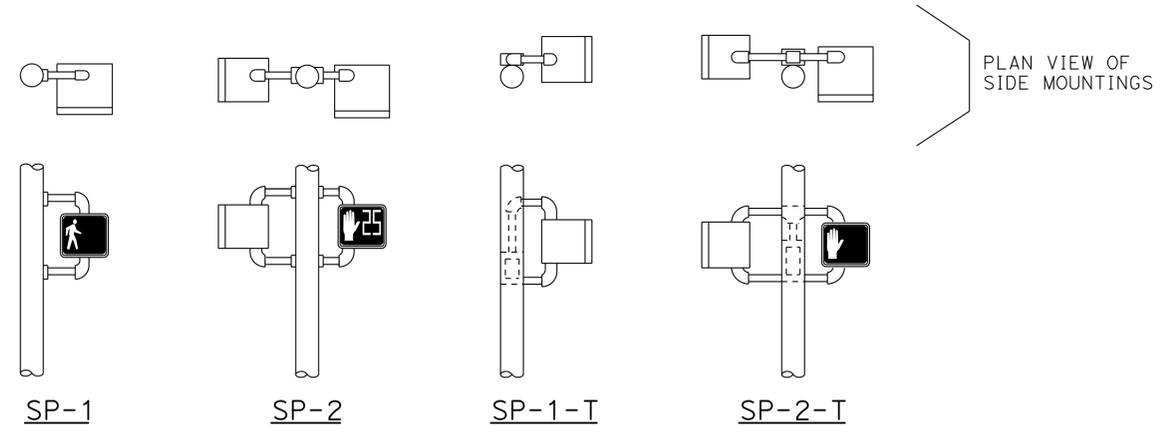


Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Kin	198	R16.5/R17.2	201	247

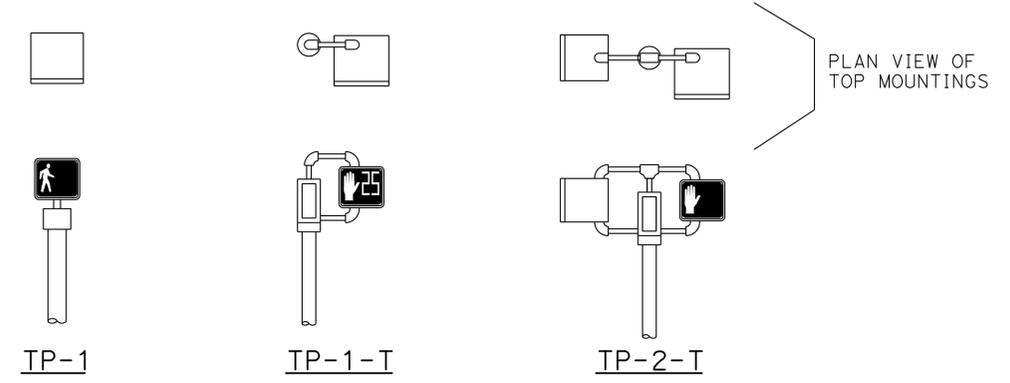
Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 July 19, 2013
 PLANS APPROVAL DATE

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

TO ACCOMPANY PLANS DATED 11-12-13



SIDE MOUNTINGS



TOP MOUNTINGS

PEDESTRIAN SIGNALS AND MOUNTINGS

DETAIL A

NOTES:

1. Mounting shall be oriented to provide maximum horizontal clearance to adjacent roadway.
2. Bracket arms shall be long enough to permit proper alignment of signals.
3. See Standard Plan ES-4D for attachment fittings details.

ABBREVIATIONS:

- 1, 2 NUMBER OF SIGNAL FACES
- SP SIDE MOUNTED PEDESTRIAN SIGNAL
- T TERMINAL COMPARTMENT
- TP TOP MOUNTED PEDESTRIAN SIGNAL



PERSON WALKING INTERVAL FLASHING UPRAISED HAND INTERVAL STEADY UPRAISED HAND INTERVAL

PEDESTRIAN SIGNAL MODULE WITH COUNTDOWN

DETAIL B



RAMP METERING SIGN

DETAIL D



PERSON WALKING INTERVAL

STEADY UPRAISED HAND INTERVAL

PEDESTRIAN SIGNAL MODULE WITHOUT COUNTDOWN

DETAIL C

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
 (PEDESTRIAN SIGNAL AND
 RAMP METERING SIGN)**

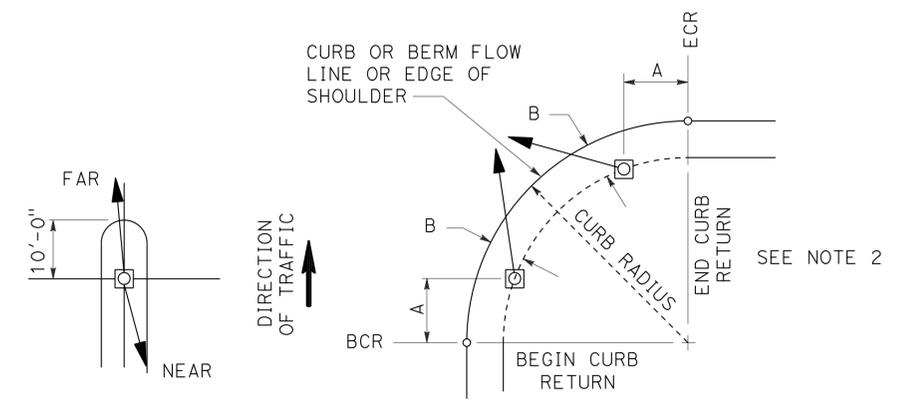
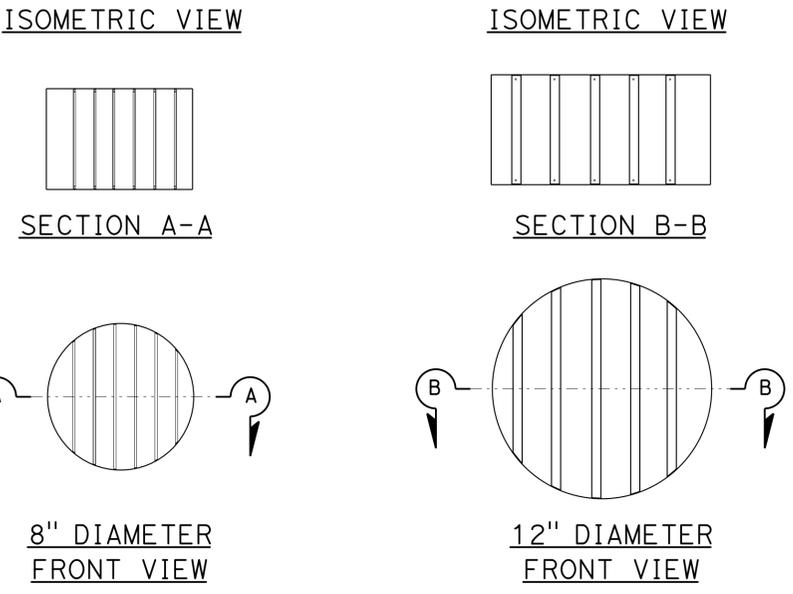
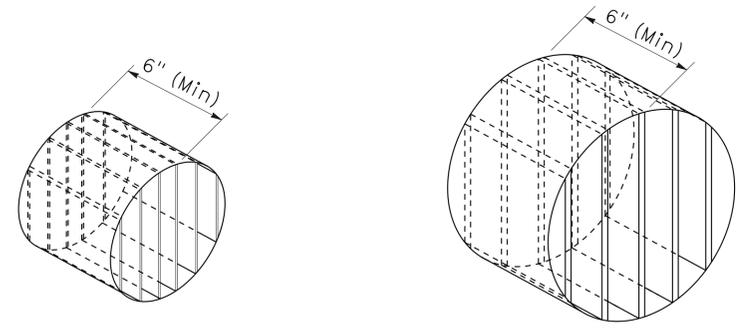
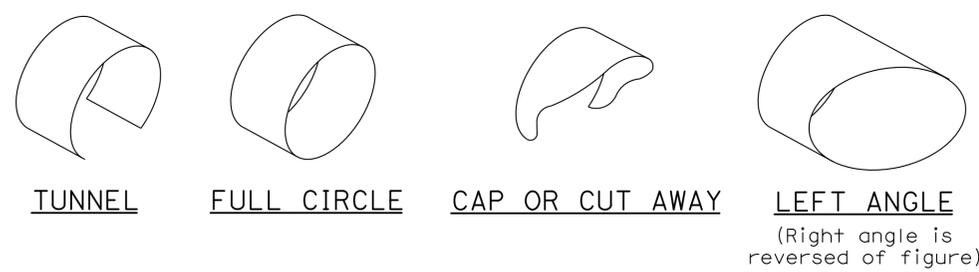
NO SCALE

RSP ES-4B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-4B
 DATED MAY 20, 2011 - PAGE 444 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-4B

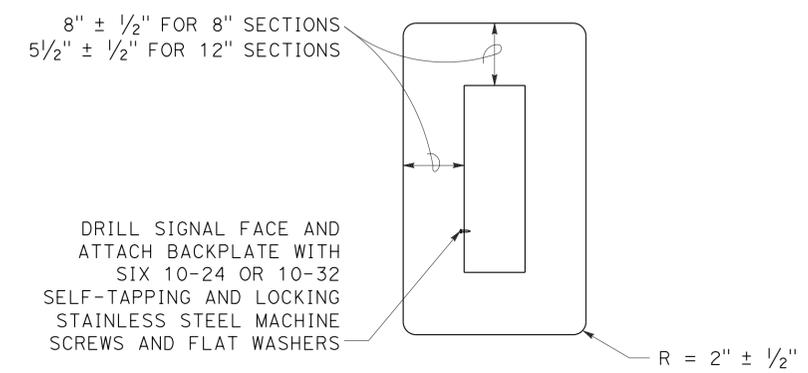
2010 REVISED STANDARD PLAN RSP ES-4B

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kin	198	R16.5/R17.2	202	247
<i>Theresa Gabriel</i> REGISTERED ELECTRICAL ENGINEER July 19, 2013 PLANS APPROVAL DATE <small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
TO ACCOMPANY PLANS DATED <u>11-12-13</u>					



- 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.

VISORS



8" AND 12" SECTIONS

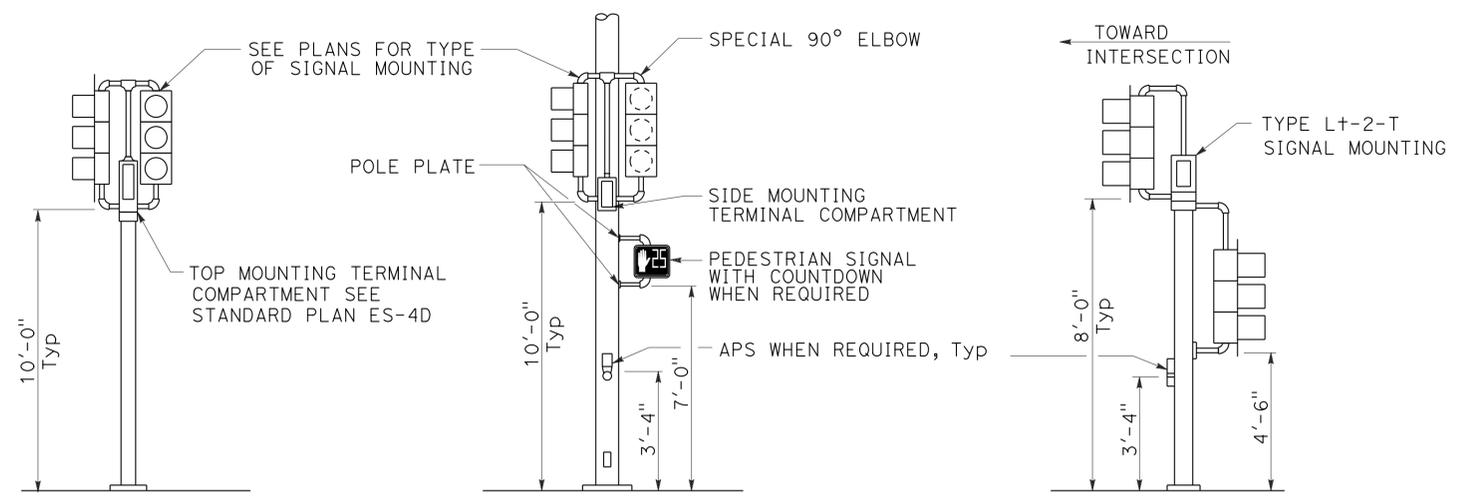
BACKPLATE

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

DIRECTIONAL LOUVER

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

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

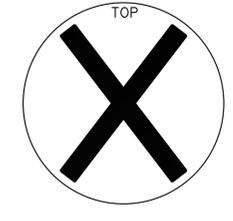
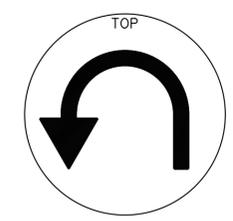
SIDE MOUNTED SIGNALS (SV AND SP)

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



SIGNAL FACES

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (VEHICULAR SIGNAL HEADS AND MOUNTINGS)

NO SCALE

RSP ES-4C DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-04C DATED MAY 20, 2011 - PAGE 445 OF THE STANDARD PLANS BOOK DATED 2010.

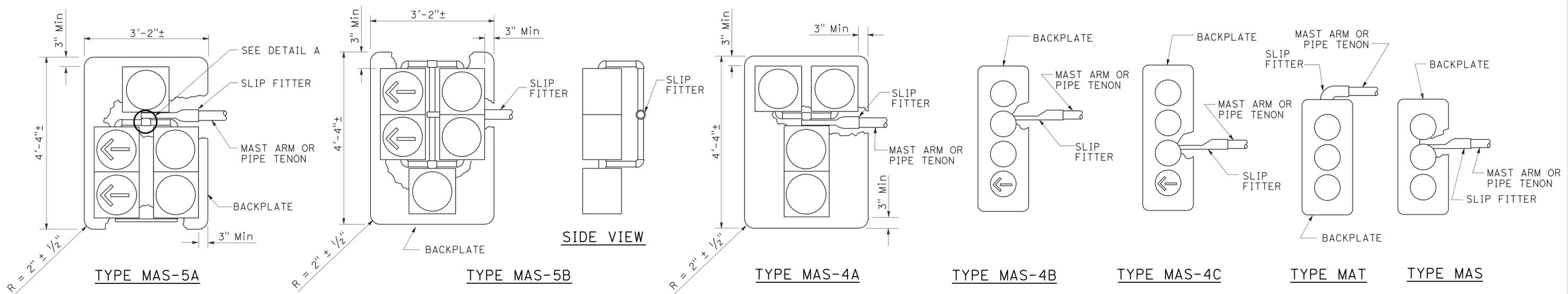
REVISED STANDARD PLAN RSP ES-4C

2010 REVISED STANDARD PLAN RSP ES-4C

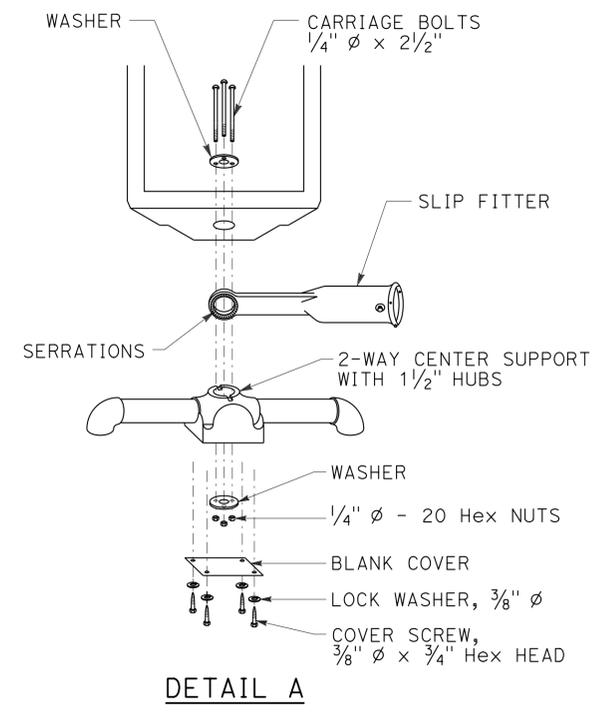
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kin	198	R16.5/R17.2	203	247
<i>Theresa Gabriel</i> REGISTERED ELECTRICAL ENGINEER					
July 19, 2013 PLANS APPROVAL DATE					
<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					



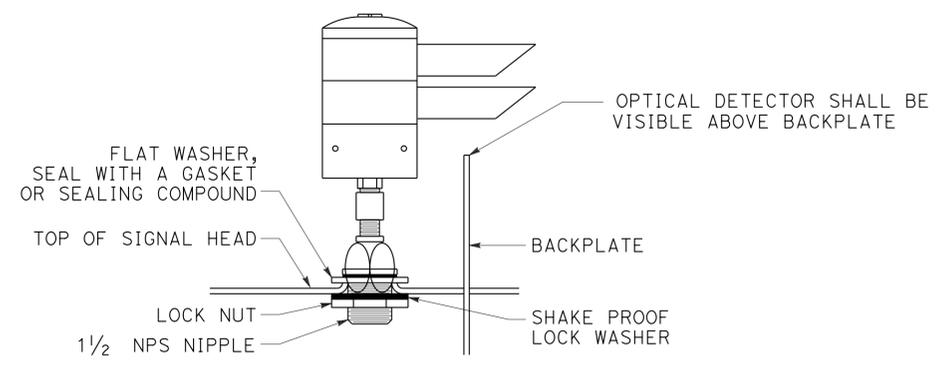
TO ACCOMPANY PLANS DATED 11-12-13



MAST ARM MOUNTINGS



DETAIL A



DETAIL B

OPTICAL DETECTOR MOUNTING FOR EMERGENCY VEHICLE DETECTION SYSTEM

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS
(VEHICULAR SIGNAL HEADS AND
OPTICAL DETECTOR MOUNTING)**

NO SCALE

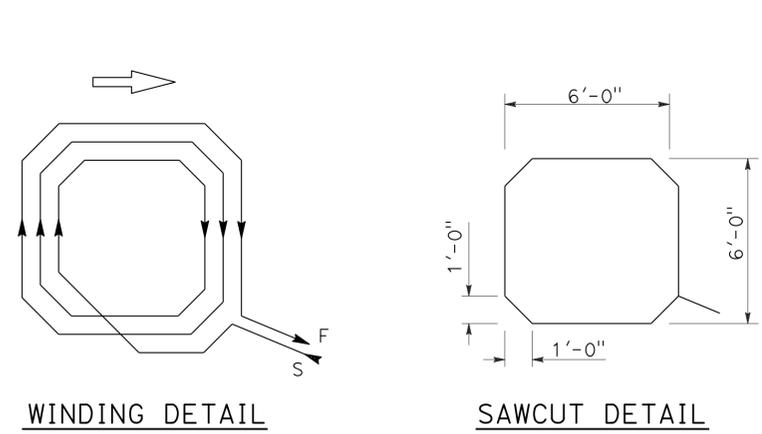
RSP ES-4E DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-4E DATED MAY 20, 2011 - 447 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-4E

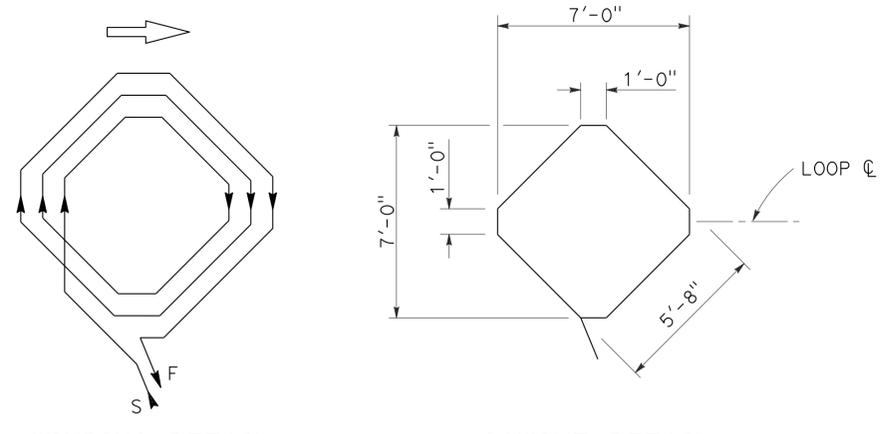
2010 REVISED STANDARD PLAN RSP ES-4E

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kin	198	R16.5/R17.2	204	247
<i>Theresa Gabriel</i> REGISTERED ELECTRICAL ENGINEER July 19, 2013 PLANS APPROVAL DATE <small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>					
					

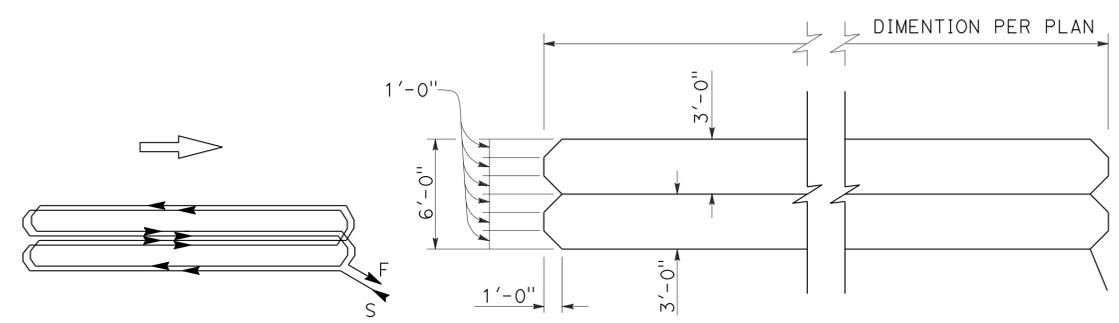
TO ACCOMPANY PLANS DATED 11-12-13



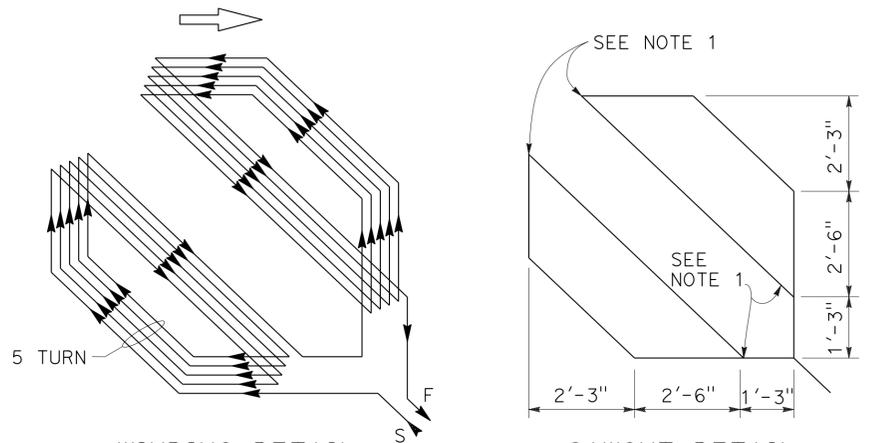
WINDING DETAIL
SAWCUT DETAIL
TYPE A LOOP DETECTOR CONFIGURATION



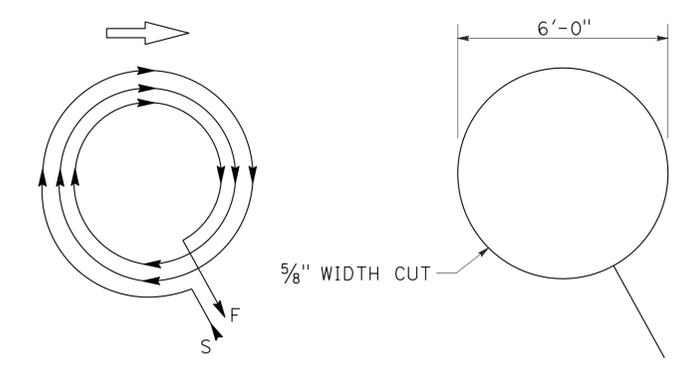
WINDING DETAIL
SAWCUT DETAIL
TYPE B LOOP DETECTOR CONFIGURATION



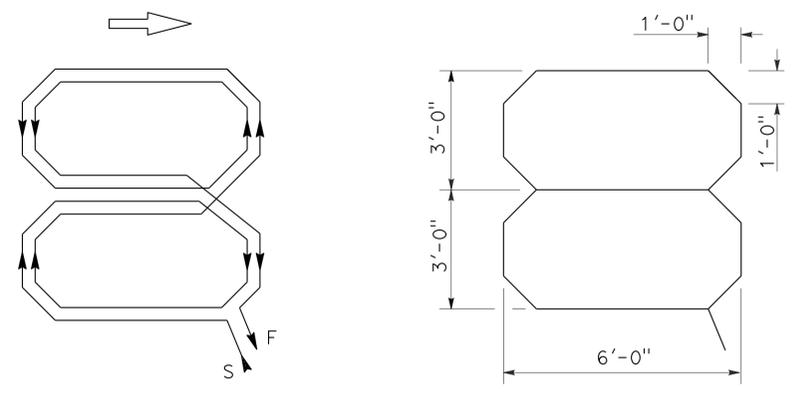
WINDING DETAIL
SAWCUT DETAIL
TYPE C LOOP DETECTOR CONFIGURATION



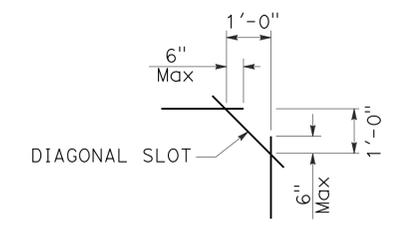
WINDING DETAIL
SAWCUT DETAIL
TYPE D LOOP DETECTOR CONFIGURATION



WINDING DETAIL
SAWCUT DETAIL
TYPE E LOOP DETECTOR CONFIGURATION



WINDING DETAIL
SAWCUT DETAIL
TYPE Q LOOP DETECTOR CONFIGURATION



PLAN VIEW OF DIAGONAL SLOT AT CORNERS

- NOTES:**
1. Round corners of acute angle sawcuts to prevent damage to conductors.
 2. Typical distance separating loops from edge to edge is 10' for Type A, B, D and E installation in single lane.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (DETECTORS)

NO SCALE

RSP ES-5B DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-5B DATED MAY 20, 2011 - PAGE 449 OF THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-5B

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Kin	198	R16.5/R17.2	205	247

Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 No. E15129
 Exp. 6-30-14
 ELECTRICAL
 STATE OF CALIFORNIA

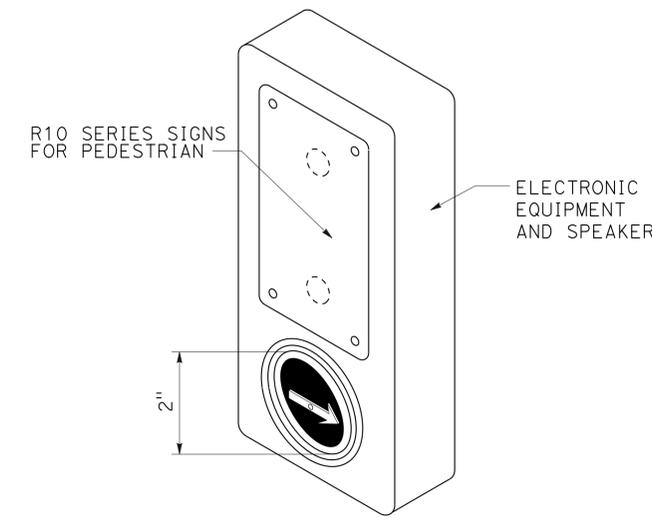
July 19, 2013
 PLANS APPROVAL DATE

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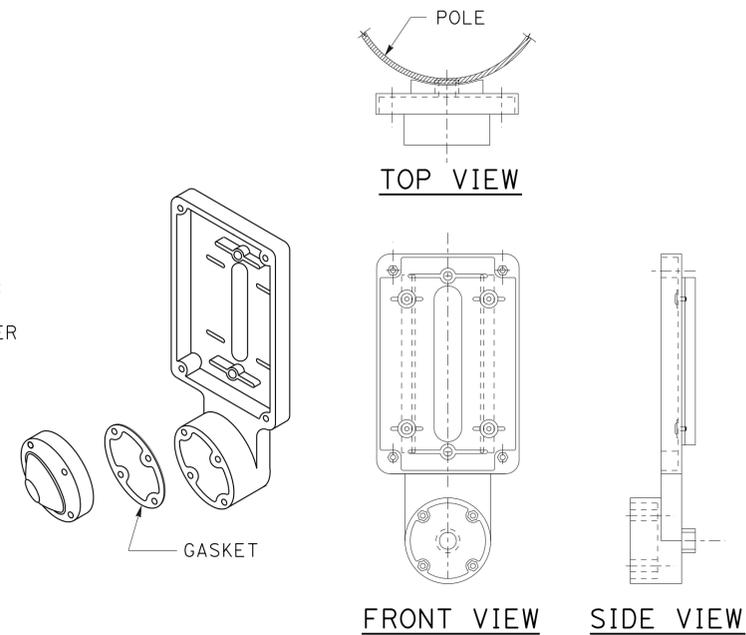
TO ACCOMPANY PLANS DATED 11-12-13

NOTES:

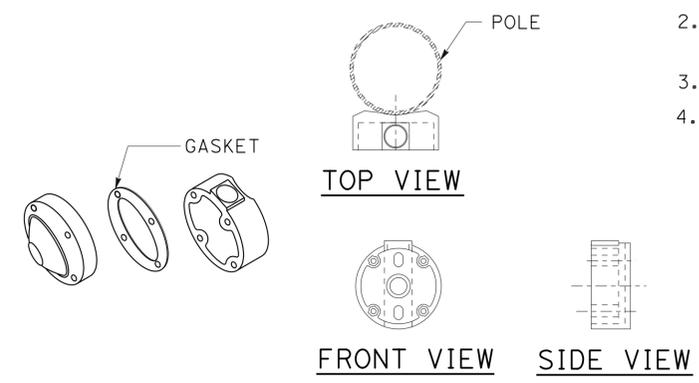
1. Back casting shape to fit curvature of pole.
2. Provide cover fitting for top of post, when PBA is mounted on push button assembly post.
3. Install push button on crosswalk side of standard.
4. Use R10 series regulatory signs and plaques for pedestrian and bicycle facilities.



