

INDEX OF PLANS

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

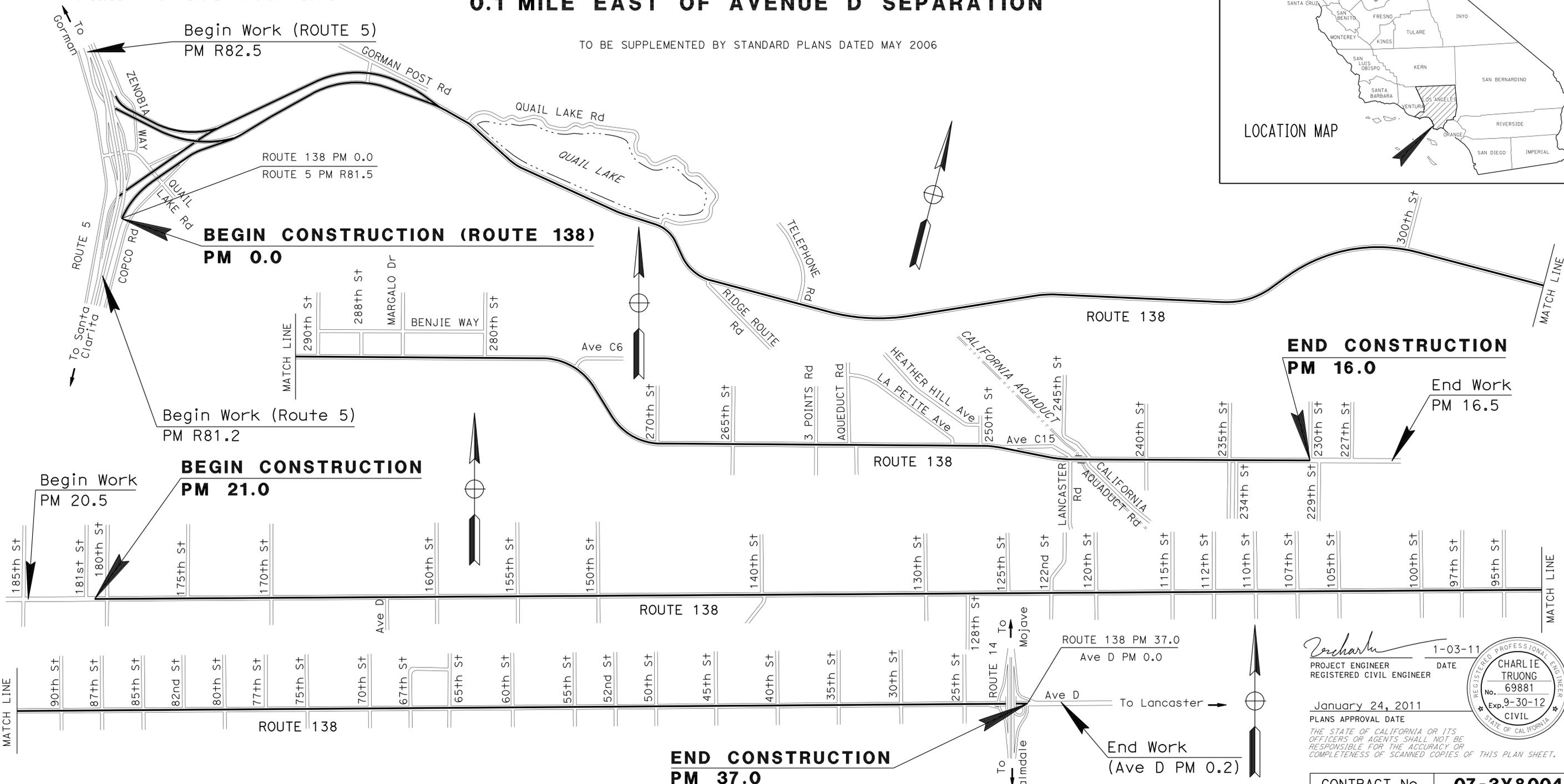
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

ACNH-P138(045)E

PROJECT PLANS FOR CONSTRUCTION ON  
STATE HIGHWAY

IN LOS ANGELES COUNTY NEAR LANCASTER  
FROM ROUTE 5/138 SEPARATION TO 230TH STREET AND  
FROM 0.1 MILE WEST OF 180TH STREET TO  
0.1 MILE EAST OF AVENUE D SEPARATION

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2006



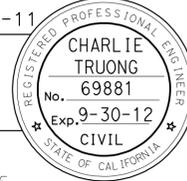
PROJECT MANAGER  
GARY KEVORKIAN

DESIGN ENGINEER  
CHARLIE TRUONG

*Charlie Truong* 1-03-11  
PROJECT ENGINEER DATE  
REGISTERED CIVIL ENGINEER

January 24, 2011  
PLANS APPROVAL DATE

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



CONTRACT No. **07-3Y8004**  
PROJECT ID **070000772**

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

END CONSTRUCTION  
PM 37.0

NO SCALE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	138	0.0/16.0, 21.0/37.0	2	27

1-03-11  
 REGISTERED CIVIL ENGINEER DATE  
 1-24-11  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 CHARLIE TRUONG  
 No. 69881  
 Exp. 9/30/12  
 CIVIL  
 STATE OF CALIFORNIA

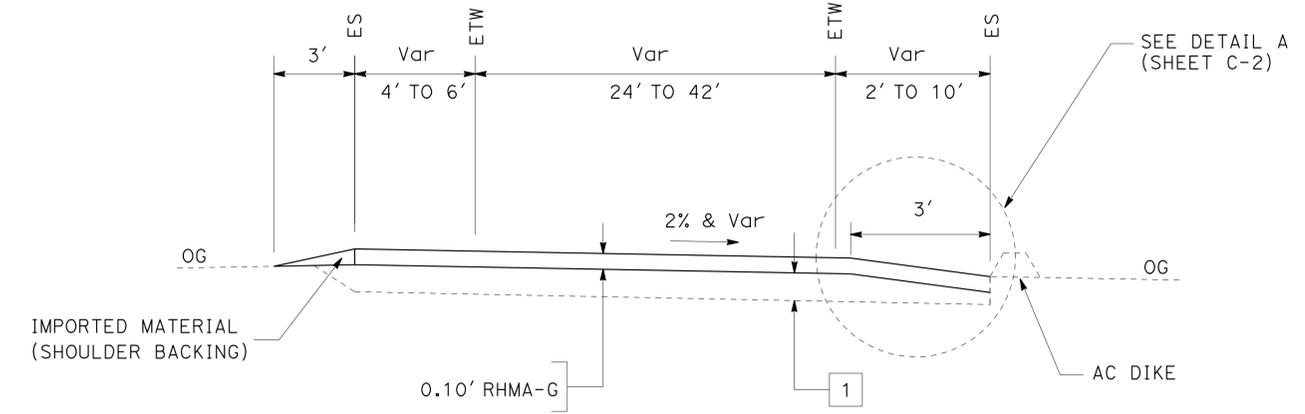
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

**NOTES:**

- 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.
- EXISTING UTILITIES FACILITIES ARE NOT SHOWN ON THESE PLANS.
- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- OMIT RHMA-G, SLURRY SEAL AND COLD PLANNING ON BRIDGE DECKS, PCC PAVEMENT, MANHOLES AND GUTTERS.

**ABBREVIATIONS:**

RHMA-G: RUBBERIZED HOT MIX ASPHALT (GAP GRADED)



**EB 138 FROM NB 5 EASTBOUND 138**

PM 0.0/0.4 PM 1.7/2.1  
PM 1.0/1.4

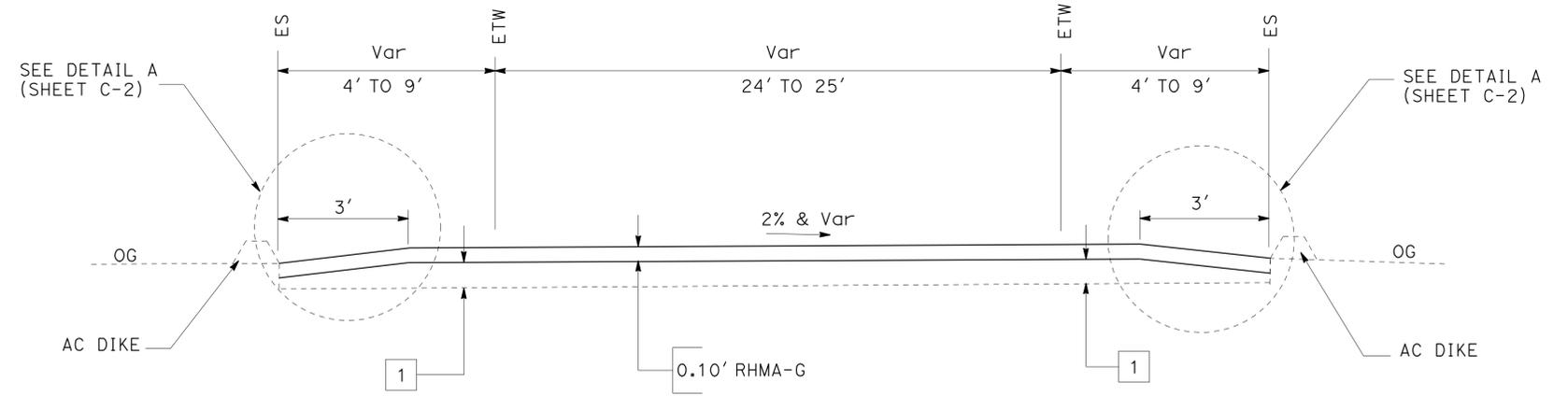
**EB 138 FROM SB 5**

PM 0.1/0.4

**EXISTING PAVEMENT STRUCTURAL SECTIONS**

1 0.25' AC  
0.67' CTB  
0.17' MINERAL AGGREGATE UNTREATED  
0.92' AB (CLASS 4)

2 Var 0.38' To 0.74' AC  
Var 0.12' To 0.41' CTB



**EB 138 FROM SB 5**

PM 0.0/0.1

**WB 138 TO SB 5**

PM 0.0/0.1

**TYPICAL CROSS SECTIONS**

NO SCALE

**X-1**

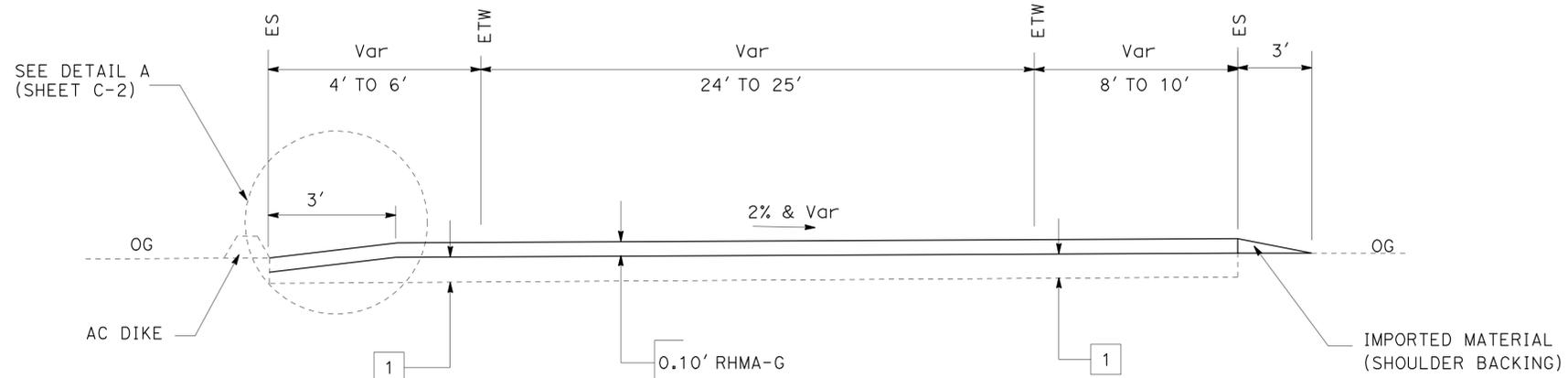
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** MAINTENANCE ENGINEERING  
 FUNCTIONAL SUPERVISOR DEBORAH WONG  
 CALCULATED/DESIGNED BY CHECKED BY  
 CHARLIE TRUONG DEBORAH WONG  
 REVISED BY DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	138	0.0/16.0, 21.0/37.0	3	27

1-03-11  
 REGISTERED CIVIL ENGINEER DATE  
 1-24-11  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 CHARLIE TRUONG  
 No. 69881  
 Exp. 9/30/12  
 CIVIL  
 STATE OF CALIFORNIA

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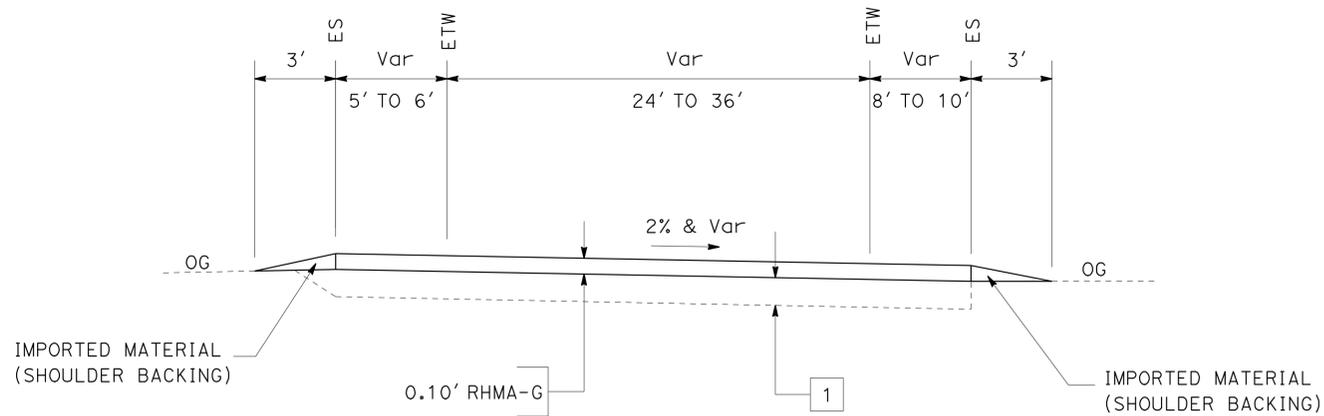


**EB 138 FROM NB 5**

PM 0.6/0.7

**EB 138 FROM SB 5**

PM 0.6/0.7



**EB 138 FROM NB 5**

PM 0.7/1.0

PM 0.4/0.6

**EB 138 FROM SB 5**

PM 0.7/1.0

PM 0.4/0.6

**EASTBOUND 138**

PM 1.4/1.7

**TYPICAL CROSS SECTIONS**

NO SCALE

**X-2**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	DESIGNED BY	REVISOR
<b>Caltrans</b> MAINTENANCE ENGINEERING	DEBORAH WONG	CHARLIE TRUONG	DEBORAH WONG
		CHECKED BY	DATE
		DEBORAH WONG	

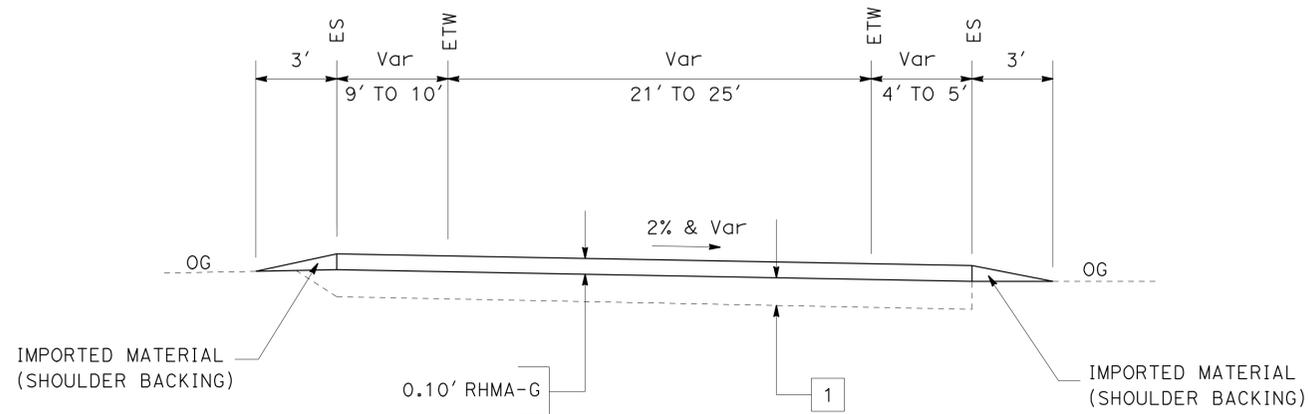


Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	138	0.0/16.0, 21.0/37.0	4	27

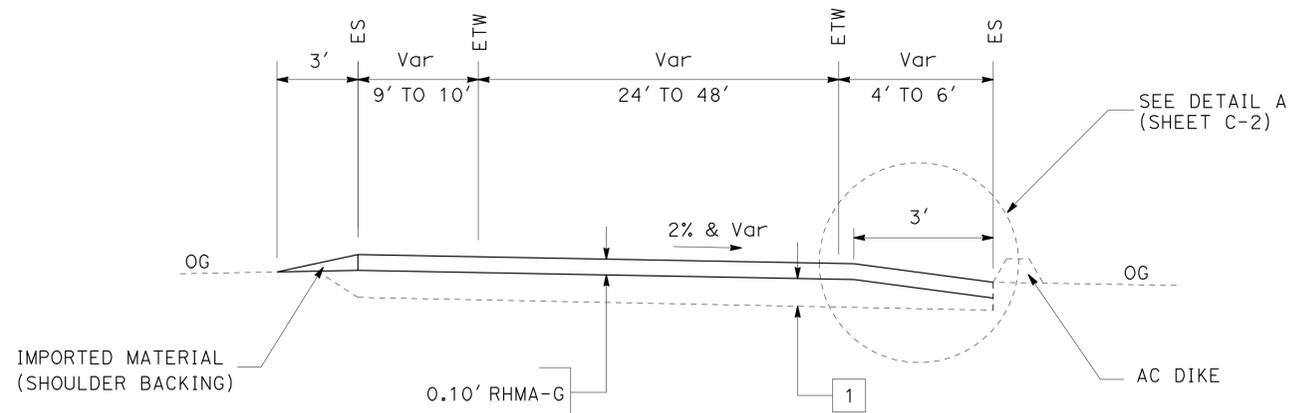
*Charlie Truong* 1-03-11  
 REGISTERED CIVIL ENGINEER DATE  
 1-24-11  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 CHARLIE TRUONG  
 No. 69881  
 Exp. 9/30/12  
 CIVIL  
 STATE OF CALIFORNIA

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**WB 138 TO SB 5**                      **WESTBOUND 138**  
 PM 0.4/0.9                                      PM 1.3/2.1  
**WB 138 TO NB 5**  
 PM 0.5/0.9



**WB 138 TO SB 5**                      **WESTBOUND 138**  
 PM 0.1/0.4                                      PM 0.9/1.3  
**WB 138 TO NB 5**  
 PM 0.0/0.5

