

INDEX OF PLANS

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STRUCTURE PLANS

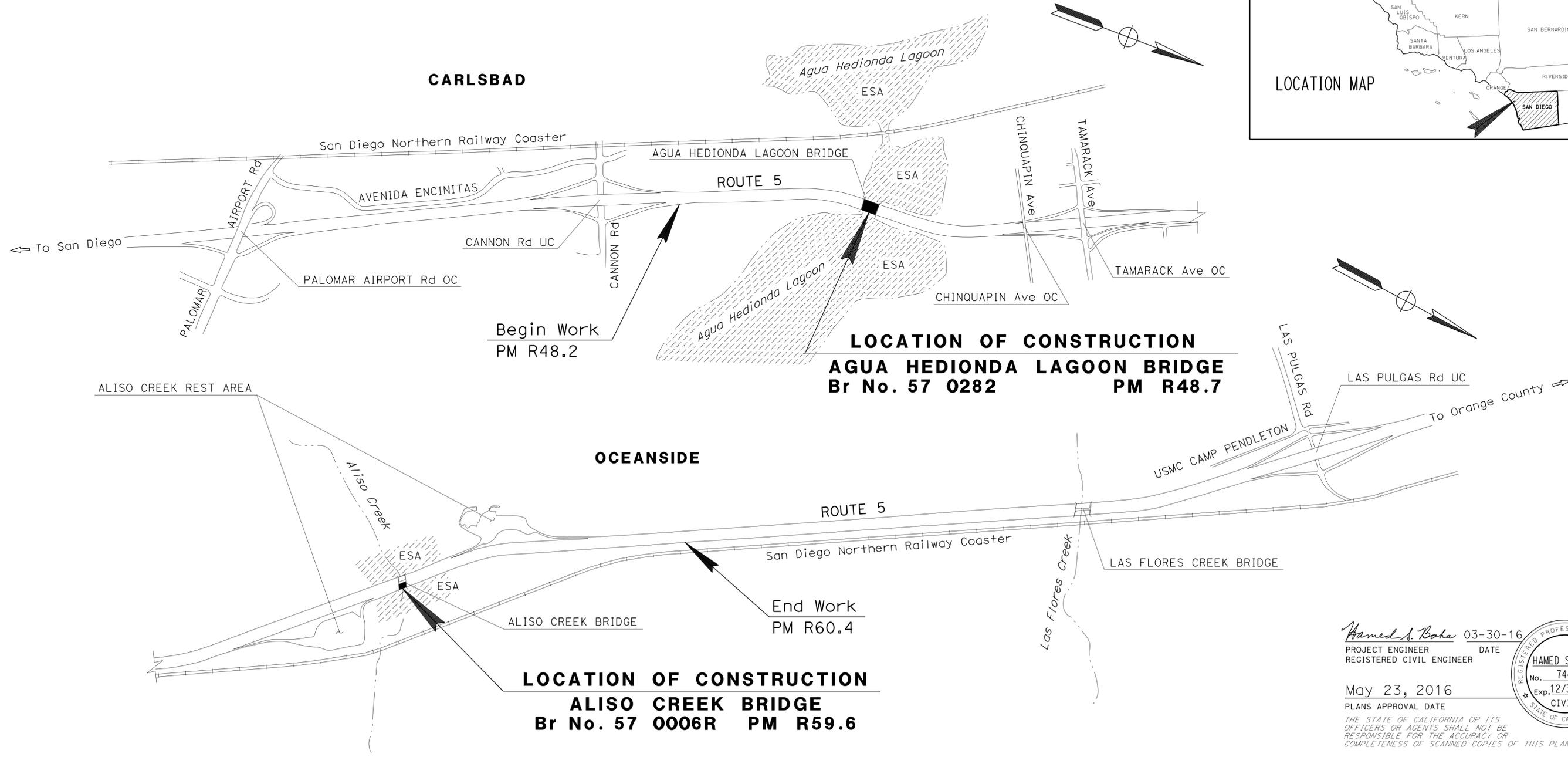
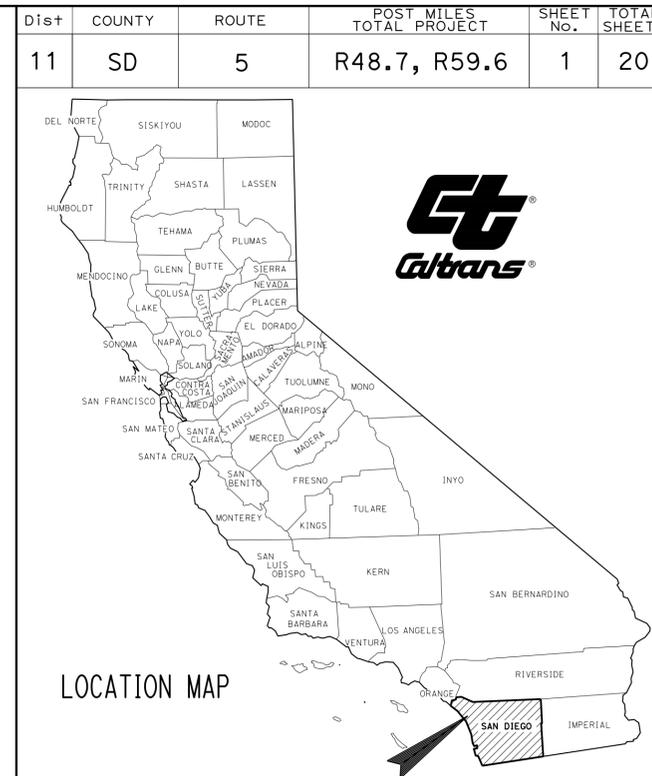
15-16	GENERAL PLAN
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THE STANDARD PLANS LIST APPLICABLE TO THIS CONTRACT IS INCLUDED IN THE NOTICE TO BIDDERS AND SPECIAL PROVISIONS BOOK.

STATE OF CALIFORNIA **ACNHPI-005-1(633)E**  
 DEPARTMENT OF TRANSPORTATION

**PROJECT PLANS FOR CONSTRUCTION ON STATE HIGHWAY**  
**IN SAN DIEGO COUNTY**  
**IN CARLSBAD AT AGUA HEDIONDA LAGOON BRIDGE**  
**AND IN OCEANSIDE AT ALISO CREEK BRIDGE**

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010



PROJECT MANAGER  
 LAURA ESPINOZA

DESIGN MANAGER  
 HAMED S. BAHA

*Hamed S. Baha* 03-30-16  
 PROJECT ENGINEER DATE  
 REGISTERED CIVIL ENGINEER

May 23, 2016  
 PLANS APPROVAL DATE

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

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

NO SCALE

CONTRACT No.	<b>11-299304</b>
PROJECT ID	<b>1112000052</b>

DATE PLOTTED => 24-MAY-2016  
 TIME PLOTTED => 10:35  
 LAST REVISION 04-20-16

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	5	R48.7, R59.6	2	20

Hamed S. Baha 03-30-16  
 REGISTERED CIVIL ENGINEER DATE  
 05-23-16  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 HAMED S. BAHA  
 No. 74499  
 Exp. 12-31-17  
 CIVIL  
 STATE OF CALIFORNIA

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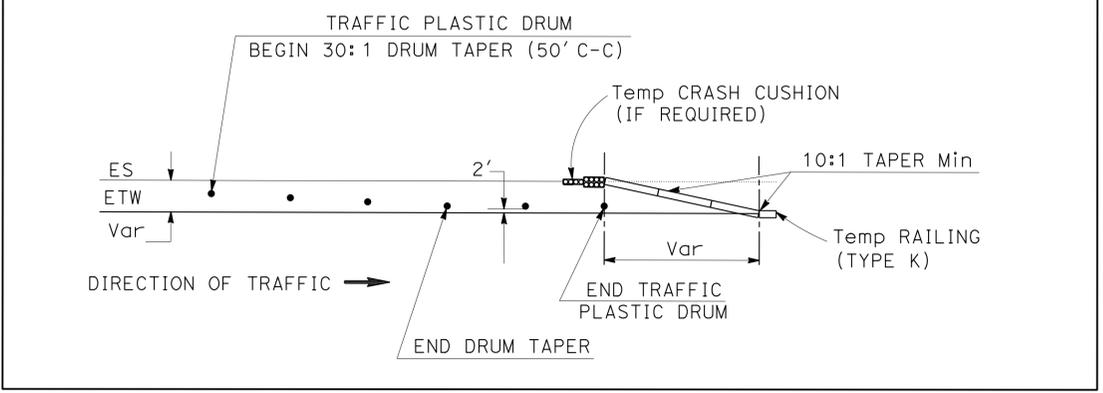
**NOTES:**

1. EXACT LOCATION OF CONSTRUCTION AREA SIGNS WILL BE DETERMINED BY THE ENGINEER.
2. FEDERAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) SIGN CODES ARE SHOWN UNLESS DESIGNATED BY (CA), INDICATING CALIFORNIA MUTCD.
3. EXISTING UTILITIES ARE NOT SHOWN ON THESE PLAN SHEETS. THE CONTRACTOR SHALL VERIFY LOCATIONS OF EXISTING UTILITIES AND ADJUST THE FIELD LOCATION OF SIGN POSTS IN CONSULTATION WITH THE ENGINEER.
4. SEE TRAFFIC HANDLING PLANS FOR ADDITIONAL CONSTRUCTION AREA SIGNS.

**LEGEND:**

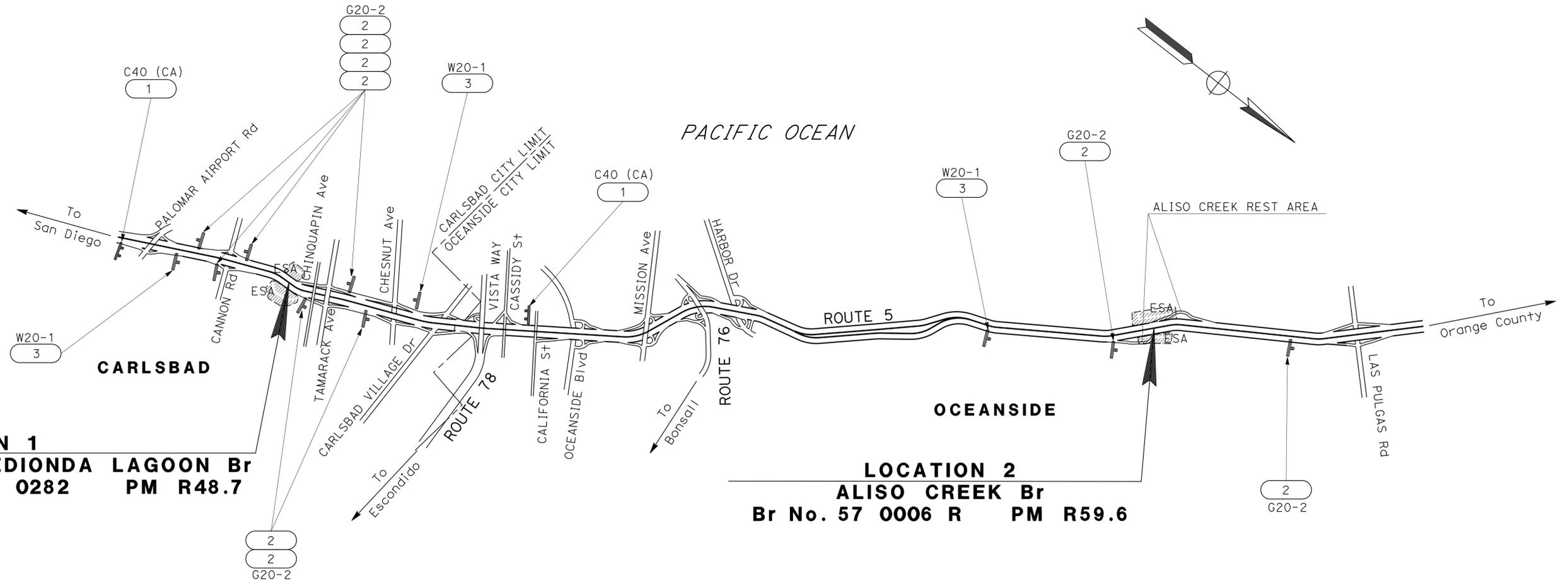
(X) = CONSTRUCTION AREA SIGNS

**TYPICAL PLACEMENT OF TRAFFIC PLASTIC DRUM**



**CONSTRUCTION AREA SIGNS**

SIGN No.	TYPE	PANEL SIZE (INCH)x(INCH)	No. OF POST AND SIZE (INCH)x(INCH)	No. OF SIGNS
1	C40 (CA)	108 X 42	PORTABLE	2
2	G20-2	48 X 24	PORTABLE	10
3	W20-1	48 X 48	PORTABLE	3



**LOCATION 1**  
**AGUA HEDIONDA LAGOON Br**  
**Br No. 57 0282 PM R48.7**

**LOCATION 2**  
**ALISO CREEK Br**  
**Br No. 57 0006 R PM R59.6**

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

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** TRAFFIC DESIGN  
 REBECCA IGNACIO  
 HAMED S. BAHA  
 LAURA ESPINOZA  
 REVISIONS: 04-22-16

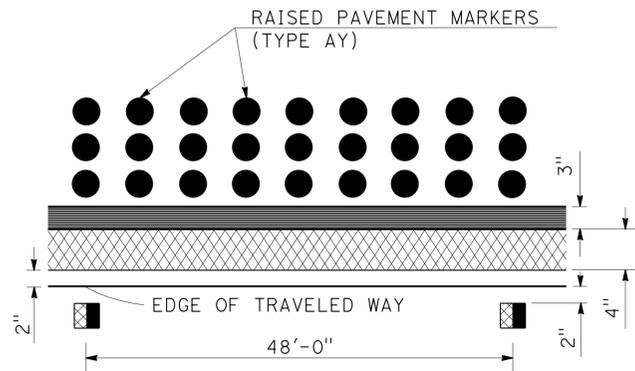
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	5	R48.7, R59.6	3	20

*Hamed S. Baha* 03-30-16  
 REGISTERED CIVIL ENGINEER DATE

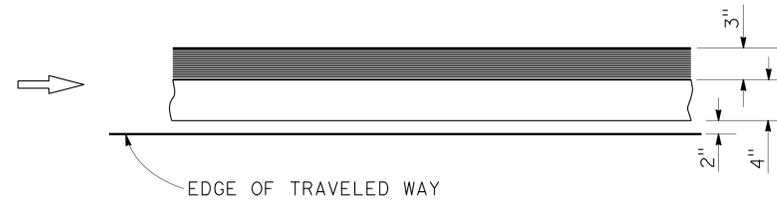
05-23-16  
 PLANS APPROVAL DATE

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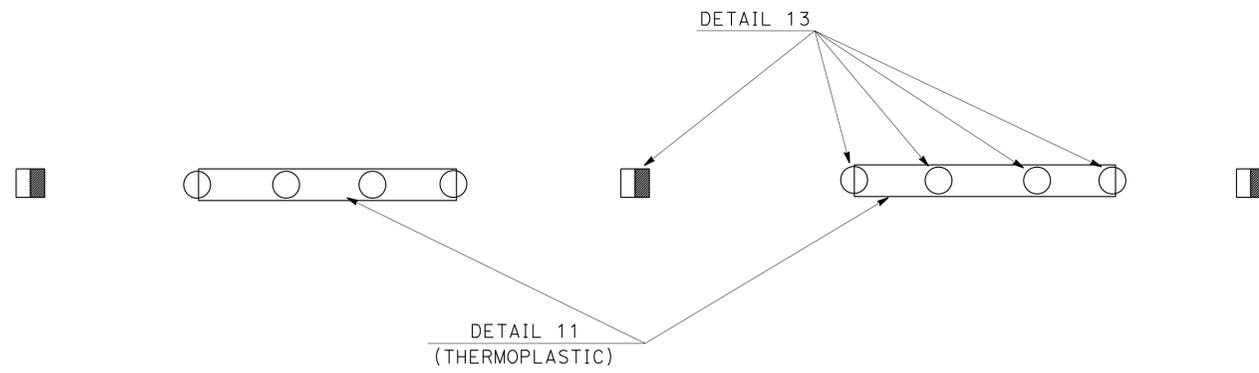
**NOTE:** REPLACE IN-KIND UNLESS OTHERWISE NOTED.



