Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	880	18.3/22.8	1	19

STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION

ACIM-880-1(068)E

PROJECT PLANS FOR CONSTRUCTION ON STATE HIGHWAY

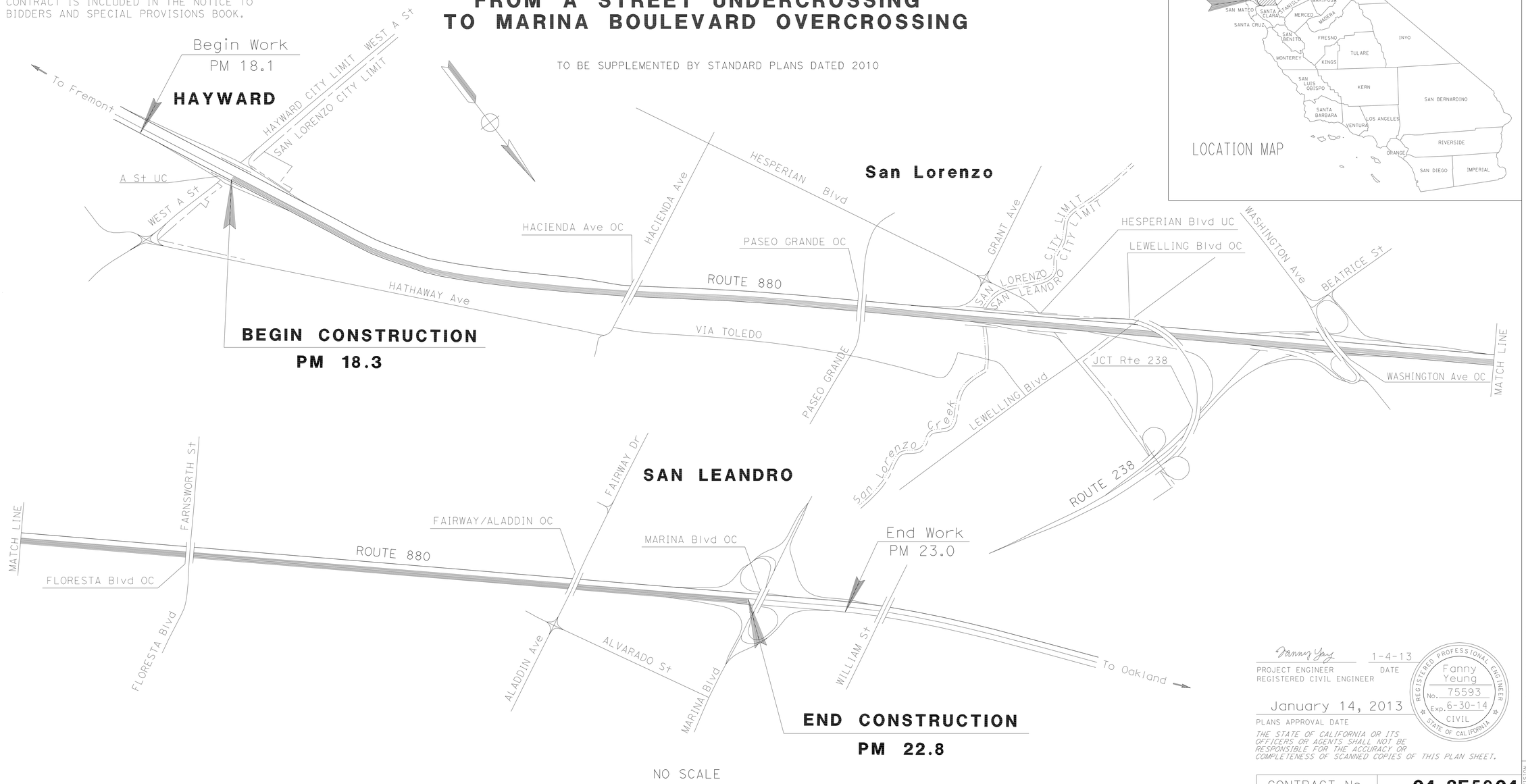
IN ALAMEDA COUNTY AT SAN LORENZO AND IN SAN LEANDRO FROM A STREET UNDERCROSSING TO MARINA BOULEVARD OVERCROSSING

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010

INDEX OF PLANS

SHEET No.	DESCRIPTION
1	TITLE SHEET AND LOCATION MAP
2	TYPICAL CROSS SECTIONS
3 & 4	CONTRUCTION DETAILS
5-10	CONSTRUCTION AREA SIGNS
11 & 12	PAVEMENT DELINEATION DETAILS AND QUANTITIES
13	SUMMARY OF QUANTITIES
14 & 15	ELECTRICAL PLANS
16-19	TRAFFIC CONTROL SYSTEM PLANS

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



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 NGOC TRAN

Fanny Yeung 1-4-13

PROJECT ENGINEER REGISTERED CIVIL ENGINEER — DATE

January 14, 2013

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Fanny Yeung No. 75593 Exp. 6-30-14 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.

CONTRACT No.	04-3E5904
PROJECT ID	0412000428

LAST REVISION 01-03-13 DATE PLOTTED => 04-MAR-2013 TIME PLOTTED => 13:33

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	880	18.3/22.8	2	19

REGISTERED CIVIL ENGINEER — DATE 1-4-13

PLANS APPROVAL DATE 1-14-13

REGISTERED PROFESSIONAL ENGINEER — Fanny Yeung — No. 75593 — Exp. 6-30-14 — CIVIL — STATE OF CALIFORNIA

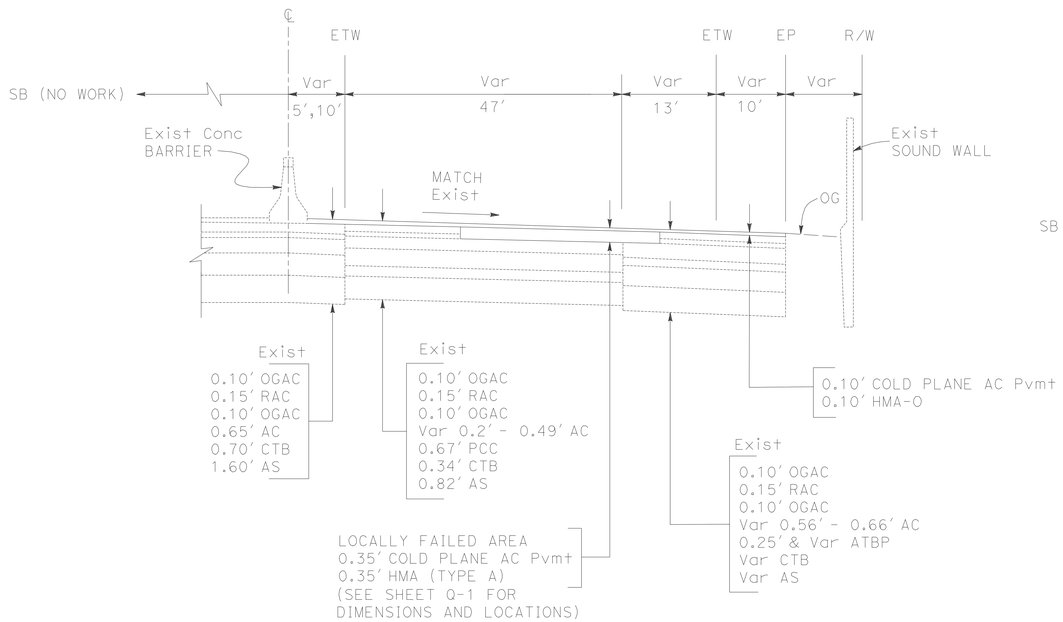
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTES:

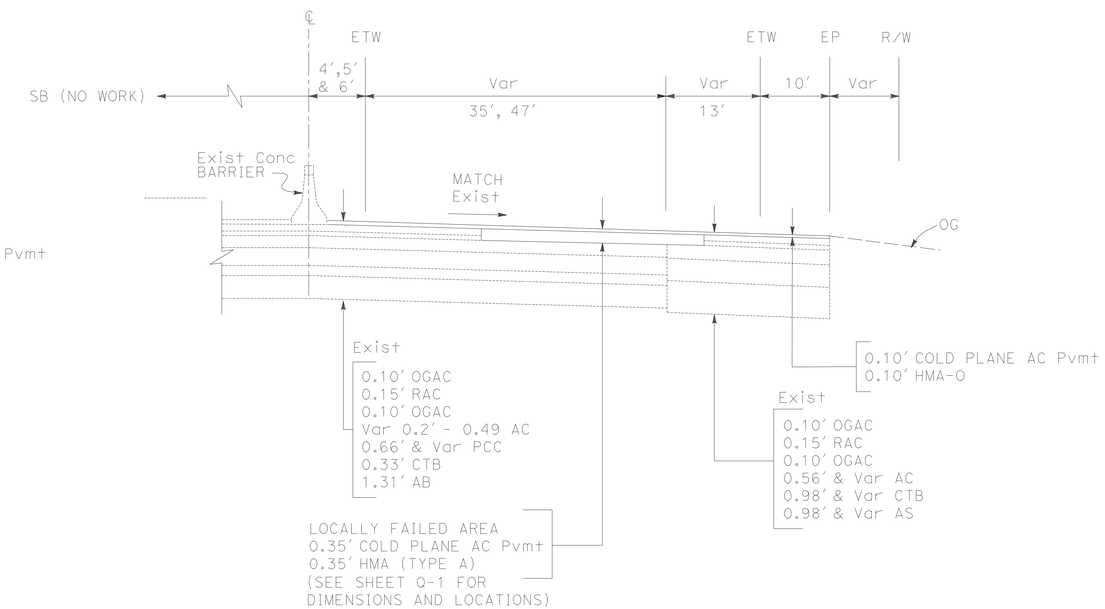
1. FOR ACCURATE RIGHT OF WAY AND ACCESS DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. DIMENSION OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
3. EXISTING UTILITY FACILITIES HAVE NOT BEEN PLOTTED ON THESE PLANS.

ABBREVIATION:

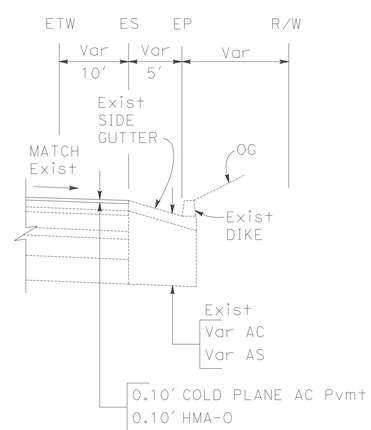
HMA-O HOT MIX ASPHALT (OPEN GRADED)



NORTHBOUND
PM 18.3 TO PM 20.8



NORTHBOUND
PM 20.8 TO PM 22.8



NORTHBOUND
PM 19.2 TO PM 19.4

TYPICAL CROSS SECTIONS

NO SCALE

X-1

REVISED BY	DATE REVISED
FY	1/3/13

FANNY YEUNG — NGOC TRAN

CALCULATED-DESIGNED BY — CHECKED BY

FUNCTIONAL SUPERVISOR — NGOC TRAN

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — Caltrans — DESIGN

LAST REVISION 01-03-13 — DATE PLOTTED => 04-MAR-2013 — TIME PLOTTED => 13:33

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	880	18.3/22.8	3	19

REGISTERED CIVIL ENGINEER 1-4-13 DATE

1-14-13
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Fanny Yeung No. 75593 Exp. 6-30-14 CIVIL STATE OF CALIFORNIA

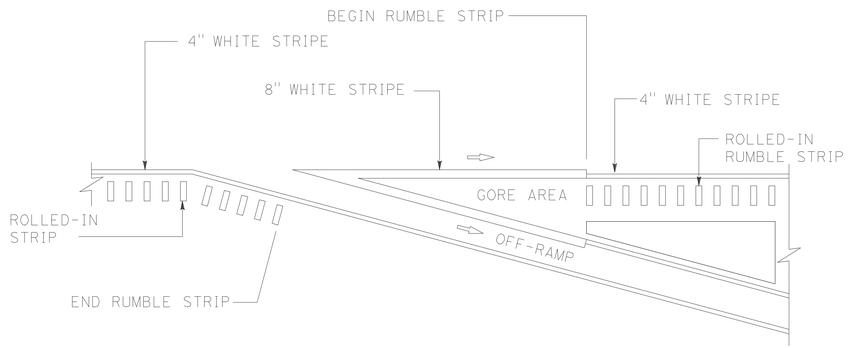
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTES:

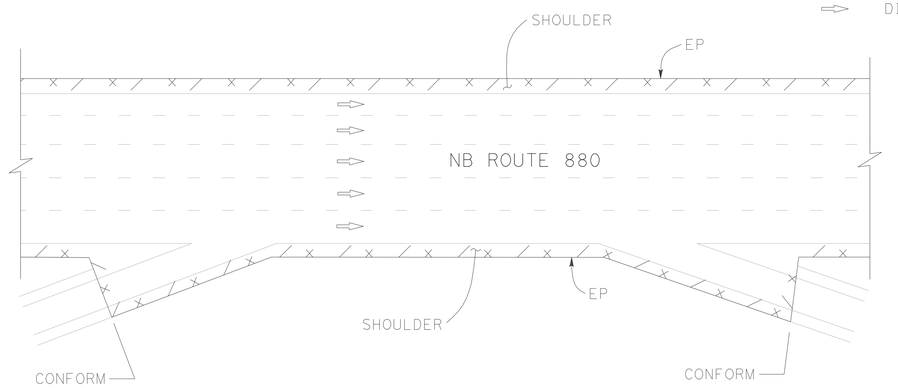
1. DO NOT GRIND ON ANY CONCRETE STRUCTURE (BRIDGE DECK, DRAINAGE APRON, Etc.)
2. DO NOT GRIND ON OR BEHIND CURB WHEN CURB IS ADJACENT TO ETW.

