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

STATE OF CALIFORNIA  
**DEPARTMENT OF TRANSPORTATION**  
**PROJECT PLANS FOR CONSTRUCTION ON**  
**STATE HIGHWAY**  
**IN LOS ANGELES COUNTY**  
**IN MONROVIA AND IRWINDALE**  
**FROM HUNGTINGTON DRIVE UNDERCROSSING**  
**TO BRADBURY FLOOD CONTROL CHANNEL**

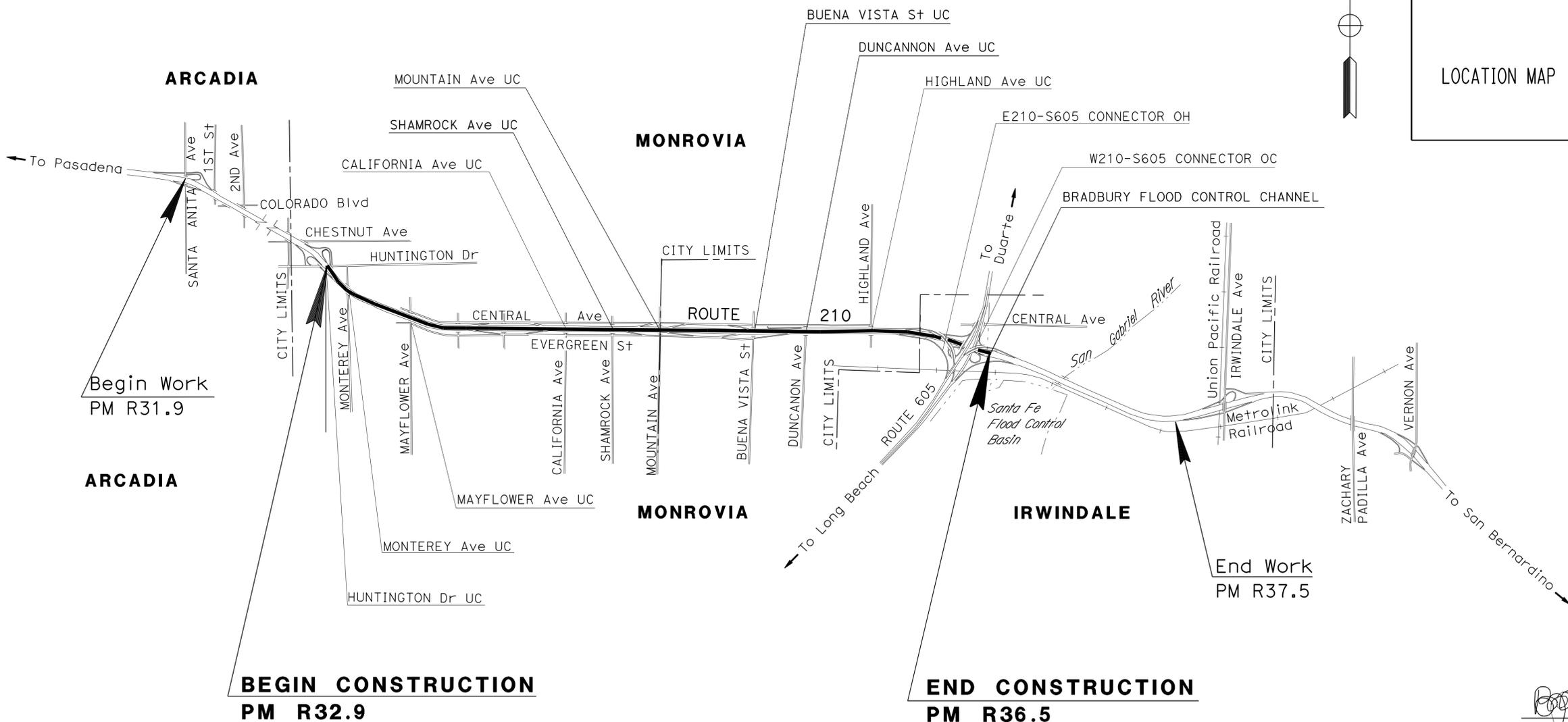
TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2015

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210	R32.9/R36.5	1	29





LOCATION MAP



PROJECT MANAGER  
**GARY KEVORKIAN**  
 DESIGN MANAGER  
**LARRY WIERING**

  
 PROJECT ENGINEER  
 REGISTERED CIVIL ENGINEER  
 DATE 8-25-16



September 12, 2016  
 PLANS APPROVAL DATE  
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

CONTRACT No.	<b>07-3W5004</b>
PROJECT ID	<b>0716000163</b>

NO SCALE

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210	R32.9/R36.5	2	29

REGISTERED CIVIL ENGINEER	DATE
8-25-16	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
BIPIN PATEL
No. C60082
Exp. 6-30-18
CIVIL

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

**NOTES:**

- DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
- SUPERELEVATION AS SHOWN OR AS DIRECTED BY THE ENGINEER.
- FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- EXISTING DRAINAGE INLETS HAVE NOT BEEN PLOTTED ON THESE PLANS.
- EXEMPT PROJECT PER UTILITY POLICY, UTILITIES ARE NOT SHOWN.
- GRIND PCC PAVEMENT IN ALL LANES, INCLUDING LANE LINES. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.
- THE CONTRACTOR SHALL REMOVE EXISTING PAVEMENT MARKERS PRIOR TO GRINDING AND MATCH EXISTING TRAFFIC STRIPE AND PAVEMENT MARKING.
- OMIT GRINDING ON AC PAVEMENT, BRIDGE DECKS, AND APPROACH AND DEPARTURE SLABS.

**ABBREVIATION:**

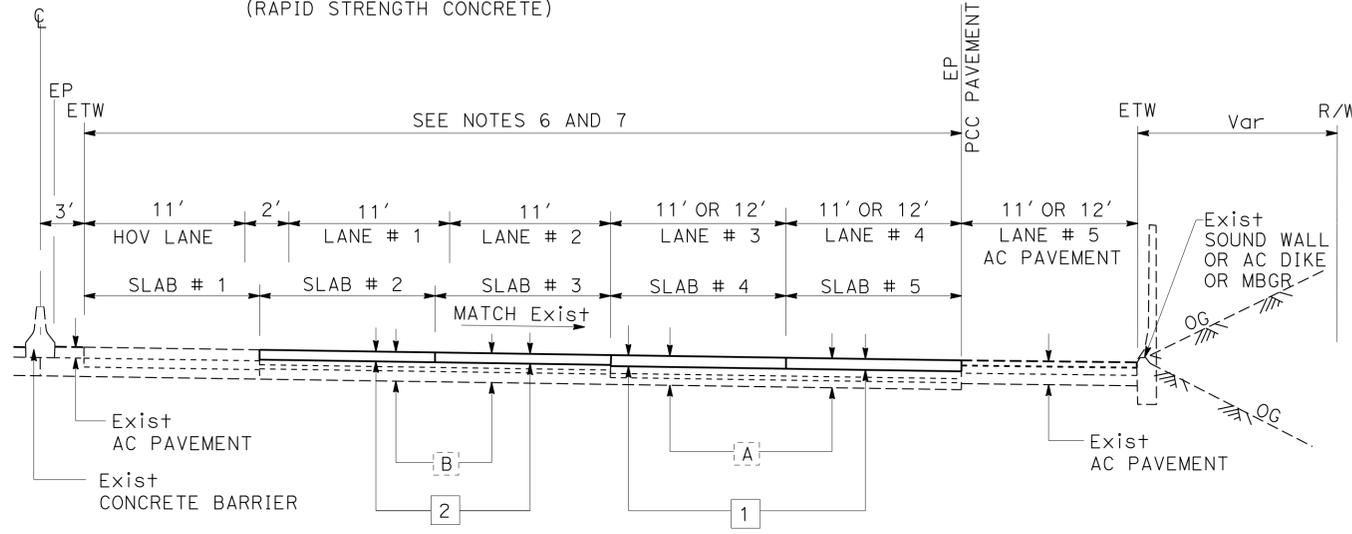
ISR (RSC) INDIVIDUAL SLAB REPLACEMENT (RAPID STRENGTH CONCRETE)

**EXISTING PAVEMENT STRUCTURAL SECTIONS**

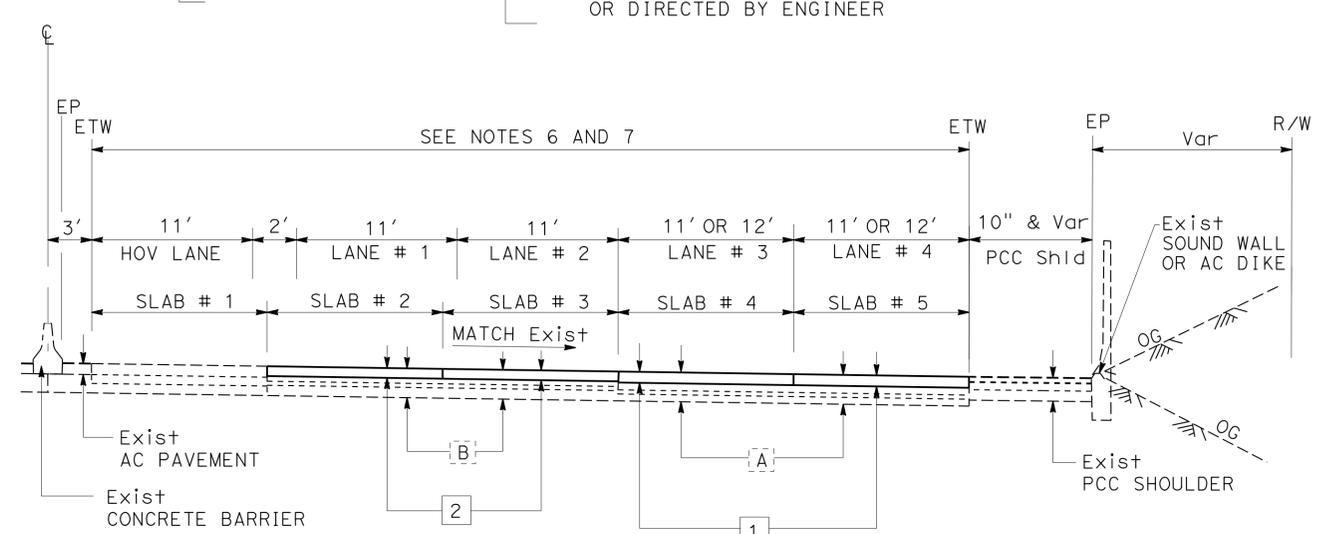
- [A] 0.75' PCC  
0.50' CLASS A CTB  
0.28' AB  
0.47' CLASS 4 AS
- [B] 0.67' PCC  
0.35' CLASS A CTB  
0.28' AB  
0.70' CLASS 4 AS

**PROPOSED PAVEMENT STRUCTURAL SECTIONS**

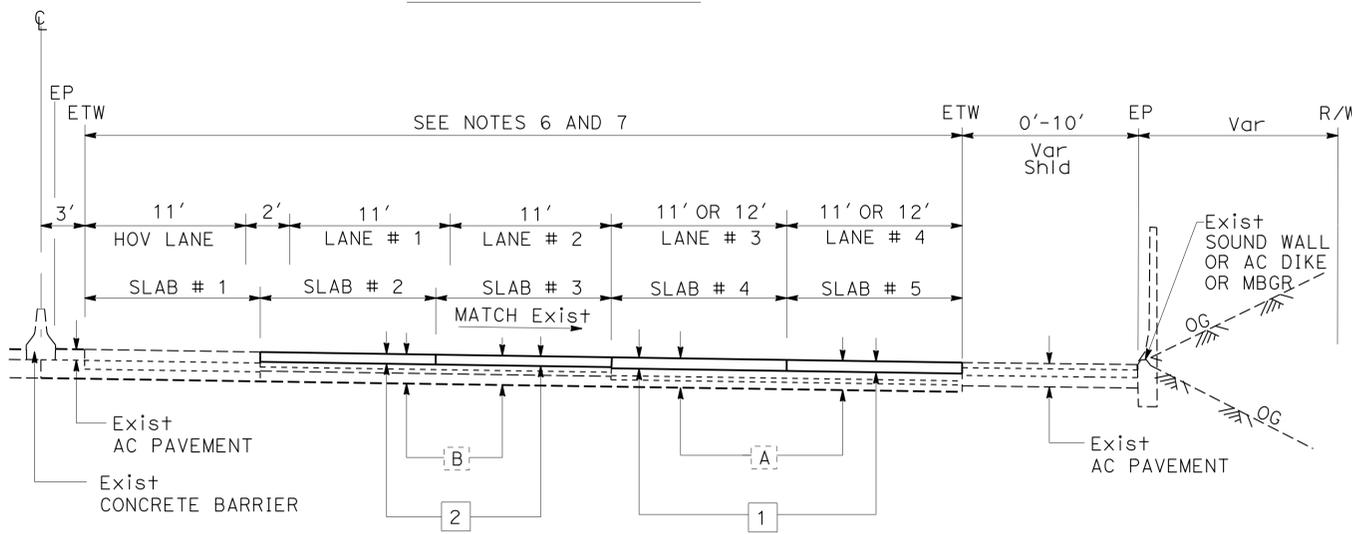
- 1 0.75' ISR (RSC)  
BASE BOND BREAKER  
0.50' REPLACE BASE (LCBRS) AS NEEDED OR DIRECTED BY ENGINEER
- 2 0.67' ISR (RSC)  
BASE BOND BREAKER  
0.35' REPLACE BASE (LCBRS) AS NEEDED OR DIRECTED BY ENGINEER



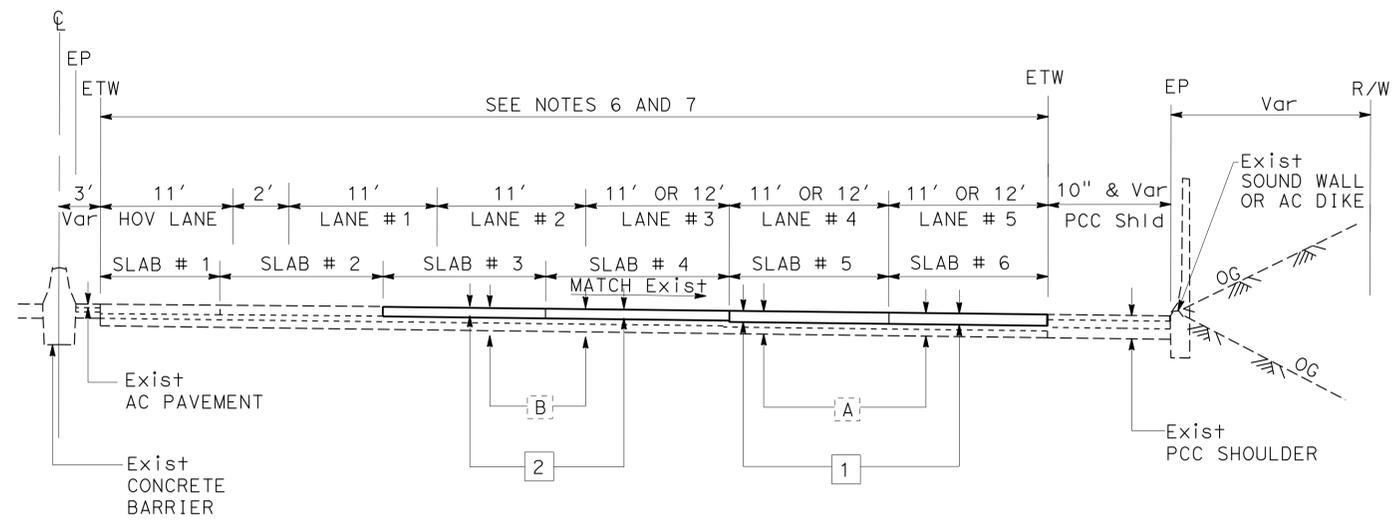
PM R35.1 - PM R35.5  
PM R34.2 - PM R34.5  
PM R33.4 - PM R33.7



