED ELECTRICAL ENGINEER  
 11-16-09  
 PLANS APPROVAL DATE  
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

NOTE:  
 1. FOR COMPLETE RIGHT OF WAY DATA, SEE RIGHT OF WAY RECORD MAPS AT DISTRICT OFFICE.

**SHEET NOTES:**

- 1 EXISTING 2-3"C, 8-3csc, 8-12csc, 4 vivds cable, 4 evd cable, 4' dlc, ADD 1 SIC.
- 2 EXISTING 3"C, 4-3csc, 4-12csc, 2#10, 2 vivds cable, 1 evd cable, 2' dlc, ADD 1 SIC.
- 3 EXISTING 3"C, 3-3csc, 3-12csc, 2#10, 2 vivds cable, 1 evd, 2' dlc, ADD 1 SIC.
- 4 INSTALL CONDUIT UNDERNEATH THE GUTTER PAN USING THE TRENCHING IN PAVEMENT METHOD.



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

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.



USERNAME => trmikesl  
 DGN FILE => 21e480ua003.dgn

CU 02 365  
 EA 1E4801

P:\proj2\02\1E480\plans\pse\21e480ua003.dgn  
 STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL DESIGN  
 FUNCTIONAL SUPERVISOR: ROB STINGER  
 CHECKED BY: JIM ELGIN  
 DESIGNED BY: JAMES M. HANNIGAN  
 REVISIONS: REVISED BY: DATE REVISED:

LAST REVISION: 10-14-09  
 DATE PLOTTED => 10-14-09  
 TIME PLOTTED => 08:25

BORDER LAST REVISED 3/1/2007

|      |        |       |                             |              |                 |
|------|--------|-------|-----------------------------|--------------|-----------------|
| Dist | COUNTY | ROUTE | POST MILES<br>TOTAL PROJECT | SHEET<br>No. | TOTAL<br>SHEETS |
| 02   | Sha    | 299   | 23.7                        | 21           | 48              |

*J. Hannigan* 10-14-09  
 REGISTERED ELECTRICAL ENGINEER  
 No. E13665  
 Exp. 6/30/11  
 11-16-09  
 PLANS APPROVAL DATE

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

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL DESIGN  
 JAMES M. HANNIGAN  
 JIM ELGIN  
 ROB STINGER  
 REVISIONS: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100

| EQUIPMENT SCHEDULE |           |     |     |            |                      |         |                       |        |           |       |                         |
|--------------------|-----------|-----|-----|------------|----------------------|---------|-----------------------|--------|-----------|-------|-------------------------|
| POLE               |           |     |     |            | Veh SIGNALS<br>12" * |         | PED SIGNALS<br>TYPE A |        | PPB<br>** |       | STREET NAME SIGN<br>*** |
| No.                | TYPE      | SMA | LMA | HPS<br>LUM | PHASE                | MTG     | PHASE                 | MTG    | PHASE     | ARROW |                         |
| A                  | 28-5-100  | 55' | -   | -          | 5,8                  | SV-2-TB | 6,8                   | SP-2-T | 6         | ←     | Eureka Way              |
|                    |           |     |     |            | 8                    | MAS     |                       |        | 8         | →     |                         |
| B                  | 24A-4-100 | 35' | 12' | 310 W      | 2,4                  | SV-2-TB | 2,8                   | SP-2-T | 2         | ←     | 11th St                 |
|                    |           |     |     |            | 2,5                  | MAS     |                       |        | 8         | ←     |                         |
| C                  | 19A-3-100 | 15' | 12' | 310 W      | 1,4,0L5              | SV-2-TB | 2                     | SP-1-T | 2         | →     | Eureka Way              |
|                    |           |     |     |            | 4                    | MAS     |                       |        |           |       |                         |
| D                  | 23-4-100  | 35' | -   | -          | 6,8                  | SV-2-TB | 6                     | SP-1-T | -         | -     | 11th St                 |
|                    |           |     |     |            | 1,6                  | MAS     |                       |        |           |       |                         |
| E                  | 1-B       | -   | -   | -          | 4,0L5                | TV-1-TB | -                     | -      | 6         | →     |                         |

\* PROVIDE LOUVERED BACKPLATES FOR ALL SIGNAL HEADS.  
 \*\* MOUNT PEDESTRIAN PUSHBUTTON 3'-4" ABOVE FINISHED GRADE.  
 \*\*\* SEE SHEET E-6 FOR MOUNTING DETAIL.

| CONDUCTOR SCHEDULE      |                     |      |                                |           |           |            |         |            |   |   |
|-------------------------|---------------------|------|--------------------------------|-----------|-----------|------------|---------|------------|---|---|
| DESIGNATION             |                     |      | CONDUIT SIZE AND<br>RUN NUMBER |           |           |            |         |            |   |   |
| AWG OR<br>CABLE<br>TYPE | PHASE OR<br>CIRCUIT | POLE | 2-4"<br>1                      | 2-4"<br>2 | 2-4"<br>3 | (E)3"<br>4 | 3"<br>5 | (E)3"<br>6 |   |   |
| 3CSC                    | 5,8,6P,8P           | A    | 2                              | 2         | 2         | 2          |         |            |   |   |
|                         | 2,4,5,2P,8P         | B    | 2                              | 2         | 2         | 2          | 2       | 2          |   |   |
|                         | 1,4,0L5,2P          | C    | 1                              | 2         | 1         | 2          | 1       | 2          | 1 |   |
|                         | 1,6,8,6P            | D    | 2                              | 2         | 2         | 2          |         |            | 2 |   |
| 12CSC                   | 4,0L5               | E    | 1                              | 1         | 1         | 1          |         |            | 1 |   |
| TOTAL 3CSC/12CSC        |                     |      | 6                              | 9         | 6         | 9          | 3       | 4          | 1 | 2 |
| #6                      | SIGNAL              |      | 2                              |           |           |            |         |            |   |   |
| #8                      | LIGHTING            |      |                                | 2         | 2         | 2          | 2       |            |   |   |
| #6G                     | GROUND              |      | 1                              | 1         | 1         | 1          | 1       | 1          | 1 |   |
| CABLE                   | SIC                 |      | 3                              | 2         | 2         |            |         |            |   |   |
| VIVDS<br>CABLE          | 1I1U,6J4U,6J4L      |      | 1                              | 1         | 1         |            |         |            | 1 |   |
|                         | 4I7U,4I7L           |      | 1                              | 1         | 1         | 1          | 1       |            |   |   |
|                         | 2I4U,2I4L,5J1U      |      | 1                              | 1         | 1         | 1          |         |            |   |   |
|                         | 8J7U                |      | 1                              | 1         | 1         |            |         |            |   |   |
| TOTAL                   |                     |      | 4                              | 4         | 4         | 2          | 1       | 1          |   |   |
| DLC                     | 1I9U                |      | 1                              | 1         | 1         |            |         |            |   |   |
|                         | 2I2U                |      | 1                              | 1         | 1         | 1          | 1       |            |   |   |
|                         | 4I6U                |      | 1                              | 1         | 1         |            |         | 1          |   |   |
|                         | 5J9U                |      | 1                              | 1         | 1         | 1          | 1       |            |   |   |
|                         | 6J2U,6J2L           |      | 2                              | 2         | 2         |            |         |            |   |   |
|                         | 8J6U                |      | 1                              | 1         | 1         | 1          |         |            |   |   |
| TOTAL                   |                     |      | 7                              | 7         | 7         | 3          | 2       | 1          |   |   |

**SIGNAL AND LIGHTING**  
**E-4**

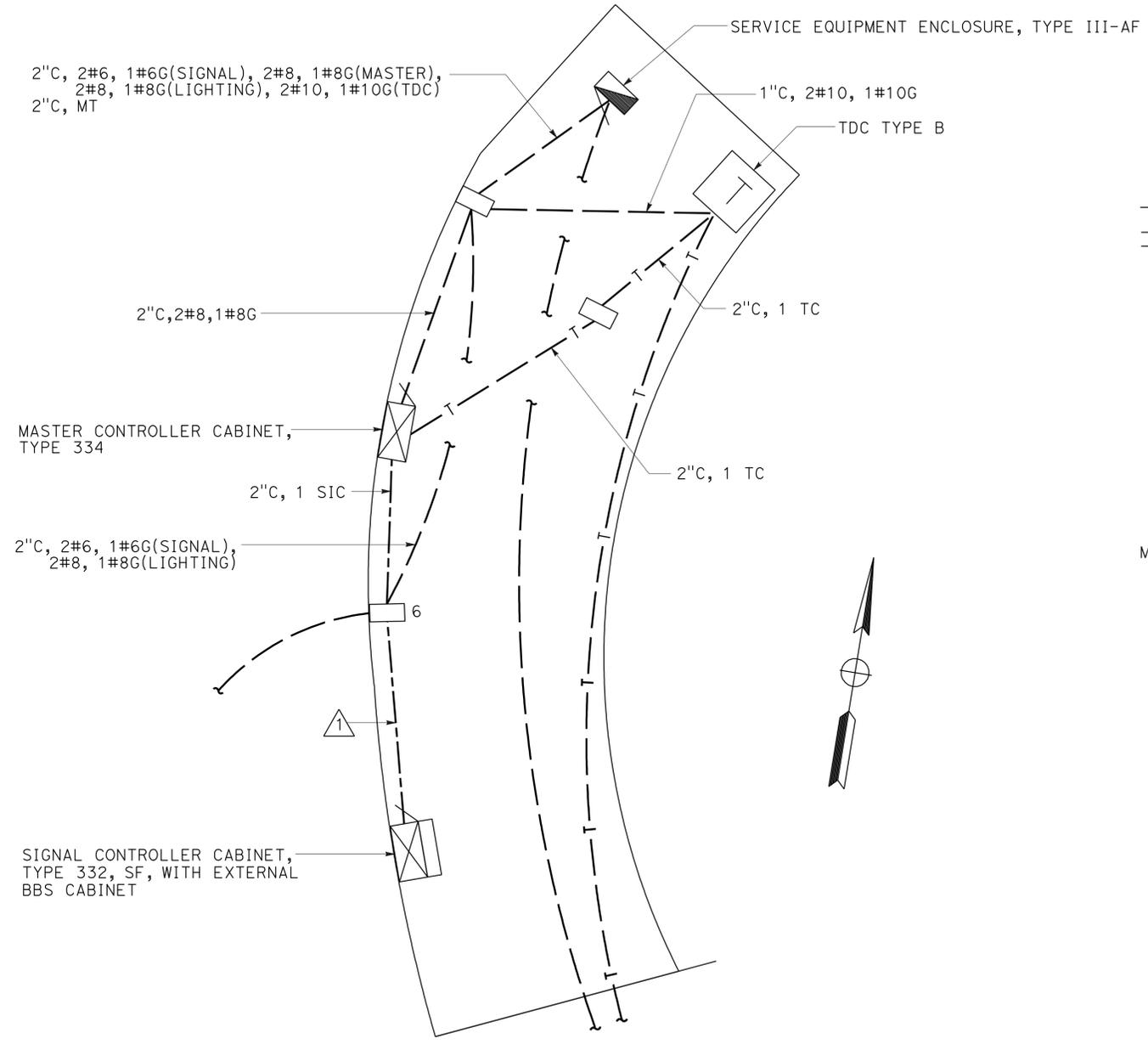
|      |        |       |                          |           |              |
|------|--------|-------|--------------------------|-----------|--------------|
| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
| 02   | Sha    | 299   | 23.7                     | 22        | 48           |

*J. Hannigan* 10-14-09  
 REGISTERED ELECTRICAL ENGINEER  
 11-16-09  
 PLANS APPROVAL DATE

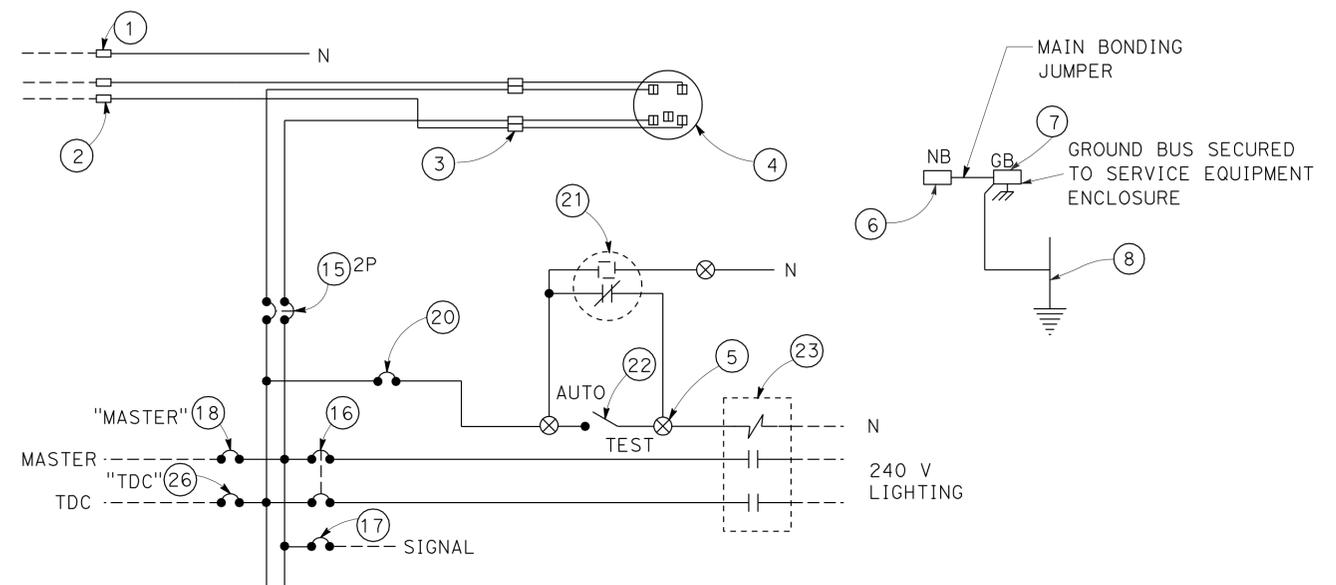
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER  
**J.M. HANNIGAN**  
 No. E13665  
 Exp. 6/30/11  
 ELECTRICAL  
 STATE OF CALIFORNIA

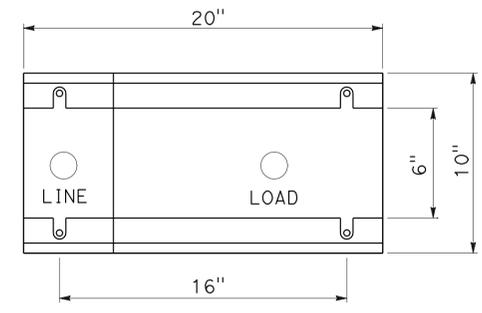
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL DESIGN  
 FUNCTIONAL SUPERVISOR: ROB STINGER  
 CALCULATED/DESIGNED BY: JIM ELGIN  
 CHECKED BY:  
 REVISIONS:  
 REVISED BY: JAMES M. HANNIGAN  
 DATE REVISED:  
 PROJECT: 10-14-09



**CONTROLLER WALKWAY DETAIL**



**SERVICE WIRING DIAGRAM**  
SEE Std PLANS FOR DETAILS NOT SHOWN



**BASE DETAIL FOR TYPE III-AF SERVICE EQUIPMENT ENCLOSURE (20" WIDE)**

**SIGNAL AND LIGHTING (DETAILS)**  
NO SCALE **E-5**

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|------|--------|-------|--------------------------|-----------|--------------|
| 02   | Sha    | 299   | 23.7                     | 23        | 48           |

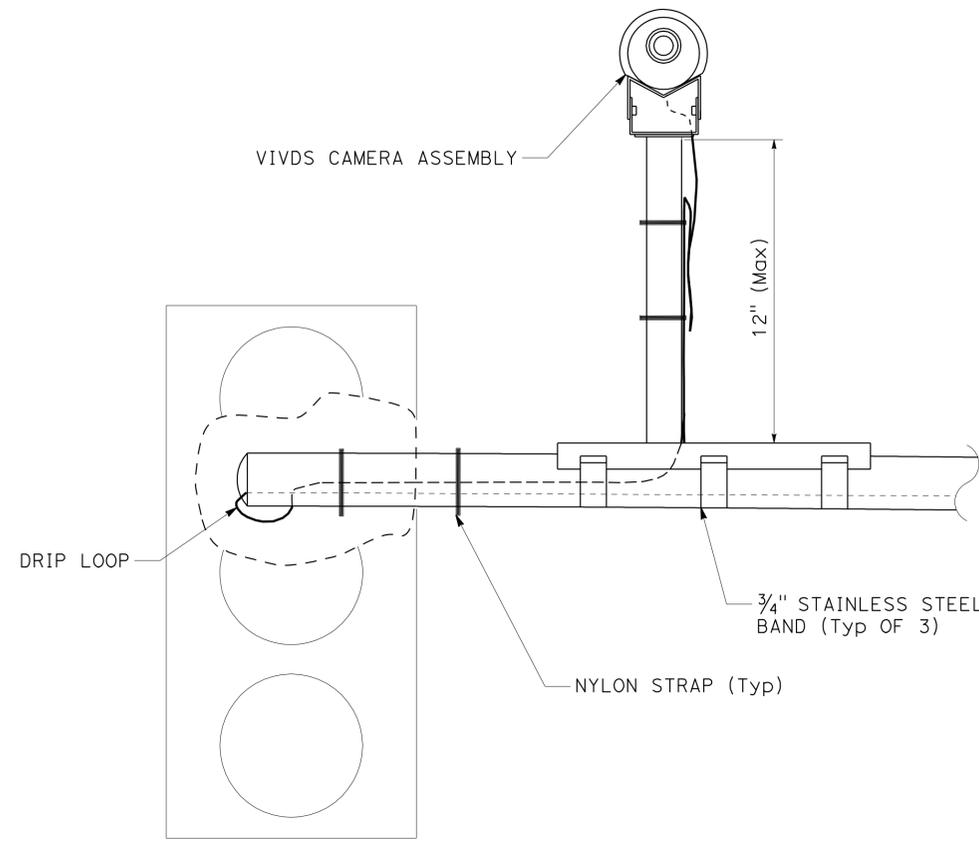
  

|   |                     |
|---|---------------------|
| <i>J. Hannigan</i> 10-14-09   |                     |
| REGISTERED ELECTRICAL ENGINEER  |                     |
| 11-16-09  | PLANS APPROVAL DATE |
| <small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.</small> |                     |

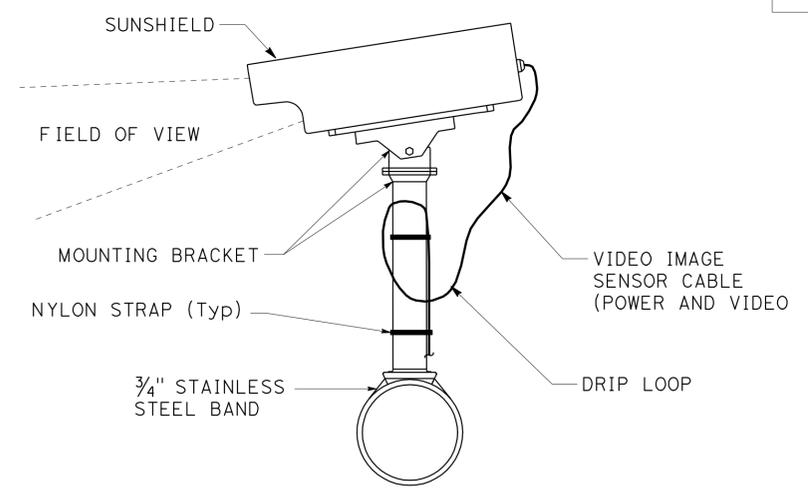
REGISTERED PROFESSIONAL ENGINEER  
**J.M. HANNIGAN**  
 No. E13665  
 Exp. 6/30/11  
 ELECTRICAL  
 STATE OF CALIFORNIA

SHEET NOTES:

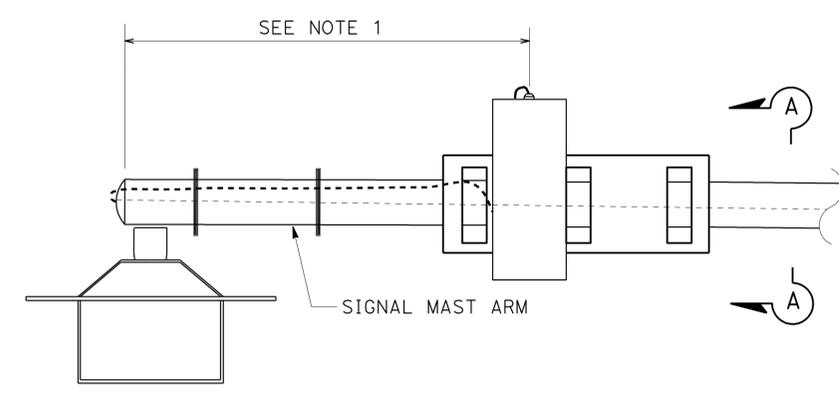
1. EXACT LOCATION OF CAMERA ASSEMBLY AND MOUNTING BRACKET SHALL BE DETERMINED IN THE FIELD AND APPROVED BY THE ENGINEER.
2. ROUTE POWER AND VIDEO CABLES THROUGH SIGNAL MAST ARM END CAP AND PROVIDE WEATHERTIGHT FITTING PER VIVDS MANUFACTURER'S RECOMMENDATIONS.
3. STRAP CABLE BEHIND THE SIGNAL MAST ARM. FOR CLARITY, SIGNAL CONDUCTORS ARE NOT SHOWN.



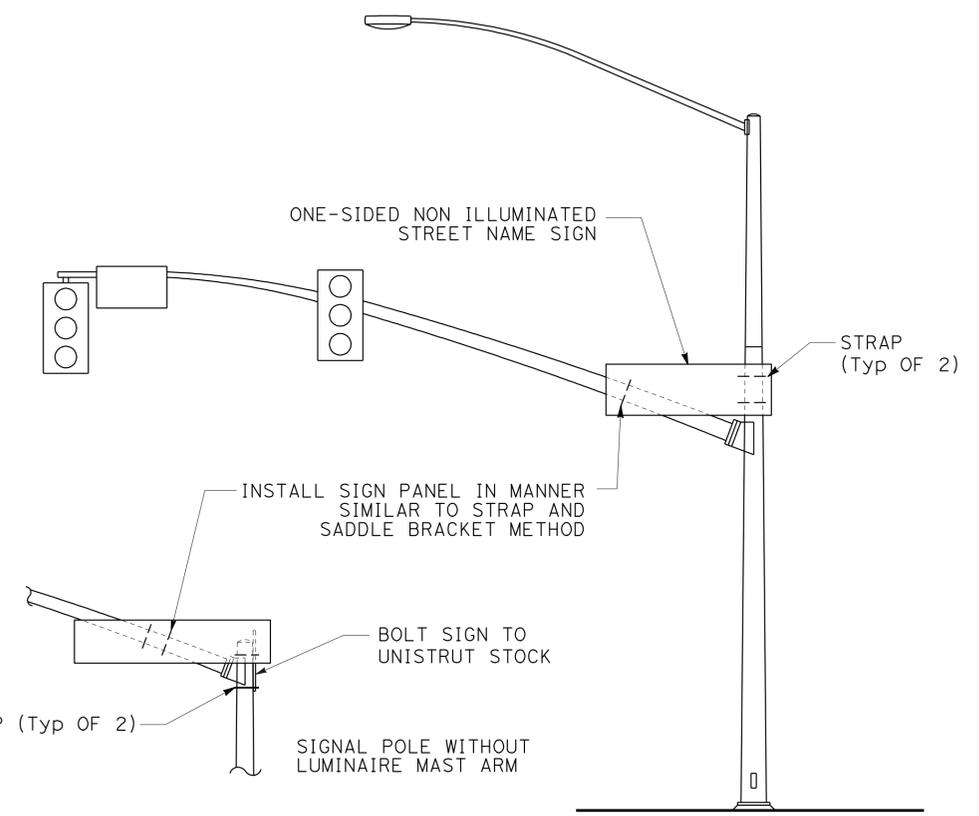
ELEVATION



SECTION A-A



PLAN



**SIGN MOUNTED TO SIGNAL POLE/MAST ARM**

**VIVDS CAMERA ASSEMBLY MOUNTING**

**SIGNAL AND LIGHTING (DETAILS)**

NO SCALE

**E-6**

P:\proj2\02\1E480\plans\pse\21e480u006.dgn  
 STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** ELECTRICAL DESIGN  
 FUNCTIONAL SUPERVISOR: ROB STINGER  
 DESIGNED BY: JAMES M. HANNIGAN  
 CHECKED BY: JIM ELGIN  
 REVISIONS: (None shown)  
 REVISIONS: (None shown)  
 REVISIONS: (None shown)

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|------|--------|-------|--------------------------|-----------|--------------|
| 02   | Sha    | 299   | 23.7                     | 24        | 48           |

|  |  |
|--|--|
| <i>Theresa Gabriel</i> 04-21-09<br>REGISTERED ELECTRICAL ENGINEER  |  |
| 11-16-09<br>PLANS APPROVAL DATE  |  |
| <small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small> |  |

