

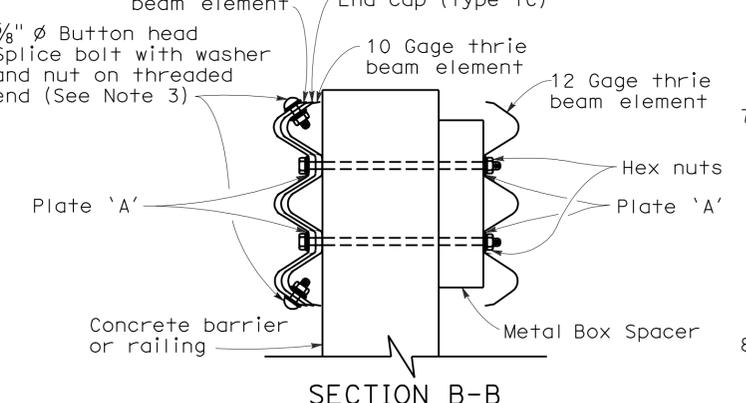
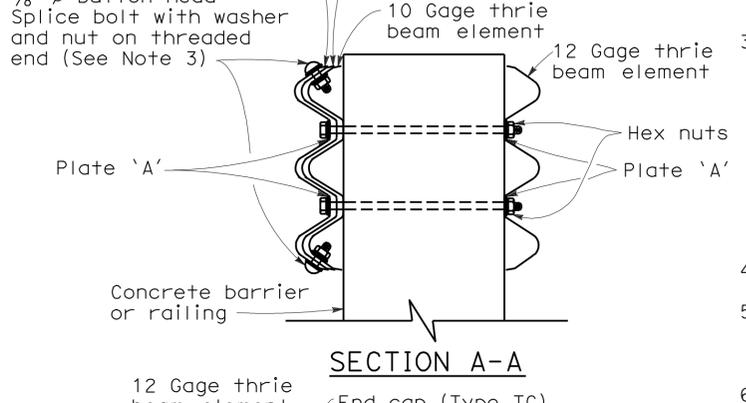
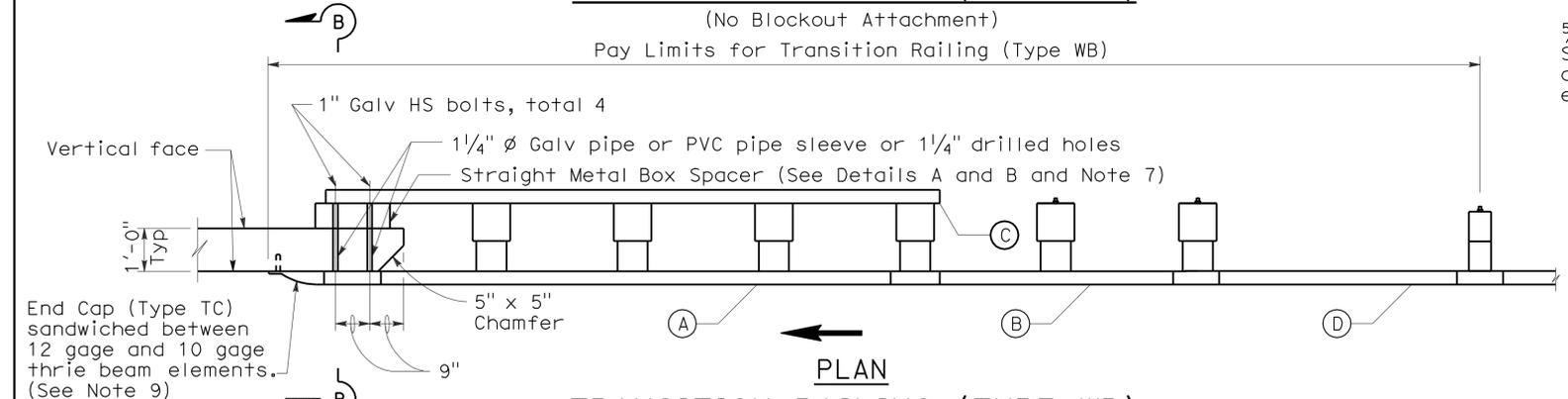
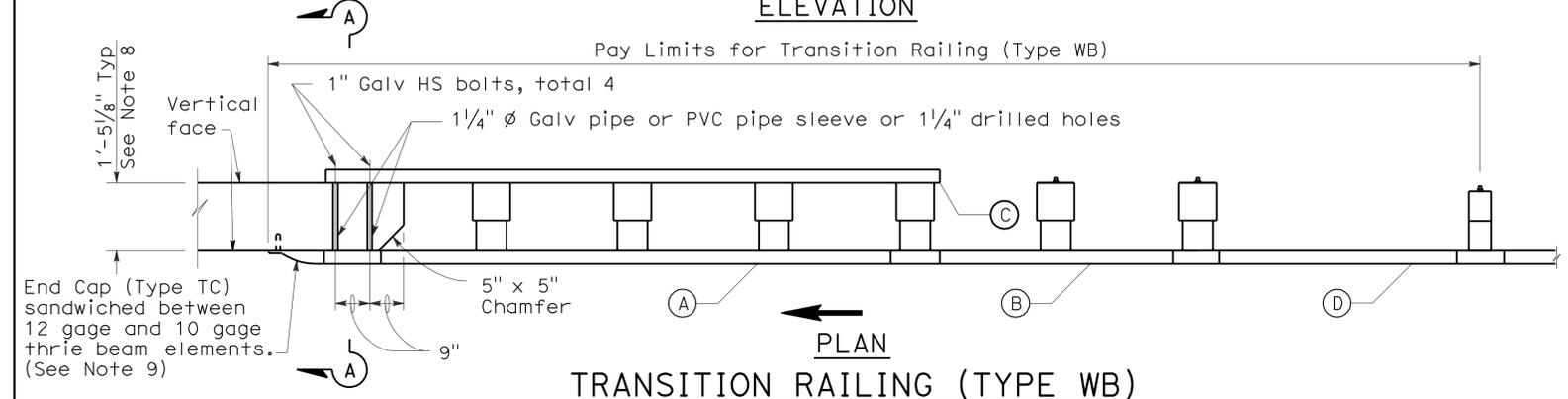
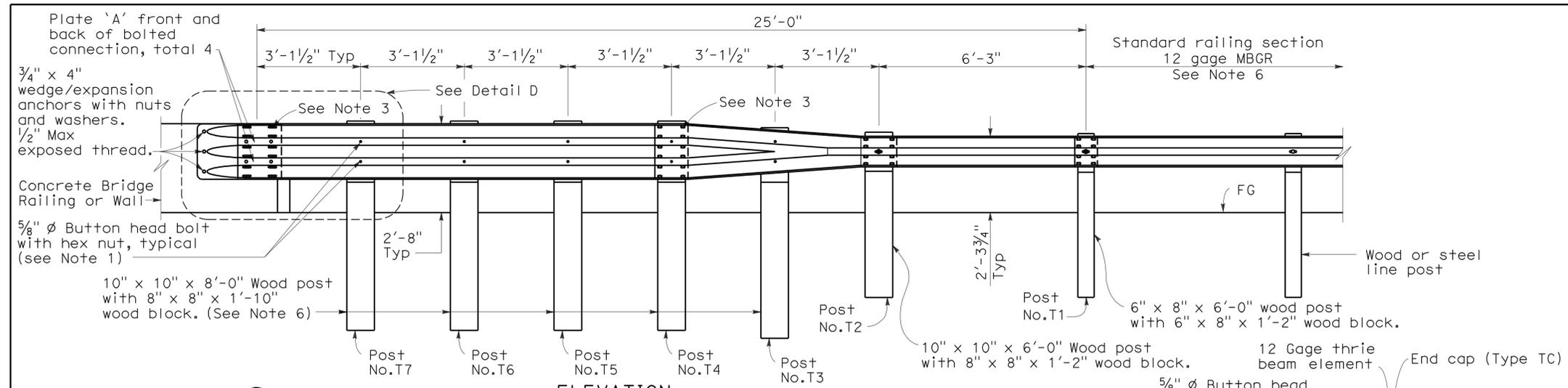
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	9.1/15.1	801	949

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 5, 2009
PLANS APPROVAL DATE

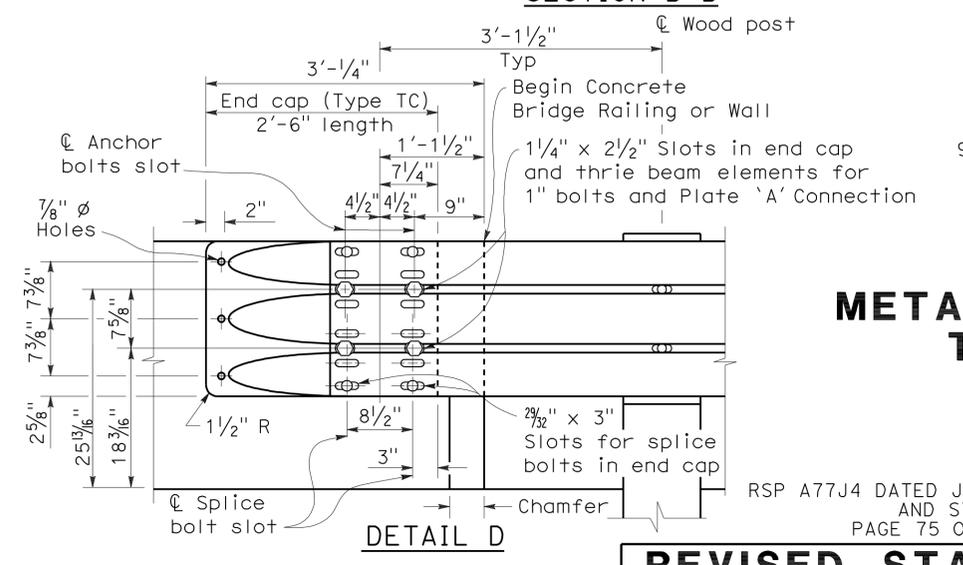
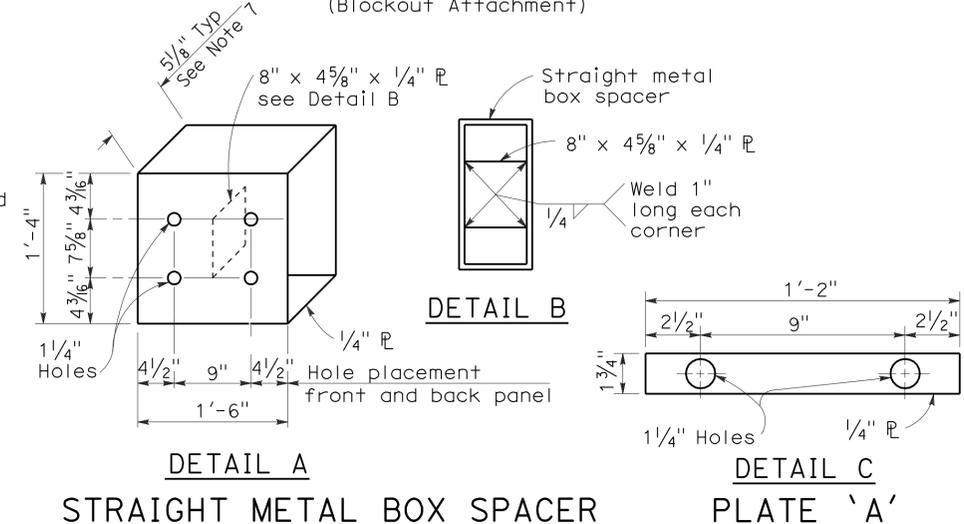
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REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA



- NOTES:** To accompany plans dated 10-25-10
- Use 5/8 " ϕ Button head bolts and hex nuts for connections to posts. No washer on rail face for bolted connections to post.
 - The nested rail elements, end cap, and 'W' beam to thrie beam element may be spliced together prior to bolting the elements to the wood post and concrete barrier or railing.
 - Exterior splice bolt holes for rail element splices at Post No.T4 and the connection to the concrete barrier or railing shall be the standard 29/32 " x 1 1/8 " slot size. Interior splice bolt holes at these locations may be increased up to 1 1/4 " ϕ . Only the top 2 and the bottom 2 splice bolts with washers and nuts are required for rail splices at Post No.T4 and the connection to the concrete barrier or railing.
 - Direction of adjacent traffic indicated by \rightarrow .
 - The top elevation of Post Nos.T2 through T7 shall not project more than 1" above the top elevation of the rail element.
 - Typically, the railing connected to Transition Railing (Type WB) will be either standard railing section of metal beam guard railing or an approved Caltrans end treatment attached to Post No.T1.
 - The depth of the metal box spacer varies from the 5 1/8 " to 1 1/2 " and is dependent on the width of the concrete railing or wall. The combined dimension for the depth of the metal box spacer plus the width of railing or wall is typically 17 1/8 ". Where the space between the backside of the concrete railing or wall and the rear thrie beam element is less than 1 1/2 ", metal plates similar to Plate 'A' are to be used as spacers.
 - Where the width of the concrete railing or wall is greater than 17 1/8 ", wood blocks are to be used to fill the space created between the backside of Posts No.4 through No.7 and the rear thrie beam element. These wood blocks shall be 8" in width and 1'-2" in length. The dimension between the front thrie beam element and the rear thrie beam element is to match the width of the concrete railing or wall.
 - End cap may be installed over 12 gage and 10 gage thrie beam elements where transition railing is installed on the departure end of bridge railing.

- LEGEND**
- (A) Nested thrie beam elements (one 12 gage element nested over one 10 gage element).
 - (B) One 10 gage "W" beam to thrie beam element.
 - (C) One 12 gage thrie beam element.
 - (D) One 10 gage "W" beam rail element (7'-3 1/2" length)
- 10 gage = 0.135" thick
12 gage = 0.108" thick



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

METAL BEAM GUARD RAILING TRANSITION RAILING (TYPE WB)

NO SCALE

RSP A77J4 DATED JUNE 5, 2009 SUPERSEDES RSP A77J4 DATED JUNE 6, 2008 AND STANDARD PLAN A77J4 DATED MAY 1, 2006 - PAGE 75 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP A77J4

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	9.1/15.1	802	949

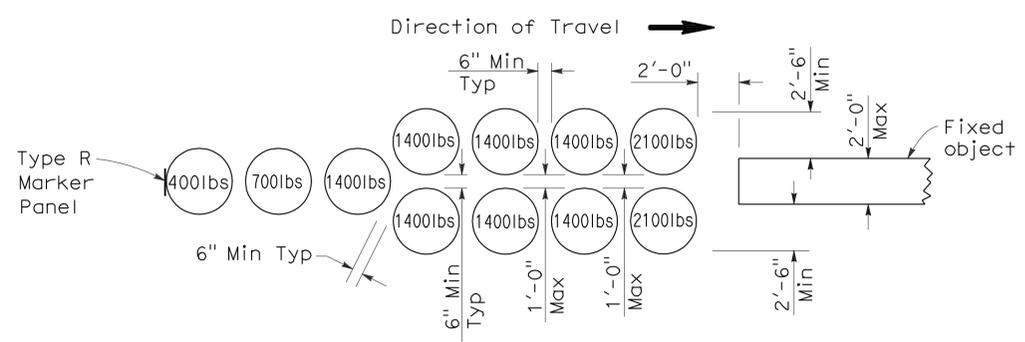
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

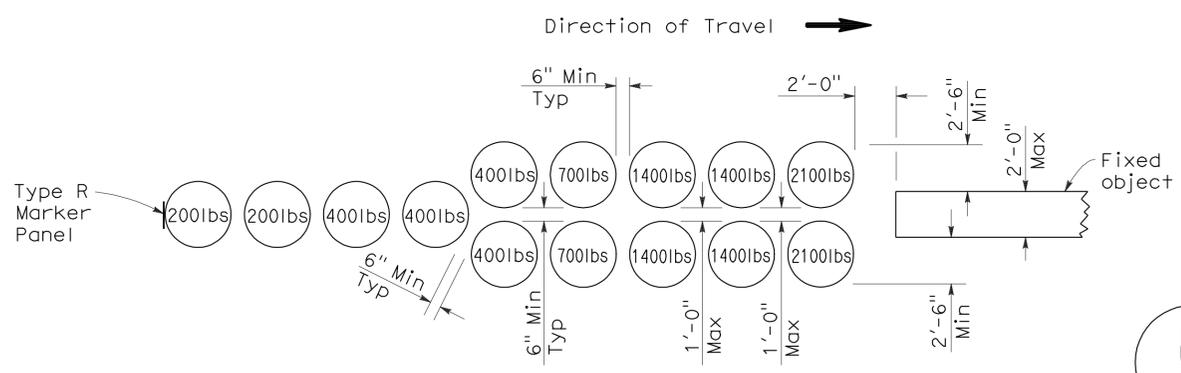
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REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

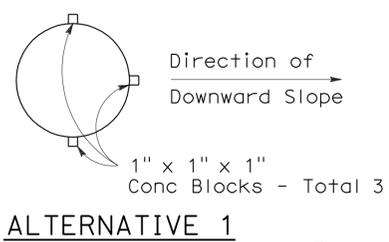
To accompany plans dated 10-25-10



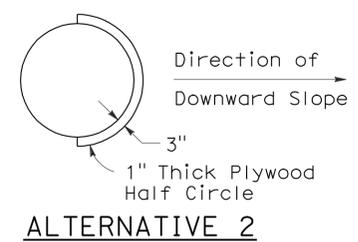
Direction of Travel →
ARRAY 'U11'
Approach speed less than 45 mph



Direction of Travel →
ARRAY 'U14'
Approach speed 45 mph or more

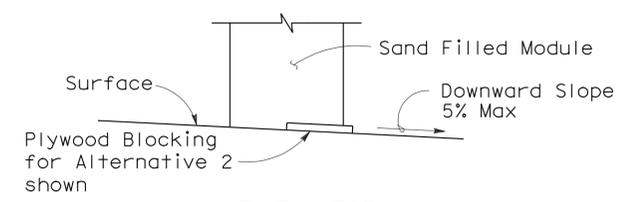


ALTERNATIVE 1



ALTERNATIVE 2

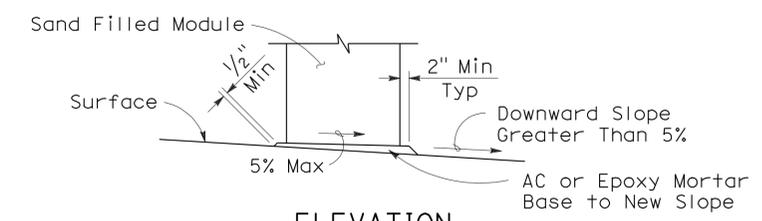
PLAN



ELEVATION

BRIDGE DECK MODULE BLOCKING DETAILS

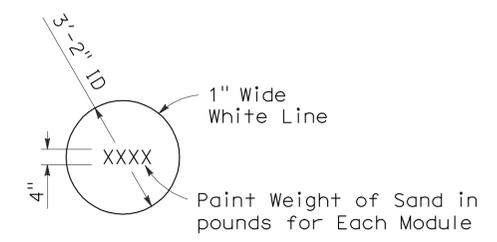
(See Note 6)



ELEVATION

SLOPED SEAT DETAIL

(See Note 4)



PAINTING DETAIL

(See Note 5)

NOTES:

1. (xxx) Indicates module location and mass of sand in pounds for each module. Module spacing is based on the greater diameter of the modules.
2. All sand weights are nominal.
3. Each module is to contain amount of sand indicated, supported according to the manufacturer's instructions.
4. Modules shall be placed on asphalt concrete, epoxy mortar or concrete surface. Modules to be placed on surfacing with greater than 5% downward slope shall be seated as shown.
5. Mass of sand and outline of each module shall be painted on the surface at each module location.
6. Module blocking, epoxied to the deck surface, is required for all modules placed on bridge decks. Two acceptable alternatives are shown. Other alternatives recommended by the manufacturer and approved by the Engineer will be accepted.
7. Place the top of the Type R marker panel 1" below the module lid.
8. Approach speeds indicated conform to NCHRP Report criteria.

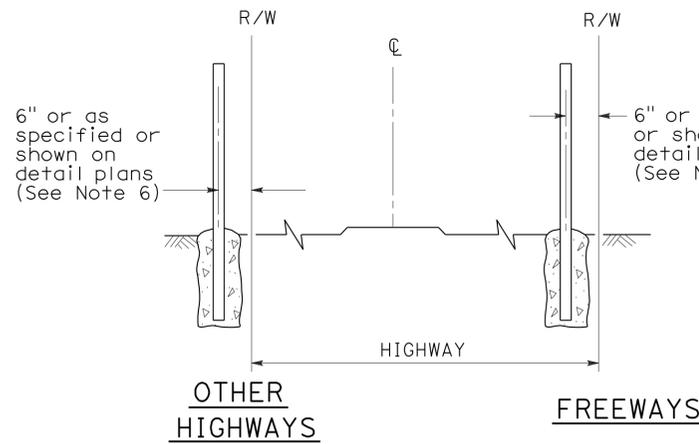
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**CRASH CUSHION,
SAND FILLED
(UNIDIRECTIONAL)**

NO SCALE

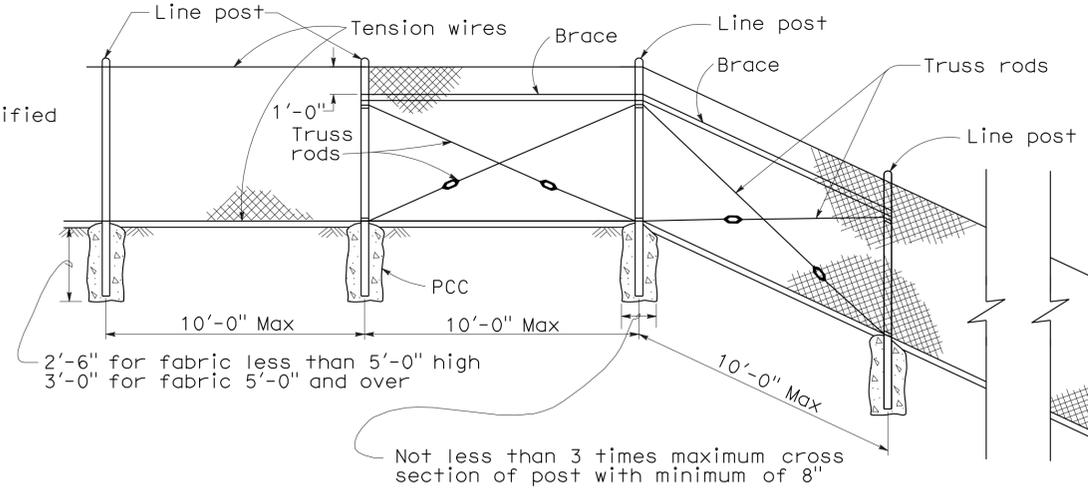
RSP A81A DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A81A
DATED MAY 1, 2006 - PAGE 99 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A81A

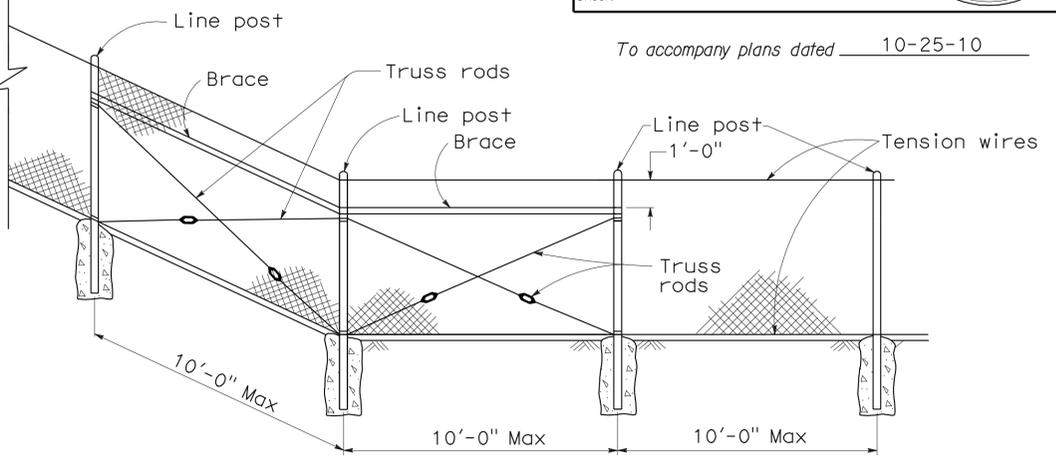
2006 REVISED STANDARD PLAN RSP A81A



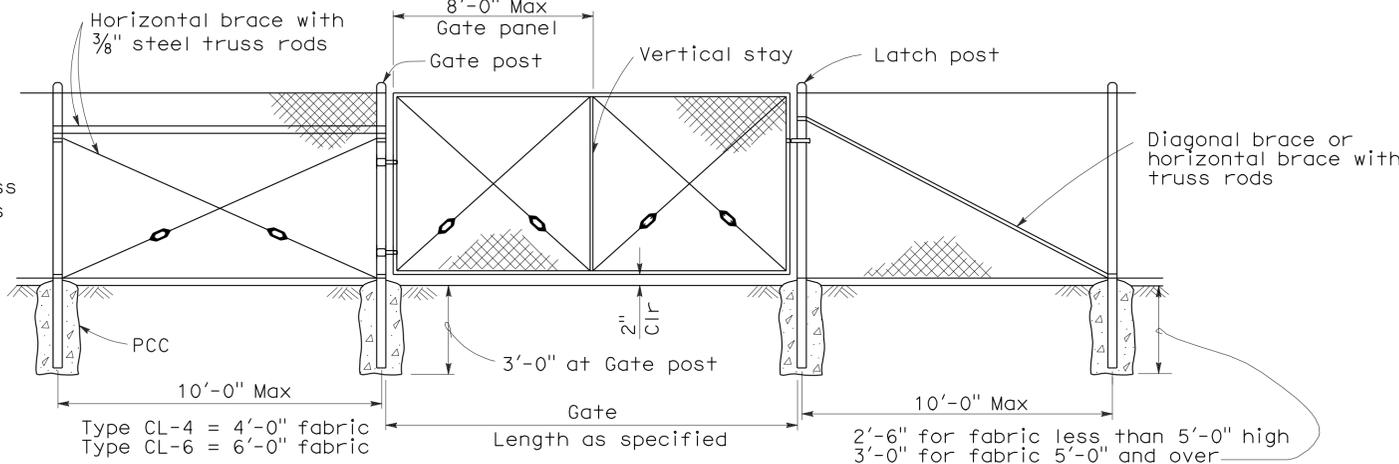
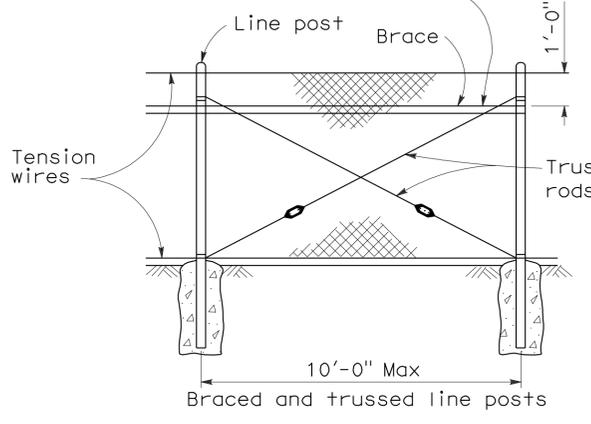
FENCE LOCATION



CHAIN LINK FENCE ON SHARP BREAK IN GRADE



Brace to be removed after all other fence construction is completed unless otherwise directed by the Engineer



CHAIN LINK GATE INSTALLATION

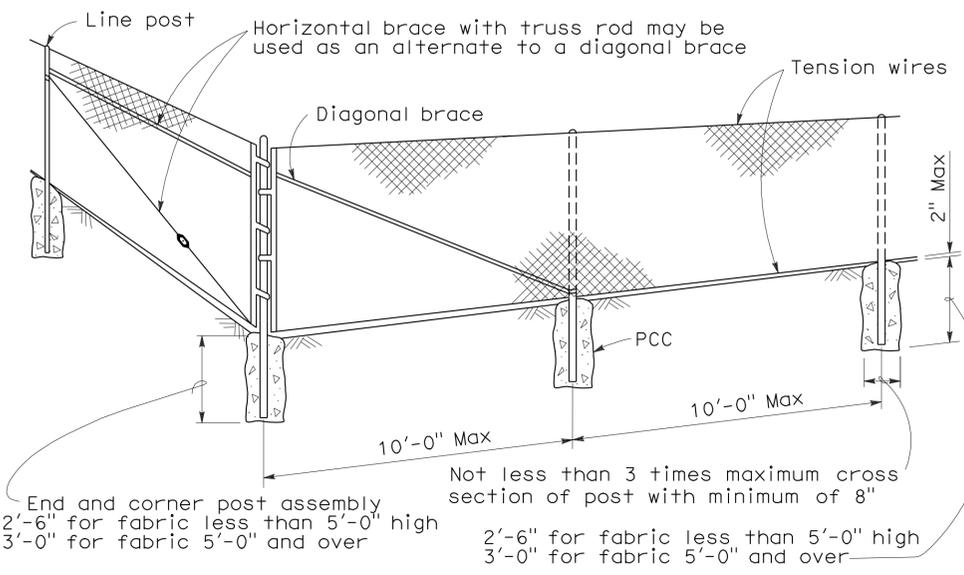
GATE POST			
FENCE HEIGHT	GATE WIDTHS	NOMINAL ID	WEIGHT PER FOOT
6'-0" and Less	Up thru 6'-0"	2 1/2"	4.95 LB
	Over 6'-0" thru 12'-0"	4"	10.79 LB
	Over 12'-0" thru 18'-0"	5"	14.62 LB
	Over 18'-0" to 24'-0" Max	6"	18.97 LB
Over 6'-0"	Up thru 6'-0"	3"	7.58 LB
	Over 6'-0" thru 12'-0"	5"	14.62 LB
	Over 12'-0" thru 18'-0"	6"	18.97 LB
	Over 18'-0" to 24'-0" Max	8"	28.55 LB

Above post dimensions and weights are minimums. Larger sizes may be used on approval of the Engineer.

NOTES:

- The below table shows examples of post and brace sections which may comply with the Specifications.
- Sections shown in the tables must also comply with the strength requirements and other provisions of the Specifications.
- Other sections which comply with the strength requirements and other provisions of the Specifications may be used on approval of the Engineer.
- Options exercised shall be uniform on any one project.
- Dimensions shown are nominal.
- Offset to be 2'-0" at monument locations, measured at right angles to R/W lines. Taper to achieve offset to be at least 20'-0" long.

FENCE HEIGHT	TYPICAL MEMBER DIMENSIONS (See Notes)									
	LINE POSTS			END, LATCH & CORNER POSTS			BRACES			
	ROUND ID	H	ROLL FORMED	ROUND ID	ROLL FORMED		ROUND ID	H	ROLL FORMED	
6' & less	1 1/2"	1 7/8" x 1 5/8"	1 7/8" x 1 5/8"	2"	3 1/2" x 3 1/2"	2" x 1 3/4"	1 1/4"	1 1/2" x 1 5/16"	1 5/8" x 1 1/4"	1 3/4" x 1 1/4"
Over 6'	2"	2 1/4" x 2"	2" x 1 3/4"	2 1/2"	3 1/2" x 3 1/2"	2 1/2" x 2 1/2"	1 1/4"	1 1/2" x 1 5/16"	1 5/8" x 1 1/4"	1 3/4" x 1 1/4"



CORNER POST

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
CHAIN LINK FENCE
 NO SCALE

RSP A85 DATED JUNE 5, 2009 SUPERSEDES STANDARD PLAN A85
 DATED MAY 1, 2006 - PAGE 111 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A85

2006 REVISED STANDARD PLAN RSP A85

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	9.1/15.1	804	949

Glenn DeCou
 REGISTERED CIVIL ENGINEER
 No. C34547
 Exp. 9-30-09
 STATE OF CALIFORNIA

June 5, 2009
 PLANS APPROVAL DATE

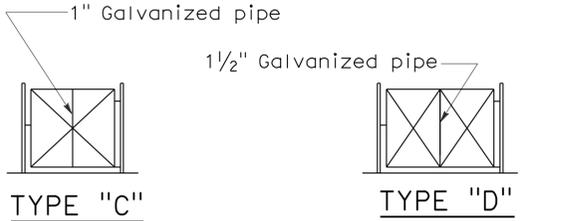
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To accompany plans dated 10-25-10



TYPE "A"
3' and 6' Single
6' and 12' Double

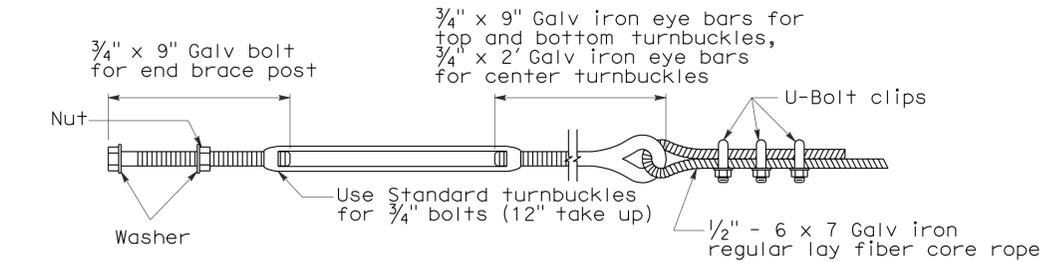
TYPE "B"
Over 6' to 12' Single.
Over 12' to 24' Double



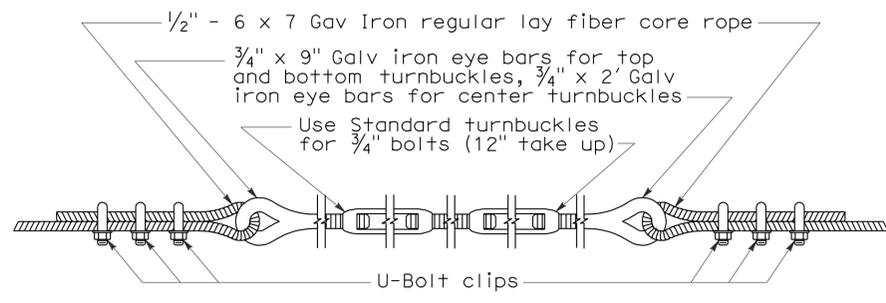
TYPE "C"
Over 12' to 18' Single
Over 24' to 36' Double.

TYPE "D"
Over 18' to 24' Single
Over 36' to 48' Double

TYPICAL FRAMEWORK SHOWING NUMBER OF BAYS IN GATE



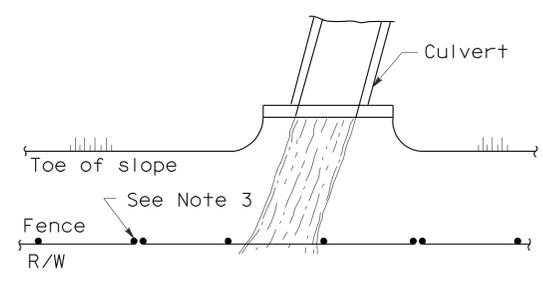
TURNBUCKLE A



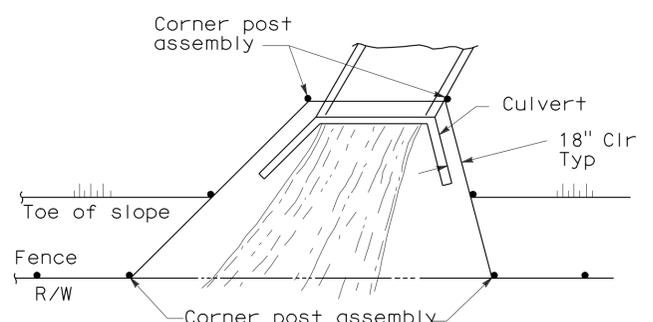
TURNBUCKLE B

NOTES:

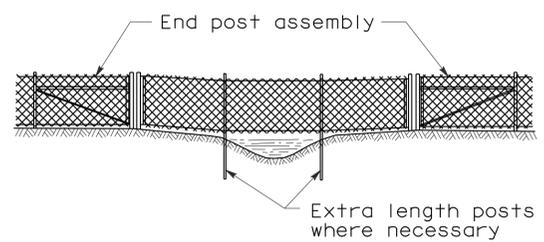
1. All material for abutment connection to be galvanized.
2. The chain link fabric shall be replaced by barbed wire strands at 12" maximum centers between the double posts.
3. When the width of the culvert makes it necessary to anchor a post to the top of the culvert, a cast iron shoe or other device approved by the Engineer shall be used.
4. Fencing over stream and around headwall may also use Barbed Wire or Wire Mesh fencing with either wood post or steel post installation.
5. See Revised Standard Plan RSP A85 for Chain Link fence dimensions. See Standard Plan A86 for Barbed Wire and Wire Mesh fence dimensions and for wood post and steel post installation.



PLAN

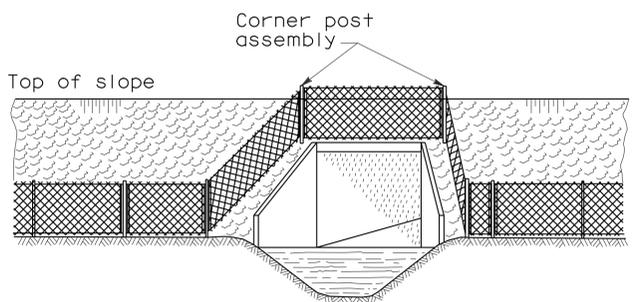


PLAN



ELEVATION

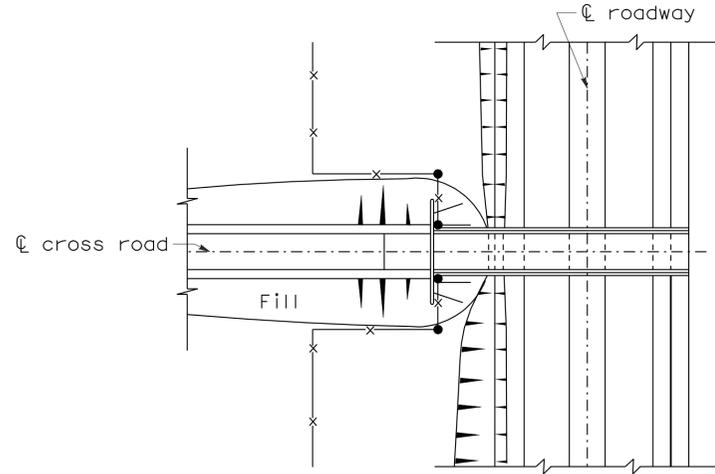
INSTALLATION OVER STREAM



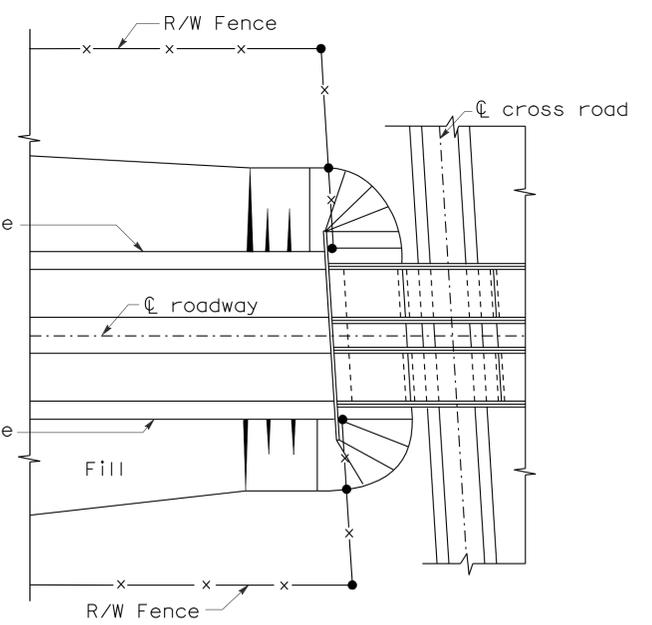
ELEVATION

INSTALLATION AROUND HEADWALL

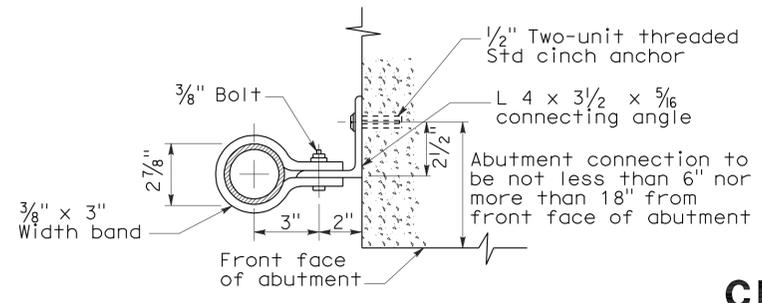
See Note 4



PLAN OF ROADWAY - UNDERPASS



PLAN OF ROADWAY - OVERPASS



ABUTMENT CONNECTION

TYPICAL INSTALLATION AT BRIDGES

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

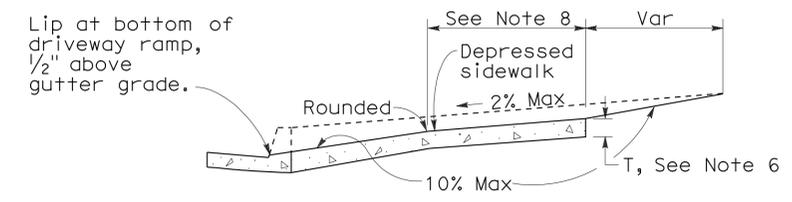
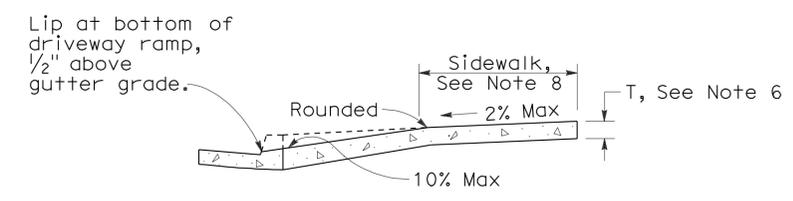
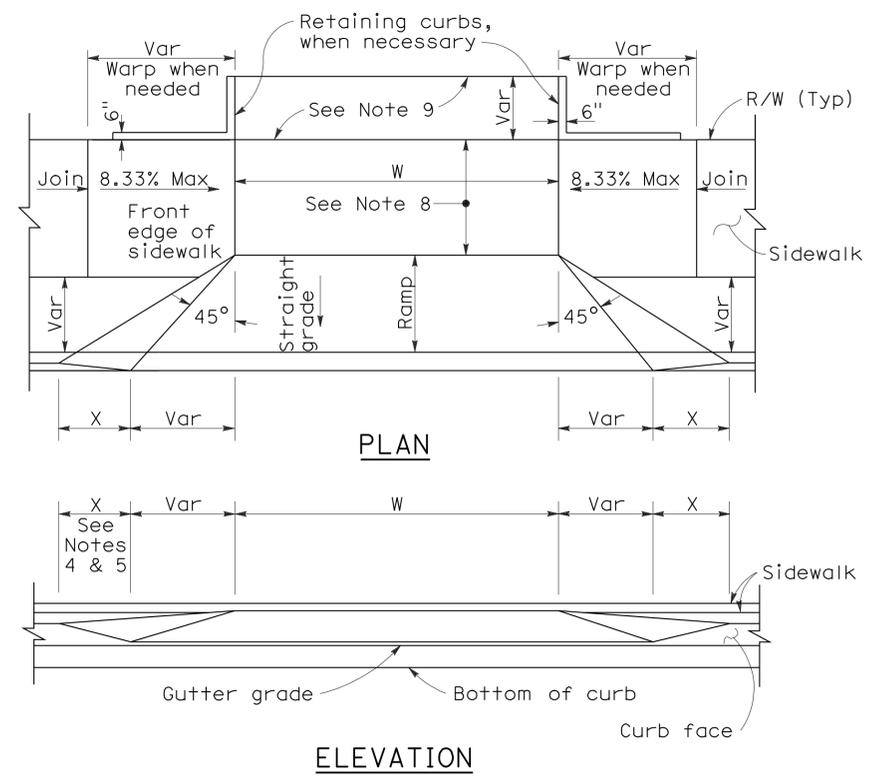
CHAIN LINK FENCE DETAILS

NO SCALE

NSP A85B DATED JUNE 5, 2009 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

NEW STANDARD PLAN NSP A85B

2006 NEW STANDARD PLAN NSP A85B



CASE A

Typical driveway, sidewalk not depressed

CASE B

Driveway with depressed sidewalk

SECTIONS

CURB QUANTITIES

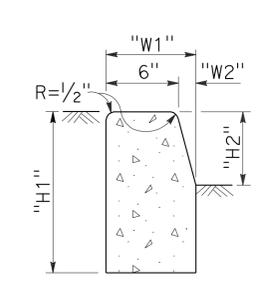
TYPE	CUBIC YARDS PER LINEAR FOOT
A1-6	0.02585
A1-8	0.03084
A2-6	0.05903
A2-8	0.06379
A3-6	0.01036
A3-8	0.01435
B1-4	0.02185
B1-6	0.02930
B2-4	0.05515
B2-6	0.06171
B3-4	0.00641
B3-6	0.01074
B4	0.05709
D-4	0.04083
D-6	0.06804
E	0.06661

TABLE A

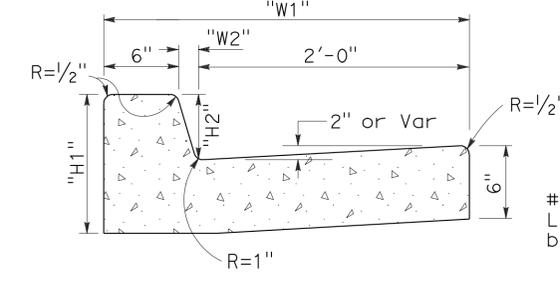
CURB TYPE	DIMENSIONS			
	"H1"	"H2"	"W1"	"W2"
A1-6	1'-2"	6"	7 1/2"	1 1/2"
A1-8	1'-4"	8"	8"	2"
A2-6	1'-0"	6"	2'-7 1/2"	1 1/2"
A2-8	1'-2"	8"	2'-8"	2"
A3-6	6"	5"	7 1/4"	1 1/4"
A3-8	8"	7"	7 3/4"	1 3/4"
B1-4	1'-0"	4"	7 1/2"	2 1/2"
B1-6	1'-2"	6"	9"	4"
B2-4	10"	4"	2'-7 1/2"	2 1/2"
B2-6	1'-0"	6"	2'-9"	4"
B3-4	4"	3"	7"	2"
B3-6	6"	5"	8 1/2"	3 1/2"
D-4	10"	4"	1'-6"	1'-1"
D-6	1'-0"	6"	2'-2"	1'-8"

To accompany plans dated 10-25-10

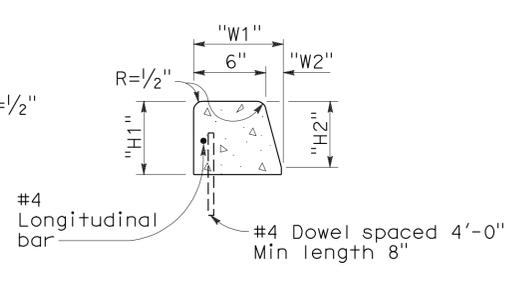
DRIVEWAYS



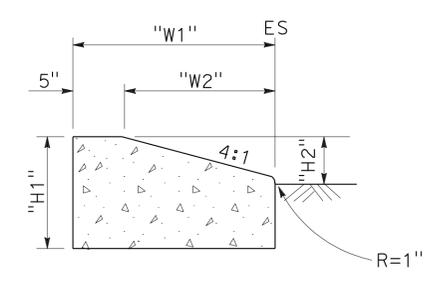
TYPE A1 CURBS
See Table A



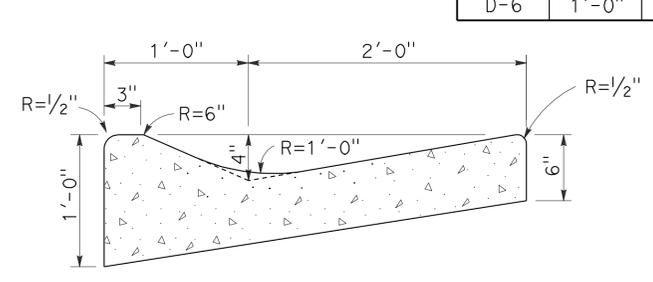
TYPE A2 CURBS
See Table A



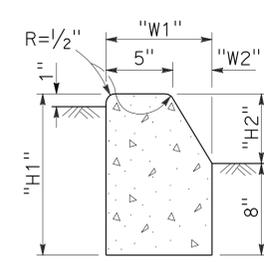
TYPE A3 CURBS
Superimposed on existing pavement
See Table A



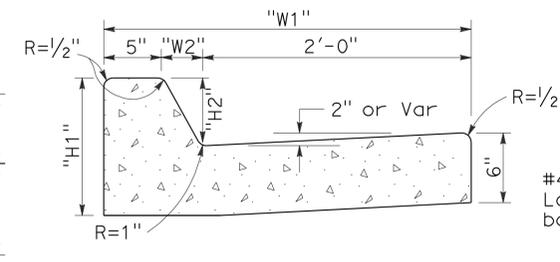
TYPE D CURBS
See Table A



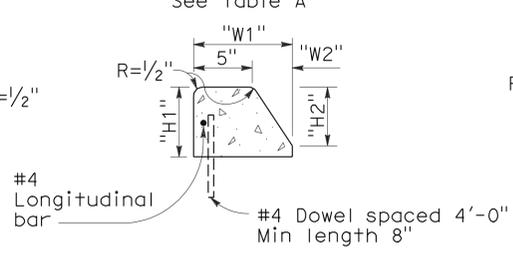
TYPE E CURB



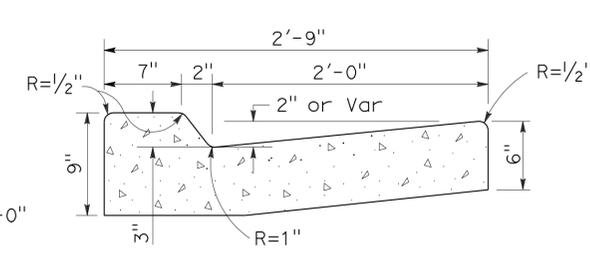
TYPE B1 CURBS
See Table A



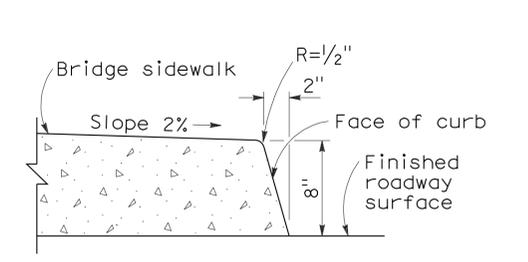
TYPE B2 CURBS
See Table A



TYPE B3 CURBS
Superimposed on existing pavement
See Table A



TYPE B4 CURBS



TYPE H CURB
On Bridges

NOTES:

- Case A driveway section typically applies.
- Use Case B driveway section when ramp slopes would exceed 10% in Case A.
- Use Case B driveway section when sidewalk cross slope would exceed 2% in Case A.
- X=3'-0" except for curb heights over 10" where 4:1 slopes shall be used on curb slope.
- X is a variable when sidewalk is located where wheelchairs may traverse the surface. Slopes shall not exceed 8.33%.
- Sidewalk and ramp thickness "T" at driveway shall be 4" for residential and 6" for commercial.
- Difference in slope of the driveway ramp and the slope of a line between the gutter and a point on the roadway 5'-0" from gutter line shall not exceed 15%. Reduce driveway ramp slope, not gutter slope, where required.
- Minimum width of clear passageway for sidewalk shall be 4'-0".
- Retaining curbs and acquisition of construction easement may be necessary for narrow sidewalks or curb heights in excess of 6".
- Across the pedestrian route at curb ramp locations, the gutter pan slope shall not exceed 1" of depth for each 2'-0" of width.

CURBS

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CURBS AND DRIVEWAYS

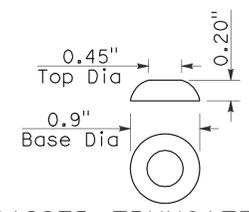
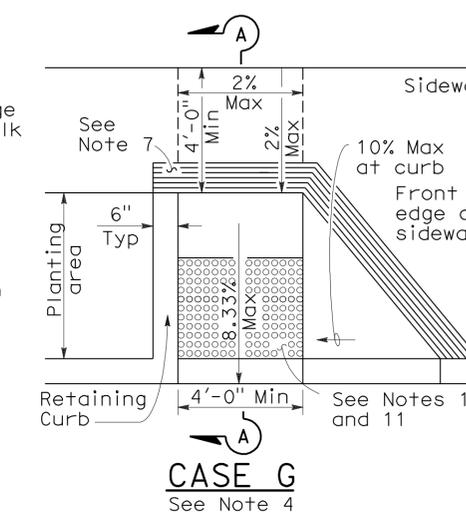
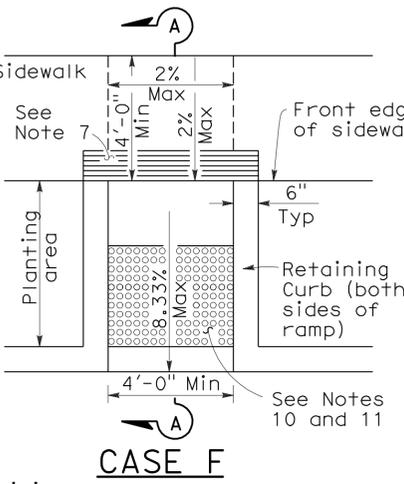
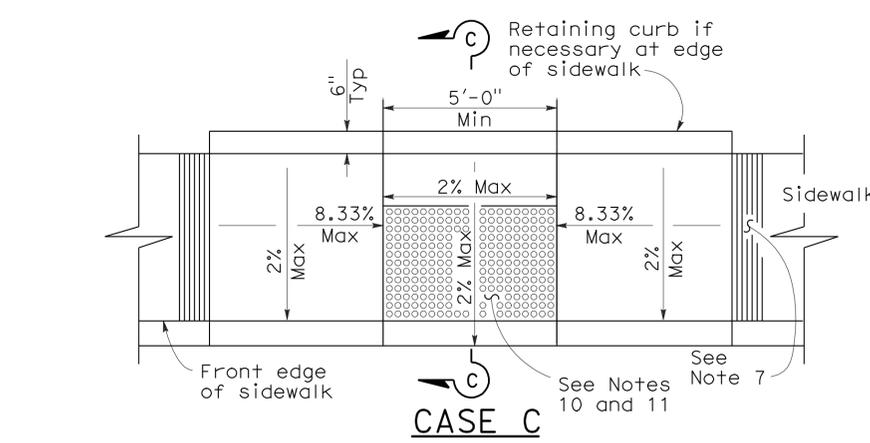
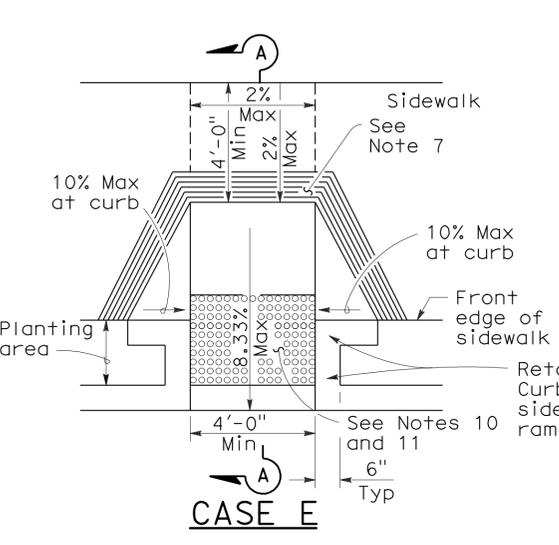
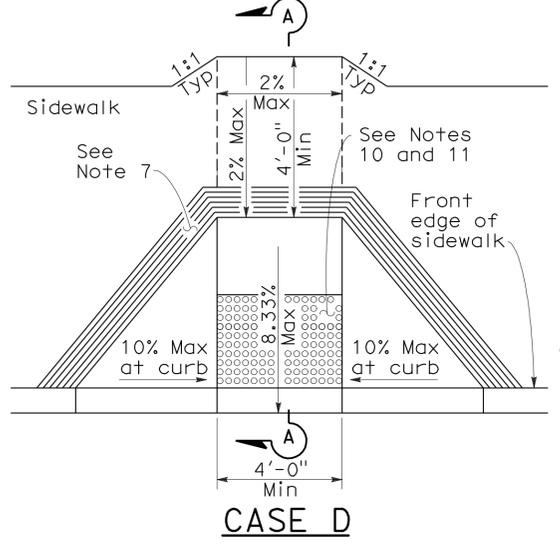
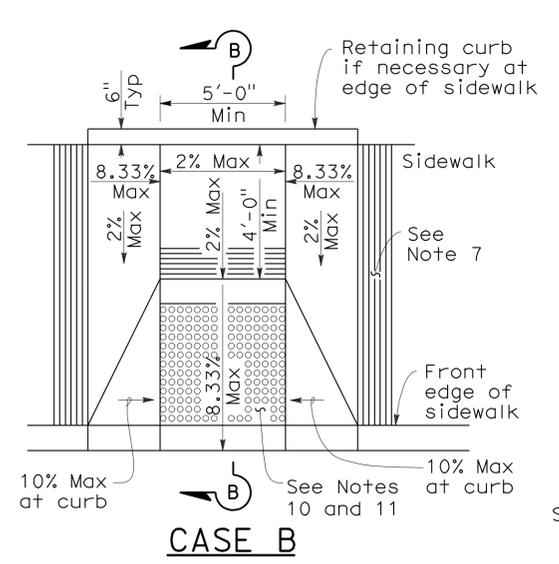
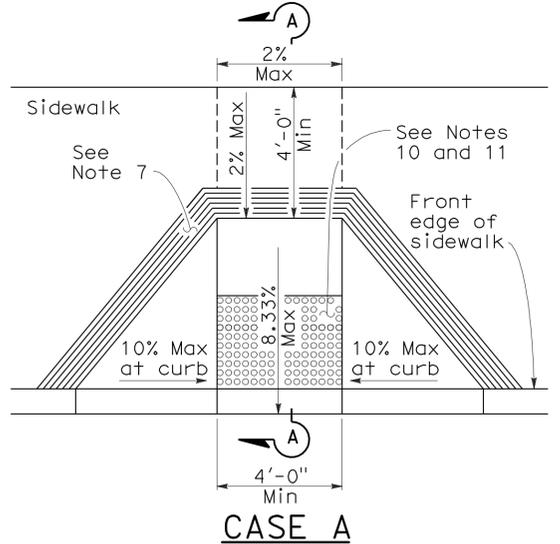
NO SCALE

2006 REVISED STANDARD PLAN RSP A87A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	9.1/15.1	806	949

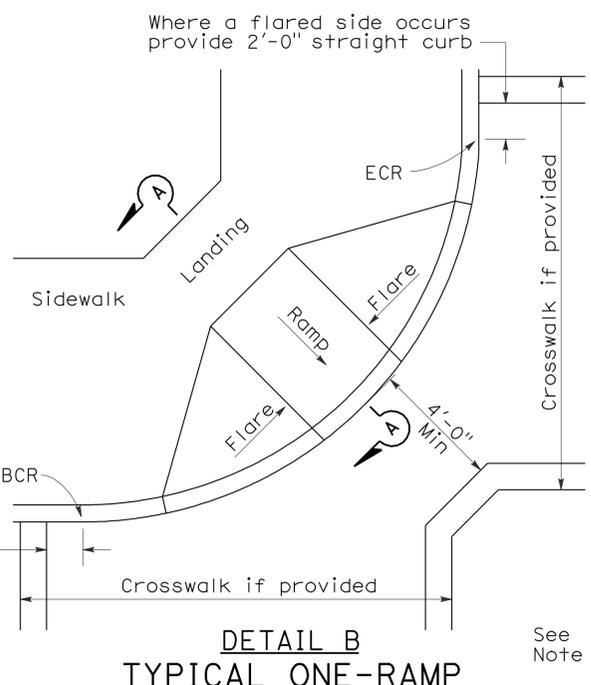
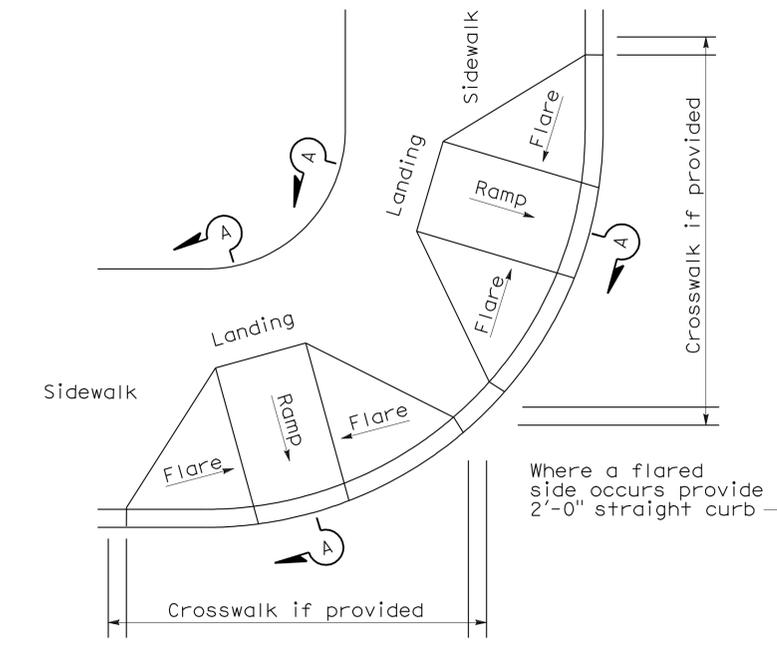
H. David Cordova
 REGISTERED CIVIL ENGINEER
 September 1, 2006
 PLANS APPROVAL DATE
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REGISTERED PROFESSIONAL ENGINEER
Hector David Cordova
 No. C41957
 Exp. 3-31-08
 CIVIL
 STATE OF CALIFORNIA



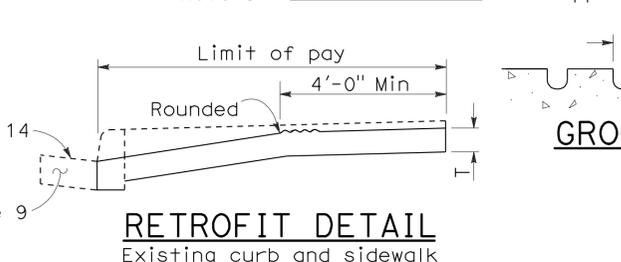
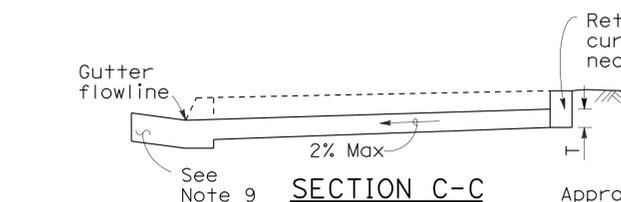
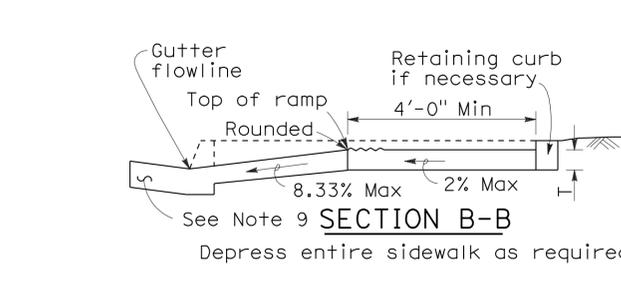
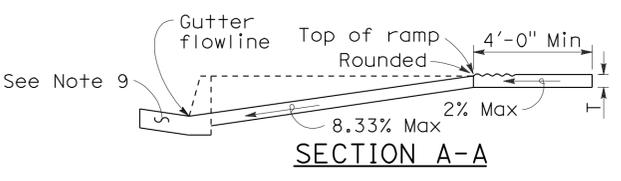
NOTES:

- As site conditions dictate, Case A through Case G curb ramps may be used for corner installations similar to those shown in Detail A and Detail B. The case of curb ramps used in Detail A do not have to be the same. Case A through Case G curb ramps also may be used at mid block locations, as site conditions dictate.
- If distance from curb to back of sidewalk is too short to accommodate ramp and 4'-0" platform (landing) as shown in Case A, the sidewalk may be depressed longitudinally as in Case B, or C or may be widened as in Case D.
- When ramp is located in center of curb return, crosswalk configuration must be similar to that shown for Detail B.
- As site conditions dictate, the retaining curb side and the flared side of the Case G ramp shall be constructed in reversed position.
- If located on a curve, the sides of the ramp need not be parallel, but the minimum width of the ramp shall be 4'-0".
- Side slope of ramp flares vary uniformly from a maximum of 10% at curb to conform with longitudinal sidewalk slope adjacent to top of the ramp, except in Case C and Case F.
- The curb ramp shall be outlined, as shown, with a 1'-0" wide border with 1/4" grooves approximately 3/4" on center. See grooving detail.
- Transitions from ramps and landing to walks, gutters or streets shall be flush and free of abrupt changes.
- Maximum slopes of adjoining gutters, the road surface immediately adjacent to the curb ramp or accessible route shall not exceed 5 percent within 4'-0" of the top and bottom of the curb ramp.
- Curb ramps shall have a detectable warning surface that extends the full width and 3'-0" depth of the ramp. Detectable Warning Surfaces shall conform to the details on this plan and the requirements in the Special Provisions.
- The edge of the detectable warning surface nearest the street shall be between 6" and 8" from the gutter flowline.
- Sidewalk and ramp thickness, "T", shall be 3/2" minimum.
- Utility pull boxes, manholes, vaults and all other utility facilities within the boundaries of the curb ramp will be relocated or adjusted to grade by the owner prior to, or in conjunction with, curb ramp construction.
- For retrofit conditions, removal and replacement of curb apron will be at the Contractor's option, unless otherwise shown on project plans.



TYPICAL TWO-RAMP CORNER INSTALLATION
See Note 1

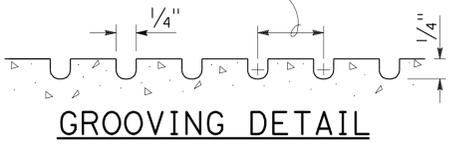
TYPICAL ONE-RAMP CORNER INSTALLATION
See Notes 1 and 3



1.67" to 2.35"
Center to
center spacing

**RAISED TRUNCATED DOME PATTERN (IN-LINE)
DETECTABLE WARNING SURFACE**

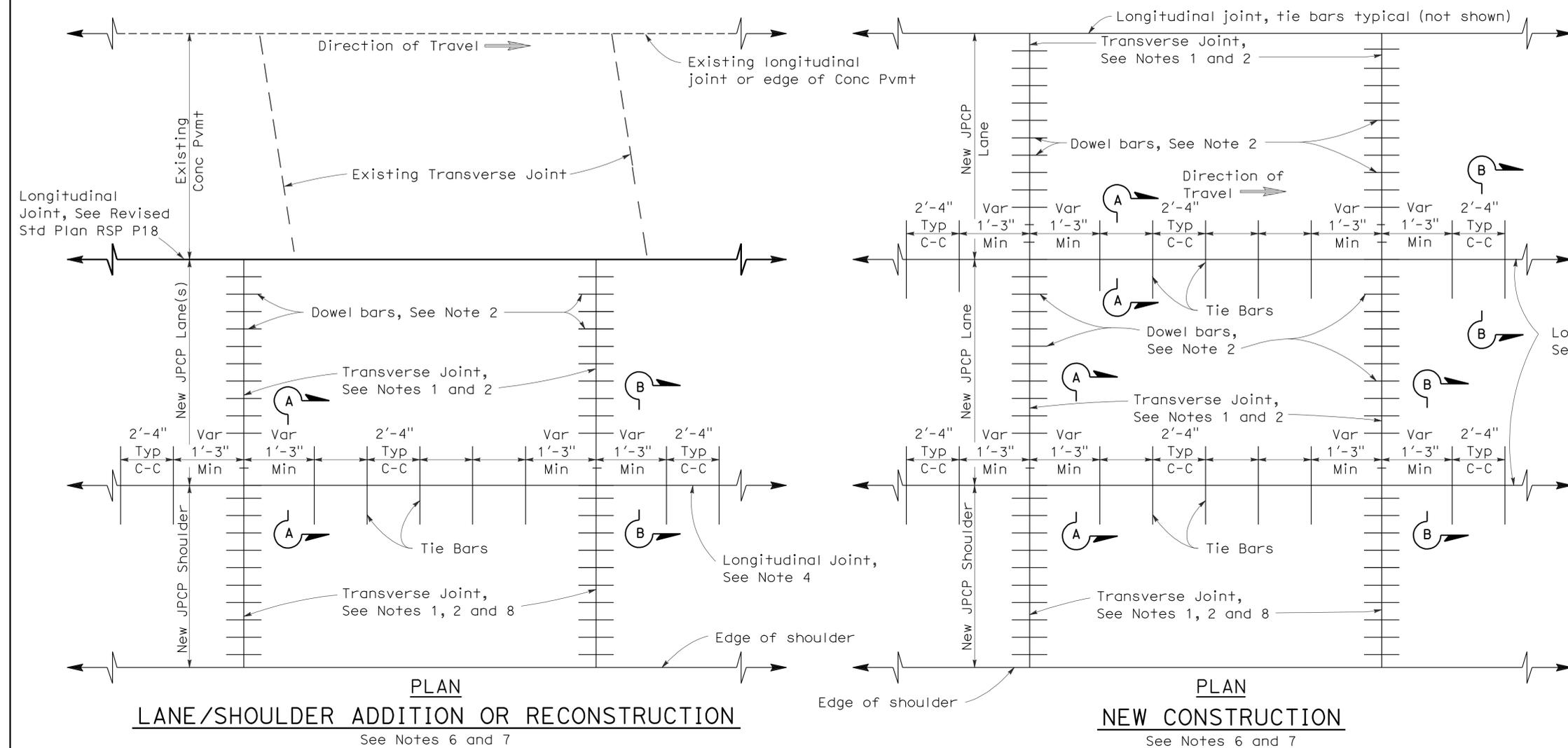
See Note 10
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
CURB RAMP DETAILS
NO SCALE



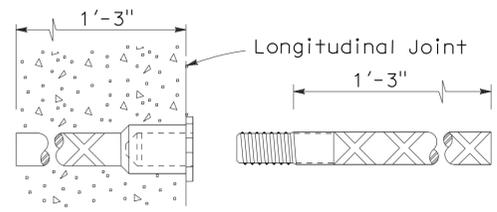
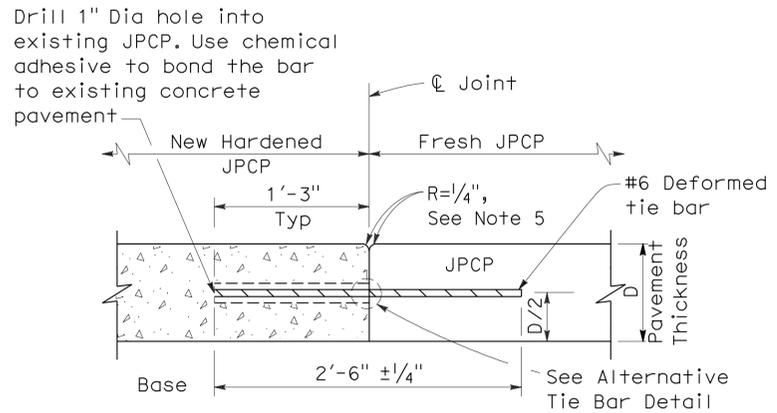
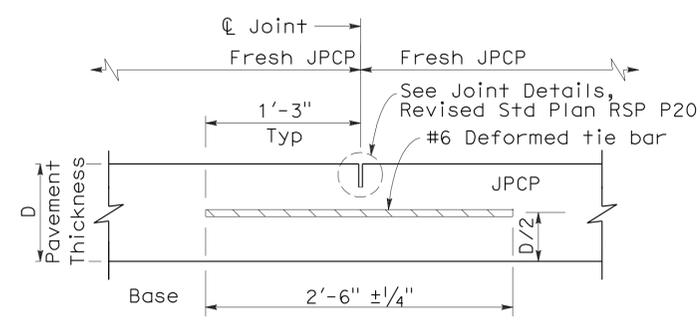
2006 REVISED STANDARD PLAN RSP A88A

RSP A88A DATED SEPTEMBER 1, 2006 SUPERSEDES STANDARD PLAN A88A DATED MAY 1, 2006 - PAGE 115 OF THE STANDARD PLANS BOOK DATED MAY 2006.

To accompany plans dated 10-25-10



- NOTES:**
1. Transverse joints shall be constructed at right angles to the longitudinal pavement joints in new jointed plain concrete pavement and spaced at successive repeated intervals of 12', 15', 13' and 14'.
 2. For transverse joint and dowel bar details not shown, See Revised Standard Plan RSP P10.
 3. Construct longitudinal contraction joints as shown in Section A-A when more than one lane or shoulder widths are placed at one time. If constructing one lane at a time, use longitudinal construction joint, as shown in Section B-B.
 4. For additional longitudinal joint details, see Revised Standard Plan RSP P18.
 5. If fresh concrete is placed adjacent to existing concrete, the top corner of the new hardened concrete does not need to be rounded to the 1/4" radius as shown.
 6. Joint spacing patterns do not apply to intersections.
 7. Details can also apply to inside widening.
 8. Dowel bars may be omitted from shoulders when the shoulder cross slope is not the same as the adjacent traffic lane.



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
JOINTED PLAIN CONCRETE PAVEMENT

NO SCALE

RSP P1 DATED MAY 15, 2009 SUPERSEDES STANDARD PLAN P1
DATED MAY 1, 2006 - PAGE 119 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP P1

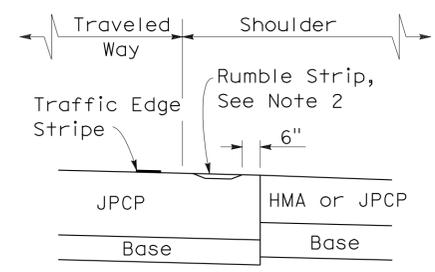
2006 REVISED STANDARD PLAN RSP P1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	9.1/15.1	808	949

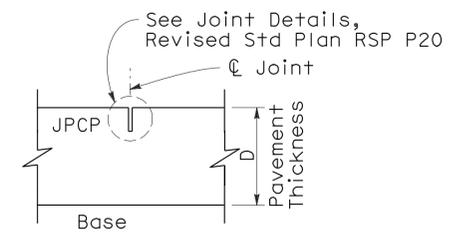
William K. Farnbach
 REGISTERED CIVIL ENGINEER
 June 5, 2009
 PLANS APPROVAL DATE
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 10-25-10

- NOTES:**
1. Transverse joints shall be constructed at right angles to the longitudinal pavement joints in new Jointed Plain Concrete Pavement and spaced at successive repeated intervals of 12', 15', 13' and 14'.
 2. For locations of rumble strips, see project plans. For rumble strip details not shown, see Standard Plans A40A and A40B.
 3. Joint spacing patterns do not apply to intersections.



DETAIL "A"



**SECTION C-C
TRANSVERSE/LONGITUDINAL JOINT
(no dowel bars/tie bars)**

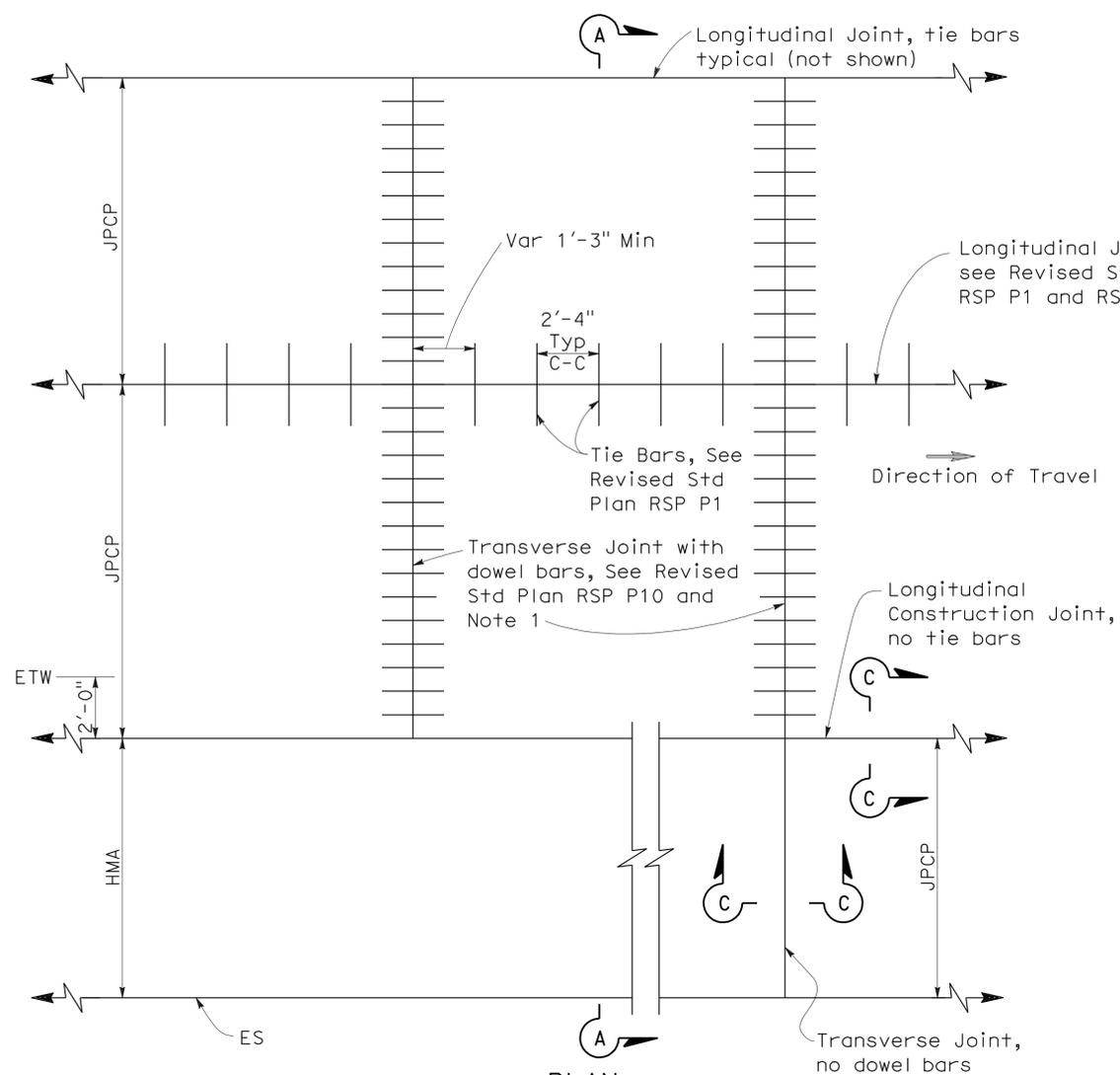
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**JOINTED PLAIN CONCRETE
PAVEMENT-WIDENED SLAB DETAILS**

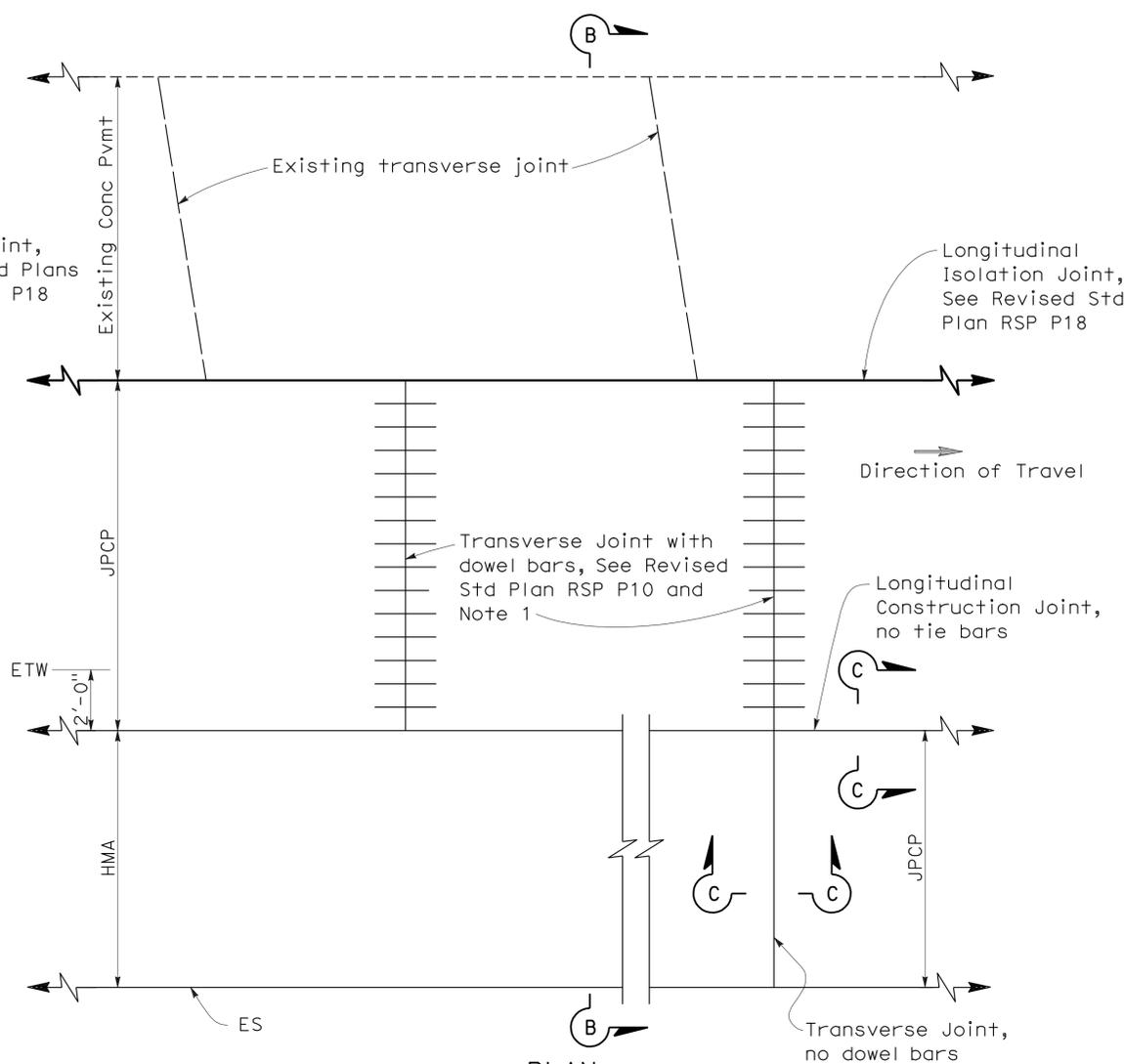
NO SCALE

RSP P2 DATED JUNE 5, 2009 SUPERCEDES STANDARD PLAN P2
DATED MAY 1, 2006 - PAGE 120 OF THE STANDARD PLANS BOOK DATED MAY 2006.

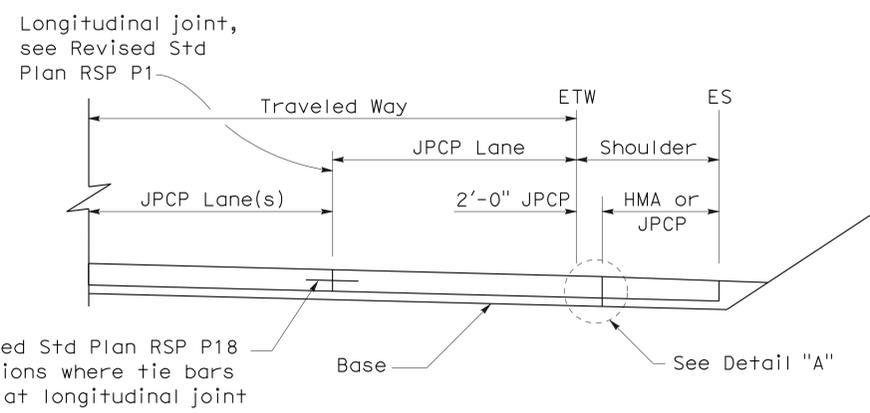
REVISED STANDARD PLAN RSP P2



**PLAN
NEW CONSTRUCTION**



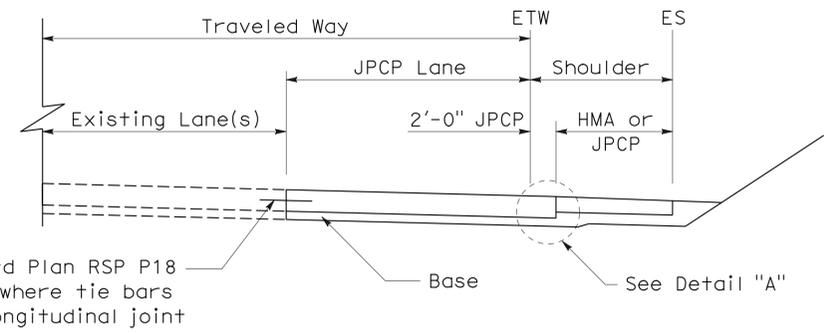
**PLAN
LANE/SHOULDER ADDITION OR RECONSTRUCTION**



SECTION A-A

See Revised Std Plan RSP P18 for locations where tie bars are used at longitudinal joint

See Detail "A"

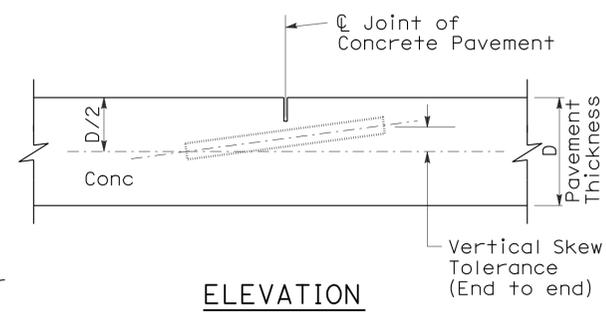
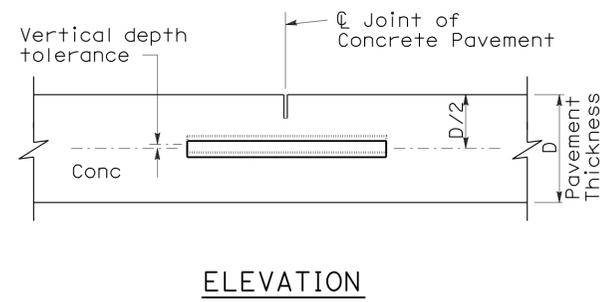
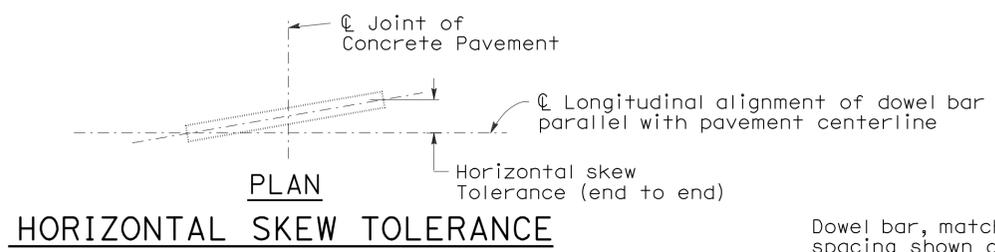
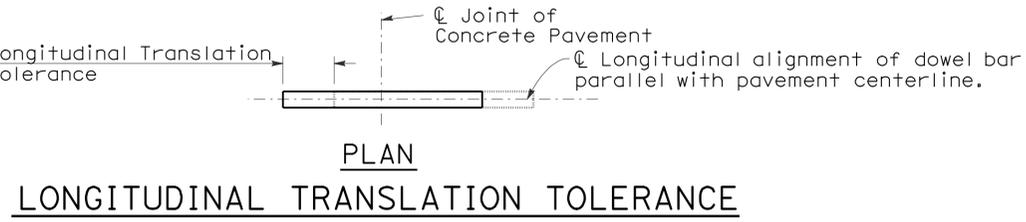
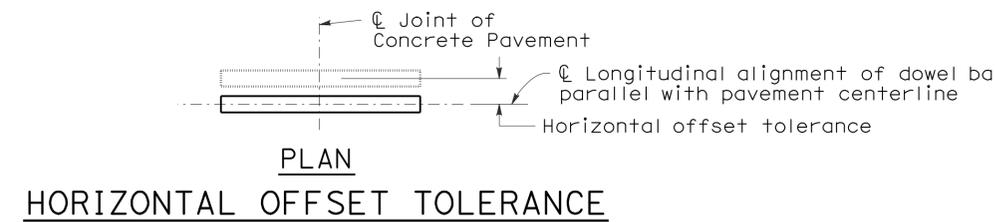
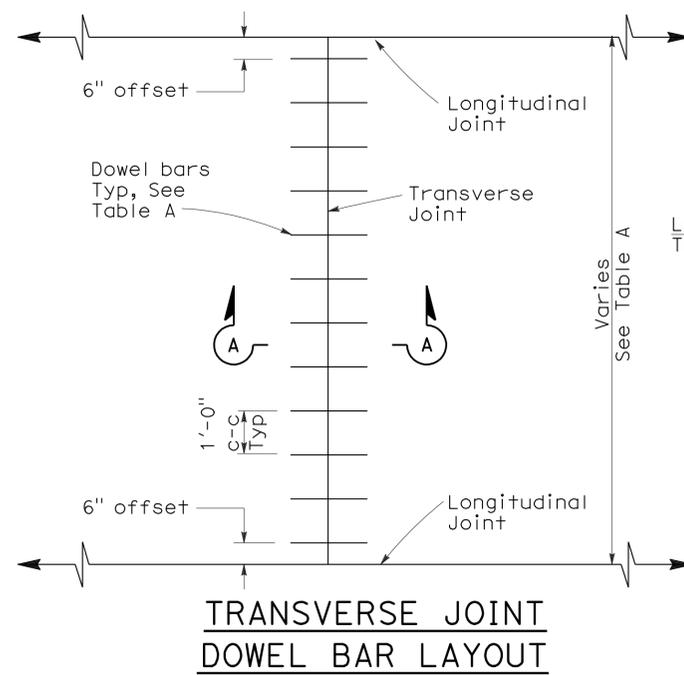


SECTION B-B

See Revised Std Plan RSP P18 for locations where tie bars are used at longitudinal joint

See Detail "A"

2006 REVISED STANDARD PLAN RSP P2



To accompany plans dated 10-25-10

- NOTES:**
- See Revised Standard Plan RSP P1 for typical dowel bar placement and locations.
 - 1 1/2" Dia smooth dowel bars are to be used with a pavement thickness, D, equal to or greater than 0.70 feet. For pavement thickness, D, less than 0.70 feet, use 1 1/4" Dia smooth dowel bars.
 - For widths not shown, see Project Plans.
 - If fresh concrete pavement is placed adjacent to existing concrete pavement, the top corner of the existing concrete pavement does not need to be rounded to the 1/4" radius, as shown.

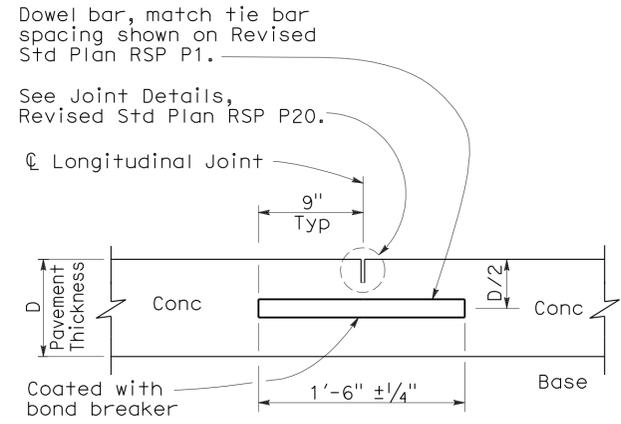
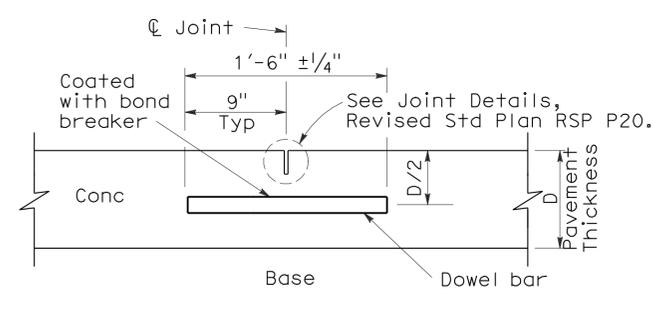
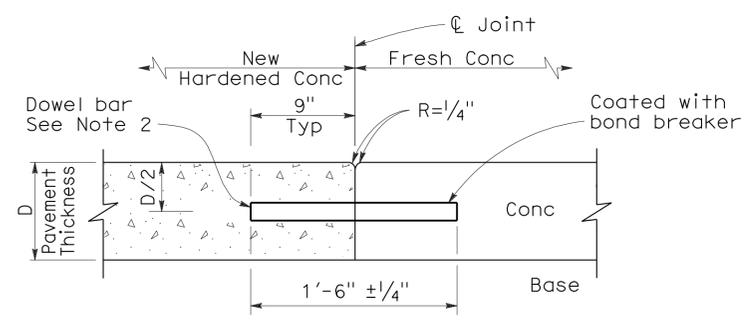


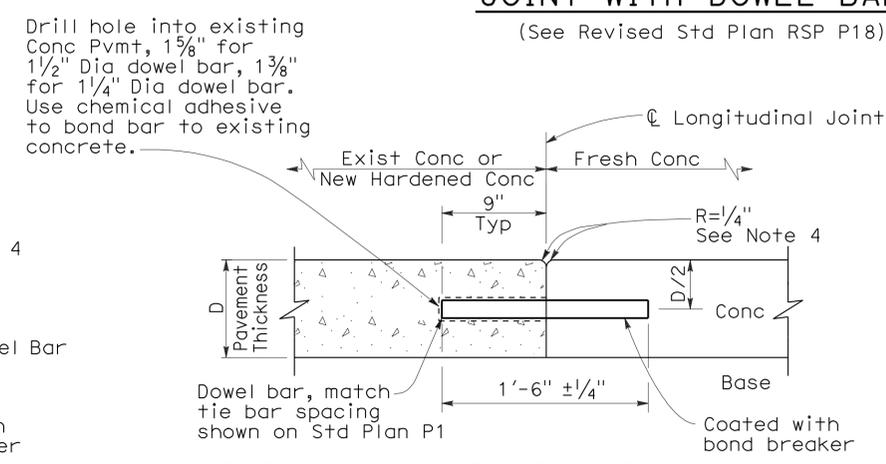
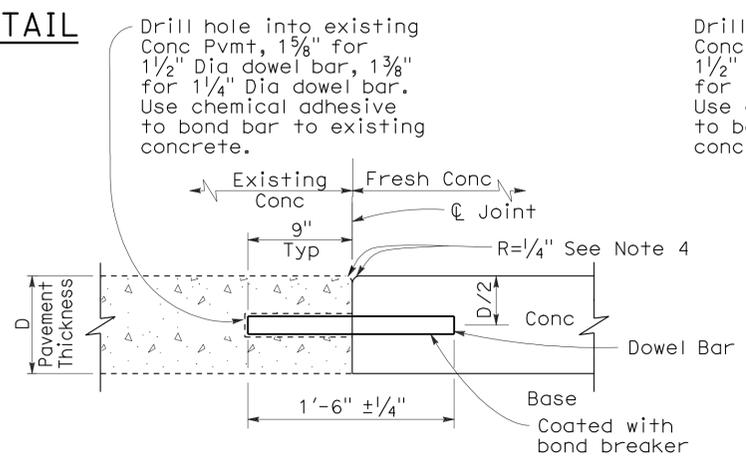
TABLE A (See Note 3)
Dowel Bar Transverse Spacing Table

Width between Longitudinal Joints	Number of Dowels between Longitudinal Joints
14'-0"	14
13'-0"	13
12'-0"	12
11'-0"	11
10'-0"	10
8'-0"	8
5'-0"	5
4'-0"	4

**SECTION A-A
TRANSVERSE
CONSTRUCTION JOINT DETAIL**

TRANSVERSE CONTRACTION JOINT

**LONGITUDINAL CONTRACTION
JOINT WITH DOWEL BARS**
(See Revised Std Plan RSP P18)



**TRANSVERSE CONSTRUCTION JOINT
FOR EXISTING CONCRETE PAVEMENT**
(Drill and bond locations)

**LONGITUDINAL CONSTRUCTION JOINT
WITH DOWEL BARS**
(See Revised Std Plan RSP P18)

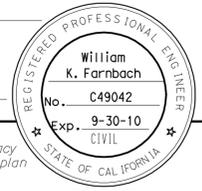
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**CONCRETE PAVEMENT-
DOWEL BAR
DETAILS**
NO SCALE

RSP P10 DATED MAY 15, 2009 SUPERSEDES STANDARD PLAN P10
DATED MAY 1, 2006 - PAGE 124 OF THE STANDARD PLANS BOOK DATED MAY 2006.

