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| 2 | TYPICAL CROSS SECTIONS |
| 3 | PROJECT CONTROL |
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| 24-27 | TRAFFIC HANDLING PLANS AND QUANTITIES |
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THE STANDARD PLANS LIST APPLICABLE TO THIS CONTRACT IS INCLUDED IN THE NOTICE TO BIDDERS AND SPECIAL PROVISIONS BOOK.

STATE OF CALIFORNIA

# DEPARTMENT OF TRANSPORTATION

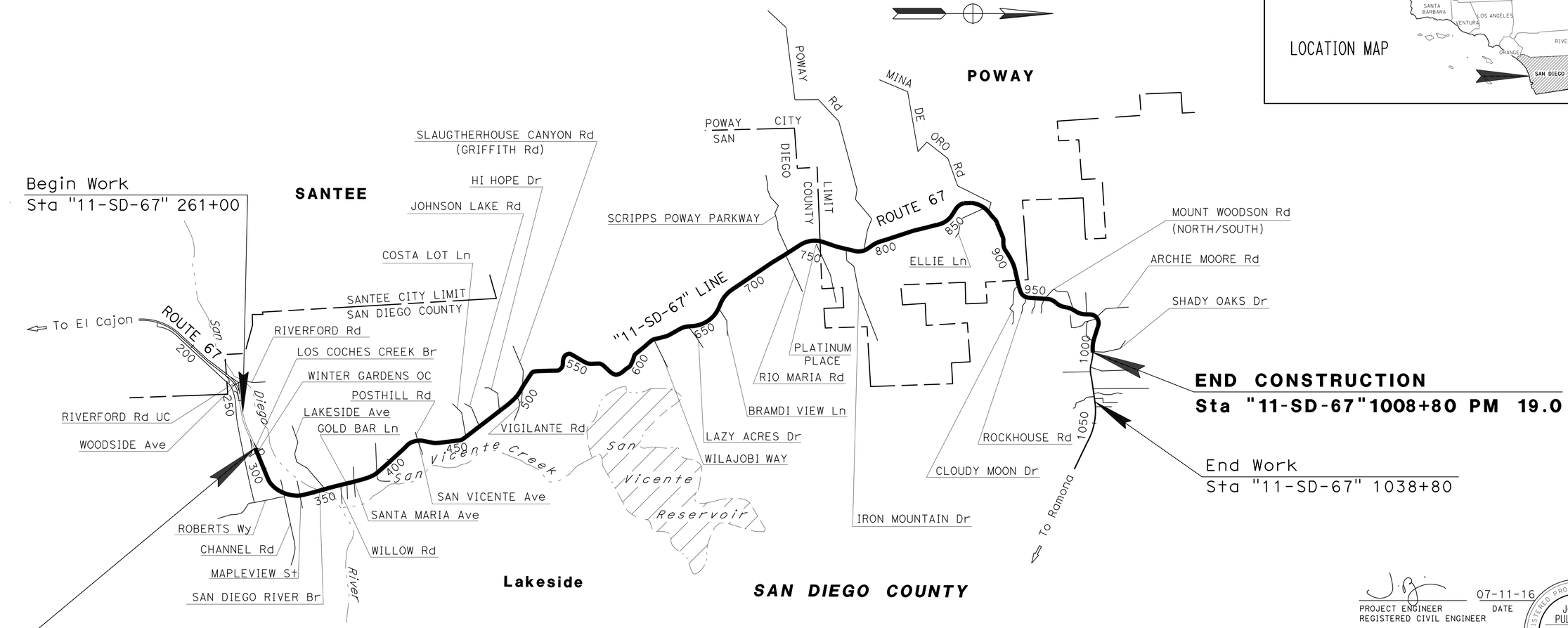
ACHSST-P067(076)E

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 1 | 113 |

# PROJECT PLANS FOR CONSTRUCTION ON STATE HIGHWAY

## IN SAN DIEGO COUNTY
## IN AND NEAR POWAY
## FROM 0.2 MILE SOUTH OF WINTER GARDENS OVERCROSSING TO SHADY OAKS DRIVE

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010




Begin Work
Sta "11-SD-67" 261+00

**BEGIN CONSTRUCTION**
**Sta "11-SD-67" 286+60 PM R4.6**

**END CONSTRUCTION**
**Sta "11-SD-67"1008+80 PM 19.0**

End Work
Sta "11-SD-67" 1038+80

PROJECT MANAGER: JOSE LUIS ROBLES

DESIGN ENGINEER: JOHAN PULGARIN

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

NO SCALE

07-11-16
PROJECT ENGINEER
REGISTERED CIVIL ENGINEER
DATE

JOHAN PULGARIN
No. 76894
Exp. 12-31-16
CIVIL
STATE OF CALIFORNIA

August 29, 2016
PLANS APPROVAL DATE

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

| | |
|---|---|
| CONTRACT No. | 11-403204 |
| PROJECT ID | 1100000545 |

LAST REVISION 08-04-16
DATE PLOTTED => 30-AUG-2016
TIME PLOTTED => 15:54

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 2 | 113 |

REGISTERED CIVIL ENGINEER — DATE 07-11-16

PLANS APPROVAL DATE 08-29-16

REGISTERED PROFESSIONAL ENGINEER — JOHAN PULGARIN — No. 76894 — Exp. 12-31-16 — CIVIL — STATE OF CALIFORNIA

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

## NOTES:

1. DIMENSION OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
2. SEE LAYOUTS, CONSTRUCTION DETAILS, PAVEMENT DELINEATION, AND SUMMARY OF QUANTITIES SHEETS FOR ADDITIONAL INFORMATION ON CENTERLINE STRIPING, CENTERLINE CHANNELIZERS, RUMBLE STRIPS, HMA DIKE, AND HIGH FRICTION SURFACE TREATMENT.

### DESIGN DESIGNATION (PM R4.6 - R5.5)

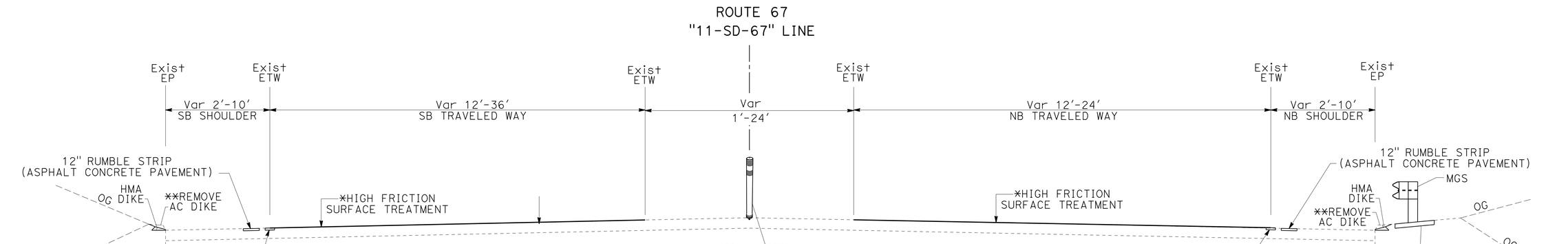
| | | | |
|---|---|---|---|
| ADT (2015) | 62,170 | D | 52% |
| ADT (2030) | 68,550 | T | 2.6% |
| DHV | 5,570 | V | 55 mph |
| ESAL | 2,162,000 | $TI_{10}$ | 10 |

PAVEMENT CLIMATE REGION: SOUTH COAST

### DESIGN DESIGNATION (PM R5.5 - 19.0)

| | | | |
|---|---|---|---|
| ADT (2015) | 26,140 | D | 50% |
| ADT (2030) | 28,200 | T | 8.1% |
| DHV | 3,240 | V | 55 mph |
| ESAL | 1,518,000 | $TI_{10}$ | 9.5 |

PAVEMENT CLIMATE REGION: SOUTH COAST




* Sta 708+20 TO Sta 722+21
* Sta 799+67 TO Sta 813+33

** Sta 747+09 TO Sta 747+98
** Sta 767+60 TO Sta 770+78

**ROUTE 67**

Sta 286+60 TO Sta 1008+80

# TYPICAL CROSS SECTIONS

NO SCALE

**X-1**

| REVISED BY | DATE REVISED |
|---|---|
| | |

CALCULATED-DESIGNED BY: HUNG TRAN
CHECKED BY: JOHAN PULGARIN
FUNCTIONAL SUPERVISOR: JOSE LUIS ROBLES

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC PROJECT DEVELOPMENT

LAST REVISION 08-15-16
DATE PLOTTED => 30-AUG-2016
TIME PLOTTED => 15:54

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19 | 3 | 113 |

07-13-16
PROFESSIONAL LAND SURVEYOR DATE

08-29-16
PLANS APPROVAL DATE

MARK D. PHELAN
PROFESSIONAL LAND SURVEYOR
STATE OF CALIFORNIA
L.S.7111
EXP:12-31-16

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

## NOTES:

1. FOR COMPLETE PROJECT CONTROL DATA, SEE THE SURVEY RECORDS ON FILE IN THE SURVEY DEPARTMENT AT THE DISTRICT OFFICE.
2. **BASIS OF BEARINGS**

   FOR THIS PROJECT IS THE CALIFORNIA COORDINATE SYSTEM OF 1983 (2007 Epoch) ZONE 6. PROJECT CONTROL STATIONS WERE ESTABLISHED ACCORDING TO CRITERIA SET FORTH IN THE FEDERAL GEODETIC CONTROL SUBCOMMITTEE'S "GEOMETRIC GEODETIC ACCURACY STANDARDS AND SPECIFICATIONS FOR USING GPS RELATIVE POSITIONING TECHNIQUES" REPRINTED AUGUST 1, 1989.
3. **BASIS OF ELEVATIONS**

   FOR THIS PROJECT IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88 CGPS).
4. IN THE EVENT GPS MACHINE CONTROL/GUIDANCE IS USED FOR THIS PROJECT, THE CONTRACTOR SHALL CONTACT OR MEET WITH DISTRICT 11'S LAND SURVEY DIVISION TO OBTAIN THE CONTROL NECESSARY TO ESTABLISH A PROJECT CALIBRATION COMPATIBLE FOR ALL USERS.

## ABBREVIATIONS:

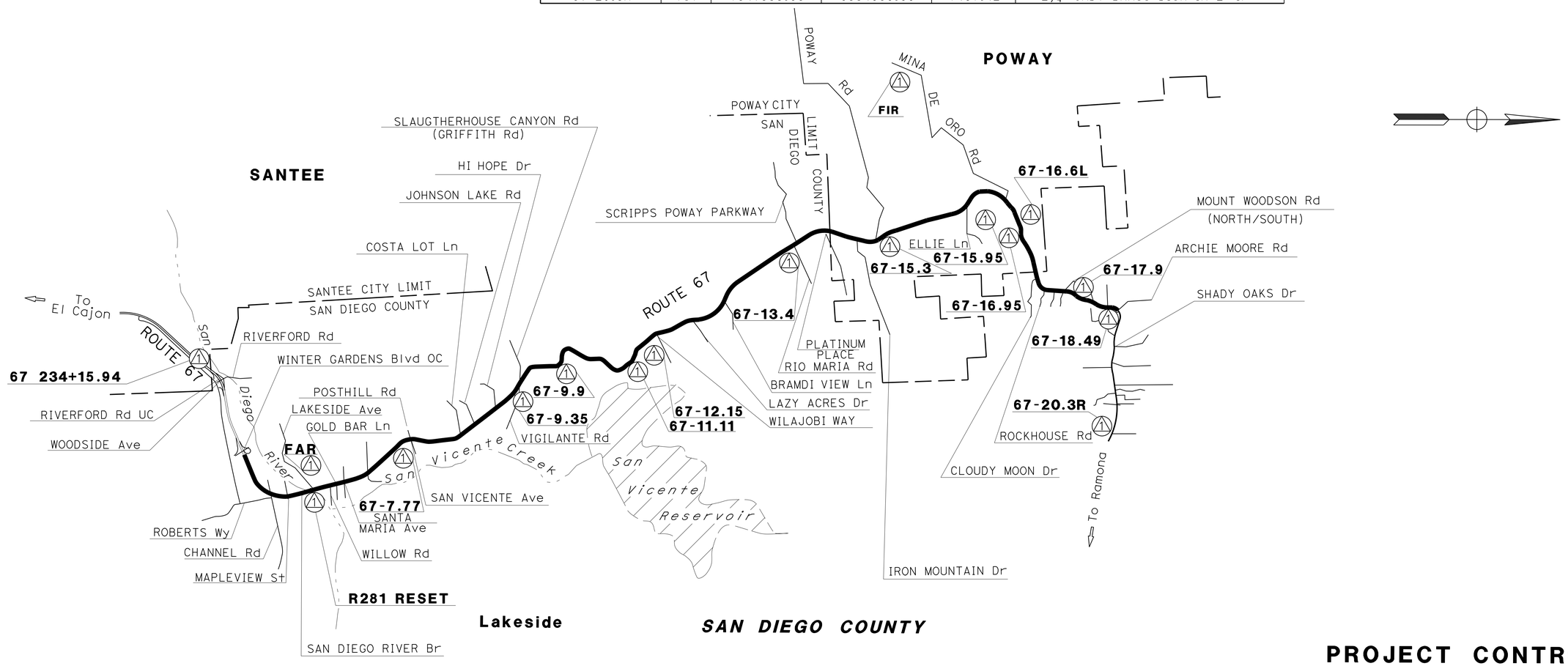
CADT CALIFORNIA DEPARTMENT OF TRANSPORTATION
CDH CALIFORNIA DIVISION OF HIGHWAYS
USC&GS UNITED STATES COAST AND GEODETIC SURVEY

## LEGEND:

1 1ST ORDER STATION

## CONTROL FOR DESIGN AND CONSTRUCTION

| DESIGNATION | ORDER | NORTHING | EASTING | ELEVATION | DESCRIPTION |
|---|---|---|---|---|---|
| 67 234+15.94 | 1ST | 1891075.03 | 63470077.44 | 388.50 | 2" CDH BRASS DISK IN 2" IP |
| R281 RESET | 1ST | 1897358.49 | 6354889.05 | 415.71 | 3½" USC&GS BM DISK IN BRIDGE DECK |
| FAR | 1ST | 1897552.80 | 6354062.09 | 680.58 | 3½" CDH BRASS DISK IN ROCK OUTROP |
| 67-7.77 | 1ST | 1903263.61 | 6352191.09 | 518.62 | 2¼" CADT BRASS DISK IN ROCK OUTCROP |
| 67-9.35 | 1ST | 1910371.76 | 6349204.35 | 469.51 | 2¼" CDH BRASS DISK IN ROCK OUTCROP |
| 67-9.9 | 1ST | 1912801.78 | 6347740.42 | 663.41 | 2¼" CADT BRASS DISK IN 2" IP |
| 67-11.11 | 1ST | 1917819.97 | 6347778.31 | 1081.62 | 2¼" CADT BRASS DISK IN ROCK OUTCROP |
| 67-12.15 | 1ST | 1922512.85 | 6345280.14 | 1128.11 | 2¼" CADT BRASS DISK IN ROCK OUTCROP |
| 67-13.4 | 1ST | 1928006.84 | 6341286.54 | 1410.23 | 2¼" CADT BRASS DISK IN BOULDER |
| 67-15.3 | 1ST | 1937025.67 | 6339802.67 | 1622.41 | 2¼" CADT BRASS DISK IN ROCK OUTCROP |
| FIR | 1ST | 1939245.24 | 6337754.04 | 1765.69 | 2¼" CDH BRASS DISK IN ROCK OUTCROP |
| 67-15.95 | 1ST | 1939940.10 | 6338557.88 | 1618.45 | 2¼" CADT BRASS DISK IN BOULDER |
| 67-16.6L | 1ST | 1943996.97 | 6339695.48 | 1429.05 | 2¼" CADT BRASS DISK IN 2" IP |
| 67-16.95 | 1ST | 1943051.26 | 6340842.06 | 1733.75 | 2¼" CADT BRASS DISK IN 2" IP |
| 67-17.9 | 1ST | 1945651.01 | 6344672.85 | 1785.74 | 2¼" CADT BRASS DISK IN ROCK OUTCROP |
| 67-18.49 | 1ST | 1948385.75 | 6345830.17 | 1677.44 | 2¼" CADT BRASS DISK IN BOULDER |
| 67-20.3R | 1ST | 1947353.66 | 6354866.88 | 1481.42 | 2¼" CADT BRASS DISK IN 2" IP |




# PROJECT CONTROL

NO SCALE

**PC-1**

*APPROVED FOR PROJECT CONTROL INFORMATION ONLY*

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
LAND SURVEYS DIVISION

| CALCULATED-DESIGNED BY | CHECKED BY | REVISED BY | DATE REVISED |
|---|---|---|---|
| ROBERT EICHWALD | MARK PHELAN | | |

FUNCTIONAL SUPERVISOR: GEORGE SCHUH

LAST REVISION | DATE PLOTTED => 30-AUG-2016 | 08-05-16 | TIME PLOTTED => 15:54

BORDER LAST REVISED 7/2/2010 | USERNAME => s127400 | DGN FILE => 1100000545dc001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2771 | PROJECT NUMBER & PHASE 1110000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 4 | 113 |

REGISTERED CIVIL ENGINEER — DATE 07-11-16

JOHAN PULGARIN No. 76894 Exp. 12-31-16 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

08-29-16
PLANS APPROVAL DATE

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

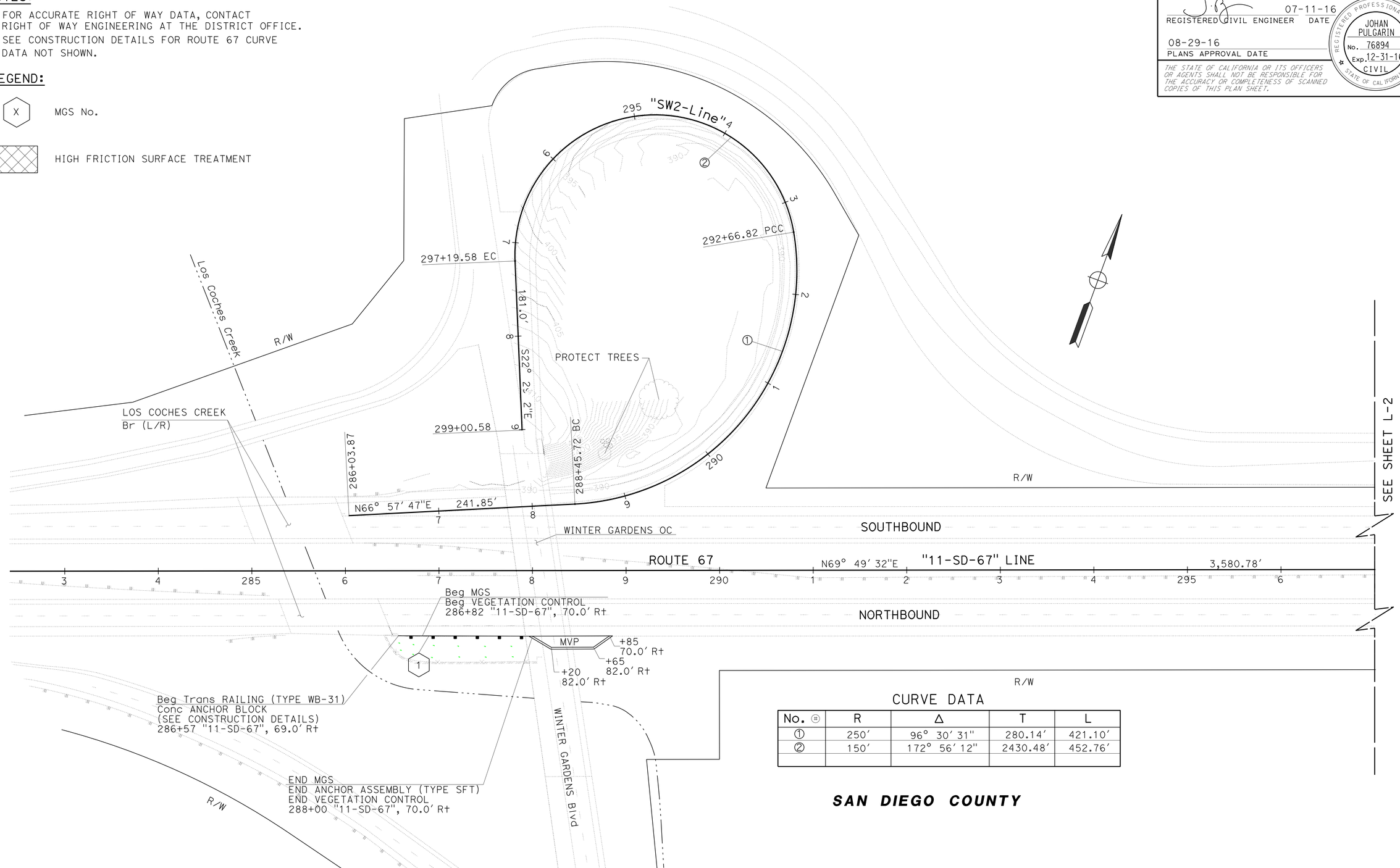
## NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. SEE CONSTRUCTION DETAILS FOR ROUTE 67 CURVE DATA NOT SHOWN.

## LEGEND:

X — MGS No.

HIGH FRICTION SURFACE TREATMENT




### CURVE DATA

| No. | R | Δ | T | L |
|---|---|---|---|---|
| ① | 250′ | 96° 30′ 31" | 280.14′ | 421.10′ |
| ② | 150′ | 172° 56′ 12" | 2430.48′ | 452.76′ |
| | | | | |

***SAN DIEGO COUNTY***

# LAYOUT

# L-1

SCALE: 1" = 50′

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
TRAFFIC PROJECT DEVELOPMENT
Caltrans

FUNCTIONAL SUPERVISOR: JOSE LUIS ROBLES
CALCULATED-DESIGNED BY: HUNG TRAN
CHECKED BY: JOHAN PULGARIN
REVISED BY / DATE REVISED:

LAST REVISION | DATE PLOTTED => 30-AUG-2016 | 08-05-16 | TIME PLOTTED => 15:54

BORDER LAST REVISED 7/2/2010 | USERNAME => s127400 | DGN FILE => 1100000545ea001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2771 | PROJECT NUMBER & PHASE 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 5 | 113 |

REGISTERED CIVIL ENGINEER — 07-11-16 DATE

JOHAN PULGARIN No. 76894 Exp. 12-31-16 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

08-29-16
PLANS APPROVAL DATE

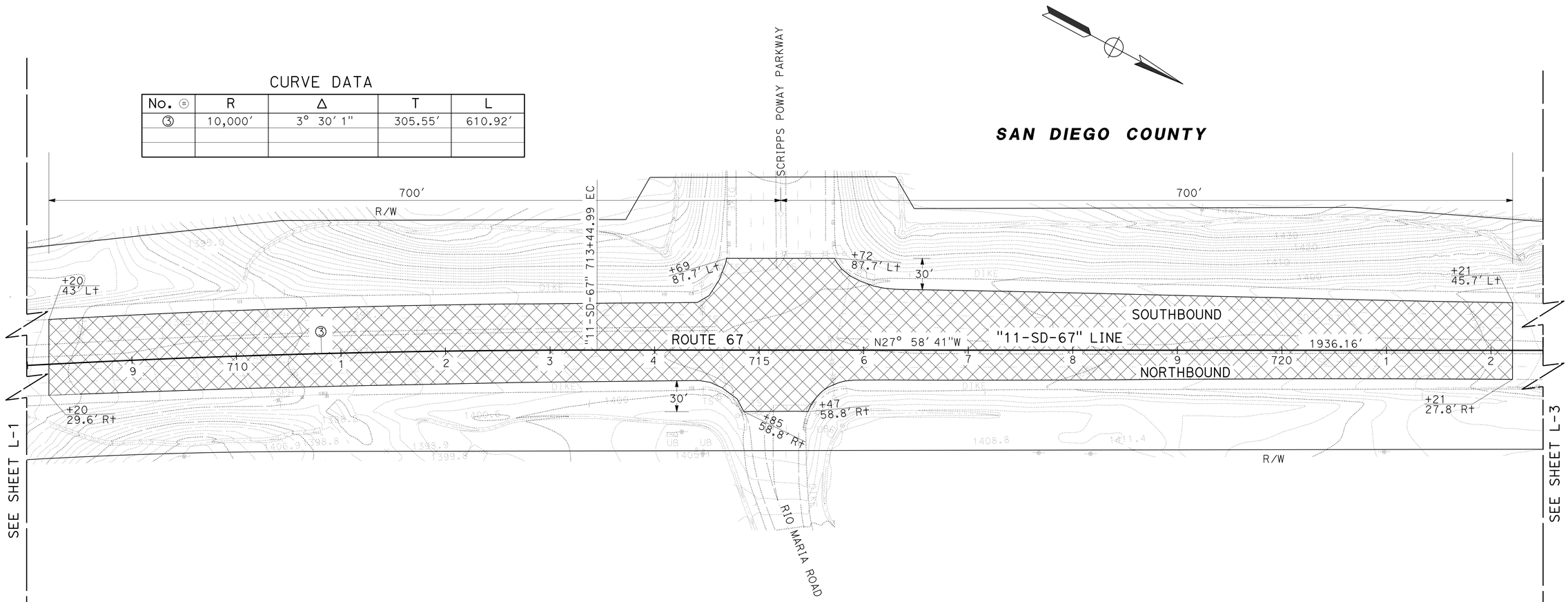
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

## NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. SEE CONSTRUCTION DETAILS FOR ROUTE 67 CURVE DATA NOT SHOWN.

### CURVE DATA

| No. ⑪ | R | Δ | T | L |
|---|---|---|---|---|
| ③ | 10,000′ | 3° 30′ 1" | 305.55′ | 610.92′ |
| | | | | |
| | | | | |




# LAYOUT

L-2

SCALE: 1" = 50′

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
TRAFFIC PROJECT DEVELOPMENT
Caltrans

FUNCTIONAL SUPERVISOR: JOSE LUIS ROBLES
CALCULATED-DESIGNED BY: HUNG TRAN
CHECKED BY: JOHAN PULGARIN
REVISED BY
DATE REVISED

LAST REVISION — DATE PLOTTED => 30-AUG-2016 — TIME PLOTTED => 15:54 — 08-05-16

BORDER LAST REVISED 7/2/2010 | USERNAME => s127400 | DGN FILE => 1100000545ea002.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2771 | PROJECT NUMBER & PHASE 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 6 | 113 |

REGISTERED CIVIL ENGINEER — DATE 07-11-16

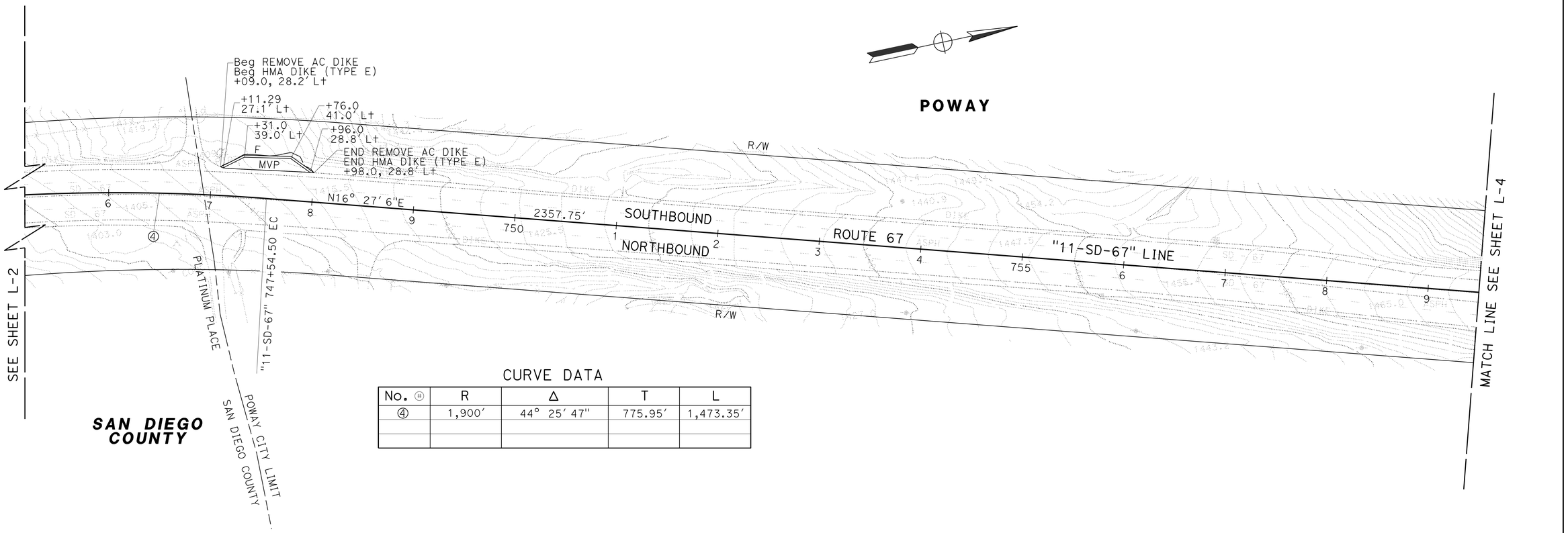
JOHAN PULGARIN No. 76894 Exp. 12-31-16 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

08-29-16
PLANS APPROVAL DATE

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

## NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. SEE CONSTRUCTION DETAILS FOR ROUTE 67 CURVE DATA NOT SHOWN.




CURVE DATA

| No. ⑪ | R | Δ | T | L |
|---|---|---|---|---|
| ④ | 1,900′ | 44° 25′ 47" | 775.95′ | 1,473.35′ |
| | | | | |
| | | | | |

**LAYOUT**

**L-3**

SCALE: 1" = 50′

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
TRAFFIC PROJECT DEVELOPMENT
Caltrans

FUNCTIONAL SUPERVISOR: JOSE LUIS ROBLES
CALCULATED-DESIGNED BY: HUNG TRAN
CHECKED BY: JOHAN PULGARIN
REVISED BY
DATE REVISED

LAST REVISION | DATE PLOTTED => 30-AUG-2016 | 08-05-16 | TIME PLOTTED => 15:54

BORDER LAST REVISED 7/2/2010 | USERNAME => s127400 | DGN FILE => 1100000545ea003.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2771 | PROJECT NUMBER & PHASE 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 7 | 113 |

REGISTERED CIVIL ENGINEER — DATE 07-11-16

JOHAN PULGARIN No. 76894 Exp. 12-31-16 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

08-29-16
PLANS APPROVAL DATE

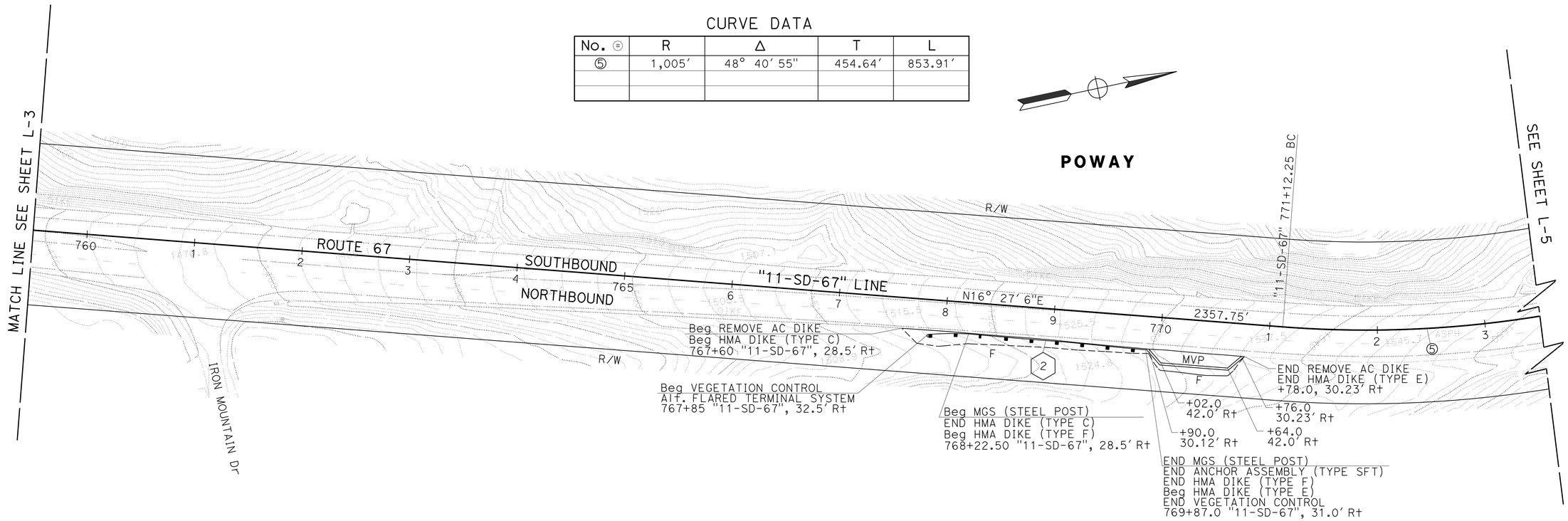
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

## NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. SEE CONSTRUCTION DETAILS FOR ROUTE 67 CURVE DATA NOT SHOWN.

### CURVE DATA

| No. ⑪ | R | Δ | T | L |
|---|---|---|---|---|
| ⑤ | 1,005′ | 48° 40′ 55" | 454.64′ | 853.91′ |
| | | | | |
| | | | | |




# LAYOUT

SCALE: 1" = 50′

L-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
TRAFFIC PROJECT DEVELOPMENT
Caltrans

FUNCTIONAL SUPERVISOR: JOSE LUIS ROBLES
CALCULATED-DESIGNED BY: HUNG TRAN
CHECKED BY: JOHAN PULGARIN
REVISED BY
DATE REVISED

LAST REVISION: DATE PLOTTED => 30-AUG-2016; 08-05-16 TIME PLOTTED => 15:54

BORDER LAST REVISED 7/2/2010
USERNAME => s127400
DGN FILE => 1100000545ea004.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 2771
PROJECT NUMBER & PHASE 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 8 | 113 |

07-11-16
REGISTERED CIVIL ENGINEER DATE

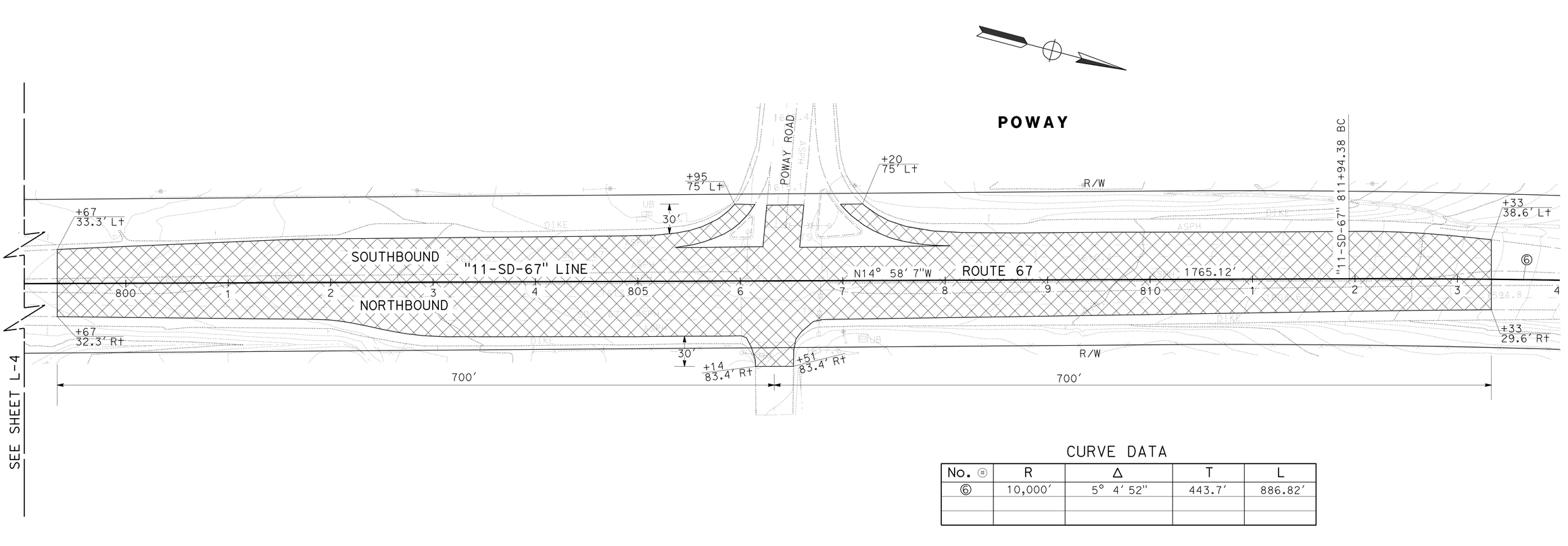
JOHAN PULGARIN
No. 76894
Exp. 12-31-16
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

08-29-16
PLANS APPROVAL DATE

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

## NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. SEE CONSTRUCTION DETAILS FOR ROUTE 67 CURVE DATA NOT SHOWN.




### CURVE DATA

| No. ⑥ | R | Δ | T | L |
|---|---|---|---|---|
| ⑥ | 10,000' | 5° 4' 52" | 443.7' | 886.82' |
| | | | | |
| | | | | |

## LAYOUT

SCALE: 1" = 50'

L-5

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
TRAFFIC PROJECT DEVELOPMENT
Caltrans

FUNCTIONAL SUPERVISOR: JOSE LUIS ROBLES
CALCULATED-DESIGNED BY: HUNG TRAN
CHECKED BY: JOHAN PULGARIN
REVISED BY
DATE REVISED

LAST REVISION DATE PLOTTED => 30-AUG-2016
TIME PLOTTED => 15:54
08-05-16

BORDER LAST REVISED 7/2/2010
USERNAME => s127400
DGN FILE => 1100000545ea005.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 2771
PROJECT NUMBER & PHASE 11000005451

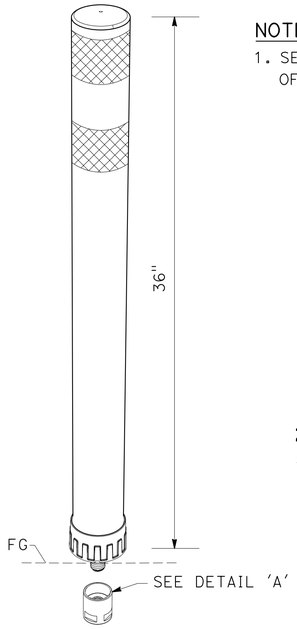
| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 9 | 113 |

REGISTERED CIVIL ENGINEER — DATE 07-11-16

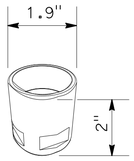
JOHAN PULGARIN No. 76894 Exp. 12-31-16 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

08-29-16
PLANS APPROVAL DATE

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




YELLOW CITY POST
WITH TWO WRAPS
RETRORELECTIVE SHEETING



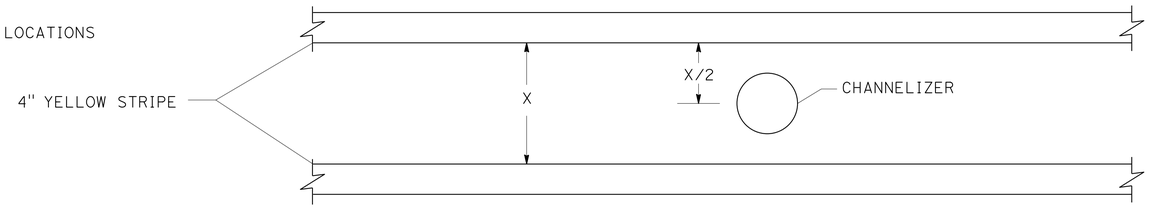

2" ALUMINUM
ANCHOR CUP

DETAIL 'A'

## CENTERLINE CHANNELIZER (TYPE CITY POST) (LEFT IN PLACE)

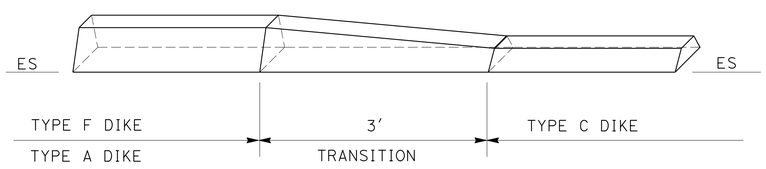
NOTE:

1. SEE SUMMARY OF QUANTITIES FOR LOCATIONS OF CENTERLINE CHANNELIZERS.



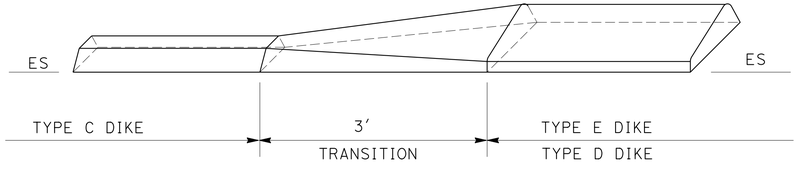

X = VARIOUS DISTANCES BETWEEN 4" YELLOW STRIPES (SEE PDD SHEETS).
X/2 = CHANNELIZER PLACEMENT DISTANCE.

## CENTERLINE CHANNELIZER PLACEMENT



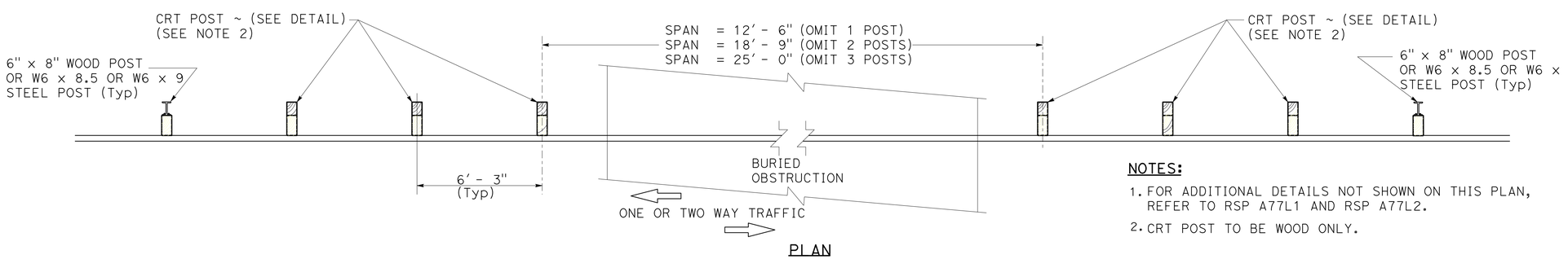

## HMA DIKE TRANSITION

TYPE A OR F TO TYPE C




## HMA DIKE TRANSITION

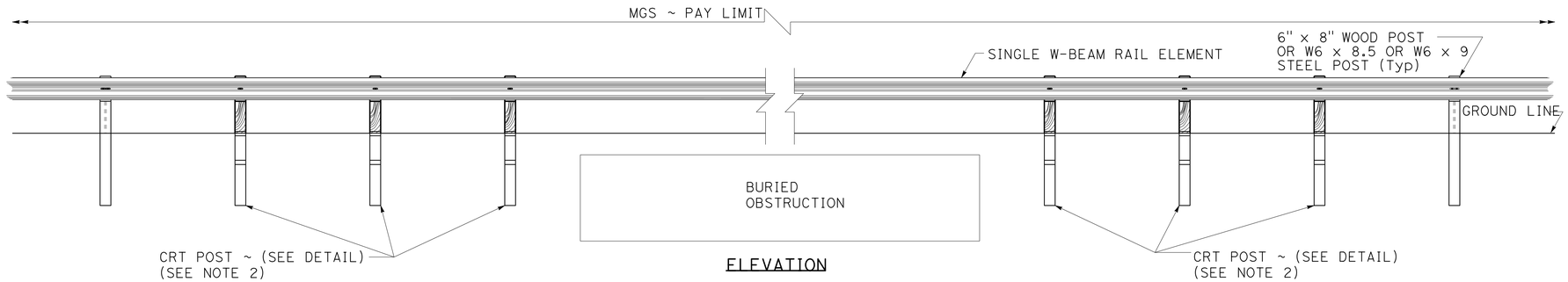
TYPE C TO TYPE E OR D




PLAN

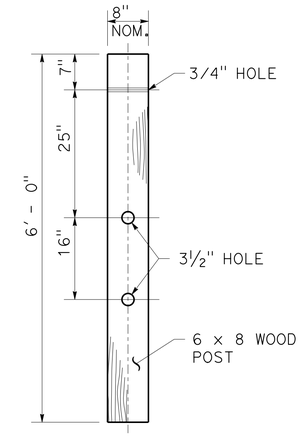
NOTES:

1. FOR ADDITIONAL DETAILS NOT SHOWN ON THIS PLAN, REFER TO RSP A77L1 AND RSP A77L2.
2. CRT POST TO BE WOOD ONLY.




ELEVATION

## MIDWEST GUARDRAIL SYSTEM DETAILS




## CONTROLLED RELEASING TERMINAL (CRT) POST DETAIL

## CONSTRUCTION DETAILS

NO SCALE

C-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
TRAFFIC PROJECT DEVELOPMENT
Caltrans

FUNCTIONAL SUPERVISOR: JOSE LUIS ROBLES
CALCULATED-DESIGNED BY: HUNG TRAN
CHECKED BY: JOHAN PULGARIN
REVISED BY
DATE REVISED

LAST REVISION 08-05-16
DATE PLOTTED => 30-AUG-2016
TIME PLOTTED => 15:54

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 10 | 113 |

REGISTERED CIVIL ENGINEER — DATE 07-11-16

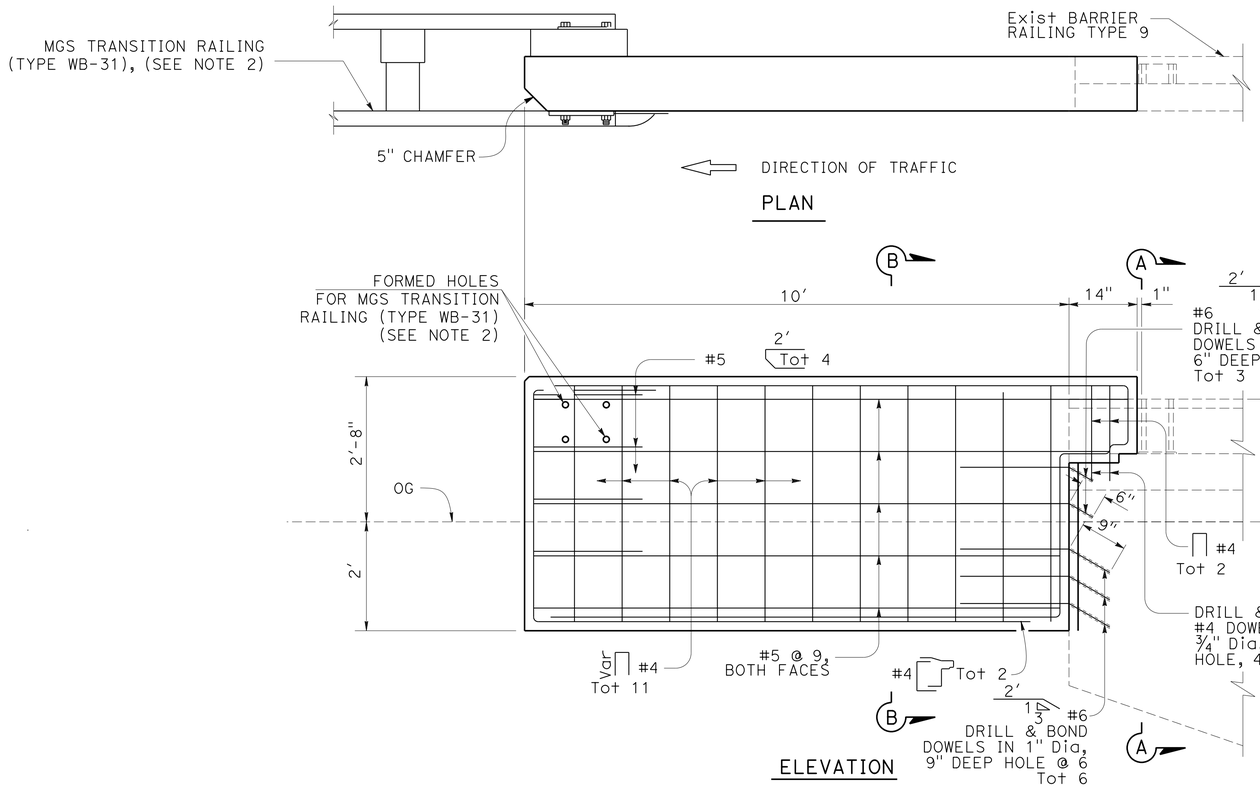
PLANS APPROVAL DATE 08-29-16

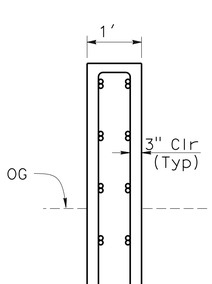
REGISTERED PROFESSIONAL ENGINEER — JOHAN PULGARIN — No. 76894 — Exp. 12-31-16 — CIVIL — STATE OF CALIFORNIA

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

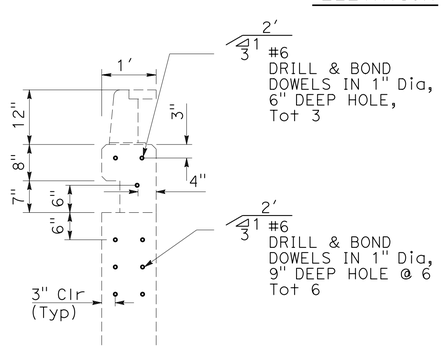
## NOTES:

1. THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.
2. FOR ADDITIONAL INFORMATION AND DETAILS NOT SHOWN SEE STANDARD PLANS.
3. SEE REVISED Std PLANS RSP A77U4 FOR ADDITIONAL DETAILS NOT SHOWN FOR MGS TRANSITION RAILING (TYPE WB-31).



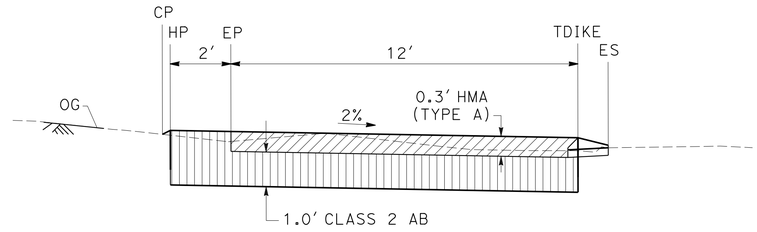

SECTION B-B




SECTION A-A

## Conc ANCHOR BLOCK

STA 286+56.70 "11-SD-67" 69.0' Rt




## MAINTENANCE VEHICLE PULLOUT

## CONSTRUCTION DETAILS

NO SCALE

C-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
TRAFFIC PROJECT DEVELOPMENT
Caltrans

FUNCTIONAL SUPERVISOR: JOSE LUIS ROBLES
CALCULATED-DESIGNED BY: HUNG TRAN
CHECKED BY: JOHAN PULGARIN
REVISED BY | DATE REVISED

LAST REVISION | DATE PLOTTED => 30-AUG-2016 | 08-15-16 | TIME PLOTTED => 15:54

BORDER LAST REVISED 7/2/2010 | USERNAME => s127400 | DGN FILE => 1100000545ga002.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2771 | PROJECT NUMBER & PHASE 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 11 | 113 |

REGISTERED CIVIL ENGINEER — DATE 07-11-16

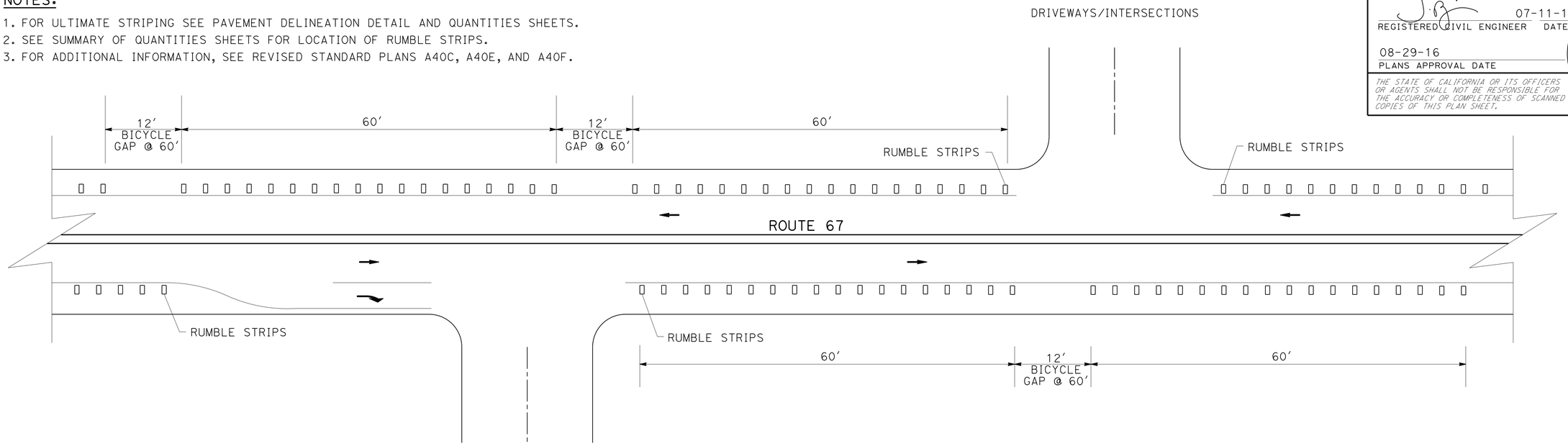
JOHAN PULGARIN No. 76894 Exp. 12-31-16 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

08-29-16
PLANS APPROVAL DATE

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

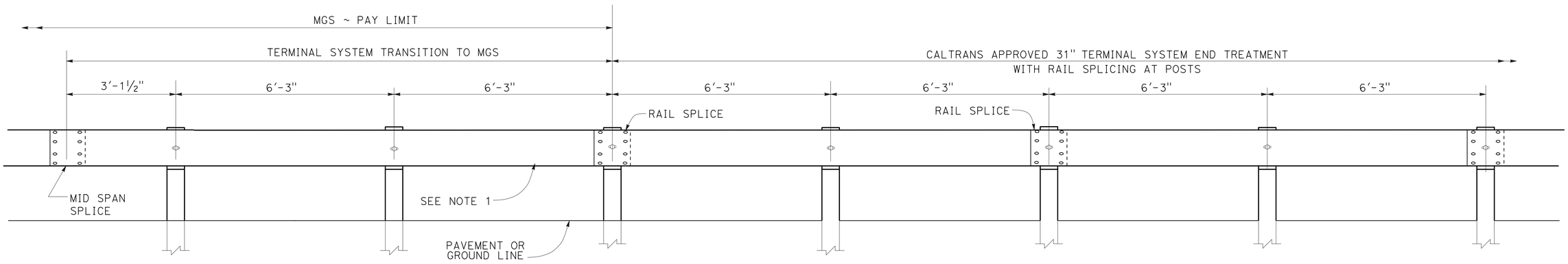
## NOTES:

1. FOR ULTIMATE STRIPING SEE PAVEMENT DELINEATION DETAIL AND QUANTITIES SHEETS.
2. SEE SUMMARY OF QUANTITIES SHEETS FOR LOCATION OF RUMBLE STRIPS.
3. FOR ADDITIONAL INFORMATION, SEE REVISED STANDARD PLANS A40C, A40E, AND A40F.




## TYPICAL RUMBLE STRIPS LAYOUT

6" RUMBLE STRIP
(ASPHALT CONCRETE PAVEMENT)(Mod)




NOTE:
1. USE 15′-7½" LENGTH RAIL.

## TRANSITION DETAIL FOR 31" TERMINAL SYSTEM END TREATMENT WITH RAIL SPLICING AT POSTS TO MIDWEST GUARDRAIL SYSTEM

## CONSTRUCTION DETAILS

NO SCALE

C-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
TRAFFIC PROJECT DEVELOPMENT
Caltrans

FUNCTIONAL SUPERVISOR: JOSE LUIS ROBLES
CALCULATED-DESIGNED BY: HUNG TRAN
CHECKED BY: JOHAN PULGARIN
REVISED BY / DATE REVISED:

LAST REVISION | DATE PLOTTED => 30-AUG-2016 | TIME PLOTTED => 15:54 | 08-15-16

BORDER LAST REVISED 7/2/2010 | USERNAME => s127400 | DGN FILE => 1100000545ga003.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2771 | PROJECT NUMBER & PHASE 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 12 | 113 |

07-11-16
REGISTERED CIVIL ENGINEER DATE

08-29-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JOHAN PULGARIN
No. 76894
Exp. 12-31-16
CIVIL
STATE OF CALIFORNIA

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

# ROUTE 67 CURVE DATA TABLE

| LINE | BC Sta | EC Sta | R | Δ | T | L |
|---|---|---|---|---|---|---|
| "11-SD-67" | 306+23.33 | 307+79.52 | 2,000′ | 4° 28′ 28" | 78.13′ | 156.18′ |
| "11-SD-67" | 307+79.52 | 311+02.88 | 2,000′ | 9° 15′ 49" | 162.04′ | 323.36′ |
| "11-SD-67" | 311+02.88 | 321+84.88 | 1,950′ | 31° 47′ 30" | 555.32′ | 1,082.00′ |
| "11-SD-67" | 321+84.88 | 326+02.67 | 1,915′ | 12° 30′ 00" | 209.73′ | 417.79′ |
| "11-SD-67" | 326+02.67 | 328+25.20 | 1,700′ | 7° 30′ 00" | 111.42′ | 222.53′ |
| "11-SD-67" | 328+25.20 | 337+31.96 | 3,443.62′ | 15° 5′ 13" | 456.02′ | 906.76′ |
| "11-SD-67" | 353+59.39 | 356+56.39 | 2,725.02′ | 6° 14′ 41" | 148.65′ | 297.00′ |
| "11-SD-67" | 357+01.99 | 362+30.35 | 5,000′ | 6° 3′ 17" | 264.43′ | 528.36′ |
| "11-SD-67" | 375+73.38 | 388+89.38 | 2,675′ | 28° 11′ 15" | 671.60′ | 1,316.00′ |
| "11-SD-67" | 411+39.30 | 424+70.37 | 1,425′ | 53° 31′ 09" | 718.56′ | 1,331.07′ |
| "11-SD-67" | 428+97.35 | 434+19.76 | 1,530′ | 19° 33′ 48" | 263.77′ | 522.41′ |
| "11-SD-67" | 439+51.41 | 441+26.81 | 30,000′ | 0° 20′ 06" | 87.70′ | 175.40′ |
| "11-SD-67" | 446+58.40 | 454+24.47 | 1,500′ | 29° 15′ 42" | 391.58′ | 766.07′ |
| "11-SD-67" | 488+31.69 | 499+83.03 | 3,325′ | 19° 50′ 23" | 581.49′ | 1,151.34′ |
| "11-SD-67" | 512+02.96 | 520+47.66 | 850′ | 56° 56′ 19" | 460.92′ | 844.70′ |
| "11-SD-67" | 525+61.33 | 533+04.02 | 860′ | 49° 28′ 48" | 396.28′ | 742.69′ |
| "11-SD-67" | 537+53.94 | 548+48.49 | 845′ | 74° 13′ 00" | 639.26′ | 1,094.55′ |
| "11-SD-67" | 555+08.56 | 558+47.28 | 970′ | 20° 0′ 28" | 171.11′ | 338.73′ |
| "11-SD-67" | 563+20.52 | 570+89.72 | 1,000′ | 44° 4′ 20" | 404.76′ | 769.21′ |
| "11-SD-67" | 573+09.13 | 582+15.94 | 600′ | 86° 35′ 36" | 565.35′ | 906.80′ |
| "11-SD-67" | 585+12.88 | 585+92.02 | 5,000′ | 0° 54′ 25" | 39.57′ | 79.14′ |
| "11-SD-67" | 588+27.98 | 592+46.90 | 785′ | 30° 34′ 34" | 214.58′ | 418.92′ |
| "11-SD-67" | 595+54.00 | 599+97.08 | 825′ | 30° 46′ 17" | 227.02′ | 443.08′ |
| "11-SD-67" | 610+82.98 | 615+23.57 | 1000.03′ | 25° 14′ 35" | 223.93′ | 440.59′ |
| "11-SD-67" | 620+33.36 | 624+85.39 | 1600′ | 16°1 1′ 14" | 227.53′ | 452.03′ |
| "11-SD-67" | 629+94.20 | 637+78.62 | 2050′ | 21° 55′ 25" | 397.06′ | 784.41′ |
| "11-SD-67" | 643+11.21 | 663+13.99 | 1985′ | 57° 48′ 32" | 1095.98′ | 2002.78′ |
| "11-SD-67" | 668+30.47 | 678+13.95 | 1800′ | 31° 18′ 19" | 504.35′ | 983.48′ |
| "11-SD-67" | 681+81.59 | 686+36.49 | 100000′ | 0° 15′ 38" | 227.45′ | 454.91′ |
| "11-SD-67" | 707+34.07 | 713+44.99 | 10000′ | 3° 30′ 01" | 305.55′ | 610.92′ |
| "11-SD-67" | 732+81.15 | 747+54.50 | 1900′ | 44° 25′ 47" | 775.95′ | 1473.35′ |
| "11-SD-67" | 771+12.25 | 779+66.16 | 1005′ | 48° 40′ 55" | 454.64′ | 853.91′ |
| "11-SD-67" | 782+61.68 | 787+76.65 | 1750′ | 16° 51′ 37" | 259.36′ | 514.97′ |
| "11-SD-67" | 793+94.25 | 794+29.26 | 5000′ | 0° 24′ 04" | 17.51′ | 35.01′ |
| "11-SD-67" | 811+94.38 | 820+81.20 | 10000′ | 5° 04′ 52" | 443.70′ | 886.82′ |
| "11-SD-67" | 829+50.76 | 840+95.41 | 1475′ | 44° 27′ 49" | 602.89′ | 1144.66′ |
| "11-SD-67" | 844+78.05 | 853+23.83 | 1000′ | 48° 27′ 35" | 450.04′ | 845.78′ |
| "11-SD-67" | 853+23.83 | 869+64.57 | 1600′ | 58° 45′ 16" | 900.72′ | 1640.74′ |
| "11-SD-67" | 879+99.75 | 879+99.75 | 1000′ | 18° 56′ 55" | 166.88 | 330.71′ |
| "11-SD-67" | 889+06.56 | 891+11.92 | 1000′ | 11° 46′ 00" | 103.05′ | 205.37′ |
| "11-SD-67" | 893+09.62 | 893+49.27 | 2000′ | 1° 08′ 10" | 19.83′ | 39.65′ |
| "11-SD-67" | 895+68.41 | 898+91.96 | 1150′ | 16° 07′ 12" | 162.85′ | 323.55′ |
| "11-SD-67" | 902+75.20 | 903+45.12 | 5000′ | 0° 48′ 04" | 34.96′ | 69.92′ |
| "11-SD-67" | 908+41.55 | 911+56.17 | 1250′ | 14° 25′ 15" | 158.14′ | 314.62′ |
| "11-SD-67" | 924+33.95 | 936+41.95 | 940′ | 73° 37′ 53" | 703.61′ | 1208.00′ |
| "11-SD-67" | 942+64.34 | 946+87.58 | 1150′ | 21° 05′ 13" | 214.04′ | 423.24′ |
| "11-SD-67" | 951+40.24 | 956+91.34 | 2941.73′ | 10° 44′ 01" | 276.36′ | 551.10′ |
| "11-SD-67" | 966+82.42 | 970+43.88 | 2900′ | 7° 08′ 29" | 180.96′ | 361.46′ |
| "11-SD-67" | 974+46.84 | 976+93.15 | 815′ | 17° 18′ 58" | 124.10′ | 246.31′ |
| "11-SD-67" | 976+93.15 | 982+86.74 | 850′ | 40° 00′ 43" | 309.48′ | 593.59′ |
| "11-SD-67" | 982+86.74 | 989+31.24 | 850′ | 43° 26′ 37" | 338.63′ | 644.50′ |
| "11-SD-67" | 997+63.00 | 1000+45.51 | 1000′ | 16° 11′ 13" | 142.20′ | 282.52′ |
| "11-SD-67" | 1007+10.12 | 1012+20.38 | 2900′ | 10° 04′ 53" | 255.79′ | 510.27′ |
| | | | | | | |

## CONSTRUCTION DETAILS

C-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
TRAFFIC PROJECT DEVELOPMENT
Caltrans

CALCULATED-DESIGNED BY: HUNG TRAN
CHECKED BY: JOHAN PULGARIN
FUNCTIONAL SUPERVISOR: JOSE LUIS ROBLES
REVISED BY
DATE REVISED

LAST REVISION 08-05-16
DATE PLOTTED => 30-AUG-2016
TIME PLOTTED => 15:54

BORDER LAST REVISED 7/2/2010
USERNAME => s127400
DGN FILE => 1100000545ga004.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 2771
PROJECT NUMBER & PHASE 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 13 | 113 |

07-11-16
REGISTERED CIVIL ENGINEER DATE

JOHAN PULGARIN
No. 76894
Exp. 12-31-16
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

08-29-16
PLANS APPROVAL DATE

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

NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. INSTALL Temp WPC ITEMS FIRST.
3. INSTALL PERMANENT EC ITEMS AT THE END.

## SEED MIX - (TYPE 1)

| BOTANICAL NAME (COMMON NAME) | PERCENT GERMINATION (MINIMUM) | POUNDS PURE LIVE SEED PER ACRE (SLOPE MEASUREMENT) |
|---|---|---|
| BACCHARIS SAROTHROIDES [1] (BROOM BACCHARIS) | 25 | 0.5 |
| ERIOGONUM FASCICULATUM [1] (CALIFORNIA BUCKWHEAT) | 20 | 2.5 |
| ESCHSCHOLZIA CALIFORNICA [1] (CALIFORNIA POPPY) | 60 | 5.0 |
| LASTHENIA CALIFORNICA [1] (GOLDFIELDS) | 35 | 4.0 |
| LOTUS SCOPARIUS [1] (DEERWEED) | 60 | 6.0 |
| LUPINUS BICOLOR [1] (PIGMY-LEAVED LUPINE) | 65 | 4.0 |
| NASELLA PULCHRA [1] (PURPLE NEEDLEGRASS) | 60 | 8.0 |
| | TOTAL | 30.0 |

1 SEED PRODUCED FROM CALIFORNIA ONLY.

LEGEND:

EC (DRY SEED) - EROSION CONTROL (DRY SEED)

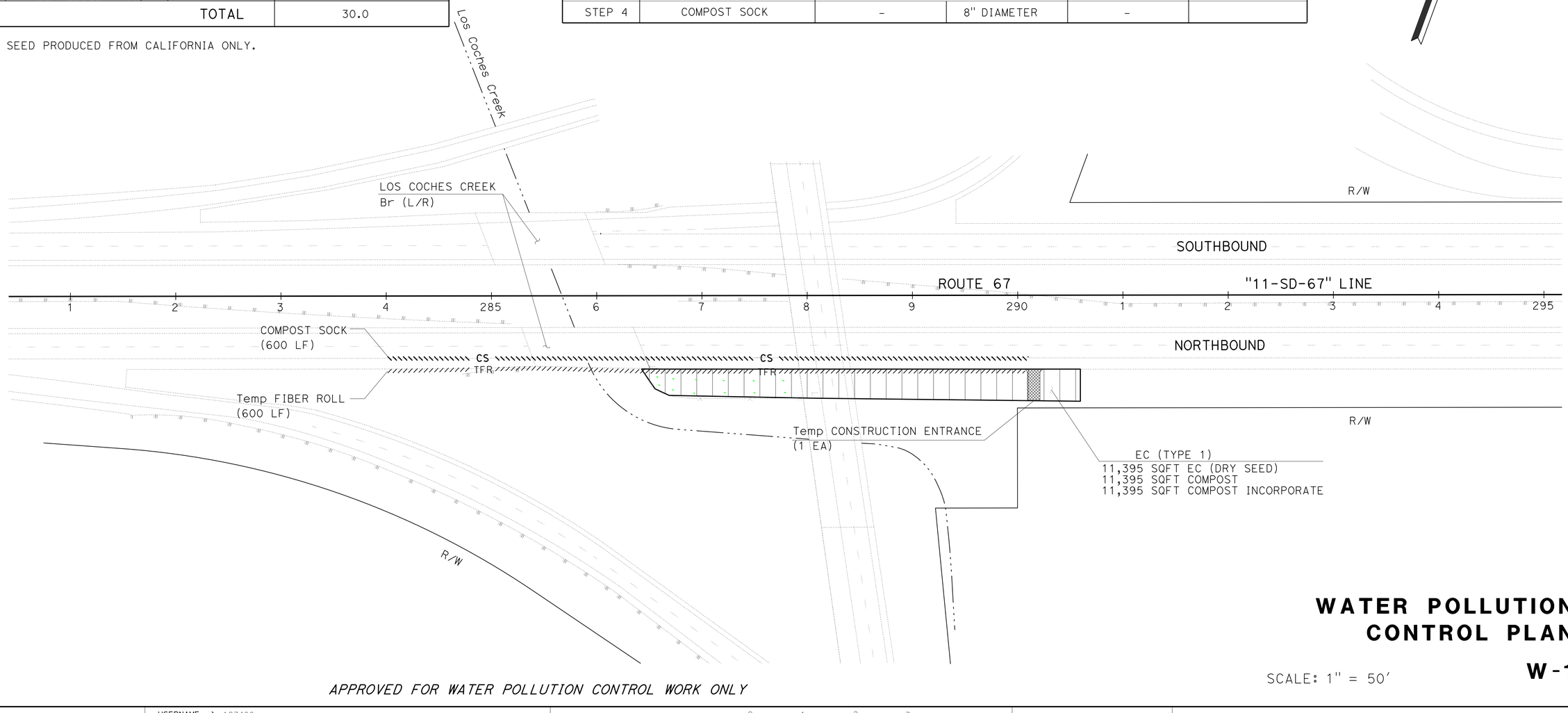
- EROSION CONTROL (TYPE 1)

- EROSION CONTROL (TYPE 2)

\\\\\CS\\\\\ - COMPOST SOCK

## EC (TYPE 1)

| SEQUENCE | ITEM | MATERIAL | | APPLICATION RATE | REMARKS |
|---|---|---|---|---|---|
| | | DESCRIPTION | TYPE | | |
| STEP 1 | COMPOST | COMPOST | FINE | 135 CY/ACRE | |
| STEP 2 | INCORPORATE MATERIALS | COMPOST | | - | 12" DEPTH |
| STEP 3 | EC (DRY SEED) | SEED MIX (TYPE 1) | | 30 LB/ACRE | |
| STEP 4 | COMPOST SOCK | - | 8" DIAMETER | - | |




*APPROVED FOR WATER POLLUTION CONTROL WORK ONLY*

# WATER POLLUTION CONTROL PLAN

SCALE: 1" = 50'

**W-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
TRAFFIC PROJECT DEVELOPMENT
FUNCTIONAL SUPERVISOR: JOSE LUIS ROBLES
CALCULATED-DESIGNED BY: HUNG TRAN
CHECKED BY: JOHAN PULGARIN
REVISED BY
DATE REVISED

LAST REVISION DATE PLOTTED => 30-AUG-2016
TIME PLOTTED => 15:54
08-05-16

BORDER LAST REVISED 7/2/2010
USERNAME => s127400
DGN FILE => 1100000545gi001.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 2771
PROJECT NUMBER & PHASE 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 14 | 113 |

07-11-16
REGISTERED CIVIL ENGINEER DATE

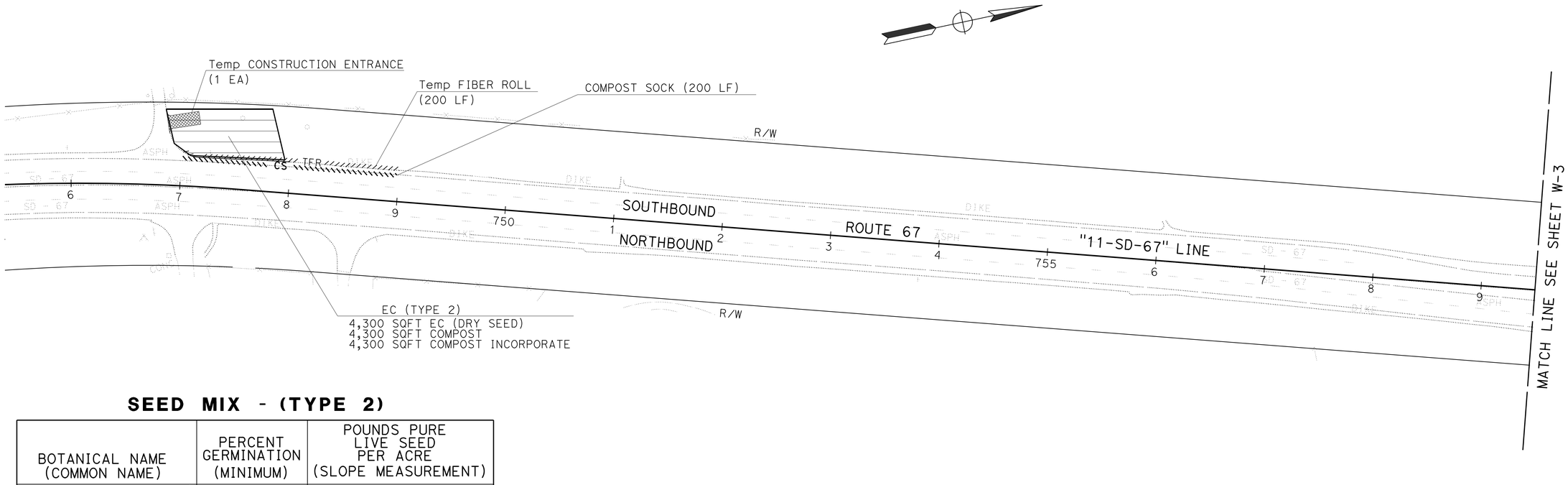
JOHAN PULGARIN
No. 76894
Exp. 12-31-16
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

08-29-16
PLANS APPROVAL DATE

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

# EC (TYPE 2)

| SEQUENCE | ITEM | MATERIAL | | APPLICATION RATE | REMARKS |
|---|---|---|---|---|---|
| | | DESCRIPTION | TYPE | | |
| STEP 1 | COMPOST | COMPOST | FINE | 135 CY/ACRE | |
| STEP 2 | INCORPORATE MATERIALS | COMPOST | | - | 12" DEPTH |
| STEP 3 | EC (DRY SEED) | SEED MIX (TYPE 2) | | 30 LB/ACRE | |
| STEP 4 | COMPOST SOCKS | - | 8" DIAMETER | - | |




# SEED MIX - (TYPE 2)

| BOTANICAL NAME (COMMON NAME) | PERCENT GERMINATION (MINIMUM) | POUNDS PURE LIVE SEED PER ACRE (SLOPE MEASUREMENT) |
|---|---|---|
| ARCHILLEA MILLEFOLIUM [1] (WESTERN YARROW) | 60 | 0.5 |
| ARTEMISIA CALIFORNICA [1] (COASTAL SAGE BRUSH) | 60 | 0.5 |
| ENCELIA CALIFORNICA [1] (CALIFORNIA SUNFLOWER) | 35 | 2.0 |
| ERIOGONUM FASCICULATUM [1] (CALIFORNIA BUCKWHEAT) | 20 | 2.0 |
| FESTUCA MICROSTACHYS [1] (SMALL FESCUE) | 35 | 4.0 |
| LASTHENIA CALIFORNICA [1] (GOLDFIELDS) | 35 | 4.0 |
| LOTUS SCOPARIUS [1] (DEERWEED) | 60 | 6.0 |
| LUPINUS BICOLOR [1] (PIGMY LUPINE) | 65 | 4.0 |
| SALVIA MELLIFERA [1] (BLACK SAGE) | 35 | 1.0 |
| STIPA PULCHRA [1] (PURPLE NEEDLEGRASS) | 60 | 6.0 |
| | TOTAL | 30.0 |

1 SEED PRODUCED FROM CALIFORNIA ONLY.

*APPROVED FOR WATER POLLUTION CONTROL WORK ONLY*

# WATER POLLUTION CONTROL PLAN

SCALE: 1" = 50'

**W-2**

REVISED BY | DATE REVISED
HUNG TRAN | JOHAN PULGARIN
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: JOSE LUIS ROBLES
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
TRAFFIC PROJECT DEVELOPMENT
Caltrans

LAST REVISION | DATE PLOTTED => 30-AUG-2016
08-05-17 | TIME PLOTTED => 15:54

BORDER LAST REVISED 7/2/2010 | USERNAME => s127400 | DGN FILE => 1100000545gi002.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2771 | PROJECT NUMBER & PHASE 11000005451

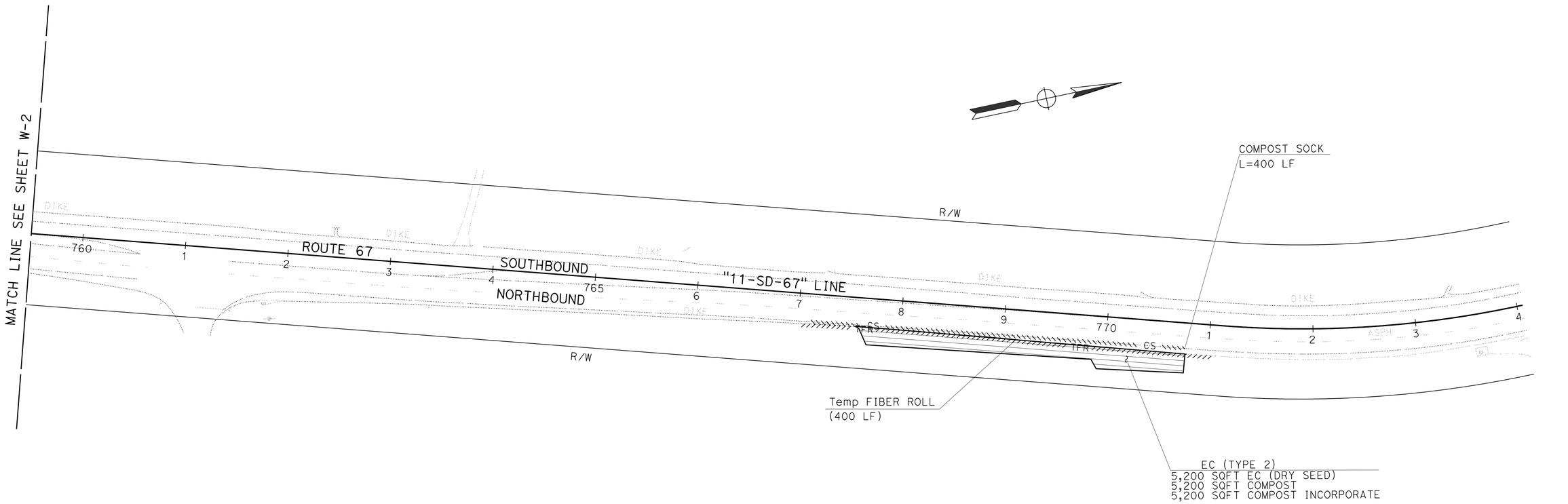
| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 15 | 113 |

REGISTERED CIVIL ENGINEER — DATE 07-11-16

08-29-16
PLANS APPROVAL DATE

JOHAN PULGARIN
No. 76894
Exp. 12-31-16
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

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




# WATER POLLUTION CONTROL PLAN

*APPROVED FOR WATER POLLUTION CONTROL WORK ONLY*

SCALE: 1" = 50'

**W-3**

CALCULATED-DESIGNED BY
CHECKED BY
HUNG TRAN
JOHAN PULGARIN
REVISED BY
DATE REVISED
FUNCTIONAL SUPERVISOR
JOSE LUIS ROBLES

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC PROJECT DEVELOPMENT

LAST REVISION | DATE PLOTTED => 30-AUG-2016 | TIME PLOTTED => 15:54 | 08-08-16

BORDER LAST REVISED 7/2/2010 | USERNAME => s127400 | DGN FILE => 1100000545gi003.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2771 | PROJECT NUMBER & PHASE 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 16 | 113 |

07-11-16
REGISTERED CIVIL ENGINEER DATE

08-29-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JOHAN PULGARIN
No. 76894
Exp. 12-31-16
CIVIL
STATE OF CALIFORNIA

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

## TEMPORARY FIBER ROLL

| SHEET | QUANTITY (LF) |
|---|---|
| W-1 | 600 |
| W-2 | 200 |
| W-3 | 400 |
| TOTAL | 1,200 |

## TEMPORARY CONSTRUCTION ENTRANCE

| SHEET | QUANTITY (EA) |
|---|---|
| W-1 | 1 |
| W-2 | 1 |
| TOTAL | 2 |

## EROSION CONTROL QUANTITIES

| SHEET | COMPOST (SQFT) | INCORPORATE MATERIALS (SQFT) | EC (DRY SEED) | | COMPOST SOCK (LF) |
|---|---|---|---|---|---|
| | | | EC (TYPE 1) (SQFT) | EC (TYPE 2) (SQFT) | |
| W-1 | 11,395 | 11,395 | 11,395 | | 600 |
| W-2 | 4,300 | 4,300 | | 4,300 | 200 |
| W-3 | 5,200 | 5,200 | | 5,200 | 400 |
| TOTAL | 20,895 | 20,895 | 20,895 | | 1,200 |

# WATER POLLUTION CONTROL QUANTITIES

# WQ-1

| CALCULATED-DESIGNED BY | CHECKED BY |
|---|---|
| HUNG TRAN | JOHAN PULGARIN |

| REVISED BY | DATE REVISED |
|---|---|

FUNCTIONAL SUPERVISOR: JOSE LUIS ROBLES

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC PROJECT DEVELOPMENT

LAST REVISION 08-08-16
DATE PLOTTED => 30-AUG-2016
TIME PLOTTED => 15:54

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 17 | 113 |

REGISTERED CIVIL ENGINEER — DATE: 07-13-16

FARDAD BEHBOODY No. C61478 Exp. 06-30-17 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

