Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	9.0/10.0	1	25

INDEX OF PLANS

SHEET No.	DESCRIPTION
1	TITLE SHEET AND LOCATION MAP
2	TYPICAL CROSS SECTIONS
3 - 6	CONSTRUCTION AREA SIGNS
7	PAVEMENT DELINEATION DETAILS AND QUANTITIES
8 - 9	SUMMARY OF QUANTITIES
10 - 12	ELECTRICAL PLANS
13 - 25	REVISED STANDARD PLANS

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

STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION

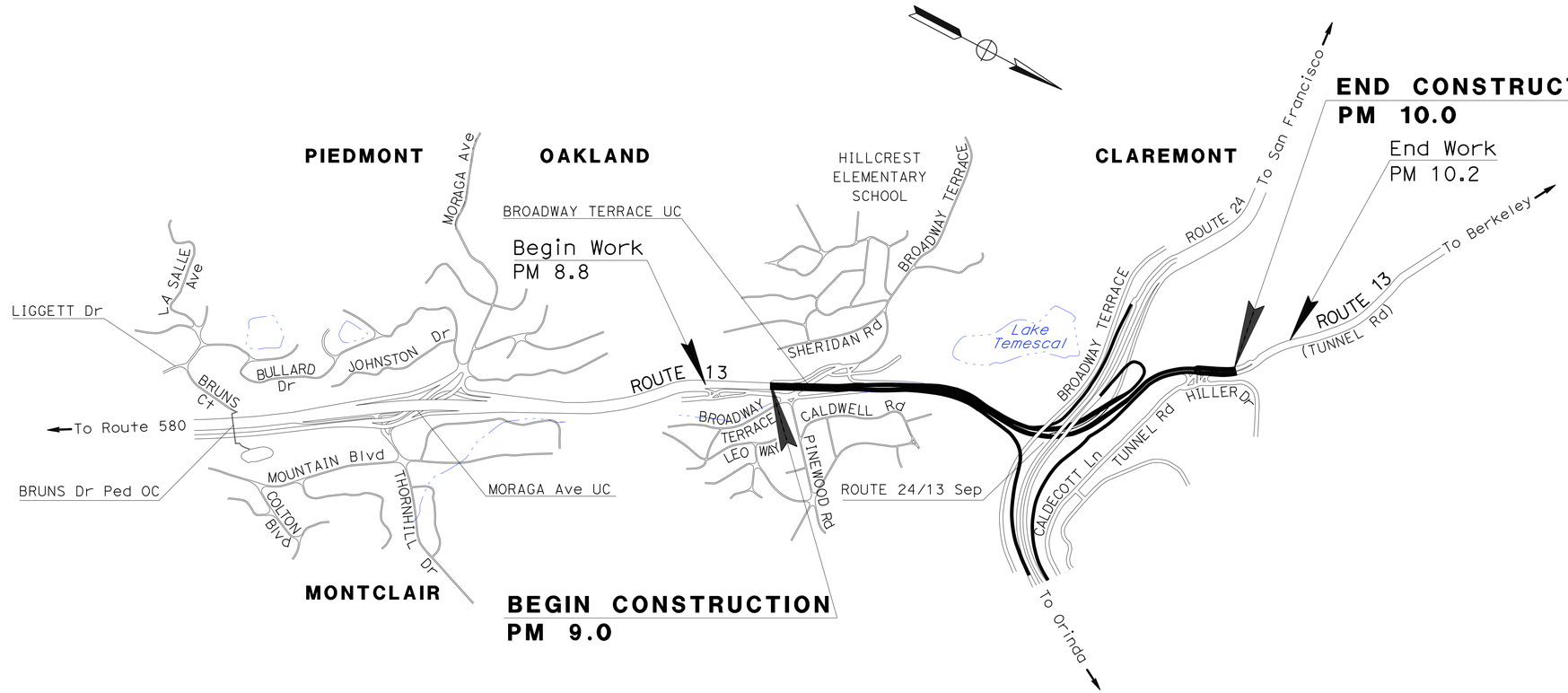
PROJECT PLANS FOR CONSTRUCTION ON

STATE HIGHWAY

IN ALAMEDA COUNTY
IN OAKLAND
FROM 0.1 MILE SOUTH OF BROADWAY TERRACE UNDERCROSSING TO HILLER DRIVE

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010

LOCATION MAP



NO SCALE

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

PROJECT MANAGER: RAMSES SARGISS

DESIGN MANAGER: ROBERT CAMARGO

PROJECT ENGINEER
REGISTERED CIVIL ENGINEER

2/17/15
DATE

Steven S. Lee
No. 80370
Exp. 3-31-17
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

March 9, 2015
PLANS APPROVAL DATE

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

CONTRACT No.	04-3E2304
PROJECT ID	0412000286

LAST REVISION 02-17-15
DATE PLOTTED => 16-MAR-2015
TIME PLOTTED => 11:10

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	9.0/10.0	2	25

2/17/15
REGISTERED CIVIL ENGINEER DATE

3-9-15
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Steven S. Lee
No. 80370
Exp. 3-31-17
CIVIL
STATE OF CALIFORNIA

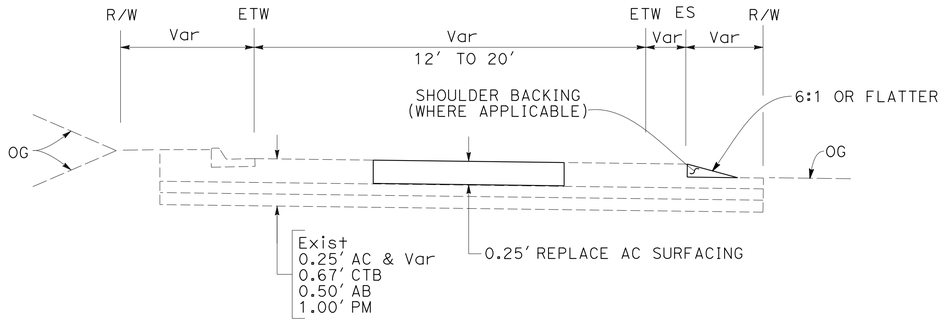
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTES:

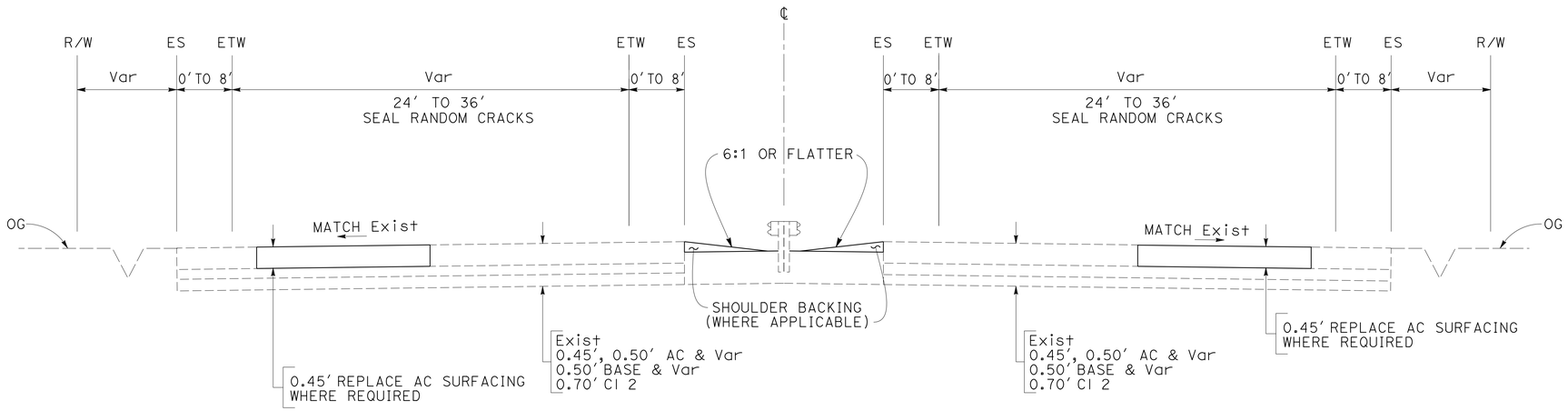
1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
3. FOR LOCATION AND DIMENSIONS OF REPLACE AC SURFACING, SEE SHEET Q-1 AND Q-2 OR AS DIRECTED BY THE ENGINEER.
4. CONTRACTOR IS RESPONSIBLE TO PROVIDE POSITIVE DRAINAGE FROM ALL ROADWAY AREA AT ALL TIME.

ABBREVIATION:

& AND



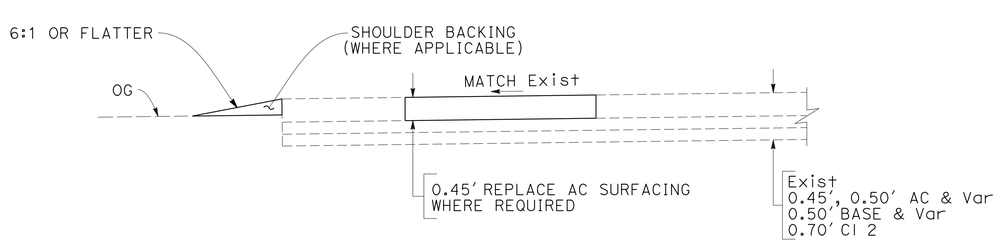
RAMP



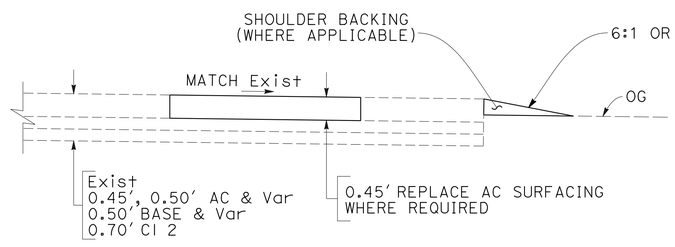
SOUTHBOUND

NORTHBOUND

PM 9.6 TO 9.9



SOUTHBOUND



NORTHBOUND

PM 9.0 TO 9.6
PM 9.9 TO 10.0

ROUTE 13

TYPICAL CROSS SECTIONS

NO SCALE

X-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
FUNCTIONAL SUPERVISOR: ROBERT CAMARGO
CALCULATED-DESIGNED BY: STEVEN S. LEE
CHECKED BY: ROBERT CAMARGO
REVISED BY: SL
DATE REVISED: 2/17/15

LAST REVISION DATE PLOTTED => 16-MAR-2015
02-17-15 TIME PLOTTED => 11:10

BORDER LAST REVISED 7/2/2010
USERNAME => s136183
DGN FILE => 0412000286ca001.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0976
PROJECT NUMBER & PHASE 04120002861

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	9.0/10.0	3	25

Parwin W. Sarwary 2/17/15
REGISTERED CIVIL ENGINEER DATE

3-9-15
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Parwin W. Sarwary
No. 79545
Exp. 9-30-16
CIVIL
STATE OF CALIFORNIA

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

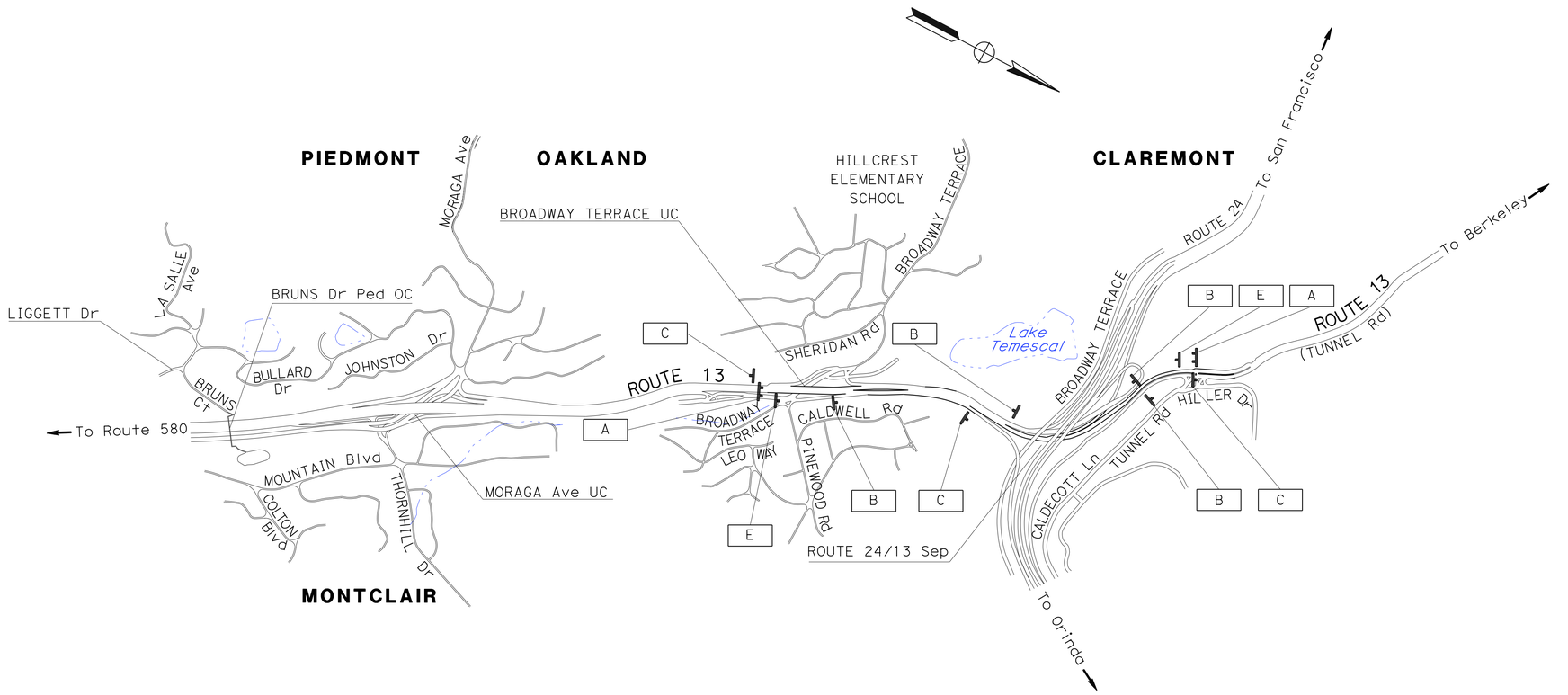
LEGEND:

CONSTRUCTION AREA SIGN LETTER

X RAMP OR CONNECTOR TO BE CLOSED

NOTE:

1. LOCATION OF CONSTRUCTION AREA SIGNS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED BY THE ENGINEER.



CONSTRUCTION AREA SIGNS

NO SCALE

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

CS-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC

FUNCTIONAL SUPERVISOR: LOURDES DAVID

REVISED BY	DATE REVISED
PS	2/17/15

CALCULATED-DESIGNED BY: PARWIN SARWARY
CHECKED BY: CLAUDIA FANG

LAST REVISION | DATE PLOTTED => 16-MAR-2015
02-17-15 | TIME PLOTTED => 11:10

BORDER LAST REVISED 7/2/2010

USERNAME => s136183
DGN FILE => 04120002861a001.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0976

PROJECT NUMBER & PHASE 04120002861

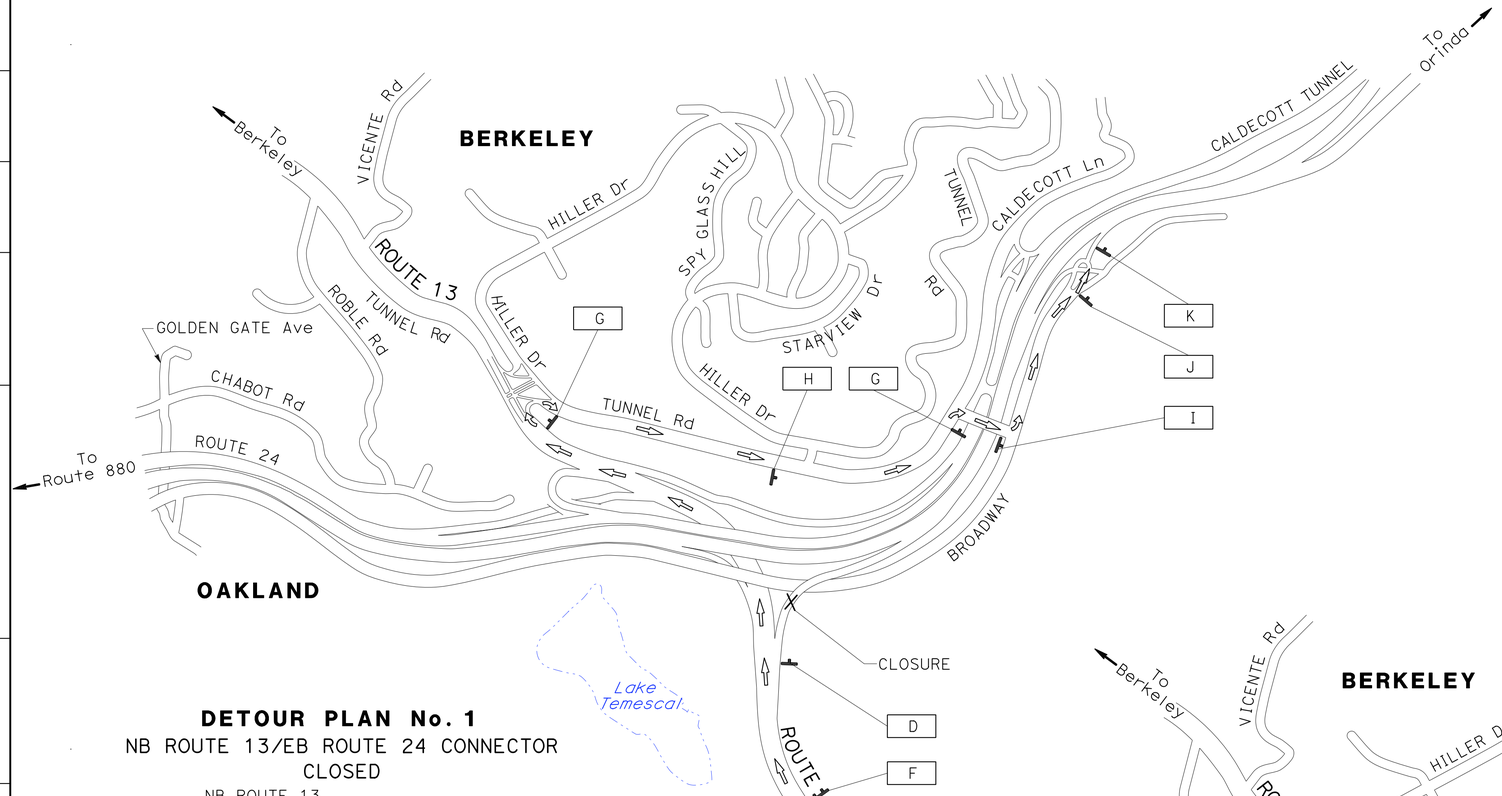
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	9.0/10.0	4	25

