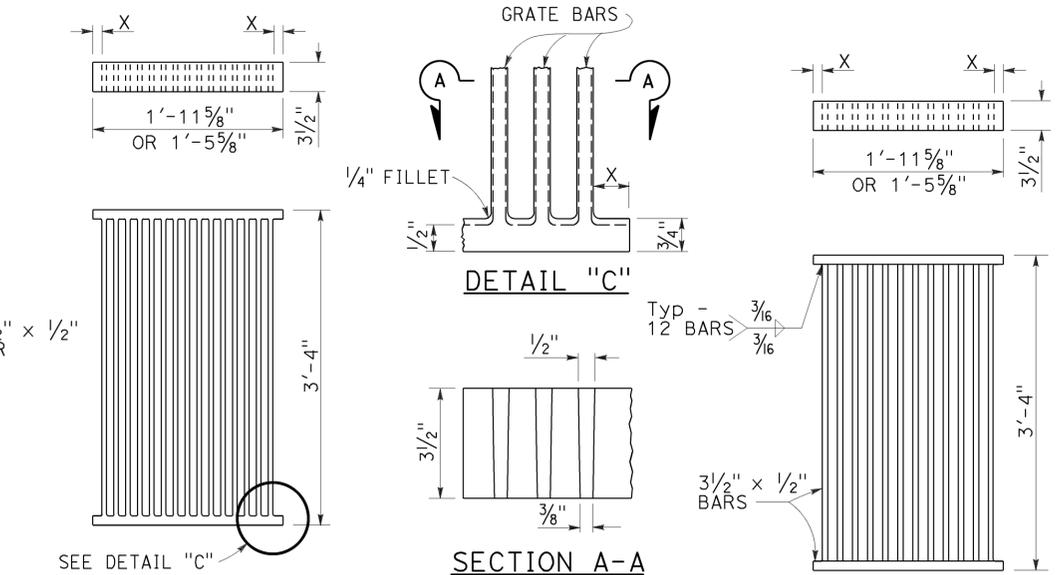
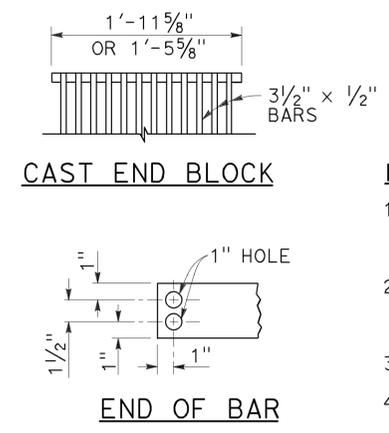


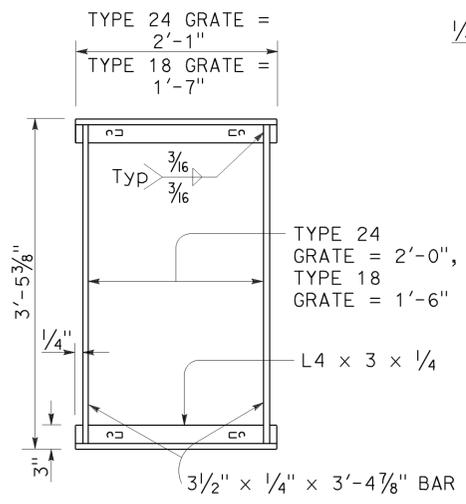
RECTANGULAR GRATE DETAILS
(See table below)



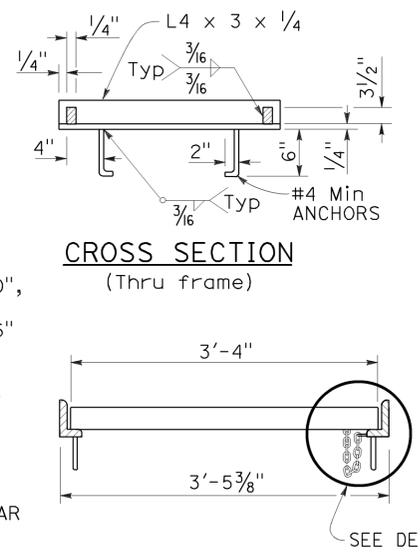
ALTERNATIVE CAST DUCTILE IRON GRATE OR CAST CARBON STEEL GRATE
ALTERNATIVE WELDED GRATE



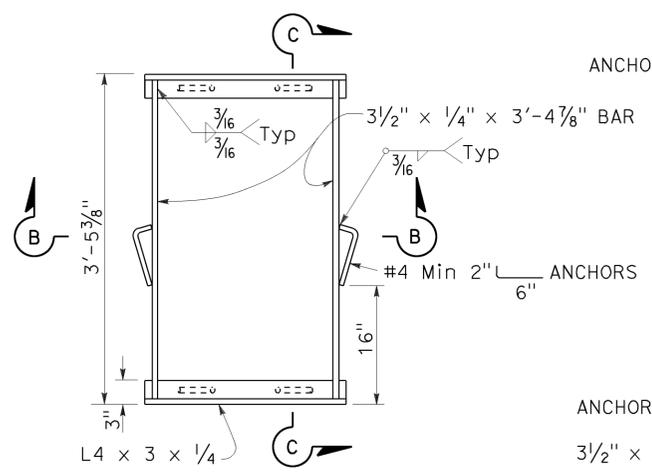
CAST END BLOCK
END OF BAR



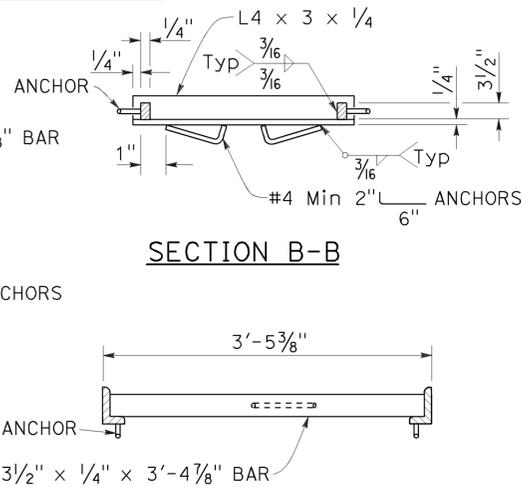
TYPICAL FRAME



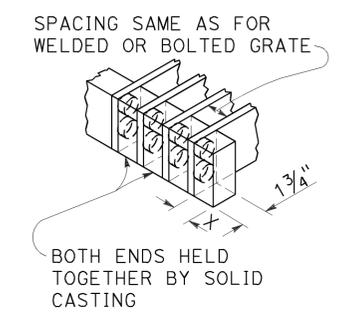
CROSS SECTION (Thru frame)
LONGITUDINAL SECTION (Thru frame and grate)



TYPICAL FRAME
ALTERNATIVE ANCHOR FOR RECTANGULAR FRAME
(For details not shown, See Rectangular Frame Details)



SECTION B-B
SECTION C-C



ALTERNATIVE CAST DUCTILE IRON OR CAST CARBON STEEL END BLOCK GRATE

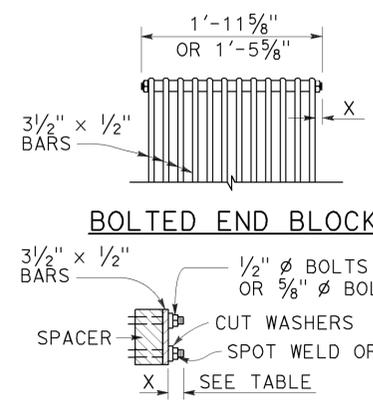
RECTANGULAR FRAME DETAILS
(For all rectangular grates)

GRATE BAR SPACING TABLE

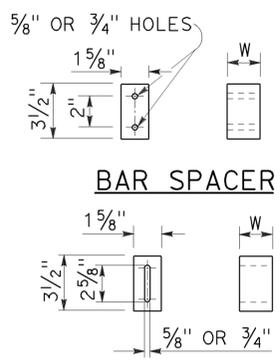
TYPE	NO. OF BARS	CLEAR BAR SPACING	X
18-9	9	1 3/8"	1 1/16"
24-9	9	2"	1 9/16"
24-12	12	1 3/8"	1 1/4"

INLET TYPE	COVER TYPE	WEIGHT LB
OS	PLATE	174
OL-7	PLATE	170
OL-10	PLATE	170
OL-14	PLATE	170
OL-21	PLATE	170
OCPI	PLATE	112
OCPI	PLATE	112
OCPI	REDWOOD	42
OMP	PLATE	177
OMPI	PLATE	177

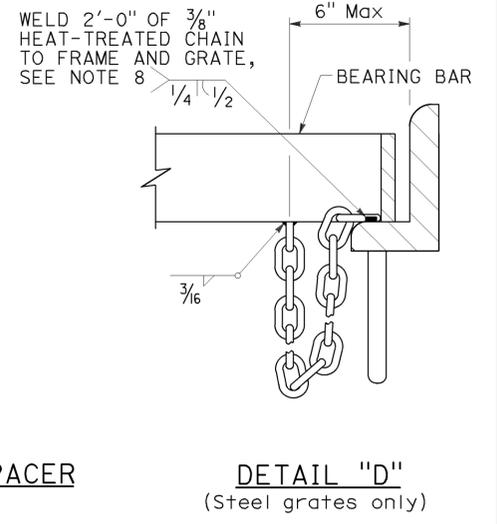
INLET TYPE	GRATE TYPE	NO. OF GRATES	WEIGHT LB
GDO	24-12	2	634
GOL-7	24-12	1	326
GOL-10	24-12	1	326
G0,G1,G2,G3,G4 (TYPE 24)	24-9	1	263
	24-12	1	326
G4 (TYPE 18),G5,G6	18-9	1	249
GT1	18-9	2	498
GT2	18-9	2	498
GT3	24-12	2	652
GT4	24-12	2	652
TRASH RACK			22
GRATE CHAIN			3



BOLTED END BLOCK
BOLTING DETAIL
ALTERNATIVE BOLTED GRATE



ALTERNATIVE SPACER
W = 1 3/8" or 2"



DETAIL "D"
(Steel grates only)

GRATE DETAILS No. 1
NO SCALE

BASIS FOR Misc IRON & STEEL FINAL PAY WEIGHTS FOR DRAINAGE INLETS
(See Note 7)

RSP D77A DATED APRIL 19, 2013 SUPERSEDES RSP D77A DATED JULY 20, 2012 AND STANDARD PLAN D77A DATED MAY 20, 2011 - PAGE 164 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP D77A

2010 REVISED STANDARD PLAN RSP D77A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn, Son	1	50.2/50.5, 0.0/0.2	103	154

Gregory A. Balzer
LICENSED LANDSCAPE ARCHITECT

July 19, 2013
PLANS APPROVAL DATE

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THE ACCURACY OR COMPLETENESS OF SCANNED
COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 6-6-16

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

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

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

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

2010 REVISED STANDARD PLAN RSP H1

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.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mtn, Son	1	50.2/50.5, 0.0/0.2	104	154

Devinder Singh
REGISTERED CIVIL ENGINEER

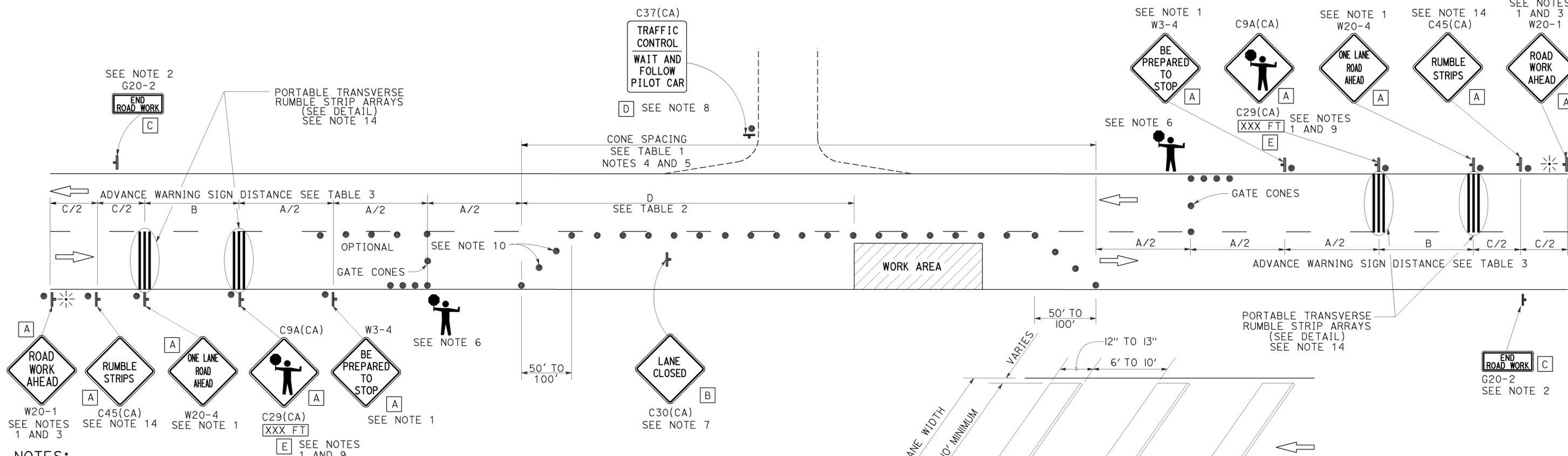
October 30, 2015
PLANS APPROVAL DATE

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
Devinder Singh
No. C50470
Exp. 6-30-17
CIVIL
STATE OF CALIFORNIA

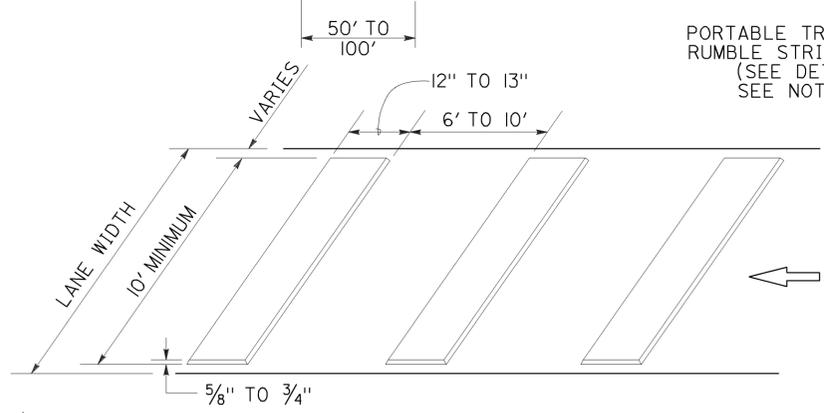
TYPICAL LANE CLOSURE WITH REVERSIBLE CONTROL

TO ACCOMPANY PLANS DATED 6-6-16



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 strips are not required if any one of the following conditions is satisfied:
 - Work duration occupies a location for four hours or less
 - Posted speed limit is below 45 MPH
 - Work is of emergency nature
 - Work zone is in snow or icy weather conditions



LEGEND

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

SIGN PANEL SIZE (Min)

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

TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE ON TWO LANE CONVENTIONAL HIGHWAYS

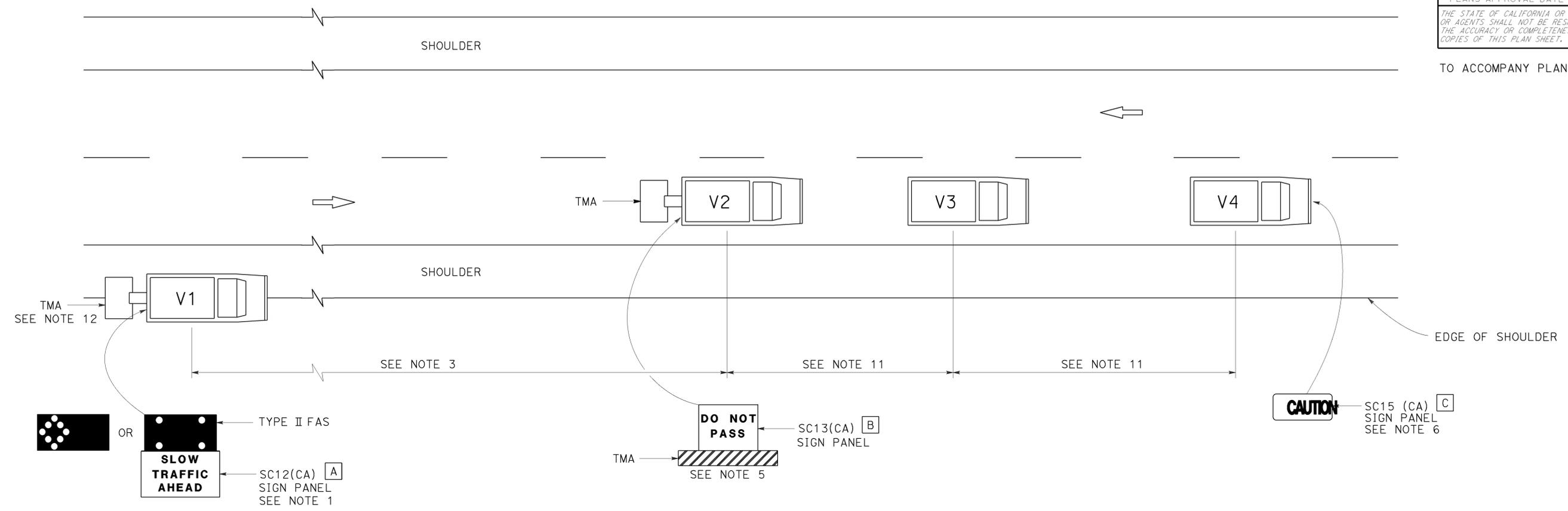
NO SCALE

RSP T13 DATED OCTOBER 30, 2015 SUPERSEDES RSP T13 DATED OCTOBER 17, 2014, RSP T13 DATED JULY 18, 2014 AND RSP T13 DATED APRIL 19, 2013 AND STANDARD PLAN T13 DATED MAY 20, 2011 - PAGE 241 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T13

2010 REVISED STANDARD PLAN RSP T13

TO ACCOMPANY PLANS DATED 6-6-16



NOTES:

1. Either a changeable message sign or a SC12(CA) "SLOW TRAFFIC AHEAD" sign shall be mounted on the rear of sign vehicle V1. The changeable message sign shall be sequenced to show the "CAUTION" message first, follow by the "SLOW TRAFFIC AHEAD" message. A Type II flashing arrow sign may be used with the SC12(CA) sign panel.
2. Sign vehicle V1 should be positioned where highly visible when shoulders are not available.
3. If traffic queues develop, sign vehicle V1 should be positioned upstream from the end of queue.
4. Vehicle-mounted sign panels shall have Type III or above retroreflective sheeting, black on white, or black on fluorescent orange, with 6" minimum series D letters per Caltrans sign specifications.
5. Shadow vehicle shall be equipped with a truck-mounted attenuator. The sign panel shown shall be mounted on the rear of shadow vehicle V2. The message "LANE CLOSED" may be used in place of the "DO NOT PASS" message.
6. The sign panel shown shall be mounted on the front of sign vehicle V4, facing opposing traffic.

7. All vehicles shall be equipped with flashing or rotating amber lights.
8. Sign vehicle V4 will not be required when the work and vehicles V2 and V3 are 2' or more from the centerline of the highway during the work or application operations.
9. All vehicles used for lane closures shall be equipped with two-way radios and the vehicle operators shall maintain communication during the work or application operation.
10. This plan shall not be used where workers would be on foot in the work area. Use a stationary type lane closure (Revised Standard Plan T13) for this condition.
11. Minimize spacing between vehicles V2 and V3 and vehicles V3 and V4 to deter road users from driving in between them.
12. If sign vehicle V1 encroaches into the traffic lane due to insufficient shoulder width, sign vehicle V1 shall be equipped with a truck-mounted attenuator. Sign vehicle V1 shall stay as close to the edge of shoulder as practicable.

LEGEND

- V1 SIGN VEHICLE
- V2 SHADOW VEHICLE
- V3 WORK/APPLICATION VEHICLE
- V4 SIGN VEHICLE
- TMA TRUCK-MOUNTED ATTENUATOR
- FLASHING ARROW SIGN (FAS) IN FLASHING CAUTION MODE
- FLASHING ARROW SIGN (FAS) IN ALTERNATING DIAMOND CAUTION

SIGN PANEL SIZE (Min)

- A 72" x 42"
- B 54" x 42"
- C 54" x 24"

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

RSP T17 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T17
 DATED MAY 20, 2011 - PAGE 245 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T17

2010 REVISED STANDARD PLAN RSP T17

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn, Son	1	50.2/50.5, 0.0/0.2	106	154

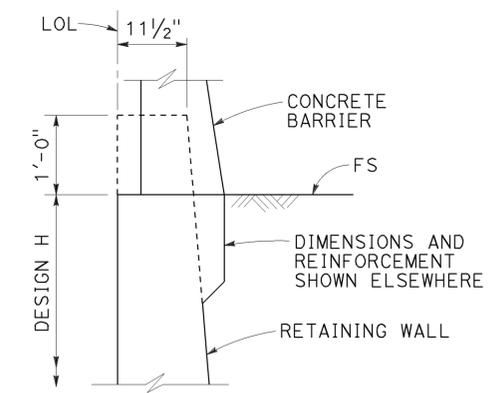


April 20, 2012
 PLANS APPROVAL DATE

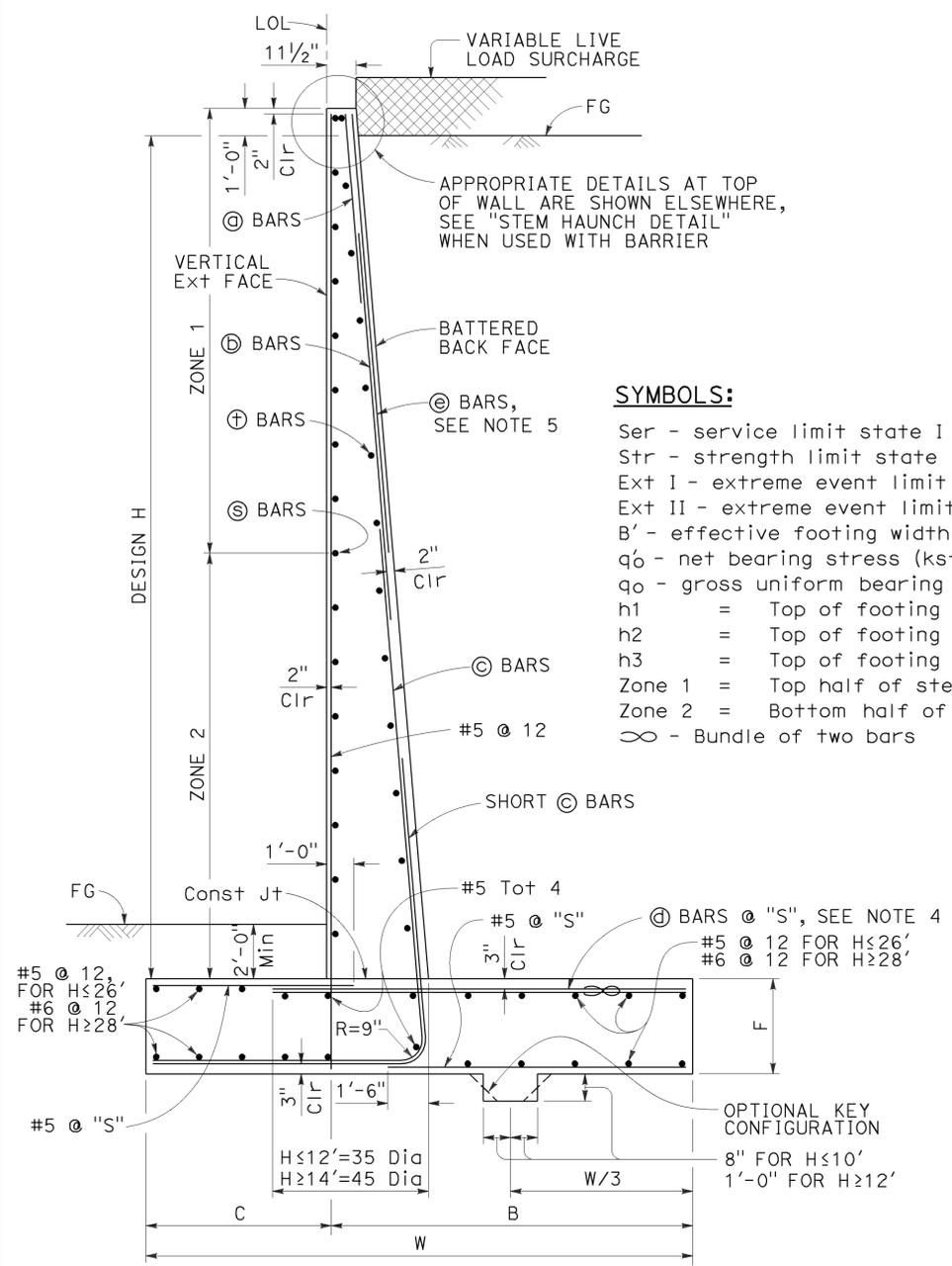
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

DESIGN CONDITIONS:

Design H may be exceeded by 6" before going to the next size. Special footing design is required where foundation material is incapable of supporting bearing stress listed in the table.

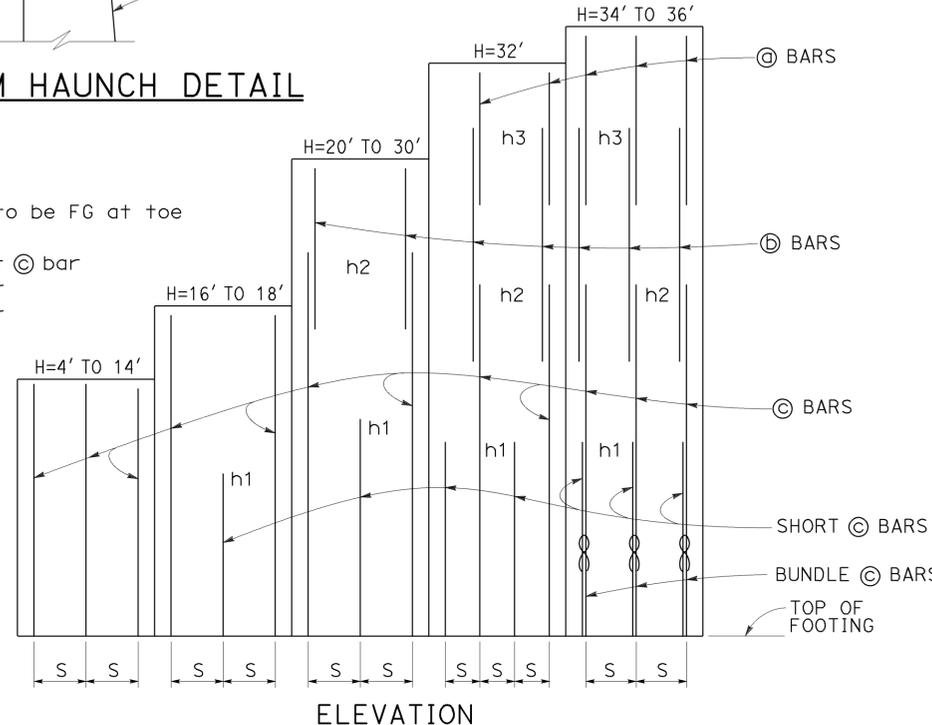


STEM HAUNCH DETAIL



TYPICAL SECTION

- NOTES:**
- For details not shown and drainage notes see 
 - For wall stem joint details see  and 
 - At \textcircled{C} bars:
 $H \leq 6'$, no splices are allowed within 1'-8" above the top of footing.
 $H > 6'$, no splices are allowed within $H/4$ above the top of footing.
 - Bundle \textcircled{A} bars for $H = 34'$ & $36'$.
 - Provide #6 @ 10" x 15'-0" \textcircled{C} bars over a distance of 8'-0" measured from all expansion joints, begin wall and end wall locations. For $H \leq 14'$, hook \textcircled{C} bar into footing and reduce bar length as needed to maintain Min Clr cover.



ELEVATION

TABLE OF REINFORCING STEEL, DIMENSIONS AND DATA																	
DESIGN H	4'	6'	8'	10'	12'	14'	16'	18'	20'	22'	24'	26'	28'	30'	32'	34'	36'
W	6'-10"	7'-0"	7'-3"	7'-7"	8'-4"	9'-7"	10'-9"	12'-0"	13'-3"	14'-6"	15'-9"	17'-1"	18'-5"	19'-10"	21'-2"	22'-7"	24'-0"
C	2'-2"	2'-3"	2'-3"	2'-4"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-5"	6'-0"	6'-6"	7'-2"	7'-8"	8'-2"	9'-0"
B	4'-8"	4'-9"	5'-0"	5'-3"	5'-10"	6'-7"	7'-3"	8'-0"	8'-9"	9'-6"	10'-4"	11'-1"	11'-11"	12'-8"	13'-6"	14'-5"	15'-0"
F	1'-4"	1'-4"	1'-4"	1'-4"	1'-6"	1'-8"	1'-8"	1'-9"	1'-9"	1'-11"	2'-2"	2'-5"	2'-10"	3'-3"	3'-6"	4'-0"	4'-3"
BATTER	1/2: 12	1/2: 12	1/2: 12	1/2: 12	1/2: 12	1/2: 12	1/2: 12	1/2: 12	1/2: 12	1/2: 12	5/8: 12	5/8: 12	3/4: 12	7/8: 12	1: 12	1: 12	1: 12
SPACING "S"	9"	9"	9"	9"	9"	7"	6"	5"	6"	6"	6"	6"	6"	6"	6"	10"	8"
\textcircled{A} BARS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
\textcircled{B} BARS	-	-	-	-	-	-	-	-	#7	#7	#7	#7	#7	#7	#7	#7	#7
\textcircled{C} BARS	#6	#6	#6	#6	#6	#6	#7	#7	#8	#9	#9	#10	#10	#10	#11	#11	#11
\textcircled{D} BARS	#5	#5	#6	#6	#6	#6	#9	#8	#8	#9	#9	#10	#10	#10	#11	#11	#11
h1	-	-	-	-	-	-	5'-9"	5'-10"	8'-0"	9'-0"	10'-1"	11'-0"	12'-1"	13'-0"	13'-0"	12'-7"	11'-6"
h2	-	-	-	-	-	-	-	-	10'-5"	13'-0"	14'-7"	17'-6"	19'-0"	20'-5"	19'-0"	18'-0"	20'-2"
h3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21'-2"	21'-10"	24'-0"
ZONE 1 \textcircled{S} BARS	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12
ZONE 2 \textcircled{S} BARS	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#6 @ 12	#6 @ 12	#6 @ 12	#7 @ 12	#7 @ 12
ZONE 1 \textcircled{T} BARS	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12
ZONE 2 \textcircled{T} BARS	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12	#5 @ 12	#5 @ 12	#5 @ 12
Ser: B', q ₀	6.8, 0.7	6.5, 1.0	6.2, 1.3	6.0, 1.6	6.3, 2.0	7.5, 2.1	8.6, 2.2	9.8, 2.3	11.0, 2.4	12.1, 2.5	13.2, 2.8	14.4, 2.9	15.5, 3.1	16.8, 3.3	18.0, 3.5	19.2, 3.7	20.6, 3.7
Str: B', q ₀	6.6, 1.6	5.0, 1.8	3.6, 2.3	3.0, 3.3	3.2, 4.0	4.3, 3.8	5.3, 3.7	6.4, 3.7	7.4, 3.8	8.2, 4.1	9.0, 4.4	9.9, 4.6	10.7, 4.9	11.7, 5.2	12.6, 5.4	13.6, 5.8	14.6, 5.9
Ext I: B', q ₀	5.2, 1.1	4.7, 1.5	3.9, 2.2	3.1, 3.4	2.8, 4.8	3.2, 5.3	3.6, 5.7	4.1, 6.1	4.6, 6.4	5.0, 6.9	5.3, 7.6	5.8, 8.1	6.1, 8.9	6.7, 9.4	7.1, 10.0	7.5, 10.7	8.2, 10.9
Ext II: B', q ₀	2.6, 2.2	2.7, 2.6	2.8, 3.1	2.9, 3.6	3.7, 3.6	5.2, 3.3	6.7, 3.1	8.3, 3.0	9.8, 3.0	11.2, 3.1	12.5, 3.2	13.9, 3.4	15.2, 3.6	16.7, 3.8	18.0, 4.0	19.3, 4.2	20.8, 4.3

DESIGN NOTES:

- TO ACCOMPANY PLANS DATED 6-6-16
- DESIGN: AASHTO LRFD Bridge Design Specifications, 4th Edition with California Amendments
- LS: Varied surcharge on level ground surface
- DC: Stem Architectural Treatment of thickness up to 6" of concrete (75 psf) considered
- CT: 54 kip transverse force applied at $H_e = 32'$, distributed over 10 feet at the top of wall and 1:1 distribution down and outward. Distribution below footing taken no less than 40'.
- SEISMIC: $k_h = 0.2, k_v = 0.0$
- SOIL: $\phi = 34^\circ, \gamma = 120 \text{ pcf}$
- REINFORCED CONCRETE: $f'_c = 3,600 \text{ psi}$
 $f_y = 60,000 \text{ psi}$
- LOAD COMBINATIONS AND LIMIT STATES:
 Service I $Q = 1.00DC + 1.00EV + 1.00EH + 1.00LS$
 Strength I $Q = \alpha DC + \beta EV + \eta EH + 1.75LS$
 Extreme I $Q = 1.00DC + 1.00EV + 1.00EH + 1.00EQD + 1.00EQE$
 Extreme II $Q = 1.00DC + 1.00EV + 1.00EH + 1.00CT$
- Where:
 Q: Force Effects
 α : 1.25 or 0.90, Whichever Controls Design
 β : 1.35 or 1.00, Whichever Controls Design
 η : 1.50 or 0.90, Whichever Controls Design
 DC: Dead Load of Structure Components
 EH: Horizontal Earth Fill Pressure
 EV: Vertical Earth Pressure from Earth Fill Weight
 LS: Live Load Surcharge
 EQE: Seismic Earth Pressure
 EQD: Soil and Structural and Nonstructural Components Inertia
 CT: Vehicular Collision Force

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
RETAINING WALL TYPE 1 (CASE 1)
 NO SCALE

RSP B3-1A DATED APRIL 20, 2012 SUPPLEMENTS THE
 STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP B3-1A

2010 REVISED STANDARD PLAN RSP B3-1A

TO ACCOMPANY PLANS DATED 6-6-16

2010 REVISED STANDARD PLAN RSP B3-5

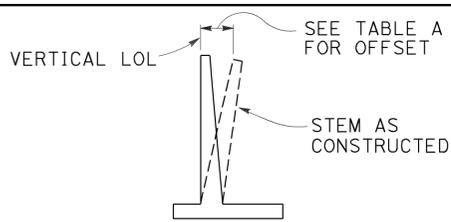
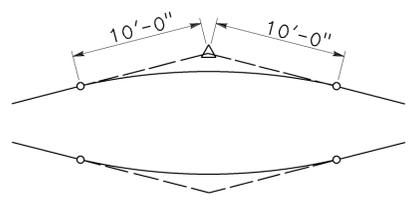


TABLE A

H	OFFSET
4'-12'	H/200
14'-16'	H/160
18'-20'	H/140
22'-24'	H/130
26'-36'	2 1/2"

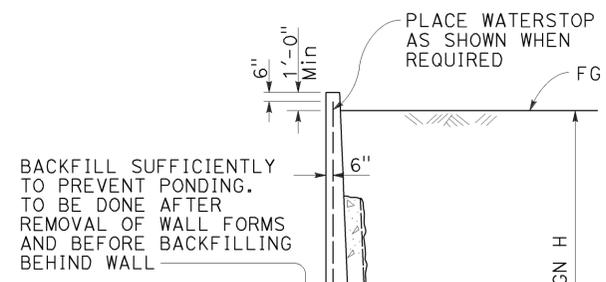
APPROXIMATE WALL OFFSET VALUES

Values for offsetting forms to be determined by the Engineer.



20'-0" VC AT TOP OF WALL SLOPE CHANGE

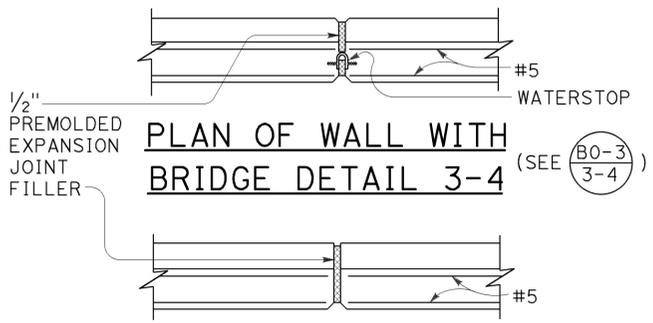
Where shown on the plans



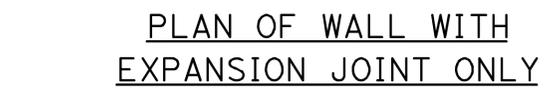
BACKFILL SUFFICIENTLY TO PREVENT PONDING. TO BE DONE AFTER REMOVAL OF WALL FORMS AND BEFORE BACKFILLING BEHIND WALL.

PLACE CONCRETE IN TOE AGAINST UNDISTURBED MATERIAL EXCEPT AS PERMITTED BY THE ENGINEER.

