

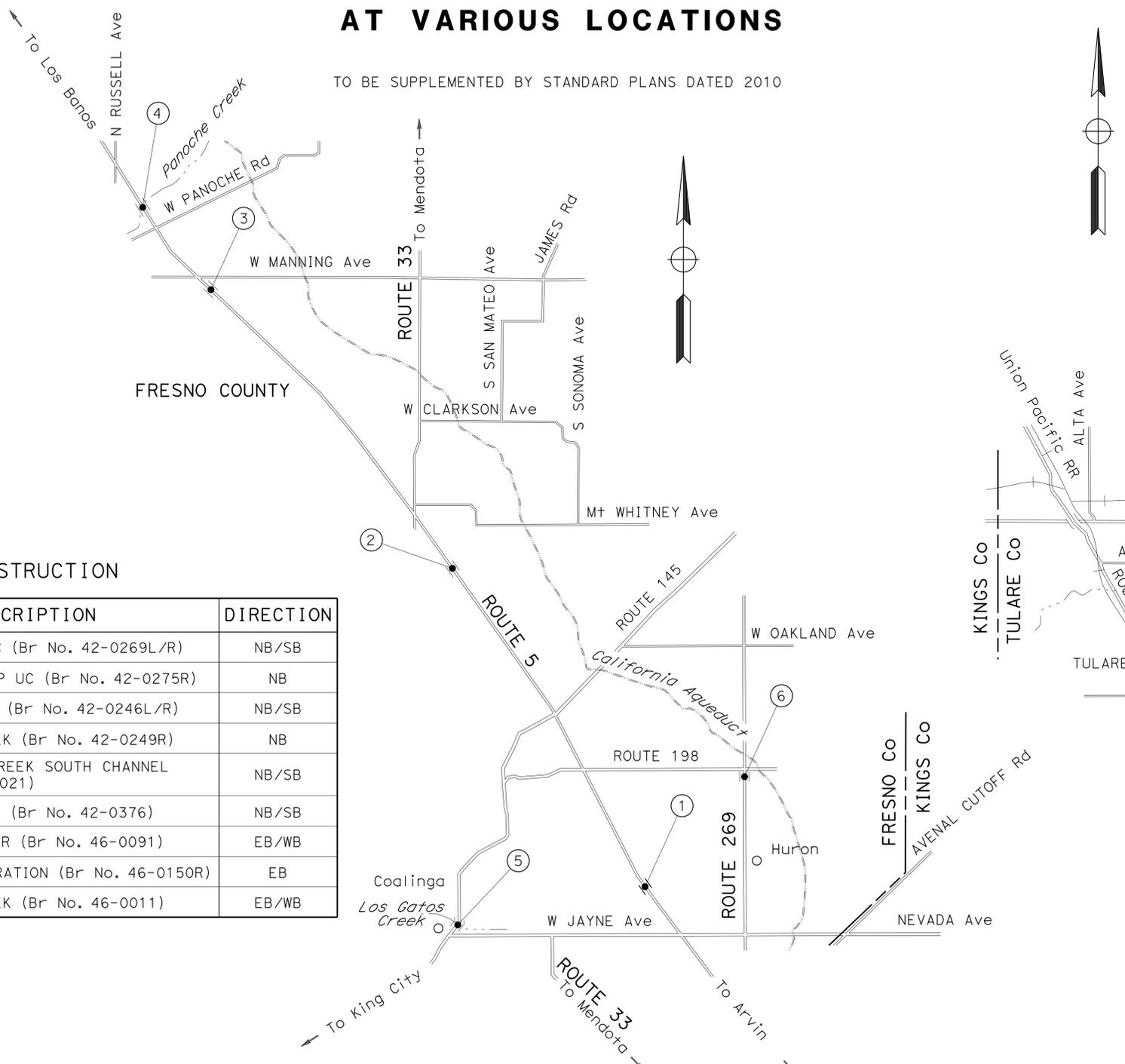
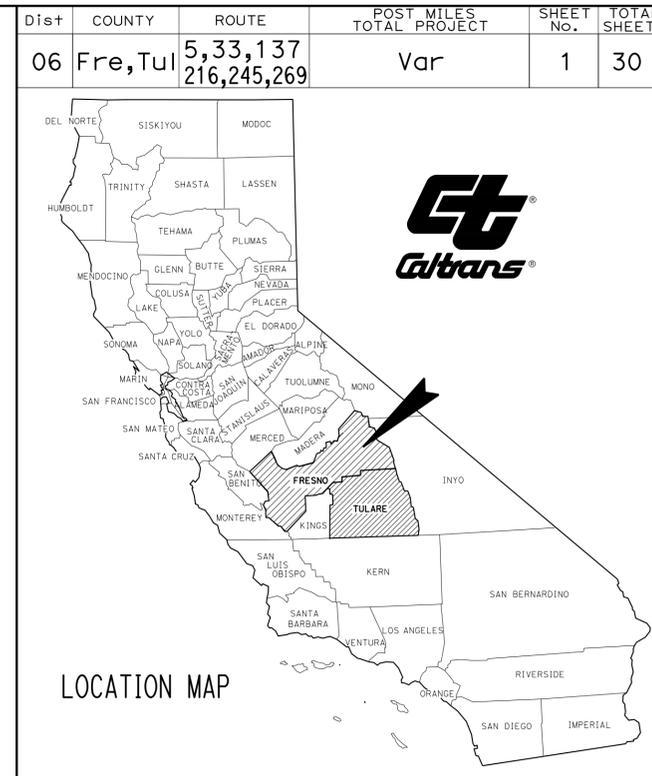
INDEX OF PLANS

Sheet No.	DESCRIPTION
1	TITLE AND LOCATION MAP
2-3	CONSTRUCTION DETAILS
4	CONSTRUCTION AREA SIGNS
5	SUMMARY OF QUANTITIES
6-19	REVISED STANDARD PLANS
20-30	STRUCTURE PLANS

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY**
**IN FRESNO AND
TULARE COUNTIES**
AT VARIOUS LOCATIONS

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010



LOCATIONS OF CONSTRUCTION

Loc No.	COUNTY	ROUTE	PM	DESCRIPTION	DIRECTION
①	Fre	5	9.23	W GALE Ave UC (Br No. 42-0269L/R)	NB/SB
②		5	26.8	PARKHURST EQUIP UC (Br No. 42-0275R)	NB
③		5	44.93	TUMEY GULCH (Br No. 42-0246L/R)	NB/SB
④		5	49.99	PANOCHÉ CREEK (Br No. 42-0249R)	NB
⑤		33	16.68	LOS GATOS CREEK SOUTH CHANNEL (Br No. 42-0021)	NB/SB
⑥	Tul	269	12.21	HURON DIKE (Br No. 42-0376)	NB/SB
⑦		216	18.68	KAWEAH RIVER (Br No. 46-0091)	EB/WB
⑧		137	16.63	JCT 137/99 SEPARATION (Br No. 46-0150R)	EB
⑨		245	1.39	YOKHOL CREEK (Br No. 46-0011)	EB/WB

PROJECT MANAGER
BILL MOSES

DESIGN ENGINEER
FRANK GONZALEZ

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

NO SCALE

PROJECT ENGINEER REGISTERED CIVIL ENGINEER
 DATE: 02-12-14
 October 06, 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.

CONTRACT No.	06-OP0604
PROJECT ID	0612000163

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE DESIGN

FUNCTIONAL SUPERVISOR
 FRANK GONZALEZ

CALCULATED/DESIGNED BY
 CHECKED BY

LEE XIONG
 VICTOR ECHEVESTE

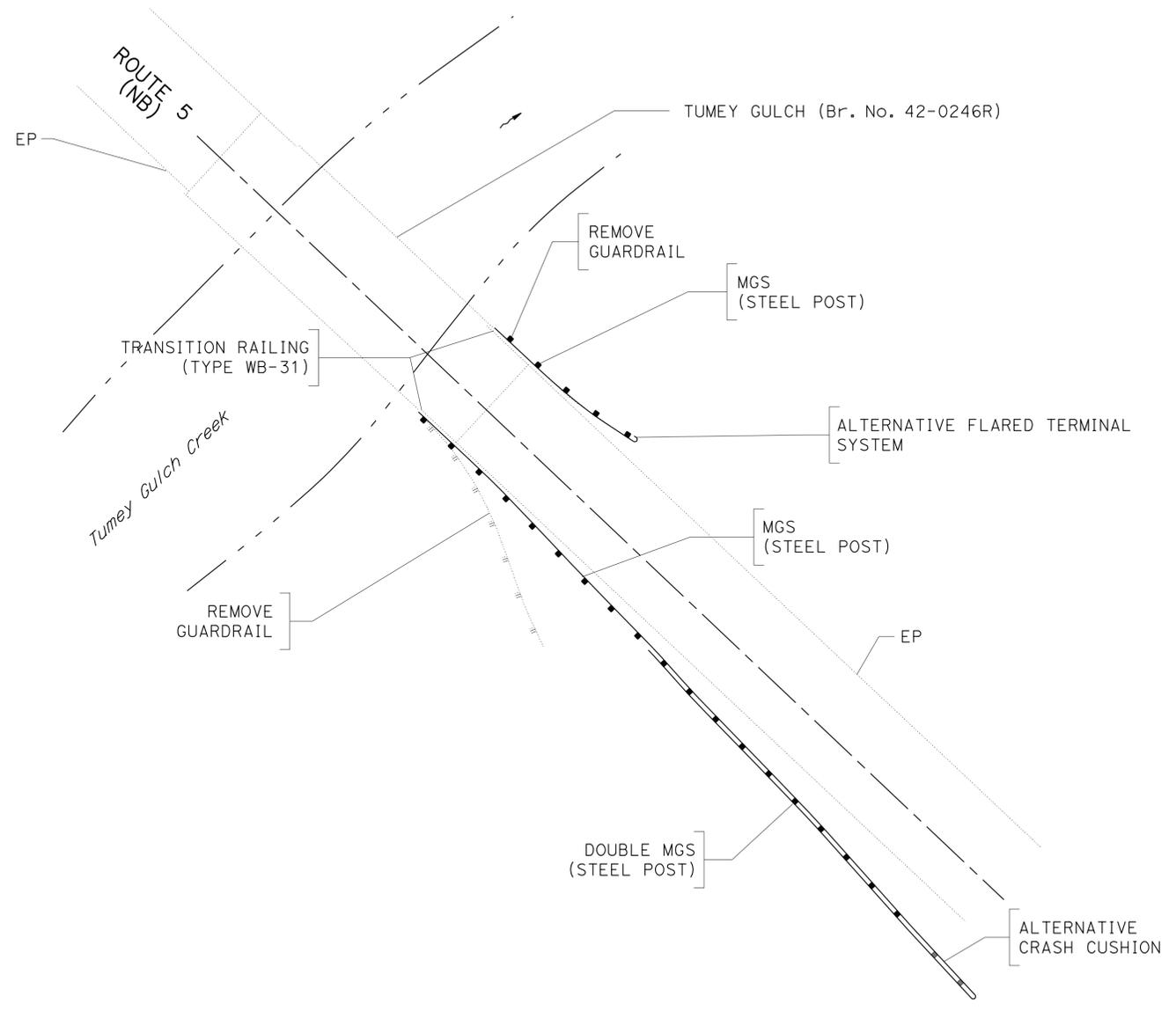
REVISED BY
 DATE REVISED

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre, Tul	5,33,137 216,245,269	Var	2	30

REGISTERED CIVIL ENGINEER DATE 02-12-14
 PLANS APPROVAL DATE 10-06-14

REGISTERED PROFESSIONAL ENGINEER
 Jose Victor Echeveste
 No. 50825
 Exp. 09-30-15
 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.



LOCATION 3

CONSTRUCTION DETAILS

NO SCALE

C-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre, Tul	5,33,137 216,245,269	Var	3	30
			02-12-14		
			REGISTERED CIVIL ENGINEER DATE		
			10-06-14		
			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>					

NOTE:
1. USE 15'-7 1/2" LENGTH RAIL.

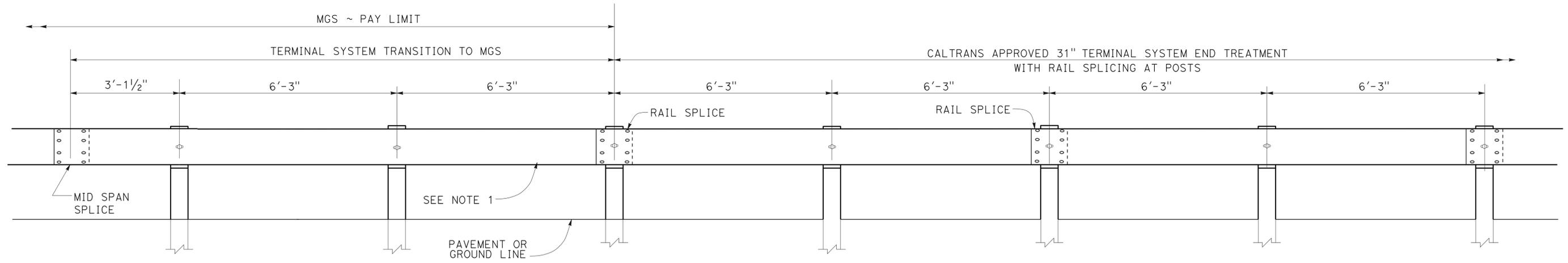
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE DESIGN

FUNCTIONAL SUPERVISOR
FRANK GONZALEZ

CALCULATED-DESIGNED BY
CHECKED BY

LEE XIONG
VICTOR ECHEVESTE

REVISED BY
DATE REVISED



TRANSITION DETAIL FOR 31" TERMINAL SYSTEM END TREATMENT CONSTRUCTION DETAILS WITH RAIL SPLICING AT POSTS TO MIDWEST GUARDRAIL SYSTEM

NO SCALE **C-2**

STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre, Tul	5,33,137 216,245,269	Var	4	30

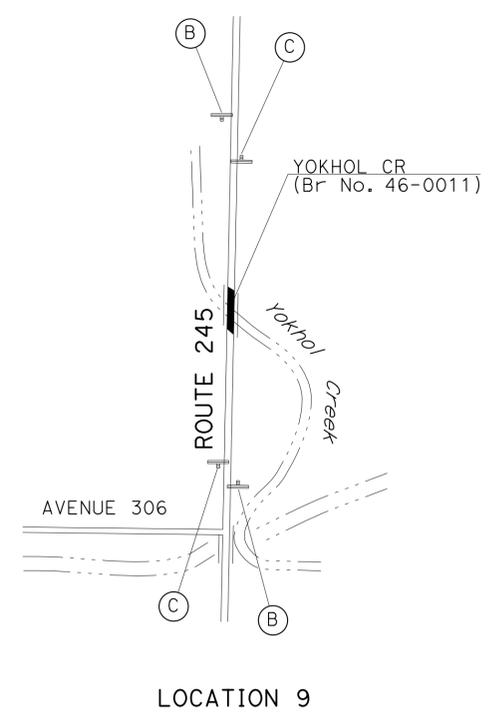
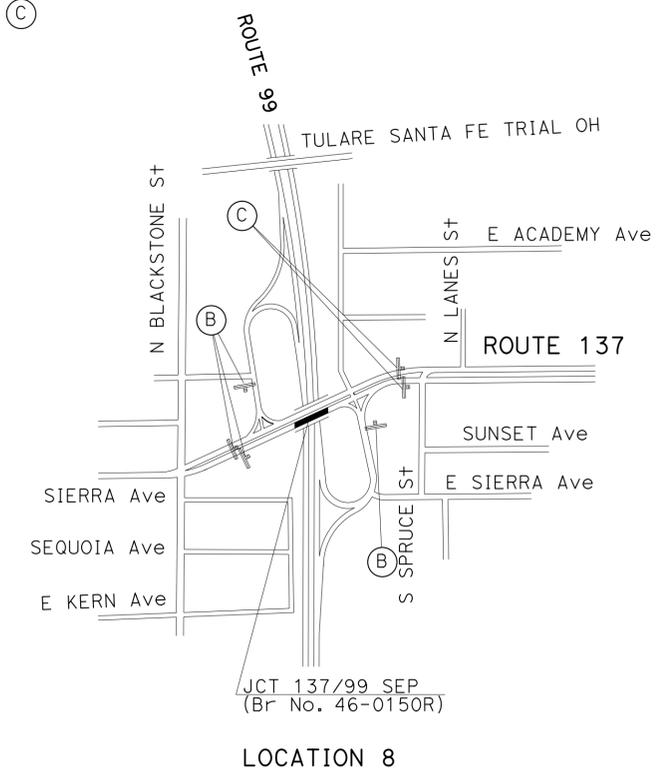
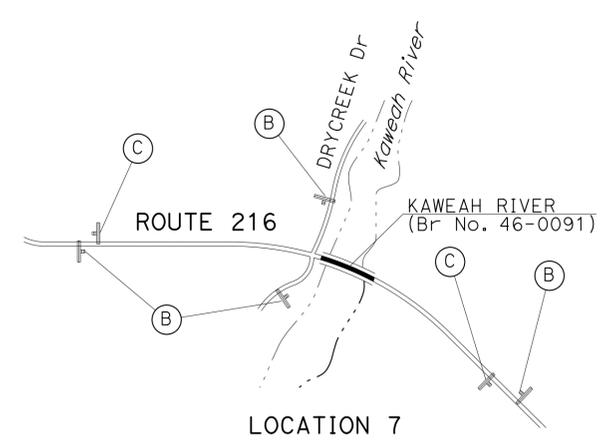
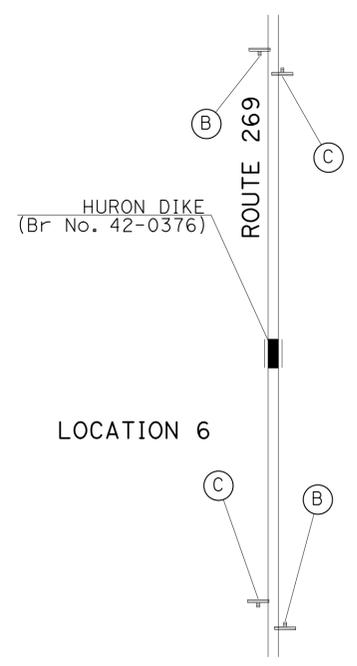
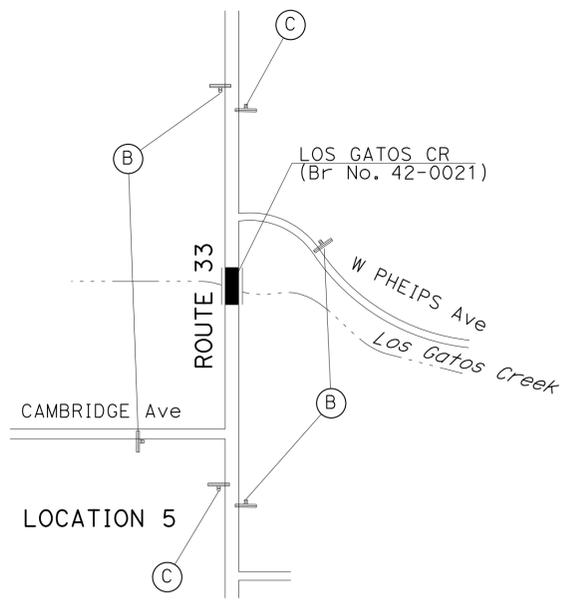
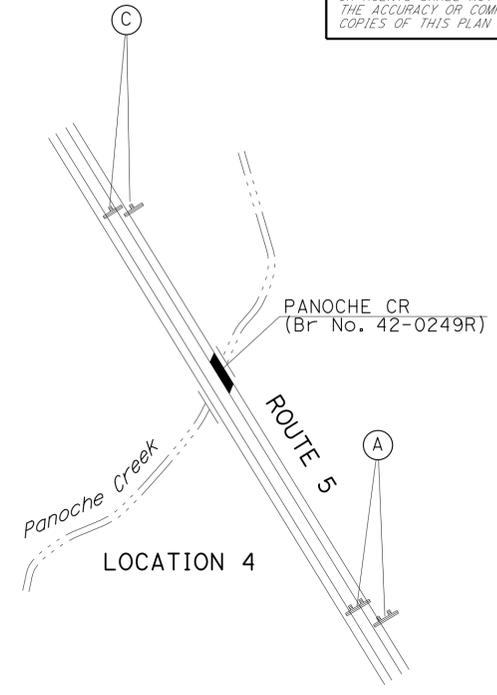
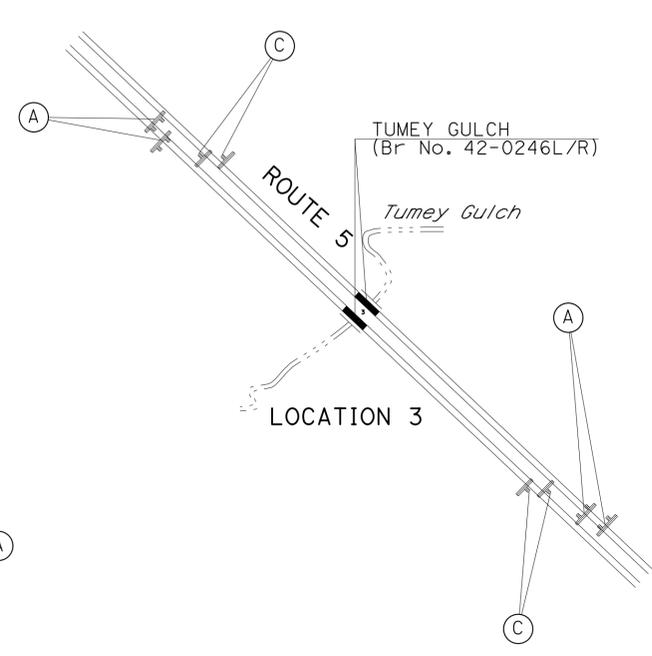
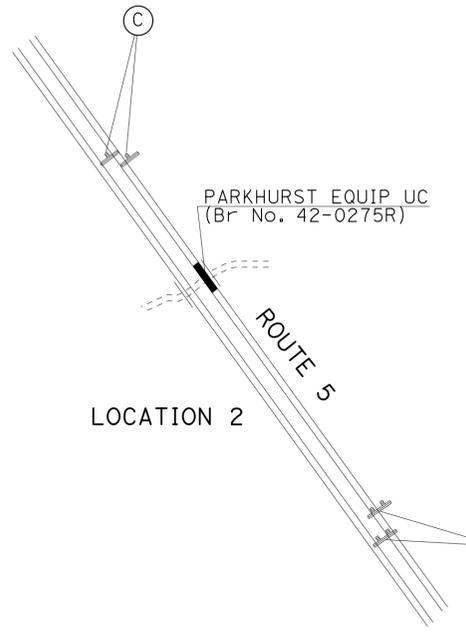
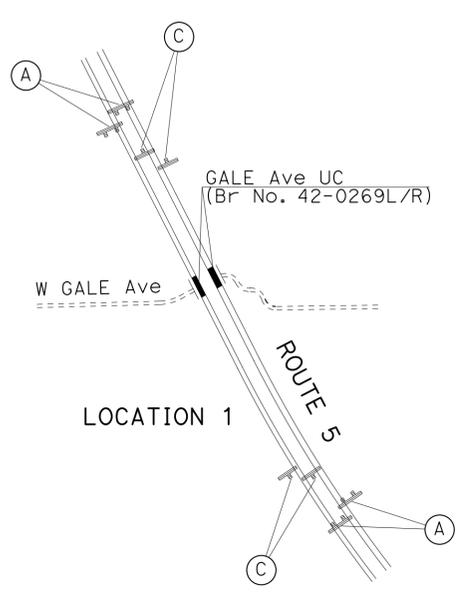
02-12-14
 REGISTERED CIVIL ENGINEER DATE
 10-06-14
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Jose Victor Echeveste
 No. 50825
 Exp. 09-30-15
 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.	SIGN CODE	PANEL SIZE	SIGN MESSAGE	No. OF POST AND SIZE	No. OF SIGNS
(A)	W20-1	48" x 48"	ROAD WORK AHEAD	2 - 6" x 6"	12
(B)	W20-1	36" x 36"	ROAD WORK AHEAD	1 - 4" x 6"	16
(C)	G20-2	36" x 18"	END ROAD WORK	1 - 4" x 4"	22

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



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans MAINTENANCE DESIGN

FUNCTIONAL SUPERVISOR
 FRANK GONZALEZ

CALCULATED-DESIGNED BY
 CHECKED BY

LEE XIONG
 VICTOR ECHEVESTE

REVISED BY
 DATE REVISED

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

CONSTRUCTION AREA SIGNS

NO SCALE

CS-1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre, Tul	5,33,137 216,245,269	Var	5	30
			02-12-14		
REGISTERED CIVIL ENGINEER			DATE		
			10-06-14		
			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.