Parwin W. Sarwary 2/17/15
REGISTERED CIVIL ENGINEER DATE

3-9-15
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Parwin W. Sarwary
No. 79545
Exp. 9-30-16
CIVIL
STATE OF CALIFORNIA

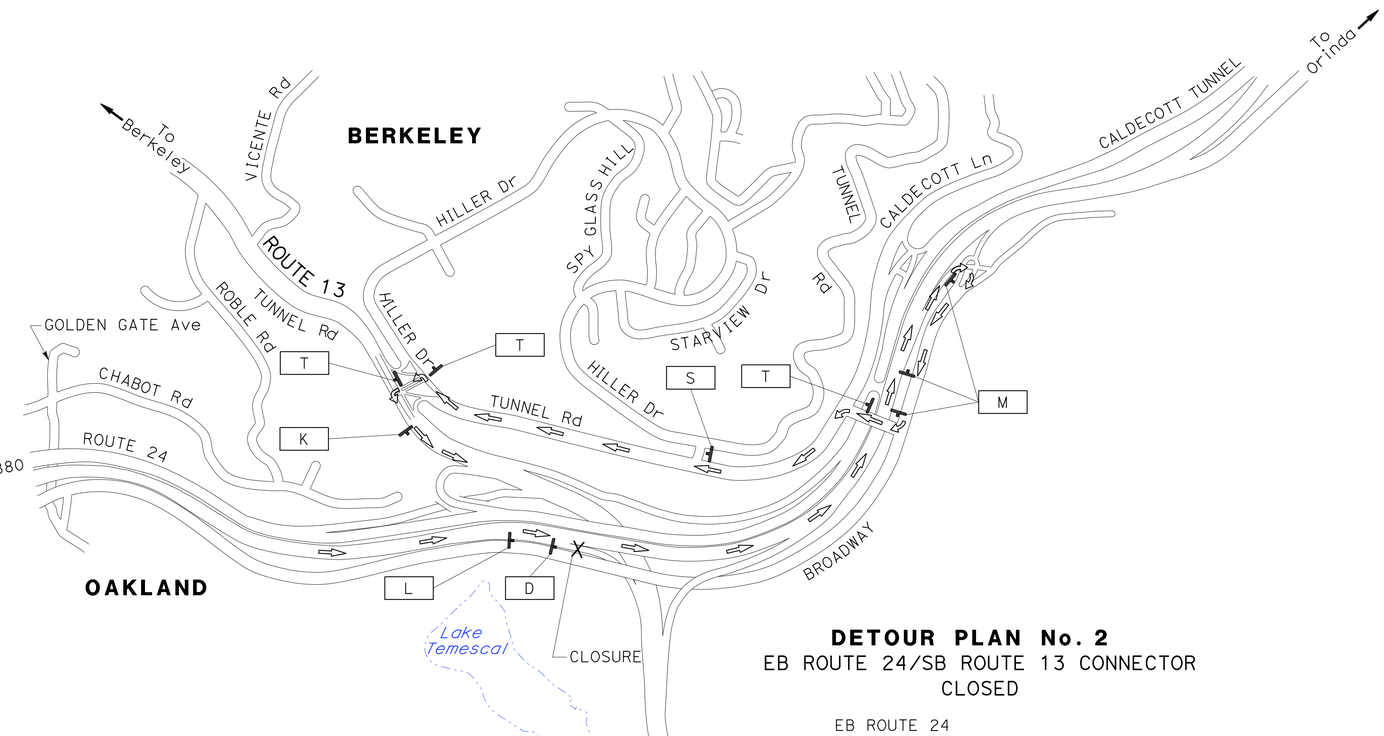
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



DETOUR PLAN No. 1

NB ROUTE 13/EB ROUTE 24 CONNECTOR
CLOSED

NB ROUTE 13
OFF-RAMP TO CALDECOTT Ln
EB TUNNEL Rd/CALDECOTT Ln
EB TO BROADWAY
ON-RAMP TO EB ROUTE 24



DETOUR PLAN No. 2

EB ROUTE 24/SB ROUTE 13 CONNECTOR
CLOSED

EB ROUTE 24
OFF-RAMP TO OLD TUNNEL Rd
WB TO BROADWAY
WB CALDECOTT Ln/TUNNEL Rd
SB ROUTE 13 CONNECTOR

CONSTRUCTION AREA SIGNS

NO SCALE

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

FOR NOTE AND LEGEND, SEE SHEET CS-1

CS-2

REVISED BY	DATE REVISED
PS	2/17/15

CALCULATED-DESIGNED BY: PARWIN SARWARY
CHECKED BY: CLAUDIA FANG
FUNCTIONAL SUPERVISOR: LOURDES DAVID

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
TRAFFIC

LAST REVISION | DATE PLOTTED => 16-MAR-2015
02-17-15 | TIME PLOTTED => 11:10

BORDER LAST REVISED 7/2/2010
USERNAME => s136183
DGN FILE => 04120002861a002.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0976
PROJECT NUMBER & PHASE 04120002861

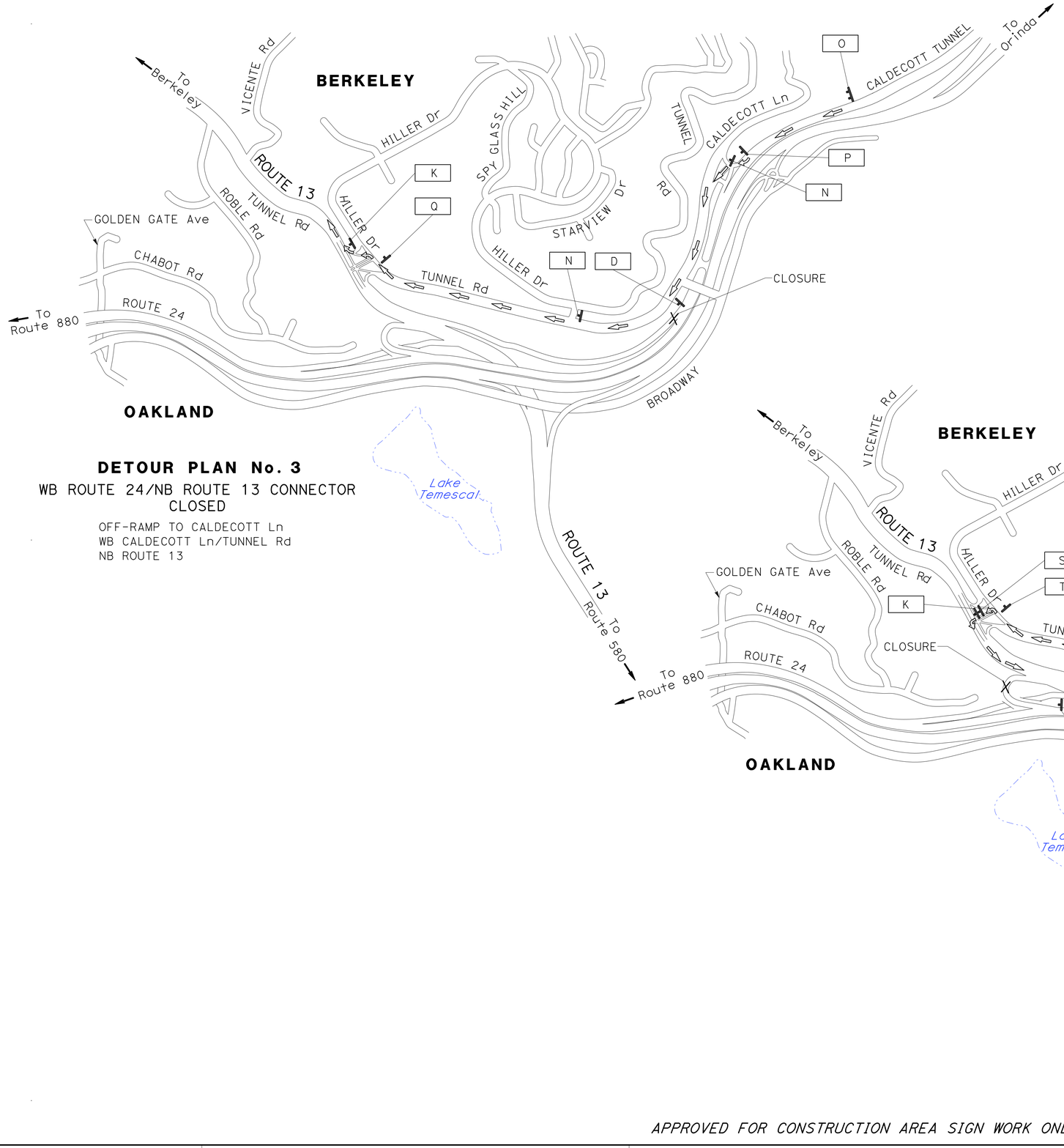
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	9.0/10.0	5	25

Parwin W. Sarwary 2/17/15
REGISTERED CIVIL ENGINEER DATE

3-9-15
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Parwin W. Sarwary
No. 79545
Exp. 9-30-16
CIVIL
STATE OF CALIFORNIA

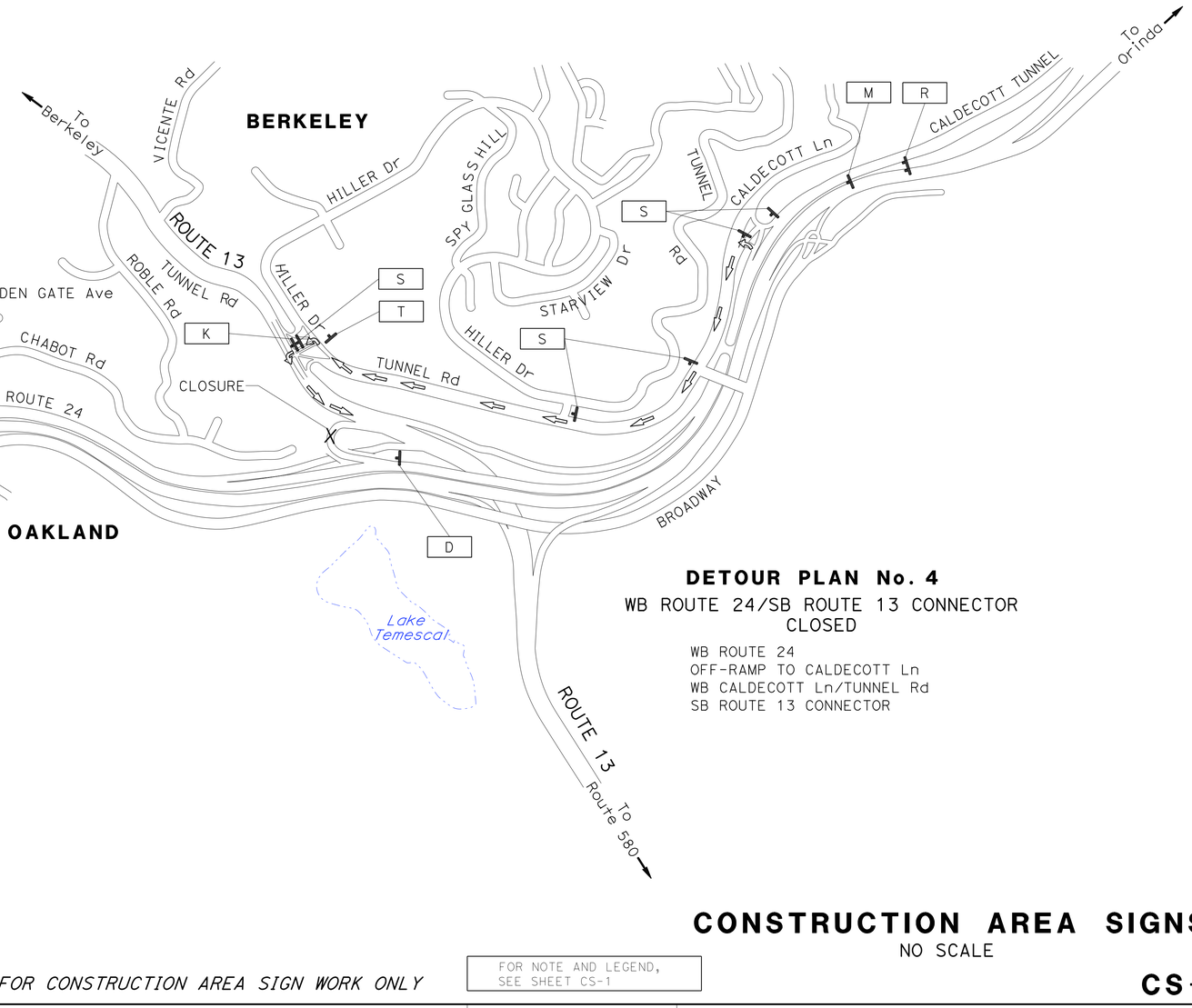
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



DETOUR PLAN No. 3

WB ROUTE 24/NB ROUTE 13 CONNECTOR CLOSED

OFF-RAMP TO CALDECOTT Ln
WB CALDECOTT Ln/TUNNEL Rd
NB ROUTE 13



DETOUR PLAN No. 4

WB ROUTE 24/SB ROUTE 13 CONNECTOR CLOSED

WB ROUTE 24
OFF-RAMP TO CALDECOTT Ln
WB CALDECOTT Ln/TUNNEL Rd
SB ROUTE 13 CONNECTOR

CONSTRUCTION AREA SIGNS

NO SCALE

CS-3

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

FOR NOTE AND LEGEND, SEE SHEET CS-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
TRAFFIC
Caltrans

REVISED BY	DATE REVISED
PS	2/17/15

CALCULATED-DESIGNED BY: PARWIN SARWARY
CHECKED BY: CLAUDIA FANG
FUNCTIONAL SUPERVISOR: LOURDES DAVID

LAST REVISION: DATE PLOTTED => 16-MAR-2015
02-17-15 TIME PLOTTED => 11:10

BORDER LAST REVISED 7/2/2010
USERNAME => s136183
DGN FILE => 04120002861a003.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0976
PROJECT NUMBER & PHASE 04120002861

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	9.0/10.0	6	25

Parwin W. Sarwary 2/17/15
REGISTERED CIVIL ENGINEER DATE

3-9-15
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Parwin W. Sarwary
No. 79545
Exp 9-30-16
CIVIL
STATE OF CALIFORNIA

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

STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN LETTER	SIGN CODE	SIGN MESSAGE	PANEL SIZE	NUMBER OF POSTS AND SIZE	No. OF SIGNS
A	W20-1	ROAD WORK AHEAD	48" x 48"	2 - 4" x 6"	2
B	W20-1	ROAD WORK AHEAD	36" x 36"	1 - 4" x 4"	4
C	G20-2	END ROAD WORK	48" x 24"	1 - 4" x 4"	3
D	SC6-4(CA)	RAMP CLOSED	48" x 60"	1 - 6" x 6"	4
E	C40A(CA)	TRAFFIC FINES DOUBLED IN WORK ZONES	36" x 36"	1 - 4" x 6"	2
F	SC7(CA)	NB 13/EB 24 CONNECTOR CLOSED USE RAMP AT TUNNEL Rd	108" x 42"	2 - 4" x 6"	1
G	M4-8	DETOUR	30" x 15"	1 - 4" x 4"	2
	G28-2(24)(CA)	ROUTE SHIELD	24" x 25"		
	M3-2	EAST	30" x 15"		
	M6-1(→)	RIGHT ARROW	21" x 15"		
H	M4-8	DETOUR	30" x 15"	1 - 4" x 4"	1
	G28-2(24)(CA)	ROUTE SHIELD	24" x 25"		
	M3-2	EAST	30" x 15"		
	M6-3(↑)	STRAIGHT ARROW	21" x 15"		
I	M4-8	DETOUR	30" x 15"	1 - 4" x 4"	1
	G28-2(24)(CA)	ROUTE SHIELD	24" x 25"		
	M3-2	EAST	30" x 15"		
	M6-1(←)	LEFT ARROW	21" x 15"		
J	M4-8	DETOUR	30" x 15"	1 - 4" x 4"	1
	G28-2(24)(CA)	ROUTE SHIELD	24" x 25"		
	M3-2	EAST	30" x 15"		
	M6-2(↖)	UP LEFT ARROW	21" x 15"		
K	M4-8a	END DETOUR	24" x 18"	1 - 4" x 4"	4
L	SC7(CA)	EB 24/SB 13 CONNECTOR CLOSED USE RAMP AT OLD TUNNEL Rd	108" x 42"	2 - 4" x 6"	1
M	M4-8	DETOUR	30" x 15"	1 - 4" x 4"	4
	G28-2(13)(CA)	ROUTE SHIELD	24" x 25"		
	M3-3	SOUTH	30" x 15"		
	M6-1(→)	RIGHT ARROW	21" x 15"		

STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN LETTER	SIGN CODE	SIGN MESSAGE	PANEL SIZE	NUMBER OF POSTS AND SIZE	No. OF SIGNS
N	M4-8	DETOUR	30" x 15"	1 - 4" x 4"	2
	G28-2(13)(CA)	ROUTE SHIELD	24" x 25"		
	M3-3	NORTH	30" x 15"		
	M6-3(↑)	STRAIGHT ARROW	21" x 15"		
O	SC7(CA)	WB 24/NB 13 CONNECTOR CLOSED USE RAMP AT CALDECOTT Ln	108" x 42"	2 - 4" x 6"	1
P	M4-8	DETOUR	30" x 15"	1 - 4" x 4"	1
	G28-2(13)(CA)	ROUTE SHIELD	24" x 25"		
	M3-1	NORTH	30" x 15"		
	M6-2(↗)	UP RIGHT ARROW	21" x 15"		
Q	M4-8	DETOUR	30" x 15"	1 - 4" x 4"	1
	G28-2(13)(CA)	ROUTE SHIELD	24" x 25"		
	M3-1	NORTH	30" x 15"		
	M6-2(↖)	UP LEFT ARROW	21" x 15"		
R	SC7(CA)	WB 24/SB 13 CONNECTOR CLOSED USE RAMP AT CALDECOTT Ln	108" x 42"	2 - 4" x 6"	1
S	M4-8	DETOUR	30" x 15"	1 - 4" x 4"	6
	G28-2(13)(CA)	ROUTE SHIELD	24" x 25"		
	M3-3	SOUTH	30" x 15"		
	M6-3(↑)	STRAIGHT ARROW	21" x 15"		
T	M4-8	DETOUR	30" x 15"	1 - 4" x 4"	4
	G28-2(13)(CA)	ROUTE SHIELD	24" x 25"		
	M3-3	SOUTH	30" x 15"		
	M6-1(←)	LEFT ARROW	21" x 15"		

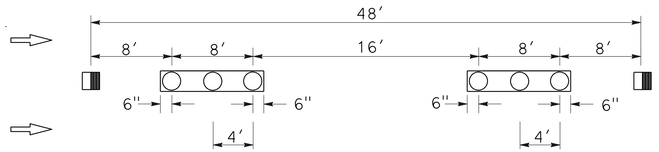
REVISED BY: PS | DATE REVISED: 2/17/15
CALCULATED-DESIGNED BY: PARWIN SARWARY | CHECKED BY: CLAUDIA FANG
FUNCTIONAL SUPERVISOR: LOURDES DAVID
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
TRAFFIC

CONSTRUCTION AREA SIGNS

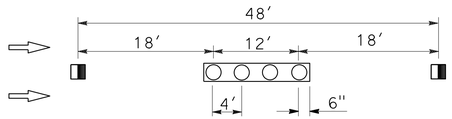
CS-4

LAST REVISION 02-17-15 | DATE PLOTTED => 16-MAR-2015 | TIME PLOTTED => 11:10

BORDER LAST REVISED 7/2/2010 | USERNAME => s136183 | DGN FILE => 04120002861a004.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0976 | PROJECT NUMBER & PHASE 04120002861



DETAIL 9M



DETAIL 13M

NOTES:

1. INSTALL 4" WHITE AFTER INSTALLING PAVEMENT MARKERS.
2. ALL PAVEMENT DELINEATIONS SHALL BE REPLACED IN KIND AT THE SAME ALIGNMENT AS EXISTING OR AS DIRECTED BY THE ENGINEER.

LEGEND:

- ○ TYPE A WHITE NON-REFLECTIVE MARKER
- ◨ TYPE G ONE-WAY CLEAR RETROREFLECTIVE MARKER
- ▭ 4" WHITE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	9.0/10.0	7	25

REGISTERED CIVIL ENGINEER — DATE 2/17/15

PLANS APPROVAL DATE 3-9-15

REGISTERED PROFESSIONAL ENGINEER — Steven S. Lee — No. 80370 — Exp. 3-31-17 — CIVIL — STATE OF CALIFORNIA

TRAFFIC STRIPES, PAVEMENT MARKINGS AND PAVEMENT MARKERS

LOCATION		DETAIL No. OR PAVEMENT MARKING	REMOVE PAVEMENT MARKER (N)	PAVEMENT MARKER					THERMOPLASTIC TRAFFIC STRIPE								THERMOPLASTIC MARKING		
				RETROREFLECTIVE				NON-REFLECTIVE	4" YELLOW	4" WHITE	4" WHITE (BROKEN 35-13)	4" WHITE (BROKEN 17-7)	4" WHITE (BROKEN 12-3)	4" WHITE (BROKEN 15-9)	8" WHITE (BROKEN 12-3)	8" WHITE SOLID	12" WHITE	ARROW	WORD/ SYMBOL
DIRECTION	PM			TYPE C	TYPE D	TYPE G	TYPE H	TYPE A	SOLID	SOLID									
			EA	EA					LF								SQFT		
NB/SB	9.0 TO 10.0	22	22		68				800										
		25	25				95		3080										
		27B								4355									
		27C											220						
		8										110							
		9M	71			11		60						450					
		13M	822			316		506			6010								
		36	8			8										200			
		36B	15			15										300			
		37	28	28											325				
		38	10													200			
		38A														300			
		SIGNAL AHEAD (2 EA)																	126
		LIMIT LINE															26		
		BIKE LANE (2 EA)																	
		BIKE LANE SYMBOL WITH PERSON (2 EA)																	14
		TYPE I ARROW (5 EA)																120	
		TYPE II (R)ARROW																45	
		TYPE III (R) ARROW (4 EA)																168	
		TYPE III (L) ARROW (2 EA)																84	
		TYPE IV ARROW (3 EA)																126	
		TYPE III (L) ARROW TYPE IV (L) ARROW																114	
ROUTE 13/24 CONNECTOR RAMPS		25A	113				113		2260										
		27B								2260									
SUBTOTAL			1114	28	68	350	208	566	6140	6615	6010	110	220	450	325	1000	26	657	140
TOTAL			1114	654				566	12755		6010	110	220	450	325	1000		823	

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

PAVEMENT DELINEATION DETAILS AND QUANTITIES

NO SCALE

PDD-1

REVISED BY: SL — DATE REVISED: 2/17/15
CALCULATED-DESIGNED BY: STEVEN S. LEE — CHECKED BY: ROBERT CAMARGO
FUNCTIONAL SUPERVISOR: ROBERT CAMARGO
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — DESIGN

LAST REVISION — DATE PLOTTED => 16-MAR-2015 — TIME PLOTTED => 11:11
02-17-15

BORDER LAST REVISED 7/2/2010 | USERNAME => s136183 | DGN FILE => 0412000286nb001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0976 | PROJECT NUMBER & PHASE 04120002861

NOTE:

1. EXACT LOCATIONS AND DIMENSIONS OF REPLACE AC SURFACING WILL BE DETERMINED BY THE ENGINEER.

ABBREVIATION:

LNMI LANE MILE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	9.0/10.0	8	25

2/17/15
REGISTERED CIVIL ENGINEER DATE

Steven S. Lee
No. 80370
Exp. 3-31-17
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

3-9-15
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.

REPLACE ASPHALT CONCRETE SURFACING

LOCATION											
DIRECTION	PM	LANE 1	LANE 2	AUXILIARY LANE	OUTSIDE SHOULDER	TURN POCKET	LENGTH (N)	WIDTH (N)	REPLACE 0.45' AC SURFACING	TACK COAT (N)
							LF		CY	TON
SOUTHBOUND	10.0 TO 9.9					X	100	24	40	0.11
						X	100	12	20	0.06
		X					75	12	15	0.04
		X				X	50	36	30	0.09
	9.9 TO 9.8					X	70	24	28	0.08
		X					50	16	14	0.04
					X		75	8	10	0.03
		X					100	12	20	0.06
	9.8 TO 9.7	X					75	12	15	0.04
			X				125	12	25	0.07
		X					100	12	20	0.06
			X				150	12	30	0.09
	9.7 TO 9.6	X	X				100	24	40	0.11
			X				250	12	50	0.14
	9.6 TO 9.5		X				100	12	20	0.06
			X				75	8	10	0.03
		X					60	12	12	0.03
	9.5 TO 9.4			X			75	12	15	0.04
			X	X			100	18	30	0.09
			X				100	12	20	0.06
	9.4 TO 9.3		X				100	12	20	0.06
			X				100	12	20	0.06
	9.3 TO 9.2		X				50	12	10	0.03
			X				100	12	20	0.06
	9.2 TO 9.1	X					125	12	25	0.07
		X	X				200	24	80	0.23
			X				150	12	30	0.09
	9.1 TO 9.0		X				50	12	10	0.03
		X					75	12	15	0.04
			X				100	12	20	0.06
	TOTAL								714 *	2.06*

(N) NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY
* QUANTITY INCLUDED IN SUMMARY OF QUANTITIES

REPLACE ASPHALT CONCRETE SURFACING

LOCATION								
DIRECTION	PM	LANE 1	LANE 2	RIGHT TURN POCKET	LENGTH (N)	WIDTH (N)	REPLACE 0.45' AC SURFACING	TACK COAT (N)
					LF		CY	TON
NORTHBOUND	9.0 TO 9.1		X		150	12	30	0.09
		X			75	12	15	0.04
			X		100	12	20	0.06
	9.1 TO 9.2		X		75	12	15	0.04
		X			60	6	6	0.02
	9.2 TO 9.3	X			100	12	20	0.06
			X		130	12	26	0.07
	9.3 TO 9.4	X			150	12	30	0.09
			X		100	12	20	0.06
	9.4 TO 9.5	X			150	12	30	0.09
		X			100	12	20	0.06
			X		75	12	15	0.04
		X			50	12	10	0.03
		X			75	12	15	0.04
	9.5 TO 9.6	X			100	12	20	0.06
			X		125	13	28	0.08
		X			100	12	20	0.06
	9.6 TO 9.7	X			120	12	24	0.07
		X			50	12	10	0.03
			X		100	12	20	0.06
	9.7 TO 9.8	X	X		150	24	60	0.17
		X			150	12	30	0.09
			X		250	12	50	0.14
	9.8 TO 9.9	X	X		200	24	80	0.23
				X	100	12	20	0.06
		X			50	12	10	0.03
			X		200	12	40	0.11
	9.9 TO 10.0	X			250	12	50	0.14
			X		100	12	20	0.06
		X			100	12	20	0.06
	TOTAL						774*	2.24*

(N) NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY
* QUANTITY INCLUDED IN SUMMARY OF QUANTITIES

SUMMARY OF QUANTITIES

Q-1

REVISED BY	SL	CALCULATED-DESIGNED BY	STEVEN S. LEE
DATE REVISED	2/17/15	CHECKED BY	ROBERT CAMARGO
FUNCTIONAL SUPERVISOR	ROBERT CAMARGO		

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

LAST REVISION | DATE PLOTTED => 16-MAR-2015
02-17-15 | TIME PLOTTED => 11:11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	9.0/10.0	9	25

2/17/15
REGISTERED CIVIL ENGINEER DATE

Steven S. Lee
No. 80370
Exp. 3-31-17
CIVIL
REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

3-9-15
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.

REPLACE ASPHALT CONCRETE SURFACING

LOCATION		LANE 1	LENGTH (N)	WIDTH (N)	REPLACE 0.25' AC SURFACING	TACK COAT (N)
DIRECTION	PM		LF		CY	TON
RAMPS	CONNECTOR FROM NB 13 TO EB 24	X	100	12	12	0.06
			200		23	0.11
			50		6	0.03
			75		9	0.04
	CONNECTOR FROM WB 24 TO NB 13		100		12	0.06
			50		6	0.03
			75	8	6	0.03
			60	12	7	0.03
			100		12	0.06
	CONNECTOR FROM WB 24 TO SB 13		150		17	0.09
			150		17	0.09
			150		17	0.09
			200		23	0.11
	CONNECTOR FROM EB 24 TO SB 13		100	24	23	0.11
			50	12	6	0.03
			100		12	0.06
			150		17	0.09
			200		23	0.11
			200		23	0.11
	TOTAL				271 *	1.34 *

(N) NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY
* QUANTITY INCLUDED IN SUMMARY OF QUANTITIES

SUMMARY OF ROADWAY QUANTITIES

DESCRIPTION		REPLACE AC SURFACING	TACK COAT (N)	CRACK TREATMENT	SHOULDER BACKING
		CY	TON	LNMI	TON
REPLACE ASPHALT CONCRETE SURFACING	NORTHBOUND (SEE SHEET Q-1)	774	2.24	2	55
	SOUTHBOUND (SEE SHEET Q-1)	714	2.06	2	55
REPLACE ASPHALT CONCRETE SURFACING-RAMPS		271	1.34		50
TOTAL		1759	5.64	4	160

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

SUMMARY OF QUANTITIES

FOR ABBREVIATION AND NOTES, SEE SHEET Q-1

Q-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
FUNCTIONAL SUPERVISOR: ROBERT CAMARGO
CALCULATED-DESIGNED BY: STEVEN S. LEE
CHECKED BY: ROBERT CAMARGO
REVISED BY: SL
DATE REVISED: 2/17/15

LAST REVISION DATE PLOTTED => 16-MAR-2015
02-17-15 TIME PLOTTED => 11:11

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	9.0/10.0	10	25

m Noii 2/17/15
REGISTERED ELECTRICAL ENGINEER DATE

3-9-15
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Mahmood Noii
No. 13717
Exp. 6-30-15
ELECTRICAL
STATE OF CALIFORNIA

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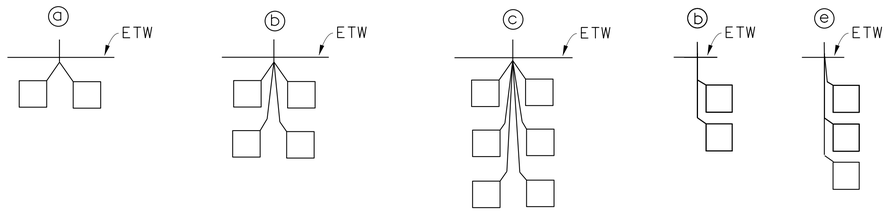


DETAIL A
TYPICAL DETECTOR CONFIGURATIONS

PART OF BID ITEM LOOP DETECTOR REPLACEMENT (TRAFFIC MONITORING STATION)

POST MILE	9.04	9.21	9.22	9.30	9.42	9.47	-	
LOCATION	(1)	(2)	(3)	(4)	(5)	(6)	-	
DETECTORS: A, B, C, D A = TMS-MAINLINE B = ON-RAMP-QUEUE C = ON-RAMP-RM D = OFF-RAMP	A	A	A	A	A	D	-	
NUMBER OF LANES/ DIRECTION OF TRAFFIC (#/NB, #/SB, #/EB, #/WB)	2/NB	2/NB	3/SB	2/NB	2/NB	2/NB	-	
DETECTOR CONFIGURATION: a,b and c (SEE DETAIL A ON E-1)	b	b	c	b	b	a	-	
PULL BOX A, B, C LOCATION: A = LEFT SHOULDER B = RIGHT SHOULDER C = MEDIAN	B	B	B	B	B	B	-	SUB TOTAL
PULL BOX REPLACEMENT: (Y=YES, N=NO, 5=No. 5(T), 6=No. 6(T))	N	N	N	N	N	N	-	0
LOOP DETECTOR TOTAL	4	4	6	4	4	2	-	24
COMMENTS								

ELECTRICAL INDEX:

GENERAL NOTES:

1. NO ABOVE GROUND ELECTRICAL WORK SHALL BE PERFORMED ON ANY SYSTEM WITHIN THE PROJECT SITE UNTIL ALL CONTRACTOR-FURNISHED ELECTRICAL MATERIALS FOR THAT INDIVIDUAL SYSTEM HAVE BEEN TESTED AND DELIVERED TO CONTRACTOR.
2. WHERE ONE OR MORE TRAFFIC SIGNAL DETECTOR(S) CONSIST OF A SEQUENCE OF 4 LOOPS IN A SINGLE LANE, THE FRONT LOOP CLOSEST TO THE LIMIT LINE OR CROSSWALK SHALL BE LOCATED 1 FOOT FROM THE LINE. THE SET OF 3 LOOPS OR 4 LOOPS ASSIGNED TO THE SAME LOOP DETECTOR LEAD-IN CABLE (DLC) SHALL BE CONNECTED IN SERIES FOR TRAFFIC SIGNAL SYSTEM ONLY AND NOT FOR RAMP METERING SYSTEM.
3. WHERE 6 OR MORE 3" CONDUITS ENTER A No. 6 PULL BOX, THE CONDUITS SHALL ENTER AT AN ANGLE NOT GREATER THAN 45 DEGREES FROM THE HORIZONTAL.
4. ALL LOOP DETECTORS AT EACH LOCATION SHALL BE REPLACED AND TESTED WITHIN THE TIME ALLOTTED FOR TRAFFIC SIGNAL SYSTEM SHUTDOWN AT THAT LOCATION.
5. THE CONTRACTOR SHALL PROVIDE TWO REPORTS PER LOCATION ON THE STATUS OF EACH DETECTOR LOOP REPLACEMENT SHOWING CONTINUITY AND INSULATION RESISTANCE READINGS. THE REPORTS SHALL BE SUBMITTED TO THE ENGINEER, ONE BEFORE STARTING WORK AND THE OTHER AFTER WORK HAS BEEN COMPLETED AT EACH LOCATION.
6. VERIFY EXACT LOCATION OF EACH EXISTING DETECTOR, PULL BOX AND DLC, INCLUDING EACH LOOP CONDUCTOR SPLICE TO DLC AS FIRST ORDER OF WORK PRIOR TO REPAVING.
7. ABANDON THE EXISTING DETECTORS AS INDICATED IN THE CHARTS SHOWN ON SHEETS E-1 AND E-2. INSTALL NEW DETECTORS IN KIND.
8. RC THE EXISTING PULL BOXES AND DETECTOR HANDHOLES INDICATED IN THE CHART SHOWN ON E-2. INSTALL NEW PULL BOXES AND DETECTOR HANDHOLES AS INDICATED.
10. SPLICE NEW LOOP CONDUCTORS TO CORRESPONDING DLC IN TERMINATION PULL BOX. VERIFY IDENTIFICATION OF EXISTING DLC BEFORE CONNECTING TO THE CORRESPONDING LOOP DETECTORS.