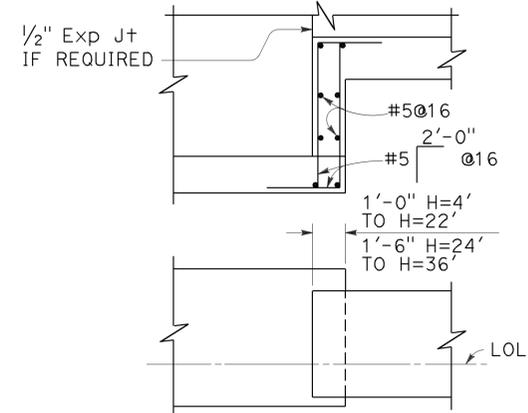
DESIGN AND DRAINAGE



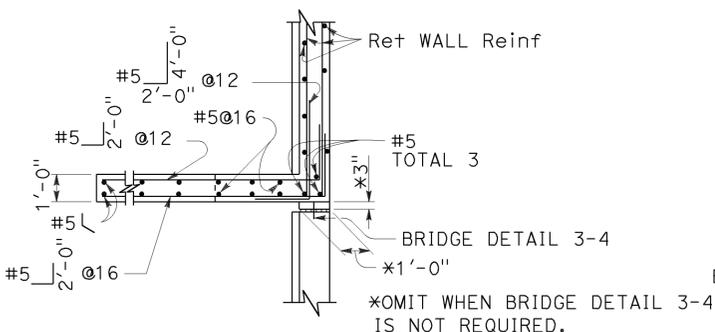
PLAN OF WALL WITH BRIDGE DETAIL 3-4



PLAN OF WALL WITH EXPANSION JOINT ONLY

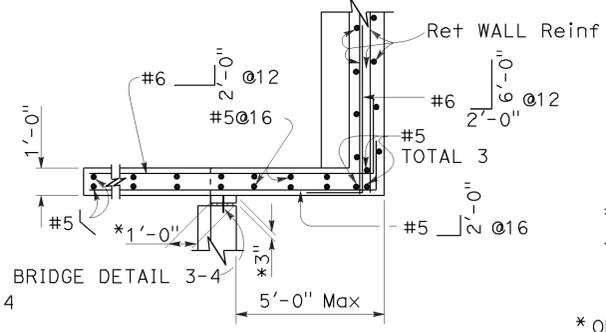


FOOTING STEP



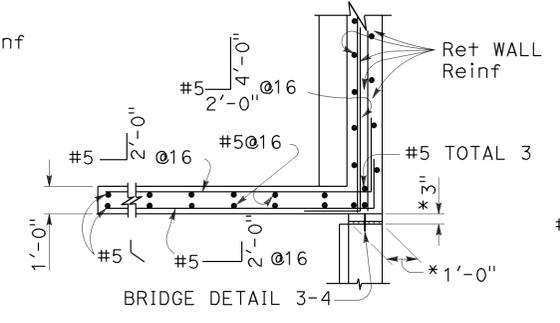
PLAN

(For return wall Type "A")



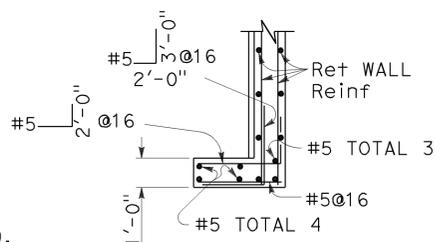
PLAN

(For return wall Type "B")



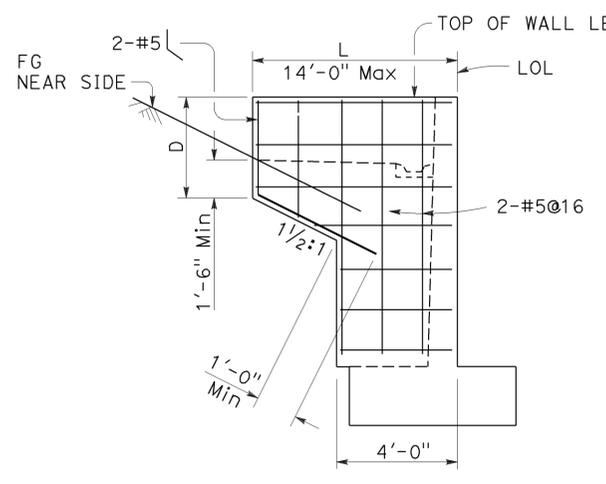
PLAN

(For return wall Type "C")



PLAN

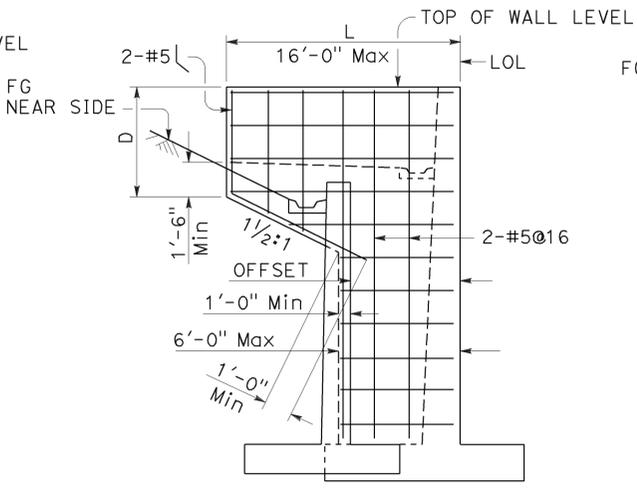
(For return wall Type "D")



ELEVATION

RETURN WALL TYPE "A"

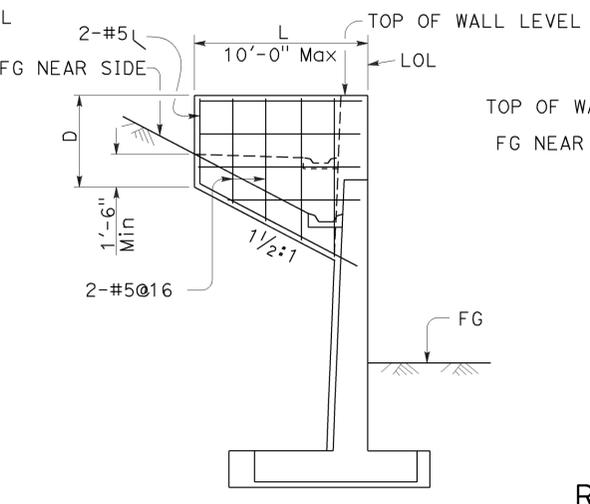
Use where H=8' or less



ELEVATION

RETURN WALL TYPE "B"

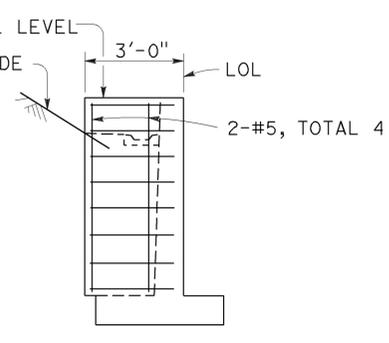
Use where H=10' or more on offset walls



ELEVATION

RETURN WALL TYPE "C"

Use where H=10' or more on straight walls



ELEVATION

RETURN WALL TYPE "D"

Use where H=6' or less

DESIGN CONDITIONS:

Design "H" may be exceeded by 6" before going to the next size. Special footing design is required where foundation material is incapable of supporting bearing stress listed in table

Return wall not required unless shown elsewhere

DESIGN NOTES:

DESIGN: AASHTO LRFD Bridge Design Specifications, 4th edition with California Amendments

LIVE LOAD: Surcharge on level ground surface

SOIL: $\phi = 34^\circ$
 $\gamma = 120$ pcf

REINFORCED CONCRETE: $f_y = 60,000$ psi
 $f_c' = 3,600$ psi

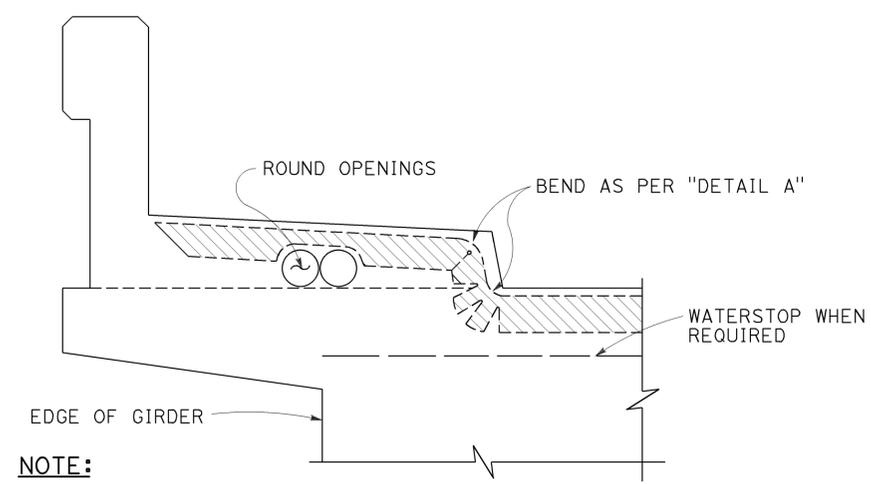
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

RETAINING WALL DETAILS No. 1

NO SCALE

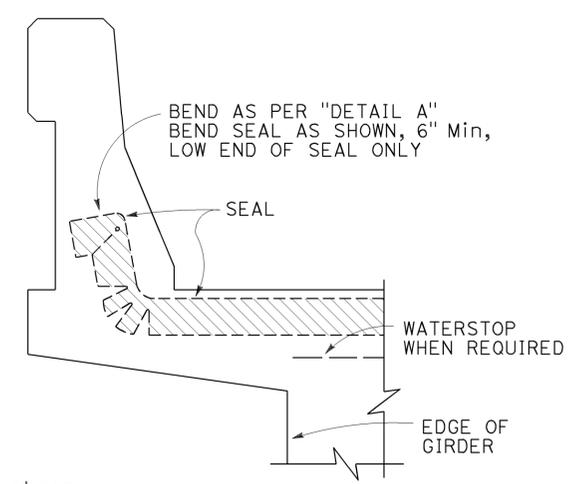
RSP B3-5 DATED APRIL 20, 2012 SUPERSEDES STANDARD PLAN B3-5 DATED MAY 20, 2011 - PAGE 277 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP B3-5

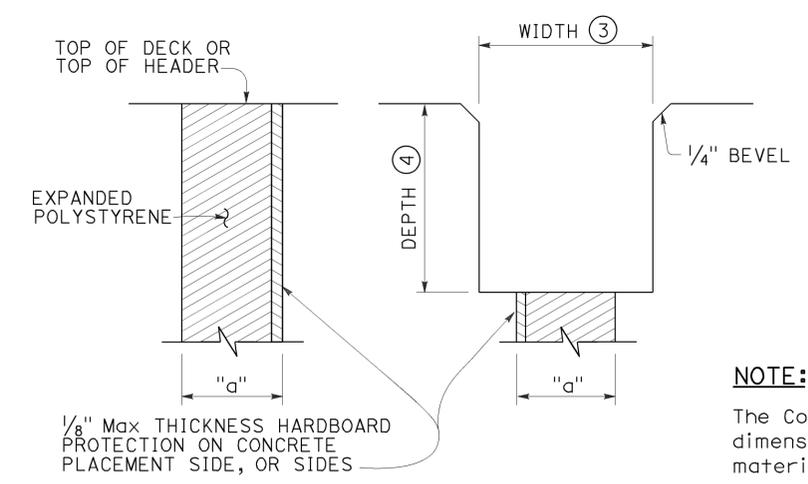


NOTE:
 Type "B" seal shown. Type "A" seals to conform to the general path of seal shown, cuts for bending not required. Bend type "A" seals 3" up into curb or barrier rail on only the low end of the seal.

CONCRETE BARRIER AND SIDEWALK



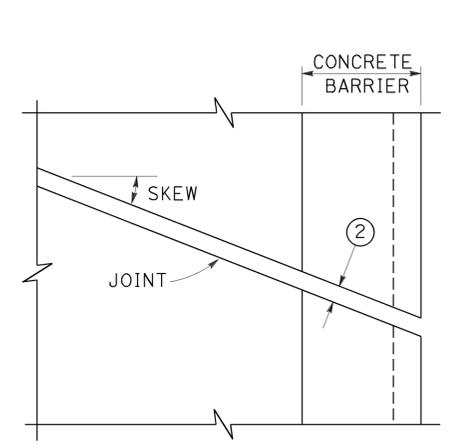
CONCRETE BARRIER



FORMING DETAIL SAWCUT DETAIL

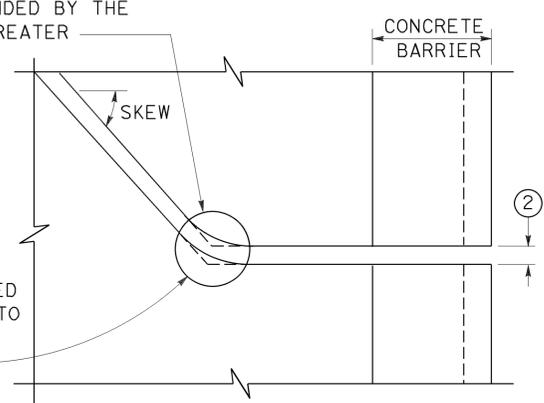
NOTE:
 The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

JOINT SEALS DETAILS



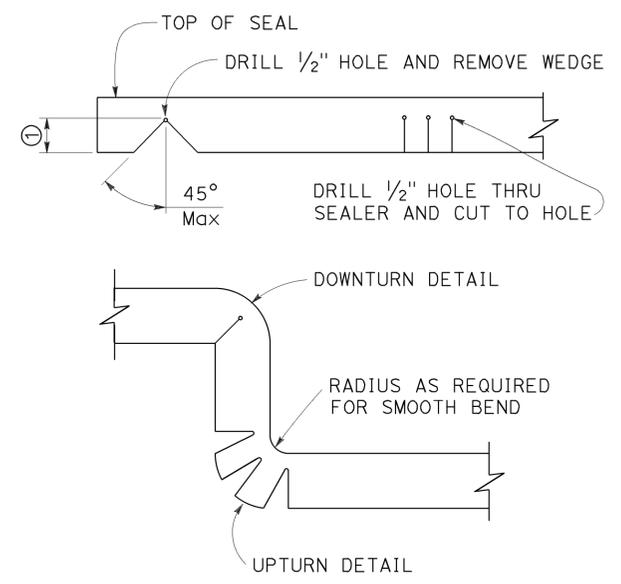
PLAN OF JOINT (SKEW ≤ 20°)

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



PLAN OF JOINT (SKEW > 20°)

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

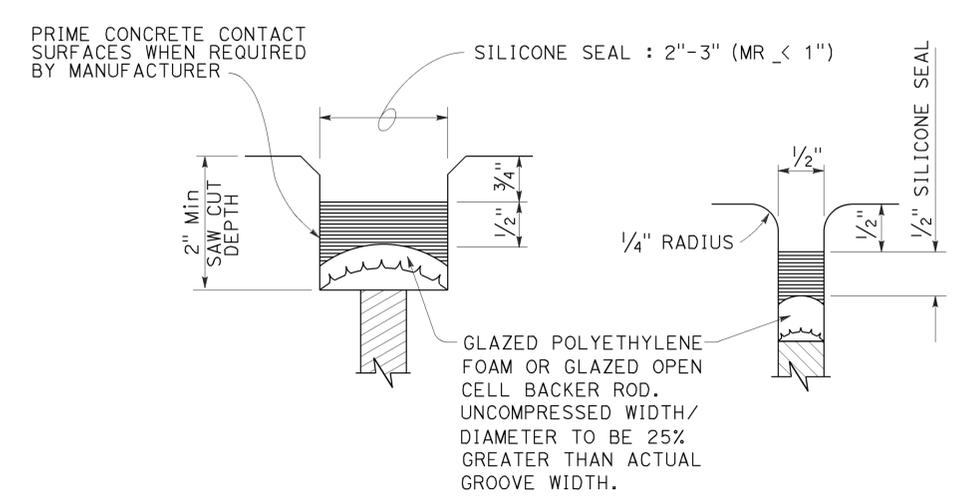


DETAIL A

- NOTES:**
- Make smooth cuts from the bottom of seal to 1/2" clear of top leaving at least one complete cell between the top of the cut and top of the seal. When necessary cut back of seal to clear conduit and round openings.
 - Opening in barrier to match width of sawn deck joint.
 - Sawcut groove widths shall be as ordered by the Engineer.
 - Depth of sawcut: Type A - Depth to be 2" minimum.
 Type B - Depth to be equal to or greater than the depth of seal measured along the contact surface, when compressed to minimum width position (W₂) plus dimensions shown.
 - MR (movement rating) as shown on other plan sheets.
 - Other depths must be approved by the Engineer.
 - A sidewalk joint shall be covered by an expansion joint armor.

DIMENSIONS "a" OF JOINT REQUIRED

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

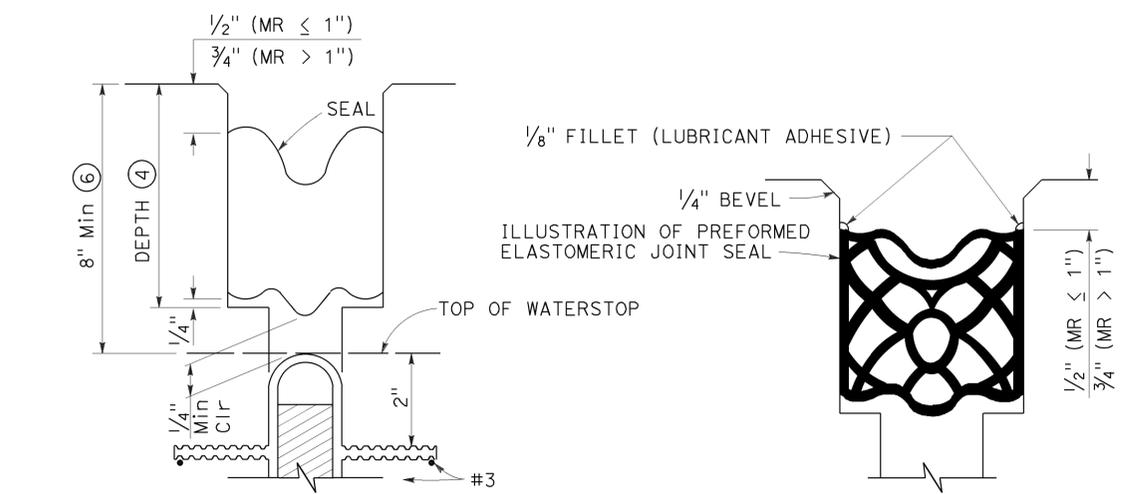


TYPE A SEAL

Movement rating : Silicone = 1" Max

TYPE AL SEAL

Longitudinal joints only



TYPE B JOINT SEAL IN MINIMUM WIDTH POSITION (W₂)

TYPE B SEAL

Movement Rating ≤ 2"

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

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

LEGEND:

AB	ABANDON. IF APPLIED TO CONDUIT, REMOVE CONDUCTORS
BC	INSTALL PULL BOX IN EXISTING CONDUIT RUN
BP	PEDESTRIAN BARRICADE, TYPE AS INDICATED ON PLAN
CB	INSTALL CONDUIT INTO EXISTING PULL BOX
CC	CONNECT NEW AND EXISTING CONDUIT. REMOVE EXISTING CONDUCTORS AND INSTALL CONDUCTORS AS INDICATED
CF	CONDUIT TO REMAIN FOR FUTURE USE. REMOVE CONDUCTORS. INSTALL PULL TAPE
DH	DETECTOR HANDHOLE
FA	FOUNDATION TO BE ABANDONED
IS	INSTALL SIGN ON SIGNAL MAST ARM
NS	NO SLIP BASE ON STANDARD
PEC	PHOTOELECTRIC CONTROL
PEU	PHOTOELECTRIC UNIT
RC	EQUIPMENT OR MATERIAL TO BE REMOVED AND BECOME THE PROPERTY OF THE CONTRACTOR
RE	REMOVE ELECTROLIER, FUSES AND BALLAST. TAPE ENDS OF CONDUCTORS
RL	RELOCATE EQUIPMENT
RR	REMOVE AND REUSE EQUIPMENT
RS	REMOVE AND SALVAGE EQUIPMENT
SC	SPLICE NEW TO EXISTING CONDUCTORS
SD	SERVICE DISCONNECT
TSP	TELEPHONE SERVICE POINT

ABBREVIATIONS

AC+	UNDERGROUNDED CONDUCTOR	MAT	MAST ARM MOUNTING TOP ATTACHMENT
APS	ACCESSIBLE PEDESTRIAN SIGNAL	MAS	MAST ARM MOUNTING SIDE ATTACHMENT
Batt	BATTERY	MBPS	MANUAL BYPASS SWITCH
BBS	BATTERY BACKUP SYSTEM	M/M	MULTIPLE TO MULTIPLE TRANSFORMER
BC	BOLT CIRCLE	Mtg	MOUNTING
BIK	BLACK	MV	MERCURY VAPOR LIGHTING FIXTURE
BP	BYPASS	MVDS	MICROWAVE VEHICLE DETECTION SYSTEM
BPB	BICYCLE PUSH BUTTON	N	NEUTRAL (GROUNDED CONDUCTOR)
C	CONDUIT	NB	NEUTRAL BUS
CB	CIRCUIT BREAKER	NC	NORMALLY CLOSE
CCTV	CLOSED CIRCUIT TELEVISION	NO	NORMALLY OPEN
Ckt	CIRCUIT	P	CIRCUIT BREAKER'S POLE
CMS	CHANGEABLE MESSAGE SIGN	PB	PULL BOX
Ctid	CALTRANS IDENTIFICATION	PBA	PUSH BUTTON ASSEMBLY
Comm	COMMUNICATION	PEC	PHOTOELECTRIC CONTROL
Cntl	CONTROL	Ped	PEDESTRIAN
DF	DEPARTMENT-FURNISHED	PEU	PHOTOELECTRIC UNIT
DLC	LOOP DETECTOR LEAD-IN CABLE	PT	CONDUIT WITH PULL TAPE
EMS	EXTINGUISHABLE MESSAGE SIGN	PTR	POWER TRANSFER RELAY
EVUC	EMERGENCY VEHICLE UNIT CABLE	RE	RELOCATED EQUIPMENT
EVUD	EMERGENCY VEHICLE UNIT DETECTOR	RM	RAMP METERING
FB	FLASHING BEACON	RWIS	ROADSIDE WEATHER INFORMATION SYSTEM
FBCA	FLASHING BEACON CONTROL ASSEMBLY	SB	SLIP BASE
FBS	FLASHING BEACON WITH SLIP BASE	SIC	SIGNAL INTERCONNECT CABLE
FO	FIBER OPTIC	Sig	SIGNAL
G	EQUIPMENT GROUNDING CONDUCTOR	SMA	SIGNAL MAST ARM
GB	GROUND BUS	SNS	STREET NAME SIGN
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	SP	SERVICE POINT
Grn	GREEN	TB	TERMINAL BOARD
HAR	HIGHWAY ADVISORY RADIO	TDC	TELEPHONE DEMARCATION CABINET
Hex	HEXAGONAL	Temp	TEMPERATURE
HPS	HIGH PRESSURE SODIUM	TMS	TRAFFIC MONITORING STATION
IISNS	INTERNALLY ILLUMINATED STREET NAME SIGN	TOS	TRAFFIC OPERATIONS SYSTEM
ISL	INDUCTION SIGN LIGHTING	UPS	UNINTERRUPTABLE POWER SUPPLY
LED	LIGHT EMITTING DIODE	UPSC	UNINTERRUPTABLE POWER SUPPLY CONTROLLER
LMA	LUMINAIRE MAST ARM	Veh	VEHICLE
LPS	LOW PRESSURE SODIUM	VIVDS	VIDEO IMAGE VEHICLE DETECTION SYSTEM
Ltg	LIGHTING	Wht	WHITE
Lum	LUMINAIRE	WIM	WEIGH-IN-MOTION
M	METERED	Xfmr	TRANSFORMER

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn, Son	1	50.2/50.5, 0.0/0.2	109	154

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

October 30, 2015
PLANS APPROVAL DATE

Theresa Aziz Gabriel
No. E15129
Exp. 6-30-16
ELECTRICAL
STATE OF CALIFORNIA

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

TO ACCOMPANY PLANS DATED 6-6-16

SOFFIT AND WALL-MOUNTED LUMINAIRES

- PENDANT SOFFIT LUMINAIRE, 70 W HPS UNLESS OTHERWISE SPECIFIED
- FLUSH-MOUNTED SOFFIT LUMINAIRE, 70 W HPS UNLESS OTHERWISE SPECIFIED
- WALL-MOUNTED LUMINAIRE, 70 W HPS UNLESS OTHERWISE SPECIFIED
- EXISTING SOFFIT OR WALL-MOUNTED LUMINAIRE TO REMAIN UNMODIFIED
- EXISTING SOFFIT OR WALL-MOUNTED LUMINAIRE TO BE MODIFIED AS SPECIFIED

NOTE:
Arrow indicates "street side" of luminaire.

COMMONLY USED SYMBOLS FOR UNITED STATES CUSTOMARY UNITS OF MEASUREMENT:

SYMBOL	DEFINITIONS
Ω	OHMS
min	MINUTE
s	SECOND
bps	BITS PER SECOND
Bps	BYTES PER SECOND
A	AMPERE
V	VOLT
V(dc)	VOLT (DIRECT CURRENT)
V(ac)	VOLT (ALTERNATING CURRENT)
FC	FOOT - CANDLE
W	WATTS
VA	VOLT-AMPERE
M	MEGA
k	KILO
m	MILLI
μ	MICRO
P	PICO
Hz	HERTZ

MISCELLANEOUS ELECTROLIERS

NEW	EXISTING	
		LUMINAIRE ON WOOD POLE
		NON-STANDARD ELECTROLIER (SEE PROJECT LEGEND)
		CITY ELECTROLIER
		ELECTROLIER FOUNDATION (FUTURE INSTALLATION)

- NOTES:**
- LED luminaires shall be 235 W when installed on Type 21, 21D, 30, 31 and 32 Standards, unless otherwise specified. LED luminaires shall be 165 W when installed on other type standards or poles, unless otherwise specified.
 - Luminaires shall be the cutoff type, ANSI Type III medium cutoff lighting distribution, unless otherwise specified.

STANDARD ELECTROLIER

NEW	EXISTING	STANDARD TYPE
		15
		150
		15 STRUCTURE
		150 STRUCTURE
		21
		210
		21 STRUCTURE
		210 STRUCTURE
		30
		31
		32

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

NO SCALE

RSP ES-1A DATED OCTOBER 30, 2015 SUPERSEDES RSP ES-1A DATED JULY 19, 2013 AND STANDARD PLAN ES-1A DATED MAY 20, 2011 - PAGE 425 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-1A

2010 REVISED STANDARD PLAN RSP ES-1A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn, Son	1	50.2/50.5, 0.0/0.2	110	154

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER
October 30, 2015
PLANS APPROVAL DATE

Theresa Aziz Gabriel
REGISTERED PROFESSIONAL ENGINEER
No. E15129
Exp. 6-30-16
ELECTRICAL
STATE OF CALIFORNIA

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

TO ACCOMPANY PLANS DATED 6-6-16

CONDUIT

SIGNAL EQUIPMENT

NEW	EXISTING	
---	---	LIGHTING CONDUIT, UNLESS OTHERWISE INDICATED OR NOTED
---	---	TRAFFIC SIGNAL CONDUIT
---C---	---c---	COMMUNICATION CONDUIT
---T---	---t---	TELEPHONE CONDUIT
---F---	---f---	FIRE ALARM CONDUIT
---FO---	---fo---	FIBER OPTIC CONDUIT
---	---	CONDUIT TERMINATION
		CONDUIT RISER ATTACHED TO THE STRUCTURE OR SERVICE POLE

NEW	EXISTING	
		PEDESTRIAN SIGNAL HEAD
		PUSH BUTTON ASSEMBLY POST
		PEDESTRIAN BARRICADE
		VEHICLE SIGNAL HEAD (WITH BACKPLATE AND 3-SECTIONS: RED, YELLOW AND GREEN)
		VEHICLE SIGNAL HEAD WITH ANGLE VISOR
		MODIFICATIONS OF BASIC SYMBOL: "L" INDICATES ALL NON-ARROW SECTIONS LOUVERED "LG" INDICATES LOUVERED GREEN SECTION ONLY "PV" INDICATES ALL 12" SECTIONS PROGRAMMED VISIBILITY "8" INDICATES ALL 8" SECTIONS (ONLY WHEN SPECIFIED)

SIGNAL EQUIPMENT Cont

NEW	EXISTING	
		GUARD POST
		TYPE 1 STANDARD WITH RAMP METERING SIGN
		OPTICAL DETECTOR FOR THE EMERGENCY VEHICLE DETECTION

SERVICE EQUIPMENT

NEW	EXISTING	
---OH---	---oh---	OVERHEAD LINES
		WOOD POLE, "U" INDICATES UTILITY OWNED
		POLE GUY WITH ANCHOR
		UTILITY TRANSFORMER - GROUND MOUNTED
		SERVICE EQUIPMENT ENCLOSURE TYPE. DOOR INDICATES FRONT OF ENCLOSURE
		TELEPHONE DEMARCATION CABINET

POLE-MOUNTED SERVICE DESIGNATION

	TYPE H SERVICE, 28'-10"	TYPE OF INSTALLATION AND POLE HEIGHT ABOVE GRADE
--	-------------------------	--------------------------------------------------

FLASHING BEACON

NEW	EXISTING	
		FLASHING BEACON (ONE VEHICLE SIGNAL HEAD WITH BACKPLATE AND VISOR) "R" INDICATES RED INDICATION, "Y" INDICATES YELLOW INDICATION
		FLASHING BEACON WITH TYPE 15-FBS STANDARD AND A SIGN.
		FLASHING BEACON WITH TYPES 9, 9A OR 9B SIGN UNLESS OTHERWISE SPECIFIED OR INDICATED

		VEHICLE SIGNAL HEAD CONSISTING OF RED, YELLOW AND GREEN LEFT ARROW SECTIONS
		VEHICLE SIGNAL HEAD CONSISTING OF RED AND YELLOW SECTIONS WITH AN UP GREEN ARROW SECTION
		VEHICLE SIGNAL HEAD (5 SECTION) CONSISTING OF RED, YELLOW AND GREEN SECTIONS WITH YELLOW AND GREEN RIGHT ARROW SECTIONS
		TYPE 15TS STANDARD WITH VEHICLE SIGNAL HEAD AND LUMINAIRE
		TYPE 21TS STANDARD WITH VEHICLE SIGNAL HEAD AND LUMINAIRE
		STANDARD WITH LUMINAIRE AND SIGNAL MAST ARMS AND ATTACHED VEHICLE SIGNAL HEADS
		TYPE 1 STANDARD WITH ATTACHED VEHICLE SIGNAL HEADS
		STANDARD WITH A SIGNAL MAST ARM, ATTACHED VEHICLE SIGNAL HEADS AND INTERNALLY ILLUMINATED STREET NAME SIGN
		CONTROLLER ASSEMBLY. DOOR INDICATES FRONT OF CABINET

NOTES:

- All signal sections shall be 12" unless shown otherwise.
- Signal heads shall be provided with backplates unless shown otherwise.

ILLUMINATED OVERHEAD SIGN

NEW	EXISTING	
		SINGLE POST, SINGLE ILLUMINATED SIGN, BALANCED BUTTERFLY
		SINGLE POST, DOUBLE ILLUMINATED SIGN, BALANCED BUTTERFLY
		SINGLE POST, SINGLE ILLUMINATED SIGN, FULL CANTILEVER
		DOUBLE POST, SINGLE ILLUMINATED SIGN
		SINGLE ILLUMINATED SIGN MOUNTED ON STRUCTURE
		DOUBLE POST, SINGLE ILLUMINATED SIGN WITH ELECTROLIER

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS
(LEGEND AND ABBREVIATIONS)**

NO SCALE

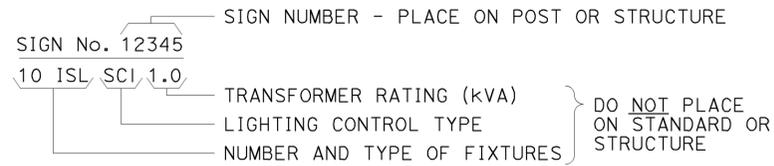
RSP ES-1B DATED OCTOBER 30, 2015 SUPERSEDES RSP ES-1B DATED JULY 19, 2013 AND STANDARD PLAN ES-1B DATED MAY 20, 2011 - PAGE 426 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-1B

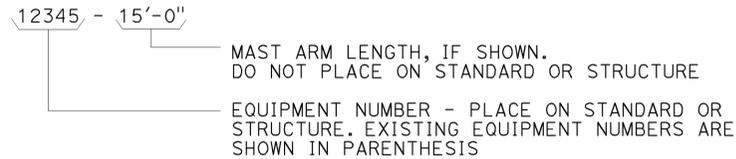
2010 REVISED STANDARD PLAN RSP ES-1B

EQUIPMENT IDENTIFICATION

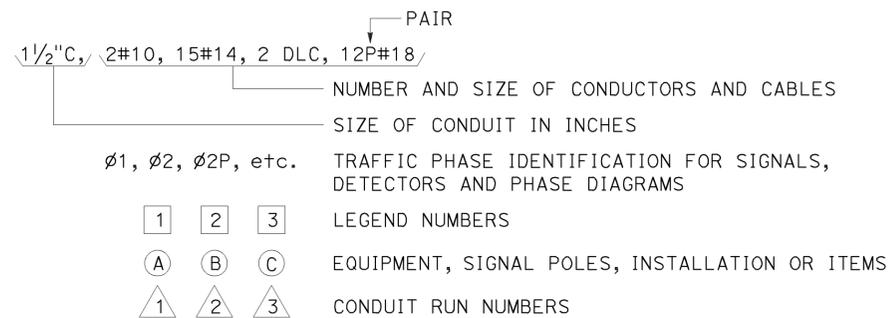
ILLUMINATED SIGN IDENTIFICATION NUMBER:



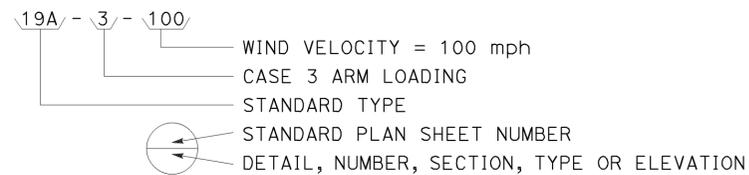
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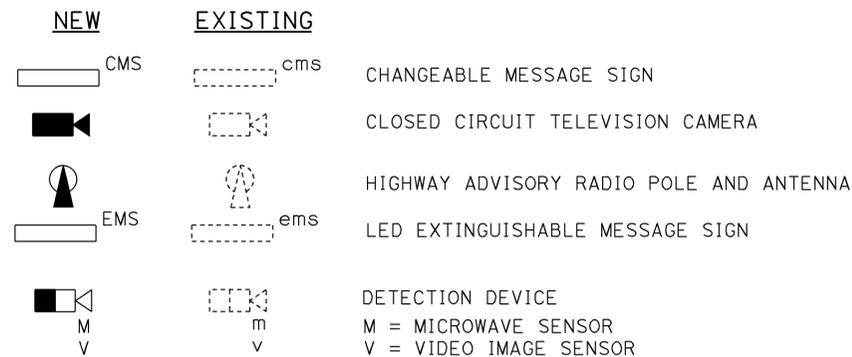
CONDUIT AND CONDUCTOR IDENTIFICATION:



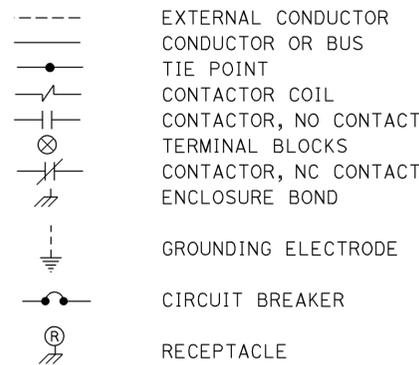
SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



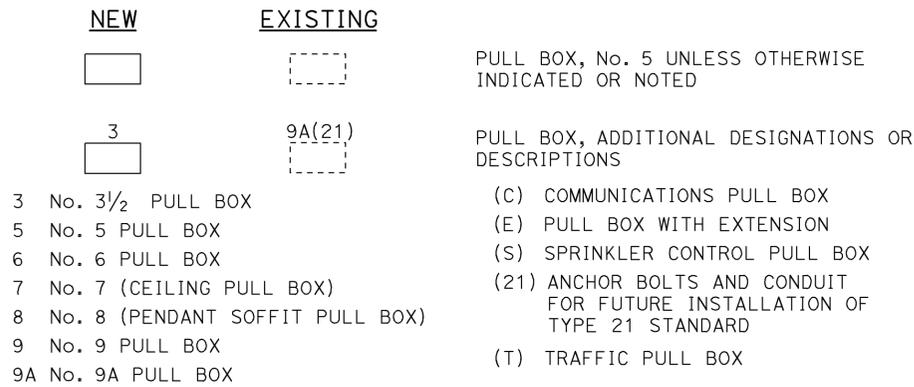
MISCELLANEOUS EQUIPMENT



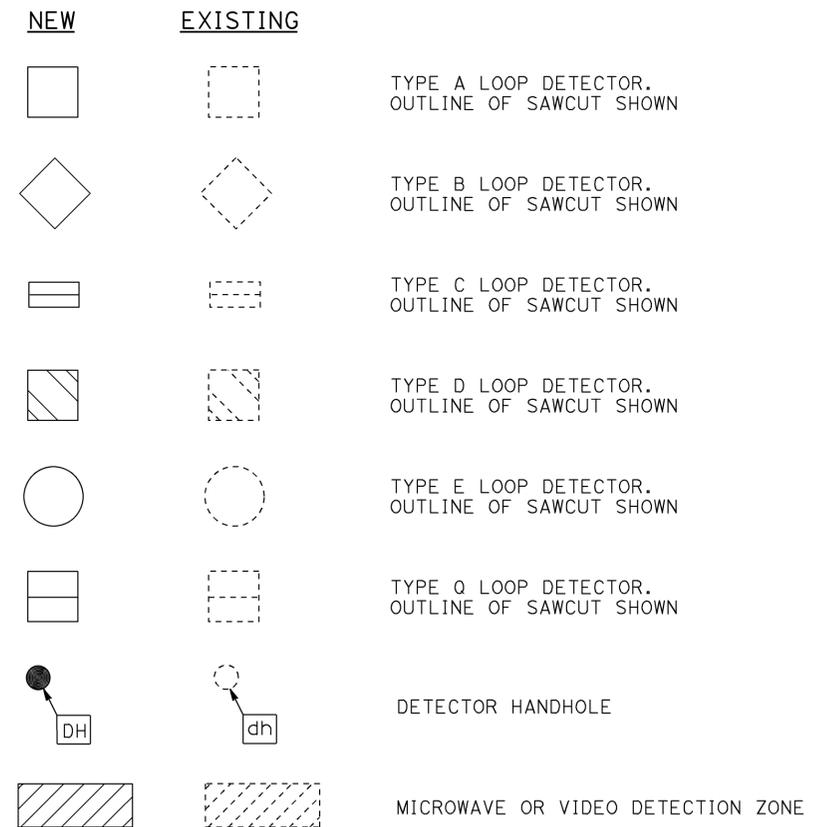
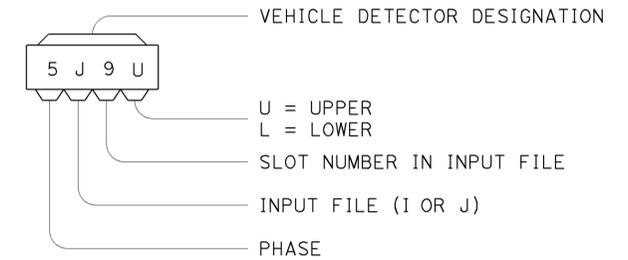
WIRING DIAGRAM LEGEND



PULL BOXES



VEHICLE DETECTORS



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (LEGEND AND ABBREVIATIONS)

NO SCALE

RSP ES-1C DATED OCTOBER 30, 2015 SUPERSEDES RSP ES-1C DATED JULY 19, 2013 AND STANDARD PLAN ES-1C DATED MAY 20, 2011 - PAGE 427 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-1C

2010 REVISED STANDARD PLAN RSP ES-1C

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn, Son	1	50.2/50.5, 0.0/0.2	112	154

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

October 30, 2015
PLANS APPROVAL DATE

Theresa
Aziz Gabriel
No. E15129
Exp. 6-30-16
ELECTRICAL
STATE OF CALIFORNIA

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

TO ACCOMPANY PLANS DATED 6-6-16

NOTES:

1. The plan shows the approximate location of devices within the enclosure. Components may be rearranged, however, the "working" clearances within the service equipment enclosure shall be maintained.
2. In unpaved areas a raised portland cement concrete pad 2'-0" x 4" x width of foundation shall be constructed in front of new service equipment enclosure installation. Pad shall be set to elevation of foundation.
3. Plug-in circuit breakers may be mounted in the vertical or horizontal position. Cable-in/cable-out circuit breakers shall be mounted in the vertical position.
4. Type III-AF and Type III-BF service equipment enclosures shall have the meter viewing windows located on the front side of the service equipment enclosures.
5. Type III-AR and Type III-BR service equipment enclosure shall be similarly constructed as Type III-AF and Type III-BF respectively, except the meter viewing windows shall be located on the back side of the service equipment enclosures.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