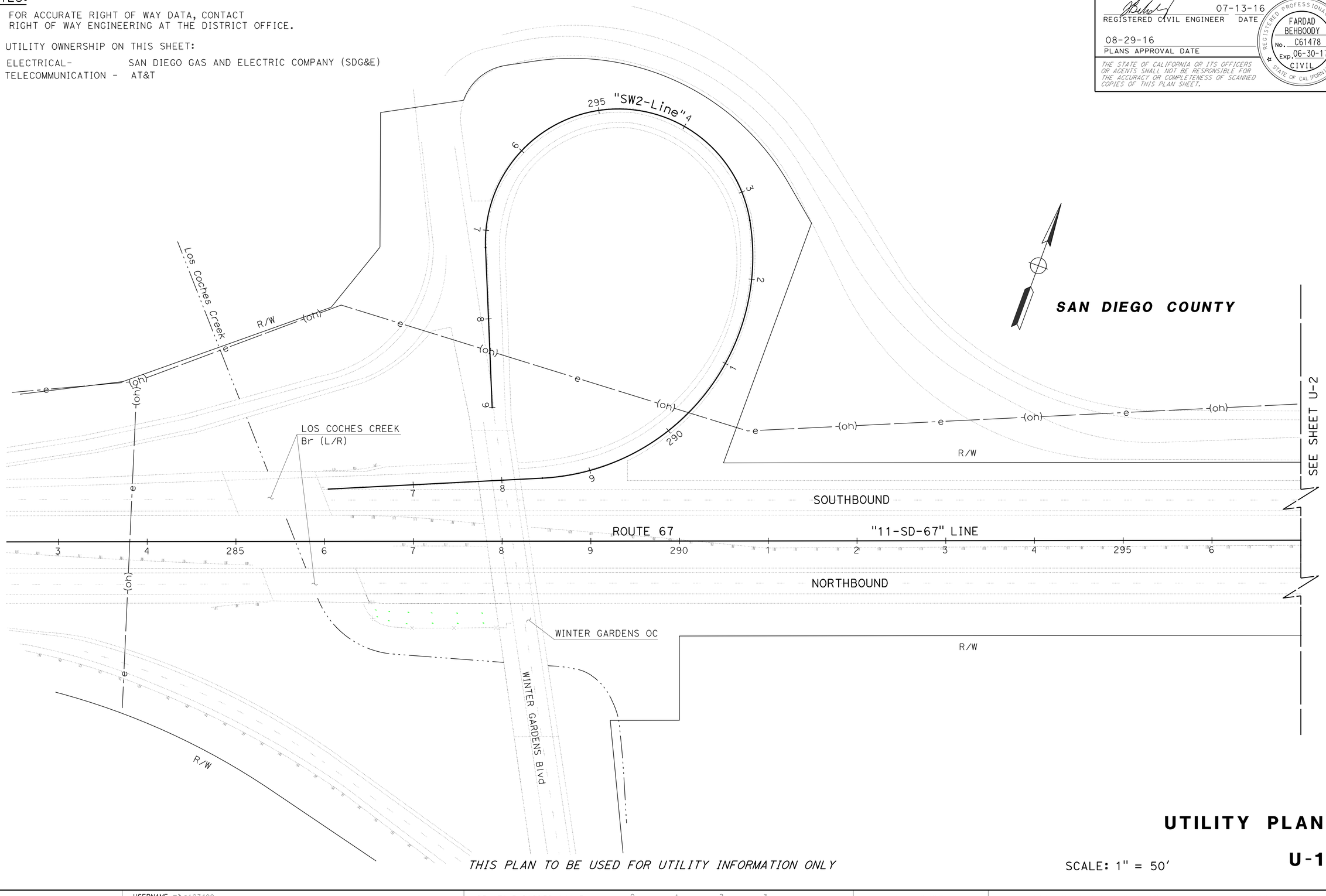
08-29-16
PLANS APPROVAL DATE

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

## NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. UTILITY OWNERSHIP ON THIS SHEET:

   ELECTRICAL- SAN DIEGO GAS AND ELECTRIC COMPANY (SDG&E)
   TELECOMMUNICATION - AT&T




THIS PLAN TO BE USED FOR UTILITY INFORMATION ONLY

# UTILITY PLAN

SCALE: 1" = 50'

U-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
UTILITY

FUNCTIONAL SUPERVISOR: ABU-BAKR AL-JAFRI
CALCULATED-DESIGNED BY:
CHECKED BY:
REVISED BY / DATE REVISED:
FARDAD BEHBOODY
MICHAEL B PEDERSEN

LAST REVISION | DATE PLOTTED => 30-AUG-2016 | TIME PLOTTED => 15:54
08-08-16

BORDER LAST REVISED 7/2/2010 | USERNAME => s127400 | DGN FILE => 1100000545ka001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2796 | PROJECT NUMBER & PHASE 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 18 | 113 |

REGISTERED CIVIL ENGINEER — DATE: 07-13-16

FARDAD BEHBOODY No. C61478 Exp. 06-30-17 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

08-29-16
PLANS APPROVAL DATE

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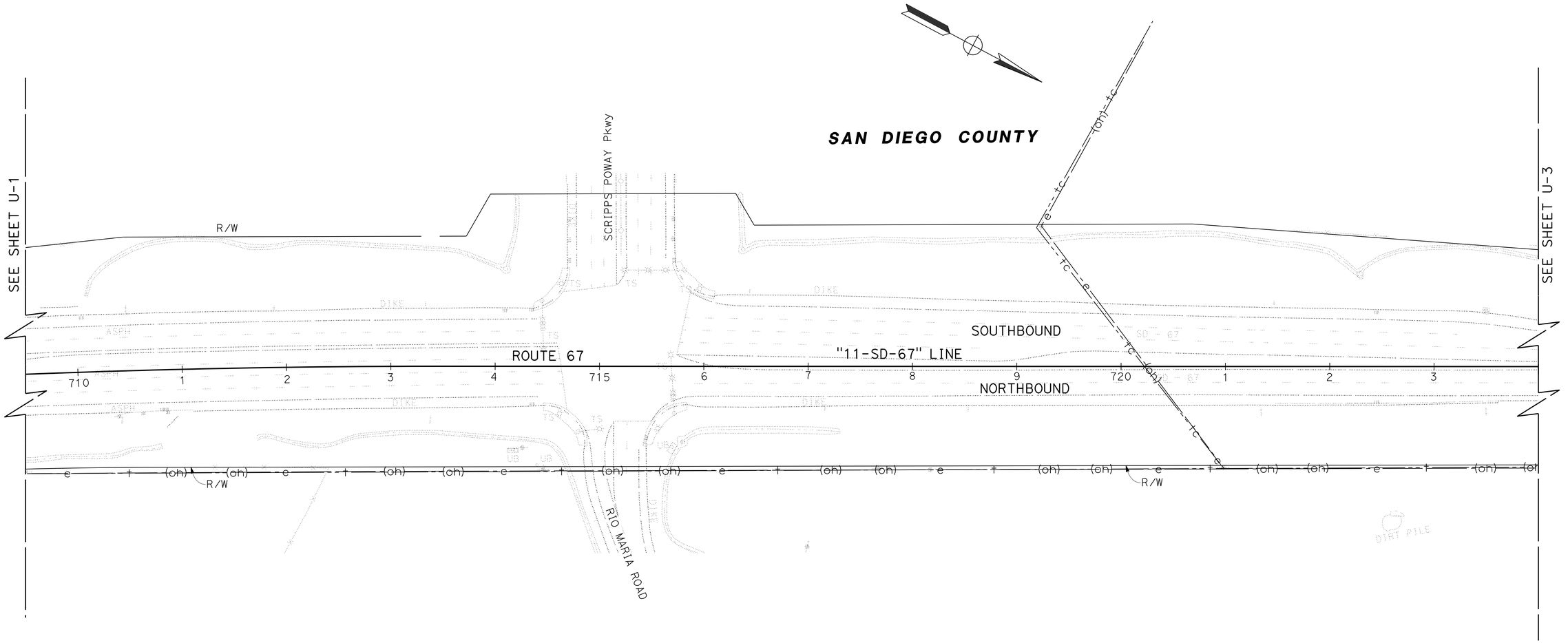
## NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. UTILITY OWNERSHIP ON THIS SHEET:

   ELECTRICAL- SAN DIEGO GAS AND ELECTRIC COMPANY (SDG&E)
   TELECOMMUNICATION - AT&T




*THIS PLAN TO BE USED FOR UTILITY INFORMATION ONLY*

SCALE: 1" = 50'

# UTILITY PLAN

**U-2**

REVISED BY | DATE REVISED
FARDAD BEHBOODY | MICHAEL B PEDERSEN
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: ABU-BAKR AL-JAFRI
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
UTILITY

LAST REVISION | DATE PLOTTED => 30-AUG-2016 | TIME PLOTTED => 15:55
08-08-16

BORDER LAST REVISED 7/2/2010 | USERNAME => s127400 | DGN FILE => 1100000545ka002.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2796 | PROJECT NUMBER & PHASE 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 19 | 113 |

REGISTERED CIVIL ENGINEER — DATE 07-13-16

FARDAD BEHBOODY No. C61478 Exp. 06-30-17 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

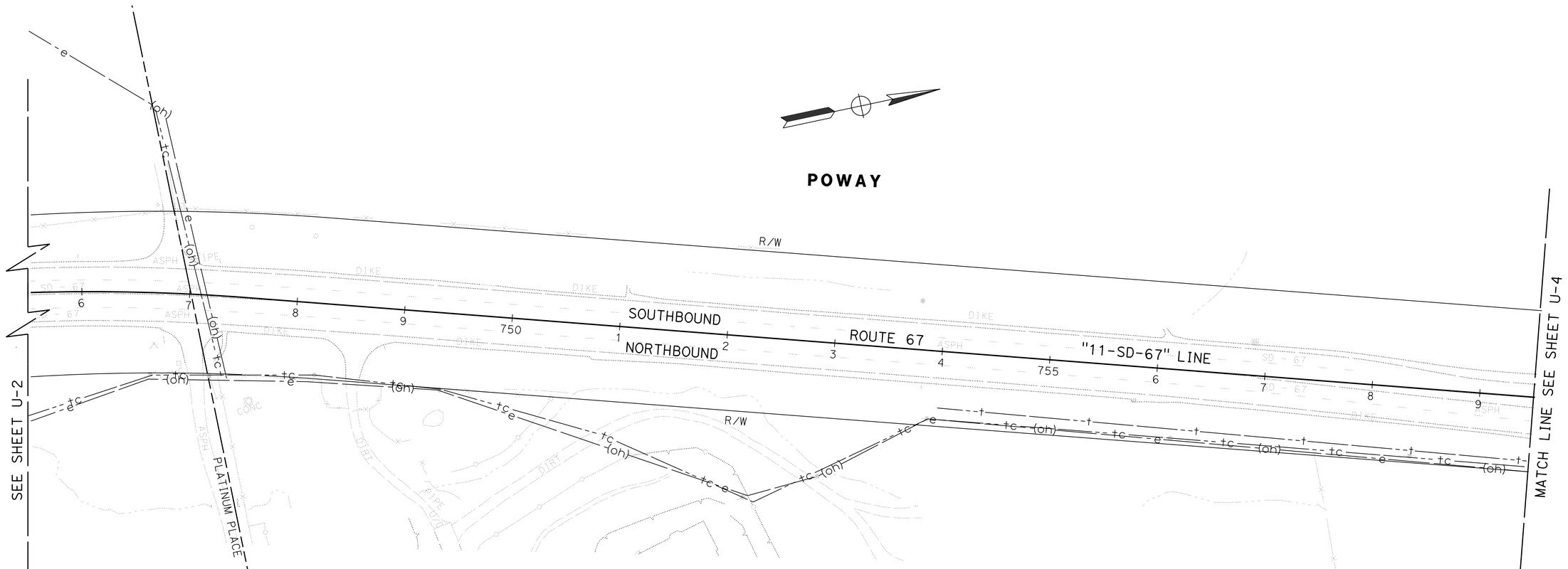
08-29-16
PLANS APPROVAL DATE

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

## NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. UTILITY OWNERSHIP ON THIS SHEET:

   ELECTRICAL- SAN DIEGO GAS AND ELECTRIC COMPANY (SDG&E)
   TELECOMMUNICATION - AT&T




# UTILITY PLAN

*THIS PLAN TO BE USED FOR UTILITY INFORMATION ONLY*

SCALE: 1" = 50'

**U-3**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
UTILITY
FUNCTIONAL SUPERVISOR: ABU-BAKR AL-JAFRI
CALCULATED-DESIGNED BY: FARDAD BEHBOODY
CHECKED BY: MICHAEL B PEDERSEN
REVISED BY / DATE REVISED

LAST REVISION: DATE PLOTTED => 30-AUG-2016, TIME PLOTTED => 15:55, 08-08-16

BORDER LAST REVISED 7/2/2010 | USERNAME => s127400 | DGN FILE => 1100000545ka003.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2796 | PROJECT NUMBER & PHASE 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 20 | 113 |

REGISTERED CIVIL ENGINEER — DATE 07-13-16

FARDAD BEHBOODY No. C61478 Exp. 06-30-17 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

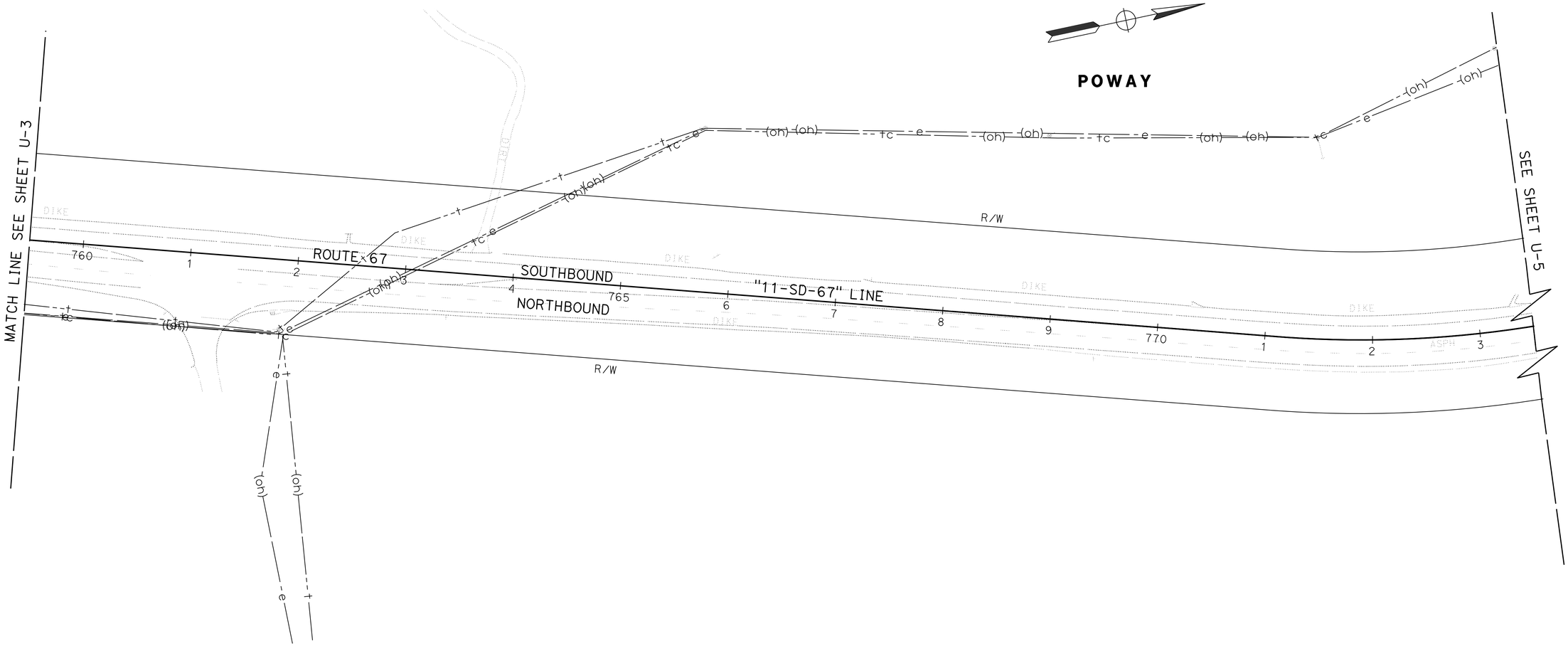
08-29-16
PLANS APPROVAL DATE

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

## NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. UTILITY OWNERSHIP ON THIS SHEET:

   ELECTRICAL- SAN DIEGO GAS AND ELECTRIC COMPANY (SDG&E)
   TELECOMMUNICATION - AT&T




# UTILITY PLAN

*THIS PLAN TO BE USED FOR UTILITY INFORMATION ONLY*

SCALE: 1" = 50'

U-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
UTILITY

FUNCTIONAL SUPERVISOR: ABU-BAKR AL-JAFRI
CALCULATED-DESIGNED BY: FARDAD BEHBOODY
CHECKED BY: MICHAEL B PEDERSEN
REVISED BY
DATE REVISED

LAST REVISION — DATE PLOTTED => 30-AUG-2016 — TIME PLOTTED => 15:55 — 08-08-16

BORDER LAST REVISED 7/2/2010 | USERNAME => s127400 | DGN FILE => 1100000545ka004.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2796 | PROJECT NUMBER & PHASE 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 21 | 113 |

REGISTERED CIVIL ENGINEER — DATE 07-13-16

FARDAD BEHBOODY No. C61478 Exp. 06-30-17 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

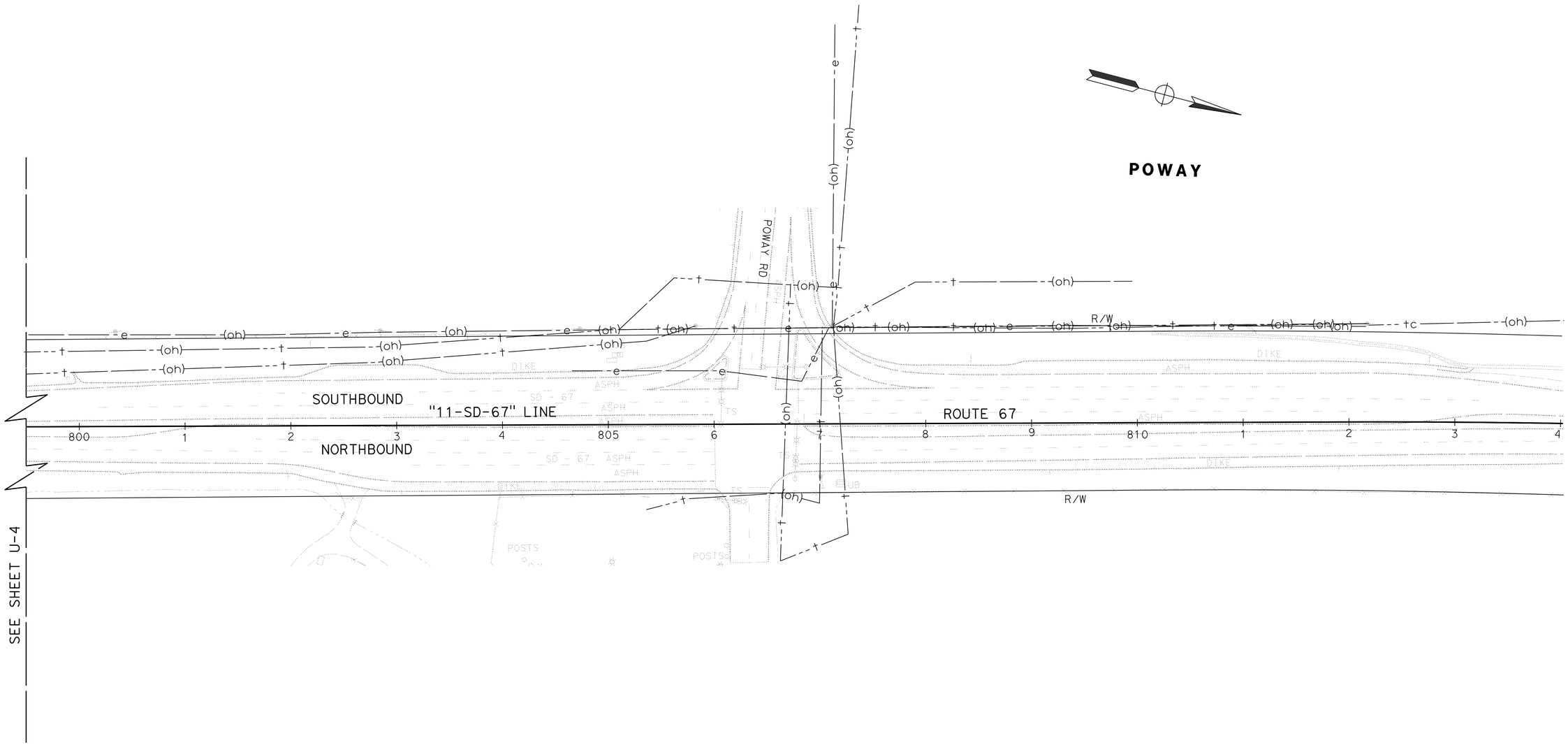
08-29-16
PLANS APPROVAL DATE

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

## NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. UTILITY OWNERSHIP ON THIS SHEET:

   ELECTRICAL- SAN DIEGO GAS AND ELECTRIC COMPANY (SDG&E)
   TELECOMMUNICATION - AT&T




# UTILITY PLAN

*THIS PLAN TO BE USED FOR UTILITY INFORMATION ONLY*

SCALE: 1" = 50'

**U-5**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
UTILITY
FUNCTIONAL SUPERVISOR: ABU-BAKR AL-JAFRI
CALCULATED-DESIGNED BY: FARDAD BEHBOODY
CHECKED BY: MICHAEL B PEDERSEN
REVISED BY / DATE REVISED

LAST REVISION — DATE PLOTTED => 30-AUG-2016 — TIME PLOTTED => 15:55 — 08-08-16

BORDER LAST REVISED 7/2/2010 | USERNAME => s127400 | DGN FILE => 1100000545ka005.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2796 | PROJECT NUMBER & PHASE 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 22 | 113 |

REGISTERED CIVIL ENGINEER , 07-13-16 DATE

08-29-16
PLANS APPROVAL DATE

SHAHIN ADIBI No. 54839 Exp. 06-30-18 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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

## NOTES:

1. EXACT LOCATION OF CONSTRUCTION AREA SIGNS WILL BE DETERMINED BY THE ENGINEER.
2. FEDERAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) SIGN CODES ARE SHOWN UNLESS DESIGNATED BY (CA), INDICATING CALIFORNIA MUTCD.
3. SEE TRAFFIC HANDLING PLANS FOR ADDITIONAL CONSTRUCTION AREA SIGNS.
4. EXISTING UTILITIES ARE NOT SHOWN ON THESE PLAN SHEETS. THE CONTRACTOR SHALL VERIFY LOCATIONS OF EXISTING UTILITIES AND ADJUST THE FIELD LOCATION OF SIGN POSTS IN CONSULTATION WITH THE ENGINEER.

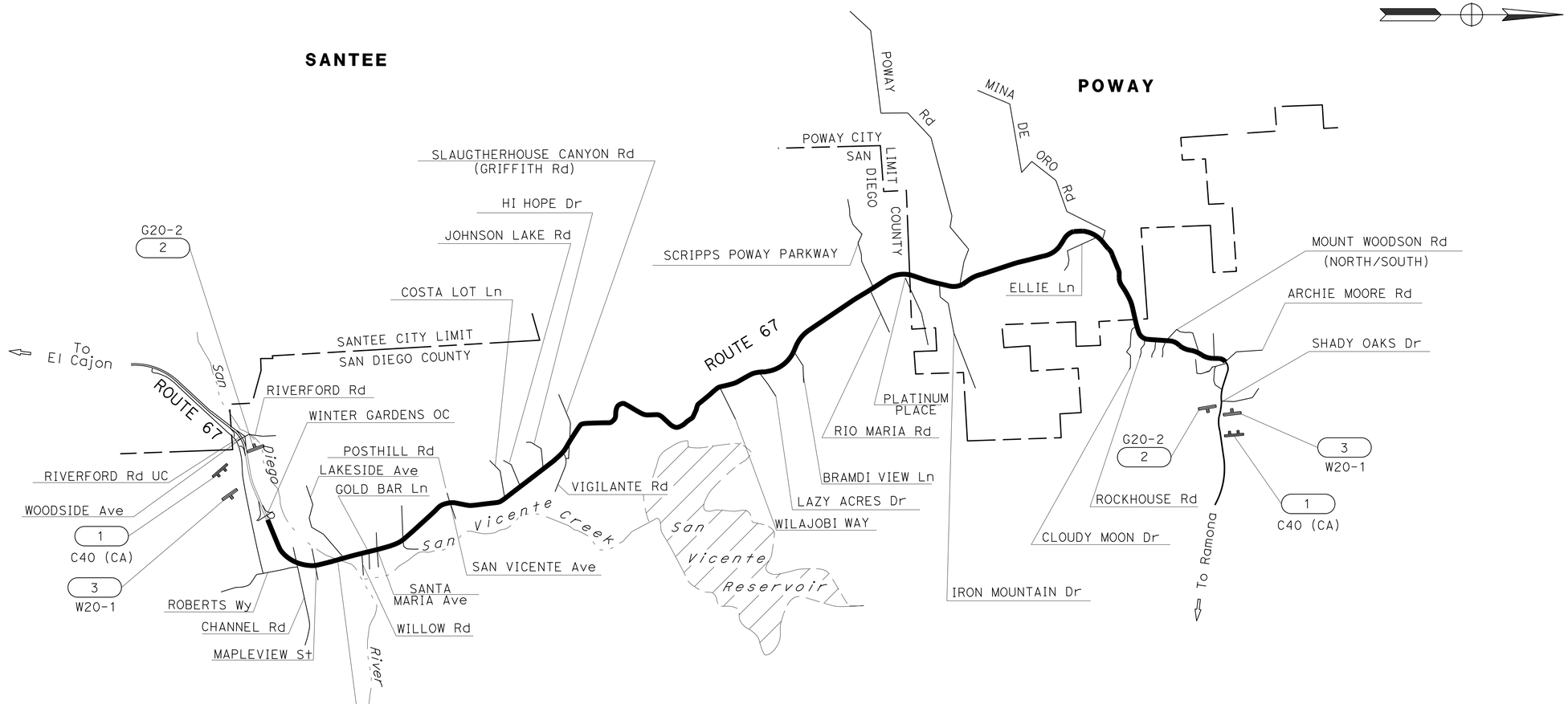
## LEGEND:

(X) = CONSTRUCTION AREA SIGNS

## CONSTRUCTION AREA SIGNS

| SIGN No. | TYPE | PANEL SIZE (Inches)x(Inches) | No. OF POST AND SIZE (Inches)x(Inches) | No. OF SIGNS |
|---|---|---|---|---|
| 1 | C40 (CA) | 108 X 42 | 2-4 X 6 (s) | 2 |
| 2 | G20-2 | 48 X 24 | 1-4 X 4 (s) | 31 |
| 3 | W20-1 | 48 X 48 | 1-4 X 6 (s) | 32 |
| 4 | SC6-4 (CA) | 48 X 60 | 1-4 X 6 (s) | 1 |
| | | | | |

(s) DENOTES STATIONARY MOUNTED SIGN




**SAN DIEGO COUNTY**

**Lakeside**

## CONSTRUCTION AREA SIGNS

NO SCALE

**CS-1**

*APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY*

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
TRAFFIC DESIGN
FUNCTIONAL SUPERVISOR: CAMILLE ABOU-FADEL
CALCULATED-DESIGNED BY: RYAN CHAO
CHECKED BY: SHAHIN ADIBI
REVISED BY
DATE REVISED

LAST REVISION: DATE PLOTTED => 30-AUG-2016
08-08-16 TIME PLOTTED => 15:55

BORDER LAST REVISED 7/2/2010 | USERNAME => s127400 | DGN FILE => 11000005451a001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2828 | PROJECT NUMBER & PHASE 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 23 | 113 |

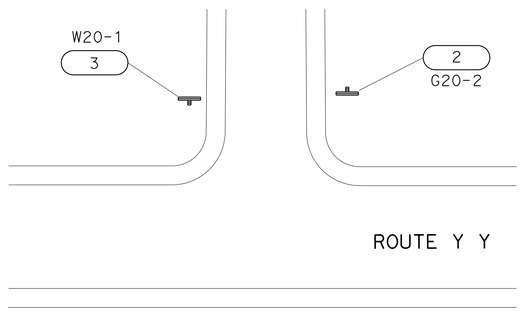
REGISTERED CIVIL ENGINEER , 07-13-16 DATE

SHAHIN ADIBI No. 54839 Exp. 06-30-18 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

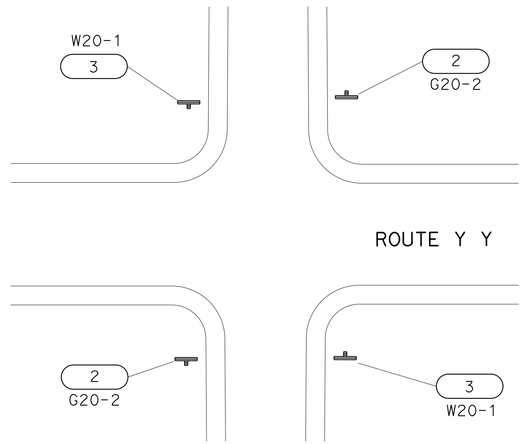
08-29-16
PLANS APPROVAL DATE

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

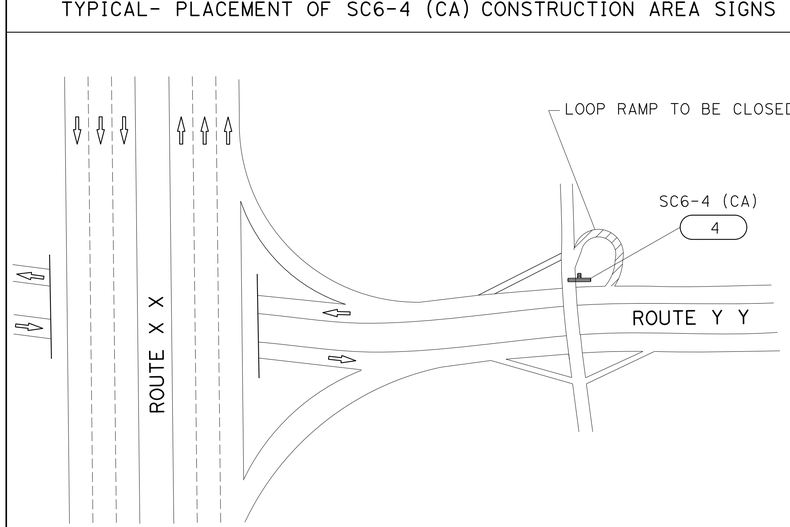
## TYPICAL- PLACEMENT OF G20-2 & W20-1 CONSTRUCTION AREA SIGNS



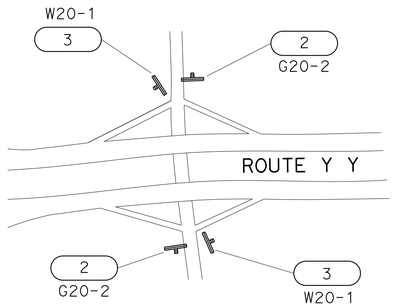

## TYPICAL- PLACEMENT OF G20-2 & W20-1 CONSTRUCTION AREA SIGNS




## TYPICAL- PLACEMENT OF SC6-4 (CA) CONSTRUCTION AREA SIGNS




## TYPICAL- PLACEMENT OF G20-2 & W20-1 CONSTRUCTION AREA SIGNS




*APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY*

# CONSTRUCTION AREA SIGNS

NO SCALE

**CS-2**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
TRAFFIC DESIGN
FUNCTIONAL SUPERVISOR: CAMILLE ABOU-FADEL
CALCULATED-DESIGNED BY: SHAHIN ADIBI
CHECKED BY: RYAN CHAO
REVISED BY / DATE REVISED

LAST REVISION 08-08-16
DATE PLOTTED => 30-AUG-2016
TIME PLOTTED => 15:55

BORDER LAST REVISED 7/2/2010
USERNAME => s127400
DGN FILE => 11000005451a002.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 2828
PROJECT NUMBER & PHASE 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 24 | 113 |

REGISTERED CIVIL ENGINEER — DATE 07-11-16

JOHAN PULGARIN No. 76894 Exp. 12-31-16 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

08-29-16
PLANS APPROVAL DATE

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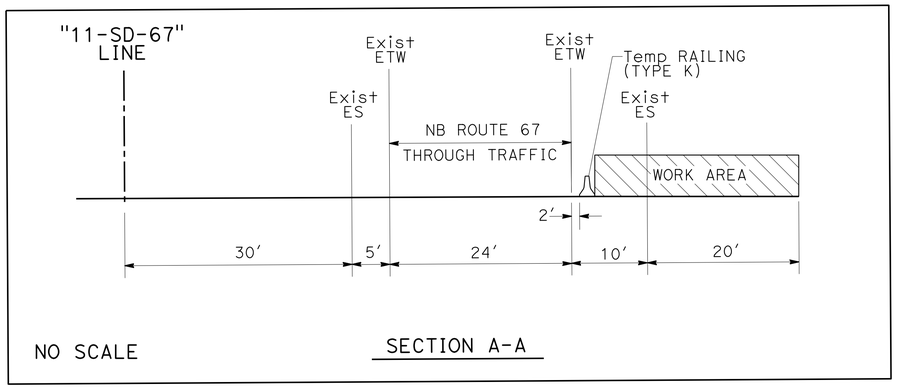
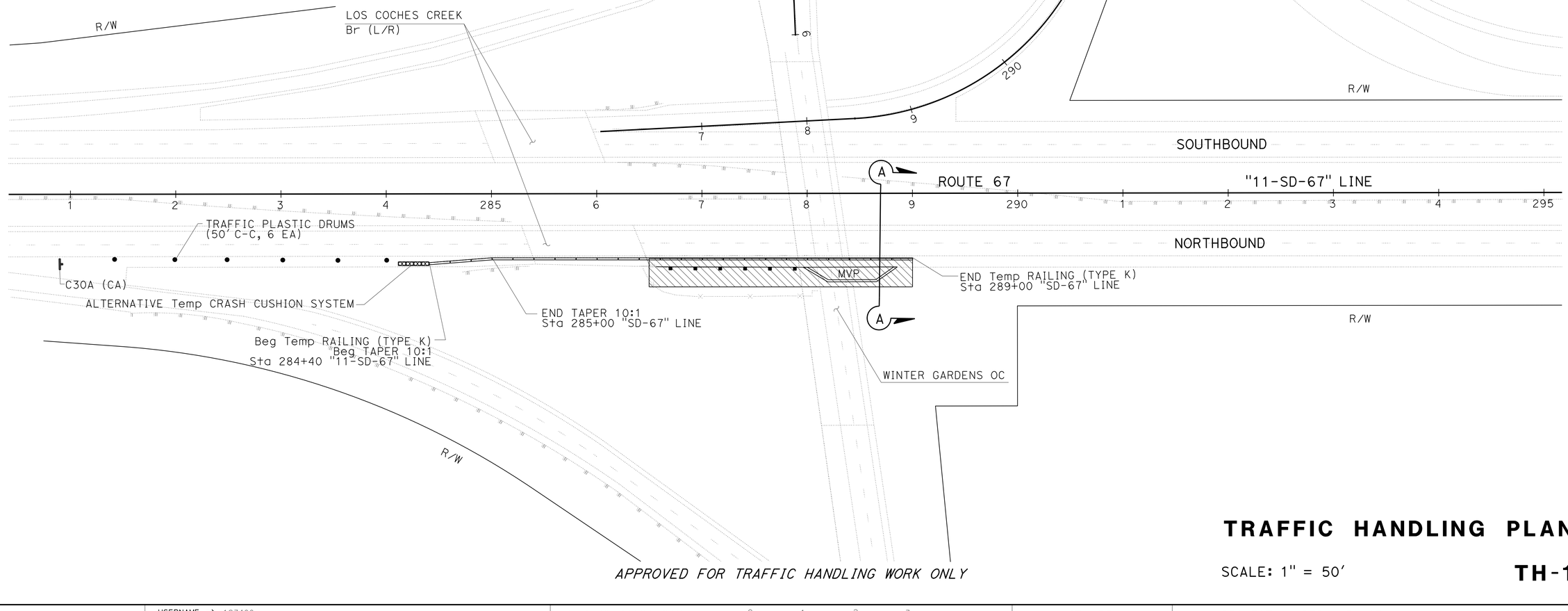
## NOTES:

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. EXACT LOCATION OF CONSTRUCTION AREA SIGNS WILL BE DETERMINED BY THE ENGINEER.
3. FEDERAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) SIGN CODES ARE SHOWN UNLESS DESIGNATED BY (CA), INDICATING CALIFORNIA MUTCD.
4. EXISTING UTILITIES ARE NOT SHOWN ON THESE PLAN SHEETS. THE CONTRACTOR SHALL VERIFY LOCATIONS OF EXISTING UTILITIES AND ADJUST THE FIELD LOCATION OF THE SIGN POSTS IN CONSULTATION WITH THE ENGINEER.
5. SEE CONSTRUCTION AREA SIGNS PLAN FOR ADDITIONAL CONSTRUCTION AREA SIGNS.




NO SCALE

SECTION A-A




*APPROVED FOR TRAFFIC HANDLING WORK ONLY*

**SAN DIEGO COUNTY**

# TRAFFIC HANDLING PLAN

SCALE: 1" = 50'

**TH-1**

| | |
|---|---|
| REVISED BY | HUNG TRAN |
| DATE REVISED | |
| CALCULATED-DESIGNED BY | JOHAN PULGARIN |
| CHECKED BY | |
| FUNCTIONAL SUPERVISOR | JOSE LUIS ROBLES |

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
**TRAFFIC PROJECT DEVELOPMENT**
Caltrans

LAST REVISION 08-08-16 | DATE PLOTTED => 30-AUG-2016 | TIME PLOTTED => 15:55

BORDER LAST REVISED 7/2/2010 | USERNAME => s127400 | DGN FILE => 1100000545md001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2771 | PROJECT NUMBER & PHASE 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 25 | 113 |

REGISTERED CIVIL ENGINEER — DATE 07-11-16

JOHAN PULGARIN No. 76894 Exp. 12-31-16 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

08-29-16
PLANS APPROVAL DATE

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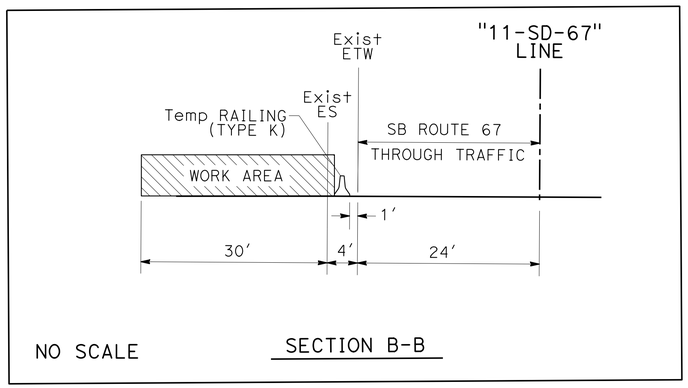
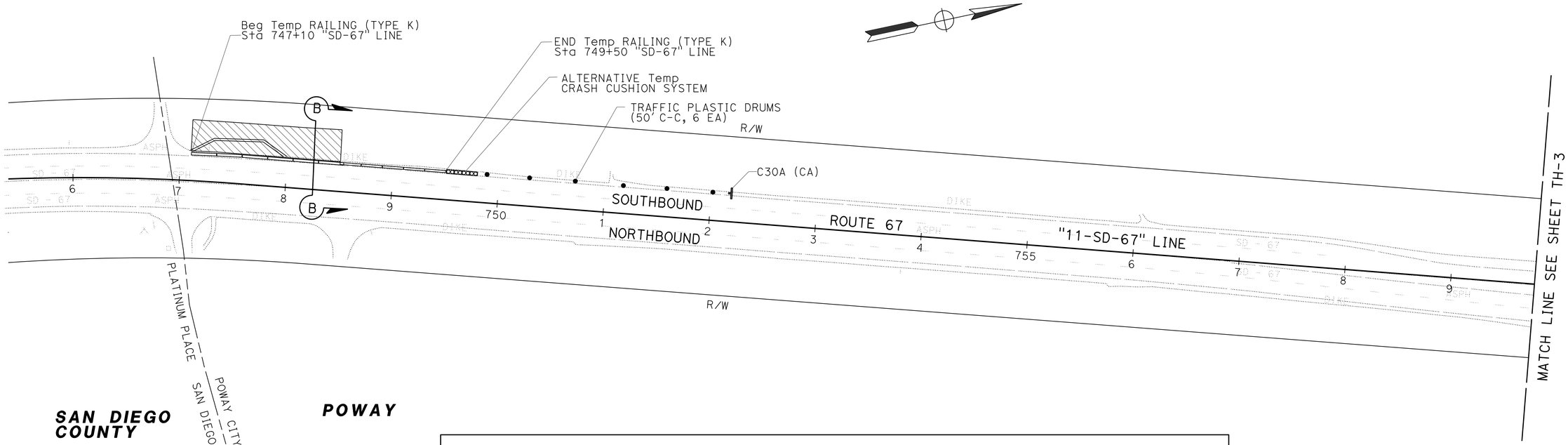
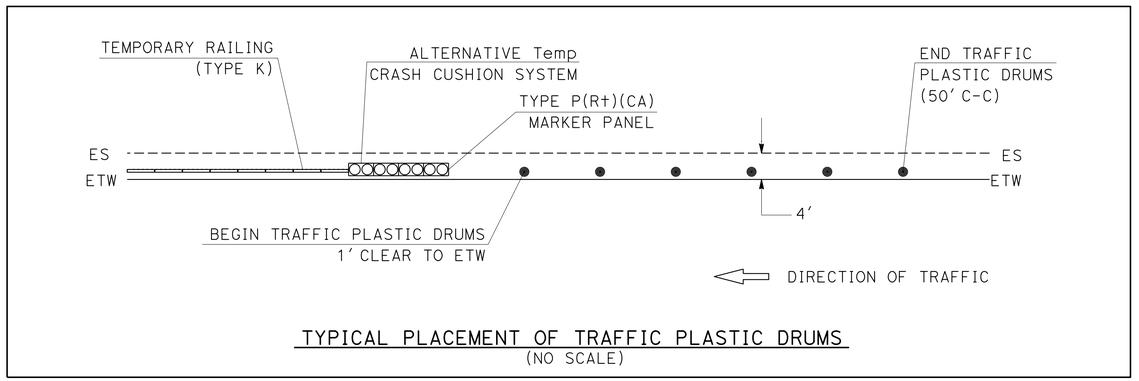



NO SCALE

SECTION B-B




TYPICAL PLACEMENT OF TRAFFIC PLASTIC DRUMS
(NO SCALE)

# TRAFFIC HANDLING PLAN

SCALE: 1" = 50'

TH-2

*APPROVED FOR TRAFFIC HANDLING WORK ONLY*

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
TRAFFIC PROJECT DEVELOPMENT
Caltrans

FUNCTIONAL SUPERVISOR: JOSE LUIS ROBLES
CALCULATED-DESIGNED BY: HUNG TRAN
CHECKED BY: JOHAN PULGARIN
REVISED BY
DATE REVISED

LAST REVISION | DATE PLOTTED => 30-AUG-2016 | 08-08-16 | TIME PLOTTED => 15:55

BORDER LAST REVISED 7/2/2010 | USERNAME => s127400 | DGN FILE => 1100000545md002.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2771 | PROJECT NUMBER & PHASE 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 26 | 113 |

REGISTERED CIVIL ENGINEER — DATE: 07-11-16

JOHAN PULGARIN No. 76894 Exp. 12-31-16 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

08-29-16
PLANS APPROVAL DATE

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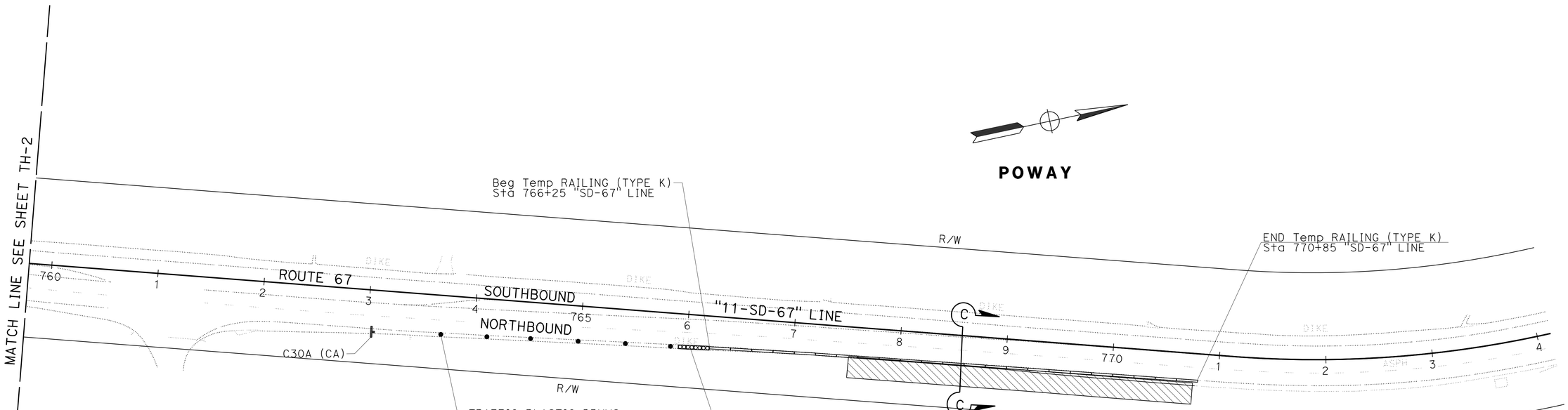
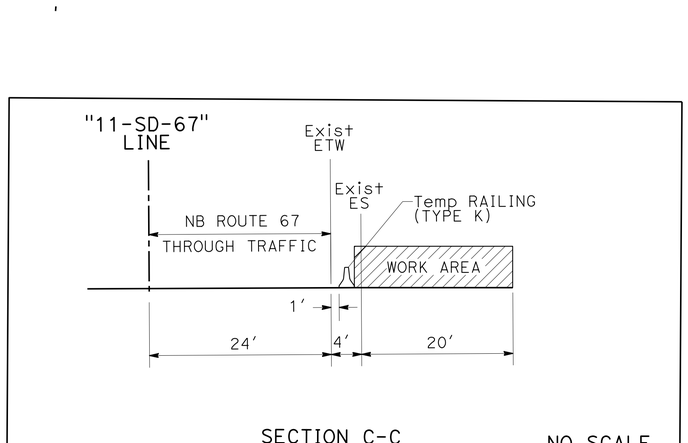



SECTION C-C — NO SCALE

*APPROVED FOR TRAFFIC HANDLING WORK ONLY*

# TRAFFIC HANDLING PLAN

SCALE: 1" = 50'

**TH-3**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
TRAFFIC PROJECT DEVELOPMENT
Caltrans
FUNCTIONAL SUPERVISOR: JOSE LUIS ROBLES
CALCULATED-DESIGNED BY: HUNG TRAN
CHECKED BY: JOHAN PULGARIN
REVISED BY
DATE REVISED

LAST REVISION | DATE PLOTTED => 30-AUG-2016 | TIME PLOTTED => 15:55

BORDER LAST REVISED 7/2/2010 | USERNAME => s127400 | DGN FILE => 1100000545md003.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2771 | PROJECT NUMBER & PHASE 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 27 | 113 |

REGISTERED CIVIL ENGINEER — DATE 07-11-16

PLANS APPROVAL DATE 08-29-16

REGISTERED PROFESSIONAL ENGINEER — JOHAN PULGARIN — No. 76894 — Exp. 12-31-16 — CIVIL — STATE OF CALIFORNIA

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

NOTE:

1. [N] - NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.

## TRAFFIC HANDLING QUANTITIES

| LOCATION | | | | TEMPORARY RAILING (TYPE K) | TRAFFIC PLASTIC DRUM | ALTERNATIVE TEMPORARY CRASH CUSHION SYSTEM | [N] TYPE P(R†)(CA) MARKER PANEL | [N] REFLECTOR | [N] CONSTRUCTION AREA SIGNS C30A (CA) |
|---|---|---|---|---|---|---|---|---|---|
| SHEET | LINE | SIDE | STATION | (LF) | (EA) | (EA) | (EA) | (EA) | (No.) |
| TH-1 | "11-SD-67" | R† | 284+40.00 TO 289+00.00 | 460 | 6 | 1 | 1 | 19 | 1 |
| TH-2 | "11-SD-67" | L† | 747+10.00 TO 749+50.00 | 240 | 6 | 1 | 1 | 11 | 1 |
| TH-3 | "11-SD-67" | R† | 766+25.00 TO 770+85.00 | 460 | 6 | 1 | 1 | 19 | 1 |
| | | | TOTAL | 1,160 | 18 | 3 | | | |

REVISED BY | DATE REVISED

HUNG TRAN | JOHAN PULGARIN

CALCULATED-DESIGNED BY | CHECKED BY

FUNCTIONAL SUPERVISOR: JOSE LUIS ROBLES

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans®

TRAFFIC PROJECT DEVELOPMENT

# TRAFFIC HANDLING QUANTITIES

THQ-1

LAST REVISION 08-08-16 | DATE PLOTTED => 30-AUG-2016 | TIME PLOTTED => 15:55

BORDER LAST REVISED 7/2/2010

USERNAME => s127400
DGN FILE => 1100000545mf001.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 2771 | PROJECT NUMBER & PHASE 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 28 | 113 |

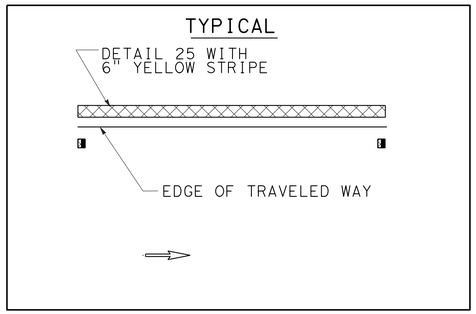
REGISTERED CIVIL ENGINEER , 07-13-16 DATE

SHAHIN ADIBI No. 54839 Exp. 06-30-18 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

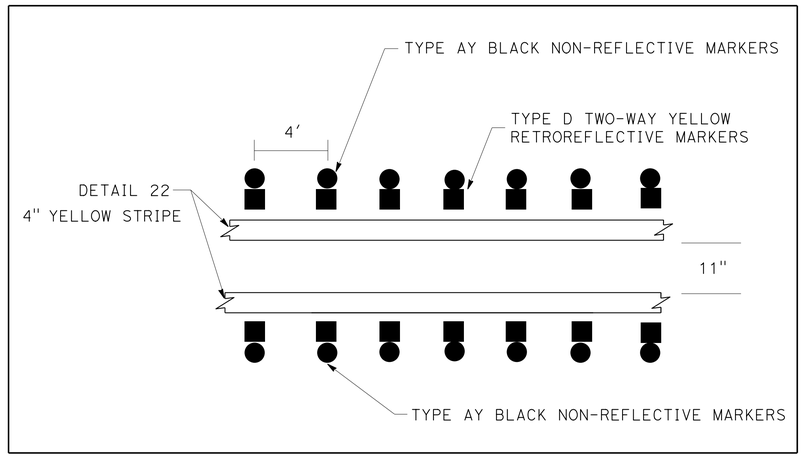
08-29-16
PLANS APPROVAL DATE

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

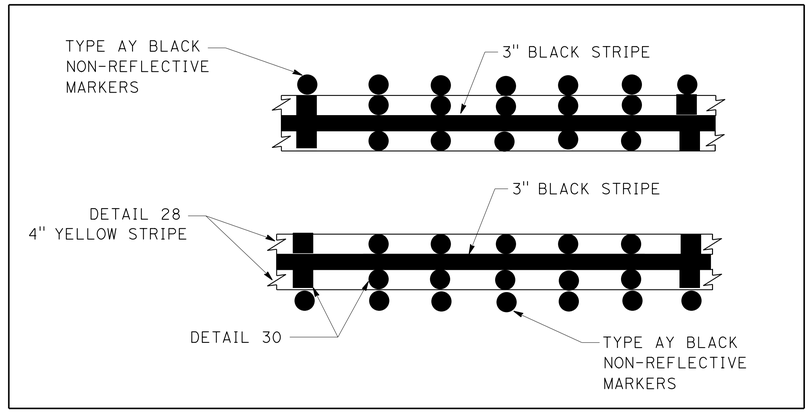
## DETAIL 25 (6Mod)



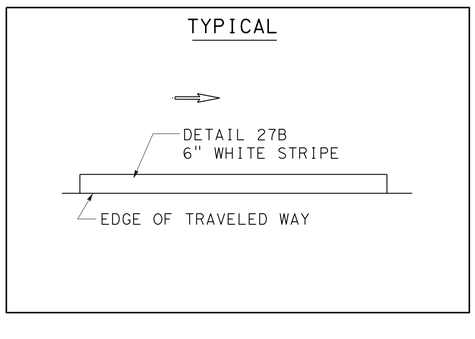

## DETAIL 22 (Mod)



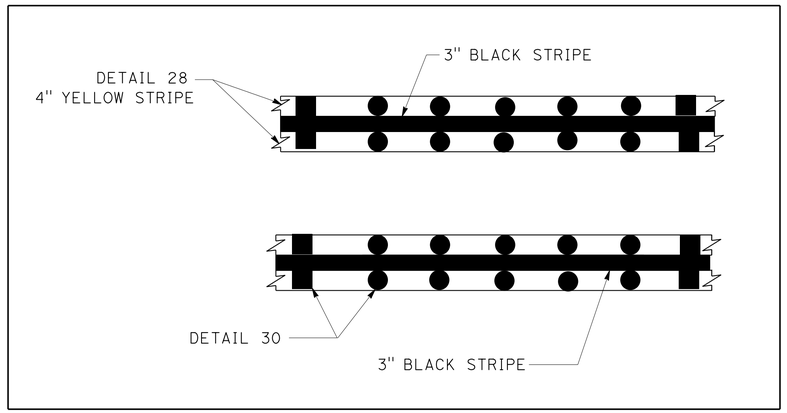

## DETAIL 28/30 (Mod 2)



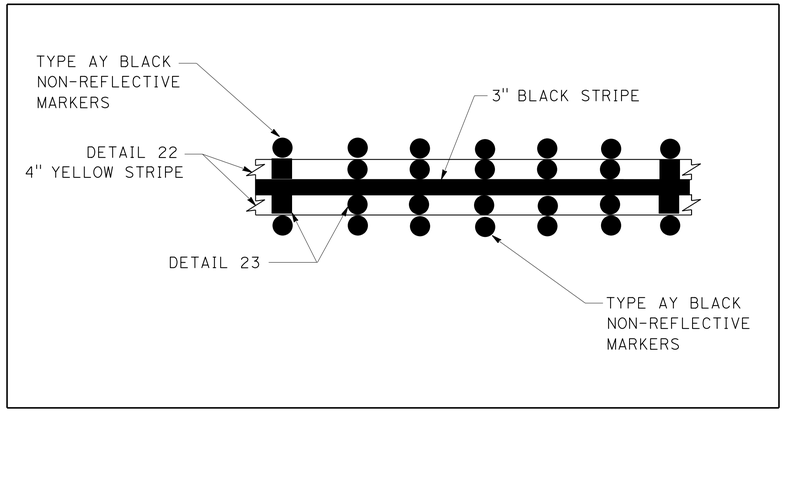

## DETAIL 27B (6Mod)



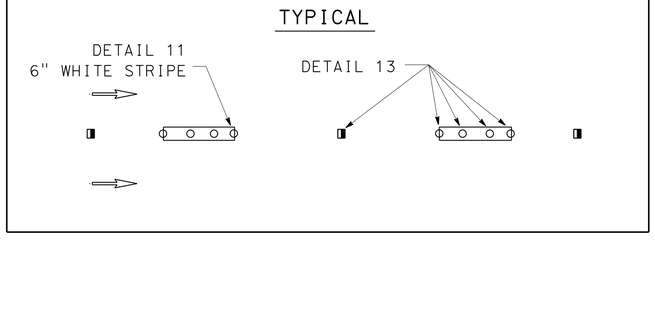

## DETAIL 28/30 (Mod 1)



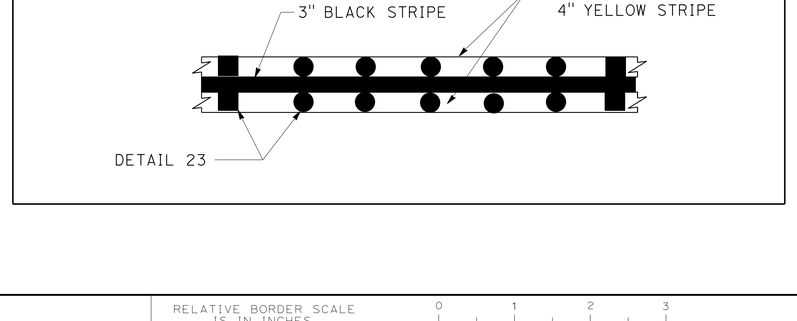

## DETAIL 22/23 (Mod 2)




## DETAIL 11/13 (6Mod)




## DETAIL 22/23 (Mod 1)




# PAVEMENT DELINEATION DETAILS

NO SCALE

**PDD-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
TRAFFIC DESIGN
FUNCTIONAL SUPERVISOR: CAMILLE ABOU-FADEL
CALCULATED-DESIGNED BY: RYAN CHAO
CHECKED BY: SHAHIN ADIBI
REVISED BY | DATE REVISED

LAST REVISION | DATE PLOTTED => 30-AUG-2016
08-30-16 | TIME PLOTTED => 15:55

BORDER LAST REVISED 7/2/2010 | USERNAME => s127400 | DGN FILE => 1100000545nb001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2828 | PROJECT NUMBER & PHASE 11000005451

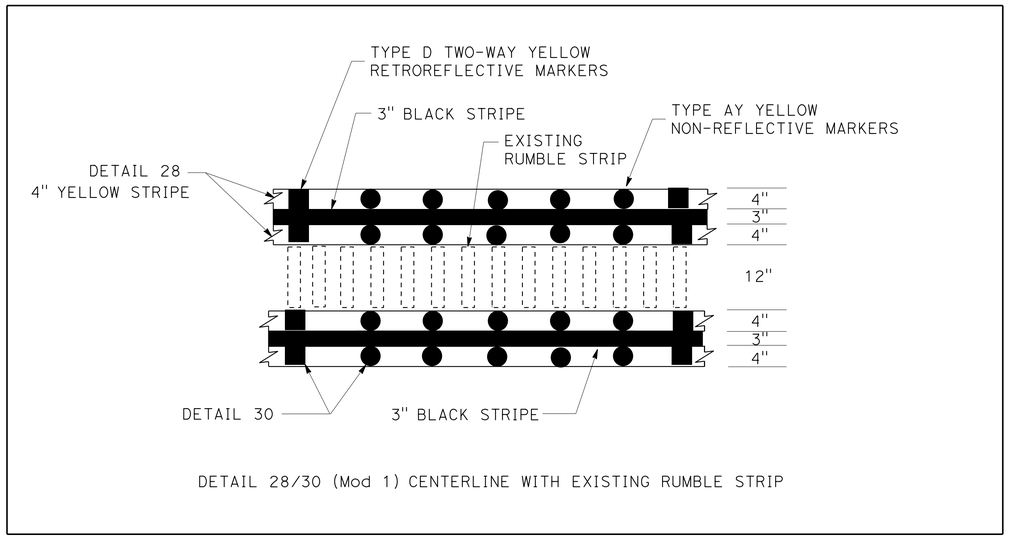
| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 29 | 113 |

REGISTERED CIVIL ENGINEER , 07-13-16 DATE

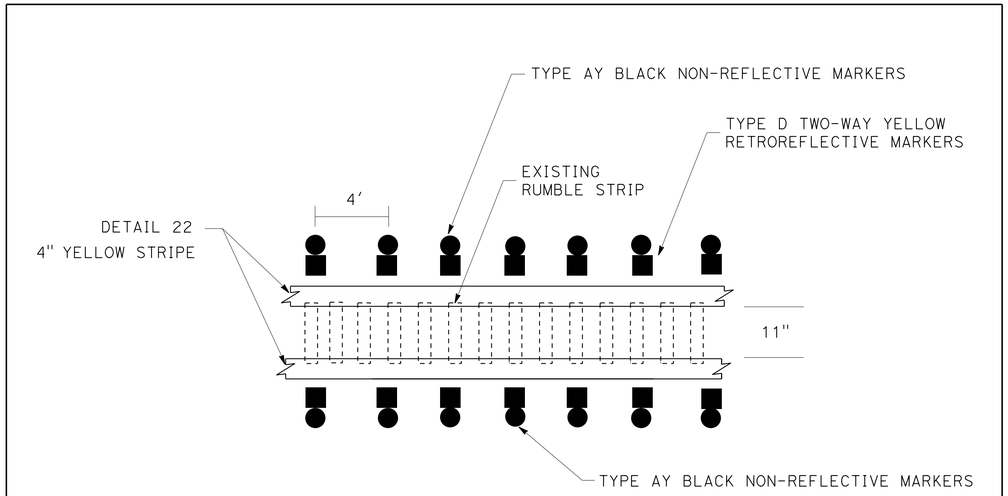
08-29-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
SHAHIN ADIBI
No. 54839
Exp. 06-30-18
CIVIL
STATE OF CALIFORNIA

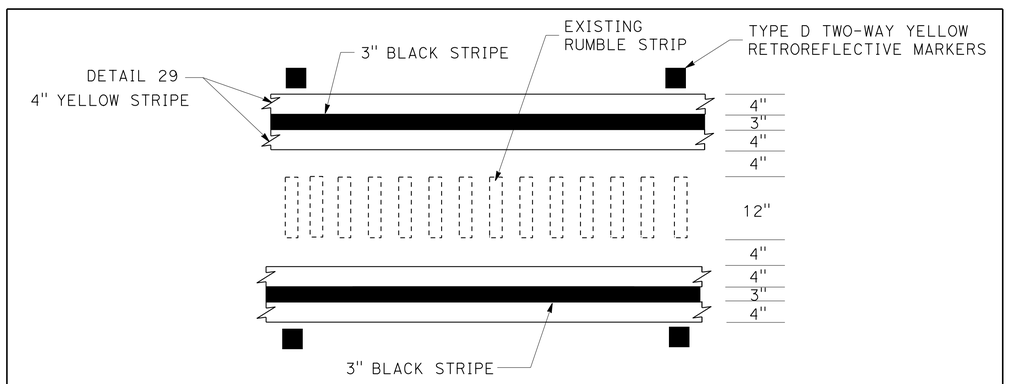
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.




DETAIL 28/30 (Mod 1) CENTERLINE WITH EXISTING RUMBLE STRIP




DETAIL 22 (Mod) CENTERLINE WITH EXISTING RUMBLE STRIP
(IN CITY OF POWAY)




DETAIL 29 CENTERLINE WITH EXISTING RUMBLE STRIP

# PAVEMENT DELINEATION DETAILS

NO SCALE

**PDD-2**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC DESIGN
FUNCTIONAL SUPERVISOR: CAMILLE ABOU-FADEL
CALCULATED-DESIGNED BY: SHAHIN ADIBI
CHECKED BY: RYAN CHAO
REVISED BY | DATE REVISED

LAST REVISION | DATE PLOTTED => 30-AUG-2016
08-30-16 | TIME PLOTTED => 15:55

BORDER LAST REVISED 7/2/2010
USERNAME => s127400
DGN FILE => 1100000545nb002.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 2828
PROJECT NUMBER & PHASE 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 30 | 113 |

REGISTERED CIVIL ENGINEER , 07-13-16 DATE

08-29-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
SHAHIN ADIBI
No. 54839
Exp 06-30-18
CIVIL
STATE OF CALIFORNIA

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

NOTE:

1. ALL PAVEMENT DELINEATION SHALL BE REPLACED IN KIND UNLESS INDICATED OTHERWISE.

# PAVEMENT DELINEATION QUANTITIES

| LOCATION | | | | | | PAVEMENT MARKER | | | | | | TRAFFIC STRIPE | | | | | | | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | NON-REFLECTIVE (EA) | | | RETROREFLECTIVE (EA) | | | PAINT (1 COAT) (LF) | THERMOPLASTIC (ENHANCED WET NIGHT VISIBILITY) (LF) | | | | | | |
| | | | | | | | | | | | | 3" | 4" | | 6" | | | 8" | |
| ROUTE | DIRECTION | DESCRIPTION | FROM STA | TO STA | DETAIL No. | TYPE A WHITE | TYPE AY YELLOW | TYPE AY BLACK | TYPE D YELLOW | TYPE G CLEAR | TYPE H YELLOW | BLACK | SOLID | BROKEN 36′-12′ | SOLID | BROKEN 36′-12′ | BROKEN 8′-4′ | SOLID | |
| 67 | NB | MAINLANE | 286+60 | 1008+80 | 25 (6Mod) | | | | | | 109 | | | | 5,165 | | | | |
| 67 | SB | MAINLANE | 286+60 | 1008+80 | 25 (6Mod) | | | | | | 108 | | | | 5,120 | | | | |
| 67 | NB | MAINLANE | 286+60 | 1008+80 | 27B (6Mod) | | | | | | | | | | 76,032 | | | | |
| 67 | SB | MAINLANE | 286+60 | 1008+80 | 27B (6Mod) | | | | | | | | | | 76,032 | | | | |
| 67 | NB | MAINLANE | 286+60 | 1008+80 | 11/13 (6Mod) | 3,833 | | | | 960 | | | | | | 45,985 | | | |
| 67 | SB | MAINLANE | 286+60 | 1008+80 | 11/13 (6Mod) | 2,493 | | | | 625 | | | | | | 29,908 | | | |
| 67 | NB/SB | MAINLANE | 286+60 | 1008+80 | 29 | | | | 966 | | | 23,126 | 46,252 | | | | | | L=11,563′ |
| 67 | NB/SB | MAINLANE | 286+60 | 1008+80 | 32 | | | | 119 | | | 2,218 | 2,218 | 2,218 | | | | | L=1,109′ |
| 67 | NB/SB | MAINLANE | 286+60 | 1008+80 | 27 | | | | | | 199 | 9,504 | 19,008 | | | | | | L=9,504′ |
| 67 | NB/SB | MAINLANE | 286+60 | 1008+80 | 28/30 (Mod1) | | 17,938 | | 3,592 | | | 43,050 | 86,100 | | | | | | L=21,525 |
| 67 | NB/SB | MAINLANE | 286+60 | 1008+80 | 22/23 (Mod1) | | 144 | | 31 | | | 345 | 690 | | | | | | L=345′ |
| 67 | NB/SB | MAINLANE | 286+60 | 1008+80 | 22 | | | | 320 | | | 3,807 | 7,614 | | | | | | L=3,807′ |
| 67 | NB/SB | MAINLANE | 286+60 | 1008+80 | 22 (Mod) | | | 5,461 | 1,095 | | | 13,105 | 26,210 | | | | | | L=13,105′ |
| 67 | NB/SB | MAINLANE | 286+60 | 1008+80 | 22/23 (Mod2) | | 1,550 | 1,550 | 312 | | | 3,720 | 7,440 | | | | | | L=3,720′ |
| 67 | NB/SB | MAINLANE | 286+60 | 1008+80 | 28/30 (Mod2) | | 350 | 175 | 74 | | | 840 | 1,680 | | | | | | L=420′ |
| | | | | | | | | | | | | | | | | | | | |
| 67 | NB/SB | SCRIPPS POWAY Pkwy / Rte 67 | 286+60 | 1008+80 | 28/30 (Mod1) | | 542 | | 113 | | | 1,300 | 2,600 | | | | | | L=650′ |
| 67 | NB | SCRIPPS POWAY Pkwy / Rte 67 | 286+60 | 1008+80 | 38 | | | | | 29 | | | | | | | | 650 | |
| 67 | NB | SCRIPPS POWAY Pkwy / Rte 67 | 286+60 | 1008+80 | 11/13 (6Mod) | 40 | | | | 11 | | | | | | 470 | | | |
| 67 | NB/SB | SCRIPPS POWAY Pkwy / Rte 67 | 286+60 | 1008+80 | 28/30 (Mod1) | | 542 | | 113 | | | 1,300 | 2,600 | | | | | | L=650′ |
| 67 | SB | SCRIPPS POWAY Pkwy / Rte 67 | 286+60 | 1008+80 | 38 | | | | | 29 | | | | | | | | 650 | |
| 67 | SB | SCRIPPS POWAY Pkwy / Rte 67 | 286+60 | 1008+80 | 38 | | | | | 13 | | | | | | | | 285 | |
| | | | | | | | | | | | | | | | | | | | |
| 67 | NB/SB | POWAY Rd / Rte 67 | 286+60 | 1008+80 | 28/30 (Mod1) | | 542 | | 113 | | | 1,300 | 2,600 | | | | | | L=650′ |
| 67 | NB | POWAY Rd / Rte 67 | 286+60 | 1008+80 | 38 | | | | | 20 | | | | | | | | 435 | |
| 67 | NB | POWAY Rd / Rte 67 | 286+60 | 1008+80 | 38 | | | | | 14 | | | | | | | | 295 | |
| 67 | NB | POWAY Rd / Rte 67 | 286+60 | 1008+80 | 39A | | | | | | | | | | | | 190 | | |
| 67 | NB | POWAY Rd / Rte 67 | 286+60 | 1008+80 | 39 | | | | | | | | | | 460 | | | | |
| 67 | NB/SB | POWAY Rd / Rte 67 | 286+60 | 1008+80 | 28/30 (Mod1) | | 542 | | 113 | | | 1,300 | 2,600 | | | | | | L=650′ |
| 67 | SB | POWAY Rd / Rte 67 | 286+60 | 1008+80 | 38 | | | | | 20 | | | | | | | | 450 | |
| 67 | SB | POWAY Rd / Rte 67 | 286+60 | 1008+80 | 38 | | | | | 21 | | | | | | | | 470 | |
| 67 | SB | POWAY Rd / Rte 67 | 286+60 | 1008+80 | 38 | | | | | 24 | | | | | | | | 535 | |
| | | | | | | | | | | | | | | | | | | | |
| 67 | WB/EB | POWAY Rd | 286+60 | 1008+80 | 38 | | | | | 4 | | | | | | | | 60 | |
| 67 | WB/EB | POWAY Rd | 286+60 | 1008+80 | 11/13 (6Mod) | 3 | | | | 2 | | | | | | 30 | | | |
| 67 | WB/EB | POWAY Rd | 286+60 | 1008+80 | 27B (6Mod) | | | | | | | | | | 30 | | | | |
| 67 | WB/EB | POWAY Rd | 286+60 | 1008+80 | 22/23 (Mod1) | | 13 | | 5 | | | 30 | 60 | | | | | | L=30′ |
| 67 | WB/EB | POWAY Rd | 286+60 | 1008+80 | 38 | | | | | 4 | | | | | | | | 60 | |
| 67 | WB/EB | POWAY Rd | 286+60 | 1008+80 | 27B (6Mod) | | | | | | | | | | 30 | | | | |
| 67 | WB/EB | DRIVEWAY / Rte 67 | 286+60 | 1008+80 | 22 | | | | 5 | | | 30 | 60 | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | SUBTOTAL | 6,369 | 22,163 | 7,186 | 6,971 | 1,776 | 416 | 104,975 | 207,732 | 2,218 | 162,869 | 76,393 | 190 | 3,890 | |
| | | | | | TOTAL | | 35,718 | | | 9,163 | | 104,975 | 207,732 | 2,218 | 162,869 | 76,393 | 190 | 3,890 | |

# PAVEMENT DELINEATION QUANTITIES
# PDQ-1

REVISED BY | DATE REVISED
RYAN CHAO | SHAHIN ADIBI
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: CAMILLE ABOU-FADEL
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

LAST REVISION 08-08-16
DATE PLOTTED => 30-AUG-2016
TIME PLOTTED => 15:55

BORDER LAST REVISED 7/2/2010
USERNAME => s127400
DGN FILE => 1100000545nc001.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 2828
PROJECT NUMBER & PHASE 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 31 | 113 |

REGISTERED CIVIL ENGINEER , 07-13-16 DATE

08-29-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
SHAHIN ADIBI
No. 54839
Exp 06-30-18
CIVIL
STATE OF CALIFORNIA

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

NOTE:

1. ALL PAVEMENT DELINEATION SHALL BE REPLACED IN KIND UNLESS INDICATED OTHERWISE.

## REMOVE PAINTED TRAFFIC STRIPE

| ROUTE | DIRECTION | DESCRIPTION | FROM STA | TO STA | DETAIL No. | LF | REMARKS |
|---|---|---|---|---|---|---|---|
| 67 | NB | MAINLANE | 286+60 | 1008+80 | 25 | 5,165 | |
| 67 | SB | MAINLANE | 286+60 | 1008+80 | 25 | 5,120 | |
| 67 | NB | MAINLANE | 286+60 | 1008+80 | 27B | 76,032 | |
| 67 | SB | MAINLANE | 286+60 | 1008+80 | 27B | 76,032 | |
| 67 | NB | MAINLANE | 286+60 | 1008+80 | 11/13 | 11,497 | L = 45,985′ |
| 67 | SB | MAINLANE | 286+60 | 1008+80 | 11/13 | 7,477 | L = 29,908′ |
| 67 | NB/SB | MAINLANE | 286+60 | 1008+80 | 29 | 46,252 | L = 11,563′ |
| 67 | NB/SB | MAINLANE | 286+60 | 1008+80 | 32 | 2,773 | L = 1,109′ |
| 67 | NB/SB | MAINLANE | 286+60 | 1008+80 | 27 | 19,008 | L = 9,504′ |
| 67 | NB/SB | MAINLANE | 286+60 | 1008+80 | 28/30 (Mod1) | 86,100 | L = 21,525′ |
| 67 | NB/SB | MAINLANE | 286+60 | 1008+80 | 22/23 (Mod1) | 690 | L = 345′ |
| 67 | NB/SB | MAINLANE | 286+60 | 1008+80 | 22 | 7,614 | L = 3,807′ |
| 67 | NB/SB | MAINLANE | 286+60 | 1008+80 | 22 (Mod) | 26,210 | L = 13,105′ |
| 67 | NB/SB | MAINLANE | 286+60 | 1008+80 | 22/23 (Mod2) | 7,440 | L = 3,720′ |
| 67 | NB/SB | MAINLANE | 286+60 | 1008+80 | 28/30 (Mod2) | 1,680 | L = 420′ |
| | | | | | | | |
| 67 | NB/SB | SCRIPPS POWAY PKWY / Rte 67 | 286+60 | 1008+80 | 28/30 (Mod1) | 2,600 | L = 650′ |
| 67 | NB | SCRIPPS POWAY PKWY / Rte 67 | 286+60 | 1008+80 | 11/13 | 118 | L = 470′ |
| 67 | NB/SB | SCRIPPS POWAY PKWY / Rte 67 | 286+60 | 1008+80 | 28/30 (Mod1) | 2,600 | L = 650′ |
| | | | | | | | |
| 67 | NB/SB | POWAY Rd / Rte 67 | 286+60 | 1008+80 | 28/30 (Mod1) | 2,600 | L = 650′ |
| 67 | NB/SB | POWAY Rd / Rte 67 | 286+60 | 1008+80 | 28/30 (Mod1) | 2,600 | L = 650′ |
| 67 | WB/EB | POWAY Rd | 286+60 | 1008+80 | 11/13 | 8 | L = 30′ |
| 67 | WB/EB | POWAY Rd | 286+60 | 1008+80 | 27B | 30 | |
| 67 | WB/EB | POWAY Rd | 286+60 | 1008+80 | 22/23 (Mod1) | 60 | L = 30′ |
| 67 | WB/EB | POWAY Rd | 286+60 | 1008+80 | 27B | 30 | |
| 67 | WB/EB | DRIVEWAY / Rte 67 | 286+60 | 1008+80 | 22 | 60 | L = 30′ |
| | | | | | | | |
| | | | | | TOTAL | 389,796 | |

## REMOVE THERMOPLASTIC TRAFFIC STRIPE

| ROUTE | DIRECTION | DESCRIPTION | FROM STA | TO STA | DETAIL No. | LF | REMARKS |
|---|---|---|---|---|---|---|---|
| 67 | NB | SCRIPPS POWAY PKWY / Rte 67 | 286+60 | 1008+80 | 38 | 1,300 | L = 650′ |
| 67 | SB | SCRIPPS POWAY PKWY / Rte 67 | 286+60 | 1008+80 | 38 | 1,300 | L = 650′ |
| 67 | SB | SCRIPPS POWAY PKWY / Rte 67 | 286+60 | 1008+80 | 38 | 570 | L = 285′ |
| | | | | | | | |
| 67 | NB | POWAY Rd / Rte 67 | 286+60 | 1008+80 | 38 | 870 | L = 435′ |
| 67 | NB | POWAY Rd / Rte 67 | 286+60 | 1008+80 | 38 | 590 | L = 295′ |
| 67 | NB | POWAY Rd / Rte 67 | 286+60 | 1008+80 | 39A | 64 | L = 190′ |
| 67 | NB | POWAY Rd / Rte 67 | 286+60 | 1008+80 | 39 | 690 | L = 460′ |
| 67 | SB | POWAY Rd / Rte 67 | 286+60 | 1008+80 | 38 | 900 | L = 450′ |
| 67 | SB | POWAY Rd / Rte 67 | 286+60 | 1008+80 | 38 | 940 | L = 470′ |
| 67 | SB | POWAY Rd / Rte 67 | 286+60 | 1008+80 | 38 | 1,070 | L = 535′ |
| 67 | WB/EB | POWAY Rd | 286+60 | 1008+80 | 38 | 120 | L = 60′ |
| 67 | WB/EB | POWAY Rd | 286+60 | 1008+80 | 38 | 120 | L = 60′ |
| | | | | | | | |
| | | | | | TOTAL | 8,534 | |

## REMOVE PAVEMENT MARKER (N)

| ROUTE | DIRECTION | DESCRIPTION | FROM STA | TO STA | TYPE A,AY,D,G,H (EA) |
|---|---|---|---|---|---|
| 67 | NB/SB | MAINLANE | 286+60 | 1008+80 | 44,881 |
| 67 | NB/SB | SCRIPPS POWAY PKWY / Rte 67 | 286+60 | 1008+80 | |
| 67 | NB/SB | POWAY Rd / Rte 67 | 286+60 | 1008+80 | |
| 67 | WB/EB | POWAY Rd | 286+60 | 1008+80 | |
| 67 | WB/EB | DRIVEWAY / Rte 67 | 286+60 | 1008+80 | |
| | | | | | |

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

# PAVEMENT DELINEATION QUANTITIES

# PDQ-2

REVISED BY | DATE REVISED
RYAN CHAO | SHAHIN ADIBI
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: CAMILLE ABOU-FADEL
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

LAST REVISION | DATE PLOTTED => 30-AUG-2016
08-15-16 | TIME PLOTTED => 15:55

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 32 | 113 |

REGISTERED CIVIL ENGINEER , 07-13-16 DATE

SHAHIN ADIBI No. 54839 Exp. 06-30-18 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

08-29-16
PLANS APPROVAL DATE

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

NOTE:

1. ALL PAVEMENT DELINEATION SHALL BE REPLACED IN KIND UNLESS INDICATED OTHERWISE.

## THERMOPLASTIC PAVEMENT MARKING (ENHANCED WET NIGHT VISIBILITY)

| ROUTE | DIRECTION | LOCATION | TYPE VI SQFT | TYPE V SQFT | TYPE III (L) SQFT | TYPE III (R) SQFT | TYPE IV (L) SQFT | TYPE IV (R) SQFT | TYPE VII (L) SQFT | TYPE VIII SQFT | SIGNAL SQFT | AHEAD SQFT | 12" LIMIT LINE SQFT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 67 | NB/SB | SCRIPPS POWAY PKWY / Rte 67 | 126 | - | 252 | 84 | 60 | - | 81 | - | 128 | 124 | 205 |
| 67 | NB/SB | POWAY Rd / Rte 67 | 252 | 198 | 210 | 168 | 30 | 30 | 54 | 36 | 96 | 93 | 140 |
| | | | | | | | | | | | | | |
| | | SUBTOTAL | 378 | 198 | 462 | 252 | 90 | 30 | 135 | 36 | 224 | 217 | 345 |
| | | TOTAL | 2,367 | | | | | | | | | | |

## REMOVE THERMOPLASTIC PAVEMENT MARKING

| ROUTE | DIRECTION | LOCATION | TYPE VI SQFT | TYPE V SQFT | TYPE III (L) SQFT | TYPE III (R) SQFT | TYPE IV (L) SQFT | TYPE IV (R) SQFT | TYPE VII (L) SQFT | TYPE VIII SQFT | SIGNAL SQFT | AHEAD SQFT | 12" LIMIT LINE SQFT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 67 | NB/SB | SCRIPPS POWAY PKWY / Rte 67 | 126 | - | 252 | 84 | 60 | - | 81 | - | 128 | 124 | 205 |
| 67 | NB/SB | POWAY Rd / Rte 67 | 252 | 198 | 210 | 168 | 30 | 30 | 54 | 36 | 96 | 93 | 140 |
| | | | | | | | | | | | | | |
| | | SUBTOTAL | 378 | 198 | 462 | 252 | 90 | 30 | 135 | 36 | 224 | 217 | 345 |
| | | TOTAL | 2,367 | | | | | | | | | | |

# PAVEMENT DELINEATION QUANTITIES

# PDQ-3

REVISED BY | DATE REVISED
RYAN CHAO | SHAHIN ADIBI
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: CAMILLE ABOU-FADEL
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

LAST REVISION 08-08-16 | DATE PLOTTED => 30-AUG-2016 | TIME PLOTTED => 15:55

BORDER LAST REVISED 7/2/2010 | USERNAME => s127400 | DGN FILE => 1100000545nc003.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2828 | PROJECT NUMBER & PHASE 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 33 | 113 |

REGISTERED CIVIL ENGINEER , 07-13-16 DATE

08-29-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
SHAHIN ADIBI
No. 54839
Exp. 06-30-18
CIVIL
STATE OF CALIFORNIA

