| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 08 | Riv | 111 | T50.0/56.2 | 1 | 32 |

INDEX OF PLANS


| SHEET No. | DESCRIPTION |
|---|---|
| 1 | TITLE AND LOCATION MAP |
| 2-3 | TYPICAL CROSS SECTIONS |
| 4 | CONSTRUCTION DETAILS |
| 5 | CONSTRUCTION AREA SIGNS |
| 6 | PAVEMENT DELINEATION QUANTITIES |
| 7 | SUMMARY OF QUANTITIES |
| 8-14 | ELECTRICAL PLANS |
| 15-32 | REVISED STANDARD PLANS |


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

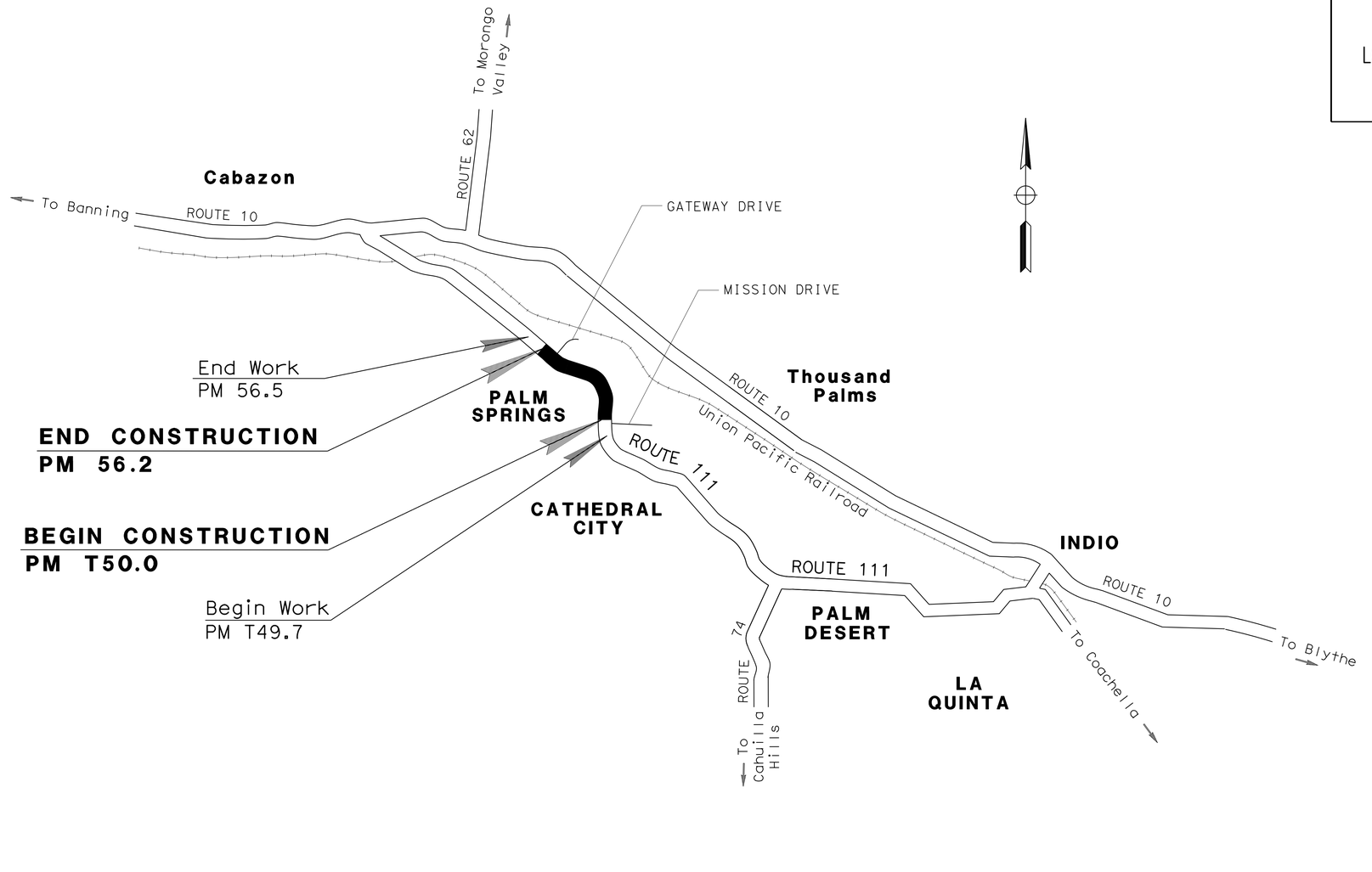
## PROJECT PLANS FOR CONSTRUCTION ON

# STATE HIGHWAY

## IN RIVERSIDE COUNTY
## IN PALM SPRINGS
## FROM 0.3 MILE NORTH OF MISSION DRIVE
## TO 0.9 MILE NORTH OF GATEWAY DRIVE

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010

LOCATION MAP




NO SCALE

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

Henry Lee 10/26/15
PROJECT ENGINEER DATE
REGISTERED CIVIL ENGINEER

REGISTERED PROFESSIONAL ENGINEER
HENRY LEE
No. C 69931
Exp. 09-30-16
CIVIL
STATE OF CALIFORNIA

October 26, 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.

| | |
|---|---|
| CONTRACT No. | 08-1C4604 |
| PROJECT ID | 0812000318 |

PROJECT MANAGER: MICHAEL RISTIC
DESIGN MANAGER: IYAD NAMY

LAST REVISION 10-26-15 DATE PLOTTED => 02-DEC-2015 TIME PLOTTED => 13:01

BORDER LAST REVISED 10/4/2013 | CALTRANS WEB SITE IS: HTTP//WWW.DOT.CA.GOV/ | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | USERNAME => s110420 DGN FILE => 0812000318ab001.dgn | UNIT 2343 | PROJECT NUMBER & PHASE 08120003181

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 08 | Riv | 111 | T50.0/56.2 | 2 | 32 |

Henry Lee 10/26/15
REGISTERED CIVIL ENGINEER DATE

10/26/15
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Henry Lee
No. 69931
Exp. 9/30/16
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.

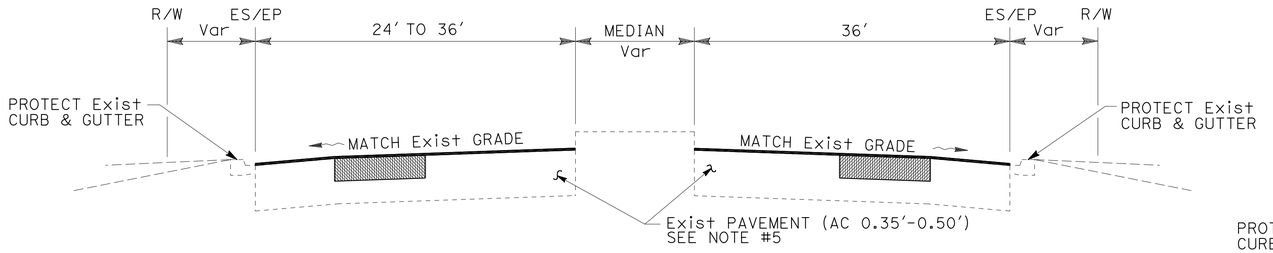
## NOTES:

1. DIMENSIONS OF THE STRUCTURAL SECTIONS ARE SUBJECT TO TOLERENCES SPECIFIED IN THE STANDARD SPECFICATIONS.
2. SUPERELEVATIONS AS SHOWN OR AS DIRECTED BY THE ENGINEER.
3. EXISTING UTILITY FACILITIES HAVE NOT BEEN PLOTTED ON THESE PLANS.
4. EXACT LOCATIONS AND DIMENSIONS OF REPLACE AC SURFACING SHALL BE DETERMINED BY THE ENGINEER.
5. THERE IS A CTB FROM PM 51.0 TO 54.0 UNDER EXISTING AC.

## LEGEND:

SLURRY SEAL (TYPE III)

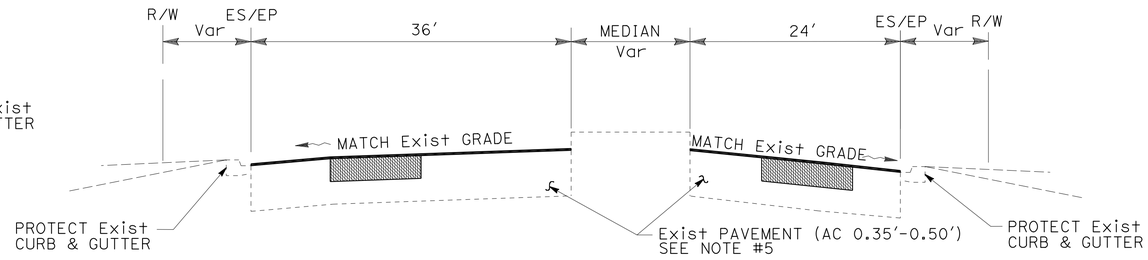
0.35′ REPLACE AC SURFACING (LOCALIZED DIGOUT) WITH HMA TYPE A
SEE SHEETS C-1 FOR DETAILS & Q-1 FOR LOCATIONS




SOUTHBOUND NORTHBOUND

### POST MILE LOCATIONS

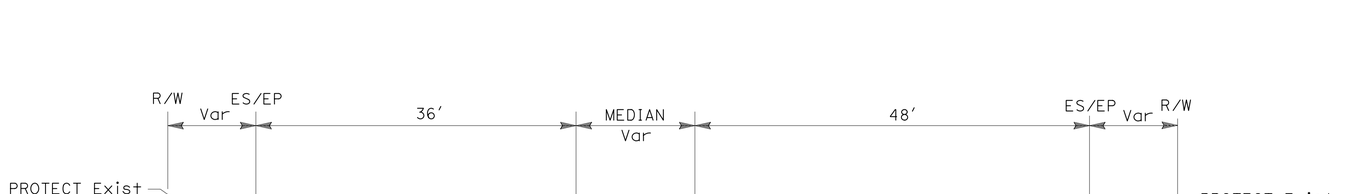
FROM PM T50.00 TO PM T50.28
FROM PM T50.52 TO PM T51.52
FROM PM T51.58 TO PM T52.55
FROM PM T53.00 TO PM T53.40




SOUTHBOUND NORTHBOUND

### POST MILE LOCATION

FROM PM T52.55 TO T53.00




SOUTHBOUND NORTHBOUND

### POST MILE LOCATIONS

FROM PM T50.28 TO T50.52
FROM PM T51.52 TO T51.58

# TYPICAL CROSS SECTIONS

NO SCALE **X-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: MICHAEL RISTIC

CALCULATED-DESIGNED BY: HENRY LEE
CHECKED BY: MICHAEL RISTIC

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

LAST REVISION: DATE PLOTTED => 02-DEC-2015
10-26-15 TIME PLOTTED => 13:01

BORDER LAST REVISED 7/2/2010

USERNAME => s110420
DGN FILE => 08120003318ca0001.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 2343

PROJECT NUMBER & PHASE 08120003181

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 08 | Riv | 111 | T50.0/56.2 | 3 | 32 |

Henry Lee 10/26/15
REGISTERED CIVIL ENGINEER DATE

10/26/15
PLANS APPROVAL DATE

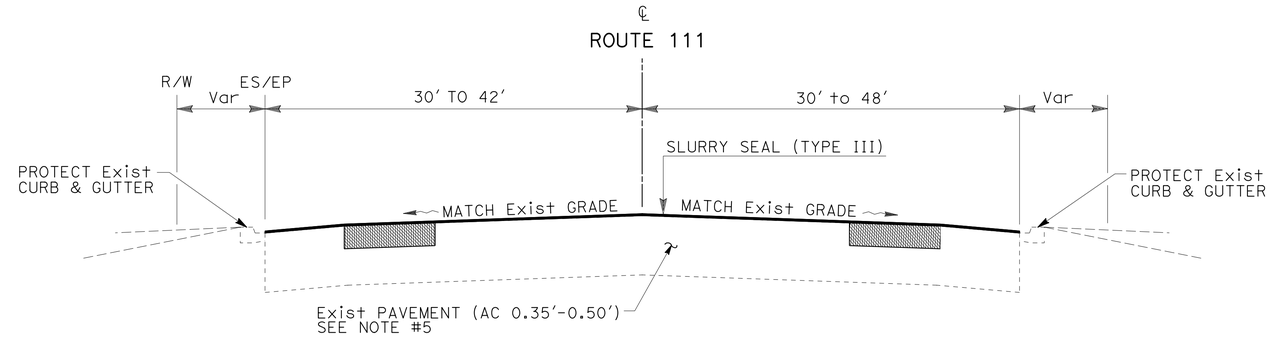
REGISTERED PROFESSIONAL ENGINEER
Henry Lee
No. 69931
Exp. 9/30/16
CIVIL
STATE OF CALIFORNIA

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.

## LEGEND:

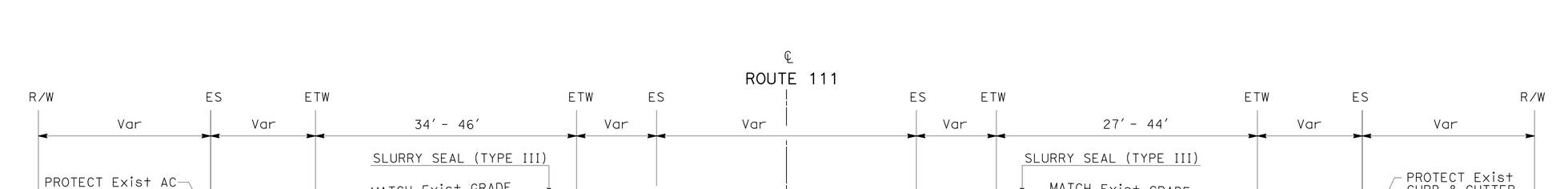
SLURRY SEAL

0.35′ REPLACE AC SURFACING (LOCALIZED DIGOUT) WITH HMA TYPE A
SEE SHEETS C-1 FOR DETAILS & Q-1 FOR LOCATIONS




SOUTHBOUND NORTHBOUND

**POST MILE LOCATION**
FROM PM T53.40 TO PM 55.05




SOUTHBOUND NORTHBOUND

**POST MILE LOCATION**
FROM PM 55.05 TO PM 56.20

# TYPICAL CROSS SECTIONS

NO SCALE **X-2**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: MICHAEL RISTIC

CALCULATED-DESIGNED BY: HENRY LEE
CHECKED BY: MICHAEL RISTIC

REVISED BY | DATE REVISED

LAST REVISION DATE PLOTTED => 02-DEC-2015
TIME PLOTTED => 13:01
10-26-15

BORDER LAST REVISED 7/2/2010

USERNAME => s110420
DGN FILE => 08120003181ca002.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 2343

PROJECT NUMBER & PHASE 08120003181

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 08 | Riv | 111 | T50.0/56.2 | 4 | 32 |

Henry Lee 10/26/15
REGISTERED CIVIL ENGINEER DATE

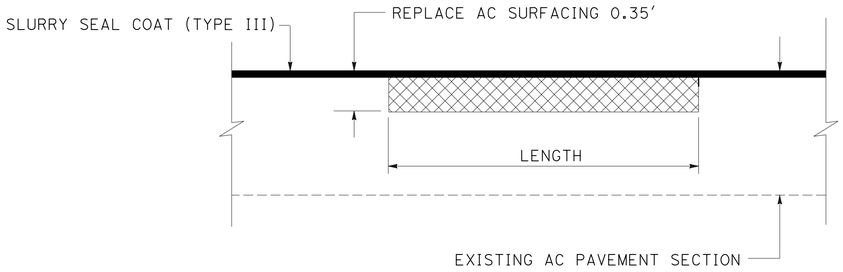
10/26/15
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Henry Lee — No. 69931 — Exp. 9/30/16 — 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.

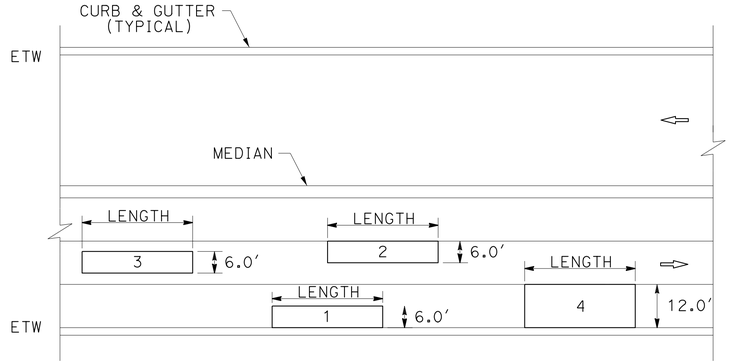
## NOTES:

1. ALL WORK WITHIN STATE RIGHT OF WAY.
2. EXACT LIMITS AND REPLACE ASPHALT CONCRETE SURFACING LOCATIONS SHALL BE DETERMINED BY THE ENGINEER.
3. EXISTING UTILITY FACILITIES HAVE NOT BEEN PLOTTED ON THESE PLANS.
4. PROTECT IN PLACE EXISTING SURVEY MONUMENTS. ANY MONUMENTS THAT WILL BE DISTURBED, OBLITERATED OR DISTROYED BY THE SCOPE OF THE PROJECT MUST BE REFERENCED BY THE OFFICE OF LAND SURVEYS PRIOR TO THEIR DISTURBANCE. THEY MUST THEN BE RESET IN WELLS AND BROUGHT TO THE SURFACE BY THE CONTRACTOR USING STANDARD PLAN A-74, TYPE D. THE OFFICE OF LAND SURVEYS WILL PROVIDE STANDARD BRASS DISKS AND LOCATION REFERENCE POINTS. ALL OTHER WORK, MATERIALS AND TRAFFIC CONTROLS MUST BE PROVIDED BY THE CONTRACTOR.