**TYPICAL CROSS SECTIONS**  
NO SCALE

**X-3**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR
<b>Caltrans</b> MAINTENANCE ENGINEERING	DEBORAH WONG	CHARLIE TRUONG	DEBORAH WONG
		CHECKED BY	DATE REVISED

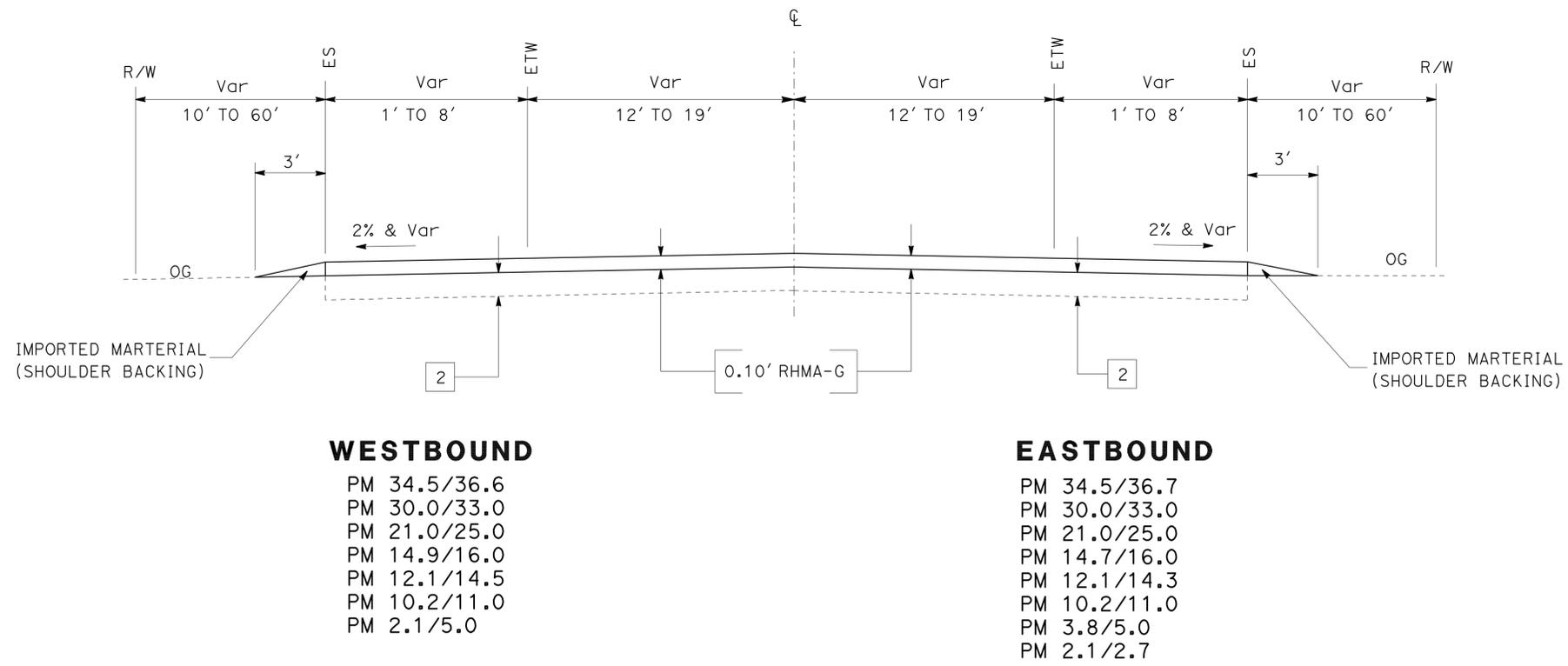
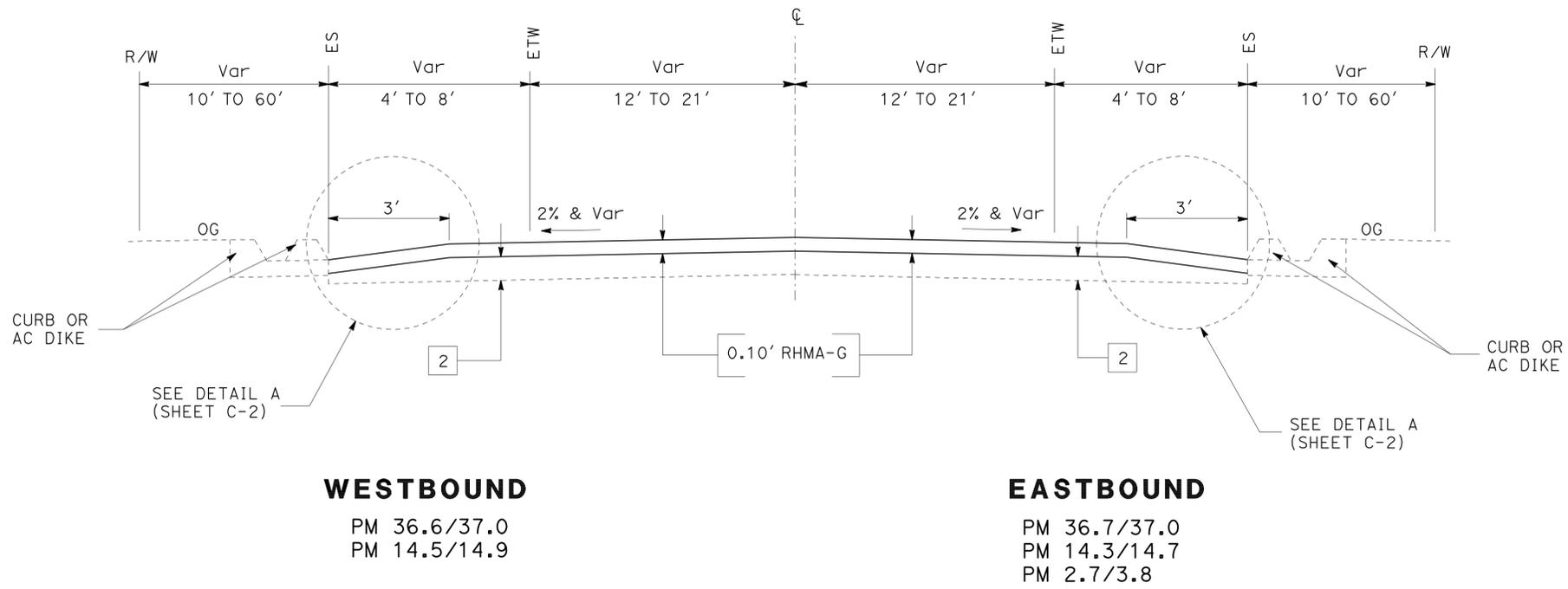


Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	138	0.0/16.0, 21.0/37.0	5	27

1-03-11  
 REGISTERED CIVIL ENGINEER DATE  
 1-24-11  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 CHARLIE TRUONG  
 No. 69881  
 Exp. 9/30/12  
 CIVIL  
 STATE OF CALIFORNIA

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**TYPICAL CROSS SECTIONS**  
 NO SCALE

**X-4**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	DESIGNED BY	REVISOR
<b>Caltrans</b> MAINTENANCE ENGINEERING	DEBORAH WONG	CHARLIE TRUONG	DEBORAH WONG
		CHECKED BY	DATE REVISED



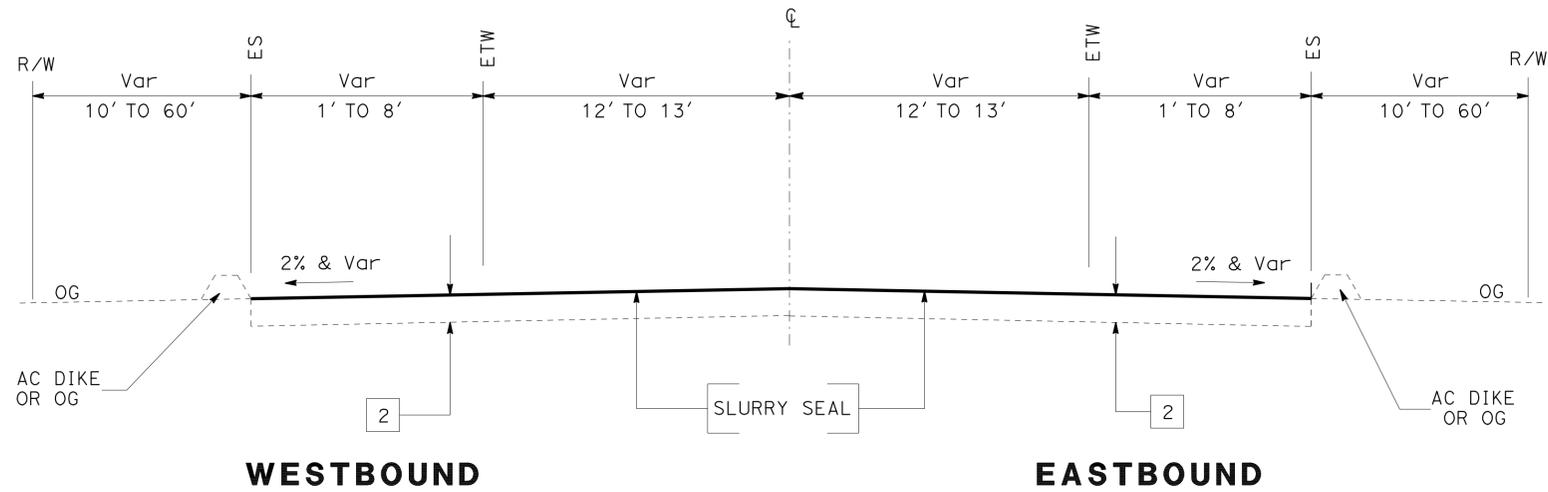
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	138	0.0/16.0, 21.0/37.0	6	27

 1-03-11  
 REGISTERED CIVIL ENGINEER DATE

1-24-11  
 PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER  
 CHARLIE TRUONG  
 No. 69881  
 Exp. 9/30/12  
 CIVIL  
 STATE OF CALIFORNIA



PM 33.0/34.5  
 PM 25.0/30.0  
 PM 11.0/12.1  
 PM 5.0/10.2

**TYPICAL CROSS SECTIONS**  
NO SCALE

**X-5**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	REVISOR	DATE
<b>Caltrans</b> MAINTENANCE ENGINEERING	DEBORAH WONG	CHARLIE TRUONG	DEBORAH WONG
	DESIGNED BY	CHECKED BY	DATE
	DEBORAH WONG	DEBORAH WONG	REVISOR



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	138	0.0/16.0, 21.0/37.0	7	27

1-03-11  
 REGISTERED CIVIL ENGINEER DATE  
 1-24-11  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 CHARLIE TRUONG  
 No. 69881  
 Exp. 9/30/12  
 CIVIL  
 STATE OF CALIFORNIA

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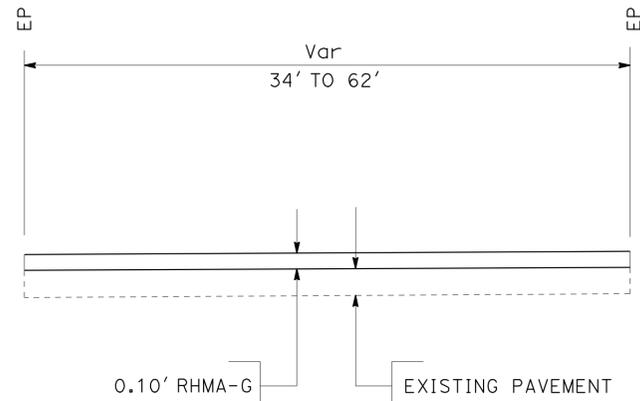
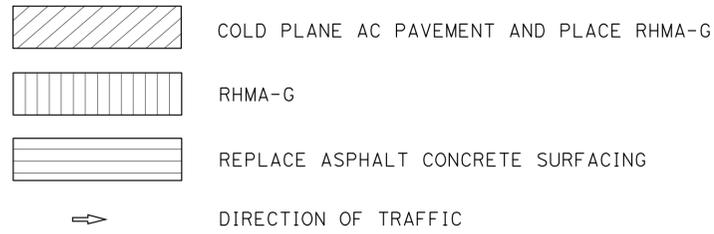
**NOTES:**

- EXISTING DRAINAGE INLETS HAVE NOT BEEN PLOTTED ON THESE PLANS.
- EXISTING UTILITY FACILITIES HAVE NOT BEEN PLOTTED ON THESE PLANS.
- OMIT RHMA-G, SLURRY SEAL AND COLD PLANNING ON BRIDGE DECKS, PCC PAVEMENT, MANHOLES AND GUTTERS.
- EXACT DIMENSIONS AND LIMITS FOR REPLACE ASPHALT CONCRETE SURFACING BE DETERMINED BY ENGINEER.

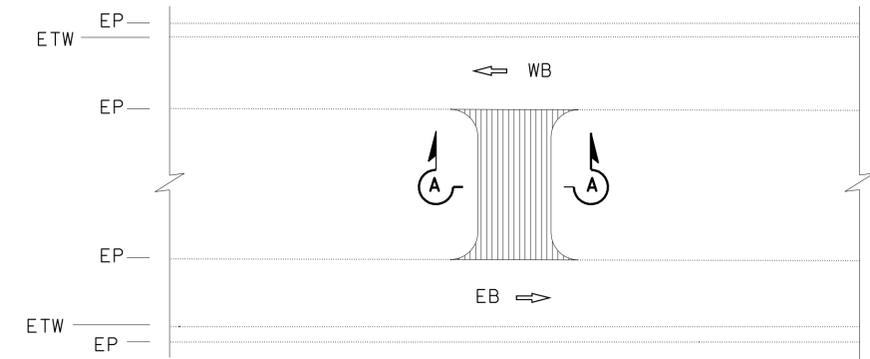
**ABBREVIATIONS:**

RHMA-G: RUBBERIZED HOT MIX ALPHALT (GAP GRADED)

**LEGEND:**

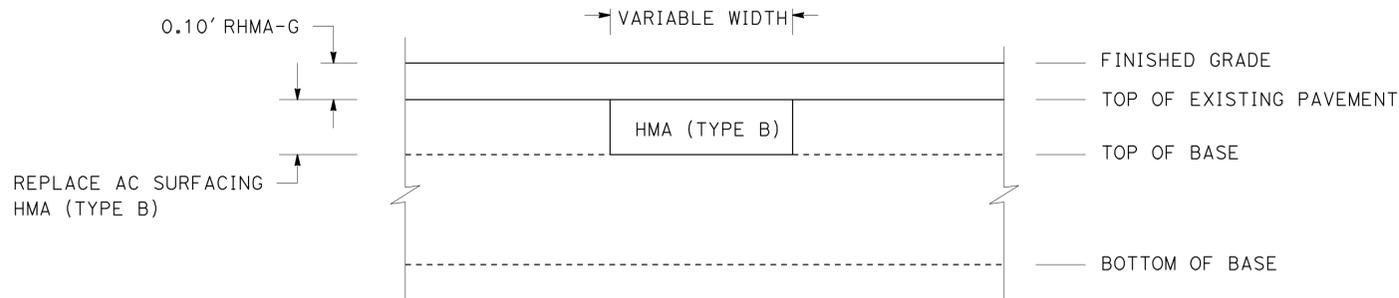


SECTION A-A

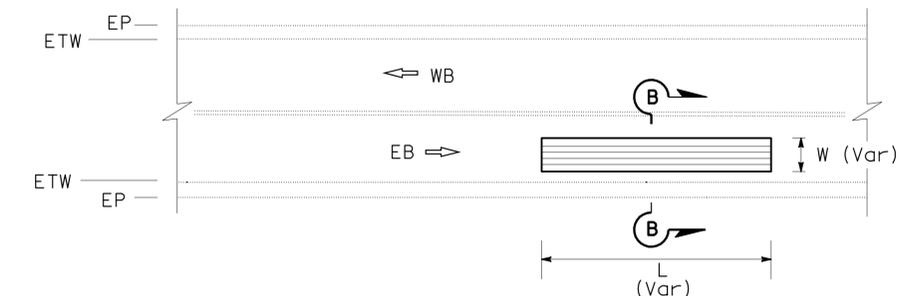


PLAN

**PAVING DETAIL AT GORMAN POST Rd**



SECTION B-B



PLAN

**TYPICAL DETAIL FOR REPLACE ASPHALT CONCRETE SURFACING**

**CONSTRUCTION DETAILS**  
NO SCALE

C-1

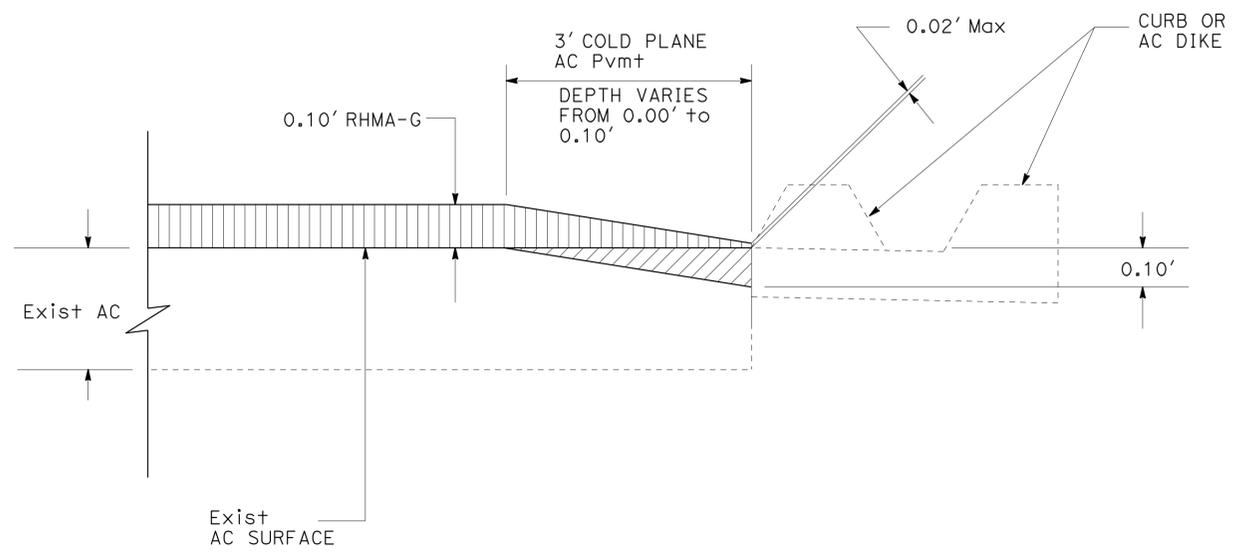
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	DESIGNED BY	REVISOR
MAINTENANCE ENGINEERING	DEBORAH WONG	CHARLIE TRUONG	DEBORAH WONG
		CHECKED BY	DATE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	138	0.0/16.0 21.0/37.0	8	27

