

INDEX OF PLANS

SHEET No.	DESCRIPTION
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THE STANDARD PLANS LIST APPLICABLE TO THIS CONTRACT IS INCLUDED IN THE NOTICE TO BIDDERS AND SPECIAL PROVISIONS BOOK.

STATE OF CALIFORNIA  
**DEPARTMENT OF TRANSPORTATION**  
**PROJECT PLANS FOR CONSTRUCTION ON**  
**STATE HIGHWAY**  
**IN SAN LUIS OBISPO COUNTY**  
**NEAR ATASCADERO**  
**FROM 0.2 MILE EAST OF CRESTON EUREKA ROAD**  
**TO 0.1 MILE WEST OF VIA VISTA WAY**

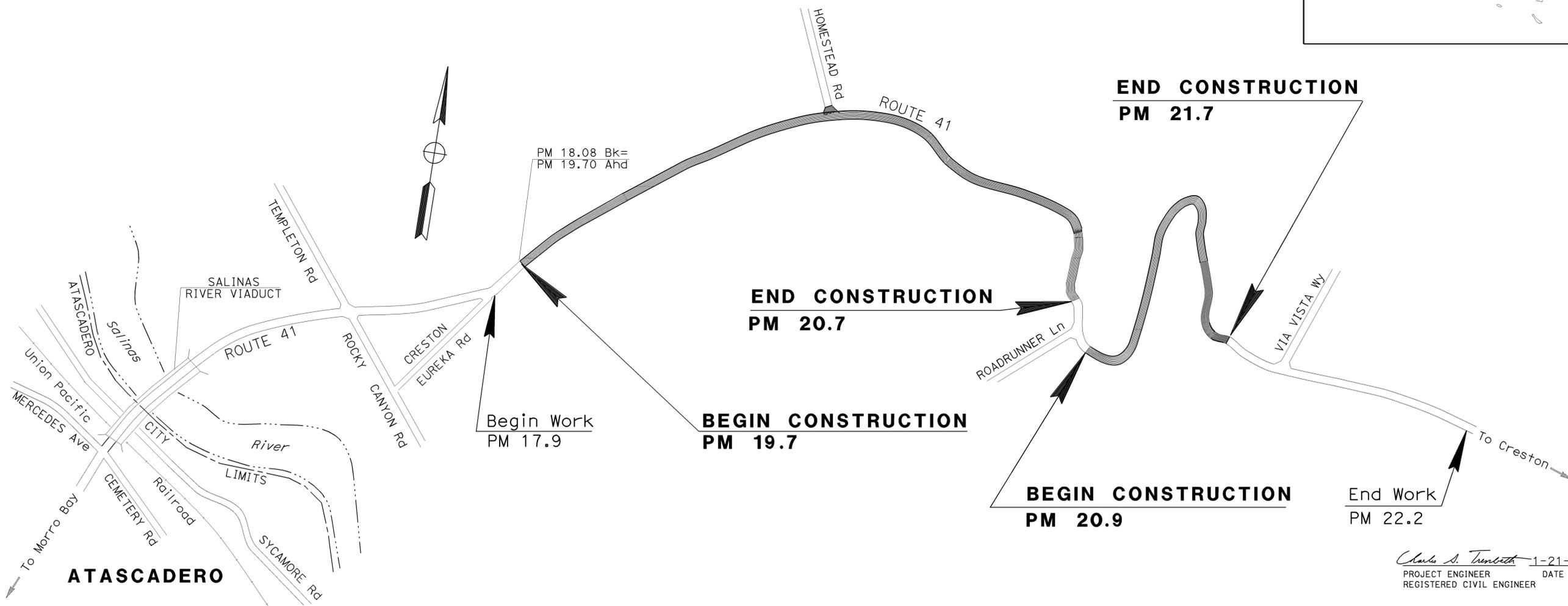
TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	41	19.7/21.7	1	16



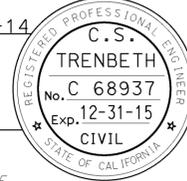


LOCATION MAP



PROJECT MANAGER  
**KELLY J. McCLAIN**  
 DESIGN ENGINEER  
**KELLY J. McCLAIN**

*Charles S. Trenbeth* 1-21-14  
 PROJECT ENGINEER DATE  
 REGISTERED CIVIL ENGINEER



**January 21, 2014**  
 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>05-1A3604</b>
PROJECT ID	<b>0500020316</b>

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** MAINTENANCE DESIGN  
 FUNCTIONAL SUPERVISOR: KELLY J. McCLAIN  
 CALCULATED/DESIGNED BY: CHARLES S. TRENBETH  
 CHECKED BY: KELLY J. McCLAIN  
 REVISED BY: DATE  
 REVISIONS:

**NOTES:**

- DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
- HMA-A SHALL NOT BE PLACED ON PCC STRUCTURES OR SURFACES.
- FOR ACCURATE R/W DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- EXISTING UTILITY FACILITIES HAVE NOT BEEN PLOTTED ON THESE PLANS.
- APPLY ASPHALTIC EMULSION (FOG SEAL COAT) TO EXISTING DIKE OR BERM AT EP.
- SEE QUANTITY SHEET FOR EXACT LOCATIONS OF MIDWEST GUARD RAIL SYSTEM.
- SEE QUANTITY SHEET FOR EXACT LOCATIONS AND TYPES OF HMA DIKE.

**PAVEMENT CLIMATE REGION**  
INLAND VALLEY

**ABBREVIATION:**

HMA-SP (TYPE A) = HOT MIX ASPHALT, SUPERPAVE (TYPE A)

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	41	19.7/21.7	2	16

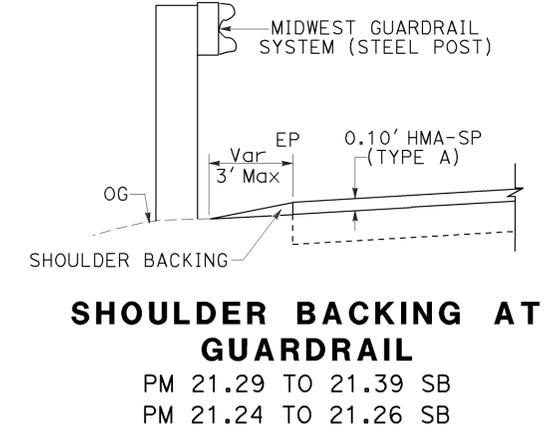
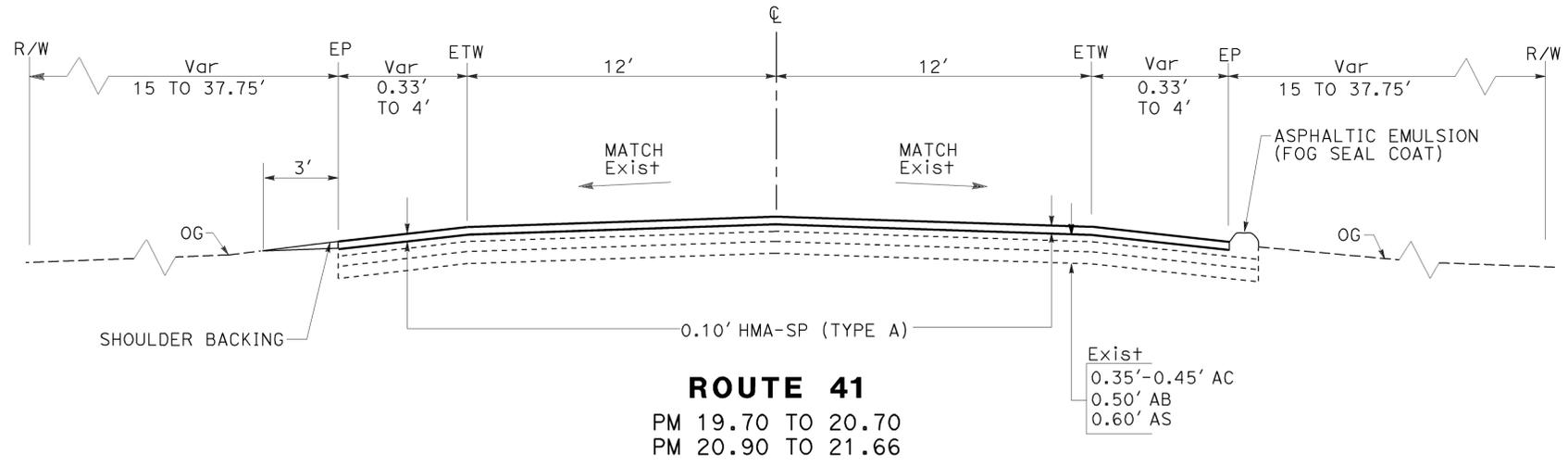
<i>Charles S. Trenbeth</i>	1-21-14
REGISTERED CIVIL ENGINEER	DATE

1-21-14
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.



**TYPICAL CROSS SECTIONS**

NO SCALE

**X-1**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	41	19.7/21.7	3	16
<i>Charles S. Trenbeth</i> 1-21-14 REGISTERED CIVIL ENGINEER DATE			C.S. TRENBETH No. C 68937 Exp. 12-31-15 CIVIL STATE OF CALIFORNIA		
1-21-14 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					

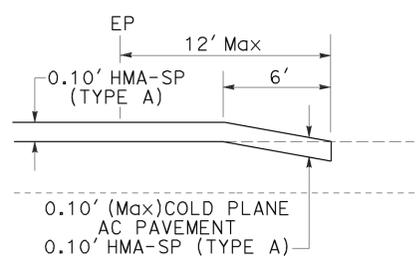
**LEGEND:**

COLD PLANE AC PAVEMENT AND HMA-SP ( TYPE A )

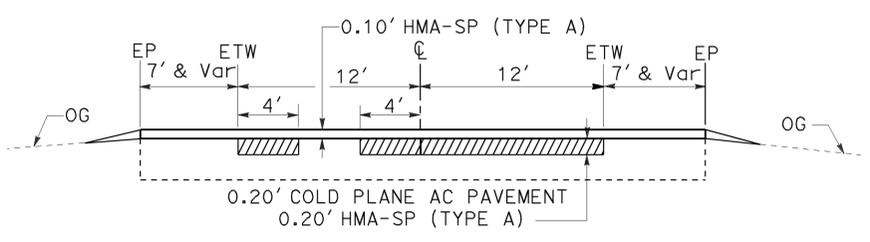
**ABBREVIATION:**

HMA-SP (TYPE A) = HOT MIX ASPHALT, SUPERPAVE (TYPE A)

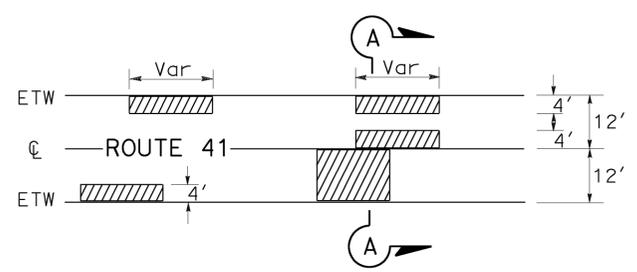
REVISOR: CHARLES S. TRENBETH  
 DATE: KELLY J. McCLAIN  
 CHECKED BY: KELLY J. McCLAIN  
 DESIGNED BY: KELLY J. McCLAIN  
 SUPERVISOR: KELLY J. McCLAIN