LEGEND:

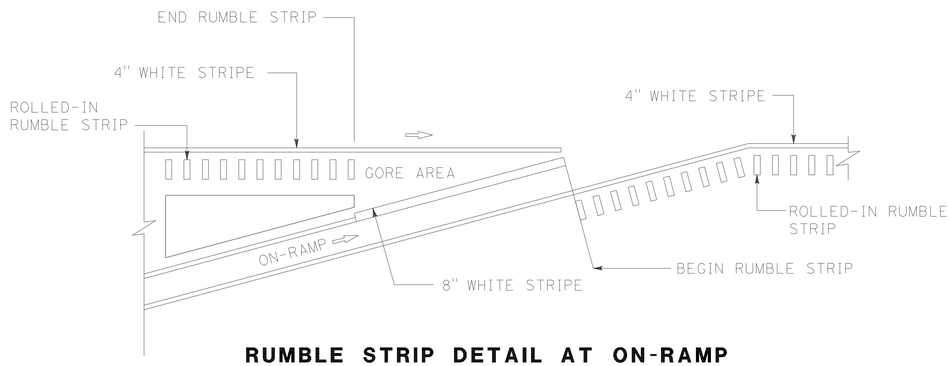
- 0.1' COLD PLANE AC Pvmt AND 0.1' HMA-O
- 0.1' COLD PLANE AC Pvmt AND 0.1' HMA-O
- DIRECTION OF TRAFFIC



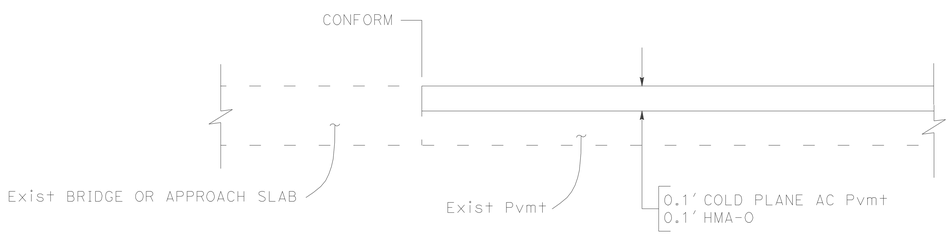
RUMBLE STRIP DETAIL AT OFF-RAMP (TYPICAL)



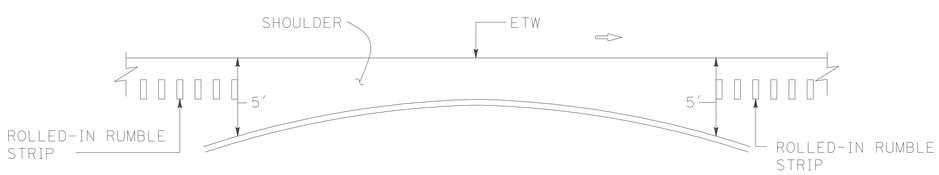
PAVING LIMIT AT RAMP, CONNECTOR AND MAINLINE (TYPICAL)



RUMBLE STRIP DETAIL AT ON-RAMP (TYPICAL)



PAVING DETAIL AT BRIDGE, BEGIN AND END CONSTRUCTION (TYPICAL)



RUMBLE STRIP DETAIL AT NARROW SHOULDER (TYPICAL)

CONSTRUCTION DETAILS

NO SCALE

C-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN

FUNCTIONAL SUPERVISOR: NGOC TRAN
CALCULATED-DESIGNED BY: FANNY YEUNG
CHECKED BY: NGOC TRAN
REVISED BY: FY
DATE REVISED: 1/3/13

LAST REVISION 01-03-13
DATE PLOTTED => 04-MAR-2013
TIME PLOTTED => 13:33

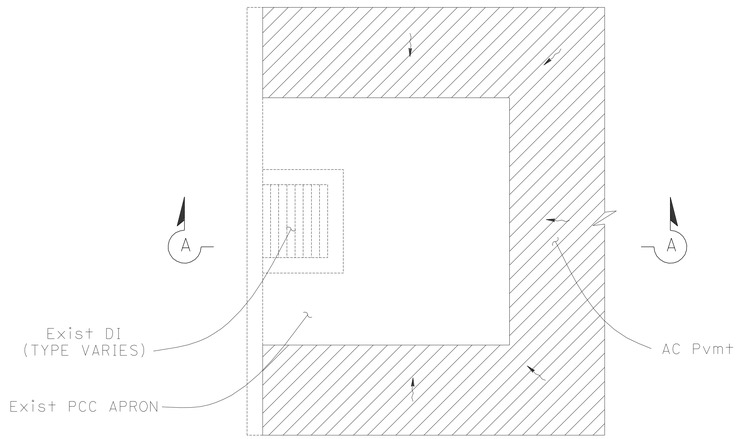
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	880	18.3/22.8	4	19

Fanny Yeung 1-4-13
REGISTERED CIVIL ENGINEER DATE

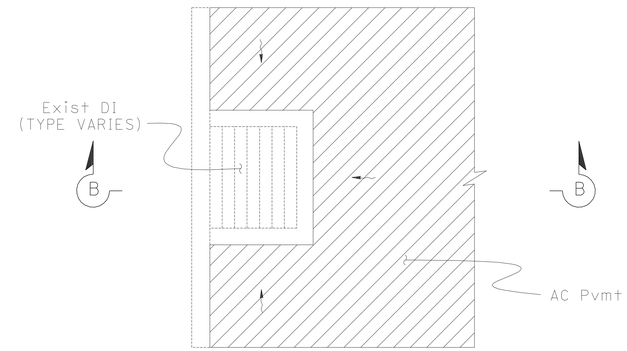
1-14-13
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Fanny Yeung No. 75593 Exp. 6-30-14 CIVIL STATE OF CALIFORNIA

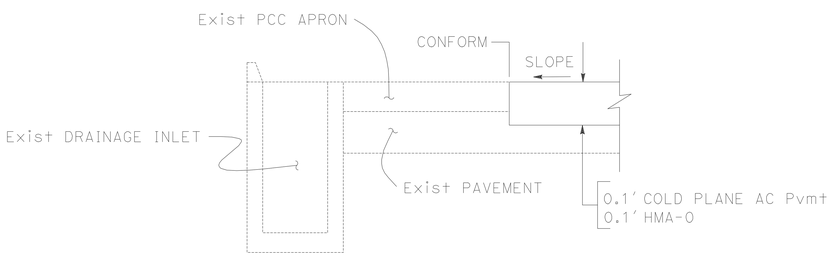
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



PLAN

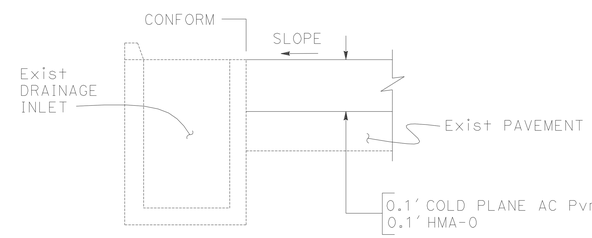


PLAN



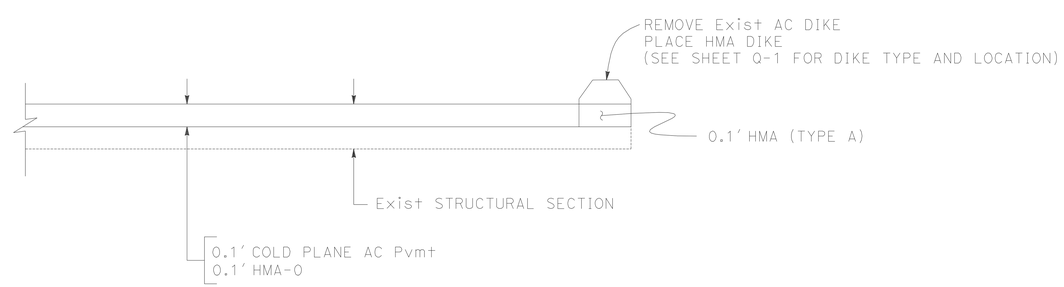
SECTION A-A

PAVING CONFORM AT DRAINAGE INLET WITH PCC APRON (TYPICAL)



SECTION B-B

PAVING CONFORM AT DRAINAGE INLET (TYPICAL)



PAVING DETAIL AT AC DIKE (TYPICAL)

CONSTRUCTION DETAILS

NO SCALE

C-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN

FUNCTIONAL SUPERVISOR: NGOC TRAN
CALCULATED-DESIGNED BY: FANNY YEUNG
CHECKED BY: NGOC TRAN
REVISED BY: FY
DATE REVISED: 1/3/13

LAST REVISION 01-03-13
DATE PLOTTED => 04-MAR-2013
TIME PLOTTED => 13:33

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	880	18.3/22.8	5	19

Lourdes David 12-19-12
REGISTERED CIVIL ENGINEER DATE

1-14-13
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Lourdes David No. 51428 Exp. 6-30-14 CIVIL STATE OF CALIFORNIA