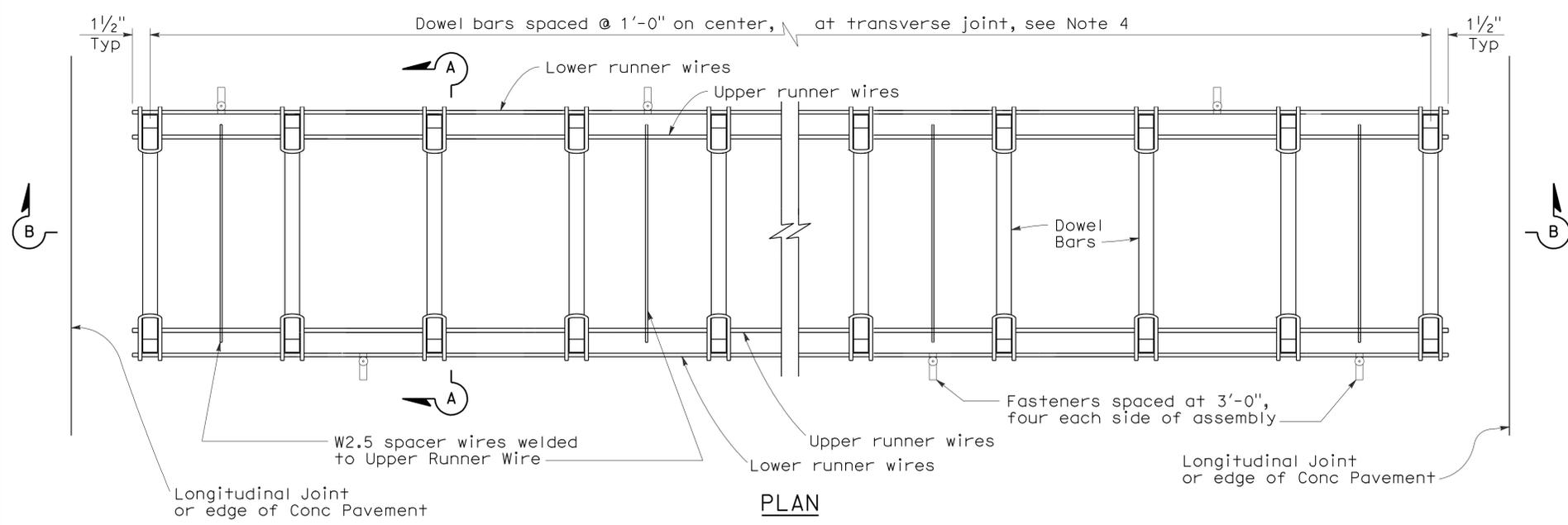
2006 REVISED STANDARD PLAN RSP P10

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	9.1/15.1	810	949

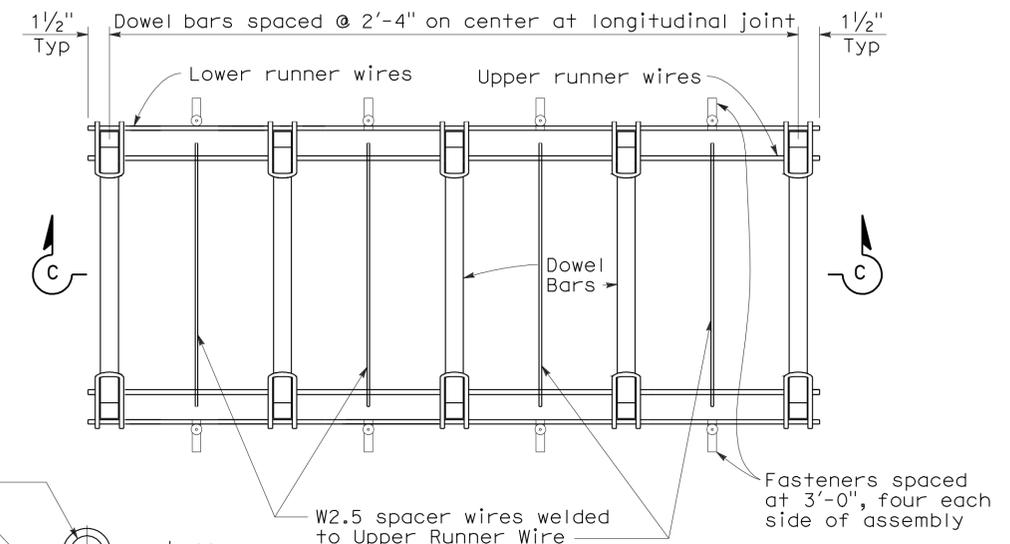
William K. Farnbach
 REGISTERED CIVIL ENGINEER
 May 15, 2009
 PLANS APPROVAL DATE
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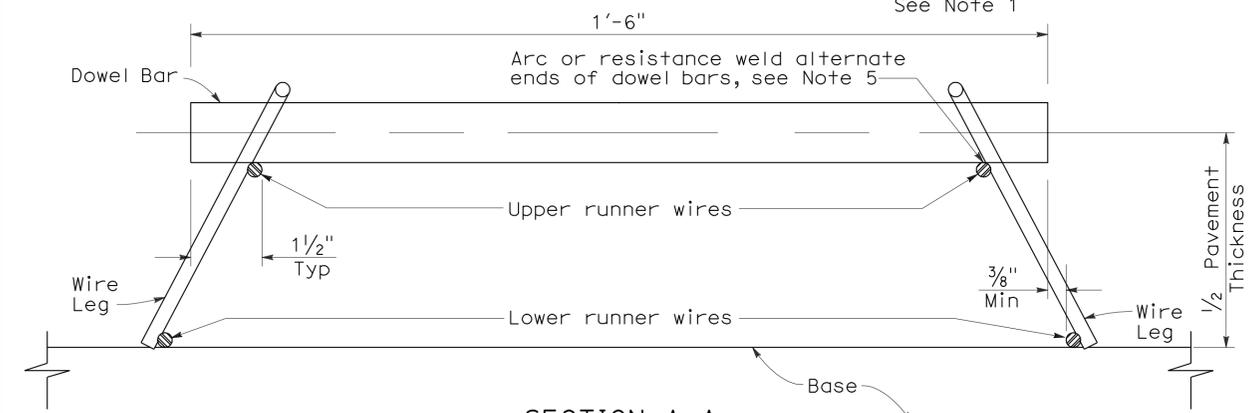
To accompany plans dated 10-25-10



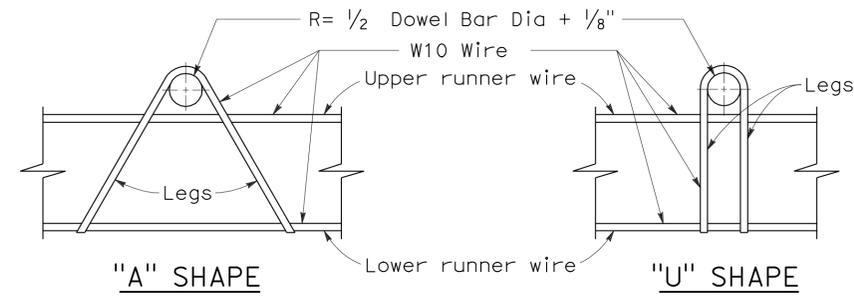
**PLAN
DOWEL BAR BASKET
(TRANSVERSE JOINT)**
See Note 1



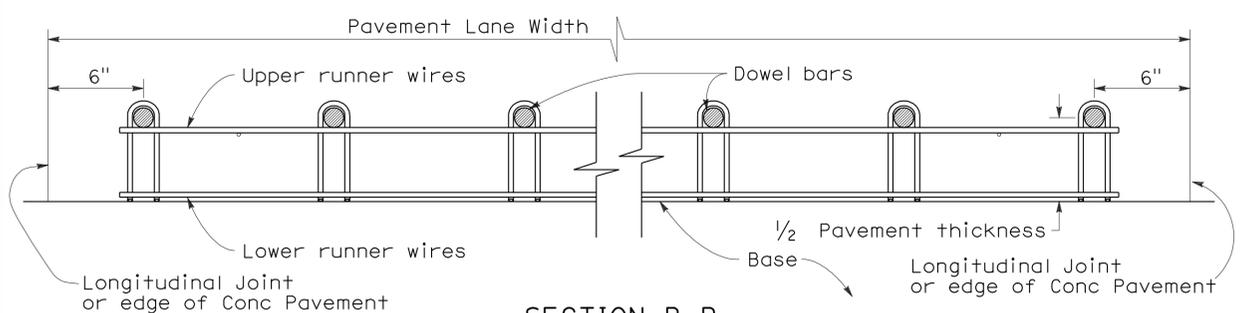
**PLAN
DOWEL BAR BASKET
(LONGITUDINAL JOINT)**
See Note 1



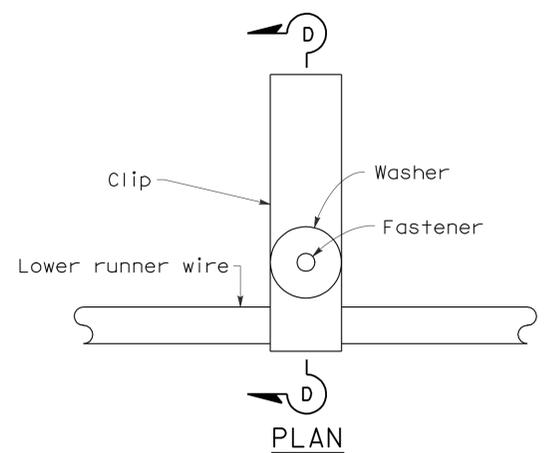
SECTION A-A



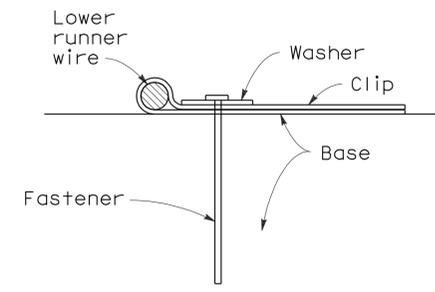
ASSEMBLY FRAME DETAILS



SECTION B-B
See Note 1



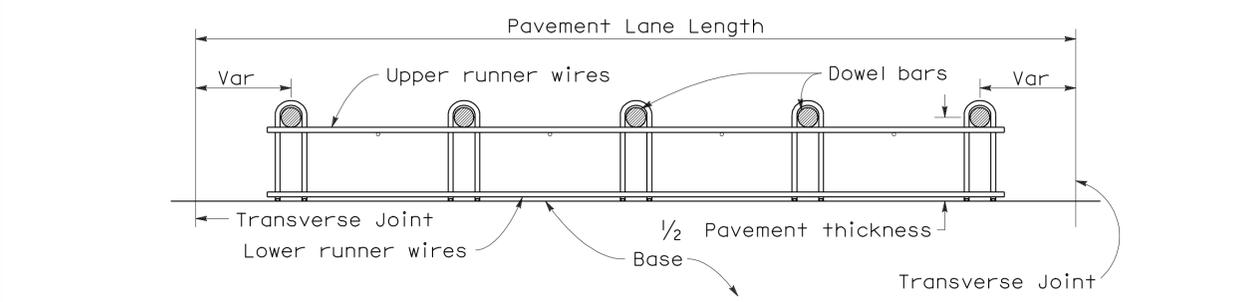
FASTENER DETAIL



SECTION D-D

NOTES:

- "U" frame shape assembly shown. "U" frame shape or "A" frame shape are acceptable.
- Wire sizes shown are minimum required.
- All wire intersections are to be resistance welded.
- Use tie bar spacing for longitudinal dowel bar locations. See Revised Std Plans RSPs P1, P2, and P3 for tie bar requirements.
- Weld may be at top or bottom of dowel bar.



SECTION C-C
See Notes 1 and 4

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**CONCRETE PAVEMENT-
DOWEL BAR BASKET
DETAILS**

NO SCALE

RSP P12 DATED MAY 15, 2009 SUPERSEDES RSP P12 DATED NOVEMBER 17, 2006 AND STANDARD PLAN P12 DATED MAY 1, 2006 - PAGE 125 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP P12

2006 REVISED STANDARD PLAN RSP P12

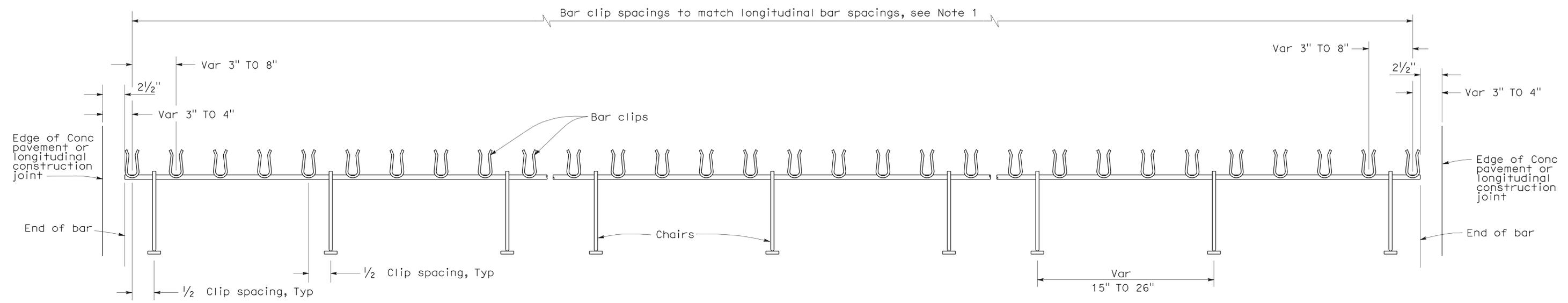
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	9.1/15.1	811	949

William K. Farnbach
 REGISTERED CIVIL ENGINEER
 June 5, 2009
 PLANS APPROVAL DATE

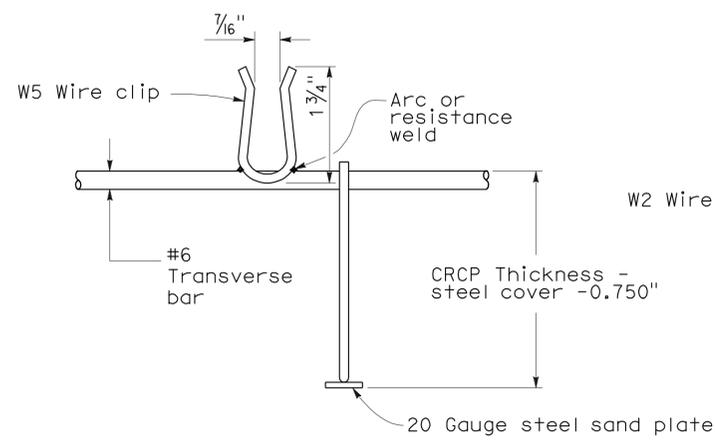
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REGISTERED PROFESSIONAL ENGINEER
 William K. Farnbach
 No. 49042
 Exp. 09-30-10
 CIVIL
 STATE OF CALIFORNIA

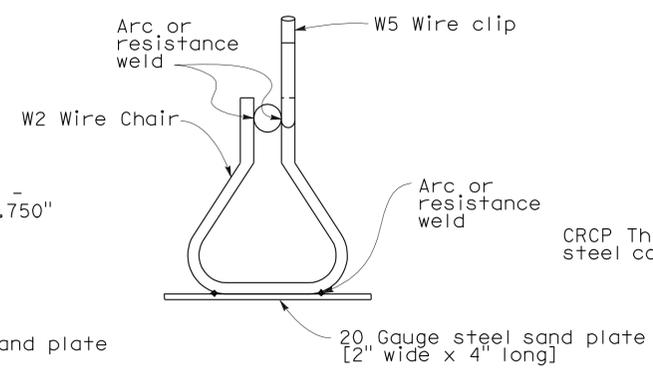
To accompany plans dated 10-25-10



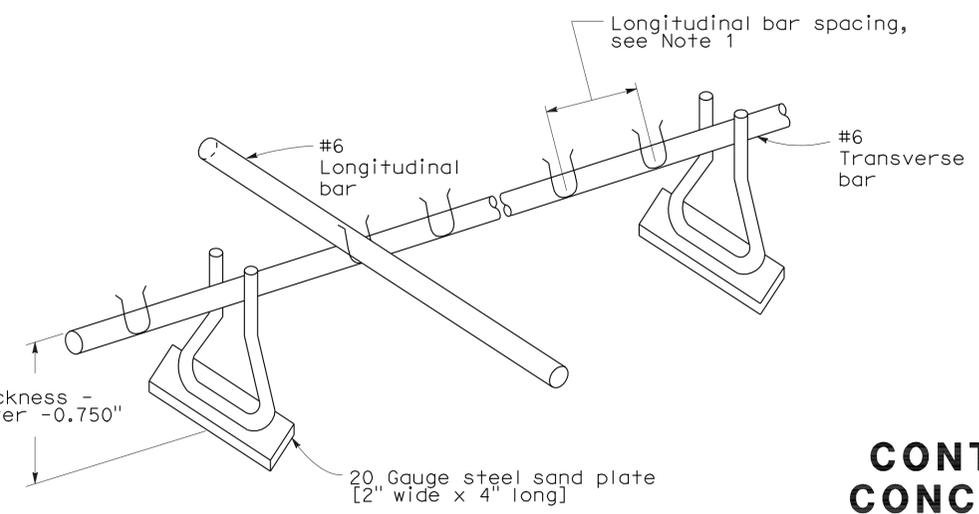
TRANSVERSE BAR ASSEMBLY



#6 BAR CLIP DETAIL



CHAIR DETAIL



ISOMETRIC VIEW OF CHAIR ASSEMBLY

- NOTES:**
1. See New Standard Plan NSP P4 for spacing of longitudinal bars.
 2. Tensile strength of chair shall be at least 50,000 psi.
 3. Wire sizes shown are minimum required.

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**CONTINUOUSLY REINFORCED
 CONCRETE PAVEMENT-SINGLE
 PIECE TRANSVERSE BAR
 ASSEMBLY**
 NO SCALE

NSP P13 DATED JUNE 5, 2009 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP P13

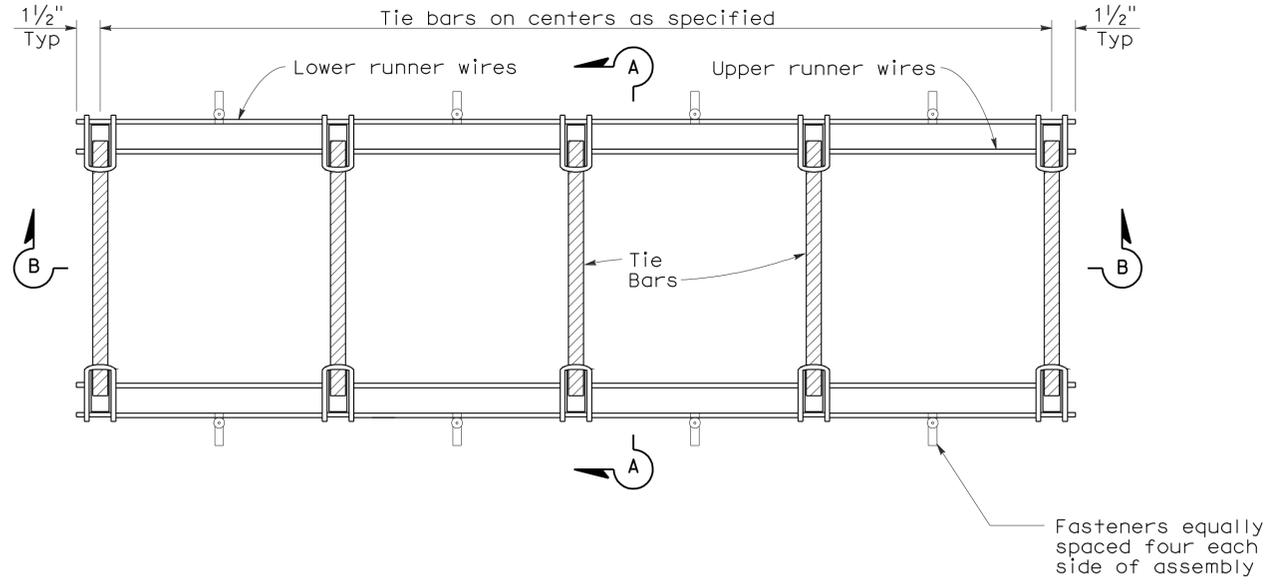
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	9.1/15.1	812	949

William K. Farnbach
 REGISTERED CIVIL ENGINEER
 May 15, 2009
 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.

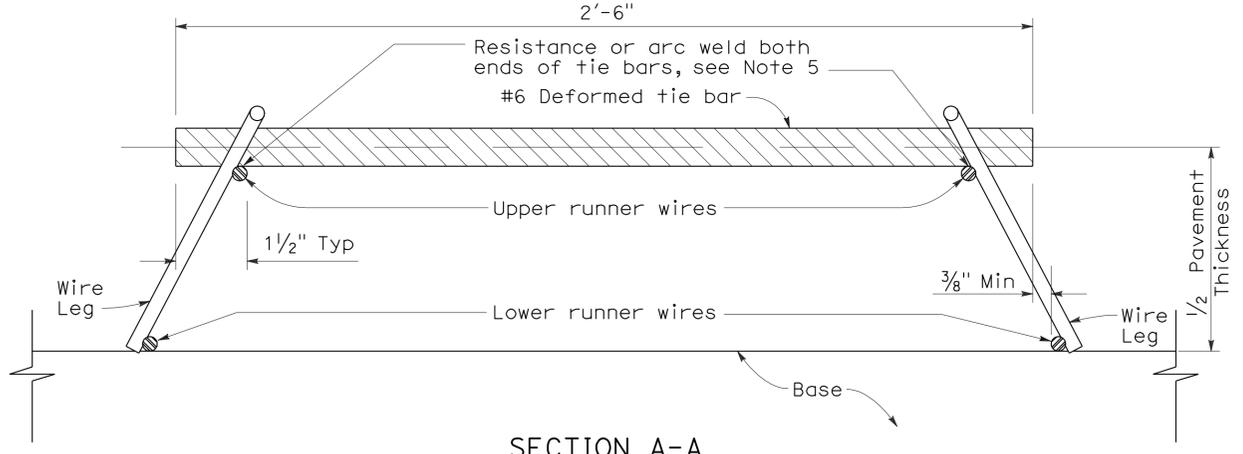
REGISTERED PROFESSIONAL ENGINEER
 William K. Farnbach
 No. C49042
 Exp. 9-30-10
 CIVIL
 STATE OF CALIFORNIA

To accompany plans dated 10-25-10

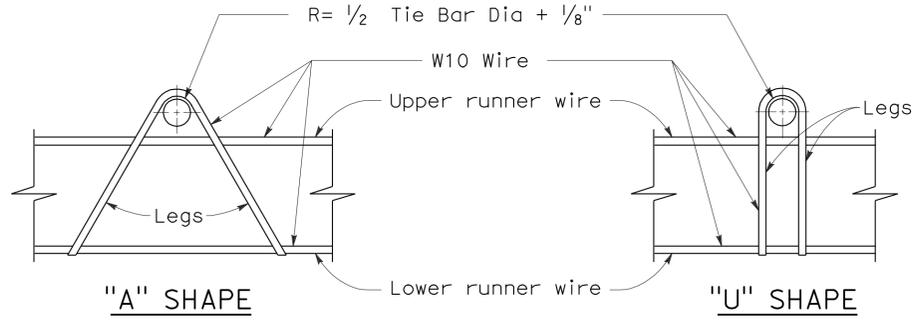


PLAN
TIE BAR BASKET
 (TIE BARS AT LONGITUDINAL JOINT)
 See Note 1

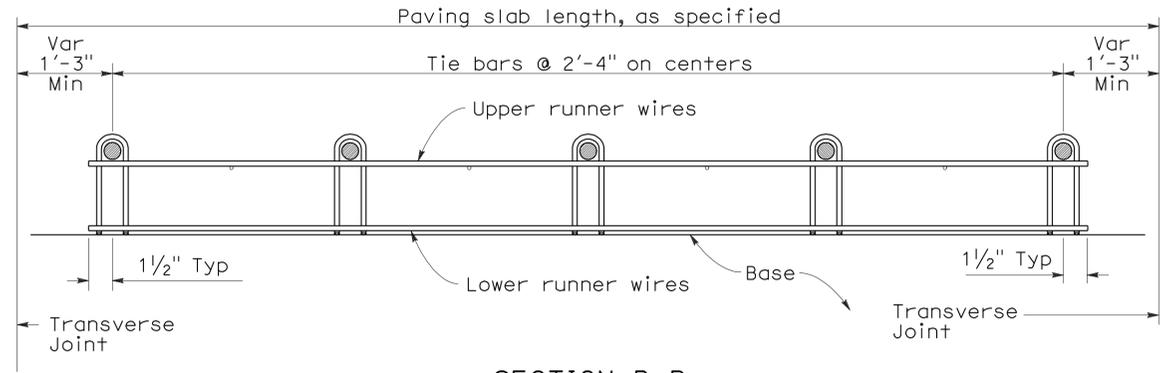
- NOTES:**
- "U" frame shape assembly shown. "U" frame shape or "A" frame shape are acceptable.
 - Wire sizes shown are minimum required.
 - All wire intersections are to be resistance welded.
 - Not for use on nondoweled skewed jointed plain concrete pavement.
 - Weld may be at top or bottom of tie bar.



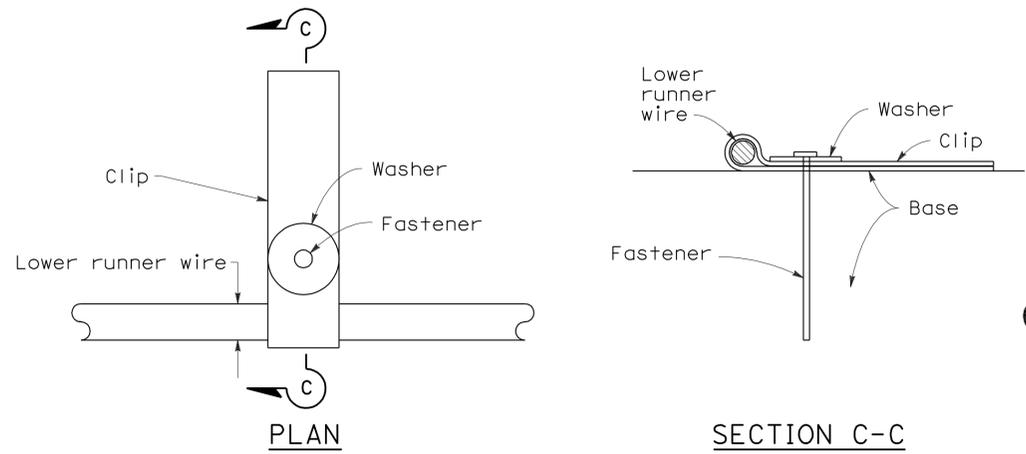
SECTION A-A



ASSEMBLY FRAME DETAILS



SECTION B-B
 See Note 1



FASTENER DETAIL

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**CONCRETE PAVEMENT -
 TIE BAR BASKET
 DETAILS**

NO SCALE

RSP P17 DATED MAY 15, 2009 SUPERSEDES RSP P17 DATED NOVEMBER 17, 2006 AND STANDARD PLAN P17 DATED MAY 1, 2006 - PAGE 126 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP P17

2006 REVISED STANDARD PLAN RSP P17

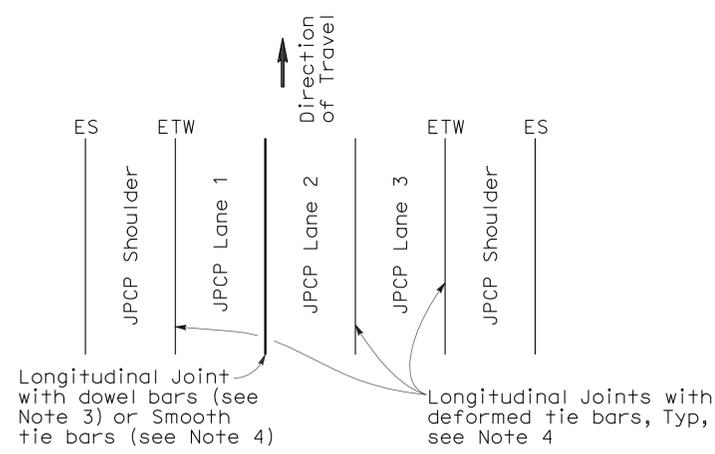
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	9.1/15.1	813	949

William K. Farnbach
 REGISTERED CIVIL ENGINEER
 June 5, 2009
 PLANS APPROVAL DATE

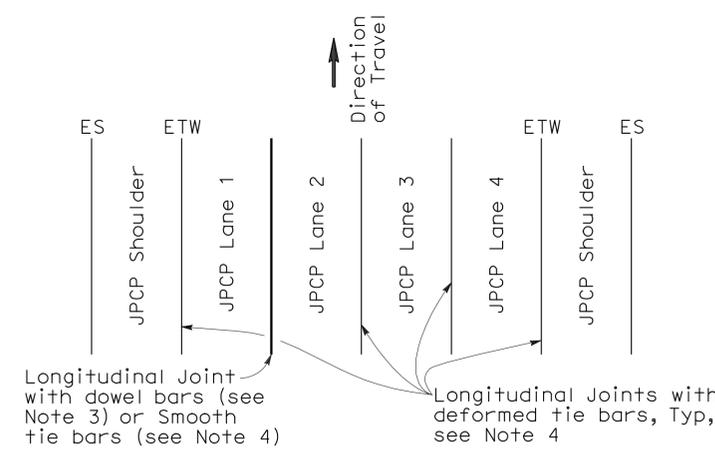
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 10-25-10

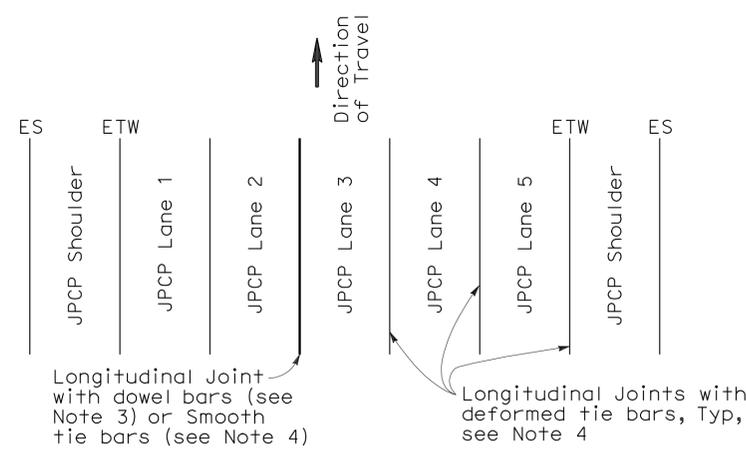
2006 REVISED STANDARD PLAN RSP P18



3 LANES WITH TIED CONCRETE SHOULDERS
PLAN

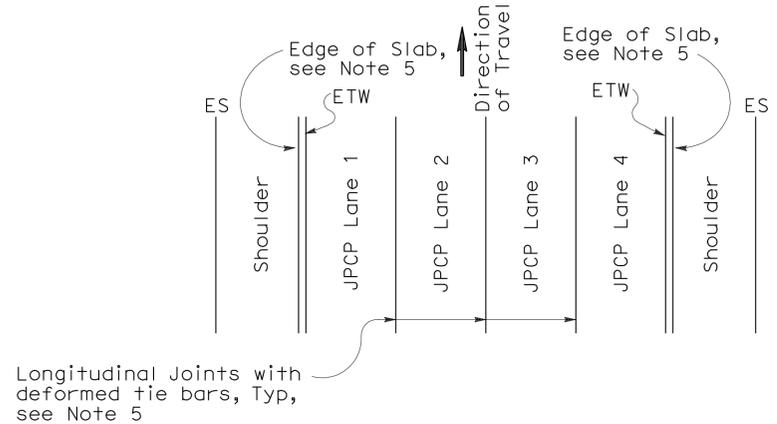


4 LANES WITH TIED CONCRETE SHOULDERS
PLAN

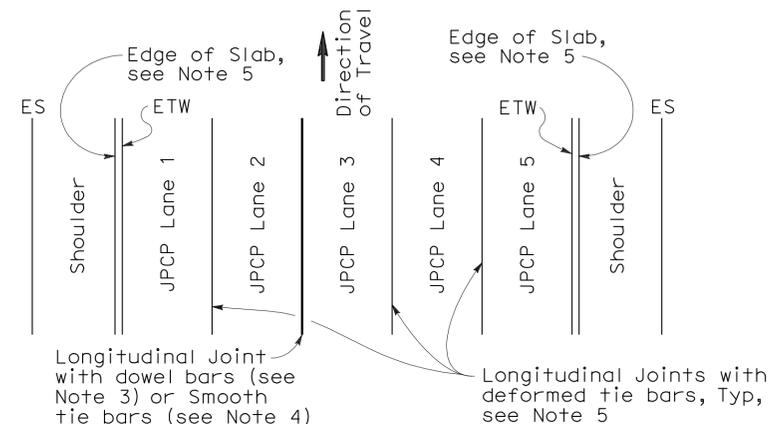


5 LANES WITH TIED CONCRETE SHOULDERS
PLAN

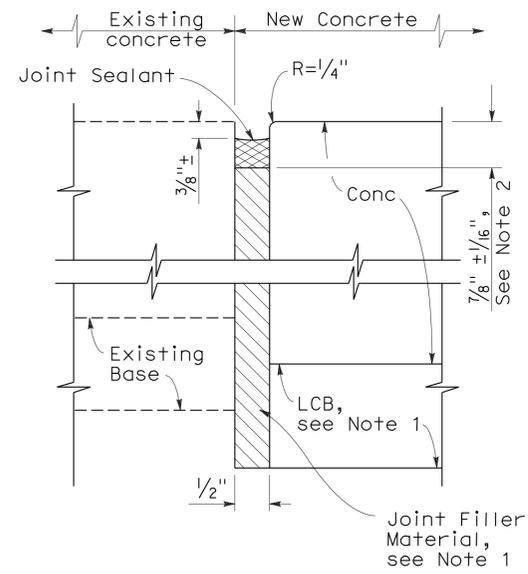
- NOTES:**
- Where Lean Concrete Base is not used as base material, the joint filler material used for the longitudinal isolation joint shall only extend to the bottom of the new concrete slab. See Detail A.
 - Use 5/8" ± 1/16" dimension for silicone sealant.
 - See Revised Standard Plan RSP P10 for longitudinal joint with dowel bars.
 - See Revised Standard Plan RSP P1.
 - See Revised Standard Plan RSP P2.



4 LANES OR LESS WITH WIDENED SLAB
PLAN

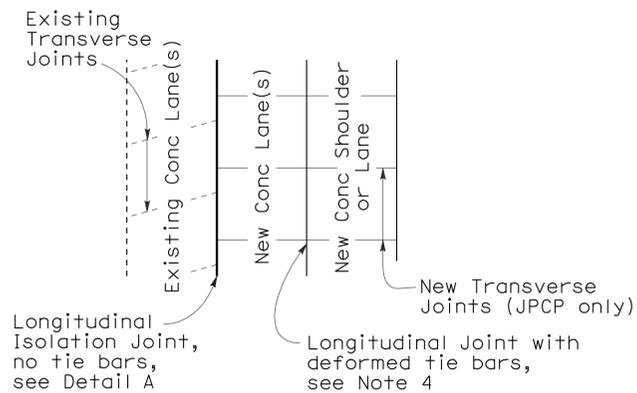


5 LANES WITH WIDENED SLAB
PLAN



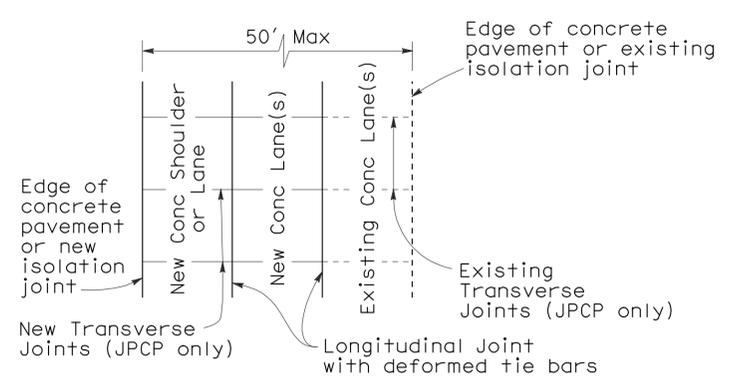
DETAIL A
ISOLATION JOINT

NEW CONSTRUCTION
Location of Longitudinal Joints
(For JPCP)



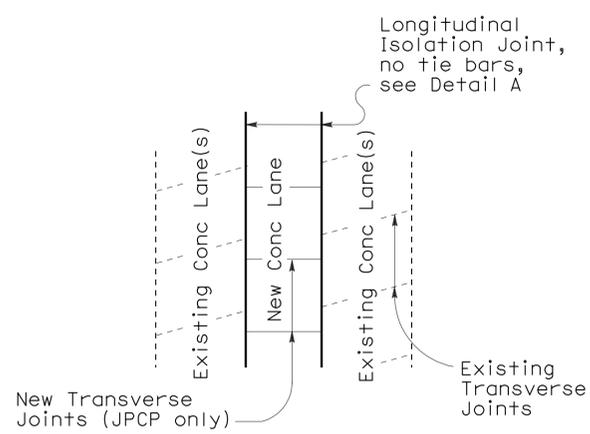
CASE 1
PLAN

Transverse Joints do not align between new and existing



CASE 2
PLAN

Transverse Joints align between new and existing



CASE 3 (INTERIOR LANE REPLACEMENT)
PLAN

Transverse Joints do not align between new and existing

LANE/SHOULDER ADDITION OR RECONSTRUCTION
(For JPCP and CRCP)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**CONCRETE PAVEMENT-
LANE SCHEMATICS
AND ISOLATION JOINT DETAIL**
NO SCALE

RSP P18 DATED JUNE 5, 2009 SUPERSEDES RSP P18 DATED MAY 15, 2009, RSP P18 DATED NOVEMBER 17, 2006 AND STANDARD PLAN P18 DATED MAY 1, 2006 - PAGE 127 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP P18

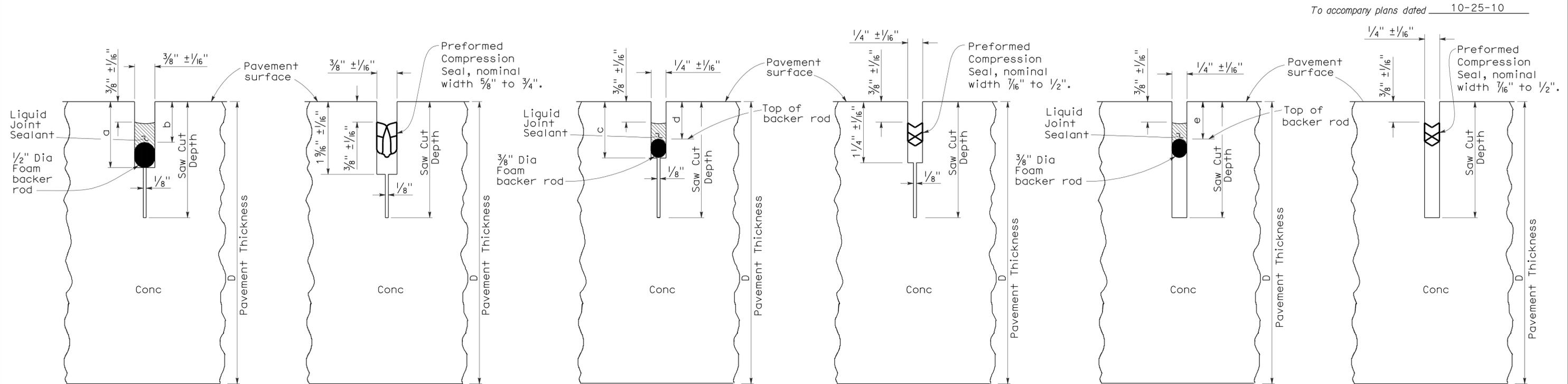
NOTE:

1. Tie bars, dowel bars, and reinforcement are not shown in joint seal details, see Revised Standard Plans RSP P1, RSP P3, RSP P10, RSP P35, RSP P45, or RSP P46 as applicable.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	9.1/15.1	814	949

William K. Farnbach
 REGISTERED CIVIL ENGINEER
 May 15, 2009
 PLANS APPROVAL DATE

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LIQUID SEALANT COMPRESSION SEAL LIQUID SEALANT COMPRESSION SEAL LIQUID SEALANT COMPRESSION SEAL

TYPE A1 **TYPE A2** **TYPE B**

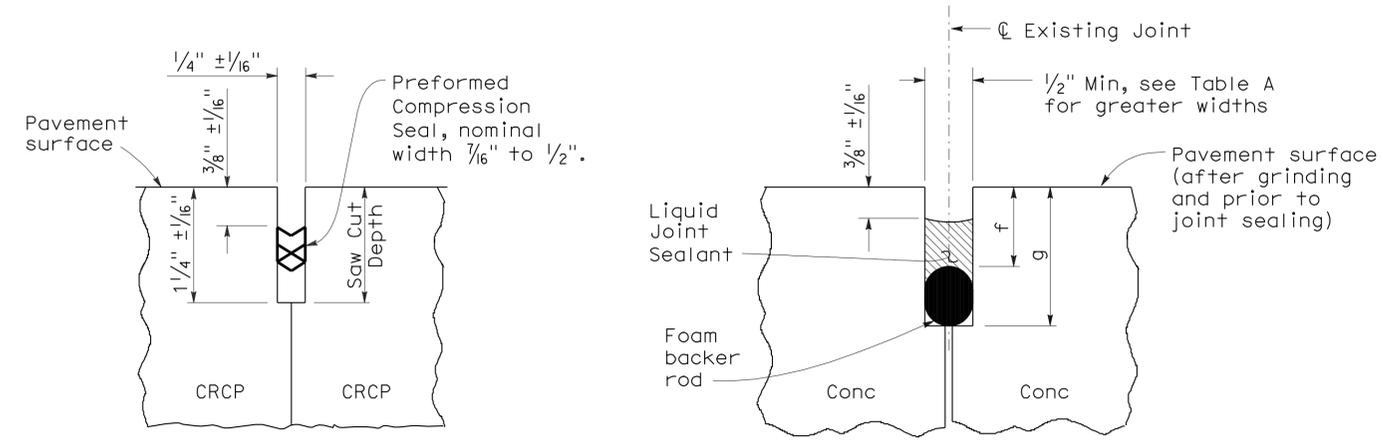
Transverse Contraction Joints Longitudinal Contraction Joints Longitudinal or Transverse Contraction Joint

LIQUID SEALANT RESERVOIR DEPTH

LIQUID SEALANT MATERIAL	3/8" Joint Width Type A1		1/4" Joint Width Type A2		1/4" Joint Width Type B
	DIMENSION		DIMENSION		DIMENSION
	a	b	c	d	e
SILICONE	1" ± 1/16"	5/8" ± 1/16"	15/16" ± 1/16"	9/16" ± 1/16"	9/16" ± 1/16"
ASPHALT RUBBER	1 3/16" ± 1/16"	3/4" ± 1/16"	1 1/16" ± 1/16"	11/16" ± 1/16"	11/16" ± 1/16"

TABLE A (TYPE R JOINT)

Sawn Joint Width	Backer Rod Diameter ± 1/16"	DIMENSION "f"	DIMENSION "g"
1"	1 5/16"	7/8"	2 1/4"
7/8"	1 3/16"	13/16"	2"
3/4"	1"	3/4"	1 3/4"
5/8"	7/8"	11/16"	1 1/2"
1/2"	11/16"	5/8"	1 1/4"



COMPRESSION SEAL LIQUID SEALANT

TYPE C **TYPE R**

Transverse and Longitudinal Construction Joints (For CRCP) Retrofit Transverse and Longitudinal Joints

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
CONCRETE PAVEMENT-JOINT DETAILS
 NO SCALE

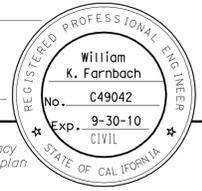
RSP P20 DATED MAY 15, 2009 SUPERSEDES STANDARD PLAN P20
 DATED MAY 1, 2006 - PAGE 128 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP P20

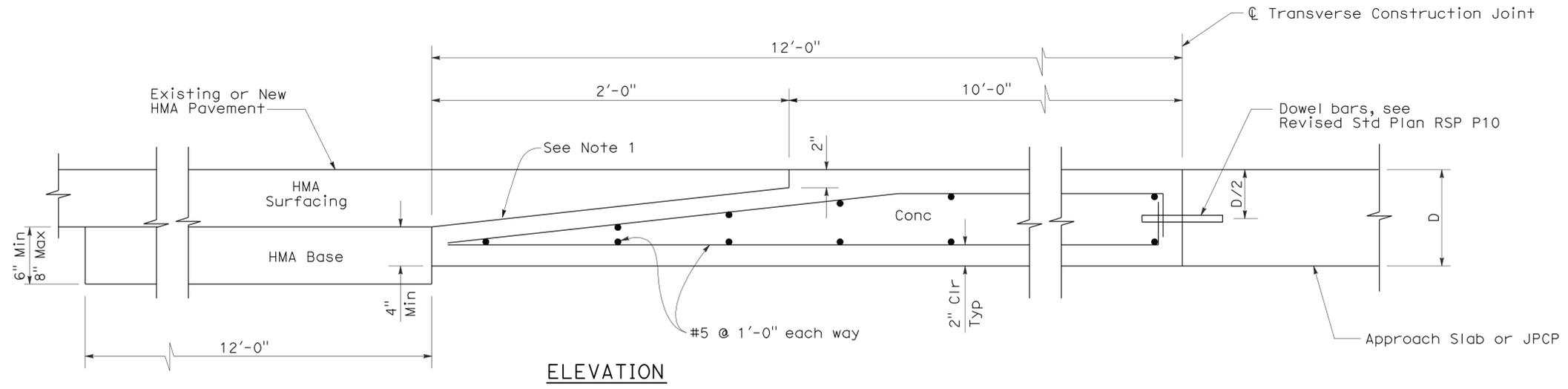
2006 REVISED STANDARD PLAN RSP P20

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	9.1/15.1	815	949

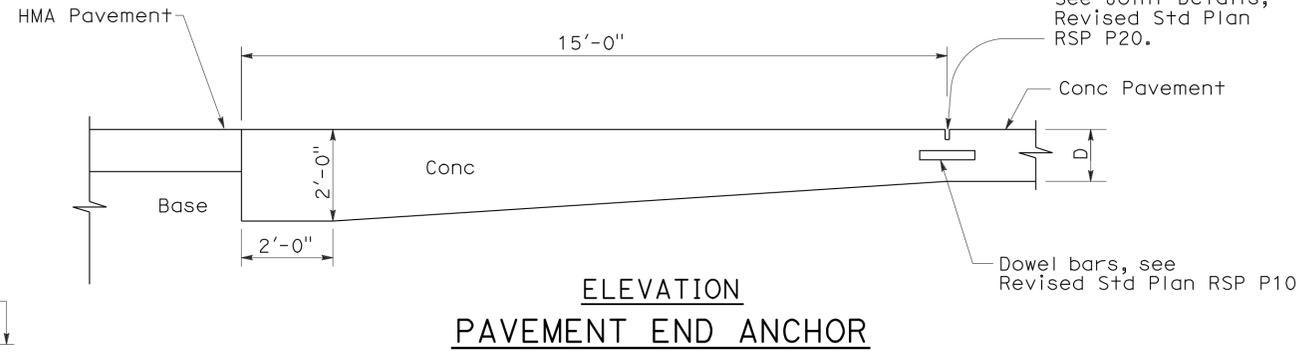
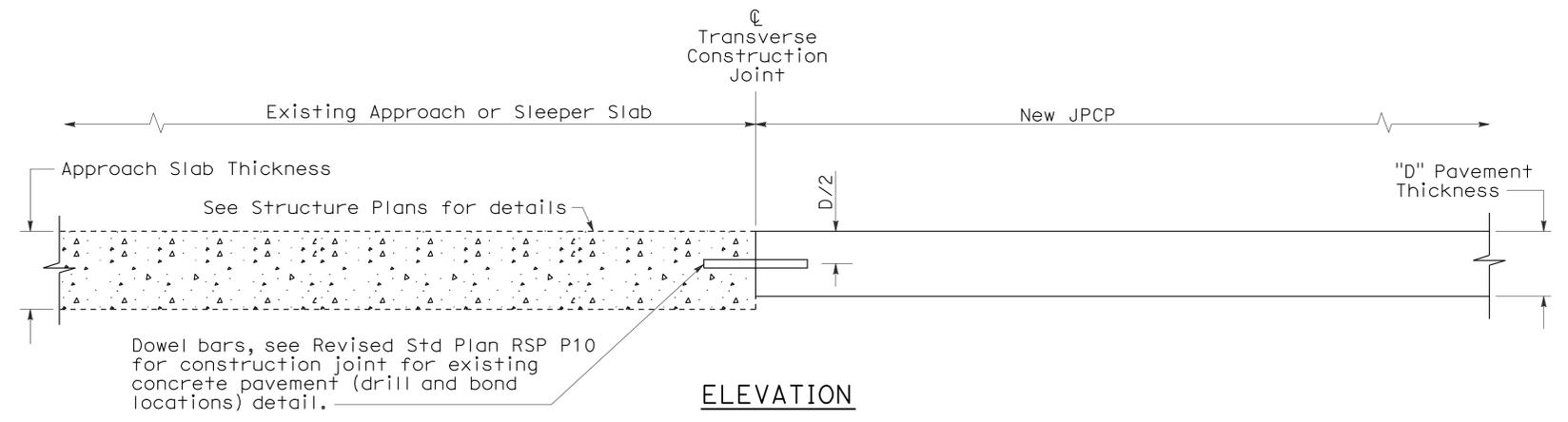
William K. Farnbach
 REGISTERED CIVIL ENGINEER
 May 15, 2009
 PLANS APPROVAL DATE
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To accompany plans dated 10-25-10

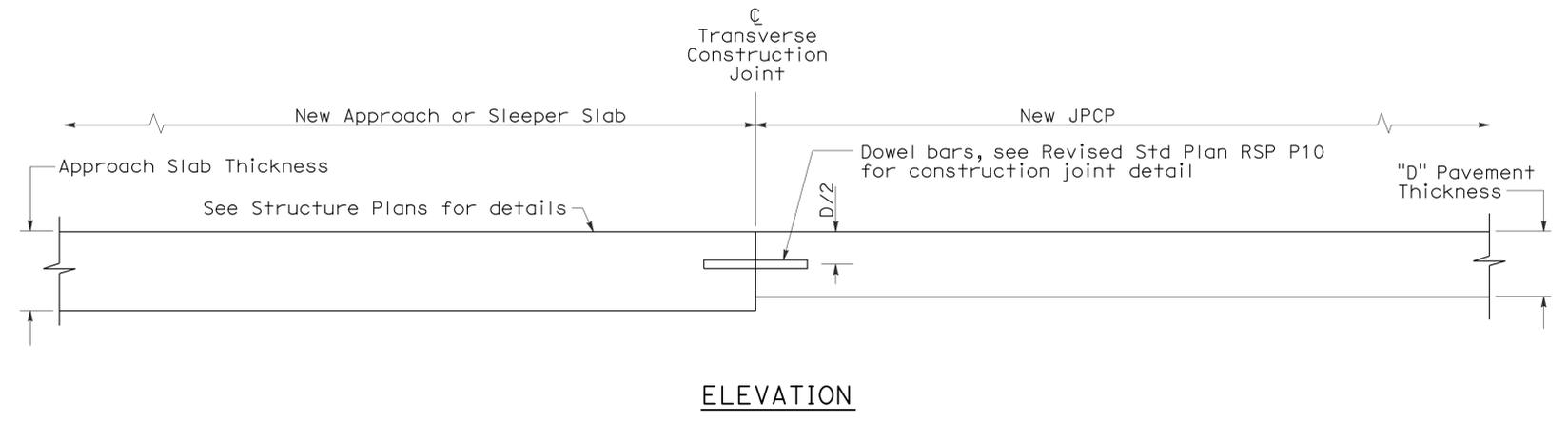


CONCRETE PAVEMENT TO HOT MIXED ASPHALT PAVEMENT TRANSITION PANEL



PAVEMENT END ANCHOR

NOTE:
1. Heavy broom finish.



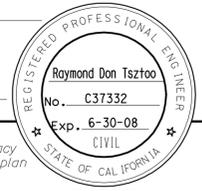
CONCRETE PAVEMENT TRANSITION TO APPROACH OR SLEEPER SLAB

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**JOINTED PLAIN CONCRETE PAVEMENT-
END PANEL
PAVEMENT TRANSITIONS**
NO SCALE

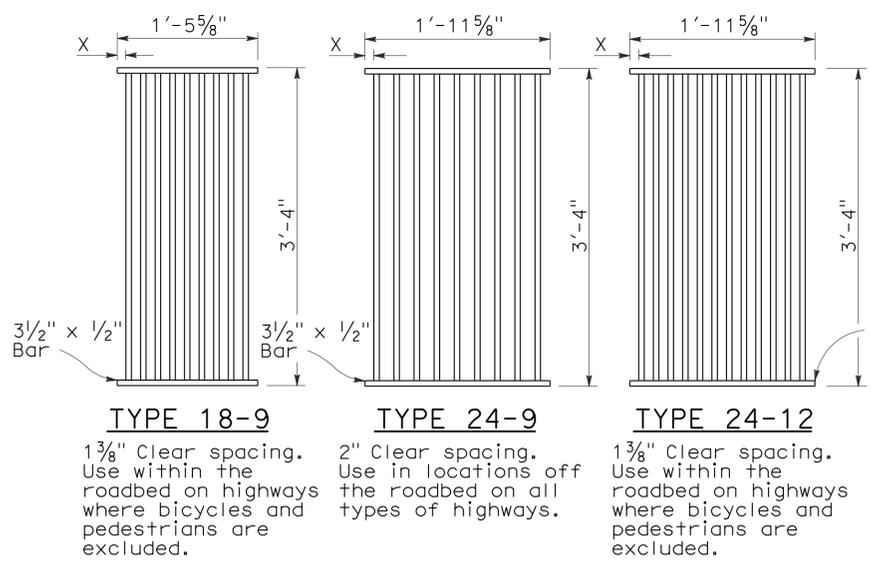
RSP P30 DATED MAY 15, 2009 SUPERSEDES STANDARD PLAN P30
DATED MAY 1, 2006 - PAGE 129 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP P30

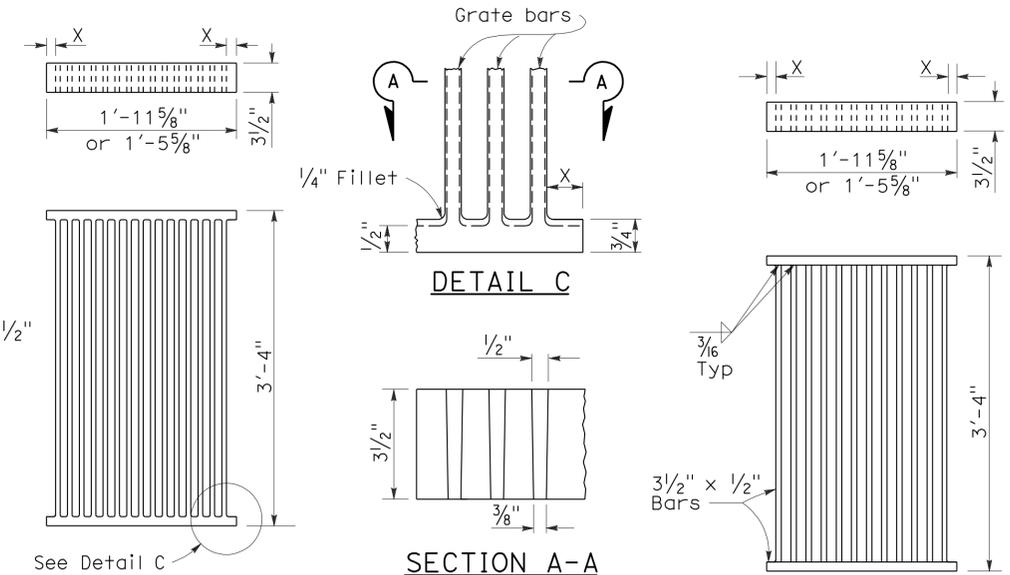
2006 REVISED STANDARD PLAN RSP P30



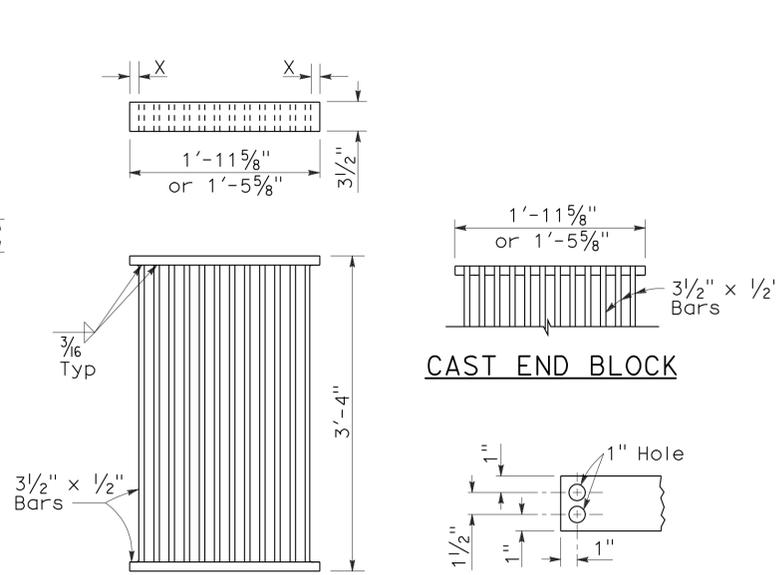
To accompany plans dated 10-25-10



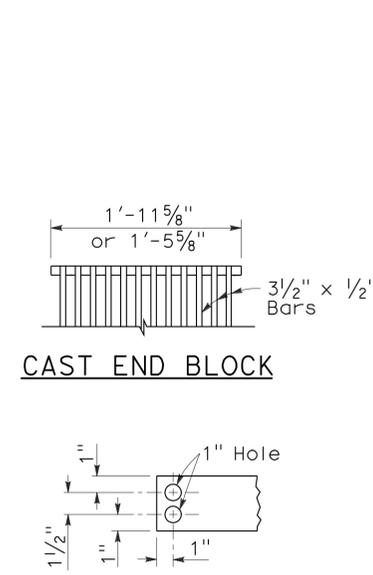
RECTANGULAR GRATE DETAILS
(See table below)



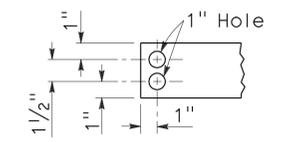
ALTERNATIVE CAST NODULAR IRON GRATE OR CAST STEEL GRATE



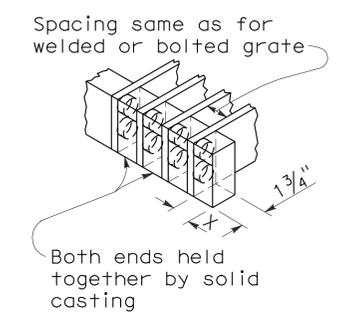
ALTERNATIVE WELDED GRATE



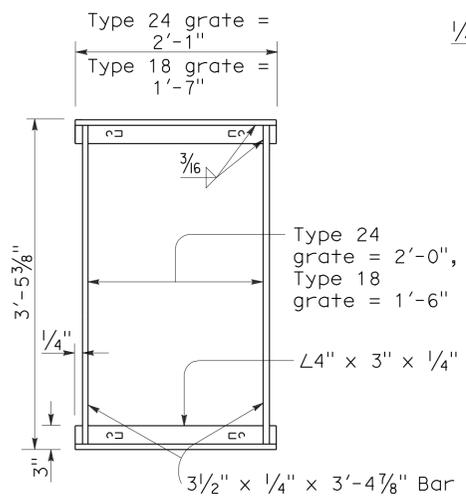
CAST END BLOCK



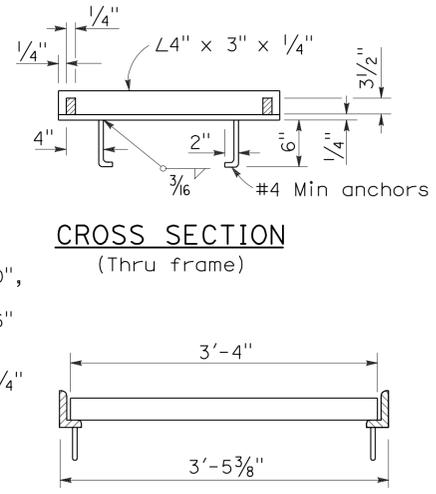
END OF BAR



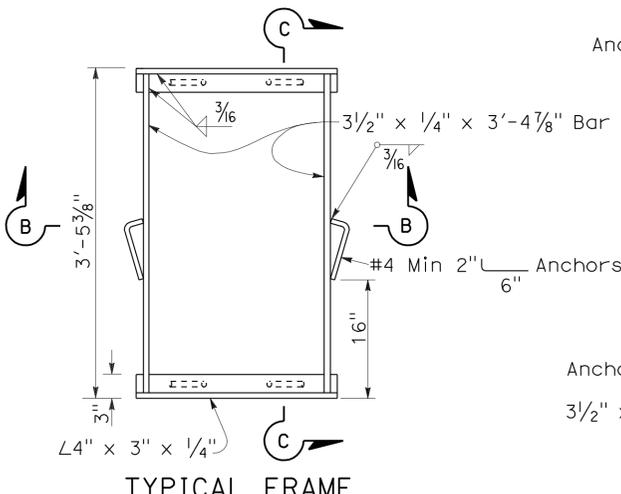
ALTERNATIVE CAST NODULAR IRON OR CAST STEEL END BLOCK GRATE



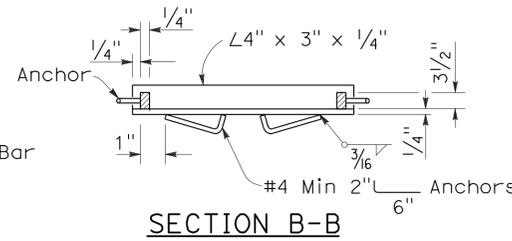
TYPICAL FRAME



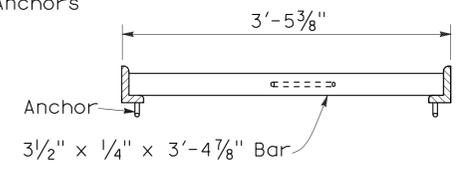
LONGITUDINAL SECTION
(Thru frame and grate)



TYPICAL FRAME



SECTION B-B



SECTION C-C

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

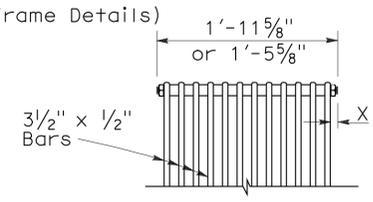
RECTANGULAR FRAME DETAILS
(For all rectangular grates)

GRATE BAR SPACING TABLE

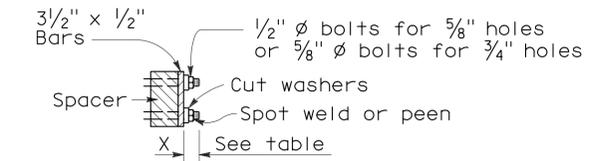
TYPE	NO. OF BARS	CLEAR BAR SPACING	X
18-9	9	1 3/8"	1 1/16"
24-9	9	2"	1 9/16"
24-12	12	1 3/8"	1 1/4"

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	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

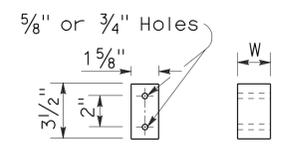


BOLTED END BLOCK

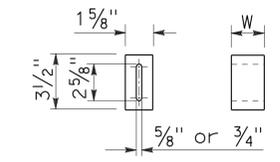


BOLTING DETAIL

ALTERNATIVE BOLTED GRATE



BAR SPACER



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

BASIS FOR MISC IRON & STEEL FINAL PAY WEIGHTS FOR DRAINAGE INLETS

(See General Notes, No 8)

ANNULAR AND HELICAL PROFILE

COUPLING TYPE	PIPE CORRUGATION	PIPE SIZE	W OR A	PIPE WALL THICKNESS				BAR AND STRAP (CSP ONLY)				ANGLE							
				PIPE WALL THICKNESS		BAND THICKNESS		STRAP THICKNESS	BOLTS Dia	BAR Dia	BAR YIELD STRENGTH	DIMENSIONS		BOLTS (No.- Dia)		RIVETS ANGLE TO BAND		SPOT WELDS ANGLE TO BAND	
				CSP	CAP	CSP	CAP					CSP	CAP	CSP	CAP	CSP	CAP	CSP	
TWO PIECE INTEGRAL FLANGE	1 1/2' x 1/4"	6"-10"	7"	0.052"-0.079"	0.048"-0.060"	0.052"	0.060"							2-3/8"	2-3/8"				
				12"-18"	7"	0.052"-0.079"										2-1/2"			
				2 2/3" x 1/2"	12"-24"	7"	0.052"-0.079"	0.060"-0.105"	0.064"	0.060"							2-1/2"	2-1/2"	
UNIVERSAL	2 2/3" x 1/2"	THROUGH 36"	12"	0.052"-0.138"	0.060"-0.135"	0.052"	0.060"						2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	3-1/2"
		42"-60"	12"	0.052"-0.168"	0.075"-0.164"	0.052"	0.060"						2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"
		THROUGH 72"	12"	0.052"-0.168"	0.164"	0.052"	0.105"	0.079"	1/2"	7/8"	32 ksi	2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"	
		78"-84"	16 1/4"	0.168"		0.079"		DOUBLE 0.079"	1/2"	7/8"	32 ksi								
ANNULAR	2 2/3" x 1/2"	THROUGH 36"	7"	0.064"-0.138"	0.060"-0.135"	0.052"	0.060"	0.079"	1/2"	7/8"	32 ksi	2" x 2" x 3/16"	2" x 2" x 3/16"	2-1/2"	2-1/2"	3-3/8"	3-3/8"	3-1/2"	
		42"-72"	12"	0.064"-0.168"	0.075"-0.164"	0.052"	0.105"	0.079"	1/2"	7/8"	32 ksi	2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"	
		78"-84"	12"	0.168"		0.079"		0.109"	1/2"	7/8"	45 ksi	2" x 2" x 3/16"		3-1/2"		3-3/8"		5-1/2"	
	3" x 1"	48"-90"	14"	0.064"-0.109"		0.052"		0.079"	1/2"	7/8"	32 ksi	2" x 2" x 3/16"		3-1/2"		3-3/8"		5-1/2"	
		96"-120"	14"	0.079"-0.109"		0.052"		0.109"	1/2"	7/8"	45 ksi	2" x 2" x 3/16"		3-1/2"		4-3/8"			
		42"-108"	14"		0.060"-0.135"		0.060"					2" x 2" x 3/16"		3-1/2"		3-3/8"			
HELICAL	2 2/3" x 1/2"	THROUGH 36"	12"	0.052"-0.138"	0.060"-0.135"	0.052"	0.060"	0.079"	1/2"	7/8"	32 ksi	2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	3-1/2"	
		42"-72"	12"	0.052"-0.168"	0.075"-0.164"	0.052"	0.060"	0.079"	1/2"	7/8"	32 ksi	2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"	
		78"-84"	12"	0.168"		0.079"		0.109"	1/2"	7/8"	45 ksi	2" x 2" x 3/16"		3-1/2"		3-3/8"		5-1/2"	
	3" x 1"	48"-90"	14"	0.064"-0.109"		0.052"		0.079"	1/2"	7/8"	32 ksi	2" x 2" x 3/16"		3-1/2"		3-3/8"		5-1/2"	
		96"-120"	14"	0.079"-0.109"		0.052"		0.109"	1/2"	7/8"	45 ksi	2" x 2" x 3/16"		3-1/2"		4-3/8"			
		42"-108"	14"		0.060"-0.135"		0.060"					2" x 2" x 3/16"		3-1/2"		3-3/8"			
HUGGER	2 2/3" x 1/2"	REROLLED END	12"-54"	4"	0.052"-0.109"		0.052"					2 1/2" x 1 1/2" x 3/16"	2 1/2" x 1 1/2" x 3/16"	1-1/2"				3-1/2"	
			60"-66"	4"	0.109"		0.064"						2 1/2" x 1 1/2" x 3/16"	2 1/2" x 1 1/2" x 3/16"	1-1/2"			3-1/2"	
			36"-48"	4"	0.138"		0.064"						2 1/2" x 1 1/2" x 3/16"	2 1/2" x 1 1/2" x 3/16"	1-1/2"			3-1/2"	
			THROUGH 72"	10 1/2"	0.052"-0.168"		0.052"		0.079"	1/2"	7/8"	32 ksi							
			78"-84"	10 1/2"	0.168"		0.079"		0.109"	1/2"	7/8"	45 ksi							
	3" x 1"	REROLLED END	48"-90"	10 1/2"	0.064"-0.109"		0.052"		0.079"	1/2"	7/8"	32 ksi							
			96"-120"	10 1/2"	0.079"-0.109"		0.052"		0.109"	1/2"	7/8"	45 ksi							
	5" x 1"	REROLLED END	48"-66"	7 1/2"	0.064"-0.109"		0.064"		0.079"	1/2"	7/8"	32 ksi	2 1/2" x 1 1/2" x 3/16"	2 1/2" x 1 1/2" x 3/16"	1-1/2"				3-1/2"
			72"-90"	7 1/2"	0.064"-0.079"		0.064"		0.079"	1/2"	7/8"	32 ksi	2 1/2" x 1 1/2" x 3/16"	2 1/2" x 1 1/2" x 3/16"	1-1/2"				3-1/2"
			48"-90"	7 1/2"	0.064"-0.138"		0.064"		0.079"	1/2"	7/8"	32 ksi							
48"-120"			12" SEE	0.064"-0.109"		0.064"		0.079"	1/2"	7/8"	32 ksi								
48"-84"			12" NOTE	0.138"		0.064"		0.079"	1/2"	7/8"	32 ksi								
		90"-120"	12" 11	0.138"		0.064"		DOUBLE 0.079"	1/2"	7/8"	32 ksi								

SPIRAL RIB PROFILE

COUPLING TYPE	PIPE CORRUGATION	PIPE SIZE	W	PIPE WALL THICKNESS				BAR AND STRAP (SSRP ONLY)				ANGLE						
				PIPE WALL THICKNESS		BAND THICKNESS		STRAP THICKNESS	BOLTS Dia	BAR Dia	BAR YIELD STRENGTH	DIMENSIONS		BOLTS (No.- Dia)		RIVETS ANGLE TO BAND		SPOT WELDS ANGLE TO BAND
				SSRP	ASRP	SSRP	ASRP					SSRP	ASRP	SSRP	ASRP	SSRP	ASRP	SSRP
ANNULAR	2 2/3" x 1/2" * REROLLED END	24"-36"	12"	0.064"-0.109"	0.060"-0.105"	0.052"	0.060"	0.079"	1/2"	7/8"	32 ksi	2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"
		42"-60"	12"	0.064"-0.109"	0.075"-0.105"	0.052"	0.105"	0.079"	1/2"	7/8"	32 ksi	2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"
		66"-72"	12"	0.064"-0.109"		0.052"		0.079"	1/2"	7/8"	32 ksi	2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"
		78"-114"	12"	0.079"-0.109"		0.079"		0.109"	1/2"	7/8"	45 ksi	2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"
HUGGER	2 2/3" x 1/2" * REROLLED END	24"-72"	10 1/2"	0.064"-0.109"		0.052"		0.079"	1/2"	7/8"	32 ksi							
		78"-84"	10 1/2"	0.109"		0.079"		0.109"	1/2"	7/8"	45 ksi							

* See Note 14.

14. All profiles of Spiral Rib Pipe (3/4" x 3/4" ribs at 7 1/2" pitch and 3/4" x 1" ribs at 11 1/2" pitch in both steel and aluminum and 3/4" x 1" ribs at 8 1/2" pitch in steel only) shall be manufactured with rerolled ends. Corrugation profile of the rerolled ends shall be 2 2/3" x 1/2" annual corrugations with a minimum of two full corrugations at each end.

- NOTES:** To accompany plans dated 10-25-10
- All ferrous metal coupling band connection hardware shall be galvanized or electro-plated in accordance with the Standard Specifications.
 - For helically corrugated coupling bands, the connection angles may be oriented parallel to the pipe axis, provided connecting holes are slotted lengthwise sufficiently to allow adjustment for the helix angle.
 - Tension strap may be connected to band with either spot welds or fillet welds that develop minimum required strength of strap.
 - Use 1 1/4" gage line dimension on attached angle leg for rivets and spot welds.
 - Band thickness shall not be less than:
 - 3 standard thicknesses lighter than the thickness of the pipe for Corrugated Steel Pipe.
 - 2 standard thicknesses lighter than the thickness of the pipe and in no case lighter than 0.060" for Corrugated Aluminum Pipe.
 - Dimensions, thicknesses and strengths shown are minimum.
 - For pipe arches use same width band as for round pipe of equal periphery.
 - Fillet welds of equivalent strength may be substituted for spot welds or rivets.
 - Spot welds shall develop minimum required strength of strap.
 - Pipe with rerolled ends having at least two 2 2/3" x 1/2" annular corrugations at each end with or without an upturned flange may be connected with any of the annular coupling bands shown for pipe of the same diameter and wall thickness and having 2 2/3" x 1/2" corrugations.
 - In the case of H-12 huggerbands, two piece bands are required for diameters through 96" and three piece bands are required for diameters 102" through 120".
 - Two piece bands are required for pipes greater than 42" diameter.
 - The 2 1/4" x 2" x 0.109" thick galvanized die-formed angle connector may be used in lieu of the 2" x 2" x 3/16" angle connector for standard joints only on pipes through 72" diameter.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**CORRUGATED METAL PIPE
COUPLING DETAILS No. 5
STANDARD JOINT**
NO SCALE

RSP D97E DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN D97E
DATED MAY 1, 2006 - PAGE 187 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP D97E

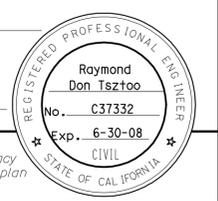
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	9.1/15.1	817	949

Raymond Don Tsztoo
REGISTERED CIVIL ENGINEER

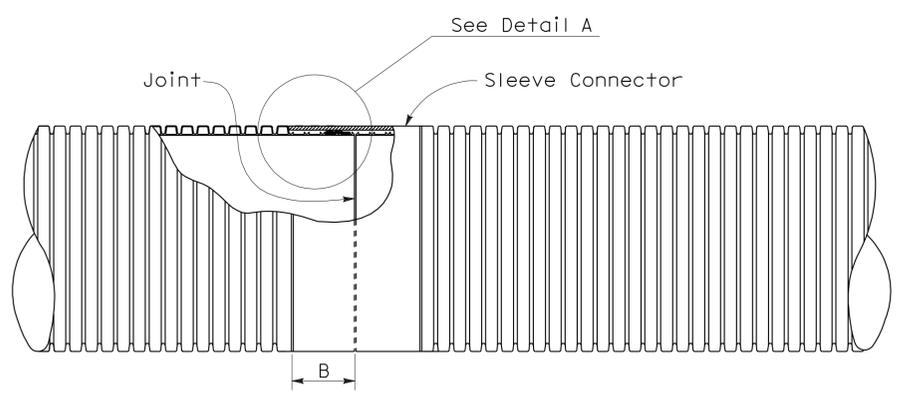
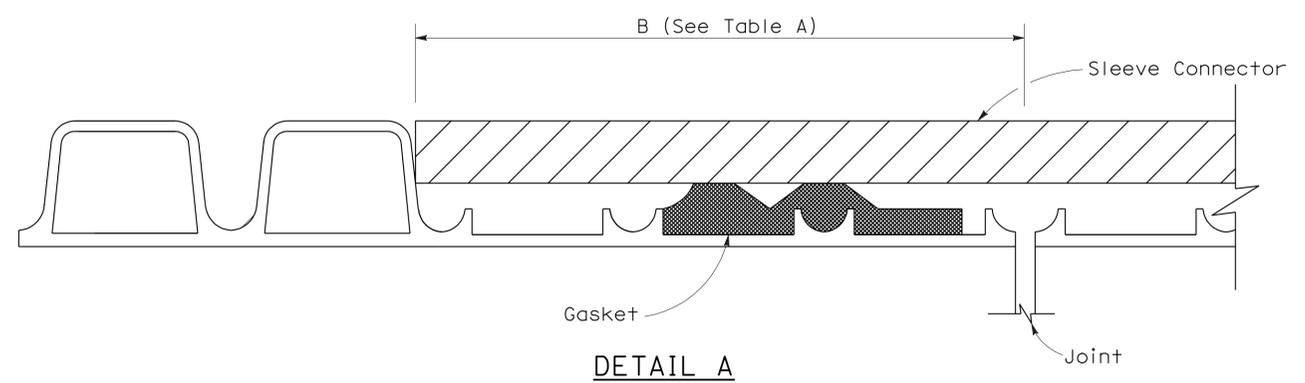
June 6, 2008
PLANS APPROVAL DATE

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2006 REVISED STANDARD PLAN RSP D97E

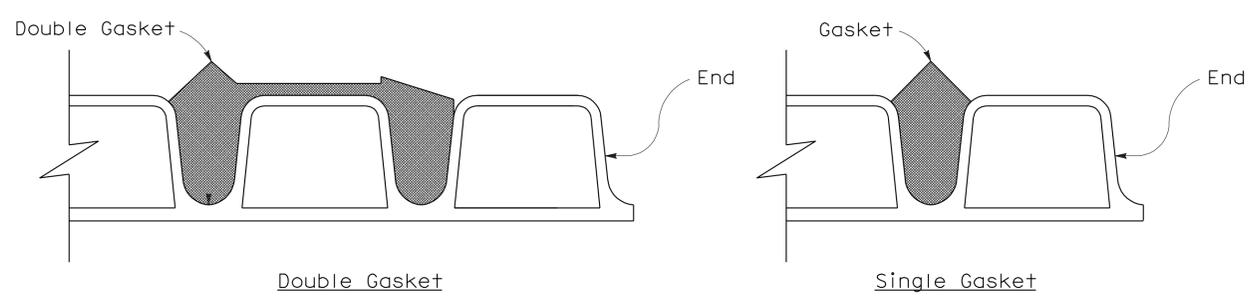


To accompany plans dated 10-25-10

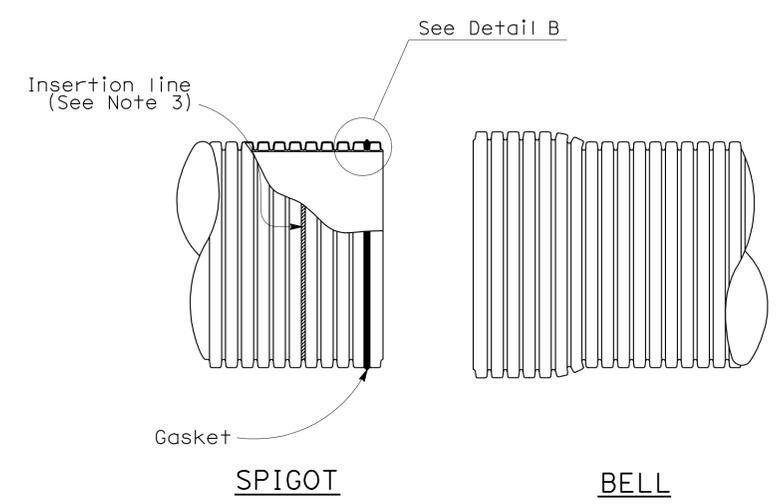


PLAN VIEW
Liner Insert
See Note 4

- NOTES:**
- For pipe sections installed on straight alignment, the pipe sections shall be joined to achieve maximum joint overlap at all points on the periphery as indicated in Table A where the plans call for positive or watertight joints. Maximum joint overlap is recommended where the plans call for standard joints, but in no case shall the joint overlap be less than 3/2".
 - For pipe sections installed on curved alignment, the maximum angle of deflection from straight alignment at any joint shall not exceed two degrees. Where the plans call for watertightness, field testing for compliance is required. Where plans call for positive joints, the pipe sections shall be joined to achieve Table A Dimensions on one side of the joint. Joints classified as standard shall have no less than 3/2" joint overlap at any point on the periphery.
 - Factory applied insertion line limit shall be placed on spigot.
 - Liner insert to be used inside of existing pipe.



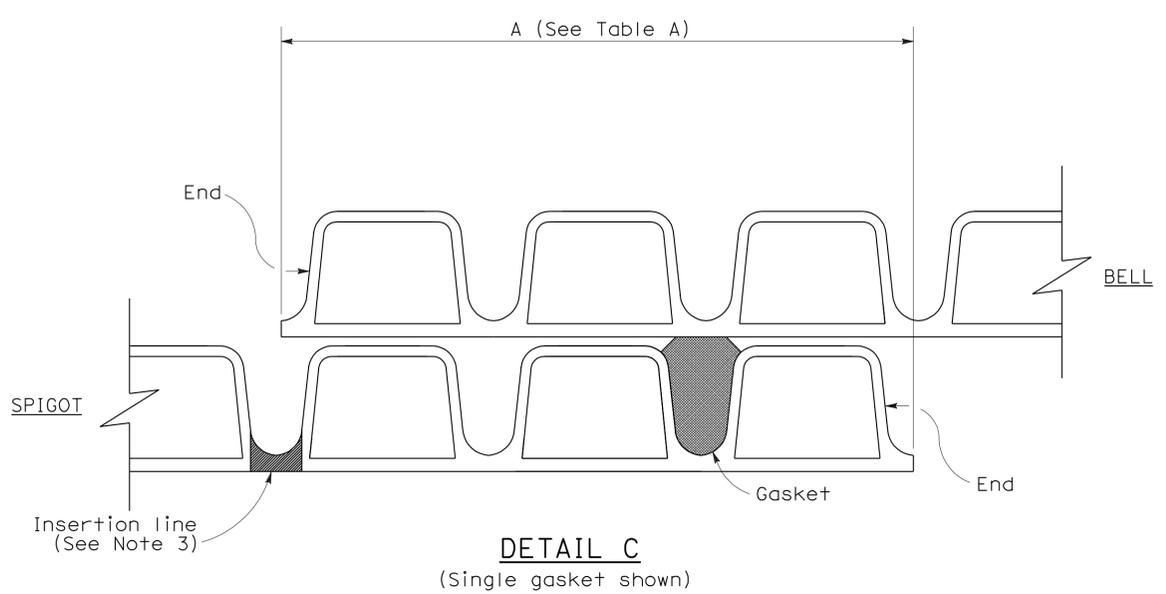
DETAIL B



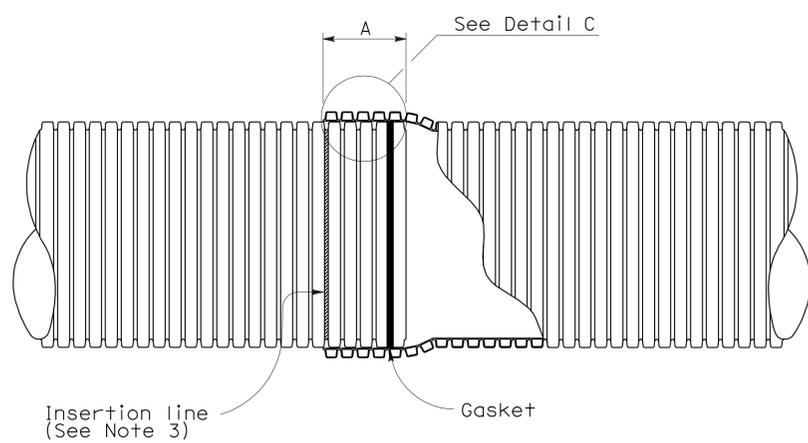
SPIGOT BELL

TABLE A

JOINT OVERLAP DIMENSIONS		
PIPE Dia (NOMINAL)	A	B
12"	5 3/4"	4 1/4"
15"	6 3/4"	5 5/8"
18"	6 3/4"	5 5/8"
21"	8 1/2"	5 5/8"
24"	8 1/2"	6 1/8"
30"	8 1/2"	7 1/8"
36"	8 1/2"	8 1/8"



DETAIL C
(Single gasket shown)



BELL AND SPIGOT JOINT

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
CORRUGATED POLYVINYL CHLORIDE PIPE WITH SMOOTH INTERIOR STANDARD AND POSITIVE JOINTS

NO SCALE
NSP D97I DATED MARCH 7, 2008 SUPPLEMENTS THE STANDARD
PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP D97I

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	9.1/15.1	819	949

Gregory A. Balzer
LICENSED LANDSCAPE ARCHITECT

June 5, 2009
PLANS APPROVAL DATE

Gregory A. Balzer
LICENSED LANDSCAPE ARCHITECT
2-28-11
5-14-09
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.

To accompany plans dated 10-25-10

2006 REVISED STANDARD PLAN RSP H1

A

AB aggregate base
 ABS acrylonitrile-butadiene-styrene
 AC asphalt concrete
 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
 BPAE backflow preventer assembly in enclosure
 BPE backflow preventer enclosure
 BV ball valve

C

CAP corrugated aluminum pipe
 CARV combination air release valve
 CCA cam coupler assembly
 CEC controller enclosure cabinet
 CHDPE corrugated high density polyethylene
 CL chain link
 CNC control and neutral conductors
 Conc concrete
 Cond conduit
 CSP corrugated steel pipe
 CST center strip
 CV check valve

D

Dia diameter
 DIP ductile iron pipe
 DN diameter nominal

E

EA each
 Elect electric/electrical
 Elev elevation
 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
 FAU filter assembly unit
 FCV flow control valve
 FERT fertilizer
 FG finished grade
 FIPT female iron pipe thread
 FIS fertilizer injector system
 FL flow line
 FM flow monitor
 FS flow sensor
 Ft foot/feet
 FV flush valve

G

GAL Gallon(s)
 Galv galvanized
 GARV garden valve
 GPH gallons per hour
 GPM gallons per minute
 GSP galvanized steel pipe
 GV gate valve

H

H half circle
 HB hose bib
 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
 In inches
 IFS irrigation filtration system
 IPS iron pipe size
 IPT iron pipe thread
 Irr irrigation

L

L length
 LF linear foot

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
 Mtl 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
 Oz ounce

P

P part circle
 PB pull box
 PCC portland cement concrete
 PE polyethylene
 Pkt packet
 PL plastic
 PLT plant/planting
 PLT ESTB plant establishment
 PM post mile
 PR pressure rated
 PRLV pressure relief valve
 PSFM polymer stabilized fiber matrix
 PSI pounds per square inch
 PRV pressure reducing valve
 PVC polyvinyl chloride
 Pvmnt pavement

Q

Q quarter circle
 QCV quick coupling valve

R

R radius
 RCP reinforced concrete pipe
 RCV remote control valve
 RCVM remote control valve (master)
 RCVMF remote control valve (master) w/ flow meter
 RCW recycled/reclaimed water
 RECP rolled erosion control product
 REQ required
 R/W right of way

S

S slip
 SCC sprinkler control conduit
 SCH schedule
 SF state-furnished
 Shld shoulder
 SQFT square foot/feet
 SQYD square yard(s)
 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
 TRVD traveled
 TT two third circle
 Typ typical

U

UG underground

V

VAU valve assembly unit

W

W width
 W/ with
 WM water meter
 WS wye strainer
 WSP welded steel pipe
 WWM welded wire mesh

NOTE:

FOR ADDITIONAL ABBREVIATIONS,
 SEE STANDARD PLANS A10A AND A10B.

**PLANTING AND IRRIGATION
 ABBREVIATIONS**

NO SCALE

RSP H1 DATED JUNE 5, 2009 SUPERSEDES STANDARD PLAN H1
 DATED MAY 1, 2006 - PAGE 201 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP H1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	9.1/15.1	820	949

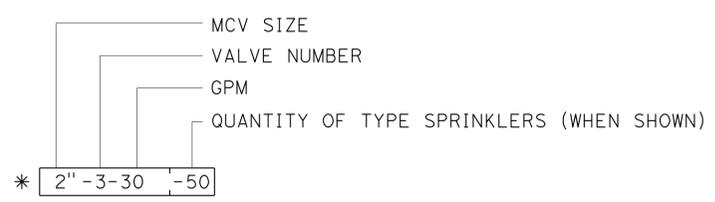
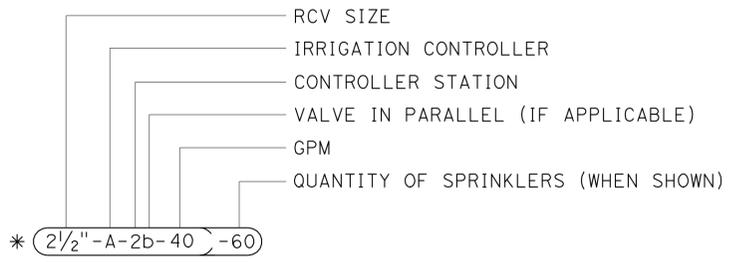
Gregory A. Balzer
 LICENSED LANDSCAPE ARCHITECT
 June 5, 2009
 PLANS APPROVAL DATE
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 10-25-10

EXISTING	PROPOSED	ITEM DESCRIPTION
		WATER METER (WM)
		BACKFLOW PREVENTER ASSEMBLY (BPA)
		BACKFLOW PREVENTER ASSEMBLY IN ENCLOSURE (BPAE)
		BACKFLOW PREVENTER ENCLOSURE (BPE)
		BOOSTER PUMP (BP)
		TRUCK LOADING STANDPIPE (TLS)
		FLOW SENSOR (FS)
		MASTER IRRIGATION CONTROLLER (MIC)
		AUXILIARY IRRIGATION CONTROLLER (AIC)
		IRRIGATION CONTROLLER (IC)/ IRRIGATION CONTROLLER (IC) (BATTERY) IRRIGATION CONTROLLER (IC) (SOLAR)
		IRRIGATION CONTROLLER(S) IN CONTROLLER ENCLOSURE CABINET (ICC)
		CONTROL AND NEUTRAL CONDUCTORS (CNC)
		SPRINKLER CONTROL CONDUIT (SCC)
		IRRIGATION CROSSOVER
		EXTEND IRRIGATION CROSSOVER
		IRRIGATION SLEEVE
		DUCTILE IRON PIPE (SUPPLY LINE) (MAIN) (DIP)
		GALVANIZED STEEL PIPE (SUPPLY LINE) (MAIN) (GSP)
		GALVANIZED STEEL PIPE (SUPPLY LINE) (LATERAL) (GSP)
		PLASTIC PIPE (PR 200) (SUPPLY LINE) (MAIN)
		PLASTIC PIPE (PR 200) (SUPPLY LINE) (LATERAL)
		PLASTIC PIPE (IRRIGATION LINE)
		REMOTE CONTROL VALVE (RCV) REMOTE CONTROL VALVE (MASTER) (RCVM) REMOTE CONTROL VALVE (MASTER) W/FLOW METER (RCVMF)
		MANUAL CONTROL VALVE (MCV)
		VALVE ASSEMBLY UNIT (VAU)
		WYE STRAINER (WS)
		FILTER ASSEMBLY UNIT (FAU)
		GATE VALVE (GV)
		BALL VALVE (BV)

EXISTING	PROPOSED	ITEM DESCRIPTION
		QUICK COUPLING VALVE (QCV)
		CAM COUPLER ASSEMBLY (CCA)
		PRESSURE REDUCING VALVE (PRV)
		PRESSURE RELIEF VALVE (PRLV)
		FLOW CONTROL VALVE (FCV)
		COMBINATION AIR RELEASE VALVE (CARV)
		CHECK VALVE (CV)
		FLUSH VALVE (FV)
		NOZZLE LINE W/TURNING UNION
		IRRIGATION SYSTEM
		IRRIGATION SYSTEM TO BE REMOVED
		CHAIN LINK GATE
		QUICK COUPLING VALVE W/SPRINKLER PROTECTOR
		SPRINKLER W/SPRINKLER PROTECTOR
		CONNECT TO EXISTING SYSTEM
		CAP
		CAP EXISTING

VALVE CODE



* VALVE CODES FOR EXISTING VALVES ARE SHOWN IN A DASHED ENCLOSURE.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
PLANTING AND IRRIGATION SYMBOLS

NO SCALE

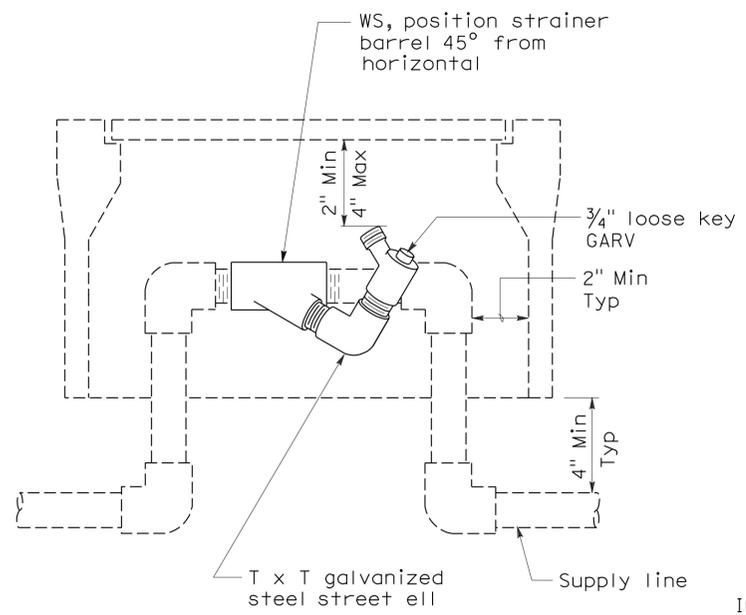
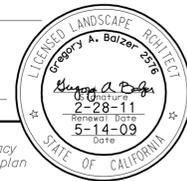
RSP H2 DATED JUNE 5, 2009 SUPERSEDES RSP H2 DATED MARCH 7, 2008 AND STANDARD PLAN H2 DATED MAY 1, 2006 - PAGE 202 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP H2

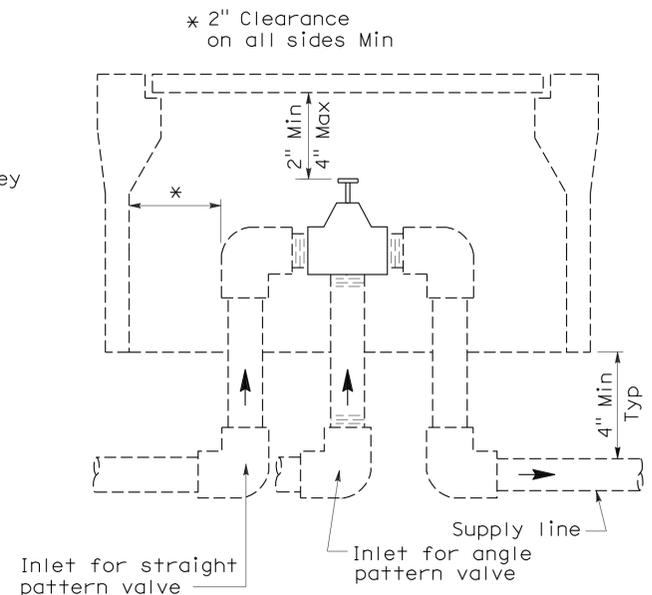
2006 REVISED STANDARD PLAN RSP H2

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	9.1/15.1	821	949

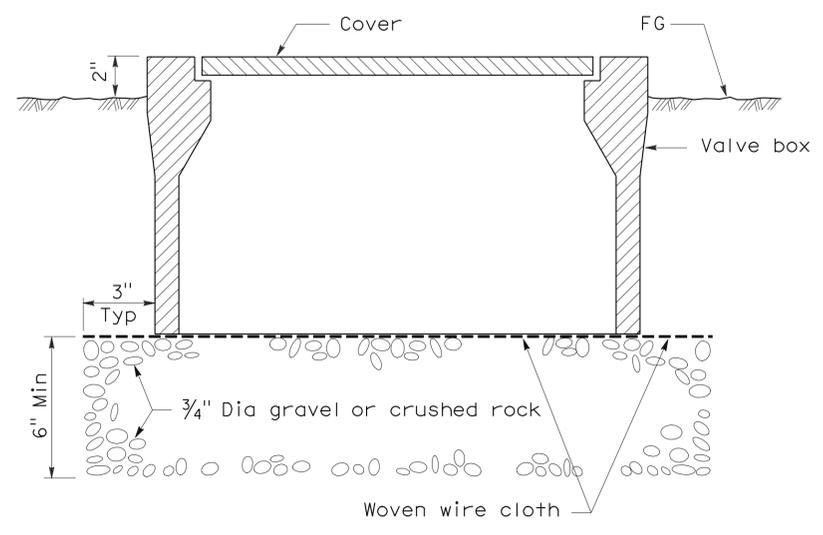
Gregory A. Balzer
 LICENSED LANDSCAPE ARCHITECT
 June 5, 2009
 PLANS APPROVAL DATE
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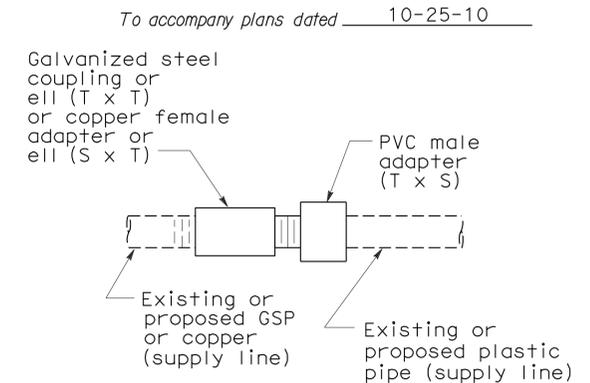
**ELEVATION
WYE STRAINER**



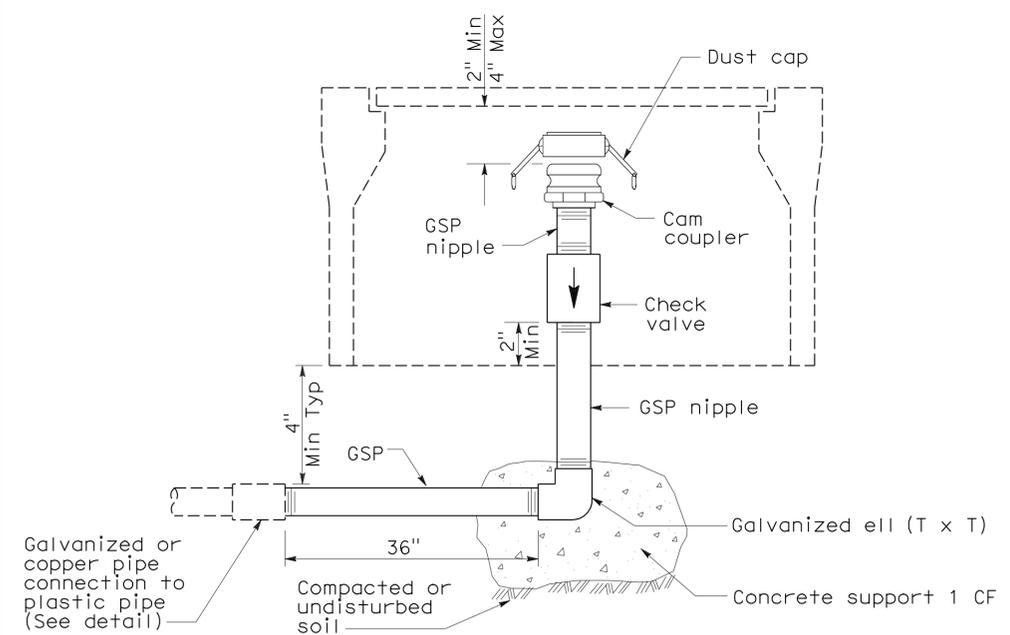
**ELEVATION
VALVE**



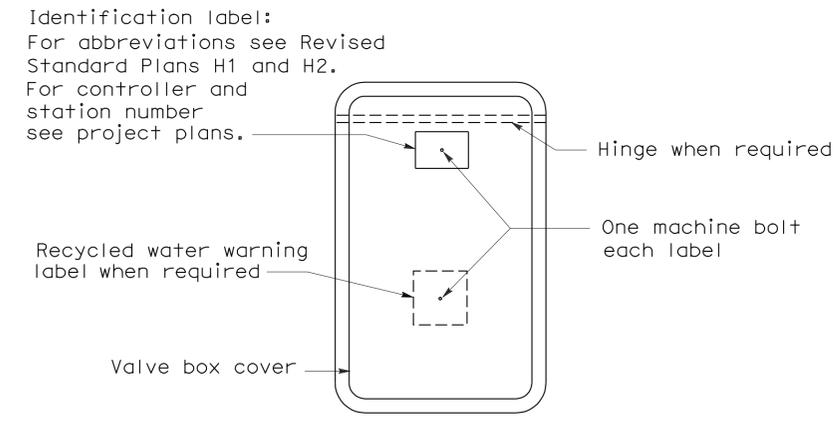
**SECTION
VALVE BOX**



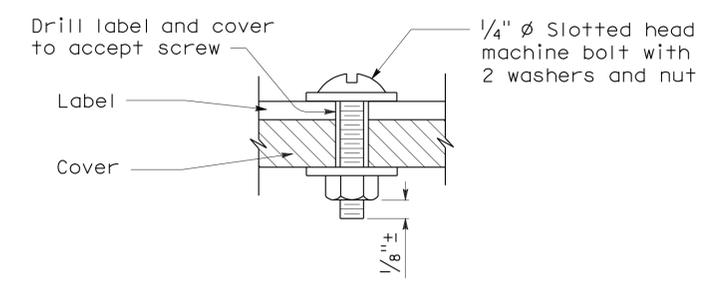
**PLAN
GALVANIZED OR COPPER PIPE
CONNECTION TO PLASTIC PIPE**



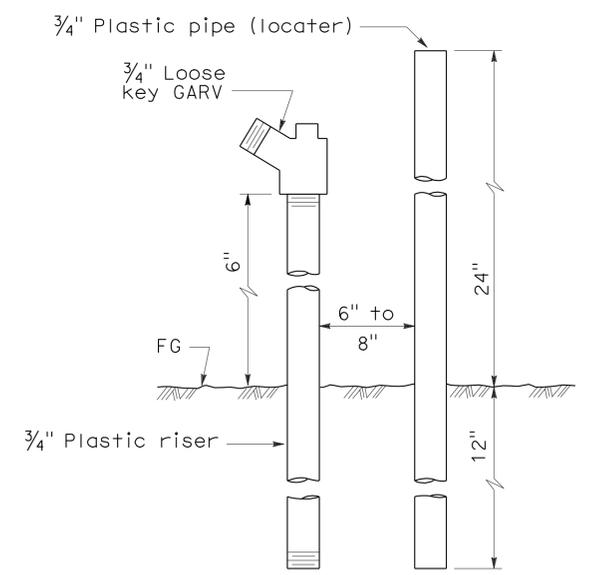
**ELEVATION
CAM COUPLER ASSEMBLY**



**PLAN
VALVE BOX IDENTIFICATION**



**SECTION
VALVE BOX IDENTIFICATION**



**ELEVATION
FLUSH VALVE**

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**PLANTING AND IRRIGATION
DETAILS**