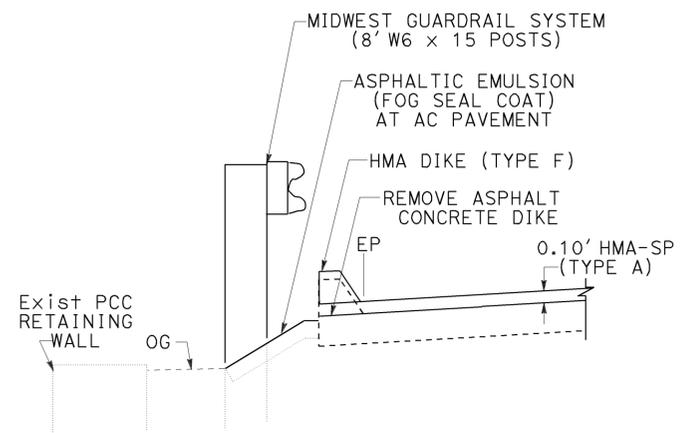
**CONFORM AT PAVED DRIVEWAY**  
 VARIOUS LOCATIONS



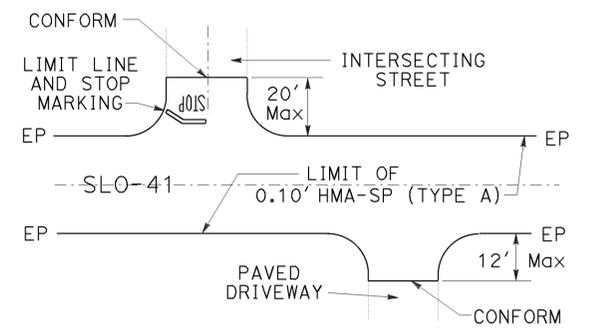
SECTION A-A



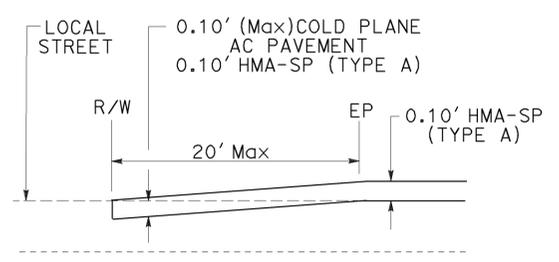
**REPAIR FAILED AREAS**  
 SEE Q-2 FOR LOCATIONS



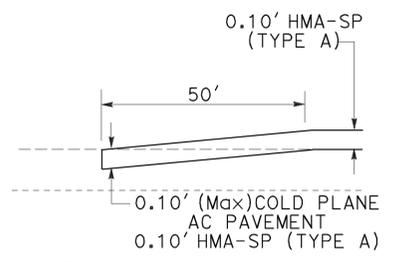
**GUARDRAIL AT HMA DIKE (TYPE F) AND EXISTING RETAINING WALL**  
 PM 21.27 TO 21.29 SB



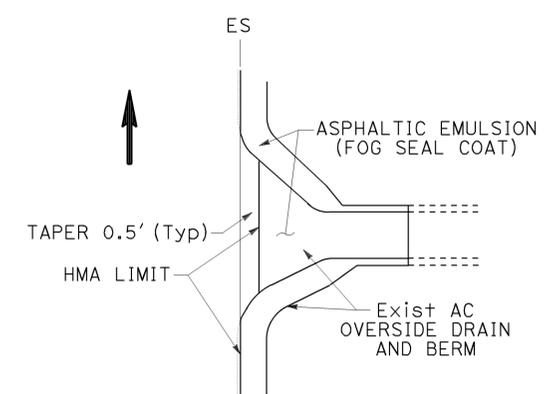
**INTERSECTION AT LOCAL ROAD AND DRIVEWAY**  
 PM 19.70 TO 20.70  
 PM 20.90 TO 21.70



**CONFORM AT LOCAL STREET**  
 PM 20.03 SB



**LONGITUDINAL CONFORM**  
 PM 19.70 PM 20.90  
 PM 20.70 PM 21.70



**OVERSIDE DRAIN**  
 VARIOUS LOCATIONS

**CONSTRUCTION DETAILS**  
 NO SCALE **C-1**

# STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	41	19.7/21.7	4	16

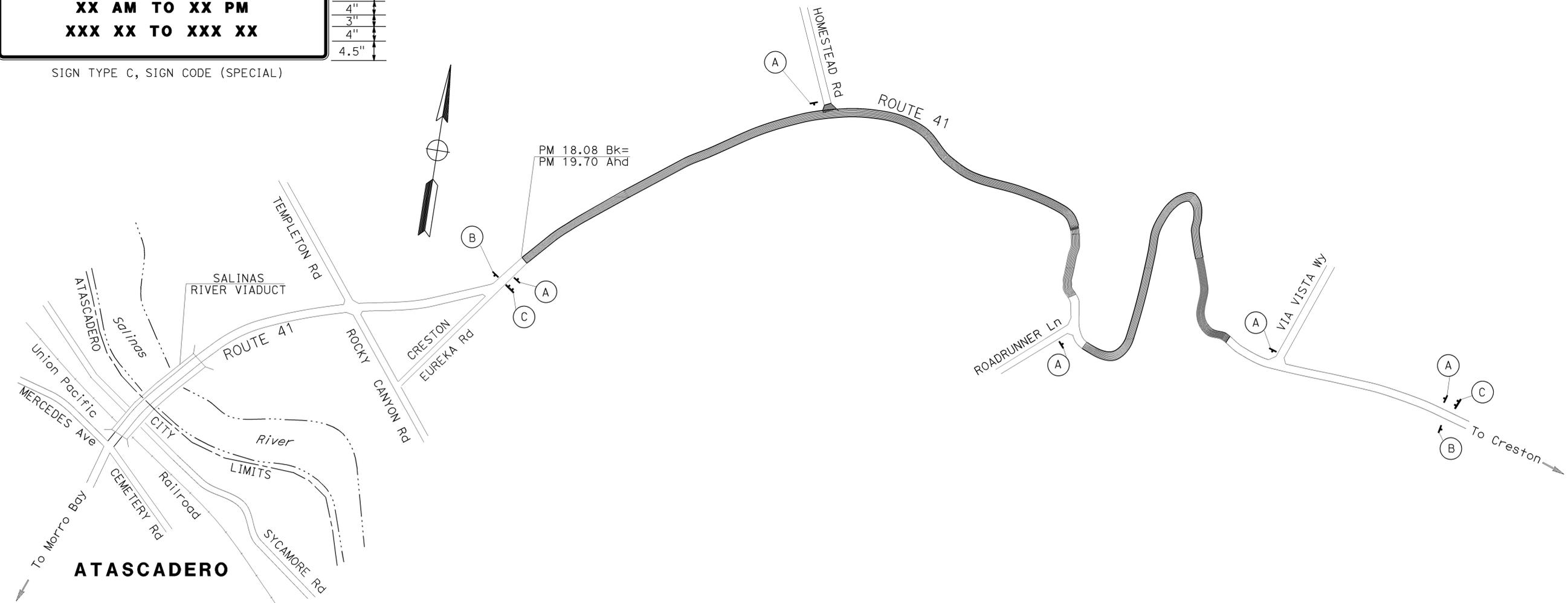
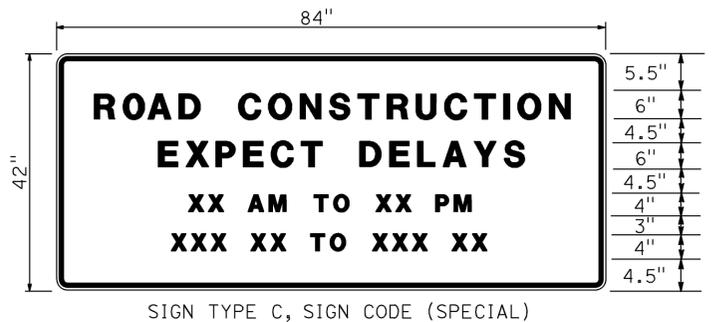
*Charles S. Trenbeth* 1-21-14  
 REGISTERED CIVIL ENGINEER DATE  
 1-21-14  
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER  
 C.S. TRENBETH  
 No. C 68937  
 Exp. 12-31-15  
 CIVIL  
 STATE OF CALIFORNIA

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

SIGN No. (X)	SIGN CODE		PANEL SIZE	SIGN MESSAGE	NUMBER OF POSTS AND SIZE	NUMBER OF SIGNS
	FEDERAL	CALIFORNIA				
A	W20-1		48" x 48"	ROAD WORK AHEAD	1 - 4" x 6"	5
B	G20-2		48" x 24"	END ROAD WORK	1 - 4" x 4"	2
C	(SPECIAL)		84" x 42"	ROAD CONSTRUCTION EXPECT DELAYS (6" CAPITAL LETTERS)	2 - 4" x 6"	2

NOTE:  
EXACT SIGN LOCATIONS TO BE DETERMINED BY THE ENGINEER.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** MAINTENANCE DESIGN  
 FUNCTIONAL SUPERVISOR: KELLY J. McCLAIN  
 CALCULATED/DESIGNED BY: KELLY J. McCLAIN  
 CHECKED BY: KELLY J. McCLAIN  
 REVISED BY: CHARLES S. TRENBETH  
 DATE REVISED: KELLY J. McCLAIN

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

LAST REVISION | DATE PLOTTED => 16-JAN-2014  
 12-16-13 TIME PLOTTED => 13:51

**GUARDRAIL**

LOCATION/POST MILE	DIRECTION	REMOVE GUARDRAIL	REMOVE CABLE ANCHOR ASSEMBLY (N)	MIDWEST GUARDRAIL SYSTEM (STEEL POST)	MIDWEST GUARDRAIL SYSTEM (8' W6 x 15 STEEL POST)	ALTERNATIVE IN-LINE TERMINAL SYSTEM	TREATED WOOD WASTE	GUARDRAIL LAYOUT (N)
		LF	EA	LF	LF	EA	LB	TYPE
PM 21.24 TO 21.35	SB	582	1		582	1	3,518	11D
PM 21.35 TO 21.39	SB	188	1	188		1	10,538	11D
<b>TOTAL</b>		770	2	188*	582*	2	14,056	

(N) NOT A SEPARATE PAY ITEM, FOR INFORMATION ONLY.  
 \*EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER

**PAVEMENT STRUCTURE QUANTITIES**

LOCATION/POST MILE	ASPHALTIC EMULSION (FOG SEAL COAT)	TACK COAT	COLD PLANE AC PAVEMENT		HOT MIX ASPHALT, SUPERPAVE (TYPE A)	
			0.10'	0.20'	3/8" GRADATION	1/2" GRADATION
	TON	TON	SQYD	SQYD	TON	TON
PM 19.7/20.7 PM 20.9/21.7						
REPAIR FAILED AREAS				3,600		486.1
OVERLAY Rte 41	1.5	8.5	1,420		2,244.0	
HMA DIKE					37.3	
<b>SUBTOTAL</b>	1.5	8.5	1,420	3,600	2,281.3	486.1
<b>TOTAL</b>	1.5	8.5	5,020		2,767.4	