PM R33.7 - PM R34.2



PM R34.5 - PM R35.1  
PM R32.9 - PM R33.1



PM R33.1 - PM R33.4

**TYPICAL CROSS SECTIONS**  
NO SCALE

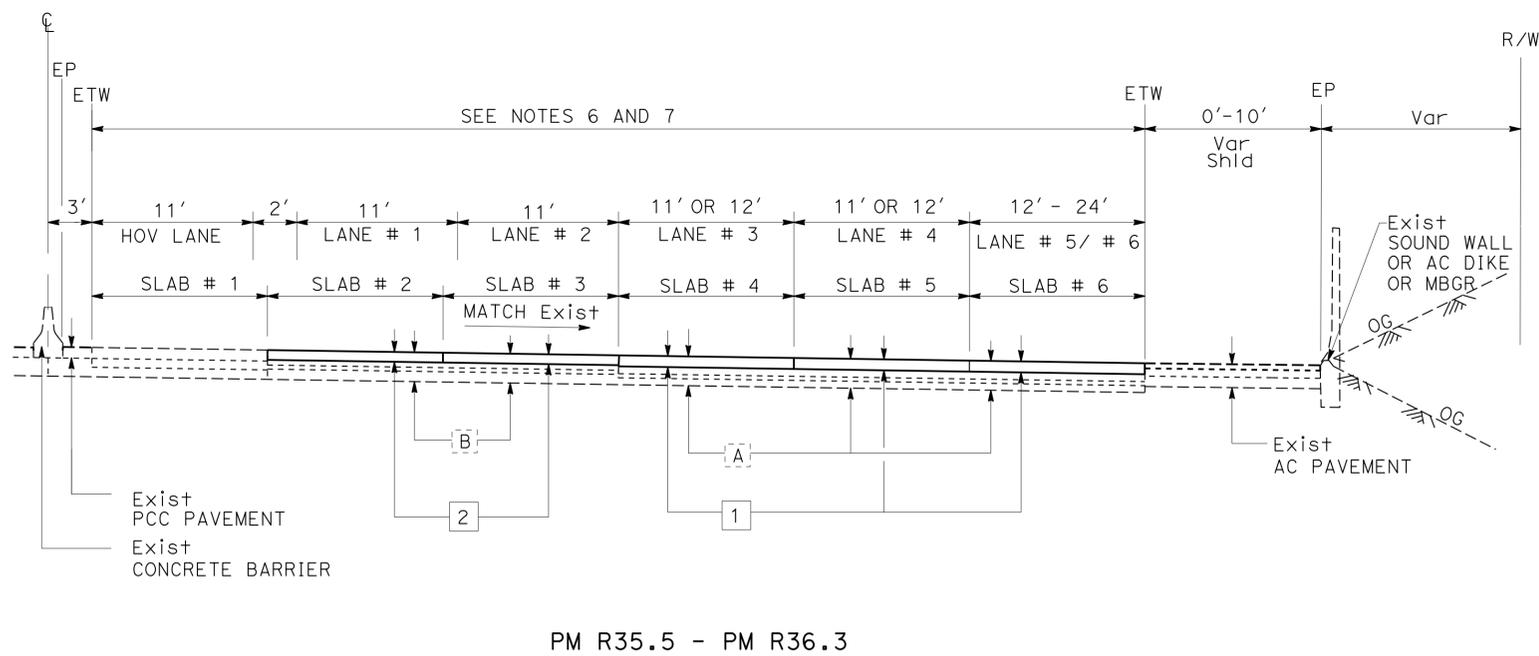
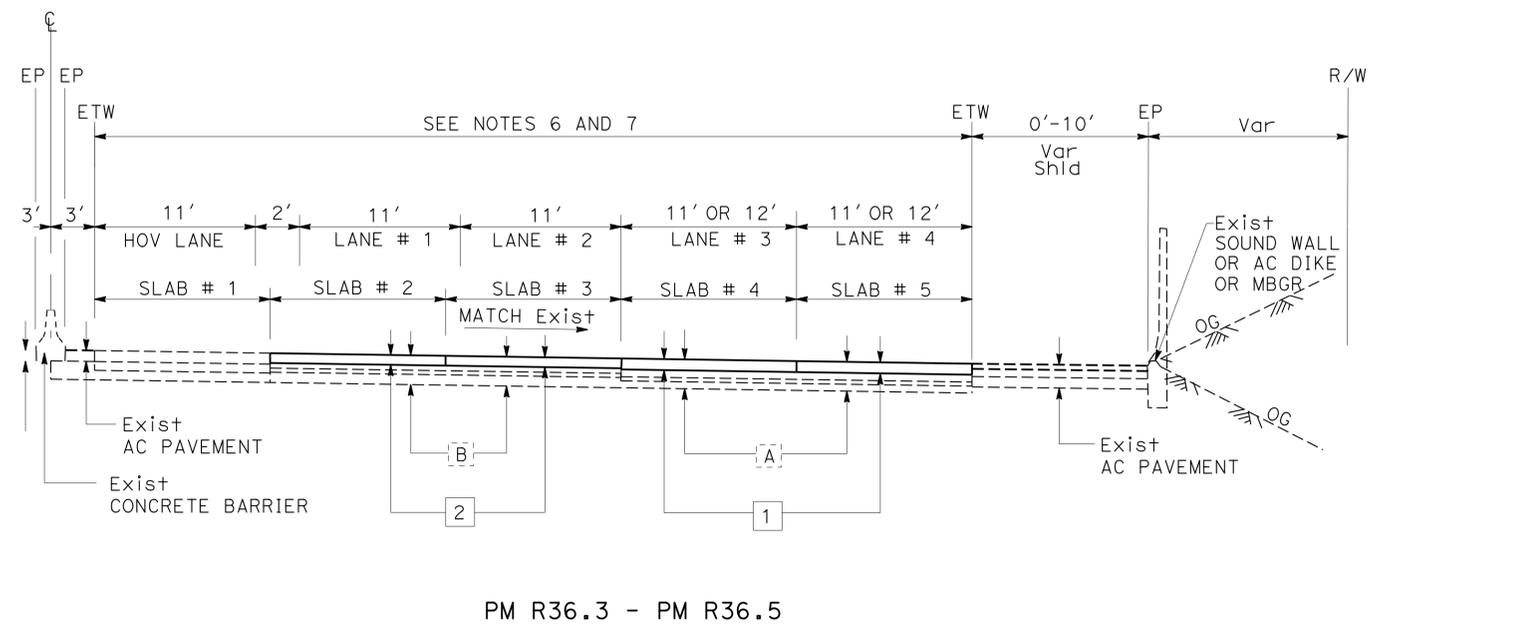
**HUNTINGTON DRIVE UC TO BUENA VISTA STREET ON RAMP**

PM R32.9 - PM R35.5 (EASTBOUND)

X-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** MAINTENANCE ENGINEERING  
 FUNCTIONAL SUPERVISOR: LARRY WIERING  
 BIPIN PATEL  
 LARRY WIERING  
 REVISOR: LARRY WIERING  
 DATE REVISOR: [blank]  
 CALCULATED/DESIGNED BY: [blank]  
 CHECKED BY: [blank]

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210	R32.9/R36.5	3	29
			8-25-16	REGISTERED CIVIL ENGINEER DATE	
			9-12-16	PLANS APPROVAL DATE	
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



**BUENA VISTA STREET ON RAMP TO BRADBURY FLOOD CONTROL CHANNEL**  
 PM R35.5 - PM R36.5 (EASTBOUND)

**TYPICAL CROSS SECTIONS**  
NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	DESIGNED BY	REVISOR
<b>Caltrans</b> MAINTENANCE ENGINEERING	LARRY WIERING	BIPIN PATEL	LARRY WIERING
		CHECKED BY	DATE REVISED

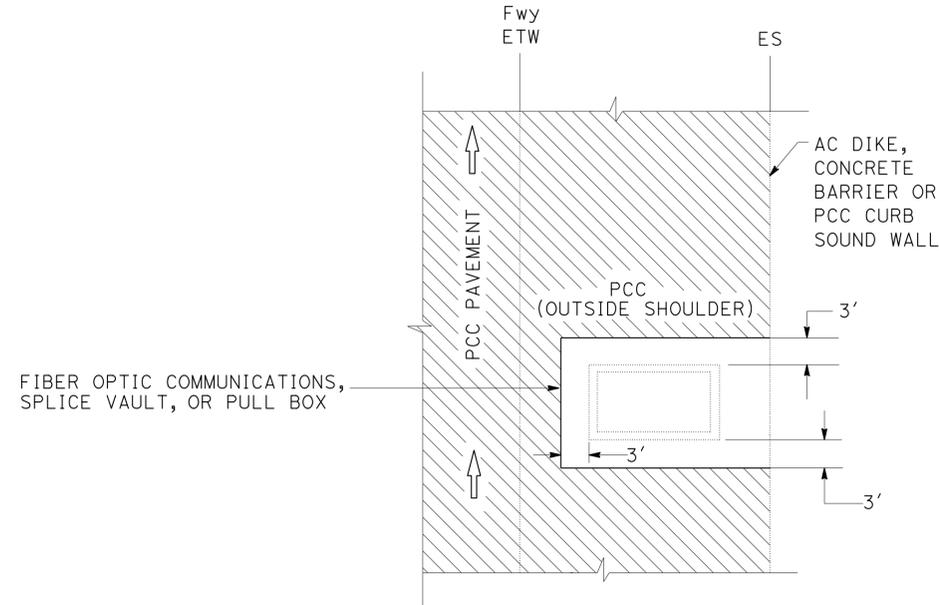
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210	R32.9/R36.5	4	29
			8-25-16	REGISTERED CIVIL ENGINEER DATE	
			9-12-16	PLANS APPROVAL DATE	
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					

**NOTES:**

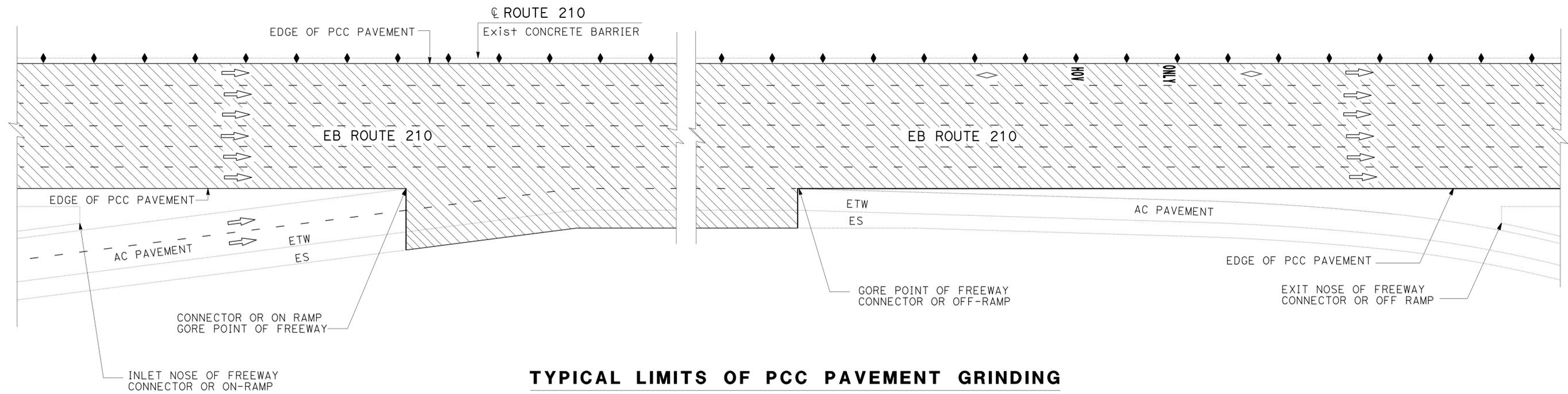
1. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL LOCATE ALL THE EXISTING INDUCTIVE LOOP DETECTORS, FIBER OPTIC COMMUNICATIONS, PULL BOXES, AND SPLICE VAULTS.
2. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
3. EXACT PAVING LIMITS WILL BE DETERMINED BY THE ENGINEER.

**LEGEND:**

GRIND EXISTING CONCRETE PAVEMENT



**TYPICAL WORK AT FIBER OPTIC COMMUNICATIONS, SPLICE VAULT, OR PULL BOX**



**TYPICAL LIMITS OF PCC PAVEMENT GRINDING AT ENTRANCE AND EXIT GORES**

**CONSTRUCTION DETAILS**

NO SCALE

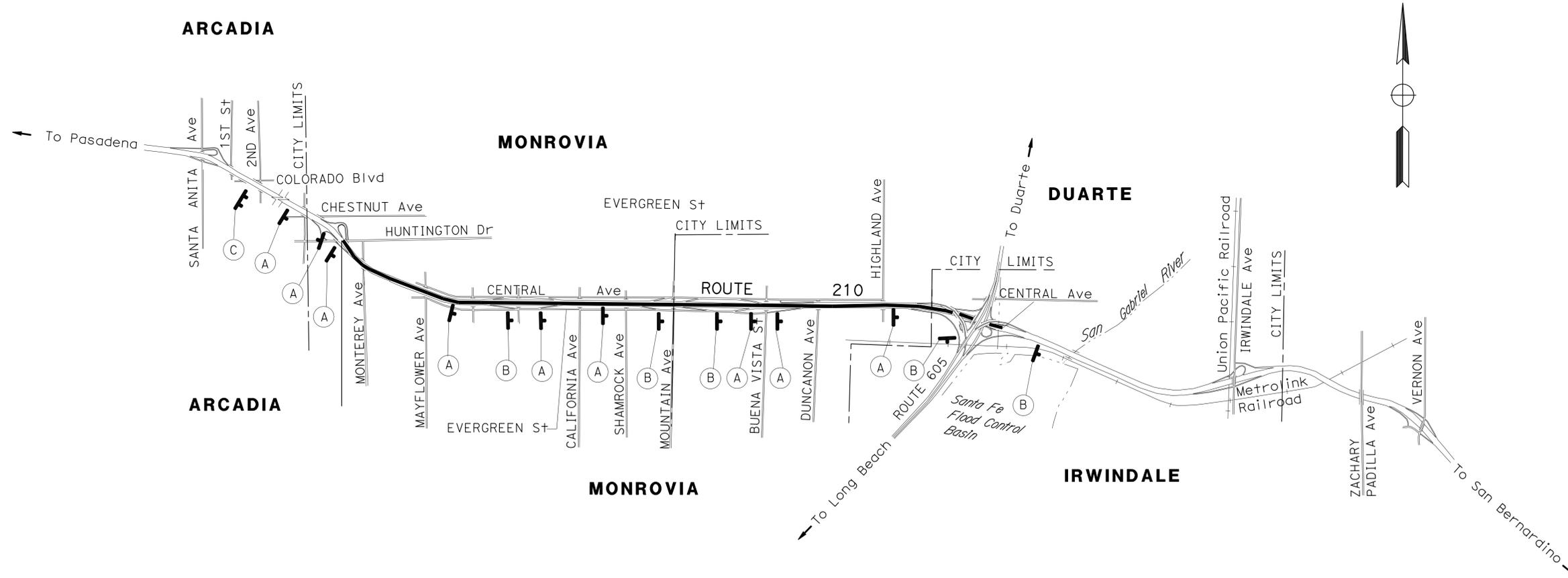
**C-1**

REVISOR	DATE	REVISION
BIPIN PATEL		
LARRY WIERING		
CALCULATED/DESIGNED BY	CHECKED BY	
LARRY WIERING		
FUNCTIONAL SUPERVISOR		
LARRY WIERING		
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION		
<b>Caltrans</b> MAINTENANCE ENGINEERING		

**NOTES:**

1. THE ENGINEER DETERMINES THE EXACT LOCATION OF CONSTRUCTION AREA SIGNS.
2. "TRAFFIC FINES DOUBLED IN CONSTRUCTION ZONES" SIGN SHALL BE PLACED APPROXIMATELY 500 FEET IN ADVANCE OF "ROAD WORK AHEAD" SIGN OR AS DETERMINED BY THE ENGINEER.

STATIONARY MOUNTED CONSTRUCTION AREA SIGNS						
SIGN No. (X)	FEDERAL	CALIFORNIA	PANEL SIZE	SIGN MESSAGE	NUMBER OF POSTS AND SIZE	NUMBER OF SIGNS
A	W20-1		48" x 48"	ROAD WORK AHEAD	1 - 6" x 6"	9
B	G20-2		48" x 24"	END ROAD WORK	1 - 4" x 6"	5
C		C40(CA)	144" x 60"	TRAFFIC FINES DOUBLED IN CONSTRUCTION ZONES	2 - 6" x 8"	1



**CONSTRUCTION AREA SIGNS**

NO SCALE

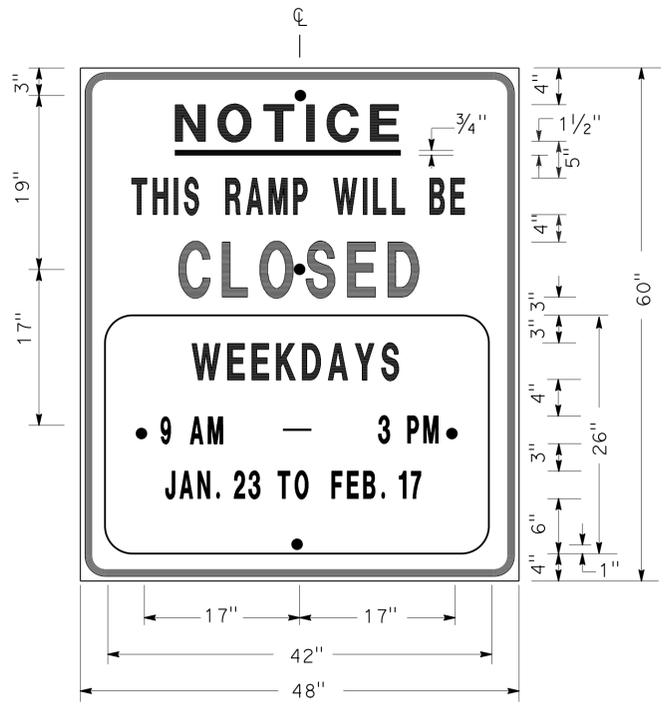
**CS-1**

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

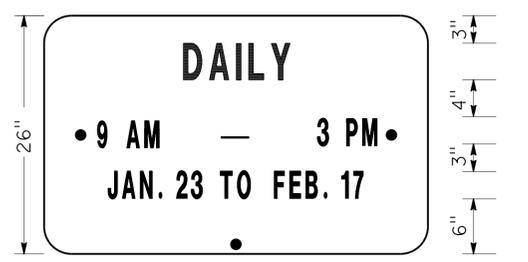
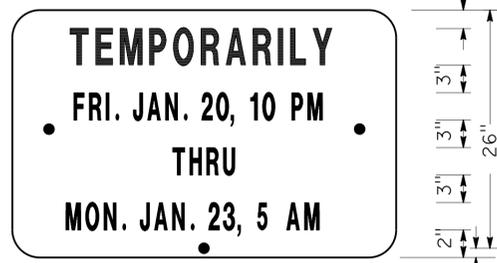
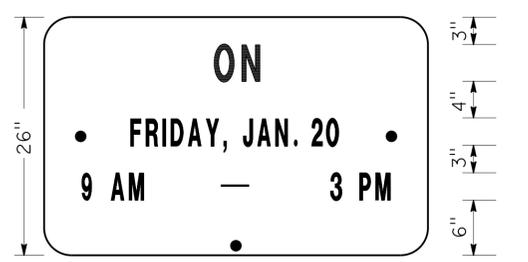
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210	R32.9/R36.5	6	29

REGISTERED CIVIL ENGINEER: *Benjamin Ramos* DATE: 7-18-16  
 PLANS APPROVAL DATE: 9-12-16  
 No. C 61340  
 Exp. 6-30-17  
 CIVIL  
 STATE OF CALIFORNIA

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



SIGN SP-1



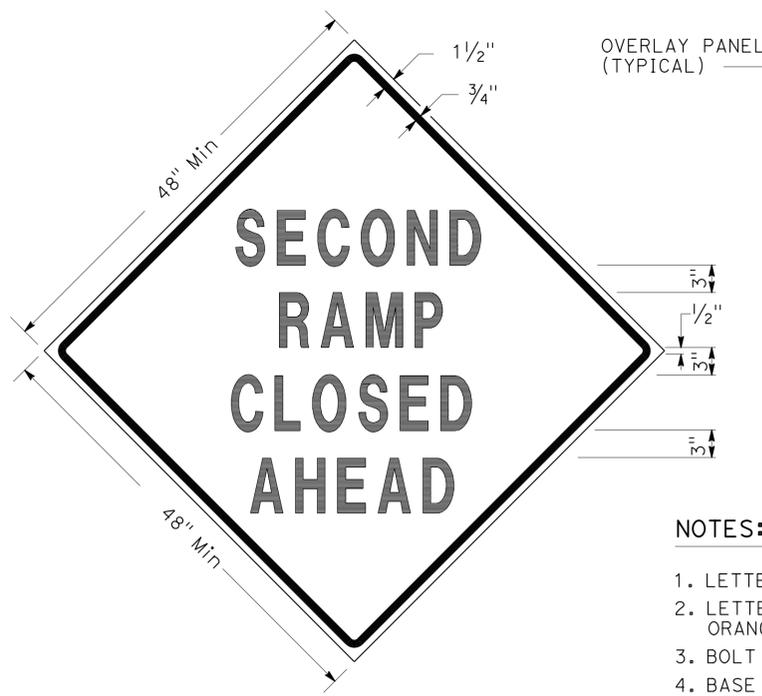
ALTERNATE OVERLAY PANELS (TYPICAL)

- NOTES: SIGN SP-1
- LETTERS AND BORDER MUST BE BLACK ON REFLECTORIZED ORANGE BACKGROUND.
  - BOLT HOLES MUST BE 3/8" DIAMETER.
  - BASE MATERIAL MUST BE ALUMINUM (MINIMUM 0.06").
  - SIGNS MUST BE MOUNTED WITH BOTTOMS OF SIGNS A MINIMUM OF 7' ABOVE GROUND.