NO SCALE

RSP H7 DATED JUNE 5, 2009 SUPERSEDES STANDARD PLAN H7
DATED MAY 1, 2006 - PAGE 207 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP H7

2006 REVISED STANDARD PLAN RSP H7

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	9.1/15.1	822	949

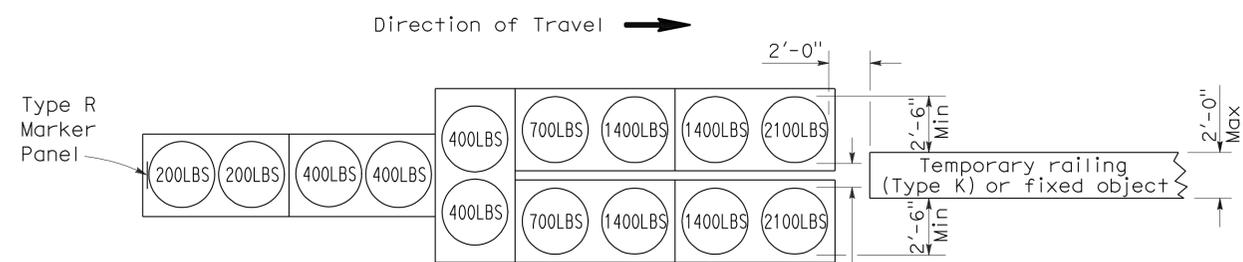
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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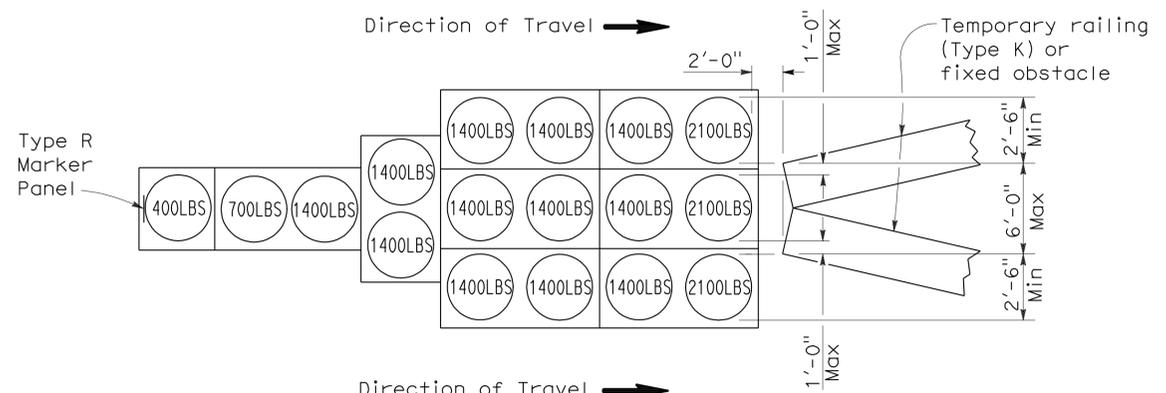
REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

To accompany plans dated 10-25-10



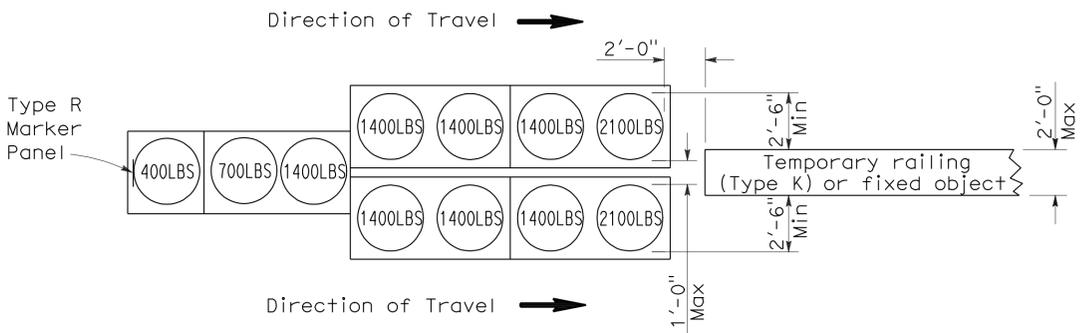
ARRAY 'TU14'

Approach speed 45 mph or more



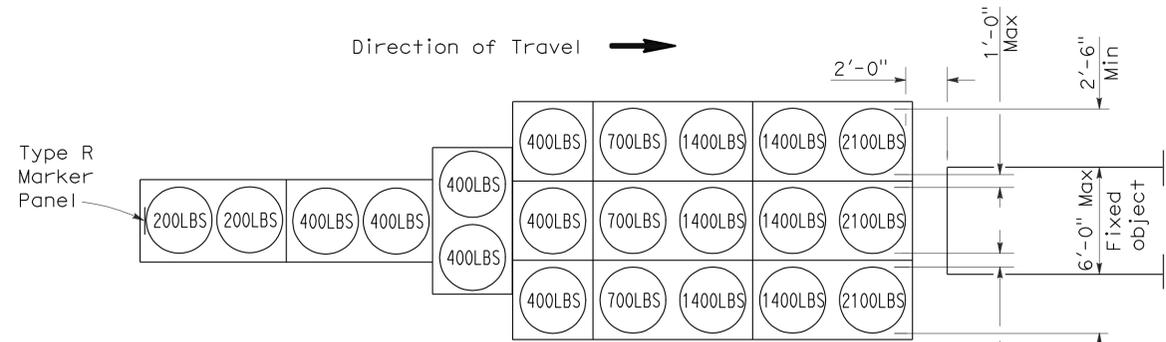
ARRAY 'TU17'

Approach speed less than 45 mph



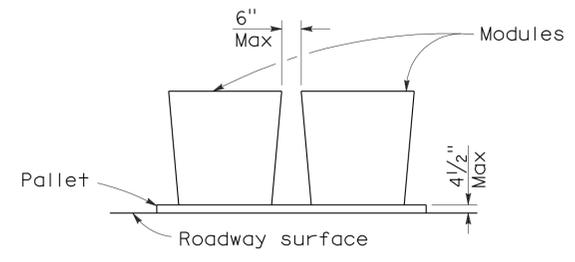
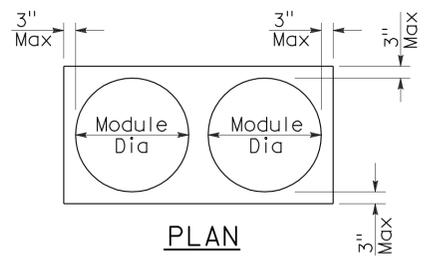
ARRAY 'TU11'

Approach speed less than 45 mph



ARRAY 'TU21'

Approach speed 45 mph or more



CRASH CUSHION PALLET DETAIL

See Note 7

NOTES:

1. (XXX) Indicates sand filled module location and weight of sand in pounds for each module. Module spacing is based on the greater diameter of the module.
2. All sand weights are nominal.
3. Temporary crash cushion arrays shall not encroach on the traveled way.
4. Place the top of Type R marker panel 1" below the module lid.
5. Refer to Standard Plan A73B for marker details.
6. Approach speeds indicated conform to NCHRP 350 Report criteria.
7. Use of pallets is optional.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**TEMPORARY CRASH CUSHION,
SAND FILLED
(UNIDIRECTIONAL)**

NO SCALE

RSP T1A DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T1A
DATED MAY 1, 2006 - PAGE 211 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP T1A

2006 REVISED STANDARD PLAN RSP T1A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	9.1/15.1	823	949

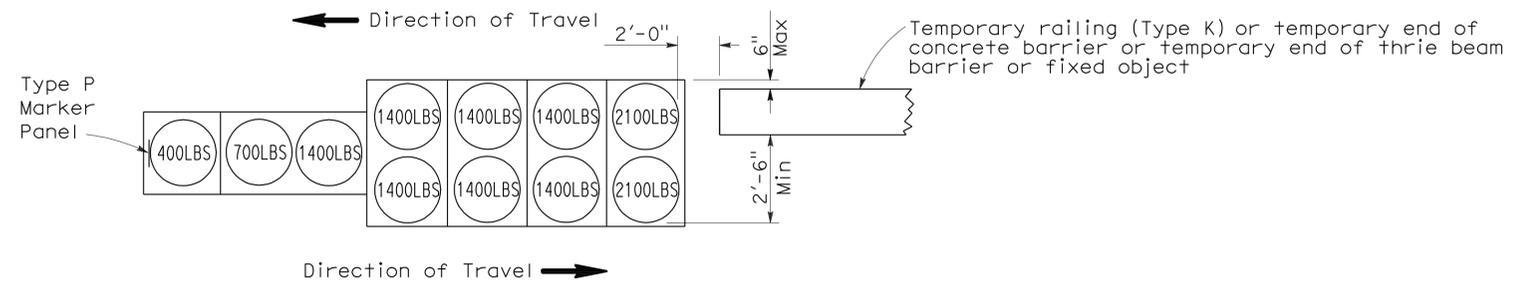
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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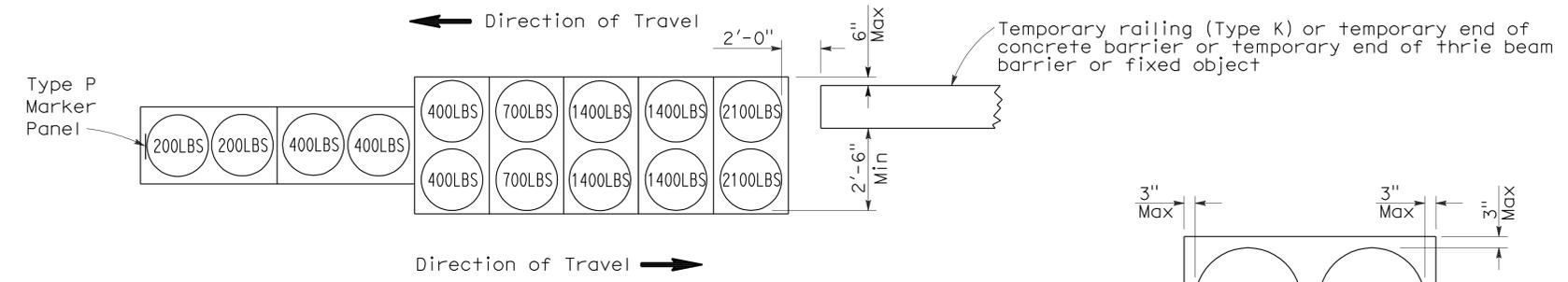
REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

To accompany plans dated 10-25-10



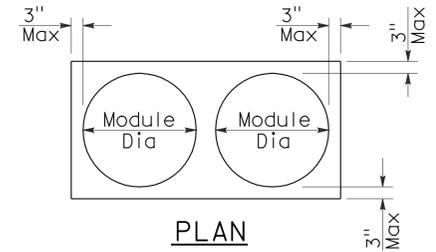
ARRAY 'TB11'

Approach speed less than 45 mph

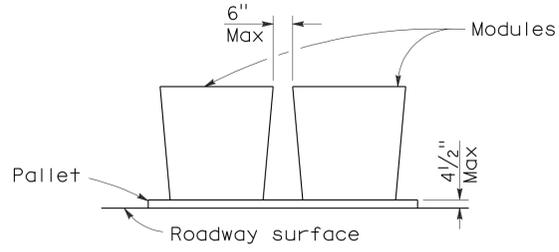


ARRAY 'TB14'

Approach speed 45 mph or more



PLAN



ELEVATION

CRASH CUSHION PALLET DETAIL

See Note 7

NOTES:

1. (XXX) Indicates sand filled module location and weight of sand in pounds for each module. Module spacing is based on the greater diameter of the module.
2. All sand weights are nominal.
3. Temporary crash cushion arrays shall not encroach on the traveled way.
4. Place the Type P marker panel so that the bottom of the panel rests upon the pallet.
5. Refer to Standard Plan A73B for marker details.
6. Approach speeds indicated conform to NCHRP 350 Report criteria.
7. Use of pallets is optional.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**TEMPORARY CRASH CUSHION,
SAND FILLED
(BIDIRECTIONAL)**

NO SCALE

RSP T1B DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T1B
DATED MAY 1, 2006 - PAGE 212 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP T1B

2006 REVISED STANDARD PLAN RSP T1B

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	9.1/15.1	824	949

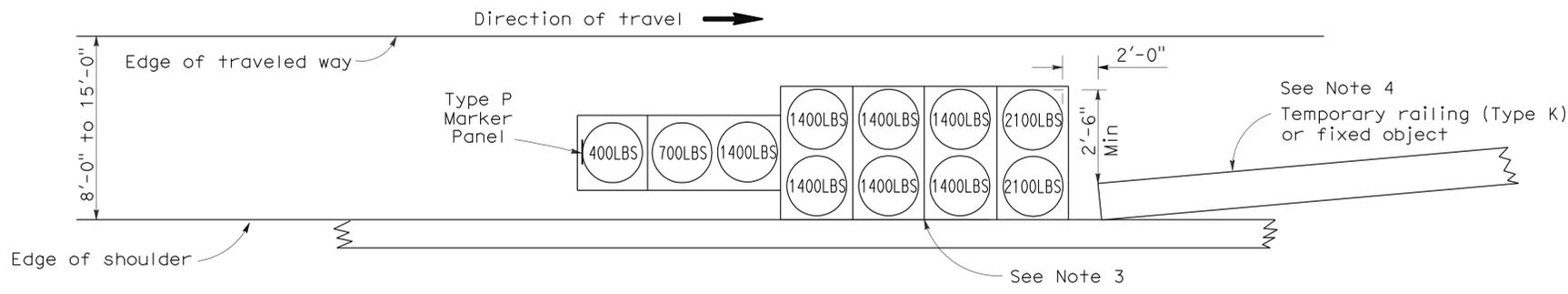
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

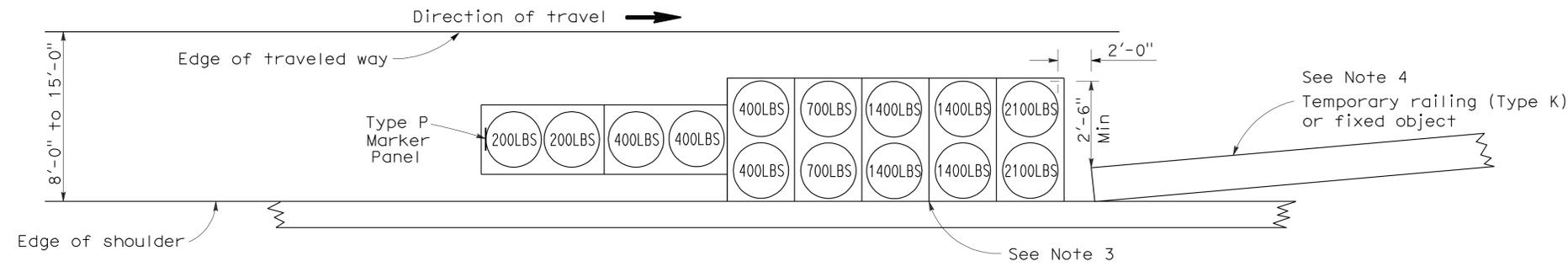
Randell D. Hiatt
REGISTERED PROFESSIONAL ENGINEER
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

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.

To accompany plans dated 10-25-10



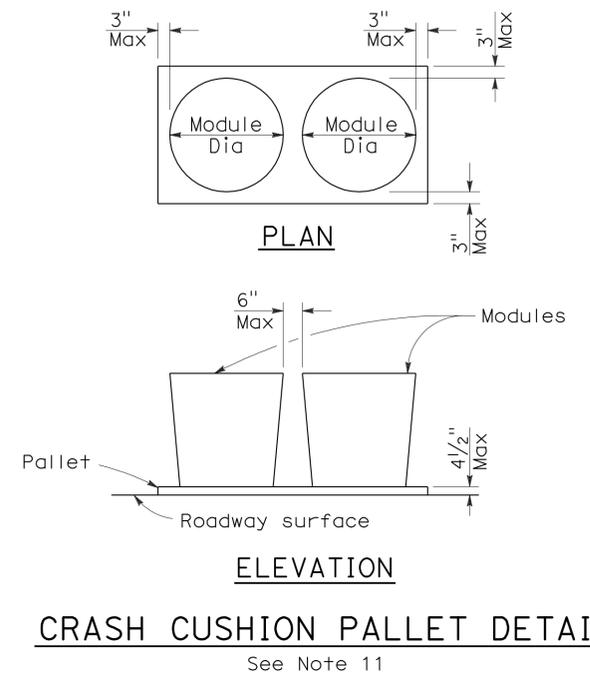
ARRAY 'TS11'
Approach speed less than 45 mph
See Note 9



ARRAY 'TS14'
Approach speed 45 mph or more
See Note 9

NOTES:

- (XXX) Indicates sand filled module location and weight of sand in pounds for each module. Module spacing is based on the greater diameter of the module.
- All sand weights are nominal.
- The temporary crash cushion arrays shown on this plan shall be used only in locations where there will be traffic on one side of the temporary crash cushion array.
- If the fixed object or approach end of the temporary railing is less than 15'-0" from the edge of traveled way, a temporary crash cushion is required in a construction or work zone.
- Temporary crash cushion arrays shall not encroach on the traveled way.
- Arrays for median shoulders shall conform to details shown on this plan for outside shoulders.
- Place the Type P marker panel so that the bottom of the panel rests upon the pallet and faces traffic.
- Refer to Standard Plan A73B for marker details.
- For shoulder widths less than 8'-0", appropriate approved crash cushion protection, other than sand filled modules, shall be provided at fixed objects and at approach ends of temporary railing. The specific type of crash cushion shall be as shown on the project plans or as specified in the Special Provisions, or if not shown on the project plans or specified in the Special Provisions, shall be as approved by the Engineer.
- Approach speeds indicated conform to NCHRP 350 Report criteria.
- Use of pallets is optional.



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**TEMPORARY CRASH CUSHION,
SAND FILLED
(SHOULDER INSTALLATIONS)**

NO SCALE

RSP T2 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T2
DATED MAY 1, 2006 - PAGE 213 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP T2

2006 REVISED STANDARD PLAN RSP T2

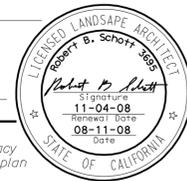
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	9.1/15.1	826	949

Robert B. Schott
LICENSED LANDSCAPE ARCHITECT

August 15, 2008
PLANS APPROVAL DATE

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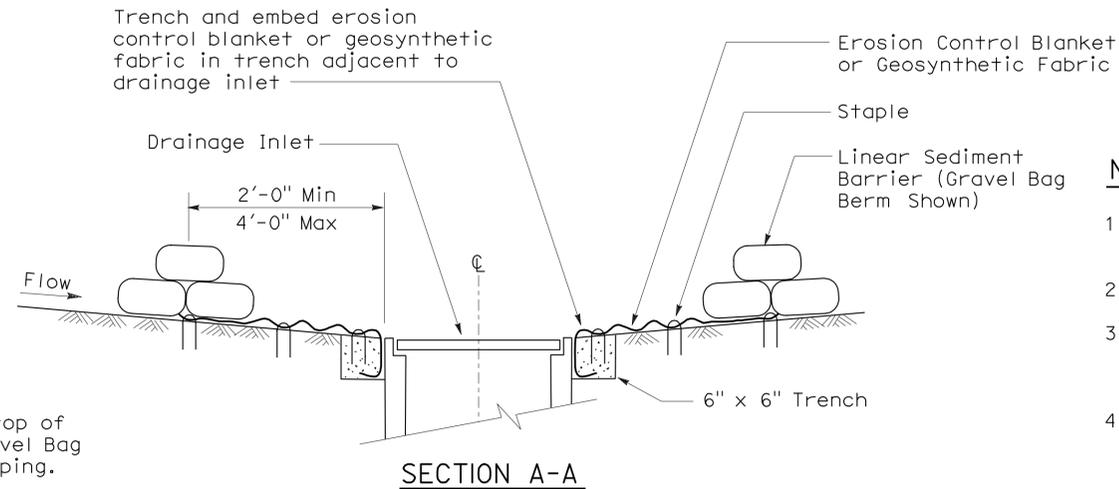
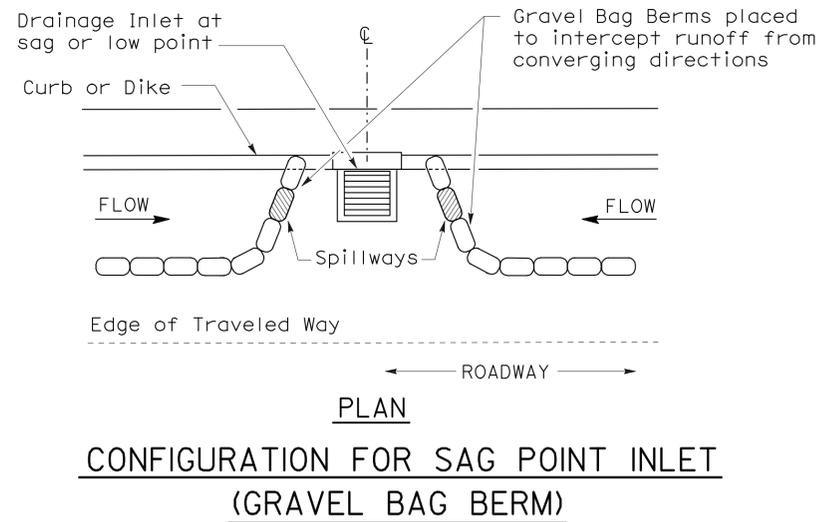
To accompany plans dated 10-25-10



GRAVEL BAG BERM (TYPE 3A) SPACING TABLE

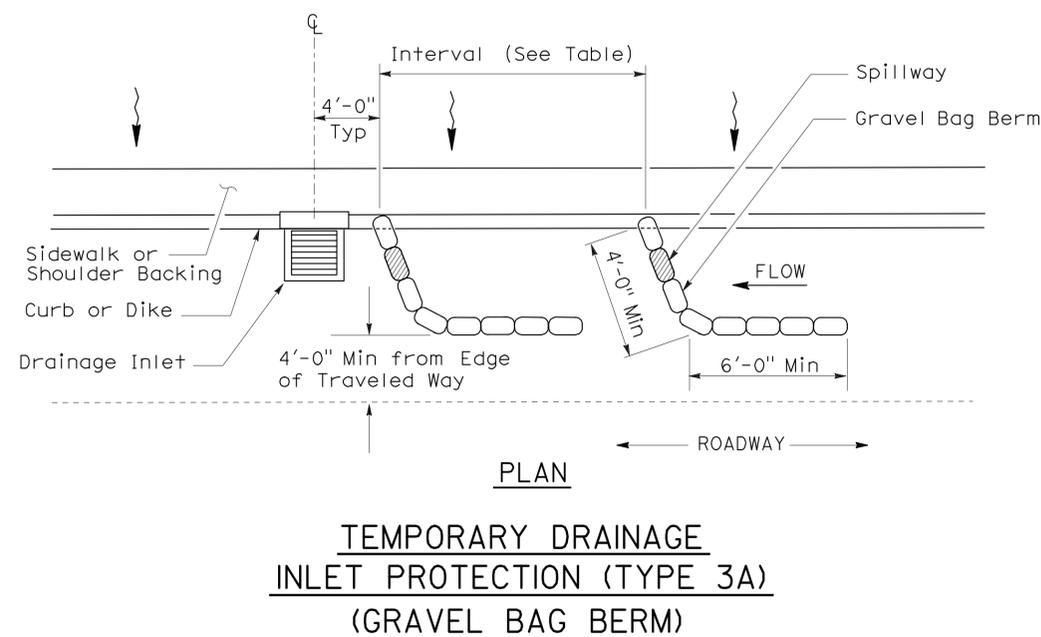
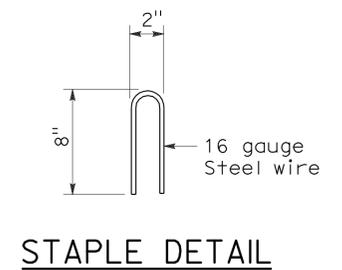
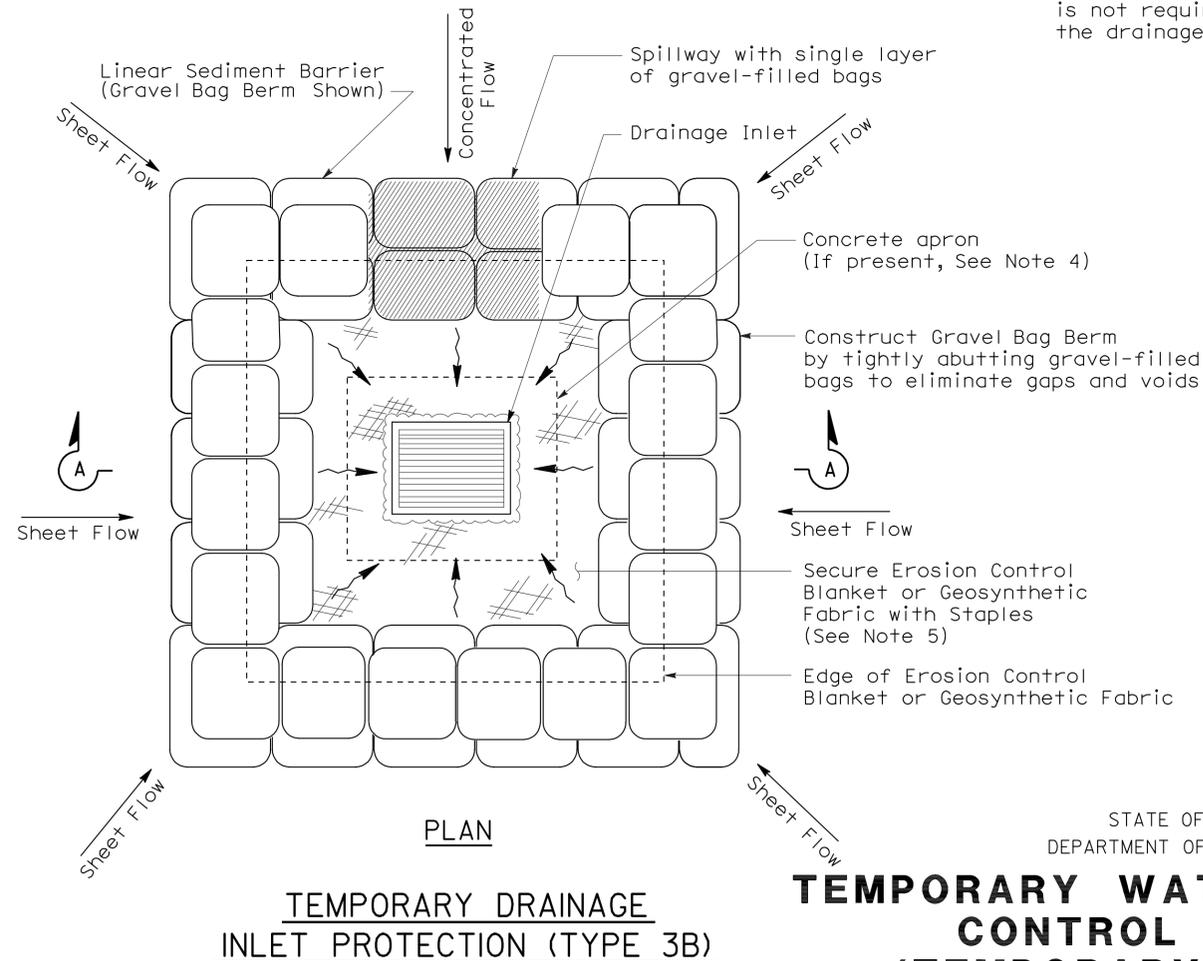
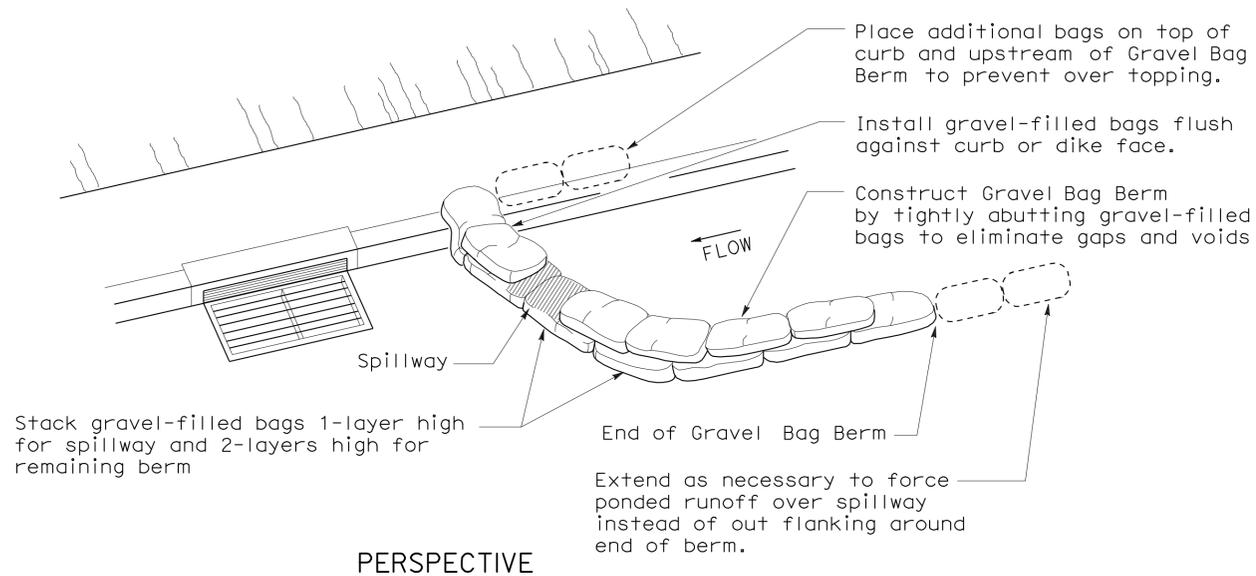
SLOPE OF ROADWAY (PERCENT)	1 to 3.9	4 to 5.9	6 to 7.9	8 to 10	10+
INTERVAL BETWEEN BERM	100'	75'	50'	25'	12'

For slope of less than 1%, install barriers only if erosion/sediment is prevalent



NOTES:

1. Place safety cones adjacent to drainage inlet protection.
2. Dimensions may vary to fit field conditions.
3. Install a minimum of 3 gravel bag berms upstream of each drainage inlet to be protected.
4. Position erosion control blanket or geosynthetic fabric at edge of concrete apron and secure in trench.
5. Erosion control blanket or geosynthetic fabric is not required if the area adjacent to the drainage inlet is vegetated or paved.

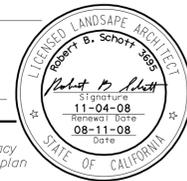


TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY DRAINAGE INLET PROTECTION)

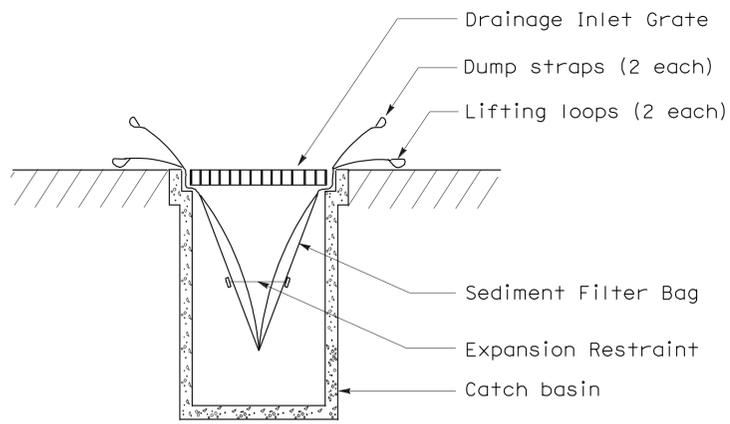
NO SCALE
NSP T62 DATED AUGUST 15, 2008 SUPPLEMENTS
THE STANDARD PLANS BOOK DATED MAY 2006.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	9.1/15.1	827	949

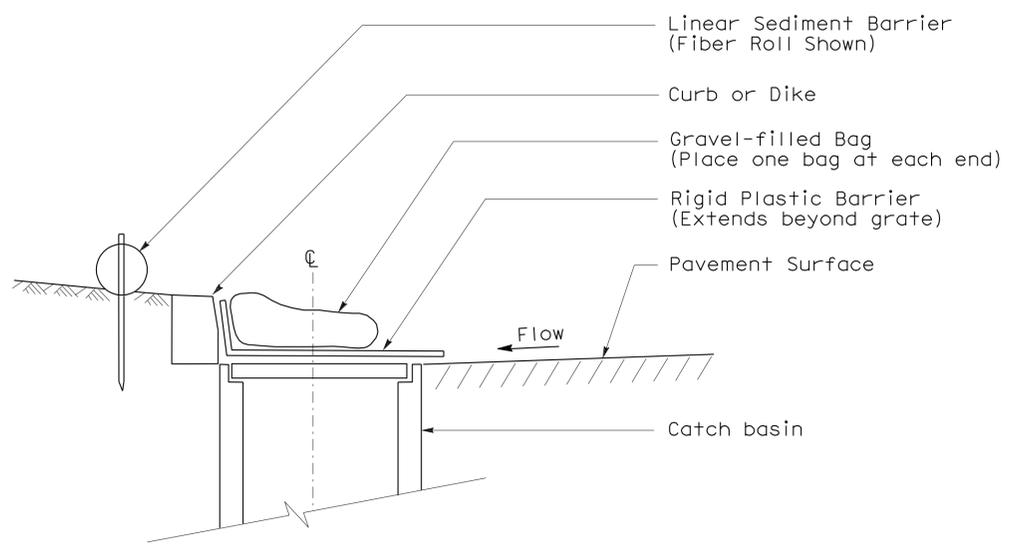
Robert B. Schott
 LICENSED LANDSCAPE ARCHITECT
 August 15, 2008
 PLANS APPROVAL DATE
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



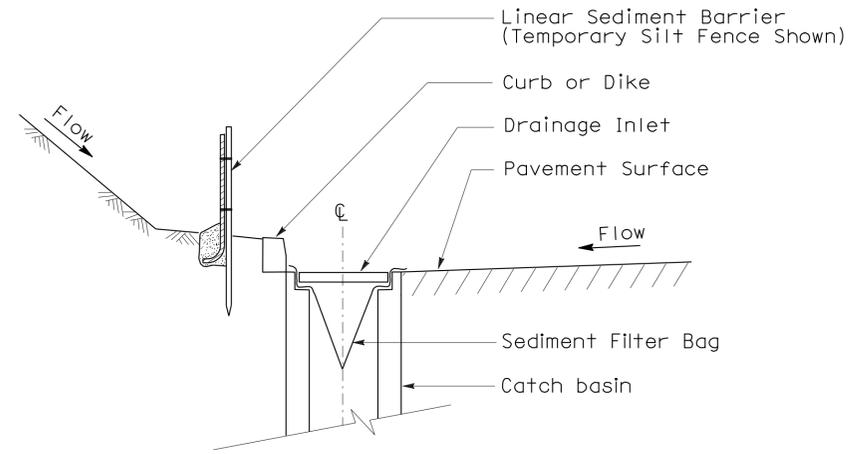
To accompany plans dated 10-25-10



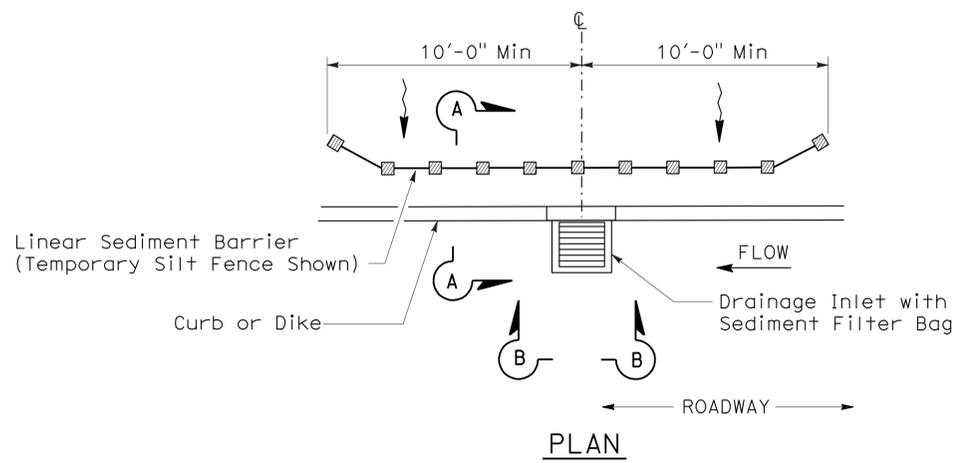
SECTION B-B
SEDIMENT FILTER BAG DETAIL



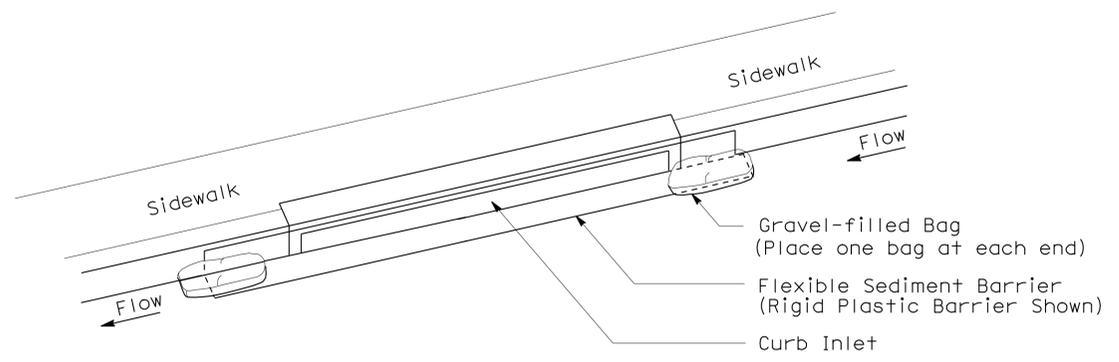
SECTION
TEMPORARY DRAINAGE
INLET PROTECTION (TYPE 6A)
(CATCH BASIN WITH GRATE)



SECTION A-A



PLAN
TEMPORARY DRAINAGE
INLET PROTECTION (TYPE 5)
(SEDIMENT FILTER BAG)



PERSPECTIVE
TEMPORARY DRAINAGE
INLET PROTECTION (TYPE 6B)
(CURB INLET WITHOUT GRATE)

NOTES:

1. See Standard Plan T51 for Temporary Silt Fence.
2. Dimensions may vary to fit field conditions.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY DRAINAGE INLET PROTECTION)

NO SCALE

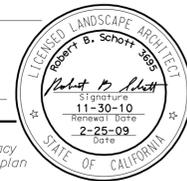
NSP T64 DATED AUGUST 15, 2008 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

NEW STANDARD PLAN NSP T64

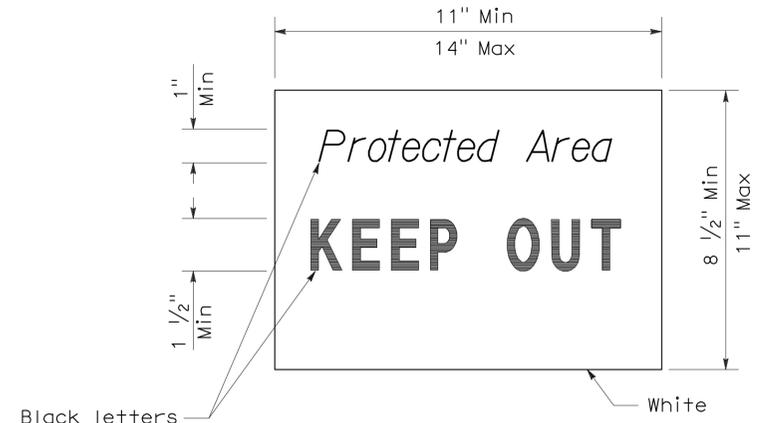
2006 NEW STANDARD PLAN NSP T64

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	9.1/15.1	828	949

Robert B. Schott
 LICENSED LANDSCAPE ARCHITECT
 April 3, 2009
 PLANS APPROVAL DATE
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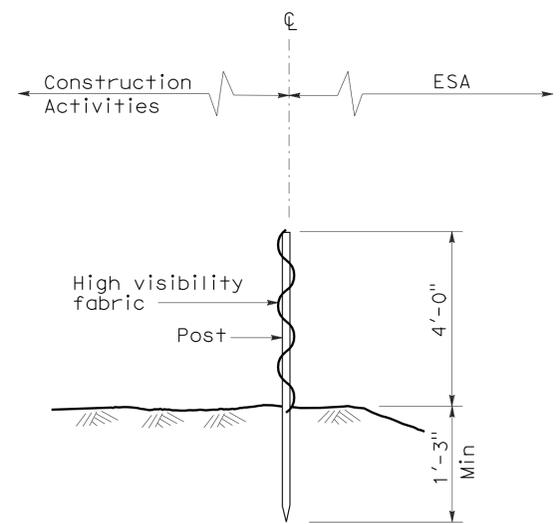
To accompany plans dated 10-25-10



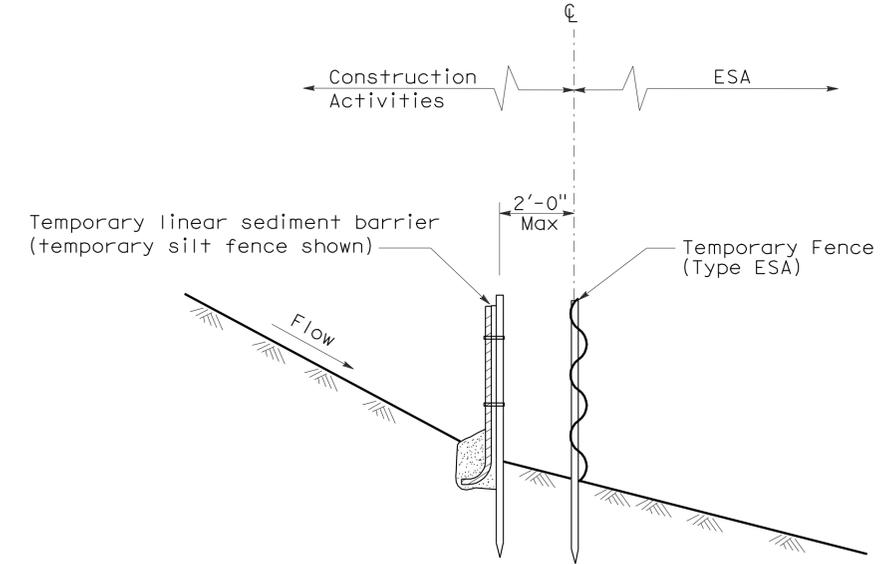
SIGN DETAIL

NOTE:

1. Temporary silt fence and temporary straw bale barrier shown for reference purposes only.

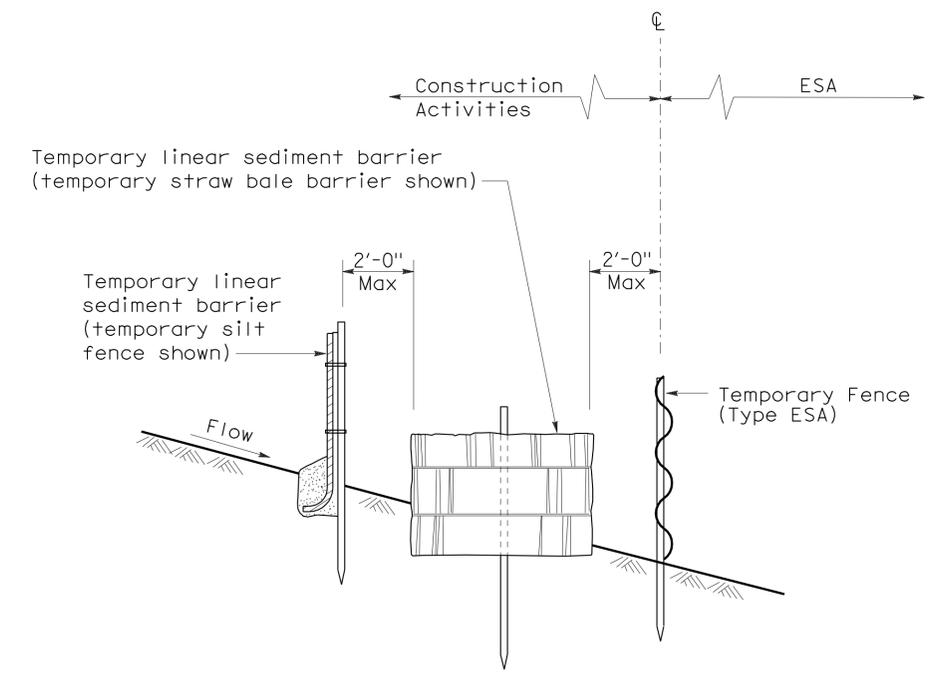


SECTION
TEMPORARY FENCE (TYPE ESA)



SECTION
PLACEMENT DETAIL
FOR TEMPORARY LINEAR SEDIMENT BARRIER
USED WITH TEMPORARY FENCE (TYPE ESA)

(See Note 1)



SECTION
PLACEMENT DETAIL
FOR TEMPORARY SILT FENCE
AND TEMPORARY STRAW BALE BARRIER
USED WITH TEMPORARY FENCE (TYPE ESA)

(See Note 1)

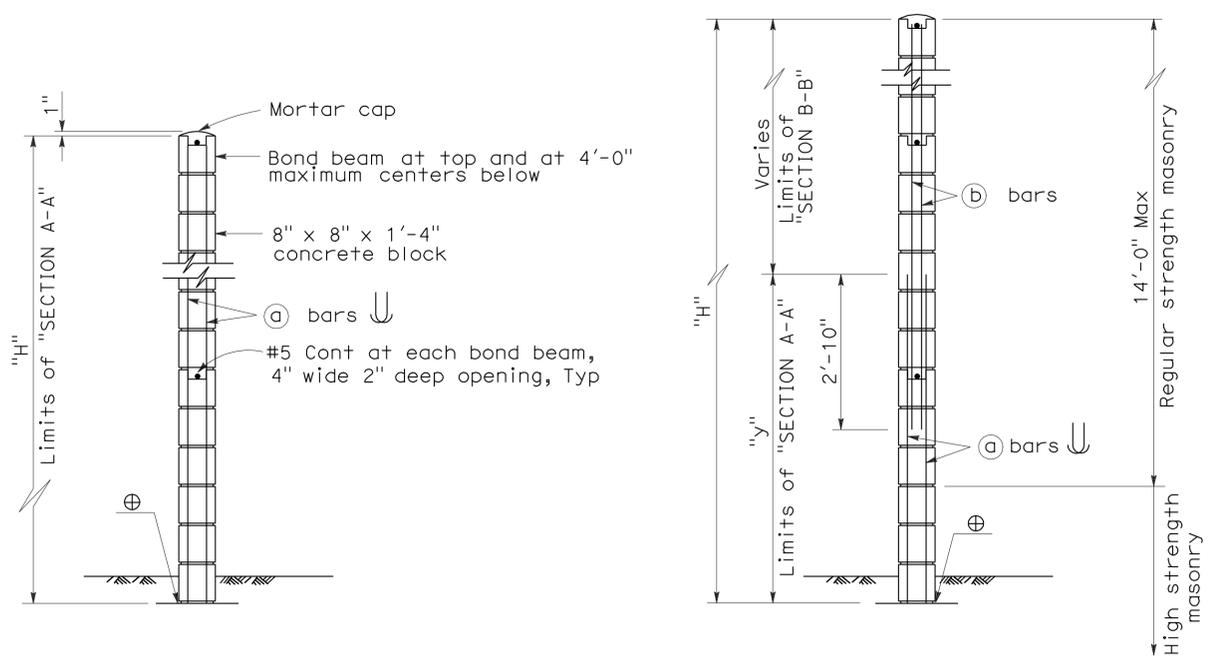
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TEMPORARY WATER POLLUTION CONTROL DETAILS
[TEMPORARY FENCE (TYPE ESA)]

NO SCALE

NSP T65 DATED APRIL 3, 2009 SUPPLEMENTS
THE STANDARD PLANS BOOK DATED MAY 2006.

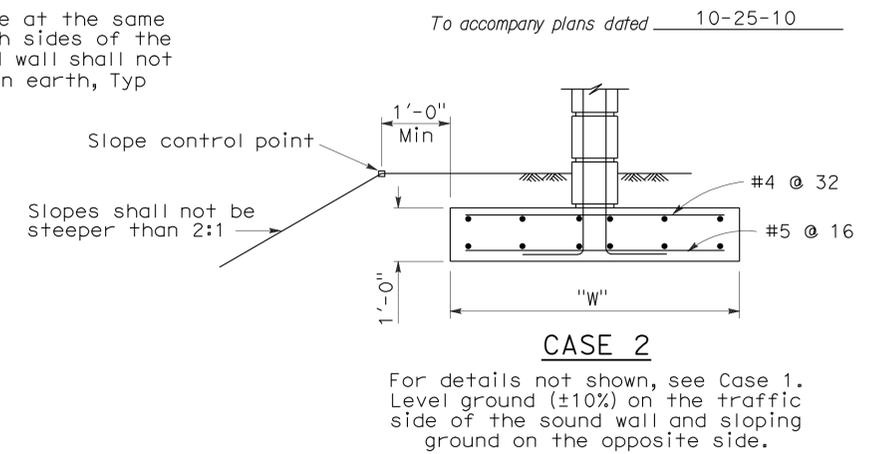
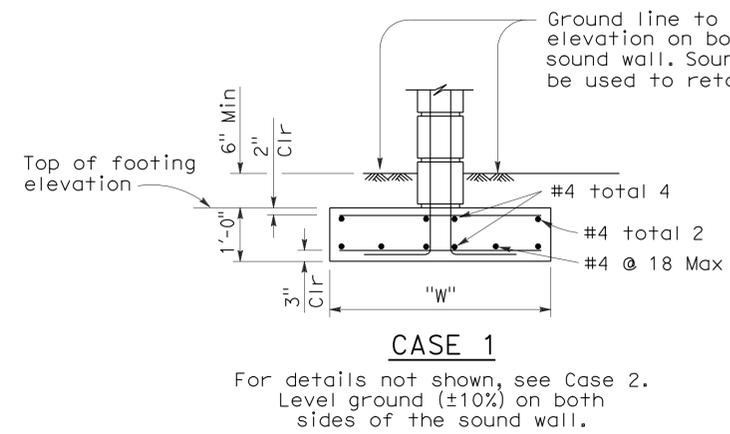
2006 NEW STANDARD PLAN NSP T65



H=6'-0" THRU H=10'-0"
 H=12'-0" THRU H=16'-0"
 For details not shown, see H=6'-0" thru H=10'-0".

TYPICAL SECTION

⊕ Full mortar bed at bottom of wall



SPREAD FOOTING SECTION

TRENCH FOOTING

Maximum H	CASE 1			CASE 2		Maximum H
	∅ = 25 Min	∅ = 30 Min	∅ = 35 Min	∅ = 30 Min	∅ = 35 Min	
	D	D	D	D	D	
6'-0"	5'-0"	4'-3"	3'-6"	6'-6"	5'-0"	6'-0"
8'-0"	6'-0"	5'-0"	4'-3"	7'-9"	6'-0"	8'-0"
10'-0"	6'-9"	5'-9"	5'-0"	8'-9"	6'-9"	10'-0"
12'-0"	7'-9"	6'-6"	5'-6"	9'-9"	7'-9"	12'-0"
14'-0"	8'-6"	7'-3"	6'-0"	10'-9"	8'-6"	14'-0"
16'-0"	9'-3"	7'-9"	6'-6"	11'-9"	9'-3"	16'-0"

Case 1 - Level ground (±10%) on both sides of the sound wall.
 Case 2 - Level ground (±10%) on traffic side of the sound wall and sloping ground on opposite side.

SOUND WALL REINFORCEMENT TABLE

Maximum H	(a) bars @ 1'-4" Max	(b) bars @ 1'-4" Max	"y"	f'm (psi)	Compressive Strength of CMU (psi)	Maximum H
6'-0"	#4	—	—	1500	1900	6'-0"
8'-0"	#4	—	—	1500	1900	8'-0"
10'-0"	#4	—	—	1500	1900	10'-0"
12'-0"	#5	#4	6'-0"	1500	1900	12'-0"
14'-0"	#6	#4	8'-0"	1500	1900	14'-0"
16'-0"	#6	#4	10'-0"	2000	2800	16'-0"

GENERAL NOTES:

- A. For type of block and joint finish, see other sheets.
- B. When blocks are laid in stacked bond, ladder type, galvanized joint reinforcement shall be provided. A minimum of 2-9 gauge wires continuous at 4'-0" maximum to be used. Locate reinforcement in joints that are at the approximate midpoint between bond and beams.
- C. Horizontal joints shall be tooled concave or may be weathered. Vertical joints shall be tooled concave or may be raked.
- D. For intermediate wall heights that are between the "H's" given, use the tabular information for the next higher "H".
- E. Masonry strengths are listed in the "SOUND WALL REINFORCEMENT TABLE".

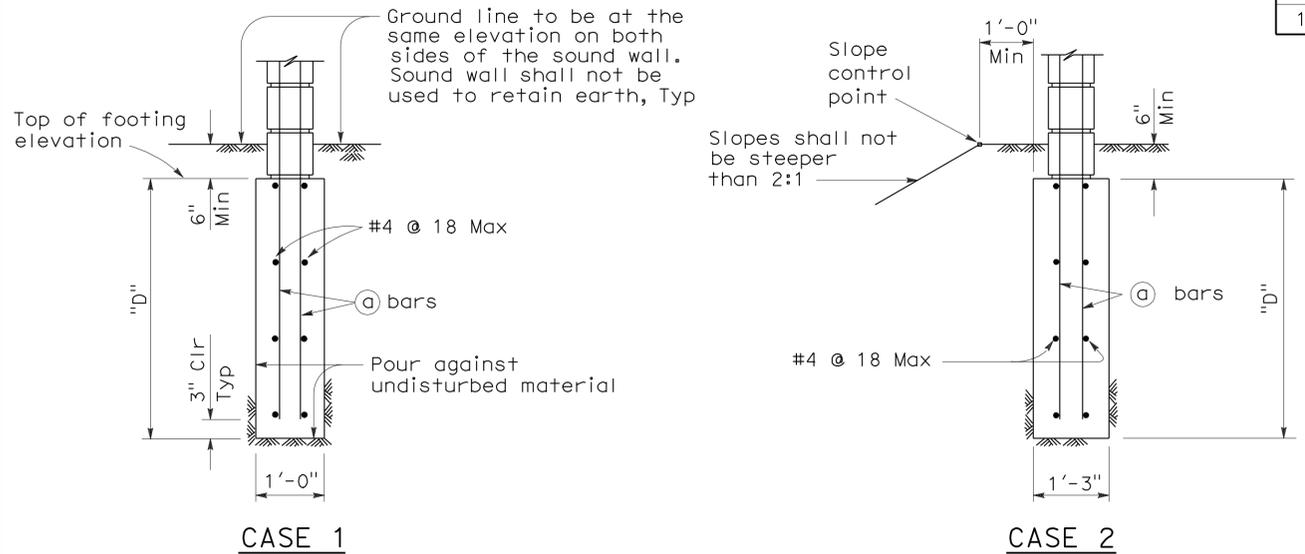
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

SOUND WALL MASONRY BLOCK ON FOOTING DETAILS (1)

NO SCALE

RSP B15-1 DATED OCTOBER 5, 2007 SUPERSEDES STANDARD PLAN B15-1 DATED MAY 1, 2006 - PAGE 291 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP B15-1



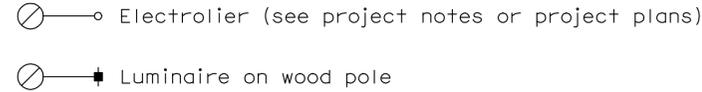
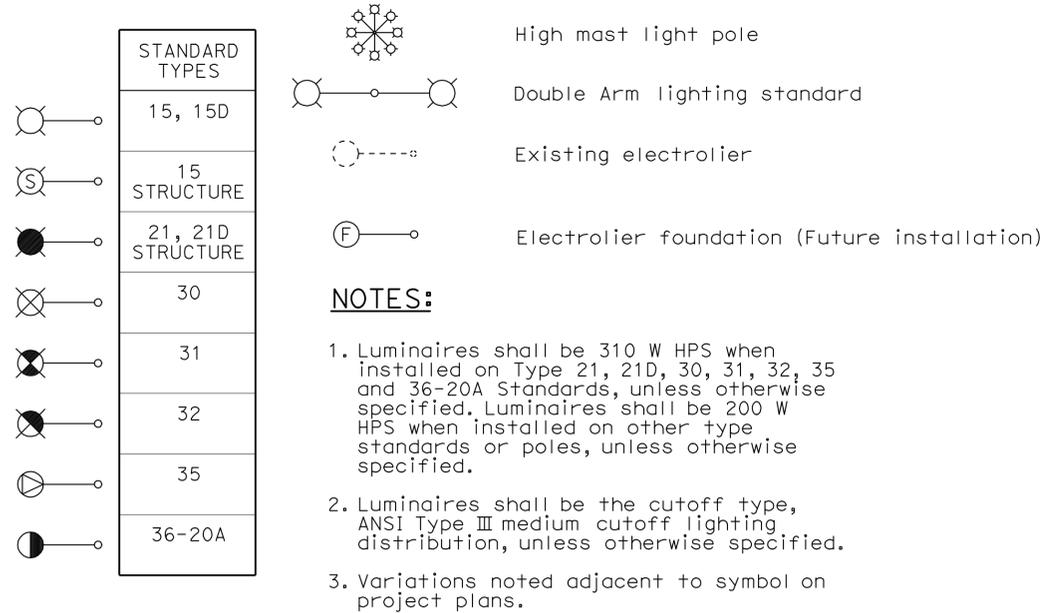
TRENCH FOOTING SECTION

SPREAD FOOTING

Maximum H	W
6'-0"	3'-0"
8'-0"	4'-0"
10'-0"	5'-0"
12'-0"	5'-9"
14'-0"	6'-6"
16'-0"	7'-6"

2006 REVISED STANDARD PLAN RSP B15-1

ELECTROLIERS



STANDARD NOTES:

- 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 wire or rope.
- 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.
- SF** Standard to remain for future use. Remove luminaire, pole conductors, fuses and ballast.
- TSP** Telephone service point.

ABBREVIATIONS AND EQUIPMENT DESIGNATIONS

PROPOSED EXISTING

PROPOSED	EXISTING	DESCRIPTION
BBS	bbs	Battery backup system
BC	bc	Bolt circle
C	C	Conduit
CCTV	cctv	Closed circuit television
CKT	ckt	Circuit
CMS	cms	Changeable message sign
DLC	dlc	Loop detector lead-in cable
EMS	ems	Extinguishable message sign
EVC	evc	Emergency vehicle cable
EVD	evd	Emergency vehicle detector
FB	fb	Flashing beacon
FBCA	fbca	Flashing beacon control assembly
FBS	fbs	Flashing beacon with slip base
FO	fo	Fiber optic
G	G	Ground (Equipment Grounding Conductor)
GFCI	GFCI	Ground fault circuit interrupt
HAR	har	Highway advisory radio
HEX	hex	Hexagonal
HPS	hps	High pressure sodium
IISNS	iisns	Internally illuminated street name sign
ISL	isl	Induction sign lighting
LED	led	Light emitting diode
LMA	lma	Luminaire mast arm
LPS	lps	Low pressure sodium
LTG	ltg	Lighting
LUM	lum	Luminaire
MAT	mat	Mast arm mounting vehicle signal faces, top attachment
MAS	mas	Mast arm mounting vehicle signal faces, side attachment
MAS-4A	mas-4A	Mast arm mounting vehicle signal faces, side attachment - 4 signal section
MAS-4B	mas-4B	
MAS-4C	mas-4C	
MAS-5A	mas-5A	Mast arm mounting vehicle signal faces, side attachment - 5 signal section
MAS-5B	mas-5B	
MC	mc	Mercury contactor
M/M	m/m	Multiple to multiple transformer
MT	mt	Conduit with pull wire or rope only
MTG	mtg	Mounting
	mv	Mercury vapor lighting fixture
N	N	Neutral (Grounded Conductor)
NC	NC	Normally closed
NO	NO	Normally open
PB	pb	Pull box
PEC	pec	Photoelectric control (Type I, II, III, IV or V as shown)
PED	ped	Pedestrian
PEU	peu	Photoelectric unit
PPB	ppb	Pedestrian push button
RL		Relocated equipment
RM	rm	Ramp metering
SB	sb	Slip base
SIC	sic	Signal interconnect cable
SIG	sig	Signal
SMA	sma	Signal mast arm
SNS	sns	Street name sign
SP	sp	Service point
TDC	tdc	Telephone demarcation cabinet
TMS	tms	Traffic monitoring station
TOS	tos	Traffic Operations System
VEH	veh	Vehicle
XFMR	xfmr	Transformer
COMM	comm	Communication
RWIS	rwis	Roadway weather information system

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	9.1/15.1	830	949

Jeffery G. McRae
REGISTERED ELECTRICAL ENGINEER

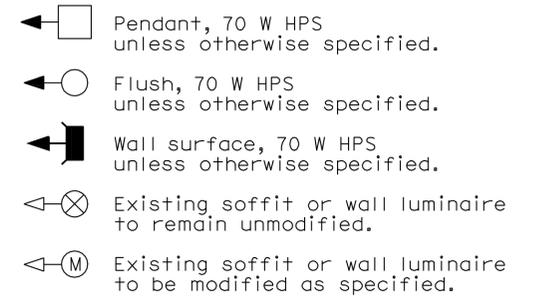
October 5, 2007
PLANS APPROVAL DATE

Jeffery G. McRae
No. E14512
Exp. 6-30-08
ELECTRICAL
STATE OF CALIFORNIA

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To accompany plans dated 10-25-10

SOFFIT AND WALL MOUNTED LUMINAIRES



NOTE:

Arrow indicates "street side" of luminaire.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

RSP ES-1A DATED OCTOBER 5, 2007 SUPERSEDES STANDARD PLAN ES-1A DATED MAY 1, 2006 - PAGE 400 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-1A

2006 REVISED STANDARD PLAN RSP ES-1A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	9.1/15.1	831	949

Jeffrey G. McRae
 REGISTERED ELECTRICAL ENGINEER
 October 5, 2007
 PLANS APPROVAL DATE
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REGISTERED PROFESSIONAL ENGINEER
 Jeffrey G. McRae
 No. E14512
 Exp. 6-30-08
 ELECTRICAL
 STATE OF CALIFORNIA

CONDUIT

PROPOSED	EXISTING	
		Lighting Conduit, unless otherwise indicated or noted
		Traffic signal conduit
		Communication conduit
		Telephone conduit
		Fire alarm conduit
		Fiber optic conduit
		Conduit termination
		Conduit riser in/on structure or service pole

SIGNAL EQUIPMENT

PROPOSED	EXISTING	
		Pedestrian signal face
		Pedestrian push button post
		Pedestrian barricade
		Vehicle signal face (with backplate, 3-Section: red, yellow and green)
		Vehicle signal face with angle visors
		Modifications of basic symbols: "L" indicates all non-arrow sections louvered "LG" indicates louvered green section only "PV" indicates 12" programmed visibility sections "8" indicates all 8" sections (only when specified)
		Type 15TS and Vehicle signal face
		Vehicle signal face with red, yellow and green left arrow sections
		Vehicle signal face with red and yellow sections and up green arrow
		Vehicle signal face (5 Section) with red, yellow and green sections and yellow and green right arrows
		Type 1 Standard and attached vehicle signal faces
		Standard with signal mast arm only and attached vehicle signal faces and internally illuminated street name sign
		Type 33 Standard, Left-turn vehicle signal face and sign
		Standard with luminaire and signal mast arms and attached vehicle signal faces
		Cantilever flashing beacon Type 9 Frame, with a sign unless otherwise specified or indicated
		Type 15-FBS Standard with two vehicle signal face sections with lens, backplate and visor with a sign
		Flashing beacon. One vehicle signal face section with lens, backplate and visor. "R" indicates red indication, "Y" indicates yellow indication
		Controller assembly. Door indicates front of cabinet

SERVICE EQUIPMENT

PROPOSED	EXISTING	
		Overhead lines
		Wood pole "U" indicates utility owned
		Pole guy with anchor
		Utility transformer - ground mounted
		Service equipment enclosure type
		Service equipment enclosure door indicates front of enclosure
		Telephone demarcation cabinet

POLE-MOUNTED SERVICE DESIGNATION



ILLUMINATED OVERHEAD SIGN

PROPOSED	EXISTING	
		Overhead sign - Single post
		Overhead sign - Two post
		Overhead sign - Mounted on structure
		Overhead sign with electrolier

SIGNAL EQUIPMENT Cont

PROPOSED	EXISTING	
		Guard post
		Type 1 Standard with "Meter On" sign
		Emergency Vehicle detector

NOTES:

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

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
 (SYMBOLS AND ABBREVIATIONS)**
 NO SCALE

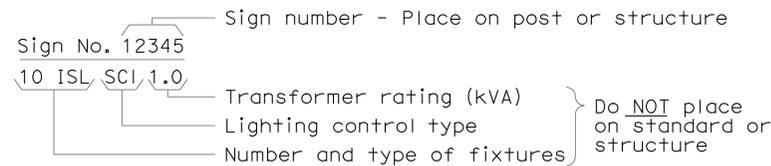
RSP ES-1B DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1B
 DATED MAY 1, 2006 - PAGE 401 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-1B

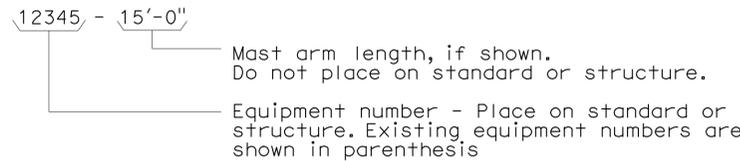
2006 REVISED STANDARD PLAN RSP ES-1B

EQUIPMENT IDENTIFICATION

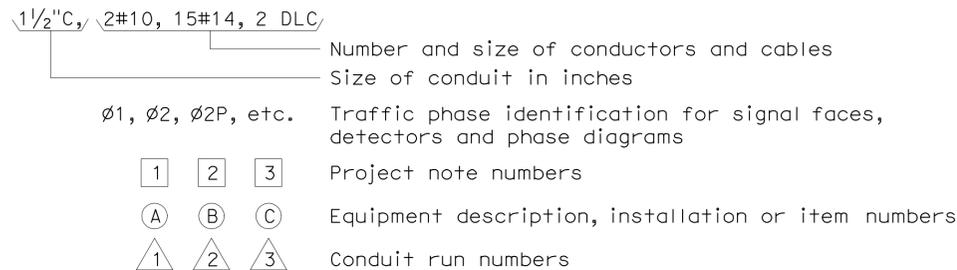
ILLUMINATED SIGN IDENTIFICATION NUMBER:



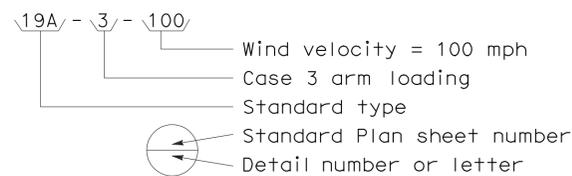
ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



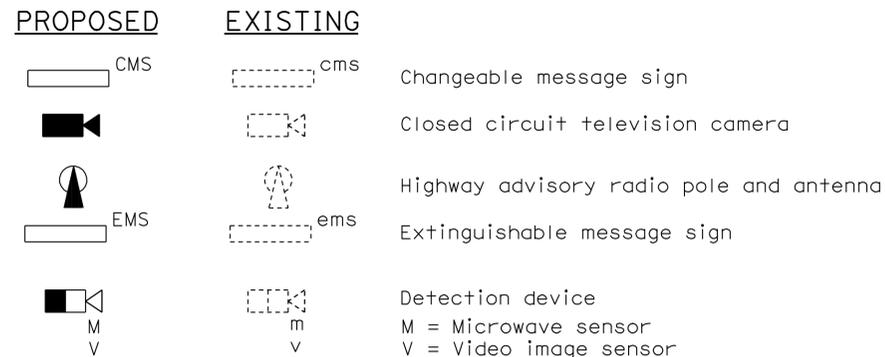
CONDUIT AND CONDUCTOR IDENTIFICATION:



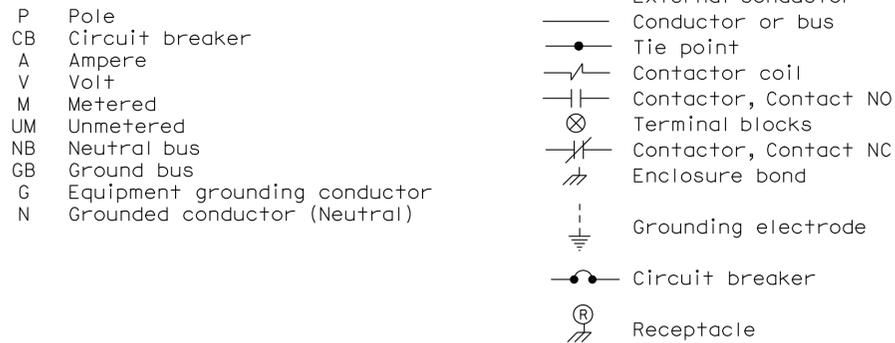
SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



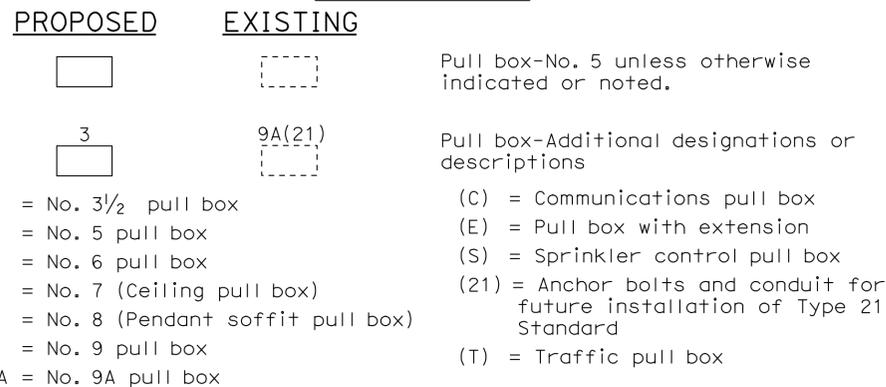
MISCELLANEOUS EQUIPMENT



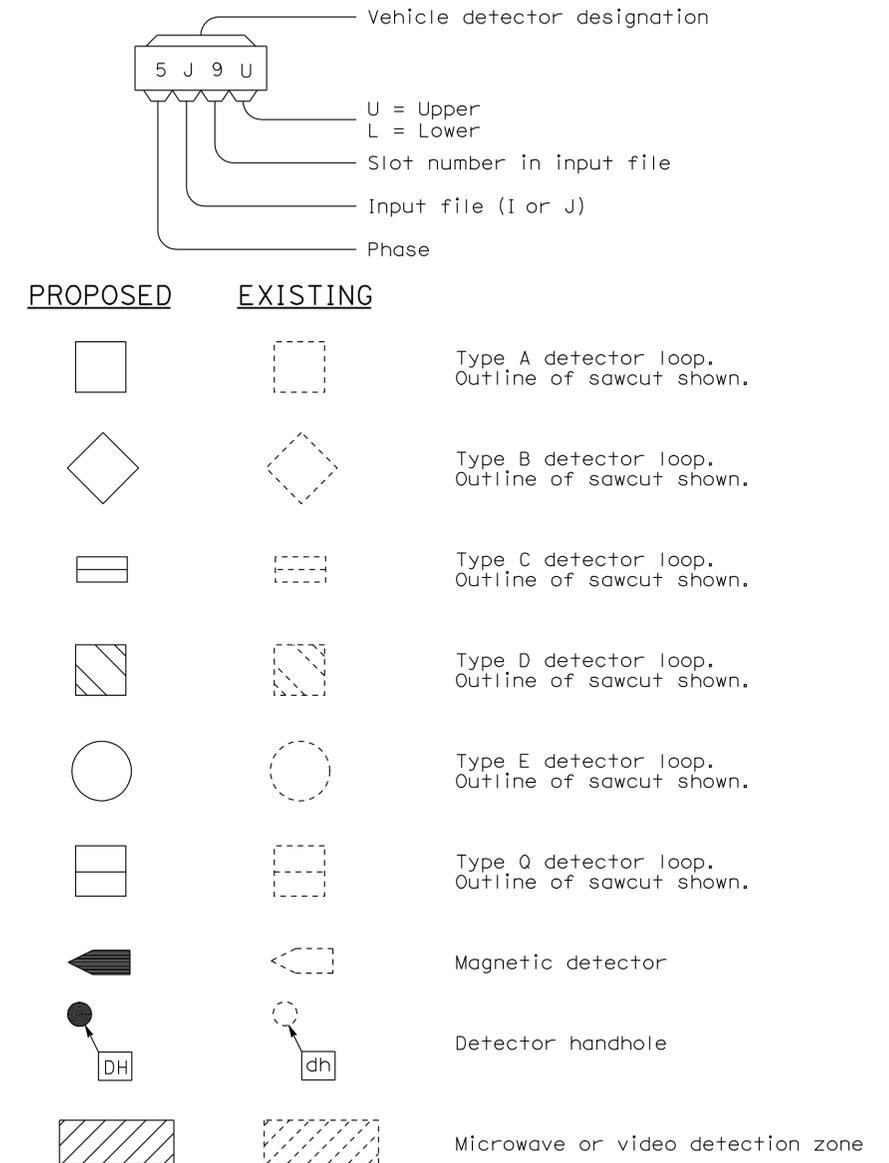
WIRING DIAGRAM LEGEND



PULL BOXES



VEHICLE DETECTORS



STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

RSP ES-1C DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1C
 DATED MAY 1, 2006 - PAGE 402 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP ES-1C

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	9.1/15.1	833	949

Jeffery G. McRae
 REGISTERED ELECTRICAL ENGINEER

October 5, 2007
 PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER
 Jeffery G. McRae
 No. E14512
 Exp. 6-30-08
 ELECTRICAL
 STATE OF CALIFORNIA

NOTES-TYPE III SERVICE EQUIPMENT ENCLOSURES:

1. Service equipment enclosure and metering equipment shall meet the requirements of the service utility. The meter area shall have a sealable, lockable, weathertight cover that can be removed without the use of tools.
2. Service equipment enclosures shall be factory wired and conform to NEMA standards.
3. Dimensions of service equipment enclosures shall meet the requirements of the service utility.
4. The dead front panels on Type III service equipment enclosures shall have a continuous stainless steel or aluminum piano hinge. The panel in front of the breakers shall be secured with a latch or captive screws. No live parts shall be mounted on the dead front panel.
5. The exterior door shall have provisions for padlocking. The padlock hole shall be a minimum diameter of $\frac{7}{16}$ ".
6. Enclosures housing transformers of more than one kVA shall have effective screened ventilation louver of not less than 50 square inches. Screen shall be stainless steel No. 304, with a No. 10 size mesh. Framed screen shall be secured with at least four bolts.
7. Fasteners on the exterior of the enclosure shall be vandal-resistant and shall not be removable from the exterior. Exterior screws, nuts, bolts and washers shall be stainless steel.
8. Landing lugs for incoming service conductors shall be compatible with either copper or aluminum conductors sized to suit the conductors shown on the plan. Landing lugs shall be copper or tin-plated aluminum. Neutral bus shall be rated for 125 A and be suitable for copper or aluminum conductors unless otherwise specified. The terminal shall include but not be limited to:
 - a) Incoming terminals (landing lugs)
 - b) Neutral lugs
 - c) Solid neutral terminal strip
9. At least 6 standard single pole circuit breaker spaces, $\frac{3}{4}$ " nominal, shall be provided for branch circuits. Circuit breaker interiors shall be copper. Interiors of enclosure shall accept plug-in or cable-in/cable-out circuit breakers.
10. Control wiring shall be 600 V, 14 stranded machine tool wire. Where subject to flexing, 19 strand wire shall be used.
11. Main bus shall be rated for 125 A and shall be tin-plated copper.
12. A plastic laminated wiring diagram shall be provided with brass mounting eyelets and attached to the inside of the enclosure and the wiring diagram shall be affixed to the interior with a UL or ETL approved method.

13. An engraved phenolic nameplate on the dead front panel indicating the function of each circuit or device shall be installed with stainless steel rivets or stainless steel screws:
 - a) Adjacent to the breaker or device with character size a minimum of $\frac{1}{8}$ ".
 - b) At the top of the exterior door panel indicating State system number, voltage level and number of phases with character size a minimum of $\frac{3}{16}$ ".
14. 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.
15. 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.
16. Foundation shall extend 2" minimum beyond edge of service equipment enclosure.
17. Internal bus, where shown, is typical only. Alternative design of proposed service equipment enclosure shall be submitted to the Engineer for approval.
18. 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.
19. 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.
20. Type III-AR and Type III-BR service equipment enclosures 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.
21. Minimum clearance shall be required for front and back of service equipment enclosure per National Electrical Code, Article 110.26, "Spaces About Electric Equipment (600 Volts, Nominal, or Less)."

To accompany plans dated 10-25-10

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

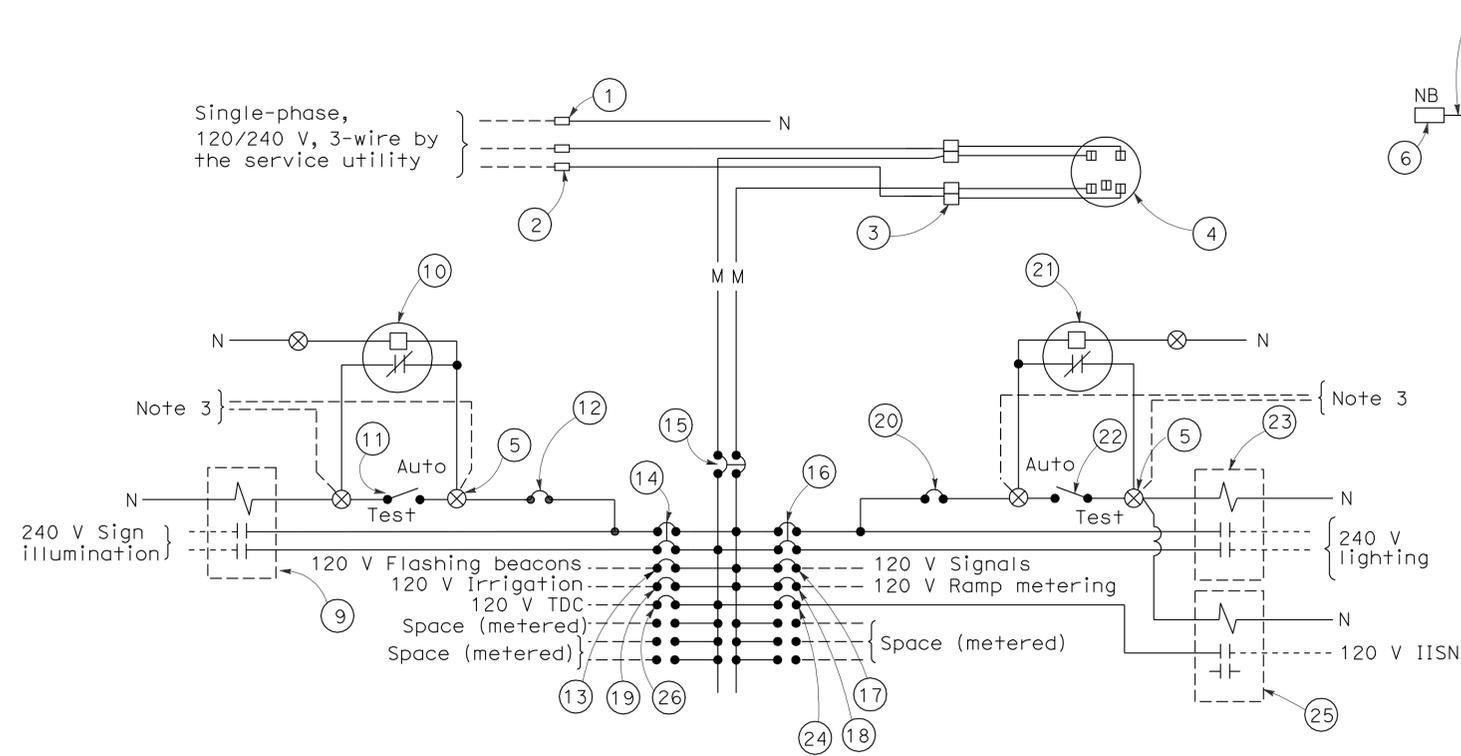
**ELECTRICAL SYSTEMS
 (SERVICE EQUIPMENT NOTES
 TYPE III SERIES)**

NO SCALE

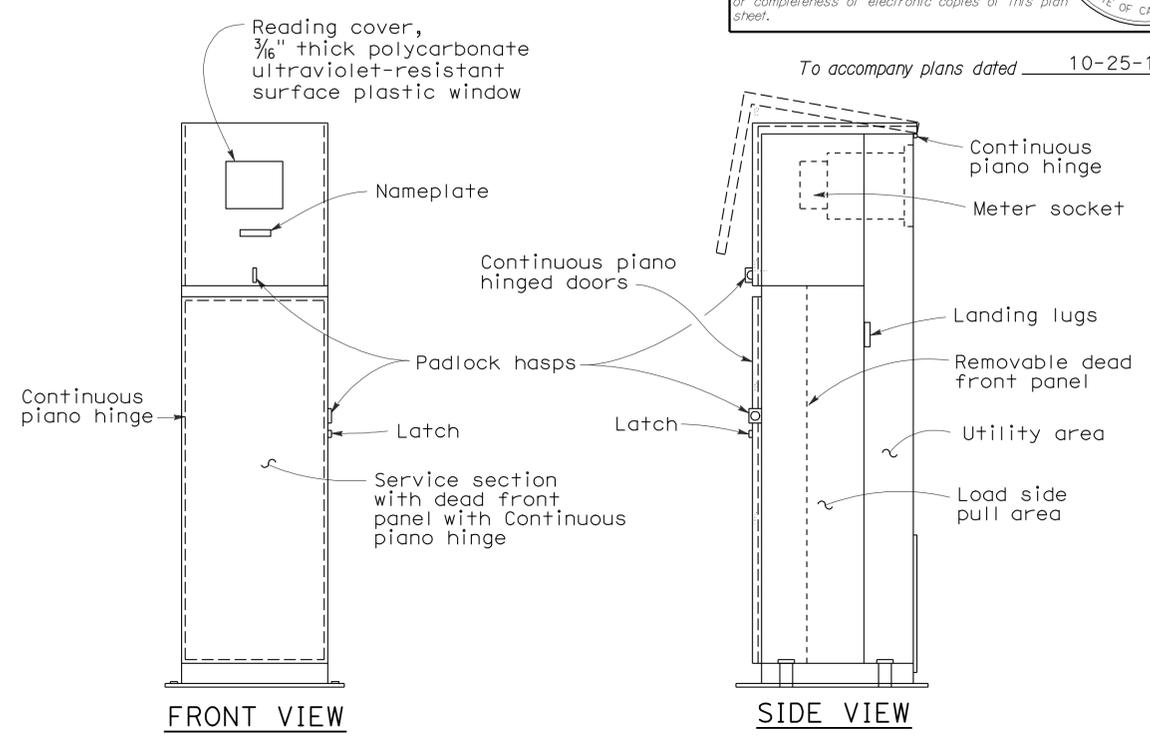
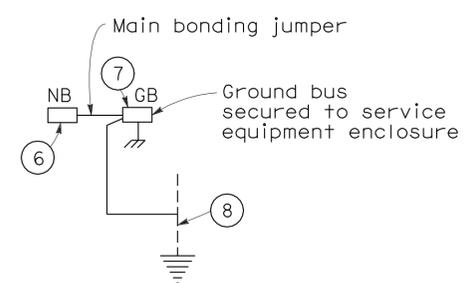
RSP ES-2C DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-2C
 DATED MAY 1, 2006 - PAGE 405 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-2C

2006 REVISED STANDARD PLAN RSP ES-2C



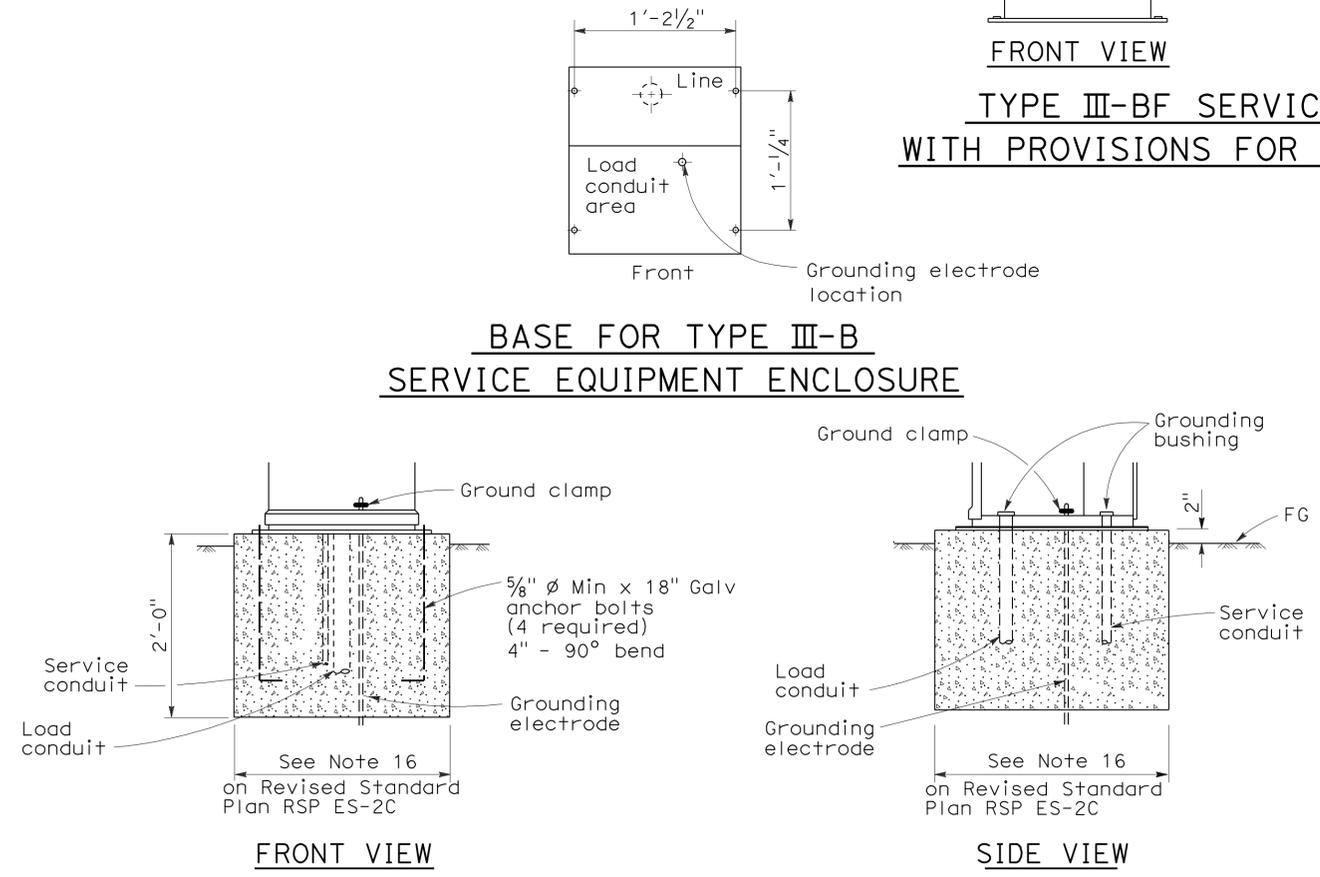
120/240 V SERVICE WIRING DIAGRAM (TYPICAL)



TYPE III-BF SERVICE EQUIPMENT ENCLOSURE WITH PROVISIONS FOR ONE 100 A METER (TYPICAL)

TYPE III-B SERVICE (120/240 V) EQUIPMENT LEGEND		
ITEM No.	COMPONENT	NAME PLATE DESCRIPTION
①	Neutral lug	
②	Landing lug (Note 6)	
③	Test bypass facility	
④	Meter socket and support	
⑤	Terminal blocks	
⑥	Neutral bus	
⑦	Ground bus	
⑧	Grounding electrode	
⑨	30 A, 2PNO Contactor	Sign Illumination
⑩	Photoelectric unit (Note 7)	
⑪	15 A, 1P, Test switch	Sign Illumination Test Switch
⑫	15 A, 120 V, 1P, CB	Sign Illumination Control
⑬	15 A, 120 V, 1P, CB	Flashing Beacon
⑭	30 A, 240 V, 2P, CB	Sign Illumination
⑮	100 A, 240 V, 2P, CB	Main Breaker
⑯	30 A, 240 V, 2P, CB	Lighting
⑰	50 A, 120 V, 1P, CB	Signals
⑱	30 A, 120 V, 1P, CB	Ramp Metering
⑲	20 A, 120 V, 1P, CB	Irrigation
⑳	15 A, 120 V, 1P, CB	Lighting Control
㉑	Photoelectric unit (Note 7)	
㉒	15 A, 1P, Test switch	Lighting Test Switch
㉓	60 A, 2PNO Contactor	Lighting
㉔	15 A, 120 V, 1P, CB	IISNS
㉕	30 A, 2PNO Contactor	IISNS
㉖	20 A, 120 V, 1P, CB	Telephone Demarcation Cabinet

BASE FOR TYPE III-B SERVICE EQUIPMENT ENCLOSURE



TYPE III-B SERVICE EQUIPMENT ENCLOSURE FOUNDATION DETAILS

- NOTES: (FOR SERVICE EQUIPMENT ENCLOSURE)**
- Voltage ratings of service equipment shall conform to the service voltages indicated on the plans.
 - 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 No. ① and ⑥ shall be isolated from the service equipment enclosure.
 - Meter sockets shall be 5 clip type.
 - The landing lug shall be suitable for multiple conductors.
 - Type I photoelectric control shall be used unless otherwise indicated on the plans.

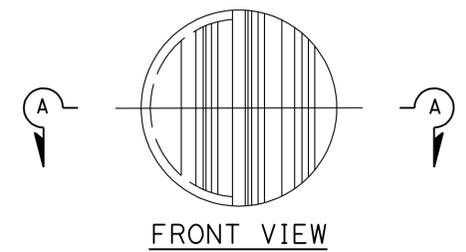
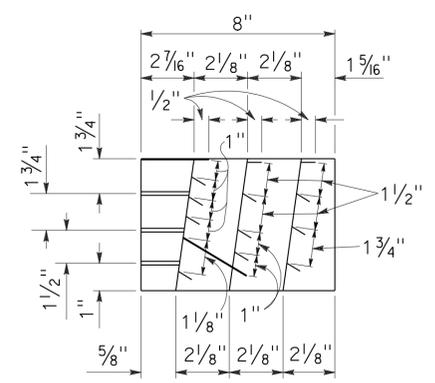
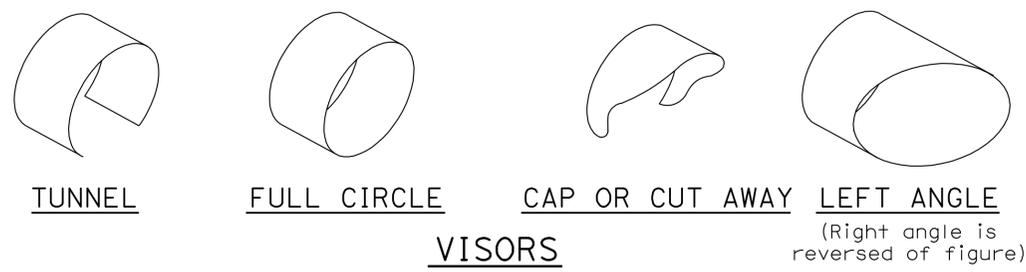
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
ELECTRICAL SYSTEMS (SERVICE EQUIPMENT AND TYPICAL WIRING DIAGRAM, TYPE III-B SERIES)
 NO SCALE

RSP ES-2E DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-2E DATED MAY 1, 2006 - PAGE 407 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP ES-2E

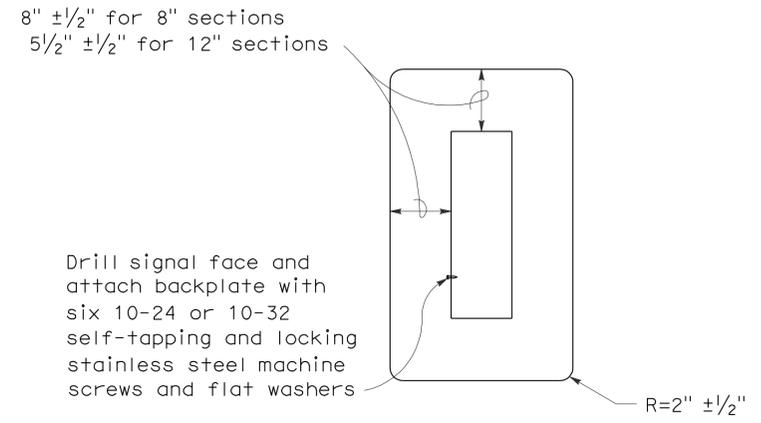
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	9.1/15.1	835	949

Jeffrey G. McRae
 REGISTERED ELECTRICAL ENGINEER
 June 6, 2008
 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.
 REGISTERED PROFESSIONAL ENGINEER
 Jeffrey G. McRae
 No. E14512
 Exp. 6-30-10
 ELECTRICAL
 STATE OF CALIFORNIA



DIRECTIONAL LOUVER

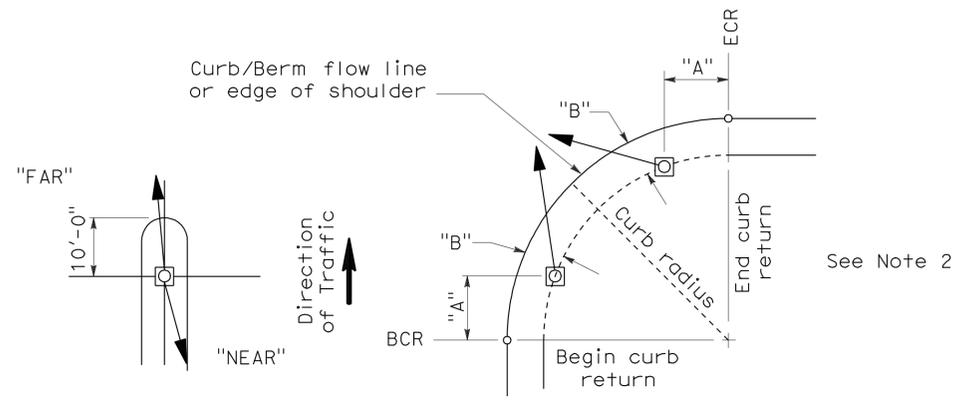
Directional louvers shall be oriented as directed by the Engineer and secured in place with one plated brass machine screw and nut.



8" AND 12" SECTIONS

BACKPLATE

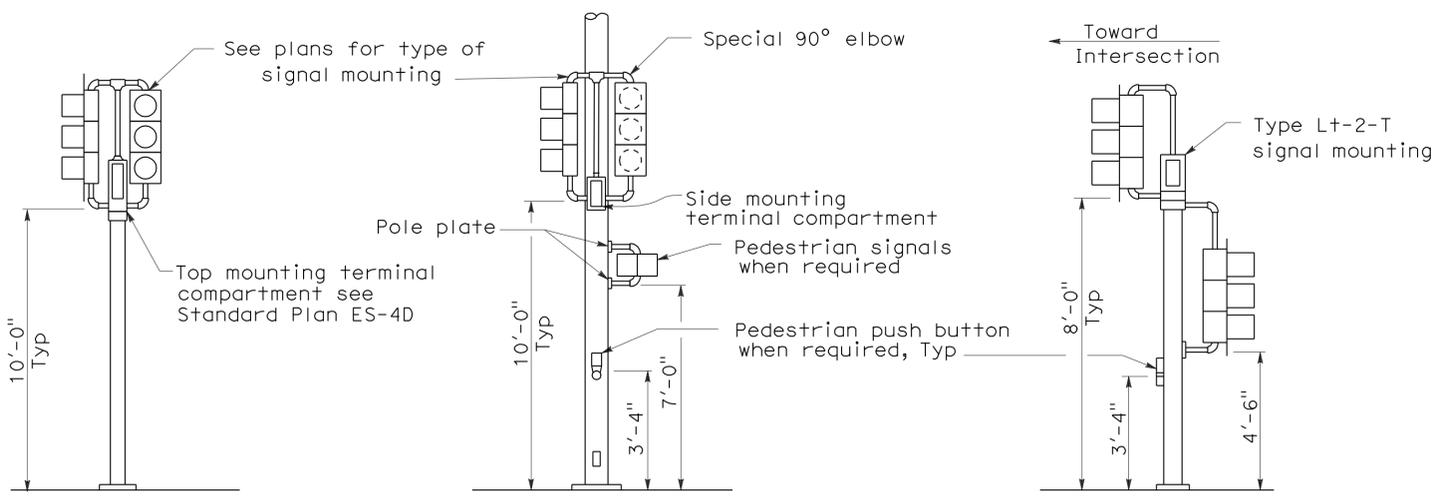
1/16" minimum thickness
 3001-14 aluminum, or plastic when specified



NOTES:

1. Typical signal pole placement unless dimensioned on plans.
2. For "A" and "B" dimensions, see Pole Schedule, or as directed by the Engineer.