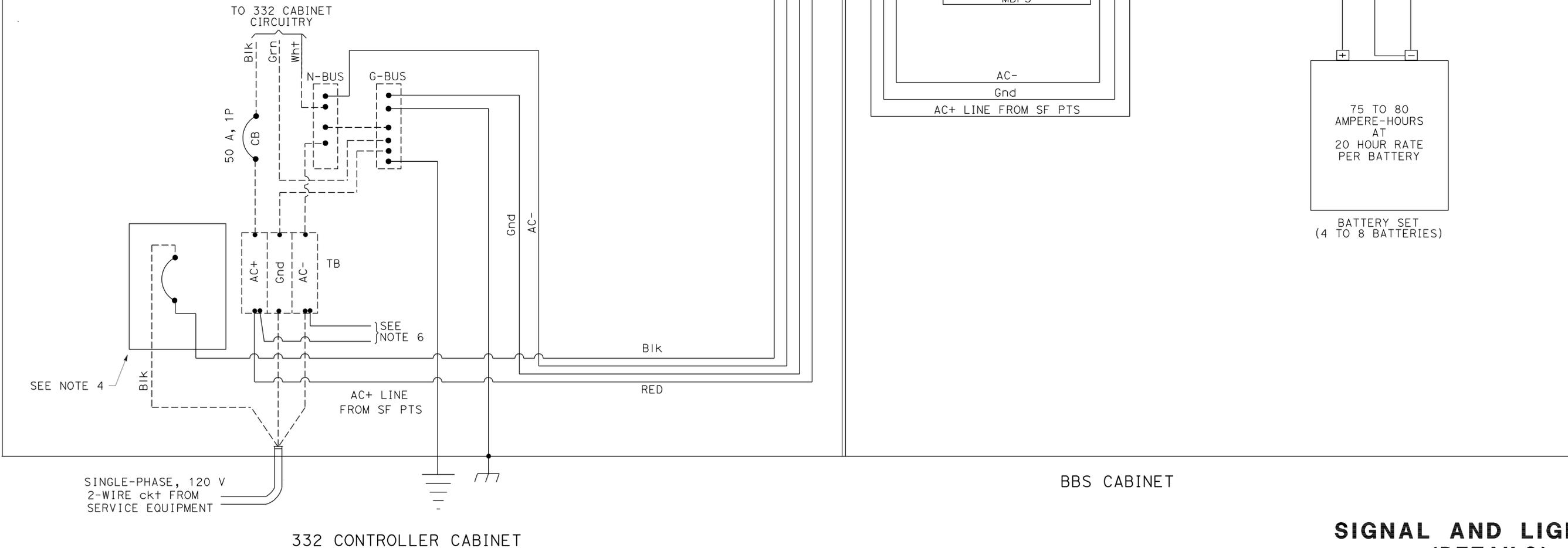
REGISTERED PROFESSIONAL ENGINEER  
**Theresa A. Gabriel**  
 No. E15129  
 Exp. 6-30-10  
 ELECT

**LEGEND: (THIS SHEET ONLY)**

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

**NOTES: (THIS SHEET ONLY)**

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



**SIGNAL AND LIGHTING (DETAILS)**

NO SCALE

**E-7**

P:\proj\2\02\1E480\plans\pse\21e480u007.dgn

|                        |              |                       |         |      |
|------------------------|--------------|-----------------------|---------|------|
| CALCULATED-DESIGNED BY | CHECKED BY   | FUNCTIONAL SUPERVISOR | REVISOR | DATE |
| JAMES M. HANNIGAN      | JIM ELGIN    | ROB STINGER           |         |      |
| REVISED BY             | DATE REVISED |                       |         |      |



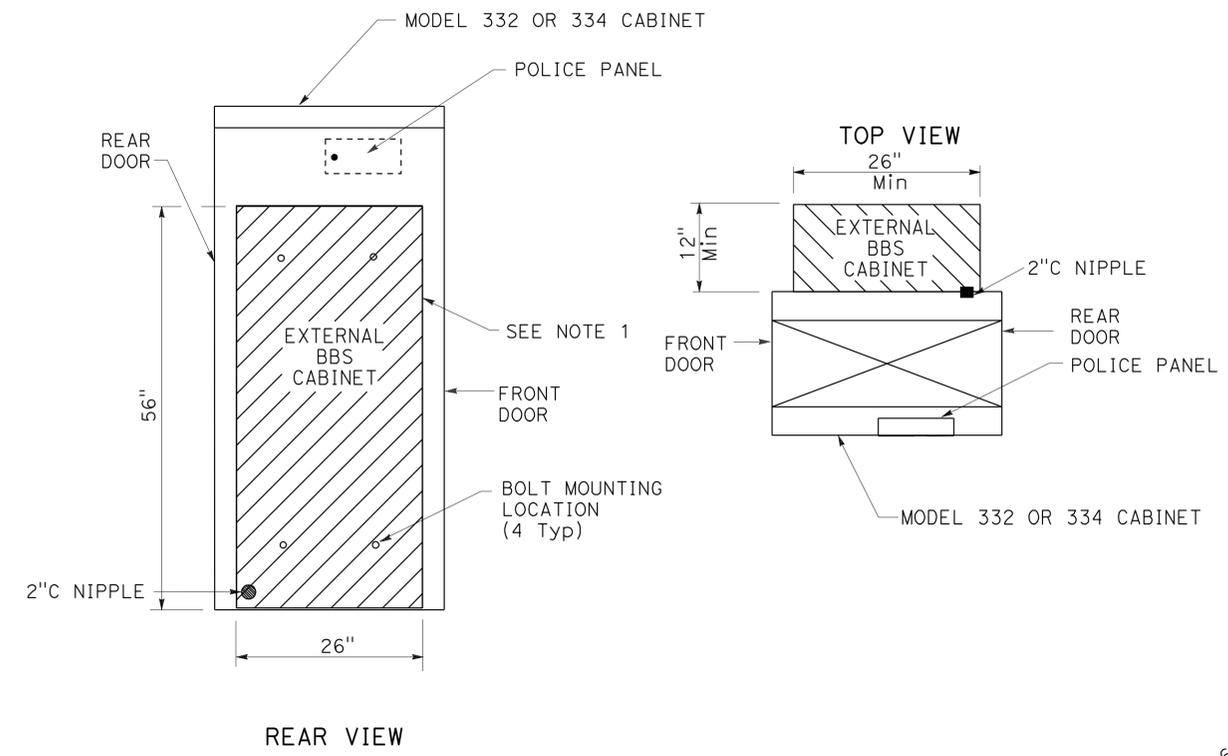
| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|------|--------|-------|--------------------------|-----------|--------------|
| 02   | Sha    | 299   | 23.7                     | 26        | 48           |

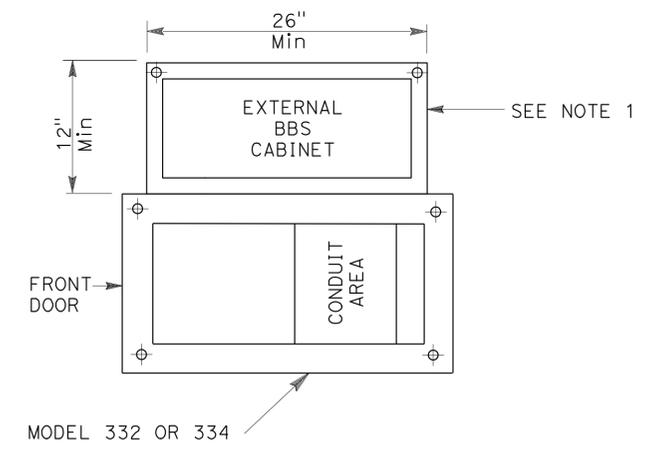
|  |  |
|--|--|
| <i>Theresa Gabriel</i> 04-21-09<br>REGISTERED ENGINEER   |  |
| REGISTERED PROFESSIONAL ENGINEER<br>Theresa A. Gabriel<br>No. E15129<br>Exp. 6-30-10<br>ELECT  |  |
| 11-16-09<br>PLANS APPROVAL DATE  |  |
| <small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small> |  |

**NOTE: (THIS SHEET ONLY)**

1. THE EXTERNAL BBS CABINET SHALL BE MOUNTED TO THE MODEL 332 OR 334 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 MODIFIED PORTION OF THE Std MODEL 332 AND 334 CABINET FOUNDATION. THE ENGINEER WILL HAVE TO APPROVE ANY NECESSARY DEVIATIONS PRIOR TO CONSTRUCTION.
4. ALL DIMENSIONS ARE NOMINAL.

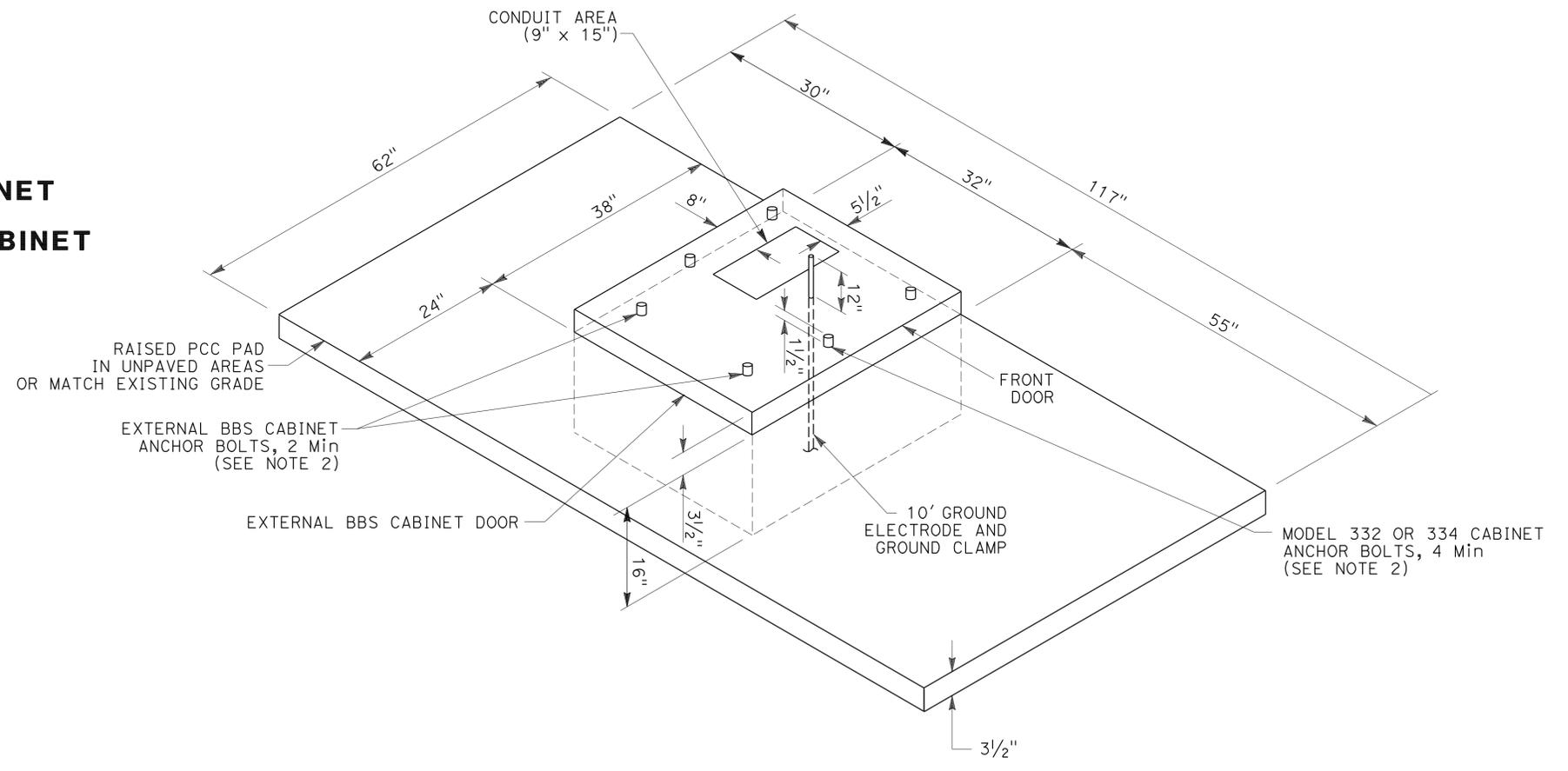


**EXTERNAL BBS CABINET MOUNTED TO THE MODEL 332 OR 334 CABINET**



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

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



**MODIFIED MODEL 332 AND 334 CABINET FOUNDATION DETAIL FOR BATTERY BACKUP SYSTEM (BBS)**

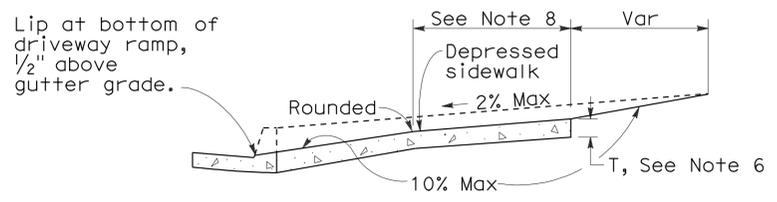
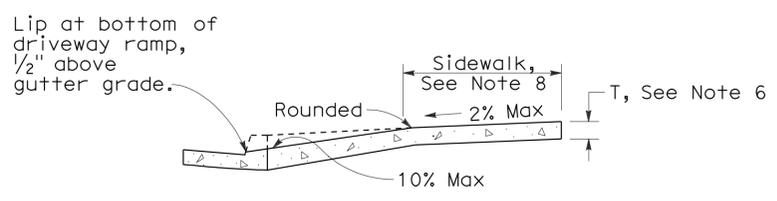
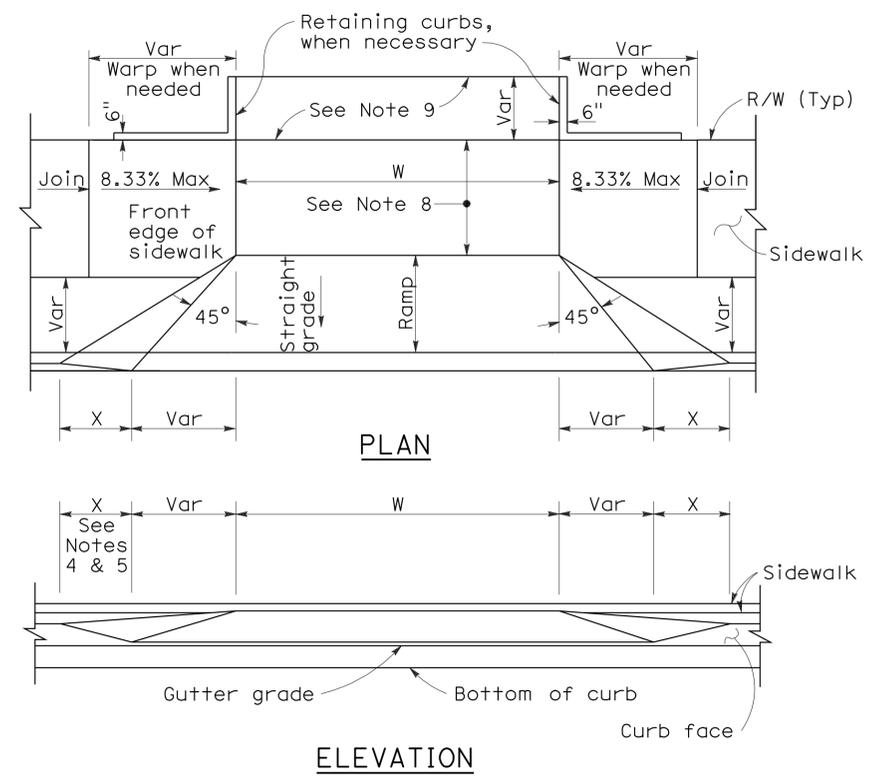
(FOR DIMENSIONS AND DETAILS NOT SHOWN AND ADDITIONAL NOTES, SEE SHEET ES-3C OF THE STANDARD PLANS FOR MODEL 332 AND 334 CABINETS)

**SIGNAL AND LIGHTING (DETAILS)**

NO SCALE

**E-9**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - ELECTRICAL DESIGN  
 JAMES M. HANNIGAN  
 JIM ELGIN  
 ROB STINGER  
 FUNCTIONAL SUPERVISOR  
 CALCULATED-DESIGNED BY  
 CHECKED BY  
 REVISED BY  
 DATE REVISED  
 P:\proj\2\02\1480\plans\pse\21e480u009.dgn



**CASE A**

Typical driveway, sidewalk not depressed

**CASE B**

Driveway with depressed sidewalk

**SECTIONS**

**CURB QUANTITIES**

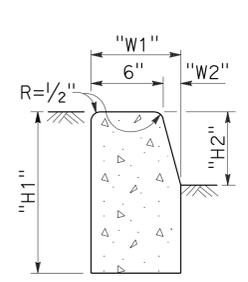
| TYPE | CUBIC YARDS PER LINEAR FOOT |
|------|-----------------------------|
| A1-6 | 0.02585                     |
| A1-8 | 0.03084                     |
| A2-6 | 0.05903                     |
| A2-8 | 0.06379                     |
| A3-6 | 0.01036                     |
| A3-8 | 0.01435           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

**TABLE A**

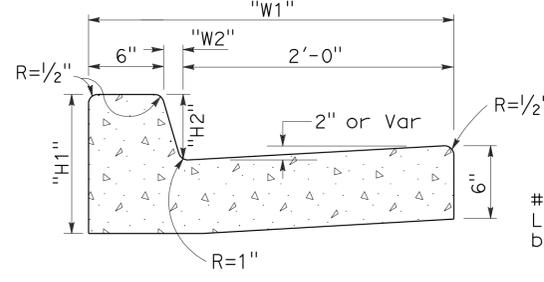
| CURB TYPE | DIMENSIONS |      |           |        |
|-----------|------------|------|-----------|--------|
|           | "H1"       | "H2" | "W1"      | "W2"   |
| A1-6      | 1'-2"      | 6"   | 7 1/2"    | 1 1/2" |
| A1-8      | 1'-4"      | 8"   | 8"        | 2"     |
| A2-6      | 1'-0"      |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

To accompany plans dated 11-16-09

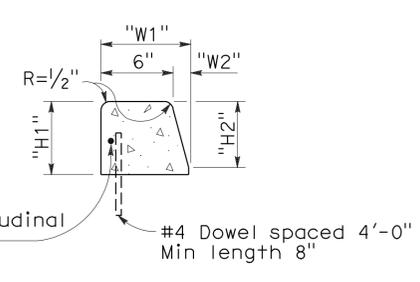
**DRIVEWAYS**



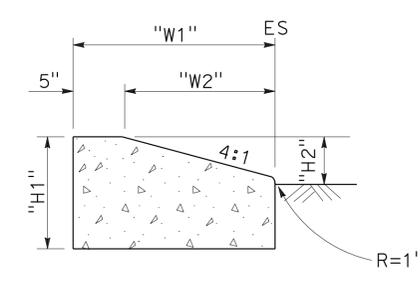
**TYPE A1 CURBS**  
See Table A



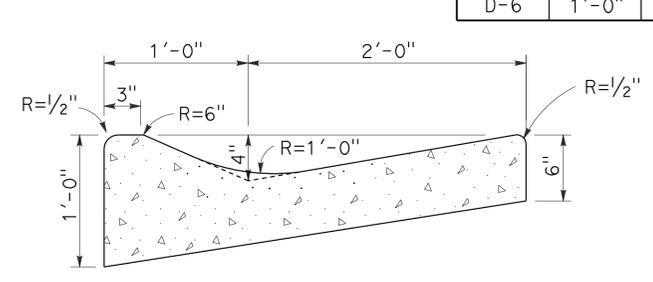
**TYPE A2 CURBS**  
See Table A



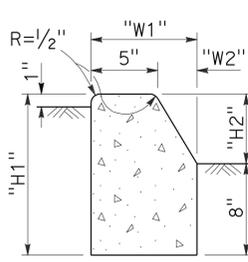
**TYPE A3 CURBS**  
Superimposed on existing pavement  
See Table A