MIDWEST GUARDRAIL SYSTEM QUANTITIES

Loc No.	COUNTY	ROUTE	DIRECTION	BRIDGE	LAYOUT TYPE (N)	TRANSITION RAILING (TYPE WB-31)		ALTERNATIVE FLARED TERMINAL SYSTEM			ALTERNATIVE CRASH CUSHION	REMOVE GUARDRAIL	TREATED WOOD WASTE
						EA	LF	EA	EA	EA			
③	Fre	5	NB	TUMEY GULCH (Br. No. 42-0246R)	TYPE 12B LAYOUT	1	25		1			167	2857
					TYPE 12E LAYOUT	1	100	150		1			
TOTAL						2	125	150	1	1	167	2857	

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

PAVEMENT DELINEATION QUANTITIES

Loc No.	COUNTY	ROUTE	CROSSING	BRIDGE No.	DETAIL No.	THERMOPLASTIC TRAFFIC STRIPE			PAVEMENT MARKER			THERMOPLASTIC PAVEMENT MARKING		REMOVE THERMOPLASTIC TRAFFIC STRIPE	REMOVE YELLOW THERMOPLASTIC TRAFFIC STRIPE (HAZARDOUS WASTE)	REMOVE THERMOPLASTIC PAVEMENT MARKING	REMOVE PAVEMENT MARKER (N)				
						RETROREFLECTIVE			TYPE			TYPE	SQFT					LF	LF	SQFT	EA
						4" (BROKEN 36-12)	4"	8"	D	G	H										
①	Fre	5	W GALE AVENUE UC	42-0269L/R	12	208				5				208							
					25		208														
					27B		208														
⑤	Fre	33	LOS GATOS CREEK SOUTH CHANNEL	42-0021	12	626				14				626							
					22		788			20											
					27B		787														
					38				85												
⑥	Fre	269	HURON DIKE	42-0376	22	176				5				176							
					27B		176			10											
⑦	Tul	216	KAWEAH RIVER	46-0091	22																
					27B		693			32											
⑧	Tul	137	Rte 137/99 SEPARATION	46-0150L	12	134				4				134							
⑨	Tul	245	YOKOHL CREEK	46-0011	22																
					27B		544			32											
SUBTOTAL						1144	4641	85	94	28	5		42	3722	2233	42					
TOTAL						1144	4641	85		127			42	3722	2233	42					

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

SUMMARY OF QUANTITIES

Q-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - MAINTENANCE DESIGN
 FUNCTIONAL SUPERVISOR: FRANK GONZALEZ
 CALCULATED/DESIGNED BY: VICTOR ECHEVESTE
 CHECKED BY: LEE XIANG
 REVISED BY: DATE REVISED:

	M	
Maint	MAINTENANCE	
Max	MAXIMUM	
MB	METAL BEAM	
MBB	METAL BEAM BARRIER	
MBGR	METAL BEAM GUARD RAILING	
Med	MEDIAN	
MGS	MIDWEST GUARDRAIL SYSTEM	
MH	MANHOLE	
Min	MINIMUM	
Misc	MISCELLANEOUS	
Misc I & S	MISCELLANEOUS IRON AND STEEL	
Mkr	MARKER	
Mod	MODIFIED, MODIFY	
Mon	MONUMENT	
MP	METAL PLATE	
MPGR	METAL PLATE GUARD RAILING	
MR	MOVEMENT RATING	
MSE	MECHANICALLY STABILIZED EMBANKMENT	
Mt	MOUNTAIN, MOUNT	
MtI	MATERIAL	
MVP	MAINTENANCE VEHICLE PULLOUT	
	N	
N	NORTH	
NB	NORTHBOUND	
No.	NUMBER (MUST HAVE PERIOD)	
Nos.	NUMBERS (MUST HAVE PERIOD)	
NPS	NOMINAL PIPE SIZE	
NS	NEAR SIDE	
NSP	NEW STANDARD PLAN	
NTS	NOT TO SCALE	
	O	
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	
	P	
p	PAGE	
PAP	PERFORATED ALUMINUM PIPE	
PB	PULL BOX	
PC	POINT OF CURVATURE, PRECAST	
PCC	POINT OF COMPOUND CURVE, PORTLAND CEMENT CONCRETE	
PCMS	PORTABLE CHANGEABLE MESSAGE SIGN	
PCP	PERFORATED CONCRETE PIPE, PRESTRESSED CONCRETE PIPE	
PCVC	POINT OF COMPOUND VERTICAL CURVE	
PEC	PERMIT TO ENTER AND CONSTRUCT	
Ped	PEDESTRIAN	
Ped OC	PEDESTRIAN OVERCROSSING	
Ped UC	PEDESTRIAN UNDERCROSSING	
Perm MtI	PERMEABLE MATERIAL	

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

	S	
S	SOUTH, SUPPLEMENT	
SAE	STRUCTURE APPROACH EMBANKMENT	
Salv	SALVAGE	
SAPP	STRUCTURAL ALUMINUM PLATE PIPE	
SB	SOUTHBOUND	
SC	SAND CUSHION	
SCSP	SLOTTED CORRUGATED STEEL PIPE	
SD	STORM DRAIN	
Sec	SECOND, SECTION	
Sep	SEPARATION	
SG	SUBGRADE	
Shld	SHOULDER	
Sht	SHEET	
Sim	SIMILAR	
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	
	T	
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	

	T continued	
TS	TRANSVERSE, TRAFFIC SIGNAL, TUBULAR STEEL	
Typ	TYPICAL	U
UC	UNDERCROSSING	
UD	UNDERDRAIN	
UG	UNDERGROUND	
UON	UNLESS OTHERWISE NOTED	
UP	UNDERPASS	V
V	VALVE, DESIGN SPEED	
Var	VARIABLE, VARIES	W
VC	VERTICAL CURVE	
VCP	VITRIFIED CLAY PIPE	
Vert	VERTICAL	
Via	VIADUCT	
Vol	VOLUME	
W	WEST, WIDTH	
WB	WESTBOUND	
WH	WEEP HOLE	
WM	WIRE MESH	
WS	WATER SURFACE	
WSP	WELDED STEEL PIPE	
Wt	WEIGHT	
WV	WATER VALVE	
WW	WINGWALL	
WWLOL	WINGWALL LAYOUT LINE	X
X Sec	CROSS SECTION	
Xing	CROSSING	Y
Yr	YEAR	
Yrs	YEARS	

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre, Tul	5, 33, 137 216, 245, 269	Var	6	30

Grace M. Tsushima
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 10-06-14

UNIT OF MEASUREMENT SYMBOLS:

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

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:

SYMBOL USED	DEFINITIONS
ksi	KIPS PER SQUARE INCH
ksf	KIPS PER SQUARE FOOT
psi	POUNDS PER SQUARE INCH
psf	POUNDS PER SQUARE FOOT
lb/ft ³ , pcf	POUNDS PER CUBIC FOOT
tsf	TONS PER SQUARE FOOT
mph, MPH *	MILES PER HOUR
Ø	NOMINAL DIAMETER
oz	OUNCE
lb	POUND
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
06	Fre, Tul	5,33,137 216,245,269	Var	7	30

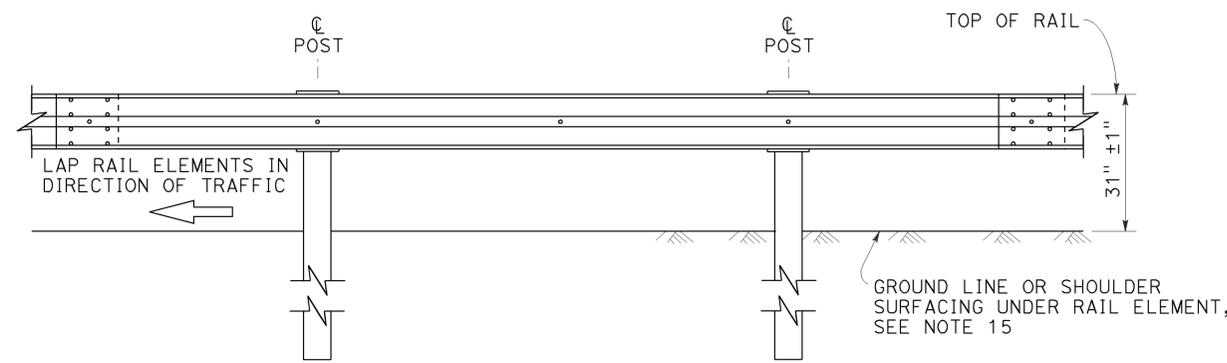
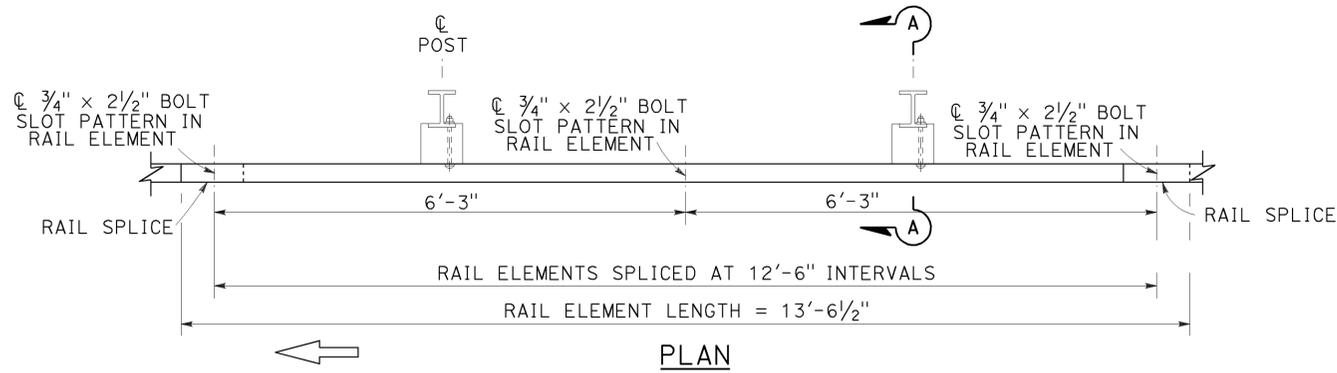
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

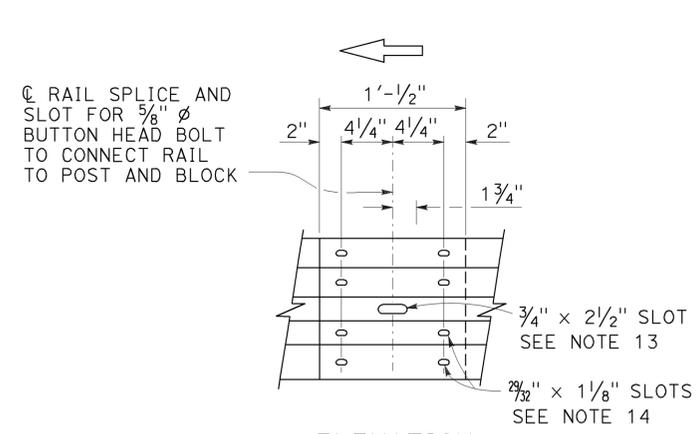
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 10-06-14

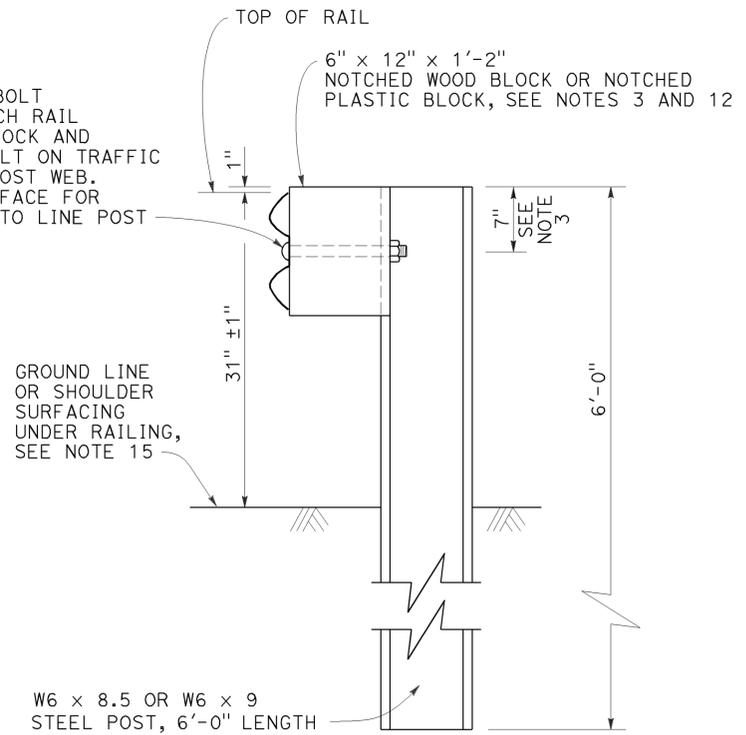
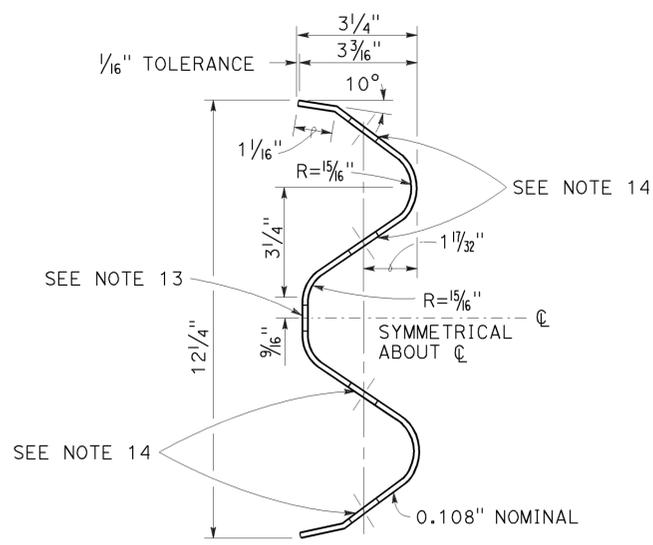
2010 REVISED STANDARD PLAN RSP A77L2



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" ϕ 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" ϕ 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.



SECTION A-A
TYPICAL STEEL LINE POST INSTALLATION
See Note 4

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.

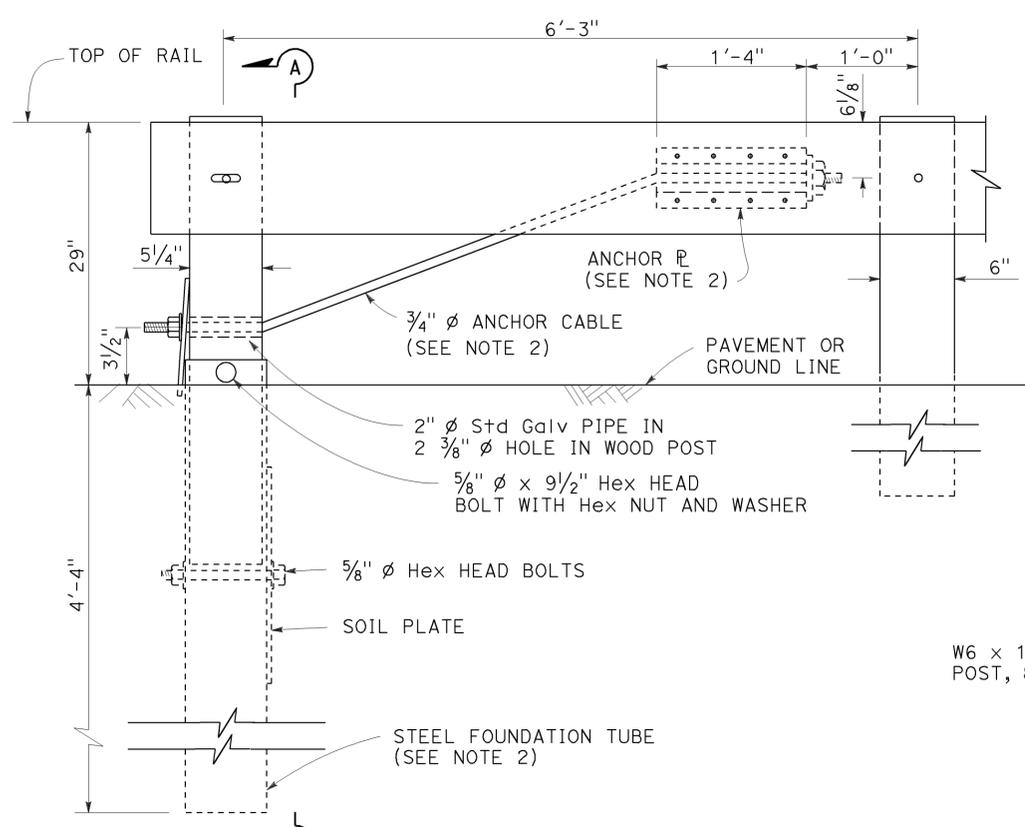
REVISED STANDARD PLAN RSP A77L2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre, Tul	5, 33, 137 216, 245, 269	Var	8	30

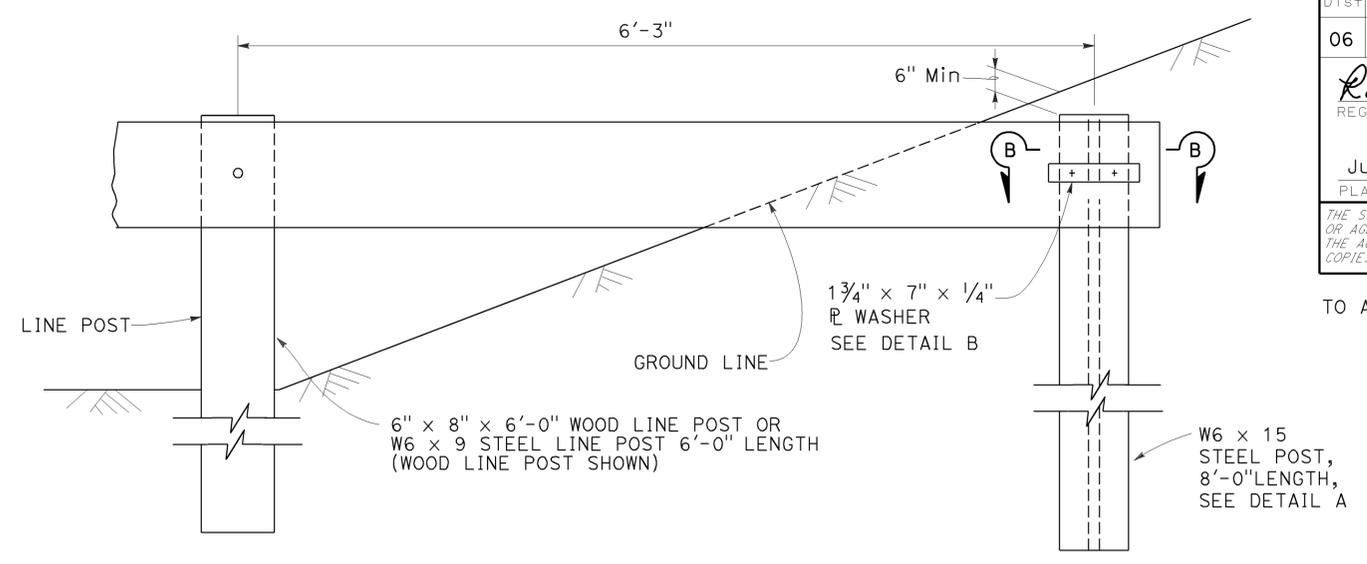
RANDALL D. HIATT
 REGISTERED CIVIL ENGINEER
 July 19, 2013
 PLANS APPROVAL DATE
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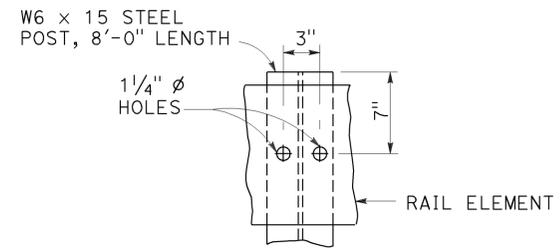
TO ACCOMPANY PLANS DATED 10-06-14



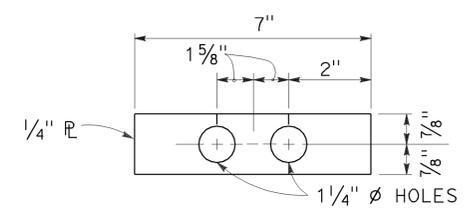
**ELEVATION
END ANCHOR
ASSEMBLY (TYPE SFT)**



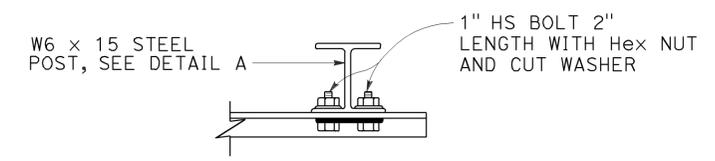
BURIED POST END ANCHOR



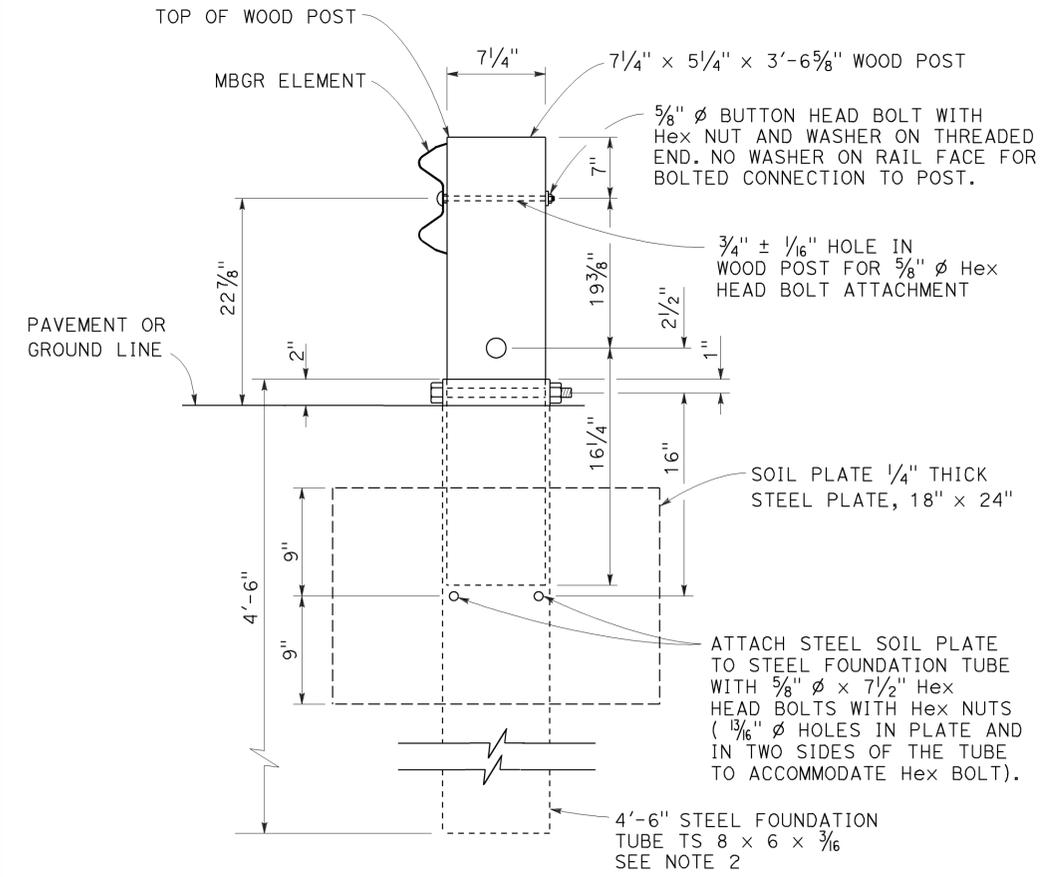
DETAIL A



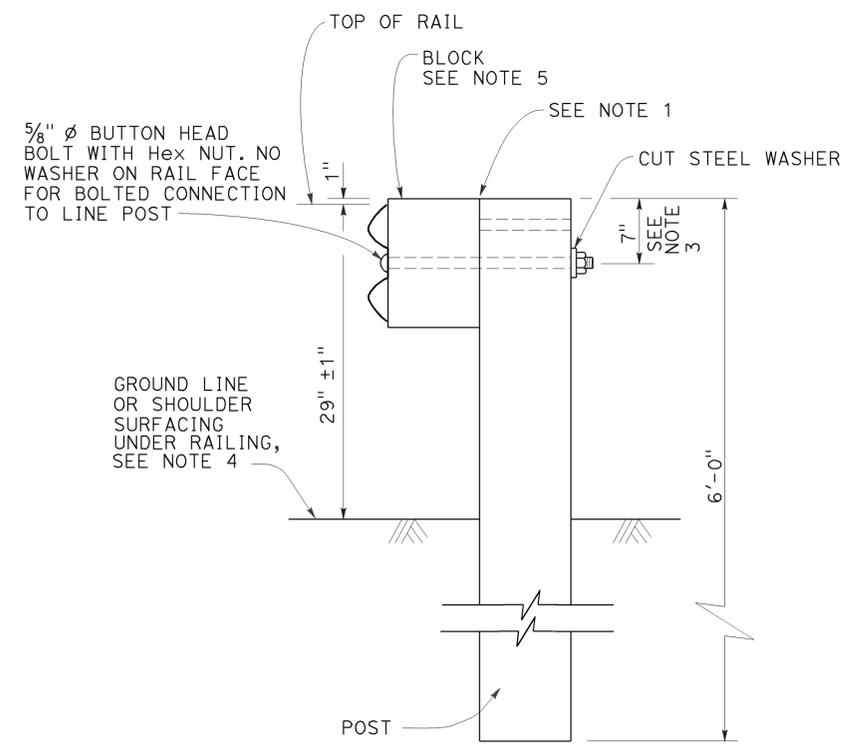
DETAIL B



SECTION B-B



SECTION A-A



**TYPICAL LINE
POST INSTALLATION**

NOTES:

1. For wood post and wood block, toenail with 2-16d Galv nails in top of block. For steel post and notched wood or plastic block, notched face of block faces steel post.
2. A 6'-0" Length steel foundation tube, TS 8 x 6 x 3/16, without a soil plate, may be furnished and installed in place of the 4'-6" length steel foundation tube and soil plate shown. Minimum embedment of the 6'-0" length tube shall be 5'-9". A 5/8" Hex head bolt and nut shall be installed in the hole in the 6'-0" length tube to keep the wood post from dropping into the tube.
3. To connect railing to 27" terminal system end treatment, transition the top of railing height at a ratio of 120:1 to terminal system end treatment height plus one 12'-6" standard railing section at the transitioned height for a horizontal connection to the end treatment.
4. Install posts in soil.
5. See Revised Standard Plans RSP A77N1 and RSP A77N2 for details.
6. Holes excavation in the slope to construct the buried post end anchor shall be backfilled with selected earth, placed in layers approximately 1'-0" thick. Each layer shall be moistened and thoroughly compacted.