## REPLACE ASPHALT CONCRETE SURFACING

FOR REPLACE ASPHALT CONCRETE SURFACING LOCATIONS AND DIMENSIONS SEE SHEET Q-1

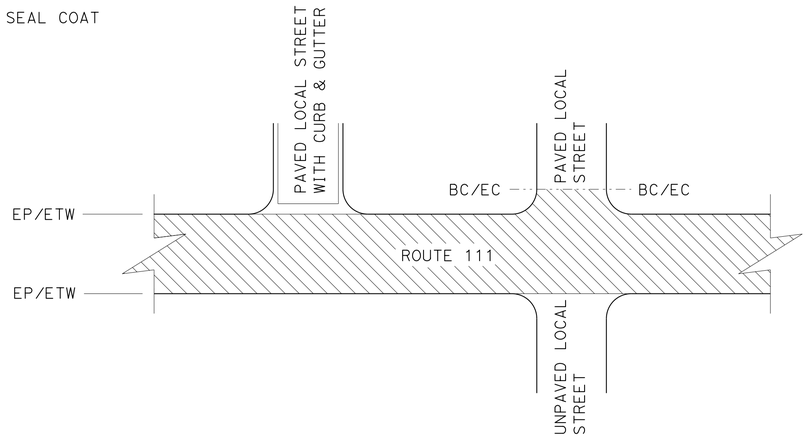



## REPLACE ASPHALT SURFACING LAYOUT (TYPICAL)

CASE 1: RIGHT WHEEL TRACK (R)
CASE 2: LEFT WHEEL TRACK (L)
CASE 3: CENTER OF TRAVEL WAY (C)
CASE 4: ENTIRE LANE (E)

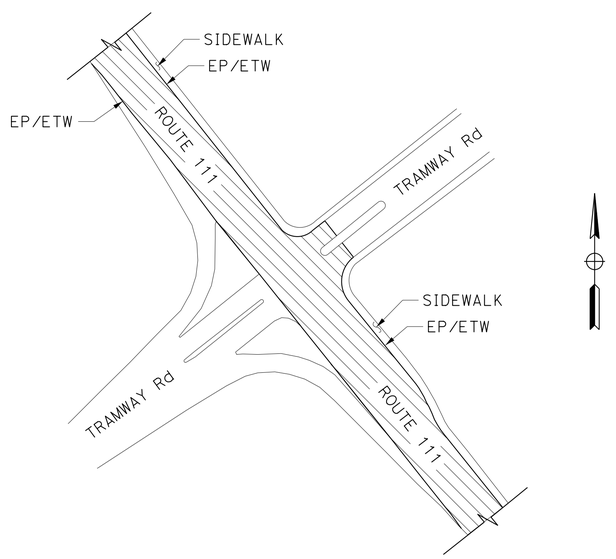
LEGEND

- LIMITS OF WORK (SLURRY SEAL COAT)
- REPLACE ASPHALT CONCRETE SURFACING (LOCALIZED DIGOUT) WITH HMA TYPE A. SEE SHEETS C-1 FOR DETAILS & Q-1 FOR LOCATIONS
- CONCRETE
- SLURRY SEAL COAT




## PAVING LIMITS OF WORK

TYPICAL




## PAVING LIMITS OF WORK

AT INTERSECTION OF ROUTE 111 AND TRAMWAY ROAD

# CONSTRUCTION DETAILS

NO SCALE

**C-1**

CALCULATED-DESIGNED BY
CHECKED BY
REVISED BY
DATE REVISED
HENRY LEE
MICHAEL RISTIC
FUNCTIONAL SUPERVISOR
MICHAEL RISTIC
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

LAST REVISION 10-26-15
DATE PLOTTED => 02-DEC-2015
TIME PLOTTED => 13:01

BORDER LAST REVISED 7/2/2010
USERNAME => s110420
DGN FILE => 08120003181ga001.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 2343
PROJECT NUMBER & PHASE 08120003181

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 08 | Riv | 111 | T50.0/56.2 | 6 | 32 |

Daryush Nami 10/26/15
REGISTERED CIVIL ENGINEER DATE

10/26/15
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Daryush Nami No. 78890 Exp. 3/31/16 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:

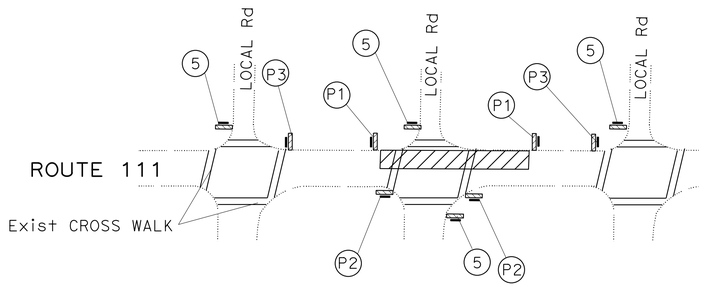
1. LOCATIONS OF CONSTRUCTION AREA SIGNS, AND PCMS ARE APPROXIMATE, EXACT LOCATIONS OF THE CONSTRUCTION AREA SIGNS AND PCMS WILL BE DETERMINED BY THE ENGINEER.
2. ALL TRAFFIC CONTROL ITEMS ON THIS SHEET EXCEPT THE PORTABLE CHANGEABLE MESSAGE SIGNS, ARE PART OF "TRAFFIC CONTROL" ITEM.
3. REFER TO STANDARD PLANS RSP T9, RSP T11, RSP T12, RSP T13, RSP T15 AND RSP T16 FOR ADDITIONAL NOTES, AND TRAFFIC CONTROL REQUIREMENTS.
4. CONTRACTOR SHALL MAINTAIN AND PROVIDE TRAFFIC ACCESS TO RESIDENCE, AND LOCAL BUSINESSES.
5. COVER ALL CONFLICTING SIGNING.
6. ALL CONSTRUCTION AREA SIGNS ARE BLACK ON ORANGE EXCEPT FOR REGULATORY SIGNS AND C40(CA) SIGN.

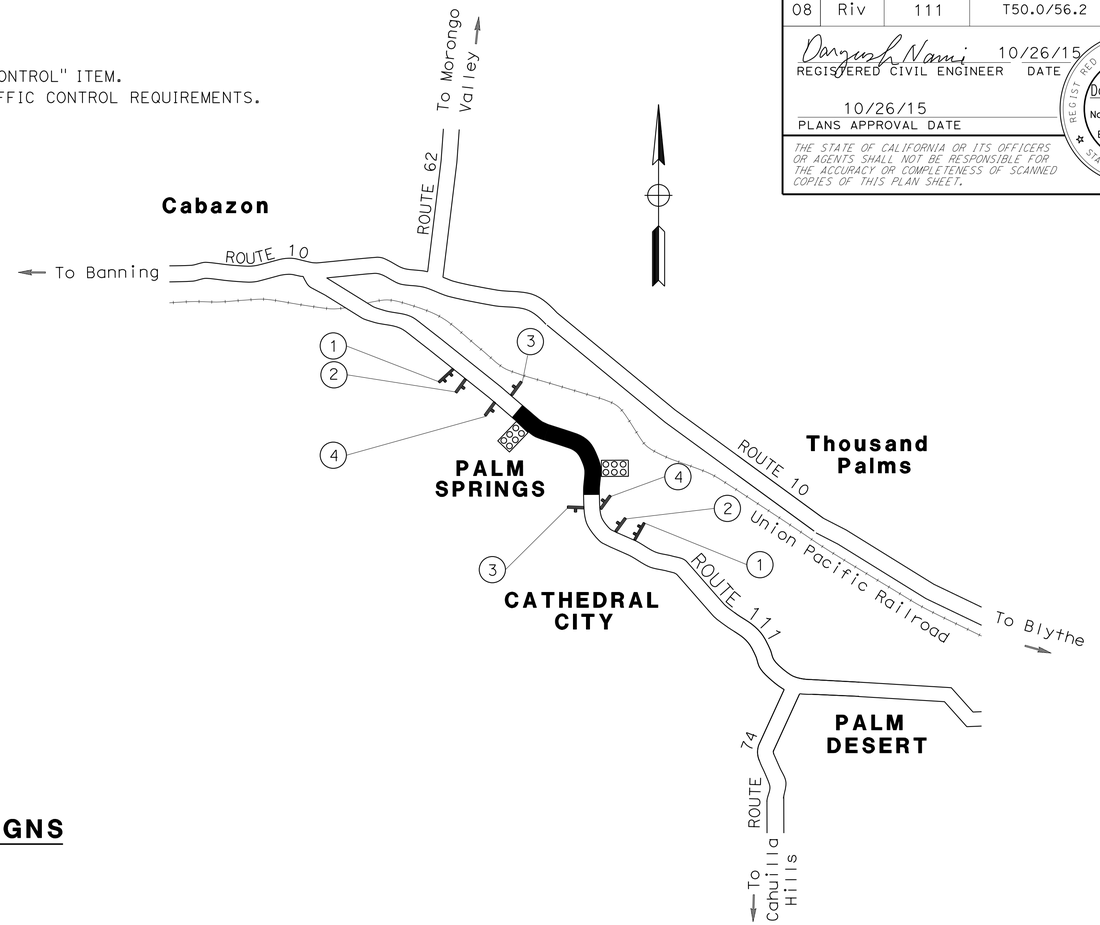
## LEGEND:

CONSTRUCTION AREA

PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

PORTABLE CONSTRUCTION AREA SIGN ON TYPE II BARRICADE




## TYPICAL LOCAL ROAD AND PEDESTRIAN DETOUR SIGNS

## STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

| SIGN No. (X) | SIGN CODE | | PANEL SIZE | No. OF POSTS AND POST SIZE | SIGN MESSAGE | No. OF SIGNS | |
|---|---|---|---|---|---|---|---|
| | FEDERAL | CALIFORNIA | | | | ONE POST (EA) | TWO POST (EA) |
| 1 | - | C40(CA) | 72" X 36" | 2 - 4" X 6" | TRAFFIC FINES DOUBLED IN CONSTRUCTION ZONES | | 2 |
| 2 | G20-1 | | 36" X 18" | 1 - 4" X 4" | ROAD WORK AHEAD NEXT 6 MILES | 2 | |
| 3 | G20-2 | | 36" X 18" | 1 - 4" X 4" | END ROAD WORK | 2 | |
| 4 | W11-1 | W79(CA) | 36" X 36" | 1 - 6" X 6" | BICYCLE TRAFFIC | 2 | |
| | W16-1 | W79A(CA) | 36" X 30" | | SHARE THE ROAD | | |
| 5 | W20-1 | C23(CA) | 48" X 48" | ON BARRICADE | ROAD WORK AHEAD | 4 | |
| P1 | | R9-9(CA) | 30" x 18" | ON BARRICADE | SIDEWALK CLOSED | 2 | |
| P2 | | R9-10(CA) | 48" x 24" | ON BARRICADE | SIDEWALK CLOSED ⟷ USE OTHERSIDE | 2 | |
| P3 | | R9-11(CA) | 48" X 36" | ON BARRICADE | SIDEWALK CLOSED AHEAD → CROSS HERE | 2 | |

### PORTABLE CHANGEABLE MESSAGE SIGNS

| (EA) |
|---|
| 2 |

### PORTABLE TYPE II BARRICADES

| (EA) |
|---|
| 10 |

*APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY*

# CONSTRUCTION AREA SIGNS

NO SCALE **CS-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
TRAFFIC DESIGN
FUNCTIONAL SUPERVISOR: MARIO AMANCIO
CALCULATED-DESIGNED BY: KEVIN NGUYEN
CHECKED BY: DARYUSH NAMI
REVISED BY
DATE REVISED

LAST REVISION | DATE PLOTTED => 02-DEC-2015 | 10-26-15 | TIME PLOTTED => 13:01

BORDER LAST REVISED 7/2/2010 | USERNAME => s110420 | DGN FILE => 08120003181a001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2284 | PROJECT NUMBER & PHASE 0812000318

NOTES:

1. REPLACE IN KIND FOR ALL PAVEMENT DELINEATION ON STATE ROUTE 111.
2. REMOVE TRAFFIC STRIPE DETAIL 38, ALL PAVEMENT MARKINGS AND PAVEMENT MARKERS PRIOR TO PLACE SLURRY SEAL.

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 08 | Riv | 111 | T50.0/56.2 | 6 | 32 |

Daryush Nami 10/26/15
REGISTERED CIVIL ENGINEER DATE

10/26/15
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Daryush Nami
No. 78890
Exp. 3/31/16
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.

## PAVEMENT DELINEATION QUANTITIES

| LOCATION | DIRECTION | DETAIL No. OR PAVEMENT MARKING | REMOVE PAVEMENT MARKER | REMOVE THERMOPLASTIC PAVEMENT MARKING | REMOVE YELLOW THERMOPLASTIC PAVEMENT MARKING (HAZARDOUS WASTE) | REMOVE THERMOPLASTIC TRAFFIC STRIPE | PAVEMENT MARKER (RETROREFLECTIVE) | | | PAVEMENT MARKER (RETROREFLECTIVE-RECESSED) | | | THERMOPLASTIC TRAFFIC STRIPE (SPRAYABLE) | | | THERMOPLASTIC PAVEMENT MARKING | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | WHITE | | | | | | | | | | | |
| | | | | | | 8in | TYPE D | TYPE G | TYPE H | TYPE D | TYPE G | TYPE H | 4in YELLOW | 4in WHITE | 8in WHITE | WHITE | YELLOW |
| | | | EA | SQFT | SQFT | LF | EA | | | EA | | | LF | | | SQFT | |
| ON ROUTE 111 PM T50.0 TO PM 56.2 | NORTHBOUND | 4" white | | | | | | | | | | | | 2200 | | | |
| | | 12 | 778 | | | | | 438 | | | 340 | | | 37340 | | | |
| | | 25 | 124 | | | | | | | | | 124 | 5920 | | | | |
| | | 25A | 204 | | | | | | 204 | | | | 9750 | | | | |
| | | 27B | | | | | | | | | | | | 7600 | | | |
| | | 38 | 143 | | | 6770 | | 102 | | | 41 | | | | 3385 | | |
| | | SIGNAL | | 690 | | | | | | | | | | | | 320 | |
| | | AHEAD | | 640 | | | | | | | | | | | | 310 | |
| | | TYPE I 10'-0" ARROW | | 210 | | | | | | | | | | | | 84 | |
| | | TYPE III (R) ARROW | | 576 | | | | | | | | | | | | 168 | |
| | | TYPE IV (L) ARROW | | 1728 | | | | | | | | | | | | 540 | |
| | | TYPE IV (R) ARROW | | 672 | | | | | | | | | | | | 210 | |
| | | TYPE VI (R) ARROW | | 297 | | | | | | | | | | | | 126 | |
| | MEDIAN | 22 | 786 | | | | 74 | | | 712 | | | 9408 | | | | |
| | | 29 | 61 | | | | | | | 61 | | | 1440 | | | | |
| | | 32 | 1160 | | | | 1007 | | | 153 | | | 11124 | | | | |
| | | NO TURN | | 75 | | | | | | | | | | | | 38 | |
| | | DIAGONAL MARKING | | 50 | | | | | | | | | | | | 50 | |
| | SOUTHBOUND | 4" white | | | | | | | | | | | | 2150 | | | |
| | | 12 | 841 | | | | | 500 | | | 341 | | | 40608 | | | |
| | | 25 | 124 | | | | | | | | | 124 | 5920 | | | | |
| | | 25A | 204 | | | | | | 204 | | | | 9750 | | | | |
| | | 27B | | | | | | | | | | | | 8300 | | | |
| | | 38 | 127 | | | 6050 | | 83 | | | 44 | | | | 3025 | | |
| | | SIGNAL | | 690 | | | | | | | | | | | | 320 | |
| | | AHEAD | | 640 | | | | | | | | | | | | 310 | |
| | | TYPE III (L) ARROW | | 432 | | | | | | | | | | | | 126 | |
| | | TYPE IV (L) ARROW | | 1632 | | | | | | | | | | | | 510 | |
| | | TYPE IV (R) ARROW | | 144 | | | | | | | | | | | | 45 | |
| | | TYPE V ARROW | | 912 | | | | | | | | | | | | 264 | |
| | | CROSSWALK/LIMIT LINE | | 4420 | 320 | | | | | | | | | | | 4420 | 320 |
| SUBTOTAL | | | 4552 | 13808 | 320 | 12820 | 1081 | 1123 | 408 | 926 | 766 | 248 | 53312 | 98198 | 6410 | 7841 | 320 |
| TOTAL | | | 4552 | 13808 | 320 | 12820 | 2612 | | | 1940 | | | 157920 | | | 8161 | |

REVISED BY | DATE REVISED
KEVIN NGUYEN | DARYUSH NAMI
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR | MARIO AMANCIO
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® TRAFFIC DESIGN

# PAVEMENT DELINEATION QUANTITIES PDQ-1

LAST REVISION | DATE PLOTTED => 02-DEC-2015
10-26-15 | TIME PLOTTED => 13:01

BORDER LAST REVISED 7/2/2010 | USERNAME => s110420 | DGN FILE => 0812000318nc001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2284 | PROJECT NUMBER & PHASE 0812000318

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 08 | Riv | 111 | T50.0/56.2 | 7 | 32 |

Henry Lee 10/26/15
REGISTERED CIVIL ENGINEER DATE

10/26/15
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Henry Lee
No. 69931
Exp. 9/30/16
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. EXACT LOCATION AND DIMENSIONS OF REPLACE AC SURFACING SHALL BE DETERMINED BY THE ENGINEER.
2. LENGTHS AND WIDTHS ARE APPROXIMATE AND NOMINAL. MATCH EXISTING WIDTHS IN THE FIELD.