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

## NOTE:

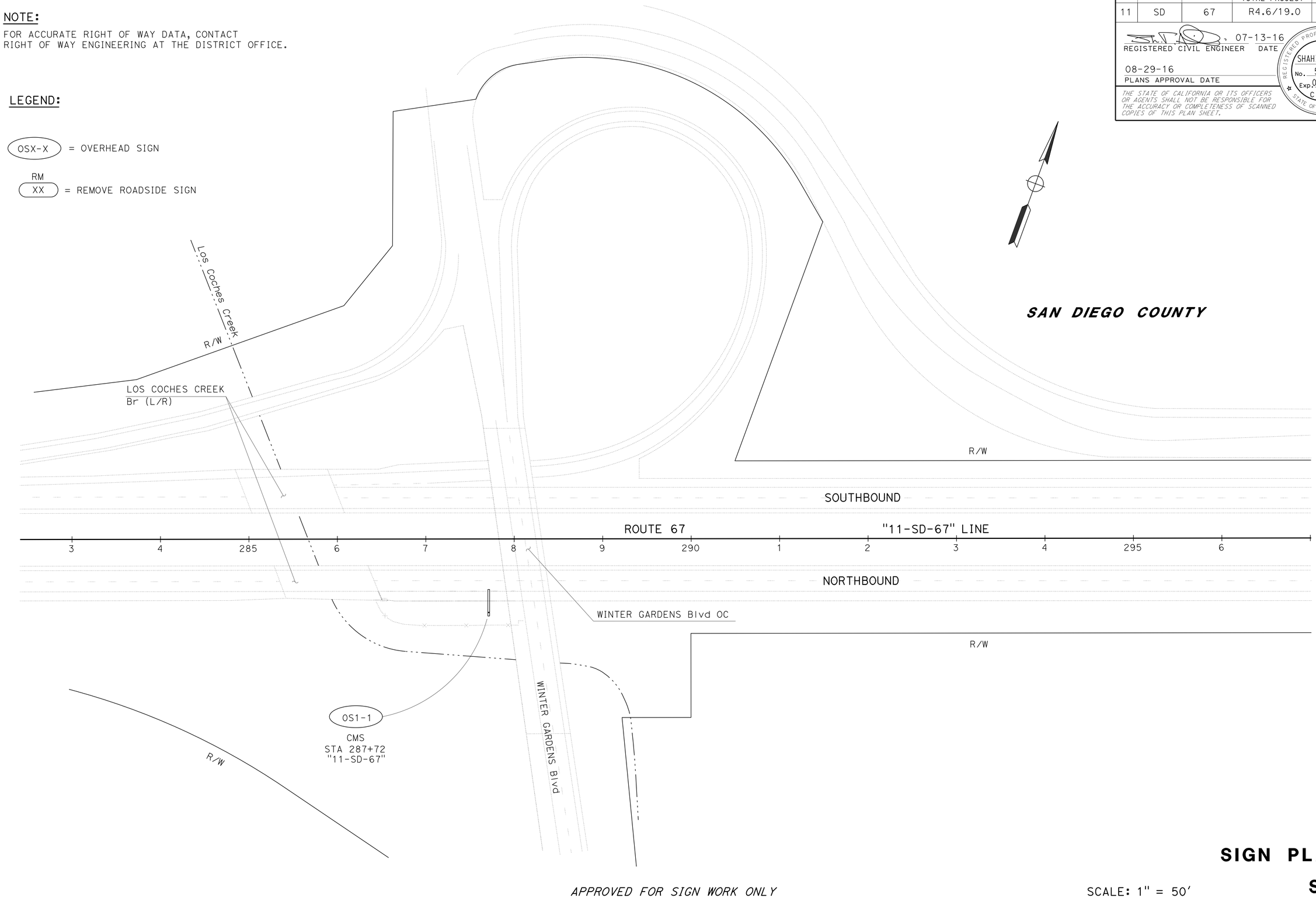
FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

## LEGEND:

OSX-X = OVERHEAD SIGN

RM
XX = REMOVE ROADSIDE SIGN

**SAN DIEGO COUNTY**




*APPROVED FOR SIGN WORK ONLY*

SCALE: 1" = 50'

# SIGN PLAN

**S-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
TRAFFIC DESIGN

FUNCTIONAL SUPERVISOR: CAMILLE ABOU-FADEL
CALCULATED-DESIGNED BY: RYAN CHAO
CHECKED BY: SHAHIN ADIBI
REVISED BY
DATE REVISED

LAST REVISION DATE PLOTTED => 30-AUG-2016
TIME PLOTTED => 15:55
08-08-16

BORDER LAST REVISED 7/2/2010
USERNAME => s127400
DGN FILE => 1100000545oa001.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 2828
PROJECT NUMBER & PHASE 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 34 | 113 |

REGISTERED CIVIL ENGINEER , 07-13-16 DATE

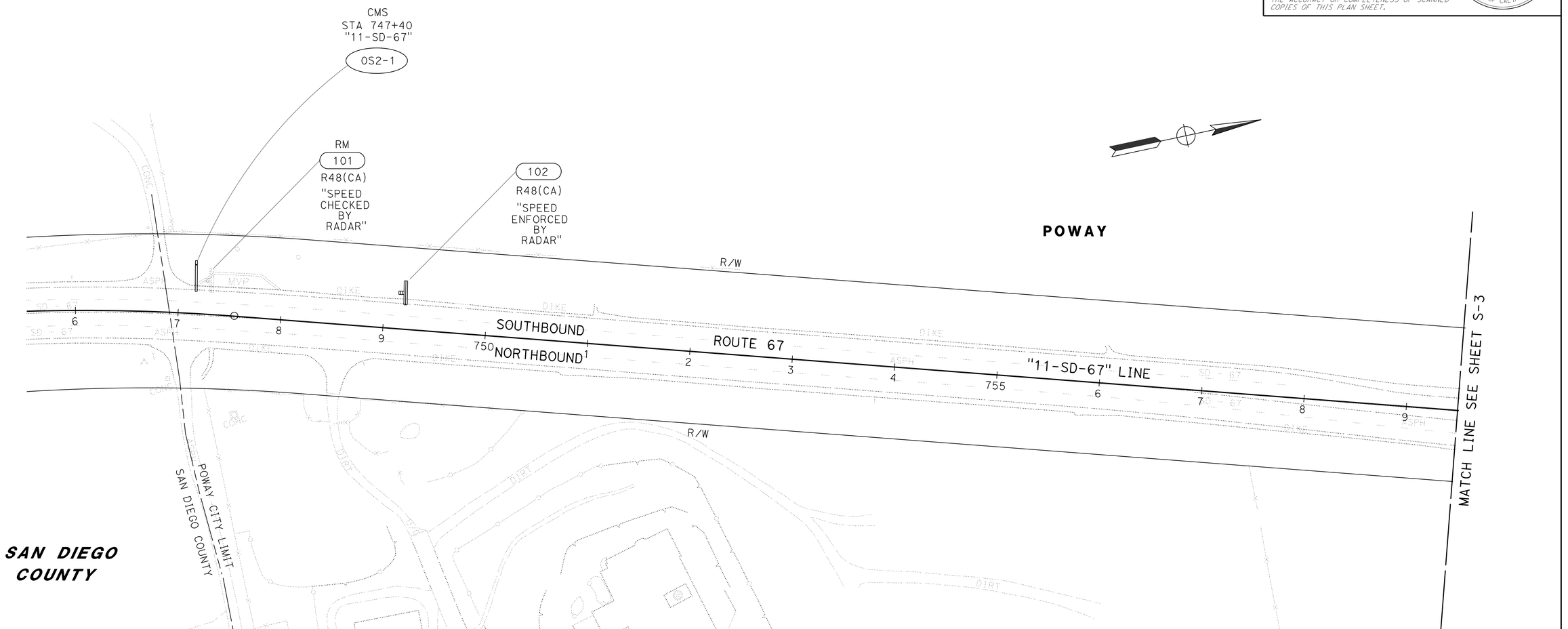
SHAHIN ADIBI No. 54839 Exp. 06-30-18 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

08-29-16
PLANS APPROVAL DATE

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

**NOTE:**

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




*APPROVED FOR SIGN WORK ONLY*

SCALE: 1" = 50'

**SIGN PLAN**

**S-2**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® **TRAFFIC DESIGN**

FUNCTIONAL SUPERVISOR: CAMILLE ABOU-FADEL
CALCULATED-DESIGNED BY: RYAN CHAO
CHECKED BY: SHAHIN ADIBI
REVISED BY / DATE REVISED

LAST REVISION | DATE PLOTTED => 30-AUG-2016 | TIME PLOTTED => 15:55
08-08-16

BORDER LAST REVISED 7/2/2010 | USERNAME => s127400 | DGN FILE => 1100000545oa002.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2828 | PROJECT NUMBER & PHASE 11000005451

NOTE:

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

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 35 | 113 |

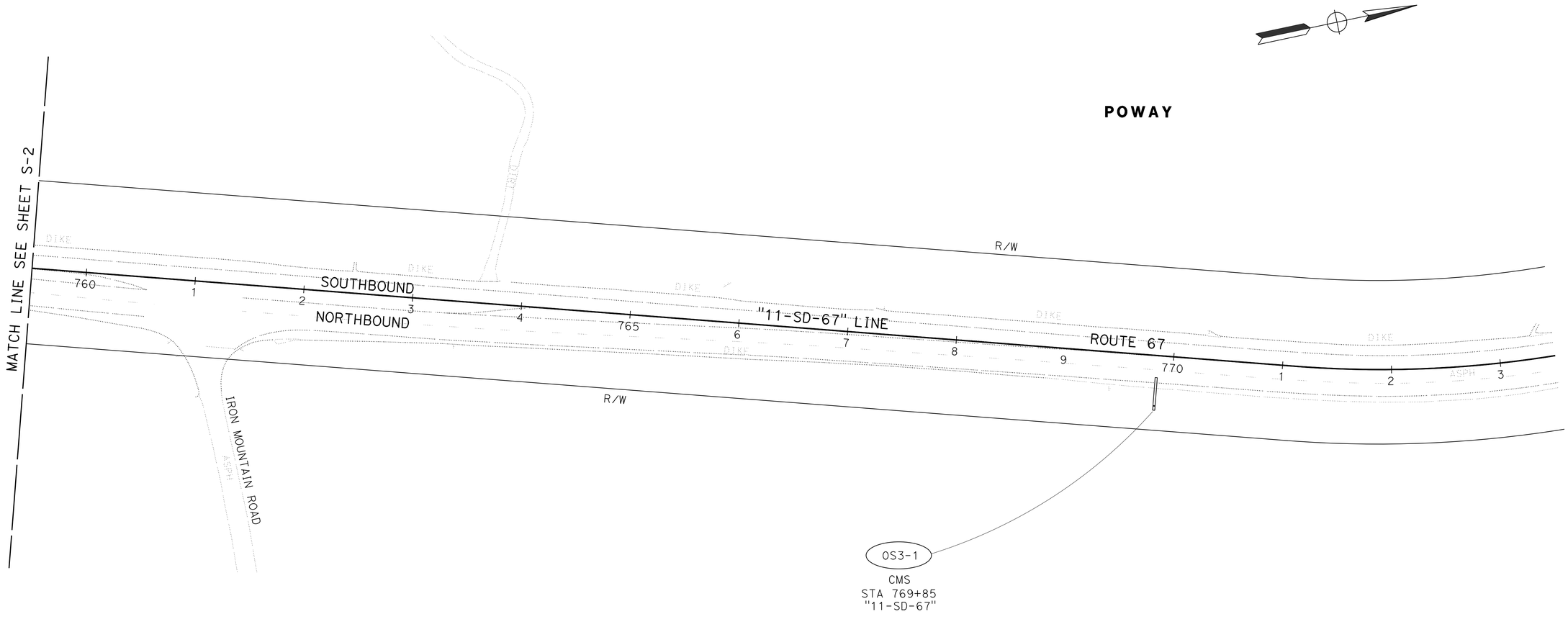
, 07-13-16
REGISTERED CIVIL ENGINEER DATE

08-29-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
SHAHIN ADIBI
No. 54839
Exp. 06-30-18
CIVIL
STATE OF CALIFORNIA

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

**POWAY**




*APPROVED FOR SIGN WORK ONLY*

# SIGN PLAN

## S-3

SCALE: 1" = 50'

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
**TRAFFIC DESIGN**

FUNCTIONAL SUPERVISOR: CAMILLE ABOU-FADEL

CALCULATED-DESIGNED BY: RYAN CHAO
CHECKED BY: SHAHIN ADIBI

REVISED BY | DATE REVISED

LAST REVISION DATE PLOTTED => 30-AUG-2016
TIME PLOTTED => 15:55
08-08-16

BORDER LAST REVISED 7/2/2010

USERNAME => s127400
DGN FILE => 1100000545oa003.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 2828

PROJECT NUMBER & PHASE 11000005451

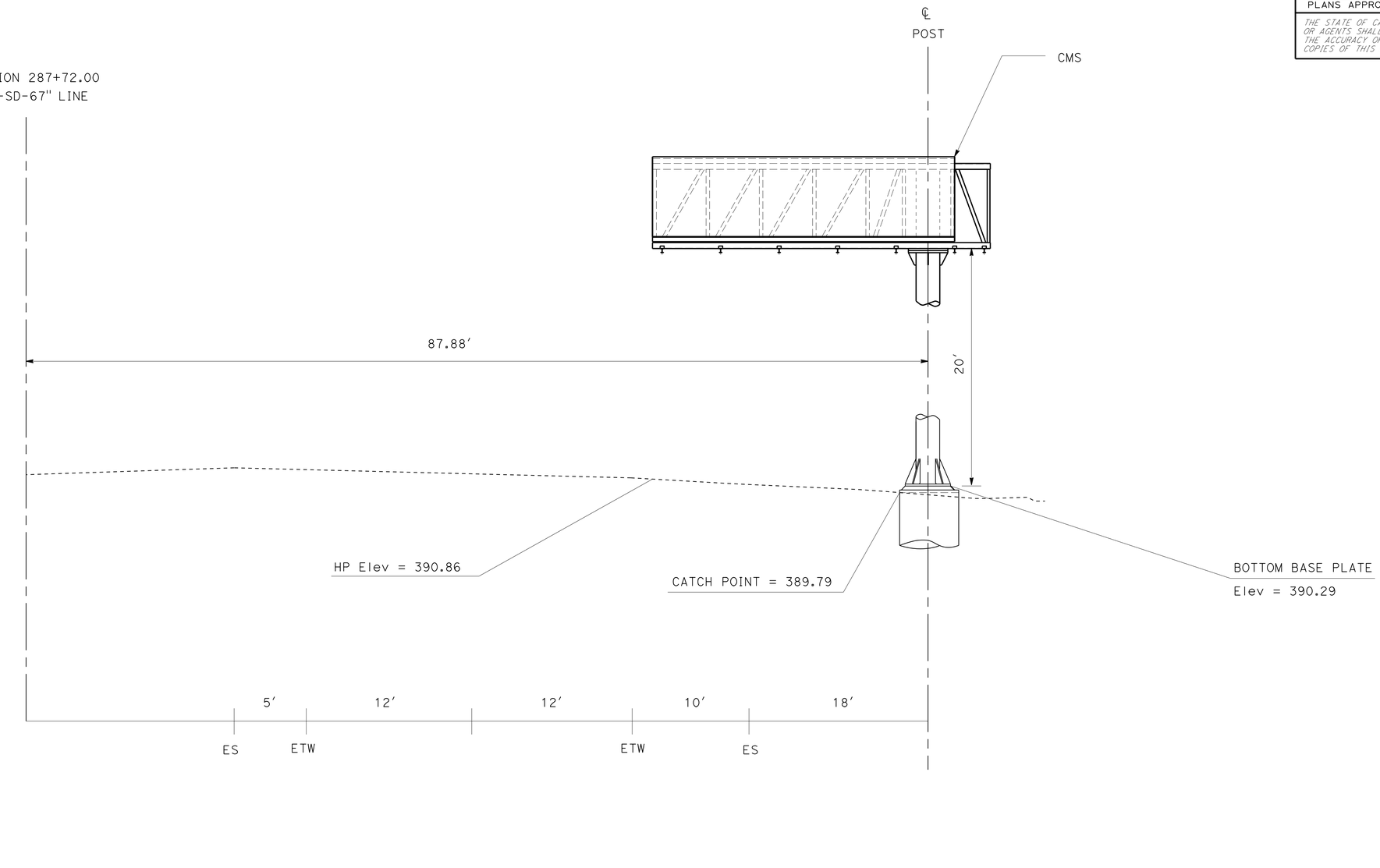
| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 36 | 113 |

REGISTERED CIVIL ENGINEER , 07-13-16 DATE

08-29-16
PLANS APPROVAL DATE

SHAHIN ADIBI No. 54839 Exp. 06-30-18 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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




OS1-1

INSTALL SIGN STRUCTURE
STATION 287+72.00 "11-SD-67" LINE (FNBT)
CMS - CHANGEABLE MESSAGE SIGN
TRUSS SINGLE POST
UNBALANCED BUTTERFLY (WITH WALKWAY)

# SIGN DETAILS

NO SCALE

**SD-1**

| CALCULATED-DESIGNED BY | CHECKED BY | REVISED BY | DATE REVISED |
|---|---|---|---|
| RYAN CHAO | SHAHIN ADIBI | | |

FUNCTIONAL SUPERVISOR: CAMILLE ABOUFADEL

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

LAST REVISION | DATE PLOTTED => 30-AUG-2016 | TIME PLOTTED => 15:55
08-09-16

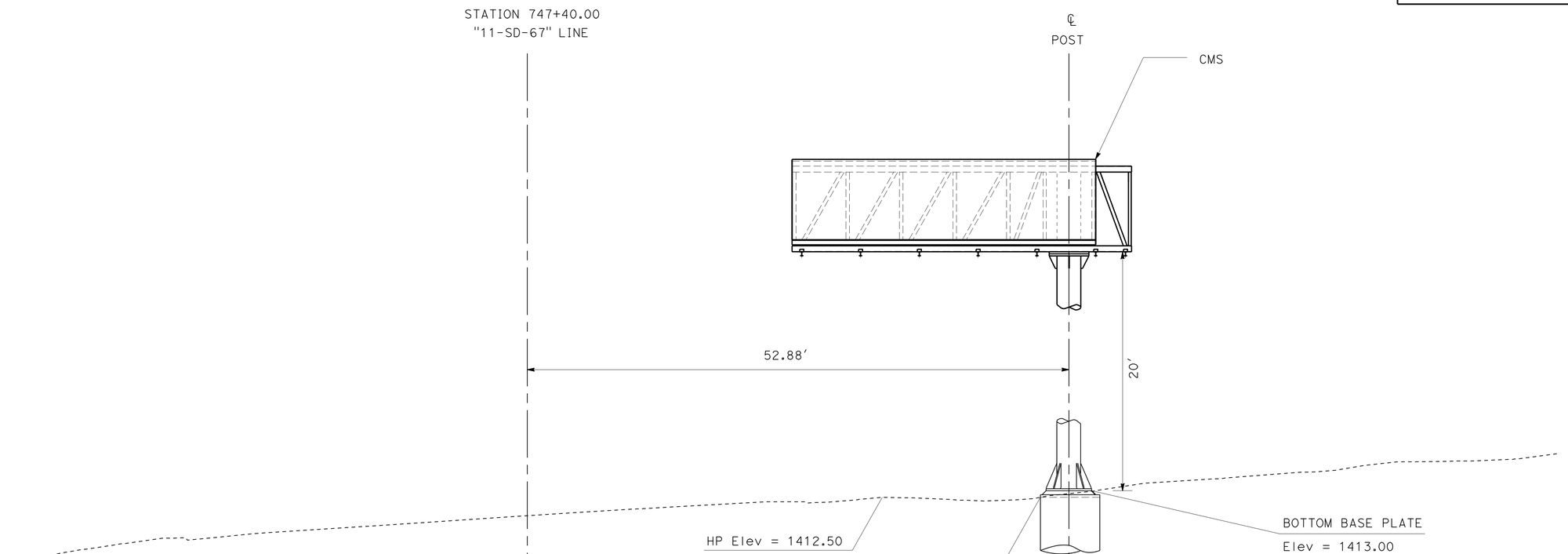
| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 37 | 113 |

REGISTERED CIVIL ENGINEER , 07-13-16 DATE

SHAHIN ADIBI No. 54839 Exp. 06-30-18 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

08-29-16
PLANS APPROVAL DATE

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




OS2-1

INSTALL SIGN STRUCTURE
STATION 747+40.00 "11-SD-67" LINE (FSBT)
CMS - CHANGEABLE MESSAGE SIGN
TRUSS SINGLE POST
UNBALANCED BUTTERFLY (WITH WALKWAY)

# SIGN DETAILS

NO SCALE

**SD-2**

| CALCULATED-DESIGNED BY | CHECKED BY | REVISED BY | DATE REVISED |
|---|---|---|---|
| RYAN CHAO | SHAHIN ADIBI | | |

FUNCTIONAL SUPERVISOR: CAMILLE ABOUFADEL

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

LAST REVISION DATE PLOTTED => 30-AUG-2016
TIME PLOTTED => 15:55
08-09-16

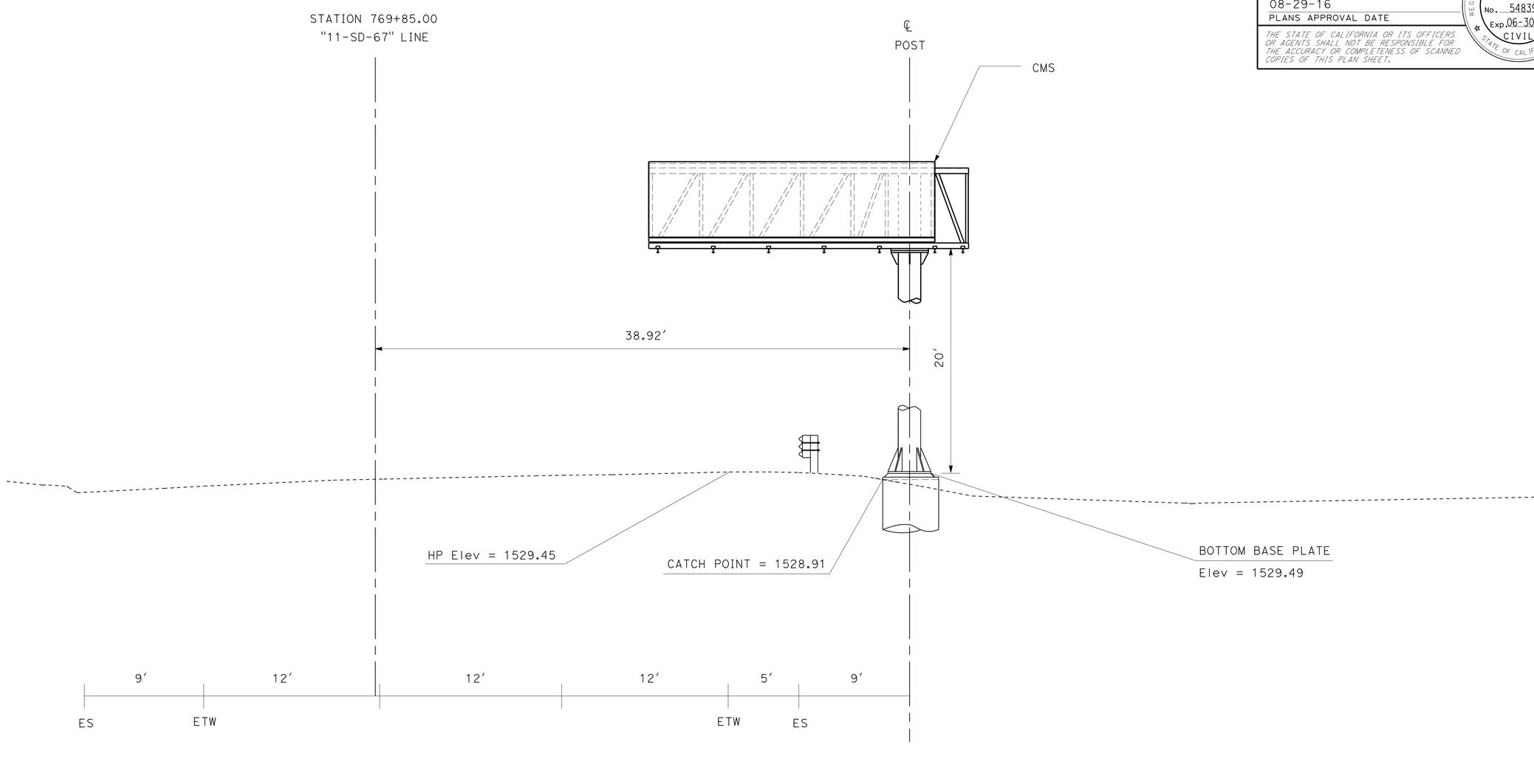
| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 38 | 113 |

REGISTERED CIVIL ENGINEER , 07-13-16 DATE

08-29-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
SHAHIN ADIBI
No. 54839
Exp. 06-30-18
CIVIL
STATE OF CALIFORNIA

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




OS3-1

INSTALL SIGN STRUCTURE
STATION 769+85.00 "11-SD-67" LINE (FNBT)
CMS - CHANGEABLE MESSAGE SIGN
TRUSS SINGLE POST
UNBALANCED BUTTERFLY (WITH WALKWAY)

# SIGN DETAILS

NO SCALE

**SD-3**

REVISED BY | DATE REVISED

RYAN CHAO | SHAHIN ADIBI

CALCULATED-DESIGNED BY | CHECKED BY

FUNCTIONAL SUPERVISOR: CAMILLE ABOUFADEL

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

LAST REVISION | DATE PLOTTED => 30-AUG-2016
08-09-16 | TIME PLOTTED => 15:55

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 39 | 113 |

REGISTERED CIVIL ENGINEER , 07-13-16 DATE

08-29-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
SHAHIN ADIBI
No. 54839
Exp. 06-30-18
CIVIL
STATE OF CALIFORNIA

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

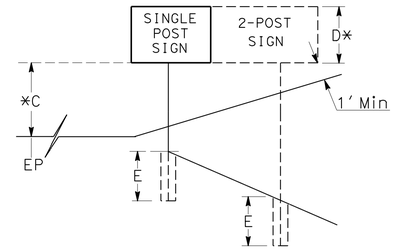
NOTES:

1. FEDERAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) SIGN CODES ARE SHOWN UNLESS DESIGNATED BY (CA) INDICATING STANDARD CALIFORNIA SIGN SPECIFICATIONS.
2. MINIMUM POST LENGTHS WERE CALCULATED ASSUMING A LEVEL GROUND SURFACE FROM THE EP. ENSURE "C" DIMENSION IS MET. POST LENGTHS MAY VARY DUE TO SITE CONDITIONS.
3. EXACT LOCATIONS OF SIGNS AND POSTS SHALL BE DETERMINED BY THE ENGINEER.

## ROADSIDE SIGN QUANTITIES

| SIGN No. | CODE | SHEET No. | PANEL SIZE (N) HORIZ | PANEL SIZE (N) VERT | D | C | E | Min POST LENGTH | POST SIZE 4x4 | POST SIZE 4x6 | POST SIZE 6x6 | POST SIZE 6x8 | ROADSIDE SIGN ONE POST | ROADSIDE SIGN TWO POST | REMOVE ROADSIDE SIGN | TREATED WOOD WASTE | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | INCHES | INCHES | F† | F† | F† | F† | INCHES | INCHES | INCHES | INCHES | EA | EA | EA | LB | |
| 101 | R48(CA) | S-2 | | | | | | | | | | | | | 1 | 146 | L=17' (ONE-POST), "SPEED CHECKED BY RADAR" |
| 102 | R48(CA) | S-2 | 48 | 60 | 5.0 | 7.0 | 5.0 | 17.0 | | | X | | 1 | | | | "SPEED ENFORCED BY RADAR" |
| | | | | | | | | | | | | TOTAL | 1 | | 1 | 146 | |

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




*TO BOTTOM OF LOWER PANEL ON MULTIPLE SIGN INSTALLATIONS.

## FURNISH ROADSIDE SIGN PANEL

| SIGN No. | CODE | SHEET No. | PANEL SIZE Horiz | PANEL SIZE Vert | BACKGROUND SHEETING COLOR | BACKGROUND RETRO-REFLECTIVE ASTM TYPE | LEGEND SHEETING COLOR | LEGEND REFLECTIVE ASTM TYPE | LEGEND BLACK (NON-REFLECTIVE) | SIGN PANEL SINGLE SHEET ALUMINUM FOR RETROREFLECTIVE SHEETING (TYPE XI) (SQFT) UNFRAMED 0.063" | SIGN PANEL SINGLE SHEET ALUMINUM FOR RETROREFLECTIVE SHEETING (TYPE XI) (SQFT) UNFRAMED 0.080" | SIGN PANEL RETROREFLECTIVE SHEETING (TYPE XI) (SQFT) | SIGN PANEL PROTECTIVE OVERLAY (N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | INCHES | INCHES | | | | | | | | | PREMIUM FILM |
| 102 | R48(CA) | S-2 | 48 | 60 | WHITE | XI | BLACK | | X | | 20.00 | 20.00 | X |
| | | | | | | | | | | | | | |
| | | | | | | | | TOTAL | | | 20.00 | 20.00 | |

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

## OVERHEAD SIGN STRUCTURE

| SIGN No. | LOCATION | INSTALL SIGN STRUCTURE (TRUSS) | FURNISH SIGN STRUCTURE (TRUSS) | 60 INCH CIDH CONCRETE PILE (SIGN Fdn) | COMMENTS |
|---|---|---|---|---|---|
| | | LB | LB | LF | |
| OS1-1 | 287+72.00 "11-SD-67" | 13,896 | 13,896 | 22 | CMS |
| OS2-1 | 747+40.00 "11-SD-67" | 13,896 | 13,896 | 22 | CMS |
| OS3-1 | 769+85.00 "11-SD-67" | 13,896 | 13,896 | 22 | CMS |
| | | | | | |
| | TOTAL | 41,688 | 41,688 | 66 | |

# SIGN QUANTITIES

SQ-1

REVISED BY | DATE REVISED
RYAN CHAO | SHAHIN ADIBI
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: CAMILLE ABOU-FADEL
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

LAST REVISION 08-09-16
DATE PLOTTED => 30-AUG-2016
TIME PLOTTED => 15:55

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 40 | 113 |

REGISTERED CIVIL ENGINEER — DATE 07-11-16

JOHAN PULGARIN No. 76894 Exp. 12-31-16 CIVIL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

08-29-16
PLANS APPROVAL DATE

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

## CENTERLINE CHANNELIZER

(TYPE CITY POST) (LEFT IN PLACE)

| LOCATION | | | | | |
|---|---|---|---|---|---|
| LINE | BEGIN (Sta) | END (Sta) | (N) LENGTH (LF) | TOTAL (EA) | *REMARKS |
| "11-SD-67" | 370+80 | 375+73 | 493 | 41 | TANGENT |
| "11-SD-67" | 375+73 | 377+00 | 127 | 21 | CURVE |
| "11-SD-67" | 386+50 | 388+89 | 239 | 40 | CURVE |
| "11-SD-67" | 388+89 | 392+80 | 391 | 33 | TANGENT |
| "11-SD-67" | 397+00 | 399+20 | 220 | 18 | TANGENT |
| "11-SD-67" | 400+00 | 402+55 | 255 | 21 | TANGENT |
| "11-SD-67" | 403+10 | 406+30 | 320 | 27 | TANGENT |
| "11-SD-67" | 406+75 | 411+20 | 445 | 37 | TANGENT |
| "11-SD-67" | 411+60 | 419+00 | 740 | 123 | CURVE |
| "11-SD-67" | 423+40 | 424+70 | 130 | 22 | CURVE |
| "11-SD-67" | 424+70 | 428+98 | 428 | 36 | TANGENT |
| "11-SD-67" | 428+98 | 434+20 | 522 | 87 | CURVE |
| "11-SD-67" | 437+00 | 439+50 | 250 | 21 | TANGENT |
| "11-SD-67" | 439+50 | 441+25 | 175 | 29 | CURVE |
| "11-SD-67" | 441+25 | 446+40 | 515 | 43 | TANGENT |
| "11-SD-67" | 459+55 | 462+00 | 245 | 20 | TANGENT |
| "11-SD-67" | 462+30 | 467+20 | 490 | 41 | TANGENT |
| "11-SD-67" | 468+00 | 471+00 | 300 | 25 | TANGENT |
| "11-SD-67" | 472+00 | 474+25 | 225 | 19 | TANGENT |
| "11-SD-67" | 475+40 | 480+20 | 480 | 40 | TANGENT |
| "11-SD-67" | 480+65 | 482+50 | 185 | 15 | TANGENT |
| "11-SD-67" | 484+00 | 489+00 | 500 | 42 | TANGENT |
| "11-SD-67" | 583+80 | 598+00 | 1420 | 237 | CURVE |
| "11-SD-67" | 600+00 | 610+80 | 1080 | 90 | TANGENT |
| "11-SD-67" | 610+80 | 615+25 | 445 | 74 | CURVE |
| "11-SD-67" | 615+25 | 620+30 | 505 | 42 | TANGENT |
| "11-SD-67" | 620+30 | 624+85 | 455 | 76 | CURVE |
| "11-SD-67" | 624+85 | 629+94 | 509 | 42 | TANGENT |
| "11-SD-67" | 629+94 | 637+80 | 786 | 131 | CURVE |
| "11-SD-67" | 637+80 | 643+10 | 530 | 44 | TANGENT |
| "11-SD-67" | 643+10 | 648+00 | 490 | 82 | CURVE |
| "11-SD-67" | 649+00 | 662+50 | 1350 | 225 | CURVE |
| "11-SD-67" | 663+50 | 668+30 | 480 | 40 | TANGENT |
| "11-SD-67" | 668+30 | 678+14 | 984 | 164 | CURVE |
| "11-SD-67" | 679+20 | 682+00 | 280 | 23 | TANGENT |
| "11-SD-67" | 684+00 | 694+00 | 1000 | 83 | TANGENT |
| "11-SD-67" | 695+00 | 708+80 | 1380 | 115 | TANGENT |
| "11-SD-67" | 716+00 | 726+00 | 1000 | 83 | TANGENT |
| "11-SD-67" | 726+00 | 732+80 | 680 | 57 | TANGENT |
| "11-SD-67" | 732+80 | 740+50 | 770 | 128 | CURVE |
| "11-SD-67" | 743+00 | 746+00 | 300 | 50 | CURVE |
| "11-SD-67" | 749+00 | 760+50 | 1150 | 96 | TANGENT |
| "11-SD-67" | 761+50 | 771+10 | 960 | 80 | TANGENT |
| "11-SD-67" | 771+10 | 779+66 | 856 | 143 | CURVE |
| "11-SD-67" | 779+66 | 782+60 | 294 | 25 | TANGENT |
| "11-SD-67" | 782+60 | 787+75 | 515 | 86 | CURVE |
| "11-SD-67" | 787+75 | 789+50 | 175 | 15 | TANGENT |
| "11-SD-67" | 791+00 | 806+00 | 1500 | 125 | TANGENT |
| "11-SD-67" | 807+00 | 811+90 | 490 | 41 | TANGENT |
| "11-SD-67" | 811+90 | 820+80 | 890 | 148 | CURVE |
| "11-SD-67" | 820+80 | 829+50 | 870 | 73 | TANGENT |
| "11-SD-67" | 829+50 | 842+00 | 1250 | 208 | CURVE |
| "11-SD-67" | 843+50 | 855+00 | 1150 | 192 | CURVE |
| "11-SD-67" | 856+40 | 860+40 | 400 | 67 | CURVE |
| "11-SD-67" | 861+00 | 869+00 | 800 | 133 | CURVE |
| | | | SUBTOTAL | 4,019 | |

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

* PLACE CENTERLINE CHANNELIZER 12' C-C ON TANGENTS AND 6' C-C ON CURVES

## CENTERLINE CHANNELIZER

(TYPE CITY POST) (LEFT IN PLACE)

| LOCATION | | | | | |
|---|---|---|---|---|---|
| LINE | BEGIN (Sta) | END (Sta) | (N) LENGTH (LF) | TOTAL (EA) | *REMARKS |
| "11-SD-67" | 870+00 | 876+70 | 670 | 56 | TANGENT |
| "11-SD-67" | 876+70 | 880+00 | 330 | 55 | CURVE |
| "11-SD-67" | 880+00 | 889+00 | 900 | 75 | TANGENT |
| "11-SD-67" | 889+00 | 903+45 | 1445 | 241 | CURVE |
| "11-SD-67" | 903+45 | 908+40 | 495 | 41 | TANGENT |
| "11-SD-67" | 908+40 | 920+00 | 1160 | 193 | CURVE |
| "11-SD-67" | 924+00 | 935+00 | 1100 | 183 | CURVE |
| "11-SD-67" | 935+00 | 936+42 | 142 | 12 | TANGENT |
| "11-SD-67" | 936+42 | 938+50 | 208 | 35 | CURVE |
| "11-SD-67" | 945+80 | 949+20 | 340 | 57 | CURVE |
| "11-SD-67" | 949+60 | 957+20 | 760 | 127 | CURVE |
| "11-SD-67" | 957+80 | 959+40 | 160 | 13 | TANGENT |
| "11-SD-67" | 983+20 | 989+30 | 610 | 102 | CURVE |
| "11-SD-67" | 989+30 | 1000+45 | 1115 | 93 | TANGENT |
| "11-SD-67" | 1000+45 | 1008+20 | 775 | 129 | CURVE |
| | | | | | |
| | | | SUBTOTAL | 1,412 | |
| | | | TOTAL | 5,431 | |

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

* PLACE CENTERLINE CHANNELIZER 12' C-C ON TANGENTS AND 6' C-C ON CURVES

## ROADWAY EXCAVATION

| LINE | LOCATION | SHEET No. | REMARKS | VOLUME (CY) |
|---|---|---|---|---|
| "11-SD-67" | Sta 286+82 TO Sta 288+85 | L-1 | VEGETATION AND MVP | 46.7 |
| "11-SD-67" | Sta 747+11 TO Sta 747+96 | L-3 | MVP | 42.5 |
| "11-SD-67" | Sta 767+85 TO Sta 770+78 | L-4 | VEGETATION AND MVP | 49.8 |
| | | | | |
| | | | | |
| | | | TOTAL | 139.0 |

## STRUCTURAL SECTION

| LINE | LOCATION | SHEET No. | HMA (TYPE A) (TON) | CLASS 2 AB (CY) | REMARKS |
|---|---|---|---|---|---|
| "11-SD-67" | Sta 288+00 TO Sta 288+85 | L-1 | 17.3 | 37.1 | MVP |
| "11-SD-67" | Sta 747+11 TO Sta 747+96 | L-3 | 17.3 | 37.1 | MVP |
| "11-SD-67" | Sta 769+90 TO Sta 770+76 | L-4 | 17.3 | 37.1 | MVP |
| | | TOTAL | 51.9 | 111.3 | |

# SUMMARY OF QUANTITIES

# Q-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
TRAFFIC PROJECT DEVELOPMENT
Caltrans

FUNCTIONAL SUPERVISOR: JOSE LUIS ROBLES
CALCULATED-DESIGNED BY: HUNG TRAN
CHECKED BY: JOHAN PULGARIN
REVISED BY
DATE REVISED

LAST REVISION: DATE PLOTTED => 30-AUG-2016, TIME PLOTTED => 15:55
08-09-16

BORDER LAST REVISED 7/2/2010 | USERNAME => s127400 | DGN FILE => 1100000545pa001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2771 | PROJECT NUMBER & PHASE 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 41 | 113 |

07-11-16
REGISTERED CIVIL ENGINEER DATE

08-29-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JOHAN PULGARIN
No. 76894
Exp. 12-31-16
CIVIL
STATE OF CALIFORNIA

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

# RUMBLE STRIP

| LOCATION | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| NORTHBOUND | | | | | SOUTHBOUND | | | |
| LINE | BEGIN (Sta) | END (Sta) | 6" RUMBLE STRIP (ASPHALT CONCRETE PAVEMENT)(Mod) LENGTH (Sta) | 12" RUMBLE STRIP (ASPHALT CONCRETE PAVEMENT) LENGTH (Sta) | BEGIN (Sta) | END (Sta) | 6" RUMBLE STRIP (ASPHALT CONCRETE PAVEMENT)(Mod) LENGTH (Sta) | 12" RUMBLE STRIP (ASPHALT CONCRETE PAVEMENT) LENGTH (Sta) |
| "11-SD-67" | 286+60 | 307+00 | | 20.4 | 289+60 | 307+10 | | 17.5 |
| "11-SD-67" | 308+50 | 320+50 | | 12 | 308+80 | 319+00 | | 10.2 |
| "11-SD-67" | 324+50 | 331+00 | | 6.5 | 324+40 | 341+30 | | 16.9 |
| "11-SD-67" | 336+00 | 341+30 | | 5.3 | 357+50 | 362+00 | | 4.5 |
| "11-SD-67" | 352+00 | 356+20 | | 4.2 | 490+00 | 494+00 | | 4 |
| "11-SD-67" | 492+00 | 495+50 | | 3.5 | 503+20 | 523+80 | | 20.6 |
| "11-SD-67" | 496+20 | 537+80 | | 41.6 | 524+20 | 551+00 | | 26.8 |
| "11-SD-67" | 537+80 | 541+00 | 3.2 | | 551+60 | 596+50 | | 44.9 |
| "11-SD-67" | 541+00 | 570+80 | | 29.8 | 596+50 | 598+80 | 2.3 | |
| "11-SD-67" | 570+80 | 572+20 | 1.4 | | 598+80 | 600+40 | | 1.6 |
| "11-SD-67" | 572+20 | 582+80 | | 10.6 | 600+40 | 607+60 | 7.2 | |
| "11-SD-67" | 583+30 | 592+40 | | 9.1 | 607+60 | 678+00 | | 70.4 |
| "11-SD-67" | 592+40 | 598+40 | 6 | | 679+30 | 714+00 | | 34.7 |
| "11-SD-67" | 599+30 | 607+00 | | 7.7 | 716+20 | 726+80 | | 10.6 |
| "11-SD-67" | 607+00 | 630+20 | 23.2 | | 733+00 | 736+20 | 3.2 | |
| "11-SD-67" | 631+20 | 648+00 | 16.8 | | 741+40 | 746+40 | 5 | |
| "11-SD-67" | 649+00 | 661+50 | 12.5 | | 756+20 | 758+40 | 2.2 | |
| "11-SD-67" | 664+20 | 670+00 | 5.8 | | 758+40 | 789+90 | | 31.5 |
| "11-SD-67" | 670+00 | 673+80 | | 3.8 | 790+60 | 797+00 | | 6.4 |
| "11-SD-67" | 673+80 | 682+20 | 8.4 | | 797+00 | 800+00 | 3 | |
| "11-SD-67" | 684+00 | 686+00 | | 2 | 802+00 | 805+00 | 3 | |
| "11-SD-67" | 686+00 | 694+10 | 8.1 | | 808+50 | 821+90 | | 13.4 |
| "11-SD-67" | 695+00 | 695+80 | 0.8 | | 823+00 | 835+20 | | 12.2 |
| "11-SD-67" | 695+80 | 714+00 | | 18.2 | 835+20 | 848+00 | 12.8 | |
| "11-SD-67" | 716+00 | 723+60 | | 7.6 | 853+00 | 854+50 | 1.5 | |
| "11-SD-67" | 723+60 | 740+60 | 17 | | 854+50 | 869+00 | | 14.5 |
| "11-SD-67" | 742+60 | 746+80 | 4.2 | | 870+10 | 920+80 | | 50.7 |
| "11-SD-67" | 747+30 | 748+10 | 0.8 | | 921+80 | 942+80 | | 21 |
| "11-SD-67" | 749+00 | 757+80 | 8.8 | | 943+40 | 944+20 | | 0.8 |
| "11-SD-67" | 769+50 | 781+00 | 11.5 | | 946+50 | 959+00 | | 12.5 |
| "11-SD-67" | 790+60 | 795+60 | 5 | | 960+80 | 964+80 | | 4 |
| "11-SD-67" | 795+60 | 805+80 | | 10.2 | 966+20 | 970+20 | | 4 |
| "11-SD-67" | 807+00 | 820+00 | | 13 | 971+90 | 981+80 | | 9.9 |
| "11-SD-67" | 821+00 | 833+00 | | 12 | 984+00 | 992+80 | | 8.8 |
| "11-SD-67" | 833+00 | 842+00 | 9 | | 993+20 | 1007+80 | | 14.6 |
| "11-SD-67" | 843+30 | 851+50 | 8.2 | | | | | |
| "11-SD-67" | 854+50 | 855+20 | 0.7 | | | | | |
| "11-SD-67" | 856+10 | 903+00 | | 46.9 | | | | |
| "11-SD-67" | 903+00 | 905+00 | 2 | | | | | |
| "11-SD-67" | 905+00 | 914+80 | | 9.8 | | | | |
| "11-SD-67" | 914+80 | 923+00 | 8.2 | | | | | |
| "11-SD-67" | 924+20 | 931+20 | 7 | | | | | |
| "11-SD-67" | 931+20 | 938+40 | | 7.2 | | | | |
| "11-SD-67" | 940+00 | 949+00 | | 9 | | | | |
| "11-SD-67" | 950+00 | 957+00 | | 7 | | | | |
| "11-SD-67" | 958+20 | 961+50 | | 3.3 | | | | |
| "11-SD-67" | 962+80 | 964+80 | | 2 | | | | |
| "11-SD-67" | 967+00 | 999+80 | | 32.8 | | | | |
| "11-SD-67" | 1000+20 | 1001+80 | | 1.6 | | | | |
| "11-SD-67" | 1002+80 | 1005+20 | | 2.4 | | | | |
| "11-SD-67" | 1006+40 | 1008+80 | | 2.4 | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | SUBTOTAL | 168.6 | 341.9 | | SUBTOTAL | 40.2 | 467.0 |
| | | | | | | TOTAL | 208.8 | 808.9 |

## SUMMARY OF QUANTITIES

## Q-2

REVISED BY | DATE REVISED
HUNG TRAN | JOHAN PULGARIN
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR
JOSE LUIS ROBLES

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
TRAFFIC PROJECT DEVELOPMENT

LAST REVISION 08-15-16
DATE PLOTTED => 30-AUG-2016
TIME PLOTTED => 15:55

BORDER LAST REVISED 7/2/2010
USERNAME => s127400
DGN FILE => 1100000545pa002.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 2771
PROJECT NUMBER & PHASE 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 42 | 113 |

REGISTERED CIVIL ENGINEER — DATE 07-11-16

08-29-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JOHAN PULGARIN
No. 76894
Exp. 12-31-16
CIVIL
STATE OF CALIFORNIA

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

## HIGH FRICTION SURFACE TREATMENT

| LINE | LOCATION | SHEET No. | AREA (SQYD) |
|---|---|---|---|
| "11-SD-67" | Sta 708+20 TO Sta 722+21 | L-2 | 11,600 |
| "11-SD-67" | Sta 799+67 TO Sta 813+33 | L-5 | 12,413 |
| | | | |
| | | TOTAL | 24,013 |

## REMOVE AC DIKE

| LINE | LOCATION | SHEET No. | LENGTH (LF) |
|---|---|---|---|
| "11-SD-67" | Sta 747+09 TO Sta 747+98 | L-3 | 89.0 |
| "11-SD-67" | Sta 767+60 TO Sta 770+78 | L-4 | 318.0 |
| | | TOTAL | 407.0 |

## HOT MIX ASPHALT DIKE

| LINE | LOCATION | SHEET No. | PLACE HMA DIKE | | | MINOR HMA (TON) |
|---|---|---|---|---|---|---|
| | | | TYPE C (LF) | TYPE F (LF) | TYPE E (LF) | |
| "11-SD-67" | Sta 747+09 TO Sta 747+98 | L-3 | | | 89.0 | 2.3 |
| "11-SD-67" | Sta 767+60 TO Sta 770+78 | L-4 | 62.5 | 164.5 | 91.0 | 5.0 |
| | | TOTAL | 62.5 | 164.5 | 180.0 | 7.3 |

## MIDWEST GUARDRAIL SYSTEM

| GUARDRAIL No. | SHEET No. | LINE | STATION | SIDE | LAYOUT TYPE | END ANCHOR ASSEMBLY (TYPE SFT) | ALTERNATIVE FLARED TERMINAL SYSTEM | GUARD RAILING DELINEATOR | END CAP (TYPE TC) (N) | TRANSITION RAILING (TYPE WB-31) | VEGETATION CONTROL (MINOR CONCRETE) | MINOR CONCRETE (MINOR STRUCTURE) | MIDWEST GUARDRAIL SYSTEM | MIDWEST GUARDRAIL SYSTEM (STEEL POST) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | (EA) | (EA) | (EA) | (EA) | (EA) | (SQYD) | (CY) | (LF) | (LF) |
| 1 | L-1 | "11-SD-67" | Sta 286+57 TO Sta 288+00 | Rt | 12DD | 1 | | 3 | 1 | 1 | 113 | 1.7 | 118.0 | |
| 2 | L-4 | "11-SD-67" | Sta 767+85 TO Sta 769+87 | Rt | 16B | 1 | 1 | 4 | | | 157 | | | 164.5 |
| | | | | | | | | | | | | | | |
| | | | | | TOTAL | 2 | 1 | 7 | | 1 | 270 | 1.7 | 118.0 | 164.5 |

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

# SUMMARY OF QUANTITIES

# Q-3

| REVISED BY | DATE REVISED |
|---|---|
| HUNG TRAN | JOHAN PULGARIN |

CALCULATED-DESIGNED BY
CHECKED BY

FUNCTIONAL SUPERVISOR: CHARLES GRAY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
TRAFFIC PROJECT DEVELOPMENT
Caltrans

LAST REVISION 08-09-16
DATE PLOTTED => 30-AUG-2016
TIME PLOTTED => 15:55

BORDER LAST REVISED 7/2/2010
USERNAME => s127400
DGN FILE => 1100000545pa003.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 2771
PROJECT NUMBER & PHASE 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 43 | 113 |

MERVIN FULLENWIDER 08-02-16
REGISTERED ELECTRICAL ENGINEER — DATE

08-29-16
PLANS APPROVAL DATE

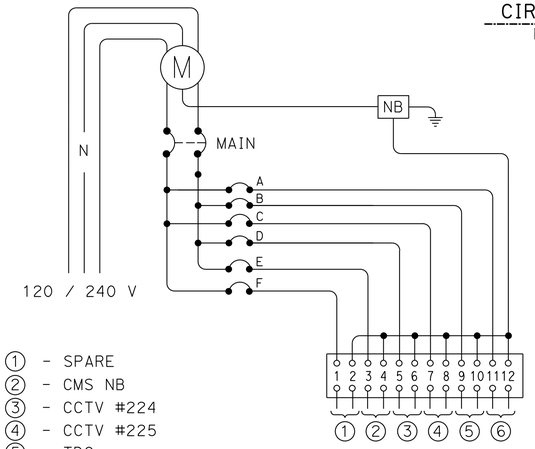
REGISTERED PROFESSIONAL ENGINEER — MERVIN D. FULLENWIDER No. E20211 Exp. 03-31-17 ELECTRICAL — STATE OF CALIFORNIA

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

## CIRCUIT BREAKERS

MAIN-2P-100 A

| | |
|---|---|
| A | 1P-20 A |
| B | 1P-15 A |
| C | 1P-20 A |
| D | 1P-20 A |
| E | 1P-30 A |
| F | 1P-30 A |




1 - SPARE
2 - CMS NB
3 - CCTV #224
4 - CCTV #225
5 - TDC
6 - CMS CONTROLLER

## WIRING DIAGRAM IND

(TYPE III-BF SERVICE EQUIPMENT ENCLOSURE SEE RSP ES-2C AND RSP ES-2E)

## CONDUIT NOTES:

1 - 3"C, PT (CONDUCTORS BY SDG&E)

2 - 2"C, 2#8 (CMS NB), 2#8 (CMS CONTROLLER), 2#8 (CCTV #224)
- 2"C, 1 OCC (CCTV), 1 OCC (CMS)

3 - 2"C, 1 OCC (CONTROLLER), 1 OCC (TEST BOX), 1 OCC (SPARE)

4 - 2"C, 2#8 (CMS CONTROLLER)

5 - 2"C, 2#8 (CMS NB)

6 - 2"C, 2#8 (CMS NB), 2#8 (CMS CONTROLLER), 2#8 (CCTV #224), 2#8 (CCTV #225)

7 - 3"C, 2#8 (CMS NB), 2#8 (CMS CONTROLLER), 2#8 (CCTV #224), 2#8 (CCTV #225), 2#10 (TDC)

8 - 1"C, 2#10 (TDC)

9 - 2"C, 3 OCC

10 - 2"C, 1 OCC

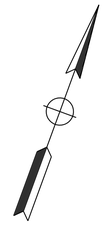
11 - 2"C, 2#8 (CMS NB), 2#8 (CMS CONTROLLER) 2#8 (CCTV #224), 2#8 (CCTV #225)
- 2"C, 2 OCC (CCTV), 1 OCC (CMS)

12 - 2"C, 2 OCC

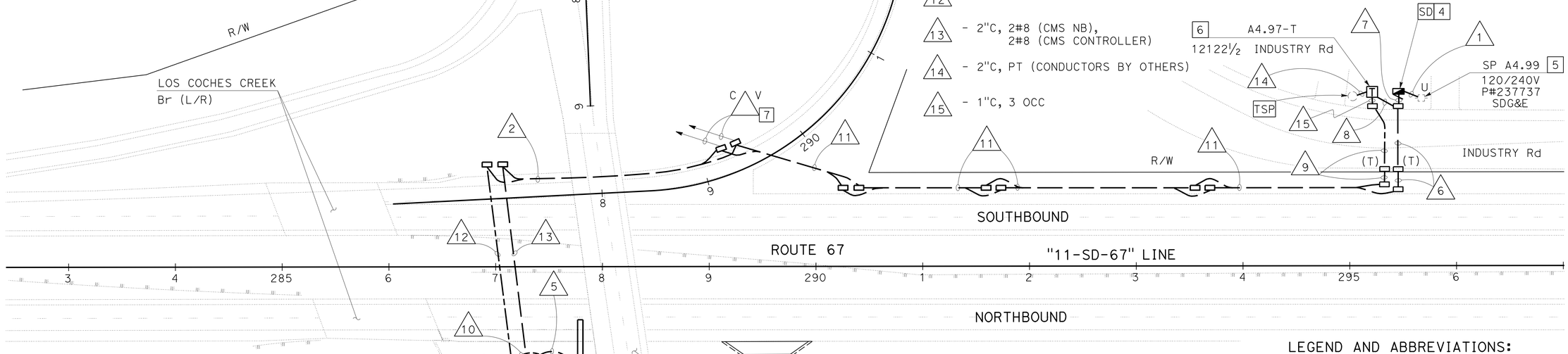
13 - 2"C, 2#8 (CMS NB), 2#8 (CMS CONTROLLER)

14 - 2"C, PT (CONDUCTORS BY OTHERS)

15 - 1"C, 3 OCC



**SAN DIEGO COUNTY**




## LEGEND AND NOTES:

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

2 - DEPARTMENT FURNISHED CMS (MODEL 710). SEE SIGNING PLANS.

3 - CMS CABINET. SEE ELECTRICAL DETAILS SHEETS E-11 AND E-13.

4 - TYPE III-BF SERVICE EQUIPMENT ENCLOSURE. SEE WIRING DIAGRAM IND ON THIS SHEET.

5 - PLACE TYPE H SERVICE RISER PER SDG&E REQUIREMENTS.

6 - MODIFIED TYPE G (TDC) CABINET. SEE ELECTRICAL DETAILS SHEETS E-15 AND E-16.

7 - FOR CIRCUIT CONTINUITY, SEE CLOSED CIRCUIT TELEVISION SYSTEM SHEET E-4.

## LEGEND AND ABBREVIATIONS:

SDG&E - SAN DIEGO GAS AND ELECTRIC
OCC - OUTDOOR CATEGORY 6A CABLE
C V - FOR INFORMATION SEE CLOSED CIRCUIT TELEVISION SYSTEM PLANS
N C - EXISTING CONDUIT NO CHANGE
PEU - PHOTOELECTRIC UNIT
- CCTV SYSTEM WITH CANTILEVERED ARM
TSO - THIS SHEET ONLY

*APPROVED FOR ELECTRICAL WORK ONLY*

# CHANGEABLE MESSAGE SIGN SYSTEM

SCALE: 1" = 50'

**E-1**

CALCULATED-DESIGNED BY
CHECKED BY
REVISED BY
DATE REVISED
MERVIN FULLENWIDER
ANTONIO A. RODRIGUEZ
FUNCTIONAL SUPERVISOR
RAJPREET SINGH

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC ELECTRICAL

LAST REVISION DATE PLOTTED => 30-AUG-2016
TIME PLOTTED => 15:55
08-09-17

BORDER LAST REVISED 7/2/2010
USERNAME => s127400
DGN FILE => 1100000545ua001.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 2833
PROJECT NUMBER & PHASE 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 44 | 113 |

MJFullenwider 08-02-16
REGISTERED ELECTRICAL ENGINEER — DATE

08-29-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MERVIN D. FULLENWIDER No. E20211 Exp. 03-31-17 ELECTRICAL — STATE OF CALIFORNIA

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

## CONDUIT NOTES (TSO):

1 - 2"C, 1 OCC (CONTROLLER), 1 OCC (TEST BOX), 1 OCC (SPARE)

2 - 2"C 2#8 (CMS SB)

3 - 2"C, 2#8 (CMS CONTROLLER)

4 - 2"C, 1 OCC

5 - 2"C, 2#8 (CMS SB), 2#8 (CMS CONTROLLER)
- 2"C, 1 OCC

6 - 2"C, 2#8 (CMS SB), 2#8 (CMS CONTROLLER)

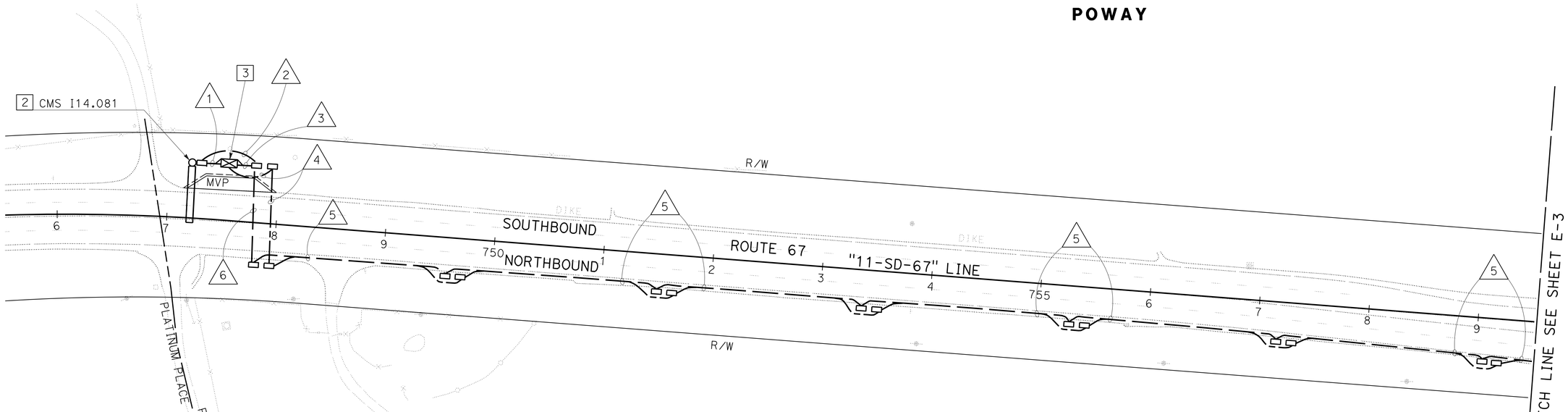
## LEGEND AND NOTES (TSO):

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

[2] -DEPARTMENT FURNISHED CMS (MODEL 710). SEE SIGNING PLANS.

[3] -CMS CABINET. SEE ELECTRICAL DETAILS SHEETS E-11 AND E-12.

**POWAY**




***SAN DIEGO COUNTY***

## CHANGEABLE MESSAGE SIGN SYSTEM

SCALE: 1" = 50'

**E-2**

*APPROVED FOR ELECTRICAL WORK ONLY*

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC ELECTRICAL

FUNCTIONAL SUPERVISOR: RAJPREET SINGH
CALCULATED-DESIGNED BY: MERVIN FULLENWIDER
CHECKED BY: ANTONIO A. RODRIGUEZ
REVISED BY
DATE REVISED

LAST REVISION 08-09-16
DATE PLOTTED => 30-AUG-2016
TIME PLOTTED => 15:55

BORDER LAST REVISED 7/2/2010
USERNAME => s127400
DGN FILE => 1100000545ua002.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 2833
PROJECT NUMBER & PHASE 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 45 | 113 |

M Fullenwider 08-02-16
REGISTERED ELECTRICAL ENGINEER — DATE

08-29-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MERVIN D. FULLENWIDER No. E20211 Exp. 03-31-17 ELECTRICAL — STATE OF CALIFORNIA

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

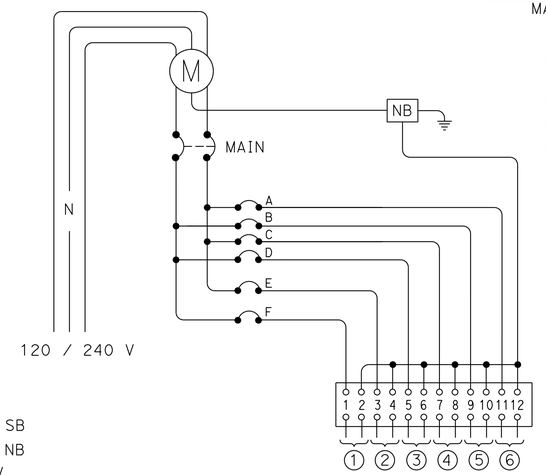
## CONDUIT NOTES (TSO):

1. - 2"C, 1 OCC (CONTROLLER), 1 OCC (TEST BOX), 1 OCC (SPARE)
2. - 2"C, 2#8 (CMS NB)
3. - 2"C, 2#8 (CMS CONTROLLER)
4. - 2"C, 1 OCC
5. - 2"C, 2#8 (CMS SB), 2#8 (CMS CONTROLLER)
   - 2"C, 1 OCC
6. - 2"C, 2#8 (CMS NB), 2#8 (CMS CONTROLLER), 2#8 (CCTV)
   - 2"C, 3 OCC
7. - 3"C, PT (CONDUCTORS BY SDG&E)
   - 2"C, PT (CONDUCTORS BY OTHERS)
8. - 3"C, 4#8 (CMS CONTROLLER), 4#8 (CMS) 2#10 (TDC), 2#8 (CCTV)
9. - 1"C, 2#10 (TDC)
10. - 1"C, 4 OCC
11. - 2"C, PT (CONDUCTORS BY OTHERS)

## CIRCUIT BREAKERS

MAIN-2P-100 A

| | |
|---|---|
| A | 1P-20 A |
| B | 1P-20 A |
| C | 1P-15 A |
| D | 1P-20 A |
| E | 1P-30 A |
| F | 1P-30 A |

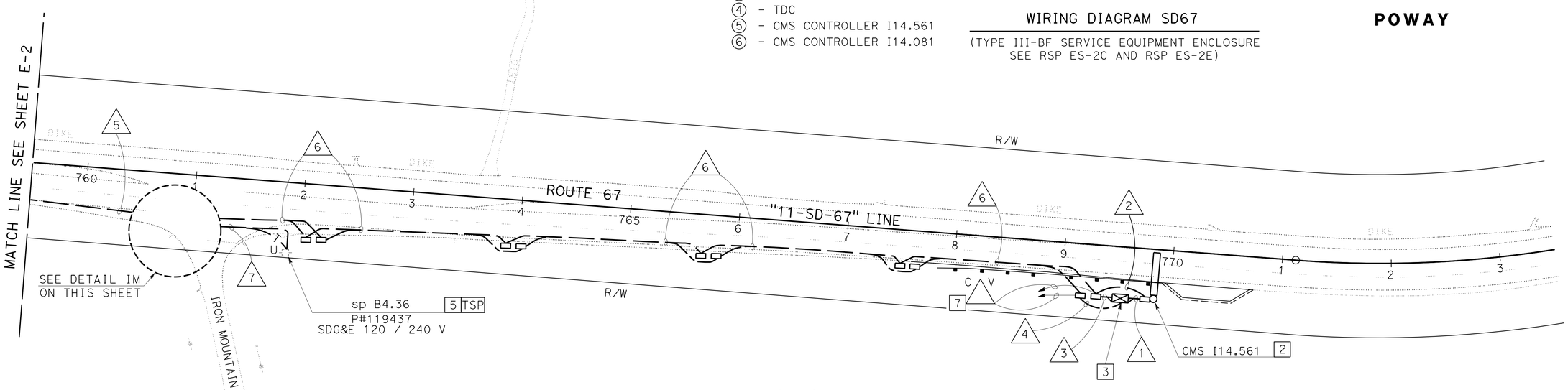


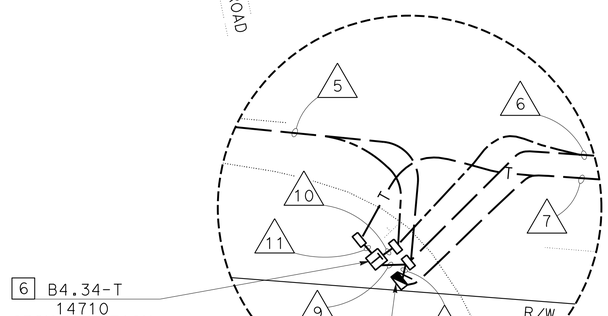

① - CMS SB
② - CMS NB
③ - CCTV
④ - TDC
⑤ - CMS CONTROLLER I14.561
⑥ - CMS CONTROLLER I14.081

### WIRING DIAGRAM SD67

(TYPE III-BF SERVICE EQUIPMENT ENCLOSURE SEE RSP ES-2C AND RSP ES-2E)

**POWAY**




DETAIL IM
NO SCALE

## LEGEND AND NOTES (TSO):

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

[2] -DEPARTMENT FURNISHED CMS (MODEL 710). SEE SIGNING PLANS.

[3] -CMS CABINET. SEE ELECTRICAL DETAILS SHEETS E-11, E-12 AND E-13.

[4] -TYPE III-BF SERVICE EQUIPMENT ENCLOSURE, SEE WIRING DIAGRAM SD67 ON THIS SHEET.

[5] -PLACE TYPE H SERVICE RISER PER SDG&E AND TELEPHONE REQUIREMENTS.

[6] -MODIFIED TYPE G (TDC) CABINET. SEE ELECTRICAL DETAILS SHEETS E-15 AND E-16.

[7] -FOR CIRCUIT CONTINUITY, SEE CLOSED CIRCUIT TELEVISION SYSTEM SHEET E-6.

*APPROVED FOR ELECTRICAL WORK ONLY*

# CHANGEABLE MESSAGE SIGN SYSTEM

SCALE: 1" = 50'

**E-3**

CALCULATED- DESIGNED BY
CHECKED BY
REVISED BY
DATE REVISED
MERVIN FULLENWIDER
ANTONIO A. RODRIGUEZ
FUNCTIONAL SUPERVISOR
RAJPREET SINGH
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC ELECTRICAL

LAST REVISION | DATE PLOTTED => 30-AUG-2016
08-09-16 | TIME PLOTTED => 15:55

BORDER LAST REVISED 7/2/2010 | USERNAME => s127400 | DGN FILE => 1100000545ua003.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2833 | PROJECT NUMBER & PHASE | 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | 4.6/19.0 | 46 | 113 |

M Fullenwider 08-02-16
REGISTERED ELECTRICAL ENGINEER — DATE

08-29-16
PLANS APPROVAL DATE

MERVIN D. FULLENWIDER No. E20211 Exp. 03-31-17 ELECTRICAL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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

## LEGEND AND NOTES:

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

[2] - TYPE CCTV 35.

[3] - CCTV CABINET. SEE ELECTRICAL DETAILS SHEETS E-10 AND E-14.

[4] - CAMERA CABLE. SEE ELECTRICAL DETAILS SHEETS E-8 AND E-9.

[5] - FOR CIRCUIT CONTINUITY SEE CHANGEABLE MESSAGE SIGN SYSTEM SHEET E-1.

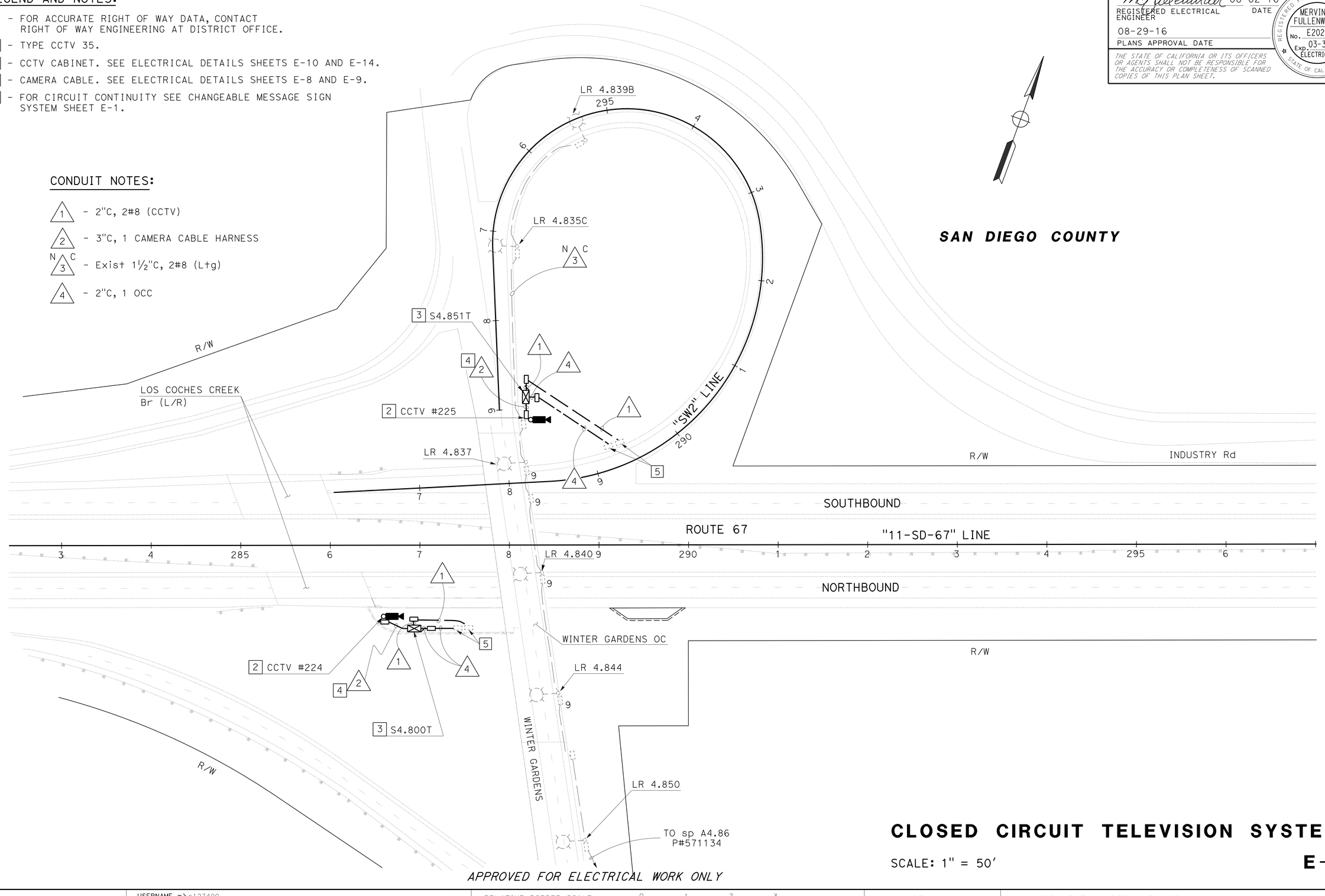
## CONDUIT NOTES:

△1 - 2"C, 2#8 (CCTV)

△2 - 3"C, 1 CAMERA CABLE HARNESS

N △3 C - Exist 1½"C, 2#8 (L+g)

△4 - 2"C, 1 OCC




***SAN DIEGO COUNTY***

*APPROVED FOR ELECTRICAL WORK ONLY*

# CLOSED CIRCUIT TELEVISION SYSTEM

SCALE: 1" = 50'

**E-4**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC ELECTRICAL

FUNCTIONAL SUPERVISOR: RAJPREET SINGH

CALCULATED-DESIGNED BY: MERVIN FULLENWIDER
CHECKED BY: ANTONIO A. RODRIGUEZ

REVISED BY | DATE REVISED

LAST REVISION: DATE PLOTTED => 30-AUG-2016; TIME PLOTTED => 15:55; 08-09-16

BORDER LAST REVISED 7/2/2010

USERNAME => s127400
DGN FILE => 1100000545ua004.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 2833

PROJECT NUMBER & PHASE 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/9.0 | 47 | 113 |

REGISTERED ELECTRICAL ENGINEER — DATE 08-02-16

MERVIN D. FULLENWIDER No. E20211 Exp. 03-31-17 ELECTRICAL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

08-29-16
PLANS APPROVAL DATE

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

## LEGEND AND NOTES:

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

[2] - TYPE CCTV 35 WITH CANTILEVERED ARM PERPENDICULAR TO "11-SD-67" LINE. FOR ADDITIONAL DETAILS SEE SES-1.

[3] - CCTV CABINET. SEE ELECTRICAL DETAILS SHEETS E-10 AND E-14.

[4] - CAMERA CABLE. SEE ELECTRICAL DETAILS SHEETS E-8 AND E-9.

[5] - Exist TYPE III SERVICE EQUIPMENT ENCLOSURE (120/240 V) WITH:

| METERED | UNMETERED |
|---|---|
| MAIN 3P-100 A | 2P-40 A (Ltg) |
| 1P-15 A (TDC) | |
| 1P-50 A (Sig) | |
| 1P-15 A (PEU) | |
| 1P-15 A (FB) | |
| 1P-15 A (SPARE) | |
| ADD 1P-20 A (CCTV) | |

[6] - MODIFIED TYPE G (TDC) CABINET. SEE ELECTRICAL DETAILS SHEETS E-15 AND E-16.

[7] - SIGNAL CABINET. SEE ELECTRICAL DETAILS SHEET E-14. SEE TERMINAL BLOCK DETAIL FOR OCC TERMINATION ON THIS SHEET.

[8] - [RC] EXISTING TDC. PLACE No. 5 PULL BOX.

[9] - PLACE TYPE H SERVICE RISER PER TELEPHONE REQUIREMENTS.

## CONDUIT NOTES:

1 - 3"C, 2 CAMERA CABLE HARNESS

2 - 2"C, 2#8 (CCTV)
- 3"C, 2 CAMERA CABLE HARNESS

3 - 2"C, 2 OCC (TELEPHONE)

4 - Exist 2"C, 1 SIC, [RC] 1 SIC, ADD 3 OCC (TELEPHONE)

5 - Exist 2"C, 2#6 (Sig). 2#10 (FB), 2#8 (Ltg), 2#8 (PEU), ADD 2#8(CCTV)

6 - 2"C, 2#8 (CCTV)

7 - Exist 2"C, 1 SIC, [RC] 1 SIC, ADD 1 OCC (TELEPHONE)

N C 8 - Exist 3"C, 1-12CSC. 2#10 (FB), 2#8 (Ltg), 9 DLC, 2#8 (PEU)

9 - Exist 2"C, 2#6 (Sig). 2#10 (FB), 2#8 (Ltg), 2#8 (PEU), 2#10 (TDC), ADD 2#8(CCTV)

N C 10 - Exist 2-3"C, 3-12CSC. 1-3CSC, 2#10 (FB), 2#8 (Ltg), 9 DLC, 1 EVUC, 2#6 (SERVICE)

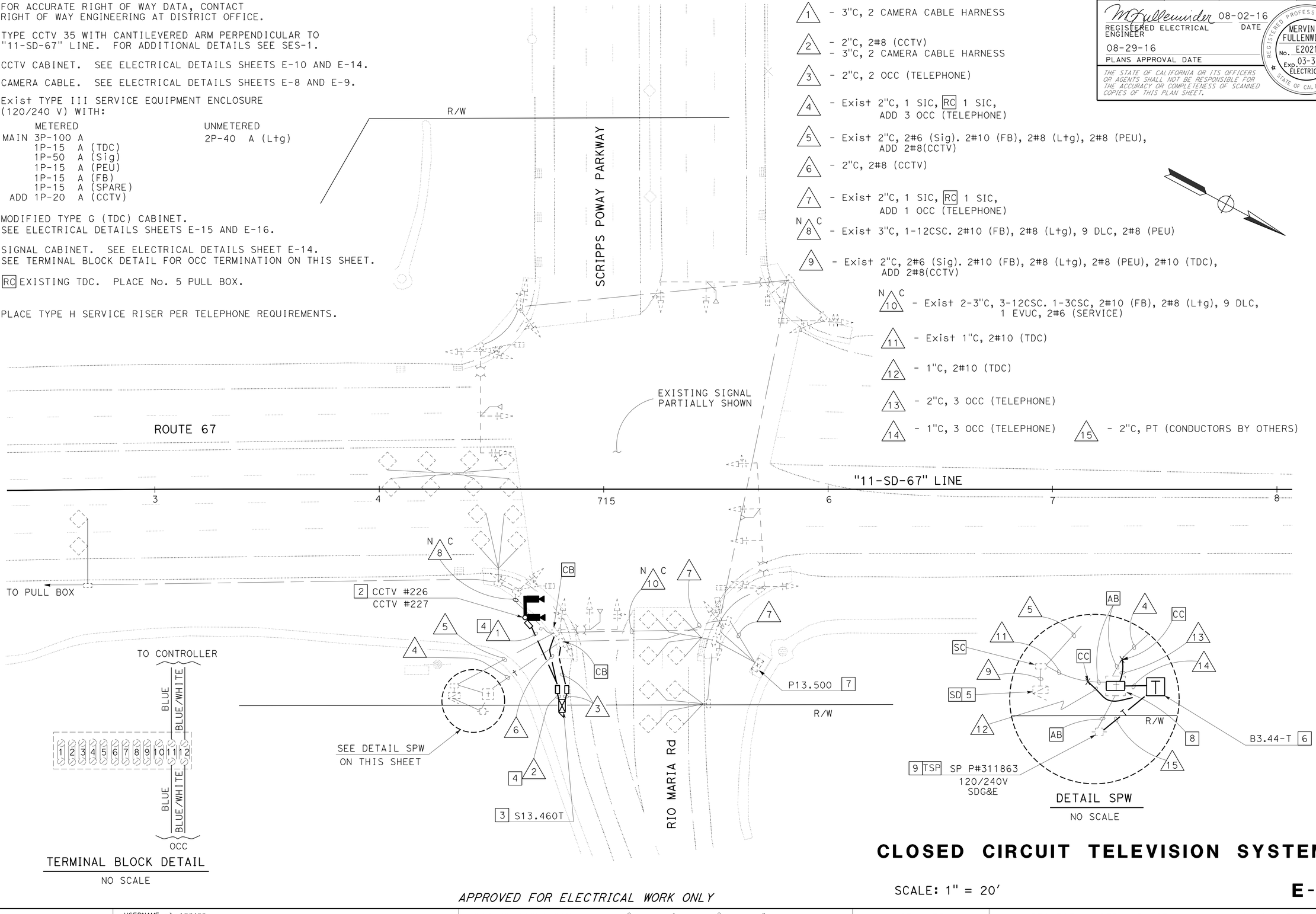
11 - Exist 1"C, 2#10 (TDC)

12 - 1"C, 2#10 (TDC)

13 - 2"C, 3 OCC (TELEPHONE)

14 - 1"C, 3 OCC (TELEPHONE)

15 - 2"C, PT (CONDUCTORS BY OTHERS)







TERMINAL BLOCK DETAIL
NO SCALE




DETAIL SPW
NO SCALE

# CLOSED CIRCUIT TELEVISION SYSTEM

SCALE: 1" = 20'

E-5

*APPROVED FOR ELECTRICAL WORK ONLY*

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC ELECTRICAL

FUNCTIONAL SUPERVISOR: RAJPREET SINGH
CALCULATED-DESIGNED BY: ANTONIO A. RODRIGUEZ
CHECKED BY: MERVIN FULLENWIDER
REVISED BY
DATE REVISED

LAST REVISION DATE PLOTTED => 30-AUG-2016
TIME PLOTTED => 15:55
07-29-16

BORDER LAST REVISED 7/2/2010 | USERNAME => s127400 | DGN FILE => 1100000545ua005.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2833 | PROJECT NUMBER & PHASE 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 48 | 113 |

M Fullenwider 08-02-16
REGISTERED ELECTRICAL ENGINEER — DATE

08-29-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
MERVIN D. FULLENWIDER
No. E20211
Exp. 03-31-17
ELECTRICAL
STATE OF CALIFORNIA

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

## LEGEND AND NOTES:

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

2 -TYPE CCTV 35 WITH CANTILEVERED ARM PERPENDICULAR TO "11-SD-67" LINE. FOR ADDITIONAL DETAILS SEE SES-1.

3 -CCTV CABINET. SEE ELECTRICAL DETAILS SHEETS E-10 AND E-14.

4 -FOR CIRCUIT CONTINUITY, SEE CHANGEABLE MESSAGE SIGN SYSTEM SHEET E-3.

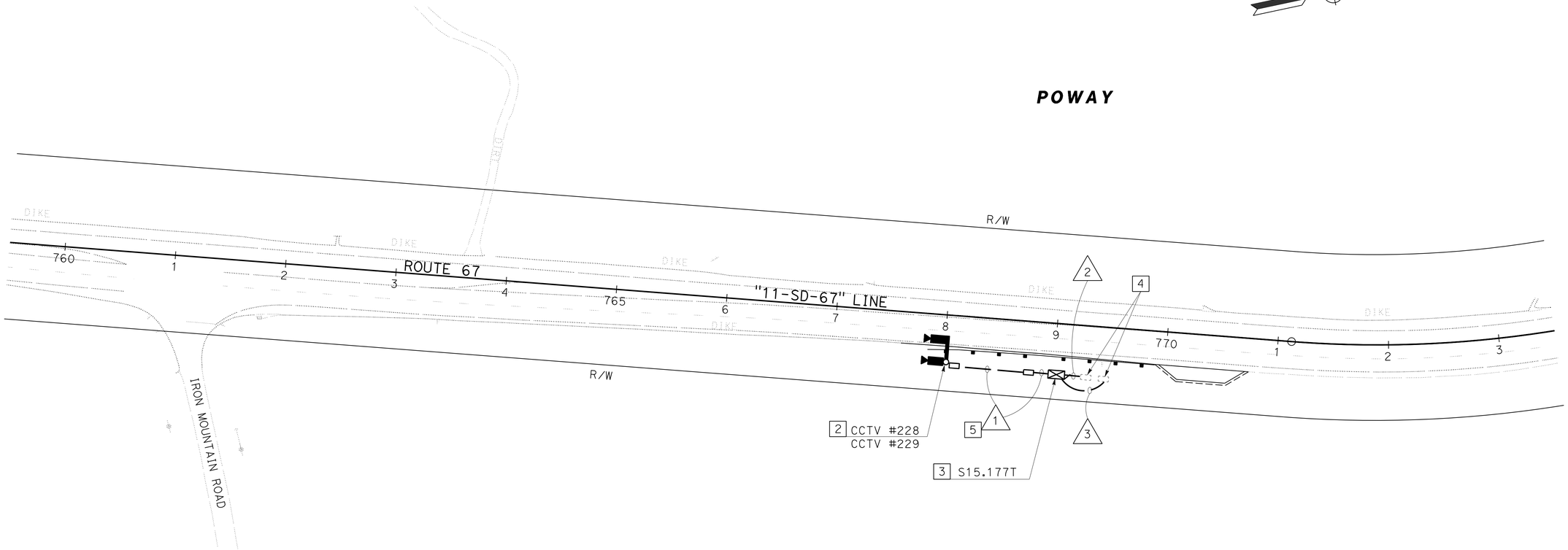
5 -CAMERA CABLE. SEE ELECTRICAL DETAILS SHEETS E-8 AND E-9.

## CONDUIT NOTES:

1 - 3"C, 2 CAMERA CABLE HARNESS.