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DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
RECONSTRUCT INSTALLATION**

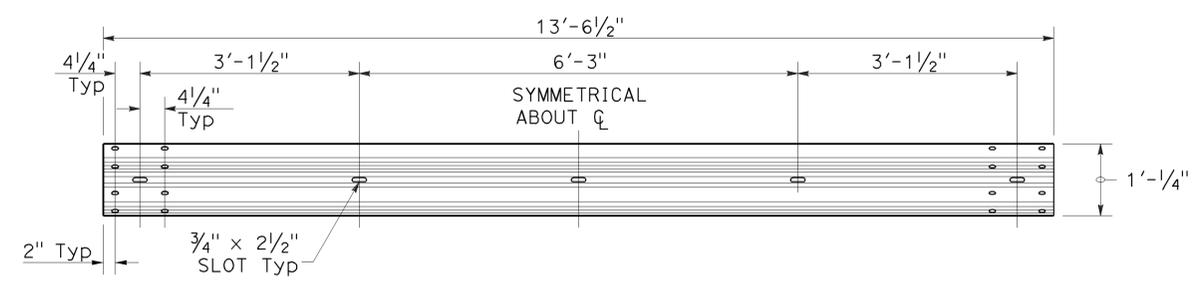
NO SCALE

RSP A77L3 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77L3

2010 REVISED STANDARD PLAN RSP A77L3

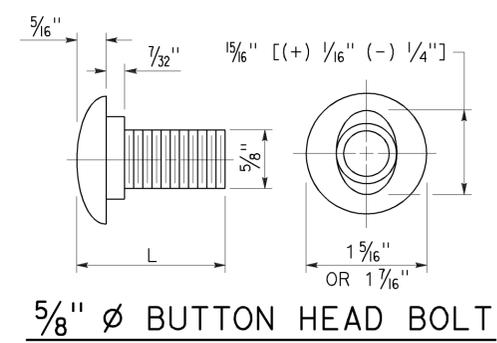
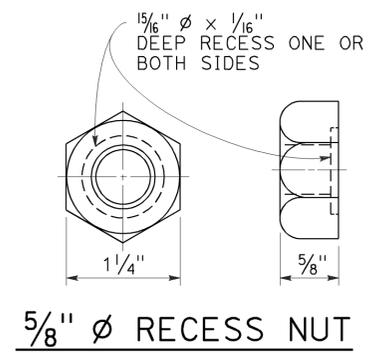
TO ACCOMPANY PLANS DATED 10-06-14



TYPICAL RAIL ELEMENT

NOTE:

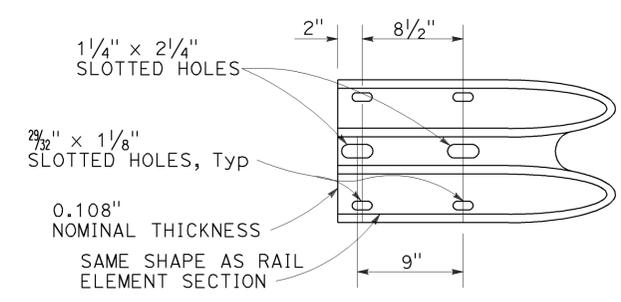
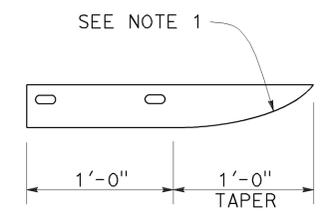
1. Slotted holes for splice bolts to overlap ends of rail element.



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.



STATE OF CALIFORNIA
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**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
06	Fre, Tul	5,33,137 216,245,269	Var	10	30

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

November 15, 2013
PLANS APPROVAL DATE

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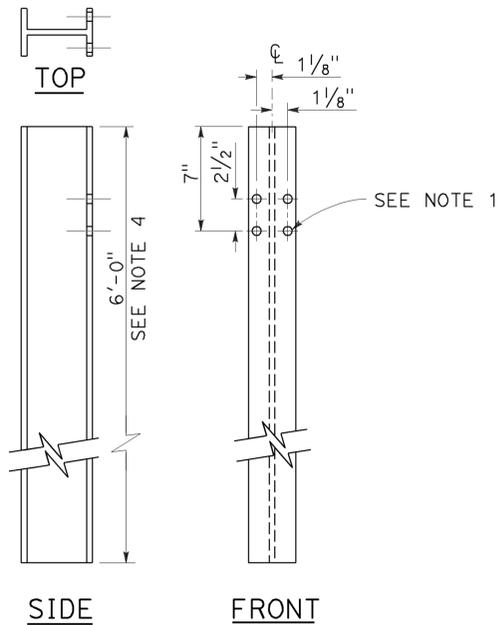
REGISTERED PROFESSIONAL ENGINEER
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 10-06-14

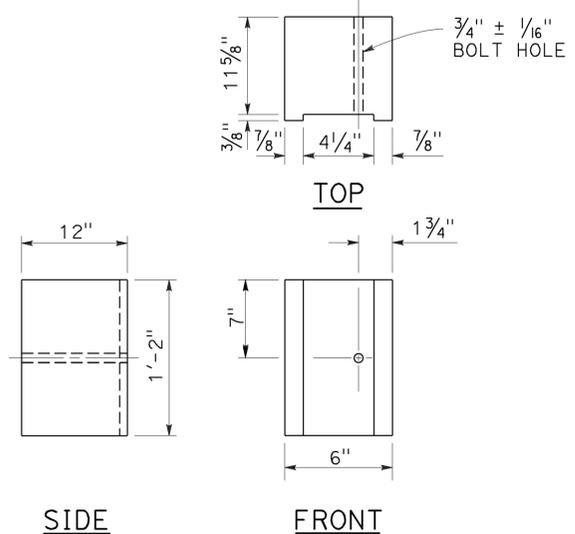
NOTES:

1. All holes in steel post shall be 1 3/8" 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.

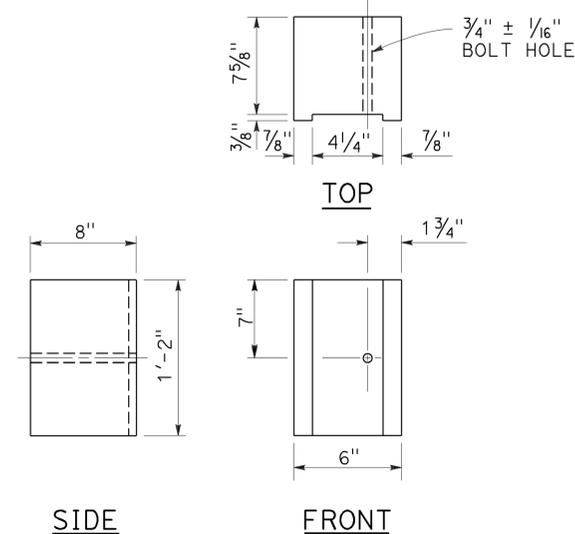
2010 REVISED STANDARD PLAN RSP A77N2



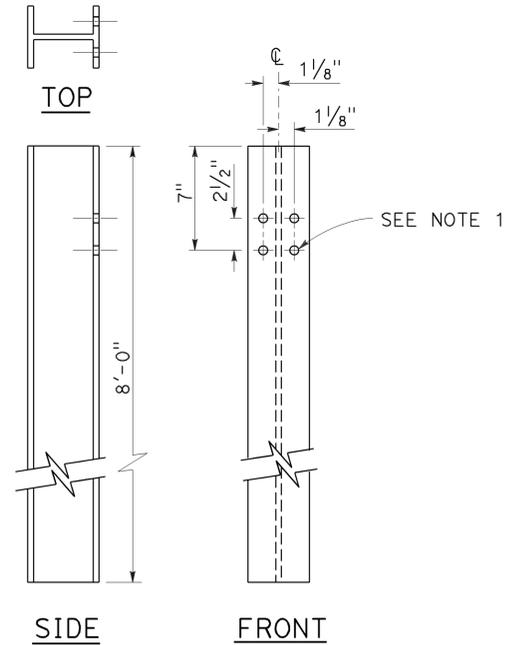
**W6 x 9 OR W6 x 8.5
STEEL POST**
See Note 4



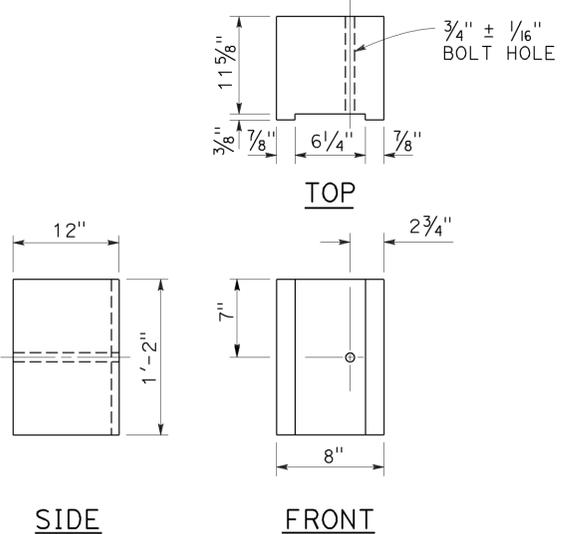
**6" x 12"
NOTCHED WOOD BLOCK**
See Notes 2 and 3



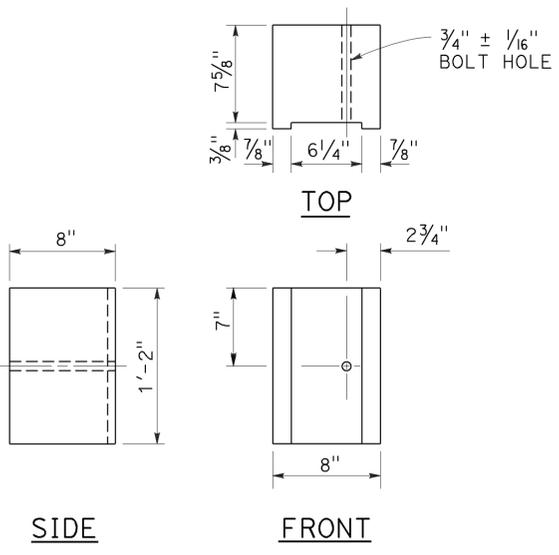
**6" x 8"
NOTCHED WOOD BLOCK**
Only for use with metal beam guard railing. See Note 5



**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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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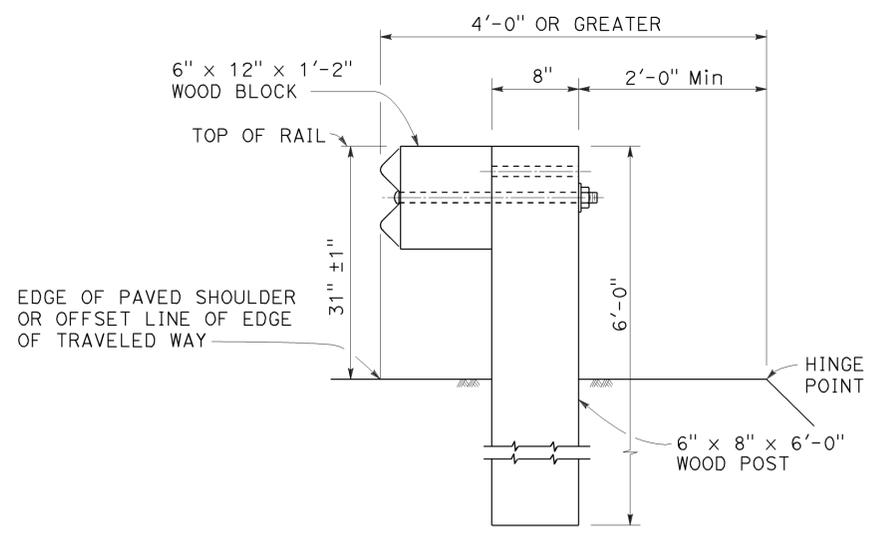
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

November 15, 2013
PLANS APPROVAL DATE

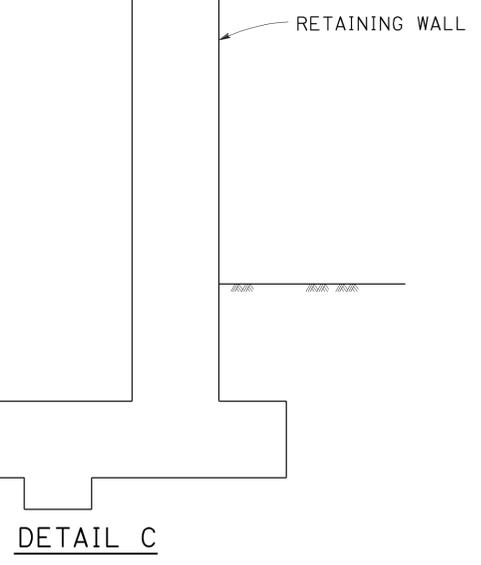
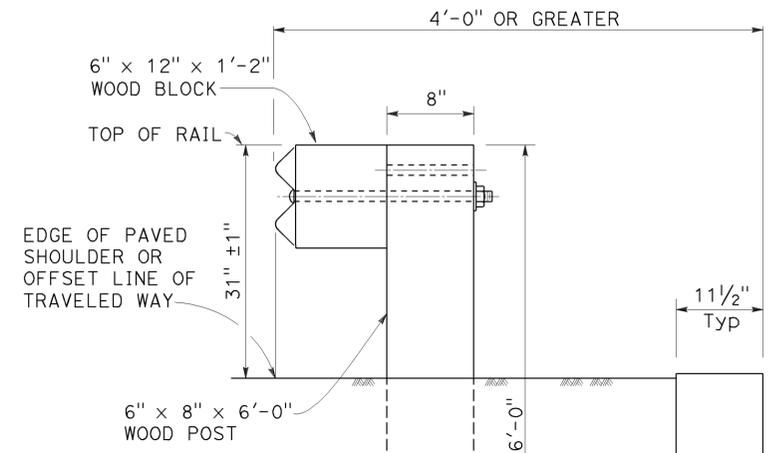
Randell D. Hiatt
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Exp. 6-30-15
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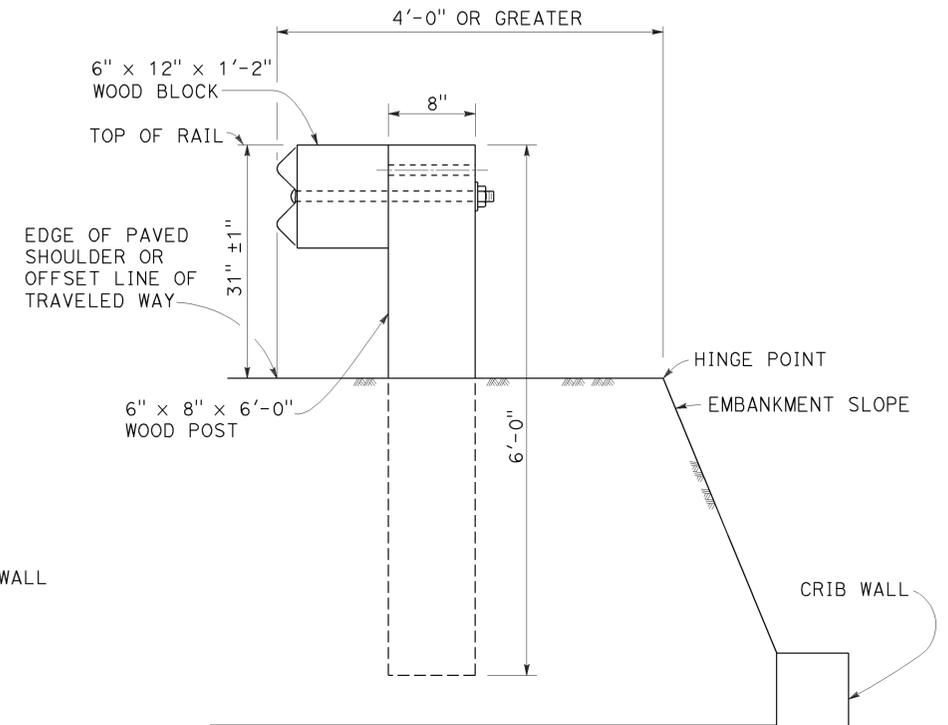
TO ACCOMPANY PLANS DATED 10-06-14



DETAIL A
TYPICAL ROADWAY
INSTALLATION
See Note 1



DETAIL B
NARROW ROADWAY
INSTALLATION
See Note 1



DETAIL D

INSTALLATION AT EARTH RETAINING WALLS

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.

POST EMBEDMENT

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
06	Fre, Tul	5,33,137 216,245,269	Var	12	30

Randell D. Hiatt
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July 19, 2013
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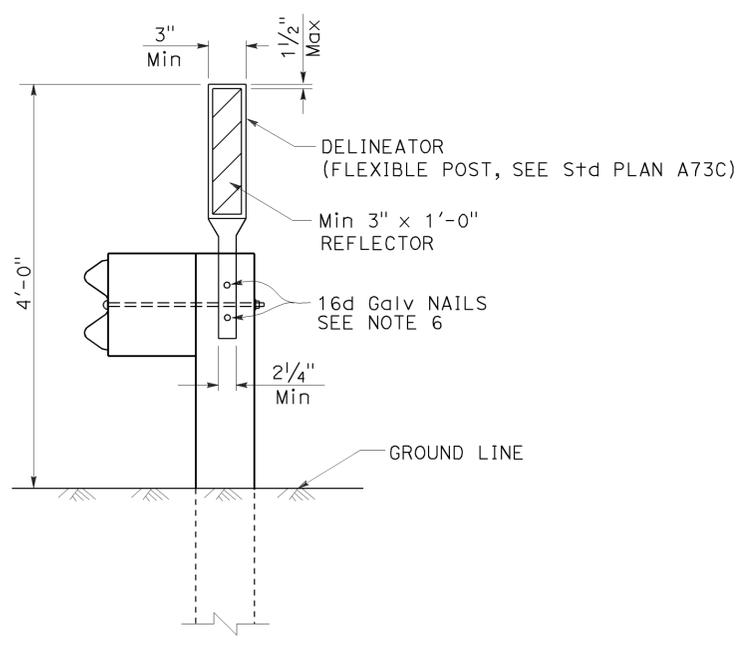
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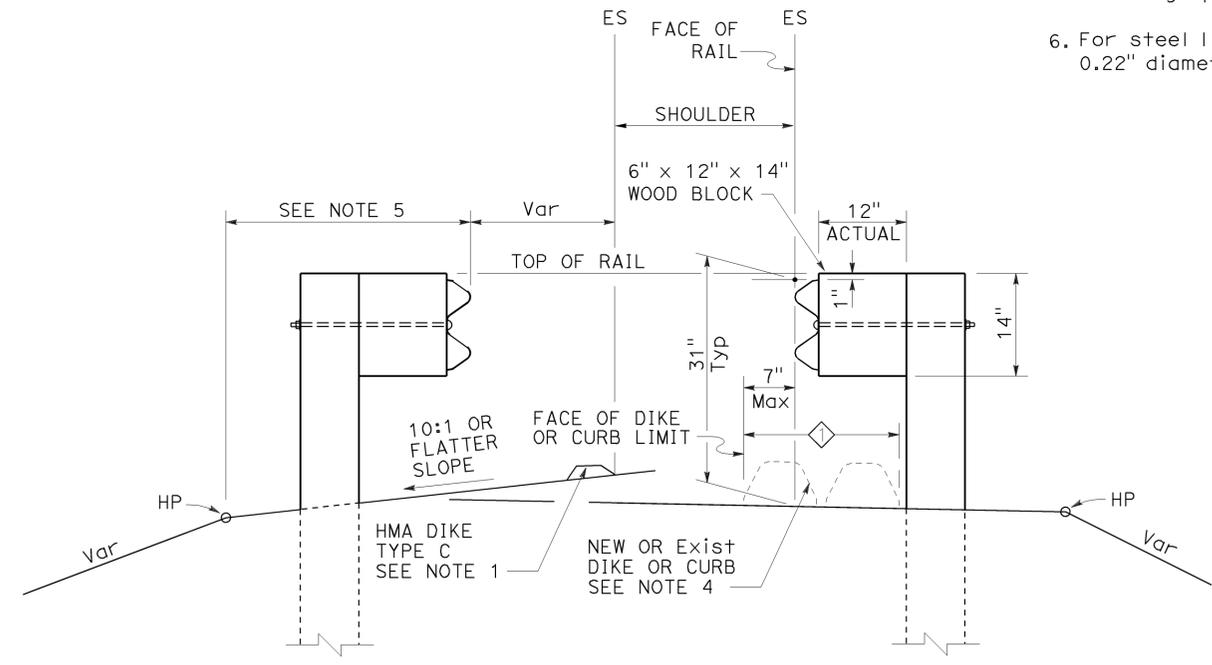
TO ACCOMPANY PLANS DATED 10-06-14

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

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre, Tul	5, 33, 137 216, 245, 269	Var	13	30

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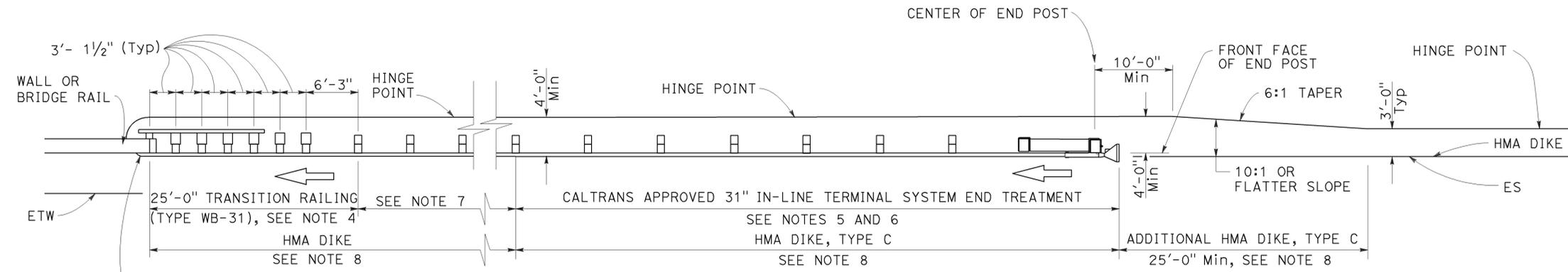
July 19, 2013
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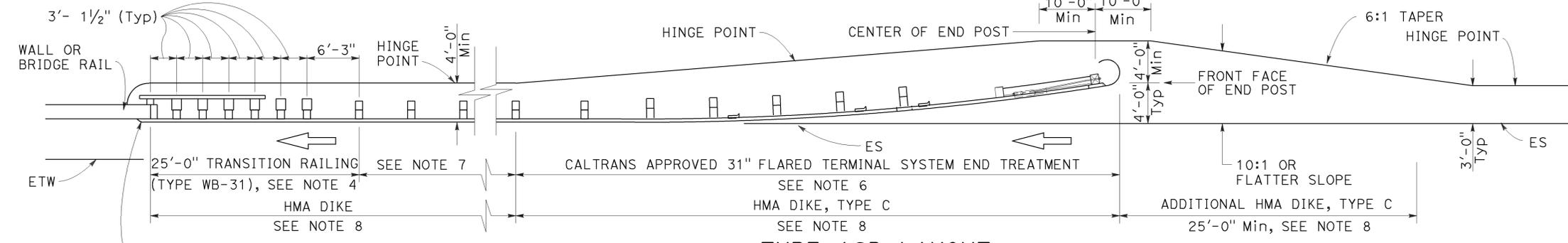


2010 REVISED STANDARD PLAN RSP A77Q1



TYPE 12A LAYOUT

(MGS installation at structure approach with 31" in-line end treatment at traffic approach end of railing)
See Notes 9



TYPE 12B LAYOUT

(MGS installation at structure approach with 31" Flared end treatment at traffic approach end of railing)
See Notes 9

NOTES:

- Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
- MGS post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 12" x 1'-2" wood blocks. W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
- For Transition Railing (Type WB-31) details for Types 12A and 12B Layouts, see Revised Standard Plan RSP A77U4.
- 31" in-line terminal system end treatments are used where site conditions will not accommodate a 31" flared end treatment.
- The type 31" of terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height, side slopes, or other fixed objects), it may be advisable to construct additional guard railing (a length equal to multiples of 12'-6" with 6'-3" post spacing) between the transition railing and end treatment. A 12.5 degree angle of departure can be drawn on the Project Plans from the edge of traveled way through the outer most point of the fixed object to determine the additional length of railing needed.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77N4 for dike positioning details.
- Type 12A or Type 12B Layouts are typically used:
 - To the right of approaching traffic, at the end of a structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
 - To the left of approaching traffic, at the end of a structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
 - To the right of approaching traffic at the end of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.
 - To the right of approaching traffic at the end of the structure on multilane freeways or expressways with decked median on the bridge.
- See Revised Standard Plan RSP A77Q3 for typical layout used left of approaching traffic at the ends of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.
- For additional details of typical connections to bridge rail, see Connection Detail AA on Revised Standard Plans RSP A77U1 and RSP A77U2 and Connection Detail FF on Revised Standard Plans RSP A77V1 and RSP A77V2.
- For additional details of a typical connection to walls or abutments, see Revised Standard Plan RSP A77U3.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
TYPICAL LAYOUTS FOR
STRUCTURE APPROACH**

NO SCALE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre, Tul	5, 33, 137 216, 245, 269	Var	14	30

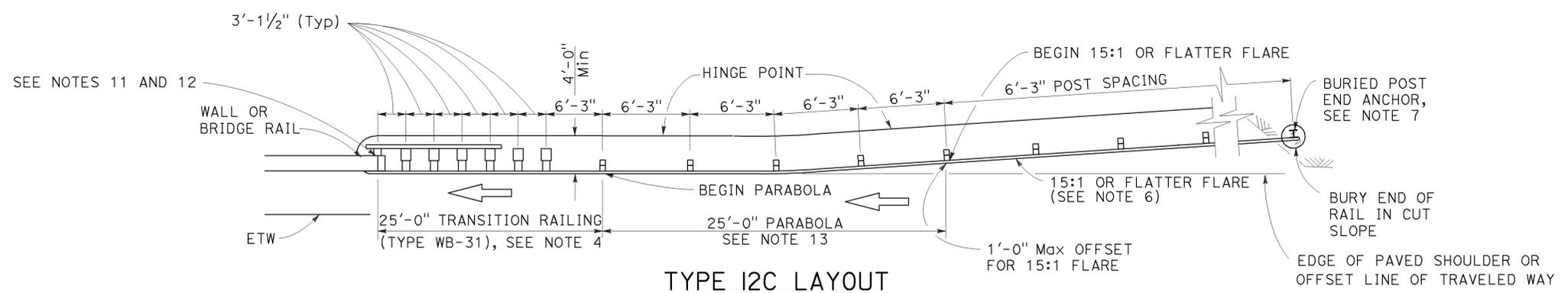
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July 19, 2013
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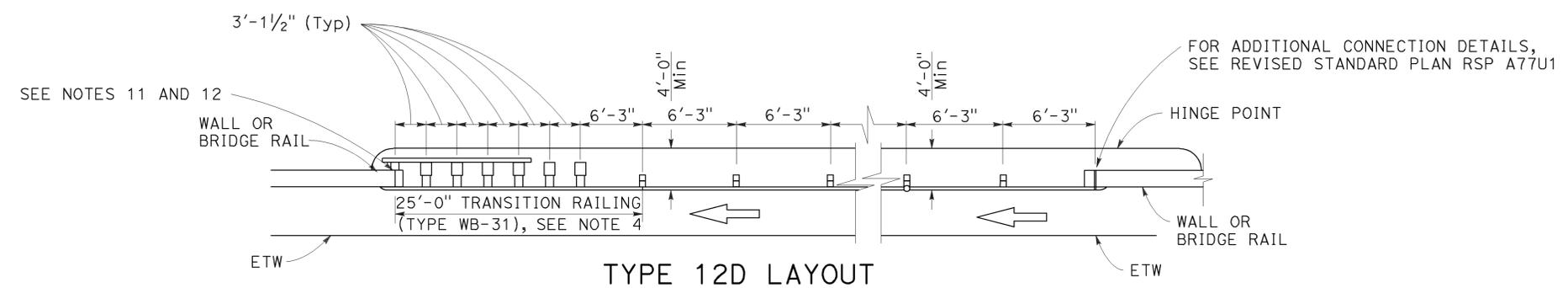
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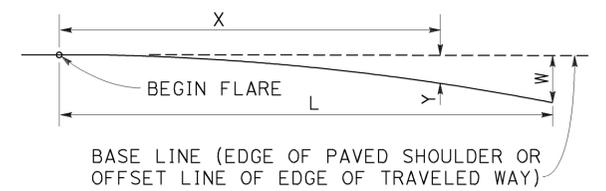
TYPE 12C LAYOUT