**PAVEMENT DELINEATION QUANTITIES**

LOCATION/POST MILE	DETAIL No. OR PAVEMENT MARKING	REMOVE PAINTED TRAFFIC STRIPE	REMOVE YELLOW THERMOPLASTIC TRAFFIC STRIPE (HAZARDOUS WASTE)	REMOVE THERMOPLASTIC PAVEMENT MARKING	4" THERMOPLASTIC TRAFFIC STRIPE		THERMOPLASTIC PAVEMENT MARKING	PAVEMENT MARKER (RETROREFLECTIVE)	GUARD RAILING DELINEATOR	DESCRIPTION/ COMMENTS
					YELLOW SOLID	WHITE SOLID				
					LF	LF				
PM 19.7/20.7 PM 20.9/21.7	22				19,008			796		2 TRAFFIC STRIPES
	27B	19,008				19,008				
	STOP			22			22			
	LIMIT LINE			18			18			
	GUARD RAILING DELINEATOR								28	
<b>TOTAL</b>		19,008	19,008	40	38,016	40	796	28		

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	41	19.7/21.7	5	16

1-21-14  
 REGISTERED CIVIL ENGINEER DATE

1-21-14  
 PLANS APPROVAL DATE

C.S. TRENBETH  
 No. C 68937  
 Exp. 12-31-15  
 CIVIL

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**HMA DIKE**

LOCATION/POST MILE	DIRECTION	REMOVE ASPHALT CONCRETE DIKE	PLACE HOT MIX ASPHALT DIKE			HMA-SP (TYPE A)
			(TYPE D)	(TYPE E)	(TYPE F)	
			LF	LF	LF	
PM 21.56 TO 21.60	SB	160	160			9.0
PM 20.46 TO 20.50	SB	200	200			11.4
PM 21.44 TO 21.46	SB	100		100		2.5
PM 21.40 TO 21.44	SB	215	215			12.2
PM 21.26 TO 21.29	SB	165			165	2.2
<b>TOTAL</b>		840	575	100	165	37.3*

\* QUANTITY INCLUDED IN PAVEMENT STRUCTURE QUANTITIES TABLE  
 EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER

**SHOULDER BACKING**

LOCATION/POST MILE	DIRECTION	SHOULDER BACKING
		TON
PM 19.74 TO 19.80	NB	9
PM 19.86 TO 19.87	NB	2
PM 20.04 TO 20.27	NB	35
PM 20.90 TO 21.09	NB	29
PM 21.33 TO 21.38	NB	8
PM 21.53 TO 21.70	NB	26
PM 21.59 TO 21.70	SB	17
PM 21.51 TO 21.58	SB	11
PM 21.34 TO 21.40	SB	9
PM 21.01 TO 21.14	SB	20
PM 20.90 TO 20.99	SB	14
PM 19.70 TO 20.11	SB	62
<b>TOTAL</b>		242

**NOTE:**  
 EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.

**SUMMARY OF QUANTITIES Q-1**

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	41	19.7/21.7	6	16

*Charles S. Trenbeth* 1-21-14  
 REGISTERED CIVIL ENGINEER DATE

1-21-14  
 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.

### NORTHBOUND REPAIR FAILED AREAS

POST MILE LOCATIONS	LENGTH	WIDTH	DEPTH	COLD PLANE AC PAVEMENT	HMA-SP (TYPE A) 1/2" GRADATION	REMARKS
	LF	LF	LF	SQYD	TON	
19.70 TO 19.71	52	4	0.2	24	3.1	RIGHT WHEELTRACK
19.74 TO 19.90	840	4	0.2	374	49.8	RIGHT WHEELTRACK
19.81 TO 19.83	84	4	0.2	38	5.0	LEFT WHEEL TRACK
19.88 TO 19.89	32	4	0.2	15	1.9	LEFT WHEEL TRACK
19.92 TO 19.95	147	4	0.2	66	8.8	RIGHT WHEELTRACK
19.96 TO 19.98	90	4	0.2	40	5.4	LEFT WHEEL TRACK
20.04 TO 20.06	94	4	0.2	42	5.6	LEFT WHEEL TRACK
20.06 TO 20.07	73	12	0.2	98	13.0	WHOLE LANE WIDTH
20.07 TO 20.08	62	4	0.2	28	3.7	LEFT WHEEL TRACK
20.09 TO 20.10	32	4	0.2	15	1.9	LEFT WHEEL TRACK
20.11 TO 20.17	268	4	0.2	120	15.9	LEFT WHEEL TRACK
20.18 TO 20.20	105	4	0.2	47	6.3	RIGHT WHEELTRACK
20.20 TO 20.22	78	4	0.2	35	4.7	RIGHT WHEELTRACK
20.26 TO 20.27	53	4	0.2	24	3.2	LEFT WHEEL TRACK
20.47 TO 20.48	50	4	0.2	23	3.0	LEFT WHEEL TRACK
20.48 TO 20.50	107	4	0.2	48	6.4	RIGHT WHEELTRACK
20.51 TO 20.52	72	4	0.2	32	4.3	LEFT WHEEL TRACK
20.53 TO 20.54	50	4	0.2	23	3.0	LEFT WHEEL TRACK
20.56 TO 20.58	112	4	0.2	50	6.7	LEFT WHEEL TRACK
20.57 TO 20.60	147	4	0.2	66	8.8	RIGHT WHEELTRACK
20.62 TO 20.63	64	4	0.2	29	3.8	LEFT WHEEL TRACK
20.64 TO 20.65	37	12	0.2	50	6.6	WHOLE LANE WIDTH
20.67 TO 20.69	107	4	0.2	48	6.4	RIGHT WHEELTRACK
20.70 TO 20.71	46	4	0.2	21	2.8	RIGHT WHEELTRACK
20.92 TO 20.96	198	4	0.2	88	11.8	RIGHT WHEELTRACK
20.97 TO 20.98	40	4	0.2	18	2.4	RIGHT WHEELTRACK
21.11 TO 21.12	30	4	0.2	14	1.8	LEFT WHEEL TRACK
21.19 TO 21.21	75	4	0.2	34	4.5	LEFT WHEEL TRACK
21.22 TO 21.23	50	4	0.2	23	3.0	RIGHT WHEELTRACK
21.25 TO 21.26	80	4	0.2	36	4.8	LEFT WHEEL TRACK
21.26 TO 21.28	90	4	0.2	40	5.4	RIGHT WHEELTRACK
21.27 TO 21.29	104	4	0.2	47	6.2	LEFT WHEEL TRACK
21.29 TO 21.30	66	4	0.2	30	11.8	MIDDLE WHEELTRACK
21.30 TO 21.33	155	4	0.2	69	9.2	RIGHT WHEELTRACK
21.30 TO 21.33	130	4	0.2	58	7.7	LEFT WHEEL TRACK
21.34 TO 21.36	75	4	0.2	34	5.0	RIGHT WHEELTRACK
21.38 TO 21.39	30	4	0.2	14	1.8	RIGHT WHEELTRACK
21.39 TO 21.40	30	4	0.2	14	1.8	RIGHT WHEELTRACK
21.56 TO 21.57	76	4	0.2	34	4.5	RIGHT WHEELTRACK
21.63 TO 21.64	20	4	0.2	9	1.2	RIGHT WHEELTRACK
<b>SUBTOTAL</b>	-	-	-	1,918*	263.0*	

\* QUANTITIES INCLUDED IN PAVEMENT STRUCTURE TABLE.  
 EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.

### SOUTHBOUND REPAIR FAILED AREAS

POST MILE LOCATIONS	LENGTH	WIDTH	DEPTH	COLD PLANE AC PAVEMENT	HMA-SP (TYPE A) 1/2" GRADATION	REMARKS
	LF	LF	LF	SQYD	TON	
21.59 TO 21.60	26	4	0.2	12	1.6	RIGHT WHEELTRACK
21.56 TO 21.59	137	12	0.2	183	24.4	WHOLE LANE WIDTH
21.54 TO 21.56	119	4	0.2	53	7.0	RIGHT WHEELTRACK
21.50 TO 21.52	107	4	0.2	48	6.4	RIGHT WHEELTRACK
21.41 TO 21.42	26	4	0.2	12	1.6	RIGHT WHEELTRACK
21.40 TO 21.41	72	4	0.2	32	4.3	LEFT WHEEL TRACK
21.36 TO 21.38	90	4	0.2	40	5.4	RIGHT WHEELTRACK
21.35 TO 21.36	30	4	0.2	14	1.8	LEFT WHEEL TRACK
21.33 TO 21.34	45	4	0.2	20	2.7	RIGHT WHEELTRACK
21.25 TO 21.26	46	4	0.2	21	2.8	RIGHT WHEELTRACK
21.13 TO 21.15	104	4	0.2	47	6.2	RIGHT WHEELTRACK
21.06 TO 21.08	108	4	0.2	48	6.4	MIDDLE WHEEL TRACK
21.06 TO 21.07	56	4	0.2	25	3.4	LEFT WHEEL TRACK
20.94 TO 20.97	183	4	0.2	82	10.9	RIGHT WHEELTRACK
20.92 TO 20.94	93	4	0.2	42	5.5	LEFT WHEEL TRACK
20.70 TO 20.71	68	4	0.2	31	4.0	RIGHT WHEELTRACK
20.67 TO 20.69	84	4	0.2	38	5.0	RIGHT WHEELTRACK
20.65 TO 20.66	68	4	0.2	31	4.0	LEFT WHEEL TRACK
20.61 TO 20.64	194	4	0.2	87	11.5	RIGHT WHEELTRACK
20.56 TO 20.60	223	4	0.2	100	13.2	RIGHT WHEELTRACK
20.54 TO 20.55	60	4	0.2	27	3.6	RIGHT WHEELTRACK
20.54 TO 20.56	106	4	0.2	48	6.3	LEFT WHEEL TRACK
20.49 TO 20.50	32	4	0.2	15	1.9	RIGHT WHEELTRACK
20.38 TO 20.39	50	4	0.2	23	3.0	LEFT WHEEL TRACK
20.41 TO 20.42	41	4	0.2	19	2.5	RIGHT WHEELTRACK
20.34 TO 20.35	47	4	0.2	21	2.8	RIGHT WHEELTRACK
20.31 TO 20.35	240	4	0.2	107	14.2	LEFT WHEEL TRACK
20.06 TO 20.07	31	4	0.2	14	1.9	RIGHT WHEELTRACK
20.06 TO 20.07	40	4	0.2	18	2.4	LEFT WHEEL TRACK
19.80 TO 19.92	650	4	0.2	289	38.5	RIGHT WHEELTRACK
19.72 TO 19.75	152	4	0.2	68	9.0	LEFT WHEEL TRACK
19.72 TO 19.75	150	4	0.2	67	8.9	RIGHT WHEELTRACK
<b>SUBTOTAL (SOUTHBOUND)</b>				1,682	223.1	
<b>SUBTOTAL (NORTHBOUND)</b>				1,918	263.0	
<b>GRAND TOTAL</b>				3,600*	486.1*	

\* QUANTITIES INCLUDED IN PAVEMENT STRUCTURE TABLE.  
 EXACT LOCATIONS TO BE DETERMINED BY THE ENGINEER.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
**Caltrans** MAINTENANCE DESIGN  
 FUNCTIONAL SUPERVISOR: KELLY J. McCLAIN  
 CALCULATED/DESIGNED BY: [Blank]  
 CHECKED BY: [Blank]  
 CHARLES S. TRENBETH  
 KELLY J. McCLAIN  
 REVISED BY: [Blank]  
 DATE REVISED: [Blank]