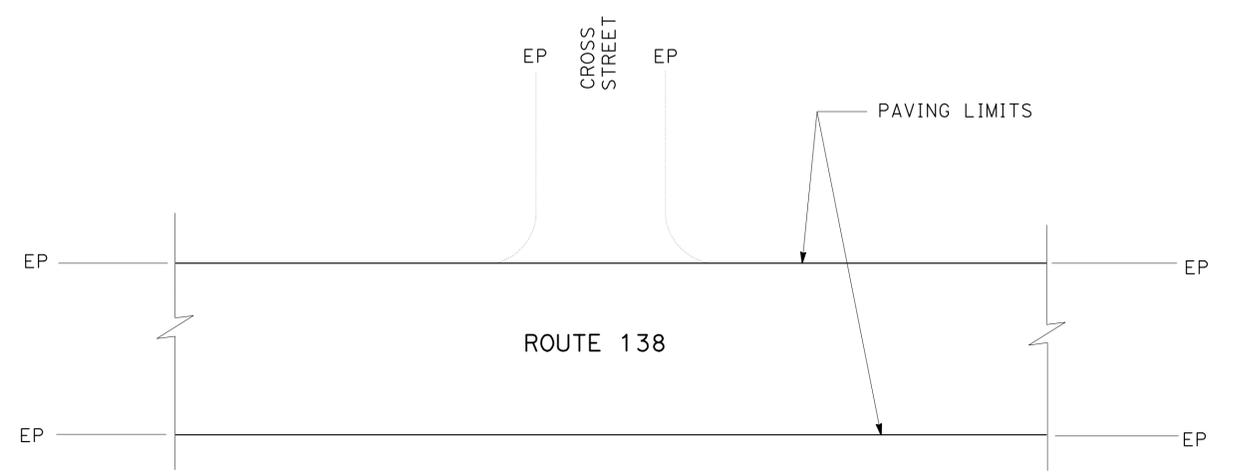
1-03-11  
 REGISTERED CIVIL ENGINEER DATE  
 1-24-11  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 CHARLIE TRUONG  
 No. 69881  
 Exp. 9/30/12  
 CIVIL  
 STATE OF CALIFORNIA

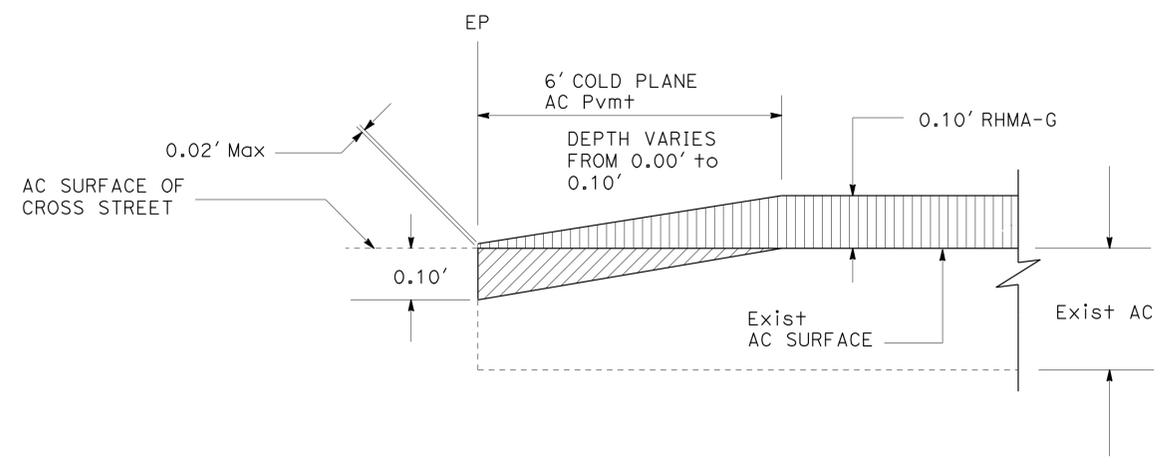
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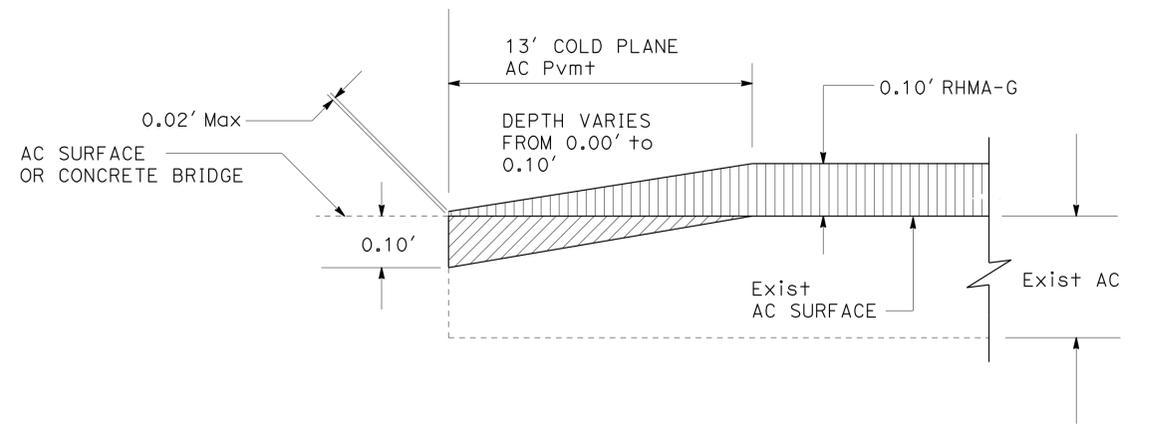
**DETAIL A**



**TYPICAL PAVING LIMITS AT INTERSECTIONS**



**TYPICAL TRANSITION TO CONFORM  
AC PAVEMENT AT CROSS STREET**



**TYPICAL TRANSITION TO  
CONFORM AC PAVEMENT**  
(BETWEEN EXISTING AND RHMA-G)

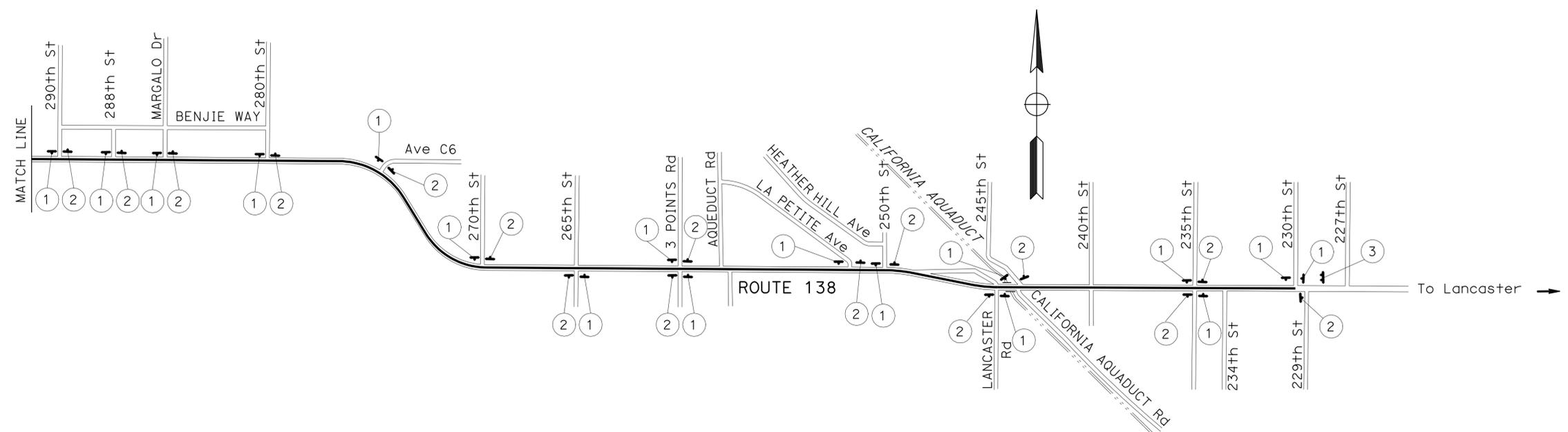
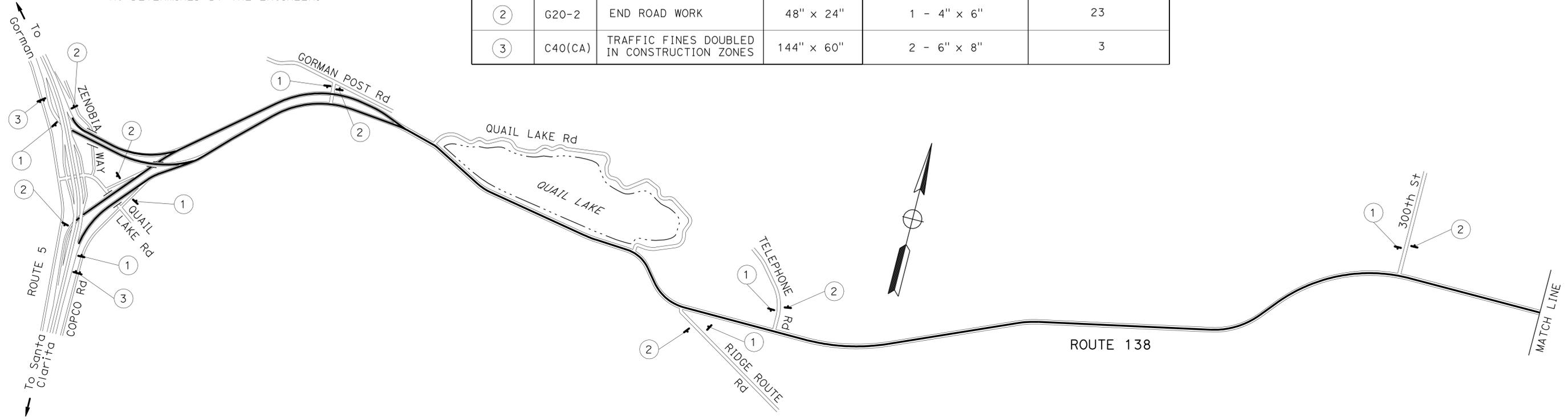
**CONSTRUCTION DETAILS**  
NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** MAINTENANCE ENGINEERING  
 FUNCTIONAL SUPERVISOR: DEBORAH WONG  
 CALCULATED/DESIGNED BY: CHARLIE TRUONG  
 CHECKED BY: DEBORAH WONG  
 REVISED BY: DATE  
 REVISIONS:

**NOTES:**

1. LOCATIONS OF CONSTRUCTION AREA SIGNS SHOWN ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.
2. "TRAFFIC FINES DOUBLED IN CONSTRUCTION ZONES" SIGNS SHALL BE PLACED APPROXIMATELY 500 FEET IN ADVANCE OF "ROAD WORK AHEAD" SIGNS OR AS DETERMINED BY THE ENGINEER.

STATIONARY MOUNTED CONSTRUCTION AREA SIGNS					
SIGN NUMBER	CODE	SIGN MESSAGE	PANEL SIZE	NUMBER OF POSTS AND SIZE	NUMBER OF SIGNS (SHEET CS-1)
①	W20-1	ROAD WORK AHEAD	48" x 48"	1 - 6" x 6"	24
②	G20-2	END ROAD WORK	48" x 24"	1 - 4" x 6"	23
③	C40(CA)	TRAFFIC FINES DOUBLED IN CONSTRUCTION ZONES	144" x 60"	2 - 6" x 8"	3



**CONSTRUCTION AREA SIGNS**  
NO SCALE  
**CS-1**

THIS PLAN ACCURATE FOR CONSTRUCTION AREA SIGN WORK ONLY.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** MAINTENANCE ENGINEERING  
 FUNCTIONAL SUPERVISOR: DEBORAH WONG  
 CALCULATED/DESIGNED BY: CHARLIE TRUONG  
 CHECKED BY: DEBORAH WONG  
 REVISED BY: CHARLIE TRUONG  
 DATE REVISED: DEBORAH WONG

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	138	0.0/16.0, 21.0/37.0	10	27

 1-03-11  
 REGISTERED CIVIL ENGINEER DATE

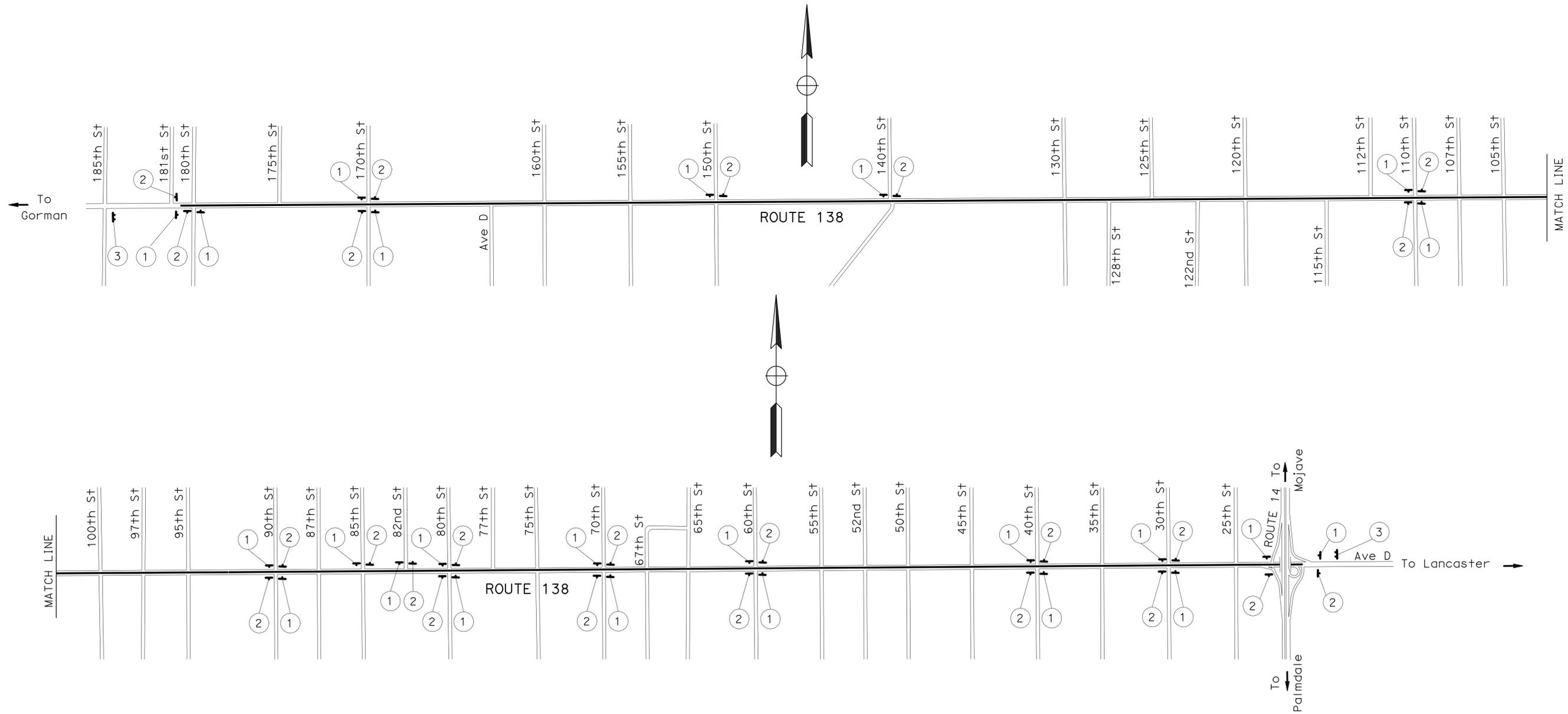
1-24-11  
 PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER  
 CHARLIE TRUONG  
 No. 69881  
 Exp. 9/30/12  
 CIVIL  
 STATE OF CALIFORNIA

### STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN NUMBER	CODE	SIGN MESSAGE	PANEL SIZE	NUMBER OF POSTS AND SIZE	NUMBER OF SIGNS (SHEET CS-2)	TOTAL NUMBER OF SIGNS (SHEET CS-1 AND CS-2)
①	W20-1	ROAD WORK AHEAD	48" x 48"	1 - 6" x 6"	24	48
②	G20-2	END ROAD WORK	48" x 24"	1 - 4" x 6"	24	47
③	C40(CA)	TRAFFIC FINES DOUBLED IN CONSTRUCTION ZONES	144" x 60"	2 - 6" x 8"	2	5



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** MAINTENANCE ENGINEERING  
 FUNCTIONAL SUPERVISOR: DEBORAH WONG  
 CALCULATED/DESIGNED BY: CHARLIE TRUONG  
 CHECKED BY: DEBORAH WONG  
 REVISED BY: CHARLIE TRUONG  
 DATE REVISED: DEBORAH WONG

## CONSTRUCTION AREA SIGNS

NO SCALE

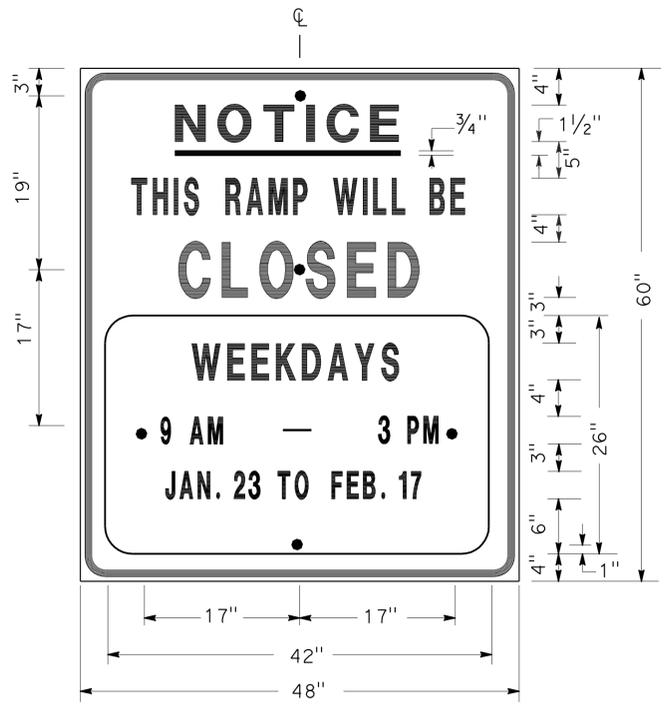
### CS-2

THIS PLAN ACCURATE FOR CONSTRUCTION AREA SIGN WORK ONLY.