ELECTRICAL INDEX, NOTES AND DETAILS
LOOP DETECTOR REPLACEMENT (TRAFFIC MONITORING STATION)

E-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® ELECTRICAL
FUNCTIONAL SUPERVISOR: LAI HONG CHIU
CALCULATED-DESIGNED BY: HAWA GARDIZI
CHECKED BY: MAHMOOD NOII
REVISED BY: HG
DATE REVISED: 2/17/15

LAST REVISION: DATE PLOTTED => 16-MAR-2015 02-17-15 TIME PLOTTED => 11:11

BORDER LAST REVISED 7/2/2010
USERNAME => s136183
DGN FILE => 0412000286ua001.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0976
PROJECT NUMBER & PHASE 04120002861

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	9.0/10.0	11	25

m Noii 2/17/15
REGISTERED ELECTRICAL ENGINEER DATE

3-9-15
PLANS APPROVAL DATE

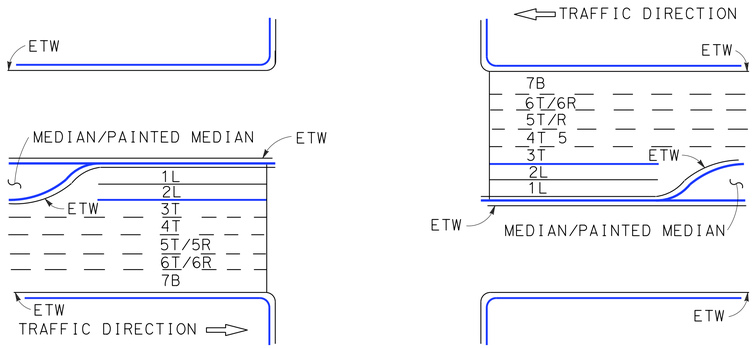
REGISTERED PROFESSIONAL ENGINEER — Mahmood Noii — No. 13717 — Exp 6-30-15 — ELECTRICAL — STATE OF CALIFORNIA

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.

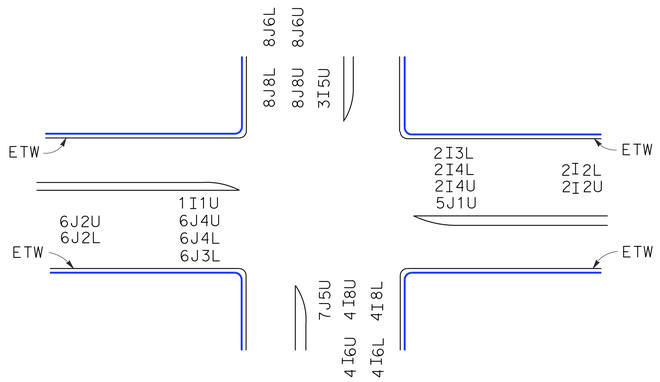
LANE DESCRIPTION

NUMBER OF LANE FROM LEFT WITH RESPECT TO TRAFFIC DIRECTION:

1= FIRST LANE FROM LEFT
2= SECOND LANE FROM LEFT
3= THIRD LANE FROM LEFT
4= FOURTH LANE FROM LEFT
5= FIFTH LANE FROM LEFT
6= SIXTH LANE FROM LEFT
7= SEVENTH LANE FROM LEFT
T=THROUGH TRAFFIC MOVEMENT
L=LEFT TURN TRAFFIC MOVEMENT
R=RIGHT TURN TRAFFIC MOVEMENT
B= BICYCLE LANE



TRAFFIC SIGNAL
LANE CONFIGURATION (TYPICAL)



DETECTOR IDENTIFICATION (TYPICAL)

PART OF BID ITEM LOOP DETECTOR REPLACEMENT (TRAFFIC SIGNAL) ROUTE 13/ TUNNEL ROAD AND HILLER DRIVE

COUNTY - ROUTE - PM		Ala 13 9.0/10.0				
		ADVANCE DETECTOR				
		(SB)		(NB)		
LANE NUMBER (FROM LEFT WITH RESPECT TO DIRECTION OF TRAFFIC. SEE THIS SHEET FOR LANE DESCRIPTION)		1T	2T	1T	2T	3T
DISTANCE FROM LIMIT LINE (FEET)		180	180	250	250	250
DETECTORS	A. FRONT DETECTOR B. BICYCLE DETECTOR C. ADVANCE DETECTOR D. INTERMEDIATE DETECTOR	C	C	C	C	C
PULL BOX LOCATION:	A. RIGHT SHOULDER B. RIGHT SIDEWALK C. MEDIAN D. LEFT SHOULDER E. ISLAND	A		A		
HANDHOLE LOCATION:	A. RIGHT SHOULDER/(RIGHT ETW) B. LEFT SHOULDER/(LEFT ETW) C. MEDIAN D. PAINTED MEDIAN	A		A		
DETECTOR TYPE & QUANTITY	TYPE A LOOP DETECTOR					
	TYPE B LOOP DETECTOR					
	TYPE C LOOP DETECTOR					
	TYPE D LOOP DETECTOR	1	1	1	1	1
DETECTOR CONFIGURATION	(SEE DETAIL A ON E-1) a...e	e		d		
PULL BOX REPLACEMENT	(Y=YES N=NO)	N		N		
HANDHOLE REPLACEMENT	(Y=YES N=NO)	Y		Y		
LOOP DETECTOR TOTAL		1	1	1	1	1
COMMENTS						

ELECTRICAL DETAILS
LOOP DETECTOR REPLACEMENT (TRAFFIC SIGNAL)

NO SCALE **E-2**

REVISED BY	DATE REVISED
HG	2/17/15

CALCULATED-DESIGNED BY: HAWA GARDIZI
CHECKED BY: MAHMOOD NOII
FUNCTIONAL SUPERVISOR: LAI HONG CHIU

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
ELECTRICAL
Caltrans

LAST REVISION | DATE PLOTTED => 16-MAR-2015
02-17-15 | TIME PLOTTED => 11:11

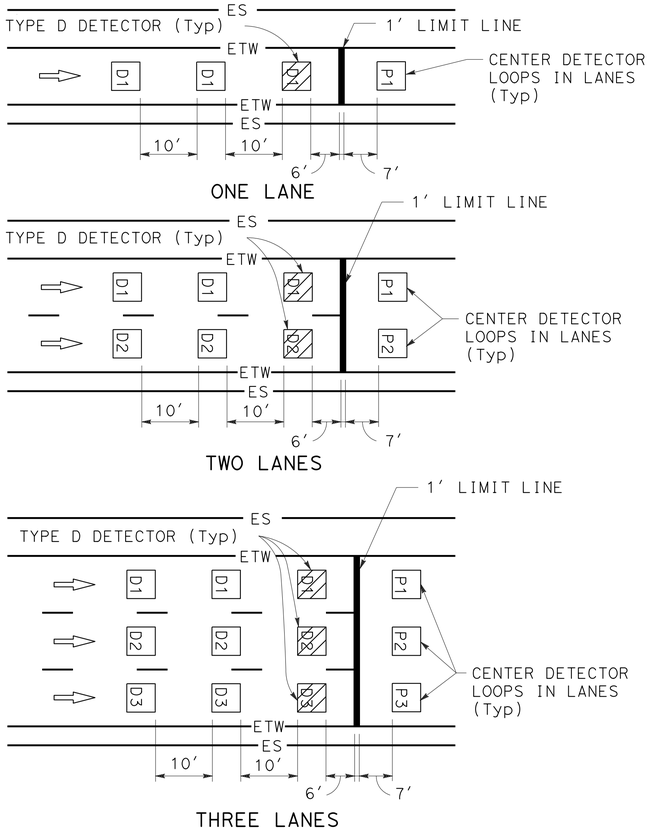
BORDER LAST REVISED 7/2/2010
USERNAME => s136183
DGN FILE => 04120002861ua002.dgn
RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3
UNIT 0976
PROJECT NUMBER & PHASE 04120002861

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	9.0/10.0	12	25

R C Duschane 2/17/15
REGISTERED ELECTRICAL ENGINEER DATE

3-9-15
PLANS APPROVAL DATE

Ray C. Duschane No. 14758 Exp. 6-30-15 ELECTRICAL — REGISTERED PROFESSIONAL ENGINEER — STATE OF CALIFORNIA



ONE LANE

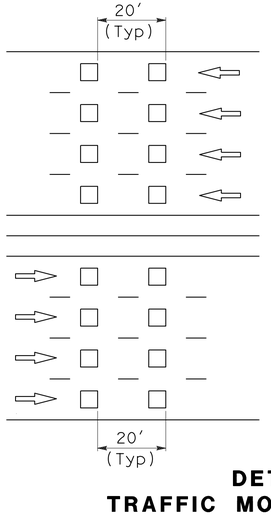
TWO LANES

THREE LANES

DETAIL "RM"
RAMP METERING STATION

RAMP METERING STATION NOTES:

1. SEE STANDARD PLAN ES-5A, ES-5B AND ES-13A FOR ADDITIONAL DETAILS.
2. DLC CONDUCTORS SHALL BE SPLICED TO THE LOOP CONDUCTORS IN THE NEAREST PULL BOX.
3. ALL SPLICES SHALL BE TYPE "S" OR TYPE "ST" AS REQUIRED.



TRAFFIC MONITORING STATION NOTES

FREEWAY MAINLINE DETECTOR DESIGNATION:

- N=NORTHBOUND LANES (NB)
- S=SOUTHBOUND LANES (SB)
- E=EASTBOUND LANES (EB)
- W=WESTBOUND LANES (WB)

NUMBER OF LANES FROM LEFT WITH RESPECT TO DIRECTION OF TRAFFIC:

- 1=FIRST LANE FROM LEFT
- 2=SECOND LANE FROM LEFT
- 3=THIRD LANE FROM LEFT
- 4=FOURTH LANE FROM LEFT

NUMBER OF DETECTOR IN THE SAME LANE:

- 1=ENTERING DETECTOR
- 2=LEAVING DETECTOR

N 3-2

RAMP DETECTOR DESIGNATION:

- D=DEMAND DETECTOR
- P=PASSAGE DETECTOR
- Q=QUEUE DETECTOR
- F=OFF-RAMP DETECTOR

- 1=FIRST LANE FROM LEFT
- 2=SECOND LANE FROM LEFT

D-2

DETAIL "TM"
TRAFFIC MONITORING STATION

ELECTRICAL DETAILS
(RAMP METERING AND TRAFFIC MONITORING DETECTOR SPACING AND DESIGNATION)

NO SCALE

E-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	ELECTRICAL	FUNCTIONAL SUPERVISOR: CHARLES PRICE	
CALCULATED-DESIGNED BY: RAY C. DUSCHANE	CHECKED BY: RAY C. DUSCHANE	REVISED BY: HG	DATE REVISED: 2/17/15

LAST REVISION: DATE PLOTTED => 16-MAR-2015 | 02-17-15 | TIME PLOTTED => 11:11

M

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

N

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

O

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

P

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

P continued

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

Q

Qty	QUANTITY

R

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

S

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

T

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

T continued

TS	TRANSVERSE, TRAFFIC SIGNAL, TUBULAR STEEL
Typ	TYPICAL

U

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

V

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

W

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

X

X Sec	CROSS SECTION
Xing	CROSSING

Y

Yr	YEAR
Yrs	YEARS

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	9.0/10.0	13	25

Grace M. Tsushima
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

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TO ACCOMPANY PLANS DATED 3-9-15

UNIT OF MEASUREMENT SYMBOLS:

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

TABLE A

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

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

TABLE B

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

* For use on a sign panel only

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ABBREVIATIONS (SHEET 2 OF 2)

NO SCALE

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

REVISED STANDARD PLAN RSP A10B

2010 REVISED STANDARD PLAN RSP A10B

6-7-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	9.0/10.0	14	25

Roberta L. McLaughlin
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

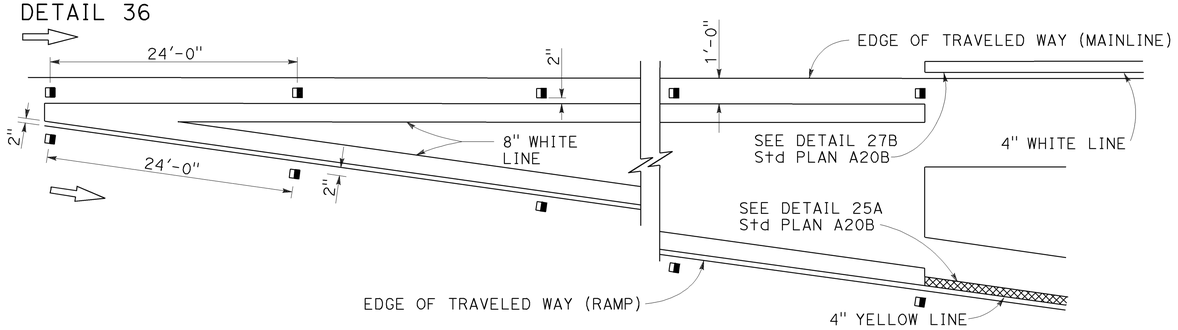
REGISTERED PROFESSIONAL ENGINEER
Roberta L. McLaughlin
No. C40375
Exp. 3-31-15
CIVIL
STATE OF CALIFORNIA

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

TO ACCOMPANY PLANS DATED 3-9-15

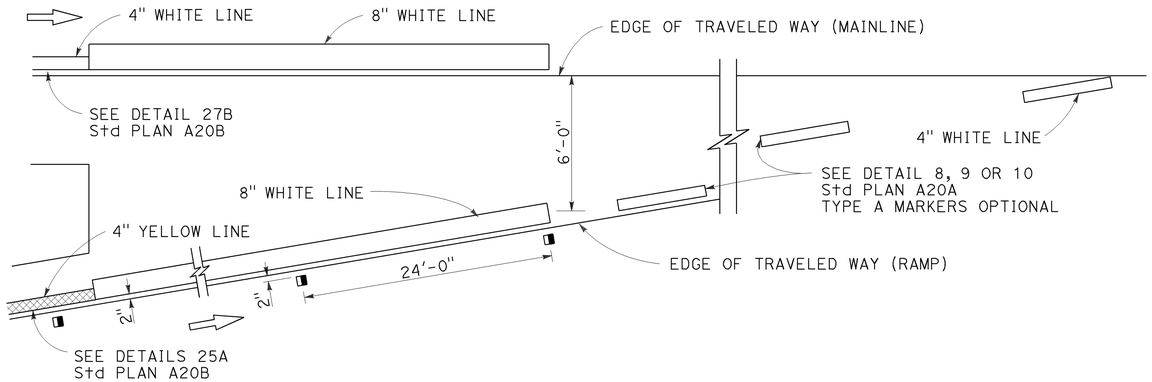
EXIT RAMP NEUTRAL AREA (GORE) TREATMENT

DETAIL 36



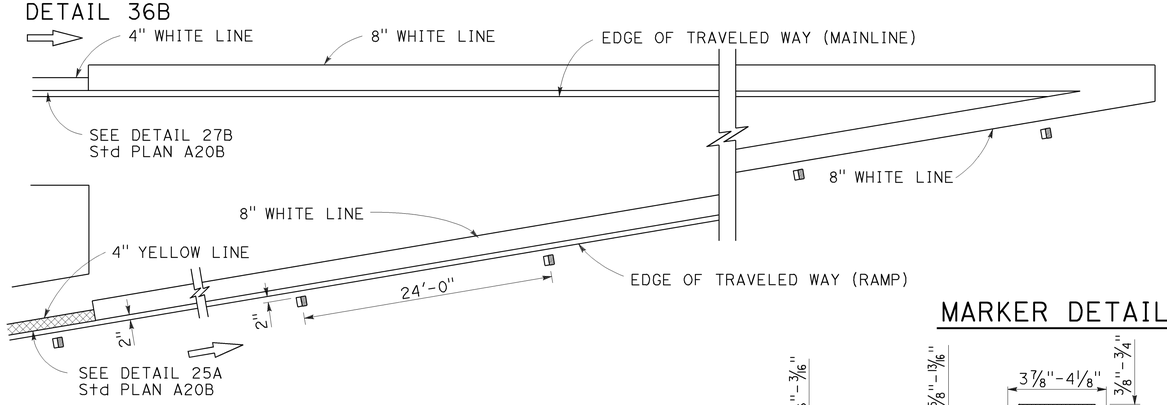
ENTRANCE RAMP NEUTRAL AREA (MERGE) TREATMENT

