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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
PROJECT PLANS FOR CONSTRUCTION ON
STATE HIGHWAY
IN MARIN COUNTY
IN MILL VALLEY
AT
0.03 MILE EAST OF ASH STREET

TO BE SUPPLEMENTED BY STANDARD PLANS DATED 2010

19A6(004)

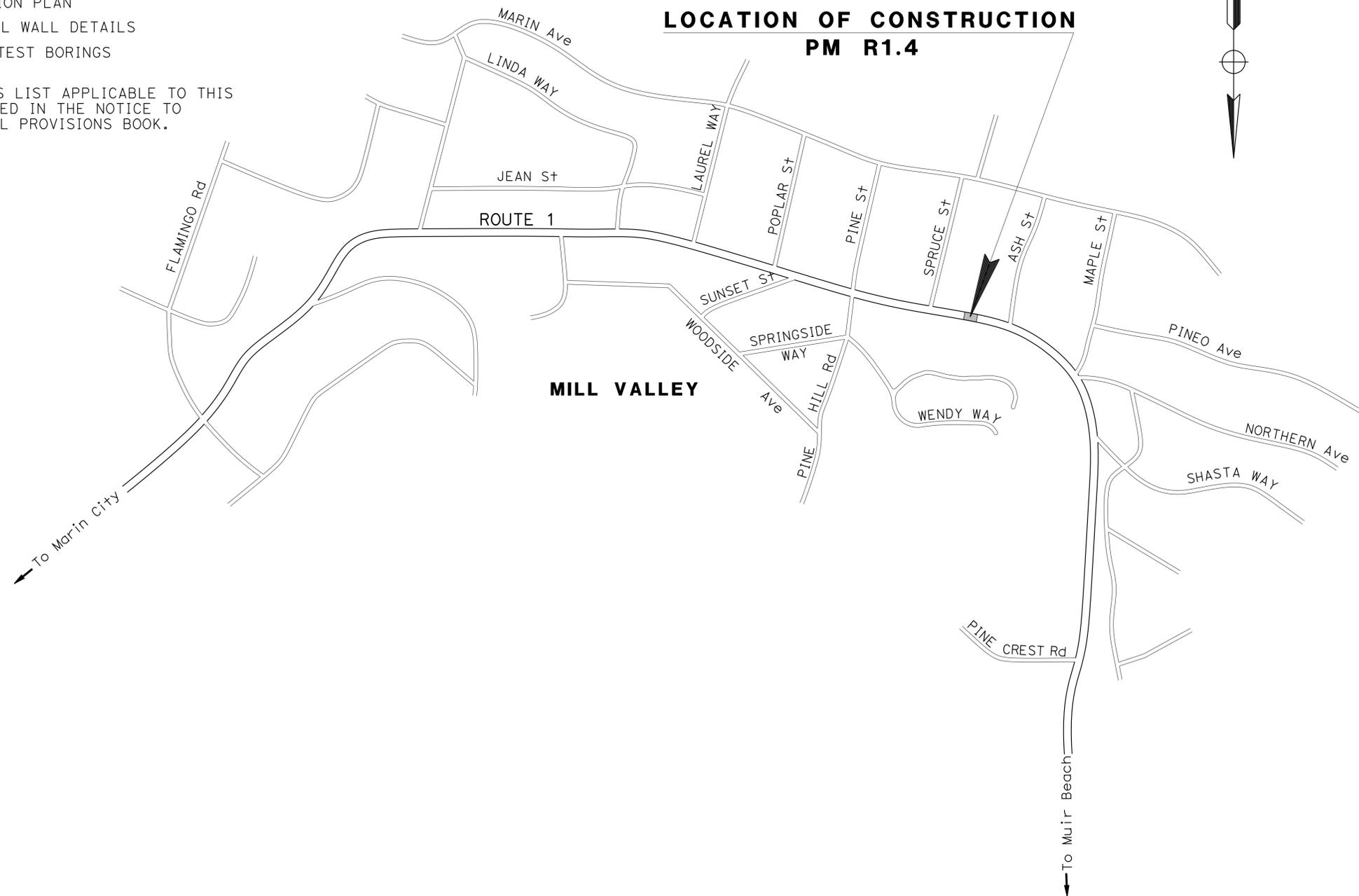
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn	1	R1.4	1	35





LOCATION MAP

LOCATION OF CONSTRUCTION
PM R1.4



PROJECT MANAGER WAJAHAT NYAZ	DESIGN MANAGER MANNY CALUYA
--	---------------------------------------

 4/25/14
 PROJECT ENGINEER DATE
 REGISTERED CIVIL ENGINEER
May 19, 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.

REGISTERED PROFESSIONAL ENGINEER

Ghulam Q. Popal

No. 61927

Exp. 9-30-15

CIVIL

STATE OF CALIFORNIA

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

NO SCALE

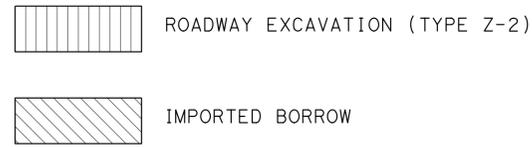
DATE PLOTTED => 20- AUG-2014 TIME PLOTTED => 11:14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mirn	1	R1.4	2	35
			4/25/14	REGISTERED CIVIL ENGINEER DATE	
			5-19-14	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>					

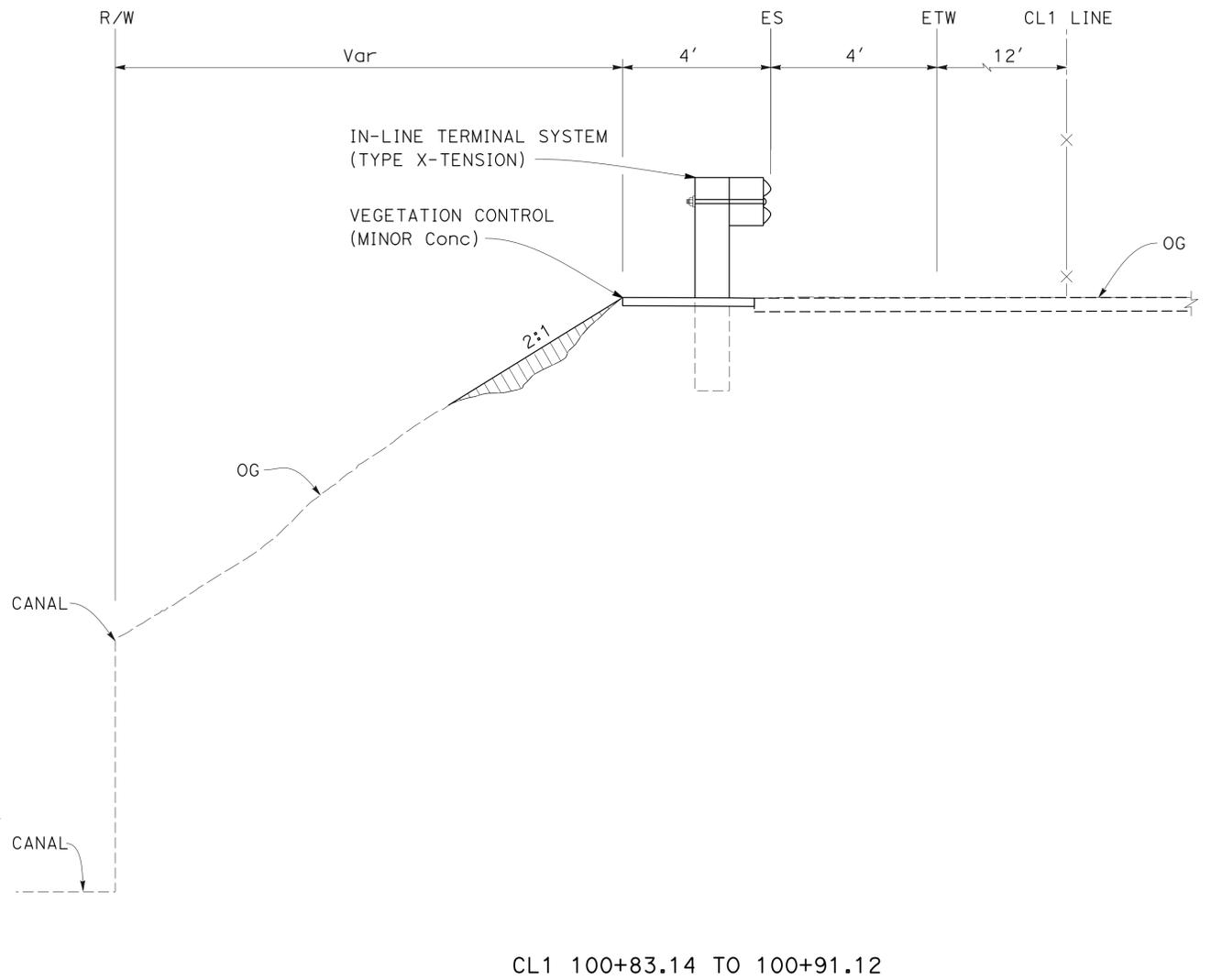
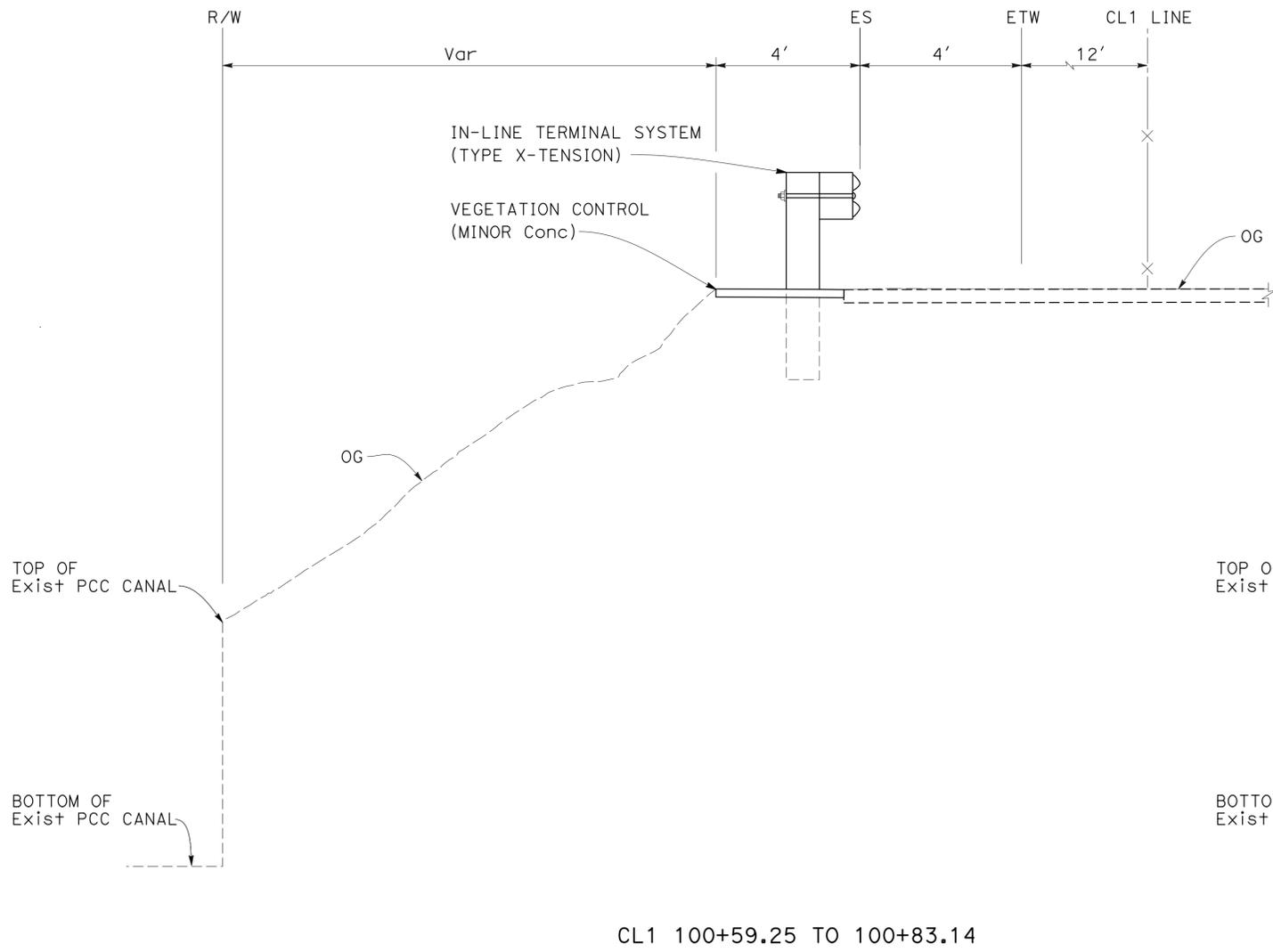
NOTES:

- ADJUST MGS WOOD POSTS, AS AUTHORIZED BY THE ENGINEER, TO AVOID SOIL NAILS.
- ADJUST REINFORCEMENT STEELS, AS AUTHORIZED BY THE ENGINEER, TO AVOID MGS WOOD POSTS.

LEGEND:



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN
 Ghulam Popal
 Ghulam Popal
 Ghulam Popal
 4/25/14
 VP



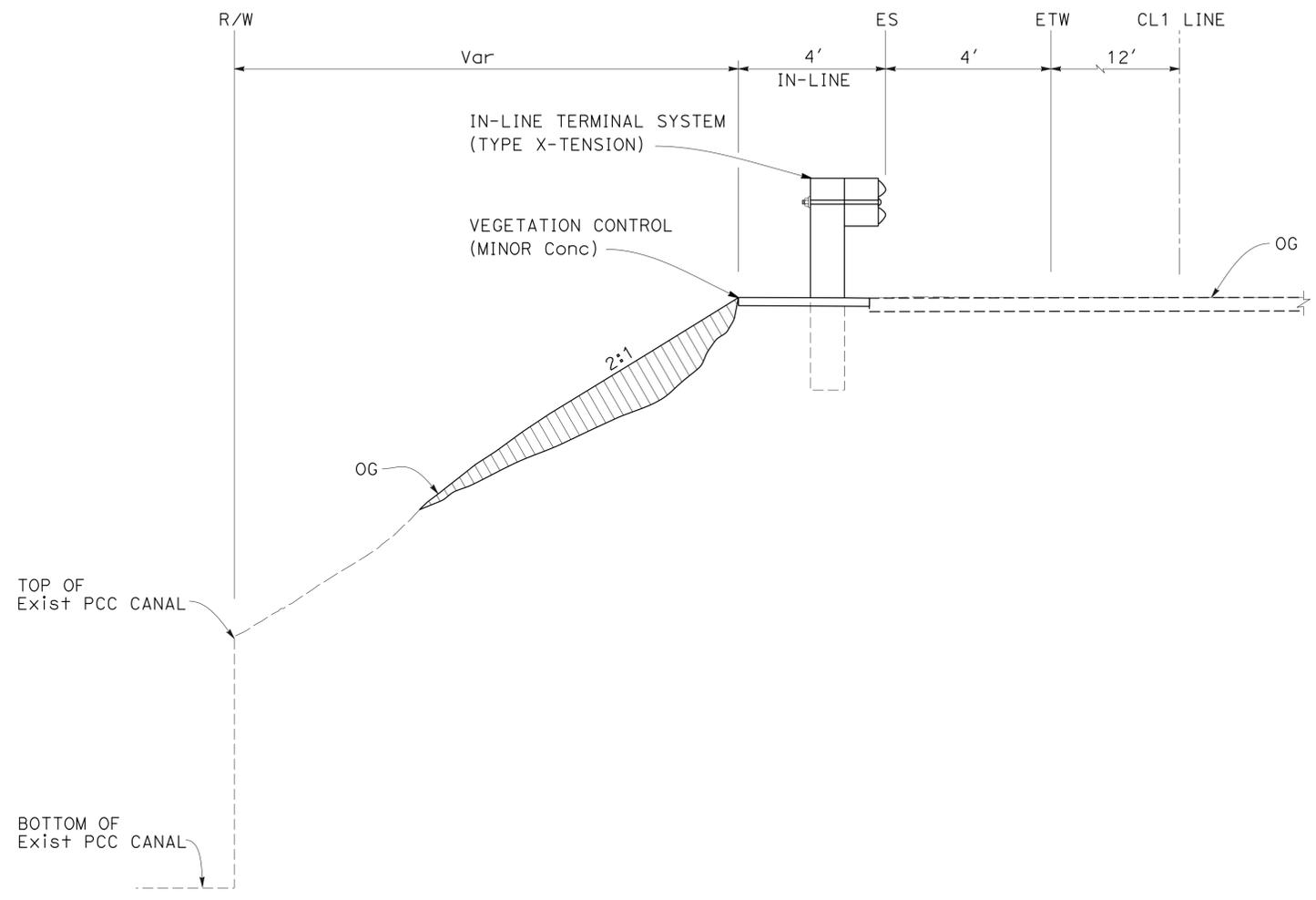
TYPICAL CROSS SECTIONS
 NO SCALE

X-1

LAST REVISION DATE PLOTTED => 20-AUG-2014 04-25-14 TIME PLOTTED => 11:14

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR	DATE
	GHULAM POPAL	GHULAM POPAL	VP	4/25/14
Caltrans®	DESIGN	CHECKED BY	DATE	DATE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn	1	R1.4	3	35
				4/25/14	
REGISTERED CIVIL ENGINEER				DATE	
PLANS APPROVAL DATE				5-19-14	
					
<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>					

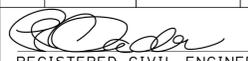
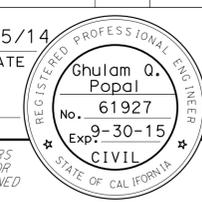


CL1 100+91.12 TO 100+93.00

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

TYPICAL CROSS SECTIONS
NO SCALE

X-2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn	1	R1.4	4	35
			4/25/14		
REGISTERED CIVIL ENGINEER			DATE		
5-19-14			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>					

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN

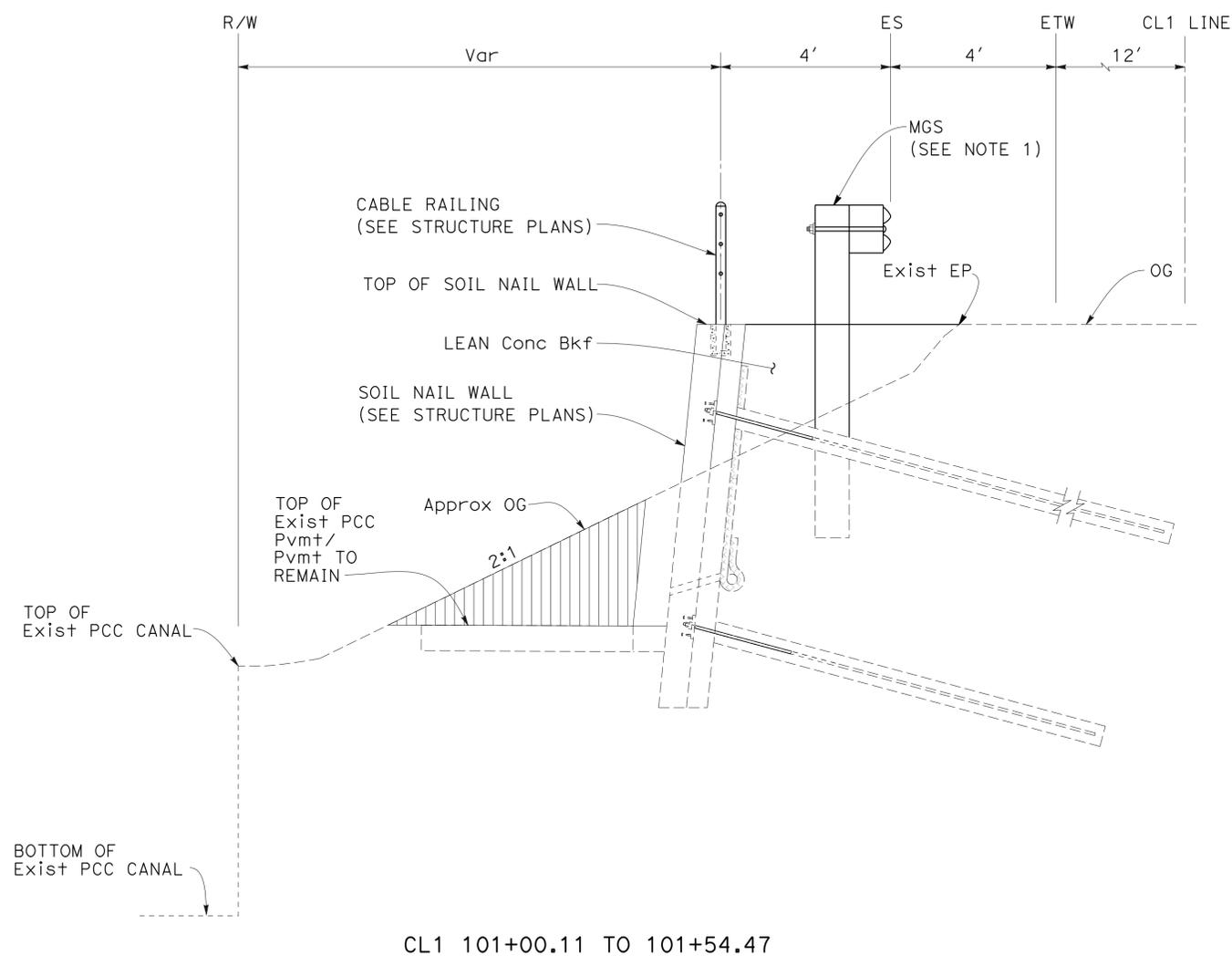
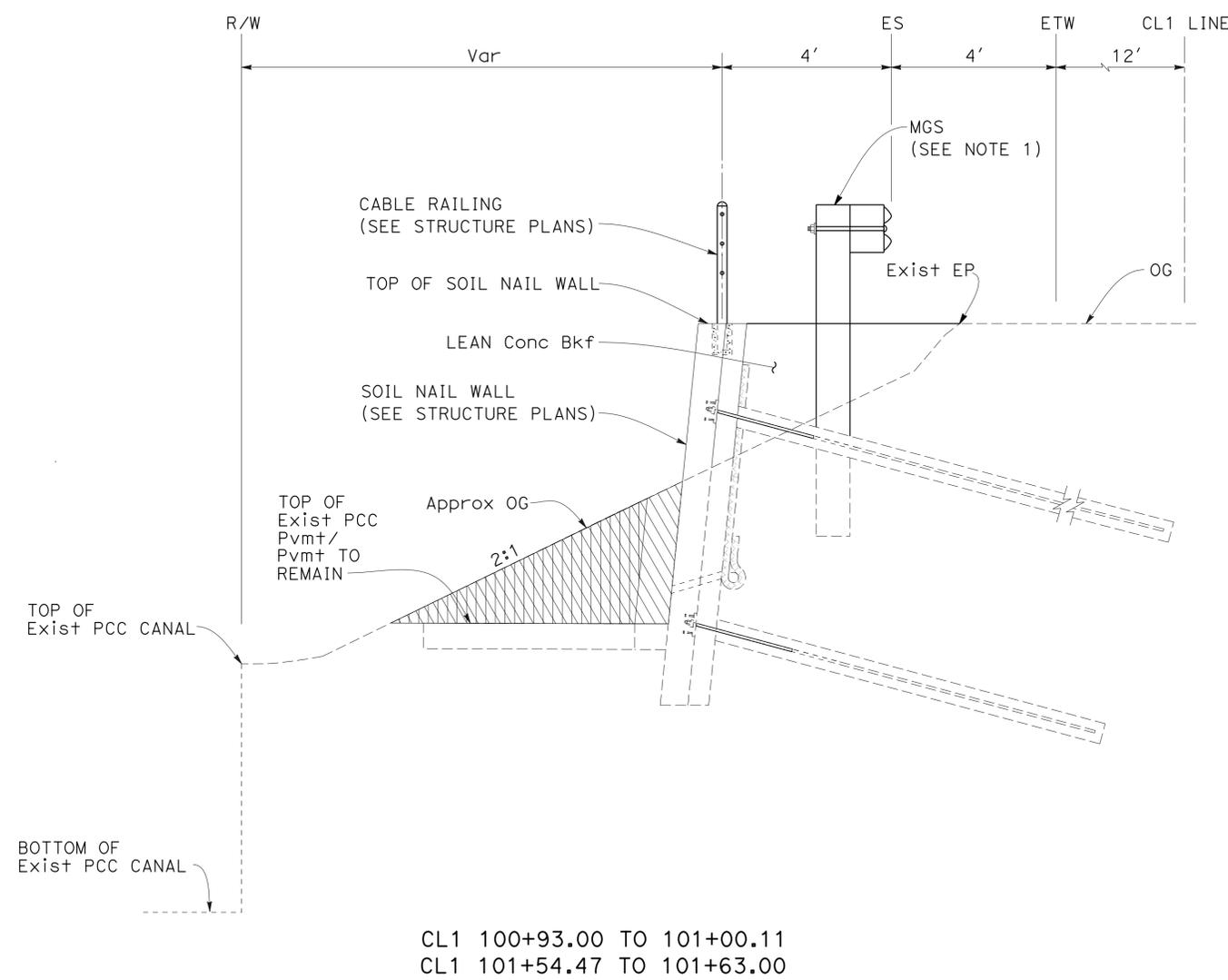
VP
4/25/14