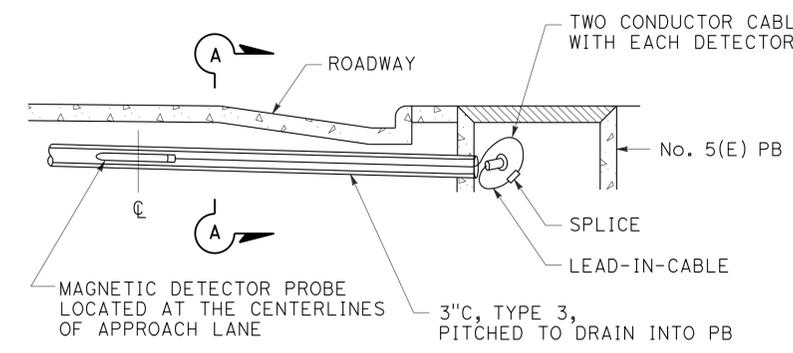
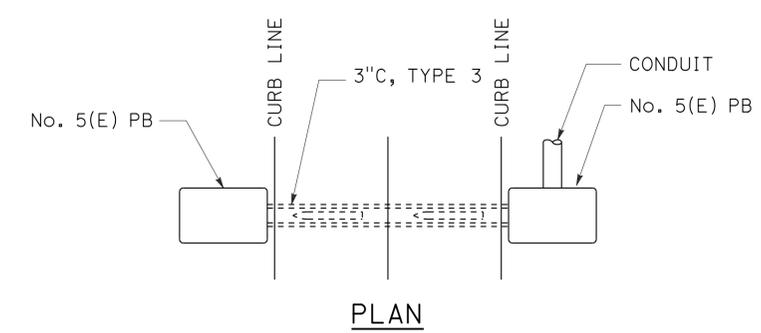
ACCESSIBLE PEDESTRIAN SIGNAL
DETAIL A
 (See note 1 to 4)



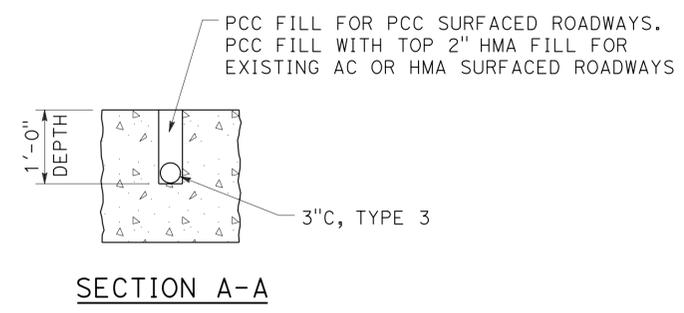
TYPE B PUSH BUTTON ASSEMBLY
DETAIL B
 (See note 1 to 4)



TYPE C PUSH BUTTON ASSEMBLY
DETAIL C
 (See note 1 to 4)



MAGNETIC VEHICLE DETECTOR
INSTALLATION DETAILS
DETAIL D



STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS
(ACCESSIBLE PEDESTRIAN SIGNAL,
PUSH BUTTON ASSEMBLIES AND
MAGNETIC VEHICLE DETECTOR)

NO SCALE

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

REVISED STANDARD PLAN RSP ES-5C

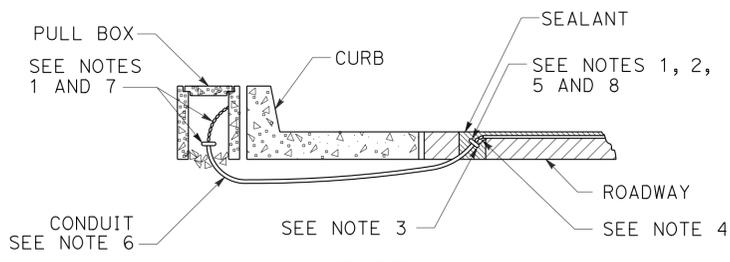
2010 REVISED STANDARD PLAN RSP ES-5C

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Kin	198	R16.5/R17.2	206	247

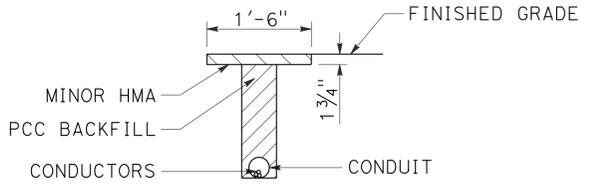
Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 July 19, 2013
 PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 11-12-13

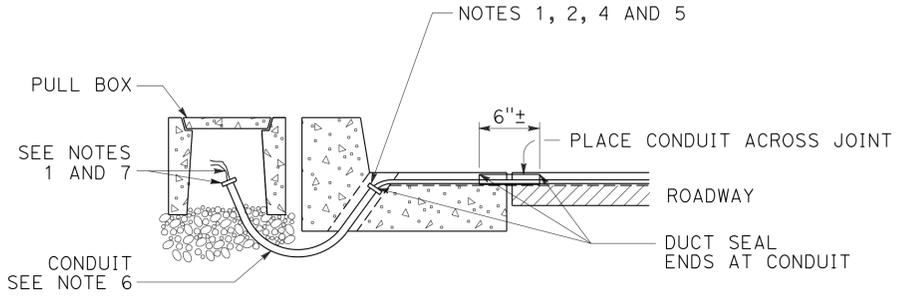
2010 REVISED STANDARD PLAN RSP ES-5D



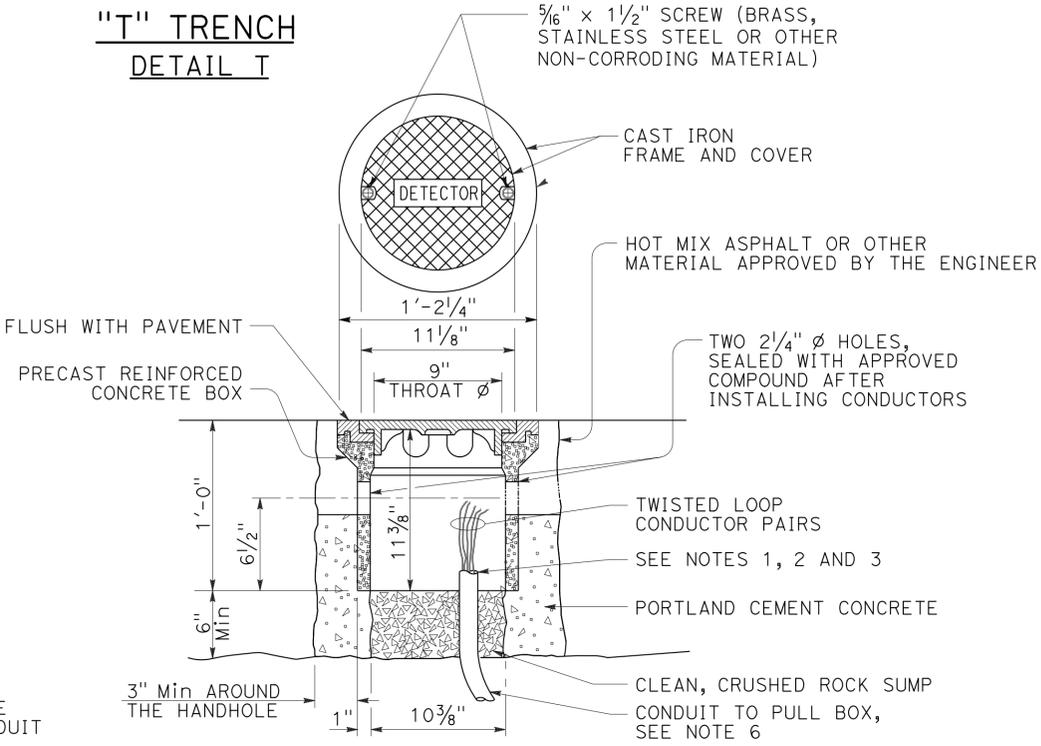
**TYPE A
CURB TERMINATION DETAIL**



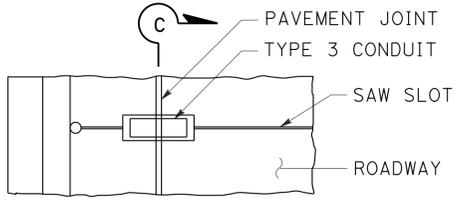
**"T" TRENCH
DETAIL 1**



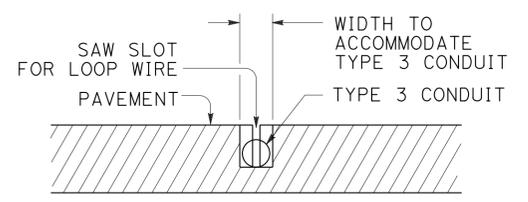
CROSS SECTION



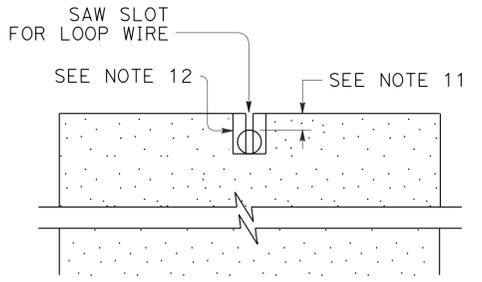
DETECTOR HANDHOLE DETAIL



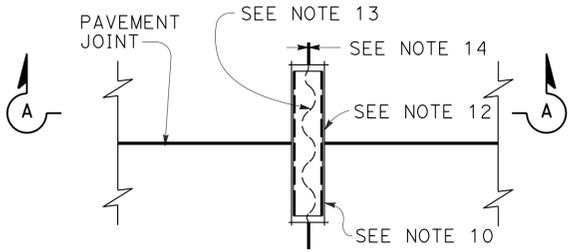
PLAN VIEW



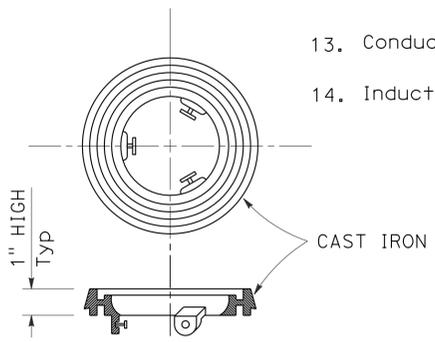
SECTION C-C



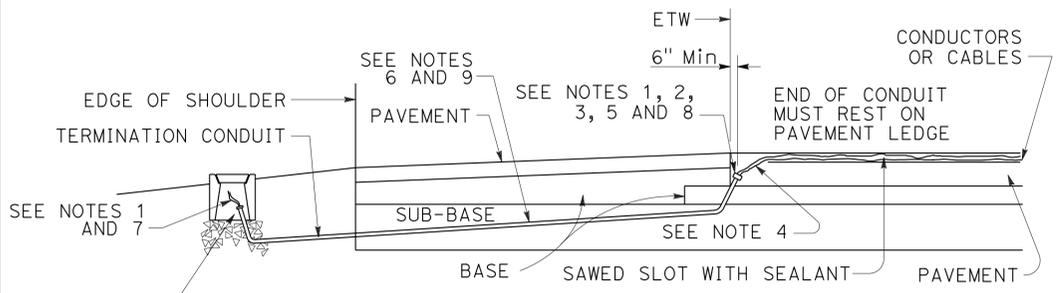
SECTION A-A



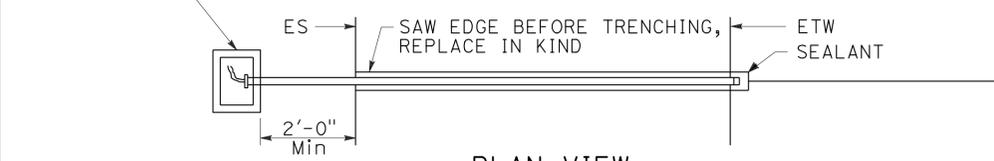
**PLAN VIEW
TYPICAL LOOP LEAD-IN DETAIL
AT PAVEMENT JOINT**



LOCKING GRADE RING



CROSS SECTION



**PLAN VIEW
SHOULDER TERMINATION DETAILS**

NOTES:

- Bushing shall be used at end of conduit.
- Tape detector conductors or cables 3" each side of bushings.
- Install duct seal compound to each end of termination conduit before installing sealant.
- Round all sharp edges where detector conductors or cables have to pass.
- End of conduit shall be 3/8" below roadway surface.
- | | |
|---------------------|------------------------|
| <u>Conduit size</u> | <u>Loop conductors</u> |
| 1"C minimum | 1 to 2 pairs |
| 1 1/2"C minimum | 3 to 4 pairs |
| 2"C minimum | 5 or more pairs |
- Splice detector conductors or cables to detector lead-in-cable.
- Location of detector handhole when shown on plans.
- When the shoulder and traveled way are paved with the same material and there is no joint between them, the conduit shall extend only 2'-0" into the shoulder pavement.
- 3/4"C, Type 3 conduit 6" long minimum, plug both ends with duct compound to keep out sealant.
- 1/2" Minimum between top of conduit and pavement surface.
- Sawcut shall not exceed 1" in width and 1/8" longer than conduit to be installed.
- Conductors with 1/2" minimum slack inside conduit.
- Inductive loop detector saw slot.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
(CURB TERMINATION
AND HANDHOLE)**
NO SCALE

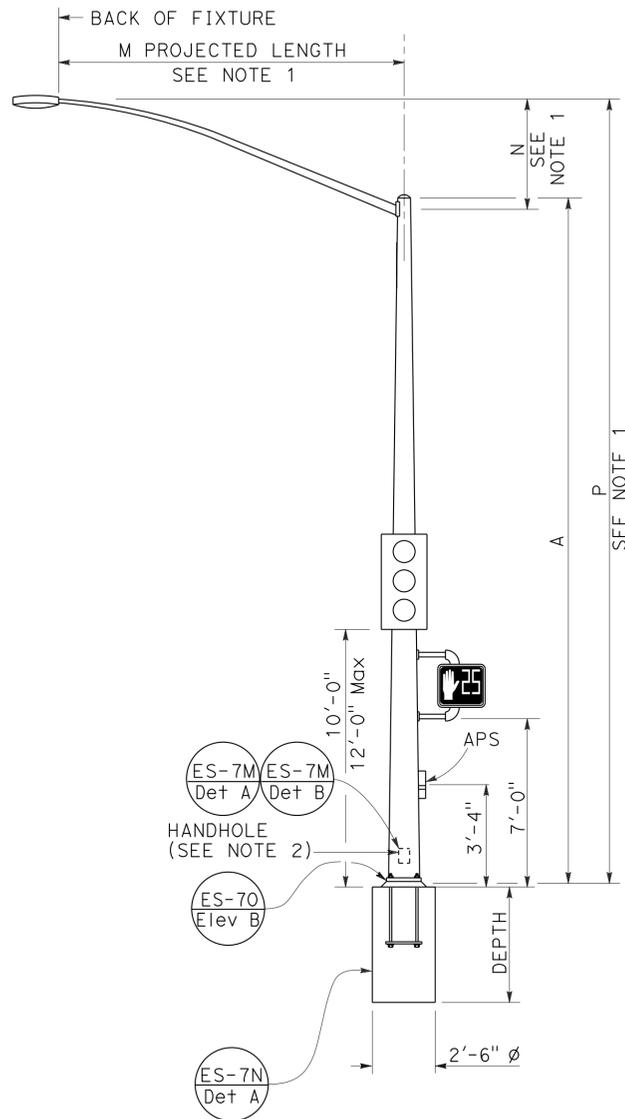
RSP ES-5D DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-5D
DATED MAY 20, 2011 - PAGE 451 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-5D

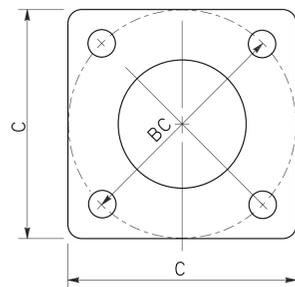
NOTES:

- For additional notes, details and data for Type 15TS and Type 21TS Standards, see Standard Plan ES-6A.
- Handhole shall be located on the downstream side of traffic.

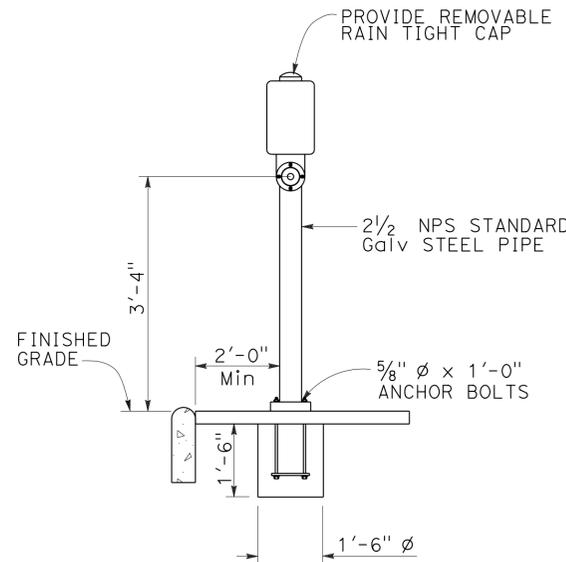
TO ACCOMPANY PLANS DATED 11-12-13



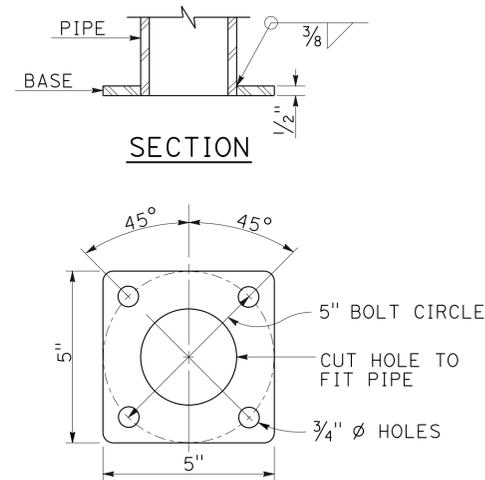
TYPE 15TS AND 21TS STANDARD
ELEVATION A
 (See Note 1)



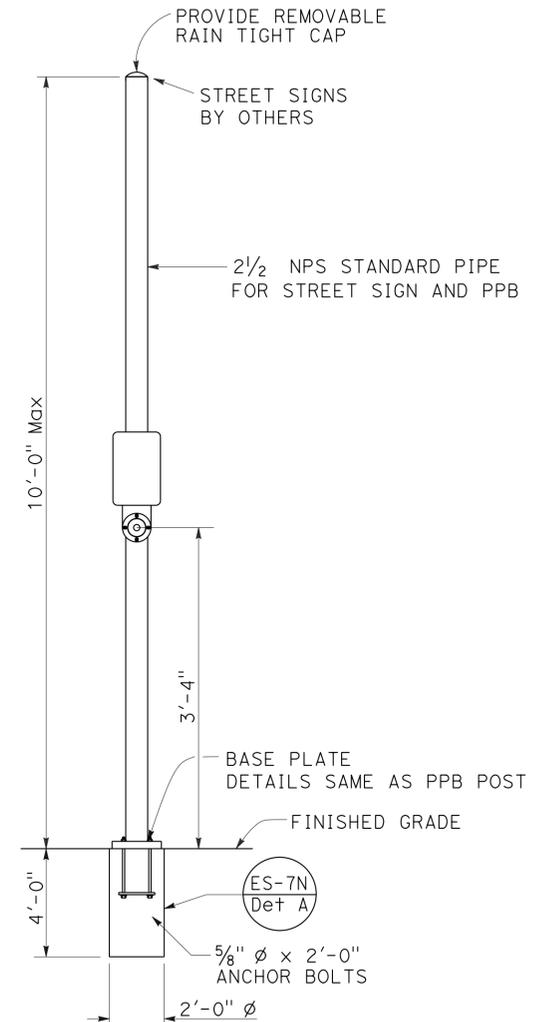
BASE PLATE
TYPE 15TS AND 21TS
DETAIL A



PUSH BUTTON ASSEMBLY POST
DETAIL B



BASE PLATE
PBA POST



COMBINED STREET SIGN
PUSH BUTTON ASSEMBLY POST
DETAIL C

POLE TYPE	POLE DATA			WALL THICKNESS	BASE PLATE DATA			CIDH DEPTH
	A HEIGHT	Min OD			C	BC = BOLT CIRCLE	THICKNESS	
15TS	30'-0"	8"	3 1/16"	0.1793"	1'-1 1/2"	1'-0"	2"	1 1/2" Ø x 42"
21TS	35'-0"	9 3/8"	3 3/16"		1'-3"	1'-2"		

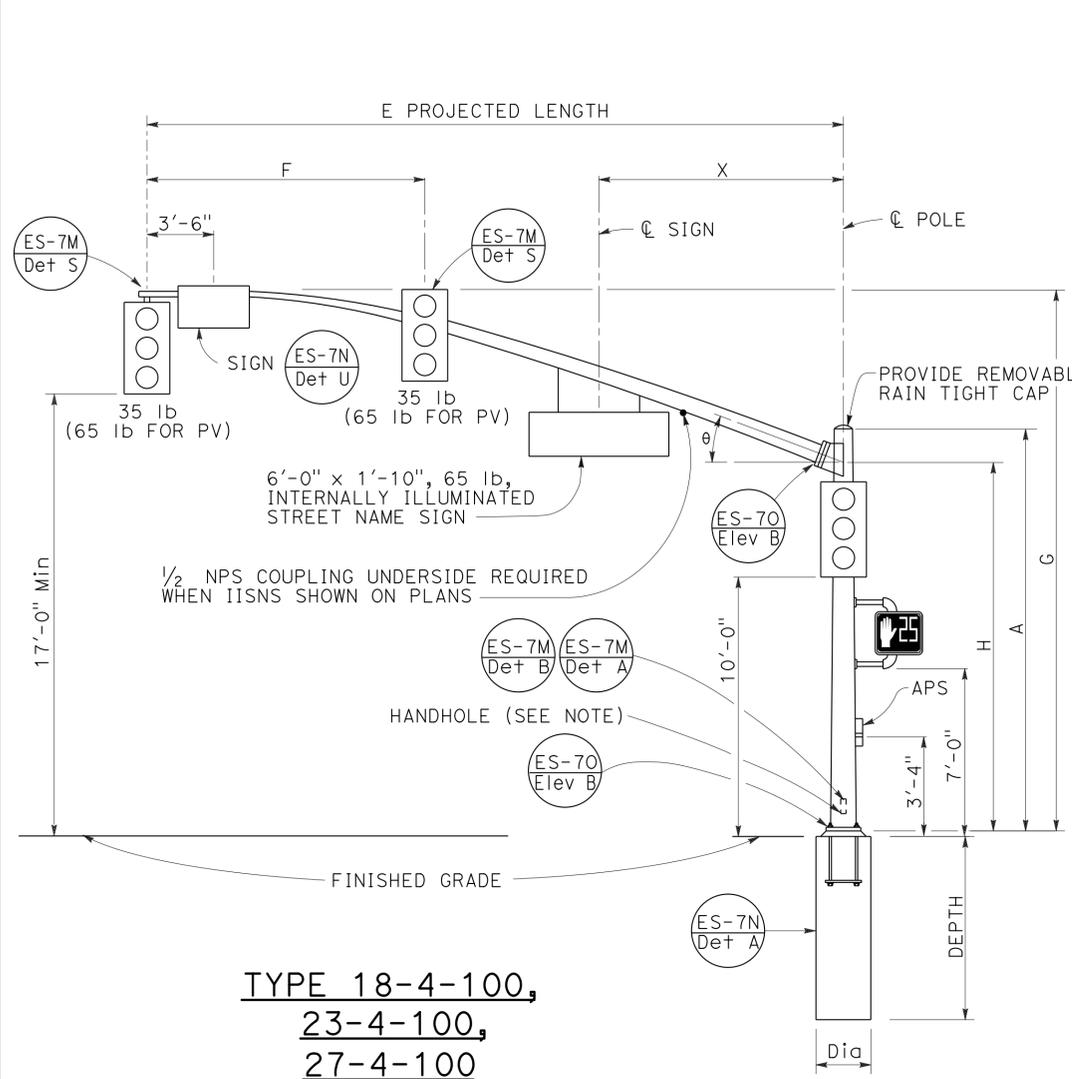
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
ELECTRICAL SYSTEMS
(SIGNAL AND LIGHTING STANDARD, TYPE TS,
AND PUSH BUTTON ASSEMBLY POST)

NO SCALE

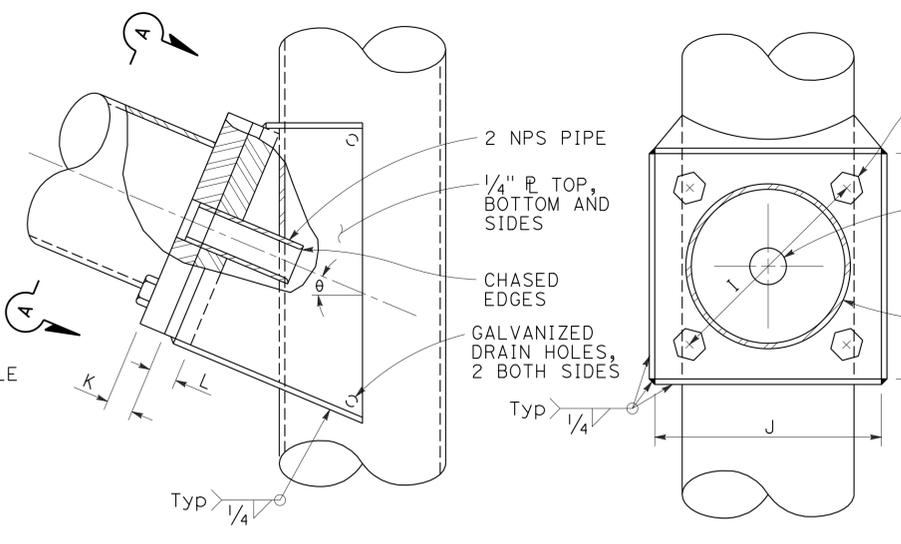
RSP ES-7A DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-7A DATED MAY 20, 2011 - PAGE 462 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-7A

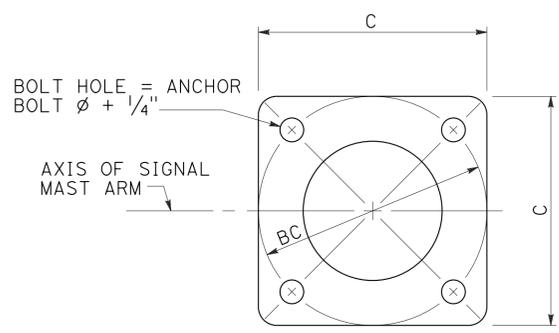
2010 REVISED STANDARD PLAN RSP ES-7A



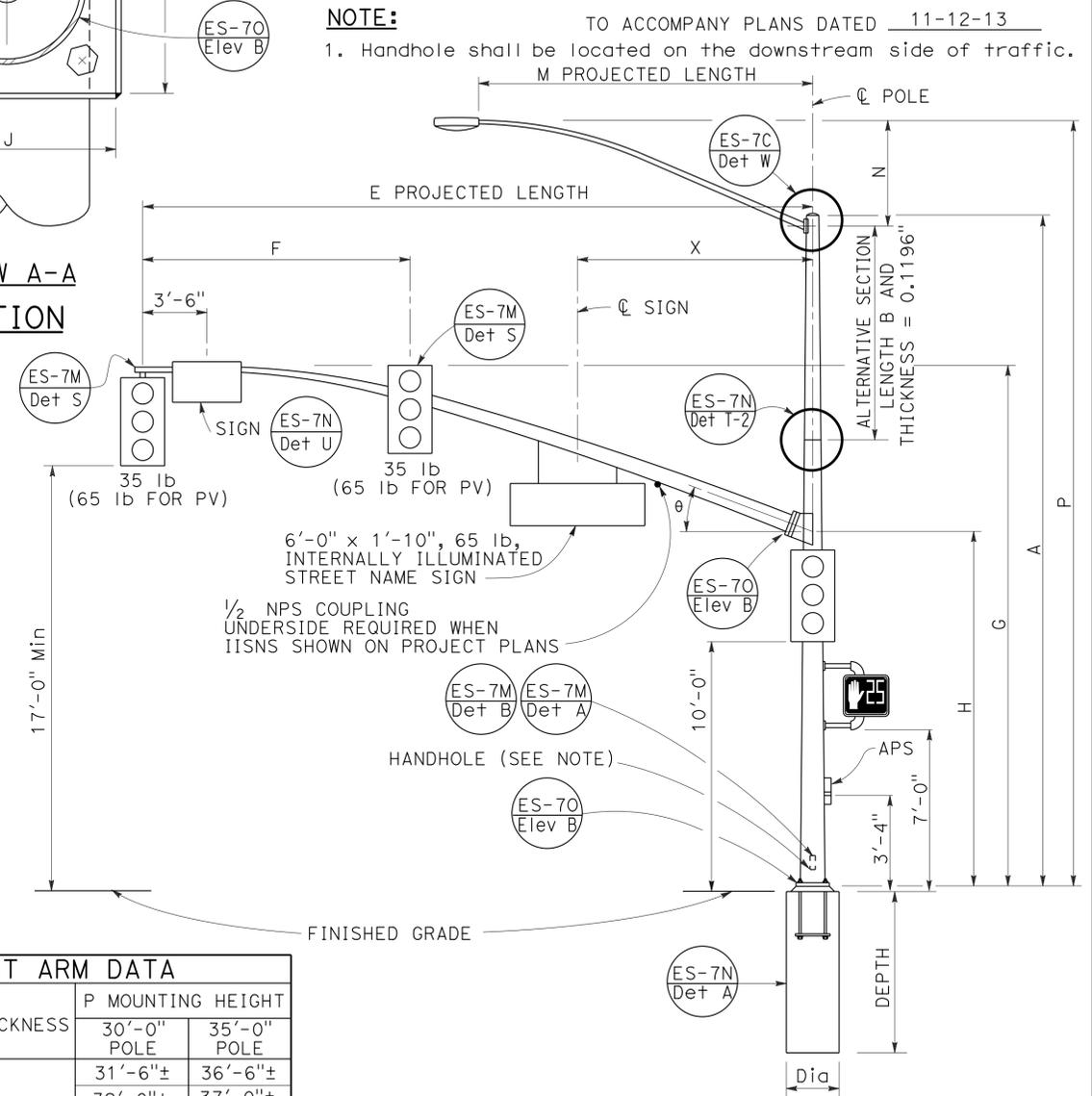
**TYPE 18-4-100,
 23-4-100,
 27-4-100
 ELEVATION A**



**ELEVATION C
 SIGNAL MAST ARM CONNECTION
 DETAIL A**



**BASE PLATE
 DETAIL B**



**TYPE 19-4-100, 19A-4-100,
 24-4-100, 24A-4-100,
 26-4-100, 26A-4-100
 ELEVATION B**

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 MAST ARM THICKNESS	L POLE THICKNESS	theta	X Max
25'-0"	10'-0"	22'-8"±	16'-0"	7 3/8"	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"		10 1/4"										

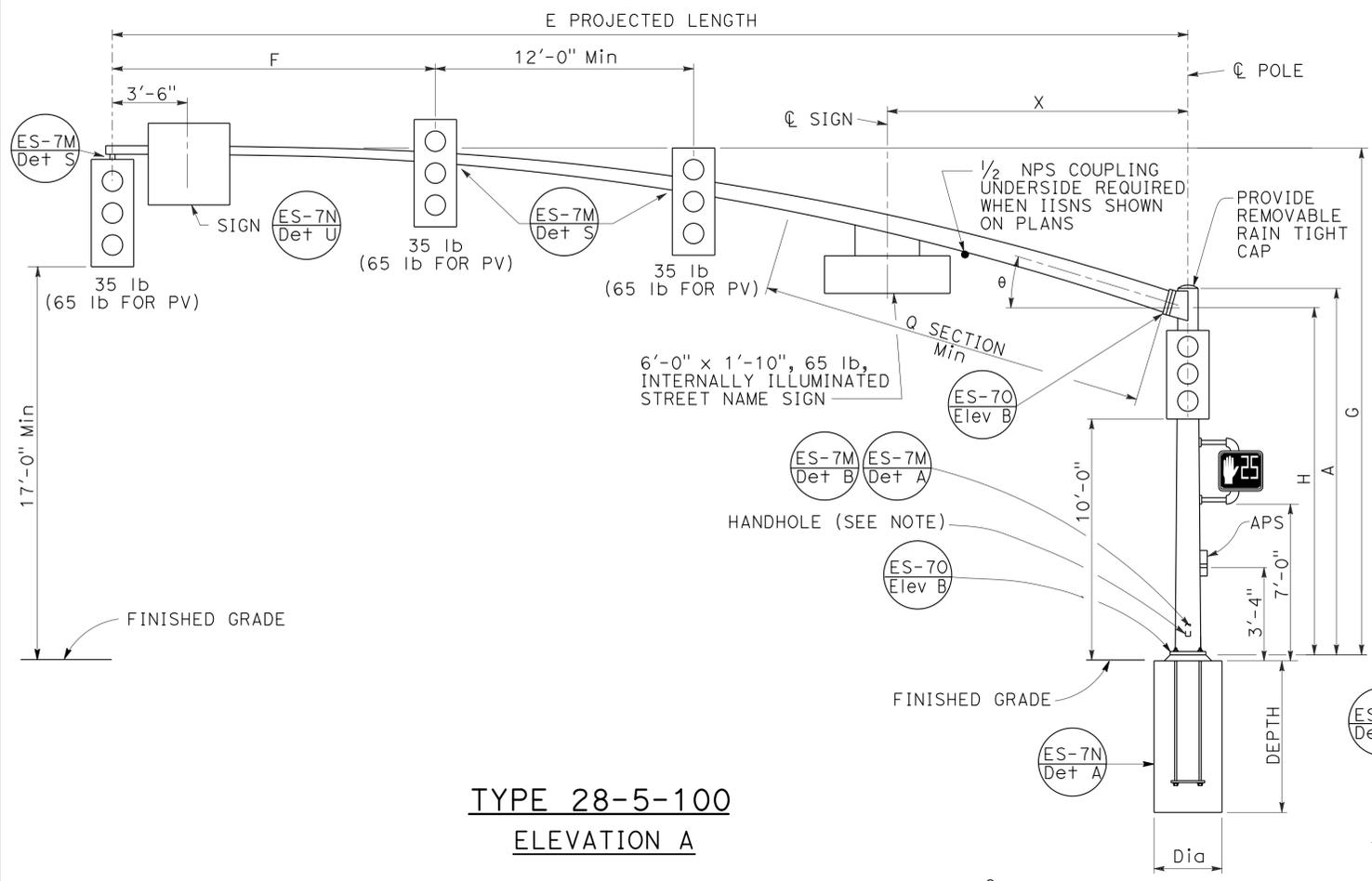
M PROJECTED LENGTH	N RISE	Min OD AT POLE	THICKNESS	P MOUNTING HEIGHT	
				30'-0" POLE	35'-0" POLE
6'-0"	2'-0"±	3 1/4"	0.1196"	31'-6"±	36'-6"±
8'-0"	2'-6"±	3 1/2"		32'-0"±	37'-0"±
10'-0"	3'-3"±	3 7/8"		32'-9"±	37'-9"±
12'-0"	4'-3"±			33'-9"±	38'-9"±
15'-0"	4'-9"±	4 1/4"		34'-3"±	39'-3"±

POLE TYPE	LOAD CASE	WIND VELOCITY (mph)	POLE DATA					BASE PLATE DATA				LUMINAIRE MAST ARM			SIGNAL MAST ARM			CIDH PILE FOUNDATION		
			A HEIGHT	Min OD		THICKNESS	ALTERNATIVE SECTION			C	BC = BOLT CIRCLE	THICKNESS	ANCHOR BOLT SIZE	LUMINAIRE MAST ARM	SIGNAL MAST ARM	Dia	DEPTH	REINFORCED		
				BASE	TOP		B LENGTH	BOTTOM	TOP											
18-4-100	4	100	17'-0"	12 1/8"	9 1/16"	0.3125"	NONE	1'-7"	1'-5 1/2"	3"	2" ø x 42"	NONE	25'-0", 30'-0"	3'-0"	11'-0"	YES				
19-4-100			30'-0"		7 1/16"		10'-0"					9 1/8"					7 1/16"	6'-15' 12'-0"		
19A-4-100			35'-0"		6 15/16"		15'-0"					6 15/16"					6'-15' 15'-0"			
23-4-100			17'-0"		9 9/16"		NONE					NONE					NONE			
24-4-100			30'-0"		7 1/16"		10'-0"					9 1/8"					7 1/16"	6'-15' 12'-0"	35'-0"	
24A-4-100			35'-0"	6 15/16"	15'-0"	9 1/8"	6 15/16"	6'-15' 15'-0"												
26-4-100			30'-0"	8 3/16"	10'-0"	9 5/8"	8 3/16"	6'-15' 12'-0"	40'-0", 45'-0"											
26A-4-100			35'-0"	7 1/16"	15'-0"	9 5/8"	7 1/16"	6'-15' 15'-0"												
27-4-100			17'-0"	10 1/16"	NONE	NONE	NONE	NONE												

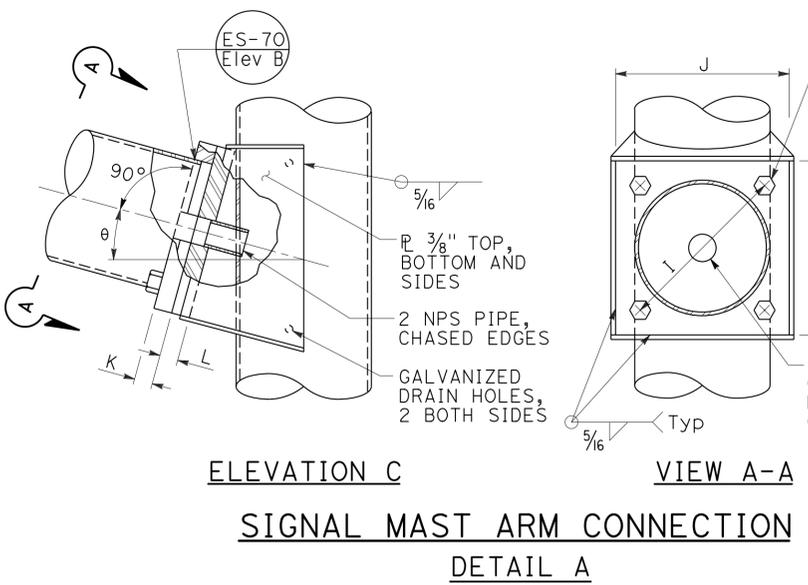
[] INDICATES MAST ARM LENGTH TO BE USED UNLESS OTHERWISE NOTED ON PLANS.