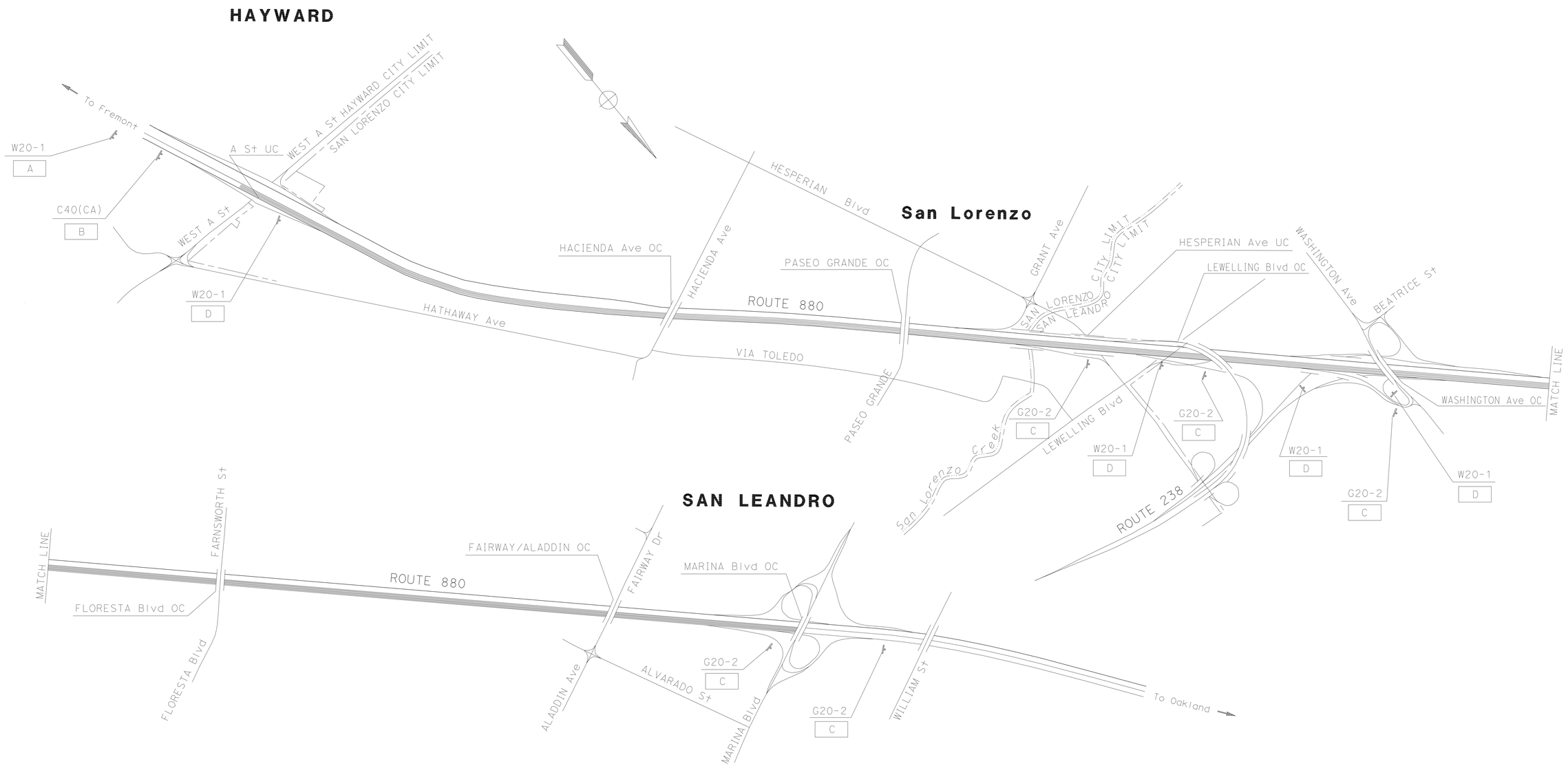
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTES:

1. EXACT LOCATION AND POSITION OF CONSTRUCTION AREA SIGNS TO BE DETERMINED BY THE ENGINEER.
2. ALL CONSTRUCTION AREA SIGNS SHALL BE STATIONARY MOUNTED, UNLESS OTHERWISE INDICATED.

LEGEND:

CONSTRUCTION AREA SIGN DESIGNATION



CONSTRUCTION AREA SIGNS

CS-1

LEOPOLDO G. BONGATO	REVISED BY
LOURDES DAVID	DATE REVISED
LGB	12/18/12
CALCULATED-DESIGNED BY	
CHECKED BY	
FUNCTIONAL SUPERVISOR	
ROLAND AU-YEUNG	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC

LAST REVISION 12-18-12
DATE PLOTTED => 04-MAR-2013
TIME PLOTTED => 13:33

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	880	18.3/22.8	6	19

Lourdes David 12-19-12
REGISTERED CIVIL ENGINEER DATE

1-14-13
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Lourdes David No. 51428 Exp. 6-30-14 CIVIL STATE OF CALIFORNIA

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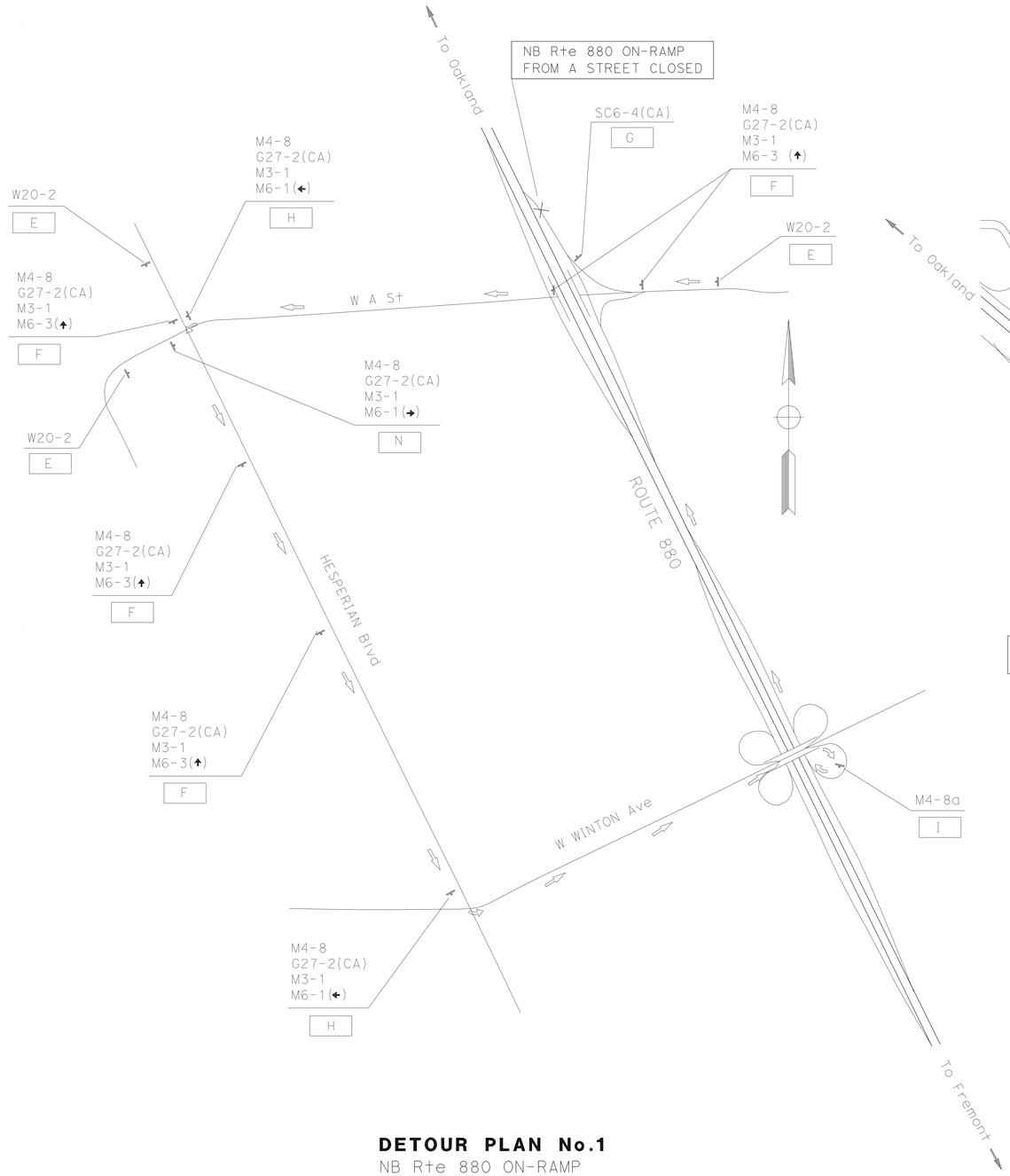
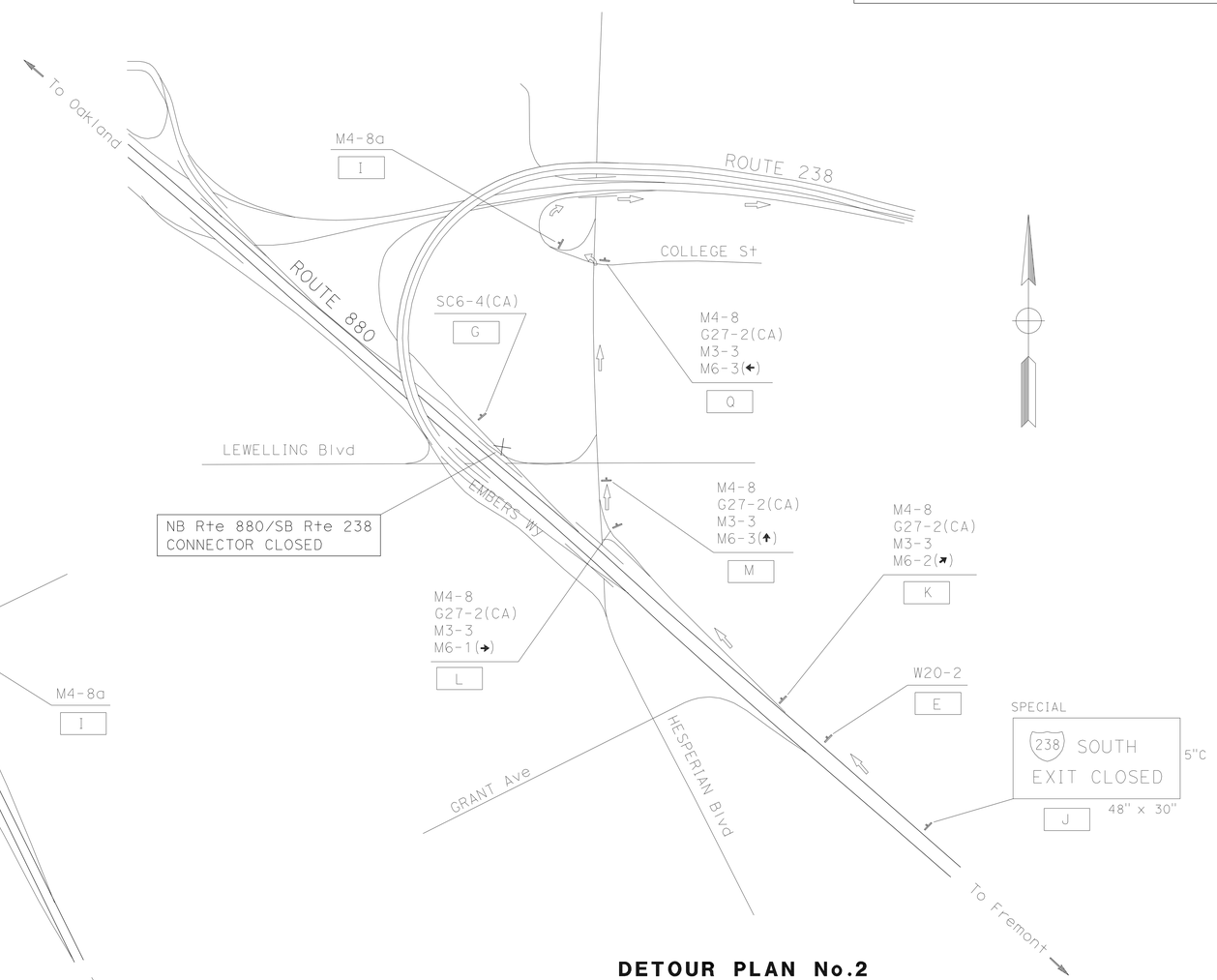


DETOUR PLAN No.1
NB Rte 880 ON-RAMP
FROM A St CLOSED

VIA:
WB/EB A St;
SB HESPERIAN Blvd.;
EB WINTON Ave;
"LOOP" ON-RAMP TO NB Rte 880.



DETOUR PLAN No.2
NB Rte 880/SB Rte 238 CONNECTOR CLOSED

VIA:
NB Rte 880;
OFF-RAMP TO HESPERIAN Blvd;
NB HESPERIAN Blvd;
ON-RAMP TO SB Rte 238.