**DETAIL 25 (Mod)**



**DETAIL 27B (Mod)**



**DETAIL 11/13**

**PAVEMENT DELINEATION DETAILS**  
 NO SCALE  
**PDD-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	REVISOR	DATE
<b>Caltrans</b> TRAFFIC DESIGN	LAURA ESPINOZA	REBECCA IGNACIO	
		HAMED S. BAHA	

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	5	R48.7, R59.6	4	20

Hamed S. Baha 03-30-16  
REGISTERED CIVIL ENGINEER DATE

05-23-16  
PLANS APPROVAL DATE

HAMED S. BAHHA  
No. 74499  
Exp. 12-31-17  
CIVIL

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

**REMOVE PAVEMENT DELINEATION QUANTITIES**

LOCATION				BRIDGE LENGTH (ft)	DETAIL No.	REMOVE PAVEMENT MARKER SUMMARY (N)				REMOVE TRAFFIC STRIPE SUMMARY				REMARKS
ROUTE	DESCRIPTION	POST MILE	BRIDGE No.			(NON-REFLECTIVE) (EA)		(RETROREFLECTIVE) (EA)		REMOVE PAINTED TRAFFIC STRIPE (LF)				
						TYPE A	TYPE AY	TYPE G	TYPE H	3" BLACK SOLID (1-COAT)	4" SOLID YELLOW	4" SOLID WHITE	4" WHITE (36-12)	
5	ALISO CREEK Br	R59.62	57 0006R	96.00	13	50		13						
					25 (Mod)			5	192	192				
					27B (Mod)				192		192			
					RAISED MEDIAN MARKERS		96							
SUB-TOTALS										384	192	192	286	
TOTALS													1,054	

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

**PAVEMENT DELINEATION QUANTITIES**

LOCATION				BRIDGE LENGTH (ft)	DETAIL No.	PAVEMENT MARKER SUMMARY				TRAFFIC STRIPE SUMMARY				REMARKS	
ROUTE	DESCRIPTION	POST MILE	BRIDGE No.			(NON-REFLECTIVE) (EA)		(RETROREFLECTIVE) (EA)		PAINT (LF)	THERMOPLASTIC (LF) (ENHANCED WET NIGHT VISIBILITY)				
						TYPE A	TYPE AY	TYPE G	TYPE H	3" BLACK SOLID (1-COAT)	4" SOLID YELLOW	4" SOLID WHITE	4" WHITE (36-12)		
5	ALISO CREEK Br	R59.62	57 0006 R	96.00	11/13	50		13					576	REPLACE-IN-KIND	
					25 (Mod)			5	192	192					
					27B (Mod)				192		192				
					RAISED MEDIAN MARKERS		96								
SUB-TOTALS						50	96	13	5	384	192	192	576		
TOTALS										146	96	18	384	384	576

**PAVEMENT DELINEATION QUANTITIES  
PDQ-1**

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** TRAFFIC DESIGN  
 FUNCTIONAL SUPERVISOR LAURA ESPINOZA  
 REBECCA IGNACIO  
 HAMED S. BAHHA  
 REVISIONS: 04-22-16 TIME PLOTTED => 10:35



	<b>M</b>	
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	
MtI	MATERIAL	
MVP	MAINTENANCE VEHICLE PULLOUT	
	<b>N</b>	
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	
	<b>O</b>	
Obir	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	
	<b>P</b>	
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 MtI	PERMEABLE MATERIAL	

	<b>P continued</b>	
PG	PROFILE GRADE	
PI	POINT OF INTERSECTION	
PJP	PARTIAL JOINT PENETRATION	
Pkwy	PARKWAY	
PL, 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	
	<b>Q</b>	
Qty	QUANTITY	
	<b>R</b>	
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	

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

	<b>T continued</b>	
TS	TRANSVERSE, TRAFFIC SIGNAL, TUBULAR STEEL	
Typ	TYPICAL	<b>U</b>
UC	UNDERCROSSING	
UD	UNDERDRAIN	
UG	UNDERGROUND	
UON	UNLESS OTHERWISE NOTED	
UP	UNDERPASS	<b>V</b>
V	VALVE, DESIGN SPEED	
Var	VARIABLE, VARIES	
VC	VERTICAL CURVE	
VCP	VITRIFIED CLAY PIPE	
Vert	VERTICAL	
Via	VIADUCT	
Vol	VOLUME	<b>W</b>
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	
WWLLOL	WINGWALL LAYOUT LINE	<b>X</b>
X Sec	CROSS SECTION	
Xing	CROSSING	<b>Y</b>
Yr	YEAR	
Yrs	YEARS	

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	5	R48.7, R59.6	5	20

*Grace M. Tsushima*  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

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

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TO ACCOMPANY PLANS DATED 05-23-16

**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 <sup>3</sup> , pcf	POUNDS PER CUBIC FOOT
tsf	TONS PER SQUARE FOOT
mph, MPH *	MILES PER HOUR
ø	NOMINAL DIAMETER
oz	OUNCE
lb	POUND
kíp	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.

2010 REVISED STANDARD PLAN RSP A10B

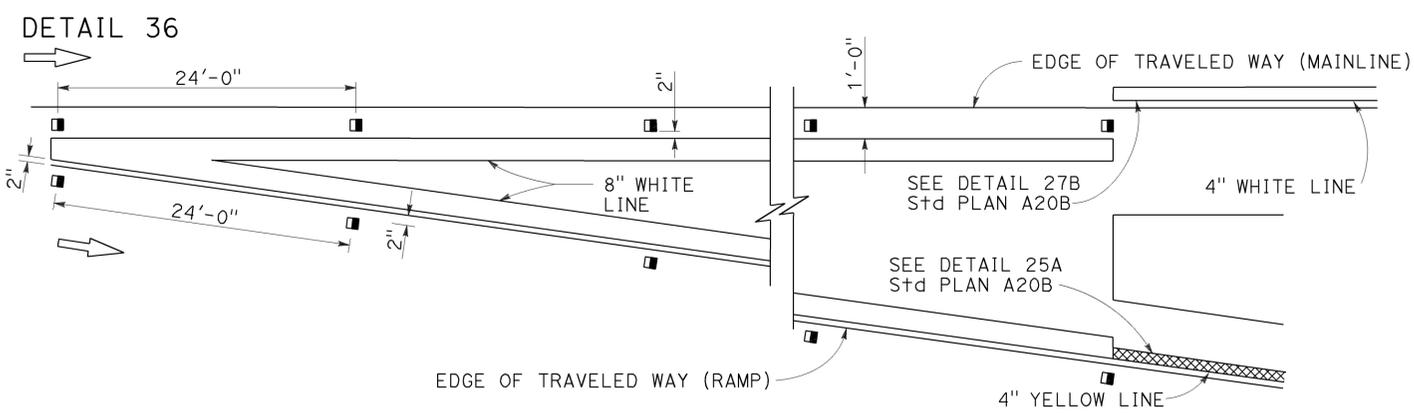
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	5	R48.7, R59.6	6	20

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

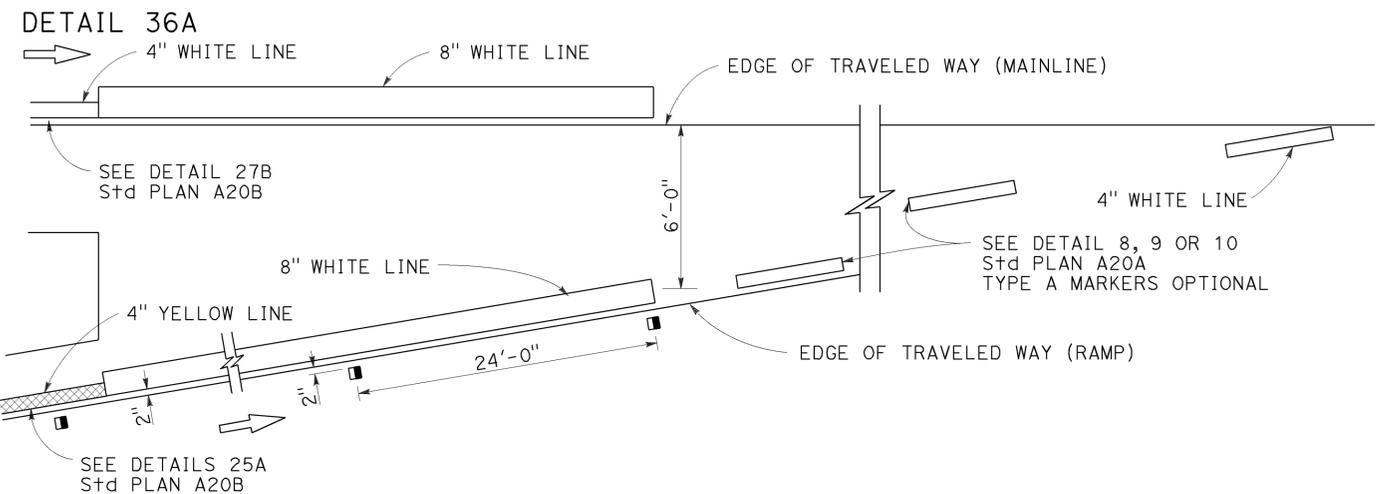
July 19, 2013  
 PLANS APPROVAL DATE

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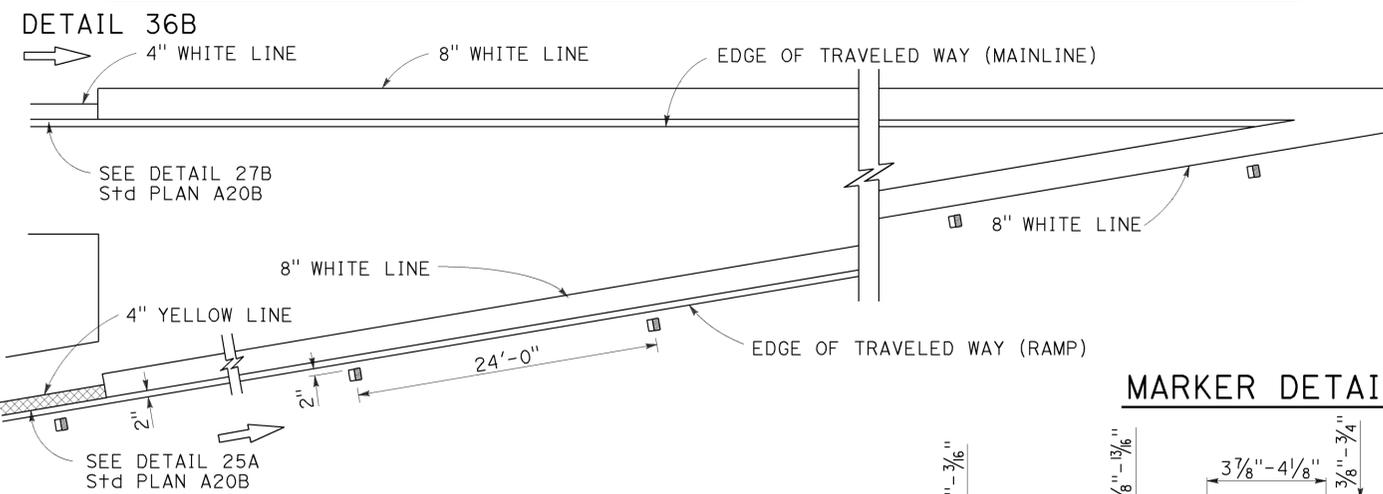
### EXIT RAMP NEUTRAL AREA (GORE) TREATMENT