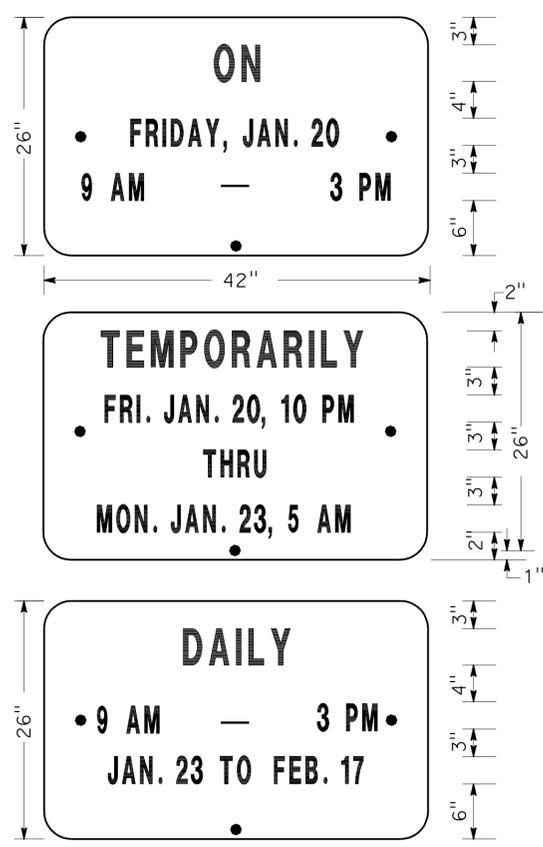
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	138	0.0/16.0 21.0/37.0	11	27

REGISTERED CIVIL ENGINEER  
 DATE 07-14-10  
 1-24-11  
 PLANS APPROVAL DATE  
 MARTIN OREGEL  
 No. C56816  
 Exp. 6-30-11  
 CIVIL  
 STATE OF CALIFORNIA  
 REGISTERED PROFESSIONAL ENGINEER

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SIGN SP-1



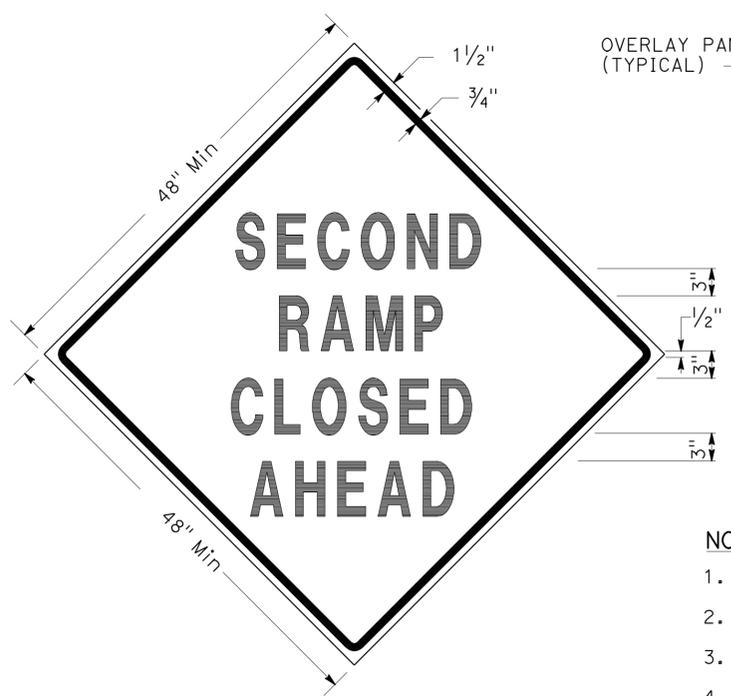
ALTERNATE OVERLAY PANELS (TYPICAL)

- NOTES: (SIGN SP-1)
- SIGNS SHALL HAVE ORANGE RETROREFLECTORIZED BACKGROUND WITH BLACK BORDER AND LETTERS.
  - BOLT HOLES SHALL BE 3/8" DIAMETER.
  - BASE MATERIAL SHALL BE ALUMINUM (MINIMUM 0.06").
  - SIGNS SHALL BE MOUNTED WITH BOTTOMS OF SIGNS A MINIMUM OF 6' ABOVE GROUND.

SIZE	BORDER	MARGIN	LETTER SIZE					CORNER RADIUS
	WIDTH	WIDTH	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

**SPECIAL SIGN FOR EXIT RAMP CLOSURES**

- NOTES: (SIGNS SP-3 & SP-5)
- LETTERS - 6" SERIES D.
  - LETTERS AND BORDERS - BLACK ON RETROREFLECTORIZED ORANGE BACKGROUND.
  - BASE MATERIAL SHALL BE ALUMINUM (MINIMUM 0.06").
  - SIGNS SHALL BE MOUNTED WITH BOTTOMS OF SIGNS A MINIMUM OF 6' ABOVE GROUND.



SIGN SP-5



SIGN SP-4

- NOTES: (SIGN SP-4)
- LETTERS - 6" SERIES C.
  - LETTERS AND BORDERS - BLACK ON RETROREFLECTORIZED WHITE BACKGROUND.
  - BASE MATERIAL SHALL BE ALUMINUM (MINIMUM 0.06").
  - SIGNS SHALL 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

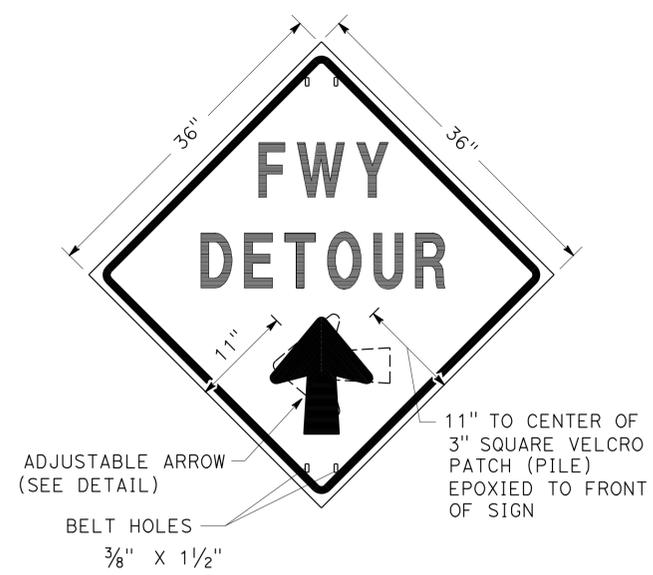
THD-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	138	0.0/16.0 21.0/37.0	12	27

*Martin Oregel* 07-14-10  
 REGISTERED CIVIL ENGINEER DATE  
 1-24-11  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 MARTIN OREGEL  
 No. C56816  
 Exp. 6-30-11  
 CIVIL  
 STATE OF CALIFORNIA

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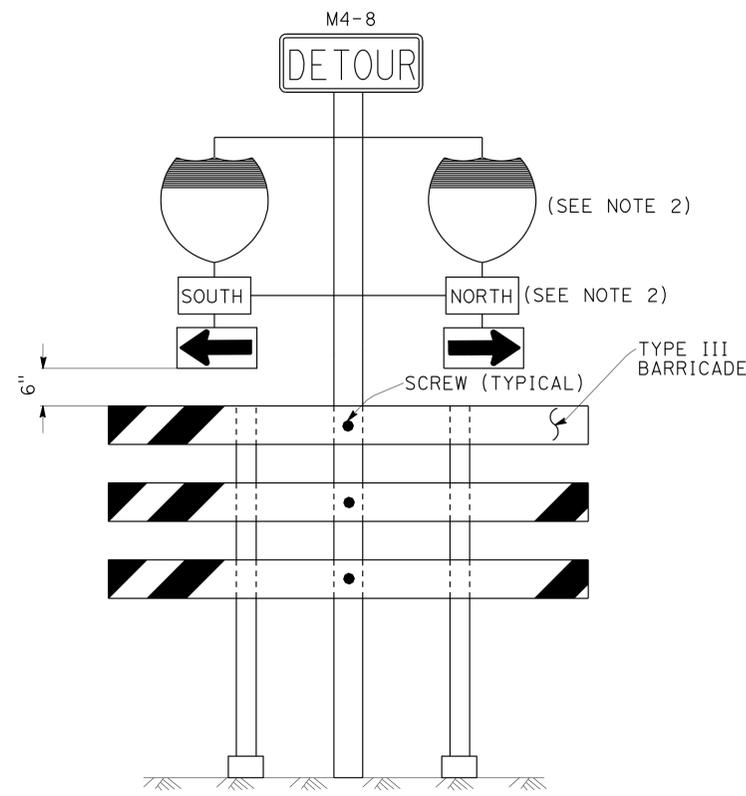
SIGN SP-2

**NOTES:** (SIGN SP-2)

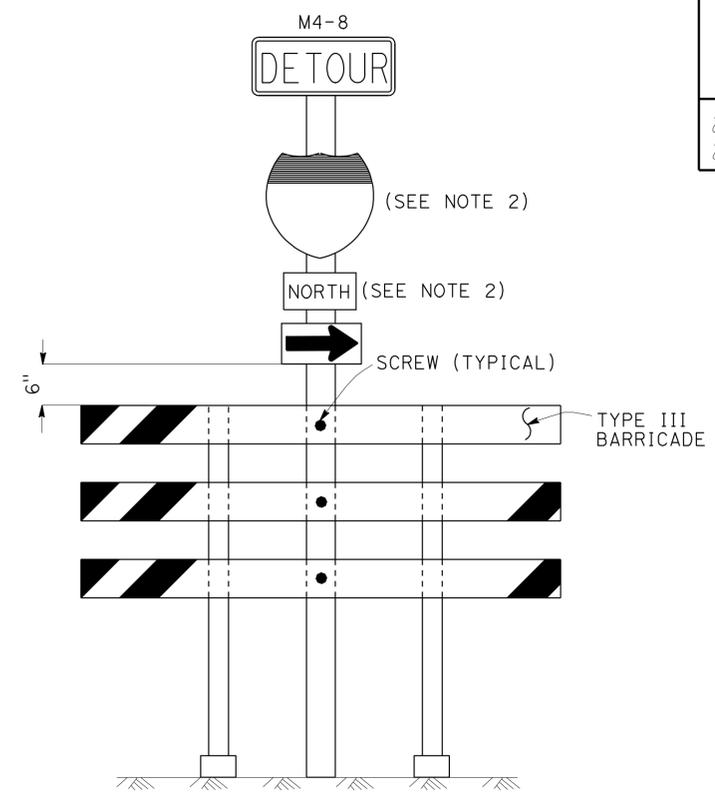
- LETTERS -6" SERIES E.
- LETTERS, BORDER AND ARROW - BLACK ON RETROREFLECTORIZED ORANGE BACKGROUND.
- BASE MATERIAL FOR SIGNS AND ARROWS SHALL BE ALUMINUM (MINIMUM 0.06").
- BELTS (LUGGAGE STRAPS) SHALL BE 1" WIDE BY 48" LONG, MADE OF COTTON OR POLYPROPYLENE WEB MATERIAL.
- SIGNS SHALL BE MOUNTED WITH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

**ABBREVIATION**

(CA) CALIFORNIA CODE



SIGN SP-6 (SEE NOTE 1)

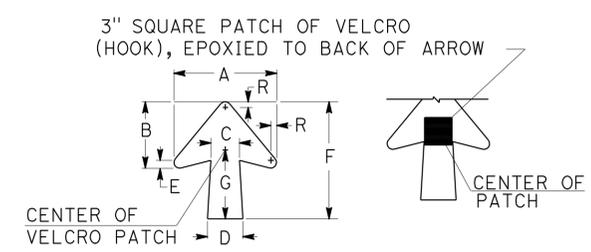


SIGN SP-7 (SEE NOTE 1)

**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 SHIELD [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**



ADJUSTABLE ARROW DETAIL

DIMENSIONS							
A	B	C	D	E	F	G	R
11 1/4"	7 1/4"	3 3/8"	4"	7 7/8"	13"	7 1/2"	5 7/8"

SPECIAL PORTABLE FREEWAY DETOUR SIGN

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

THD-2

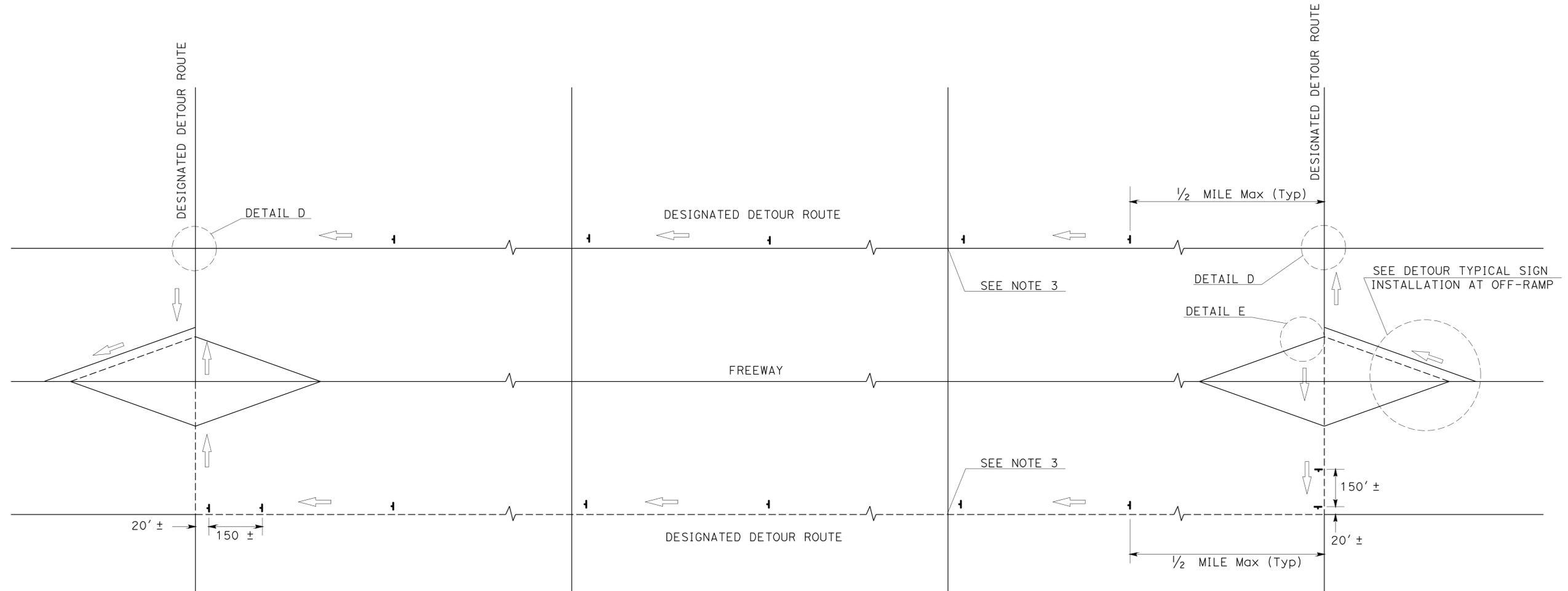
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 DT M  
 FUNCTIONAL SUPERVISOR JOHN YANG  
 CHECKED BY  
 CALCULATED/DESIGNED BY  
 REVISOR BY JC DATE REVISED 7/10  
 DESIGNED BY ALBERT K YU JOCELYN C CHIANG

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	138	0.0/16.0 21.0/37.0	13	27

*Martin Oregel* 07-14-10  
 REGISTERED CIVIL ENGINEER DATE  
 1-24-11  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
**MARTIN OREGEL**  
 No. C56816  
 Exp. 6-30-11  
 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.



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

**LEGEND**

-  TEMPORARY SIGN (SP-2)
-  AND/OR DESIGNATED DETOUR ROUTE
- 
-  DIRECTION OF TRAVEL

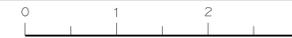
**NOTES:**

1. SP-2 SIGNS SHALL NOT BE INSTALLED ON BARRICADES EXCEPT AS OTHERWISE SHOWN.
2. SIGN LOCATIONS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.
3. SP-2 SIGNS SHALL BE POSTED AT SIGNALIZED INTERSECTIONS ALONG THE DESIGNATED DETOUR ROUTE OR 1/2 MILE MAXIMUM APART.

**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	ALBERT K YU	REVISOR BY	JC
Caltrans	JOCELYN C CHIANG	DATE REVISED	7/10
FUNCTIONAL SUPERVISOR	JOHN YANG	CALCULATED/DESIGNED BY	
		CHECKED BY	