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET CS-1

CONSTRUCTION AREA SIGNS
NO SCALE

CS-2

LGB	12/18/12
REVISED BY	DATE REVISED
LEOPOLDO G. BONGATO	LOURDES DAVID
CALCULATED-DESIGNED BY	CHECKED BY
FUNCTIONAL SUPERVISOR	ROLAND AU-YEUNG

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC

LAST REVISION 12-18-12 | DATE PLOTTED => 04-MAR-2013 TIME PLOTTED => 13:33

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	880	18.3/22.8	7	19

Lourdes David 12-19-12
REGISTERED CIVIL ENGINEER DATE

1-14-13
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Lourdes David
No. 51428
Exp. 6-30-14
CIVIL
STATE OF CALIFORNIA

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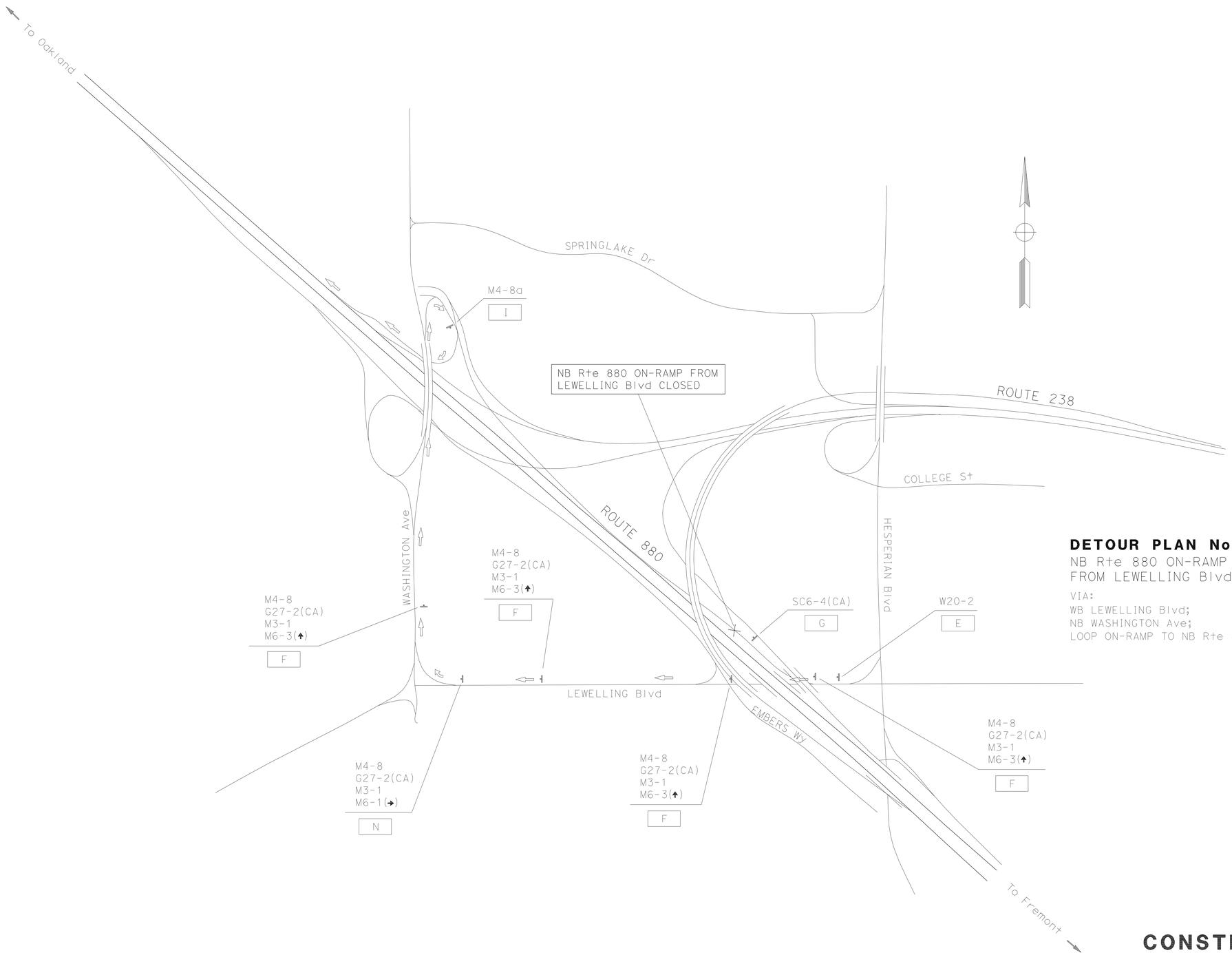

DETOUR PLAN No.3

NB Rte 880 ON-RAMP
FROM LEWELLING Blvd CLOSED

VIA:
WB LEWELLING Blvd;
NB WASHINGTON Ave;
LOOP ON-RAMP TO NB Rte 880.

CONSTRUCTION AREA SIGNS

NO SCALE

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET CS-1

CS-3

LGB	12/18/12
REVISED BY	DATE REVISED
LEOPOLDO G. BONGATO	LOURDES DAVID
CALCULATED-DESIGNED BY	CHECKED BY
FUNCTIONAL SUPERVISOR	ROLAND AU-YEUNG

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC

LAST REVISION 12-18-12 | DATE PLOTTED => 04-MAR-2013 | TIME PLOTTED => 13:33

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	880	18.3/22.8	8	19

Lourdes David 12-19-12
REGISTERED CIVIL ENGINEER DATE

1-14-13
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Lourdes David
No. 51428
Exp. 6-30-14
CIVIL
STATE OF CALIFORNIA

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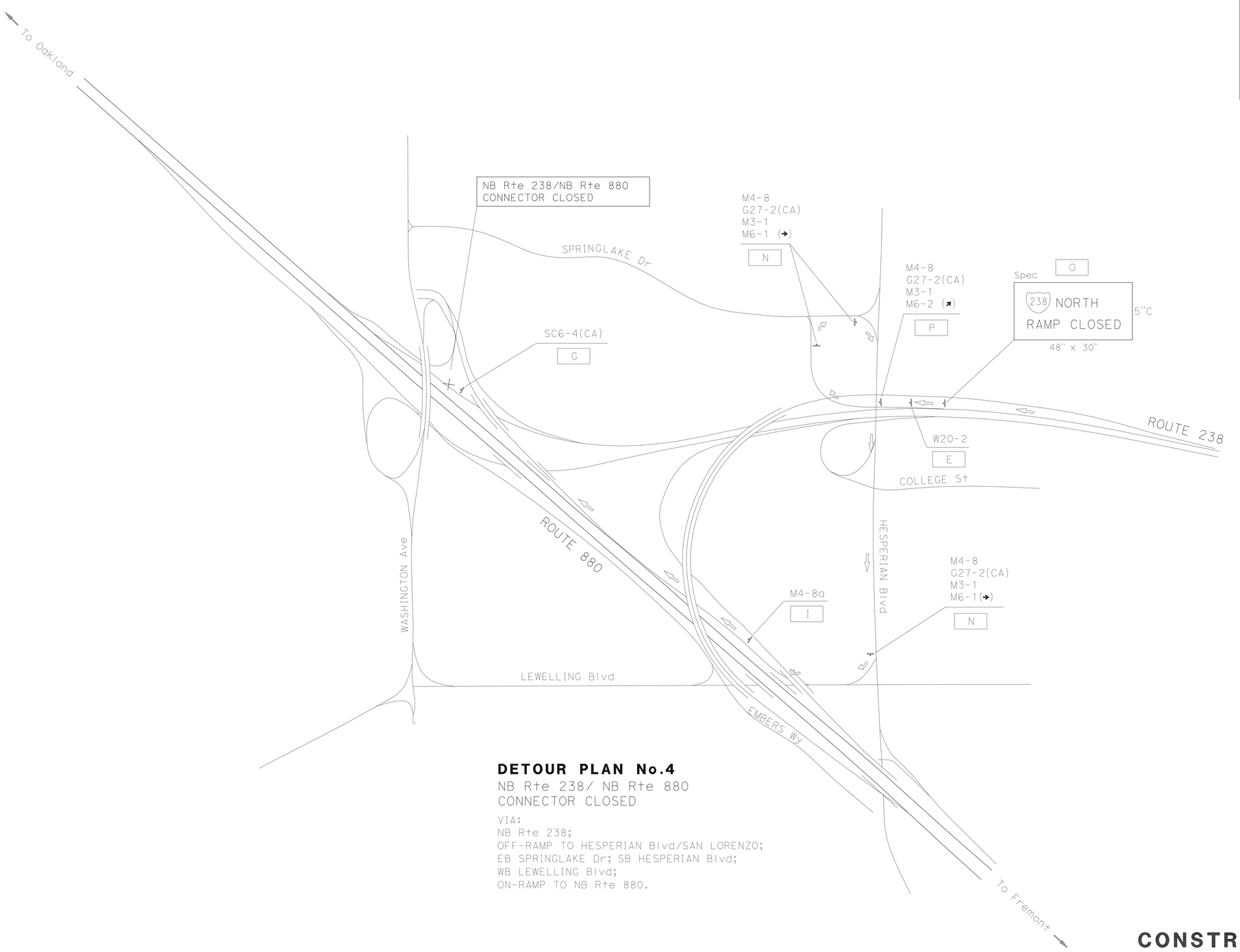

DETOUR PLAN No.4
NB Rte 238/ NB Rte 880
CONNECTOR CLOSED

VIA:
NB Rte 238;
OFF-RAMP TO HESPERIAN Blvd/SAN LORENZO;
EB SPRINGLAKE Dr; SB HESPERIAN Blvd;
WB LEWELLING Blvd;
ON-RAMP TO NB Rte 880.

CONSTRUCTION AREA SIGNS
NO SCALE

CS-4

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET CS-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC

FUNCTIONAL SUPERVISOR: ROLAND AU-YEUNG
CALCULATED-DESIGNED BY: LEOPOLDO G. BONGATO
CHECKED BY: LOURDES DAVID
REVISED BY: LGB
DATE REVISED: 12/18/12

LAST REVISION 12-18-12
DATE PLOTTED => 04-MAR-2013
TIME PLOTTED => 13:33

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	880	18.3/22.8	9	19

Lourdes David 12-19-12
REGISTERED CIVIL ENGINEER DATE

1-14-13
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Lourdes David
No. 51428
Exp. 6-30-14
CIVIL
STATE OF CALIFORNIA

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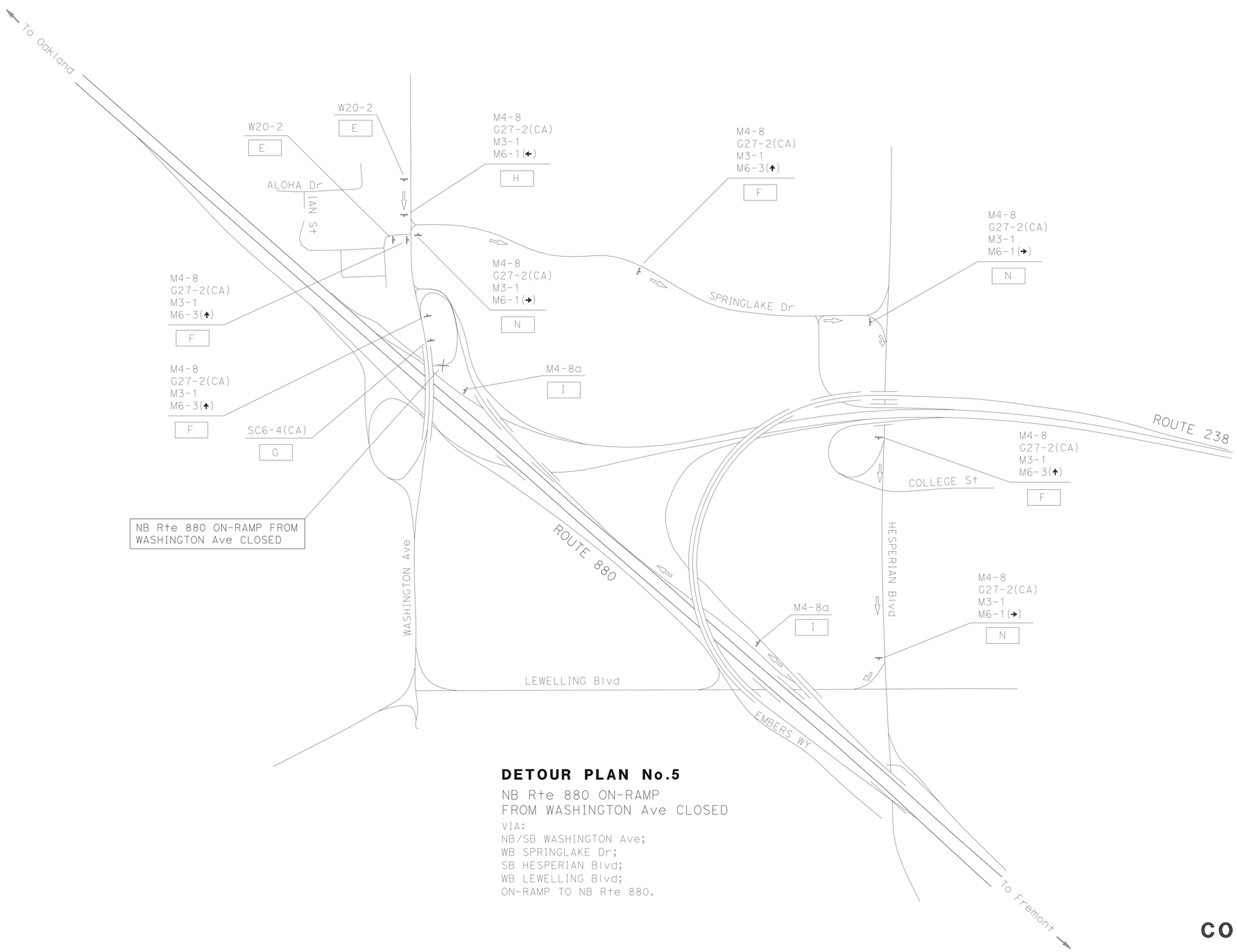

DETOUR PLAN No.5

NB Rte 880 ON-RAMP
FROM WASHINGTON Ave CLOSED

VIA:
NB/SB WASHINGTON Ave;
WB SPRINGLAKE Dr;
SB HESPERIAN Blvd;
WB LEWELLING Blvd;
ON-RAMP TO NB Rte 880.