SIZE	BORDER WIDTH	MARGIN WIDTH	LETTER SIZE					CORNER RADIUS
			LINE 1	LINE 2*	LINE 3	LINE 4	LINE 5, 6, & 7*	
48"x60"	1 1/4"	3/4"	4E	4D	6E	4D		3"
42"x26"	OVERLAY						3D	1 1/2"

\* CONDENSED SPACING IF NECESSARY

**SPECIAL ADVANCE NOTICE PUBLICITY SIGN**



SIGN SP-3



SIGN SP-5

- NOTES: SIGNS SP-3 & SP-5
- LETTERS - 6" SERIES D.
  - LETTERS AND BORDER MUST BE BLACK ON REFLECTORIZED ORANGE BACKGROUND.
  - BOLT HOLES MUST BE 3/8" DIAMETER.
  - BASE MATERIAL MUST BE ALUMINUM (MINIMUM 0.06").
  - SIGNS MUST BE MOUNTED WITH BOTTOMS OF SIGNS A MINIMUM OF 7' ABOVE GROUND.
  - SIGN SP-5 MUST BE USED IF THE OFF-RAMP TO BE CLOSED FOLLOWS A FREEWAY OFF-CONNECTOR.

**SPECIAL SIGNS FOR EXIT RAMP CLOSURES**



SIGN SP-4

- NOTES: SIGN SP-4
- LETTERS - 6" SERIES C.
  - LETTERS AND BORDER MUST BE BLACK ON REFLECTORIZED WHITE BACKGROUND.
  - BOLT HOLES MUST BE 3/8" DIAMETER.
  - BASE MATERIAL MUST BE ALUMINUM (MINIMUM 0.06").
  - SIGNS MUST BE PLACED AT RAMP ENTRANCES IN ADDITION TO SIGNS POSTED IN ACCORDANCE WITH STANDARD PLAN T14.

**SPECIAL SIGN FOR ENTRANCE RAMP CLOSURES**

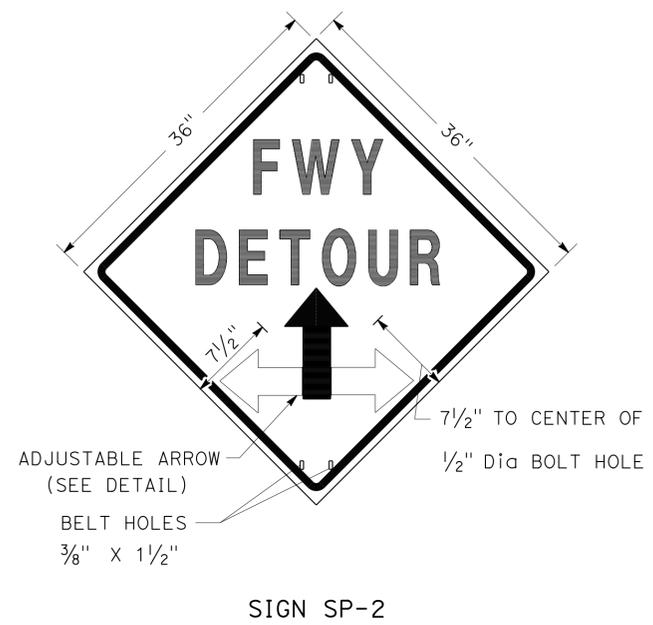
**TRAFFIC HANDLING DETAILS  
 TRAFFIC CONTROL SYSTEM  
 FOR RAMP CLOSURES, DETOUR SIGNS,  
 AND MISCELLANEOUS DETAILS**

SHEET 1 OF 2

NO SCALE

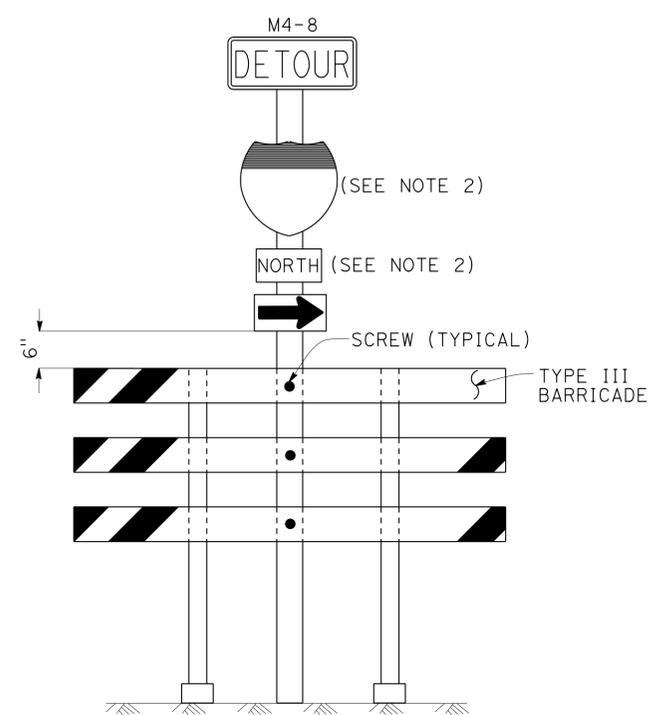
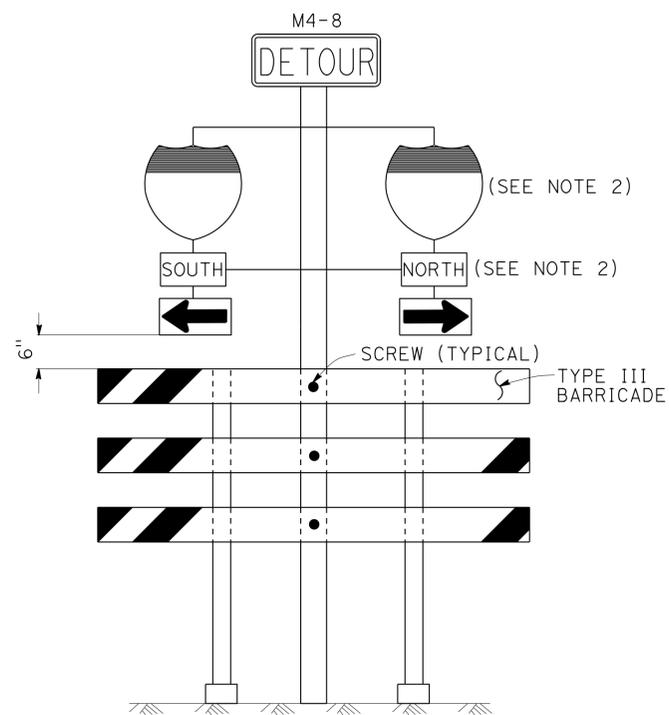
THD-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DTM  
 FUNCTIONAL SUPERVISOR  
 ALI BAMSHAD  
 CHECKED BY  
 ALI BAMSHAD  
 DESIGNED BY  
 BENJAMIN RAMOS  
 REVISOR  
 ALI BAMSHAD  
 DATE  
 2/14  
 JC



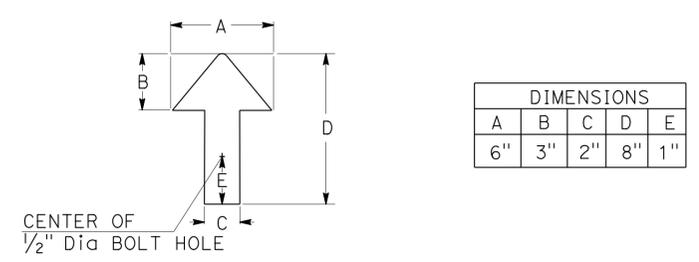
- NOTES:** SIGN SP-2
- LETTERS - 6" SERIES E.
  - LETTERS, BORDER AND ARROW - BLACK ON RETROREFLECTORIZED ORANGE BACKGROUND.
  - BASE MATERIAL FOR SIGNS AND ARROWS MUST BE ALUMINUM (MINIMUM 0.06").
  - BELTS (LUGGAGE STRAPS) MUST BE 1" WIDE BY 48" LONG, MADE OF COTTON OR POLYPROPYLENE WEB MATERIAL.
  - SIGNS MUST BE MOUNTED WITH BOTTOMS OF SIGNS A MINIMUM OF 7' ABOVE GROUND EXCEPT AS OTHERWISE SHOWN ON OTHER TRAFFIC HANDLING DETAILS PLANS.

**ABBREVIATION**  
 (CA) CALIFORNIA CODE



- NOTES:** SIGNS SP-6 & SP-7
- IN LIEU OF PLACING SIGNS ON TYPE III BARRICADES, SIGNS, INCLUDING POSTS, MAY BE PLACED INTO THE GROUND OR FASTENED ONTO ELECTROLIERS.
  - USE APPROPRIATE ROUTE MARKER [G26-2(CA), G27-2(CA), G28-2(CA)] AND CARDINAL DIRECTION [NORTH (M3-1), SOUTH (M3-3), EAST (M3-2), WEST (M3-4)].

**SPECIAL PORTABLE FREEWAY DETOUR SIGNS**



**TRAFFIC HANDLING DETAILS**  
**TRAFFIC CONTROL SYSTEM**  
**FOR RAMP CLOSURES, DETOUR SIGNS,**  
**AND MISCELLANEOUS DETAILS**  
**SHEET 2 OF 2**  
 NO SCALE

**THD-2**

LAST REVISION | DATE PLOTTED => 15-SEP-2016  
 09-12-16 | TIME PLOTTED => 12:59

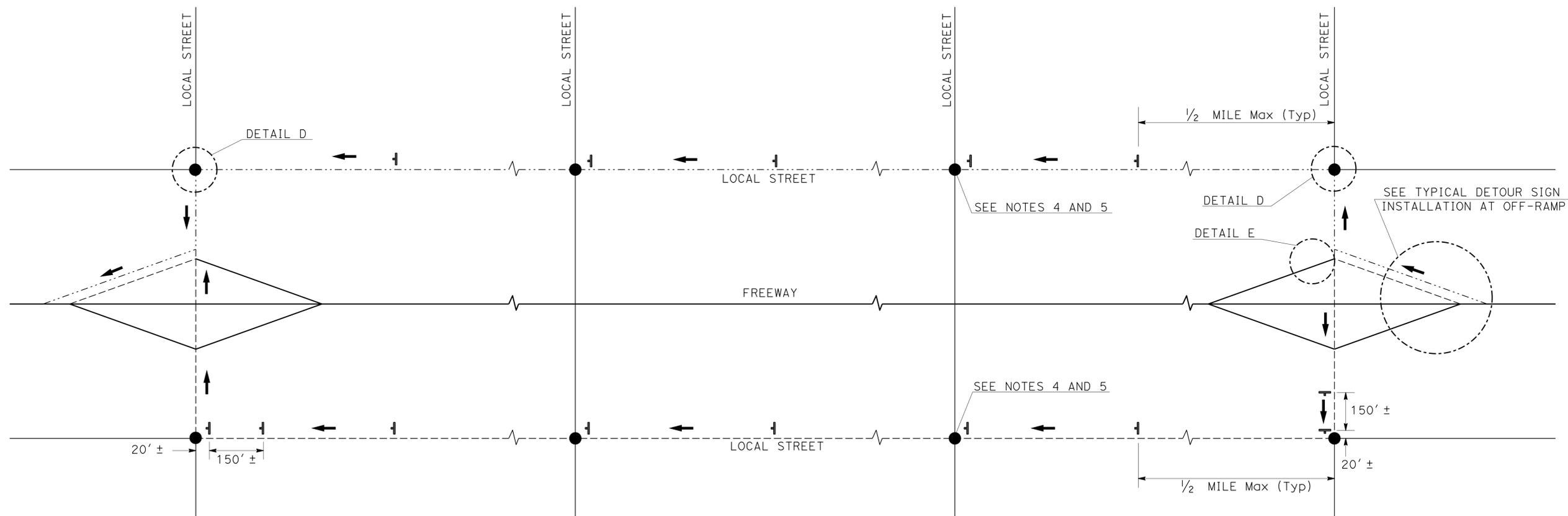
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210	R32.9/R36.5	8	29
			7-18-16	REGISTERED CIVIL ENGINEER DATE	
			9-12-16	PLANS APPROVAL DATE	
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**LEGEND**

- SIGN SP-2
- AND/OR DESIGNATED DETOUR ROUTE
- DETOUR DIRECTION
- CONTROLLED INTERSECTION

**NOTES:**

1. SP-2 SIGNS MAY BE STRAPPED ON EXISTING ELECTROLIER, SIGNAL POST OR SIGN POST.
2. SP-2 SIGNS MUST NOT BE INSTALLED ON BARRICADES EXCEPT AS OTHERWISE SHOWN.
3. SIGN LOCATIONS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.
4. SP-2 SIGNS MUST BE POSTED AT EACH CONTROLLED INTERSECTION (EXCEPT AT COMMERCIAL PROPERTY, RESIDENTIAL COMPLEX OR T-INTERSECTION FROM ONE-WAY STREET) ALONG THE DESIGNATED DETOUR ROUTE.
5. UNLESS OTHERWISE SHOWN ON OTHER THD PLANS, WHEN CONTROLLED INTERSECTIONS ALONG THE DESIGNATED DETOUR ROUTE ARE CLOSELY SPACED, PLACE SP-2 SIGNS AT CONTROLLED INTERSECTIONS AT A DISTANCE NOT TO EXCEED 1/4 MILE FROM THE PRECEDING DETOUR SIGN.
6. EXCEPT AS OTHERWISE SHOWN ON OTHER PLANS OR SPECIFIED IN THE SPECIAL PROVISIONS, SP-2 SIGNS MUST BE PLACED AS SHOWN ON THIS PLAN.



**TYPICAL DETOUR SIGN INSTALLATION ALONG DESIGNATED DETOUR ROUTE**

**TRAFFIC HANDLING DETAILS  
TRAFFIC CONTROL SYSTEM  
FOR DETOUR SIGN INSTALLATION  
ALONG DESIGNATED DETOUR ROUTE  
SHEET 1 OF 2**

NO SCALE

**THD-3**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	BENJAMIN RAMOS	REVISOR	DATE
	ALI BAMSHAD	DESIGNED BY	2/14
FUNCTIONAL SUPERVISOR	ALI BAMSHAD	CHECKED BY	
DTM			







Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210	R32.9/R36.5	11	29
			7-18-16	REGISTERED PROFESSIONAL ENGINEER	
			DATE	BENJAMIN RAMOS	
			9-12-16	No. C 61340	
			PLANS APPROVAL DATE	Exp. 6-30-17	
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

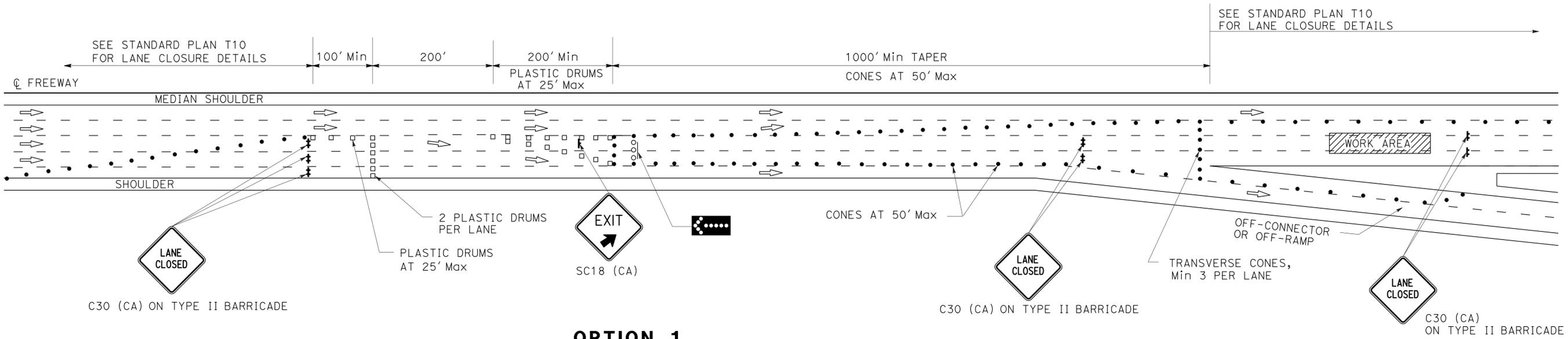
**LEGEND**

- TRAFFIC CONE
- TRAFFIC PLASTIC DRUM
- ⊢ TEMPORARY TRAFFIC CONTROL SIGN
- ⚡ BARRICADES
- ☐ PCMS
- ⬇️ FLASHING ARROW SIGN (FAS)
- ⊖ FAS SUPPORT OR TRAILER