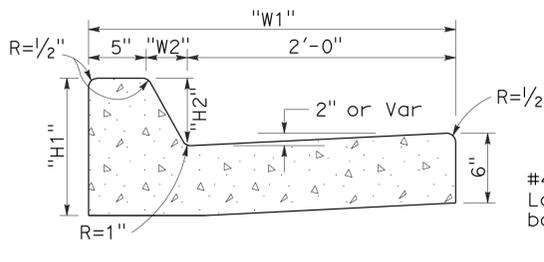
**TYPE D CURBS**  
See Table A



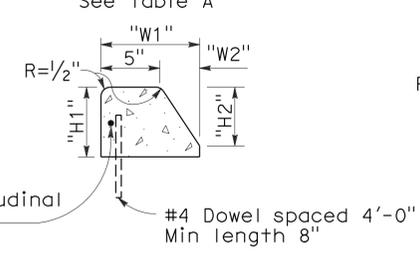
**TYPE E CURB**



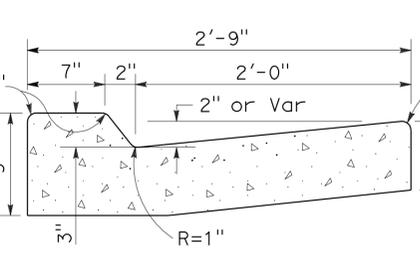
**TYPE B1 CURBS**  
See Table A



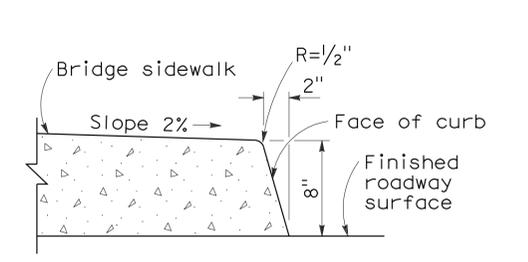
**TYPE B2 CURBS**  
See Table A



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



**TYPE B4 CURBS**



**TYPE H CURB**  
On Bridges

**NOTES:**

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

**CURBS**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**CURBS AND DRIVEWAYS**

NO SCALE

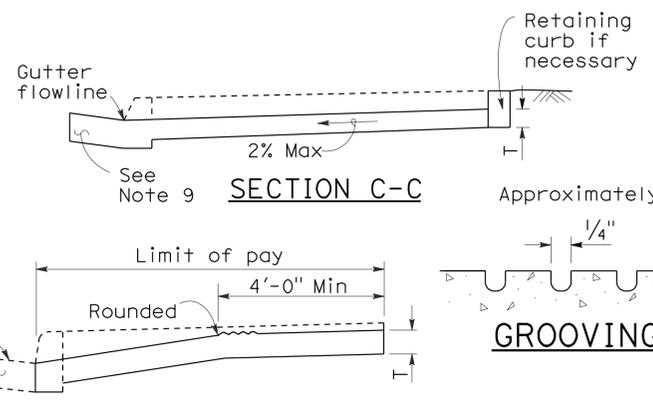
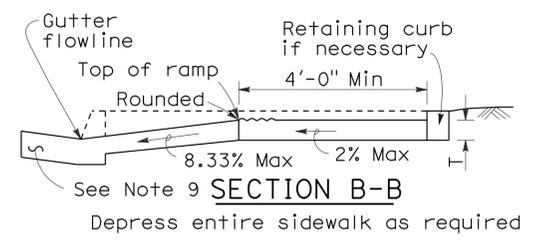
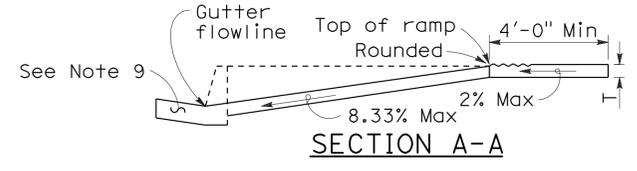
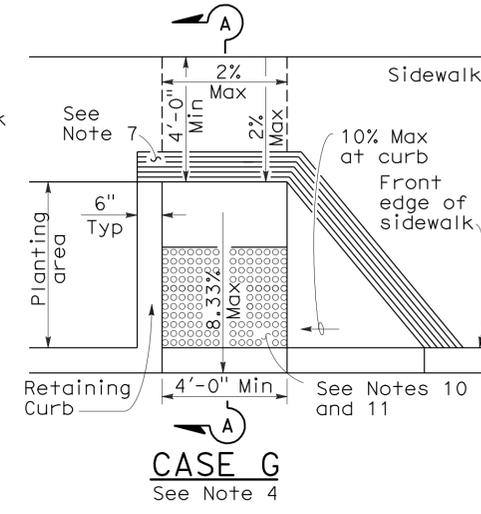
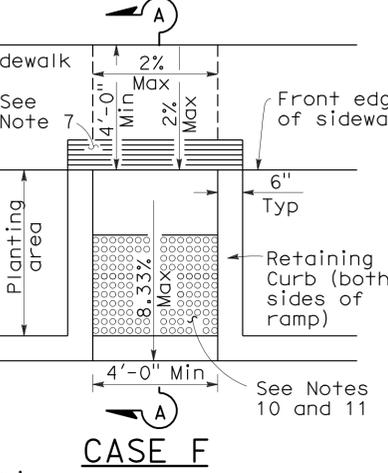
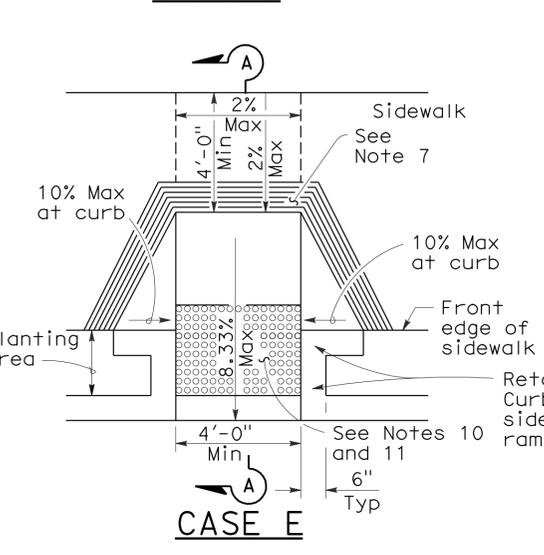
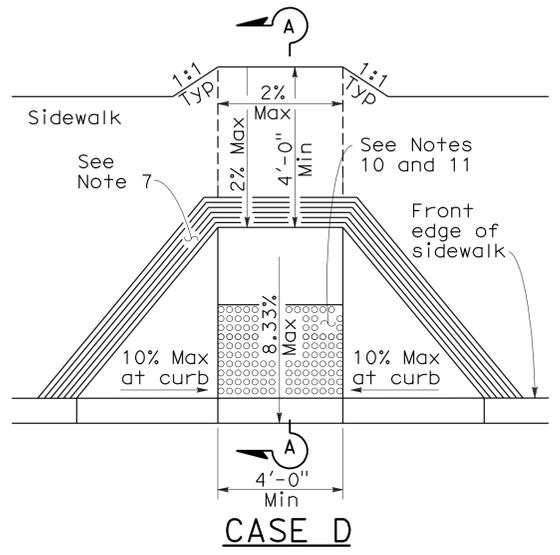
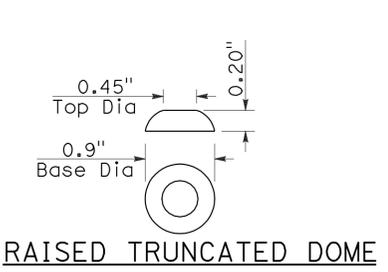
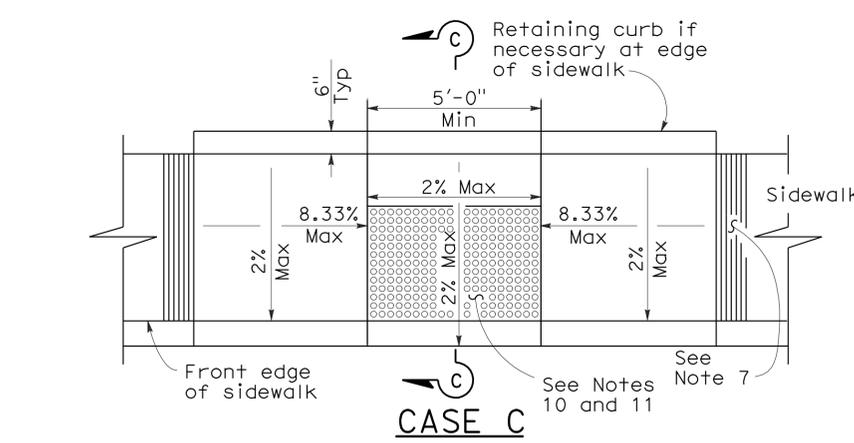
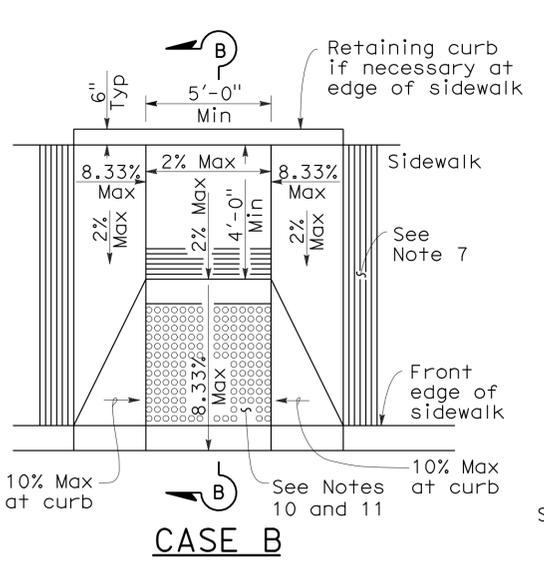
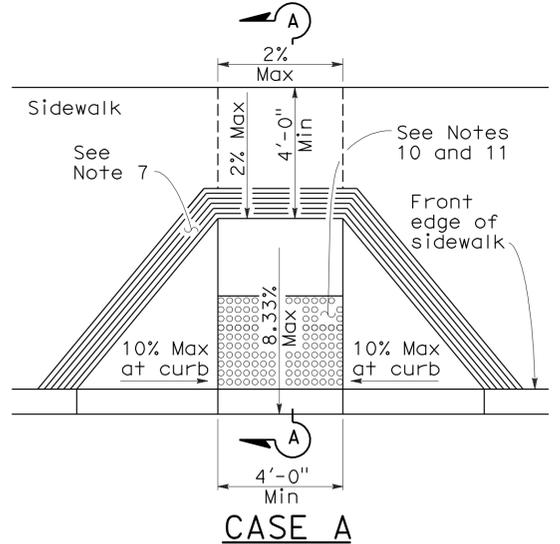
RSP A87A DATED NOVEMBER 17, 2006 SUPERSEDES STANDARD PLAN A87A  
DATED MAY 1, 2006 - PAGE 113 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A87A**

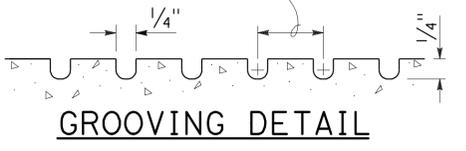
| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|------|--------|-------|--------------------------|-----------|--------------|
| 02   | Sha    | 299   | 23.7                     | 28        | 48           |

H. David Cordova  
 REGISTERED CIVIL ENGINEER  
 September 1, 2006  
 PLANS APPROVAL DATE  
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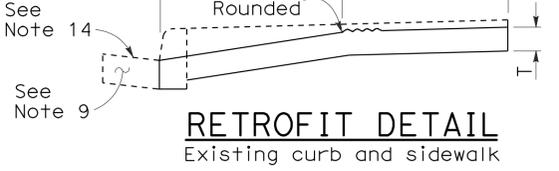
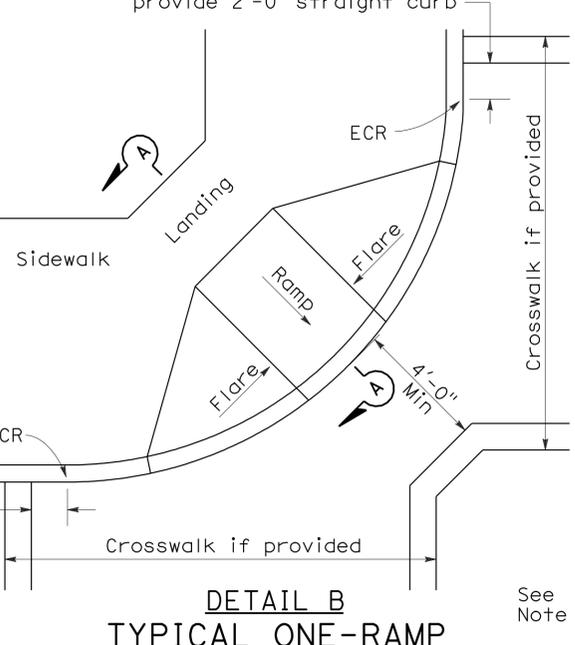
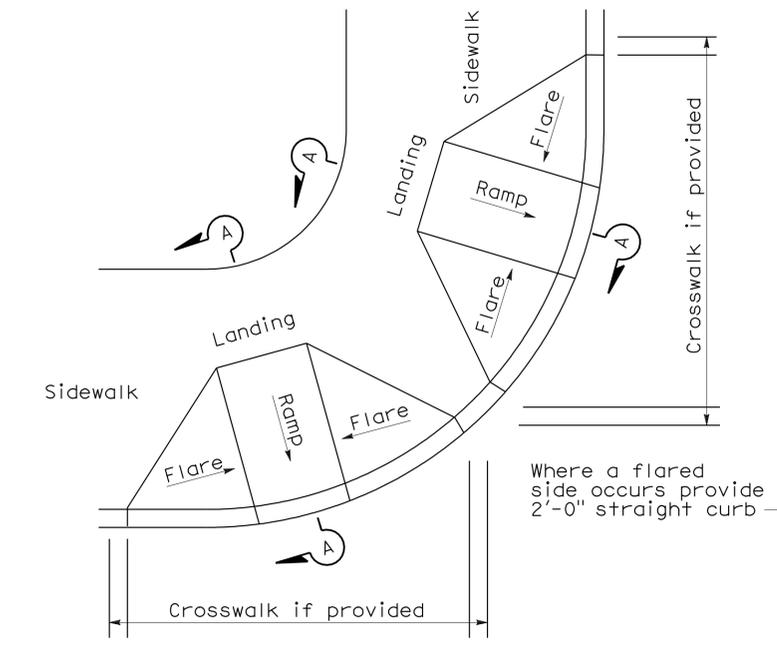
REGISTERED PROFESSIONAL ENGINEER  
 Hector David Cordova  
 No. C41957  
 Exp. 3-31-08  
 CIVIL  
 STATE OF CALIFORNIA



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



**CURB RAMP DETAILS**  
NO SCALE



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

**NOTES:**

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

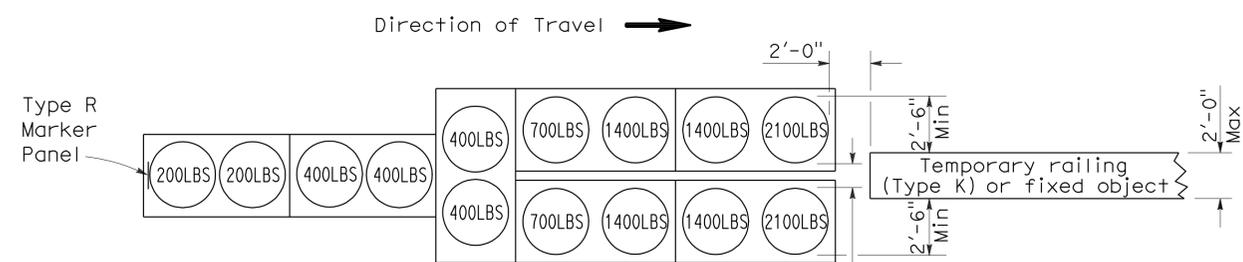
RSP A88A DATED SEPTEMBER 1, 2006 SUPERSEDES STANDARD PLAN A88A DATED MAY 1, 2006 - PAGE 115 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A88A**

2006 REVISED STANDARD PLAN RSP A88A

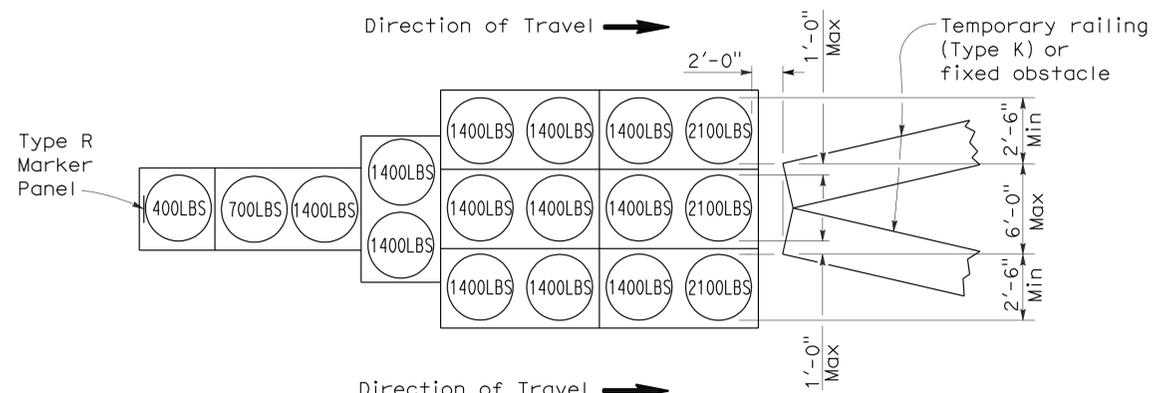
To accompany plans dated 11-16-09

2006 REVISED STANDARD PLAN RSP T1A



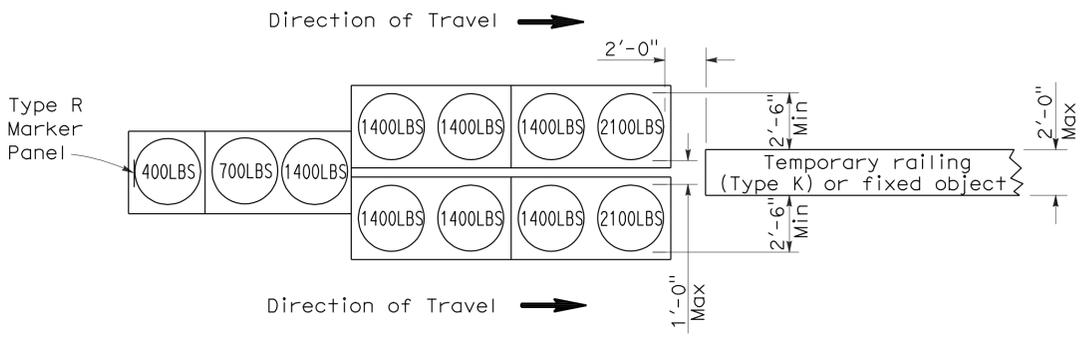
**ARRAY 'TU14'**

Approach speed 45 mph or more



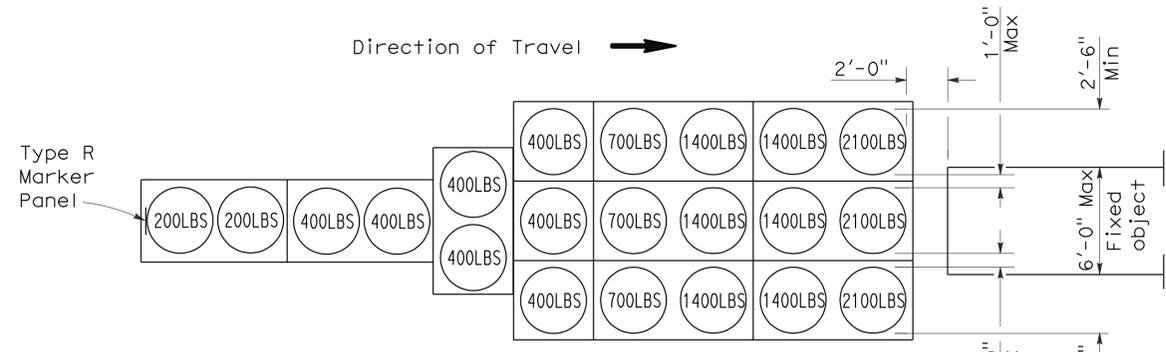
**ARRAY 'TU17'**

Approach speed less than 45 mph



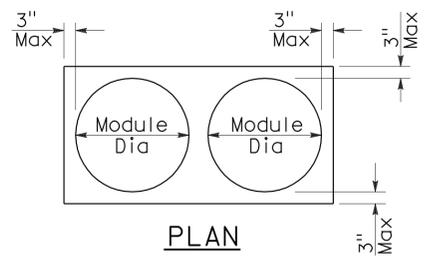
**ARRAY 'TU11'**

Approach speed less than 45 mph

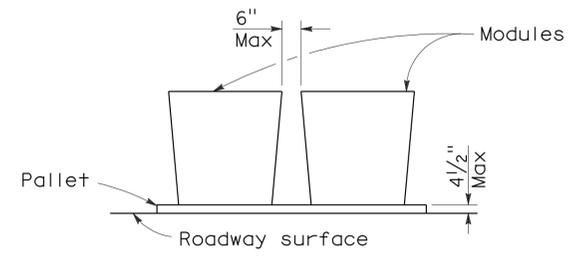


**ARRAY 'TU21'**

Approach speed 45 mph or more



**PLAN**



**ELEVATION**

**CRASH CUSHION PALLET DETAIL**

See Note 7

**NOTES:**

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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

**REVISED STANDARD PLAN RSP T1A**

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|------|--------|-------|--------------------------|-----------|--------------|
| 02   | Sha    | 299   | 23.7                     | 30        | 48           |

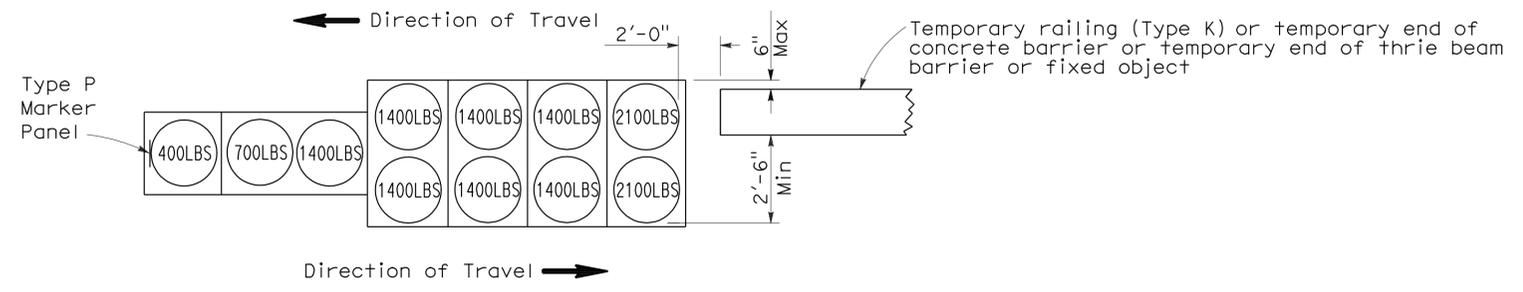
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

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

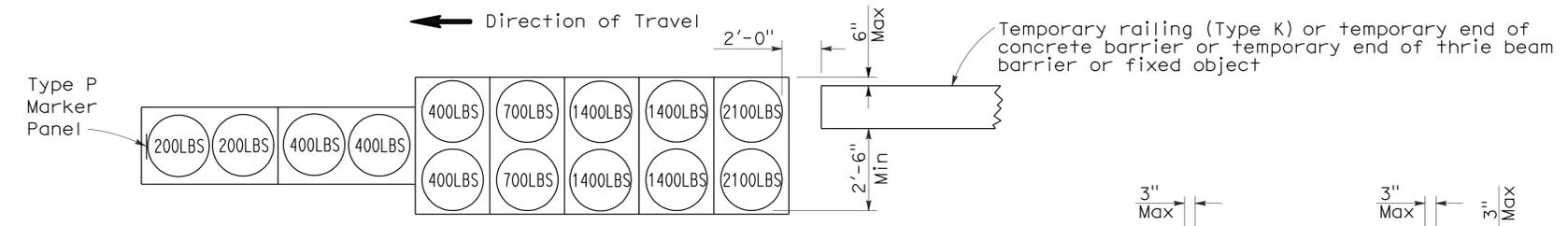
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To accompany plans dated 11-16-09



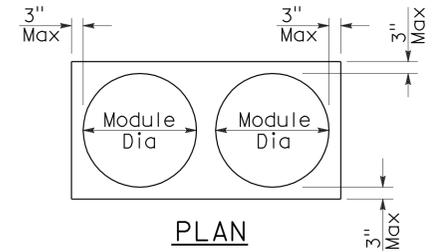
**ARRAY 'TB11'**

Approach speed less than 45 mph

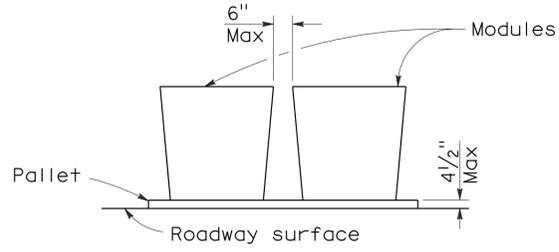


**ARRAY 'TB14'**

Approach speed 45 mph or more



PLAN



ELEVATION

**CRASH CUSHION PALLET DETAIL**

See Note 7

**NOTES:**

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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

**REVISED STANDARD PLAN RSP T1B**

2006 REVISED STANDARD PLAN RSP T1B

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|------|--------|-------|--------------------------|-----------|--------------|
| 02   | Sha    | 299   | 23.7                     | 31        | 48           |

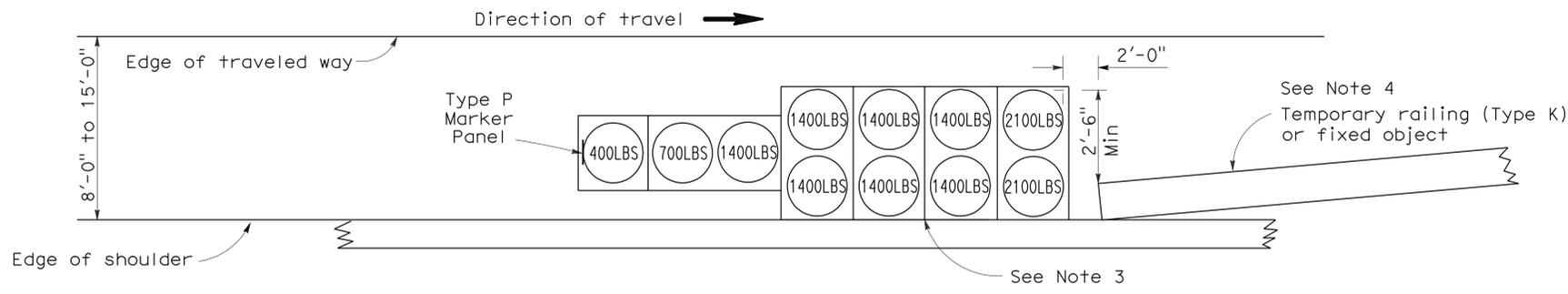
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

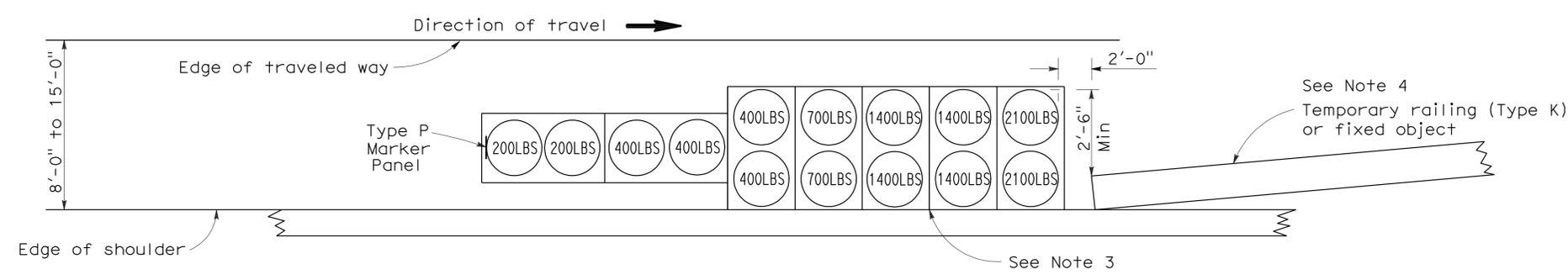
*Randell D. Hiatt*  
REGISTERED PROFESSIONAL ENGINEER  
No. C50200  
Exp. 6-30-09  
CIVIL  
STATE OF CALIFORNIA

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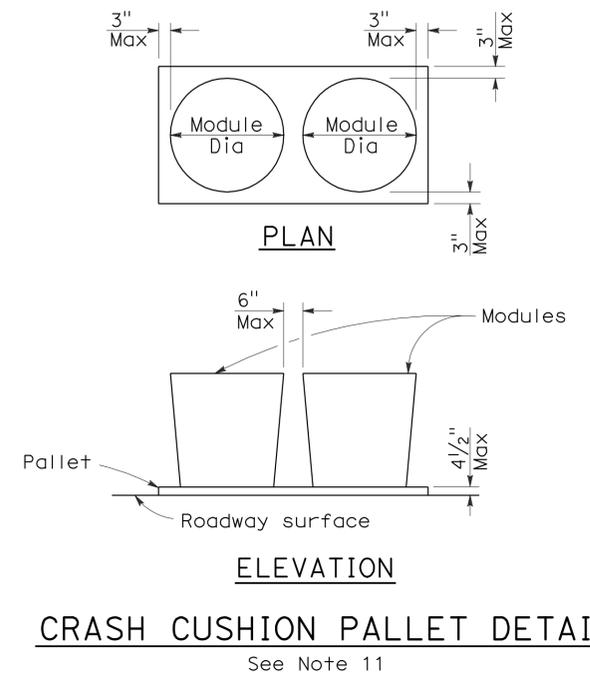
To accompany plans dated 11-16-09



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



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



**NOTES:**

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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

RSP T2 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T2  
DATED MAY 1, 2006 - PAGE 213 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP T2**

2006 REVISED STANDARD PLAN RSP T2

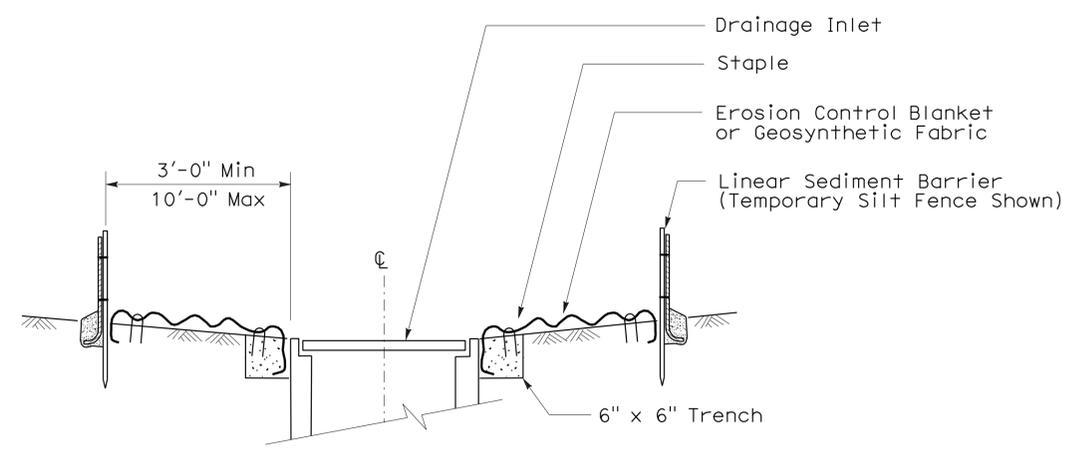
| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|------|--------|-------|--------------------------|-----------|--------------|
| 02   | Sha    | 299   | 23.7                     | 32        | 48           |