## SUMMARY OF QUANTITIES Q-2

LAST REVISION | DATE PLOTTED => 16-JAN-2014  
 01-14-14 | TIME PLOTTED => 1:3:51

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	41	19.7/21.7	7	16

*Grace M. Tsushima*  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

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

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

TO ACCOMPANY PLANS DATED 1-21-14

**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
∅	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.

**REVISED STANDARD PLAN RSP A10B**

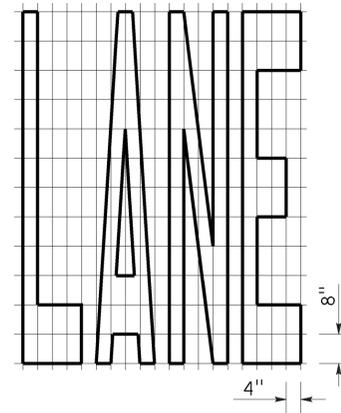
	<b>M</b>
Maint	MAINTENANCE
Max	MAXIMUM
MB	METAL BEAM
MBB	METAL BEAM BARRIER
MBGR	METAL BEAM GUARD RAILING
Med	MEDIAN
MGS	MIDWEST GUARDRAIL SYSTEM
MH	MANHOLE
Min	MINIMUM
Misc	MISCELLANEOUS
Misc I & S	MISCELLANEOUS IRON AND STEEL
Mkr	MARKER
Mod	MODIFIED, MODIFY
Mon	MONUMENT
MP	METAL PLATE
MPGR	METAL PLATE 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

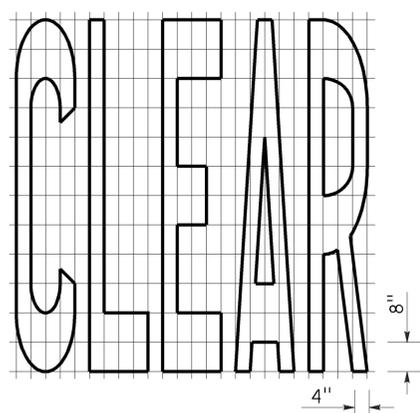
	<b>S</b>
S	SOUTH, SUPPLEMENT
SAE	STRUCTURE APPROACH EMBANKMENT
Salv	SALVAGE
SAPP	STRUCTURAL ALUMINUM PLATE PIPE
SB	SOUTHBOUND
SC	SAND CUSHION
SCSP	SLOTTED CORRUGATED STEEL PIPE
SD	STORM DRAIN
Sec	SECOND, SECTION
Sep	SEPARATION
SG	SUBGRADE
Shld	SHOULDER
Sht	SHEET
Sim	SIMILAR
ℒ	STATION LINE
SM	SELECTED 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
WWLOL	WINGWALL LAYOUT LINE
	<b>X</b>
X Sec	CROSS SECTION
Xing	CROSSING
	<b>Y</b>
Yr	YEAR
Yrs	YEARS

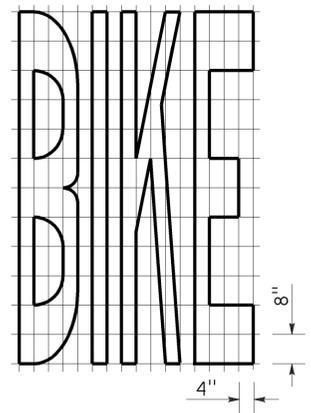
TO ACCOMPANY PLANS DATED 1-21-14



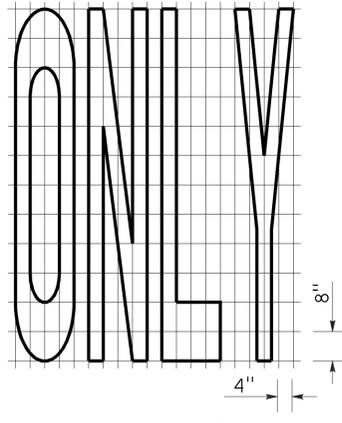
A=24 ft<sup>2</sup>



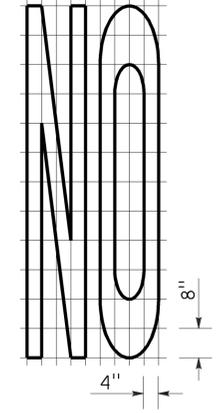
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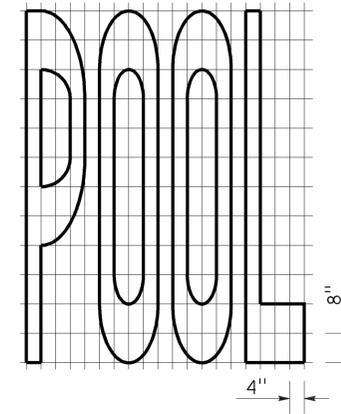
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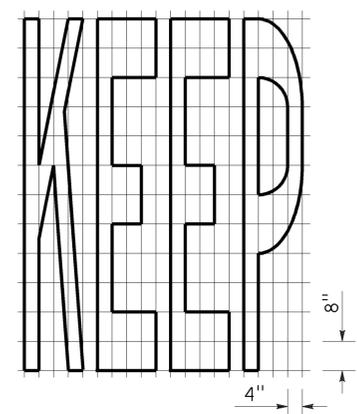
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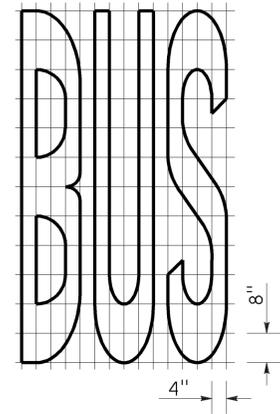
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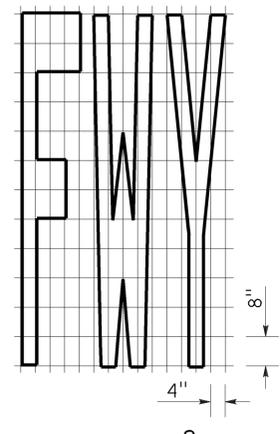
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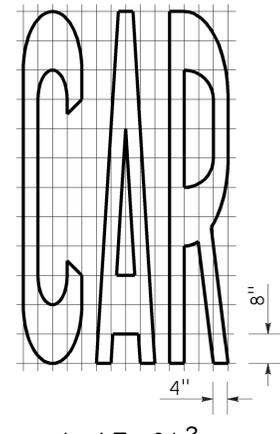
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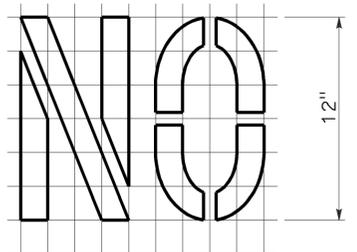


A=16 ft<sup>2</sup>



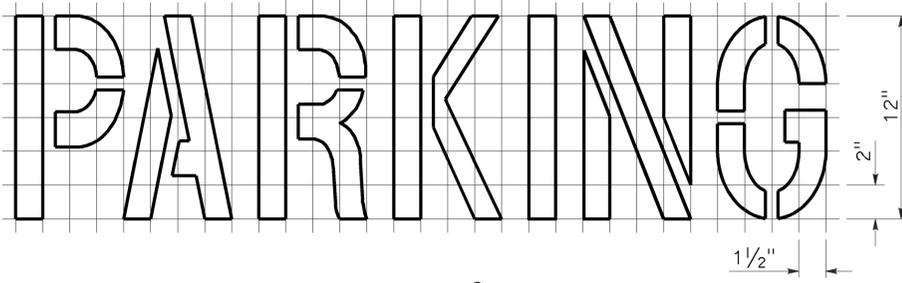
A=17 ft<sup>2</sup>

WORD MARKINGS			
ITEM	ft <sup>2</sup>	ITEM	ft <sup>2</sup>
LANE	24	NO	14
POOL	23	BIKE	21
CAR	17	BUS	20
CLEAR	27	ONLY	22
KEEP	24	FWY	16



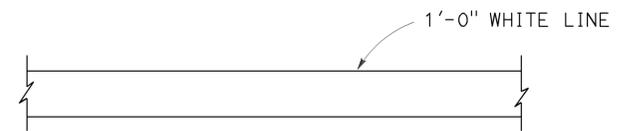
A=2 ft<sup>2</sup>

See Notes 6 and 7

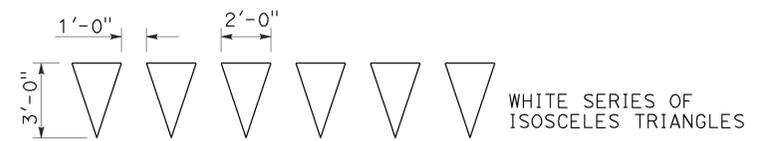


A=2 ft<sup>2</sup>

See Notes 6 and 7



LIMIT LINE (STOP LINE)



YIELD LINE

**NOTES:**

1. If a message consists of more than one word, it should read "UP", i.e., the first word should be nearest the driver.
2. The space between words should be at least four times the height of the characters for low speed roads, but not more than ten times the height of the characters. The space may be reduced appropriately where there is limited space because of local conditions.
3. Minor variations in dimensions may be accepted by the Engineer.
4. Portions of a letter, number or symbol may be separated by connecting segments not to exceed 2" in width.
5. The words "NO PARKING" pavement marking is to be used for parking facilities. For typical locations of markings, see Standard Plans A90A and A90B.
6. The words "NO PARKING", shall be painted in white letters no less than 1'-0" high on a contrasting background and located so that it is visible to traffic enforcement officials.