REVISOR
DATE

VICTOR PEREYRA
GHULAM POPAL

CALCULATED-DESIGNED BY
CHECKED BY

FUNCTIONAL SUPERVISOR
GHULAM POPAL



SOIL NAIL WALL

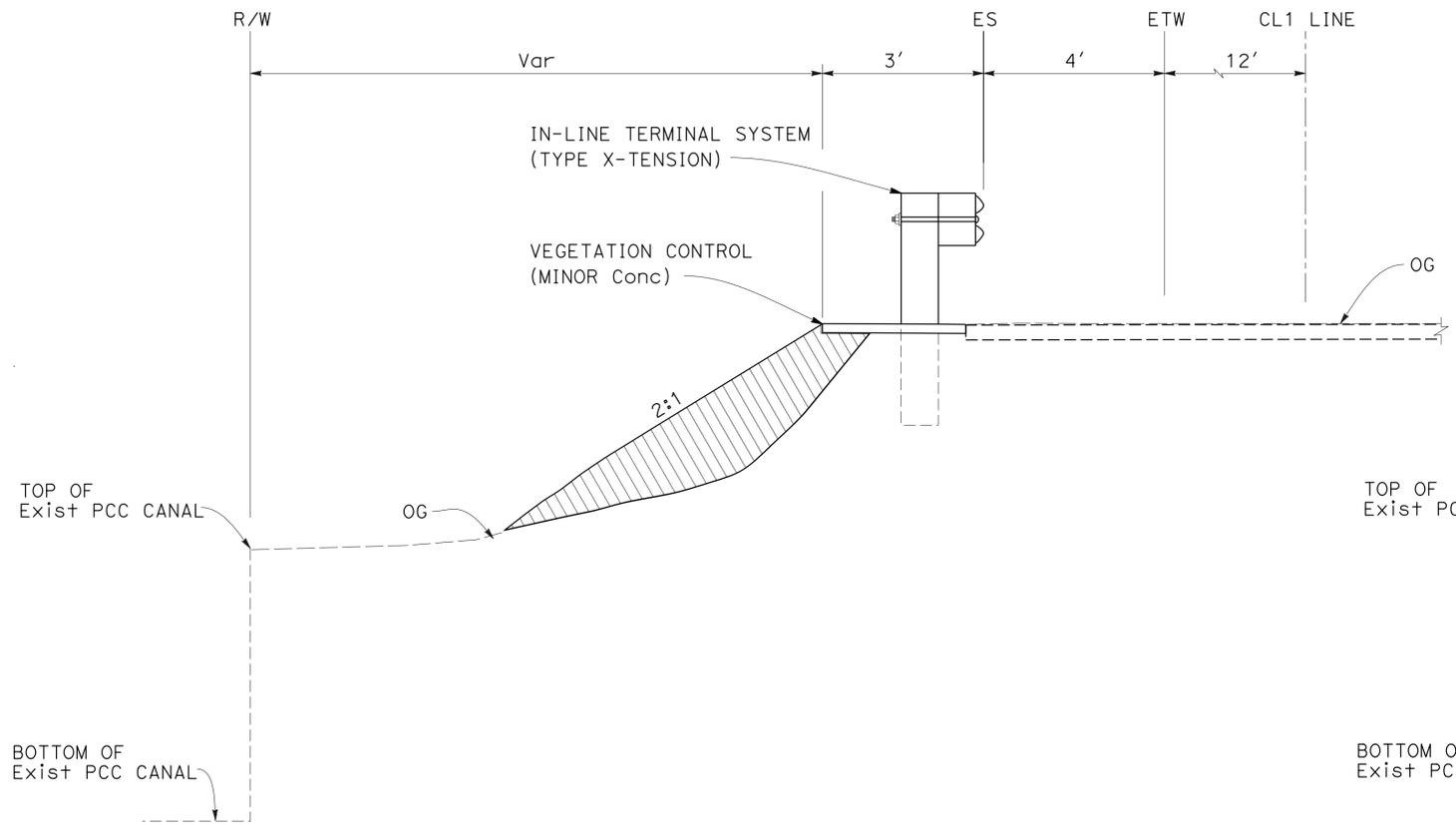
TYPICAL CROSS SECTIONS
NO SCALE

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

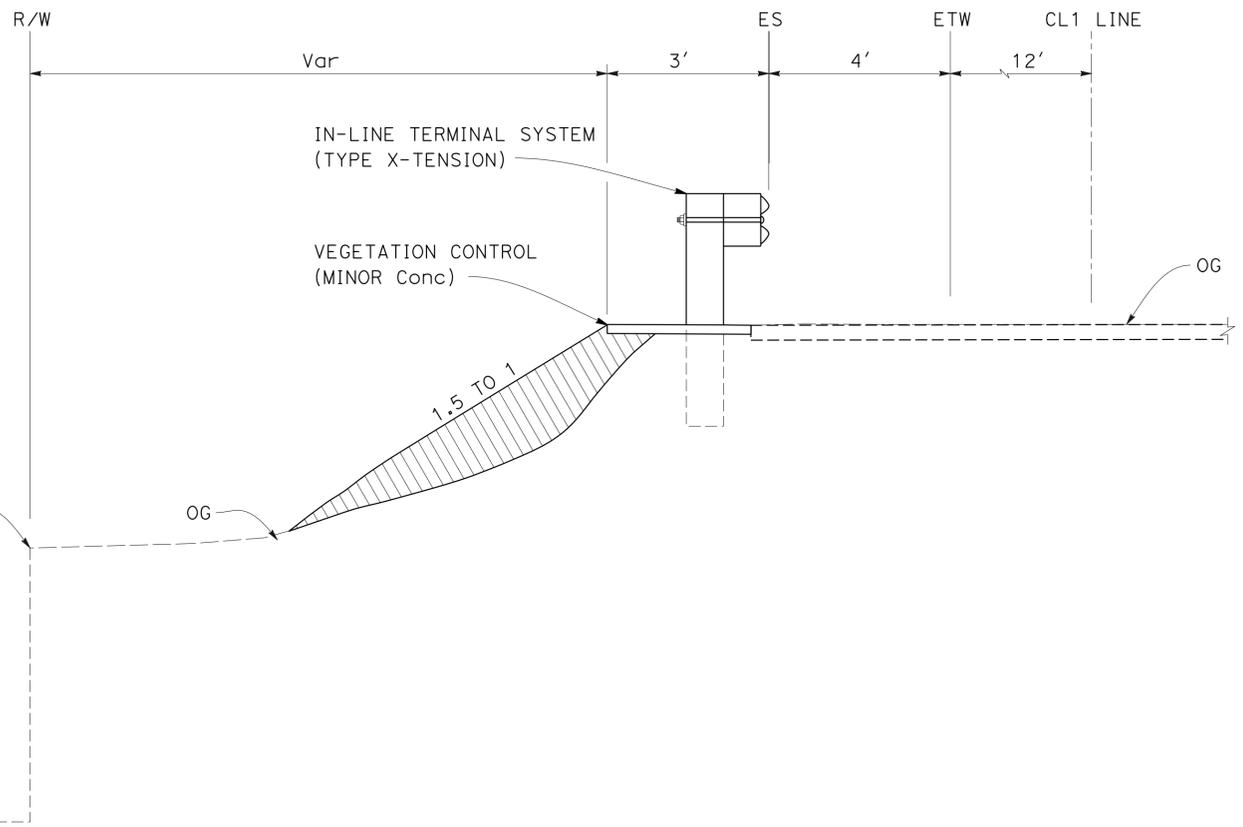
X-3

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn	1	R1.4	5	35
			4/25/14	REGISTERED CIVIL ENGINEER DATE	
			5-19-14	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>					

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN
FUNCTIONAL SUPERVISOR	GHULAM POPAL
CALCULATED/DESIGNED BY	CHECKED BY
VICTOR PEREYRA	GHULAM POPAL
REVISOR	DATE
VP	4/25/14



CL1 101+63.00 TO 101+70.00



CL1 101+70.00 TO 101+96.03

TYPICAL CROSS SECTIONS
NO SCALE

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

X-4

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN

NOTE:
 FOR ACCURATE RIGHT OF WAY DATA, CONTACT
 RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

CURVE DATA						
No. @	R	Δ	T	L	NORTHING	EASTING
1	2000'	03° 06' 16"	54.19'	108.36'	2149207.255	5973899.418

LEGEND:

 ROADWAY EXCAVATION (TYPE Z-2)

 IMPORTED BORROW

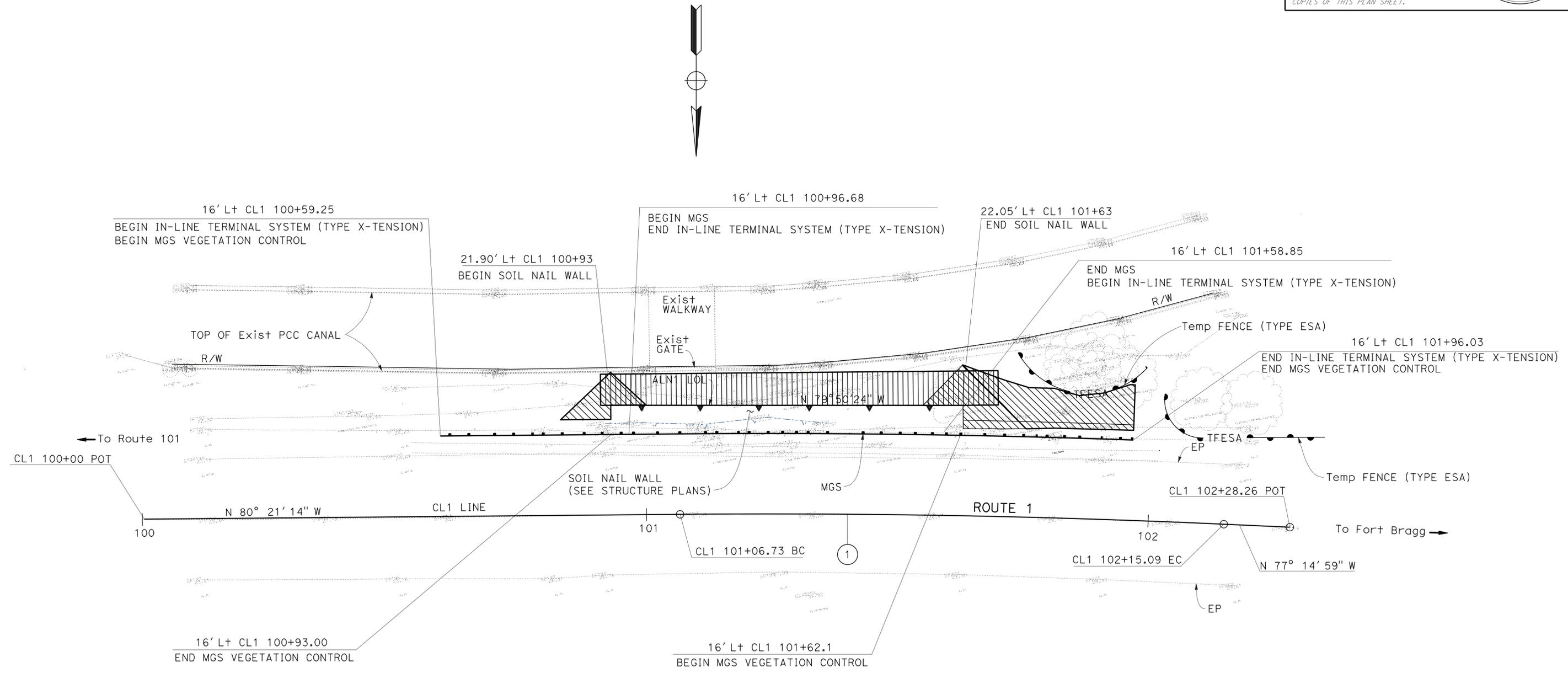
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn	1	R1.4	6	35

4/25/14
 REGISTERED CIVIL ENGINEER DATE

5-19-14
 PLANS APPROVAL DATE

Ghulam Q. Popal
 No. 61927
 Exp. 9-30-15
 CIVIL

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



LAYOUT
 SCALE: 1" = 10'

L-1

LAST REVISION DATE PLOTTED => 20-AUG-2014 04-24-14 TIME PLOTTED => 11:14

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 DESIGN

FUNCTIONAL SUPERVISOR: GHULAM POPAL
 CHECKED BY: GHULAM POPAL
 VICTOR PEREYRA
 GHULAM POPAL
 REVISOR: VP
 DATE: 4/25/14

NOTE:
 1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

NOTES:
 1. LOCATION OF UTILITY FACILITIES SHOWN ON THESE PLANS ARE APPROXIMATE ONLY AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
 2. ELEVATIONS SHOWN REFER TO THE TOP OF PIPE OR CONDUIT, UNLESS OTHERWISE STATED.

LEGEND:

UTILITIES	EXISTING UTILITIES	OWNERSHIP	MMWD
WATER	--- w --- w	MMWD	PG&E
GAS	--- g --- g	PG&E	AT&T
TELEPHONE	--- + --- (oh)	AT&T	

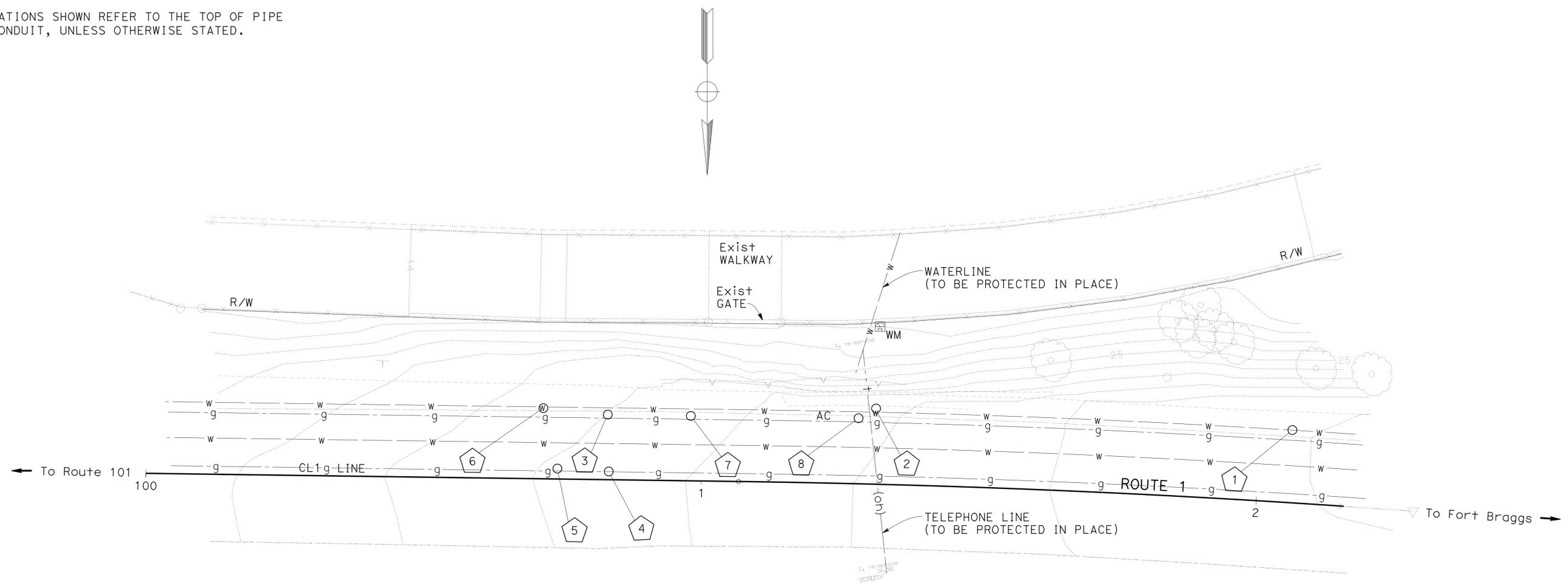
ABBREVIATIONS:
 MARIN MUNICIPAL WATER DISTRICT
 PACIFIC GAS & ELECTRIC
 AMERICAN TELEPHONE AND TELEGRAPH COMPANY

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn	1	R1.4	7	35

REGISTERED CIVIL ENGINEER: Ghulam Q. Popal
 No. 61927
 Exp. 9-30-15
 CIVIL

DATE: 4/25/14
 PLANS APPROVAL DATE: 5-19-14

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.



POSITIVE LOCATION INFORMATION

No.	UTILITY TYPE	SIZE	LOCATION	ELEVATION	METHOD
1	WATER	6"	12.1 L+ CL1 102+05.9	25.9	POTHOLING
2		3/4"	13.5 L+ CL1 101+31.3	24.7	
3		3/4"	10.1 L+ CL1 100+82.8	23.0	
4	GAS	4"	01.1 L+ CI1 100+83.4	23.5	
5		4"	01.1 L+ CL1 100+74.2	22.8	
6	WATER	3/4"	12.2 L+ CL1 100+71.5	22.1	
7	GAS	4"	11.2 L+ CL1 100+98.2	23.5	
8		4"	11.4 L+ CL1 101+28.2	23.7	

APPROVED FOR UTILITY INFORMATION ONLY

UTILITY PLAN
 SCALE: 1" = 10'

U-1

STATIONARY MOUNTED CONSTRUCTION AREA SIGNS

SIGN No.	SIGN CODE	PANEL SIZE	MESSAGE	NUMBER OF POSTS AND SIZE	No. OF SIGNS
1	W20-1	48" x 48"	ROAD WORK AHEAD	1 - 4" x 6"	3
2	G20-2	18" x 36"	END ROAD WORK	1 - 4" x 4"	3

NOTES:

1. EXACT LOCATION AND POSITION OF ROADSIDE SIGNS AND CONSTRUCTION AREA SIGNS TO BE DETERMINED BY THE ENGINEER.
2. POST SIZE AND LENGTH GIVEN ARE APPROXIMATE. EXACT SIZE AND LENGTH TO BE DETERMINED BY THE ENGINEER.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn	1	R1.4	8	35

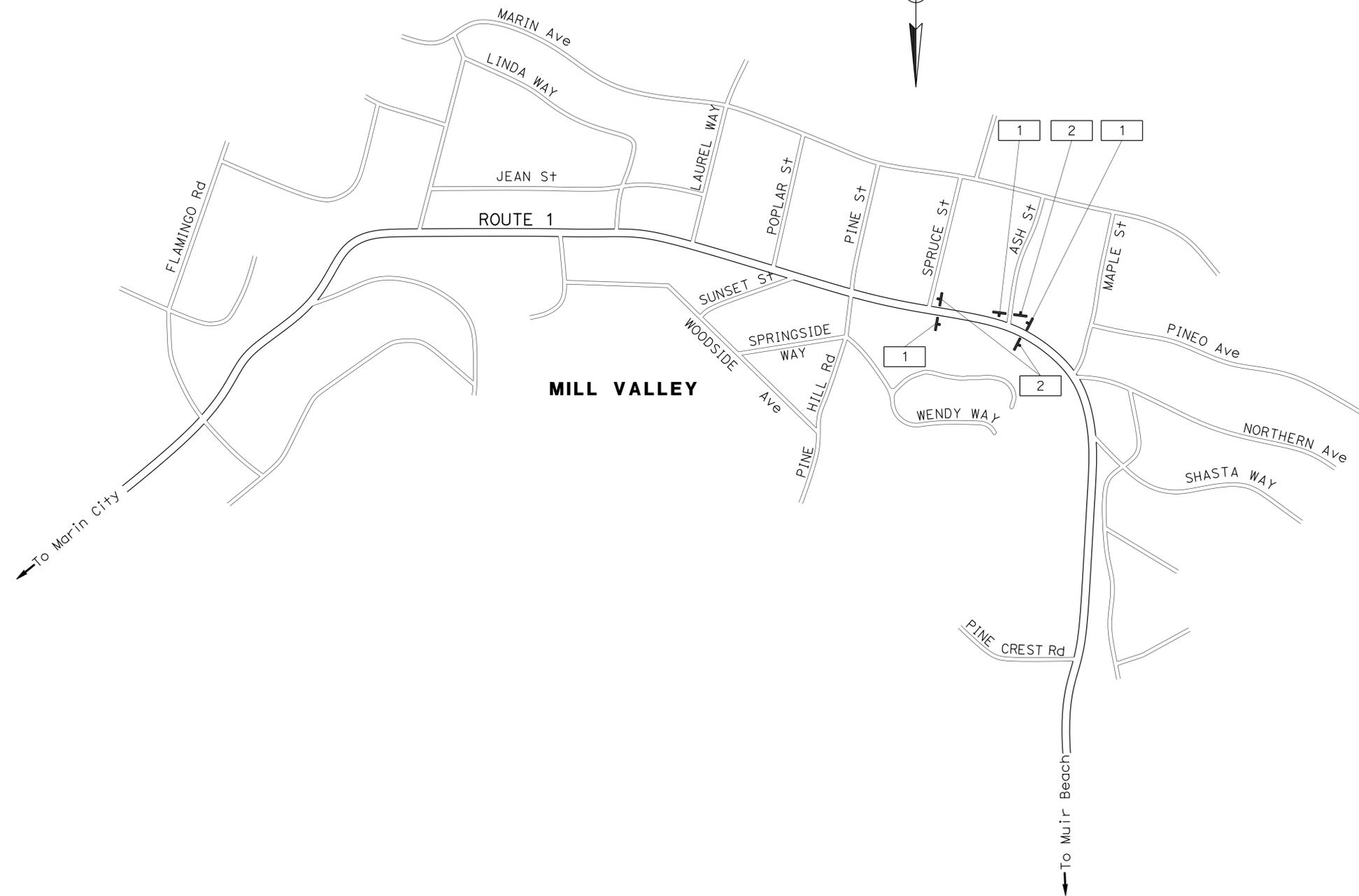
Jerilyn L. Struven 4/25/14
 REGISTERED CIVIL ENGINEER DATE
 5-19-14
 PLANS APPROVAL DATE

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.

REGISTERED PROFESSIONAL ENGINEER
 Jerilyn L. Struven
 No. 49964
 Exp. 2-31-14
 CIVIL
 STATE OF CALIFORNIA

LEGEND:

No. CONSTRUCTION AREA SIGN NUMBER



CONSTRUCTION AREA SIGNS
NO SCALE

CS-1

APPROVED FOR CONSTRUCTION AREA SIGN WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 TRAFFIC

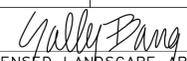
FUNCTIONAL SUPERVISOR
 ROLAND AU-YEUNG

CALCULATED/DESIGNED BY
 CHECKED BY

SHARI TALAI
 JERILYN STRUVEN

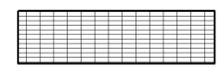
REVISOR BY
 DATE REVISED

JS
 4/25/14

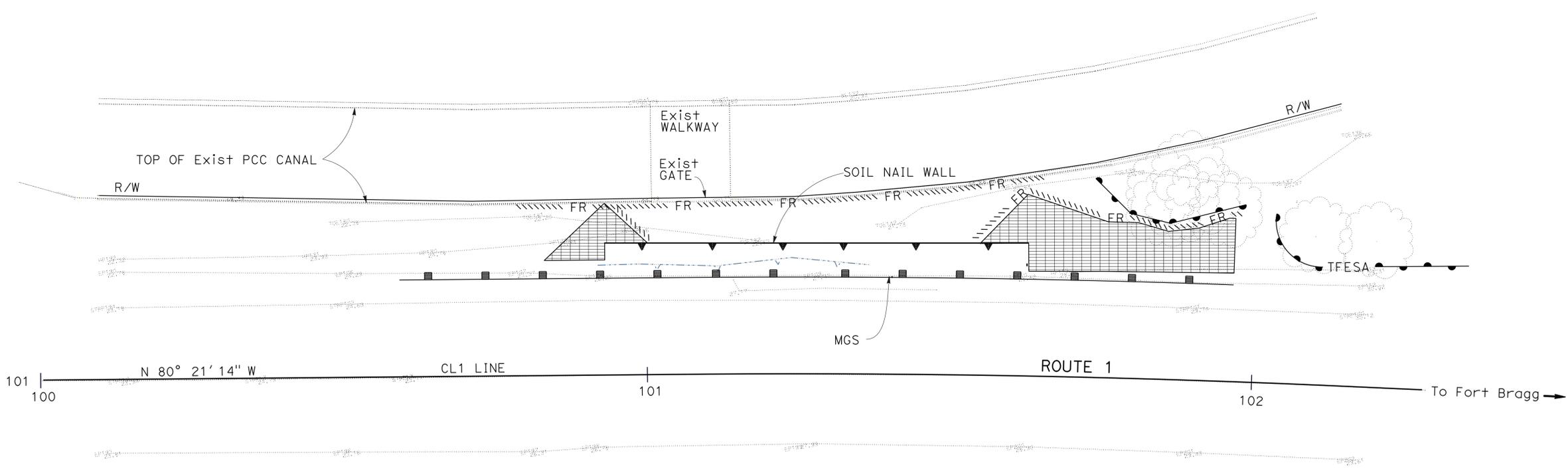
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn	1	R1.4	10	35
 LICENSED LANDSCAPE ARCHITECT					
5-19-14 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



LEGEND:

EROSION CONTROL (Type 1) 

FIBER ROLLS 



EROSION CONTROL PLAN
SCALE: 1" = 10'

EC-1

APPROVED FOR EROSION CONTROL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - WATER QUALITY
 SENIOR LANDSCAPE ARCHITECT: DAVID YAM
 SALLY BANG
 ANGELA KWAN
 SB
 4/25/14
 REVISIONS: 05-08-14

USERNAME => s141070
DGN FILE => 0400021257te001.dgn

RELATIVE BORDER SCALE IS IN INCHES 

UNIT 0792

PROJECT NUMBER & PHASE 0400021257

BORDER LAST REVISED 7/2/2010

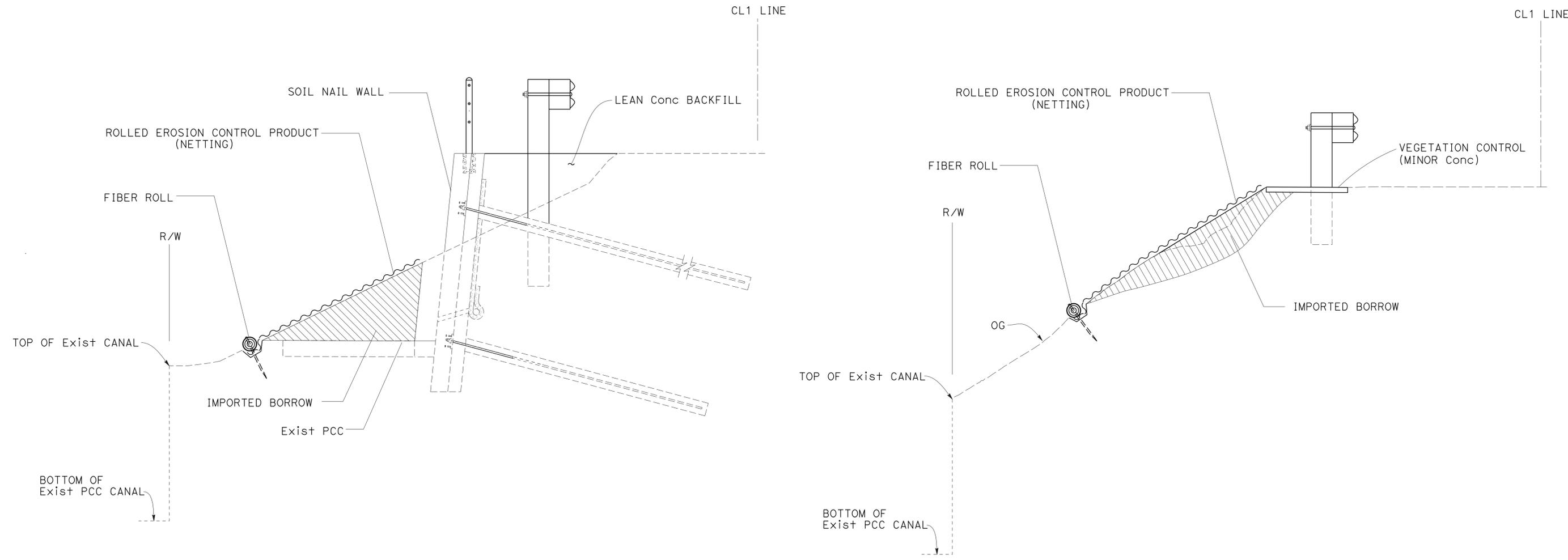
LAST REVISION: 05-08-14
 DATE PLOTTED => 20-AUG-2014
 TIME PLOTTED => 11:14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn	1	R1.4	11	35

Sally Bang
 LICENSED LANDSCAPE ARCHITECT
 5-19-14
 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.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	SENIOR LANDSCAPE ARCHITECT	DESIGNED BY	REVISOR	DATE
Caltrans	DAVID YAM	DAVID YAM	ANGELA KWAN	4/25/14
WATER QUALITY				



CL1 100+83.14 TO 101+00.11
 CL1 101+54.47 TO 101+96.03
EROSION CONTROL INSTALLATION TYPICALS

EROSION CONTROL DETAILS
 NO SCALE
ECD-1

LAST REVISION DATE PLOTTED => 20-AUG-2014 04-25-14 TIME PLOTTED => 11:14

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn	1	R1.4	12	35

Sally Bang
 LICENSED LANDSCAPE ARCHITECT
 5-19-14
 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.