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
 (SIGNAL AND LIGHTING STANDARD,
 CASE 4 SIGNAL MAST ARM LOADING,
 WIND VELOCITY=100 MPH AND SIGNAL
 MAST ARM LENGTHS 25' TO 45')**
 NO SCALE
 RSP ES-7F DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-7F
 DATED MAY 20, 2011 - PAGE 467 OF THE STANDARD PLANS BOOK DATED 2010.
REVISED STANDARD PLAN RSP ES-7F

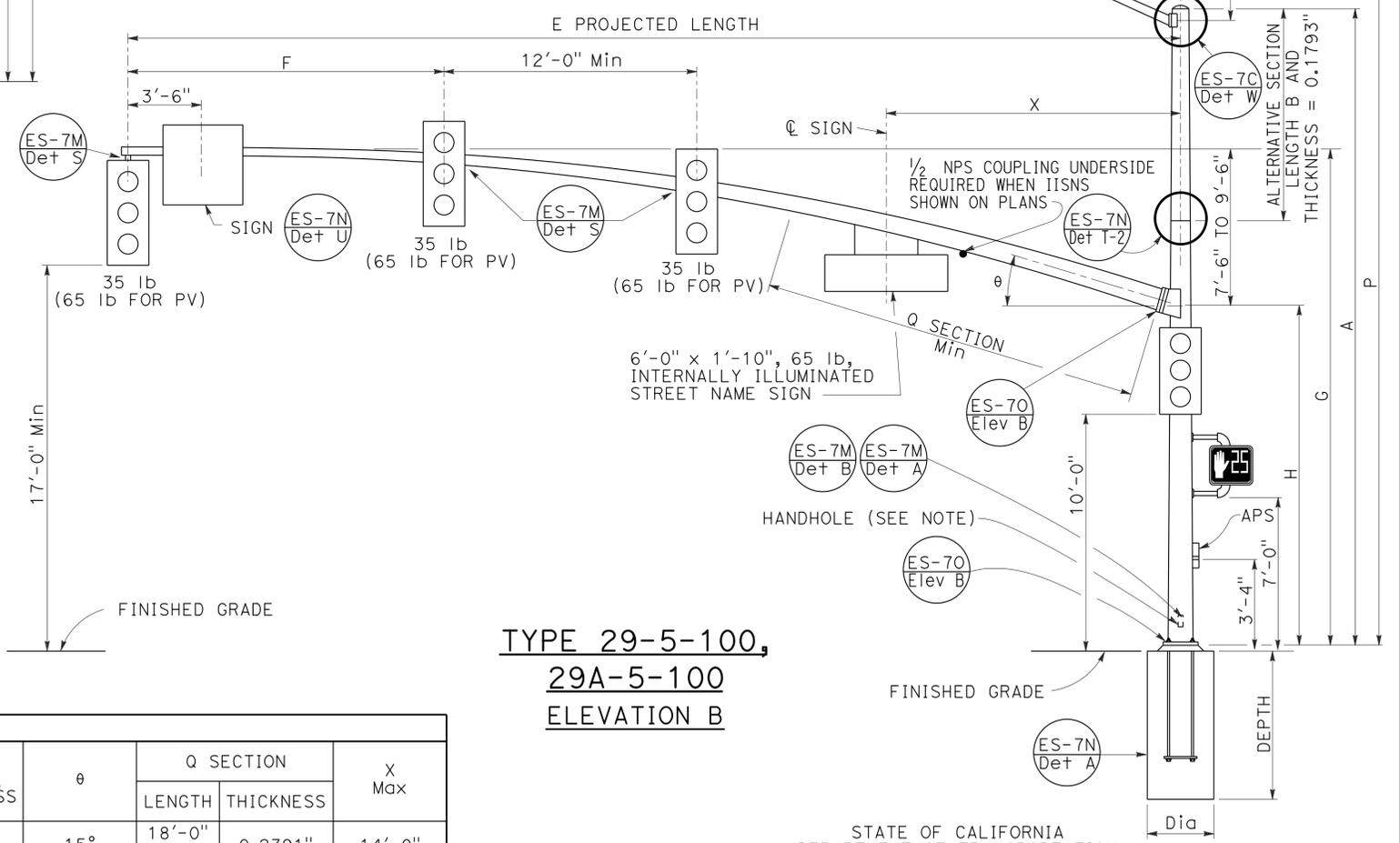
2010 REVISED STANDARD PLAN RSP ES-7F



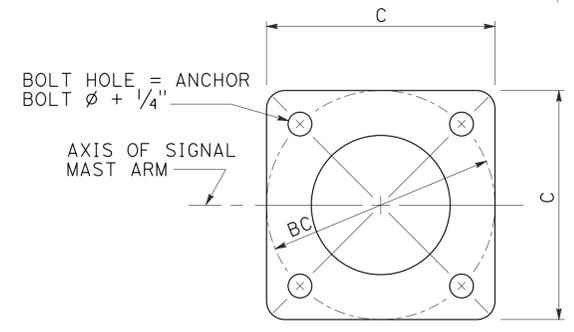
TYPE 28-5-100
ELEVATION A



ELEVATION C
VIEW A-A
SIGNAL MAST ARM CONNECTION
DETAIL A



TYPE 29-5-100,
29A-5-100
ELEVATION B



BASE PLATE
DETAIL B

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"±

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 MAST ARM THICKNESS	L POLE THICKNESS	θ	Q SECTION		X Max
												LENGTH	THICKNESS	
50'-0" 55'-0"	15'-0"	23'-7"± TO 25'-7"±	16'-0"	11 7/16" 1'-1/4"	0.1793"	16"	1 1/2"-6NC-3 1/4"	1'-4"	1 3/4"	1 3/4"	15°	18'-0" 23'-0"	0.2391"	14'-0"

POLE TYPE	LOAD CASE	WIND VELOCITY (mph)	POLE DATA				BASE PLATE DATA				LUMINAIRE MAST ARM	SIGNAL MAST ARM	CIDH PILE FOUNDATION					
			A HEIGHT	Min OD BASE	Min OD TOP	THICKNESS	B LENGTH	ALTERNATIVE SECTION BOTTOM	ALTERNATIVE SECTION TOP	C			BC = BOLT CIRCLE	THICKNESS	ANCHOR BOLT SIZE	Dia	DEPTH	REINFORCED
28-5-100			17'-0"	11 3/16"		NONE							NONE					
29-5-100	5	100	30'-0"	14"	9 1/16"	0.3125"	10'-0"	11 1/8"	9 1/16"	23"	21"	3"	2 1/2" φ × 42"	6'-15" [15'-0"]	50'-0", 55'-0"	3'-6"	12'-0"	YES
29A-5-100			35'-0"		8 5/16"		15'-0"		8 5/16"									

INDICATES MAST ARM LENGTH TO BE USED UNLESS OTHERWISE NOTED ON PLANS.

ELECTRICAL SYSTEMS
(SIGNAL AND LIGHTING STANDARD,
CASE 5 SIGNAL MAST ARM LOADING,
WIND VELOCITY=100 MPH AND SIGNAL
MAST ARM LENGTHS 50' TO 55')

NO SCALE
 RSP ES-7G DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-7G DATED MAY 20, 2011 - PAGE 468 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-7G

2010 REVISED STANDARD PLAN RSP ES-7G

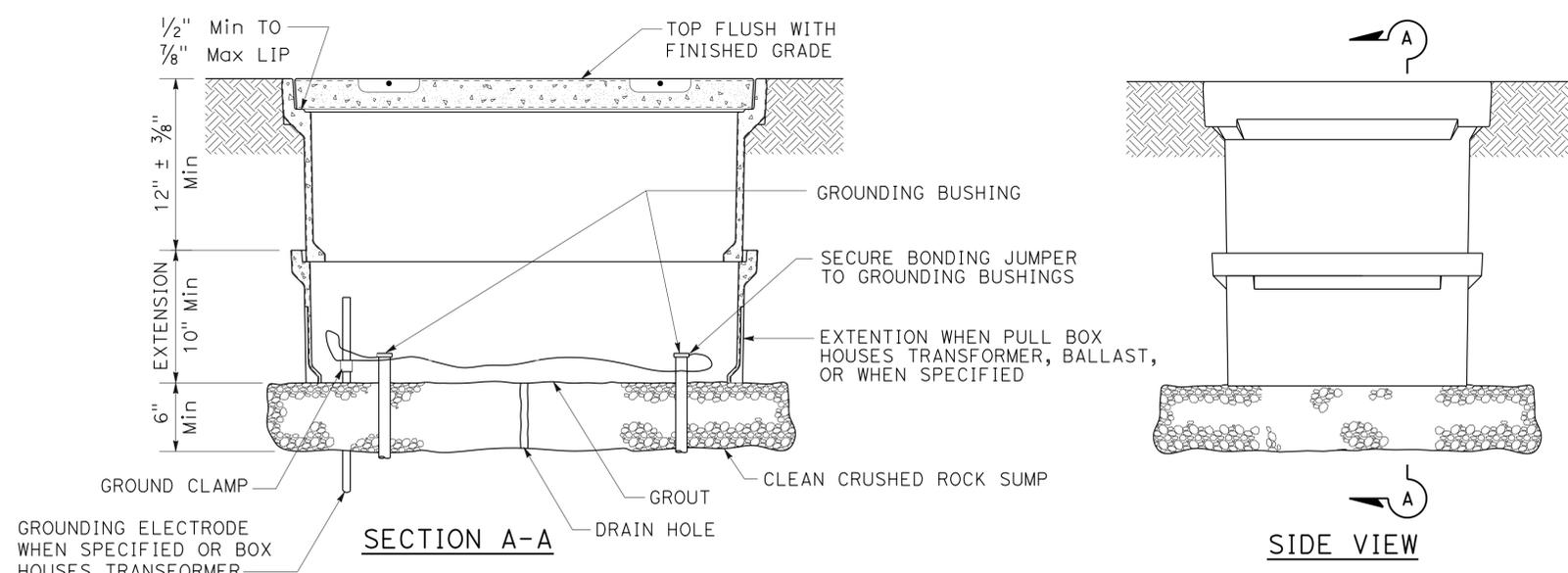
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Kin	198	R16.5/R17.2	210	247

Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 No. E15129
 Exp. 6-30-14
 ELECTRICAL
 STATE OF CALIFORNIA

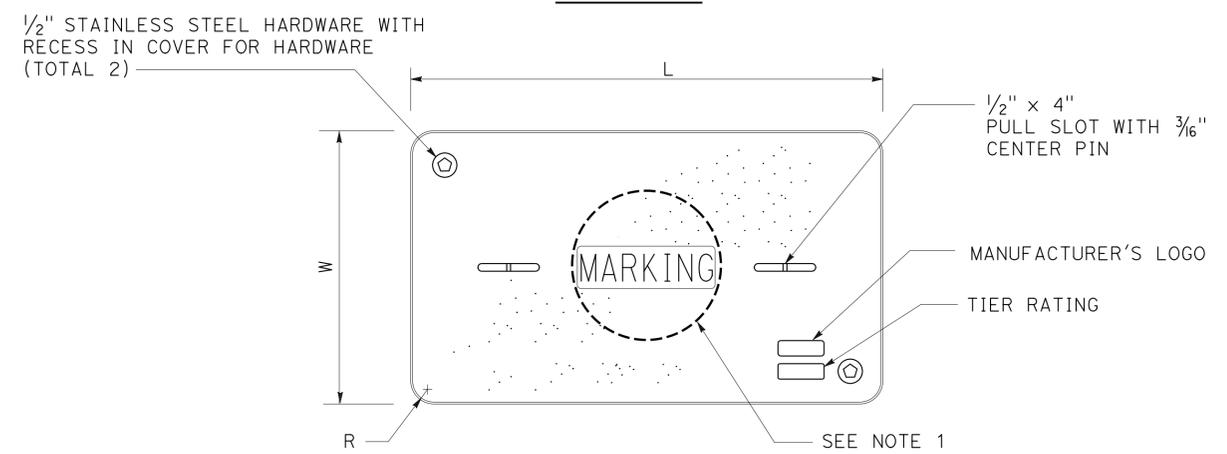
July 19, 2013
 PLANS APPROVAL DATE

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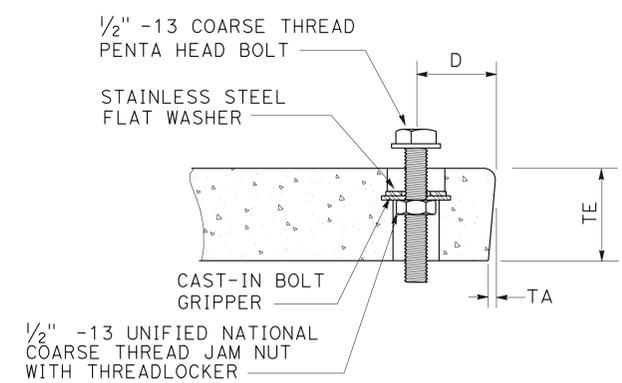
TO ACCOMPANY PLANS DATED 11-12-13



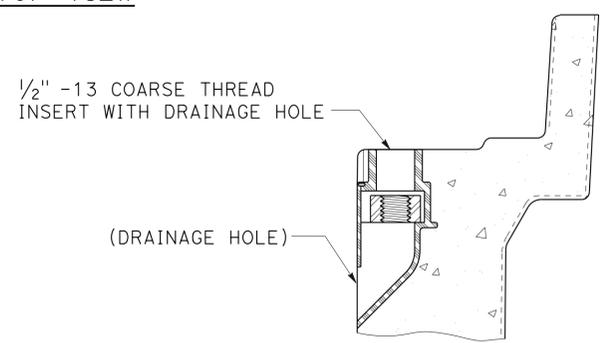
INSTALLATION DETAILS
DETAIL A



COVER TOP VIEW



TYPICAL COVER CAPTIVE BOLT
OR SIMILAR



TYPICAL THREADED INSERT
OR SIMILAR

NOTES:

- Pull box covers shall be marked as follows: "SERVICE" Service circuits between service point and service disconnect; "SPRINKLER-CONTROL" sprinkler control circuits, 50 V or less; "CALTRANS" on all pull boxes, except pull boxes marked "SPRINKLER-CONTROL"; and "TELEPHONE" Telephone service;
 - No. 3 1/2 pull box.
 - "SIGNAL" - Traffic signal circuits with or without lighting or sign lighting circuits.
 - "LIGHTING" - Lighting or sign lighting circuits where voltage is under 600 V.
 - No. 5, 6, 9 or 9A pull box.
 - "TRAFFIC SIGNAL" - Traffic signal circuits with or without lighting or sign lighting circuits.
 - "LIGHTING" - Lighting or sign lighting circuits where voltage is under 600 V.
 - "LIGHTING-HIGH VOLTAGE" - Lighting or sign lighting circuits where voltage is above 600 V.
 - "IRRIGATION" - Circuits to irrigation controller 120 V or more.
 - "RAMP METER" - Ramp meter circuits.
 - "COUNT STATION" - Count or speed monitor circuits.
 - "COMMUNICATIONS" - Communication circuits.
 - "TOS COMMUNICATIONS" - TOS communication line.
 - "TOS POWER" - TOS power.
 - "TDC POWER" - Telephone demarcation cabinet power.
 - "CCTV" - Closed circuit television circuits.
 - "TMS" - Traffic monitoring station circuits.
 - "CMS" - Changeable message sign circuits.
 - "HAR" - Highway advisory radio circuits.
 - "BOOSTER PUMP" - Booster pump circuit.
- The nominal dimensions of the opening in which the cover sets shall be the same as the cover dimensions except the length and width dimensions shall be 1/8" greater.
- Covers and boxes shall be interchangeable with California standard male and female gages. When interchanged with a standard male or female gage, the top surfaces shall be flush within 1/8". Top outside radius of covers and pull boxes shall have a 1/8" radius.
- Pull box extension may be another pull box as long as the bottom edge of the pull box can fit into the cover opening.
- All dimensions for the cover for non-traffic pull box are nominal values.

DIMENSION TABLE										
PULL BOX	PULL BOX			COVER						
	MINIMUM DEPTH BOX	MINIMUM DEPTH EXTENSION	MAXIMUM WEIGHT	L	W	R	TE	TA	D	MAXIMUM WEIGHT
No. 3 1/2	12"	N/A	40 lb	1' - 3 3/8"	10 1/8"	1 3/8"	2"	1/8"	1 3/4"	30 lb
No. 5	12"	10"	55 lb	1' - 11 1/4"	1' - 1 3/4"	1 3/8"	2"	1/8"	1 3/4"	60 lb
No. 6	12"	10"	70 lb	2' - 6 1/2"	1' - 5 1/2"	1 3/8"	2"	1/8"	2"	85 lb

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
ELECTRICAL SYSTEMS
(NON-TRAFFIC PULL BOX)
 NO SCALE

RSP ES-8A DATED JULY 19, 2013 SUPERSEDES RSP ES-8A DATED JANUARY 20, 2012 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP ES-8A

2010 REVISED STANDARD PLAN RSP ES-8A

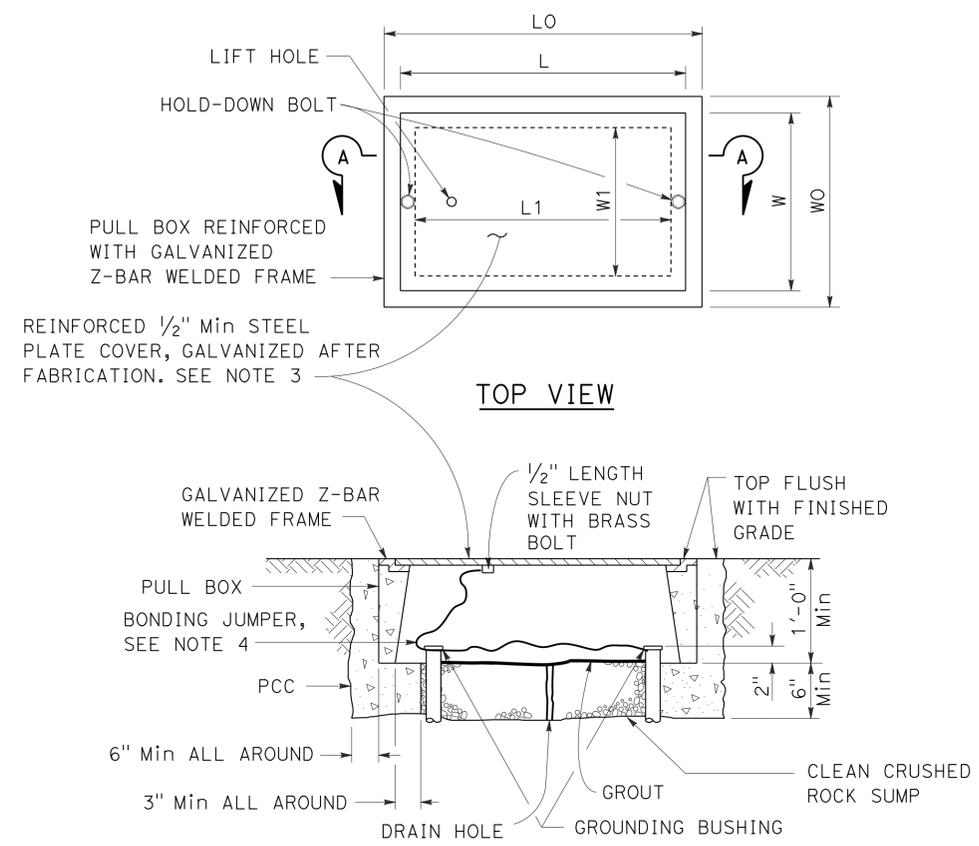
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Kin	198	R16.5/R17.2	211	247

Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 July 19, 2013
 PLANS APPROVAL DATE

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TO ACCOMPANY PLANS DATED 11-12-13



SECTION A-A
No. 3 1/2(T), No. 5(T) AND
No. 6(T) TRAFFIC PULL BOX

NOTES:

- Traffic pull box shall be provided with steel cover and special concrete footing. Steel cover shall have embossed non-skid pattern.
- Steel reinforcing shall be as regularly used in the standard products of the respective manufacturer.
- Pull box covers shall be marked as follows: "SERVICE" Service circuits between service point and service disconnect; "SPRINKLER-CONTROL" Sprinkler control circuits, 50 V or less; "CALTRANS" On all pull boxes, except pull boxes marked "SPRINKLER-CONTROL"; and "TELEPHONE" Telephone service.
 - No. 3 1/2(T) pull box.
 - "SIGNAL" - Traffic signal circuits with or without lighting or sign lighting circuits.
 - "LIGHTING" - Lighting or sign lighting circuits where voltage is under 600 V.
 - No. 5(T) or 6(T) pull box.
 - "TRAFFIC SIGNAL" - Traffic signal circuits with or without lighting or sign lighting circuits.
 - "LIGHTING" - Lighting or sign lighting circuits where voltage is under 600 V.
 - "LIGHTING-HIGH VOLTAGE" - Lighting or sign lighting circuits where voltage is above 600 V.
 - "IRRIGATION" - Circuits to irrigation controller 120 V or more.
 - "RAMP METER" - Ramp meter circuits.
 - "COUNT STATION" - Count or speed monitor circuits.
 - "COMMUNICATION" - Communication circuits.
 - "TOS COMMUNICATIONS" - TOS communications line.
 - "TOS POWER" - TOS power.
 - "TDC POWER" - Telephone demarcation cabinet power.
 - "CCTV" - Closed circuit television circuits.
 - "TMS" - Traffic monitoring station circuits.
 - "CMS" - Changeable message sign circuits.
 - "HAR" - Highway advisory radio circuits.
 - "BOOSTER PUMP" - Booster pump circuit.
- Bonding jumper for metal covers shall be 3' long, minimum.
- The nominal dimensions of the opening in which the cover sets shall be the same as the cover dimensions except the length and width dimensions shall be 1/8" greater.
- Covers and boxes shall be interchangeable with California standard male and female gages. When interchanged with a standard male or female gage, the top surfaces shall be flush within 1/8".

PULL BOX	PULL BOX						COVER				
	MINIMUM * THICKNESS	MINIMUM DEPTH BOX AND EXTENSION	W0	L0	L1	W1	L **	W **	R	EDGE THICKNESS	EDGE TAPER
No. 3 1/2(T)	1 1/2"	1'-0"	1'-5"± 1"	1'-8 7/8"±	1'-2 1/2"±	10 5/8"± 1"	1'-8"±	1'-1 3/4"±	0"	1/2"	NONE
No. 5(T)	1 3/4"	1'-0"	1'-11 1/2"± 1"	2'-5 1/2"±	1'-7"±	1'-1"± 1"	2'-3"±	1'-4"±	0"	1/2"	NONE
No. 6(T)	2"	1'-0"	2'-6"± 1"	2'-11 1/2"±	1'-11 1/2"±	1'-5"± 1"	2'-9"±	1'-8"±	0"	1/2"	NONE

* EXCLUDING CONDUIT WEB ** TOP DIMENSION

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
ELECTRICAL SYSTEMS
(TRAFFIC PULL BOX)
 NO SCALE

RSP ES-8B DATED JULY 19, 2013 SUPERSEDES RSP ES-8B DATED JANUARY 20, 2012 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-8B

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kin	198	R16.5/R17.2	212	247

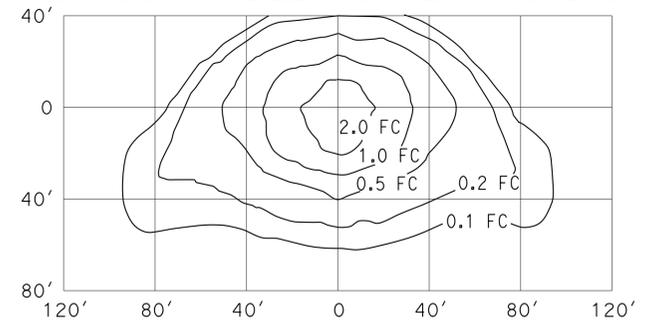
Theresa Gabriel
 REGISTERED ELECTRICAL ENGINEER
 No. E15129
 Exp. 6-30-14
 ELECTRICAL
 STATE OF CALIFORNIA

July 19, 2013
 PLANS APPROVAL DATE

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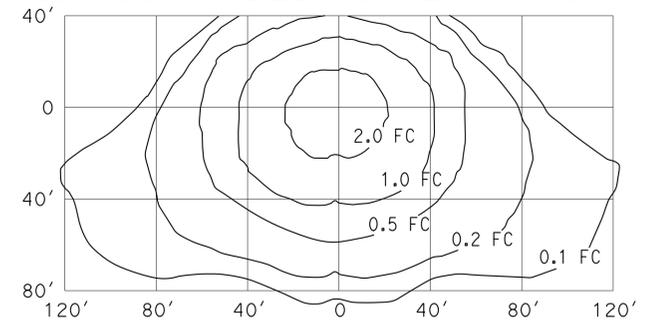
TO ACCOMPANY PLANS DATED 11-12-13

ISOFOOTCANDLE CURVE - MINIMUM



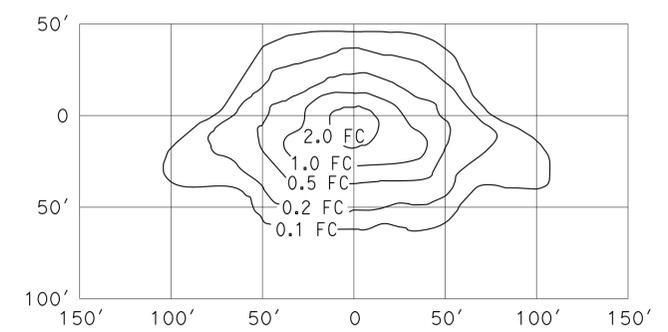
TYPE III MEDIUM CUTOFF
 Cutoff Luminaire
 34' Mounting Height
 Lamp operated at 22,000 lm
 200-W high pressure sodium lamp
 ANSI Designation S66

ISOFOOTCANDLE CURVE - MINIMUM



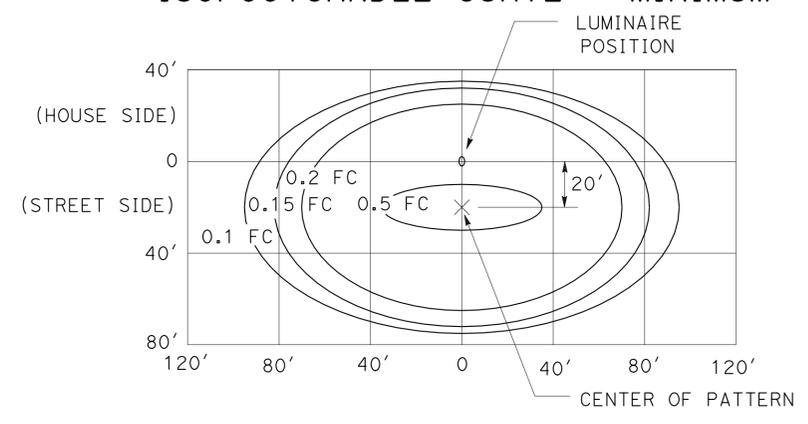
TYPE III MEDIUM CUTOFF
 Cutoff Luminaire
 40' Mounting Height
 Lamp operated at 37,000 lm
 310-W high pressure sodium lamp
 ANSI Designation S67

ISOFOOTCANDLE CURVE - MINIMUM



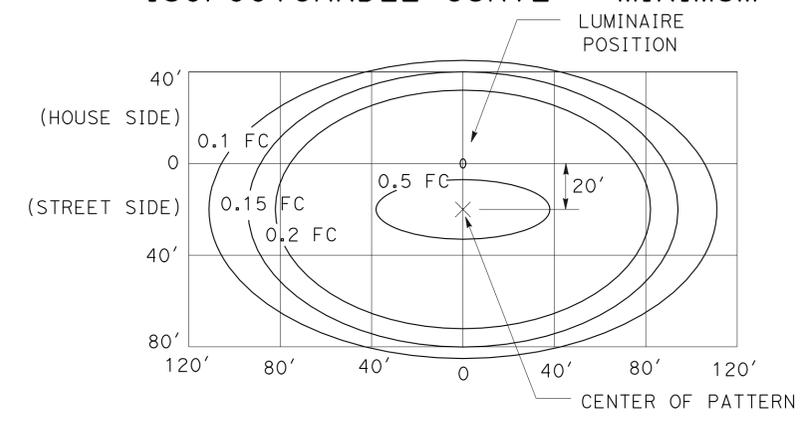
TYPE III MEDIUM CUTOFF
 Cutoff Luminaire
 30' Mounting Height
 Lamp operated at 16,000 lm
 150-W high pressure sodium lamp
 ANSI Designation S55

ISOFOOTCANDLE CURVE - MINIMUM



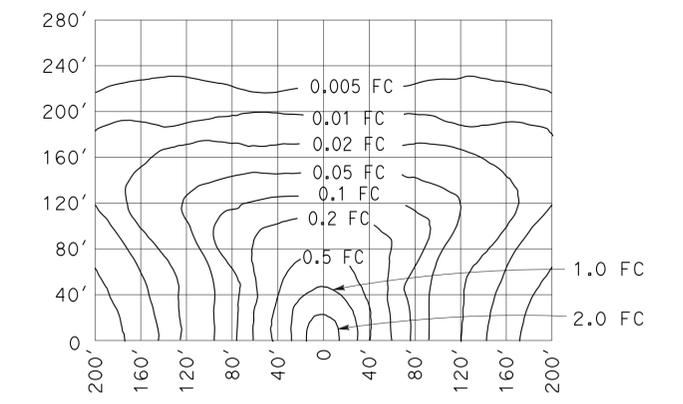
LED LUMINAIRE ROADWAY 1
 165-W at 34' Mounting Height

ISOFOOTCANDLE CURVE - MINIMUM



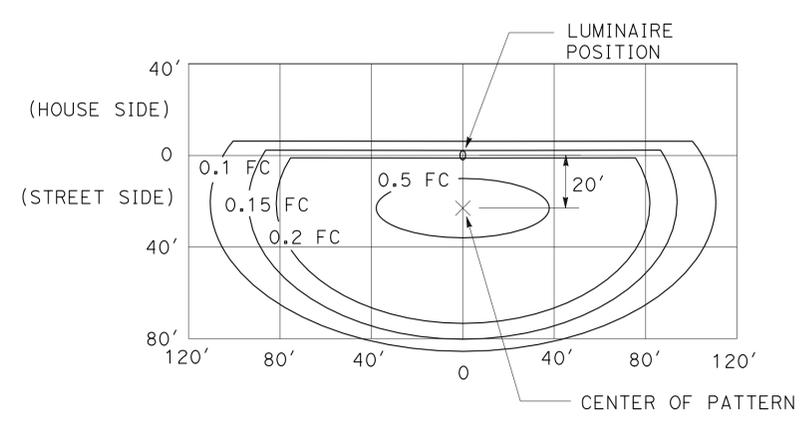
LED LUMINAIRE ROADWAY 2
 235-W at 40' Mounting Height

ISOFOOTCANDLE CURVE - MINIMUM



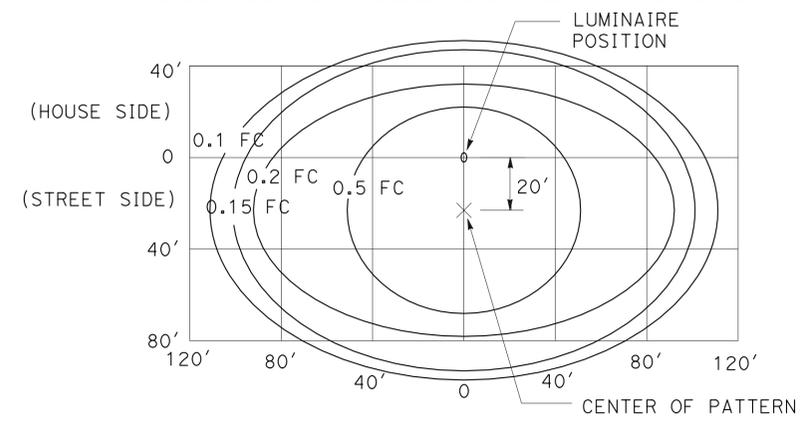
LOW PRESSURE SODIUM LUMINAIRE
 40' Mounting Height
 Lamp operated at 33,000 lm
 180-W low pressure sodium lamp