### ENTRANCE RAMP NEUTRAL AREA (MERGE) TREATMENT



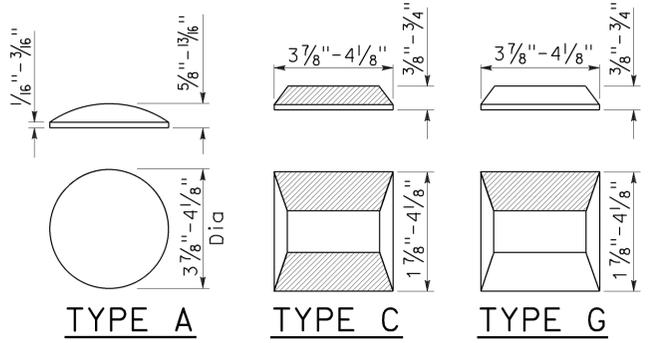
### ENTRANCE RAMP NEUTRAL AREA (ACCELERATION LANE) TREATMENT



### MARKER DETAILS

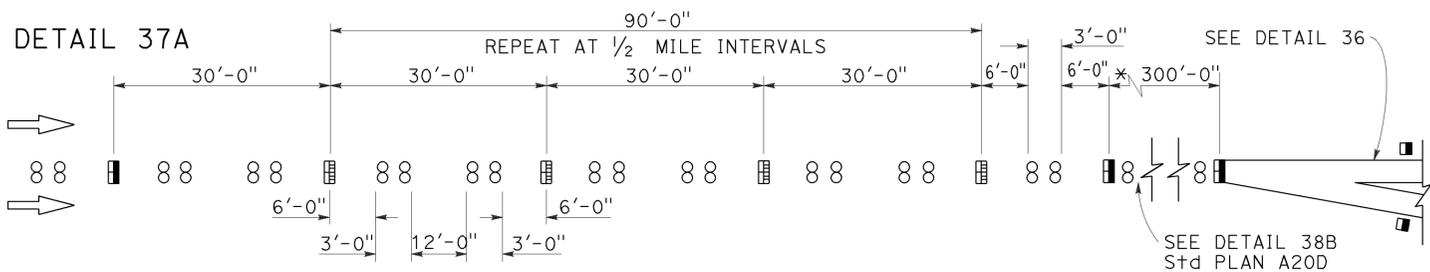
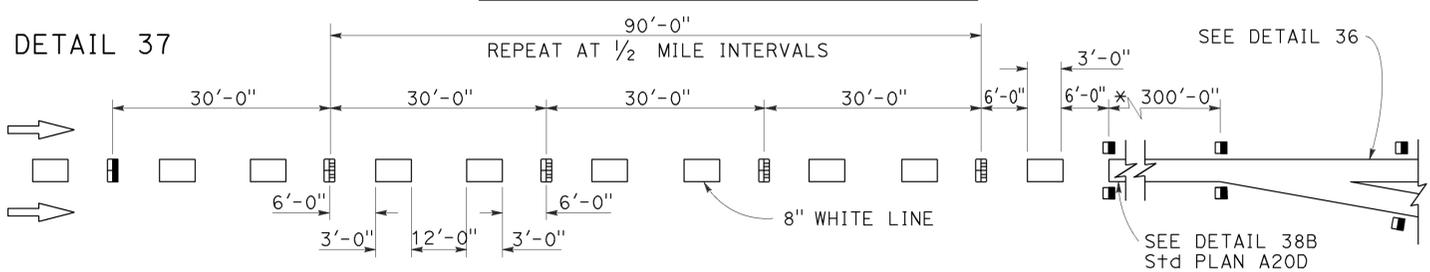
#### LEGEND:

- MARKERS
- TYPE A WHITE NON-REFLECTIVE
  - ◻ TYPE C RED-CLEAR RETROREFLECTIVE
  - TYPE G ONE-WAY CLEAR RETROREFLECTIVE



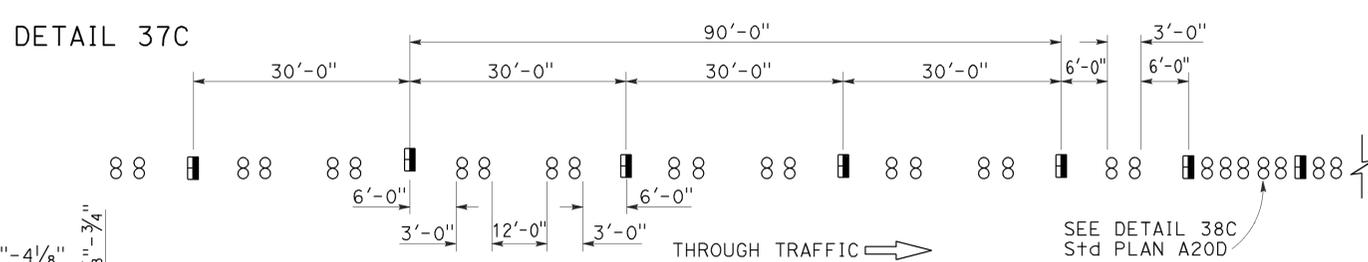
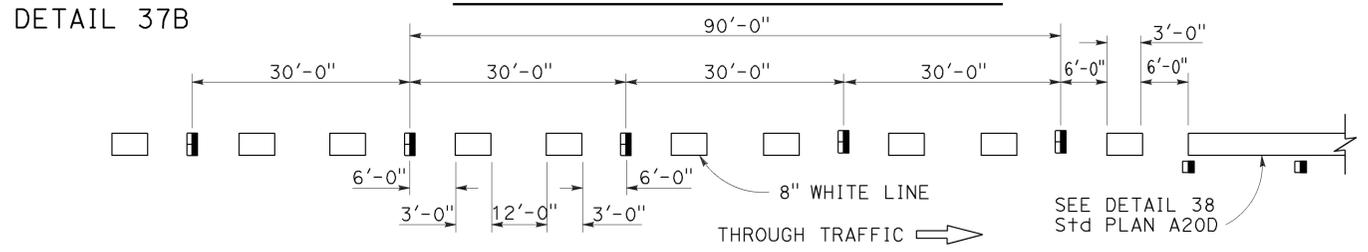
RETROREFLECTIVE FACE

### LANE DROP AT EXIT RAMP



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

### LANE DROP AT INTERSECTIONS



STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

### PAVEMENT MARKERS AND TRAFFIC LINE TYPICAL DETAILS

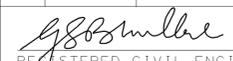
NO SCALE

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	5	R48.7, R59.6	7	20

  
 REGISTERED CIVIL ENGINEER  
 July 19, 2013  
 PLANS APPROVAL DATE



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TO ACCOMPANY PLANS DATED 05-23-16

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		
	TANGENT 2L	MERGING L	SHIFTING L/2	SHOULDER L/3	X	Y	Z **
					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%
		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 recommended distances.

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**

2010 REVISED STANDARD PLAN RSP T9



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	5	R48.7, R59.6	9	20

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

April 19, 2013  
 PLANS APPROVAL DATE

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

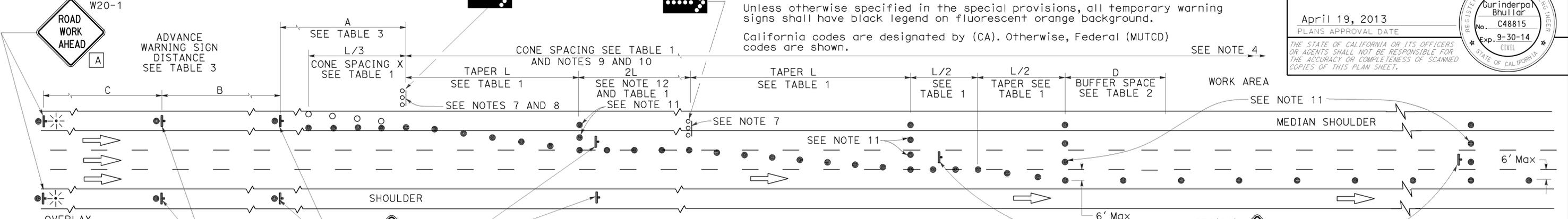
**NOTES:** See Revised Standard Plan RSP T9 for tables.

Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as appropriate, 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.

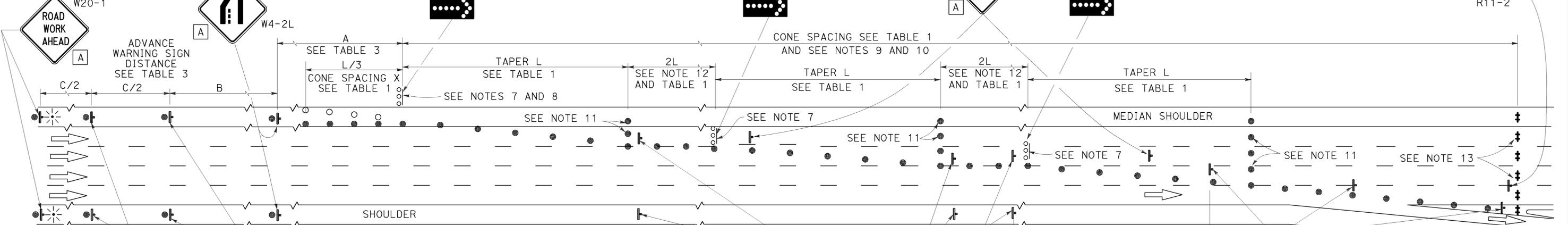
California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

SEE NOTES 3 AND 5



**LANE CLOSURE WITH PARTIAL SHOULDER USE**

SEE NOTES 3 AND 5



**COMPLETE CLOSURE**

**NOTES:**

- Lane closures on the right side using partial median shoulder as a traffic lane shall conform to the details as shown except that C20(CA)R and W4-2R signs shall be used.
- At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closures.
- 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.
- A G20-2 "END ROAD WORK" sign, with minimum size of 48" x 24" 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.
- 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.
- Place a C30(CA) sign every 2000' throughout length of lane closure.
- One flashing arrow sign for each lane closed. The flashing arrow signs shall be Type I.
- 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.
- All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
- Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime closures only.
- 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 With Partial Shoulder Use" 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.
- Unless otherwise specified in the special provisions, the 2L tangent shown along lane lines shall be used between the L tapers required for each closed traffic lane.
- A minimum of Two Type II or III barricades shall be placed across each closed lane and shoulder at the location shown and every 2000' within the complete closure area. Within the complete closure area, the transverse alignment of the barricades on the closed shoulder may be shifted from the transverse alignment to provide access to the work.
- When specified in the special provisions, a W20-2 "DETOUR AHEAD" sign is to be used in place of the W20-3 "FREEWAY CLOSED AHEAD" sign.

**SIGN PANEL SIZE (Min)**

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

**LEGEND**

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

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

**TRAFFIC CONTROL SYSTEM  
 FOR LANE CLOSURES ON  
 FREEWAYS AND EXPRESSWAYS**

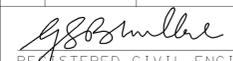
NO SCALE

RSP T10A DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T10A DATED MAY 20, 2011 - PAGE 238 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP T10A**

2010 REVISED STANDARD PLAN RSP T10A

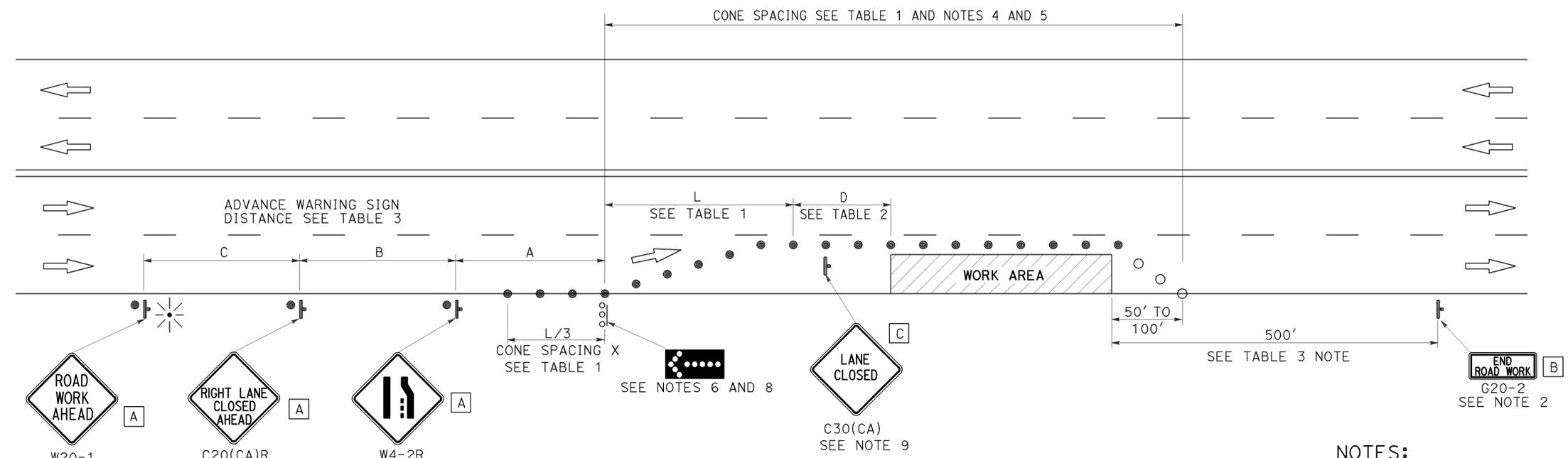
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	5	R48.7, R59.6	10	20

  
 REGISTERED CIVIL ENGINEER  
 April 19, 2013  
 PLANS APPROVAL DATE



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

TO ACCOMPANY PLANS DATED 05-23-16



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 appropriate, 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:**

- 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.
- 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.
- 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.
- All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
- Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime closures only.
- Flashing arrow sign shall be either Type I or Type II.
- 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.
- 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.
- Place a C30(CA) sign every 2000' throughout length of lane closure.
- Median lane closures shall conform to the details as shown except that C20(CA)L and W4-2L signs shall be used.
- 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

# TYPICAL RAMP CLOSURES

## SIGN PANEL SIZE (Min)

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

## LEGEND

- TRAFFIC CONE
- † TEMPORARY TRAFFIC CONTROL SIGN
- ‡ BARRICADES
- ⚡ PORTABLE FLASHING BEACON

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	5	R48.7, R59.6	11	20

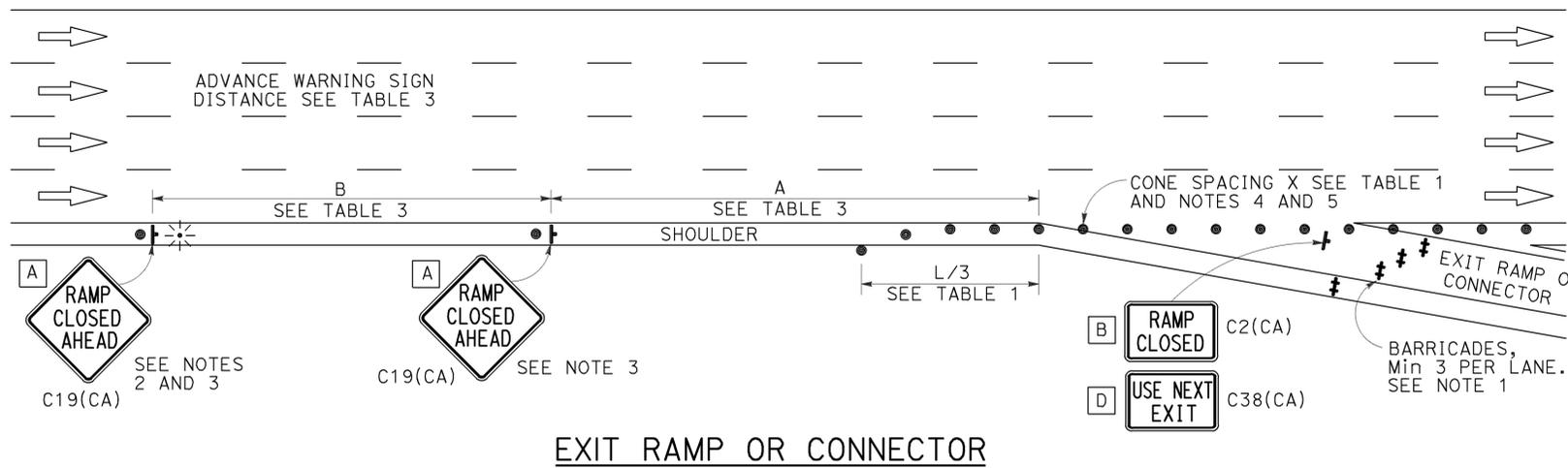
*Gurinderpal Bhullar*  
 REGISTERED CIVIL ENGINEER  
 April 19, 2013  
 PLANS APPROVAL DATE  
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