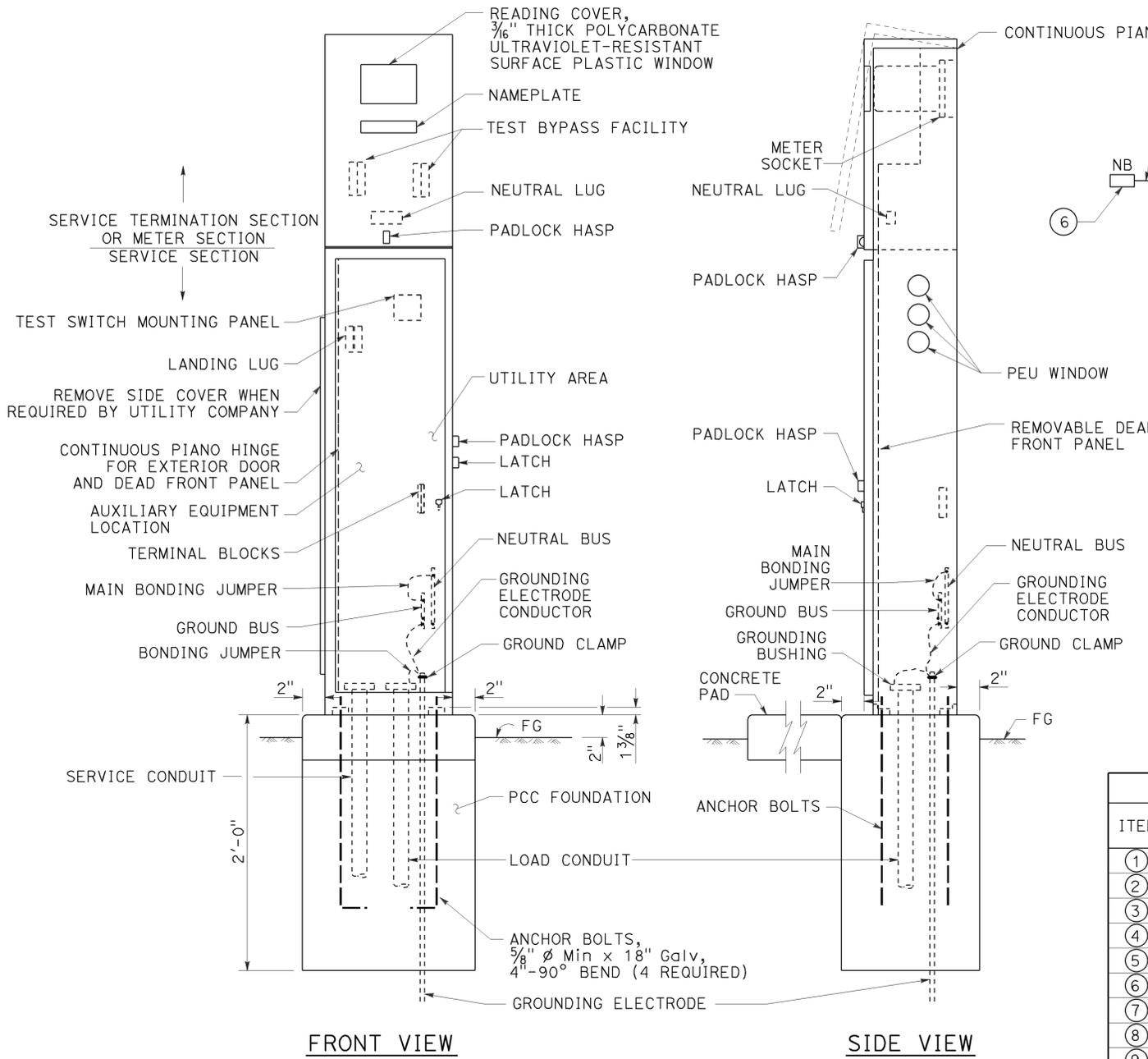
**ELECTRICAL SYSTEMS
(SERVICE EQUIPMENT ENCLOSURE
NOTES TYPE III SERIES)**

NO SCALE

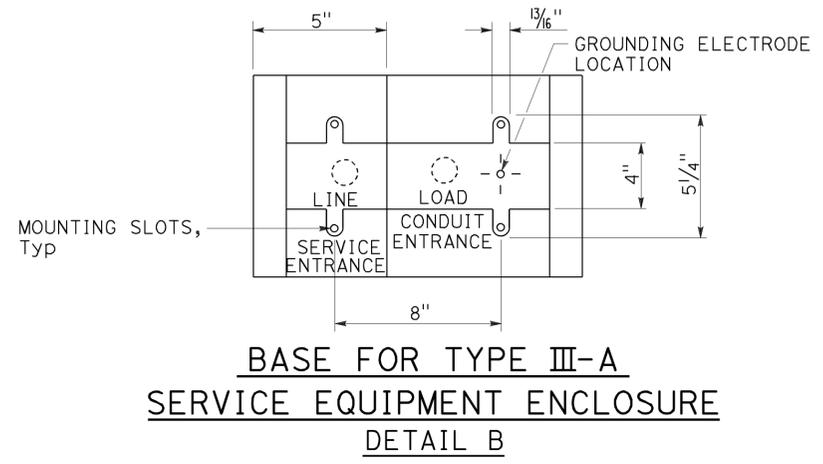
RSP ES-2C DATED OCTOBER 30, 2015 SUPERSEDES STANDARD PLAN ES-2C DATED MAY 20, 2011 - PAGE 430 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-2C

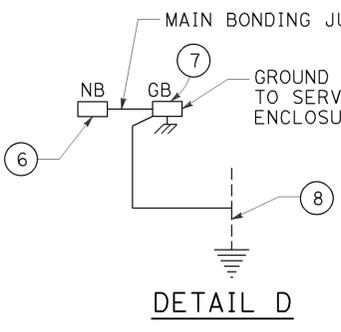
2010 REVISED STANDARD PLAN RSP ES-2C



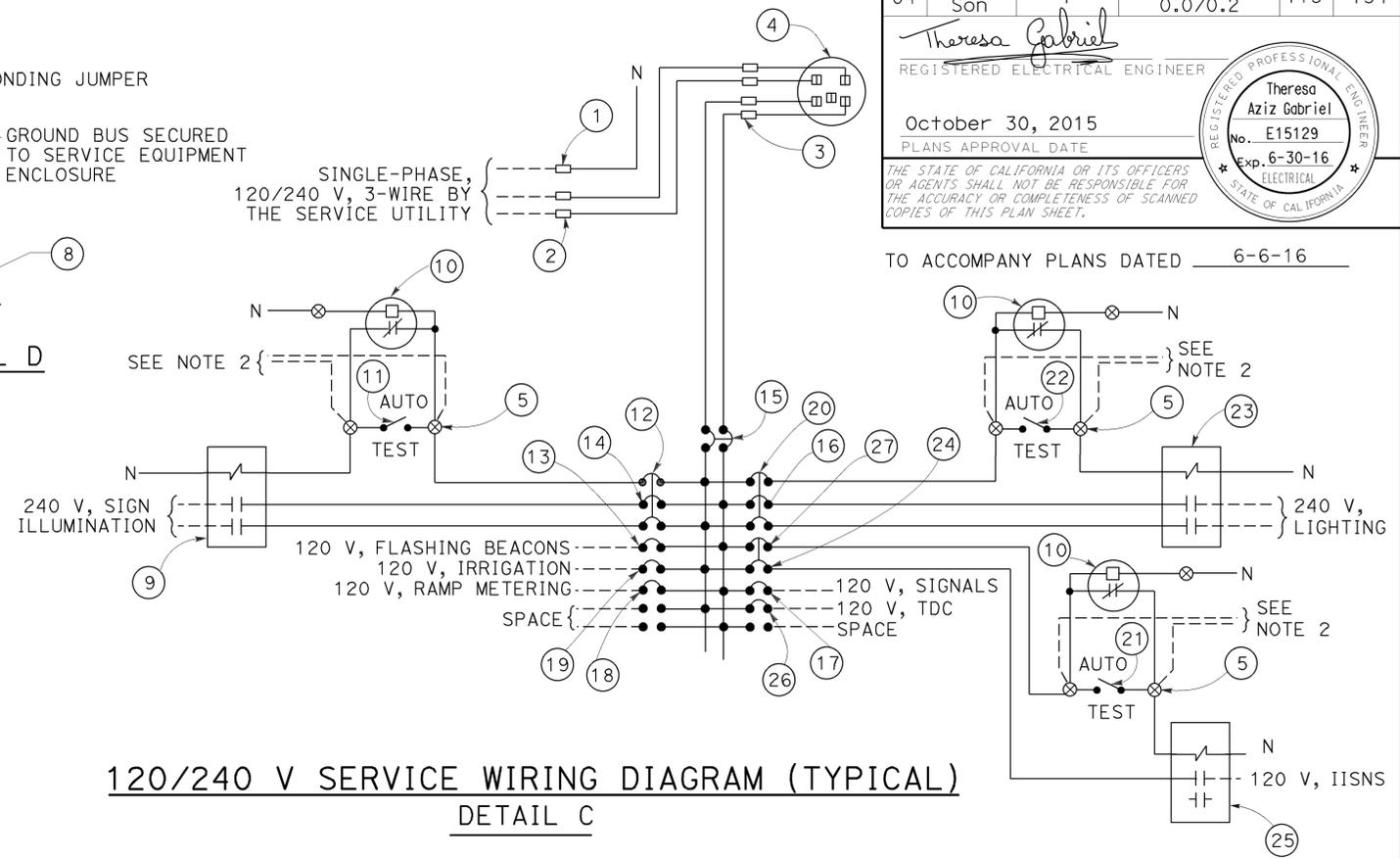
TYPE III-AF SERVICE EQUIPMENT ENCLOSURE (TYPICAL)
DETAIL A



BASE FOR TYPE III-A SERVICE EQUIPMENT ENCLOSURE
DETAIL B



DETAIL D



120/240 V SERVICE WIRING DIAGRAM (TYPICAL)
DETAIL C

TYPE III-A SERVICE EQUIPMENT ENCLOSURE LEGEND (120/240 V)					
ITEM	COMPONENT	NAMEPLATE DESCRIPTION	ITEM	COMPONENT	NAMEPLATE DESCRIPTION
①	NEUTRAL LUG		⑭	30 A, 240 V, 2P, CB	SIGN ILLUMINATION
②	LANDING LUG		⑮	100 A, 240 V, 2P, CB	MAIN BREAKER
③	TEST BYPASS FACILITY		⑯	30 A, 240 V, 2P, CB	LIGHTING
④	METER SOCKET AND SUPPORT		⑰	50 A, 120 V, 1P, CB	SIGNALS
⑤	TERMINAL BLOCKS		⑱	30 A, 120 V, 1P, CB	RAMP METERING
⑥	NEUTRAL BUS		⑲	20 A, 120 V, 1P, CB	IRRIGATION
⑦	GROUND BUS		⑳	15 A, 120 V, 1P, CB	LIGHTING CONTROL
⑧	GROUNDING ELECTRODE		㉑	15 A, 1P, TEST SWITCH	IISNS TEST SWITCH
⑨	30 A, 2P, NO CONTACTOR	SIGN ILLUMINATION	㉒	15 A, 1P, TEST SWITCH	LIGHTING TEST SWITCH
⑩	PHOTOELECTRIC UNIT (NOTE 4)	PEU	㉓	60 A, 2P, NO CONTACTOR	LIGHTING
⑪	15 A, 1P, TEST SWITCH	SIGN ILLUMINATION TEST SWITCH	㉔	15 A, 120 V, 1P, CB	IISNS
⑫	15 A, 120 V, 1P, CB	SIGN ILLUMINATION CONTROL	㉕	30 A, 2P, NO CONTACTOR	IISNS
⑬	15 A, 120 V, 1P, CB	FLASHING BEACON	㉖	20 A, 120 V, 1P, CB	TELEPHONE DEMARICATION CABINET
			㉗	15 A, 120 V, 1P, CB	IISNS CONTROL

NOTES:

- Unless otherwise indicated on the plans, service equipment items shall be provided for each service equipment enclosure as shown.
- Connect to remote test switch mounted on lighting standards, sign post or structure when required.
- Items ① and ⑥ shall be isolated from the service equipment enclosure.
- Type I photoelectric control shall be used unless otherwise indicated on the plans.
- Item ⑫, ⑳ and ㉗ shall be ganged operated CB.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS
(SERVICE EQUIPMENT ENCLOSURE
AND TYPICAL WIRING DIAGRAM,
TYPE III-A SERIES)**

NO SCALE

RSP ES-2D DATED OCTOBER 30, 2015 SUPERSEDES STANDARD PLAN ES-2D DATED MAY 20, 2011 - PAGE 431 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-2D

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn, Son	1	50.2/50.5, 0.0/0.2	114	154

Theresa Gabriel
REGISTERED ELECTRICAL ENGINEER

October 30, 2015
PLANS APPROVAL DATE

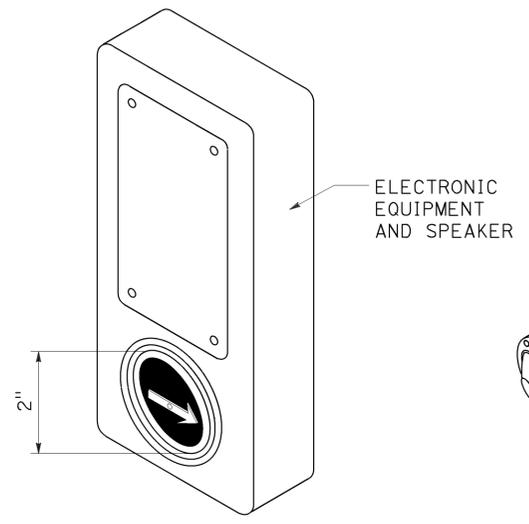
Theresa
Aziz Gabriel
No. E15129
Exp. 6-30-16
ELECTRICAL
STATE OF CALIFORNIA

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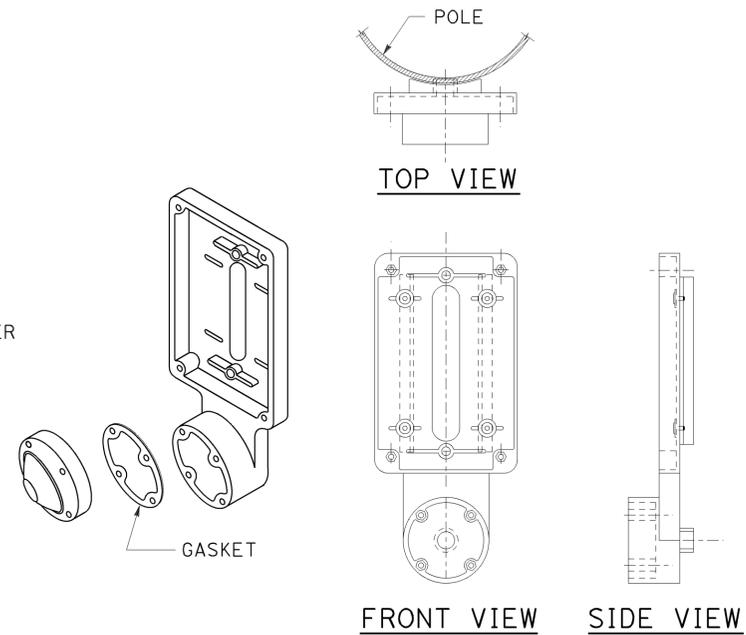
TO ACCOMPANY PLANS DATED 6-6-16

NOTES:

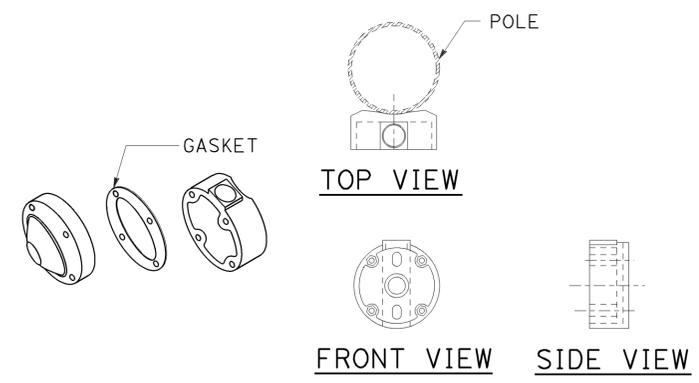
1. Back casting shape to fit curvature of pole.
2. Provide cover fitting for top of post, when PBA is mounted on push button assembly post.
3. Install push button on crosswalk side of standard.
4. Use R10 series regulatory signs and plaques for pedestrian and bicycle facilities.



ACCESSIBLE PEDESTRIAN SIGNAL
DETAIL A



TYPE B PUSH BUTTON ASSEMBLY
DETAIL B



TYPE C PUSH BUTTON ASSEMBLY
DETAIL C

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

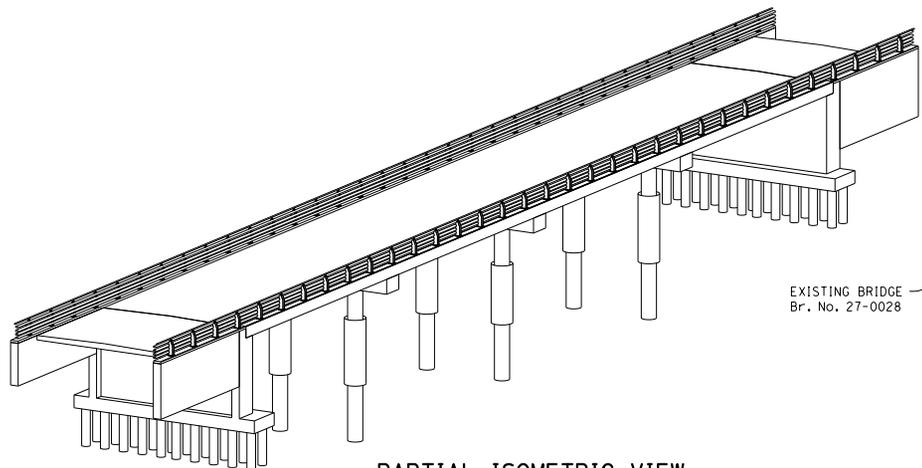
**ELECTRICAL SYSTEMS
(ACCESSIBLE PEDESTRIAN SIGNAL
AND PUSH BUTTON ASSEMBLIES)**

NO SCALE

RSP ES-5C DATED OCTOBER 30, 2015 SUPERSEDES RSP ES-5C DATED JULY 19, 2013 AND STANDARD PLAN ES-5C DATED MAY 20, 2011 - PAGE 450 OF THE STANDARD PLANS BOOK DATED 2010.

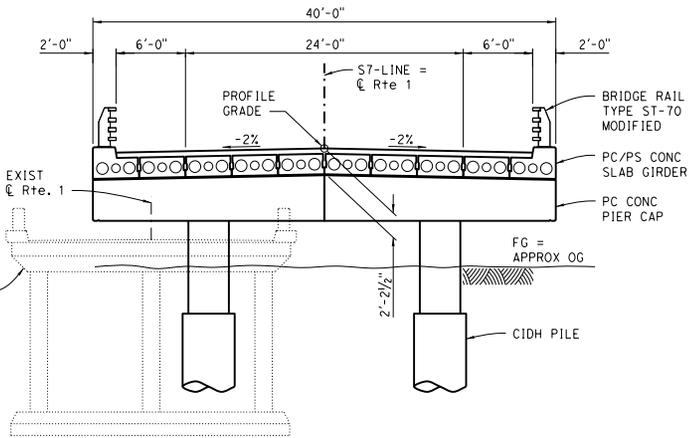
REVISED STANDARD PLAN RSP ES-5C

2010 REVISED STANDARD PLAN RSP ES-5C



PARTIAL ISOMETRIC VIEW

no scale



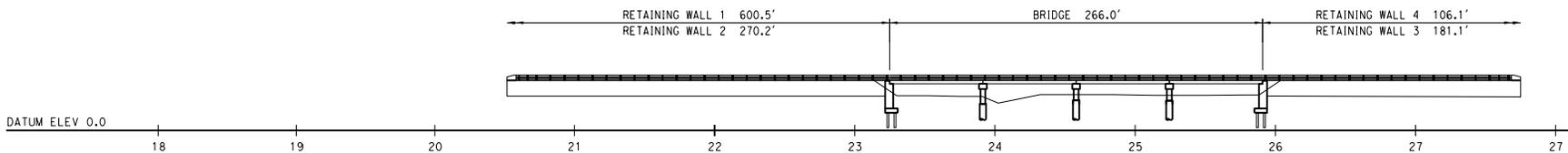
TYPICAL SECTION

3/8" = 1'-0"

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mfn, Son	1	50.27/50.5, 0.0/0.2	115	154

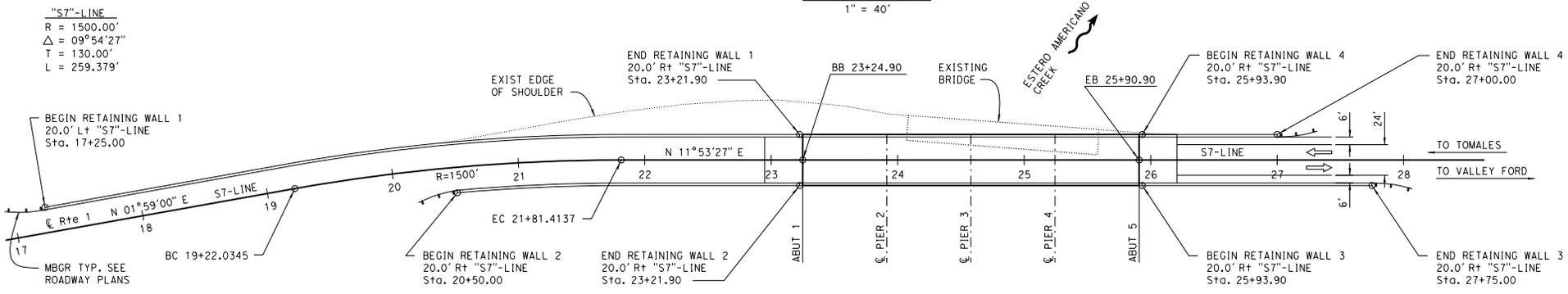
V. Ramakrishnan
 REGISTERED CIVIL ENGINEER DATE 12-14-2015
 PLANS APPROVAL DATE 6-6-16
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

The contractor must verify all controlling field dimensions before ordering or fabricating any material.



ELEVATION

1" = 40'



PLAN

1" = 40'

Note:
 For Index to Plans, Standard Plan List, General Notes and Quantities see "Index To Plans" sheet.

DESIGN ENGINEER D. Dunrud	DESIGN BY V. Ramakrishnan	CHECKED BY J. Peterson / L. Bahia	LOAD & RESISTANCE FACTOR DESIGN BY V. Ramakrishnan	LIVE LOADS: HL 93 W/LOW-BY PERMIT DESIGN VEHICLE	BRIDGE NO. 27-0121	ESTERO AMERICANO BRIDGE (REPLACE)	
	DETAILS BY T. Mason	CHECKED BY J. Peterson / L. Bahia	LAYOUT BY V. Ramakrishnan	CLASSIFIED SPEED COMPARED TO HANSEN	POST MILE 50.5		GENERAL PLAN
	QUANTITIES BY V. Ramakrishnan / L. Bahia	CHECKED BY A. Pearson	SPECIFICATIONS BY S. Hansen	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	UNIT: 3613 PROJECT NUMBER & PHASE: 0412000116	CONTRACT NO.: 04-209504	
STRUCTURES DESIGN GENERAL PLAN SHEET (ENGLISH) (REV.09-01-10)					DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 1 OF 40

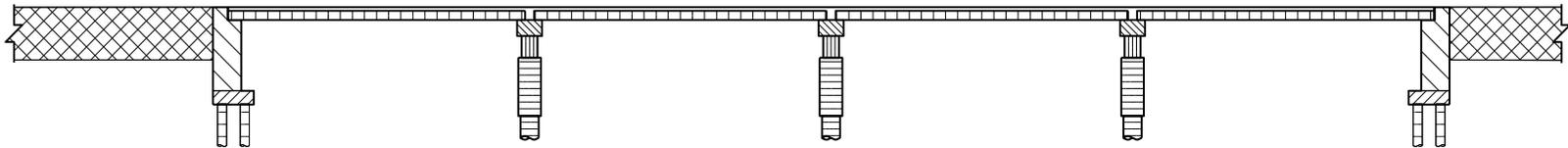
USERNAME = 93127688 DATE PLOTTED => 30-AUG-2016 TIME PLOTTED => 14:27

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mfn, Son	1	50.2/50.5, 0.0/0.2	116	154

V. Ramakrishnan
REGISTERED CIVIL ENGINEER DATE 12-14-2015
6-6-16
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Vijayaram Ramakrishnan
No. C. 63091
Exp. 06/30/2018
CIVIL
STATE OF CALIFORNIA

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- Structural Concrete, Bridge Deck, (Polymer Fiber) (4000 psi @ 28 days)
- PreCast Prestressed Concrete Slab Girder (6000 psi @ 28 days)
- PreCast Concrete Pier Cap (5000 psi @ 28 days)
- Structural Concrete, Bridge Abutment (3600 psi @ 28 days)
- Structural Concrete, Bridge Column (5000 psi @ 28 days)
- Structural Concrete, Bridge Footing (3600 psi @ 28 days)
- CIDH Concrete Pile (4000 psi @ 28 days)
- Structural Concrete, Retaining Wall (3600 psi @ 28 days)

CONCRETE STRENGTH AND TYPE LIMITS
no scale

INDEX TO PLANS

1. GENERAL PLAN
2. INDEX TO PLANS
3. STRUCTURE PLAN
4. STAGE CONSTRUCTION
5. DECK CONTOURS
6. FOUNDATION PLAN NO. 1
7. FOUNDATION PLAN NO. 2
8. ABUTMENT LAYOUT
9. ABUTMENT DETAILS NO. 1
10. ABUTMENT DETAILS NO. 2
11. PIER LAYOUT
12. PIER DETAILS NO. 1
13. PIER DETAILS NO. 2
14. PIER CAP DETAILS NO. 1
15. PIER CAP DETAILS NO. 2
16. TYPICAL SECTION
17. ADDITIONAL DECK REINFORCEMENT
18. PRECAST SLAB GIRDER LAYOUT
19. INTERIOR PC SLAB GIRDER LAYOUT
20. EXTERIOR PC SLAB GIRDER LAYOUT
21. PRECAST SLAB GIRDER DETAILS NO. 1
22. PRECAST SLAB GIRDER DETAILS NO. 2
23. TIE ROD DETAILS
24. DECK DRAINAGE LAYOUT
25. BRIDGE RAIL LAYOUT
26. CALIFORNIA ST-70 BRIDGE RAIL DETAILS NO. 1
27. CALIFORNIA ST-70 BRIDGE RAIL DETAILS NO. 2
28. CALIFORNIA ST-70 BRIDGE RAIL DETAILS NO. 3
29. CALIFORNIA ST-70 BRIDGE RAIL DETAILS NO. 4
30. STRUCTURE APPROACH TYPE N(30S)
31. STRUCTURE APPROACH DRAINAGE DETAILS
32. RETAINING WALL 1 & 2 LAYOUT NO. 1
33. RETAINING WALL 1 & 2 LAYOUT NO. 2
34. RETAINING WALL 1 & 2 LAYOUT NO. 3
35. RETAINING WALL 3 & 4 LAYOUT
36. RETAINING WALL DETAILS
37. LOG OF TEST BORINGS 1 OF 4
38. LOG OF TEST BORINGS 2 OF 4
39. LOG OF TEST BORINGS 3 OF 4
40. LOG OF TEST BORINGS 4 OF 4

QUANTITIES

BRIDGE REMOVAL	LUMP	SUM
STRUCTURE EXCAVATION (BRIDGE) (TYPE D)	670	CY
STRUCTURE EXCAVATION (RETAINING WALL) (TYPE D)	5,642	CY
STRUCTURE BACKFILL (BRIDGE)	456	CY
STRUCTURE BACKFILL (RETAINING WALL)	6,583	CY
36" PERMANENT STEEL CASING	210	LF
60" PERMANENT STEEL CASING	79	LF
24" CAST-IN-DRILLED-HOLE CONCRETE PILING	640	LF
36" CAST-IN-DRILLED-HOLE CONCRETE PILING	210	LF
48" CAST-IN-DRILLED-HOLE CONCRETE PILING	246	LF
60" CAST-IN-DRILLED-HOLE CONCRETE PILING	79	LF
TRANSVERSE TIE ROD	3,490	LB
STRUCTURAL CONCRETE, BRIDGE FOOTING	96	CY
STRUCTURAL CONCRETE, BRIDGE	262	CY
STRUCTURAL CONCRETE, BRIDGE (POLYMER FIBER)	175	CY
STRUCTURAL CONCRETE, RETAINING WALL	1,194	CY
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE N)	100	CY
FURNISH PRECAST PRESTRESSED CONCRETE SLAB	10,400	SOFT
FURNISH PRECAST CONCRETE PIER CAP	6	EA
ERECT PRECAST PRESTRESSED CONCRETE SLAB	40	EA
ERECT PRECAST CONCRETE PIER CAP	6	EA
JOINT SEAL (MR 1")	80	LF
BAR REINFORCING STEEL (BRIDGE)	261,589	LB
BAR REINFORCING STEEL (RETAINING WALL)	175,336	LB
STRUCTURAL STEEL (PIPE PIN)	1,732	LB
BRIDGE DECK DRAINAGE SYSTEM	5,134	LB
BUILDING INFORMATION MODEL	LUMP	SUM
CALIFORNIA ST-70 BRIDGE RAIL (MODIFIED)	1,702	LF

GENERAL NOTES

LOAD AND RESISTANCE FACTOR DESIGN

DESIGN: AASHTO LRFD Bridge Design Specifications, 6th edition with California Amendments, Preface dated January 2014

SEISMIC DESIGN: Caltrans Seismic Design Criteria (SDC), Version 1.7 dated April 2013

DEAD LOAD: Includes 35 psf for future wearing surface.

LIVE LOADING: HL93 and permit design load.

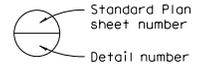
SEISMIC LOADING: See: Site Specific Response Spectra on "Deck Contours" sheet.

CONCRETE: $f_y = 60$ ksi
 $f'_c =$ See: "Concrete Strength And Type Limits"

STRUCTURAL STEEL: $f_y = 50$ ksi

STANDARD PLANS 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)
- RSP A10F LEGEND - SOIL (SHEET 1 OF 2)
- RSP A10G LEGEND - SOIL (SHEET 2 OF 2)
- A10H LEGEND - ROCK
- A62C LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL - BRIDGE
- B0-1 BRIDGE DETAILS
- B0-3 BRIDGE DETAILS
- B0-5 BRIDGE DETAILS
- B2-3 16" AND 24" CAST IN DRILLED HOLE CONCRETE PILE
- RSP B3-1A RETAINING WALL TYPE 1 (CASE 1)
- RSP B3-5 RETAINING WALL DETAILS NO. 1
- RSP B6-21 JOINT SEALS (MAXIMUM MOVEMENT RATING = 2")
- B7-1 BOX GIRDER DETAILS
- B7-6 DECK DRAINS - TYPE D-1 AND D-2



Note: All excavation is Type D.
For pay limits see: A62C.

GROUT TABLE

Location	Grout Type	Minimum Strength for Load Transfer	Min. Strength at 28 Days
Pier Cap Tie Rod Holes	Post Tensioning	3 ksi	5 ksi
Slab Girder Tie Rod Holes	Post Tensioning	3 ksi	5 ksi
Slab Girder Longit. Keyways	Non Shrink	5 ksi	5 ksi
Dowel and Pin Holes	Non Shrink	5 ksi	5 ksi

DESIGN BY: V. Ramakrishnan	CHECKED: J. Peterson / L. Bahia	<p align="center">STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION</p>	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN	BRIDGE NO.: 27-0121	<p align="center">ESTERO AMERICANO BRIDGE (REPLACE) INDEX TO PLANS</p>
DETAILS BY: T. Mason	CHECKED: J. Peterson / L. Bahia		DESIGN BRANCH 14	POST MILE: 50.5	
QUANTITIES BY: V. Ramakrishnan / L. Bahia	CHECKED: A. Pearson		UNIT: 3613	CONTRACT NO.: 04-209504	

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: 12-14-2015

SHEET 2 OF 40

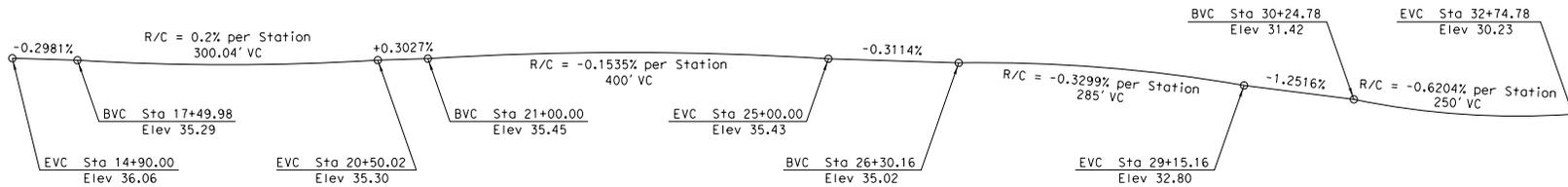
FILE => 27-0121 - 02 Index2plans.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mfn, Son	1	50.2/50.5, 0.0/0.2	117	154

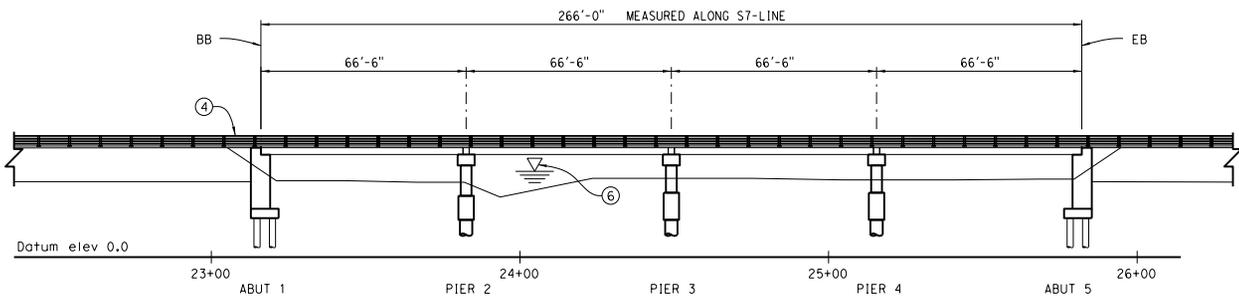
V. Ramakrishnan		12-14-2015
REGISTERED CIVIL ENGINEER	DATE	
Vijayarani Ramakrishnan		
6-6-16		
PLANS APPROVAL DATE		

PROFESSIONAL ENGINEER	No. C 63091
Exp. 06/30/2018	CIVIL
STATE OF CALIFORNIA	

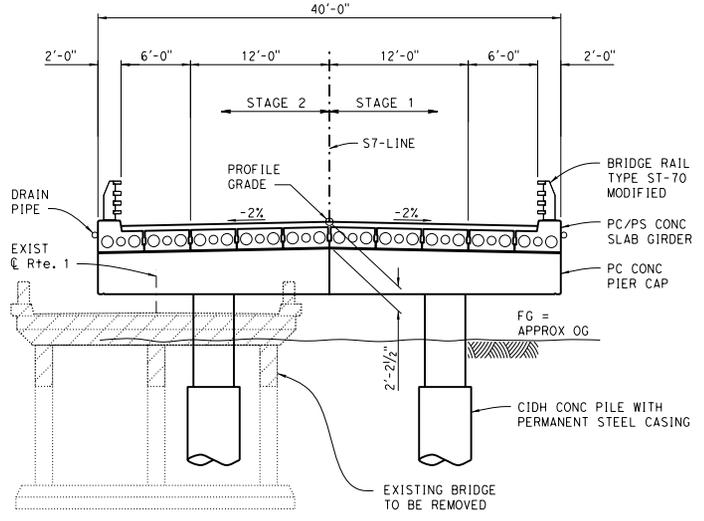
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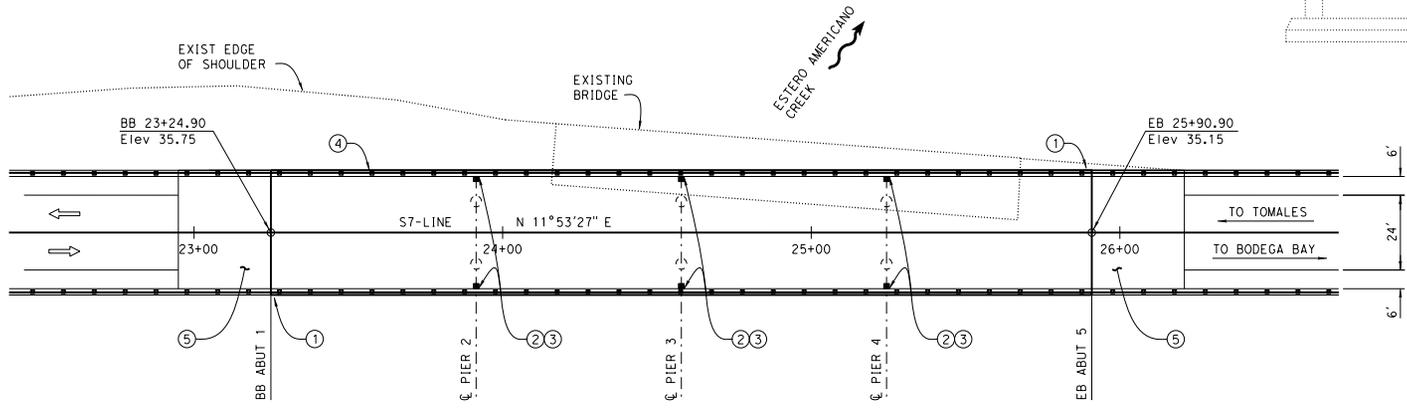
PROFILE GRADE
no scale



ELEVATION
1" = 20'



TYPICAL SECTION
3/8" = 1'-0"



PLAN
1" = 20'

LEGEND

- ① Place Sign on Post at BB and EB printed with: "Bridge Name: Estero Americano Bridge", "Bridge No. 27-0121" and year completed.
 - ② Paint Pier Number on Face of Curb.
 - ③ Deck Drain, see: "Deck Drainage Layout" sheet.
 - ④ Bridge Railing ST-70, Modified.
 - ⑤ Structure Approach, Type N(30S).
 - ⑥ See: "Hydraulic / Hydrology Data" on "Foundation Plan" sheet.
- Indicates existing structure.
 Indicates structure removal.