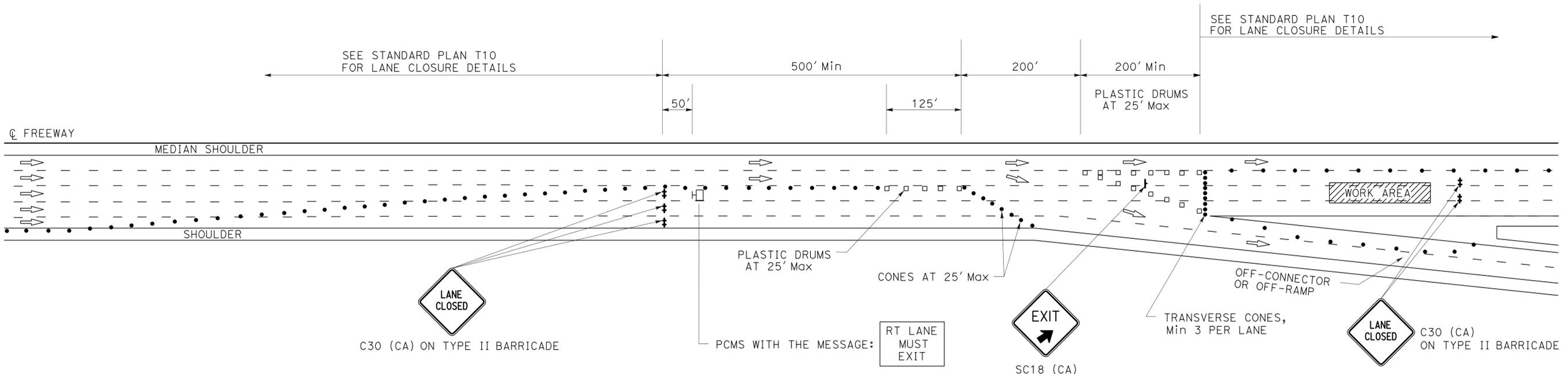
**ABBREVIATIONS**

(CA) CALIFORNIA CODE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans**  
 DT  
 FUNCTIONAL SUPERVISOR: ALI BAMSHAD  
 CALCULATED/DESIGNED BY: BENJAMIN RAMOS  
 CHECKED BY: ALI BAMSHAD  
 REVISED BY: DATE REVISED: 4/16  
 DV: 4/16



**OPTION 1**



**OPTION 2**

**TRAFFIC HANDLING DETAILS  
 TRAFFIC CONTROL SYSTEM  
 FOR SLIP-RAMP AT  
 OFF-CONNECTOR OR OFF-RAMP**

NO SCALE

**THD-6**

LAST REVISION | DATE PLOTTED => 15-SEP-2016  
 09-12-16 | TIME PLOTTED => 12:59

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210	R32.9/R36.5	12	29

REGISTERED CIVIL ENGINEER	DATE
<i>Benjamin Ramos</i>	7-18-16
PLANS APPROVAL DATE	
9-12-16	

REGISTERED PROFESSIONAL ENGINEER
<b>BENJAMIN RAMOS</b>
No. C 61340
Exp. 6-30-17
CIVIL

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**NOTES:**

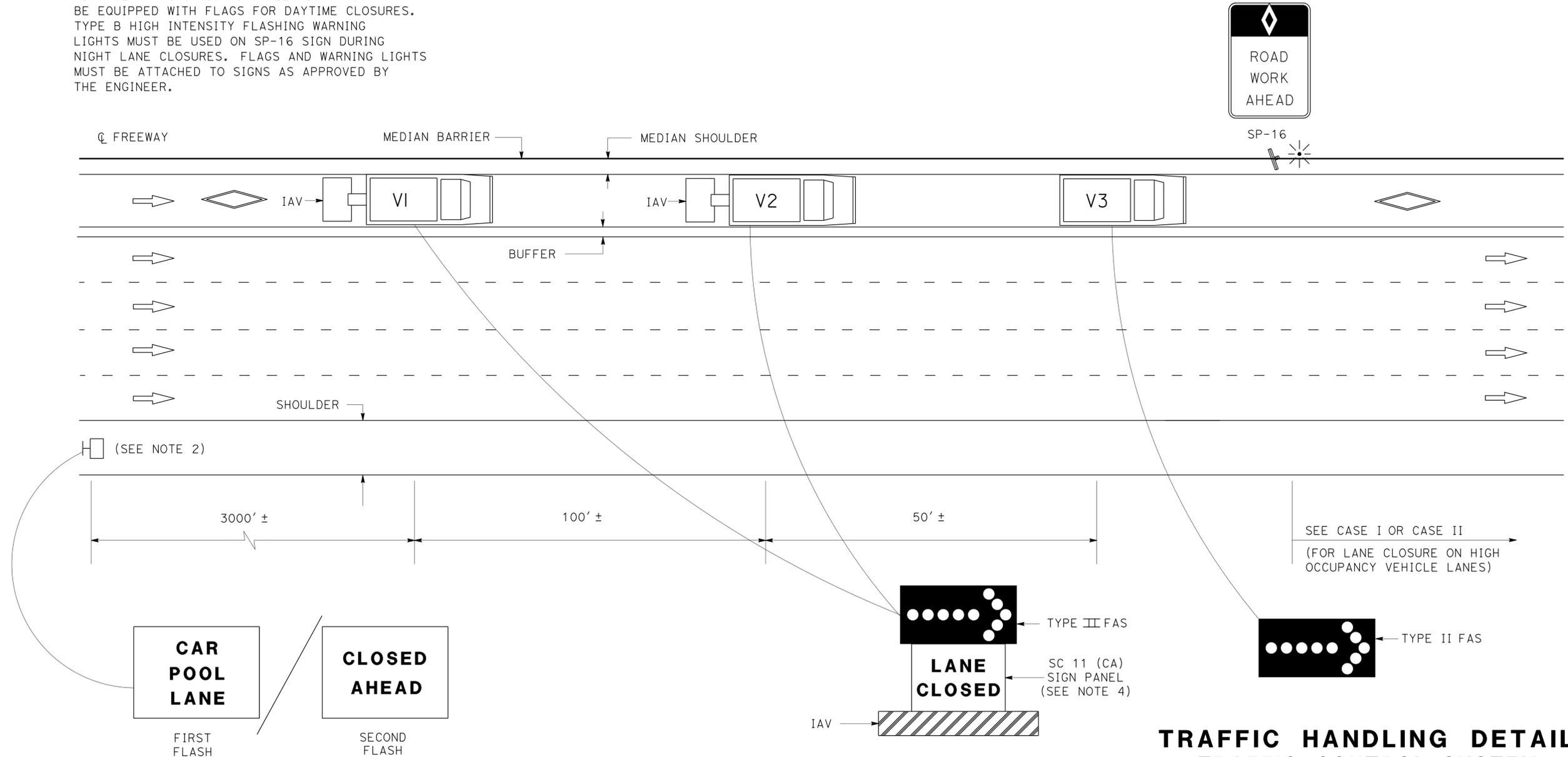
- LANE CLOSURES MUST NOT BE PLACED ON CREST VERTICAL CURVES OR ON HORIZONTAL CURVES.
- PCMS MUST BE ACTIVATED PRIOR TO TRAFFIC CONTROL ACTIVITIES ON THE HOV LANE.
- A MINIMUM SIGHT DISTANCE OF 1500' MUST BE PROVIDED IN ADVANCE OF PCMS.
- VEHICLE-MOUNTED SIGN PANELS MUST BE TYPE III OR IV RETROREFLECTORIZED SHEETING, BLACK ON WHITE OR BLACK ON ORANGE WITH 8" MINIMUM SERIES D LETTERS PER CALTRANS SIGN SPECIFICATIONS.
- PLACE PCMS ON THE MEDIAN SHOULDER WHERE SUFFICIENT ROOM (SUCH AS CHP ENFORCEMENT AREAS) EXISTS.
- ADVANCE WARNING SIGN INSTALLATIONS MUST BE EQUIPPED WITH FLAGS FOR DAYTIME CLOSURES. TYPE B HIGH INTENSITY FLASHING WARNING LIGHTS MUST BE USED ON SP-16 SIGN DURING NIGHT LANE CLOSURES. FLAGS AND WARNING LIGHTS MUST BE ATTACHED TO SIGNS AS APPROVED BY THE ENGINEER.

**LEGEND**

- V1, V2 SHADOW VEHICLES
- V3 WORK/APPLICATION VEHICLE
- PCMS
- PORTABLE FLASHING BEACON
- TEMPORARY TRAFFIC CONTROL SIGN
- FLASHING ARROW SIGN (FAS)

**ABBREVIATIONS**

- IAV IMPACT ATTENUATOR VEHICLE
- (CA) CALIFORNIA CODE
- CHP CALIFORNIA HIGHWAY PATROL



**PCMS OR TRUCK MOUNTED CMS MESSAGE**

(SEE NOTE 5)

**TRAFFIC HANDLING DETAILS  
TRAFFIC CONTROL SYSTEM  
FOR HIGH OCCUPANCY VEHICLE LANES  
WITH MEDIAN SHOULDERS LESS THAN 8 FEET**

NO SCALE

**THD-7**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
DTM

BENJAMIN RAMOS  
ALI BAMSHAD

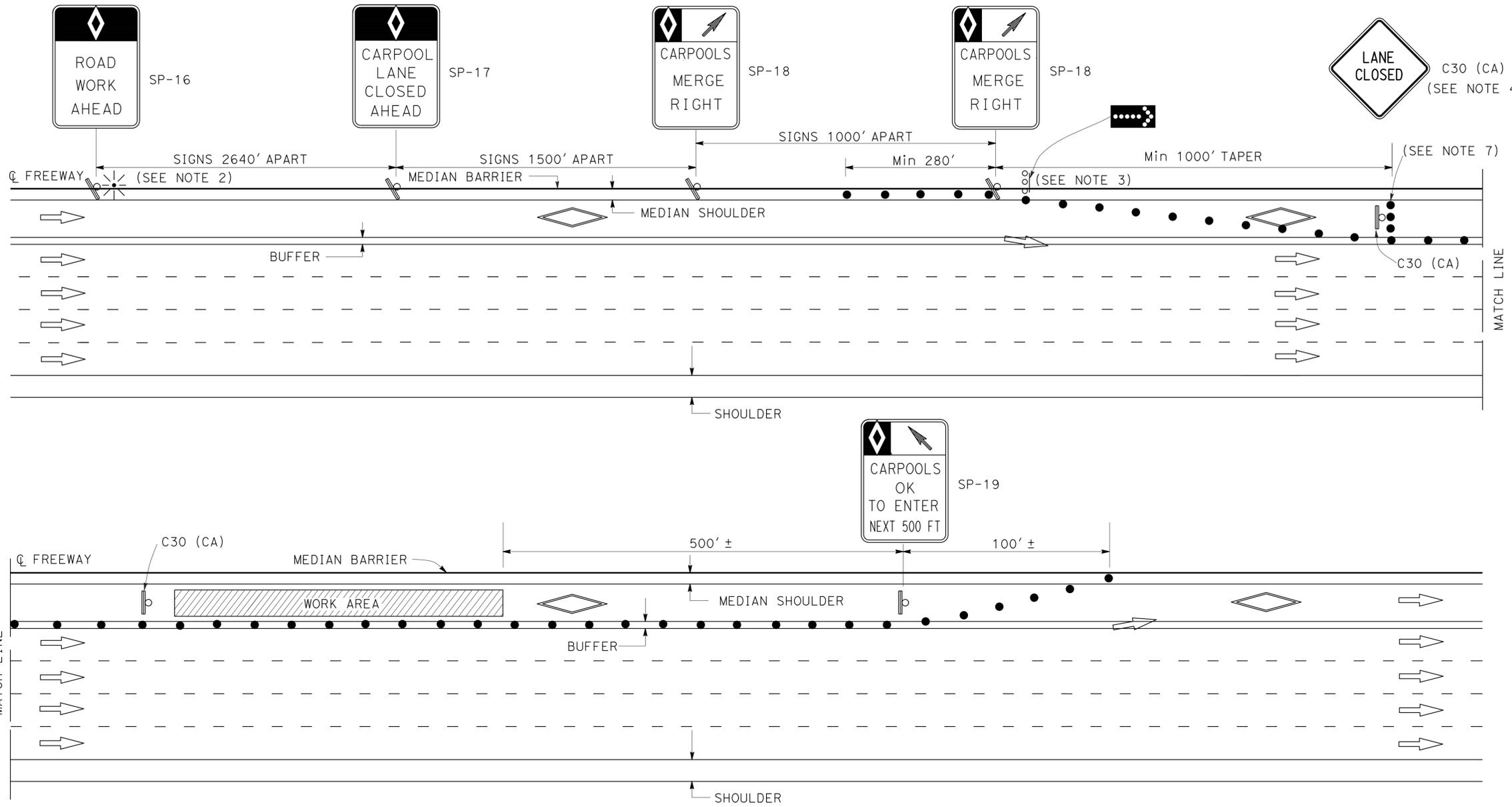
REVISOR BY  
DATE REVISED

JC  
2/14

CALCULATED/DESIGNED BY  
CHECKED BY

FUNCTIONAL SUPERVISOR  
ALI BAMSHAD

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210	R32.9/R36.5	13	29
			7-18-16	REGISTERED CIVIL ENGINEER DATE	
			9-12-16	PLANS APPROVAL DATE	
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- LEGEND**
- TRAFFIC CONE
  - ☼ PORTABLE FLASHING BEACON
  - Ⓟ TEMPORARY TRAFFIC CONTROL SIGN
  - Ⓜ FLASHING ARROW SIGN (FAS)
  - Ⓜ FAS SUPPORT OR TRAILER

**ABBREVIATIONS**

(CA) CALIFORNIA CODE

**SIGN PANEL SIZE (MIN)**

SP-16	36" X 54"
SP-17	36" X 54"
SP-18	36" X 48"
SP-19	36" X 60"
C30 (CA)	30" X 30"
G20-2	48" X 24"

**NOTES: FOR CASE I AND CASE II**

1. AT LEAST ONE PERSON MUST BE ASSIGNED TO FULL TIME MAINTENANCE OF TRAFFIC CONTROL DEVICES ON NIGHT LANE CLOSURES OR DAY-TIME CLOSURES EXCEEDING 1 MILE LENGTH, INCLUDING TAPERS.
2. ADVANCE WARNING SIGN INSTALLATIONS MUST BE EQUIPPED WITH FLAGS FOR DAYTIME CLOSURES. TYPE B HIGH INTENSITY FLASHING WARNING LIGHTS MUST BE USED ON SP-16 SIGN DURING NIGHT LANE CLOSURES. FLAGS AND WARNING LIGHTS MUST BE ATTACHED TO SIGNS AS APPROVED BY THE ENGINEER.
3. THE FLASHING ARROW SIGN MUST BE TYPE I.
4. PLACE C30 (CA) SIGNS EVERY 2000' THROUGHOUT THE LENGTH OF LANE CLOSURE.
5. A MINIMUM 1500' OF SIGHT DISTANCE MUST BE PROVIDED WHERE POSSIBLE FOR VEHICLES APPROACHING THE FLASHING ARROW SIGN. LANE CLOSURES MUST NOT BE PLACED ON CREST VERTICAL CURVES OR ON HORIZONTAL CURVES.
6. PORTABLE DELINEATORS PLACED AT ONE-HALF THE SPACING INDICATED FOR TRAFFIC CONES MAY BE USED INSTEAD OF CONES FOR DAYTIME CLOSURES.
7. A MINIMUM OF 3 CONES MUST BE PLACED TRANSVERSELY ACROSS CLOSED LANES WHERE TAPERS END AND EVERY 2000'. TWO TYPE II BARRICADES MAY BE USED INSTEAD OF 3 CONES. THE ALIGNMENT OF CONES OR BARRICADES MAY BE SHIFTED FROM THE TRANSVERSE ALIGNMENT TO PROVIDE ACCESS TO WORK.
8. IF AN INGRESS/EGRESS AREA IS WITHIN 5250' UPSTREAM OR DOWNSTREAM OF THE WORK AREA, LANE CLOSURES MUST BE EXTENDED TO THAT AREA AS SHOWN IN CASE II.
9. SIGNS SP-16, 17, 18, AND 19 MAY BE OVERLAID ON EXISTING CARPOOL SIGNS IN MEDIANS AS APPROVED BY THE ENGINEER.
10. SIGNS SP-16, 17, 18, AND C30 (CA) MUST BE BLACK ON ORANGE BACKGROUND. SIGN SP-19 MUST BE BLACK ON WHITE BACKGROUND. DIAMONDS ON SIGNS MUST BE WHITE.
11. FOR CLOSURE OF LANE(S) ADJACENT TO HOV LANES, SEE CASE II.
12. THE MAXIMUM SPACING BETWEEN CONES MUST BE APPROXIMATELY 50' IN TAPERS AND 100' ON TANGENTS.

**TRAFFIC HANDLING DETAILS  
TRAFFIC CONTROL SYSTEM  
FOR HIGH OCCUPANCY VEHICLE LANES  
AT NON-INGRESS/EGRESS AREAS  
CASE I**

NO SCALE

**THD-8**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
DTM  
BORDER LAST REVISED 7/2/2010

USERNAME => s122436  
DGN FILE => 73w500me008.dgn

RELATIVE BORDER SCALE IS IN INCHES  
0 1 2 3

UNIT 1887

PROJECT NUMBER & PHASE

07160001631

LAST REVISION DATE PLOTTED => 15-SEP-2016  
09-12-16 TIME PLOTTED => 12:59

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210	R32.9/R36.5	14	29

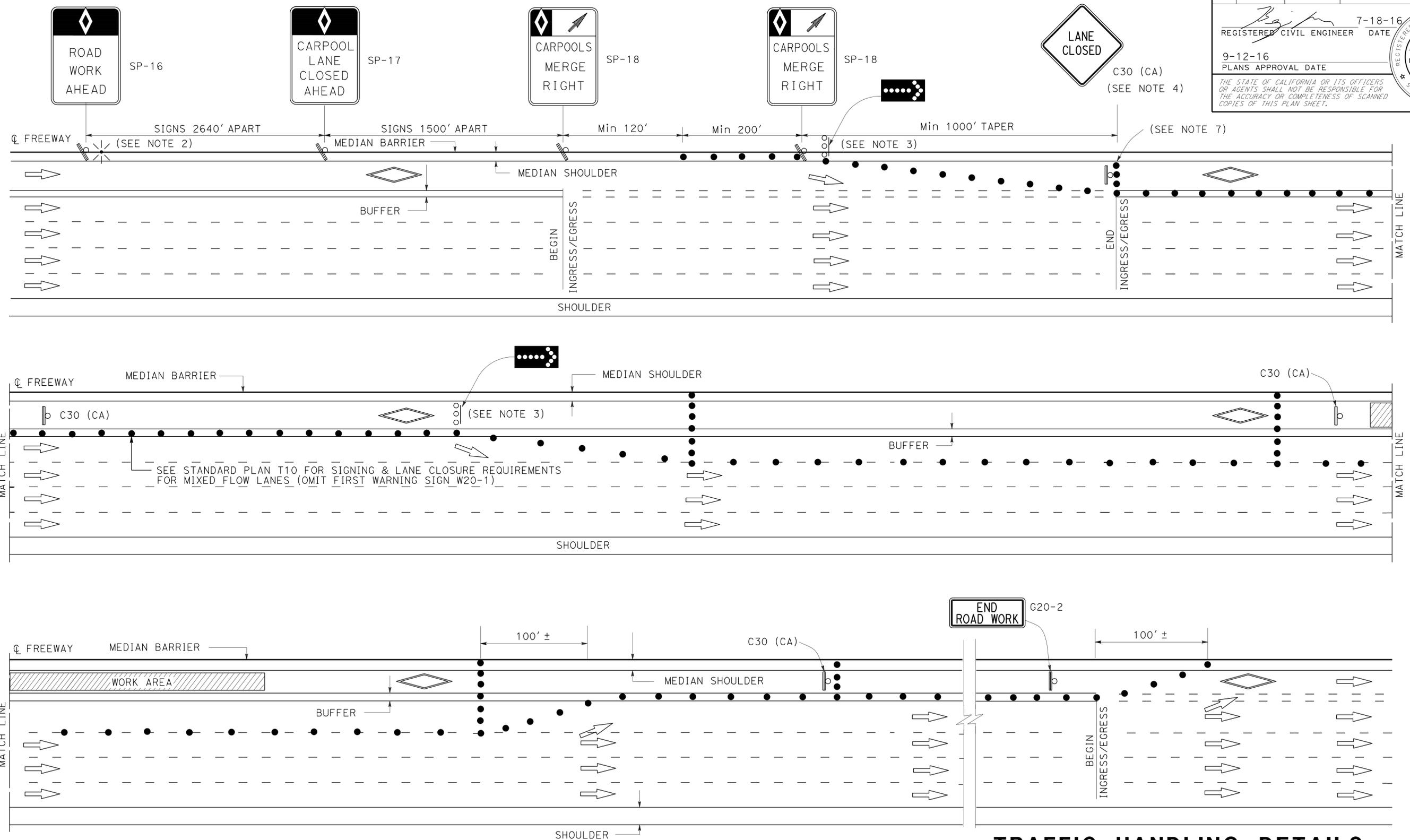
  

REGISTERED CIVIL ENGINEER	DATE	7-18-16
PLANS APPROVAL DATE		
9-12-16		

REGISTERED PROFESSIONAL ENGINEER	No. C. 61340
Exp. 6-30-17	CIVIL

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



**NOTES:**

- SEE CASE I FOR NOTES, LEGEND, SIGN PANEL, AND ABBREVIATIONS FOR THIS SHEET.
- CLOSURES OF ONE MIXED FLOW TRAFFIC LANE ADJACENT TO HOV LANE SHOWN ON THIS SHEET. MULTIPLE MIXED FLOW LANE CLOSURES ARE SIMILAR.