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**PAVEMENT MARKINGS  
 WORDS, LIMIT AND YIELD LINES**  
 NO SCALE

RSP A24E DATED JULY 20, 2012 SUPERSEDES STANDARD PLAN A24E  
 DATED MAY 20, 2011 - PAGE 17 OF THE STANDARD PLANS BOOK DATED 2010.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	41	19.7/21.7	9	16

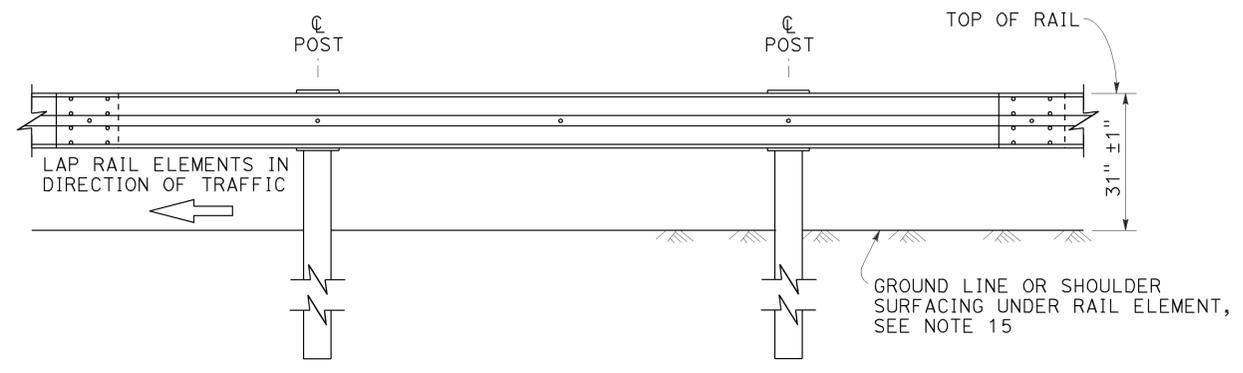
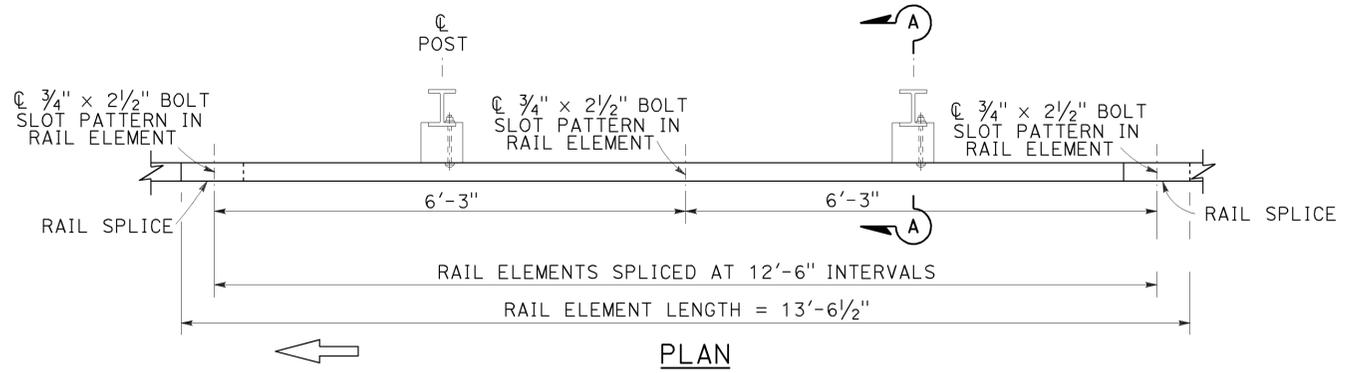
**Randell D. Hiatt**  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

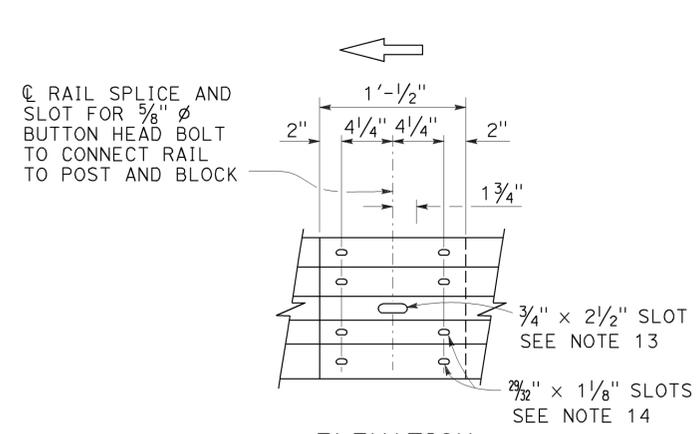
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TO ACCOMPANY PLANS DATED 1-21-14

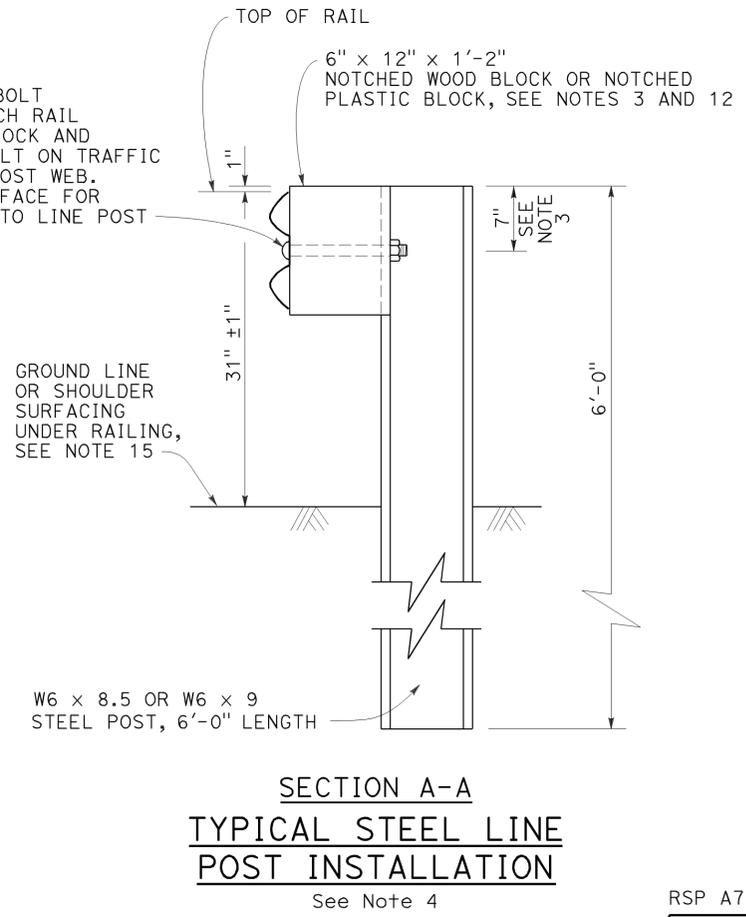
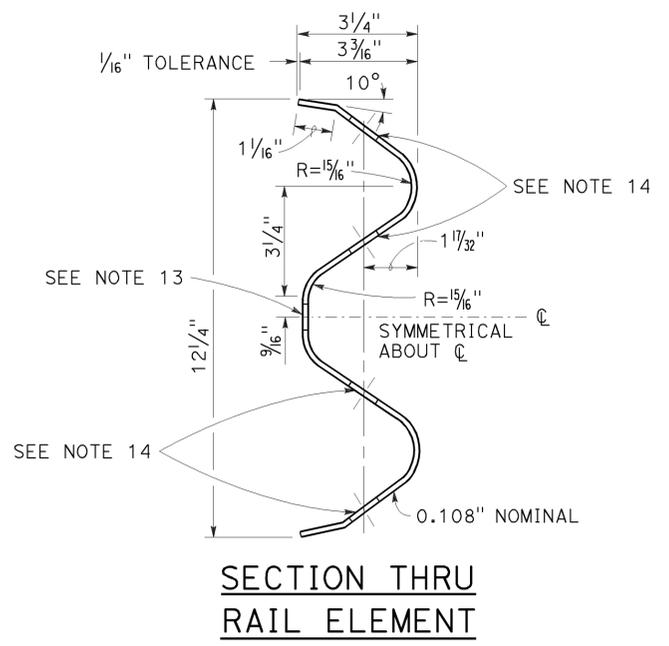
**Randell D. Hiatt**  
REGISTERED PROFESSIONAL ENGINEER  
No. C50200  
Exp. 6-30-15  
CIVIL  
STATE OF CALIFORNIA



**MIDWEST GUARDRAIL SYSTEM WITH STEEL POSTS AND NOTCHED WOOD OR NOTCHED RECYCLED PLASTIC BLOCKS**



- Connect the overlapped end of the rail elements with 5/8" Ø x 1 3/8" button head oval shoulder splice bolts inserted into the 7/32" x 1 1/8" slots and bolted together with 5/8" Ø recessed hex nuts. Recess of hex nut points toward rail element. A total of 8 bolts and nuts are to be used at each rail splice connection.
- The ends of the rail elements are to be overlapped in the direction of traffic (see details).
- Where end cap is to be attached to the end of a rail element, a total of 4 of the above described splice bolts and nuts are to be used.



**NOTES:**

- For details of wood post installations, see Revised Standard Plan RSP A77L1.
- For details of standard hardware used to construct MGS, see Revised Standard Plan RSP A77M1.
- For details of steel posts and notched wood blocks used to construct MGS, see Revised Standard Plan RSP A77N2.
- For additional installation details, see Revised Standard Plan RSP A77N3.
- MGS post spacing to be 6'-3" center to center, except as otherwise noted.
- For MGS typical layouts, see the A77P, A77Q and A77R Series of Standard Plans.
- If railing is connected to terminal system end treatment, use 31" height terminal system end treatment.
- For MGS end anchor details, see Revised Standard Plans RSP A77S1 and RSP A77T2.
- For details of MGS transition to bridge railing, see Revised Standard Plan RSP A77U4.
- For additional details of MGS connection to bridge railings, see Revised Standard Plans RSP A77U1, RSP A77U2 and RSP A77V1.
- For dike positioning and MGS delineation details, see Revised Standard Plan RSP A77N4.
- Notched face of block faces steel post.
- Slotted hole for bolted connection of rail element to block and post. See "Section Thru Rail Element".
- Slotted holes for splice bolts to overlap ends of rail element. See "Section Thru Rail Element".
- Install posts in soil.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM STANDARD RAILING SECTION (STEEL POST WITH NOTCHED WOOD OR NOTCHED RECYCLED PLASTIC BLOCK)**

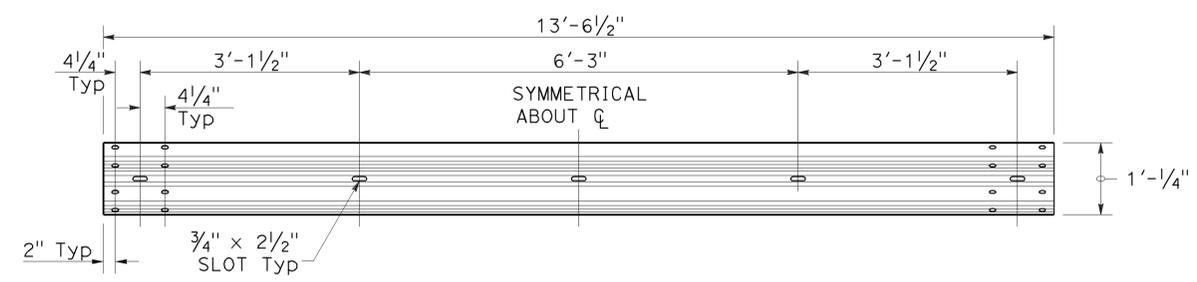
NO SCALE

RSP A77L2 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77L2**

2010 REVISED STANDARD PLAN RSP A77L2

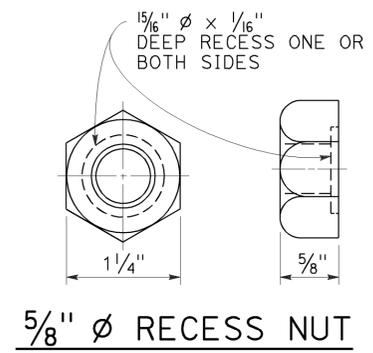
TO ACCOMPANY PLANS DATED 1-21-14



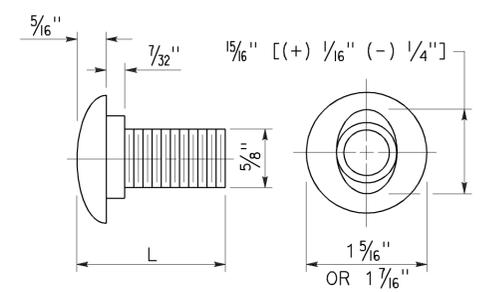
**TYPICAL RAIL ELEMENT**

**NOTE:**

1. Slotted holes for splice bolts to overlap ends of rail element.



**5/8" Ø RECESS NUT**

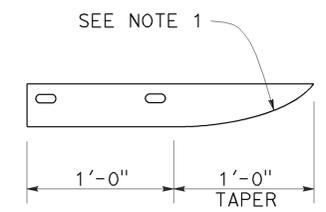


**5/8" Ø BUTTON HEAD BOLT**

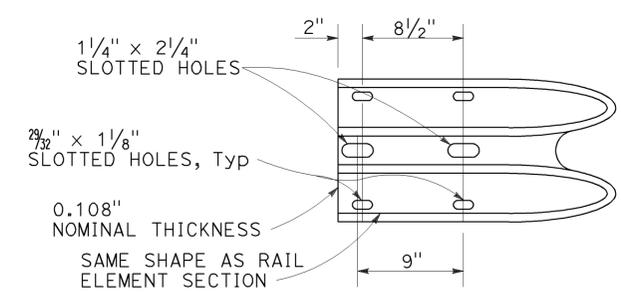
**BUTTON HEAD BOLT**

L	THREAD LENGTH
1 3/8"	FULL THREAD LENGTH
2"	FULL THREAD LENGTH
10"	4" Min THREAD LENGTH
18"	4" Min THREAD LENGTH
20"	4" Min THREAD LENGTH
22"	4" Min THREAD LENGTH
26"	4" Min THREAD LENGTH
36"	4" Min THREAD LENGTH
** 2 3/4"	2" Min THREAD LENGTH
** 19"	4" Min THREAD LENGTH

\*\* For nested rail applications.