## SLURRY SEAL (TYPE III)

| DIRECTION | PM | LENGTH(FT) | AVERAGE WIDTH FROM EP TO EP (FT) | AREA (SQYD) | TON |
|---|---|---|---|---|---|
| NB | T50.00/T50.28 | 1,478 | 36 | 5,914 | 67 |
| NB | T50.28/T50.52 | 1,267 | 48 | 6,758 | 76 |
| NB | T50.52/T51.52 | 5,280 | 36 | 21,120 | 238 |
| NB | T51.52/T51.58 | 317 | 48 | 1,690 | 19 |
| NB | T51.58/T52.55 | 5,122 | 36 | 20,486 | 230 |
| NB | T52.55/T53.00 | 2,376 | 36 | 9,504 | 107 |
| NB | T53.00/T53.40 | 2,112 | 36 | 8,448 | 95 |
| NB | T53.40/54.90 | 7,920 | 30 | 26,400 | 297 |
| NB | 54.90/55.05 | 792 | 48 | 4,224 | 48 |
| NB | 55.05/55.12 | 370 | 34 | 1,396 | 16 |
| NB | 55.12/55.28 | 845 | 44 | 4,130 | 46 |
| NB | 55.28/55.78 | 2,640 | 31 | 9,093 | 102 |
| NB | 55.78/56.20 | 2,218 | 27 | 6,653 | 75 |
| SB | 56.20/55.37 | 4,382 | 36 | 17,530 | 197 |
| SB | 55.37/55.23 | 739 | 46 | 3,778 | 43 |
| SB | 55.23/55.05 | 950 | 34 | 3,590 | 40 |
| SB | 55.05/53.88 | 6,178 | 30 | 20,590 | 232 |
| SB | 53.88/T53.40 | 2,534 | 42 | 11,827 | 133 |
| SB | T53.40/T53.36 | 211 | 32 | 751 | 8 |
| SB | T53.36/T53.06 | 1,584 | 27 | 4,752 | 53 |
| SB | T53.06/T52.91 | 792 | 36 | 3,168 | 36 |
| SB | T52.91/T52.22 | 3,643 | 36 | 14,573 | 164 |
| SB | T55.22/T52.13 | 475 | 36 | 1,901 | 21 |
| SB | T52.13/T51.65 | 2,534 | 24 | 6,758 | 76 |
| SB | T51.65/T51.58 | 370 | 36 | 1,478 | 17 |
| SB | T51.58/T50.00 | 8,342 | 36 | 33,370 | 375 |
| TOTAL | | | | | 2811 |

## REPLACE ASPHALT CONCRETE SURFACING (LOCALIZED DIGOUTS) QUANTITIES

| LOCATION # | POST MILE | DIRECTION | LANE # | DIMENSIONS (LF) | | | VOLUME | TACK COAT |
|---|---|---|---|---|---|---|---|---|
| | | | | L | W | D | CY | TON |
| 1 | 50.331 | SB | 1,2,3 | 1500 | 36 | 0.35′ | 700.0 | 1.5 |
| 2 | 51.086 | SB | 1,2,3 | 100 | 36 | 0.35′ | 46.7 | 0.1 |
| 2 | 51.568 | SB | 1,2,3 | 800 | 36 | 0.35′ | 373.3 | 0.8 |
| 3 | 51.588 | SB | 1,2,3 | 100 | 36 | 0.35′ | 46.7 | 0.1 |
| 4 | 52.371 | SB | 1,2,3 | 100 | 36 | 0.35′ | 46.7 | 0.1 |
| 4 | 52.856 | SB | 1,2,3 | 800 | 36 | 0.35′ | 373.3 | 0.8 |
| 5 | 52.876 | SB | 1,2,3 | 100 | 36 | 0.35′ | 46.7 | 0.1 |
| 6 | 53.627 | SB | 1,2 | 1500 | 38 | 0.35′ | 738.9 | 1.6 |
| 7 | 53.821 | SB | 1,2 | 100 | 42 | 0.35′ | 54.4 | 0.1 |
| 8 | 54.247 | SB | 1,2 | 100 | 30 | 0.35′ | 38.9 | 0.1 |
| 9 | 54.247 | NB | 1,2 | 100 | 30 | 0.35′ | 38.9 | 0.1 |
| 10 | 53.821 | NB | 1,2 | 100 | 30 | 0.35′ | 38.9 | 0.1 |
| 11 | 53.001 | NB | 1,2 | 1500 | 28 | 0.35′ | 544.4 | 1.2 |
| 11 | 52.896 | NB | 1,2,3 | 800 | 36 | 0.35′ | 373.3 | 0.8 |
| 12 | 52.876 | NB | 1,2 | 100 | 24 | 0.35′ | 31.1 | 0.1 |
| 13 | 52.371 | NB | 1,2,3 | 100 | 36 | 0.35′ | 46.7 | 0.1 |
| 14 | 51.588 | NB | 1,2,3 | 100 | 36 | 0.35′ | 46.7 | 0.1 |
| 14 | 51.106 | NB | 1,2,3 | 800 | 36 | 0.35′ | 373.3 | 0.8 |
| 15 | 51.086 | NB | 1,2,3 | 100 | 36 | 0.35′ | 46.7 | 0.1 |
| TOTAL | | | | | | | 4,005.6 | 9 |

NOTE: EXACT LOCATION AND DIMENSION TO BE DETERMINED BY THE ENGINEER.

## TEMPORARY CONSTRUCTION BMPs

| ITEM DESCRIPTION | UNIT | QUANTITY |
|---|---|---|
| TEMPORARY FIBER ROLLS | LF | 1000 |

## CRACK TREATMENT

| LNMI |
|---|
| 8 |

## SUMMARY OF QUANTITIES
## Q-1

REVISED BY | DATE REVISED
HENRY LEE | MICHAEL RISTIC
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR | MICHAEL RISTIC
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE ENGINEERING

LAST REVISION | DATE PLOTTED => 02-DEC-2015
10-26-15 | TIME PLOTTED => 13:01

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 08 | Riv | 111 | T50.0/56.2 | 8 | 32 |

10/26/15
REGISTERED ELECTRICAL ENGINEER DATE

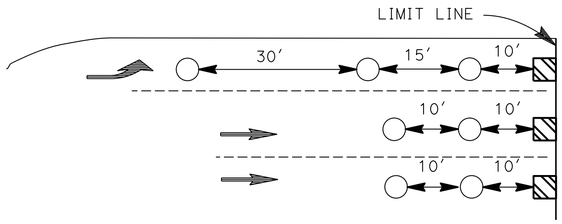
10/26/15
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
David A Gonzalez
No. E15387
Exp. 6-30-17
ELECTRICAL
STATE OF CALIFORNIA

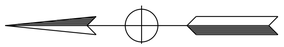
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

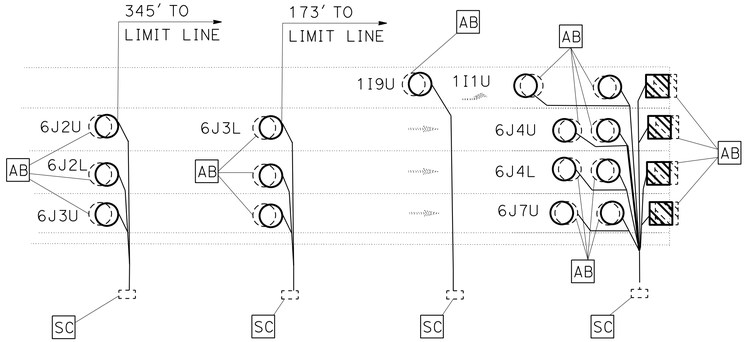
## NOTES: (THIS SHEET ONLY)

1. ALL DISTANCES ARE APPROXIMATE. PRIOR TO CONSTRUCTION, THE CONTRACTOR MUST VERIFY ALL LOOP LOCATIONS.
2. NEW INDUCTIVE LOOP DETECTORS MUST BE INSTALLED AT LOCATION OF EXISTING LOOPS.
3. NEW INDUCTIVE LOOP DETECTORS MUST BE SPLICED TO EXISTING DLC.
4. LABEL CONDUCTOR END AS PER STANDARD PLAN ES-13B.




TYPICAL LOOP DETECTOR SETBACKS






HWY 111 (GENE AUTRY TRAIL) AT DISTRICT CENTER DRIVE (S/B, PM 50.1)

# MODIFY SIGNAL AND LIGHTING

NO SCALE

**E-1**

*APPROVED FOR ELECTRICAL WORK ONLY*

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® ELECTRICAL DESIGN A
FUNCTIONAL SUPERVISOR: DAVID A GONZALEZ
CALCULATED-DESIGNED BY: NASIMA A HYDER
CHECKED BY: DAVID A GONZALEZ
REVISED BY
DATE REVISED

LAST REVISION | DATE PLOTTED => 02-DEC-2015
10-26-15 | TIME PLOTTED => 13:01

BORDER LAST REVISED 7/2/2010
USERNAME => s110420
DGN FILE => 0812000318ua001.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 2291
PROJECT NUMBER & PHASE 0812000318

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 08 | Riv | 111 | T50.0/56.2 | 9 | 32 |

10/26/15
REGISTERED ELECTRICAL ENGINEER DATE

10/26/15
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
David A Gonzalez
No. E15382
Exp 6-30-17
ELECTRICAL
STATE OF CALIFORNIA

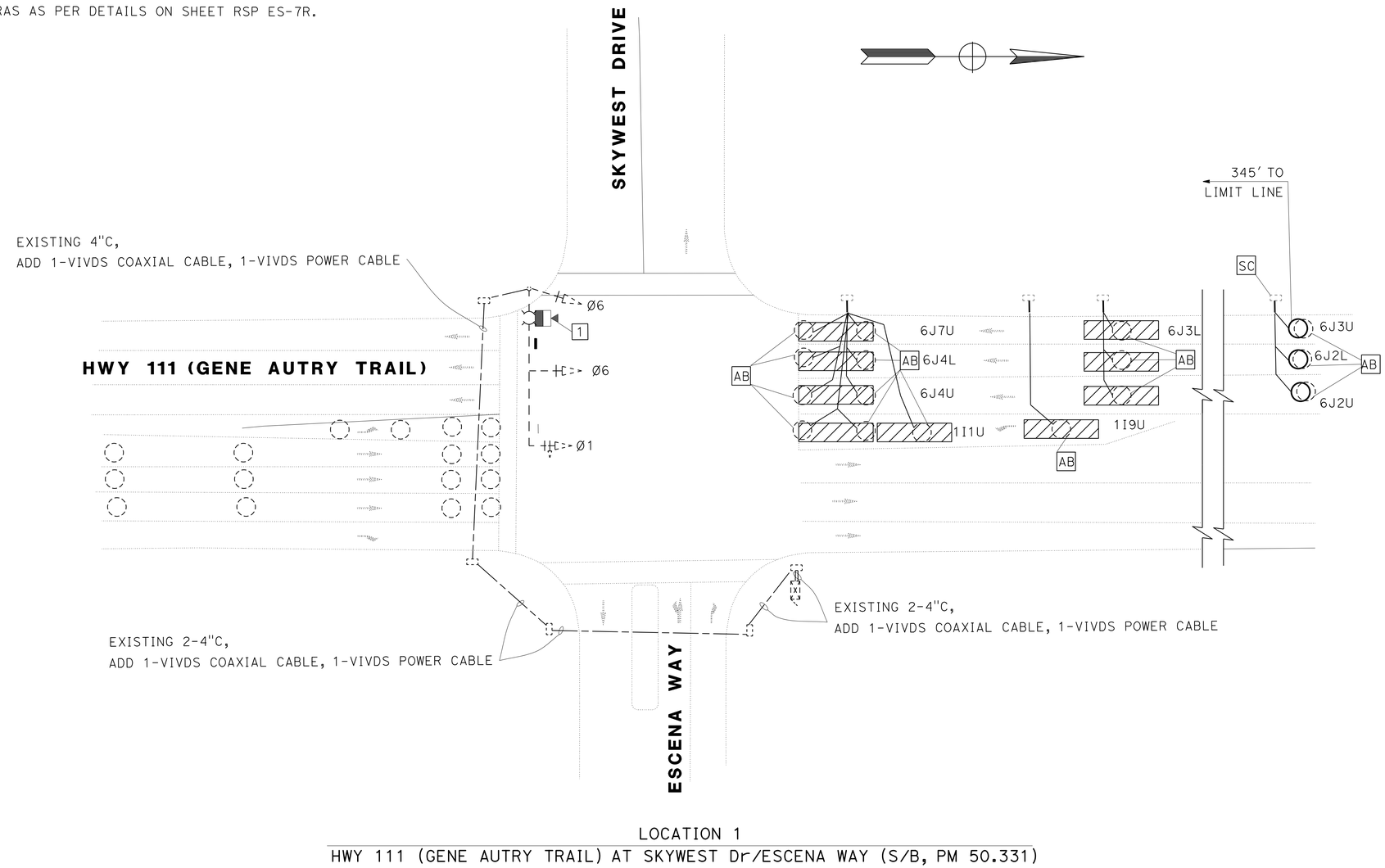
*THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.*

## NOTES: (THIS SHEET ONLY)

1. ALL DISTANCES ARE APPROXIMATE. PRIOR TO CONSTRUCTION, THE CONTRACTOR MUST VERIFY ALL LOOP LOCATIONS.
2. NEW INDUCTIVE LOOP DETECTORS MUST BE INSTALLED AT LOCATION OF EXISTING LOOPS.
3. NEW INDUCTIVE LOOP DETECTORS MUST BE SPLICED TO EXISTING DLC.
4. LABEL CONDUCTOR END AS PER STANDARD PLAN ES-13B.
5. VIDEO DETECTION ZONES WILL BE ESTABLISHED IN THE FIELD BY THE ENGINEER AND THE MANUFACTURER'S REPRESENTATIVE.

## LEGEND: (THIS SHEET ONLY)

[1] INSTALL VIVDS CAMERAS AS PER DETAILS ON SHEET RSP ES-7R.




LOCATION 1

HWY 111 (GENE AUTRY TRAIL) AT SKYWEST Dr/ESCENA WAY (S/B, PM 50.331)

# MODIFY SIGNAL AND LIGHTING (LOCATION 1)

NO SCALE

**E-2**

*APPROVED FOR ELECTRICAL WORK ONLY*

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
ELECTRICAL DESIGN A
FUNCTIONAL SUPERVISOR: DAVID A GONZALEZ
CALCULATED-DESIGNED BY: NASIMA A HYDER
CHECKED BY: DAVID A GONZALEZ
REVISED BY
DATE REVISED

LAST REVISION | DATE PLOTTED => 02-DEC-2015 | 10-26-15 | TIME PLOTTED => 13:01

BORDER LAST REVISED 7/2/2010 | USERNAME => s110420 | DGN FILE => 0812000318ua002.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2291 | PROJECT NUMBER & PHASE 0812000318

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 08 | Riv | 111 | T50.0/56.2 | 10 | 32 |

10/26/15
REGISTERED ELECTRICAL ENGINEER DATE

10/26/15
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
David A Gonzalez
No. E15382
Exp 6-30-17
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.

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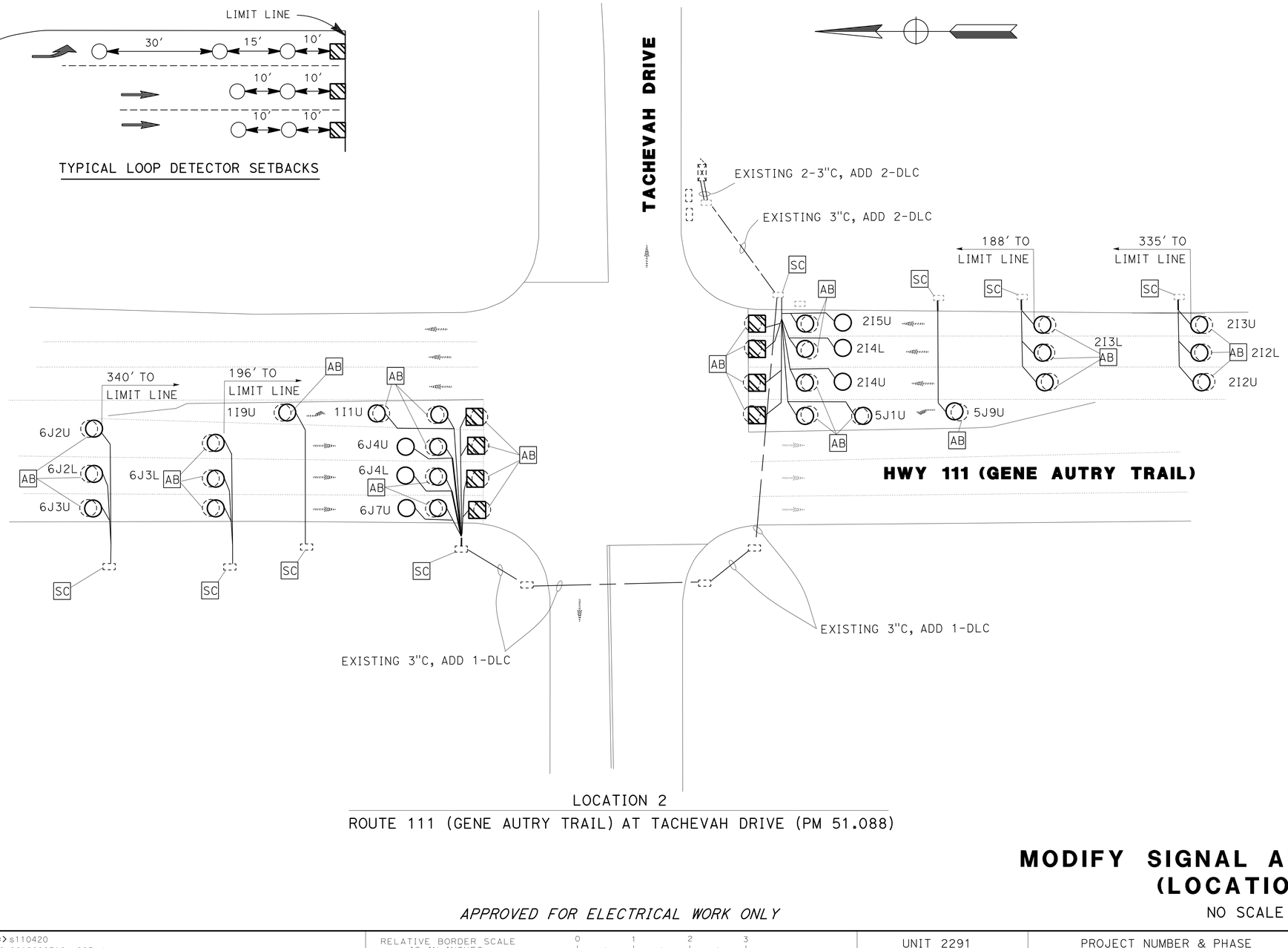
4. LABEL CONDUCTOR END AS PER STANDARD PLAN ES-13B.