DESIGN	BY	CHECKED
	V. Ramakrishnan	J. Peterson / L. Bahia
DETAILS	BY	CHECKED
	T. Mason	J. Peterson / L. Bahia
QUANTITIES	BY	CHECKED
	V. Ramakrishnan / L. Bahia	A. Pearson

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 14

BRIDGE NO.	27-0121
POST MILE	50.5

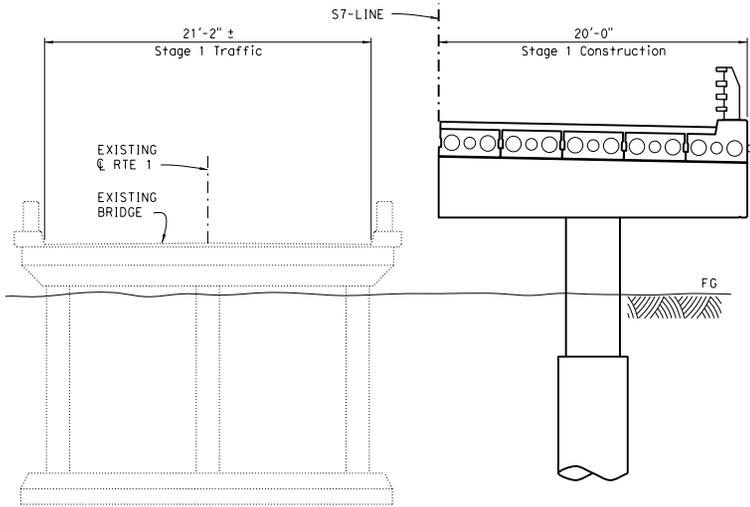
ESTERO AMERICANO BRIDGE (REPLACE)
STRUCTURE PLAN

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mfn, Son	1	50.27/50.5, 0.0/0.2	118	154

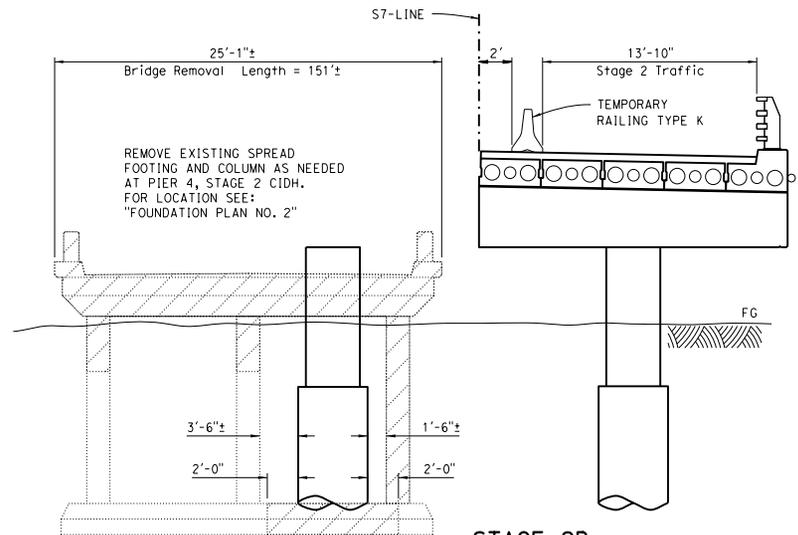
V. Ramakrishnan
 REGISTERED CIVIL ENGINEER DATE: 12-14-2015
 VIJAYARAMI RAMAKRISHNAN
 No. C 63091
 Exp. 06/30/2018
 CIVIL ENGINEER
 STATE OF CALIFORNIA

PLANS APPROVAL DATE: 6-6-16

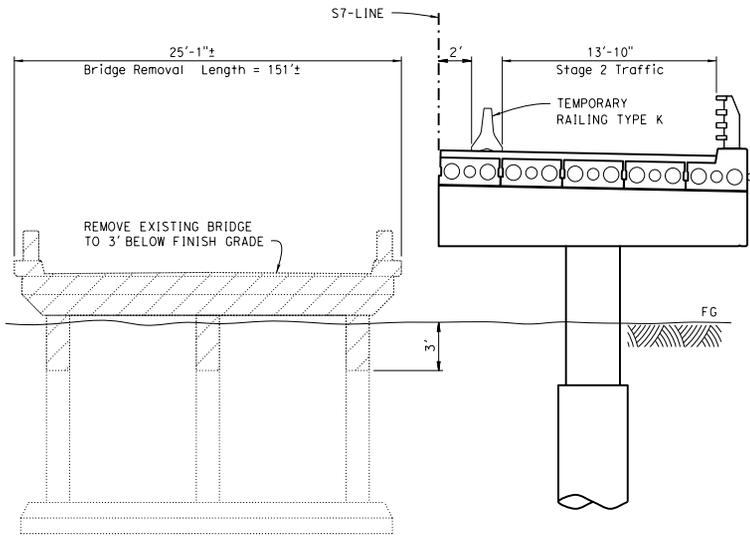
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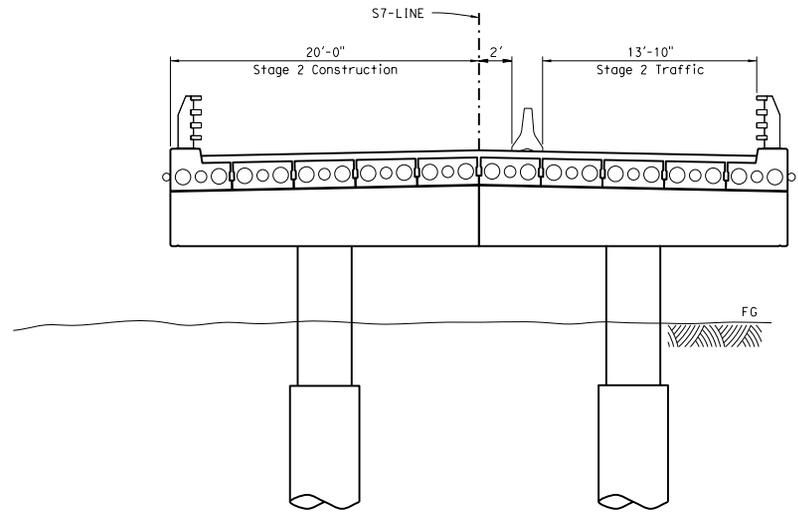
STAGE 1
 1/4" = 1'-0"



STAGE 2B
 1/4" = 1'-0"



STAGE 2A
 1/4" = 1'-0"



STAGE 2C
 1/4" = 1'-0"

--- Indicates existing structure.
 [Hatched] Indicates structure removal.

DESIGN	BY	CHECKED
	V. Ramakrishnan	J. Peterson / L. Bahia
DETAILS	BY	CHECKED
	T. Mason	J. Peterson / L. Bahia
QUANTITIES	BY	CHECKED
	V. Ramakrishnan / L. Bahia	A. Pearson

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
DESIGN BRANCH 14

BRIDGE NO.	27-0121
POST MILE	50.5

ESTERO AMERICANO BRIDGE (REPLACE)
STAGE CONSTRUCTION

DATE PLOTTED => 30-AUG-2016 USERNAME => s127888 14827

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mfn. Son	1	50.27/50.5, 0.0/0.2	119	154

V. Ramakrishnan
 REGISTERED CIVIL ENGINEER DATE: 12-14-2015
 VIJAYARAMI RAMAKRISHNAN
 REGISTERED PROFESSIONAL ENGINEER
 No. C 63091
 Exp. 06/30/2018
 CIVIL
 STATE OF CALIFORNIA

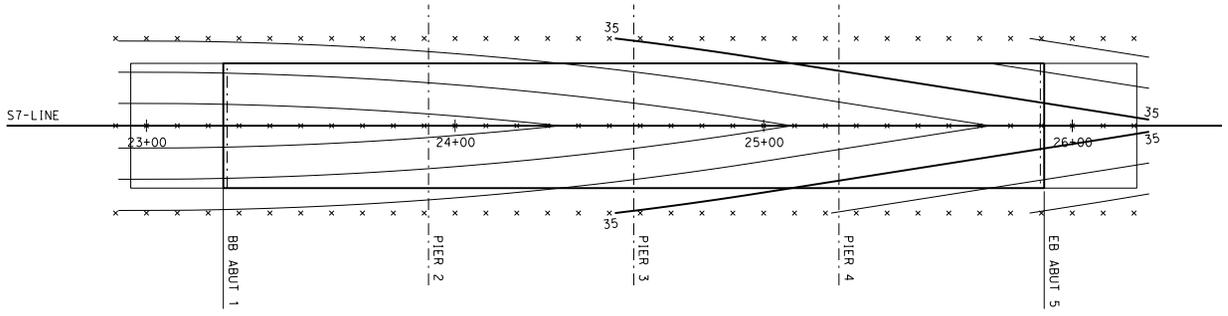
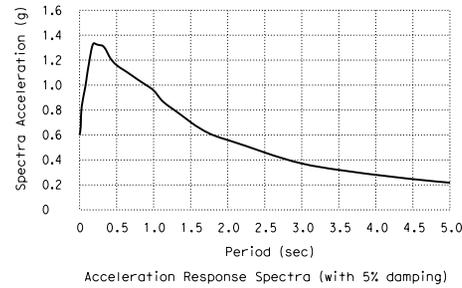
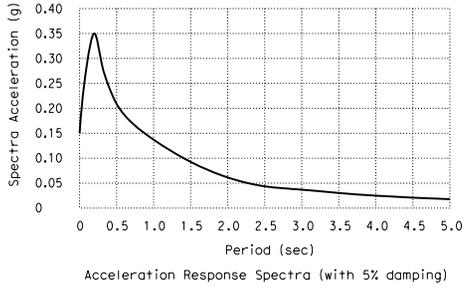
PLANS APPROVAL DATE: 6-6-16

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IMMEDIATE DEFLECTION In Inches

Location	Deck		Rail and Future Waring Surface	
	1/4Span	1/2Span	1/4Span	1/2Span
Span 1	0.5	0.71	0.16	0.21
Span 2	0.5	0.71	0.02	0.07
Span 3	0.5	0.71	0.04	0.07
Span 4	0.5	0.71	0.12	0.21

Immediate Deflection components are informational for setting screed line elevations. Screed line elevations for Deck Concrete will be determined by the Engineer.



DECK CONTOURS
1" = 20'

Notes:
 x - 10' Interval along station line.
 Contour interval = 0.2'
 Contours do not include camber.



DESIGN BY: V. Ramakrishnan CHECKED: J. Peterson DETAILS BY: T. Mason CHECKED: J. Peterson QUANTITIES BY: V. Ramakrishnan / L. Bahia CHECKED: A. Pearson	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 14	BRIDGE NO.: 27-0121 POST MILE: 50.5 UNIT: 3613 PROJECT NUMBER & PHASE: 0412000116 CONTRACT NO.: 04-209504
ESTERO AMERICANO BRIDGE (REPLACE) DECK CONTOURS			SHEET 5 OF 40 DATE PLOTTED: 30-AUG-2016 14:28 USERNAME: s127888

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS DISREGARD PRINTS BEARING EARLIER REVISION DATES

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mfn, Son	1	50.2/50.5, 0.0/0.2	120	154

V. Ramakrishnan
 REGISTERED CIVIL ENGINEER DATE 11-01-2015
 6-6-16
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 Vijayaram Ramakrishnan
 No. C. 63091
 Exp. 06/30/2018
 CIVIL
 STATE OF CALIFORNIA

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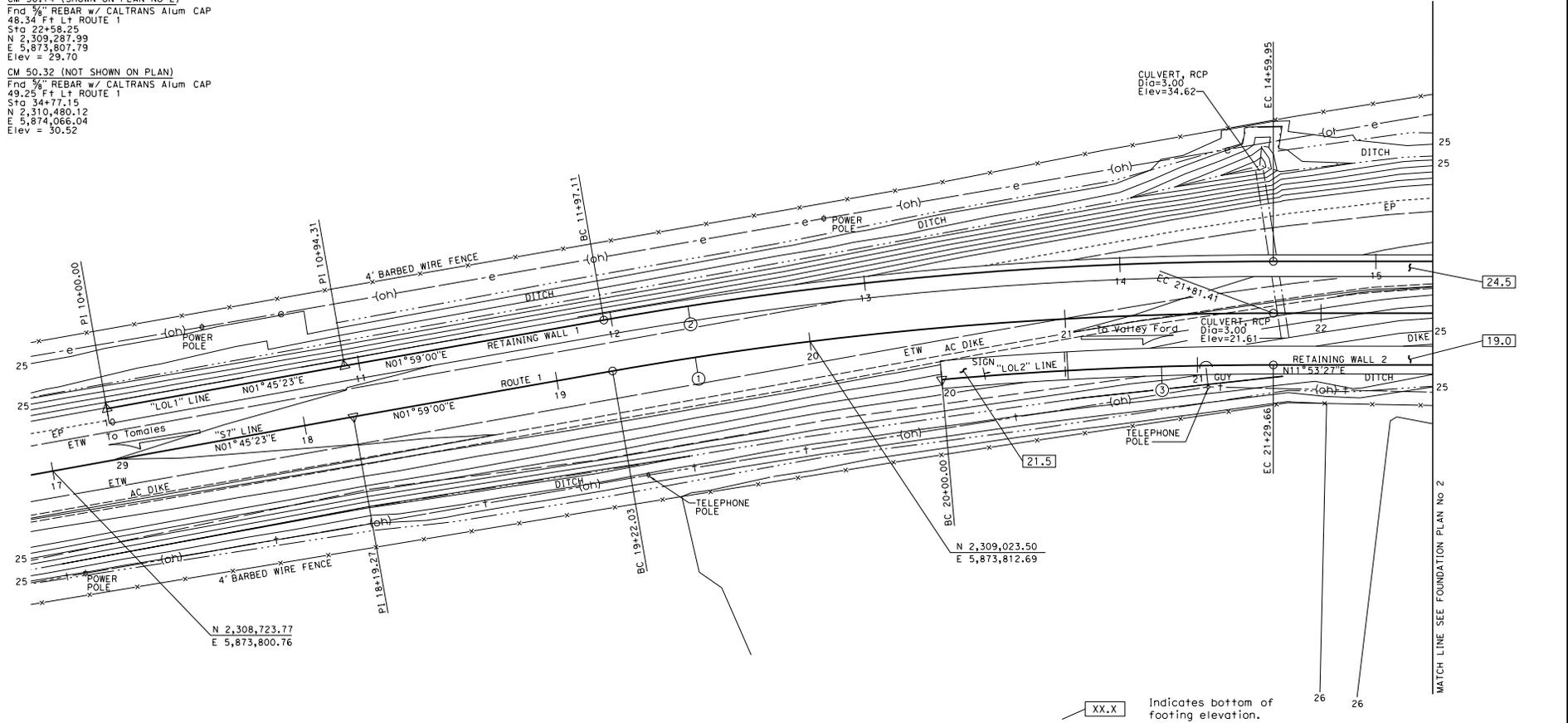
CURVE DATA

No.	⊙	R	Δ	T	L
1		1500.00	09°54'27"	130.01	259.38
2		1520.00	09°54'27"	131.75	262.84
3		1480.00	05°01'10"	64.87	129.66

SURVEY CONTROL

CM 50.14 (SHOWN ON PLAN No 2)
 Fnd 5/8" REBAR w/ CALTRANS Alum CAP
 48.34 Ft Lt ROUTE 1
 Sta 22+58.25
 N 2,309,287.99
 E 5,873,807.79
 Elev = 29.70

CM 50.32 (NOT SHOWN ON PLAN)
 Fnd 5/8" REBAR w/ CALTRANS Alum CAP
 49.25 Ft Lt ROUTE 1
 Sta 34+77.15
 N 2,310,480.12
 E 5,874,066.04
 Elev = 30.52



PRELIMINARY INVESTIGATION SECTION

SCALE	VERT. DATUM	NAVD88	PHOTOGRAMMETRY	AS OF: X
1"=20'	HORIZ. DATUM	NAD83	SURVEYED	BY DISTRICT
ALIGNMENT TIES	DIST	TRaverse SHEET	DRAFTED	BY T. ZOLNIKOV 05/2015
STRUCTURES FOUNDATION PLAN SHEET (ENGLISH) (REV. 09-01-10)	CHECKED	BY J. BORDEN 05/2015	CHECKED	BY S. SOU 05/2015

DESIGN	BY V. Ramakrishnan	CHECKED	L. Bahia
DETAILS	BY T. Mason	CHECKED	L. Bahia
QUANTITIES	BY V. Ramakrishnan	CHECKED	A. Pearson

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 14

BRIDGE NO. 27-0121
 POST MILE 50.5

ESTERO AMERICANO BRIDGE (REPLACE)
FOUNDATION PLAN No. 1

SUBMITTAL DATE	REVISION DATES	SHEET	OF
06/08/15	07/08/15	6	40

USERNAME => 93127688 DATE PLOTTED => 30-AUG-2016 TIME PLOTTED => 14:28

HYDRAULIC / HYDROLOGY DATA			
ESTERO AMERICANO CREEK			
Drainage Area = 17.6 sq mi.	Design Flood	Base Flood	Channel Capacity
Frequency	50 Year	100 Year	N/A
Discharge	5,380 cfs	6,174 cfs	N/A
Proposed Water Surface Elevation at Face of Bridge	29.8 ft	30.4 ft	N/A

SCOUR DATA TABLE		
Support	Long Term (Degradation and Contraction) Scour Elevation (ft)	Short Term (Local) Scour Depth (ft)
Abutments	14.0'	10.0'
Piers	13.0'	8.0'

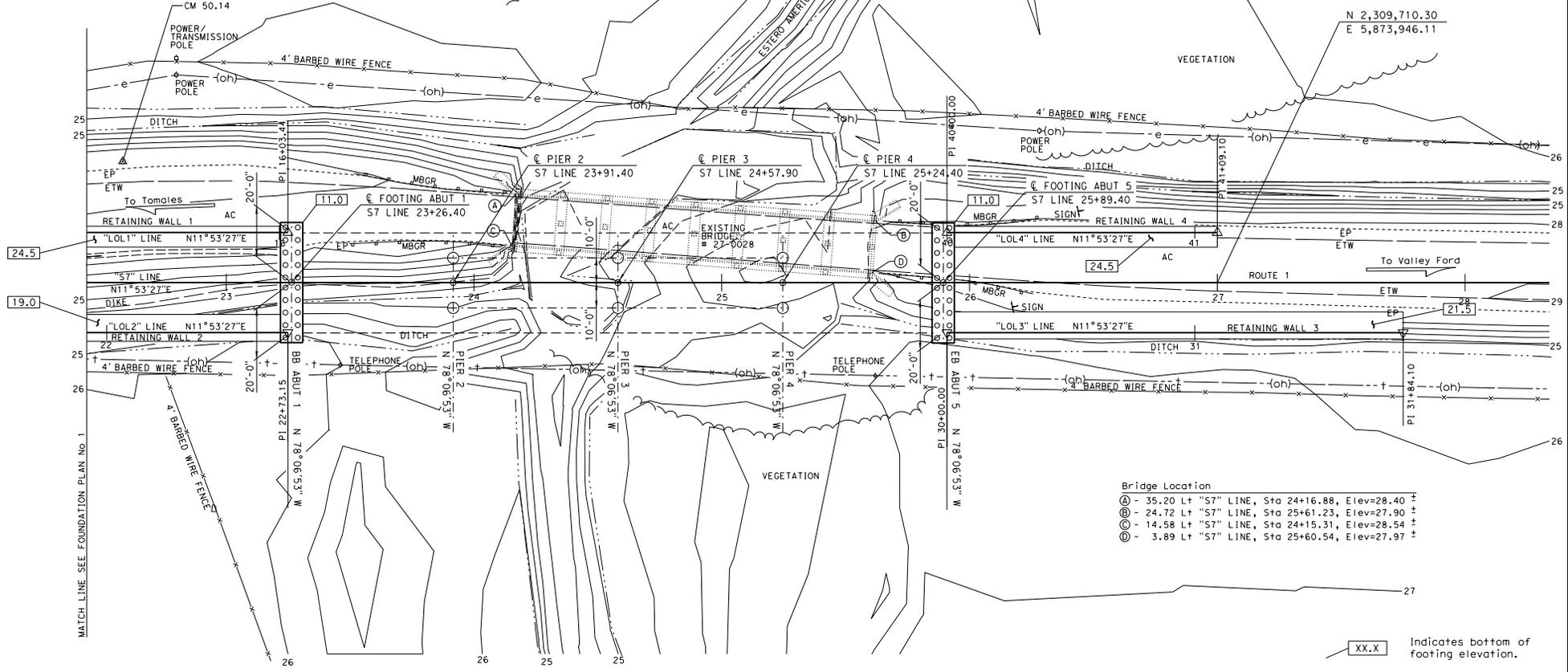
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mtn. Son	1	50.2/50.5, 0.0/0.2	121	154

V. Ramakrishnan
 REGISTERED CIVIL ENGINEER DATE 11-01-2015
 6-6-16
 PLANS APPROVAL DATE

PROFESSIONAL SEAL: Vijayarani Ramakrishnan, No. C. 63091, Exp. 06/30/2018, CIVIL ENGINEER, STATE OF CALIFORNIA

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Flood Plain Data is based on information available when the Plans were prepared and shown to meet Federal requirements. The accuracy of said information is not warranted by the State and interested or affected Parties should make their own investigation.



- Bridge Location
- Ⓐ - 35.20 Lt "S7" LINE, Sta 24+16.88, Elev=28.40 ±
 - Ⓑ - 24.72 Lt "S7" LINE, Sta 25+61.23, Elev=27.90 ±
 - Ⓒ - 14.58 Lt "S7" LINE, Sta 24+15.31, Elev=28.54 ±
 - Ⓓ - 3.89 Lt "S7" LINE, Sta 25+60.54, Elev=27.97 ±

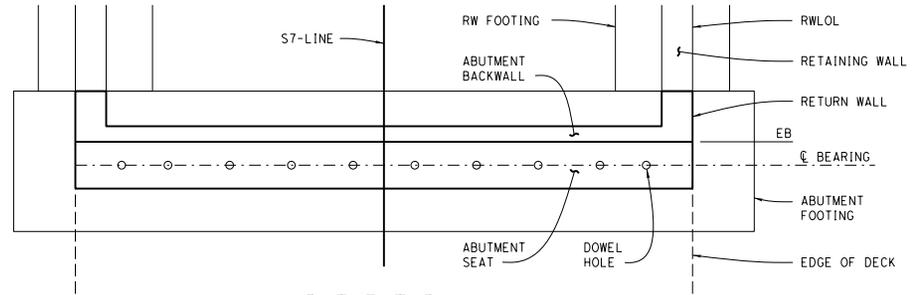
PRELIMINARY INVESTIGATION SECTION				DESIGN	BY V. Ramakrishnan	CHECKED L. Bahia	STATE OF CALIFORNIA	DIVISION OF ENGINEERING SERVICES	BRIDGE NO. 27-0121	ESTERO AMERICANO BRIDGE (REPLACE)	
SCALE	VERT. DATUM NAVD88	PHOTOGRAMMETRY AS OF: X	DETAILS	BY T. Mason	CHECKED L. Bahia	DEPARTMENT OF TRANSPORTATION	DESIGN BRANCH 14	POST MILE 50.5	FOUNDATION PLAN No. 2		
ALIGNMENT TIES Dis+ TRAVERSE SHEET	DRAFTED BY T. ZOLNIKOV 05/2015	CHECKED BY S. SOU 05/2015	QUANTITIES	BY V. Ramakrishnan	CHECKED A. Pearson				UNIT: 3646	PROJECT NUMBER & PHASE: 0412000116 1	CONTRACT NO.: 04-209504
STRUCTURES FOUNDATION PLAN SHEET (ENGLISH) (REV. 09-01-10)						ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		SUBMITTAL DATE 06/09/15		REVISION DATES	SHEET 7 OF 40

FILE => 27-0121 - 07 Foundation Plan2.dgn

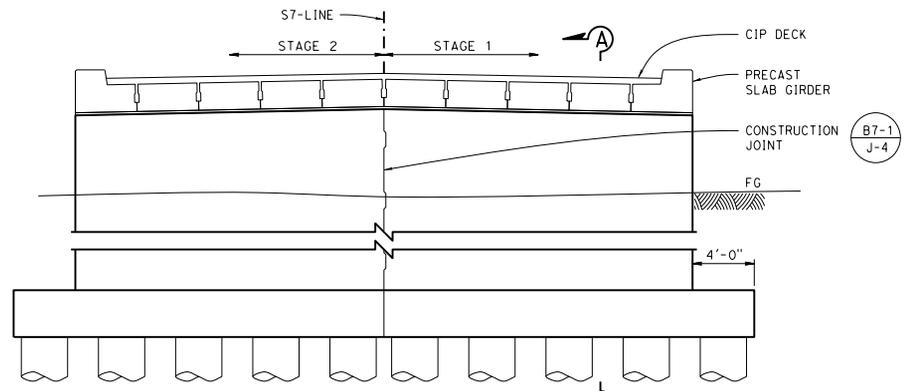
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mfn, Son	1	50.27/50.5, 0.0/0.2	122	154

V. Ramakrishnan		12-14-2015
REGISTERED CIVIL ENGINEER	DATE	
6-6-16		
PLANS APPROVAL DATE		

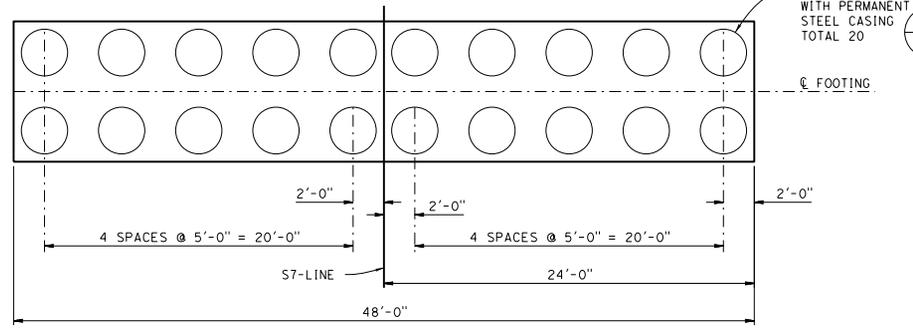
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ABUTMENT PLAN
1/4" = 1'-0"

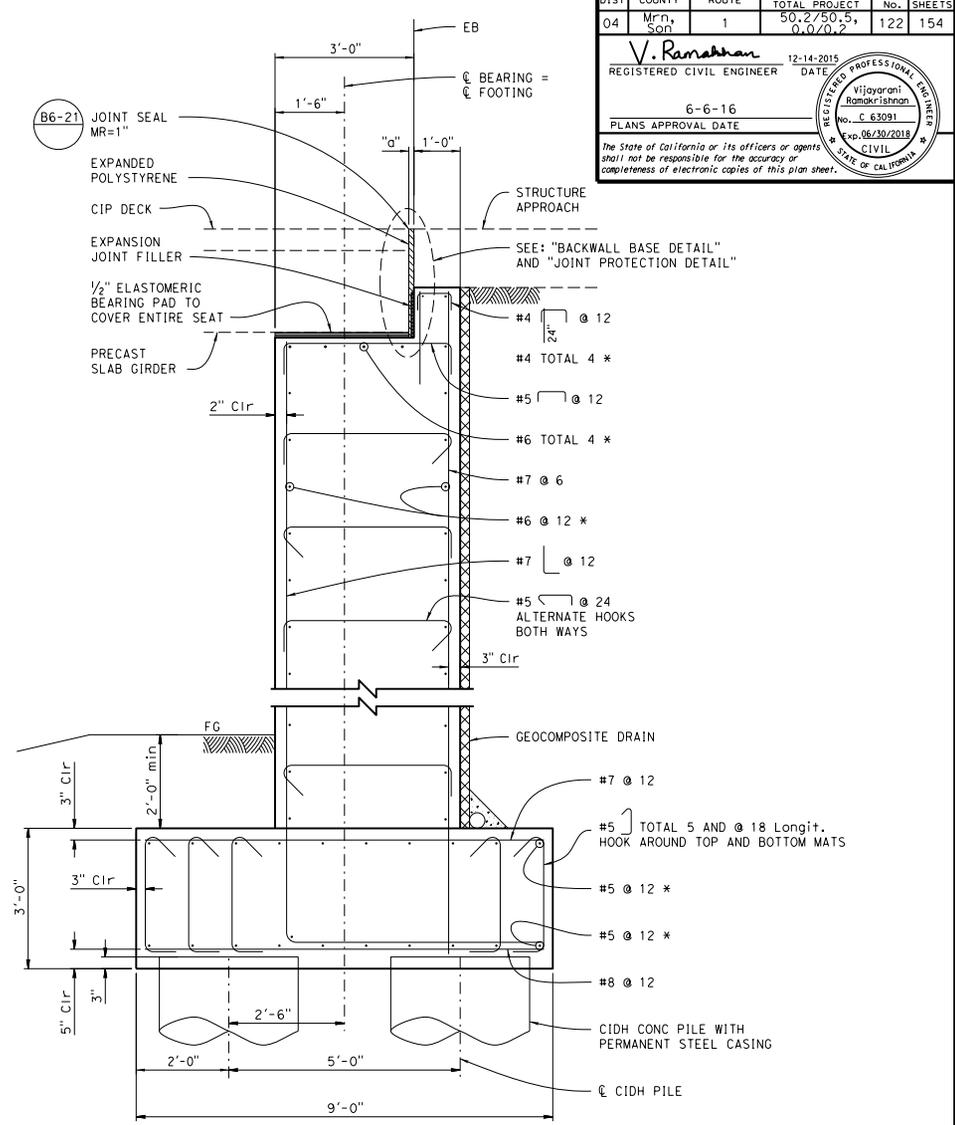


ABUTMENT ELEVATION
1/4" = 1'-0"



ABUTMENT FOOTING PLAN
1/4" = 1'-0"

Abutment 5 shown
Abutment 1 similar



ABUTMENT SECTION A-A
3/4" = 1'-0"

* Extend Stage 1 Abutment
Longitudinal reinforcement 3'
and lap splice with Stage 2 reinf.

DESIGN BY V. Ramakrishnan CHECKED L. Bahia			BRIDGE NO. 27-0121		ESTERO AMERICANO BRIDGE (REPLACE)
DETAILS BY T. Mason CHECKED L. Bahia			PROJECT NUMBER & PHASE: 0412000116		
QUANTITIES BY V. Ramakrishnan / L. Bahia CHECKED A. Pearson			CONTRACT NO.: 04-209504		ABUTMENT LAYOUT
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			DISREGARD PRINTS BEARING EARLIER REVISION DATES		

STATE OF CALIFORNIA	DIVISION OF ENGINEERING SERVICES	BRIDGE NO.	27-0121
DEPARTMENT OF TRANSPORTATION	STRUCTURE DESIGN	PROJECT NUMBER & PHASE:	0412000116
	DESIGN BRANCH	POST MILE	50.5

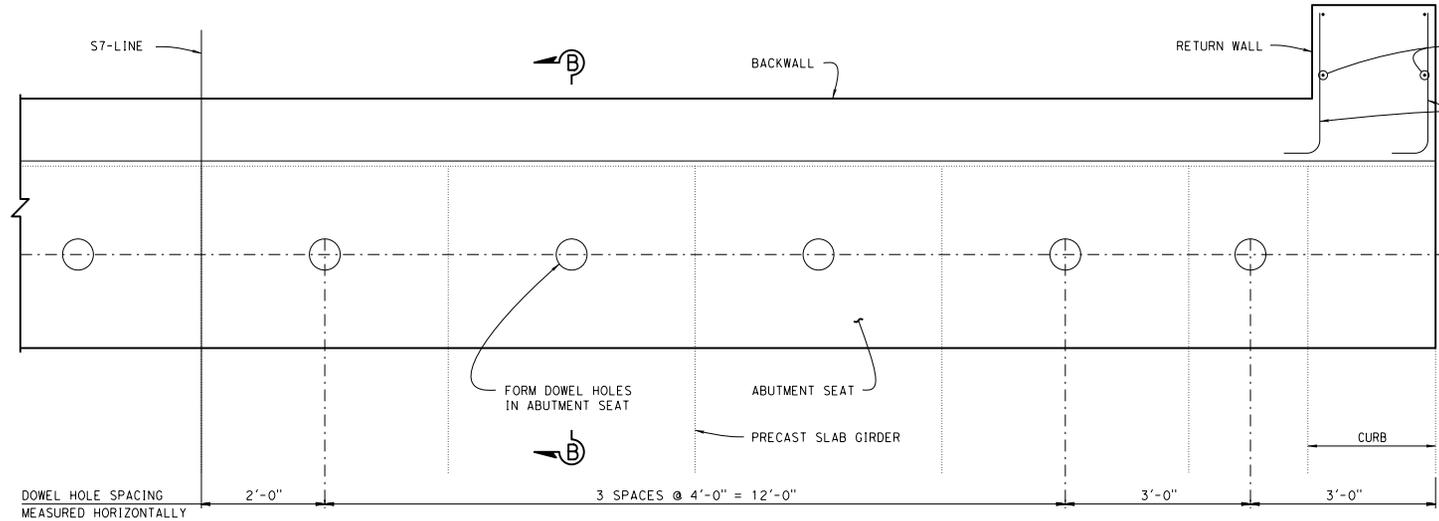
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	UNIT: 3613	REVISION DATES	SHEET	OF
FILE => 27-0121 - 08 Abut Layout.dgn	PROJECT NUMBER & PHASE: 0412000116	CONTRACT NO.: 04-209504	8	40

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mfn, Son	1	50.27/50.5, 0.0/0.2	123	154

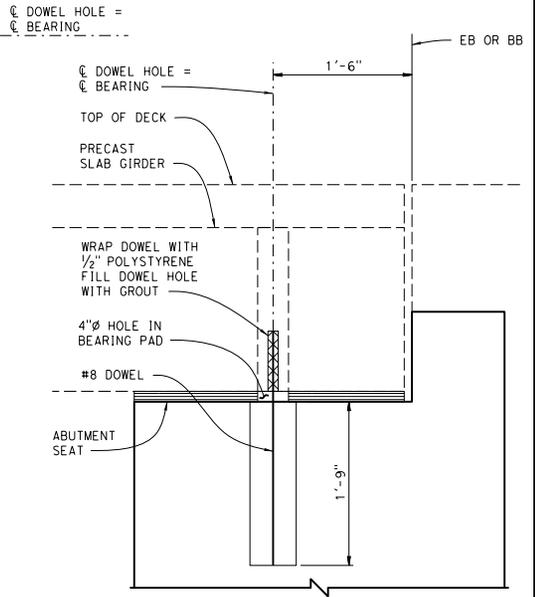
V. Ramakrishnan
 REGISTERED CIVIL ENGINEER DATE 12-14-2015
 VIJAYARAM RAMAKRISHNAN
 No. C 63091
 Exp. 06/30/2018
 CIVIL
 STATE OF CALIFORNIA

PLANS APPROVAL DATE 6-6-16

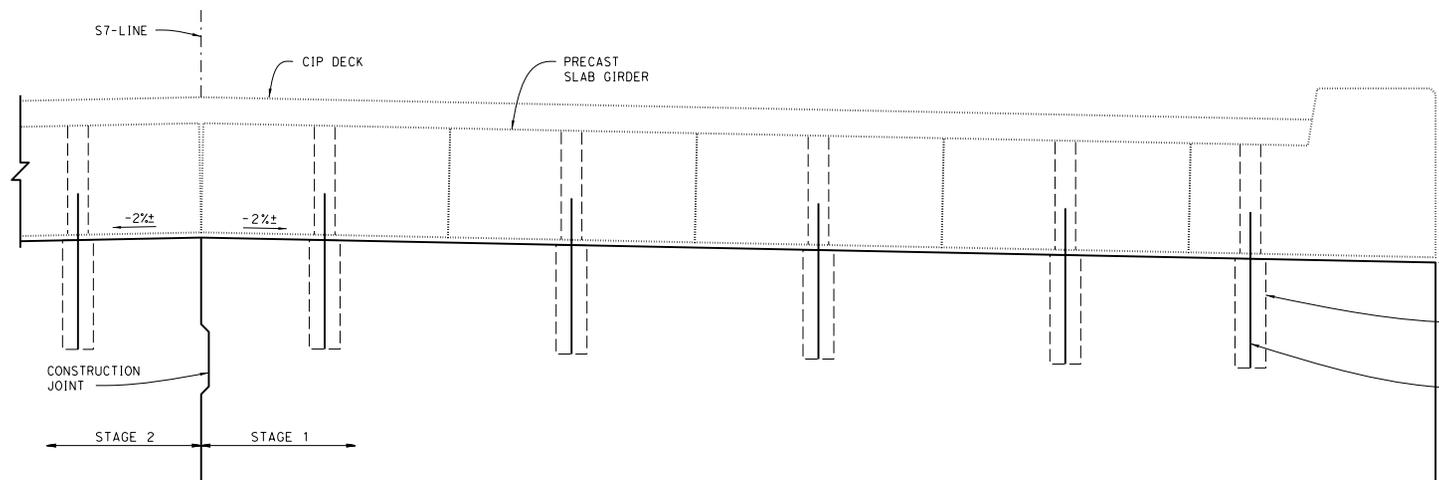
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ABUTMENT SEAT PLAN
 1" = 1'-0"



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



ABUTMENT SEAT ELEVATION
 1" = 1'-0"

Abutment 5 Stage 1 shown,
 Abutment 1 and Stage 2 similar.

DESIGN	BY V. Ramakrishnan	CHECKED L. Bahia
DETAILS	BY T. Mason	CHECKED L. Bahia
QUANTITIES	BY V. Ramakrishnan / L. Bahia	CHECKED A. Pearson

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
DESIGN BRANCH 14

BRIDGE NO. 27-0121
 POST MILE 50.5

ESTERO AMERICANO BRIDGE (REPLACE)
ABUTMENT DETAILS NO. 1

UNIT: 3613
 PROJECT NUMBER & PHASE: 0412000116
 CONTRACT NO.: 04-209504

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
11-20-2012-11-2012	9	40

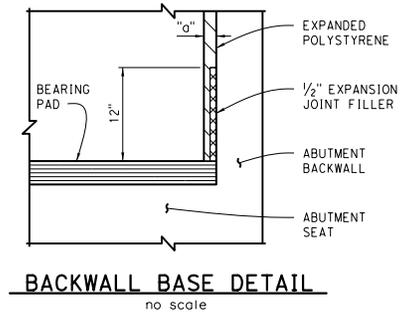
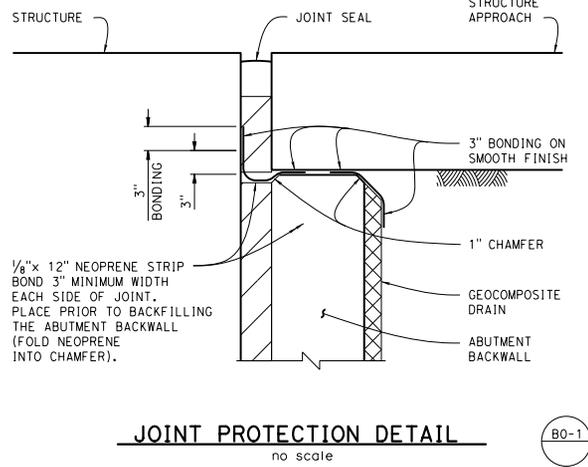
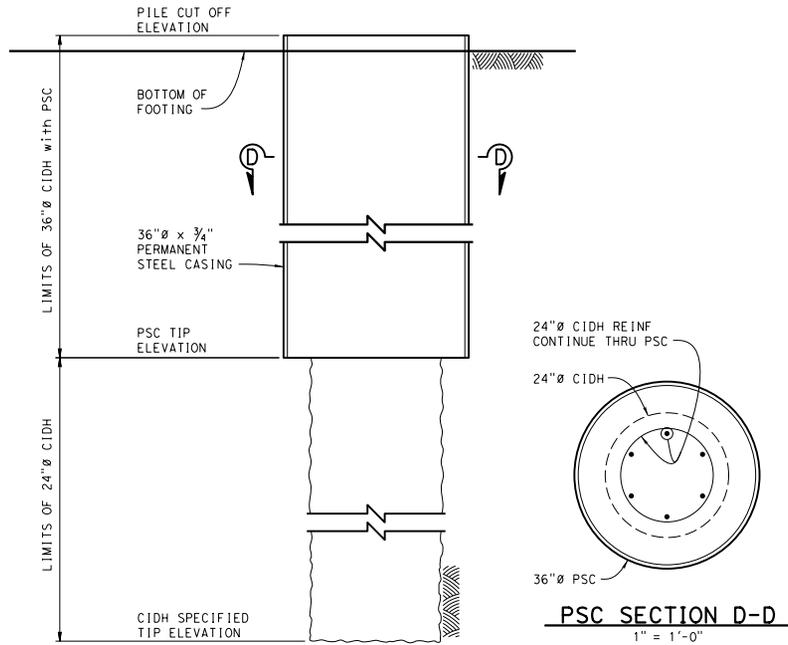
DATE PLOTTED => 30-AUG-2016
 USERNAME => s127688

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mfn, Son	1	50.2/50.5, 0.0/0.2	124	154

V. Ramakrishnan
REGISTERED CIVIL ENGINEER DATE 12-14-2015
Vijayarani Ramakrishnan
No. C 63091
Exp. 06/30/2018
CIVIL ENGINEER
STATE OF CALIFORNIA

PLANS APPROVAL DATE 6-6-16

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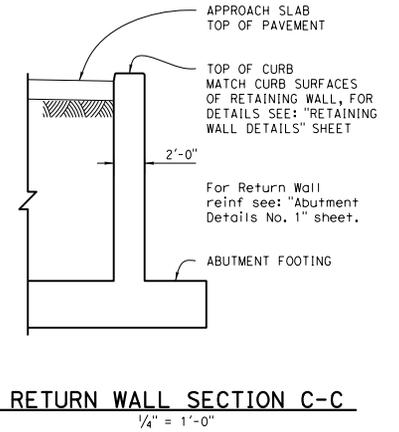
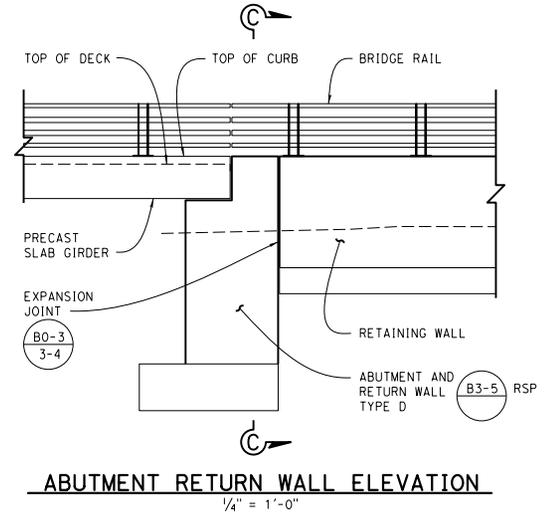


ABUTMENT CIDH CONCRETE PILE WITH PERMANENT STEEL CASING
no scale

For CIDH Pile details see: **B2-3**

ABUTMENT PILE DATA						
CIDH CONCRETE PILE WITH PERMANENT STEEL CASING						
LOCATION	NOMINAL RESISTANCE COMPRESSION	TENSION	PILE CUT-OFF ELEVATION	DESIGN TIP ELEVATION	24" \varnothing CIDH SPECIFIED TIP ELEVATION	36" \varnothing PSC TIP ELEVATION
Abut 1	380 kips	150 kips	11.25'	(a-I) -10.0' (a-II) -2.0' (b) -5.0'	-10.0'	6.0'
Abut 5	380 kips	150 kips	11.25'	(a-I) -10.0' (a-II) -2.0' (b) -5.0'	-10.0'	6.0'

Design tip elevation are controlled by the following demands:
(a-I) Compression, (a-II) Tension, (b) Lateral Load
The Specified Tip Elevation shall not be raised.
Abutment Scour Elevation 14.0'.