**PLAN**



**ELEVATION  
END CAP  
(TYPE A)**

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM  
STANDARD HARDWARE**

NO SCALE

RSP A77M1 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77M1**

2010 REVISED STANDARD PLAN RSP A77M1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	41	19.7/21.7	11	16

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

November 15, 2013  
PLANS APPROVAL DATE

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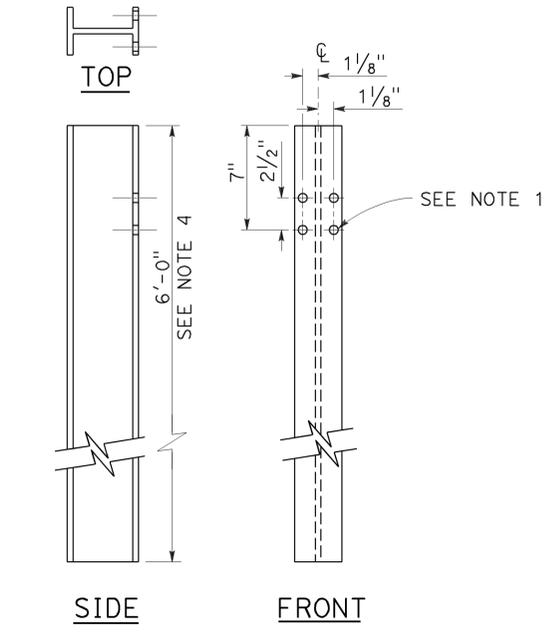
REGISTERED PROFESSIONAL ENGINEER  
No. C50200  
Exp. 6-30-15  
CIVIL  
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 1-21-14

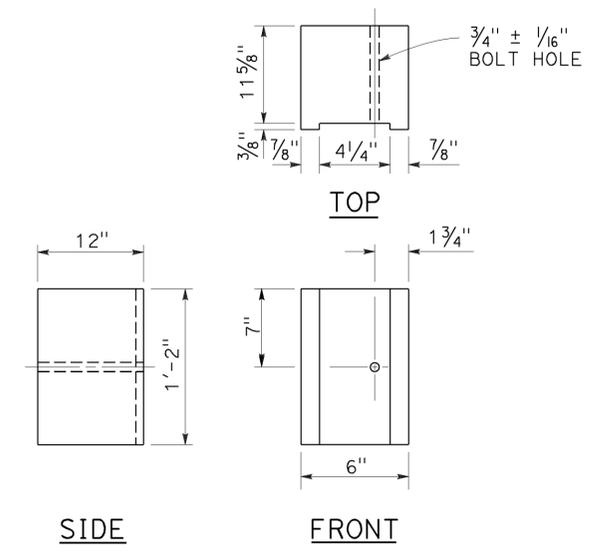
**NOTES:**

1. All holes in steel post shall be  $\frac{13}{16}$ " Dia maximum.
2. Dimensions shown for wood block are nominal.
3. Notched face of block faces steel post.
4. 6'-0" length posts to be used for typical roadway installation. See Revised Standard Plan RSP A77N3.
5. See Revised Standard Plan RSP A77L3 for use of 6" x 8" and 8" x 8" notched wood blocks.
6. This post and 8" x 12" block combination to be used for line post sections of MGS on narrow roadways and where strengthened line post sections of MGS are warranted to shield fixed objects.

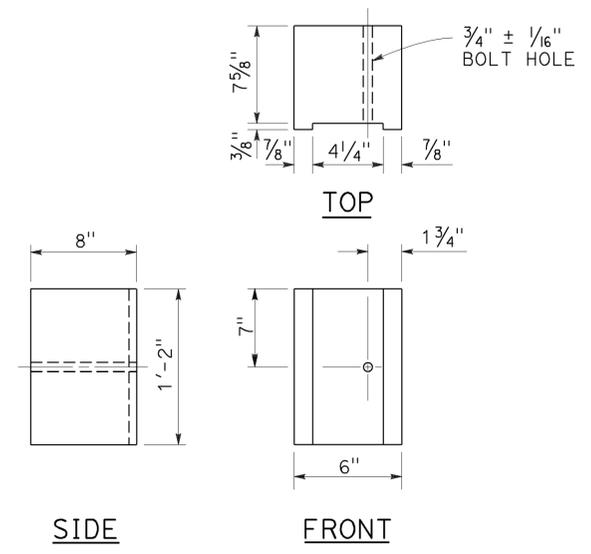
2010 REVISED STANDARD PLAN RSP A77N2



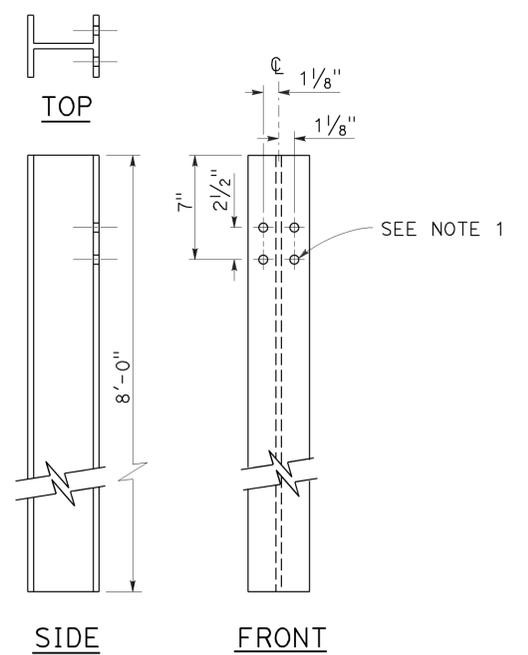
**W6 x 9 OR W6 x 8.5  
STEEL POST**  
See Note 4



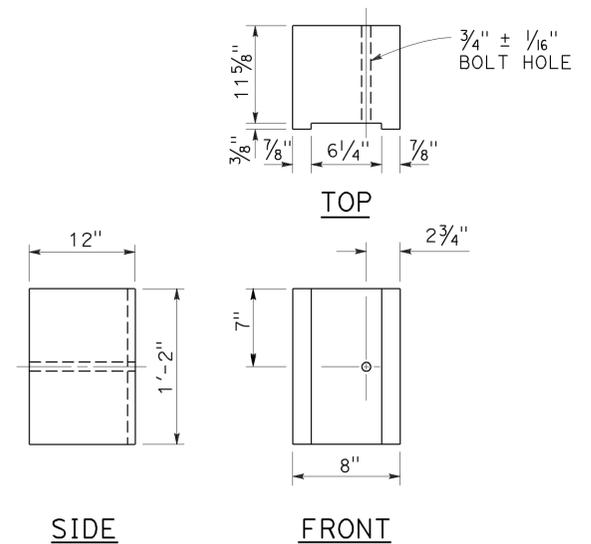
**6" x 12"  
NOTCHED WOOD BLOCK**  
See Notes 2 and 3



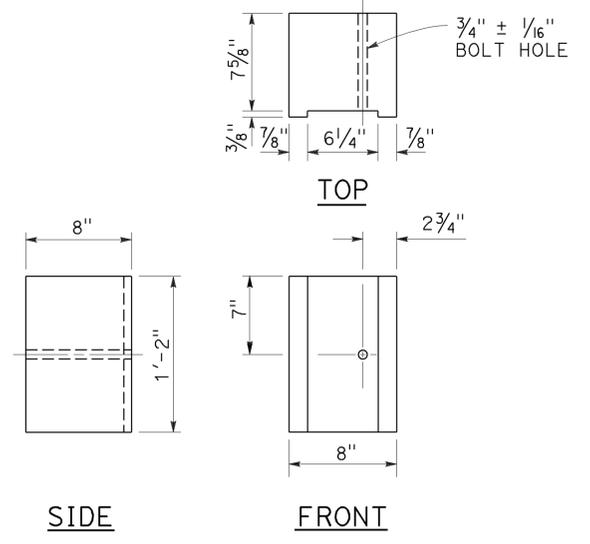
**6" x 8"  
NOTCHED WOOD BLOCK**  
Only for use with metal beam guard railing. See Note 5



**W6 x 15  
STEEL POST**  
See Note 6



**8" x 12"  
NOTCHED WOOD BLOCK**  
See Notes 2 and 3



**8" x 8"  
NOTCHED WOOD BLOCK**  
Only for use with metal beam guard railing. See Note 5

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM  
STEEL POST AND  
NOTCHED WOOD BLOCK DETAILS**

NO SCALE

RSP A77N2 DATED NOVEMBER 15, 2013 SUPERSEDES RSP A77N2  
DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

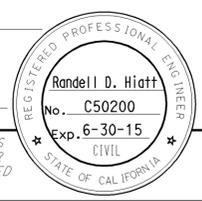
**REVISED STANDARD PLAN RSP A77N2**

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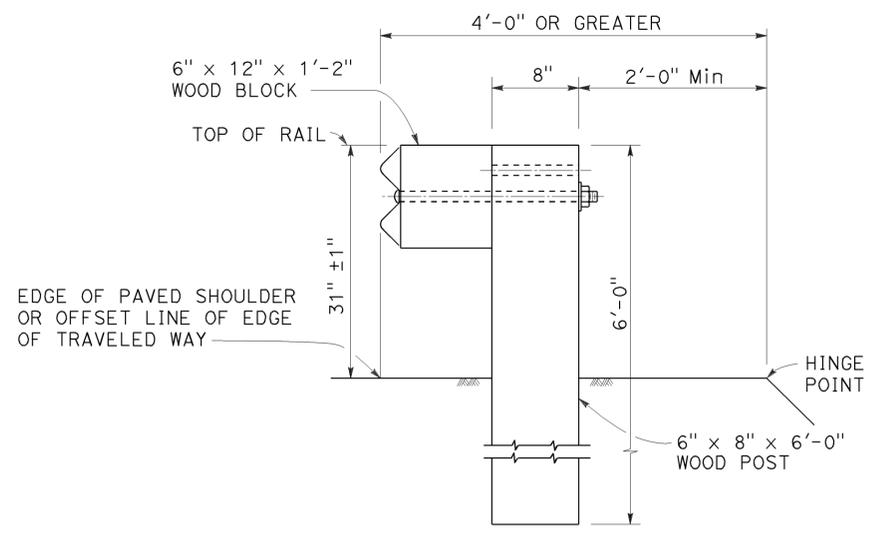
*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