Robert B. Schott  
 LICENSED LANDSCAPE ARCHITECT  
 August 15, 2008  
 PLANS Approval DATE  
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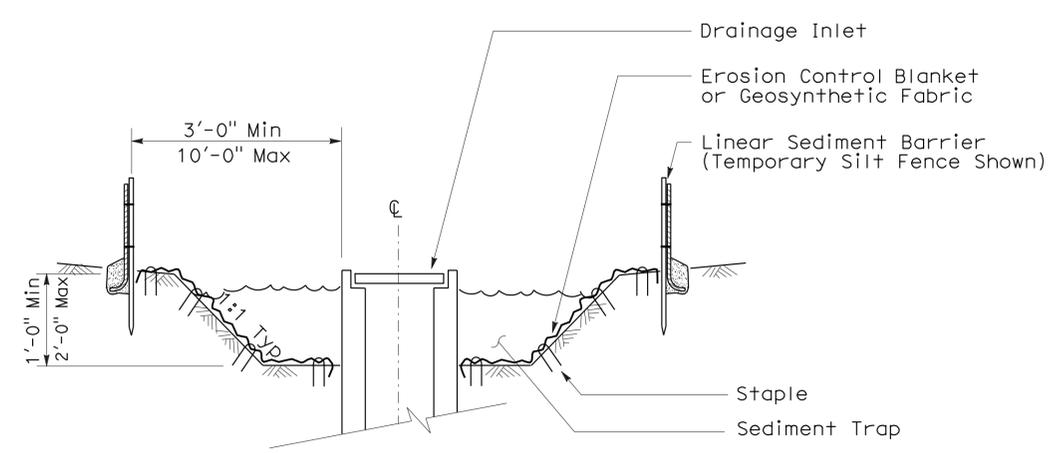


To accompany plans dated 11-16-09

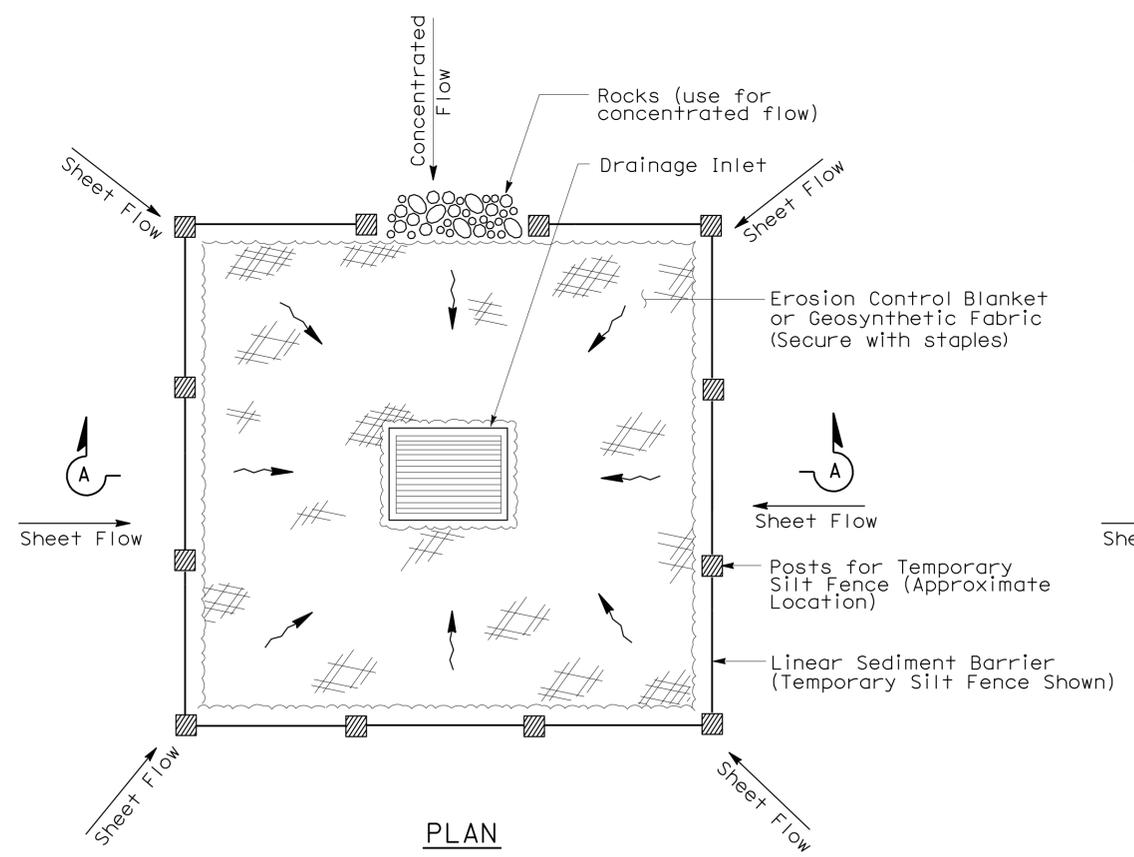
- NOTES:**
- See Standard Plan T51 for Temporary Silt Fence.
  - Dimensions may vary to fit field conditions.



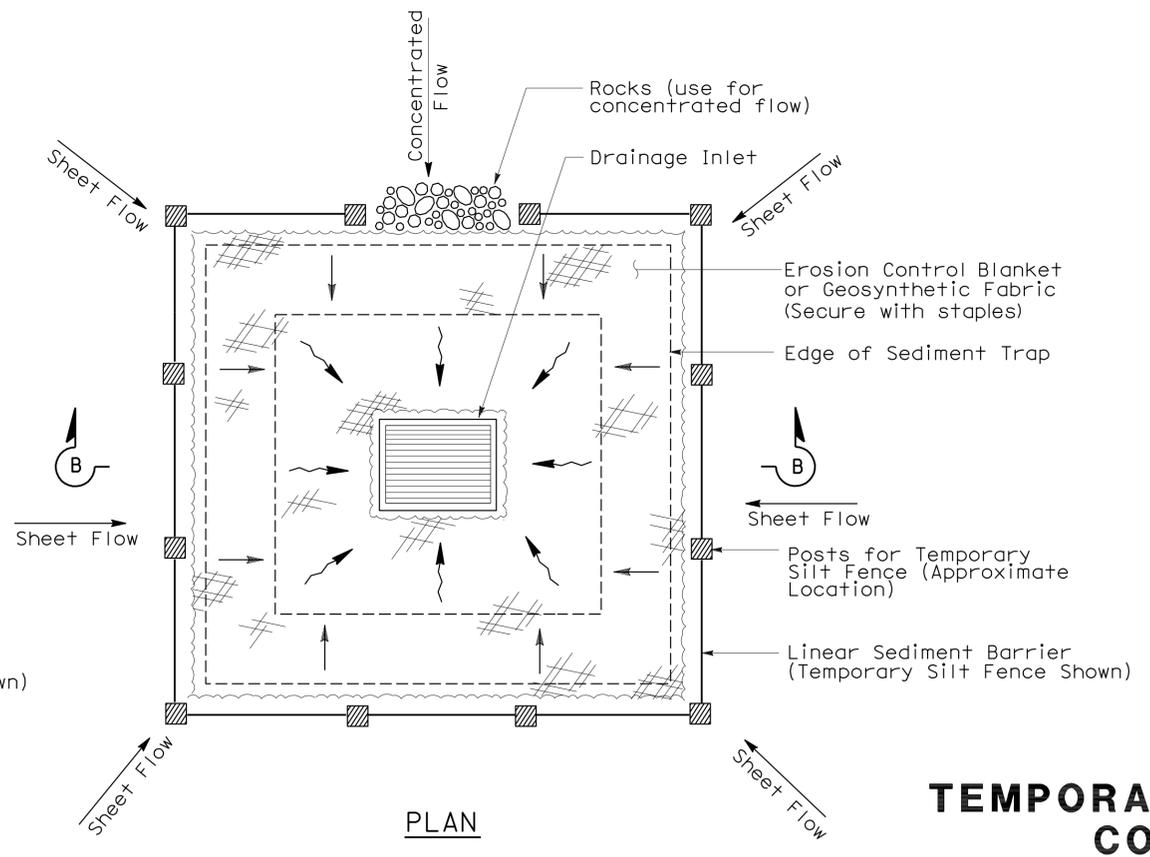
SECTION A-A



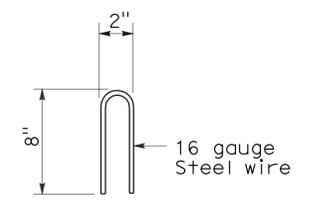
SECTION B-B



TEMPORARY DRAINAGE INLET PROTECTION (TYPE 1)



TEMPORARY DRAINAGE INLET PROTECTION (TYPE 2) (EXCAVATED SEDIMENT TRAP)



STAPLE DETAIL

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**TEMPORARY WATER POLLUTION CONTROL DETAILS**  
**(TEMPORARY DRAINAGE INLET PROTECTION)**  
 NO SCALE

NSP T61 DATED AUGUST 15, 2008 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

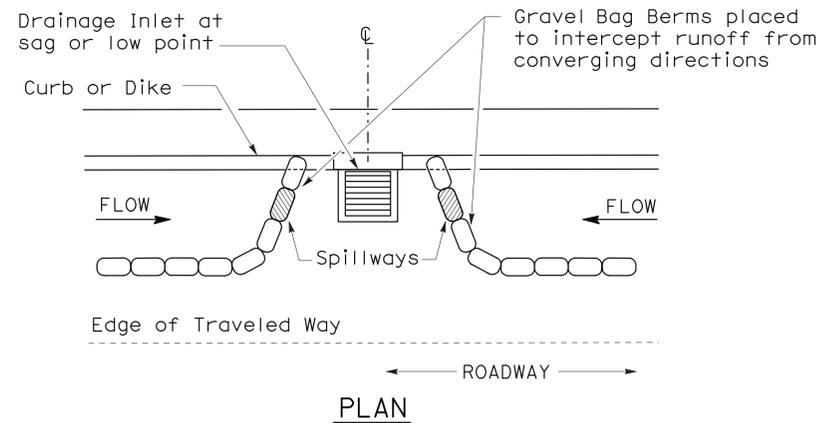
2006 NEW STANDARD PLAN NSP T61



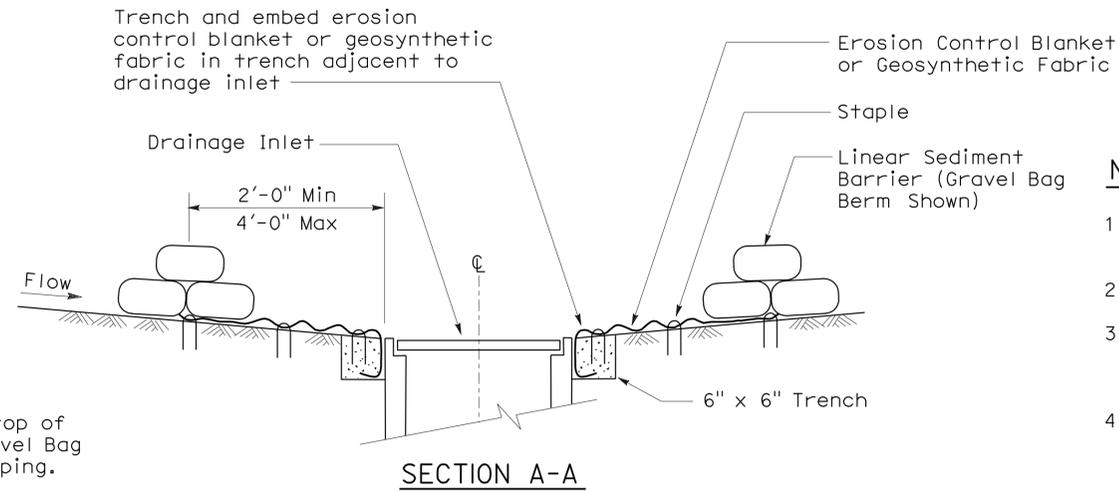
### GRAVEL BAG BERM (TYPE 3A) SPACING TABLE

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

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



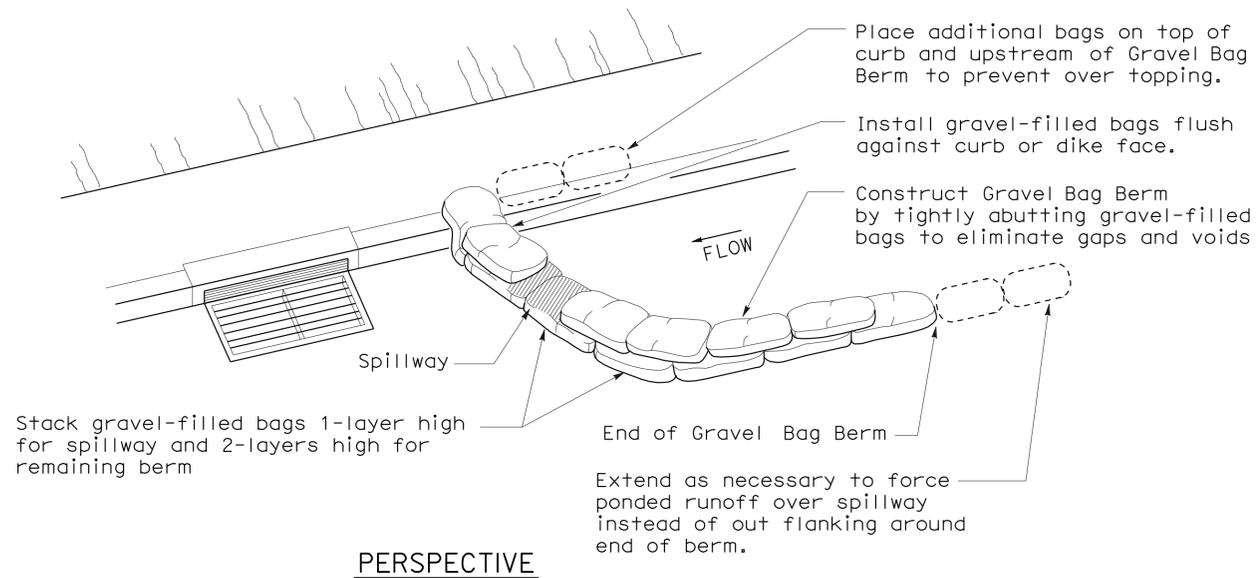
**PLAN**  
**CONFIGURATION FOR SAG POINT INLET**  
**(GRAVEL BAG BERM)**



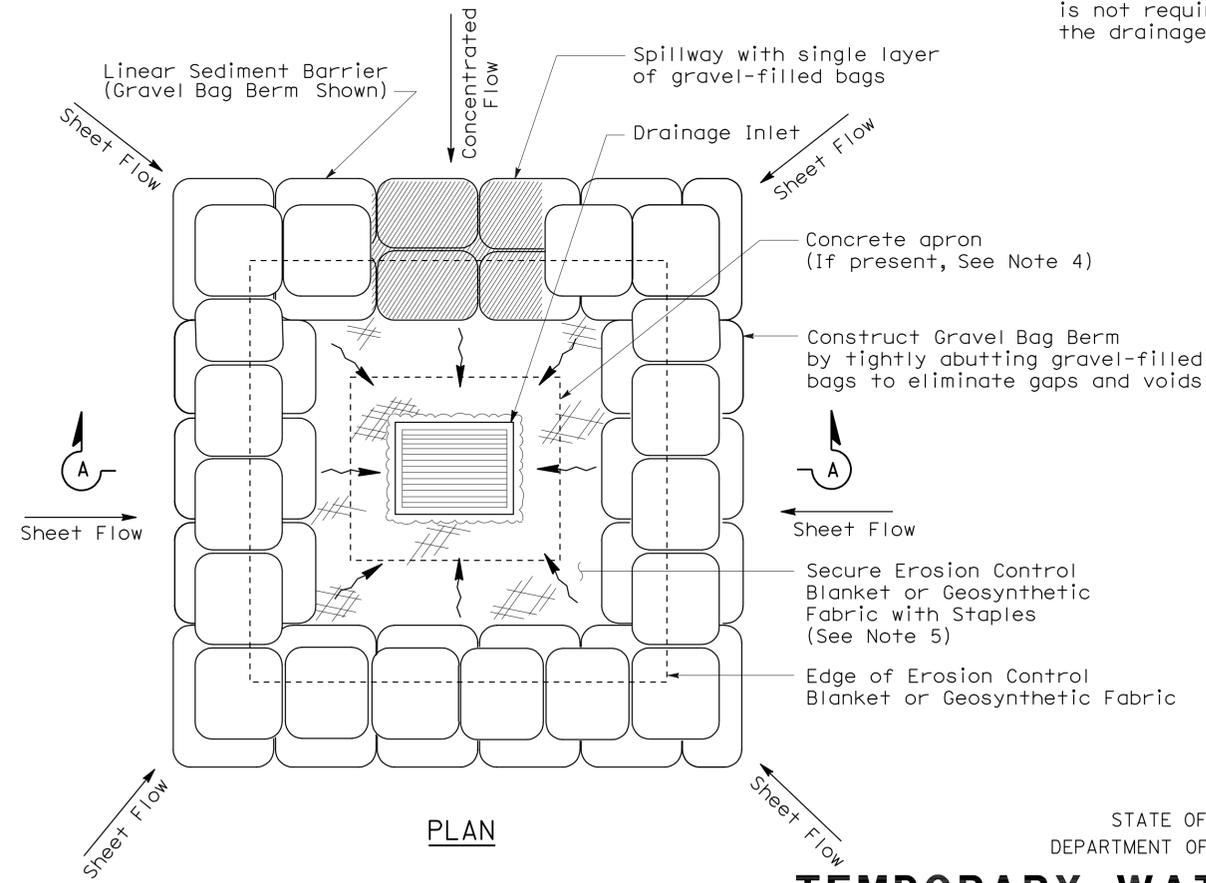
**SECTION A-A**

**NOTES:**

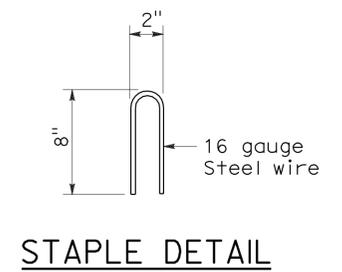
1. Place safety cones adjacent to drainage inlet protection.
2. Dimensions may vary to fit field conditions.
3. Install a minimum of 3 gravel bag berms upstream of each drainage inlet to be protected.
4. Position erosion control blanket or geosynthetic fabric at edge of concrete apron and secure in trench.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



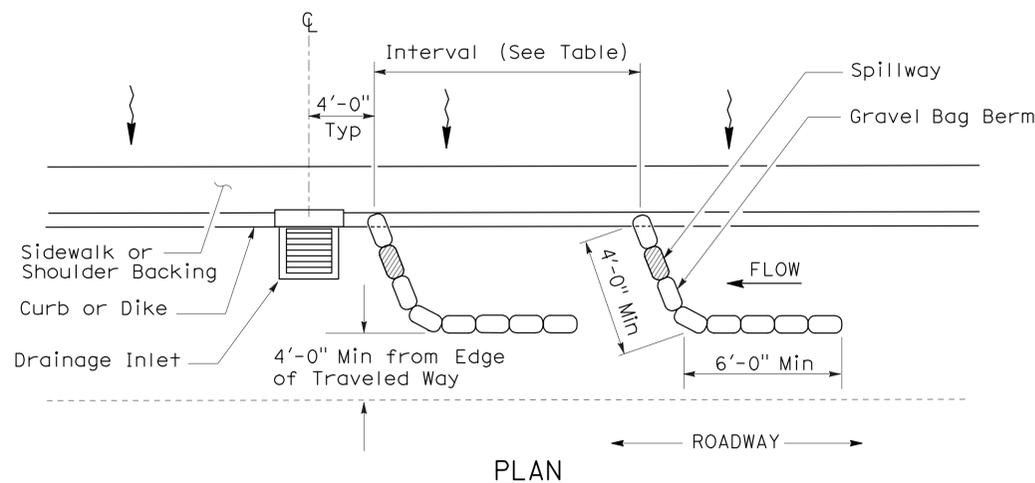
**PERSPECTIVE**



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



**STAPLE DETAIL**



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

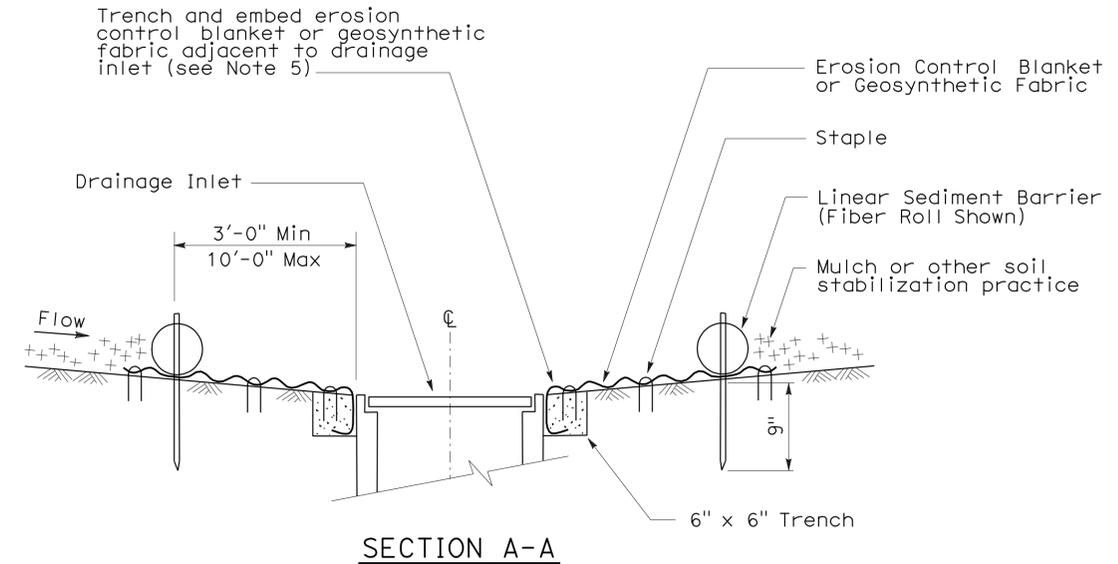
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**TEMPORARY WATER POLLUTION CONTROL DETAILS**  
**(TEMPORARY DRAINAGE INLET PROTECTION)**

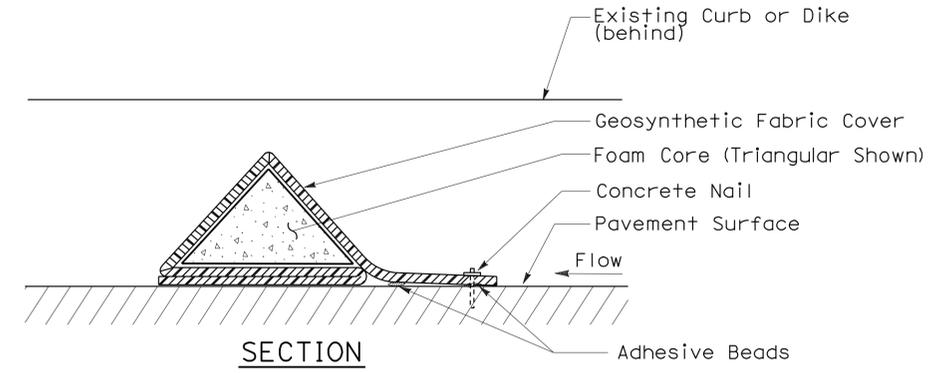
NO SCALE  
NSP T62 DATED AUGUST 15, 2008 SUPPLEMENTS  
THE STANDARD PLANS BOOK DATED MAY 2006.