DETAIL 36A



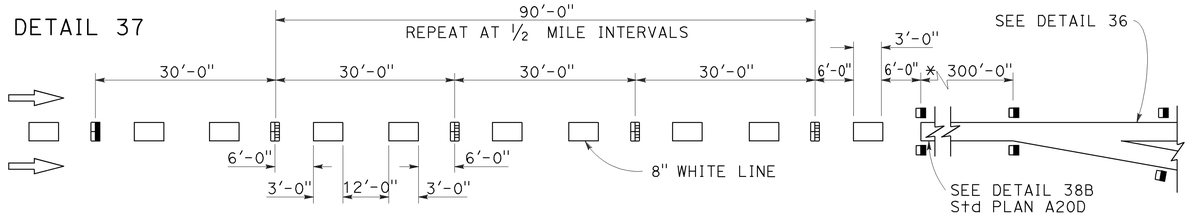
ENTRANCE RAMP NEUTRAL AREA (ACCELERATION LANE) TREATMENT

DETAIL 36B

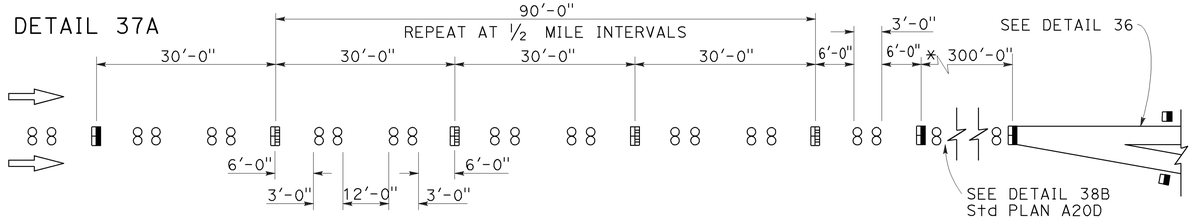


LANE DROP AT EXIT RAMPS

DETAIL 37



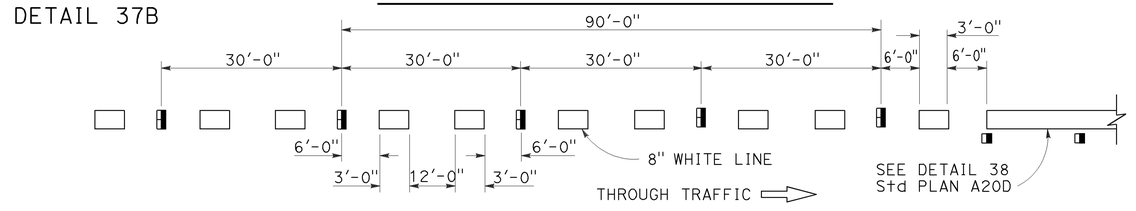
DETAIL 37A



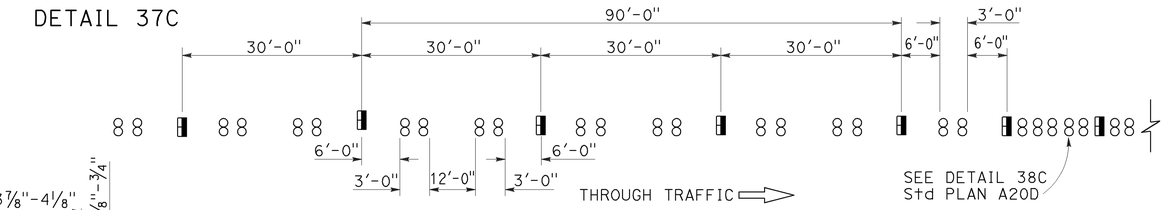
* The solid channelizing line shown may be omitted on short auxiliary lanes where weaving length is critical.

LANE DROP AT INTERSECTIONS

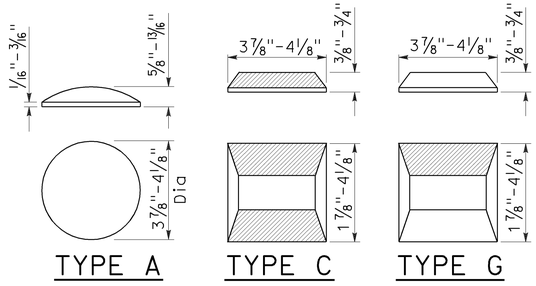
DETAIL 37B



DETAIL 37C



MARKER DETAILS



LEGEND:

MARKERS

- ○ TYPE A WHITE NON-REFLECTIVE
- ▣ TYPE C RED-CLEAR RETROREFLECTIVE
- ◨ TYPE G ONE-WAY CLEAR RETROREFLECTIVE

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKERS AND TRAFFIC LINE TYPICAL DETAILS

NO SCALE

RSP A20C DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN A20C DATED MAY 20, 2011 - PAGE 11 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A20C

2010 REVISED STANDARD PLAN RSP A20C

4-29-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	9.0/10.0	15	25

Roberta L. McLaughlin
REGISTERED CIVIL ENGINEER

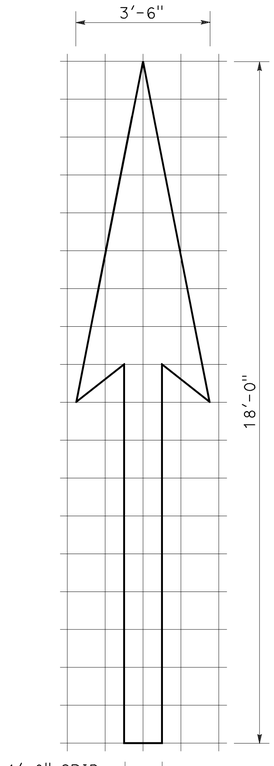
April 20, 2012
PLANS APPROVAL DATE

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

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

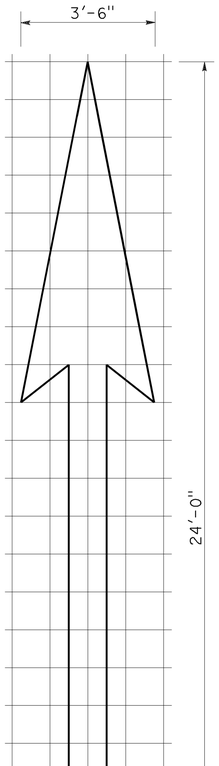
TO ACCOMPANY PLANS DATED 3-9-15

2010 REVISED STANDARD PLAN RSP A24A



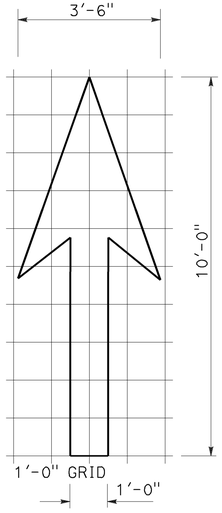
A=25 ft²

TYPE I 18'-0" ARROW



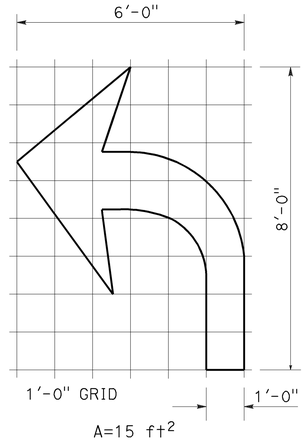
A=31 ft²

TYPE I 24'-0" ARROW



A=14 ft²

TYPE I 10'-0" ARROW

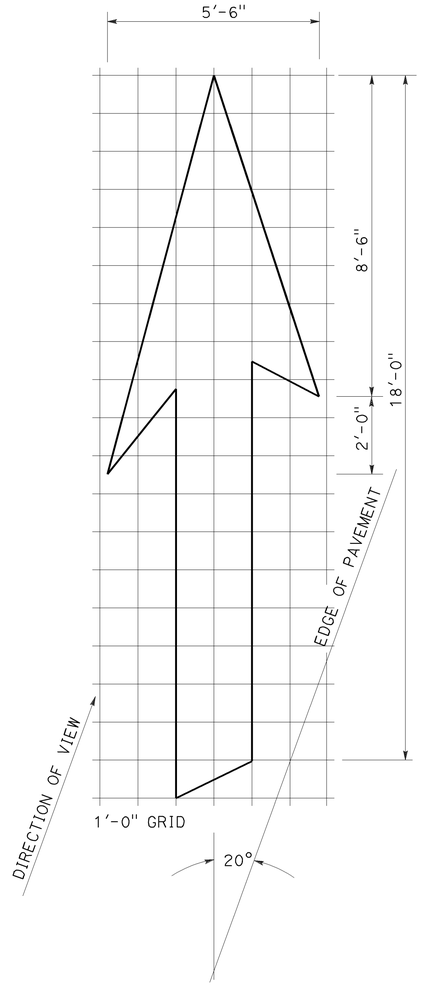


A=15 ft²

TYPE IV (L) ARROW

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

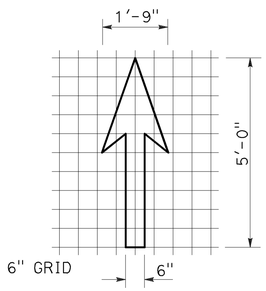
NOTE:
Minor variations in dimensions may be accepted by the Engineer.



A=42 ft²

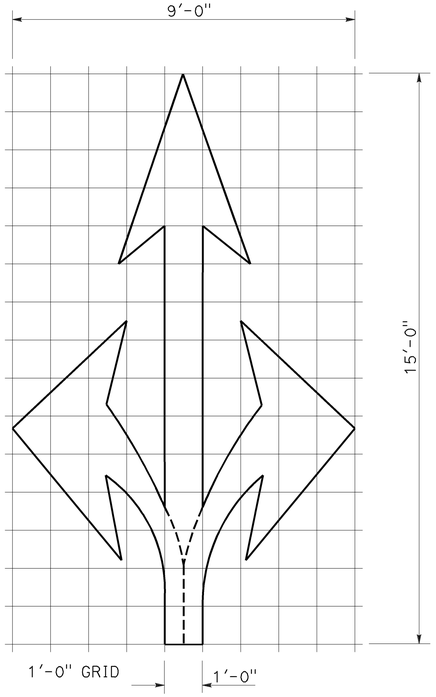
TYPE VI ARROW

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



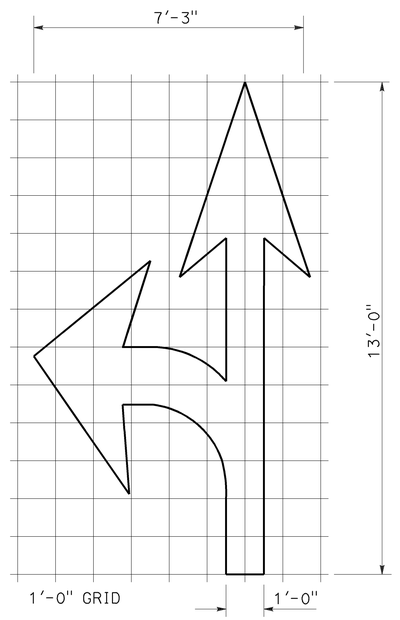
A=3.5 ft²

BIKE LANE ARROW



A=36 ft²

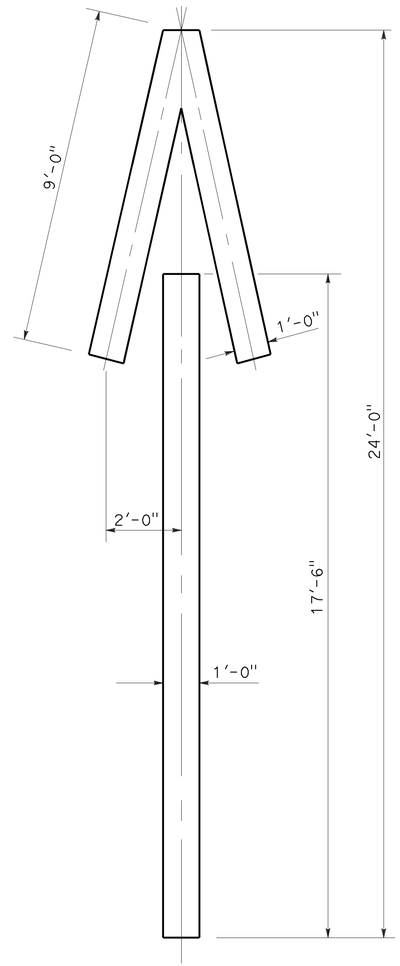
TYPE VIII ARROW



A=27 ft²

TYPE VII (L) ARROW

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



A=33 ft²

TYPE V ARROW

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

PAVEMENT MARKINGS ARROWS

NO SCALE

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

REVISED STANDARD PLAN RSP A24A

3-14-12

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	9.0/10.0	16	25

REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

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

TO ACCOMPANY PLANS DATED 3-9-15

TABLE 1

TAPER LENGTH CRITERIA AND CHANNELIZING DEVICE SPACING

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

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

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

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

TABLE 2

LONGITUDINAL BUFFER SPACE AND FLAGGER STATION SPACING

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

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

** - Longitudinal buffer space or flagger station spacing

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

TABLE 3

ADVANCE WARNING SIGN SPACING

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

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

2010 REVISED STANDARD PLAN RSP T9

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SYSTEM TABLES FOR LANE AND RAMP CLOSURES

NO SCALE

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

REVISED STANDARD PLAN RSP T9

4-30-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	9.0/10.0	17	25

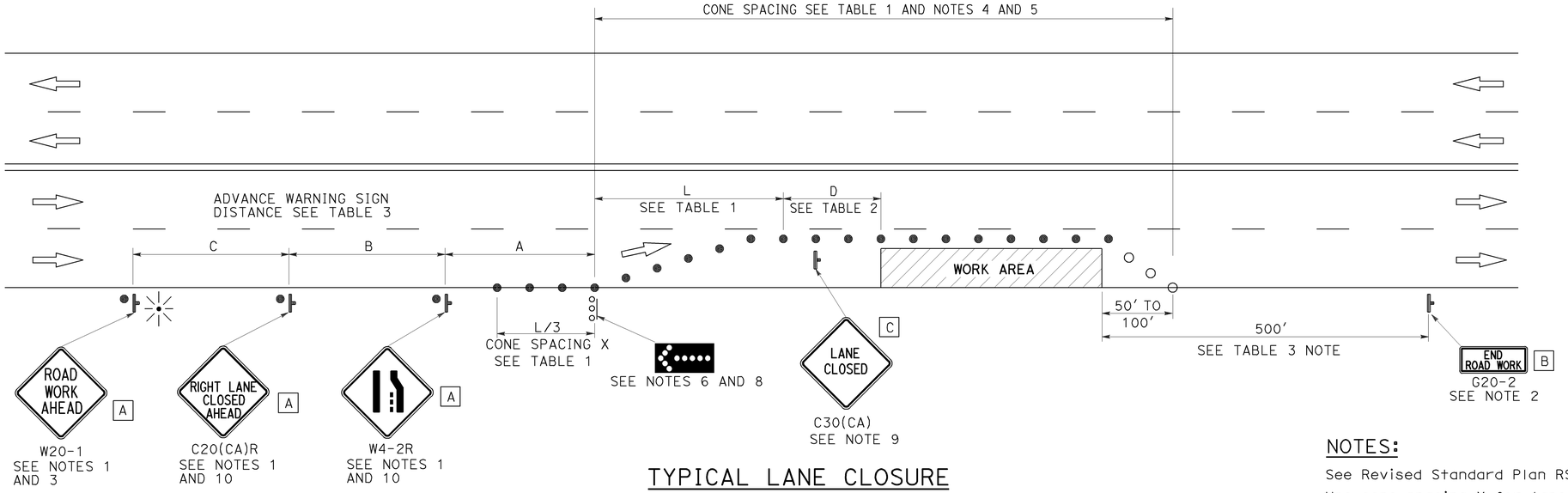
REGISTERED CIVIL ENGINEER

April 19, 2013
PLANS APPROVAL DATE

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

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

TO ACCOMPANY PLANS DATED 3-9-15



TYPICAL LANE CLOSURE

NOTES:

See Revised Standard Plan RSP T9 for tables.

Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as approriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.

Unless otherwise specified in the special provisions, all temporary warning signs shall have black legend on fluorescent orange background.