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET CS-1

CONSTRUCTION AREA SIGNS

NO SCALE

CS-5

LGB	12/18/12
REVISED BY	DATE REVISED
LEOPOLDO G. BONGATO	LOURDES DAVID
CALCULATED-DESIGNED BY	CHECKED BY
FUNCTIONAL SUPERVISOR	ROLAND AU-YEUNG

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans®
TRAFFIC

LAST REVISION 12-18-12
DATE PLOTTED => 04-MAR-2013
TIME PLOTTED => 13:34

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	880	18.3/22.8	10	19

Lourdes David 12-19-12
REGISTERED CIVIL ENGINEER DATE

1-14-13
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Lourdes David No. 51428 Exp. 6-30-14 CIVIL STATE OF CALIFORNIA

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STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN	CODE	SIGN MESSAGE	PANEL SIZE	No. OF POSTS AND SIZE	No. OF SIGNS
A	W20-1	ROAD WORK AHEAD	60" x 60"	2 - 4" x 6"	1
B	C40(CA)	TRAFFIC FINES DOUBLED IN CONSTRUCTION ZONES	104" x 42"	2 - 4" x 4"	1
C	G20-2	END ROAD WORK	36" x 18"	1 - 4" x 4"	5
D	W20-1	ROAD WORK AHEAD	48" x 48"	1 - 4" x 4"	4
E	W20-2	DETOUR AHEAD	48" x 48"	1 - 4" x 4"	8
F	M4-8	DETOUR	24" x 12"	1 - 4" x 6"	13
	G27-2(CA)	ROUTE 880 SHIELD	21" x 18"		
	M3-1	NORTH	21" x 15"		
	M6-3(↑)	UP ARROW	24" x 12"		
G	SC6-4(CA)	RAMP CLOSURE NOTICE	48" x 60"	1 - 4" x 6"	5
H	M4-8	DETOUR	24" x 12"	1 - 4 x 6	3
	G27-2(CA)	ROUTE 880 SHIELD	21" x 18"		
	M3-1	NORTH	21" x 15"		
	M6-1(←)	LEFT ARROW	24" x 12"		
I	M4-8a	END DETOUR	30" x 18"	1 - 4" x 4"	6
J	SPECIAL	EXIT CLOSED	48" x 30"	1 - 4" x 6"	1
K	M4-8	DETOUR	24" x 12"	1 - 4" x 6"	1
	G27-2(CA)	ROUTE 238 SHIELD	21" x 18"		
	M3-3	SOUTH	21" x 15"		
	M6-2(↗)	UP-RIGHT ARROW	24" x 12"		
L	M4-8	DETOUR	24" x 12"	1 - 4" x 6"	1
	G27-2(CA)	ROUTE 238 SHIELD	21" x 18"		
	M3-3	SOUTH	21" x 15"		
	M6-1(→)	RIGHT ARROW	24" x 12"		
M	M4-8	DETOUR	24" x 12"	1 - 4" x 6"	1
	G27-2(CA)	ROUTE 238 SHIELD	21" x 18"		
	M3-3	SOUTH	21" x 15"		
	M6-3(↑)	UP ARROW	24" x 12"		
N	M4-8	DETOUR	24" x 12"	1 - 4" x 6"	8
	G27-2(CA)	ROUTE 880 SHIELD	21" x 18"		
	M3-1	NORTH	21" x 15"		
	M6-1(→)	RIGHT ARROW	24" x 12"		
O	SPECIAL	RAMP CLOSED	48" x 30"	1 - 4" x 6"	1
P	M4-8	DETOUR	24" x 12"	1 - 4" x 6"	1
	G27-2(CA)	ROUTE 880 SHIELD	21" x 18"		
	M3-1	NORTH	21" x 15"		
	M6-2(↗)	UP-RIGHT ARROW	24" x 12"		
Q	M4-8	DETOUR	24" x 12"	1 - 4" x 6"	1
	G27-2(CA)	ROUTE 238 SHIELD	21" x 18"		
	M3-3	SOUTH	21" x 15"		
	M6-1(←)	LEFT ARROW	24" x 12"		

CONSTRUCTION AREA SIGNS

CS-6

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
TRAFFIC

FUNCTIONAL SUPERVISOR: ROLAND AU-YEUNG
CALCULATED-DESIGNED BY: LEOPOLDO G. BONGATO
CHECKED BY: LOURDES DAVID
REVISED BY: LGB
DATE REVISED: 12/18/12

LAST REVISION 12-18-12
DATE PLOTTED => 04-MAR-2013
TIME PLOTTED => 13:34

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	880	18.3/22.8	11	19

REGISTERED CIVIL ENGINEER 1-4-13 DATE

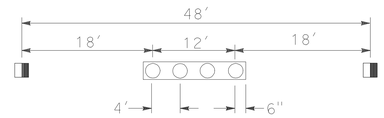
1-14-13
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Fanny Yeung No. 75593 Exp. 6-30-14 CIVIL STATE OF CALIFORNIA

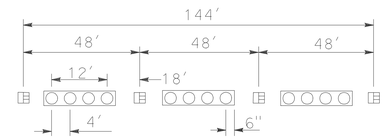
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

LEGEND:

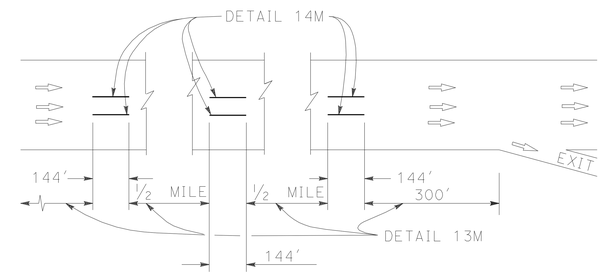
- TYPE A WHITE NON-REFLECTIVE MARKER
- TYPE G ONE-WAY CLEAR RETROREFLECTIVE MARKER
- TYPE C RED-CLEAR RETROREFLECTIVE MARKER
- 4" WHITE
- DIRECTION OF TRAVEL



DETAIL 13M



DETAIL 14M



TYPICAL LANE LINE DELINEATION IN ADVANCE OF EXIT RAMP

NO SCALE

NOTES:

1. INSTALL 4" WHITE AFTER INSTALLING PAVEMENT MARKERS.
2. DETAIL 14M TO BE USED IN COMBINATION WITH DETAIL 13M.
3. ALL EXISTING PAVEMENT DELINEATION SHALL BE REMOVED AND REPLACED AT THE SAME LOCATIONS AS EXISTING.

TRAFFIC STRIPES, PAVEMENT MARKINGS AND PAVEMENT MARKERS

PM	LOCATION	DETAIL No.	THERMOPLASTIC TRAFFIC STRIPE						PAVEMENT MARKER				THERMOPLASTIC PAVEMENT MARKING
			4'' WHITE	4'' YELLOW	8'' WHITE	8'' WHITE	4'' WHITE		NON-REFLECTIVE	RETROREFLECTIVE			SYMBOL
						BROKEN 12-3	BROKEN 17-7	BROKEN 35-13	TYPE A	TYPE C	TYPE G	TYPE H	
			LF						EA				SQFT
18.3 TO 19.3	WEST A St UC TO HACIENDA Ave OC	8					150						
		13M						18224	1519		761		
		14M						576	48	16			
		25		4700								99	
		27B	5051										
		36A			310						14		
		DIAMOND SYMBOL											99
19.3 TO 19.7	HACIENDA Ave OC TO PASEO GRANDE OC	13M						10034	837		211		
		14M						576	48	16			
		25		2620								56	
		27B	2620										
19.7 TO 20.2	PASEO GRANDE OC TO HESPERIAN Blvd UC	13M						8489	708		178		
		14M						1296	108	36			
		25		2185								47	
		27B	1985										
		36			500						44		
		37				595				42	12		
SUBTOTAL			9656	9505	810	595	150	39195	3268	110	1220	202	99

PAVEMENT DELINEATION DETAILS AND QUANTITIES PDQ-1

FY	REVISED BY	FANNY YEUNG	CALCULATED-DESIGNED BY	FUNCTIONAL SUPERVISOR
1/3/13	DATE REVISED	NGOC TRAN	CHECKED BY	NGOC TRAN

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans® DESIGN

LAST REVISION 01-03-13 | DATE PLOTTED => 04-MAR-2013 | TIME PLOTTED => 13:34

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	880	18.3/22.8	12	19

REGISTERED CIVIL ENGINEER 1-4-13 DATE

1-14-13
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Fanny Yeung No. 75593 Exp. 6-30-14 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.

TRAFFIC STRIPES, PAVEMENT MARKINGS AND PAVEMENT MARKERS

PM	LOCATION	DETAIL No.	THERMOPLASTIC TRAFFIC STRIPE						PAVEMENT MARKER				THERMOPLASTIC PAVEMENT MARKING
			4'' WHITE	4'' YELLOW	8'' WHITE	8'' WHITE	4'' WHITE		NONREFLECTIVE	RETROREFLECTIVE			SYMBOL
						BROKEN 12-3	BROKEN 17-7	BROKEN 35-13	TYPE A	TYPE C	TYPE G	TYPE H	
			LF						EA				SQFT
20.2 TO 20.3	HESPERIAN Blvd UC TO LEWELLING Blvd UC	13M						2340	195		50		
		25		700								16	
		27B	573										
		36			760						34		
		38B			100						11		
20.3 TO 20.8	LEWELLING Blvd UC TO WASHINGTON Ave OC	9					370					9	
		13M						7860	655		165		
		25		2620								56	
		27B	2890										
		36			610						28		
		36A			270						13		
		37				530				38	10		
20.8 TO 22.8	WASHINGTON Ave OC TO MARINA Blvd OC	8					141						
		13M						31401	2617		656		
		14M						1584	132	44			
		25		10785									
		27B	11161										
		36			1060						48		
		36A			230						11		
		36B			130						7		
		37				2290				165	39		
		38A			515								
		38B			300						27		
	SUBTOTAL		14624	14105	3975	2820	511	43185	3599	247	1099	81	
	SUBTOTAL SHEET PDQ-1		9656	9505	810	595	150	39195	3268	110	1220	202	99
	TOTAL		47890		4785	3415	661	82380	6867	2959			99

PAVEMENT DELINEATION QUANTITIES

PDQ-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN

FUNCTIONAL SUPERVISOR: NGOC TRAN
CALCULATED-DESIGNED BY: FANNY YEUNG
CHECKED BY: NGOC TRAN
REVISED BY: FY
DATE REVISED: 1/3/13

LAST REVISION 01-03-13
DATE PLOTTED => 04-MAR-2013
TIME PLOTTED => 13:34

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	880	18.3/22.8	13	19

Fanny Yeung 1-4-13
REGISTERED CIVIL ENGINEER DATE

1-14-13
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Fanny Yeung No. 75593 Exp 6-30-14 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.