2 - 2"C, 2 OCC

3 - 2"C, 2#6 (CCTV)




# CLOSED CIRCUIT TELEVISION SYSTEM

SCALE: 1" = 50'

E-6

*APPROVED FOR ELECTRICAL WORK ONLY*

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC ELECTRICAL

FUNCTIONAL SUPERVISOR: RAJPREET SINGH

CALCULATED-DESIGNED BY: MERVIN FULLENWIDER
CHECKED BY: ANTONIO A. RODRIGUEZ

REVISED BY | DATE REVISED

LAST REVISION | DATE PLOTTED => 30-AUG-2016
08-09-16 | TIME PLOTTED => 15:55

BORDER LAST REVISED 7/2/2010

USERNAME => s127400
DGN FILE => 1100000545ua006.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 2833 | PROJECT NUMBER & PHASE | 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 49 | 113 |

M Fullenwider 08-02-16
REGISTERED ELECTRICAL ENGINEER — DATE

08-29-16
PLANS APPROVAL DATE

MERVIN D. FULLENWIDER No. E20211 Exp. 03-31-17 ELECTRICAL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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## LEGEND AND NOTES:

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2 - TYPE CCTV 35 WITH CANTILEVERED ARM PERPENDICULAR TO "11-SD-67" LINE. FOR ADDITIONAL DETAILS SEE SES-1.

3 - CCTV CABINET. SEE ELECTRICAL DETAILS SHEETS E-10 AND E-14.

4 - CAMERA CABLE. SEE ELECTRICAL DETAILS SHEETS E-8 AND E-9.

5 - TYPE III-BF SERVICE EQUIPMENT ENCLOSURE SEE WIRING DIAGRAM SWP-B ON THIS SHEET.

6 - CUT THE EXISTING CONDUIT STUB OUTS AND ANCHOR BOLTS FLUSH WITH THE EXISTING FOUNDATION.

7 - RC TYPE H SERVICE RISER FOR TELEPHONE. PLACE TYPE H SERVICE RISER PER TELEPHONE REQUIREMENTS.

8 - RC CIRCUIT BREAKER SERVICE ENCLOSURE, LIGHTING SERVICE ENCLOSURE, PEU AND CONDUIT RISER TO PEU AND EMPTY CONDUIT RISER. MOUNT SERVICE ENCLOSURE AND CONNECT TO EXISITNG METER SOCKET AND EXISTING CONDUIT RISER. SEE WIRING DIAGRAM SWP-A ON THIS SHEET.

9 - SIGNAL CABINET. SEE ELECTRICAL DETAILS SHEET E-14. SEE TERMINAL BLOCK DETAIL FOR OCC TERMINATION ON THIS SHEET.

10 - MODIFIED TYPE G (TDC) CABINET. SEE ELECTRICAL DETAILS SHEETS E-15 AND E-16.

## CONDUIT NOTES:

1 - 2"C, 2#6 (240 V)

2 - 2"C, PT, (CONDUCTORS BY AT&T)

3 - 1"C, 2#10 (TDC)

4 - 2"C, 2 OCC

5 - 3"C, 2#8 (Sig), 2#10 (Ltg), 2#8 (CCTV), 2#10 (TDC)

6 - 2"C, 2#8 (Sig), 2#10 (Ltg)

7 - Exist 2"C, 2#8 (Sig), 2#10 (Ltg), RC ALL CONDUCTORS, ADD 2#8 (Sig)

8 - 2"C, 2#10 (Ltg)

9 - Exist 2-4"C, 7-12CSC, 6-3CSC, 6 DLC, 4 EVUC, 4 VIDEO CABLE HARNESS, 2#10 (Ltg), 1 SIC, RC 2#10 (Ltg), RC 1 SIC, ADD 1 OCC

10 - 2"C, 2#8 (CCTV)

11 - 2"C, 2 CAMERA CABLE HARNESS

12 - 2"C, 1 OCC

13 - 2"C, 3 OCC

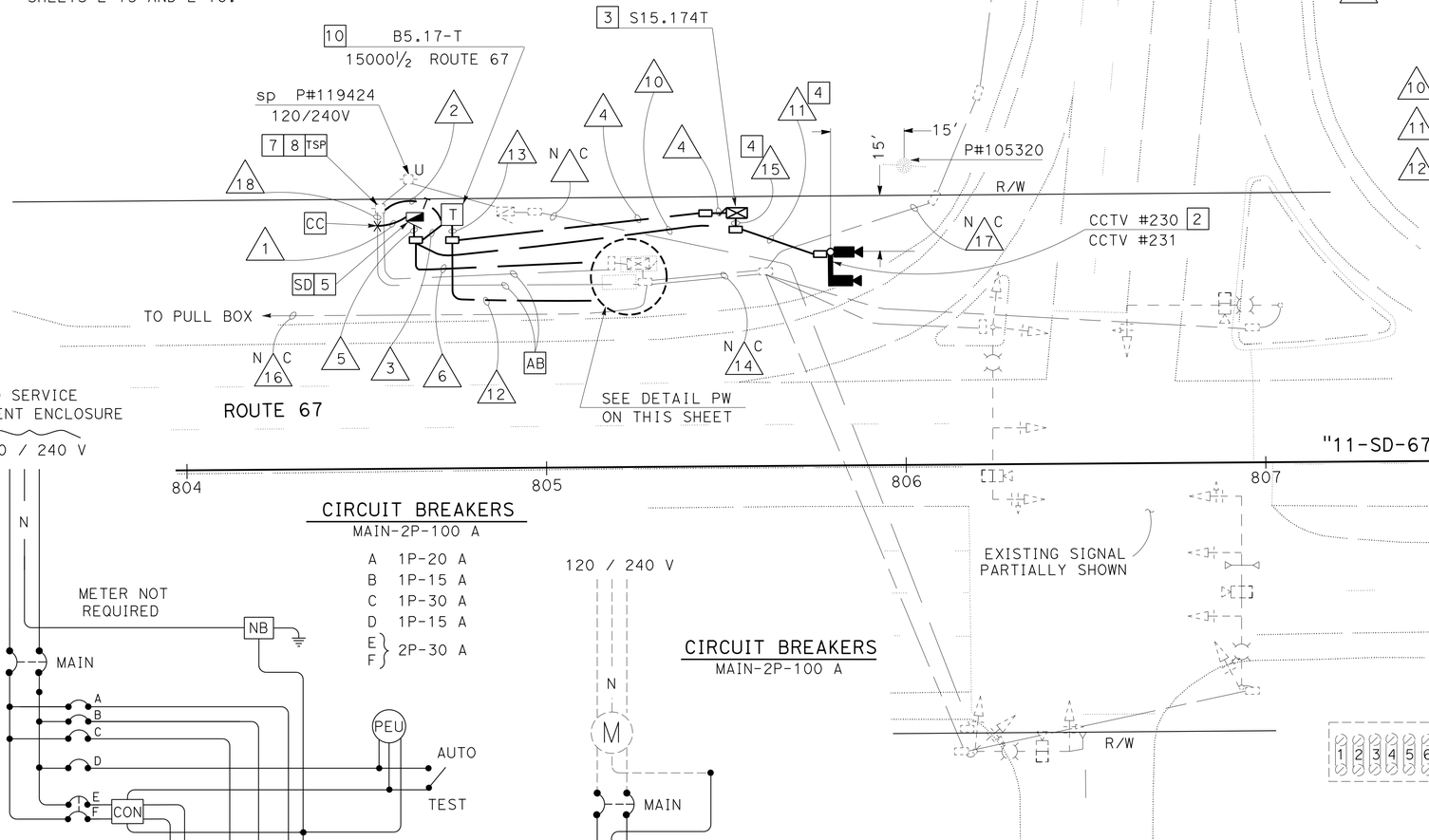
N C 14 - Exist 2-4"C, 7-12CSC, 6-3CSC, 2#6 (Sig), 4 EVUC, 4 DLC, 4 VIDEO CABLE HARNESS, 2#10 (Ltg)

15 - 2"C, 2#8 (CCTV)
- 2"C, 2 CAMERA CABLE HARNESS

N C 16 - Exist 1"C, 2 DLC

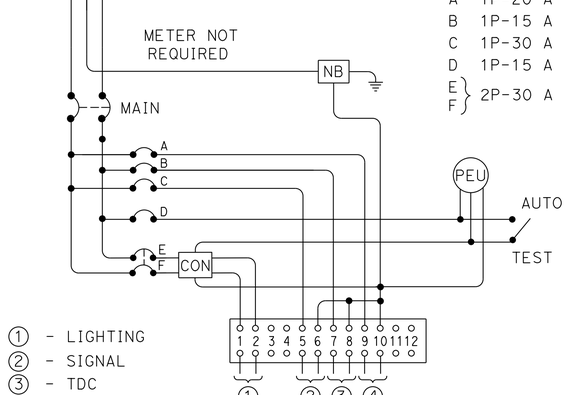
18 - Exist 2"C, RC ALL CONDUCTORS, ADD 2#6 (240 V)

N C 17 - Exist 1½"C, 2#10 (Ltg), 2 DLC



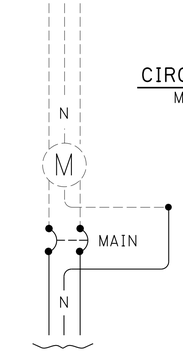

### CIRCUIT BREAKERS
MAIN-2P-100 A

A 1P-20 A
B 1P-15 A
C 1P-30 A
D 1P-15 A
E, F 2P-30 A

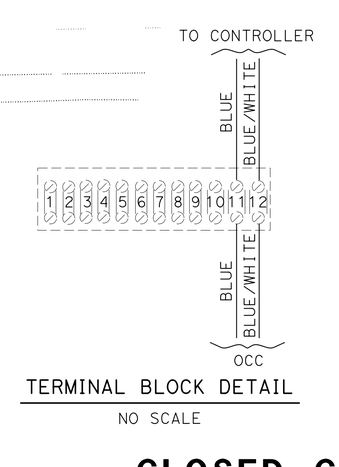



### WIRING DIAGRAM SWP-B
(TYPE III-BF SERVICE EQUIPMENT ENCLOSURE SEE RSP ES-2C AND RSP ES-2E)

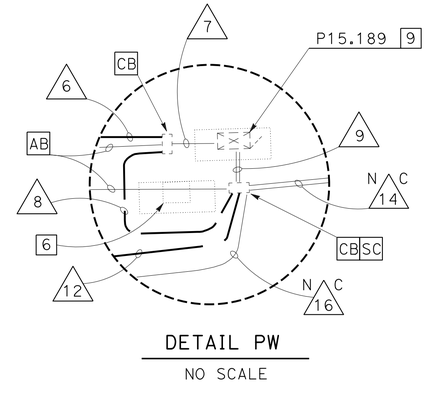
### CIRCUIT BREAKERS
MAIN-2P-100 A




### WIRING DIAGRAM SWP-A
(SERVICE EQUIPMENT ENCLOSURE SEE RSP ES-2C AND RSP ES-2E)




### TERMINAL BLOCK DETAIL
NO SCALE




### DETAIL PW
NO SCALE

*APPROVED FOR ELECTRICAL WORK ONLY*

# CLOSED CIRCUIT TELEVISION SYSTEM

SCALE: 1" = 20'

**E-7**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC ELECTRICAL

FUNCTIONAL SUPERVISOR: RAJPREET SINGH
CALCULATED-DESIGNED BY: ANTONIO A. RODRIGUEZ
CHECKED BY: MERVIN FULLENWIDER
REVISED BY
DATE REVISED

LAST REVISION DATE PLOTTED => 30-AUG-2016
TIME PLOTTED => 15:55

BORDER LAST REVISED 7/2/2010
USERNAME => s127400
DGN FILE => 1100000545ua007.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 2833
PROJECT NUMBER & PHASE 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 50 | 113 |

M Fullenwider 08-02-16
REGISTERED ELECTRICAL ENGINEER — DATE

08-29-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MERVIN D. FULLENWIDER No. E20211 Exp. 03-31-17 ELECTRICAL — STATE OF CALIFORNIA

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

## LEGEND AND NOTES:

1 - SEE CAMERA CABLE CROSS SECTION ON THIS SHEET.

2 - STRAIN RELIEF CABLE GRIP SUITABLE FOR CABLE WEIGHT AND DIAMETER.

3 - PROTECT AND INSULATE CABLES/CONDUCTORS USING HEAT-SHRINK TUBING METHOD. NO SPLICES ALLOWED EXCEPT FOR POWER.

4 - GROUND CAMERA CABLE AT CCTV CABINET.

5 - MINIMUM 5' OF SLACK IS REQUIRED FROM CAMERA CABLE TO THE CONNECTORS IN CCTV CABINETS.

6 - OUTSIDE JACKET OR SLEEVING REQUIRED.

7 - CONNECT TO ADAPTER, SEE ADAPTER DETAILS ON SHEET E-9.

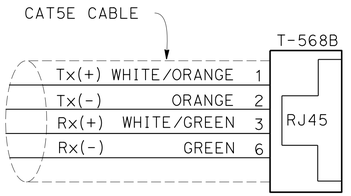
8 - PLACE WATER TIGHT CABLE ENTRY SEAL AND WATER TIGHT SEAL RING REQUIRED FOR THE CONNECTOR.

9 - CAMERA CONTROL CABLE 22 AWG OR LARGER.

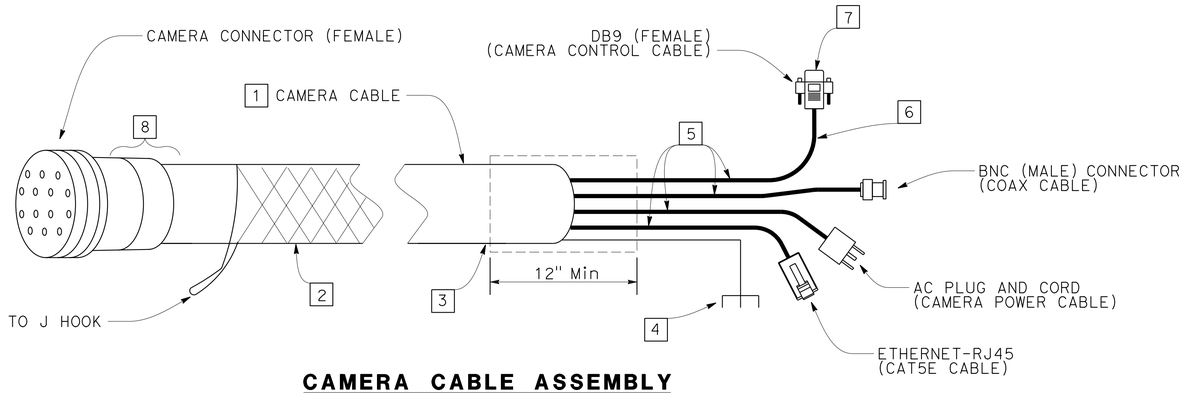
10 - TO VIDEO ENCODER AT CCTV CABINET, VIDEO INPUT.

11 - THE CONTRACTOR SHALL VERIFY THE LENGTH OF CAMERA CABLE AT EACH LOCATION AS SHOWN IN ELECTRICAL PLANS. A SLACK OF 8' IS REQUIRED AT EACH LOCATION.

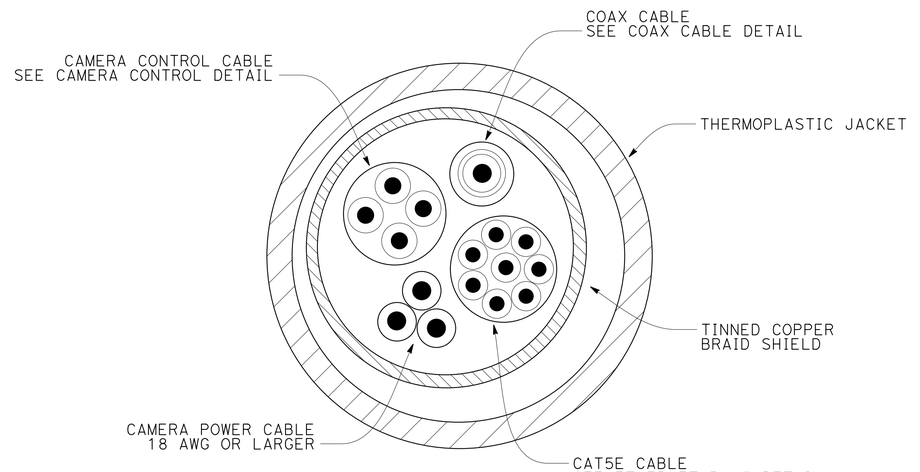
12 - SEE ELECTRICAL DETAIL FOR TYPICAL CCTV SYSTEM COMPONENT CONNECTION DETAIL




**ETHERNET-RJ45 DETAIL**

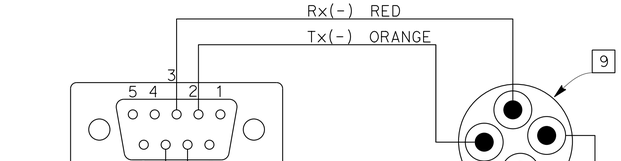



**CAMERA CABLE ASSEMBLY**

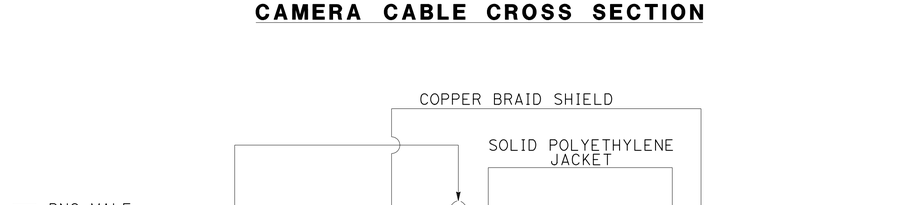



**CAMERA CABLE CROSS SECTION**

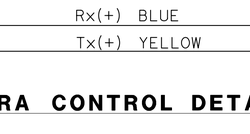
| TABLE A | | |
|---|---|---|
| PIN ASSIGNMENT | | |
| PIN | FUNCTION | COLOR |
| 1 | CONTROL RX(-) | RED |
| 2 | CONTROL RX(+) | BLUE |
| 3 | CONTROL TX(-) | ORANGE |
| 4 | CONTROL TX(+) | YELLOW |
| 6 | GROUND (SHIELD) | |
| 8 | VIDEO SIGNAL COAX INNER CORE | |
| 9 | VIDEO SIGNAL COAX SHIELD | |
| 10 | POWER, GROUND | GREEN |
| 13 | POWER, AC LOW | WHITE |
| 14 | POWER, AC HIGH | BLACK |
| 5 | ETHERNET Tx(+) | Wht/Org |
| 7 | ETHERNET Tx(-) | ORANGE |
| 11 | ETHERNET Rx(+) | Wht/Grn |
| 12 | ETHERNET Rx(-) | GREEN |




**CAMERA CONTROL DETAIL**




**COAX CABLE DETAIL**




**CAMERA CONNECTOR (FEMALE)**
**CONTACT ARRANGEMENTS**
SEE TABLE A FOR PIN ASSIGNMENT

**CAMERA CABLE**

# ELECTRICAL DETAILS

NO SCALE

**E-8**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC ELECTRICAL

| REVISED BY | DATE REVISED |
|---|---|
| | |

| CALCULATED-DESIGNED BY | CHECKED BY |
|---|---|
| MERVIN FULLENWIDER | ANTONIO A. RODRIGUEZ |

FUNCTIONAL SUPERVISOR: RAJPREET SINGH

LAST REVISION 08-09-16
DATE PLOTTED => 30-AUG-2016
TIME PLOTTED => 15:55

BORDER LAST REVISED 7/2/2010
USERNAME => s127400
DGN FILE => 1100000545ua008.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 2833
PROJECT NUMBER & PHASE 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 51 | 113 |

M Fullenwider 08-02-16
REGISTERED ELECTRICAL ENGINEER — DATE

08-29-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MERVIN D. FULLENWIDER — No. E20211 — Exp. 03-31-17 — ELECTRICAL — STATE OF CALIFORNIA

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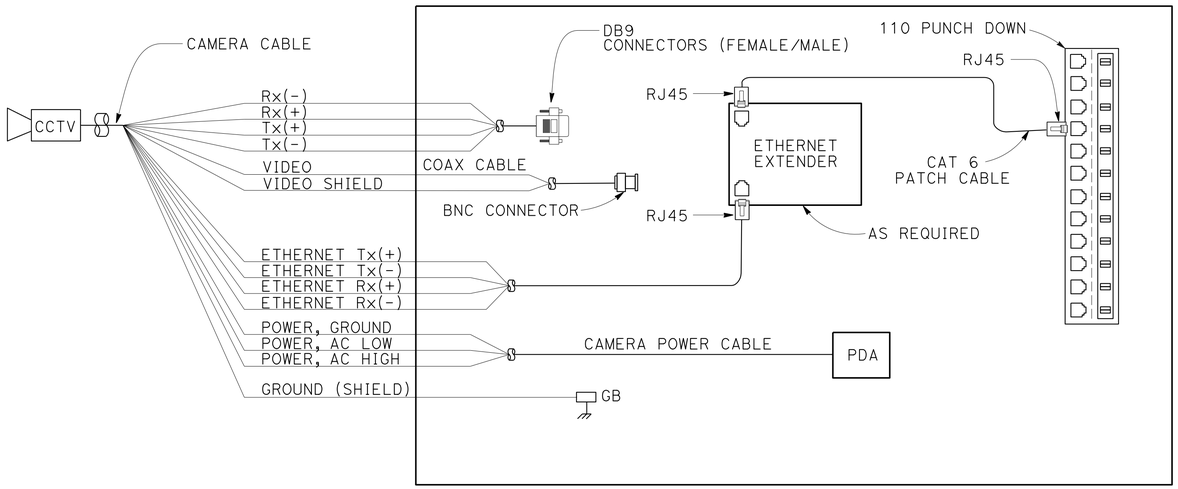
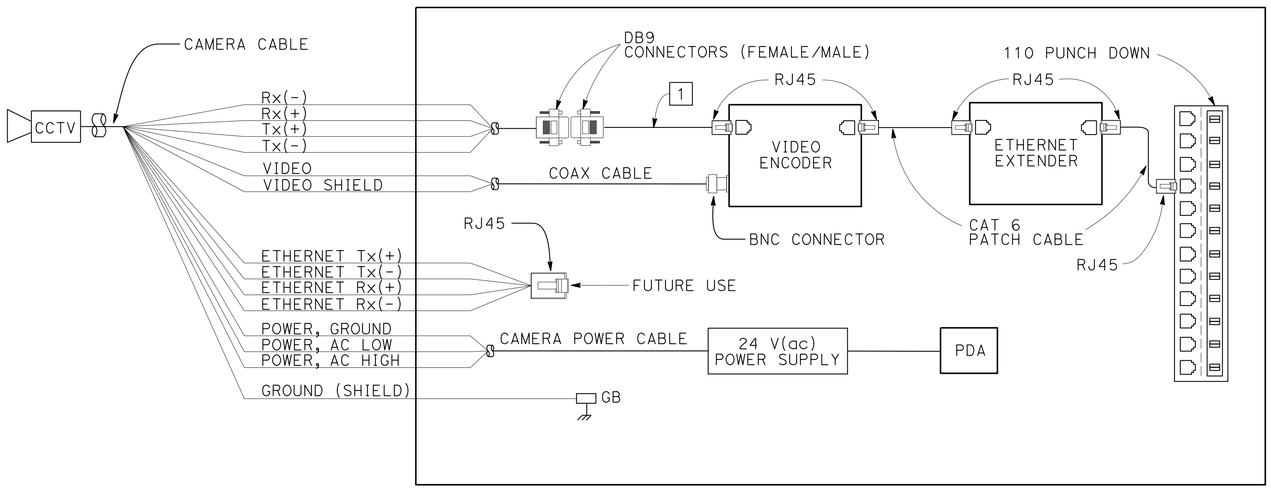


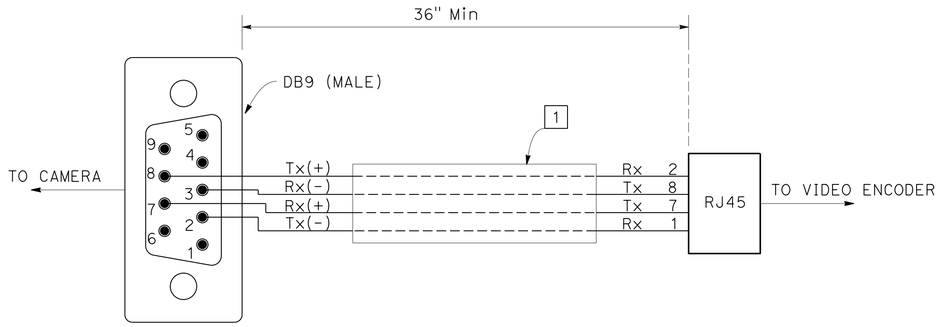

**CCTV CONNECTIVITY DETAIL A**
MODEL 334L CABINET




**CCTV CONNECTIVITY DETAIL B**
MODEL 334L CABINET

## LEGEND:

[1] - CAMERA CONTROL CABLE 22 AWG OR LARGER, OUTSIDE JACKET OR SLEEVING REQUIRED.




**ADAPTER DETAIL**
DB9 TO RJ45 MODULAR ADAPTER

## CAMERA CABLE

# ELECTRICAL DETAILS

NO SCALE

**E-9**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC ELECTRICAL

| CALCULATED-DESIGNED BY | FUNCTIONAL SUPERVISOR | REVISED BY | DATE REVISED |
|---|---|---|---|
| MERVIN FULLENWIDER | RAJPREET SINGH | | |
| ANTONIO A. RODRIGUEZ | | | |
| CHECKED BY | | | |

LAST REVISION | DATE PLOTTED => 30-AUG-2016
08-09-16 | TIME PLOTTED => 15:55

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 52 | 113 |

M Fullenwider 08-02-16
REGISTERED ELECTRICAL ENGINEER — DATE

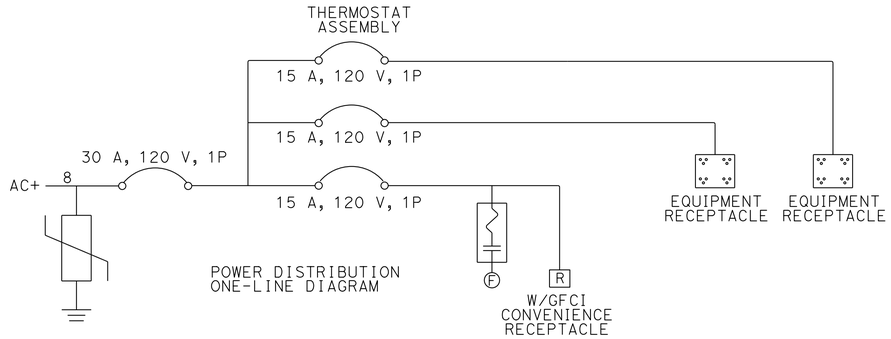
08-29-16
PLANS APPROVAL DATE

MERVIN D. FULLENWIDER No. E20211 Exp. 03-31-17 ELECTRICAL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

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

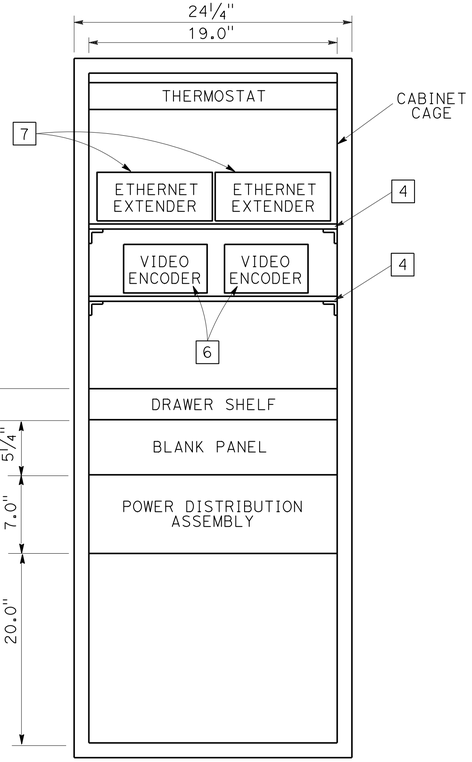
## LEGEND:

- SURGE PROTECTOR
- CIRCUIT BREAKER
- (HT) RELAY COIL - HIGH TEMPERATURE
- HT RELAY CONTACT - NORMALLY CLOSED
- W\GFC1 WITH GROUND FAULT CURRENT INTERRUPT
- 8 WIRE SIZE, IF NOT INDICATED MUST BE #12 AWG
- (F) FAN
- SECU SERIAL TO ETHERNET CONVERSION UNIT
- THERMO ADJUSTABLE CALIBRATED THERMOSTAT
- NETWORK PORT
- [R] DUPLEX RECEPTACLE
- (L) INDICATOR LAMP
- THERMOSTATIC CONTROL



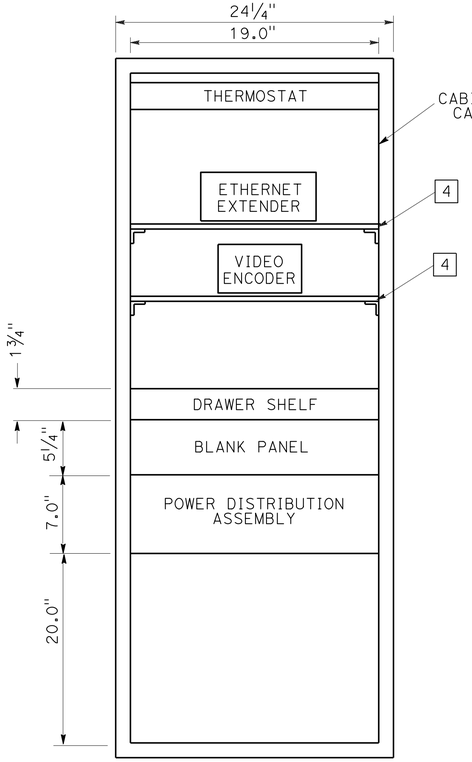

POWER DISTRIBUTION ONE-LINE DIAGRAM

FRONT
CCTV #230 AND
CCTV #231
CCTV #228 AND
CCTV #229
CCTV #226 AND
CCTV #227
(TYPE 334L CABINET)




CCTV CABINET EQUIPMENT PLACEMENT DETAIL A

FRONT
CCTV #224
CCTV #225
(TYPE 334L CABINET)




CCTV CABINET EQUIPMENT PLACEMENT DETAIL B

## CCTV SYSTEM CABINET POWER DISTRIBUTION ASSEMBLY DETAILS

## LEGEND AND NOTES:

1 - THE CONTRACTOR MUST VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING MATERIAL.

2 - GFCI RECEPTACLES ARE FOR MAINTENANCE EQUIPMENT ONLY.

3 - CONSTRUCT FOUNDATION PER Std PLAN ES-3C.

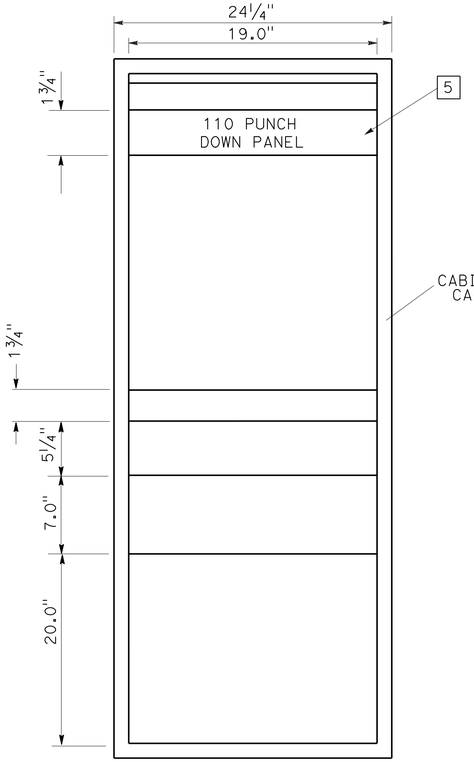
[4] - UNIVERSAL 3U 19-INCH RACK MOUNT CANTILEVER VENTED SHELF USING STANDARD MOUNTING HARDWARE.

[5] - ADD RACK MOUNTABLE PUNCH DOWN PANEL WITH RJ45 ON THE FRONT AND 110 PUNCH ON THE BACK. TERMINATE OCC AS TIA/EIA 568B.

[6] - PLACE VIDEO ENCODER AS REQUIRED.

[7] - PLACE ETHERNET EXTENDER IN TYPE 334L CABINET FOR CCTV #228 AND #229.

REAR
CCTV
(TYPE 334L CABINET)




TYPICAL CCTV CABINET EQUIPMENT PLACEMENT DETAIL C

## CLOSED CIRCUIT TELEVISION SYSTEM

# ELECTRICAL DETAILS

NO SCALE

E-10

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC ELECTRICAL
FUNCTIONAL SUPERVISOR: RAJPREET SINGH
CALCULATED-DESIGNED BY: MERVIN FULLENWIDER
CHECKED BY: ANTONIO A. RODRIGUEZ
REVISED BY
DATE REVISED

LAST REVISION 08-09-16
DATE PLOTTED => 30-AUG-2016
TIME PLOTTED => 15:55

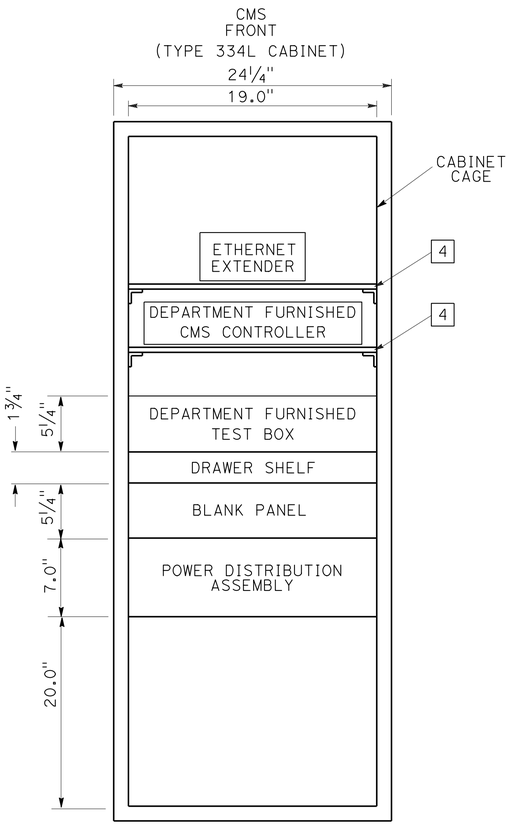
| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 53 | 113 |

REGISTERED ELECTRICAL ENGINEER — 08-02-16 DATE

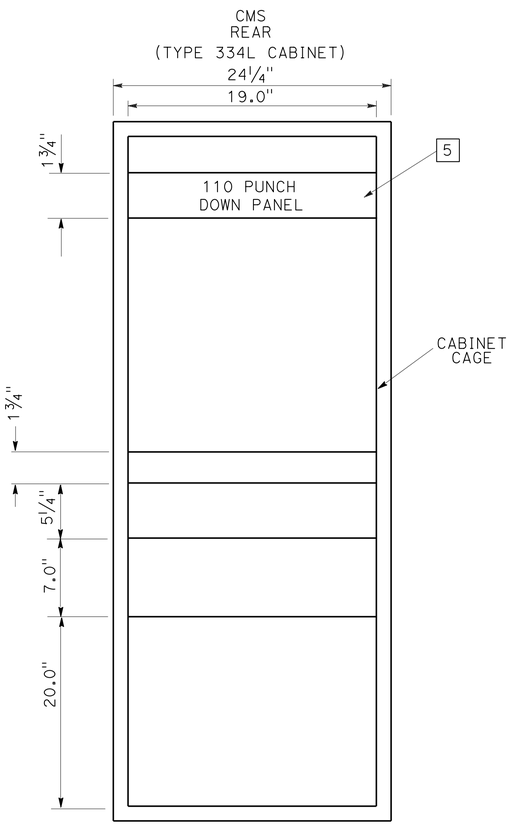
08-29-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
MERVIN D. FULLENWIDER
No. E20211
Exp. 03-31-17
ELECTRICAL
STATE OF CALIFORNIA

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




CMS CABINET EQUIPMENT PLACEMENT DETAIL A




CMS CABINET EQUIPMENT PLACEMENT DETAIL B

## LEGEND AND NOTES:

1 - THE CONTRACTOR MUST VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING MATERIAL.

2 - GFCI RECEPTACLES ARE FOR MAINTENANCE EQUIPMENT ONLY.

3 - CONSTRUCT FOUNDATION PER Std PLAN ES-3C.

[4] - UNIVERSAL 3U 19-INCH RACK MOUNT CANTILEVER VENTED SHELF USING STANDARD MOUNTING HARDWARE.

[5] - ADD RACK MOUNTABLE PUNCH DOWN PANEL WITH RJ45 ON THE FRONT AND 110 PUNCH ON THE BACK. TERMINATE OCC AS TIA/EIA 568B.

## CHANGEABLE MESSAGE SIGN SYSTEM

# ELECTRICAL DETAILS

NO SCALE

**E-11**

CALCULATED-DESIGNED BY: MERVIN FULLENWIDER
CHECKED BY: ANTONIO A. RODRIGUEZ
FUNCTIONAL SUPERVISOR: RAJPREET SINGH
REVISED BY
DATE REVISED

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC ELECTRICAL

LAST REVISION: DATE PLOTTED => 30-AUG-2016 08-09-16 TIME PLOTTED => 15:55

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 54 | 113 |

MJFullenwider 08-02-16
REGISTERED ELECTRICAL ENGINEER — DATE

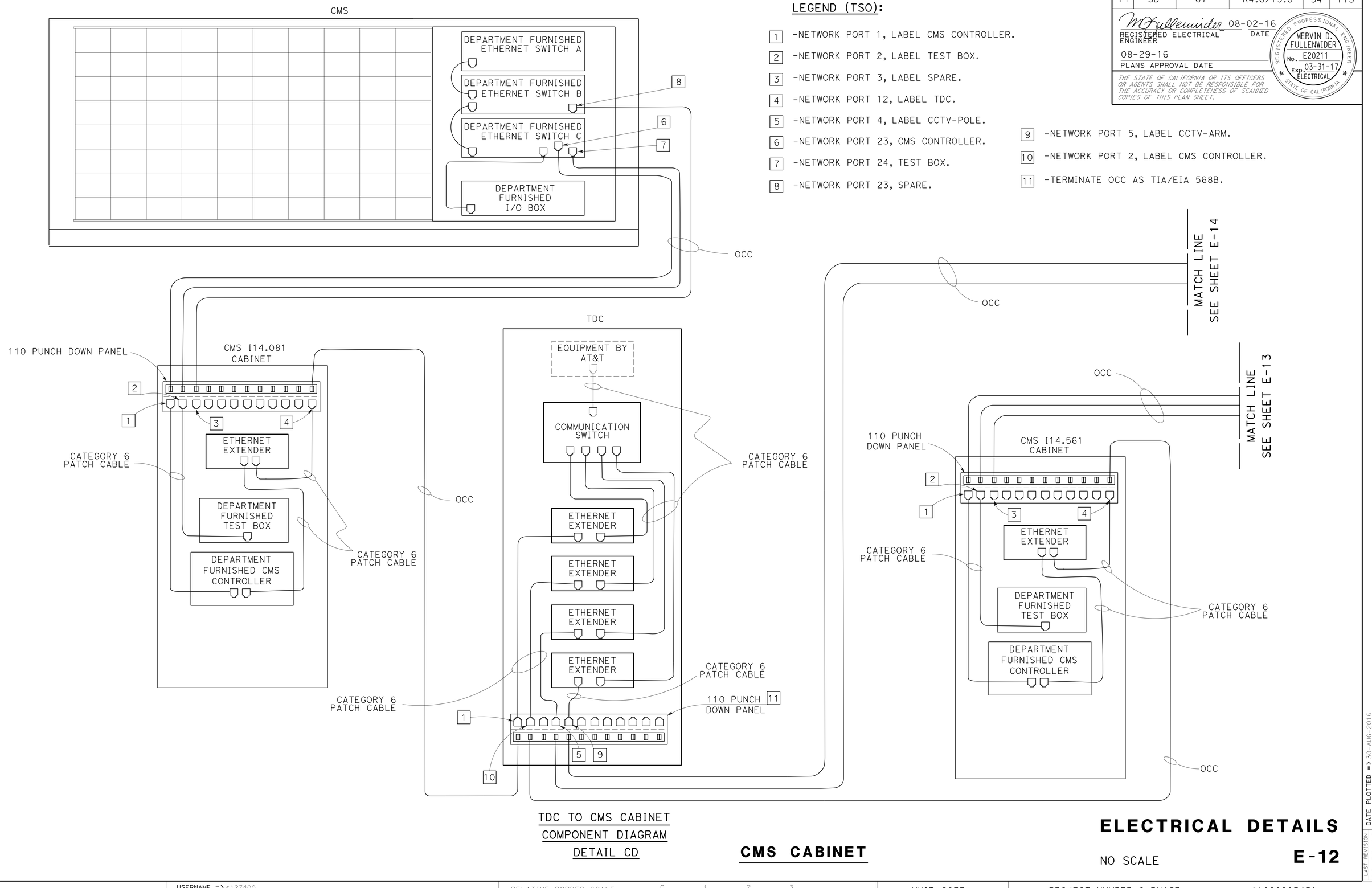
08-29-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MERVIN D. FULLENWIDER No. E20211 Exp. 03-31-17 ELECTRICAL — STATE OF CALIFORNIA

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

## LEGEND (TSO):

1 -NETWORK PORT 1, LABEL CMS CONTROLLER.
2 -NETWORK PORT 2, LABEL TEST BOX.
3 -NETWORK PORT 3, LABEL SPARE.
4 -NETWORK PORT 12, LABEL TDC.
5 -NETWORK PORT 4, LABEL CCTV-POLE.
6 -NETWORK PORT 23, CMS CONTROLLER.
7 -NETWORK PORT 24, TEST BOX.
8 -NETWORK PORT 23, SPARE.
9 -NETWORK PORT 5, LABEL CCTV-ARM.
10 -NETWORK PORT 2, LABEL CMS CONTROLLER.
11 -TERMINATE OCC AS TIA/EIA 568B.




TDC TO CMS CABINET
COMPONENT DIAGRAM
DETAIL CD

**CMS CABINET**

# ELECTRICAL DETAILS

NO SCALE

**E-12**

CALCULATED-DESIGNED BY: MERVIN FULLENWIDER
CHECKED BY: ANTONIO A. RODRIGUEZ
FUNCTIONAL SUPERVISOR: RAJPREET SINGH
REVISED BY
DATE REVISED

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC ELECTRICAL

LAST REVISION DATE PLOTTED => 30-AUG-2016
TIME PLOTTED => 15:55
08-09-16

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 55 | 113 |

MFullenwider 08-02-16
REGISTERED ELECTRICAL ENGINEER — DATE

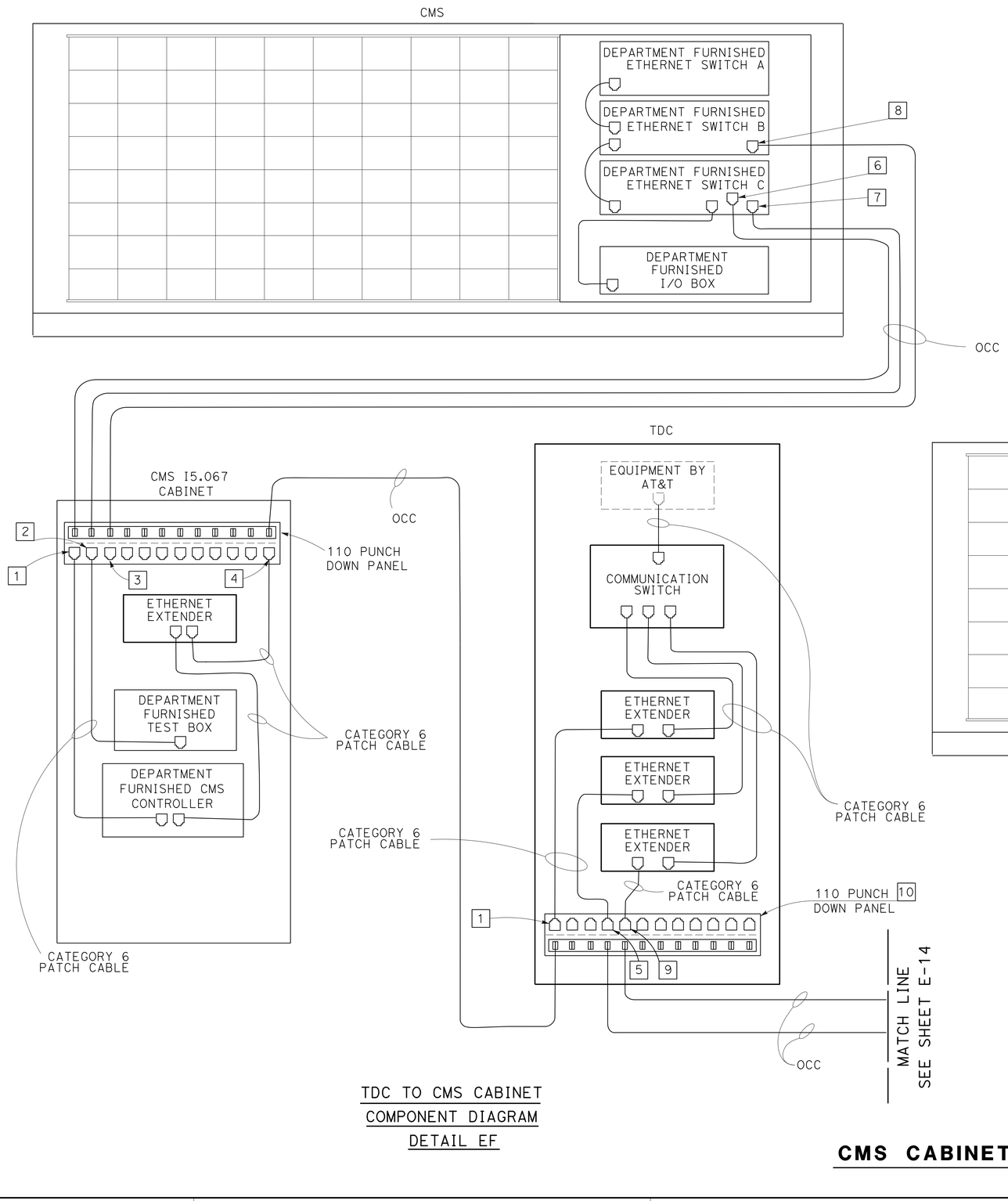
08-29-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
MERVIN D. FULLENWIDER
No. E20211
Exp. 03-31-17
ELECTRICAL
STATE OF CALIFORNIA

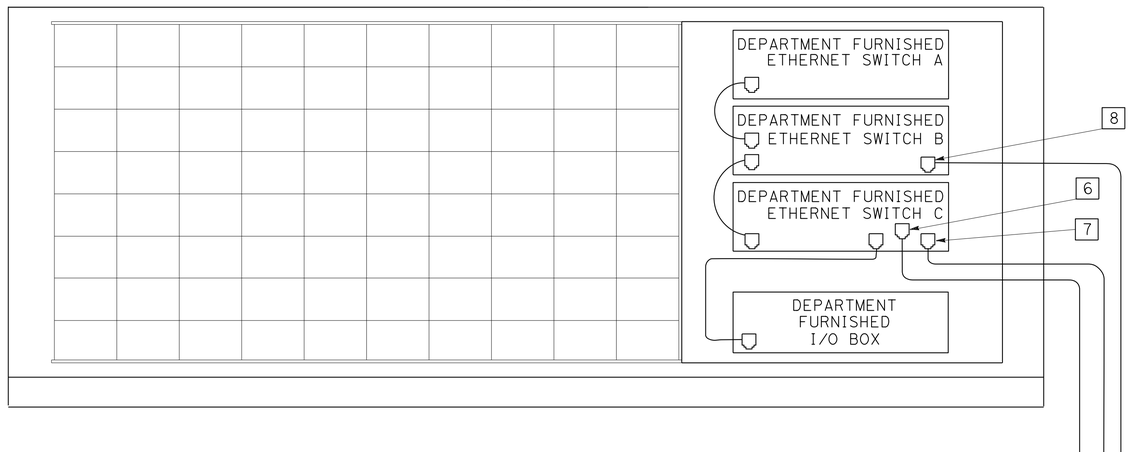
*THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.*

## LEGEND (TSO):

1. -NETWORK PORT 1, LABEL CMS CONTROLLER.
2. -NETWORK PORT 2, LABEL TEST BOX.
3. -NETWORK PORT 3, LABEL SPARE.
4. -NETWORK PORT 12, LABEL TDC.
5. -NETWORK PORT 4, LABEL CCTV #224.
6. -NETWORK PORT 23, CMS CONTROLLER.
7. -NETWORK PORT 24, TEST BOX.
8. -NETWORK PORT 23, SPARE.
9. -NETWORK PORT 5, LABEL CCTV #225.
10. -TERMINATE OCC AS TIA/EIA 568B.




TDC TO CMS CABINET
COMPONENT DIAGRAM
DETAIL EF




CMS
COMPONENT DIAGRAM
DETAIL GH

**CMS CABINET**

# ELECTRICAL DETAILS

NO SCALE

**E-13**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC ELECTRICAL
FUNCTIONAL SUPERVISOR: RAJPREET SINGH
CALCULATED-DESIGNED BY: MERVIN FULLENWIDER
CHECKED BY: ANTONIO A. RODRIGUEZ
REVISED BY | DATE REVISED

LAST REVISION | DATE PLOTTED => 30-AUG-2016
08-09-16 | TIME PLOTTED => 15:55

BORDER LAST REVISED 7/2/2010 | USERNAME => s127400 | DGN FILE => 1100000545ua013.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2833 | PROJECT NUMBER & PHASE 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 56 | 113 |

MJFullenwider 08-02-16
REGISTERED ELECTRICAL ENGINEER — DATE

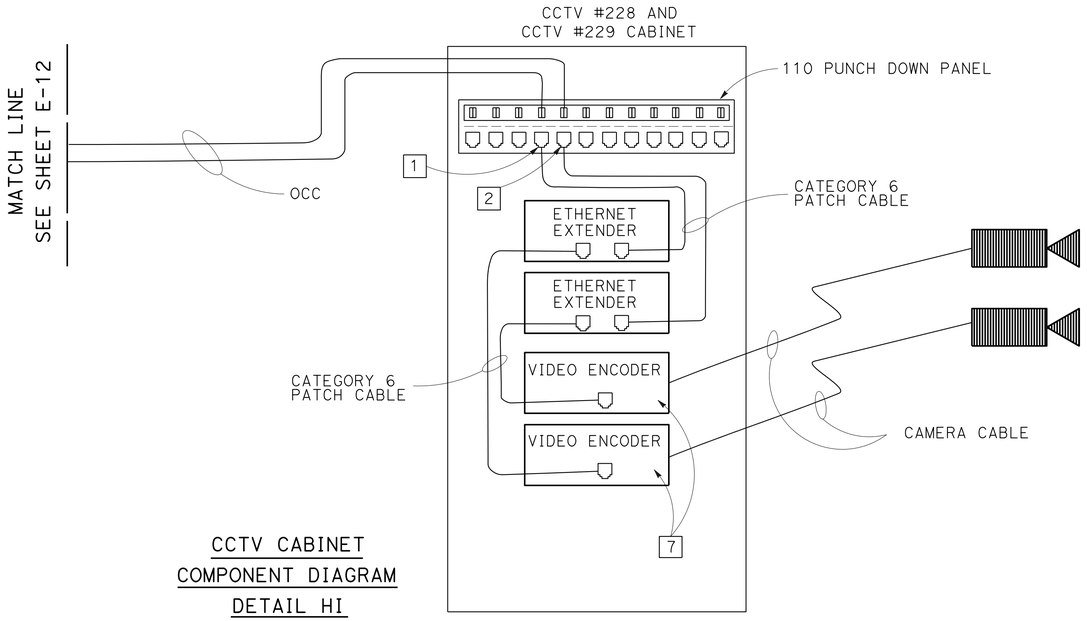
08-29-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MERVIN D. FULLENWIDER No. E20211 Exp. 03-31-17 ELECTRICAL — STATE OF CALIFORNIA

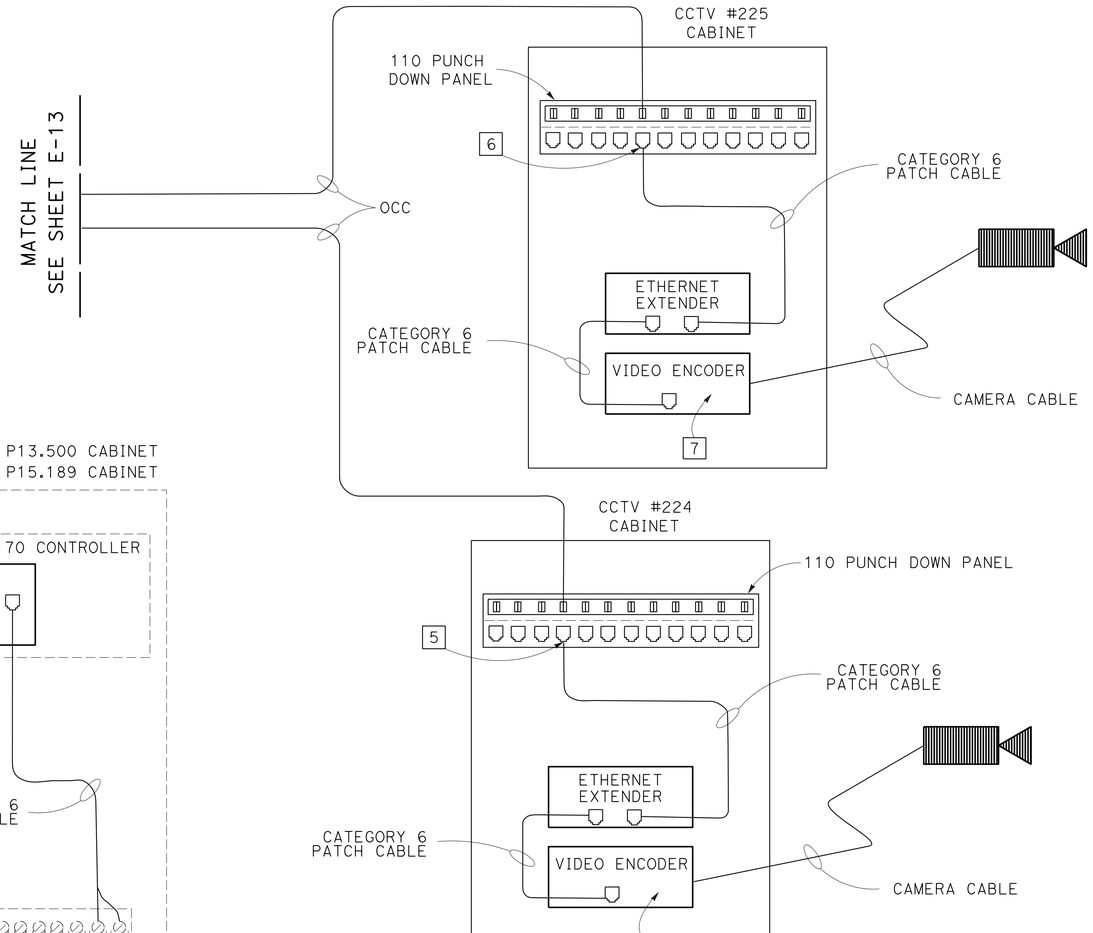
*THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.*

## LEGEND (TSO):

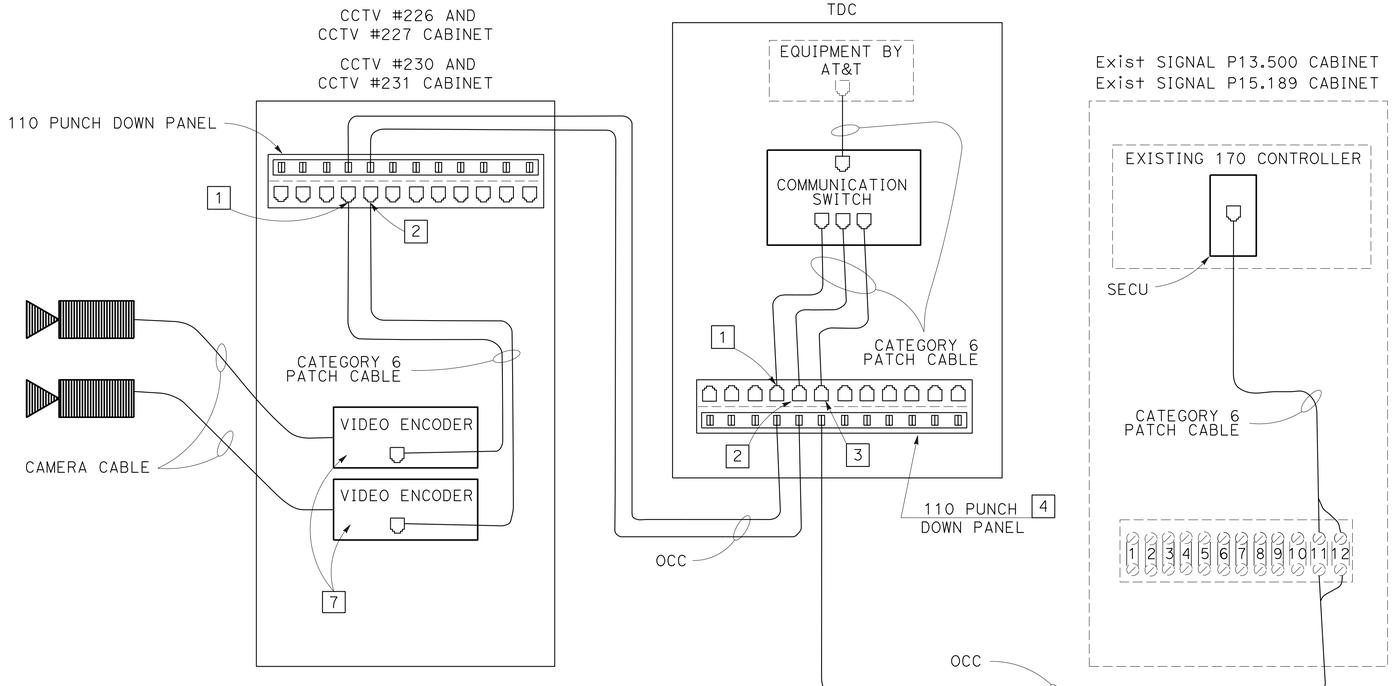
1. -NETWORK PORT 4, LABEL CCTV-POLE
2. -NETWORK PORT 5, LABEL CCTV-ARM
3. -NETWORK PORT 6, LABEL SIGNAL.
4. -TERMINATE OCC AS TIA/EIA 568B.
5. -NETWORK PORT 5, LABEL CCTV #224.
6. -NETWORK PORT 5, LABEL CCTV #225.
7. -VIDEO ENCODER AS REQUIRED.




CCTV CABINET
COMPONENT DIAGRAM
DETAIL HI




CCTV CABINET
COMPONENT DIAGRAM
DETAIL LM




TDC TO CCTV AND SIG CABINET
COMPONENT DIAGRAM
DETAIL JK

**CCTV CABINET**

# ELECTRICAL DETAILS

NO SCALE

**E-14**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC ELECTRICAL
FUNCTIONAL SUPERVISOR: RAJPREET SINGH
CALCULATED-DESIGNED BY: MERVIN FULLENWIDER
CHECKED BY: ANTONIO A. RODRIGUEZ
REVISED BY
DATE REVISED

LAST REVISION | DATE PLOTTED => 30-AUG-2016 | TIME PLOTTED => 15:55 | 08-09-16

BORDER LAST REVISED 7/2/2010 | USERNAME => s127400 | DGN FILE => 1100000545ua014.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2833 | PROJECT NUMBER & PHASE 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 57 | 113 |

MJ Fullenwider 08-02-16
REGISTERED ELECTRICAL ENGINEER — DATE

08-29-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MERVIN D. FULLENWIDER No. E20211 Exp. 03-31-17 ELECTRICAL — STATE OF CALIFORNIA

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

## LEGEND AND NOTES:

1 - THE CONTRACTOR MUST VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING MATERIAL.

2 - GFCI RECEPTACLES ARE FOR MAINTENANCE EQUIPMENT ONLY.

[3] - EIA 19" RACK MOUNT SHELF REQUIRED FOR EQUIPMENT.

[4] - 8 PAIR TERMINAL BLOCK.

[5] - VDSL SWITCH CABLE AND VDSL CPE CONNECTION POINT.

6 - FOR DETAILS NOT SHOWN SEE RSP ES-3B (TYPE G). NOTES 1 TO 7, 9, 10 AND 12 APPLY.

[7] - BACK MOUNTING BOARD (½" THICK AND GRADE ACX PLYWOOD).

8 - CABINET MUST BE FURNISHED WITH MOUNTING BOARDS, OUTLET BOXES, CB AND OUTLET PLATES. DIMENSIONS ARE NOMINAL.

9 - FAN MUST BE THERMOSTATICALLY CONTROLLED AND ADJUSTABLE TO TURN ON BETWEEN 33°C AND 65°C.

10 - FAN CIRCUIT MUST BE FUSED AT 125 PERCENT OF THE FAN MOTOR CAPACITY.

11 - FAN CAPACITY MUST BE AT LEAST 9 CF PER MINUTE.

12 - FASTEN FIXED MOUNTING PANEL WITH NUTS, LOCK AND FLAT WASHERS TO 0.2" ∅ x 1" STUDS WELDED TO ENCLOSURE.

13 - SEE ELECTRICAL DETAILS COMPONENT DIAGRAM.

14 - POLICE PANEL NOT REQUIRED.

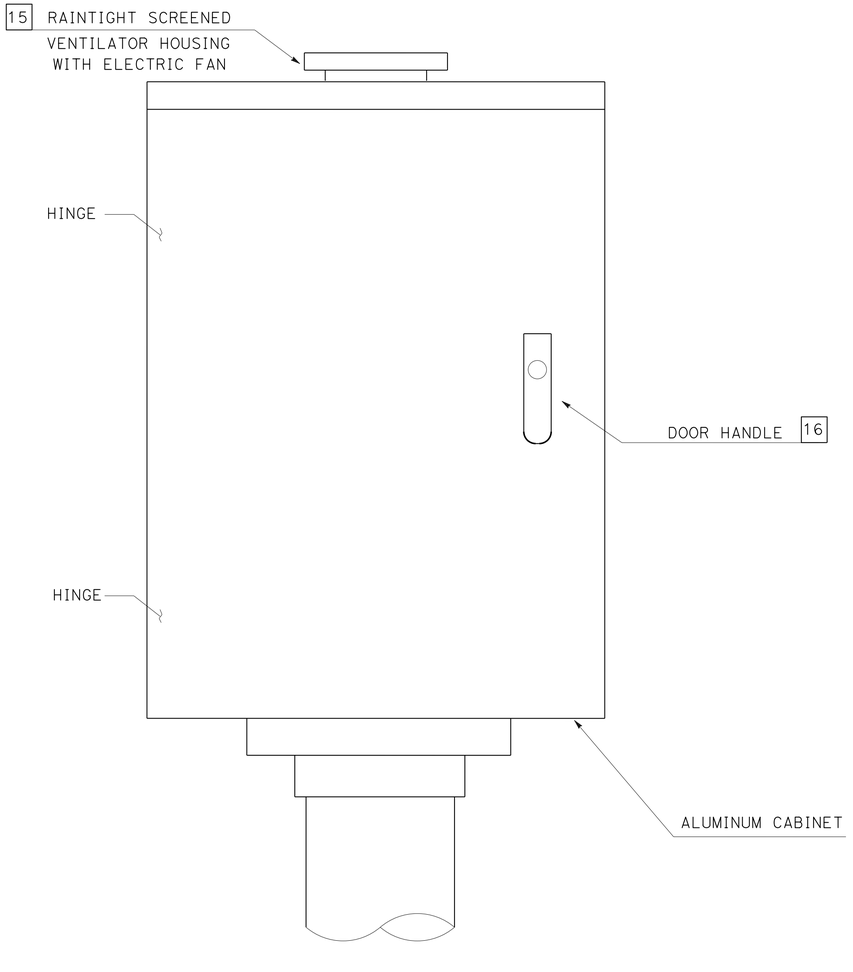
[15] - ALTERNATE VENTING METHOD MUST BE APPROVED BY ENGINEER.

[16] - THREE POINT DOOR CLOSING MECHANISM.

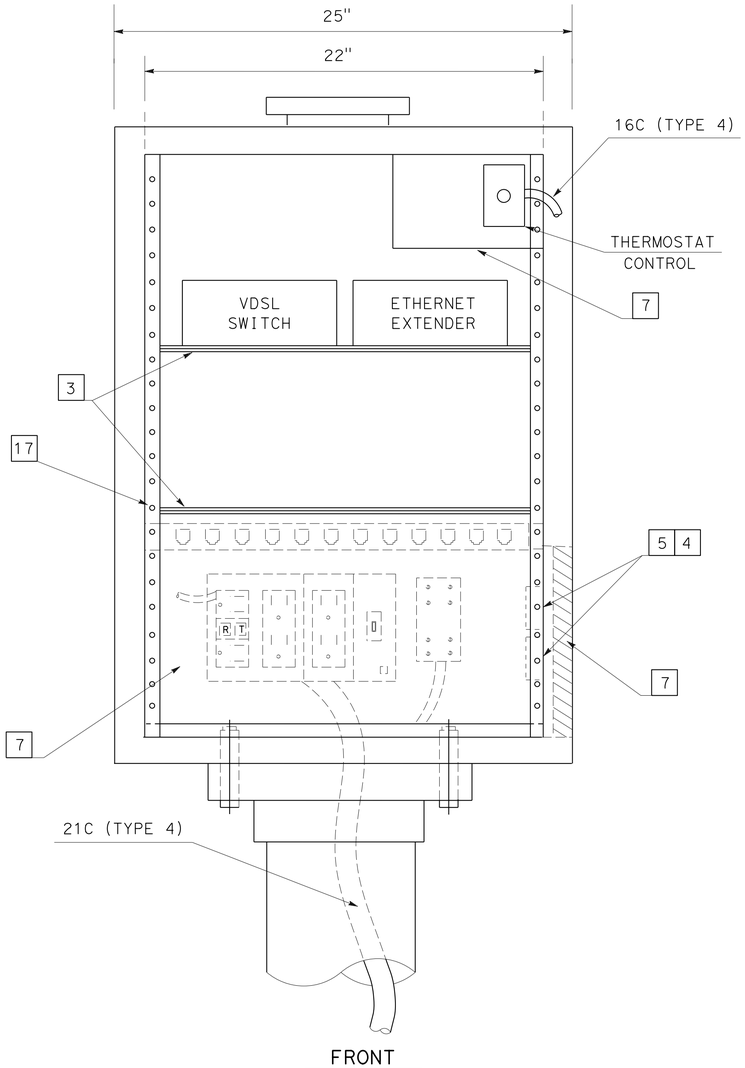
[17] - 19" EIA RACK RAIL.

## LEGEND AND ABBREVIATIONS:

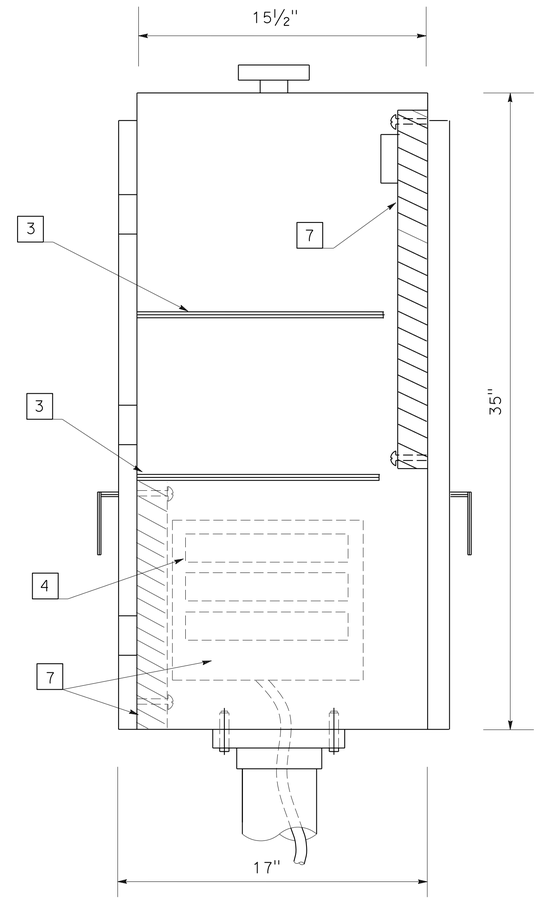
| | |
|---|---|
| CPE | CUSTOMER PREMISES EQUIPMENT |
| VDSL | VERY HIGH DIGITAL SUBSCRIBER LINE |




FRONT




FRONT
(INTERIOR)




RIGHT SIDE

## MODIFIED TYPE G CABINET
**(TDC)**

## ELECTRICAL DETAILS
NO SCALE

**E-15**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC ELECTRICAL
FUNCTIONAL SUPERVISOR: RAJPREET SINGH
CALCULATED-DESIGNED BY: ANTONIO A. RODRIGUEZ
CHECKED BY: MERVIN FULLENWIDER
REVISED BY / DATE REVISED

LAST REVISION | DATE PLOTTED => 30-AUG-2016
08-09-16 | TIME PLOTTED => 15:55

BORDER LAST REVISED 7/2/2010
USERNAME => s127400
DGN FILE => 1100000545ua015.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 2833
PROJECT NUMBER & PHASE 11000005451

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 58 | 113 |

M Fullenwider 08-02-16
REGISTERED ELECTRICAL ENGINEER — DATE

08-29-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MERVIN D. FULLENWIDER No. E20211 Exp. 03-31-17 ELECTRICAL — STATE OF CALIFORNIA

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

## LEGEND AND NOTES:

1 - THE CONTRACTOR MUST VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING MATERIAL.

[2] - POLICE PANEL NOT REQUIRED.

[3] - EIA 19" RACK MOUNT SHELF REQUIRED FOR EQUIPMENT.

[4] - 8 PAIR TERMINAL BLOCK.

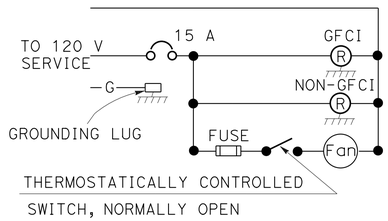
[5] - VDSL SWITCH CABLE AND VDSL CPE CONNECTION POINT.

[6] - EIA 19" RACK RAIL.

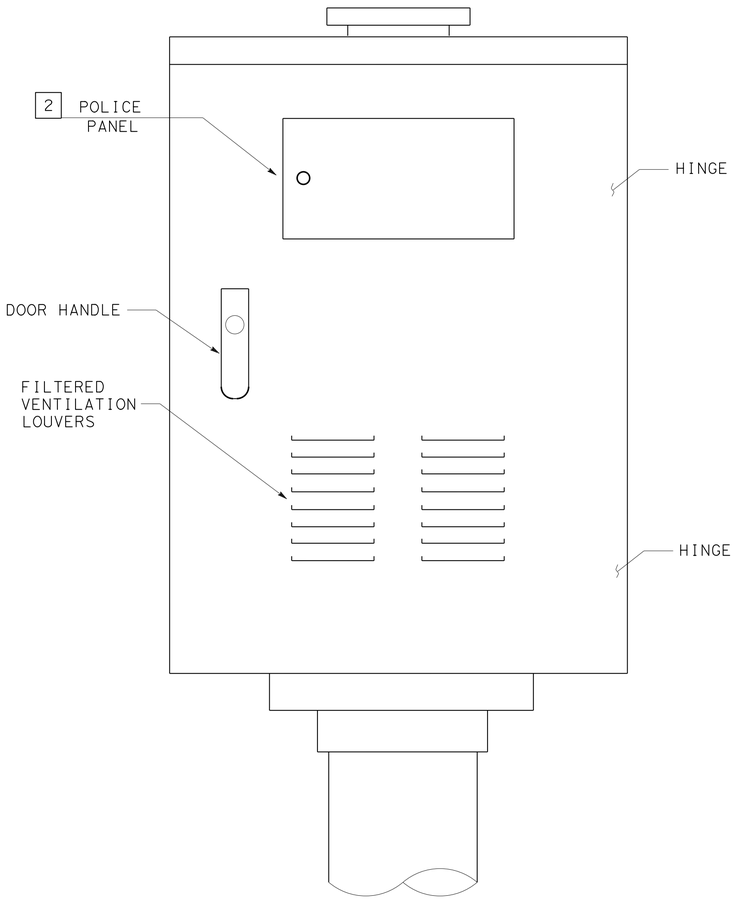
[7] - BACK MOUNTING BOARD (½" THICK AND GRADE ACX PLYWOOD).

8 - INSTALL CB INSIDE THE JUNCTION BOX. THE CB MUST BE OPERATED EXTERNALLY WITHOUT OPENING THE JUNCTION BOX COVER. SEE WIRING DIAGRAM ON THIS SHEET.

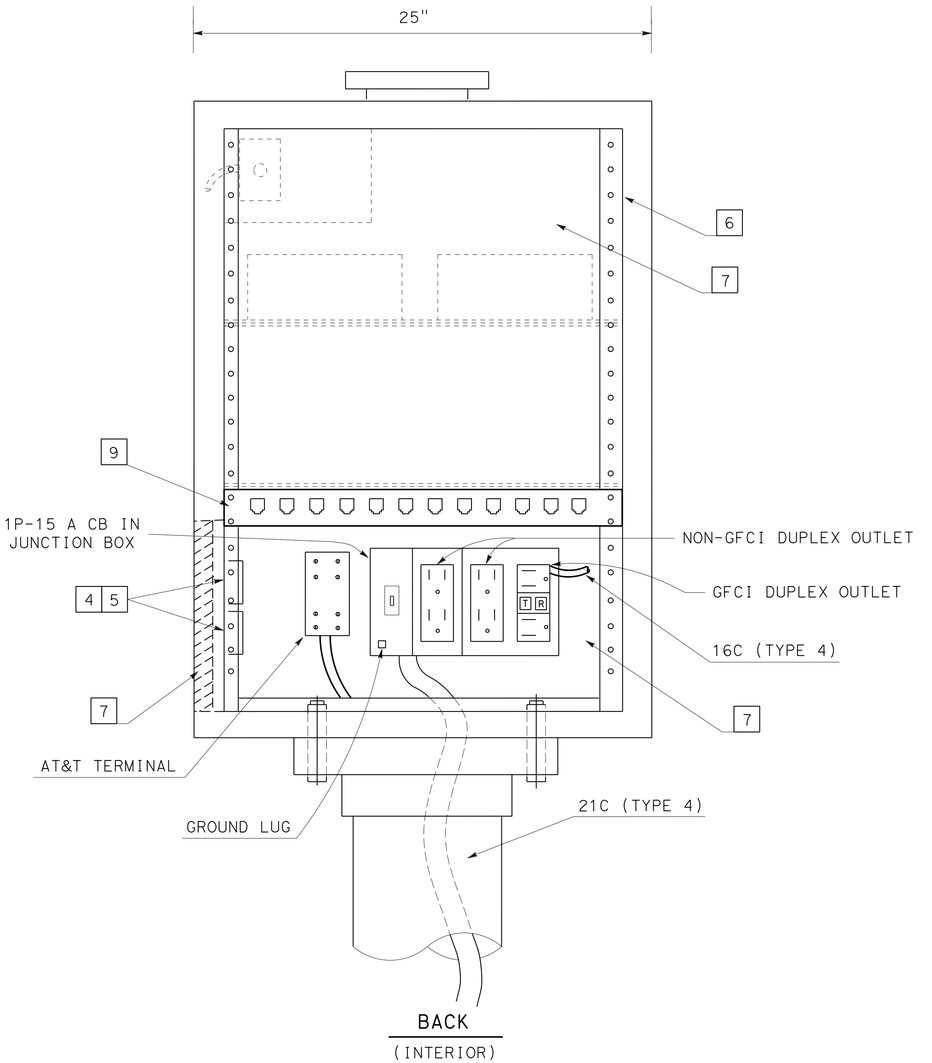
[9] - 110 PUNCH DOWN PANEL.