ISOFOOTCANDLE CURVE - MINIMUM



LED LUMINAIRE ROADWAY 3
 235-W at 40' Mounting Height
 with back side control

ISOFOOTCANDLE CURVE - MINIMUM



LED LUMINAIRE ROADWAY 4
 300-W at 40' Mounting Height

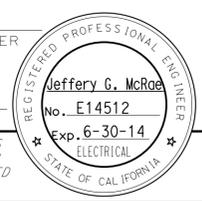
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
 (ISOFOOTCANDLE DIAGRAMS)**

NO SCALE
 RSP ES-10A DATED JULY 19, 2013 SUPERSEDES RSP ES-10A DATED JULY 20, 2012
 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-10A

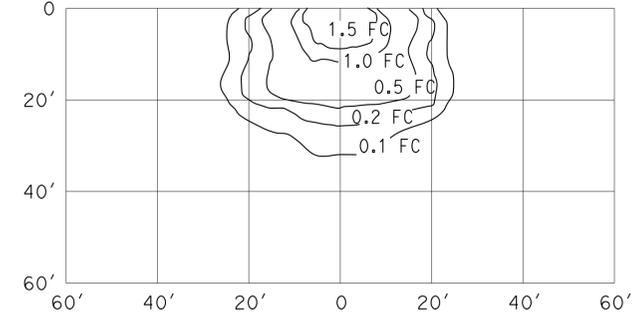
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
06	Kin	198	R16.5/R17.2	213	247

Jeffery G. McRae
 REGISTERED ELECTRICAL ENGINEER
 July 20, 2012
 PLANS APPROVAL DATE
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TO ACCOMPANY PLANS DATED 11-12-13

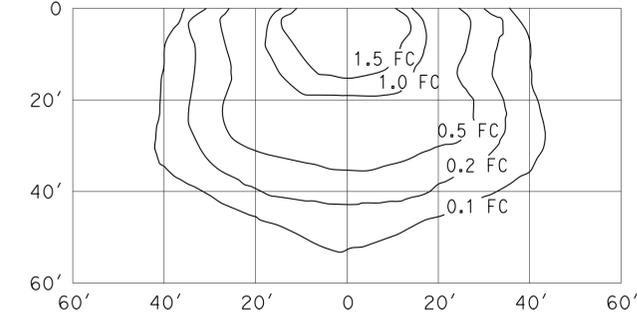
ISOFOOTCANDLE CURVE - MINIMUM



WALL LUMINAIRE

15' Mounting Height
 Lamp operated at 5,800 lm
 70-W high pressure sodium lamp
 ANSI Designation S62

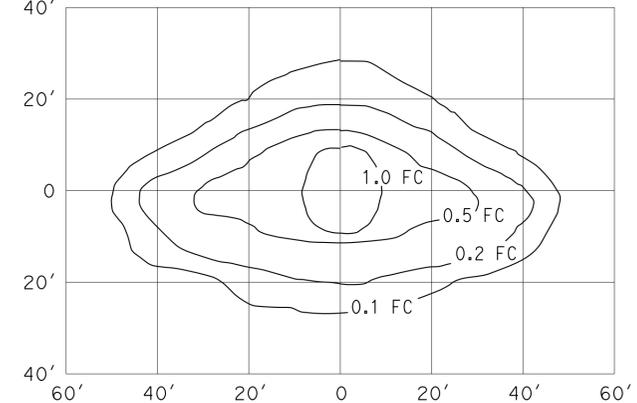
ISOFOOTCANDLE CURVE - MINIMUM



WALL LUMINAIRE

15' Mounting Height
 Lamp operated at 9,500 lm
 100-W high pressure sodium lamp
 ANSI Designation S54

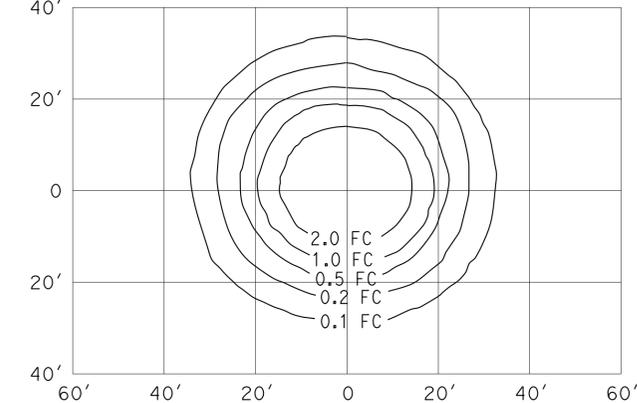
ISOFOOTCANDLE CURVE - MINIMUM



**PENDANT SOFFIT LUMINAIRE
 TYPE III SHORT**

17' Mounting Height
 Lamp operated at 5,800 lm
 70-W high pressure sodium lamp
 ANSI Designation S62

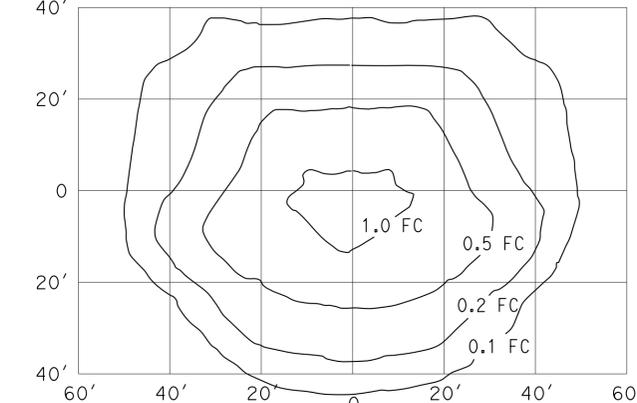
ISOFOOTCANDLE CURVE - MINIMUM



PENDANT SOFFIT LUMINAIRE

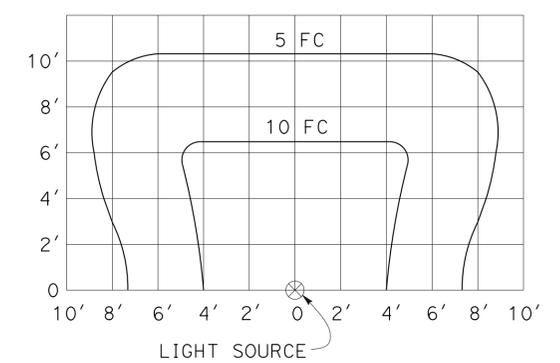
17' Mounting Height
 Lamp operated at 5,800 lm
 70-W high pressure sodium lamp
 ANSI Designation S62

ISOFOOTCANDLE CURVE - MINIMUM



FLUSH SOFFIT LUMINAIRE

17' Mounting Height
 Lamp operated at 5,800 lm
 70-W high pressure sodium lamp
 ANSI Designation S62



**SIGN LIGHTING FIXTURE
 ISOFOOTCANDLE DIAGRAM**

NOTES:

- Curves represent the minimum footcandle (FC) of initial illumination on a 10'-0" x 20'-0" panel.
- The FC shown are with the fixture attached to the light fixture mounting channel which places the center of the source 4'-8" in front of panel and 1'-0" below the bottom edge.
- Applicable lamp: 85-W fluorescent phosphor coated induction lamp.

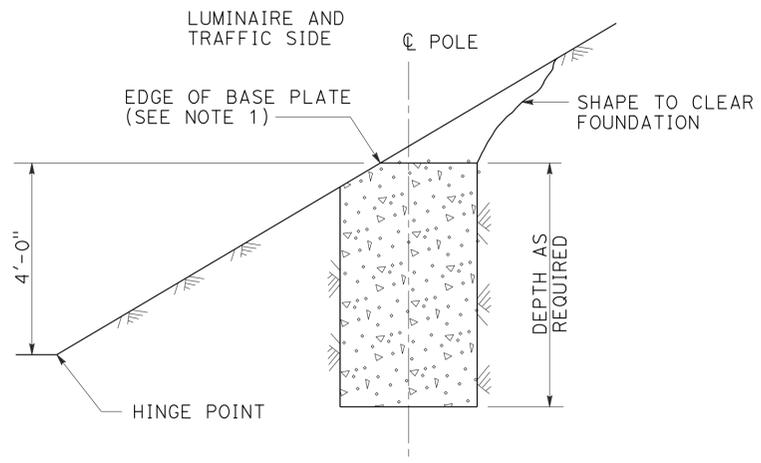
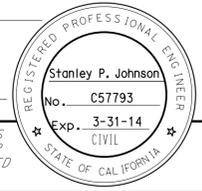
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS
 (ISOFOOTCANDLE DIAGRAMS)**

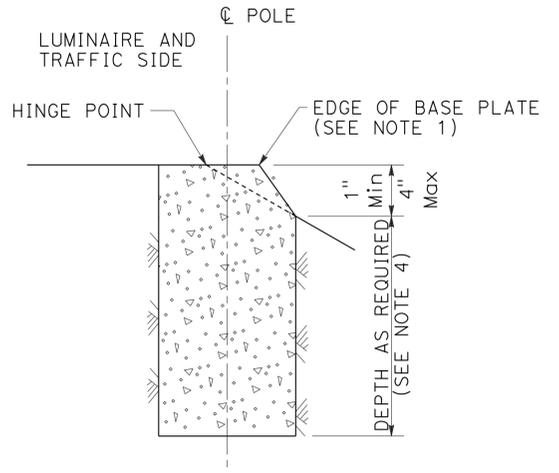
NO SCALE

RSP ES-10B DATED JULY 20, 2012 SUPPLEMENTS THE
 STANDARD PLANS BOOK DATED 2010.

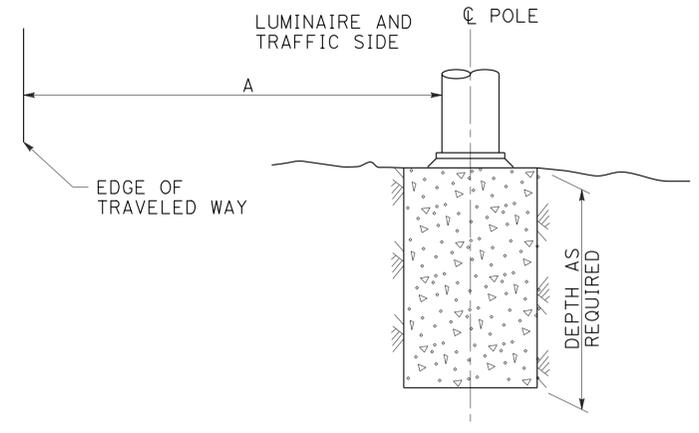
2010 REVISED STANDARD PLAN RSP ES-10B



**CUT SLOPES
 STEEPER THAN 4:1,
 LESS THAN 2:1
 DETAIL A-1**
 See Note 2 and 3



**FILL SLOPES
 STEEPER THAN 4:1,
 LESS THAN 2:1
 DETAIL A-2**
 See Note 2 and 3



**FLAT SECTIONS, CUT OR FILL SLOPES
 4:1 OR FLATTER
 DETAIL A-3**
 See Note 2

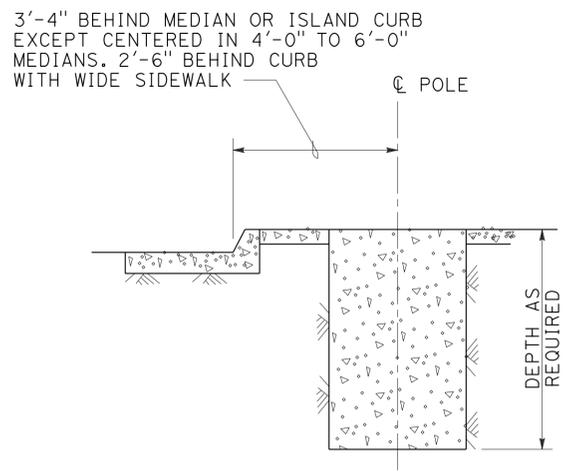
TO ACCOMPANY PLANS DATED 11-12-13

STANDARD TYPE	SETBACK (DIMENSION A)
32	30'-0" (Min)
31	20'-0" (Min)
15, 15D, 15-SB, 21, 21D, 30	ARM LENGTH (Min)

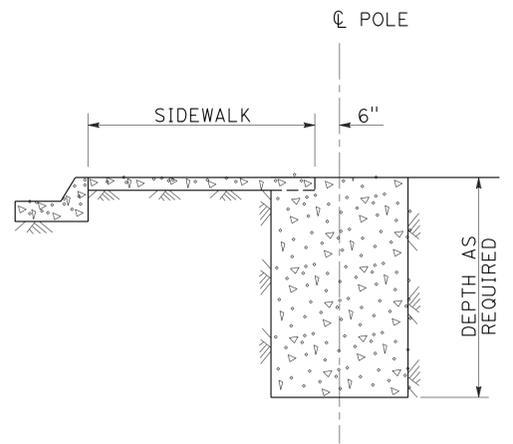
**FOUNDATIONS ADJACENT TO ALL ROADWAYS EXCEPT
 IN SIDEWALK, MEDIAN AND ISLAND AREAS
 DETAIL A**

NOTES:

- Where a portion of the foundation is above grade, the top edges shall have a 1" chamfer.
- Slopes shall be horizontal to vertical ratio (Horizontal : Vertical).
- Horizontal setbacks on cut and fill slopes steeper than 4:1 shall not exceed the distance shown for flat sections.
- CIDH embedment depth shall be increased beyond standard depths by the diameter of the CIDH.



**MEDIAN, ISLAND
 OR WIDE SIDEWALK
 DETAIL B-1**
 7' Wide and wider



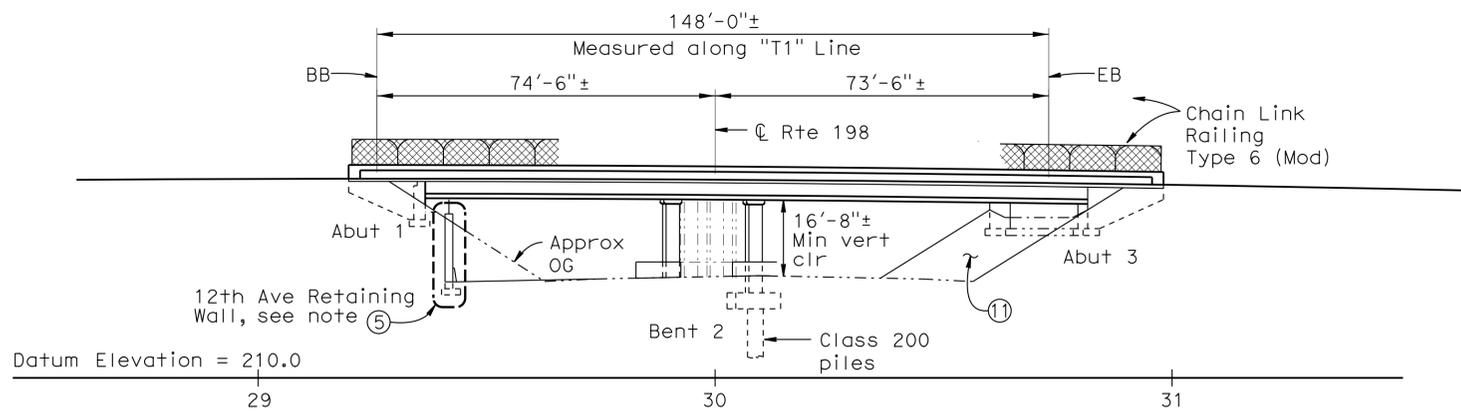
**NARROW SIDEWALK
 DETAIL B-2**
 Less than 7' wide

**FOUNDATIONS IN SIDEWALK, MEDIAN AND ISLAND AREAS
 DETAIL B**

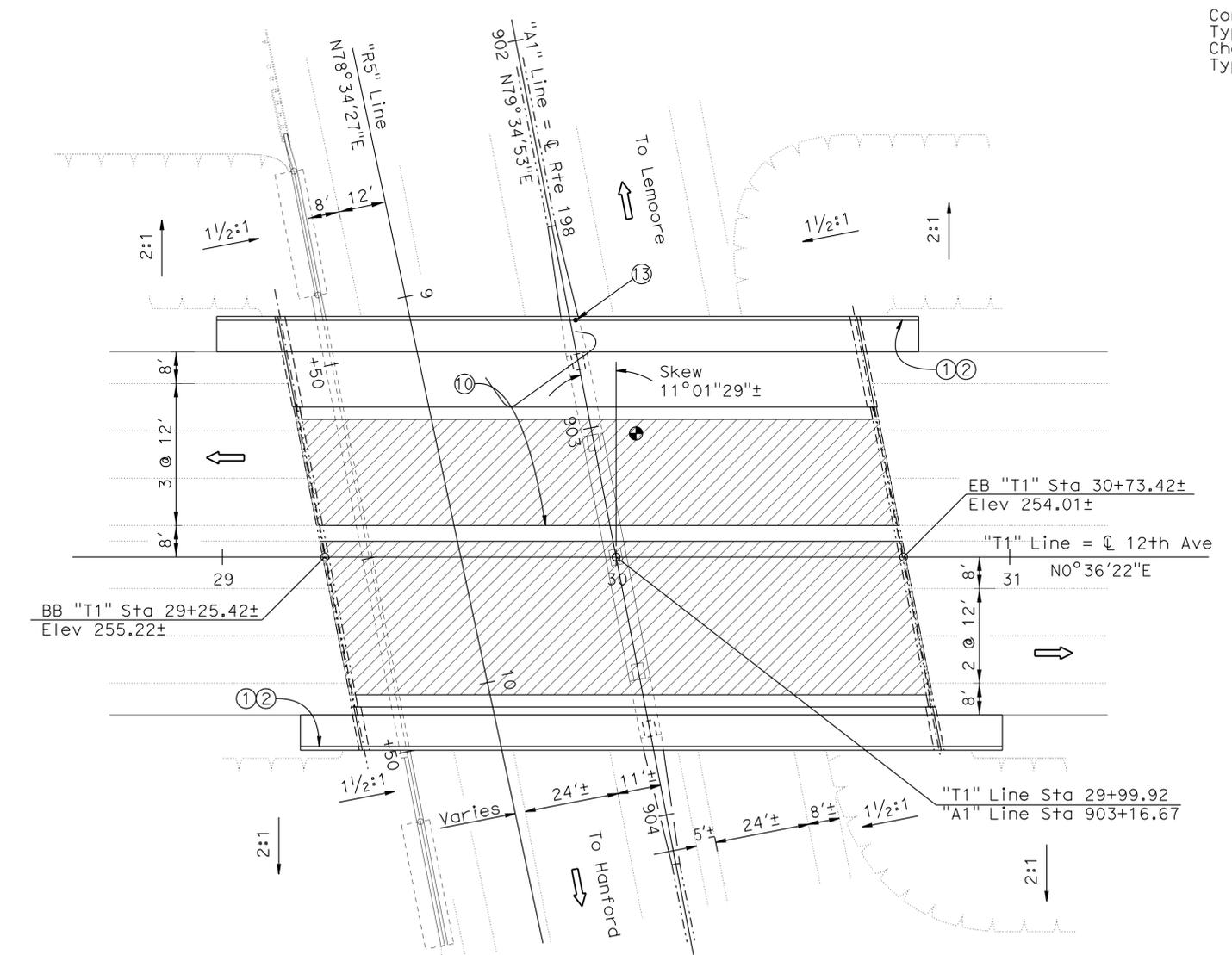
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
 (FOUNDATION INSTALLATIONS)**
 NO SCALE

RSP ES-11 DATED JULY 19, 2013 SUPERSEDES STANDARD PLAN ES-11
 DATED MAY 20, 2011 - PAGE 488 OF THE STANDARD PLANS BOOK DATED 2010.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kin	198	R16.5/R17.2	215	247
<i>Tierney L. Sanderson</i> REGISTERED CIVIL ENGINEER			5/10/12 DATE	Tierney L. Sanderson No. 48605 Exp. 6-30-2012 CIVIL STATE OF CALIFORNIA	
11-12-13 PLANS APPROVAL DATE					
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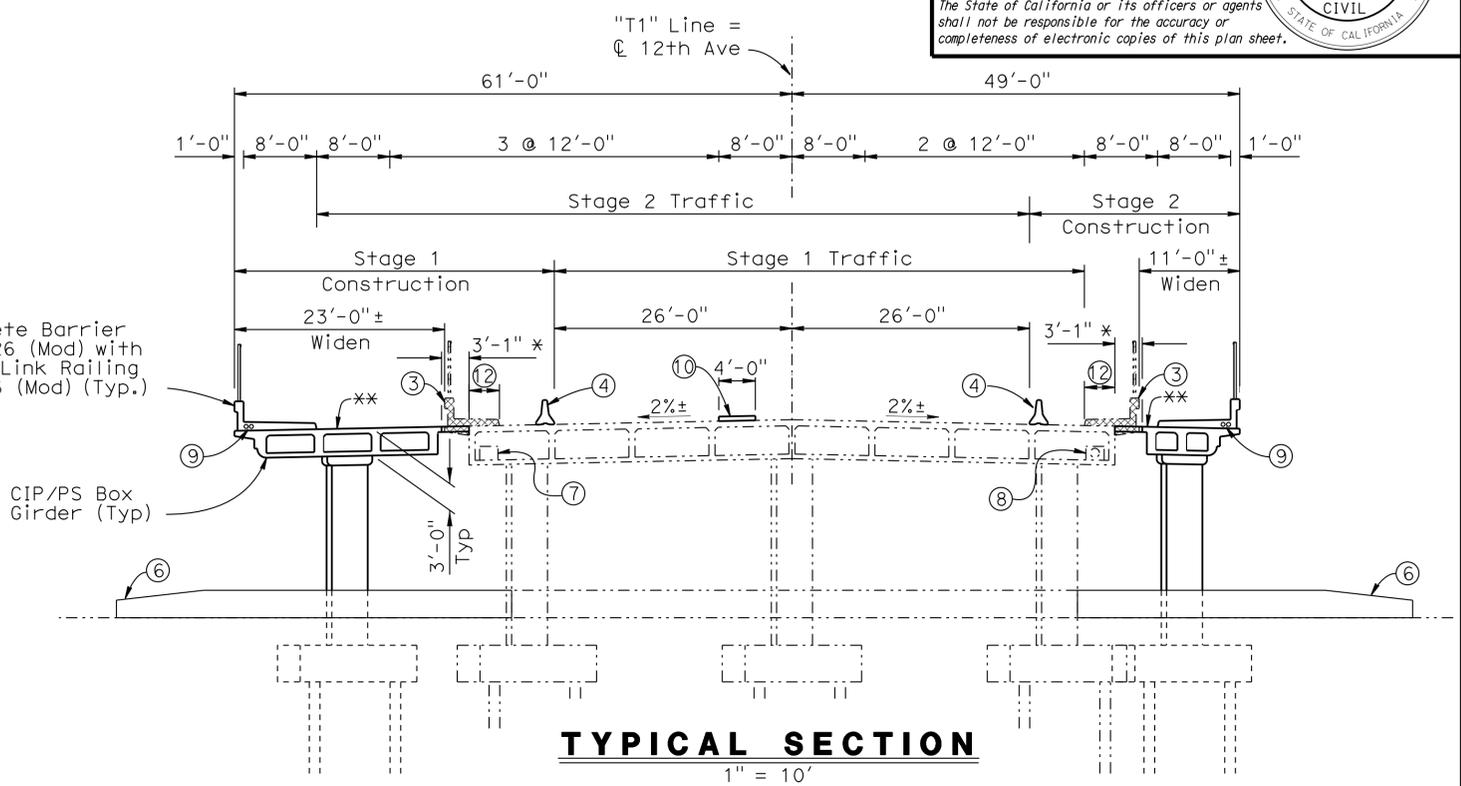
ELEVATION
1" = 20'



PLAN
1" = 20'

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

** Match existing grade and cross-slope
* Closure pour



TYPICAL SECTION
1" = 10'

- NOTES:
- Paint Bridge Name "12th AVENUE OVERCROSSING"
 - Paint Bridge Number "45-0099".
 - Remove existing Concrete Barrier, Chain Link Railing and overhang.
 - Temporary Railing Type K, see "Road Plans".
 - For Details see "12th AVENUE RETAINING WALL" plans.
 - Median Barrier, see "ROAD PLANS"
 - Existing future utility opening
 - Existing 12" Sewer Line (City of Hanford)
 - Provide 2 - 2" Electrical Conduit see "ROAD PLANS"
 - Median Curb, see "ROAD PLANS"
 - Slope Paving, Full Slope
 - Limits of Refinish Deck
 - CCTV (Barrier Mounted) - See "Road Plans"

- LEGEND:
- Indicates existing structure
 - Indicates new construction
 - Indicates location of minimum clearance.
 - ▨ Indicates limits of prepare concrete bridge deck surface and treat existing bridge deck with high molecular weight methacrylate.
 - ▩ Indicates limits of Bridge Removal (portion)

DESIGN	BY T. SANDERSON	CHECKED H. VU	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE
DETAILS	BY R. KIRKLAND	CHECKED H. VU	LAYOUT	BY T. SANDERSON
QUANTITIES	BY T. SANDERSON	CHECKED D. AZZAM	SPECIFICATIONS	BY J. RAMIREZ
DANIEL T. ADAMS DESIGN ENGINEER		H. VU J. RAMIREZ		

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 10

BRIDGE NO. 45-0099
POST MILE 16.9

12th AVENUE OC (WIDEN)
GENERAL PLAN

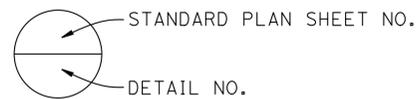
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kin	198	R16.5/R17.2	216	247
<i>Tierney L. Sanderson</i> REGISTERED CIVIL ENGINEER			5/10/12 DATE		
11-12-13 PLANS APPROVAL DATE					
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INDEX TO PLANS

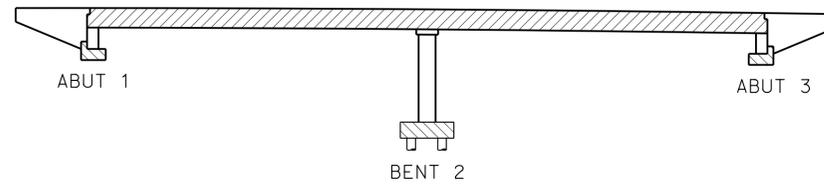
Sheet No.	Title
1	GENERAL PLAN
2	INDEX TO PLANS
3	FOUNDATION PLAN
4	ABUTMENT LAYOUT
5	ABUTMENT DETAILS NO.1
6	ABUTMENT DETAILS NO.2
7	BENT LAYOUT
8	BENT DETAILS NO. 1
9	BENT DETAILS NO. 2
10	TYPICAL SECTION
11	GIRDER LAYOUT
12	GIRDER DETAILS
13	SLOPE PAVING - FULL SLOPE
14	CHAIN LINK RAILING TYPE 6
15	ARCHITECTURAL DETAILS NO.1
16	ARCHITECTURAL DETAILS NO.2
17	LOG OF TEST BORINGS 1 OF 4
18	LOG OF TEST BORINGS 2 OF 4
19	LOG OF TEST BORINGS 3 OF 4
20	LOG OF TEST BORINGS 4 OF 4

STANDARD PLANS DATED 2010

A10A	ABBREVIATIONS (SHEET 1 OF 2)
RSP A10B	ABBREVIATIONS (SHEET 2 OF 2)
A10C	LINES AND SYMBOLS (SHEET 1 OF 3)
A10D	LINES AND SYMBOLS (SHEET 2 OF 3)
A62B	LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL - BRIDGE SURCHARGE AND WALL
A62C	LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL - BRIDGE
BO-1	BRIDGE DETAILS
BO-3	BRIDGE DETAILS
BO-5	BRIDGE DETAILS
BO-13	BRIDGE DETAILS
B2-8	PILE DETAILS CLASS 200
B7-1	BOX GIRDER DETAILS
RSP B8-5	CAST-IN-PLACE PRESTRESSED GIRDER DETAILS
RSP B11-54	CONCRETE BARRIER TYPE 26



- Structural Concrete, Bridge
- Structural Concrete, Bridge Footing
- Structural Concrete, Bridge (5,500 psi @ 28 days)



CONCRETE STRENGTH AND TYPE LIMITS

No Scale

SPREAD FOOTING DATA TABLE

Location	Working Stress Design (WSD)		Load and Resistance Factor Design (LRFD)		
	Permissible Gross Contact Stress (Settlement) (ksf)	Allowable Gross Bearing Capacity (ksf)	SERVICE Permissible Net Contact Stress (Settlement) (ksf)	STRENGTH Factored Gross Nominal Bearing Resistance (ksf)	EXTREME EVENT Factored Gross Nominal Bearing Resistance $\Psi_b = 1.00$ (ksf)
Abut 1	2.0	2.5	N/A	N/A	N/A
Abut 3	2.0	2.5	N/A	N/A	N/A

PILE DATA TABLE

Location	Pile Type	Nominal Resistance (kips)		Design Tip Elevation (ft)	Specified Tip Elevation (ft)	Nominal Driving Resistance Required (Kips)
		Compression	Tension			
Bent 2 Left & Right	Class 200 Alt. X	340	200	164.5 (a-I) 155.5 (a-II) 172.5 (b-II)	155.5	420

NOTE: Design Tip Elev is controlled by:
 (a-I) Compression (Strength Limit)
 (a-II) Compression (Extreme Limit)
 (b-II) Tension (Extreme Limit)

QUANTITIES

PREPARE CONCRETE BRIDGE DECK SURFACE	10,555	SQFT
BRIDGE REMOVAL (PORTION)	LUMP	SUM
STRUCTURE EXCAVATION (BRIDGE)	172	CY
STRUCTURE BACKFILL (BRIDGE)	114	CY
FURNISH PILING (CLASS 200) (ALTERNATIVE X)	1,435	LF
DRIVE PILE (CLASS 200) (ALTERNATIVE X)	20	EA
PRESTRESSING CAST-IN-PLACE CONCRETE	LUMP	SUM
STRUCTURAL CONCRETE, BRIDGE FOOTING	55	CY
STRUCTURAL CONCRETE, BRIDGE	408	CY
ANTI-GRAFFITI COATING	5,465	SQFT
REFINISH BRIDGE DECK	980	SQFT
BAR REINFORCING STEEL (BRIDGE)	114,597	LB
TREAT BRIDGE DECK	10,555	SQFT
FURNISH BRIDGE DECK TREATMENT MATERIAL	106	GAL
PREPARE AND PAINT CONCRETE	3,166	SQFT
SLOPE PAVING (CONCRETE)	42	CY
CHAIN LINK RAILING (TYPE 6) (MODIFIED)	365	LF
CONCRETE BARRIER (TYPE 26 MODIFIED)	365	LF

GENERAL NOTES LOAD AND RESISTANCE FACTOR DESIGN

DESIGN: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 4th Edition with 2008 Interims, and the CALTRANS Amendments, preface dated Dec. 2008.
 Except Abutment and Barrier are designed using CALTRANS BRIDGE DESIGN SPECIFICATIONS LFD Version April 2000 (1996 AASHTO with Interims and Revisions by CALTRANS).

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

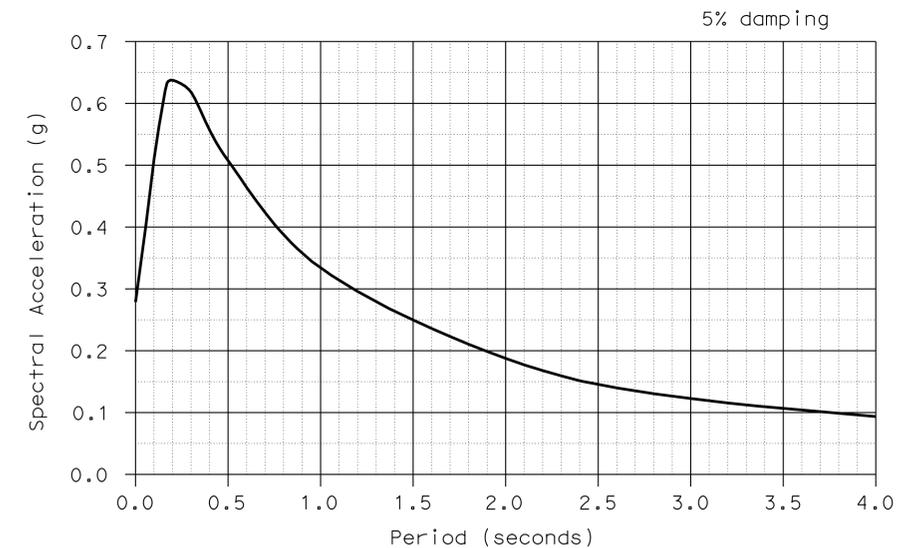
DEAD LOAD: Includes 35 psf for future wearing surface.

LIVE

LOADING: HL93 and permit design load.