TYPICAL LOOP DETECTOR SETBACKS




LOCATION 2

ROUTE 111 (GENE AUTRY TRAIL) AT TACHEVAH DRIVE (PM 51.088)

*APPROVED FOR ELECTRICAL WORK ONLY*

# MODIFY SIGNAL AND LIGHTING (LOCATION 2)

NO SCALE

**E-3**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® ELECTRICAL DESIGN A
FUNCTIONAL SUPERVISOR: DAVID A GONZALEZ
CALCULATED-DESIGNED BY: NASIMA A HYDER
CHECKED BY: DAVID A GONZALEZ
REVISED BY
DATE REVISED

LAST REVISION | DATE PLOTTED => 02-DEC-2015
10-26-15 | TIME PLOTTED => 13:01

BORDER LAST REVISED 7/2/2010
USERNAME => s110420
DGN FILE => 0812000318ua003.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 2291
PROJECT NUMBER & PHASE 0812000318

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 08 | Riv | 111 | T50.0/56.2 | 11 | 32 |

10/26/15
REGISTERED ELECTRICAL ENGINEER DATE

10/26/15
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
David A Gonzalez
No. E15382
Exp 6-30-17
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.*

## NOTES: (THIS SHEET ONLY)

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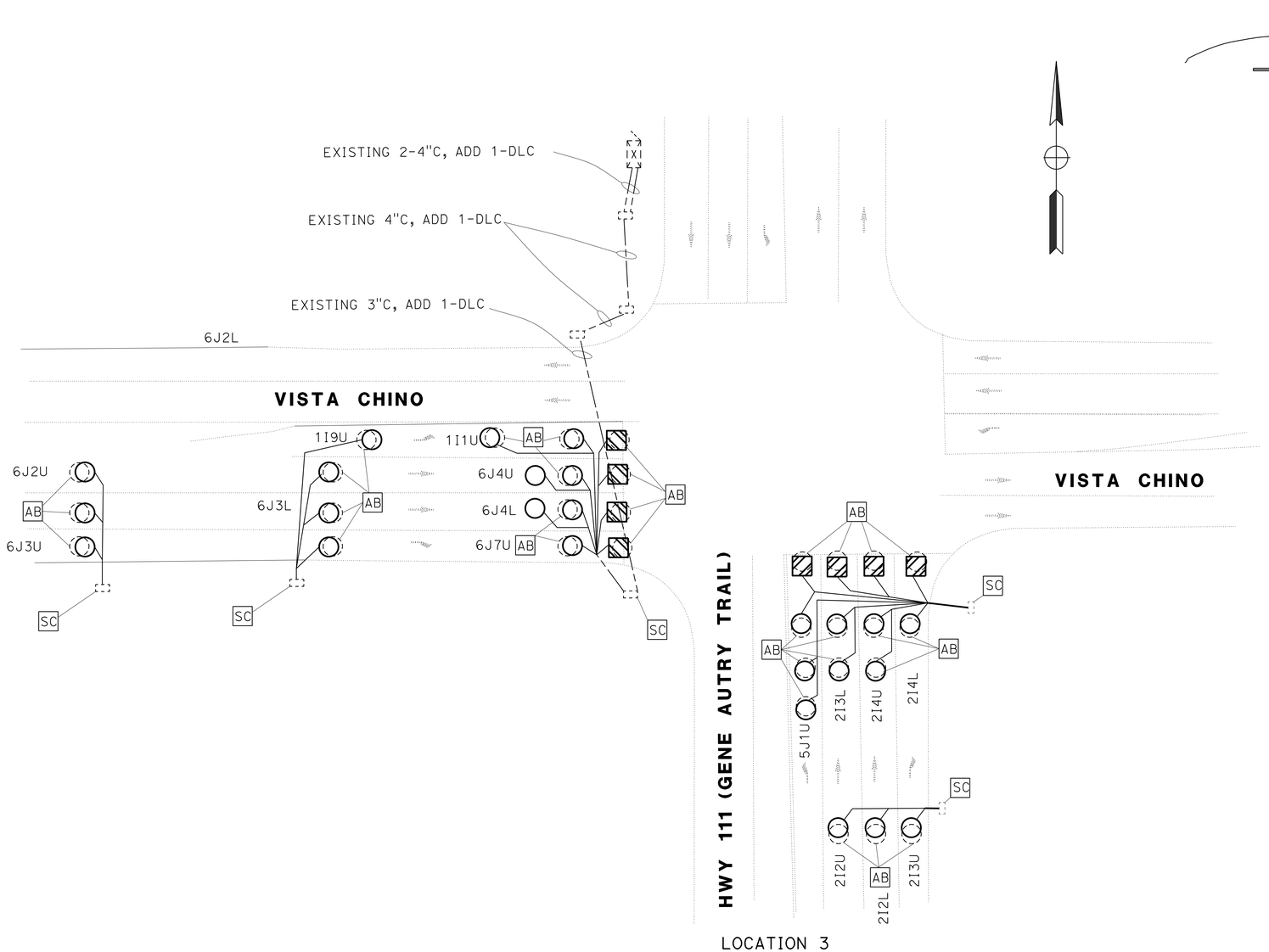
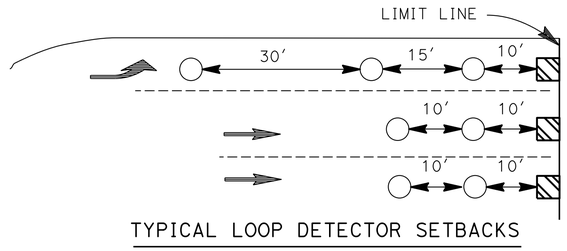
3. NEW INDUCTIVE LOOP DETECTORS MUST BE SPLICED TO EXISTING DLC.
4. LABEL CONDUCTOR END AS PER STANDARD PLAN ES-13B.




TYPICAL LOOP DETECTOR SETBACKS

LOCATION 3

ROUTE 111 (GENE AUTRY TRAIL) AT VISTA CHINO (PM 51.588)

*APPROVED FOR ELECTRICAL WORK ONLY*

# MODIFY SIGNAL AND LIGHTING (LOCATION 3)

NO SCALE

**E-4**

REVISED BY | DATE REVISED
NASIMA A HYDER | DAVID A GONZALEZ
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: DAVID A GONZALEZ
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN A

LAST REVISION | DATE PLOTTED => 02-DEC-2015
10-26-15 | TIME PLOTTED => 13:01

BORDER LAST REVISED 7/2/2010 | USERNAME => s110420 | DGN FILE => 0812000318ua004.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2291 | PROJECT NUMBER & PHASE 0812000318

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 08 | Riv | 111 | T50.0/56.2 | 12 | 32 |

10/26/15
REGISTERED ELECTRICAL ENGINEER DATE

10/26/15
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
David A Gonzalez
No. E15382
Exp 6-30-17
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.*

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4. LABEL CONDUCTOR END AS PER STANDARD PLAN ES-13B.
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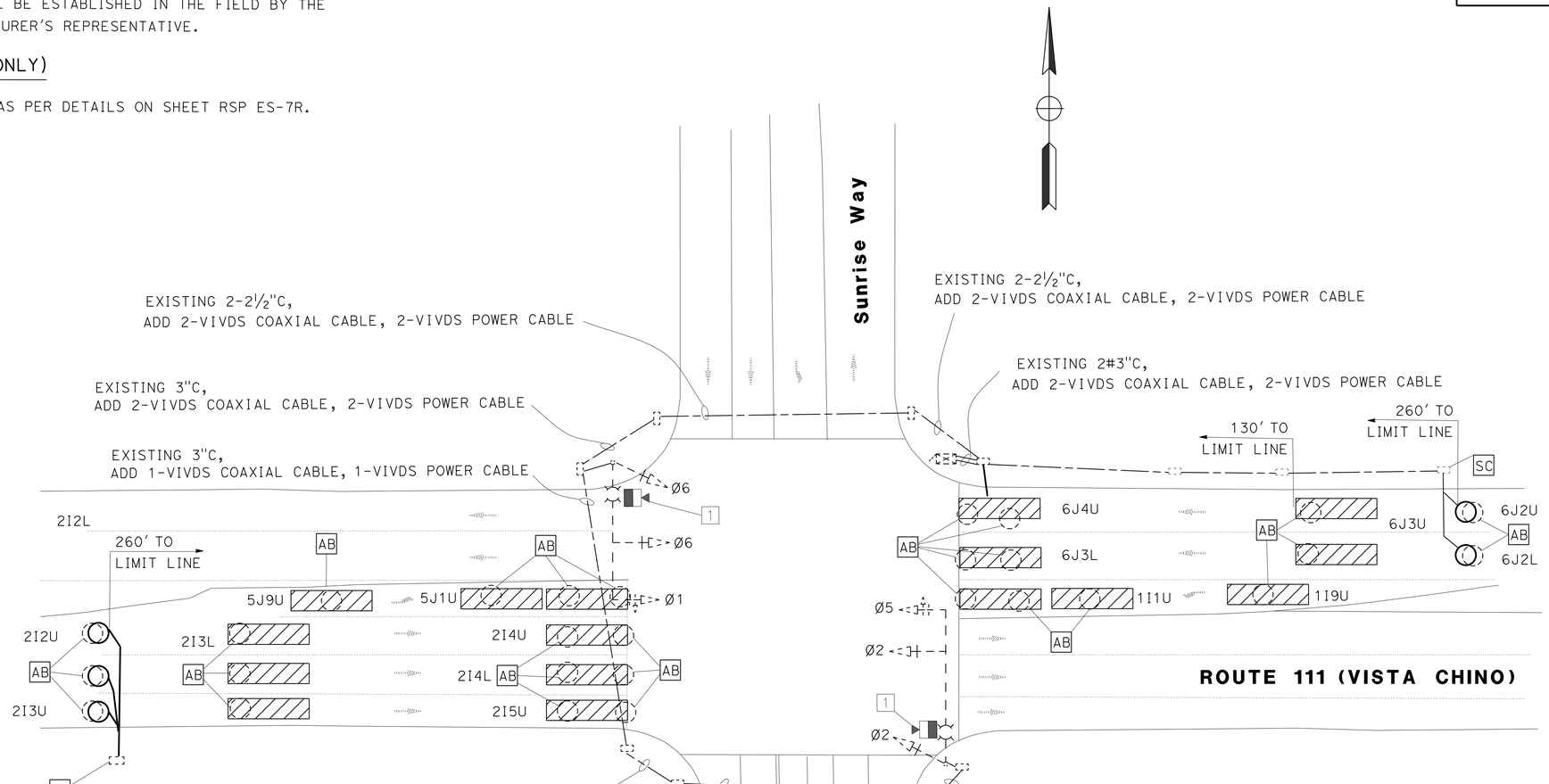
## LEGEND: (THIS SHEET ONLY)

[1] INSTALL VIVDS CAMERAS AS PER DETAILS ON SHEET RSP ES-7R.




LOCATION 4

ROUTE 111 (VISTA CHINO) AT SUNRISE WAY (PM 52.876)

*APPROVED FOR ELECTRICAL WORK ONLY*

# MODIFY SIGNAL AND LIGHTING (LOCATION 4)

NO SCALE

**E-5**

REVISED BY | DATE REVISED
NASIMA A HYDER | DAVID A GONZALEZ
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: DAVID A GONZALEZ
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® ELECTRICAL DESIGN A

LAST REVISION | DATE PLOTTED => 02-DEC-2015 | TIME PLOTTED => 13:01
10-26-15

BORDER LAST REVISED 7/2/2010 | USERNAME => s110420 | DGN FILE => 0812000318ua005.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2291 | PROJECT NUMBER & PHASE 0812000318

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 08 | Riv | 111 | T50.0/56.2 | 13 | 32 |

10/26/15
REGISTERED ELECTRICAL ENGINEER DATE

10/26/15
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
David A Gonzalez
No. E15382
Exp 6-30-17
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.*

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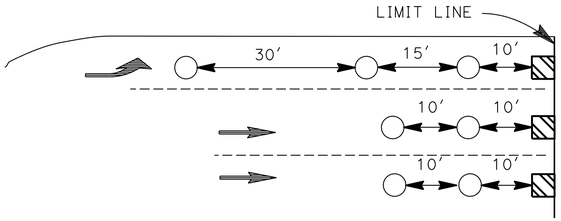
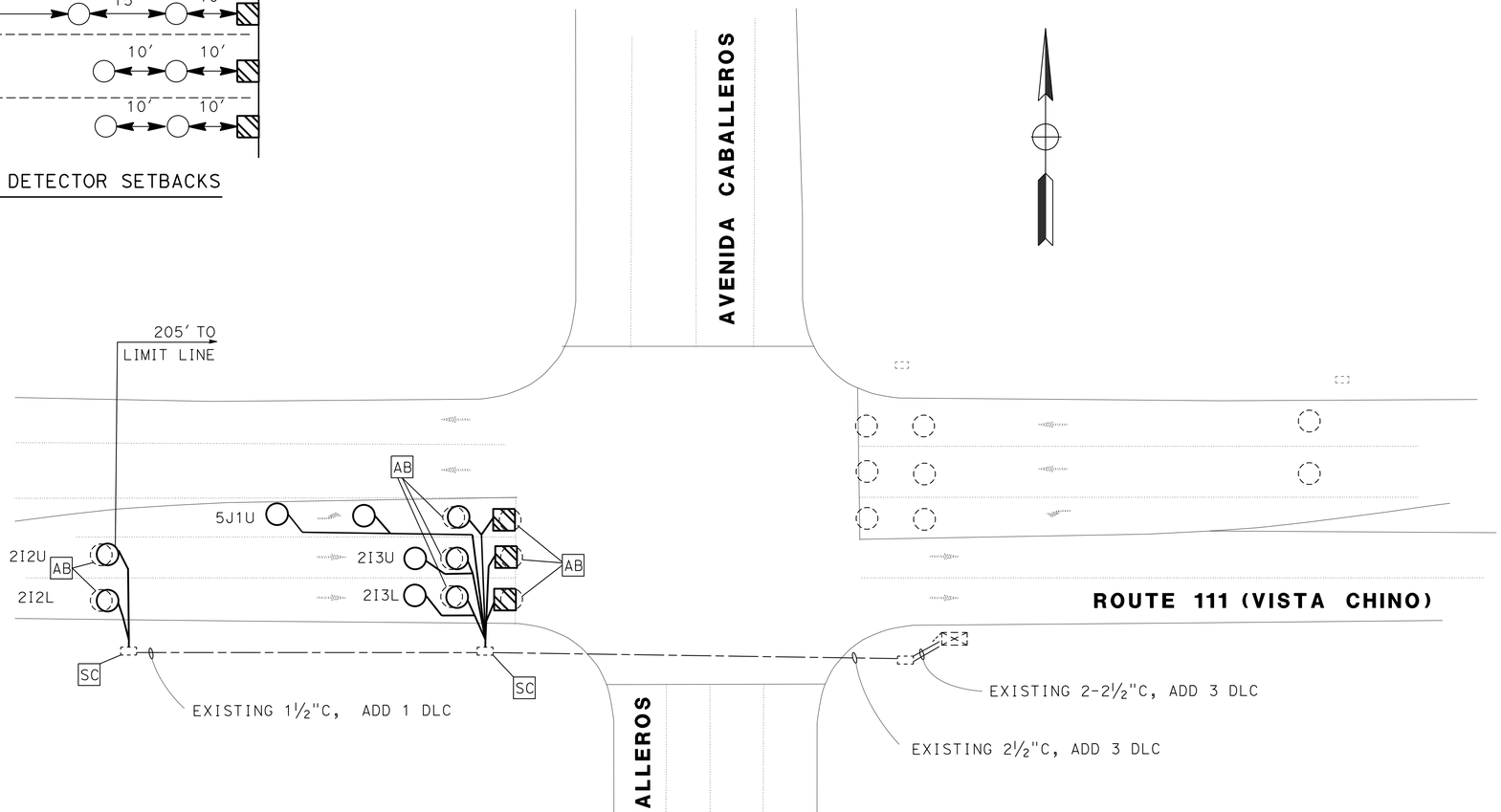



TYPICAL LOOP DETECTOR SETBACKS




LOCATION 5

ROUTE 111 (VISTA CHINO) AT AVENIDA CABALLEROS (PM 53.380)

# MODIFY SIGNAL AND LIGHTING (LOCATION 5)

NO SCALE

**E-6**

*APPROVED FOR ELECTRICAL WORK ONLY*

REVISED BY | DATE REVISED
NASIMA A HYDER | DAVID A GONZALEZ
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: DAVID A GONZALEZ

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

LAST REVISION 10-26-15 | DATE PLOTTED => 02-DEC-2015 | TIME PLOTTED => 13:02

BORDER LAST REVISED 7/2/2010 | USERNAME => s110420 | DGN FILE => 0812000318ua006.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2291 | PROJECT NUMBER & PHASE 0812000318

NOTE:

THE QUANTITIES SHOWN IN TABLES ARE NOT SEPARATE PAY ITEMS, FOR INFORMATION ONLY.
FOR COMPLETE ELECTRICAL WORK, SEE ELECTRICAL PLAN SHEETS.

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 08 | Riv | 111 | T50.0/56.2 | 14 | 32 |

10/26/15
REGISTERED ELECTRICAL ENGINEER DATE

10/26/15
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
David A Gonzalez
No. E15387
Exp 6-30-17
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.

## MODIFY SIGNAL AND LIGHTING

| SHEET No. | TYPE D LOOP | TYPE E LOOP | DLC's | VIVDS VIDEO CABLE | VIVDS POWER CABLE | VIDEO CAMERA (VIVDS) |
|---|---|---|---|---|---|---|
| | EA | EA | LF | LF | LF | EA |
| E-1 | 4 | 15 | — | — | — | — |

## MODIFY SIGNAL AND LIGHTING (LOCATION 1)

| SHEET No. | TYPE D LOOP | TYPE E LOOP | DLC's | VIVDS VIDEO CABLE | VIVDS POWER CABLE | VIDEO CAMERA (VIVDS) |
|---|---|---|---|---|---|---|
| | EA | EA | LF | LF | LF | EA |
| E-2 | — | 3 | — | 300 | 300 | 1 |

## MODIFY SIGNAL AND LIGHTING (LOCATION 2)

| SHEET No. | TYPE D LOOP | TYPE E LOOP | DLC's | VIVDS VIDEO CABLE | VIVDS POWER CABLE | VIDEO CAMERA (VIVDS) |
|---|---|---|---|---|---|---|
| | EA | EA | LF | LF | LF | EA |
| E-3 | 8 | 30 | 600 | — | — | — |

## MODIFY SIGNAL AND LIGHTING (LOCATION 3)

| SHEET No. | TYPE D LOOP | TYPE E LOOP | DLC's | VIVDS VIDEO CABLE | VIVDS POWER CABLE | VIDEO CAMERA (VIVDS) |
|---|---|---|---|---|---|---|
| | EA | EA | LF | LF | LF | EA |
| E-4 | 8 | 25 | 300 | — | — | — |

## MODIFY SIGNAL AND LIGHTING (LOCATION 4)

| SHEET No. | TYPE D LOOP | TYPE E LOOP | DLC's | VIVDS VIDEO CABLE | VIVDS POWER CABLE | VIDEO CAMERA (VIVDS) |
|---|---|---|---|---|---|---|
| | EA | EA | LF | LF | LF | EA |
| E-5 | — | 5 | — | 800 | 800 | 2 |

## MODIFY SIGNAL AND LIGHTING (LOCATION 5)

| SHEET No. | TYPE D LOOP | TYPE E LOOP | DLC's | VIVDS VIDEO CABLE | VIVDS POWER CABLE | VIDEO CAMERA (VIVDS) |
|---|---|---|---|---|---|---|
| | EA | EA | LF | LF | LF | EA |
| E-6 | 3 | 9 | 900 | — | — | — |

# ELECTRICAL QUANTITIES
# E-7

REVISED BY | DATE REVISED
NASIMA A HYDER | DAVID A GONZALEZ
CALCULATED-DESIGNED BY | CHECKED BY
FUNCTIONAL SUPERVISOR: DAVID A GONZALEZ
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® ELECTRICAL DESIGN A

LAST REVISION | DATE PLOTTED => 02-DEC-2015
10-26-15 | TIME PLOTTED => 13:02

BORDER LAST REVISED 7/2/2010 | USERNAME => s110420 | DGN FILE => 0812000318ua007.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 2291 | PROJECT NUMBER & PHASE 0812000318

## 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 |
|---|---|---|---|---|---|
| 08 | Riv | 111 | T50.0/56.2 | 15 | 32 |

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 10-26-15

### 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 |
|---|---|---|---|---|---|
| 08 | Riv | 111 | T50.0/56.2 | 16 | 32 |

REGISTERED CIVIL ENGINEER

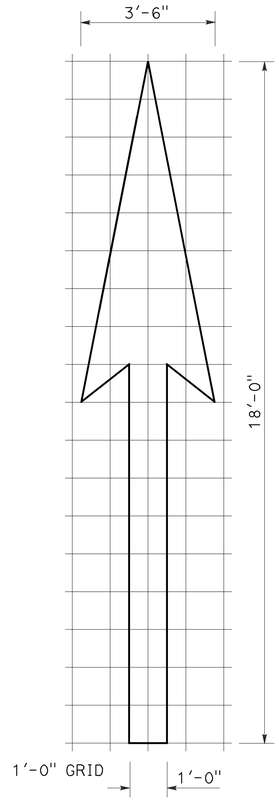
April 20, 2012
PLANS APPROVAL DATE

Roberta L. McLaughlin
No. C40375
Exp. 3-31-13
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.