**TRAFFIC HANDLING DETAILS  
TRAFFIC CONTROL SYSTEM  
FOR HIGH OCCUPANCY  
VEHICLE LANES AND ADJACENT FREEWAY LANES  
BETWEEN INGRESS/EGRESS AREAS**

**CASE II**  
NO SCALE

**THD-9**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
DTM  
Benjamin Ramos  
Ali Bamshad  
4/16

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210	R32.9/R36.5	15	29

REGISTERED CIVIL ENGINEER *Benjamin Ramos* DATE 7-18-16  
 9-12-16 PLANS APPROVAL DATE  
 REGISTERED PROFESSIONAL ENGINEER  
 BENJAMIN RAMOS  
 No. C 61340  
 Exp. 6-30-17  
 CIVIL  
 STATE OF CALIFORNIA  
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

**NOTES:**

- EXACT LOCATION OF PCMS WILL BE DETERMINED BY THE ENGINEER TO PROVIDE ADEQUATE VISIBILITY.
- PCMS MESSAGE DISPLAYED WILL BE APPROVED BY THE ENGINEER.
- PCMS MESSAGE MUST BE CHANGED AT THE BEGINNING OF CURE PERIOD TO REFLECT NUMBER OF CLOSED LANES.

**ABBREVIATIONS**

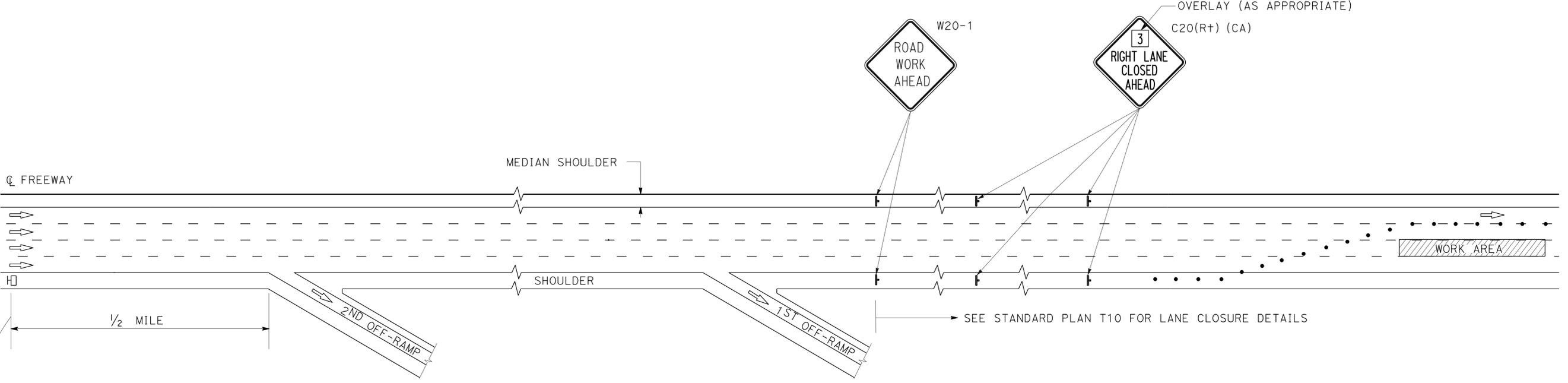
(CA) CALIFORNIA CODE

**LEGEND**

- TRAFFIC CONE
- ⊥ TEMPORARY TRAFFIC CONTROL SIGN
- ☐ PCMS

CALCULATED/DESIGNED BY	BENJAMIN RAMOS
CHECKED BY	ALI BAMSAD
FUNCTIONAL SUPERVISOR	ALI BAMSAD
DEPARTMENT OF TRANSPORTATION	DTM
STATE OF CALIFORNIA	Caltrans

DIVISION	DV
DATE	4/16
REVISIONS	



FIRST FLASH	<b>X (NO OF LANES) RIGHT / LEFT</b>	← 1ST LINE (TYPICAL)
	<b>LANES</b>	← 2ND LINE (TYPICAL)
	<b>CLOSED</b>	← 3RD LINE (TYPICAL)
SECOND FLASH	<b>A ST</b>	← LIMIT OF CLOSURE (TYPICAL)
	<b>TO B DR</b>	← LIMIT OF CLOSURE (TYPICAL)

**WORDING FORMAT FOR PCMS MESSAGE**

**TRAFFIC HANDLING DETAILS  
TRAFFIC CONTROL SYSTEM  
FOR CONCRETE PAVEMENT  
REPLACEMENT**

NO SCALE

**THD-10**

LAST REVISION DATE PLOTTED => 15-SEP-2016 09-12-16 TIME PLOTTED => 12:59

**LEGEND:**

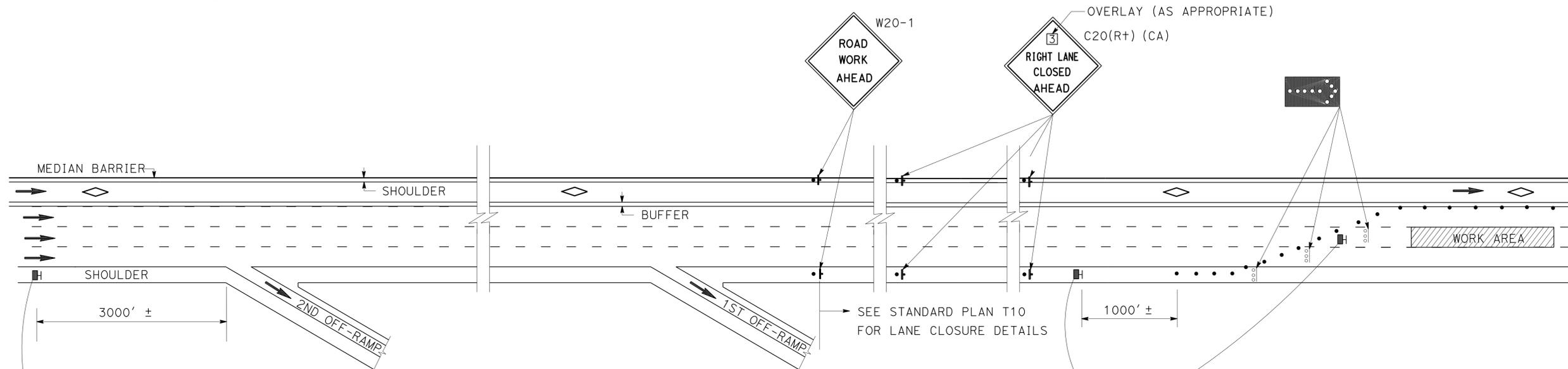
- CONE
- ▬ PORTABLE SIGN
- DIRECTION OF TRAVEL
- ▬ PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)
- ◇ HOV LANE
- ◼ FLASHING ARROW SIGN (FAS)
- FAS SUPPORT OR TRAILER

**NOTES:**

1. WORDING DISPLAYED ON PCMS WILL BE APPROVED BY THE ENGINEER.
2. EXACT LOCATIONS OF PCMS WILL BE DETERMINED BY THE ENGINEER.
3. CHANGE PCMS MESSAGE AT THE BEGINNING OF CURE PERIOD TO REFLECT NUMBER OF CLOSED LANES.

**ABBREVIATIONS:**

- PCMS PORTABLE CHANGEABLE MESSAGE SIGN  
 (CA) CALIFORNIA CODE



FIRST FLASH MESSAGE	<b>X (NO OF LANES) RIGHT / LEFT</b>	← 1ST LINE (TYPICAL)
	<b>LANES</b>	← 2ND LINE (TYPICAL)
SECOND FLASH MESSAGE	<b>CLOSED</b>	← 3RD LINE (TYPICAL)
	<b>A ST</b>	← LIMIT OF CLOSURE (TYPICAL)
	<b>TO</b>	
	<b>B DR</b>	← LIMIT OF CLOSURE (TYPICAL)

FIRST FLASH MESSAGE	<b>ALL TRAFFIC</b>	← 1ST LINE (TYPICAL)
		← 2ND LINE (TYPICAL)
SECOND FLASH MESSAGE	<b>OK USE</b>	← 1ST LINE (TYPICAL)
	<b>CARPOOL</b>	← 2ND LINE (TYPICAL)
	<b>LANE</b>	← 3RD LINE (TYPICAL)

**TRAFFIC HANDLING DETAILS**  
**TRAFFIC CONTROL SYSTEM**  
**WITH HIGH OCCUPANCY VEHICLE LANES**  
**FOR PORTABLE CHANGEABLE MESSAGE SIGN LOCATIONS**  
**FOR CONCRETE PAVEMENT REPLACEMENT**

NO SCALE

**THD-11**

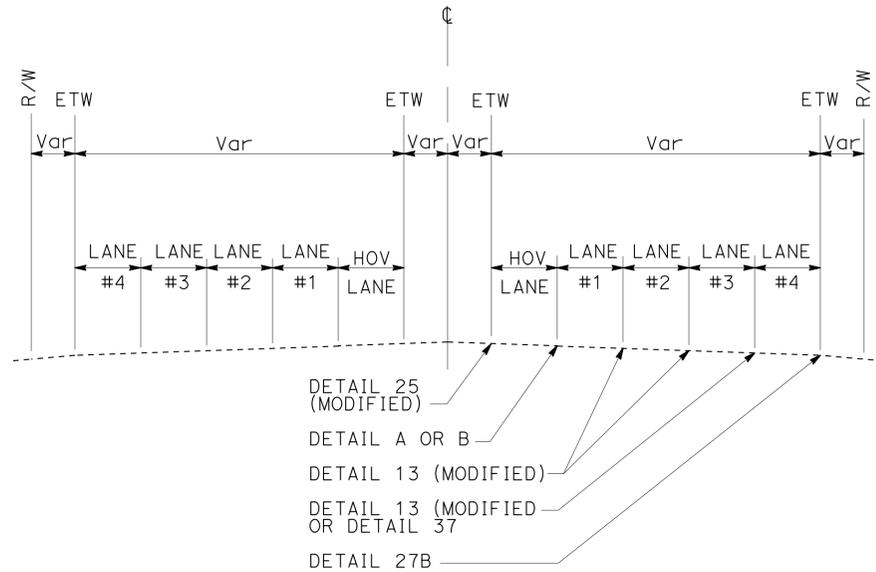
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210	R32.9/R36.5	17	29
			8-25-16	REGISTERED CIVIL ENGINEER DATE	
			9-12-16	PLANS APPROVAL DATE	
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

**NOTES:**

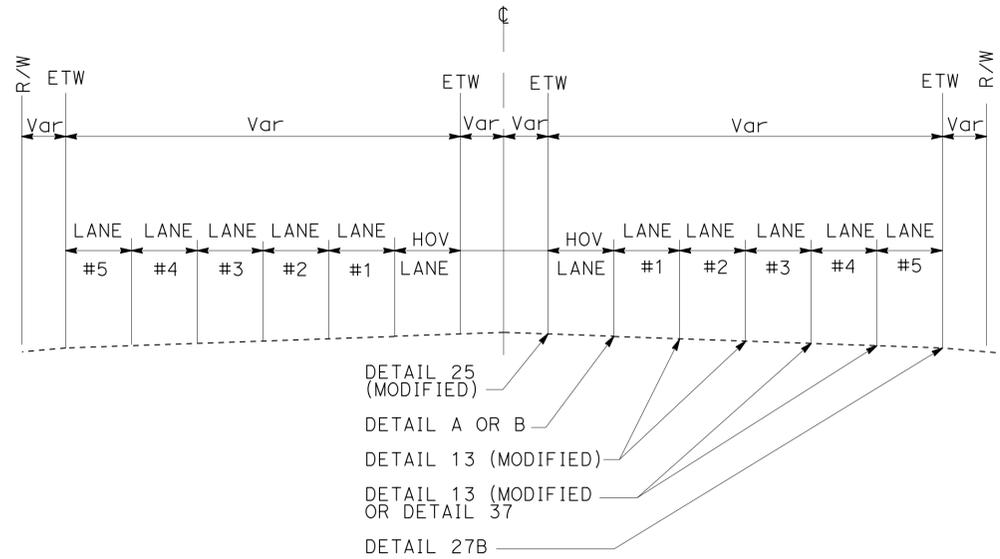
- SEE PAVEMENT DELINEATION QUANTITIES FOR LOCATION AND TYPES OF TRAFFIC STRIPES AND PAVEMENT MARKINGS TO BE PLACED.
- CONFLICT STRIPING SHALL BE REMOVED.

**LEGEND:**

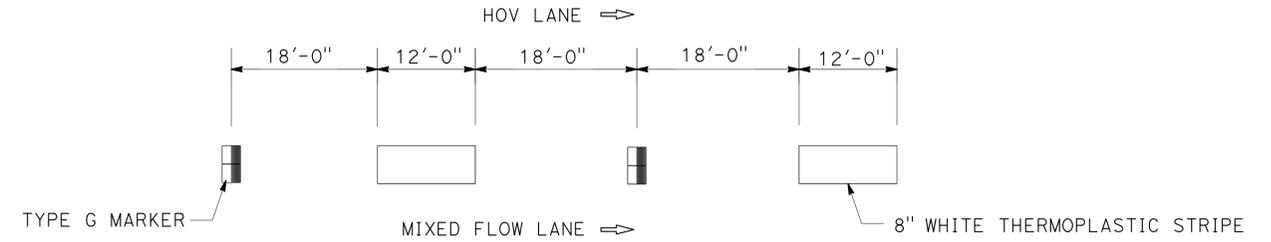
- 4" PAINT TRAFFIC STRIPE (2-COAT) BLACK
- 4" YELLOW THERMOPLASTIC STRIPE



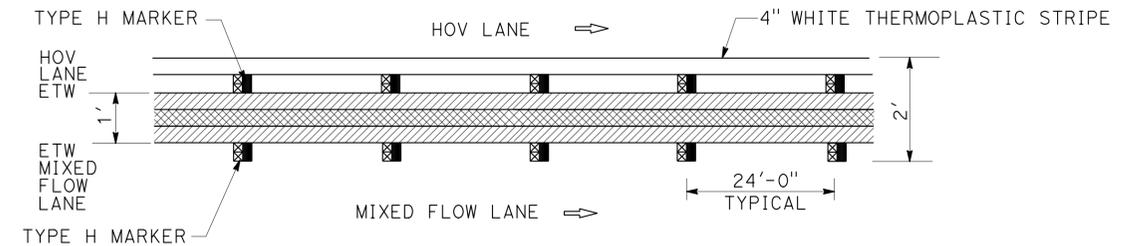
**FIVE-LANE FREEWAY SEGMENT**  
(EASTBOUND DIRECTION ONLY)



**SIX-LANE FREEWAY SEGMENT**  
(EASTBOUND DIRECTION ONLY)



**DETAIL B - INGRESS/EGRESS STRIPING**

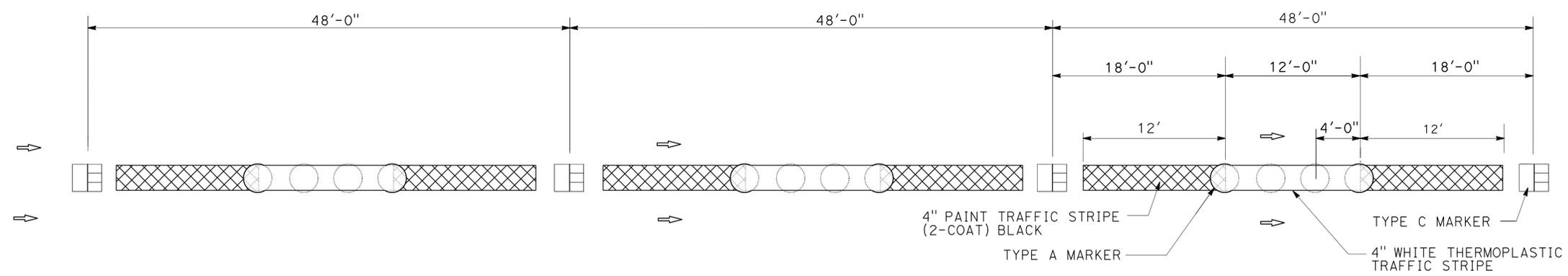


**DETAIL A - HOV BUFFER STRIPING**  
BUFFER WIDTH-1 FEET

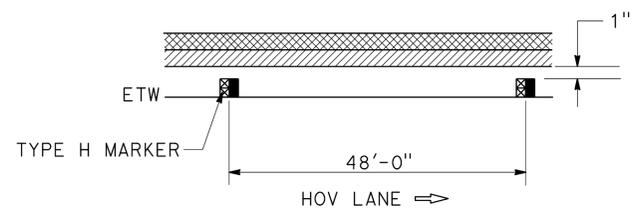
**PAVEMENT DELINEATION DETAILS**  
NO SCALE

**PDD-1**

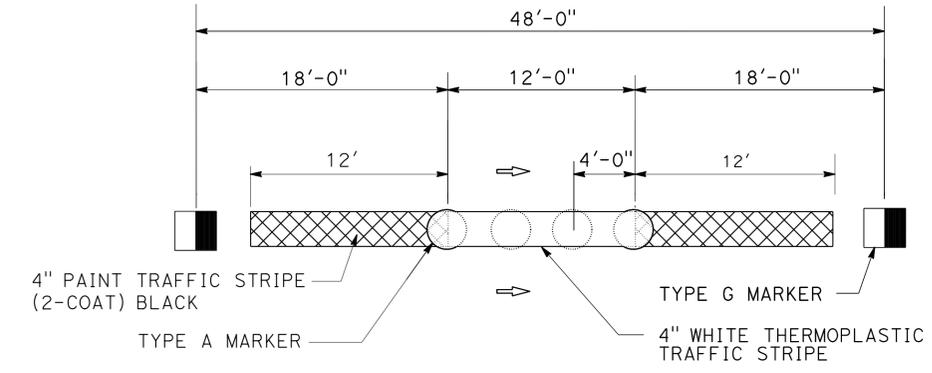
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210	R32.9/R36.5	18	29
			8-25-16	REGISTERED CIVIL ENGINEER DATE	
			9-12-16	PLANS APPROVAL DATE	
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.					