(MGS installation at structure approach with a Buried end anchor treatment at traffic approach end of railing)
See Notes 8 and 9



TYPE 12D LAYOUT

(Continuous MGS installation between structures)
See Notes 5 and 9

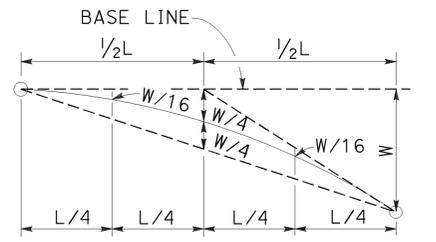


BASE LINE (EDGE OF PAVED SHOULDER OR OFFSET LINE OF EDGE OF TRAVELED WAY)

$$Y = \frac{WX^2}{L^2}$$

Y = OFFSET FROM BASE LINE
W = MAXIMUM OFFSET
X = DISTANCE ALONG BASE LINE
L = LENGTH OF FLARE

PARABOLIC FLARE OFFSETS



TYPICAL PARABOLIC LAYOUT

NOTES:

- Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
- MGS post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" m wood with 6" x 12" x 1'-2" wood blocks. W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
- For Transition Railing (Type WB-31) details for Types 12C and 12D Layouts, see Revised Standard Plan RSP A77U4.
- Type 12D layout is typically used where continuous MGS is recommended between structures.
- The 15:1 or flatter flare for Type 12C Layout is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of MGS with the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the buried post end anchor used with Type 12C Layout, see Revised Standard Plan RSP A77T2.
- Where placement of dike is required with MGS installations, see Revised Standard Plan RSP A77N4 for dike positioning details.
- Type 12C Layout is typically used:
 - To the right of approaching traffic, at the end of the structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
 - To the left of approaching traffic, at each of a structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
 - To the right of approaching traffic at the end of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.
 - To the right of approaching traffic at the end of the structure on multilane freeways or expressways with decked median on the bridge.
- See Revised Standard Plan RSP A77Q3 for typical layout used left of approaching traffic at the ends of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.
- For additional details of typical connections to bridge rail, see Connection Detail AA on Revised Standard Plans RSP A77U1 and RSP A77U2 and Connection Detail FF on Revised Standard Plans RSP A77V1 and RSP A77V2.
- For additional details of a typical connection to walls or abutments, see Revised Standard Plan RSP A77U3.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77P1.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
TYPICAL LAYOUTS FOR
STRUCTURE APPROACH
AND BETWEEN STRUCTURES**

NO SCALE

RSP A77Q2 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77Q2

2010 REVISED STANDARD PLAN RSP A77Q2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre, Tul	5,33,137 216,245,269	Var	15	30

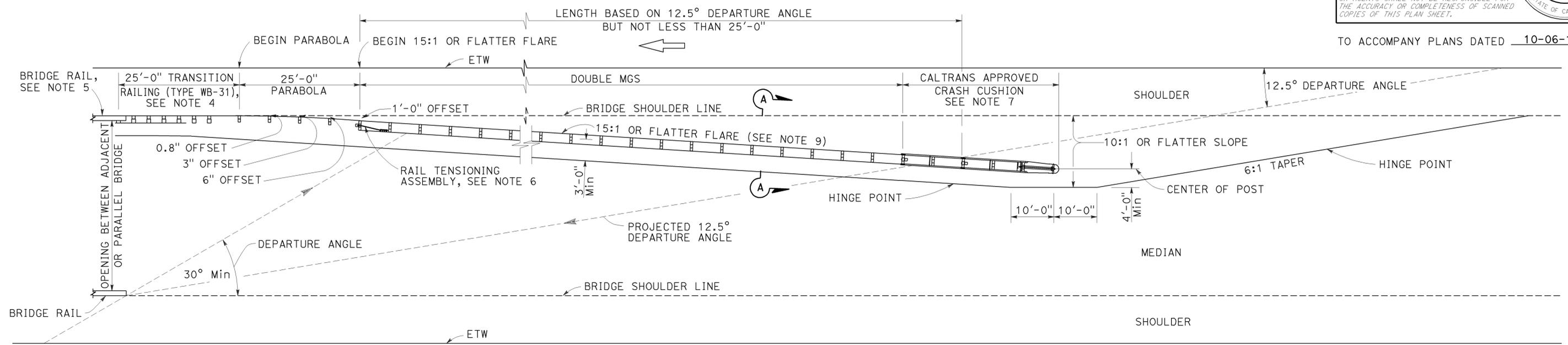
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
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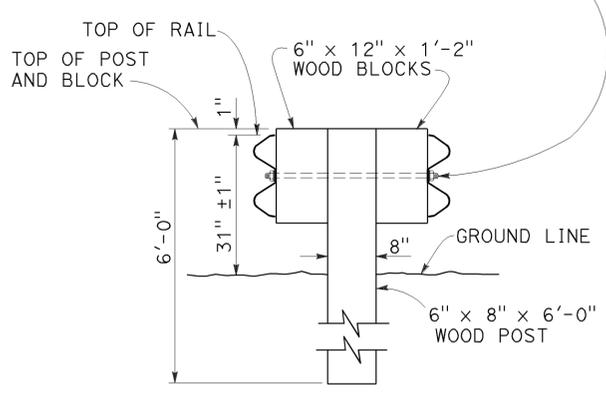
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Exp. 6-30-15
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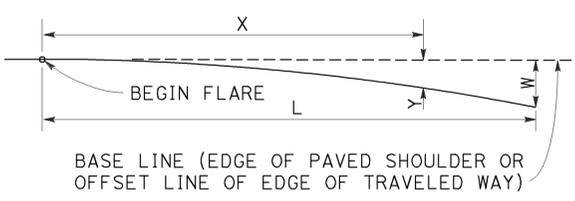


TYPE 12E LAYOUT
See Note 9

5/8" Ø BUTTON HEAD BOLT WITH Hex NUT OR 5/8" Ø ROD, THREADED BOTH ENDS, WITH Hex NUTS. 1/2" Max EXPOSED THREADS AFTER Hex NUT(S) TIGHTENED. NO WASHER ON RAIL FACES FOR BOLTED CONNECTION TO LINE POST



SECTION A-A
TYPICAL DOUBLE MIDWEST GUARDRAIL SYSTEM

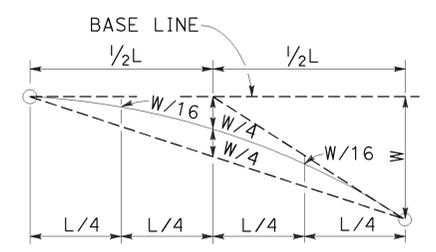


BASE LINE (EDGE OF PAVED SHOULDER OR OFFSET LINE OF EDGE OF TRAVELED WAY)

$$Y = \frac{WX^2}{L^2}$$

Y = OFFSET FROM BASE LINE
W = MAXIMUM OFFSET
X = DISTANCE ALONG BASE LINE
L = LENGTH OF FLARE

PARABOLIC FLARE OFFSETS



TYPICAL PARABOLIC LAYOUT

NOTES:

- Line post, blocks and hardware to be used are shown on Revised Standard Plans RSP A77L1, RSP A77L2, RSP A77M1, RSP A77N1 and RSP A77N2.
- MGS post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 12" x 1'-2" wood blocks. W6 x 8.5 or W6 x 9 steel posts, 6'-0" in length, with 6" x 12" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood line posts with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
- For Transition Railing (Type WB-31) details, see Revised Standard Plan RSP A77U4.
- For additional details of a typical connection to bridge rail, see Connection Detail AA on Revised Standard Plan RSP A77U1.
- For Rail Tensioning Assembly details, see Revised Standard Plan RSP A77S2.
- The type of Crash Cushion to be used will be shown on the Project Plans.
- Type 12E Layout is typically used left of approaching traffic at the end of each structure on multilane freeways or expressways where a median type barrier is not constructed between separated roadbeds.
- The 15:1 or flatter flare is measured off of the edge of traveled way.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
MIDWEST GUARDRAIL SYSTEM
TYPICAL LAYOUTS FOR
STRUCTURE APPROACH
NO SCALE

RSP A77Q3 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77Q3

2010 REVISED STANDARD PLAN RSP A77Q3

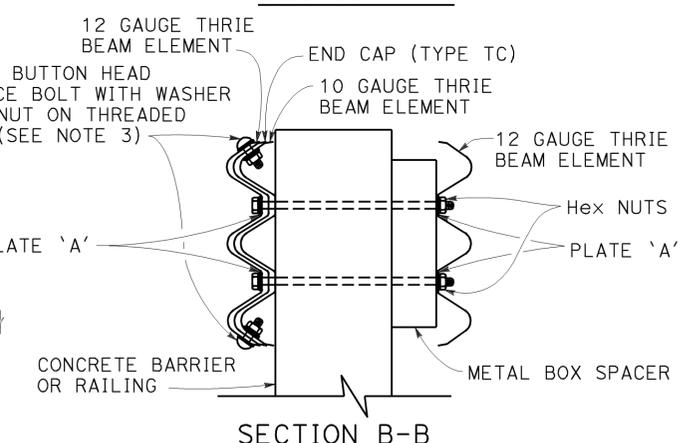
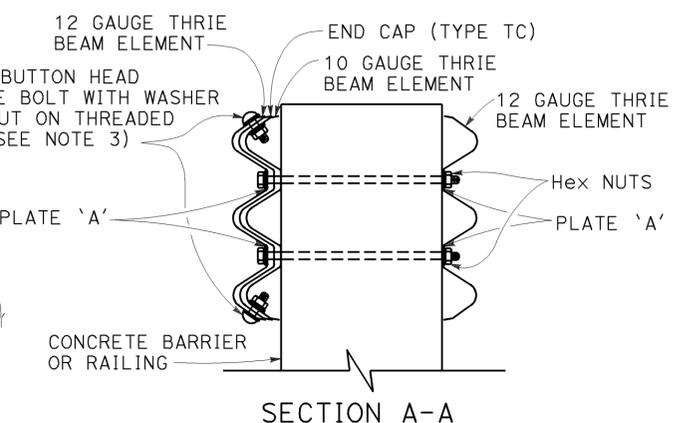
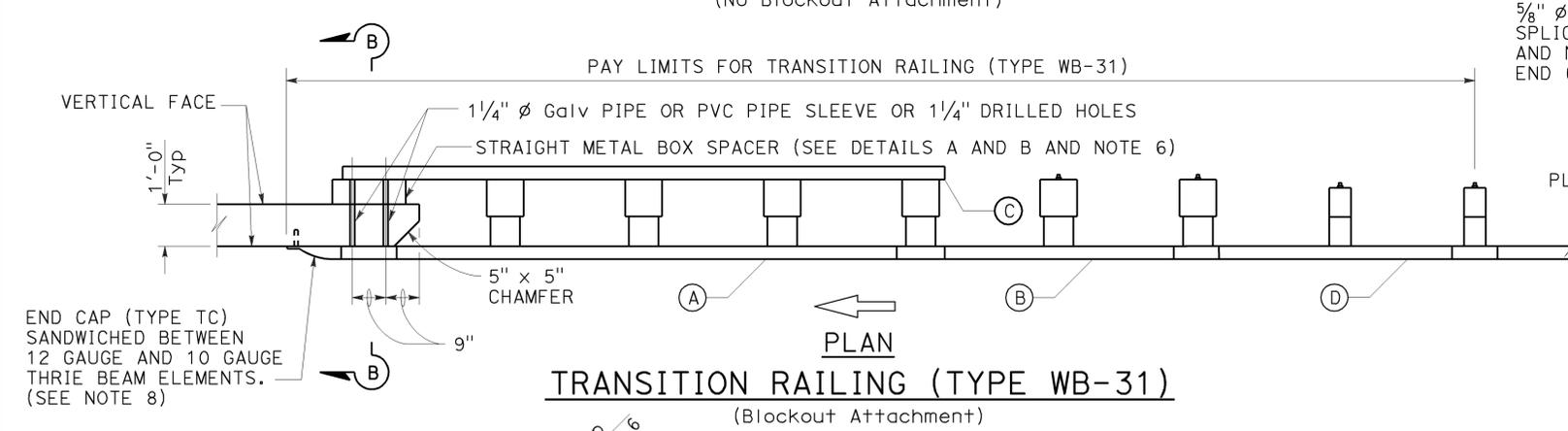
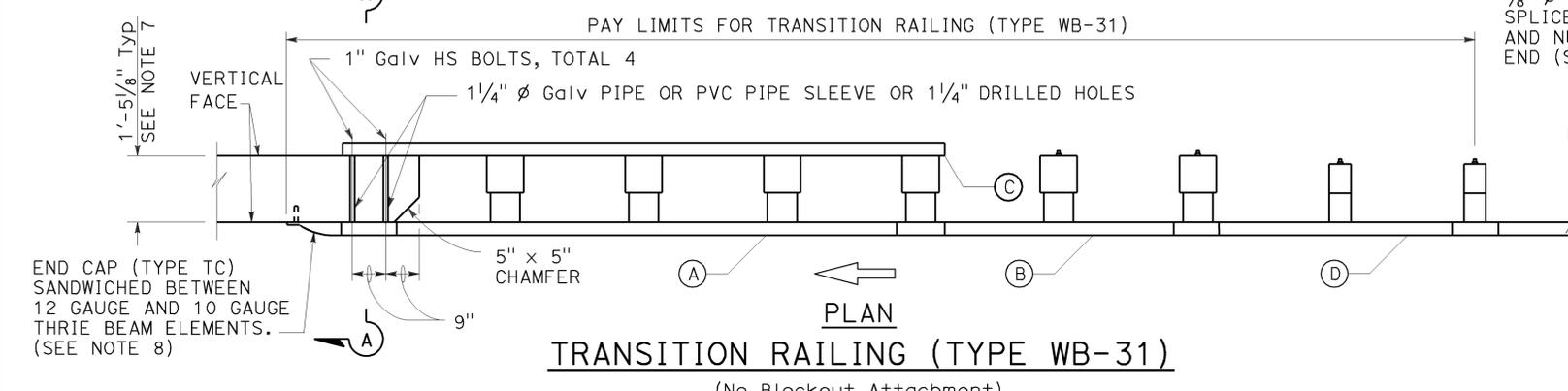
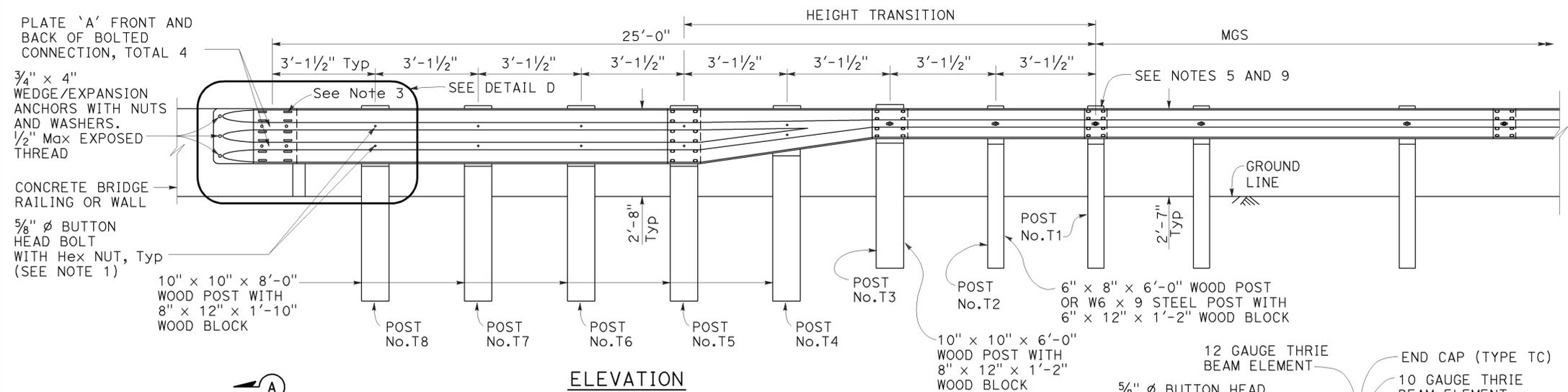
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre, Tul	5,33,137 216,245,269	Var	16	30

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

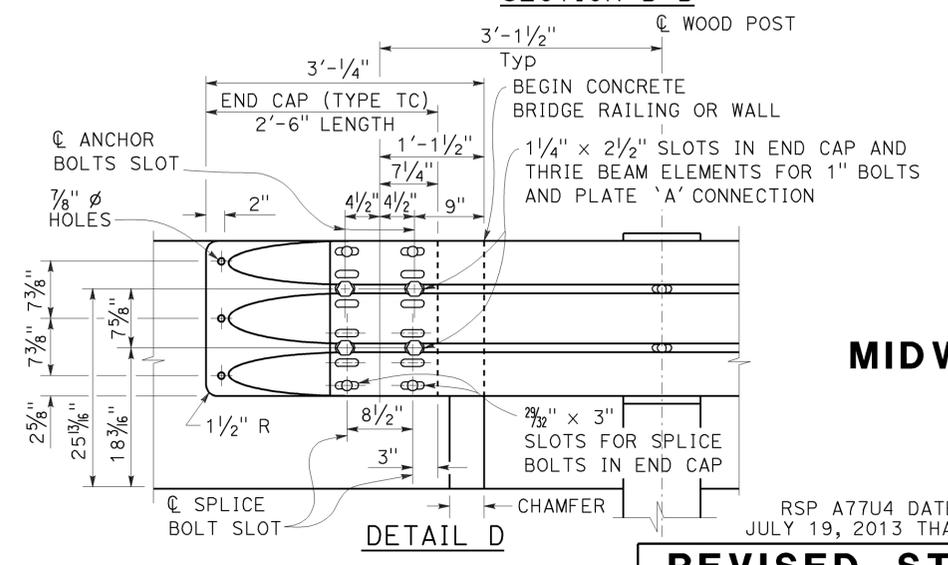
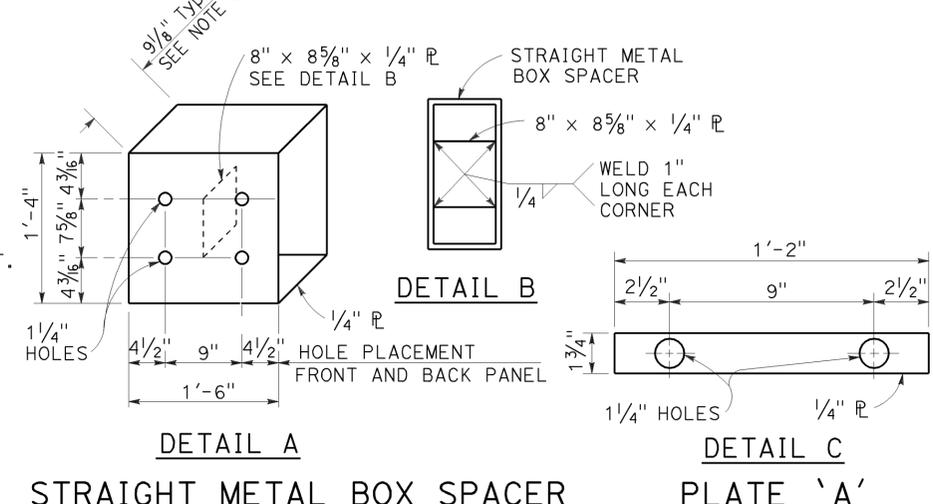
November 15, 2013
PLANS APPROVAL DATE

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



- LEGEND:**
- (A) NESTED THRIE BEAM ELEMENTS (ONE 12 GAUGE ELEMENT NESTED OVER ONE 10 GAUGE ELEMENT).
 - (B) ONE ASYMMETRICAL 10 GAUGE "W" BEAM TO THRIE BEAM ELEMENT.
 - (C) ONE 12 GAUGE THRIE BEAM ELEMENT.
 - (D) ONE 10 GAUGE "W" BEAM RAIL ELEMENT (7'-3/2" LENGTH)
- 10 GAUGE = 0.138" THICK
12 GAUGE = 0.108" THICK



- NOTES:** TO ACCOMPANY PLANS DATED 10-06-14
1. Use 5/8" diameter button head bolts and hex nuts for connections to posts. No washer on rail face for bolted connections to post.
 2. The nested rail elements, end cap, and 'W' beam to thrie beam element may be spliced together prior to bolting the elements to the wood post and concrete barrier or railing.
 3. Exterior splice bolt holes for rail element splices at Post No. T5 and the connection to the concrete barrier or railing shall be the standard 7/32" x 1/8" slot size. Interior splice bolt holes at these locations may be increased up to 1/4" diameter. Only the top 4 and the bottom 4 splice bolts with washers and nuts are required for rail splices at Post No. T5 and the connection to the concrete barrier or railing.
 4. The top elevation of Posts No. T2 through No. T7 shall not project more than 1" above the top elevation of the rail element.
 5. Typically, the railing connected to Transition Railing (Type WB-31) will be either standard railing section of MGS with height transition ratio of 150:1 or a Caltrans approved 31" end treatment attached to Post No. T1.
 6. The depth of the metal box spacer varies from the 9/8" to 1/2" and is dependent on the width of the concrete railing or wall. The combined dimension for the depth of the metal box spacer plus the width of railing or wall is typically 21 1/8". Where the space between the backside of the concrete railing or wall and the rear thrie beam element is less than 1/2", metal plates similar to Plate 'A' are to be used as spacers.
 7. Where the width of the concrete railing or wall is greater than 17 1/8", wood blocks are to be used to fill the space created between the backside of Posts No. T5 through No. T8 and the rear thrie beam element. These wood blocks shall be 8" in width and 1'-2" in length. The dimension between the front thrie beam element and the rear thrie beam element is to match the width of the concrete railing or wall.
 8. End cap may be installed over 12 gauge and 10 gauge thrie beam elements where transition railing is installed on the departure end of bridge railing.
 9. Conform standard railing section height to 31" at Post No. T1 using height transition ratio of 150:1.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
TRANSITION RAILING
(TYPE WB-31)**

NO SCALE

RSP A77U4 DATED NOVEMBER 15, 2013 SUPERSEDES RSP A77U4 DATED JULY 19, 2013 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77U4

2010 REVISED STANDARD PLAN RSP A77U4

TO ACCOMPANY PLANS DATED 10-06-14

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	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
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.

REVISED STANDARD PLAN RSP T9

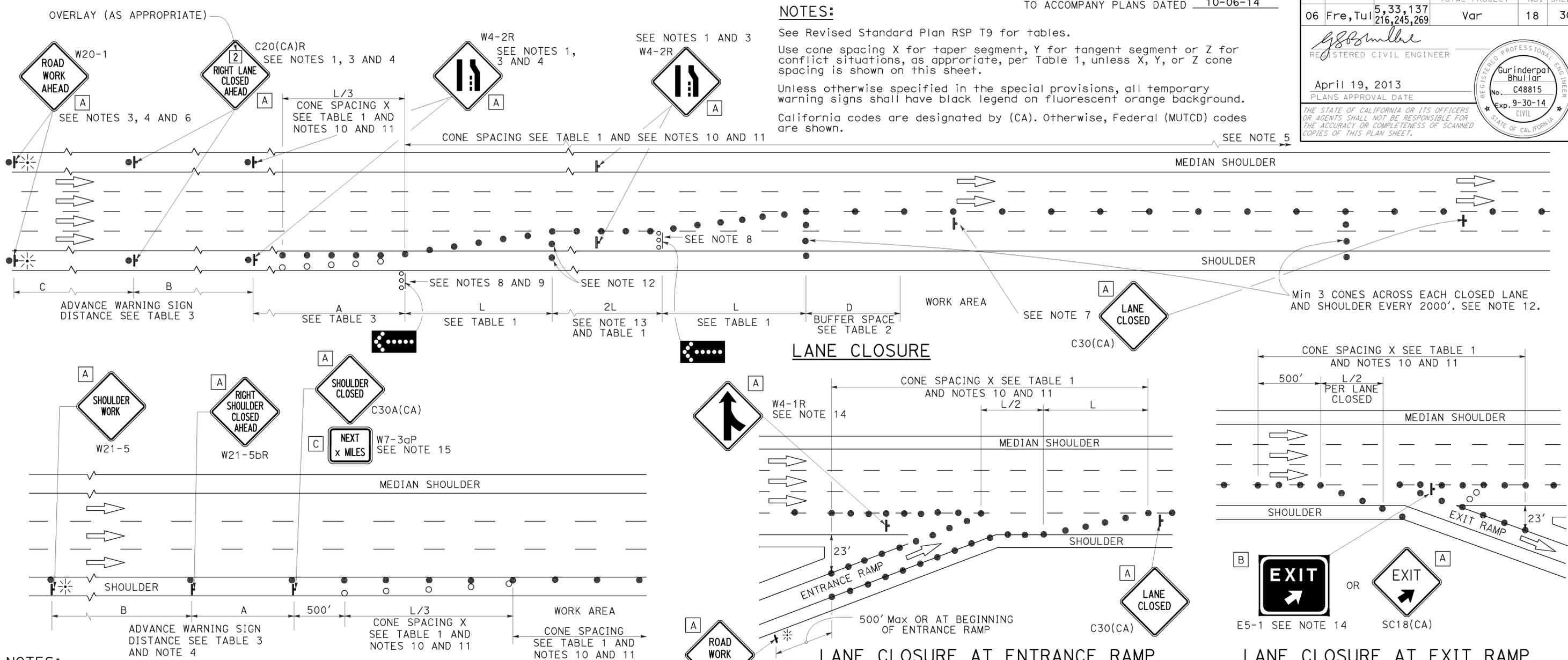
2010 REVISED STANDARD PLAN RSP T9

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre, Tul	5,33,137 216,245,269	Var	18	30

REGISTERED CIVIL ENGINEER
 April 19, 2013
 PLANS APPROVAL DATE

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

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- NOTES:**
1. Median lane closures shall conform to the details as shown except that C20(CA)L and W4-2L signs shall be used.
 2. At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closures.
 3. Duplicate sign installations are not required:
 - a) On opposite shoulder if at least one-half of the available lanes remain open to traffic.
 - b) In the median if the width of the median shoulder is less than 8' and the outside lanes are to be closed.
 4. Each advance warning sign on each side of the roadway shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
 5. A 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.