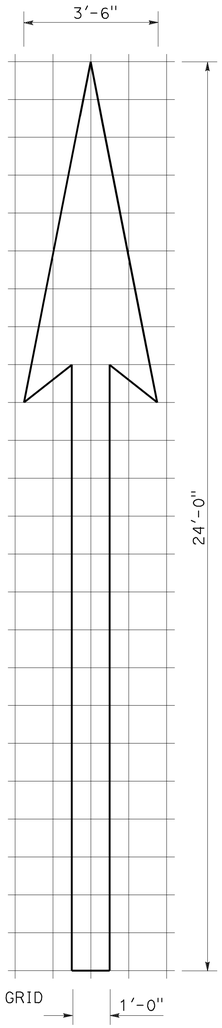
TO ACCOMPANY PLANS DATED 10-26-15

2010 REVISED STANDARD PLAN RSP A24A



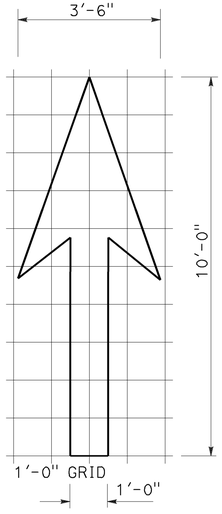

A=25 ft²

## TYPE I 18'-0" ARROW



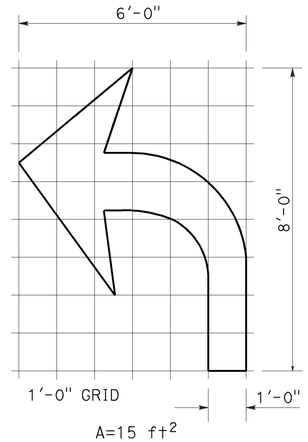

A=31 ft²

## TYPE I 24'-0" ARROW




A=14 ft²

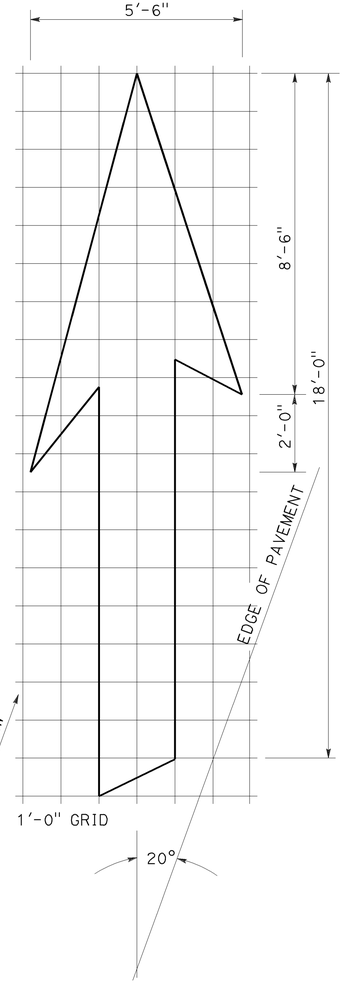
## TYPE I 10'-0" ARROW




A=15 ft²

## TYPE IV (L) ARROW

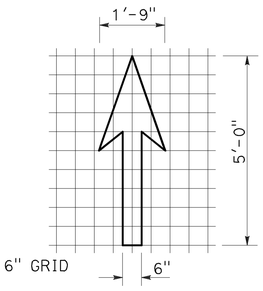
(For Type IV (R) arrow, use mirror image)




A=42 ft²

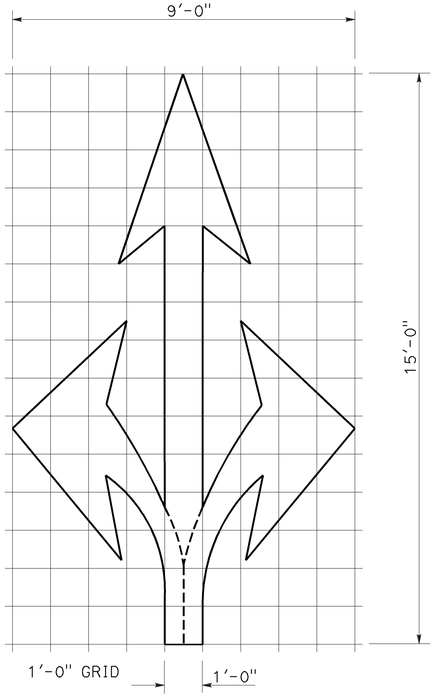
## TYPE VI ARROW

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



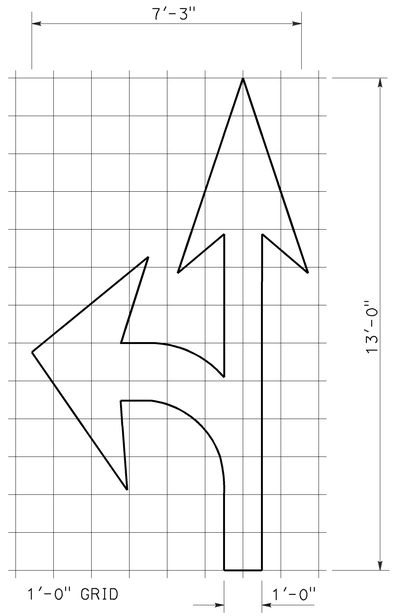

A=3.5 ft²

## BIKE LANE ARROW




A=36 ft²

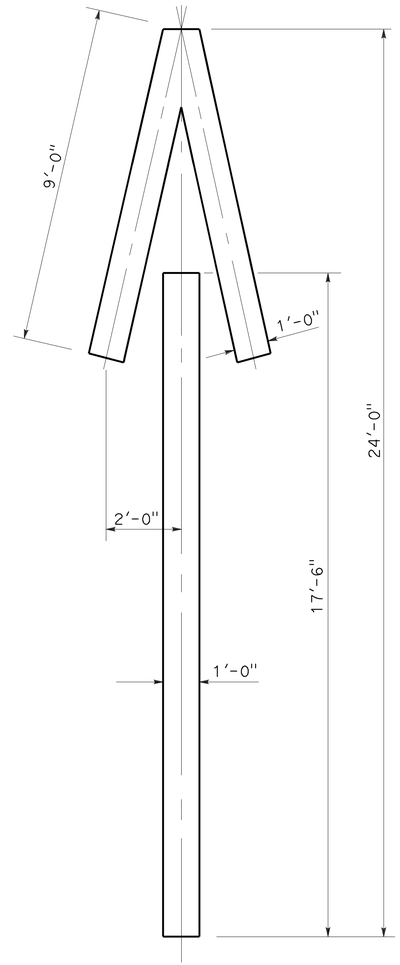
## TYPE VIII ARROW




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

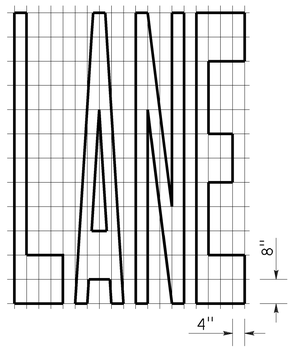
# PAVEMENT MARKINGS ARROWS

NO SCALE

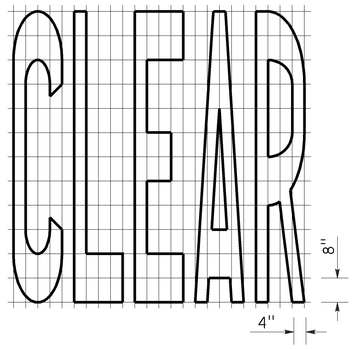
RSP A24A DATED APRIL 20, 2012 SUPERSEDES STANDARD PLAN A24A DATED MAY 20, 2011 - PAGE 13 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A24A**

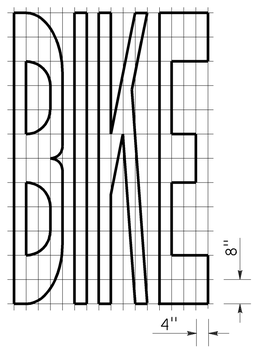
3-14-12



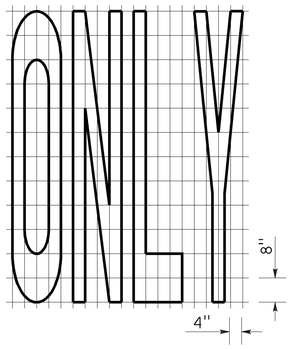

A=24 ft²



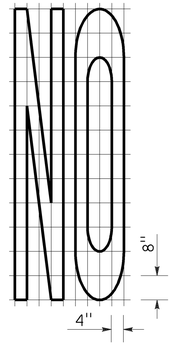

A=27 ft²



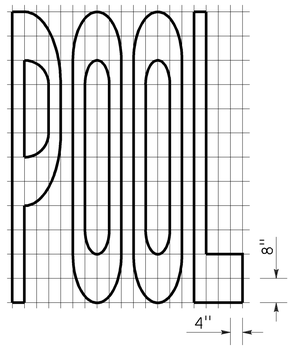

A=21 ft²



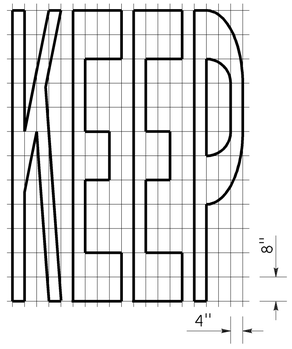

A=22 ft²



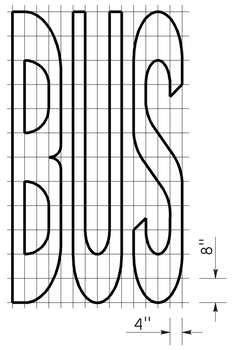

A=14 ft²



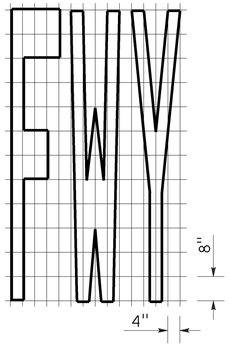

A=23 ft²



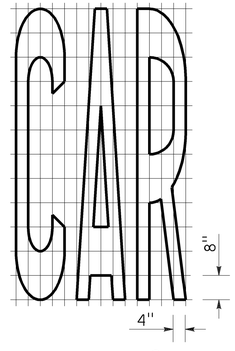

A=24 ft²




A=20 ft²




A=16 ft²




A=17 ft²

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 08 | Riv | 111 | T50.0/56.2 | 17 | 32 |

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

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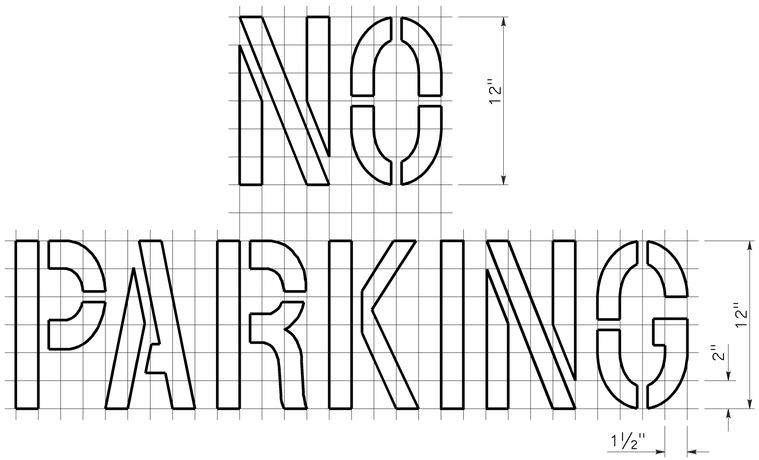
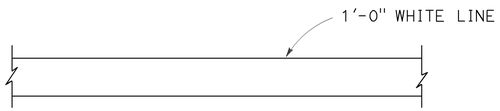
TO ACCOMPANY PLANS DATED 10-26-15

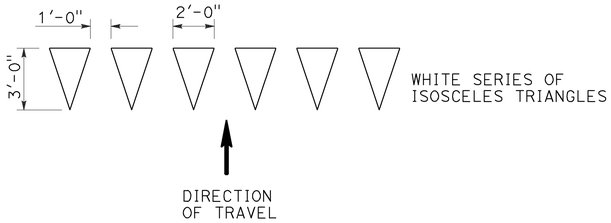
| WORD MARKINGS | | | |
|---|---|---|---|
| ITEM | ft² | ITEM | ft² |
| LANE | 24 | NO | 14 |
| POOL | 23 | BIKE | 21 |
| CAR | 17 | BUS | 20 |
| CLEAR | 27 | ONLY | 22 |
| KEEP | 24 | FWY | 16 |




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 |
|---|---|---|---|---|---|
| 08 | Riv | 111 | T50.0/56.2 | 18 | 32 |

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

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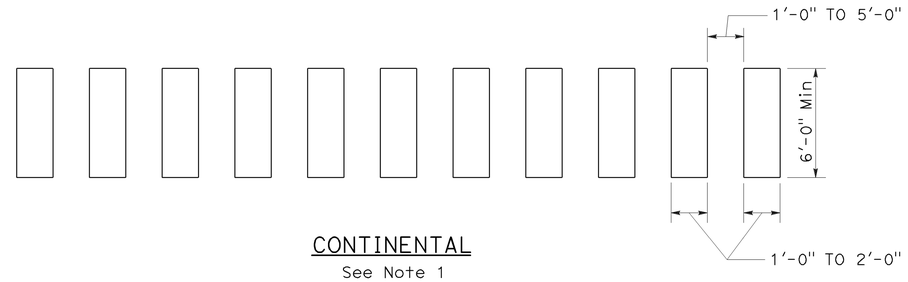
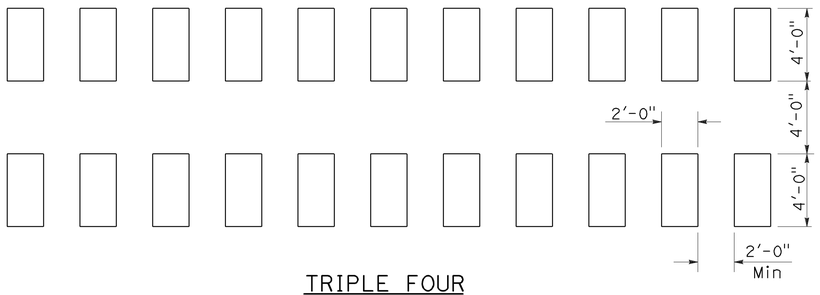
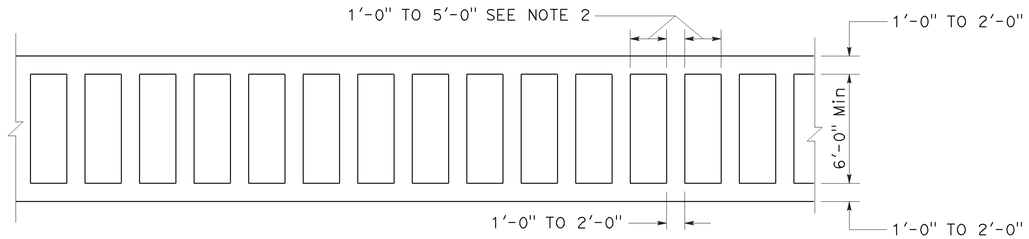
TO ACCOMPANY PLANS DATED 10-26-15



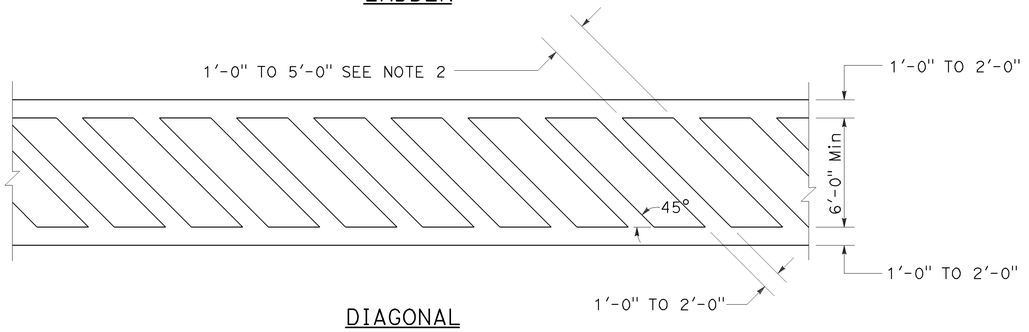

CONTINENTAL
See Note 1




TRIPLE FOUR
See Note 1




LADDER

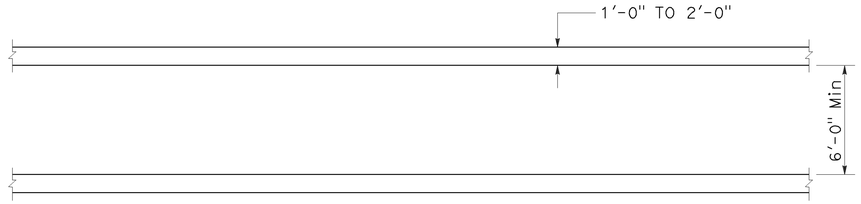



DIAGONAL

## HIGHER VISIBILITY CROSSWALKS

## NOTES:

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




BASIC

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# PAVEMENT MARKINGS CROSSWALKS

NO SCALE

RSP A24F DATED JULY 20, 2012 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A24F**

**2010 REVISED STANDARD PLAN RSP A24F**

6-28-12

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 08 | Riv | 111 | T50.0/56.2 | 19 | 32 |