ROADWAY QUANTITIES SUMMARY

LOCATION	PM	COLD PLANE AC PAVEMENT (0.1' OGAC)	COLD PLANE AC PAVEMENT (LOCALLY FAILED AREA)	HMA-O	HMA (TYPE A)	TACK COAT
	NORTHBOUND	SQYD		TON		
A St UC TO PASEO GRANDE OC	18.30 TO 19.76	75143	13069	5072	3096	35
PASEO GRANDE OC TO LEWELLING Blvd UC	19.76 TO 20.40	31121		2101		21
LEWELLING Blvd OC TO WASHINGTON Ave OC	20.40 TO 20.75	20649		1394		10
WASHINGTON Ave OC TO MARINA Blvd OC	20.75 TO 22.80	99699		6730		47
SUBTOTAL		226612	13069	15297	3096	113
SUBTOTAL FROM PLACE HMA DIKE					75	
TOTAL		239681		15297	3171	113

COLD PLANE AC PAVEMENT (LOCALLY FAILED AREA) *

LOCATION	PM	LANE No.	LENGTH	WIDTH	DEPTH	COLD PLANE AC PAVEMENT	HMA (TYPE A)
	NORTHBOUND		LF			SQYD	TON
A St UC TO HACIENDA Ave OC	18.39	1,2,3,4,5	50	60	0.35	333	79
	18.80	4,5	100	24	0.35	267	63
	18.90	2	200	12	0.35	267	63
HACIENDA Ave OC TO PASEO GRANDE OC	19.31	1,2,3,4,5	50	60	0.35	333	79
	19.40	3	50	12	0.35	67	16
	19.45	5	500	12	0.35	667	158
	19.60	5	200	12	0.35	267	63
	19.62	3	450	12	0.35	600	142
	19.69	5	100	12	0.35	133	32
	19.72	3	100	12	0.35	133	32
	19.73	4	100	12	0.35	133	32
PASEO GRANDE OC TO WASHINGTON Ave OC	19.75	6	1100	12	0.35	1467	347
	19.85	2,3	200	24	0.35	533	126
	20.05	3	600	12	0.35	800	189
	20.13	1,2,3,4,5,6	50	72	0.35	400	95
	20.17	1,2,3,4,5,6	200	72	0.35	1600	378
	20.24	2,3,4	300	36	0.35	1200	284
	20.36	1,2,3,4	50	48	0.35	267	63
	20.40	1,2,3,4	50	48	0.35	267	63
	20.71	1,2,3,4	60	48	0.35	320	76
WASHINGTON Ave OC TO FLORESTA Blvd OC	20.75	1	200	12	0.35	267	63
	20.75	2,3,4	100	36	0.35	400	95
	20.90	4,5	200	24	0.35	533	126
	21.39	3,4	50	24	0.35	133	32
	21.40	5	200	12	0.35	267	63
	21.45	2	100	12	0.35	133	32
FLORESTA Blvd OC TO ALADDIN Ave OC	21.60	4	12	12	0.35	16	4
	22.19	3	50	12	0.35	67	16
	22.22	5	100	12	0.35	133	32
ALADDIN Ave OC TO MARINA Blvd OC	22.42	5	200	12	0.35	267	63
	22.49	5	100	12	0.35	133	32
	22.64	1,2,3,4	100	48	0.35	533	126
	22.79	1	100	12	0.35	133	32
					TOTAL	13069	3096

* QUANTITY IS INCLUDED IN THE ROADWAY QUANTITIES SUMMARY TABLE

SHOULDER RUMBLE STRIP (ASPHALT CONCRETE, ROLLED-IN INDENTATIONS)

LOCATION NORTHBOUND (RIGHT SHOULDER)	PM	STA
A St UC TO OFF HESPERIAN Blvd	18.3 TO 19.8	84
OFF HESPERIAN Blvd TO WASHINGTON Ave OC	19.8 TO 20.8	18
WASHINGTON Ave OC TO MARINA Blvd OC	20.8 TO 22.8	93
	TOTAL	195

CHANNELIZER (SURFACE MOUNTED)

LOCATION	EA
NB OFF TO SB Rte 238 AT GORE AREA	2
TOTAL	2

PLACE HMA DIKE AND REMOVE AC DIKE

PM	AC DIKE TYPE C	AC DIKE TYPE E	AC DIKE TYPE F	REMOVE AC DIKE	* HMA (TYPE A)	NOTES
NORTHBOUND	LF				TON	
19.08-19.18		550		550	19	1110' SOUTH OF HACIENDA Ave OC
19.42-19.52		550		550	19	660' NORTH OF HACIENDA Ave OC
20.10-20.14	201		25	226	2	OFF HESPERIAN Blvd AND GORE AREA
20.58-20.71	75	483	132	690	25	250' NORTH OF Rte 238 WB OC
22.28-22.35	400			400	5	230' SOUTH OF ALADDIN Ave OC
22.65-22.72	345			345	5	OFF MARINA Blvd AND GORE AREA
TOTAL	1021	1583	157	2761	75	

* QUANTITY IS INCLUDED IN THE ROADWAY QUANTITIES SUMMARY TABLE

SUMMARY OF QUANTITIES
Q-1

FY	REVISED BY	CALCULATED-DESIGNED BY	FUNCTIONAL SUPERVISOR
1/3/13	DATE REVISED	FANNY YEUNG	NGOC TRAN
		CHECKED BY	NGOC TRAN

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN

LAST REVISION 01-03-13 DATE PLOTTED => 04-MAR-2013 TIME PLOTTED => 13:34

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	880	18.3/22.8	14	19

M Noii 12-19-12
REGISTERED ELECTRICAL ENGINEER DATE

1-14-13
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Mahmood Noii
No. 13717
Exp. 6-30-13
ELECT
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.

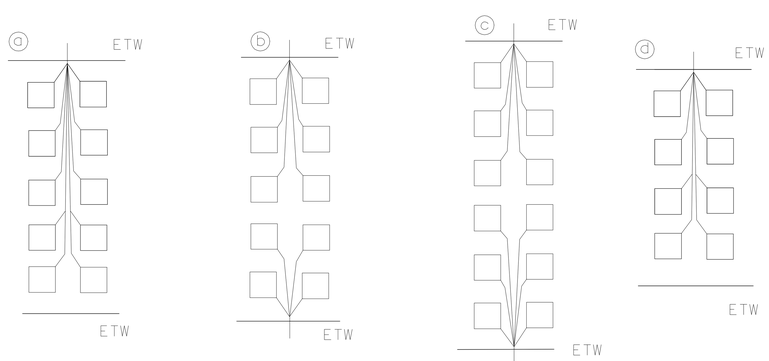
GENERAL NOTES:

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. THE CONTRACTOR SHALL VERIFY THE LOCATION OF THE LOOP DETECTORS TO BE REPLACED PRIOR TO REPAVING.
3. SPLICE NEW LOOP CONDUCTORS TO CORRESPONDING DLC IN TERMINATION PULL BOX. VERIFY IDENTIFICATION OF EXISTING DLC BEFORE CONNECTING TO THE CORRESPONDING DETECTORS.
4. THE CONTRACTOR SHALL PROVIDE TWO REPORTS PER LOCATION ON THE STATUS OF EACH DETECTOR LOOP REPLACEMENT SHOWING CONTINUITY AND INSULATION RESISTANCE READINGS. 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.
5. ABANDON THE EXISTING DETECTORS AS INDICATED IN THE CHART ON THIS SHEET. INSTALL NEW DETECTORS IN KIND.

INDEX OF PLANS:

E-1 DETECTOR LOOP - (ELECTRICAL DETAILS, INDEX AND NOTES)
E-2 DETECTOR LOOP - (RAMP METERING AND TRAFFIC MONITORING DETECTOR SPACING AND DESIGNATIONS)

POST MILE	18.60	18.72	19.04	19.68	19.80	20.03	20.42	22.15	22.48	
LOCATION	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(8)	
DETECTORS: A, B, C, D, E A = TMS-MAINLINE B = ON RAMP-QUEUE C = ON RAMP-RM D = OFF RAMP	A	A	A	A	A	A	A	A	A	
NUMBER OF LANES/ DIRECTION OF TRAFFIC (#/NB, #/SB, #/EB, #/WB)	5/NB	5/NB	5/NB	5/NB	5/NB	6/NB	4/NB	5/NB	5/NB	
DETECTOR CONFIGURATION: a,b,...s (SEE DETAIL A ON E-1)	a	a	a	a	b	c	d	b	b	
PULL BOX LOCATION: A, B, C A = LEFT SHOULDER B = RIGHT SHOULDER C = MEDIAN	B	B	B	B	B,C	B,C	B	B,C	B,C	SUB TOTAL
PULL BOX REPLACEMENT (Y=Yes, N=No, 5=No.5(T), 6=No.6(T))	N	N	N	N	N	N	N	N	N	0
LOOP DETECTOR TOTAL	10	10	10	10	10	12	8	10	10	90
COMMENTS										



TYPICAL DETECTOR CONFIGURATIONS

DETAIL A

DETECTOR LOOP

(ELECTRICAL DETAILS, INDEX AND NOTES)

NO SCALE

APPROVED FOR ELECTRICAL WORK ONLY

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: 12/18/12

LAST REVISION 12-18-12
DATE PLOTTED => 04-MAR-2013
TIME PLOTTED => 13:34

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	880	18.3/22.8	15	19

R C Duschane 12-19-12
REGISTERED ELECTRICAL ENGINEER DATE

1-14-13
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER Ray C. Duschane No. 14758 Exp. 6-30-13 ELECT STATE OF CALIFORNIA

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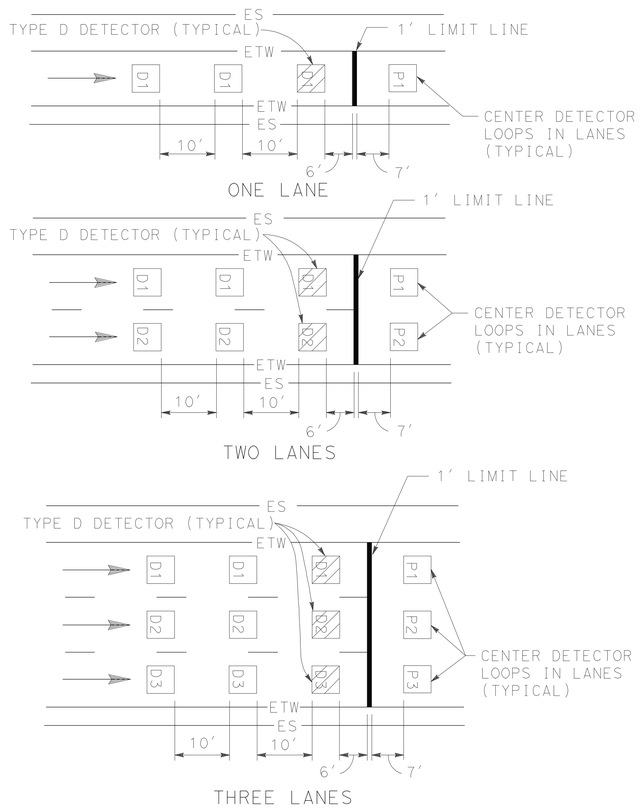
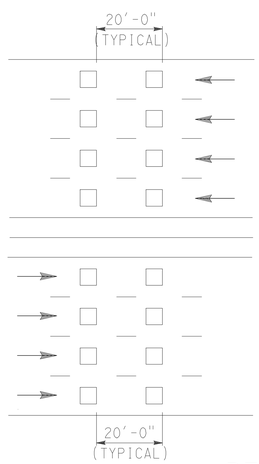


DETAIL "RM"
RAMP METERING STATION

RAMP METERING STATION NOTES

1. SEE ES-5A, ES-5B, AND ES-13A FOR ADDITIONAL DETAILS.
2. DLC CONDUCTORS SHALL BE SPLICED TO THE LOOP CONDUCTORS IN THE NEAREST PULLBOX.
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

DETAIL "TM"
TRAFFIC MONITORING STATION

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

DETECTOR LOOP
(RAMP METERING AND TRAFFIC MONITORING DETECTOR SPACING AND DESIGNATION)

NO SCALE

APPROVED FOR ELECTRICAL WORK ONLY

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET E-1

E-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
ELECTRICAL

FUNCTIONAL SUPERVISOR: CHARLES PRICE
CALCULATED-DESIGNED BY: RAY C. DUSCHANE
CHECKED BY: CHARLES PRICE
REVISED BY: RCD
DATE REVISED: 12/18/12