- SHOULDER CLOSURE**
6. 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)L and W4-2L signs shall be used.
 7. Place a C30(CA) sign every 2000' throughout length of lane closure.
 8. One flashing arrow sign for each lane closed. The flashing arrow signs shall be Type I.
 9. A minimum 1500' of sight distance shall be provided where possible for vehicles approaching the first flashing arrow sign. Lane closures shall not begin at top of crest vertical curve or on a horizontal curve.
 10. All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
 11. Portable delineators, placed at one-half the spacing indicated for traffic cones may be used instead of cones for daytime closures only.

12. Unless otherwise specified in the special provisions, a minimum of 3 cones shall be placed transversely across each closed lane and shoulder at each location where a taper across a traffic lane ends and every 2000' as shown on the "Lane Closure" detail. Two Type II barricades may be used instead of the 3 cones. The transverse alignment of the cones or barricades on the closed shoulder may be shifted from the transverse alignment to provide access to the work.
13. Unless otherwise specified in the special provisions, the 2L tangent shown along lane lines shall be used between the L tapers required for each closed traffic lane.
14. Unless otherwise specified in the special provisions, the E5-1 or SC18(CA) and W4-1 signs shall be used as shown.
15. A W7-3aP "NEXT _____ MILES" plaque must be used if the shoulder closure extends beyond the distance that can be perceived by road users.

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	72" x 60"
C	36" x 30"

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

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

NO SCALE

RSP T10 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T10 DATED MAY 20, 2011 - PAGE 237 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T10

2010 REVISED STANDARD PLAN RSP T10

NOTES:

See Revised Standard Plan RSP T9 for tables.

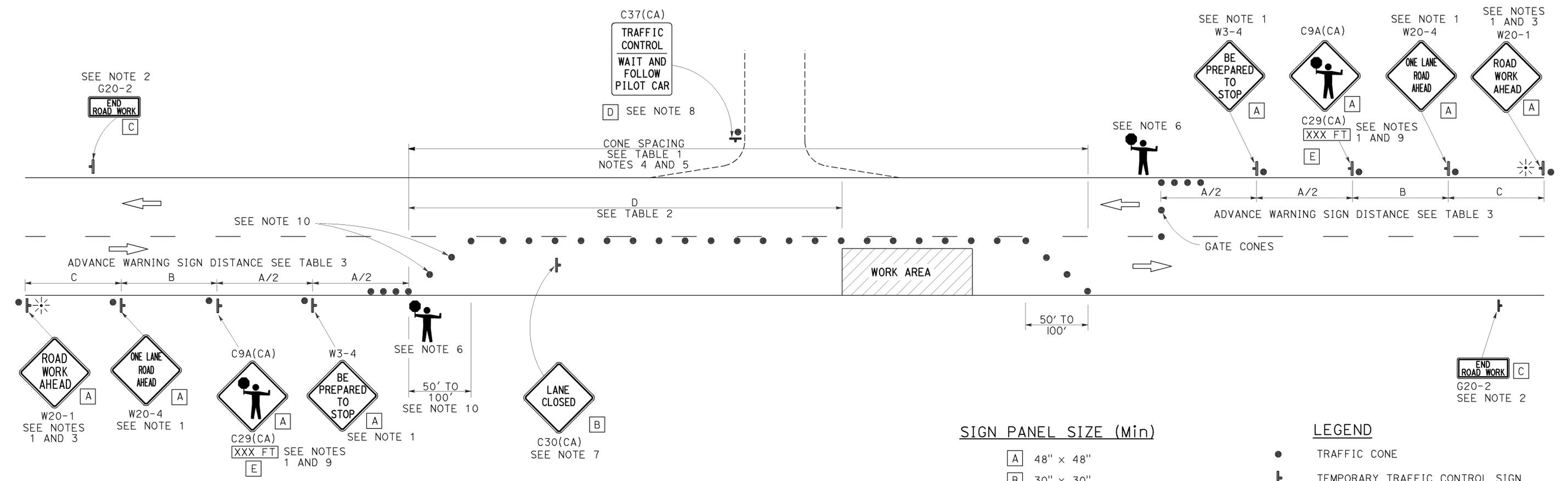
Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as appropriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.

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 10-06-14



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.

2010 REVISED STANDARD PLAN RSP T13

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre, Tul	5, 33, 137, 216, 245, 269	Var	20	30

1-17-14
REGISTERED CIVIL ENGINEER DATE

10-06-14
PLANS APPROVAL DATE

BRIAN P. NGUYEN
No. C 68270
Exp. 9-30-15
CIVIL
STATE OF CALIFORNIA

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GALE UNDERCROSSING BRIDGE NO 42-0269R/L

QUANTITIES

PREPARE CONCRETE BRIDGE DECK SURFACE	6,552	SQFT
TREAT BRIDGE DECK	6,552	SQFT
FURNISH BRIDGE DECK TREATMENT MATERIAL	73	GAL
GRIND EXISTING EPOXY GRIT OVERLAY	6,552	SQFT
AGGREGATE BASE (APPROACH SLAB)	9	CY
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE R)	87	CY
PAVING NOTCH EXTENSION	59	CF
JOINT SEAL (MR 1/2")	80	LF

PARKHURST EQUIPMENT UNDERCROSSING BRIDGE NO 42-0257R

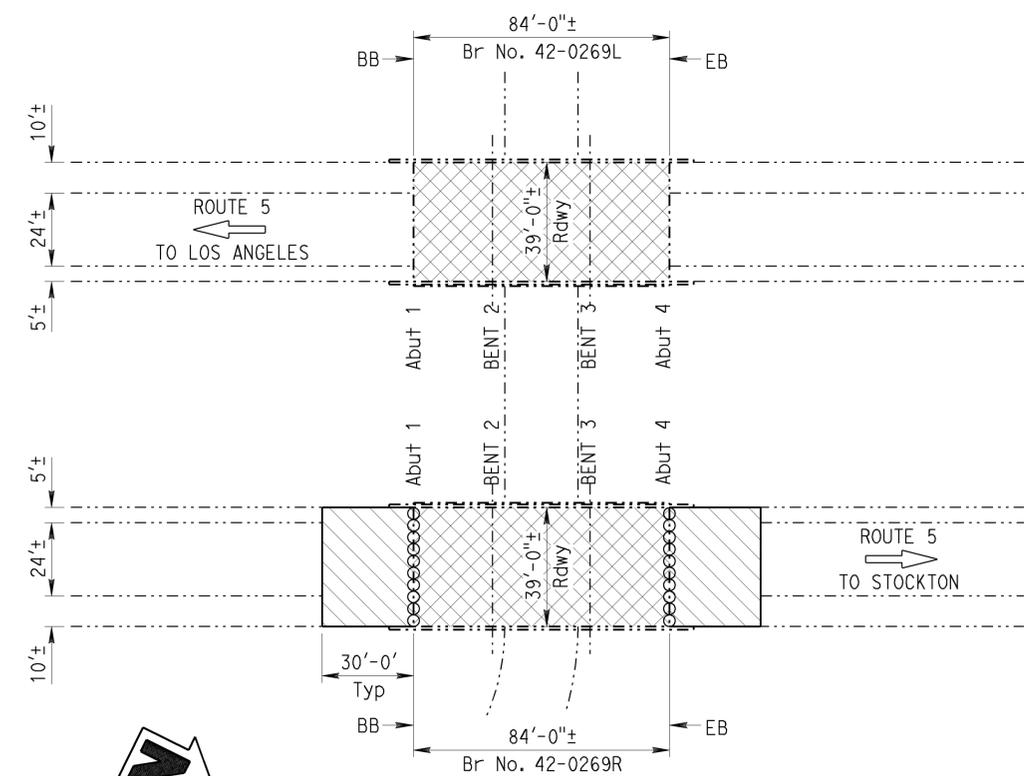
QUANTITIES

CLEAN EXPANSION JOINT	80	LF
JOINT SEAL (MR 1/2")	80	LF

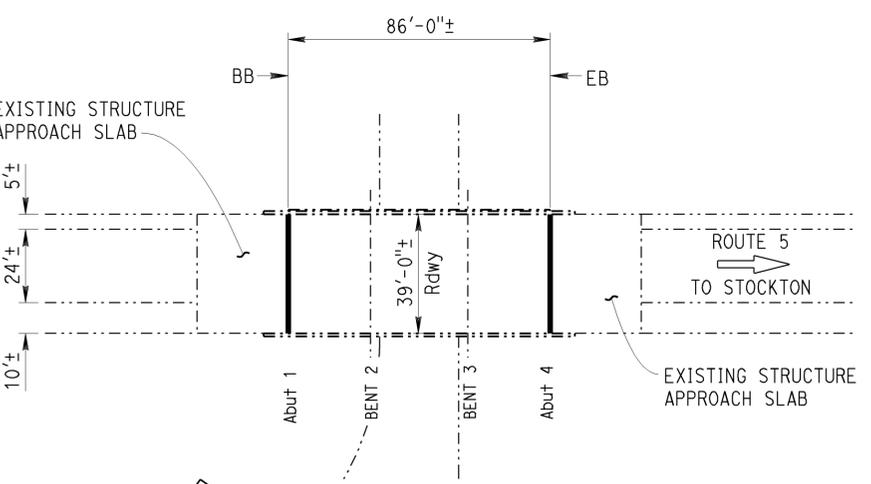
PANOCHÉ CREEK BRIDGE NO 42-0249R

QUANTITIES

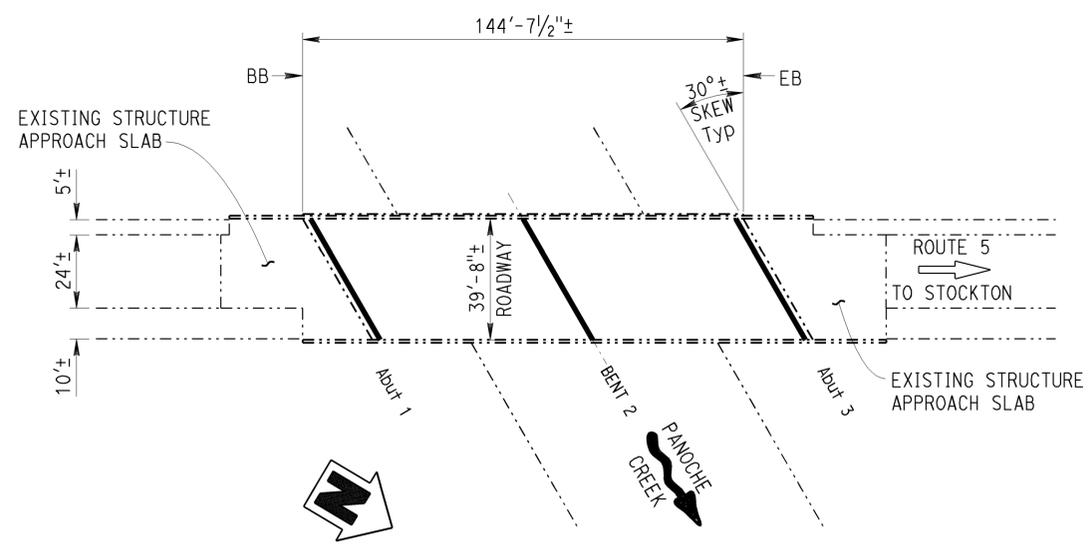
CLEAN EXPANSION JOINT	141	LF
JOINT SEAL (MR 1/2")	94	LF
JOINT SEAL (MR 1")	47	LF



GALE UNDERCROSSING
Br No. 42-0269R/L, Fre, ROUTE 5, PM 9.23
1" = 30'



PARKHURST EQUIPMENT UNDERCROSSING
Br No. 42-0275R, Fre, ROUTE 5 PM 26.80
1" = 30'



PANOCHÉ CREEK
Br No. 42-0249R, Fre, ROUTE 5 PM 49.99
1" = 30'

- NOTES: (APPLY TO ALL SHEETS)
- Indicates existing.
 - THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.
 - STANDARD PLAN SHEET NUMBER
 - DETAIL NUMBER
 - NOTES: (APPLY TO THIS SHEET ONLY)
 - ▨ Indicates limits of grind existing epoxy grit overlay, prepare concrete bridge deck surface and treat bridge deck with high molecular weight methacrylate.
 - ▨ Indicates limits of remove existing AC surfacing and PCC roadway, and place new Structure Approach Type R(30S) with paving notch extension. For details see "STRUCTURE APPROACH TYPE R(30D)" sheet.
 - Indicates limits of clean expansion joint and install new joint seal. For details see "MISCELLANEOUS DETAILS No. 2" sheet.
 - Indicates limits of install new joint seal. For details see "MISCELLANEOUS DETAILS No. 2" sheet.

INDEX TO PLANS

SHEET No.	TITLE
1	GENERAL PLAN No. 1
2	GENERAL PLAN No. 2
3	GENERAL PLAN No. 3
4	GENERAL PLAN No. 4
5	BEARING REPLACEMENT DETAILS No. 1
6	BEARING REPLACEMENT DETAILS No. 2
7	BEARING REPLACEMENT DETAILS No. 3
8	MISCELLANEOUS DETAILS No. 1
9	MISCELLANEOUS DETAILS No. 2
10	STRUCTURE APPROACH TYPE R(30D)
11	THREE BEAM BARRIER CONNECTION - TYPE 1

STANDARD PLANS DATED 2010

SHEET No.	TITLE
A10A	ABBREVIATIONS (SHEET 1 OF 2)
RSP A10B	ABBREVIATIONS (SHEET 2 OF 2)
B6-21	JOINT SEALS (MAXIMUM MOVEMENT RATING = 2")

Michael J. Lee 1-17-14
DESIGN ENGINEER

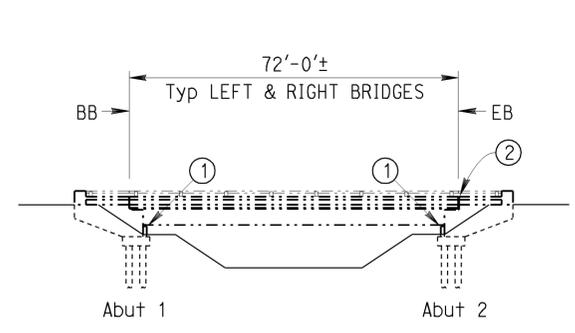
DESIGN	BY BRIAN NGUYEN	CHECKED HUBERT DANG	LOAD FACTOR DESIGN	LIVE LOADING: HS20-44 AND ALTERNATIVE AND PERMIT DESIGN LOAD
DETAILS	BY GF BIDWELL	CHECKED HUBERT DANG	LAYOUT	BY GF BIDWELL
QUANTITIES	BY BRIAN NGUYEN	CHECKED HUBERT DANG	SPECIFICATIONS	BY JARVIS MAHE

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

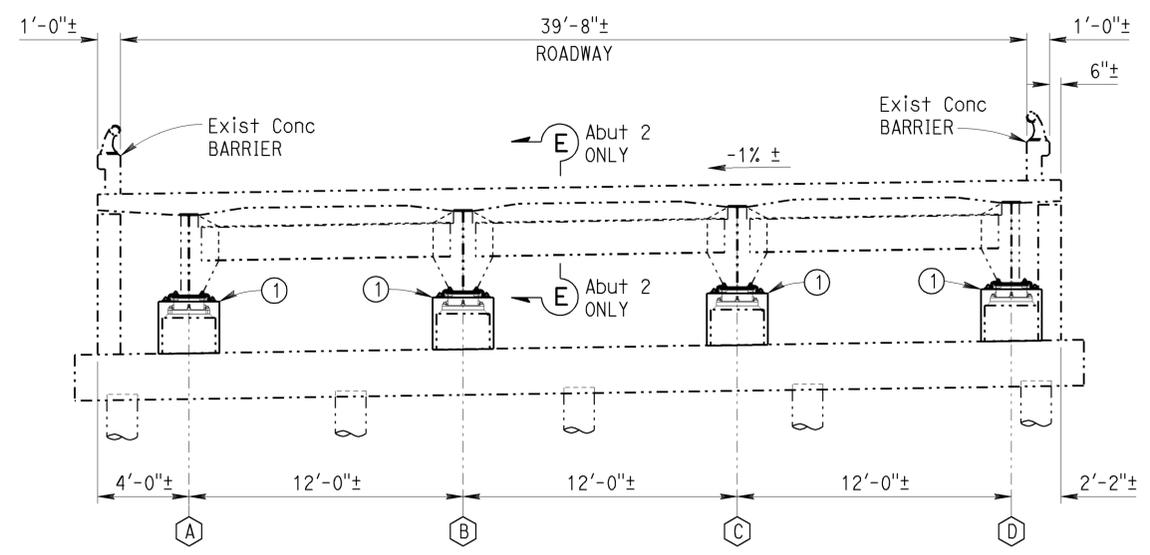
DIVISION OF MAINTENANCE
STRUCTURE MAINTENANCE DESIGN

BRIDGE No. VARIOUS
POST MILE VARIES
ROUTE 5, 33, 137, 216, 245 & 269 BRIDGES
GENERAL PLAN No. 1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre, Tul	5, 33, 137, 216, 245, 269	Var	21	30
			1-17-14		
REGISTERED CIVIL ENGINEER			DATE		
10-06-14			PLANS APPROVAL DATE		
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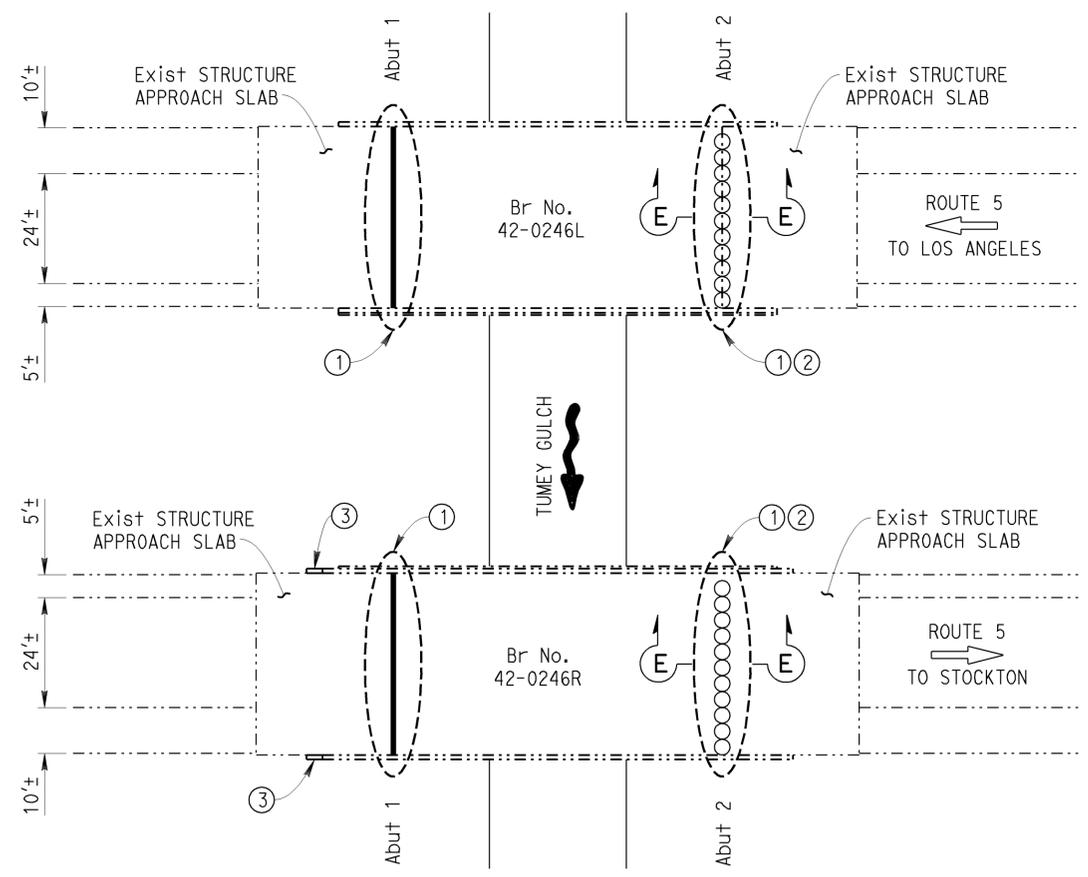


ELEVATION



TYPICAL ABUTMENT ELEVATION

LEFT BRIDGE SHOWN, RIGHT BRIDGE SIMILAR
1/4" = 1'



PLAN

TUMEY GULCH

Br No. 42-0246R/L, Fre, ROUTE 5, PM 44.93
1" = 20'

TUMEY GULCH BRIDGE NO 42-0246R/L

QUANTITIES

LEAD COMPLIANCE PLAN	LUMP SUM
REPAIR SPALLED SURFACE AREA	72 SQFT
BRIDGE REMOVAL (PORTION)	LUMP SUM
TEMPORARY SUPPORT	LUMP SUM
STRUCTURAL CONCRETE, BRIDGE	14 CY
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE R)	6 CY
DRILL AND BOND DOWEL	86 LF
CLEAN EXPANSION JOINT	82 LF
ELASTOMERIC BEARING PAD	16 EA
JOINT SEAL (MR 1/2")	164 LF
BAR REINFORCING STEEL (BRIDGE)	2,453 LB
CLEAN AND PAINT STRUCTURAL STEEL	LUMP SUM
SPOT BLAST CLEAN AND PAINT UNDERCOAT	58 SQFT
MISCELLANEOUS METAL (BRIDGE)	1,117 LB
CONCRETE BARRIER (TRANSITION ANCHOR BLOCK)	7 LF

GENERAL NOTES

- NOTES: (APPLY TO THIS SHEET ONLY)
- ① Indicates location of remove existing steel bearings and concrete pedestal and place new concrete pedestal and elastomeric bearing pad, total 4 bearing pads each at Abutment 1 and Abutment 2 for each bridge. For details see "BEARING REPLACEMENT DETAILS No. 1" through "BEARING REPLACEMENT DETAILS No. 3" sheets.
 - ② Sawcut existing concrete barrier at wingwall side of joint at Abutment 2 only. See "ABUTMENT 2 WINGWALL ELEVATION" on "MISCELLANEOUS DETAILS No. 1" sheet.
 - ③ Indicates locations of place new concrete barrier (transition anchor block). For details see "THREE BEAM CONNECTION - TYPE 1" sheet.
 - ⊗ Indicates existing steel girder designation.
 - Indicates limits of clean expansion joint and install new joint seal. See "MISCELLANEOUS DETAILS No. 2" sheet.
 - Indicates limits of reconstruct expansion joint and place new joint seal. See "SECTION E-E" on "MISCELLANEOUS DETAILS No. 1" sheet. See MISCELLANEOUS DETAILS No. 2" sheet for joint seal details.
- DESIGN: BRIDGE DESIGN SPECIFICATIONS (1996 AASHTO with Interims and Revisions by CALTRANS)
- DEAD LOAD: Includes 35 psf for future wearing surface.
- LIVE LOADING: HS20-44 and alternative and permit design load.
- REINFORCED CONCRETE: fy = 60 ksi
f'c = 4000 psi

 1-17-14
DESIGN ENGINEER

DESIGN	BY BRIAN NGUYEN	CHECKED HUBERT DANG	LOAD FACTOR DESIGN	LIVE LOADING: HS20-44 AND ALTERNATIVE AND PERMIT DESIGN LOAD
DETAILS	BY GF BIDWELL	CHECKED HUBERT DANG	LAYOUT	BY GF BIDWELL
QUANTITIES	BY BRIAN NGUYEN	CHECKED HUBERT DANG	SPECIFICATIONS	BY JARVIS MAHE

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF MAINTENANCE
STRUCTURE MAINTENANCE DESIGN

BRIDGE No. VARIOUS
POST MILE VARIES
ROUTE 5, 33, 137, 216, 245 & 269 BRIDGES
GENERAL PLAN No. 2

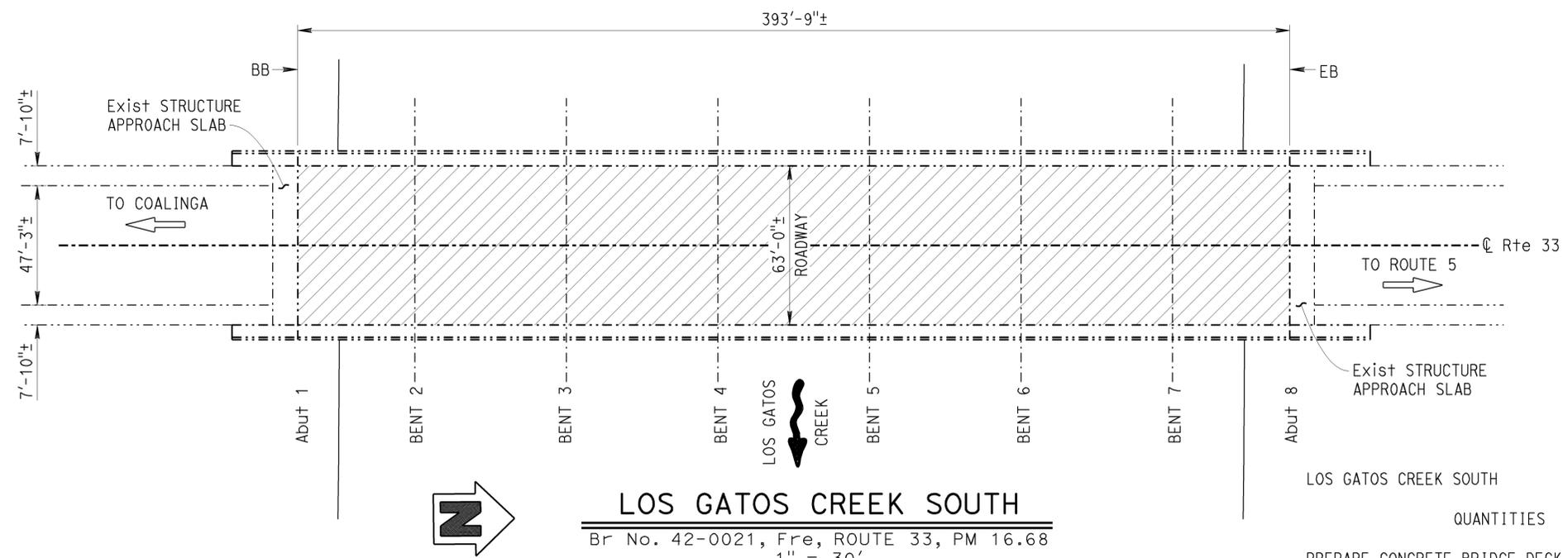
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre, Tul	5, 33, 137 216, 245, 269	Var	22	30

1-17-14
REGISTERED CIVIL ENGINEER DATE

10-06-14
PLANS APPROVAL DATE

BRIAN P. NGUYEN
No. C 68270
Exp. 9-30-15
CIVIL

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LOS GATOS CREEK SOUTH
 Br No. 42-0021, Fre, ROUTE 33, PM 16.68
 1" = 30'

LOS GATOS CREEK SOUTH BRIDGE NO 42-0021

QUANTITIES

PREPARE CONCRETE BRIDGE DECK SURFACE	24,806	SQFT
TREAT BRIDGE DECK	24,806	SQFT
FURNISH BRIDGE DECK TREATMENT MATERIAL	276	GAL

- NOTES: (APPLY TO THIS SHEET ONLY)
- Indicates limits of prepare concrete bridge deck surface and treat bridge deck with high molecular weight methacrylate.
 - Indicates limits of grind existing epoxy grit overlay, prepare concrete bridge deck surface and treat bridge deck with high molecular weight methacrylate.
 - Indicates limits of clean expansion joint and install new joint seal. See "MISCELLANEOUS DETAILS No. 2" sheet.