SIGNAL STANDARD PLACEMENT DIMENSIONS AND EQUIPMENT LOCATIONS



TOP MOUNTED SIGNALS (TV)

Type 1-A, 1-B, 1-C and 1-D standard as indicated on the plans

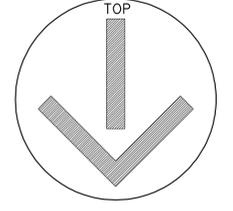
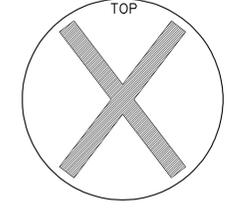
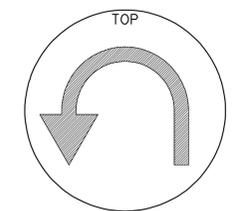
SIDE MOUNTED SIGNALS (SV AND SP)

Normally used on standards with luminaire or signal mast arm

LEFT TURN LANE SIGNAL

Type 1-A, 1-B, 1-C and 1-D standard as indicated on plans

TYPICAL SIGNAL INSTALLATIONS



STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
ELECTRICAL SYSTEMS (SIGNAL HEADS AND MOUNTINGS)

NO SCALE

RSP ES-4C DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN ES-4C DATED MAY 1, 2006 - PAGE 420 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-4C

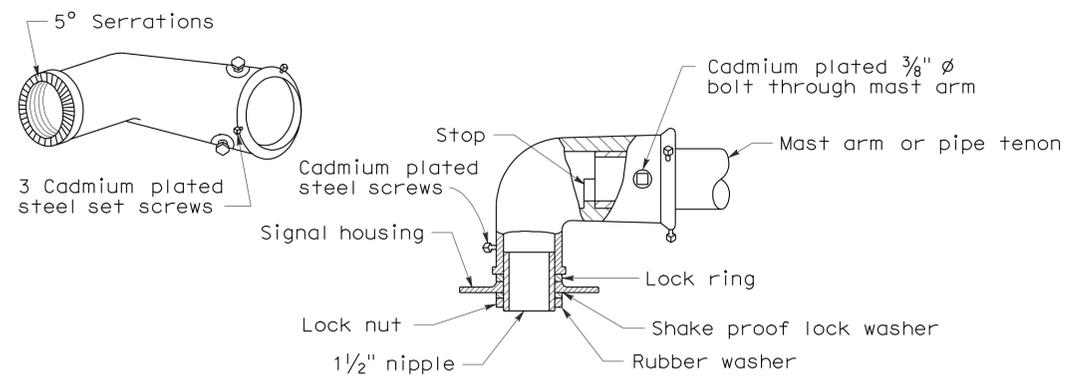
2006 REVISED STANDARD PLAN RSP ES-4C

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	9.1/15.1	836	949

Jeffrey G. McRae
 REGISTERED ELECTRICAL ENGINEER
 June 6, 2008
 PLANS APPROVAL DATE
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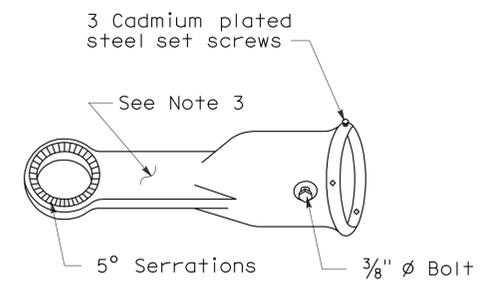
REGISTERED PROFESSIONAL ENGINEER
 Jeffrey G. McRae
 No. E14512
 Exp. 6-30-10
 ELECTRICAL
 STATE OF CALIFORNIA

To accompany plans dated 10-25-10



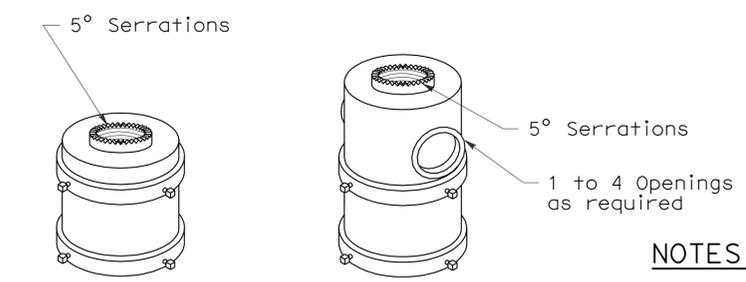
MAST ARM MOUNTING - TYPE "MAT"

For 2 NPS pipe, see Note 1.



MAST ARM MOUNTING - TYPE "MAS"

For 2 NPS pipe. See Note 1.



For one mounting For multiple mountings

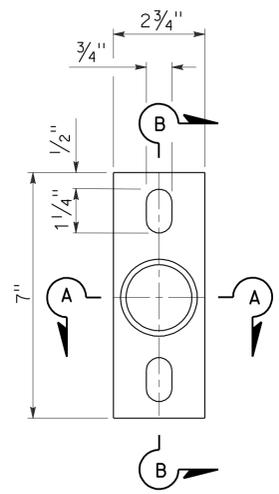
TOP MOUNTINGS

For 4 NPS pipe, see Note 2.

NOTES:

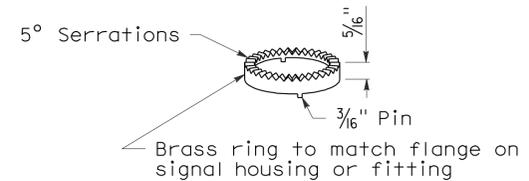
- After mast arm signal has been plumbed and secured, drill 7/16" hole through mast arm tenon in line with slip fitter hole. Place a cadmium plated 3/8" diameter galvanized bolt with washer under bolt head through hole and secure with washer, nut, and locknut. Seal openings between mast arm mountings and mast arm with mastic.
- (a) Threaded top mounted slip fitter openings shall be 1/2 NPS.
(b) Serrations in fittings shall match those on bottom of signal heads or in lock ring.
(c) Top opening shall be offset when backplate is used.
- Wireway shall have a cross section area of 0.95 square inch minimum. Minimum width of 1/2".

SIGNAL SLIP FITTERS



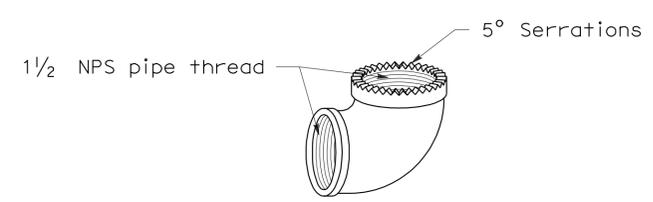
POLE PLATE

For side mountings



LOCK RING

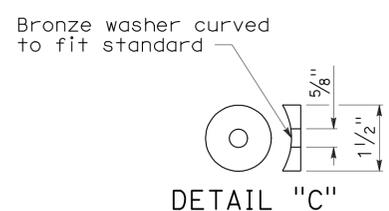
Use where locking ring is not integral with signal housing or fitting.



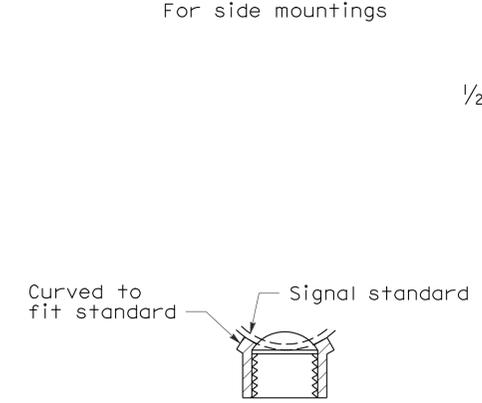
SPECIAL 90° ELBOW

One for each signal head, except those with special slip fitter mounting

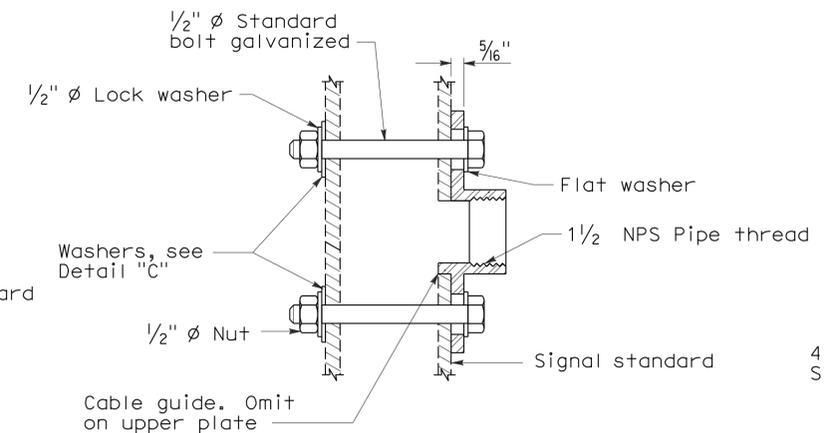
MISCELLANEOUS MOUNTING HARDWARE



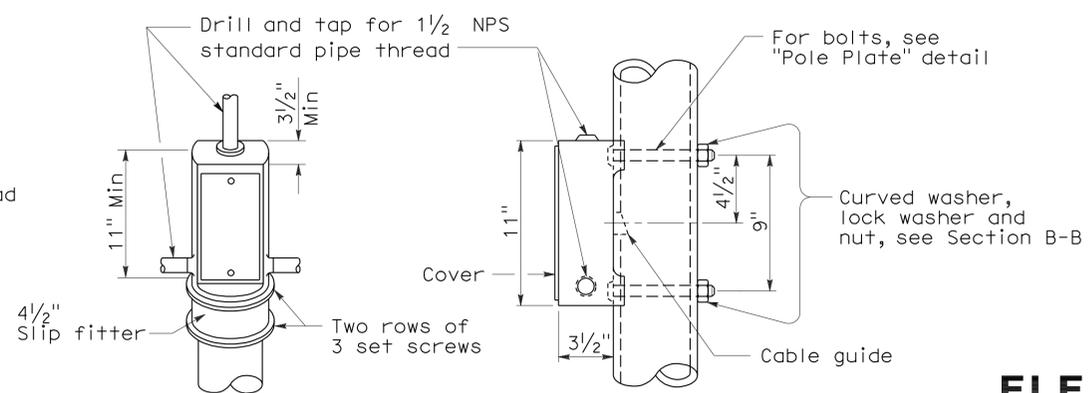
DETAIL "C"



SECTION A-A



SECTION B-B



TOP MOUNTING

SIDE MOUNTING

TERMINAL COMPARTMENTS

ELECTRICAL SYSTEMS (SIGNAL HEADS AND MOUNTINGS)

NO SCALE

RSP ES-4D DATED June 6, 2008 SUPERSEDES STANDARD PLAN ES-4D DATED MAY 1, 2006 - PAGE 421 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-4D

2006 REVISED STANDARD PLAN RSP ES-4D

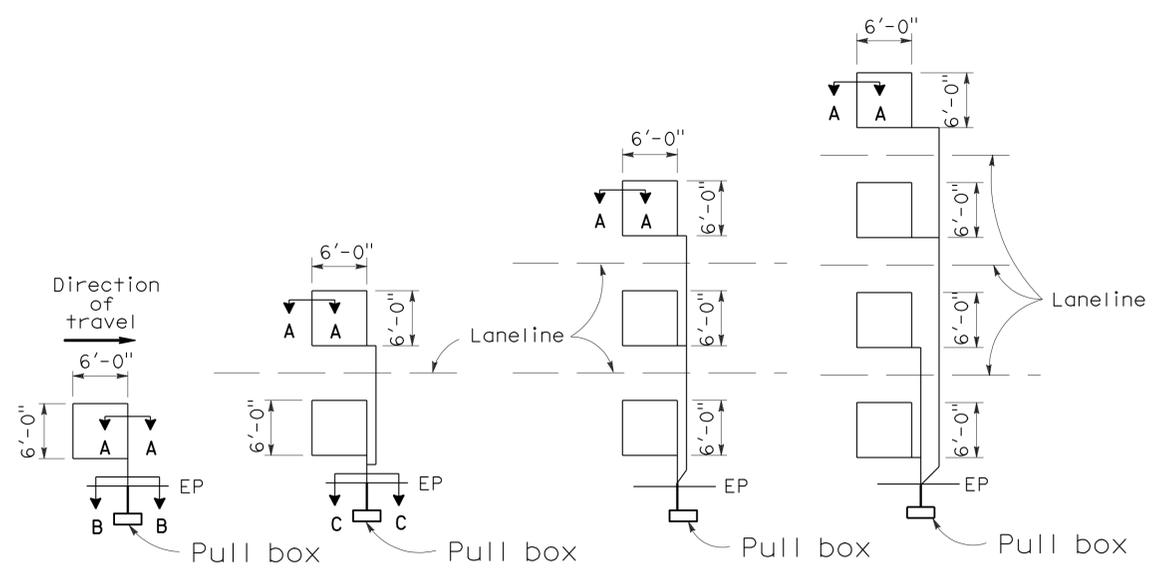
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	9.1/15.1	837	949

Jeffery G. McRae
 REGISTERED ELECTRICAL ENGINEER
 October 5, 2007
 PLANS APPROVAL DATE
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2006 REVISED STANDARD PLAN RSP ES-5A

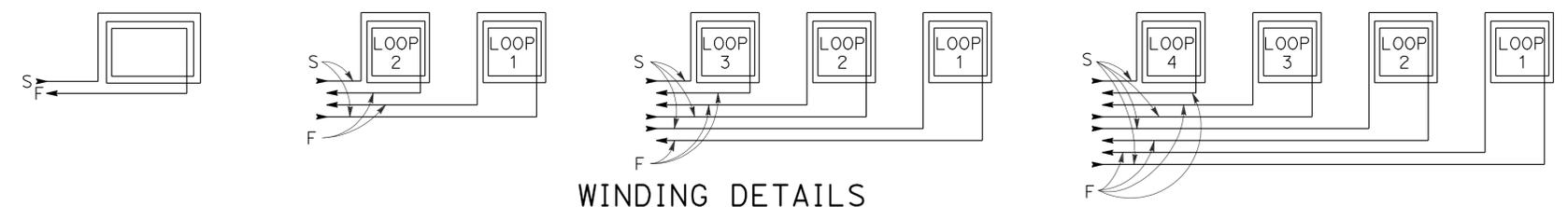
LOOP INSTALLATION PROCEDURE

- Loops shall be centered in lanes.
- Saw slots in pavement for loop conductors as shown in details.
- Distance between side of loop and a lead-in saw cut from adjacent detectors shall be 2'-0" minimum. Distance between lead-in saw cuts shall be 6" minimum.
- Bottom of saw slot shall be smooth with no sharp edges.
- Slots shall be washed until clean, blown out and thoroughly dried before installing loop conductors.
- Adjacent loops on the same sensor unit channel shall be wound in opposite directions.
- Identify and tag loop circuit pairs in the pull box with loop number, start (S) and finish (F) of conductor. Identify and tag lead-in-cable with sensor number and phase.
- Install loop conductor in slot using a 3/16" to 1/4" thick wood paddle. Hold loop conductors with wood paddles (at the bottom of the sawed slot) during sealant placement.
- No more than 2 twisted pairs shall be installed in one sawed slot.
- Allow additional 5'-0" of slack length of conductor for the lead-in run to pull box.
- The additional length of each conductor for each loop shall be twisted together into a pair (6 turns per 3'-4" minimum) before being placed in the slot and conduit leading to pull box.
- Test each loop circuit for continuity, circuit resistance and insulation resistance at the pull box before filling slots.
- Fill slots as shown in details.
- Splice loop conductors to lead-in-cable. Splices shall be soldered.
- End of lead-in-cable and Type 2 loop conductor shall be waterproofed prior to installing in conduit to prevent moisture from entering the cable.
- Lead-in-cable shall not be spliced between the pull box and the controller cabinet terminals.
- Test each loop circuit for continuity, circuit resistance and insulation resistance at the controller cabinet location.
- Where loop conductors are not to be spliced to a lead-in-cable, the ends of the conductors shall be taped and waterproofed with electrical insulating coating.



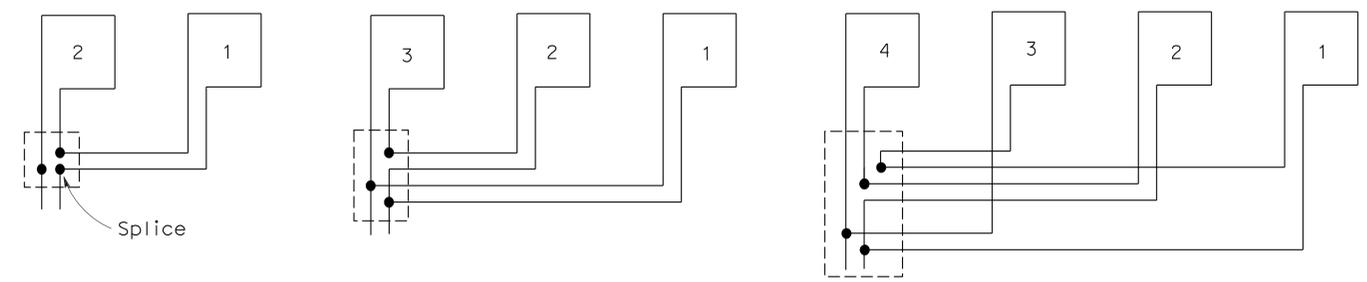
TYPE 1A INSTALLATION TYPE 2A INSTALLATION TYPE 3A INSTALLATION TYPE 4A INSTALLATION
SAWCUT DETAILS

- (Type A loop detector configurations illustrated)
- 1A thru 4A = 1 Type A loop configuration in each lane.
 - 1B thru 4B = 1 Type B loop configuration in each lane.
 - 1C = 1 Type C loop configuration entering lanes as required.
 - 1D thru 4D = 1 Type D loop configuration in each lane.
 - 1E thru 4E = 1 Type E loop configuration in each lane.
 - 1Q thru 4Q = 1 Type Q loop configuration in each lane.
- (Use Type A, B, C, D, E or Q loop detector configurations only when specified or shown on plans)



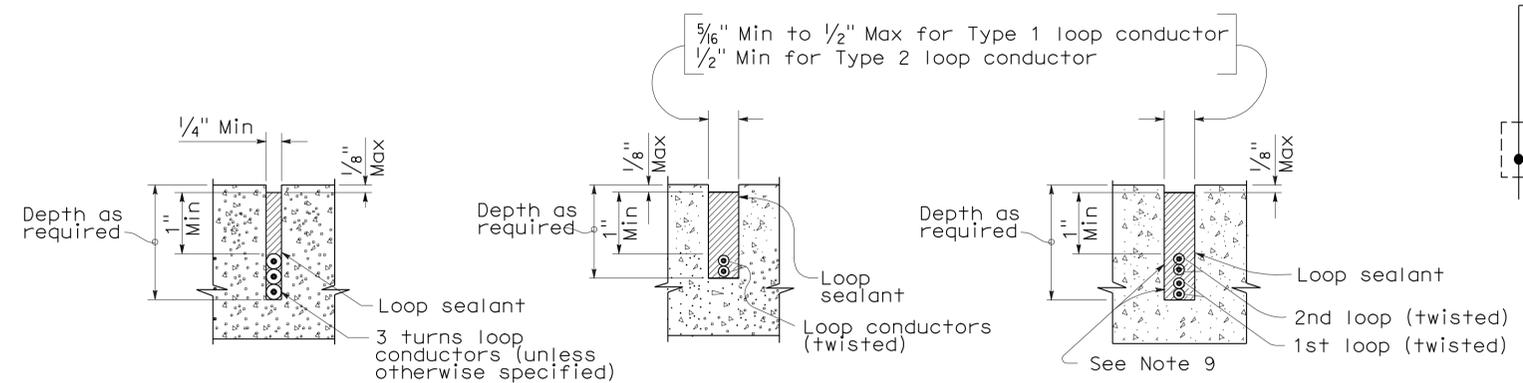
WINDING DETAILS

See Notes 6 and 7



TYPICAL LOOP CONNECTIONS

(Dashed lines represent the pull box)



SECTION A-A SECTION B-B SECTION C-C
SLOT DETAILS - TYPE 1 AND TYPE 2 LOOP CONDUCTOR

ELECTRICAL SYSTEMS (DETECTORS)

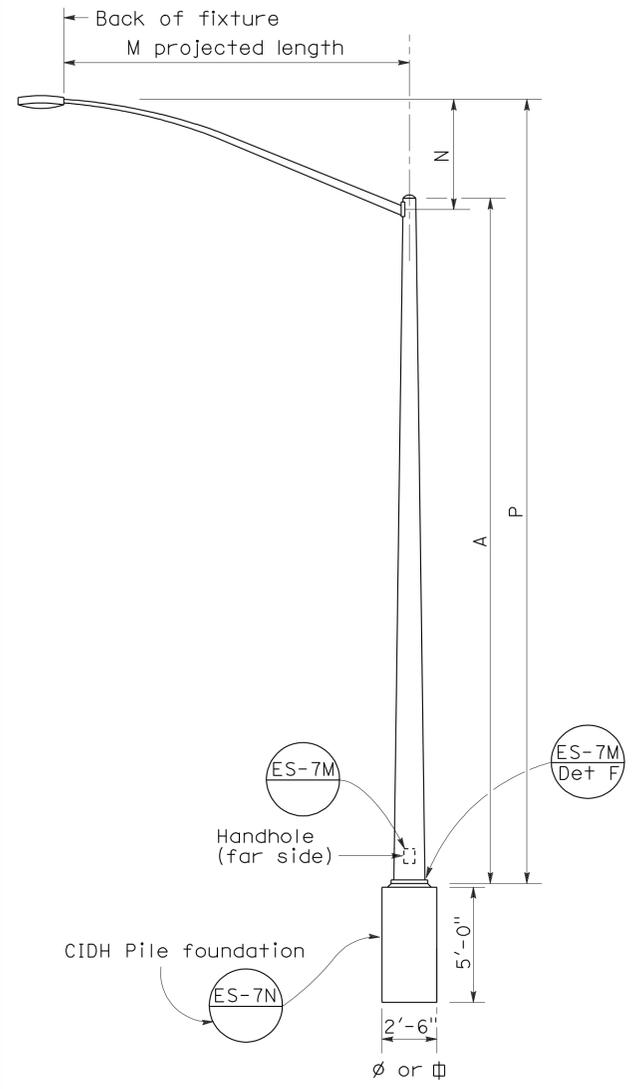
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

NO SCALE

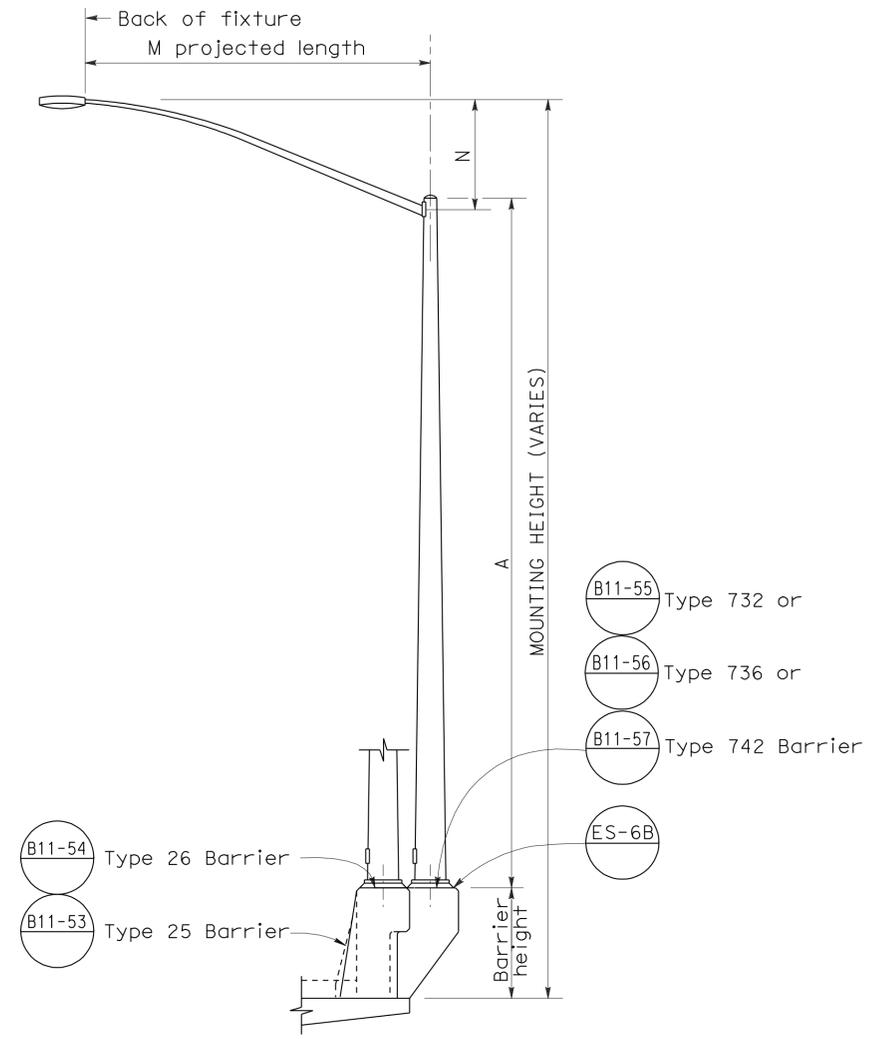
RSP ES-5A DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-5A DATED MAY 1, 2006 - PAGE 423 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-5A

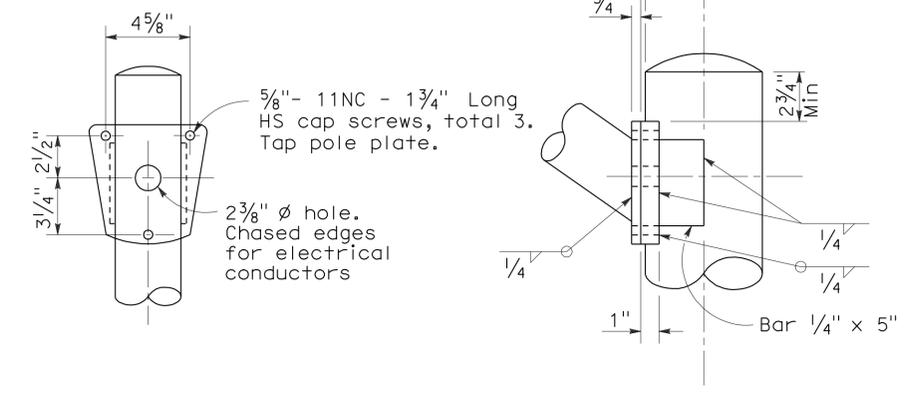
To accompany plans dated 10-25-10



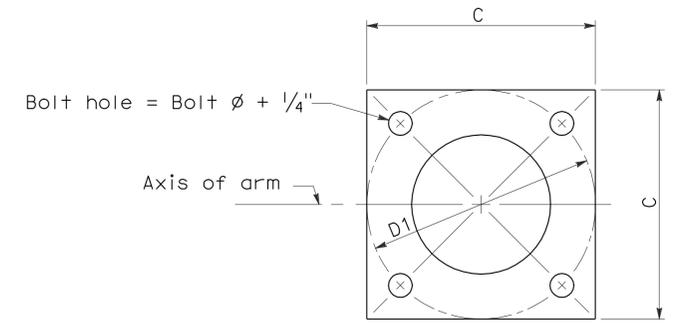
ELEVATION
TYPE 15 AND TYPE 21



ELEVATION
TYPE 15 AND TYPE 21 BARRIER RAIL MOUNTED



DETAIL R
LUMINAIRE ARM CONNECTION



BASE PLATE

POLE TYPE	POLE DATA				BASE PLATE DATA				LUMINAIRE ARM
	A Height	Min OD Base	Min OD Top	Wall Thickness	C	D1 Bolt Circle	Thick-ness	Anchor Bolts Size	
15	30'	8"	3 7/8"	0.1196"	1'-0"	1'-0"	1"	1" ø x 3'-0" x 4"*	6' - 15' 12'
21	35'	8 5/8"	3 7/8"	0.1196"	1'-0"	1'-0"	1"	1 1/4" ø x 3'-0" x 4"*	6' - 15' 12'

* For barrier rail bolts, see Standard Plan ES-6B.

M Projected Length	N Rise	Min OD At Pole	Nominal Thickness	LUMINAIRE ARM DATA	
				Type 15	Type 21
6'-0"	2'-0"±	3/4"	0.1196"	31'-6"±	36'-6"±
8'-0"	2'-6"±	3/2"	0.1196"	32'-0"±	37'-0"±
10'-0"	3'-3"±	3 7/8"	0.1196"	32'-9"±	37'-9"±
12'-0"	4'-3"±	3 7/8"	0.1196"	33'-9"±	38'-9"±
15'-0"	4'-9"±	4 1/4"	0.1196"	34'-3"±	39'-3"±

NOTES:

- Indicates arm length to be used unless otherwise noted on the plans.
- For Type 15-SB, use Type 15 standard with Type 30 slip base plate details, see Standard Plan ES-6F.
- For additional notes, see Standard Plan ES-7M and ES-7N.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
ELECTRICAL SYSTEMS
(LIGHTING STANDARD
TYPES 15 AND 21)

NO SCALE

RSP ES-6A DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-6A DATED MAY 1, 2006 - PAGE 427 OF THE STANDARD PLANS BOOK DATED MAY 2006.

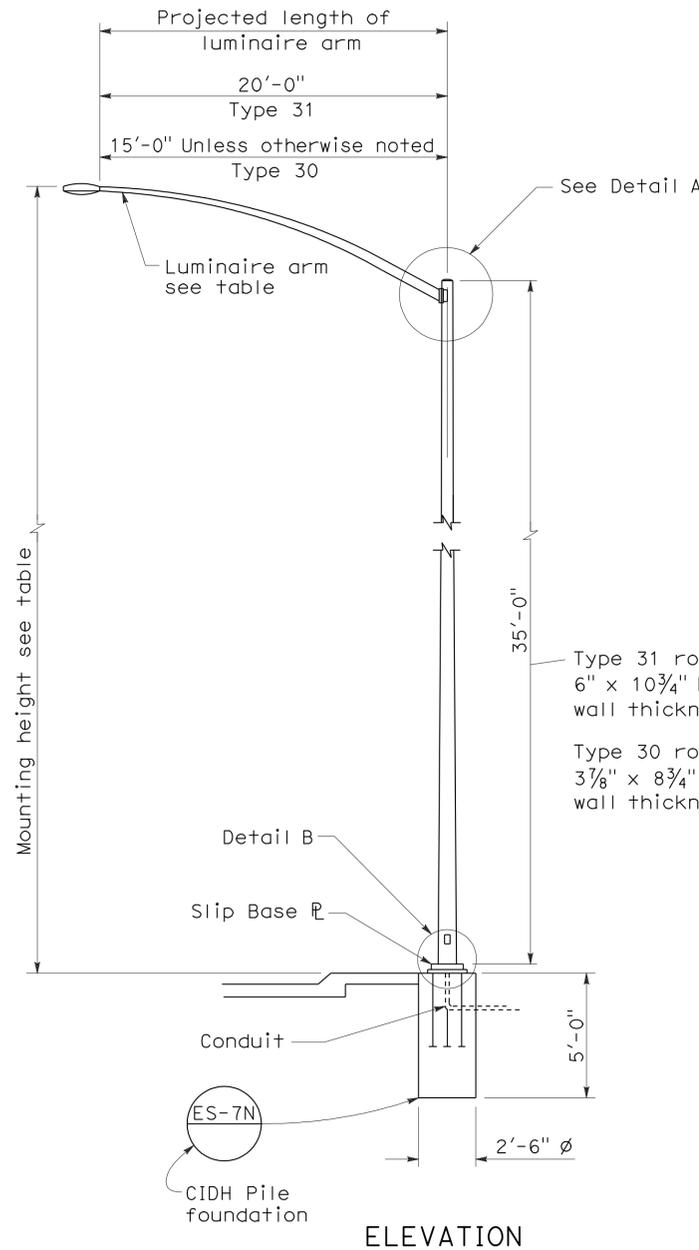
REVISED STANDARD PLAN RSP ES-6A

2006 REVISED STANDARD PLAN RSP ES-6A

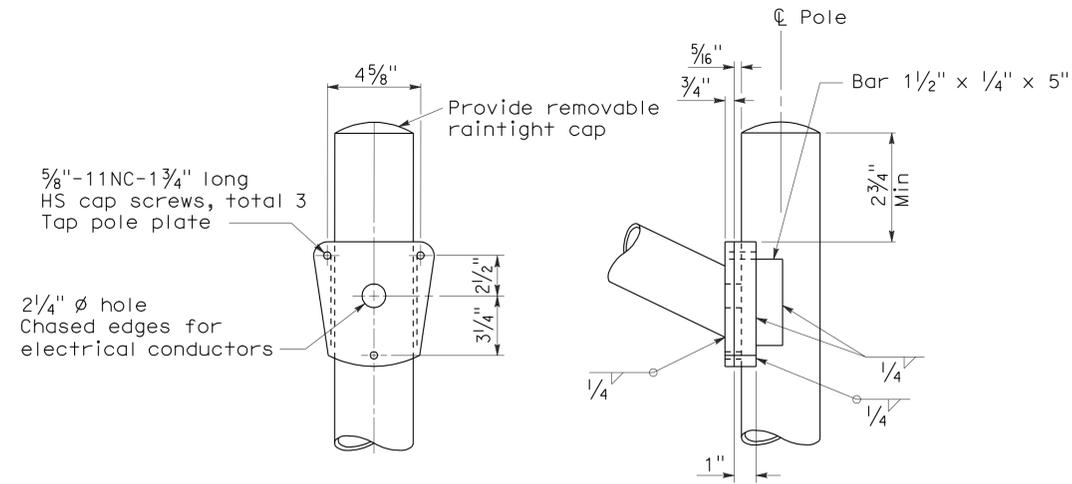
LUMINAIRE ARM DATA

PROJECTED LENGTH	THICKNESS	MINIMUM OD @ POLE	MOUNTING HEIGHT
* 6'-0"	0.1196"	3 1/4"	36'-9"±
8'-0"		3 1/2"	37'-3"±
10'-0"		3 3/4"	38'-0"±
12'-0"		3 3/4"	39'-0"±
15'-0"		4 1/4"	39'-6"±
** 20'-0"	0.1793"	5"	37'-0"±

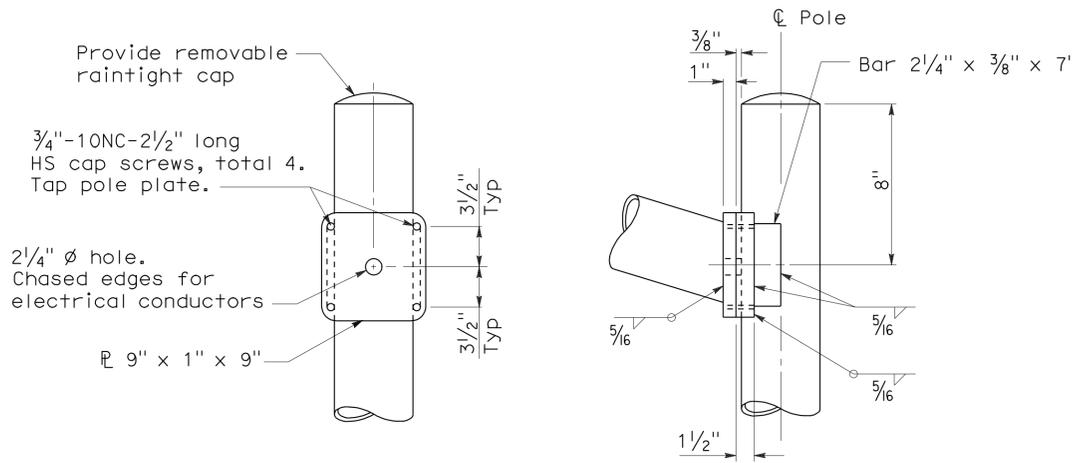
* Type 30 - arm length 6'-0" - 15'-0" maximum
 ** Type 31 - arm lengths 20'-0"



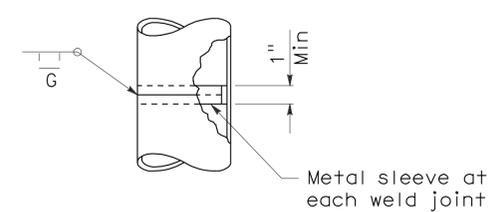
ELEVATION



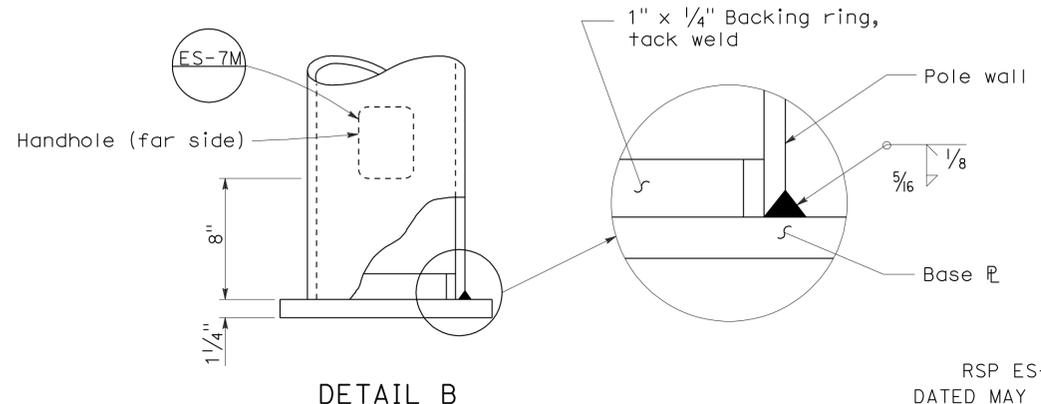
DETAIL A - TYPE 30



DETAIL A - TYPE 31



POLE SPLICE



DETAIL B

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	9.1/15.1	839	949

Stanley P. Johnson
 REGISTERED CIVIL ENGINEER
 January 18, 2008
 PLANS APPROVAL DATE
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To accompany plans dated 10-25-10

NOTES:

- Sheet steel shall have a minimum yield of 48,000 psi.
- For slip base details see Standard Plan ES-6F.
- For Type 30 fixed base use Type 15 base plate, and foundation shown on Revised Standard Plan RSP ES-6A. Use 1 1/4" Dia x 3'-6" x 4" anchor bolts.
- For Type 31 fixed base use Type 32 base plate, anchor bolts and foundation on Standard Plan ES-6G.
- Handhole shall be located on downstream side of traffic unless noted otherwise on plans.
- For additional general notes refer to Standard Plan ES-7M.

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
 (LIGHTING STANDARD
 TYPES 30 AND 31)**
 NO SCALE

RSP ES-6E DATED JANUARY 18, 2008 SUPERCEDES STANDARD PLAN ES-6E
 DATED MAY 1, 2006 - PAGE 430 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-6E

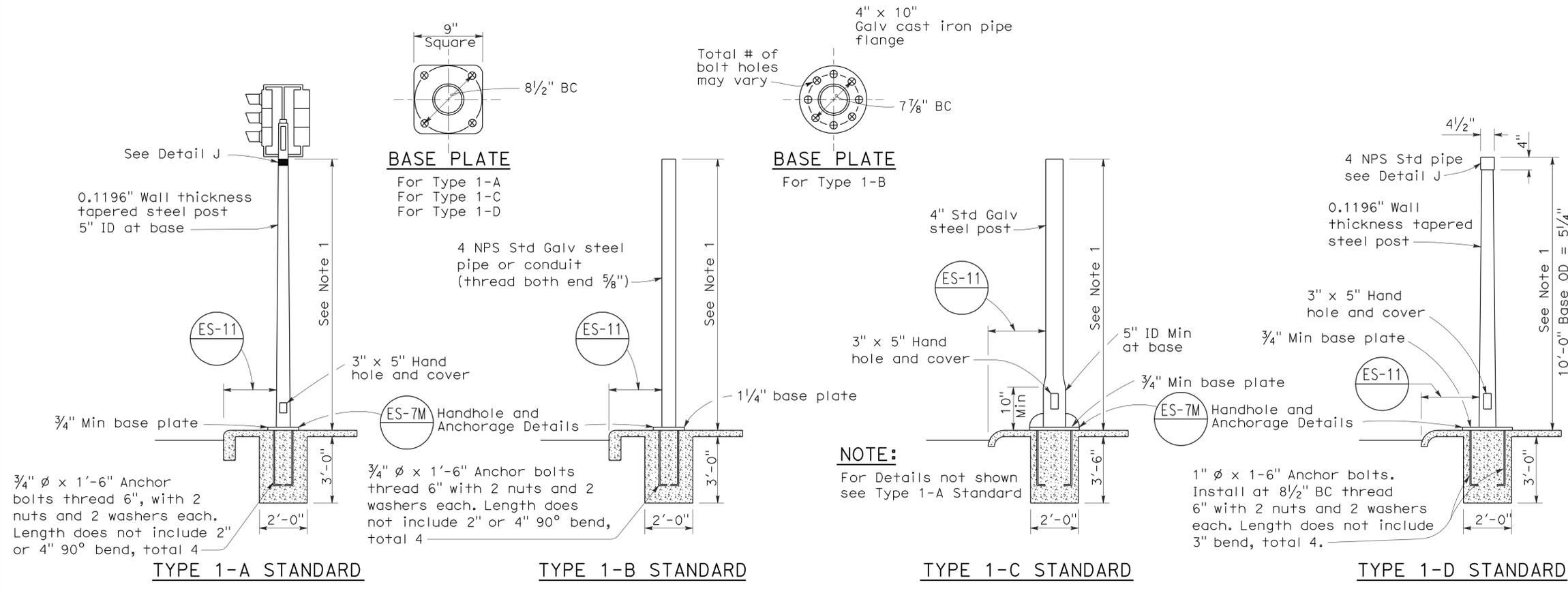
2006 REVISED STANDARD PLAN RSP ES-6E

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	9.1/15.1	840	949

Stanley P. Johnson
 REGISTERED CIVIL ENGINEER
 October 5, 2007
 PLANS APPROVAL DATE
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REGISTERED PROFESSIONAL ENGINEER
 Stanley P. Johnson
 No. C57793
 Exp. 3-31-08
 CIVIL
 STATE OF CALIFORNIA

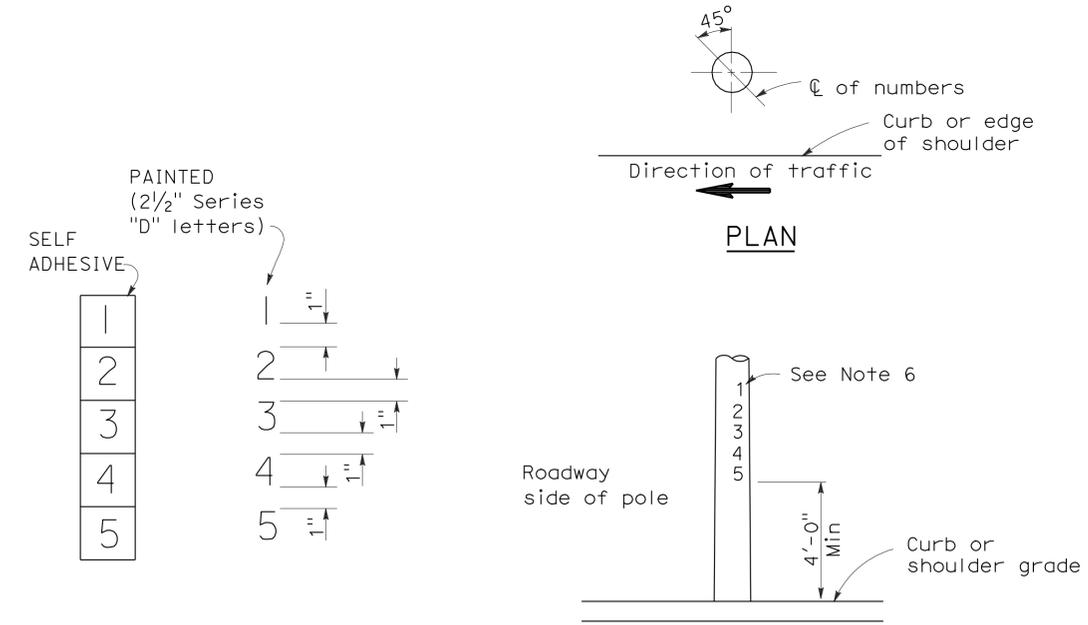
To accompany plans dated 10-25-10



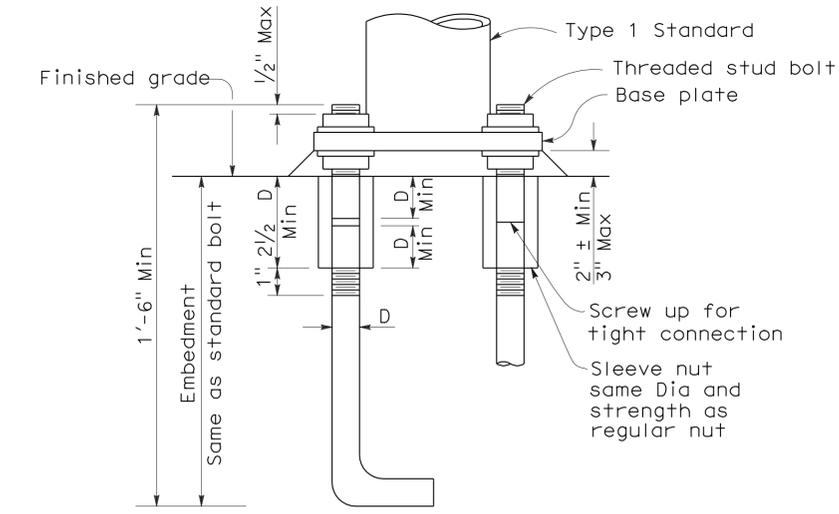
NOTES:

- Standards shall be 10'-0" ± 2" for vehicle signals and 7'-0" ± 2" for pedestrian signals unless otherwise noted on plans.
- Top of standards shall be 4 1/2" OD.
- Conduits shall extend 2" maximum above finished surface of foundation and for Types 1-A, 1-C and 1-D shall be sloped toward handhole.
- Anchor bolts shall be bonded to conduit or grounding conductor.
- Conduit between standard and adjacent pull box shall be 2" minimum.
- Paint numbers on roadway side facing traffic when electrolier or post is left of direction of traffic.

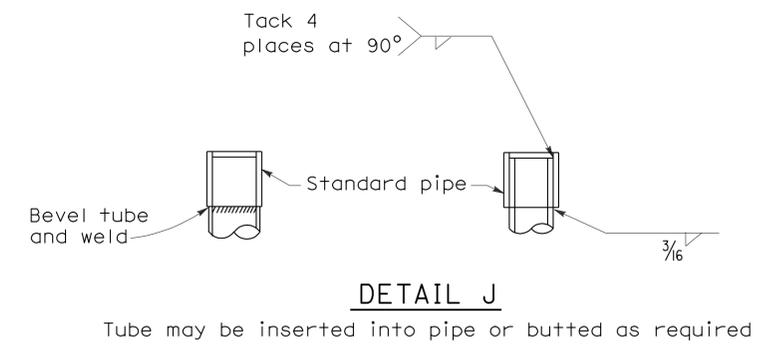
TYPE 1 SIGNAL STANDARDS



LOCATION OF EQUIPMENT NUMBERS ON STANDARDS AND POSTS

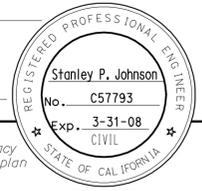


ANCHOR BOLTS WITH SLEEVE NUTS
 Sleeve nuts to be used only when shown or specified on Project Plans
 D = Diameter of anchor bolt

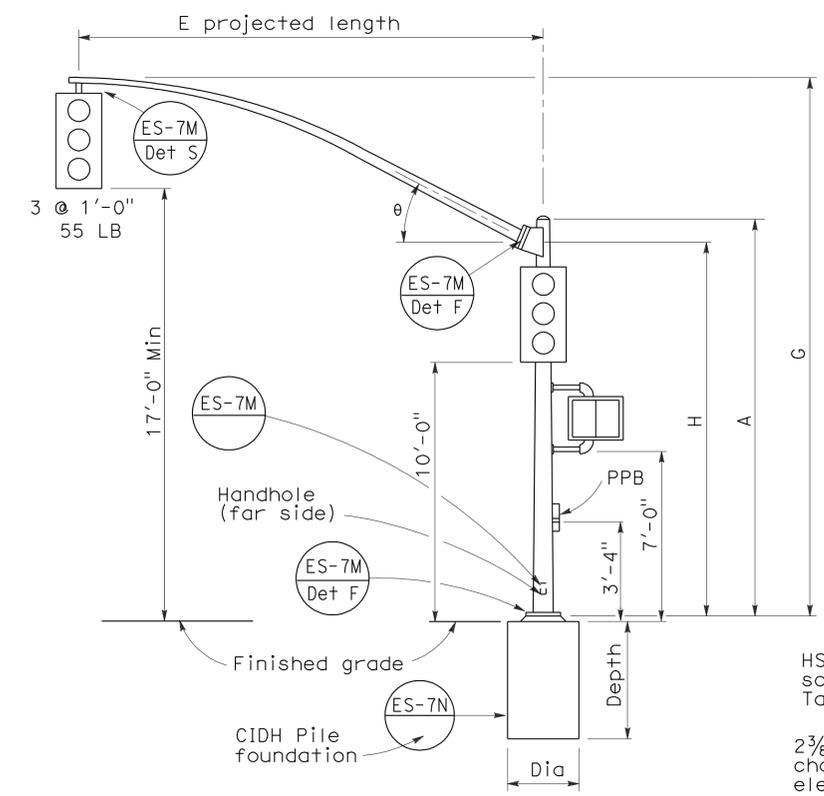


ELECTRICAL SYSTEMS (SIGNAL AND LIGHTING STANDARD TYPE 1 STANDARD AND EQUIPMENT NUMBERING)
 NO SCALE

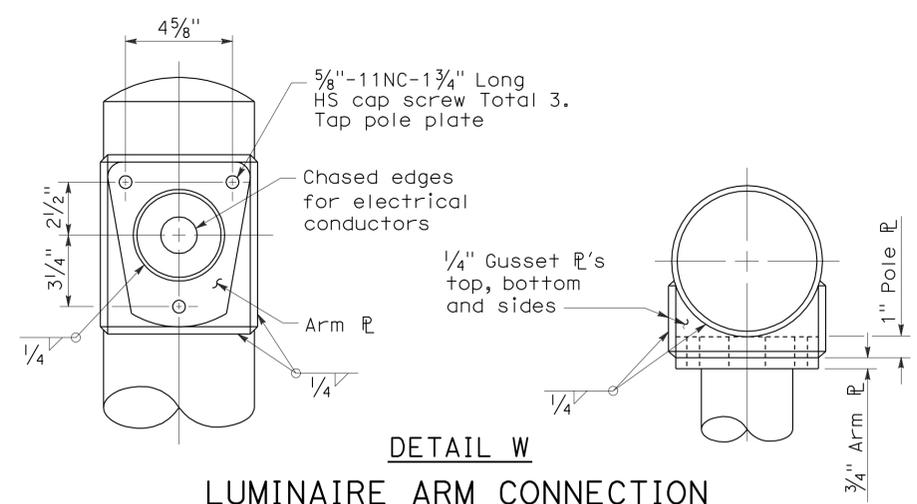
2006 REVISED STANDARD PLAN RSP ES-7B



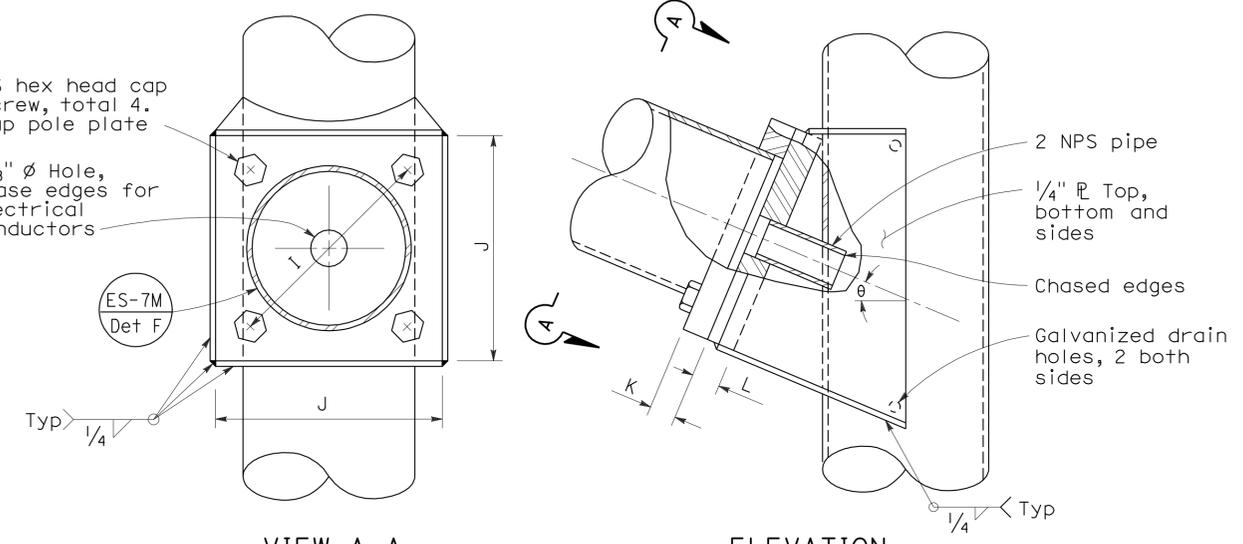
To accompany plans dated 10-25-10



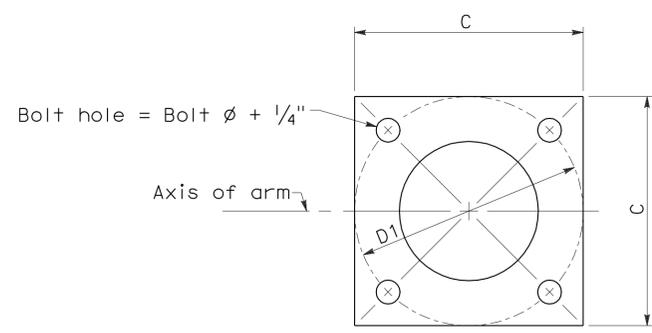
ELEVATION
TYPE 16-1-100, 18-1-100



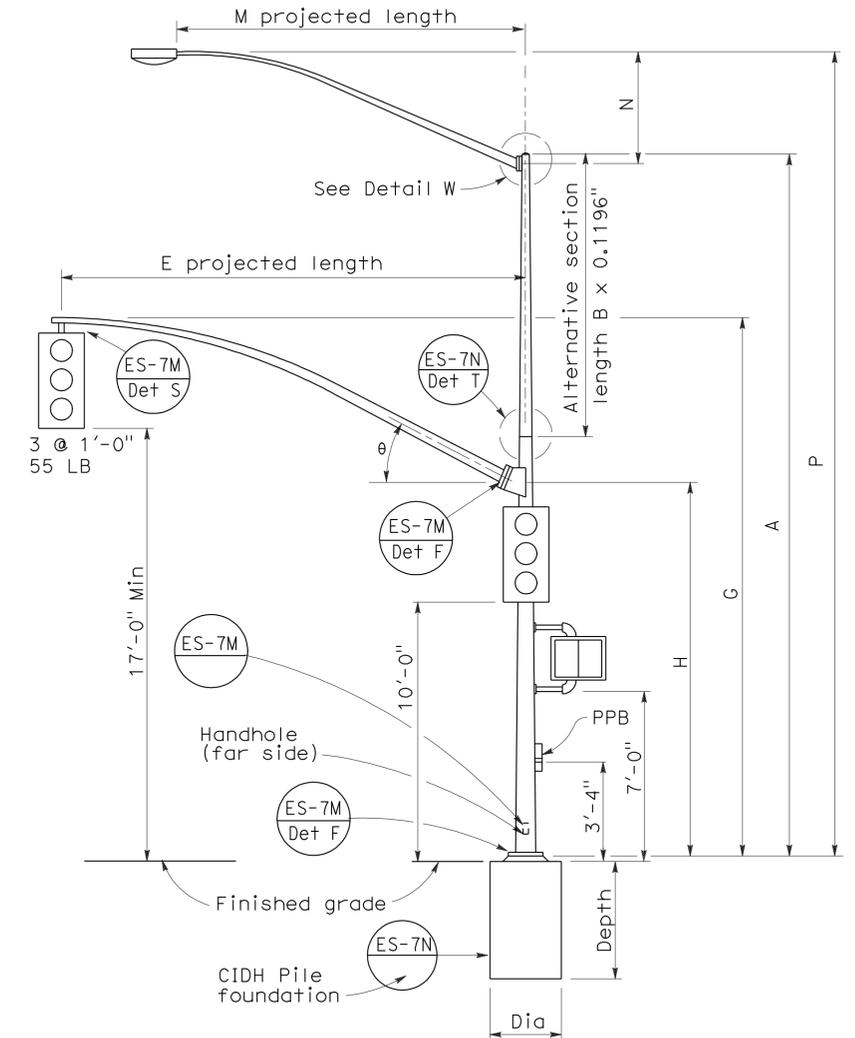
DETAIL W
LUMINAIRE ARM CONNECTION



VIEW A-A
SIGNAL ARM CONNECTION DETAILS



BASE PLATE



ELEVATION
TYPE 19-1-100, 19A-1-100

E Projected Length	G Mounting Height	H	Min OD At Pole	Thickness	I Bolt Circle	HS Cap Screws	J Plate size	K Arm Plate Thickness	L Pole Plate Thickness	θ
15'-0"	21'-8"±	17'-6"	7"	0.1196"	12"	1 1/4"-7NC-3"	1'-0"	1 1/4"	1 1/2"	23°
20'-0"	21'-8"±	7 7/8"								
25'-0"	22'-8"±	7 5/8"								
30'-0"	23'-0"±	8"								

M Projected Length	N Rise	Min OD at Pole	Thickness	P Mounting Height
6'-0"	2'-0"±	3 1/4"	0.1196"	30'-0" Pole
8'-0"	2'-6"±	3 1/2"		31'-6"±
10'-0"	3'-3"±	3 3/8"		32'-0"±
12'-0"	4'-3"±	3 7/8"		32'-9"±
15'-0"	4'-9"±	4 1/4"		33'-9"±

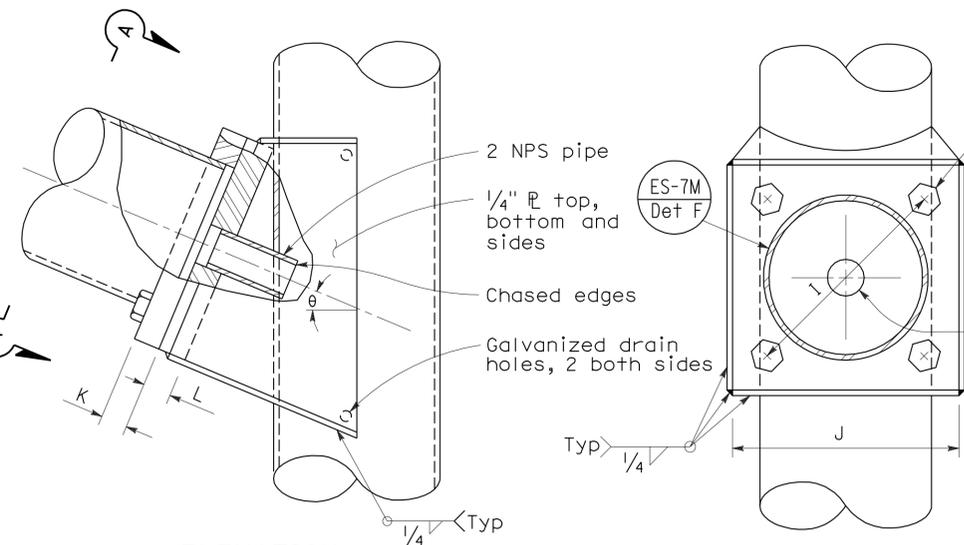
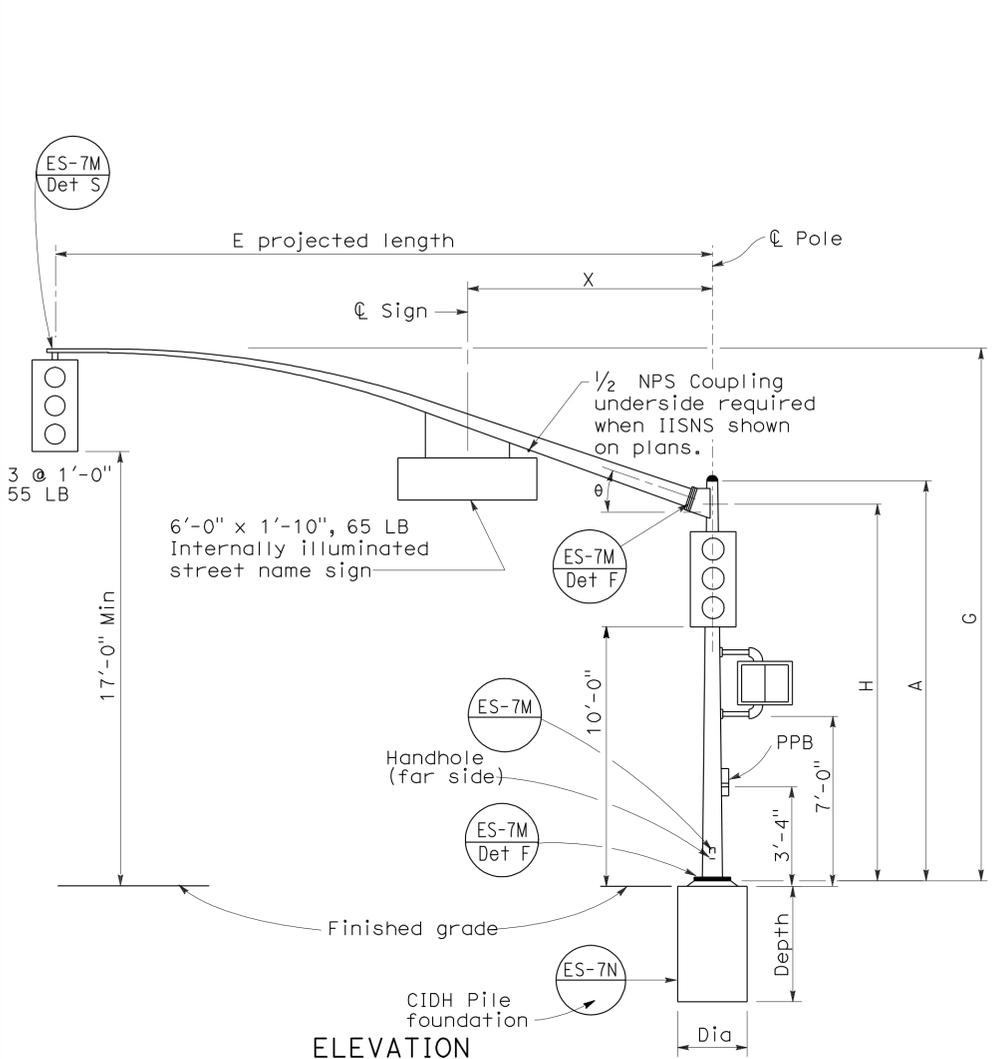
Pole Type	Load Case	Wind Velocity mph	POLE DATA			BASE PLATE DATA			CIDH PILE FOUNDATION									
			A Height	Min OD	Thickness	C	D1 Bolt Circle	Thickness	Anchor Bolts Size	Luminaire Arm	Signal Arm	Diameter	Depth	Reinforced				
16-1-100	1	100	18'-6"	8 1/4"	0.1793"	1'-6"	1'-5 1/2"	1 1/4"	1 1/2" ϕ x 42" x 6"	None	15'-0"	2'-6"	7'-2"	Yes				
18-1-100			17'-0"	8 7/8"											None	20'-0"		
19-1-100			30'-0"	6 5/8"											10'-0"	8"	6'-15' [12'-0"]	25'-0"
19A-1-100			35'-0"	5 1/6"											15'-0"	5 1/6"	6'-15' [15'-0"]	30'-0"

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
ELECTRICAL SYSTEMS
(SIGNAL AND LIGHTING STANDARD
CASE 1 ARM LOADING
WIND VELOCITY = 100 MPH
ARM LENGTHS 15' TO 30')
 NO SCALE

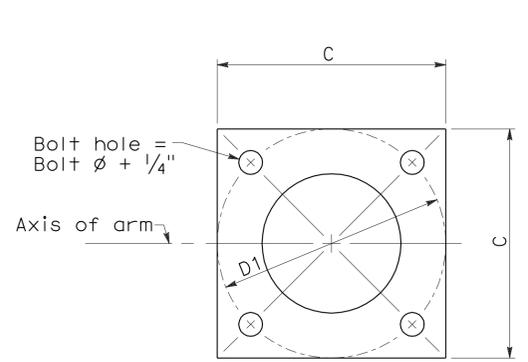
RSP ES-7C DATED JUNE 15, 2007 SUPERSEDES STANDARD PLAN ES-7C DATED MAY 1, 2006 - PAGE 439 OF THE STANDARD PLANS BOOK DATED MAY 2006.

□ Indicates arm length to be used unless otherwise noted on plans.

2006 REVISED STANDARD PLAN RSP ES-7C

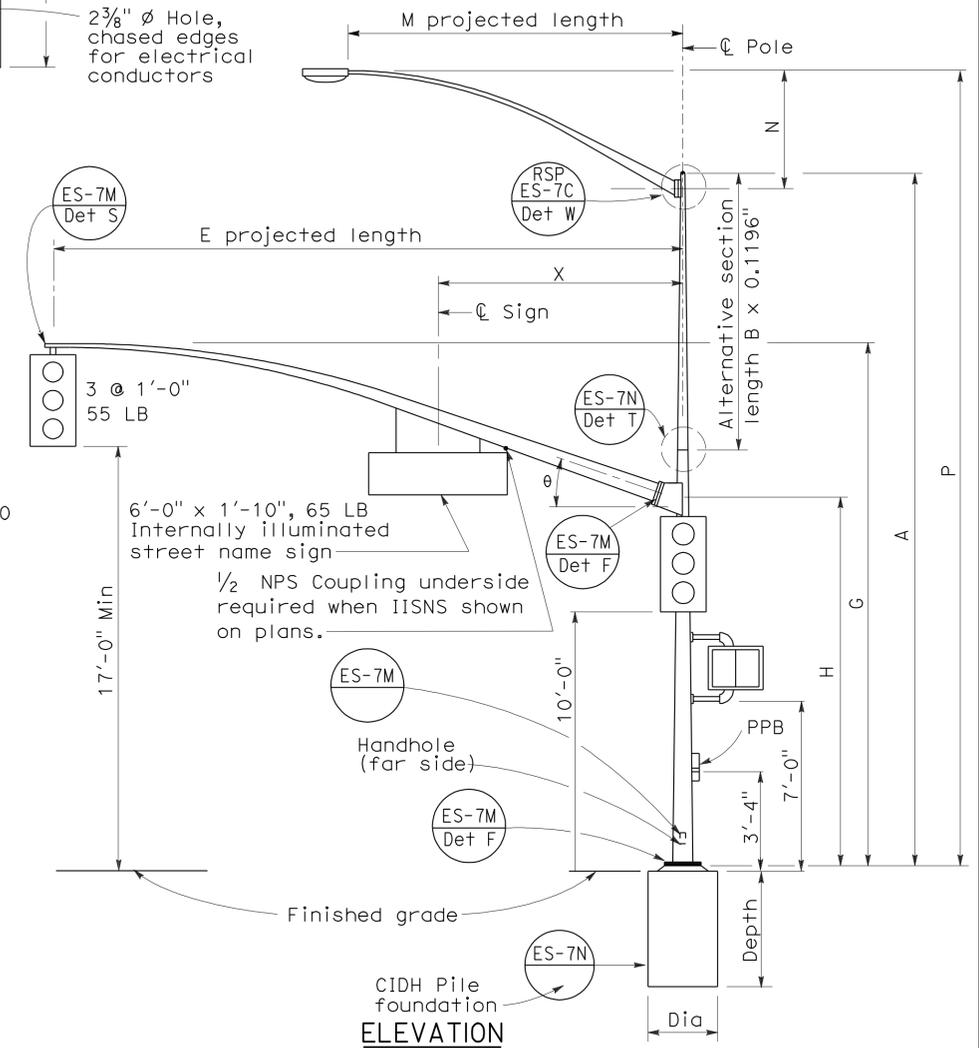


SIGNAL ARM CONNECTION DETAILS



BASE PLATE

ELEVATION
TYPE 16-2-100, 18-2-100



ELEVATION
TYPE 17-2-100, 17A-2-100,
19-2-100, 19A-2-100

E Projected Length	G Mounting Height	H	Min OD At Pole	Thickness	I Bolt Circle	HS Cap Screws	J Plate Size	K Arm R Thickness	L Pole R Thickness	θ	X Max
15'-0"	21'-8"±	17'-6"	6 5/8"	0.1793"	12"	1 1/4"-7NC-3"	1'-0"	1 1/4"	1 1/2"	23°	10'-6"
20'-0"	21'-8"±	17'-0"	6 5/8"								
25'-0"	22'-8"±	16'-0"	7 5/16"	0.1793"	12"	1 1/4"-7NC-3"	1'-0"	1 1/4"	1 1/2"	23°	10'-6"
30'-0"	23'-0"±		8"								

M Projected Length	N Rise	Min OD at Pole	Thickness	P Mounting Height	
				30'-0" Pole	35'-0" Pole
6'-0"	2'-0"±	3 1/4"	0.1196"	31'-6"±	36'-6"±
8'-0"	2'-6"±	3 1/2"		32'-0"±	37'-0"±
10'-0"	3'-3"±	3 3/8"		32'-9"±	37'-9"±
12'-0"	4'-3"±	3 7/8"		33'-9"±	38'-9"±
15'-0"	4'-9"±	4 1/4"		34'-3"±	39'-3"±

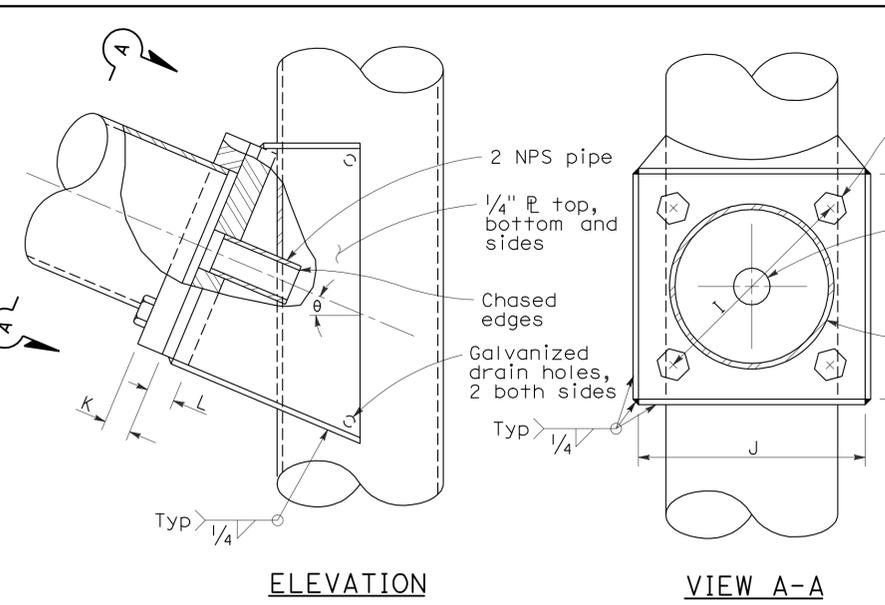
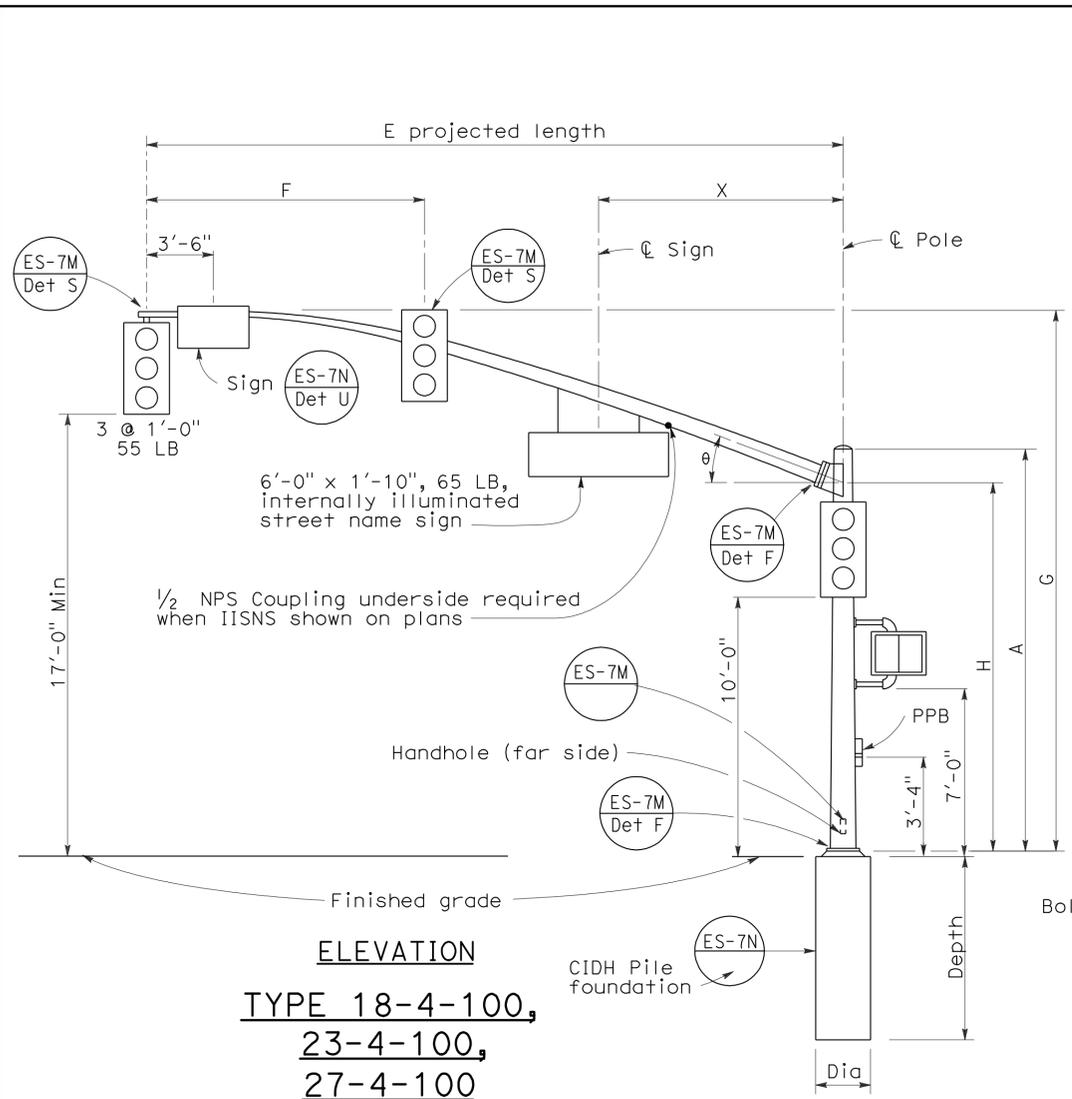
Pole Type	Load Case	Wind Velocity mph	POLE DATA				BASE PLATE DATA				Anchor Bolts Size	Luminaire Arm	Signal Arm	CIDH PILE FOUNDATION				
			A Height	Min OD		Thickness	Alternative Section		C	D1 Bolt Circle				Thickness	Diameter	Depth	Reinforced	
				Base	Top		B Length	Bottom										Top
16-2-100	2	100	18'-6"	10 3/4"	0.1793"	None	8"	6 5/8"	1'-6"	1'-5 1/2"	1 1/2"	2"φ x 42" x 6"	None	15'-0", 20'-0"	2'-6"	7'-2"	Yes	
17-2-100			30'-0"			10'-0"												6 5/8"
17A-2-100			35'-0"			15'-0"												5 15/16"
18-2-100			17'-0"			None												8 7/16"
19-2-100			30'-0"			10'-0"												6 5/8"
19A-2-100	35'-0"	15'-0"	5 15/16"	0.2391"	8"	5 5/8"												

□ Indicates arm length to be used unless otherwise noted on plans.

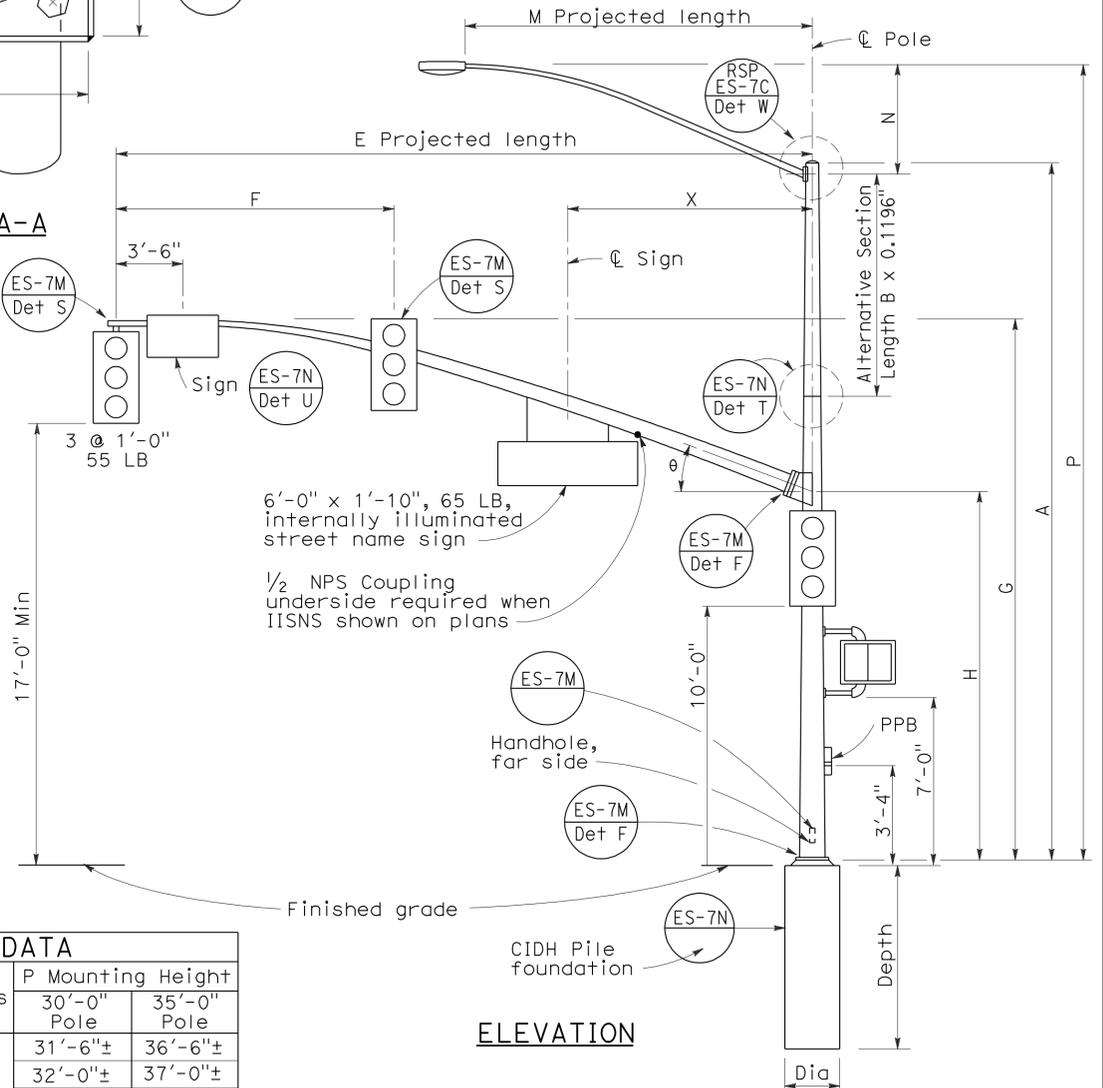
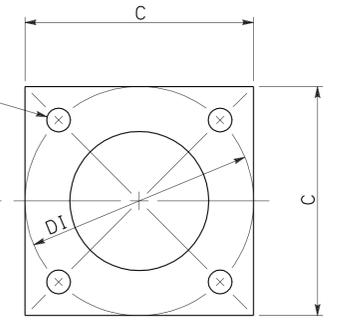
REVISED STANDARD PLAN RSP ES-7D

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
ELECTRICAL SYSTEMS
(SIGNAL AND LIGHTING STANDARD
CASE 2 ARM LOADING
WIND VELOCITY=100 MPH
ARM LENGTHS 15' TO 30')
 NO SCALE
 RSP ES-7D DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-7D
 DATED MAY 1, 2006 - PAGE 440 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP ES-7D



SIGNAL ARM CONNECTION DETAILS



ELEVATION

TYPE 19-4-100, 19A-4-100,
 24-4-100, 24A-4-100,
 26-4-100, 26A-4-100

E Projected Length	F Min Spacing	G Mounting Height	H	Min OD at Pole	Thickness	I Bolt Circle	HS Cap Screws	J Plate Size	K Arm P Thickness	L Pole P Thickness	θ	X Max
25'-0"	10'-0"	22'-8"±	16'-0"	7 5/16"	0.2391"	12"	1 1/4"-7NC-3"	1'-0"	1 1/4"	1 1/2"	23°	10'-6"
30'-0"	12'-0"	8"										
35'-0"	14'-0"	8 1/16"										
40'-0"	15'-0"	9 3/8"										
45'-0"	15'-0"	23'-8"±		10 1/4"		13 1/2"		1'-1 1/2"	1 1/2"	1 3/4"	15°	13'-0"

M Projected Length	N Rise	Min OD at Pole	Thickness	P Mounting Height	
				30'-0" Pole	35'-0" Pole
6'-0"	2'-0"±	3 1/4"	0.1196"	31'-6"±	36'-6"±
8'-0"	2'-6"±	3 1/2"		32'-0"±	37'-0"±
10'-0"	3'-3"±	3 7/8"		32'-9"±	37'-9"±
12'-0"	4'-3"±	3 7/8"		33'-9"±	38'-9"±
15'-0"	4'-9"±	4 1/4"		34'-3"±	39'-3"±

Pole Type	Load Case	Wind Velocity mph	POLE DATA						BASE PLATE DATA				Luminaire Arm	Signal Arm	CIDH PILE FOUNDATION			
			A Height	Min OD		Thickness	Alternative Section			C	DI Bolt Circle	Thickness			Anchor Bolts Size	Dia	Depth	Reinforced
				Base	Top		B Length	Bottom	Top									
18-4-100	4	100	17'-0"	12"	0.2391"	None	9 3/8"	8"	1'-6"	1'-6"	1 1/2"	2" Ø x 42" x 6"	3'-0"	9'-0"	Yes			
19-4-100			30'-0"													8"	None	8"
19A-4-100			35'-0"													7 5/16"	15'-0"	7 5/16"
23-4-100			17'-0"													9"	None	None
24-4-100			30'-0"	8"	10'-0"	8"												
24A-4-100			35'-0"	7 5/16"	15'-0"	7 5/16"												
26-4-100			30'-0"	8"	10'-0"	8 3/8"												
26A-4-100			35'-0"	7 5/16"	15'-0"	7 11/16"												
27-4-100			17'-0"	9 3/4"	None	None												

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
 (SIGNAL AND LIGHTING STANDARD
 CASE 4 ARM LOADING
 WIND VELOCITY=100 MPH
 ARM LENGTHS 25' TO 45')**
 NO SCALE

RSP ES-7F DATED OCTOBER 5, 2007 SUPERCEDES RSP ES-7F DATED NOVEMBER 17, 2006 AND STANDARD PLAN ES-7F DATED MAY 1, 2006 - PAGE 442 OF THE STANDARD PLANS BOOK DATED MAY 2006.

□ Indicates arm length to be used unless otherwise noted on plans.

2006 REVISED STANDARD PLAN RSP ES-7F

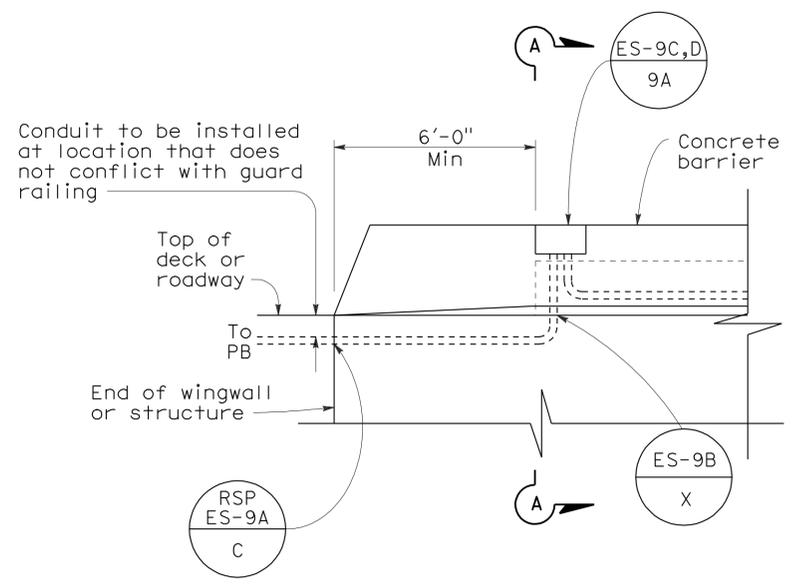
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	9.1/15.1	845	949

Jeffrey G. McRae
 REGISTERED ELECTRICAL ENGINEER
 October 5, 2007
 PLANS APPROVAL DATE

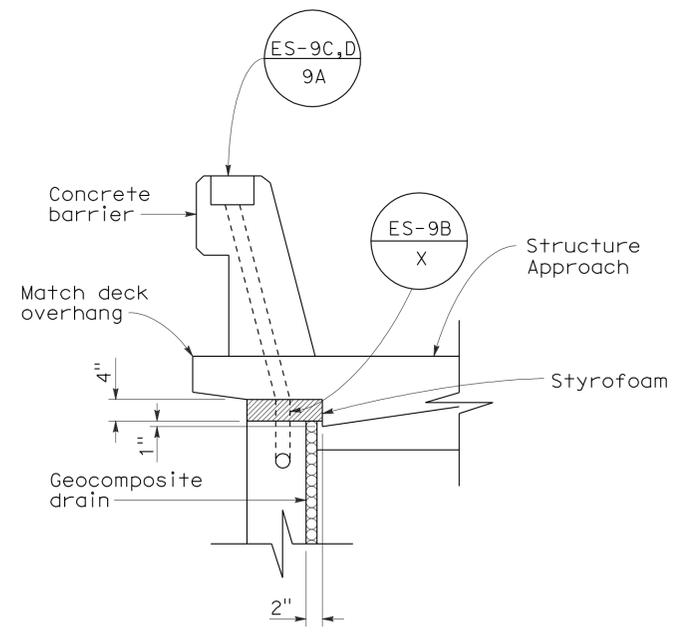
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To accompany plans dated 10-25-10

2006 REVISED STANDARD PLAN RSP ES-9A

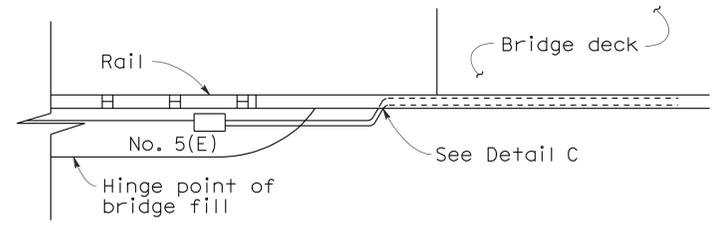


SIDEVIEW

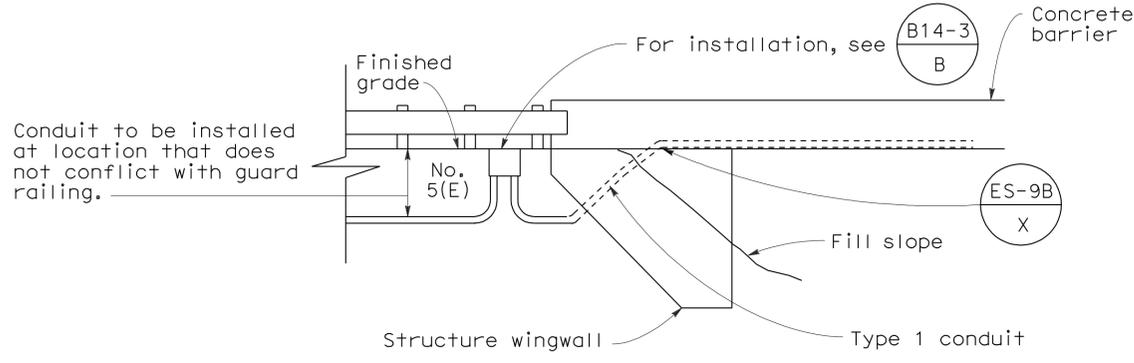


SECTION A-A

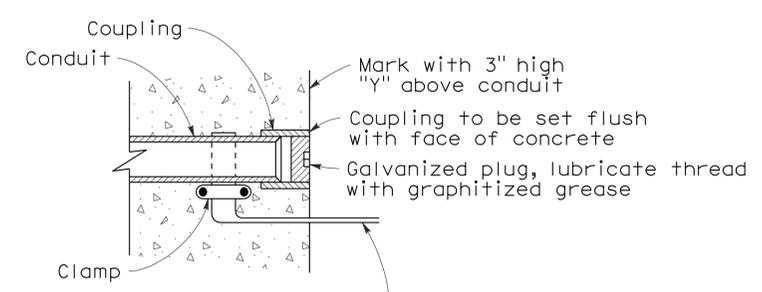
**DETAIL A
CONDUIT TERMINATION**



TOP VIEW



**SIDE VIEW
DETAIL I
CONDUIT TERMINATION**



**DETAIL C
CONDUIT TERMINATION**

Copper bonding strap install only at structure construction joint, extend at least 6" from face of concrete

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS
(ELECTRICAL DETAILS
STRUCTURE INSTALLATIONS)**

NO SCALE

RSP ES-9A DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-9A
DATED MAY 1, 2006 - PAGE 454 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-9A

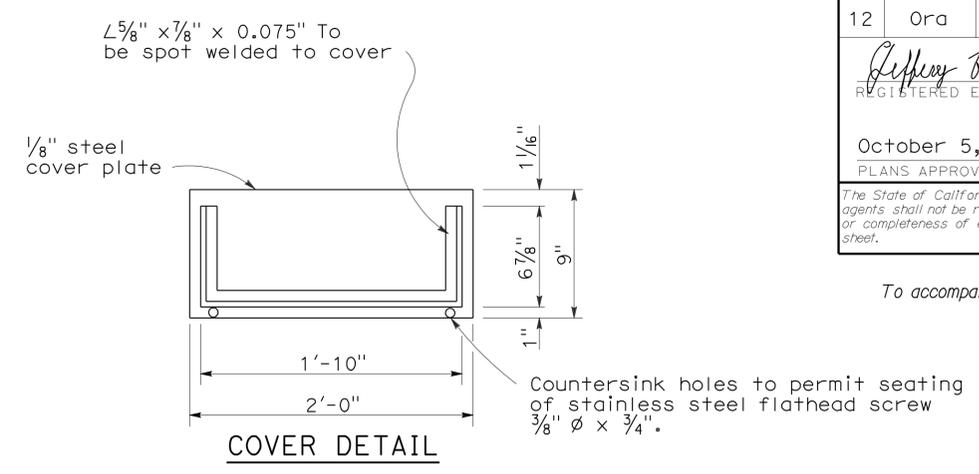
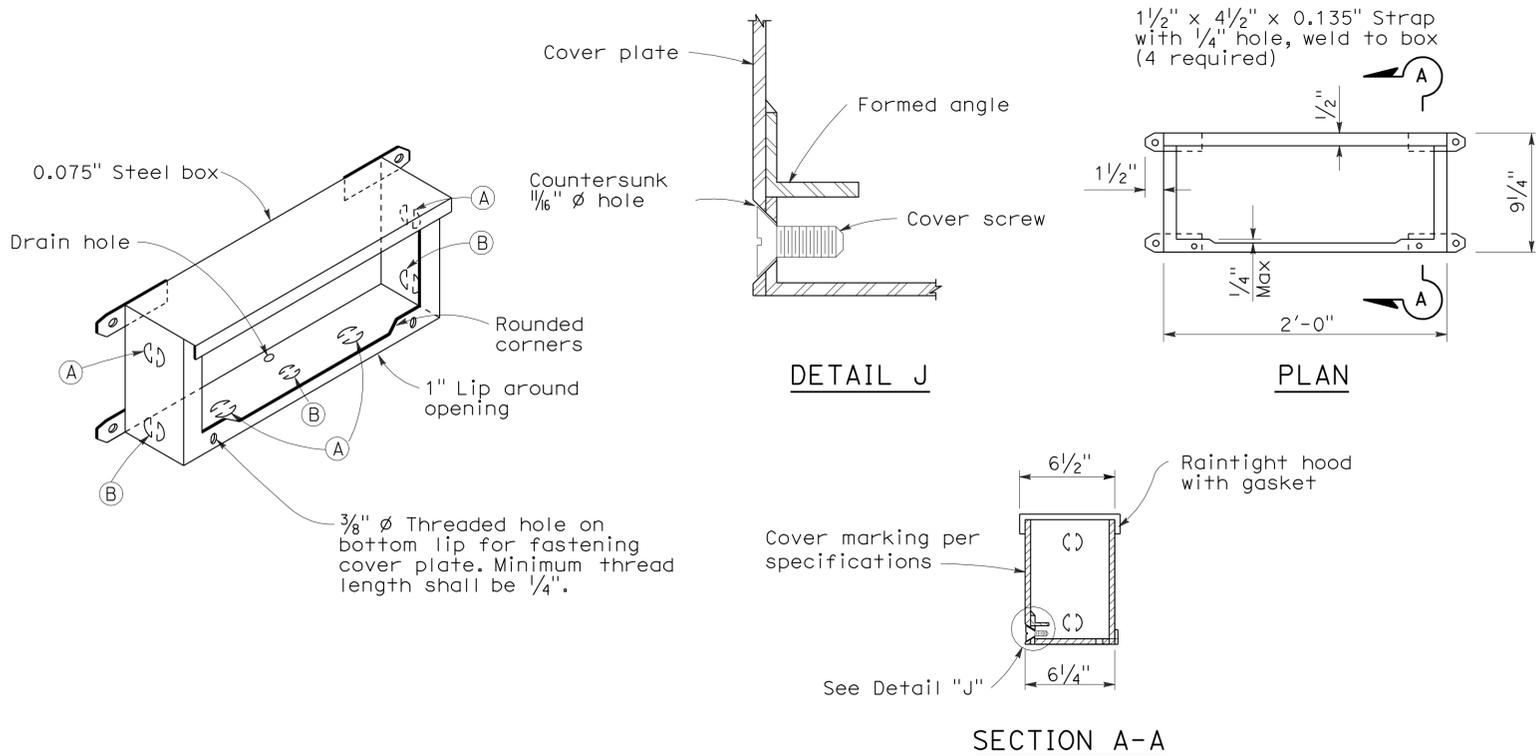
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	9.1/15.1	846	949

REGISTERED ELECTRICAL ENGINEER
Jeffery G. McRae
 No. E14512
 Exp. 6-30-08
 ELECTRICAL
 STATE OF CALIFORNIA

October 5, 2007
 PLANS APPROVAL DATE

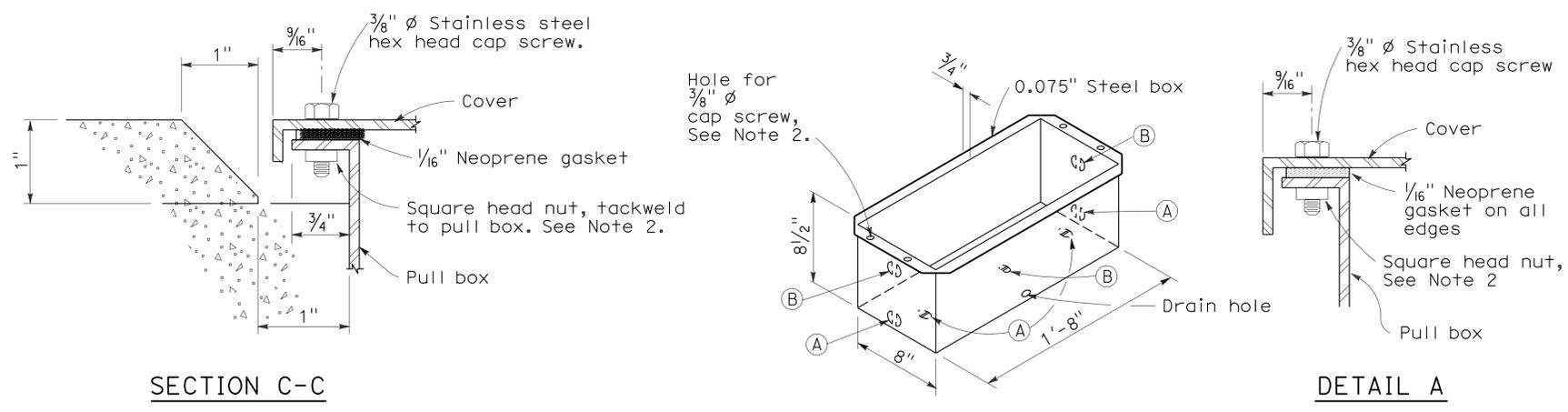
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 10-25-10



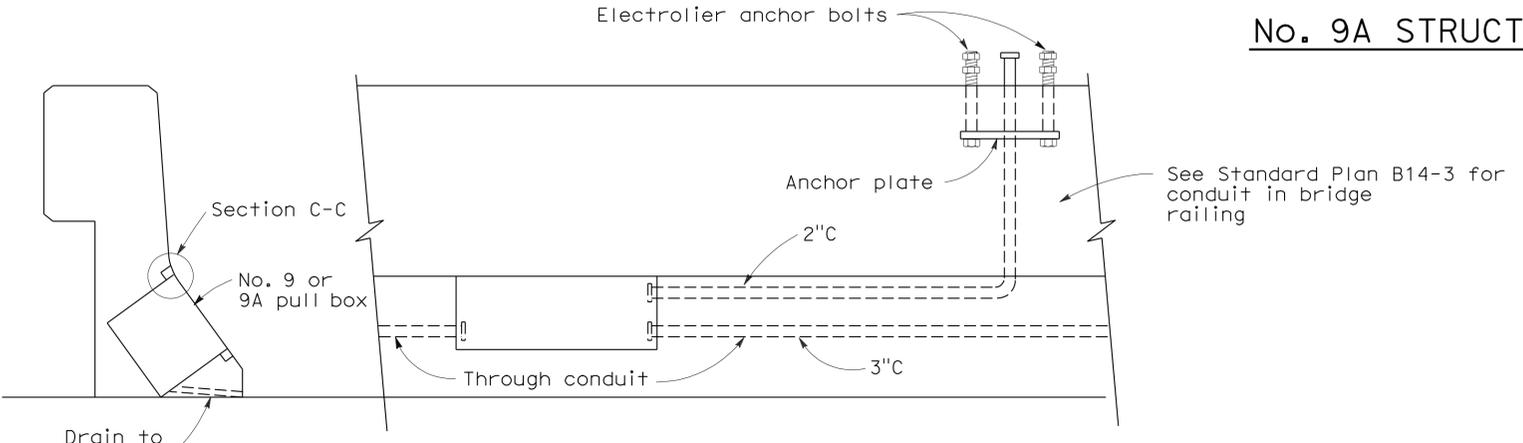
INSTALLATION NOTE:
 Box shall be parallel to top of railing. Close cover box during pouring with 1/4" plywood of sufficient size to provide 1:1 chamfer on 3 sides of cover. Upper edge of plywood shall fit against lower edge of raintight hood.

No. 9 STRUCTURE PULL BOX



- NOTES:** No. 9 and 9A Pull Box
- Corner joints shall be lapped and secured by spot welding or riveting.
 - Where cap screws are used to attach cover to box, either of the following methods of providing adequate threading may be used:
 - Tack weld square nut to bottom of flange (Total 4), or
 - Tack weld a 1/4" x 5/8" x 8" bar beneath flange (Total 2).
 - Pound knockouts flat after punching.
 - Multiple size knockouts shall not be permitted.
 - Pull box covers shall be marked as shown on Standard Plan ES-8.

No. 9A STRUCTURE PULL BOX



INSTALLATION IN SLOPING PARAPETS

For reinforcement in area of electrolier, see railing sheets. For electrolier anchor bolts, see Standard Plan ES-6B.

- KNOCKOUT SCHEDULE**
No. 9 AND 9A PULL BOX
- (A) 2"C, 1 each end, 2 on bottom.
 - (B) 3"C, 1 each end, 1 on bottom.