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

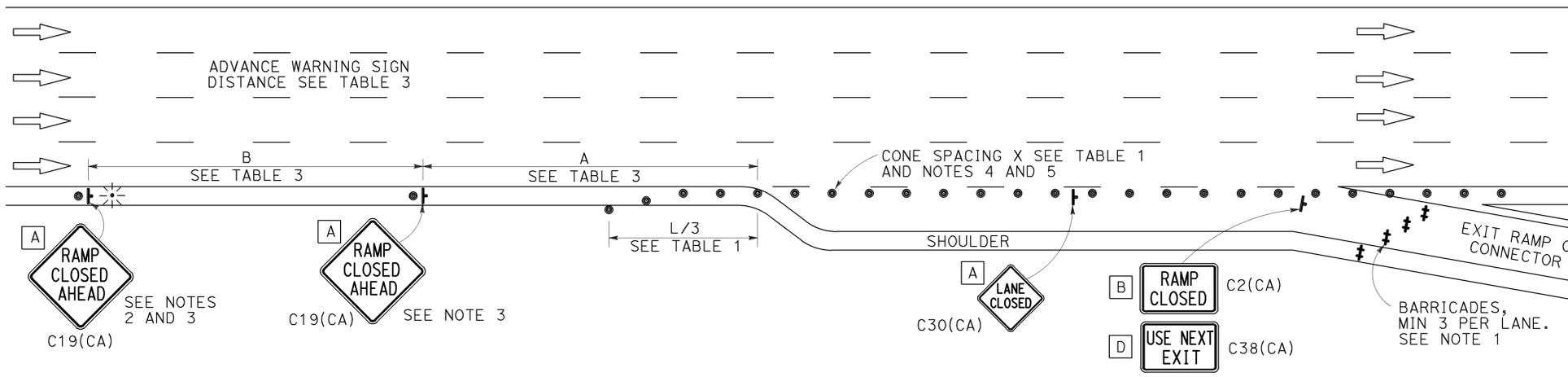
TO ACCOMPANY PLANS DATED 05-23-16

## NOTES:

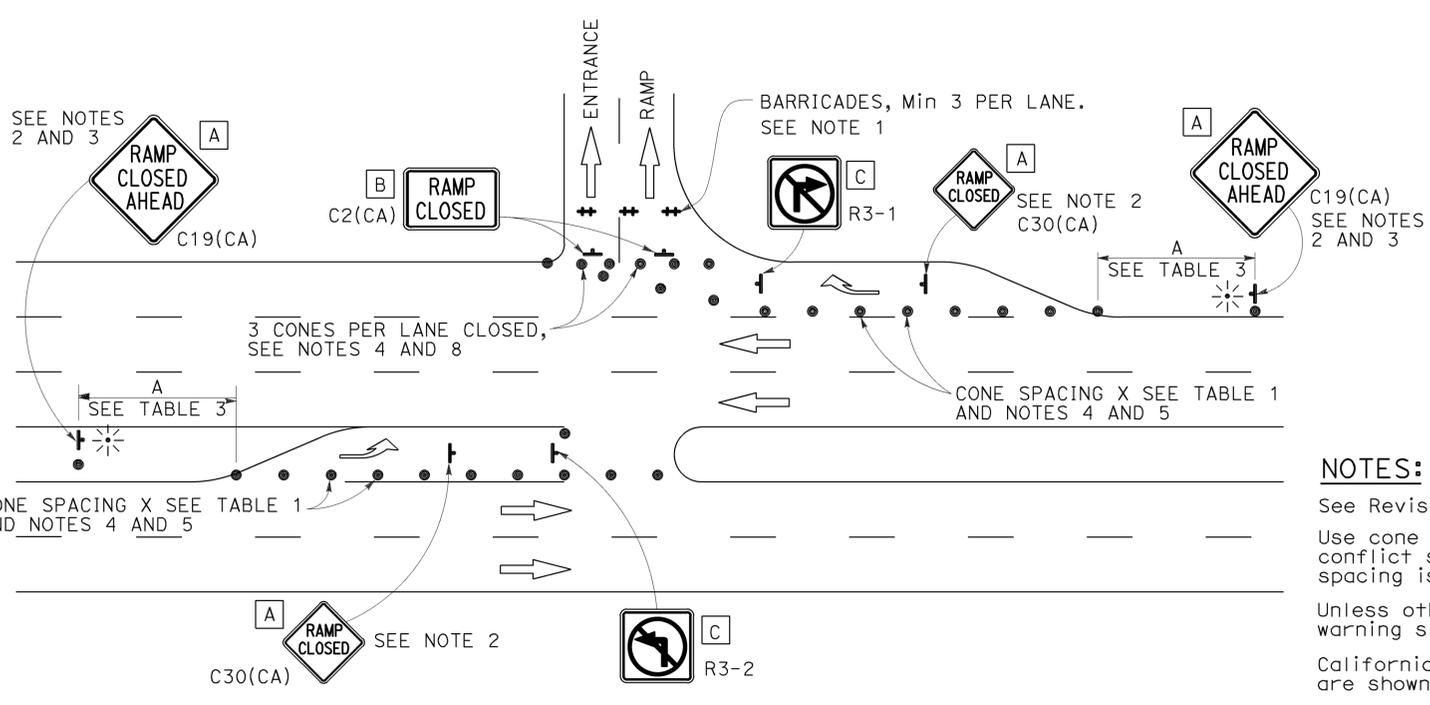
- Barricades shall be Type I, II, or III for closures lasting one week or less and Type III for closures lasting longer than one week.
- In addition to placing the C19(CA) "RAMP CLOSED AHEAD" and C30(CA) "RAMP CLOSED" signs, black on orange overlay plates with the word "CLOSED" may be mounted, as directed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



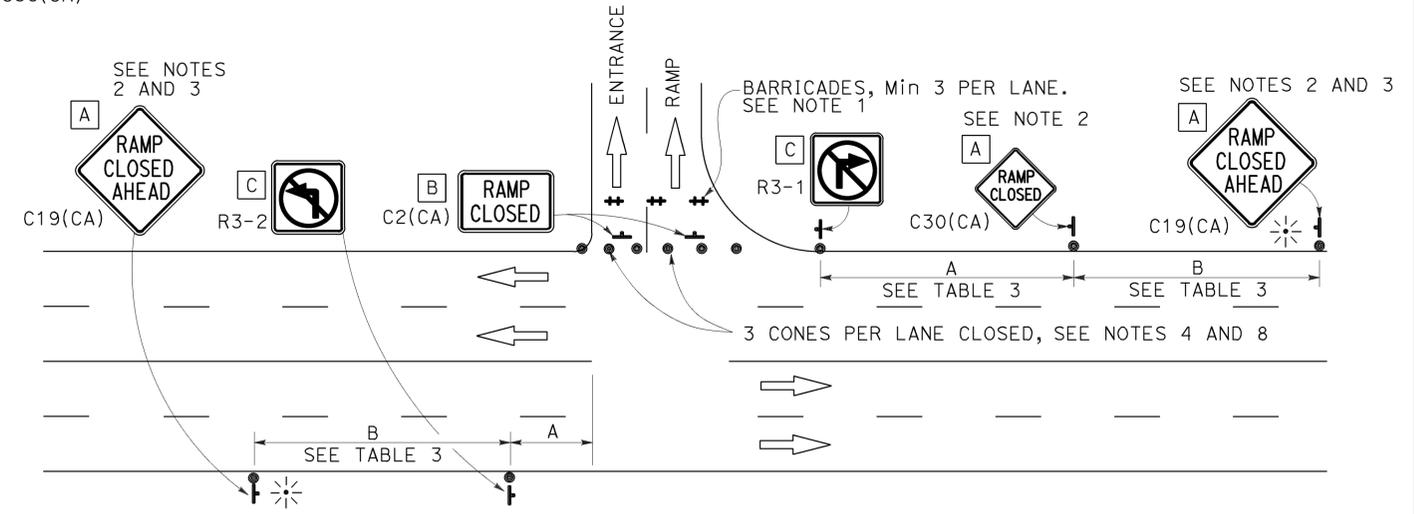
EXIT RAMP OR CONNECTOR



EXIT RAMP OR CONNECTOR WITH ADDITIONAL LANE



ENTRANCE RAMP WITH TURNING POCKETS



ENTRANCE RAMP WITHOUT TURNING POCKETS

## 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 appropriate, 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.

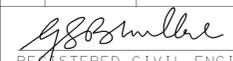
STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**TRAFFIC CONTROL SYSTEM  
 FOR RAMP CLOSURE**  
 NO SCALE

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**

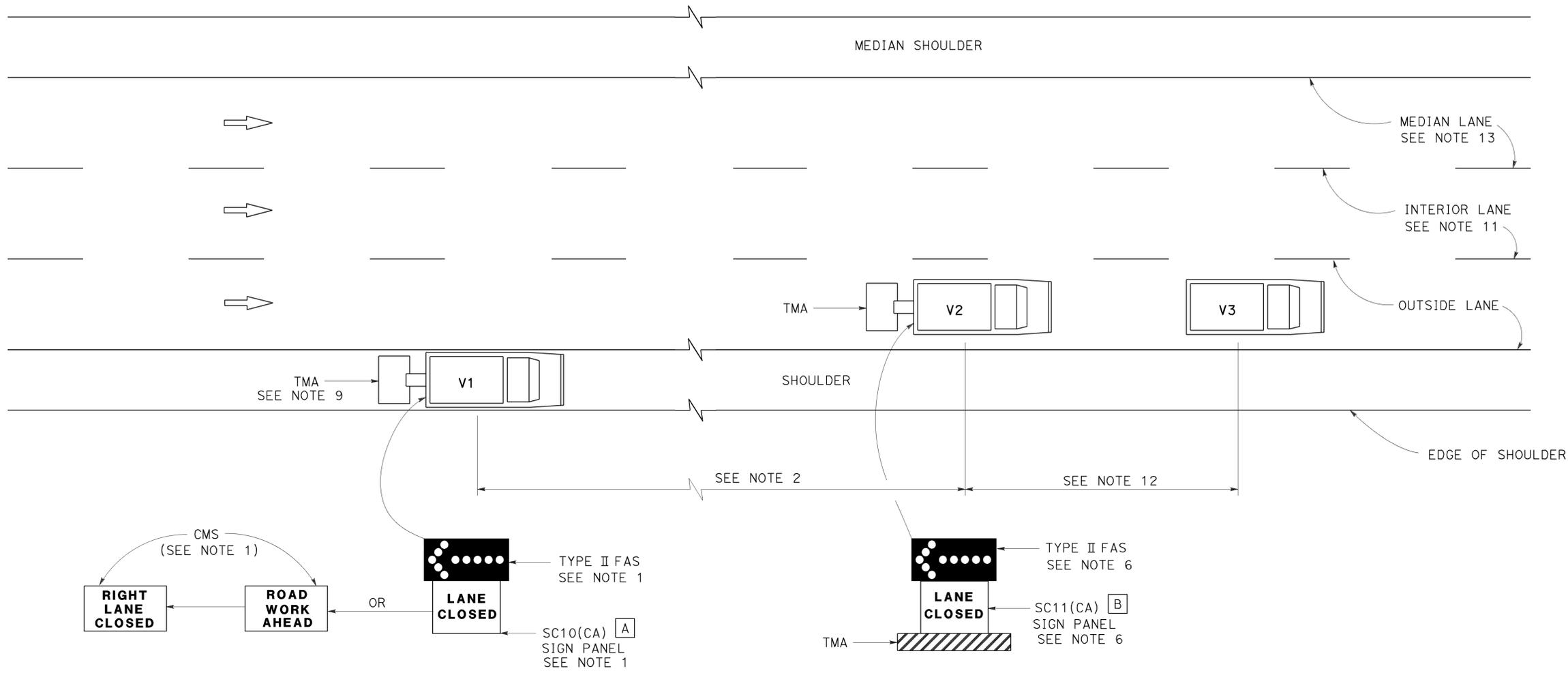
2010 REVISED STANDARD PLAN RSP T14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	5	R48.7, R59.6	12	20

  
 REGISTERED CIVIL ENGINEER  
 April 19, 2013  
 PLANS APPROVAL DATE  
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