LAST REVISION 12-18-12
DATE PLOTTED => 04-MAR-2013
TIME PLOTTED => 13:34

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	880	18.3/22.8	16	19

REGISTERED CIVIL ENGINEER 12-7-12 DATE

1-14-13
PLANS APPROVAL DATE

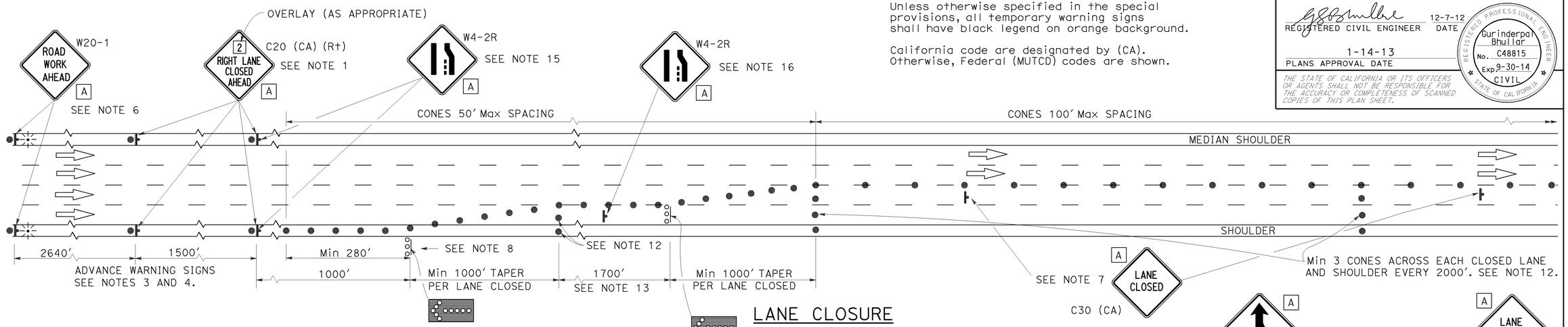
REGISTERED PROFESSIONAL ENGINEER Gurinderpal Bhullar No. C48815 Exp. 9-30-14 CIVIL STATE OF CALIFORNIA

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

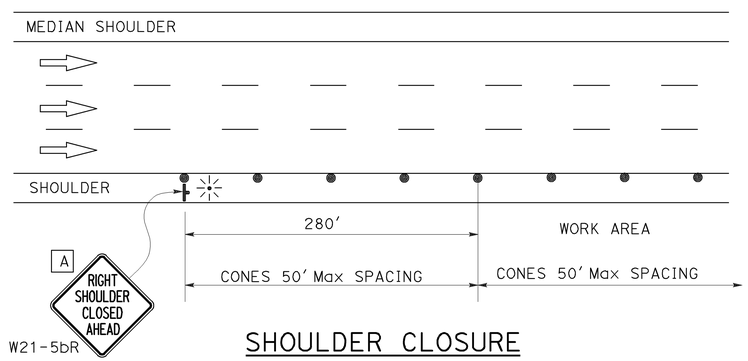
NOTES:

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

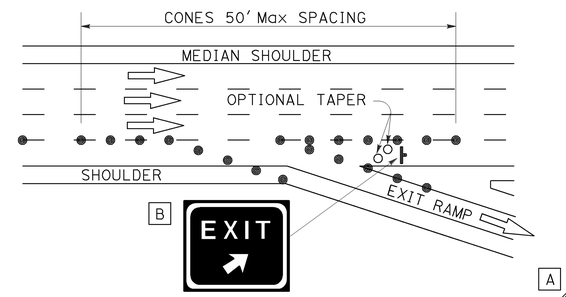
California code are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.



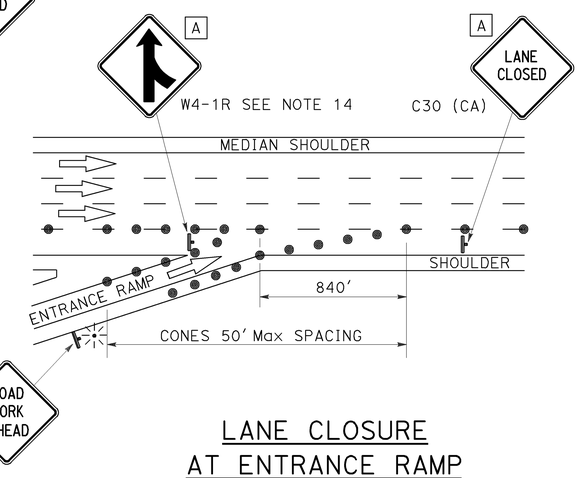
LANE CLOSURE



SHOULDER CLOSURE



LANE CLOSURE AT EXIT RAMP



LANE CLOSURE AT ENTRANCE RAMP

NOTES:

1. Median lane closures shall conform to the details for outside lane closures except that C20 (CA) (Lt) signs shall be used.
2. At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closures.
3. Duplicate sign installations are not required:
   a) On opposite shoulder if at least one-half of the available lanes remain open to traffic.
   b) In the median if the width of the median shoulder is less than 8' and the outside lanes are to be closed.
4. Each advance warning sign on each side of the roadway shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
5. A C14 (CA) "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.
6. If the W20-1 sign would follow within 2000' of a stationary W20-1 or C11 (CA) "ROAD WORK NEXT _____ MILES", use a C20 (CA) sign for the first advance warning sign.
7. Place a C30 (CA) sign every 2000' throughout length of lane closure.
8. One flashing arrow sign for each lane closed. The first flashing arrow sign shall be Type I. All others may be either Type I or Type II.
9. A minimum 1500' of sight distance shall be provided where possible for vehicles approaching the first flashing arrow sign. Lane closures shall not begin at top of crest vertical curve or on a horizontal curve.
10. All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
11. Portable delineators, placed at one-half the spacing indicated for traffic cones may be used instead of cones for daytime closures only.
12. Unless otherwise specified in the special provisions, a minimum of 3 cones shall be placed transversely across each closed lane and shoulder at each location where a taper across a traffic lane ends and every 2000' as shown on the "Lane Closure" detail. Two Type II barricades may be used instead of the 3 cones. The transverse alignment of the cones or barricades on the closed shoulder may be shifted from the transverse alignment to provide access to the work.
13. Unless otherwise specified in the special provisions, the 1700' tangent shown along lane lines shall be used between the 1000' tapers required for each closed traffic lane.
14. Unless otherwise specified in the special provisions, the G84 (CA) and W4-1 signs shall be used as shown.
15. When specified in the special provisions, a W4-2 "LANE ENDS" symbol sign is to be used in place of the C20 (CA) "RIGHT LANE CLOSED AHEAD" sign.
16. The W4-2 "LANE ENDS" symbol sign shown at this location is to be used where the W4-2 sign is used as advance warning as described in Note 15.

SIGN PANEL SIZE (Min)

A	48" x 48"
B	54" x 48"

LEGEND

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE ON FREEWAYS AND EXPRESSWAYS

NO SCALE

TCS-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

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LAST REVISION 12-05-12 | DATE PLOTTED => 10-DEC-2012 | TIME PLOTTED => 09:45

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	880	18.3/22.8	17	19

REGISTERED CIVIL ENGINEER 12-7-12 DATE

1-14-13
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.

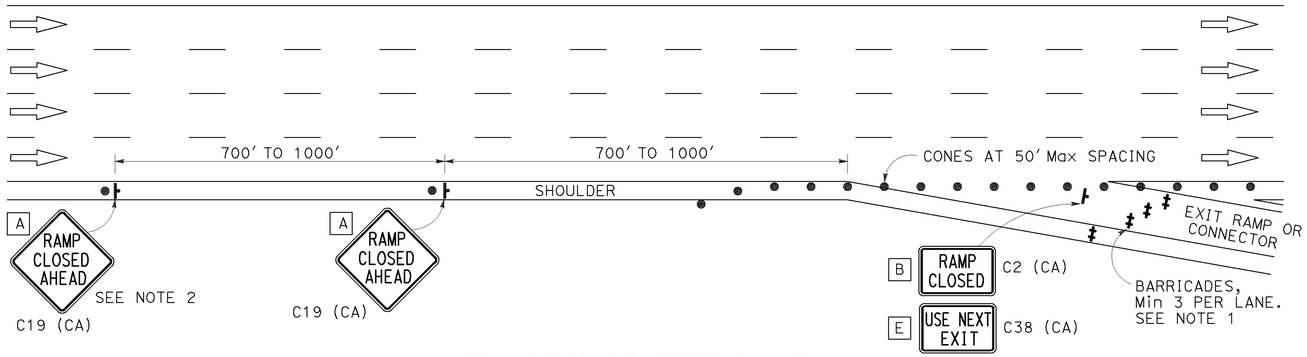
TYPICAL RAMP CLOSURES

SIGN PANEL SIZE (Min)

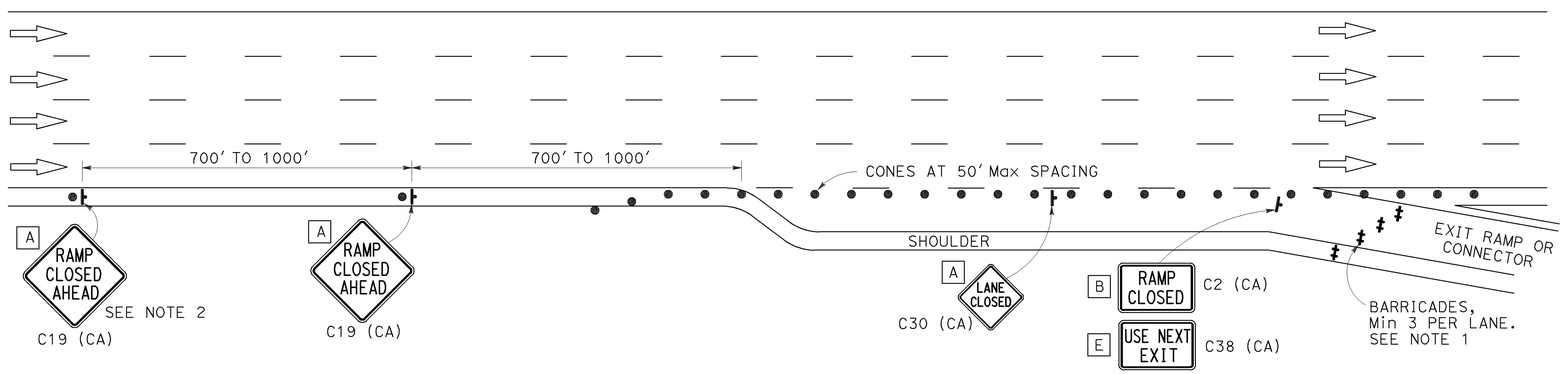
- [A] 48" x 48"
- [B] 48" x 30"
- [C] 30" x 30"
- [D] 48" x 48" - SPEED OF 50 mph OR MORE
  36" x 36" - SPEED LESS THAN 50 mph
- [E] 48" x 36"