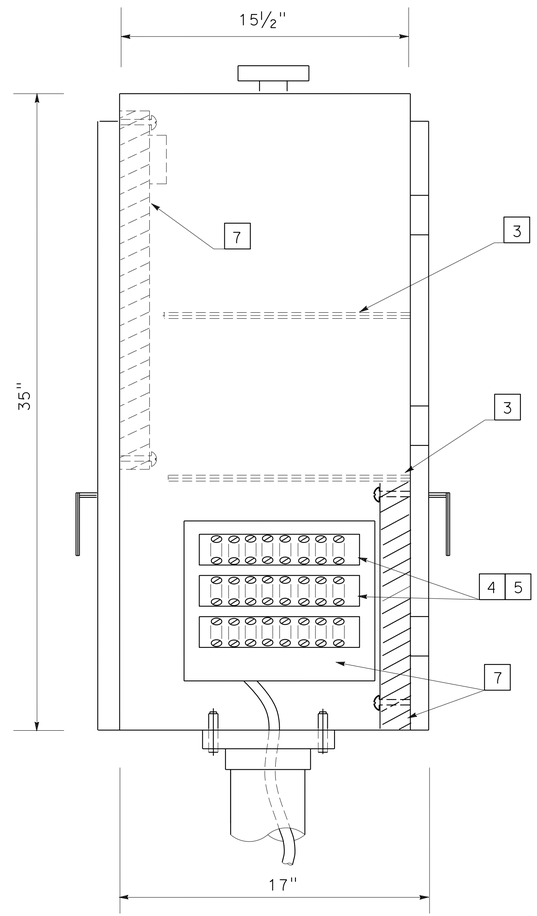

### WIRING DIAGRAM




BACK




BACK
(INTERIOR)




LEFT SIDE

## MODIFIED TYPE G CABINET

(TDC)

## ELECTRICAL DETAILS

NO SCALE

**E-16**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC ELECTRICAL

| CALCULATED-DESIGNED BY | CHECKED BY | FUNCTIONAL SUPERVISOR | REVISED BY | DATE REVISED |
|---|---|---|---|---|
| ANTONIO A. RODRIGUEZ | MERVIN FULLENWIDER | RAJPREET SINGH | | |

LAST REVISION 08-09-16
DATE PLOTTED => 30-AUG-2016
TIME PLOTTED => 15:55

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
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| 11 | SD | 67 | R4.6/19.0 | 59 | 113 |

MFullenwider 08-02-16
REGISTERED ELECTRICAL ENGINEER — DATE

08-29-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — MERVIN D. FULLENWIDER No. E20211 Exp. 03-31-17 ELECTRICAL — STATE OF CALIFORNIA

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

NOTE:

1. ITEMS SHOWN ON THESE TABLES ARE NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.

## CLOSED CIRCUIT TELEVISION SYSTEM

| ETHERNET EXTENDER (EA) | VIDEO ENCODER (EA) | SWITCH (EA) | POLES (EA) | PULL BOX (EA) | CONDUCTORS (FT) | | | | | CONDUIT (FT) | | | CABINET (EA) | | | 110 PUNCH DOWN (EA) | CABINET FOUNDATION (EA) | CAMERA (EA) | SHELF (EA) | SERIAL TO ETHERNET CONVERSION UNIT (EA) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | TYPE 35 | No. 5 | #6 | #8 | #10 | OCC | CAMERA CABLE | 1" | 2" | 3" | TYPE 334 | TYPE G | TYPE III-BF | | | | | |
| 4 | 8 | 2 | 5 | 17 | 55 | 994 | 214 | 687 | 588 | 20 | 776 | 230 | 5 | 2 | 1 | 7 | 8 | 8 | 15 | 2 |

## CHANGEABLE MESSAGE SIGN SYSTEM

| ETHERNET EXTENDER (EA) | SWITCH (EA) | PULL BOX (EA) | | CONDUCTORS (FT) | | | CONDUIT (FT) | | | CABINET (EA) | | | 110 PUNCH DOWN (EA) | CABINET FOUNDATION (EA) | POWERSTRIP (EA) | SHELF (EA) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | No. 5 | No. 5(T) | #8 | #10 | OCC | 1" | 2" | 3" | TYPE 334 | TYPE III-BF | TYPE G | | | | |
| 10 | 2 | 48 | 2 | 19,336 | 48 | 7314 | 25 | 6931 | 117 | 3 | 2 | 2 | 5 | 7 | 3 | 9 |

## ELECTRICAL QUANTITIES

E-17

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC ELECTRICAL

FUNCTIONAL SUPERVISOR: RAJPREET SINGH
CALCULATED-DESIGNED BY: ANTONIO A. RODRIGUEZ
CHECKED BY: MERVIN FULLENWIDER
REVISED BY
DATE REVISED

LAST REVISION 07-29-16
DATE PLOTTED => 30-AUG-2016
TIME PLOTTED => 15:55

## M

| | |
|---|---|
| Maint | MAINTENANCE |
| Max | MAXIMUM |
| MB | METAL BEAM |
| MBB | METAL BEAM BARRIER |
| MBGR | METAL BEAM GUARD RAILING |
| Med | MEDIAN |
| MGS | MIDWEST GUARDRAIL SYSTEM |
| MH | MANHOLE |
| Min | MINIMUM |
| Misc | MISCELLANEOUS |
| Misc I & S | MISCELLANEOUS IRON AND STEEL |
| Mkr | MARKER |
| Mod | MODIFIED,<br>MODIFY |
| Mon | MONUMENT |
| MP | METAL PLATE |
| MPGR | METAL PLATE GUARD RAILING |
| MR | MOVEMENT RATING |
| MSE | MECHANICALLY STABILIZED EMBANKMENT |
| Mt | MOUNTAIN, MOUNT |
| Mtl | MATERIAL |
| MVP | MAINTENANCE VEHICLE PULLOUT |

## N

| | |
|---|---|
| N | NORTH |
| NB | NORTHBOUND |
| No. | NUMBER (MUST HAVE PERIOD) |
| Nos. | NUMBERS (MUST HAVE PERIOD) |
| NPS | NOMINAL PIPE SIZE |
| NS | NEAR SIDE |
| NSP | NEW STANDARD PLAN |
| NTS | NOT TO SCALE |

## O

| | |
|---|---|
| Oblr | OBLITERATE |
| OC | OVERCROSSING |
| OD | OUTSIDE DIAMETER |
| OF | OUTSIDE FACE |
| OG | ORIGINAL GROUND |
| OGAC | OPEN GRADED ASPHALT CONCRETE |
| OGFC | OPEN GRADED FRICTION COURSE |
| OH | OVERHEAD |
| OHWM | ORDINARY HIGH WATER MARK |
| O-O | OUT TO OUT |
| Opp | OPPOSITE |
| OSD | OVERSIDE DRAIN |

## P

| | |
|---|---|
| P | PAGE |
| PAP | PERFORATED ALUMINUM PIPE |
| PB | PULL BOX |
| PC | POINT OF CURVATURE,<br>PRECAST |
| PCC | POINT OF COMPOUND CURVE,<br>PORTLAND CEMENT CONCRETE |
| PCMS | PORTABLE CHANGEABLE MESSAGE SIGN |
| PCP | PERFORATED CONCRETE PIPE,<br>PRESTRESSED CONCRETE PIPE |
| PCVC | POINT OF COMPOUND VERTICAL CURVE |
| PEC | PERMIT TO ENTER AND CONSTRUCT |
| Ped | PEDESTRIAN |
| Ped OC | PEDESTRIAN OVERCROSSING |
| Ped UC | PEDESTRIAN UNDERCROSSING |
| Perm Mtl | PERMEABLE MATERIAL |

## P continued

| | |
|---|---|
| PG | PROFILE GRADE |
| PI | POINT OF INTERSECTION |
| PJP | PARTIAL JOINT PENETRATION |
| Pkwy | PARKWAY |
| ℄,PL | PLATE |
| P/L | PROPERTY LINE |
| PM | POST MILE,<br>TIME FROM NOON TO MIDNIGHT |
| PN | PAVING NOTCH |
| POC | POINT OF HORIZONTAL CURVE |
| POT | POINT OF TANGENT |
| POVC | POINT OF VERTICAL CURVE |
| PP | PIPE PILE,<br>PLASTIC PIPE,<br>POWER POLE |
| PPL | PREFORMED PERMEABLE LINER |
| PPP | PERFORATED PLASTIC PIPE |
| PRC | POINT OF REVERSE CURVE |
| PRF | PAVEMENT REINFORCING FABRIC |
| PRVC | POINT OF REVERSE VERTICAL CURVE |
| PS&E | PLANS, SPECIFICATIONS AND ESTIMATES |
| PS, P/S | PRESTRESSED |
| PSP | PERFORATED STEEL PIPE |
| PT | POINT OF TANGENCY |
| PVC | POLYVINYL CHLORIDE |
| Pvmt | PAVEMENT |

## Q

| | |
|---|---|
| Qty | QUANTITY |

## R

| | |
|---|---|
| R | RADIUS |
| R & D | REMOVE AND DISPOSE |
| R & S | REMOVE AND SALVAGE |
| R/C | RATE OF CHANGE |
| RCA | REINFORCED CONCRETE ARCH |
| RCB | REINFORCED CONCRETE BOX |
| RCP | REINFORCED CONCRETE PIPE |
| RCPA | REINFORCED CONCRETE PIPE ARCH |
| Rd | ROAD |
| Reinf | REINFORCED,<br>REINFORCEMENT,<br>REINFORCING |
| Rel | RELOCATE |
| Repl | REPLACEMENT |
| Ret | RETAINING |
| Rev | REVISED, REVISION |
| Rdwy | ROADWAY |
| RHMA | RUBBERIZED HOT MIX ASPHALT |
| Riv | RIVER |
| RM | ROAD-MIXED |
| RP | RADIUS POINT,<br>REFERENCE POINT |
| RR | RAILROAD |
| RSP | ROCK SLOPE PROTECTION,<br>REVISED STANDARD PLAN |
| Rt | RIGHT |
| Rte | ROUTE |
| RW | REDWOOD,<br>RETAINING WALL |
| R/W | RIGHT OF WAY |
| Rwy | RAILWAY |

## S

| | |
|---|---|
| S | SOUTH,<br>SUPPLEMENT |
| SAE | STRUCTURE APPROACH EMBANKMENT |
| Salv | SALVAGE |
| SAPP | STRUCTURAL ALUMINUM PLATE PIPE |
| SB | SOUTHBOUND |
| SC | SAND CUSHION |
| SCSP | SLOTTED CORRUGATED STEEL PIPE |
| SD | STORM DRAIN |
| Sec | SECOND,<br>SECTION |
| Sep | SEPARATION |
| SG | SUBGRADE |
| Shld | SHOULDER |
| Sht | SHEET |
| Sim | SIMILAR |
| ℄ | STATION LINE |
| SM | SELECTED MATERIAL |
| Spec | SPECIAL,<br>SPECIFICATIONS |
| SPP | SLOTTED PLASTIC PIPE |
| SS | SLOPE STAKE |
| SSBM | STRAP AND SADDLE BRACKET METHOD |
| SSD | STRUCTURAL SECTION DRAIN |
| SSPA | STRUCTURAL STEEL PLATE ARCH |
| SSPP | STRUCTURAL STEEL PLATE PIPE |
| SSPPA | STRUCTURAL STEEL PLATE PIPE ARCH |
| SSRP | STEEL SPIRAL RIB PIPE |
| St | STREET |
| Sta | STATION |
| STBB | SINGLE THRIE BEAM BARRIER |
| Std | STANDARD |
| Str | STRUCTURE |
| Surf | SURFACING |
| SW | SIDEWALK,<br>SOUND WALL |
| Swr | SEWER |
| Sym | SYMMETRICAL |
| S4S | SURFACE 4 SIDES |

## T

| | |
|---|---|
| T | SEMI-TANGENT |
| Tan | TANGENT |
| TBB | THRIE BEAM BARRIER |
| Tbr | TIMBER |
| TC | TOP OF CURB |
| TCB | TRAFFIC CONTROL BOX |
| TCE | TEMPORARY CONSTRUCTION EASEMENT |
| Tel | TELEPHONE |
| Temp | TEMPORARY |
| TG | TOP OF GRADE |
| Tot | TOTAL |
| TP | TELEPHONE POLE |
| TPB | TREATED PERMEABLE BASE |
| TPM | TREATED PERMEABLE MATERIAL |
| Trans | TRANSITION |

## T continued

| | |
|---|---|
| TS | TRANSVERSE,<br>TRAFFIC SIGNAL,<br>TUBULAR STEEL |
| Typ | TYPICAL |

## U

| | |
|---|---|
| UC | UNDERCROSSING |
| UD | UNDERDRAIN |
| UG | UNDERGROUND |
| UON | UNLESS OTHERWISE NOTED |
| UP | UNDERPASS |

## V

| | |
|---|---|
| V | VALVE,<br>DESIGN SPEED |
| Var | VARIABLE,<br>VARIES |
| VC | VERTICAL CURVE |
| VCP | VITRIFIED CLAY PIPE |
| Vert | VERTICAL |
| Via | VIADUCT |
| Vol | VOLUME |

## W

| | |
|---|---|
| W | WEST,<br>WIDTH |
| WB | WESTBOUND |
| WH | WEEP HOLE |
| WM | WIRE MESH |
| WS | WATER SURFACE |
| WSP | WELDED STEEL PIPE |
| Wt | WEIGHT |
| WV | WATER VALVE |
| WW | WINGWALL |
| WWLOL | WINGWALL LAYOUT LINE |

## X

| | |
|---|---|
| X Sec | CROSS SECTION |
| Xing | CROSSING |

## Y

| | |
|---|---|
| Yr | YEAR |
| Yrs | YEARS |

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 60 | 113 |

Grace M. Tsushima
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

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

TO ACCOMPANY PLANS DATED 08-29-16

### UNIT OF MEASUREMENT SYMBOLS:

Some of the symbols used in the project plan quantity tables and in the Bid Item List are:

TABLE A

| SYMBOL USED | DEFINITIONS |
|---|---|
| ACRE | ACRE |
| CF | CUBIC FOOT |
| CY | CUBIC YARD |
| EA | EACH |
| GAL | GALLON |
| LB | POUND |
| LF | LINEAR FOOT |
| SQFT | SQUARE FOOT |
| SQYD | SQUARE YARD |
| STA | 100 FEET |
| TAB | TABLET |
| TON | 2,000 POUNDS |

Some of the symbols used in the plans other than in the project plan quantity tables are:

TABLE B

| SYMBOL USED | DEFINITIONS |
|---|---|
| ksi | KIPS PER SQUARE INCH |
| ksf | KIPS PER SQUARE FOOT |
| psi | POUNDS PER SQUARE INCH |
| psf | POUNDS PER SQUARE FOOT |
| $lb/ft^3$, pcf | POUNDS PER CUBIC FOOT |
| tsf | TONS PER SQUARE FOOT |
| mph, MPH * | MILES PER HOUR |
| ø | NOMINAL DIAMETER |
| oz | OUNCE |
| lb | POUND |
| kip | 1,000 POUNDS |
| cal | CALORIE |
| ft | FOOT OR FEET |
| gal | GALLON |

* For use on a sign panel only

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# ABBREVIATIONS (SHEET 2 OF 2)

NO SCALE

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

**REVISED STANDARD PLAN RSP A10B**

2010 REVISED STANDARD PLAN RSP A10B

6-7-13

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 61 | 113 |

Roberta L. McLaughlin
REGISTERED CIVIL ENGINEER

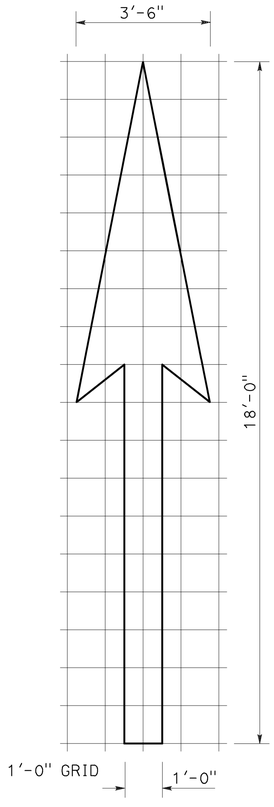
April 20, 2012
PLANS APPROVAL DATE

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

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

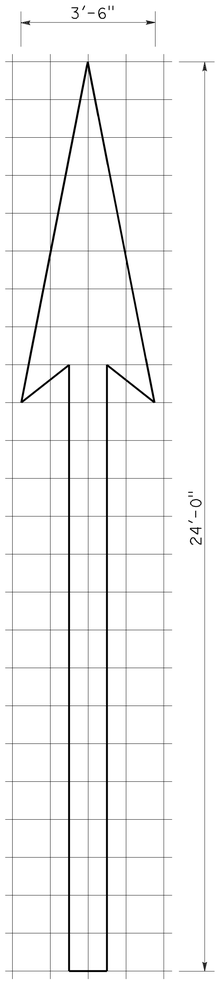
TO ACCOMPANY PLANS DATED 08-29-16

**2010 REVISED STANDARD PLAN RSP A24A**



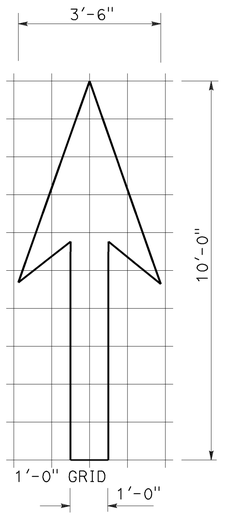

A=25 ft²

## TYPE I 18'-0" ARROW



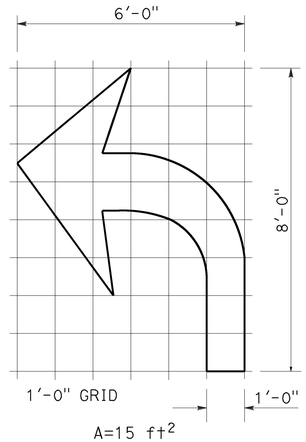

A=31 ft²

## TYPE I 24'-0" ARROW




A=14 ft²

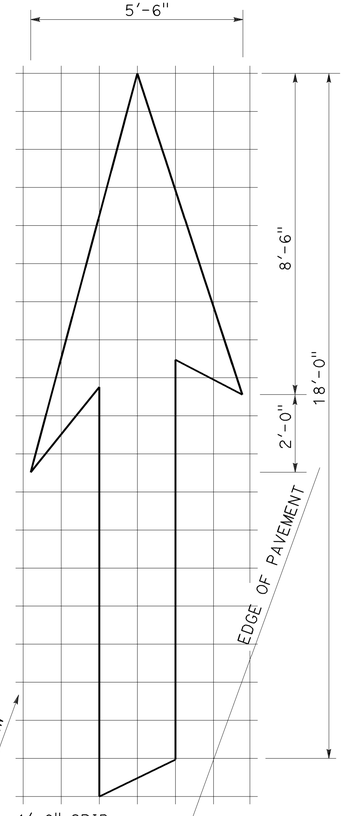
## TYPE I 10'-0" ARROW




A=15 ft²

## TYPE IV (L) ARROW

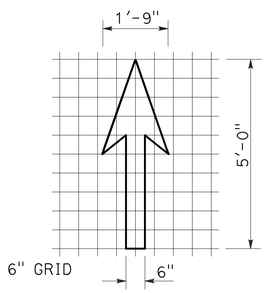
(For Type IV (R) arrow, use mirror image)




A=42 ft²

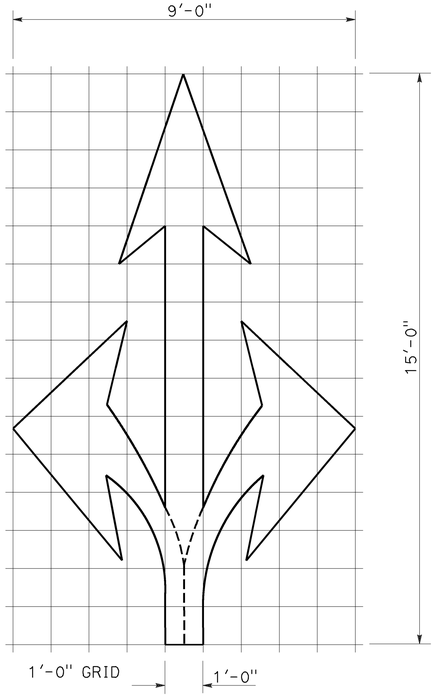
## TYPE VI ARROW

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



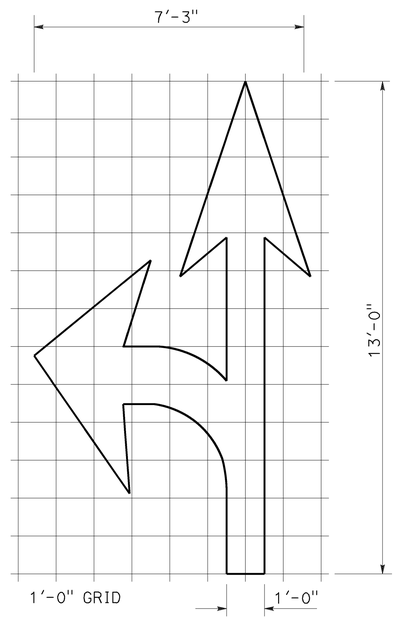

A=3.5 ft²

## BIKE LANE ARROW




A=36 ft²

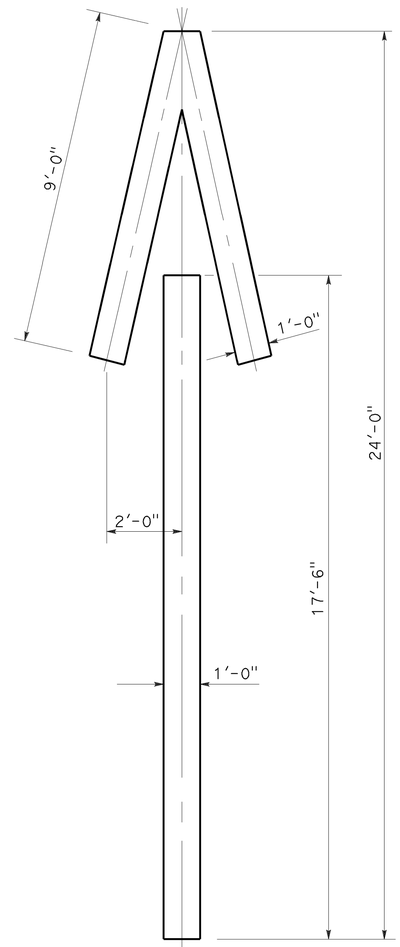
## TYPE VIII ARROW




A=27 ft²

## TYPE VII (L) ARROW

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




A=33 ft²

## TYPE V ARROW

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

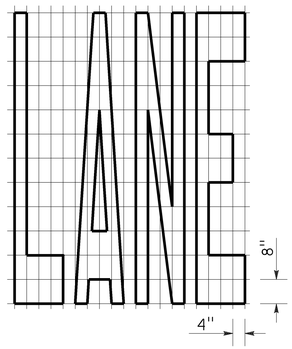
# PAVEMENT MARKINGS ARROWS

NO SCALE

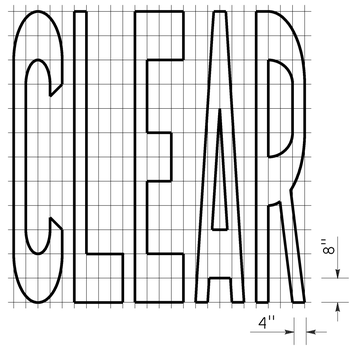
RSP A24A DATED APRIL 20, 2012 SUPERSEDES STANDARD PLAN A24A DATED MAY 20, 2011 - PAGE 13 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A24A**

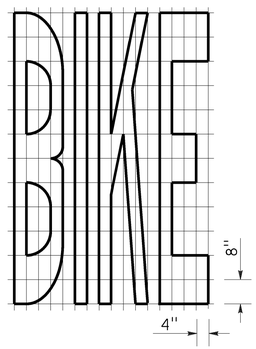
3-14-12



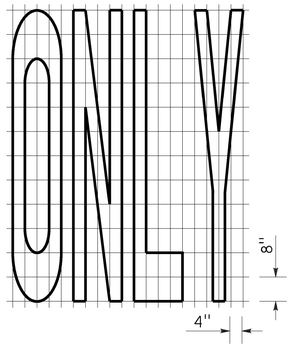

A=24 ft²




A=27 ft²




A=21 ft²

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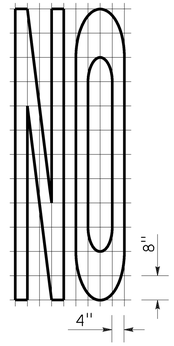
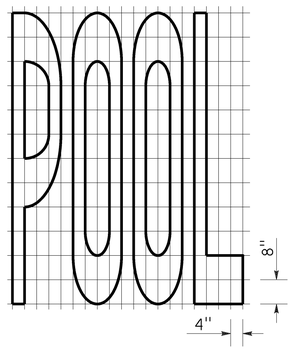
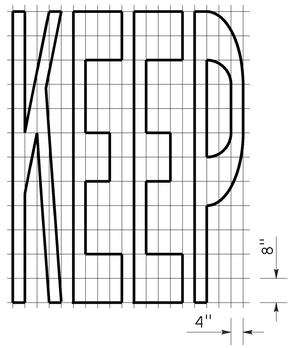


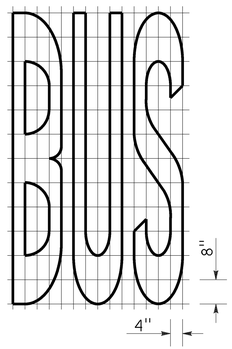

A=14 ft²




A=23 ft²




A=24 ft²

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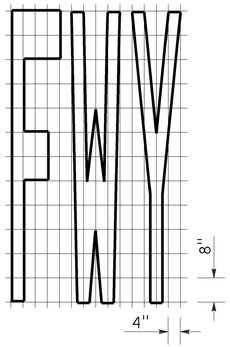
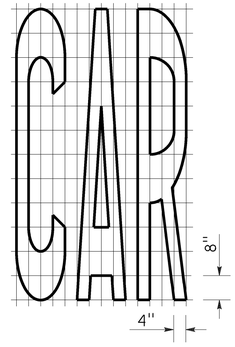



A=16 ft²




A=17 ft²

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 62 | 113 |

Roberta L. McLaughlin
REGISTERED CIVIL ENGINEER

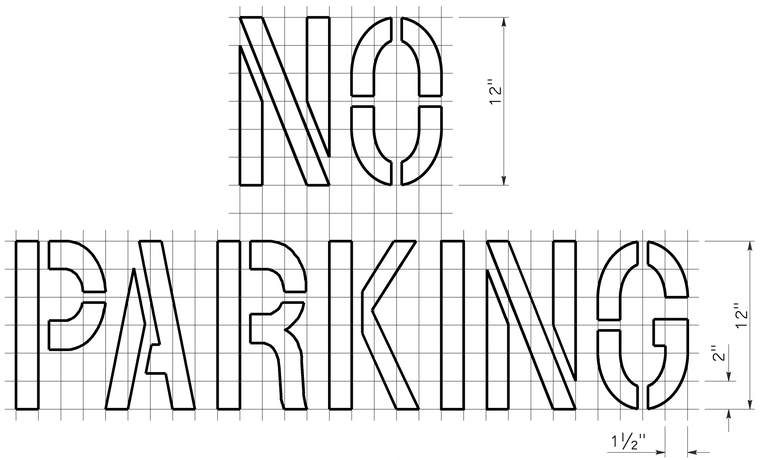
July 20, 2012
PLANS APPROVAL DATE

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

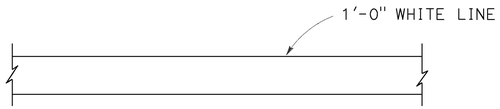
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 08-29-16

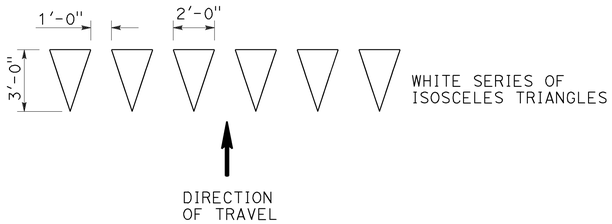
| WORD MARKINGS | | | |
|---|---|---|---|
| ITEM | ft² | ITEM | ft² |
| LANE | 24 | NO | 14 |
| POOL | 23 | BIKE | 21 |
| CAR | 17 | BUS | 20 |
| CLEAR | 27 | ONLY | 22 |
| KEEP | 24 | FWY | 16 |




A=2 ft²
See Notes 6 and 7




LIMIT LINE (STOP LINE)




YIELD LINE

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# PAVEMENT MARKINGS
# WORDS, LIMIT AND YIELD LINES

NO SCALE

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

## REVISED STANDARD PLAN RSP A24E

2010 REVISED STANDARD PLAN RSP A24E

6-12-12

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 63 | 113 |

Atifa Ferouz
REGISTERED CIVIL ENGINEER

July 15, 2016
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Atifa Ferouz
No. C80402
Exp. 3-31-17
CIVIL
STATE OF CALIFORNIA

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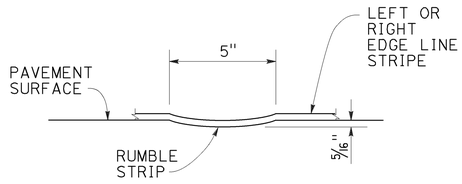
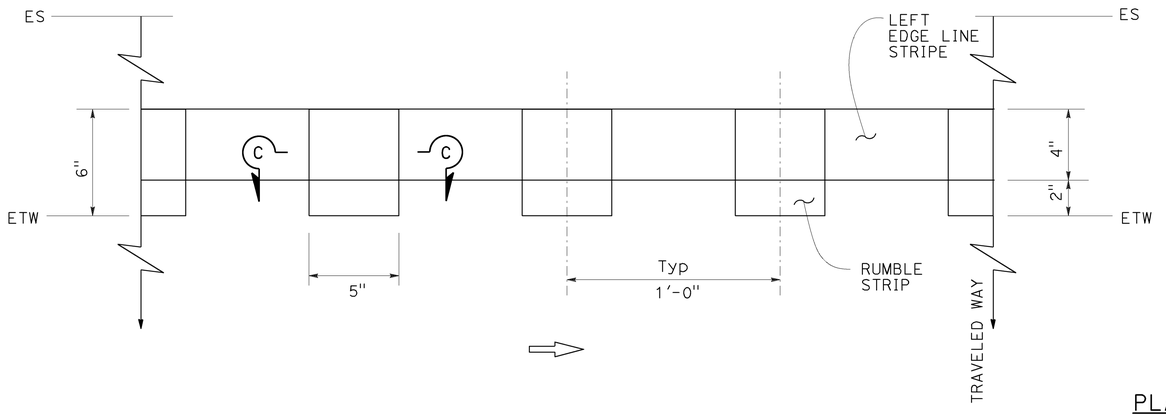
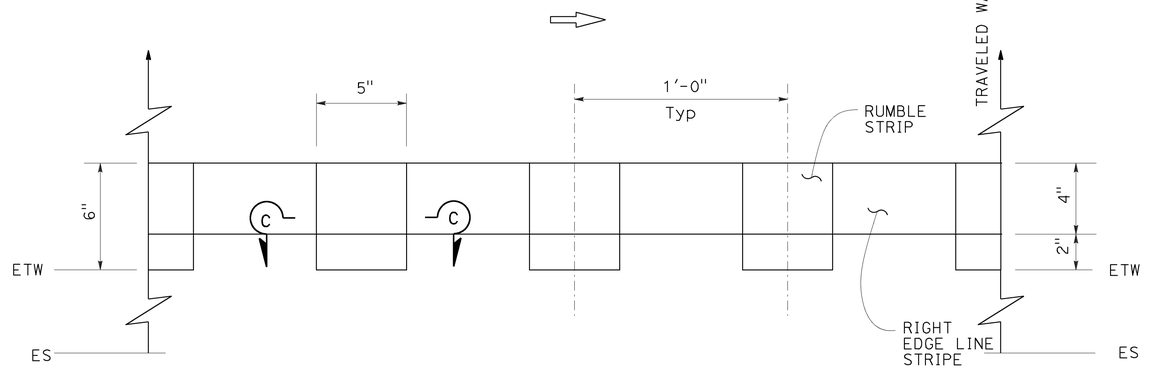



SECTION C-C




PLAN

EDGE LINE RUMBLE STRIP PLACEMENT
LEFT OF DIRECTION OF TRAVEL




EDGE LINE RUMBLE STRIP PLACEMENT
RIGHT OF DIRECTION OF TRAVEL

TYPICAL EDGE LINE RUMBLE STRIP PLACEMENT

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# EDGE LINE RUMBLE STRIP DETAILS GROUND-IN INDENTATIONS

NO SCALE

RSP A40C DATED JULY 15, 2016 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A40C**

**2010 REVISED STANDARD PLAN RSP A40C**

5-23-16

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 64 | 113 |

Atifa Ferouz
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July 15, 2016
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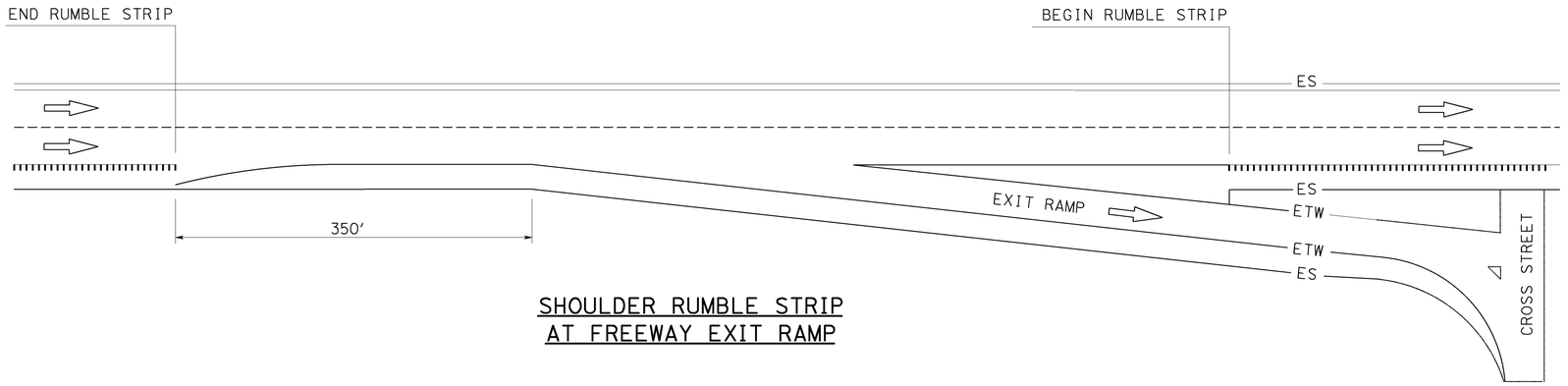
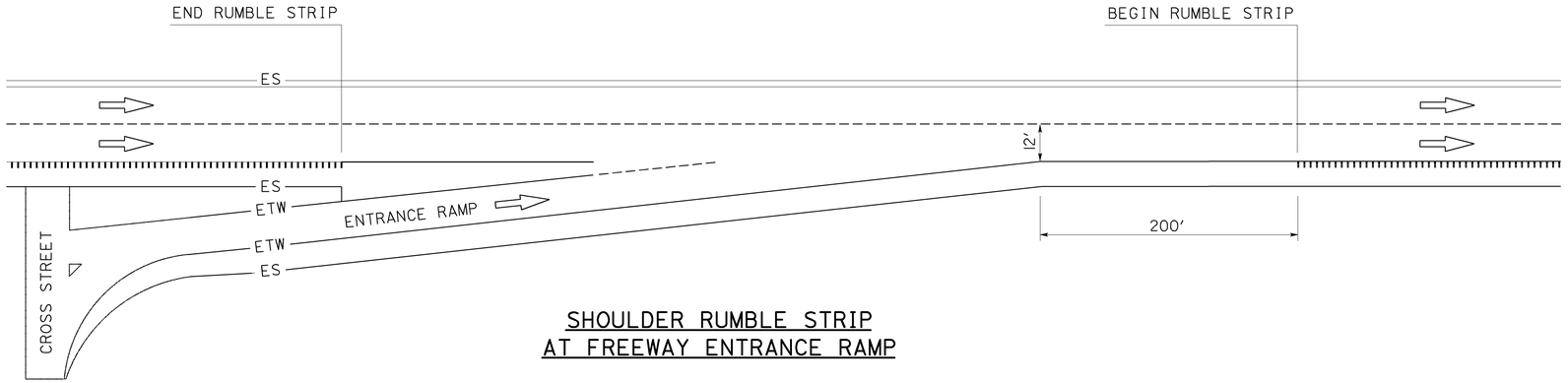
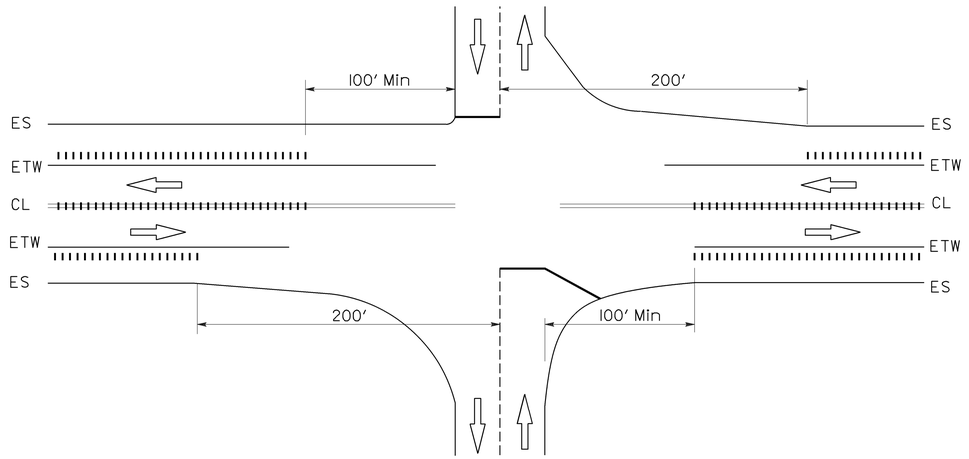
TO ACCOMPANY PLANS DATED 08-29-16




SHOULDER RUMBLE STRIP
AT FREEWAY EXIT RAMP




SHOULDER RUMBLE STRIP
AT FREEWAY ENTRANCE RAMP




CENTERLINE AND SHOULDER RUMBLE STRIP
AT GRADE INTERSECTION

## LEGEND

RUMBLE STRIP (GROUND-IN)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# RUMBLE STRIP PLACEMENT AT FREEWAY EXIT RAMPS, FREEWAY ENTRANCE RAMPS, AND INTERSECTIONS

NO SCALE

RSP A40E DATED JULY 15, 2016 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A40E**

**2010 REVISED STANDARD PLAN RSP A40E**

5-23-16

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
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Atifa Ferouz
REGISTERED CIVIL ENGINEER

July 15, 2016
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
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No. C80402
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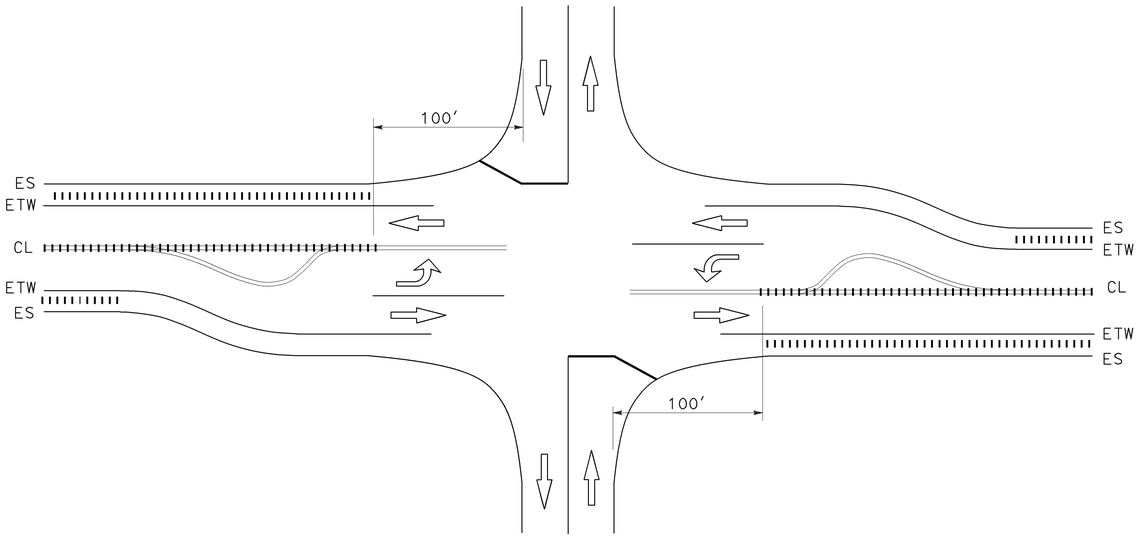
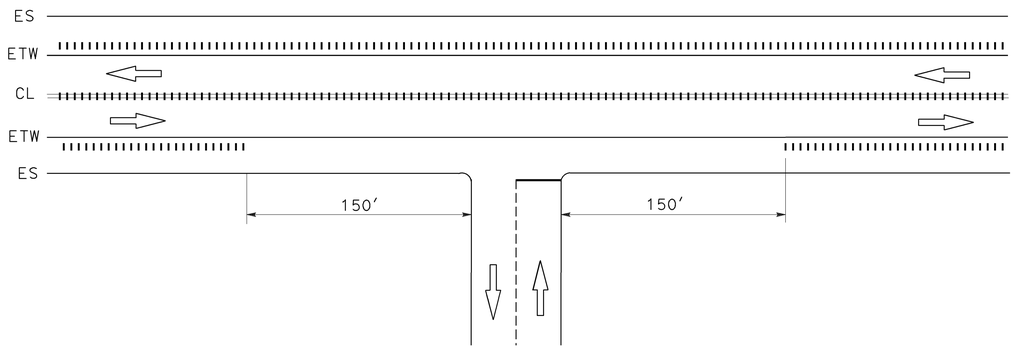



CENTERLINE AND SHOULDER RUMBLE STRIPS
AT INTERSECTION WITH LEFT TURN POCKETS

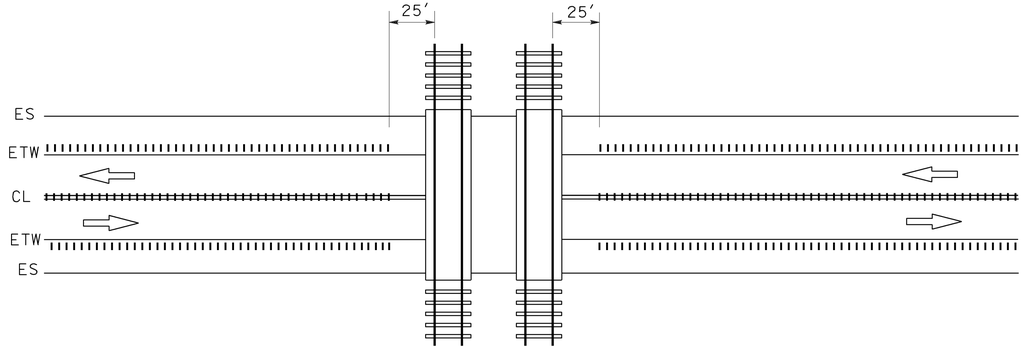



CENTERLINE AND SHOULDER RUMBLE STRIPS
AT DRIVEWAY/PRIVATE ROAD APPROACH

LEGEND

RUMBLE STRIPS (GROUND-IN)

RAILROAD TRACKS




CENTERLINE AND SHOULDER RUMBLE STRIPS
AT RAILROAD CROSSING

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# RUMBLE STRIP PLACEMENT AT INTERSECTIONS WITH LEFT TURN POCKETS, RAILROAD CROSSINGS, PRIVATE ROADS, AND MAJOR DRIVEWAYS

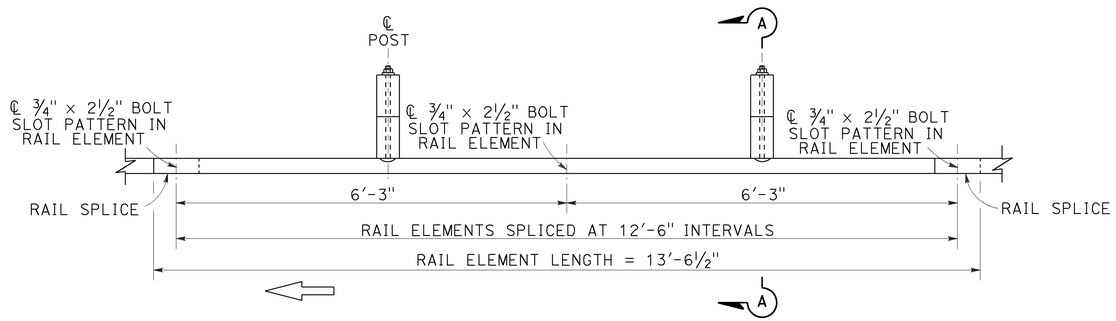
NO SCALE

RSP A40F DATED JULY 15, 2016 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

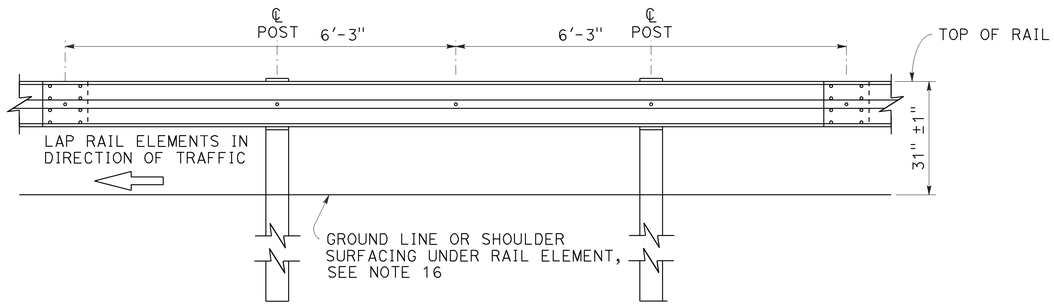
**REVISED STANDARD PLAN RSP A40F**

**2010 REVISED STANDARD PLAN RSP A40F**

5-23-16

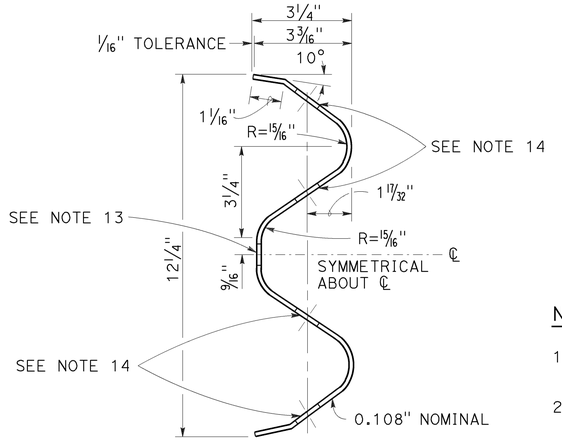



PLAN

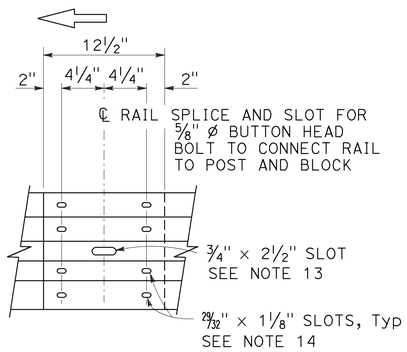



ELEVATION

# MIDWEST GUARDRAIL SYSTEM WITH WOOD POST AND BLOCKS




SECTION THRU RAIL ELEMENT



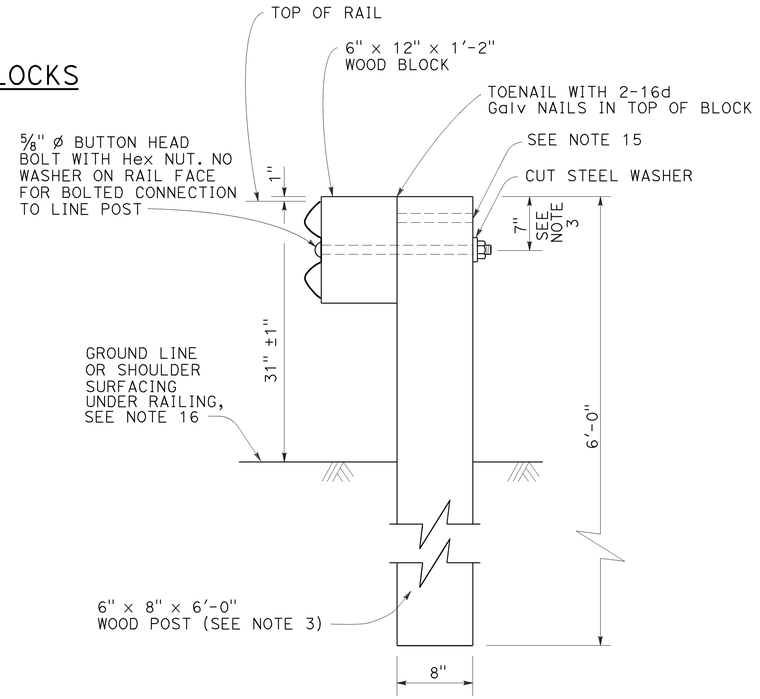

ELEVATION

## RAIL ELEMENT SPLICE DETAIL

a) Connect the over lapped end of the rail elements with ⅝" ø × 1⅜" button head oval shoulder splice bolts inserted into the 29/32" × 1⅛" slots and bolted together with ⅝" ø recessed hex nuts. Recess of hex nut points toward rail element. A total of 8 bolts and nuts are to be used at each rail splice connection.

b) The ends of the rail elements are to be overlapped in the direction of traffic (see details).

c) Where end cap is to be attached to the end of a rail element, a total of 4 of the above described splice bolts and nuts are to be used.




SECTION A-A

TYPICAL WOOD LINE POST INSTALLATION

See Note 4

NOTES:

1. For details of steel post installations, see Revised Standard Plan RSP A77L2.
2. For details of standard hardware used to construct MGS, see Revised Standard Plan RSP A77M1.
3. For details of wood posts and wood blocks used to construct MGS, see Revised Standard Plan RSP A77N1.
4. For additional installation details, see Revised Standard Plan RSP A77N3.
5. MGS post spacing to be 6'-3" center to center, except as otherwise noted.
6. For MGS typical layouts, see the A77P, A77Q and A77R Series of Standard Plans.
7. If railing is connected to terminal system end treatment, use 31" height terminal system end treatment.
8. For MGS end anchor details, see Revised Standard Plans RSP A77S1 and RSP A77T2.
9. For details of MGS transition to bridge railing, see Revised Standard Plan RSP A77U4.
10. For additional details of MSG connection to bridge railing, see Revised Standard Plans RSP A77U1, RSP A77U2 and RSP A77V1.
11. For MGS connection details to abutments and walls, see Revised Standard Plan RSP A77U3.
12. For typical MGS delineation and dike positioning details, see Revised Standard Plan RSP A77N4.
13. Slotted hole for bolted connection of rail element to block and post. See "Section Thru Rail Element".
14. Slotted holes for splice bolts to overlap ends of rail element. See "Section Thru Rail Element".
15. Additional hole in uppermost portion of line post is for potential future adjustments of railing height. See Revised Standard Plan RSP A77N1.
16. Install posts in soil.

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 66 | 113 |

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Randell D. Hiatt — No. C50200 — Exp. 6-30-15 — CIVIL — STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 08-29-16

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# MIDWEST GUARDRAIL SYSTEM STANDARD RAILING SECTION (WOOD POST WITH WOOD BLOCK)

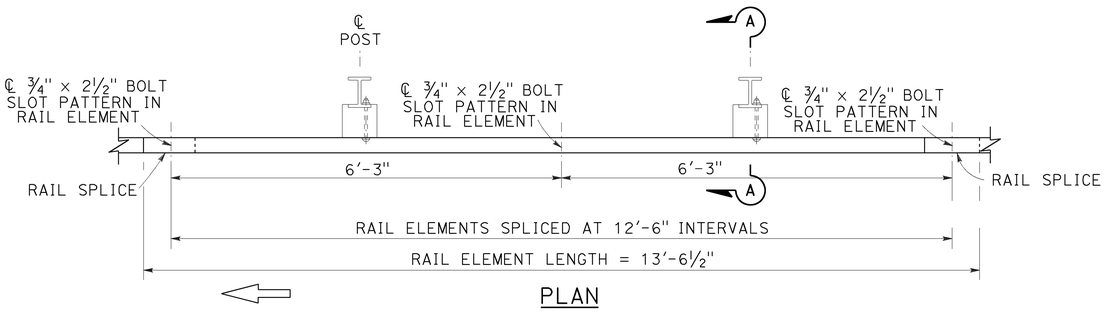
NO SCALE

RSP A77L1 DATED JULY 19, 2013 SUPPLEMENTS STANDARD PLANS BOOK DATED 2010.

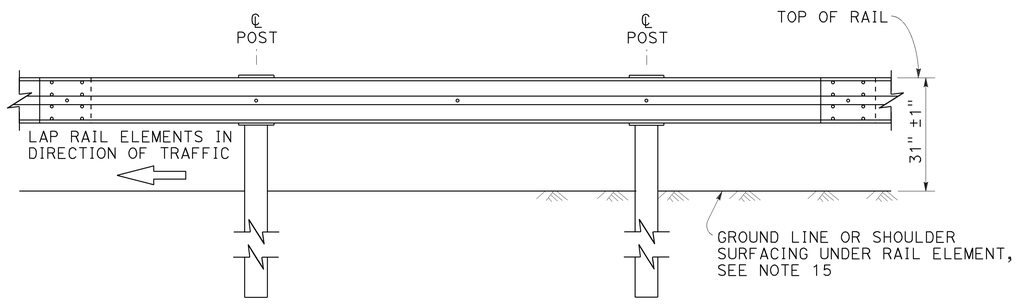
**REVISED STANDARD PLAN RSP A77L1**

2010 REVISED STANDARD PLAN RSP A77L1

7-3-13

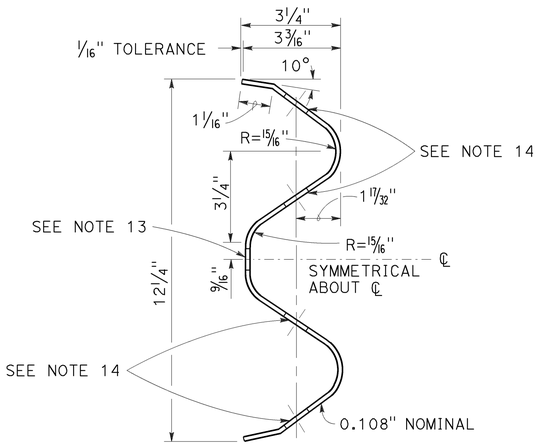



PLAN

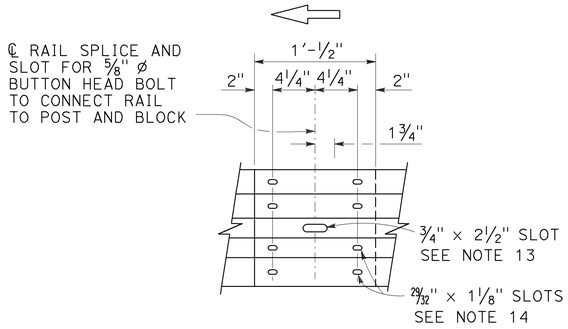



ELEVATION

# MIDWEST GUARDRAIL SYSTEM WITH STEEL POSTS AND NOTCHED WOOD OR NOTCHED RECYCLED PLASTIC BLOCKS




SECTION THRU RAIL ELEMENT



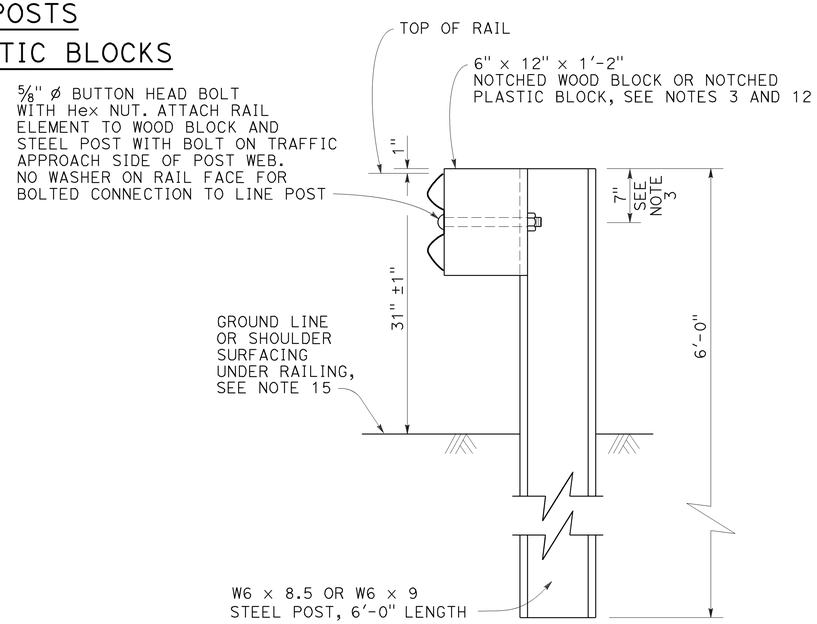

ELEVATION

## RAIL ELEMENT SPLICE DETAIL

a) Connect the over lapped end of the rail elements with ⅝" ø x 1⅜" button head oval shoulder splice bolts inserted into the $^{29}/_{32}$" x 1⅛" slots and bolted together with ⅝" ø recessed hex nuts. Recess of hex nut points toward rail element. A total of 8 bolts and nuts are to be used at each rail splice connection.

b) The ends of the rail elements are to be overlapped in the direction of traffic (see details).

c) Where end cap is to be attached to the end of a rail element, a total of 4 of the above described splice bolts and nuts are to be used.




SECTION A-A

TYPICAL STEEL LINE POST INSTALLATION

See Note 4

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 67 | 113 |

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Randell D. Hiatt No. C50200 Exp. 6-30-15 CIVIL — STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 08-29-16

## NOTES:

1. For details of wood post installations, see Revised Standard Plan RSP A77L1.
2. For details of standard hardware used to construct MGS, see Revised Standard Plan RSP A77M1.
3. For details of steel posts and notched wood blocks used to construct MGS, see Revised Standard Plan RSP A77N2.
4. For additional installation details, see Revised Standard Plan RSP A77N3.
5. MGS post spacing to be 6'-3" center to center, except as otherwise noted.
6. For MGS typical layouts, see the A77P, A77Q and A77R Series of Standard Plans.
7. If railing is connected to terminal system end treatment, use 31" height terminal system end treatment.
8. For MGS end anchor details, see Revised Standard Plans RSP A77S1 and RSP A77T2.
9. For details of MGS transition to bridge railing, see Revised Standard Plan RSP A77U4.
10. For additional details of MGS connection to bridge railings, see Revised Standard Plans RSP A77U1, RSP A77U2 and RSP A77V1.
11. For dike positioning and MGS delineation details, see Revised Standard Plan RSP A77N4.
12. Notched face of block faces steel post.
13. Slotted hole for bolted connection of rail element to block and post. See "Section Thru Rail Element".
14. Slotted holes for splice bolts to overlap ends of rail element. See "Section Thru Rail Element".
15. Install posts in soil.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# MIDWEST GUARDRAIL SYSTEM STANDARD RAILING SECTION (STEEL POST WITH NOTCHED WOOD OR NOTCHED RECYCLED PLASTIC BLOCK)

NO SCALE

RSP A77L2 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77L2**

2010 REVISED STANDARD PLAN RSP A77L2

7-3-13

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 68 | 113 |

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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Randell D. Hiatt
No. C50200
Exp. 6-30-15
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STATE OF CALIFORNIA

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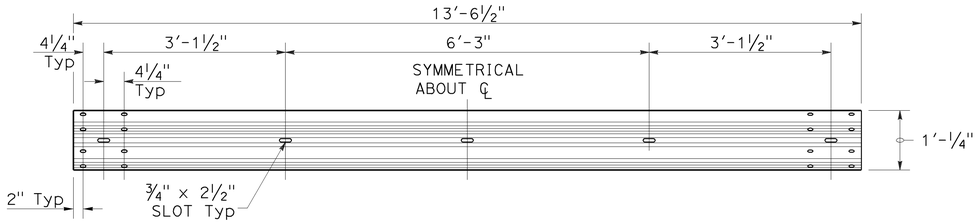
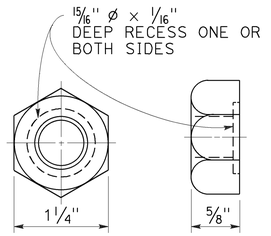
TO ACCOMPANY PLANS DATED 08-29-16



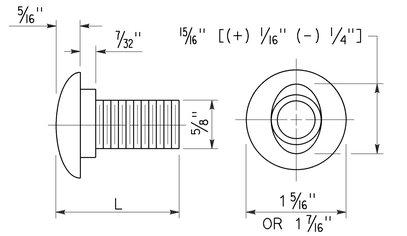

## TYPICAL RAIL ELEMENT

**NOTE:**

1. Slotted holes for splice bolts to overlap ends of rail element.




## ⅝" Ø RECESS NUT

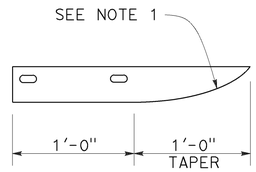



## ⅝" Ø BUTTON HEAD BOLT

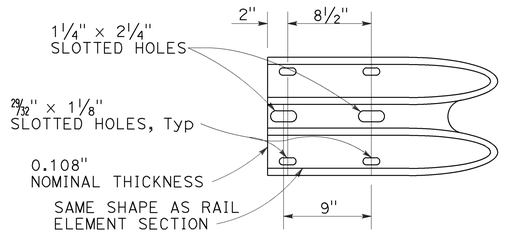
### BUTTON HEAD BOLT

| L | THREAD LENGTH |
|---|---|
| 1⅜" | FULL THREAD LENGTH |
| 2" | FULL THREAD LENGTH |
| 10" | 4" Min THREAD LENGTH |
| 18" | 4" Min THREAD LENGTH |
| 20" | 4" Min THREAD LENGTH |
| 22" | 4" Min THREAD LENGTH |
| 26" | 4" Min THREAD LENGTH |
| 36" | 4" Min THREAD LENGTH |
| ** 2¾" | 2" Min THREAD LENGTH |
| ** 19" | 4" Min THREAD LENGTH |

** For nested rail applications.




## PLAN




## ELEVATION

## END CAP (TYPE A)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# MIDWEST GUARDRAIL SYSTEM STANDARD HARDWARE

NO SCALE

RSP A77M1 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77M1**

2010 REVISED STANDARD PLAN RSP A77M1

7-3-13

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
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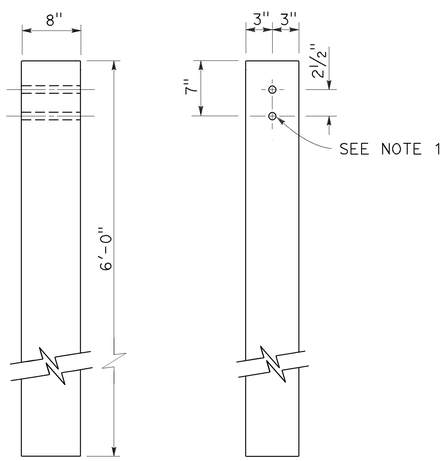
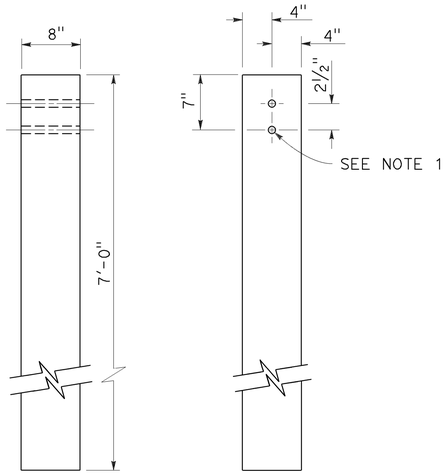
TO ACCOMPANY PLANS DATED 08-29-16



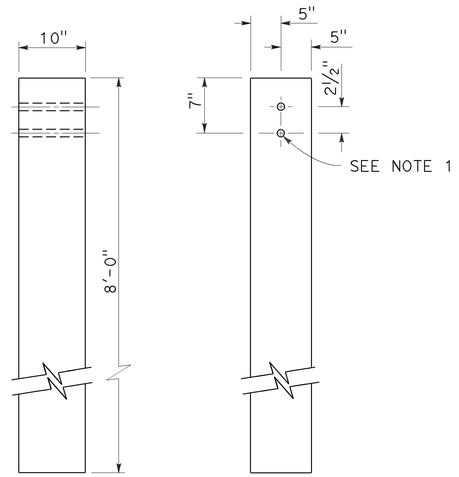

SIDE FRONT

6" x 8" WOOD POST
See Note 3




SIDE FRONT

8" x 8" WOOD POST
See Note 4

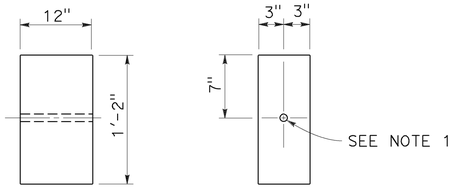



SIDE FRONT

10" x 10" WOOD POST
See Note 5

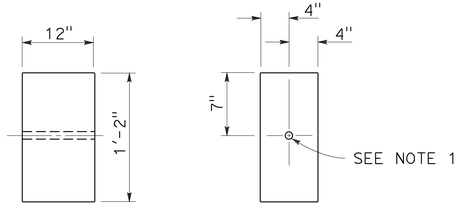
## NOTES:

1. All holes in wood posts and blocks shall be ¾" Dia ± 1/16".
2. Dimensions shown for wood post are nominal.
3. This post and block combination used for standard line post sections of MGS.
4. This post and 8" x 12" block combination used for line post sections of MGS on narrow roadways.
5. This post and 8" x 12" block combination is typically used where strengthened line post sections of MGS are warranted to shield fixed objects.
6. See Revised Standard Plan RSP A77L3 for use of 6" x 8" and 8" x 8" wood blocks.



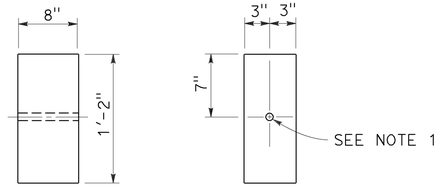

SIDE FRONT

6" x 12" WOOD BLOCK
See Note 3



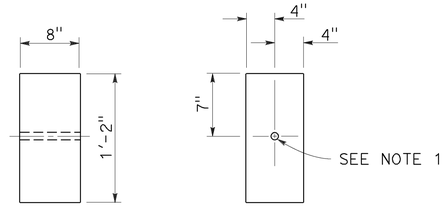

SIDE FRONT

8" x 12" WOOD BLOCK




SIDE FRONT

6" x 8" WOOD BLOCK
Only for use with metal beam guard rail see Note 6




SIDE FRONT

8" x 8" WOOD BLOCK
Only for use with metal beam guard rail see Note 6

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# MIDWEST GUARDRAIL SYSTEM WOOD POST AND WOOD BLOCK DETAILS

NO SCALE

RSP A77N1 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77N1**

**2010 REVISED STANDARD PLAN RSP A77N1**

7-3-13

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 70 | 113 |

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

November 15, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

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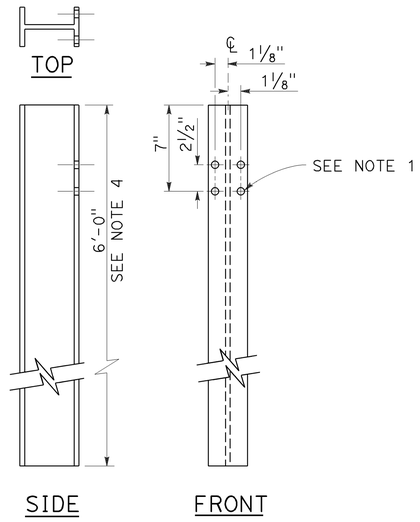
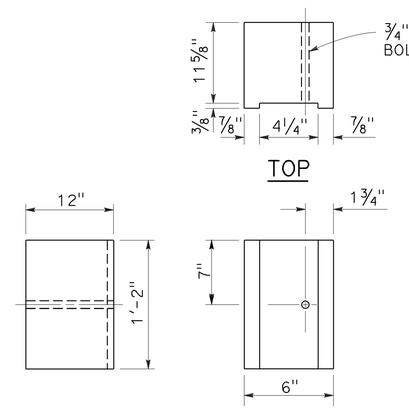
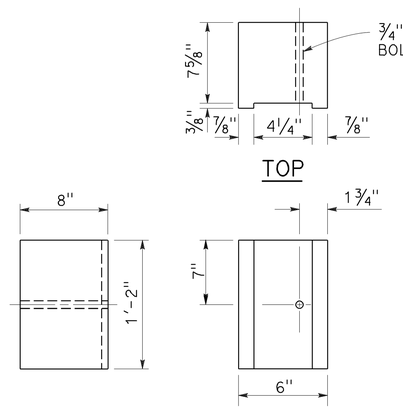
TO ACCOMPANY PLANS DATED 08-29-16




W6 x 9 OR W6 x 8.5
STEEL POST
See Note 4



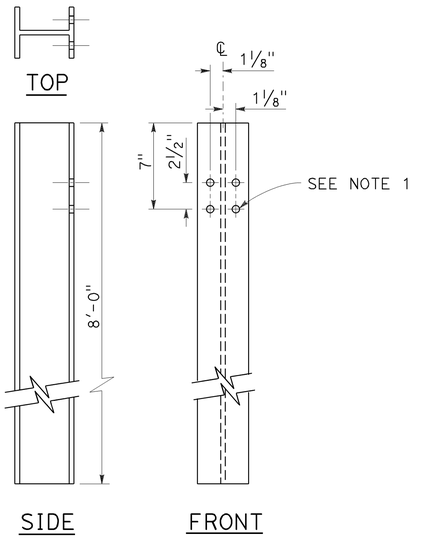

6" x 12"
NOTCHED WOOD BLOCK
See Notes 2 and 3



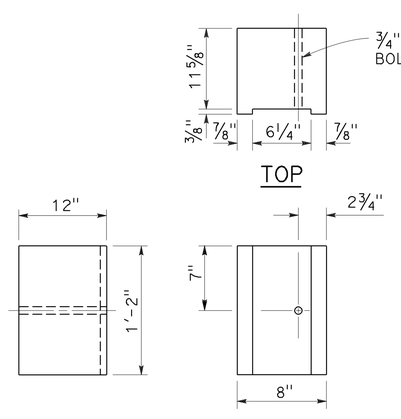

6" x 8"
NOTCHED WOOD BLOCK
Only for use with metal beam guard railing. See Note 5

NOTES:

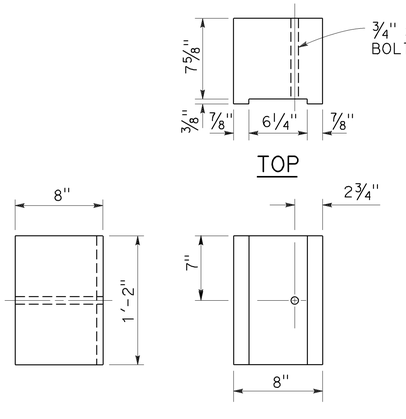
1. All holes in steel post shall be 13/16" Dia maximum.
2. Dimensions shown for wood block are nominal.
3. Notched face of block faces steel post.
4. 6'-0" length posts to be used for typical roadway installation. See Revised Standard Plan RSP A77N3.
5. See Revised Standard Plan RSP A77L3 for use of 6" x 8" and 8" x 8" notched wood blocks.
6. This post and 8" x 12" block combination to be used for line post sections of MGS on narrow roadways and where strengthened line post sections of MGS are warranted to shield fixed objects.




W6 x 15
STEEL POST
See Note 6




8" x 12"
NOTCHED WOOD BLOCK
See Notes 2 and 3




8" x 8"
NOTCHED WOOD BLOCK
Only for use with metal beam guard railing. See Note 5

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# MIDWEST GUARDRAIL SYSTEM STEEL POST AND NOTCHED WOOD BLOCK DETAILS

NO SCALE

RSP A77N2 DATED NOVEMBER 15, 2013 SUPERSEDES RSP A77N2
DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77N2**

**2010 REVISED STANDARD PLAN RSP A77N2**

10-29-13

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 71 | 113 |

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

November 15, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

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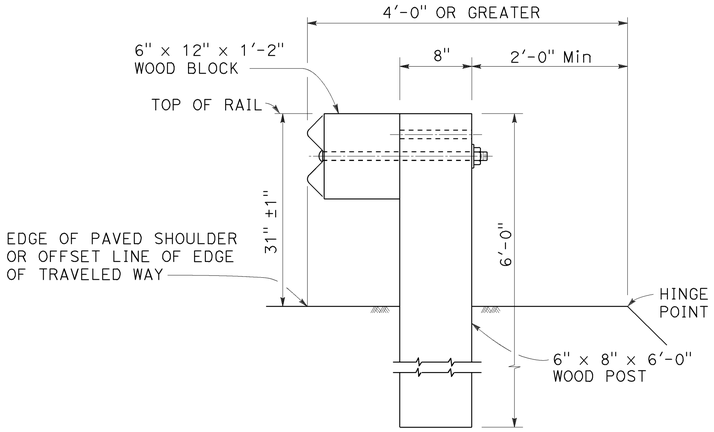
TO ACCOMPANY PLANS DATED 08-29-16

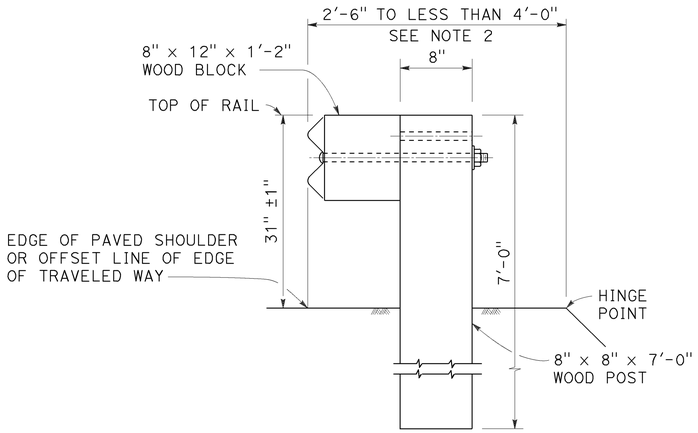
2010 REVISED STANDARD PLAN RSP A77N3




DETAIL A

TYPICAL ROADWAY INSTALLATION

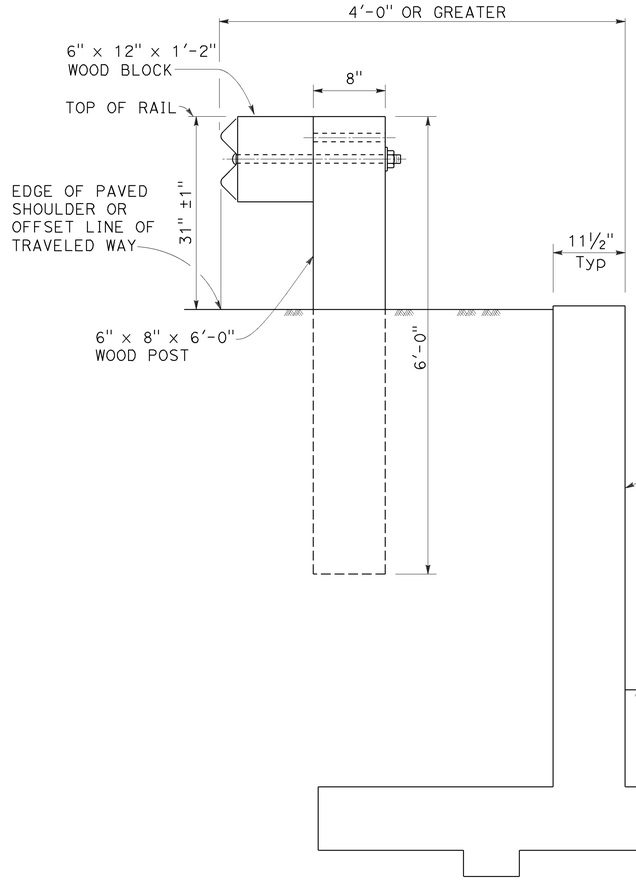
See Note 1



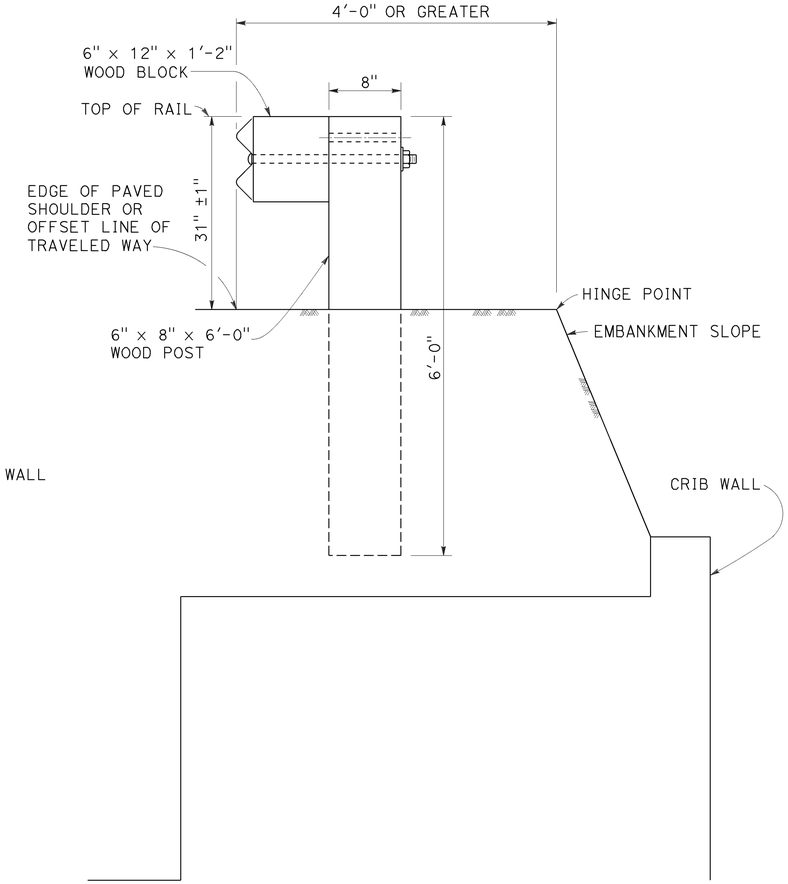

DETAIL B

NARROW ROADWAY INSTALLATION

See Note 1




DETAIL C




DETAIL D

## POST EMBEDMENT

## INSTALLATION AT EARTH RETAINING WALLS

NOTES:

1. These installation details also applicable to steel line post installations. For Detail A, C, and D, where steel line post installations are constructed, W6 x 8.5 or W6 x 9 steel post, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or notched recycled plastic blocks are to be used in place of the size of wood post and wood block shown. For Detail B, where steel line post installations are constructed, W6 x 15 steel post, 8'-0" in length, with 8" x 12" x 1'-2" notched wood blocks or notched recycled plastic blocks are to be used in place of the size of wood post and wood block shown. For additional installation details, see Revised Standard Plan RSP A77L1 and RSP A77L2.
2. Where the distance between the face of the rail and the hinge point is less than 2'-6", see the Project Plans for special details.
3. For dike positioning with MGS installations, see Revised Standard Plan RSP A77N4.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# MIDWEST GUARDRAIL SYSTEM TYPICAL LINE POST EMBEDMENT AND HINGE POINT OFFSET DETAILS

NO SCALE

RSP A77N3 DATED NOVEMBER 15, 2013 SUPERSEDES RSP A77N3 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77N3**

10-29-13

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 72 | 113 |

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
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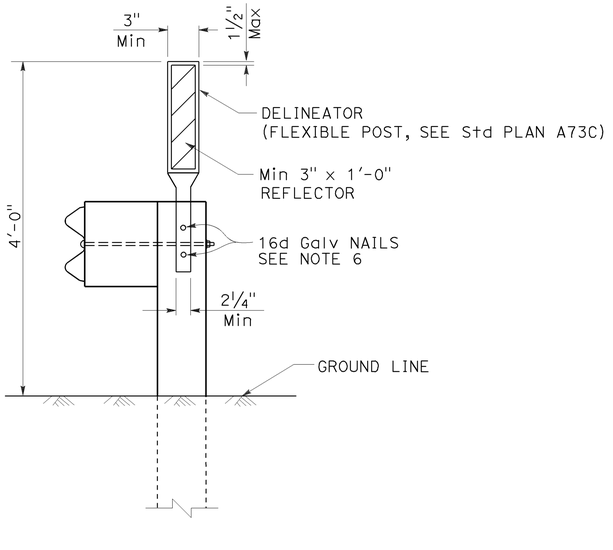
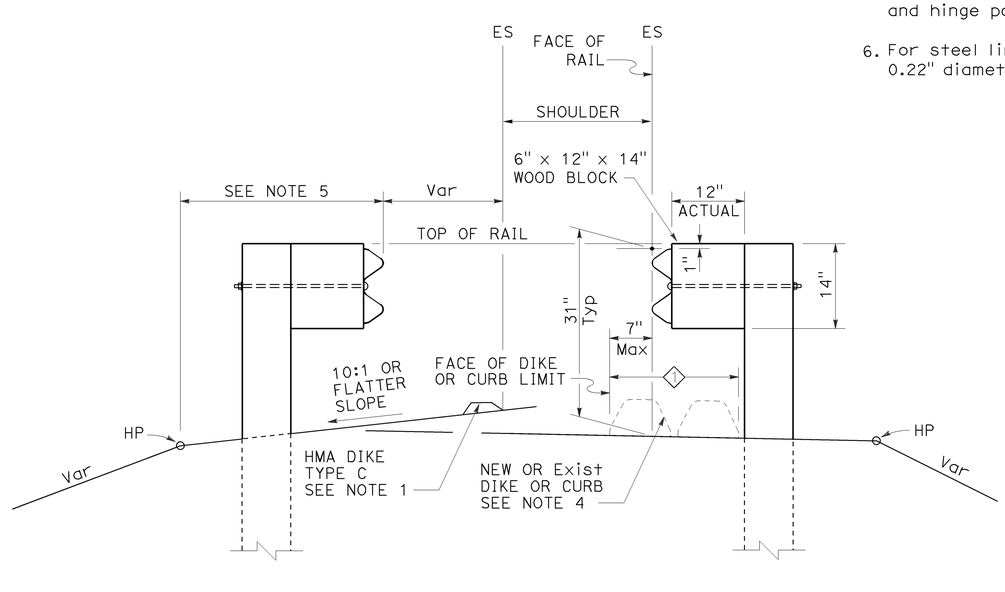
TO ACCOMPANY PLANS DATED 08-29-16

## NOTES:

1. When necessary to place dike more than 7" in front of face of MGS, only Type C dike may be used. For dike details, see Revised Standard Plan RSP A87B.
2. For standard railing post embedment, see Revised Standard Plan RSP A77N3.
3. MGS delineation to be used where shown on the Project Plans.
4. When dike or curb is placed under MGS, the maximum height of the dike or curb shall be 6". Mountable dike should not be used. For dike and curb details, see Revised Standard Plans RSP A87A and RSP A87B.
5. For details of typical distance between the face of rail and hinge point, see Revised Standard Plan RSP A77N3.
6. For steel line posts, use 1/4 - 20 self-tapping screws in 0.22" diameter holes or 1/4" bolts in 9/32" diameter holes.