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

NOTES:

1. Each advance warning sign shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
2. A G20-2 "END ROAD WORK" sign, as appropriate, shall be placed at the end of the lane closure unless the end of work area is obvious, or ends within a larger project's limits.
3. If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT _____ MILES", use a C20(CA) sign for the first advance warning sign.
4. All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
5. Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime closures only.
6. Flashing arrow sign shall be either Type I or Type II.
7. For approach speeds over 50 mph, use the "Traffic Control System for Lane Closure On Freeways And Expressways" plan for lane closure details and requirements.
8. A minimum 1500' of sight distance shall be provided where possible for vehicles approaching the first flashing arrow sign. Lane closures shall not begin at the top of crest vertical curve or on a horizontal curve.
9. Place a C30(CA) sign every 2000' throughout length of lane closure.
10. Median lane closures shall conform to the details as shown except that C20(CA)L and W4-2L signs shall be used.
11. At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closure unless, otherwise directed by the Engineer.

LEGEND

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

SIGN PANEL SIZE (Min)

A	48" x 48"
B	36" x 18"
C	30" x 30"

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE ON MULTILANE CONVENTIONAL HIGHWAYS

NO SCALE

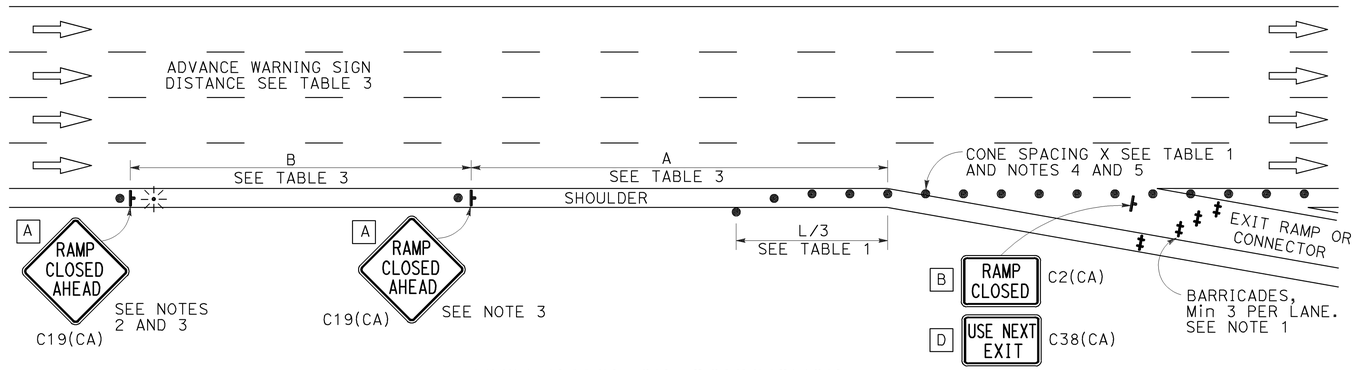
RSP T11 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T11 DATED MAY 20, 2011 - PAGE 239 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T11

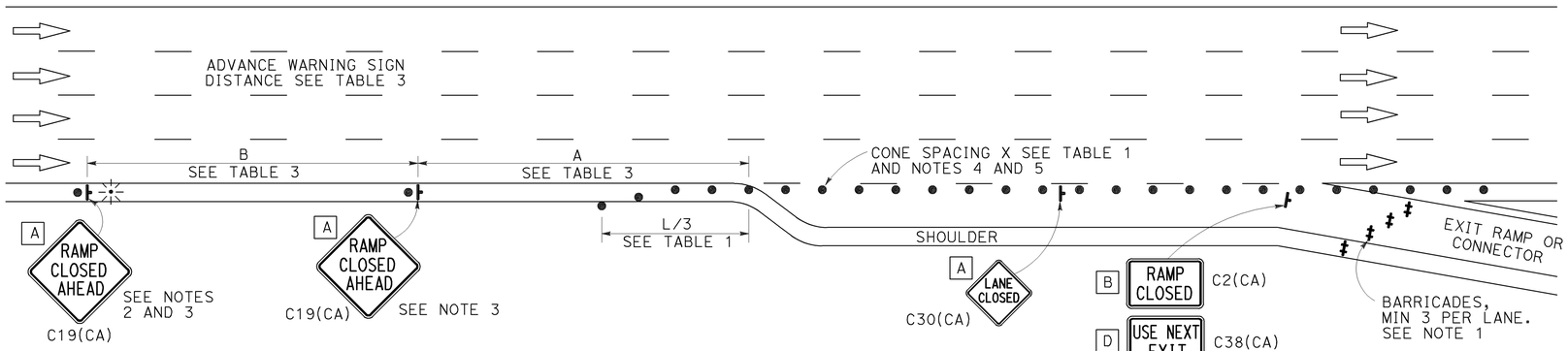
2010 REVISED STANDARD PLAN RSP T11

4-2-13

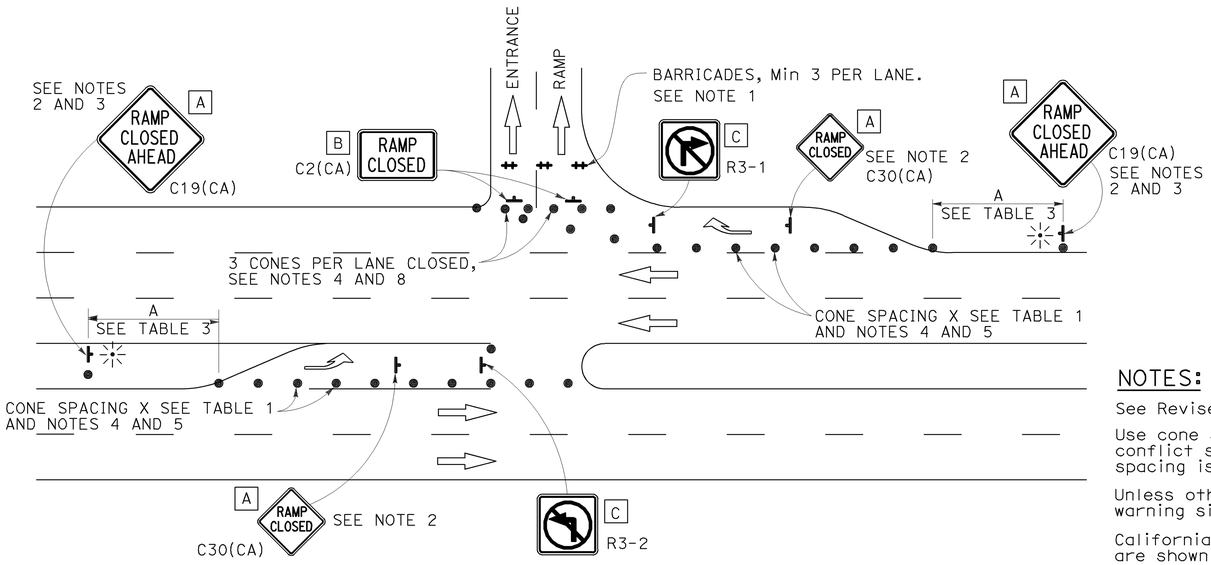
TYPICAL RAMP CLOSURES



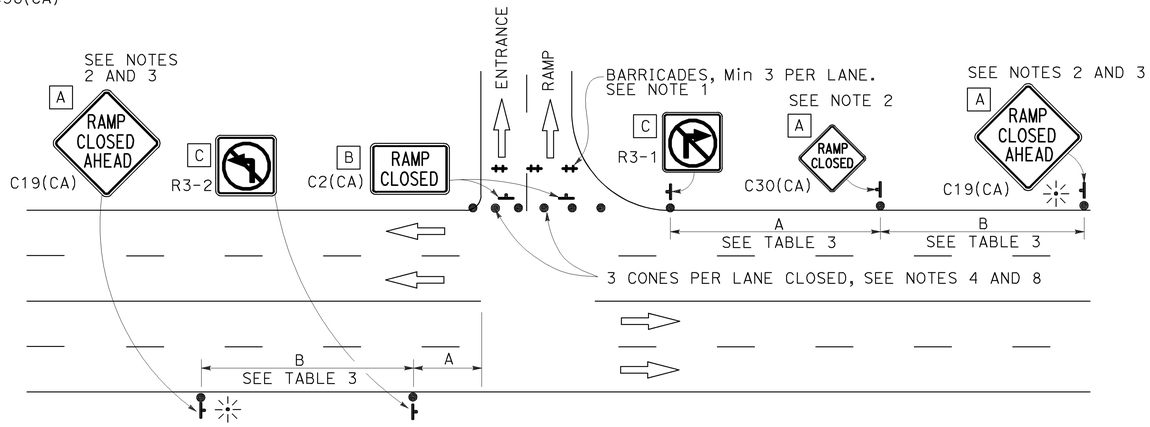
EXIT RAMP OR CONNECTOR



EXIT RAMP OR CONNECTOR WITH ADDITIONAL LANE



ENTRANCE RAMP WITH TURNING POCKETS



ENTRANCE RAMP WITHOUT TURNING POCKETS

SIGN PANEL SIZE (Min)

- A 48" × 48"
- B 48" × 30"
- C 36" × 36"
- D 48" × 36"

LEGEND

- ● TRAFFIC CONE
- ⊢ TEMPORARY TRAFFIC CONTROL SIGN
- ‡ BARRICADES
- ⁘ PORTABLE FLASHING BEACON

NOTES:

1. Barricades shall be Type I, II, or III for closures lasting one week or less and Type III for closures lasting longer than one week.
2. In addition to placing the C19(CA) "RAMP CLOSED AHEAD" and C30(CA) "RAMP CLOSED" signs, black on orange overlay plates with the word "CLOSED" may be mounted, as directed by the Engineer, on all guide signs that refer to the closed ramp. The letter size on the overlay shall be the same as the guide sign.
3. Each advance C19(CA) "RAMP CLOSED AHEAD" sign shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" × 16" in size and shall be orange or fluorescent red-orange in color. A flashing beacon shall be placed on top of the first C19(CA) sign during hours of darkness.
4. All cones used for ramp closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
5. Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime ramp closures only.
6. At least one person shall be assigned to provide full time maintenance of traffic control devices, unless otherwise directed by the Engineer.
7. The existing "EXIT" signs shall be covered during ramp closures.
8. A minimum of 3 cones shall be placed transversely across each closed lane and shoulder.

NOTES:

See Revised Standard Plan RSP T9 for tables.

Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as approriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.

Unless otherwise specified in the special provisions, all temporary warning signs shall have black legend on fluorescent orange background.

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	9.0/10.0	18	25

REGISTERED CIVIL ENGINEER

April 19, 2013
PLANS APPROVAL DATE

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

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

TO ACCOMPANY PLANS DATED 3-9-15

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SYSTEM FOR RAMP CLOSURE

NO SCALE

RSP T14 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T14
DATED MAY 20, 2011 - PAGE 242 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T14

2010 REVISED STANDARD PLAN RSP T14

12-18-12

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	9.0/10.0	19	25

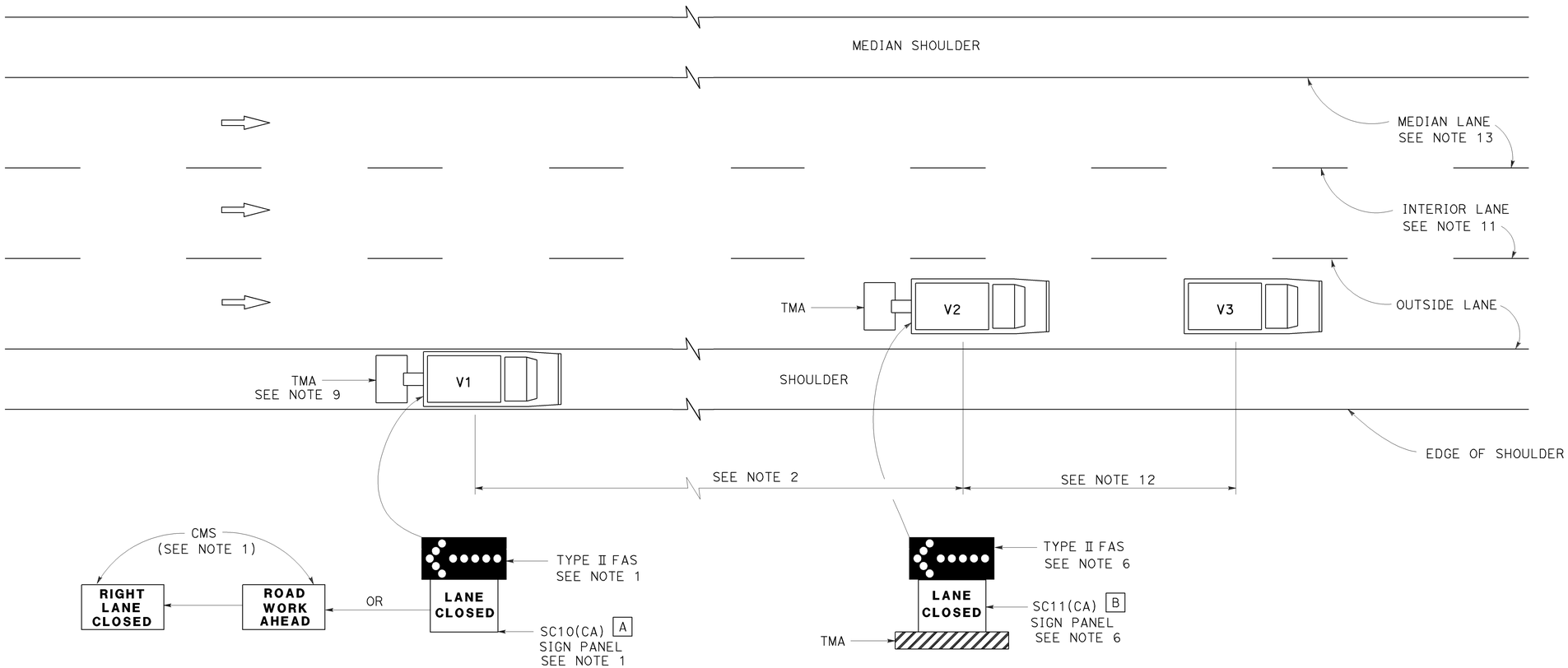
REGISTERED CIVIL ENGINEER

April 19, 2013
PLANS APPROVAL DATE

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

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

TO ACCOMPANY PLANS DATED 3-9-15



SIGN PANEL SIZE (Min)

A 66" x 36"

B 54" x 42"

LEGEND

V1	SIGN VEHICLE
V2	SHADOW VEHICLE
V3	WORK/APPLICATION VEHICLE
	FLASHING ARROW SIGN (FAS)
CMS	CHANGEABLE MESSAGE SIGN
TMA	TRUCK-MOUNTED ATTENUATOR

MOVING LANE CLOSURE ON MEDIAN LANE OR OUTSIDE LANE OF MULTILANE HIGHWAYS

NOTES:

1. Either a changeable message sign or a SC10(CA) sign panel and a Type II flashing arrow sign shall be mounted on the rear of sign vehicle V1. The changeable message sign shall be sequenced to show the "ROAD WORK AHEAD" message first, followed by the "RIGHT LANE CLOSED" message. For median lane closure, the flashing arrow symbol shall be reversed with the arrowhead on the right and the changeable message sign shall show "LEFT LANE CLOSED".
2. If traffic queues develop, sign vehicle V1 should be positioned upstream from the end of queue. Sign vehicle V1 shall be positioned where highly visible when shoulders are not available.
3. A minimum sight distance of 1500′ should be provided in advance of sign vehicle V1.
4. Sign vehicle V1 should remain at the beginning of horizontal or vertical curves until the other vehicles (V2 and V3) are far enough beyond the curve to resume the minimum sight distance of 1500′.
5. Vehicle-mounted sign panels shall have Type III or above retroreflective sheeting, black on white, or black on fluorescent orange, with 6" minimum series D letters per Caltrans sign specifications.
6. Shadow vehicle V2 shall be equipped with a truck-mounted attenuator. The sign panel shown and a Type II flashing arrow sign shall be mounted on the rear of shadow vehicle V2. For median lane closure the flashing arrow sign symbol shall be displayed with the arrowhead on the right.
7. All vehicles used for lane closures shall be equipped with two-way radios, and the vehicle operators shall maintain communication during the work or application operation.
8. All vehicles shall be equipped with flashing or rotating amber lights.
9. If sign vehicle V1 encroaches into the traffic lane due to insufficient shoulder width, sign vehicle V1 shall be equipped with a truck-mounted attenuator. Sign vehicle V1 shall stay as close to the edge of shoulder as practicable.
10. Where workers would be on foot in the work area, a stationary type lane closure (Revised Standard Plan T10, T11, etc., as applicable) shall be used instead of this plan.
11. For moving lane closure on interior lane of multilane highways, use Revised Standard Plan T16.
12. The spacing between work vehicle(s) and the shadow vehicles, and between each shadow vehicle should be minimized to deter road users from driving in between.
13. When the work/application vehicle V3 occupies the median lane, sign vehicle V1 should drive in the median shoulder and indicate left lane closed ahead.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SYSTEM FOR MOVING LANE CLOSURE ON MULTILANE HIGHWAYS

NO SCALE

RSP T15 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T15
DATED MAY 20, 2011 - PAGE 243 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T15