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
ELECTRICAL SYSTEMS
(ELECTRICAL DETAILS
STRUCTURE INSTALLATIONS)

NO SCALE
 RSP ES-9C DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-9C DATED MAY 1, 2006 - PAGE 456 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP ES-9C

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	9.1/15.1	847	949

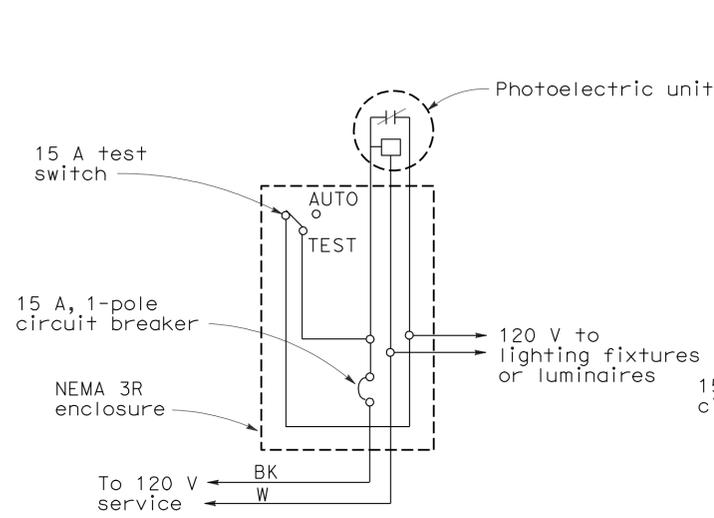
Jeffery G. McRae
 REGISTERED ELECTRICAL ENGINEER
 October 5, 2007
 PLANS APPROVAL DATE
 No. E14512
 Exp. 6-30-08
 ELECTRICAL
 STATE OF CALIFORNIA

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NOTES: (FOR LIGHTING AND SIGN ILLUMINATION CONTROL)

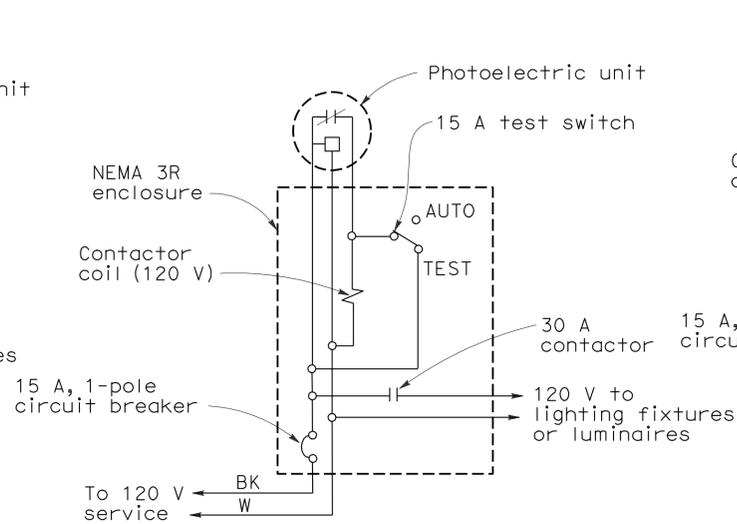
1. The ballast voltages of lighting fixtures and luminaires shall match line service voltages.
2. Voltage rating of photoelectric controls shall conform to the service voltage indicated on the plans.
3. Terminal strip shall be provided for wiring to fixtures.
4. Type SC1A, SC2A, SC3A controls are similar to Types SC1, SC2 and SC3 controls respectively except test switch and wiring are not required.

To accompany plans dated 10-25-10



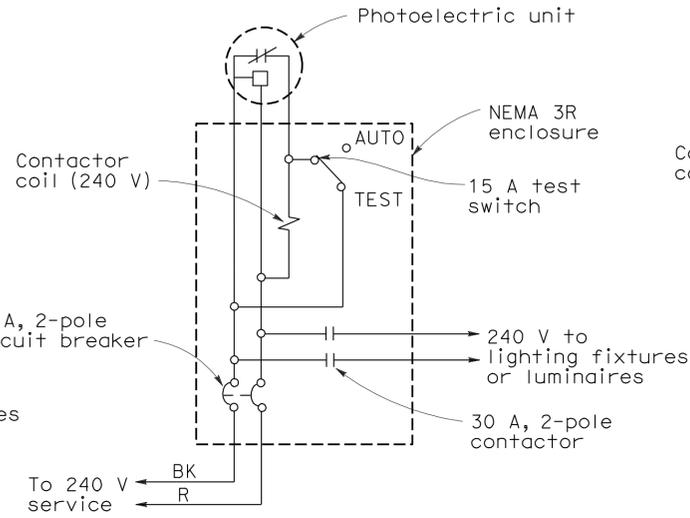
TYPE LC1 CONTROL

For 120 V unswitched circuit with no more than 800 W load.



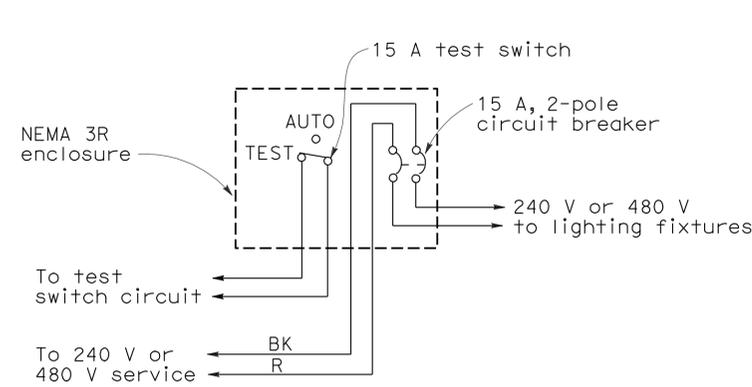
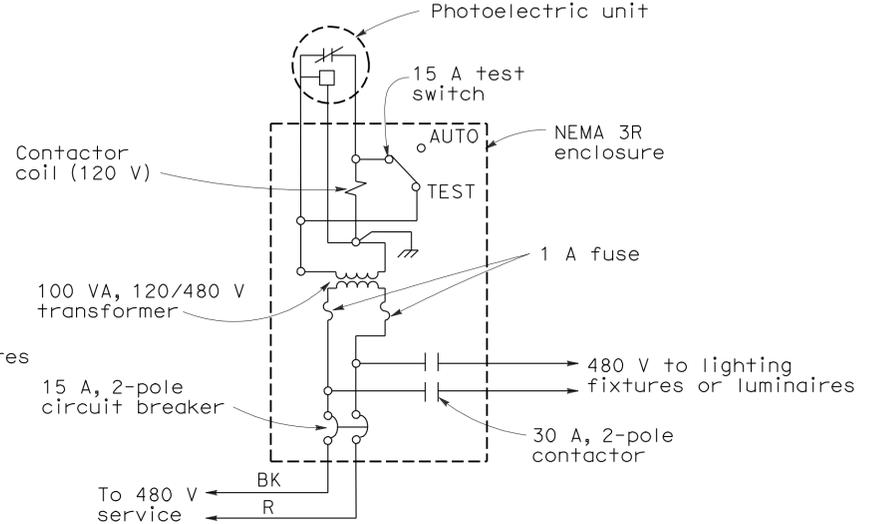
TYPE LC2 CONTROL

For 120 V unswitched circuit



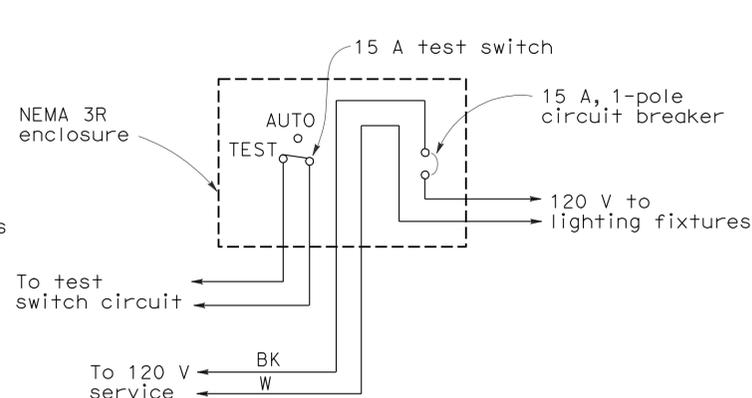
TYPE LC3 CONTROL

For 240 V and 480 V unswitched circuits



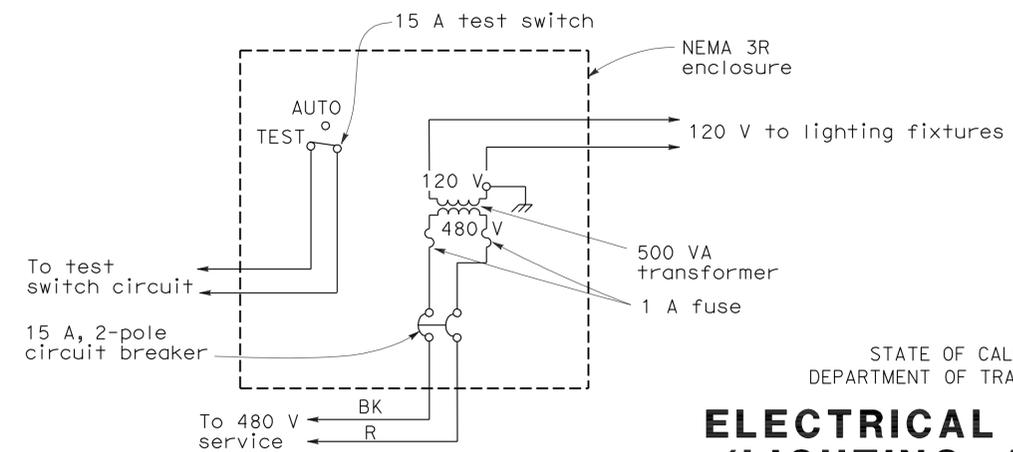
TYPE SC1 CONTROL

For 240 V or 480 V switched circuit, see Note 4 for Type SC1A



TYPE SC2 CONTROL

For 120 V switched circuit, see Note 4 for Type SC2A



TYPE SC3 CONTROL

For 480 V switched sign circuit, see Note 4 for Type SC3A

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
 (LIGHTING AND SIGN
 ILLUMINATION CONTROL)**

NO SCALE

RSP ES-15D DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-15D DATED MAY 1, 2006 - PAGE 472 OF THE STANDARD PLANS BOOK DATED MAY 2006.

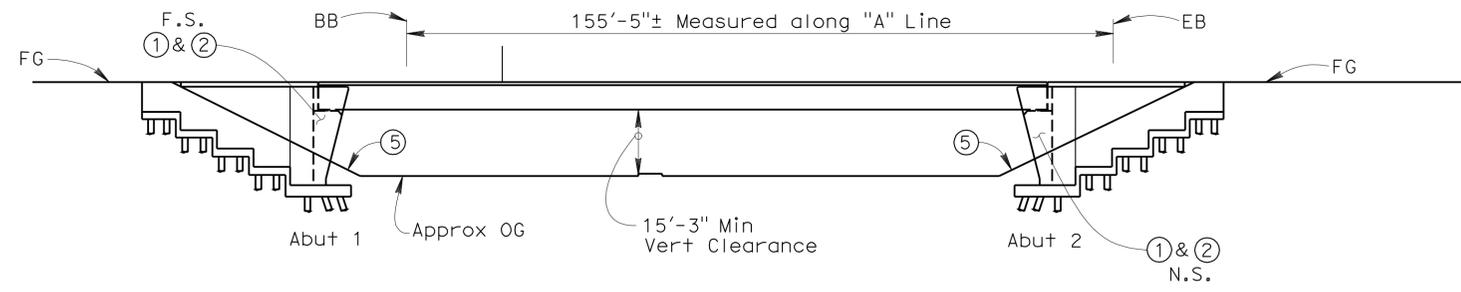
REVISED STANDARD PLAN RSP ES-15D

2006 REVISED STANDARD PLAN RSP ES-15D

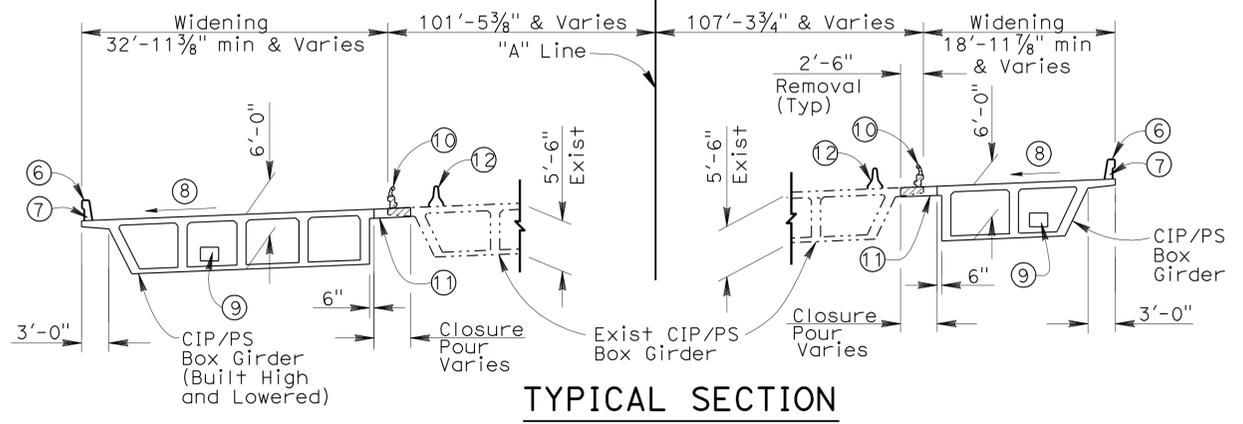
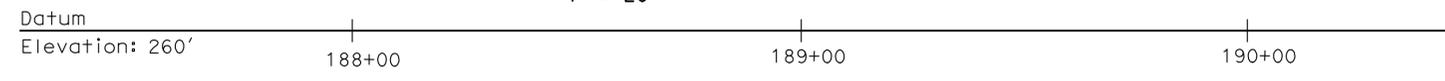
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	848	949

08-11-10
 REGISTERED CIVIL ENGINEER DATE
 10-25-10
 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.

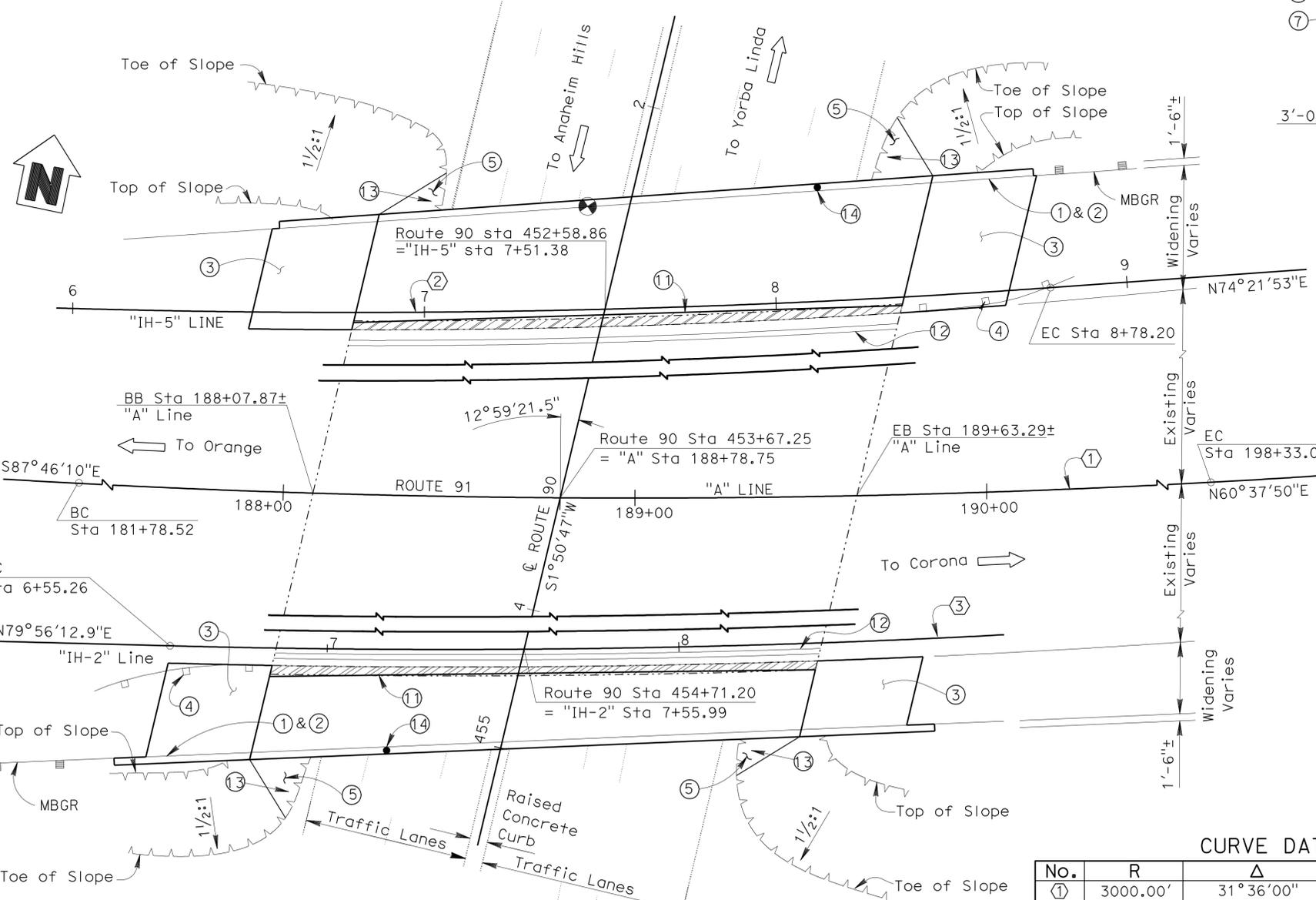
REGISTERED PROFESSIONAL ENGINEER
 WEI-KUNG HSIA
 No. C50210
 Exp. 06-30-11
 CIVIL
 STATE OF CALIFORNIA



ELEVATION
1" = 20'



TYPICAL SECTION
1" = 10'



PLAN
1" = 20'

QUANTITIES

BRIDGE REMOVAL (PORTION), LOCATION A	LUMP SUM
STRUCTURE EXCAVATION (BRIDGE)	630 CY
STRUCTURE EXCAVATION (RETAINING WALL)	432 CY
STRUCTURE BACKFILL (BRIDGE)	575 CY
STRUCTURE BACKFILL (RETAINING WALL)	335 CY
FURNISH PILING (CLASS 90)	2,275 LF
DRIVE PILE (CLASS 90)	40 EA
FURNISH PILING (CLASS 140)	3,408 LF
DRIVE PILE (CLASS 140)	69 EA
PRESTRESSING CAST-IN-PLACE CONCRETE	LUMP SUM
STRUCTURAL CONCRETE, BRIDGE FOOTING	133 CY
STRUCTURAL CONCRETE, BRIDGE	975 CY
STRUCTURAL CONCRETE, RETAINING WALL	120 CY
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE N)	138 CY
JACKING SUPERSTRUCTURE	LUMP SUM
DRILL AND BOND DOWEL	295 LF
JOINT SEAL (MR 1")	125 LF
BAR REINFORCING STEEL (BRIDGE)	276,500 LB
BAR REINFORCING STEEL (RETAINING WALL)	15,900 LB
WELDED STEEL PIPE CASING (BRIDGE)	152 LF
SLOPE PAVING (MASONRY BLOCK)	2,635 SQFT
CONCRETE BARRIER (TYPE 736)	450 LF
8" CORRUGATED STEEL PIPE DOWNDRAIN (.064" THICK)	164 LF

NOTES:

- ① Paint "Br. No. 55-0474R/L"
- ② Paint "ROUTE 91/90 SEP" & year completed
- ③ Structure approach Type N(30S)
- ④ Existing MBGR to be removed
- ⑤ Slope Paving
- ⑥ Concrete Barrier Type 736
- ⑦ Fiber Optics conduits
- ⑧ Match Exist cross slope
- ⑨ Future Utility opening
- ⑩ Remove Exist Barrier Railing and Overhang (Portion)
- ⑪ Closure Pour
- ⑫ Temporary Rail Type K, see "Road Plans"
- ⑬ Match Existing Foreslope
- ⑭ Barrier Rail Mounted Pole, see Road Plans

LEGEND

- New Structure
- - - Existing Structure
- ▨ Bridge Removal Portion
- Direction of Traffic Flow
- Point of Minimum Vertical Clearance

CURVE DATA

No.	R	Δ	T	L
①	3000.00'	31°36'00"	848.91'	1654.57'
②	2800.00'	17°58'14"	442.74'	878.21'
③	3000.00'	6°44'06"	176.53'	352.65'

X DESIGN ENGINEER	DESIGN BY Mamunur Rahman CHECKED Cesar Sanchez	LOAD & RESISTANCE FACTOR DESIGN BY Mamunur Rahman CHECKED Cesar Sanchez	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE CHECKED Cesar Sanchez	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 19	BRIDGE NO. 55-0474RL	ROUTE 91/90 SEPARATION (WIDEN) GENERAL PLAN
	DETAILS BY Hengameh Mahboobi / HB CHECKED Mamunur Rahman	LAYOUT BY Mamunur Rahman CHECKED Cesar Sanchez	POST MILE 11.53				
	QUANTITIES BY Rui Wang CHECKED Barbara McGahey	SPECIFICATIONS BY X	PLANS AND SPECS COMPARED X				

STRUCTURES DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 10/25/05) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS CU 12 EA OG3301 DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES: 09-28-09, 10-26-10, 10-11-10, 06-24-10, 06-29-10, 07-27-10, 08-11-10, 05-11-10, 10-01-10

SHEET 1 OF 26

GENERAL NOTES - LOAD AND RESISTANCE FACTOR DESIGN

DESIGN: AASHTO LRFD BRIDGE SPECIFICATIONS 4TH EDITION AND CALTRANS AMENDMENTS PREFACE DATED DECEMBER 2008

SEISMIC DESIGN: Caltrans Seismic Design Criteria (SDC), Version 1.4 June 2006

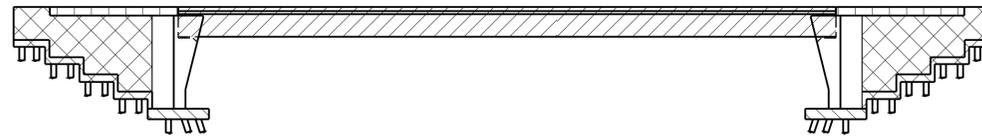
DEAD LOAD: Includes 35 psf for future wearing surface

LIVE LOADING: HL-93 and Permit design load.

SEISMIC LOADING: Soil profile: Shear wave velocity $V_{s30} = 260$ m/sec for the top 100 feet of soil
Moment Magnitude: $M_{max} = \text{Peak Ground Acceleration } 0.57g$
(See Acceleration response spectra)

REINFORCED CONCRETE: ASTM A706
 $f_y = 60$ ksi
 $f'_c = \text{See "Concrete Strength and Type Limits"}$

PRESTRESSED CONCRETE: See "Prestressing Notes" on "GIRDER LAYOUT No. 1 & 2" sheets



Abutment 1

Abutment 2

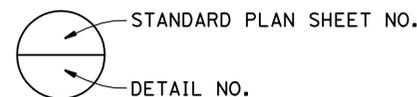
CONCRETE STRENGTH AND TYPE LIMITS

No Scale

- Structural Concrete, Bridge (See "Prestressing Notes" on "GIRDER LAYOUT No. 1 & 2" sheets)
- Structural Concrete, Bridge
- Structural Concrete, Bridge Footing
- Structural Concrete, Approach Slab (Type N)
- Structural Concrete, Retaining Wall

STANDARD PLANS DATED MAY 2006

- A10A ACRONYMS AND ABBREVIATIONS (SHEET 1 OF 2)
- A10B ACRONYMS AND ABBREVIATIONS (SHEET 2 OF 2)
- A10C SYMBOLS (SHEET 1 OF 2)
- A10D SYMBOLS (SHEET 2 OF 2)
- A62B LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL BRIDGE SURCHARGE AND WALL
- A62C LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL BRIDGE
- B0-1 BRIDGE DETAILS
- B0-3 BRIDGE DETAILS
- B0-5 BRIDGE DETAILS
- B0-13 BRIDGE DETAILS
- B2-5 PILE DETAILS, CLASS 90 AND CLASS 140
- B7-1 BOX GIRDER DETAILS
- B7-10 UTILITY OPENING BOX GIRDER
- B8-5 CAST-IN-PLACE PRESTRESSED GIRDER DETAILS
- B11-56 CONCRETE BARRIER TYPE 736
- B14-3 COMMUNICATION AND SPRINKLER CONTROL CONDUITS (CONDUIT LESS THAN 4")
- B14-4 WATER SUPPLY LINE (BRIDGE)(PIPE SIZE LESS THAN 4")
- B14-5 WATER SUPPLY LINE (DETAILS)(PIPE SIZES LESS THAN 4")
- ES-9A ELECTRICAL SYSTEMS (ELECTRICAL DETAILS STRUCTURE INSTALLATIONS)
- ES-9B ELECTRICAL SYSTEMS (ELECTRICAL DETAILS STRUCTURE INSTALLATIONS)
- ES-9C ELECTRICAL SYSTEMS (ELECTRICAL DETAILS STRUCTURE INSTALLATIONS)
- ES-9D ELECTRICAL SYSTEMS (ELECTRICAL DETAILS STRUCTURE INSTALLATIONS)
- T3 TEMPORARY RAILING (TYPE K)



REVISED STANDARD PLANS DATED MAY 2009

RSP B6-21 JOINT SEALS (MAXIMUM MOVEMENT RATING = 2")

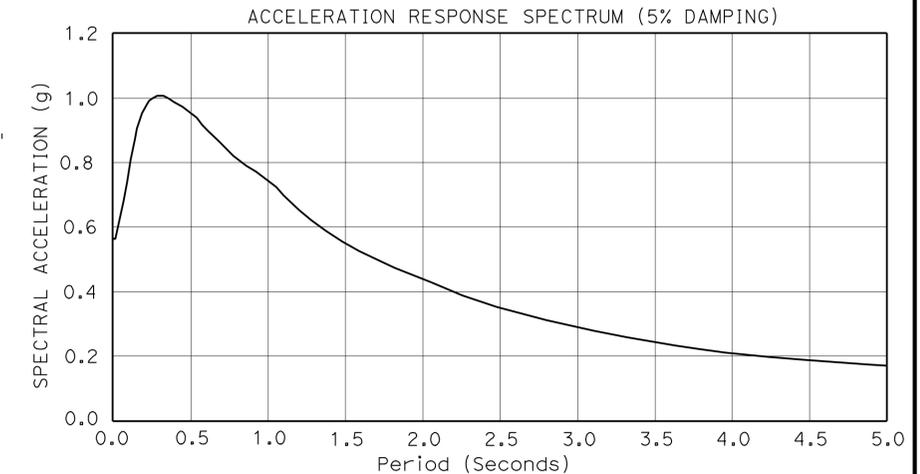
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	849	949

08-10-10
REGISTERED CIVIL ENGINEER DATE

10-25-10
PLANS APPROVAL DATE

WEI-KUNG HSIA
No. C50210
Exp. 06-30-11
CIVIL
STATE OF CALIFORNIA

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ARS CURVE INDEX TO PLANS

SHT NO.	TITLE
1	GENERAL PLAN
2	INDEX TO PLANS
3	FOUNDATION PLAN
4	ABUTMENT LAYOUT (LEFT WIDENING)
5	ABUTMENT LAYOUT (RIGHT WIDENING)
6	ABUTMENT DETAILS NO. 1
7	ABUTMENT DETAILS NO. 2
8	ABUTMENT DETAILS NO. 3
9	ABUTMENT DETAILS NO. 4
10	ABUTMENT DETAILS NO. 5
11	TYPICAL SECTION
12	GIRDER LAYOUT (LEFT WIDENING)
13	GIRDER LAYOUT (RIGHT WIDENING)
14	GIRDER DETAILS NO. 1
15	GIRDER DETAILS NO. 2
16	BRIDGE JACKING DETAILS
17	STRUCTURE APPROACH DRAINAGE DETAILS
18	STRUCTURE APPROACH TYPE N(30S)
19	SLOPE PAVING-FULL SLOPE
20	LOG OF TEST BORING 1 of 7
21	LOG OF TEST BORING 2 of 7
22	LOG OF TEST BORING 3 of 7
23	LOG OF TEST BORING 4 of 7
24	LOG OF TEST BORING 5 of 7
25	LOG OF TEST BORING 6 of 7
26	LOG OF TEST BORING 7 of 7

LOCATION	PILE TYPE	NOMINAL RESISTANCE (kips)		DESIGN TIP ELEVATION (ft)	SPECIFIED TIP ELEVATION (ft)	NOMINAL DRIVING RESISTANCE (kips)
		COMPRESSION	TENSION			
Abut 1 Left	Class 140 (Alt X)	280	0	256 (a), 262 (b), na* (c)	256.0	280.0
Abut 2 Left	Class 140 (Alt X)	280	0	253 (a), 255 (b), na* (c)	253.0	280.0
Abut 1 Right	Class 140 (Alt X)	280	0	254 (a), 256 (b), na* (c)	254.0	280.0
Abut 2 Right	Class 140 (Alt X)	280	0	254 (a), 255 (b), na* (c)	254.0	280.0

- NOTES:**
- The tip elevations shown above are for Class 140 (12 inch square) driven precast concrete piles.
 - Design tip elevations presented above were estimated based on the following requirements:
(a) Compression, (b) Settlement and (c) Lateral Load.
 - Design tip elevation for Lateral Load will be provided by Structure Design.

LOCATION	PILE TYPE	NOMINAL RESISTANCE (kips)		DESIGN TIP ELEVATION (ft)	SPECIFIED TIP ELEVATION (ft)	NOMINAL DRIVING RESISTANCE (kips)
		COMPRESSION	TENSION			
Abut 1 Left	Class 90 (Alt X)	150	0	262.0	262.0	150
Abut 2 Left	Class 90 (Alt X)	150	0	255.0	255.0	150
Abut 1 Right	Class 90 (Alt X)	150	0	256.0	256.0	150
Abut 2 Right	Class 90 (Alt X)	150	0	255.5	255.5	150

- NOTES:**
- The tip elevations shown above are for Class 90 (Alternative X) driven precast concrete piles.
 - Design tip elevations presented above was estimated only for compression capacity.

DESIGN	BY Mamunur Rahman	CHECKED Cesar Sanchez
DETAILS	BY Hemant Barbhaiya	CHECKED Cesar Sanchez
QUANTITIES	BY Rui Wang	CHECKED Barbara McGahey

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 19

BRIDGE NO.	55-0474R/L
POST MILE	11.53

ROUTE 91/90 SEPERATION (WIDEN)

INDEX TO PLANS

DATE PLOTTED => 16-DEC-2010 USERNAME => HSTFK TIME PLOTTED => 17:02

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Oran	91	9.1/15.1	850	949

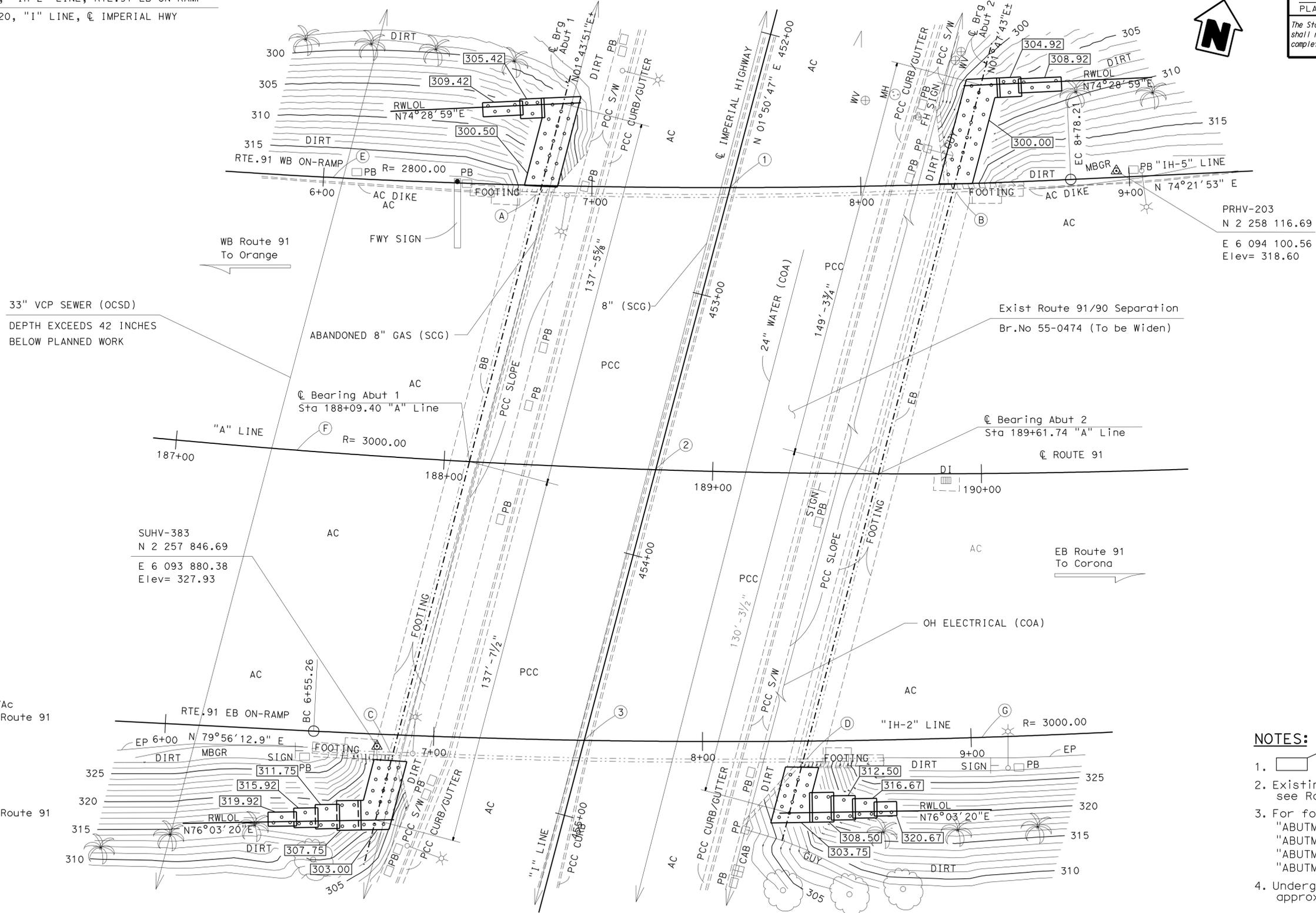
REGISTERED CIVIL ENGINEER DATE X
 10-25-10
 PLANS APPROVAL DATE
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WEI-KUNG HSIA
 No. C50210
 Exp. 06-30-11
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- ① Sta 7+51.38, "IH-5" LINE, RTE.91 WB ON-RAMP =
- Sta 452+58.86, "I" LINE, C IMPERIAL HWY
- Sta 188+78.75, "A" LINE, C ROUTE 91 =
- ② Sta 453+67.24, "I" LINE, C IMPERIAL HWY
- Sta 7+55.99, "IH-2" LINE, RTE.91 EB ON-RAMP =
- ③ Sta 454+71.20, "I" LINE, C IMPERIAL HWY

No.	R	Δ	T	L
(E)	2800.00	17°58'14"	442.74	878.21
(F)	3000.00	31°36'00"	848.91	1654.57
(G)	3000.00	06°44'06"	176.53	352.65

- BRIDGE LOCATION (55-0474)
- (A) 100.08 Ft Lt C Route 91, "A1" Line, Sta 188+29.21, Elev= 319.72±
 - (B) 104.51 Ft Lt C Route 91, "A1" Line, Sta 189+91.21, Elev= 319.47±
 - (C) 109.25 Ft Rt C Route 91, "A1" Line, Sta 187+86.60, Elev= 328.00±
 - (D) 106.13 Ft Rt C Route 91, "A1" Line, Sta 189+36.50, Elev= 327.96±



- NOTES:**
- Indicates Bottom of Footing Elevation.
 - Existing contours shown, for final contours, see Road Plans.
 - For footing dimensions and pile layout, see "ABUTMENT LAYOUT (LEFT BRIDGE)", "ABUTMENT LAYOUT (RIGHT BRIDGE)", "ABUTMENT DETAILS NO.1" and "ABUTMENT DETAILS NO.2" sheets.
 - Underground utilities as shown are approximate. See Road Plans for details.

SURVEY CONTROL
 SUHV-383
 Fd Pk Nail/Tin/Ac
 107.57 Ft Rt C Route 91
 Sta 187+81.84
 N 2 257 846.69
 E 6 093 880.38
 Elev= 327.93
 PRHV-203
 Fd Chzl. X
 111.53 Ft Lt C Route 91
 Sta 190+53.17
 N 2 258 116.69
 E 6 094 100.56
 Elev= 318.60

PRELIMINARY INVESTIGATION SECTION				DESIGN BY MAMUNUR RAHMAN	CHECKED CHARLES LOMICKA	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 19	BRIDGE NO. 55-0474	ROUTE 91/90 SEPARATION (WIDEN) FOUNDATION PLAN					
SCALE VERT. DATUM NAVD88	PHOTOGRAMMETRY AS OF: X	DETAILS BY HENGAMEH MAHBOOBI	CHECKED MAMUNUR RAHMAN	POST MILE 11.53										
1"=20'	HORIZ. DATUM NAD83 (1991.35)	QUANTITIES BY CHARLES LOMICKA	CHECKED B. MCGAHEY/C. SANCHEZ											
STRUCTURES FOUNDATION PLAN SHEET (ENGLISH) (REV. 10/25/05)				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		CU 12-209 EA 0G3301	DISREGARD PRINTS BEARING EARLIER REVISION DATES	<table border="1"> <tr> <th>REVISION DATES</th> <th>SHEET</th> <th>OF</th> </tr> <tr> <td>11/14/09 05/28/10 05/28/10 06/21/10 06/21/10 06/21/10 06/21/10 07/21/10 10/06/10</td> <td>3</td> <td>26</td> </tr> </table>	REVISION DATES	SHEET	OF	11/14/09 05/28/10 05/28/10 06/21/10 06/21/10 06/21/10 06/21/10 07/21/10 10/06/10	3	26
REVISION DATES	SHEET	OF												
11/14/09 05/28/10 05/28/10 06/21/10 06/21/10 06/21/10 06/21/10 07/21/10 10/06/10	3	26												

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Orca	91	9.1/15.1	851	949

REGISTERED CIVIL ENGINEER DATE 08-10-10
 WEI-KUNG HSIA
 No. C50210
 Exp. 06-30-11
 CIVIL
 STATE OF CALIFORNIA
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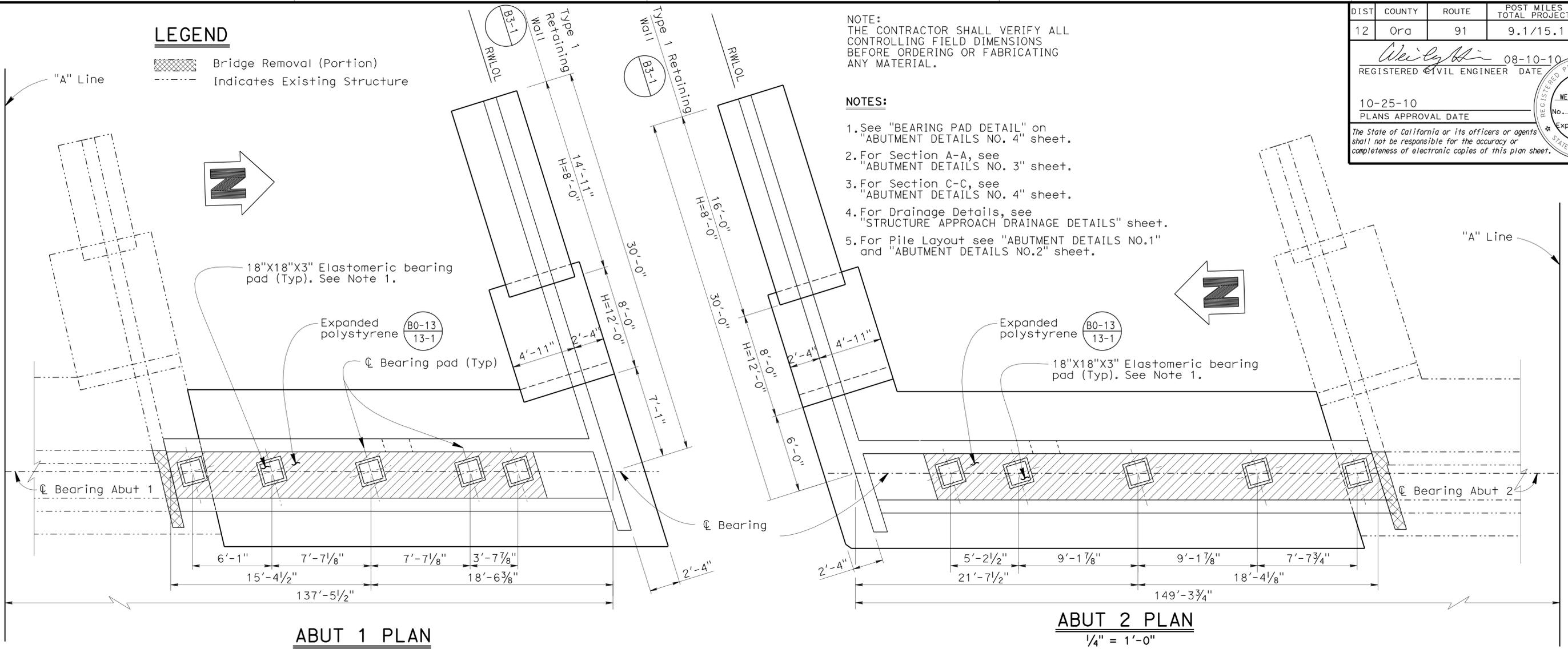
LEGEND

- Bridge Removal (Portion)
- Indicates Existing Structure

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

NOTES:

- See "BEARING PAD DETAIL" on "ABUTMENT DETAILS NO. 4" sheet.
- For Section A-A, see "ABUTMENT DETAILS NO. 3" sheet.
- For Section C-C, see "ABUTMENT DETAILS NO. 4" sheet.
- For Drainage Details, see "STRUCTURE APPROACH DRAINAGE DETAILS" sheet.
- For Pile Layout see "ABUTMENT DETAILS NO.1" and "ABUTMENT DETAILS NO.2" sheet.

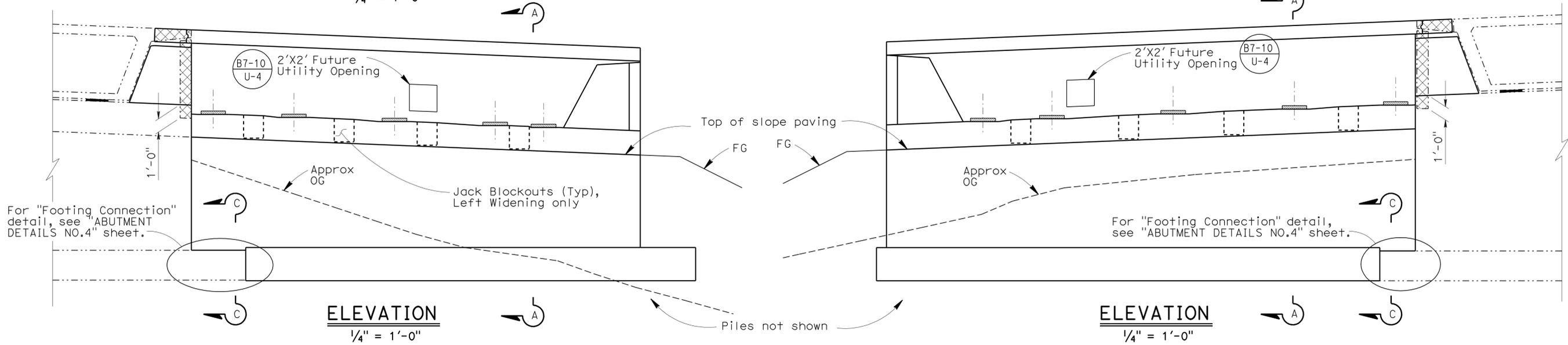


ABUT 1 PLAN

1/4" = 1'-0"

ABUT 2 PLAN

1/4" = 1'-0"



ELEVATION

1/4" = 1'-0"

ELEVATION

1/4" = 1'-0"

DESIGN	BY MAMUNUR RAHMAN	CHECKED CHARLES LOMICKA
DETAILS	BY HENGAMEH MAHBOOBI	CHECKED MAMUNUR RAHMAN
QUANTITIES	BY CHARLES LOMICKA	CHECKED BARBARA MCGAHEY

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 19

BRIDGE NO.	55-0474RL
POST MILE	11.53

ROUTE 91 / 90 SEPARATION (WIDEN)
ABUTMENT LAYOUT (LEFT WIDENING)



CU 12
EA OG3301

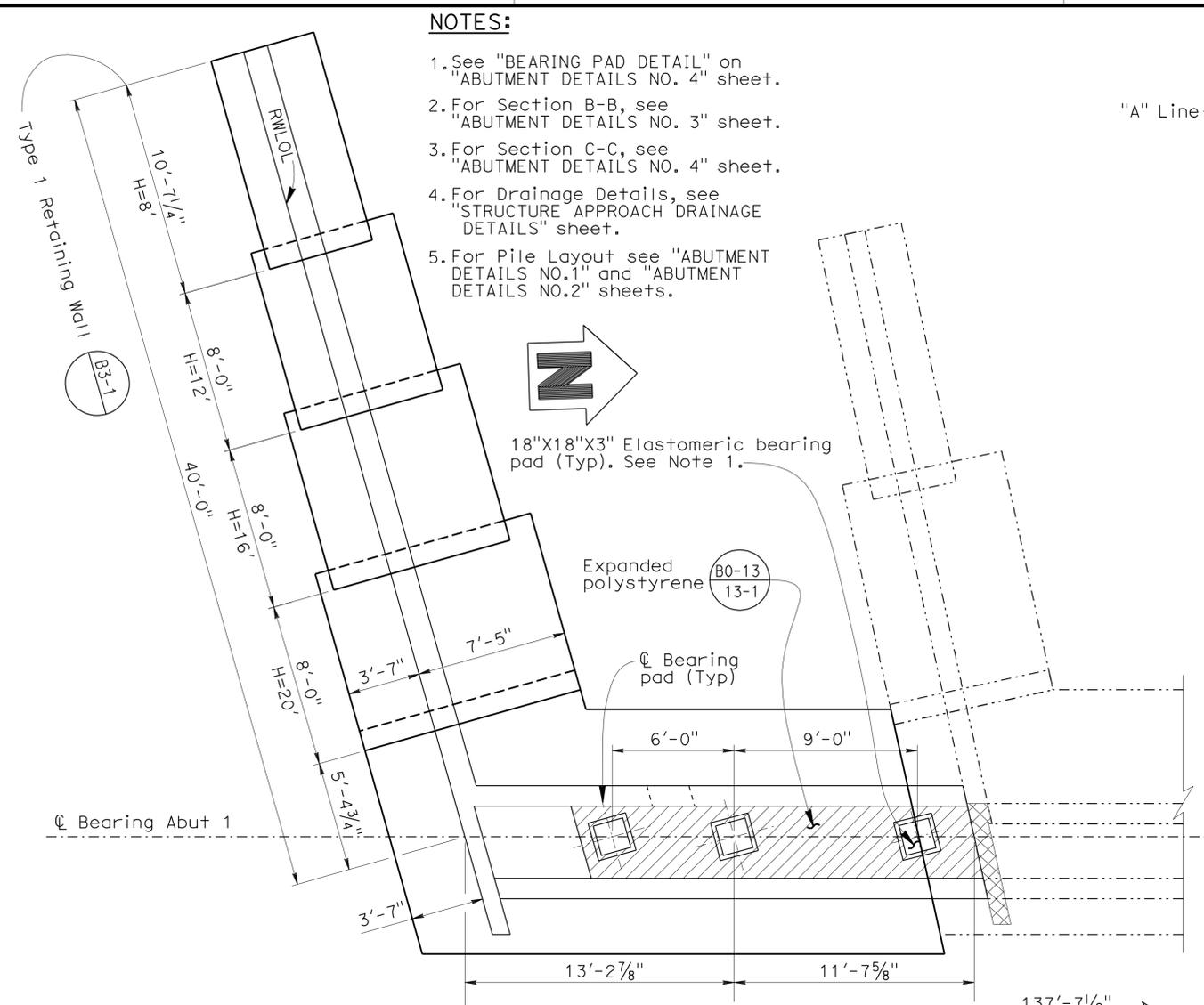
DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
03-09-10 10-06-10 06-01-10 06-29-10 07-09-10 07-29-10 08-12-10 10-01-10	4	26

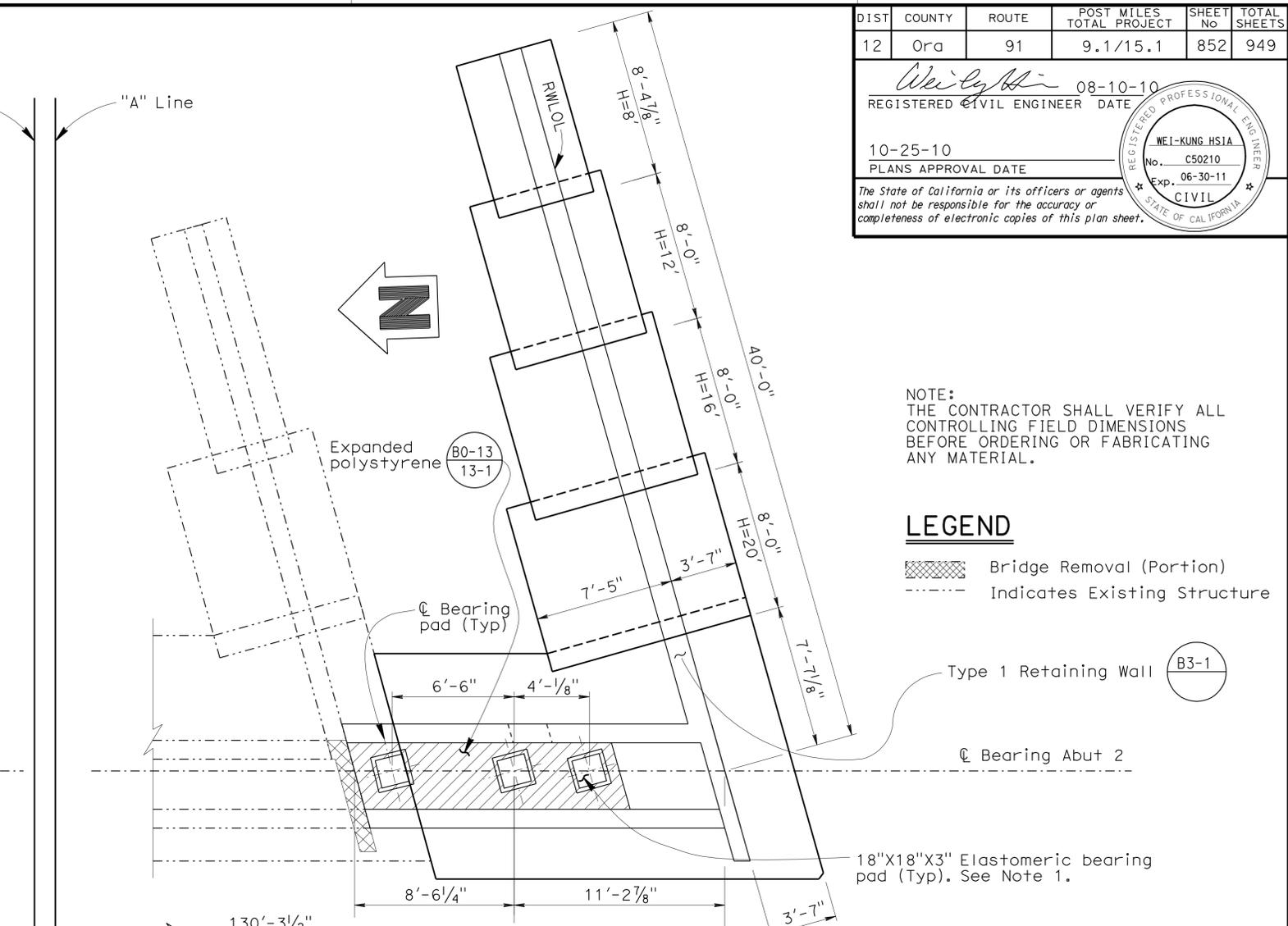
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	852	949
<i>Wei-Kung Hsia</i> 08-10-10 REGISTERED CIVIL ENGINEER DATE			REGISTERED PROFESSIONAL ENGINEER WEI-KUNG HSIA No. C50210 Exp. 06-30-11 CIVIL STATE OF CALIFORNIA		
10-25-10 PLANS APPROVAL DATE					
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NOTES:

1. See "BEARING PAD DETAIL" on "ABUTMENT DETAILS NO. 4" sheet.
2. For Section B-B, see "ABUTMENT DETAILS NO. 3" sheet.
3. For Section C-C, see "ABUTMENT DETAILS NO. 4" sheet.
4. For Drainage Details, see "STRUCTURE APPROACH DRAINAGE DETAILS" sheet.
5. For Pile Layout see "ABUTMENT DETAILS NO.1" and "ABUTMENT DETAILS NO.2" sheets.



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

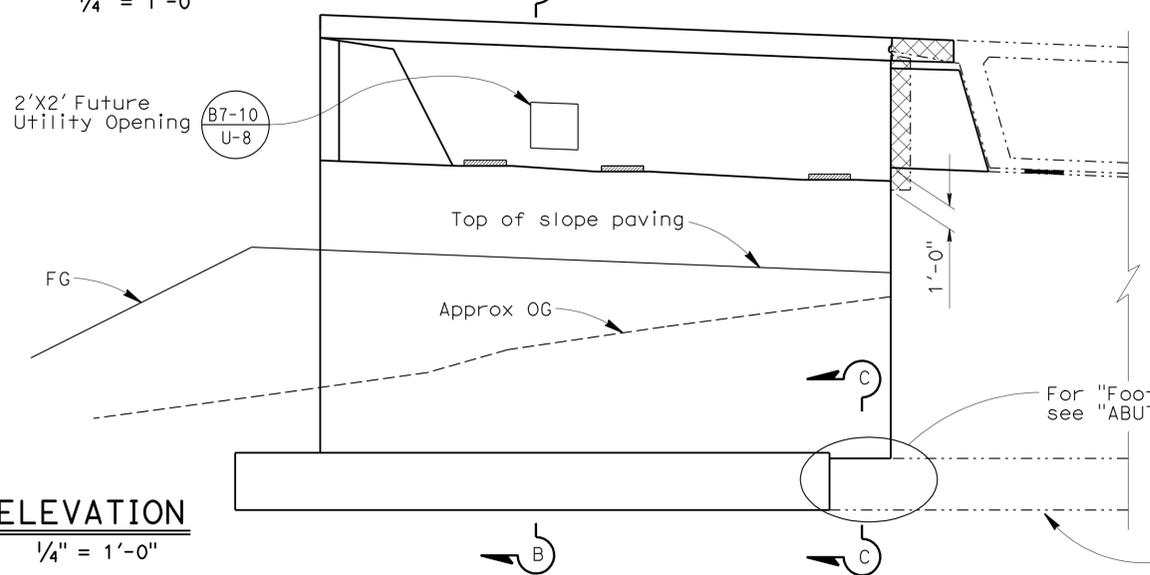


ABUT 2 PLAN
1/4" = 1'-0"

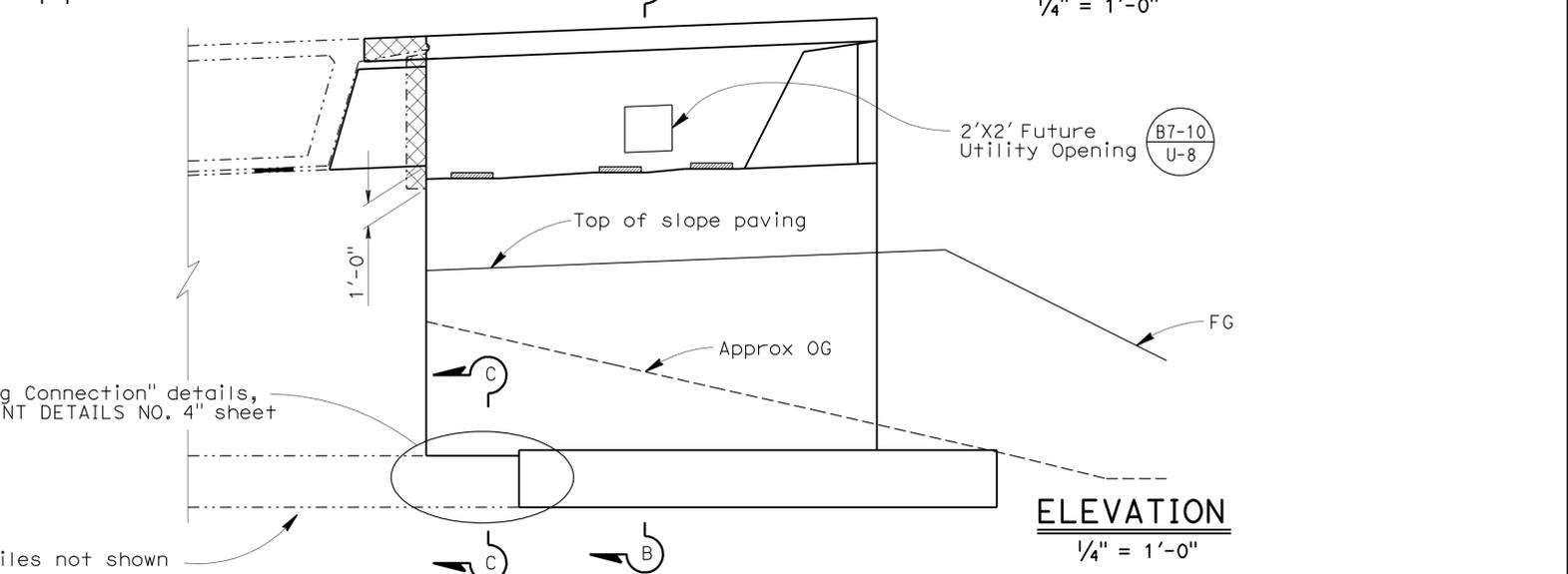
NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

LEGEND

- Bridge Removal (Portion)
- Indicates Existing Structure
- Type 1 Retaining Wall



ELEVATION
1/4" = 1'-0"



ELEVATION
1/4" = 1'-0"

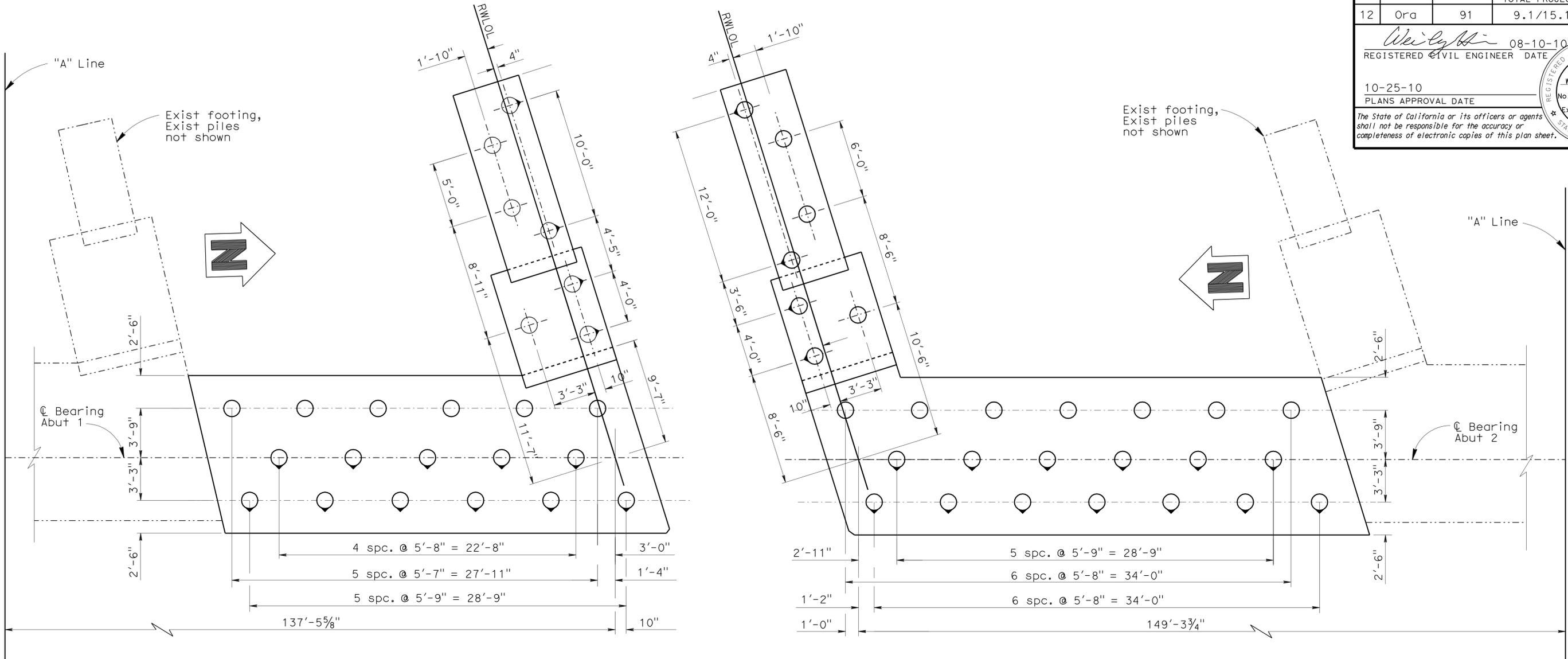
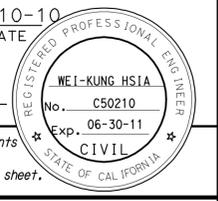
For "Footing Connection" details, see "ABUTMENT DETAILS NO. 4" sheet

Piles not shown

DESIGN BY MAMUNUR RAHMAN CHECKED CHARLES LOMICKA DETAILS BY HENGAMEH MAHBOOBI CHECKED MAMUNUR RAHMAN QUANTITIES BY CHARLES LOMICKA CHECKED BARBARA MCGAHEY	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 19	BRIDGE NO. 55-0474RL	ROUTE 91 / 90 SEPARATION (WIDEN) ABUTMENT LAYOUT (RIGHT WIDENING)
			POST MILE 11.53	
			REVISION DATES 03-09-10 10-01-10 10-06-10 06-22-10 06-28-10 07-09-10 07-27-10 08-12-10	
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	CU 12 EA OG3301	DISREGARD PRINTS BEARING EARLIER REVISION DATES	SHEET 5 OF 26	

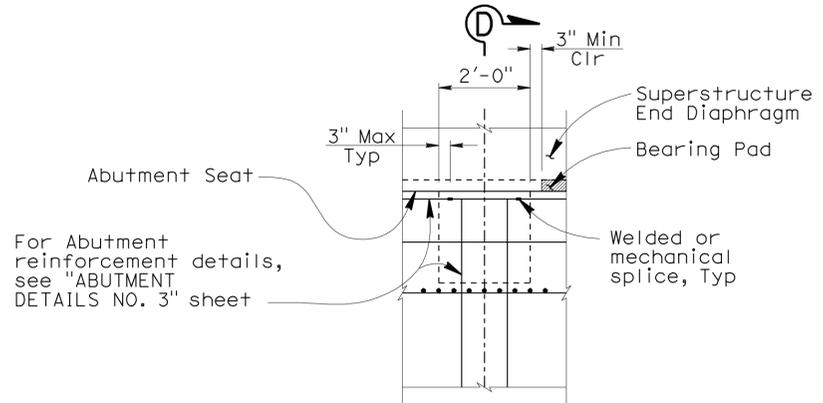
USERNAME => HSTFK DATE PLOTTED => 16-DEC-2010 TIME PLOTTED => 16:43

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	853	949
<i>Wei-Kung Hsia</i> 08-10-10 REGISTERED CIVIL ENGINEER DATE					
10-25-10 PLANS APPROVAL DATE					
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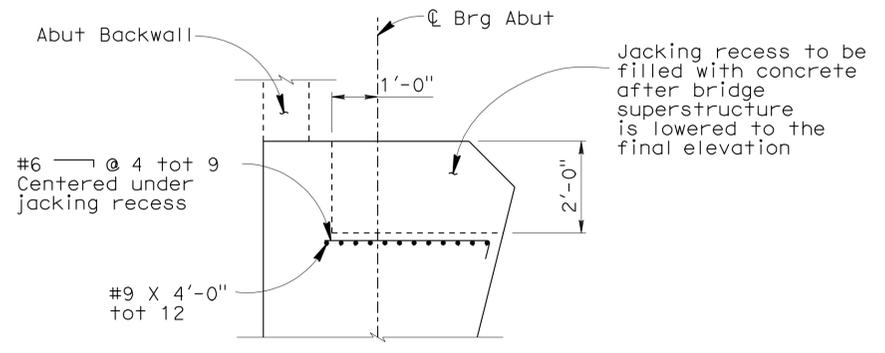


ABUT 1 PILE LAYOUT- LEFT WIDENING ABUT 2

$\frac{1}{4}'' = 1'-0''$



FRONT VIEW



JACKING RECESS DETAIL

SECTION D-D

NOTES:
 1. For pile class, see "ABUTMENT PILE DATA TABLE" and "WINGWALL PILE DATA TABLE" on "INDEX TO PLANS" sheet.

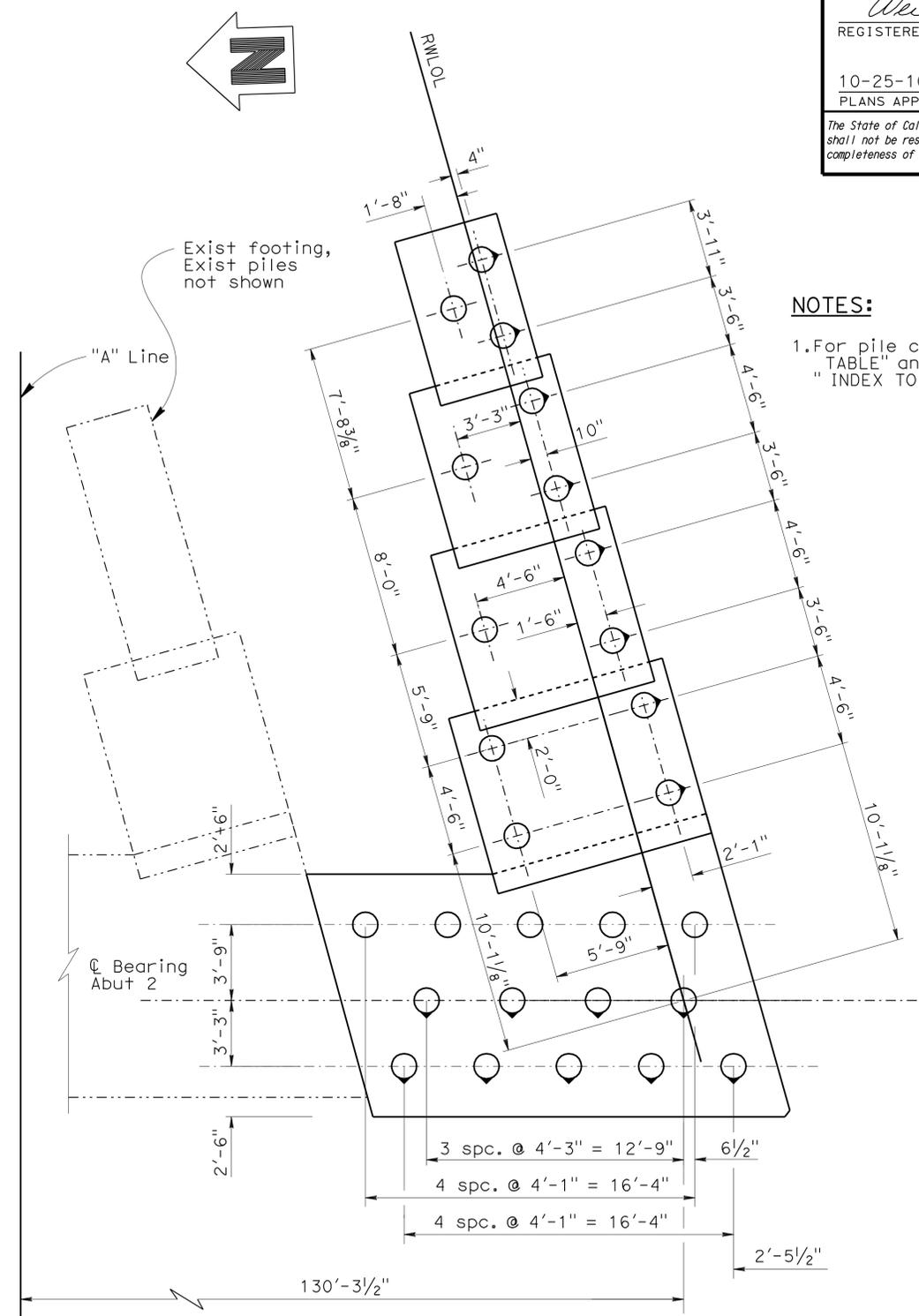
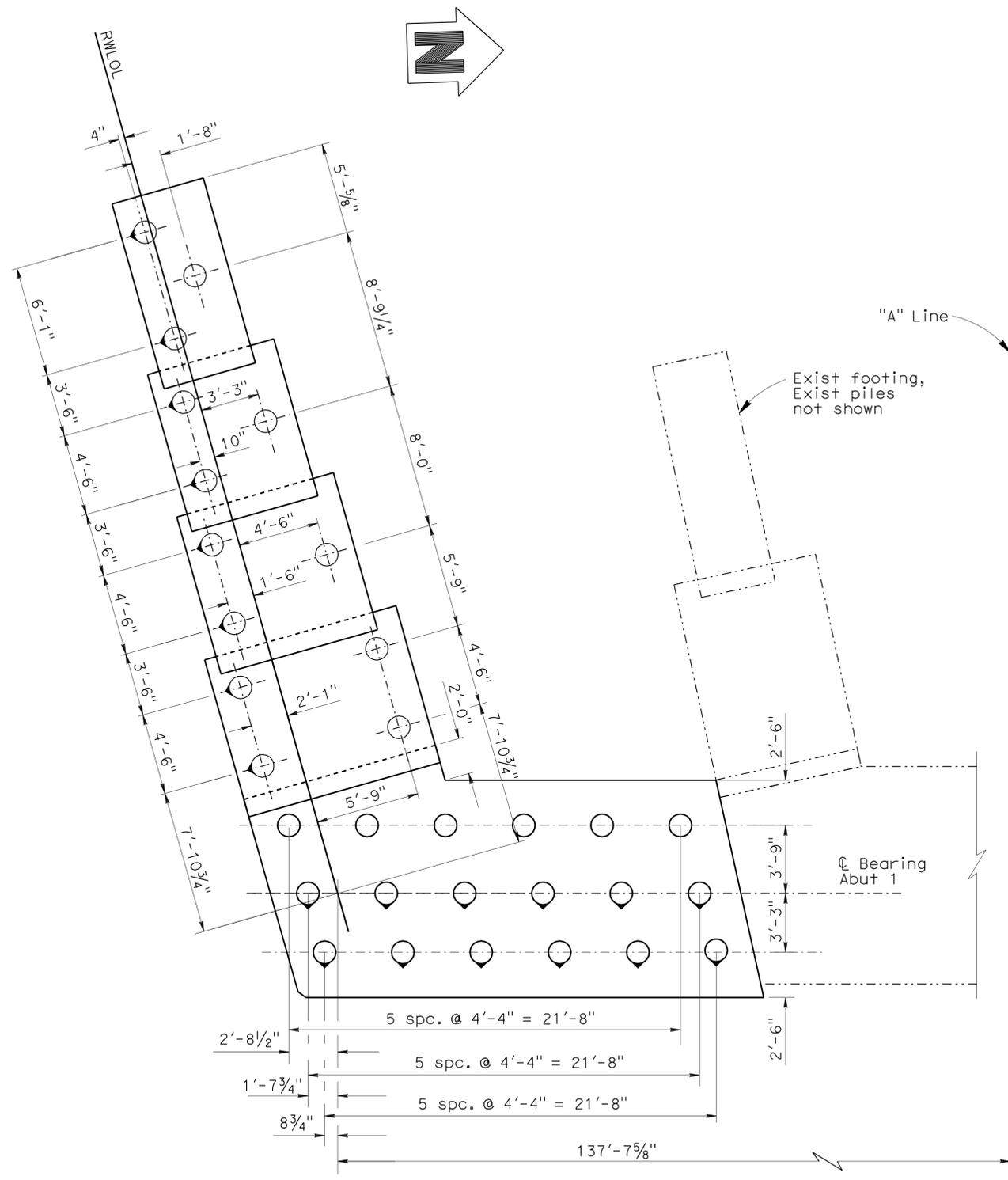
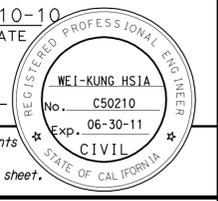
LEGEND
 ○ Indicates vertical piles
 ⊙ Indicates battered piles (1:3 Batter)

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

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)	DESIGN BY MAMUNUR RAHMAN	CHECKED CHARLES LOMICKA	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 19	BRIDGE NO. 55-0474RL	ROUTE 91 / 90 SEPARATION (WIDEN) ABUTMENT DETAILS NO. 1	
	DETAILS BY HENGAMEH MAHBOOBI	CHECKED MAMUNUR RAHMAN			POST MILE 11.53		
	QUANTITIES BY CHARLES LOMICKA	CHECKED BARBARA MCGAHEY			CU 12 EA 0G3301		
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS			0 1 2 3		DISREGARD PRINTS BEARING EARLIER REVISION DATES		
					REVISION DATES 03-09-10 04-26-10 05-25-10 06-01-10 06-29-10 07-09-10 07-29-10 10-01-10 10-06-10		
						SHEET 6	OF 26

USERNAME => HSTPK DATE PLOTTED => 16-DEC-2010 TIME PLOTTED => 16:43

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	854	949
<i>Wei-Kung Hsia</i> 08-10-10 REGISTERED CIVIL ENGINEER DATE					
10-25-10 PLANS APPROVAL DATE					
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PILE LAYOUT- RIGHT WIDENING
1/4" = 1'-0"

NOTES:
 1. For pile class, see "ABUTMENT PILE DATA TABLE" and "WINGWALL PILE DATA TABLE" on "INDEX TO PLANS" sheet.

LEGEND
 ○ Indicates vertical piles
 ⊙ Indicates battered piles (1:3 Batter)

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

DESIGN	BY MAMUNUR RAHMAN	CHECKED CHARLES LOMICKA
DETAILS	BY HENGAMEH MAHBOOBI	CHECKED MAMUNUR RAHMAN
QUANTITIES	BY CHARLES LOMICKA	CHECKED BARBARA MCGAHEY

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
 DESIGN BRANCH 19

BRIDGE NO. 55-0474RL
 POST MILE 11.53

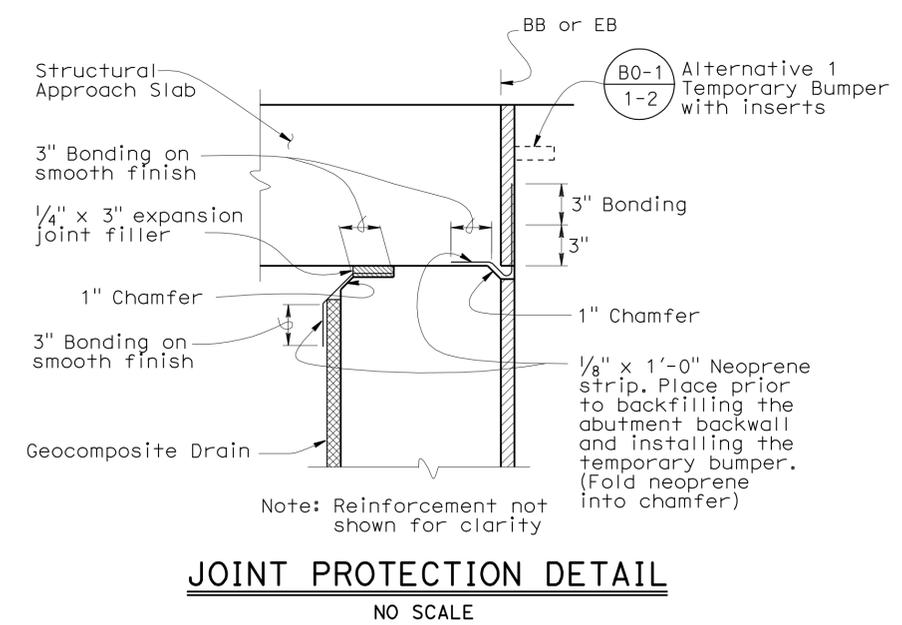
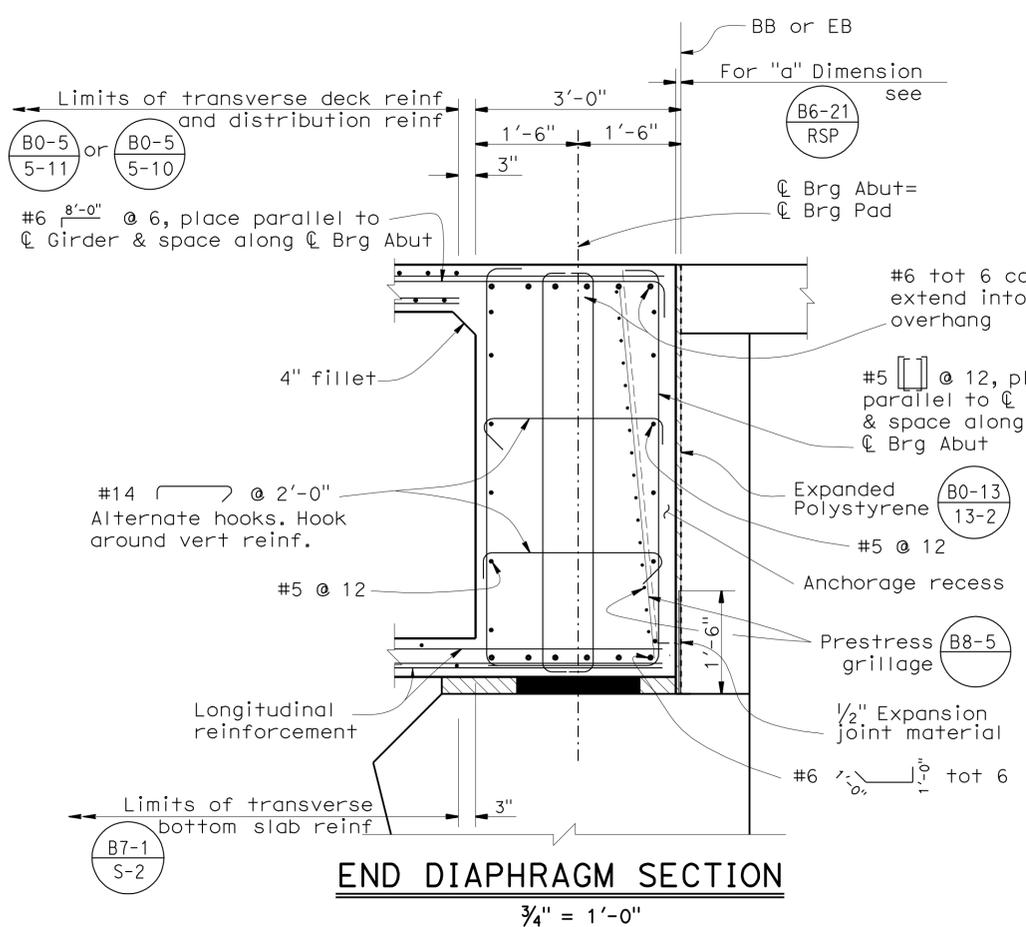
ROUTE 91 / 90 SEPARATION (WIDEN)
 ABUTMENT DETAILS NO. 2

USERNAME => HSTFK DATE PLOTTED => 16-DEC-2010 TIME PLOTTED => 16:43

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	855	949

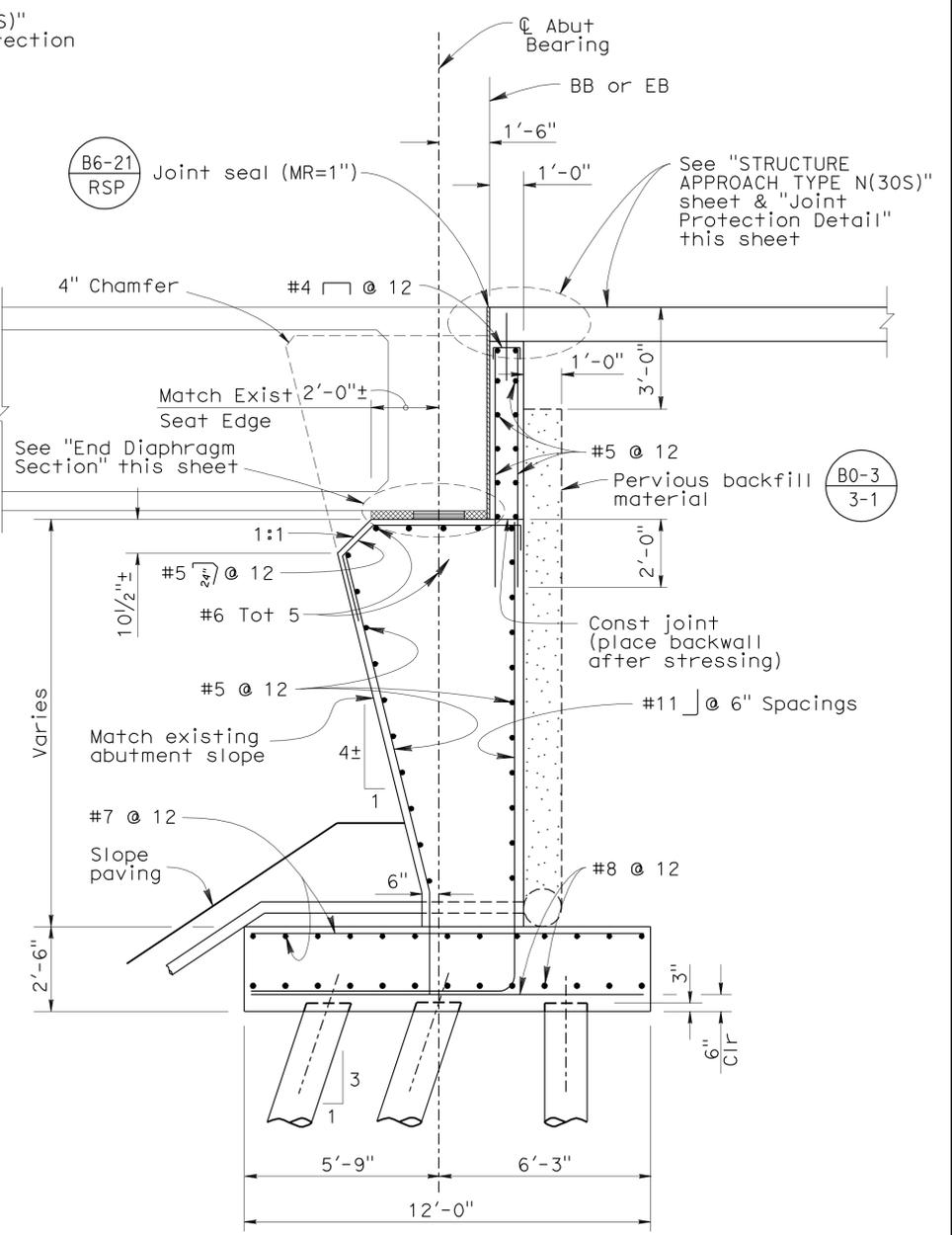
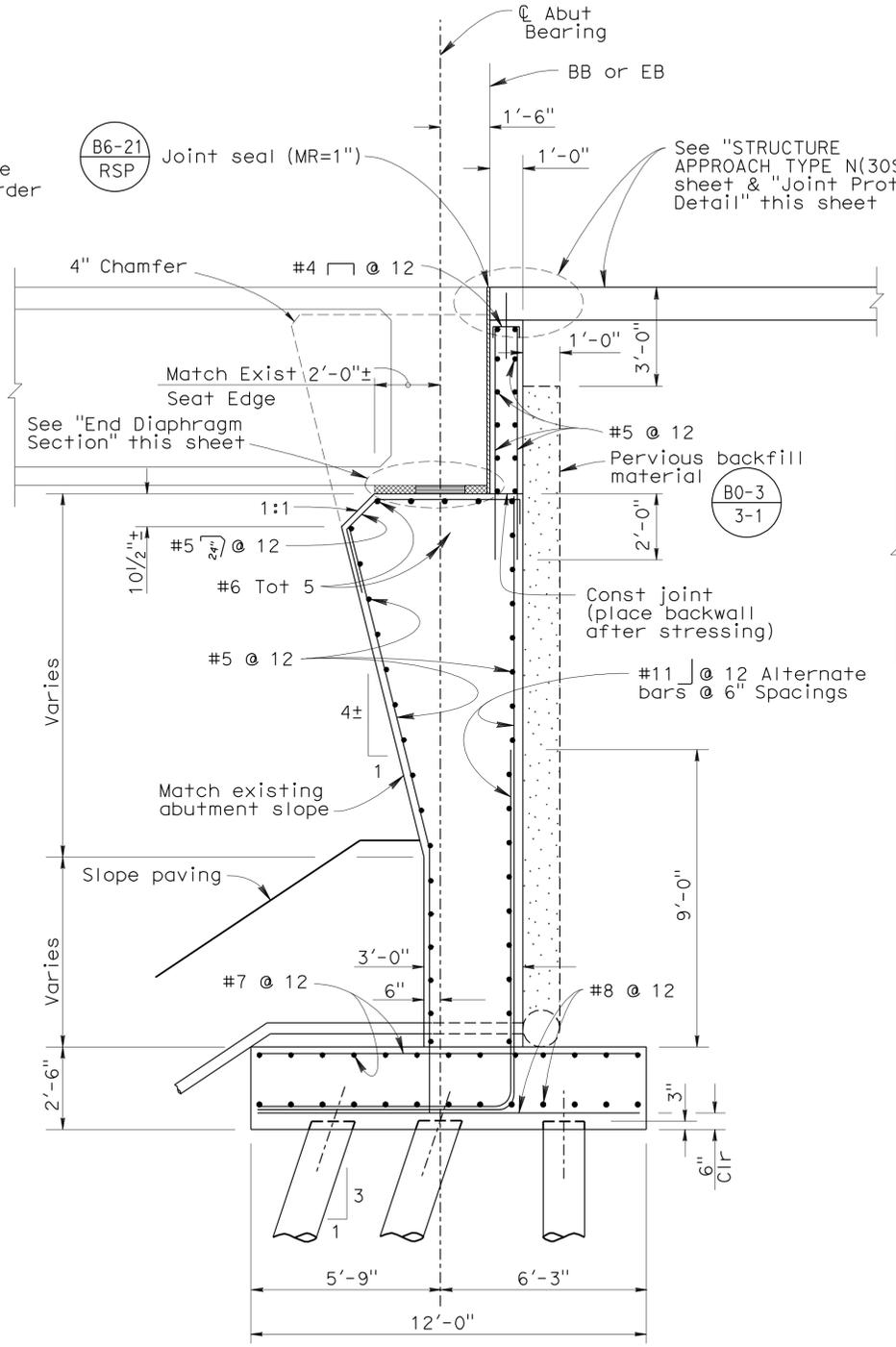
08-10-10
 REGISTERED CIVIL ENGINEER DATE
 10-25-10
 PLANS APPROVAL DATE
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REGISTERED PROFESSIONAL ENGINEER
WEI-KUNG HSIA
No. C50210
Exp. 06-30-11
CIVIL
STATE OF CALIFORNIA



NOTES:

- For location of Section A-A see "ABUTMENT LAYOUT (LEFT WIDENING)" sheet.
- For location of Section B-B see "ABUTMENT LAYOUT (RIGHT WIDENING)" sheet.