EROSION CONTROL TYPE 1

SEQUENCE	ITEM	MATERIAL		APPLICATION RATE
		DESCRIPTION	TYPE	
1	ROLLED EROSION CONTROL PRODUCT (NETTING)	NETTING	TYPE A	
2	HYDROSEED	FERTILIZER	ORGANIC	1200 LBS/ACRE
		SEED	MIX 1	42 LB/ACRE
		FIBER	WOOD	285 LB/ACRE
3	HYDROMULCH	FIBER	WOOD	285 LB/ACRE
		TACKIFIER	PLANT BASE	125 LB/ACRE

SEED MIX 1

BOTANICAL NAME (COMMON NAME)	PERCENT GERMINATION (MINIMUM)	POUNDS PURE LIVE SEED PER ACRE (SLOPE MEASUREMENT) (N)
LUPINUS BICOLOR (PYGMY LEAF LUPINE)	40	4
BROMUS CARINATUS var MARITIMUS ¹ (COASTAL CALIFORNIA BROME)	40	11
ESCHSCHOLZIA CALIFORNICA ¹ (CALIFORNIA POPPY)	50	2
ELYMUS GLAUCUS (BLUE WILDRYE)	50	9
HORDEUM BRACHYANTHERUM (MEADOW BARLEY)	50	11
VULPIA MICROSTACHYS (SMALL FESCUE)	50	5
¹ SEED PRODUCED IN CALIFORNIA ONLY	TOTAL	42

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

FIBER ROLLS

SEQUENCE	ITEM	TYPE	REMARKS
	INSTALL FIBER ROLLS AFTER RECP (NETTING) AND BEFORE HYDROSEED.	FIBER ROLLS	TYPE B, 8" TO 10" DIA TYPE 1 FIBER ROLL INSTALLATION

ROLLED EROSION CONTROL PRODUCT

SEQUENCE	ITEM	TYPE	DESCRIPTION
	INSTALL RECP (NETTING) BEFORE FIBER ROLL	NETTING	TYPE B WOVEN COIR

EROSION CONTROL QUANTITIES

SHEET	FIBER ROLLS	HYDROSEED	HYDROMULCH	ROLLED EROSION CONTROL PRODUCT (NETTING)
	LF	SQFT		
EC-1	150	450	450	450
TOTAL	150	450	450	450

EROSION CONTROL QUANTITIES & LEGEND

ECQ-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 WATER QUALITY
 SENIOR LANDSCAPE ARCHITECT
 DAVID YAM
 CALCULATED/DESIGNED BY
 CHECKED BY
 SALLY BANG
 ANGELA KWAN
 REVISED BY
 DATE REVISED
 SB
 4/25/14

	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	
ℒ	STATION LINE	
SM	SELECTED MATERIAL	
Spec	SPECIAL, SPECIFICATIONS	
SPP	SLOTTED PLASTIC PIPE	
SS	SLOPE STAKE	
SSBM	STRAP AND SADDLE BRACKET METHOD	
SSD	STRUCTURAL SECTION DRAIN	
SSPA	STRUCTURAL STEEL PLATE ARCH	
SSPP	STRUCTURAL STEEL PLATE PIPE	
SSPPA	STRUCTURAL STEEL PLATE PIPE ARCH	
SSRP	STEEL SPIRAL RIB PIPE	
St	STREET	
Sta	STATION	
STBB	SINGLE THRIE BEAM BARRIER	
Std	STANDARD	
Str	STRUCTURE	
Surf	SURFACING	
SW	SIDEWALK, SOUND WALL	
Swr	SEWER	
Sym	SYMMETRICAL	
S4S	SURFACE 4 SIDES	
	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	
VC	VERTICAL CURVE	
VCP	VITRIFIED CLAY PIPE	
Vert	VERTICAL	
Via	VIADUCT	
Vol	VOLUME	W
W	WEST, WIDTH	
WB	WESTBOUND	
WH	WEEP HOLE	
WM	WIRE MESH	
WS	WATER SURFACE	
WSP	WELDED STEEL PIPE	
Wt	WEIGHT	
WV	WATER VALVE	
WW	WINGWALL	
WWLOL	WINGWALL LAYOUT LINE	X
X Sec	CROSS SECTION	
Xing	CROSSING	Y
Yr	YEAR	
Yrs	YEARS	

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn	1	R1.4	13	35

Grace M. Tsushima
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

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TO ACCOMPANY PLANS DATED 5-19-14

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

TABLE A

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

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

TABLE B

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

* For use on a sign panel only

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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.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn	1	R1.4	14	35

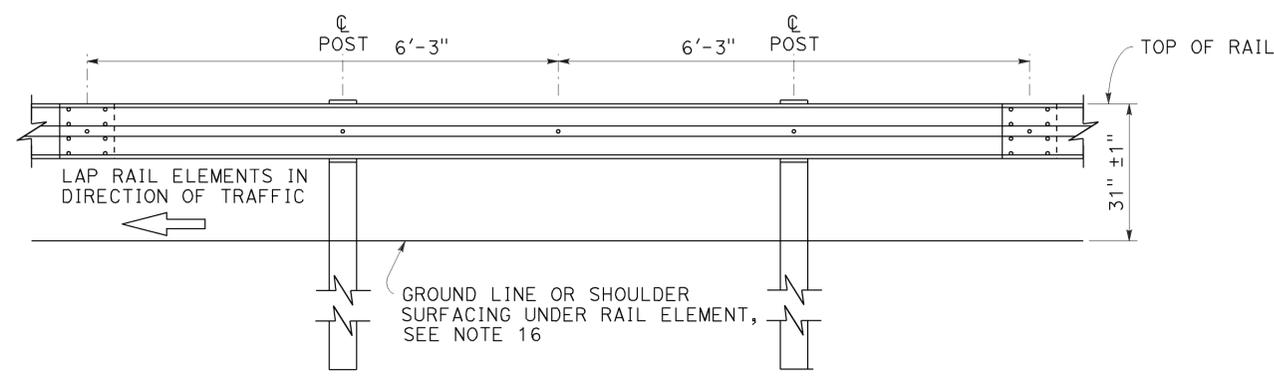
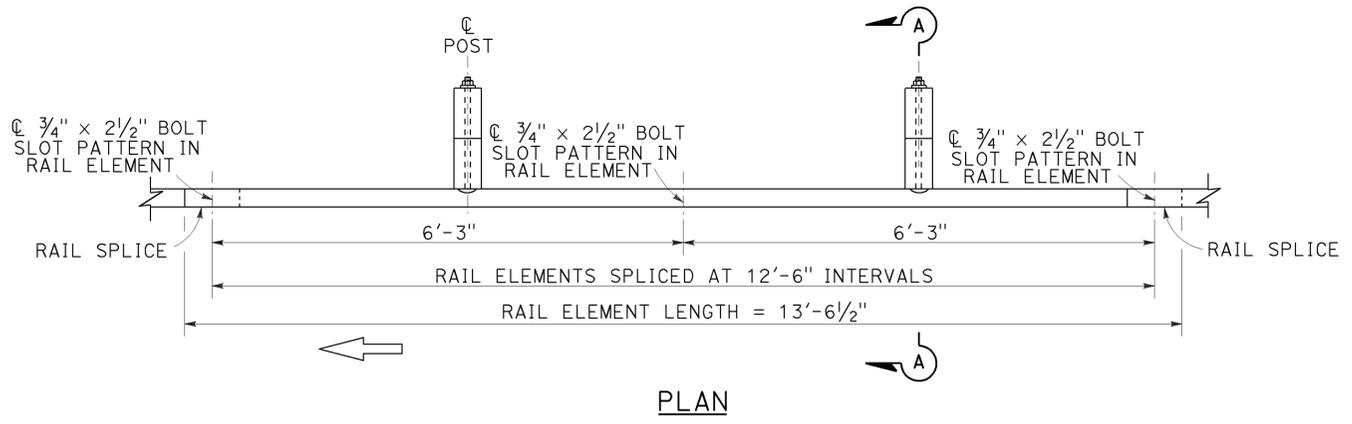
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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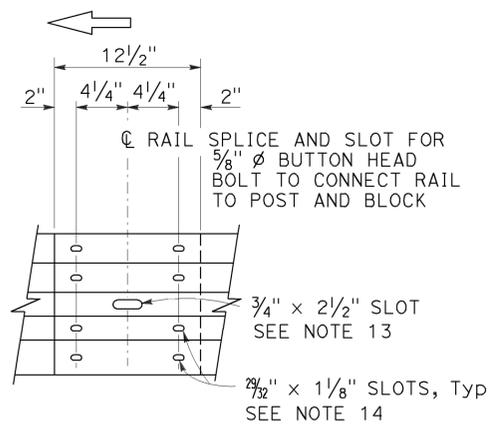
REGISTERED PROFESSIONAL ENGINEER
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 5-19-14



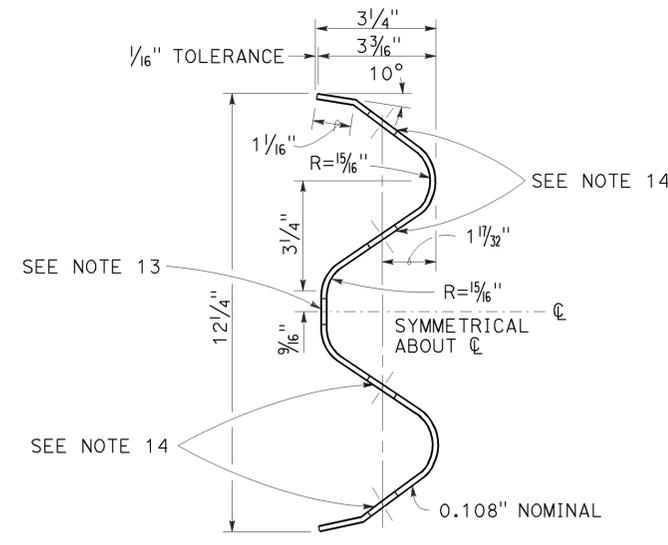
ELEVATION

MIDWEST GUARDRAIL SYSTEM WITH WOOD POST AND BLOCKS

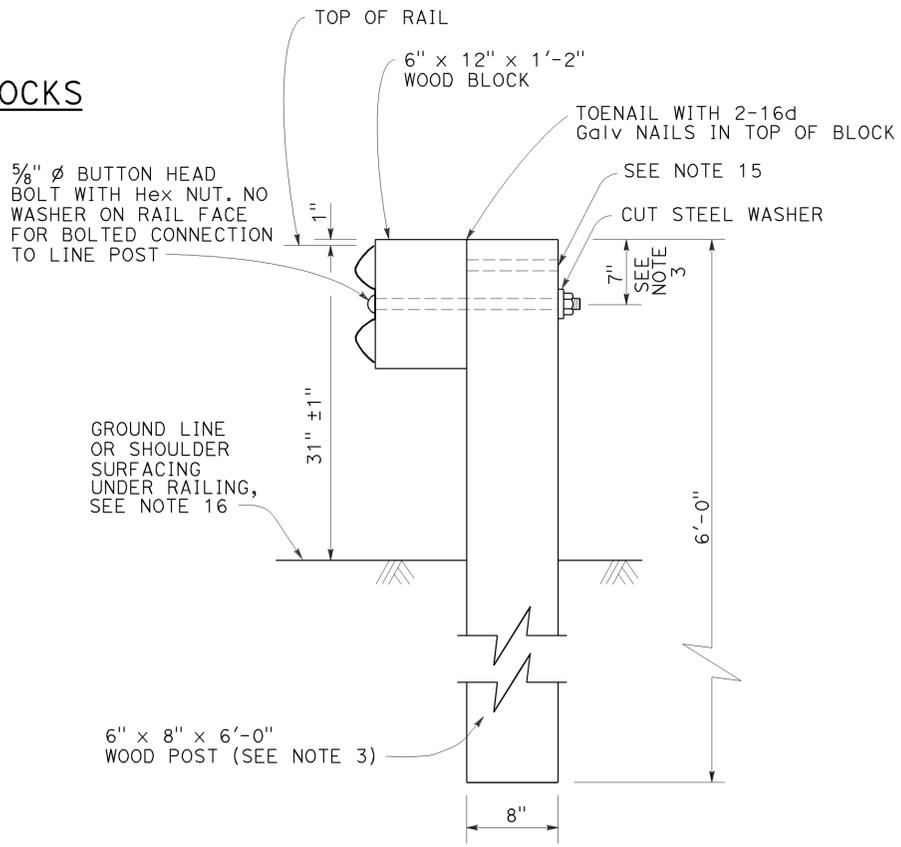


ELEVATION
RAIL ELEMENT SPLICE DETAIL

- Connect the over lapped end of the rail elements with $\frac{5}{8}$ " ϕ x $1\frac{3}{8}$ " button head oval shoulder splice bolts inserted into the $\frac{7}{32}$ " x $\frac{1}{8}$ " slots and bolted together with $\frac{5}{8}$ " 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 THRU RAIL ELEMENT



SECTION A-A
TYPICAL WOOD LINE POST INSTALLATION

See Note 4

NOTES:

- For details of steel post installations, see Revised Standard Plan RSP A77L2.
- For details of standard hardware used to construct MGS, see Revised Standard Plan RSP A77M1.
- For details of wood posts and wood blocks used to construct MGS, see Revised Standard Plan RSP A77N1.
- 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 railing, see Revised Standard Plans RSP A77U1, RSP A77U2 and RSP A77V1.
- For MGS connection details to abutments and walls, see Revised Standard Plan RSP A77U3.
- For typical MGS delineation and dike positioning details, see Revised Standard Plan RSP A77N4.
- 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".
- Additional hole in uppermost portion of line post is for potential future adjustments of railing height. See Revised Standard Plan RSP A77N1.
- Install posts in soil.

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DEPARTMENT OF TRANSPORTATION

MIDWEST GUARDRAIL SYSTEM
STANDARD RAILING SECTION
(WOOD POST WITH WOOD BLOCK)

NO SCALE

RSP A77L1 DATED JULY 19, 2013 SUPPLEMENTS STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77L1

2010 REVISED STANDARD PLAN RSP A77L1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn	1	R1.4	15	35

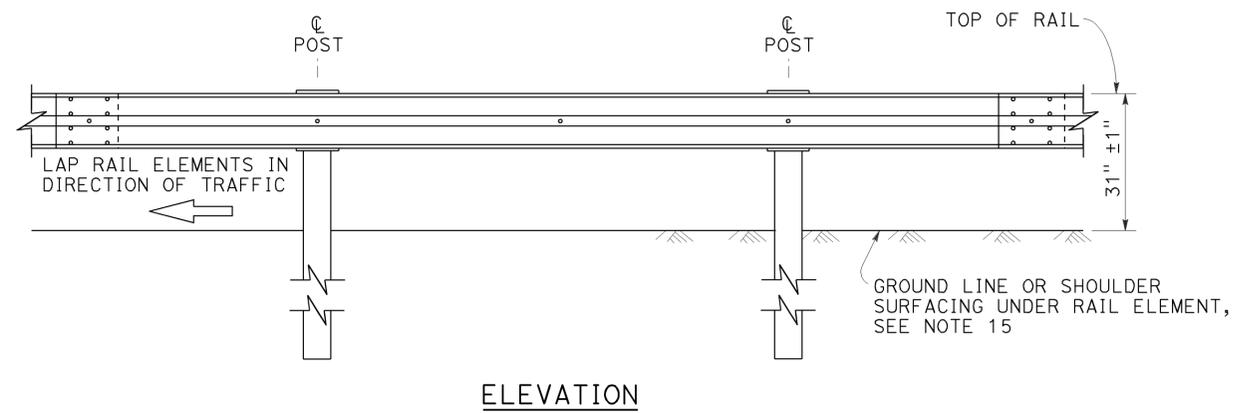
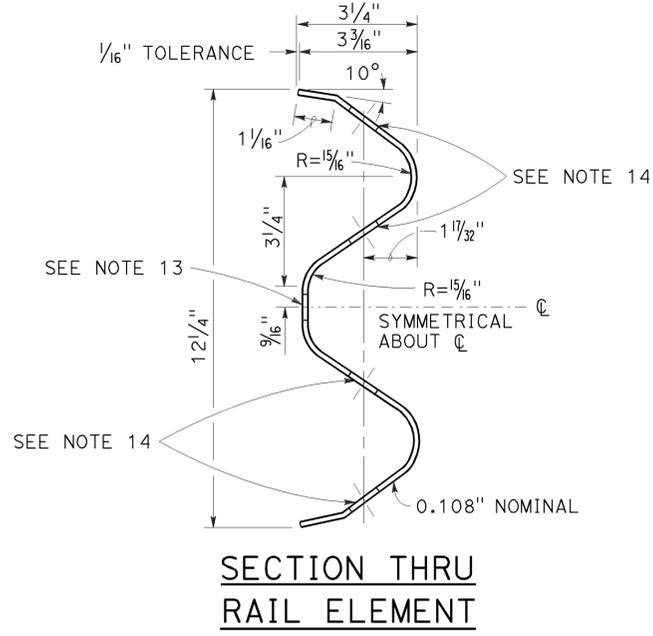
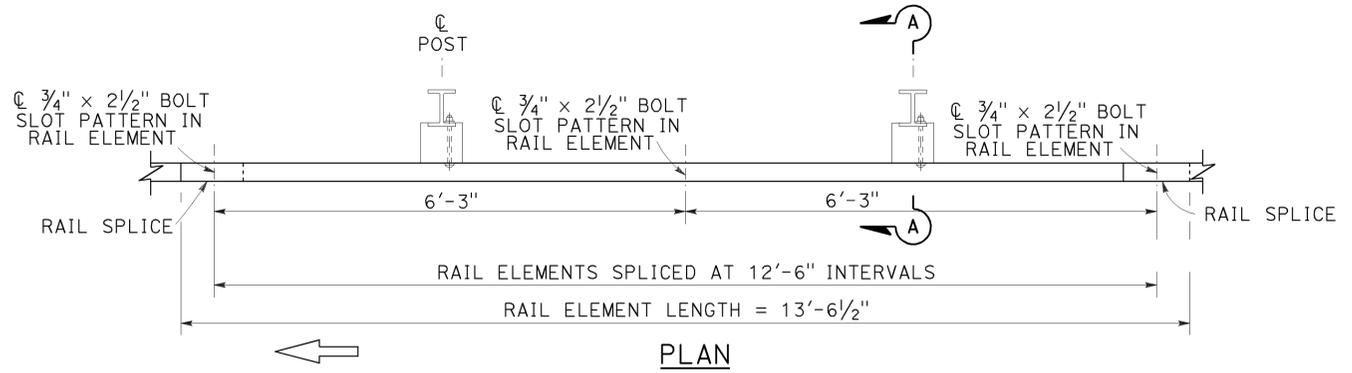
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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TO ACCOMPANY PLANS DATED 5-19-14

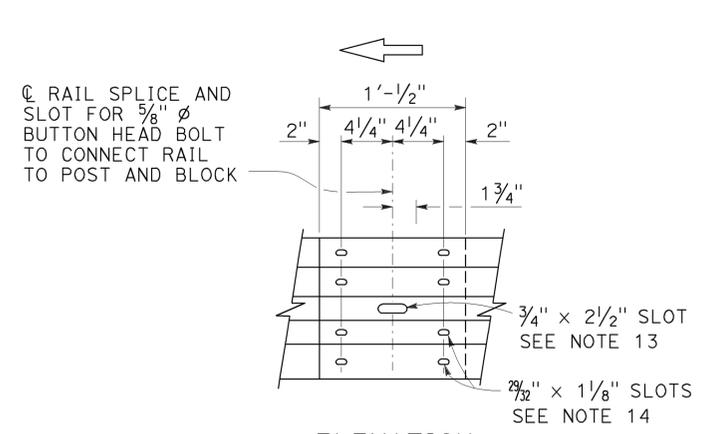
REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA



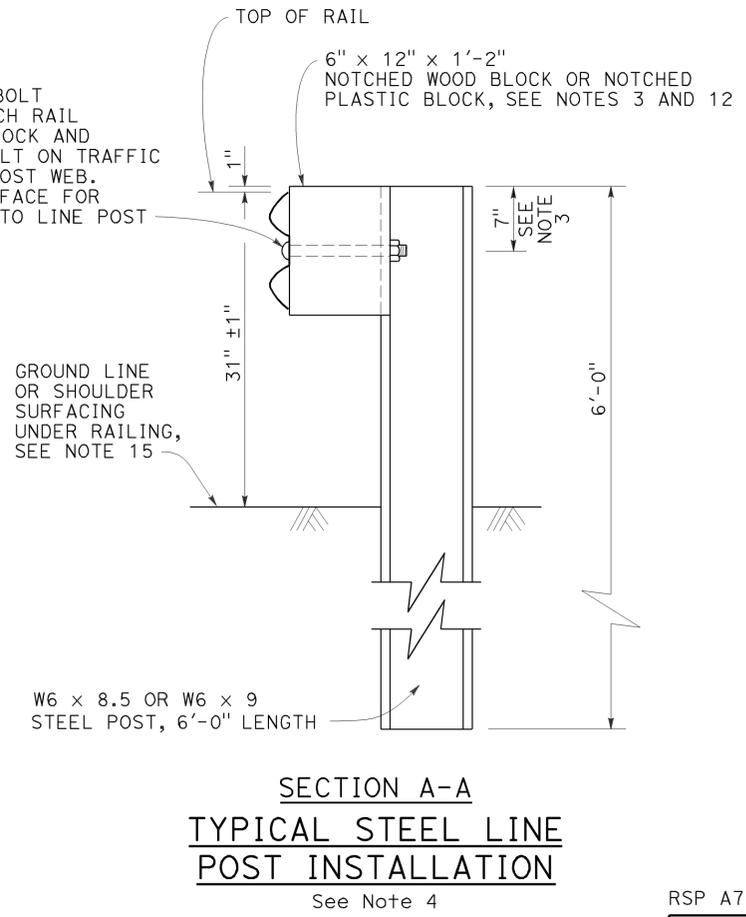
MIDWEST GUARDRAIL SYSTEM WITH STEEL POSTS AND NOTCHED WOOD OR NOTCHED RECYCLED PLASTIC BLOCKS

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.