DESIGN BY: V. Ramakrishnan	CHECKED: L. Bahia	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 14	BRIDGE NO.: 27-0121
DETAILS BY: T. Mason	CHECKED: L. Bahia			POST MILE: 50.5
QUANTITIES BY: V. Ramakrishnan / L. Bahia	CHECKED: A. Pearson	PROJECT NUMBER & PHASE: 0412000116		CONTRACT NO.: 04-209504

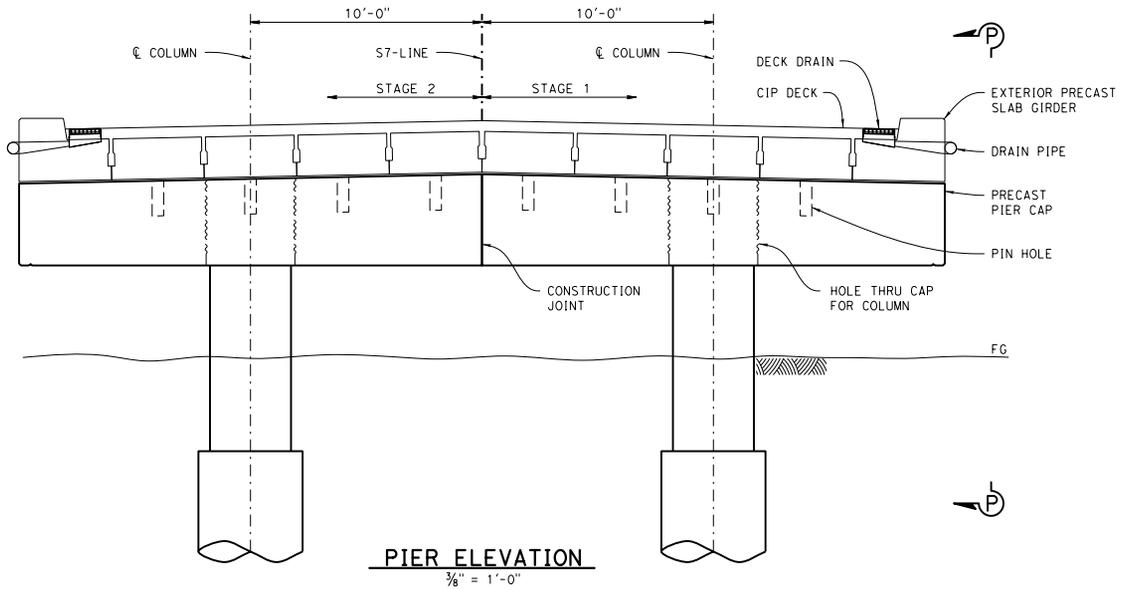
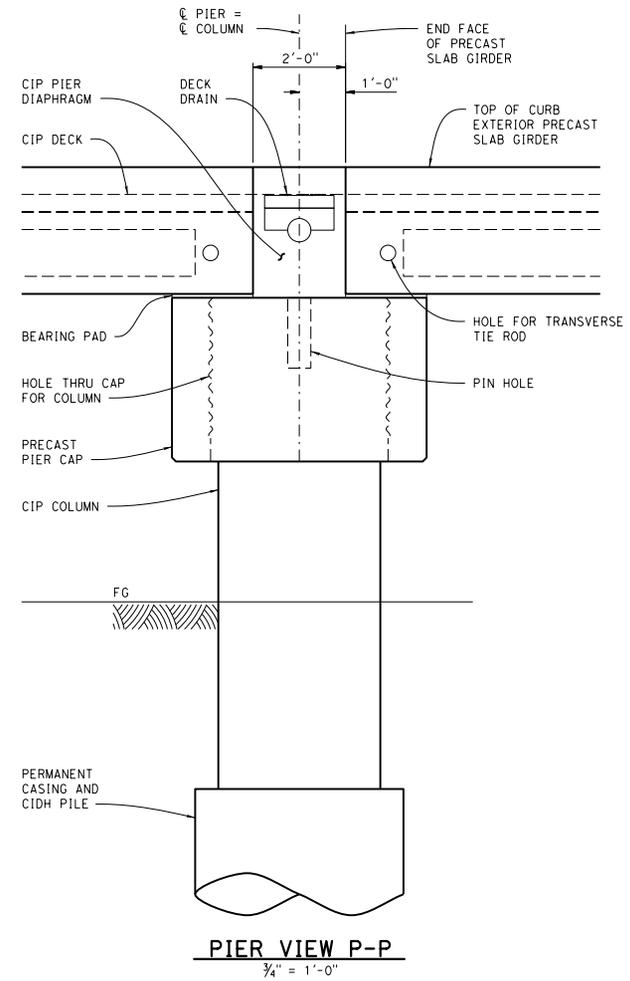
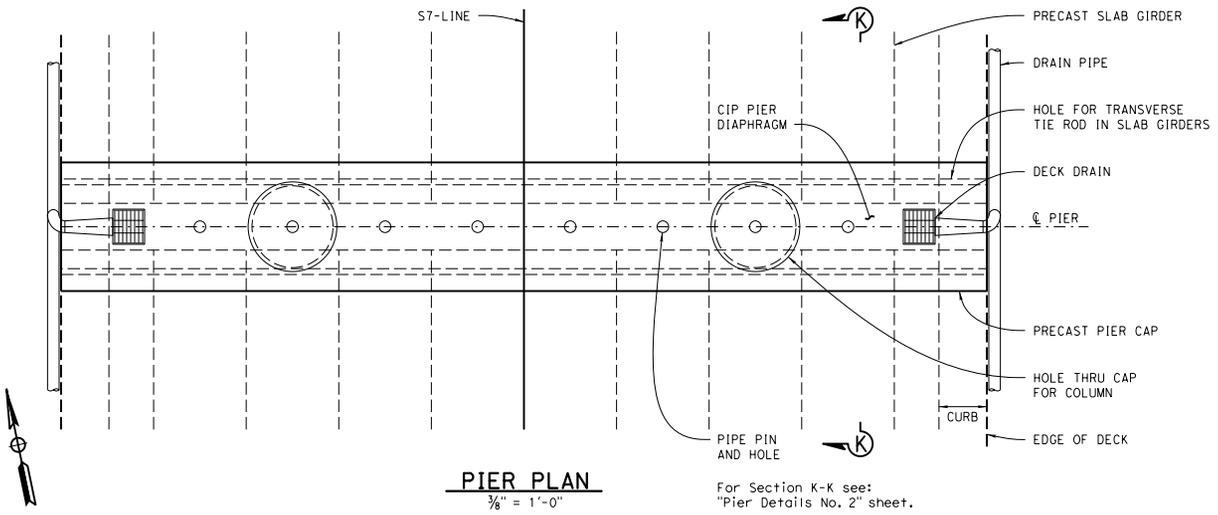
ESTERO AMERICANO BRIDGE (REPLACE)		ABUTMENT DETAILS NO. 2	
REVISION DATES	SHEET 10	OF 40	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mfn, Son	1	50.2/50.5, 0.0/0.2	125	154

V. Ramakrishnan
 REGISTERED CIVIL ENGINEER DATE 12-14-2015
 VIJAYARAMI Ramakrishnan
 No. C. 63091
 Exp. 06/30/2018
 CIVIL ENGINEER
 STATE OF CALIFORNIA

PLANS APPROVAL DATE 6-6-16

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DESIGN	BY V. Ramakrishnan	CHECKED L. Bahia
DETAILS	BY T. Mason	CHECKED L. Bahia
QUANTITIES	BY V. Ramakrishnan / L. Bahia	CHECKED A. Pearson

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
DESIGN BRANCH 14

ESTERO AMERICANO BRIDGE (REPLACE)
PIER LAYOUT

DATE PLOTTED => 30-AUG-2016 TIME PLOTTED => 14:28 USERNAME => s127688

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mfn, Son	1	50.2/50.5, 0.0/0.2	126	154

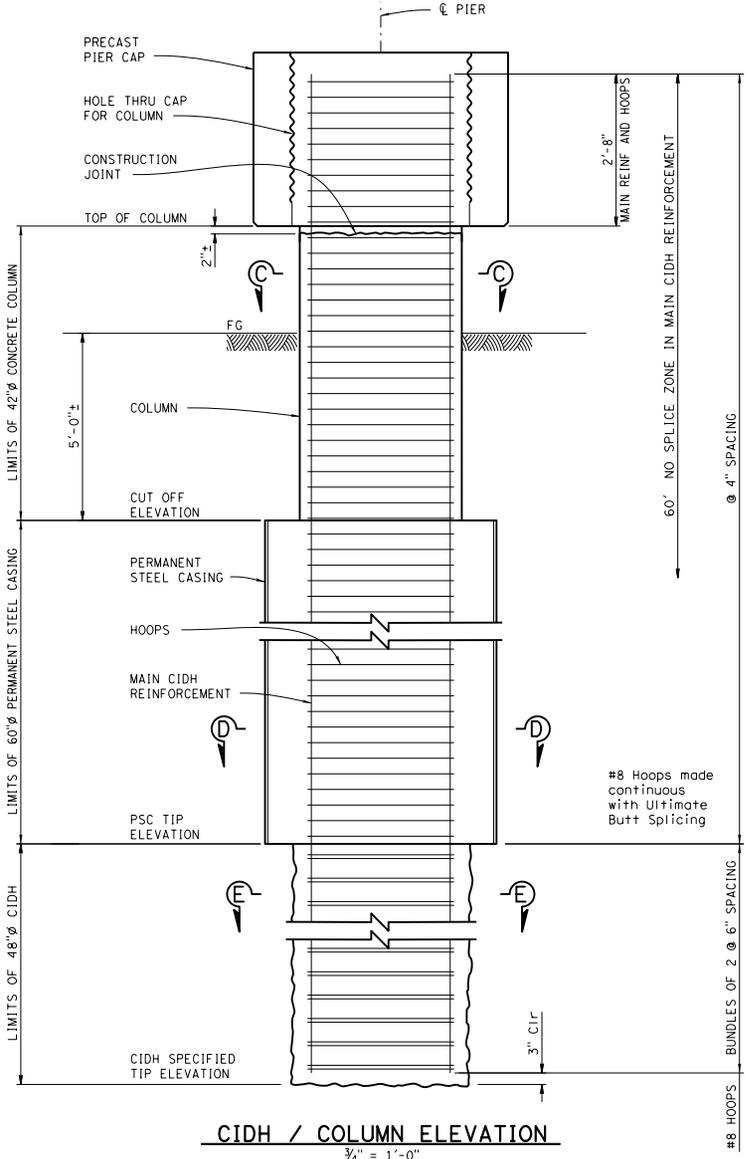
V. Ramakrishnan
 REGISTERED CIVIL ENGINEER DATE 12-14-2015
 VIJAYARAMI RAMAKRISHNAN
 REGISTERED PROFESSIONAL ENGINEER
 No. C 63091
 Exp. 06/30/2018
 CIVIL
 STATE OF CALIFORNIA

6-6-16
 PLANS APPROVAL DATE

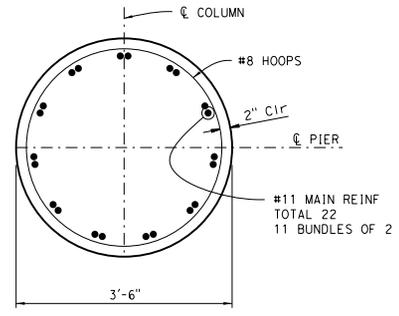
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

PIER PILE DATA							
CIDH CONCRETE PILE WITH PERMANENT STEEL CASING							
LOCATION		NOMINAL RESISTANCE		PILE CUT-OFF ELEVATION	DESIGN TIP ELEVATION	48"Ø CIDH SPECIFIED TIP ELEVATION	60"Ø PSC TIP ELEVATION
		COMPRESSION	TENSION				
Pier 2	L+ Column	2070 kips	790 kips	18.5'	-36.0'	-36.0'	5.0'
	R+ Column						
Pier 3	L+ Column	2070 kips	790 kips	18.0'	-36.0'	-36.0'	5.0'
	R+ Column						
Pier 4	L+ Column	2070 kips	790 kips	18.0'	-36.0'	-36.0'	5.0'
	R+ Column						

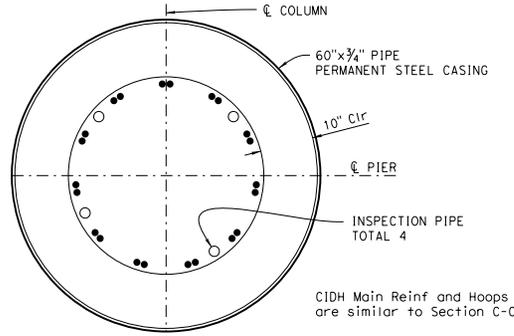
Design tip elevation are controlled by the following demands:
 (a-I) Compression, (a-II) Tension, (b) Lateral Load
 The Specified Tip Elevation shall not be raised.
 Pier Scour Elevation 13.0'.



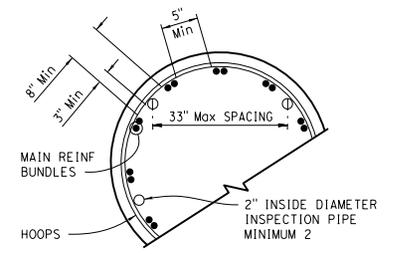
CIDH / COLUMN ELEVATION
 3/4" = 1'-0"



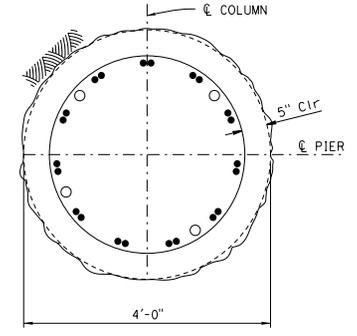
COLUMN SECTION C-C
 1" = 1'-0"



CIDH PERMANENT CASING SECTION D-D
 1" = 1'-0"



INSPECTION PIPE LAYOUT
 no scale



CIDH SECTION E-E
 1" = 1'-0"

DESIGN	BY V. Ramakrishnan	CHECKED L. Bahía
DETAILS	BY T. Mason	CHECKED L. Bahía
QUANTITIES	BY V. Ramakrishnan / L. Bahía	CHECKED A. Pegerson

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

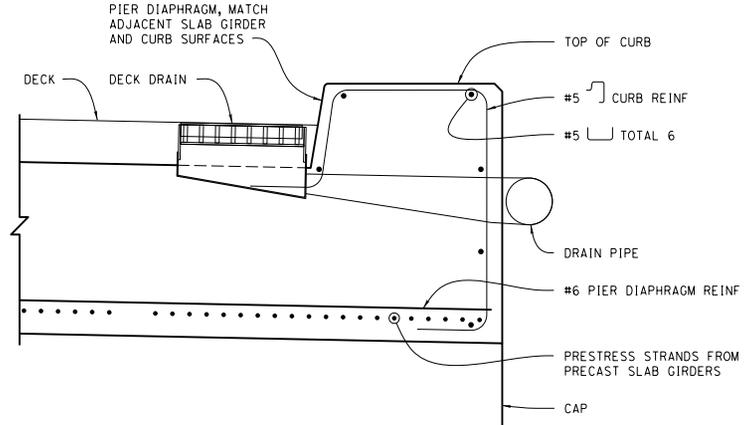
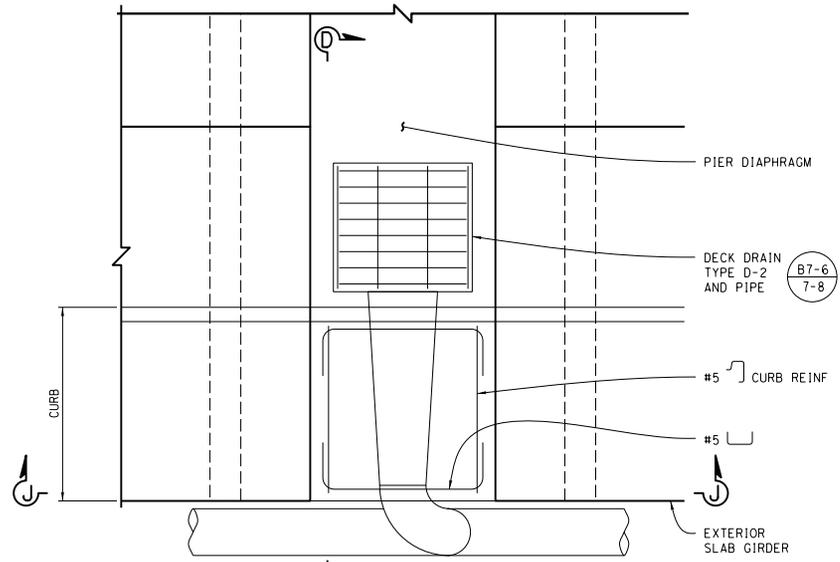
DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
DESIGN BRANCH 14

ESTERO AMERICANO BRIDGE (REPLACE)
PIER DETAILS NO. 1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mfn, Son	1	50.2/50.5, 0.0/0.2	127	154

V. Ramakrishnan
REGISTERED CIVIL ENGINEER DATE 12-14-2015
PLANS APPROVAL DATE 6-6-16
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REGISTERED PROFESSIONAL ENGINEER
Vijayarani Ramakrishnan
No. C 63091
Exp. 06/30/2018
STATE OF CALIFORNIA CIVIL

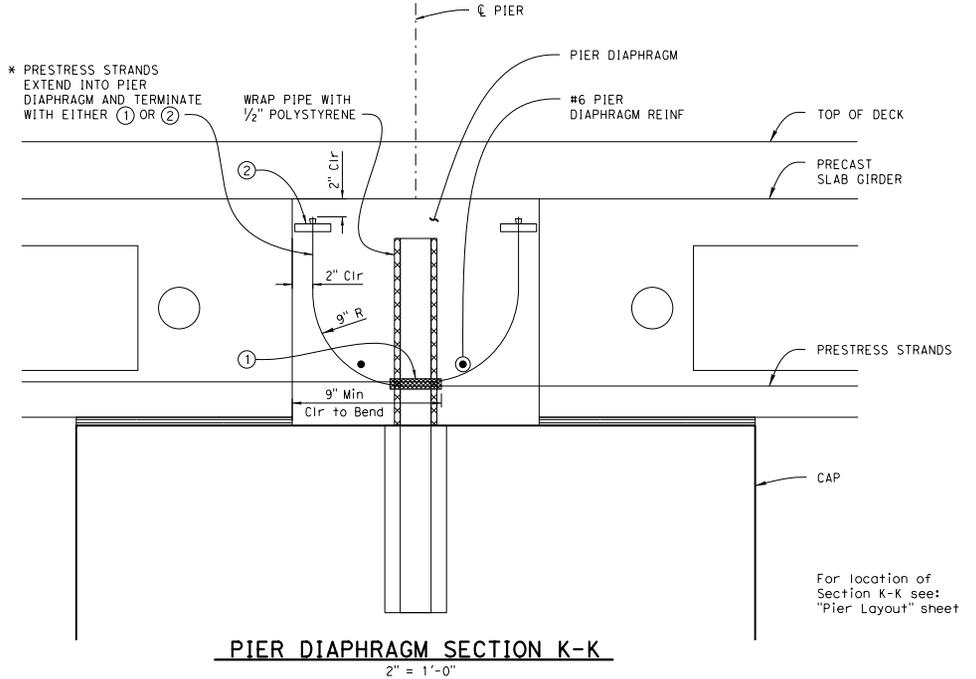
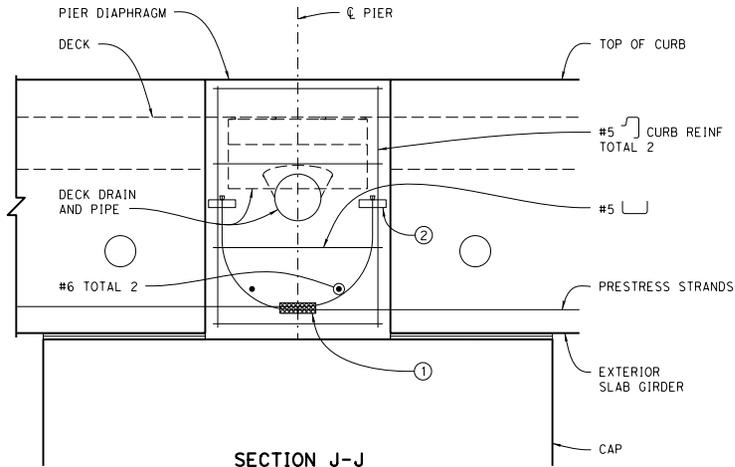


EXTEND PRESTRESS STRANDS

* At least one third of Prestress Strands shall extend into Pier Diaphragm and terminate with either:

- 1 A Mechanical Strand Coupler, couple opposing strands.
- or
- 2 Extend strands a minimum of 9" then bend upwards with a 9" radius. These Prestress Strands shall be headed with 4x4x1/4" L and Strand Chuck.

Avoid extending strands at dowel locations, leave 1" min. clear between dowel and strands.



DESIGN	BY V. Ramakrishnan	CHECKED L. Bahia
DETAILS	BY T. Mason	CHECKED L. Bahia
QUANTITIES	BY V. Ramakrishnan / L. Bahia	CHECKED A. Pearson

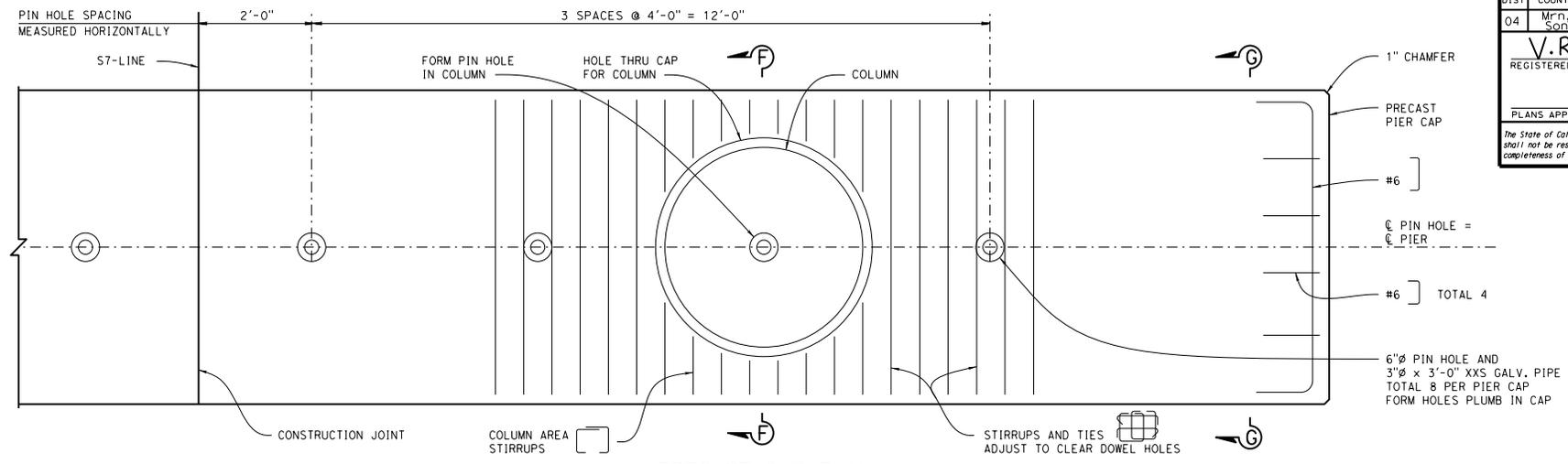
STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN	BRIDGE NO. 27-0121
	DESIGN BRANCH 14	POST MILE 50.5
	UNIT: 3613 PROJECT NUMBER & PHASE: 0412000116	CONTRACT NO.: 04-209504

ESTERO AMERICANO BRIDGE (REPLACE)	
PIER DETAILS NO. 2	
REVISION DATES	SHEET 13 OF 40

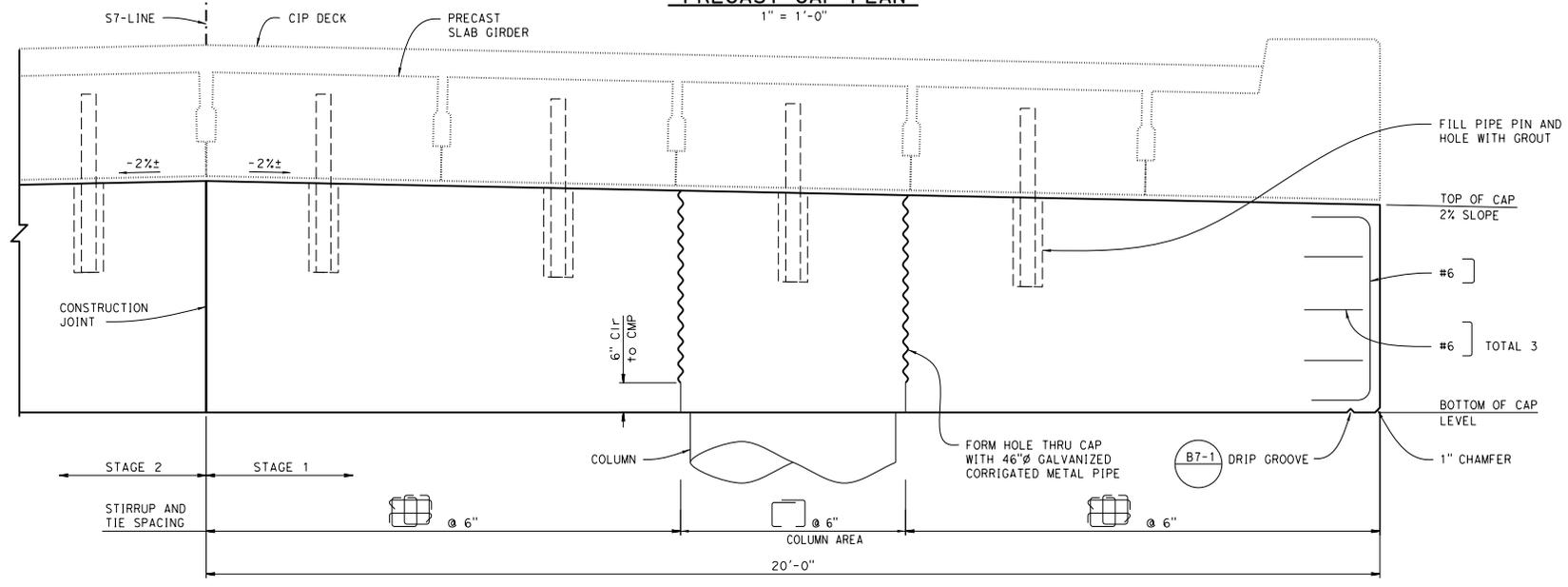
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mfn. Son	1	50.27/50.5, 0.0/0.2	128	154

V. Ramakrishnan
 REGISTERED CIVIL ENGINEER DATE: 12-14-2015
 No. C 63091
 PLANS APPROVAL DATE: 6-6-16
 Exp. 06/30/2018
 CIVIL ENGINEER
 STATE OF CALIFORNIA

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PRECAST CAP PLAN
 1" = 1'-0"



PRECAST CAP ELEVATION
 1" = 1'-0"

Stage 1 shown
 Stage 2 similar

DESIGN	BY V. Ramakrishnan	CHECKED L. Bahig
DETAILS	BY T. Mason	CHECKED L. Bahig
QUANTITIES	BY V. Ramakrishnan / L. Bahig	CHECKED A. Pearson

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
DESIGN BRANCH 14

BRIDGE NO. 27-0121
 POST MILE 50.5

ESTERO AMERICANO BRIDGE (REPLACE)
PIER CAP DETAILS NO. 1

UNIT: 3613
 PROJECT NUMBER & PHASE: 0412000116
 CONTRACT NO.: 04-209504

DISREGARD PRINTS BEARING EARLIER REVISION DATES

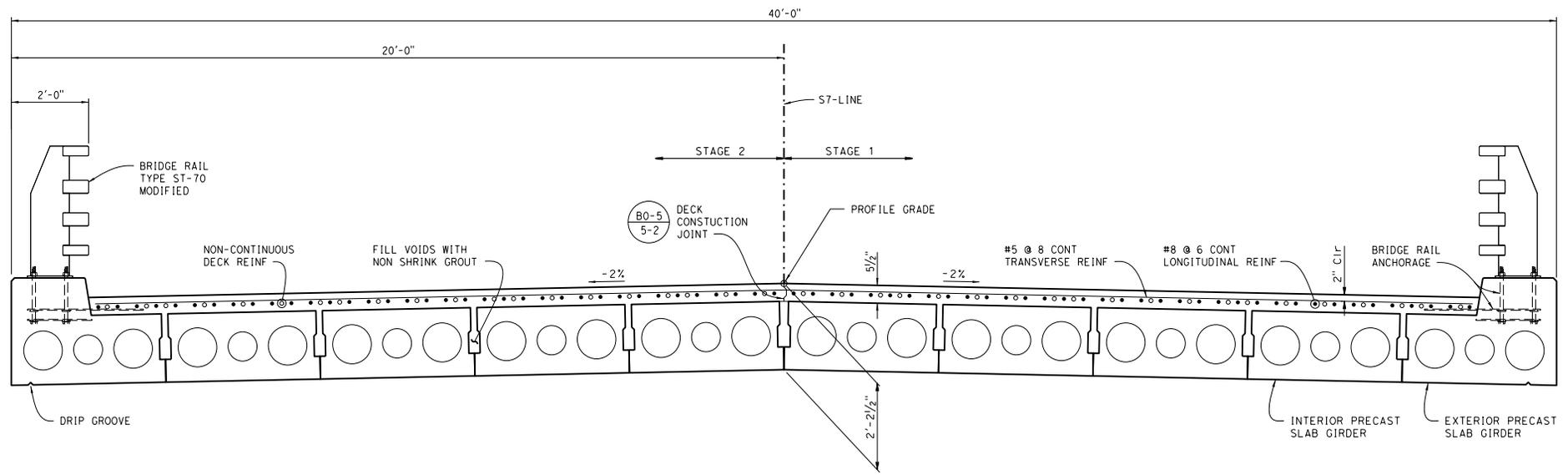
REVISION DATES	SHEET	OF
12-14-2015	14	40

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Mfn, Son	1	50.2/50.5, 0.0/0.2	130	154

V. Ramakrishnan
REGISTERED CIVIL ENGINEER DATE 12-14-2015
Vijayarani Ramakrishnan
No. C. 63091
Exp. 06/30/2018
CIVIL
STATE OF CALIFORNIA

PLANS APPROVAL DATE 6-6-16

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TYPICAL SECTION
3/4" = 1'-0"

Place Longitudinal Deck reinf parallel to S7-Line. Splice only at $\frac{1}{2}$ Span.

Place Transverse Deck reinf perpendicular to and space along S7-Line. Extend Stage 1 Transverse Reinf 18" into Stage 2.

For non-continuous deck reinf see: "Additional Deck Reinforcement" sheet.

For Pre-Cast Slab Girder details see Girder sheets.

Bridge Rail Type ST-70 modifications include casting concrete Curb and Posts Anchors into Precast Exterior Slab Girder and Retaining Walls.

DESIGN	BY	CHECKED
V. Ramakrishnan	J. Peterson	J. Peterson
DETAILS	BY	CHECKED
T. Mason	J. Peterson	J. Peterson
QUANTITIES	BY	CHECKED
V. Ramakrishnan / L. Bahia	A. Pearson	A. Pearson

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 14

BRIDGE NO.	27-0121
POST MILE	50.5

ESTERO AMERICANO BRIDGE (REPLACE)
TYPICAL SECTION

USER NAME => 12/28/2015 14:22 TIME PLOTTED => 30-AUG-2015 14:22 DATE PLOTTED => 14:22

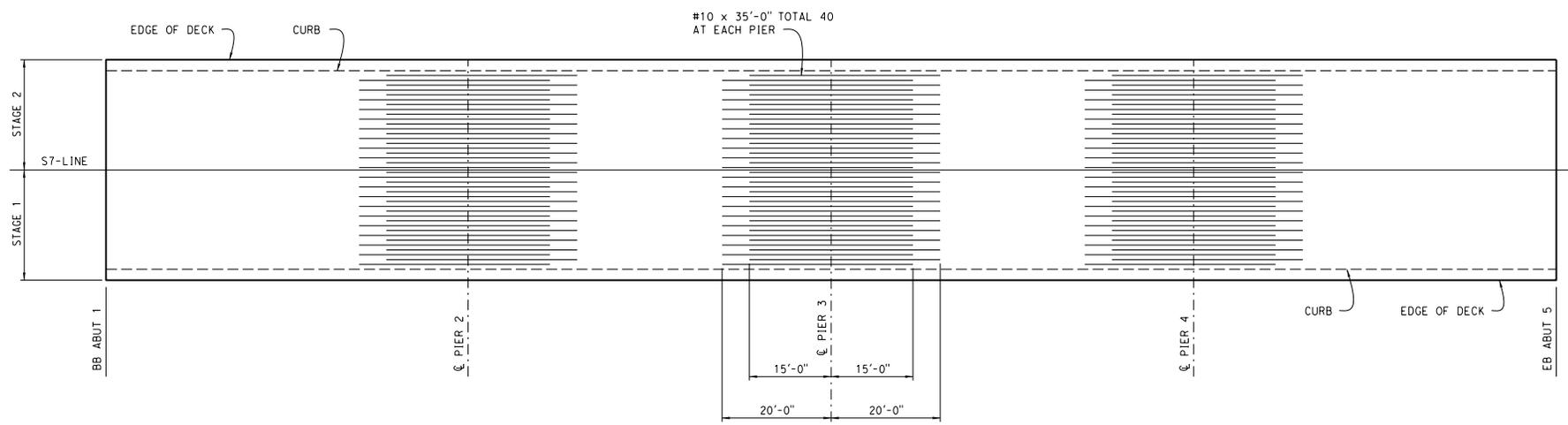
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mfn. Son	1	50.2/50.5, 0.0/0.2	131	154

V. Ramakrishnan
 REGISTERED CIVIL ENGINEER DATE 12-14-2015

6-6-16
 PLANS APPROVAL DATE

Vijayarani Ramakrishnan
 REGISTERED PROFESSIONAL ENGINEER
 No. C 63091
 Exp. 06/30/2018
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ADDITIONAL DECK REINFORCEMENT LAYOUT
 1" = 10'

Place #10x35' reinf at the same level and equally space between continuous longitudinal deck reinforcement.

For continuous reinforcement See: "Typical Section" sheet.

Continuous deck reinforcement must be spliced only at ϕ Span.



DESIGN	BY	V. Ramakrishnan	CHECKED	J. Peterson	BRIDGE NO.	27-0121	ESTERO AMERICANO BRIDGE (REPLACE)
	DETAILS	BY	T. Mason	CHECKED			
QUANTITIES	BY	V. Ramakrishnan / L. Bahia	CHECKED	A. Pearson	50.5		

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
DESIGN BRANCH 14

UNIT: 3613
 PROJECT NUMBER & PHASE: 0412000116
 CONTRACT NO.: 04-209504

DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
12-14-2015	17	40

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)
 ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

FILE => 27-0121 - 17 Additional Deck Reinf.dgn

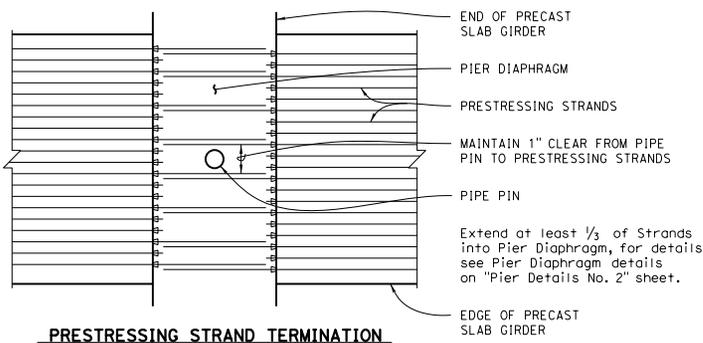
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 TIME PLOTTED => 14:28
 USERNAME => s127888

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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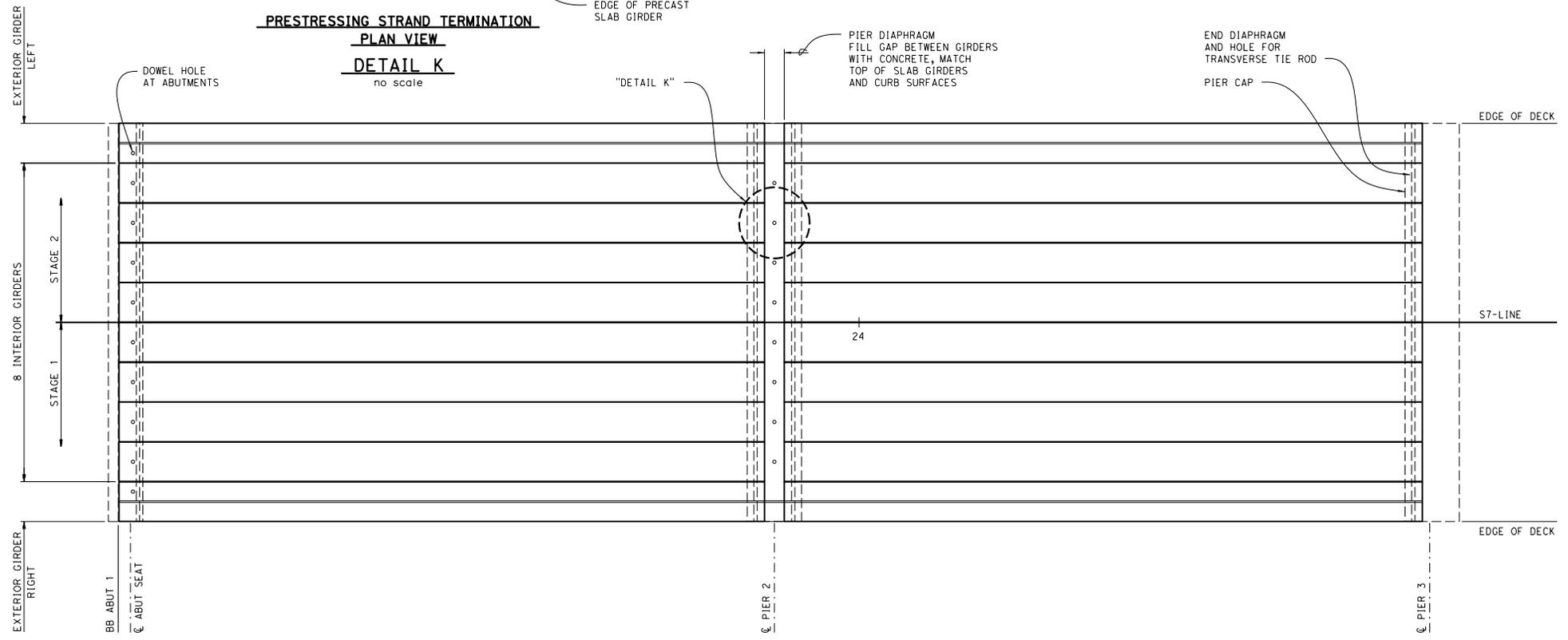
V. Ramakrishnan
 REGISTERED CIVIL ENGINEER DATE: 12-14-2015
 PLANS APPROVAL DATE: 6-6-16

REGISTERED PROFESSIONAL ENGINEER
 Vijayarani Ramakrishnan
 No. C 63091
 Exp. 06/30/2018
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PRESTRESSING STRAND TERMINATION
PLAN VIEW
DETAIL K
 no scale



GIRDER LAYOUT
 1" = 5'



DESIGN	BY V. Ramakrishnan	CHECKED J. Peterson
DETAILS	BY T. Mason	CHECKED J. Peterson
QUANTITIES	BY V. Ramakrishnan / L. Bahia	CHECKED A. Pearson

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 14

BRIDGE NO.	27-0121
POST MILE	50.5

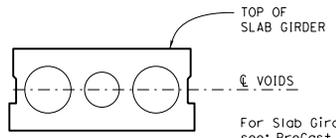
ESTERO AMERICANO BRIDGE (REPLACE)
PRECAST SLAB GIRDER LAYOUT

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mfn, Son	1	50.2/50.5, 0.0/0.2	133	154

V. Ramakrishnan
 REGISTERED CIVIL ENGINEER DATE 12-14-2015
 VIJAYARAMI RAMAKRISHNAN
 No. C 63091
 Exp. 06/30/2018
 CIVIL ENGINEER
 STATE OF CALIFORNIA

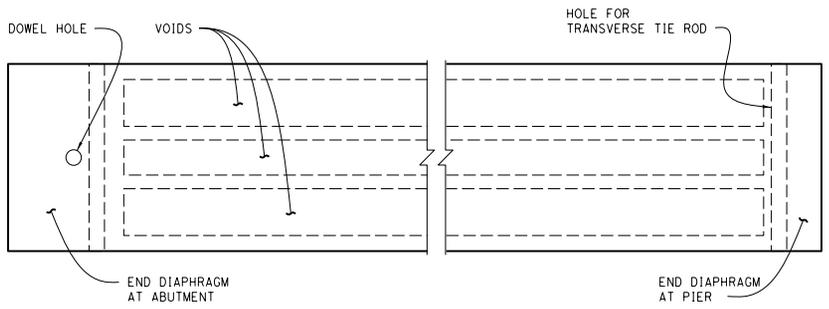
PLANS APPROVAL DATE 6-6-16

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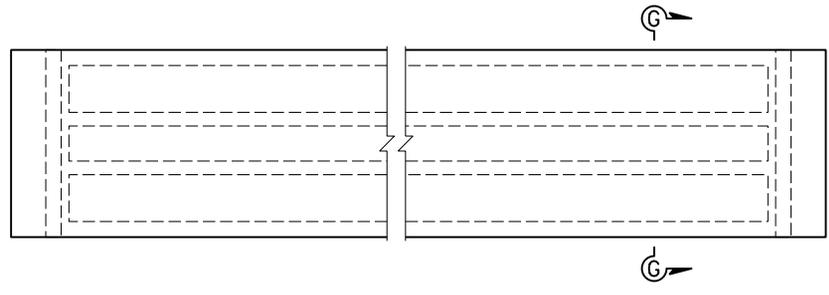


For Slab Girder details see: PreCast Slab Girder Details sheets.