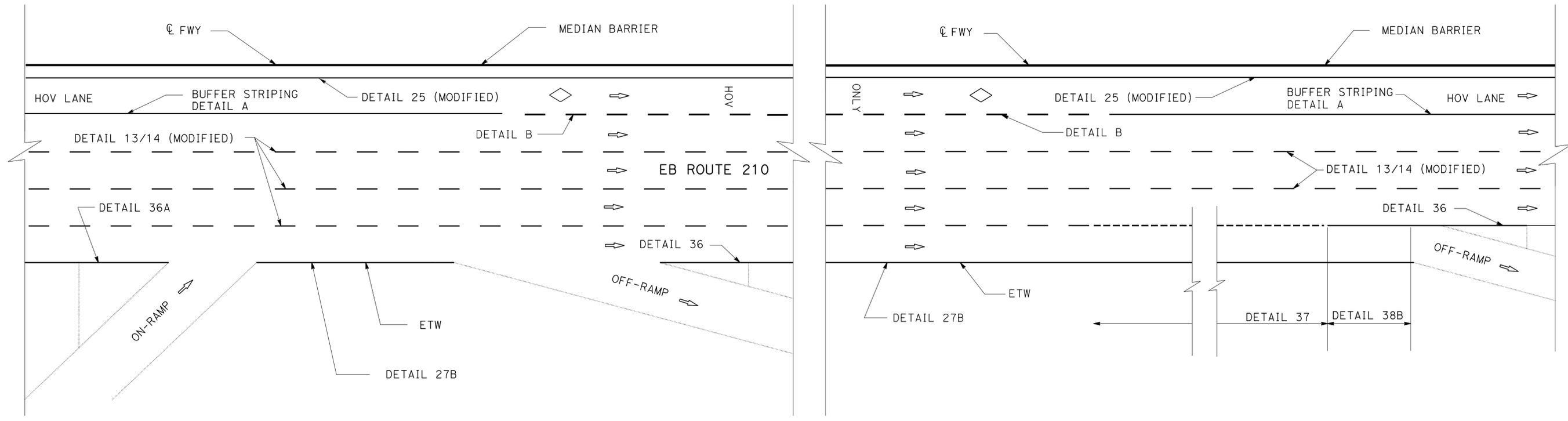
**DETAIL 14 (MODIFIED)**



**DETAIL 25 (MODIFIED)**



**DETAIL 13 (MODIFIED)**



**RAMP      MAINLINE LANE DROP TO A ONE LANE EXIT      PAVEMENT DELINEATION DETAILS**  
NO SCALE

**PDD-2**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** MAINTENANCE ENGINEERING  
 FUNCTIONAL SUPERVISOR: LARRY WIERING  
 BIPIN PATEL  
 LARRY WIERING  
 REVISOR: BIPIN PATEL  
 DATE: 8-25-16  
 DESIGNED BY: LARRY WIERING  
 CHECKED BY: LARRY WIERING  
 REVISIONS: 09-12-16

USERNAME => s122436  
DGN FILE => 73w500nb002.dgn



UNIT 1963      PROJECT NUMBER & PHASE      07160001631

LAST REVISION: DATE PLOTTED => 15-SEP-2016  
 09-12-16 TIME PLOTTED => 12:59

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210	R32.9/R36.5	19	29
			8-25-16	REGISTERED CIVIL ENGINEER DATE	
			9-12-16	PLANS APPROVAL DATE	



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

<b>PAVEMENT DELINEATION QUANTITIES</b>																			
DIRECTION	DESCRIPTION	THERMOPLASTIC TRAFFIC STRIPE										THERMOPLASTIC PAVEMENT MARKING (DIAGONALS, SYMBOLS, WORDS)	PAVEMENT MARKER				REMOVE PAVEMENT MARKER	REMOVE YELLOW THERMOPLASTIC TRAFFIC STRIPE (HAZARDOUS WASTE)	PAINT TRAFFIC STRIPE (2-COAT)
		4"				4" BROKEN (17-7)	8" BROKEN (36-12)	4" BROKEN (36-12)		8" BROKEN (12-3)	8"		RETROREFLECTIVE			NON-REFLECTIVE			
		WHITE	YELLOW	WHITE	YELLOW	DETAIL 8	DETAIL B	DETAIL 13 (MODIFIED)	DETAIL 14 (MODIFIED)	DETAIL 37	DETAIL 36		TYPE G	TYPE C	TYPE H	TYPE A			
		DETAIL A	DETAIL 27B	DETAIL 25 (MODIFIED)	EA														
LF		LF		LF		LF	LF	SQFT	EA			EA	EA	LF	LF				
EB	PM R32.9 TO PM R33.1	1,056	2,112	370	1,056			3,168					69		113	276	458	3,168	1,656
EB	PM R33.1 TO PM R33.4	1,584	3,168	1,584	1,584			4,752		1,584			210		168	408	786	4,752	2,448
EB	PM R33.4 TO PM R33.7	1,584	3,168		1,584			4,752		1,275	280		216	8	168	408	800	4,752	2,448
EB	PM R33.7 TO PM R34.2	2,640	5,280	2,500	2,640	100		9,120	1,296		275	67	214	30	327	804	1,375	9,120	4,032
EB	PM R34.2 TO PM R34.5	1,584	3,168		1,584			3,900	864	950	260		192	20	141	348	701	3,900	2,448
EB	PM R34.5 TO PM R35.1	3,168	6,336	2,710	3,168		710	9,090	432		285	201	256	12	266	792	1,326	7,690	4,824
EB	PM R35.1 TO PM R35.5	2,112	4,224	880	2,112		605	7,335		1,570		134	300		214	648	1,162	6,125	2,160
EB	PM R35.5 TO PM R36.3	4,224	8,448	3,310	4,224			12,105		1,815	1,455	89	484	16	432	1,056	1,988	12,105	6,408
EB	PM R36.3 TO PM R36.5	1,056	2,112	1,150	1,056			3,495			1,150	67	128		126	312	566	3,495	1,656
SUB TOTAL		19,008	38,016	12,504	19,008	100	1,315	57,717	2,592	7,194	3,705	558	2,069	86	1,955	5,052	9,162	55,107	28,080
TOTAL		88,536				100	1,315	60,309		7,194	3,705	558	4,110			5,052	9,162	55,107	28,080

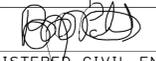
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** MAINTENANCE ENGINEERING  
 FUNCTIONAL SUPERVISOR: LARRY WIERING  
 CALCULATED/DESIGNED BY: BIPIN PATEL  
 CHECKED BY: LARRY WIERING  
 REVISED BY: BIPIN PATEL  
 DATE REVISED:

## PAVEMENT DELINEATION QUANTITIES

### PDQ-1

LAST REVISION DATE PLOTTED => 15-SEP-2016  
 09-12-16 TIME PLOTTED => 12:59

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210	R32.9/R36.5	20	29


 8-25-16  
 REGISTERED CIVIL ENGINEER DATE

9-12-16  
 PLANS APPROVAL DATE

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



**NOTES:**

- WEAKENED PLANE JOINT TO WEAKEND PLANE JOINT CONSTITUTES ONE SLAB.
- SLAB NUMBER AND LOCATION IS APPROXIMATE, THE EXACT NUMBER WILL BE DETERMINED BY THE ENGINEER.

**ABBREVIATION:**

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

**SLAB REPLACEMENT QUANTITIES**

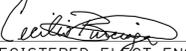
SLAB APPROXIMATE LOCATION		NUMBER OF SLABS (N)						INDIVIDUAL SLAB REPLACEMENT (RSC)	GRIND EXISTING CONCRETE PAVEMENT	DRILL AND BOND (TIE BARS)	DRILL AND BOND (DOWEL BARS)
FROM	TO	No. 1 LANE	No. 2 LANE	No. 3 LANE	No. 4 LANE	No. 5 LANE	No. 6 LANE				
PM	PM	EA	EA	EA	EA	EA	EA	CY	SQYD	EA	EA
R32.9	R33.1	2	1	3	3			51.3	7,040	90	216
R33.1	R33.4		2	17	22	2		245.1	12,672	456	732
R33.4	R33.7		2	12	10			136.8	10,560	228	408
R33.7	R34.2	1	4	33	26			364.8	17,600	660	1,140
R34.2	R34.5		2	5	5			68.4	10,560	114	288
R34.5	R35.1			20	13			188.1	21,120	318	792
R35.1	R35.5	4	8	42	19			416.1	14,080	786	1,368
R35.5	R36.3	2	2	19	9	5	1	216.6	35,200	414	864
R36.3	R36.5		2	9	10			119.7	7,040	144	420
<b>SUB TOTAL</b>		9	23	160	117	7	1	1,806.9	135,872	3,210	6,228
<b>TOTAL</b>		317						1,806.9	135,872	3,210	6,228

**SUMMARY OF QUANTITIES**

**Q-1**

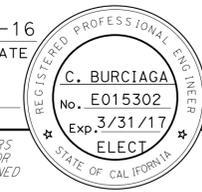


Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210	R32.9/R36.5	22	29

 8-3-16  
 REGISTERED ELECT ENGINEER DATE

9-12-16  
 PLANS APPROVAL DATE

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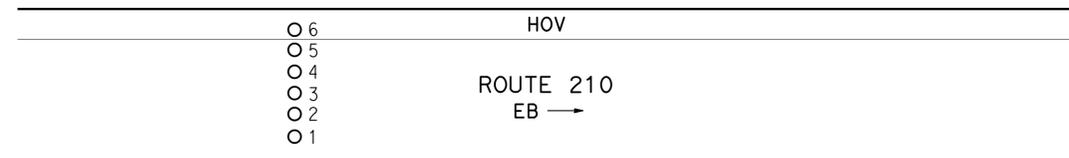


**NOTES: (SHEETS E-1 THRU E-2)**

1. INSTALL 2" C STUBOUTS. ABANDON Exist STUBOUTS.
2. PRIOR TO CONSTRUCTION, LOCATE Exist LOOP DETECTORS.
3. SPLICE NEW LOOP DETECTORS TO Exist DLC IN ADJACENT PULL BOX.
4. TAG Exist DLC IN ADJACENT PULL BOX AND AT CONTROLLER CABINET.

LOOP TABLE (ROUTE 210)								
Approx PM	LOCATION EASTBOUND ON RAMPS	SEE DETAIL A THIS SHEET FOR TYPICAL LOCATION OF LOOP DETECTORS						No. OF STUBOUTS (RESET)
		1	2	3	4	5	6	
R32.9	EB ROUTE 210 W OF HUNTINGTON Dr UC	X	X	X	X	X		1
R33.1	EB ROUTE 210 E OF HUNTINGTON Dr UC	X	X	X	X	X		1
R34.1	EB ROUTE 210 E OF MYRTLE Ave	X	X	X	X	X		1
R35.2	EB ROUTE 210 W OF BUENA VISTA St	X	X	X	X	X		1
R35.4	EB ROUTE 210 E OF BUENA VISTA St	X	X	X	X	X		1
R36.3	EB ROUTE 210 W OF ROUTE 605	X	X	X	X	X	X	1

X - INSTALL TYPE E LOOP DETECTOR. ABANDON Exist LOOP DETECTOR AT SAME LOCATION.



DETAIL A  
TYPICAL LOOP DETECTOR INSTALLATION

**MODIFYING RAMP METERING SYSTEM**

**MODIFYING EXISTING  
ELECTRICAL SYSTEM**

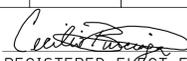
NO SCALE

**E-1**

APPROVED FOR ELECTRICAL WORK ONLY

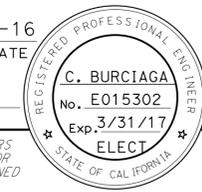
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** TRAFFIC DESIGN  
 QUINCIE TRAN  
 CECILIO BURCIAGA  
 CALCULATED-DESIGNED BY  
 CHECKED BY  
 FUNCTIONAL SUPERVISOR  
 YI TSAU  
 REVISOR BY  
 DATE REVISOR

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210	R32.9/R36.5	23	29

 8-3-16  
 REGISTERED ELECT ENGINEER DATE

9-12-16  
 PLANS APPROVAL DATE

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

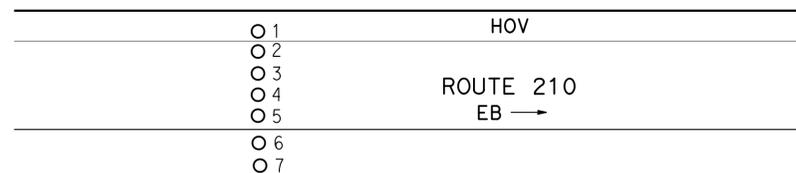


NOTE: (THIS SHEET ONLY)

1. SEE NOTES ON SHEET E-1.

LOOP TABLE (ROUTE 210)										
Approx PM	LOCATION EASTBOUND ON RAMPS	SEE DETAIL A THIS SHEET FOR TYPICAL LOCATION OF LOOP DETECTORS								No. OF STUBOUTS (RESET)
		1	2	3	4	5	6	7	8	
R35.7	EB ROUTE 210 W OF HIGHLAND Ave	X	X	X	X	X	X			2
R36.0	EB ROUTE 210 E OF HIGHLAND Ave	X	X	X	X	X	X	X		2

X - INSTALL TYPE E LOOP DETECTOR. ABANDON Exist LOOP DETECTOR AT SAME LOCATION.



DETAIL A  
TYPICAL LOOP DETECTOR INSTALLATION

**MODIFYING TRAFFIC MONITORING STATION**

**MODIFYING EXISTING ELECTRICAL SYSTEM**

NO SCALE

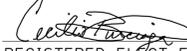
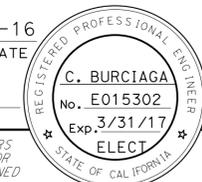
E-2

APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** TRAFFIC DESIGN  
 FUNCTIONAL SUPERVISOR Y1 TSAU  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 QUINCIE TRAN  
 CECILIO BURCIAGA  
 REVISED BY  
 DATE REVISED

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** TRAFFIC DESIGN  
 FUNCTIONAL SUPERVISOR Y1 TSAU  
 CALCULATED/DESIGNED BY CHECKED BY  
 QUINCIE TRAN CECILIO BURCIAGA  
 REVISED BY DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210	R32.9/R36.5	24	29

 8-3-16  
 REGISTERED ELECT ENGINEER DATE  
 9-12-16  
 PLANS APPROVAL DATE  


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**NOTE: (THIS SHEET ONLY)**

1. ITEMS SHOWN IN THIS TABLE ARE NOT SEPARATE PAY ITEMS, FOR INFORMATION ONLY.

MODIFYING EXISTING ELECTRICAL SYSTEM			
SHEET No.	TYPE OF WORK	TYPE E LOOP DETECTOR	STUBOUT
		EA (N)	EA (N)
E-1	MODIFYING RAMP METERING SYSTEM	31	6
E-2	MODIFYING TRAFFIC MONITORING STATION	13	4

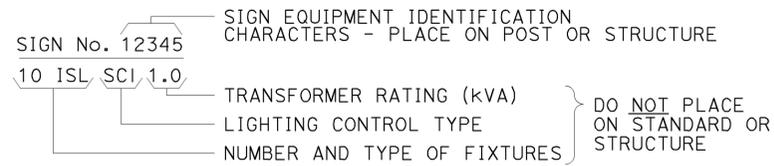
**ELECTRICAL QUANTITIES**

**EQ-1**

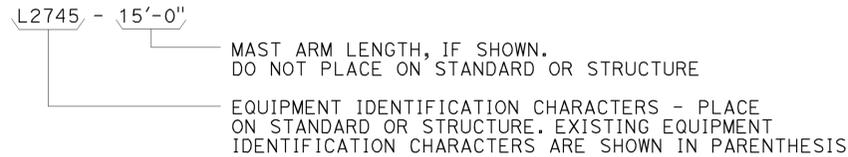


### EQUIPMENT IDENTIFICATION

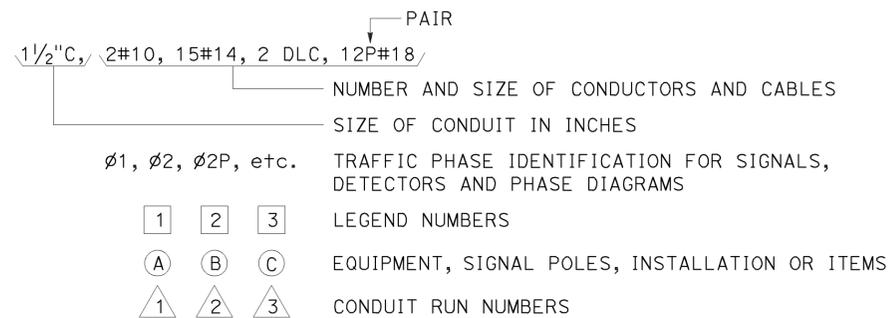
#### ILLUMINATED SIGN IDENTIFICATION:



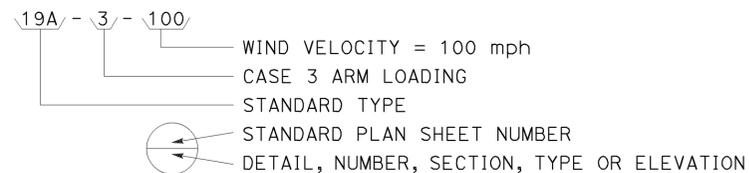
#### ELECTROLIER OR EQUIPMENT IDENTIFICATION:



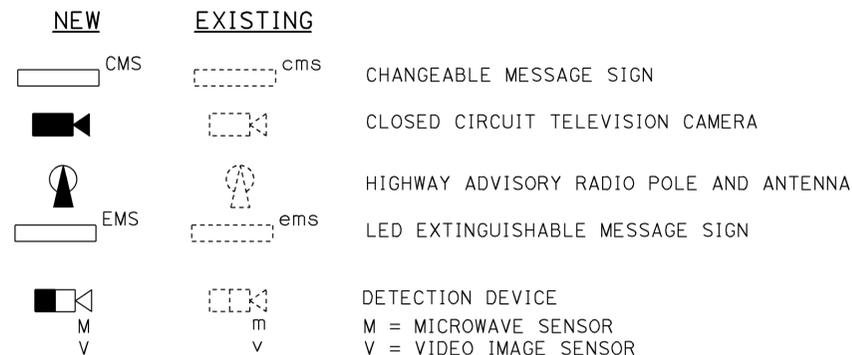
#### CONDUIT AND CONDUCTOR IDENTIFICATION:



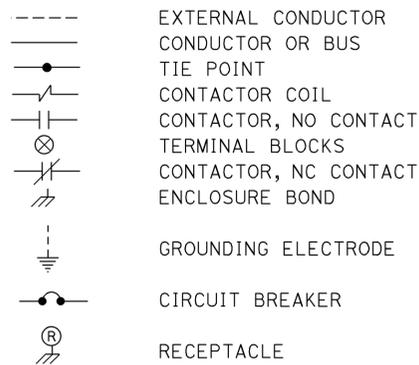
#### SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



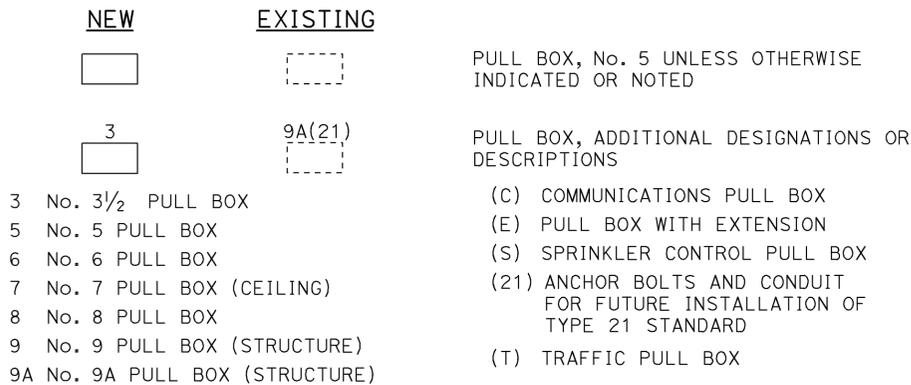
### MISCELLANEOUS EQUIPMENT



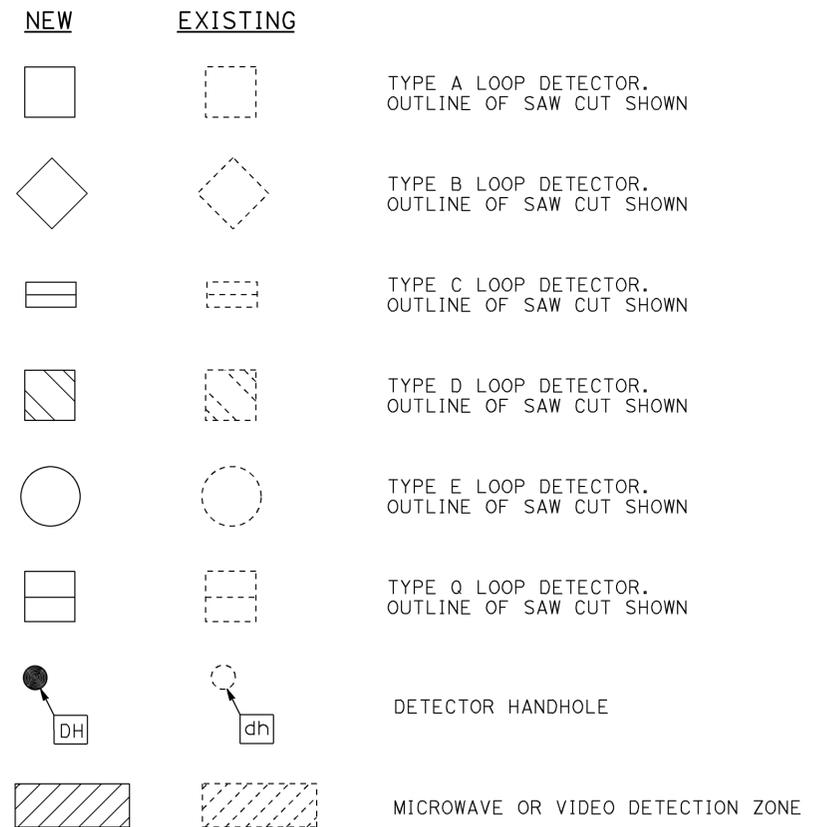
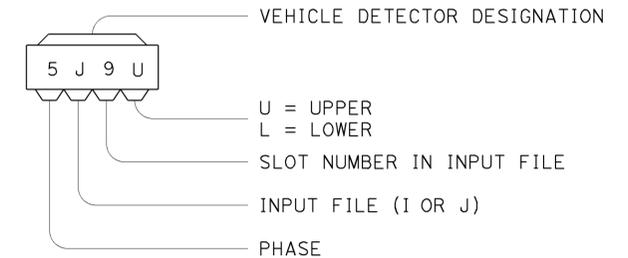
### WIRING DIAGRAM LEGEND



### PULL BOXES



### VEHICLE DETECTORS



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

## ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

NO SCALE

RSP ES-1C DATED APRIL 15, 2016 SUPERSEDES STANDARD PLAN ES-1C  
DATED OCTOBER 30, 2015 - PAGE 420 OF THE STANDARD PLANS BOOK DATED 2015.

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

2015 REVISED STANDARD PLAN RSP ES-1C

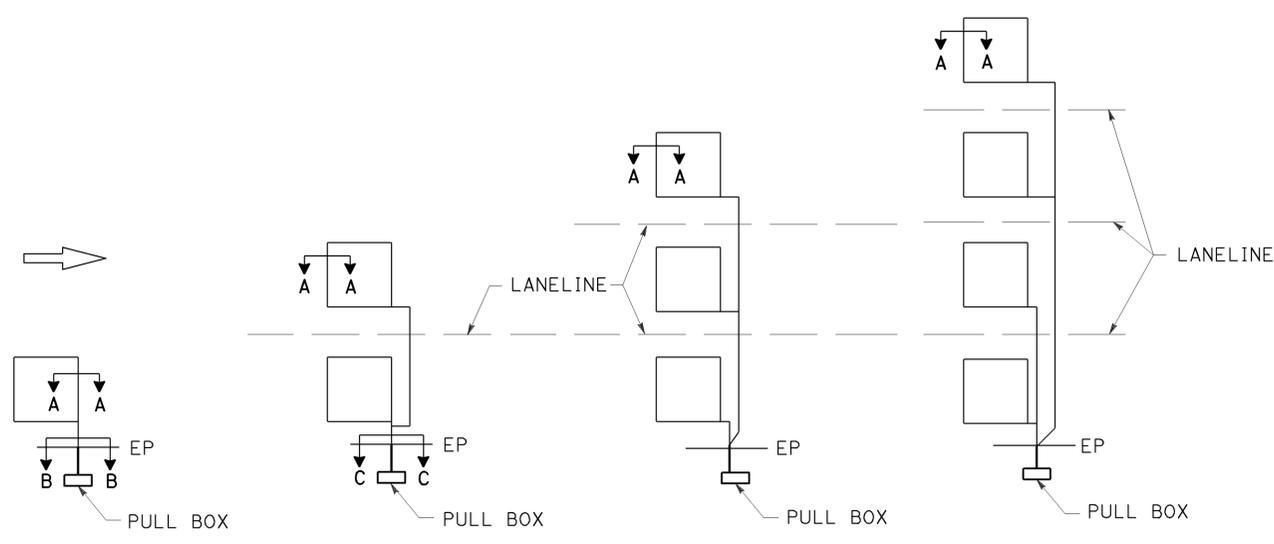
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210	R32.9/R36.5	26	29

Theresa Gabriel  
 REGISTERED ELECTRICAL ENGINEER  
 April 15, 2016  
 PLANS APPROVAL DATE

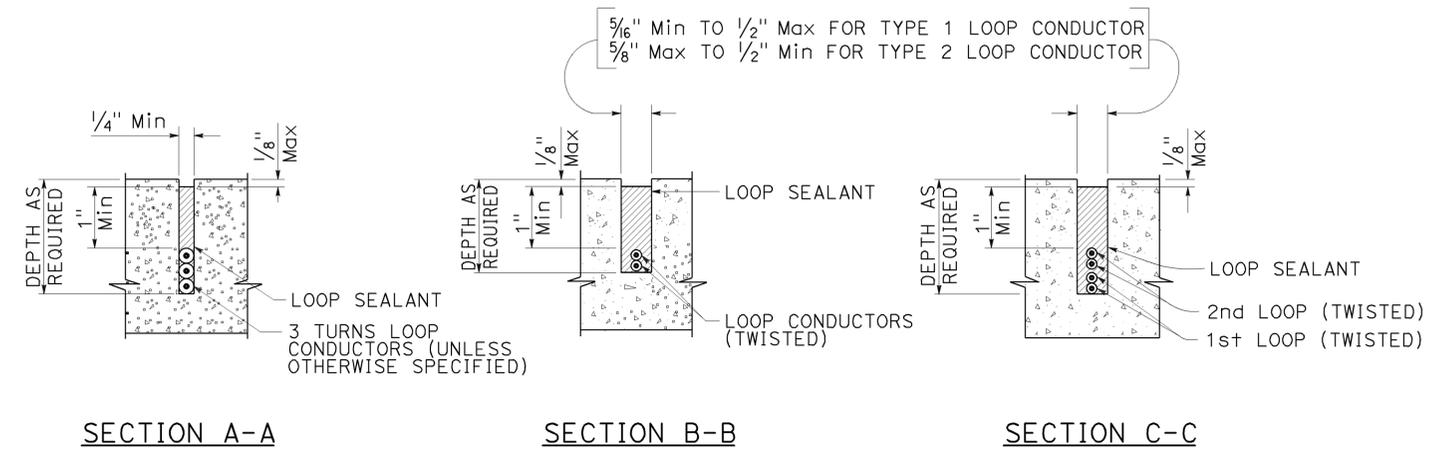
REGISTERED PROFESSIONAL ENGINEER  
 Theresa Aziz Gabriel  
 No. E15129  
 Exp. 6-30-16  
 ELECTRICAL  
 STATE OF CALIFORNIA

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

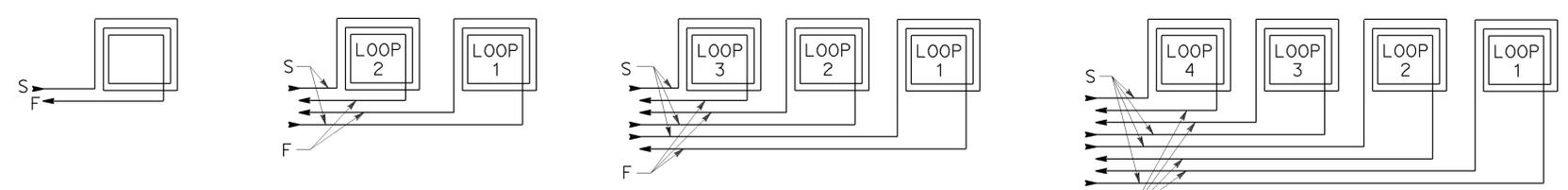
TO ACCOMPANY PLANS DATED 9-12-16



**SAW CUT DETAILS**  
Type A loop detector configurations illustrated

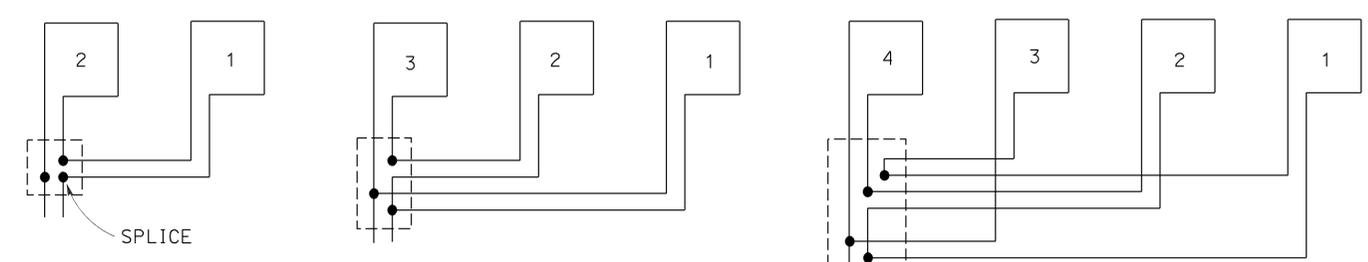


**SLOT DETAILS - TYPE 1 AND TYPE 2 LOOP CONDUCTOR**



**WINDING DETAILS**

**ABBREVIATIONS:**  
S - START  
F - FINISH



**TYPICAL LOOP CONNECTIONS**  
Dashed lines represent the pull box

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
(LOOP DETECTORS)**

NO SCALE  
RSP ES-5A DATED APRIL 15, 2016 SUPERSEDES STANDARD PLAN ES-5A  
DATED OCTOBER 30, 2015 - PAGE 445 OF THE STANDARD PLANS BOOK DATED 2015.

2015 REVISED STANDARD PLAN RSP ES-5A

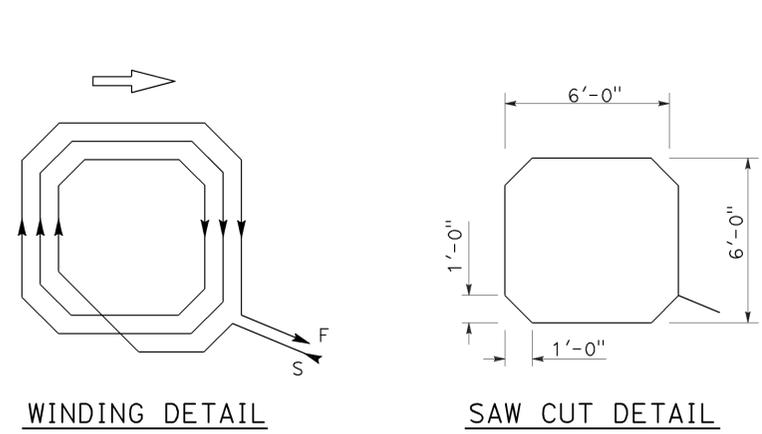
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210	R32.9/R36.5	27	29

*Theresa Gabriel*  
 REGISTERED ELECTRICAL ENGINEER  
 April 15, 2016  
 PLANS APPROVAL DATE

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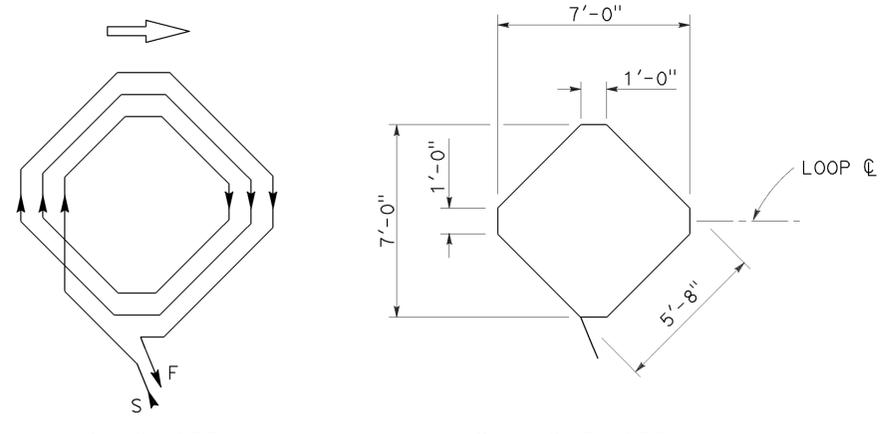
REGISTERED PROFESSIONAL ENGINEER  
 Theresa  
 Aziz Gabriel  
 No. E15129  
 Exp. 6-30-16  
 ELECTRICAL  
 STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 9-12-16