REGISTERED CIVIL ENGINEER

July 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 10-26-15

## 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 |
|---|---|---|---|---|---|
| 08 | Riv | 111 | T50.0/56.2 | 20 | 32 |

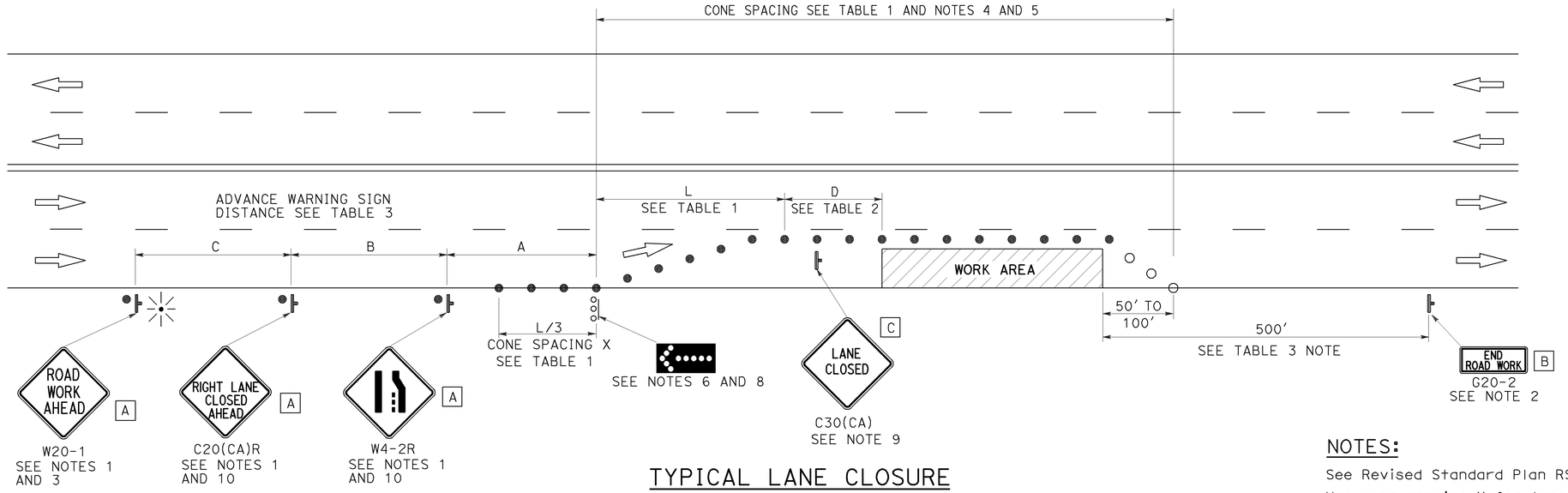
REGISTERED CIVIL ENGINEER

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 10-26-15




## 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 |
|---|---|---|---|---|---|
| 08 | Riv | 111 | T50.0/56.2 | 21 | 32 |

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 10-26-15

## LEGEND

- TRAFFIC CONE
- TEMPORARY TRAFFIC CONTROL SIGN
- FLASHING ARROW SIGN (FAS)
- FAS SUPPORT OR TRAILER
- PORTABLE FLASHING BEACON

## SIGN PANEL SIZE (Min)

- [A] 48" x 48"
- [B] 24" x 24"
- [C] 36" x 18"

## NOTES:

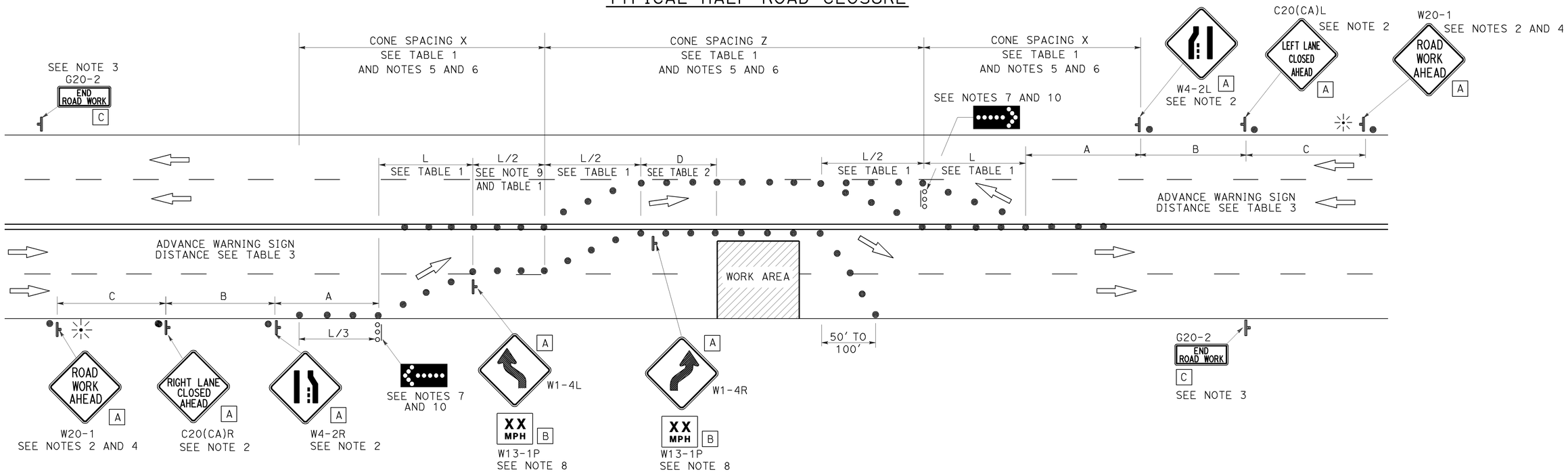
See Revised Standard Plan RSP T9 for tables.

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 |
|---|---|---|---|---|---|
| 08 | Riv | 111 | T50.0/56.2 | 22 | 32 |

Devinder Singh
REGISTERED CIVIL ENGINEER

October 17, 2014
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Devinder Singh — No. C50470 — Exp. 6-30-15 — 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 10-26-15

## NOTES:

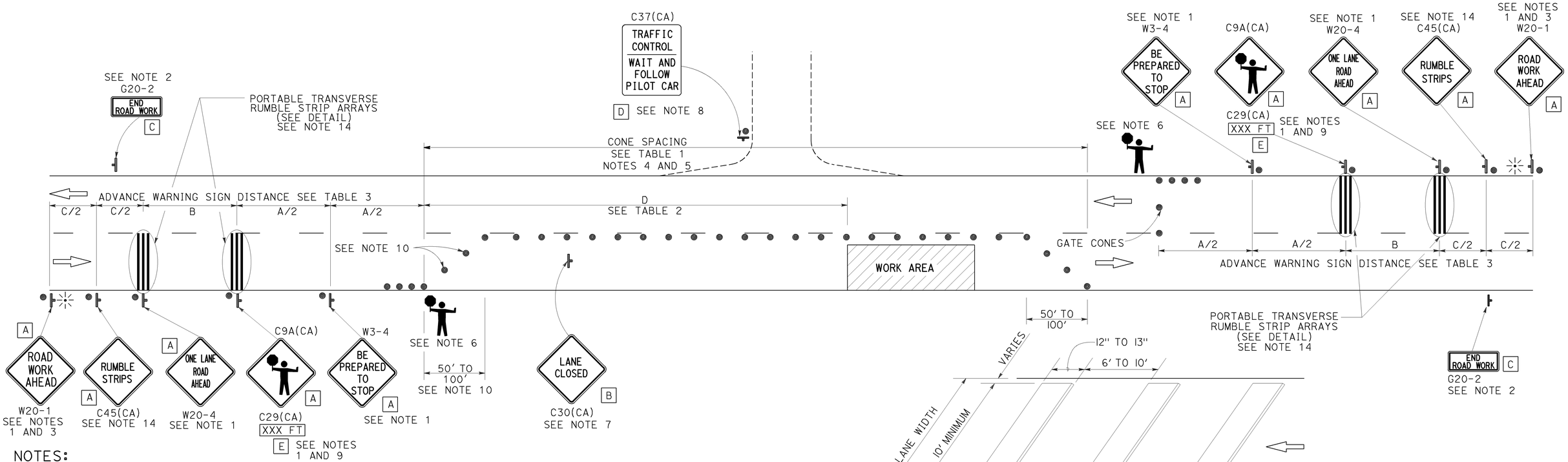
See Revised Standard Plan RSP T9 for tables.

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.

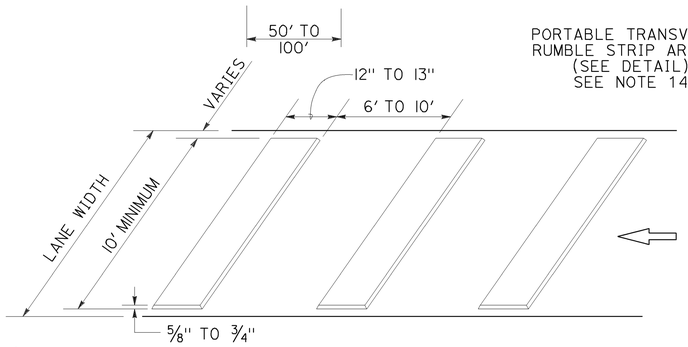
California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

# 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

## LEGEND

- TRAFFIC CONE
- TEMPORARY TRAFFIC CONTROL SIGN
- PORTABLE FLASHING BEACON
- FLAGGER

## SIGN PANEL SIZE (Min)

| | |
|---|---|
| A | 48" x 48" |
| B | 30" x 30" |
| C | 36" x 18" |
| D | 36" x 42" |
| E | 20" x 7" |

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

RSP T13 DATED OCTOBER 17, 2014 SUPERSEDES 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

9-26-14

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 08 | Riv | 111 | T50.0/56.2 | 23 | 32 |

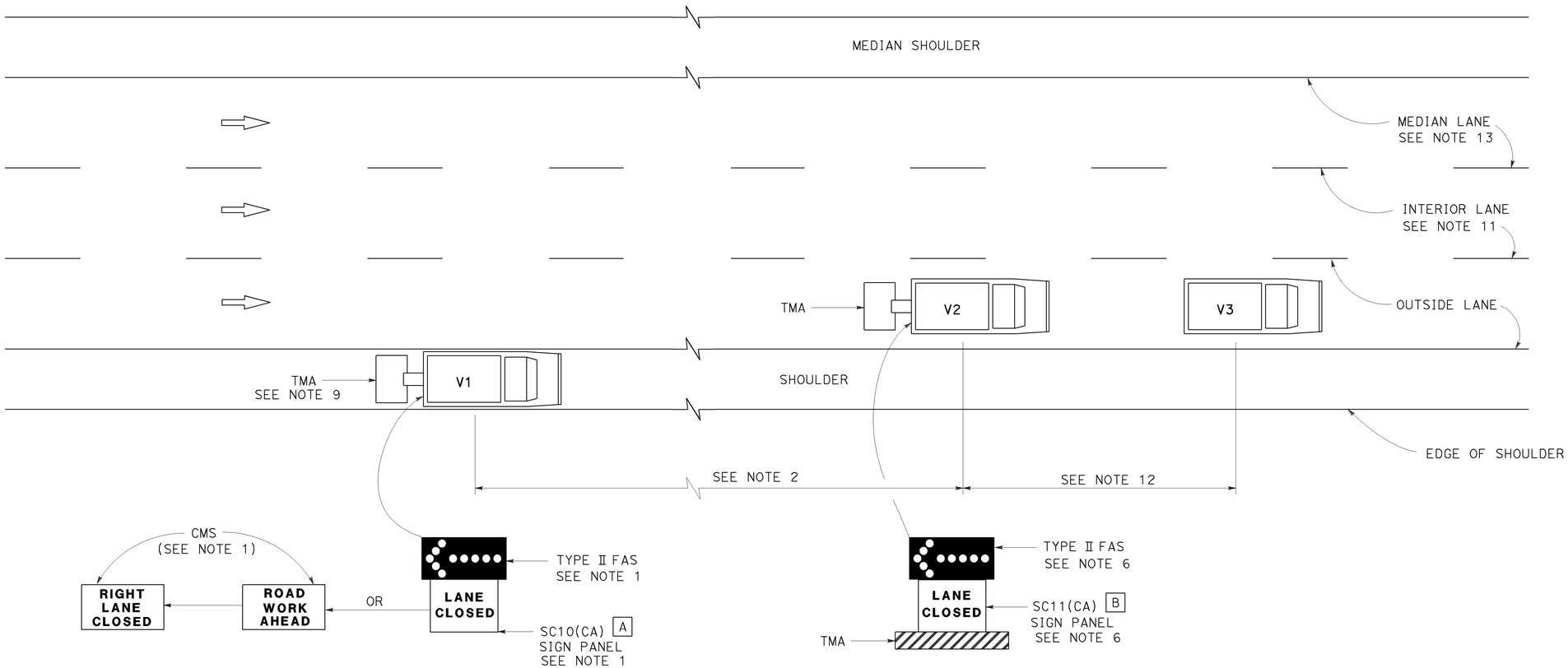
REGISTERED CIVIL ENGINEER

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 10-26-15




## 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 |
|---|---|---|---|---|---|
| 08 | Riv | 111 | T50.0/56.2 | 24 | 32 |

REGISTERED CIVIL ENGINEER

April 19, 2013
PLANS APPROVAL DATE

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

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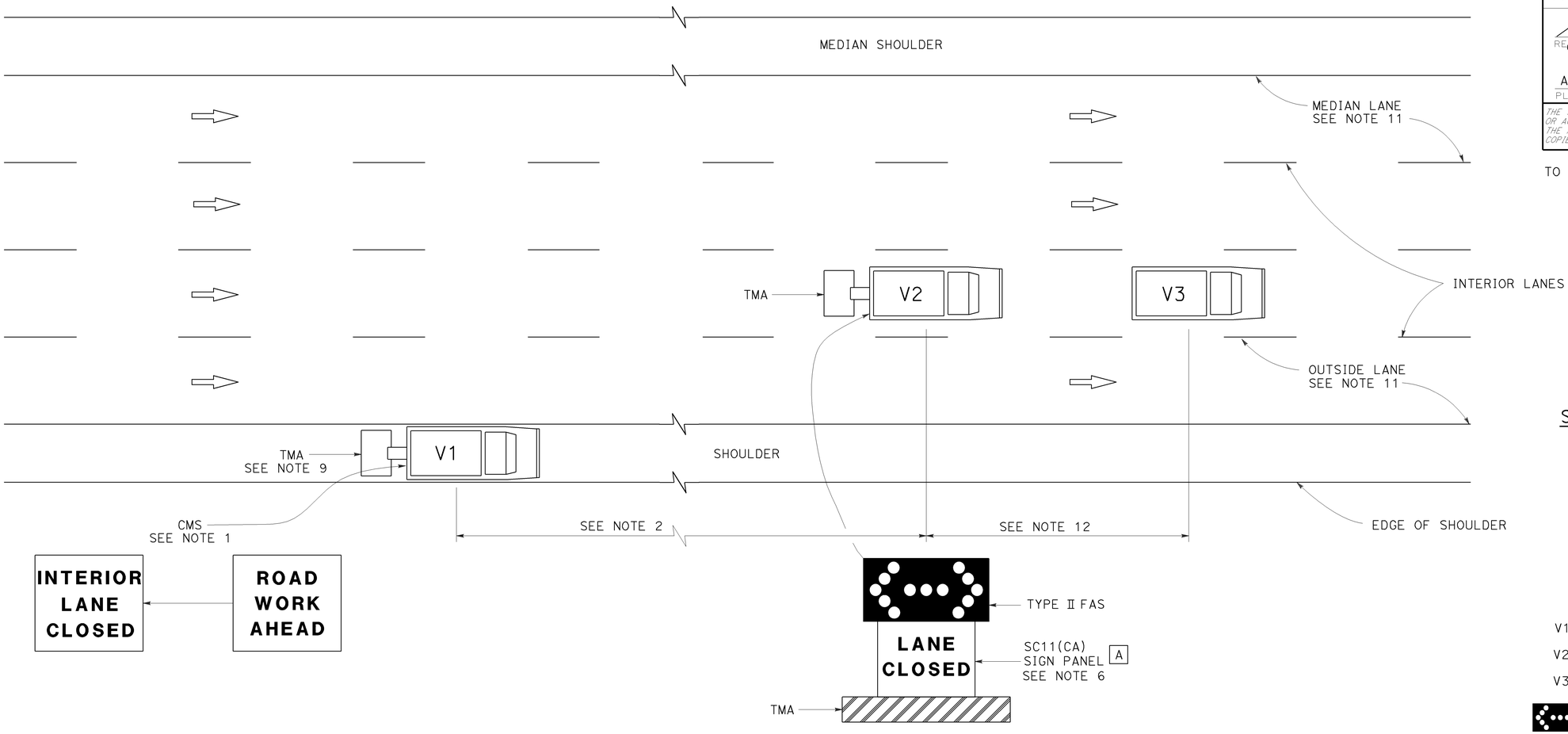
TO ACCOMPANY PLANS DATED 10-26-15

2010 REVISED STANDARD PLAN RSP T16




## 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**

12-18-13

## 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

| | |
|---|---|
| APS | ACCESSIBLE PEDESTRIAN SIGNAL |
| BBS | BATTERY BACKUP SYSTEM |
| BC | BOLT CIRCLE |
| BPB | BICYCLE PUSH BUTTON |
| C | CONDUIT |
| CB | CIRCUIT BREAKER |
| CCTV | CLOSED CIRCUIT TELEVISION |
| Ckt | CIRCUIT |
| CMS | CHANGEABLE MESSAGE SIGN |
| Ctid | CALTRANS IDENTIFICATION |
| Comm | COMMUNICATION |
| 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 |
| 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 |
| 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 |
| 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 |
| TDC | TELEPHONE DEMARCATION CABINET |
| TMS | TRAFFIC MONITORING STATION |
| TOS | TRAFFIC OPERATIONS SYSTEM |
| Veh | VEHICLE |
| VIVDS | VIDEO IMAGE VEHICLE DETECTION SYSTEM |
| WIM | WEIGH-IN-MOTION |
| Xfmr | TRANSFORMER |

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 08 | Riv | 111 | T50.0/56.2 | 25 | 32 |

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

Theresa Aziz Gabriel No. E15129 Exp. 6-30-14 ELECTRICAL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

July 19, 2013
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 10-26-15

## SOFFIT AND WALL MOUNTED LUMINAIRES

- PENDANT, 70 W HPS UNLESS OTHERWISE SPECIFIED
- FLUSH, 70 W HPS UNLESS OTHERWISE SPECIFIED
- WALL SURFACE, 70 W HPS UNLESS OTHERWISE SPECIFIED
- EXISTING SOFFIT OR WALL LUMINAIRE TO REMAIN UNMODIFIED
- (M) EXISTING SOFFIT OR WALL LUMINAIRE TO BE MODIFIED AS SPECIFIED

**NOTE:**
Arrow indicates "street side" of luminaire.

COMMONLY USED SYMBOLS FOR UNITED STATES CUSTOMARY UNITS OF MEASUREMENT:

| SYMBOL USED | 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 |

## MISCELLANEOUS ELECTROLIERS

| NEW | EXISTING | |
|---|---|---|
| | | LUMINAIRE ON WOOD POLE |
| | | NON-STANDARD ELECTROLIER (SEE PROJECT NOTES OR PROJECT PLANS) |
| | | CITY ELECTROLIER |
| | | ELECTROLIER FOUNDATION (FUTURE INSTALLATION) |

**NOTES:**

1. HPS luminaires shall be 310 W HPS when installed on Type 21, 21D, 30, 31 and 32 Standards, unless otherwise specified. HPS luminaires shall be 200 W when installed on other type standards or poles, unless otherwise specified.
2. 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.
3. Luminaires shall be the cutoff type, ANSI Type III medium cutoff lighting distribution, unless otherwise specified.