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



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DEPARTMENT OF TRANSPORTATION

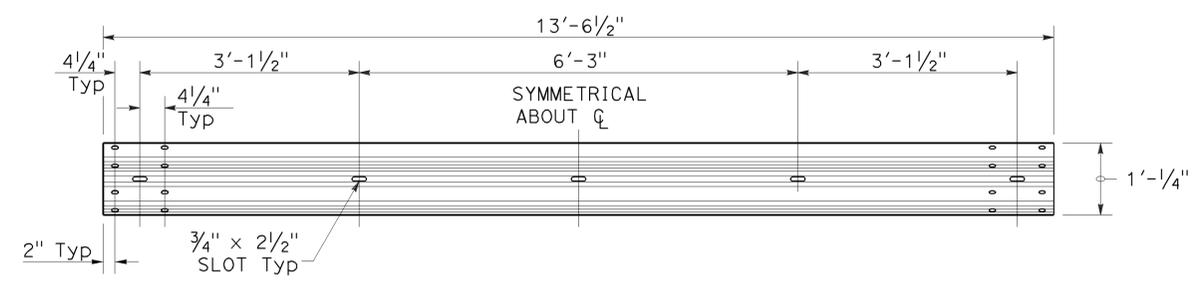
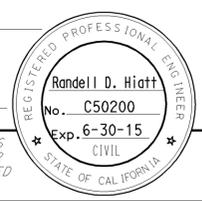
MIDWEST GUARDRAIL SYSTEM STANDARD RAILING SECTION (STEEL POST WITH NOTCHED WOOD OR NOTCHED RECYCLED PLASTIC BLOCK)

NO SCALE

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

REVISED STANDARD PLAN RSP A77L2

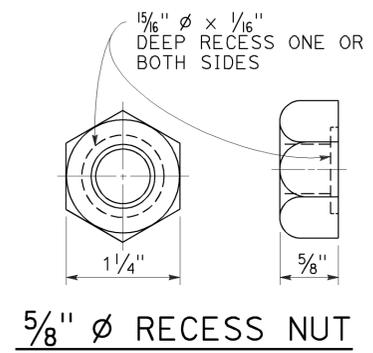
2010 REVISED STANDARD PLAN RSP A77L2



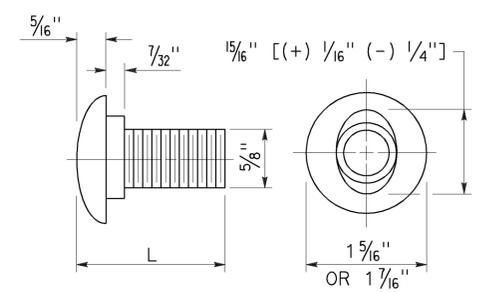
TYPICAL RAIL ELEMENT

NOTE:

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



5/8" Ø RECESS NUT

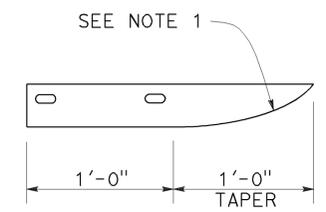


5/8" Ø BUTTON HEAD BOLT

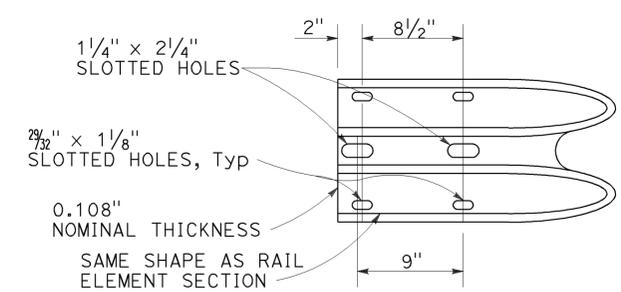
BUTTON HEAD BOLT

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

** For nested rail applications.



PLAN



**ELEVATION
END CAP
(TYPE A)**

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
STANDARD HARDWARE**

NO SCALE

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

REVISED STANDARD PLAN RSP A77M1

2010 REVISED STANDARD PLAN RSP A77M1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn	1	R1.4	17	35

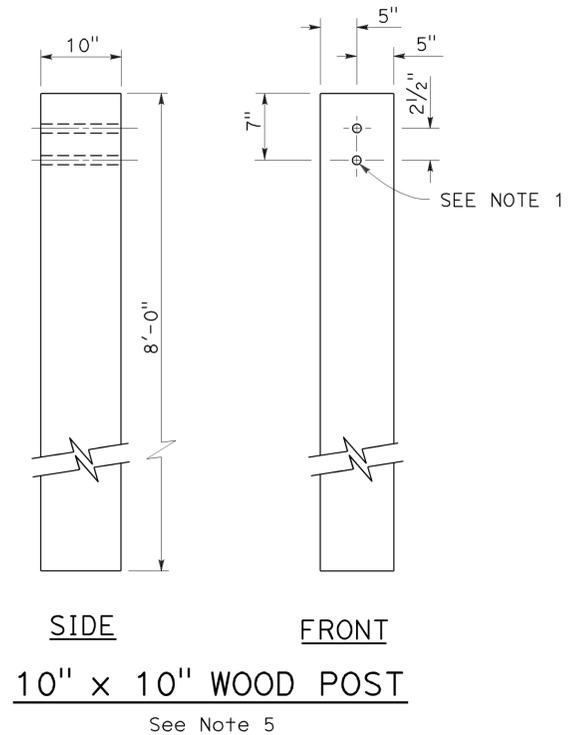
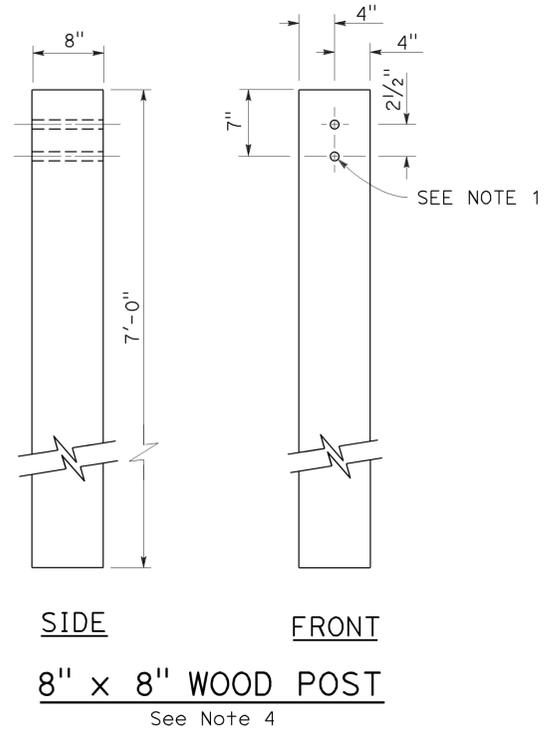
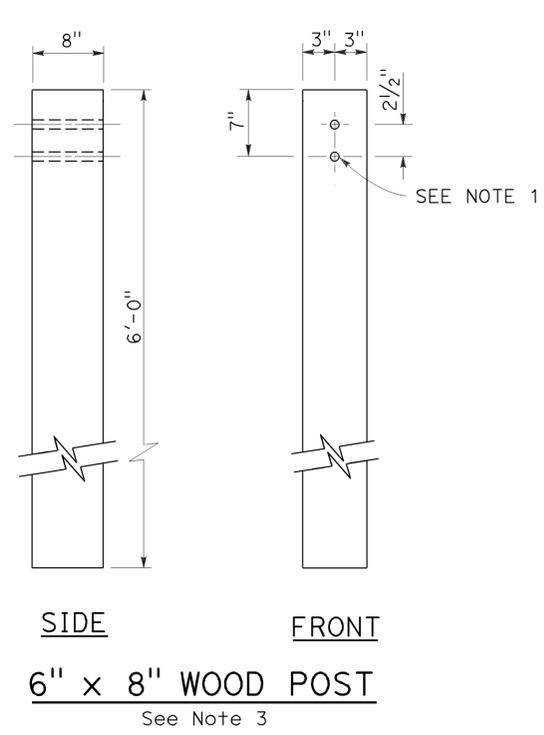
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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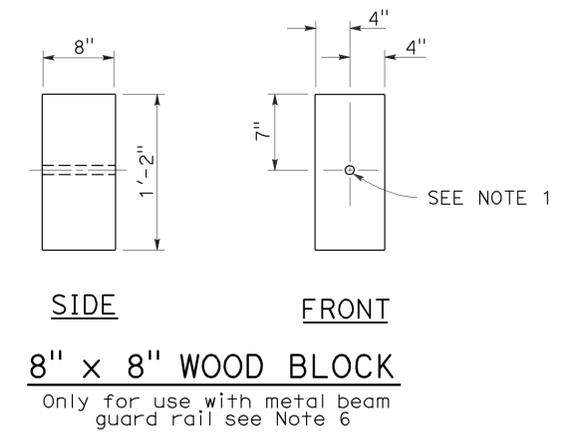
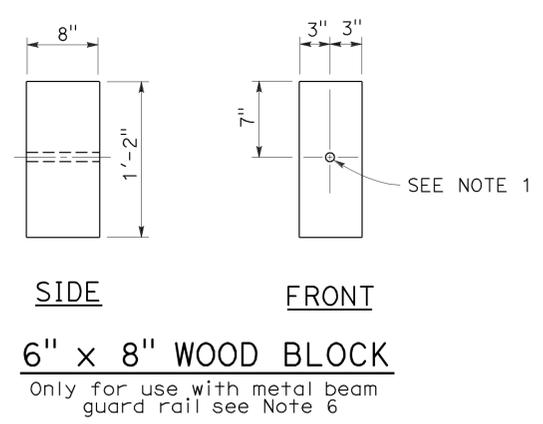
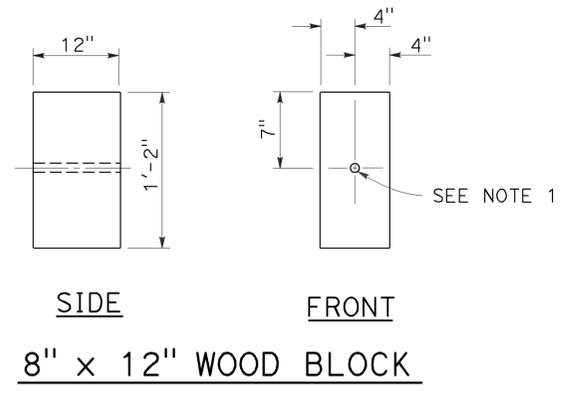
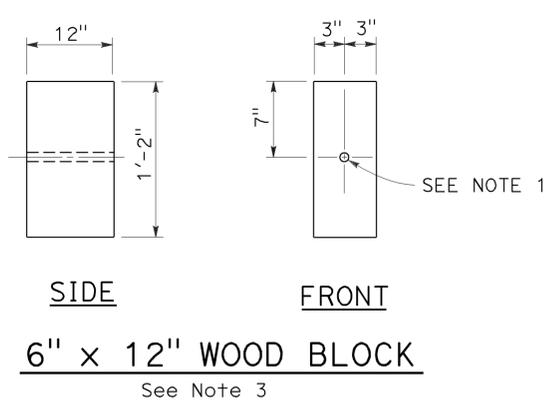
REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 5-19-14



NOTES:

1. All holes in wood posts and blocks shall be $\frac{3}{4}$ " Dia \pm $\frac{1}{16}$ ".
2. Dimensions shown for wood post are nominal.
3. This post and block combination used for standard line post sections of MGS.
4. This post and 8" x 12" block combination used for line post sections of MGS on narrow roadways.
5. This post and 8" x 12" block combination is typically used where strengthened line post sections of MGS are warranted to shield fixed objects.
6. See Revised Standard Plan RSP A77L3 for use of 6" x 8" and 8" x 8" wood blocks.



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

RSP A77N1 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77N1

2010 REVISED STANDARD PLAN RSP A77N1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn	1	R1.4	18	35

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

November 15, 2013
PLANS APPROVAL DATE

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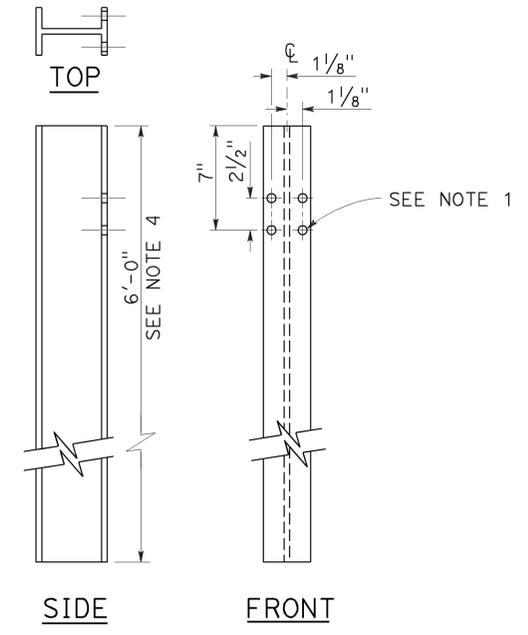
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CIVIL
STATE OF CALIFORNIA

TO ACCOMPANY PLANS DATED 5-19-14

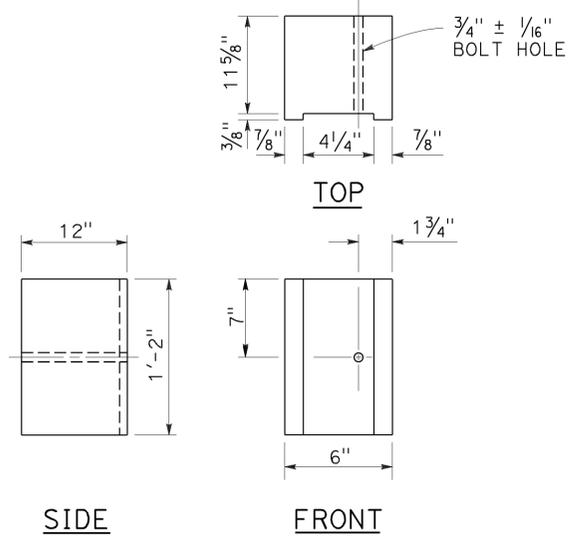
NOTES:

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

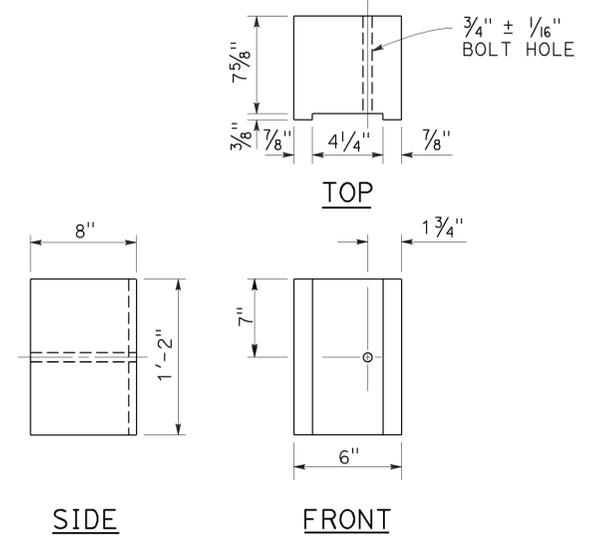
2010 REVISED STANDARD PLAN RSP A77N2



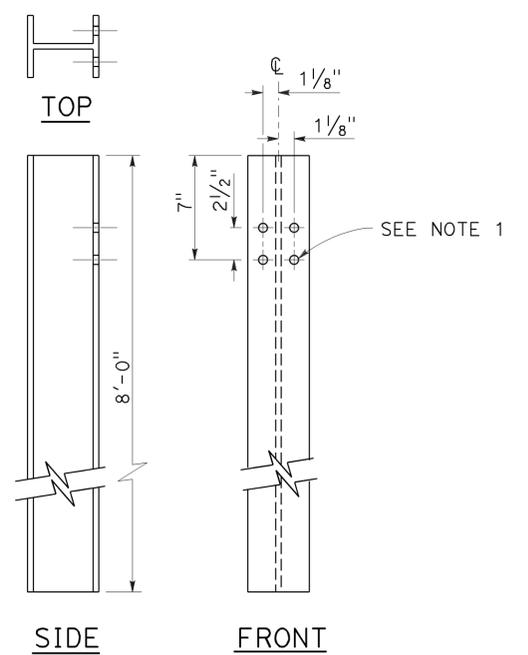
**W6 x 9 OR W6 x 8.5
STEEL POST**
See Note 4



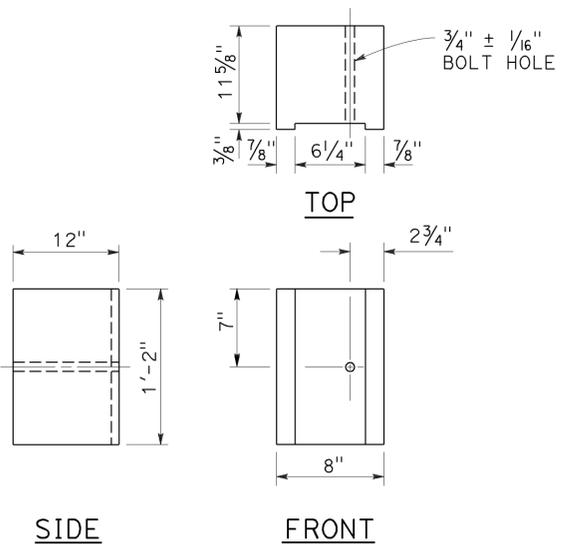
**6" x 12"
NOTCHED WOOD BLOCK**
See Notes 2 and 3



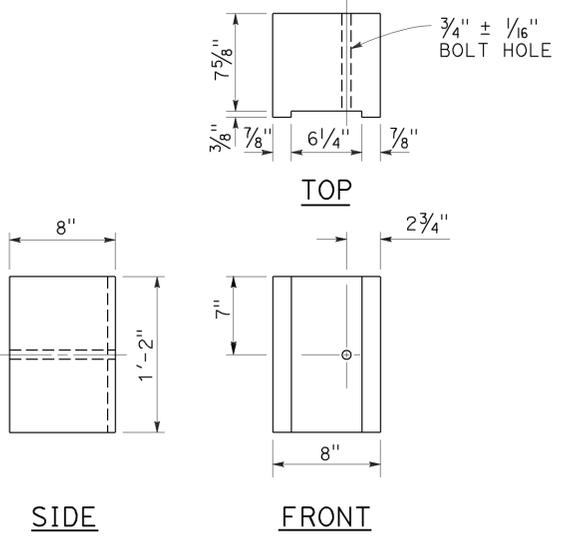
**6" x 8"
NOTCHED WOOD BLOCK**
Only for use with metal beam guard railing. See Note 5



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



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



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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

REVISED STANDARD PLAN RSP A77N2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn	1	R1.4	19	35

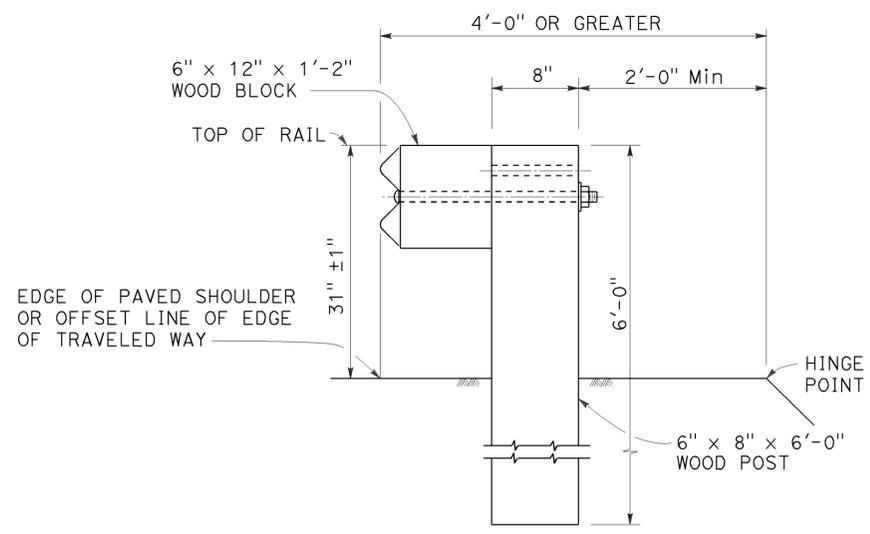
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

November 15, 2013
PLANS APPROVAL DATE

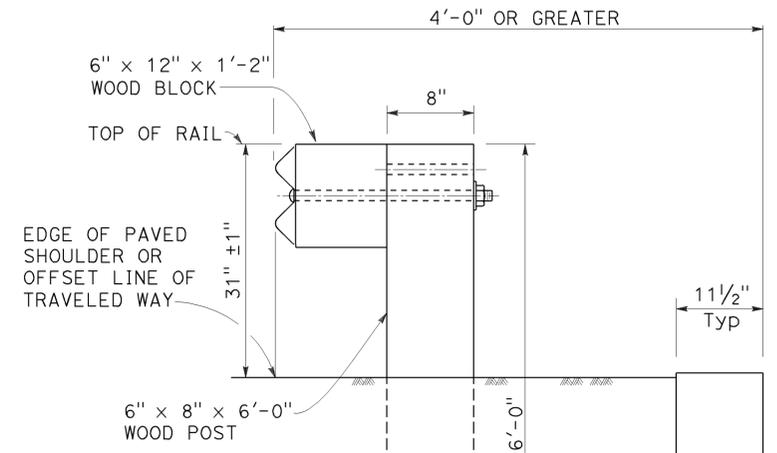
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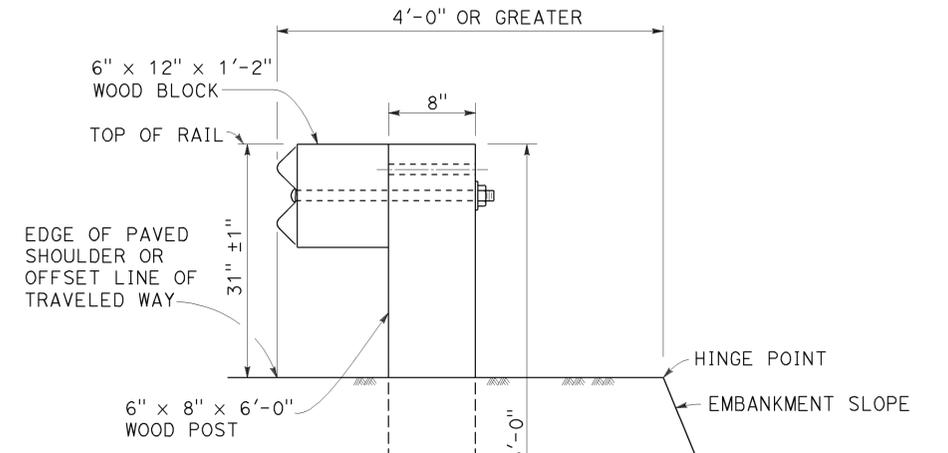
TO ACCOMPANY PLANS DATED 5-19-14



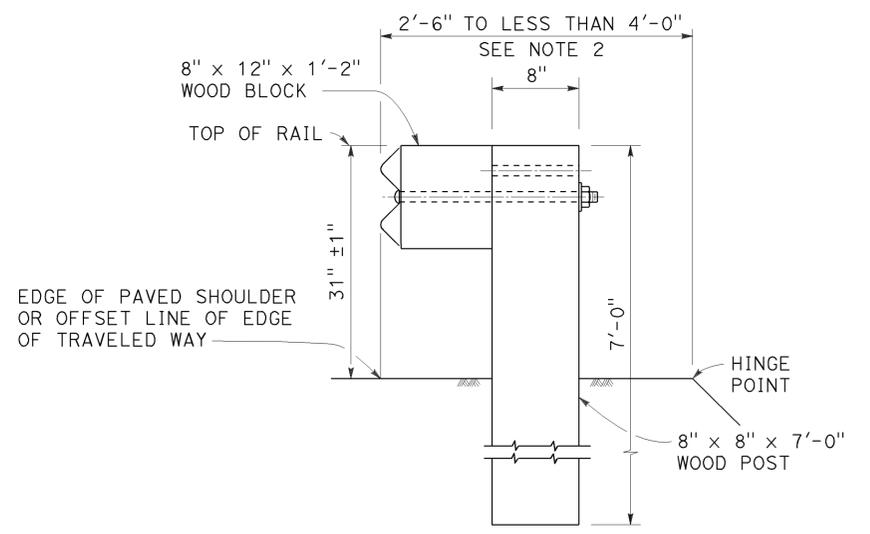
DETAIL A
TYPICAL ROADWAY
INSTALLATION
See Note 1



DETAIL C



DETAIL D



DETAIL B
NARROW ROADWAY
INSTALLATION
See Note 1

POST EMBEDMENT

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.