TO ACCOMPANY PLANS DATED 05-23-16



**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**

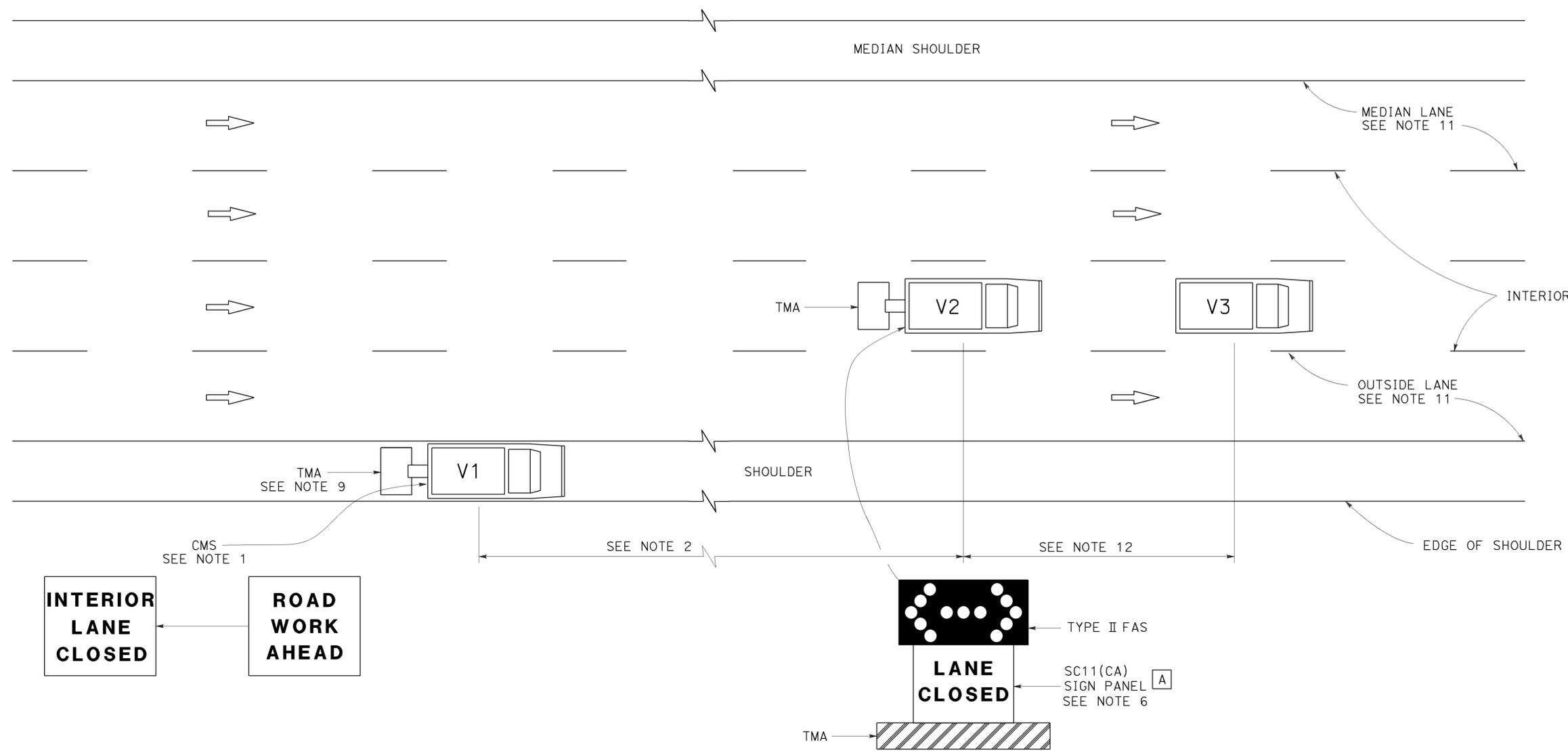
2010 REVISED STANDARD PLAN RSP T15

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	5	R48.7, R59.6	13	20

Registered Civil Engineer  
 April 19, 2013  
 PLANS APPROVAL DATE  
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

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

TO ACCOMPANY PLANS DATED 05-23-16



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

MOVING LANE CLOSURE ON INTERIOR LANE OF MULTILANE HIGHWAYS

NOTES:

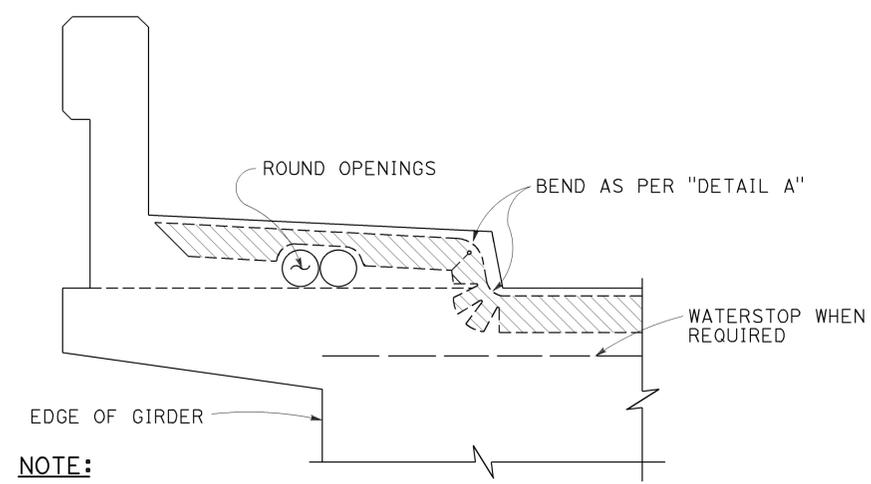
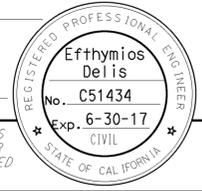
1. A changeable message sign shall be mounted on the rear of sign vehicle V1. The changeable message sign shall be sequenced to show the "ROAD WORK AHEAD" message first, followed by the "INTERIOR LANE CLOSED" message. The message "CENTER LANE CLOSED" may be used in place of the "INTERIOR LANE CLOSED" 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.

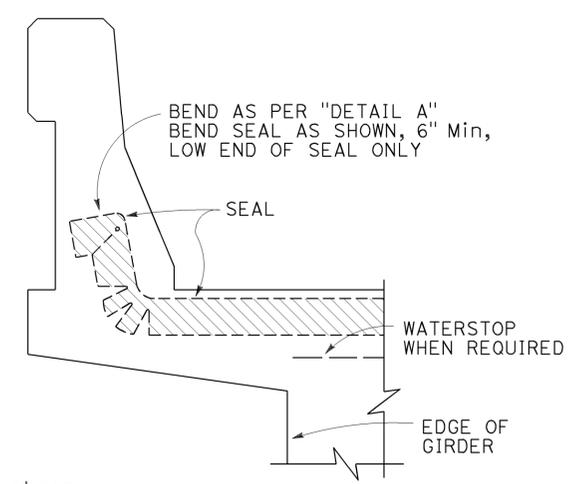
**REVISED STANDARD PLAN RSP T16**

2010 REVISED STANDARD PLAN RSP T16

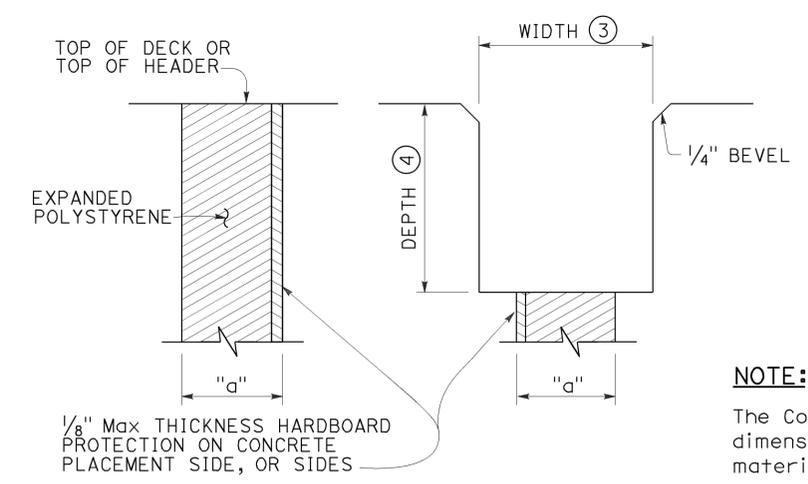


**NOTE:**  
 Type "B" seal shown. Type "A" seals to conform to the general path of seal shown, cuts for bending not required. Bend type "A" seals 3" up into curb or barrier rail on only the low end of the seal.

**CONCRETE BARRIER AND SIDEWALK**



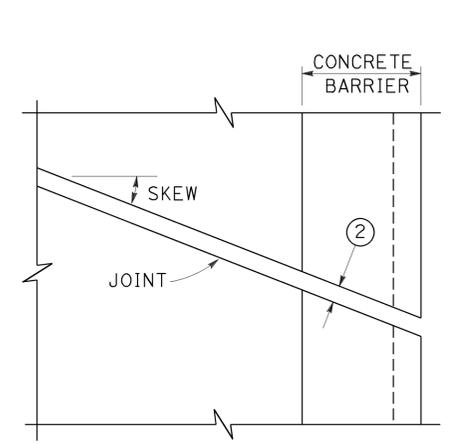
**CONCRETE BARRIER**



**FORMING DETAIL SAWCUT DETAIL**

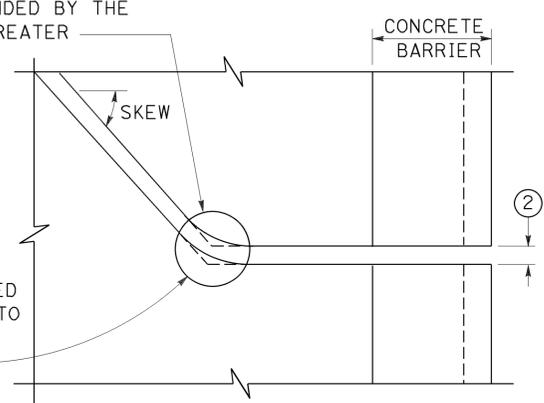
**NOTE:**  
 The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

**JOINT SEALS DETAILS**



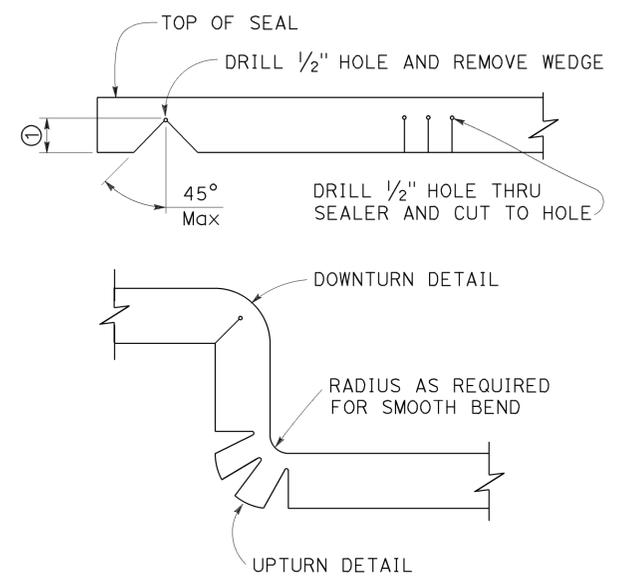
**PLAN OF JOINT (SKEW ≤ 20°)**

Min  $\phi$  RADIUS TO BE 4 TIMES UNCOMPRESSED WIDTH OF SEAL OR AS RECOMMENDED BY THE MANUFACTURER, WHICHEVER IS GREATER



**PLAN OF JOINT (SKEW > 20°)**

IN LIEU OF SAW CUTTING, THIS AREA MAY BE BLOCKED OUT AND RECONSTRUCTED TO MATCH SAW CUTTING ON BOTH SIDES.

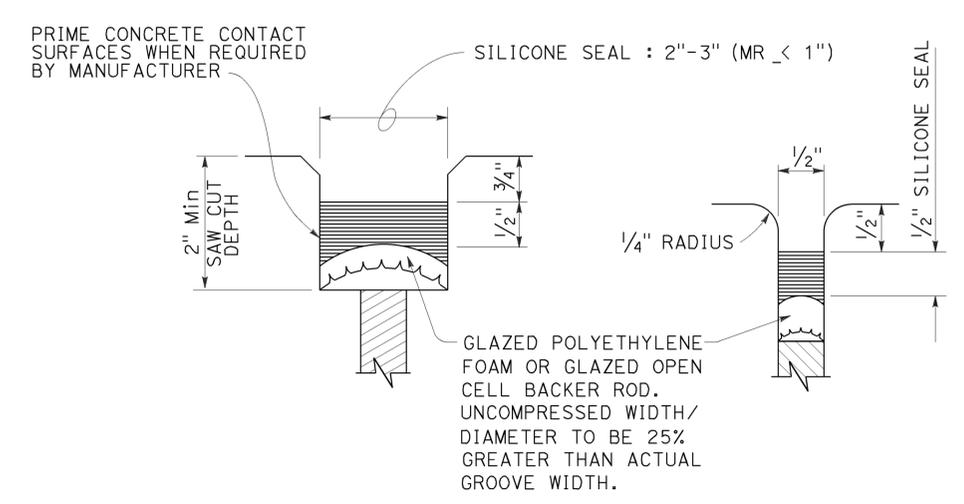


**DETAIL A**

- NOTES:**
- Make smooth cuts from the bottom of seal to 1/2" clear of top leaving at least one complete cell between the top of the cut and top of the seal. When necessary cut back of seal to clear conduit and round openings.
  - Opening in barrier to match width of sawn deck joint.
  - Sawcut groove widths shall be as ordered by the Engineer.
  - Depth of sawcut: Type A - Depth to be 2" minimum. Type B - Depth to be equal to or greater than the depth of seal measured along the contact surface, when compressed to minimum width position ( $W_2$ ) plus dimensions shown.
  - MR (movement rating) as shown on other plan sheets.
  - Other depths must be approved by the Engineer.
  - A sidewalk joint shall be covered by an expansion joint armor.