November 15, 2013  
PLANS APPROVAL DATE

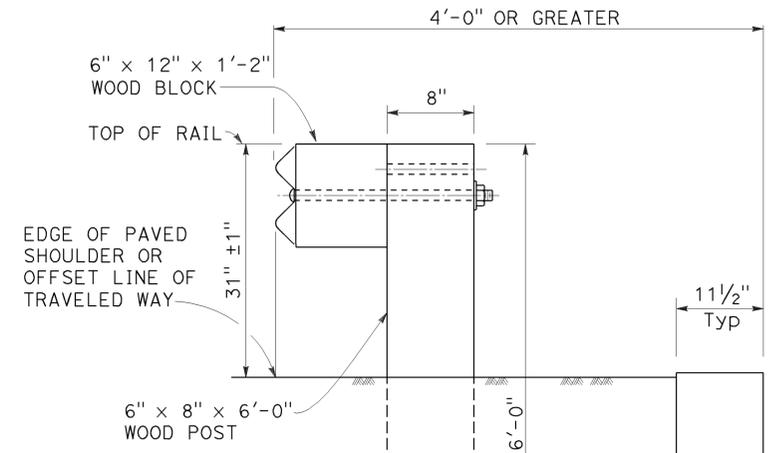
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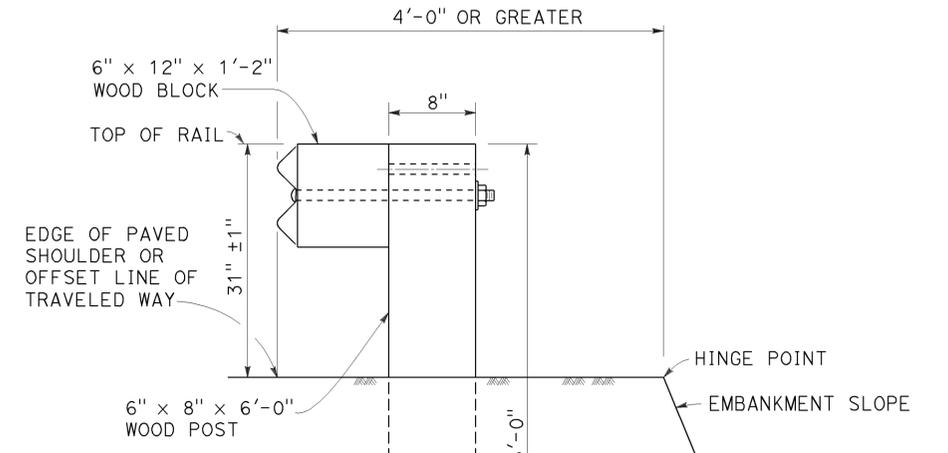
TO ACCOMPANY PLANS DATED 1-21-14



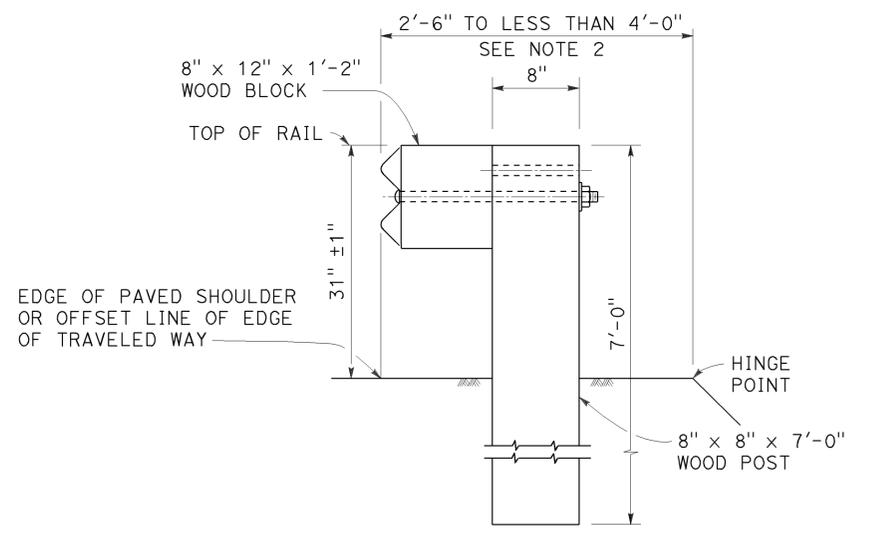
**DETAIL A**  
**TYPICAL ROADWAY**  
**INSTALLATION**  
See Note 1



**DETAIL C**  
**INSTALLATION AT EARTH RETAINING WALLS**



**DETAIL D**



**DETAIL B**  
**NARROW ROADWAY**  
**INSTALLATION**  
See Note 1

**POST EMBEDMENT**

**NOTES:**

1. These installation details also applicable to steel line post installations. For Detail A, C, and D, where steel line post installations are constructed, W6 x 8.5 or W6 x 9 steel post, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or notched recycled plastic blocks are to be used in place of the size of wood post and wood block shown. For Detail B, where steel line post installations are constructed, W6 x 15 steel post, 8'-0" in length, with 8" x 12" x 1'-2" notched wood blocks or notched recycled plastic blocks are to be used in place of the size of wood post and wood block shown. For additional installation details, see Revised Standard Plan RSP A77L1 and RSP A77L2.
2. Where the distance between the face of the rail and the hinge point is less than 2'-6", see the Project Plans for special details.
3. For dike positioning with MGS installations, see Revised Standard Plan RSP A77N4.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM**  
**TYPICAL LINE POST**  
**EMBEDMENT AND**  
**HINGE POINT OFFSET DETAILS**

NO SCALE

RSP A77N3 DATED NOVEMBER 15, 2013 SUPERSEDES RSP A77N3  
DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77N3**

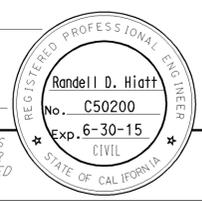
2010 REVISED STANDARD PLAN RSP A77N3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
05	SLO	41	19.7/21.7	13	16

*Randell D. Hiatt*  
REGISTERED CIVIL ENGINEER

July 19, 2013  
PLANS APPROVAL DATE

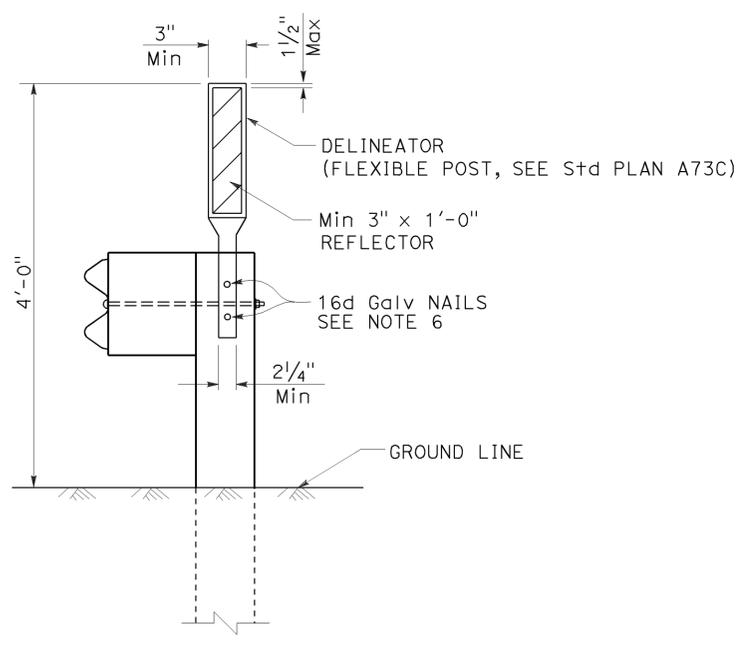
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



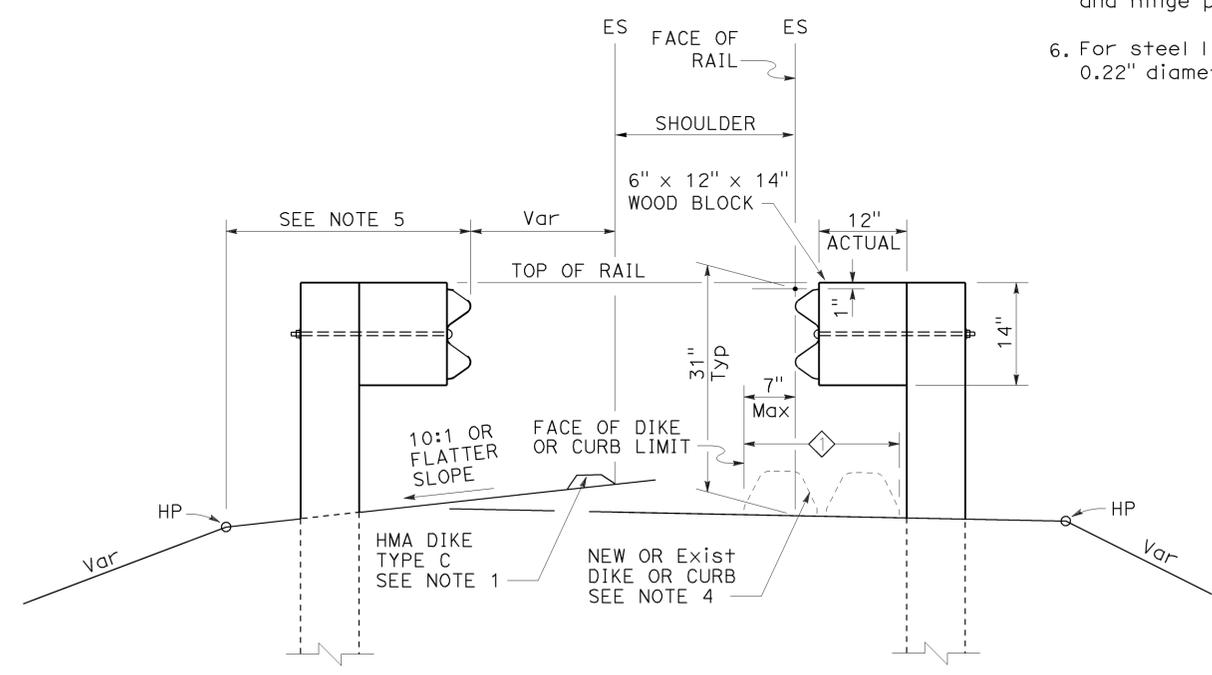
TO ACCOMPANY PLANS DATED 1-21-14

**NOTES:**

1. When necessary to place dike more than 7" in front of face of MGS, only Type C dike may be used. For dike details, see Revised Standard Plan RSP A87B.
2. For standard railing post embedment, see Revised Standard Plan RSP A77N3.
3. MGS delineation to be used where shown on the Project Plans.
4. When dike or curb is placed under MGS, the maximum height of the dike or curb shall be 6". Mountable dike should not be used. For dike and curb details, see Revised Standard Plans RSP A87A and RSP A87B.
5. For details of typical distance between the face of rail and hinge point, see Revised Standard Plan RSP A77N3.
6. For steel line posts, use 1/4" - 20 self-tapping screws in 0.22" diameter holes or 1/4" bolts in 3/32" diameter holes.