## MGS DELINEATION
See Note 3




## DIKE POSITIONING
See Note 1

◇1 PERMISSIBLE DIKE OR CURB PLACEMENT AREA

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# MIDWEST GUARDRAIL SYSTEM TYPICAL RAILING DELINEATION AND DIKE POSITIONING DETAILS

NO SCALE

RSP A77N4 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77N4**

2010 REVISED STANDARD PLAN RSP A77N4

7-10-13

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 73 | 113 |

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
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STATE OF CALIFORNIA

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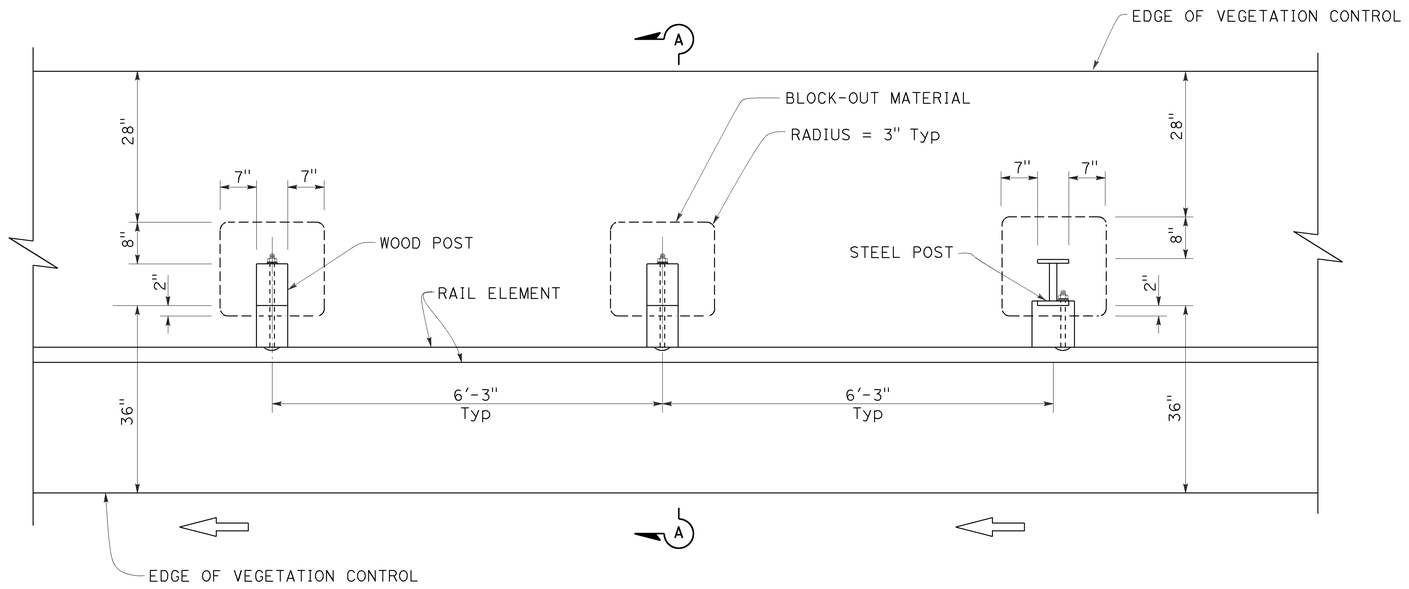
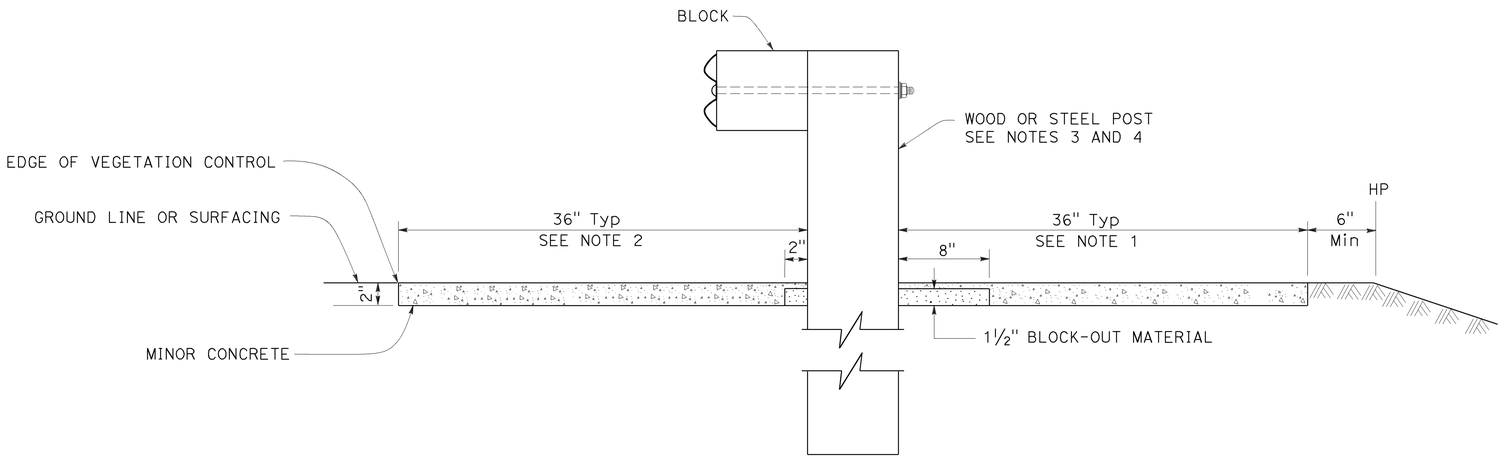
TO ACCOMPANY PLANS DATED 08-29-16




PLAN




SECTION A-A

## NOTES:

1. Where the distance between back of post and hinge point is less than 42", construct vegetation control to 6" from hinge point while maintaining the 8" block-out at back of post. If the 8" block-out at back of post can not be maintained, construct vegetation control flush with the back edge of post.
2. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 36" in front of the post, construct vegetation control to the edge of paved shoulder.
3. For wood post sizes, see Revised Standard Plan RSP A77N1.
4. For steel post sizes, see Revised Standard Plan RSP A77N2.
5. For details not shown, see Revised Standard Plans RSP A77L1 and RSP A77L2.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# MIDWEST GUARDRAIL SYSTEM
# TYPICAL VEGETATION CONTROL
# STANDARD RAILING SECTION

NO SCALE

RSP A77N5 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

## REVISED STANDARD PLAN RSP A77N5

2010 REVISED STANDARD PLAN RSP A77N5

7-3-13

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 74 | 113 |

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

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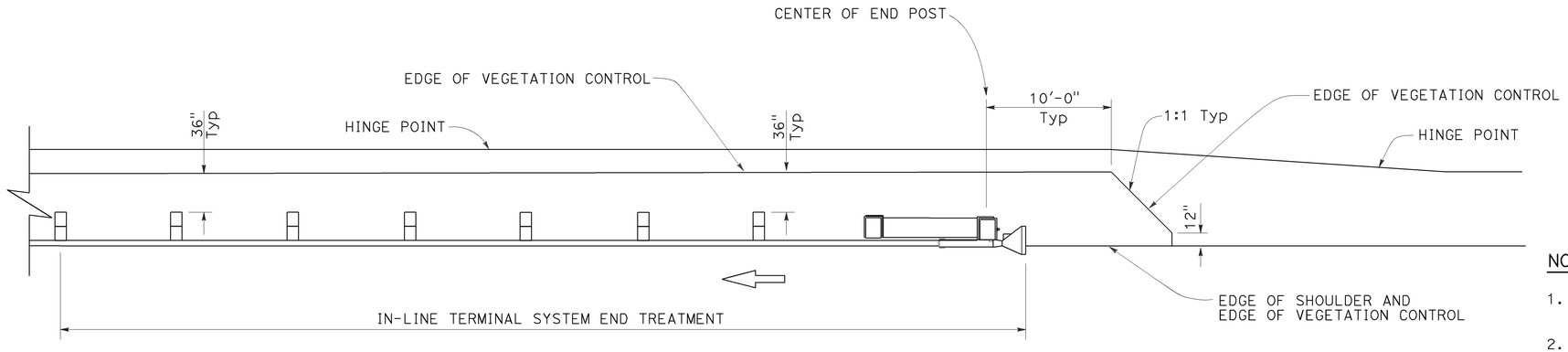
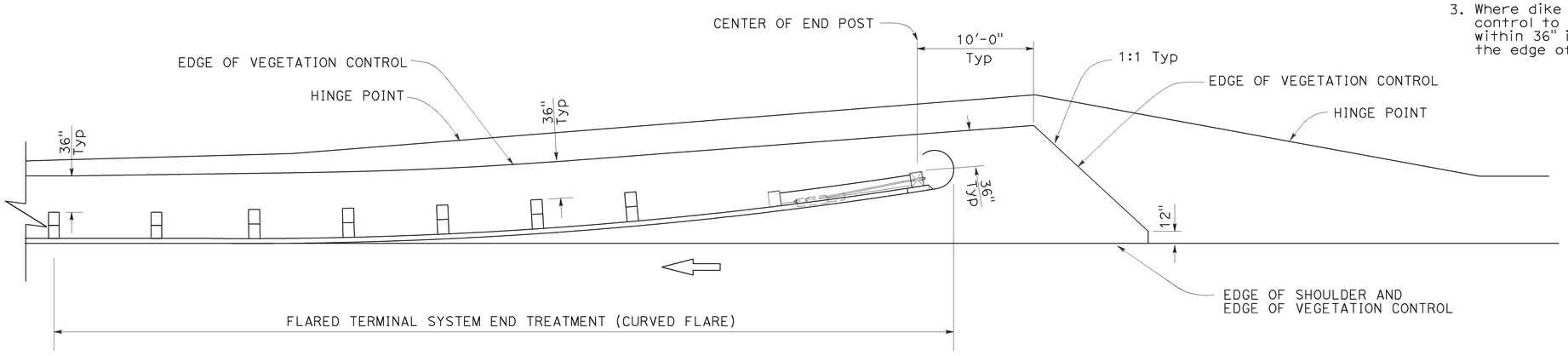
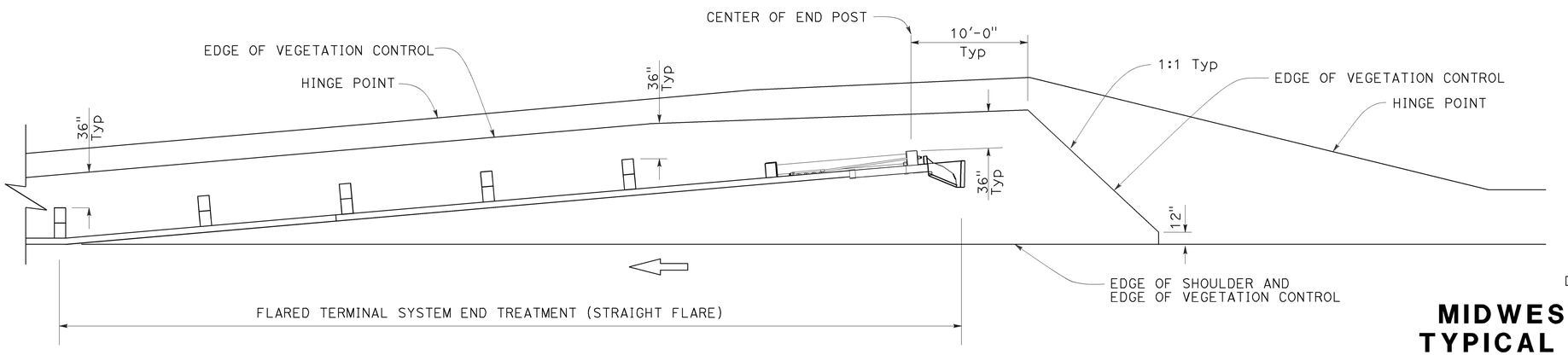
TO ACCOMPANY PLANS DATED 08-29-16




PLAN




PLAN




PLAN

NOTES:

1. See Revised Standard Plan RSP A77N5 for additional vegetation control details.
2. Where the distance between back of post and hinge point is less than 42", construct vegetation control to 6" from hinge point while maintaining the 8" block-out at back of post. If the 8" block-out at back of post can not be maintained, construct vegetation control flush with the back edge of post.
3. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 36" in front of the post, construct vegetation control to the edge of paved shoulder.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# MIDWEST GUARDRAIL SYSTEM TYPICAL VEGETATION CONTROL FOR TERMINAL SYSTEM END TREATMENTS

NO SCALE

RSP A77N6 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

## REVISED STANDARD PLAN RSP A77N6

2010 REVISED STANDARD PLAN RSP A77N6

6-12-13

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 75 | 113 |

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

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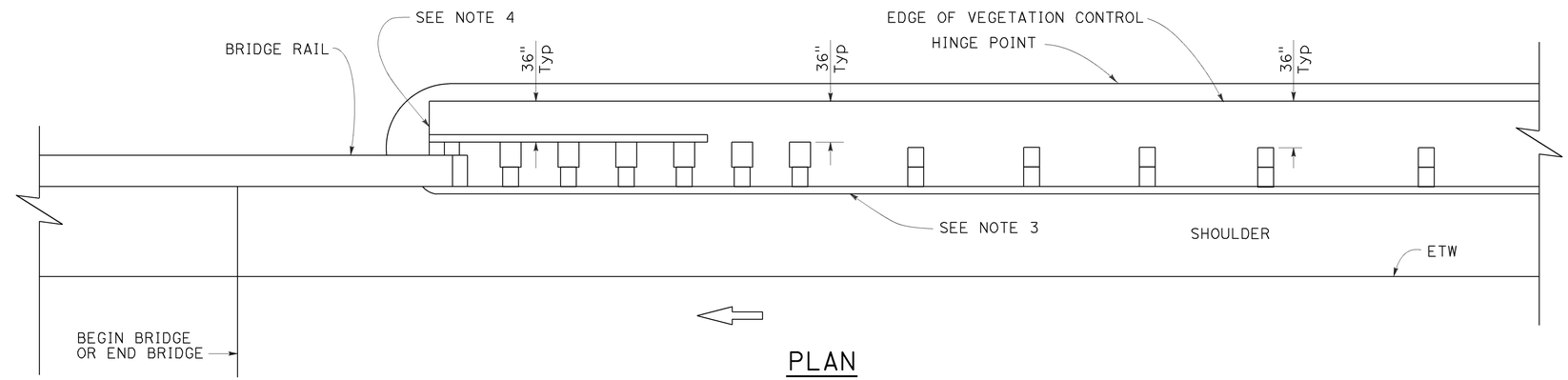
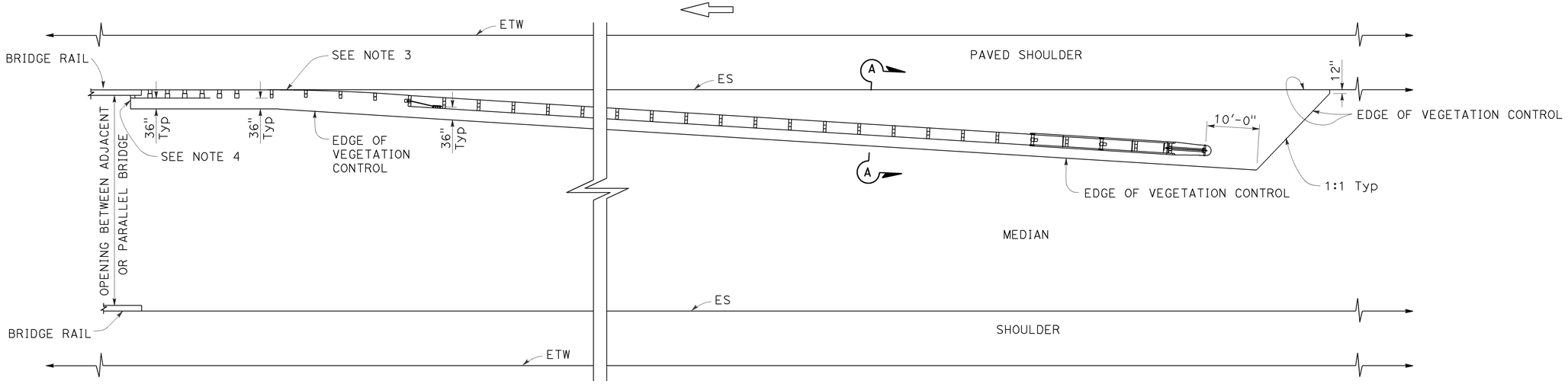
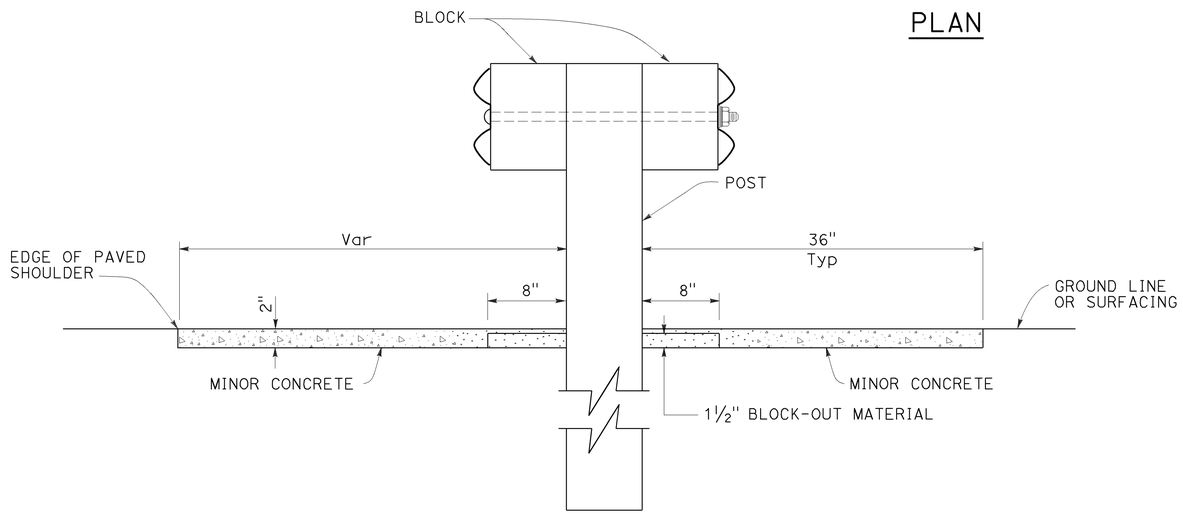
TO ACCOMPANY PLANS DATED 08-29-16




PLAN




PLAN




SECTION A-A

NOTES:

1. See Revised Standard Plan RSP A77N5 for additional vegetation control details.
2. Where the distance between back of post and hinge point is less than 42", construct vegetation control to 6" from hinge point while maintaining the 8" block-out at back of post. If the 8" block-out at back of post can not be maintained, construct vegetation control flush with the back edge of post.
3. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 36" in front of the post, construct vegetation control to the edge of paved shoulder.
4. End vegetation control at end of backside rail element.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# MIDWEST GUARDRAIL SYSTEM TYPICAL VEGETATION CONTROL AT STRUCTURE APPROACH

NO SCALE

RSP A77N7 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77N7**

2010 REVISED STANDARD PLAN RSP A77N7

6-12-13

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 76 | 113 |

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

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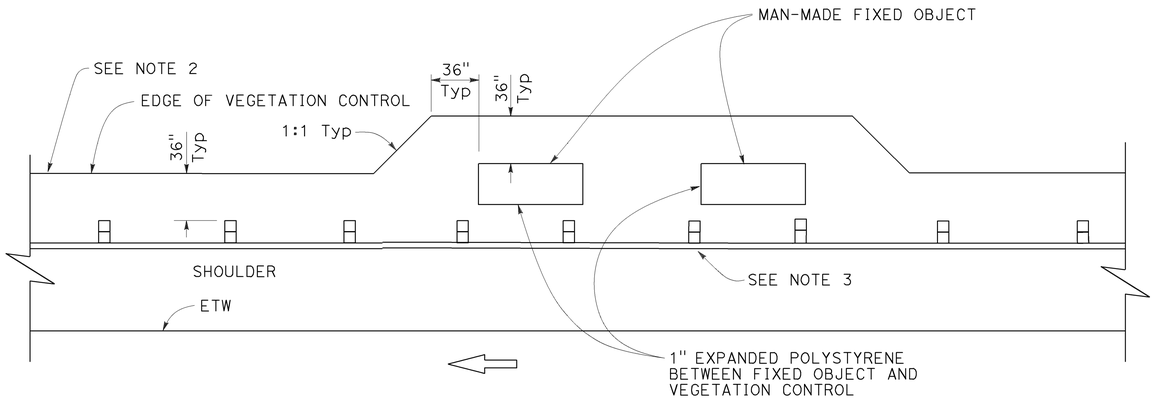
TO ACCOMPANY PLANS DATED 08-29-16

## NOTES:

1. See Revised Standard Plan RSP A77N5 for additional vegetation control details.
2. Where the distance between back of post and hinge point is less than 42", construct vegetation control to 6" from hinge point while maintaining the 8" block-out at back of post. If the 8" block-out at back of post can not be maintained, construct vegetation control flush with the back edge of post.
3. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 36" in front of the post, construct vegetation control to the edge of paved shoulder.




PLAN

Fixed object(s) on shoulder

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# MIDWEST GUARDRAIL SYSTEM
# TYPICAL VEGETATION CONTROL AT FIXED OBJECT

NO SCALE

RSP A77N8 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77N8**

**2010 REVISED STANDARD PLAN RSP A77N8**

6-12-13

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 77 | 113 |

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

August 14, 2015
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Randell D. Hiatt — No. C50200 — Exp. 6-30-17 — CIVIL — STATE OF CALIFORNIA

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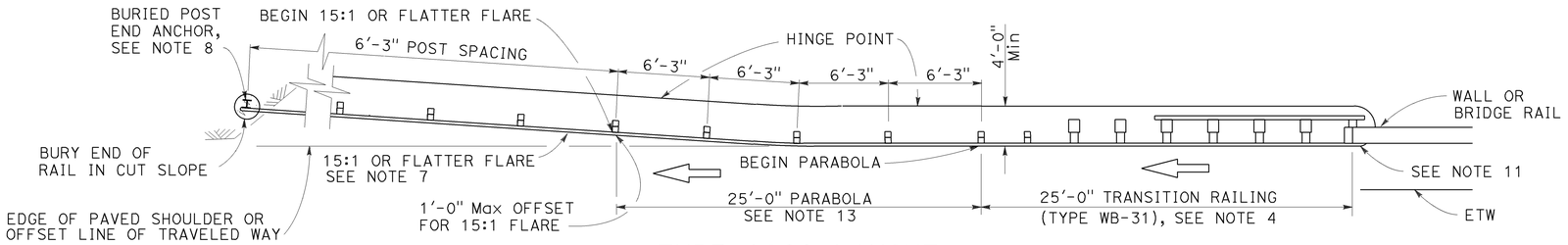
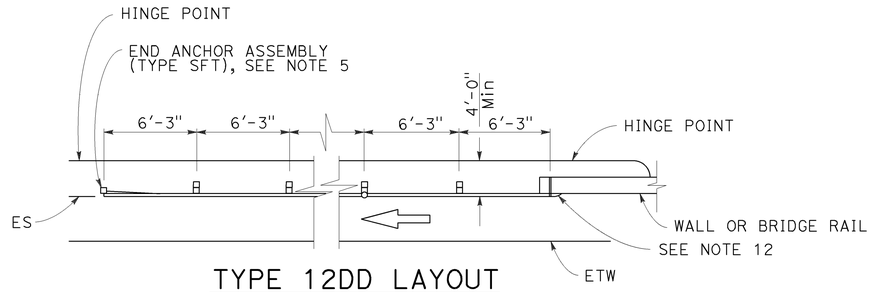
TO ACCOMPANY PLANS DATED 08-29-16



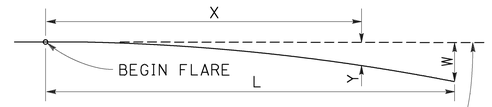

## TYPE 12CC LAYOUT

(MGS installation at structure departure with a
Buried end anchor treatment at trailing end of railing)
See Notes 9 and 10




## TYPE 12DD LAYOUT

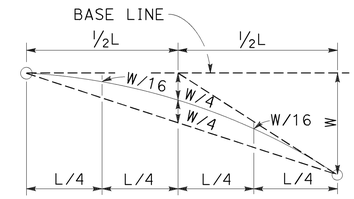
(MGS installation at structure departure
With end anchor assembly at trailing end of railing)
See Notes 6 and 9




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

Y = OFFSET FROM BASE LINE
W = MAXIMUM OFFSET
X = DISTANCE ALONG BASE LINE
L = LENGTH OF FLARE

## PARABOLIC FLARE OFFSETS




## TYPICAL PARABOLIC LAYOUT

### NOTES:

1. Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
2. MSG post spacing to be 6'-3" center to center, except as otherwise noted.
3. Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 12" x 1'-2" wood blocks. W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood line posts with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
4. For Transition Railing (Type WB-31) details for Type 12CC Layout, see Revised Standard Plan RSP A77U4.
5. For details of End Anchor Assembly (Type SFT) used with Type 12DD Layout, see Revised Standard Plan RSP A77S1.
6. Type 12DD layout is typically used to the right of traffic departing a structure on two-way conventional highways where the roadbed width across the structure is equal to or greater than 40 feet and MGS is recommended (embankment height, side slopes, other fixed objects). Length of railing to be equal to multiples of 12'-6". For MGS connection details to bridge rail, see Revised Standard Plans RSP A77U1 and RSP A77V1. For MGS connection details to wall, see Revised Standard Plan RSP A77U3.
7. The 15:1 or flatter flare for Type 12CC Layout is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of MGS within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
8. For details of the buried post end anchor used with Type 12CC Layout, see Revised Standard Plan RSP A77T2.
9. Where placement of dike is required with MGS installations, see Revised Standard Plan RSP A77N4 for dike positioning details.
10. Type 12CC Layout is typically used to the right of traffic departing a structure on two-way conventional highways where the roadbed width across the structure is less than 40 feet.
11. For additional details of a typical connection to bridge rail for Layout Type 12CC, see Connection Detail CC on Revised Standard Plan RSP A77U2 and Connection Detail HH on Revised Standard Plan RSP A77V2.
12. For additional details of a typical connection to bridge rail for Layout Type 12DD, see Connection Detail BB on Revised Standard Plan RSP A77U1 and Connection Detail GG on Revised Standard Plan RSP A77V1.
13. For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77P1.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# MIDWEST GUARDRAIL SYSTEM TYPICAL LAYOUTS FOR STRUCTURE DEPARTURE

NO SCALE

RSP A77Q5 DATED AUGUST 14, 2015 SUPERSEDES RSP A77Q5 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77Q5**

2010 REVISED STANDARD PLAN RSP A77Q5

8-13-15

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 78 | 113 |

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Randell D. Hiatt — No. C50200 — Exp. 6-30-15 — CIVIL — STATE OF CALIFORNIA

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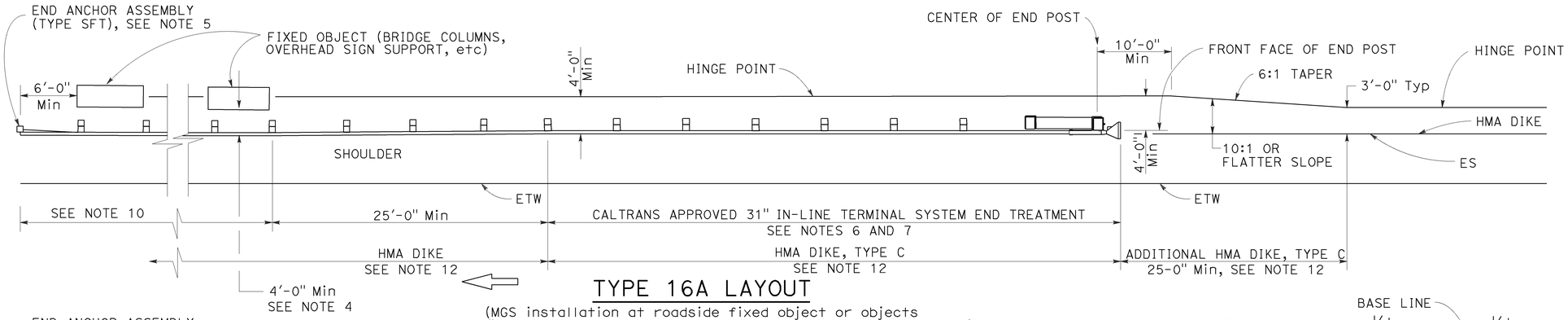
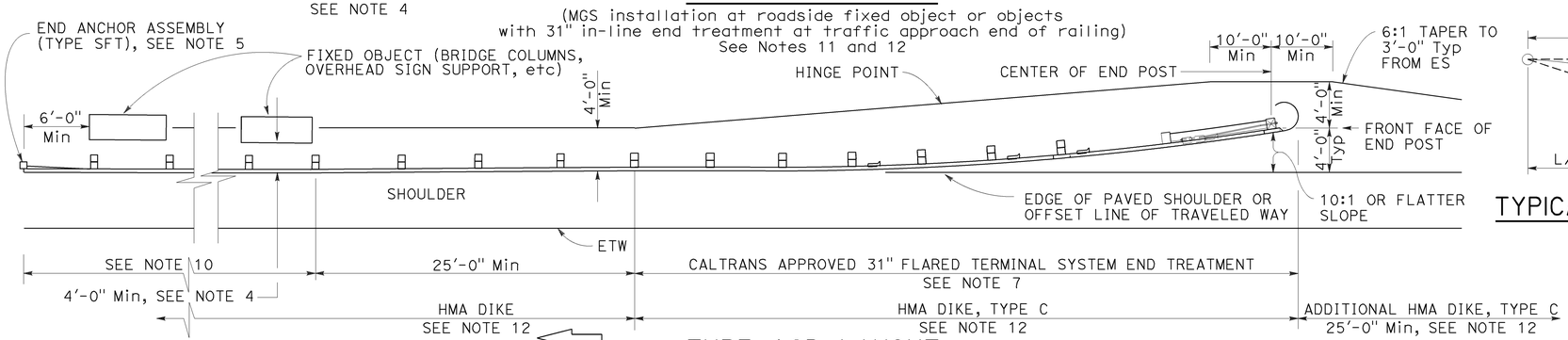
TO ACCOMPANY PLANS DATED 08-29-16



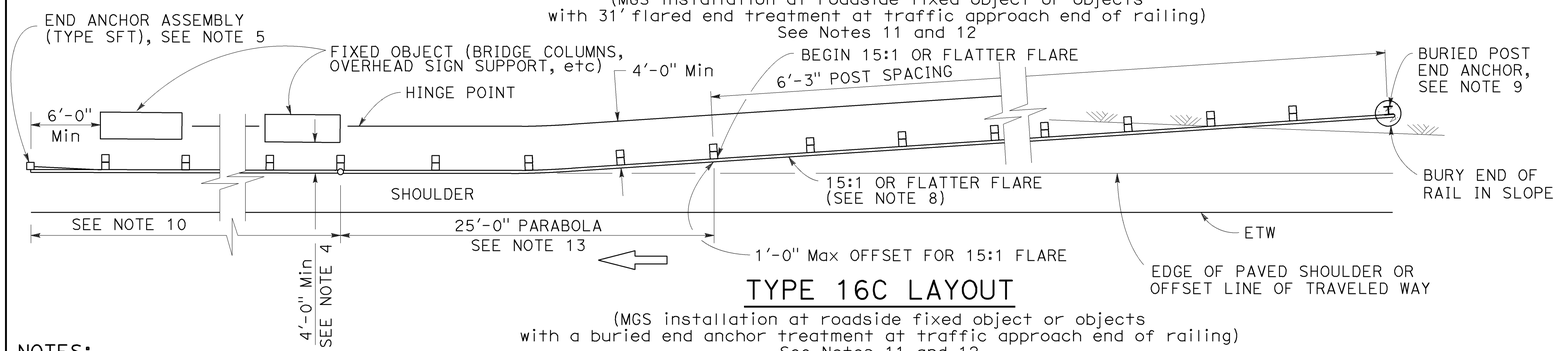

## TYPE 16A LAYOUT

(MGS installation at roadside fixed object or objects with 31" in-line end treatment at traffic approach end of railing)
See Notes 11 and 12



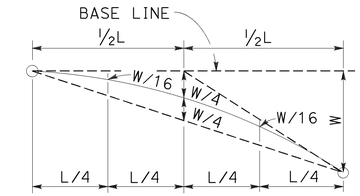

## TYPE 16B LAYOUT

(MGS installation at roadside fixed object or objects with 31' flared end treatment at traffic approach end of railing)
See Notes 11 and 12

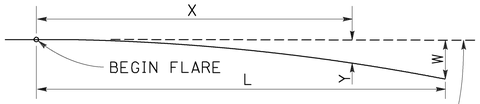



## TYPE 16C LAYOUT

(MGS installation at roadside fixed object or objects with a buried end anchor treatment at traffic approach end of railing)
See Notes 11 and 12




## TYPICAL PARABOLIC LAYOUT

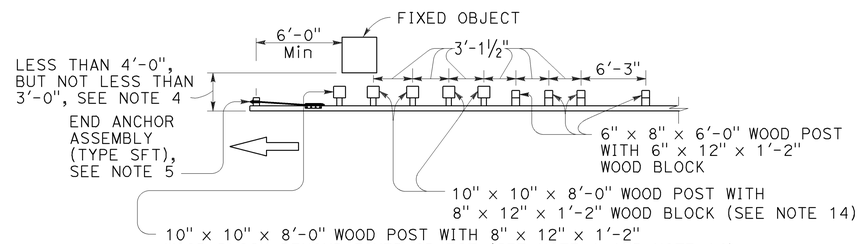



BASE LINE (EDGE OF PAVED SHOULDER OR OFFSET LINE OF EDGE OF TRAVELED WAY)

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

Y = OFFSET FROM BASE LINE
W = MAXIMUM OFFSET
X = DISTANCE ALONG BASE LINE
L = LENGTH OF FLARE

## PARABOLIC FLARE OFFSETS




**NOTE A:** For a series of fixed objects (bridge columns, overhead sign supports, etc.) additional 10" x 10" x 8'-0" wood post with 8" x 12" x 1'-2" wood blocks at 3'-1½" center to center spacing are to be used between fixed objects.

## STRENGTHENED MIDWEST GUARDRAIL SYSTEM SECTIONS FOR FIXED OBJECT

Use strengthened MGS sections with Types 16A, 16B or 16C layouts where minimum clearance between the face of the railing and fixed object(s) is less than 4'-0", but not less than 3'-0". See Note 4

## NOTES:

1. Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
2. MGS post spacing to be 6'-3" center to center, except as otherwise noted.
3. Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 12" x 1'-2" wood blocks. W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood line posts with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
4. A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object located directly behind MGS sections with post spacing of 6'-3". Construct MGS as shown in the detail "Strengthened Midwest Guardrail System Sections for Fixed Object" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 3'-0". Where the clearance is less than 3'-0", a concrete wall or barrier should be constructed to shield the fixed object(s).
5. For End Anchor Assembly (Type SFT) details, see Revised Standard Plan RSP A77S1.
6. 31" in-line terminal system end treatments are used where site conditions will not accommodate a 31" flared end treatment.
7. The type of 31" terminal system to be used will be shown on the Project Plans.
8. The 15:1 or flatter flare used with Type 16C Layout is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of MGS within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
9. For details of the Buried Post End Anchor used with Type 16C Layout, see Revised Standard Plan RSP A77T2.
10. As site conditions dictate, construct additional MGS to shield fixed object(s). Additional MGS length equal to multiples of 12'-6". Post spacing at 6'-3" except as specified in Note 4.
11. Layout Types 16A, 16B or 16C are typically used where MGS is recommended to shield roadside fixed object(s) and a crashworthy 31" end treatment is required for only one direction of traffic.
12. Where placement of dike is required with MGS, see Revised Standard Plan RSP A77N4 for dike positioning details.
13. For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77P1.
14. W6 x 15 steel post, 8'-0" in length, with 8" x 12" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 12" x 1'-2" wood block shown in the detail "Strengthened Midwest Guardrail System Sections for Fixed Object".

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# MIDWEST GUARDRAIL SYSTEM TYPICAL LAYOUTS FOR ROADSIDE FIXED OBJECTS

NO SCALE

RSP A77R3 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

# REVISED STANDARD PLAN RSP A77R3

2010 REVISED STANDARD PLAN RSP A77R3

6-20-13

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 79 | 113 |

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

November 15, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

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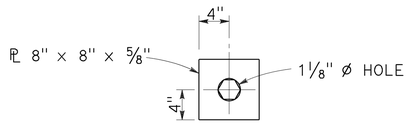
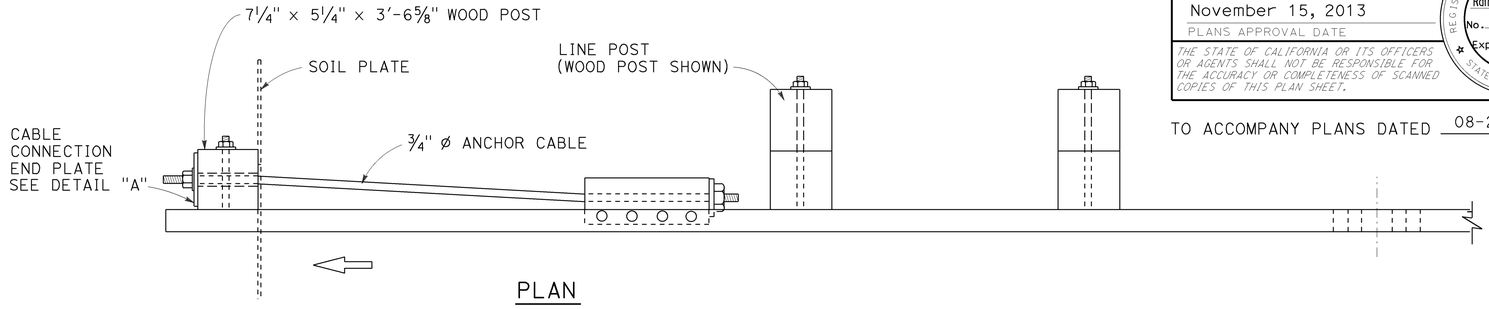
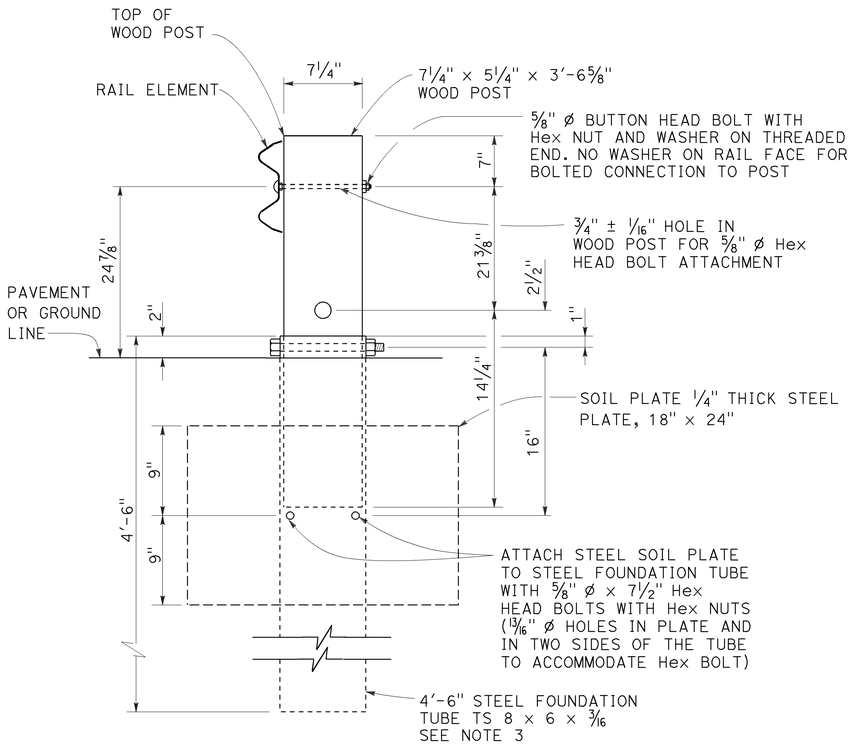
TO ACCOMPANY PLANS DATED 08-29-16



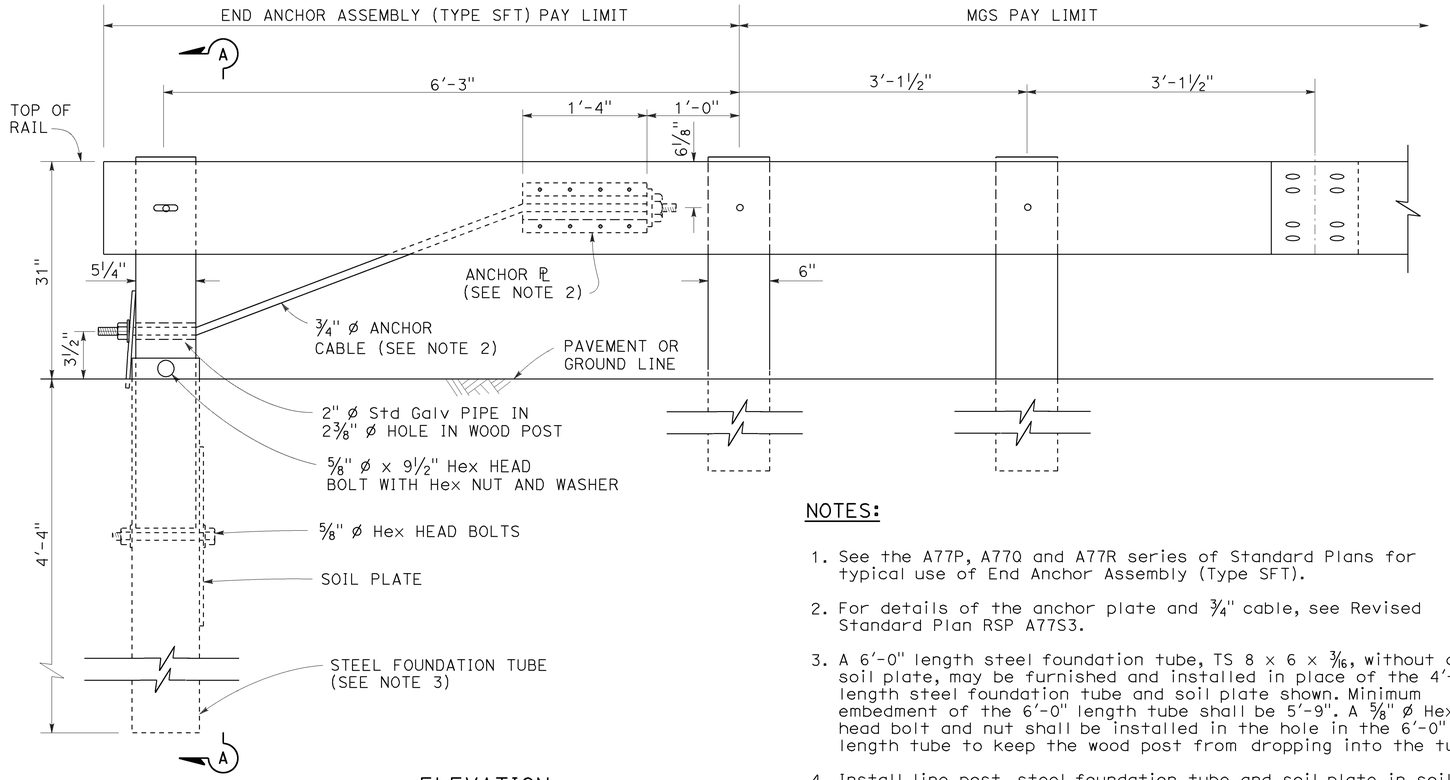

DETAIL "A"
CABLE CONNECTION
END PLATE




PLAN




SECTION A-A




ELEVATION

END ANCHOR
ASSEMBLY (TYPE SFT)
See Note 1

NOTES:

1. See the A77P, A77Q and A77R series of Standard Plans for typical use of End Anchor Assembly (Type SFT).
2. For details of the anchor plate and 3/4" cable, see Revised Standard Plan RSP A77S3.
3. A 6'-0" length steel foundation tube, TS 8 x 6 x 3/16, without a soil plate, may be furnished and installed in place of the 4'-6" length steel foundation tube and soil plate shown. Minimum embedment of the 6'-0" length tube shall be 5'-9". A 5/8" ø Hex head bolt and nut shall be installed in the hole in the 6'-0" length tube to keep the wood post from dropping into the tube.
4. Install line post, steel foundation tube and soil plate in soil.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# MIDWEST GUARDRAIL SYSTEM
# END ANCHOR ASSEMBLY
# (TYPE SFT)

NO SCALE

RSP A77S1 DATED NOVEMBER 15, 2013 SUPERSEDES RSP A77S1
DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77S1**

**2010 REVISED STANDARD PLAN RSP A77S1**

10-4-13

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 80 | 113 |

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

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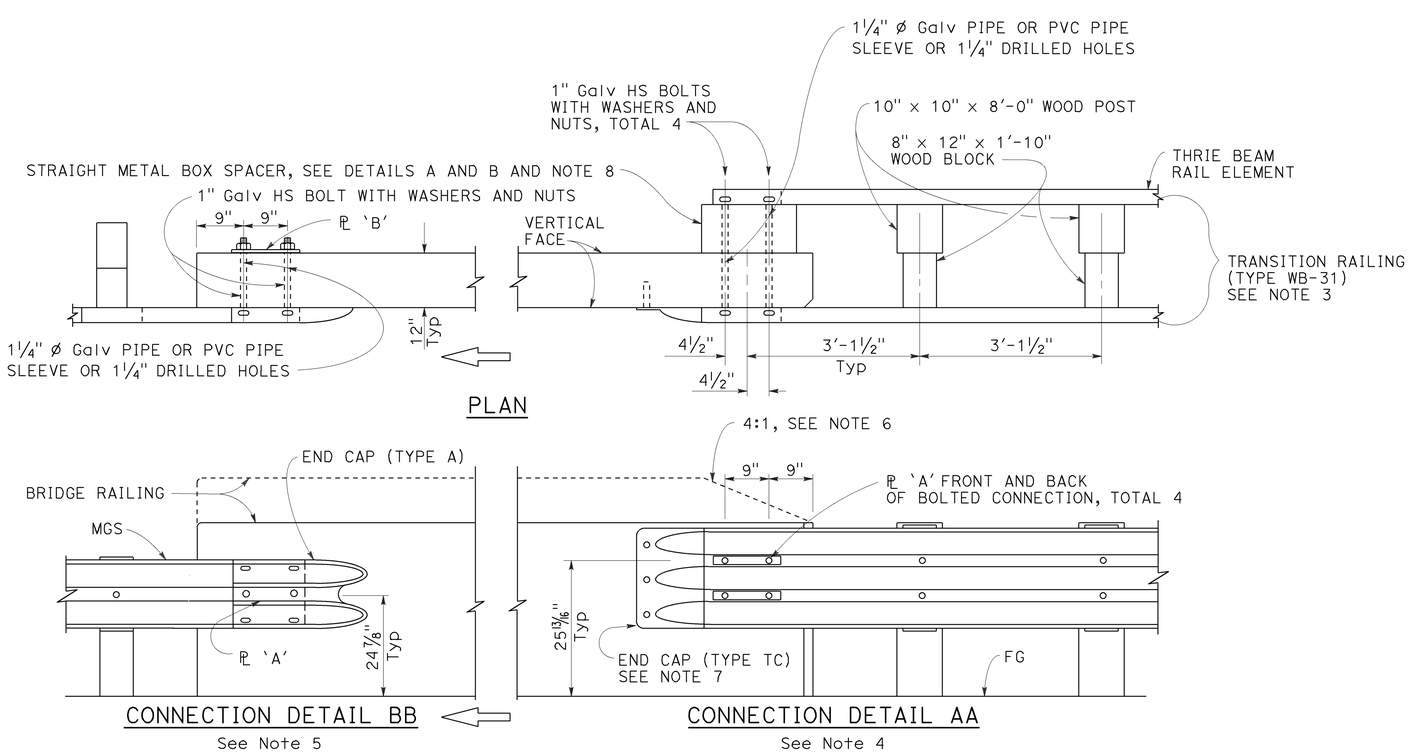
TO ACCOMPANY PLANS DATED 08-29-16




## MIDWEST GUARDRAIL SYSTEM CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK

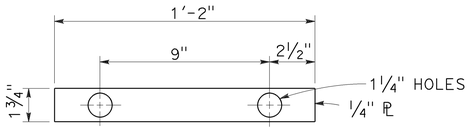



PLATE 'A'

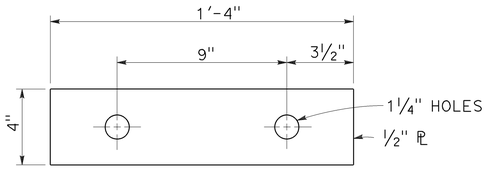
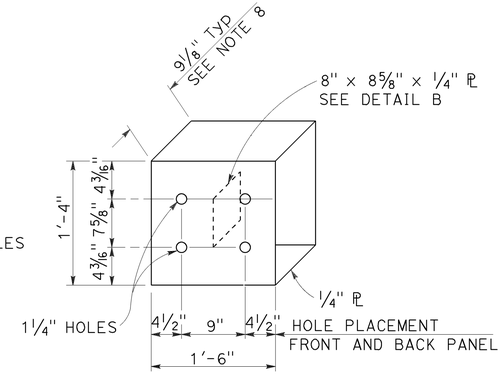
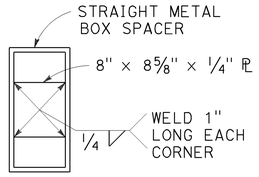



PLATE 'B'
(For backside of connection BB)




DETAIL A




DETAIL B

STRAIGHT METAL BOX SPACER

## NOTES:

1. See Revised Standard Plan RSP A77U2 for additional connection details to bridges without sidewalks.
2. Additional details of posts, blocks and hardware are shown on Revised Standard Plans RSP A77M1, RSP A77N1 and RSP A77N2.
3. For additional details of Transition Railing (Type WB-31), see Revised Standard Plan RSP A77U4. Transition Railing (Type WB-31) transitions the 12 gauge MGS railing section to a heavier gage nested thrie beam railing section which is connected to the concrete bridge railing.
4. For typical use of Connection Detail AA, see Layout Types 12A and 12B on Revised Standard Plan RSP A77Q1, Layout Types 12C and 12D on Revised Standard Plan RSP A77Q2, and Layout Type 12E on Revised Standard Plan RSP A77Q3.
5. For typical use of Connection Detail BB, see Layout Type 12D (structure departure railing connection) on Revised Standard Plan RSP A77Q2 and Layout Type 12DD on Revised Standard Plan RSP A77Q5.
6. Where the height of the bridge railing exceeds the height of the thrie beam railing by more than 1" at Connection Detail AA, taper the top of the end of the bridge railing at 4:1 to match the top elevation of the thrie beam rail.
7. For details of End Cap (Type TC), see Revised Standard Plan RSP A77U4.
8. See Revised Standard Plan RSP A77U4 for additional details regarding depth dimension for straight metal box spacer.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# MIDWEST GUARDRAIL SYSTEM CONNECTIONS TO BRIDGE RAILINGS WITHOUT SIDEWALKS DETAILS No. 1

NO SCALE

RSP A77U1 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77U1**

2010 REVISED STANDARD PLAN RSP A77U1

7-8-13

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 81 | 113 |

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

January 23, 2015
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

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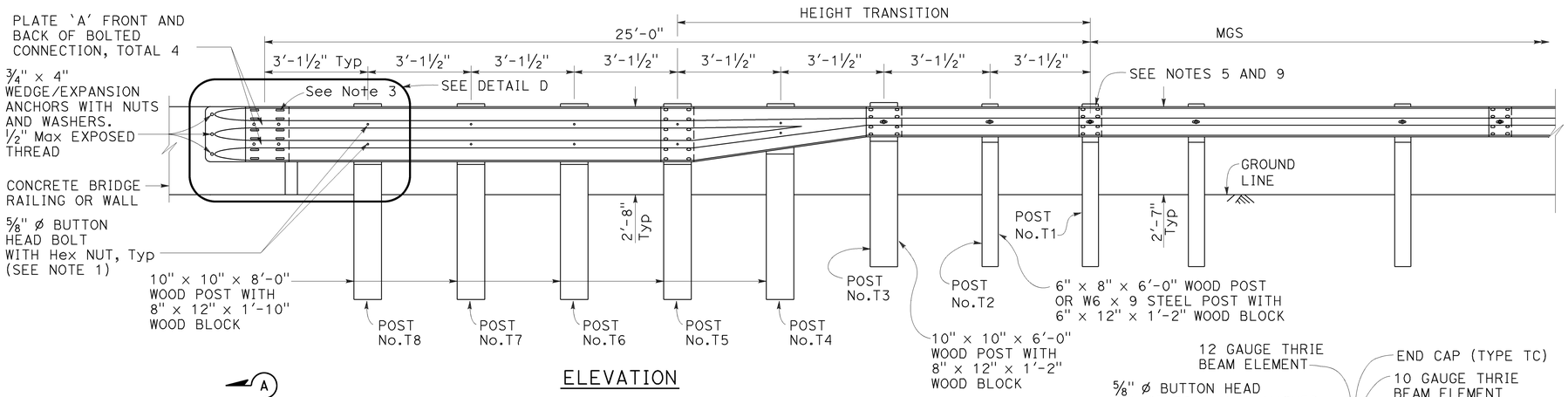
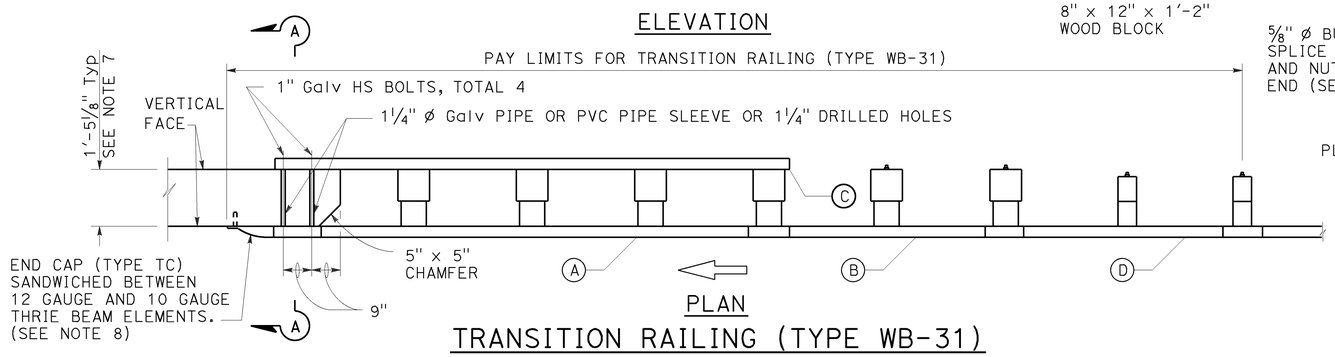
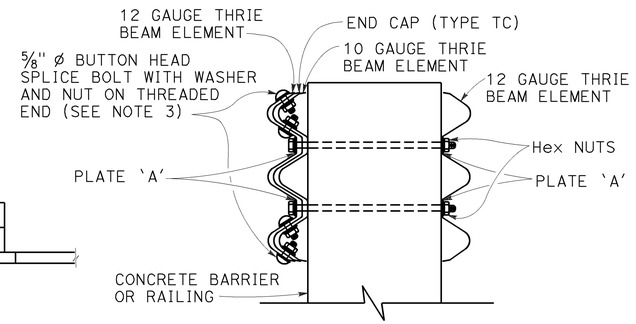



ELEVATION



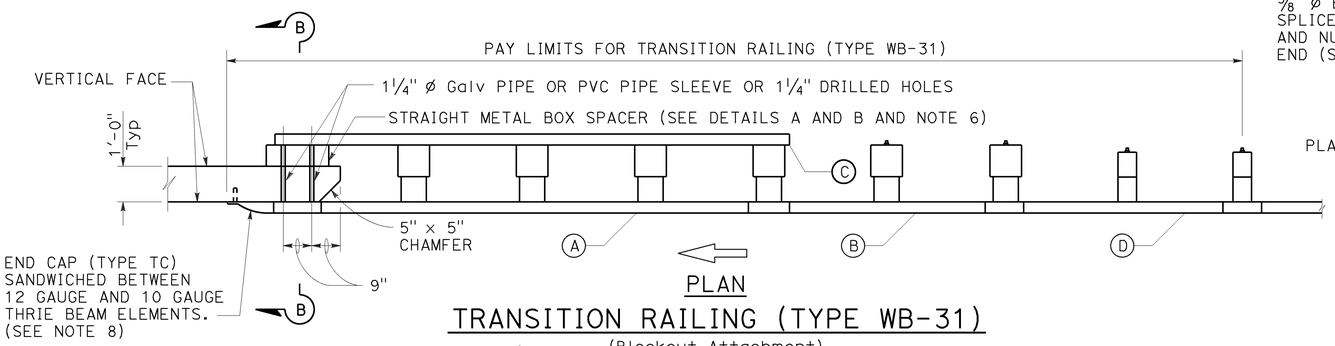

PLAN




SECTION A-A

## TRANSITION RAILING (TYPE WB-31)

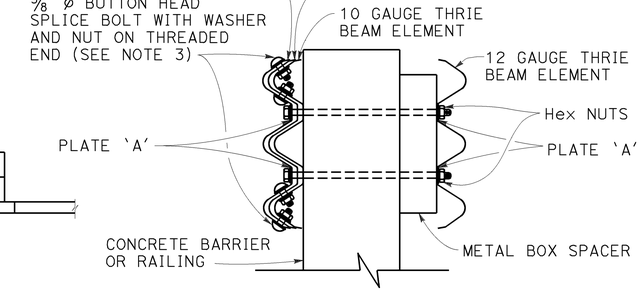
(No Blockout Attachment)




PLAN

## TRANSITION RAILING (TYPE WB-31)

(Blockout Attachment)

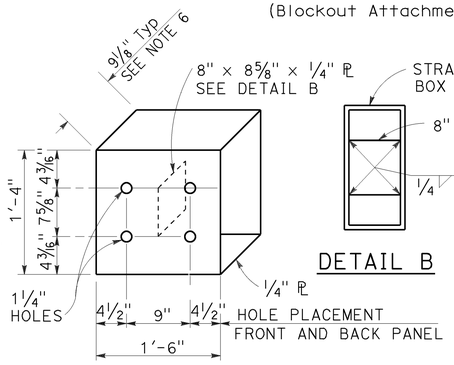



SECTION B-B

### LEGEND:

- (A) NESTED THRIE BEAM ELEMENTS (ONE 12 GAUGE ELEMENT NESTED OVER ONE 10 GAUGE ELEMENT).
- (B) ONE ASYMMETRICAL 10 GAUGE "W" BEAM TO THRIE BEAM ELEMENT.
- (C) ONE 12 GAUGE THRIE BEAM ELEMENT.
- (D) ONE 10 GAUGE "W" BEAM RAIL ELEMENT (7'-3½"LENGTH)

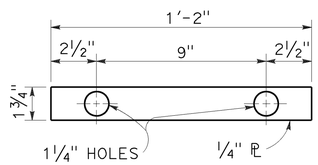
10 GAUGE = 0.138" THICK
12 GAUGE = 0.108" THICK



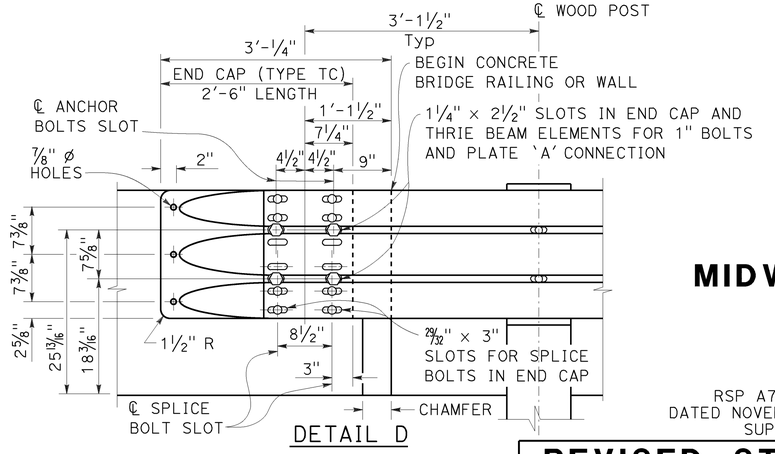

DETAIL A




DETAIL B




DETAIL C




DETAIL D

## STRAIGHT METAL BOX SPACER

## PLATE 'A'

NOTES: TO ACCOMPANY PLANS DATED 08-29-16

1. Use ⅝" ø Button head bolts and hex nuts for connections to posts. No washer on rail face for bolted connections to post.
2. The nested rail elements, end cap, and 'W' beam to thrie beam element may be spliced together prior to bolting the elements to the wood post and concrete barrier or railing.
3. Exterior splice bolt holes for rail element splices at Post No. T5 and the connection to the concrete barrier or railing shall be the standard 29/32" x 1⅛" slot size. Interior splice bolt holes at these locations may be increased up to 1¼" ø. Only the top 4 and the bottom 4 splice bolts with washers and nuts are required for rail splices at Post No. T5 and the connection to the concrete barrier or railing.
4. The top elevation of Posts No. T2 through No. T7 shall not project more than 1" above the top elevation of the rail element.
5. Typically, the railing connected to Transition Railing (Type WB-31) will be either standard railing section of MGS with height transition ratio of 150:1 or a Caltrans approved 31" end treatment attached to Post No. T1.
6. The depth of the metal box spacer varies from the 9⅛" to 1½" and is dependent on the width of the concrete railing or wall. The combined dimension for the depth of the metal box spacer plus the width of railing or wall is typically 21⅛". Where the space between the backside of the concrete railing or wall and the rear thrie beam element is less than 1½", metal plates similar to Plate 'A' are to be used as spacers.
7. Where the width of the concrete railing or wall is greater than 17⅛", wood blocks are to be used to fill the space created between the backside of Posts No. T5 through No. T8 and the rear thrie beam element. These wood blocks shall be 8" in width and 1'-2" in length. The dimension between the front thrie beam element and the rear thrie beam element is to match the width of the concrete railing or wall.
8. End cap may be installed over 12 gauge and 10 gauge thrie beam elements where transition railing is installed on the departure end of bridge railing.
9. Conform standard railing section height to 31" at Post No. T1 using height transition ratio of 150:1.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# MIDWEST GUARDRAIL SYSTEM TRANSITION RAILING (TYPE WB-31)

NO SCALE

RSP A77U4 DATED JANUARY 23, 2015 SUPERSEDES RSP A77U4 DATED NOVEMBER 15, 2013 AND RSP A77U4 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77U4**

2010 REVISED STANDARD PLAN RSP A77U4

1-8-15

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 82 | 113 |

REGISTERED CIVIL ENGINEER

January 15, 2016
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Michael Janzen
No. 44788
Exp. 3-31-16
CIVIL
STATE OF CALIFORNIA

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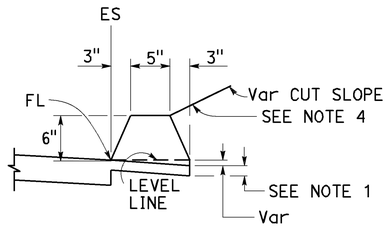
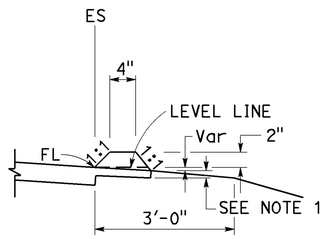
TO ACCOMPANY PLANS DATED 08-29-16

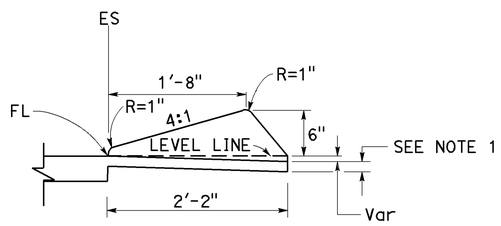




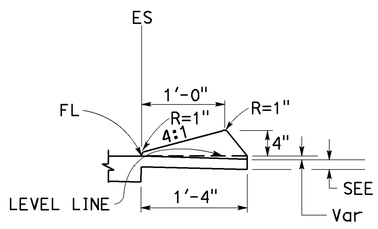

TYPE A
See Notes 3 and 5



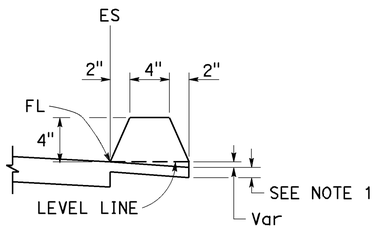

TYPE C




TYPE D

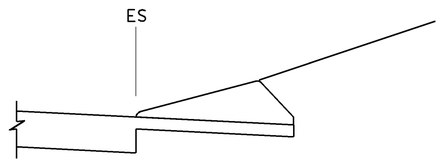



TYPE E

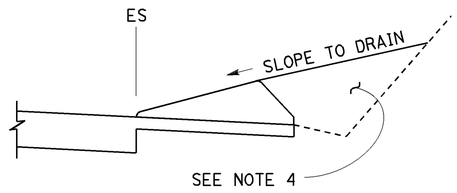



TYPE F
See Note 5

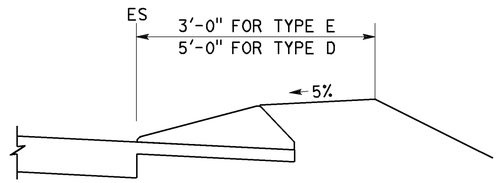
## DIKES



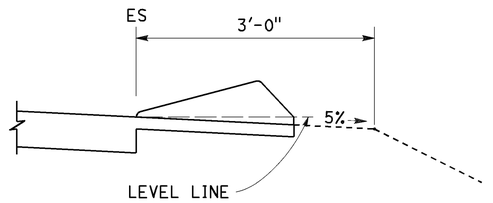

CASE C-1
Cut Slope




CASE C-2
Cut Slope




CASE F




CASE R
See Note 2

## TYPE D AND E BACKFILL DETAILS

### NOTES:

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

DIKE QUANTITIES

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

Quantities based on 5% cross slope.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# HOT MIX ASPHALT DIKES

NO SCALE

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

# REVISED STANDARD PLAN RSP A87B

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 83 | 113 |

Gregory A. Balzer
LICENSED LANDSCAPE ARCHITECT

July 19, 2013
PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT
Gregory A. Balzer 2576
Gregory A. Balzer
Oct. 31, 2014
2-28-15
Renewal Date
7-19-13
Date
STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 08-29-16

## A

| | |
|---|---|
| AB | AGGREGATE BASE |
| ABS | ACRYLONITRILE-BUTADIENE-STYRENE |
| AC | ASPHALT CONCRETE |
| ACC | ARMOR-CLAD CONDUCTORS |
| Adj | ADJACENT/ADJUSTABLE |
| AIC | AUXILIARY IRRIGATION CONTROLLER |
| Alt | ALTERNATIVE |
| AMEND | AMENDMENT |
| ARV | AIR RELEASE VALVE |
| AUTO | AUTOMATIC |
| AUX | AUXILIARY |
| AVB | ATMOSPHERIC VACUUM BREAKER |

## B

| | |
|---|---|
| B&B | BALLED AND BURLAPPED |
| B/B | BRASS/BRONZE |
| B/B/PL | BRASS/BRONZE/PLASTIC |
| B/PL | BRASS/PLASTIC |
| BFM | BONDED FIBER MATRIX |
| Bit Ctd | BITUMINOUS COATED |
| BP | BOOSTER PUMP |
| BPA | BACKFLOW PREVENTER ASSEMBLY |
| BPE | BACKFLOW PREVENTER ENCLOSURE |
| BV | BALL VALVE |

## C

| | |
|---|---|
| C | CONDUIT |
| CAP | CORRUGATED ALUMINUM PIPE |
| CARV | COMBINATION AIR RELEASE VALVE |
| CB | COUPLING BAND |
| CCA | CAM COUPLER ASSEMBLY |
| CEC | CONTROLLER ENCLOSURE CABINET |
| CHDPE | CORRUGATED HIGH DENSITY POLYETHYLENE |
| CL | CHAIN LINK |
| CNC | CONTROL AND NEUTRAL CONDUCTORS |
| Conc | CONCRETE |
| CP | COPPER PIPE |
| CS | COMPOST SOCK |
| CSP | CORRUGATED STEEL PIPE |
| CST | CENTER STRIP |
| CV | CHECK VALVE |

## D

| | |
|---|---|
| Dia | DIAMETER |
| DIP | DUCTILE IRON PIPE |
| DIT | DRIP IRRIGATION TUBING |
| DG | DECOMPOSED GRANITE |
| DN | DIAMETER NOMINAL |
| DVA | DRIP VALVE ASSEMBLY |

## E

| | |
|---|---|
| EC | EROSION CONTROL |
| ECTC | EROSION CONTROL TECHNOLOGY COUNCIL |
| Elect | ELECTRIC/ELECTRICAL |
| Elev | ELEVATION |
| ELL | ELBOW |
| ENCL | ENCLOSURE |
| EP | EDGE OF PAVEMENT |
| ES | EDGE OF SHOULDER |
| EST | END STRIP |
| ESTB | ESTABLISHMENT |
| ETW | EDGE OF TRAVELED WAY |

## F

| | |
|---|---|
| F | FULL CIRCLE |
| F/P | FULL/PART CIRCLE |
| FCV | FLOW CONTROL VALVE |
| FERT | FERTILIZER |
| FG | FINISHED GRADE |
| FH | FLEXIBLE HOSE |
| FIPT | FEMALE IRON PIPE THREAD |
| FIS | FERTILIZER INJECTOR SYSTEM |
| FL | FLOW LINE |
| FR | FIBER ROLL |
| FS | FLOW SENSOR |
| FSC | FLOW SENSOR CABLE |
| FV | FLUSH VALVE |

## G

| | |
|---|---|
| Galv | GALVANIZED |
| GARV | GARDEN VALVE |
| GARVA | GARDEN VALVE ASSEMBLY |
| GM | GRAVEL MULCH |
| GPH | GALLONS PER HOUR |
| GPM | GALLONS PER MINUTE |
| GSP | GALVANIZED STEEL PIPE |
| GV | GATE VALVE |

## H

| | |
|---|---|
| H | HALF CIRCLE |
| HDPE | HIGH DENSITY POLYETHYLENE |
| HP | HORSEPOWER/HINGE POINT |
| HPL | HIGH PRESSURE LINE |
| Hwy | HIGHWAY |

## I

| | |
|---|---|
| IC | IRRIGATION CONTROLLER |
| ICC | IRRIGATION CONTROLLER(S) IN CONTROLLER ENCLOSURE CABINET |
| ID | INSIDE DIAMETER |
| IFS | IRRIGATION FILTRATION SYSTEM |
| IPS | IRON PIPE SIZE |
| IPT | IRON PIPE THREAD |
| Irr | IRRIGATION |

## L

| | |
|---|---|
| L | LENGTH |

## M

| | |
|---|---|
| Max | MAXIMUM |
| MBGR | METAL BEAM GUARD RAILING |
| MCV | MANUAL CONTROL VALVE |
| MIC | MASTER IRRIGATION CONTROLLER |
| Min | MINIMUM |
| MIPT | MALE IRON PIPE THREAD |
| Misc | MISCELLANEOUS |
| Mtl | MATERIAL |
| MVP | MAINTENANCE VEHICLE PULLOUT |

## N

| | |
|---|---|
| NCN | NO COMMON NAME |
| NL | NOZZLE LINE |
| No. | NUMBER |
| NPT | NATIONAL PIPE THREAD |

## O

| | |
|---|---|
| O/C | ON CENTER |
| OD | OUTSIDE DIAMETER |
| OL | OVERLAP |

## P

| | |
|---|---|
| P | PART CIRCLE |
| PB | PULL BOX |
| PCC | PORTLAND CEMENT CONCRETE |
| PE | POLYETHYLENE |
| Pkt | PACKET |
| PL | PLASTIC |
| PLS | PURE LIVE SEED |
| PLT | PLANT/PLANTING |
| PLT ESTB | PLANT ESTABLISHMENT |
| PM | POST MILE |
| PR | PRESSURE RATED |
| PRLV | PRESSURE RELIEF VALVE |
| PRV | PRESSURE REGULATING VALVE |
| PVC | POLYVINYL CHLORIDE |
| Pvmt | PAVEMENT |

## Q

| | |
|---|---|
| Q | QUARTER CIRCLE |
| QCV | QUICK COUPLING VALVE |

## R

| | |
|---|---|
| R | RADIUS |
| RCP | REINFORCED CONCRETE PIPE |
| RCV | REMOTE CONTROL VALVE |
| RCVM | REMOTE CONTROL VALVE (MASTER) |
| RCVMF | REMOTE CONTROL VALVE (MASTER) W/FLOW SENSOR |
| RCVP | REMOTE CONTROL VALVE W/PRESSURE REGULATOR |
| RCW | RECYCLED WATER |
| RECP | ROLLED EROSION CONTROL PRODUCT |
| REQ | REQUIRED |
| RICS | REMOTE IRRIGATION CONTROL SYSTEM |
| R/W | RIGHT OF WAY |

## S

| | |
|---|---|
| S | SLIP |
| SCH | SCHEDULE |
| SF | STATE-FURNISHED |
| Shld | SHOULDER |
| Sq | SQUARE |
| SST | SIDE STRIP |
| Sta | STATION |
| Std | STANDARD |
| SW | SIDEWALK/SOUND WALL |

## T

| | |
|---|---|
| T | THIRD CIRCLE/THREAD |
| TLS | TRUCK LOADING STANDPIPE |
| TQ | THREE QUARTER CIRCLE |
| TRM | TURF REINFORCEMENT MAT |
| TT | TWO-THIRDS CIRCLE |
| TWSA | TREE WELL SPRINKLER ASSEMBLY |
| Typ | TYPICAL |

## U

| | |
|---|---|
| UG | UNDERGROUND |

## W

| | |
|---|---|
| W | WIDTH |
| W/ | WITH |
| WM | WATER METER |
| WS | WYE STRAINER |
| WSA | WYE STRAINER ASSEMBLY |
| WSP | WELDED STEEL PIPE |
| WWM | WELDED WIRE MESH |

NOTE:
For additional abbreviations, see Standard Plans A10A and A10B.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# LANDSCAPE AND EROSION CONTROL ABBREVIATIONS

NO SCALE

RSP H1 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN H1
DATED MAY 20, 2011 - PAGE 218 OF THE STANDARD PLANS BOOK DATED 2010.

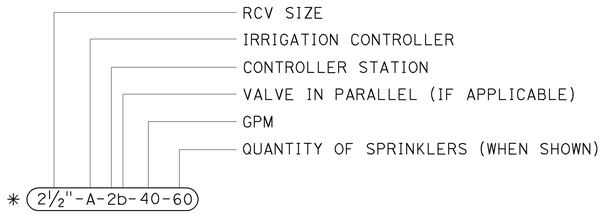
**REVISED STANDARD PLAN RSP H1**

**2010 REVISED STANDARD PLAN RSP H1**

6-28-13

| EXISTING | NEW | ITEM DESCRIPTION |
|---|---|---|
| | | WATER METER (WM) |
| | | BACKFLOW PREVENTER ASSEMBLY (BPA) |
| | | BACKFLOW PREVENTER ENCLOSURE (BPE) |
| | | BOOSTER PUMP (BP) |
| | | TRUCK LOADING STANDPIPE (TLS) |
| | FS | FLOW SENSOR (FS) |
| | | MASTER IRRIGATION CONTROLLER (MIC) |
| | | AUXILIARY IRRIGATION CONTROLLER (AIC) |
| | | IRRIGATION CONTROLLER (IC)<br>IRRIGATION CONTROLLER (IC) (BATTERY)<br>IRRIGATION CONTROLLER (IC) (SOLAR)<br>IRRIGATION CONTROLLER (IC) (TWO WIRE) |
| | | IRRIGATION CONTROLLER(S) IN CONTROLLER ENCLOSURE CABINET (ICC) |
| acc | ACC | ARMOR-CLAD CONDUCTORS (ACC) |
| | | CONTROL AND NEUTRAL CONDUCTORS (CNC) |
| | | IRRIGATION CONDUIT |
| | | IRRIGATION SLEEVE |
| dip | DIP | DUCTILE IRON PIPE (SUPPLY LINE) (MAIN) (DIP) |
| | | GALVANIZED STEEL PIPE (SUPPLY LINE) (MAIN) (GSP) |
| | | GALVANIZED STEEL PIPE (SUPPLY LINE) (LATERAL) (GSP) |
| | | PLASTIC PIPE (SUPPLY LINE) (MAIN) |
| | | PLASTIC PIPE (SUPPLY LINE) (LATERAL) |
| cp | CP | COPPER PIPE (SUPPLY LINE) |
| dit | DIT | DRIP IRRIGATION TUBING |
| | | REMOTE CONTROL VALVE (RCV)<br>REMOTE CONTROL VALVE (MASTER) (RCVM)<br>REMOTE CONTROL VALVE (MASTER) W/FLOW METER (RCVMF) |
| | | REMOTE CONTROL VALVE W/PRESSURE REGULATOR (RCVP) |
| | | EXISTING MANUAL CONTROL VALVE (MCV) |
| | | DRIP VALVE ASSEMBLY (DVA) |
| | | WYE STRAINER ASSEMBLY (WSA) |

| EXISTING | NEW | ITEM DESCRIPTION |
|---|---|---|
| | | GATE VALVE (GV) |
| | | BALL VALVE (BV) |
| | | QUICK COUPLING VALVE (QCV) |
| | | CAM COUPLER ASSEMBLY (CCA) |
| | | GARDEN VALVE ASSEMBLY (GARVA) |
| | | PRESSURE REGULATING VALVE (PRV) |
| | | PRESSURE RELIEF VALVE (PRLV) |
| | | FLOW CONTROL VALVE (FCV) |
| | | COMBINATION AIR RELEASE VALVE (CARV) |
| | | CHECK VALVE (CV) |
| | | FLUSH VALVE (FV) |
| | | EXISTING NOZZLE LINE W/TURNING UNION |
| | | EXISTING IRRIGATION SYSTEM |
| | | EXISTING IRRIGATION SYSTEM TO BE REMOVED |
| | | CHAIN LINK GATE |
| | | QUICK COUPLING VALVE W/SPRINKLER PROTECTOR |
| 3 | 3 | SPRINKLER W/SPRINKLER PROTECTOR |
| | C | CONNECT TO EXISTING SYSTEM |
| | | CAP |
| | | CAP EXISTING |
| | FR | FIBER ROLL |
| | CS | COMPOST SOCK |




## VALVE CODE

* VALVE CODES FOR EXISTING VALVES ARE SHOWN IN A DASHED ENCLOSURE.

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 84 | 113 |

LICENSED LANDSCAPE ARCHITECT

July 15, 2016
PLANS APPROVAL DATE

LICENSED LANDSCAPE ARCHITECT
Michael V. Ferrara 3899
Signature
9-30-17
Renewal Date
Date
STATE OF CALIFORNIA

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TO ACCOMPANY PLANS DATED 08-29-16

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# LANDSCAPE AND EROSION CONTROL SYMBOLS

NO SCALE

RSP H2 DATED JULY 15, 2016 SUPERSEDES RSP H2 DATED NOVEMBER 15, 2013 AND RSP H2 DATED JULY 19, 2013 AND STANDARD PLAN H2 DATED MAY 20, 2011 - PAGE 219 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP H2**

**2010 REVISED STANDARD PLAN RSP H2**

5-24-16

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 85 | 113 |

REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

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TO ACCOMPANY PLANS DATED 08-29-16

## TABLE 1

### TAPER LENGTH CRITERIA AND CHANNELIZING DEVICE SPACING

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

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

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

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

## TABLE 2

### LONGITUDINAL BUFFER SPACE AND FLAGGER STATION SPACING

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

* - Speed is posted speed limit, off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph

** - Longitudinal buffer space or flagger station spacing

*** - Use on sustained downgrade steeper than -3 percent and longer than 1 mile.

## TABLE 3

### ADVANCE WARNING SIGN SPACING

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

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

2010 REVISED STANDARD PLAN RSP T9

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# TRAFFIC CONTROL SYSTEM TABLES FOR LANE AND RAMP CLOSURES

NO SCALE

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

**REVISED STANDARD PLAN RSP T9**

4-30-13

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 86 | 113 |

REGISTERED CIVIL ENGINEER

April 19, 2013
PLANS APPROVAL DATE

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

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

TO ACCOMPANY PLANS DATED 08-29-16

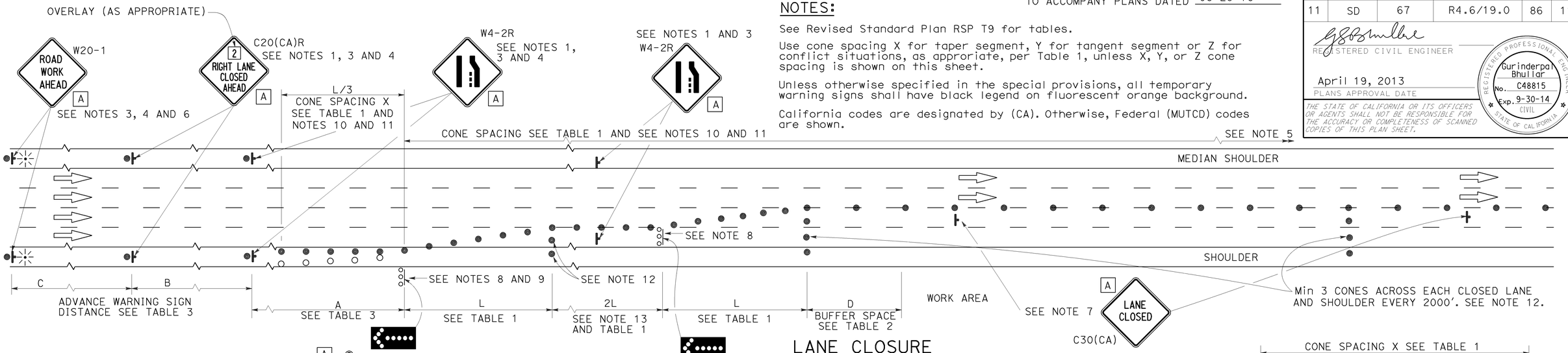
## NOTES:

See Revised Standard Plan RSP T9 for tables.

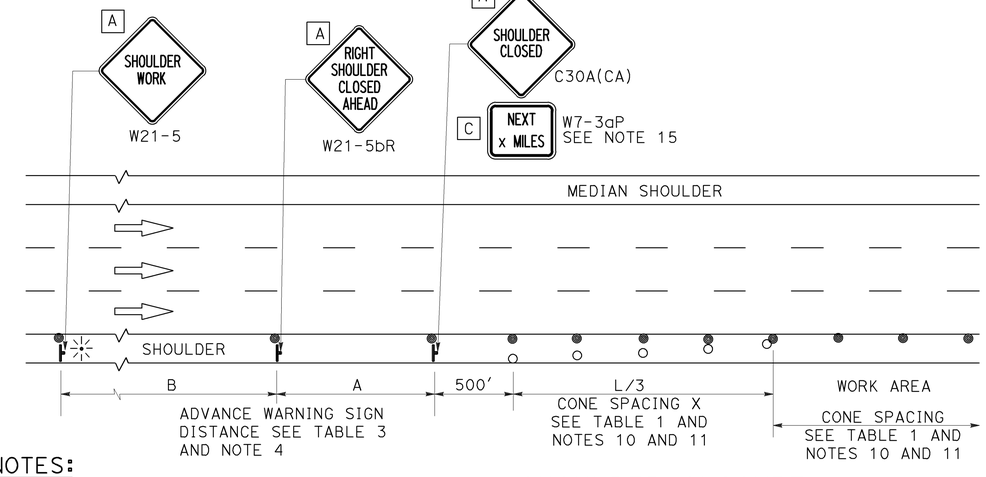
Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as approriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.

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

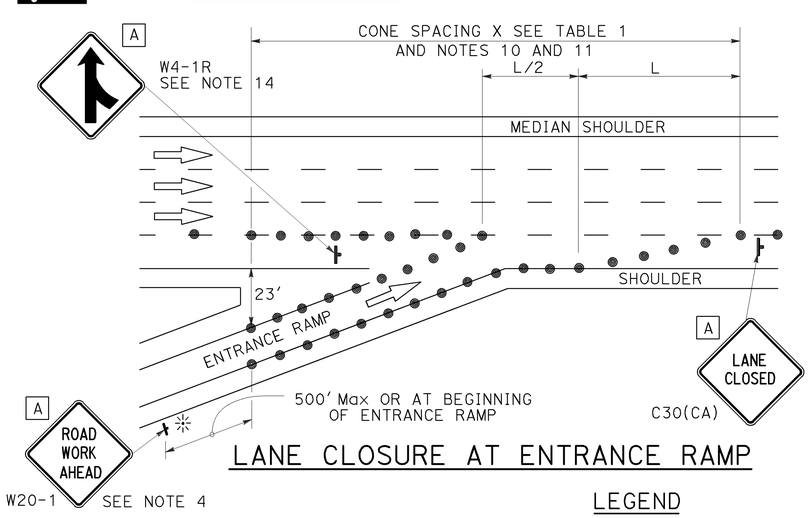
California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.



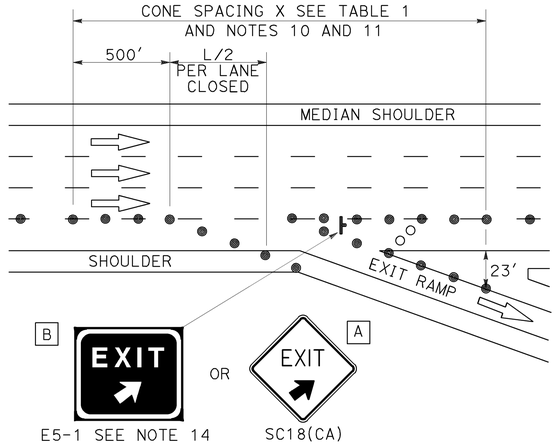

## LANE CLOSURE




## SHOULDER CLOSURE




## LANE CLOSURE AT ENTRANCE RAMP




## LANE CLOSURE AT EXIT RAMP

## NOTES:

1. Median lane closures shall conform to the details as shown except that C20(CA)L and W4-2L signs shall be used.
2. At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closures.
3. Duplicate sign installations are not required:
   a) On opposite shoulder if at least one-half of the available lanes remain open to traffic.
   b) In the median if the width of the median shoulder is less than 8' and the outside lanes are to be closed.
4. Each advance warning sign on each side of the roadway shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
5. A G20-2 "END ROAD WORK" sign, with minimum size of 48" x 24" as appropriate, shall be placed at the end of the lane closure unless the end of work area is obvious or ends within a larger project's limits.
6. If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT _____ MILES", use a C20(CA) sign for the first advance warning sign.
7. Place a C30(CA) sign every 2000' throughout length of lane closure.
8. One flashing arrow sign for each lane closed. The flashing arrow signs shall be Type I.
9. A minimum 1500' of sight distance shall be provided where possible for vehicles approaching the first flashing arrow sign. Lane closures shall not begin at top of crest vertical curve or on a horizontal curve.
10. All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
11. Portable delineators, placed at one-half the spacing indicated for traffic cones may be used instead of cones for daytime closures only.
12. Unless otherwise specified in the special provisions, a minimum of 3 cones shall be placed transversely across each closed lane and shoulder at each location where a taper across a traffic lane ends and every 2000' as shown on the "Lane Closure" detail. Two Type II barricades may be used instead of the 3 cones. The transverse alignment of the cones or barricades on the closed shoulder may be shifted from the transverse alignment to provide access to the work.
13. Unless otherwise specified in the special provisions, the 2L tangent shown along lane lines shall be used between the L tapers required for each closed traffic lane.
14. Unless otherwise specified in the special provisions, the E5-1 or SC18(CA) and W4-1 signs shall be used as shown.
15. A W7-3aP "NEXT___MILES" plaque must be used if theshoulder closure extends beyond the distance that can be perceived by road users.