## STANDARD ELECTROLIER

| NEW | EXISTING | STANDARD TYPE |
|---|---|---|
| | | 15 |
| | | 15D |
| | | 15 STRUCTURE |
| | | 15D STRUCTURE |
| | | 21 |
| | | 21D |
| | | 21 STRUCTURE |
| | | 21D STRUCTURE |
| | | 30 |
| | | 31 |
| | | 32 |

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

NO SCALE

RSP ES-1A DATED JULY 19, 2013 SUPERSEDES 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

7-15-13

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 08 | Riv | 111 | T50.0/56.2 | 26 | 32 |

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

Theresa Aziz Gabriel No. E15129 Exp. 6-30-14 ELECTRICAL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

July 19, 2013
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TO ACCOMPANY PLANS DATED 10-26-15

## 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 | |
|---|---|---|
| C | C | PEDESTRIAN SIGNAL HEAD "C" INDICATES COUNTDOWN PEDESTRIAN 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: "L" INDICATES ALL NON-ARROW SECTIONS LOUVERED "LG" INDICATES LOUVERED GREEN SECTION ONLY "PV" INDICATES ALL 12" SECTIONS PROGRAMMED VISIBILITY "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 SYSTEM |

### 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 JULY 19, 2013 SUPERSEDES 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

7-15-13

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 08 | Riv | 111 | T50.0/56.2 | 27 | 32 |

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

Theresa Aziz Gabriel No. E15129 Exp. 6-30-14 ELECTRICAL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA

July 19, 2013
PLANS APPROVAL DATE

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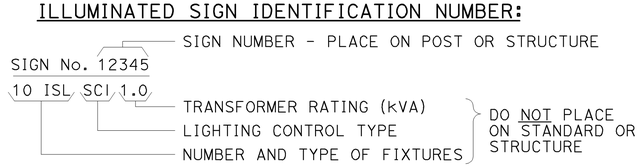
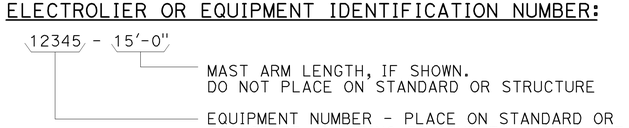
TO ACCOMPANY PLANS DATED 10-26-15

# EQUIPMENT IDENTIFICATION

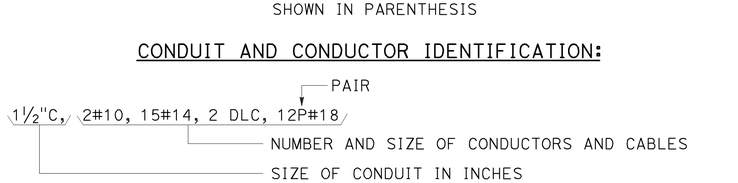
## ILLUMINATED SIGN IDENTIFICATION NUMBER:



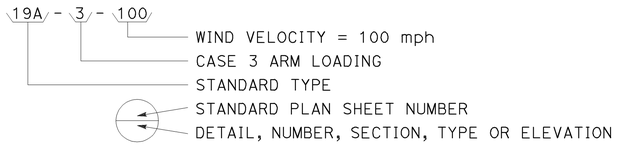

## ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:




## CONDUIT AND CONDUCTOR IDENTIFICATION:




## SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):




# MISCELLANEOUS EQUIPMENT

| NEW | EXISTING | |
|---|---|---|
| CMS | cms | CHANGEABLE MESSAGE SIGN |
| | | CLOSED CIRCUIT TELEVISION CAMERA |
| | | HIGHWAY ADVISORY RADIO POLE AND ANTENNA |
| EMS | ems | 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 |

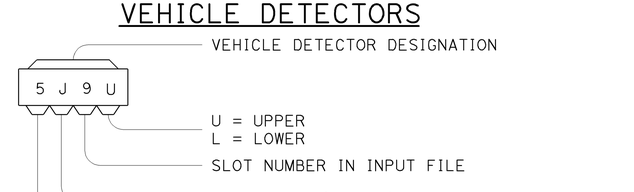
# PULL BOXES

| 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 (CEILING PULL BOX)
8 No. 8 (PENDANT SOFFIT PULL BOX)
9 No. 9 PULL BOX
9A No. 9A PULL BOX

(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




| NEW | EXISTING | |
|---|---|---|
| | | TYPE A DETECTOR LOOP. OUTLINE OF SAWCUT SHOWN |
| | | TYPE B DETECTOR LOOP. OUTLINE OF SAWCUT SHOWN |
| | | TYPE C DETECTOR LOOP. OUTLINE OF SAWCUT SHOWN |
| | | TYPE D DETECTOR LOOP. OUTLINE OF SAWCUT SHOWN |
| | | TYPE E DETECTOR LOOP. OUTLINE OF SAWCUT SHOWN |
| | | TYPE Q DETECTOR LOOP. OUTLINE OF SAWCUT SHOWN |
| | | MAGNETIC DETECTOR |
| 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 JULY 19, 2013 SUPERSEDES 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**

7-11-13

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 08 | Riv | 111 | T50.0/56.2 | 28 | 32 |

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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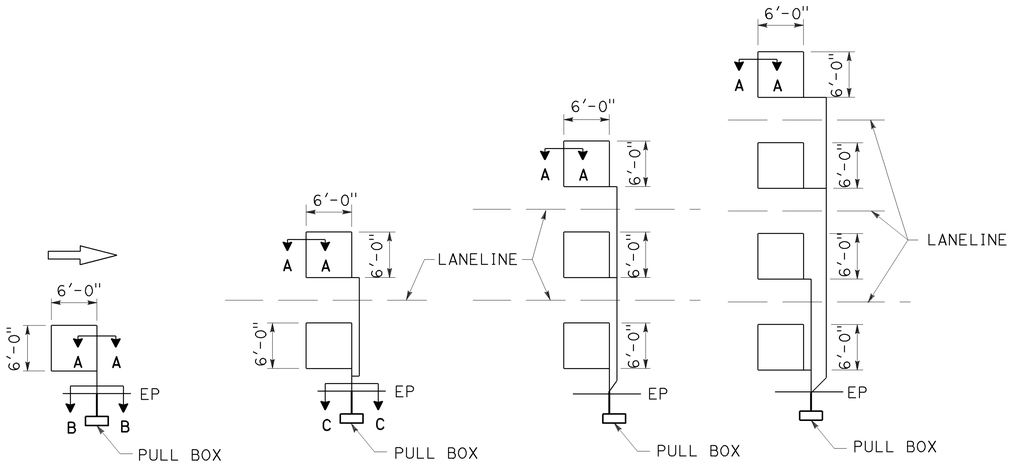
TO ACCOMPANY PLANS DATED 10-26-15

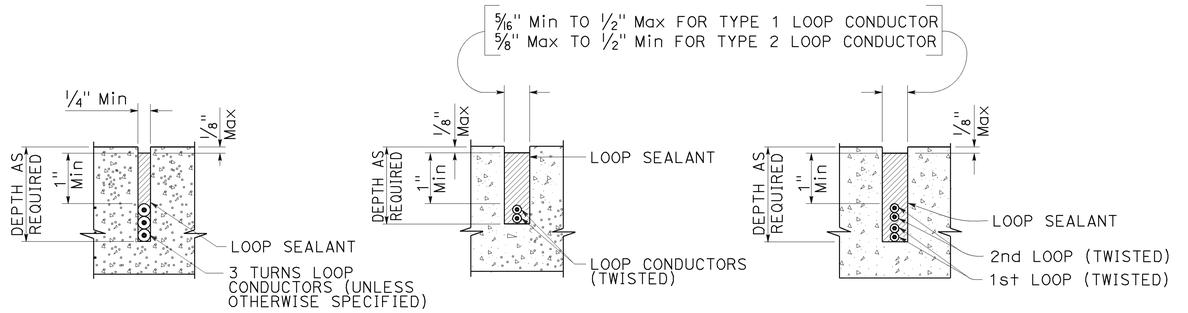



TYPE 1A INSTALLATION | TYPE 2A INSTALLATION | TYPE 3A INSTALLATION | TYPE 4A INSTALLATION

## SAWCUT DETAILS

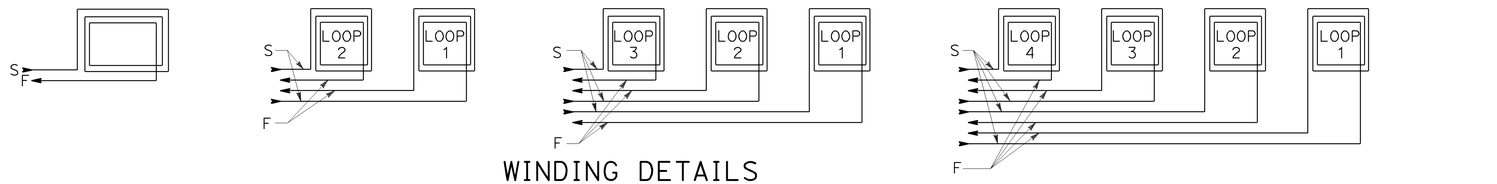
Type A loop detector configurations illustrated

1. 1A thru 4A = 1 Type A loop configuration in each lane.
2. 1B thru 4B = 1 Type B loop configuration in each lane.
3. 1C = 1 Type C loop configuration entering lanes as required.
4. 1D thru 4D = 1 Type D loop configuration in each lane.
5. 1E thru 4E = 1 Type E loop configuration in each lane.
6. 1Q thru 4Q = 1 Type Q loop configuration in each lane.
   Use Type A, B, C, D, E or Q loop detector configurations only when specified or shown on plans.

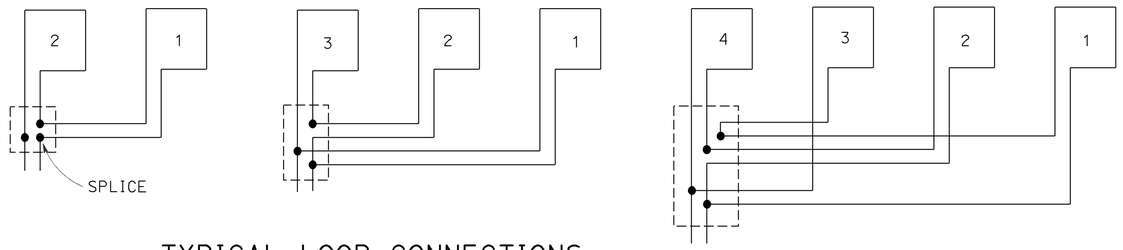



SECTION A-A | SECTION B-B | SECTION C-C

## SLOT DETAILS - TYPE 1 AND TYPE 2 LOOP CONDUCTOR




## WINDING DETAILS




## TYPICAL LOOP CONNECTIONS

Dashed lines represent the pull box

ABBREVIATIONS:

S - START
F - FINISH

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# ELECTRICAL SYSTEMS (LOOP DETECTORS)

NO SCALE

RSP ES-5A DATED OCTOBER 30, 2015 SUPERSEDES STANDARD PLAN ES-5A DATED MAY 20, 2011 - PAGE 448 OF THE STANDARD PLANS BOOK DATED 2010.

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

**2010 REVISED STANDARD PLAN RSP ES-5A**

8-24-15

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 08 | Riv | 111 | T50.0/56.2 | 29 | 32 |

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Theresa Aziz Gabriel
No. E15129
Exp. 6-30-14
ELECTRICAL
STATE OF CALIFORNIA

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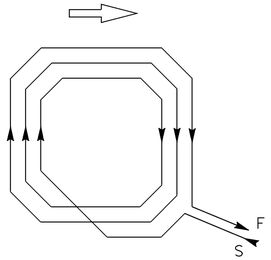
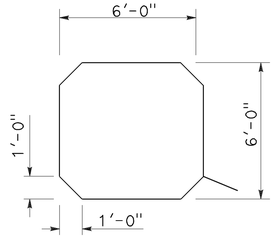
TO ACCOMPANY PLANS DATED 10-26-15

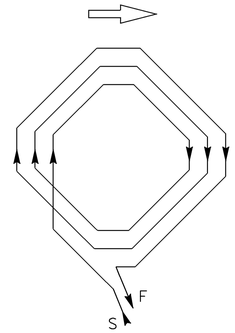



WINDING DETAIL

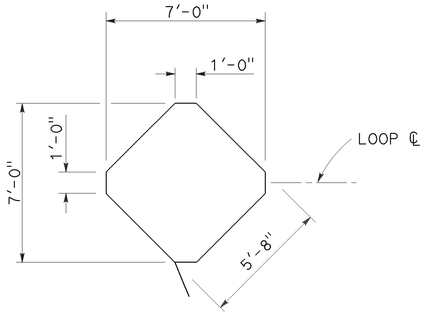



SAWCUT DETAIL

TYPE A LOOP DETECTOR CONFIGURATION

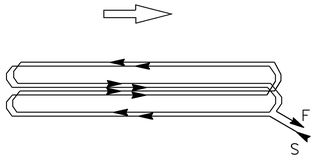



WINDING DETAIL

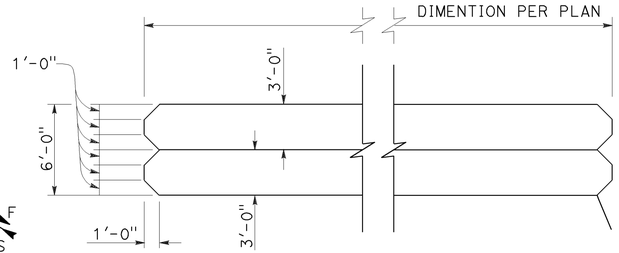



SAWCUT DETAIL

TYPE B LOOP DETECTOR CONFIGURATION

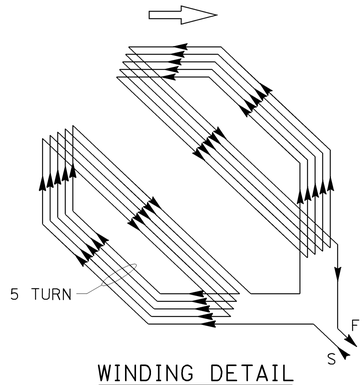



WINDING DETAIL

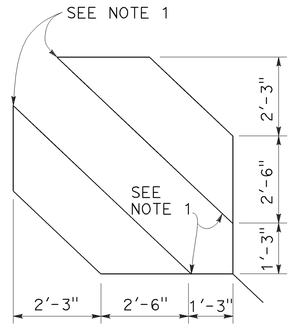



SAWCUT DETAIL

TYPE C LOOP DETECTOR CONFIGURATION

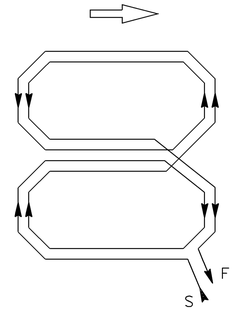



WINDING DETAIL

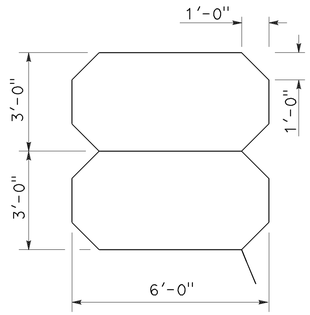



SAWCUT DETAIL

TYPE D LOOP DETECTOR CONFIGURATION

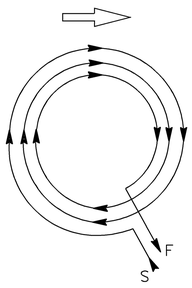



WINDING DETAIL

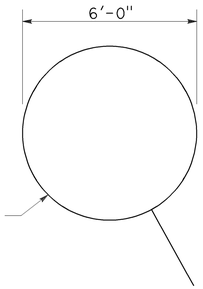



SAWCUT DETAIL

TYPE Q LOOP DETECTOR CONFIGURATION

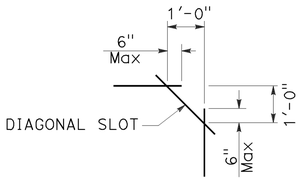



WINDING DETAIL




SAWCUT DETAIL

TYPE E LOOP DETECTOR CONFIGURATION




PLAN VIEW OF DIAGONAL SLOT AT CORNERS

NOTES:

1. Round corners of acute angle sawcuts to prevent damage to conductors.
2. Typical distance separating loops from edge to edge is 10' for Type A, B, D and E installation in single lane.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# ELECTRICAL SYSTEMS (DETECTORS)

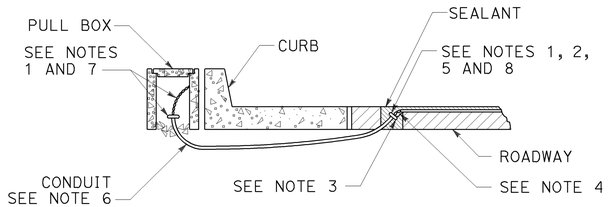
NO SCALE

RSP ES-5B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-5B
DATED MAY 20, 2011 - PAGE 449 OF THE STANDARD PLANS BOOK DATED 2010.