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

DESIGN	BY MAMUNUR RAHMAN	CHECKED CHARLES LOMICKA
DETAILS	BY HEMANT BARBHAIYA	CHECKED MAMUNUR RAHMAN
QUANTITIES	BY CHARLES LOMICKA	CHECKED BARBARA MCGAHEY

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

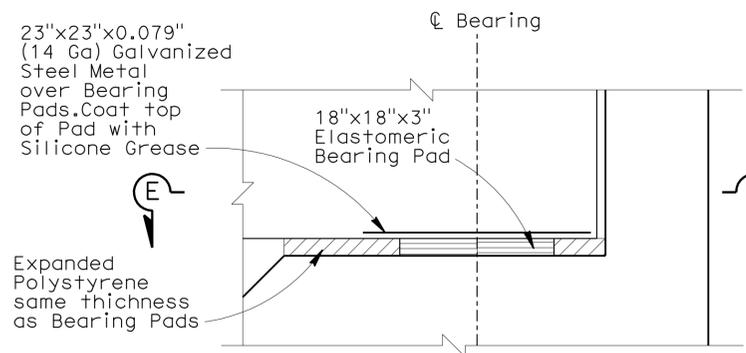
DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 19

BRIDGE NO. 55-0474RL
POST MILE 11.53
ROUTE 91 / 90 SEPARATION (WIDEN)
ABUTMENT DETAILS NO. 3

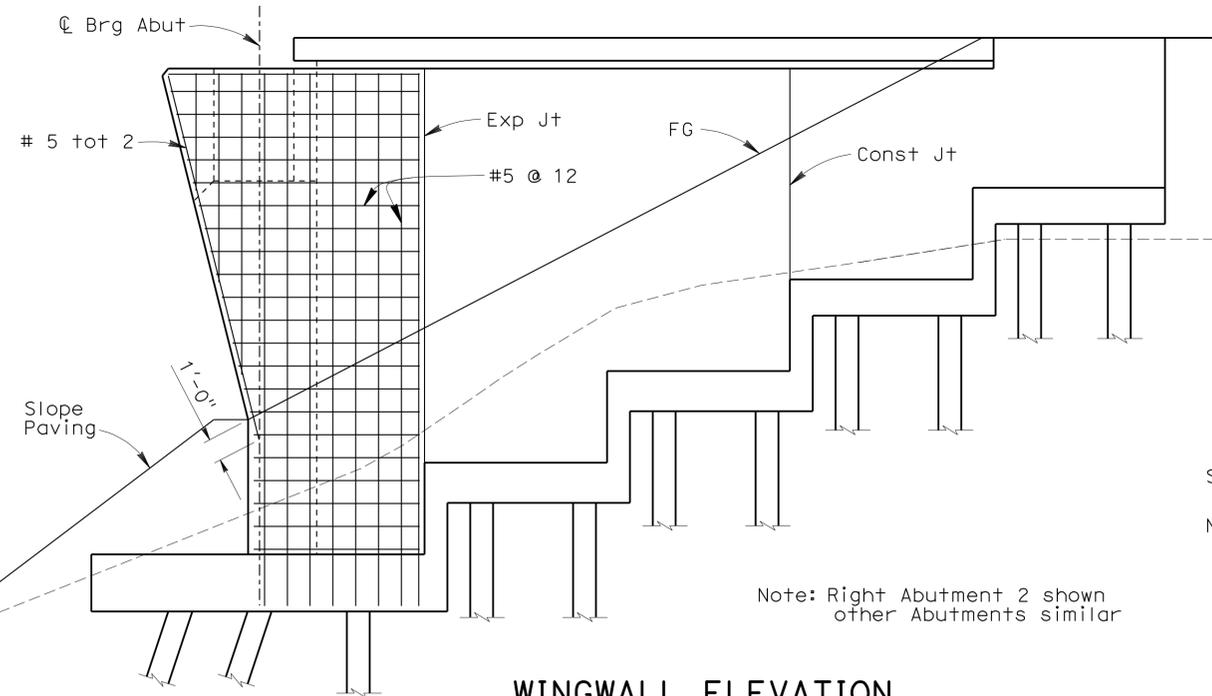
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	856	949

08-10-10
 REGISTERED CIVIL ENGINEER DATE
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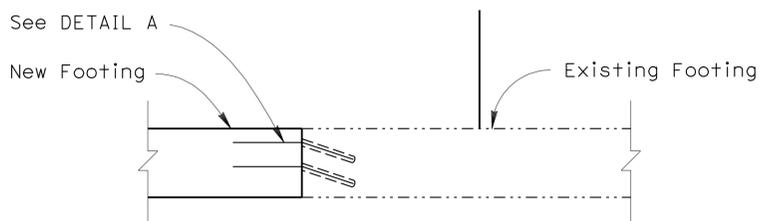
REGISTERED PROFESSIONAL ENGINEER
 WEI-KUNG HSIA
 No. C50210
 Exp. 06-30-11
 CIVIL
 STATE OF CALIFORNIA



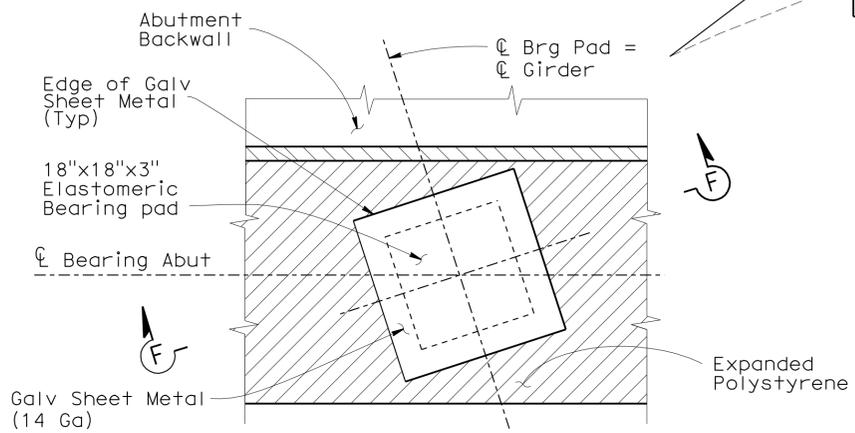
BEARING PAD DETAIL
No Scale
(Details Typical at all bearing pads)



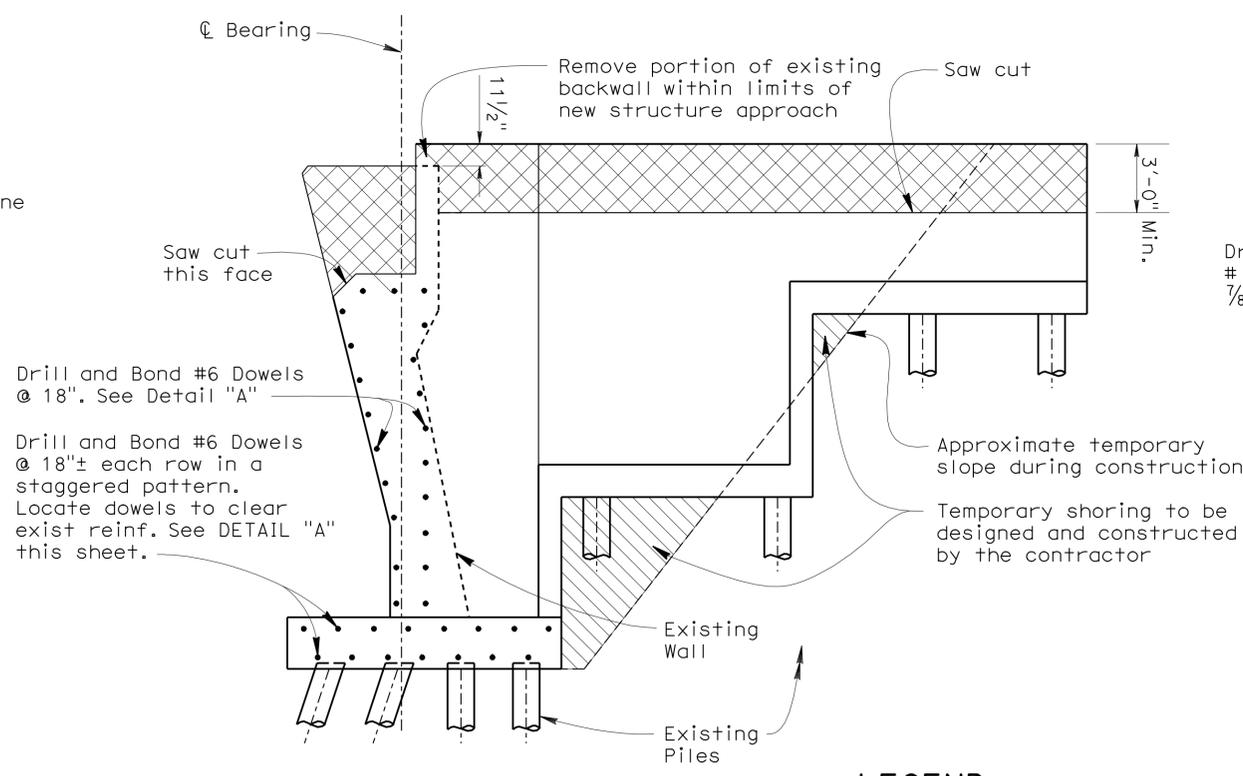
WINGWALL ELEVATION
NO SCALE



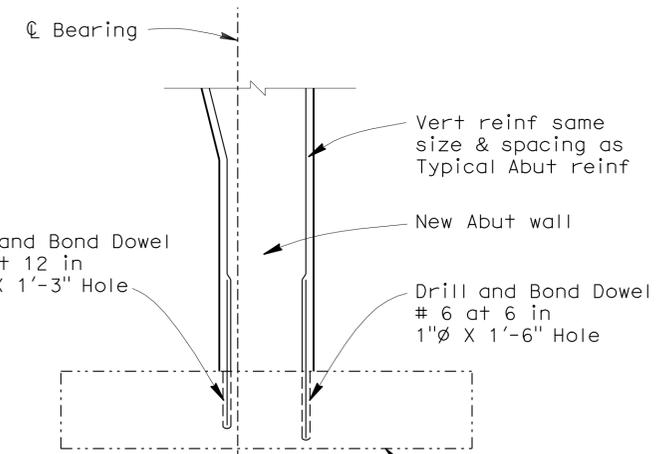
FOOTING CONNECTION
No Scale



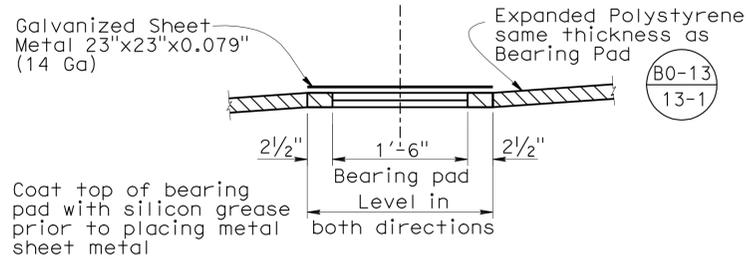
SECTION E-E
No Scale



EXISTING WINGWALL ELEVATION
NO SCALE



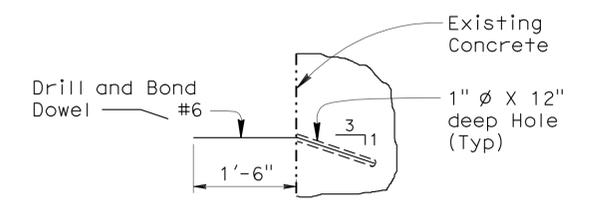
SECTION C-C
No Scale



SECTION F-F
NO SCALE

LEGEND

- Bridge Removal Portion
- Temporary shoring



DETAIL A
No Scale

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

DESIGN	BY MAMUNUR RAHMAN	CHECKED CHARLES LOMICKA
DETAILS	BY HEMANT BARBHAIYA	CHECKED MAMUNUR RAHMAN
QUANTITIES	BY CHARLES LOMICKA	CHECKED BARBARA MCGAHEY

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 19

BRIDGE NO.	55-0474RL
POST MILE	11.53

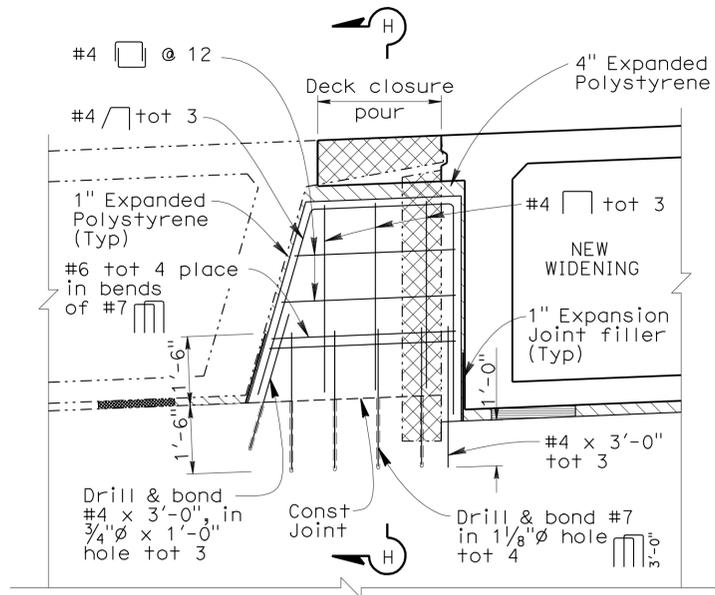
ROUTE 91 / 90 SEPARATION (WIDEN)
ABUTMENT DETAILS NO. 4

USERNAME => HSTFK DATE PLOTTED => 16-DEC-2010 TIME PLOTTED => 16:43

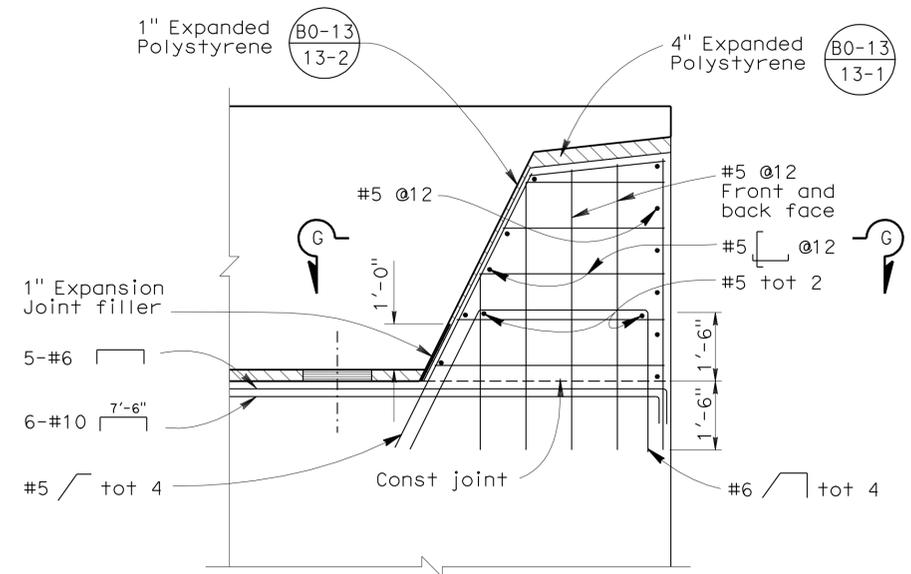
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	857	949

08-10-10
 REGISTERED CIVIL ENGINEER DATE
 10-25-10
 PLANS APPROVAL DATE
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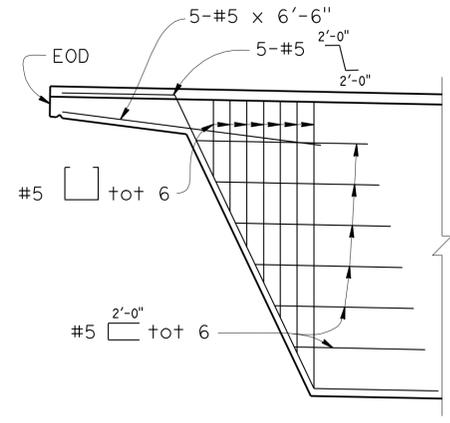
WEI-KUNG HSIA
 No. C50210
 Exp. 06-30-11
 CIVIL
 STATE OF CALIFORNIA



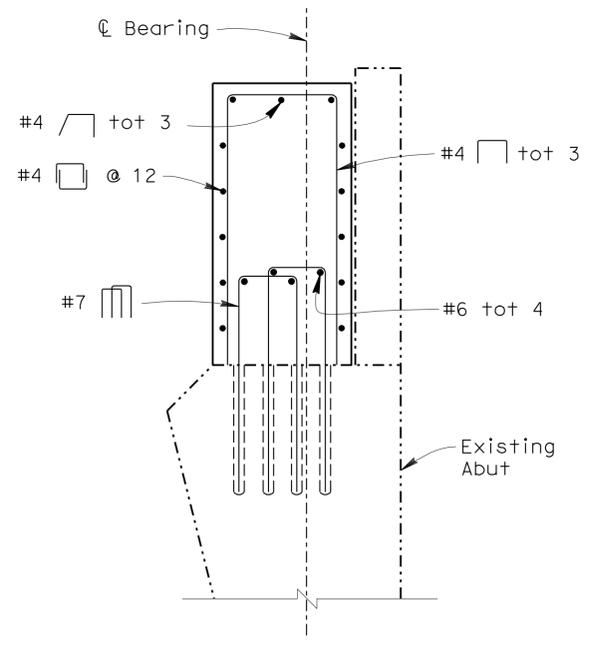
INTERIOR SHEAR KEY
1/2" = 1'-0"



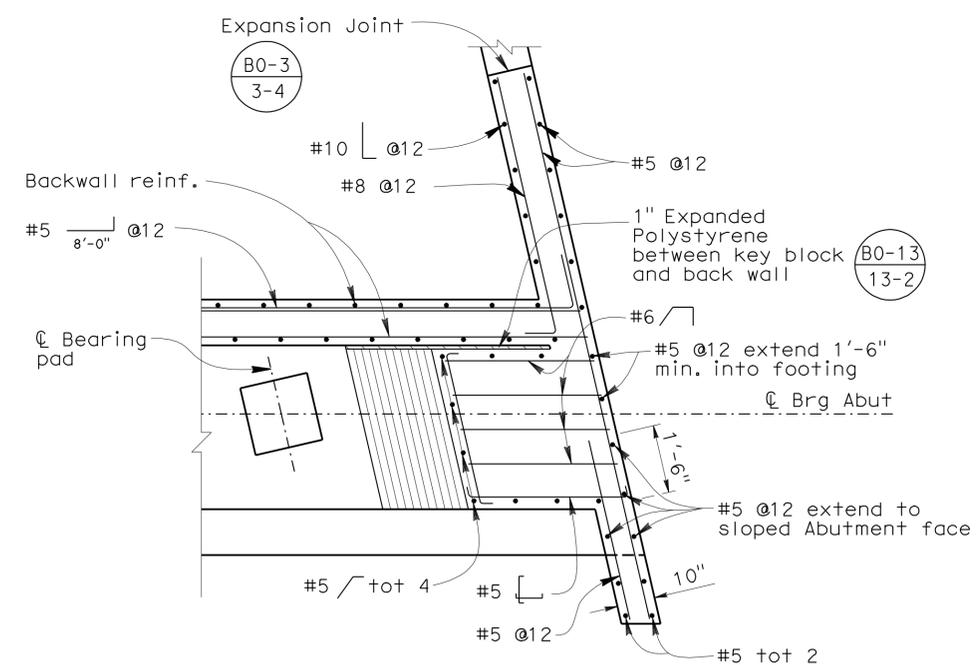
EXTERIOR SHEAR KEY
1/2" = 1'-0"



ADDITIONAL REINFORCEMENT AT END DIAPHRAGM
1/2" = 1'-0"



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



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

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

LEGEND

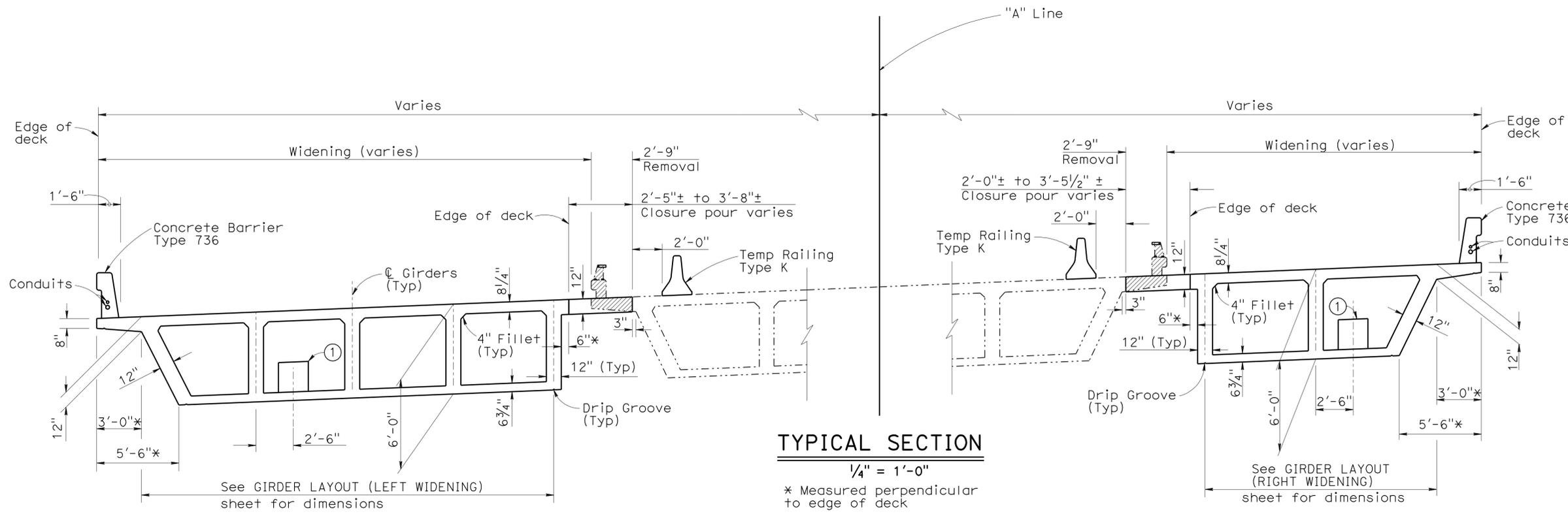
Bridge Removal (Portion)
 - - - - - Indicates existing structure

DESIGN	BY	MAMUNUR RAHMAN	CHECKED	CHARLES LOMICKA	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 19	BRIDGE NO.	55-0474RL	ROUTE 91 / 90 SEPARATION (WIDEN) ABUTMENT DETAILS NO. 5	
	DETAILS	BY	HEMANT BARBHAIYA	CHECKED			MAMUNUR RAHMAN	POST MILE		11.53
	QUANTITIES	BY	CHARLES LOMICKA	CHECKED			BARBARA M.	REVISION DATES		05-28-10 06-30-10 07-07-10 07-27-10 10-07-10
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)					ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	CU 12 EA OG3301	DISREGARD PRINTS BEARING EARLIER REVISION DATES	10	26	

USERNAME => HSTPK DATE PLOTTED => 16-DEC-2010 TIME PLOTTED => 16:44

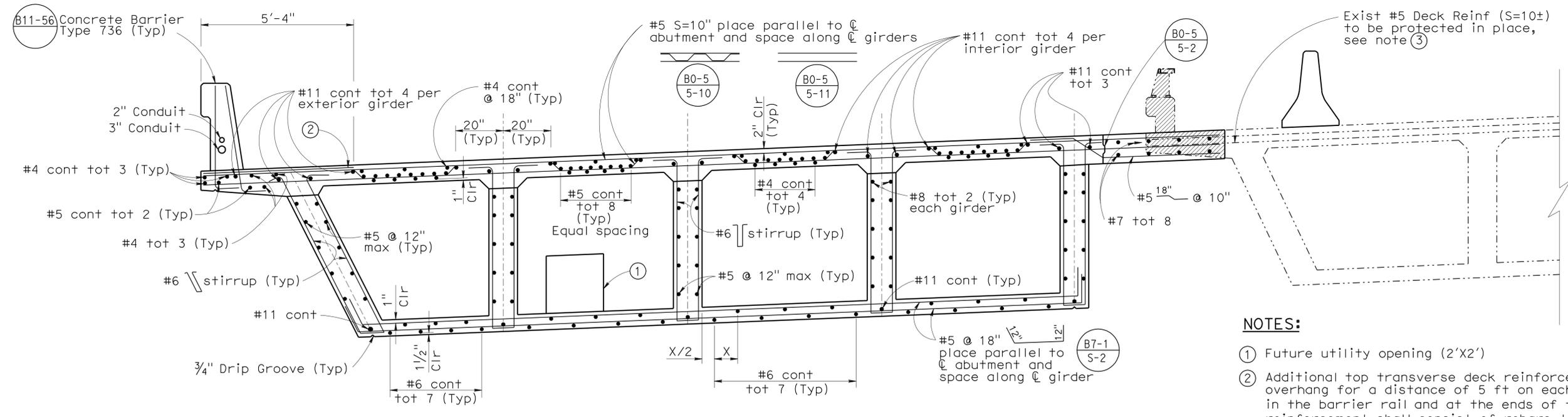
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	858	949

08-10-10
 REGISTERED CIVIL ENGINEER DATE
 10-25-10
 PLANS APPROVAL DATE
 WEI-KUNG HSIA
 No. C50210
 Exp. 06-30-11
 CIVIL
 STATE OF CALIFORNIA
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LEGEND

- Bridge Removal Portion
- Indicates Existing Structure

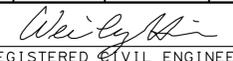


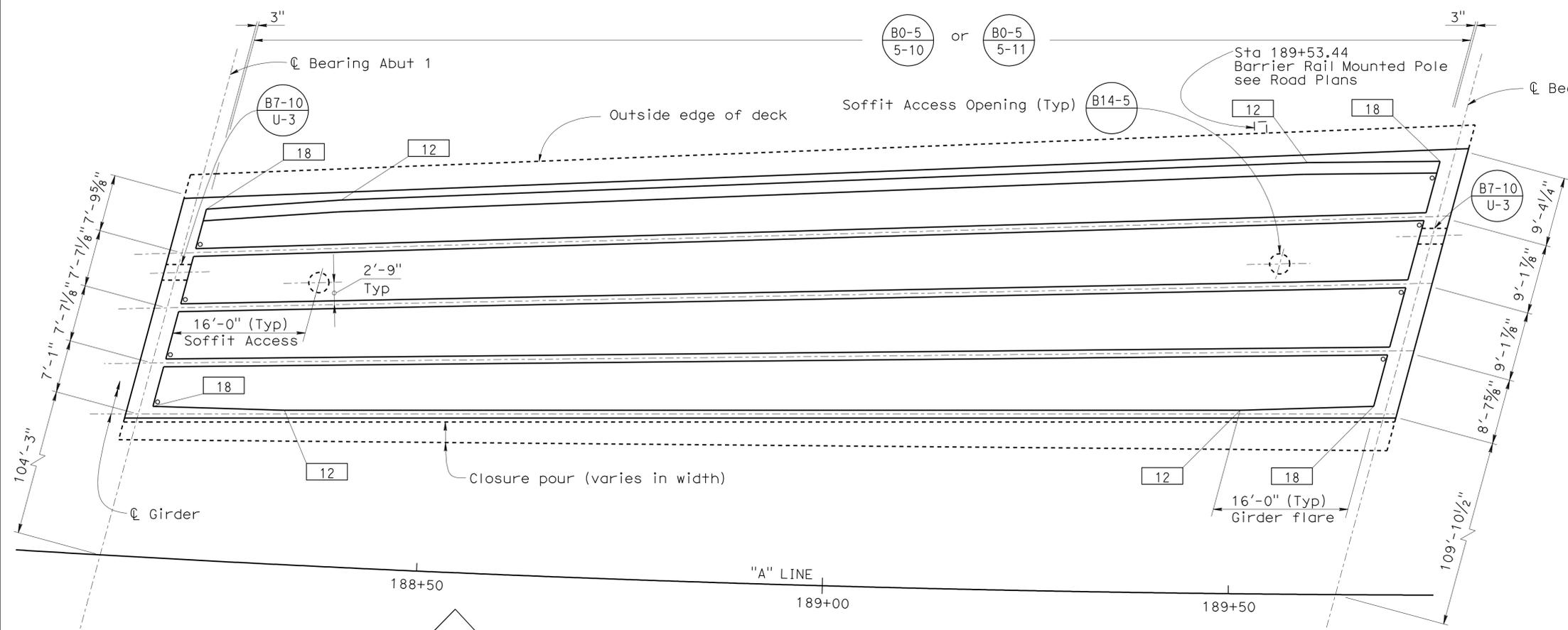
NOTE:
 The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

- NOTES:**
- Future utility opening (2'X2')
 - Additional top transverse deck reinforcement shall be placed in the overhang for a distance of 5 ft on each side of an expansion joint in the barrier rail and at the ends of the barrier rail. This additional reinforcement shall consist of rebars that are of the same size as that of the transverse bars, and shall be bundled with each alternating top transverse bar in the overhang. This reinforcement shall extend for a minimum length of 25 bar diameters beyond the centerline of the exterior girder.
 - Field bend the existing deck reinf as necessary to provide 2" deck cover as required.

DESIGN BY Mamunur Rahman	CHECKED Cesar Sanchez	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	BRIDGE NO. 55-0474RL	ROUTE 91 / 90 SEPARATION (WIDEN) TYPICAL SECTION
DETAILS BY Hemant Barbhuiya	CHECKED Cesar Sanchez		POST MILE 11.53	
QUANTITIES BY Rui Wang	CHECKED Barbara McGahey		DESIGN BRANCH 19	

USERNAME => HSTFK DATE PLOTTED => 16-DEC-2010 TIME PLOTTED => 16:44

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	859	949
 REGISTERED CIVIL ENGINEER DATE 08-10-10					
10-25-10 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>					



PLAN (LEFT WIDENING)
 $\frac{1}{8}'' = 1'-0''$
 o Location of Vents   

PRESTRESSING NOTES

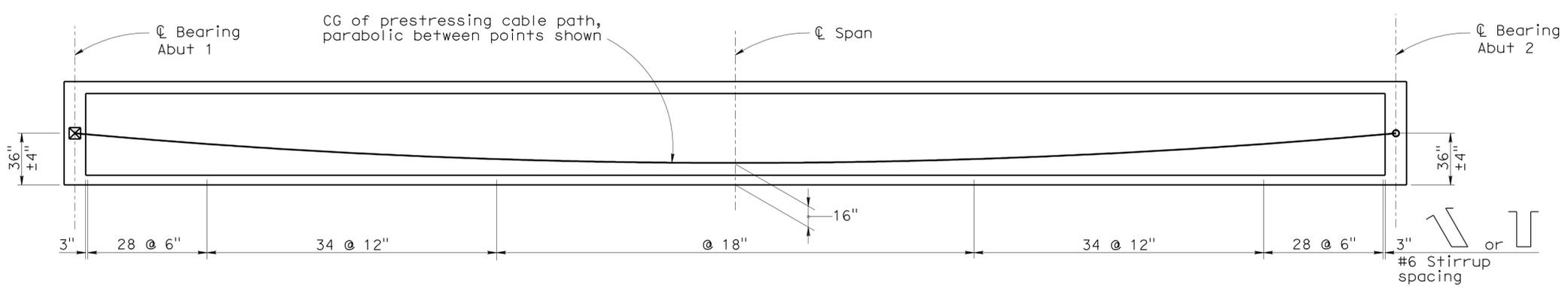
270 ksi Low Relaxation Strands:
 Pjack = 15,170 kips
 Anchor Set = $\frac{3}{8}''$
 Total Number of Girders = 5
 Friction curvature coefficient $\mu = 15 \times 10^{-2}$ (1/rad)
 Friction wobble coefficient $K = 2.0 \times 10^{-4}$ (1/ft)
 Distribution of prestress force (Pjack) between girders shall not exceed the ratio of 3:2.
 Maximum final force variation between girders shall not exceed 725 kips.
 Concrete: $f'c = 6.0$ ksi @ 28 days
 $f'ci = 4.0$ ksi @ time of stressing
 Contractor shall submit elongation calculations based on initial stress at $\square = 0.957$ times jacking stress
 One end stressing only.
 For end diaphragm details, see "ABUTMENT DETAILS NO. 5" sheet.

FALSEWORK RELEASE

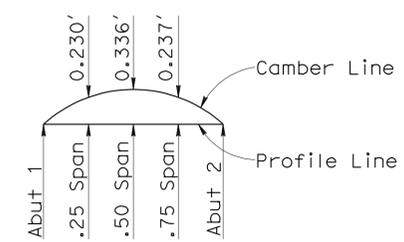
Falsework release shall be as per specifications. Closure pour shall not be placed sooner than 60 days after falsework release.

LEGEND

- Indicates point of no movement
- Indicates stem width in inches



LONGITUDINAL SECTION
 NO SCALE



CAMBER DIAGRAM
 NO SCALE

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

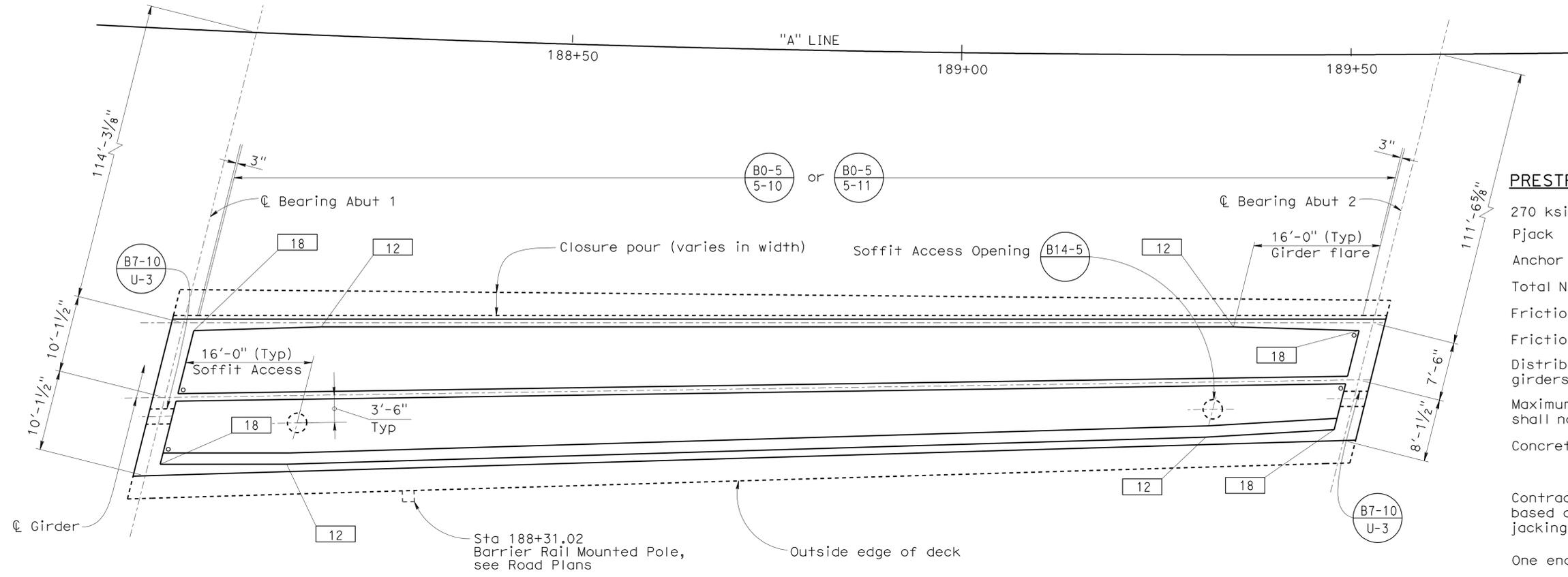
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)	DESIGN	BY Mamunur Rahman	CHECKED Cesar Sanchez	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 19	BRIDGE NO.	ROUTE 91 / 90 SEPARATION (WIDEN)						
	DETAILS	BY Hemant Barbhuiya	CHECKED Cesar Sanchez			55-0474RL		GIRDER LAYOUT (LEFT WIDENING)					
	QUANTITIES	BY Rui Wang	CHECKED Barbara McGahey			11.53							
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0	1	2	3	CU 12 EA 0G3301	DISREGARD PRINTS BEARING EARLIER REVISION DATES	<table border="1"> <tr> <th>REVISION DATES</th> <th>SHEET</th> <th>OF</th> </tr> <tr> <td>11-09-09</td> <td>12</td> <td>26</td> </tr> </table>	REVISION DATES	SHEET	OF	11-09-09	12	26
REVISION DATES	SHEET	OF											
11-09-09	12	26											

USERNAME => HSTFK DATE PLOTTED => 16-DEC-2010 TIME PLOTTED => 16:44

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	860	949

08-10-10
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 10-25-10
 PLANS APPROVAL DATE
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 No. C50210
 Exp. 06-30-11
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 STATE OF CALIFORNIA



PLAN (RIGHT WIDENING)

1/8" = 1'-0"

o Location of Vents



PRESTRESSING NOTES

270 ksi Low Relaxation Strands:
 Pjack = 10,130 kips
 Anchor Set = 3/8"
 Total Number of Girders = 3
 Friction curvature coefficient $\mu = 15 \times 10^{-2}$ (1/rad)
 Friction wobble coefficient $K = 2.0 \times 10^{-4}$ (1/ft)
 Distribution of prestress force (Pjack) between girders shall not exceed the ratio of 3:2.
 Maximum final force variation between girders shall not exceed 725 kips.
 Concrete: $f'c = 6.0$ ksi @ 28 days
 $f'ci = 4.0$ ksi @ time of stressing

Contractor shall submit elongation calculations based on initial stress at $\alpha = 0.957$ times jacking stress.
 One end stressing only.

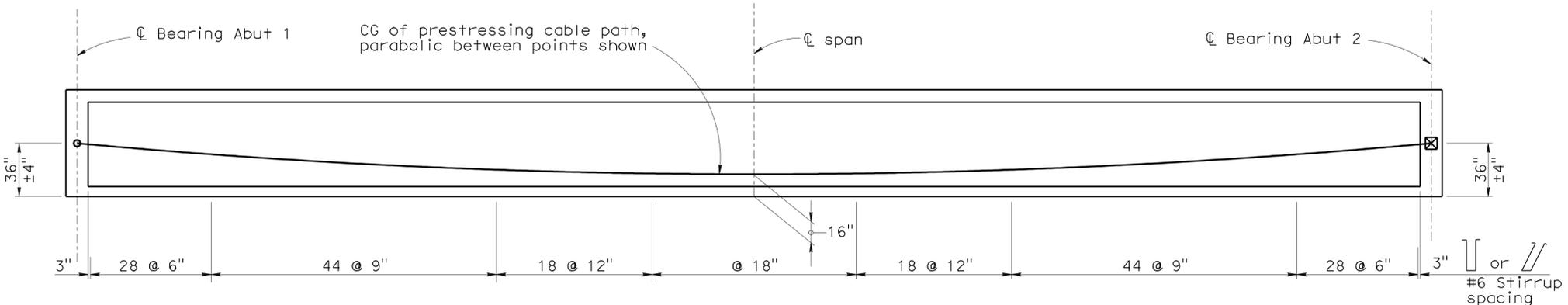
For end diaphragm details, see "ABUTMENT DETAILS No. 5" sheet.

FALSEWORK RELEASE

Falsework release shall be as per specifications. Closure pour shall not be placed sooner than 60 days after falsework release.

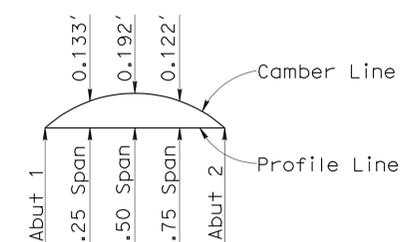
LEGEND

- Indicates point of no movement
- Indicates stem width in inches



LONGITUDINAL SECTION

NO SCALE



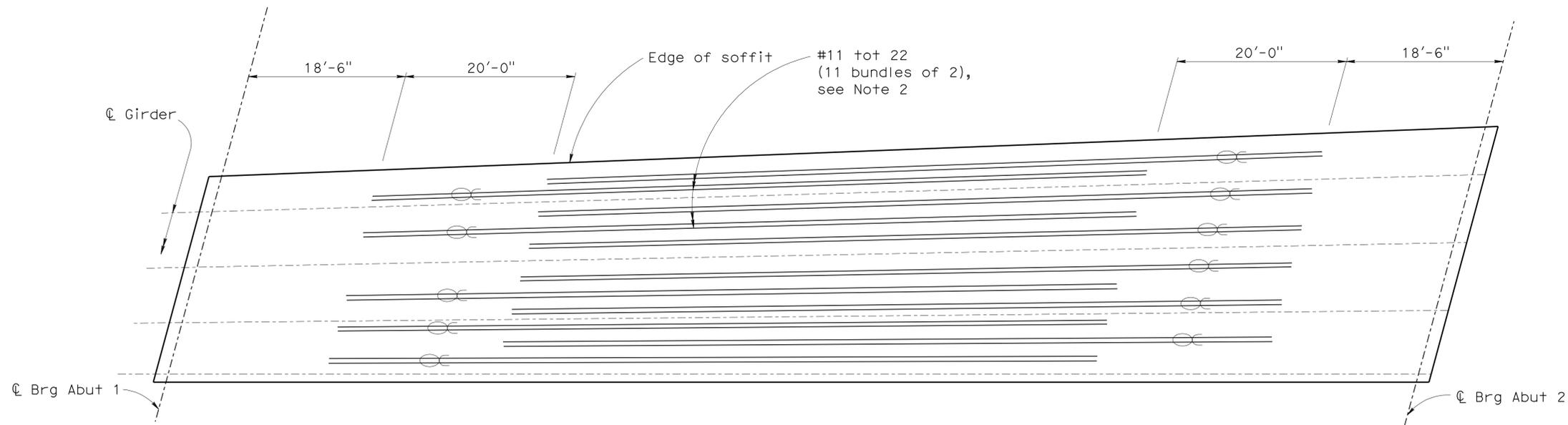
CAMBER DIAGRAM

NO SCALE

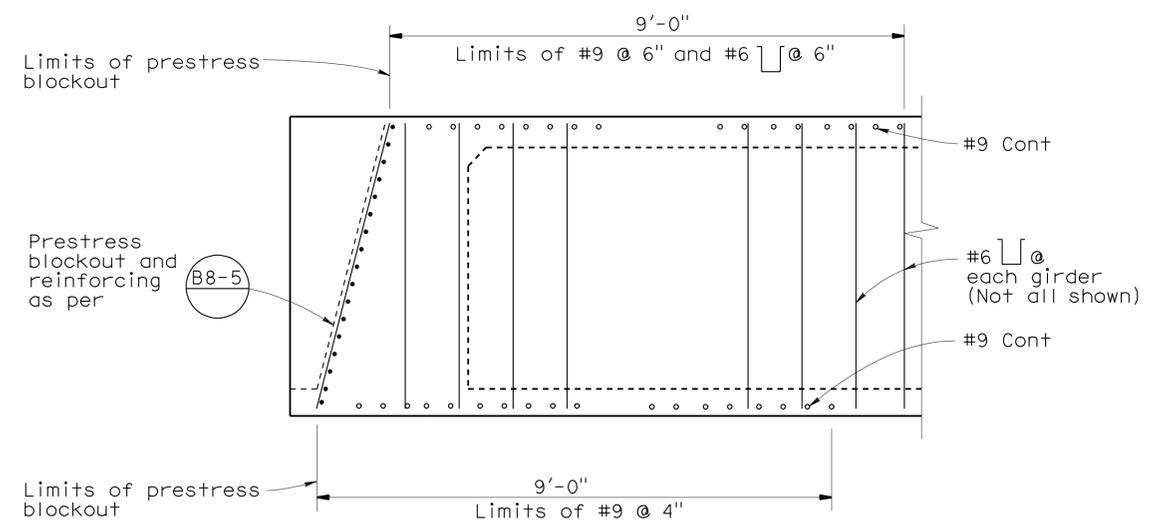
NOTE:
 THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN BY Mamunur Rahman CHECKED Cesar Sanchez DETAILS BY Hemant Barbhuiya CHECKED Cesar Sanchez QUANTITIES BY Rui Wang CHECKED Barbara McGahey	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 19	BRIDGE NO. 55-0474RL	ROUTE 91 / 90 SEPARATION (WIDEN) GIRDER LAYOUT (RIGHT WIDENING)
			POST MILE 11.53	
			STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	861	949
<i>Wei-Kung Hsia</i> REGISTERED CIVIL ENGINEER DATE 08-10-10			10-25-10 PLANS APPROVAL DATE		
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BOTTOM LONGITUDINAL REINFORCEMENT (LEFT WIDENING)
 $\frac{1}{8}'' = 1'-0''$



All reinforcement to be placed parallel to
 @ Abutment bearing. Detail typical at all abutments.
 Not all reinforcement shown.

ADDITIONAL DIAPHRAGM REINFORCEMENT DETAIL
 No Scale

NOTES:

1. For additional details and reinforcement, see "TYPICAL SECTION" sheet.
2. Adjust location of bottom longitudinal reinforcement to clear soffit openings.
3. Only service splices allowed in longitudinal reinforcement.

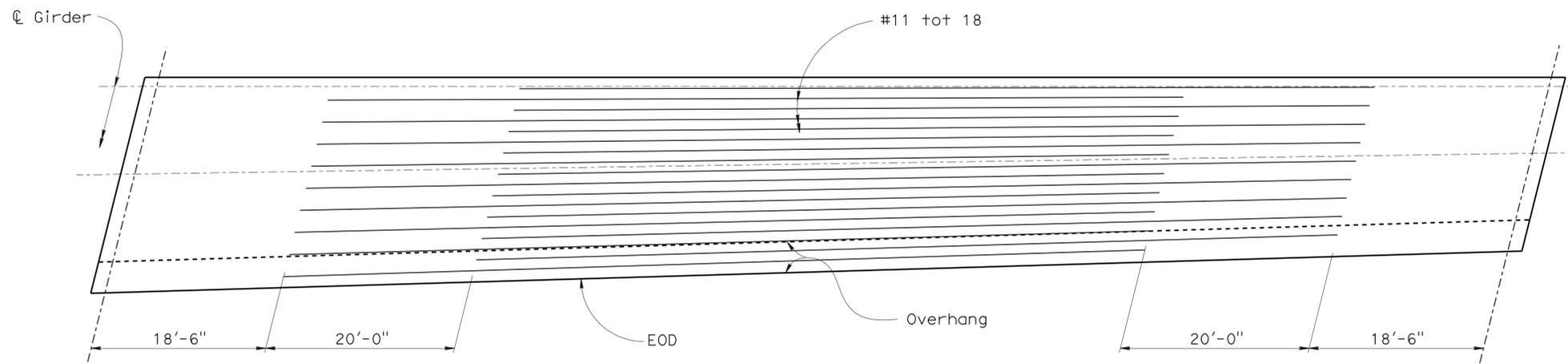
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)	DESIGN	BY Mamunur Rahman	CHECKED Cesar Sanchez	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 19	BRIDGE NO.	55-0474RL	ROUTE 91 / 90 SEPARATION (WIDEN) GIRDER DETAILS NO. 1
	DETAILS	BY Hemant Barbhuiya	CHECKED Cesar Sanchez			POST MILE	11.53	
	QUANTITIES	BY Rui Wang	CHECKED Barbara McGahey			REVISION DATES	11-09-09 12-31-09 04-20-10 05-18-10 06-24-10 07-01-10 07-27-10 10-07-10	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS				0 1 2 3	CU 12 EA OG3301	DISREGARD PRINTS BEARING EARLIER REVISION DATES	SHEET 14	OF 26

USERNAME => HSTFK DATE PLOTTED => 16-DEC-2010 TIME PLOTTED => 16:44

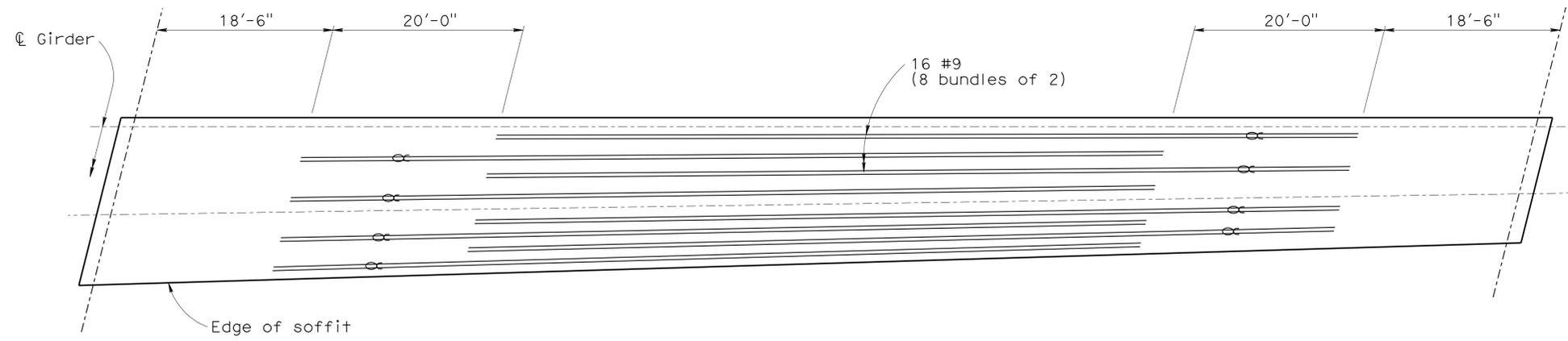
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	862	949

08-10-10
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REGISTERED PROFESSIONAL ENGINEER
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 No. C50210
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 STATE OF CALIFORNIA



TOP LONGITUDINAL REINFORCEMENT (RIGHT WIDENING)
 $\frac{1}{8}'' = 1'-0''$



BOTTOM LONGITUDINAL REINFORCEMENT (RIGHT WIDENING)
 $\frac{1}{8}'' = 1'-0''$

- NOTES:**
1. For additional details and reinforcement, see "TYPICAL SECTION" sheet.
 2. Adjust location of bottom longitudinal reinforcement to clear soffit openings.
 3. Only service splices allowed in longitudinal reinforcement.

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)	DESIGN	BY Mamunur Rahman	CHECKED Cesar Sanchez	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 19	BRIDGE NO.	ROUTE 91 / 90 SEPARATION (WIDEN)	
	DETAILS	BY Hemant Barbhaiya	CHECKED Cesar Sanchez			POST MILE	GIRDER DETAILS NO. 2	
QUANTITIES	BY Rui Wang	CHECKED Barbara McGahey	11.53					

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

0	1	2	3
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CU 12
 EA OG3301

DISREGARD PRINTS BEARING EARLIER REVISION DATES

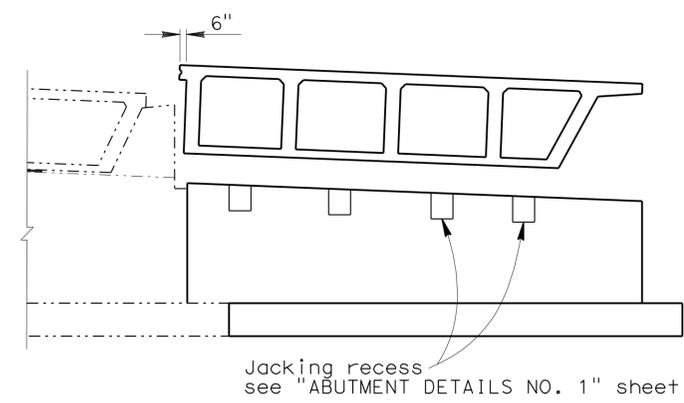
REVISION DATES

11-09-09	01-04-10	04-21-10	05-18-10	07-01-10	07-27-10	10-07-10
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SHEET 15 OF 26

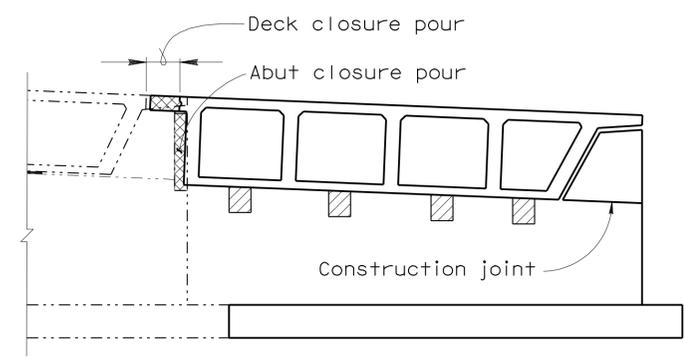
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USERNAME => HSTFK DATE PLOTTED => 16-DEC-2010 TIME PLOTTED => 16:44



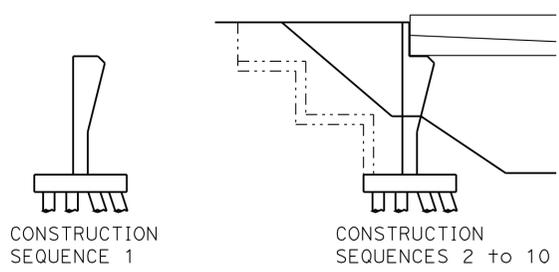
SUPERSTRUCTURE IN RAISED POSITION

No Scale
(Abutment 1 shown, Abutment 2 similar)



SUPERSTRUCTURE IN FINAL POSITION

No Scale
(Abutment 1 shown, Abutment 2 similar)

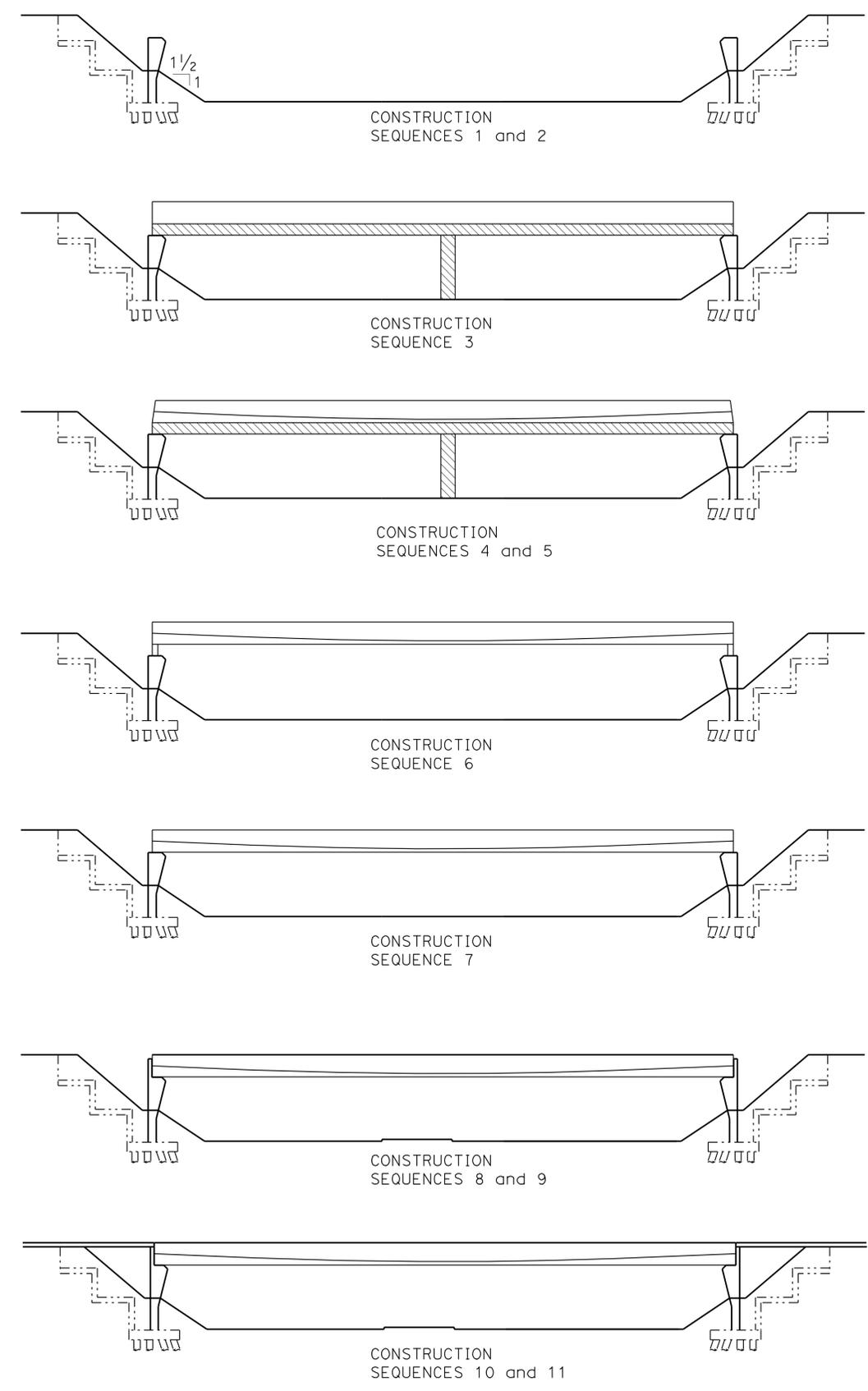


ABUTMENT CONSTRUCTION SEQUENCE

No Scale

ESTIMATED JACKING LOAD TABLE	
Location	Total Minimum Jacking Load (kips)
Abut 1 (Left Widen)	1,100
Abut 2 (Left Widen)	1,146

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



NOTES:

- Loads given at the specified locations are 1.3 X the total superstructure Dead Load, including abutment diaphragms but less Barrier Rail, Future Wearing Surface and Utilities.
- The jacking load for each specified jack shall be the load given at the specified location (see Note 1) divided by the number of jacks at the same location.
- Contractor shall determine the height at which superstructure shall be cast based on false work depth and minimum vertical clearance required over roadway below.
- Bottom of jacking recess shall be cast level so that jacks can be placed plumb.
- Structure shall be lowered simultaneously at both abutments.
- Contractor shall design lowering system. Lowering system shop drawings shall be submitted for approval. Lowering system shall include a minimum of four hydraulic jacks at each abutment.
- Temporary lateral supports in both directions transverse to the superstructure shall be provided to resist a minimum of 10% of the total load specified in Note 1.
- Roadway below to be closed during all jacking operations.

CONSTRUCTION SEQUENCE:

- Construct abutments to bottom of superstructure seat level.
- Grade front face of abutment to proposed grade and back face to same level as that of front face.
- Construct falsework and cast superstructure in raised position.
- Stress and Grout prestressing tendons.
- Provide temporary lateral support to prevent transverse movement of the superstructure during lowering operation and install the needed number of jacks.
- Transfer superstructure load on to the installed jacks and remove all falsework including middle falsework a minimum of 28 days after placement of concrete or as instructed by the engineer.
- Lower superstructure to its final position.
- Remove jacks and fill in the jacking recesses.
- Complete abutment by constructing the backwall and shear key as per these plans.
- Pour deck and abutment closure pours.
- Finish backfill, construct approach slabs and complete abutment slope paving.

LEGEND

- Fill jacking recess with structural concrete after lowering superstructure
- Deck and abutment closure pour
- Falsework

DESIGN	BY MAMUNUR RAHMAN	CHECKED CESAR SANCHEZ
DETAILS	BY HENGAMEH MAHBOOBI	CHECKED MAMUNUR RAHMAN
QUANTITIES	BY RUI WANG	CHECKED BARBARA MCGAHEY

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

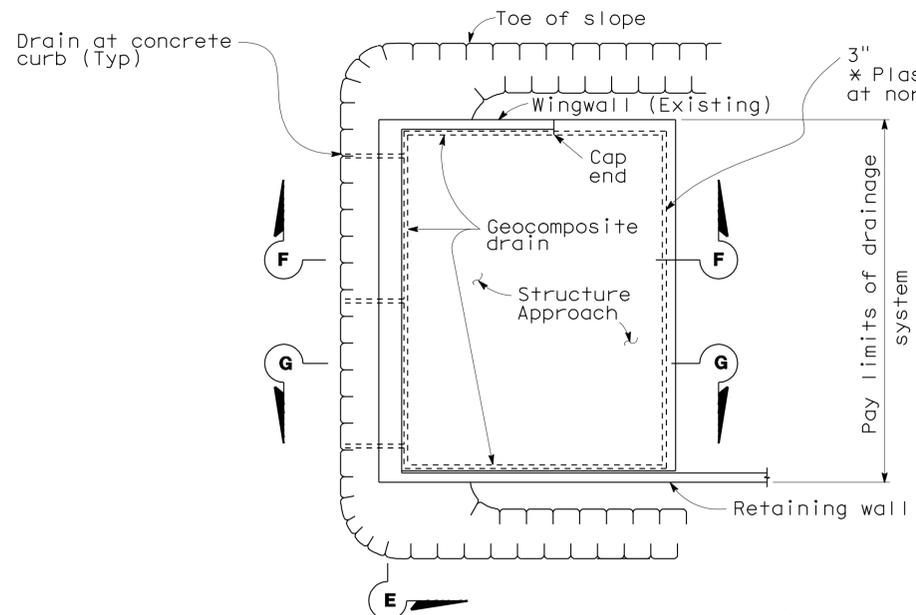
DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 19

BRIDGE NO.	55-0474RL
POST MILE	12.8

ROUTE 91 / 90 SEPARATION (WIDEN)
BRIDGE JACKING DETAILS

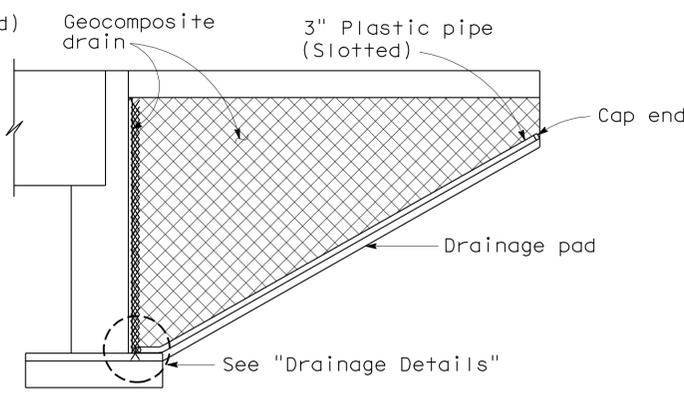
DIST.	COUNTY	ROUTE	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	9.1/15.1	864	949

<i>Wei-Kung Hsia</i> 08-10-10 REGISTERED ENGINEER - CIVIL		
10-25-10 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.		
REGISTERED PROFESSIONAL ENGINEER WEI-KUNG HSIA No. C50210 Exp. 06-30-11 CIVIL STATE OF CALIFORNIA		

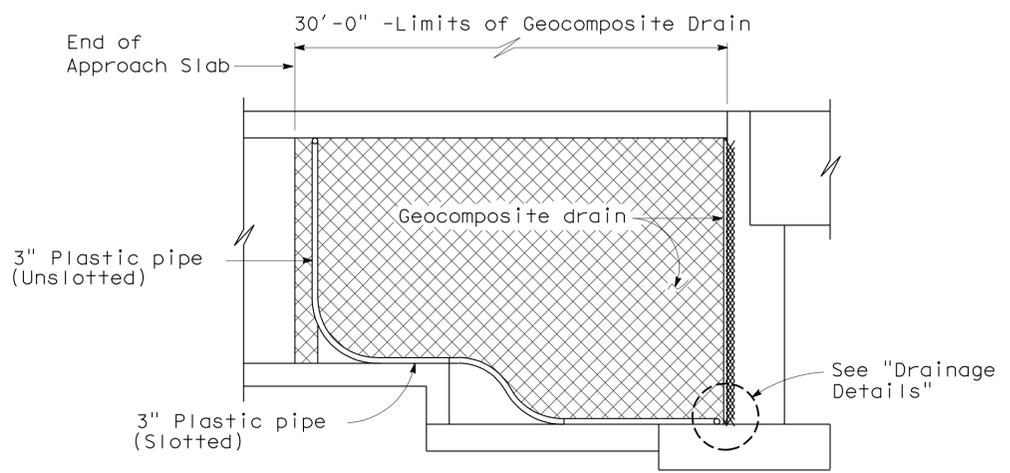


TYPICAL PLAN
1"=10'

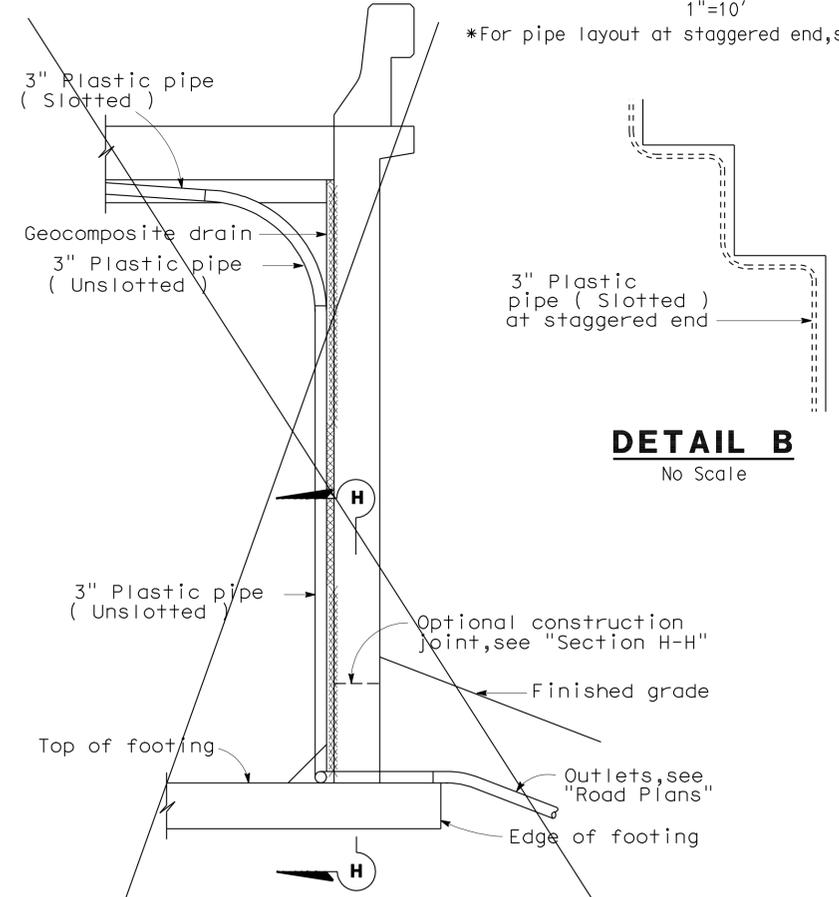
*For pipe layout at staggered end, see "Detail B".



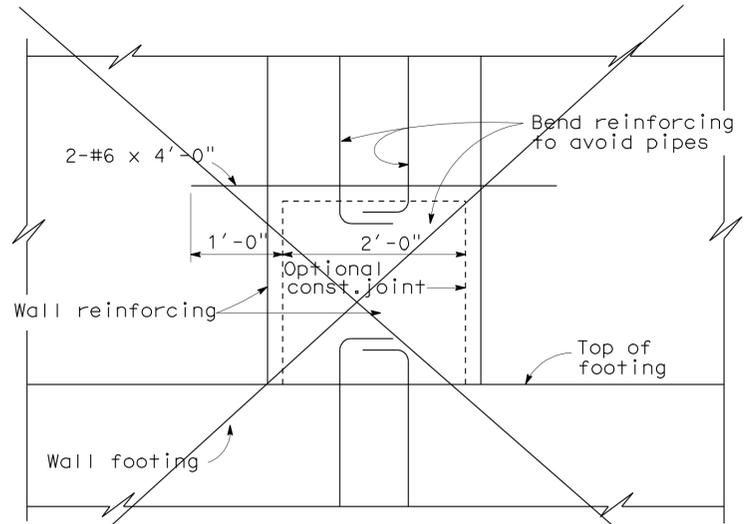
CANTILEVER WINGWALL SECTION F-F
1/4"=1'-0"



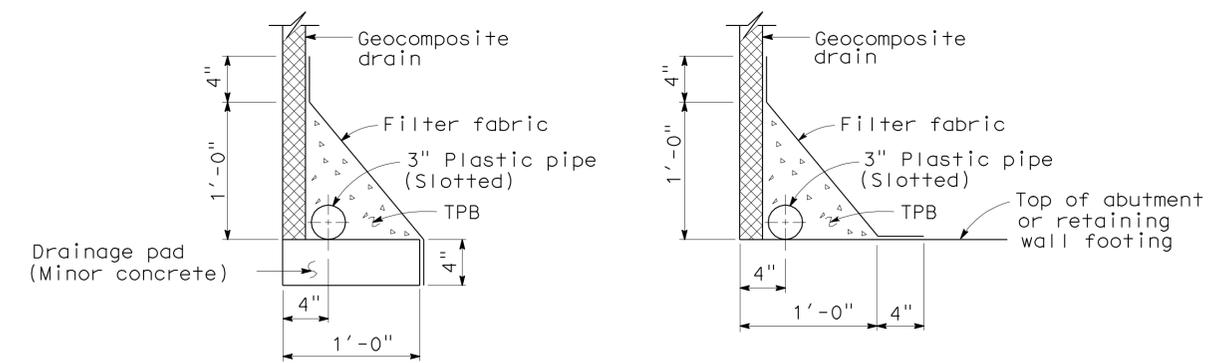
RETAINING WALL WINGWALL SECTION G-G
1/4"=1'-0"



DETAIL B
No Scale



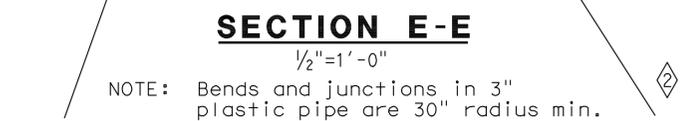
SECTION H-H
1"=1'-0"



WITHOUT FOOTING

WITH FOOTING

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



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

NOTE: Bends and junctions in 3" plastic pipe are 30" radius min.

STANDARD DRAWING			
RELEASE DATE 4/23/98	DESIGN BY <i>M. TRAFFALIS</i>	CHECKED <i>E. THORKILDSEN</i>	RELEASED BY <i>[Signature]</i>
FILE NO. xs3-110e	DETAILS BY <i>R. YEE</i>	CHECKED <i>E. THORKILDSEN</i>	OFFICE CHIEF <i>[Signature]</i>
	SUBMITTED BY <i>M. HA</i>	DRAWING DATE 4/98	

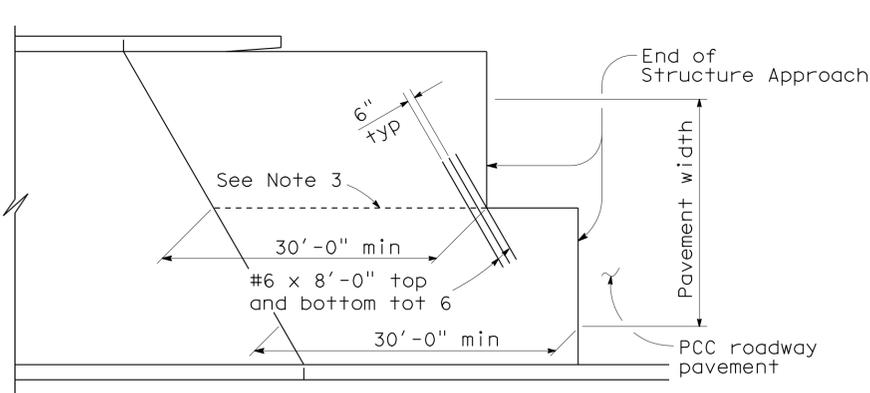
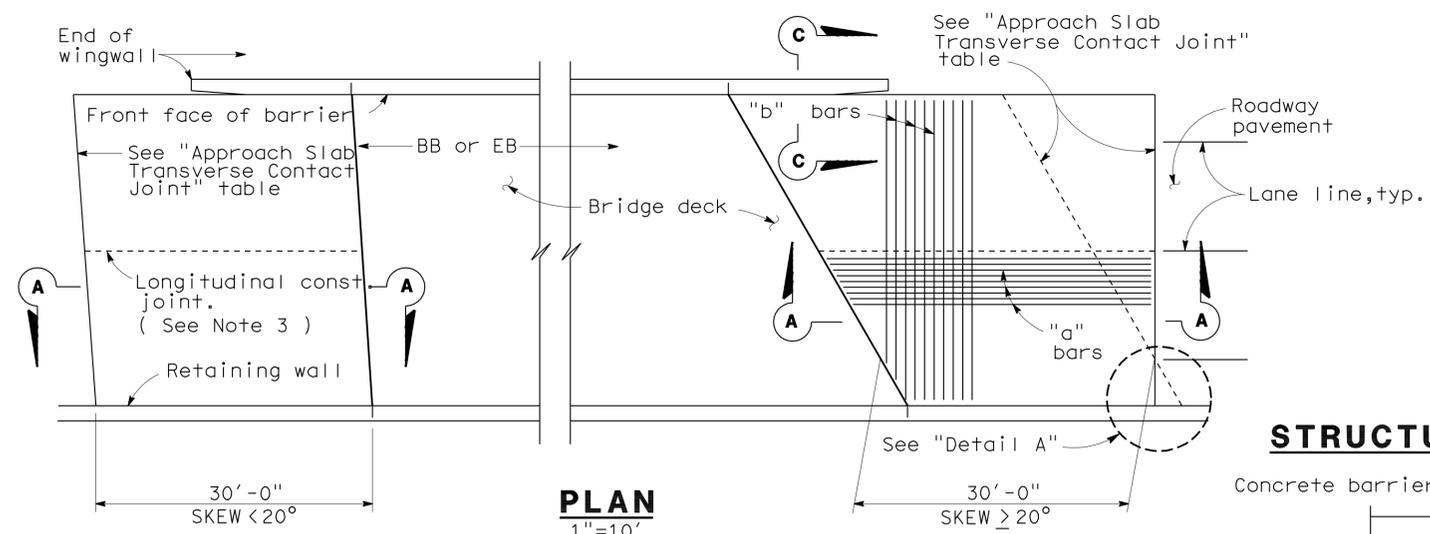
- ◇ Detail Revised
- ◇ Delete Detail

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES

BRIDGE NO. 55-474R/L
MILE POST 12.8
ROUTE 91 / 90 SEPARATION (WIDEN)
STRUCTURE APPROACH DRAINAGE DETAILS

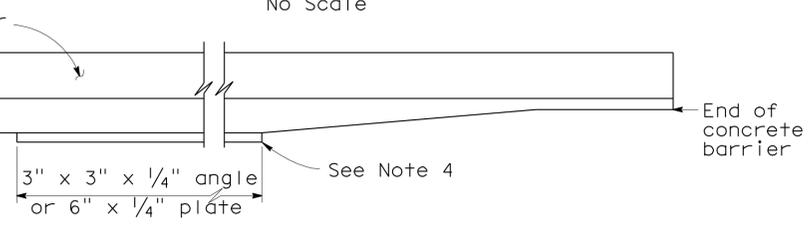
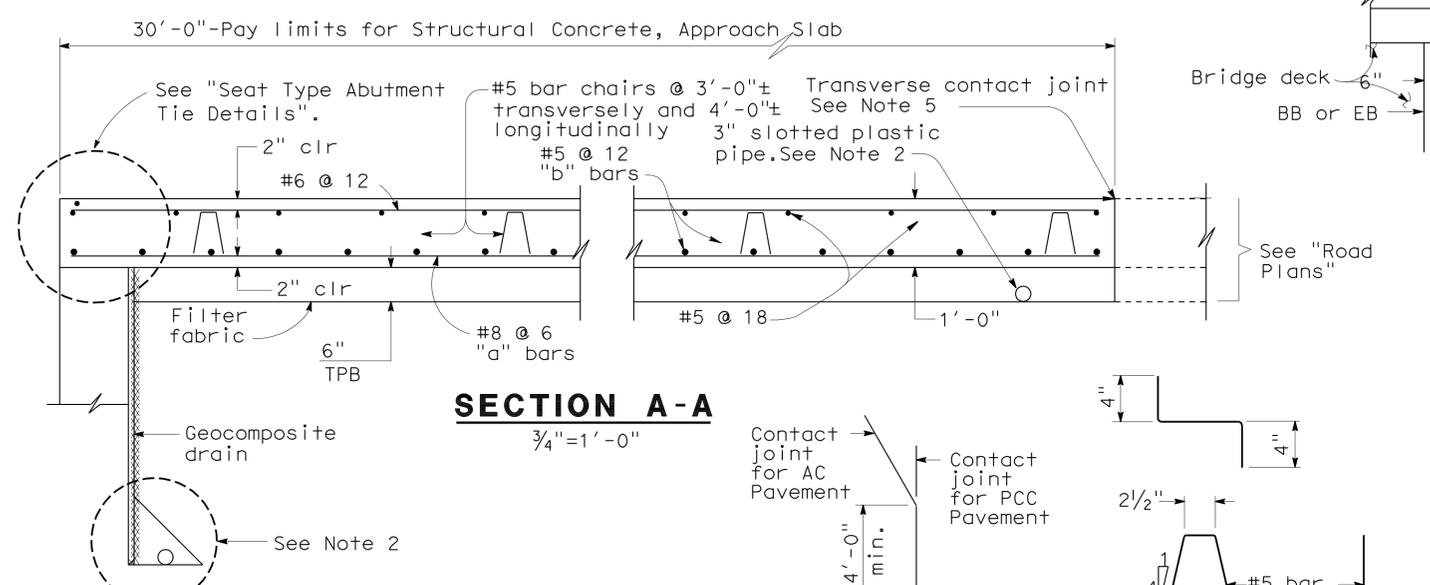
DIST.	COUNTY	ROUTE	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	9.1/15.1	865	949

REGISTERED ENGINEER - CIVIL
 10-25-10
 PLANS APPROVAL DATE
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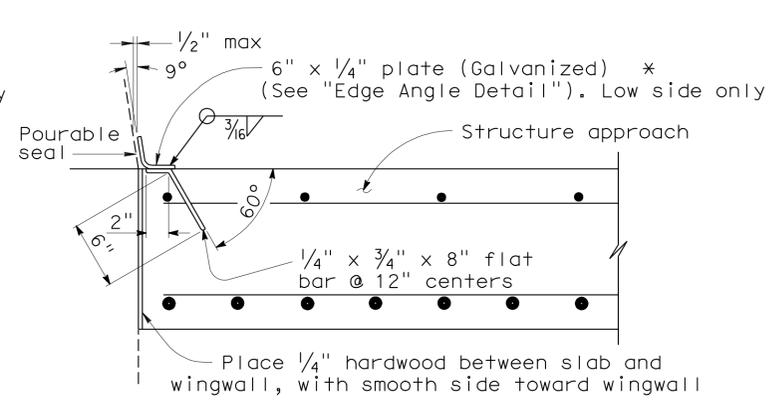
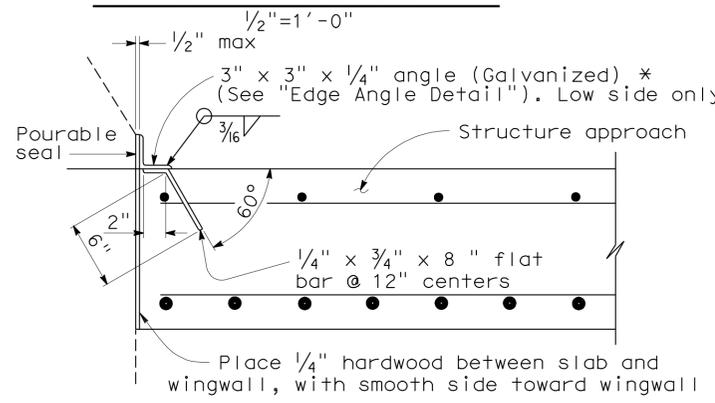


STRUCTURE APPROACH - END STAGGER DETAIL

APPROACH SLAB TRANSVERSE CONTACT JOINT		
APPROACH SKEW	WITH AC ROADWAY PAVEMENT	WITH PCC ROADWAY PAVEMENT
< 20°	Parallel to face of paving notch	Parallel to face of paving notch
20° - 45°	Parallel to face of P N use (Detail A)	Stagger lines 24' to 36' apart.
> 45°	Parallel to face of P N use (Detail A)	Stagger at each lane line.

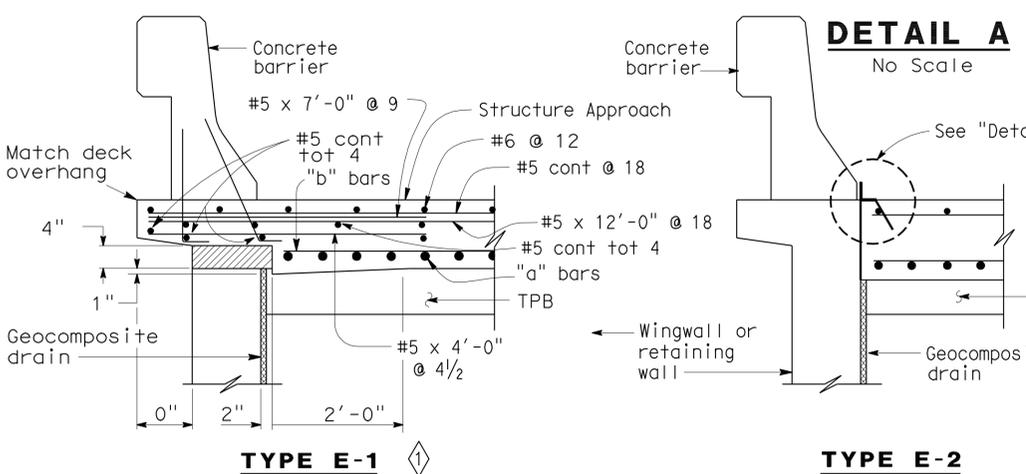


EDGE ANGLE DETAIL



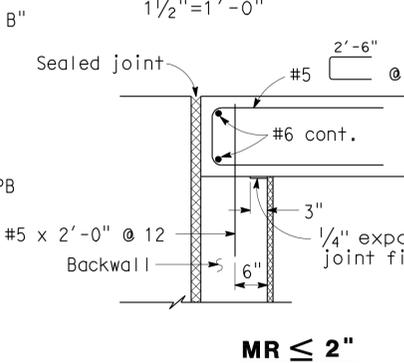
***(TO BE USED WITH TYPE 25 OR TYPE 27 CONCRETE BARRIER)**

***(TO BE USED WITH TYPE 732 OR TYPE 736 CONCRETE BARRIER)**

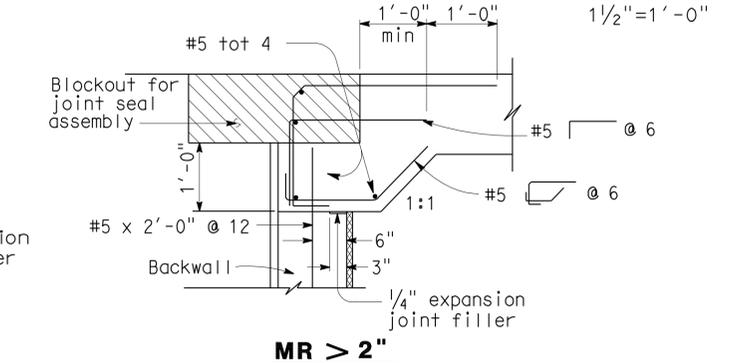


DETAIL A

BAR CHAIR DETAIL

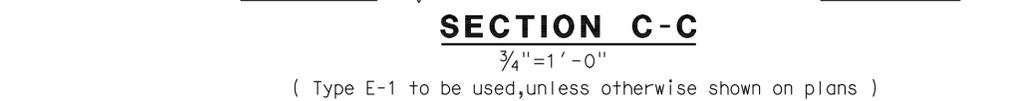


DETAIL B



SEAT TYPE ABUTMENT TIE DETAILS (SEE NOTE 1)

- NOTES:**
- For details not shown, see Structure Plans. For MR <= 2, adjust bar reinforcement to clear a sawcut for sealed joint, when required.
 - For drainage details, see "Structure Approach Drainage Details" sheet.
 - Longitudinal construction joints, when permitted by the Engineer, shall be located on lane lines.
 - End angle or plate at beginning of barrier transition, end of wingwall or end of structure approach as applicable.
 - For transverse contact joint with new PCC paving, refer to Standard Plan P10.
 - At the contractor's option, approach slab transverse reinforcement may be placed parallel to paving notch. Spacing of transverse reinforcement is measured along roadway.
- Remove all polystyrene.



SECTION C-C

(Type E-1 to be used, unless otherwise shown on plans)

STANDARD DRAWING			
RELEASE DATE: 3/14/05	DESIGN BY: M. TRAFFALIS	CHECKED: E. THORKILDSEN	RELEASED BY:
FILE NO.: xs3-120e	DETAILS BY: R. YEE	CHECKED: E. THORKILDSEN	
	SUBMITTED BY: M. HA	DRAWING DATE: 4/98	OFFICE CHIEF:

Detail Revised

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

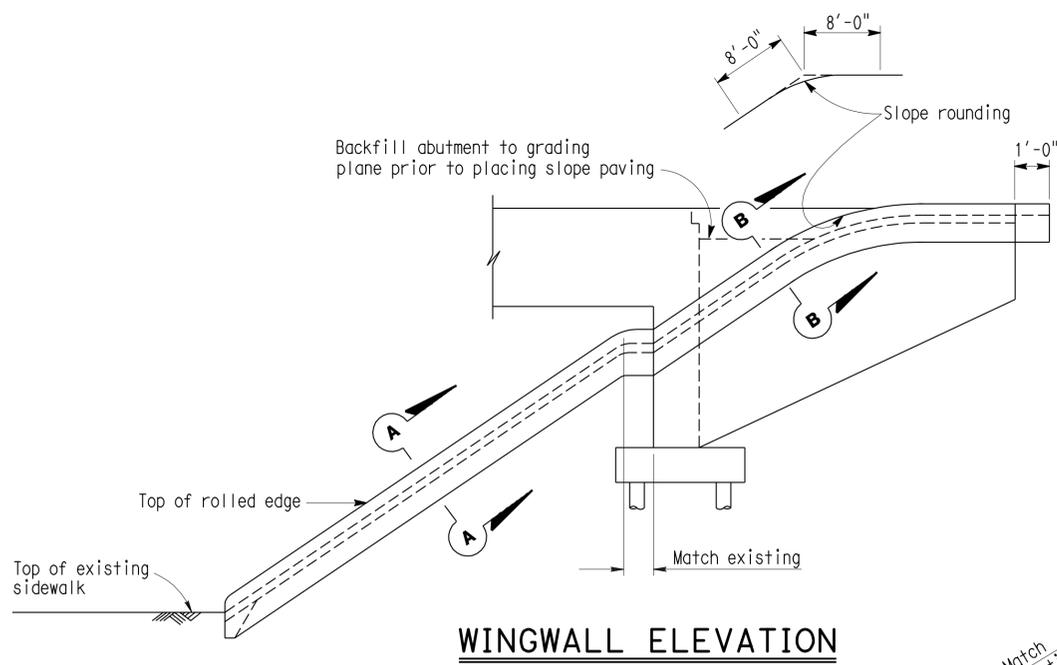
BRIDGE NO. 55-0474RL
MILE POST 12.8

ROUTE 91 / 90 SEPARATION (WIDEN)
STRUCTURE APPROACH TYPE N(30S)

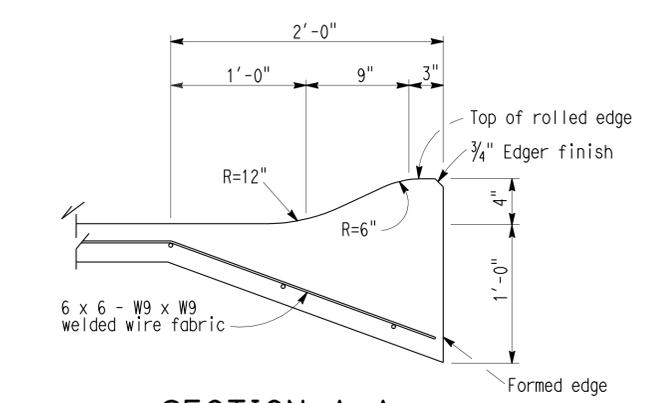
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Orca	91	9.1/15.1	866	949

08-10-10
 REGISTERED CIVIL ENGINEER DATE
 10-25-10
 PLANS APPROVAL DATE
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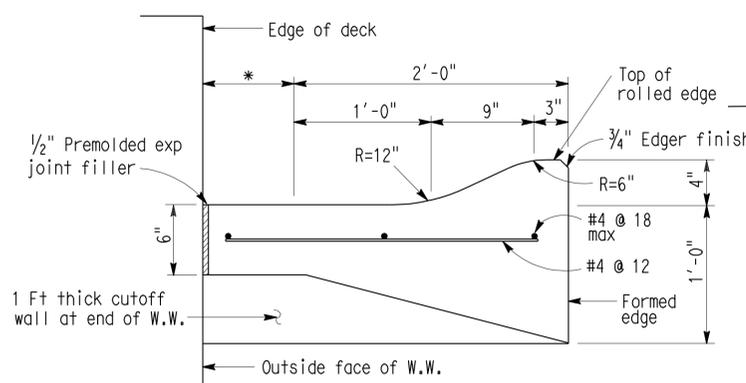
REGISTERED PROFESSIONAL ENGINEER
 WEI-KUNG HSIA
 No. C50210
 Exp. 06-30-11
 CIVIL
 STATE OF CALIFORNIA



WINGWALL ELEVATION

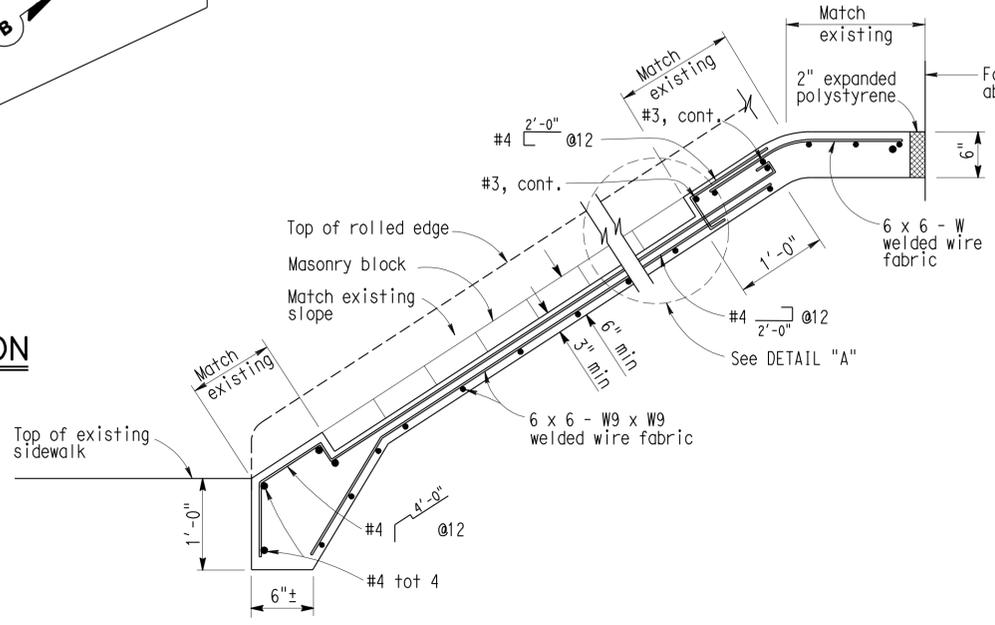


SECTION A-A

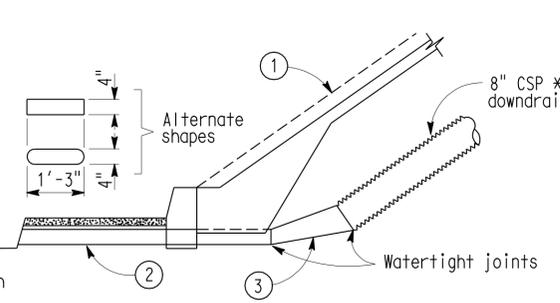


SECTION B-B

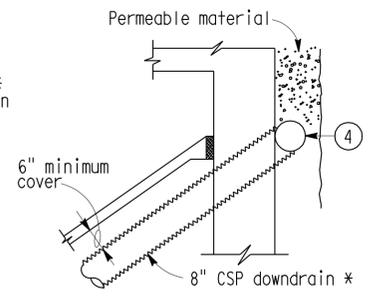
* This dimension becomes zero when edge of deck is at outside face of W.W.



TYPICAL SECTION - CONCRETE PAVING



TYPICAL - WITH SIDEWALK

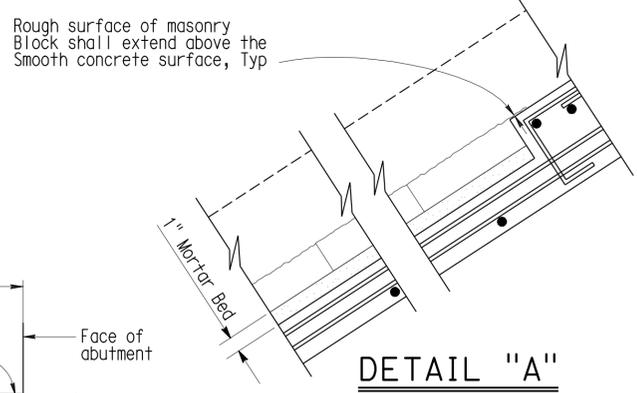


TYPICAL - DRAIN CONNECTION

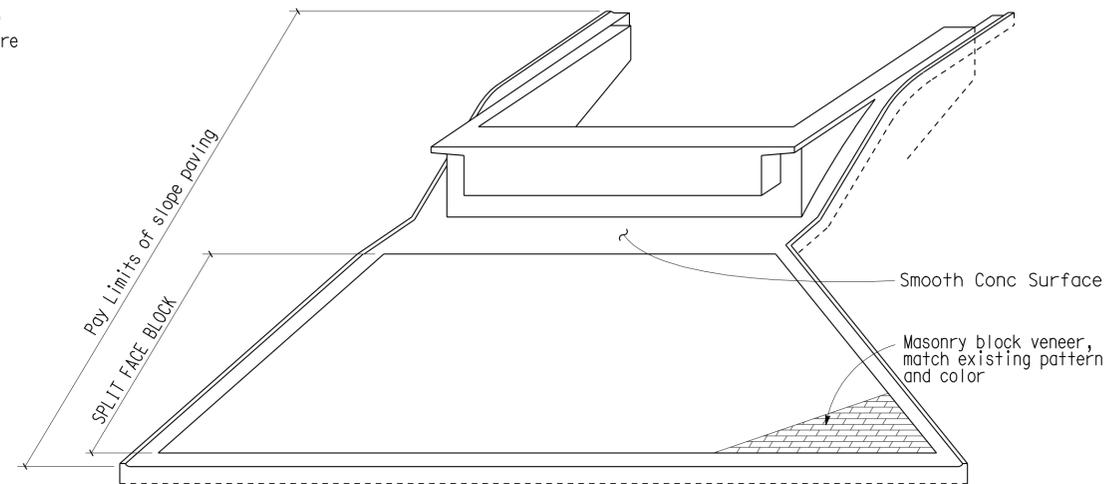
DRAINAGE DETAILS

NOTES:

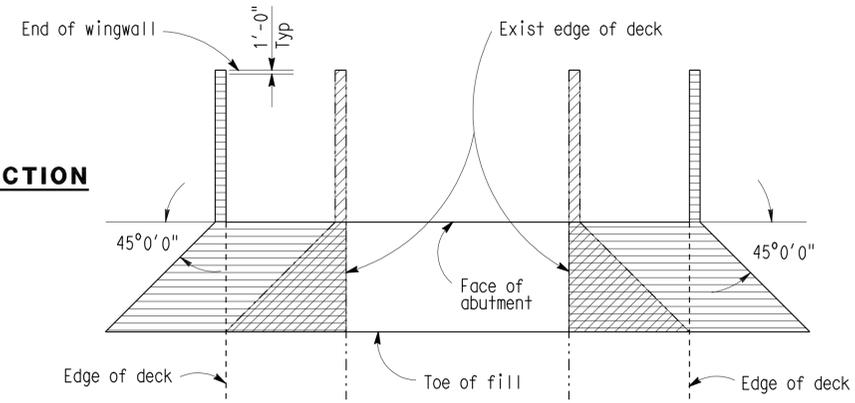
- ① Top of rolled edge
 - ② Conduit: 1/16" galv corrugated steel or 1/8" smooth galv steel
 - ③ Taper: { 1/16" / 1/8" smooth galv steel
 - ④ 8"Ø perforated steel pipe (1/16" thick) underdrain behind abutment. Connect to downdrain as shown on limits of Slope Paving & Drainage layout.
- * 2 Locations at each abutment of left widening and 1 Location at each abutment of right widening



DETAIL "A"



PICTORIAL VIEW OF TYPICAL INSTALLATION



LIMITS OF SLOPE PAVING

- Remove exist slope paving
- Const new slope paving

NOTE:
Abut. 1 shown, Abut. 2 similar.

NO SCALE

DESIGN BY MAMUNUR RAHMAN CHECKED CHARLES LOMICKA DETAILS BY HENGAMEH MAHBOOBI CHECKED MAMUNUR RAHMAN QUANTITIES BY CHARLES LOMICKA CHECKED BARBARA MCGAHEY	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 19	BRIDGE NO. 55-0474RL POST MILE 11.53	ROUTE 91 / 90 SEPARATION (WIDEN) SLOPE PAVING - FULL SLOPE	SHEET 19 OF 26
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		CU X EA X	DISREGARD PRINTS BEARING EARLIER REVISION DATES

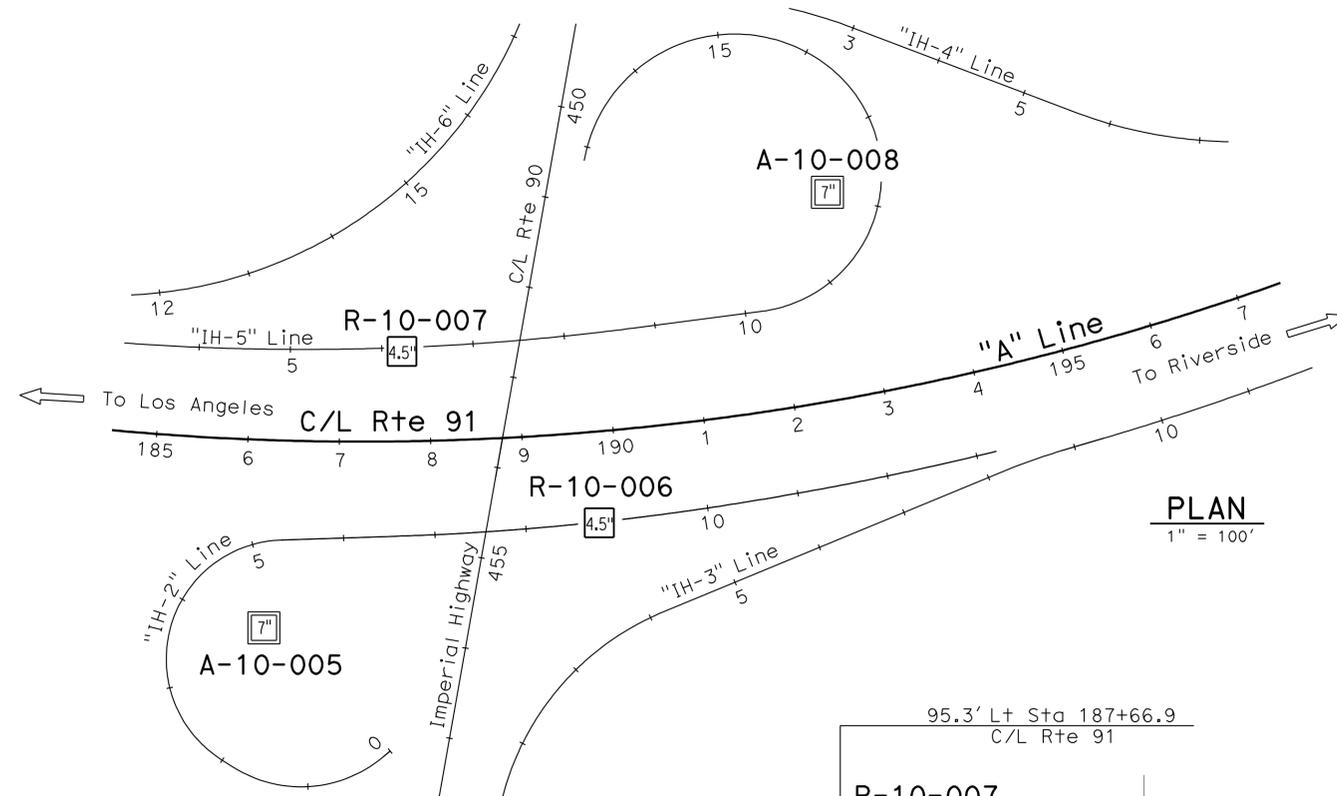
USERNAME => HSTFK DATE PLOTTED => 16-DEC-2010 TIME PLOTTED => 16:45

BENCH MARK

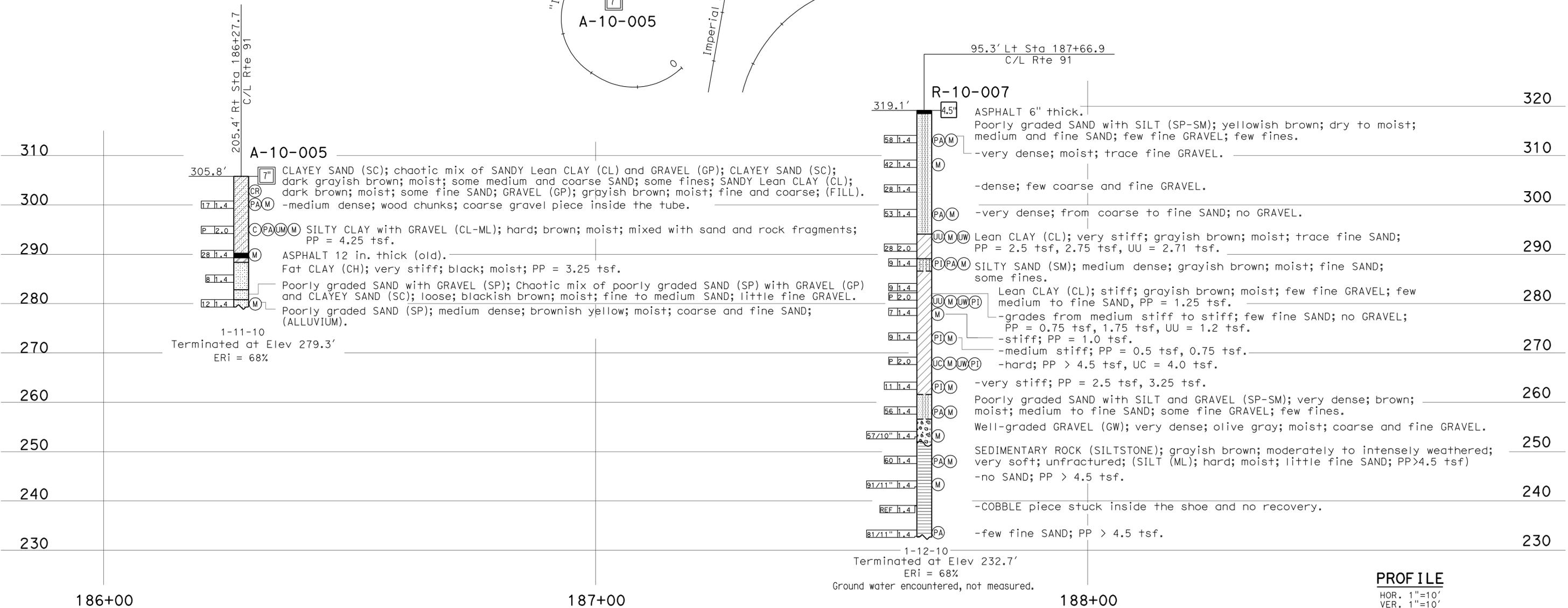
Elev 285.605'

Described by Orange County Surveyor (OCS) 2003 - found 3 3/4" OCS aluminum benchmark disk stamped "2J-44-71", set in the northeasterly corner of a 4 ft. by 4 ft. concrete catch basin. Monument is located in the southwesterly corner of the intersection of Imperial Highway and La Palma Avenue, 308 ft. westerly of the centerline of Imperial, 43 ft. southerly of the centerline of La Palma and 6.8 ft. northerly of a traffic signal pole. Monument is set level with the sidewalk, Vertical Datum NAVD 1988.

Note:
Top of Hole Elevations are based on NAVD 88 elevations. As-Built Log of Test Borings (completed May 1967) require a +2.41 ft add to adjust to the current NAVD 88 elevation shown on all current plans.



PLAN
1" = 100'



PROFILE
HOR. 1"=10'
VER. 1"=10'

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Orca	91	9.1/15.1	867	949

CERTIFIED GEOTECHNICAL ENGINEER
8-23-10
10-25-10
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
Paramanathan Piratheepan
No. 2826
Exp. 9-30-10
STATE OF CALIFORNIA
GEOTECHNICAL

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This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, & Presentation Manual (2010 Edition).

ENGINEERING SERVICES		GEOTECHNICAL SERVICES		STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES		BRIDGE NO.		ROUTE 91/90 SEPARATION (WIDEN)	
FUNCTIONAL SUPERVISOR		DRAWN BY: W. Tang 06/10		DEPARTMENT OF TRANSPORTATION		STRUCTURE DESIGN		55-0474RL		LOG OF TEST BORINGS 1 of 7	
NAME: S. Karimi		CHECKED BY: K. Lai, T Halda		P. Piratheepan		DESIGN BRANCH		11.53			
06S CIVIL LOG OF TEST BORINGS SHEET				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS				CU 12 EA 0G3301		REVISION DATES	
				0 1 2 3				DISREGARD PRINTS BEARING EARLIER REVISION DATES		SHEET 20 OF 26	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	869	949

8-23-10
 CERTIFIED GEOTECHNICAL ENGINEER
 10-25-10
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 Paramanathan Piratheepan
 No. 2826
 Exp. 9-30-10
 GEOTECHNICAL
 STATE OF CALIFORNIA

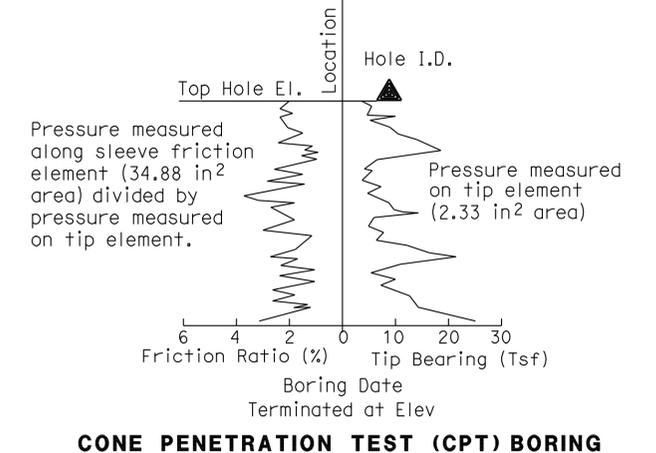
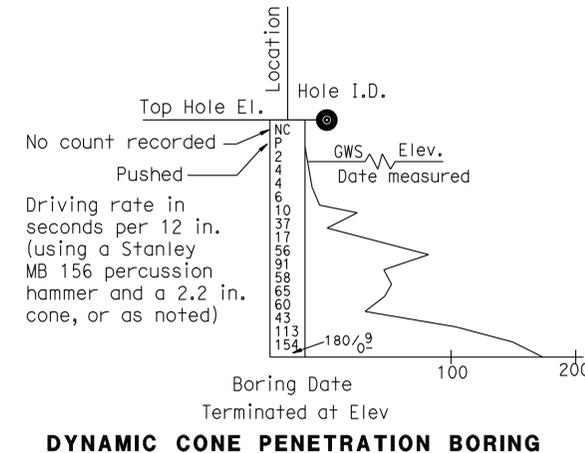
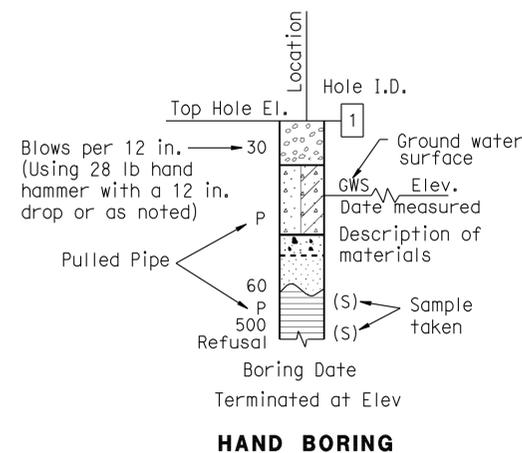
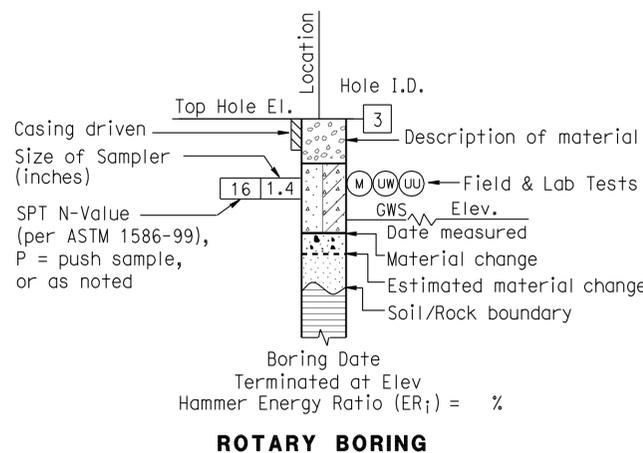
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CEMENTATION	
Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

BOREHOLE IDENTIFICATION		
Symbol	Hole Type	Description
	A	Auger Boring (hollow or solid stem bucket)
	R	Rotary drilled boring (conventional)
	RW	Rotary drilled with self-casing wire-line
	RC	Rotary core with continuously-sampled, self-casing wire-line
	P	Rotary percussion boring (air)
	R	Rotary drilled diamond core
	HD	Hand driven (1-inch soil tube)
	HA	Hand Auger
	D	Dynamic Cone Penetration Boring
	CPT	Cone Penetration Test (ASTM D 5778)
	O	Other (note on LOTB)

Note: Size in inches.