## LEGEND

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

## SIGN PANEL SIZE (Min)

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE ON FREEWAYS AND EXPRESSWAYS

NO SCALE

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

# REVISED STANDARD PLAN RSP T10

2010 REVISED STANDARD PLAN RSP T10

12-18-12

TO ACCOMPANY PLANS DATED 08-29-16

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 87 | 113 |

REGISTERED CIVIL ENGINEER

April 19, 2013
PLANS APPROVAL DATE

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

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

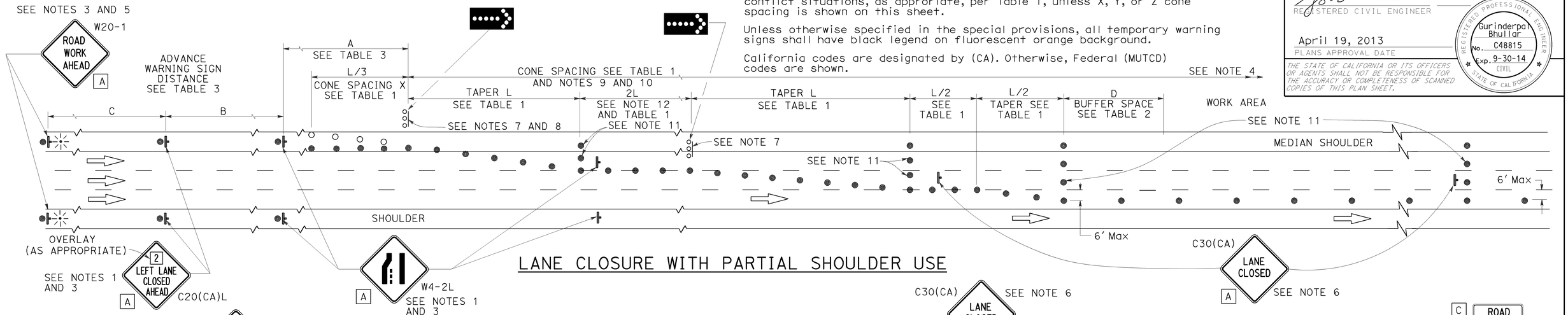
**NOTES:**

See Revised Standard Plan RSP T9 for tables.

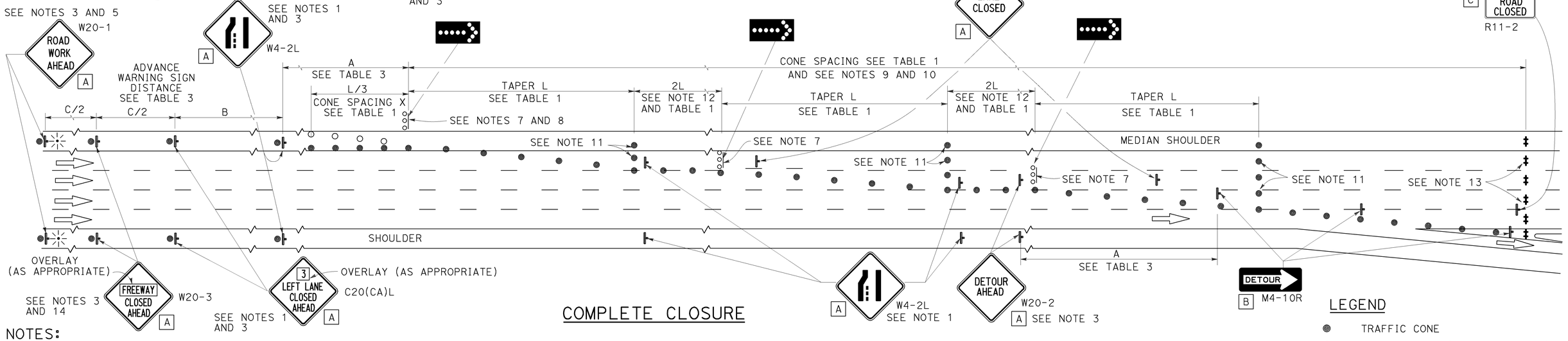
Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as approriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.

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

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




## LANE CLOSURE WITH PARTIAL SHOULDER USE




## COMPLETE CLOSURE

**NOTES:**

1. Lane closures on the right side using partial median shoulder as a traffic lane shall conform to the details as shown except that C20(CA)R and W4-2R signs shall be used.
2. At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closures.
3. Each advance warning sign on each side of the roadway shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" X 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
4. A G20-2 "END ROAD WORK" sign, with minimum size of 48" x 24" as appropriate, shall be placed at the end of the lane closure unless the end of work area is obvious or ends within a larger project's limits.
5. If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT ___ MILES", use a C20(CA) sign for the first advance warning sign.
6. Place a C30(CA) sign every 2000' throughout length of lane closure.
7. One flashing arrow sign for each lane closed. The flashing arrow signs shall be Type I.
8. A minimum 1500' of sight distance shall be provided where possible for vehicles approaching the first flashing arrow sign. Lane closures shall not begin at the top of crest vertical curve or on a horizontal curve.
9. All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
10. Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime closures only.
11. Unless otherwise specified in the special provisions, a minimum of 3 cones shall be placed transversely across each closed lane and shoulder at each location where a taper across a traffic lane ends and every 2000' as shown on the "Lane Closure With Partial Shoulder Use" detail. Two Type II barricades may be used instead of the 3 cones. The transverse alignment of the cones or barricades on the closed shoulder may be shifted from the transverse alignment to provide access to the work.
12. Unless otherwise specified in the special provisions, the 2L tangent shown along lane lines shall be used between the L tapers required for each closed traffic lane.
13. A minimum of Two Type II or III barricades shall be placed across each closed lane and shoulder at the location shown and every 2000' within the complete closure area. Within the complete closure area, the transverse alignment of the barricades on the closed shoulder may be shifted from the transverse alignment to provide access to the work.
14. When specified in the special provisions, a W20-2 "DETOUR AHEAD" sign is to be used in place of the W20-3 "FREEWAY CLOSED AHEAD" sign.

### SIGN PANEL SIZE (Min)

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

### LEGEND

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# TRAFFIC CONTROL SYSTEM FOR LANE CLOSURES ON FREEWAYS AND EXPRESSWAYS

NO SCALE

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

# REVISED STANDARD PLAN RSP T10A

2010 REVISED STANDARD PLAN RSP T10A

12-18-12

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 88 | 113 |

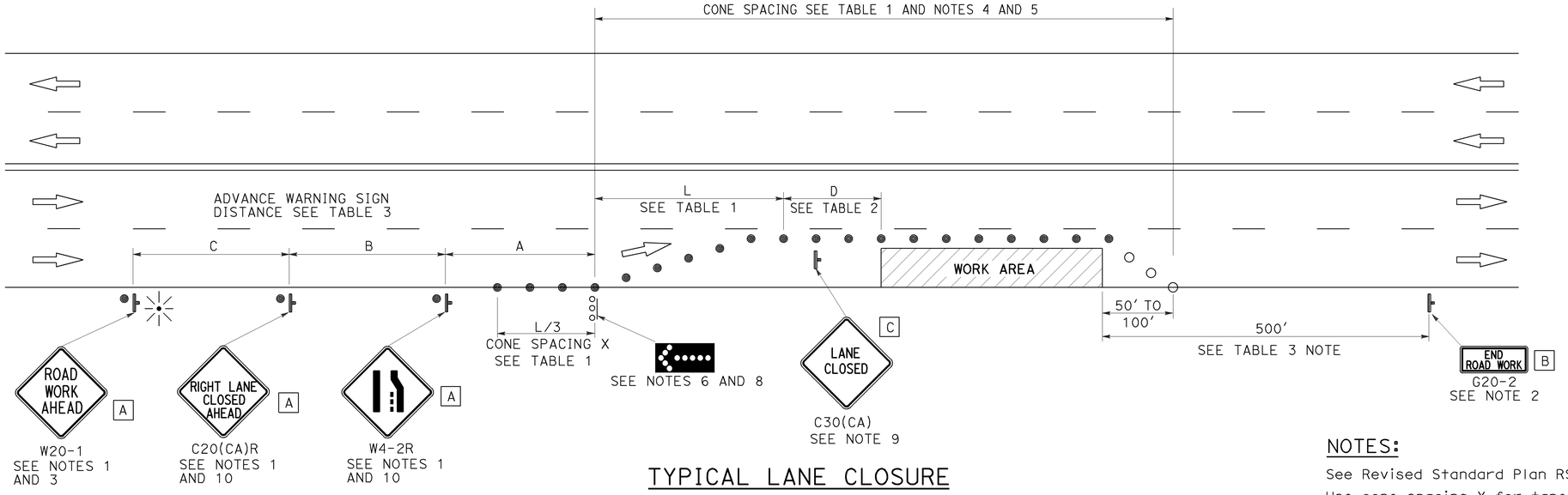
REGISTERED CIVIL ENGINEER

April 19, 2013
PLANS APPROVAL DATE

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

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

TO ACCOMPANY PLANS DATED 08-29-16




# TYPICAL LANE CLOSURE

## NOTES:

See Revised Standard Plan RSP T9 for tables.

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

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

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

## LEGEND

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

## SIGN PANEL SIZE (Min)

- A 48" × 48"
- B 36" × 18"
- C 30" × 30"

## NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE ON MULTILANE CONVENTIONAL HIGHWAYS

NO SCALE

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

# REVISED STANDARD PLAN RSP T11

2010 REVISED STANDARD PLAN RSP T11

4-2-13

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 89 | 113 |

REGISTERED CIVIL ENGINEER

April 19, 2013
PLANS APPROVAL DATE

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

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TO ACCOMPANY PLANS DATED 08-29-16

## LEGEND

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

## SIGN PANEL SIZE (Min)

- [A] 48" × 48"
- [B] 24" × 24"
- [C] 36" × 18"

## NOTES:

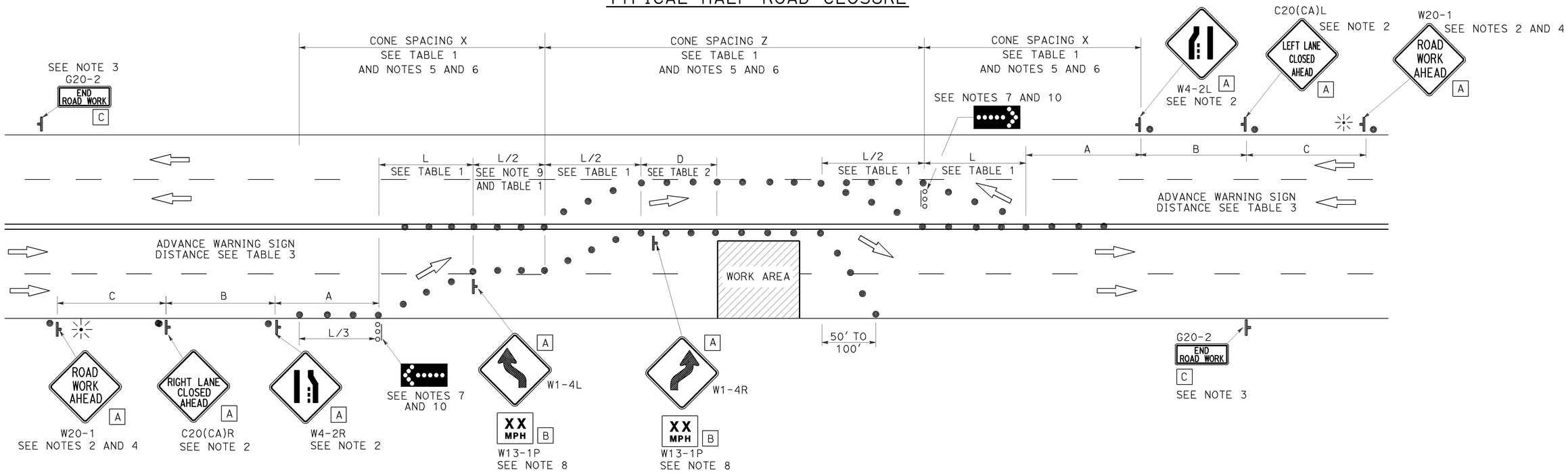
See Revised Standard Plan RSP T9 for tables.

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

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

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

## TYPICAL HALF ROAD CLOSURE




## NOTES:

1. At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closure unless, otherwise directed by the Engineer.
2. Each advance warning sign in each direction of travel shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
3. A G20-2 "END ROAD WORK" sign, as appropriate, shall be placed at the end of the lane closure unless the end of work area is obvious, or ends within a larger project's limits.
4. If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT _____ MILES", use a C20(CA) sign for the first advance warning sign.
5. All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
6. Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime closures only.
7. Flashing arrow signs shall be either Type I or Type II.
8. Advisory speed will be determined by the Engineer. The W13-1P Plaque will not be required when advisory speed is more than the posted or maximum speed limit.
9. Unless otherwise specified in the special provisions, the tangent (L/2) shall be used.
10. A minimum 1500' of sight distance shall be provided where possible for vehicles approaching the first flashing arrow sign. Lane closures shall not begin at the top of crest vertical curve or on a horizontal curve.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# TRAFFIC CONTROL SYSTEM FOR HALF ROAD CLOSURE ON MULTILANE CONVENTIONAL HIGHWAYS AND EXPRESSWAYS

NO SCALE

RSP T12 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T12
DATED MAY 20, 2011 - PAGE 240 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP T12**

2010 REVISED STANDARD PLAN RSP T12

4-2-13

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 90 | 113 |

Devinder Singh
REGISTERED CIVIL ENGINEER

October 30, 2015
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Devinder Singh — No. C50470 — Exp. 6-30-17 — CIVIL — STATE OF CALIFORNIA

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

TO ACCOMPANY PLANS DATED 08-29-16

## NOTES:

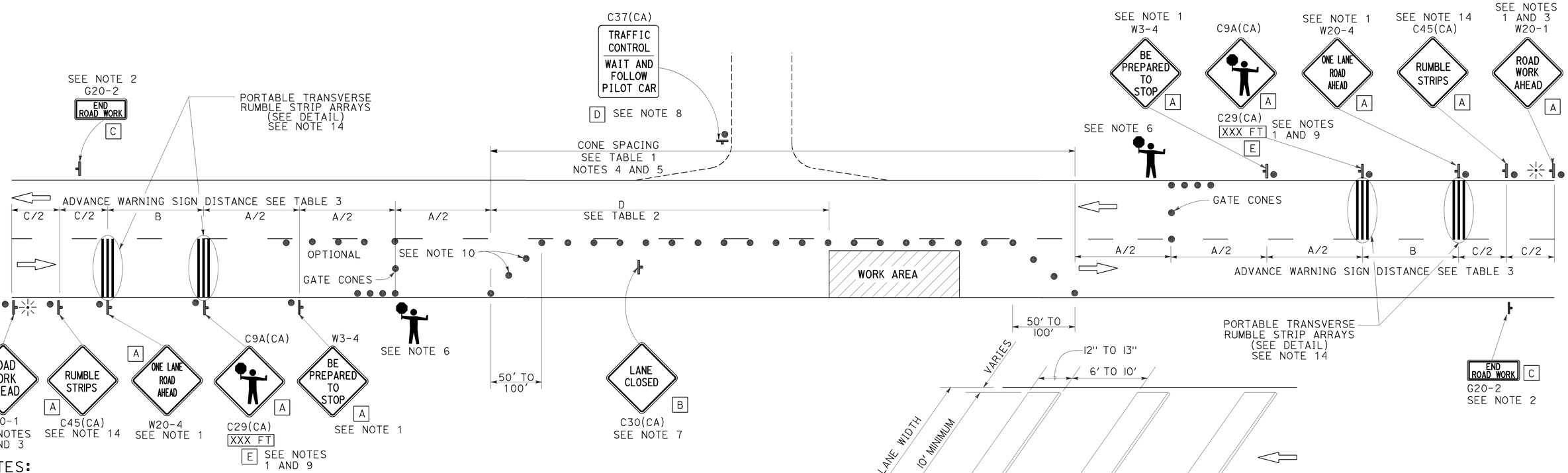
See Revised Standard Plan RSP T9 for tables.

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

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

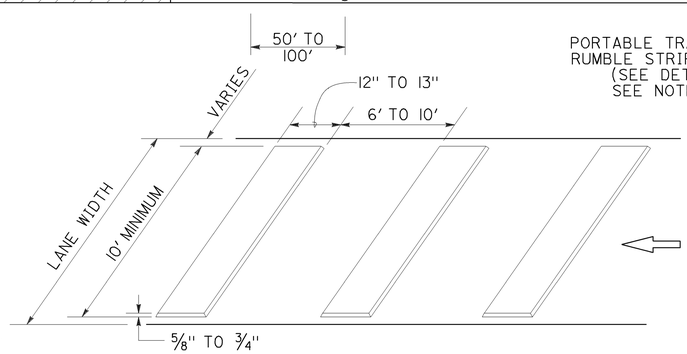
California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

# TYPICAL LANE CLOSURE WITH REVERSIBLE CONTROL




## NOTES:

1. Each advance warning sign in each direction of travel shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
2. A G20-2 "END ROAD WORK" sign, as appropriate, shall be placed at the end of the lane control unless the end of work area is obvious, or ends within a larger project's limits.
3. If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT _____ MILES", use a W20-4 sign for the first advance warning sign.
4. All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
5. Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime closures only.
6. Additional advance flaggers may be required. Flagger should stand in a conspicuous place, be visible to approaching traffic as well as approaching vehicles after the first vehicle has stopped. During the hours of darkness, the flagging-station and flagger shall be illuminated and clearly visible to approaching traffic. The illumination footprint of the lighting on the ground shall be at least 20' in diameter. Place a minimum of four cones at 50' intervals in advance of flagger station as shown.
7. Place C30(CA) "LANE CLOSED" sign at 500' to 1000' intervals throughout extended work areas. They are optional if the work area is visible from the flagger station.
8. When a pilot car is used, place a C37(CA) "TRAFFIC CONTROL-WAIT AND FOLLOW PILOT CAR" sign with black legend on white background at all intersections, driveways and alleys without a flagger within traffic control area. Signs shall be clean and visible at all times. Where traffic can not be effectively self-regulated, at least one flagger shall be used at each intersection within traffic control area.
9. An optional C29(CA) sign may be placed below the C9A(CA) sign.
10. Either traffic cones or barricades shall be placed on the taper. Barricades shall be Type I, II, or III.
11. The color of the portable transverse rumble strips shall be black or orange. Use 2 arrays, each array shall consist of 3 rumble strips.
12. Portable transverse rumble strips shall not be placed on sharp horizontal or vertical curves nor shall they be placed through pedestrian crossings.
13. If the portable transverse rumble strips become out of alignment (skewed) by more than 6 inches, measured from one end to the other, they shall be readjusted to bring the placement back to the original location.
14. Portable transverse rumble strips are not required if any one of the following conditions is satisfied:
    A. Work duration occupies a location for four hours or less
    B. Posted speed limit is below 45 MPH
    C. Work is of emergency nature
    D. Work zone is in snow or icy weather conditions




## PORTABLE TRANSVERSE RUMBLE STRIP ARRAY DETAIL

## SIGN PANEL SIZE (Min)

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

## LEGEND

- TRAFFIC CONE
- TEMPORARY TRAFFIC CONTROL SIGN
- PORTABLE FLASHING BEACON
- FLAGGER

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

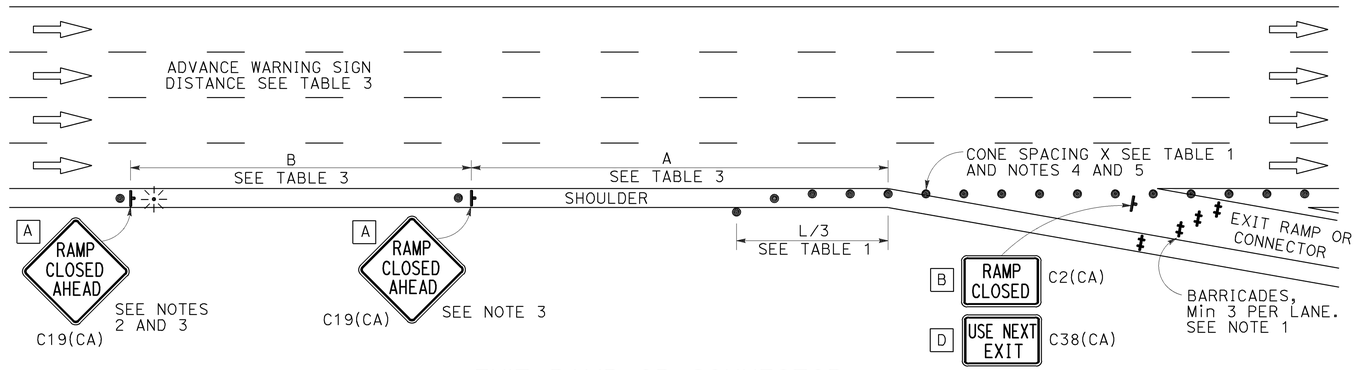
RSP T13 DATED OCTOBER 30, 2015 SUPERSEDES RSP T13 DATED OCTOBER 17, 2014, RSP T13 DATED JULY 18, 2014 AND RSP T13 DATED APRIL 19, 2013 AND STANDARD PLAN T13 DATED MAY 20, 2011 - PAGE 241 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP T13**

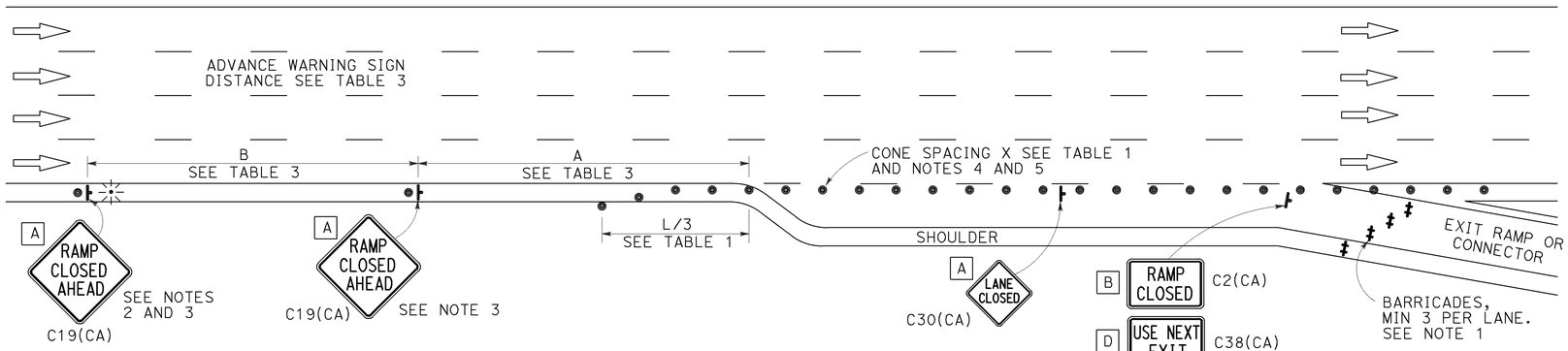
2010 REVISED STANDARD PLAN RSP T13

10-13-15

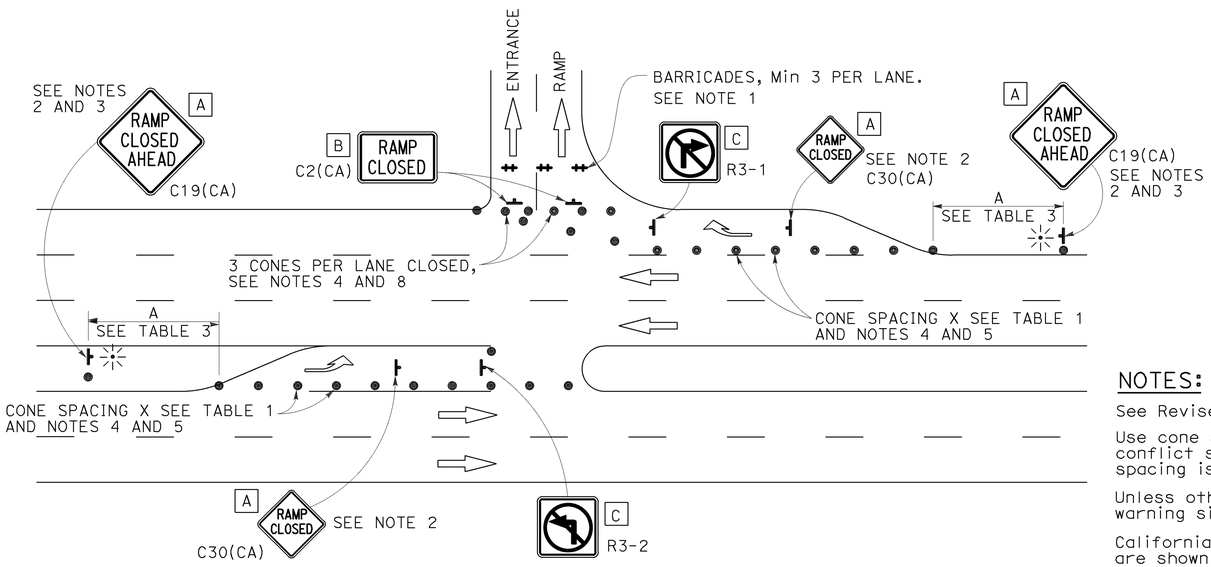
# TYPICAL RAMP CLOSURES



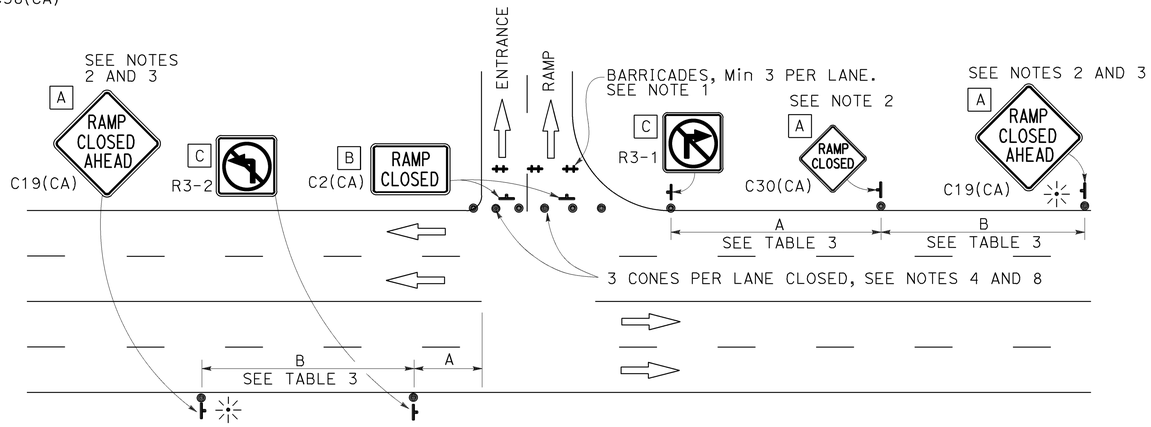

## EXIT RAMP OR CONNECTOR




## EXIT RAMP OR CONNECTOR WITH ADDITIONAL LANE




## ENTRANCE RAMP WITH TURNING POCKETS




## ENTRANCE RAMP WITHOUT TURNING POCKETS

## SIGN PANEL SIZE (Min)

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

## LEGEND

- TRAFFIC CONE
- TEMPORARY TRAFFIC CONTROL SIGN
- BARRICADES
- PORTABLE FLASHING BEACON

## NOTES:

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

## NOTES:

See Revised Standard Plan RSP T9 for tables.

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

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

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

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 91 | 113 |

REGISTERED CIVIL ENGINEER

April 19, 2013
PLANS APPROVAL DATE

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

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

TO ACCOMPANY PLANS DATED 08-29-16

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# TRAFFIC CONTROL SYSTEM FOR RAMP CLOSURE

NO SCALE

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

**REVISED STANDARD PLAN RSP T14**

2010 REVISED STANDARD PLAN RSP T14

12-18-12

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 92 | 113 |

REGISTERED CIVIL ENGINEER

April 19, 2013
PLANS APPROVAL DATE

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

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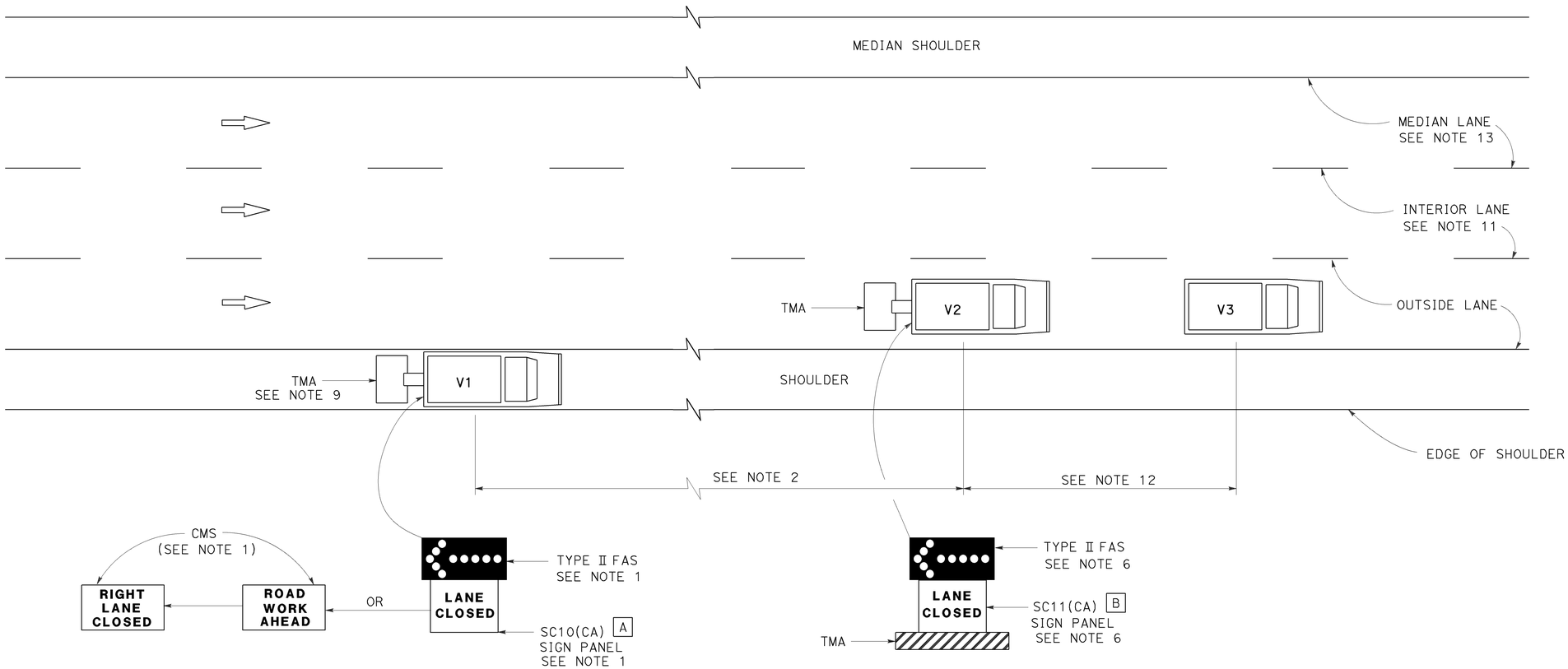
TO ACCOMPANY PLANS DATED 08-29-16




## SIGN PANEL SIZE (Min)

A 66" x 36"

B 54" x 42"

## LEGEND

| | |
|---|---|
| V1 | SIGN VEHICLE |
| V2 | SHADOW VEHICLE |
| V3 | WORK/APPLICATION VEHICLE |
| | FLASHING ARROW SIGN (FAS) |
| CMS | CHANGEABLE MESSAGE SIGN |
| TMA | TRUCK-MOUNTED ATTENUATOR |

# MOVING LANE CLOSURE ON MEDIAN LANE OR OUTSIDE LANE OF MULTILANE HIGHWAYS

## NOTES:

1. Either a changeable message sign or a SC10(CA) sign panel and a Type II flashing arrow sign shall be mounted on the rear of sign vehicle V1. The changeable message sign shall be sequenced to show the "ROAD WORK AHEAD" message first, followed by the "RIGHT LANE CLOSED" message. For median lane closure, the flashing arrow symbol shall be reversed with the arrowhead on the right and the changeable message sign shall show "LEFT LANE CLOSED".
2. If traffic queues develop, sign vehicle V1 should be positioned upstream from the end of queue. Sign vehicle V1 shall be positioned where highly visible when shoulders are not available.
3. A minimum sight distance of 1500′ should be provided in advance of sign vehicle V1.
4. Sign vehicle V1 should remain at the beginning of horizontal or vertical curves until the other vehicles (V2 and V3) are far enough beyond the curve to resume the minimum sight distance of 1500′.
5. Vehicle-mounted sign panels shall have Type III or above retroreflective sheeting, black on white, or black on fluorescent orange, with 6" minimum series D letters per Caltrans sign specifications.
6. Shadow vehicle V2 shall be equipped with a truck-mounted attenuator. The sign panel shown and a Type II flashing arrow sign shall be mounted on the rear of shadow vehicle V2. For median lane closure the flashing arrow sign symbol shall be displayed with the arrowhead on the right.
7. All vehicles used for lane closures shall be equipped with two-way radios, and the vehicle operators shall maintain communication during the work or application operation.
8. All vehicles shall be equipped with flashing or rotating amber lights.
9. If sign vehicle V1 encroaches into the traffic lane due to insufficient shoulder width, sign vehicle V1 shall be equipped with a truck-mounted attenuator. Sign vehicle V1 shall stay as close to the edge of shoulder as practicable.
10. Where workers would be on foot in the work area, a stationary type lane closure (Revised Standard Plan T10, T11, etc., as applicable) shall be used instead of this plan.
11. For moving lane closure on interior lane of multilane highways, use Revised Standard Plan T16.
12. The spacing between work vehicle(s) and the shadow vehicles, and between each shadow vehicle should be minimized to deter road users from driving in between.
13. When the work/application vehicle V3 occupies the median lane, sign vehicle V1 should drive in the median shoulder and indicate left lane closed ahead.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# TRAFFIC CONTROL SYSTEM FOR MOVING LANE CLOSURE ON MULTILANE HIGHWAYS

NO SCALE

RSP T15 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T15
DATED MAY 20, 2011 - PAGE 243 OF THE STANDARD PLANS BOOK DATED 2010.

# REVISED STANDARD PLAN RSP T15

2010 REVISED STANDARD PLAN RSP T15

12-18-12

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 93 | 113 |

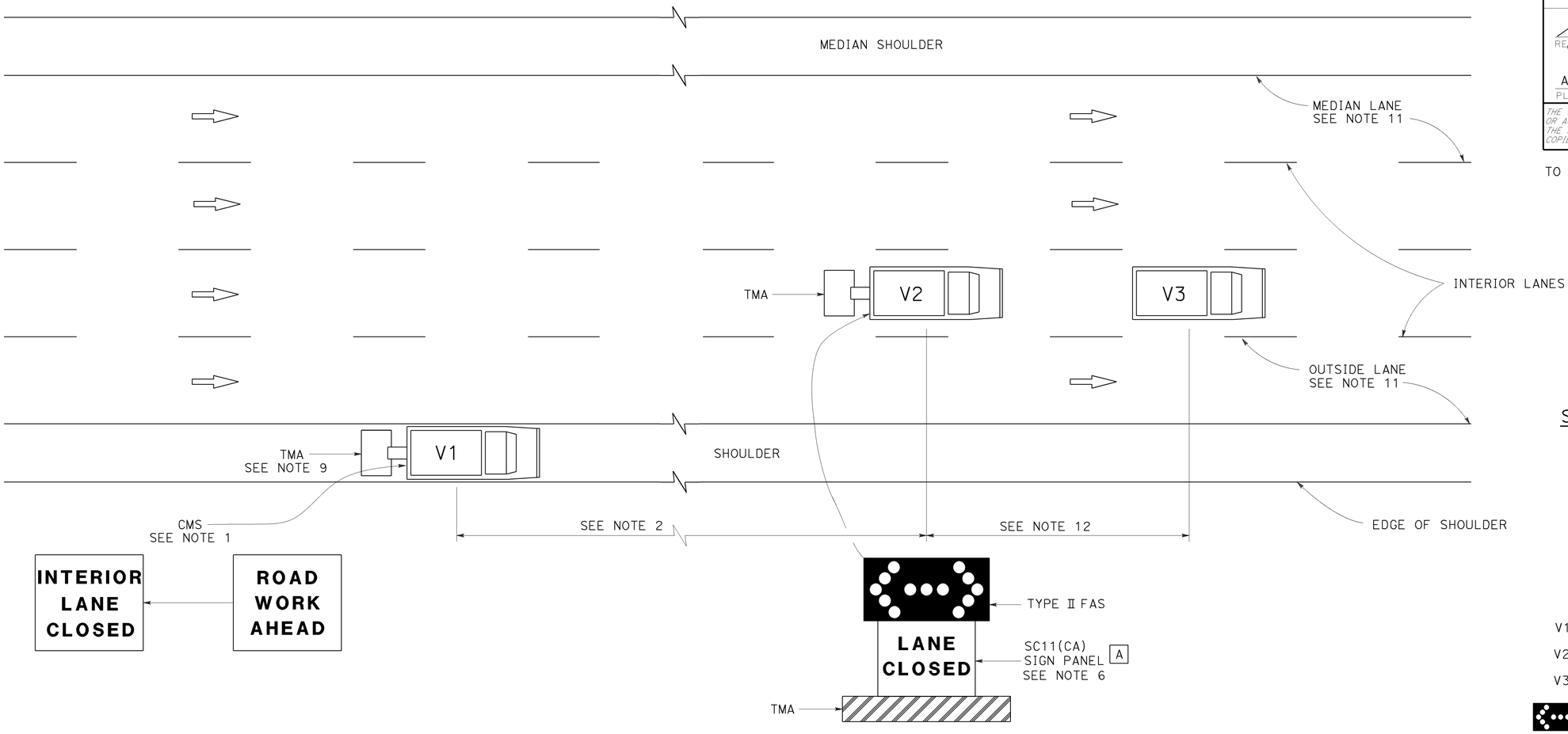
REGISTERED CIVIL ENGINEER

April 19, 2013
PLANS APPROVAL DATE

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

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

TO ACCOMPANY PLANS DATED 08-29-16




## MOVING LANE CLOSURE ON INTERIOR LANE OF MULTILANE HIGHWAYS

### SIGN PANEL SIZE (Min)

A 54" x 42"

### LEGEND

| | |
|---|---|
| V1 | SIGN VEHICLE |
| V2 | SHADOW VEHICLE |
| V3 | WORK/APPLICATION VEHICLE |
| | FLASHING ARROW SIGN (FAS) IN FLASHING DOUBLE ARROW MODE |
| CMS | CHANGEABLE MESSAGE SIGN |
| TMA | TRUCK-MOUNTED ATTENUATOR |

### NOTES:

1. A changeable message sign shall be mounted on the rear of sign vehicle V1. The changeable message sign shall be sequenced to show the "ROAD WORK AHEAD" message first, followed by the "INTERIOR LANE CLOSED" message. The message "CENTER LANE CLOSED" may be used in place of the "INTERIOR LANE CLOSED" message.
2. If traffic queues develop, sign vehicle V1 should be positioned upstream from the end of queue. Sign vehicle V1 shall be positioned where highly visible when shoulders are not available.
3. A minimum sight distance of 1500′ should be provided in advance of sign vehicle V1.
4. Sign vehicle V1 should remain at the beginning of horizontal or vertical curves until the other vehicles (V2 and V3) are far enough beyond the curve to resume the minimum sight distance of 1500′.
5. Vehicle-mounted sign panels shall have Type III or above retroreflective sheeting, black on white, or black on fluorescent orange, with 6" minimum series D letters per Caltrans sign specifications.
6. Shadow vehicle V2 shall be equipped with a truck-mounted attenuator. The sign panel shown and a Type II flashing arrow sign shall be mounted on the rear of shadow vehicle V2.
7. All vehicles used for lane closures shall be equipped with two-way radios, and the vehicle operators shall maintain communication during the work or application operation.
8. All vehicles shall be equipped with flashing or rotating amber lights.
9. If sign vehicle V1 encroaches into the traffic lane due to insufficient shoulder width, sign vehicle V1 shall be equipped with a truck-mounted attenuator. Sign vehicle V1 shall stay as close to the edge of shoulder as practicable.
10. Where workers would be on foot in the work area, a stationary type lane closure (Revised Standard Plan T10, T11 etc., as applicable) shall be used instead of this plan.
11. For moving lane closure on median lane or outside lane of multilane highways, use Revised Standard Plan T15.
12. The spacing between work vehicle(s) and the shadow vehicles, and between each shadow vehicle should be minimized to deter road users from driving in between.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# TRAFFIC CONTROL SYSTEM FOR MOVING LANE CLOSURE ON MULTILANE HIGHWAYS

NO SCALE

RSP T16 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T16
DATED MAY 20, 2011 - PAGE 244 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP T16**

2010 REVISED STANDARD PLAN RSP T16

12-18-12

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 94 | 113 |

REGISTERED CIVIL ENGINEER

April 19, 2013
PLANS APPROVAL DATE

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

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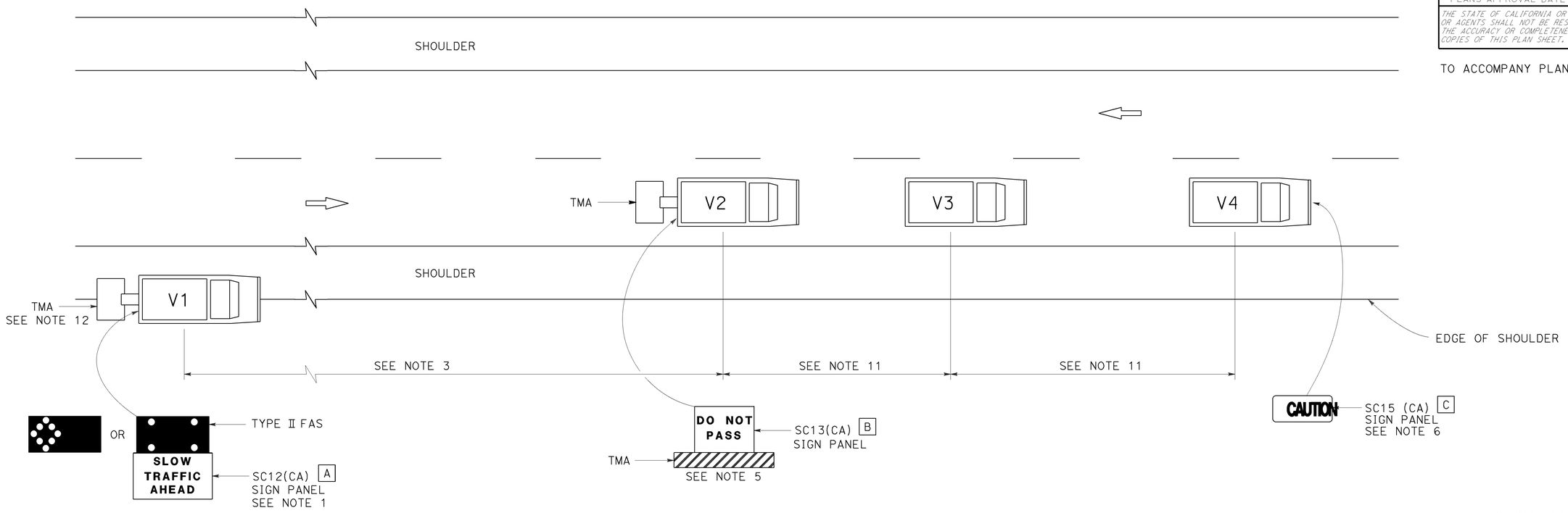
TO ACCOMPANY PLANS DATED 08-29-16




## NOTES:

1. Either a changeable message sign or a SC12(CA) "SLOW TRAFFIC AHEAD" sign shall be mounted on the rear of sign vehicle V1. The changeable message sign shall be sequenced to show the "CAUTION" message first, follow by the "SLOW TRAFFIC AHEAD" message. A Type II flashing arrow sign may be used with the SC12(CA) sign panel.
2. Sign vehicle V1 should be positioned where highly visible when shoulders are not available.
3. If traffic queues develop, sign vehicle V1 should be positioned upstream from the end of queue.
4. Vehicle-mounted sign panels shall have Type III or above retroreflective sheeting, black on white, or black on fluorescent orange, with 6" minimum series D letters per Caltrans sign specifications.
5. Shadow vehicle shall be equipped with a truck-mounted attenuator. The sign panel shown shall be mounted on the rear of shadow vehicle V2. The message "LANE CLOSED" may be used in place of the "DO NOT PASS" message.
6. The sign panel shown shall be mounted on the front of sign vehicle V4, facing opposing traffic.
7. All vehicles shall be equipped with flashing or rotating amber lights.
8. Sign vehicle V4 will not be required when the work and vehicles V2 and V3 are 2' or more from the centerline of the highway during the work or application operations.
9. All vehicles used for lane closures shall be equipped with two-way radios and the vehicle operators shall maintain communication during the work or application operation.
10. This plan shall not be used where workers would be on foot in the work area. Use a stationary type lane closure (Revised Standard Plan T13) for this condition.
11. Minimize spacing between vehicles V2 and V3 and vehicles V3 and V4 to deter road users from driving in between them.
12. If sign vehicle V1 encroaches into the traffic lane due to insufficient shoulder width, sign vehicle V1 shall be equipped with a truck-mounted attenuator. Sign vehicle V1 shall stay as close to the edge of shoulder as practicable.

## LEGEND

| | |
|---|---|
| V1 | SIGN VEHICLE |
| V2 | SHADOW VEHICLE |
| V3 | WORK/APPLICATION VEHICLE |
| V4 | SIGN VEHICLE |
| TMA | TRUCK-MOUNTED ATTENUATOR |
| | FLASHING ARROW SIGN (FAS) IN FLASHING CAUTION MODE |
| | FLASHING ARROW SIGN (FAS) IN ALTERNATING DIAMOND CAUTION |

## SIGN PANEL SIZE (Min)

| | |
|---|---|
| A | 72" x 42" |
| B | 54" x 42" |
| C | 54" x 24" |

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# TRAFFIC CONTROL SYSTEM FOR MOVING LANE CLOSURE ON TWO LANE HIGHWAYS

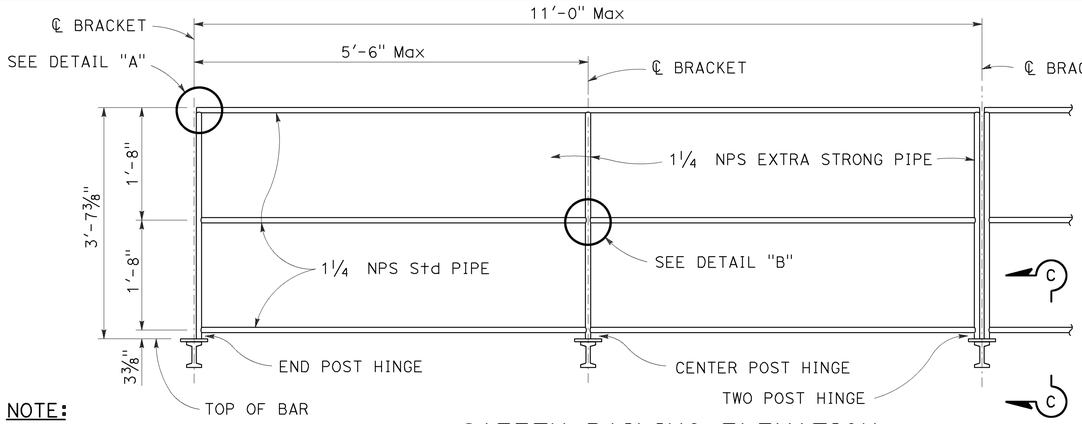
NO SCALE

RSP T17 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T17
DATED MAY 20, 2011 - PAGE 245 OF THE STANDARD PLANS BOOK DATED 2010.

# REVISED STANDARD PLAN RSP T17

2010 REVISED STANDARD PLAN RSP T17

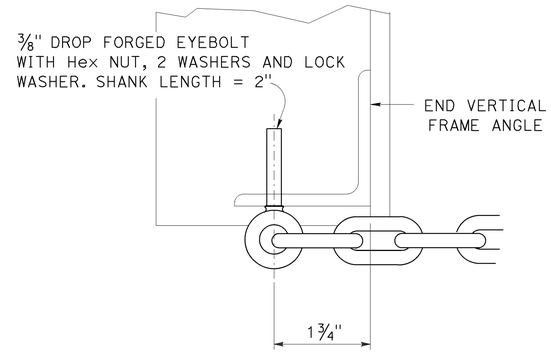
12-18-12




NOTE:
Chain assembly behind
(see detail this page)

## SAFETY RAILING ELEVATION

NOTE:
See Standard Plans
S101 and S105 and S109
for walkway bracket spacing.




## SECTION D-D

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 95 | 113 |

REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Stanley P. Johnson
No. C57793
Exp. 3-31-14
CIVIL
STATE OF CALIFORNIA

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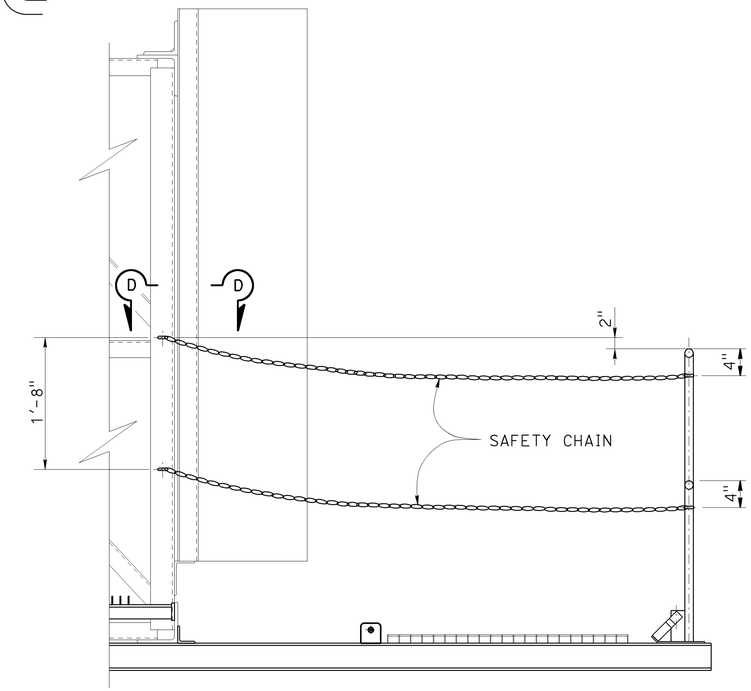
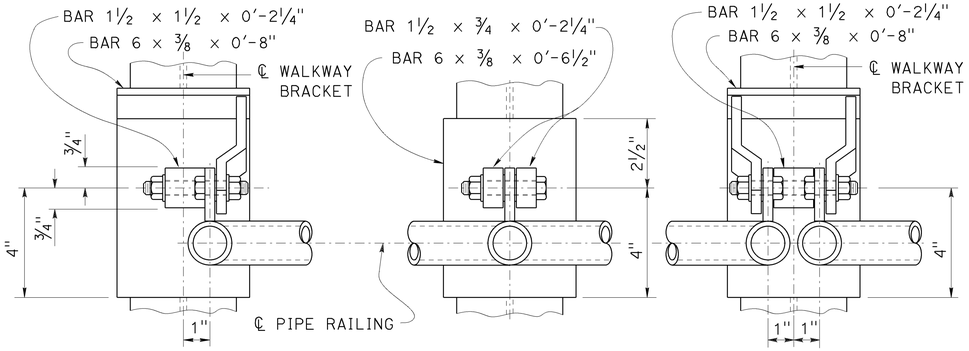
TO ACCOMPANY PLANS DATED 08-29-16

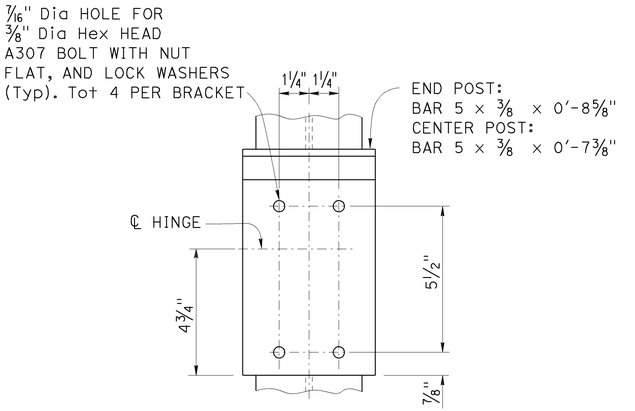



## CHAIN ASSEMBLY

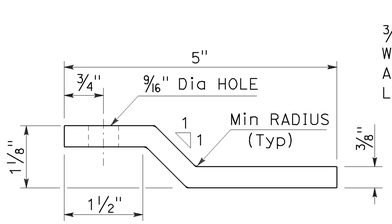



END POST | CENTER POST | TWO POST

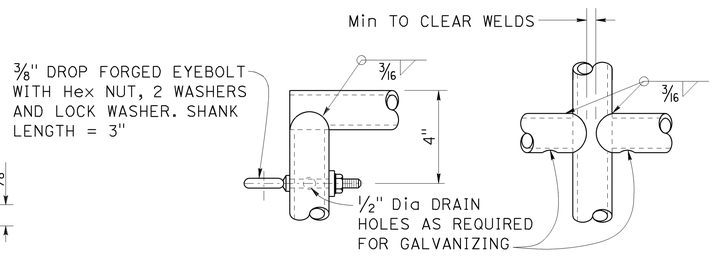
## WELDED HINGE - PLAN




## TYPICAL BOLTED (ALTERNATIVE) HINGED CONNECTION

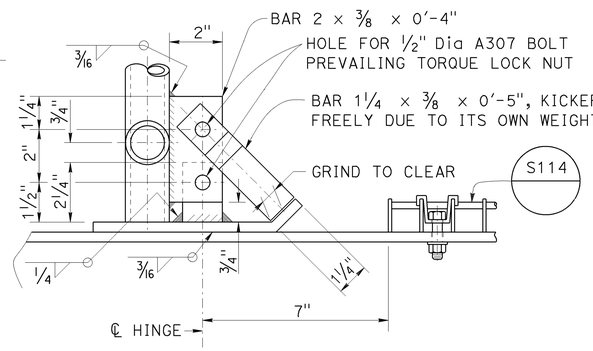



## PLAN - KICKER BAR




DETAIL "A" | DETAIL "B"

NOTE:
Alternative venting methods may be
used if approved by the Engineer.




## SECTION C-C ELEVATION VIEW

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# OVERHEAD SIGN-TRUSS SINGLE POST TYPE WALKWAY SAFETY RAILING DETAILS CHANGEABLE MESSAGE SIGNS MODEL 500 AND 510

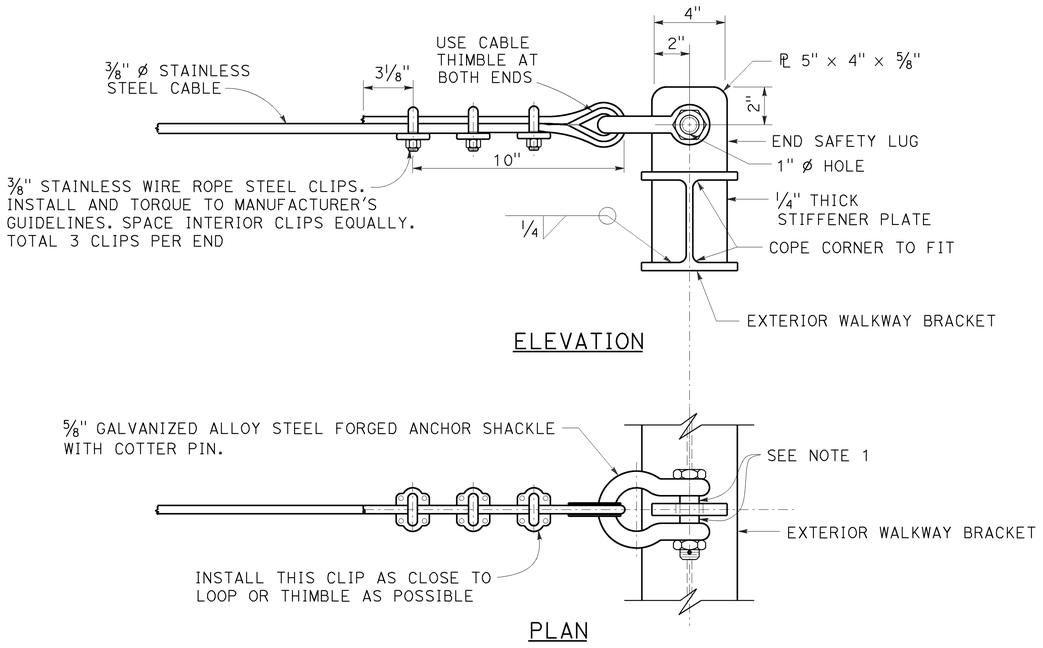
NO SCALE

RSP S140 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN S140
DATED MAY 20, 2011 - PAGE 422 OF THE STANDARD PLANS BOOK DATED 2010.

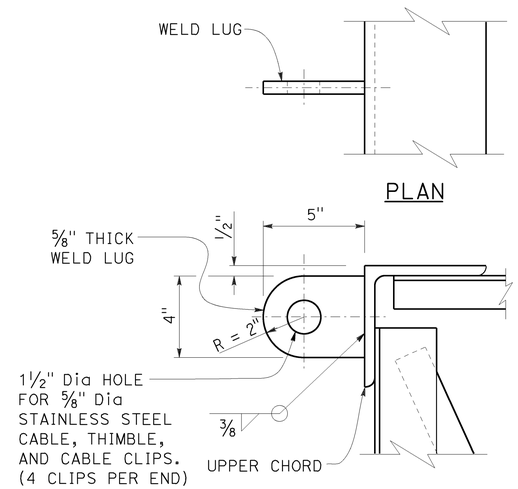
**REVISED STANDARD PLAN RSP S140**

2010 REVISED STANDARD PLAN RSP S140

7-11-13

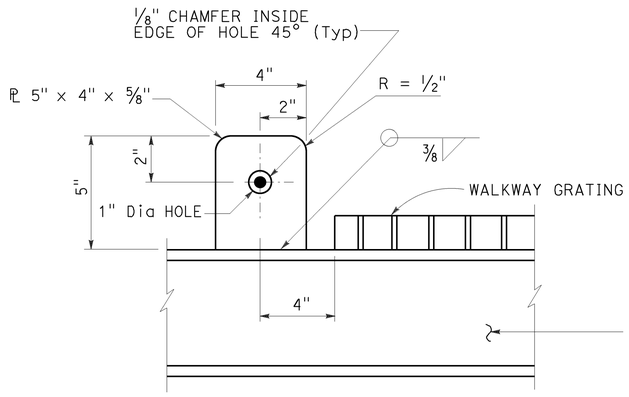



## END SAFETY CABLE DETAIL

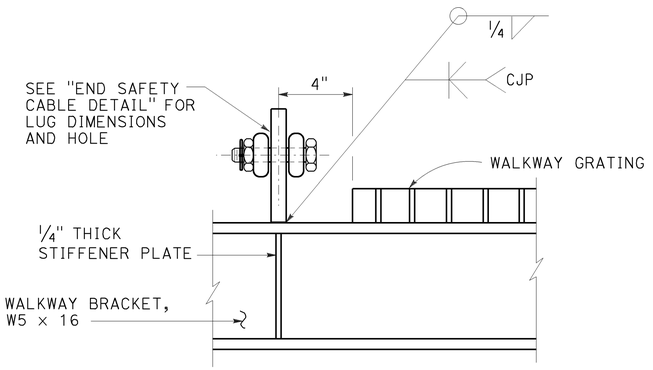



## BACKSIDE WELD LUG DETAIL

**NOTE:** Backside weld lug shall be installed only for projects requiring backside walkways.




## INTERIOR SAFETY LUG DETAIL




## END SAFETY LUG DETAIL

**NOTES:**

1. Place an equal amount of washers on each side to align cable with end lug without restricting shakle bolt rotation or contacting cable.
2. For walkway grating details, see Standard Plan S114.

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 96 | 113 |

REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Stanley P. Johnson
No. C57793
Exp. 3-31-14
CIVIL
STATE OF CALIFORNIA

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

TO ACCOMPANY PLANS DATED 08-29-16

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# OVERHEAD SIGN-TRUSS SINGLE POST TYPE SAFETY CABLE ANCHORAGE DETAILS CHANGEABLE MESSAGE SIGNS MODEL 500 AND 510

NO SCALE

RSP S141 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN S141 DATED MAY 20, 2011 - PAGE 423 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP S141**

**2010 REVISED STANDARD PLAN RSP S141**

7-11-13

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 97 | 113 |

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

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

October 30, 2015
PLANS APPROVAL DATE

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

TO ACCOMPANY PLANS DATED 08-29-16

## LEGEND:

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

## ABBREVIATIONS

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

## SOFFIT AND WALL-MOUNTED LUMINAIRES

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

**NOTE:**
Arrow indicates "street side" of luminaire.

## MISCELLANEOUS ELECTROLIERS

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

**NOTES:**

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

## STANDARD ELECTROLIER

| NEW | EXISTING | STANDARD TYPE |
|---|---|---|
| | | 15 |
| | | 15D |
| S | S | 15 STRUCTURE |
| S S | S S | 15D STRUCTURE |
| | | 21 |
| | | 21D |
| | | 21 STRUCTURE |
| | | 21D STRUCTURE |
| | | 30 |
| | | 31 |
| | | 32 |

COMMONLY USED SYMBOLS FOR UNITED STATES CUSTOMARY UNITS OF MEASUREMENT:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

NO SCALE

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

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

**2010 REVISED STANDARD PLAN RSP ES-1A**

9-29-15

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 98 | 113 |

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

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

October 30, 2015
PLANS APPROVAL DATE

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

TO ACCOMPANY PLANS DATED 08-29-16

## CONDUIT

| NEW | EXISTING | |
|---|---|---|
| | | LIGHTING CONDUIT, UNLESS OTHERWISE INDICATED OR NOTED |
| | | TRAFFIC SIGNAL CONDUIT |
| C | c | COMMUNICATION CONDUIT |
| T | t | TELEPHONE CONDUIT |
| F | f | FIRE ALARM CONDUIT |
| FO | fo | FIBER OPTIC CONDUIT |
| | | CONDUIT TERMINATION |
| R | r | CONDUIT RISER ATTACHED TO THE STRUCTURE OR SERVICE POLE |

## SERVICE EQUIPMENT

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

## POLE-MOUNTED SERVICE DESIGNATION

TYPE H SERVICE, 28'-10" — TYPE OF INSTALLATION AND POLE HEIGHT ABOVE GRADE

## FLASHING BEACON

| NEW | EXISTING | |
|---|---|---|
| R | R | FLASHING BEACON (ONE VEHICLE SIGNAL HEAD WITH BACKPLATE AND VISOR) "R" INDICATES RED INDICATION, "Y" INDICATES YELLOW INDICATION |
| Y Y | Y Y | FLASHING BEACON WITH TYPE 15-FBS STANDARD AND A SIGN. |
| R R | R R | FLASHING BEACON WITH TYPES 9, 9A OR 9B SIGN UNLESS OTHERWISE SPECIFIED OR INDICATED |

## SIGNAL EQUIPMENT

| NEW | EXISTING | |
|---|---|---|
| | | PEDESTRIAN SIGNAL HEAD |
| | | PUSH BUTTON ASSEMBLY POST |
| | | PEDESTRIAN BARRICADE |
| | | VEHICLE SIGNAL HEAD (WITH BACKPLATE AND 3-SECTIONS: RED, YELLOW AND GREEN) |
| | | VEHICLE SIGNAL HEAD WITH ANGLE VISOR |
| PV | PV | MODIFICATIONS OF BASIC SYMBOL:<br>"L" INDICATES ALL NON-ARROW SECTIONS LOUVERED<br>"LG" INDICATES LOUVERED GREEN SECTION ONLY<br>"PV" INDICATES ALL 12" SECTIONS PROGRAMMED VISIBILITY<br>"8" INDICATES ALL 8" SECTIONS (ONLY WHEN SPECIFIED) |
| | | VEHICLE SIGNAL HEAD CONSISTING OF RED, YELLOW AND GREEN LEFT ARROW SECTIONS |
| | | VEHICLE SIGNAL HEAD CONSISTING OF RED AND YELLOW SECTIONS WITH AN UP GREEN ARROW SECTION |
| | | VEHICLE SIGNAL HEAD (5 SECTION) CONSISTING OF RED, YELLOW AND GREEN SECTIONS WITH YELLOW AND GREEN RIGHT ARROW SECTIONS |
| | | TYPE 15TS STANDARD WITH VEHICLE SIGNAL HEAD AND LUMINAIRE |
| | | TYPE 21TS STANDARD WITH VEHICLE SIGNAL HEAD AND LUMINAIRE |
| | | STANDARD WITH LUMINAIRE AND SIGNAL MAST ARMS AND ATTACHED VEHICLE SIGNAL HEADS |
| | | TYPE 1 STANDARD WITH ATTACHED VEHICLE SIGNAL HEADS |
| | | STANDARD WITH A SIGNAL MAST ARM, ATTACHED VEHICLE SIGNAL HEADS AND INTERNALLY ILLUMINATED STREET NAME SIGN |
| | | CONTROLLER ASSEMBLY. DOOR INDICATES FRONT OF CABINET |

## SIGNAL EQUIPMENT Cont

| NEW | EXISTING | |
|---|---|---|
| | | GUARD POST |
| | | TYPE 1 STANDARD WITH RAMP METERING SIGN |
| | | OPTICAL DETECTOR FOR THE EMERGENCY VEHICLE DETECTION |

### NOTES:

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

## ILLUMINATED OVERHEAD SIGN

| NEW | EXISTING | |
|---|---|---|
| | | SINGLE POST, SINGLE ILLUMINATED SIGN, BALANCED BUTTERFLY |
| | | SINGLE POST, DOUBLE ILLUMINATED SIGN, BALANCED BUTTERFLY |
| | | SINGLE POST, SINGLE ILLUMINATED SIGN, FULL CANTILEVER |
| | | DOUBLE POST, SINGLE ILLUMINATED SIGN |
| | | SINGLE ILLUMINATED SIGN MOUNTED ON STRUCTURE |
| | | DOUBLE POST, SINGLE ILLUMINATED SIGN WITH ELECTROLIER |

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

NO SCALE

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

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

2010 REVISED STANDARD PLAN RSP ES-1B

8-19-15

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 99 | 113 |

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

April 15, 2016
PLANS APPROVAL DATE

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

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

TO ACCOMPANY PLANS DATED 08-29-16

# EQUIPMENT IDENTIFICATION

## ILLUMINATED SIGN IDENTIFICATION:

SIGN No. 12345 — SIGN EQUIPMENT IDENTIFICATION CHARACTERS - PLACE ON POST OR STRUCTURE

10 ISL SCI 1.0
- TRANSFORMER RATING (kVA)
- LIGHTING CONTROL TYPE
- NUMBER AND TYPE OF FIXTURES

} DO NOT PLACE ON STANDARD OR STRUCTURE

## ELECTROLIER OR EQUIPMENT IDENTIFICATION:

L2745 - 15'-0"
- 15'-0" — MAST ARM LENGTH, IF SHOWN. DO NOT PLACE ON STANDARD OR STRUCTURE
- L2745 — EQUIPMENT IDENTIFICATION CHARACTERS - PLACE ON STANDARD OR STRUCTURE. EXISTING EQUIPMENT IDENTIFICATION CHARACTERS ARE SHOWN IN PARENTHESIS

## CONDUIT AND CONDUCTOR IDENTIFICATION:

1½"C, 2#10, 15#14, 2 DLC, 12P#18
- PAIR
- NUMBER AND SIZE OF CONDUCTORS AND CABLES
- SIZE OF CONDUIT IN INCHES

ø1, ø2, ø2P, etc. — TRAFFIC PHASE IDENTIFICATION FOR SIGNALS, DETECTORS AND PHASE DIAGRAMS

1 2 3 — LEGEND NUMBERS

(A) (B) (C) — EQUIPMENT, SIGNAL POLES, INSTALLATION OR ITEMS

1 2 3 — CONDUIT RUN NUMBERS

## SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):

19A - 3 - 100
- 100 — WIND VELOCITY = 100 mph
- 3 — CASE 3 ARM LOADING
- 19A — STANDARD TYPE
- STANDARD PLAN SHEET NUMBER
- DETAIL, NUMBER, SECTION, TYPE OR ELEVATION

# MISCELLANEOUS EQUIPMENT

| NEW | EXISTING | |
|---|---|---|
| CMS | cms | CHANGEABLE MESSAGE SIGN |
| | | CLOSED CIRCUIT TELEVISION CAMERA |
| | | HIGHWAY ADVISORY RADIO POLE AND ANTENNA |
| EMS | ems | LED EXTINGUISHABLE MESSAGE SIGN |
| M<br>V | m<br>v | DETECTION DEVICE<br>M = MICROWAVE SENSOR<br>V = VIDEO IMAGE SENSOR |

# WIRING DIAGRAM LEGEND

- EXTERNAL CONDUCTOR
- CONDUCTOR OR BUS
- TIE POINT
- CONTACTOR COIL
- CONTACTOR, NO CONTACT
- TERMINAL BLOCKS
- CONTACTOR, NC CONTACT
- ENCLOSURE BOND
- GROUNDING ELECTRODE
- CIRCUIT BREAKER
- RECEPTACLE

# PULL BOXES

| NEW | EXISTING | |
|---|---|---|
| | | PULL BOX, No. 5 UNLESS OTHERWISE INDICATED OR NOTED |
| 3 | 9A(21) | PULL BOX, ADDITIONAL DESIGNATIONS OR DESCRIPTIONS |

3 No. 3½ PULL BOX
5 No. 5 PULL BOX
6 No. 6 PULL BOX
7 No. 7 PULL BOX (CEILING)
8 No. 8 PULL BOX
9 No. 9 PULL BOX (STRUCTURE)
9A No. 9A PULL BOX (STRUCTURE)

(C) COMMUNICATIONS PULL BOX
(E) PULL BOX WITH EXTENSION
(S) SPRINKLER CONTROL PULL BOX
(21) ANCHOR BOLTS AND CONDUIT FOR FUTURE INSTALLATION OF TYPE 21 STANDARD
(T) TRAFFIC PULL BOX

# VEHICLE DETECTORS

5 J 9 U
- 9 — SLOT NUMBER IN INPUT FILE
- J — INPUT FILE (I OR J)
- 5 — PHASE
- U — U = UPPER, L = LOWER
- VEHICLE DETECTOR DESIGNATION

| NEW | EXISTING | |
|---|---|---|
| | | TYPE A LOOP DETECTOR. OUTLINE OF SAW CUT SHOWN |
| | | TYPE B LOOP DETECTOR. OUTLINE OF SAW CUT SHOWN |
| | | TYPE C LOOP DETECTOR. OUTLINE OF SAW CUT SHOWN |
| | | TYPE D LOOP DETECTOR. OUTLINE OF SAW CUT SHOWN |
| | | TYPE E LOOP DETECTOR. OUTLINE OF SAW CUT SHOWN |
| | | TYPE Q LOOP DETECTOR. OUTLINE OF SAW CUT SHOWN |
| DH | dh | DETECTOR HANDHOLE |
| | | MICROWAVE OR VIDEO DETECTION ZONE |

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

NO SCALE

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

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

**2010 REVISED STANDARD PLAN RSP ES-1C**

1-22-16

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 100 | 113 |

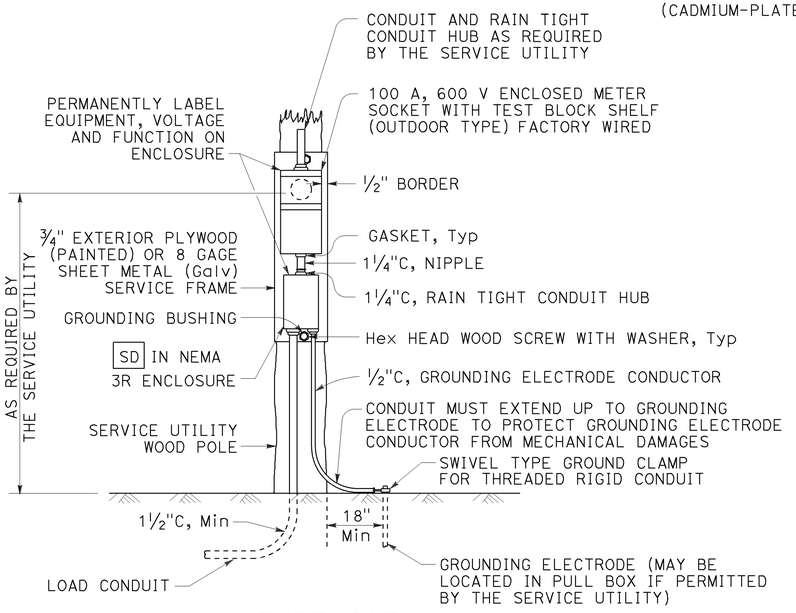
Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

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

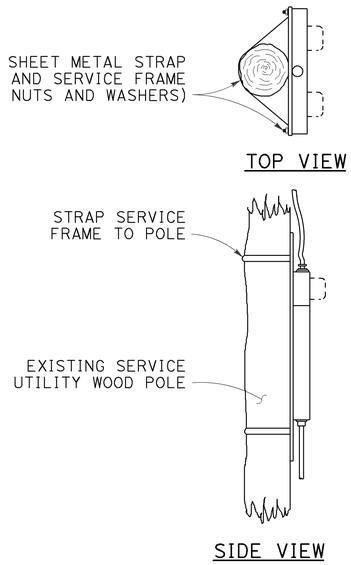
October 30, 2015
PLANS APPROVAL DATE

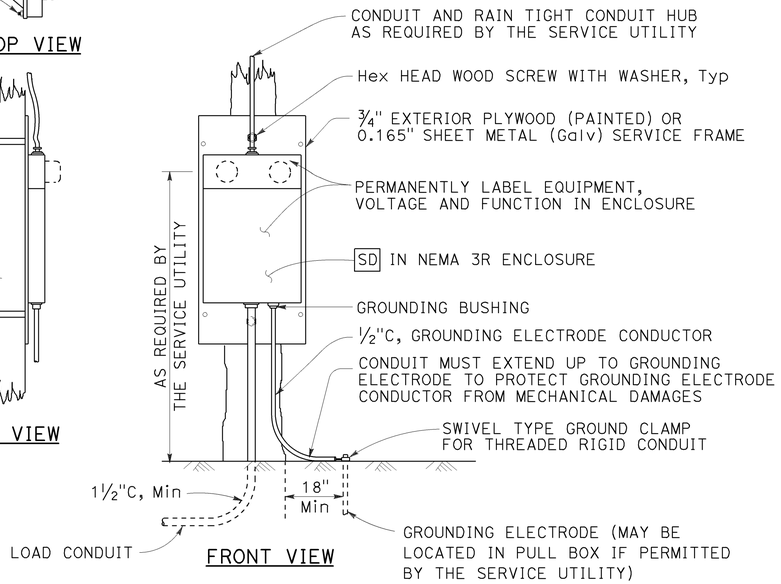
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 08-29-16

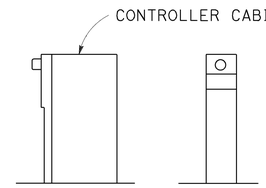



## TYPE SCE-1
DETAIL A



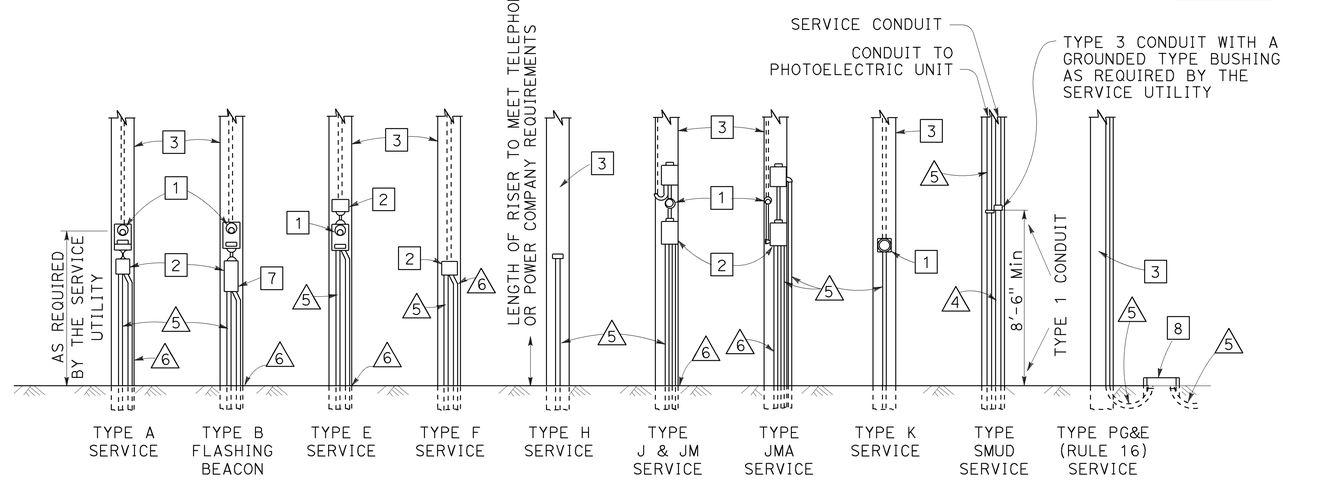




## TYPE SCE-2
DETAIL B

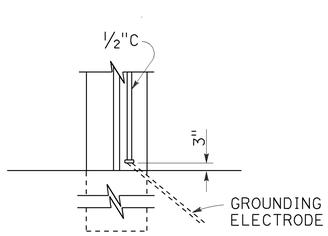



## TYPE OF SERVICE (TYPICAL)
DETAIL C

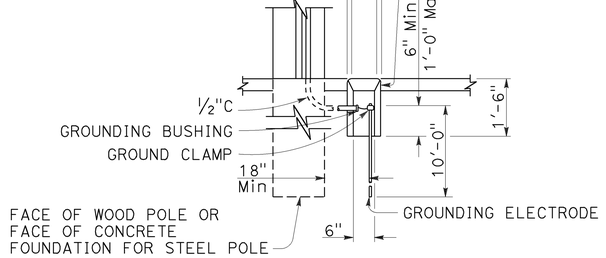
See Notes 1 and 2




## POLE MOUNTED SERVICE INSTALLATIONS
DETAIL D




TYPE A
See Note 3




TYPE B
See Note 4

## SERVICE GROUNDING
DETAIL E

**LEGEND:**

1. METER SOCKET.
2. SERVICE ENCLOSURE WITH A MINIMUM 60 A RATED MAIN CIRCUIT BREAKER, UNLESS OTHERWISE SHOWN.
3. A. UTILITY OWNED POLE. THE SERVICE UTILITY WILL FURNISH AND INSTALL REQUIRED SERVICE RISER, PEU WITH CONDUCTORS AND OTHER EQUIPMENT AS NEEDED.
   B. STATE OWNED POLE. THE CONTRACTOR SHALL FURNISH AND INSTALL REQUIRED SERVICE RISER AND EQUIPMENT.
4. 2"C, SERVICE CONDUIT MUST HAVE A GROUNDED TYPE BUSHING INSTALLED AT UPPER END OF THE METALLIC POLE RISER CONDUIT. A GROUNDING CONDUCTOR MUST BE ATTACHED TO THE BUSHING, CARRIED THROUGH THE CONDUIT RUN AND ATTACHED TO THE SERVICE EQUIPMENT ENCLOSURE'S GROUNDING ELECTRODE.
5. CONDUIT, LENGTH AND SIZE AS REQUIRED.
6. ½"C, 1#6. SEE DETAIL E.
7. FLASHING BEACON CONTROL ASSEMBLY.
8. SERVICE PULL BOX, No. 5 UNLESS OTHERWISE NOTED, FURNISHED AND INSTALLED BY THE CONTRACTOR. SERVICE UTILITY SHALL DETERMINE THE EXACT LOCATION.

**NOTES:**

1. Type II service equipment enclosure mounted on the side of a controller cabinet.
2. Type III complete free-standing service equipment enclosure.
3. Ground clamp and required fittings must be accessible. Conduit must extend to protect grounding electrode conductor from mechanical damage.
4. Use where service utility requires 18" clearance between grounding electrode and the pole or service equipment enclosure. Installation shown is for sidewalk or paved areas. In unpaved areas, omit special service pull box and locate ground clamp above ground or locate ground clamp in nearest pull box.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# ELECTRICAL SYSTEMS (SERVICE EQUIPMENT)

NO SCALE

RSP ES-2A DATED OCTOBER 30, 2015 SUPERSEDES STANDARD PLAN ES-2A DATED MAY 20, 2011 - PAGE 428 OF THE STANDARD PLANS BOOK DATED 2010.

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

**2010 REVISED STANDARD PLAN RSP ES-2A**

8-20-15

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 101 | 113 |

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

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

October 30, 2015
PLANS APPROVAL DATE

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TO ACCOMPANY PLANS DATED 08-29-16

NOTES:

1. The plan shows the approximate location of devices within the enclosure. Components may be rearranged, however, the "working" clearances within the service equipment enclosure shall be maintained.

2. In unpaved areas a raised portland cement concrete pad 2'-0" x 4" x width of foundation shall be constructed in front of new service equipment enclosure installation. Pad shall be set to elevation of foundation.

3. Plug-in circuit breakers may be mounted in the vertical or horizontal position. Cable-in/cable-out circuit breakers shall be mounted in the vertical position.

4. Type III-AF and Type III-BF service equipment enclosures shall have the meter viewing windows located on the front side of the service equipment enclosures.