ROUTE 137/99 SEPARATION BRIDGE NO 42-0150R

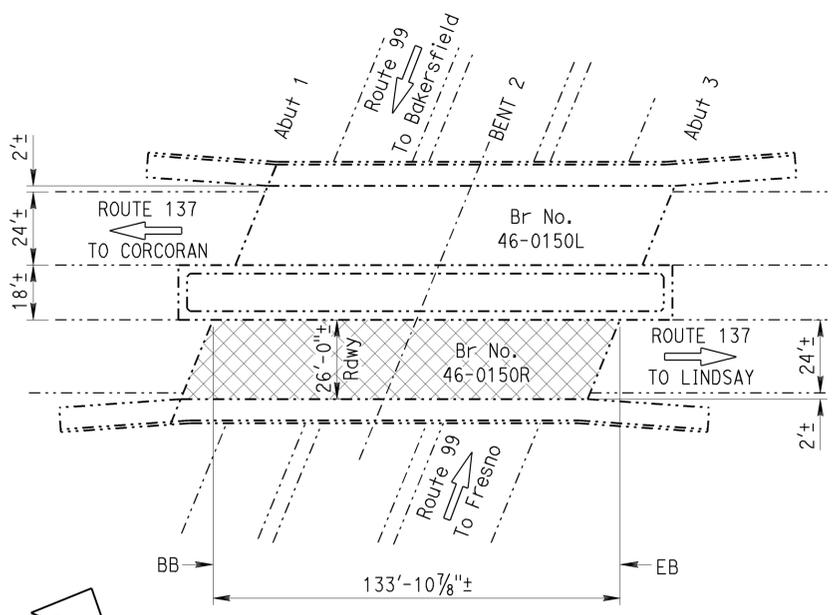
QUANTITIES

PREPARE CONCRETE BRIDGE DECK SURFACE	3,484	SQFT
TREAT BRIDGE DECK	3,484	SQFT
FURNISH BRIDGE DECK TREATMENT MATERIAL	39	GAL
GRIND EXISTING EPOXY GRIT OVERLAY	3,484	SQFT

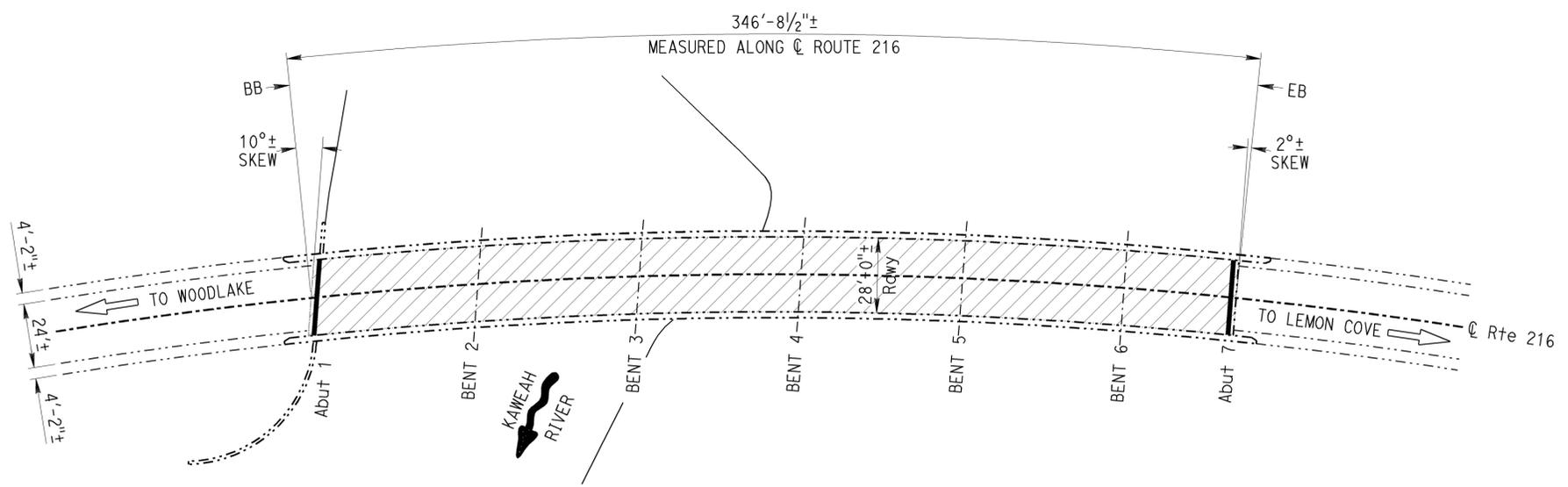
KAWEAH RIVER BRIDGE NO 46-0091

QUANTITIES

PREPARE CONCRETE BRIDGE DECK SURFACE	9,702	SQFT
TREAT BRIDGE DECK	9,702	SQFT
FURNISH BRIDGE DECK TREATMENT MATERIAL	108	GAL
CLEAN EXPANSION JOINT	58	LF
JOINT SEAL (MR 1/2")	58	LF



ROUTE 137/99 SEPARATION
 Br No. 46-0150R, Tul, ROUTE 137, PM 16.63
 1" = 30'



KAWEAH RIVER
 Br No. 46-0091, Tul, ROUTE 216, PM 18.68
 1" = 30'

Michael J. Lee 1-17-14
 DESIGN ENGINEER

DESIGN	BY BRIAN NGUYEN	CHECKED HUBERT DANG	LOAD FACTOR DESIGN	LIVE LOADING: HS20-44 AND ALTERNATIVE AND PERMIT DESIGN LOAD
DETAILS	BY GF BIDWELL	CHECKED HUBERT DANG	LAYOUT	BY GF BIDWELL
QUANTITIES	BY BRIAN NGUYEN	CHECKED HUBERT DANG	SPECIFICATIONS	BY JARVIS MAHE

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF MAINTENANCE
 STRUCTURE MAINTENANCE DESIGN

BRIDGE No. VARIOUS
 POST MILE Varies
ROUTE 5, 33, 137, 216, 245 & 269 BRIDGES
GENERAL PLAN No. 3

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre, Tul	5, 33, 137, 216, 245, 269	Var	23	30

1-17-14
 REGISTERED CIVIL ENGINEER DATE
 10-06-14
 PLANS APPROVAL DATE

BRIAN P. NGUYEN
 No. C 68270
 Exp. 9-30-15
 CIVIL
 STATE OF CALIFORNIA

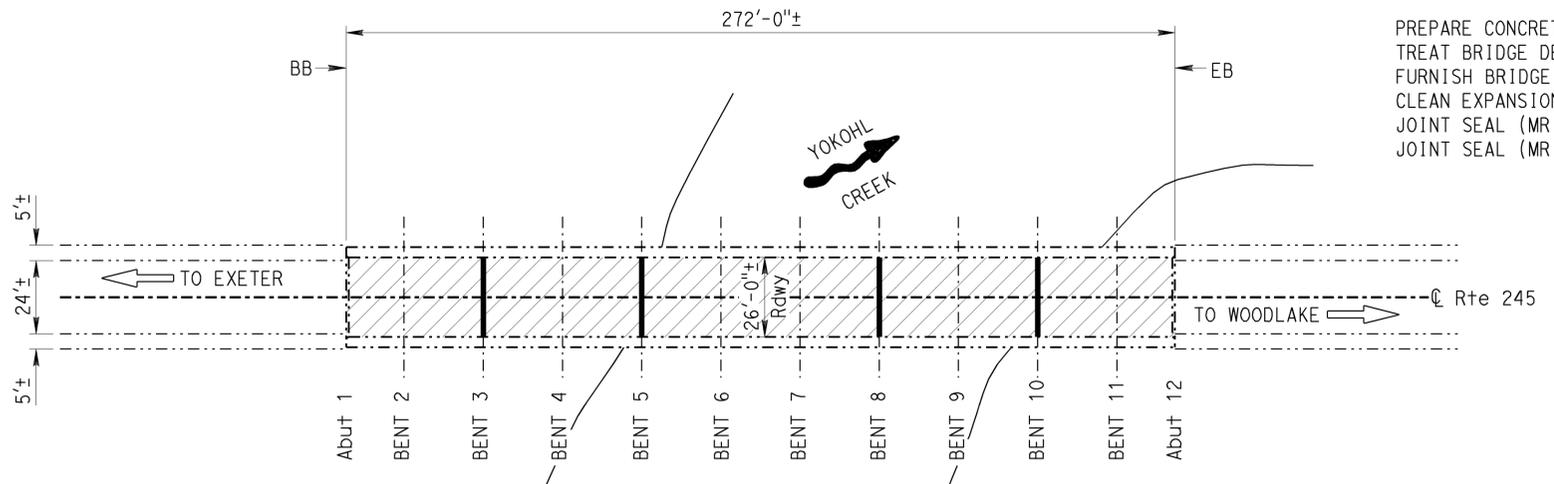
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YOKOHL CREEK

BRIDGE NO 46-0011

QUANTITIES

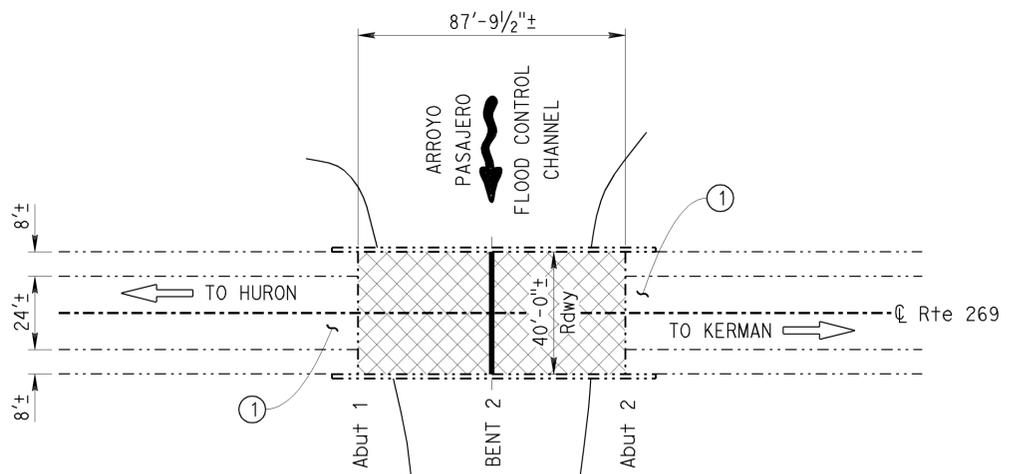
PREPARE CONCRETE BRIDGE DECK SURFACE	7,072	SQFT
TREAT BRIDGE DECK	7,072	SQFT
FURNISH BRIDGE DECK TREATMENT MATERIAL	79	GAL
CLEAN EXPANSION JOINT	108	LF
JOINT SEAL (MR 1/2")	54	LF
JOINT SEAL (MR 1")	54	LF



YOKOHL CREEK

Br No. 46-0011, Tul, ROUTE 245, PM 1.39
 1" = 30'

- NOTES:** (APPLY TO THIS SHEET ONLY)
- Indicates limits of prepare concrete bridge deck surface and treat bridge deck with high molecular weight methacrylate.
 - Indicates limits of remove unsound concrete, place rapid setting concrete patches, prepare concrete bridge deck surface, and place new 3/4" Min depth polyester concrete overlay. For details see "MISCELLANEOUS DETAILS No. 2" sheet.
 - Indicates limits of clean expansion joint and install new joint seal. See "MISCELLANEOUS DETAILS No. 2" sheet.
 - ① See Road Plans for roadway conform.



HURON DIKE

Br No. 42-0376, Fre, ROUTE 269, PM 12.21
 1" = 30'

HURON DIKE

BRIDGE NO 42-0376

QUANTITIES

RAPID SETTING CONCRETE (PATCH)	9	CF
REMOVE UNSOUND CONCRETE	9	CF
PREPARE CONCRETE BRIDGE DECK SURFACE	3,510	SQFT
FURNISH POLYESTER CONCRETE OVERLAY	263	CF
PLACE POLYESTER CONCRETE OVERLAY	3,510	SQFT
CLEAN EXPANSION JOINT	41	LF
JOINT SEAL (MR 1/2")	41	LF

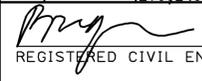
Michael J. Lee 1-17-14
 DESIGN ENGINEER

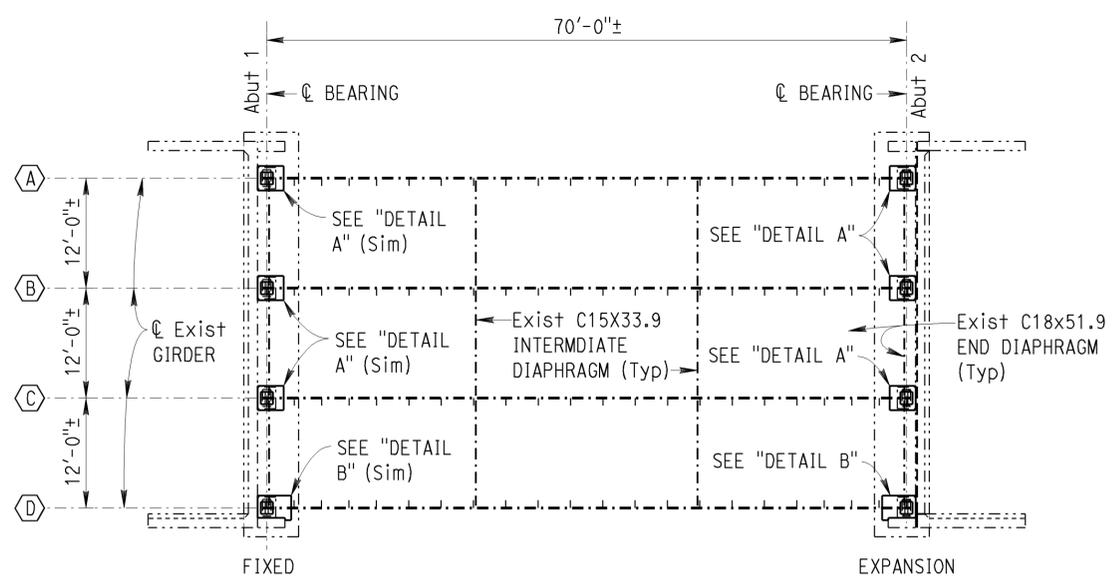
DESIGN	BY BRIAN NGUYEN	CHECKED HUBERT DANG	LOAD FACTOR DESIGN	LIVE LOADING: HS20-44 AND ALTERNATIVE AND PERMIT DESIGN LOAD
DETAILS	BY GF BIDWELL	CHECKED HUBERT DANG	LAYOUT	BY GF BIDWELL
QUANTITIES	BY BRIAN NGUYEN	CHECKED HUBERT DANG	SPECIFICATIONS	BY JARVIS MAHE

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF MAINTENANCE
 STRUCTURE MAINTENANCE DESIGN

BRIDGE No. VARIOUS
 POST MILE Varies
ROUTE 5, 33, 137, 216, 245 & 269 BRIDGES
 GENERAL PLAN No. 4

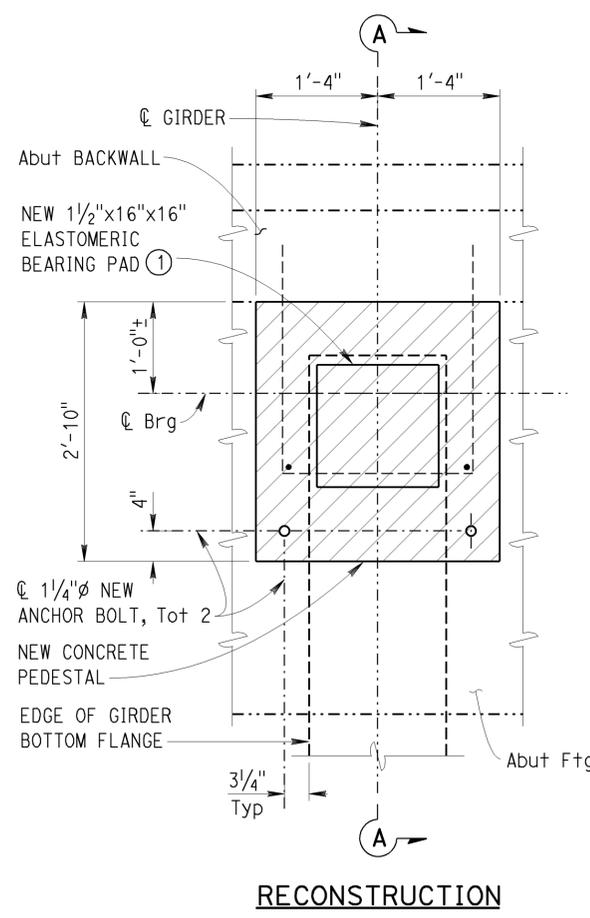
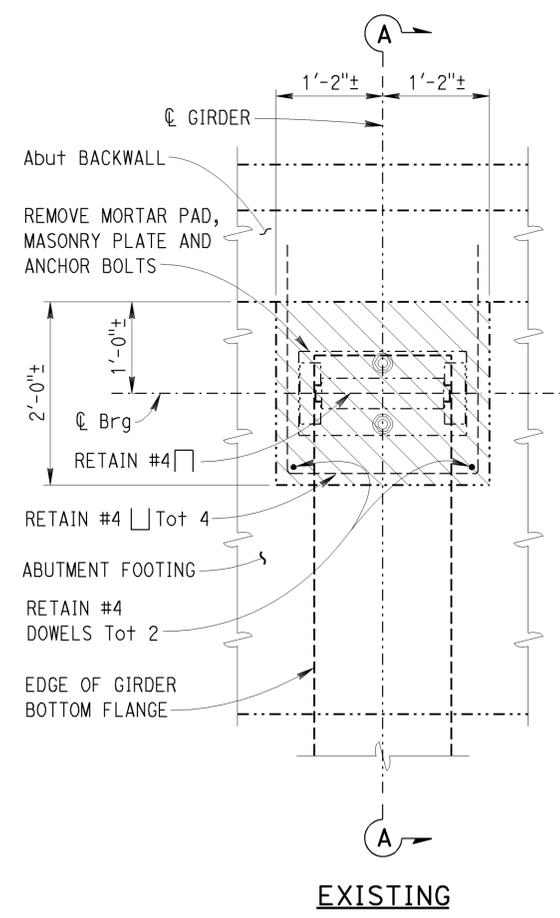
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre, Tul	5, 33, 137, 216, 245, 269	Var	24	30
 REGISTERED CIVIL ENGINEER			DATE	1-17-14	
PLANS APPROVAL DATE			10-06-14		
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF ELECTRONIC COPIES OF THIS PLAN SHEET.					



EXISTING GIRDER LAYOUT

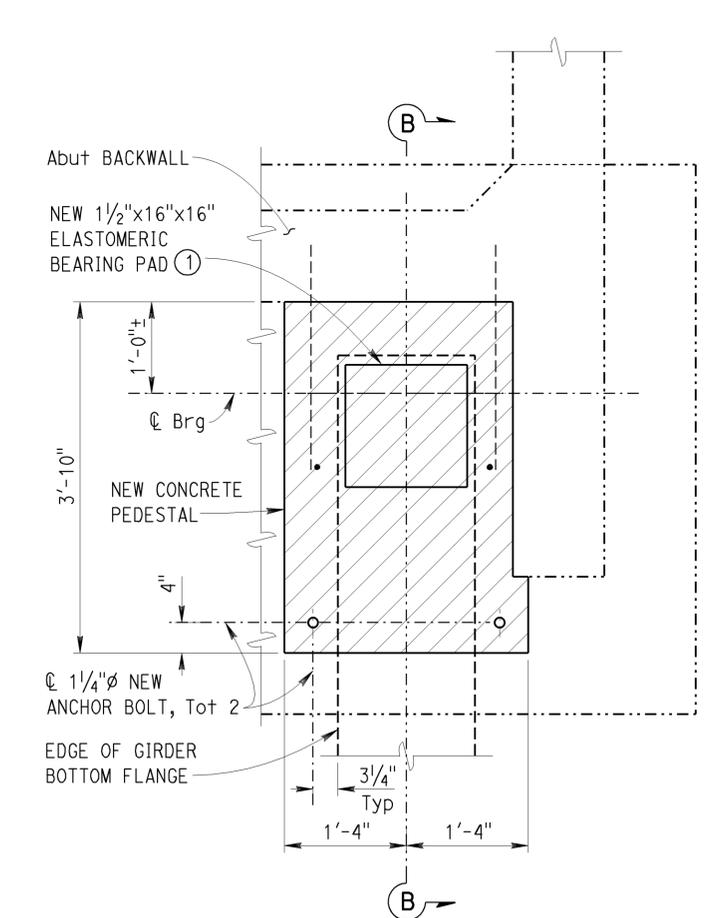
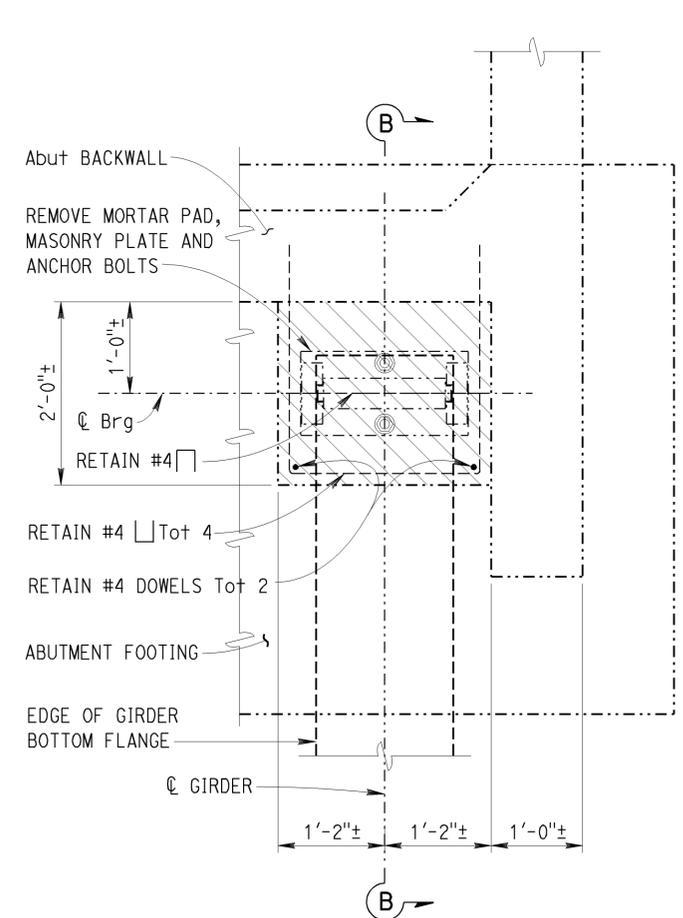
Br No. 42-0246L SHOWN; Br No. 42-0246R SIMILAR
1" = 10'

- NOTES: (APPLY TO THIS SHEET ONLY)**
-  Indicates limits of remove existing concrete. Retain existing reinforcing steel.
 -  Indicates limits of place new concrete pedestal.
 - ① For details see "BEARING REPLACEMENT DETAILS No. 3" sheet.
- See "BEARING REPLACEMENT DETAILS No. 2" sheet for "SECTION A-A" and "SECTION B-B".