2010 REVISED STANDARD PLAN RSP T15

12-18-12

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	9.0/10.0	20	25

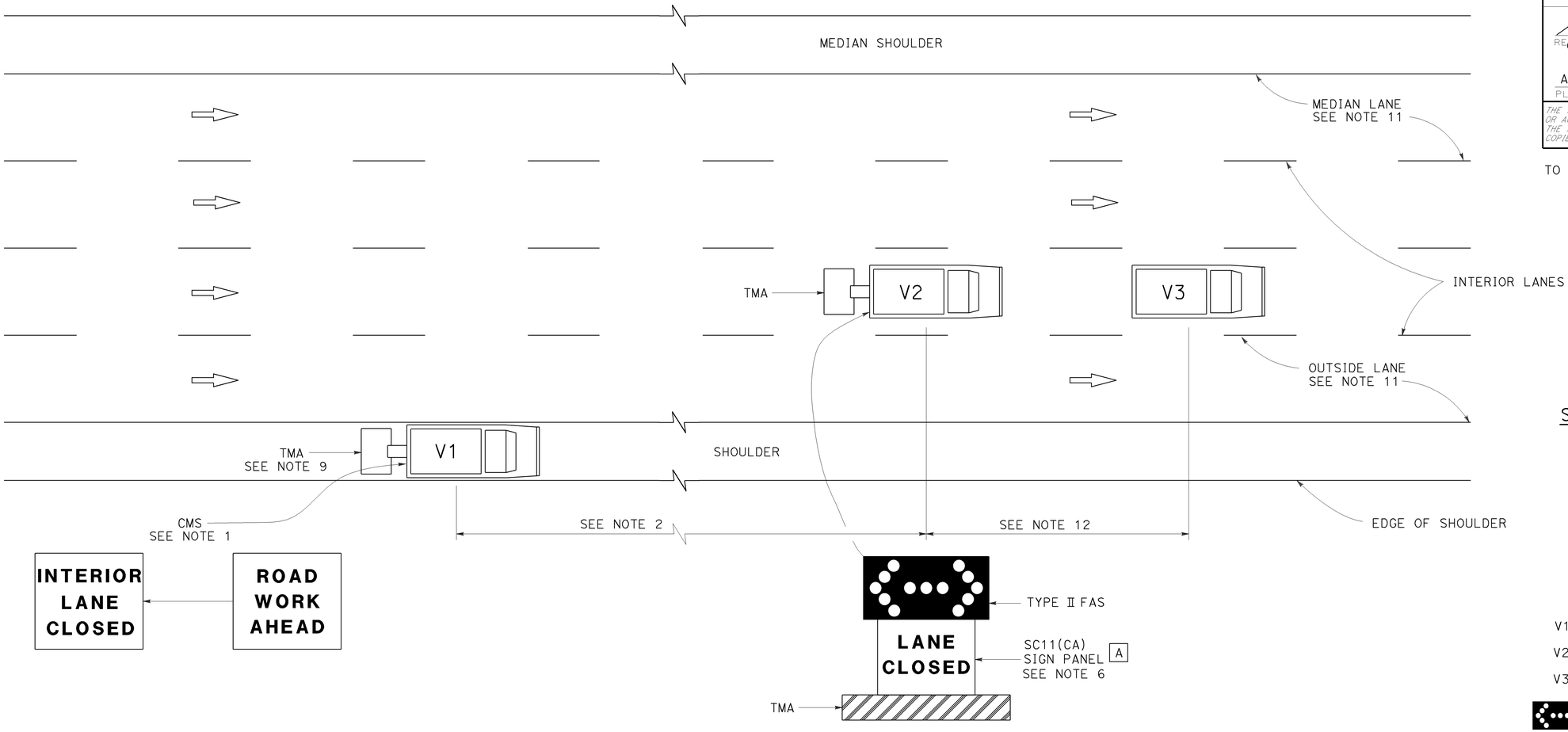
REGISTERED CIVIL ENGINEER

April 19, 2013
PLANS APPROVAL DATE

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

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

TO ACCOMPANY PLANS DATED 3-9-15



MOVING LANE CLOSURE ON INTERIOR LANE OF MULTILANE HIGHWAYS

SIGN PANEL SIZE (Min)

A 54" x 42"

LEGEND

V1	SIGN VEHICLE
V2	SHADOW VEHICLE
V3	WORK/APPLICATION VEHICLE
	FLASHING ARROW SIGN (FAS) IN FLASHING DOUBLE ARROW MODE
CMS	CHANGEABLE MESSAGE SIGN
TMA	TRUCK-MOUNTED ATTENUATOR

NOTES:

1. A changeable message sign shall be mounted on the rear of sign vehicle V1. The changeable message sign shall be sequenced to show the "ROAD WORK AHEAD" message first, followed by the "INTERIOR LANE CLOSED" message. The message "CENTER LANE CLOSED" may be used in place of the "INTERIOR LANE CLOSED" message.
2. If traffic queues develop, sign vehicle V1 should be positioned upstream from the end of queue. Sign vehicle V1 shall be positioned where highly visible when shoulders are not available.
3. A minimum sight distance of 1500′ should be provided in advance of sign vehicle V1.
4. Sign vehicle V1 should remain at the beginning of horizontal or vertical curves until the other vehicles (V2 and V3) are far enough beyond the curve to resume the minimum sight distance of 1500′.
5. Vehicle-mounted sign panels shall have Type III or above retroreflective sheeting, black on white, or black on fluorescent orange, with 6" minimum series D letters per Caltrans sign specifications.
6. Shadow vehicle V2 shall be equipped with a truck-mounted attenuator. The sign panel shown and a Type II flashing arrow sign shall be mounted on the rear of shadow vehicle V2.
7. All vehicles used for lane closures shall be equipped with two-way radios, and the vehicle operators shall maintain communication during the work or application operation.
8. All vehicles shall be equipped with flashing or rotating amber lights.
9. If sign vehicle V1 encroaches into the traffic lane due to insufficient shoulder width, sign vehicle V1 shall be equipped with a truck-mounted attenuator. Sign vehicle V1 shall stay as close to the edge of shoulder as practicable.
10. Where workers would be on foot in the work area, a stationary type lane closure (Revised Standard Plan T10, T11 etc., as applicable) shall be used instead of this plan.
11. For moving lane closure on median lane or outside lane of multilane highways, use Revised Standard Plan T15.
12. The spacing between work vehicle(s) and the shadow vehicles, and between each shadow vehicle should be minimized to deter road users from driving in between.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SYSTEM FOR MOVING LANE CLOSURE ON MULTILANE HIGHWAYS

NO SCALE

RSP T16 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T16
DATED MAY 20, 2011 - PAGE 244 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T16

2010 REVISED STANDARD PLAN RSP T16

12-18-12

LEGEND:

AB	ABANDON. IF APPLIED TO CONDUIT, REMOVE CONDUCTORS
BC	INSTALL PULL BOX IN EXISTING CONDUIT RUN
BP	PEDESTRIAN BARRICADE, TYPE AS INDICATED ON PLAN
CB	INSTALL CONDUIT INTO EXISTING PULL BOX
CC	CONNECT NEW AND EXISTING CONDUIT. REMOVE EXISTING CONDUCTORS AND INSTALL CONDUCTORS AS INDICATED
CF	CONDUIT TO REMAIN FOR FUTURE USE. REMOVE CONDUCTORS. INSTALL PULL TAPE
DH	DETECTOR HANDHOLE
FA	FOUNDATION TO BE ABANDONED
IS	INSTALL SIGN ON SIGNAL MAST ARM
NS	NO SLIP BASE ON STANDARD
PEC	PHOTOELECTRIC CONTROL
PEU	PHOTOELECTRIC UNIT
RC	EQUIPMENT OR MATERIAL TO BE REMOVED AND BECOME THE PROPERTY OF THE CONTRACTOR
RE	REMOVE ELECTROLIER, FUSES AND BALLAST. TAPE ENDS OF CONDUCTORS
RL	RELOCATE EQUIPMENT
RR	REMOVE AND REUSE EQUIPMENT
RS	REMOVE AND SALVAGE EQUIPMENT
SC	SPLICE NEW TO EXISTING CONDUCTORS
SD	SERVICE DISCONNECT
TSP	TELEPHONE SERVICE POINT

ABBREVIATIONS

APS	ACCESSIBLE PEDESTRIAN SIGNAL
BBS	BATTERY BACKUP SYSTEM
BC	BOLT CIRCLE
BPB	BICYCLE PUSH BUTTON
C	CONDUIT
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
Ckt	CIRCUIT
CMS	CHANGEABLE MESSAGE SIGN
Ctid	CALTRANS IDENTIFICATION
Comm	COMMUNICATION
DLC	LOOP DETECTOR LEAD-IN CABLE
EMS	EXTINGUISHABLE MESSAGE SIGN
EVUC	EMERGENCY VEHICLE UNIT CABLE
EVUD	EMERGENCY VEHICLE UNIT DETECTOR
FB	FLASHING BEACON
FBCA	FLASHING BEACON CONTROL ASSEMBLY
FBS	FLASHING BEACON WITH SLIP BASE
FO	FIBER OPTIC
G	EQUIPMENT GROUNDING CONDUCTOR
GB	GROUND BUS
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
HAR	HIGHWAY ADVISORY RADIO
Hex	HEXAGONAL
HPS	HIGH PRESSURE SODIUM
IISNS	INTERNALLY ILLUMINATED STREET NAME SIGN
ISL	INDUCTION SIGN LIGHTING
LED	LIGHT EMITTING DIODE
LMA	LUMINAIRE MAST ARM
LPS	LOW PRESSURE SODIUM
Ltg	LIGHTING
Lum	LUMINAIRE
M	METERED
MAT	MAST ARM MOUNTING TOP ATTACHMENT
MAS	MAST ARM MOUNTING SIDE ATTACHMENT
M/M	MULTIPLE TO MULTIPLE TRANSFORMER
Mtg	MOUNTING
MV	MERCURY VAPOR LIGHTING FIXTURE
MVDS	MICROWAVE VEHICLE DETECTION SYSTEM
N	NEUTRAL (GROUNDED CONDUCTOR)
NB	NEUTRAL BUS
NC	NORMALLY CLOSE
NO	NORMALLY OPEN
P	CIRCUIT BREAKER'S POLE
PB	PULL BOX
PBA	PUSH BUTTON ASSEMBLY
PEC	PHOTOELECTRIC CONTROL
Ped	PEDESTRIAN
PEU	PHOTOELECTRIC UNIT
PT	CONDUIT WITH PULL TAPE
RE	RELOCATED EQUIPMENT
RM	RAMP METERING
RWIS	ROADSIDE WEATHER INFORMATION SYSTEM
SB	SLIP BASE
SIC	SIGNAL INTERCONNECT CABLE
Sig	SIGNAL
SMA	SIGNAL MAST ARM
SNS	STREET NAME SIGN
SP	SERVICE POINT
TDC	TELEPHONE DEMARCATION CABINET
TMS	TRAFFIC MONITORING STATION
TOS	TRAFFIC OPERATIONS SYSTEM
Veh	VEHICLE
VIVDS	VIDEO IMAGE VEHICLE DETECTION SYSTEM
WIM	WEIGH-IN-MOTION
Xfmr	TRANSFORMER

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	9.0/10.0	21	25

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

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

July 19, 2013
PLANS APPROVAL DATE

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TO ACCOMPANY PLANS DATED 3-9-15

SOFFIT AND WALL MOUNTED LUMINAIRES

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

NOTE:
Arrow indicates "street side" of luminaire.

COMMONLY USED SYMBOLS FOR UNITED STATES CUSTOMARY UNITS OF MEASUREMENT:

SYMBOL USED	DEFINITIONS
Ω	OHMS
min	MINUTE
s	SECOND
bps	BITS PER SECOND
Bps	BYTES PER SECOND
A	AMPERE
V	VOLT
V(dc)	VOLT (DIRECT CURRENT)
V(ac)	VOLT (ALTERNATING CURRENT)
FC	FOOT - CANDLE
W	WATTS
VA	VOLT-AMPERE
M	MEGA
k	KILO
m	MILLI
μ	MICRO
P	PICO
Hz	HERTZ

MISCELLANEOUS ELECTROLIERS

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

NOTES:

1. HPS luminaires shall be 310 W HPS when installed on Type 21, 21D, 30, 31 and 32 Standards, unless otherwise specified. HPS luminaires shall be 200 W when installed on other type standards or poles, unless otherwise specified.
2. LED luminaires shall be 235 W when installed on Type 21, 21D, 30, 31 and 32 Standards, unless otherwise specified. LED luminaires shall be 165 W when installed on other type standards or poles, unless otherwise specified.
3. Luminaires shall be the cutoff type, ANSI Type III medium cutoff lighting distribution, unless otherwise specified.

STANDARD ELECTROLIER

NEW	EXISTING	STANDARD TYPE
		15
		15D
S	S	15 STRUCTURE
S	S	15D STRUCTURE
		21
		21D
		21 STRUCTURE
		21D STRUCTURE
		30
		31
		32

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

NO SCALE

RSP ES-1A DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-1A DATED MAY 20, 2011 - PAGE 425 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-1A

2010 REVISED STANDARD PLAN RSP ES-1A

7-15-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	9.0/10.0	22	25

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

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

July 19, 2013
PLANS APPROVAL DATE

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TO ACCOMPANY PLANS DATED 3-9-15

CONDUIT

NEW	EXISTING	
		LIGHTING CONDUIT, UNLESS OTHERWISE INDICATED OR NOTED
		TRAFFIC SIGNAL CONDUIT
C	c	COMMUNICATION CONDUIT
T	t	TELEPHONE CONDUIT
F	f	FIRE ALARM CONDUIT
FO	fo	FIBER OPTIC CONDUIT
		CONDUIT TERMINATION
R	r	CONDUIT RISER ATTACHED TO THE STRUCTURE OR SERVICE POLE

SERVICE EQUIPMENT

NEW	EXISTING	
OH	oh	OVERHEAD LINES
U	U	WOOD POLE, "U" INDICATES UTILITY OWNED
		POLE GUY WITH ANCHOR
		UTILITY TRANSFORMER - GROUND MOUNTED
III	III	SERVICE EQUIPMENT ENCLOSURE TYPE. DOOR INDICATES FRONT OF ENCLOSURE
T	t	TELEPHONE DEMARCATION CABINET

POLE-MOUNTED SERVICE DESIGNATION

TYPE H SERVICE, 28'-10" — TYPE OF INSTALLATION AND POLE HEIGHT ABOVE GRADE

FLASHING BEACON

NEW	EXISTING	
R	R	FLASHING BEACON (ONE VEHICLE SIGNAL HEAD WITH BACKPLATE AND VISOR) "R" INDICATES RED INDICATION, "Y" INDICATES YELLOW INDICATION
Y Y	Y Y	FLASHING BEACON WITH TYPE 15-FBS STANDARD AND A SIGN.
R R	R R	FLASHING BEACON WITH TYPES 9, 9A OR 9B SIGN UNLESS OTHERWISE SPECIFIED OR INDICATED

SIGNAL EQUIPMENT

NEW	EXISTING	
C	C	PEDESTRIAN SIGNAL HEAD "C" INDICATES COUNTDOWN PEDESTRIAN HEAD
		PUSH BUTTON ASSEMBLY POST
		PEDESTRIAN BARRICADE
		VEHICLE SIGNAL HEAD (WITH BACKPLATE AND 3-SECTIONS: RED, YELLOW AND GREEN)
		VEHICLE SIGNAL HEAD WITH ANGLE VISOR
PV	PV	MODIFICATIONS OF BASIC SYMBOL: "L" INDICATES ALL NON-ARROW SECTIONS LOUVERED "LG" INDICATES LOUVERED GREEN SECTION ONLY "PV" INDICATES ALL 12" SECTIONS PROGRAMMED VISIBILITY "8" INDICATES ALL 8" SECTIONS (ONLY WHEN SPECIFIED)
		VEHICLE SIGNAL HEAD CONSISTING OF RED, YELLOW AND GREEN LEFT ARROW SECTIONS
		VEHICLE SIGNAL HEAD CONSISTING OF RED AND YELLOW SECTIONS WITH AN UP GREEN ARROW SECTION
		VEHICLE SIGNAL HEAD (5 SECTION) CONSISTING OF RED, YELLOW AND GREEN SECTIONS WITH YELLOW AND GREEN RIGHT ARROW SECTIONS
		TYPE 15TS STANDARD WITH VEHICLE SIGNAL HEAD AND LUMINAIRE
		TYPE 21TS STANDARD WITH VEHICLE SIGNAL HEAD AND LUMINAIRE
		STANDARD WITH LUMINAIRE AND SIGNAL MAST ARMS AND ATTACHED VEHICLE SIGNAL HEADS
		TYPE 1 STANDARD WITH ATTACHED VEHICLE SIGNAL HEADS
		STANDARD WITH A SIGNAL MAST ARM, ATTACHED VEHICLE SIGNAL HEADS AND INTERNALLY ILLUMINATED STREET NAME SIGN
		CONTROLLER ASSEMBLY. DOOR INDICATES FRONT OF CABINET

SIGNAL EQUIPMENT Cont

NEW	EXISTING	
		GUARD POST
		TYPE 1 STANDARD WITH RAMP METERING SIGN
		OPTICAL DETECTOR FOR THE EMERGENCY VEHICLE DETECTION SYSTEM

NOTES:

1. All signal sections shall be 12" unless shown otherwise.
2. Signal heads shall be provided with backplates unless shown otherwise.