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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
04	Mrn	1	R1.4	20	35

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

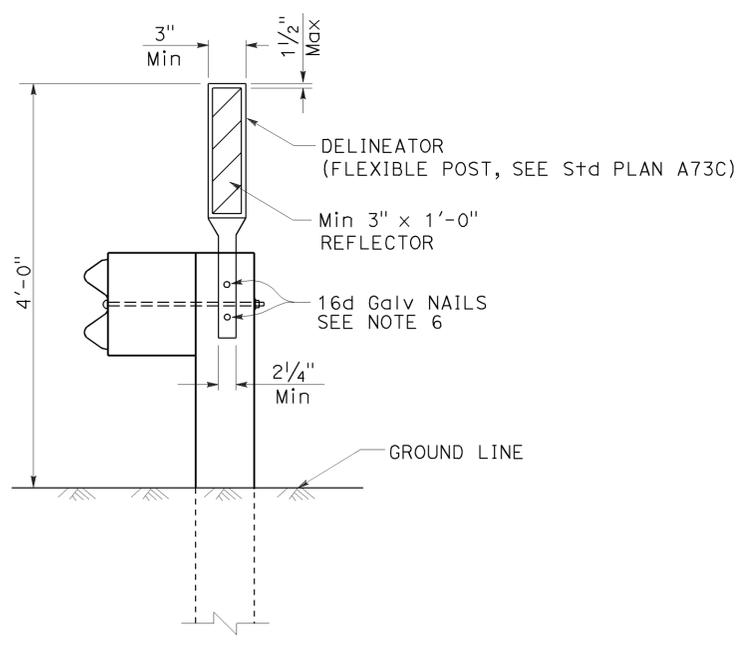
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No. C50200
Exp. 6-30-15
CIVIL
STATE OF CALIFORNIA

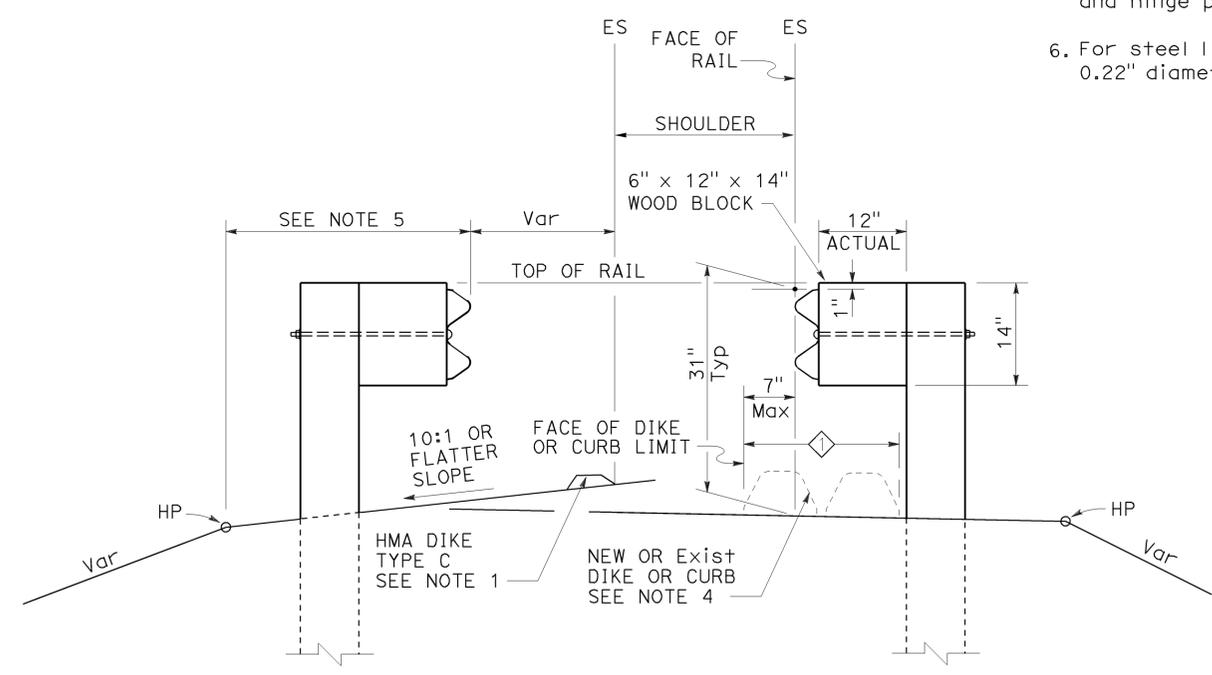
TO ACCOMPANY PLANS DATED 5-19-14

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
04	Mrn	1	R1.4	21	35

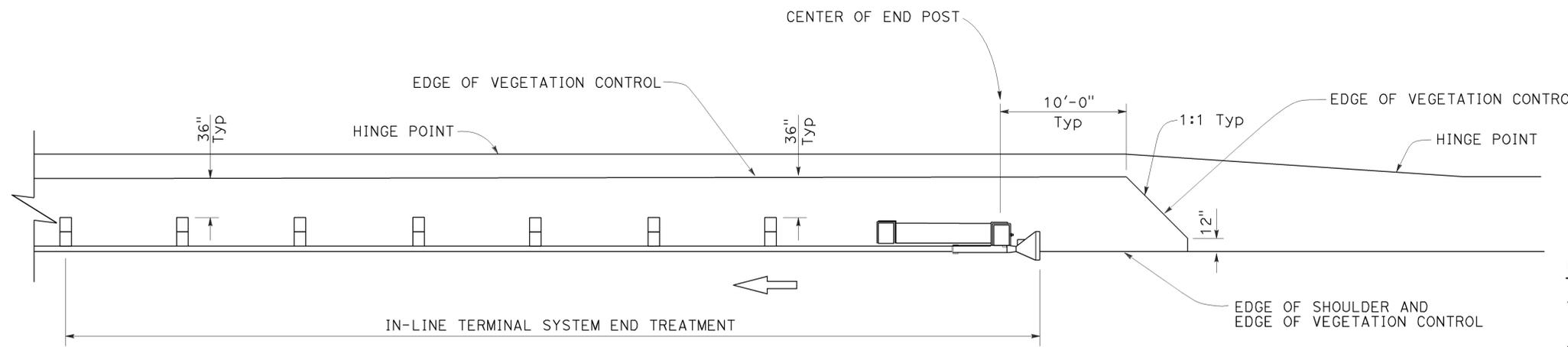
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

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

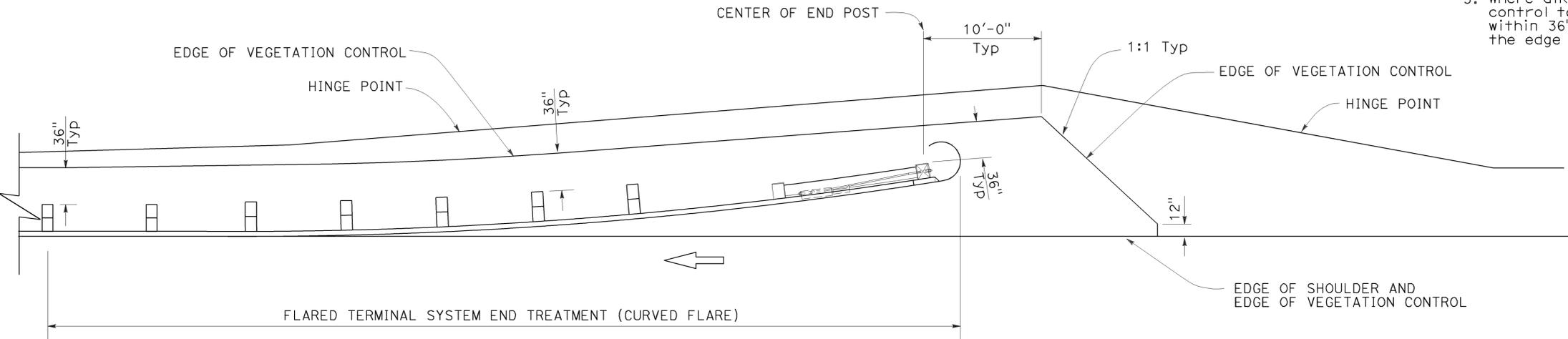
TO ACCOMPANY PLANS DATED 5-19-14



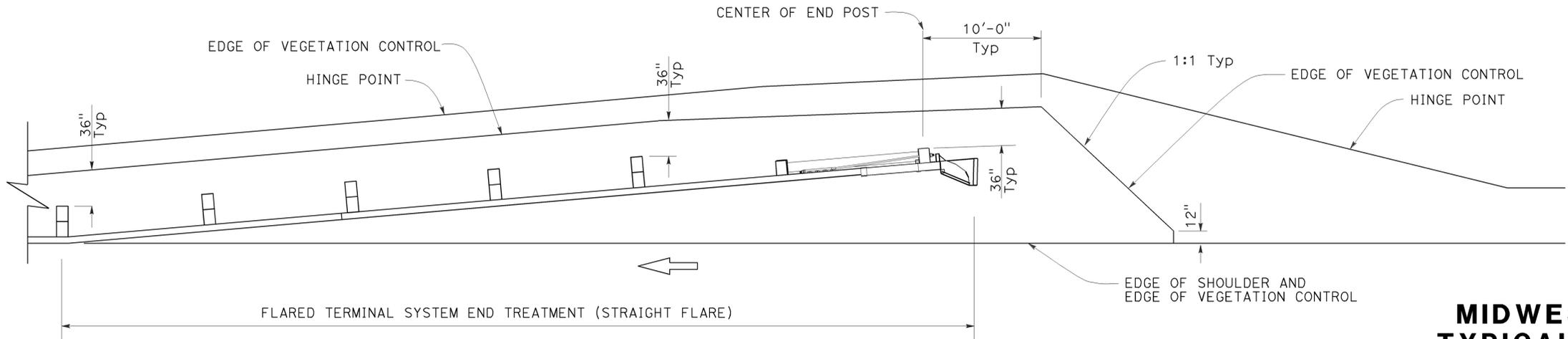
PLAN

NOTES:

1. See Revised Standard Plan RSP A77N5 for additional vegetation control details.
2. Where the distance between back of post and hinge point is less than 42", construct vegetation control to 6" from hinge point while maintaining the 8" block-out at back of post. If the 8" block-out at back of post can not be maintained, construct vegetation control flush with the back edge of post.
3. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 36" in front of the post, construct vegetation control to the edge of paved shoulder.



PLAN



PLAN

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
TYPICAL VEGETATION CONTROL
FOR TERMINAL SYSTEM END TREATMENTS**

NO SCALE

RSP A77N6 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77N6

2010 REVISED STANDARD PLAN RSP A77N6

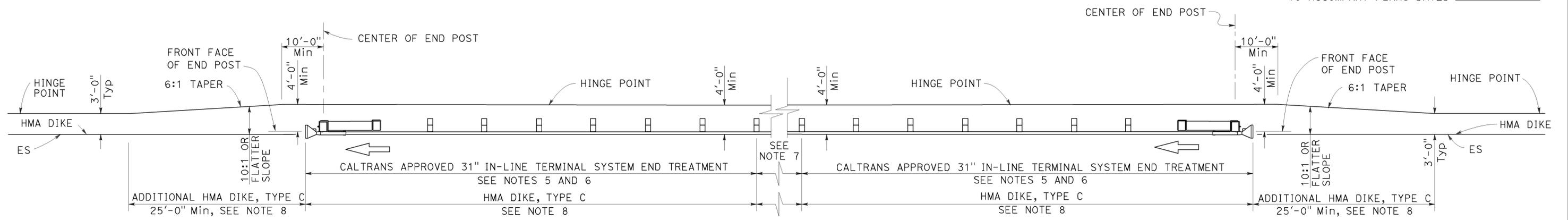
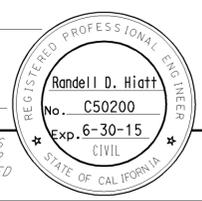
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn	1	R1.4	22	35

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

July 19, 2013
PLANS APPROVAL DATE

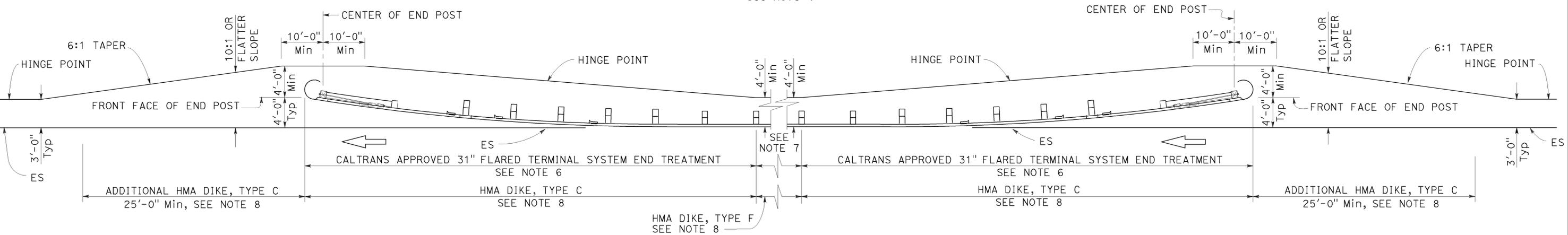
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TO ACCOMPANY PLANS DATED 5-19-14



TYPE 11D LAYOUT

(Embankment MGS installation with 31" in-line end treatment at each end of railing)
See Note 4



TYPE 11E LAYOUT

(Embankment MGS installation with 31" flared end treatment at each end of railing)
See Note 4

NOTES:

1. 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.
2. MGS post spacing to be 6'-3" center to center, except as otherwise noted.
3. 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 post with 6" x 12" x 1'-2" wood blocks where applicable and when specified.
4. Layout Types 11D through 11L, shown on the A77P Series of Standard Plans, are typically used where MGS is recommended to shield embankment slopes and a crashworthy 31" end treatment is required for both directions of traffic.
5. 31" in-line terminal system end treatments are used where site conditions will not accommodate a flared end treatment.
6. The type of 31" terminal system end treatment to be used will be shown on the Project Plans.
7. Dependent on site conditions (embankment height and side slope), construction of additional MGS (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
8. Where placement of dike is required with MGS installations, see Revised Standard Plan RSP A77N4 for dike positioning details.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**MIDWEST GUARDRAIL SYSTEM
TYPICAL LAYOUTS FOR
EMBANKMENTS**

NO SCALE

RSP A77P2 DATED JULY 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A77P2

2010 REVISED STANDARD PLAN RSP A77P2

Gregory A. Balzer
LICENSED LANDSCAPE ARCHITECT

July 19, 2013
PLANS APPROVAL DATE

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TO ACCOMPANY PLANS DATED 5-19-14

2010 REVISED STANDARD PLAN RSP H1

A

AB AGGREGATE BASE
 ABS ACRYLONITRILE-BUTADIENE-STYRENE
 AC ASPHALT CONCRETE
 ACC ARMOR-CLAD CONDUCTORS
 Adj ADJACENT/ADJUSTABLE
 AIC AUXILIARY IRRIGATION CONTROLLER
 Alt ALTERNATIVE
 AMEND AMENDMENT
 ARV AIR RELEASE VALVE
 AUTO AUTOMATIC
 AUX AUXILIARY
 AVB ATMOSPHERIC VACUUM BREAKER

B

B&B BALLED AND BURLAPPED
 B/B BRASS/BRONZE
 B/B/PL BRASS/BRONZE/PLASTIC
 B/PL BRASS/PLASTIC
 BFM BONDED FIBER MATRIX
 Bit Ctd BITUMINOUS COATED
 BP BOOSTER PUMP
 BPA BACKFLOW PREVENTER ASSEMBLY
 BPE BACKFLOW PREVENTER ENCLOSURE
 BV BALL VALVE

C

C CONDUIT
 CAP CORRUGATED ALUMINUM PIPE
 CARV COMBINATION AIR RELEASE VALVE
 CB COUPLING BAND
 CCA CAM COUPLER ASSEMBLY
 CEC CONTROLLER ENCLOSURE CABINET
 CHDPE CORRUGATED HIGH DENSITY POLYETHYLENE
 CL CHAIN LINK
 CNC CONTROL AND NEUTRAL CONDUCTORS
 Conc CONCRETE
 CP COPPER PIPE
 CS COMPOST SOCK
 CSP CORRUGATED STEEL PIPE
 CST CENTER STRIP
 CV CHECK VALVE

D

Dia DIAMETER
 DIP DUCTILE IRON PIPE
 DIT DRIP IRRIGATION TUBING
 DG DECOMPOSED GRANITE
 DN DIAMETER NOMINAL
 DVA DRIP VALVE ASSEMBLY

E

EC EROSION CONTROL
 ECTC EROSION CONTROL TECHNOLOGY COUNCIL
 ElecT ELECTRIC/ELECTRICAL
 Elev ELEVATION
 ELL ELBOW
 ENCL ENCLOSURE
 EP EDGE OF PAVEMENT
 ES EDGE OF SHOULDER
 EST END STRIP
 ESTB ESTABLISHMENT
 ETW EDGE OF TRAVELED WAY

F

F FULL CIRCLE
 F/P FULL/PART CIRCLE
 FCV FLOW CONTROL VALVE
 FERT FERTILIZER
 FG FINISHED GRADE
 FH FLEXIBLE HOSE
 FIPT FEMALE IRON PIPE THREAD
 FIS FERTILIZER INJECTOR SYSTEM
 FL FLOW LINE
 FR FIBER ROLL
 FS FLOW SENSOR
 FSC FLOW SENSOR CABLE
 FV FLUSH VALVE

G

Galv GALVANIZED
 GARV GARDEN VALVE
 GARVA GARDEN VALVE ASSEMBLY
 GM GRAVEL MULCH
 GPH GALLONS PER HOUR
 GPM GALLONS PER MINUTE
 GSP GALVANIZED STEEL PIPE
 GV GATE VALVE

H

H HALF CIRCLE
 HDPE HIGH DENSITY POLYETHYLENE
 HP HORSEPOWER/HINGE POINT
 HPL HIGH PRESSURE LINE
 Hwy HIGHWAY

I

IC IRRIGATION CONTROLLER
 ICC IRRIGATION CONTROLLER(S)
 IN CONTROLLER ENCLOSURE CABINET
 ID INSIDE DIAMETER
 IFS IRRIGATION FILTRATION SYSTEM
 IPS IRON PIPE SIZE
 IPT IRON PIPE THREAD
 Irr IRRIGATION

L

L LENGTH

M

Max MAXIMUM
 MBGR METAL BEAM GUARD RAILING
 MCV MANUAL CONTROL VALVE
 MIC MASTER IRRIGATION CONTROLLER
 Min MINIMUM
 MIPT MALE IRON PIPE THREAD
 Misc MISCELLANEOUS
 MtI MATERIAL
 MVP MAINTENANCE VEHICLE PULLOUT

N

NCN NO COMMON NAME
 NL NOZZLE LINE
 No. NUMBER
 NPT NATIONAL PIPE THREAD

O

O/C ON CENTER
 OD OUTSIDE DIAMETER
 OL OVERLAP

P

P PART CIRCLE
 PB PULL BOX
 PCC PORTLAND CEMENT CONCRETE
 PE POLYETHYLENE
 Pkt+ PACKET
 PL PLASTIC
 PLS PURE LIVE SEED
 PLT PLANT/PLANTING
 PLT ESTB PLANT ESTABLISHMENT
 PM POST MILE
 PR PRESSURE RATED
 PRLV PRESSURE RELIEF VALVE
 PRV PRESSURE REGULATING VALVE
 PVC POLYVINYL CHLORIDE
 Pvm+ PAVEMENT

Q

Q QUARTER CIRCLE
 QCV QUICK COUPLING VALVE

R

R RADIUS
 RCP REINFORCED CONCRETE PIPE
 RCV REMOTE CONTROL VALVE
 RCVM REMOTE CONTROL VALVE (MASTER)
 RCVMF REMOTE CONTROL VALVE (MASTER) W/FLOW SENSOR
 RCVP REMOTE CONTROL VALVE W/PRESSURE REGULATOR
 RCW RECYCLED WATER
 RECP ROLLED EROSION CONTROL PRODUCT
 REQ REQUIRED
 RICS REMOTE IRRIGATION CONTROL SYSTEM
 R/W RIGHT OF WAY

S

S SLIP
 SCH SCHEDULE
 SF STATE-FURNISHED
 Shld SHOULDER
 Sq SQUARE
 SST SIDE STRIP
 Sta STATION
 Std STANDARD
 SW SIDEWALK/SOUND WALL

T

T THIRD CIRCLE/THREAD
 TLS TRUCK LOADING STANDPIPE
 TQ THREE QUARTER CIRCLE
 TRM TURF REINFORCEMENT MAT
 TT TWO-THIRDS CIRCLE
 TWSA TREE WELL SPRINKLER ASSEMBLY
 Typ TYPICAL

U

UG UNDERGROUND

W

W WIDTH
 W/ WITH
 WM WATER METER
 WS WYE STRAINER
 WSA WYE STRAINER ASSEMBLY
 WSP WELDED STEEL PIPE
 WWM WELDED WIRE MESH

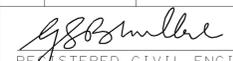
NOTE:
 For additional abbreviations,
 see Standard Plans A10A and A10B.

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**LANDSCAPE AND
 EROSION CONTROL ABBREVIATIONS**
 NO SCALE

RSP H1 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN H1
 DATED MAY 20, 2011 - PAGE 218 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP H1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn	1	R1.4	24	35


 REGISTERED CIVIL ENGINEER
 July 19, 2013
 PLANS APPROVAL DATE



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TO ACCOMPANY PLANS DATED _____

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.

2010 REVISED STANDARD PLAN RSP T9

NOTES:

See Revised Standard Plan RSP T9 for tables.

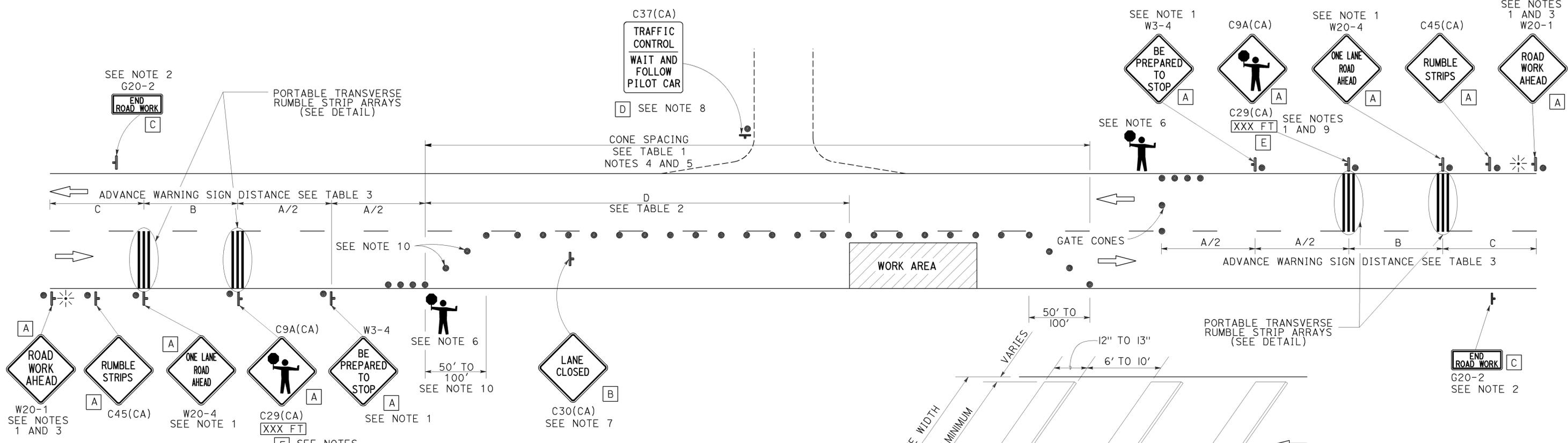
Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as appropriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.

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

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

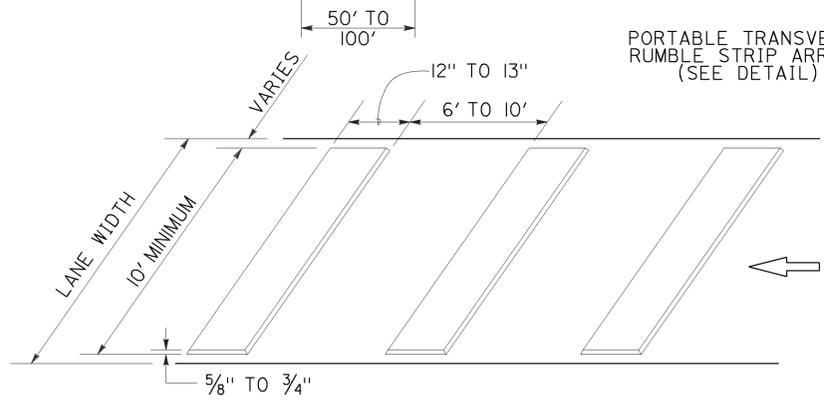
TYPICAL LANE CLOSURE WITH REVERSIBLE CONTROL

TO ACCOMPANY PLANS DATED 5-19-14



- 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.
- The color of the portable transverse rumble strips shall be black or orange. Use 2 arrays, each array shall consist of 3 rumble strips.
- Portable transverse rumble strips shall not be placed on sharp horizontal or vertical curves nor shall they be placed through pedestrian crossings.
- If the portable transverse rumble strips become out of alignment (skewed) by more than 6 inches, measured from one end to the other, they shall be readjusted to bring the placement back to the original location.



PORTABLE TRANSVERSE RUMBLE STRIP ARRAY DETAIL

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 JULY 18, 2014 SUPERSEDES RSP T13 DATED APRIL 19, 2013 AND STANDARD PLAN T13 DATED MAY 20, 2011 - PAGE 241 OF THE STANDARD PLANS BOOK DATED 2010.

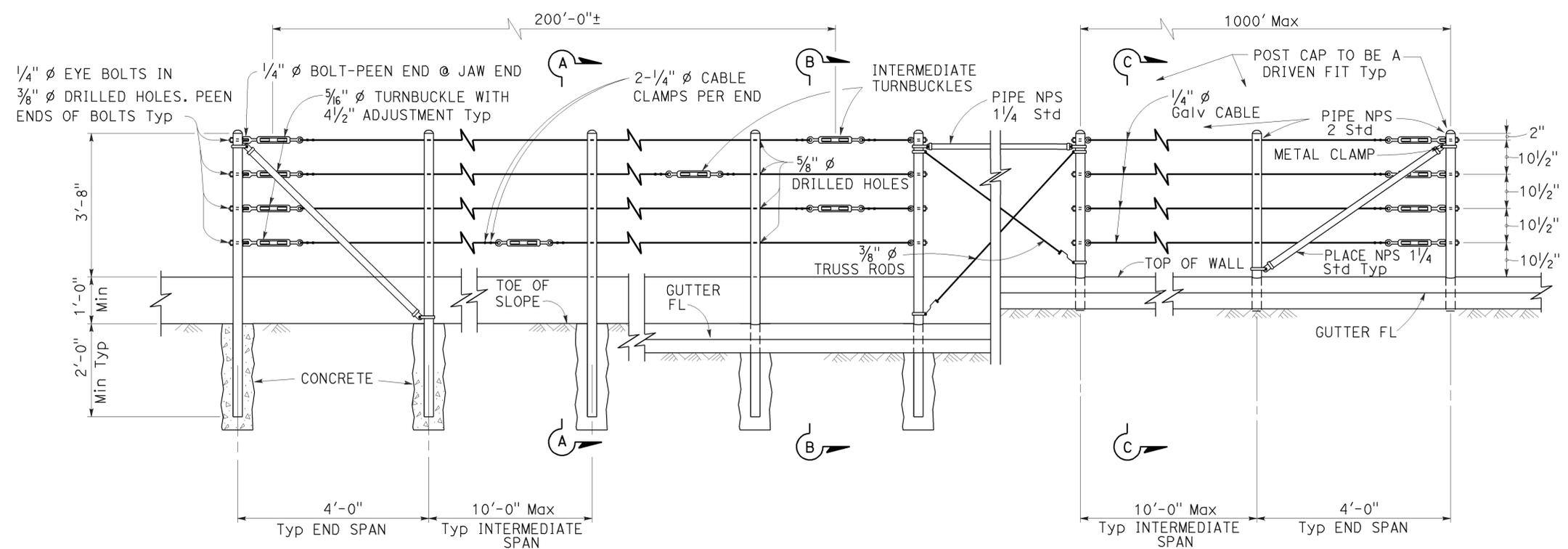
2010 REVISED STANDARD PLAN RSP T13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn	1	R1.4	26	35

REGISTERED CIVIL ENGINEER
 Tillet Satter
 No. C42892
 Exp. 3-31-12
 CIVIL
 STATE OF CALIFORNIA

October 21, 2011
 PLANS APPROVAL DATE

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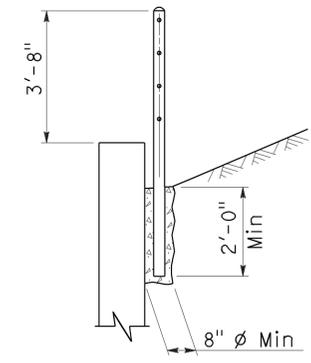


EXISTING WALL (WITHOUT GUTTER) Existing
RETAINING WALL (WITH GUTTER) Existing
RETAINING WALL (WITH GUTTER) New construction

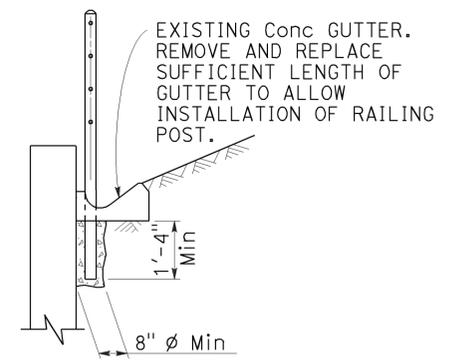
ELEVATION

NOTES:

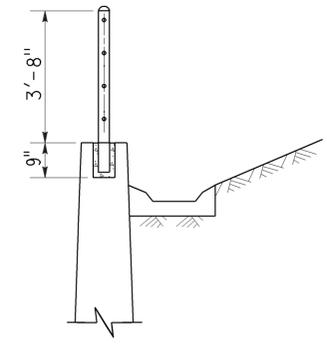
1. Maximum distance between turnbuckles shall be 200'-0"±.
2. Intermediate turnbuckles to be placed in adjacent spans.
3. Cable shall not be spliced between intermediate turnbuckles and end posts.
4. Posts to be vertical.
5. Alignment of holes in posts may vary to conform to slope of top of retaining wall.
6. The Contractor shall verify all dependent dimensions in the field before ordering or fabricating any material.
7. Line posts shall be braced horizontally and trussed diagonally in both directions at intervals not to exceed 1000'.
8. Post pockets to be centered in top of wall.
9. Typical end spans, braced in both directions, shall be constructed at changes in line where the angle of deflection is 15° or more.
10. Provide thimbles at all cable loops.