SEISMIC

LOADING: Soil Profile: Vs30 = 900 ft/s
 Moment Magnitude: Mmax = 2.4
 Peak Ground Acceleration: 0.24g



HORIZONTAL ARS CURVE

DESIGN	BY T. Sanderson	CHECKED H. Vu
DETAILS	BY R. Kirkland	CHECKED H. Vu
QUANTITIES	BY T. Sanderson	CHECKED D. Azzam

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 10

BRIDGE NO.	45-0099
POST MILE	16.9

12th AVENUE OC (WIDEN)
INDEX TO PLANS

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
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Tierney L. Sanderson 5/10/12
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11-12-13
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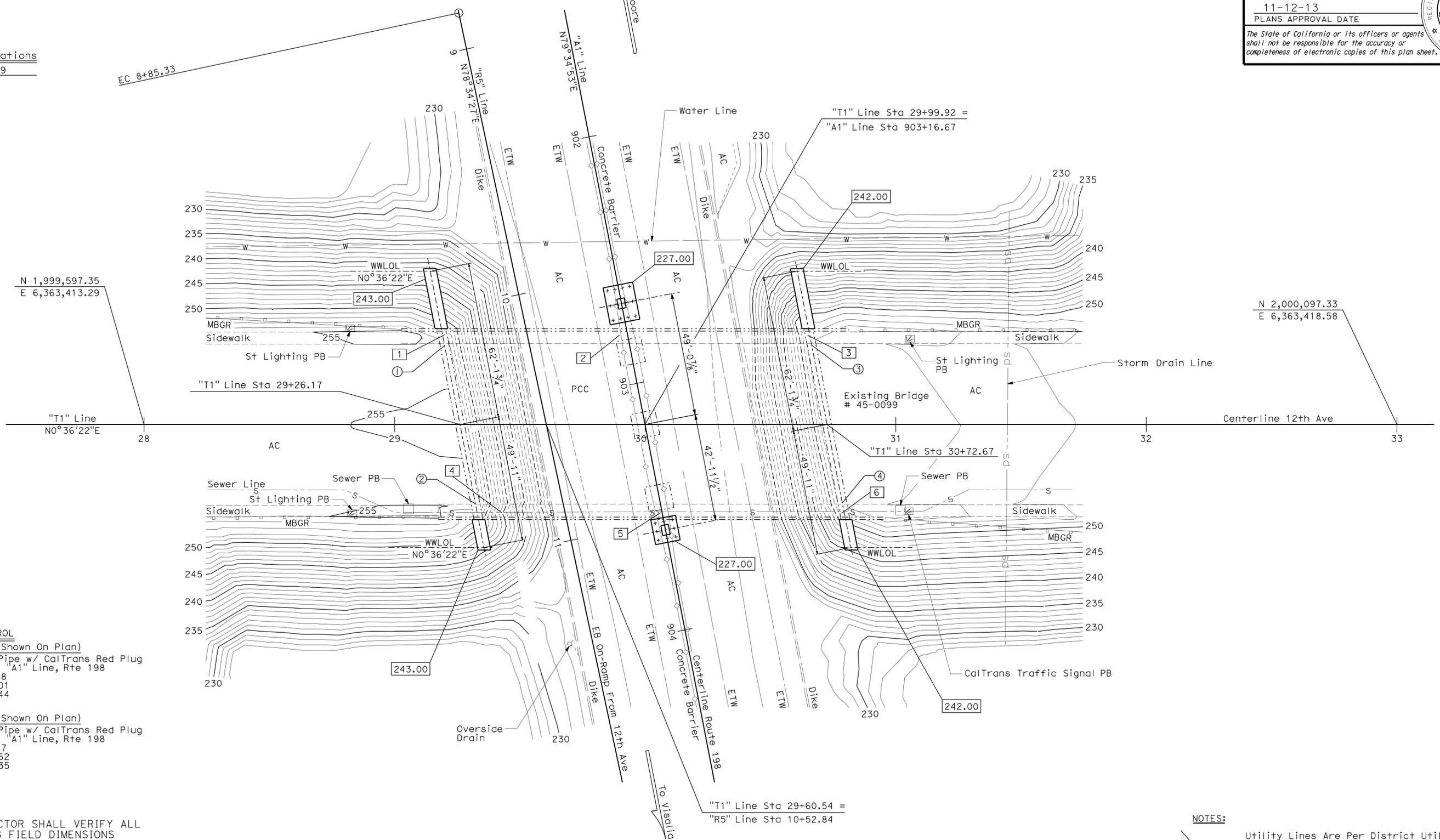
Tierney L. Sanderson
 No. 48605
 Exp. 6-30-2012
 CIVIL
 STATE OF CALIFORNIA

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- Bridge Location
- ① - 31.40 Lt "T1" Line, Sta 29+19.92, Elev= 254.60 ±
 - ② - 31.63 Rt "T1" Line, Sta 29+32.25, Elev= 254.54 ±
 - ③ - 31.53 Lt "T1" Line, Sta 30+66.55, Elev= 253.43 ±
 - ④ - 31.08 Rt "T1" Line, Sta 30+78.76, Elev= 253.31 ±

- Soffit Elevations
Br # 45-0099
- 1 - 250.34
 - 2 - 250.20
 - 3 - 249.26
 - 4 - 250.38
 - 5 - 250.10
 - 6 - 249.02



SURVEY CONTROL
 PRHV10 (Not Shown On Plan)
 Fnd 1" Iron Pipe w/ CalTrans Red Plug
 305.69 Ft Rt "A1" Line, Rte 198
 Sta 901+75.08
 N 1,999,471.01
 E 6,363,331.44
 Elev= 254.51
 PRHV11 (Not Shown On Plan)
 Fnd 1" Iron Pipe w/ CalTrans Red Plug
 112.28 Ft Lt "A1" Line, Rte 198
 Sta 908+41.57
 N 2,000,002.62
 E 6,363,911.35
 Elev= 239.64

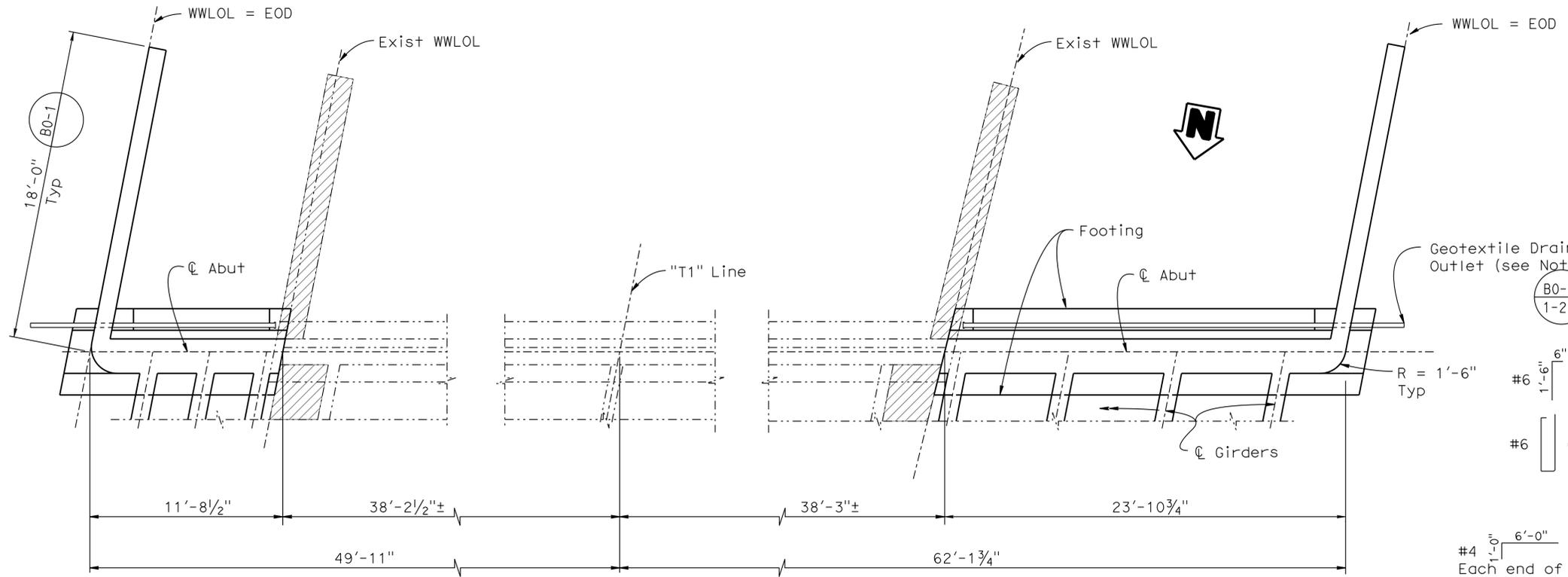
NOTE:
 THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

NOTES:
 Utility Lines Are Per District Utility Plan.
 Denotes bottom of footing elevation

PRELIMINARY INVESTIGATION SECTION				DESIGN BY T. Sanderson	CHECKED H. VU	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO. 45-0099	12TH AVENUE OC (WIDEN) FOUNDATION PLAN									
SCALE 1"=20'	VERT. DATUM NGVD29	PHOTOGRAMMETRY AS OF: X	DETAILS BY R. Kirkland	CHECKED H. VU	POST MILE 16.91													
ALIGNMENT TIES Dist. Traverse Sheet	SURVEYED BY District 05/1996	CHECKED BY J. Borden 06/2010	QUANTITIES BY T. Sanderson	CHECKED D. Azzam	REVISION DATES													
STRUCTURES FOUNDATION PLAN SHEET (ENGLISH) (REV. 10/25/05)				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		CU 06 EA 487501	DISREGARD PRINTS BEARING EARLIER REVISION DATES	<table border="1" style="font-size: x-small;"> <tr> <td>06/22/10</td> <td>05/20/11</td> <td>3/29/12</td> <td>5/09/12</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	06/22/10	05/20/11	3/29/12	5/09/12					SHEET 3	OF 20
06/22/10	05/20/11	3/29/12	5/09/12															

USERNAME => s128843 DATE PLOTTED => 19-NOV-2013 TIME PLOTTED => 12:29

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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11-12-13 PLANS APPROVAL DATE					
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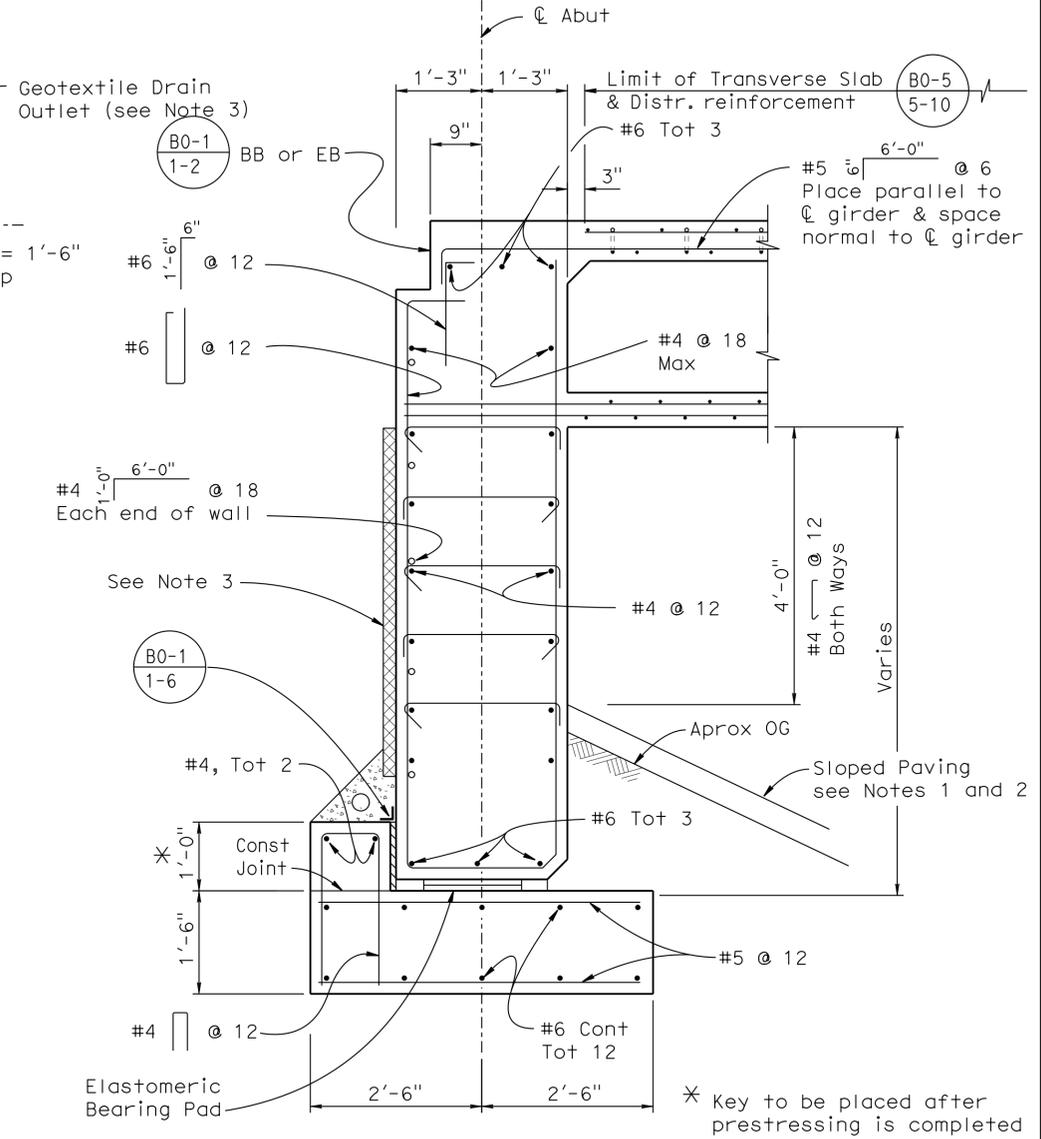


PLAN

1/4" = 1'-0"

Abutment 1 shown, Abutment 3 similar

Indicates Bridge Removal (portion)

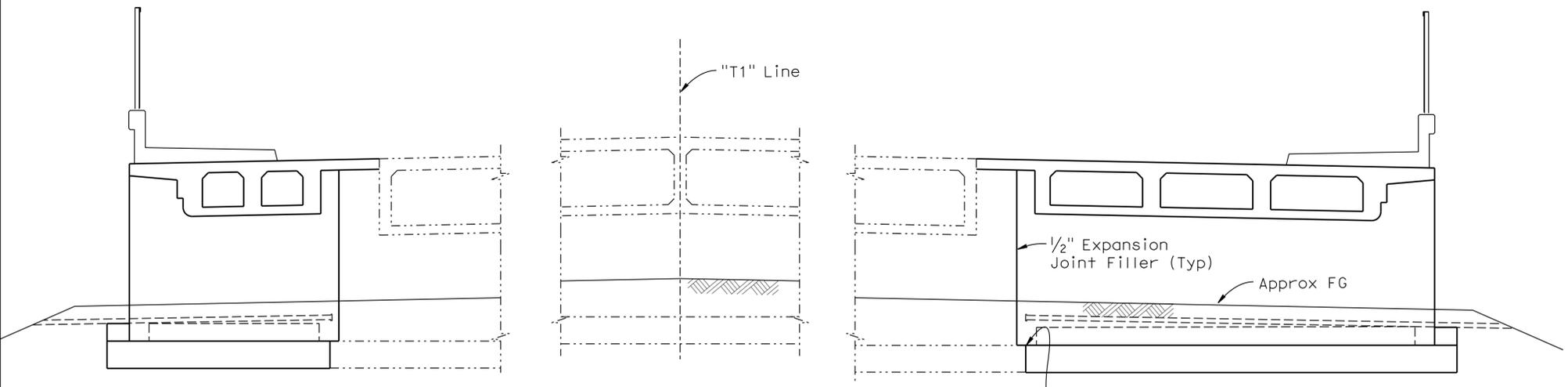


ABUTMENT SECTION

3/4" = 1'-0"

NOTES:

1. For Slope Paving details, see "SLOPE PAVING-FULL SLOPE" sheet.
2. Slope Paving (concrete)(brick and smooth surface), see "ARCHITECTURAL DETAIL NO. 1" sheet.
3. For Geocomposite Drain Details see "ABUTMENT DETAILS NO. 2" sheet.



ELEVATION

1/4" = 1'-0"

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

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	DESIGN	BY T. Sanderson	CHECKED H. Vu	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	45-0099	12th AVENUE OC (WIDEN) ABUTMENT LAYOUT	
	DETAILS	BY R. Kirkland	CHECKED H. Vu			POST MILE	16.9		
	QUANTITIES	BY T. Sanderson	CHECKED D. Azzam						
				UNIT: 3589	PROJECT NUMBER & PHASE: 0600000488 1	CONTRACT NO.: 06-487500	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 12/15/10 3/29/12 4/21/12	SHEET OF 4 20

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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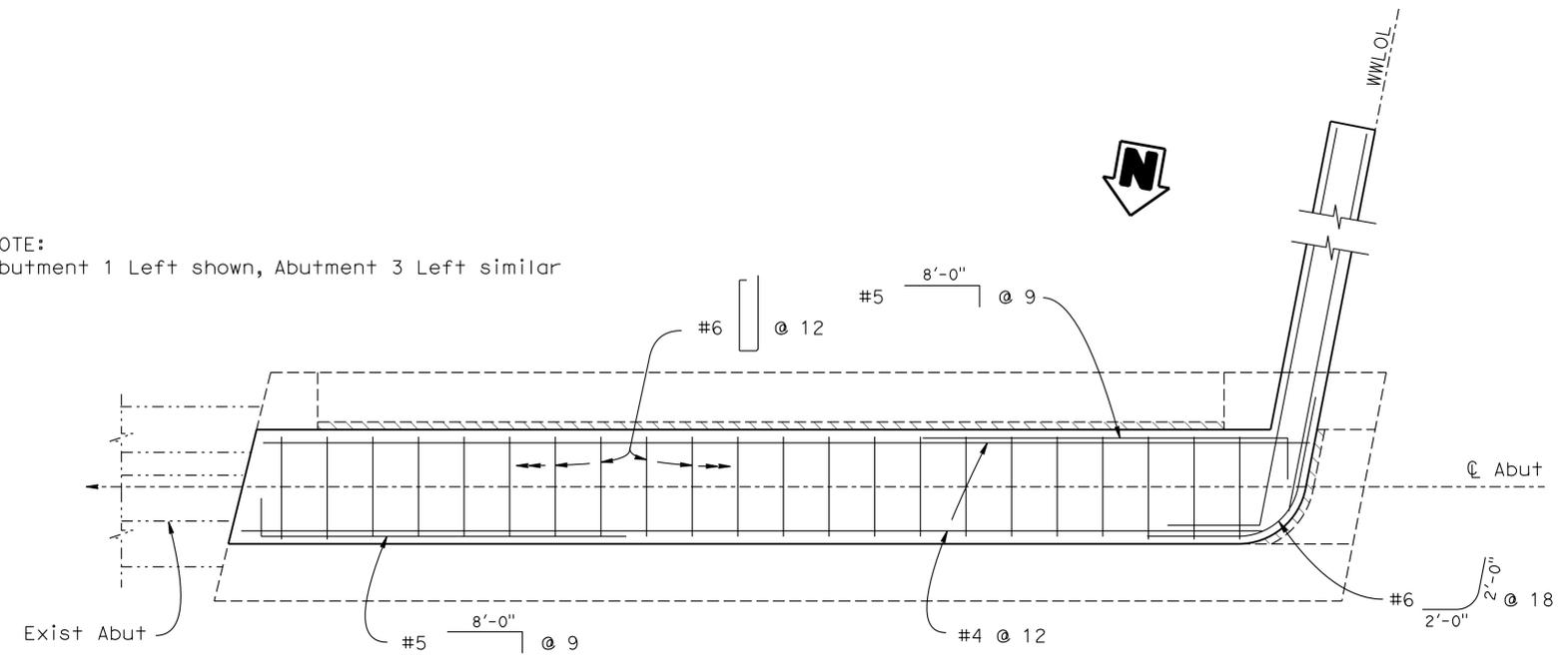
Tierney L. Sanderson 5/10/12
 REGISTERED CIVIL ENGINEER DATE

11-12-13
 PLANS APPROVAL DATE

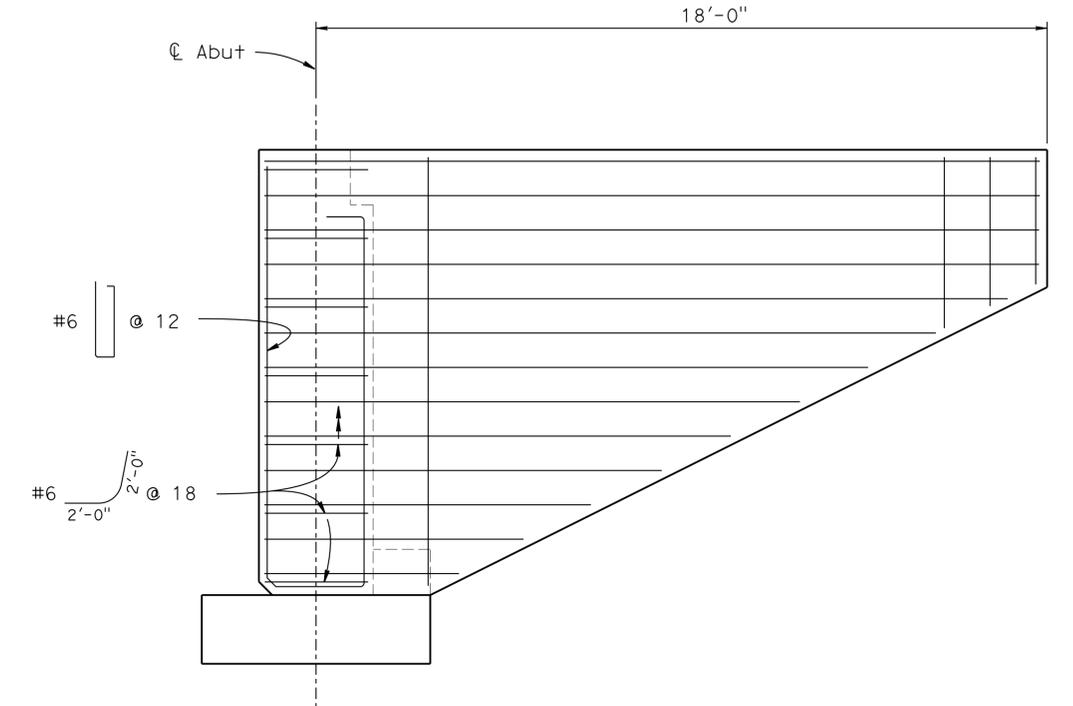
TIERNEY L. SANDERSON
 No. 48605
 Exp. 6-30-2012
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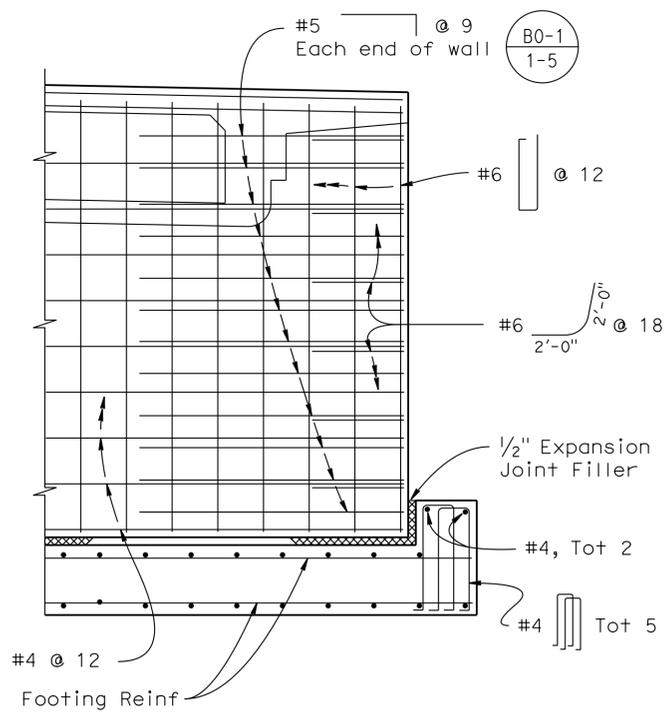
NOTE:
 Abutment 1 Left shown, Abutment 3 Left similar



PART PLAN
 1/2" = 1'-0"



WINGWALL ELEVATION
 No Scale

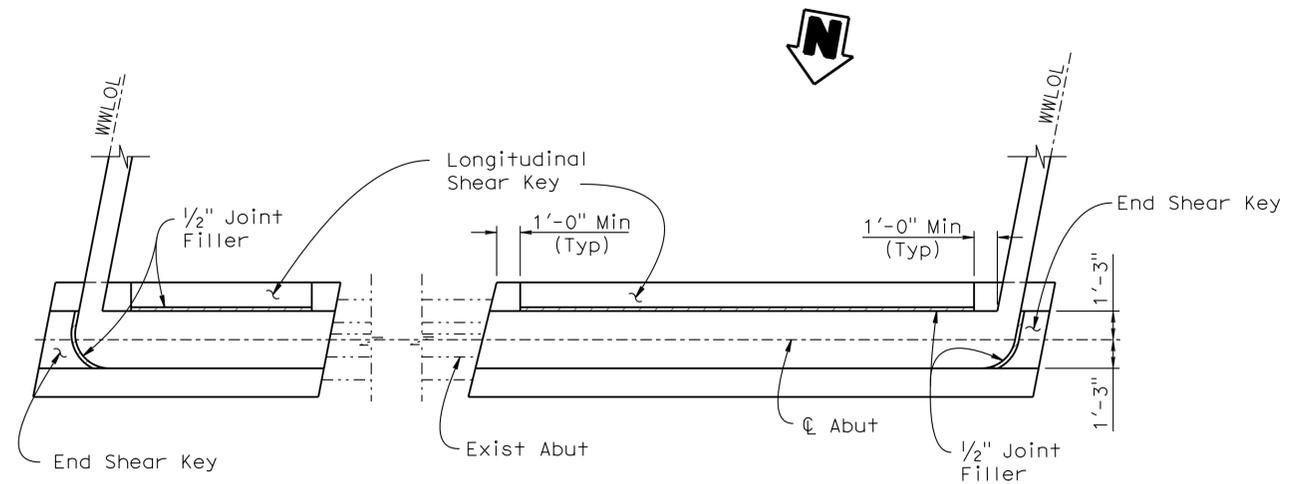


PART ELEVATION
 No Scale

NOTE:
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DESIGN	BY	T. Sanderson	CHECKED	H. Vu	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	45-0099	12th AVENUE OC (WIDEN) ABUTMENT DETAILS NO. 1
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	QUANTITIES	T. Sanderson	CHECKED	D. Azzam					

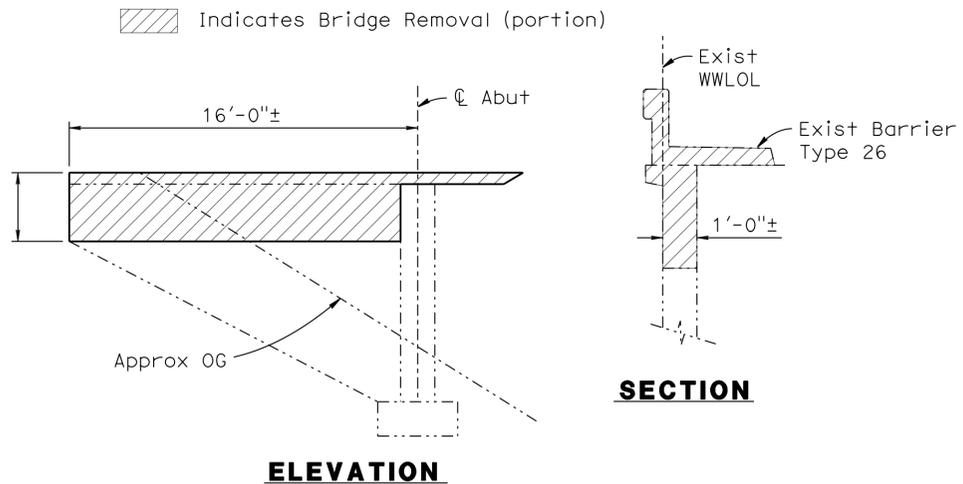
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SHEAR KEY LAYOUT

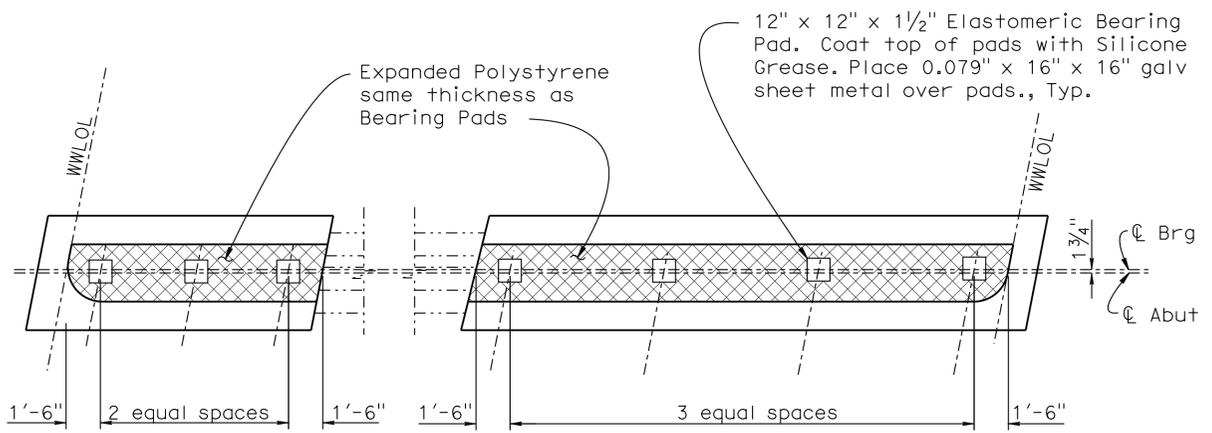
1/4" = 1'-0"

NOTE:
Abutment 1 shown, Abutment 3 similar



LIMITS OF BRIDGE REMOVAL EXISTING WINGWALL

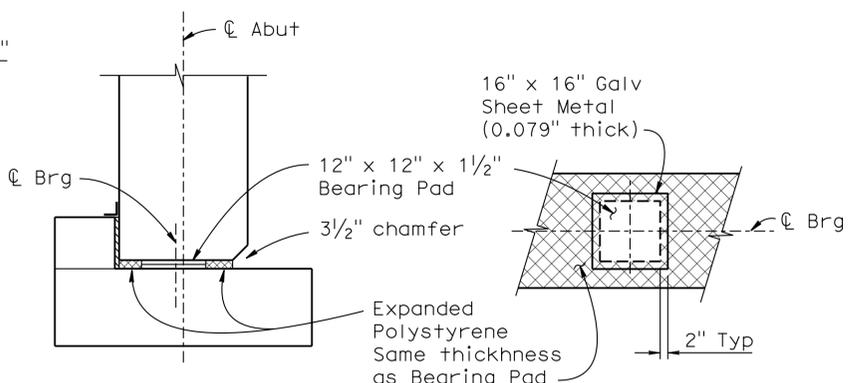
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BEARING PAD LAYOUT

1/4" = 1'-0"

NOTE:
Abutment 1 shown, Abutment 3 similar

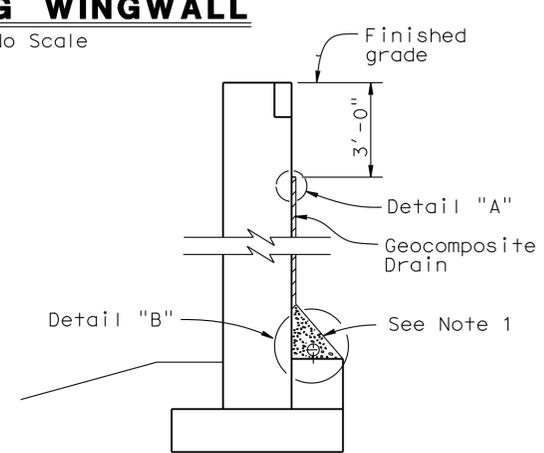


SECTION

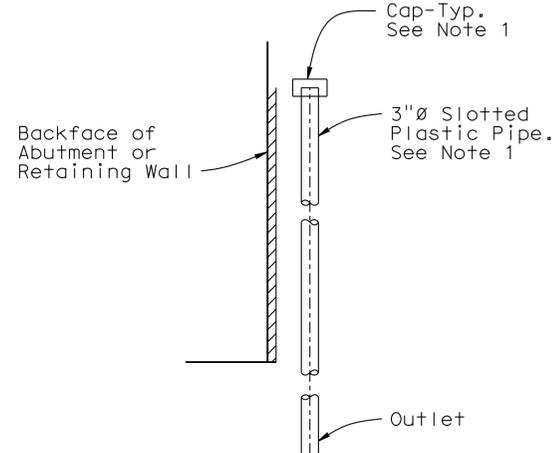
PLAN

ELASTOMERIC BEARING PAD DETAIL

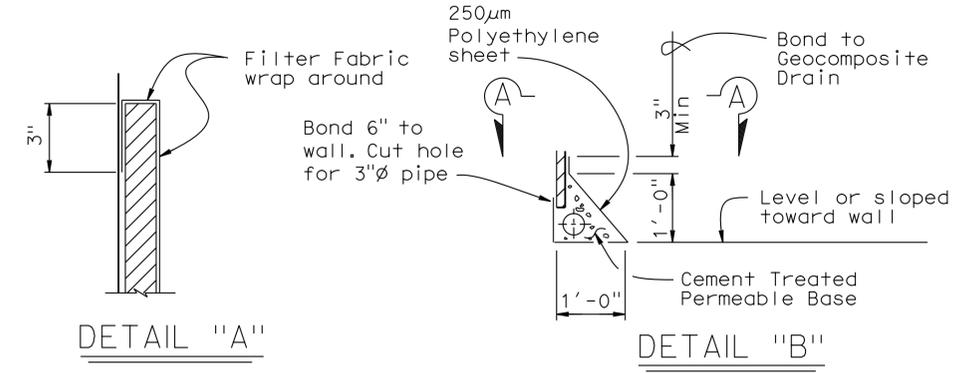
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ABUTMENT SECTION



SECTION A-A



GEOCOMPOSITE DRAIN DETAIL

ALTERNATIVE TO BRIDGE DETAIL (BO-3/3-5)