**FLEXIBLE SEDIMENT BARRIER SPACING TABLE**

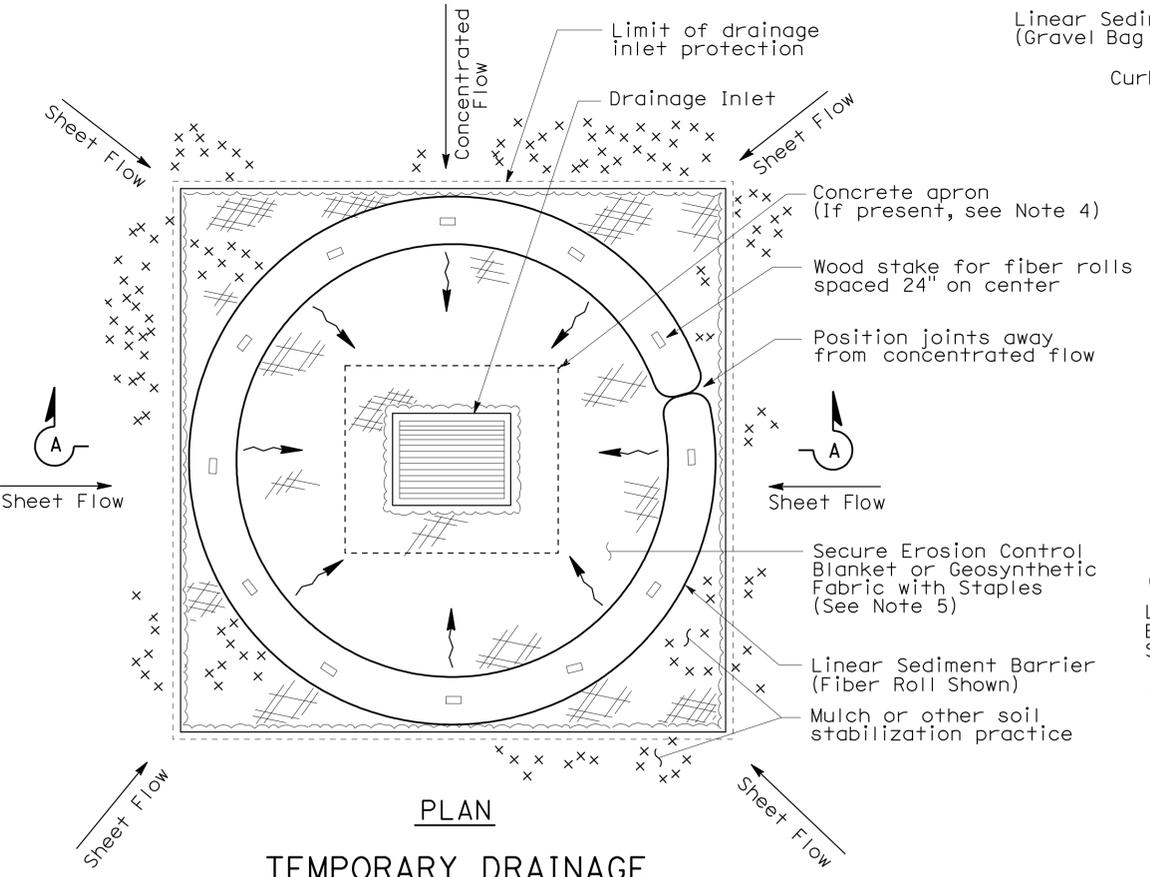
| SLOPE OF ROADWAY (PERCENT) | 0 to 0.9 | 1 to 1.9 | 2 to 2.9 | 3 to 4 | 5+  |
|----------------------------|----------|----------|----------|--------|-----|
| INTERVAL BETWEEN BARRIERS  | 50'      | 35'      | 30'      | 25'    | 20' |
| ANGLE FROM FACE OF CURB    | 70°      | 70°      | 70°      | 45°    | 45° |
| SUGGESTED BARRIER LENGTH   | 6'       | 6'       | 6'       | 6'     | 6'  |



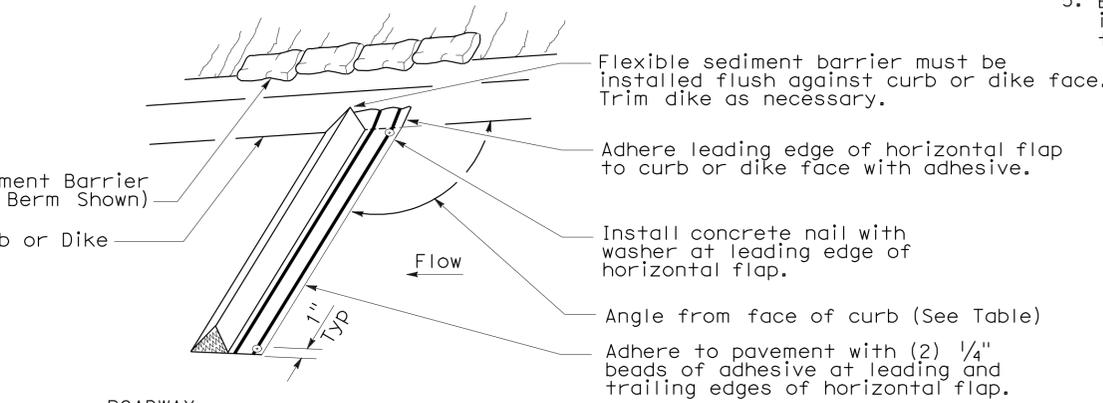
**SECTION A-A**



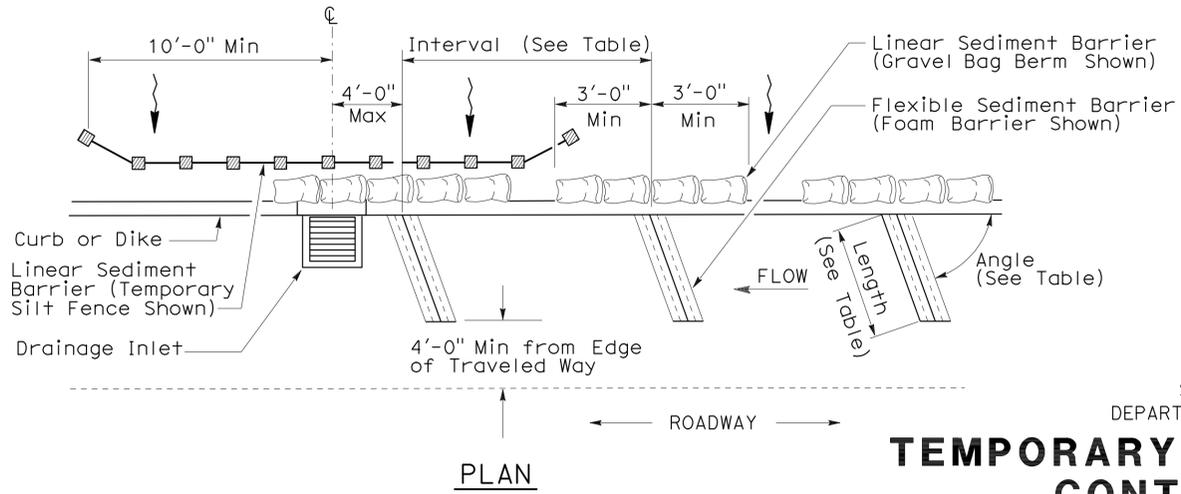
**FLEXIBLE SEDIMENT BARRIER DETAIL (FOAM BARRIER SHOWN)**



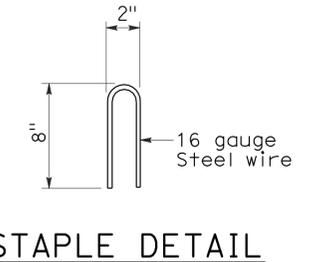
**TEMPORARY DRAINAGE INLET PROTECTION (TYPE 4A)**



**PERSPECTIVE**



**TEMPORARY DRAINAGE INLET PROTECTION (TYPE 4B) FLEXIBLE SEDIMENT BARRIER**



**NOTES:**

1. See Standard Plan T51 for Temporary Silt Fence.
2. Dimensions may vary to fit field conditions.
3. Install a minimum of 3 flexible sediment barriers upstream of each drainage inlet to be protected.
4. Position erosion control blanket or geosynthetic fabric at edge of concrete apron and secure in trench.
5. Erosion control blanket or geosynthetic fabric is not required if the area adjacent to the drainage inlet is vegetated.

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

NO SCALE  
 NSP T63 DATED AUGUST 15, 2008 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP T63

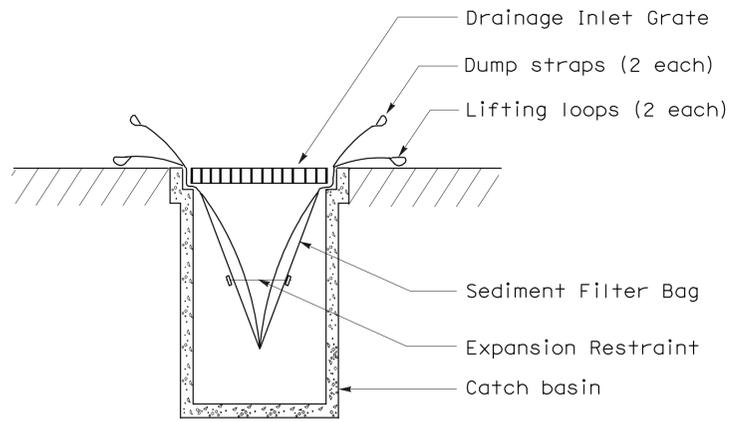
| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|------|--------|-------|--------------------------|-----------|--------------|
| 02   | Sha    | 299   | 23.7                     | 35        | 48           |

*Robert B. Schott*  
 LICENSED LANDSCAPE ARCHITECT

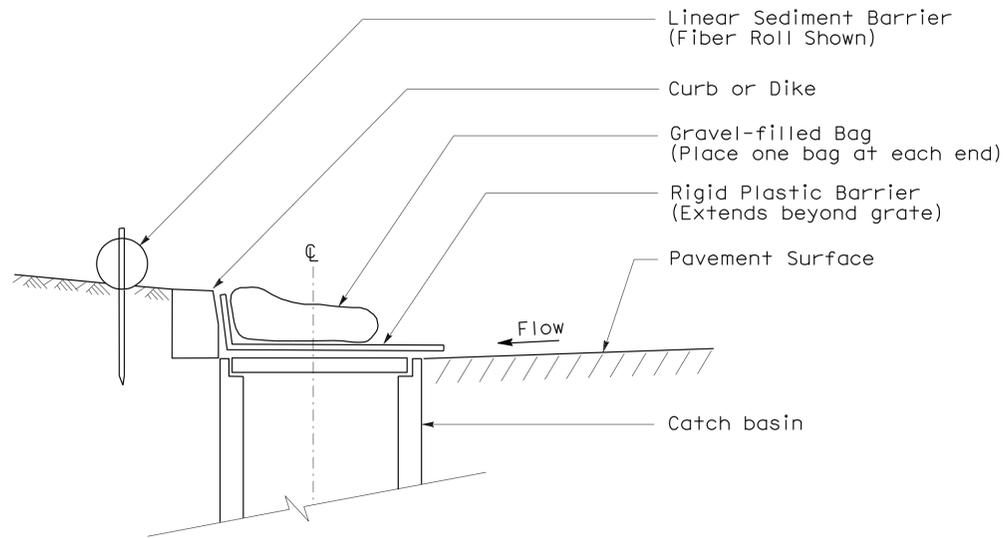
August 15, 2008  
 PLANS APPROVAL DATE

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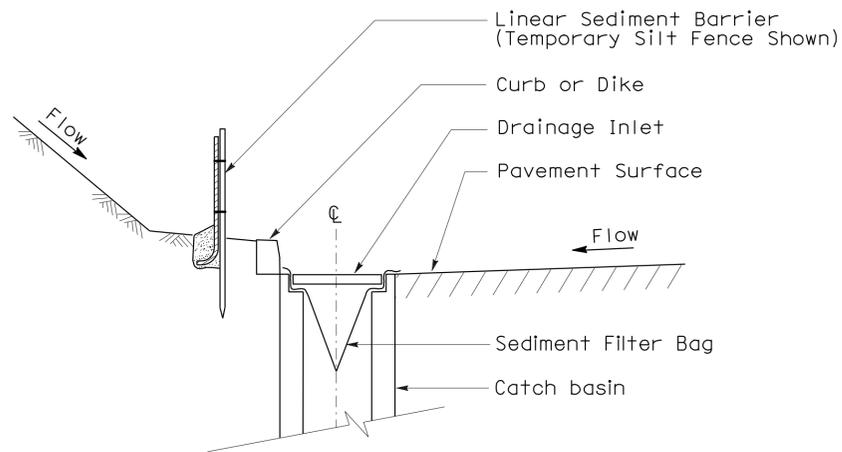
To accompany plans dated 11-16-09



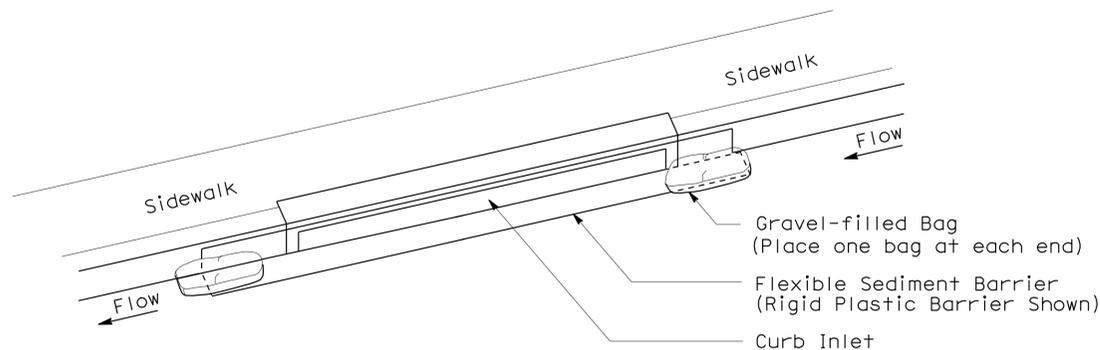
SECTION B-B  
SEDIMENT FILTER BAG DETAIL



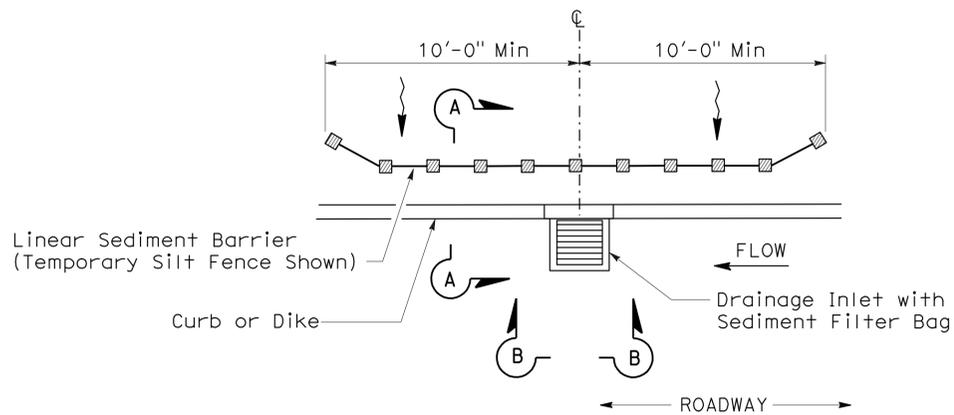
SECTION  
TEMPORARY DRAINAGE  
INLET PROTECTION (TYPE 6A)  
(CATCH BASIN WITH GRATE)



SECTION A-A



PERSPECTIVE



PLAN  
TEMPORARY DRAINAGE  
INLET PROTECTION (TYPE 5)  
(SEDIMENT FILTER BAG)

TEMPORARY DRAINAGE  
INLET PROTECTION (TYPE 6B)  
(CURB INLET WITHOUT GRATE)

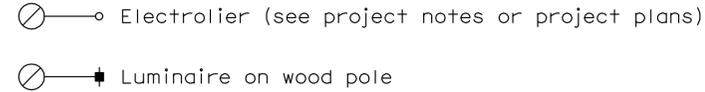
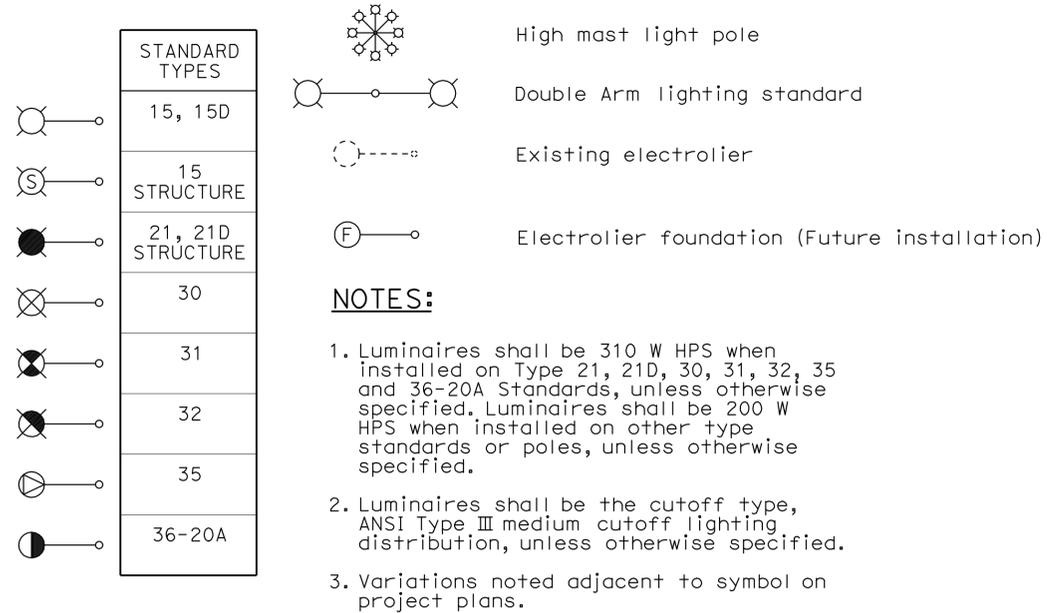
NOTES:

1. See Standard Plan T51 for Temporary Silt Fence.
2. Dimensions may vary to fit field conditions.

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

NO SCALE  
NSP T64 DATED AUGUST 15, 2008 SUPPLEMENTS  
THE STANDARD PLANS BOOK DATED MAY 2006.

# ELECTROLIERS



## STANDARD NOTES:

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

# ABBREVIATIONS AND EQUIPMENT DESIGNATIONS

## PROPOSED EXISTING

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

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|------|--------|-------|--------------------------|-----------|--------------|
| 02   | Sha    | 299   | 23.7                     | 36        | 48           |

REGISTERED ELECTRICAL ENGINEER

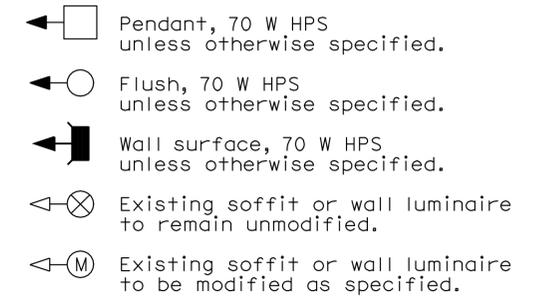
October 5, 2007
   
 PLANS APPROVAL DATE

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

To accompany plans dated 11-16-09

## SOFFIT AND WALL MOUNTED LUMINAIRES



### NOTE:

Arrow indicates "street side" of luminaire.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

# ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

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

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

2006 REVISED STANDARD PLAN RSP ES-1A

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|------|--------|-------|--------------------------|-----------|--------------|
| 02   | Sha    | 299   | 23.7                     | 37        | 48           |

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

To accompany plans dated 11-16-09

### CONDUIT

| PROPOSED | EXISTING |   |
|----------|----------|---|
| ---      | ---      | Lighting Conduit, unless otherwise indicated or noted |
| ---      | ---      | Traffic signal conduit                                |
| -C-      | -c-      | Communication conduit                                 |
| -T-      | -t-      | Telephone conduit                                     |
| -F-      | -f-      | Fire alarm conduit                                    |
| -FO-     | -fo-     | Fiber optic conduit                                   |
| ---      | ---      | Conduit termination                                   |
|          |          | Conduit riser in/on structure or service pole         |

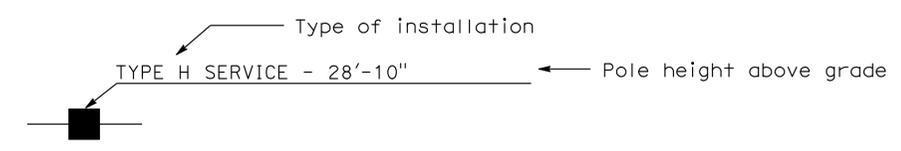
### SIGNAL EQUIPMENT

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

### SERVICE EQUIPMENT

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

### POLE-MOUNTED SERVICE DESIGNATION



### ILLUMINATED OVERHEAD SIGN

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

### SIGNAL EQUIPMENT Cont

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

### NOTES:

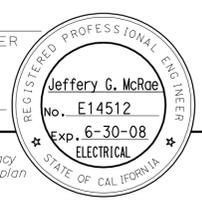
- All signal sections shall be 12" unless shown otherwise.
- Signal heads shall be provided with backplates unless shown otherwise.
- Signal indication shall be LED.

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

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

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

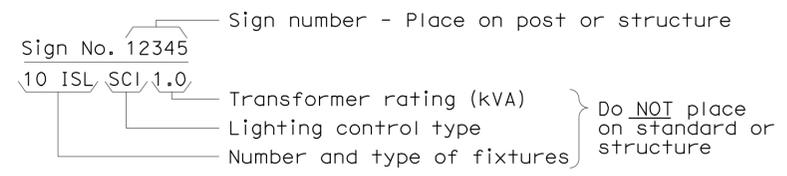
2006 REVISED STANDARD PLAN RSP ES-1B



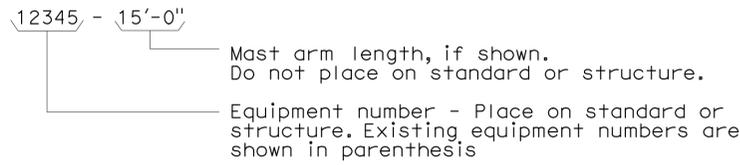
To accompany plans dated 11-16-09

### EQUIPMENT IDENTIFICATION

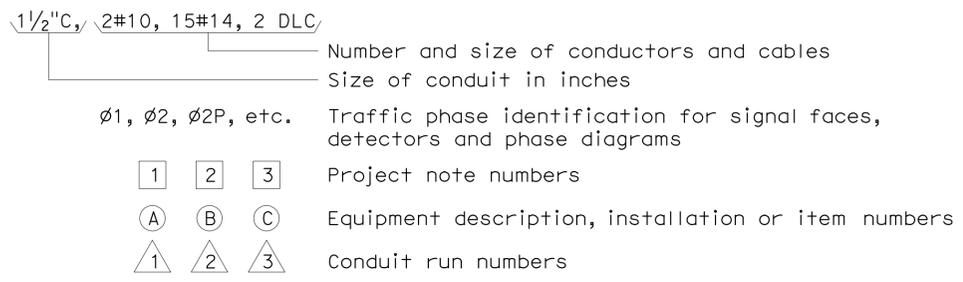
#### ILLUMINATED SIGN IDENTIFICATION NUMBER:



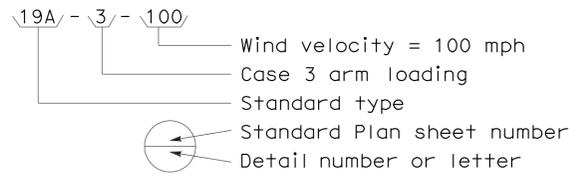
#### ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



#### CONDUIT AND CONDUCTOR IDENTIFICATION:



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



### MISCELLANEOUS EQUIPMENT

| PROPOSED | EXISTING |  |
|----------|----------|--|
| CMS      | cms      | Changeable message sign  |
|          |          | Closed circuit television camera                                   |
| EMS      | ems      | Highway advisory radio pole and antenna                            |
|          |          | Extinguishable message sign  |
| M<br>V   | m<br>v   | Detection device<br>M = Microwave sensor<br>V = Video image sensor |

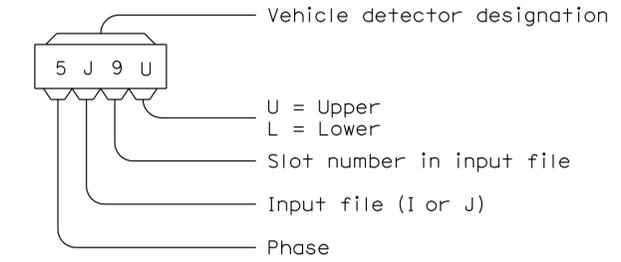
### WIRING DIAGRAM LEGEND

|    |                               |       |                       |
|----|-------------------------------|-------|-----------------------|
| P  | Pole                          | ----  | External conductor    |
| CB | Circuit breaker               | —     | Conductor or bus      |
| A  | Ampere                        | —●—   | Tie point             |
| V  | Volt                          | —/—   | Contactor coil        |
| M  | Metered                       | — —   | Contactor, Contact NO |
| UM | Unmetered                     | —X—   | Terminal blocks       |
| NB | Neutral bus                   | —/—   | Contactor, Contact NC |
| GB | Ground bus                    | —/—   | Enclosure bond        |
| G  | Equipment grounding conductor | — —   | Grounding electrode   |
| N  | Grounded conductor (Neutral)  | — —   | Circuit breaker       |
|    |                               | —(R)— | Receptacle            |

### PULL BOXES

| PROPOSED | EXISTING |   |
|----------|----------|---|
|          |          | Pull box-No. 5 unless otherwise indicated or noted.                         |
|          |          | Pull box-Additional designations or descriptions                            |
| 3        |          | (C) = Communications pull box   |
| 5        |          | (E) = Pull box with extension   |
| 6        |          | (S) = Sprinkler control pull box  |
| 7        |          | (21) = Anchor bolts and conduit for future installation of Type 21 Standard |
| 8        |          | (T) = Traffic pull box  |
| 9        |          |   |
| 9A       |          |   |

### VEHICLE DETECTORS



| PROPOSED | EXISTING |  |
|----------|----------|--|
|          |          | Type A detector loop. Outline of sawcut shown. |
|          |          | Type B detector loop. Outline of sawcut shown. |
|          |          | Type C detector loop. Outline of sawcut shown. |
|          |          | Type D detector loop. Outline of sawcut shown. |
|          |          | Type E detector loop. Outline of sawcut shown. |
|          |          | Type Q detector loop. Outline of sawcut shown. |
|          |          | Magnetic detector                              |
|          |          | Detector handhole                              |
|          |          | Microwave or video detection zone              |

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

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

2006 REVISED STANDARD PLAN RSP ES-1C

| DIST | COUNTY | ROUTE | POST MILES<br>TOTAL PROJECT | SHEET<br>NO. | TOTAL<br>SHEETS |
|------|--------|-------|-----------------------------|--------------|-----------------|
| 02   | Sha    | 299   | 23.7                        | 39           | 48              |

*Jeffery G. McRae*  
 REGISTERED ELECTRICAL ENGINEER

October 5, 2007  
 PLANS APPROVAL DATE

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

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

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

13. An engraved phenolic nameplate on the dead front panel indicating the function of each circuit or device shall be installed with stainless steel rivets or stainless steel screws:
  - a) Adjacent to the breaker or device with character size a minimum of  $\frac{1}{8}$ ".
  - b) At the top of the exterior door panel indicating State system number, voltage level and number of phases with character size a minimum of  $\frac{3}{16}$ ".
14. The plan shows the approximate location of devices within the enclosure. Components may be rearranged, however, the "working" clearances within the service equipment enclosure shall be maintained.
15. In unpaved areas a raised portland cement concrete pad 2'-0" x 4" x width of foundation shall be constructed in front of new service equipment enclosure installation. Pad shall be set to elevation of foundation.
16. Foundation shall extend 2" minimum beyond edge of service equipment enclosure.
17. Internal bus, where shown, is typical only. Alternative design of proposed service equipment enclosure shall be submitted to the Engineer for approval.
18. Plug-in circuit breakers may be mounted in the vertical or horizontal position. Cable-in/cable-out circuit breakers shall be mounted in the vertical position.
19. Type III-AF and Type III-BF service equipment enclosures shall have the meter viewing windows located on the front side of the service equipment enclosures.
20. Type III-AR and Type III-BR service equipment enclosures shall be similarly constructed as Type III-AF and Type III-BF respectively, except the meter viewing windows shall be located on the back side of the service equipment enclosures.
21. Minimum clearance shall be required for front and back of service equipment enclosure per National Electrical Code, Article 110.26, "Spaces About Electric Equipment (600 Volts, Nominal, or Less)."