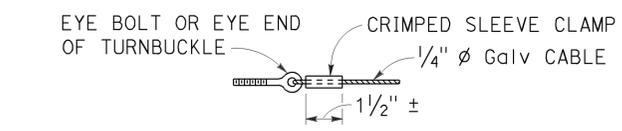
SECTION A-A
Existing



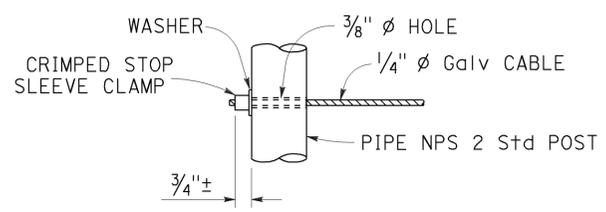
SECTION B-B
Existing



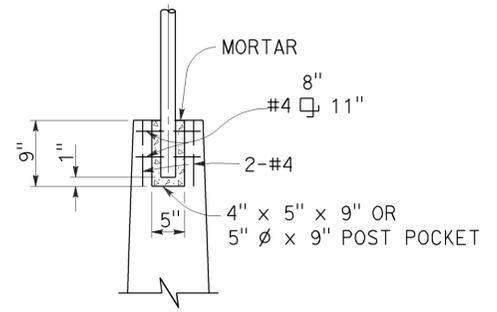
SECTION C-C
New construction



ALTERNATIVE CABLE CONNECTION



ALTERNATIVE DEAD END ANCHORAGE



POST POCKET

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
CABLE RAILING

NO SCALE

RSP B11-47 DATED OCTOBER 21, 2011 SUPERSEDES STANDARD PLAN B11-47 DATED MAY 20, 2011 - PAGE 293 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP B11-47

2010 REVISED STANDARD PLAN RSP B11-47

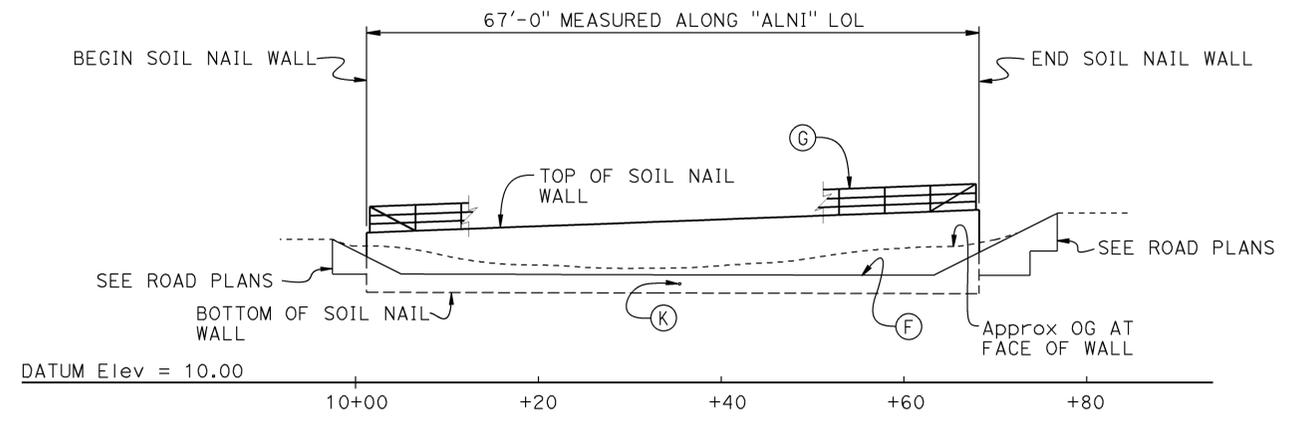
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn	1	R 1.4	27	35

Muthanna S. Omran 4-30-14
 REGISTERED CIVIL ENGINEER DATE

5-19-14
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 MUTHANNA S. OMRAN
 No. 61637
 Exp. 06-30-15
 CIVIL
 STATE OF CALIFORNIA

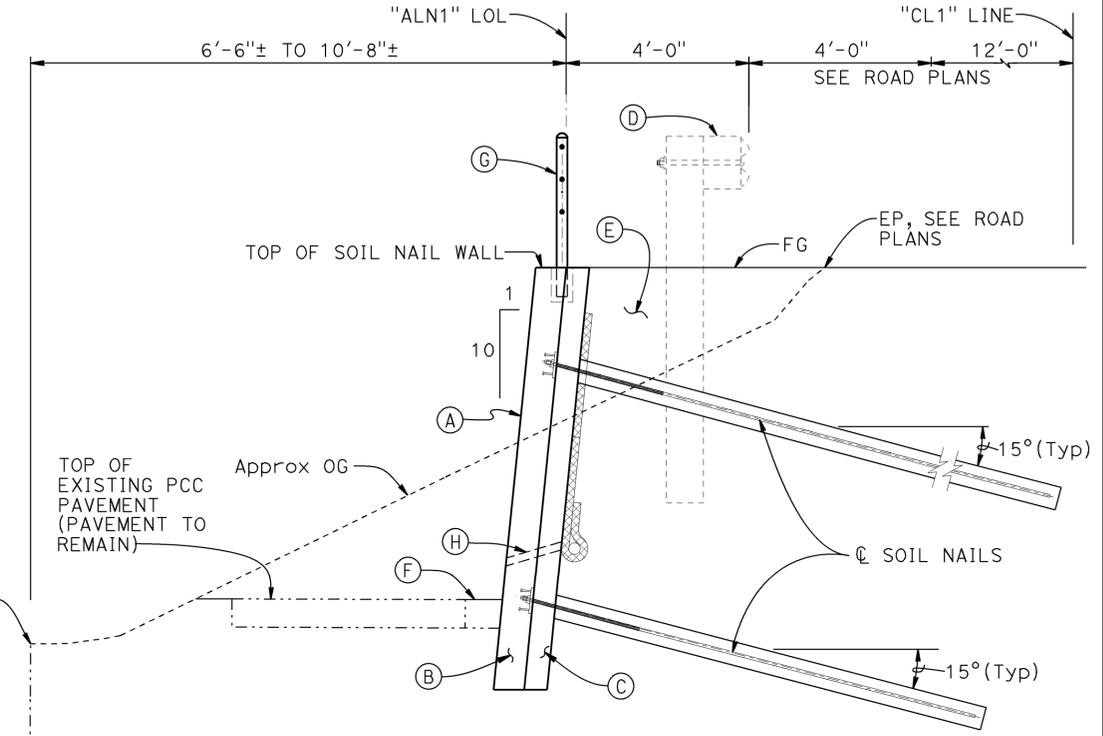
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MIRRORED ELEVATION
 1" = 10'

QUANTITIES

STRUCTURE EXCAVATION (SOIL NAIL WALL)	34	CY
STRUCTURE BACKFILL (SOIL NAIL WALL)	7	CY
LEAN CONCRETE BACKFILL	40	CY
SOIL NAIL	606	LF
STRUCTURAL CONCRETE, RETAINING WALL	14	CY
BAR REINFORCING STEEL (RETAINING WALL)	4,815	LB
STRUCTURAL SHOTCRETE	10	CY
CABLE RAILING	70	LF



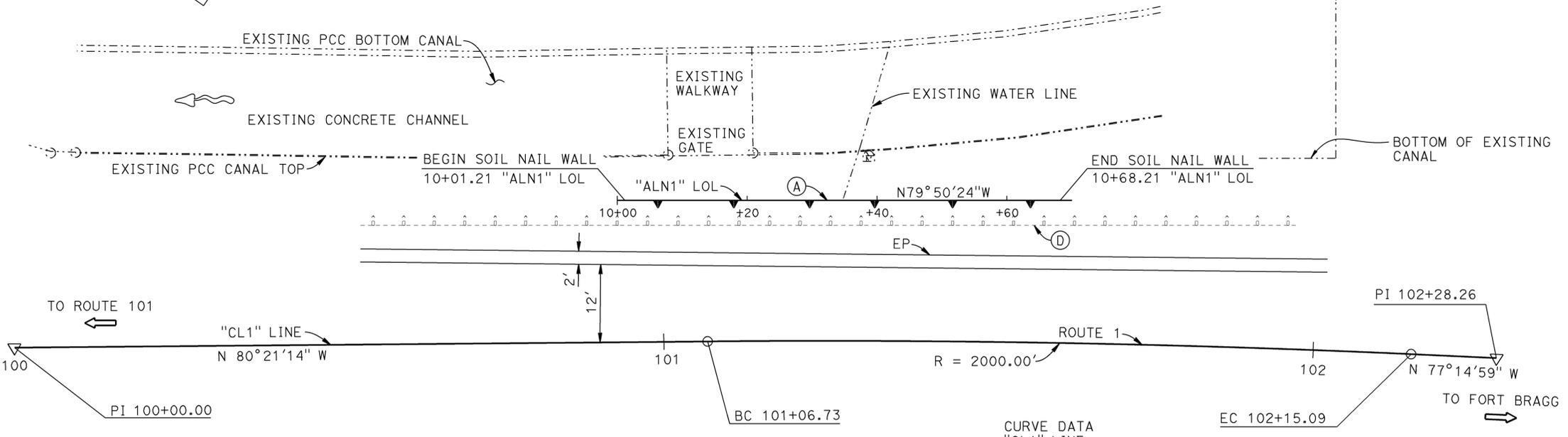
TYPICAL SECTION
 1/2" = 1'-0"

LEGEND:

- Existing Structure
- New Structure

NOTES:

- For existing underground utilities, see "FOUNDATION PLAN"
- (A) Soil Nail Wall
 - (B) CIP concrete
 - (C) Shotcrete
 - (D) Midwest Guardrail System, see road plans
 - (E) Lean concrete backfill
 - (F) FG at face and side of wall
 - (G) Cable Railing
 - (H) Weephole, see "SOIL NAIL WALL DETAILS NO. 2"
 - (K) Existing Water Line (Ø=2")



PLAN
 1" = 10'

CURVE DATA
 "CL1" LINE

R = 2000.00'
Δ = 3°06'16"
T = 54.19'
L = 108.36'

Muthanna S. Omran
 4-30-14 MUTHANNA OMRAN
 DESIGN ENGINEER

DESIGN	BY Sam Kotalawala	CHECKED Muthanna Omran
DETAILS	BY Liang Ma/T. Cotton	CHECKED Muthanna Omran
QUANTITIES	BY Sam Kotalawala	CHECKED Pao-Tsan Wang

LOAD & RESISTANCE FACTOR DESIGN	BY Sam Kotalawala	CHECKED Muthanna Omran
LAYOUT	BY Sam Kotalawala	CHECKED Muthanna Omran
SPECIFICATIONS	BY Sharon Hansen	CHECKED Sharon Hansen

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
DESIGN BRANCH 16

BRIDGE NO.	27E0066
POST MILE	1.40

**STORM DAMAGE REPAIR
 GENERAL PLAN**

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn	1	R 1.4	28	35

Muthanna S. Omeran 4-30-14
 REGISTERED CIVIL ENGINEER DATE

5-19-14
 PLANS APPROVAL DATE

REG. NO. 61637
 Exp. 06-30-15
 CIVIL

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INDEX TO PLANS

SHEET NO.	TITLE
1	GENERAL PLAN
2	INDEX TO PLANS
3	STRUCTURE PLAN
4	FOUNDATION PLAN
5	SOIL NAIL WALL DETAILS No. 1
6	SOIL NAIL WALL DETAILS No. 2
7	SOIL NAIL WALL DETAILS No. 3
8	SOIL NAIL WALL DETAILS No. 4
9	LOG OF TEST BORINGS

GENERAL NOTES

DESIGN:
 "Soil Nail Walls"(FHWA0-IF-03-017)

LIVE LOAD:
 Traffic Load = 250 psf

SOIL PARAMETERS - SOIL NAIL DESIGN
 Friction Angle, $\phi = 30^\circ$
 Cohesion, $c = 0$ psf
 Unit Weight, $\gamma = 125$ pcf
 Design Pullout Resistance = 1.8k/ft

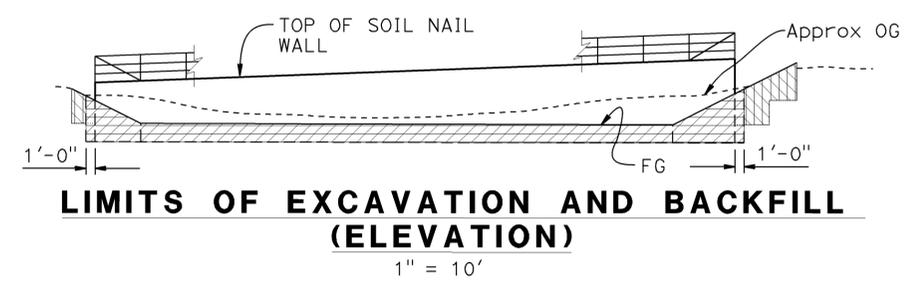
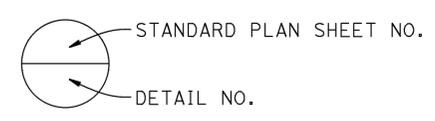
SHOTCRETE **CONCRETE** **LEAN CONCRETE**
 $f'c = 3,600$ psi $f'c = 3,600$ psi $f'c = 2,500$ psi
 $fy = 60$ ksi $fy = 60$ ksi $fy = 60$ ksi

SOIL NAILS
 ASTM Designation A615/A615M, Grade 60
 $fs = 60$ ksi

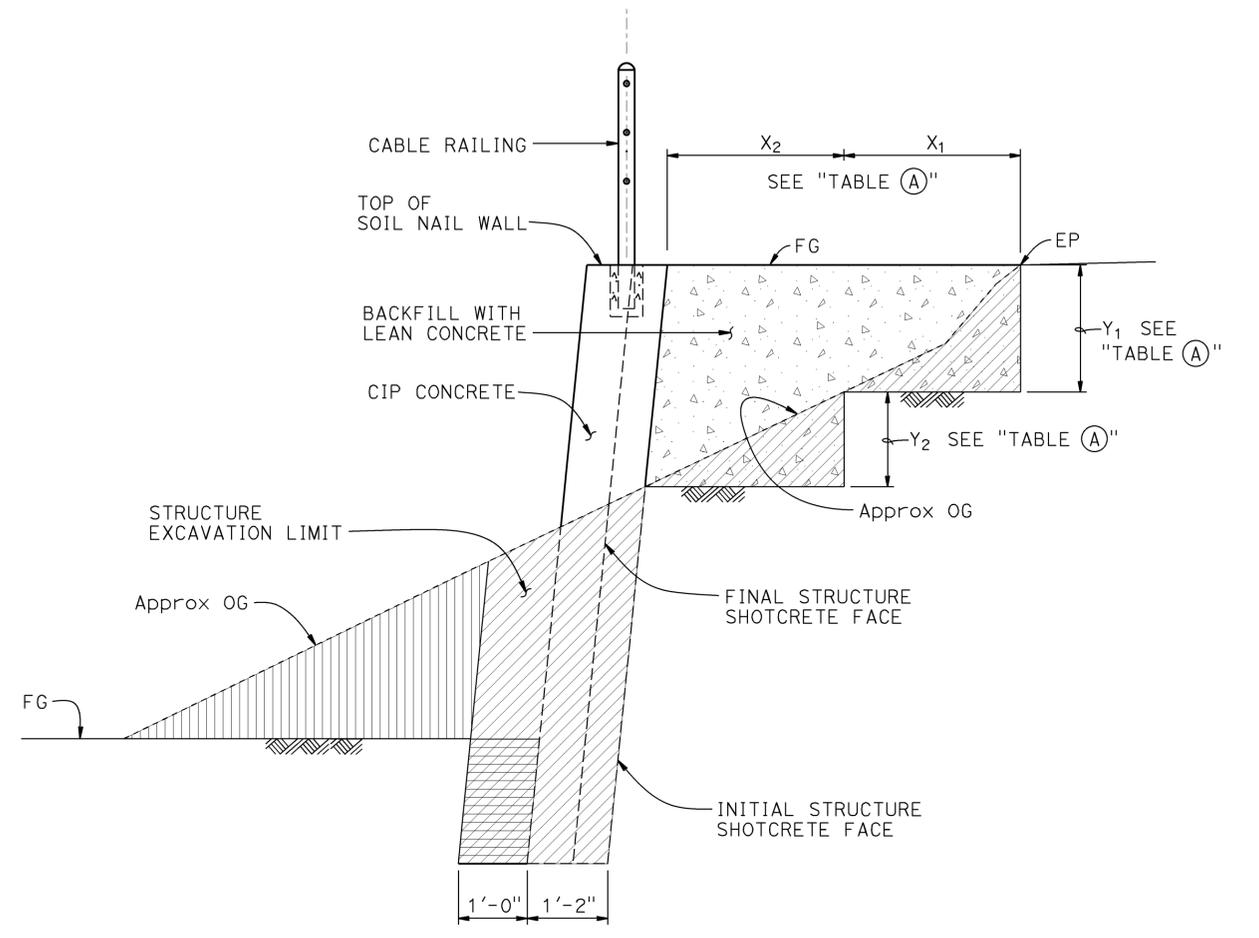
SEISMIC LOADING
 Soil profile: Class C
 PGA: 0.68g $K_h = 0.34$

STANDARD PLANS DATED 2010

A10A	ABBREVIATIONS (SHEET 1 OF 2)
RSP A10B	ABBREVIATIONS (SHEET 2 OF 2)
A10C	LINES AND SYMBOLS (SHEET 1 OF 3)
A10D	LINES AND SYMBOLS (SHEET 2 OF 3)
A10E	LINES AND SYMBOLS (SHEET 3 OF 3)
A10F	LEGEND - SOIL (SHEET 1 OF 2)
A10G	LEGEND - SOIL (SHEET 2 OF 2)
A10H	LEGEND - ROCK
RSP B11-47	CABLE RAILING



STATION	X ₁ (ft)	Y ₁ (ft)	X ₂ (ft)	Y ₂ (ft)
10+00.00	5'-0"	1'-3"	0'-0"	0'-0"
10+02.50	5'-0"	1'-3"	0'-0"	0'-0"
10+07.50	5'-0"	2'-0"	0'-0"	0'-0"
10+12.50	2'-9"	2'-6"	2'-3"	0'-9"
10+17.50	1'-6"	2'-6"	3'-3"	1'-3"
10+22.50	1'-6"	2'-6"	3'-6"	1'-6"
10+27.50	1'-3"	2'-6"	3'-6"	2'-0"
10+32.50	1'-3"	2'-6"	3'-6"	2'-3"
10+37.50	1'-3"	2'-6"	3'-6"	2'-3"
10+42.50	1'-6"	2'-6"	3'-3"	2'-0"
10+47.50	1'-9"	2'-6"	3'-3"	2'-0"
10+52.50	2'-3"	2'-6"	2'-9"	1'-6"
10+57.50	3'-0"	2'-6"	2'-0"	1'-0"
10+62.50	3'-0"	2'-6"	1'-9"	1'-0"
10+67.50	3'-3"	2'-6"	1'-9"	0'-9"
10+70.50	4'-0"	2'-6"	1'-3"	0'-6"



LIMITS OF EXCAVATION, AND BACKFILL (SECTION)
 NO SCALE

LEGEND:

	Structure excavation (Soil Nail Wall)
	Roadway excavation, see road plans
	Structure backfill (Soil Nail Wall)
	Lean concrete backfill
	Roadway embankment, see road plans

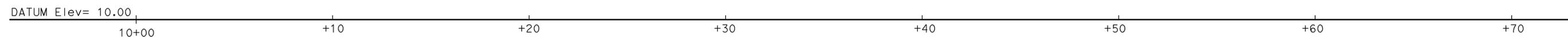
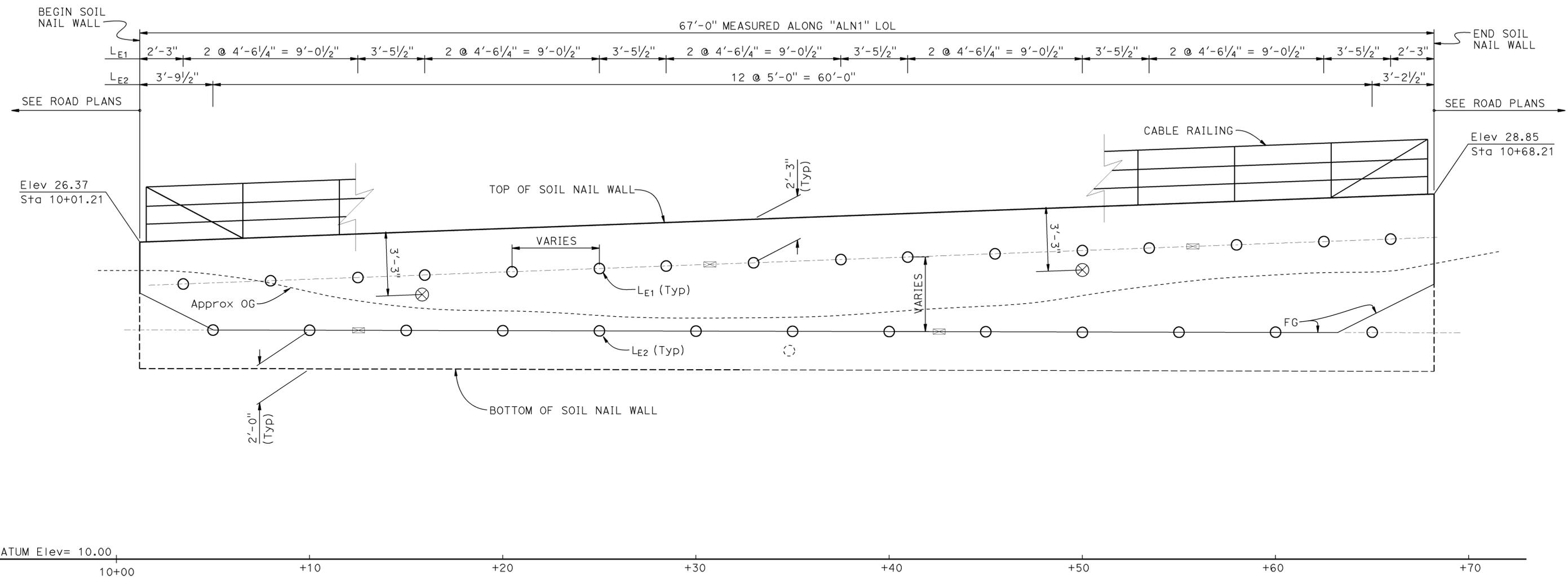
DESIGN BY Sam Kotalawala CHECKED Muthanna Omeran	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 16	BRIDGE NO. 27E0066	STORM DAMAGE REPAIR INDEX TO PLANS
			POST MILE 1.40	
DETAILS BY Liang Ma/Min Yu/T. Cotton CHECKED Muthanna Omeran	UNIT: 3617	PROJECT NUMBER & PHASE: 04000212574	CONTRACT NO.: 04-2G8701	REVISION DATES
QUANTITIES BY Sam Kotalawala CHECKED Pao-Tsan Wang	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0 1 2 3	DISREGARD PRINTS BEARING EARLIER REVISION DATES	01-08-14 02-24-14 03-04-14 04-15-09
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)				SHEET 2 OF 9

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn	1	R 1.4	29	35

Muthanna S. Omran 4-30-14
REGISTERED CIVIL ENGINEER DATE

5-19-14
PLANS APPROVAL DATE

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MIRRORED ELEVATION

3/8" = 1'-0"

STATION	TOP WALL Elev (ft)	Bot WALL Elev (ft)
10+01.21	26.37	19.84
10+02.5	26.40	19.85
10+07.5	26.60	19.80
10+12.5	26.80	19.80
10+17.5	26.95	19.80
10+22.5	27.15	19.80
10+27.5	27.35	19.70
10+32.5	27.55	19.75

STATION	TOP WALL Elev (ft)	Bot WALL Elev (ft)
10+37.5	27.70	19.75
10+42.5	27.90	19.75
10+47.5	28.10	19.70
10+52.5	28.25	19.70
10+57.5	28.45	19.70
10+62.5	28.65	19.70
10+67.5	28.80	19.70
10+68.21	28.85	19.69

LEVEL	NAIL SIZE	LENGTH (ft)
LE1	#8	20.00
LE2	#8	15.00

LEGEND:

- Indicates soil nail and bearing plate location
- ⊗ Indicates proof test soil nail location, and locations may be adjusted by the engineer
- Indicates soil nail profile line
- ⊙ Indicates existing water line $\phi = 2"$
- ⊗ Indicates verification test soil nail

NOTES:

1. For verification soil test nails and proof test nails test details, see "SPECIAL PROVISIONS"
2. verification soil test nails are located at sta. 10+15.00 and sta. 10+50.00

DESIGN BY Sam Kotalawala	CHECKED Muthanna Omran	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 16	BRIDGE NO. 27E0066	STORM DAMAGE REPAIR STRUCTURE PLAN			
	DETAILS BY Liang Ma/T. Cotton			CHECKED Muthanna Omran		POST MILE 1.40		
QUANTITIES BY Sam Kotalawala	CHECKED Pao-Tsan Wang	UNIT: 3617	PROJECT NUMBER & PHASE: 04000212571	CONTRACT NO.: 04-2G8704	REVISION DATES			
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0 1 2 3	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 3 OF 9

CURVE DATA

No	R	Δ	T	L
1	2000.00	03°06'16"	54.19	108.36

- NOTES:
1. LOCATION OF UTILITY FACILITIES SHOWN ON THESE PLANS ARE APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. REFER TO UTILITY PLAN SHEET(S) FOR UTILITY INFORMATION.
 2. WATER LINE TO BE PROTECTED IN PLACE DURING CONSTRUCTION.
 3. ○ UTILITY POTHOLE PER UTILITY PLAN SHEET.