DETAIL A

TYPICAL FOR GIRDERS A, B & C
1" = 1'



DETAIL B

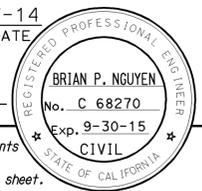
TYPICAL FOR GIRDER D
1" = 1'

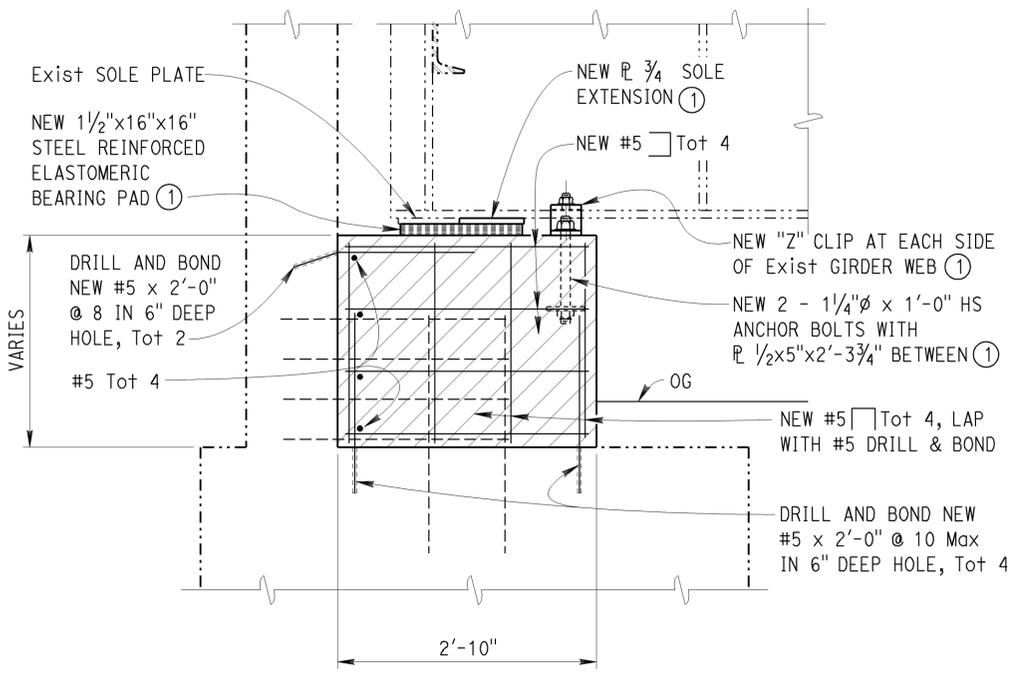
DESIGN	BY BRIAN NGUYEN	CHECKED HUBERT DANG
DETAILS	BY GF BIDWELL	CHECKED HUBERT DANG
QUANTITIES	BY BRIAN NGUYEN	CHECKED HUBERT DANG

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

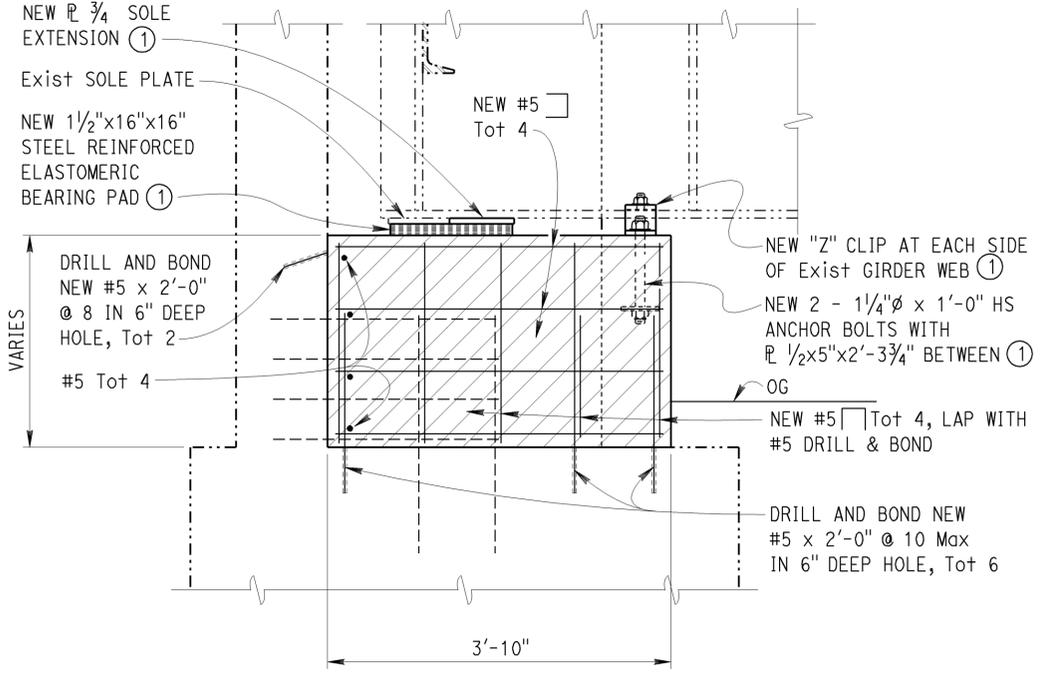
DIVISION OF MAINTENANCE
STRUCTURE MAINTENANCE DESIGN

BRIDGE No. VARIOUS
POST MILE VARIES
ROUTE 5, 33, 137, 216, 245 & 269 BRIDGES
BEARING REPLACEMENT DETAILS No. 1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre, Tul	5, 33, 137, 216, 245, 269	Var	25	30
			1-17-14	DATE	
REGISTERED CIVIL ENGINEER			DATE		
10-06-14			PLANS APPROVAL DATE		
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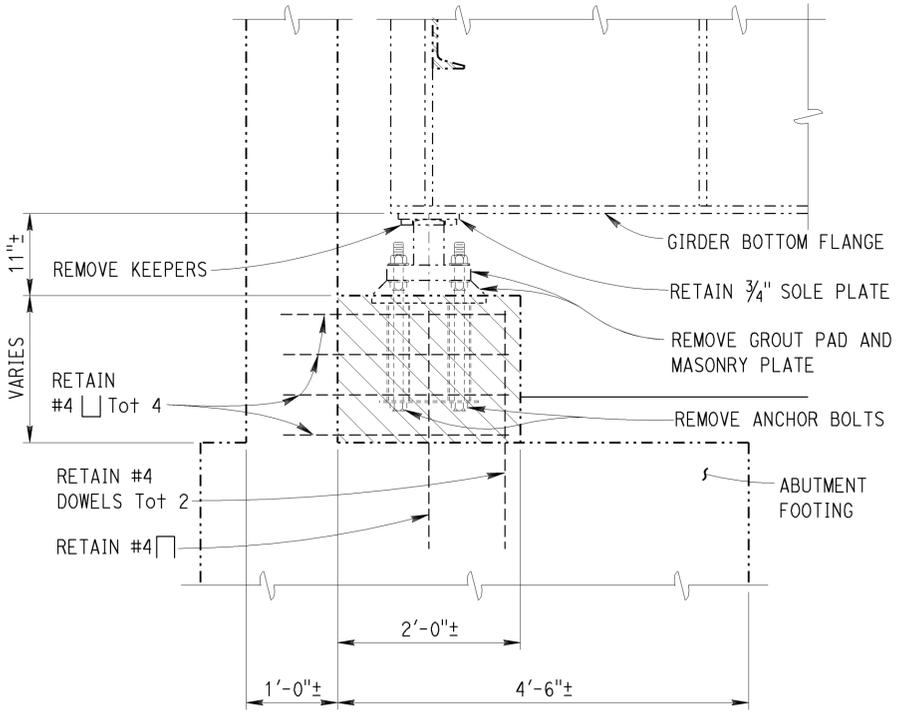


RECONSTRUCTION

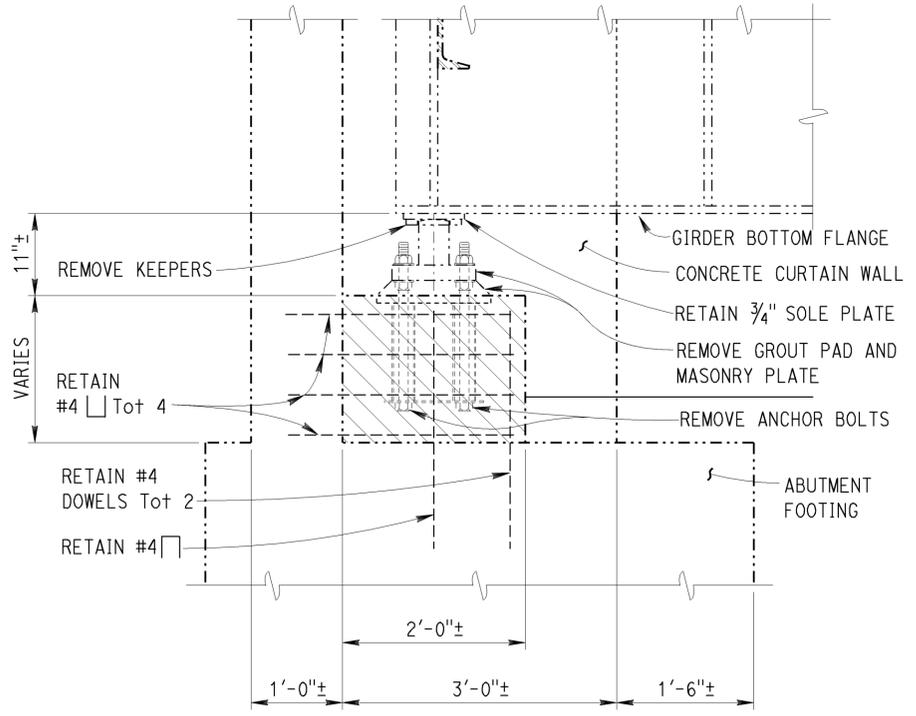


RECONSTRUCTION

- NOTES: (APPLY TO THIS SHEET ONLY)**
-  Indicates limits of remove existing concrete. Retain existing reinforcing steel.
 -  Indicates limits of place new concrete pedestal.
 - ① For details see "BEARING REPLACEMENT DETAILS No. 3" sheet.



EXISTING SECTION A-A
1" = 1'

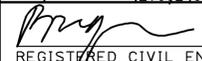
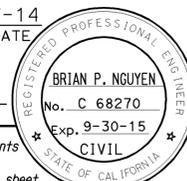


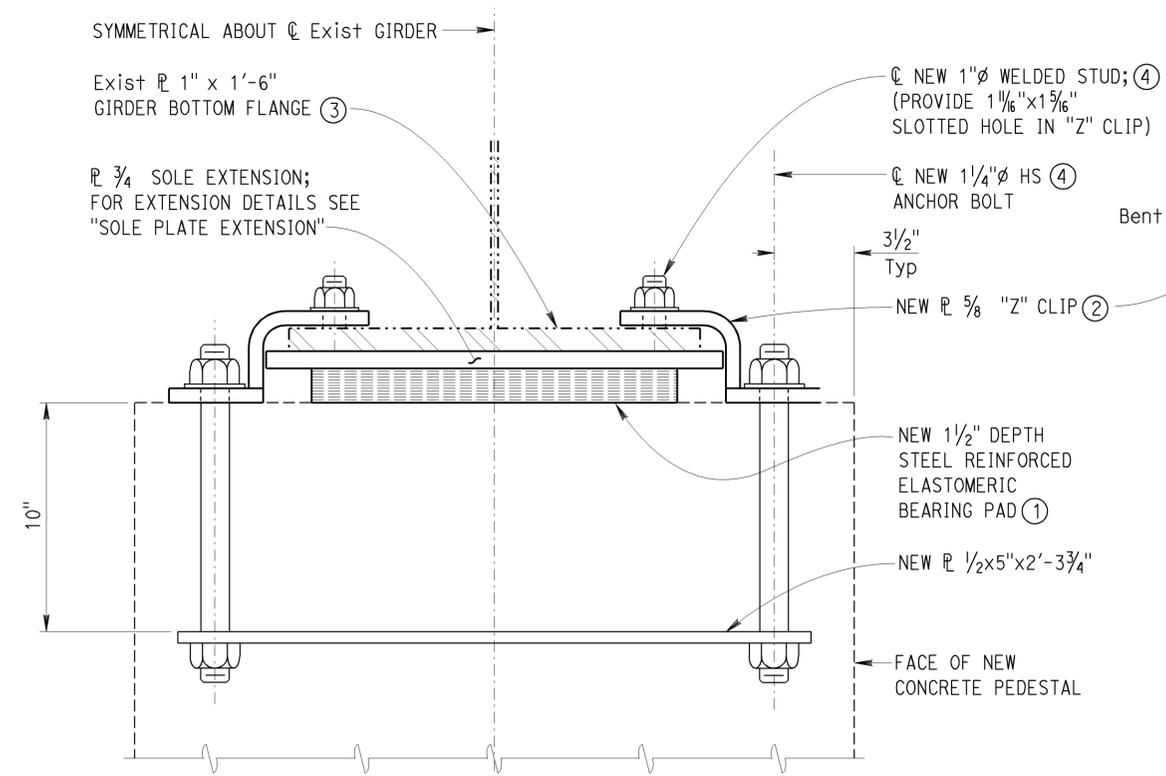
EXISTING SECTION B-B
1" = 1'

LOCATION	DEAD LOAD REACTION (K)	LL + DL REACTION (K)	MINIMUM LATERAL TEMPORARY SUPPORT DESIGN LOAD (K)
42-0246L Abut	294	515	29.4
42-0246R Abut	294	515	29.4

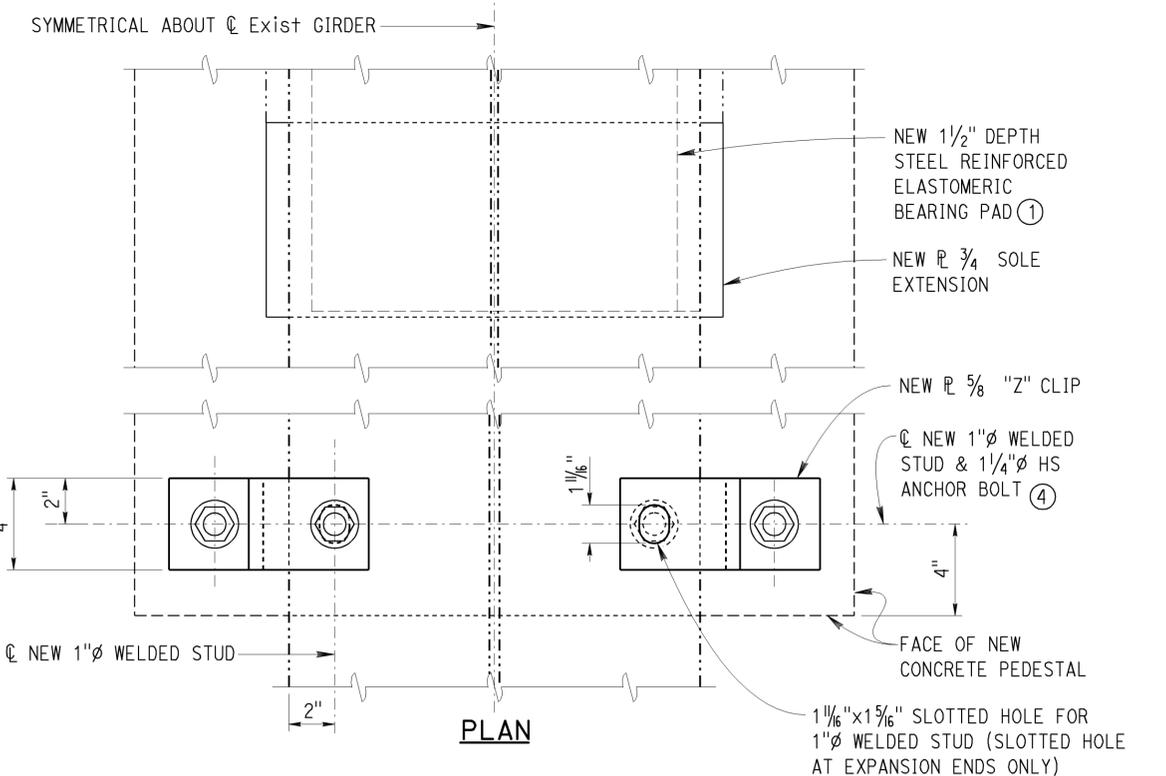
- JACKING NOTES:**
- Loads are given for the full width of the location shown on the "JACKING FORCES TABLE".
 - All temporary supports shall apply the jacking force uniformly across the transverse width of the portion of the structure requiring temporary supports and shall provide uniform bearing to each girder. The vertical lift shall be enough to release/remove existing bearing system and install new pedestal and bearing pads, but no more than 1/4" above final grade.
 - Temporary supports shall be jacked and tightly wedged to take up gaps and initial compression before repairs are started.
 - The differential vertical deflection between adjacent girders, measured at the base of the concrete deck, shall not exceed 1/4".

STRUCTURES MAINTENANCE GENERAL PLAN SHEET (ENGLISH) (REV. 09-01-10) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	DESIGN	BY BRIAN NGUYEN	CHECKED HUBERT DANG	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF MAINTENANCE STRUCTURE MAINTENANCE DESIGN	BRIDGE No.	ROUTE 5, 33, 137, 216, 245 & 269 BRIDGES
	DETAILS	BY GF BIDWELL	CHECKED HUBERT DANG			VARIOUS	
	QUANTITIES	BY BRIAN NGUYEN	CHECKED HUBERT DANG			VARIES	
PROJECT NUMBER & PHASE: 0612000163 1				CONTRACT No.: 06-0P0601		REVISION DATES: 7-13, 8-29-13, 10-2-13, 1-8-14	
UNIT: 3488						SHEET 6 OF 11	

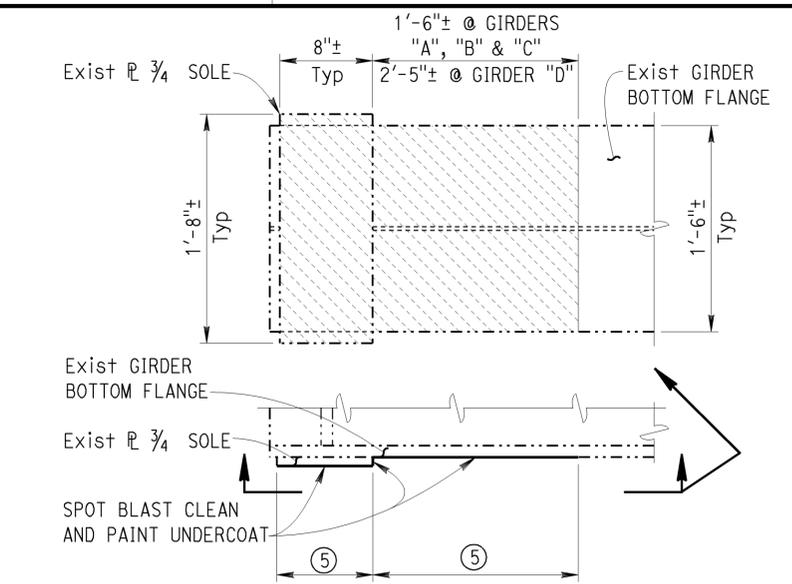
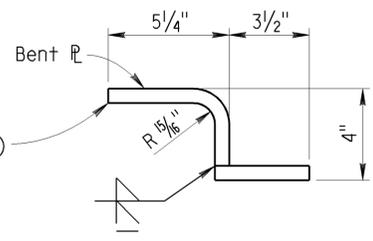
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre, Tul	5, 33, 137, 216, 245, 269	Var	26	30
 REGISTERED CIVIL ENGINEER DATE 1-17-14					
PLANS APPROVAL DATE 10-06-14					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



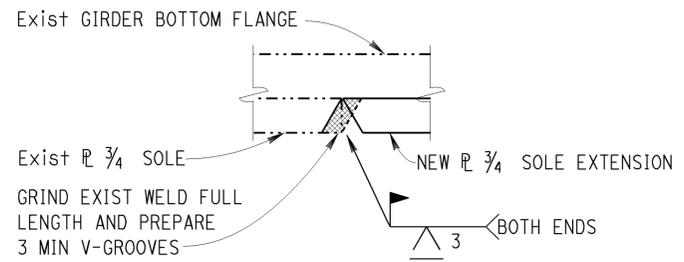
ELEVATION



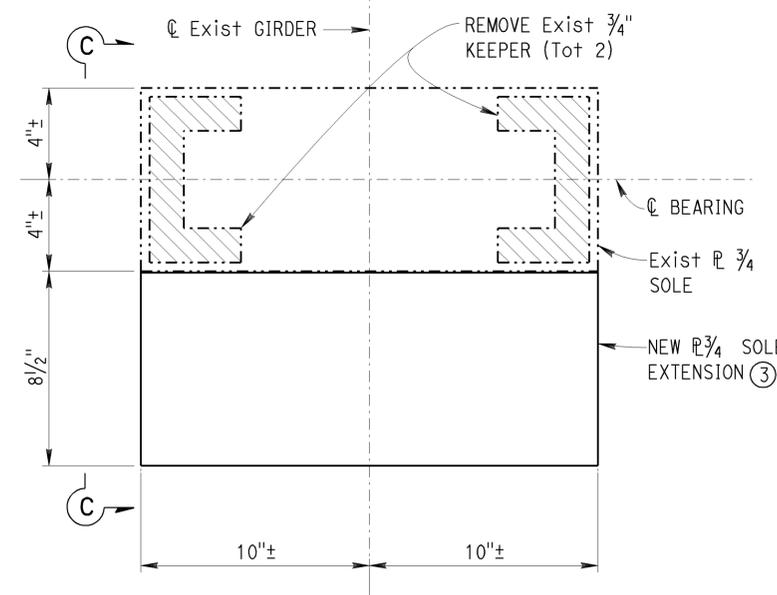
TYPICAL "Z" CLIP
3" = 1'



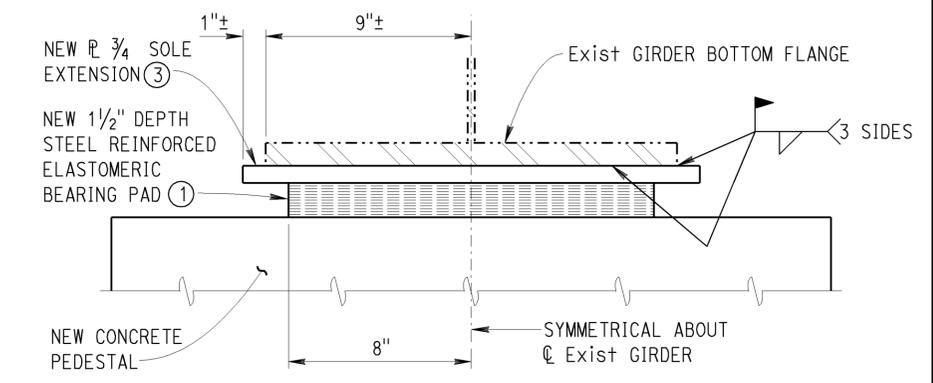
LIMITS OF SPOT BLAST CLEAN & PAINT
NO SCALE



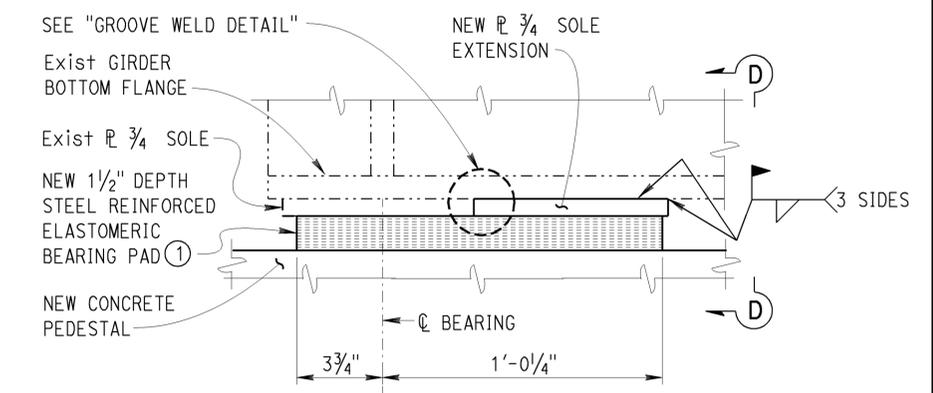
GROOVE WELD DETAIL
NO SCALE



SOLE PLATE EXTENSION
3" = 1'



SECTION D-D
3" = 1'



ELEVATION C-C
3" = 1'

- NOTES: (APPLY TO THIS SHEET ONLY)**
- Place elastomeric pad on two component epoxy adhesive.
 - Prepare and paint exposed surfaces.
 - Clean and paint exposed surfaces.
 - Anchor bolt and welded stud with nuts, washers and thread locking system. Nuts shall be snug tighten.
 - Indicates limits of spot blast clean and paint undercoat for existing steel surfaces.