INTERIOR SLAB GIRDER SECTION G-G
 $\frac{3}{4}'' = 1'-0''$

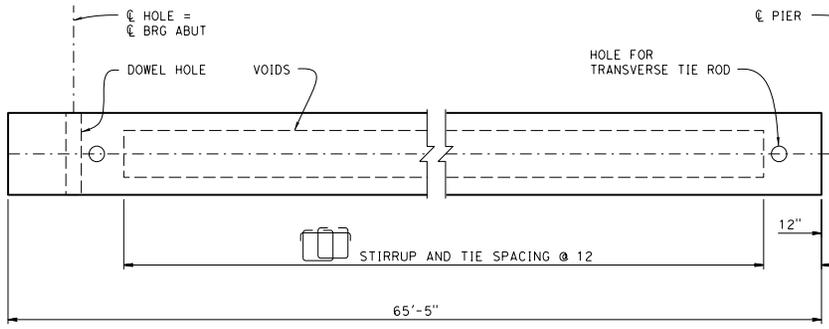


END SPAN

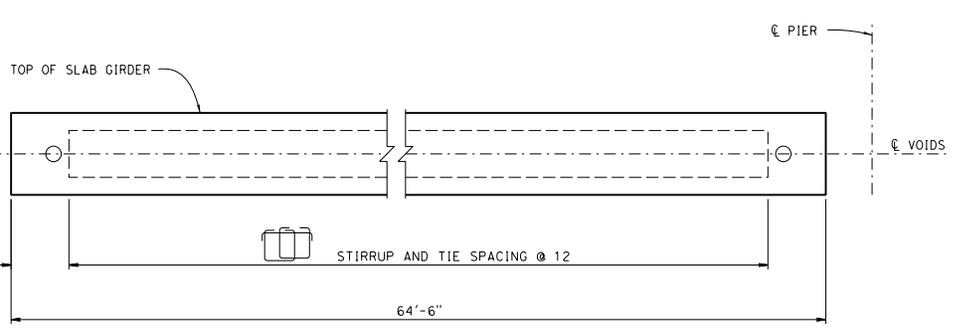


INTERMEDIATE SPAN

INTERIOR SLAB GIRDER PLAN
 $\frac{3}{4}'' = 1'-0''$



END SPAN



INTERMEDIATE SPAN

INTERIOR SLAB GIRDER ELEVATION
 $\frac{3}{4}'' = 1'-0''$

DESIGN	BY V. Ramakrishnan	CHECKED J. Peterson
DETAILS	BY T. Mason	CHECKED J. Peterson
QUANTITIES	BY V. Ramakrishnan / L. Bahia	CHECKED A. Pearson

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
 DESIGN BRANCH 14

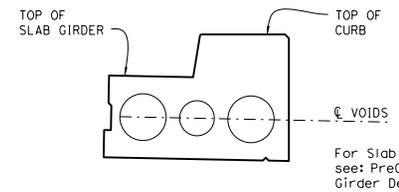
BRIDGE NO.	27-0121
POST MILE	50.5

ESTERO AMERICANO BRIDGE (REPLACE)
INTERIOR PC SLAB GIRDER LAYOUT

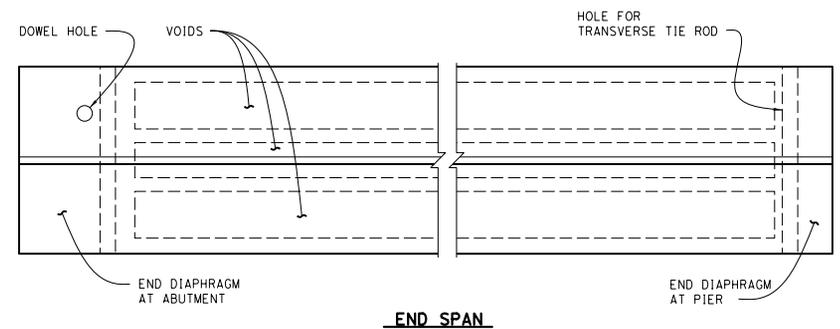
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mfn. Son	1	50.2/50.5, 0.0/0.2	134	154

V. Ramakrishnan
REGISTERED CIVIL ENGINEER DATE 12-14-2015
Vijayarani Ramakrishnan
No. C. 63091
PLANS APPROVAL DATE 6-6-16
Exp. 06/30/2018
CIVIL ENGINEER
STATE OF CALIFORNIA

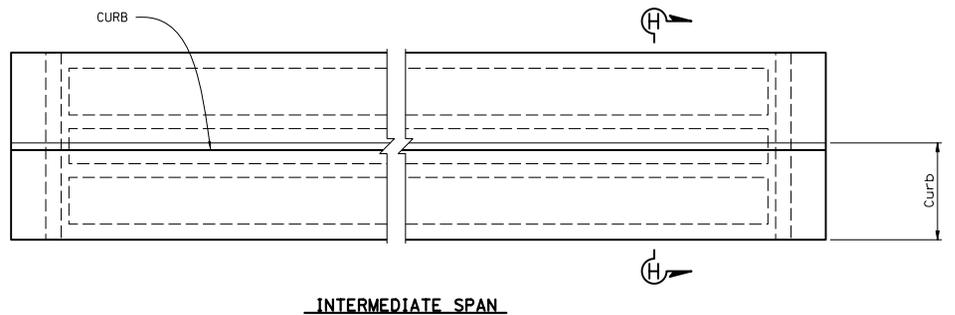
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EXTERIOR SLAB GIRDER SECTION H-H
 $\frac{3}{4}'' = 1'-0''$

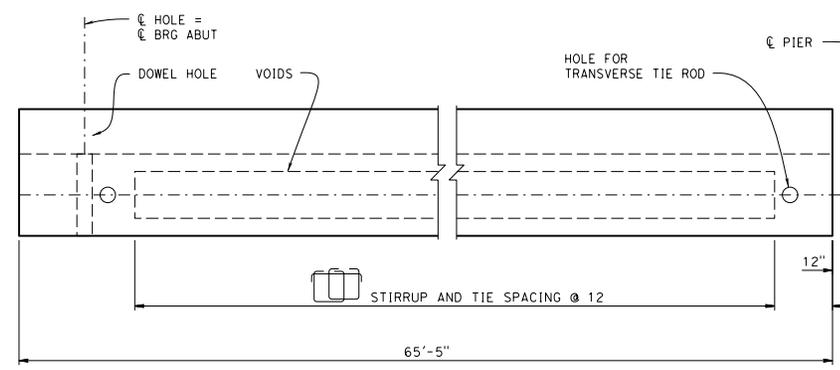


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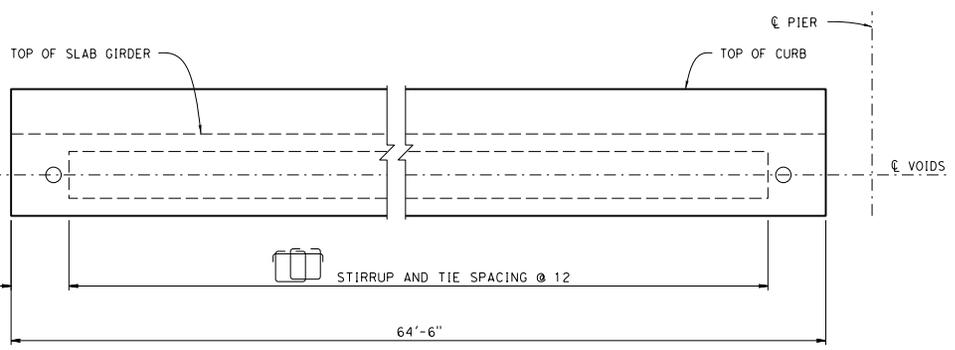


INTERMEDIATE SPAN

EXTERIOR SLAB GIRDER PLAN
 $\frac{3}{4}'' = 1'-0''$



END SPAN



INTERMEDIATE SPAN

EXTERIOR SLAB GIRDER ELEVATION
 $\frac{3}{4}'' = 1'-0''$

Right side Exterior Slab Girder shown Left side similar.

DESIGN	BY V. Ramakrishnan	CHECKED J. Peterson
DETAILS	BY T. Mason	CHECKED J. Peterson
QUANTITIES	BY V. Ramakrishnan / L. Bahia	CHECKED A. Pearson

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 14

BRIDGE NO.	27-0121
POST MILE	50.5

ESTERO AMERICANO BRIDGE (REPLACE)
EXTERIOR PC SLAB GIRDER LAYOUT

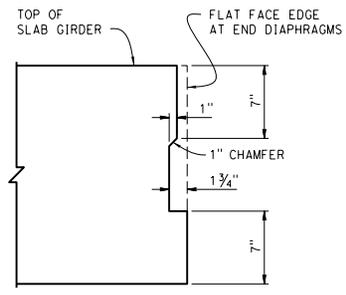
DATE PLOTTED => 30-AUG-2016
TIME PLOTTED => 14:28
USER NAME => s127688

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mfn, Son	1	50.2/50.5, 0.0/0.2	135	154

V. Ramakrishnan
REGISTERED CIVIL ENGINEER DATE 12-14-2015
Vijayarani Ramakrishnan
No. C 63091
Exp. 06/30/2018
CIVIL ENGINEER
STATE OF CALIFORNIA

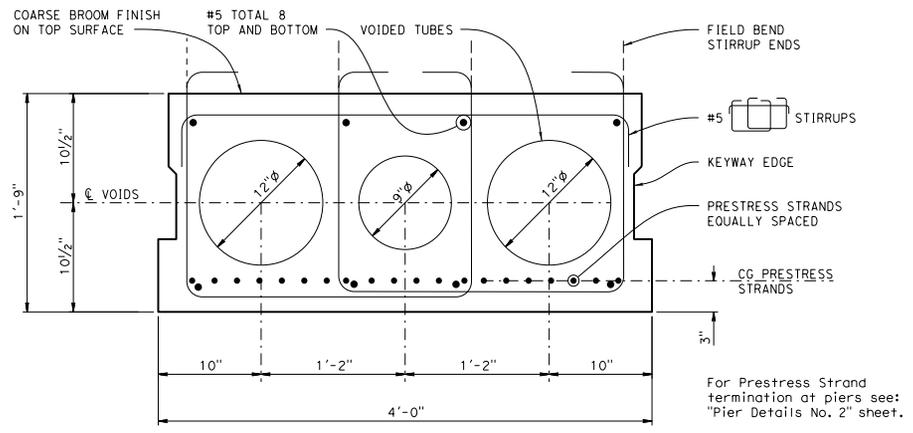
6-6-16
PLANS APPROVAL DATE

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Keyway Edge detail shall be placed on Slab Girders edges that are adjacent to another Slab Girder, except at End Diaphragms.

KEYWAY EDGE DETAIL
2" = 1'-0"



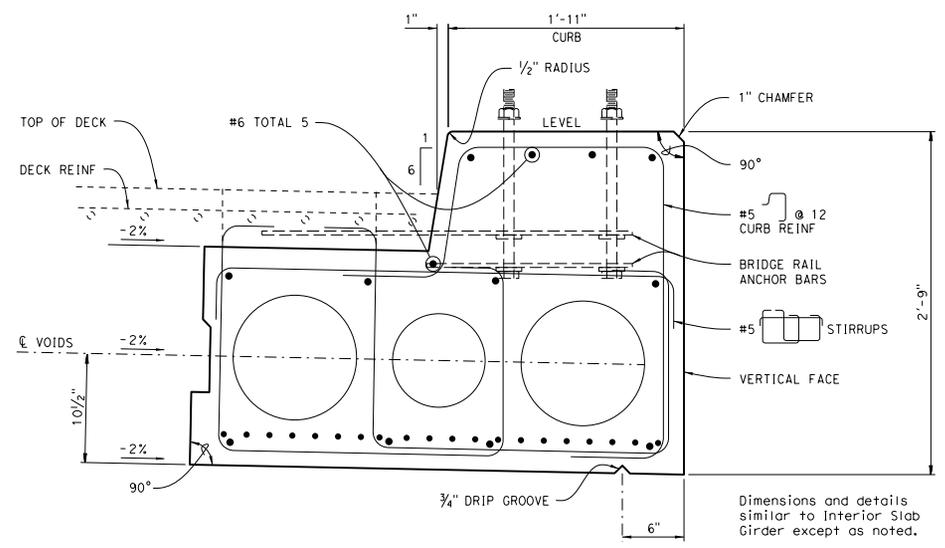
INTERIOR SLAB GIRDER SECTION
2" = 1'-0"

For Prestress Strand termination at piers see: "Pier Details No. 2" sheet.

PRESTRESSING NOTES

270 ksi Low Relaxation Strand:
Jacking Force P = 880 Kips/slab
Total number of Precast Slab Girders per Span: 10 (5 Per Stage).

- The Jacking Force (P) is the jacking force required at the point of control along the span. The jacking force does not include any fabrication specific losses.
- The maximum tensile stress in the prestressing steel upon release shall not exceed 75% of the specified minimum ultimate tensile strength of the prestressing steel.
- The maximum temporary tensile stress (jacking stress) in the prestressing steel shall not exceed 80% of the specified minimum ultimate tensile strength of the prestressing steel.
- Concrete Strength:
f'ci = 4.8 ksi at time of initial stressing.
f'c = 6.0 ksi at 28 days.
- All keyways to be filled with non-shrinking grout, with concrete strength of:
f'c = 5.0 ksi at 24 hours.
- Slab Girders are designed for pretensioning.



RIGHT EXTERIOR SLAB GIRDER SECTION
2" = 1'-0"

Dimensions and details similar to Interior Slab Girder except as noted.
See Bridge Rail sheets for Anchor Bars and other details.
Right Exterior Slab Girder shown left side mirrored.

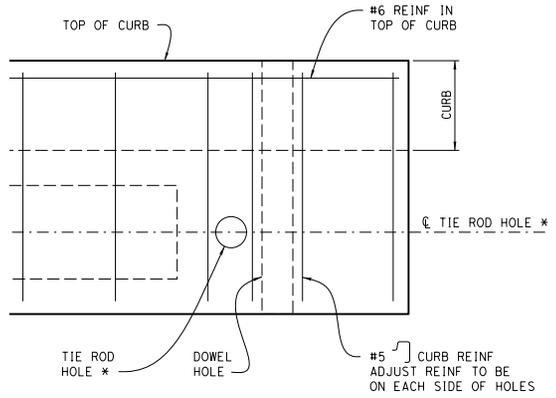
DESIGN BY: V. Ramakrishnan	CHECKED BY: J. Peterson	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN	BRIDGE NO.: 27-0121	ESTERO AMERICANO BRIDGE (REPLACE) PRECAST SLAB GIRDER DETAILS No.1
DETAILS BY: T. Mason	CHECKED BY: J. Peterson		DESIGN BRANCH 14	POST MILE: 50.5	
QUANTITIES BY: V. Ramakrishnan / L. Bahia	CHECKED BY: A. Pearson	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	UNIT: 3613	PROJECT NUMBER & PHASE: 0412000116	CONTRACT NO.: 04-209504
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)			DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 21 OF 40

FILE => 27-0121 - 21 PC SlabGirder Details No1-Sheet.dgn

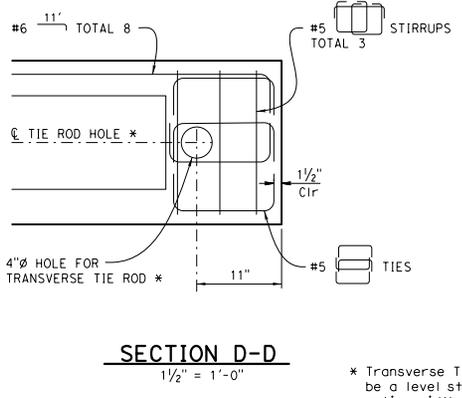
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mfn, Son	1	50.2/50.5, 0.0/0.2	136	154

V. Ramakrishnan		12-14-2015
REGISTERED CIVIL ENGINEER	DATE	
Vijayarani Ramakrishnan		
No. C. 63091		
PLANS APPROVAL DATE		
6-6-16		
Exp. 06/30/2018		
CIVIL		
STATE OF CALIFORNIA		

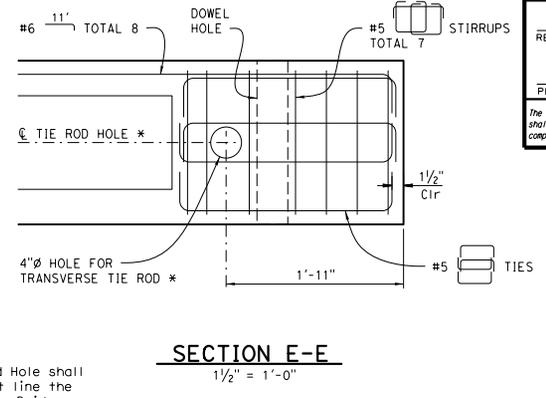
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EXTERIOR ELEVATION

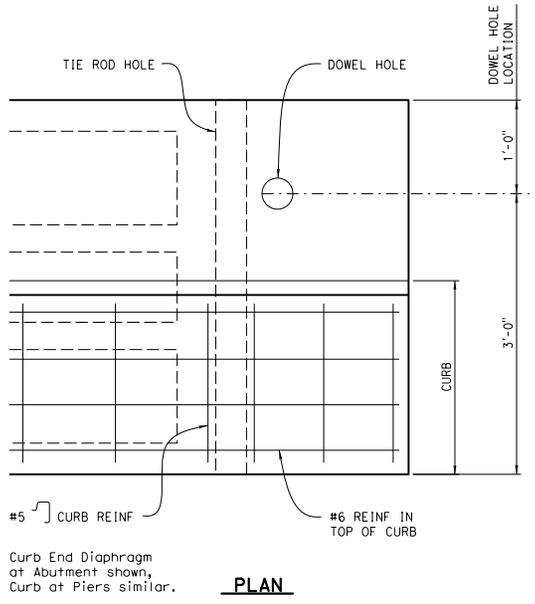


SECTION D-D
1/2" = 1'-0"

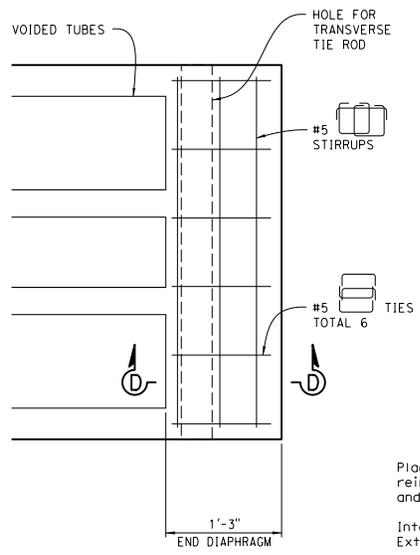


SECTION E-E
1/2" = 1'-0"

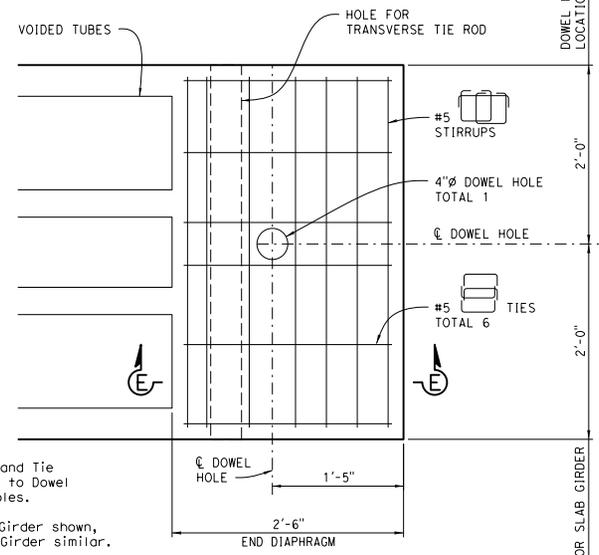
* Transverse Tie Rod Hole shall be a level straight line the entire width of the Bridge. For vertical location see: "Tie Rod Details" sheet.



EXTERIOR SLAB GIRDER CURB REINF.
1/2" = 1'-0"



AT PIERS



END DIAPHRAGM PLAN
1/2" = 1'-0"

Place Stirrup and Tie reinf adjacent to Dowel and Tie Rod Holes.
Interior Slab Girder shown, Exterior Slab Girder similar.

DESIGN	BY V. Ramakrishnan	CHECKED J. Peterson
DETAILS	BY T. Mason	CHECKED J. Peterson
QUANTITIES	BY V. Ramakrishnan / L. Bahia	CHECKED A. Pearson

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 14

BRIDGE NO. 27-0121
POST MILE 50.5
ESTERO AMERICANO BRIDGE (REPLACE)
PRECAST SLAB GIRDER DETAILS No.2

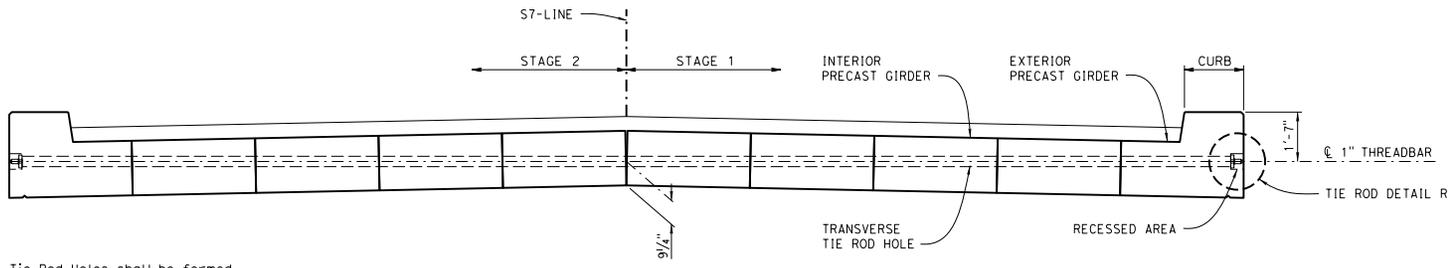
UNIT: 3613	PROJECT NUMBER & PHASE: 0412000116	CONTRACT NO.: 04-209504	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 22	OF 40
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mfn, Son	1	50.27/50.5, 0.0/0.2	137	154

V. Ramakrishnan
 REGISTERED CIVIL ENGINEER DATE: 12-14-2015
 6-6-16
 PLANS APPROVAL DATE

PROFESSIONAL ENGINEER
 Vijayarani Ramakrishnan
 No. C 63091
 Exp. 06/30/2018
 CIVIL
 STATE OF CALIFORNIA

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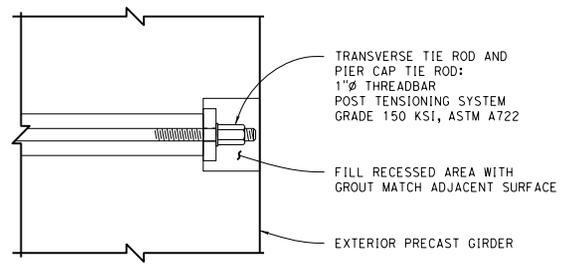
END DIAPHRAGM TRANSVERSE TIE ROD SECTION T-T
 $\frac{1}{2}'' = 1'-0''$

Tie Rod Holes shall be formed in the Slab Girders to create a Straight Horizontal line the entire width of the bridge.

One continuous Tie Rod to be used thru the entire width of the bridge.

Tie Rods to be used on both ends of the Precast Slab Girders at Abutments and Piers. For locations see Precast Slab Girder sheets.

Tie Rods details for Pier Caps are similar. For location and layout see Pier Cap sheets.

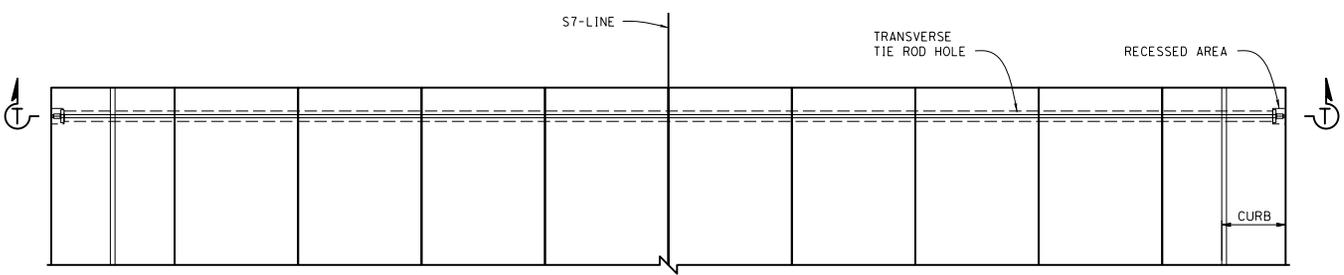


The bearing surface in the Recessed Area shall be perpendicular to the Tie Rod Hole.

Tension Tie Rods after placement of CIP Deck.

Tie Rod in Slab Girder shown Cap Tie Rod details are similar.

TIE ROD DETAIL R
 no scale



TRANSVERSE TIE ROD PLAN
 $\frac{1}{2}'' = 1'-0''$

Transverse Tie Rod shown at Pier, Abutment Tie Rod details are similar.

DESIGN	BY	V. Ramakrishnan	CHECKED	J. Peterson	BRIDGE NO.	27-0121	ESTERO AMERICANO BRIDGE (REPLACE)	
	DETAILS	BY	T. Mason	CHECKED				J. Peterson
QUANTITIES	BY	V. Ramakrishnan / L. Bahia	CHECKED	A. Pearson	POST MILE	50.5	REVISION DATES	
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)					UNIT: 3613	PROJECT NUMBER & PHASE: 0412000116	CONTRACT NO.: 04-209504	DISREGARD PRINTS BEARING EARLIER REVISION DATES
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS					0	1	2	3
					FILE => 27-0121 - 23 TieRod Details.dgn			REVISION DATES
								SHEET 23 OF 40

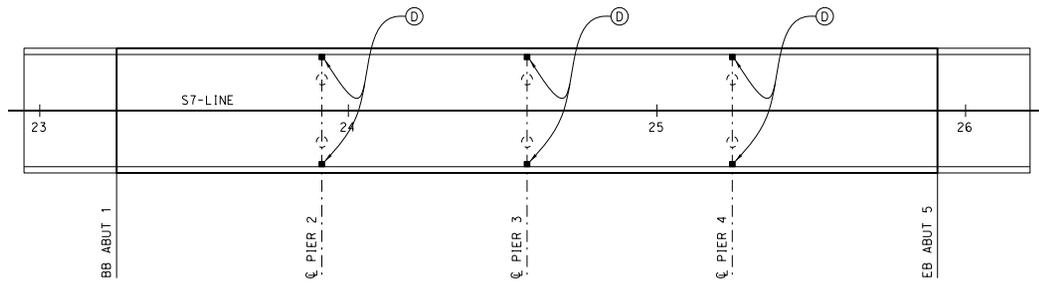
USERNAME => s127688 DATE PLOTTED => 30-AUG-2016 TIME PLOTTED => 14:28

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mfn, Son	1	50.2/50.5, 0.0/0.2	138	154

V. Ramakrishnan
 REGISTERED CIVIL ENGINEER
 12-14-2015 DATE
 6-6-16
 PLANS APPROVAL DATE

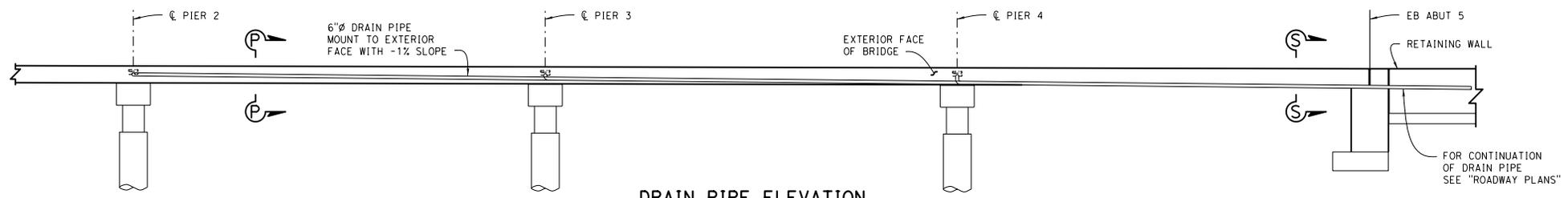
PROFESSIONAL ENGINEER
 No. C 63091
 Exp. 06/30/2018
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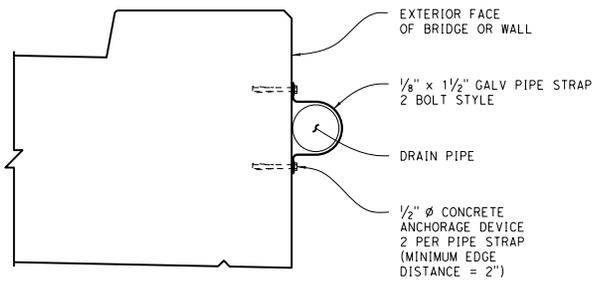


PLAN
 1" = 20'

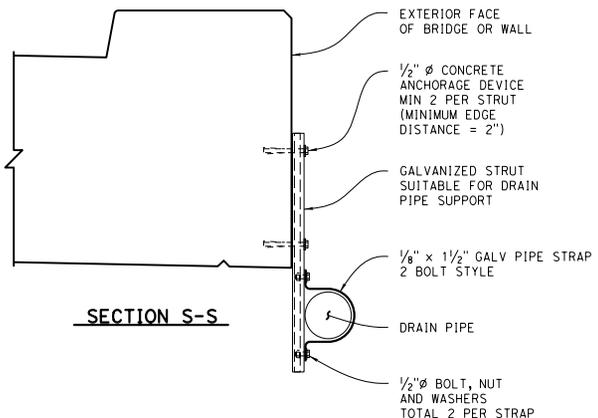
Place Deck Drain Type D-2 at each ϕ Pier on both sides of bridge. For details see: **B7-6** **7-8**



DRAIN PIPE ELEVATION
 1/8" = 1'-0"



SECTION P-P



SECTION S-S

DRAIN PIPE SUPPORT DETAILS
 1/2" = 1'-0"

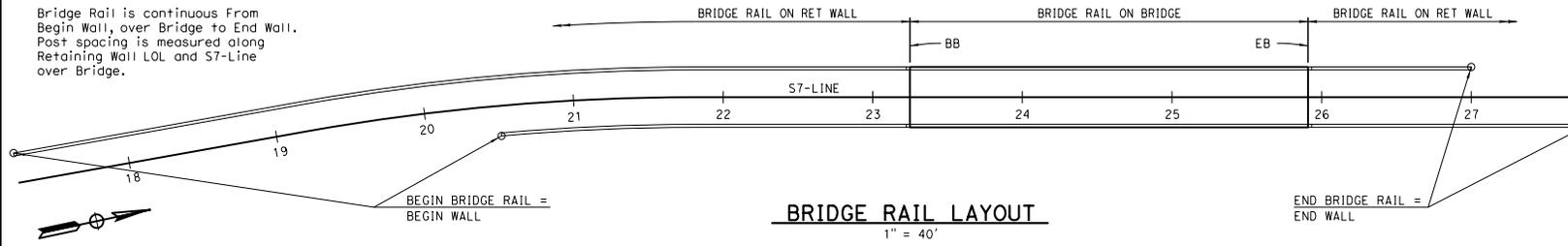
Provide Drain Pipe support at 10' max.
 Use Strut as needed to maintain Drain Pipe slope.
 All Drain Pipe hardware shall be Galvanized.

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	DESIGN	BY V. Ramakrishnan	CHECKED J. Peterson	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 14	BRIDGE NO.	ESTERO AMERICANO BRIDGE (REPLACE)	
	DETAILS	BY T. Mason	CHECKED J. Peterson			27-0121	DECK DRAINAGE LAYOUT	
	QUANTITIES	BY V. Ramakrishnan / L. Bahia	CHECKED A. Pearson			50.5	REVISION DATES	SHEET 24

UNIT: 3613
 PROJECT NUMBER & PHASE: 0412000116
 CONTRACT NO.: 04-209504
 DISREGARD PRINTS BEARING EARLIER REVISION DATES
 FILE => 27-0121 - 24 Deck Drainage Layout.dgn

DATE PLOTTED => 30-AUG-2016
 TIME PLOTTED => 14:28
 USERNAME => s127888

Bridge Rail is continuous From Begin Wall, over Bridge to End Wall. Post spacing is measured along Retaining Wall LOL and S7-Line over Bridge.