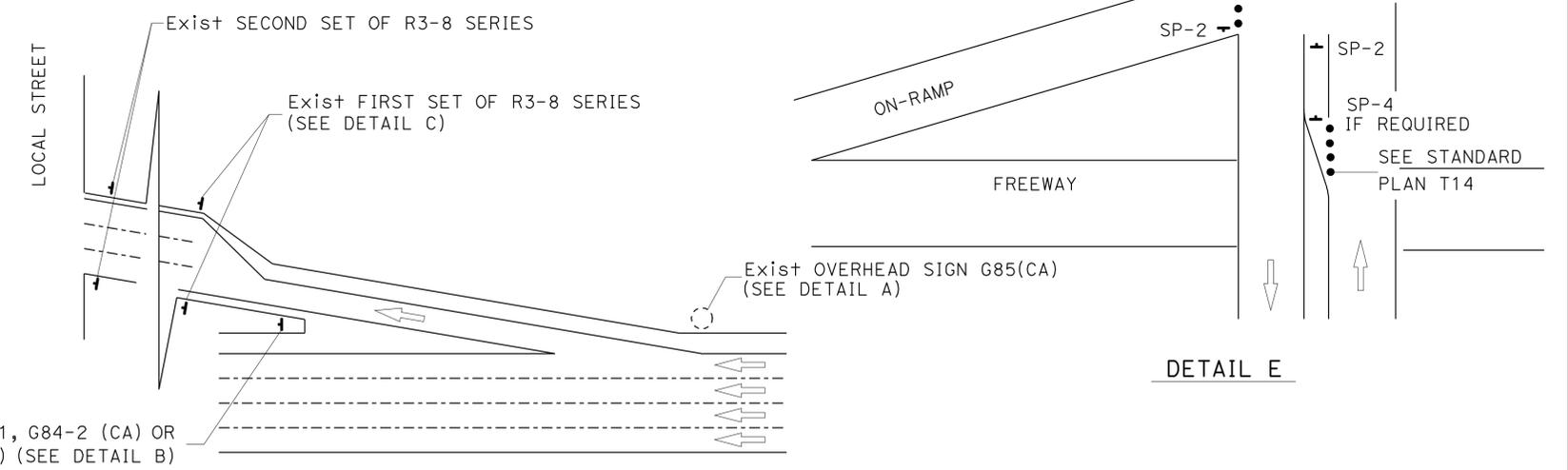
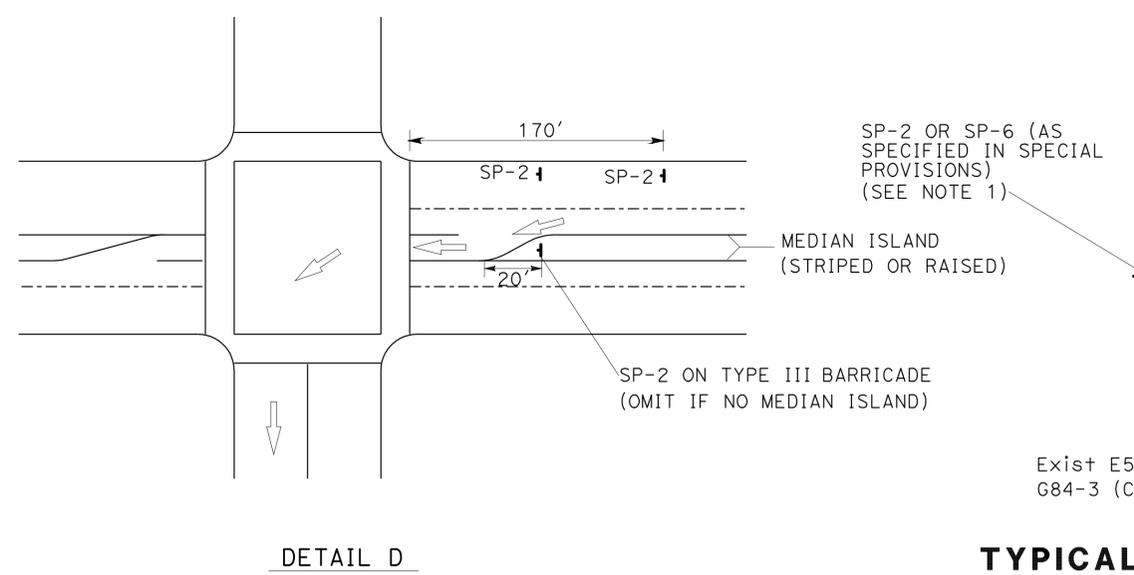
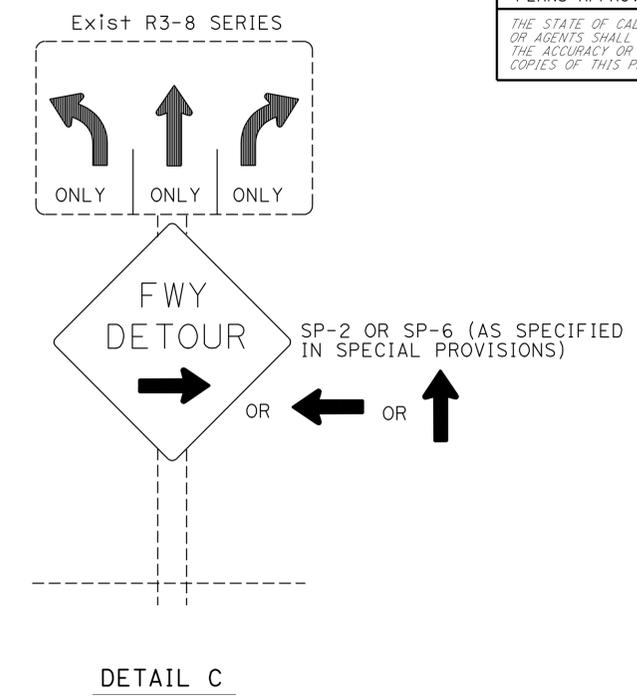
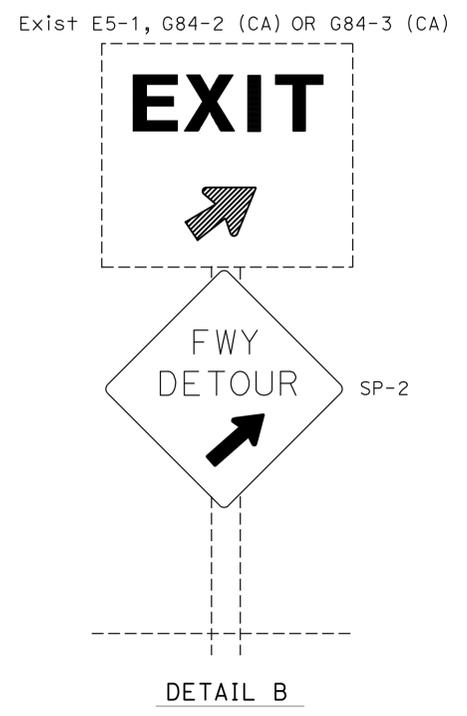
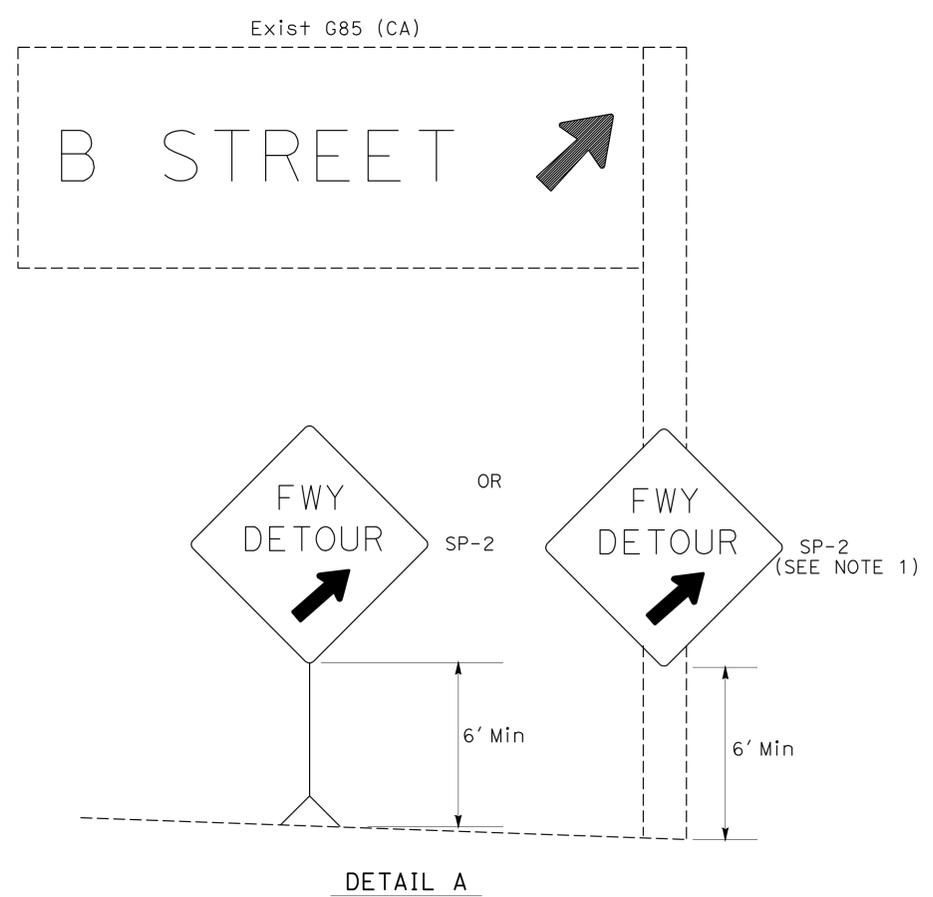


Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	138	0.0/16.0 21.0/37.0	14	27

07-14-10  
 REGISTERED CIVIL ENGINEER DATE  
 1-24-11  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 MARTIN OREGEL  
 No. C56816  
 Exp. 6-30-11  
 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.



**TYPICAL DETOUR SIGN INSTALLATION AT OFF-RAMP**

**NOTES:**  
 1. TEMPORARY SIGNS MAY BE STRAPPED ON EXISTING ELECTROLIER, SIGNAL POSTS, OR SIGN POSTS.

**ABBREVIATIONS**  
 (CA) CALIFORNIA CODE

**LEGENDS**

- TRAFFIC CONE
- ↑ TEMPORARY SIGN
- DIRECTION OF TRAVEL
- EXISTING OVERHEAD SIGN

**TRAFFIC HANDLING DETAILS  
 TRAFFIC CONTROL SYSTEM  
 FOR DETOUR SIGN INSTALLATION  
 ALONG DESIGNATED DETOUR ROUTE  
 SHEET 2 OF 2  
 NO SCALE**

**THD-4**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
 DTM  
 FUNCTIONAL SUPERVISOR JOHN YANG  
 CHECKED BY JOCELYN C CHIANG  
 REVISOR BY ALBERT K YU  
 DATE REVISED 7/10  
 DESIGNED BY JC

USERNAME => s125624  
 DGN FILE => 73y800me004.dgn

RELATIVE BORDER SCALE IS IN INCHES

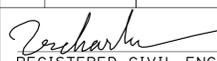
UNIT 1887

PROJECT NUMBER & PHASE

007000007721

LAST REVISION DATE PLOTTED => 02-FEB-2011  
 TIME PLOTTED => 11:32

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	138	0.0/16.0, 21.0/37.0	15	27

 1-03-11  
 REGISTERED CIVIL ENGINEER DATE

1-24-11  
 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.



### PAVEMENT DELINEATION QUANTITIES

POSTMILE	FROM	TO	DIRECTION	PAINT TRAFFIC STRIPE (2-COAT)										PAINT PAVEMENT MARKING (2-COAT)							PAVEMENT MAKER (RETROREFLECTIVE-RECESSED)			REMOVE PAVEMENT MARKER					
				Det 6	Det 12	Det 19	Det 27B	Det 25	Det 25A	Det 22	Det 29	Det 36	Det 38	Det 38B	TYPE IV ARROW	TYPE V ARROW	TYPE VI ARROW	WORDS	DIAGONAL 12' WIDE YELLOW	DIAGONAL 12' WIDE WHITE	LIMIT LINE 12" WIDE WHITE	TYPE D	TYPE G		TYPE H				
				4" YELLOW (BROKEN 36-12)	4" WHITE (BROKEN 36-12)	4" YELLOW	4" WHITE	4" YELLOW	8" WHITE	8" WHITE	8" WHITE	SOFT	SOFT	SOFT	SOFT	SOFT	SOFT	SOFT	EA		EA	EA							
0.0	1.0		EB 138 FROM NB 5		5,280		5,280		5,280								126									115	223	338	
0.0	1.0		EB 138 FROM SB 5		5,280		5,280		5,280																	115	223	338	
1.0	2.1		EB 138		5,280		5,808	3,696		2,256				110		15	132	126	44			60		193	120	80	393		
0.0	0.9		WB 138 TO NB 5		4,752		4,752		4,752				350													119	201	320	
0.0	0.9		WB 138 TO SB 5		4,752		4,752		4,752				810													138	201	339	
0.9	1.2		WB 138		3,168		1,584	1,584																		80	36	116	
1.2	2.1		WB 138		4,752		4,752	2,640		2,112							132									181	104	58	343
2.1	5.5		EB & WB	2,640		528	35,904			14,784	740			118		30									1,334	10	25	1,369	
5.5	8.3		EB & WB	5,808		4,224	29,568			4,752															610		179	789	
8.3	12.5		EB & WB	14,045		2,059	44,352			5,386	2,746			160		30									904	12	89	1,004	
12.5	16.0		EB & WB	8,395		2,693	36,960			7,392															852		115	967	
21.0	28.0		EB & WB	34,610		2,355	73,920																		775		101	876	
28.0	32.0		EB & WB	18,638		1,373	42,240			1,109															514		60	575	
32.0	33.0		EB & WB	4,646		634	10,560																		115		29	144	
33.0	35.0		EB & WB	9,979		581	21,120																		225		27	252	
35.0	37.0		EB & WB	7,075		1,373	21,120			634	2,957			140		30				190	207				357	11	60	428	
SUBTOTAL				105,838	33,264	15,820	347,952	7,920	20,064	38,425	6,443	1,160	528	110	105	264	252	44	190	207	60	6,060	824	1,707	8,591				
TOTAL				577,524										1,122							8,591			8,591					

### PAVEMENT DELINEATION QUANTITIES

**PDQ-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** MAINTENANCE ENGINEERING

FUNCTIONAL SUPERVISOR: DEBORAH WONG  
 CALCULATED/DESIGNED BY: CHARLIE TRUONG  
 CHECKED BY: DEBORAH WONG  
 REVISED BY: DEBORAH WONG  
 DATE REVISED:

LAST REVISION | DATE PLOTTED => 02-FEB-2011  
 00-00-00 | TIME PLOTTED => 11:32

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	138	0.0/16.0, 21.0/37.0	16	27

 1-03-11  
 REGISTERED CIVIL ENGINEER DATE  
 1-24-11  
 PLANS APPROVAL DATE



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

**LEGEND:**

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

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** MAINTENANCE ENGINEERING  
 FUNCTIONAL SUPERVISOR  
 DEBORAH WONG  
 CALCULATED/DESIGNED BY  
 CHECKED BY  
 CHARLIE TRUONG  
 DEBORAH WONG  
 REVISED BY  
 DATE REVISED

**ROADWAY QUANTITIES**

POSTMILE	DIRECTION		COLD PLANE ASPHALT CONCRETE PAVEMENT	RUBBERIZED HOT MIX ASPHALT CONCRETE (GAP GRADED)	TACK COAT	SLURRY SEAL	IMPORTED MATERIAL (SHOULDER BACKING)
			SQYD	TON	TON	TON	TON
FROM	TO						
0.0	1.0	EB 138 FROM NB 5	926.2	1,649.2	3.1		62.4
0.0	1.0	EB 138 FROM SB 5	1,102.2	1,451.6	2.7		58.2
1.0	2.1	EB 138	1,408.0	1,688.2	3.2		58.2
0.0	0.9	WB 138 TO NB 5	926.2	1,358.5	2.6		54.1
0.0	0.9	WB 138 TO SB 5	926.2	1,534.0	2.9		54.1
0.9	2.1	WB 138	704.0	2,213.4	4.2		83.2
2.1	5.0	EB & WB	1,982.2	4,284.7	8.1		195.4
5.0	10.2	EB & WB				12,26.2	
10.2	11.0	EB & WB	92.4	950.6	1.8		66.5
11.0	12.1	EB & WB				284.3	
12.1	16.0	EB & WB	1,500.4	4,674.6	8.8		291.1
21.0	25.0	EB & WB	92.4	4,800.7	9.1		332.6
25.0	30.0	EB & WB				1,210.7	
30.0	33.0	EB & WB	92.4	3,634.8	6.9		249.5
33.0	34.5	EB & WB				515.3	
34.5	37.0	EB & WB	1,500.4	3,847.4	7.3		174.6
TOTAL			11,253.0	32,087.7	60.7	3,236.5	1,679.8

**ROADWAY QUANTITIES**

POSTMILE	DIRECTION	LENGTH (N)	WIDTH (N)	DEPTH (N)	REPLACE ASPHALT CONCRETE SURFACING
		FOOT	FOOT	FOOT	CY
10.9	EB & WB	65	32	0.25	19.3
12.1	EB & WB	620	37	0.25	212.4
12.5	EB & WB	600	26	0.25	144.4
13.8	EB & WB	235	33	0.25	71.8
14.0	EB & WB	400	33	0.25	122.2
15.1	EB & WB	530	27	0.25	132.5
21.2	EB & WB	70	31	0.25	20.1
21.3	EB & WB	150	28	0.25	38.9
30.5	WB	200	16	0.25	29.6
31.2	WB	140	16	0.25	20.7
TOTAL					811.9

**SUMMARY OF QUANTITIES**

**Q-1**



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	138	0.0/16.0, 21.0/37.0	17	27

 1-03-11  
 REGISTERED CIVIL ENGINEER DATE  
 1-24-11  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 CHARLIE TRUONG  
 No. 69881  
 Exp. 9/30/12  
 CIVIL  
 STATE OF CALIFORNIA

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<b>PRESERVE SURVEY MONUMENTATION</b>		
LOCATION OF SURVEY MONUMENTS	DESCRIPTION	ADJUST MONUMENT COVER
		EA
25th STREET WEST AND CENTERLINE ROUTE 138	WELL MONUMENT	1
30th STREET WEST AND CENTERLINE ROUTE 138	WELL MONUMENT	1
35th STREET WEST AND CENTERLINE ROUTE 138	WELL MONUMENT	1
40th STREET WEST AND CENTERLINE ROUTE 138	WELL MONUMENT	1
45th STREET WEST AND CENTERLINE ROUTE 138	WELL MONUMENT	1
50th STREET WEST AND CENTERLINE ROUTE 138	WELL MONUMENT	1
55th STREET WEST AND CENTERLINE ROUTE 138	WELL MONUMENT	1
60th STREET WEST AND CENTERLINE ROUTE 138	WELL MONUMENT	1
65th STREET WEST AND CENTERLINE ROUTE 138	WELL MONUMENT	1
70th STREET WEST AND CENTERLINE ROUTE 138	WELL MONUMENT	1
75th STREET WEST AND CENTERLINE ROUTE 138	WELL MONUMENT	1
80th STREET WEST AND CENTERLINE ROUTE 138	WELL MONUMENT	1
85th STREET WEST AND CENTERLINE ROUTE 138	WELL MONUMENT	1
90th STREET WEST AND CENTERLINE ROUTE 138	WELL MONUMENT	1
95th STREET WEST AND CENTERLINE ROUTE 138	WELL MONUMENT	1
100th STREET WEST AND CENTERLINE ROUTE 138	WELL MONUMENT	1
110th STREET WEST AND CENTERLINE ROUTE 138	WELL MONUMENT	1
115th STREET WEST AND CENTERLINE ROUTE 138	WELL MONUMENT	1
120th STREET WEST AND CENTERLINE ROUTE 138	WELL MONUMENT	1
125th STREET WEST AND CENTERLINE ROUTE 138	WELL MONUMENT	1
130th STREET WEST AND CENTERLINE ROUTE 138	WELL MONUMENT	1
135th STREET WEST AND CENTERLINE ROUTE 138	WELL MONUMENT	1
140th STREET WEST AND CENTERLINE ROUTE 138	WELL MONUMENT	1
145th STREET WEST AND CENTERLINE ROUTE 138	WELL MONUMENT	1
150th STREET WEST AND CENTERLINE ROUTE 138	WELL MONUMENT	1
155th STREET WEST AND CENTERLINE ROUTE 138	WELL MONUMENT	1
160th STREET WEST AND CENTERLINE ROUTE 138	WELL MONUMENT	1
165th STREET WEST AND CENTERLINE ROUTE 138	WELL MONUMENT	1
170th STREET WEST AND CENTERLINE ROUTE 138	WELL MONUMENT	1
175th STREET WEST AND CENTERLINE ROUTE 138	WELL MONUMENT	1
180th STREET WEST AND CENTERLINE ROUTE 138	WELL MONUMENT	1
THREE POINTS ROAD AND CENTERLINE ROUTE 138	WELL MONUMENT	1
<b>TOTAL</b>		<b>32</b>

## SUMMARY OF QUANTITIES

### Q-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** MAINTENANCE ENGINEERING  
 FUNCTIONAL SUPERVISOR: DEBORAH WONG  
 CALCULATED/DESIGNED BY: CHARLIE TRUONG  
 CHECKED BY: DEBORAH WONG  
 REVISED BY: DATE REVISIONS

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
07	LA	138	0.0/16.0 21.0/37.0	18	27

FATEMEH ANSARI 8/3/10  
REGISTERED ELECTRICAL ENGINEER DATE

1-24-11  
PLANS APPROVAL DATE

FATEMEH ANSARI  
No. E17009  
Exp. 9/30/11  
ELECTRICAL

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

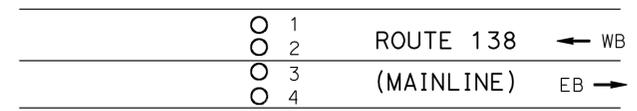
### INDUCTIVE LOOP DETECTOR SCHEDULE

No.	PM	LOCATION	SEE DETAIL A THIS SHEET FOR TYPICAL LOCATION OF LOOP DETECTORS				No. OF STUBOUTS (REPLACE)
			1	2	3	4	
1	1.6	EB ROUTE 138			X	X	1
2	1.6	WB ROUTE 138	X	X			1

X - ABANDON EXISTING INDUCTIVE LOOP DETECTOR.  
INSTALL TYPE E INDUCTIVE LOOP DETECTOR AT THE SAME LOCATION.