ILLUMINATED OVERHEAD SIGN

NEW	EXISTING	
		SINGLE POST, SINGLE ILLUMINATED SIGN, BALANCED BUTTERFLY
		SINGLE POST, DOUBLE ILLUMINATED SIGN, BALANCED BUTTERFLY
		SINGLE POST, SINGLE ILLUMINATED SIGN, FULL CANTILEVER
		DOUBLE POST, SINGLE ILLUMINATED SIGN
		SINGLE ILLUMINATED SIGN MOUNTED ON STRUCTURE
		DOUBLE POST, SINGLE ILLUMINATED SIGN WITH ELECTROLIER

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

NO SCALE

RSP ES-1B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-1B DATED MAY 20, 2011 - PAGE 426 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-1B

2010 REVISED STANDARD PLAN RSP ES-1B

7-15-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	9.0/10.0	23	25

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

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

July 19, 2013
PLANS APPROVAL DATE

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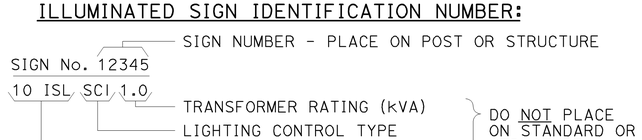
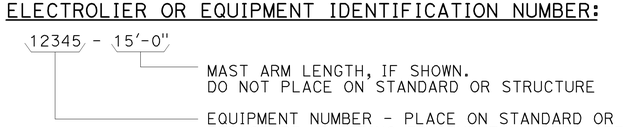
TO ACCOMPANY PLANS DATED 3-9-15

EQUIPMENT IDENTIFICATION

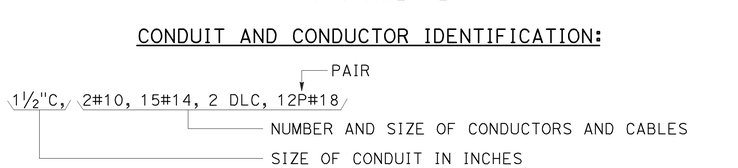
ILLUMINATED SIGN IDENTIFICATION NUMBER:



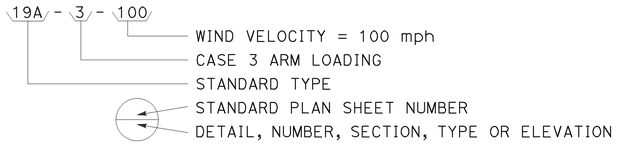
ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



CONDUIT AND CONDUCTOR IDENTIFICATION:



SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



MISCELLANEOUS EQUIPMENT

NEW	EXISTING	
CMS	cms	CHANGEABLE MESSAGE SIGN
		CLOSED CIRCUIT TELEVISION CAMERA
		HIGHWAY ADVISORY RADIO POLE AND ANTENNA
EMS	ems	EXTINGUISHABLE MESSAGE SIGN
M V	m v	DETECTION DEVICE M = MICROWAVE SENSOR V = VIDEO IMAGE SENSOR

WIRING DIAGRAM LEGEND

	EXTERNAL CONDUCTOR
	CONDUCTOR OR BUS
	TIE POINT
	CONTACTOR COIL
	CONTACTOR, NO CONTACT
	TERMINAL BLOCKS
	CONTACTOR, NC CONTACT
	ENCLOSURE BOND
	GROUNDING ELECTRODE
	CIRCUIT BREAKER
	RECEPTACLE

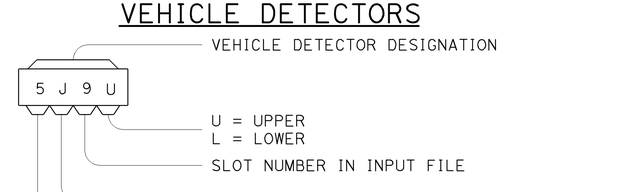
PULL BOXES

NEW	EXISTING	
		PULL BOX, No. 5 UNLESS OTHERWISE INDICATED OR NOTED
3	9A(21)	PULL BOX, ADDITIONAL DESIGNATIONS OR DESCRIPTIONS

3 No. 3½ PULL BOX
5 No. 5 PULL BOX
6 No. 6 PULL BOX
7 No. 7 (CEILING PULL BOX)
8 No. 8 (PENDANT SOFFIT PULL BOX)
9 No. 9 PULL BOX
9A No. 9A PULL BOX

(C) COMMUNICATIONS PULL BOX
(E) PULL BOX WITH EXTENSION
(S) SPRINKLER CONTROL PULL BOX
(21) ANCHOR BOLTS AND CONDUIT FOR FUTURE INSTALLATION OF TYPE 21 STANDARD
(T) TRAFFIC PULL BOX

VEHICLE DETECTORS



NEW	EXISTING	
		TYPE A DETECTOR LOOP. OUTLINE OF SAWCUT SHOWN
		TYPE B DETECTOR LOOP. OUTLINE OF SAWCUT SHOWN
		TYPE C DETECTOR LOOP. OUTLINE OF SAWCUT SHOWN
		TYPE D DETECTOR LOOP. OUTLINE OF SAWCUT SHOWN
		TYPE E DETECTOR LOOP. OUTLINE OF SAWCUT SHOWN
		TYPE Q DETECTOR LOOP. OUTLINE OF SAWCUT SHOWN
		MAGNETIC DETECTOR
DH	dh	DETECTOR HANDHOLE
		MICROWAVE OR VIDEO DETECTION ZONE

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

NO SCALE

RSP ES-1C DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-1C DATED MAY 20, 2011 - PAGE 427 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-1C

2010 REVISED STANDARD PLAN RSP ES-1C

7-11-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	9.0/10.0	24	25

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

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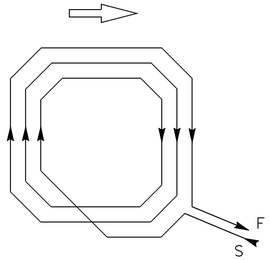
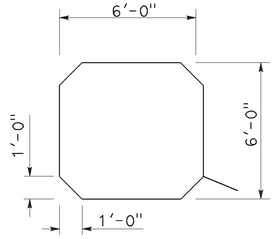
TO ACCOMPANY PLANS DATED 3-9-15

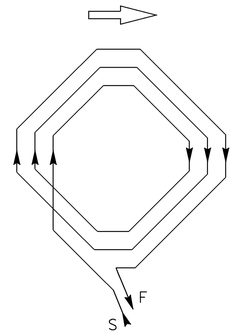


WINDING DETAIL

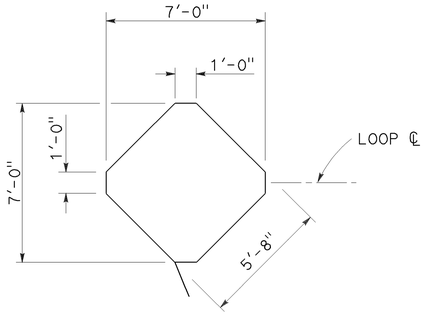


SAWCUT DETAIL

TYPE A LOOP DETECTOR CONFIGURATION

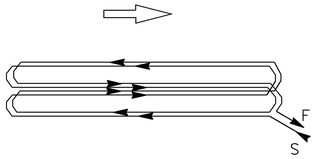


WINDING DETAIL

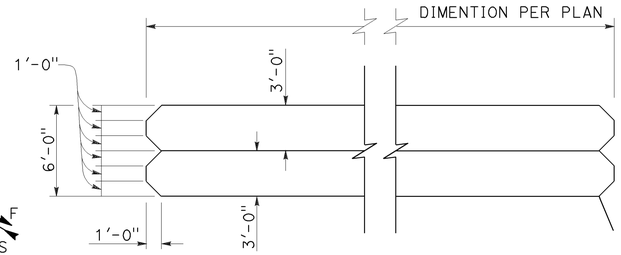


SAWCUT DETAIL

TYPE B LOOP DETECTOR CONFIGURATION

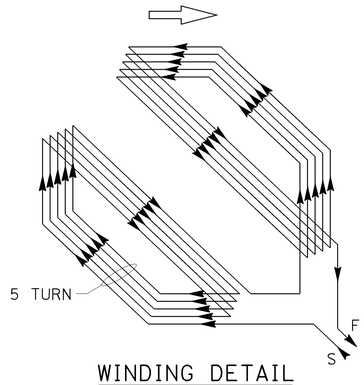


WINDING DETAIL

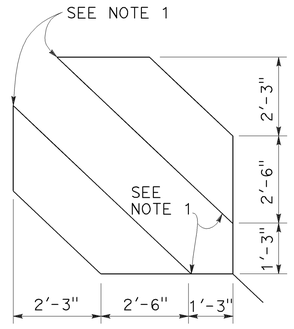


SAWCUT DETAIL

TYPE C LOOP DETECTOR CONFIGURATION

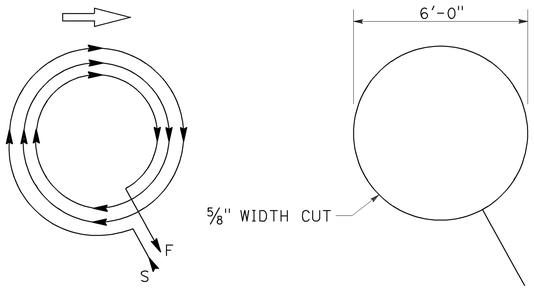


WINDING DETAIL



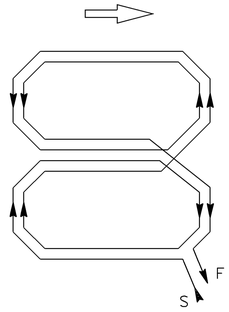
SAWCUT DETAIL

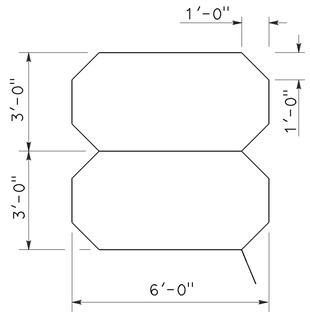
TYPE D LOOP DETECTOR CONFIGURATION



WINDING DETAIL SAWCUT DETAIL

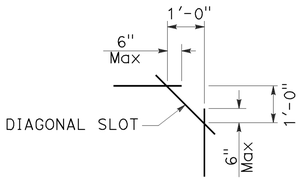
TYPE E LOOP DETECTOR CONFIGURATION





WINDING DETAIL SAWCUT DETAIL

TYPE Q LOOP DETECTOR CONFIGURATION



PLAN VIEW OF DIAGONAL SLOT AT CORNERS

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (DETECTORS)

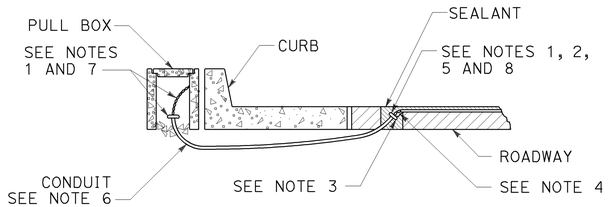
NO SCALE

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

REVISED STANDARD PLAN RSP ES-5B

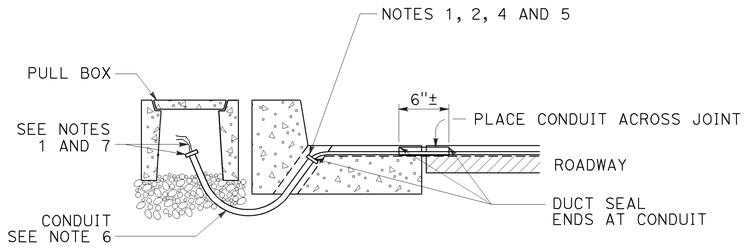
2010 REVISED STANDARD PLAN RSP ES-5B

7-9-13

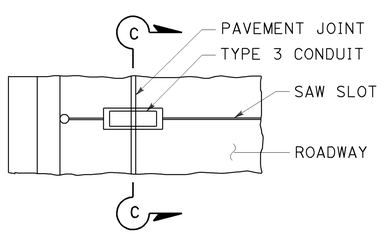


TYPE A

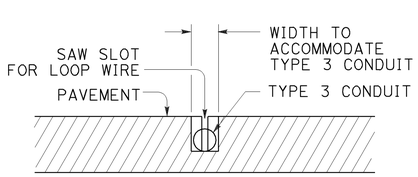
CURB TERMINATION DETAIL



CROSS SECTION



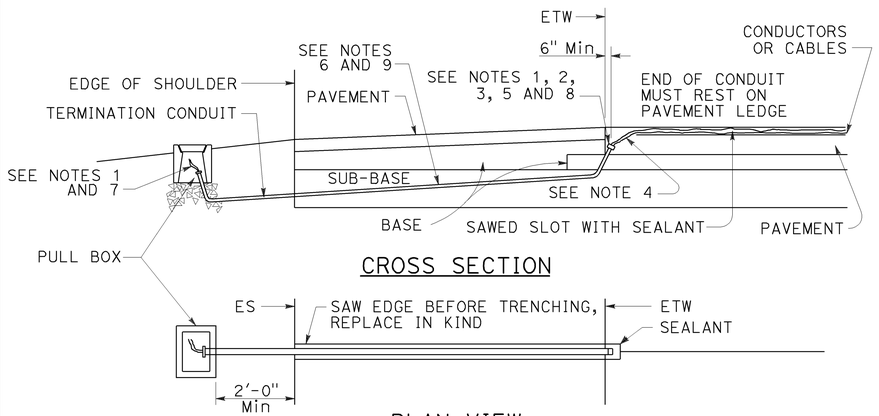
PLAN VIEW



SECTION C-C

TYPE B

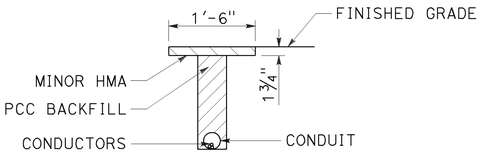
CURB TERMINATION DETAIL



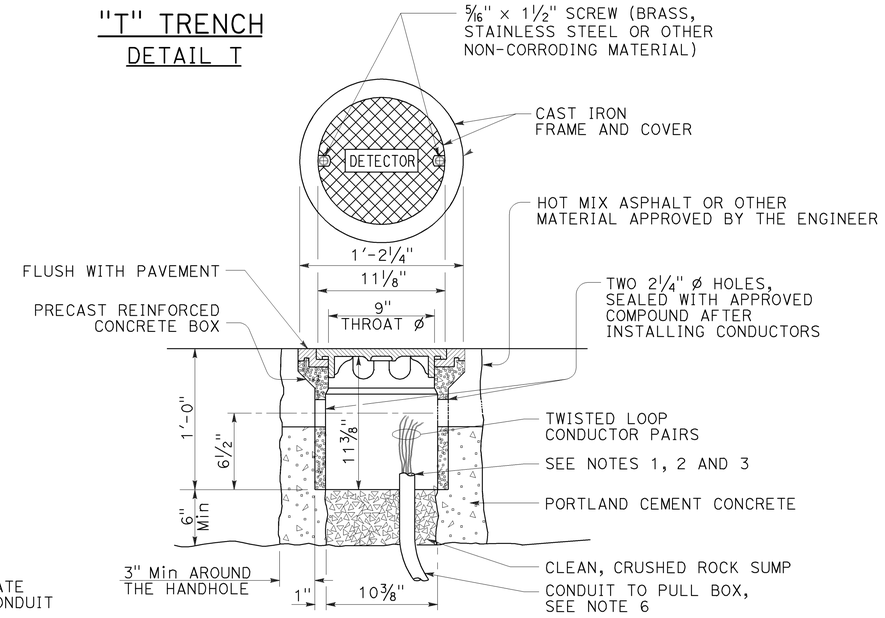
CROSS SECTION

PLAN VIEW

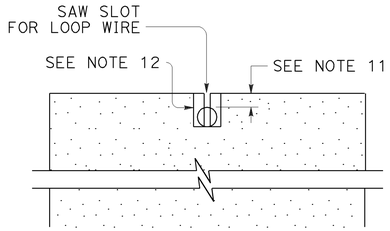
SHOULDER TERMINATION DETAILS



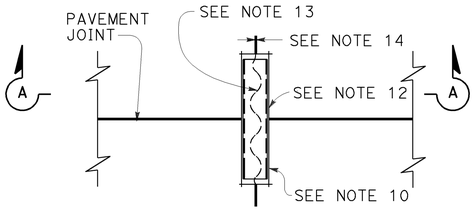
"T" TRENCH DETAIL T



DETECTOR HANDHOLE DETAIL

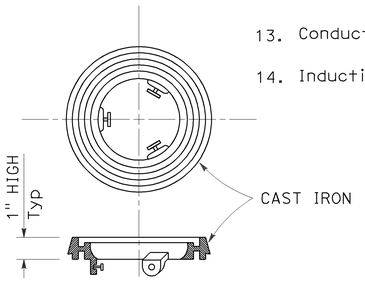


SECTION A-A



PLAN VIEW

TYPICAL LOOP LEAD-IN DETAIL AT PAVEMENT JOINT



LOCKING GRADE RING

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	13	9.0/10.0	25	25

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

TO ACCOMPANY PLANS DATED 3-9-15

NOTES:

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

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

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (CURB TERMINATION AND HANDHOLE)

NO SCALE

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

REVISED STANDARD PLAN RSP ES-5D

2010 REVISED STANDARD PLAN RSP ES-5D

7-9-13