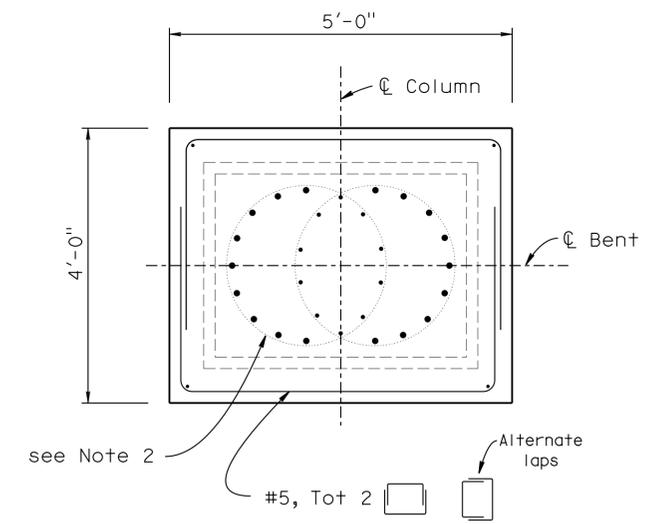
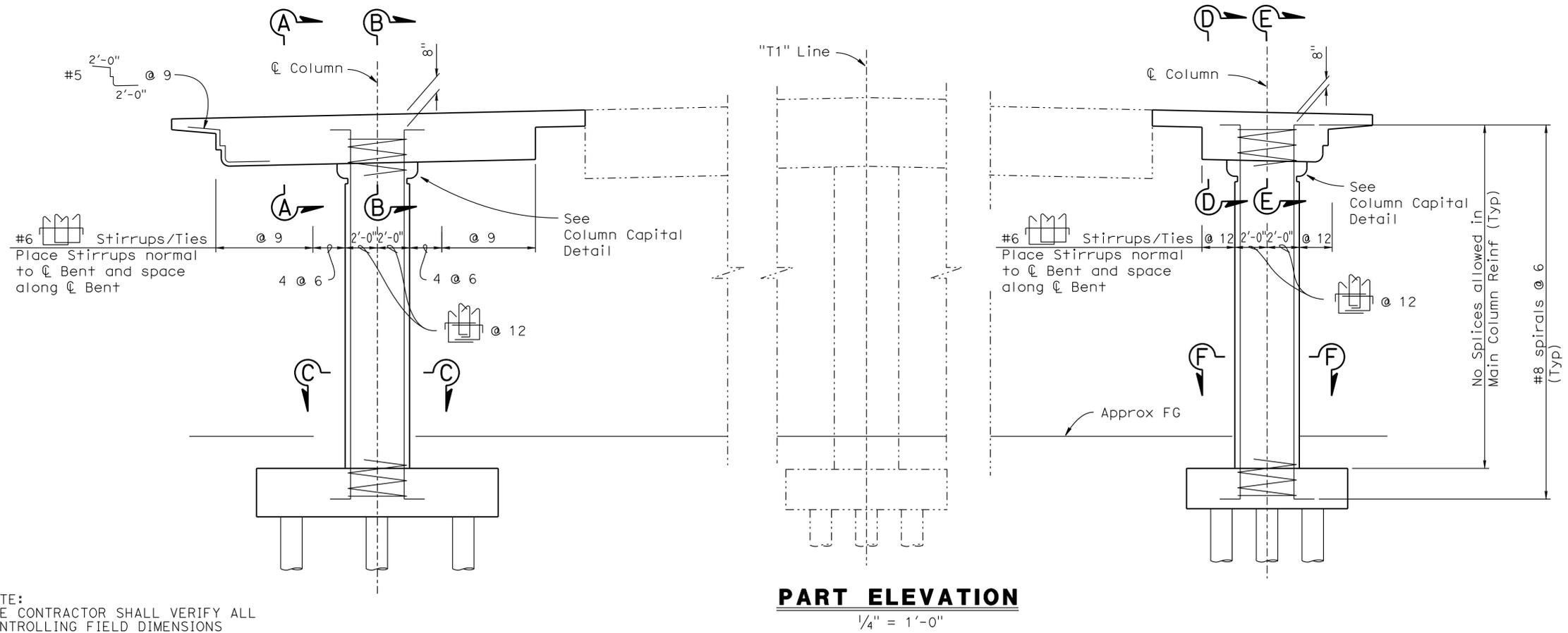
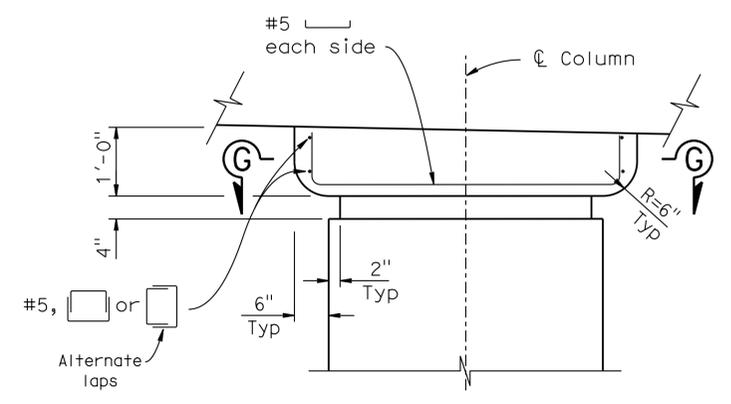
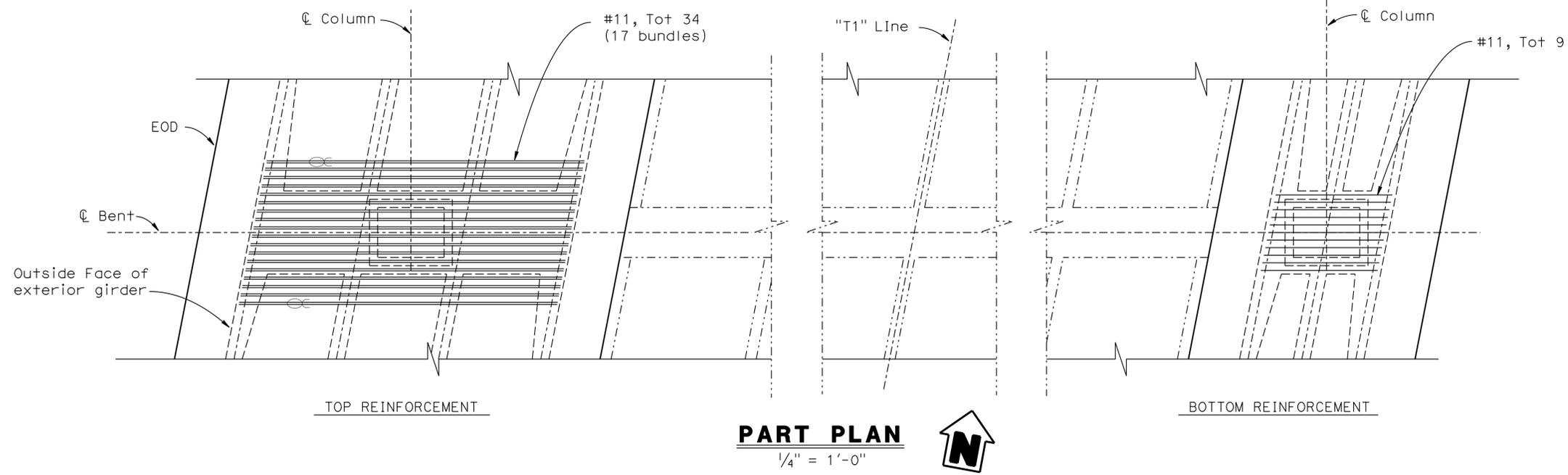
NOTES:

1. Geocomposite drain, cement treated permeable base, and 3" slotted plastic pipe continuous behind abutment. Cap end of pipe.

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

DESIGN BY T. Sanderson CHECKED H. Vu DETAILS BY R. Kirkland CHECKED H. Vu QUANTITIES BY T. Sanderson CHECKED D. Azzam	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO. 45-0099	12th AVENUE OC (WIDEN) ABUTMENT DETAILS NO. 2	
			POST MILE 16.9		
			UNIT: 3589 PROJECT NUMBER & PHASE: 0600000488 1 CONTRACT NO.: 06-487500		
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0 1 2 3	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 12/15/10 3/29/12 4/21/12	SHEET 6 OF 20

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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NOTE:
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- NOTES:
- For Section A-A, Section B-B, Section C-C Section D-D, Section E-E and Section F-F see "BENT DETAILS NO. 2" sheet.
 - For Details not shown, see "BENT DETAILS NO. 2" sheet.

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	DESIGN	BY T. Sanderson	CHECKED H. Vu	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	45-0099	12th AVENUE OC (WIDEN) BENT LAYOUT
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	QUANTITIES	BY T. Sanderson	CHECKED D. Azzam			UNIT: 3589	PROJECT NUMBER & PHASE: 0600000488 1	
REVISION DATES: 12/15/10, 3/29/12, 12/14/12								SHEET 7 OF 20

USERNAME => s128843 DATE PLOTTED => 19-NOV-2013 TIME PLOTTED => 12:29

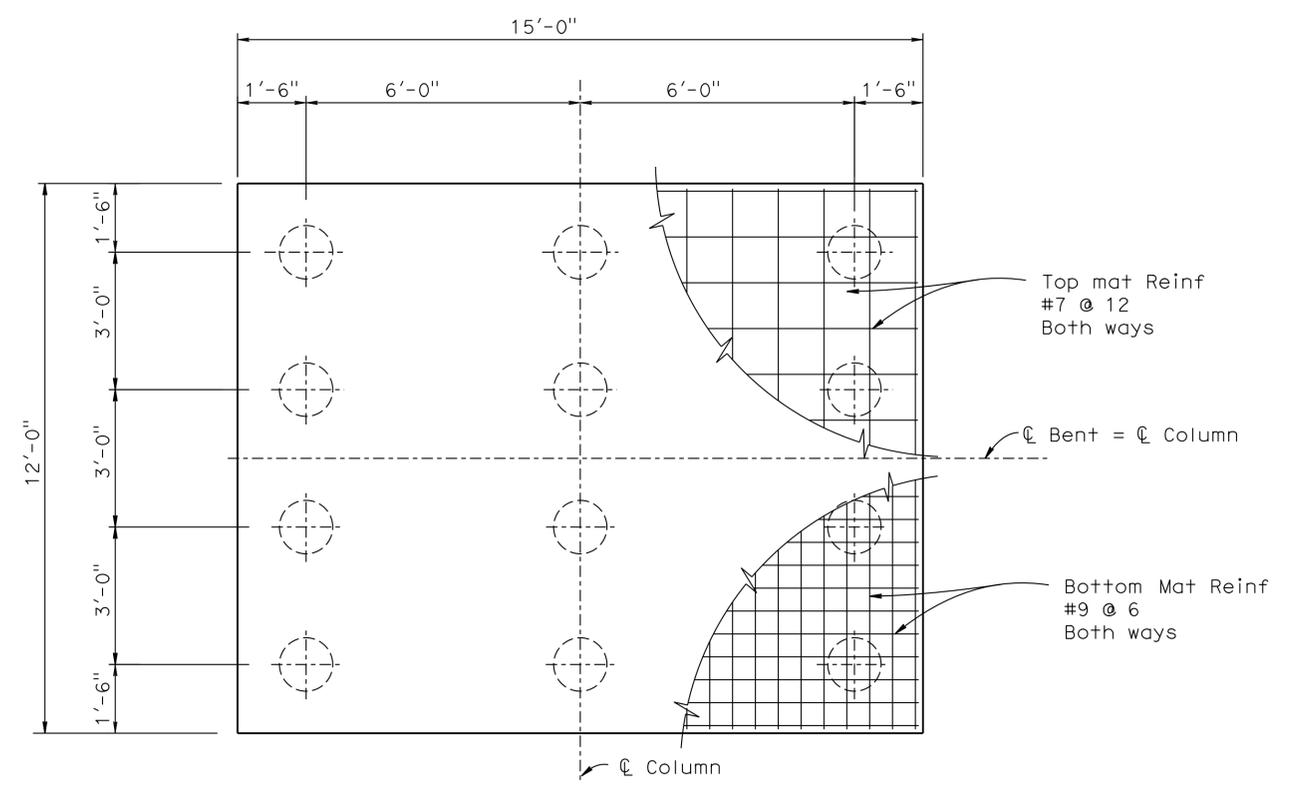
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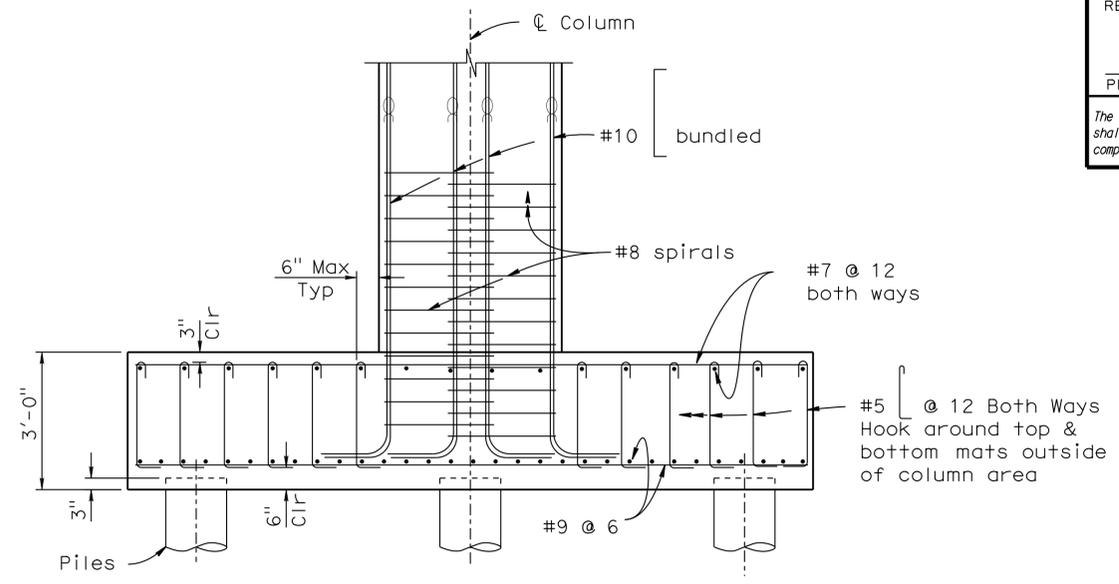
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 CIVIL
 STATE OF CALIFORNIA

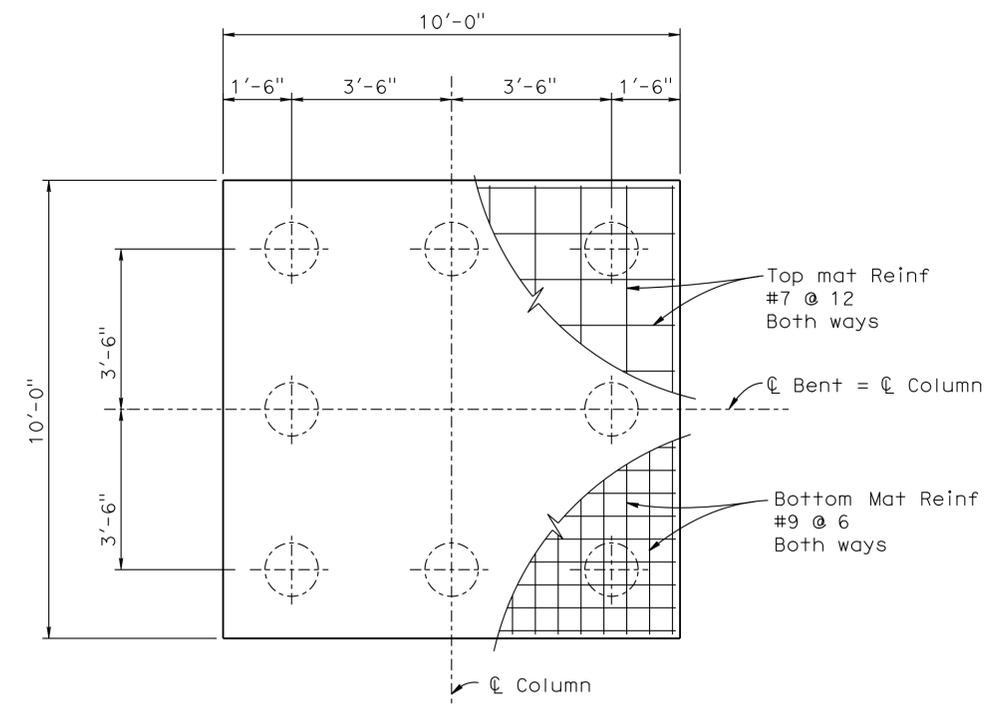
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



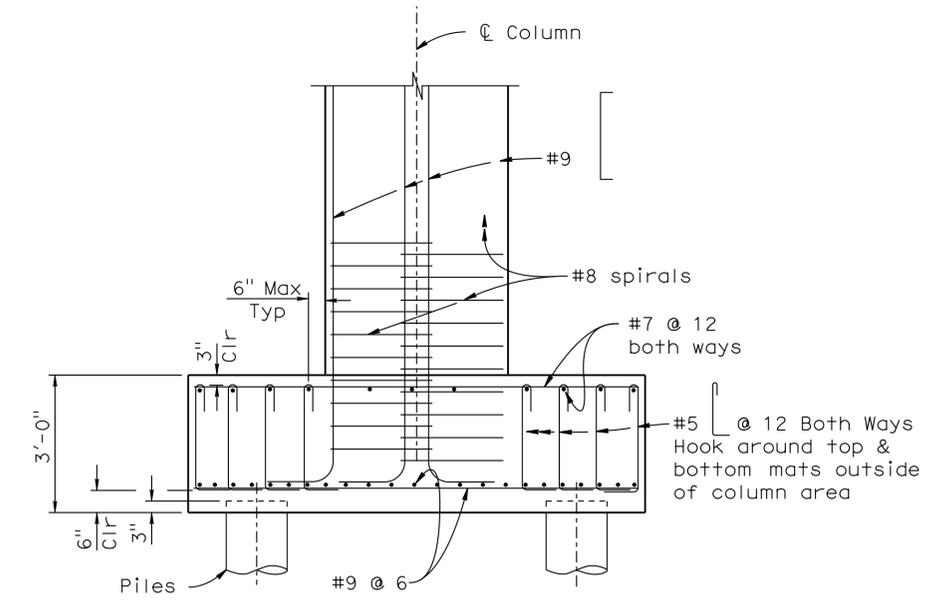
FOOTING PLAN - LEFT BRIDGE
 $1/2'' = 1'-0''$



FOOTING SECTION - LEFT BRIDGE
 $1/2'' = 1'-0''$



FOOTING PLAN - RIGHT BRIDGE
 $1/2'' = 1'-0''$

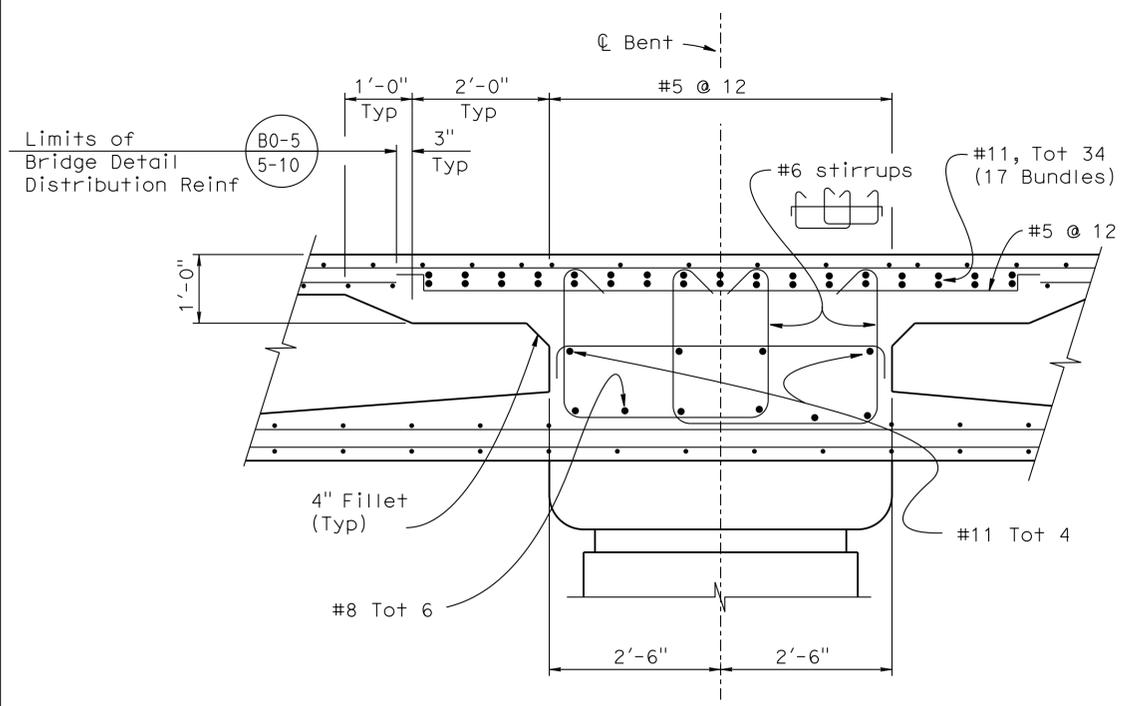


FOOTING SECTION - RIGHT BRIDGE
 $1/2'' = 1'-0''$

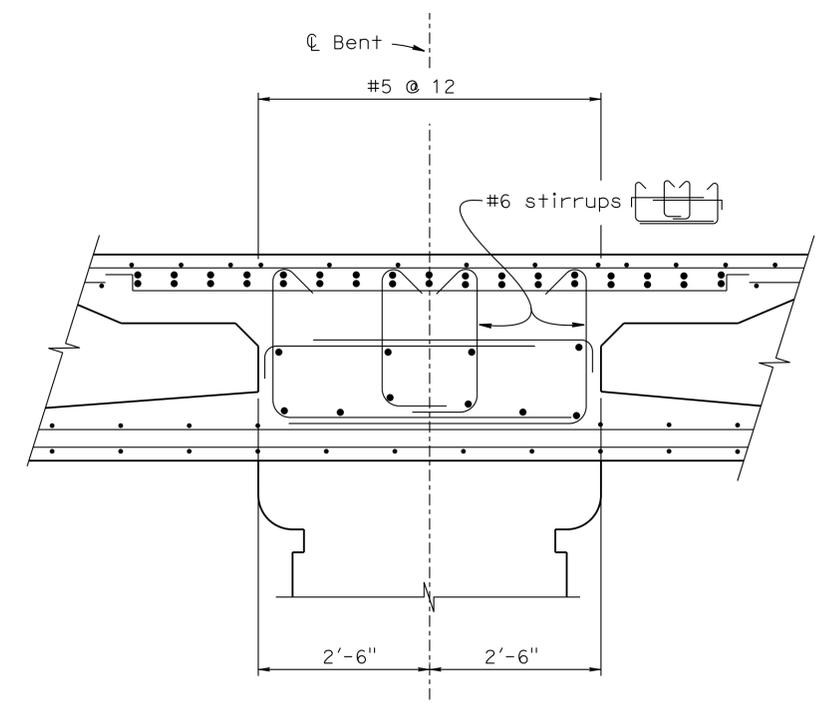
NOTE:
 THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	DESIGN	BY T. Sanderson	CHECKED H. Vu	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	12th AVENUE OC (WIDEN) BENT DETAILS NO. 1
	DETAILS	BY R. Kirkland	CHECKED H. Vu			45-0099	
	QUANTITIES	BY T. Sanderson	CHECKED D. Azzam			POST MILE 16.9	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS				0 1 2 3	UNIT: 3589 PROJECT NUMBER & PHASE: 0600000488 1	CONTRACT NO.: 06-487500	DISREGARD PRINTS BEARING EARLIER REVISION DATES
						REVISION DATES	SHEET 8 OF 20

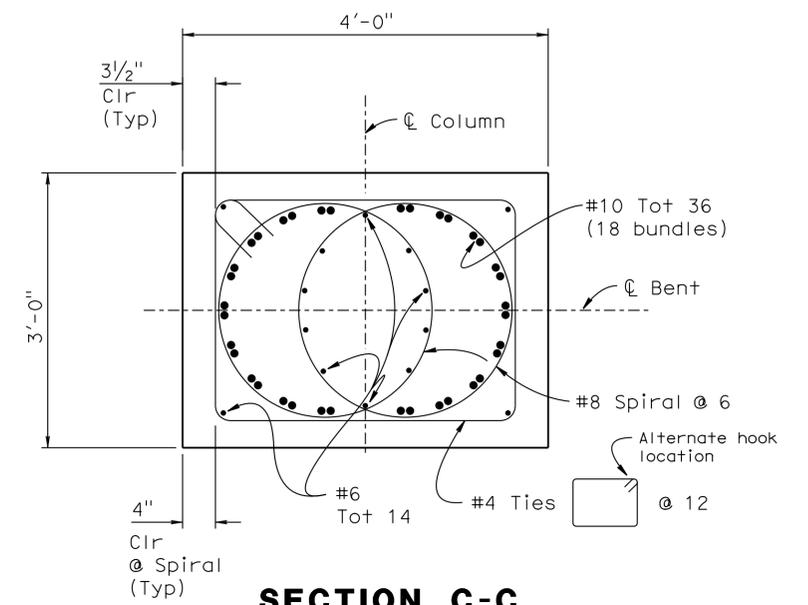
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kin	198	R16.5/R17.2	223	247
<i>Tierney L. Sanderson</i> REGISTERED CIVIL ENGINEER			5/10/12 DATE		
11-12-13 PLANS APPROVAL DATE			The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.		



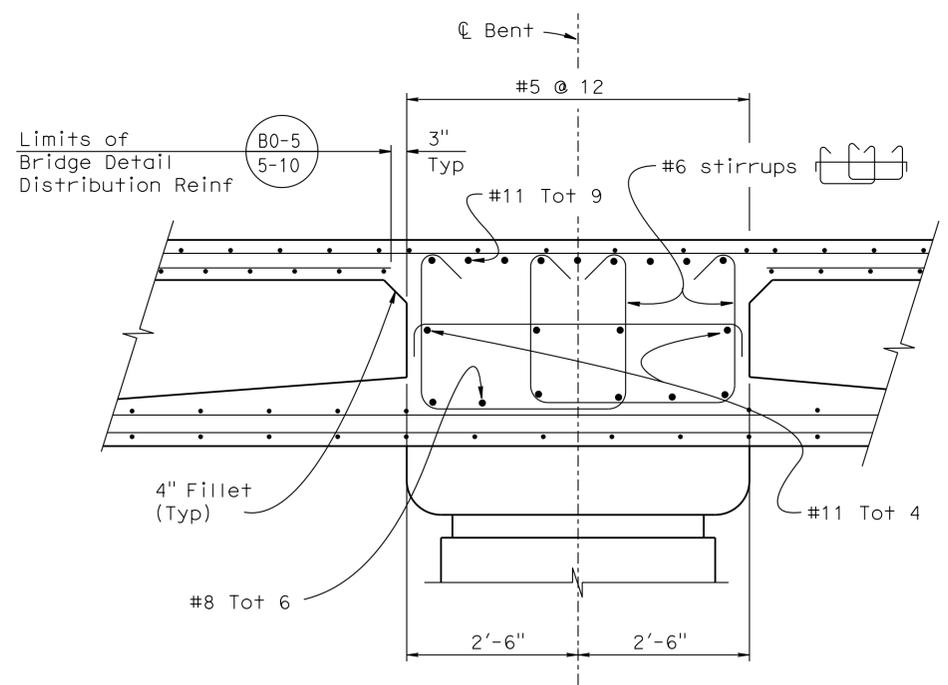
SECTION A-A
 $\frac{3}{4}'' = 1'-0''$



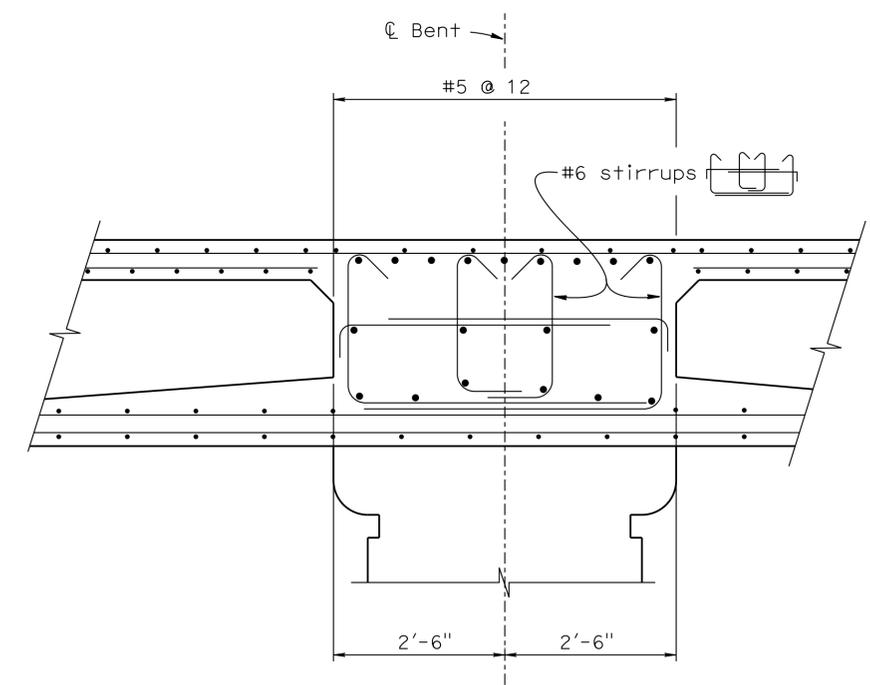
NOTE:
 See Section A-A for additional detail
SECTION B-B
 $\frac{3}{4}'' = 1'-0''$



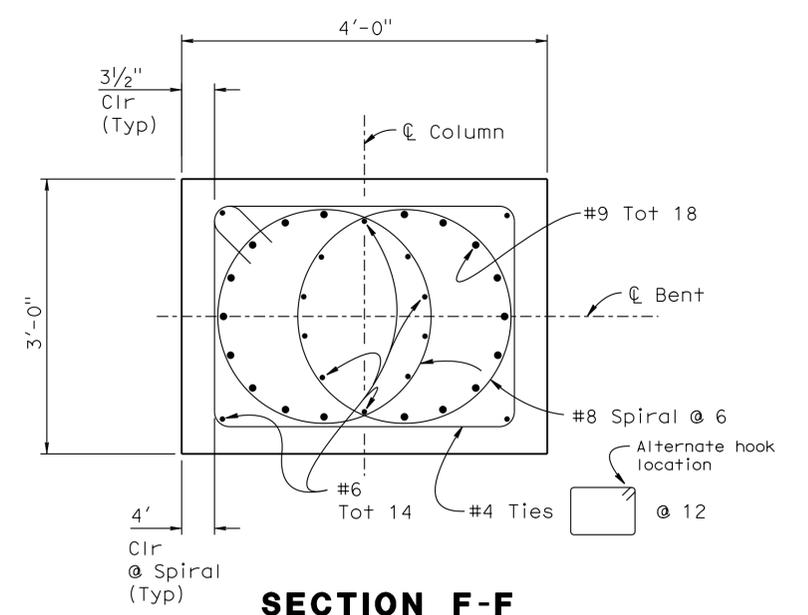
SECTION C-C
 $1'' = 1'-0''$



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



NOTE:
 See Section D-D for additional detail
SECTION E-E
 $\frac{3}{4}'' = 1'-0''$



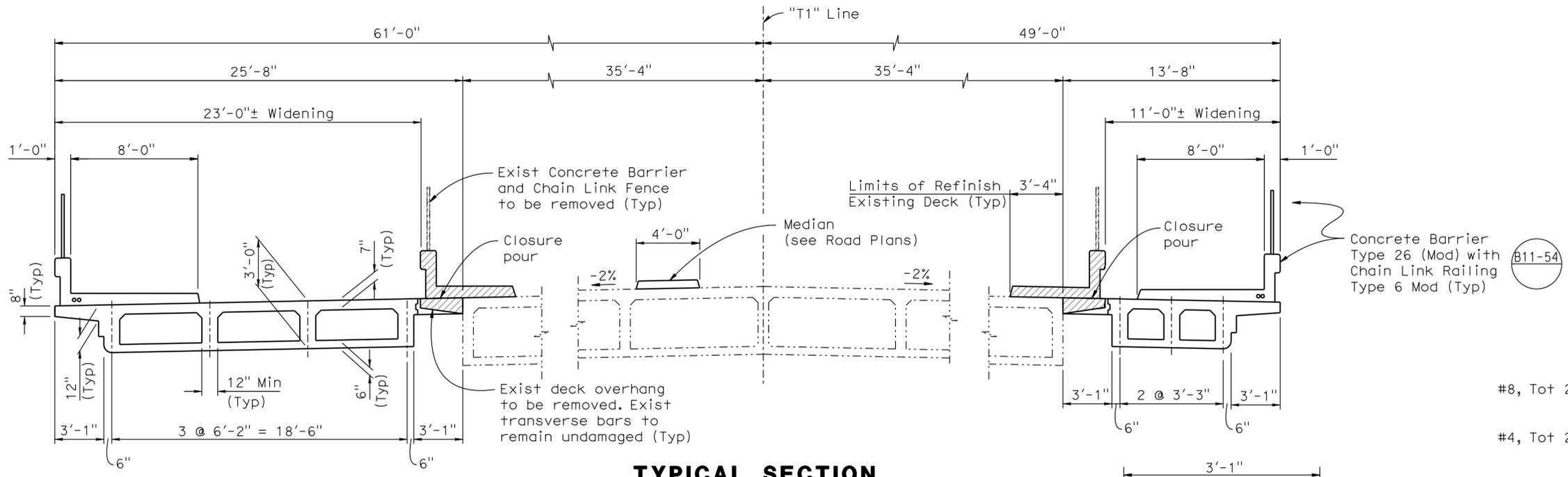
SECTION F-F
 $1'' = 1'-0''$

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

NOTES:
 1. For location of Section A-A, Section B-B, Section C-C, Section D-D, Section E-E and Section F-F see "BENT LAYOUT" sheet.