#### GENERAL NOTES: (THIS SHEET ONLY)

1. ABANDON EXISTING STUBOUTS. INSTALL 2" C STUBOUTS.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL LOCATE EXISTING INDUCTIVE LOOP DETECTORS.
3. NEW INDUCTIVE LOOP DETECTOR SHALL BE SPLICED TO EXISTING d/c IN ADJACENT PULL BOX.
4. TAG EXISTING d/c IN ADJACENT PULL BOX AND IN CONTROLLER CABINET.



DETAIL A

DETAIL FOR TYPICAL INDUCTIVE LOOP DETECTOR INSTALLATION ON MAINLINE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** TRAFFIC DESIGN  
 FUNCTIONAL SUPERVISOR: YI TSAU  
 CALCULATED/DESIGNED BY: FATEMEH ANSARI  
 CHECKED BY: JESSE RUELAS  
 REVISED BY: FATEMEH ANSARI  
 DATE REVISED:

## MODIFY TRAFFIC MONITORING STATION

NO SCALE

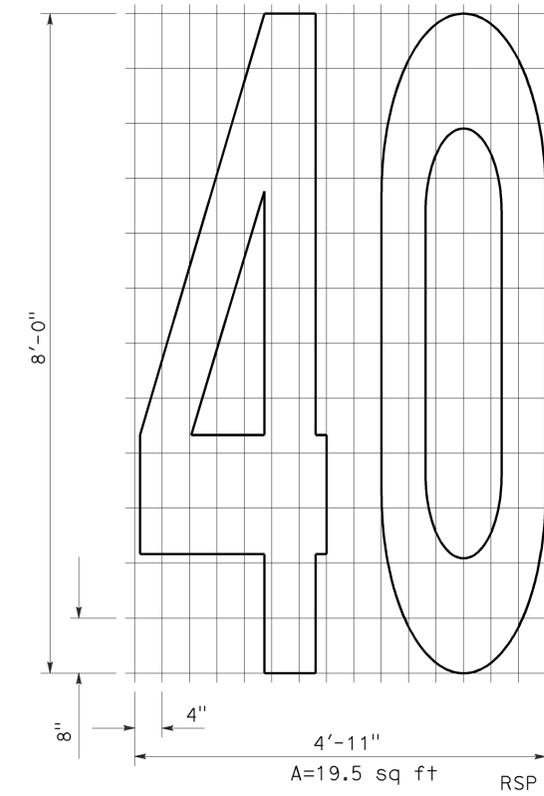
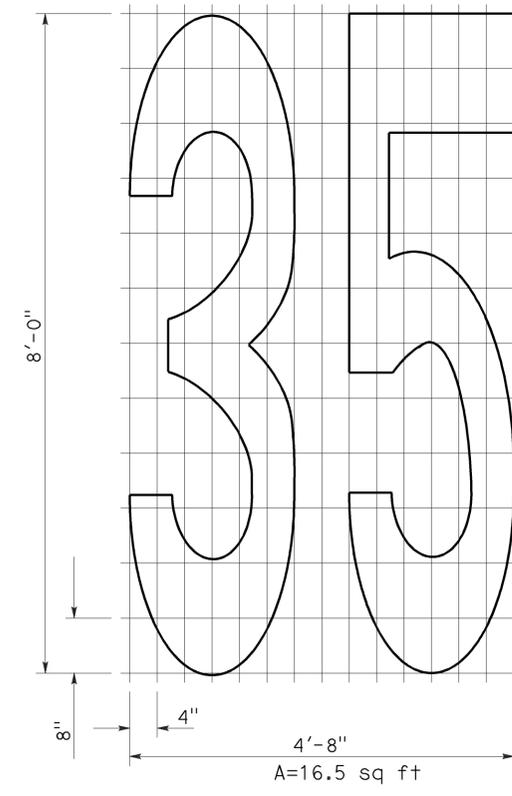
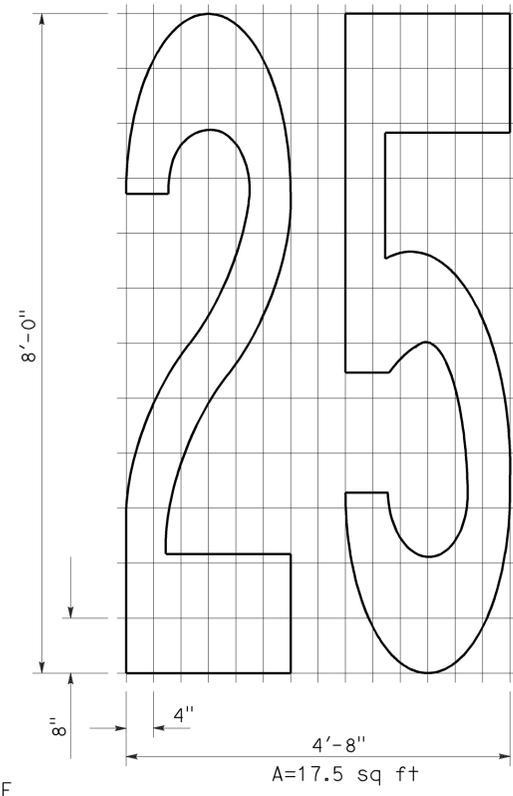
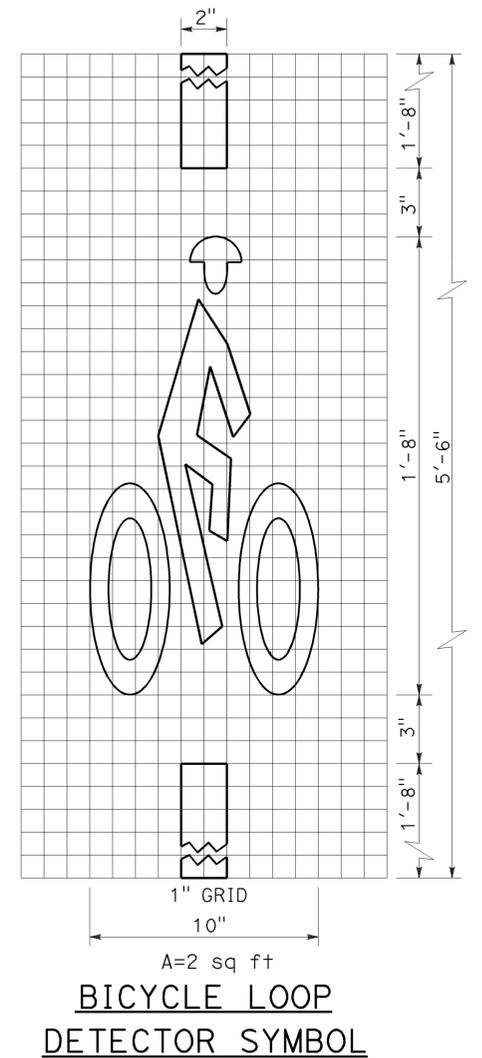
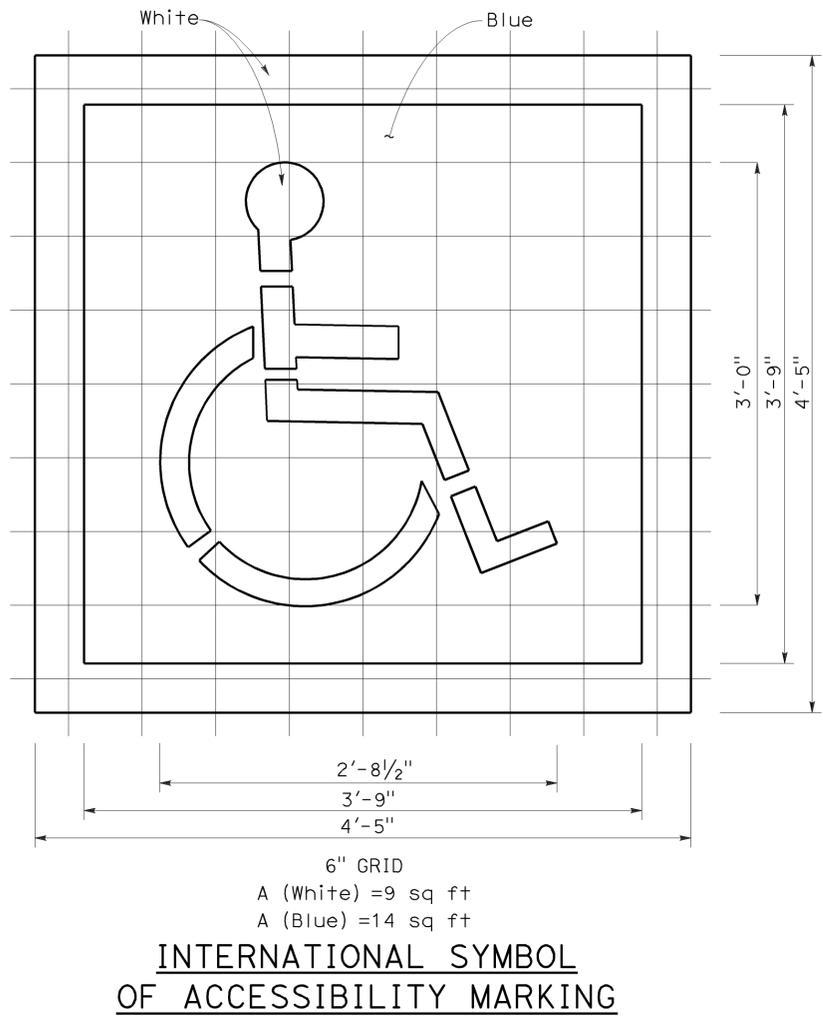
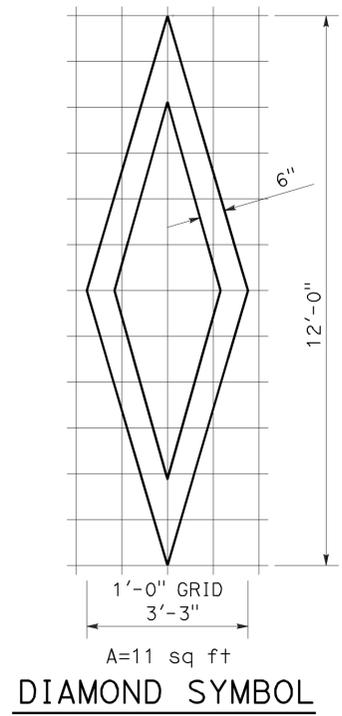
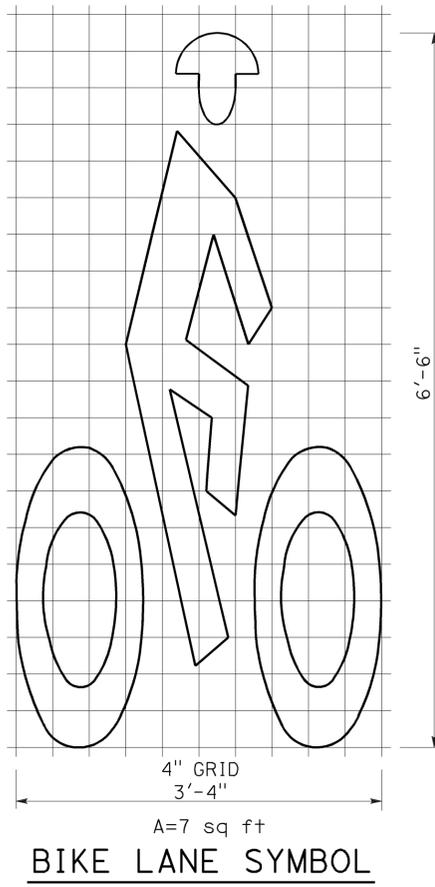
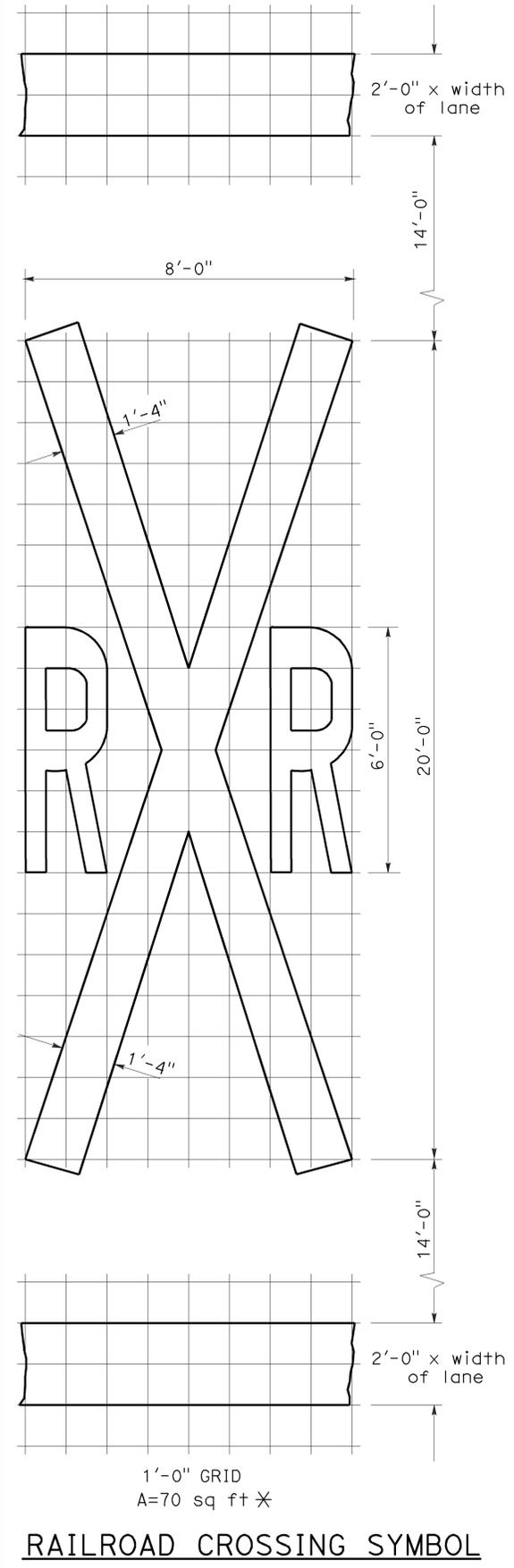
E-1

THIS PLAN IS ACCURATE FOR ELECTRICAL WORK ONLY.

DIST	COUNTY	ROUTE	POST MILES	TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	138	0.0/16.0	21.0/37.0	19	27

Donald E. Howe  
 REGISTERED CIVIL ENGINEER  
 June 6, 2008  
 PLANS APPROVAL DATE  
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 1-24-11



**NUMERALS**

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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**PAVEMENT MARKINGS SYMBOLS AND NUMERALS**  
NO SCALE

✕70 sq ft DOES NOT INCLUDE THE 2'-0" x VARIABLE WIDTH TRANSVERSE LINES.

**2006 REVISED STANDARD PLAN RSP A24C**

RSP A24C DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A24C DATED MAY 1, 2006 - PAGE 11 OF THE STANDARD PLANS BOOK DATED MAY 2006.

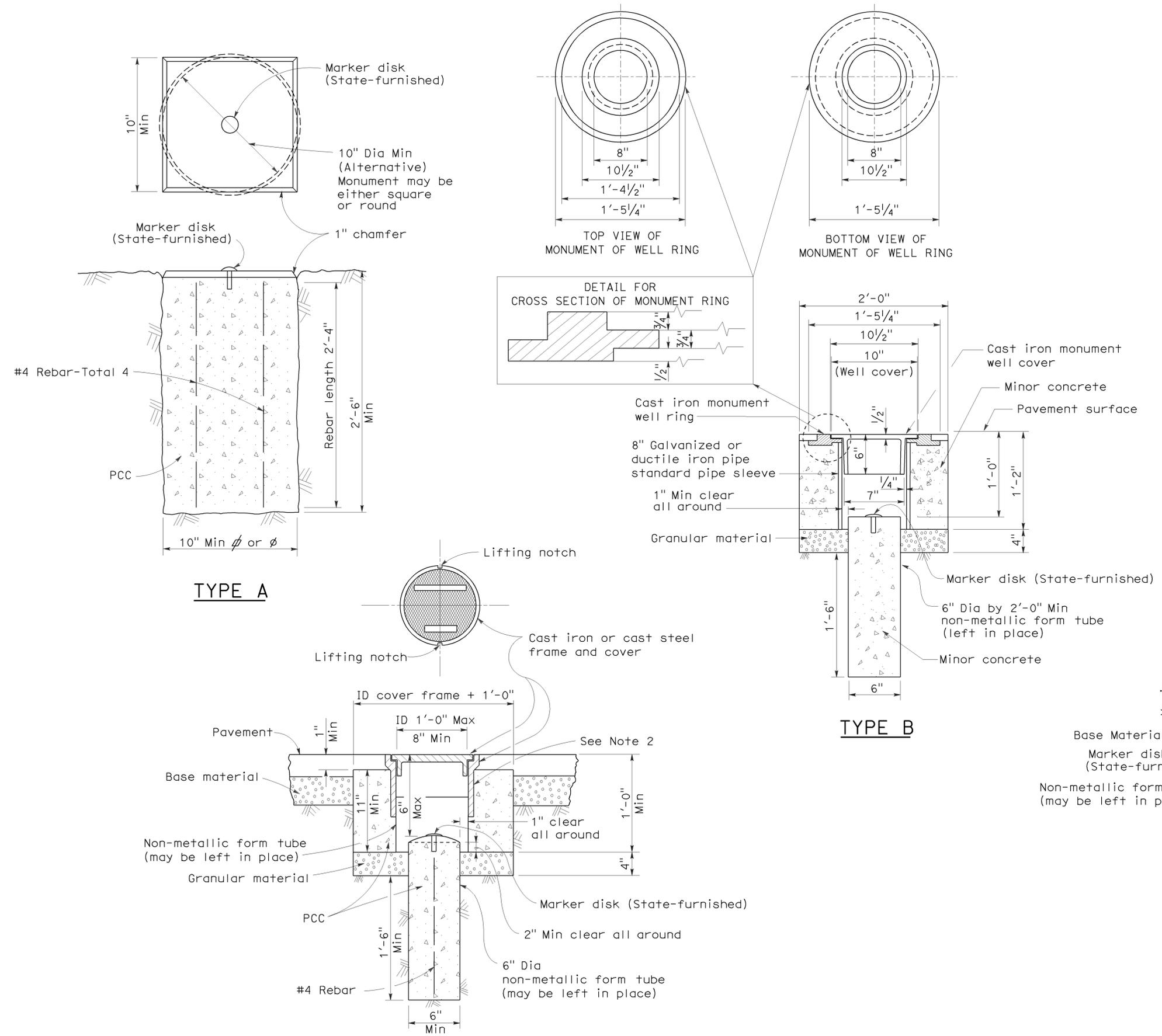
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	138	0.0/16.0 21.0/37.0	20	27

*Mark S. Turner*  
 PROFESSIONAL LAND SURVEYOR  
 June 30, 2006  
 PLANS APPROVAL DATE  
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

LICENSED LAND SURVEYOR  
 Mark S. Turner  
 No. 6228  
 Exp. 3-31-08  
 STATE OF CALIFORNIA