To accompany plans dated 11-16-09

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

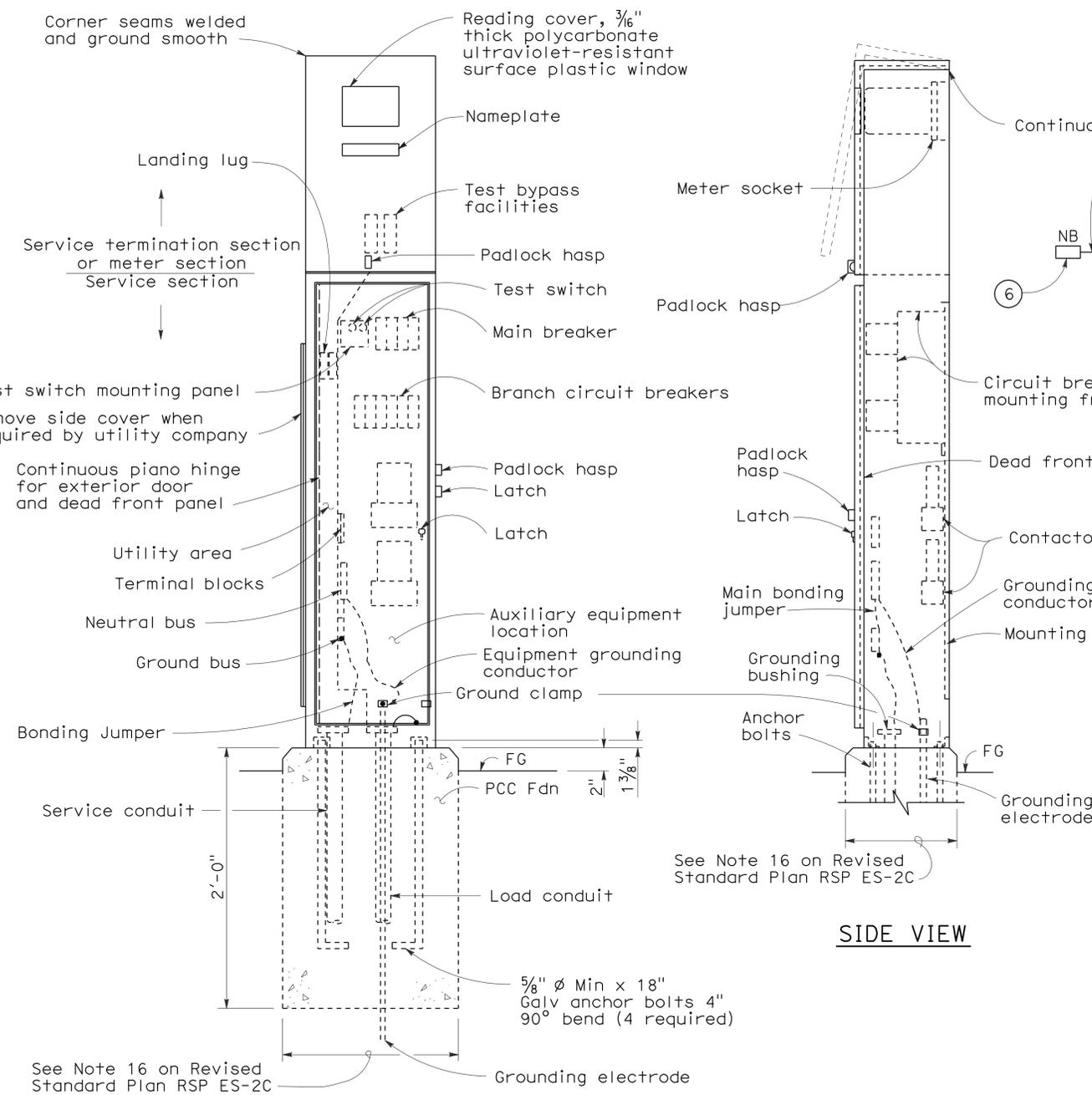
**ELECTRICAL SYSTEMS  
 (SERVICE EQUIPMENT NOTES  
 TYPE III SERIES)**

NO SCALE

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

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

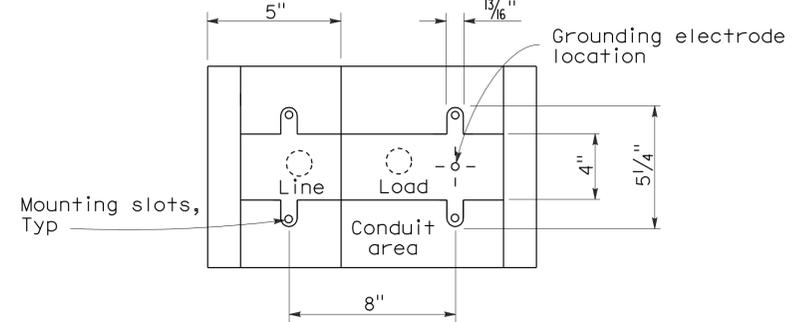
2006 REVISED STANDARD PLAN RSP ES-2C



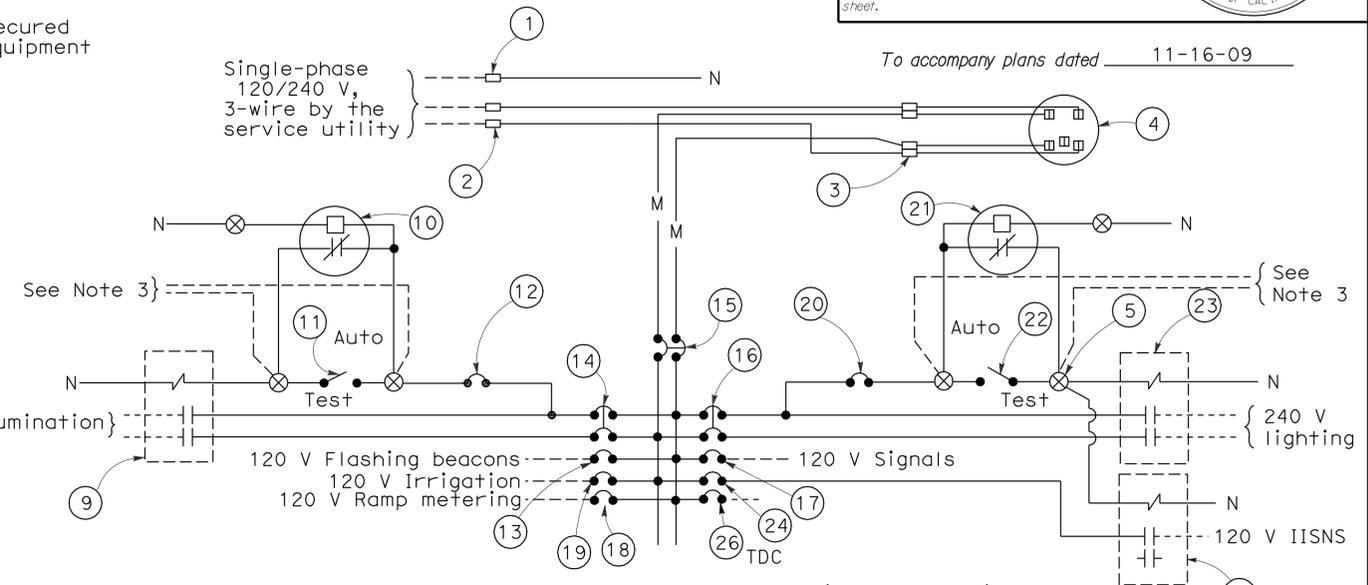
**TYPE III-AF SERVICE EQUIPMENT ENCLOSURE (TYPICAL)**

**FRONT VIEW**

**SIDE VIEW**



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



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

| TYPE III-A SERVICE (120/240 V) EQUIPMENT LEGEND |                             |                               |          |                             |                               |
|---|-----------------------------|-------------------------------|----------|-----------------------------|-------------------------------|
| ITEM No.  | COMPONENT                   | NAME PLATE DESCRIPTION        | ITEM No. | COMPONENT                   | NAME PLATE DESCRIPTION        |
| 1   | Neutral lug                 |                               | 14       | 30 A, 240 V, 2P, CB         | Sign Illumination             |
| 2   | Landing lug (Note 6)        |                               | 15       | 100 A, 240 V, 2P, CB        | Main Breaker                  |
| 3   | Test bypass facility        |                               | 16       | 30 A, 240 V, 2P, CB         | Lighting                      |
| 4   | Meter socket and support    |                               | 17       | 50 A, 120 V, 1P, CB         | Signals                       |
| 5   | Terminal blocks             |                               | 18       | 30 A, 120 V, 1P, CB         | Ramp Metering                 |
| 6   | Neutral bus                 |                               | 19       | 20 A, 120 V, 1P, CB         | Irrigation                    |
| 7   | Ground bus                  |                               | 20       | 15 A, 120 V, 1P, CB         | Lighting Control              |
| 8   | Grounding electrode         |                               | 21       | Photoelectric unit (Note 7) |                               |
| 9   | 30 A, 2PNO Contactor        | Sign Illumination             | 22       | 15 A, 1P, Test switch       | Lighting Test Switch          |
| 10  | Photoelectric unit (Note 7) |                               | 23       | 60 A, 2PNO Contactor        | Lighting                      |
| 11  | 15 A, 1P, Test switch       | Sign Illumination Test Switch | 24       | 15 A, 120 V, 1P, CB         | IISNS                         |
| 12  | 15 A, 120 V, 1P, CB         | Sign Illumination Control     | 25       | 30 A, 2PNO Contactor        | IISNS                         |
| 13  | 15 A, 120 V, 1P, CB         | Flashing Beacon               | 26       | 20 A, 120 V, 1P, CB         | Telephone Demarcation Cabinet |

**NOTES: (FOR SERVICE EQUIPMENT ENCLOSURE)**

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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

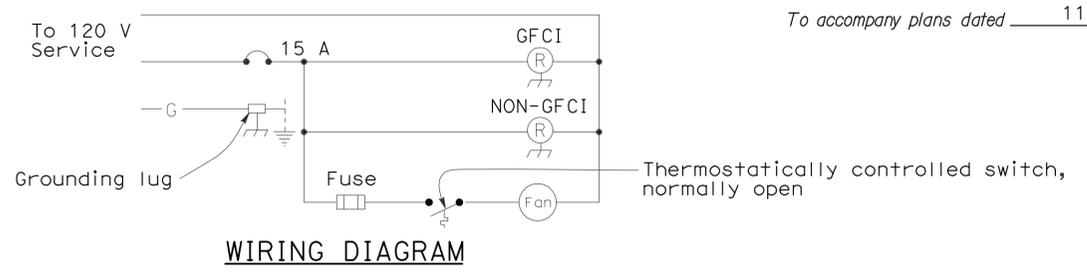
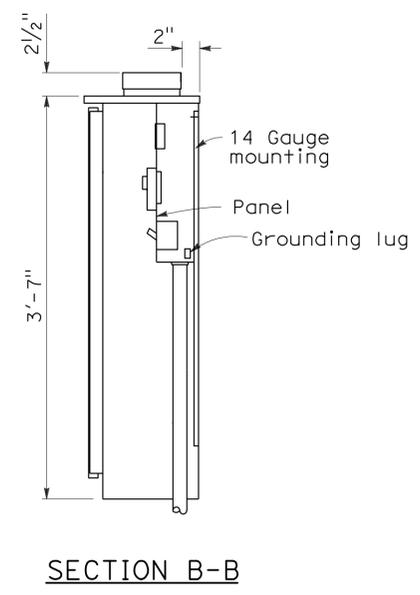
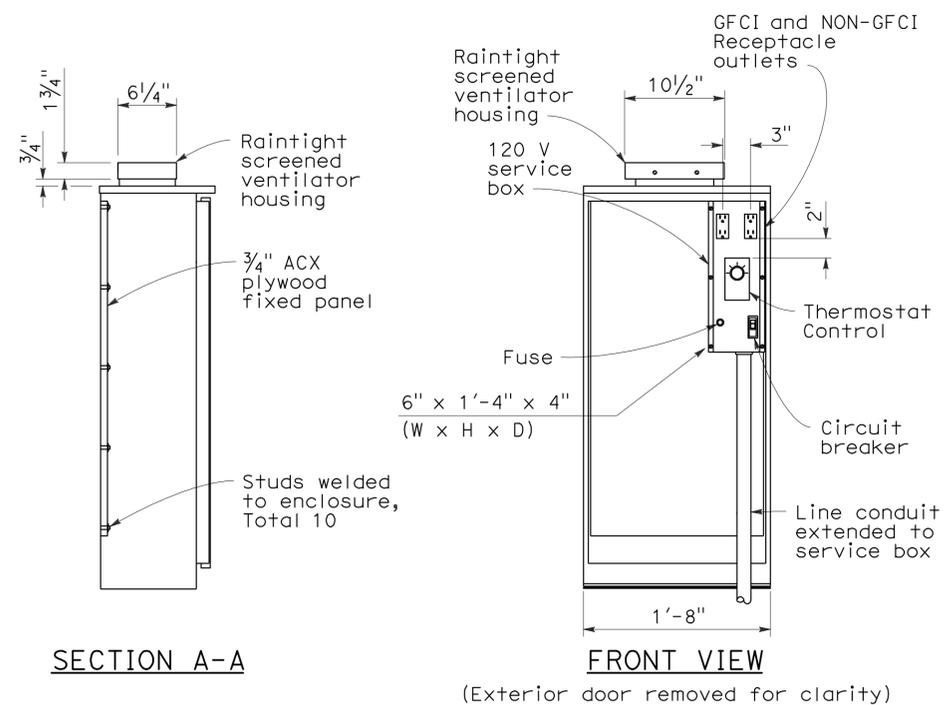
RSP ES-2D DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-2D DATED MAY 1, 2006 - PAGE 406 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP ES-2D

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|------|--------|-------|--------------------------|-----------|--------------|
| 02   | Sha    | 299   | 23.7                     | 41        | 48           |

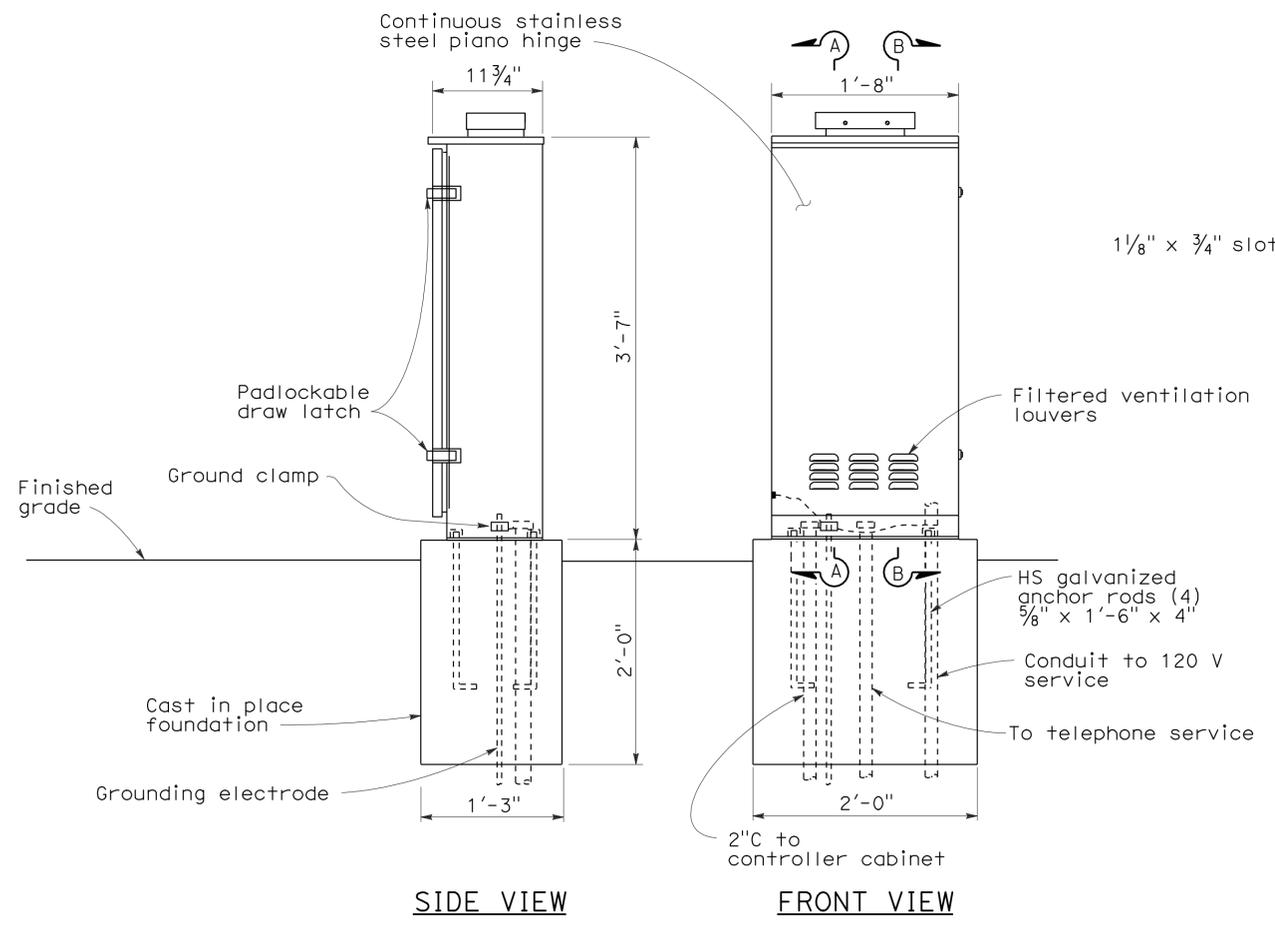
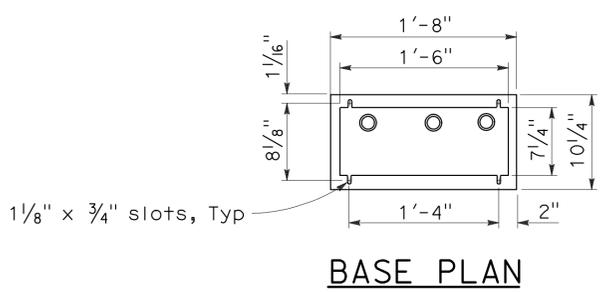
*Jeffery G. McRae*  
 REGISTERED ELECTRICAL ENGINEER  
 October 5, 2007  
 PLANS APPROVAL DATE  
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REGISTERED PROFESSIONAL ENGINEER  
 Jeffery G. McRae  
 No. E14512  
 Exp. 6-30-08  
 ELECTRICAL  
 STATE OF CALIFORNIA



**NOTES:**

- Telephone demarcation cabinet shall be furnished with a mounting panel, outlets, circuit breaker and deadfront plates in place. Dimensions are nominal.
- An approved mastic or caulking compound shall be placed on the foundation prior to placing the cabinet to seal openings between the bottom of the cabinet and the foundation.
- In unpaved areas, a raised PCC pad shall be placed in front of the telephone demarcation cabinet. Pad shall be 2'-0" x 1'-10" x 4" thick, with 2" above the finished grade.
- All conduits shall be bonded to the enclosure.
- Telephone demarcation cabinet:
  - Material shall be anodized aluminum (1/8" thick).
  - Fabrication shall conform to the requirements of the Standard Specifications.
  - The exterior door shall be side hung and secured with a padlockable draw latch, the padlock hole shall be a minimum diameter of 7/16" to receive a padlock.
  - Ventilation louvers shall be located on the door.
  - Fan shall be mounted in a ventilator housing.
  - Fan shall be thermostatically controlled and adjustable to turn on between 80°F and 130°F.
  - Fan circuit shall be fused at 175 percent of the fan motor capacity.
  - Fan capacity shall be at least 25 cubic feet per minute.
  - Fasten fixed mounting panels with nuts, lock and flat washers to 3/16" ø x 1" studs welded to enclosure.



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DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS  
(TELEPHONE DEMARCATI  
ON CABINET, TYPE B)**

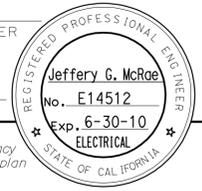
NO SCALE

RSP ES-3E DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-3E  
DATED MAY 1, 2006 - PAGE 414 OF THE STANDARD PLANS BOOK DATED MAY 2006.