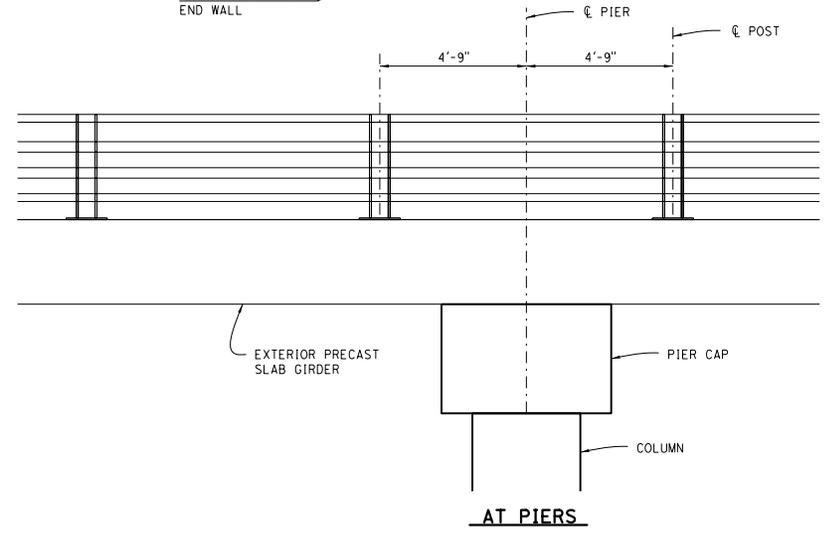
BRIDGE RAIL LAYOUT
1" = 40'

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mfn. Son	1	50.27/50.5, 0.0/0.2	139	154

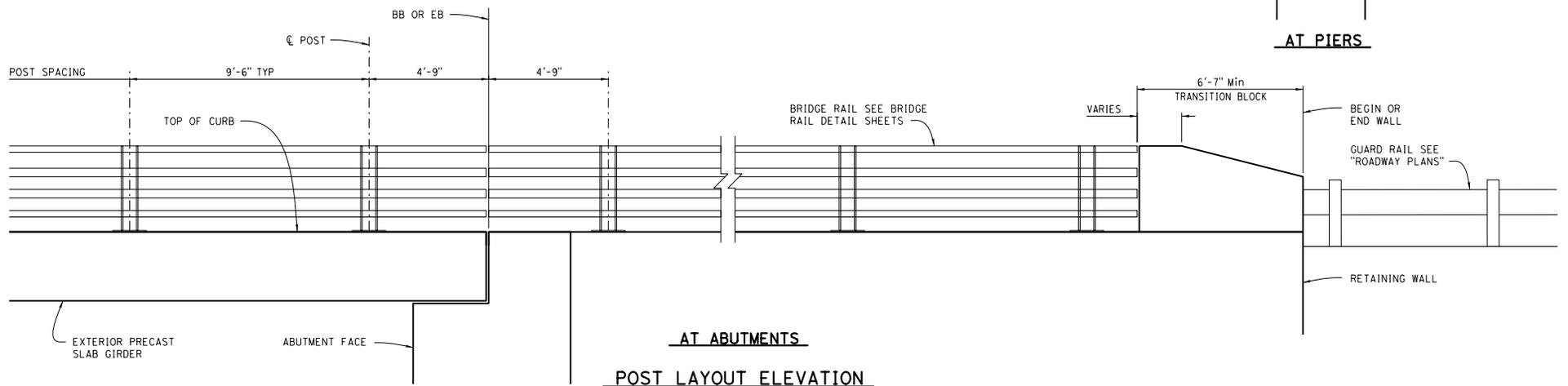
V. Ramakrishnan
REGISTERED CIVIL ENGINEER DATE 12-14-2015
Vijayarani Ramakrishnan
No. C 63091
Exp. 06/30/2018
CIVIL ENGINEER
STATE OF CALIFORNIA

PLANS APPROVAL DATE 6-6-16

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AT PIERS



AT ABUTMENTS
POST LAYOUT ELEVATION
1/2" = 1'-0"

DESIGN	BY V. Ramakrishnan	CHECKED J. Peterson
DETAILS	BY T. Mason	CHECKED J. Peterson
QUANTITIES	BY V. Ramakrishnan / L. Bahia	CHECKED A. Pearson

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 14

BRIDGE NO.	27-0121
POST MILE	50.5

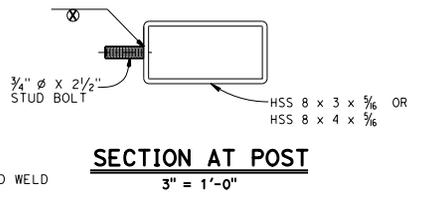
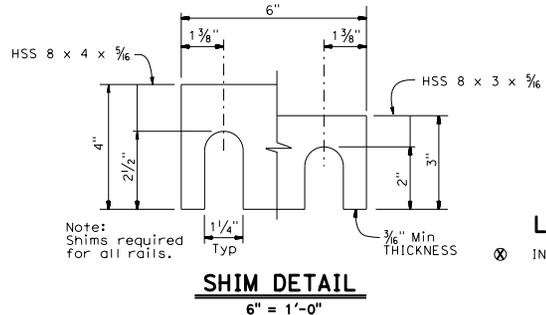
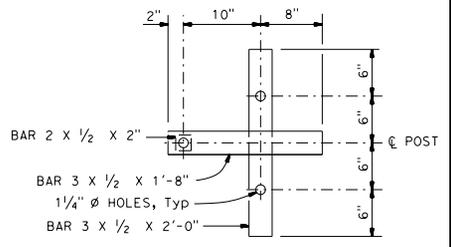
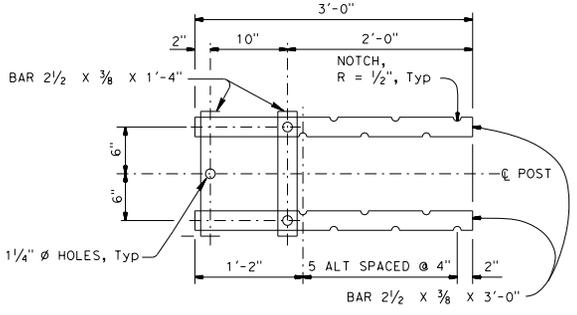
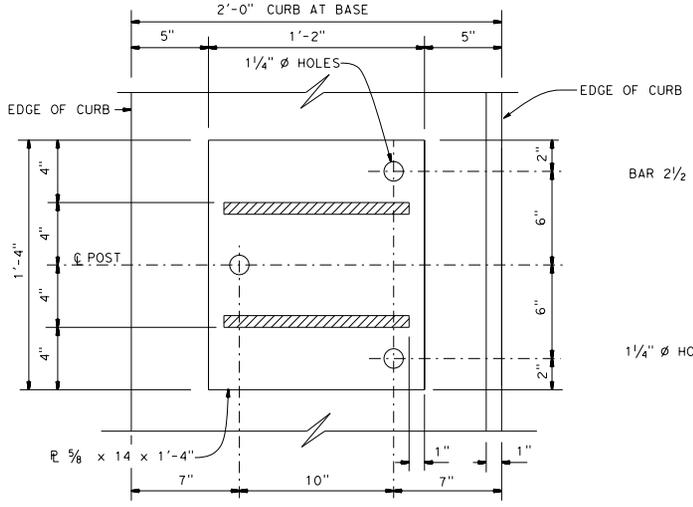
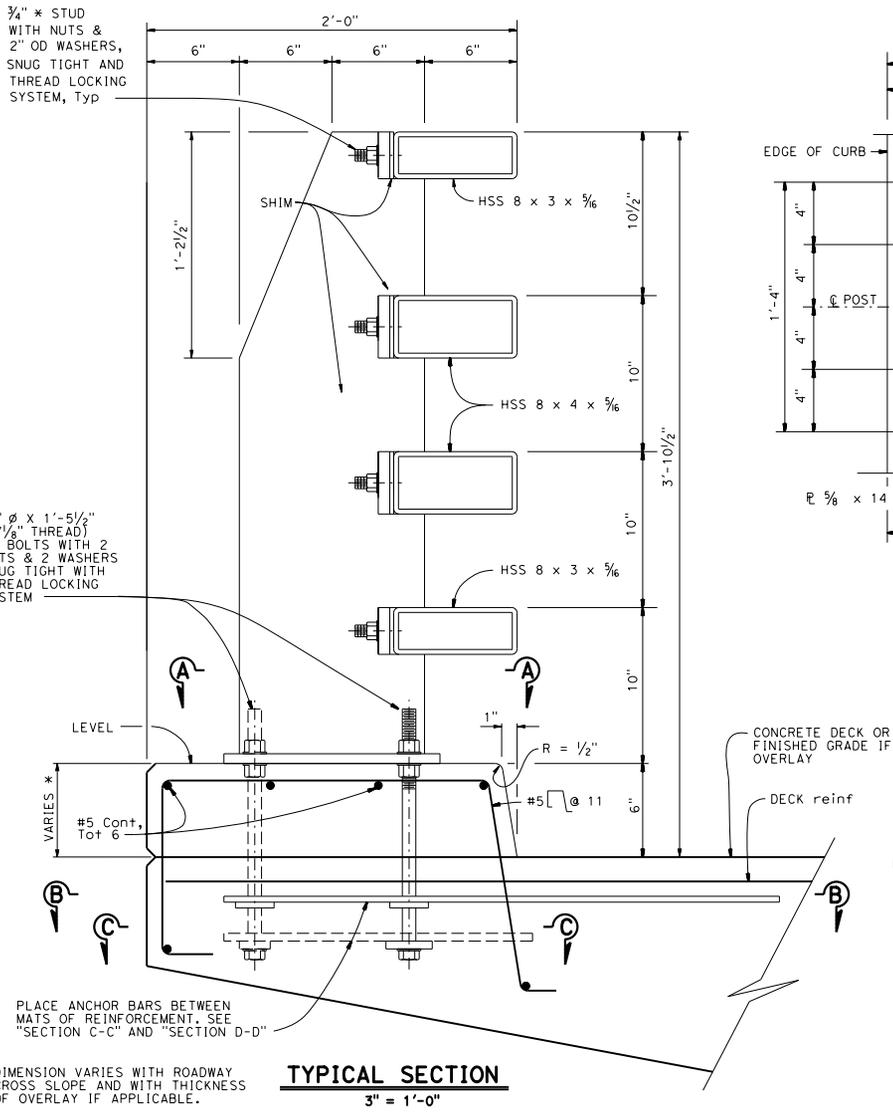
ESTERO AMERICANO BRIDGE (REPLACE)
BRIDGE RAIL LAYOUT

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Merced	1	50.2/50.5, 0.0/0.2	140	154

V. Ramakrishnan
REGISTERED CIVIL ENGINEER DATE 11-01-2015
6-6-16
PLANS APPROVAL DATE

Vijayaram Ramakrishnan
REGISTERED PROFESSIONAL ENGINEER
No. C 63091
Exp. 06/30/2018
CIVIL
STATE OF CALIFORNIA

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LEGEND:
⊗ INDICATES STUD WELD

STANDARD DRAWING	
FILE NO: x016-130-1	APPROVAL DATE January 2015

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		BRIDGE NO. 27-0121	CALIFORNIA ST-70 BRIDGE RAIL DETAILS No. 1
		POST MILE 50.5	
		UNIT: PROJECT NUMBER & PHASE: 0412000116	

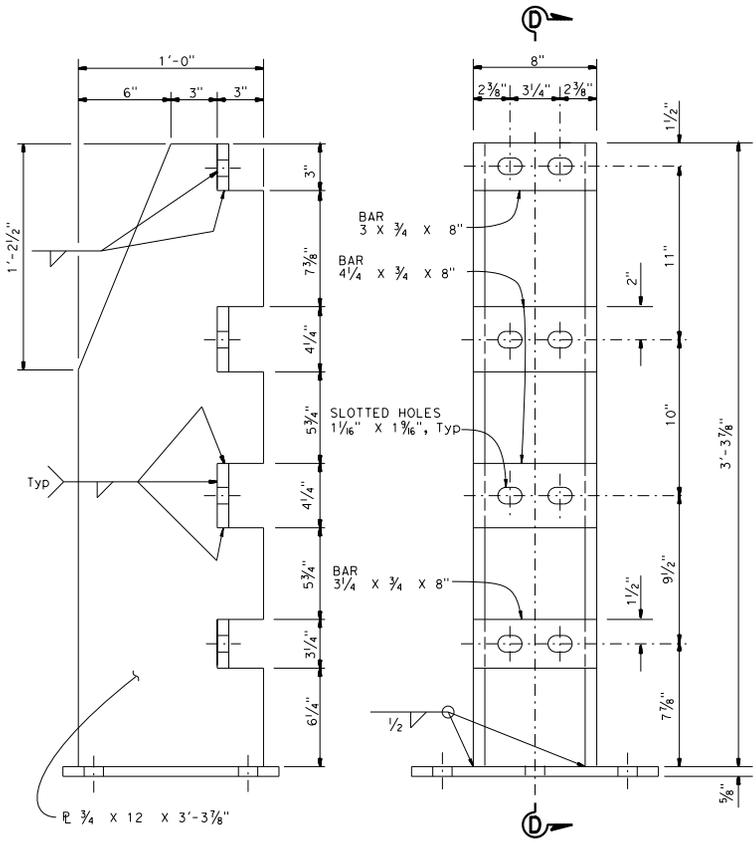
CONTRACT NO.: 04-209504		REVISION DATES	SHEET 26 OF 40
DISREGARD PRINTS BEARING EARLIER REVISION DATES		12/27/14 1:14:15	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mfn, Son	1	50.27/50.5, 0.0/0.2	141	154

V. Ramakrishnan
 REGISTERED CIVIL ENGINEER DATE 11-01-2015
 6-6-16
 PLANS APPROVAL DATE

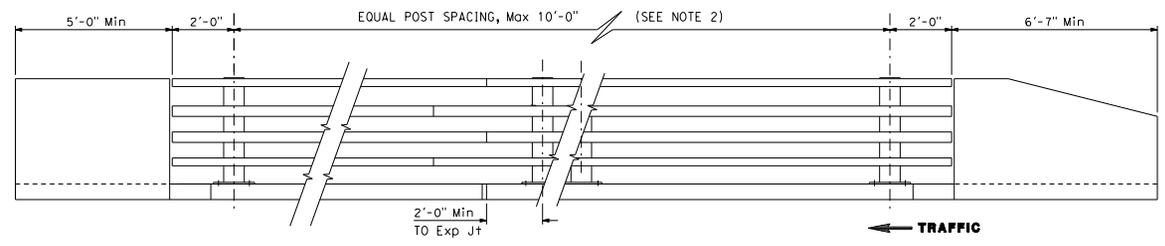
REGISTERED PROFESSIONAL ENGINEER
 Vijayaram Ramakrishnan
 No. C 63091
 Exp. 06/30/2018
 CIVIL
 STATE OF CALIFORNIA

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SECTION D-D
 3" = 1'-0"

ELEVATION
 3" = 1'-0"



ELEVATION
 1/2" = 1'-0"

- NOTES:
1. For approach and departure end details, see "DETAILS No. 3" sheet.
 2. Post spacing and/or block length to be adjusted to fit bridge length or wingwall length.
 3. All horizontal members are parallel to longitudinal profile grade of deck.
 4. Posts are normal to profile grade of structure.
 5. Posts are vertical to the transverse cross section.

STANDARD DRAWING		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES	BRIDGE NO. 27-0121	CALIFORNIA ST-70 BRIDGE RAIL DETAILS No. 2
FILE NO.: xs16-130-2	APPROVAL DATE January 2015			POST MILE 50.5	
DISREGARD PRINTS BEARING EARLIER REVISION DATES		PROJECT NUMBER & PHASE: 0412000116 CONTRACT NO.: 04-209504		DATE PLOTTED => 30-AUG-2016	

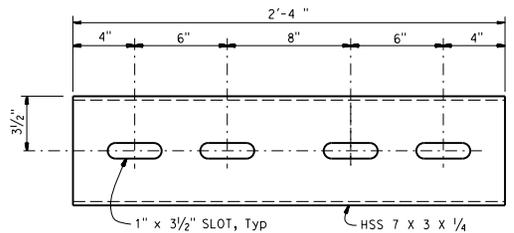
FILE => 27-0121 - 27 ST-70 Bridge Rail Det2.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mtn. Son.	1	50.2/50.5, 0.0/0.2	143	154

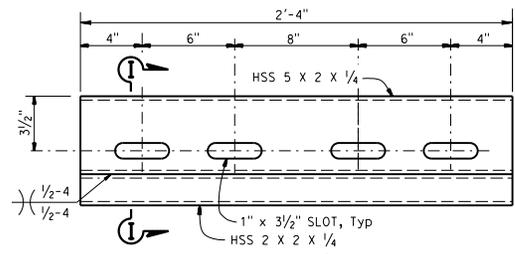
V. Ramakrishnan		11-01-2015
REGISTERED CIVIL ENGINEER	DATE	
6-6-16		
PLANS APPROVAL DATE		

REGISTERED PROFESSIONAL ENGINEER	
Vijayarami Ramakrishnan	No. C 63091
Exp. 06/30/2018	CIVIL
STATE OF CALIFORNIA	

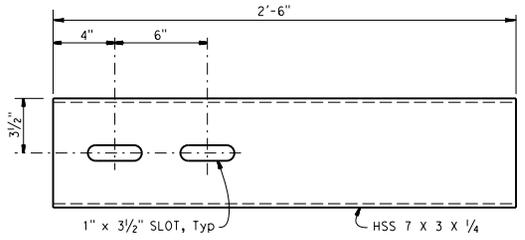
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



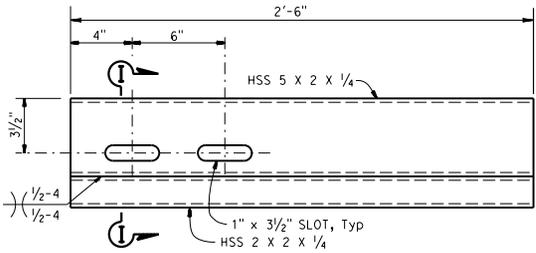
(FOR HSS 8 x 4 x 3/8 RAIL)
STANDARD SLEEVE DETAIL
 3" = 1'-0"



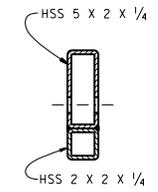
(FOR HSS 8 x 3 x 5/8 RAIL)
STANDARD SLEEVE DETAIL
 3" = 1'-0"



(FOR HSS 8 x 4 x 5/8 RAIL)
EXPANSION SLEEVE DETAIL
 3" = 1'-0"



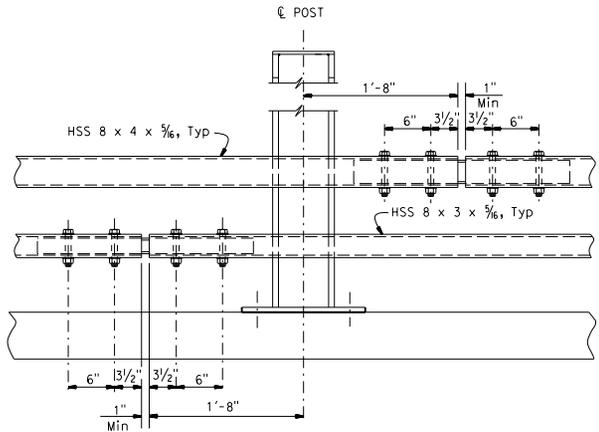
(FOR HSS 8 x 3 x 5/8 RAIL)
EXPANSION SLEEVE DETAIL
 3" = 1'-0"



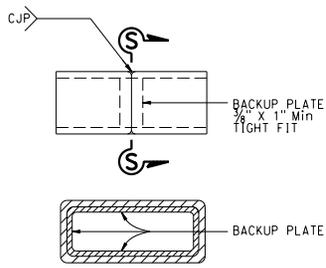
SECTION I-I
 3" = 1'-0"

NOTES:

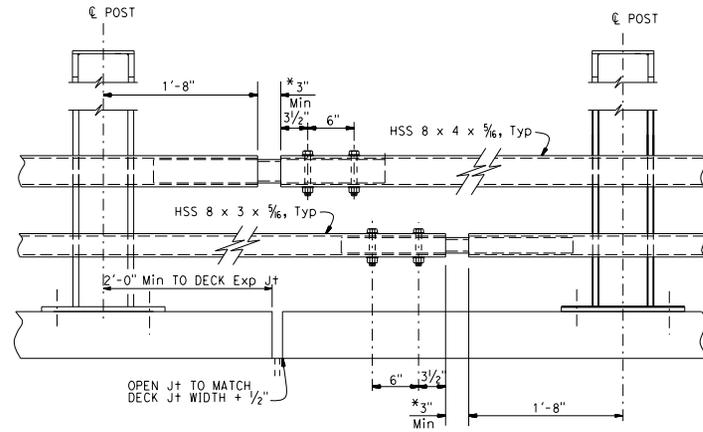
- HS bolts with nut and washers, snug tightened, and thread locking system.
- Use 3/4" dia x 4 3/8" (HSS 8 x 3 x 5/8)
 Use 3/4" dia x 5 3/8" (HSS 8 x 4 x 5/8)



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



SECTION S-S
ALTERNATE TUBE WELDED SPLICE
 1 1/2" = 1'-0"



EXPANSION SPLICE
 1 1/2" = 1'-0"
 * MATCH DECK OR WALL JOINT

STANDARD DRAWING	
FILE NO.: x016-130-4	APPROVAL DATE: January 2015

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	
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DIVISION OF ENGINEERING SERVICES	
BRIDGE NO.: 27-0121	POST MILE: 50.5

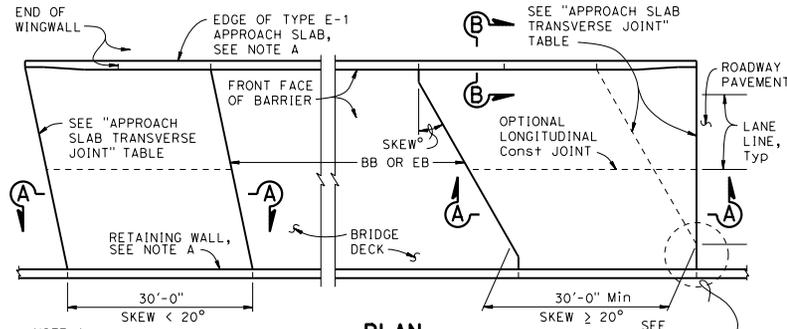
CALIFORNIA ST-70 BRIDGE RAIL	
DETAILS No. 4	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
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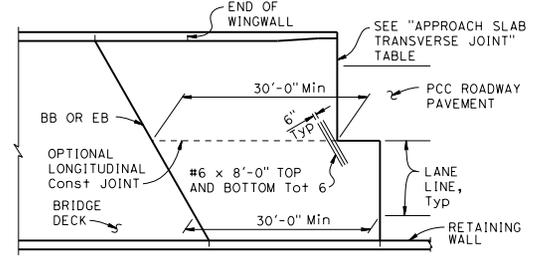
V. Ramakrishnan
 REGISTERED CIVIL ENGINEER DATE 11-01-2015
 6-6-16
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 Vijayarami Ramakrishnan
 No. C 63091
 Exp. 06/30/2019
 CIVIL
 STATE OF CALIFORNIA

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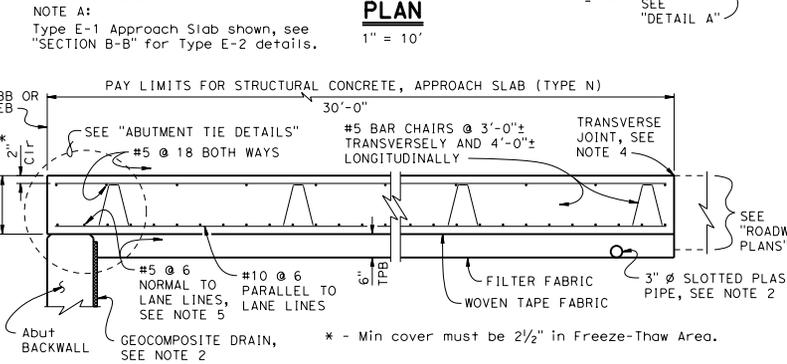


DETAIL A
 No Scale

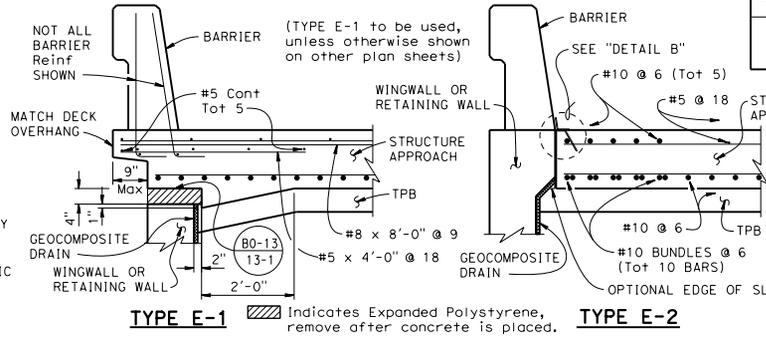


END STAGGER DETAIL
 1" = 10'

APPROACH SLAB TRANSVERSE JOINT		
APPROACH SKEW	WITH HMA ROADWAY PAVEMENT	WITH PCC ROADWAY PAVEMENT
< 20°	PARALLEL TO BB OR EB	PARALLEL TO BB OR EB
20° - 45°	PARALLEL TO BB OR EB USE "DETAIL A"	STAGGER AT LANE LINES 24' TO 36' APART, SEE "END STAGGER DETAIL"
> 45°	PARALLEL TO BB OR EB USE "DETAIL A"	STAGGER AT EACH LANE LINE, SEE "END STAGGER DETAIL"



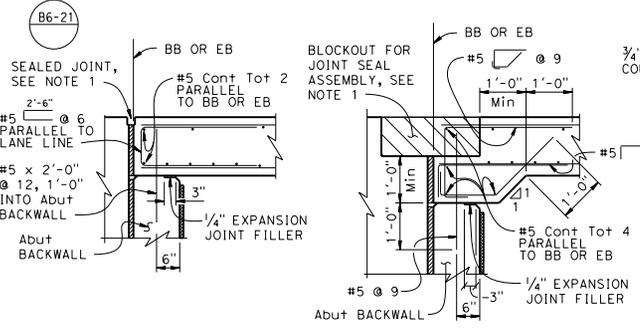
SECTION A-A
 3/4" = 1'-0"



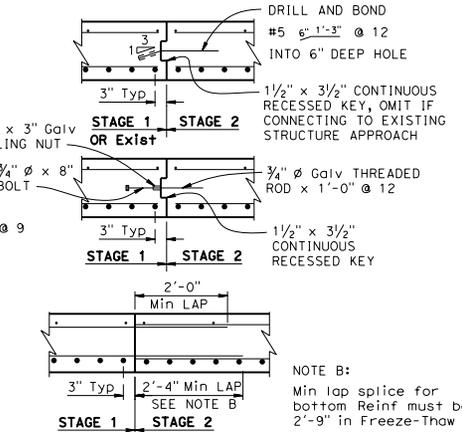
TYPE E-1

TYPE E-2

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

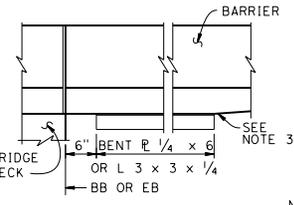


ABUTMENT TIE DETAILS
 3/4" = 1'-0"

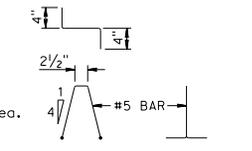


LONGITUDINAL CONSTRUCTION JOINT ALTERNATIVES
 3/4" = 1'-0"

SECTION B-B
 3/4" = 1'-0"



EDGE ANGLE PLAN
 1" = 1'-0"



BAR CHAIR DETAIL
 1" = 1'-0"

DESIGN: AASHTO LRFD Bridge Design Specifications, 2012 Edition with Caltrans Amendments, preface dated January 2014

LIMIT STATES: Service I, Strength I & II, Extreme II and Fatigue I ($\gamma_{FAT} = 1.0$)

DEAD LOAD: Includes 35 psf for future wearing surface

LIVE LOAD: HL93 and permit design load. Equivalent strip width method: $W_1 = 12$ ft. Slab span: $L_1 = 24.5$ ft

REINFORCED CONCRETE:
 $f_y = 60$ ksi
 $f'_c = 3.6$ ksi
 $n = 8$

- NOTES:**
- For joint protection details, blackout dimensions for joint seal assembly, and other details not shown, see other plan sheets. For MR $\le 2^\circ$, adjust reinforcement to clear sawcut for sealed joint. For MR >math>2^\circ</math>, haunch reinforcement placed for joint seal assembly blackout must be normal to BB or EB and spaced to avoid joint seal assembly anchorage.
 - For drainage details, see "STRUCTURE APPROACH DRAINAGE DETAILS" sheet.
 - End the plate or edge angle at beginning of barrier transition, end of wingwall, or end of structure approach as applicable.
 - Transverse joint must be a minimum of 5'-0" from an existing or constructed weakened plane joint in approach PCC roadway pavement. Refer to Standard Plans P10 and P14.
 - At the Contractor's option, approach slab transverse reinforcement may be placed parallel to BB or EB. Spacing of transverse reinforcement is measured along ℓ roadway.

STANDARD DRAWING
 FILE NO: **x03-120**
 APPROVAL DATE: January 2015

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF ENGINEERING SERVICES
 BRIDGE NO: 27-0121
 POST MILE: 50.5
 PROJECT NUMBER & PHASE: 0412000116
 CONTRACT NO.: 04-209504

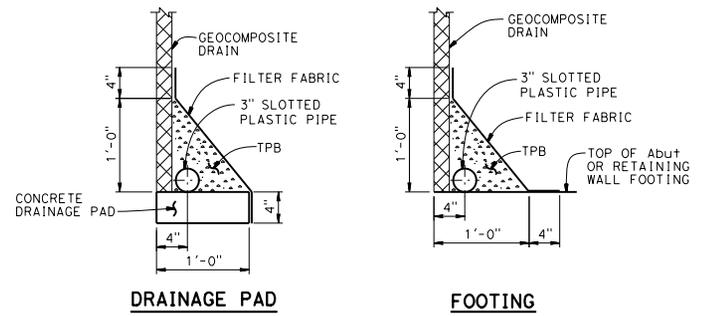
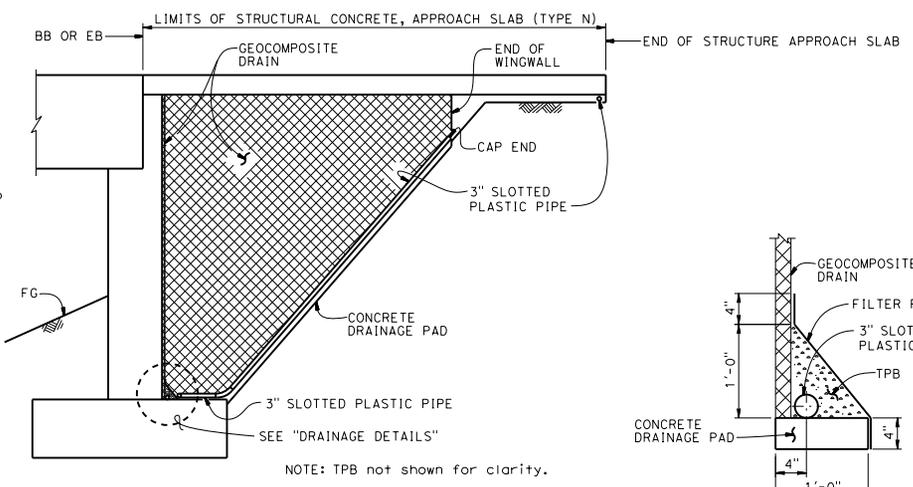
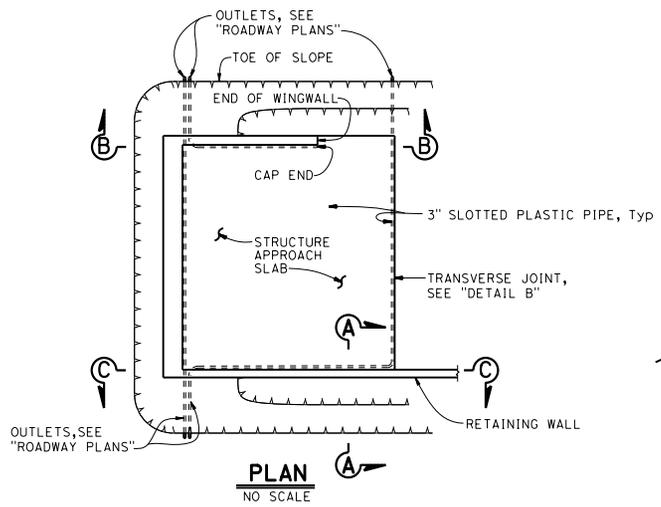
ESTERO AMERICANO BRIDGE (REPLACE)
STRUCTURE APPROACH TYPE N (30S)
 REVISION DATES
 SHEET 30 OF 40

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mfn, Son	1	50.2/50.5, 0.0/0.2	145	154

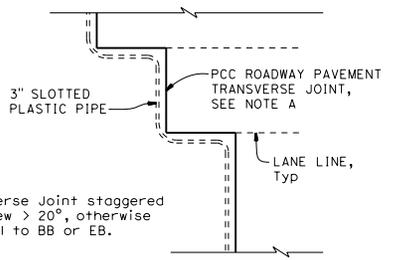
V. Ramakrishnan
 REGISTERED CIVIL ENGINEER DATE 11-01-2015
 6-6-16
 PLANS APPROVAL DATE

Vijayarani Ramakrishnan
 REGISTERED PROFESSIONAL ENGINEER
 No. 63091
 Exp. 06/30/2019
 CIVIL
 STATE OF CALIFORNIA

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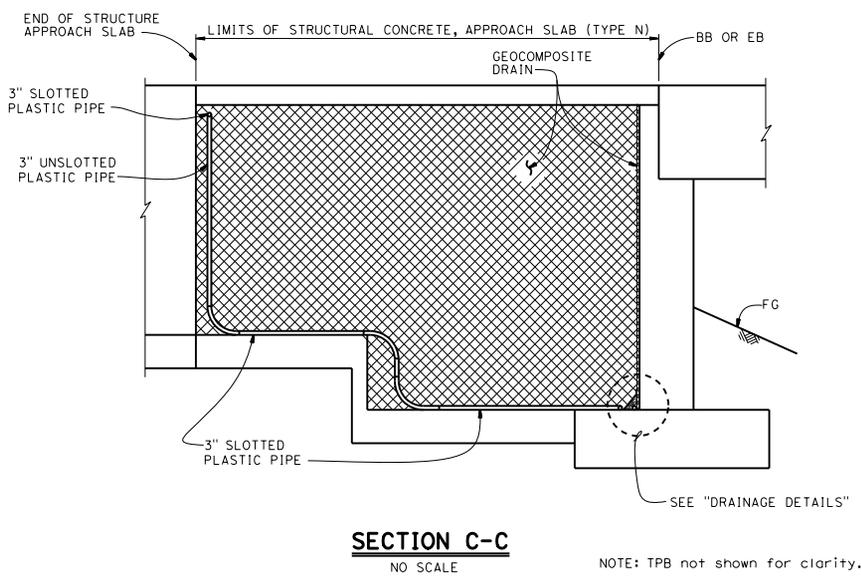
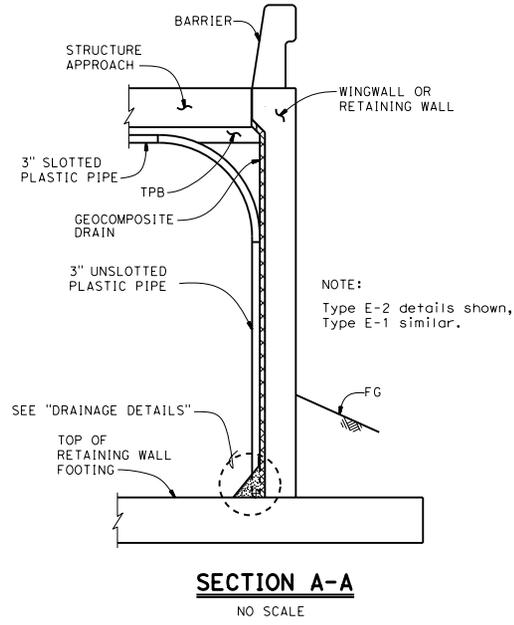


DRAINAGE DETAILS
1/2" = 1'-0"



NOTE A:
Transverse Joint staggered for Skew > 20°, otherwise parallel to BB or EB.

- NOTES:
1. For structural approach and other details not shown, see other plan sheets.
 2. All bends in plastic pipe must have 3'-0" minimum radius. Plastic pipe used for bends is not required to be slotted.



FILE NO.: x03-110	APPROVAL DATE: <u>January 2015</u>
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STANDARD DRAWING

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES
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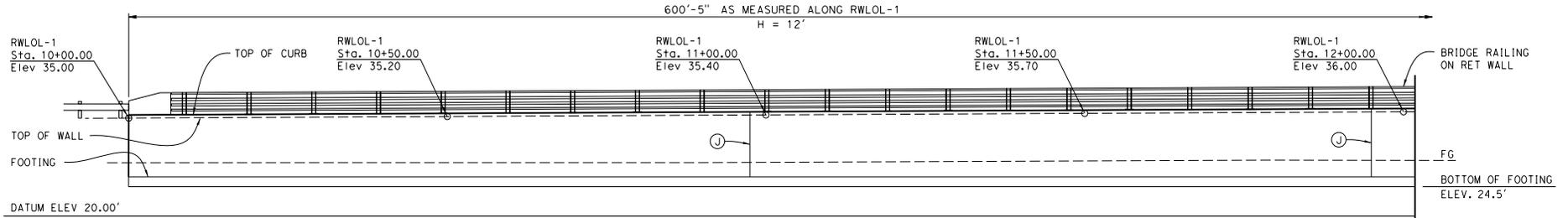
BRIDGE NO.: 27-0121	ESTERO AMERICANO BRIDGE (REPLACE)
POST MILE: 50.5	
STRUCTURE APPROACH DRAINAGE DETAILS	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mfn, Son	1	50.27/50.5, 0.0/0.2	146	154

V. Ramakrishnan
REGISTERED CIVIL ENGINEER DATE 12-14-2015
Vijayarani Ramakrishnan
No. C. 63091
Exp. 06/30/2018
CIVIL ENGINEER
STATE OF CALIFORNIA

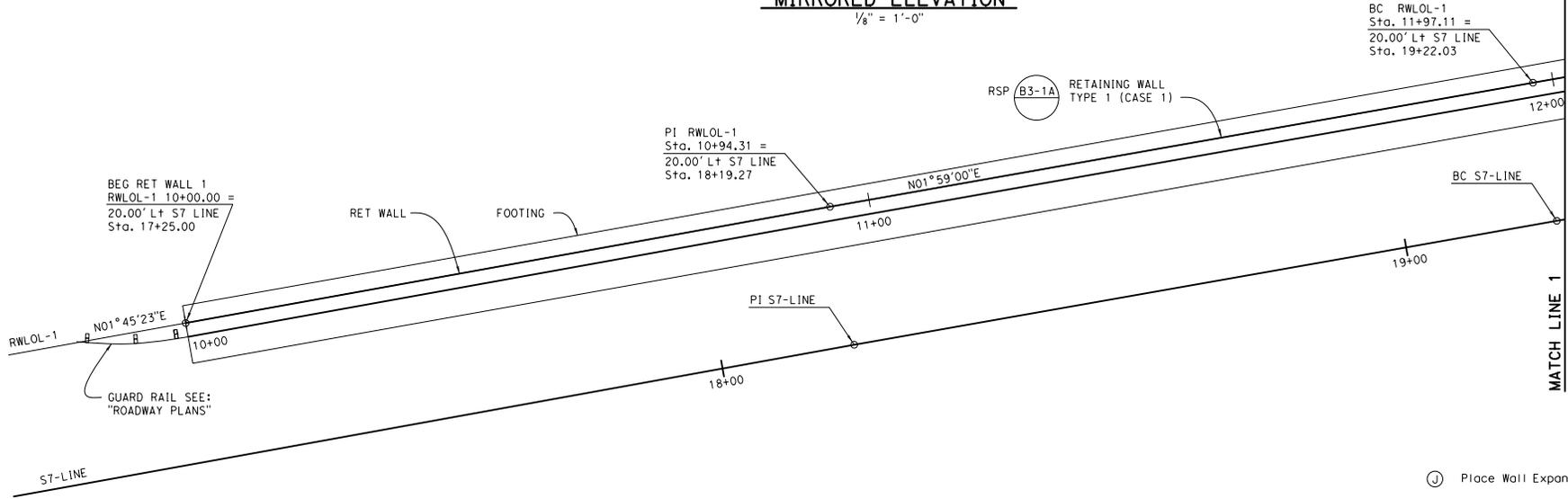
PLANS APPROVAL DATE 6-6-16

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**RETAINING WALL 1
MIRRORED ELEVATION**

1/8" = 1'-0"



RETAINING WALLS 1 AND 2 PLAN

1/8" = 1'-0"

Ⓧ Place Wall Expansion Joints at 96' max.
For Expansion Joints, Weakened Planes and Weep Holes see:

B0-3
3-3

DESIGN	BY V. Ramakrishnan	CHECKED L. Han
DETAILS	BY T. Mason	CHECKED L. Han
QUANTITIES	BY V. Ramakrishnan / L. Han	CHECKED A. Pearson

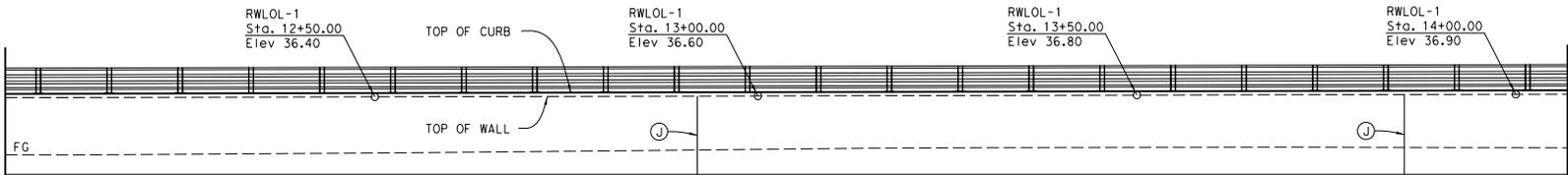
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 14

ESTERO AMERICANO BRIDGE (REPLACE)
RETAINING WALL 1 & 2 LAYOUT NO.1

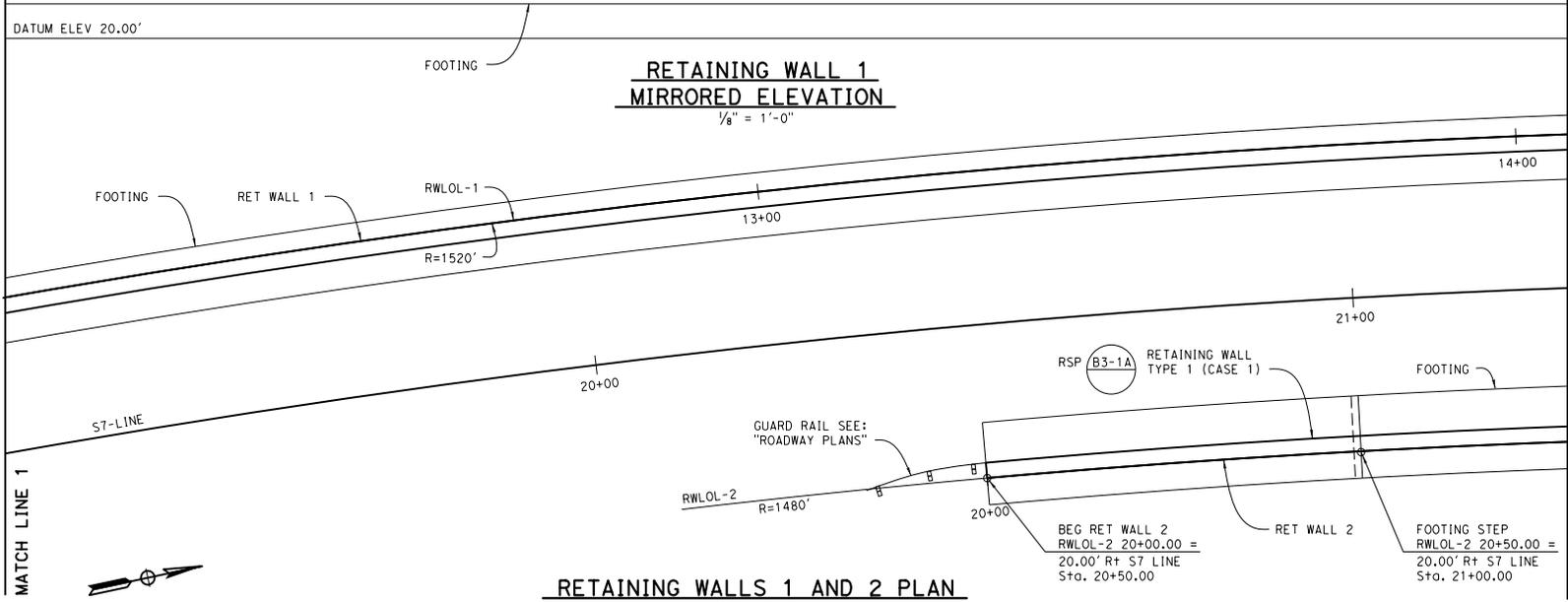
TIME PLOTTED => 14:28
DATE PLOTTED => 30-AUG-2016
USERNAME => s127688