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	DESIGN BY T. Sanderson CHECKED H. Vu	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN	BRIDGE NO. 45-0099 POST MILE 16.9	12th AVENUE OC (WIDEN) BENT DETAILS NO. 2
	DETAILS BY R. Kirkland CHECKED H. Vu		DESIGN BRANCH 10	REVISION DATES: 12/15/10, 3/29/12, 4/21/12	
	QUANTITIES BY T. Sanderson CHECKED D. Azzam		UNIT: 3589 PROJECT NUMBER & PHASE: 0600000488 1	CONTRACT NO.: 06-487500	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS: 0 1 2 3		FILE => 45-0099hbd109.dgn		SHEET 9 OF 20	

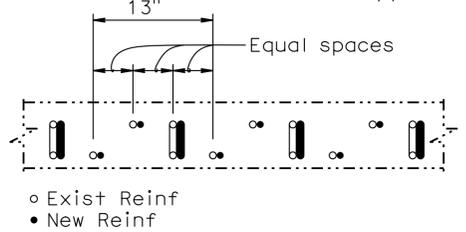
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kin	198	R16.5/R17.2	224	247
<i>Tierney L. Sanderson</i> REGISTERED CIVIL ENGINEER		5/10/12 DATE			
11-12-13 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



TYPICAL SECTION

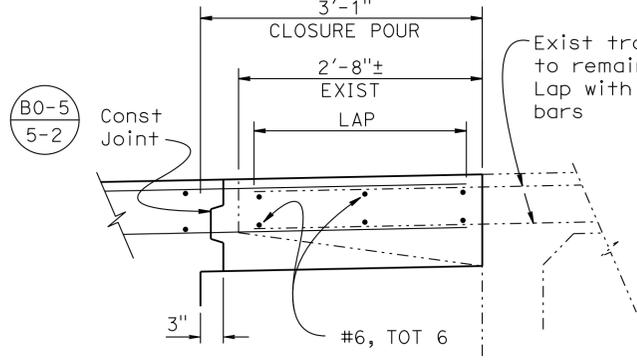
1/4" = 1'-0"

- LEGEND:**
- Indicates existing
 - Indicates new construction
 - ▨ Indicates limits of bridge removal (portion)



SECTION X-X

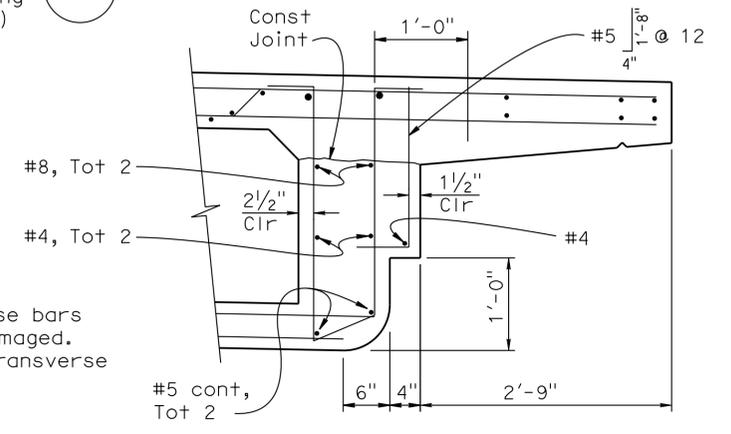
No Scale



CLOSURE POUR DETAIL

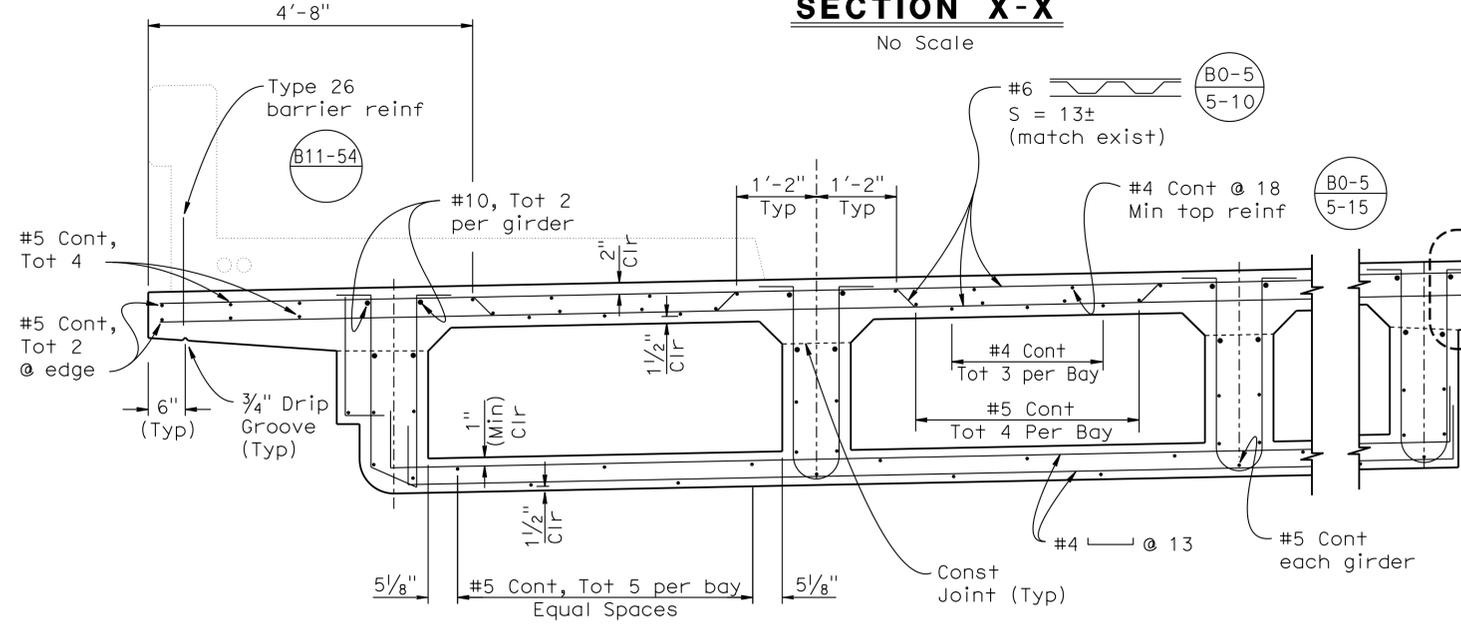
1" = 1'-0"

Left Bridge shown, Right Bridge similar



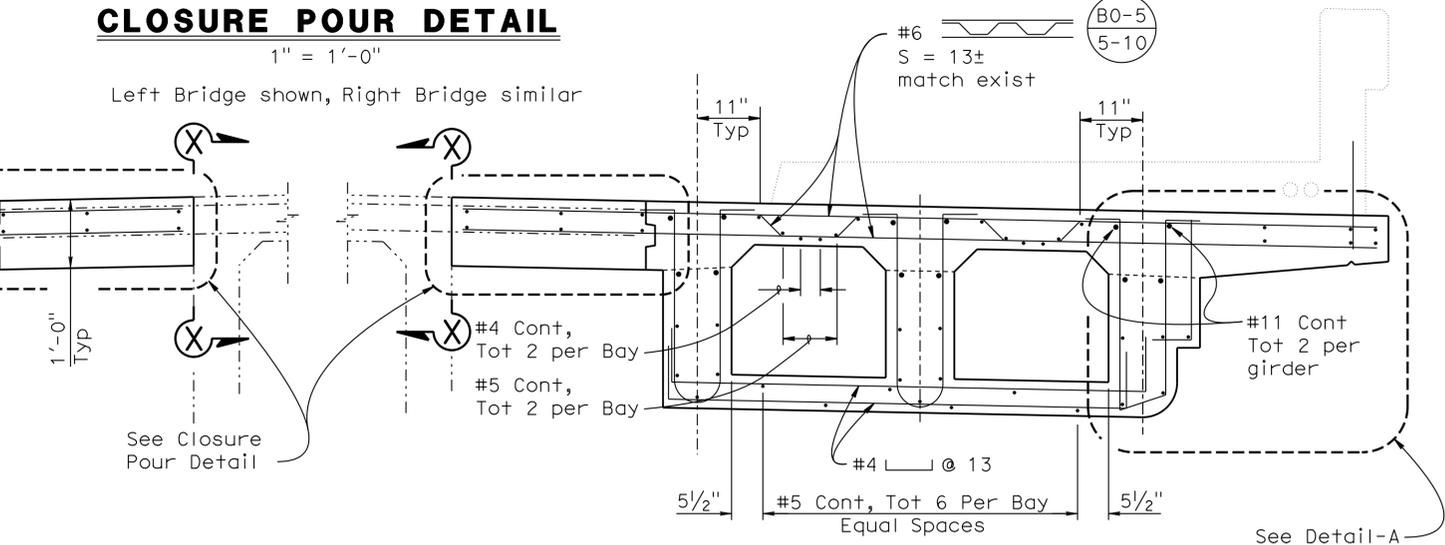
DETAIL - A

1" = 1'-0"



PART TYPICAL SECTION LEFT

3/4" = 1'-0"



PART TYPICAL SECTION RIGHT

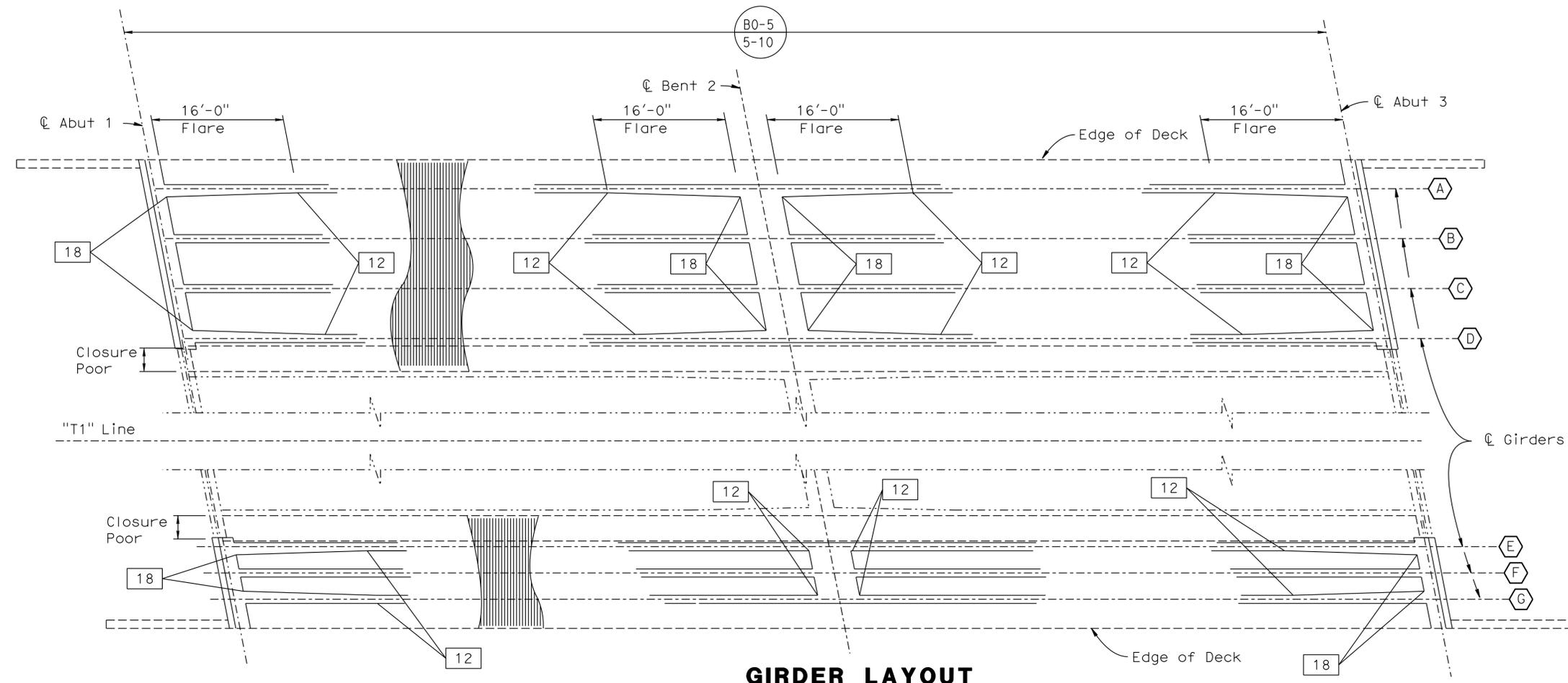
3/4" = 1'-0"

For Details not shown see, "Part Typical Section Left"

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

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	DESIGN BY T. Sanderson CHECKED H. Vu	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN	BRIDGE NO. 45-0099	12th AVENUE OC (WIDEN) TYPICAL SECTION
	DETAILS BY R. Kirkland CHECKED H. Vu		DESIGN BRANCH 10	POST MILE 16.9	
	QUANTITIES BY T. Sanderson CHECKED D. Azzam		UNIT: 3589 PROJECT NUMBER & PHASE: 0600000488 1	CONTRACT NO.: 06-487500	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS					
DISREGARD PRINTS BEARING EARLIER REVISION DATES					
REVISION DATES SHEET OF 12/15/10 3/28/12 4/21/12 10 20					

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kin	198	R16.5/R17.2	225	247
<i>Tierney L. Sanderson</i> REGISTERED CIVIL ENGINEER			5/10/12 DATE	TIERNEY L. SANDERSON No. 48605 Exp. 6-30-2012 CIVIL STATE OF CALIFORNIA	
11-12-13 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>					



GIRDER LAYOUT

1/8" = 1'-0"

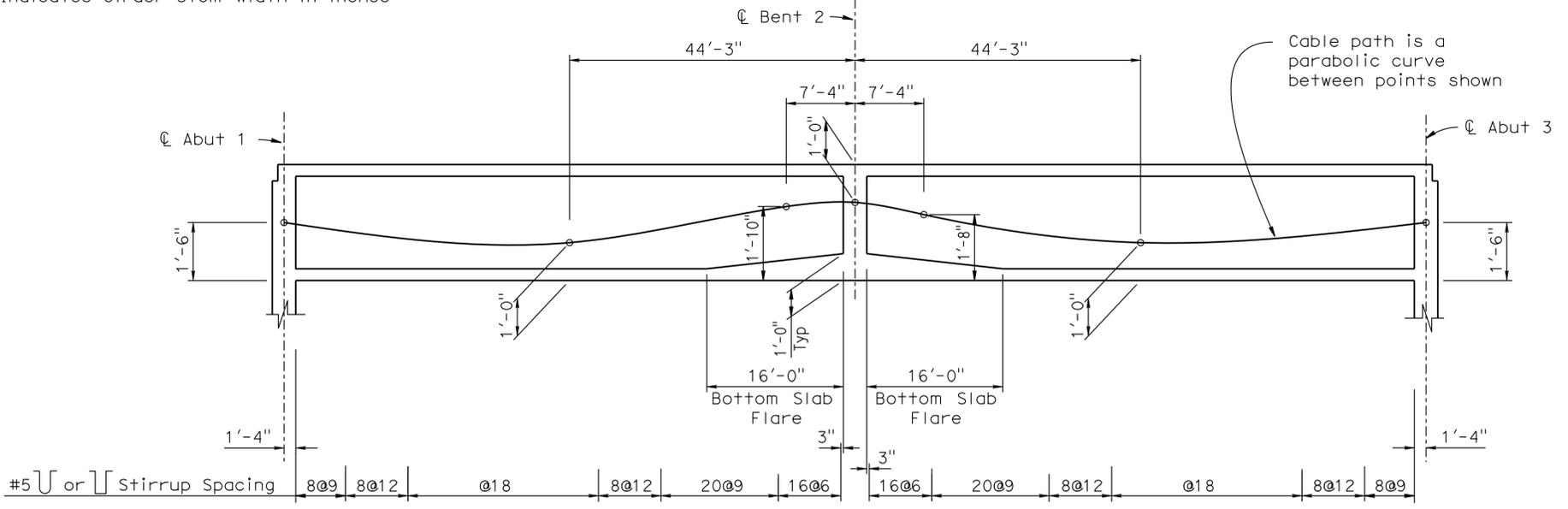
NOTE:
 Indicates Girder Stem Width in inches

LEFT BRIDGE PRESTRESSING NOTES

270 KSI Low Relaxation Strand:
 $P_{jack} = 3900$ kips
 Anchor Set = $\frac{3}{8}$ in
 Total Number of Girders = 4
 Distribution of prestress force (P_{jack}) between girders shall not exceed the ratio of 3:2.
 Maximum final force variation between girders shall not exceed 725 kips.
 Concrete: $f'_c = 5500$ psi @ 28 days
 $f'_{ci} = 3500$ psi @ time of stressing
 Contractor shall submit elongation calculations based on initial stress at
 $\lambda = 0.932$ times jacking stress.
 One end stressing shall be performed from the long-span end only.

RIGHT BRIDGE PRESTRESSING NOTES

270 KSI Low Relaxation Strand:
 $P_{jack} = 2920$ kips
 Anchor Set = $\frac{3}{8}$ in
 Total Number of Girders = 3
 Distribution of prestress force (P_{jack}) between girders shall not exceed the ratio of 3:2.
 Maximum final force variation between girders shall not exceed 725 kips.
 Concrete: $f'_c = 5500$ psi @ 28 days
 $f'_{ci} = 3500$ psi @ time of stressing
 Contractor shall submit elongation calculations based on initial stress at
 $\lambda = 0.936$ times jacking stress.
 One end stressing shall be performed from the long-span end only.



LONGITUDINAL SECTION

No Scale

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

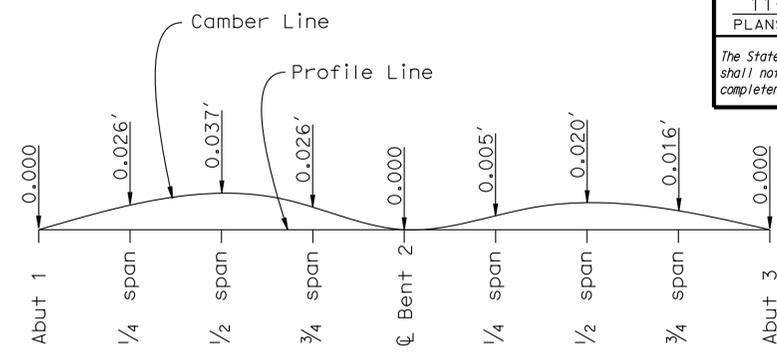
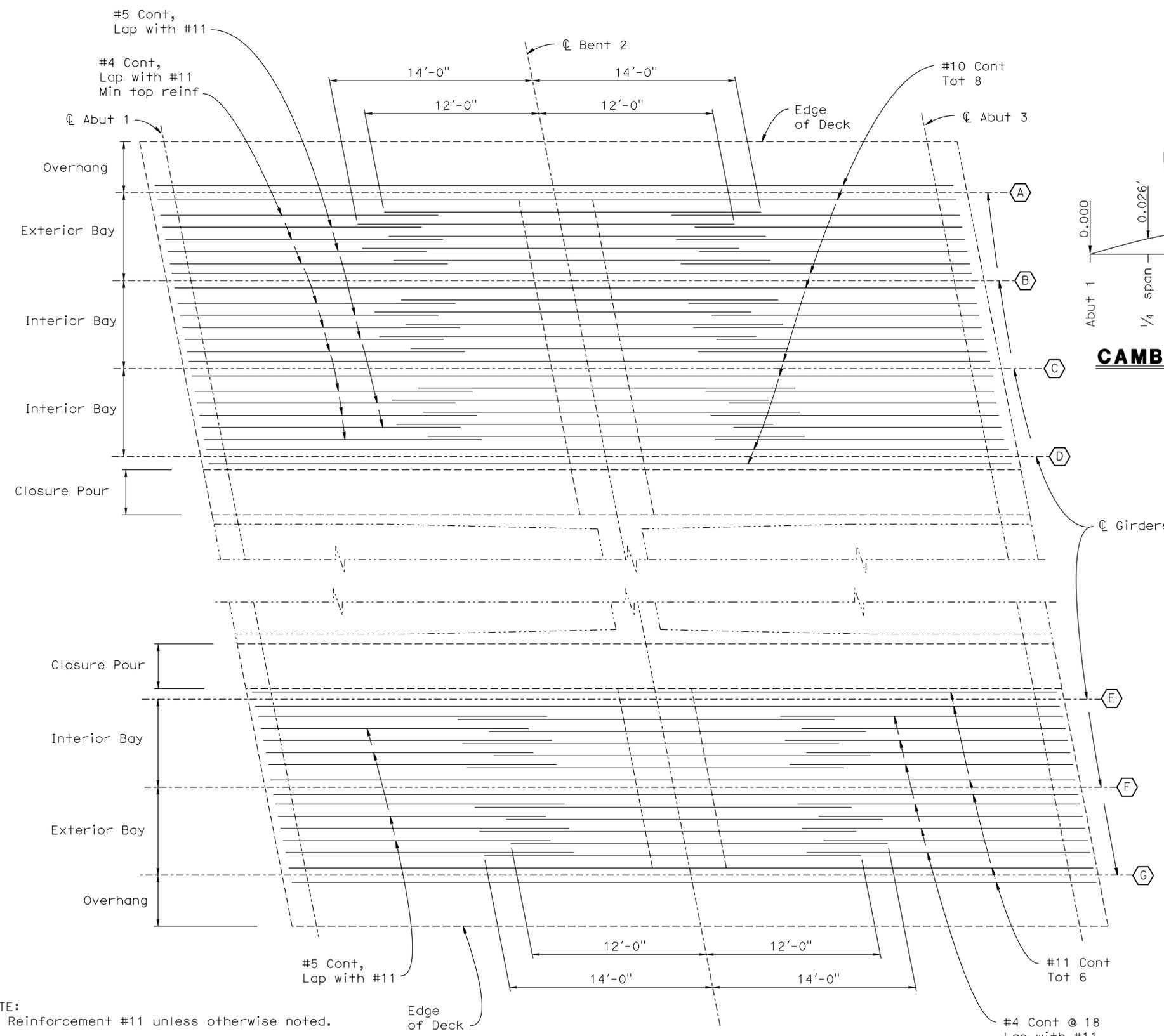
DESIGN BY T. Sanderson CHECKED H. Vu DETAILS BY R. Kirkland CHECKED H. Vu QUANTITIES BY T. Sanderson CHECKED D. Azzam	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO. 45-0099	12th AVENUE OC (WIDEN) GIRDER LAYOUT	
			POST MILE 16.9		
			UNIT: 3589 PROJECT NUMBER & PHASE: 0600000488 1 CONTRACT NO.: 06-487500		
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)			DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 12/15/10 3/29/12 4/21/12	SHEET 11 OF 20

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kin	198	R16.5/R17.2	226	247

Tierney L. Sanderson
 REGISTERED CIVIL ENGINEER
 No. 48605
 Exp. 6-30-2012
 CIVIL
 STATE OF CALIFORNIA

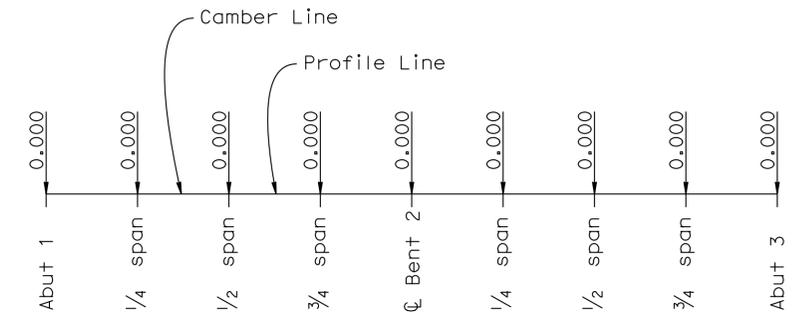
5/10/12
 DATE
 11-12-13
 PLANS APPROVAL DATE

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.



CAMBER DIAGRAM - LEFT BRIDGE
 No Scale

NOTE:
 Camber values shown do not include allowance for falsework settlement.

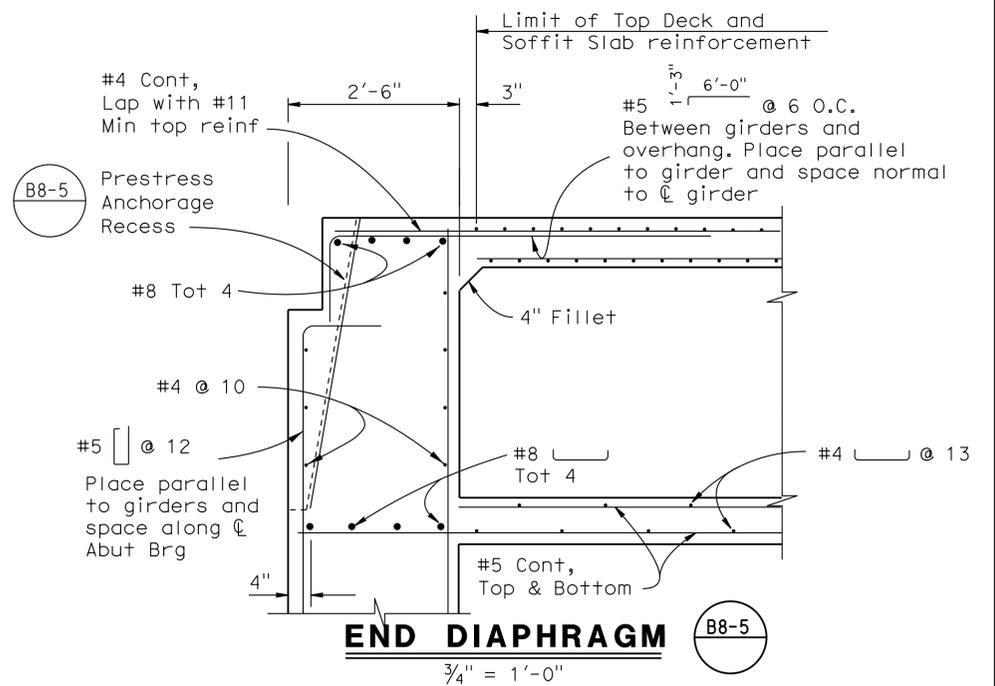


CAMBER DIAGRAM - RIGHT BRIDGE
 No Scale

ADDITIONAL TOP REINFORCEMENT
 No Scale

NOTE:
 All Reinforcement #11 unless otherwise noted.

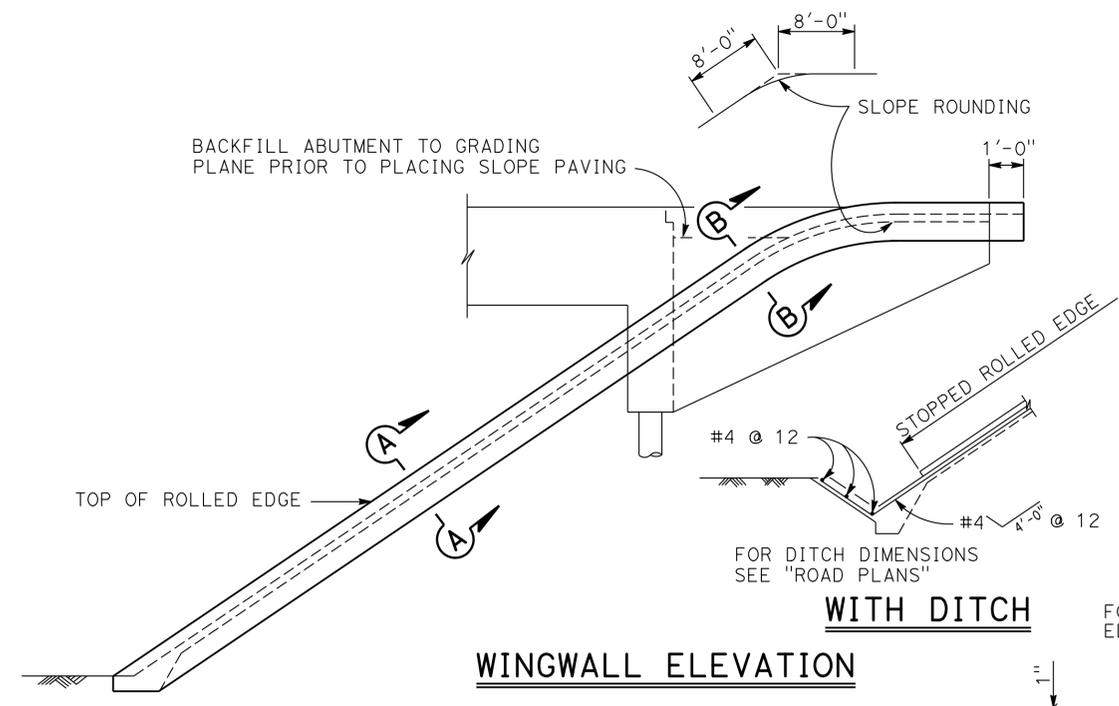
NOTE:
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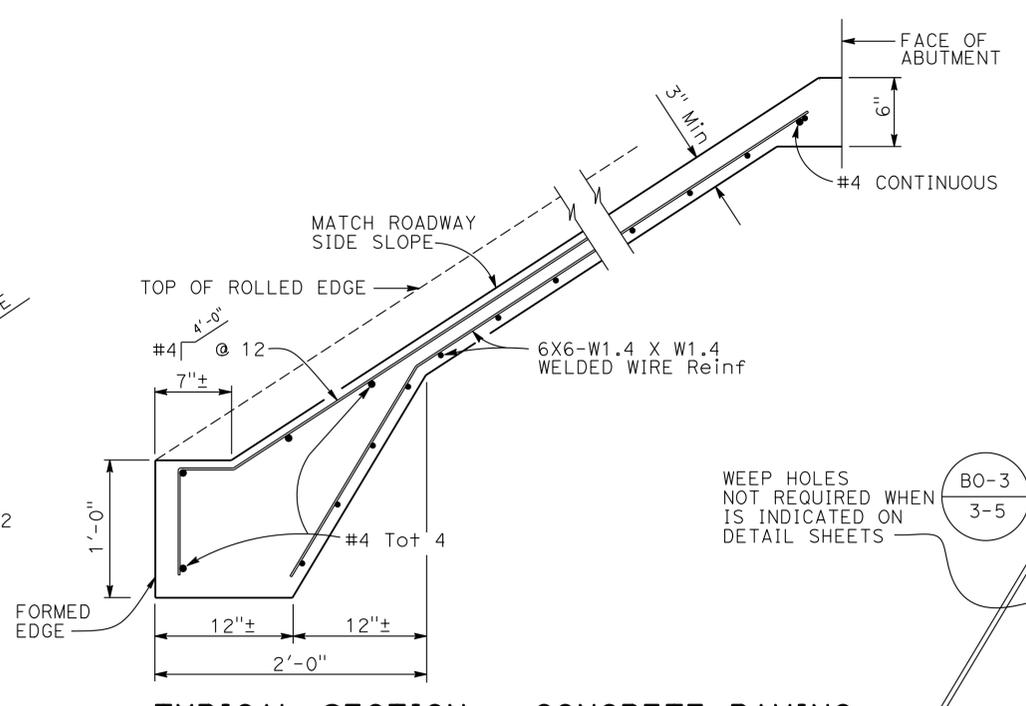
DESIGN	BY T. Sanderson	CHECKED H. Vu	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	12th AVENUE OC (WIDEN)	
DETAILS	BY R. Kirkland	CHECKED H. Vu			45-0099	GIRDER DETAILS	
QUANTITIES	BY T. Sanderson	CHECKED D. Azzam			POST MILE	16.9	REVISION DATES

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3 UNIT: 3589 PROJECT NUMBER & PHASE: 0600000488 1 CONTRACT NO.: 06-487500 DISREGARD PRINTS BEARING EARLIER REVISION DATES 12/15/10 3/29/12 4/21/12

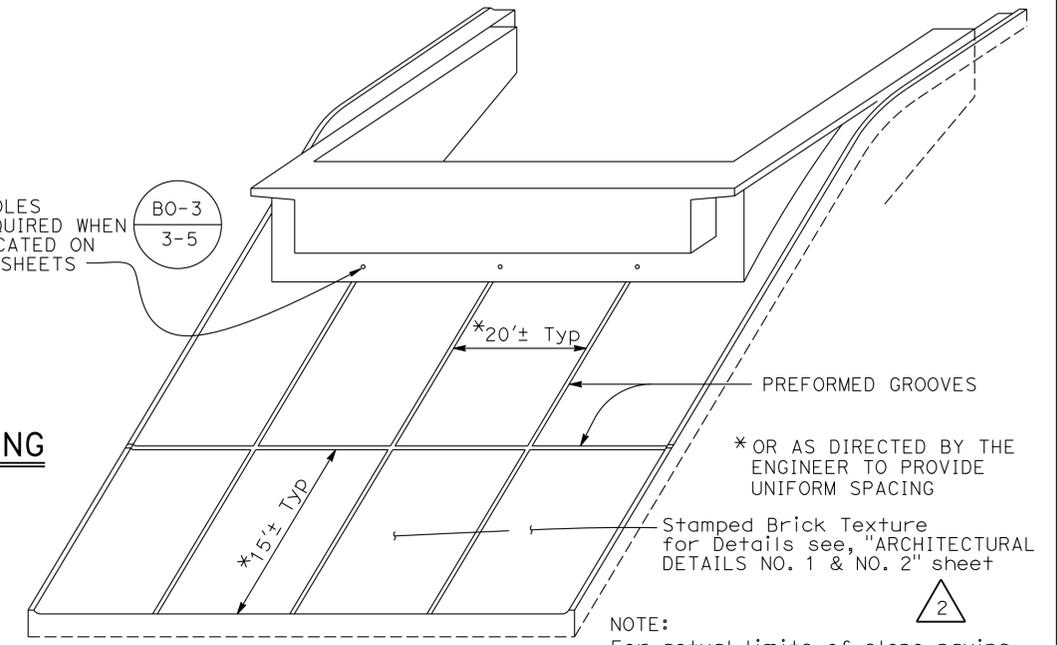
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kin	198	R16.5/R17.2	227	247
<i>Tierney L. Sanderson</i> REGISTERED CIVIL ENGINEER			5/10/12 DATE		
11-12-13 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