**DIMENSIONS "a" OF JOINT REQUIRED**

MOVEMENT RATING (MR) (5)	BRIDGE TYPE	"a" DIMENSION		
		DECK CONCRETE PLACED		
		WINTER	FALL-SPRING	SUMMER
2"	ALL EXCEPT CIP/PS	1 1/2"	1 1/4"	3/4"
	CIP/PS	1 1/4"	1"	1/2"
1 1/2"	ALL EXCEPT CIP/PS	1 1/4"	1"	1/2"
	CIP/PS	1"	3/4"	1/2"
1"	ALL EXCEPT CIP/PS	1"	3/4"	1/2"
	CIP/PS	3/4"	1/2"	1/2"
1/2"	ALL EXCEPT CIP/PS	3/4"	3/4"	1/2"
	CIP/PS	1/2"	1/2"	1/2"

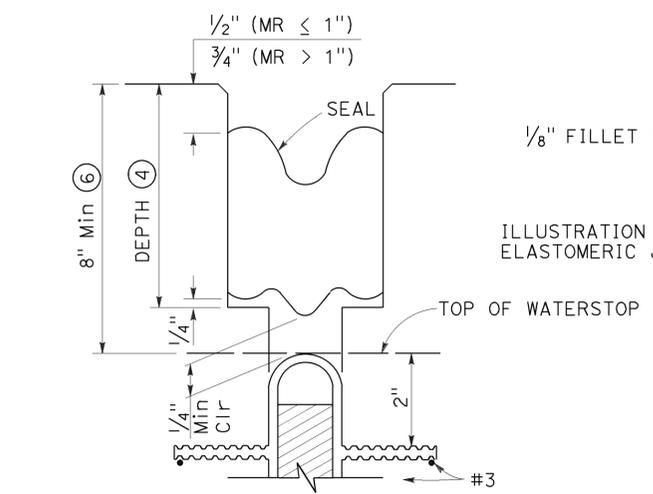


**TYPE A SEAL**

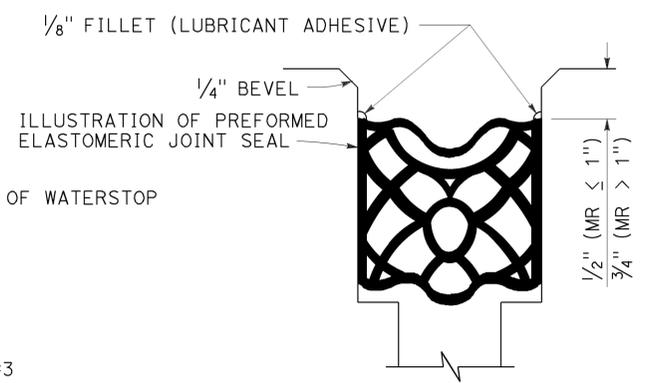
Movement rating : Silicone = 1" Max

**TYPE AL SEAL**

Longitudinal joints only



**TYPE B JOINT SEAL IN MINIMUM WIDTH POSITION ( $W_2$ )**



**TYPE B SEAL**

Movement Rating ≤ 2"

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**JOINT SEALS**  
**(MAXIMUM MOVEMENT RATING = 2")**

NO SCALE  
 RSP B6-21 DATED OCTOBER 30, 2015 SUPERSEDES STANDARD PLAN B6-21 DATED MAY 20, 2011 - PAGE 283 OF THE STANDARD PLANS BOOK DATED 2010.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	5	R48.7, R59.6	15	20

10/02/15  
 REGISTERED CIVIL ENGINEER DATE  
 05-23-16  
 PLANS APPROVAL DATE  
 No. C66900  
 Exp. 09/30/16  
 CIVIL  
 STATE OF CALIFORNIA  
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

### INDEX TO PLANS

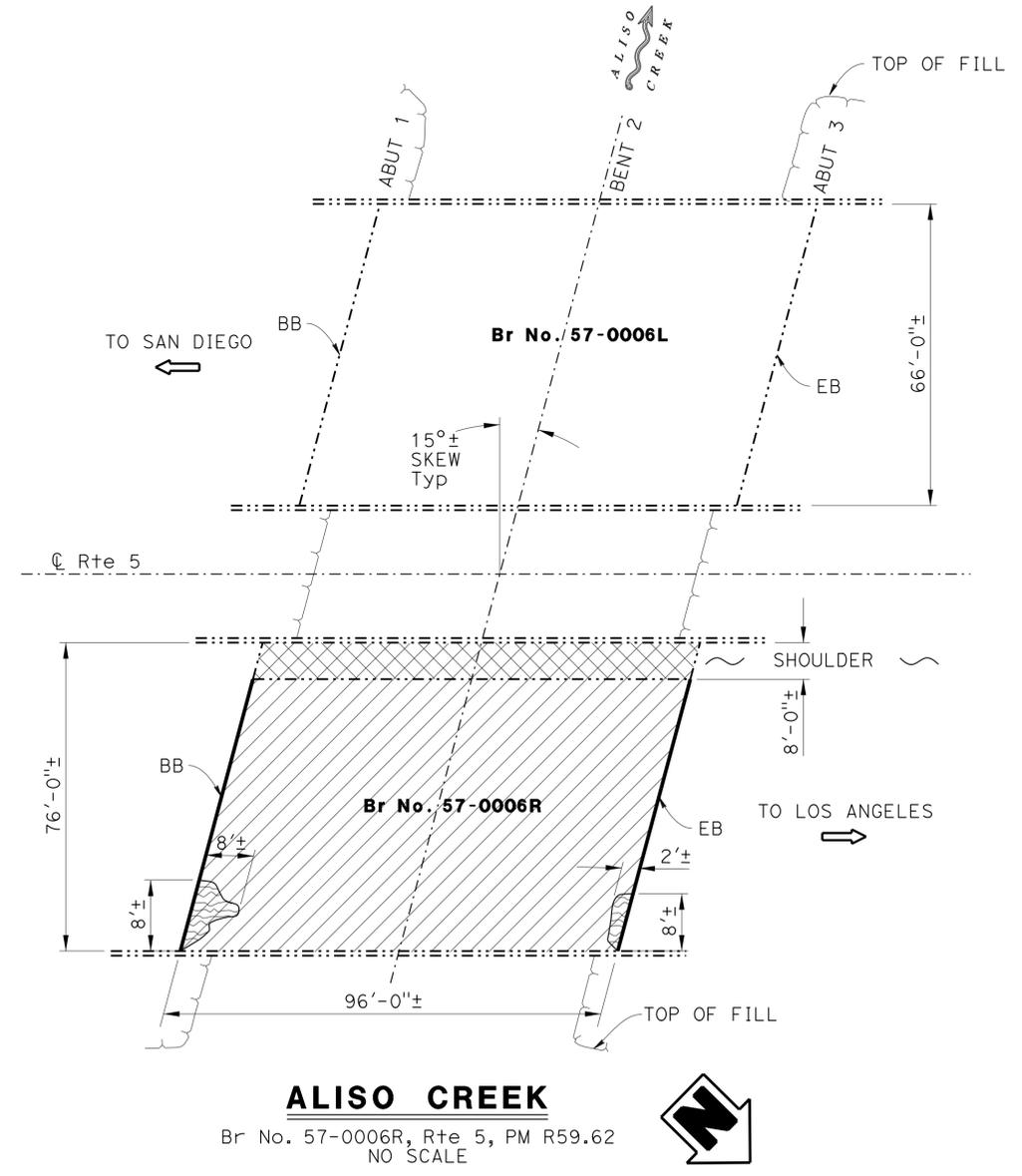
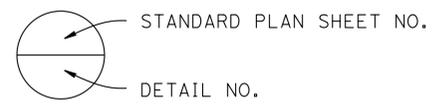
SHEET NO.	TITLE
1	GENERAL PLAN NO. 1
2	GENERAL PLAN NO. 2
3	PILE CAP REPAIR DETAILS
4	PIER COLUMN REPAIR DETAILS
5	MISCELLANEOUS DETAILS NO. 1
6	MISCELLANEOUS DETAILS NO. 2

### STANDARD PLANS DATED 2010

SHEET NO.	TITLE
A10A	ABBREVIATIONS (SHEET 1 OF 2)
RSP A10B	ABBREVIATIONS (SHEET 2 OF 2)
A10C	LINES AND SYMBOLS (SHEET 1 OF 3)
A10D	LINES AND SYMBOLS (SHEET 2 OF 3)
A10E	LINES AND SYMBOLS (SHEET 3 OF 3)
B6-21	JOINT SEALS (MAXIMUM MOVEMENT RATING = 2")

### LEGEND:

- Indicates existing.
- Indicates direction of traffic.
- [Hatched Box] Indicates limits of prepare concrete bridge deck surface and treat existing bridge deck with high molecular weight methacrylate. Prior to bridge deck treatment, remove unsound concrete and patch with rapid setting concrete.
- [Diagonal Hatched Box] Indicates limits of remove contrast treatment.
- [Wavy Hatched Box] Indicates limits of 1/8" depth of remove asphalt concrete surfacing.
- /— Indicates location of clean expansion joint and placement of new joint seal. Prior to placement of new joint seal, repair joint by removing unsound concrete and placing rapid setting concrete patch.



### NOTES:

- For clean expansion joint and joint seal details, see "MISCELLANEOUS DETAILS NO. 1" sheet.
- For joint spall repair and deck damage repair details, see "MISCELLANEOUS DETAILS NO. 2" sheet.

### ALISO CREEK (57-0006R) QUANTITIES

RAPID SETTING CONCRETE (PATCH)	20	CF
REMOVE CONTRAST TREATMENT	768	SQFT
REMOVE ASPHALT CONCRETE SURFACING	80	SQFT
REMOVE UNSOUND CONCRETE	20	CF
PREPARE CONCRETE BRIDGE DECK SURFACE	7,296	SQFT
TREAT BRIDGE DECK	7,296	SQFT
FURNISH BRIDGE DECK TREATMENT MATERIAL	91	GAL
CLEAN EXPANSION JOINT	142	LF
JOINT SEAL (MR 1")	142	LF

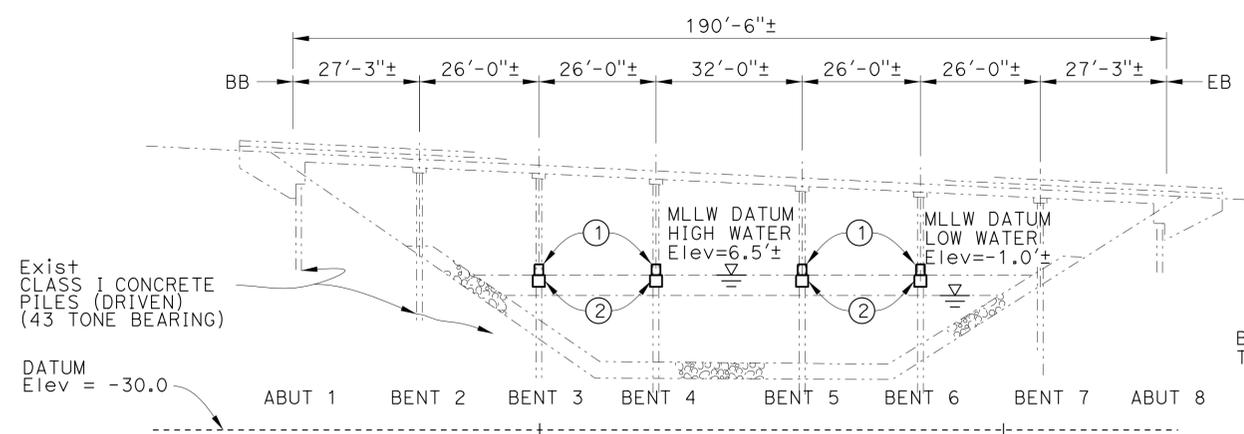
NOTE: THE CONTRACTOR MUST VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL. EXISTING UTILITY FACILITIES ARE NOT INCLUDED ON THESE PLANS.

TONY D. BRAKE DESIGN ENGINEER	DESIGN	BY Edward Nahm	CHECKED Tony Brake	LOAD FACTOR DESIGN	LIVE LOADING: HS20-44 AND ALTERNATIVE AND PERMIT DESIGN LOAD	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO.	57-0006R	ROUTE 5 BRIDGES GENERAL PLAN NO. 1	
	DETAILS	BY Tom Dang	CHECKED Edward Nahm	LAYOUT	BY Tom Dang		CHECKED Edward Nahm	POST MILE		R59.62
	QUANTITIES	BY Edward Nahm	CHECKED Tony Brake	SPECIFICATIONS	BY Kevin Ellingson		CHECKED Kevin Ellingson	PLANS AND SPECS COMPARED		Kevin Ellingson

STRUCTURES MAINTENANCE GENERAL PLAN SHEET (ENGLISH) (REV. 09-01-10) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS UNIT: 3489 PROJECT NUMBER & PHASE: 1112000052 1 CONTRACT NO.: 11-299304 DISREGARD PRINTS BEARING EARLIER REVISION DATES 8-06-12 REVISION DATES SHEET 01 OF 06

AGUA HEDIONDA LAGOON (57-0282)  
QUANTITIES

BRIDGE REMOVAL (PORTION)	LUMP SUM
TEMPORARY SUPPORT	LUMP SUM
STRUCTURAL CONCRETE, BRIDGE (REPAIR)	37 CY
GALVANIC ANODE	1,035 EA
BAR REINFORCING STEEL (BRIDGE) (REPAIR)	2,022 LB



**COLUMN HEIGHT TABLE**

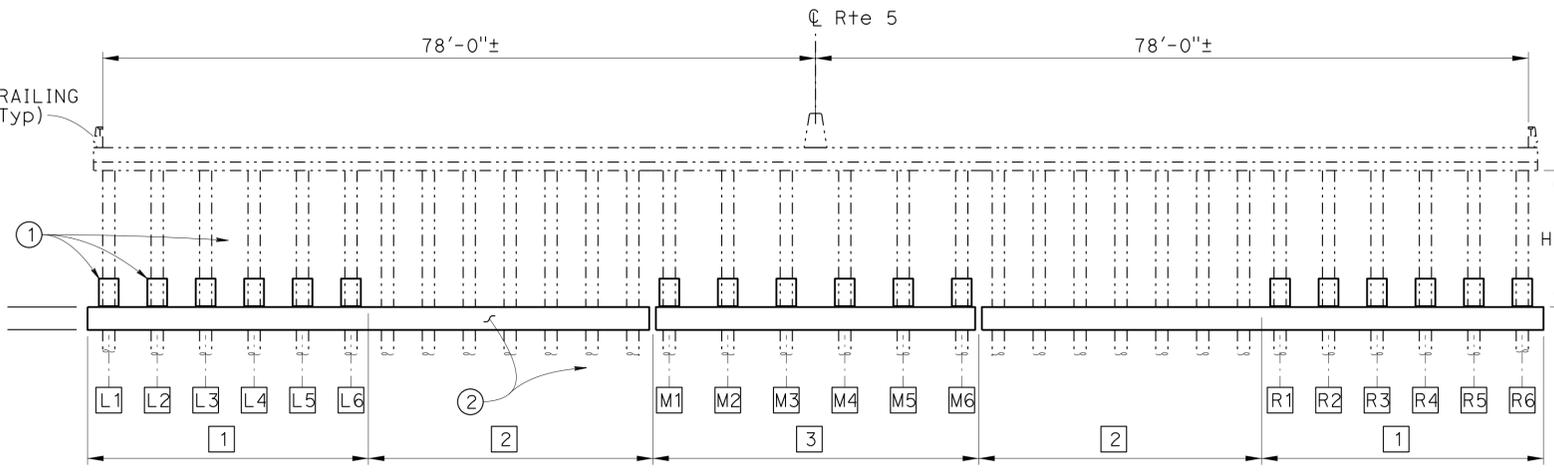
LOCATION	H
BENT 3	21'-2"±
BENT 4	20'-4"±
BENT 5	18'-10"±
BENT 6	18'-0"±

**ELEVATION**  
NO SCALE



BARRIER RAILING  
TYPE 9 (Typ)

Approx Elev 6.0'±  
Approx Elev 3.5'±



**TYPICAL SECTION**

1" = 10'  
(BENT 3 TO BENT 6)

**GENERAL NOTES**  
**LOAD FACTOR DESIGN**

DESIGN: CALTRANS BRIDGE DESIGN SPECIFICATION APRIL 2000 (LFD) (2002 AASHTO 17th Edition with INTERIMS and REVISIONS by Caltrans)

DEAD LOAD: Includes 35 psf for future wearing surface.