**MGS DELINEATION**  
See Note 3



**DIKE POSITIONING**  
See Note 1

◇ PERMISSIBLE DIKE OR CURB PLACEMENT AREA

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM  
TYPICAL RAILING DELINEATION  
AND DIKE POSITIONING DETAILS**  
NO SCALE

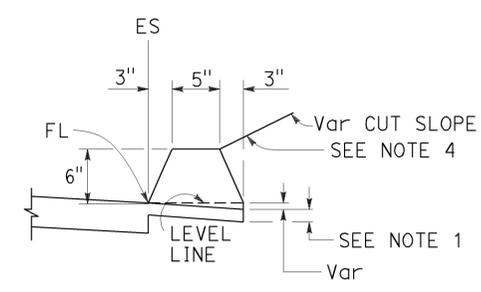
RSP A77N4 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A77N4**

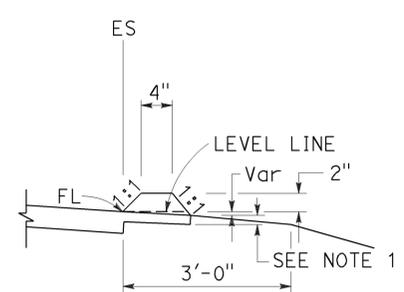
2010 REVISED STANDARD PLAN RSP A77N4



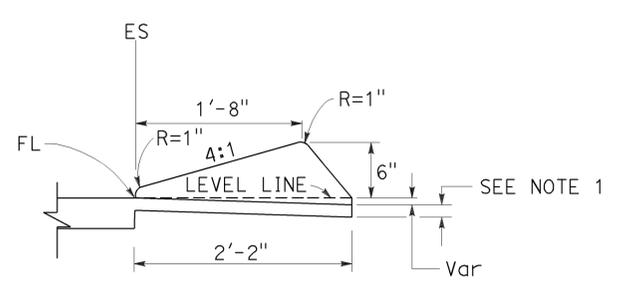
TO ACCOMPANY PLANS DATED 1-21-14



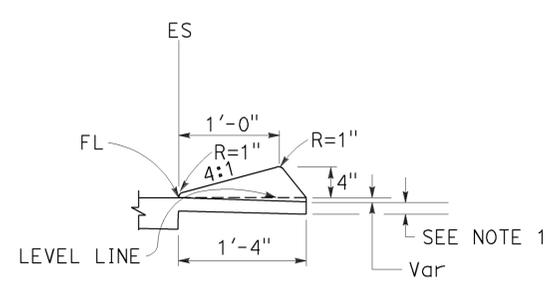
**TYPE A**  
See Note 3



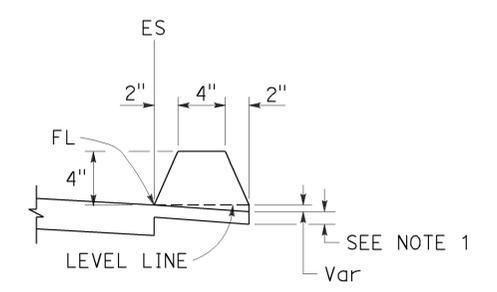
**TYPE C**



**TYPE D**

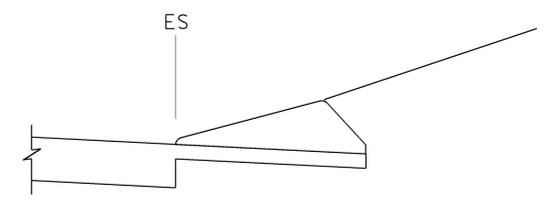


**TYPE E**

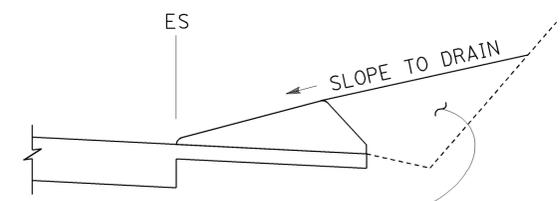


**TYPE F**  
See Note 5

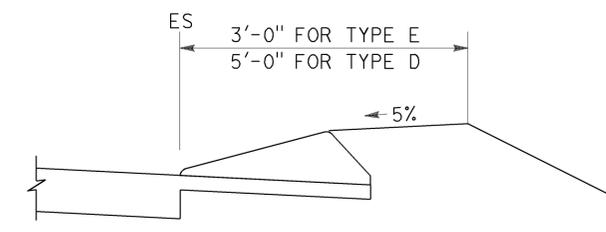
**DIKES**



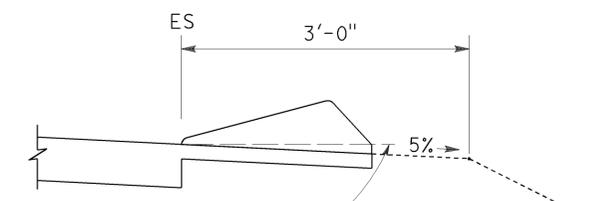
**CASE C-1**  
Cut Slope



**CASE C-2**  
Cut Slope



**CASE F**



**CASE R**  
See Note 2

**TYPE D AND E BACKFILL DETAILS**

**NOTES:**

1. For HMA shoulders only, extend top layer of HMA placed on the shoulder under dike with no joint at the ES. For projects with OGFC shoulders, do not extend OGFC under dike. See project plans for modified dike detail.
2. Case R applies to retrofit only projects where restrictive conditions do not provide enough width for Case F backfill.
3. Type A dike only to be used where restrictive slope conditions do not provide enough width to use Type D or Type E dike.
4. Fill and compact with excavated material to top of dike.
5. Use Type F dike, where dike is required with guard railing installations. See Revised Standard Plan RSP A77N4 for dike positioning details.

**DIKE QUANTITIES**

TYPE	CUBIC YARDS PER LINEAR FOOT
A	0.0135
C	0.0038
D	0.0293
E	0.0130
F	0.0066

Quantities based on 5% cross slope.

STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

**HOT MIX ASPHALT DIKES**

NO SCALE

RSP A87B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN A87B  
DATED MAY 20, 2011 - PAGE 120 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP A87B**

2010 REVISED STANDARD PLAN RSP A87B

TO ACCOMPANY PLANS DATED 1-21-14

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

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

\*\* - Longitudinal buffer space or flagger station spacing

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

TABLE 3

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

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

2010 REVISED STANDARD PLAN RSP T9

**NOTES:**

See Revised Standard Plan RSP T9 for tables.

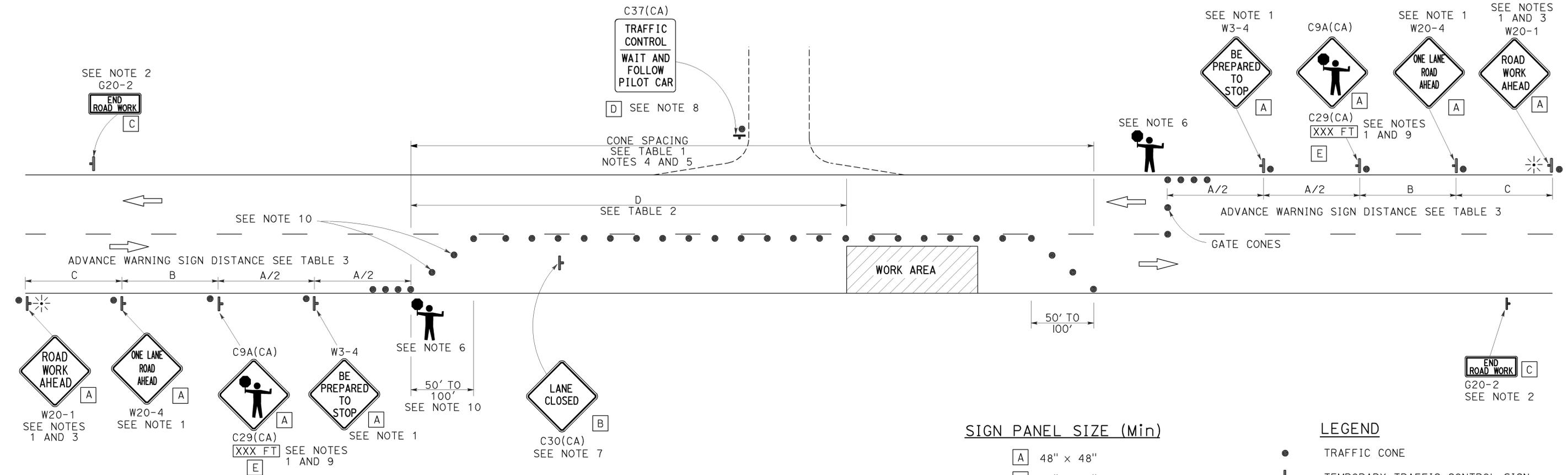
Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as appropriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.

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.

**TYPICAL LANE CLOSURE WITH REVERSIBLE CONTROL**

TO ACCOMPANY PLANS DATED 1-21-14



**NOTES:**

- Each advance warning sign in each direction of travel 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 control 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 W20-4 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.
- Additional advance flaggers may be required. Flagger should stand in a conspicuous place, be visible to approaching traffic as well as approaching vehicles after the first vehicle has stopped. During the hours of darkness, the flagging station and flagger shall be illuminated and clearly visible to approaching traffic. The illumination footprint of the lighting on the ground shall be at least 20' in diameter. Place a minimum of four cones at 50' intervals in advance of flagger station as shown.
- Place C30(CA) "LANE CLOSED" sign at 500' to 1000' intervals throughout extended work areas. They are optional if the work area is visible from the flagger station.
- When a pilot car is used, place a C37(CA) "TRAFFIC CONTROL-WAIT AND FOLLOW PILOT CAR" sign with black legend on white background at all intersections, driveways and alleys without a flagger within traffic control area. Signs shall be clean and visible at all times. Where traffic can not be effectively self-regulated, at least one flagger shall be used at each intersection within traffic control area.
- An optional C29(CA) sign may be placed below the C9A(CA) sign.
- Either traffic cones or barricades shall be placed on the taper. Barricades shall be Type I, II, or III.

**SIGN PANEL SIZE (Min)**

- A 48" x 48"
- B 30" x 30"
- C 36" x 18"
- D 36" x 42"
- E 20" x 7"

**LEGEND**

- TRAFFIC CONE
- ⊥ TEMPORARY TRAFFIC CONTROL SIGN
- ⚡ PORTABLE FLASHING BEACON
- 👤 FLAGGER

STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION  
**TRAFFIC CONTROL SYSTEM  
 FOR LANE CLOSURE ON  
 TWO LANE CONVENTIONAL  
 HIGHWAYS**  
 NO SCALE

RSP T13 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T13  
 DATED MAY 20, 2011 - PAGE 241 OF THE STANDARD PLANS BOOK DATED 2010.

**REVISED STANDARD PLAN RSP T13**

2010 REVISED STANDARD PLAN RSP T13