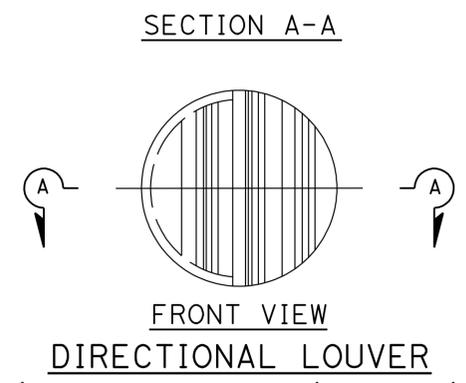
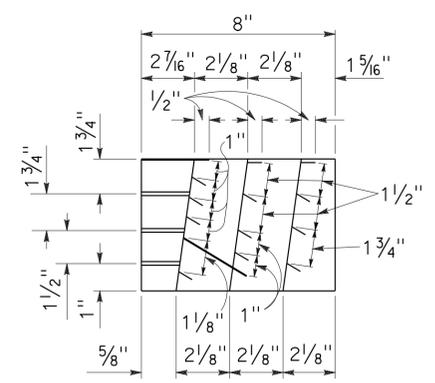
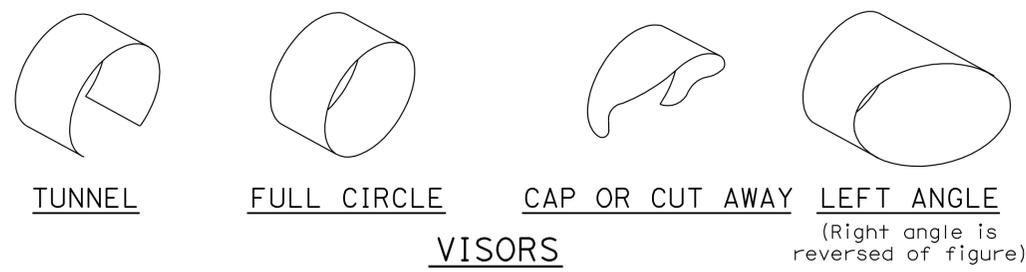
**2006 REVISED STANDARD PLAN RSP ES-3E**

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|------|--------|-------|--------------------------|-----------|--------------|
| 02   | Sha    | 299   | 23.7                     | 42        | 48           |

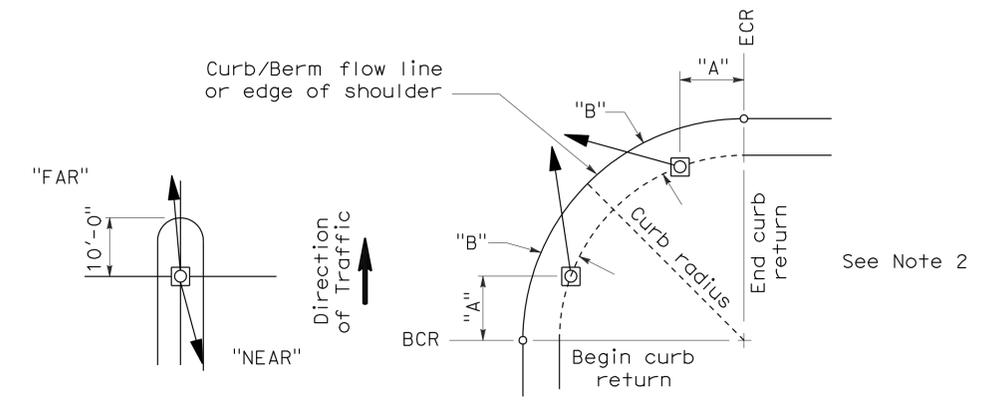
*Jeffery G. McRae*  
 REGISTERED ELECTRICAL ENGINEER  
 June 6, 2008  
 PLANS APPROVAL DATE  
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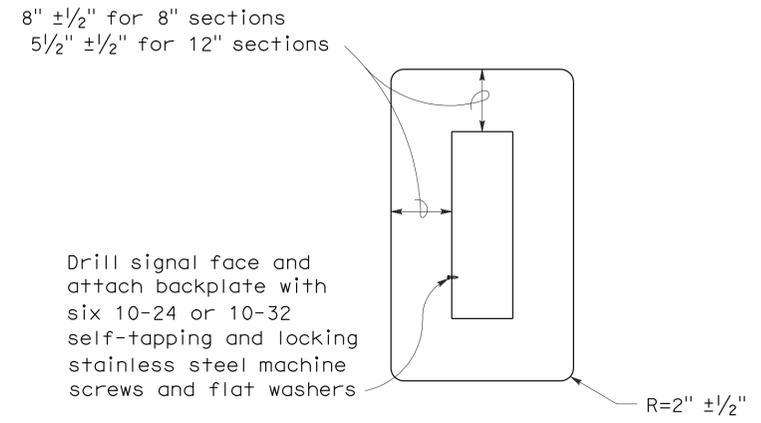
To accompany plans dated 11-16-09



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

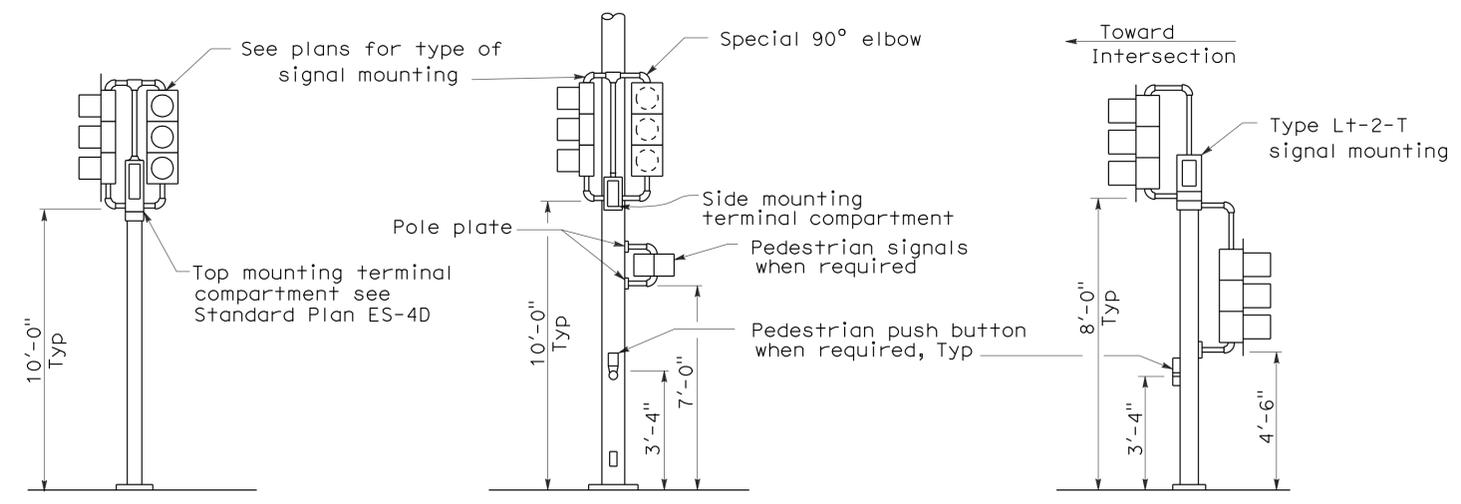


- NOTES:**
1. Typical signal pole placement unless dimensioned on plans.
  2. For "A" and "B" dimensions, see Pole Schedule, or as directed by the Engineer.



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

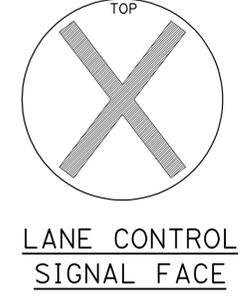
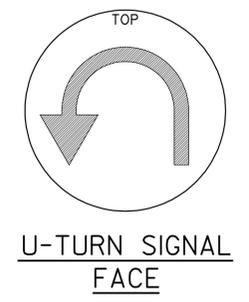
**SIGNAL STANDARD PLACEMENT DIMENSIONS AND EQUIPMENT LOCATIONS**



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

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

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



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

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

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

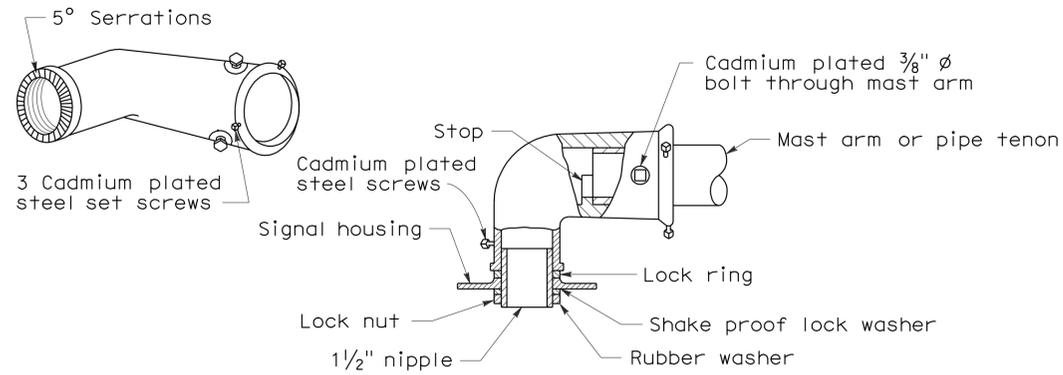
2006 REVISED STANDARD PLAN RSP ES-4C

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|------|--------|-------|--------------------------|-----------|--------------|
| 02   | Sha    | 299   | 23.7                     | 43        | 48           |

Jeffrey G. McRae  
 REGISTERED ELECTRICAL ENGINEER  
 June 6, 2008  
 PLANS APPROVAL DATE  
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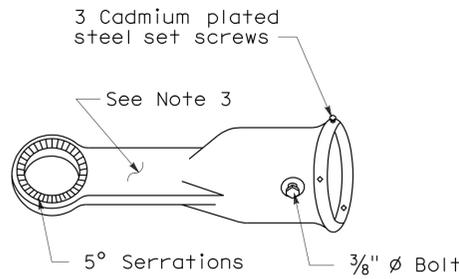
REGISTERED PROFESSIONAL ENGINEER  
 Jeffrey G. McRae  
 No. E14512  
 Exp. 6-30-10  
 ELECTRICAL  
 STATE OF CALIFORNIA

To accompany plans dated 11-16-09



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

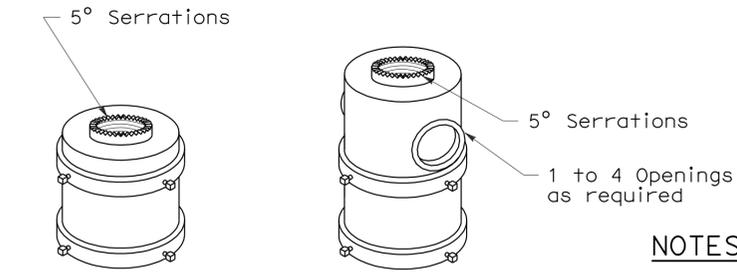
For 2 NPS pipe, see Note 1.



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

For 2 NPS pipe. See Note 1.

**SIGNAL SLIP FITTERS**



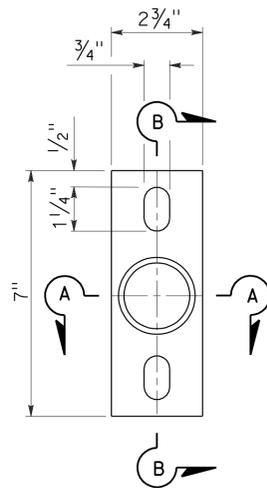
For one mounting For multiple mountings

**TOP MOUNTINGS**

For 4 NPS pipe, see Note 2.

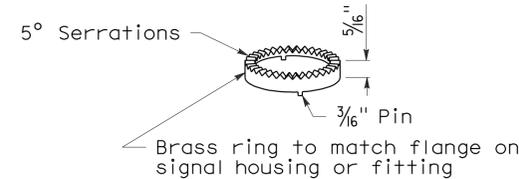
**NOTES:**

- After mast arm signal has been plumbed and secured, drill 1/16 inch hole through mast arm tenon in line with slip fitter hole. Place a cadmium plated 3/8 inch diameter galvanized bolt with washer under bolt head through hole and secure with washer, nut, and locknut. Seal openings between mast arm mountings and mast arm with mastic.
- (a) Threaded top mounted slip fitter openings shall be 1/2 NPS.  
(b) Serrations in fittings shall match those on bottom of signal heads or in lock ring.  
(c) Top opening shall be offset when backplate is used.
- Wireway shall have a cross section area of 0.95 square inch minimum. Minimum width of 1/2 inch.



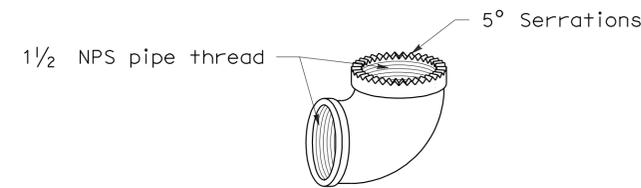
**POLE PLATE**

For side mountings



**LOCK RING**

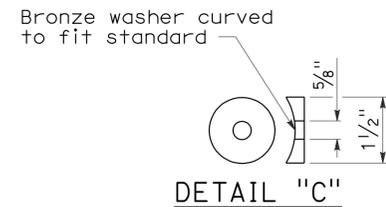
Use where locking ring is not integral with signal housing or fitting.



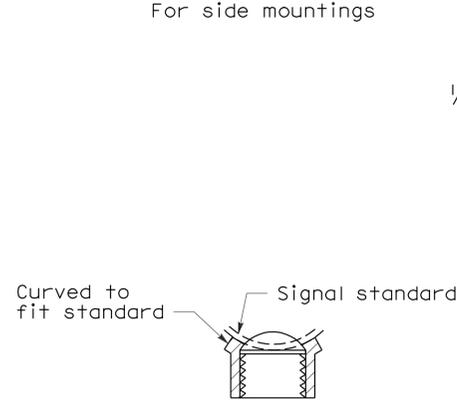
**SPECIAL 90° ELBOW**

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

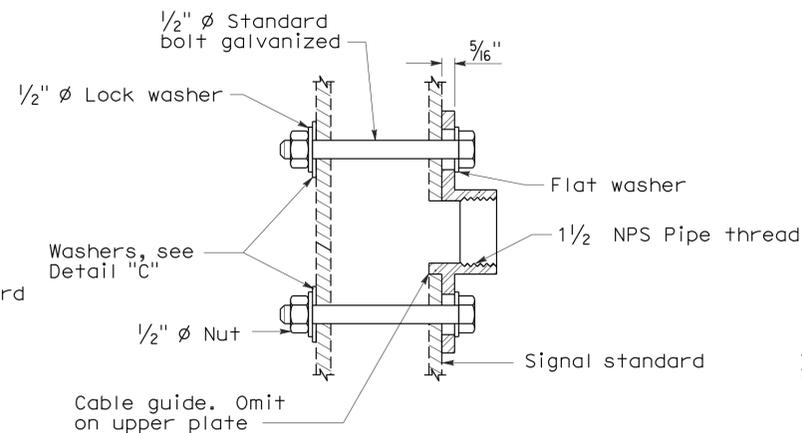
**MISCELLANEOUS MOUNTING HARDWARE**



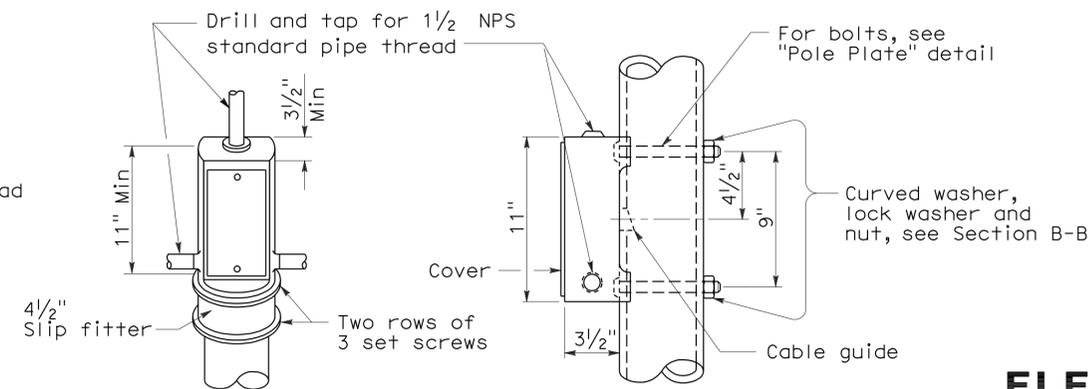
**DETAIL "C"**



**SECTION A-A**



**SECTION B-B**



**TOP MOUNTING**

**SIDE MOUNTING**

**TERMINAL COMPARTMENTS**

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

NO SCALE

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

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

2006 REVISED STANDARD PLAN RSP ES-4D

|      |        |       |                          |           |              |
|------|--------|-------|--------------------------|-----------|--------------|
| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
| 02   | Sha    | 299   | 23.7                     | 44        | 48           |

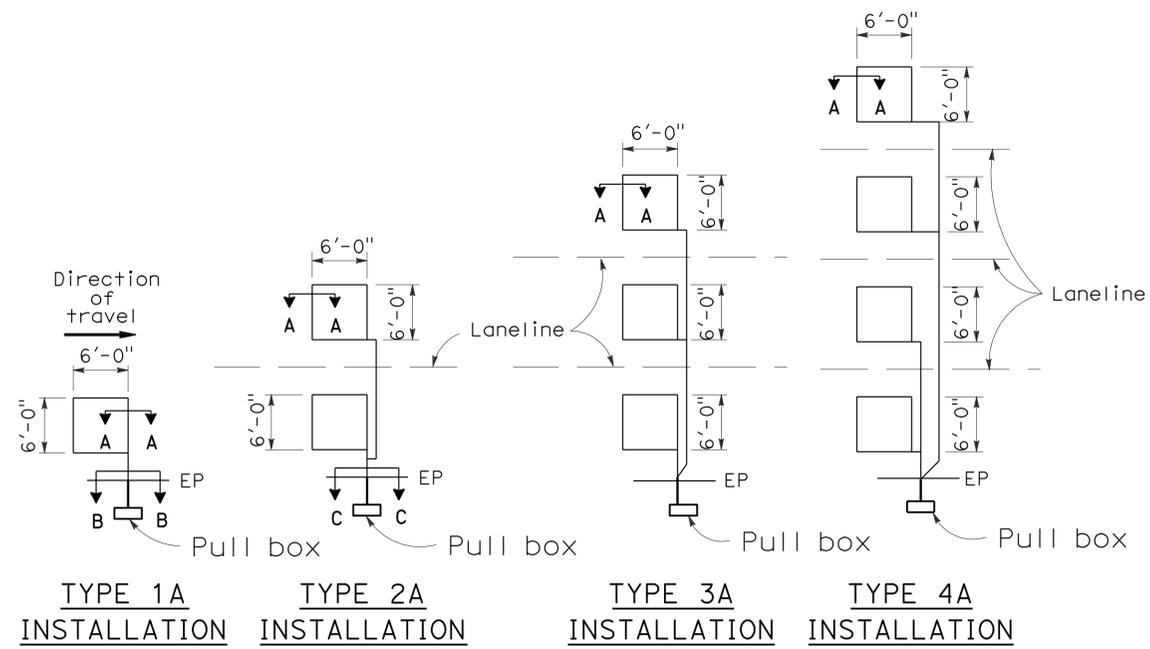
REGISTERED ELECTRICAL ENGINEER  
 Jeffery G. McRae  
 No. E14512  
 Exp. 6-30-08  
 STATE OF CALIFORNIA

October 5, 2007  
 PLANS APPROVAL DATE

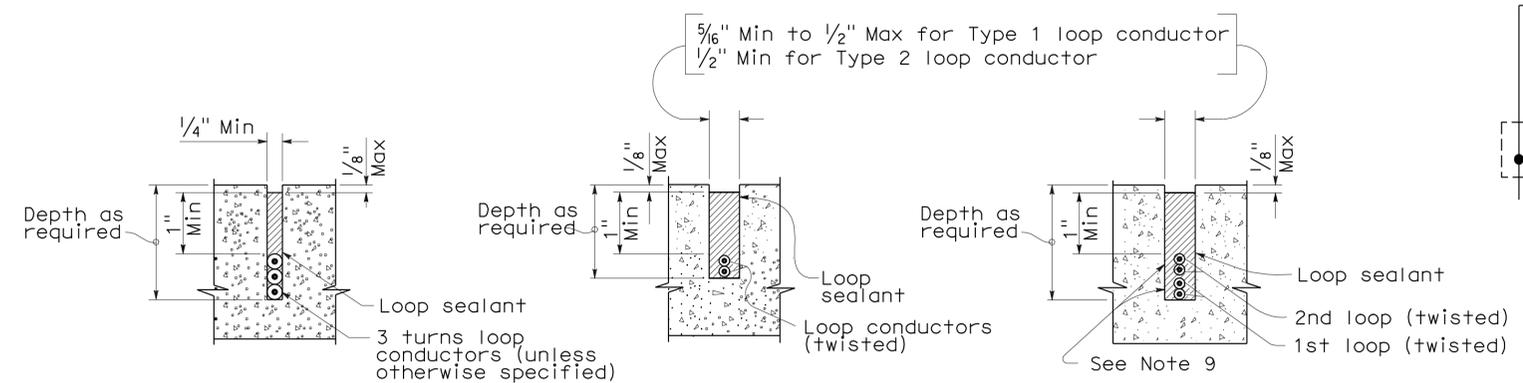
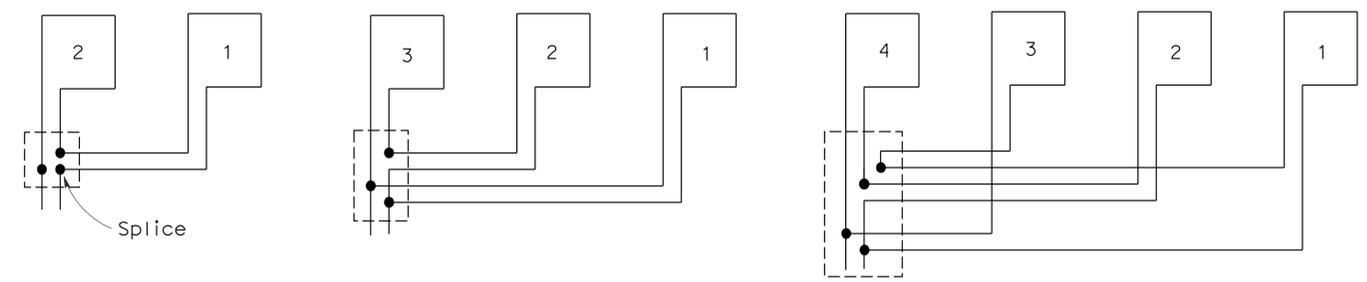
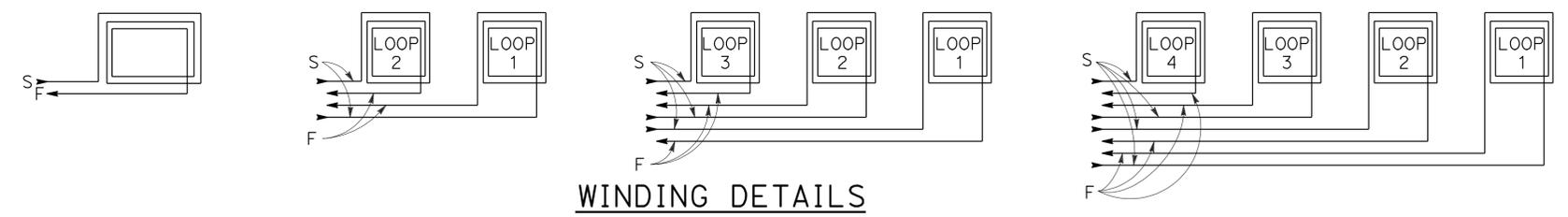
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## LOOP INSTALLATION PROCEDURE

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



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



## ELECTRICAL SYSTEMS (DETECTORS)

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

NO SCALE

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

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

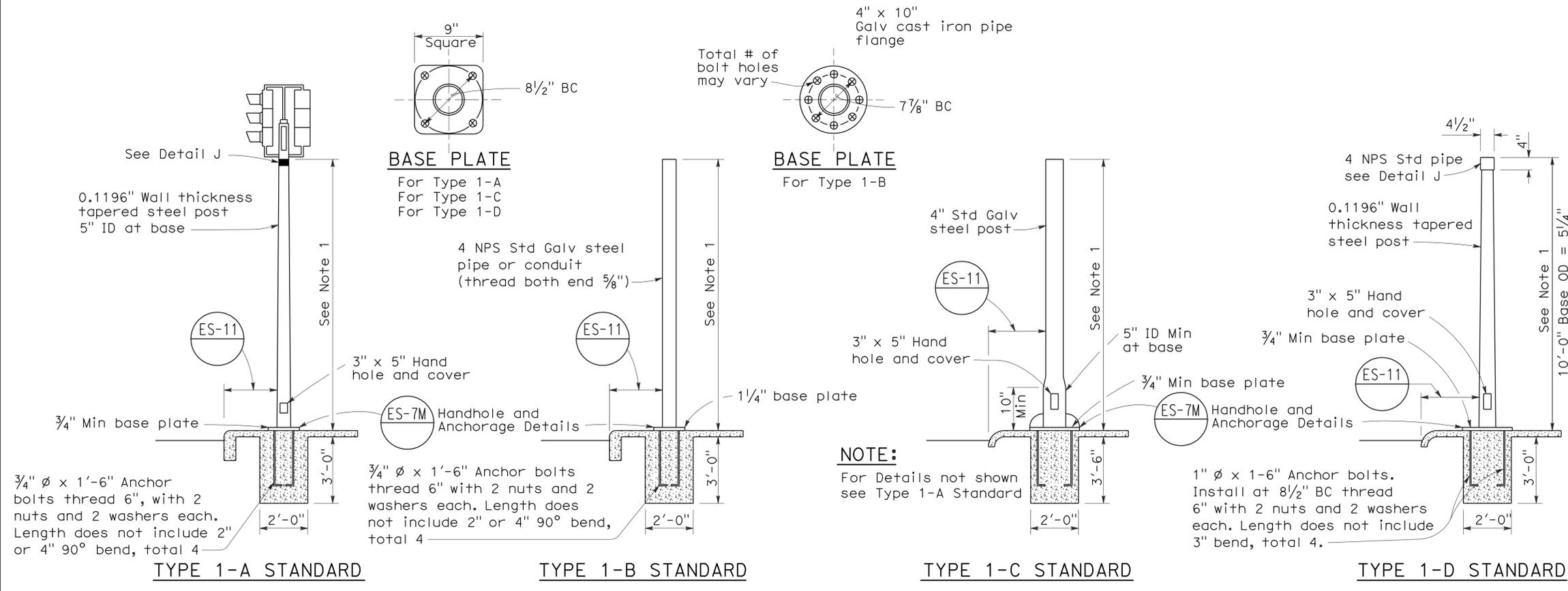
2006 REVISED STANDARD PLAN RSP ES-5A

To accompany plans dated 11-16-09

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|------|--------|-------|--------------------------|-----------|--------------|
| 02   | Sha    | 299   | 23.7                     | 45        | 48           |