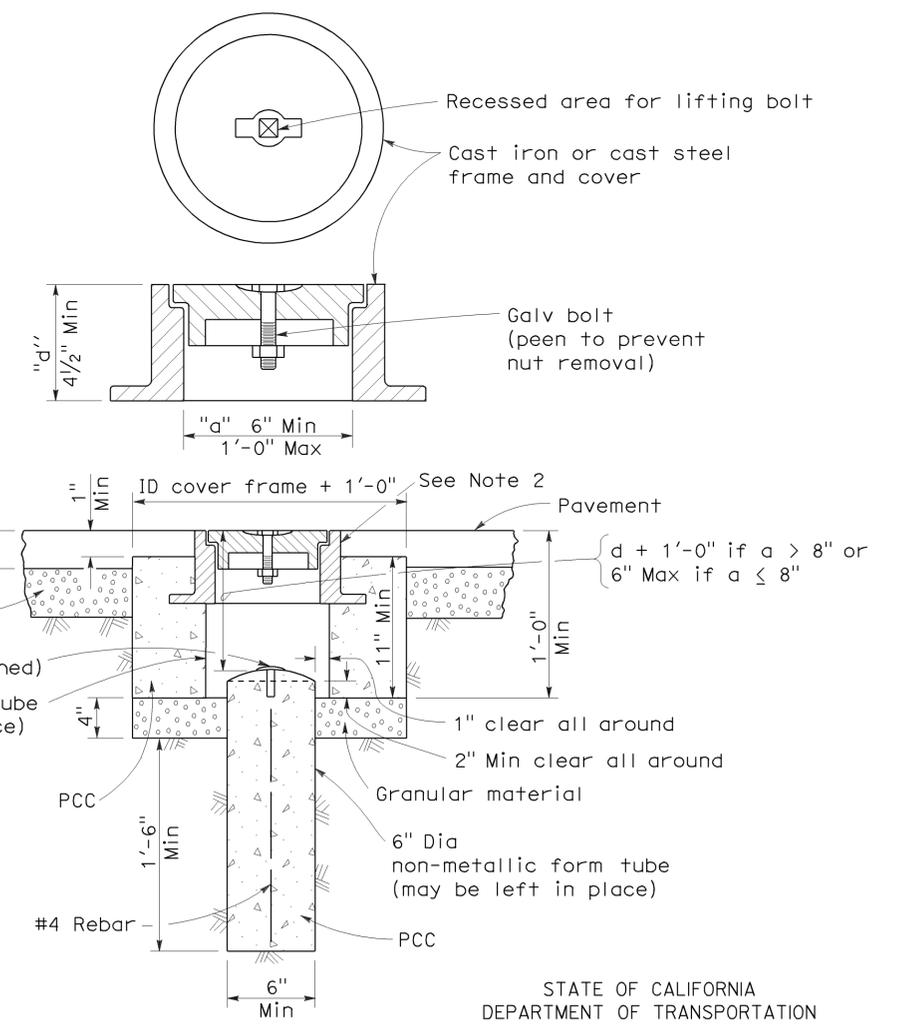
To accompany plans dated 1-24-11

2006 REVISED STANDARD PLAN RSP A74



**NOTES:**

1. The configuration of the cast iron or cast steel frame and cover may vary from that shown.
2. Frame shall be embedded in the concrete a minimum of 3".
3. Type D monument shall be either Alternative No. 1 or Alternative No. 2 at the contractor's option.
4. All portland cement concrete shall be Class 2 or minor concrete with 1" maximum aggregate.



**TYPE D SURVEY MONUMENTS**  
 Alternative No. 2  
 NO SCALE

RSP A74 DATED JUNE 30, 2006 SUPERSEDES STANDARD PLAN DATED MAY 1, 2006 - PAGE 28 OF THE STANDARD PLANS BOOK DATED MAY 2006.

**REVISED STANDARD PLAN RSP A74**

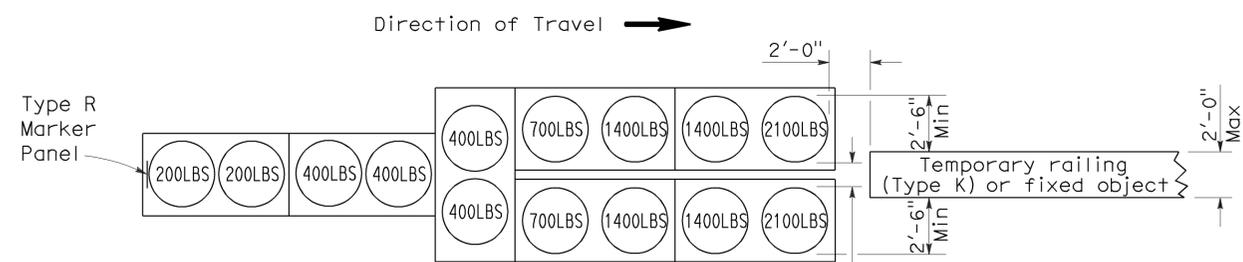
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	138	0.0/16.0, 21.0/37.0	21	27

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

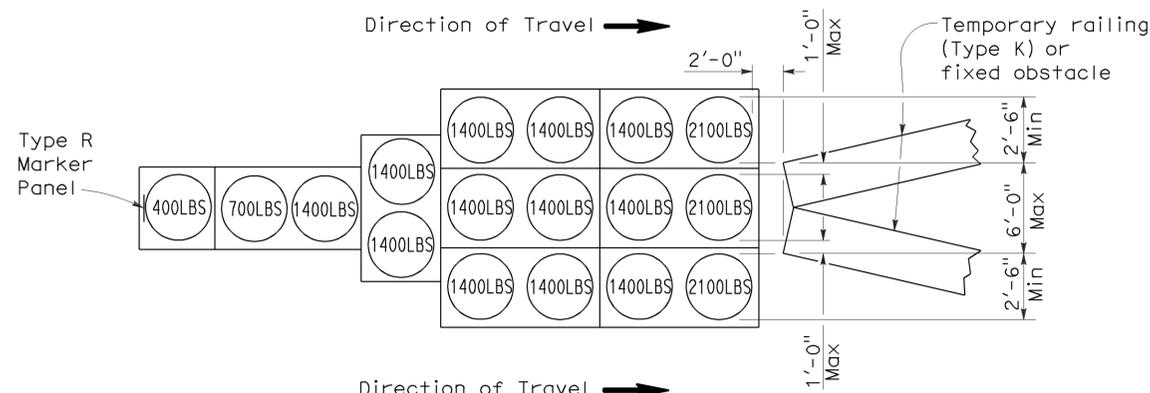
*The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

To accompany plans dated 1-24-11



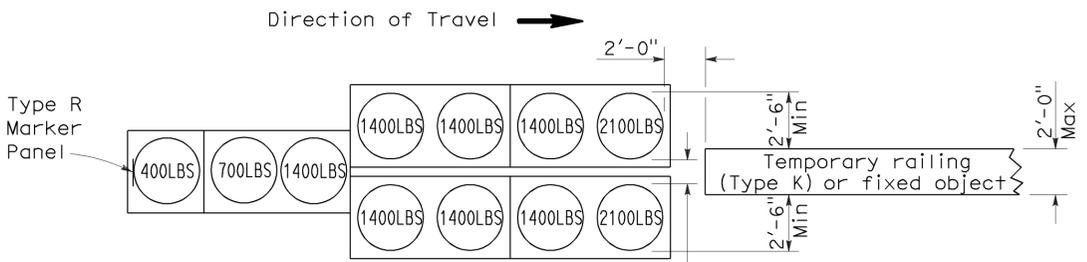
**ARRAY 'TU14'**

Approach speed 45 mph or more



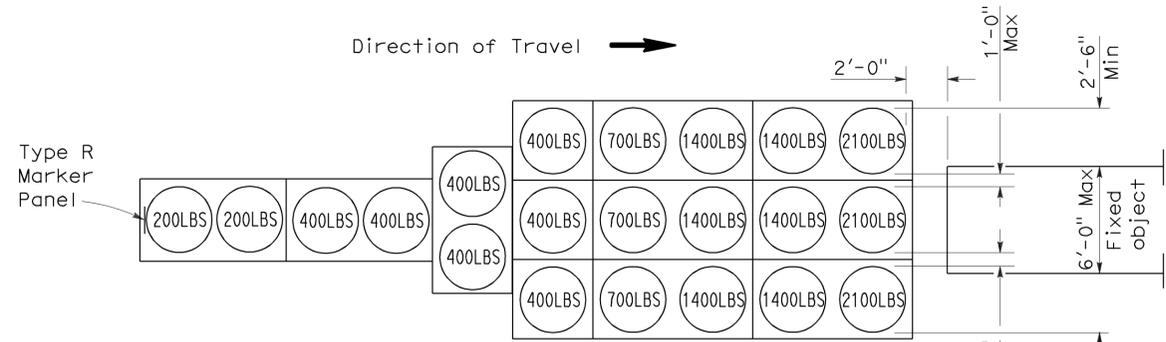
**ARRAY 'TU17'**

Approach speed less than 45 mph



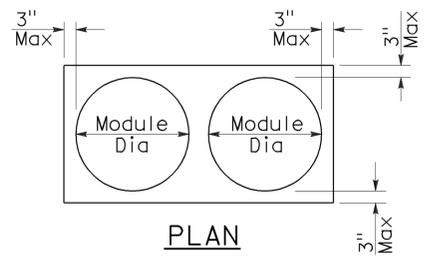
**ARRAY 'TU11'**

Approach speed less than 45 mph

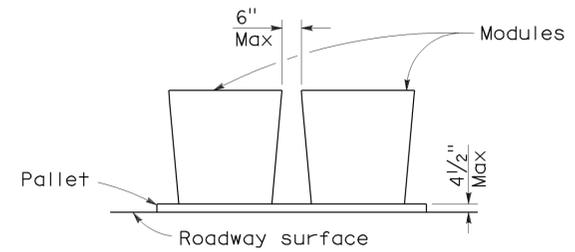


**ARRAY 'TU21'**

Approach speed 45 mph or more



**PLAN**



**ELEVATION**

**CRASH CUSHION PALLET DETAIL**

See Note 7

**NOTES:**

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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

**REVISED STANDARD PLAN RSP T1A**

2006 REVISED STANDARD PLAN RSP T1A

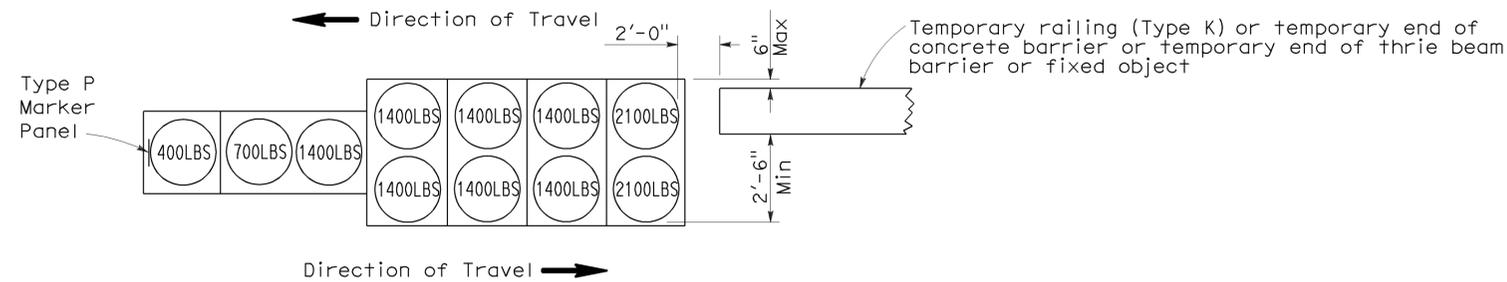
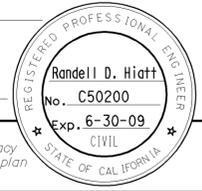
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	138	0.0/16.0, 21.0/37.0	22	27

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

June 6, 2008  
PLANS APPROVAL DATE

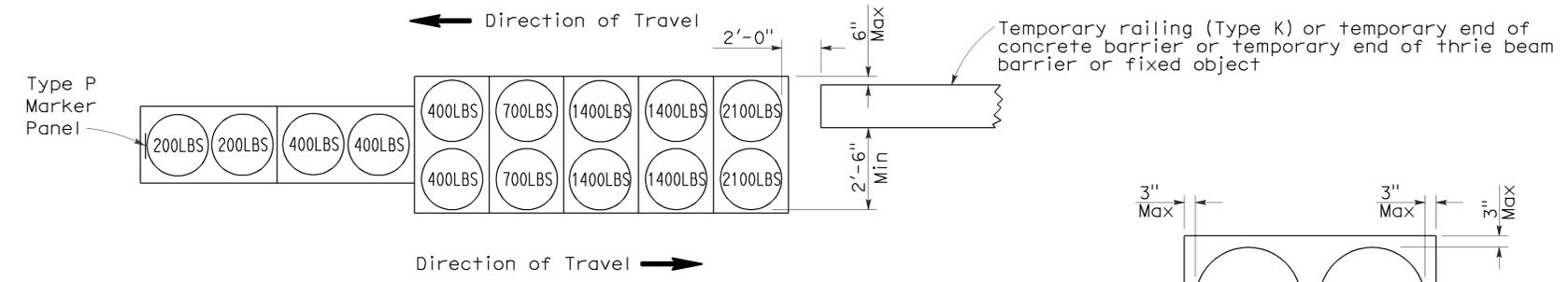
*The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.*

To accompany plans dated 1-24-11



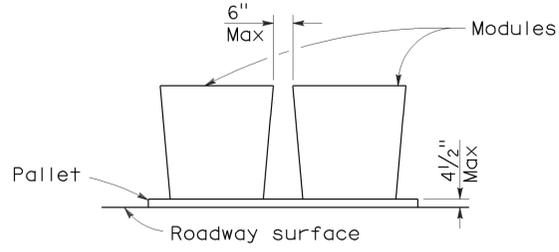
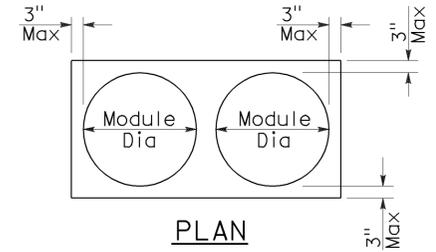
**ARRAY 'TB11'**

Approach speed less than 45 mph



**ARRAY 'TB14'**

Approach speed 45 mph or more



**CRASH CUSHION PALLET DETAIL**  
See Note 7

**NOTES:**

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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION  
**TEMPORARY CRASH CUSHION,  
SAND FILLED  
(BIDIRECTIONAL)**  
NO SCALE

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

**REVISED STANDARD PLAN RSP T1B**

2006 REVISED STANDARD PLAN RSP T1B

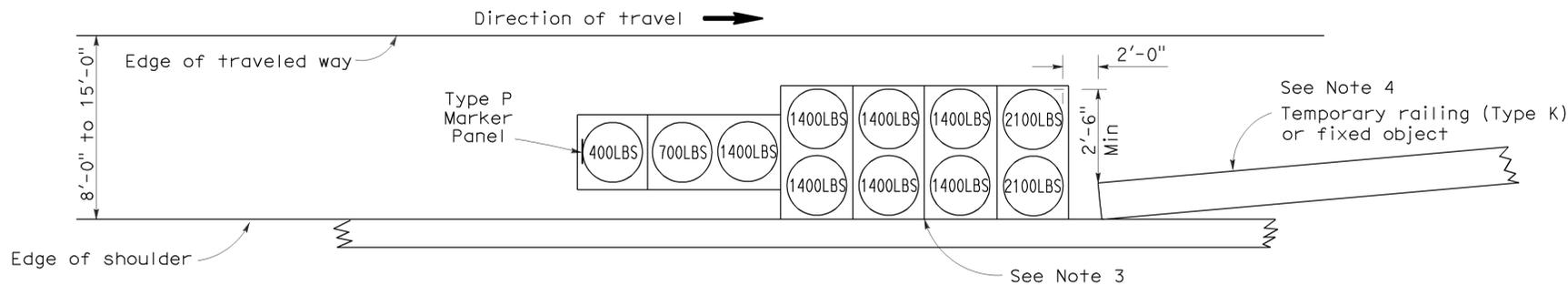
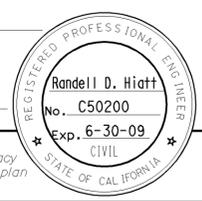
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	138	0.0/16.0, 21.0/37.0	23	27

Randell D. Hiatt  
REGISTERED CIVIL ENGINEER

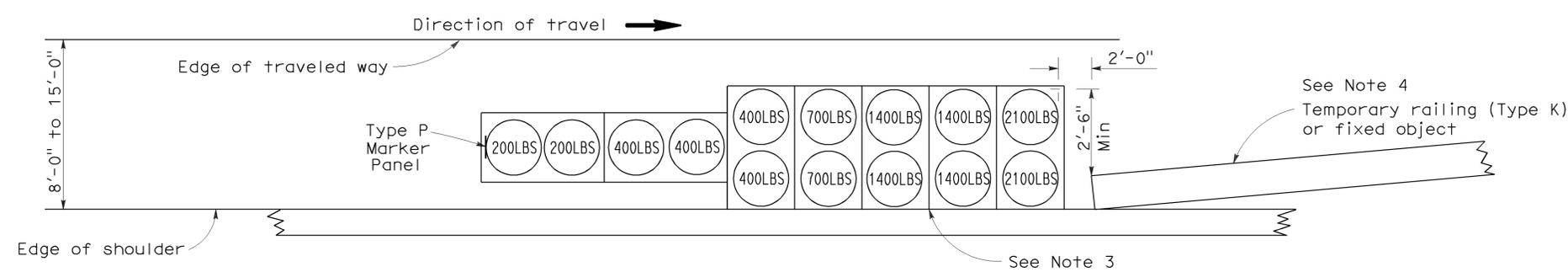
June 6, 2008  
PLANS APPROVAL DATE

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

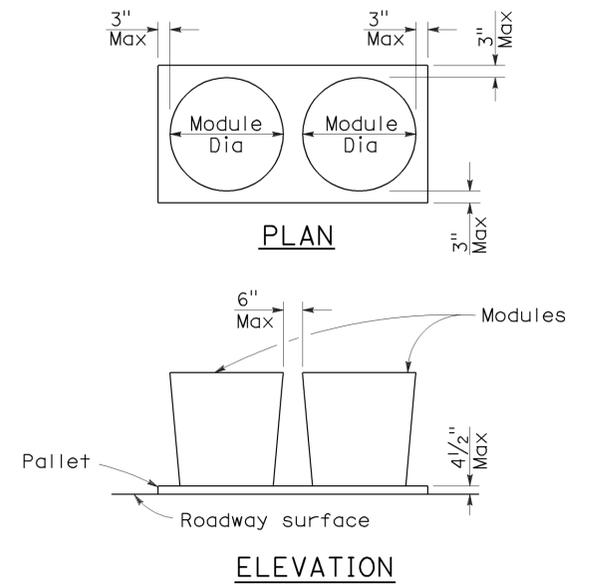
To accompany plans dated 1-24-11



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



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



**CRASH CUSHION PALLET DETAIL**  
See Note 11

**NOTES:**

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

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

**REVISED STANDARD PLAN RSP T2**

2006 REVISED STANDARD PLAN RSP T2

# ELECTROLIERS

STANDARD TYPES	Symbol	Description
15, 15D		High mast light pole
15 STRUCTURE		Double Arm lighting standard
21, 21D STRUCTURE		Existing electrolier
30		Electrolier foundation (Future installation)
31		<b>NOTES:</b> 1. Luminaires shall be 310 W HPS when installed on Type 21, 21D, 30, 31, 32, 35 and 36-20A Standards, unless otherwise specified. Luminaires shall be 200 W HPS when installed on other type standards or poles, unless otherwise specified. 2. Luminaires shall be the cutoff type, ANSI Type III medium cutoff lighting distribution, unless otherwise specified. 3. Variations noted adjacent to symbol on project plans.
32		
35		
36-20A		

- Electrolier (see project notes or project plans)
- Luminaire on wood pole

## STANDARD NOTES:

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

# ABBREVIATIONS AND EQUIPMENT DESIGNATIONS

## PROPOSED EXISTING

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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	138	0.0/16.0, 21.0/37.0	24	27

REGISTERED ELECTRICAL ENGINEER  
 October 5, 2007  
 PLANS APPROVAL DATE  
  
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To accompany plans dated 1-24-11

## 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.
- Existing soffit or wall luminaire to be modified as specified.