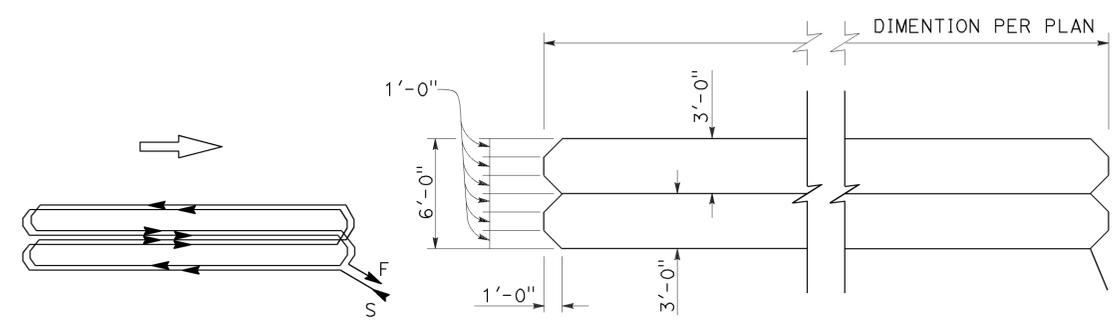
WINDING DETAIL      SAW CUT DETAIL

TYPE A LOOP DETECTOR CONFIGURATION



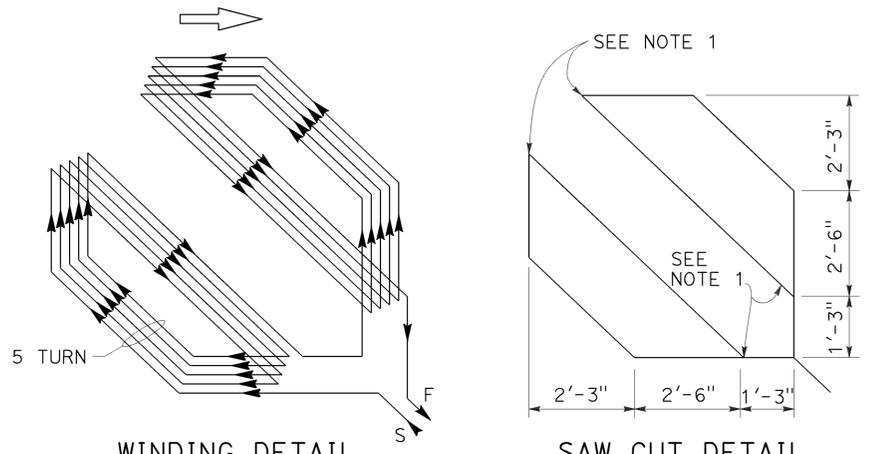
WINDING DETAIL      SAW CUT DETAIL

TYPE B LOOP DETECTOR CONFIGURATION



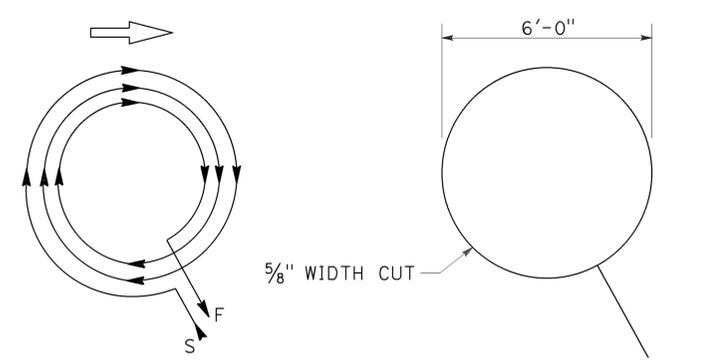
WINDING DETAIL      SAW CUT DETAIL

TYPE C LOOP DETECTOR CONFIGURATION



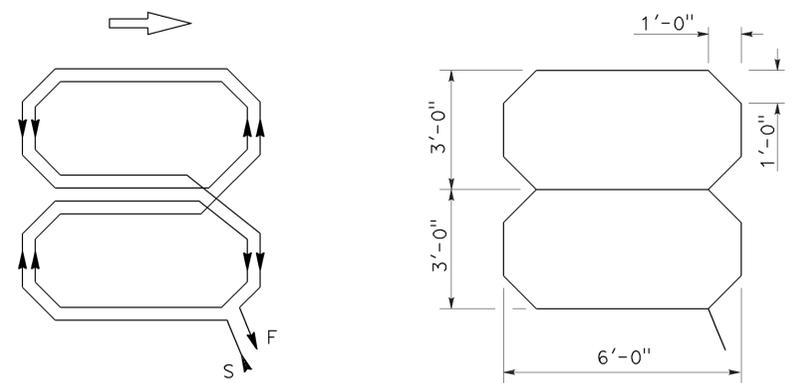
WINDING DETAIL      SAW CUT DETAIL

TYPE D LOOP DETECTOR CONFIGURATION



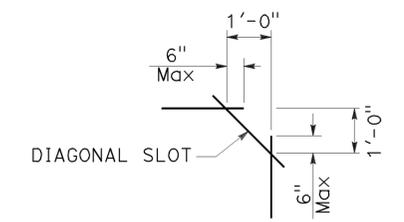
WINDING DETAIL      SAW CUT DETAIL

TYPE E LOOP DETECTOR CONFIGURATION



WINDING DETAIL      SAW CUT DETAIL

TYPE Q LOOP DETECTOR CONFIGURATION



PLAN VIEW OF  
DIAGONAL SLOT  
AT CORNERS

- NOTES:**
1. Round corners of acute angle saw cuts 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.
  3. Use Type D loops for limit line detection and bicycle lanes.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS  
(DETECTORS)**

NO SCALE  
RSP ES-5B DATED APRIL 15, 2016 SUPERSEDES STANDARD PLAN ES-5B  
DATED OCTOBER 30, 2015 - PAGE 446 OF THE STANDARD PLANS BOOK DATED 2015.

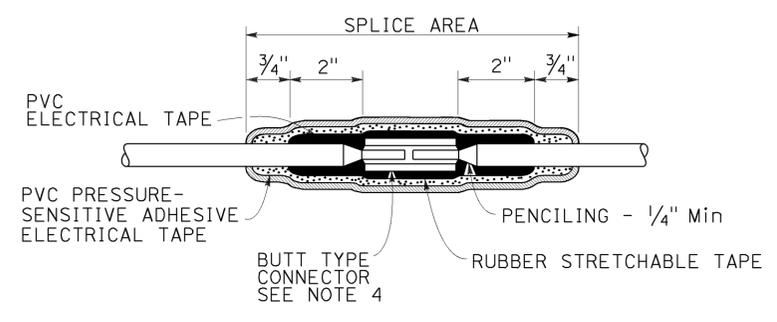
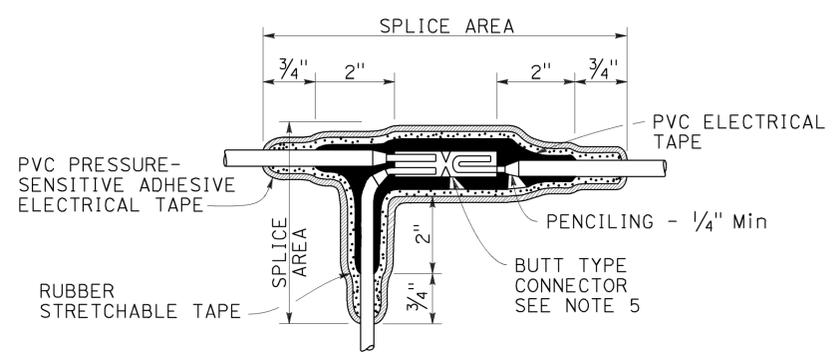
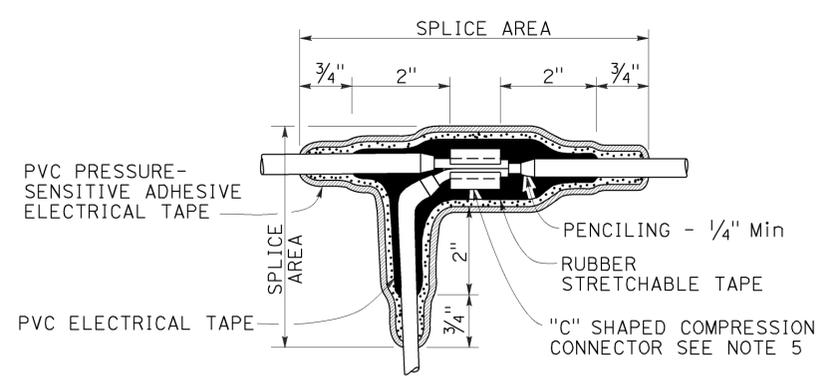
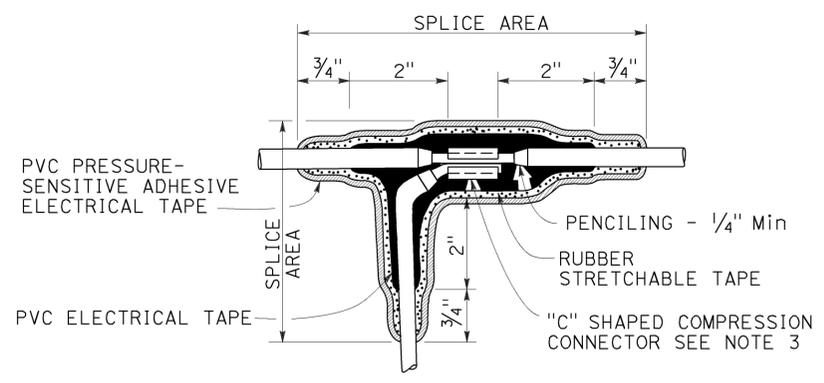
2015 REVISED STANDARD PLAN RSP ES-5B

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210	R32.9/R36.5	28	29

Theresa Gabriel  
 REGISTERED ELECTRICAL ENGINEER  
 April 15, 2016  
 PLANS APPROVAL DATE  
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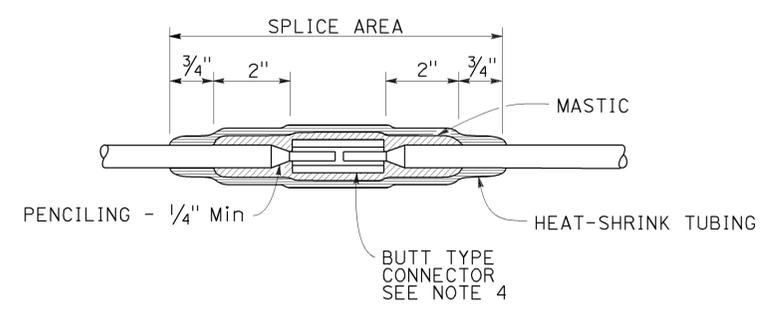
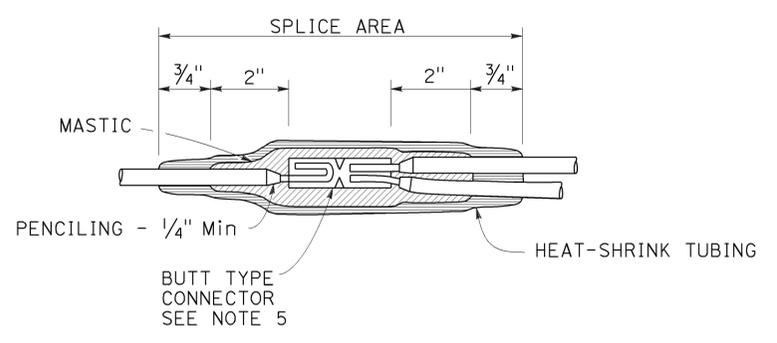
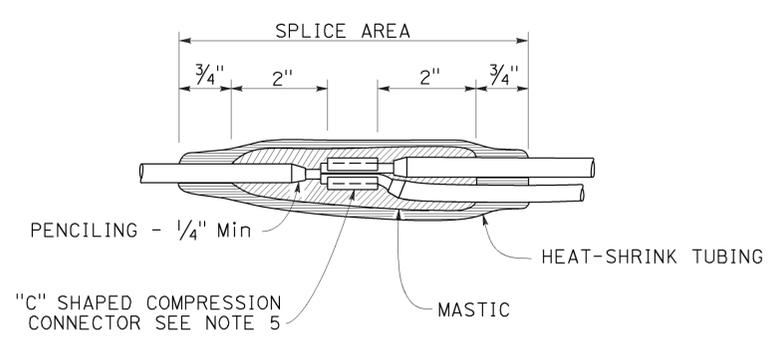
TO ACCOMPANY PLANS DATED 9-12-16



**NOTES:**

1. Dimensions are minimum.
2. Rubber tapes shall be rolled after application.
3. Between 1 free-end and 1 through conductor.
4. Between 2 free-end conductors.
5. Between 3 free-end conductors.

**TYPICAL SPLICE INSULATION METHOD B**



**TYPICAL SPLICE INSULATION HEAT-SHRINK TUBING**

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS**  
**(SPLICE INSULATION METHODS DETAILS)**

NO SCALE

RSP ES-13A DATED APRIL 15, 2016 SUPERSEDES STANDARD PLAN ES-13A DATED OCTOBER 30, 2015 - PAGE 484 OF THE STANDARD PLANS BOOK DATED 2015.

**REVISED STANDARD PLAN RSP ES-13A**

2015 REVISED STANDARD PLAN RSP ES-13A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	210	R32.9/R36.5	29	29

*Theresa Gabriel*  
 REGISTERED ELECTRICAL ENGINEER  
 April 15, 2016  
 PLANS APPROVAL DATE

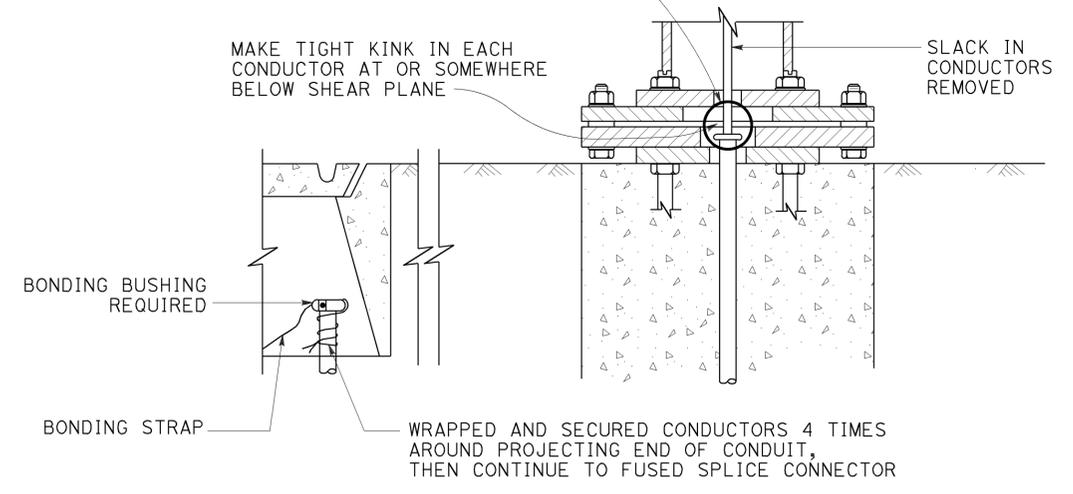
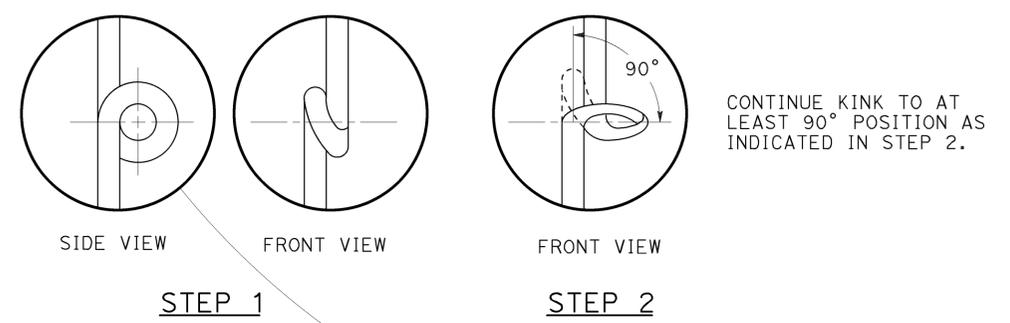
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TO ACCOMPANY PLANS DATED 9-12-16

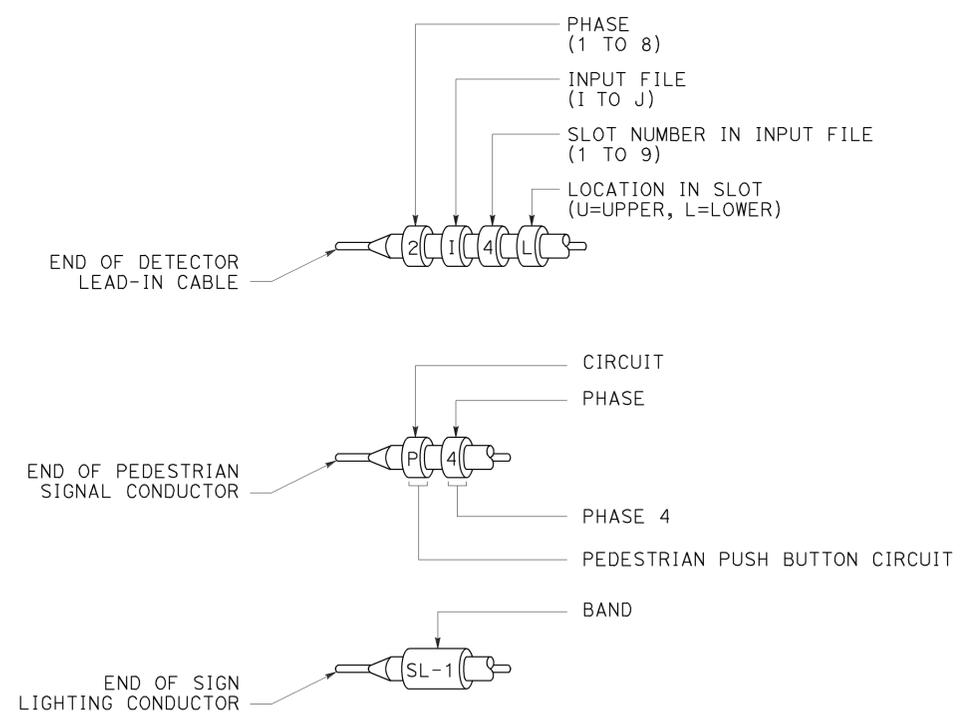
CIRCUIT VOLTAGE	FUSE VOLTAGE RATING	FUSE CURRENT RATING						
		HPS LAMP BALLAST		LOW PRESSURE SODIUM BALLAST	INDUCTION SIGN LIGHTING	SINGLE PHASE (TWO WIRE) TRANSFORMERS (PRIMARY SIDE)		
		70 W	100 W	180 W	85 W	1 KVA	2 KVA	3 KVA
120 V	250 V	5 A	5 A	5 A	5 A	10 A	20 A	30 A
240 V	250 V	5 A	5 A	5 A	5 A	6 A	10 A	20 A
480 V	500-600 V	5 A	5 A	3 A	1 A (SEE NOTE 2)	3 A	6 A	10 A

- NOTES:**
- Primary lines of multiple ballasts shall be provided with fused connectors. Fuse ratings shall be as noted above.
  - See Standard Plan ES-15D, Type SC3 control.

**FUSE RATINGS FOR FUSED CONNECTORS**



**KINKING DETAIL FOR SLIP BASE STANDARDS**  
DETAIL A



**TYPICAL BANDING DETAILS**  
DETAIL B

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**ELECTRICAL SYSTEMS**  
**(FUSE RATING, KINKING AND BANDING DETAIL)**

NO SCALE

RSP ES-13B DATED APRIL 15, 2016 SUPERSEDES STANDARD PLAN ES-13B DATED OCTOBER 30, 2015 - PAGE 485 OF THE STANDARD PLANS BOOK DATED 2015.

2015 REVISED STANDARD PLAN RSP ES-13B