H = 12'



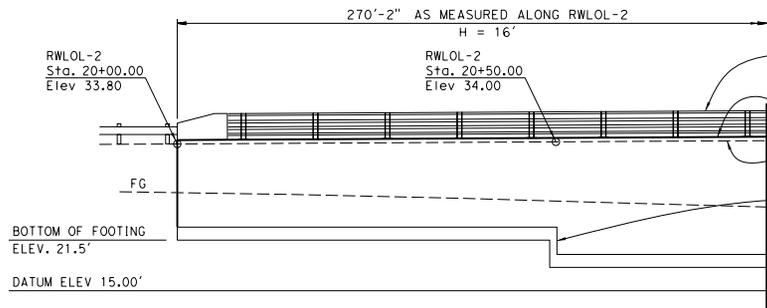
**RETAINING WALL 1
MIRRORED ELEVATION**

1/8" = 1'-0"



RETAINING WALLS 1 AND 2 PLAN

1/8" = 1'-0"



RETAINING WALL 2 ELEVATION

1/8" = 1'-0"

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mfn, Son	1	50.27/50.5, 0.0/0.2	147	154

V. Ramakrishnan
REGISTERED CIVIL ENGINEER
DATE: 12-14-2015
PLANS APPROVAL DATE: 6-6-16

PROFESSIONAL ENGINEER
Vijayarani Ramakrishnan
No. C. 63091
Exp. 06/30/2018
CIVIL
STATE OF CALIFORNIA

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BOTTOM OF FOOTING
ELEV. 24.5'

Place Wall Expansion Joints at 96' max.
For Expansion Joints, Weakened Planes and Weep Holes see:



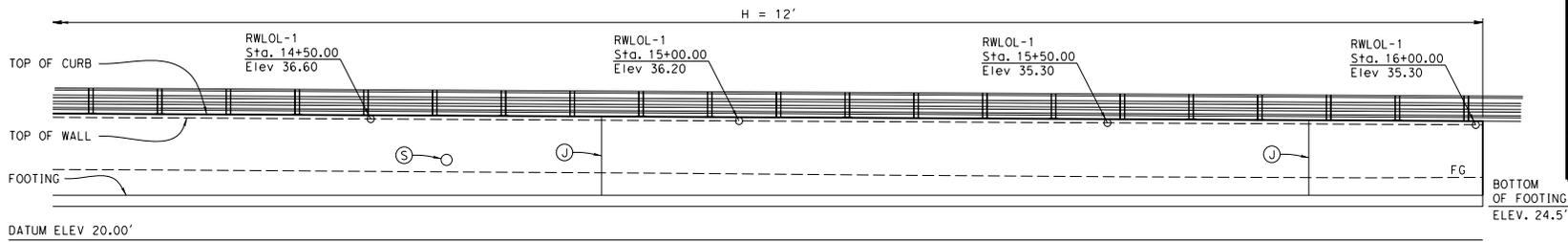
DESIGN	BY	CHECKED
	V. Ramakrishnan	L. Han
DETAILS	BY	CHECKED
	T. Mason	L. Han
QUANTITIES	BY	CHECKED
	V. Ramakrishnan / L. Han	A. Pearson

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 14

BRIDGE NO. 27-0121
POST MILE 50.5

ESTERO AMERICANO BRIDGE (REPLACE)
RETAINING WALL 1 & 2 LAYOUT NO.2



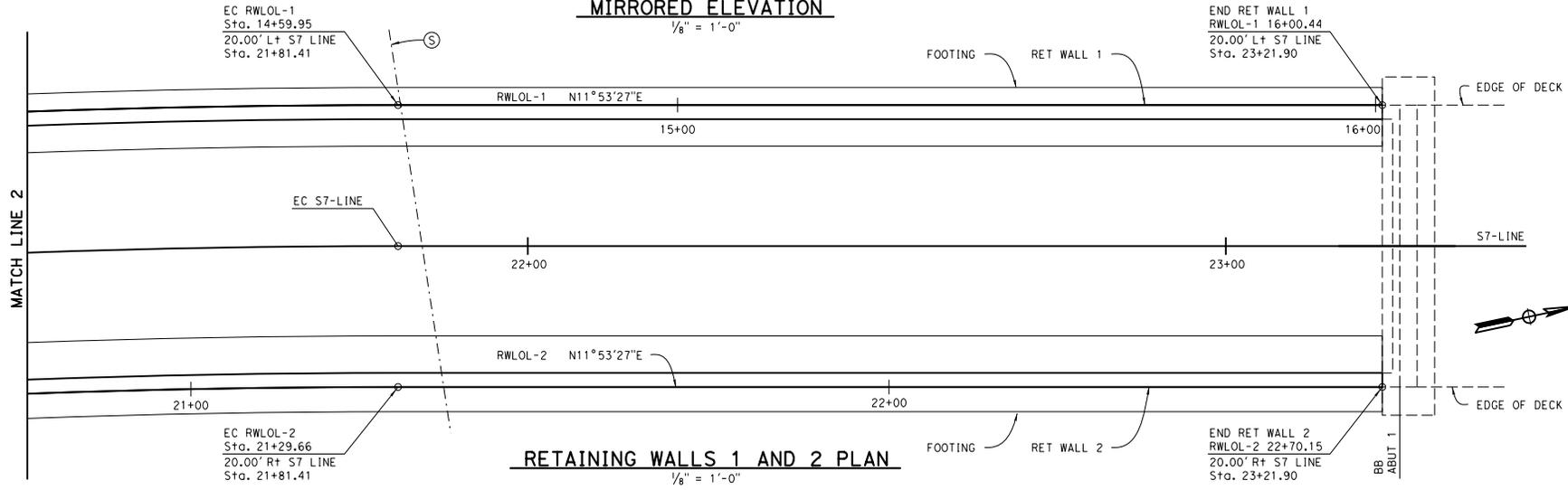
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mfn, Son	1	50.2/50.5, 0.0/0.2	148	154

V. Ramakrishnan
 REGISTERED CIVIL ENGINEER DATE 12-14-2015
 VIJAYARAMI RAMAKRISHNAN
 No. C 63091
 Exp. 06/30/2018
 CIVIL ENGINEER
 STATE OF CALIFORNIA

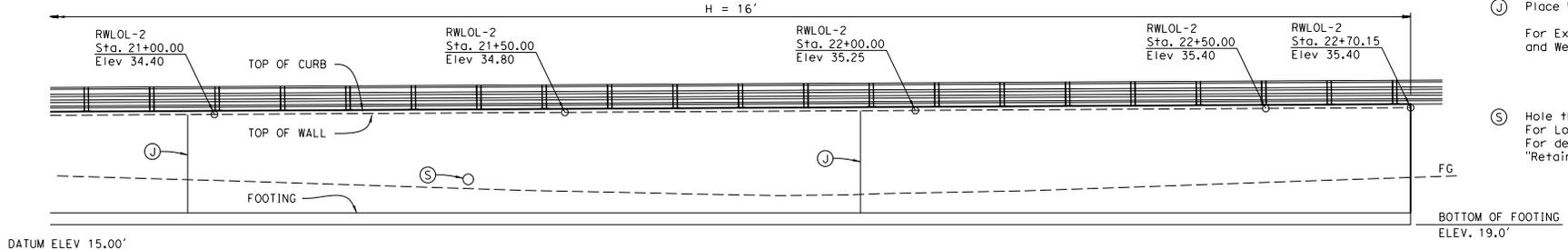
PLANS APPROVAL DATE 6-6-16

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**RETAINING WALL 1
MIRRORED ELEVATION**
 1/8" = 1'-0"



RETAINING WALLS 1 AND 2 PLAN
 1/8" = 1'-0"



RETAINING WALL 2 ELEVATION
 1/8" = 1'-0"

- Ⓝ Place Wall Expansion Joints at 96' max.
For Expansion Joints, Weakened Planes and Weep Holes see: **B0-3 3-3**
- Ⓞ Hole thru walls for 18"Ø ACP.
For Location See "Roadway Plans"
For details see: "Retaining Wall Utility Opening" **B3-6**

DESIGN	BY V. Ramakrishnan	CHECKED L. Han
DETAILS	BY T. Mason	CHECKED L. Han
QUANTITIES	BY V. Ramakrishnan / L. Han	CHECKED A. Pegarson

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
 DESIGN BRANCH 14

BRIDGE NO. 27-0121
 POST MILE 50.5

ESTERO AMERICANO BRIDGE (REPLACE)
RETAINING WALL 1 & 2 LAYOUT NO.3

UNIT: 3613
 PROJECT NUMBER & PHASE: 0412000116
 CONTRACT NO.: 04-209504

REVISION DATES
 12-14-2015

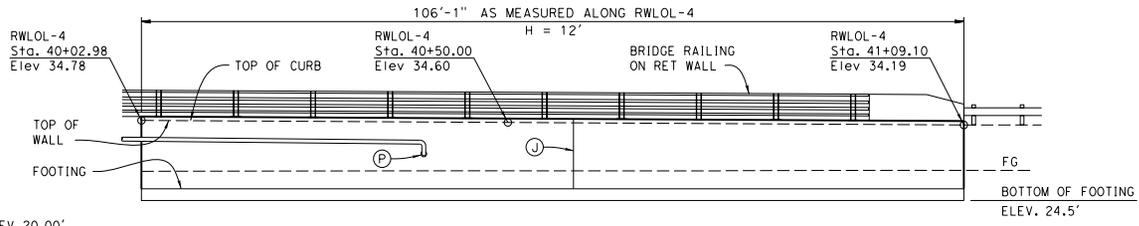
SHEET	OF
34	40

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
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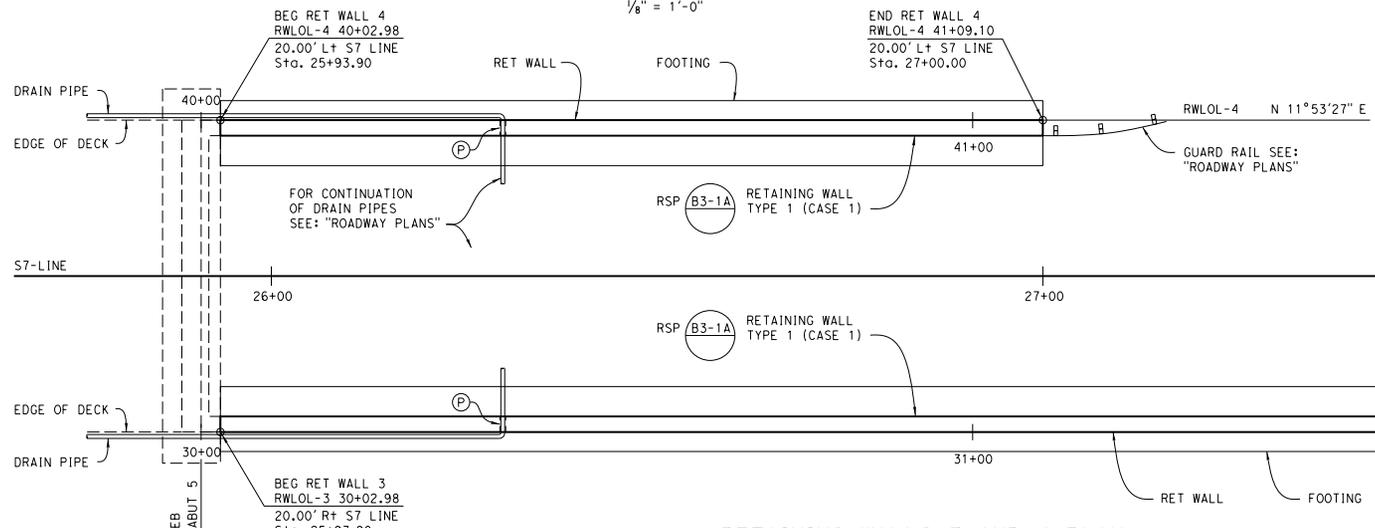
V. Ramakrishnan
REGISTERED CIVIL ENGINEER DATE 12-14-2015
Vijayarani Ramakrishnan
No. C 63091
Exp. 06/30/2018
CIVIL ENGINEER
STATE OF CALIFORNIA

6-6-16
PLANS APPROVAL DATE

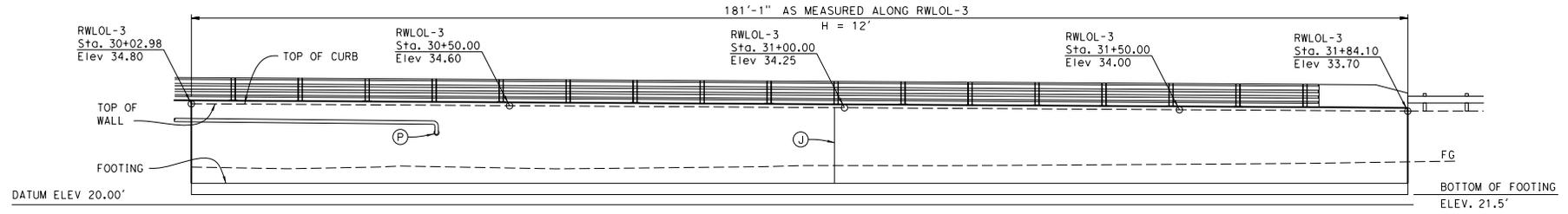
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**RETAINING WALL 4
MIRRORED ELEVATION**
1/8" = 1'-0"



RETAINING WALLS 3 AND 4 PLAN
1/8" = 1'-0"



RETAINING WALL 3 ELEVATION
1/8" = 1'-0"

- Ⓝ Place Wall Expansion Joints at 96' max.
For Expansion Joints, Weakened Planes and Weep Holes see: (B0-3) 3-3
- Ⓟ Hole thru walls for 6"Ø Drain Pipe at Location Sta 26+30 S7-Line @ Elevation 30.48' Left and 30.66' Right. For details see: "Retaining Wall Utility Opening" (B3-6)

DESIGN	BY V. Ramakrishnan	CHECKED L. Han
DETAILS	BY T. Mason	CHECKED L. Han
QUANTITIES	BY V. Ramakrishnan / L. Han	CHECKED A. Pegaron

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 14

BRIDGE NO. 27-0121
POST MILE 50.5

ESTERO AMERICANO BRIDGE (REPLACE)
RETAINING WALL 3 & 4 LAYOUT

UNIT: 3613
PROJECT NUMBER & PHASE: 0412000116
CONTRACT NO.: 04-209504

DISREGARD PRINTS BEARING EARLIER REVISION DATES

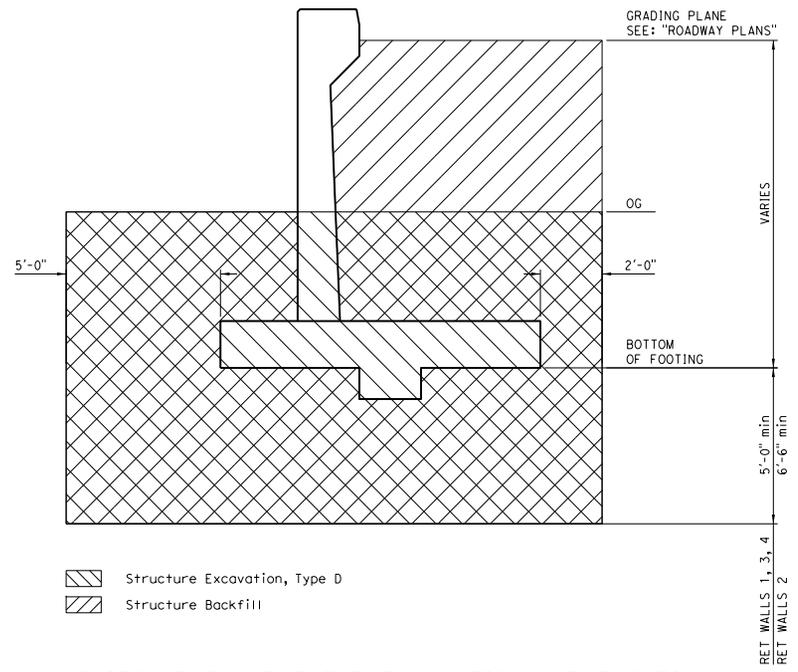
REVISION DATES	SHEET	OF
11-20-2013-12-14-2015	35	40

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mfn. Son	1	50.2/50.5, 0.0/0.2	150	154

V. Ramakrishnan
 REGISTERED CIVIL ENGINEER DATE 12-14-2015
 ROAD No. C 63091
 PLANS APPROVAL DATE 6-6-16

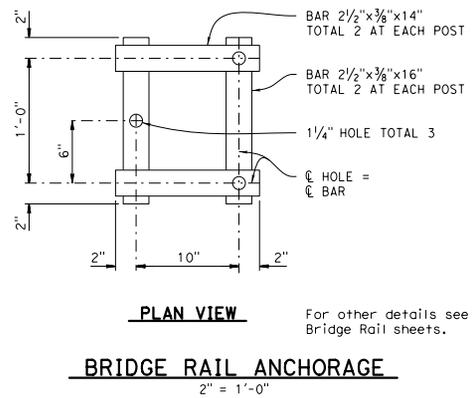
REGISTERED PROFESSIONAL ENGINEER
 Vijayaram Ramakrishnan
 No. C 63091
 Exp. 06/30/2018
 CIVIL
 STATE OF CALIFORNIA

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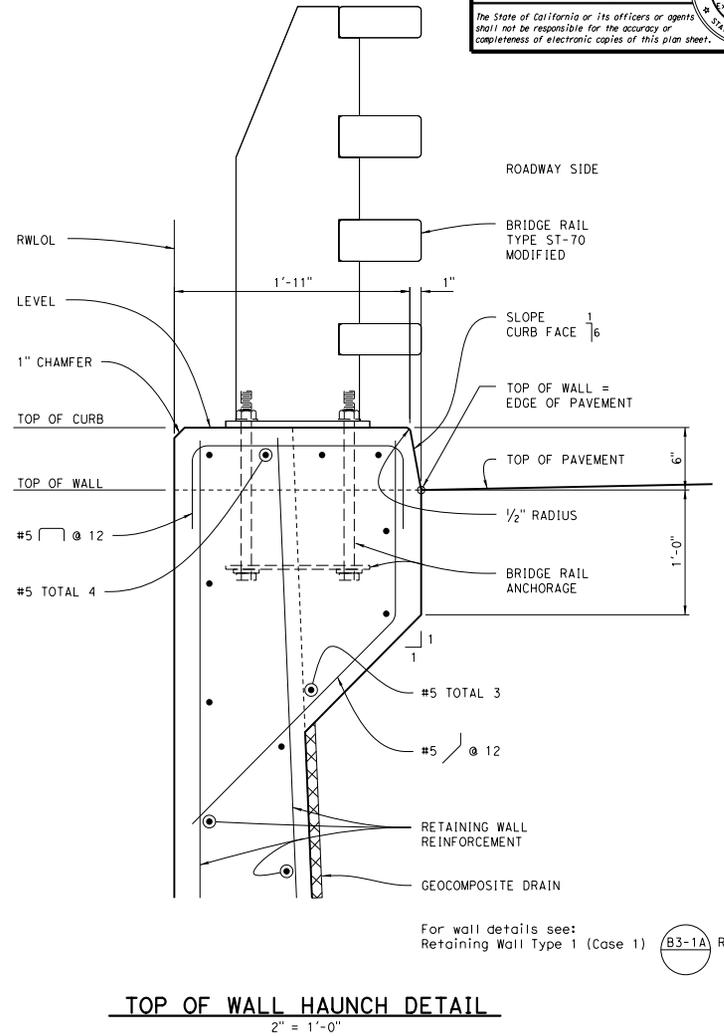
Structure Excavation, Type D
 Structure Backfill

LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL
 no scale



BRIDGE RAIL ANCHORAGE
 2" = 1'-0"

For other details see Bridge Rail sheets.



TOP OF WALL HAUNCH DETAIL
 2" = 1'-0"

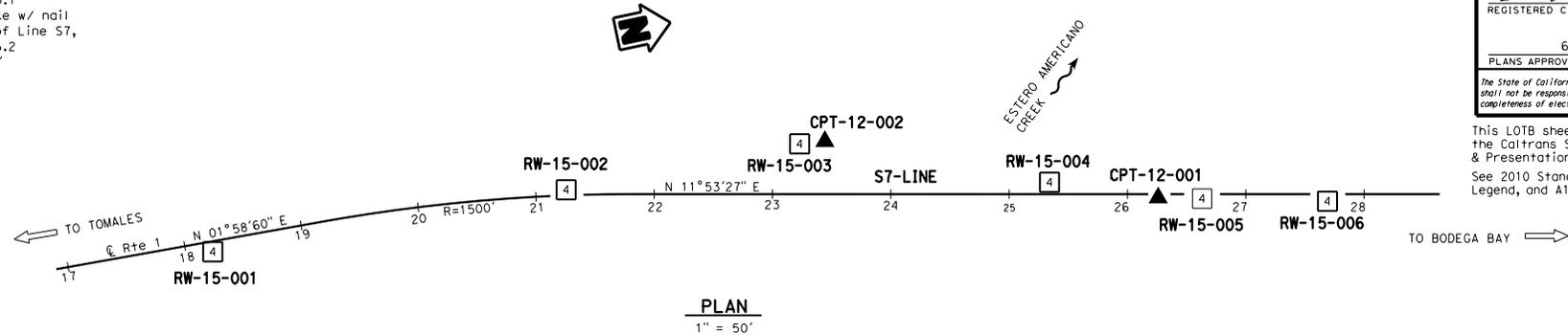
For wall details see: Retaining Wall Type 1 (Case 1) (B3-1A) RSP

DESIGN	BY V. Ramakrishnan	CHECKED L. Han	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 14	BRIDGE NO. 27-0121	ESTERO AMERICANO BRIDGE (REPLACE) RETAINING WALL DETAILS
DETAILS	BY T. Mason	CHECKED L. Han			POST MILE 50.5	
QUANTITIES	BY V. Ramakrishnan / L. Han	CHECKED A. Pearson				

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
 UNIT: 3613 PROJECT NUMBER & PHASE: 0412000116 CONTRACT NO.: 04-209504 DISREGARD PRINTS BEARING EARLIER REVISION DATES
 REVISION DATES: 01-20-2013, 02-14-2013
 SHEET 36 OF 40
 FILE => 27-0121 - 36 RetWall Details.dgn

BENCH MARK

PRHV 1149.1
Wood stake w/ nail
26.1' Rt of Line S7,
Sta 14+06.2
Elev 27.7'
NAVD 88.



PLAN
1" = 50'

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn, Son	1	50.2/50.5, 0.0/0.2	151	154

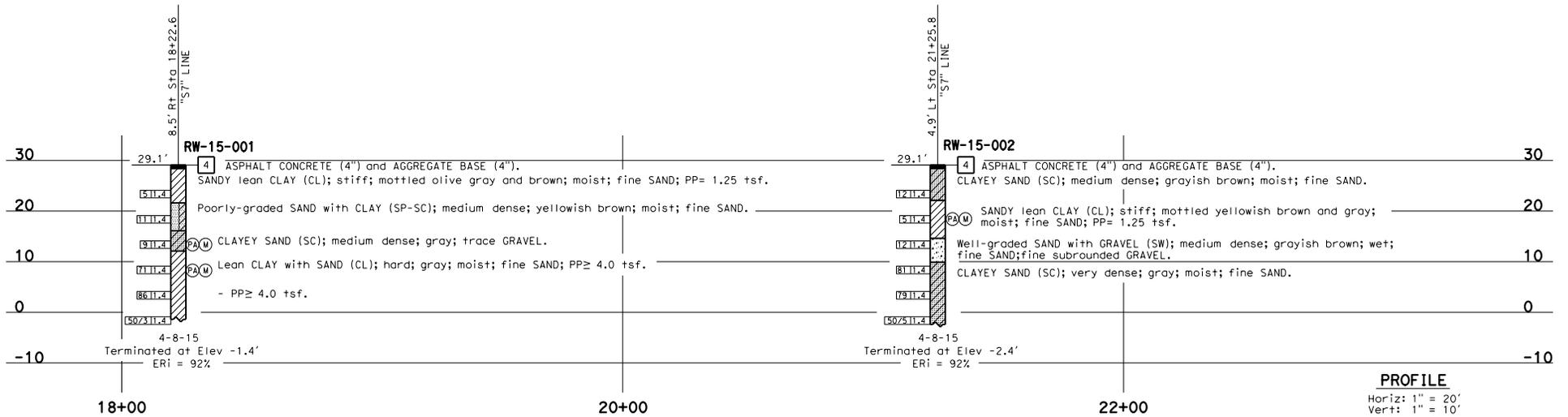
7-31-15 DATE
REGISTERED CIVIL ENGINEER
Caroline Chen
No. C62438
Exp. 9-30-15
CIVIL ENGINEER
STATE OF CALIFORNIA

6-6-16 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.

Note: Groundwater was encountered but not measured due to drilling method.

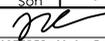


PROFILE
Horiz: 1" = 20'
Vert: 1" = 10'

ENGINEERING SERVICES		MATERIALS AND GEOTECHNICAL SERVICES		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 14		ESTERO AMERICANO BRIDGE (REPLACE) LOG OF TEST BORINGS 1 OF 4	
FUNCTIONAL SUPERVISOR NAME: M. Momenzadeh	DRAWN BY: F. Nguyen CHECKED BY: J. Moore	FIELD INVESTIGATION BY: D. Nesbitt		BRIDGE NO. 27-0121	POST MILE 50.5	CONTRACT NO.: 04-209504		REVISION DATES 01/28/15	SHEET 37 OF 40

06S CIVIL LOG OF TEST BORINGS SHEET
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS
UNIT: 3650
PROJECT NUMBER & PHASE: 04120001161
CONTRACT NO.: 04-209504
DISREGARD PRINTS BEARING EARLIER REVISION DATES
FILE => 27-0121 - 37 LOTB 1of4.dgn

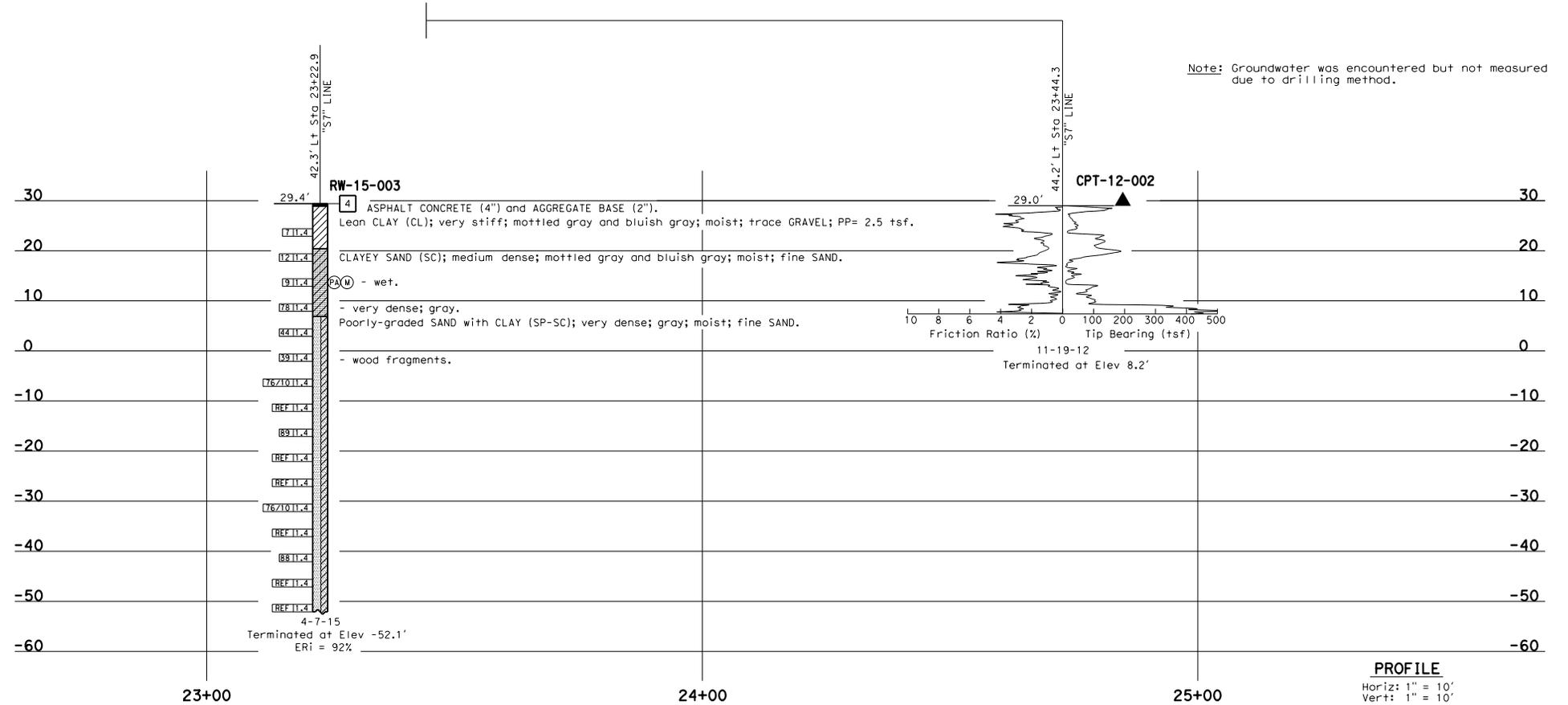
USERNAME => 93121688 DATE PLOTTED => 30-AUG-2016 TIME PLOTTED => 14:28

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn, Son	1	50.2/50.5, 0.0/0.2	152	154
 REGISTERED CIVIL ENGINEER			7-31-15	DATE	
6-6-16 PLANS APPROVAL DATE					
<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>					

FOR PLAN VIEW, SEE
"LOG OF TEST BORINGS 1 OF 4"

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.

Note: Groundwater was encountered but not measured due to drilling method.



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

ENGINEERING SERVICES FUNCTIONAL SUPERVISOR: NAME: M. Momenzadeh DRAWN BY: F. Nguyen CHECKED BY: J. Moore		MATERIALS AND GEOTECHNICAL SERVICES FIELD INVESTIGATION BY: D. Nesbitt		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 14		BRIDGE NO.: 27-0121 POST MILE: 50.5		ESTERO AMERICANO BRIDGE (REPLACE) LOG OF TEST BORINGS 2 OF 4	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS: 0 1 2 3				UNIT: 3650 PROJECT NUMBER & PHASE: 04120001161		CONTRACT NO.: 04-209504		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES: 01/28/15 01/28/15 SHEET 38 OF 40	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn. Son	1	50.2/50.5, 0.0/0.2	153	154

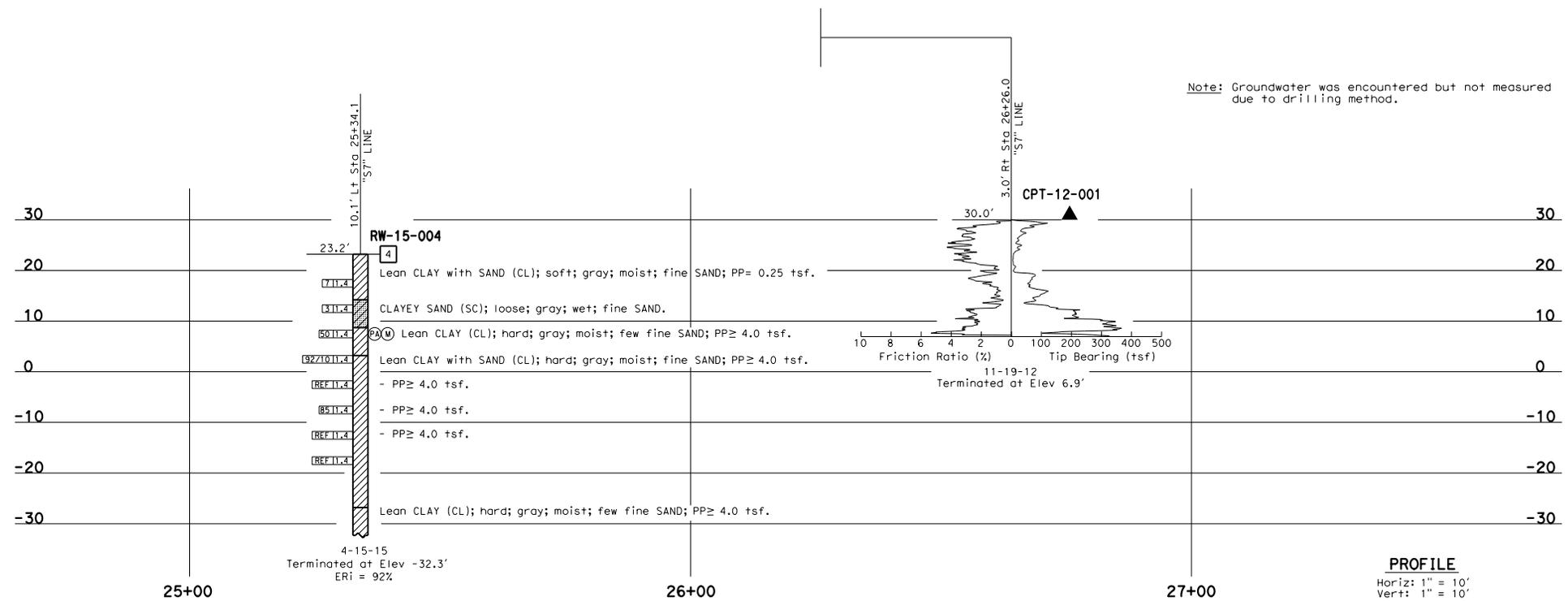
<i>me</i>	7-31-15
REGISTERED CIVIL ENGINEER	DATE
6-6-16	
PLANS APPROVAL DATE	

REGISTERED PROFESSIONAL ENGINEER
Caroline Chen
No. C62438
Exp. 9-30-15
CIVIL
STATE OF CALIFORNIA

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 See 2010 Standard Plans A10F and A10G for Soil Legend, and A10H for Rock Legend.

FOR PLAN VIEW, SEE
 "LOG OF TEST BORINGS 1 OF 4"



ENGINEERING SERVICES		MATERIALS AND GEOTECHNICAL SERVICES		STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES		BRIDGE NO.		ESTERO AMERICANO BRIDGE (REPLACE)	
FUNCTIONAL SUPERVISOR		FIELD INVESTIGATION BY:		DEPARTMENT OF TRANSPORTATION		STRUCTURE DESIGN		27-0121		LOG OF TEST BORINGS 3 OF 4	
NAME: M. Momenzadeh		D. Nesbitt				DESIGN BRANCH 14		POST MILE			
DRAWN BY: F. Nguyen								50.5			
CHECKED BY: J. Moore											
06S CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		UNIT: 3650		PROJECT NUMBER & PHASE: 04120001161		CONTRACT NO.: 04-209504		DISREGARD PRINTS BEARING EARLIER REVISION DATES	
				0 1 2 3		REVISION DATES		SHEET		OF	
						01/28/15		39		40	

FILE => 27-0121 - 39 LOTB 3of4.dgn

USERNAME => 93121688 DATE PLOTTED => 30-AUG-2016 TIME PLOTTED => 14:28

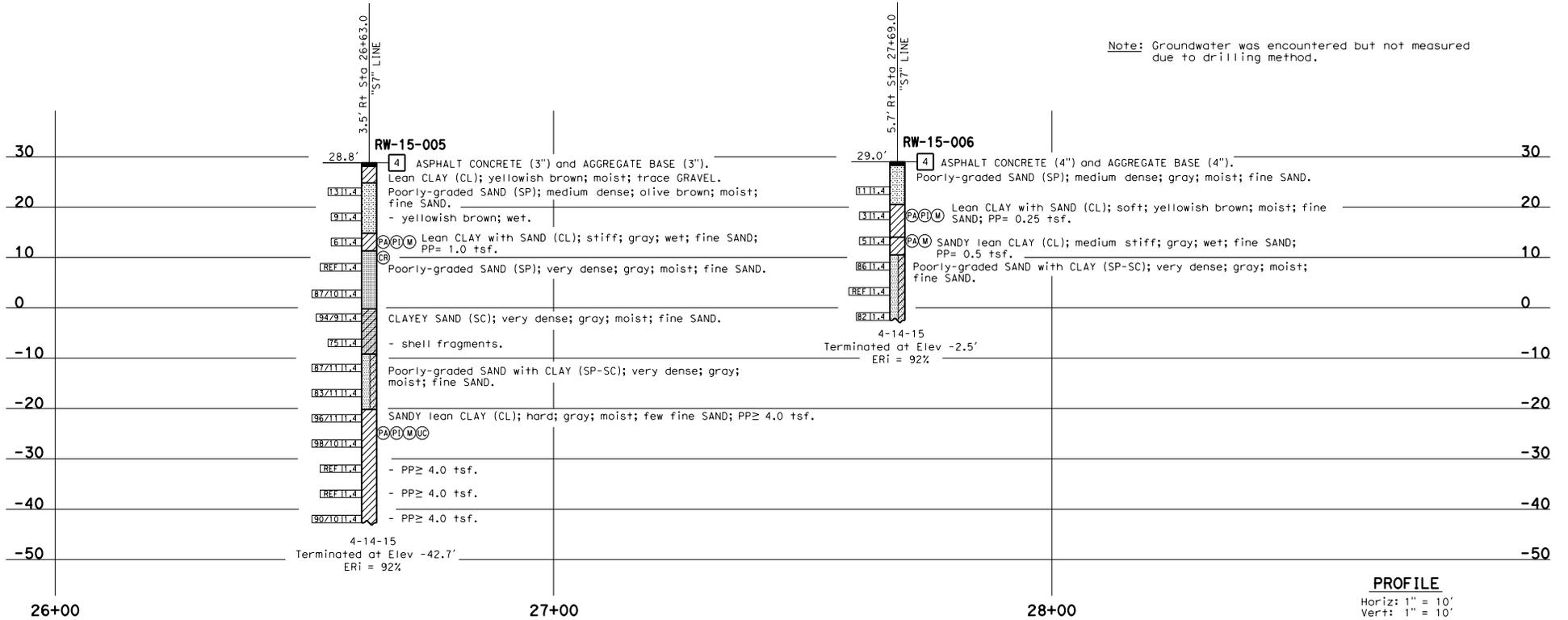
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Mrn, Son	1	50.2/50.5, 0.0/0.2	154	154

REGISTERED CIVIL ENGINEER DATE 7-31-15
 6-6-16
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 Caroline Chen
 No. C62438
 Exp. 9-30-15
 CIVIL
 STATE OF CALIFORNIA

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FOR PLAN VIEW, SEE
"LOG OF TEST BORINGS 1 OF 4"



Note: Groundwater was encountered but not measured due to drilling method.

ENGINEERING SERVICES		MATERIALS AND GEOTECHNICAL SERVICES		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 14		BRIDGE NO. 27-0121 POST MILE 50.5		ESTERO AMERICANO BRIDGE (REPLACE) LOG OF TEST BORINGS 4 OF 4	
FUNCTIONAL SUPERVISOR NAME: M. Momenzadeh	DRAWN BY: F. Nguyen CHECKED BY: J. Moore	FIELD INVESTIGATION BY: D. Nesbitt		PROJECT NUMBER & PHASE: 04120001161		CONTRACT NO.: 04-209504		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES 01/28/15 01/28/15	
06S CIVIL LOG OF TEST BORINGS SHEET				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		UNIT: 3650		SHEET 40		OF 40	

FILE => 27-0121 - 40 LOTB 4of4.dgn

USERNAME => 95121688 DATE PLOTTED => 30-AUG-2016 TIME PLOTTED => 14:28