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

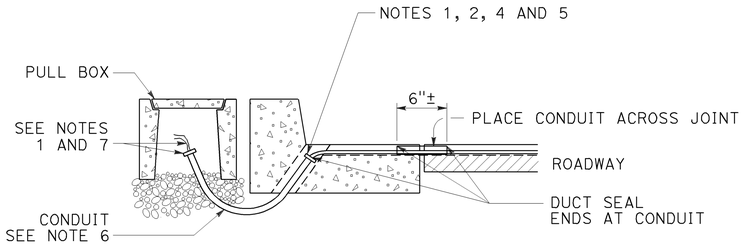
**2010 REVISED STANDARD PLAN RSP ES-5B**

7-9-13

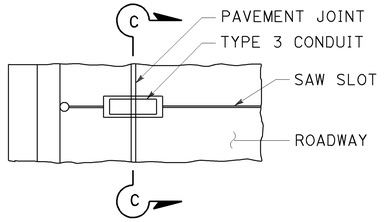



TYPE A

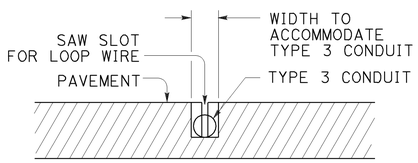
## CURB TERMINATION DETAIL




CROSS SECTION



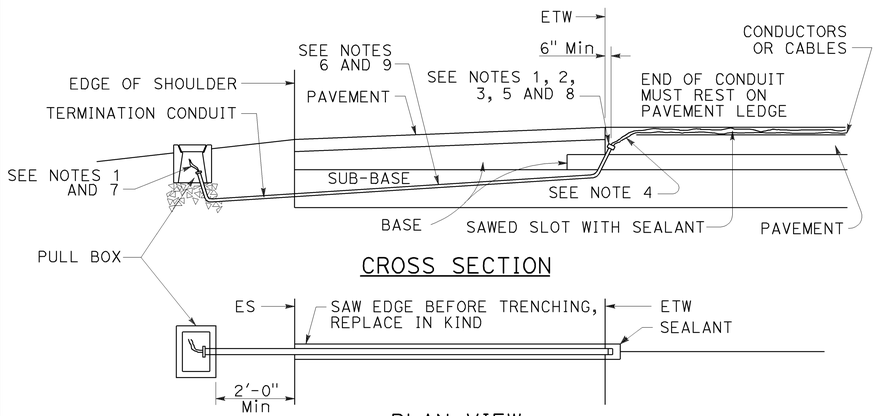

PLAN VIEW




SECTION C-C

TYPE B

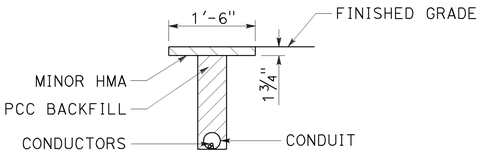
## CURB TERMINATION DETAIL



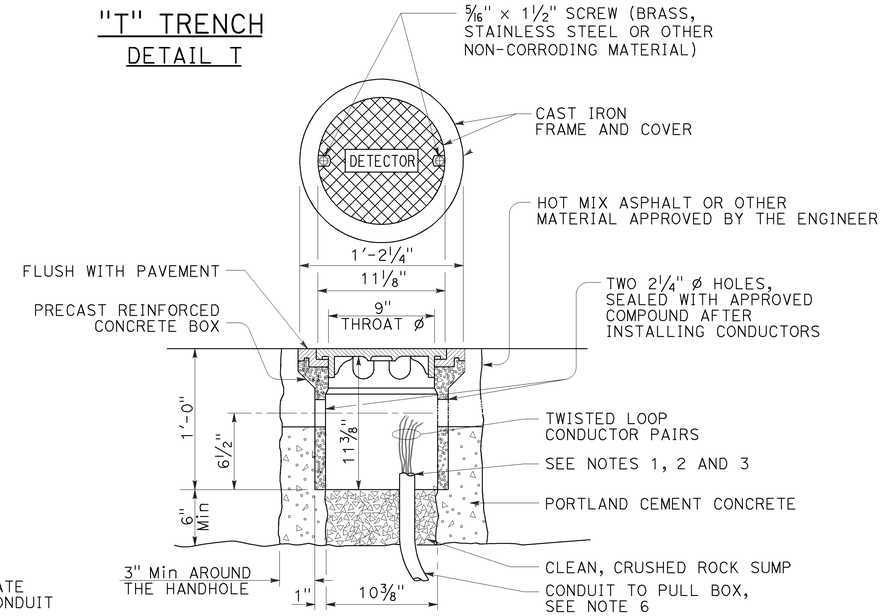

CROSS SECTION

PLAN VIEW

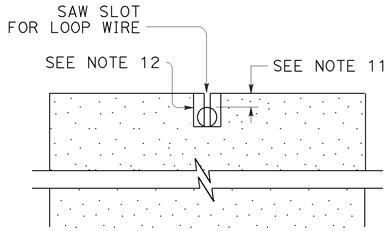
## SHOULDER TERMINATION DETAILS



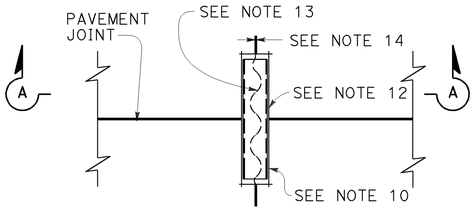

## "T" TRENCH DETAIL T




## DETECTOR HANDHOLE DETAIL

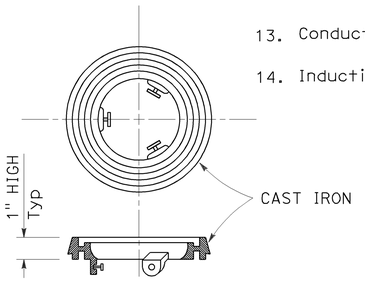



SECTION A-A




PLAN VIEW

## TYPICAL LOOP LEAD-IN DETAIL AT PAVEMENT JOINT




## LOCKING GRADE RING

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 08 | Riv | 111 | T50.0/56.2 | 30 | 32 |

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — Theresa Aziz Gabriel — No. E15129 — Exp. 6-30-14 — 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 10-26-15

### NOTES:

1. Bushing shall be used at end of conduit.
2. Tape detector conductors or cables 3" each side of bushings.
3. Install duct seal compound to each end of termination conduit before installing sealant.
4. Round all sharp edges where detector conductors or cables have to pass.
5. End of conduit shall be 3⅛" below roadway surface.
6. 

| Conduit size | Loop conductors |
|---|---|
| 1"C minimum | 1 to 2 pairs |
| 1½"C minimum | 3 to 4 pairs |
| 2"C minimum | 5 or more pairs |

7. Splice detector conductors or cables to detector lead-in-cable.
8. Location of detector handhole when shown on plans.
9. When the shoulder and traveled way are paved with the same material and there is no joint between them, the conduit shall extend only 2'-0" into the shoulder pavement.
10. ¾"C, Type 3 conduit 6" long minimum, plug both ends with duct compound to keep out sealant.
11. ½" Minimum between top of conduit and pavement surface.
12. Sawcut shall not exceed 1" in width and ⅛" longer than conduit to be installed.
13. Conductors with ½" minimum slack inside conduit.
14. Inductive loop detector saw slot.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# ELECTRICAL SYSTEMS (CURB TERMINATION AND HANDHOLE)

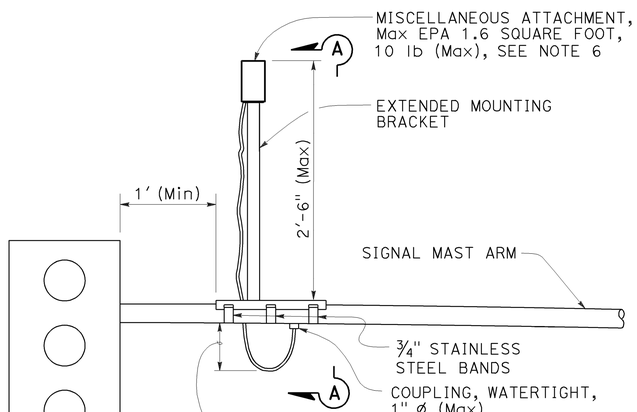
NO SCALE

RSP ES-5D DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-5D
DATED MAY 20, 2011 - PAGE 451 OF THE STANDARD PLANS BOOK DATED 2010.

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

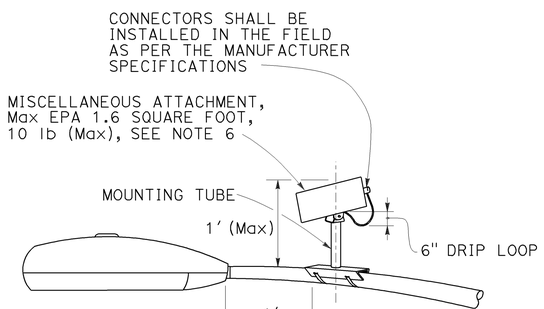
**2010 REVISED STANDARD PLAN RSP ES-5D**

7-9-13



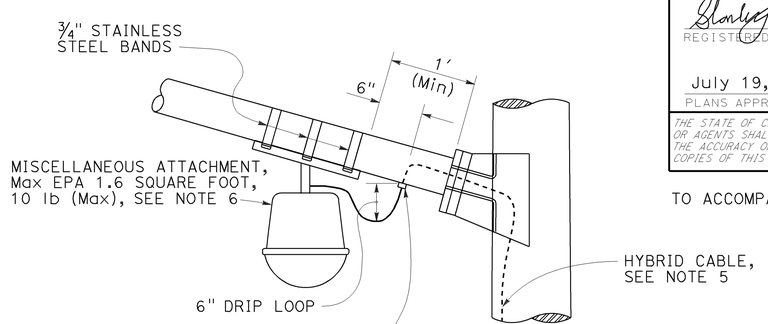

SIGNAL MAST ARM MOUNT

DETAIL A




LUMINAIRE MAST ARM MOUNT

DETAIL B




LUMINAIRE MAST ARM MOUNT

DETAIL C

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 08 | Riv | 111 | T50.0/56.2 | 31 | 32 |

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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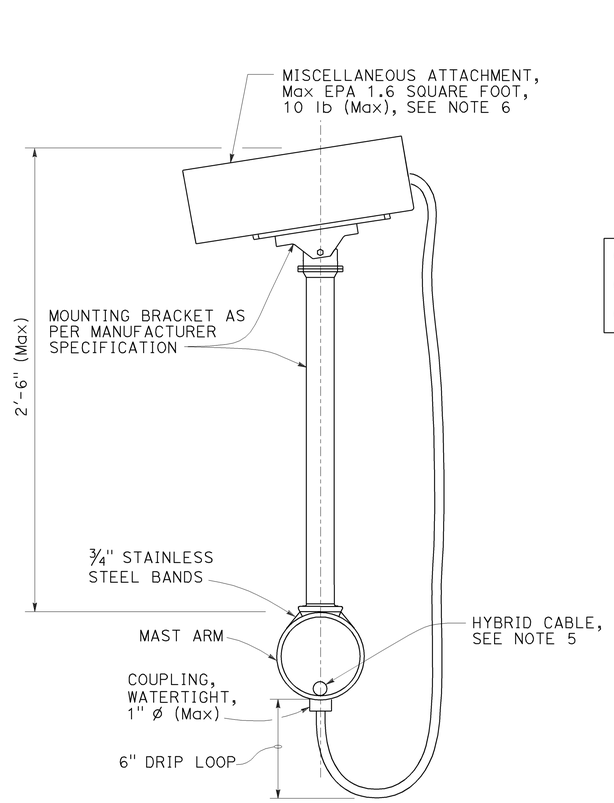
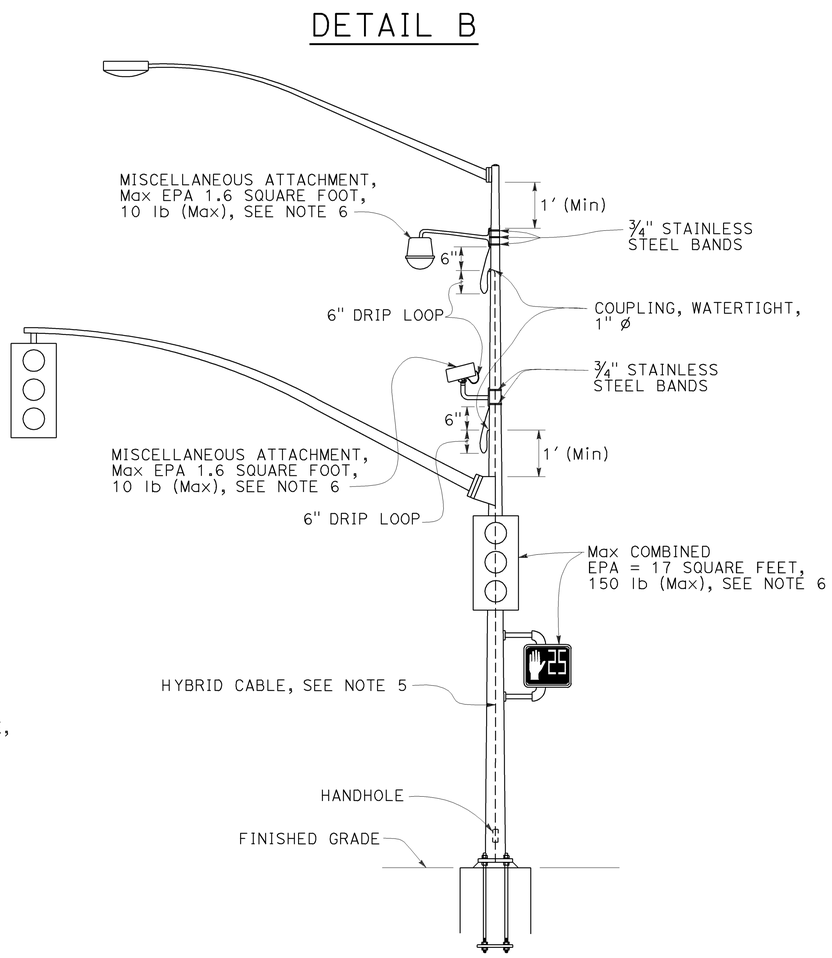
TO ACCOMPANY PLANS DATED 10-26-15




SECTION A-A




SIGNAL POLE MOUNT

DETAIL D

NOTES:

1. Exact mounting location of miscellaneous attachment and bracket shall be approved by the Engineer per manufacturer's recommendation.
2. Location of cable entrances on signal pole shall be a minimum of 1′ from any flange or base plate.
3. Hybrid cable entrances on signal pole shall be drilled for weathertight coupling as required.
4. Hybrid cable shall have a drip loop at the entrance into signal pole, luminaire mast arm and signal mast arm.
5. A single hybrid cable shall run continuous and shall not be twisted from the miscellaneous attachment to the controller cabinet. No splices shall be allowed.
6. Use the manufacturer's Effective Projected Area (EPA) for miscellaneous attachment. The maximum EPA for each miscellaneous attachment shall be 1.6 square feet.
7. Maximum of two miscellaneous attachments per traffic signal structure.
8. Maximum of one miscellaneous attachment per mast arm.
9. Miscellaneous attachment shall be mounted using clamping devices.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# ELECTRICAL SYSTEMS (SIGNAL AND LIGHTING, MISCELLANEOUS ATTACHMENT)

NO SCALE

RSP ES-7R DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-7R
DATED MAY 20, 2011 - PAGE 479 OF THE STANDARD PLANS BOOK DATED 2010.

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

**2010 REVISED STANDARD PLAN RSP ES-7R**

6-17-13

| Dist | COUNTY | ROUTE | POST MILES TOTAL PROJECT | SHEET No. | TOTAL SHEETS |
|---|---|---|---|---|---|
| 08 | Riv | 111 | T50.0/56.2 | 32 | 32 |

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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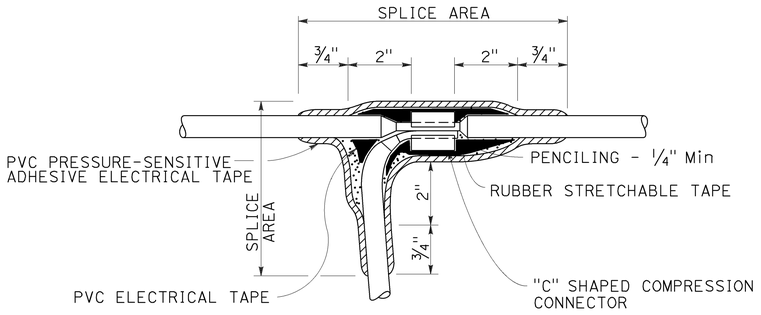
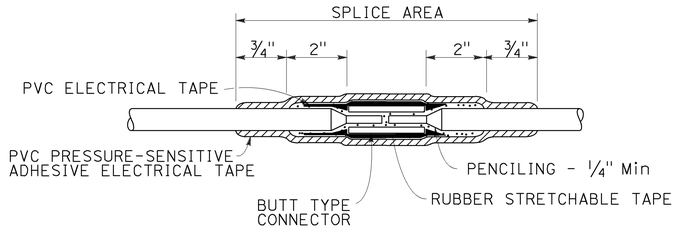
TO ACCOMPANY PLANS DATED 10-26-15



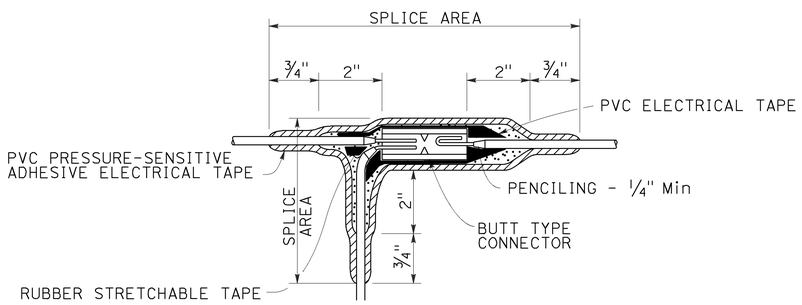

## TYPE C SPLICE

See Note 3



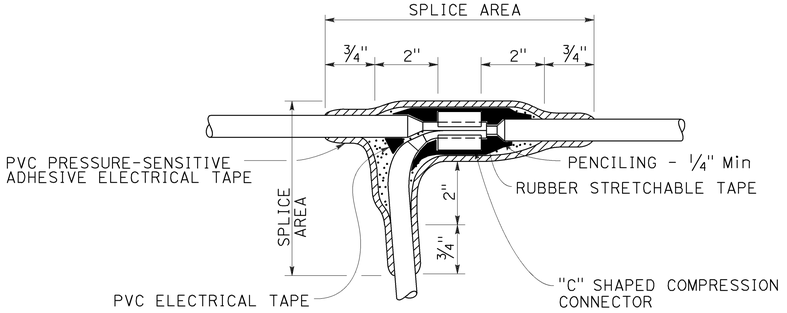

## TYPE S SPLICE

See Note 4




## TYPE ST SPLICE

See Note 5




## TYPE T SPLICE

See Note 5

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.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

# ELECTRICAL SYSTEMS (SPLICING DETAILS)

NO SCALE

RSP ES-13A DATED OCTOBER 30, 2015 SUPERSEDES 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**

9-28-15