LIVE LOAD: HS20-44 and Alternative and Permit Design Load

REINFORCED CONCRETE:  
f<sub>y</sub> = 60,000 psi  
f'c = 5,000 psi @ 28 days

**NOTE:**

1. Daily tidal height variations exist in the work zone.

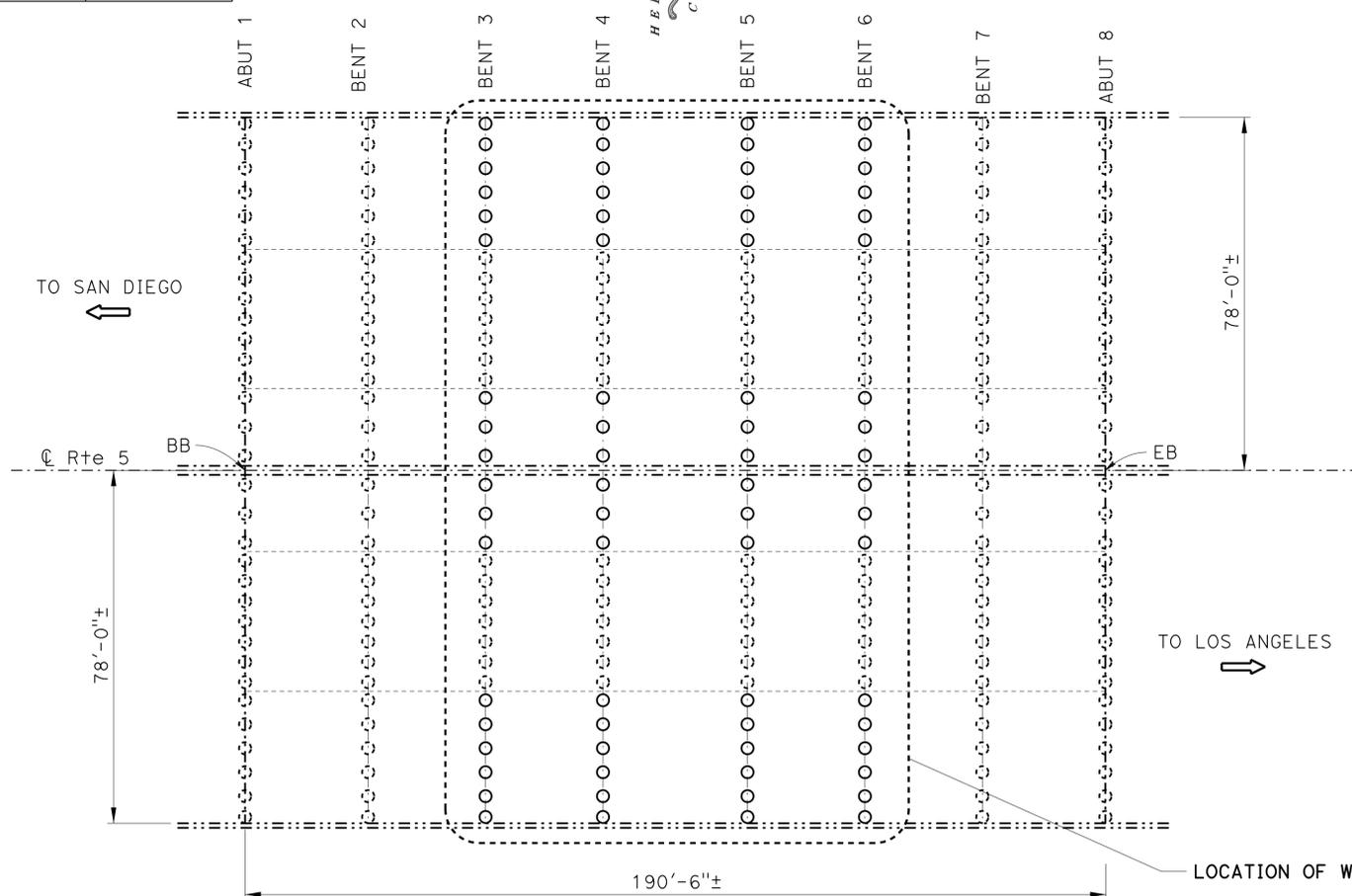
**LEGEND:**

- Indicates existing.
- ➔ Indicates direction of traffic.
- ① Indicates location of pier column repair. See "PIER COLUMN REPAIR DETAILS" sheet.
- ② Indicates location of pile cap repair. See "PILE CAP REPAIR DETAILS" sheet.
- XX Indicates pier column designation.
- # Indicates pile cap construction zone designation.
- MLLW Mean Lower Low Water, Tidal Datum.

**ORDER OF WORK:**

1. Repair pile cap per plan sequence after cleaning. See "PILE CAP REPAIR DETAILS" sheet.
2. Erect Temporary Structure Support on top of pile cap after concrete has attained 2,500 psi compressive strength prior to column repair
3. Repair columns per plan sequence. See "PIER COLUMN REPAIR DETAILS" sheet.
4. Remove Temporary Structure Support after structural concrete has been cured 7 days or 3,600 psi minimum (whichever occurs first).

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**PLAN (AGUA HEDIONDA LAGOON)**

Br No. 57-0282, Rte 5, PM R48.68  
NO SCALE



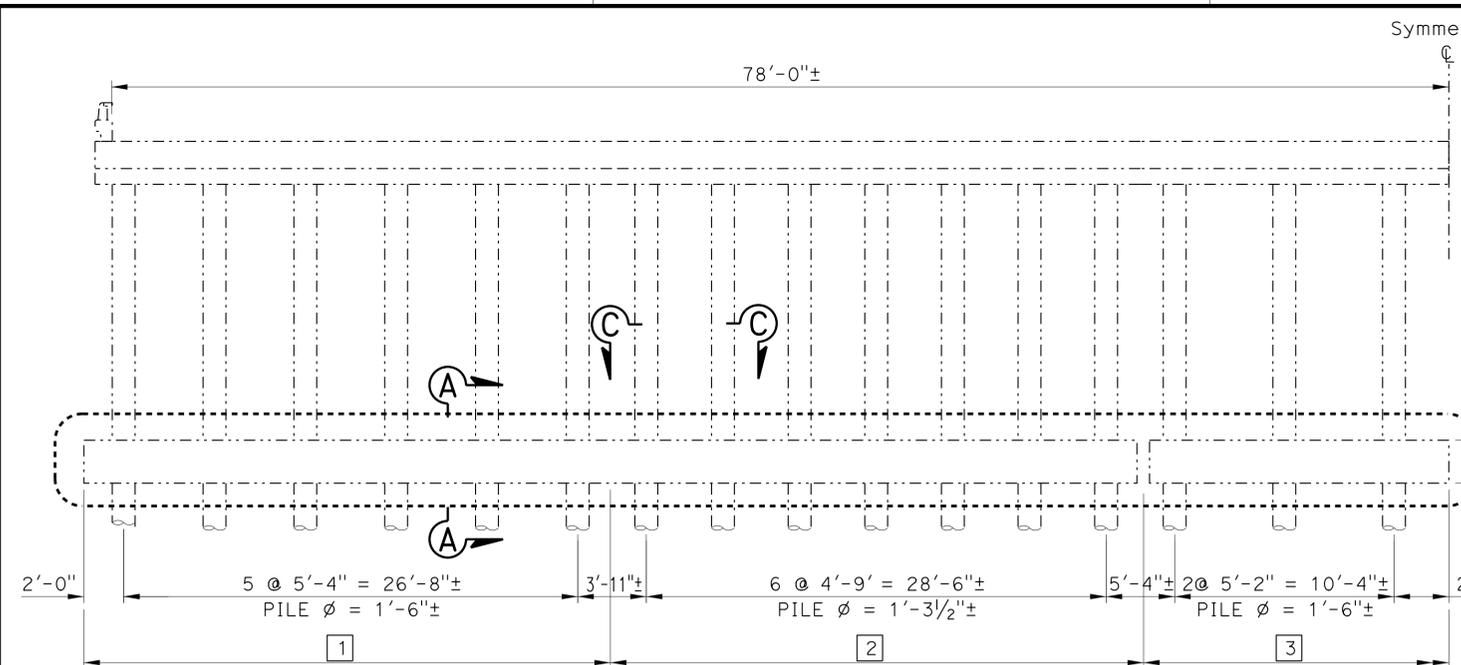
DESIGN	BY Edward Nahm	CHECKED Tony Brake	LOAD FACTOR DESIGN	LIVE LOADING: HS20-44 AND ALTERNATIVE AND PERMIT DESIGN LOAD
DETAILS	BY Tom Dang	CHECKED Edward Nahm	LAYOUT	BY Tom Dang
QUANTITIES	BY Edward Nahm	CHECKED Tony Brake	SPECIFICATIONS	BY Kevin Ellingson

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

DIVISION OF MAINTENANCE  
STRUCTURE MAINTENANCE DESIGN

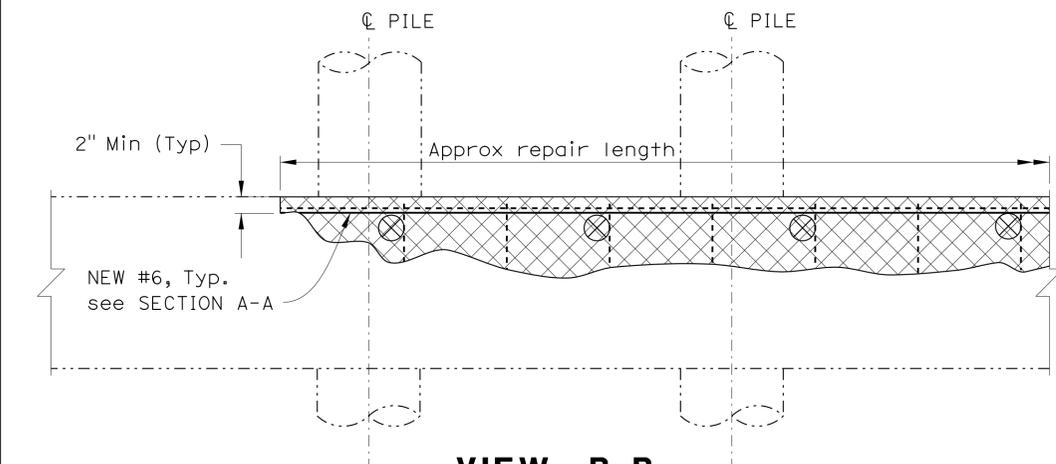
BRIDGE NO. 57-0282  
POST MILE R48.68

**ROUTE 5 BRIDGES**  
**GENERAL PLAN NO. 2**

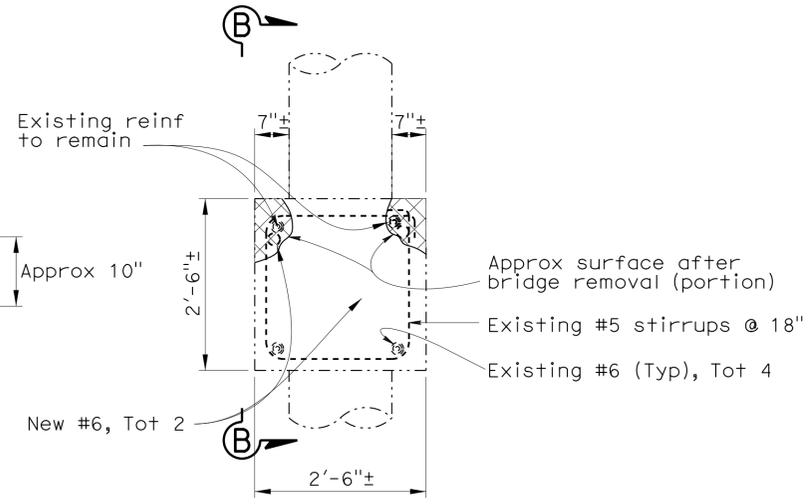


**TYPICAL SECTION**

3/16" = 1'-0"  
(BENT 3 TO BENT 6)

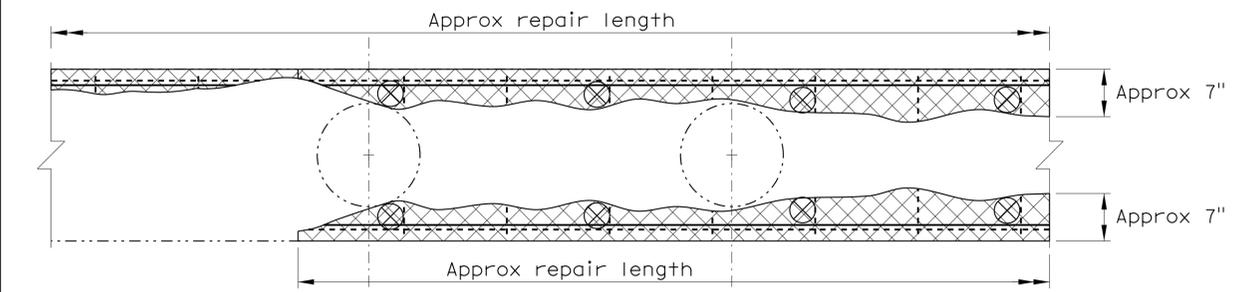


**VIEW B-B**



**SECTION A-A**

3/4" = 1'-0"



**SECTION C-C**

**TYPICAL PILE CAP SPALL REPAIR DETAIL**

3/16" = 1'-0"

**LEGEND:**

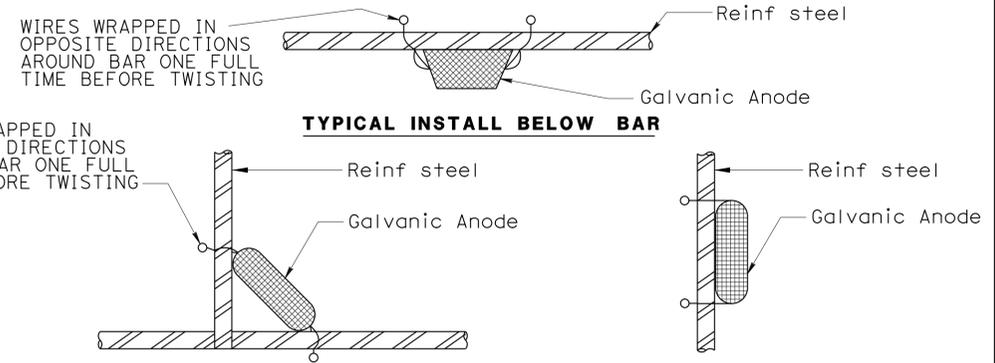
- Indicates existing.
- [Hatched Box] Indicates limits of bridge removal (portion).
- [Hatched Box] Indicates limits of structure concrete (bridge).
- ⊗ Indicates anti-corrosion galvanic anodes, 160 grams of zinc minimum.
- ⊕ Indicates new reinforcement within repair limit.
- Indicates existing reinforcement that is intact.