CONSISTENCY OF COHESIVE SOILS				
Description	Shear Strength (tsf)	Pocket Penetrometer Measurement, PP, (tsf)	Torvane Measurement, TV, (tsf)	Vane Shear Measurement, VS, (tsf)
Very Soft	Less than 0.12	Less than 0.25	Less than 0.12	Less than 0.12
Soft	0.12 - 0.25	0.25 - 0.5	0.12 - 0.25	0.12 - 0.25
Medium Stiff	0.25 - 0.5	0.5 - 1	0.25 - 0.5	0.25 - 0.5
Stiff	0.5 - 1	1 - 2	0.5 - 1	0.5 - 1
Very Stiff	1 - 2	2 - 4	1 - 2	1 - 2
Hard	Greater than 2	Greater than 4	Greater than 2	Greater than 2



DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	870	949

8-23-10
 CERTIFIED GEOTECHNICAL ENGINEER
 10-25-10
 PLANS APPROVAL DATE
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GROUP SYMBOLS AND NAMES					
Graphic/Symbol	Group Names	Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
	GW	Well-graded GRAVEL		CL	Lean CLAY
		Well-graded GRAVEL with SAND			Lean CLAY with SAND
	GP	Poorly-graded GRAVEL		CL-ML	Lean CLAY with GRAVEL
		Poorly-graded GRAVEL with SAND			SANDY lean CLAY
	GW-GM	Well-graded GRAVEL with SILT		ML	SANDY lean CLAY with GRAVEL
		Well-graded GRAVEL with SILT and SAND			GRAVELLY lean CLAY
	GW-GC	Well-graded GRAVEL with CLAY (or SILTY CLAY)		OL	GRAVELLY lean CLAY with SAND
		Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)			SILTY CLAY
	GP-GM	Poorly-graded GRAVEL with SILT		OL	SILTY CLAY with SAND
		Poorly-graded GRAVEL with SILT and SAND			SILTY CLAY with GRAVEL
	GP-GC	Poorly-graded GRAVEL with CLAY (or SILTY CLAY)		OL	SANDY SILTY CLAY
		Poorly-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)			SANDY SILTY CLAY with GRAVEL
	GM	SILTY GRAVEL		OH	GRAVELLY SILTY CLAY
		SILTY GRAVEL with SAND			GRAVELLY SILTY CLAY with SAND
	GC	CLAYEY GRAVEL		OH	ORGANIC lean CLAY
		CLAYEY GRAVEL with SAND			ORGANIC lean CLAY with SAND
	GC-GM	SILTY, CLAYEY GRAVEL		OH	ORGANIC lean CLAY with GRAVEL
		SILTY, CLAYEY GRAVEL with SAND			SANDY ORGANIC lean CLAY
	SW	Well-graded SAND		OH	GRAVELLY ORGANIC lean CLAY
		Well-graded SAND with GRAVEL			GRAVELLY ORGANIC lean CLAY with SAND
	SP	Poorly-graded SAND		OH	ORGANIC SILT
		Poorly-graded SAND with GRAVEL			ORGANIC SILT with SAND
	SW-SM	Well-graded SAND with SILT		OH	ORGANIC SILT with GRAVEL
		Well-graded SAND with SILT and GRAVEL			SANDY ORGANIC SILT
	SW-SC	Well-graded SAND with CLAY (or SILTY CLAY)		OH	SANDY ORGANIC SILT with GRAVEL
		Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)			GRAVELLY ORGANIC SILT
	SP-SM	Poorly-graded SAND with SILT		OH	GRAVELLY ORGANIC SILT with SAND
		Poorly-graded SAND with SILT and GRAVEL			ORGANIC fat CLAY
	SP-SC	Poorly-graded SAND with CLAY (or SILTY CLAY)		OH	ORGANIC fat CLAY with SAND
		Poorly-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)			ORGANIC fat CLAY with GRAVEL
	SM	SILTY SAND		OH	SANDY ORGANIC fat CLAY
		SILTY SAND with GRAVEL			SANDY ORGANIC fat CLAY with GRAVEL
	SC	CLAYEY SAND		OH	GRAVELLY ORGANIC fat CLAY
		CLAYEY SAND with GRAVEL			GRAVELLY ORGANIC fat CLAY with SAND
	SC-SM	SILTY, CLAYEY SAND		OH	ORGANIC elastic SILT
		SILTY, CLAYEY SAND with GRAVEL			ORGANIC elastic SILT with SAND
	PT	PEAT		OH	ORGANIC elastic SILT with GRAVEL
					SANDY ORGANIC elastic SILT
		COBBLES		OH/OH	GRAVELLY ORGANIC elastic SILT
		COBBLES and BOULDERS			GRAVELLY ORGANIC elastic SILT with SAND

FIELD AND LABORATORY TESTING	
(C)	Consolidation (ASTM D 2435)
(CL)	Collapse Potential (ASTM D 5333)
(CP)	Compaction Curve (CTM 216)
(CR)	Corrosivity Testing (CTM 643, CTM 422, CTM 417)
(CU)	Consolidated Undrained Triaxial (ASTM D 4767)
(DS)	Direct Shear (ASTM D 3080)
(EI)	Expansion Index (ASTM D 4829)
(M)	Moisture Content (ASTM D 2216)
(OC)	Organic Content-% (ASTM D 2974)
(P)	Permeability (CTM 220)
(PA)	Particle Size Analysis (ASTM D 422)
(PI)	Plasticity Index (AASHTO T 90) Liquid Limit (AASHTO T 89)
(PL)	Point Load Index (ASTM D 5731)
(PM)	Pressure Meter
(R)	R-Value (CTM 301)
(SE)	Sand Equivalent (CTM 217)
(SG)	Specific Gravity (AASHTO T 100)
(SL)	Shrinkage Limit (ASTM D 427)
(SW)	Swell Potential (ASTM D 4546)
(UC)	Unconfined Compression-Soil (ASTM D 2166) Unconfined Compression-Rock (ASTM D 2938)
(UU)	Unconsolidated Undrained Triaxial (ASTM D 2850)
(UW)	Unit Weight (ASTM D 4767)

APPARENT DENSITY OF COHESIONLESS SOILS	
Description	SPT N ₆₀ (Blows / 12 in.)
Very Loose	0 - 5
Loose	5 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	Greater than 50

MOISTURE	
Description	Criteria
Dry	No discernable moisture
Moist	Moisture present, but no free water
Wet	Visible free water

PERCENT OR PROPORTION OF SOILS	
Description	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5% - 10%
Little	15% - 25%
Some	30% - 45%
Mostly	50% - 100%

PARTICLE SIZE		
Description	Size (in.)	
Boulder	Greater than 12	
Cobble	3 - 12	
Gravel	Coarse	3/4 - 3
	Fine	1/5 - 3/4
Sand	Coarse	1/16 - 1/5
	Medium	1/64 - 1/16
	Fine	1/300 - 1/64
Silt and Clay	Less than 1/300	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	871	949

8-23-10
 CERTIFIED GEOTECHNICAL ENGINEER
 10-25-10
 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.

PERCENT CORE RECOVERY (REC) & ROCK QUALITY DESIGNATION (RQD)

$$REC = \frac{\sum \text{Length of the recovered core pieces (in.)}}{\text{Total length of core run (in.)}} \times 100\%$$

$$RQD = \frac{\sum \text{Length of intact core pieces} \geq 4 \text{ in.}}{\text{Total length of core run (in.)}} \times 100\%$$

RQD* Indicates soundness criteria not met.

BEDDING SPACING

Description	Thickness / Spacing
Massive	Greater than 10 ft
Very Thickly Bedded	3 ft - 10 ft
Thickly Bedded	1 ft - 3 ft
Moderately Bedded	4 in. - 1 ft
Thinly Bedded	1 in. - 4 in.
Very Thinly Bedded	1/4 in. - 1 in.
Laminated	Less than 1/4 in.

LEGEND OF ROCK MATERIALS

- IGNEOUS ROCK
- SEDIMENTARY ROCK
- METAMORPHIC ROCK

ROCK HARDNESS

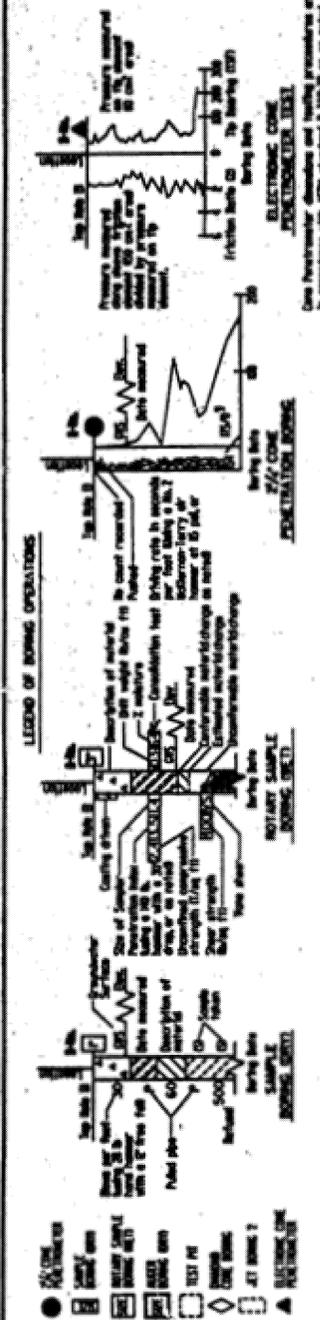
Description	Criteria
Extremely Hard	Cannot be scratched with a pocketknife or sharp pick. Can only be chipped with repeated heavy hammer blows.
Very Hard	Cannot be scratched with a pocketknife or sharp pick. Breaks with repeated heavy hammer blows.
Hard	Can be scratched with a pocketknife or sharp pick with difficulty (heavy pressure). Breaks with heavy hammer blows.
Moderately Hard	Can be scratched with pocketknife or sharp pick with light or moderate pressure. Breaks with moderate hammer blows.
Moderately Soft	Can be grooved 1/16 in. deep with a pocketknife or sharp pick with moderate or heavy pressure. Breaks with light hammer blow or heavy manual pressure.
Soft	Can be grooved or gouged easily by a pocketknife or sharp pick with light pressure, can be scratched with fingernail. Breaks with light to moderate manual pressure.
Very Soft	Can be readily indented, grooved or gouged with fingernail, or carved with a pocketknife. Breaks with light manual pressure.

WEATHERING DESCRIPTORS FOR INTACT ROCK

Description	Diagnostic Features				General Characteristics	
	Chemical Weathering-Discoloration and/or Oxidation		Mechanical Weathering-Grain Boundary Conditions (Disaggregation) Primarily for Granitics and Some Coarse-Grained Sediments	Texture and Leaching		
	Body of Rock	Fracture Surfaces		Texture		Leaching
Fresh	No discoloration, not oxidized.	No discoloration or oxidation.	No separation, intact (tight).	No change	No leaching	Hammer rings when crystalline rocks are struck.
Slightly Weathered	Discoloration or oxidation is limited to surface of, or short distance from, fractures; some feldspar crystals are dull.	Minor to complete discoloration or oxidation of most surfaces.	No visible separation, intact (tight).	Preserved	Minor leaching of some soluble minerals.	Hammer rings when crystalline rocks are struck. Body of rock not weakened.
Moderately Weathered	Discoloration or oxidation extends from fractures usually throughout; Fe-Mg minerals are "rusty," feldspar crystals are "cloudy."	All fracture surfaces are discolored or oxidized.	Partial separation of boundaries visible.	Generally preserved	Soluble minerals may be mostly leached.	Hammer does not ring when rock is struck. Body of rock is slightly weakened.
Intensely Weathered	Discoloration or oxidation throughout; all feldspars and Fe-Mg minerals are altered to clay to some extent; or chemical alteration produces in-situ disaggregation, see grain boundary conditions.	All fracture surfaces are discolored or oxidized, surfaces friable.	Partial separation, rock is friable; in semiarid conditions granitics are disaggregated.	Texture altered by chemical disintegration (hydration, argillation).	Leaching of soluble minerals may be complete.	Dull sound when struck with hammer, usually can be broken with moderate to heavy manual pressure or by light hammer blow without reference to planes of weakness such as incipient or hairline fractures, or veinlets. Rock is significantly weakened.
Decomposed	Discolored or oxidized throughout, but resistant minerals such as quartz may be unaltered; all feldspars and Fe-Mg minerals are completely altered to clay.		Complete separation of grain boundaries (disaggregated).	Resembles a soil, partial or complete remnant rock structure may be preserved; leaching of soluble minerals usually complete.		Can be granulated by hand. Resistant minerals such as quartz may be present as "stringers" or "dikes."

FRACTURE DENSITY

Description	Observed Fracture Density
Unfractured	No fractures.
Very Slightly Fractured	Core lengths greater than 3 ft.
Slightly Fractured	Core lengths mostly from 1 to 3 ft.
Moderately Fractured	Core lengths mostly from 4 in. to 1 ft.
Intensely Fractured	Core lengths mostly from 1 to 4 in.
Very Intensely Fractured	Mostly chips and fragments.



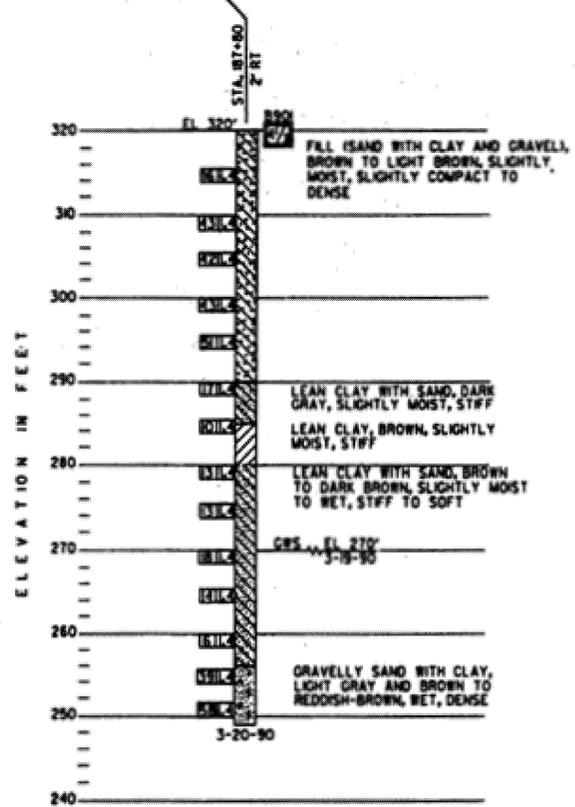
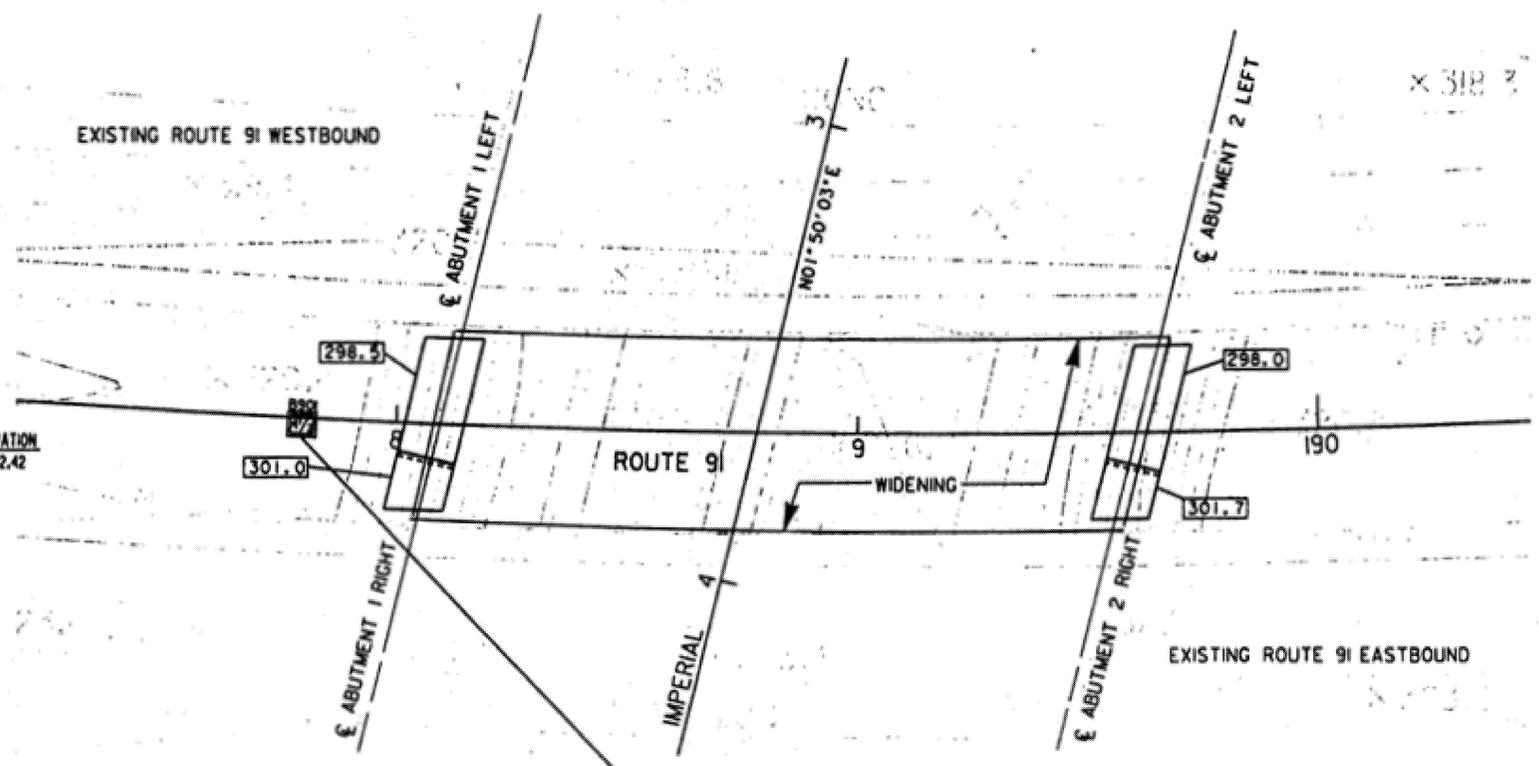
LEGEND OF EARTH MATERIALS

CLAYEY SILT	CLAYEY SAND	SANDY SILT	SANDY SAND	SILT	SAND	GRAVELLY SAND	GRAVELLY SILT
CLAYEY SAND	SANDY CLAY	SANDY SILT	SANDY SAND	SILT	SAND	GRAVELLY SAND	GRAVELLY SILT

CONSISTENCY CLASSIFICATION FOR SOILS

Plasticity Index (PI)	Liquid Limit (LL)	Consistency
0-4	0-25	Very stiff
4-7	25-50	Stiff
7-10	50-75	Medium stiff
10-15	75-90	Medium
15-20	90-100	Medium soft
20-25	100-110	Soft
25-30	110-120	Very soft
30-40	120-140	Very soft
40-50	140-160	Very soft

- NOTES:**
- THE BORING LOGS AND RELATED INFORMATION REPRESENT THE OPINION OF THE GEOTECHNICAL ENGINEER AS TO THE CHARACTER OF THE MATERIALS AT THE LOCATIONS SHOWN. SOIL AND GROUNDWATER CONDITIONS BETWEEN ADJACENT TEST HOLES AND AT OTHER LOCATIONS MAY DIFFER FROM THOSE SHOWN. GROUNDWATER CONDITIONS MAY CHANGE WITH PASSAGE OF TIME. ALL LOCATIONS AND ELEVATIONS ARE APPROXIMATE.
 - AUGER BORINGS WERE DRILLED WITH A ONE TS DRILL RIG.
 - ELEVATIONS ARE BASED ON TOPOGRAPHIC BASE SHEET MAPPING PREPARED FOR THIS PROJECT. TEST BORING ELEVATIONS ARE IN FEET AND ARE REFERENCED TO MEAN SEA LEVEL DATUM.
 - DETAILED BORING LOGS ARE INCLUDED IN THE JULY 1990 GEOTECHNICAL BRIDGE FOUNDATION REPORT PREPARED BY CH2M HILL, FILE NO. LA02636-4-LE13
 - ELEVATIONS SHOWN ARE BASED UPON OCS DATUM 1976.
 - BASIS OF BEARINGS IS CALIFORNIA STATE PLANE COORDINATE SYSTEM 1983 N.A.D.J.
- BENCH MARK DESCRIPTION ELEVATION**
 448-C-72 SET L & 'C' NAIL IN TOP OF PCC CURB NEAR END OF CURB ON WESTBOUND ON-RAMP #9, 60 FT. RT. OF ROUTE 90 AT STATION 448+90. 292.42
7. INDICATES APPROXIMATE BOTTOM OF FOOTING ELEVATION. FOR PILE LAYOUT SEE OTHER SHEETS.

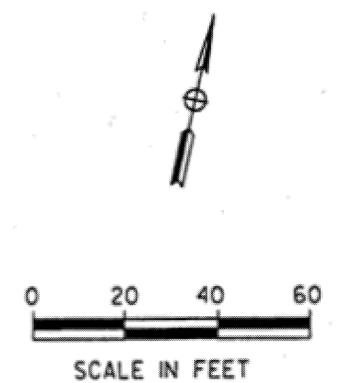


DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Or	91	RI01/RI8.9		

REGISTERED ENGINEER-GEOTECHNICAL
 STUART WILSON
 No. CE 896
 Exp. 12/31/92
 STATE OF CALIFORNIA

PLANS APPROVAL DATE
 ORANGE COUNTY TRANSP. COMM.
 1055 N. MAIN ST., SUITE 516
 SANTA ANA, CALIFORNIA 92701

CH2M HILL
 2510 RED HILL AVE, SUITE A
 SANTA ANA, CALIFORNIA 92705



AS BUILT
 RESIDENT ENGINEER *[Signature]*
 CONTRACT NO. 12-926004
 COMPLETION DATE: 07-28-1998
James Perkins

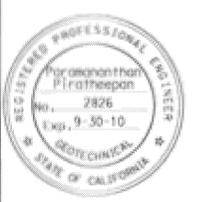
DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES

As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. It does not attest to the accuracy or validity of the information contained in the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.

DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	Sheet No.	Total Sheets
12	Or	91	9.1/15.1	872	949

CERTIFIED GEOTECHNICAL ENGINEER
ROUTE 91/90 SEPARATION (WIDEN)
LOG OF TEST BORINGS 5 OF 5

BRIDGE No. 55-474 R/L
 POST MILE 8.53
 DATE 8-2-10
 SHEET 5 OF 5



DESIGN OVERSEER <i>[Signature]</i>	DRAWN BY M. REICHERT	E. M. SMITH FIELD INVESTIGATOR	APPROVAL RECOMMENDED BY L. PERKO	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	KENT CORDTZ PROJECT ENGINEER	BRIDGE NO. 55-474 R/L POST MILE 8.53
DESIGN DATE 3/1/92	CHECKED BY E. M. SMITH	REGISTRATION NO.	REGISTRATION NO. CE44359	CU 12207 EA 000971	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES (PRELIMINARY STAGE ONLY)

ROUTE 91/90 SEPARATION (WIDEN)	
LOG OF TEST BORINGS 6 OF 7	
SHEET	25 OF 26

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	874	949

08-10-10
 REGISTERED CIVIL ENGINEER DATE
 10-25-10
 PLANS APPROVAL DATE

WEI-KUNG HSIA
 No. C50210
 Exp. 06-30-11
 CIVIL
 STATE OF CALIFORNIA

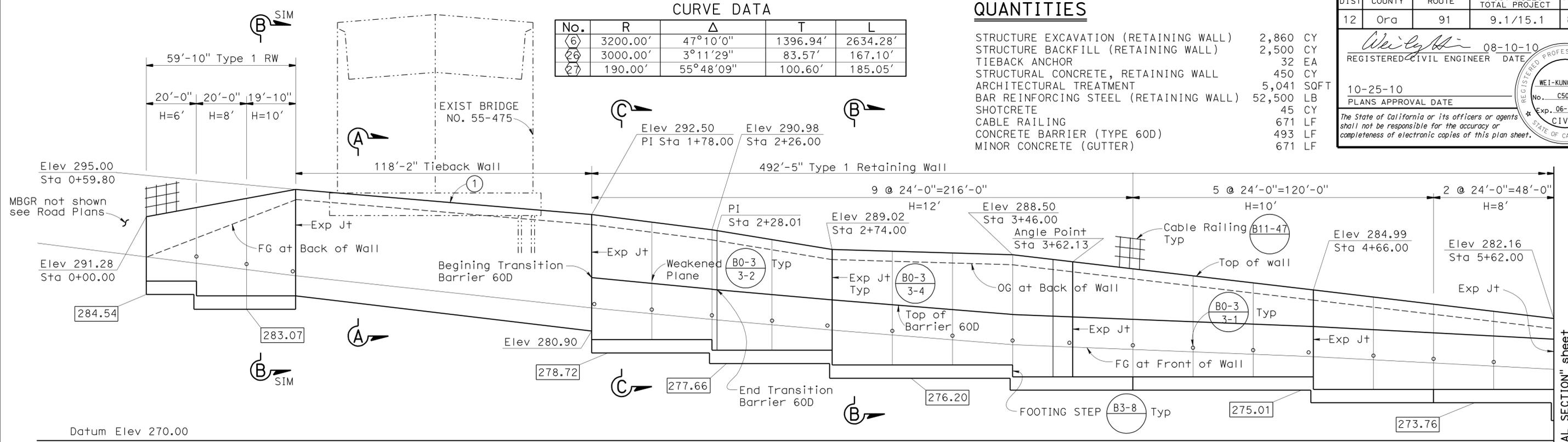
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CURVE DATA

No.	R	Δ	T	L
(6)	3200.00'	47°10'0"	1396.94'	2634.28'
(26)	3000.00'	3°11'29"	83.57'	167.10'
(27)	190.00'	55°48'09"	100.60'	185.05'

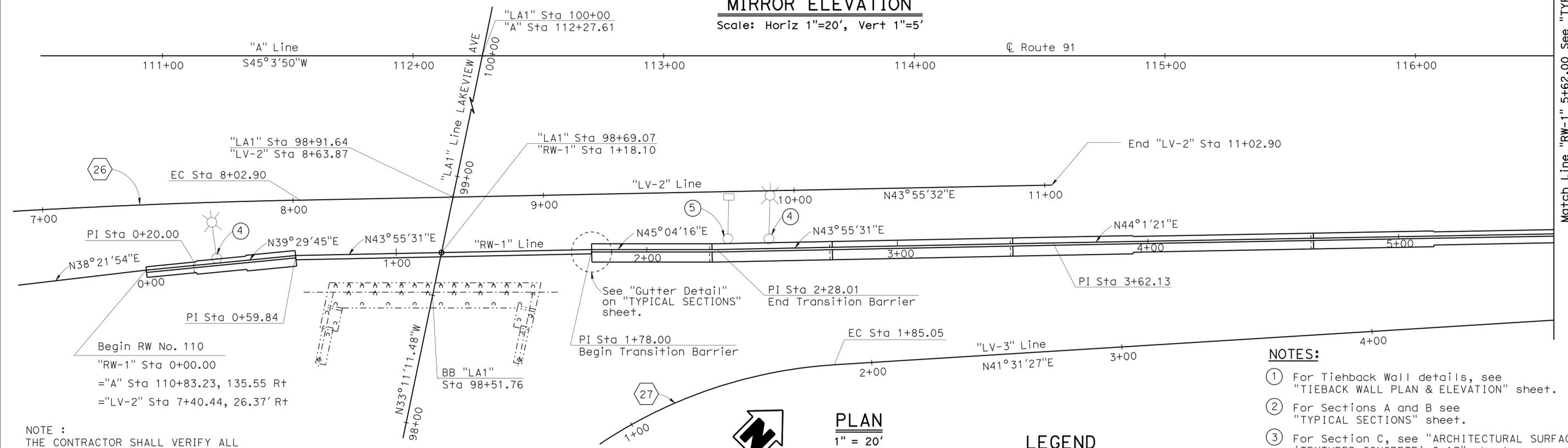
QUANTITIES

STRUCTURE EXCAVATION (RETAINING WALL)	2,860	CY
STRUCTURE BACKFILL (RETAINING WALL)	2,500	CY
TIEBACK ANCHOR	32	EA
STRUCTURAL CONCRETE, RETAINING WALL	450	CY
ARCHITECTURAL TREATMENT	5,041	SQFT
BAR REINFORCING STEEL (RETAINING WALL)	52,500	LB
SHOTCRETE	45	CY
CABLE RAILING	671	LF
CONCRETE BARRIER (TYPE 60D)	493	LF
MINOR CONCRETE (GUTTER)	671	LF



MIRROR ELEVATION

Scale: Horiz 1"=20', Vert 1"=5'



- #### NOTES:
- ① For Tieback Wall details, see "TIEBACK WALL PLAN & ELEVATION" sheet.
 - ② For Sections A and B see "TYPICAL SECTIONS" sheet.
 - ③ For Section C, see "ARCHITECTURAL SURFACE (TEXTURED CONCRETE) C-17" sheet.
 - ④ Relocate Existing electroiers, see Road Plans.
 - ⑤ Relocate Existing camera post, see Road Plans.

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

LEGEND

□ Indicates Bottom of Footing Elevation.

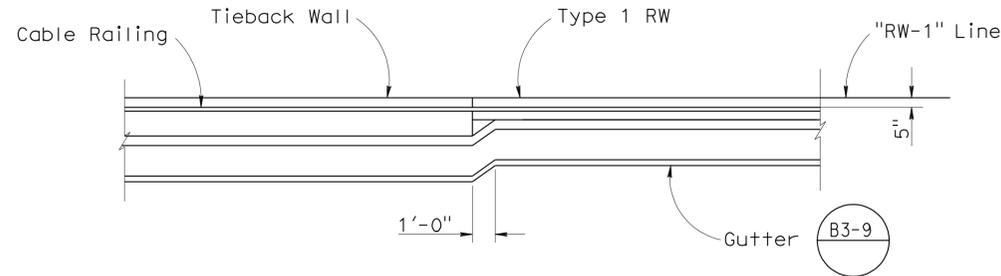
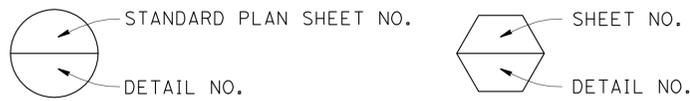
X DESIGN ENGINEER	DESIGN	BY Rui Wang	CHECKED Edward Mercado	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 19	BRIDGE NO.	RETAINING WALL NO. 110		
	DETAILS	BY Hemant Barbhaiya / H.M.	CHECKED Rui Wang	LAYOUT	BY Rui Wang			CHECKED Edward Mercado	55-0475	GENERAL PLAN	
	QUANTITIES	BY Rui Wang	CHECKED Barbara McGahey	SPECIFICATIONS	BY X			PLANS AND SPECS COMPARED X	10.1R		

STRUCTURES DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 10/25/05) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3 CU 12 EA OG3301 DISREGARD PRINTS BEARING EARLIER REVISION DATES

FILE => 55-0475-g-rw_1001.dgn

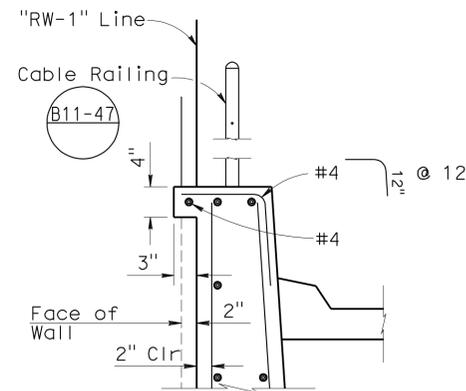
STANDARD PLANS DATED MAY 2006

- A10A ABBREVIATIONS
- A10B SYMBOLS
- A76A CONCRETE BARRIER TYPE 60
- B0-3 BRIDGE DETAILS
- B3-8 RETAINING WALL DETAIL NO.1
- B3-9 RETAINING WALL DETAIL NO.2
- B11-47 CABLE RAILING



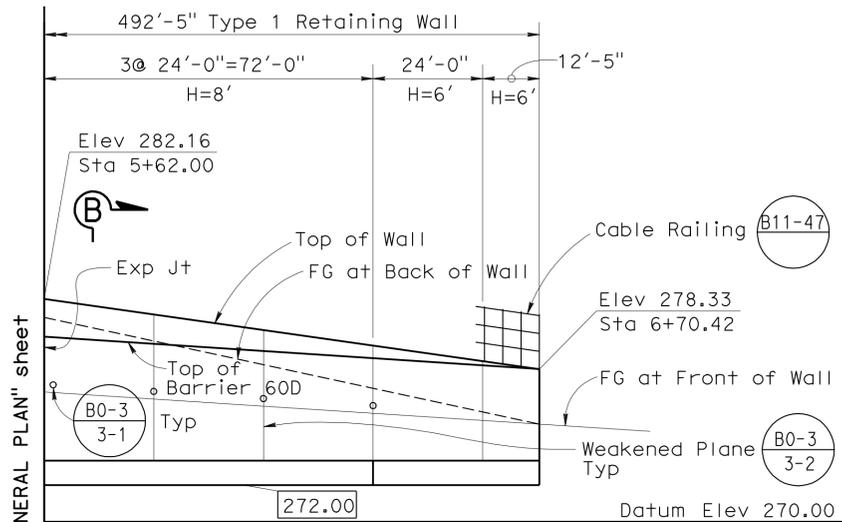
GUTTER DETAIL

1/4" = 1'-0"



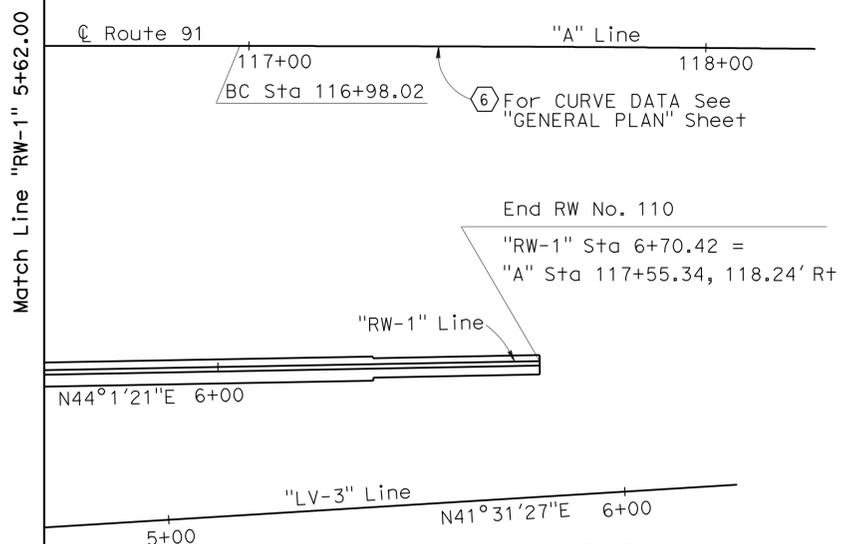
DETAIL 1

1" = 1'-0"



MIRROR ELEVATION

Scale: Horiz 1"=20', Vert 1"=5'

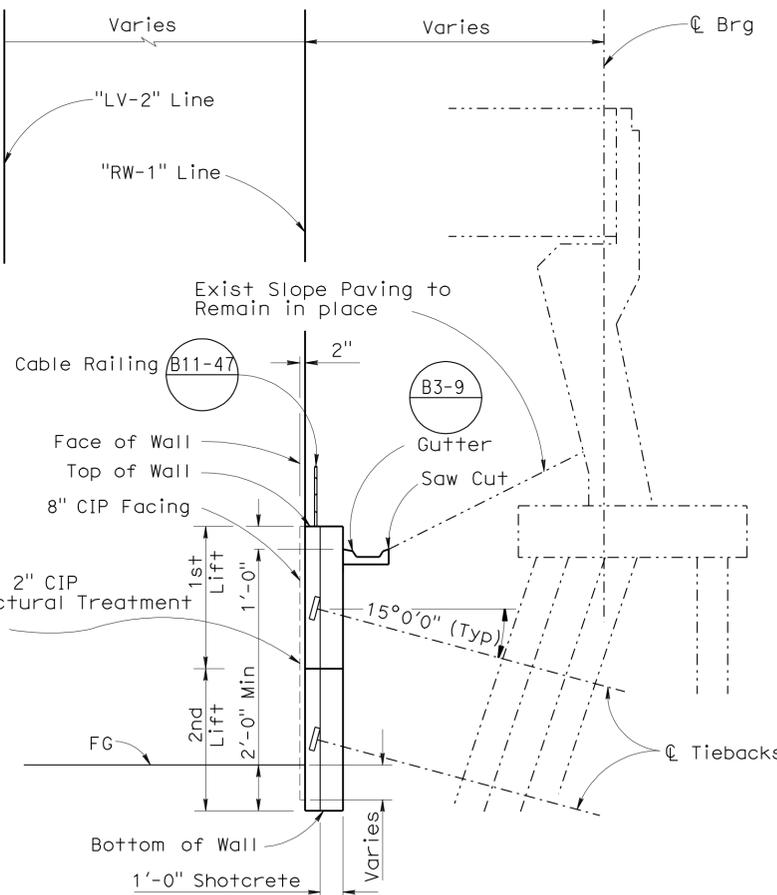


PLAN
1" = 20'



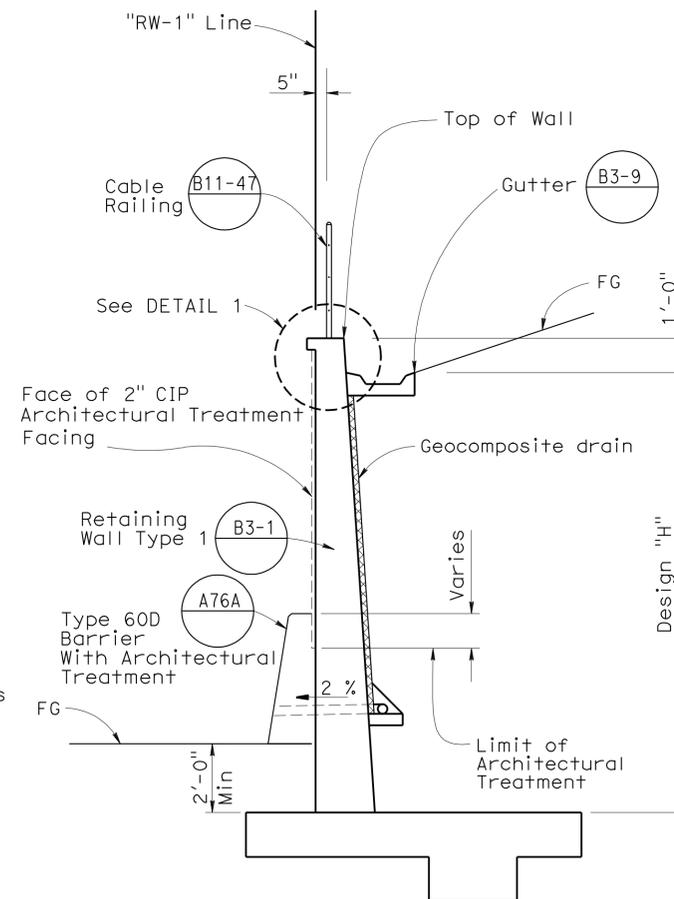
LEGEND

Indicates Bottom of Footing Elevation.



SECTION A-A

1/4" = 1'-0"



SECTION B-B

NTS

NOTES:

For Wall and Barrier Architectural Treatment, see "ARCHITECTURAL SURFACE (TEXTURED CONCRETE)" sheets.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	875	949
REGISTERED CIVIL ENGINEER			DATE		
10-25-10			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.			STATE OF CALIFORNIA		

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

INDEX TO PLANS

NO.	SHEET NAME
1	GENERAL PLAN
2	TYPICAL SECTIONS
3	TIEBACK WALL PLAN AND ELEVATION
4	TIEBACK WALL DETAIL NO.1
5	TIEBACK WALL DETAIL NO.2
6	ARCHITECTURAL LAYOUT C-1
7	ARCHITECTURAL LAYOUT C-2
8	ARCHITECTURAL SURFACE (TEXTURED CONCRETE) C-3
9	ARCHITECTURAL SURFACE (TEXTURED CONCRETE) C-4
10	ARCHITECTURAL SURFACE (TEXTURED CONCRETE) C-5
11	ARCHITECTURAL SURFACE (TEXTURED CONCRETE) C-6
12	ARCHITECTURAL SURFACE (TEXTURED CONCRETE) C-7
13	ARCHITECTURAL SURFACE (TEXTURED CONCRETE) C-8
14	ARCHITECTURAL DETAILS C-9
15	ARCHITECTURAL SURFACE (TEXTURED CONCRETE) C-10
16	ARCHITECTURAL SURFACE (TEXTURED CONCRETE) C-11
17	ARCHITECTURAL SURFACE (TEXTURED CONCRETE) C-12
18	ARCHITECTURAL SURFACE (TEXTURED CONCRETE) C-13
19	ARCHITECTURAL SURFACE (TEXTURED CONCRETE) C-14
20	ARCHITECTURAL SURFACE (TEXTURED CONCRETE) C-15
21	ARCHITECTURAL SURFACE (TEXTURED CONCRETE) C-16
22	ARCHITECTURAL SURFACE (TEXTURED CONCRETE) C-17
23	LOG OF TEST BORINGS 1 OF 5
24	LOG OF TEST BORINGS 2 OF 5
25	LOG OF TEST BORINGS 3 OF 5
26	LOG OF TEST BORINGS 4 OF 5
27	LOG OF TEST BORINGS 5 OF 5

DESIGN	BY Rui Wang	CHECKED Edward Mercado
DETAILS	BY Hemant Barbhaiya	CHECKED Rui Wang
QUANTITIES	BY Rui Wang	CHECKED Barbara McGahey

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 19

BRIDGE NO.	55-475
POST MILE	10.1R

RETAINING WALL NO.110
TYPICAL SECTIONS

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

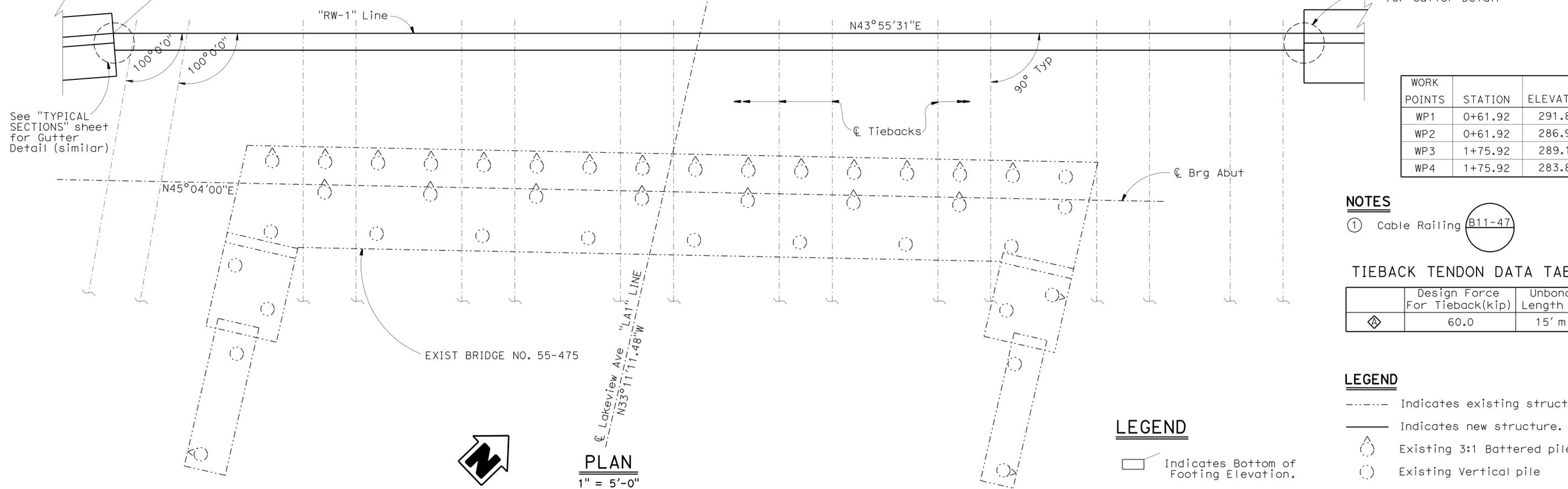
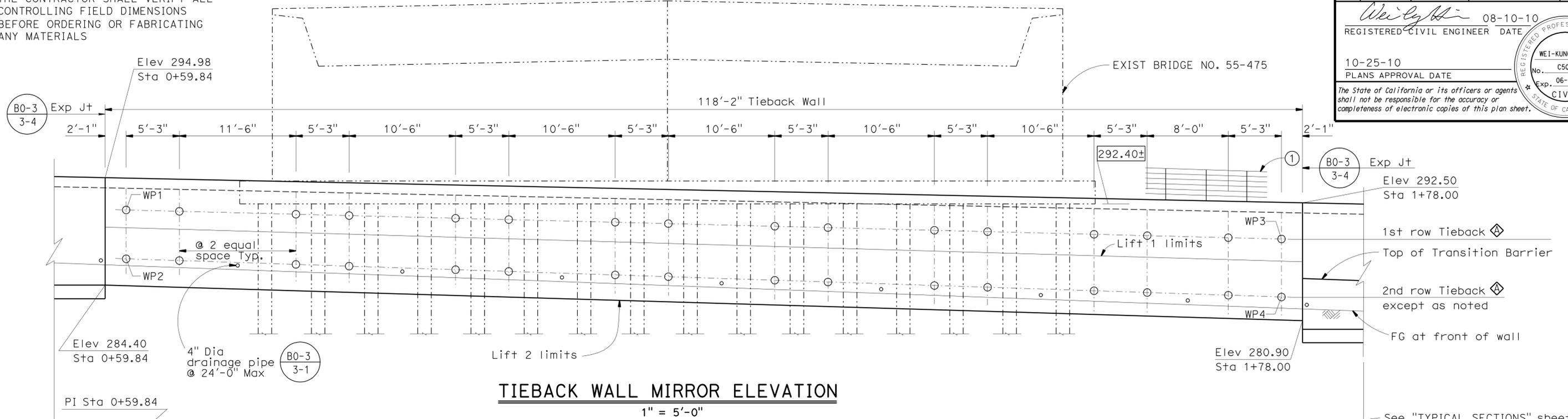
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	876	949

08-10-10
REGISTERED CIVIL ENGINEER DATE

10-25-10
PLANS APPROVAL DATE

WEI-KUNG HSIA
No. C50210
Exp. 06-30-11
CIVIL
STATE OF CALIFORNIA

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WORK POINTS	STATION	ELEVATION
WP1	0+61.92	291.80
WP2	0+61.92	286.99
WP3	1+75.92	289.14
WP4	1+75.92	283.80

NOTES

① Cable Railing B11-47

TIEBACK TENDON DATA TABLE

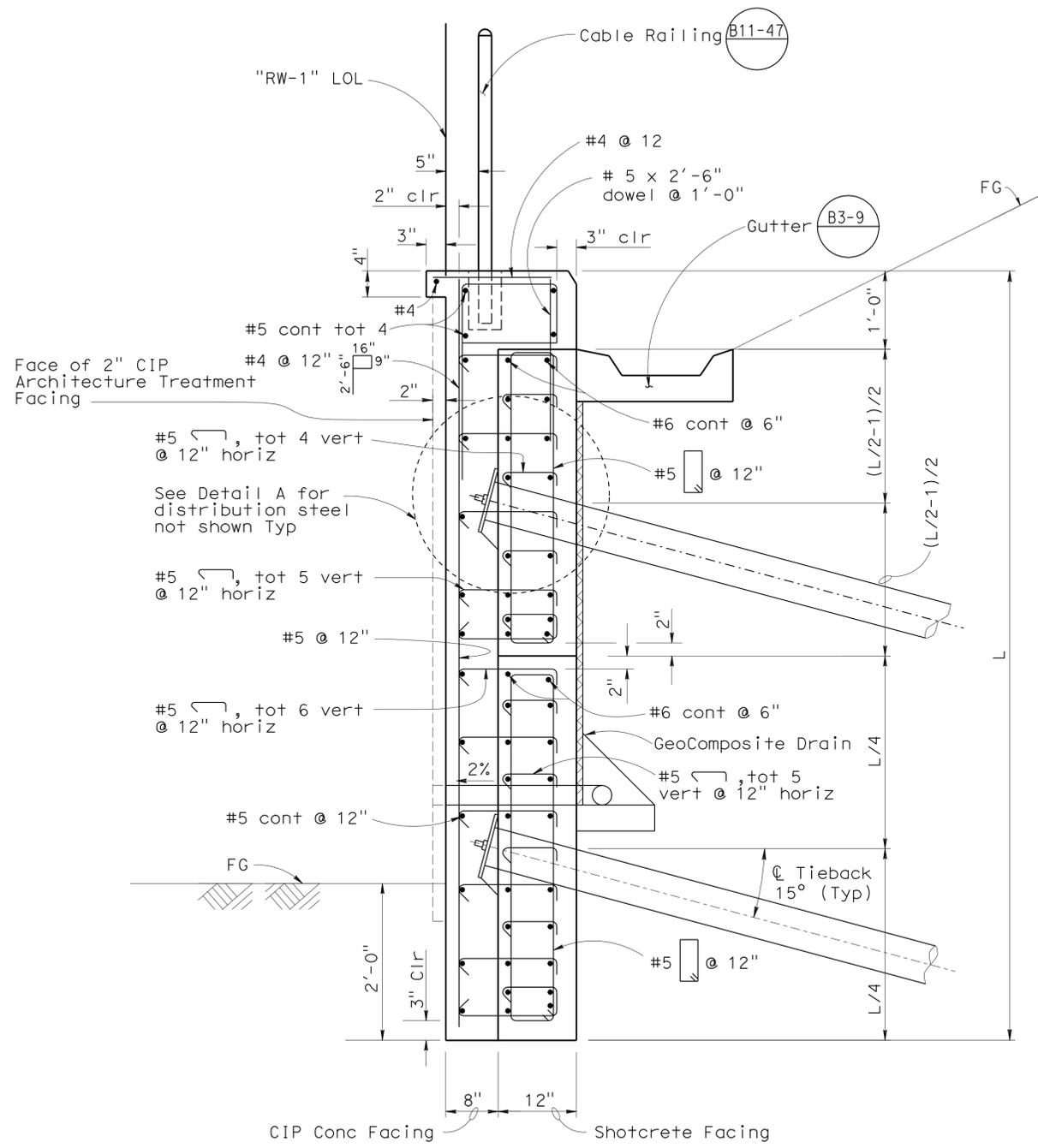
	Design Force For Tieback(kip)	Unbonded Length (ft)
⊙	60.0	15' min

LEGEND

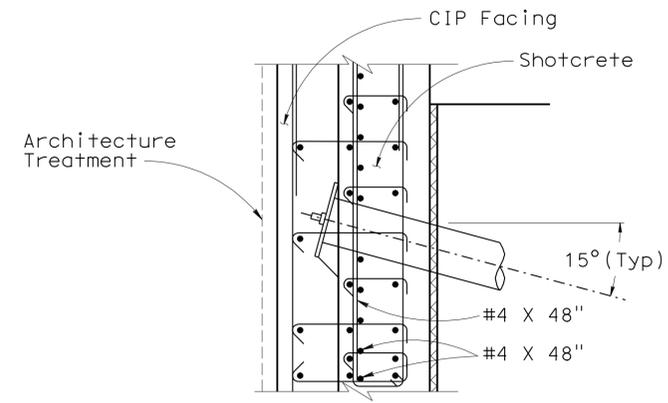
- Indicates existing structure.
- Indicates new structure.
- ⊙ Existing 3:1 Battered pile
- Existing Vertical pile
- Indicates Bottom of Footing Elevation.

DESIGN BY Rui Wang CHECKED Edward Mercado	DETAILS BY Hemant Barbhaya CHECKED Rui Wang	QUANTITIES BY Rui Wang CHECKED Barbara McGahey	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 19	BRIDGE NO. 55-475	RETAINING WALL NO. 110 TIEBACK WALL PLAN AND ELEVATION
					POST MILE 10.1R	
					REVISION DATES	
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)				CU 12 EA 0G3301	DISREGARD PRINTS BEARING EARLIER REVISION DATES	SHEET 3 OF 27

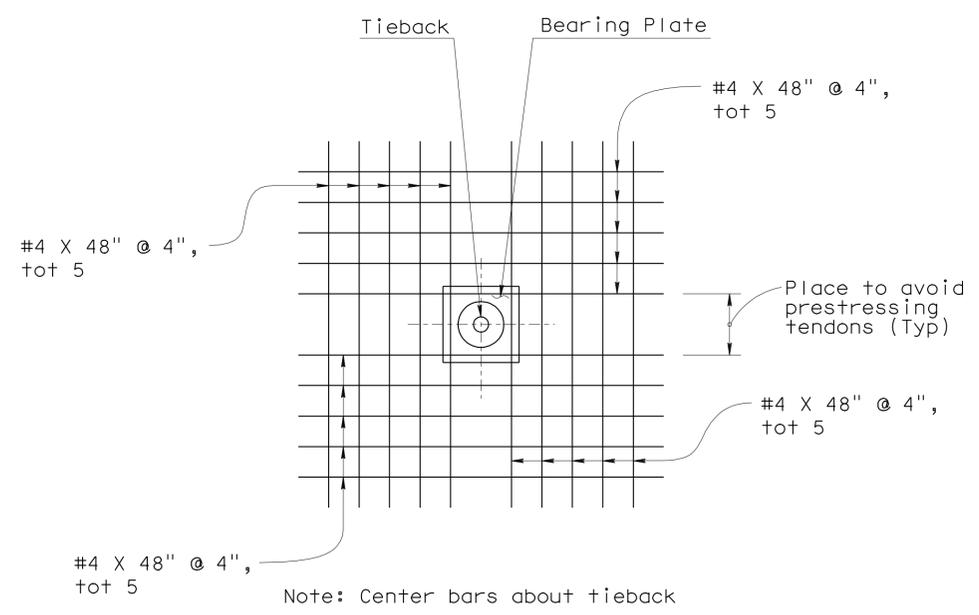
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	877	949
			08-10-10	REGISTERED CIVIL ENGINEER DATE	
			10-25-10	PLANS APPROVAL DATE	
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



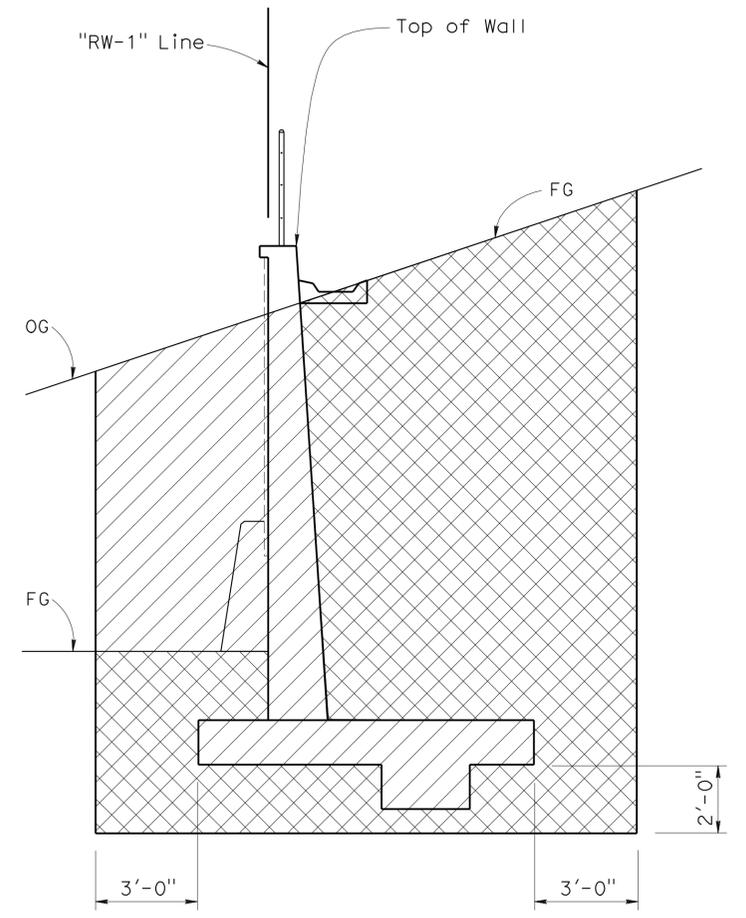
TYPICAL TIEBACK WALL SECTION
1" = 1'-0"



DETAIL A
1" = 1'-0"



DISTRIBUTION STEEL DETAIL
1" = 1'-0"



LIMITS OF PAVEMENT FOR STRUCTURE EXCAVATION AND BACKFILL
NTS

LEGEND

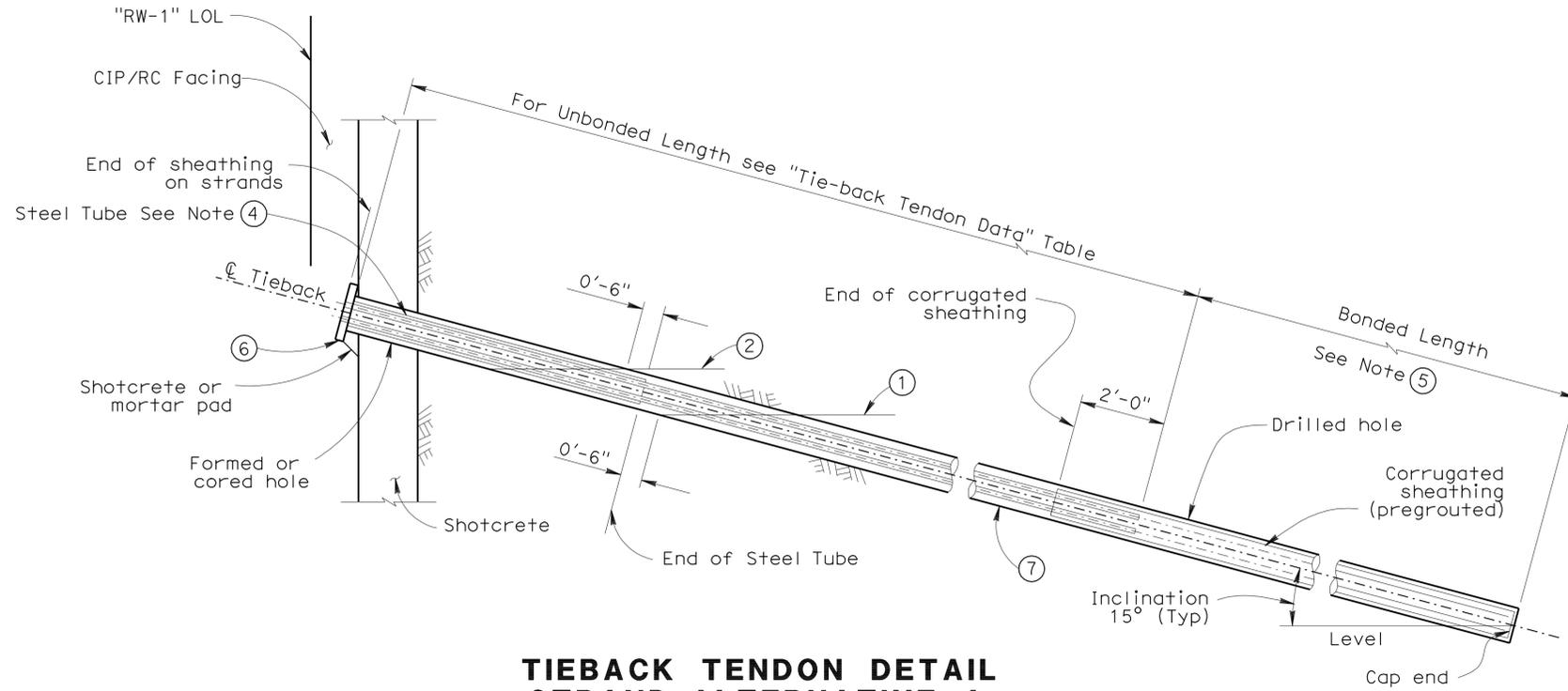
-  Structure Excavation
-  Structure Backfill

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

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)	DESIGN	BY Rui Wang	CHECKED Edward Mercado	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 19	BRIDGE NO.	RETAINING WALL NO.110		
	DETAILS	BY Hemant Barbhaya	CHECKED Rui Wang			55-475	TIEBACK WALL DETAIL NO.1		
	QUANTITIES	BY Rui Wang	CHECKED Barbara McGahey			10.1R			
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS				0 1 2 3	CU 12 EA 0G3301	DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES 3-03-10 10-05-10 10-14-10 10-18-10 10-19-10 5-28-10 7-06-10 7-26-10 8-02-10	SHEET 4 OF 27

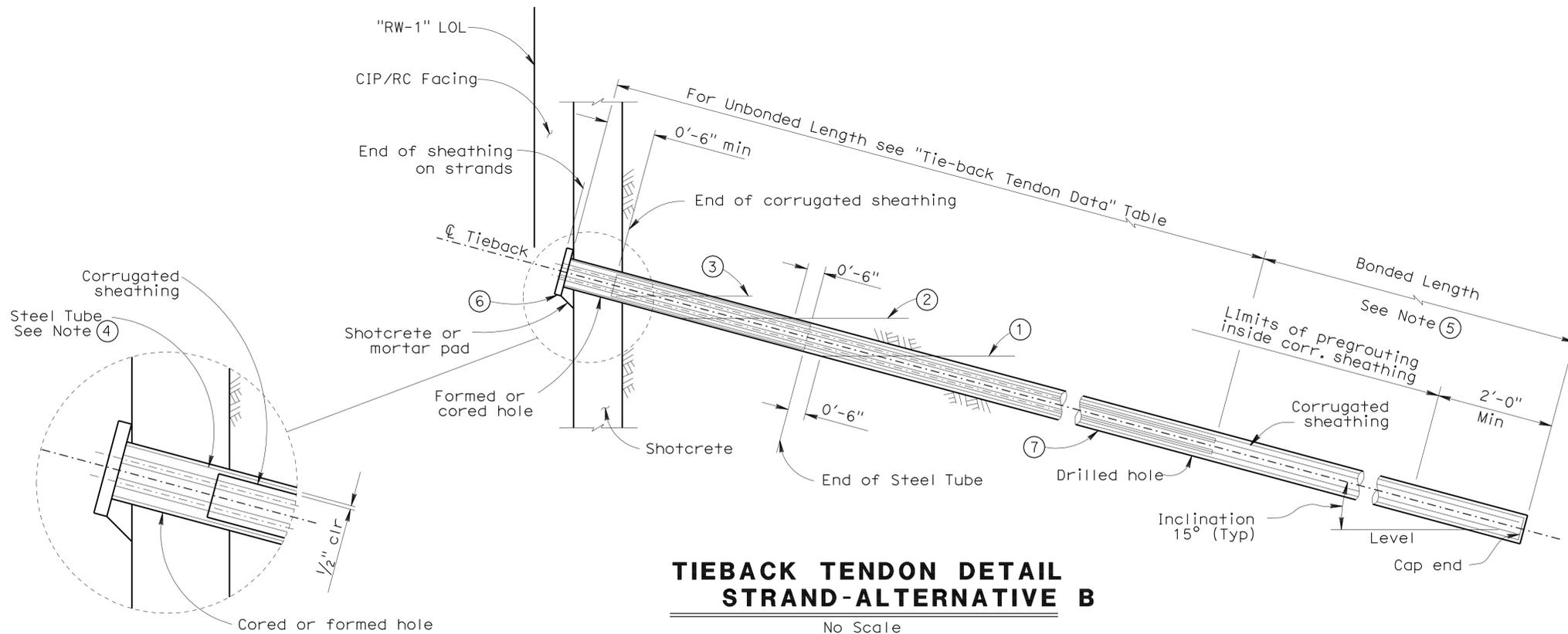
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	878	949
			08-10-10	REGISTERED CIVIL ENGINEER DATE	
			10-25-10	PLANS APPROVAL DATE	



TIEBACK TENDON DETAIL STRAND-ALTERNATIVE A

No Scale



TIEBACK TENDON DETAIL STRAND-ALTERNATIVE B

No Scale

GENERAL NOTES

DESIGN: AASHTO Standard Specifications for Highway Bridges dated 2007 with Interim Revisions and as supplemented by Bridge Design Specifications (CALTRANS)

LOADING: 1:1.5 with surcharge (250 psi)

SOIL PARAMETERS:
 (For wall design only)
 ϕ = Long-Term drained friction angle 28°
 γ = Unit Weight and Soil 130 lb/ft³
 Total resultant force = 30 H² ; H= Height of wall (per BDS Section 5.5.5.7.2 - Aug. 2004)

REINFORCED CONCRETE:
 f_y = 60 ksi (Yield strength of reinforcement)
 Minimum shotcrete strength f'_c = 3600 psi

STRUCTURAL STEEL:
 Structural steel, f_y = 36 ksi

PRESTRESSING STEEL:
 Strand Tendons - ASTM Designation A416
 Bar - ASTM Designation A722 Type II
 T = Design force per Tieback (kip); see "TIEBACK TENDON DATA TABLE" on "TIEBACK WALL PLAN AND ELEVATION" SHEET

f_{pu} = Minimum tensile strength of prestressing steel (270 ksi Low Relaxation Strand).

$A_s(\min)$ = Minimum cross sectional area of prestressing steel in Tieback tendon (square inch).

$$A_s(\min) = \frac{1.5T(1000)}{0.75f_{pu}}$$

- NOTES:**
- Level of initial grouting in drilled hole.
 - Level of secondary grouting in drilled hole.
 - Level of grouting inside of corrugated sheathing.
 - Steel tube welded to bearing plate. (Min length = 3'-6", min thickness = 1/4"). Galvanize assembly after fabrication.
 - The Bonded Length shall be determined by the Contractor.
 - Bearing plate size and thickness to be determined by contractor. (Min 8" X 8") Place normal to ϕ Tieback.
 - Individually greased and sheathed strands.

DESIGN	BY Rui Wang	CHECKED Edward Mercado
DETAILS	BY Hemant Barbhaya	CHECKED Rui Wang
QUANTITIES	BY Rui Wang	CHECKED Barbara McGahey

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
 DESIGN BRANCH 19

BRIDGE NO.	55-475
POST MILE	10.1R

RETAINING WALL NO.110
 TIEBACK WALL DETAIL NO.2



REVISION DATES	3-08-10	4-27-10	05-05-10	5-11-10	5-18-10	5-26-10	7-19-10	7-26-10	10-06-10	10-18-10
SHEET	5									
OF	27									

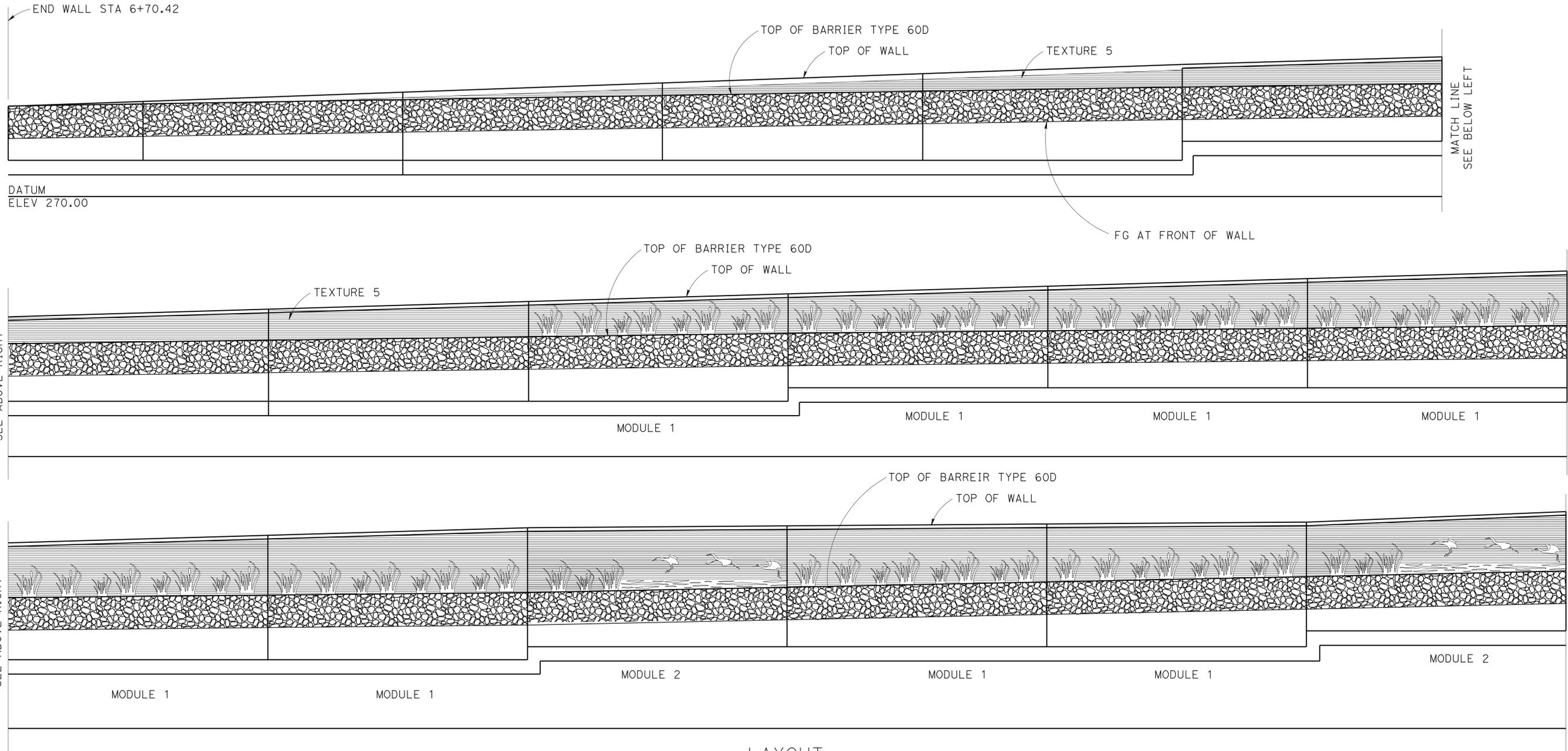
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	879	949

Wei-Kung Hsia 08-10-10
 REGISTERED CIVIL ENGINEER DATE

10-25-10
 PLANS APPROVAL DATE

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LAYOUT
NO SCALE

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

DESIGN	BY John Roberts	CHECKED Mathew Caslavka
DETAILS	BY John Roberts	CHECKED Mathew Caslavka
QUANTITIES	BY Rui Wang	CHECKED Barbara McGahey

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 19

BRIDGE NO.	55-0475
POST MILE	10.1R

RETAINING WALL NO. 110
ARCHITECTURAL LAYOUT C-1

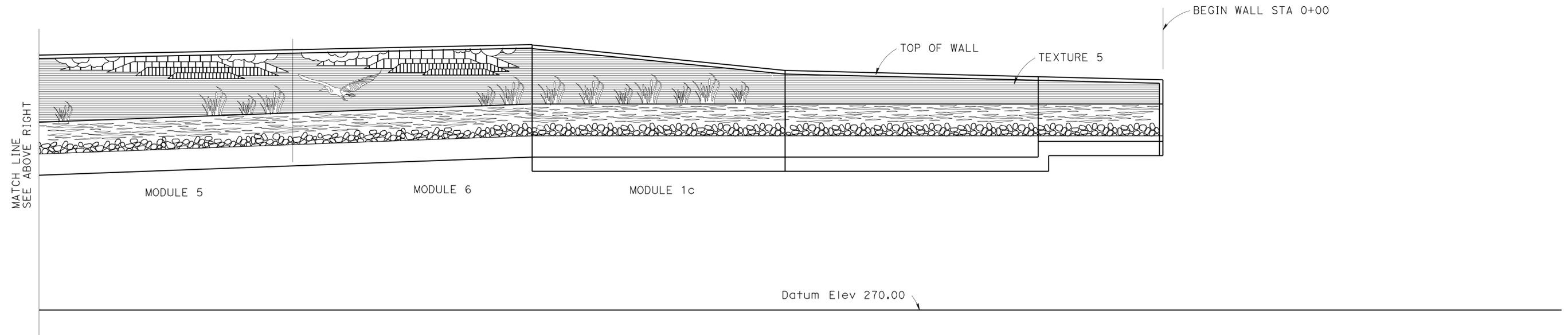
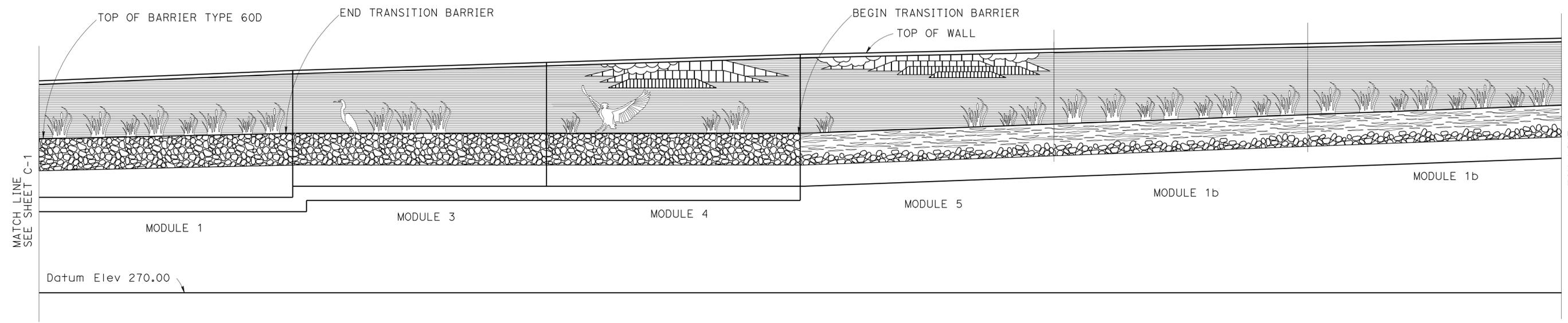
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	880	949

Wei-Kung Hsia 08-10-10
REGISTERED CIVIL ENGINEER DATE

10-25-10
PLANS APPROVAL DATE

Wei-Kung Hsia
No. C50210
Exp. 06-30-11
CIVIL
STATE OF CALIFORNIA

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LAYOUT
NO SCALE

NOTE :
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DESIGN	BY John Roberts	CHECKED Mathew Caslavka
DETAILS	BY John Roberts	CHECKED Mathew Caslavka
QUANTITIES	BY Rui Wang	CHECKED Barbara McCahey

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 19

BRIDGE NO.	55-475
POST MILE	10.1R

RETAINING WALL NO. 110
ARCHITECTURAL LAYOUT C-2

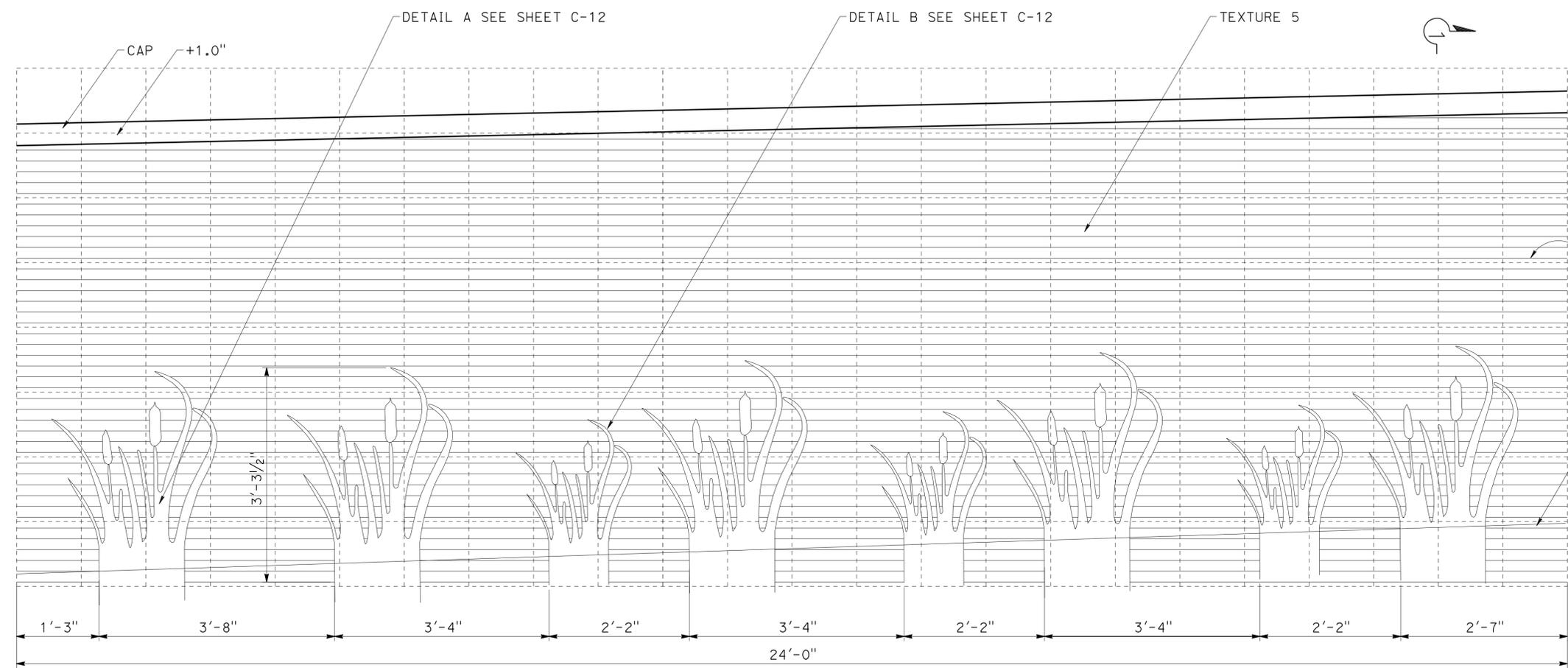
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	881	949

Wei-Kung Hsia 08-10-10
 REGISTERED CIVIL ENGINEER DATE

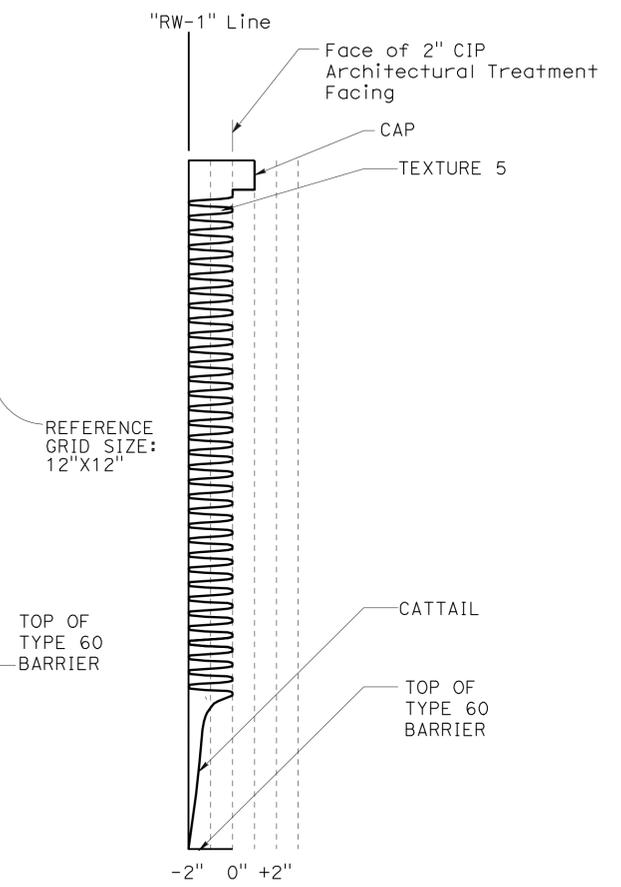
10-25-10
 PLANS APPROVAL DATE

No. C50210
 Exp. 06-30-11
 CIVIL
 STATE OF CALIFORNIA

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WALL MODULE 1
1" = 1'-0"



SECTION 1-1
H - 1/4"=0'-1"
V - 1"=1'-0"

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

DESIGN	BY John Roberts	CHECKED Mathew Caslavka
DETAILS	BY John Roberts	CHECKED Mathew Caslavka
QUANTITIES	BY Rui Wang	CHECKED Barbara McGahey

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

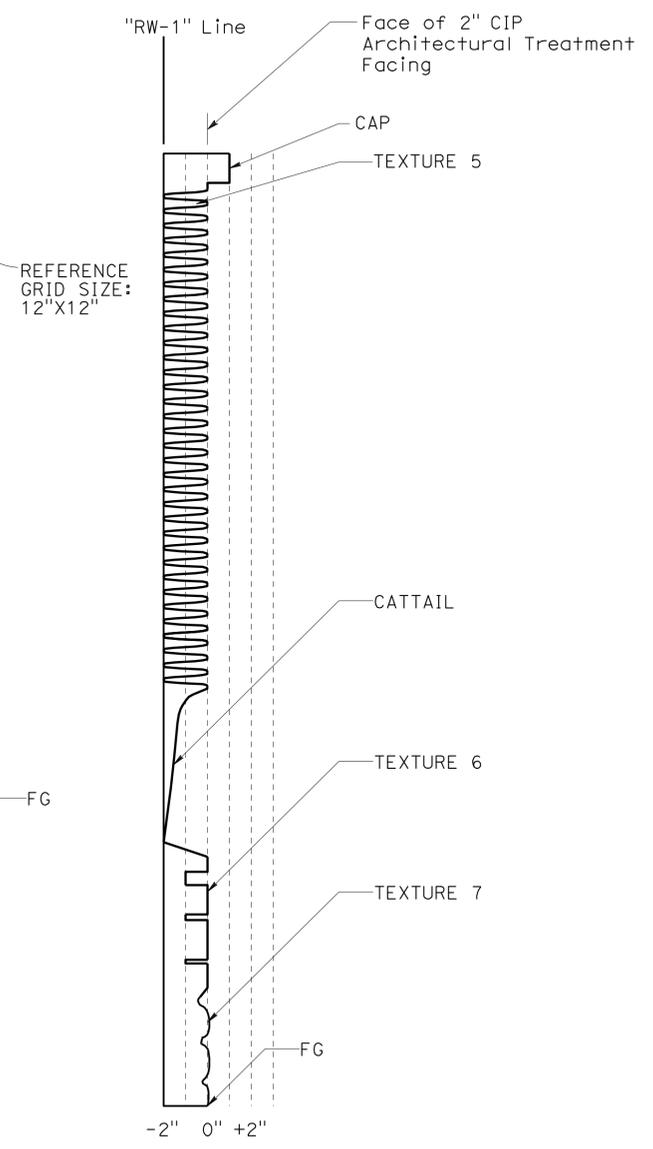
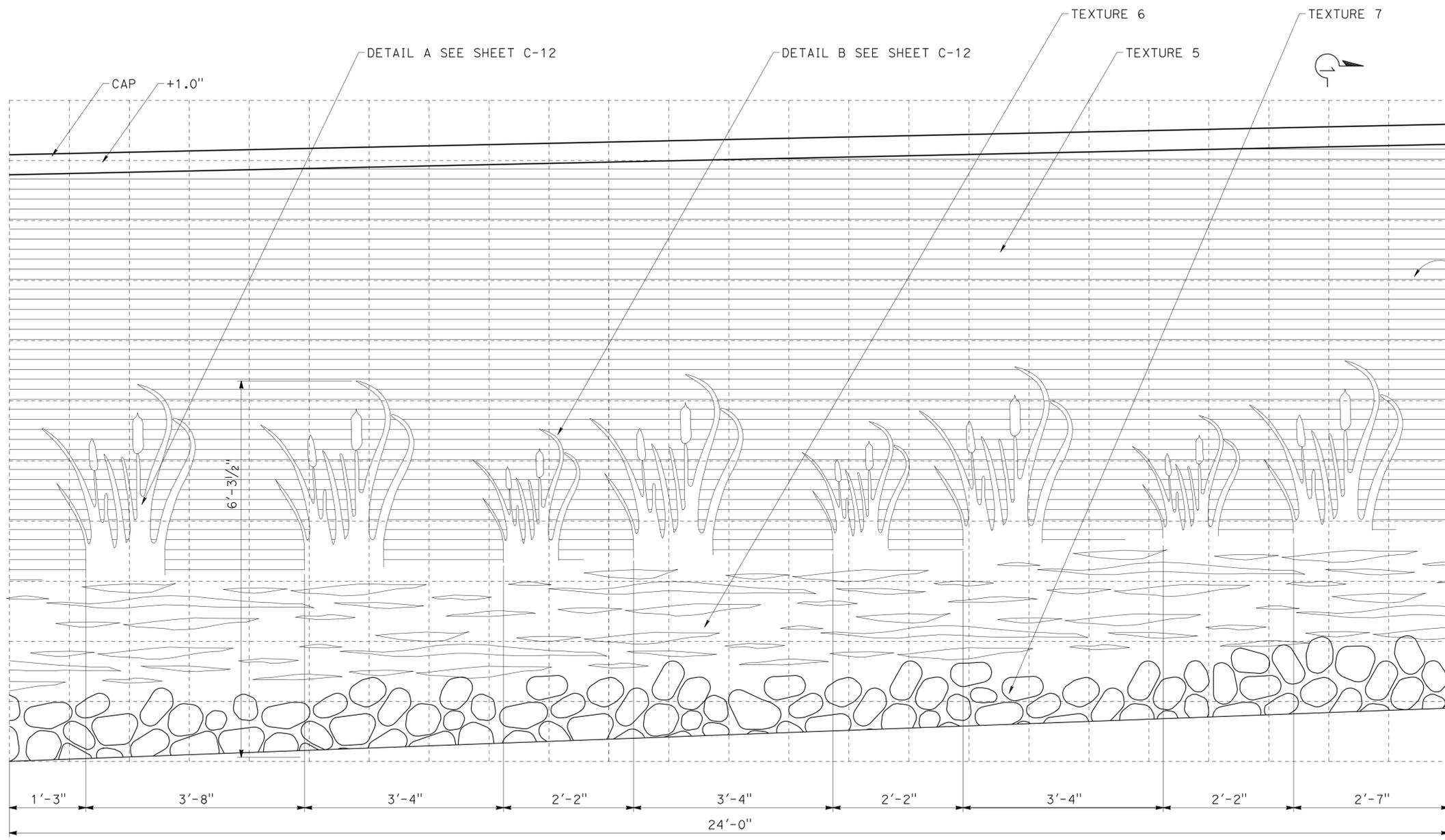
DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 19

BRIDGE NO.	55-0475
POST MILE	10.1R

RETAINING WALL NO. 110
ARCHITECTURAL SURFACE (TEXTURED CONCRETE) C-3

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	882	949

REGISTERED CIVIL ENGINEER DATE 08-10-10
 REGISTERED CIVIL ENGINEER WEI-KUNG HSIA
 No. C50210
 Exp. 06-30-11
 CIVIL
 STATE OF CALIFORNIA
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WALL MODULE 1b
1" = 1'-0"

SECTION 1-1
H - 1/4" = 0'-1"
V - 1" = 1'-0"

NOTE :
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DESIGN	BY John Roberts	CHECKED Mathew Caslavka
DETAILS	BY John Roberts	CHECKED Mathew Caslavka
QUANTITIES	BY Rui Wang	CHECKED Barbara McGahey

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 19

BRIDGE NO.	55-0475
POST MILE	10.1R

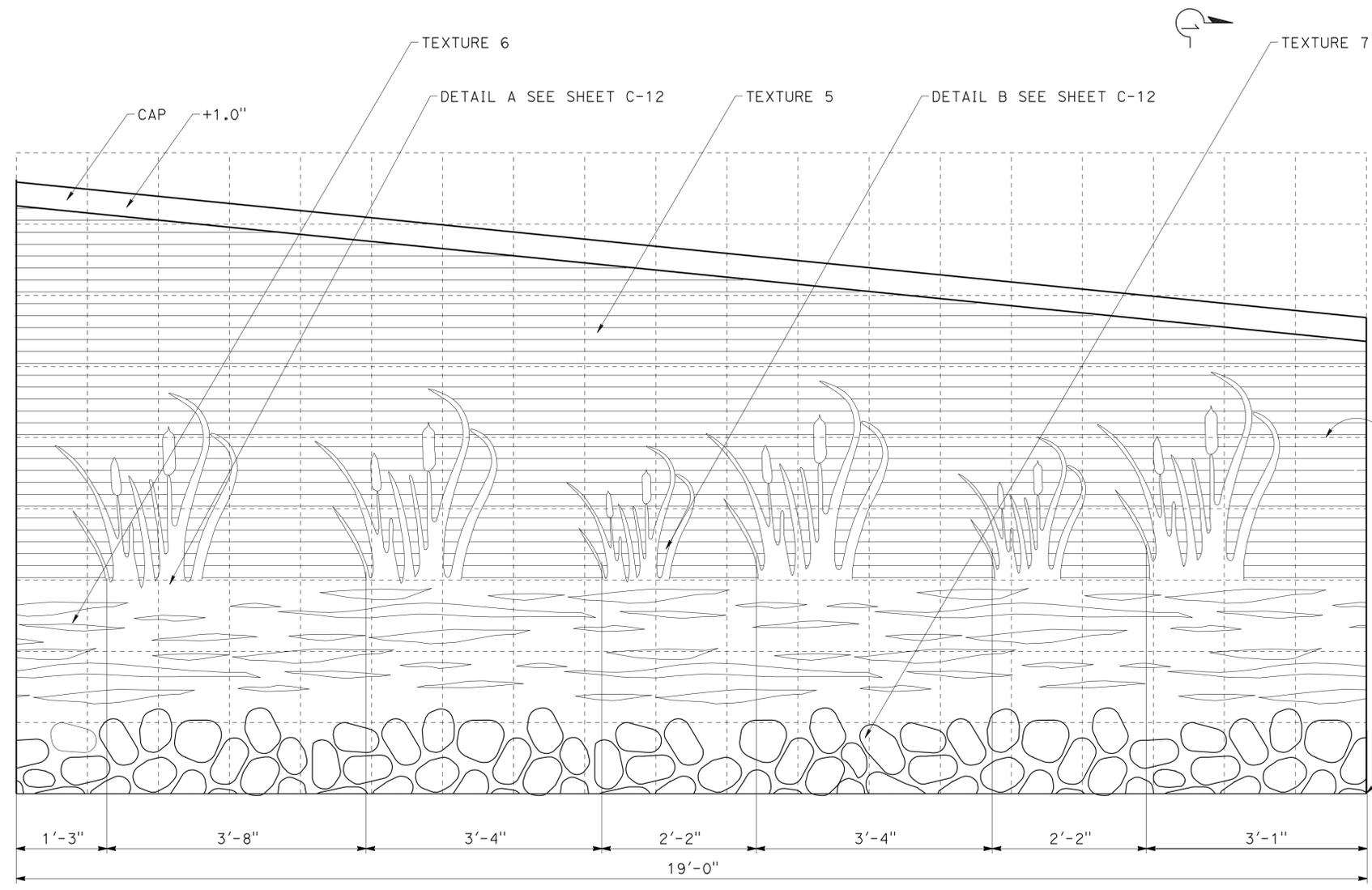
RETAINING WALL NO. 110
ARCHITECTURAL SURFACE (TEXTURED CONCRETE) C-4

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
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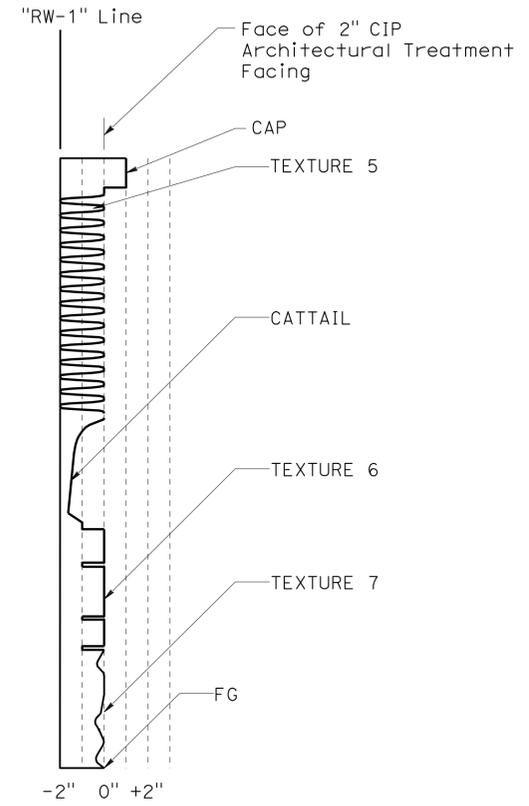
Wei-Kung Hsia 08-10-10
REGISTERED CIVIL ENGINEER DATE

10-25-10
PLANS APPROVAL DATE

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REFERENCE GRID SIZE: 12"X12"



SECTION 1-1
H - 1/4" = 0'-1"
V - 1" = 1'-0"

WALL MODULE 1c
1" = 1'-0"

NOTE :
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DESIGN	BY John Roberts	CHECKED Mathew Caslavka
DETAILS	BY John Roberts	CHECKED Mathew Caslavka
QUANTITIES	BY Rui Wang	CHECKED Barbara McGahey

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 19

BRIDGE NO.	55-0475
POST MILE	10.1R

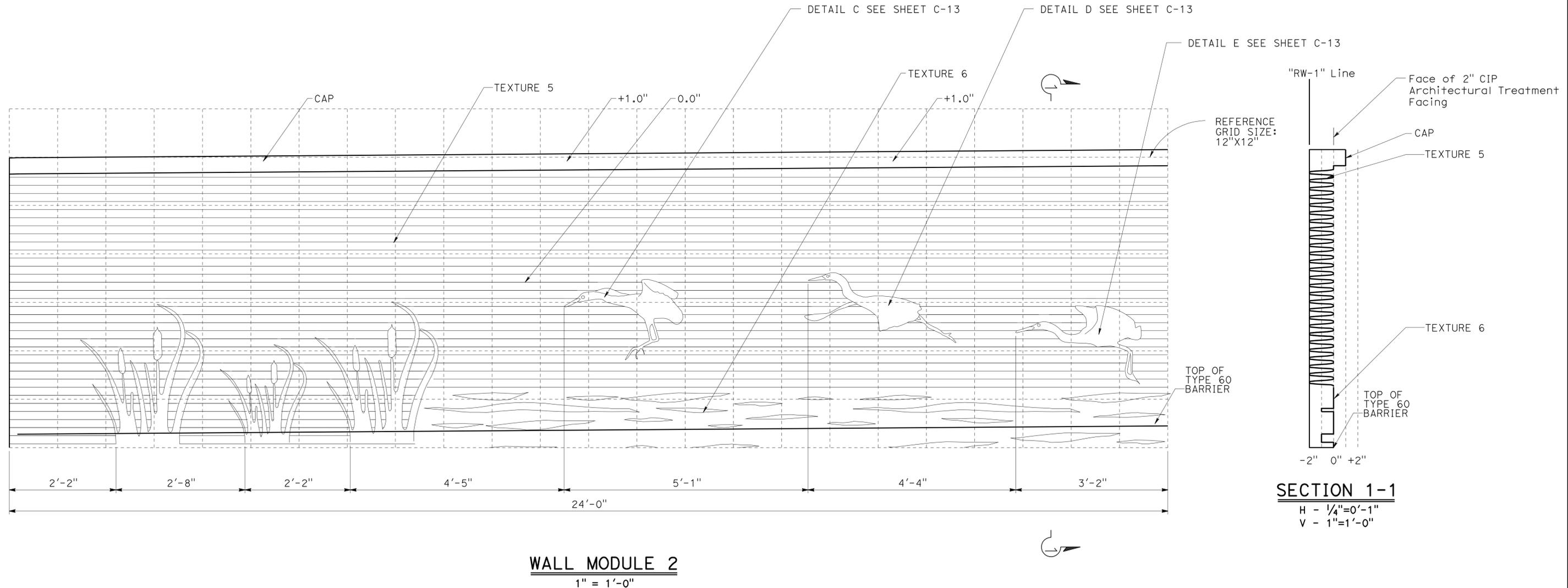
RETAINING WALL NO. 110
ARCHITECTURAL SURFACE (TEXTURED CONCRETE) C-5

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	884	949

Wei-Kung Hsia 08-10-10
 REGISTERED CIVIL ENGINEER DATE

10-25-10
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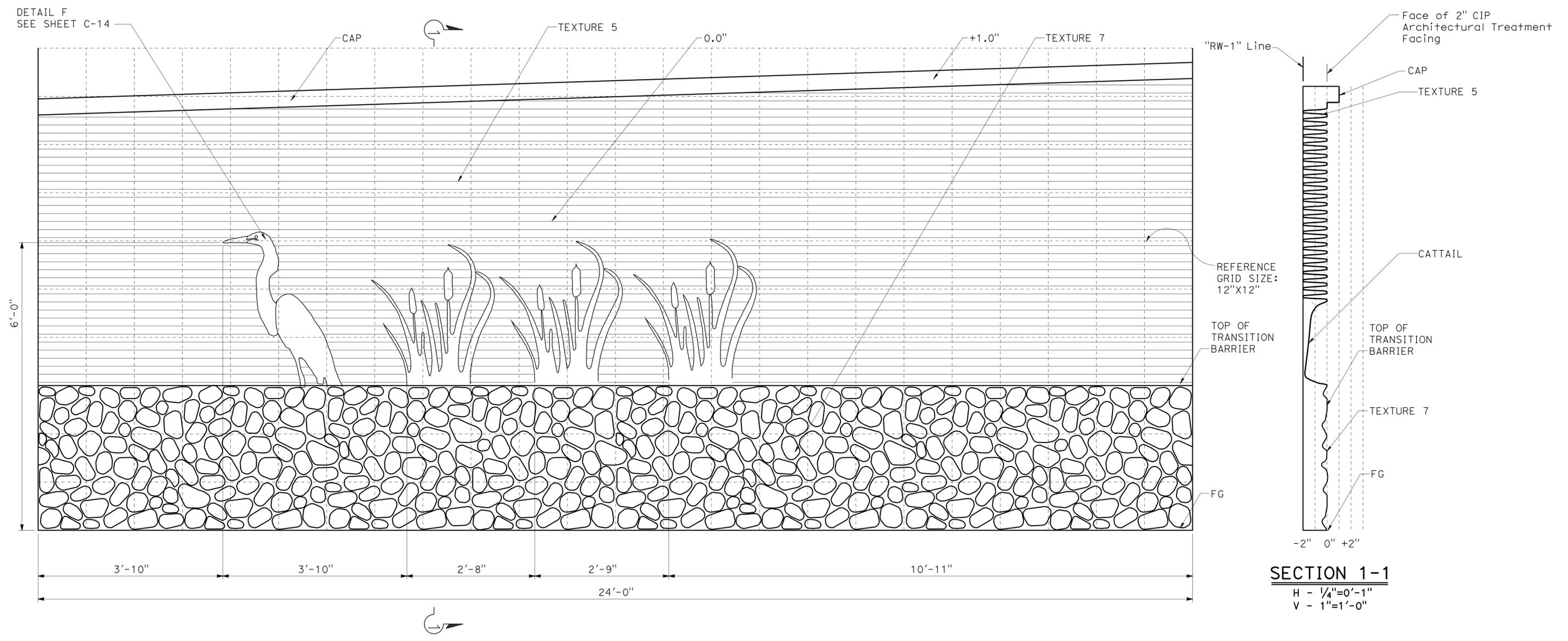
NOTE :
 THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)	DESIGN	BY John Roberts	CHECKED Mathew Caslavka	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 19	BRIDGE NO.	55-0475	RETAINING WALL NO. 110 ARCHITECTURAL SURFACE (TEXTURED CONCRETE) C-6
	DETAILS	BY John Roberts	CHECKED Mathew Caslavka			POST MILE	10.1R	
QUANTITIES	BY Rui Wang	CHECKED Barbara McGahey	CU 12 EA 0G3301			DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 05-19-10 05-21-10 07-26-10 10-18-10	

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS: 0 1 2 3
 FILE => 55-0475-u-misc06.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	885	949