### NOTE:

Arrow indicates "street side" of luminaire.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

# ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

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

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

2006 REVISED STANDARD PLAN RSP ES-1A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	138	0.0/16.0, 21.0/37.0	25	27

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

### CONDUIT

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

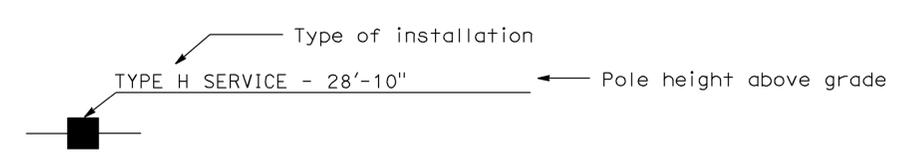
### SIGNAL EQUIPMENT

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

### SERVICE EQUIPMENT

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

### POLE-MOUNTED SERVICE DESIGNATION



### ILLUMINATED OVERHEAD SIGN

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

### SIGNAL EQUIPMENT Cont

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

### NOTES:

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

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

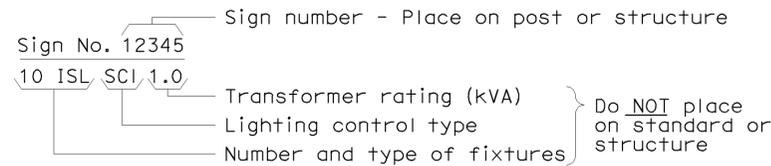
RSP ES-1B DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1B  
 DATED MAY 1, 2006 - PAGE 401 OF THE STANDARD PLANS BOOK DATED MAY 2006.

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

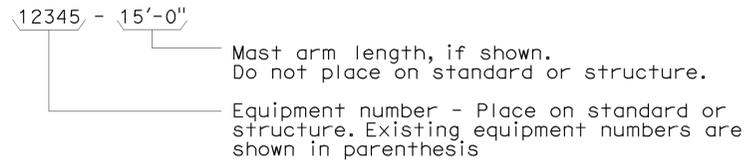
2006 REVISED STANDARD PLAN RSP ES-1B

### EQUIPMENT IDENTIFICATION

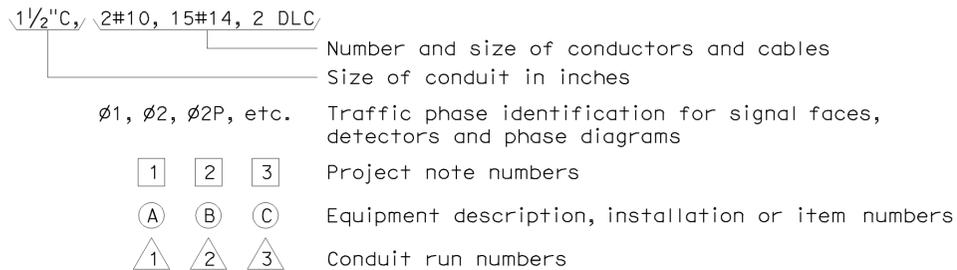
#### ILLUMINATED SIGN IDENTIFICATION NUMBER:



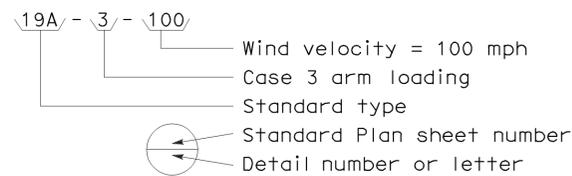
#### ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



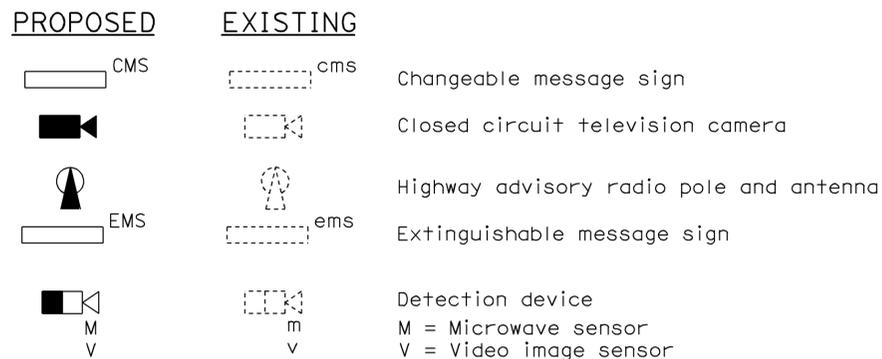
#### CONDUIT AND CONDUCTOR IDENTIFICATION:



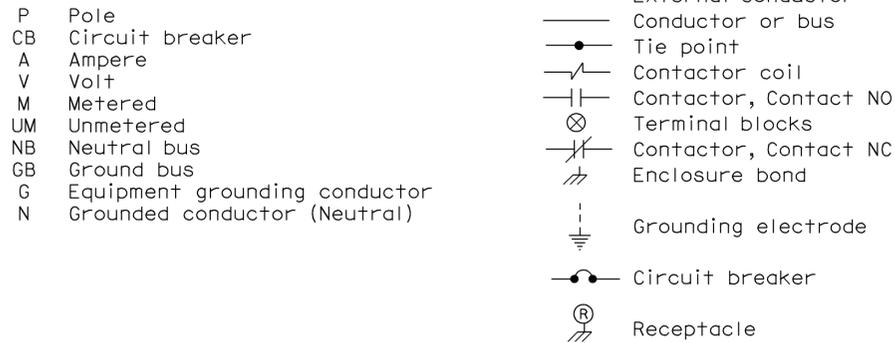
#### SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



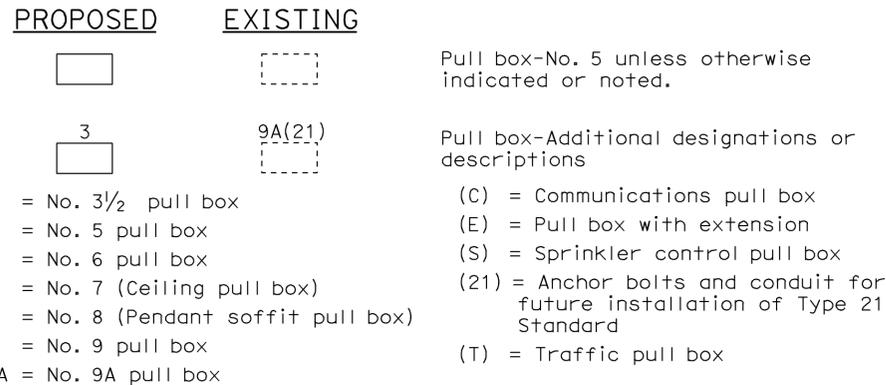
### MISCELLANEOUS EQUIPMENT



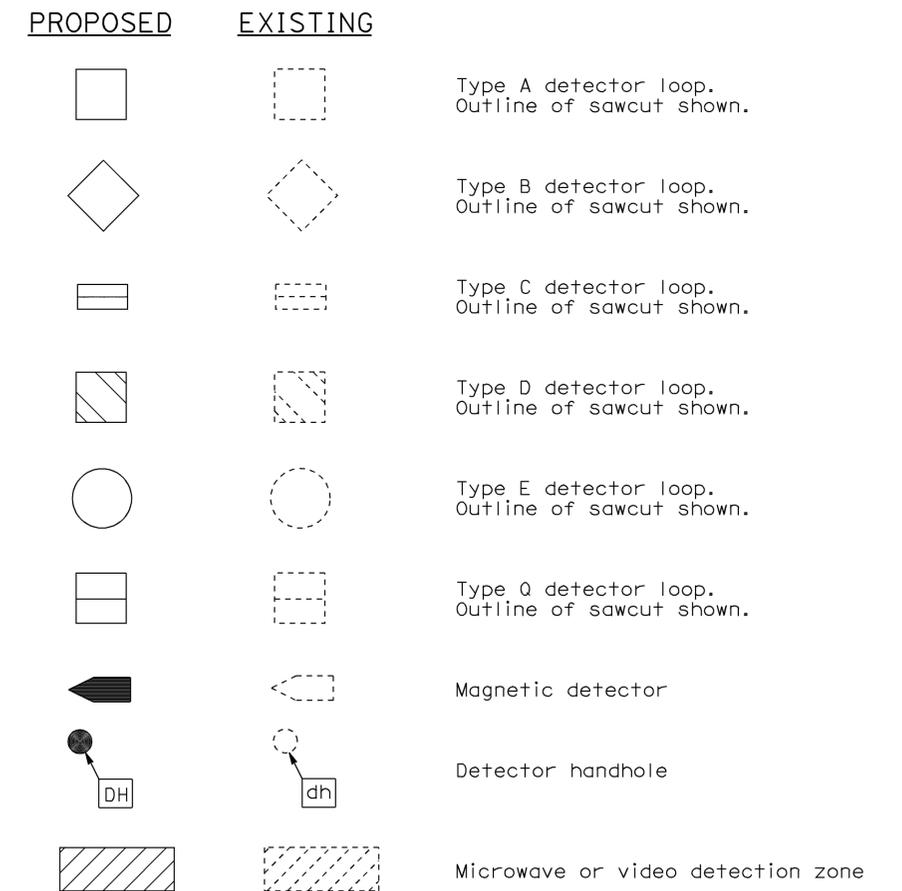
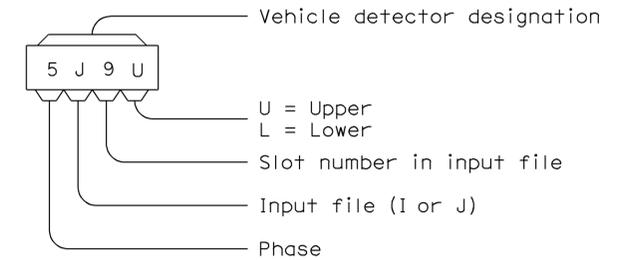
### WIRING DIAGRAM LEGEND



### PULL BOXES



### VEHICLE DETECTORS



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

## ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

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

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

2006 REVISED STANDARD PLAN RSP ES-1C

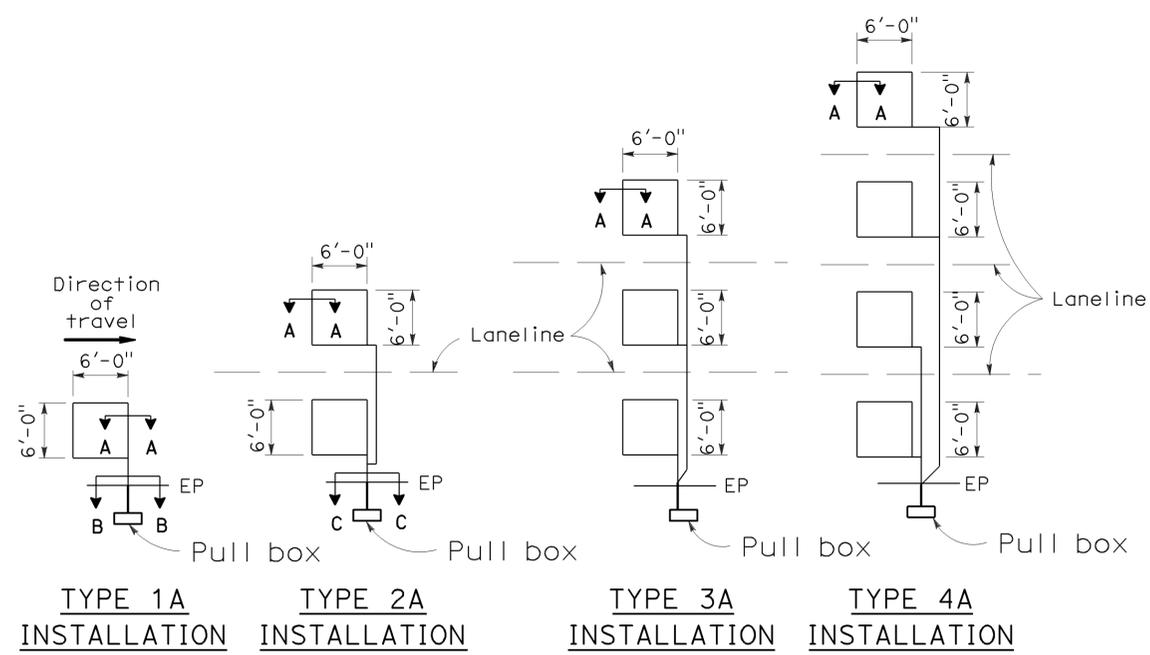
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
07	LA	138	0.0/16.0 21.0/37.0	27	27

*Jeffery G. McRae*  
 REGISTERED ELECTRICAL ENGINEER  
 October 5, 2007  
 PLANS APPROVAL DATE  
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2006 REVISED STANDARD PLAN RSP ES-5A

## LOOP INSTALLATION PROCEDURE

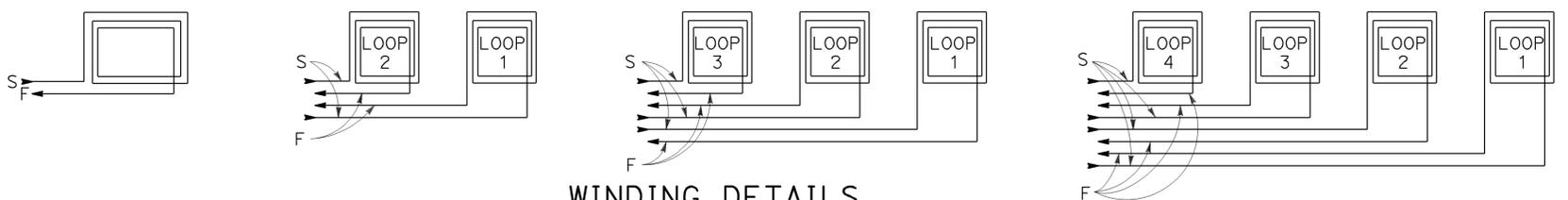
- Loops shall be centered in lanes.
- Saw slots in pavement for loop conductors as shown in details.
- Distance between side of loop and a lead-in saw cut from adjacent detectors shall be 2'-0" minimum. Distance between lead-in saw cuts shall be 6" minimum.
- Bottom of saw slot shall be smooth with no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



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

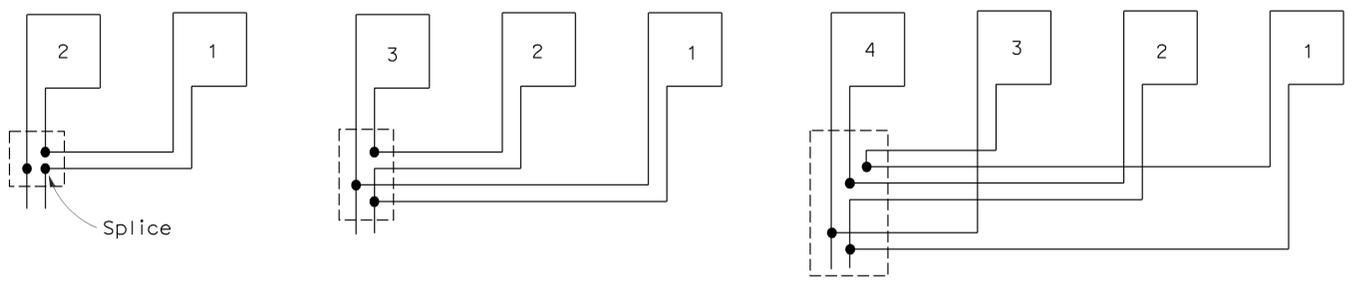
### SAWCUT DETAILS

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



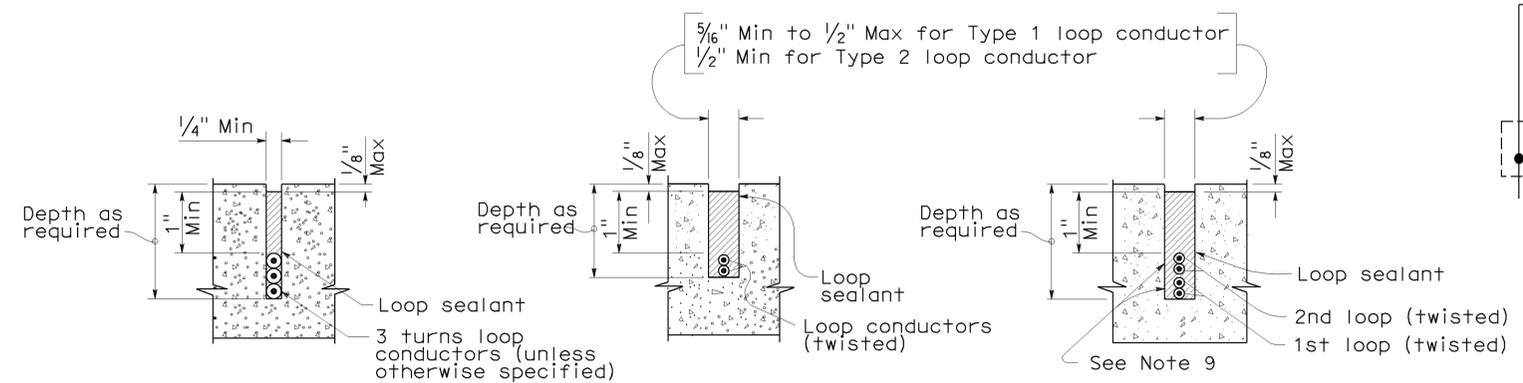
### WINDING DETAILS

See Notes 6 and 7



### TYPICAL LOOP CONNECTIONS

(Dashed lines represent the pull box)



SECTION A-A    SECTION B-B    SECTION C-C  
 SLOT DETAILS - TYPE 1 AND TYPE 2 LOOP CONDUCTOR

## ELECTRICAL SYSTEMS (DETECTORS)

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

NO SCALE

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

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