LEGEND

- ● TRAFFIC CONE
- ⊢ TEMPORARY SIGN
- ‡ BARRICADES



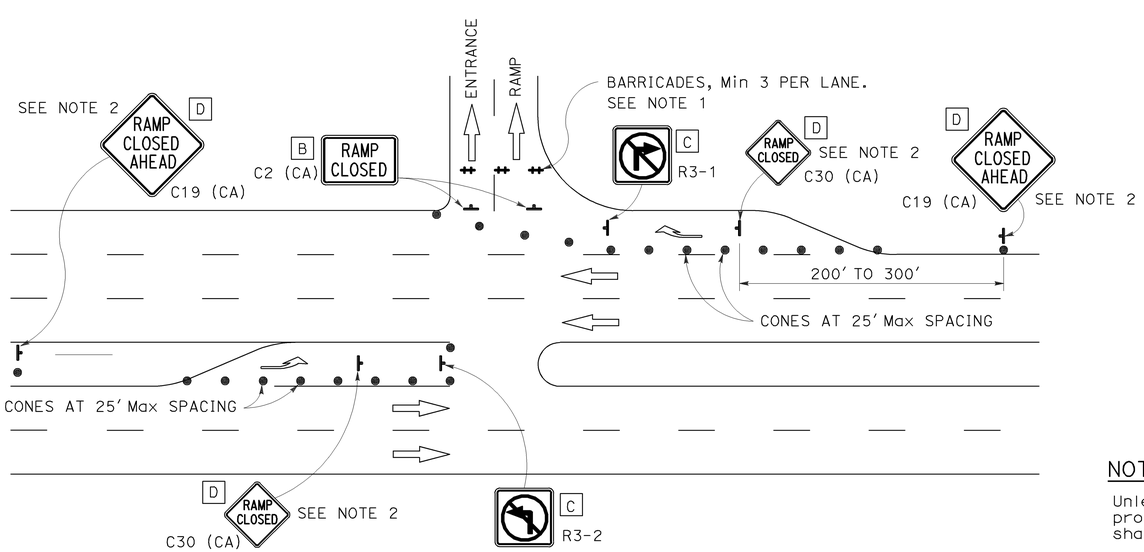
EXIT RAMP OR CONNECTOR



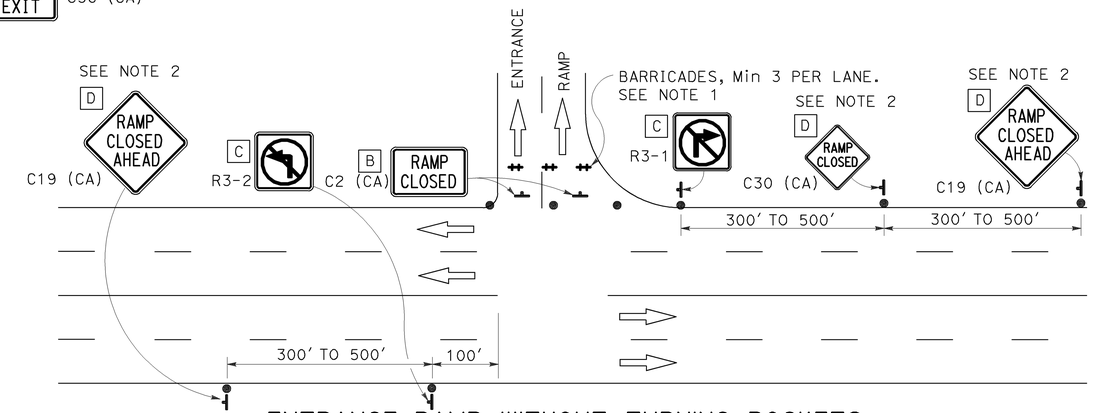
EXIT RAMP OR CONNECTOR WITH ADDITIONAL LANE

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" x 16" in size and shall be orange or fluorescent red-orange in color.
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" sign in the gore area shall be covered during ramp closures.



ENTRANCE RAMP WITH TURNING POCKETS



ENTRANCE RAMP WITHOUT TURNING POCKETS

NOTES:

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

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SYSTEM FOR RAMP CLOSURE

NO SCALE

TCS-2

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

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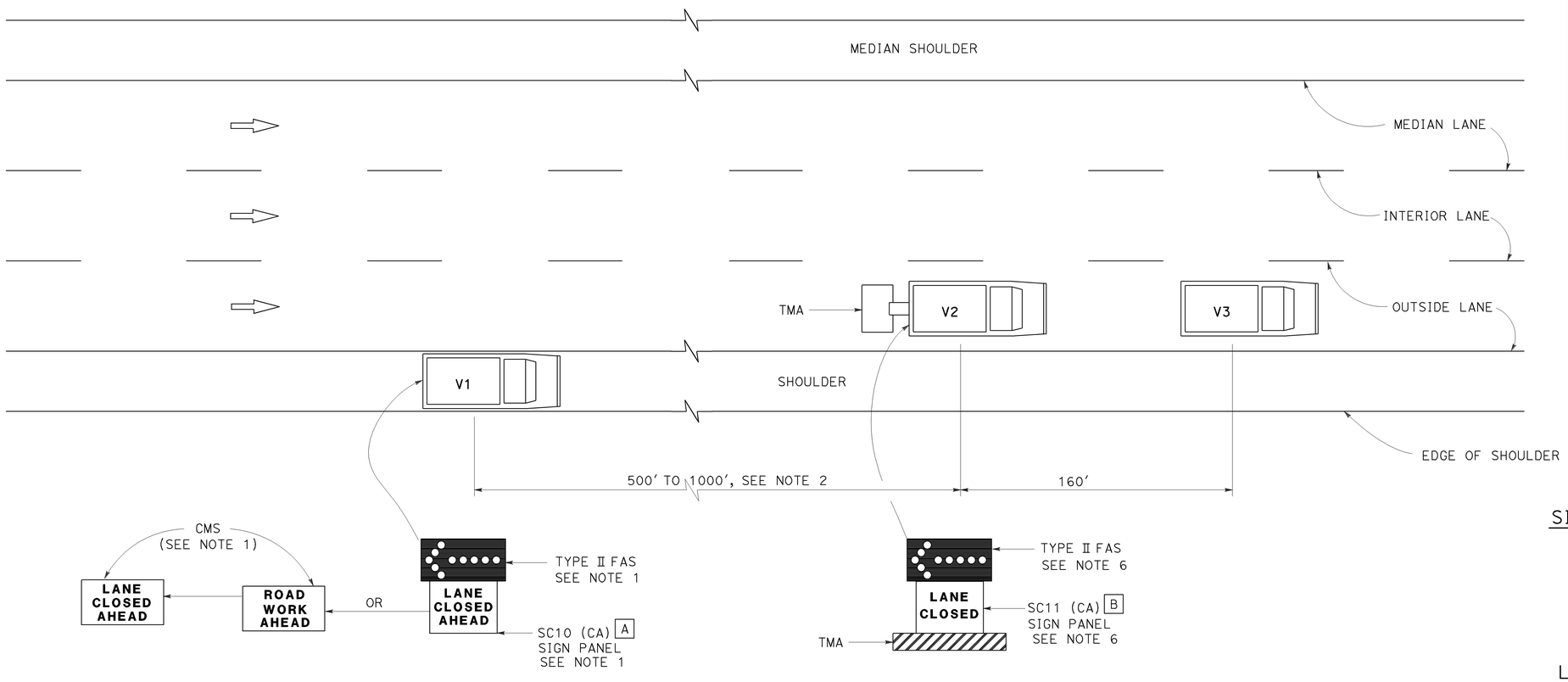

SIGN PANEL SIZE (Min)

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. A Type II flashing arrow sign shall be mounted on the rear of sign vehicle V1 and used with the SC10 (CA) sign panel. A Type II flashing arrow sign will not be required with the changeable message sign provided the flashing arrow sign symbol is displayed on the changeable message sign board. The changeable message sign shall be sequenced to show the "ROAD WORK AHEAD" message first, followed by the "LANE CLOSED AHEAD" message and then the flashing arrow sign symbol. For median lane closure, the flashing arrow symbol shall be reversed with the arrowhead on the right.

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 be Type III, IV, VII, VIII or IX retroreflective sheeting, black on white, black on orange, or black on fluorescent orange, with 6" minimum series D letters per Caltrans sign specifications.

6. Gross Vehicle Weight of shadow vehicle V2 shall be a minimum of 20,000 pounds and 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.

9. Where sufficient shoulder width is not available, sign vehicle V1 may encroach into the traffic lane staying as close to the edge of shoulder as practicable. Both V1 and V2 shall be equipped with a truck-mounted attenuator. The Gross Vehicle Weight of V1 and V2 shall be at least 20,000 pounds, respectively.

10. When multiple work vehicles are used in close proximity to each other, only one shadow vehicle is required, and spacing between work vehicles shall be minimized in order to deter traffic from entering the closed lane.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SYSTEM FOR MOVING LANE CLOSURE ON MULTILANE HIGHWAYS (OUTSIDE AND MEDIAN LANES)

NO SCALE

TCS-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

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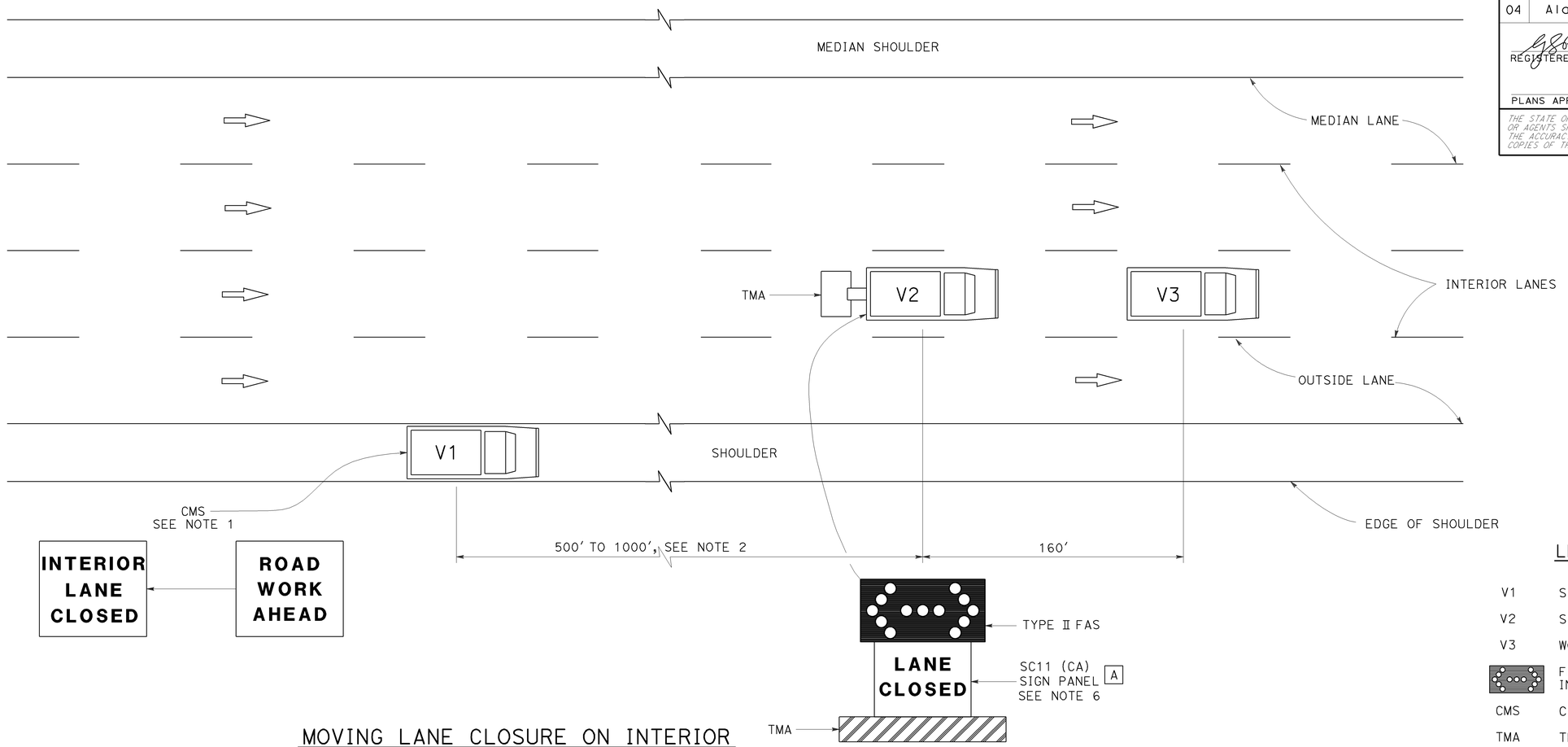

MOVING LANE CLOSURE ON INTERIOR LANE OF MULTILANE HIGHWAYS

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 be Type III, IV, VII, VIII, or IX retroreflective sheeting, black on white, black on orange, or black on fluorescent orange, with 6" minimum series D letters per Caltrans sign specifications.
6. Gross Vehicle Weight of shadow vehicle V2 shall be a minimum of 20,000 pounds and 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. Where sufficient shoulder width is not available, sign vehicle V1 may encroach into the traffic lane staying as close to the edge of shoulder as practicable. Both V1 and V2 shall be equipped with a truck-mounted attenuator. The Gross Vehicle Weight of V1 and V2 shall be at least 20,000 pounds, respectively.
10. When multiple work vehicles are used in close proximity to each other, only one shadow vehicle is required, and spacing between work vehicles shall be minimized in order to deter traffic from entering the closed lane.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SYSTEM FOR MOVING LANE CLOSURE ON MULTILANE HIGHWAYS (INTERIOR LANES)

NO SCALE

TCS-4

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