REGISTERED CIVIL ENGINEER DATE: 08-10-10
 REGISTERED CIVIL ENGINEER: WEI-KUNG HSIA
 No. C50210
 Exp. 06-30-11
 CIVIL
 STATE OF CALIFORNIA
 PLANS APPROVAL DATE: 10-25-10
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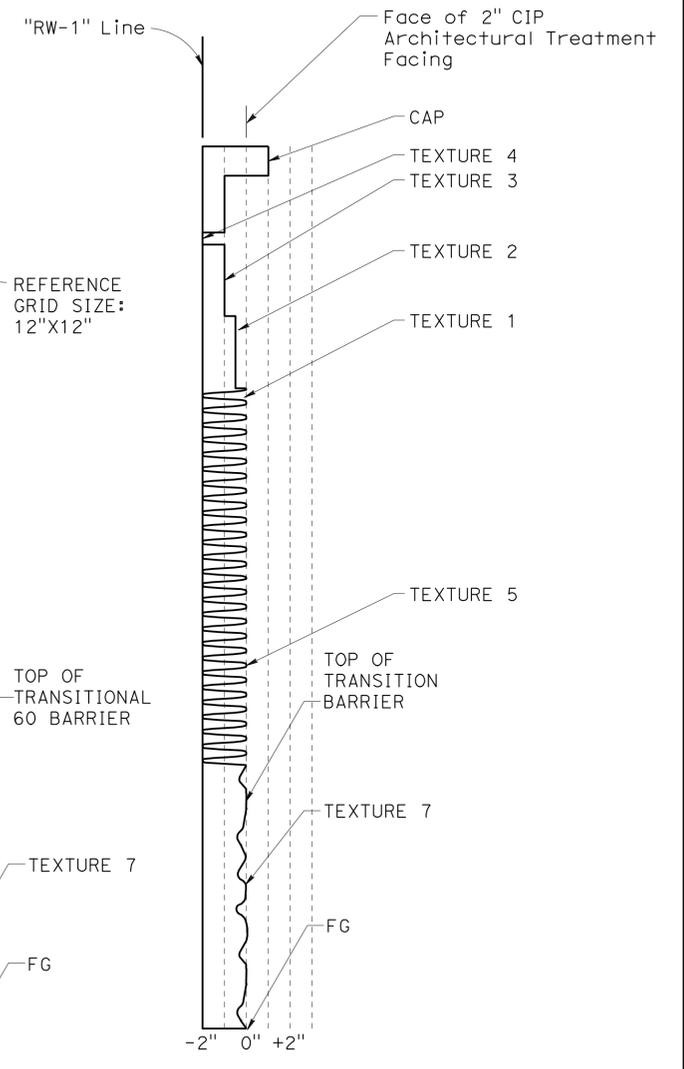
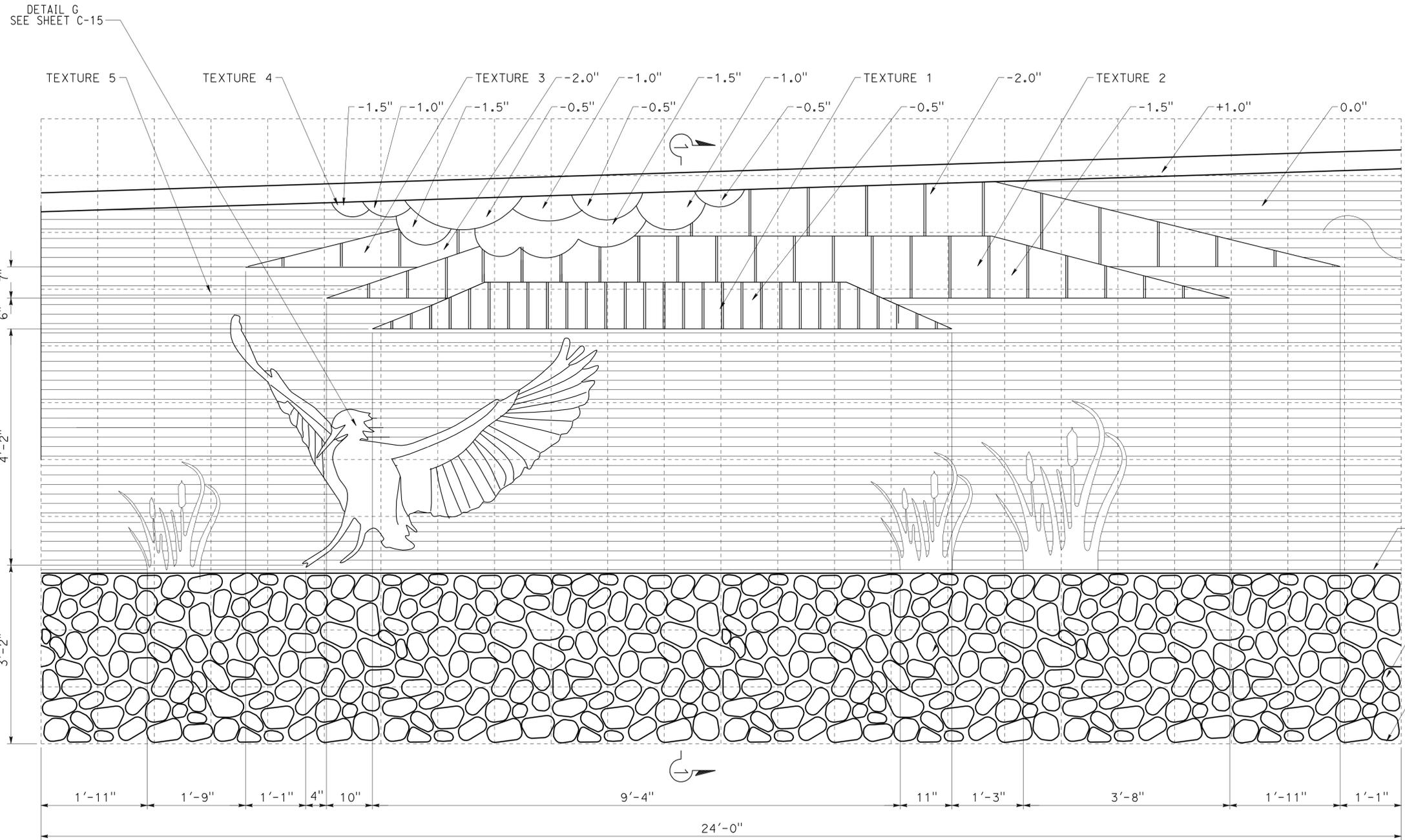
WALL MODULE 3
1" = 1'-0"

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

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)	DESIGN	BY John Roberts	CHECKED Mathew Caslavka	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 19	BRIDGE NO.	RETAINING WALL NO. 110				
	DETAILS	BY John Roberts	CHECKED Mathew Caslavka			55-0475	ARCHITECTURAL SURFACE (TEXTURED CONCRETE) C-7				
	QUANTITIES	BY Rui Wang	CHECKED Barbara McGahey			POST MILE					
						10.1R					
				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	CU 12 EA 0G3301	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES				SHEET 12 OF 27
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USERNAME => HSTFK DATE PLOTTED =>

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	886	949
			08-10-10	REGISTERED CIVIL ENGINEER DATE	
			10-25-10	PLANS APPROVAL DATE	
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SECTION 1-1
 H - 1/4" = 0'-1"
 V - 1" = 1'-0"

NOTE :
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WALL MODULE 4
 1" = 1'-0"

DESIGN	BY John Roberts	CHECKED Mathew Caslavka
DETAILS	BY John Roberts	CHECKED Mathew Caslavka
QUANTITIES	BY Rui Wang	CHECKED Barbara McGahey

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
DESIGN BRANCH 19

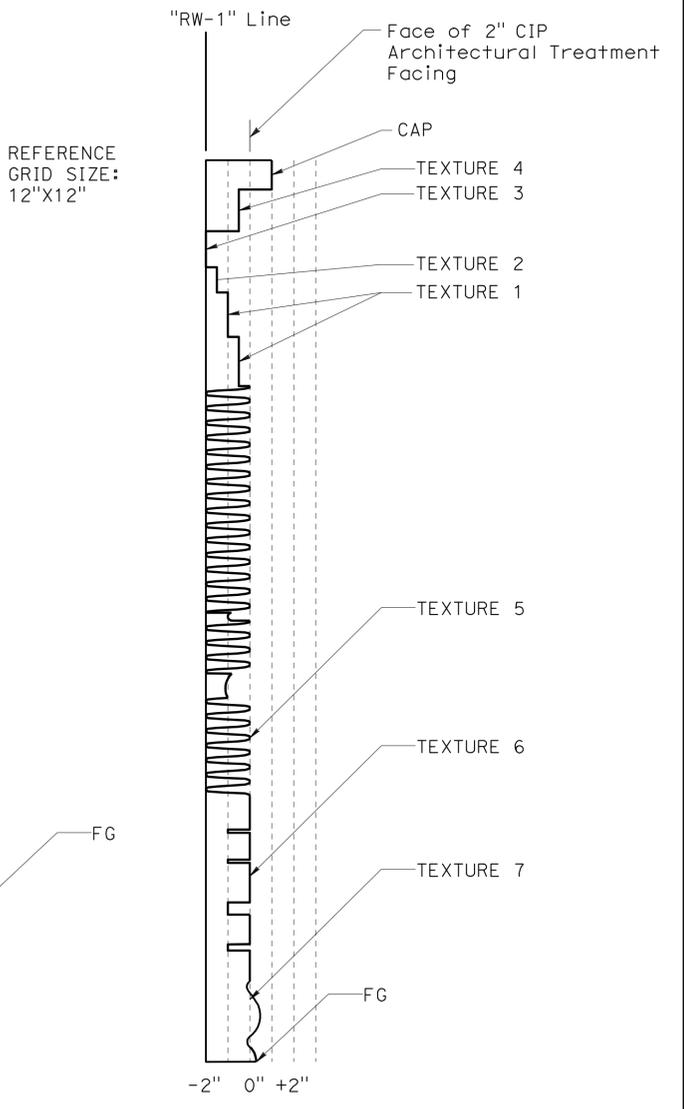
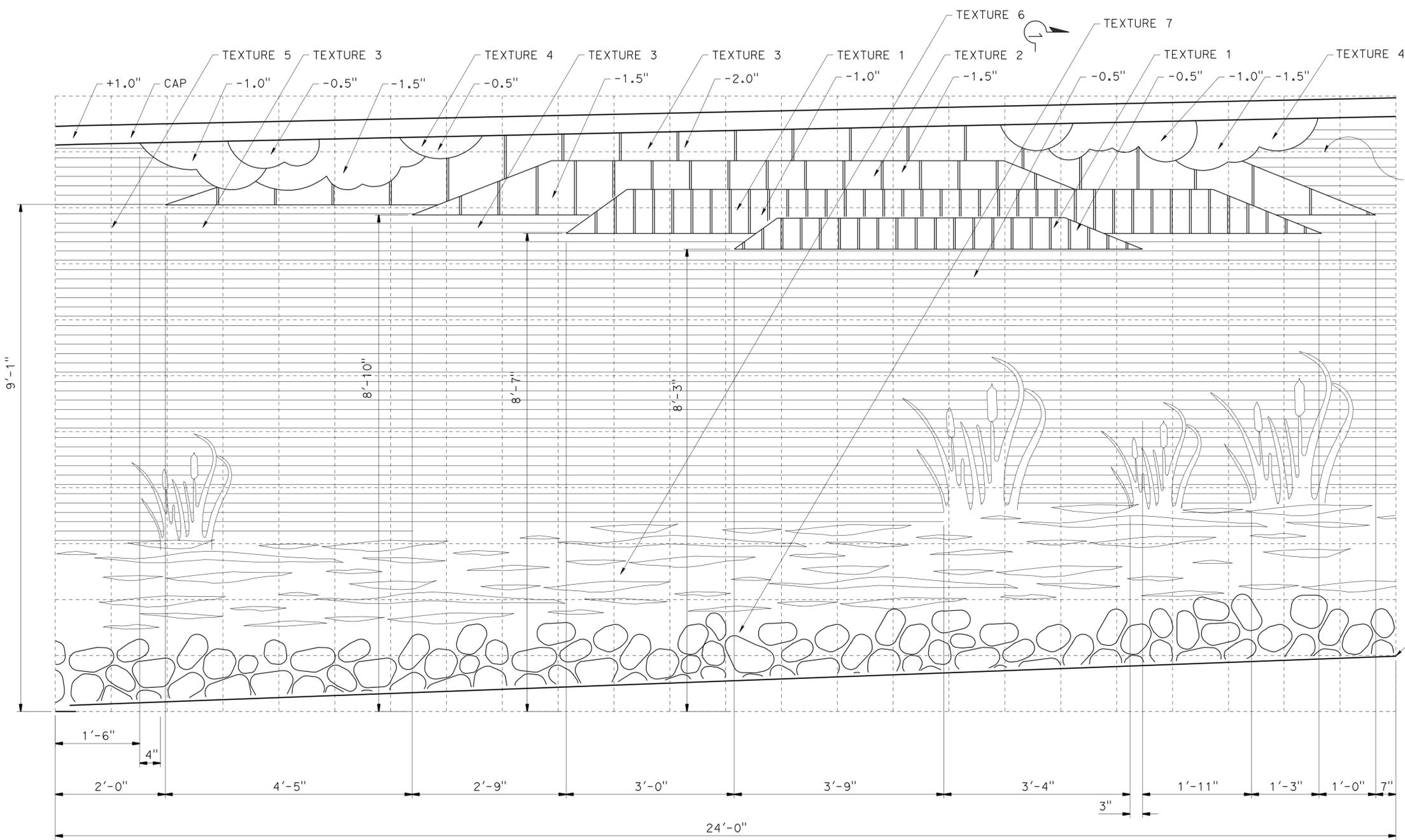
BRIDGE NO.	55-0475
POST MILE	10.1R

RETAINING WALL NO. 110
ARCHITECTURAL SURFACE (TEXTURED CONCRETE) C-8

DATE PLOTTED => 16-DEC-2010 USERNAME => HSTFK

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	887	949

REGISTERED CIVIL ENGINEER DATE 08-10-10
 WEI-KUNG HSIA
 No. C50210
 Exp. 06-30-11
 CIVIL
 STATE OF CALIFORNIA
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SECTION 1-1
 H - 1/4" = 0'-1"
 V - 1" = 1'-0"

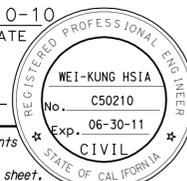
NOTE :
 THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIALS

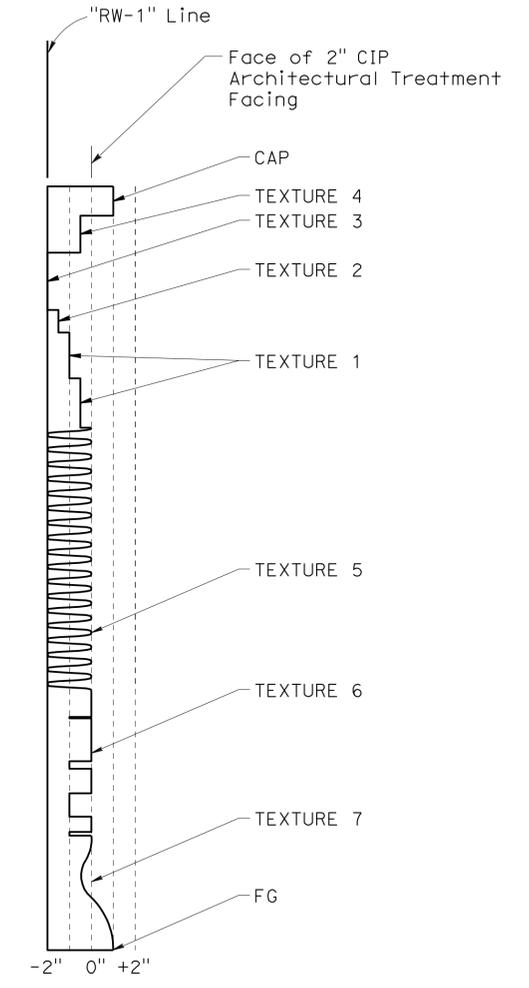
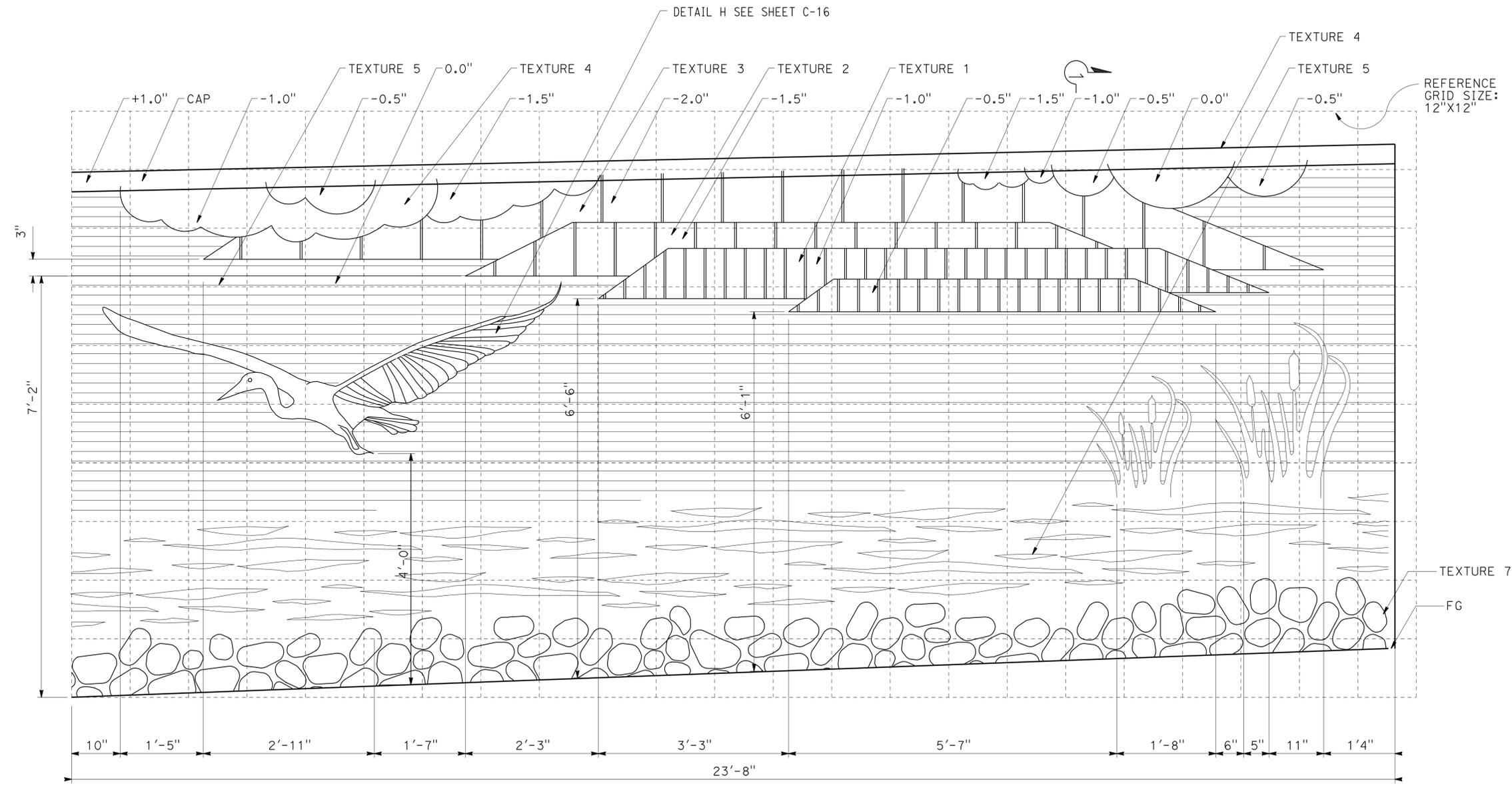
WALL MODULE 5
 1" = 1'-0"

DESIGN BY John Roberts CHECKED Mathew Caslavka DETAILS BY John Roberts CHECKED Mathew Caslavka QUANTITIES BY Rui Wang CHECKED Barbara McGahey	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 19	BRIDGE NO. 55-0475	RETAINING WALL NO. 110 ARCHITECTURAL SURFACE (TEXTURED CONCRETE) C-9	
			POST MILE 10.1R		
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)			DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 05-19-10 05-27-10 07-26-10 10-18-10	SHEET 14 OF 27

USERNAME => HSTFK DATE PLOTTED => 16-DEC-2010 16:48

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	888	949


 08-10-10
 REGISTERED CIVIL ENGINEER DATE
 10-25-10
 PLANS APPROVAL DATE
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SECTION 1-1
 H - 1/4" = 0'-1"
 V - 1" = 1'-0"

NOTE :
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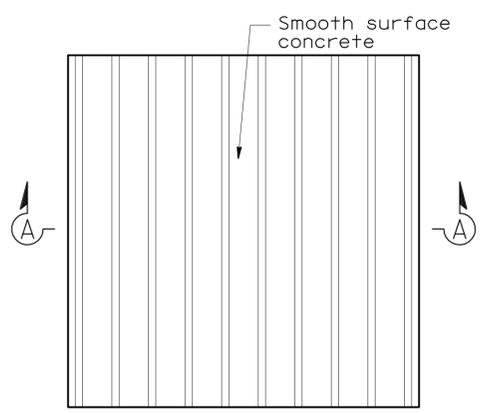
WALL MODULE 6
 1" = 1'-0"

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)	DESIGN BY John Roberts CHECKED Mathew Caslavka	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 19	BRIDGE NO. 55-0475	RETAINING WALL NO. 110
	DETAILS BY John Roberts CHECKED Mathew Caslavka			POST MILE 10.1R	
	QUANTITIES BY Rui Wang CHECKED Barbara McGahey				
	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	CU 12 EA 0G3301	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES: 05-19-10, 05-27-10, 07-26-10, 10-18-10	SHEET 15 OF 27

USERNAME => HSTFK DATE PLOTTED => 16-DEC-2010 16:48

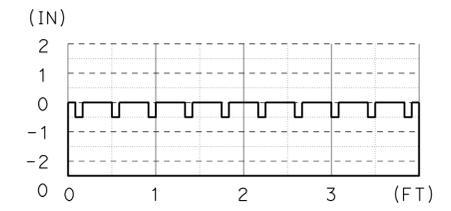
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	889	949

Wei-Kung Hsia 08-10-10
 REGISTERED CIVIL ENGINEER DATE
 10-25-10
 PLANS APPROVAL DATE
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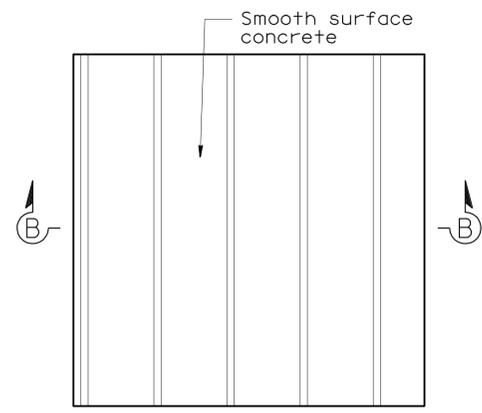
TEXTURE-1

1"=1'-0"



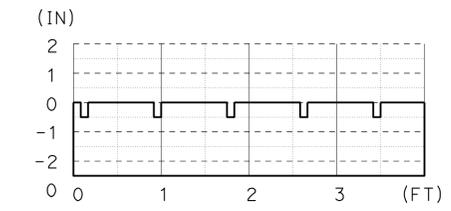
SECTION A-A

H - 1"=1'-0"
V - 1"=3"



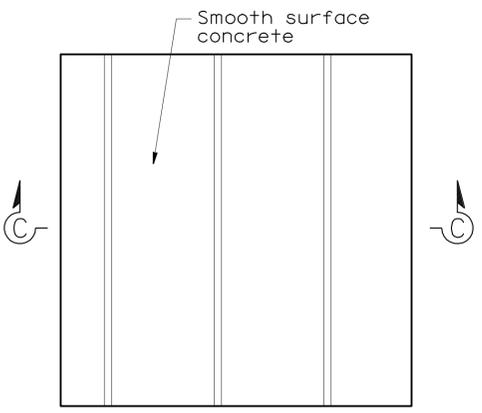
TEXTURE-2

1"=1'-0"



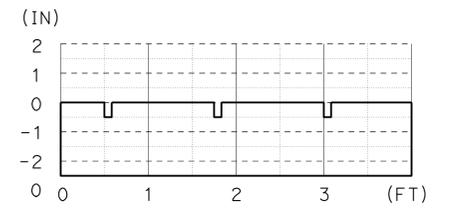
SECTION B-B

H - 1"=1'-0"
V - 1"=3"



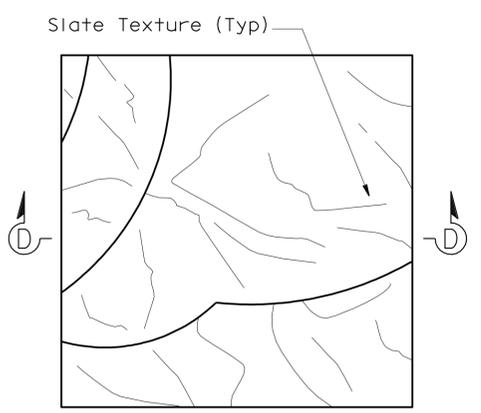
TEXTURE-3

1"=1'-0"



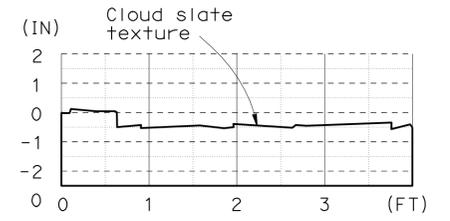
SECTION C-C

H - 1"=1'-0"
V - 1"=3"



TEXTURE-4

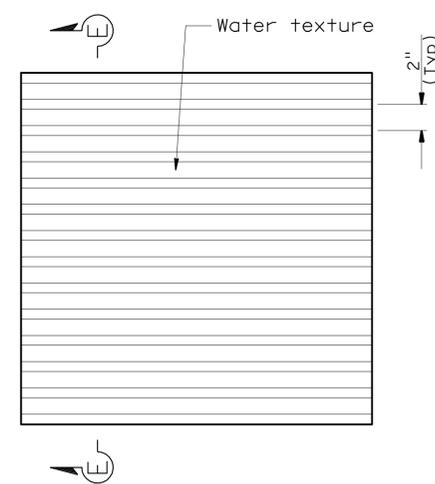
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SECTION D-D

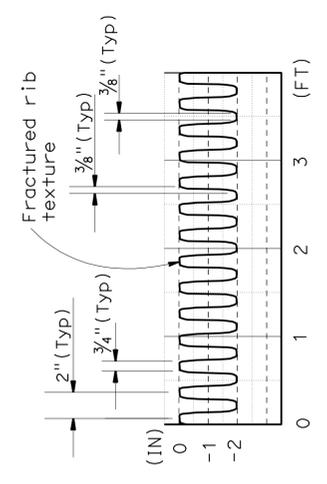
H - 1"=1'-0"
V - 1"=3"

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



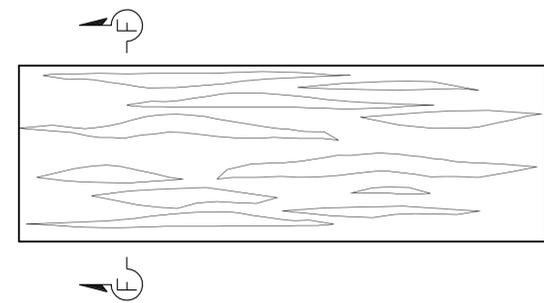
TEXTURE -5

1"=1'-0"



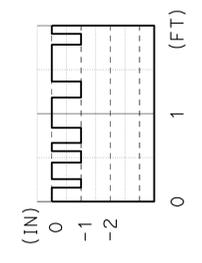
SECTION E-E

H - 1"=1'-0"
V - 1"=3"



TEXTURE -6

1"=1'-0"



SECTION F-F

H - 1"=1'-0"
V - 1"=3"

DESIGN	BY John Roberts	CHECKED Mathew Caslavka
DETAILS	BY John Roberts	CHECKED Mathew Caslavka
QUANTITIES	BY Rui Wang	CHECKED Barbara McGahey

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
DESIGN BRANCH 19

BRIDGE NO.	55-0475
POST MILE	10.1R

RETAINING WALL NO. 110
ARCHITECTURAL DETAILS C-11

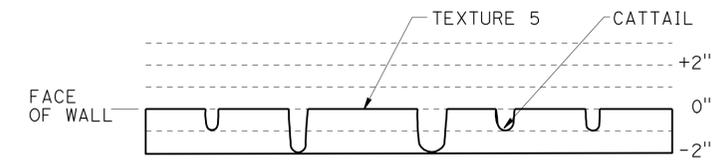


REVISION DATES				SHEET	OF
05-19-10	05-27-10	07-26-10	10-18-10	16	27

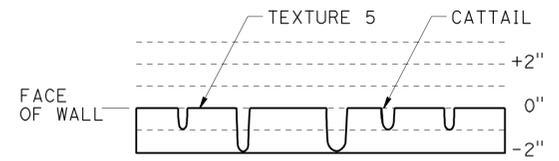
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	890	949

Wei-Kung Hsia 08-10-10
 REGISTERED CIVIL ENGINEER DATE
 10-25-10
 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.

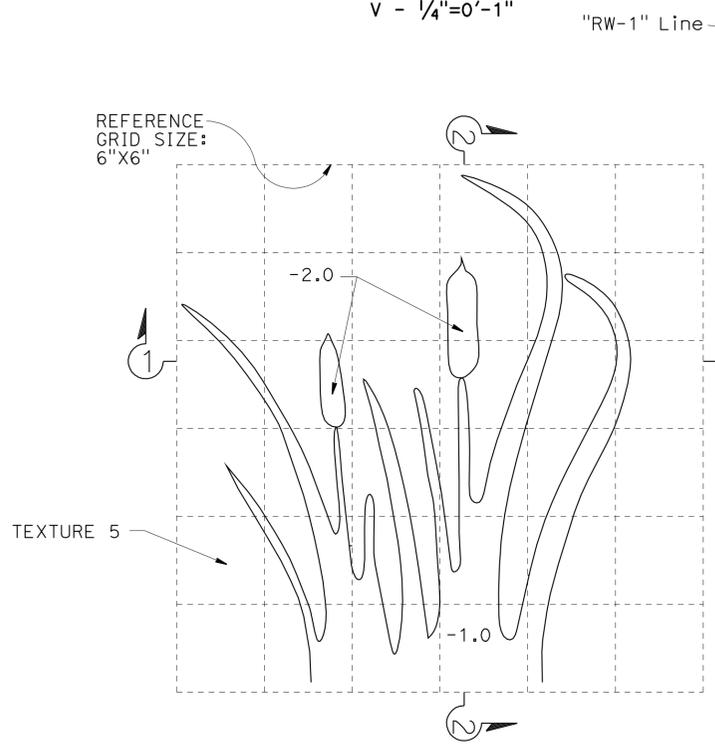
REGISTERED PROFESSIONAL ENGINEER
 WEI-KUNG HSIA
 No. C50210
 Exp. 06-30-11
 CIVIL
 STATE OF CALIFORNIA



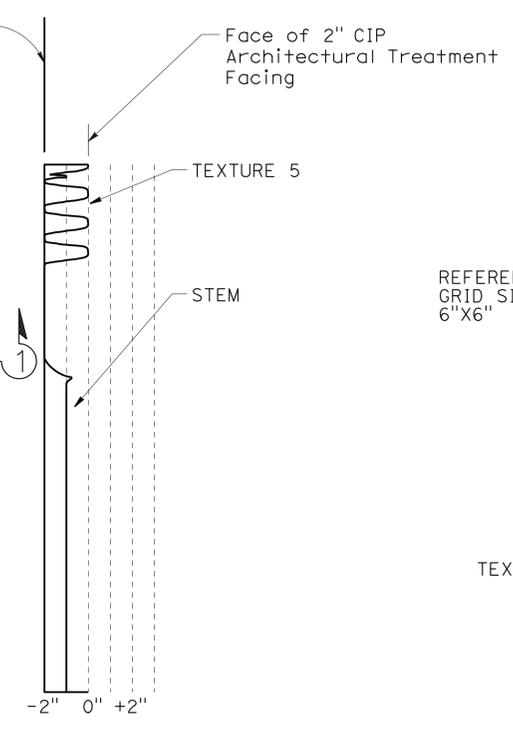
SECTION 1
 H - 1"=0'-6"
 V - 1/4"=0'-1"



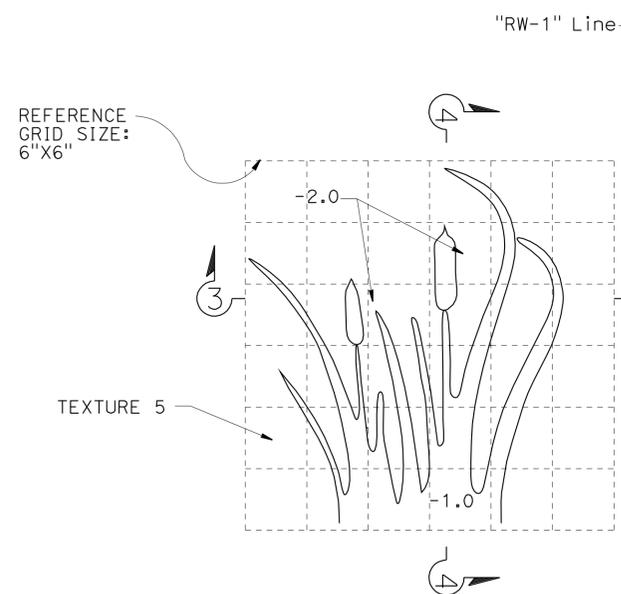
SECTION 3
 H - 1"=0'-6"
 V - 1/4"=0'-1"



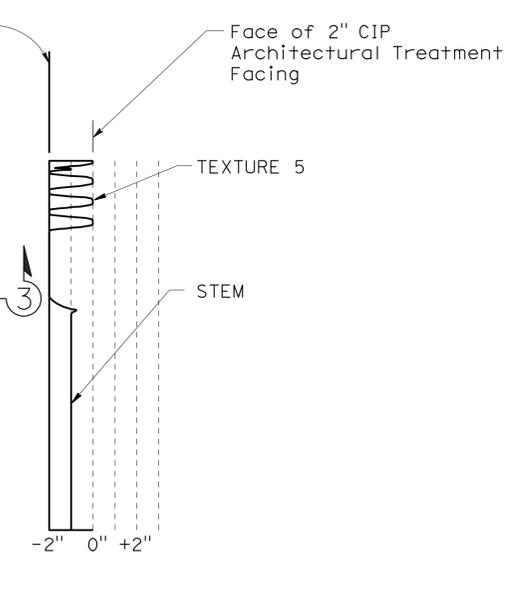
DETAIL A
 1" = 0'-6"



SECTION 2
 H - 1/4"=0'-1"
 V - 1"=0'-6"



DETAIL B
 1" = 0'-6"



SECTION 4
 H - 1/4"=0'-1"
 V - 1"=0'-6"

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

DESIGN	BY John Roberts	CHECKED Mathew Caslavka
DETAILS	BY John Roberts	CHECKED Mathew Caslavka
QUANTITIES	BY Rui Wang	CHECKED Barbara McGahey

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
DESIGN BRANCH 19

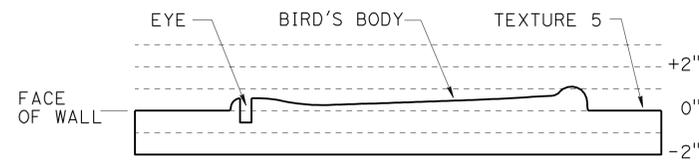
BRIDGE NO.	55-0475
POST MILE	10.1R

RETAINING WALL NO. 110
 ARCHITECTURAL SURFACE (TEXTURED CONCRETE) C-12

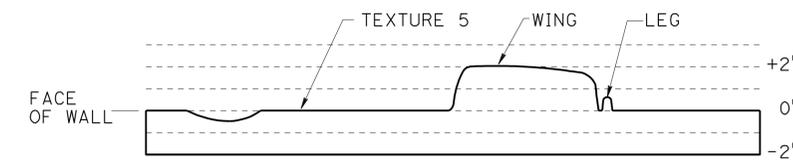


REVISION DATES		SHEET	OF
05-19-10	05-27-10	17	27

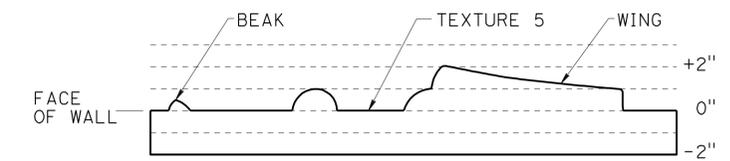
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	891	949
		08-10-10		REGISTERED CIVIL ENGINEER DATE	
		10-25-10		PLANS APPROVAL DATE	
REGISTERED PROFESSIONAL ENGINEER WEI-KUNG HSIA No. C50210 Exp. 06-30-11 CIVIL STATE OF CALIFORNIA					
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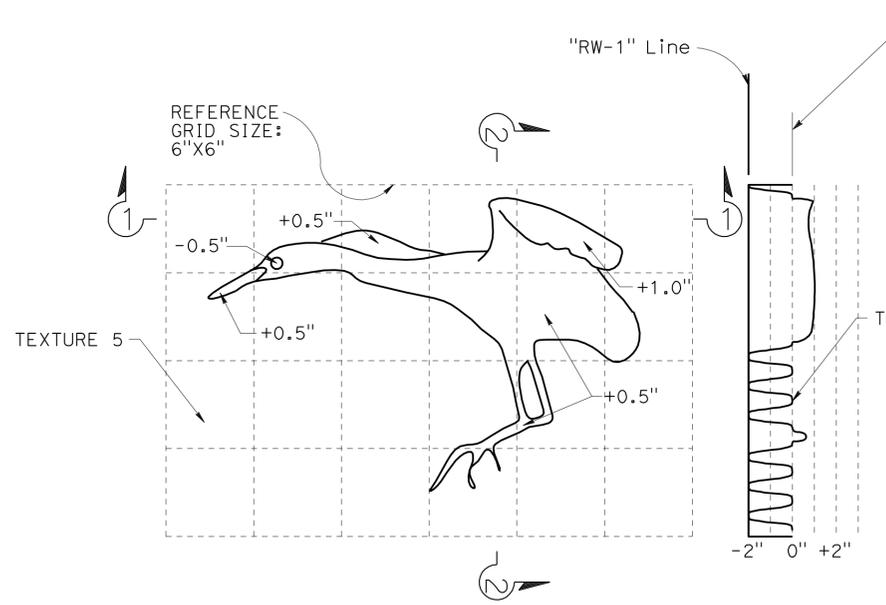
SECTION 1-1
 H - 1"=0'-6"
 V - 1/4"=0'-1"



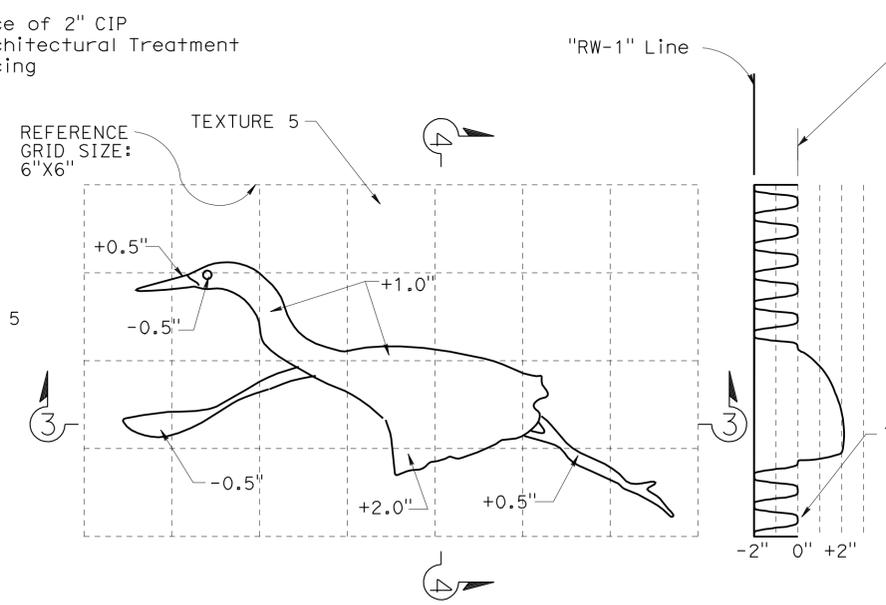
SECTION 3-3
 H - 1"=0'-6"
 V - 1/4"=0'-1"



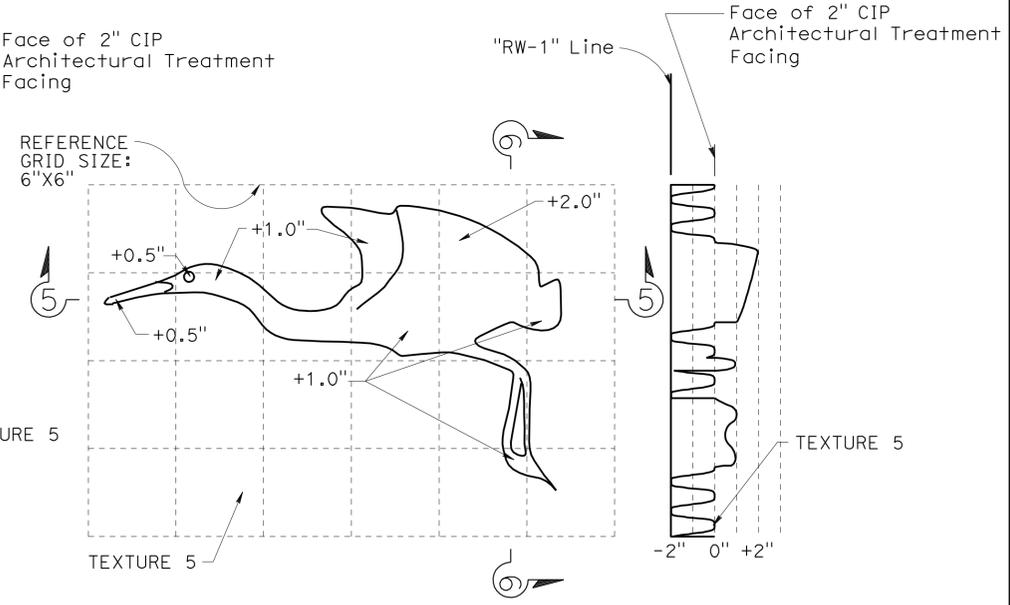
SECTION 5-5
 H - 1"=0'-6"
 V - 1/4"=0'-1"



DETAIL C
 1" = 0'-6"
SECTION 2-2
 H - 1/4"=0'-1"
 V - 1"=0'-6"



DETAIL D
 1" = 0'-6"
SECTION 4-4
 H - 1/4"=0'-1"
 V - 1"=0'-6"



DETAIL E
 1" = 0'-6"
SECTION 6-6
 H - 1/4"=0'-1"
 V - 1"=0'-6"

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

DESIGN	BY John Roberts	CHECKED Mathew Caslavka
DETAILS	BY John Roberts	CHECKED Mathew Caslavka
QUANTITIES	BY Rui Wang	CHECKED Barbara McGahey

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

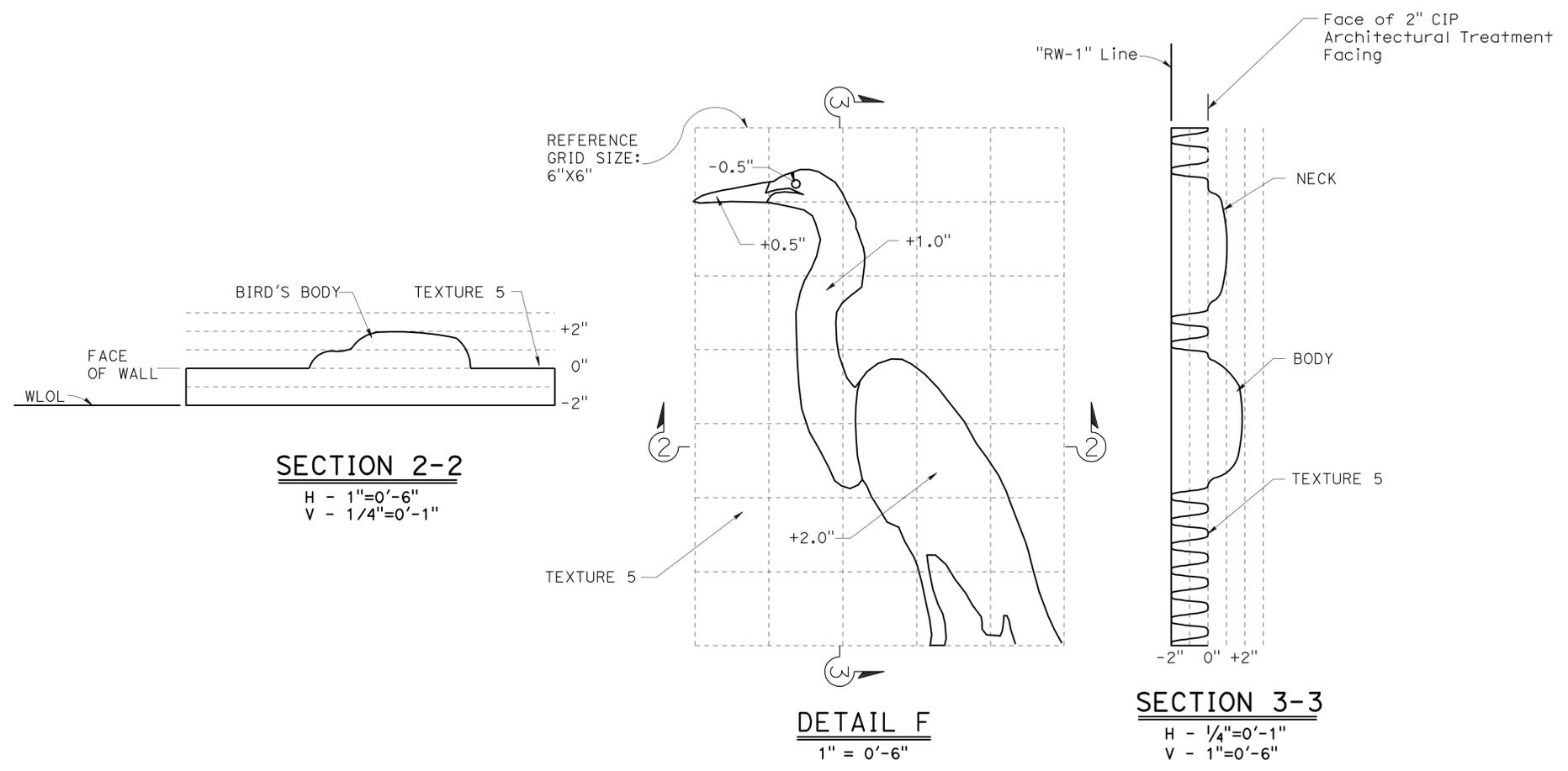
DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
 DESIGN BRANCH 19

BRIDGE NO.	55-0475
POST MILE	10.1R

RETAINING WALL NO. 110
 ARCHITECTURAL SURFACE (TEXTURED CONCRETE) C-13

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	892	949

Wei-Kung Hsia 08-10-10
 REGISTERED CIVIL ENGINEER DATE
 10-25-10
 PLANS APPROVAL DATE
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NOTE :
 THE CONTRACTOR SHALL VERIFY ALL
 CONTROLLING FIELD DIMENSIONS
 BEFORE ORDERING OR FABRICATING
 ANY MATERIALS

DESIGN	BY John Roberts	CHECKED Mathew Caslavka
DETAILS	BY John Roberts	CHECKED Mathew Caslavka
QUANTITIES	BY Rui Wang	CHECKED Barbara McGahey

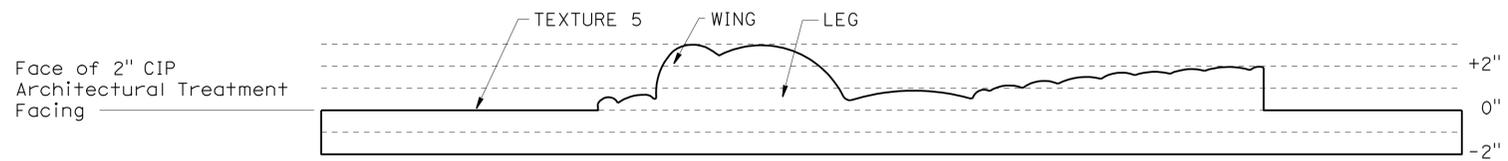
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
 DESIGN BRANCH 19

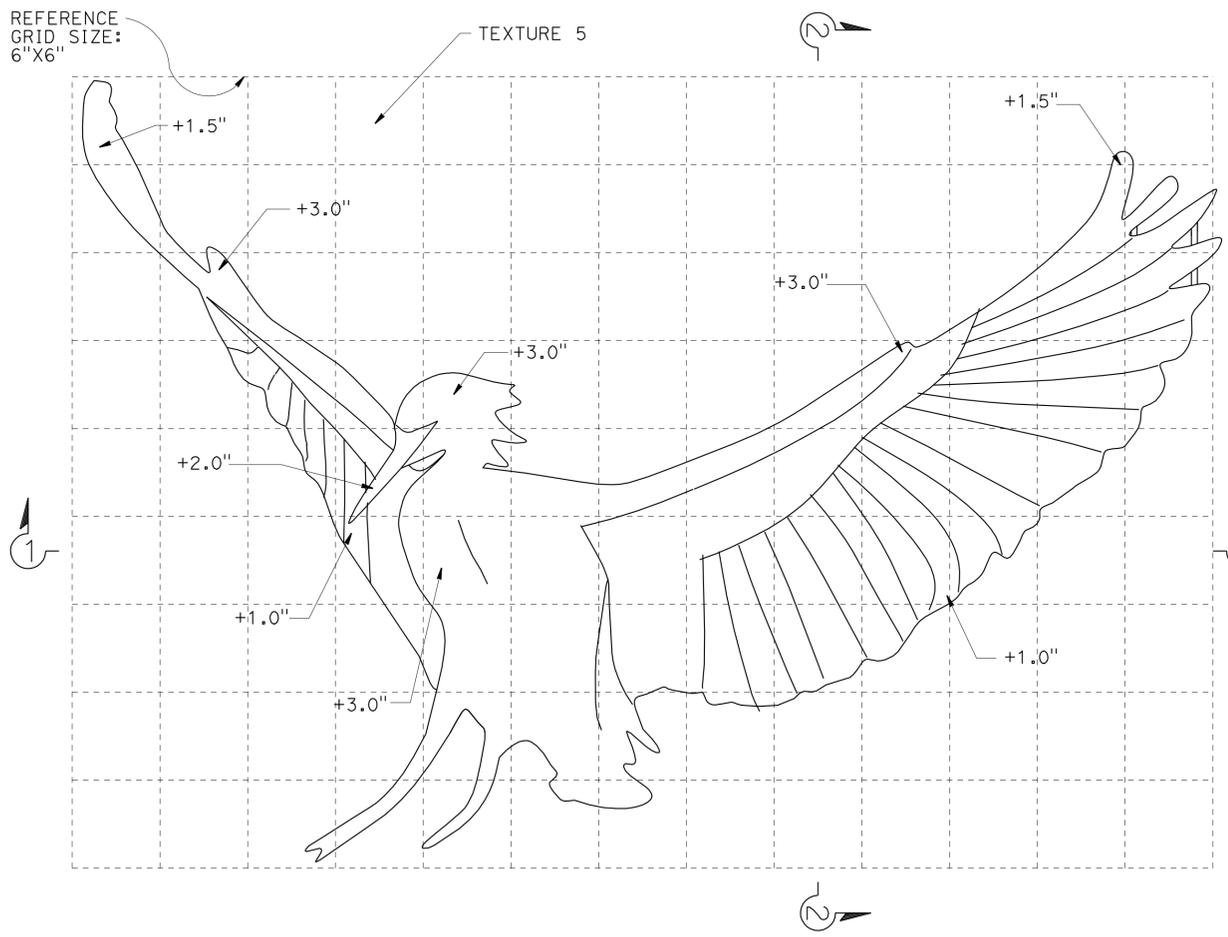
BRIDGE NO.	55-0475	RETAINING WALL NO. 110
POST MILE	10.1R	
ARCHITECTURAL SURFACE (TEXTURED CONCRETE) C-14		

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	893	949

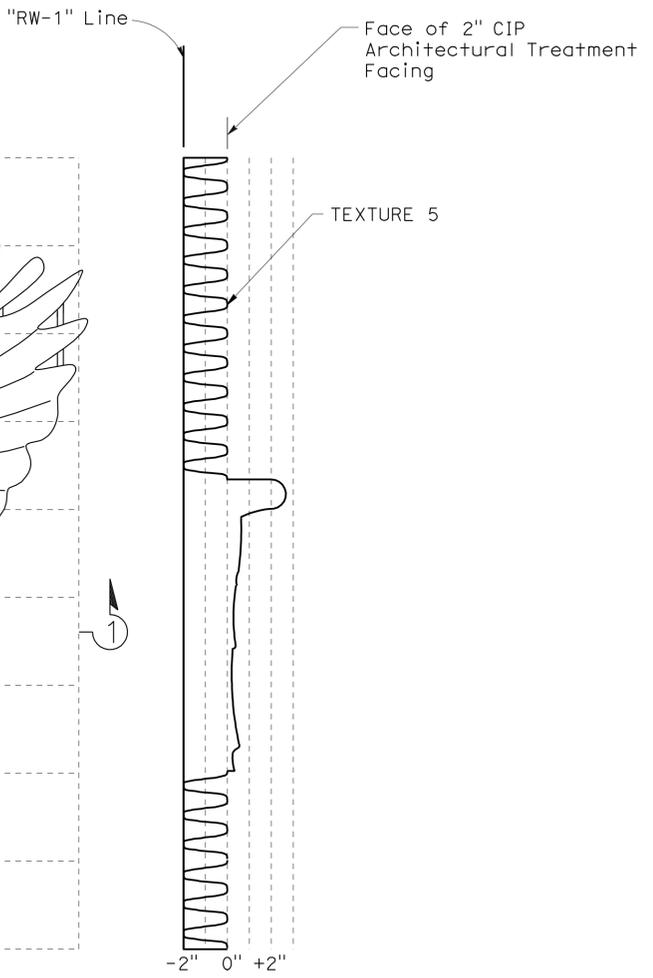
08-10-10
 REGISTERED CIVIL ENGINEER DATE
 10-25-10
 PLANS APPROVAL DATE
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SECTION 1-1
 H - 1"=0'-6"
 V - 1/4"=0'-1"



DETAIL G
 1" = 0'-6"



SECTION 2-2
 H - 1/4"=0'-1"
 V - 1"=0'-6"

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

DESIGN	BY John Roberts	CHECKED Mathew Caslavka
DETAILS	BY John Roberts	CHECKED Mathew Caslavka
QUANTITIES	BY Rui Wang	CHECKED Barbara McGahey

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
DESIGN BRANCH 19

BRIDGE NO.	55-0475
POST MILE	10.1R

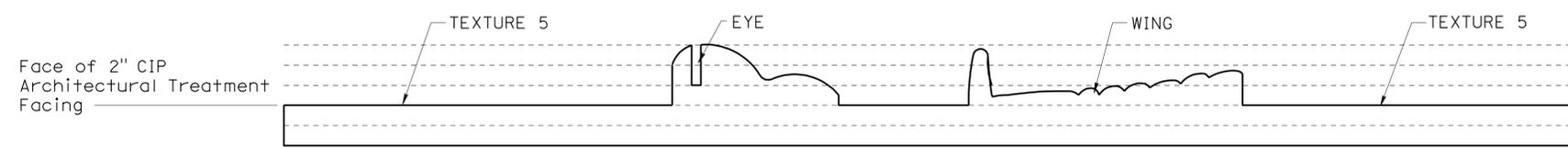
RETAINING WALL NO. 110
 ARCHITECTURAL SURFACE (TEXTURED CONCRETE) C-15

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	894	949

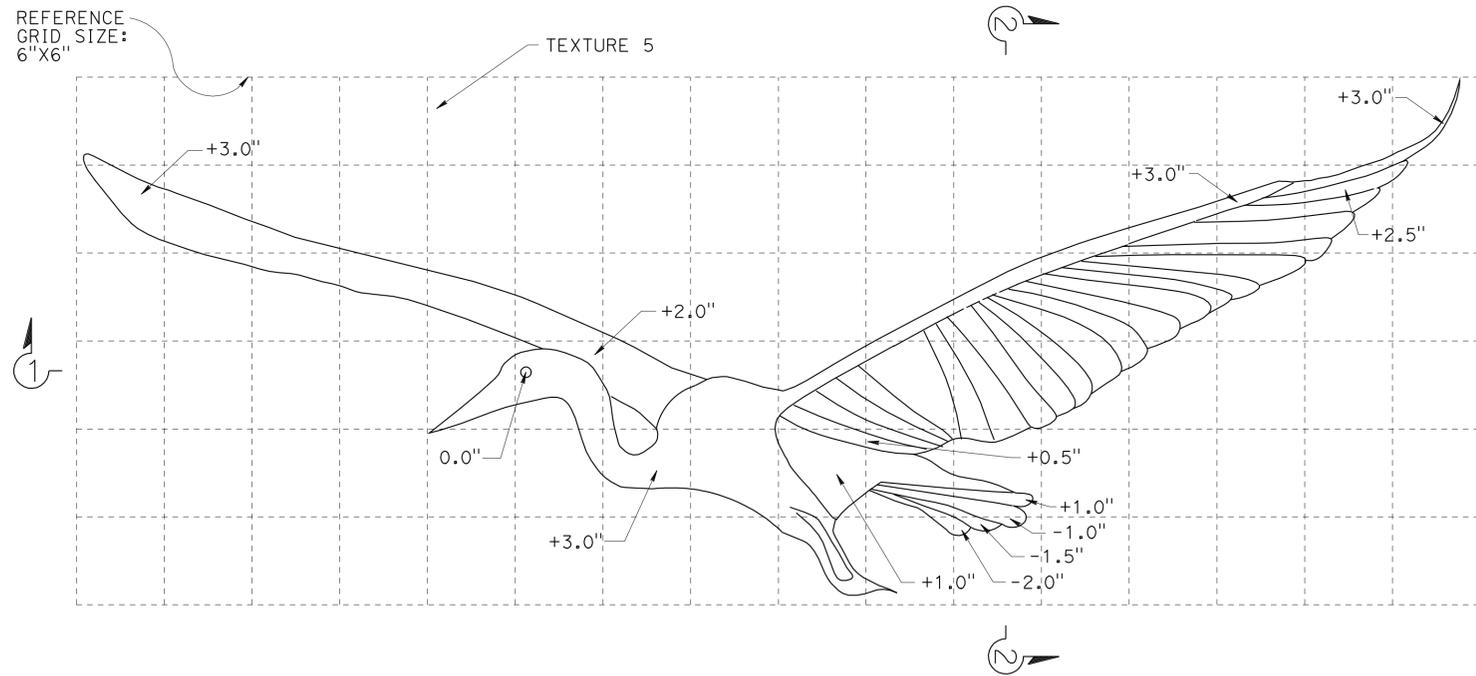
Wei-Kung Hsia 08-10-10
 REGISTERED CIVIL ENGINEER DATE

10-25-10
 PLANS APPROVAL DATE

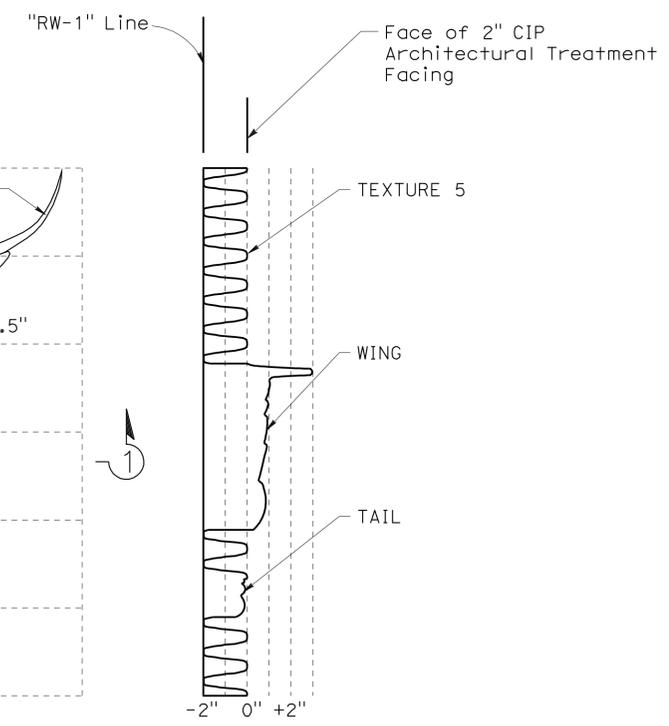
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



SECTION 1-1
 H - 1"=0'-6"
 V - 1/4"=0'-1"



DETAIL H
 1" = 0'-6"



SECTION 2-2
 H - 1/4"=0'-1"
 V - 1"=0'-6"

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

DESIGN	BY John Roberts	CHECKED Mathew Caslavka
DETAILS	BY John Roberts	CHECKED Mathew Caslavka
QUANTITIES	BY Rui Wang	CHECKED Barbara McGahey

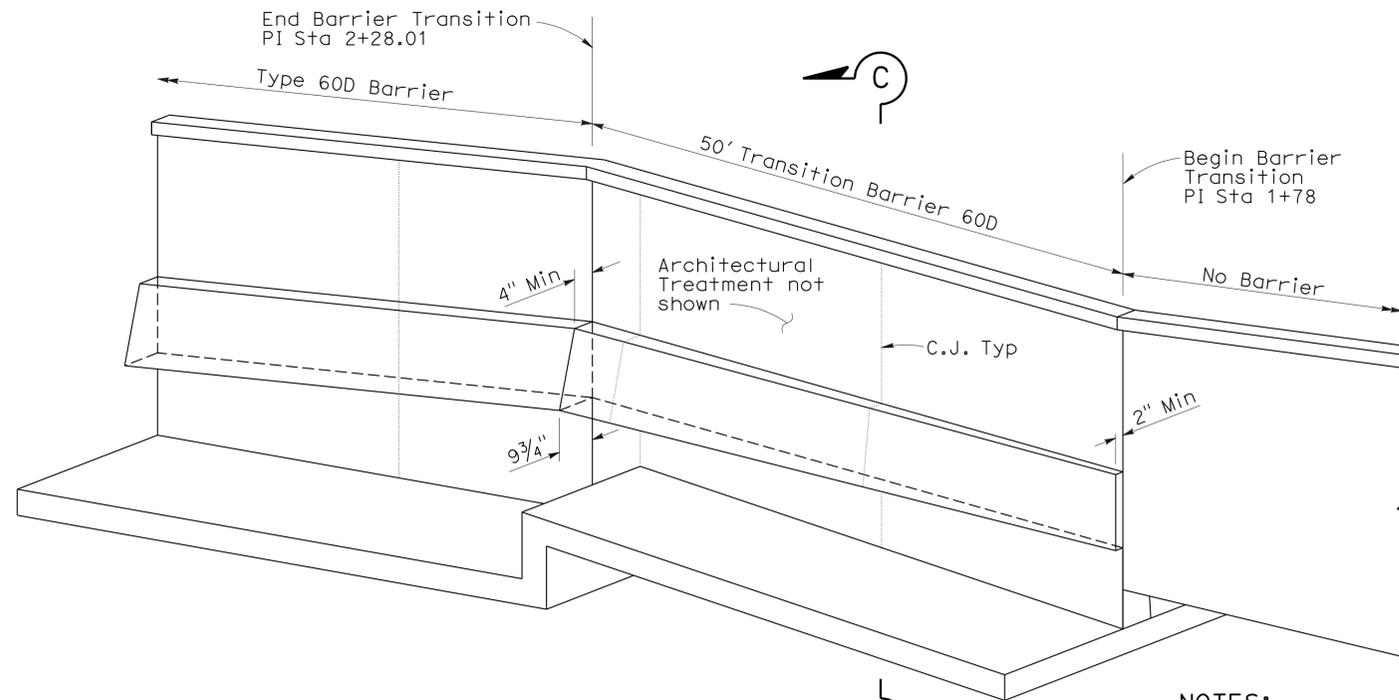
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
DESIGN BRANCH 19

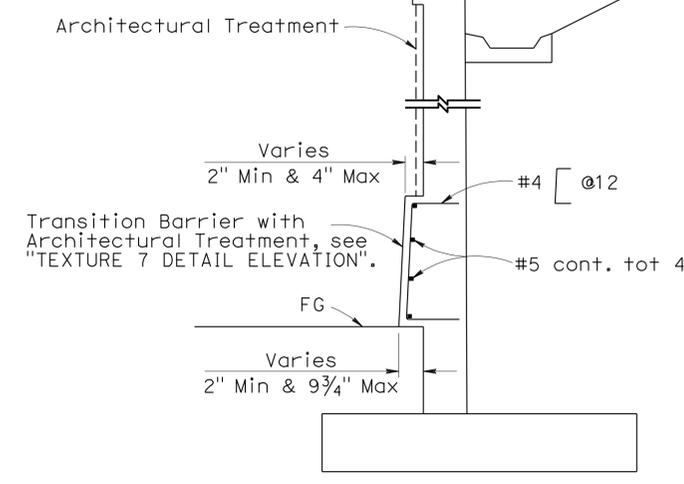
BRIDGE NO.	55-0475
POST MILE	10.1R

RETAINING WALL NO. 110
ARCHITECTURAL SURFACE (TEXTURED CONCRETE) C-16

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	895	949
<i>Wei-Kung Hsia</i> 08-10-10 REGISTERED CIVIL ENGINEER DATE			No. C50210 Exp. 06-30-11 CIVIL STATE OF CALIFORNIA		
10-25-10 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>					

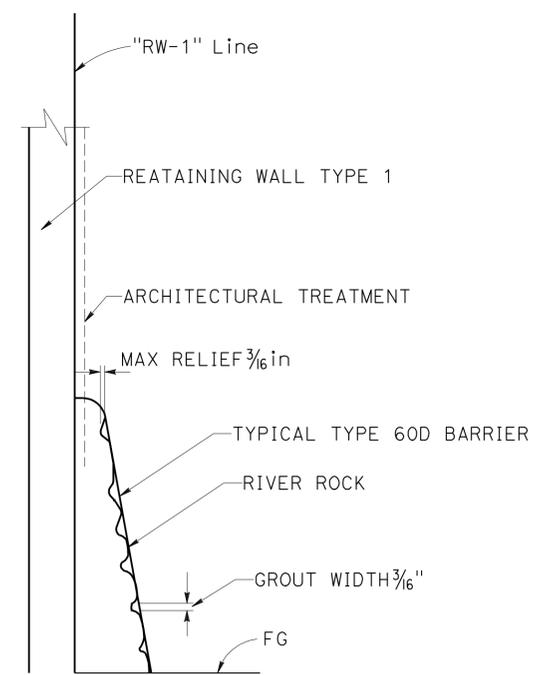


PICTORIAL VIEW OF TRANSITION BARRIER
NOT TO SCALE



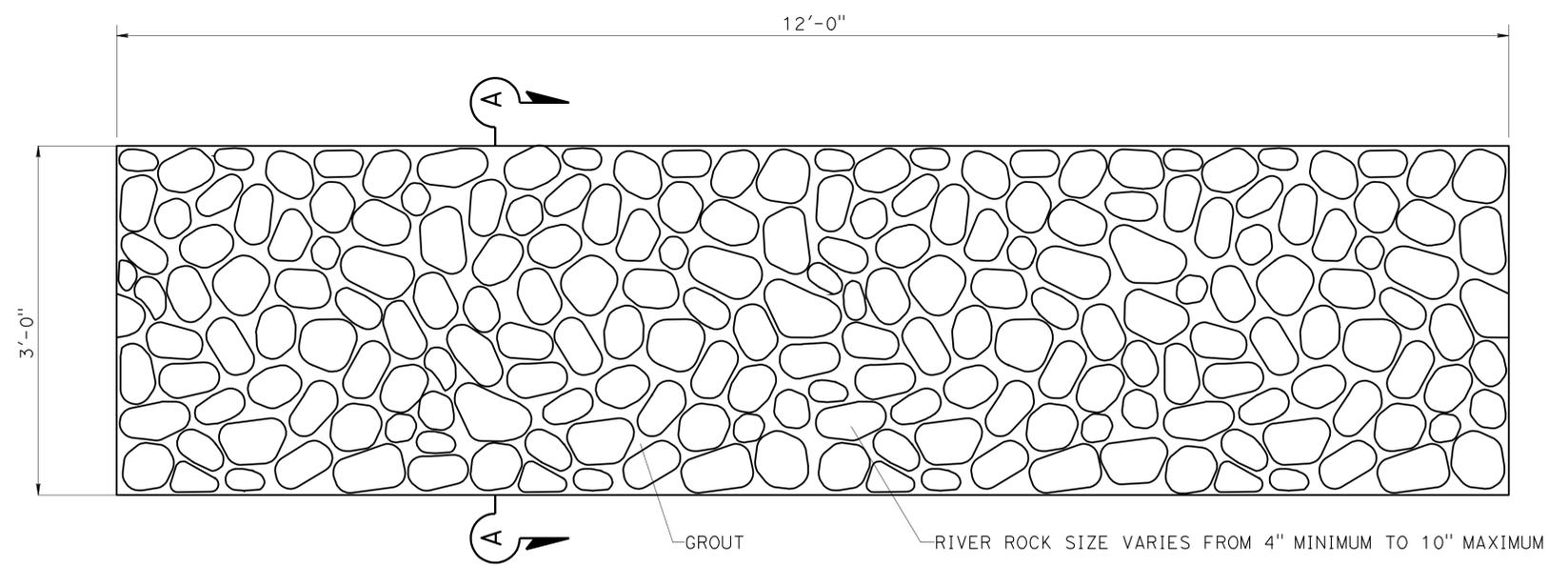
SECTION C-C
NOT TO SCALE

- NOTES:**
1. Cable Railing not shown
 2. For Details not shown, see SECTION B-B on "TYPICAL SECTIONS" sheet.



BARRIER SECTION A-A
NOT TO SCALE

NOTE:
TRANSITION BARRIER RECIEVES SAME TREATMENT



TEXTURE 7 DETAIL ELEVATION
NOT TO SCALE

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 10/25/05)	DESIGN	BY John Roberts	CHECKED Mathew Caslavka	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 19	BRIDGE NO.	RETAINING WALL NO. 110				
	DETAILS	BY John Roberts	CHECKED Mathew Caslavka			55-0475	ARCHITECTURAL SURFACE (TEXTURED CONCRETE) C-17				
	QUANTITIES	BY Rui Wang	CHECKED Barbara McGahey			POST MILE 10.1R					
	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0 1 2 3			CU 12 EA 0G3301	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES				SHEET 22 OF 27

USERNAME => HSTFK DATE PLOTTED => 16-DEC-2010 TIME PLOTTED => 16:49

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Oran	91	9.1/15.1	896	949

8-2-10
CERTIFIED GEOTECHNICAL ENGINEER
Paramanathan Piratheepan
No. 2826
Exp. 9-30-10
PLANS APPROVAL DATE
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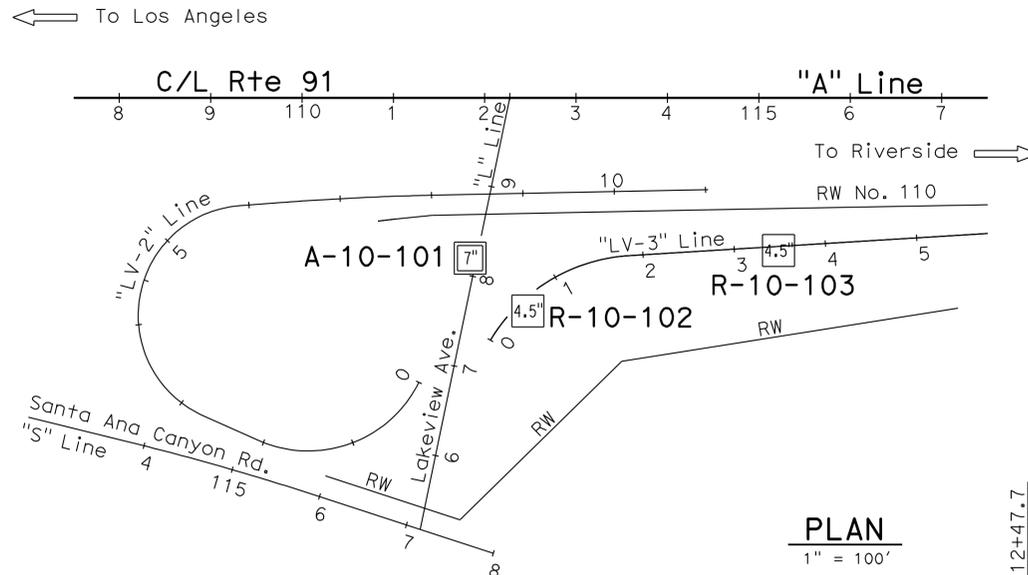
This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, & Presentation Manual (2010 Edition).

BENCH MARK

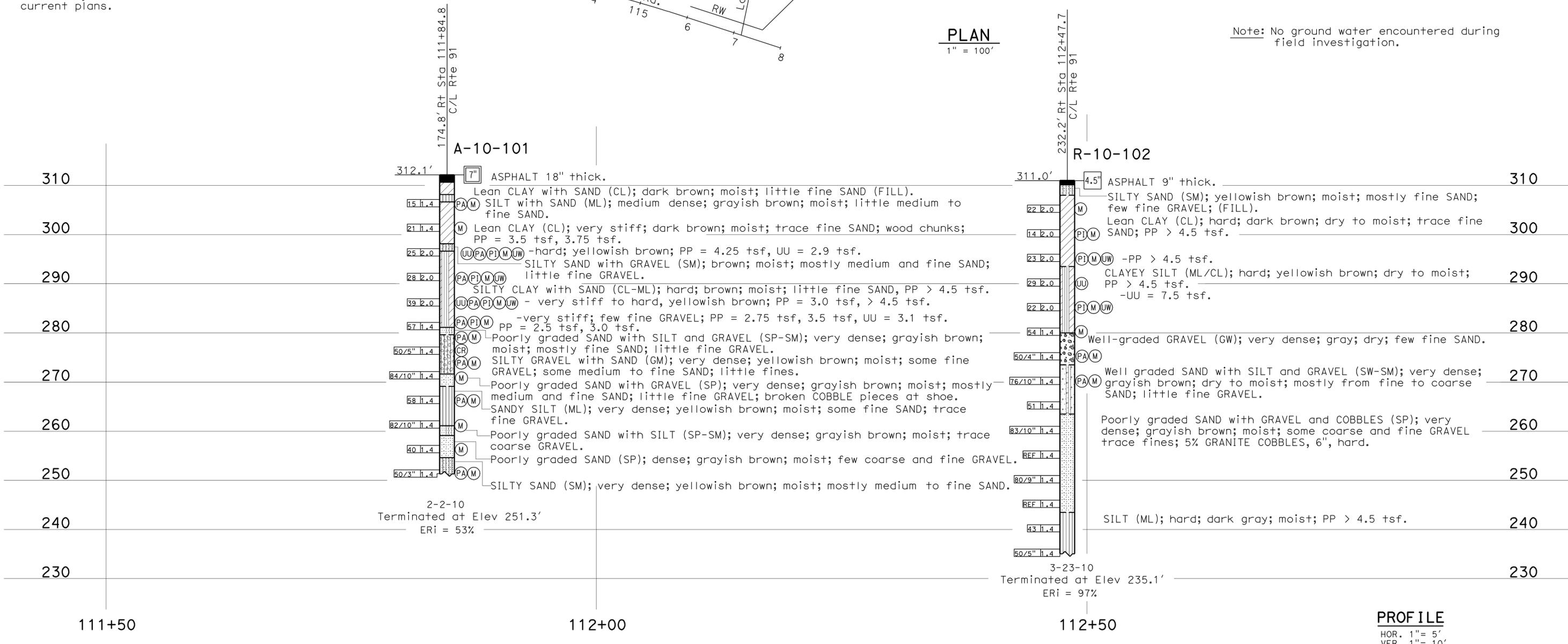
Elev 317.051'

Described by Orange County Surveyor (OCS) 2002 - found 3 3/4" OCS aluminum benchmark disk stamped "2J-39-71", set in the easterly angle point of a concrete headwall. Monument is located in the southerly corner of the intersection of Lakeview Avenue and Santa Ana Canyon Road, 63 ft. southeasterly of the centerline of Santa Ana Canyon Road and 33 ft. southwesterly of the centerline of Lakeview Avenue. Monument is set level with the top of the wall, Vertical Datum NAVD 1988.

Note:
Borings Top of Hole Elevations are based on NAVD 88 elevations. As-Built Log of Test Borings (completed May 1967) require a +2.41 ft add to adjust to the current NAVD 88 elevation shown on all current plans.



Note: No ground water encountered during field investigation.



PROFILE
HOR. 1" = 5'
VER. 1" = 10'

ENGINEERING SERVICES		GEOTECHNICAL SERVICES		STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES		BRIDGE NO.		RETAINING WALL NO. 110	
FUNCTIONAL SUPERVISOR		DRAWN BY: W. Tang 06/10		DEPARTMENT OF TRANSPORTATION		STRUCTURE DESIGN		55-0475		LOG OF TEST BORINGS 1 OF 5	
NAME: S. Karimi		CHECKED BY: K. Lai, T. Halda		P. Piratheepan		DESIGN BRANCH		POST MILES		REVISION DATES	
065 CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		CU EA		12 0G3301		R10.1		SHEET 23 OF 27	

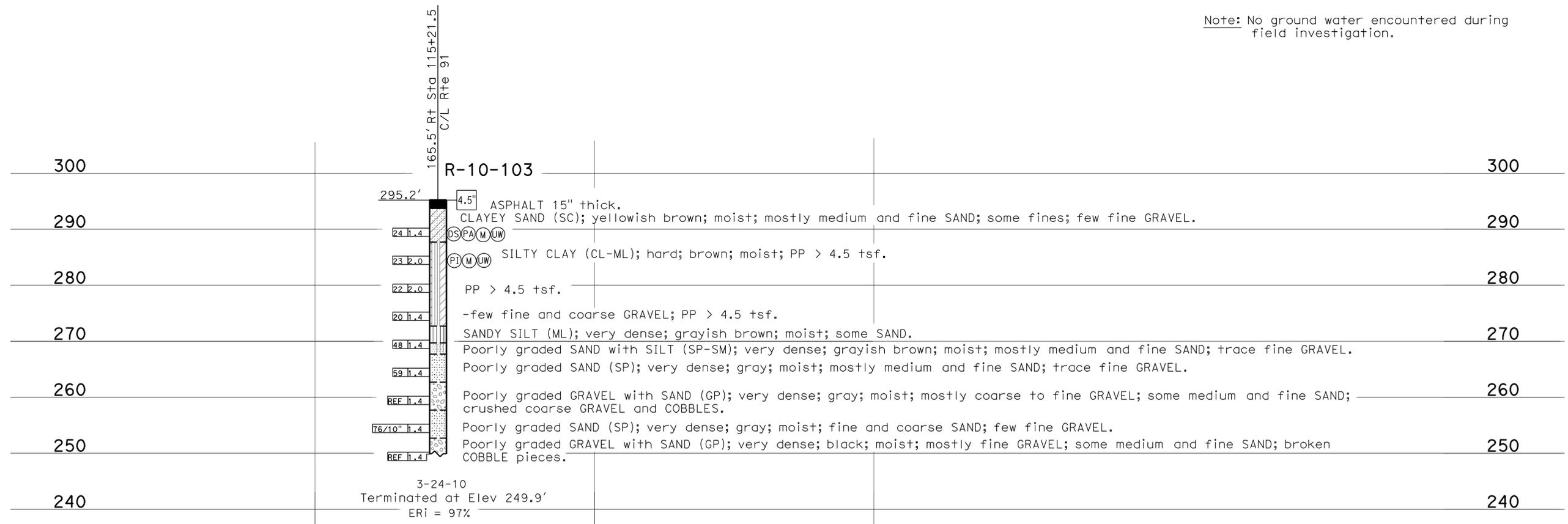
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	897	949

CERTIFIED GEOTECHNICAL ENGINEER 8-2-10
 10-25-10
 PLANS APPROVAL DATE
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REGISTERED PROFESSIONAL ENGINEER
 Paramanathan Piratheepan
 No. 2826
 Exp. 9-30-10
 GEOTECHNICAL
 STATE OF CALIFORNIA

This LOTB sheet was prepared in accordance with the Caltrans Soil & Rock Logging, Classification, & Presentation Manual (2010 Edition).

FOR PLAN VIEW, SEE
"LOG OF TEST BORINGS 1 OF 5"



Note: No ground water encountered during field investigation.

PROFILE
 HOR. 1"=10'
 VER. 1"=10'

ENGINEERING SERVICES		GEOTECHNICAL SERVICES		STATE OF CALIFORNIA	DIVISION OF ENGINEERING SERVICES	BRIDGE NO. 55-0475	RETAINING WALL NO. 110	
FUNCTIONAL SUPERVISOR NAME: S. Karimi	DRAWN BY: W. Tang 06/10	FIELD INVESTIGATION BY: P. Piratheepan		DEPARTMENT OF TRANSPORTATION	STRUCTURE DESIGN	POST MILES R10.1	LOG OF TEST BORINGS 2 OF 5	
O&S CIVIL LOG OF TEST BORINGS SHEET				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	CU 12 EA 0G3301	DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES
				0 1 2 3			07-19-10 07-23-10 07-29-10	SHEET 24 OF 27

FILE => 55-0475-z-1+b02.dgn

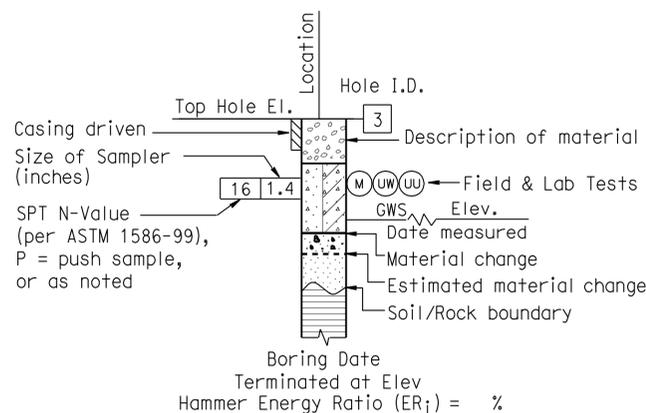
USERNAME => HSTFK DATE PLOTTED => 16-DEC-2010 TIME PLOTTED => 16:49

CEMENTATION	
Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

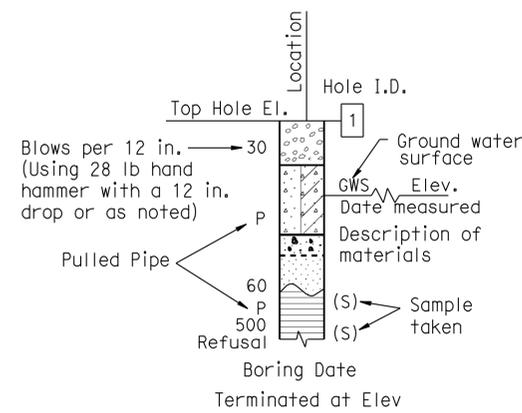
BOREHOLE IDENTIFICATION		
Symbol	Hole Type	Description
	A	Auger Boring (hollow or solid stem bucket)
	R	Rotary drilled boring (conventional)
	RW	Rotary drilled with self-casing wire-line
	RC	Rotary core with continuously-sampled, self-casing wire-line
	P	Rotary percussion boring (air)
	R	Rotary drilled diamond core
	HD	Hand driven (1-inch soil tube)
	HA	Hand Auger
	D	Dynamic Cone Penetration Boring
	CPT	Cone Penetration Test (ASTM D 5778)
	O	Other (note on LOTB)

Note: Size in inches.

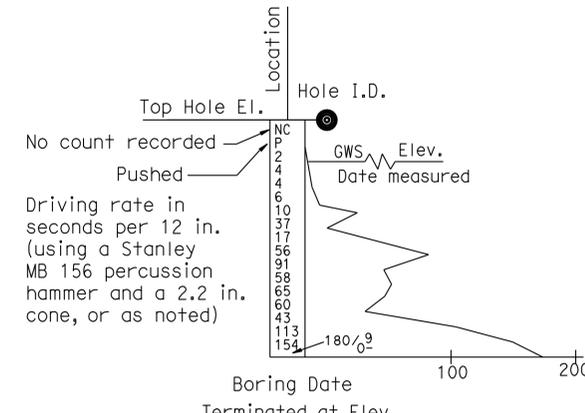
CONSISTENCY OF COHESIVE SOILS				
Description	Shear Strength (tsf)	Pocket Penetrometer Measurement, PP, (tsf)	Torvane Measurement, TV, (tsf)	Vane Shear Measurement, VS, (tsf)
Very Soft	Less than 0.12	Less than 0.25	Less than 0.12	Less than 0.12
Soft	0.12 - 0.25	0.25 - 0.5	0.12 - 0.25	0.12 - 0.25
Medium Stiff	0.25 - 0.5	0.5 - 1	0.25 - 0.5	0.25 - 0.5
Stiff	0.5 - 1	1 - 2	0.5 - 1	0.5 - 1
Very Stiff	1 - 2	2 - 4	1 - 2	1 - 2
Hard	Greater than 2	Greater than 4	Greater than 2	Greater than 2



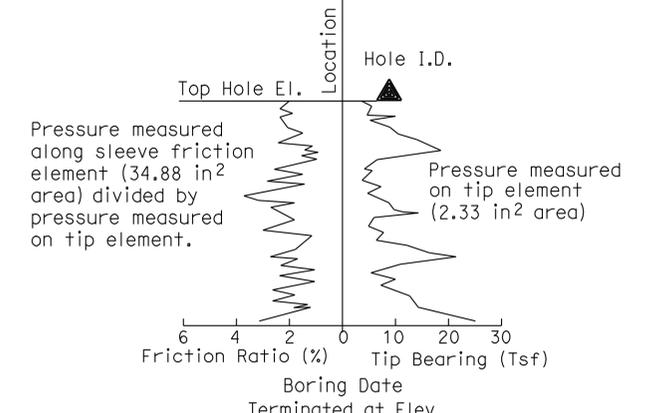
ROTARY BORING



HAND BORING



DYNAMIC CONE PENETRATION BORING



CONE PENETRATION TEST (CPT) BORING

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	9.1/15.1	899	949

8-2-10
 CERTIFIED GEOTECHNICAL ENGINEER
 10-25-10
 PLANS APPROVAL DATE
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GROUP SYMBOLS AND NAMES					
Graphic/Symbol	Group Names	Graphic/Symbol	Group Names	Graphic/Symbol	Group Names
	Well-graded GRAVEL		CL		Lean CLAY
	Well-graded GRAVEL with SAND				Lean CLAY with SAND
	Poorly-graded GRAVEL		CL-ML		Lean CLAY with GRAVEL
	Poorly-graded GRAVEL with SAND				SANDY lean CLAY
	Well-graded GRAVEL with SILT		ML		SANDY lean CLAY with GRAVEL
	Well-graded GRAVEL with SILT and SAND				GRAVELLY lean CLAY
	Well-graded GRAVEL with CLAY (or SILTY CLAY)		OL		GRAVELLY lean CLAY with SAND
	Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)				SILTY CLAY
	Poorly-graded GRAVEL with SILT		OL		SILTY CLAY with SAND
	Poorly-graded GRAVEL with SILT and SAND				SILTY CLAY with GRAVEL
	Poorly-graded GRAVEL with CLAY (or SILTY CLAY)		OL		SANDY SILTY CLAY
	Poorly-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)				SANDY SILTY CLAY with GRAVEL
	SILTY GRAVEL		CH		GRAVELLY SILTY CLAY
	SILTY GRAVEL with SAND				GRAVELLY SILTY CLAY with SAND
	CLAYEY GRAVEL		MH		ORGANIC lean CLAY
	CLAYEY GRAVEL with SAND				ORGANIC lean CLAY with SAND
	SILTY, CLAYEY GRAVEL		OH		ORGANIC lean CLAY with GRAVEL
	SILTY, CLAYEY GRAVEL with SAND				SANDY ORGANIC lean CLAY
	Well-graded SAND		OH		GRAVELLY ORGANIC lean CLAY
	Well-graded SAND with GRAVEL				GRAVELLY ORGANIC lean CLAY with SAND
	Poorly-graded SAND		OH		ORGANIC SILT
	Poorly-graded SAND with GRAVEL				ORGANIC SILT with SAND
	Well-graded SAND with SILT		OH		ORGANIC SILT with GRAVEL
	Well-graded SAND with SILT and GRAVEL				SANDY elastic SILT
	Well-graded SAND with CLAY (or SILTY CLAY)		OH		SANDY elastic SILT with GRAVEL
	Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)				GRAVELLY elastic SILT
	Poorly-graded SAND with SILT		OH		GRAVELLY elastic SILT with SAND
	Poorly-graded SAND with SILT and GRAVEL				ORGANIC fat CLAY
	Poorly-graded SAND with CLAY (or SILTY CLAY)		OH		ORGANIC fat CLAY with SAND
	Poorly-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)				ORGANIC fat CLAY with GRAVEL
	SILTY SAND		OH		SANDY ORGANIC fat CLAY
	SILTY SAND with GRAVEL				SANDY ORGANIC fat CLAY with GRAVEL
	CLAYEY SAND		OL/OH		GRAVELLY ORGANIC fat CLAY
	CLAYEY SAND with GRAVEL				GRAVELLY ORGANIC fat CLAY with SAND
	SILTY, CLAYEY SAND		OL/OH		ORGANIC elastic SILT
	SILTY, CLAYEY SAND with GRAVEL				ORGANIC elastic SILT with SAND
	PEAT		OL/OH		ORGANIC elastic SILT with GRAVEL
	PEAT				SANDY ORGANIC elastic SILT
	COBBLES		OL/OH		GRAVELLY ORGANIC elastic SILT
	COBBLES and BOULDERS				GRAVELLY ORGANIC elastic SILT with SAND
	BOULDERS		OL/OH		ORGANIC SOIL
	BOULDERS				ORGANIC SOIL with SAND
	BOULDERS		OL/OH		ORGANIC SOIL with GRAVEL
	BOULDERS				SANDY ORGANIC SOIL
	BOULDERS		OL/OH		SANDY ORGANIC SOIL with GRAVEL
	BOULDERS				GRAVELLY ORGANIC SOIL
	BOULDERS		OL/OH		GRAVELLY ORGANIC SOIL with SAND
	BOULDERS				GRAVELLY ORGANIC SOIL with SAND

FIELD AND LABORATORY TESTING	
(C)	Consolidation (ASTM D 2435)
(CL)	Collapse Potential (ASTM D 5333)
(CP)	Compaction Curve (CTM 216)
(CR)	Corrosivity Testing (CTM 643, CTM 422, CTM 417)
(CU)	Consolidated Undrained Triaxial (ASTM D 4767)
(DS)	Direct Shear (ASTM D 3080)
(EI)	Expansion Index (ASTM D 4829)
(M)	Moisture Content (ASTM D 2216)
(OC)	Organic Content-% (ASTM D 2974)
(P)	Permeability (CTM 220)
(PA)	Particle Size Analysis (ASTM D 422)
(PI)	Plasticity Index (AASHTO T 90) Liquid Limit (AASHTO T 89)
(PL)	Point Load Index (ASTM D 5731)
(PM)	Pressure Meter
(R)	R-Value (CTM 301)
(SE)	Sand Equivalent (CTM 217)
(SG)	Specific Gravity (AASHTO T 100)
(SL)	Shrinkage Limit (ASTM D 427)
(SW)	Swell Potential (ASTM D 4546)
(UC)	Unconfined Compression-Soil (ASTM D 2166) Unconfined Compression-Rock (ASTM D 2938)
(UU)	Unconsolidated Undrained Triaxial (ASTM D 2850)
(UW)	Unit Weight (ASTM D 4767)

APPARENT DENSITY OF COHESIONLESS SOILS	
Description	SPT N ₆₀ (Blows / 12 in.)
Very Loose	0 - 5
Loose	5 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	Greater than 50

MOISTURE	
Description	Criteria
Dry	No discernable moisture
Moist	Moisture present, but no free water
Wet	Visible free water

PERCENT OR PROPORTION OF SOILS	
Description	Criteria
Trace	Particles are present but estimated to be less than 5%
Few	5% - 10%
Little	15% - 25%
Some	30% - 45%
Mostly	50% - 100%

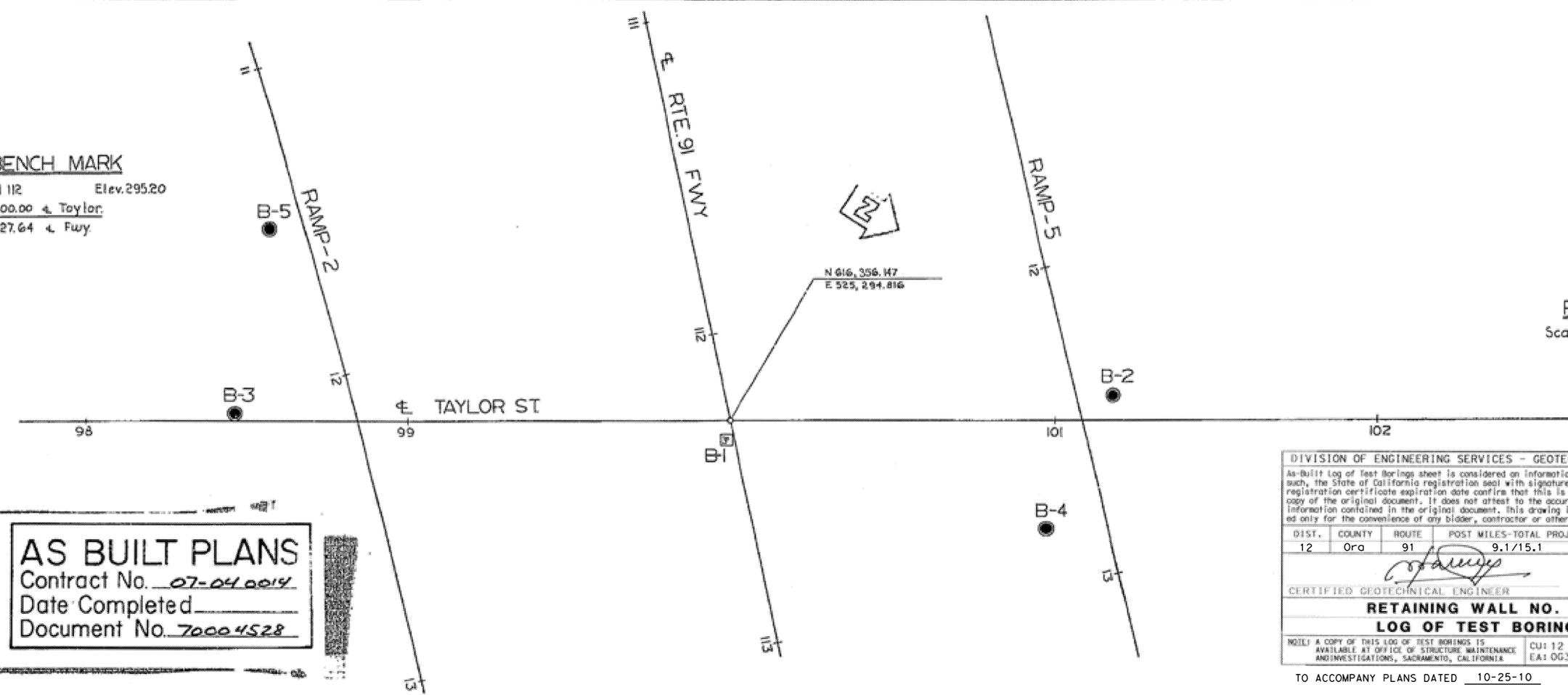
PARTICLE SIZE		
Description	Size (in.)	
Boulder	Greater than 12	
Cobble	3 - 12	
Gravel	Coarse	3/4 - 3
	Fine	1/5 - 3/4
Sand	Coarse	1/16 - 1/5
	Fine	1/64 - 1/16
Silt and Clay	Less than 1/300	

LEGEND OF BORING PENETRATION RECORDS

PENETROMETER
 2 1/2" Cone Penetrometer
 Standard Penetration (SPT)
 Rotary Boring (RBT)
 Auger Boring (AB)
 Jet Boring
 Core Boring
 Test Pit

BENCH MARK
 TBM 112 Elev. 295.20
 100+00.00 & Taylor
 112+27.64 & Fwy.

AS BUILT PLANS
 Contract No. 07-04 0014
 Date Completed _____
 Document No. 70004528



PLAN
 Scale: 1" = 20'

DIVISION OF ENGINEERING SERVICES - GEOTECHNICAL SERVICES

As-Built Log of Test Borings sheet is considered an informational document only. As such, the State of California registration seal with signature, license number and registration certificate expiration date confirm that this is a true and accurate copy of the original document. It does not attest to the accuracy or validity of the information contained in the original document. This drawing is available and presented only for the convenience of any bidder, contractor or other interested party.

DIST.	COUNTY	ROUTE	POST MILES-TOTAL PROJECT	Sheet No.	Total Sheets
12	Ora	91	9.1/15.1	900	949

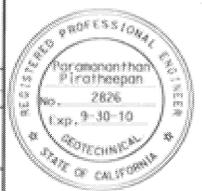
CERTIFIED GEOTECHNICAL ENGINEER
 DATE 8-2-10

RETAINING WALL NO. 110
LOG OF TEST BORINGS 5 OF 5

NOTE: A COPY OF THIS LOG OF TEST BORINGS IS AVAILABLE AT OFFICE OF STRUCTURE MAINTENANCE AND INVESTIGATIONS, SACRAMENTO, CALIFORNIA

CU: 12
 EA: OG3301
 BRIDGE No. 55-0475

TO ACCOMPANY PLANS DATED 10-25-10



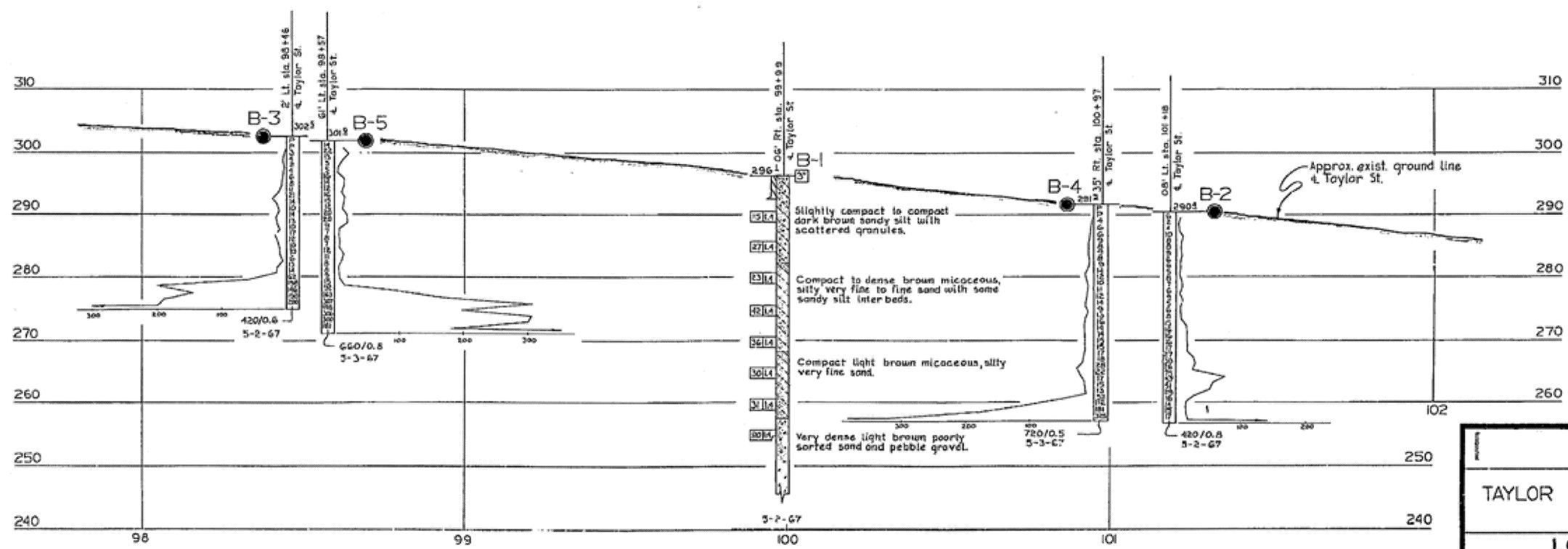
LEGEND OF EARTH MATERIALS

Gravel	Sandy Clay or Clayey Silt
Sand	Clay
Silt	Sandy Clay or Clayey Sand
Fill Material	Sandy Silt or Silty Sand
Hardness Rock	Intermediate Rock
Secondary Rock	

CLASSIFICATION OF MATERIAL BASED ON STANDARD GRADE SIZE LIMITS

Diagram showing the axes for estimation of standard deviation used in determining the percentage of clays. The axes are based on the clay limit, viz. "LI" and "PI". The "LI" and "PI" are used to determine the clay content of the soil.

NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.



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

NO GROUND WATER ENCOUNTERED DURING THIS INVESTIGATION BY BRIDGE DEPT. GEOLOGY SECTION DATE MAY 1967

AS BUILT RWE 12/20/71
 CORRECTIONS BY Howill
 CONTRACT NO. 07-040014
 3/1/71

STATE OF CALIFORNIA
 DEPARTMENT OF PUBLIC WORKS
 DIVISION OF HIGHWAYS

TAYLOR STREET OVERCROSSING

LOG OF TEST BORINGS 5 OF 5

SCALE: As Shown BRIDGE 55-475 FILE DRAWING 55475-10

BRIDGE DEPARTMENT ENGINEERING GEOLOGY SECTION