**REPAIR NOTES:**

1. Pile cap repair sequence per bridge:
  - A. Bents 3 and 5.
  - B. Bents 4 and 6.
2. Structure concrete to be 2,500 psi minimum between repair A and B.
3. Pile cap repair sequence per bent:
  - a. Repair spall at [1]
  - b. Repair spall at [2]
  - c. Repair spall at [3]
4. Structure concrete to be 2,500 psi minimum between repair a, b, and c.
5. Pile Cap repair location will be determined by the Engineer.
6. Sawcut 1/2" deep along perimeter of concrete removal limit.
7. Bridge removal (portion) to be exposed sound and hard concrete substrate.
8. After bridge removal (portion) of pile cap, clean surface of repair limit by methods to remove surface chloride to a degree as directed by the Engineer. All repair materials shall be applied during low tide.
9. It is responsibility of the Contractor to repair any reinforcement that is accidentally cut by saw cutting operation.
10. Existing reinforcement shall be protected in place during bridge removal (portion) operations.
11. Replace/clean all rusted and corroded reinforcing steel as determined by the Engineer.
12. Attach Galvanic Anodes to clean reinforcing steel per manufacturer's instructions. Otherwise, see "TYPICAL GALVANIC ANODE INSTALL DETAIL" for installation options
13. Galvanic Anodes shall be attached around perimeter of repair area, spacing not to exceed 20" O.C.
14. Watertight forms shall be used and do not remove forms until the concrete has attained 5,000 psi.

**PILE CAP REPAIR TABLE**

LOCATION	APPROX REPAIR LENGTH (FT)
BENT 3	95
BENT 4	95
BENT 5	95
BENT 6	95



**TYPICAL GALVANIC ANODE INSTALL DETAIL**

NO SCALE

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DETAILS	BY Tom Dang	CHECKED Edward Nahm
QUANTITIES	BY Edward Nahm	CHECKED Tony Brake

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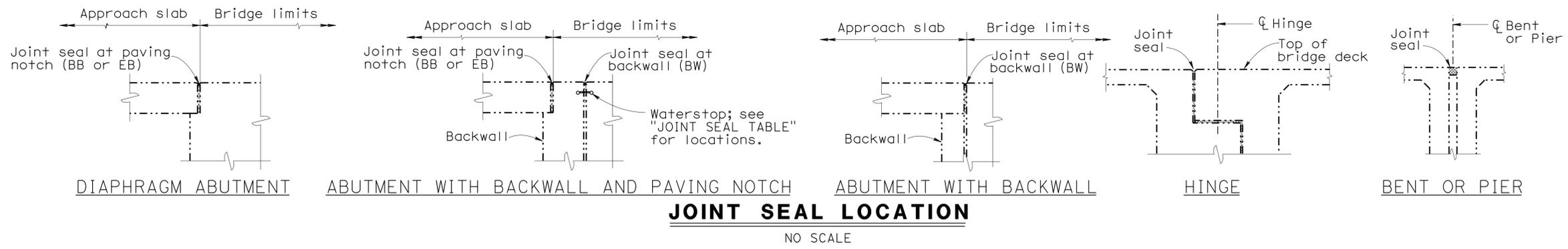
BRIDGE NO. 57-0282  
POST MILE R48.68

ROUTE 5 BRIDGES  
PILE CAP REPAIR DETAILS



DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	5	R48.7, R59.6	19	20

10/02/15  
 REGISTERED CIVIL ENGINEER DATE  
 05-23-16  
 PLANS APPROVAL DATE  
 No. C66900  
 Exp. 09/30/16  
 CIVIL  
 STATE OF CALIFORNIA  
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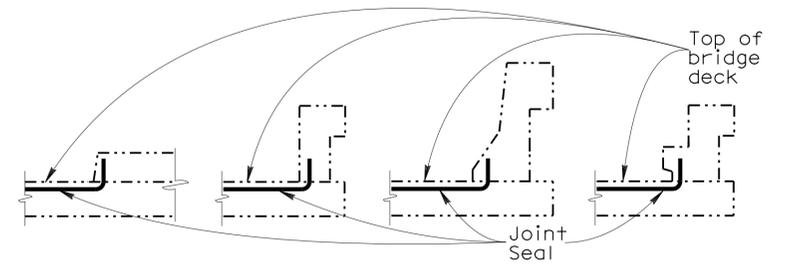


JOINT SEAL TABLE										
BRIDGE NAME	BRIDGE NUMBER	LOCATION		MINIMUM "MR" (INCHES)	APPROX LENGTH (FT)	EXISTING WATERSTOP	APPROX DEPTH TO CLEAN EXP JOINT (INCHES)	APPROX DEPTH OF JOINT SPALLS (INCHES)	APPROX WIDTH OF JOINT SPALLS (INCHES)	APPROX LENGTH OF JOINT SPALLS (FT)
		ABUT	PN							
ALISO CREEK	57-0006R	ABUT 1	PN	1	71	NO	12	3	6	5
		ABUT 3	PN	1	71	NO	12	3	6	5

PN = PAVING NOTCH

**NOTES:**

- The following notes apply to JOINT SEAL TYPE A:
- Install Joint Seal (MR = 1/2 ") or Silicone Joint Seal 3" up into curb or barrier rail on the low side of the deck where deck joint aligns with curb or barrier rail joint.
  - For details not shown see Standard Plans B6-21 sheet.
- The following notes apply to JOINT SEAL TYPE B:
- Seal must satisfy both minimum Movement Rating (MR) and minimum W1 requirements.
  - Minimum W1 is the calculated maximum width of the joint based on field measurements. After the joints have been cleaned, minimum W1 is to be recalculated by the Engineer.
  - W1 shall be the smaller of the values determined as follows:
    - 0.85 times the manufacturer's designed minimum uncompressed width of the seal.
    - The width of the seal on the third successive test cycle of the pressure deflection test, when compressed to an average pressure of 3.0 PSI.
  - Bend Type B joint seal - inches up into curb or rail on the low side of the deck where deck joint matches curb or rail joint.
- For details not shown see Standard Plans B6-21 sheet.



**BARRIER RAIL**  
**JOINT SEAL AT LOW SIDE OF DECK**

Note: Details shown for illustration purposes only.  
For use only where deck joint matches the sidewalk, curb or barrier rail joint.

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QUANTITIES	BY Edward Nahm	CHECKED Tony Brake

**STATE OF CALIFORNIA**  
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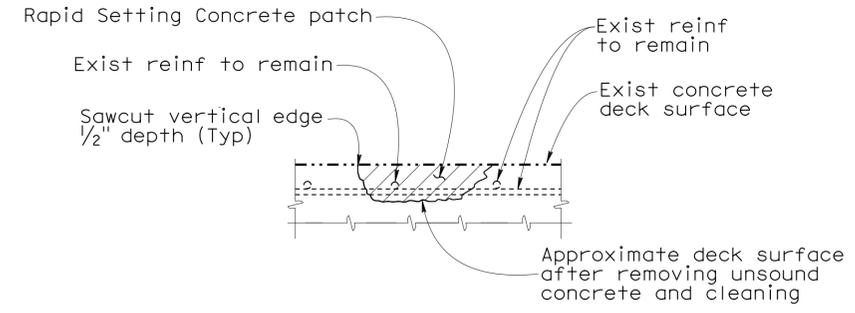
**DIVISION OF MAINTENANCE**  
STRUCTURE MAINTENANCE DESIGN

BRIDGE NO.	Various
POST MILE	Varies

**ROUTE 5 BRIDGES**  
**MISCELLANEOUS DETAILS NO. 1**

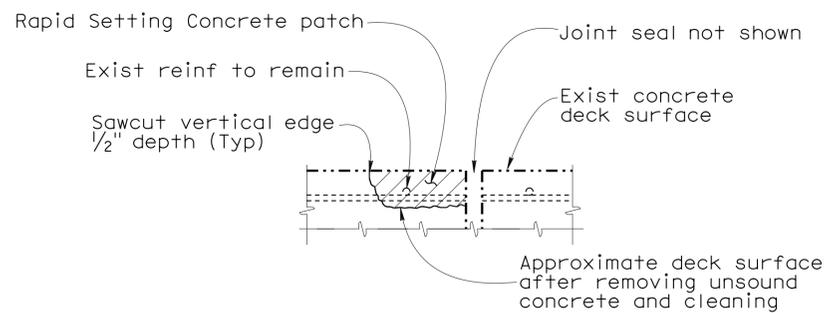
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
11	SD	5	R48.7, R59.6	20	20

10/02/15  
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**DECK DAMAGE REPAIR DETAIL**

Location will be determined by the Engineer. Reinforcement may be encountered during deck concrete removal and is to remain undamaged.



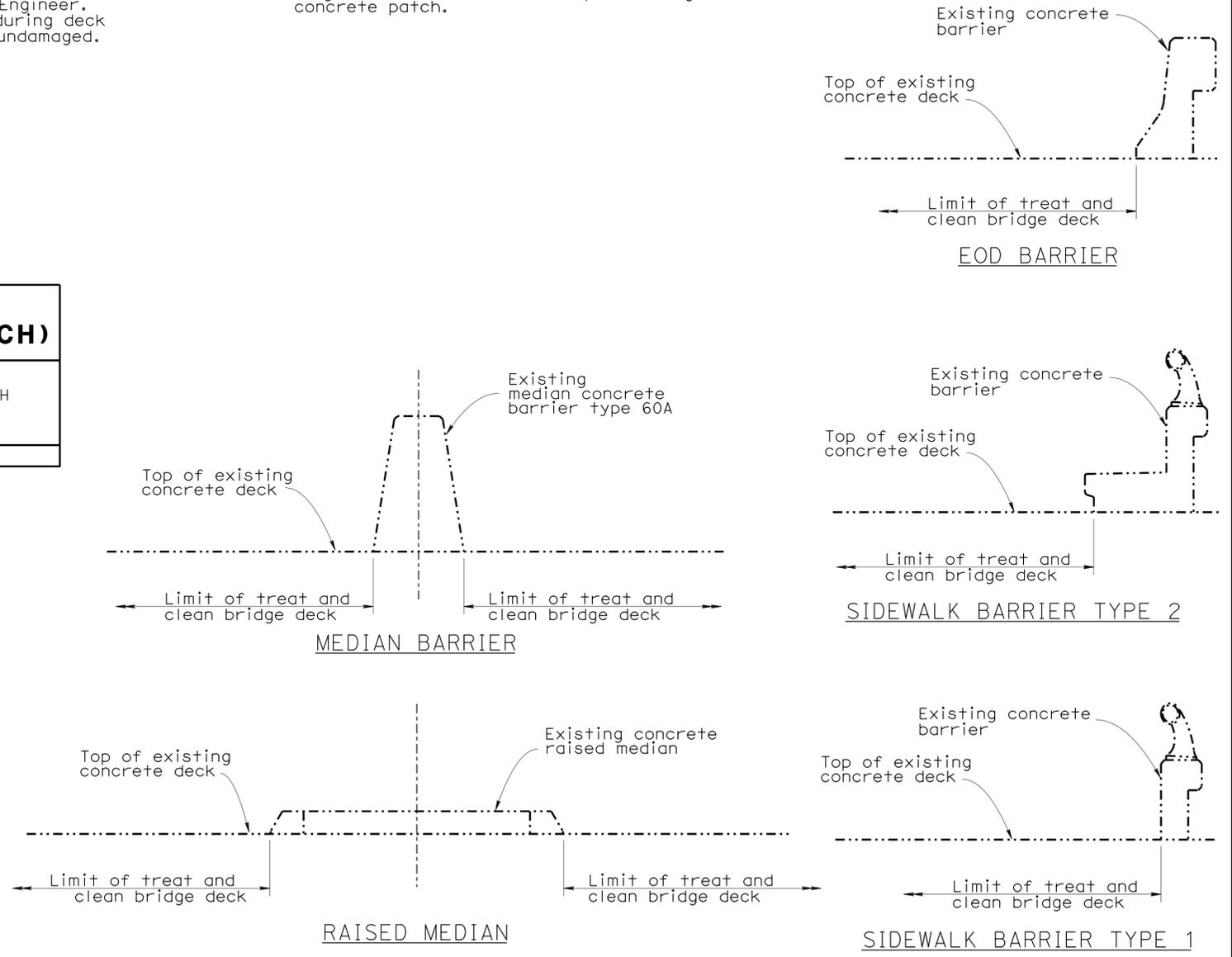
**JOINT REPAIR DETAIL**

Location will be determined by the Engineer. Reinforcement may be encountered during deck concrete removal and is to remain undamaged.

**DECK AND SPALL REPAIR NOTES:**

- Existing reinforcement shall be protected in place during unsound concrete removal and patching operations.
- It is responsibility of the Contractor to repair any reinforcement that is accidentally cut by saw cutting operations.
- When existing transverse reinforcement is exposed in the deck surface, saw cutting may be waived with the approval of the Engineer.
- The saw cut depth shall not exceed 1/2 inch or the concrete cover over the top steel reinforcing bars, whichever is less.
- Remove unsound Portland Cement concrete and unsound concrete patches to expose sound, hard concrete substrate. Replace original deck surface with rapid setting concrete patch.

DECK REPAIR TABLE REMOVE UNSOUND CONCRETE AND RAPID SETTING CONCRETE (PATCH)			
BRIDGE NAME	BRIDGE NUMBER	APPROXIMATE AREA DAMAGED (%)	APPROXIMATE DEPTH (INCH)
ALISO CREEK	57-0006R	1	3



**TYPICAL LIMITS OF DECK WORK**

NO SCALE

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 STRUCTURE MAINTENANCE DESIGN

BRIDGE NO.	Various
POST MILE	Varies

ROUTE 5 BRIDGES  
 MISCELLANEOUS DETAILS NO. 2

TIME PLOTTED => 24-MAY-2016 10:37