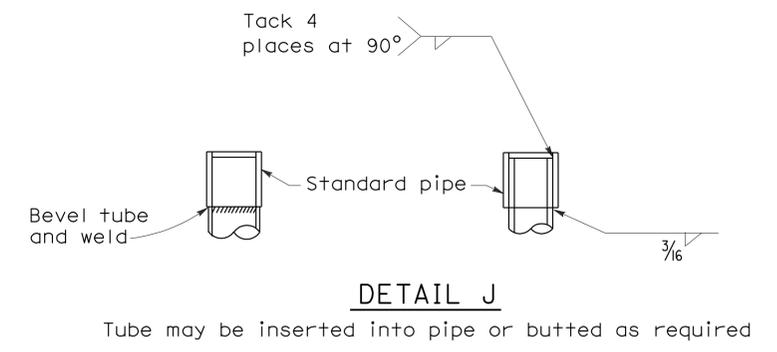
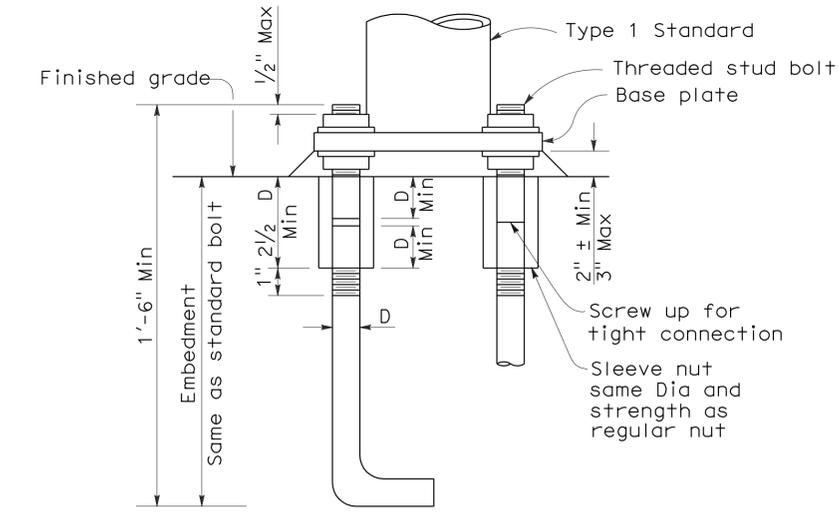
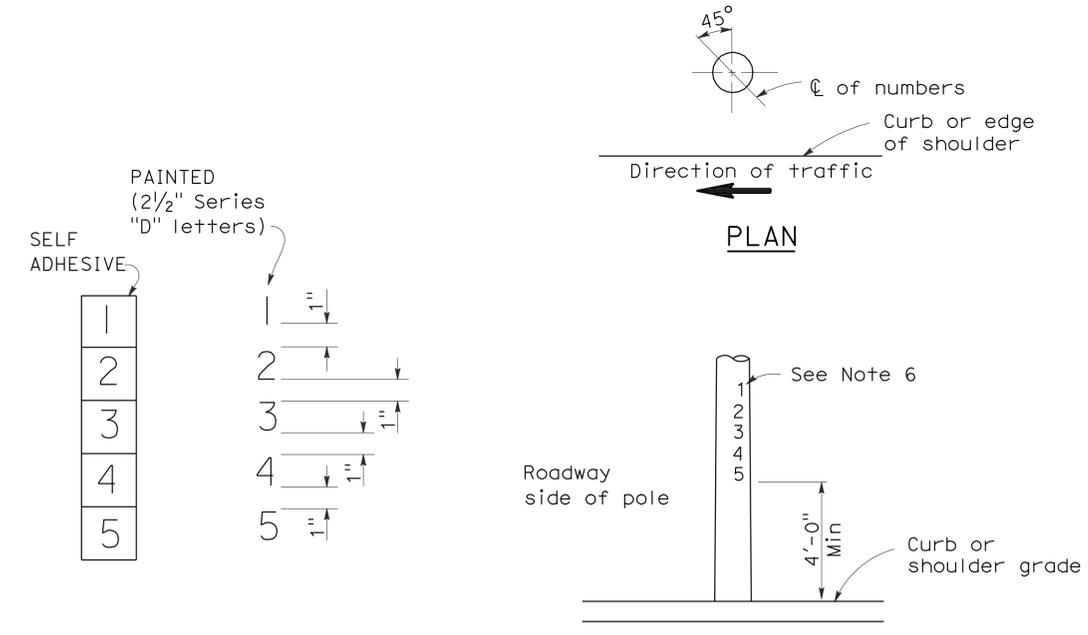
Stanley P. Johnson  
 REGISTERED CIVIL ENGINEER  
 October 5, 2007  
 PLANS APPROVAL DATE  
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 REGISTERED PROFESSIONAL ENGINEER  
 Stanley P. Johnson  
 No. C57793  
 Exp. 3-31-08  
 CIVIL  
 STATE OF CALIFORNIA

To accompany plans dated 11-16-09



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

**TYPE 1 SIGNAL STANDARDS**



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

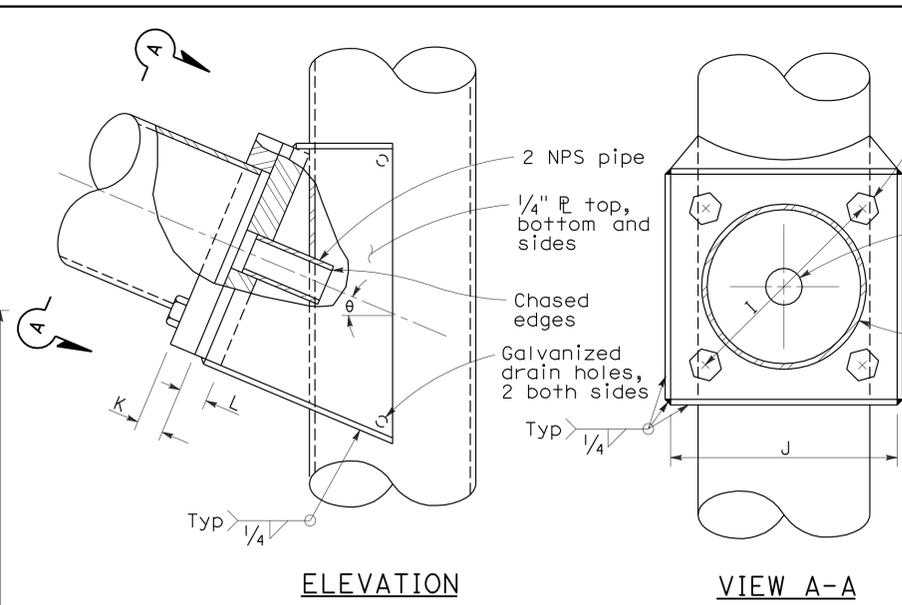
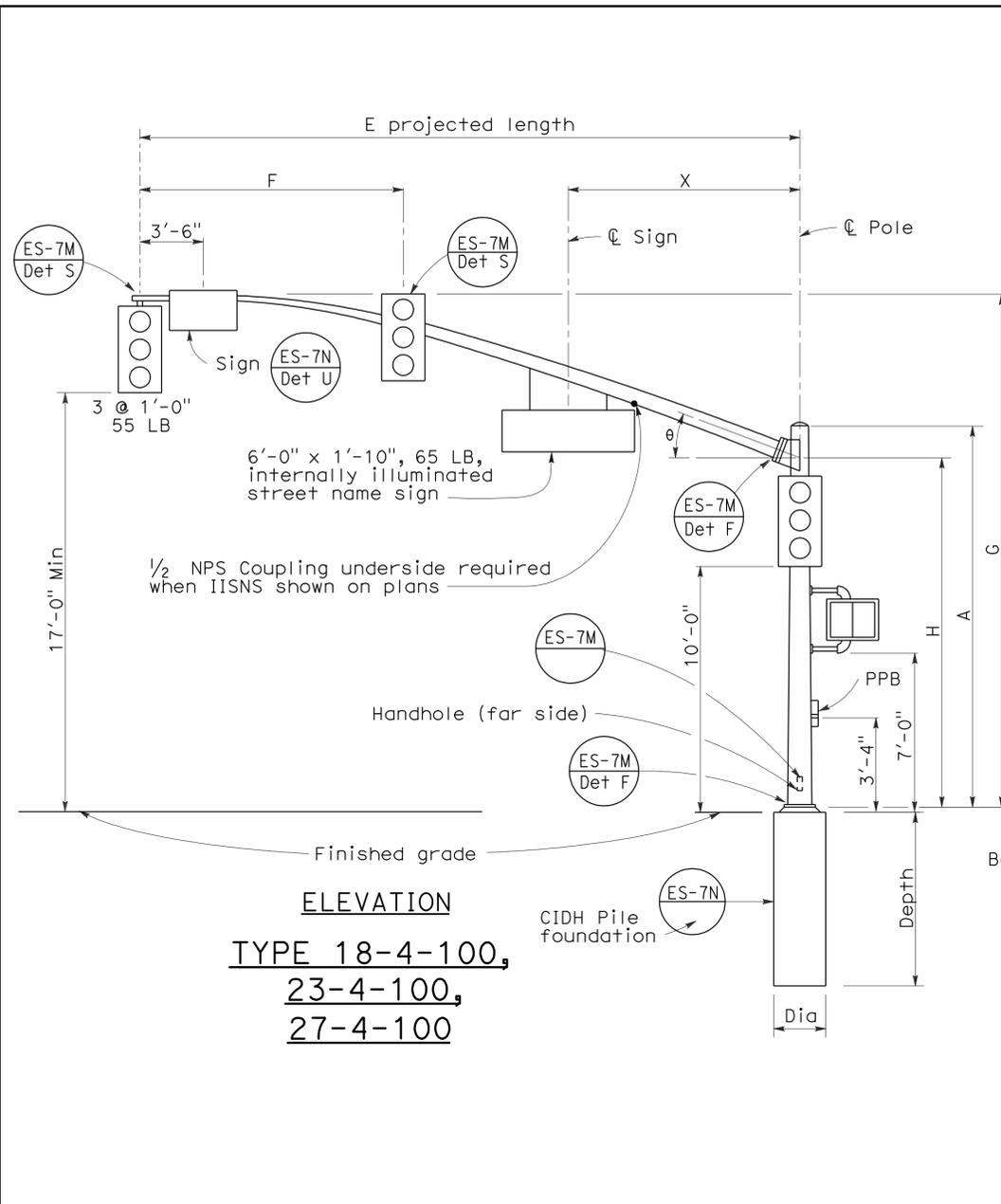
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

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

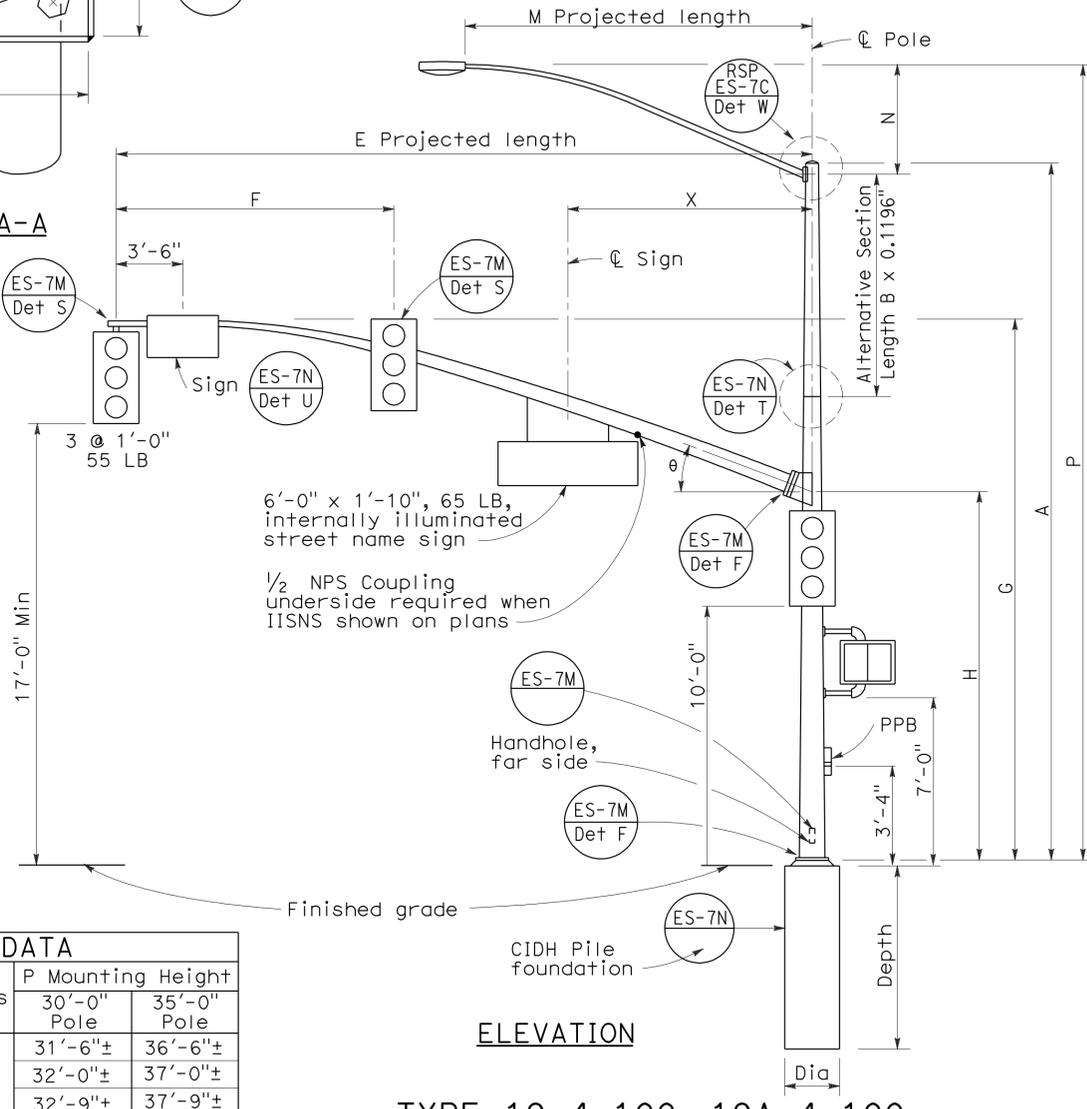
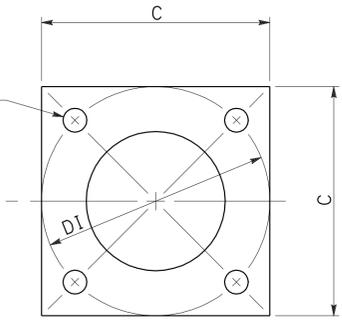
NO SCALE

2006 REVISED STANDARD PLAN RSP ES-7B





**SIGNAL ARM CONNECTION DETAILS**



**ELEVATION**

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

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

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

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

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

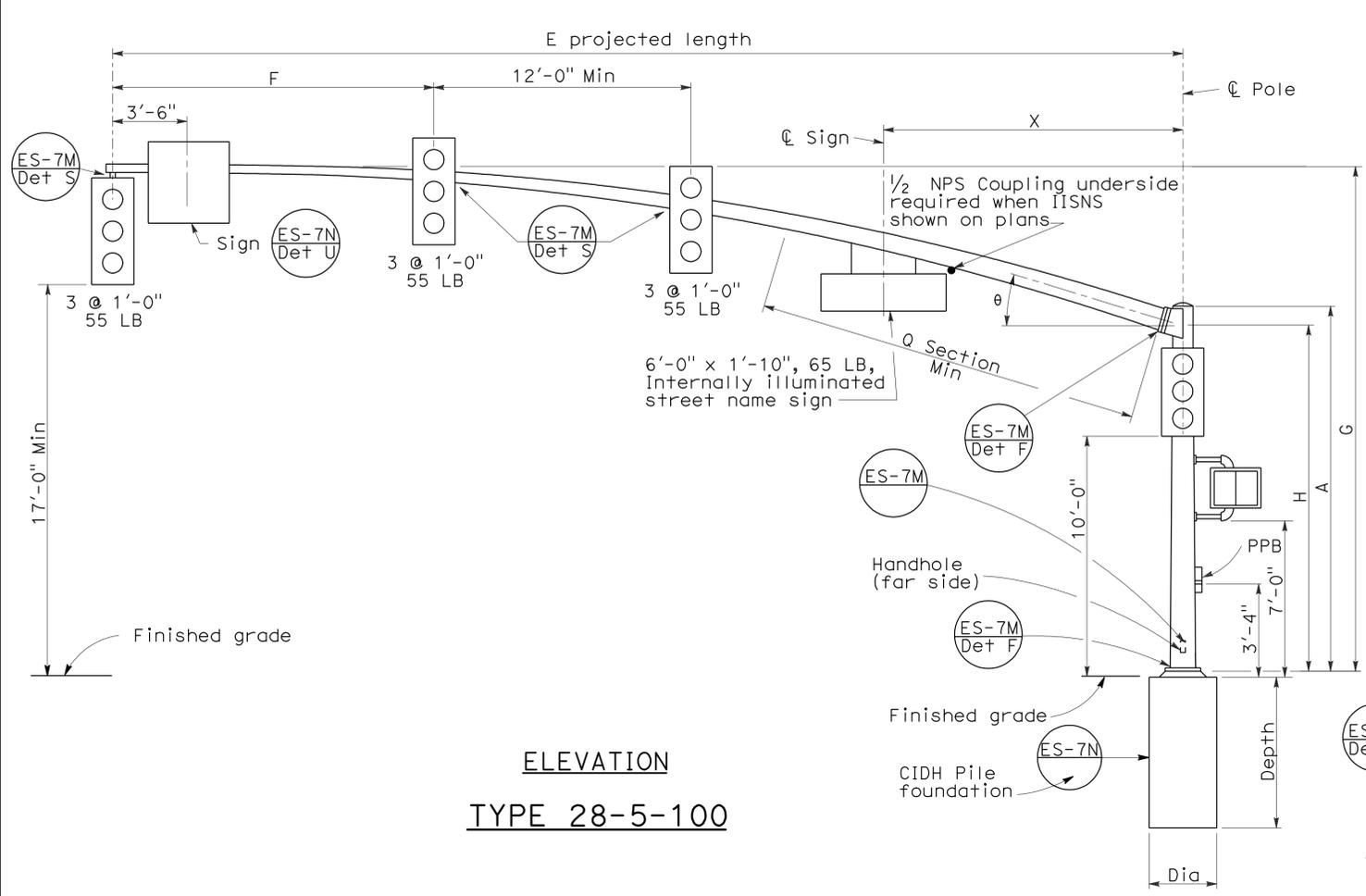
**REVISED STANDARD PLAN RSP ES-7F**

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

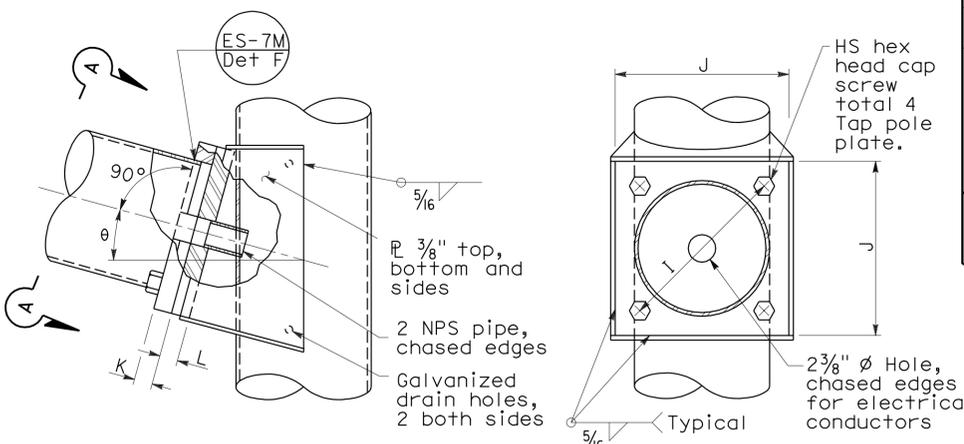
RSP ES-7F DATED OCTOBER 5, 2007 SUPERCEDES RSP ES-7F DATED  
 NOVEMBER 17, 2006 AND STANDARD PLAN ES-7F DATED MAY 1, 2006 -  
 PAGE 442 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP ES-7F

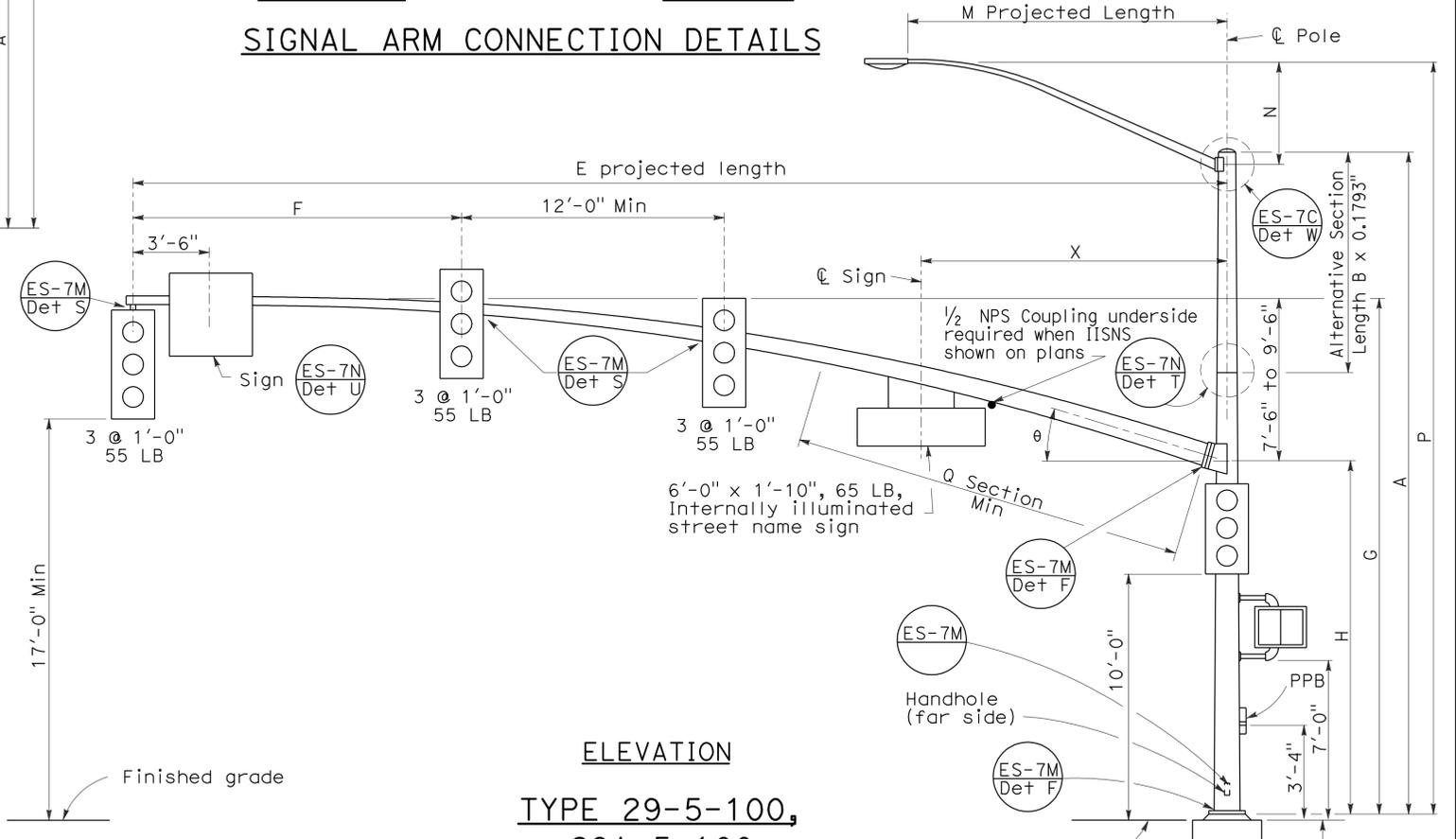
Stanley P. Johnson  
 REGISTERED CIVIL ENGINEER  
 No. C57793  
 Exp. 03-31-08  
 CIVIL  
 STATE OF CALIFORNIA



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

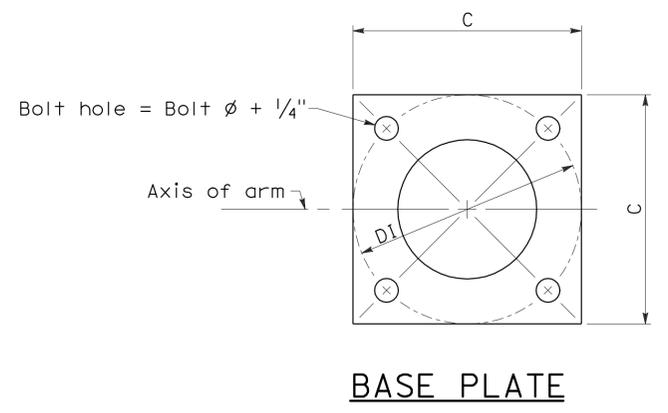


**ELEVATION**  
**SIGNAL ARM CONNECTION DETAILS**



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

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



**BASE PLATE**

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

| Pole Type | Load Case | Wind Velocity mph | POLE DATA |        |           |           | BASE PLATE DATA |                 |           |                   | Luminaire Arm     | Signal Arm | CIDH PILE FOUNDATION |       |            |          |        |     |     |
|-----------|-----------|-------------------|-----------|--------|-----------|-----------|-----------------|-----------------|-----------|-------------------|-------------------|------------|----------------------|-------|------------|----------|--------|-----|-----|
|           |           |                   | A Height  | Min OD |           | Thickness | C               | DI Bolt Circle  | Thickness | Anchor Bolts Size |                   |            | Dia                  | Depth | Reinforced |          |        |     |     |
|           |           |                   |           | Base   | Top       |           |                 |                 |           |                   |                   |            |                      |       |            | B Length | Bottom | Top |     |
| 28-5-100  | 5         | 100               | 17'-0"    | 14"    | 11 11/16" | 21"       | 21"             | 2" ø x 42" x 6" | 6'-15'    | 15'-0"            | 50'-0",<br>55'-0" | 3'-0"      | 9'-2"                | Yes   |            |          |        |     |     |
| 29-5-100  |           |                   | 30'-0"    |        | 9 7/8"    |           |                 |                 |           |                   |                   |            |                      |       | 10'-0"     | 11 1/4"  | 9 7/8" | 23" | 23" |
| 29A-5-100 |           |                   | 35'-0"    |        | 9 3/16"   |           |                 |                 |           |                   |                   |            |                      |       | 15'-0"     | 9 3/16"  |        |     |     |

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

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

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

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

2006 REVISED STANDARD PLAN RSP ES-7G