5. Type III-AR and Type III-BR service equipment enclosure shall be similarly constructed as Type III-AF and Type III-BF respectively, except the meter viewing windows shall be located on the back side of the service equipment enclosures.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# ELECTRICAL SYSTEMS (SERVICE EQUIPMENT ENCLOSURE NOTES TYPE III SERIES)

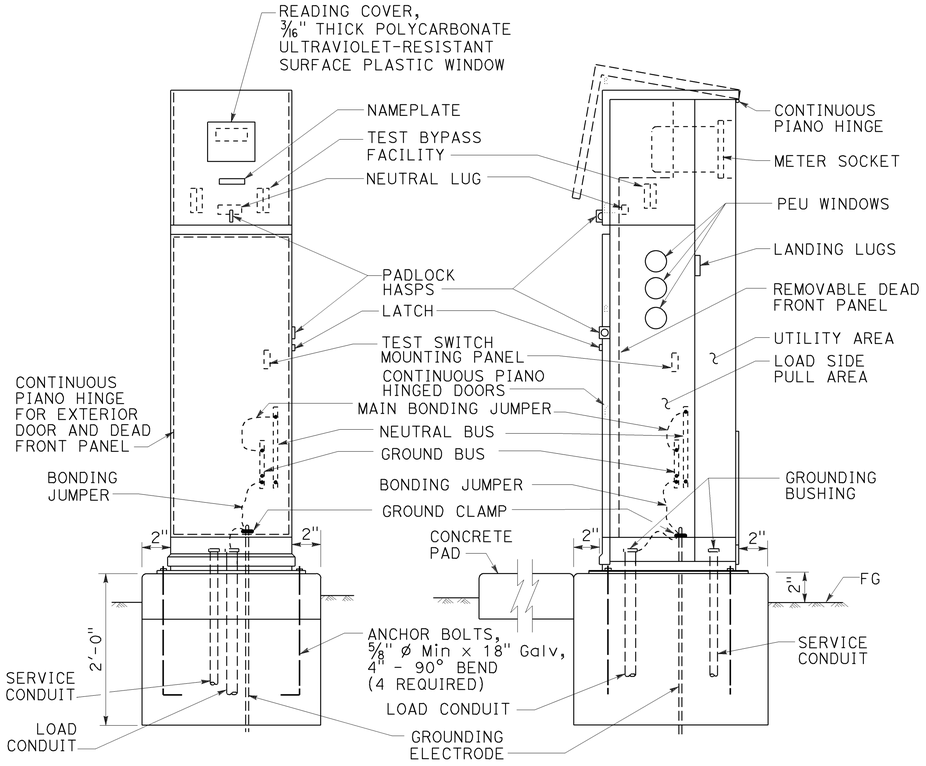
NO SCALE

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

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

**2010 REVISED STANDARD PLAN RSP ES-2C**

8-19-15

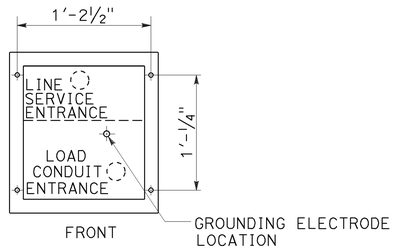



FRONT VIEW

SIDE VIEW

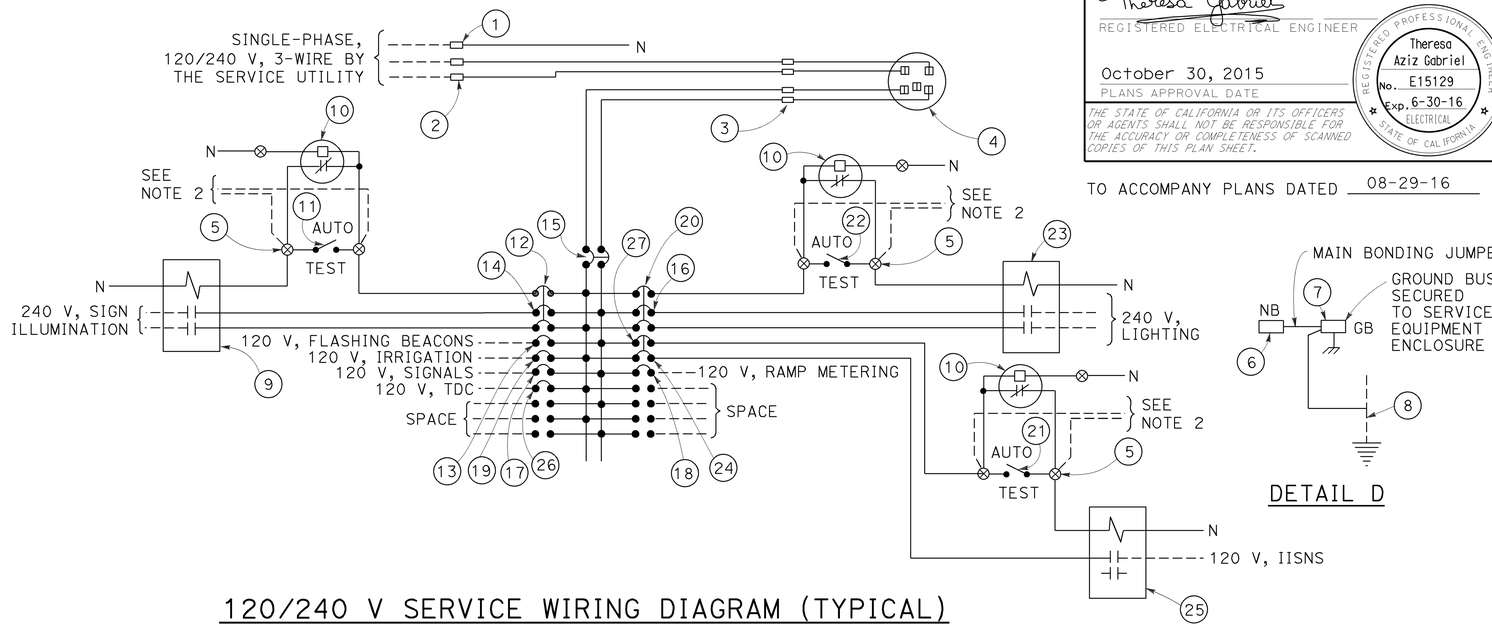
## TYPE III-BF SERVICE EQUIPMENT ENCLOSURE (TYPICAL)

DETAIL A




## BASE FOR TYPE III-B SERVICE EQUIPMENT ENCLOSURE

DETAIL B




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

DETAIL C




DETAIL D

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

NOTES:

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

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 102 | 113 |

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

October 30, 2015
PLANS APPROVAL DATE

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

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

TO ACCOMPANY PLANS DATED 08-29-16

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# ELECTRICAL SYSTEMS (SERVICE EQUIPMENT ENCLOSURE AND TYPICAL WIRING DIAGRAM, TYPE III-B SERIES)

NO SCALE

RSP ES-2E DATED OCTOBER 30, 2015 SUPERSEDES STANDARD PLAN ES-2E DATED MAY 20, 2011 - PAGE 432 OF THE STANDARD PLANS BOOK DATED 2010.

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

**2010 REVISED STANDARD PLAN RSP ES-2E**

8-20-15

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 103 | 113 |

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

October 30, 2015
PLANS APPROVAL DATE

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

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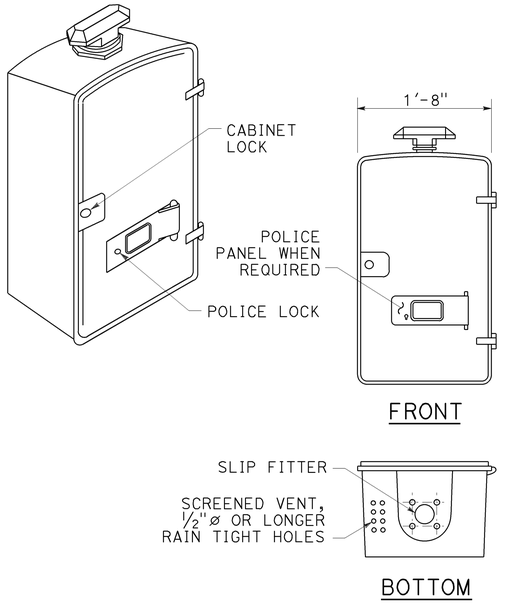
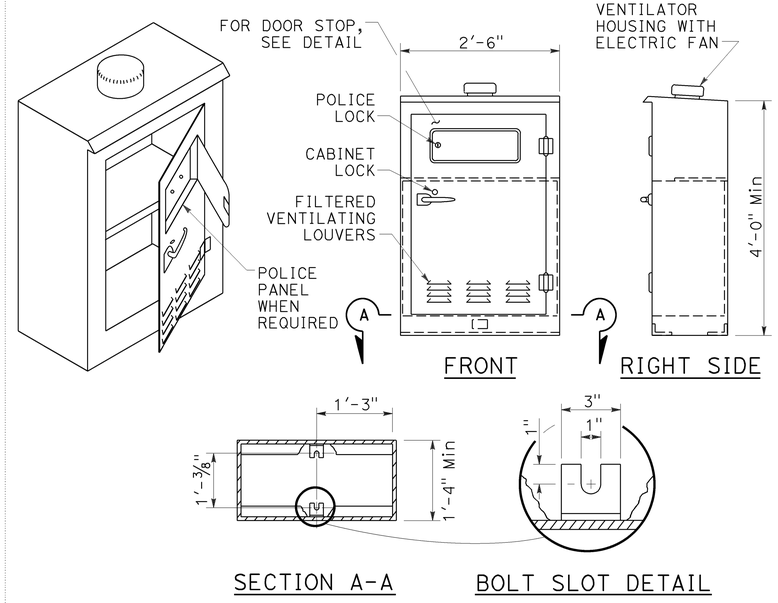
TO ACCOMPANY PLANS DATED 08-29-16

**NOTES:**

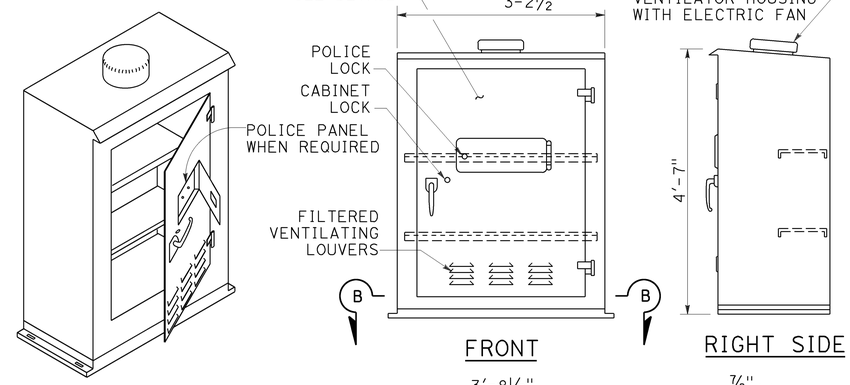
1. Cabinet dimensions are nominal.
2. Cabinet fan may be installed at an alternate location near the top of the cabinet when approved by the Engineer.

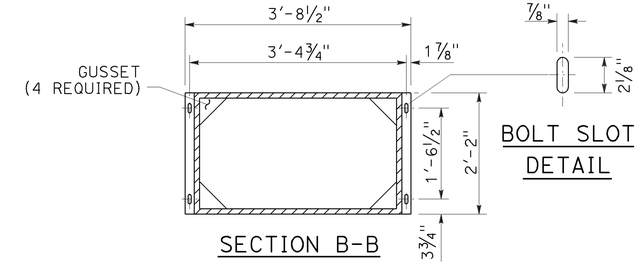



## TYPE G CABINET

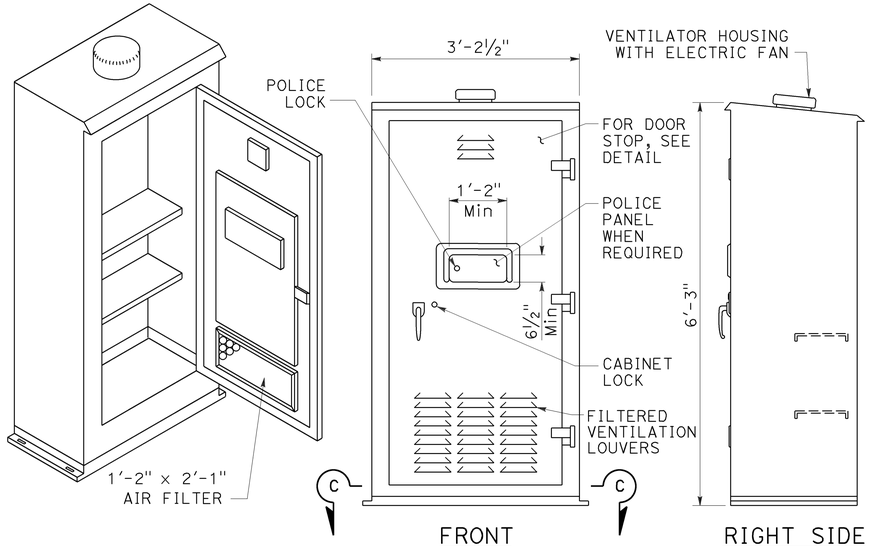



## TYPE M CABINET

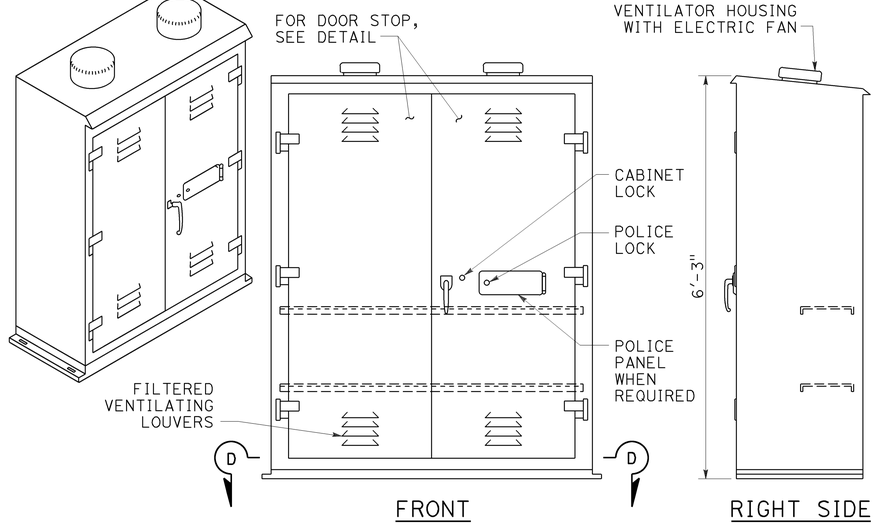


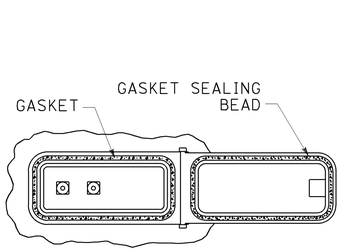

## TYPE P CABINET



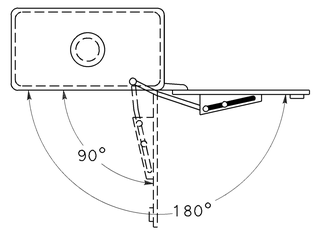

## TYPE R CABINET




## TYPE S CABINET




## POLICE PANEL




PLAN VIEW
DOOR STOP DETAIL
(2 POSITIONS)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# ELECTRICAL SYSTEMS (CONTROLLER CABINET DETAILS)

NO SCALE

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

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

**2010 REVISED STANDARD PLAN RSP ES-3A**

8-19-15

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 104 | 113 |

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

April 15, 2016
PLANS APPROVAL DATE

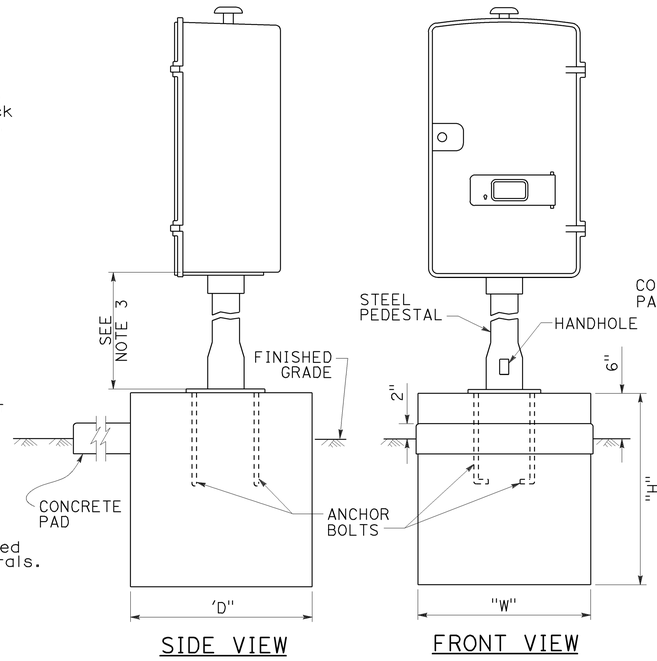
REGISTERED PROFESSIONAL ENGINEER — Theresa Aziz Gabriel — No. E15129 — Exp. 6-30-16 — ELECTRICAL — STATE OF CALIFORNIA

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

TO ACCOMPANY PLANS DATED 08-29-16

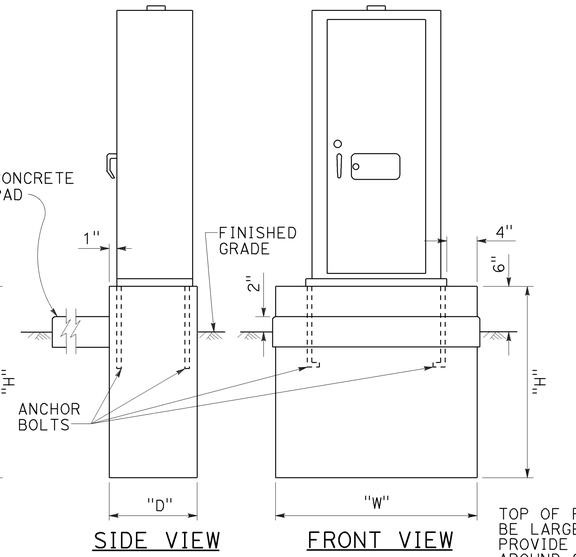
## NOTES:

1. Type G, M, P, R, S and Model 336L cabinets shall be installed with the back toward the nearest lane of traffic.
2. In unpaved areas, a raised portland cement concrete pad shall be constructed in front of each controller cabinet. The pad shall be 3'-0" x 3'-0" x 4" for a Type G cabinet and shall be 3'-0" x 4" thick x width of foundation for Type M, P, R, S and Model 336L cabinets.
3. The steel pedestal, base plate and bolt circle for Type G cabinet shall be the same as that shown for a Type 1-C Standard (see RSP ES-7B). Pedestal shall be 2'-1" to 2'-6" in length. Anchor bolts shall be ¾" ∗ x 1'-6" with a 2" - 90° bend. Four bolts required per cabinet.
4. Type G cabinet shall be provided with a slipfitter to permit mounting an 4½" outside diameter pedestal. Slipfitter shall be bolted to bottom of the cabinet.
5. A 1" drain shall be provided through the foundation of a Type M or Model 336L cabinet. Drain pipe shall be screened.
6. Cabinet shelves shall be adjustable for vertical spacing and shall be removable. Type M, P, R and S cabinets shall be provided with a minimum of two shelves.
7. Controller units, plug-mounted equipment, shelf-mounted equipment and wall-mounted equipment shall be located to permit safe and easy removal or replacement without removing any other piece of equipment.
8. Where telephone interconnect is required, a minimum of 5" clear vertical space shall be provided inside the cabinet for the equipment.
9. Telephone interconnect conductors shall be enclosed in a ¾"C or larger conduit through the foundation. Type 4 conduit shall be used to separate telephone and power conductors in cabinets or pedestals.
10. Anchor bolts for Type M, P, R, S and Model 336L cabinets shall be ¾" Ø x 1'-6" with a 2" - 90° bend.




SIDE VIEW FRONT VIEW

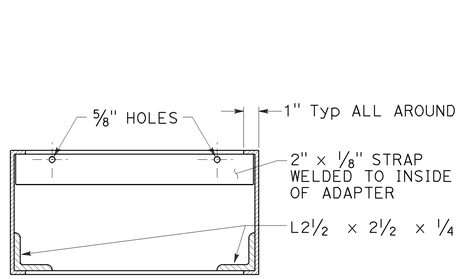
## FOUNDATION FOR TYPE G CABINET
DETAIL A



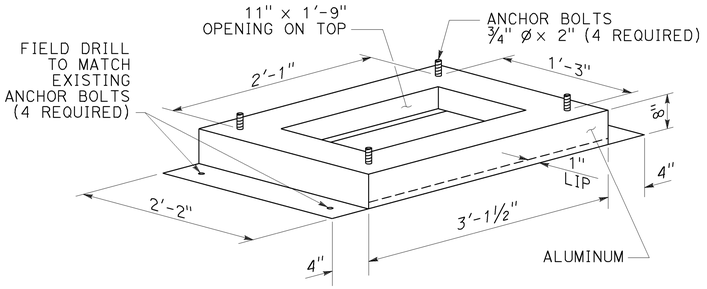

SIDE VIEW FRONT VIEW

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

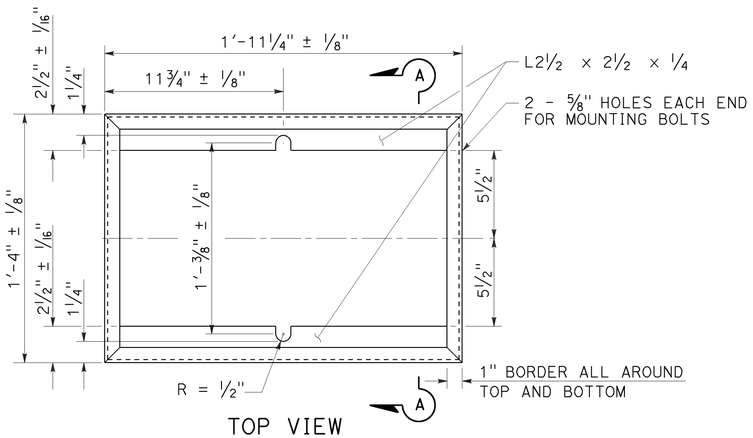
| CABINET TYPE | FOUNDATION | | |
|---|---|---|---|
| | "W" | "H" | "D" |
| G | 2'-0" | 3'-6" | 2'-0" |
| M | 3'-2" | 2'-6" | 1'-6" |
| P | 4'-4½" | 1'-6" | 2'-4" |
| R | 4'-2" | 1'-6" | 2'-4" |
| S | 5'-11½" | 1'-6" | 2'-4" |



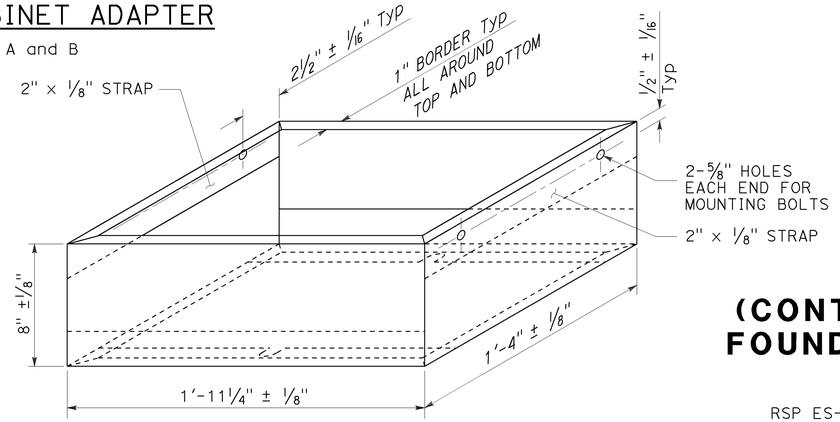

SECTION A-A




## TYPE PR CABINET ADAPTER
See Notes A and B

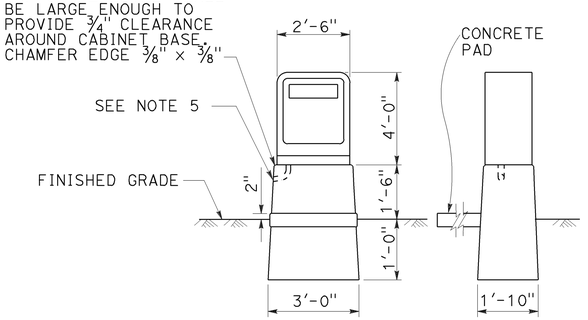



TOP VIEW




## TYPE M CABINET ADAPTER
See Notes A, C, and D

TOP OF PEDESTAL SHALL BE LARGE ENOUGH TO PROVIDE ¾" CLEARANCE AROUND CABINET BASE, CHAMFER EDGE ⅜" x ⅜"




FRONT VIEW SIDE VIEW

## PEDESTAL FOUNDATION FOR TYPE M OR MODEL 336L CABINET
DETAIL C

## NOTES:

A. Material: 0.188" thickness aluminum plate.
B. Adapter for Type P or Type R cabinet foundation.
C. Adapter for Type M cabinet foundation.
D. Mounting bolts shall be ⅜"ø minimum size.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

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

**2010 REVISED STANDARD PLAN RSP ES-3B**

1-12-16

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 105 | 113 |

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

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

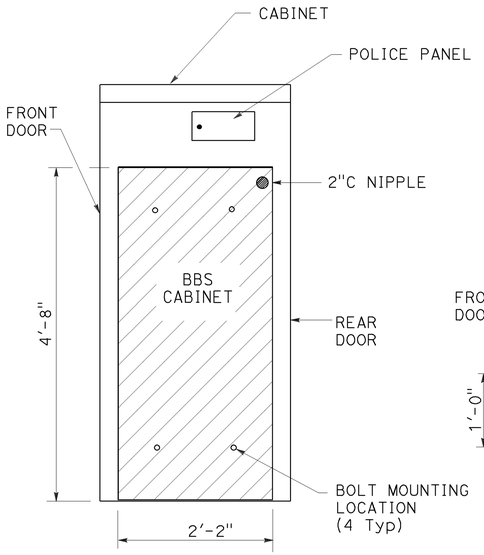
April 15, 2016
PLANS APPROVAL DATE

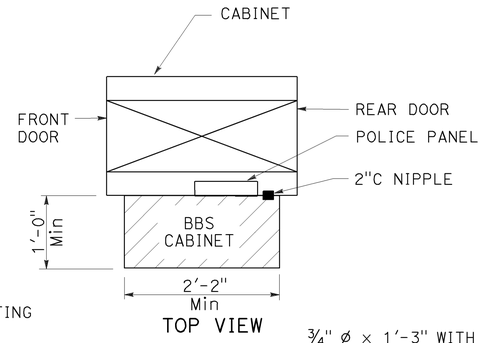
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 08-29-16

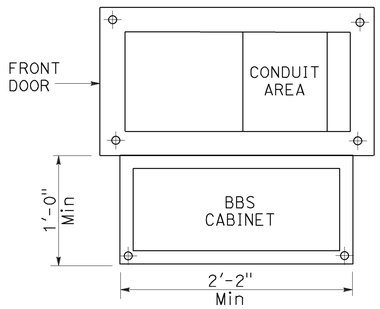
## NOTES:

1. Controller units, plug-mounted equipment, shelf-mounted equipment and wall-mounted equipment shall be located to permit safe and easy removal or replacement without removing any other piece of equipment.
2. Cabinet fan may be installed at an alternate location near the top of the cabinet when approved by the Engineer.
3. Where telephone interconnect is required, a minimum of 5" clear vertical space shall be provided inside the cabinet for the equipment.
4. Telephone interconnect conductors shall be enclosed in a ¾"C or larger conduit through the foundation. Type 4 conduit shall be used to separate telephone and power conductors in cabinets.



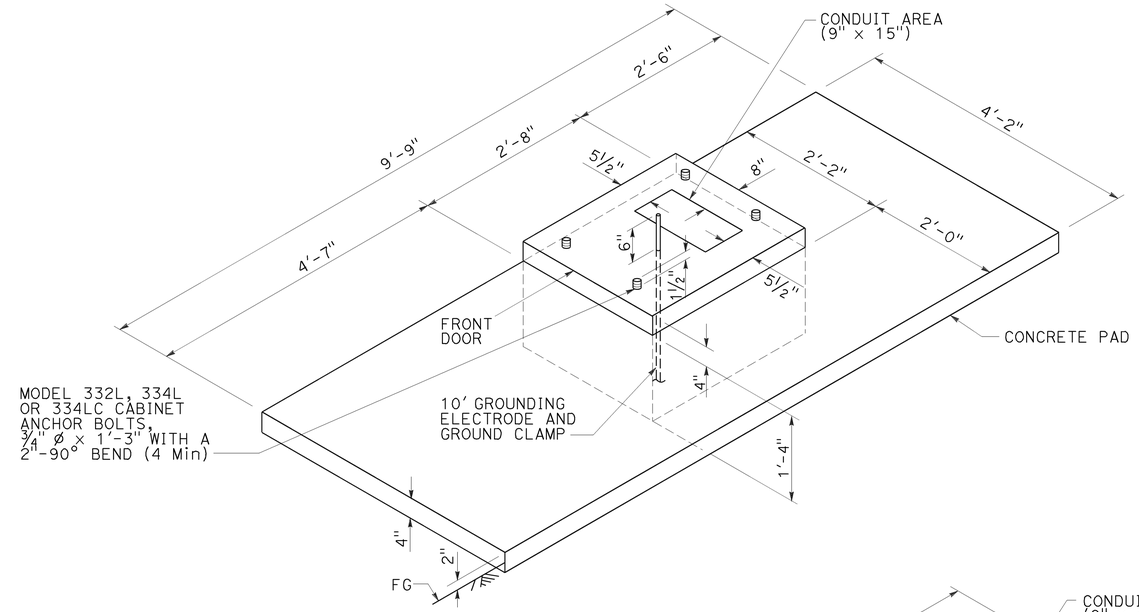




## BBS CABINET MOUNTED TO THE MODEL 332L CABINET



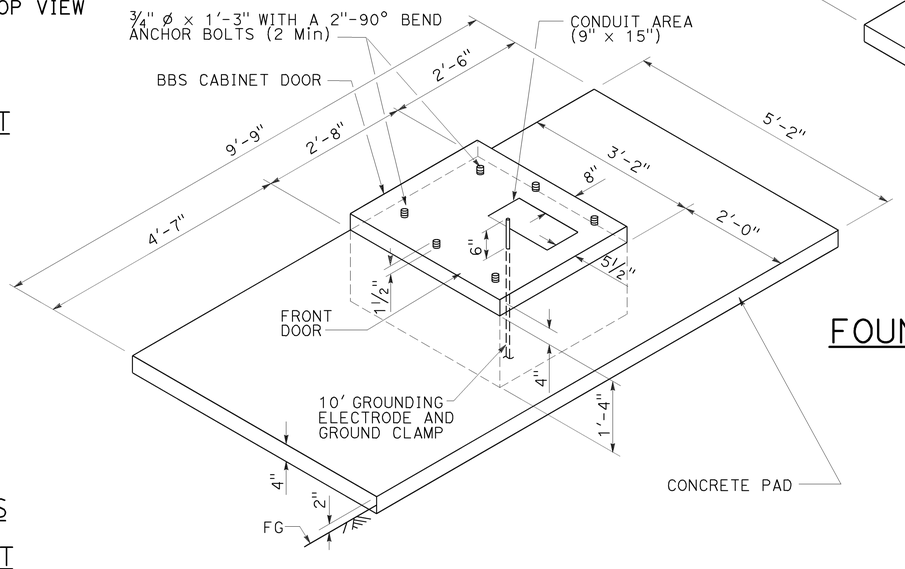

## BASE PLAN FOR BBS MOUNTED TO THE MODEL 332L CABINET

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



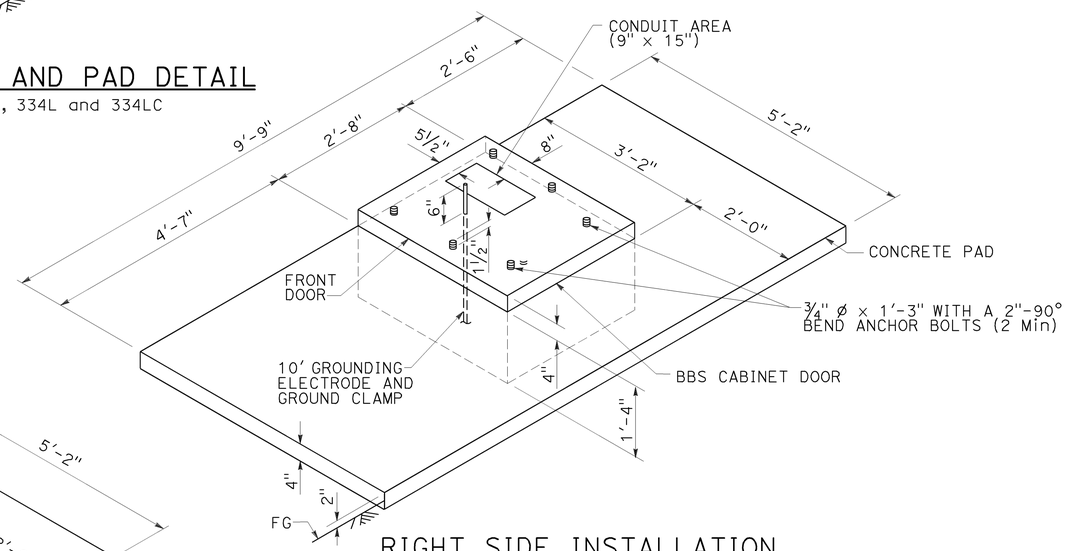

## FOUNDATION AND PAD DETAIL

Model 332L, 334L and 334LC




## LEFT SIDE INSTALLATION

DETAIL A




## RIGHT SIDE INSTALLATION

DETAIL B

# MODIFIED MODEL 332L CABINET FOUNDATION DETAIL FOR BATTERY BACKUP SYSTEM

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

## ELECTRICAL SYSTEMS (CONTROLLER CABINET FOUNDATION AND PAD DETAILS)

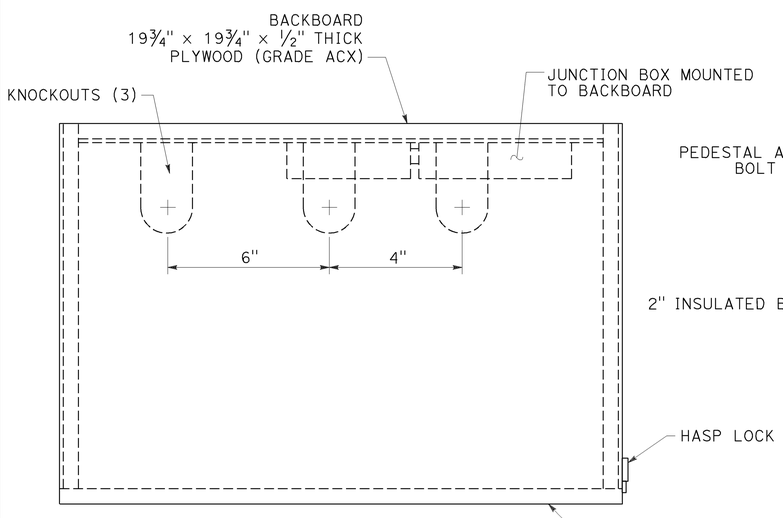
NO SCALE

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

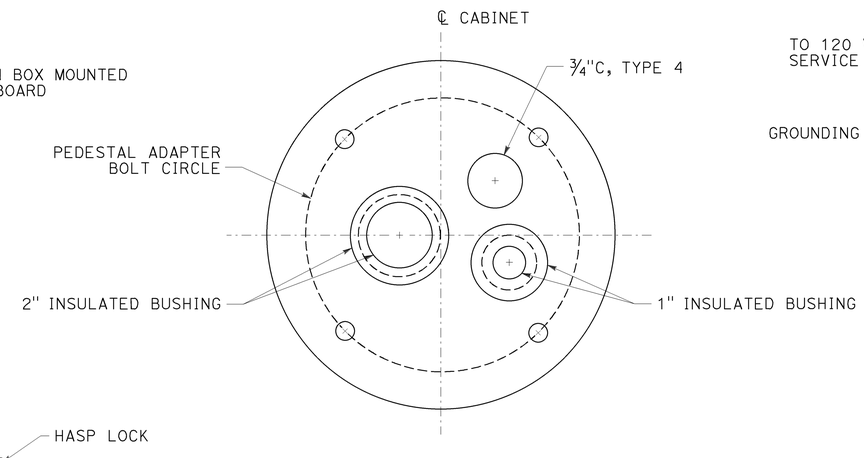
**REVISED STANDARD PLAN RSP ES-3C**

**2010 REVISED STANDARD PLAN RSP ES-3C**

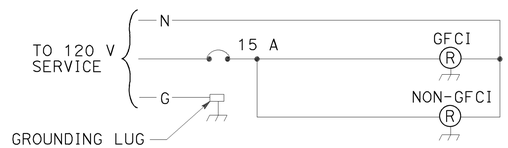
1-12-16




TOP
DETAIL C




SECTION A-A




WIRING DIAGRAM
DETAIL D

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 106 | 113 |

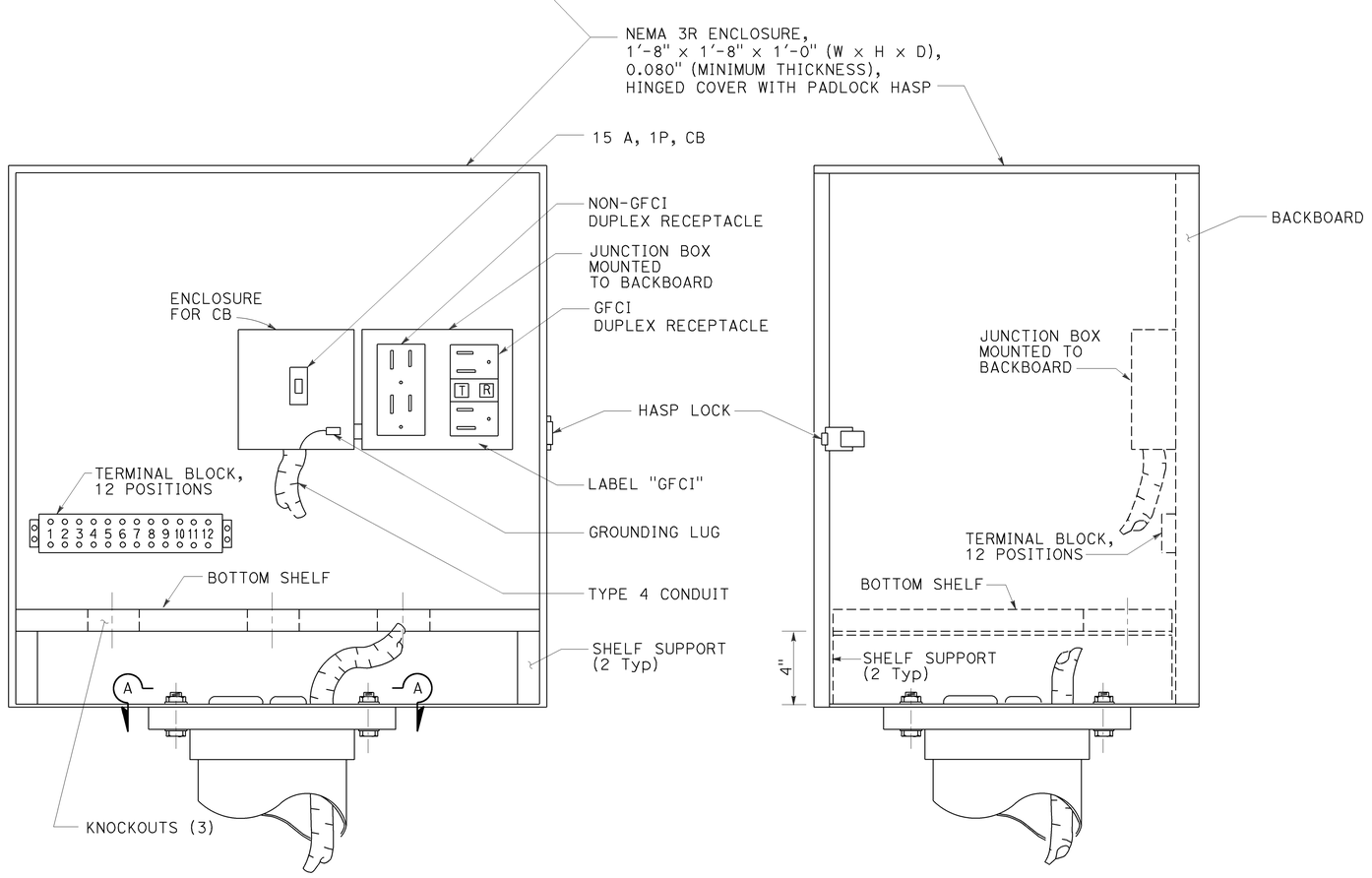
Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

April 15, 2016
PLANS APPROVAL DATE

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

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

TO ACCOMPANY PLANS DATED 08-29-16




FRONT
DETAIL A




RIGHT SIDE
DETAIL B

## NOTES:

1. Dimensions are nominal.
2. The steel pedestal, base plate, and bolt circle for the telephone demarcation cabinet shall be the same as that shown for a Type 1-C Standard. The steel pedestal shall be 2'-1" to 2'-6" in length. Anchor bolts shall be ¾" ø x 1'-6" with a 2" - 90° bend. Four bolts required per cabinet.
3. Telephone interconnect conductors shall be enclosed in a ¾"C or larger conduit through the foundation. Type 4 conduit shall be used to separate telephone and power conductors in the cabinet and pedestal.
4. Mount cabinet on Type G cabinet pedestal and foundation (see Revised Standard Plan RSP ES-3B).

## FASTENER SCHEDULE

| | |
|---|---|
| BACKBOARD | 4 - ¾" (LENGTH) WOOD SCREWS |
| 2 SHELF SUPPORTS | 4 - ¾" (LENGTH) WOOD SCREWS |
| JUNCTION BOX | 4 - ½" (LENGTH) WOOD SCREWS |
| TERMINAL BLOCK | 4 - ¾" (LENGTH) WOOD SCREWS |

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# ELECTRICAL SYSTEMS (TELEPHONE DEMARCATION CABINET, TYPE A)

NO SCALE

RSP ES-3D DATED APRIL 15, 2016 SUPERSEDES RSP ES-3D DATED OCTOBER 30, 2015 AND STANDARD PLAN ES-3D DATED MAY 20, 2011 - PAGE 438 OF THE STANDARD PLANS BOOK DATED 2010.

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

**2010 REVISED STANDARD PLAN RSP ES-3D**

1-22-16

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 107 | 113 |

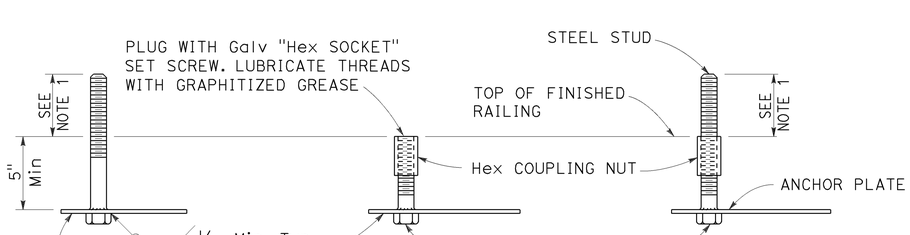
REGISTERED CIVIL ENGINEER

July 15, 2016
PLANS APPROVAL DATE

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

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

TO ACCOMPANY PLANS DATED 08-29-16




FOR IMMEDIATE INSTALLATION
DETAIL B-1

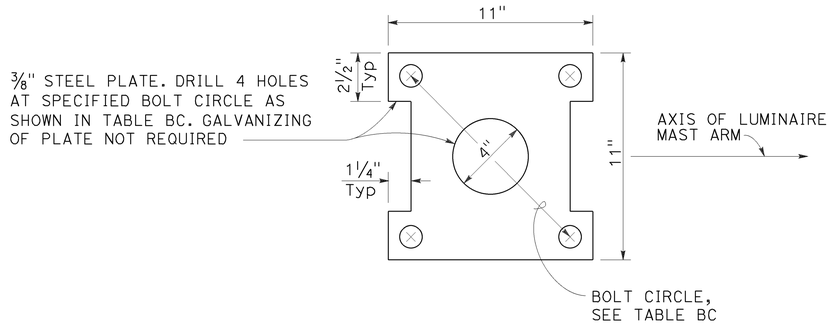
FOR FUTURE INSTALLATION WITH PLUG
DETAIL B-2

FOR INSTALLATION ON FUTURE ANCHORAGE WITH STUD
DETAIL B-3

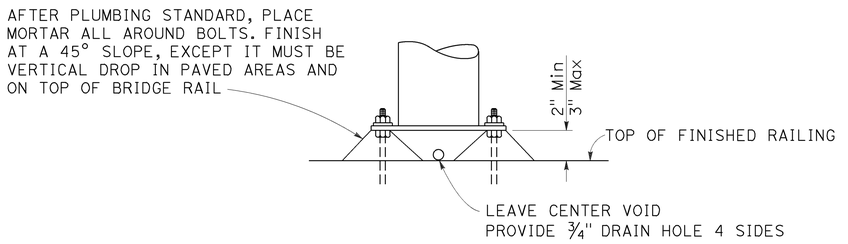
## ELECTROLIER ANCHORAGES
DETAIL B

**NOTES:**

1. Anchor bolt or stud length shall be such that thread extends 1/2" maximum above nut on level base plate after grouting. See Detail N.
2. Electrolier anchor bolts shall be held in position for pouring by means of anchor plates and suitable templates. Deviation from the true position, vertical and height shall not exceed 1/16".
3. See railing sheets for reinforcement and structural details at electroliers and pull boxes.




## ANCHOR PLATE
DETAIL A




## GROUTING AT ELECTROLIER
DETAIL N

| TABLE BC | | | | |
|---|---|---|---|---|
| TYPE | BC = BOLT CIRCLE | ANCHOR BOLT DIAMETER | COUPLING NUT BASIC LENGTH | SET SCREW LENGTH DETAIL B-2 |
| 15 | 1'-0" | 1" | 3" | 1 1/2" |
| 21 | | 1 1/4" | 3 3/4" | 1 7/8" |

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# ELECTRICAL SYSTEMS (ELECTROLIER ANCHORAGE AND GROUTING FOR TYPE 15 AND TYPE 21 BARRIER RAIL MOUNTED)

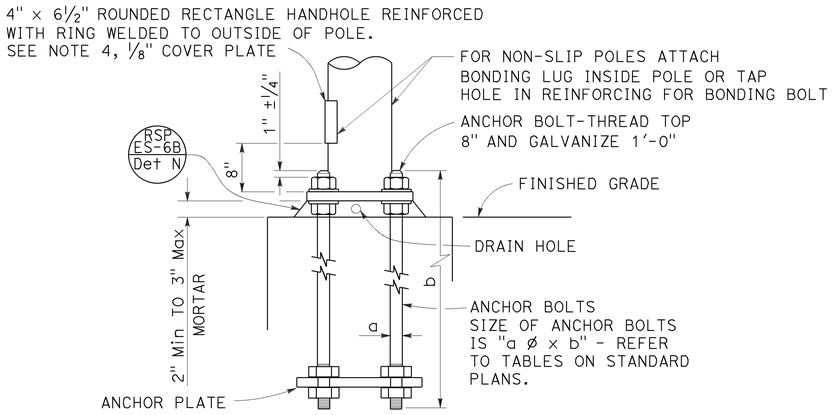
NO SCALE

RSP ES-6B DATED JULY 15, 2016 SUPERSEDES STANDARD PLAN ES-6B DATED MAY 20, 2011 - PAGE 453 OF THE STANDARD PLANS BOOK DATED 2010.

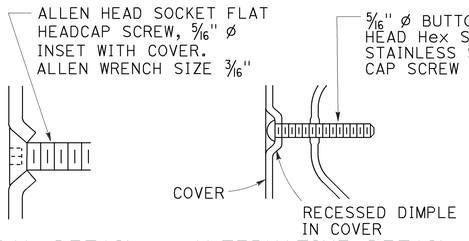
**REVISED STANDARD PLAN RSP ES-6B**

**2010 REVISED STANDARD PLAN RSP ES-6B**

6-20-16

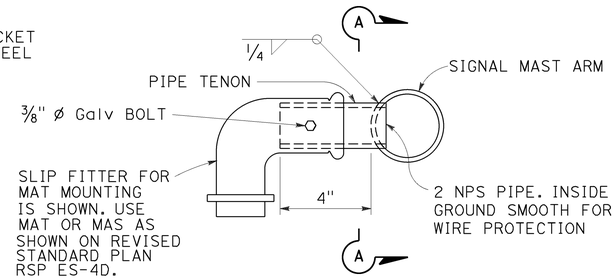



## HANDHOLE AND ANCHORAGE
### DETAIL A




### TYPICAL DETAIL
### DETAIL B-1

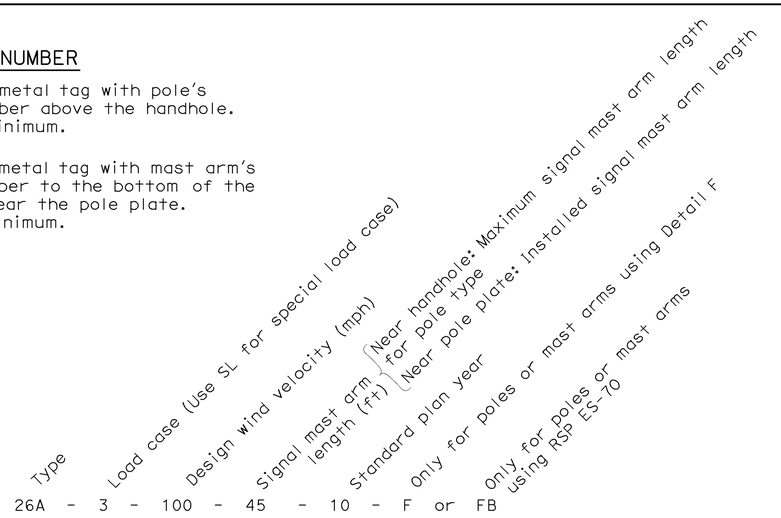
### ALTERNATIVE DETAIL
### DETAIL B-2



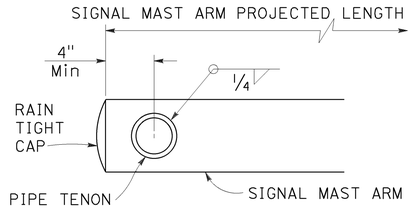

### SIDE TENON
### DETAIL S-1

## IDENTIFICATION NUMBER

1. Attach a stamped metal tag with pole's identification number above the handhole. ¼" high number, minimum.
2. Attach a stamped metal tag with mast arm's identification number to the bottom of the signal mast arm near the pole plate. ¼" high number, minimum.

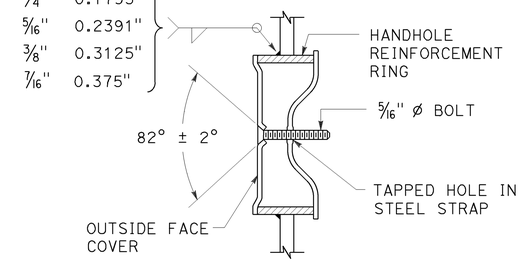



### SAMPLE IDENTIFICATION NUMBER

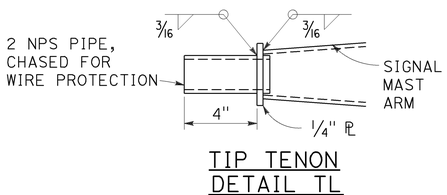



### SECTION A-A

## PIPE TENONS
### DETAIL S

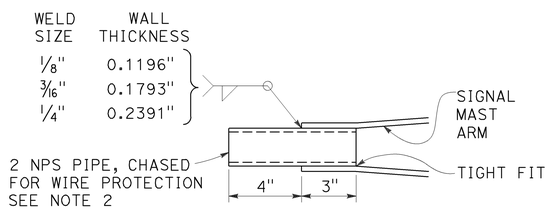



## TAMPER RESISTANT HANDHOLE COVER
### DETAIL B

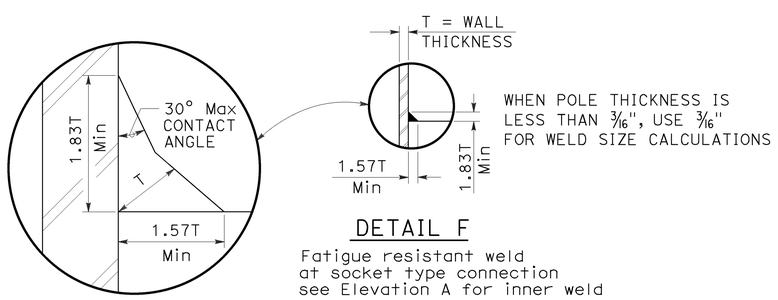



### TIP TENON
### DETAIL TL

This detail supersedes Detail S when so designated

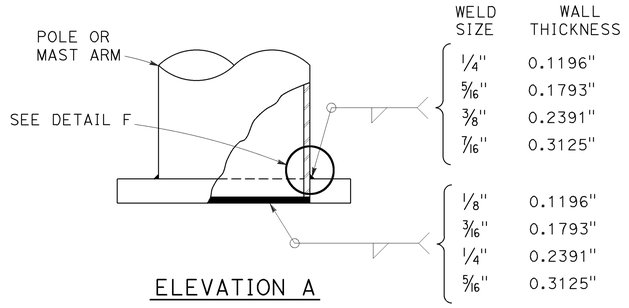



### TIP TENON
### DETAIL TS




### DETAIL F

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




### ELEVATION A

## NOTES:

1. Provide a Hex nut, leveling nut and 2 washers for each bolt.
2. Luminaire mast arms shall be round, tapered steel tubes, taper of 0.1375" to 0.143-inch per foot with an end section 2⅜" OD for mounting hardware. Extensions of 2 NPS Standard pipe and 7" long may be used at the option of the manufacturer. When low pressure sodium luminaires are required, the extension shall be 1'-3".
3. Signal mast arms shall be round, tapered steel tubes, maximum taper 0.143-inch per foot.
4. Handhole reinforcement ring shall be ¼" x 2" for 0.1196" to 0.2391" thick poles, ⅜" x 2" for 0.3125" to 0.375" thick poles.
5. Handholes shall be located on the downstream side of traffic.
6. Detail F, fatigue resistant weld, is required at socket welded signal mast arm plate and pole base plate.
7. Cap screws shall be tightened by the turn-of-nut method ⅓ turn from a snug tight condition. No washer will be required.
8. Outside diameter, wall thickness, and corresponding section properties of poles and mast arms as shown in the Standard Plans are minimums. Unless otherwise specified, alternative sections shall require approval by the Engineer.
9. Design: AASHTO Standard Specifications for Structural Support for Highway Signs, Luminaires, and Traffic Signals, 6th Edition. Basic Wind Speed = 100 mph (3 seconds gust). Yearly Mean Wind Velocity = 15.6 mph.
10. Materials (Structural steel):
    fy = 55,000 psi (tapered steel tube and anchor bolts)
    fy = 50,000 psi (unless otherwise noted)
11. Materials (Reinforced concrete):
    f'c = 3,625 psi
    fy = 60,000 psi

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 108 | 113 |

REGISTERED CIVIL ENGINEER

July 15, 2016
PLANS APPROVAL DATE

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

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

TO ACCOMPANY PLANS DATED 08-29-16

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# ELECTRICAL SYSTEMS (SIGNAL AND LIGHTING STANDARD, DETAIL No. 1)

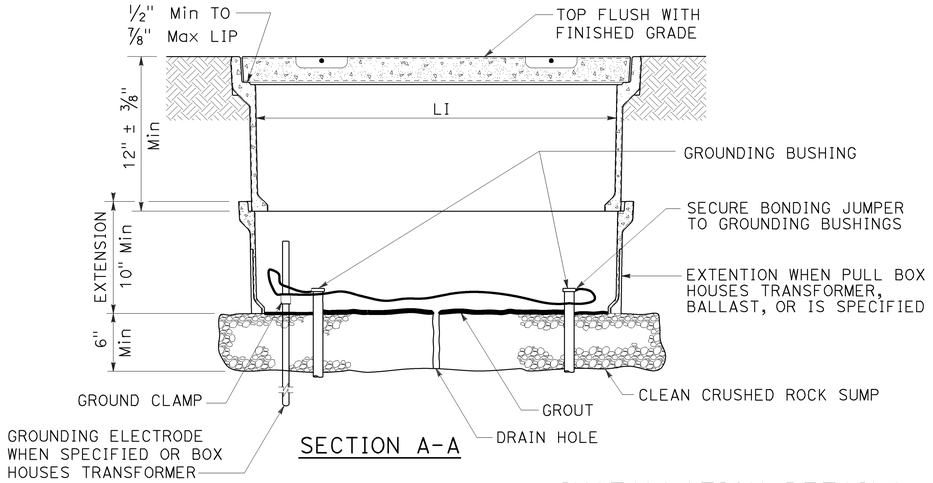
NO SCALE

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

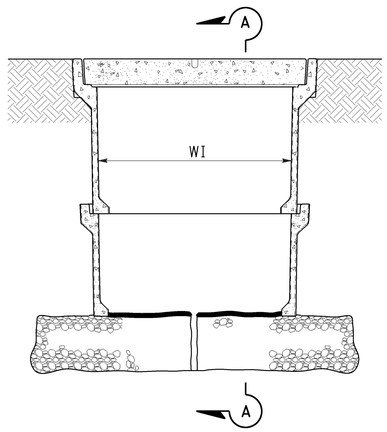
**REVISED STANDARD PLAN RSP ES-7M**

2010 REVISED STANDARD PLAN RSP ES-7M

6-20-16



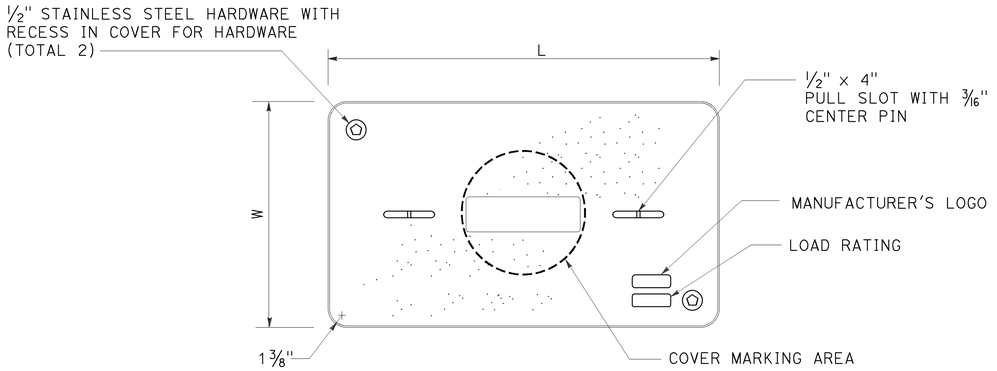

SECTION A-A



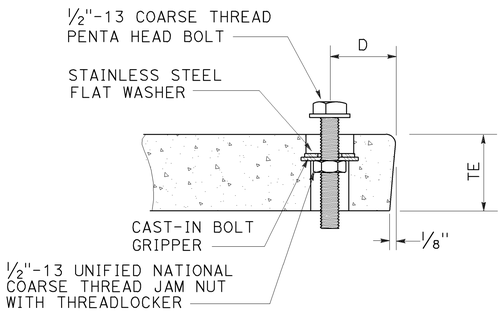

SIDE VIEW

# INSTALLATION DETAILS

## DETAIL A

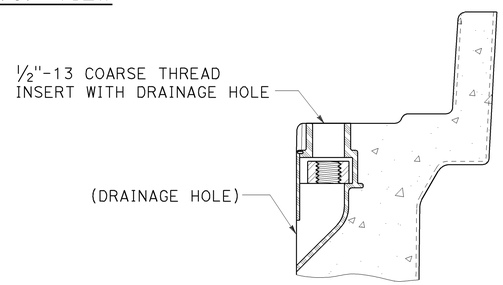



COVER TOP VIEW




TYPICAL COVER CAPTIVE BOLT

OR SIMILAR




TYPICAL THREADED INSERT

OR SIMILAR

| DIMENSION TABLE | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| PULL BOX | PULL BOX | | | | | COVER | | | | |
| | MINIMUM DEPTH BOX | MINIMUM DEPTH EXTENSION | MINIMUM WEIGHT | LI Min | WI Min | TE | D | L | W | MINIMUM WEIGHT |
| No. 3½ | 12" | N/A | 40 lb | 1′ - 3" | 9" | 1¾" | 1¾" | 1′-3¼" - 1′-3⅜" | 10" - 10⅛" | 30 lb |
| No. 5 | 12" | 10" | 55 lb | 1′ - 8" | 11" | 2" | 1¾" | 1′-11¼" | 1′-1¾" | 60 lb |
| No. 6 | 12" | 10" | 70 lb | 2′ - 4¼" | 1′ - 3¼" | 2" | 2" | 2′-6½" | 1′-5½" | 85 lb |

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 109 | 113 |

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

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

April 15, 2016
PLANS APPROVAL DATE

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TO ACCOMPANY PLANS DATED 08-29-16

NOTES:

1. The nominal dimensions of the opening in which the cover sets shall be the same as the cover dimensions except the length and width dimensions shall be ⅛" greater.
2. Covers and boxes shall be interchangeable with California standard male and female gages. When interchanged with a standard male or female gage, the top surfaces shall be flush within ⅛". Top outside radius of covers and pull boxes shall have a ⅛" radius.
3. Dimensions for the cover for non-traffic pull box are nominal values.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# ELECTRICAL SYSTEMS (NON-TRAFFIC PULL BOX)

NO SCALE

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

**REVISED STANDARD PLAN RSP ES-8A**

2010 REVISED STANDARD PLAN RSP ES-8A

1-22-16

| DIST | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET NO. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 110 | 113 |

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

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

April 15, 2016
PLANS APPROVAL DATE

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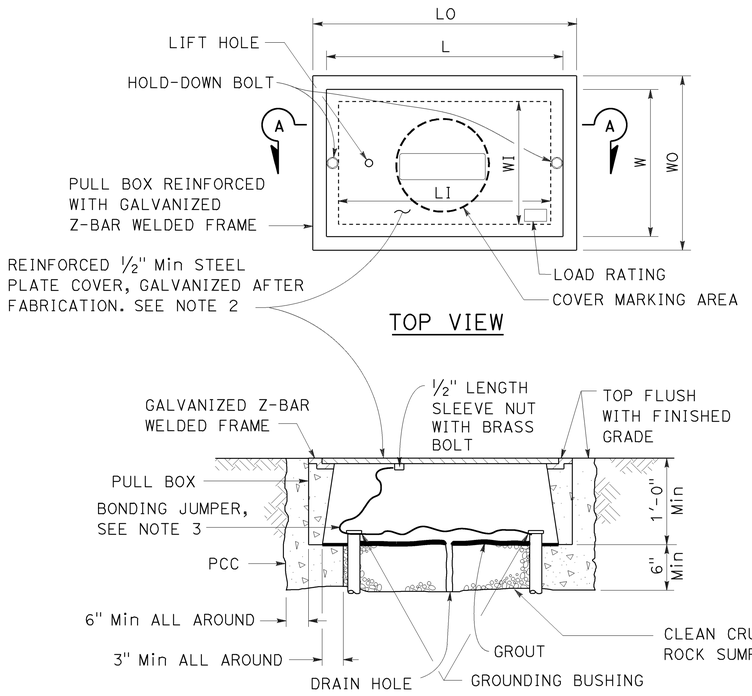
TO ACCOMPANY PLANS DATED 08-29-16




# No. 3½(T), No. 5(T) AND No. 6(T) TRAFFIC PULL BOX

## NOTES:

1. Traffic pull box shall be provided with steel cover and special concrete footing. Steel cover shall have embossed non-skid pattern.
2. Steel reinforcing shall be as regularly used in the standard products of the respective manufacturer.
3. Bonding jumper for metal covers shall be 3' long, minimum.
4. The nominal dimensions of the opening in which the cover sets shall be the same as the cover dimensions except the length and width dimensions shall be ⅛" greater.
5. Covers and boxes shall be interchangeable with California standard male and female gages. When interchanged with a standard male or female gage, the top surfaces shall be flush within ⅛".

DIMENSION TABLE

| PULL BOX | PULL BOX | | | | | | COVER | |
|---|---|---|---|---|---|---|---|---|
| | MINIMUM * THICKNESS | MINIMUM DEPTH BOX AND EXTENSION | LO | LI | WO | WI | L ** | W ** |
| No. 3½(T) | 1½" | 1'-0" | 1'-10" - 1'-11" | 1'-5" - 1'-6½" | 1'-3" - 1'-4" | 10" - 1'-0" | 1'-8" -1'-8½" | 1'-1" - 1'-2" |
| No. 5(T) | 1¾" | 1'-0" | 2'-5" - 2'-6" | 2'-0" - 2'-1" | 1'-6" - 1'-7" | 1'-1" - 1'-2" | 2'-3" - 2'-3½" | 1'-4" - 1'-4½" |
| No. 6(T) | 2" | 1'-0" | 2'-11" - 3'-1" | 2'-6" - 2'-7" | 1'-10" - 2'-0" | 1'-5" - 1'-6" | 2'-9" - 2'-9½" | 1'-8" - 1'-8½" |

* EXCLUDING CONDUIT WEB ** TOP DIMENSION

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

## ELECTRICAL SYSTEMS (TRAFFIC PULL BOX)

NO SCALE

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

**REVISED STANDARD PLAN RSP ES-8B**

**2010 REVISED STANDARD PLAN RSP ES-8B**

1-22-16

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 111 | 113 |

REGISTERED CIVIL ENGINEER

July 15, 2016
PLANS APPROVAL DATE

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

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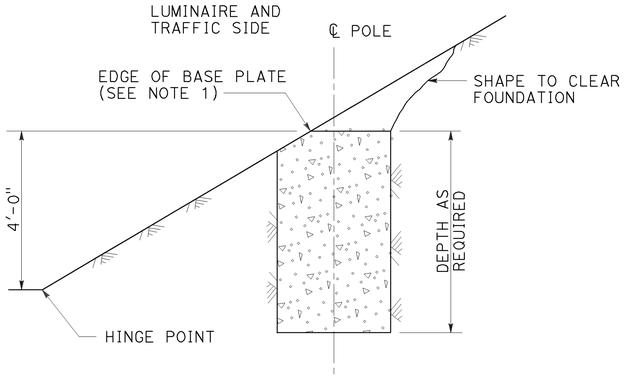
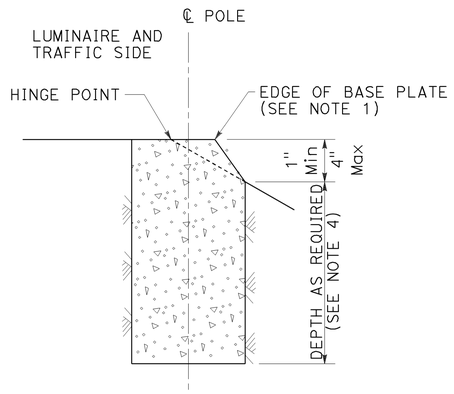
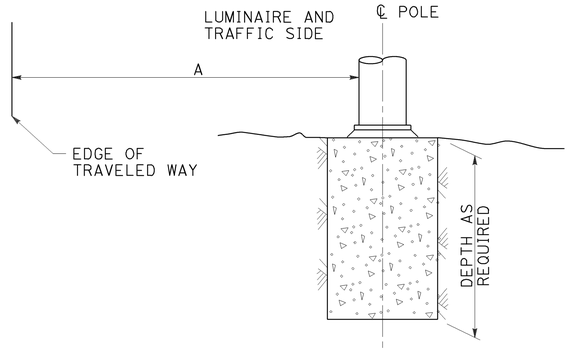
TO ACCOMPANY PLANS DATED 08-29-16




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



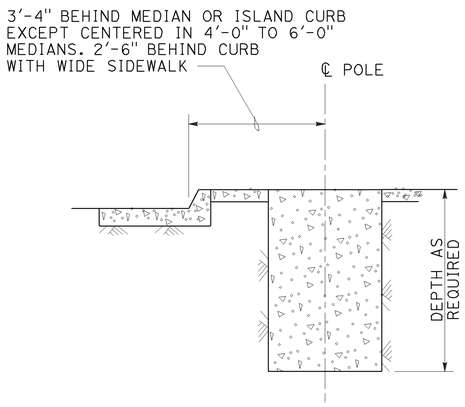

FILL SLOPES
STEEPER THAN 4:1,
LESS THAN 2:1
DETAIL A-2
See Note 2 and 3



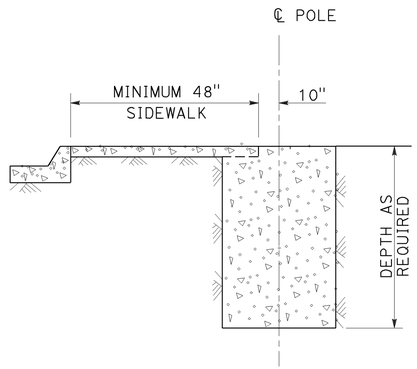

FLAT SECTIONS, CUT OR FILL SLOPES
4:1 OR FLATTER
DETAIL A-3
See Note 2

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

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




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




NARROW SIDEWALK
DETAIL B-2
Less than 7' wide

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

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# ELECTRICAL SYSTEMS (FOUNDATION INSTALLATIONS)

NO SCALE

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

**REVISED STANDARD PLAN RSP ES-11**

**2010 REVISED STANDARD PLAN RSP ES-11**

6-20-16

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 112 | 113 |

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

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

April 15, 2016
PLANS APPROVAL DATE

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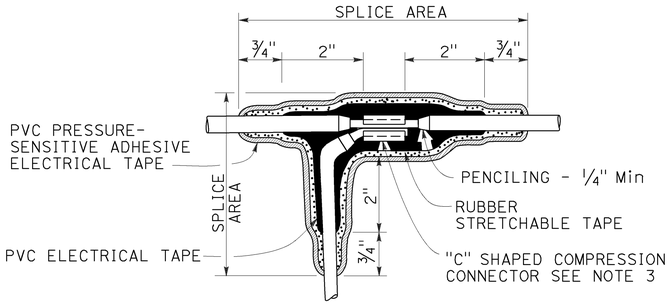
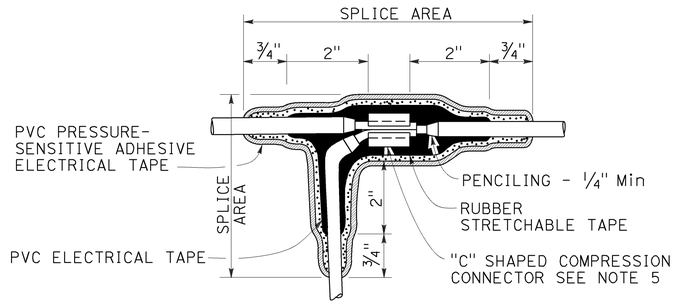
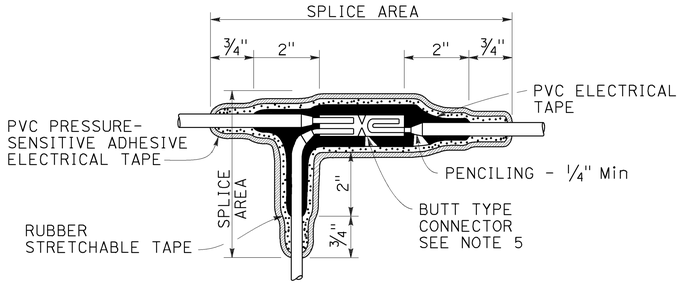
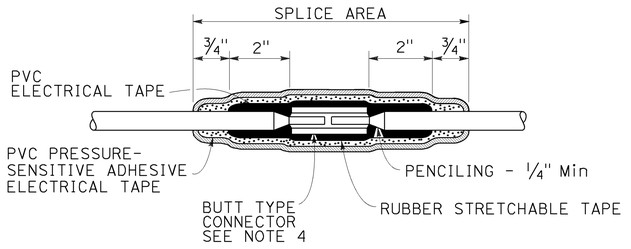
TO ACCOMPANY PLANS DATED 08-29-16



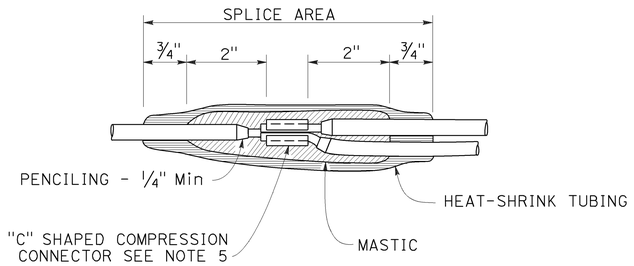



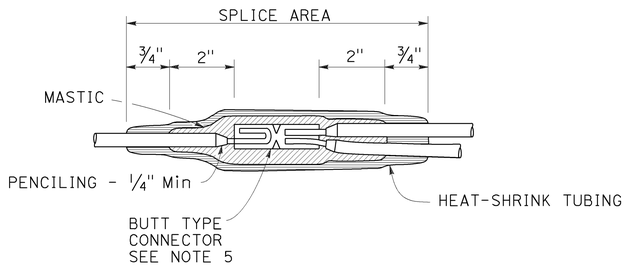



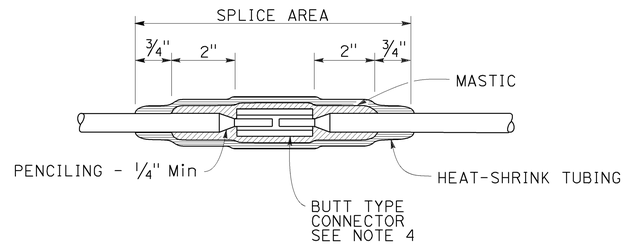

## NOTES:

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

## TYPICAL SPLICE INSULATION METHOD B




## TYPICAL SPLICE INSULATION HEAT-SHRINK TUBING

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# ELECTRICAL SYSTEMS (SPLICE INSULATION METHODS DETAILS)

NO SCALE

RSP ES-13A DATED APRIL 15, 2016 SUPERSEDES RSP ES-13A DATED OCTOBER 30, 2015 AND STANDARD PLAN ES-13A DATED MAY 20, 2011 - PAGE 491 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP ES-13A**

2010 REVISED STANDARD PLAN RSP ES-13A

1-22-16

| POLE TYPE | POLE DATA | | | | BASE PLATE DATA | | | | CIDH | |
|---|---|---|---|---|---|---|---|---|---|---|
| | HEIGHT "h" | Min OD | | THICKNESS | "C" | THICKNESS | ANCHOR BOLT SIZE | BC = BOLT CIRCLE | Dia | "d" |
| | | BASE | TOP | | | | | | | |
| CCTV 25 | 25′ | 7⅜" | 3¾" | 0.1793" | 1′-1" | 1" | 1½" ø x 36" | 11½" | 2′-6" | 7′-0" |
| CCTV 30 | 30′ | 8" | | | 1′-1½" | | | 1′-0" | | 7′-6" |
| CCTV 35 | 35′ | 8⅝" | | | 1′-2" | | | 1′-1" | | 8′-0" |
| CCTV 40 | 40′ | 9⅜" | | | 1′-3" | | | 1′-1½" | | 8′-6" |
| CCTV 45 | 45′ | 10" | | | | | | 1′-2" | | |

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 11 | SD | 67 | R4.6/19.0 | 113 | 113 |

REGISTERED CIVIL ENGINEER

July 15, 2016
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Stanley P. Johnson — No. C57793 — Exp. 3-31-18 CIVIL — STATE OF CALIFORNIA

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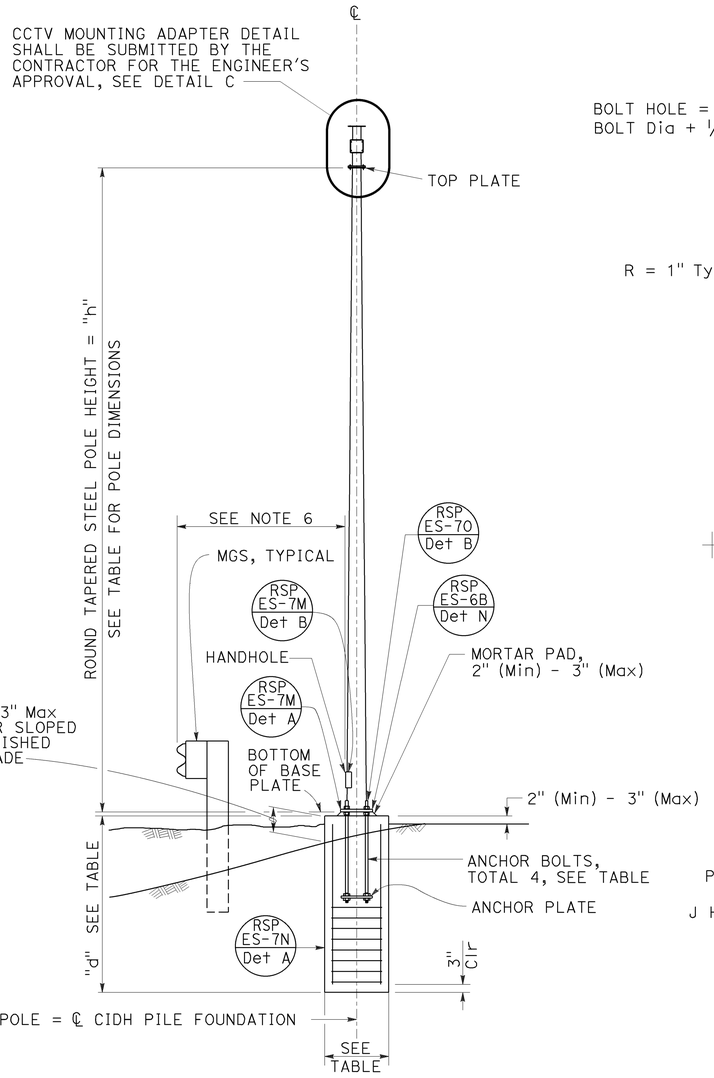
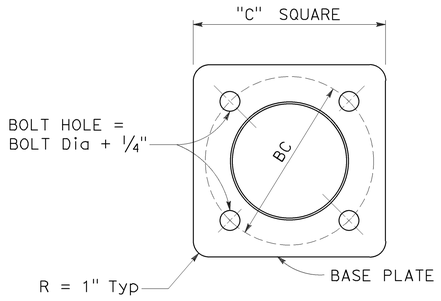
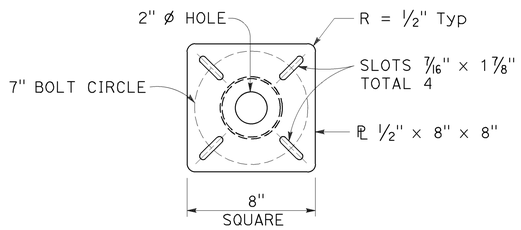
TO ACCOMPANY PLANS DATED 08-29-16




ELEVATION A



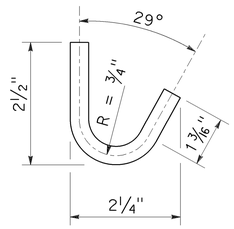

BASE PLATE
DETAIL A



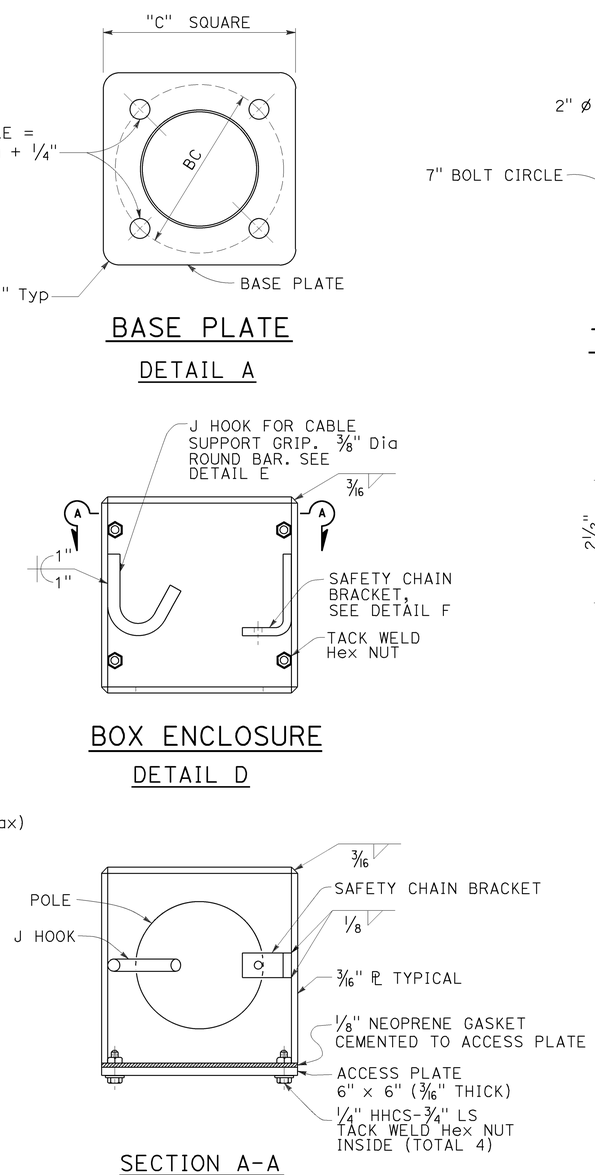

TOP PLATE
DETAIL B



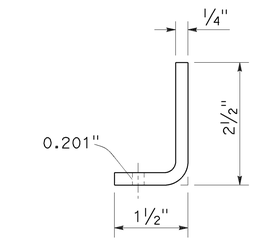

BOX ENCLOSURE
DETAIL D



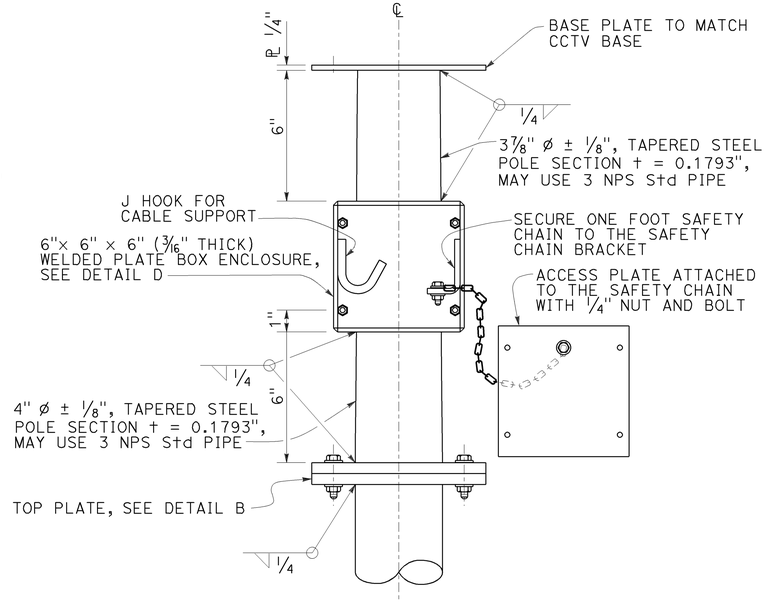

J HOOK
DETAIL E




SECTION A-A




SAFETY CHAIN BRACKET
DETAIL F




CLOSED CIRCUIT TELEVISION MOUNTING ADAPTER
DETAIL C

NOTES:

1. Verify controlling field dimensions before ordering or fabricating any material.
2. During pole installation, the post shall be raked as necessary with the use of leveling nuts to provide a plumb pole axis.
3. For wind loading see RSP ES-7M.
4. Materials (Structural Steel):
   a. fy = 55,000 psi (tapered steel tube and anchor bolts)
   b. fy = 50,000 psi (unless otherwise noted)
5. Materials (Reinforced Concrete):
   a. f′c = 3,625 psi
   b. fy = 60,000 psi
6. See RSP A77R1 thru RSP A77R8

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# ELECTRICAL SYSTEMS (CLOSED CIRCUIT TELEVISION, 25' TO 45' POLE)

NO SCALE

RSP ES-16B DATED JULY 15, 2016 SUPERSEDES RSP ES-16B DATED OCTOBER 30, 2015 AND STANDARD PLAN ES-16B DATED MAY 20, 2011 - PAGE 501 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP ES-16B**

**2010 REVISED STANDARD PLAN RSP ES-16B**

6-20-16