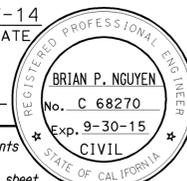
DESIGN	BY BRIAN NGUYEN	CHECKED HUBERT DANG
DETAILS	BY GF BIDWELL	CHECKED HUBERT DANG
QUANTITIES	BY BRIAN NGUYEN	CHECKED HUBERT DANG

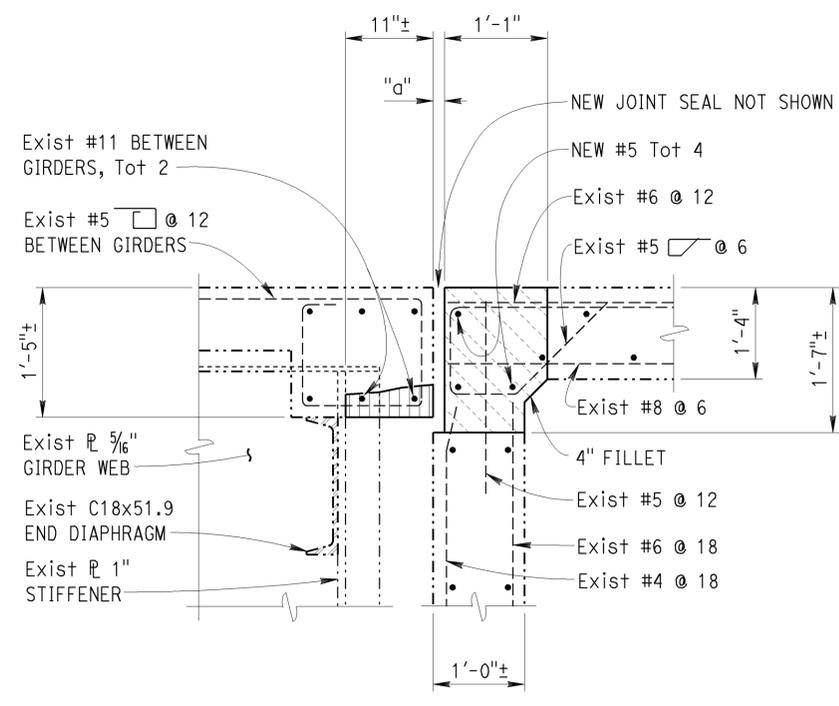
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF MAINTENANCE
STRUCTURE MAINTENANCE DESIGN

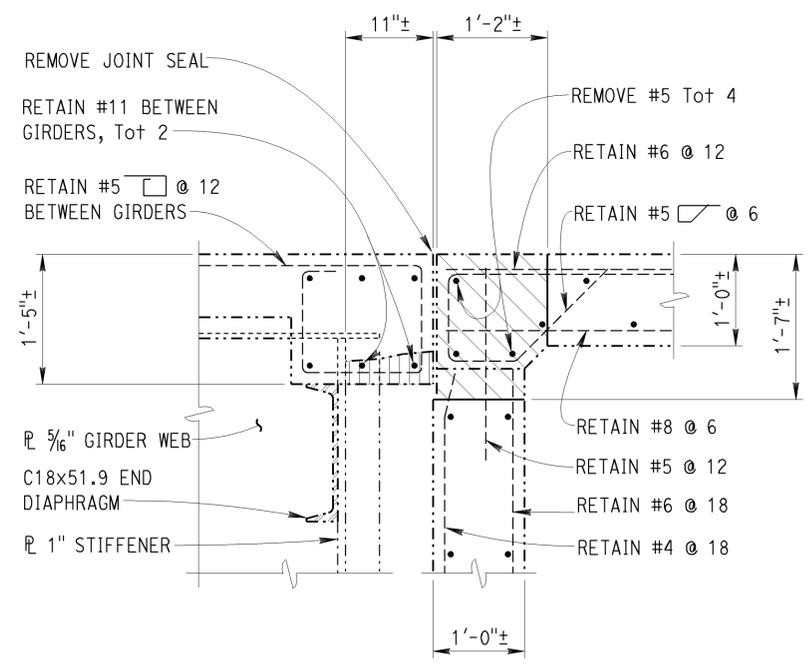
BRIDGE No. VARIOUS
POST MILE VARIES

ROUTE 5, 33, 137, 216, 245 & 269 BRIDGES
BEARING REPLACEMENT DETAILS No. 3

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre, Tul	5, 33, 137, 216, 245, 269	Var	27	30
			1-17-14	DATE	
REGISTERED CIVIL ENGINEER			DATE		
10-06-14			PLANS APPROVAL DATE		
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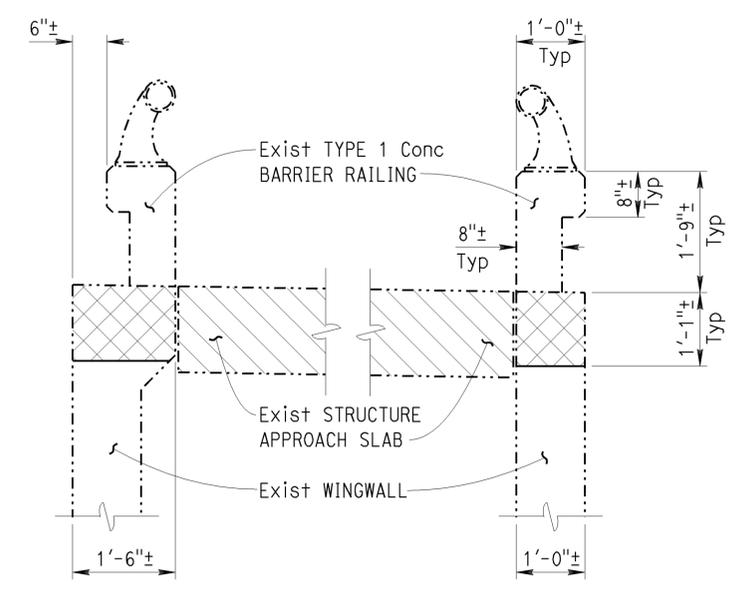


RECONSTRUCTION



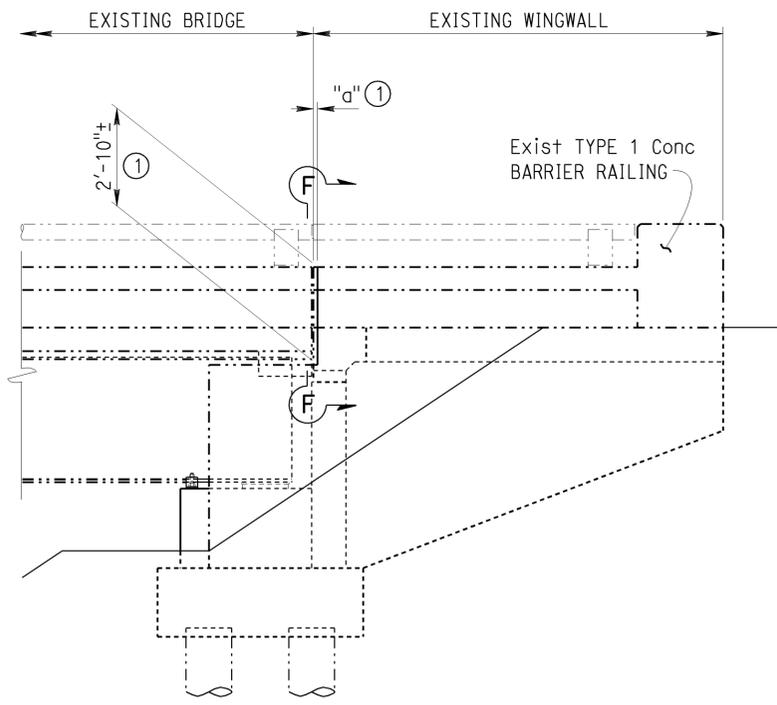
EXISTING SECTION E-E

Br No. 42-0246L (ABUTMENT 2 ONLY)
1" = 1'



SECTION F-F

Br No. 42-0246R SHOWN, Br No. 42-0246L BRIDGE SIMILAR
3/4" = 1'



ABUTMENT 2 WINGWALL ELEVATION

Br No. 42-0246R SHOWN, Br No. 42-0246L SIMILAR
3/8" = 1'

NOTES: (APPLY TO THIS SHEET ONLY)

-  Indicates limits of remove existing concrete. Retain existing reinforcing steel except where noted otherwise.
-  Indicates limits of repair spalled surface area.
-  Indicates limits of place new approach slab concrete.
-  Indicates limits of sawcut existing concrete barrier and wingwall (reinforcing steel may be encountered).

See "MISCELLANEOUS DETAILS No. 2" sheet for joint seal details.

TEMPORARY DECKING DESIGN LOADING

Br No. 42-0246L/R

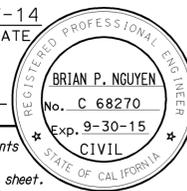
MOMENT DEMAND/FOOT (kips-ft/ft)	ANCHOR BOLT SHEAR/FOOT (kips/ft)	ANCHOR BOLT TENSION (kips/bolt)
10	8	8

Plate deflection shall not exceed s/30 inches (s = span of plate).
Maximum anchor bolt spacing = 0'-9".

STRUCTURES MAINTENANCE GENERAL PLAN SHEET (ENGLISH) (REV. 09-01-10)	DESIGN	BY BRIAN NGUYEN	CHECKED HUBERT DANG	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF MAINTENANCE	BRIDGE No.	ROUTE 5, 33, 137, 216, 245 & 269 BRIDGES MISCELLANEOUS DETAILS No. 1			
	DETAILS	BY GF BIDWELL	CHECKED HUBERT DANG		STRUCTURE MAINTENANCE	VARIOUS				
	QUANTITIES	BY BRIAN NGUYEN	CHECKED HUBERT DANG		DESIGN	POST MILE		VARIES		
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS				0 1 2 3	UNIT: 3488	PROJECT NUMBER & PHASE: 0612000163 1	CONTRACT No.: 06-0P0601	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 7-13 8-29-13 10-7-13 1-8-14	SHEET 8 OF 11

USERNAME => s121511 DATE PLOTTED => 04-MAR-2014 TIME PLOTTED => 08:12

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre, Tul	5, 33, 137, 216, 245, 269	Var	28	30
			1-17-14		
			REGISTERED CIVIL ENGINEER	DATE	
			10-06-14		
			PLANS APPROVAL DATE		
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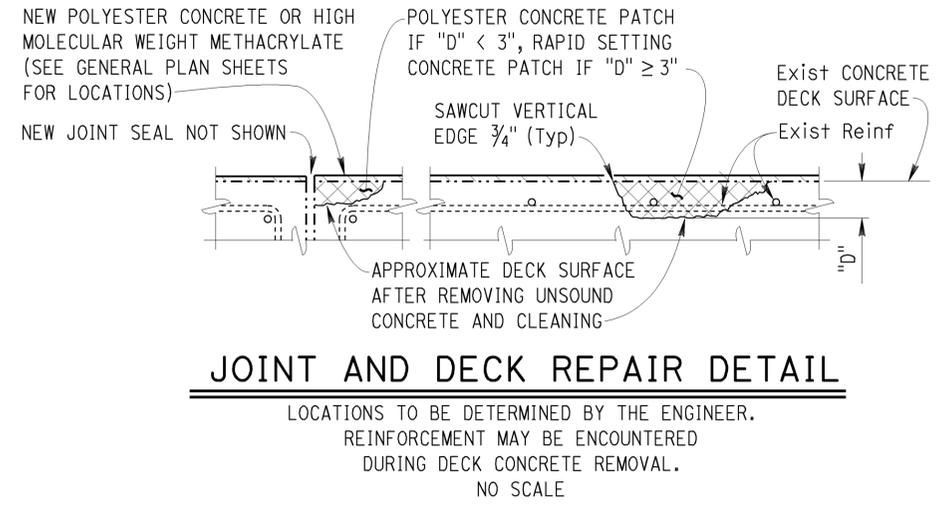
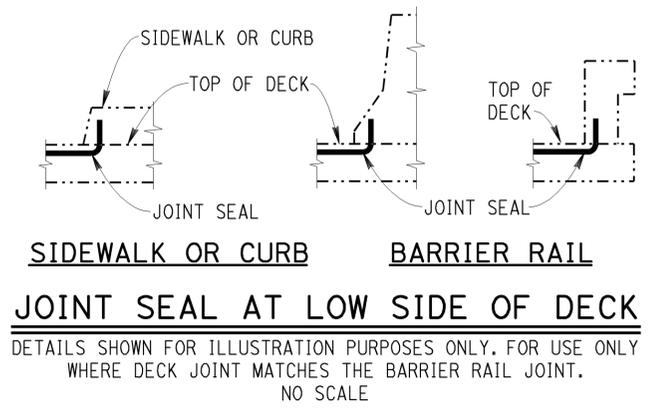
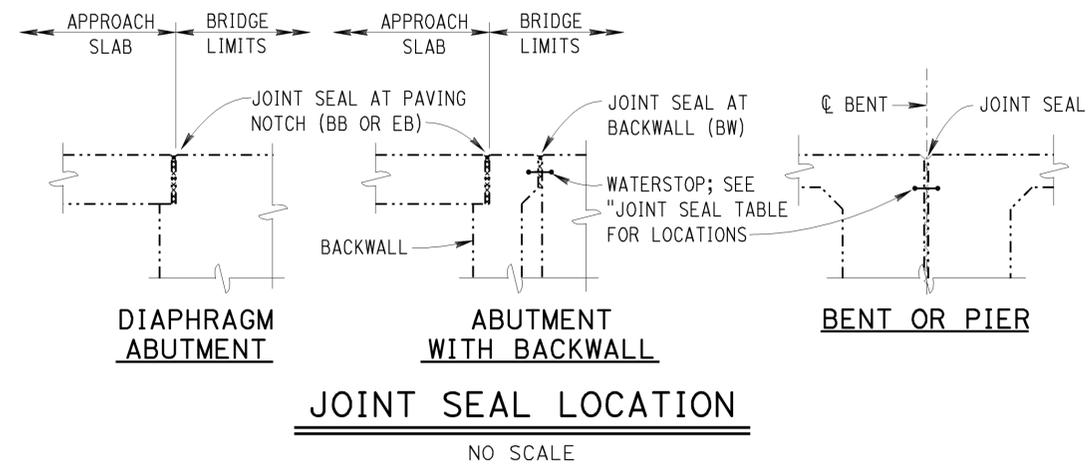
BRIDGE NAME	BRIDGE NUMBER	JOINT LOCATION		MINIMUM MR (INCHES)	Approx LENGTH (FEET)	EXISTING WATERSTOP	APPROXIMATE DEPTH TO CLEAN EXPANSION JOINT (INCHES)
GALE UC	42-0269R	Abut 1	BB	1/2	40	NO	---
		Abut 4	EB	1/2	40	NO	---
PARKHURST EQUIPMENT UC	42-0275R	Abut 1	BB	1/2	40	NO	12
		Abut 4	EB	1/2	40	NO	12
TUMEY GULCH	42-0246L	Abut 1	BB	1/2	41	NO	12
		Abut 2	BB	1/2	41	NO	---
	42-0246R	Abut 1	BB	1/2	41	NO	12
		Abut 2	EB	1/2	41	NO	---
PANOCHÉ CREEK	42-0249R	Abut 1	BW	1/2	47	YES	6
		BENT 2	☉	1	47	YES	6
		Abut 3	BW	1/2	47	YES	6
KAWEAH RIVER	46-0091	Abut 1	BW	1 1/2	29	NO	12
		Abut 2	BW	1 1/2	29	NO	12
YOKOHL CREEK	46-0011	BENT 3	☉	1/2	27	NO	8
		BENT 5	☉	1	27	NO	8
		BENT 8	☉	1	27	NO	8
		BENT 10	☉	1/2	27	NO	8
HURON DIKE	42-0376	BENT 2	☉	1/2	41	NO	3

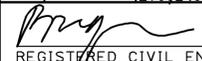
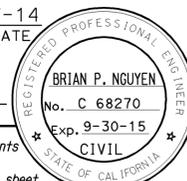
- THE FOLLOWING NOTES APPLY TO JOINT SEAL TYPE B:
- Seal must satisfy both minimum Movement Rating (MR) and minimum W1 requirements.
 - Minimum W1 is the calculated maximum width of the joint based on field measurements. After the joints have been cleaned, minimum W1 is to be recalculated by the engineer.
 - 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 psi.
 - Bend Type B joint seal 6" 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 

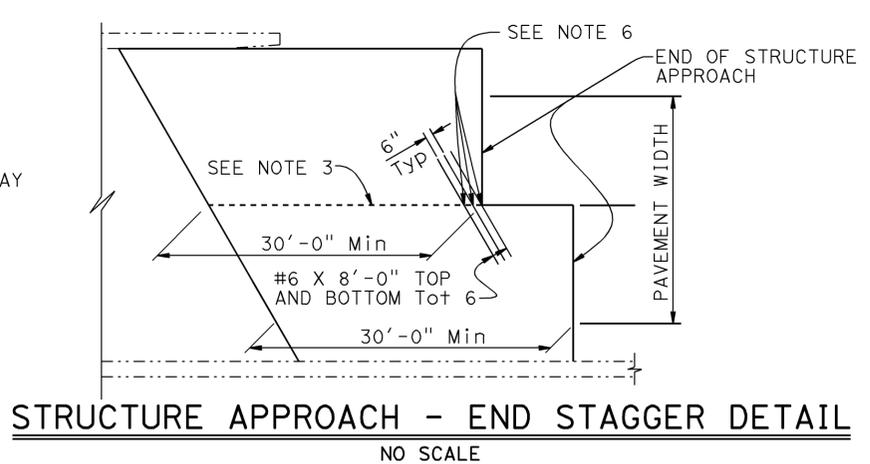
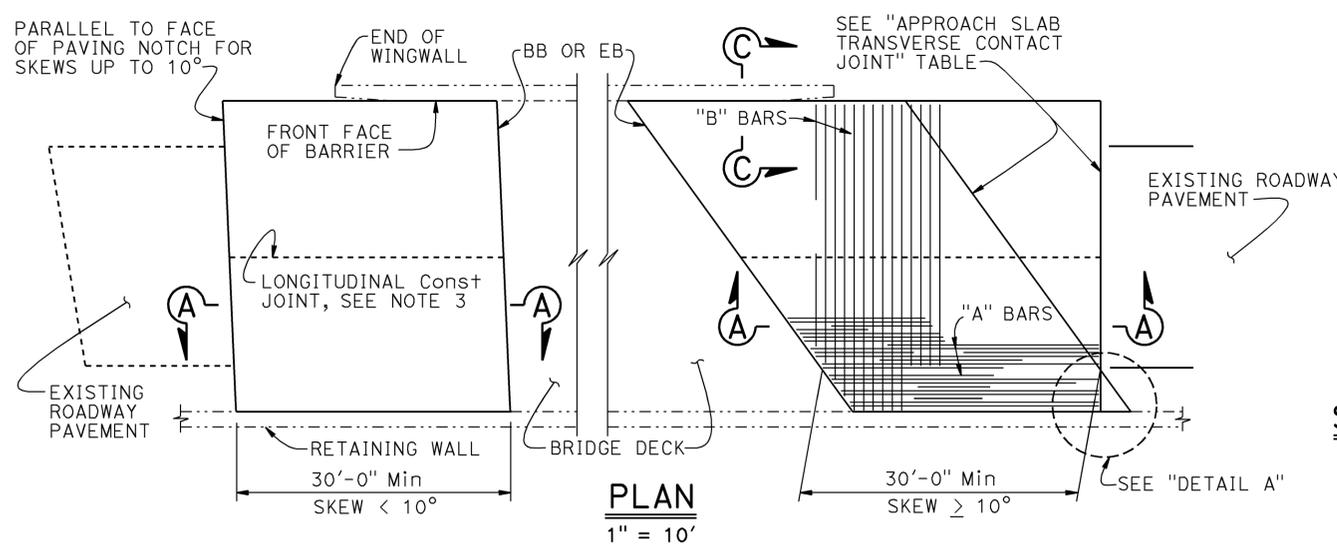
LEGEND:
 BB = PAVING NOTCH AT BEGINNING OF BRIDGE
 EB = PAVING NOTCH AT END OF BRIDGE
 BW = ABUTMENT BACKWALL
 ☉ = ☉ BENT OR PIER

REMOVE UNSOUND CONCRETE AND PLACE RAPID SETTING CONCRETE PATCHES			
BRIDGE NAME	BRIDGE NUMBER	APPROXIMATE AREA DAMAGED (PERCENT)	APPROXIMATE DEPTH (INCHES)
HURON DIKE	42-0376	1	3

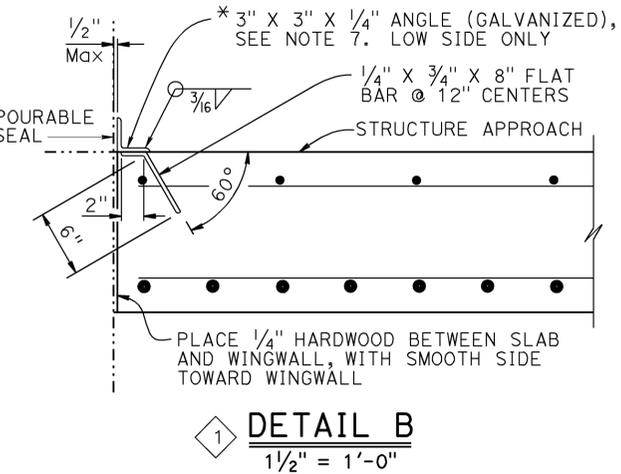
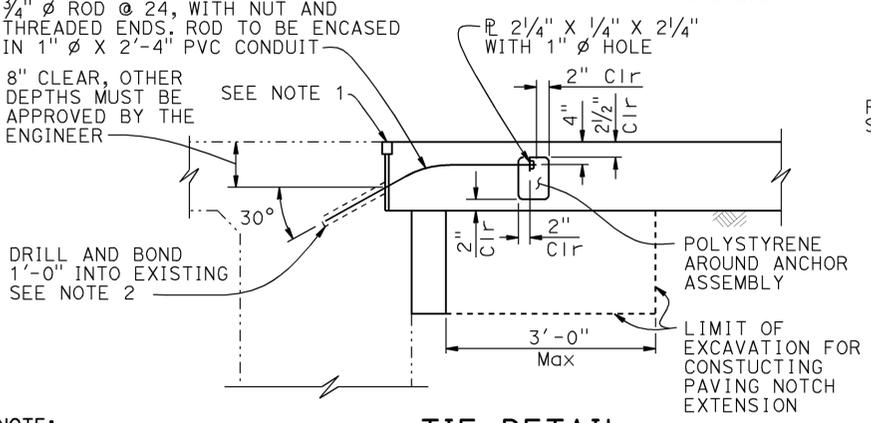
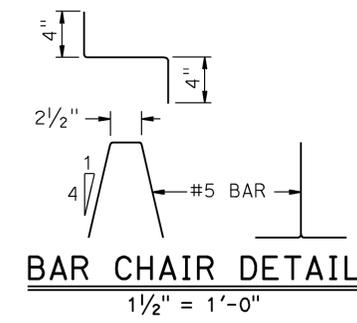
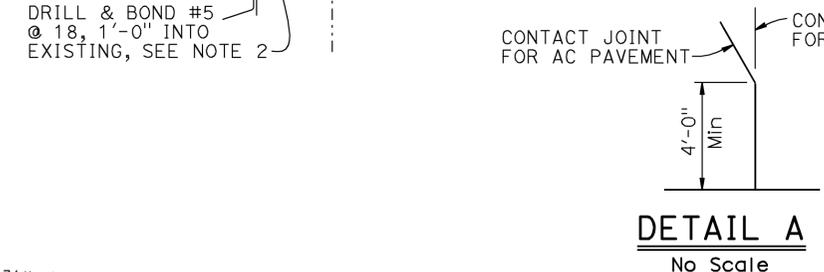
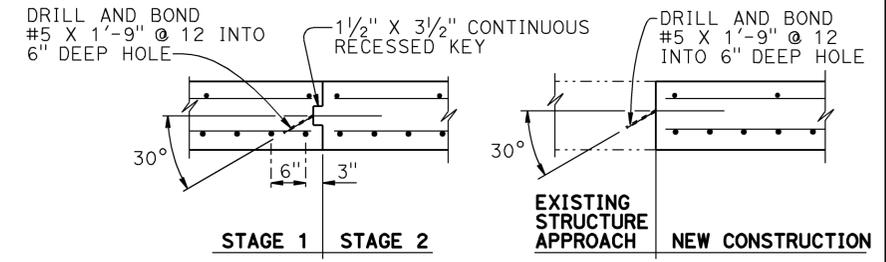
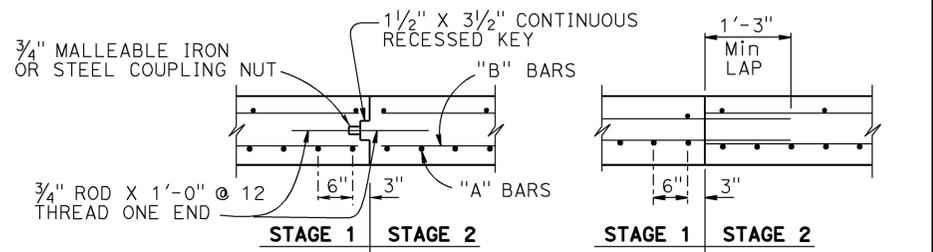
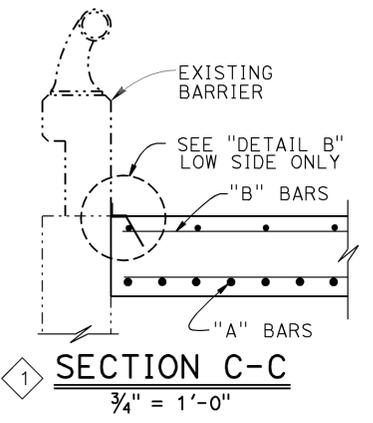
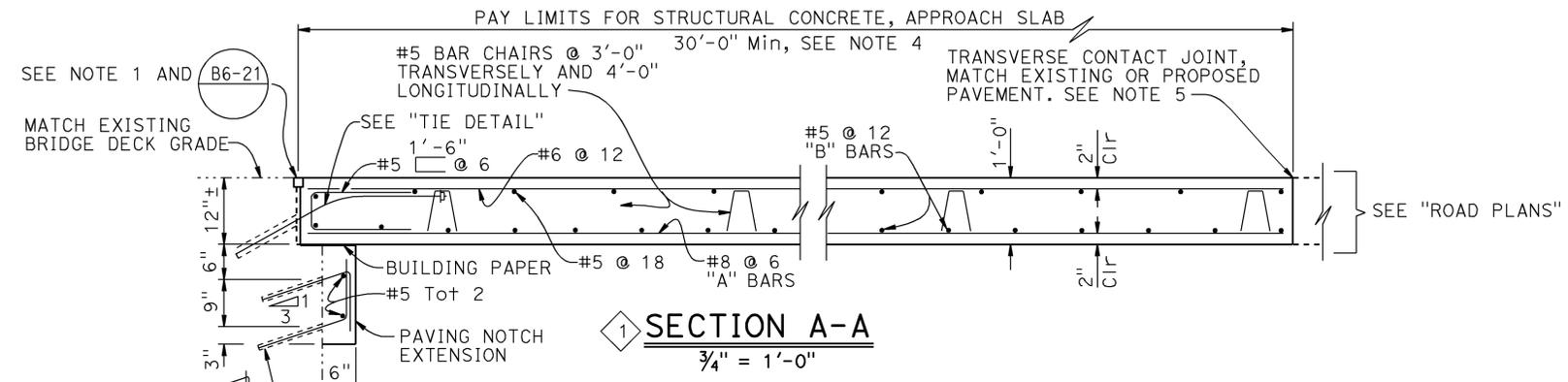
LOCATIONS TO BE DETERMINED BY THE ENGINEER. FOR DETAILS SEE "JOINT AND DECK REPAIR DETAIL".



DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Fre, Tul	5, 33, 137, 216, 245, 269	Var	29	30
 REGISTERED CIVIL ENGINEER			DATE	1-17-14	
PLANS APPROVAL DATE 10-06-14					
<small>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.</small>					



APPROACH SLAB TRANSVERSE CONTACT JOINT		
APPROACH SKEW	WITH AC ROADWAY PAVEMENT	WITH PCC ROADWAY PAVEMENT
< 10°	PARALLEL TO FACE OF PN	PARALLEL TO FACE OF PAVING NOTCH
10° - 45°	PARALLEL TO FACE OF PN USE "DETAIL A"	STAGGER LINES 24' TO 36' APART
> 45°	PARALLEL TO FACE OF PN USE "DETAIL A"	STAGGER AT EACH LANE LINE



- NOTES:
- For details not shown or noted, see Structure Plans. Adjust bar reinforcement to clear a sawcut for sealed joint, when required
 - Space to avoid existing prestress anchorages and main reinforcement
 - Longitudinal construction joints, when permitted by the Engineer, shall be located on lane lines
 - Transverse contact joint shall be a minimum of 5'-0" from an existing or constructed weakened plane joint
 - For transverse contact joint with new PCC paving, refer to Standard Plan P10
 - Couplers are required for stage construction
 - End angle or plate at beginning of barrier transition, end of wingwall or end of structure approach as applicable

NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

REVISED STANDARD DRAWING	1 DETAIL REVISED
FILE NO. xs3-150	2 DETAIL DELETED
APPROVAL DATE July 2011	

STATE OF CALIFORNIA	
DEPARTMENT OF TRANSPORTATION	
DIVISION OF ENGINEERING SERVICES	
BRIDGE No. VARIOUS	ROUTE 5, 33, 137, 216, 245 & 269 BRIDGES
POST MILE VARIES	STRUCTURE APPROACH TYPE R(30D)

UNIT: 3488	PROJECT NUMBER & PHASE: 0612000163 1	CONTRACT No.: 06-0P0601
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DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 10 OF 11
	7-13 8-29-13 10-13 1-8-14	