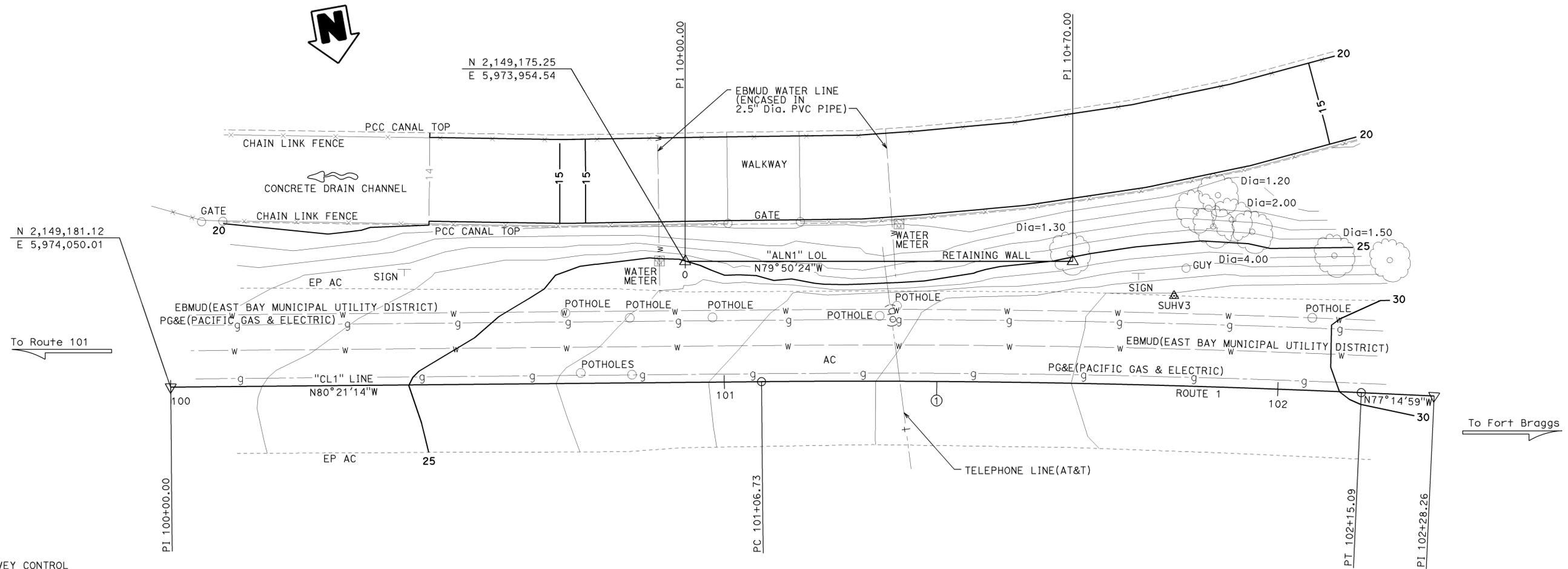
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn	1	R 1.4	30	35

Muthanna S. Omran 4-30-14
 REGISTERED CIVIL ENGINEER DATE

5-19-14
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 MUTHANNA S. OMRAN
 No. 61637
 Exp. 06-30-15
 CIVIL
 STATE OF CALIFORNIA

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SURVEY CONTROL
 SUHV2 (NOT SHOWN ON PLAN)
 Fnd 80 D SPIKE
 110.82 Ft N80°34'35"W FROM
 Sta. 102+28.26 ROUTE 1
 N 2,149,241.10
 E 5,973,716.34
 Elev = 31.31

SUHV3
 Fnd 80 D SPIKE
 16.18 Ft Lt ROUTE 1
 Sta 101+80.80
 N 2,149,196.93
 E 5,973,868.72
 Elev = 29.42

PRELIMINARY INVESTIGATION SECTION				DESIGN BY Sam Kotalawala	CHECKED Muthanna Omran	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 16	BRIDGE NO. 27E0066	STORM DAMAGE REPAIR IN MILL VALLEY FOUNDATION PLAN
SCALE VERT.DATUM NAVD88	PHOTOGRAMMETRY AS OF: X	DRAFTED BY T. ZOLNIKOV 09/2013	CHECKED BY J. BORDEN 09/2013	DETAILS BY Liang Ma/T. Cotton	CHECKED Muthanna Omran			POST MILE 1.40	
ALIGNMENT TIES Dist TRAVERSE SHEET	DRAFTED BY T. ZOLNIKOV 09/2013	CHECKED BY S. SOU 09/2013	QUANTITIES BY Sam Kotalawala	CHECKED Pao-Tsan Wang					

STRUCTURES FOUNDATION PLAN SHEET (ENGLISH) (REV. 09-01-10)

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

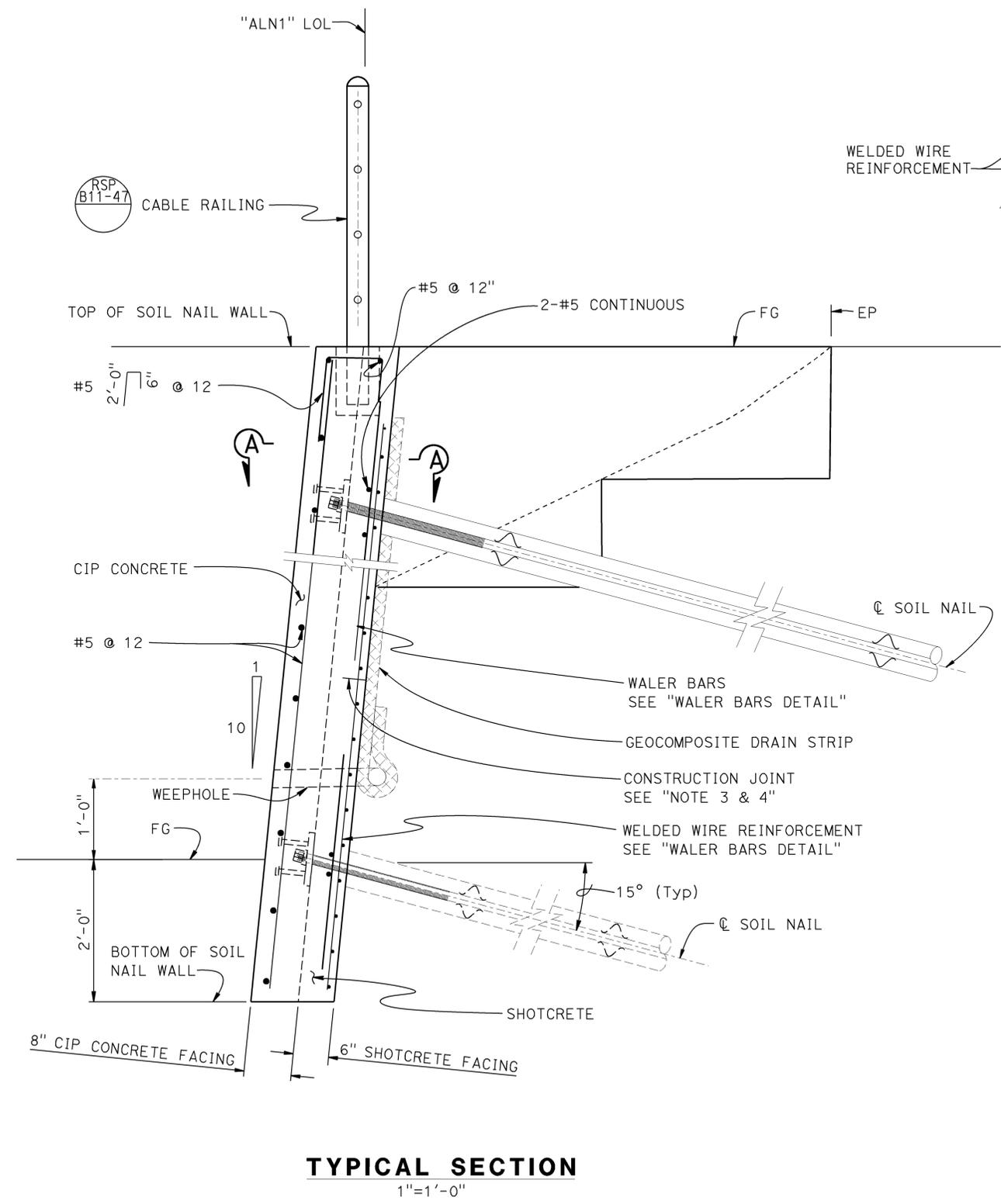
UNIT: 3646
 PROJECT NUMBER & PHASE: 0400021257 1
 CONTRACT NO.: 04-2G8704

DISREGARD PRINTS BEARING EARLIER REVISION DATES

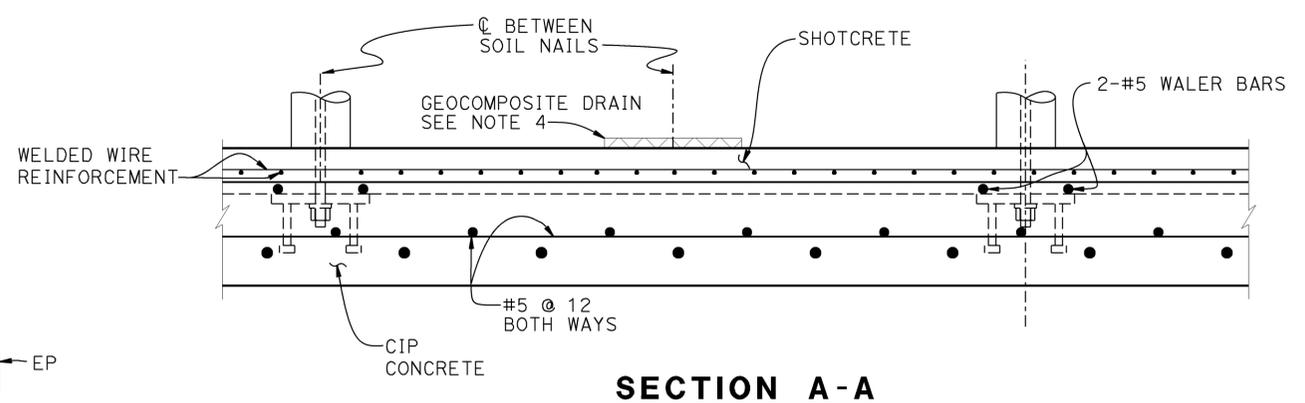
REVISION DATES	SHEET	OF
09/12/13 12/02/14 02/11/14 05/11/14	4	9

FILE => 27e0066-e-fp101.dgn

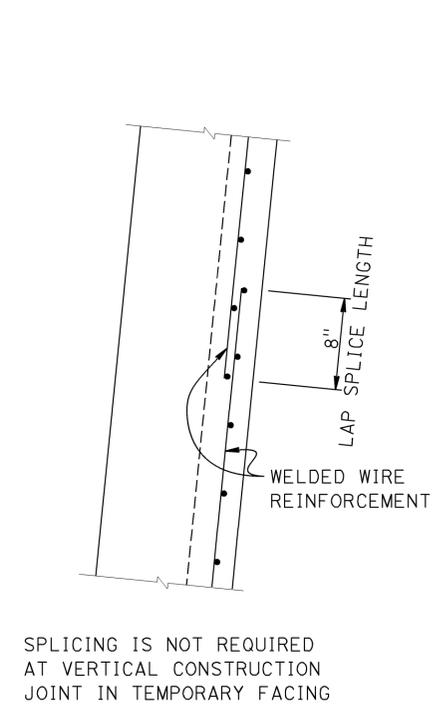
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn	1	R 1.4	31	35
Muthanna S. Omran 4-30-14				REGISTERED CIVIL ENGINEER	DATE
5-19-14				PLANS APPROVAL DATE	
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TYPICAL SECTION
1/2"=1'-0"

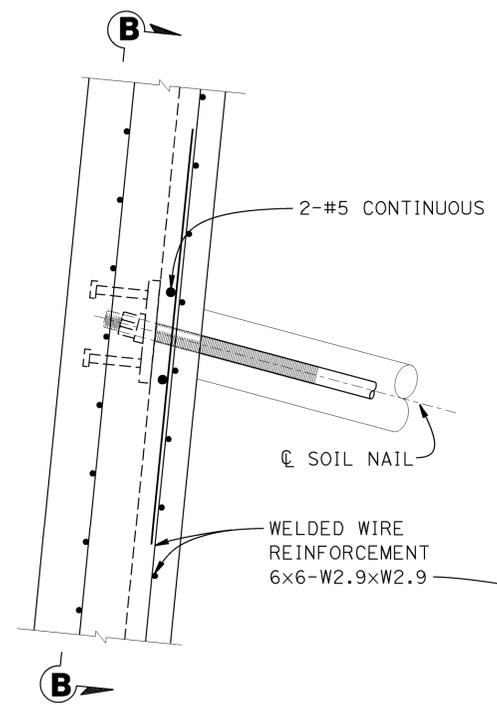


SECTION A-A
1/2"=1'-0"

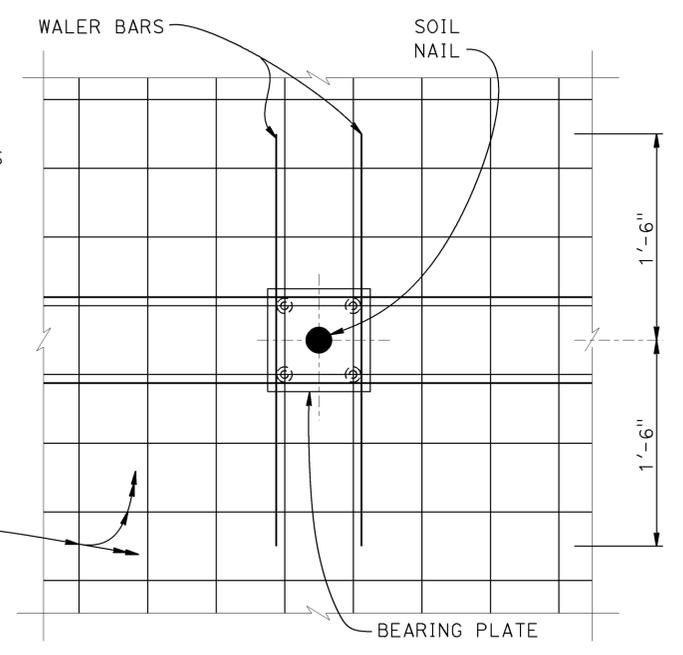


LAP SPLICE
1/2"=1'-0"

SPLICING IS NOT REQUIRED AT VERTICAL CONSTRUCTION JOINT IN TEMPORARY FACING



WALER BARS DETAIL
1/2"=1'-0"



SECTION B-B
1/2"=1'-0"

NOTES:

1. For soil nail spacing, length and size, see "STRUCTURE PLAN" sheet
2. The vertical and horizontal construction joints in the structural shotcrete layer shall be located a minimum of 1'-6" from adjacent soil nails
3. No horizontal construction joints in the CIP concrete shall be allowed. CIP vertical construction joint to be placed a minimum of 1'-6" from adjacent shotcrete vertical construction joint
4. For Geocomposite drain details, see "SOIL NAIL WALL DETAILS NO. 2" sheet
5. For Bearing plate and studs details, see "SOIL NAIL WALL DETAILS NO. 3" sheet

DESIGN	BY Sam Kotalawala	CHECKED Muthanna Omran
DETAILS	BY Liang Ma/Min Yu/T. Cotton	CHECKED Muthanna Omran
QUANTITIES	BY Sam Kotalawala	CHECKED Pao-Tsan Wang

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 16

BRIDGE NO.	27E0066
POST MILE	1.40

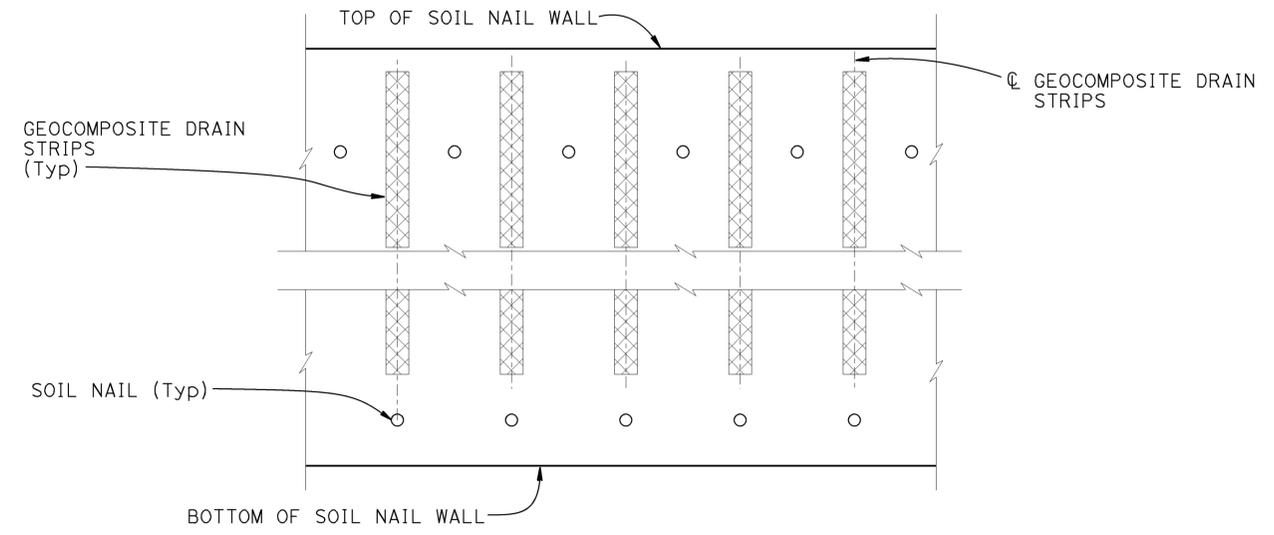
STORM DAMAGE REPAIR
SOIL NAIL WALL DETAILS NO. 1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn	1	R 1.4	32	35

Muthanna S. Omran 4-30-14
 REGISTERED CIVIL ENGINEER DATE

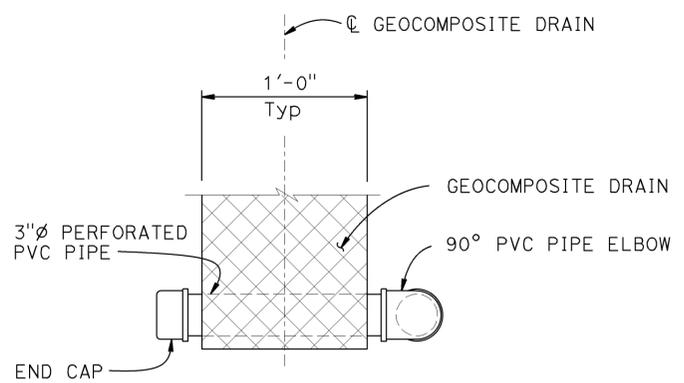
5-19-14
 PLANS APPROVAL DATE

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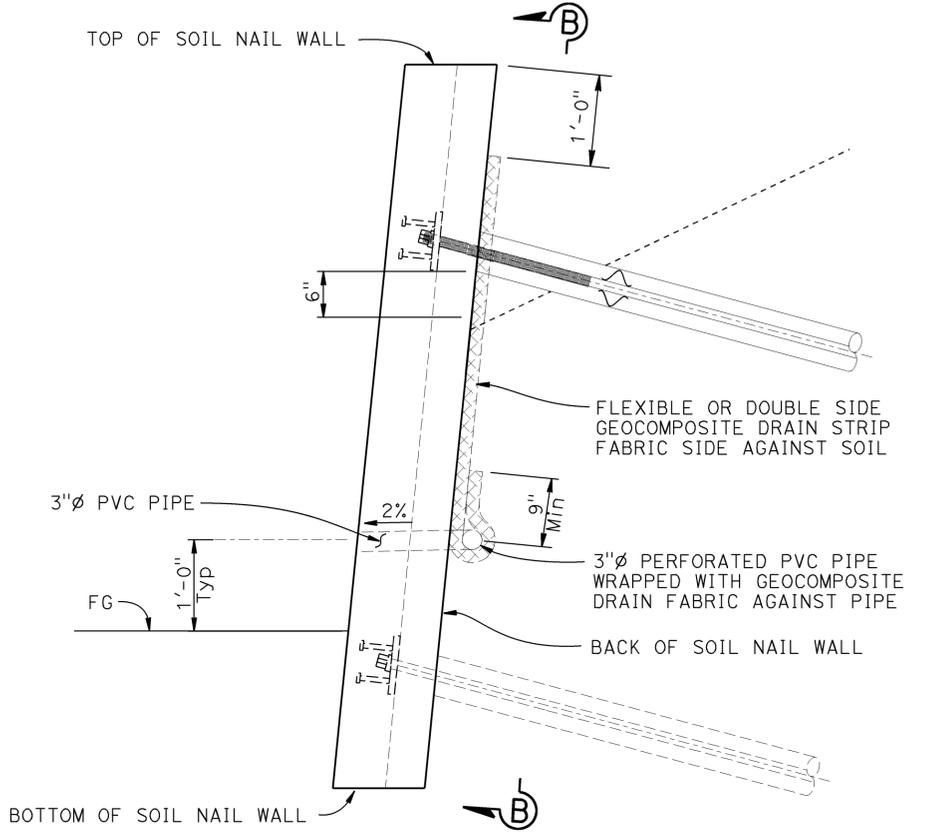
TYPICAL GEOCOMPOSITE STRIPS LAYOUT

1/4" = 1'-0"



VIEW B-B AT GEOCOMPOSITE DRAIN

NO SCALE



SOIL NAIL WALL DRAIN DETAIL AT WEEPHOLE

1" = 1'-0"

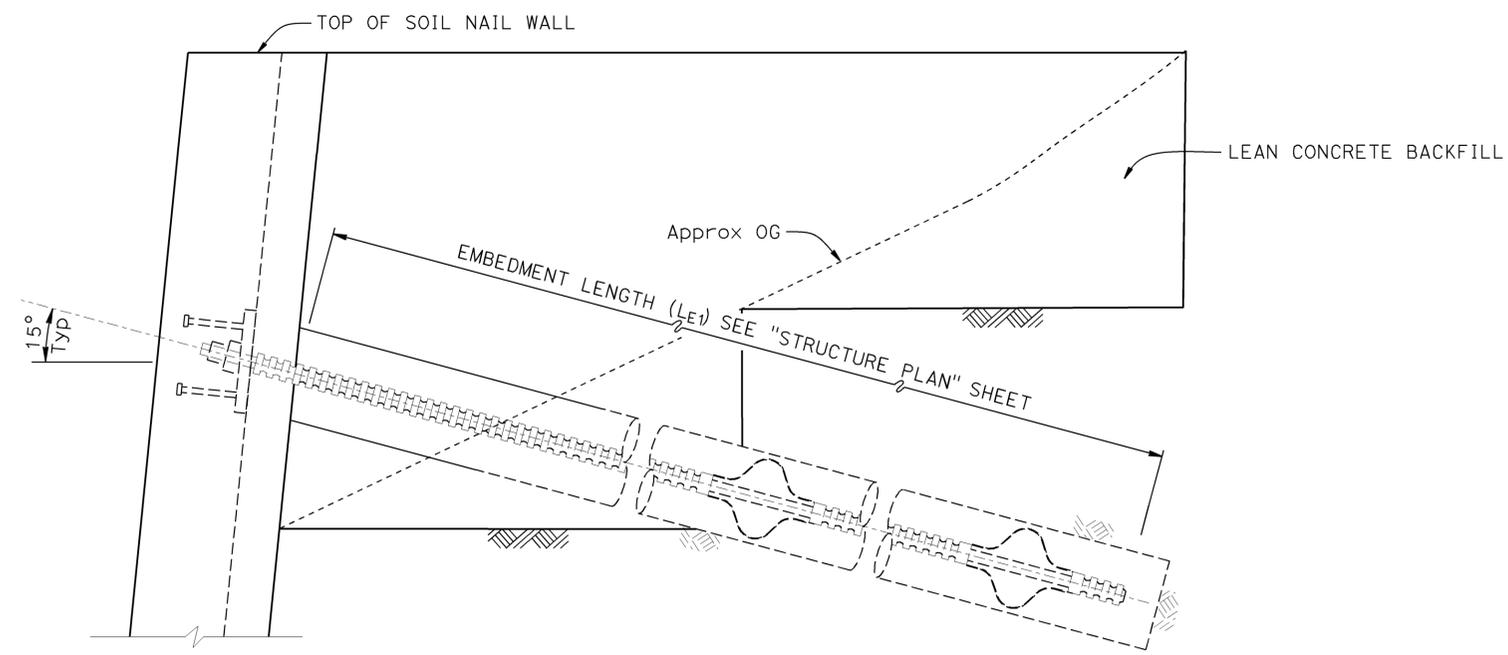
NOTES:

1. Place geocomposite vertical drains will be placed between soil nails
2. Geocomposite drain may be omitted when conflicting with proof test soil nails

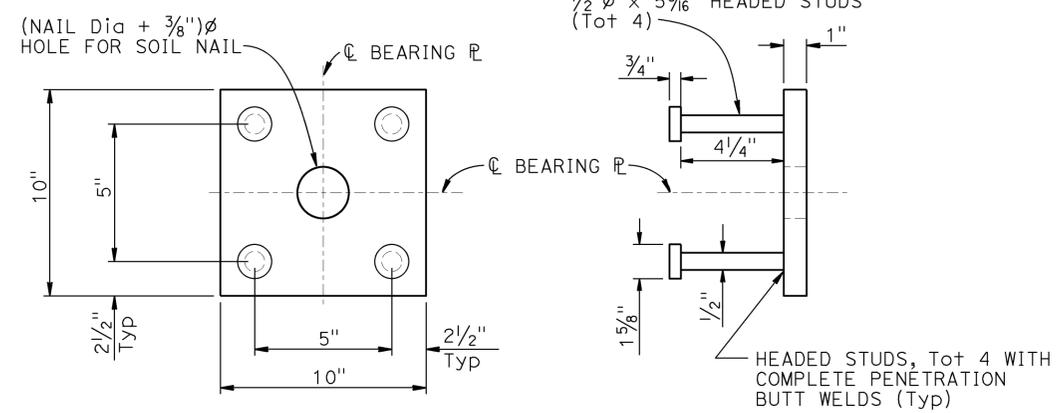
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	DESIGN	BY Sam Kotalawala	CHECKED Muthanna Omran	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 16	BRIDGE NO.	27E0066	STORM DAMAGE REPAIR SOIL NAIL WALL DETAILS NO. 2	
	DETAILS	BY Liang Ma/Min Yu/T. Cotton	CHECKED Muthanna Omran			POST MILE			1.40
	QUANTITIES	BY Sam Kotalawala	CHECKED Pao-Tsan Wang			UNIT: 3617 PROJECT NUMBER & PHASE: 04000212571			CONTRACT NO.: 04-2G8704
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS				0 1 2 3		DISREGARD PRINTS BEARING EARLIER REVISION DATES		01-14-14 02-18-14 02-24-14 04-09-14	

USERNAME => s107426 DATE PLOTTED => 20-MAY-2014 TIME PLOTTED => 14:51

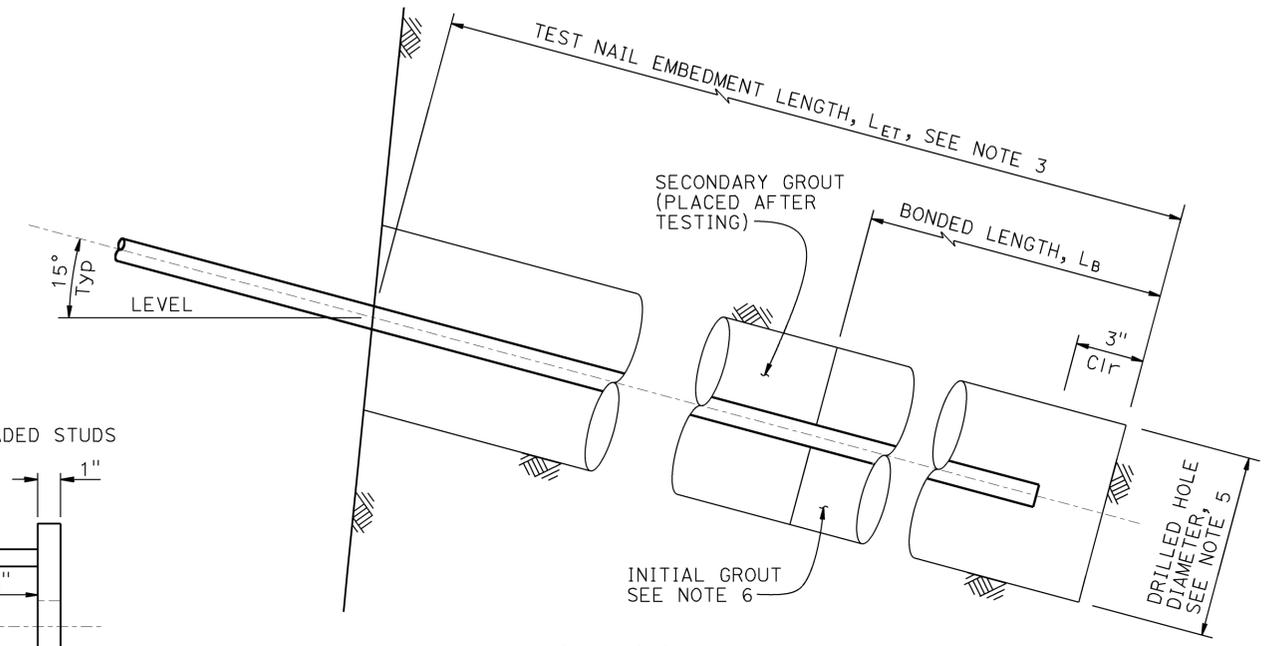
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn	1	R 1.4	33	35
Muthanna S. Omran 4-30-14				DATE	
REGISTERED CIVIL ENGINEER					
5-19-14				PLANS APPROVAL DATE	
No. 61637					
Exp. 06-30-15					
CIVIL					
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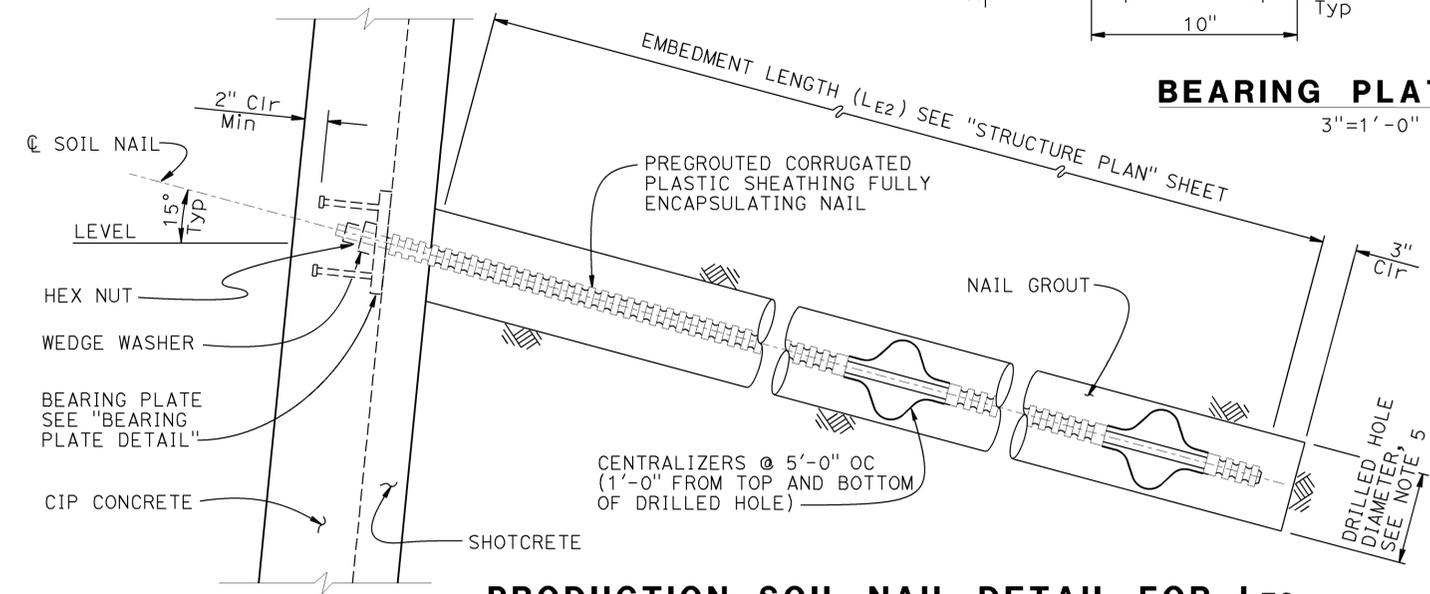
PRODUCTION SOIL NAIL DETAIL FOR Le1
1 1/2" = 1'-0"



BEARING PLATE DETAIL
3" = 1'-0"



TEST SOIL NAIL DETAIL
3" = 1'-0"



PRODUCTION SOIL NAIL DETAIL FOR Le2
1 1/2" = 1'-0"

NOTES:

1. Reinforcement in CIP concrete and shotcrete is not shown
2. The test nail embedment length L_{ET} , shall equal to $\frac{2}{3}$ of the embedment length, L_E of adjacent production soil nail assemblies, but not less than 12 feet
3. The total length of the test soil nail assembly equals the embedment length plus the required length for jacking equipment
4. For locations of verification and proof test soil nail see "STRUCTURE PLAN" sheet
5. Contractor to determine drilled hole diameter
6. Finished grout surface for test nail to be normal to the bar
7. For stability testing, see "SPECIAL PROVISION"

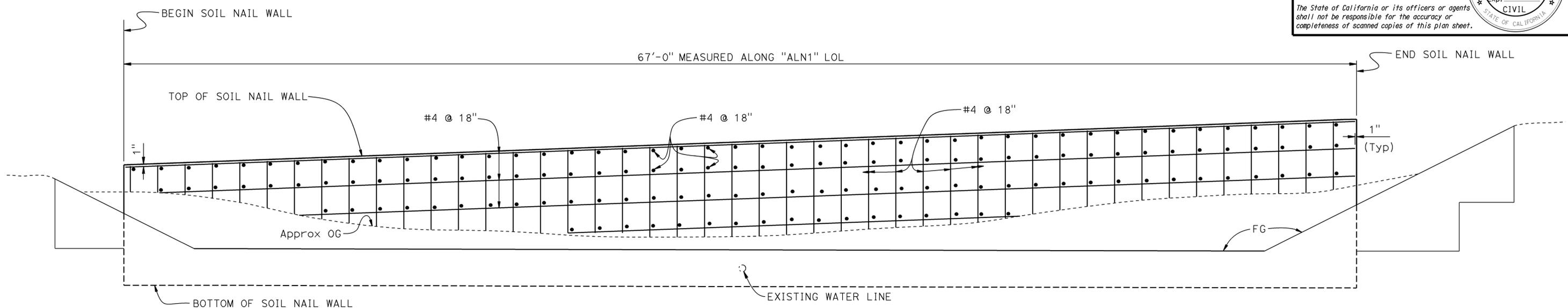
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	DESIGN	BY Sam Kotalawala	CHECKED Muthanna Omran	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 16	BRIDGE NO.	27E0066	STORM DAMAGE REPAIR SOIL NAIL WALL DETAILS NO. 3			
	DETAILS	BY Liang Ma/T. Cotton/Min Yu	CHECKED Muthanna Omran			POST MILE	1.40				
	QUANTITIES	BY Sam Kotalawala	CHECKED Pao-Tsan Wang			PROJECT NUMBER & PHASE: 04000212571	CONTRACT NO.: 04-2G8704				
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS				0	1	2	3	UNIT: 3617	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 7 OF 9

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn	1	R 1.4	34	35

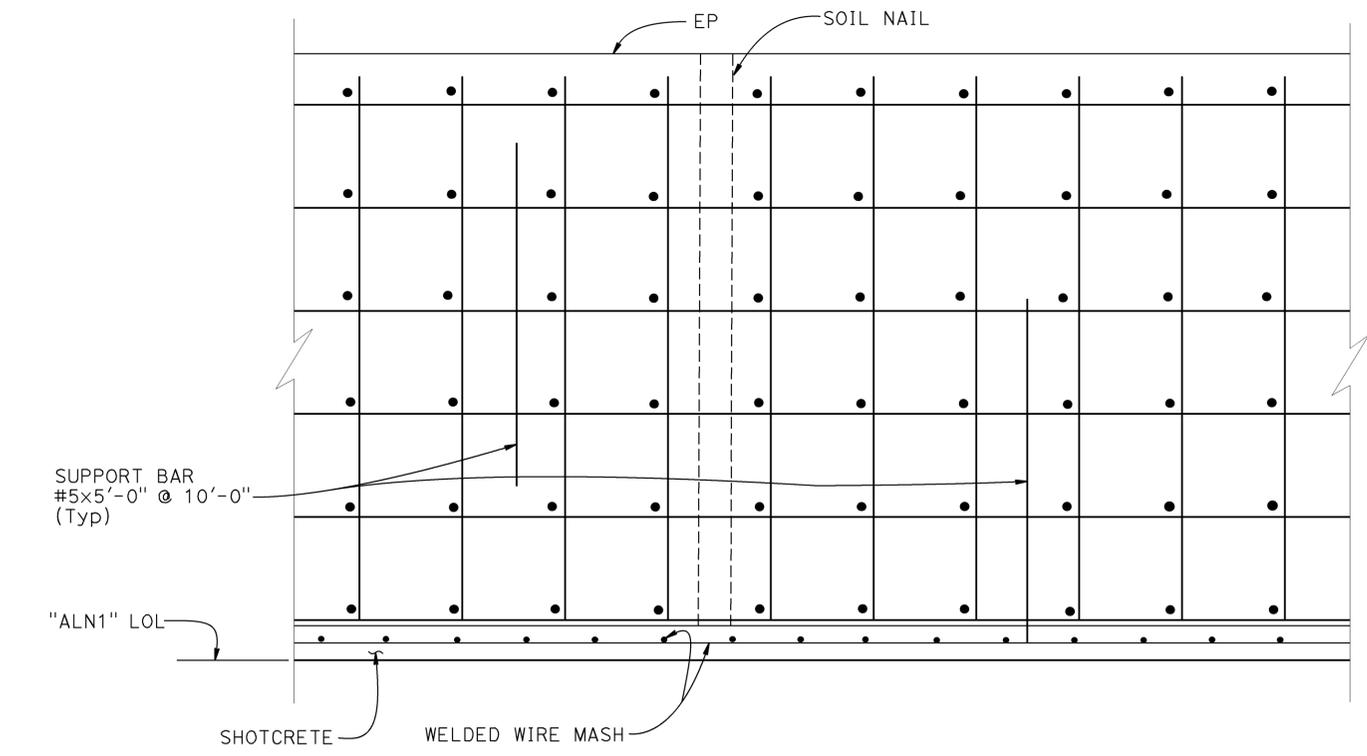
Muthanna S. Omran 4-30-14
 REGISTERED CIVIL ENGINEER DATE

5-19-14
 PLANS APPROVAL DATE

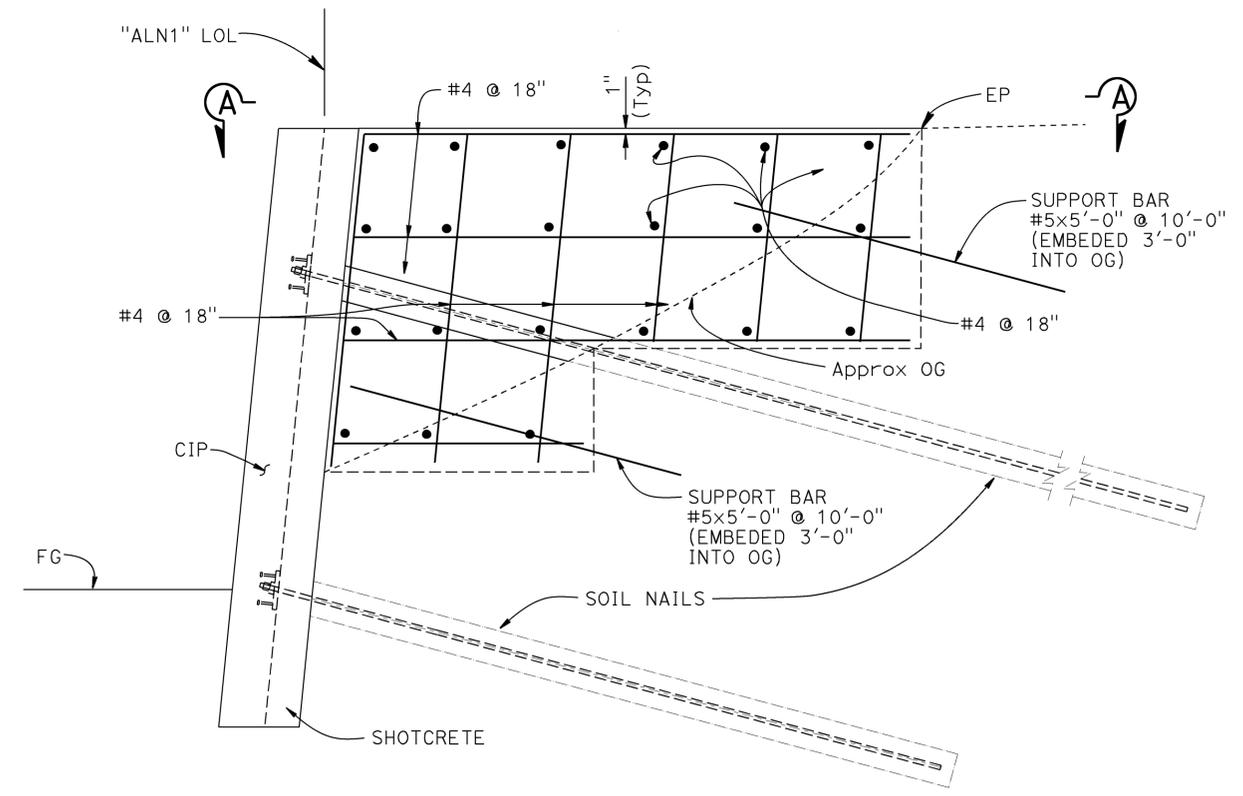
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MIRRORED ELEVATION
 $\frac{3}{8}'' = 1'-0''$



SECTION A-A
 $\frac{3}{4}'' = 1'-0''$



TYPICAL SECTION
 $\frac{3}{4}'' = 1'-0''$

NOTE:
 Cable railing not shown

DESIGN	BY Sam Kotalawala	CHECKED Muthanna Omran
DETAILS	BY Liang Ma/Min Yu/T. Cotton	CHECKED Muthanna Omran
QUANTITIES	BY Sam Kotalawala	CHECKED Pao-Tsan Wang

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
DESIGN BRANCH 16

BRIDGE NO.	27E0066
POST MILE	1.40

STORM DAMAGE REPAIR
SOIL NAIL WALL DETAILS NO. 4

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
04	Mrn	1	R 1.4	35	35

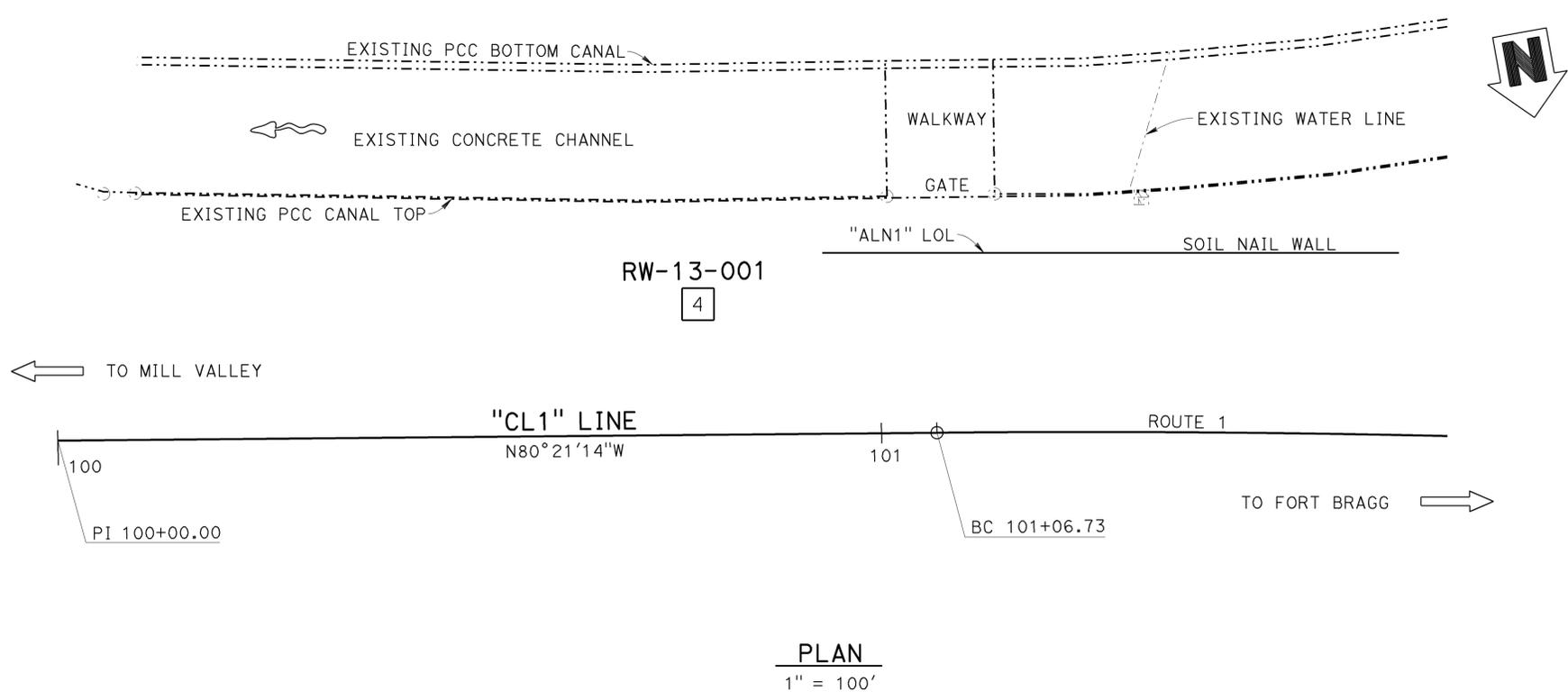
M. Momenzadeh, 1-15-14
 REGISTERED GEOTECHNICAL ENGINEER

5-19-14
 PLANS APPROVAL DATE

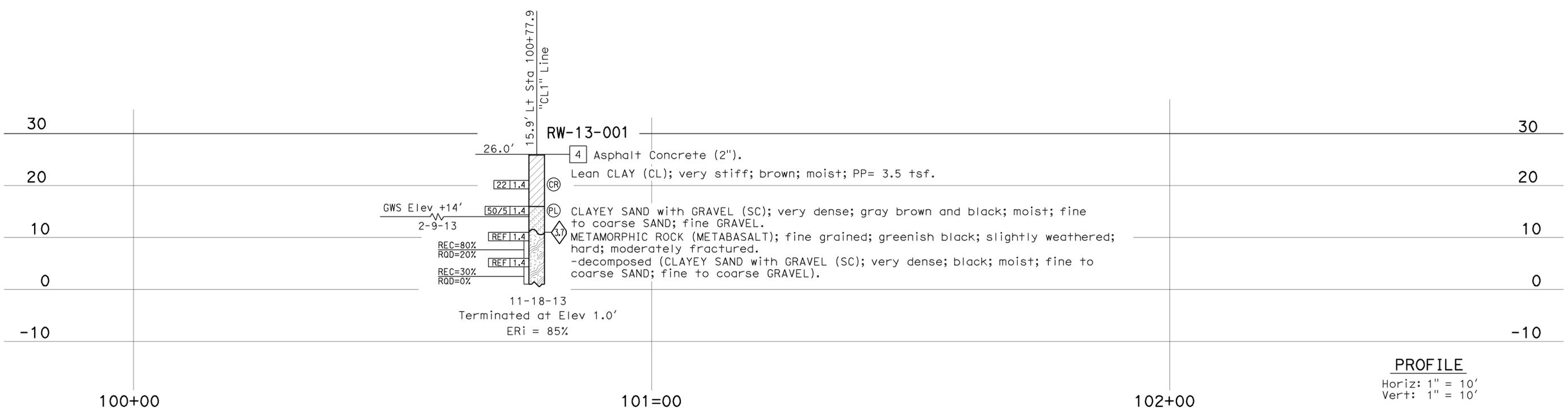
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This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, & Presentation Manual (2010 Edition).
 See 2010 Standard Plans A10F and A10G for Soil Legend, and A10H for Rock Legend.

BENCH MARK
 Boring elevation determined by GPS.



PLAN
 1" = 100'



PROFILE
 Horiz: 1" = 10'
 Vert: 1" = 10'

ENGINEERING SERVICES		MATERIALS AND GEOTECHNICAL SERVICES		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 16		STORM DAMAGE REPAIR LOG OF TEST BORINGS	
FUNCTIONAL SUPERVISOR NAME: T. Pokrywka	DRAWN BY: I. G-Remmen CHECKED BY: J. Moore	FIELD INVESTIGATION BY: D. Nesbitt		BRIDGE NO. 27E0066 POST MILE 1.40		CONTRACT NO.: 04-2G8704		REVISION DATES 01-15-14	
06S CIVIL LOG OF TEST BORINGS SHEET				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		UNIT: 3643 PROJECT NUMBER & PHASE: 04000212571		DISREGARD PRINTS BEARING EARLIER REVISION DATES	
								SHEET	OF
								9	9

USERNAME => s107426 DATE PLOTTED => 20-MAY-2014 TIME PLOTTED => 14:51