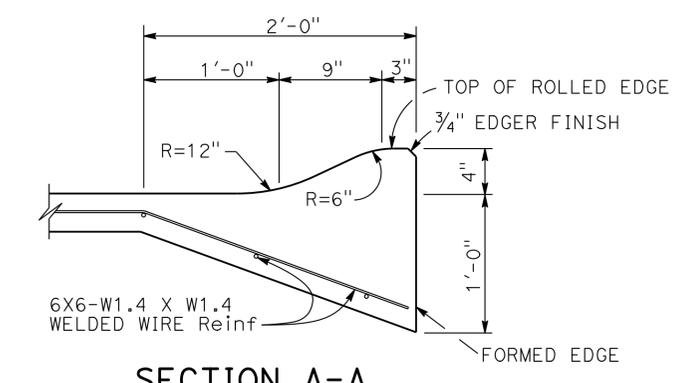
WINGWALL ELEVATION



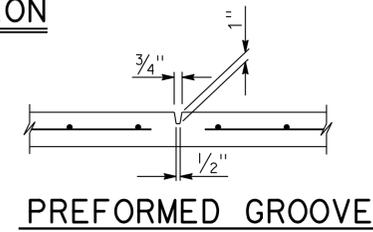
TYPICAL SECTION - CONCRETE PAVING



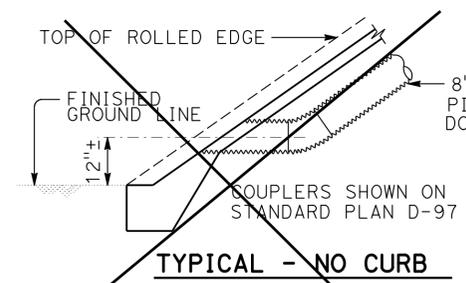
PICTORIAL VIEW OF TYPICAL INSTALLATION



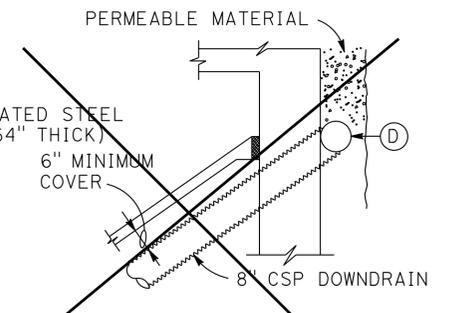
SECTION A-A



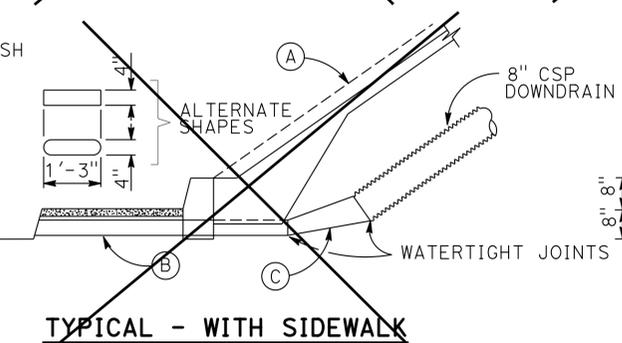
PREFORMED GROOVE



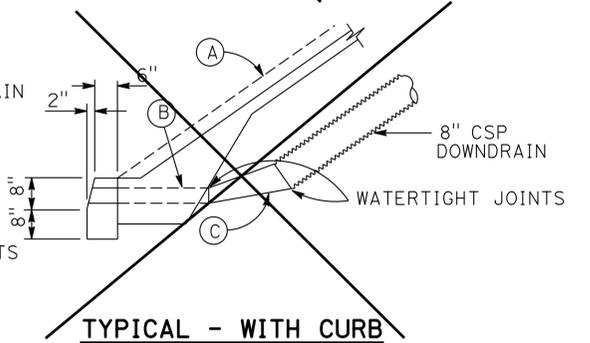
TYPICAL - NO CURB



TYPICAL - DRAIN CONNECTION



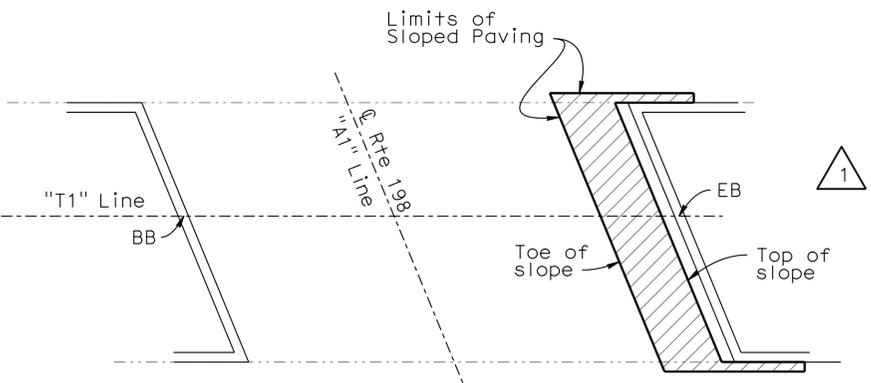
TYPICAL - WITH SIDEWALK



TYPICAL - WITH CURB

DRAINAGE DETAILS

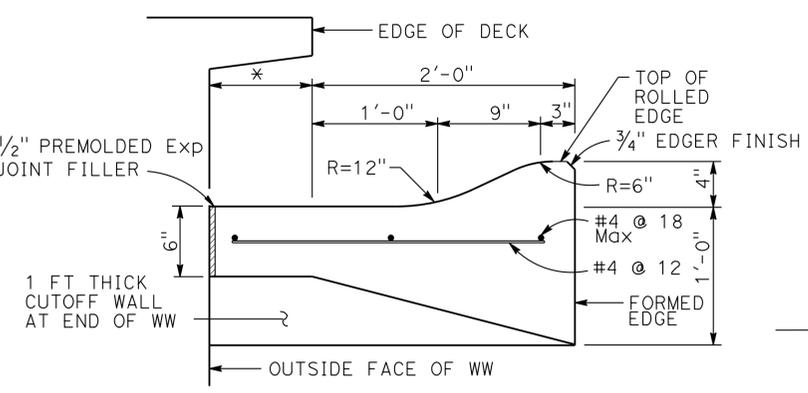
NOTE: Drainage details are only applicable when is indicated on detail sheets.



LIMITS OF SLOPE PAVING LAYOUT

- (A) Top of rolled edge
- (B) Conduit: 0.064" galv corrugated steel or 0.109" smooth galv steel
- (C) Taper: { 0.064" galv corrugated steel or 0.109" smooth galv steel
- (D) 8" perforated steel pipe (0.064" thick) underdrain behind abutment. Connect to downdrain as shown on limits of Slope Paving & Drainage layout.

NO SCALE



SECTION B-B

* THIS DIMENSION BECOMES ZERO WHEN EDGE OF DECK IS AT OUTSIDE FACE OF WW

REVISED STANDARD DRAWING	
FILE NO. xs4-210	APPROVAL DATE <u>July 2011</u>

- Added Detail
- Changed Note
- Detail Not Used

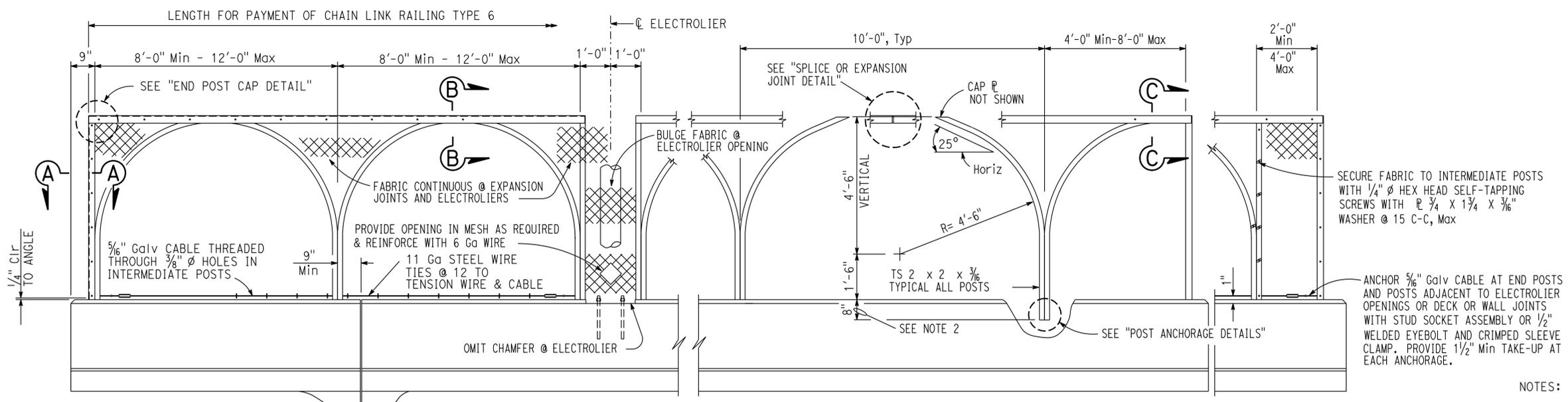
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

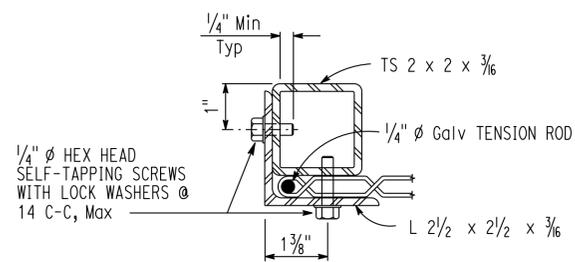
BRIDGE NO.	45-0099
POST MILE	16.9

12TH AVENUE OC (WIDEN)
SLOPE PAVING-FULL SLOPE

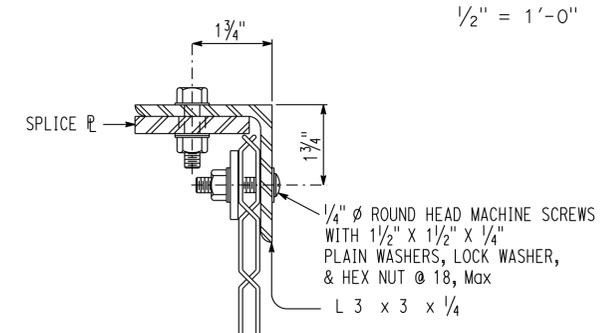
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kin	198	R16.5/R17.2	228	247
<i>Tierney L. Sanderson</i> REGISTERED CIVIL ENGINEER			5/10/12 DATE		
11-12-13 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



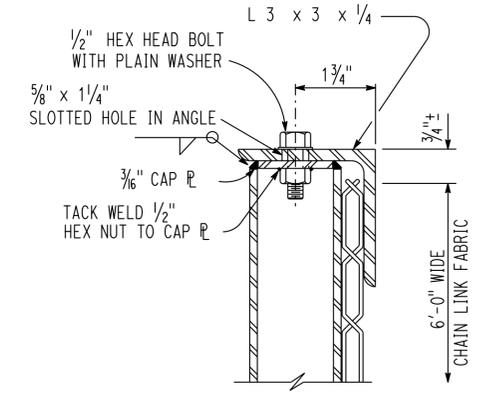
END PANEL 8'-0" - 12'-0" EXPANSION PANEL AT ELECTROLIER TYPICAL INTERIOR PANEL 10'-0", Typ END PANEL 4'-0" - 8'-0" END PANEL 2'-0" - 4'-0"



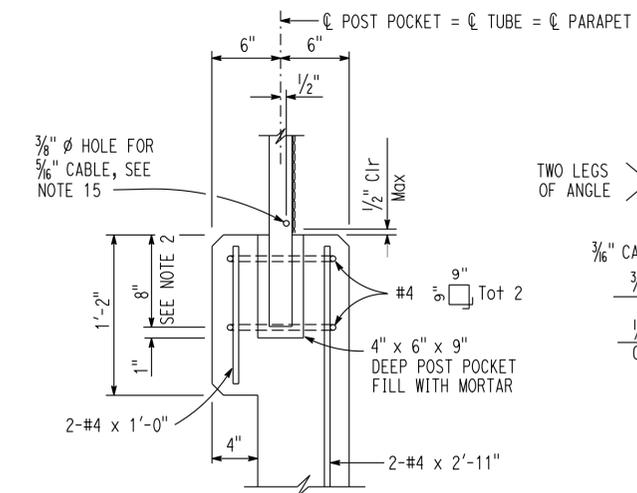
SECTION A-A
6" = 1'-0"



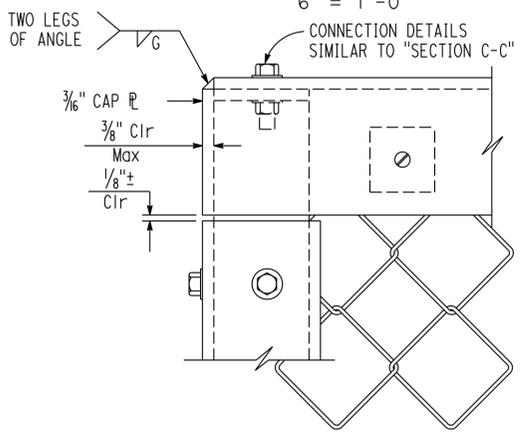
SECTION B-B
6" = 1'-0"



SECTION C-C
6" = 1'-0"

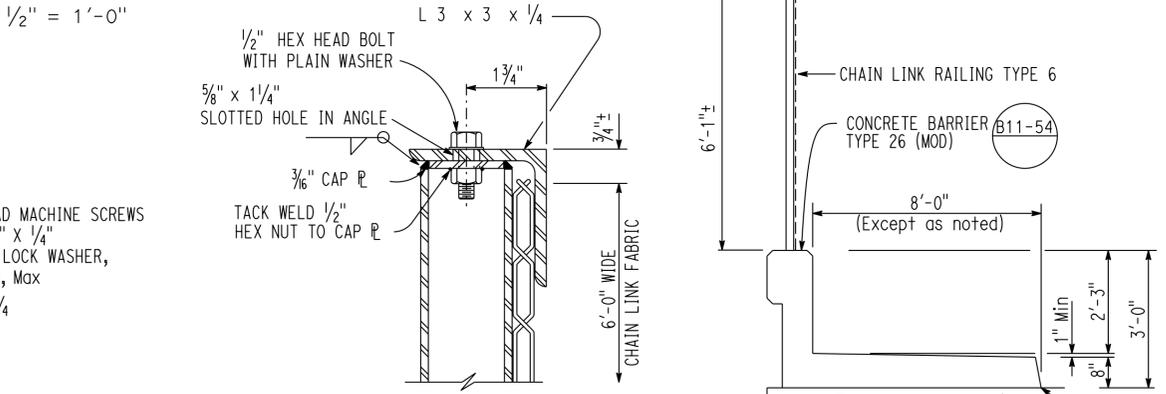


POST ANCHORAGE DETAIL
1 1/2" = 1'-0"

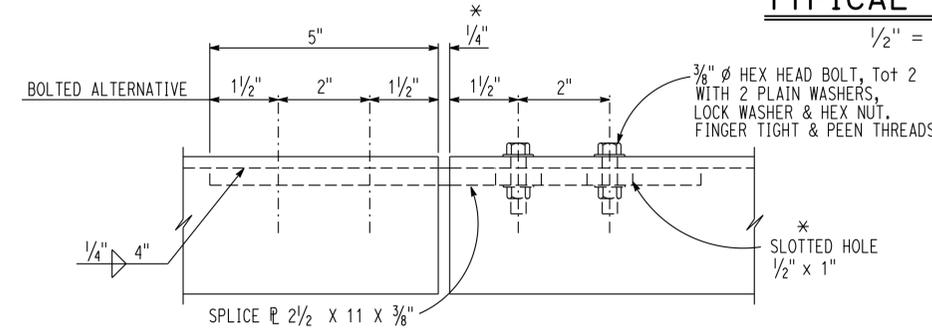


END POST CAP DETAIL
6" = 1'-0"

ELEVATION
1/2" = 1'-0"



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



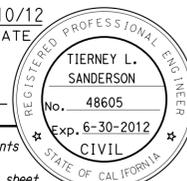
SPLICE OR EXPANSION JOINT DETAIL
6" = 1'-0"

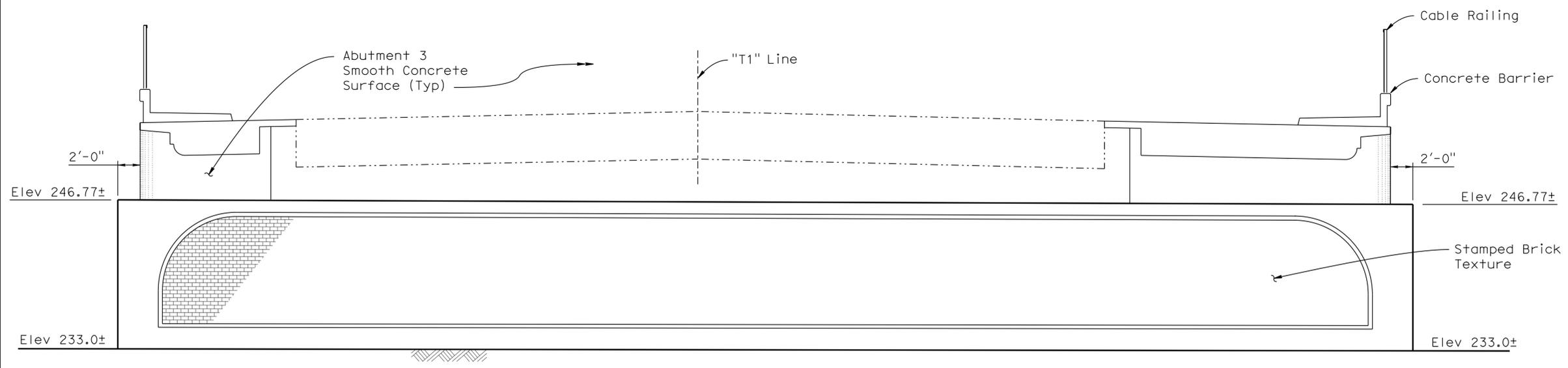
- NOTES:
- Horizontal angle shall be continuous over not less than two intermediate posts except that a shorter length is permitted at expansion joints, electroliers and other rail discontinuities.
 - One post may be embedded 6" minimum to accommodate grade changes, otherwise fabricate post lengths as required.
 - Curved posts may be rotated in plan within its post pocket to accommodate curved horizontal alignment.
 - Straight posts and straight portions of curved posts shall be installed normal to bridge profile grade.
 - Top horizontal angle shall be parallel to bridge profile grade and shall be shop bent to fit horizontal curves.
 - When railing is on slope, fabric shall be placed parallel to slope.
 - Alternative details may be submitted by Contractor for Engineer's approval.
 - For details and reinforcement not shown, see "CONCRETE BARRIER TYPE 26" sheet. (B11-54)
 - See Bridge Plans for limits of Chain Link Railing Type 6.
 - Provide thimbles at all cable loops.
 - Chain link fabric to be 6'-0" wide with 1" mesh and with knuckled selvage top and bottom.
 - When railing is placed on a horizontal alignment with a radius of 150'-0" or less, thread 5/16" cable through 3/8" diameter welded eye rods embedded 4" into the top of the concrete parapet and equally spaced to limit the middle ordinate distance between 5/16" cable and the curve to 1" maximum.
 - Splices and expansion joints shall be located at center panel.
 - Holes in posts for 5/16" cable and its anchorage may be field drilled and painted with zinc rich paint.

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

REVISED STANDARD DRAWING		Detail Modified
FILE NO. xs16-200	APPROVAL DATE <u>July 2011</u>	

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES	BRIDGE NO. 45-0099	12th AVENUE OC (WIDEN) CHAIN LINK RAILING TYPE 6
		POST MILE 16.9	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kin	198	R16.5/R17.2	229	247
<i>Tierney L. Sanderson</i> REGISTERED CIVIL ENGINEER			5/10/12 DATE		
11-12-13 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>					

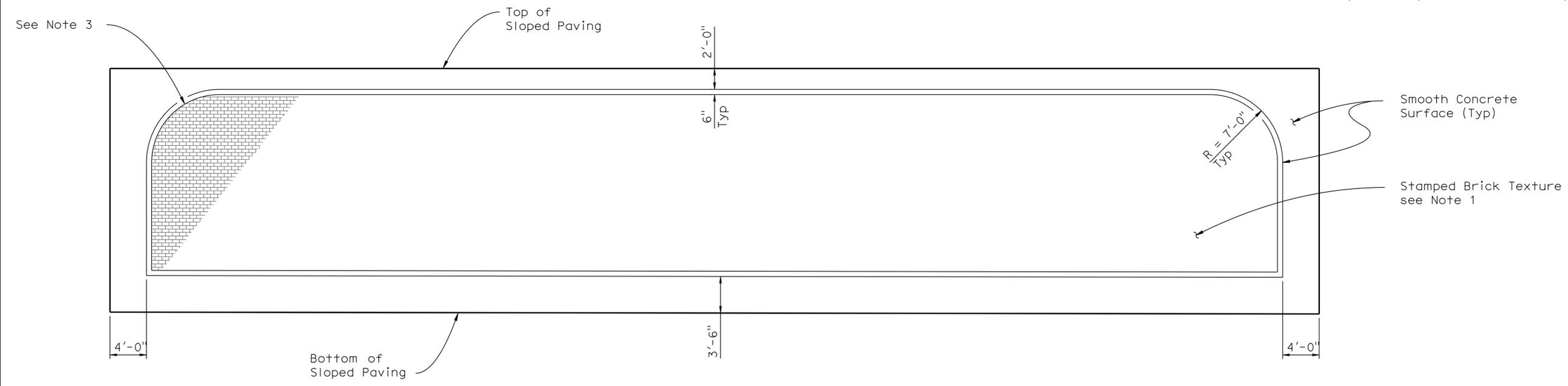


ELEVATION SLOPED PAVEMENT-ABUTMENT 3

3/16" = 1'-0"

NOTES:

1. Stamped Brick Texture, see detail on "ARCHITECTURAL DETAILS NO. 2" sheet.
2. For Slope Paving details, see "SLOPE PAVING-FULL SLOPE" SHEET.
3. Prepare and paint Concrete Stamped Brick Texture.



DEVELOPED ELEVATION

3/16" = 1'-0"

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

DESIGN BY T. Sanderson CHECKED H. Vu	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	12th AVENUE OC (WIDEN) ARCHITECTURAL DETAILS NO. 1	
			45-0099		
			POST MILE		16.9
DETAILS BY R. Kirkland CHECKED H. Vu	UNIT: 3589 PROJECT NUMBER & PHASE: 0600000488 1	CONTRACT NO.: 06-487500	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 12/15/10 3/28/12 4/21/12	SHEET 15 OF 20
QUANTITIES BY T. Sanderson CHECKED D. Azzam	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS 0 1 2 3	FILE => 45-0099umiscd115.dgn			

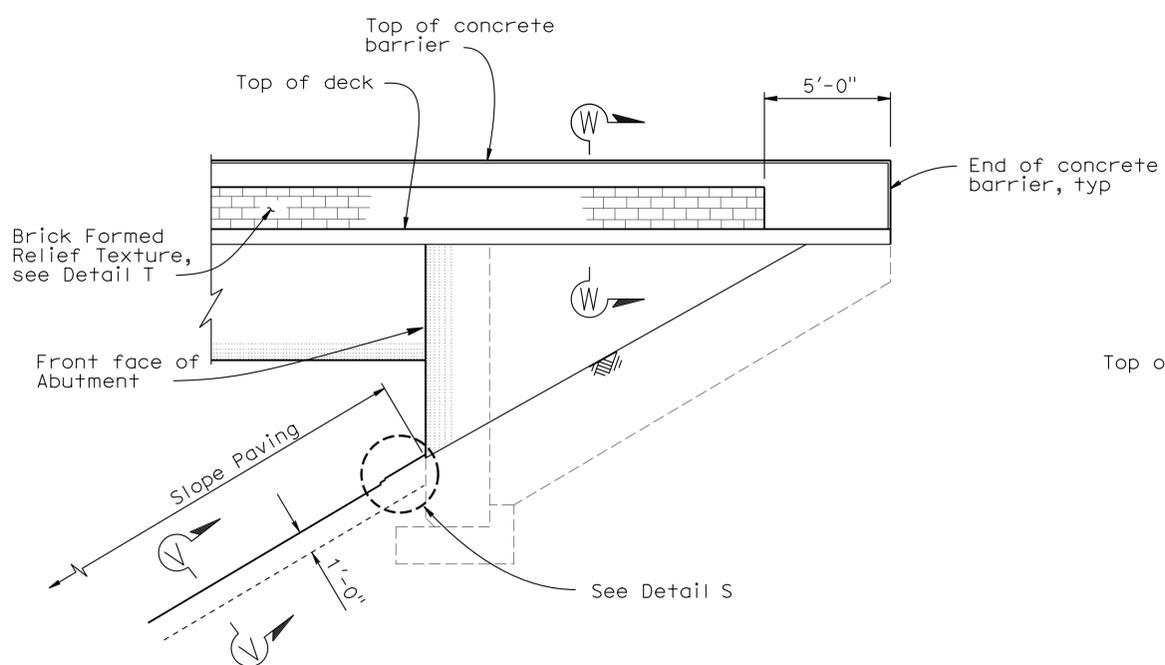
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kin	198	R16.5/R17.2	230	247

Tierney L. Sanderson 5/10/12
 REGISTERED CIVIL ENGINEER DATE

11-12-13
 PLANS APPROVAL DATE

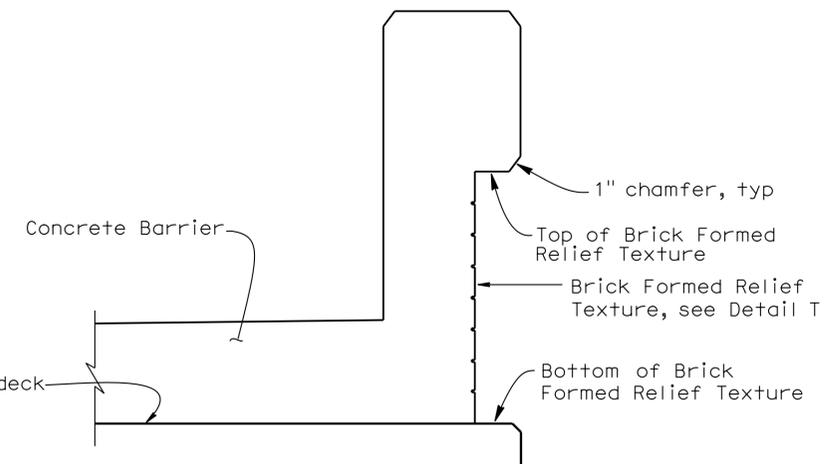
TIERNEY L. SANDERSON
 No. 48605
 Exp. 6-30-2012
 CIVIL
 STATE OF CALIFORNIA

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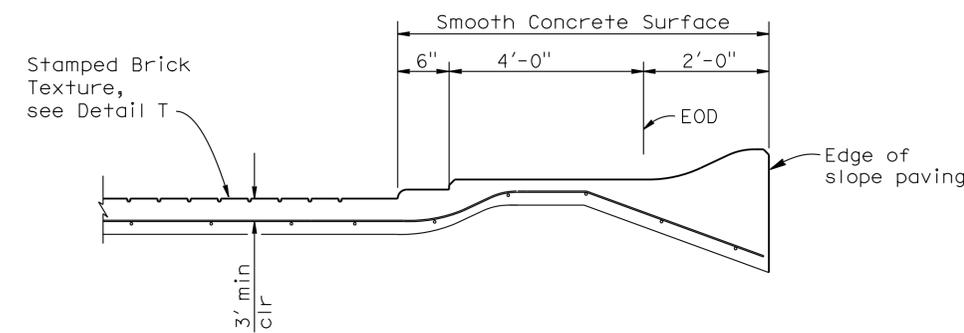
TYPICAL ABUTMENT ELEVATION

No Scale
 NOTE Abutment 3 right side is shown



SECTION W-W

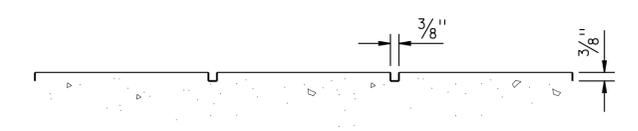
NO SCALE



SECTION V-V

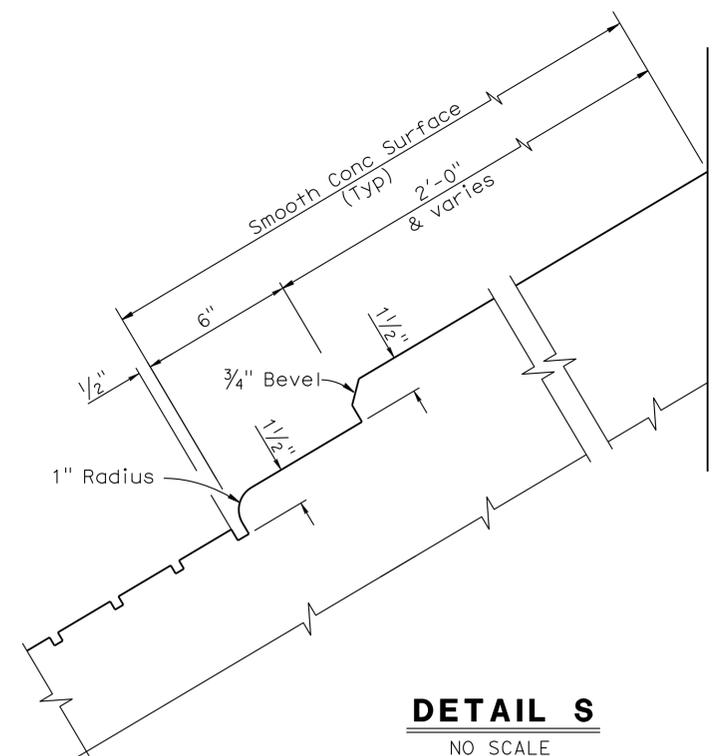
NO SCALE

NOTE:
 See "SLOPE PAVING - FULL SLOPE" sheet for additional information



SECTION Z-Z

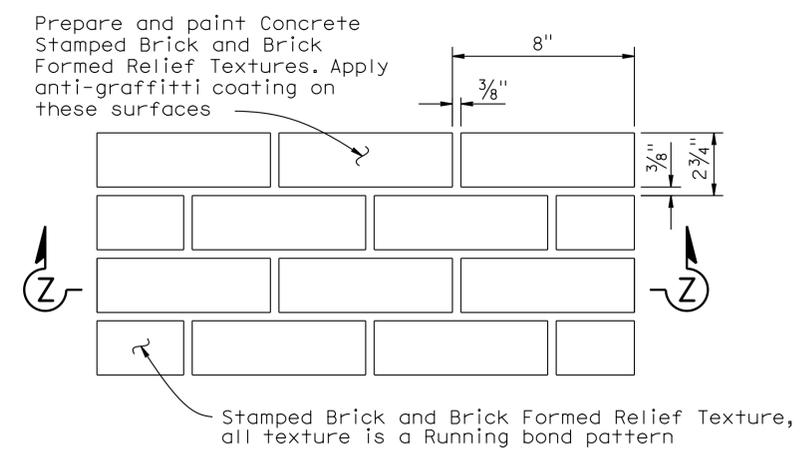
NO SCALE



DETAIL S

NO SCALE

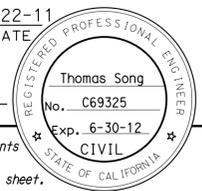
NOTE:
 THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.



DETAIL T

NO SCALE

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	DESIGN	BY T. Sanderson	CHECKED H. Vu	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	45-0099	12th AVENUE OC (WIDEN) ARCHITECTURAL DETAILS NO. 2
	DETAILS	BY R. Kirkland	CHECKED H. Vu			POST MILE	16.9	
	QUANTITIES	BY T. Sanderson	CHECKED D. Azzam			UNIT: 3589 PROJECT NUMBER & PHASE: 0600000488 1	CONTRACT NO.: 06-487500	

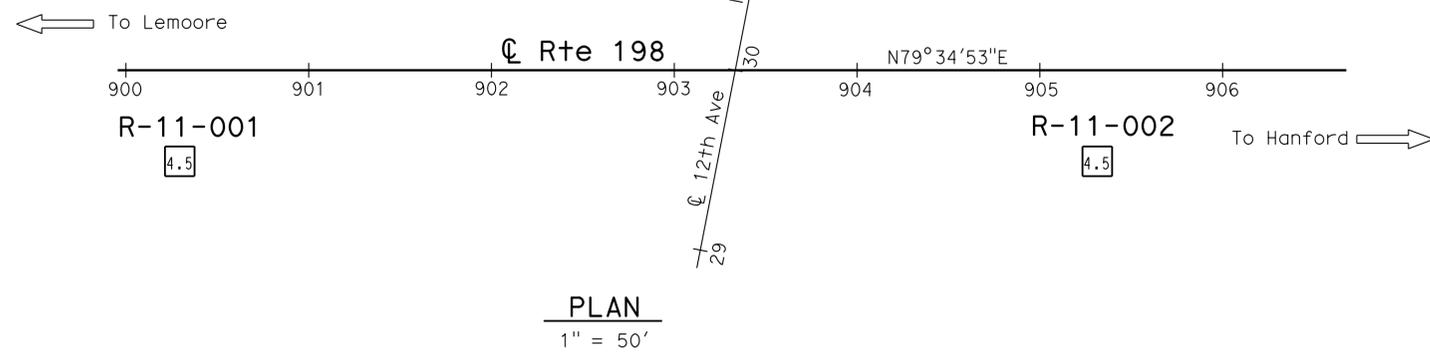
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kin	198	R16.5/R17.2	231	247
<i>Thomas N. Song</i> REGISTERED CIVIL ENGINEER			08-22-11 DATE		
			11-12-13 PLANS APPROVAL DATE		
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					

BENCH MARK

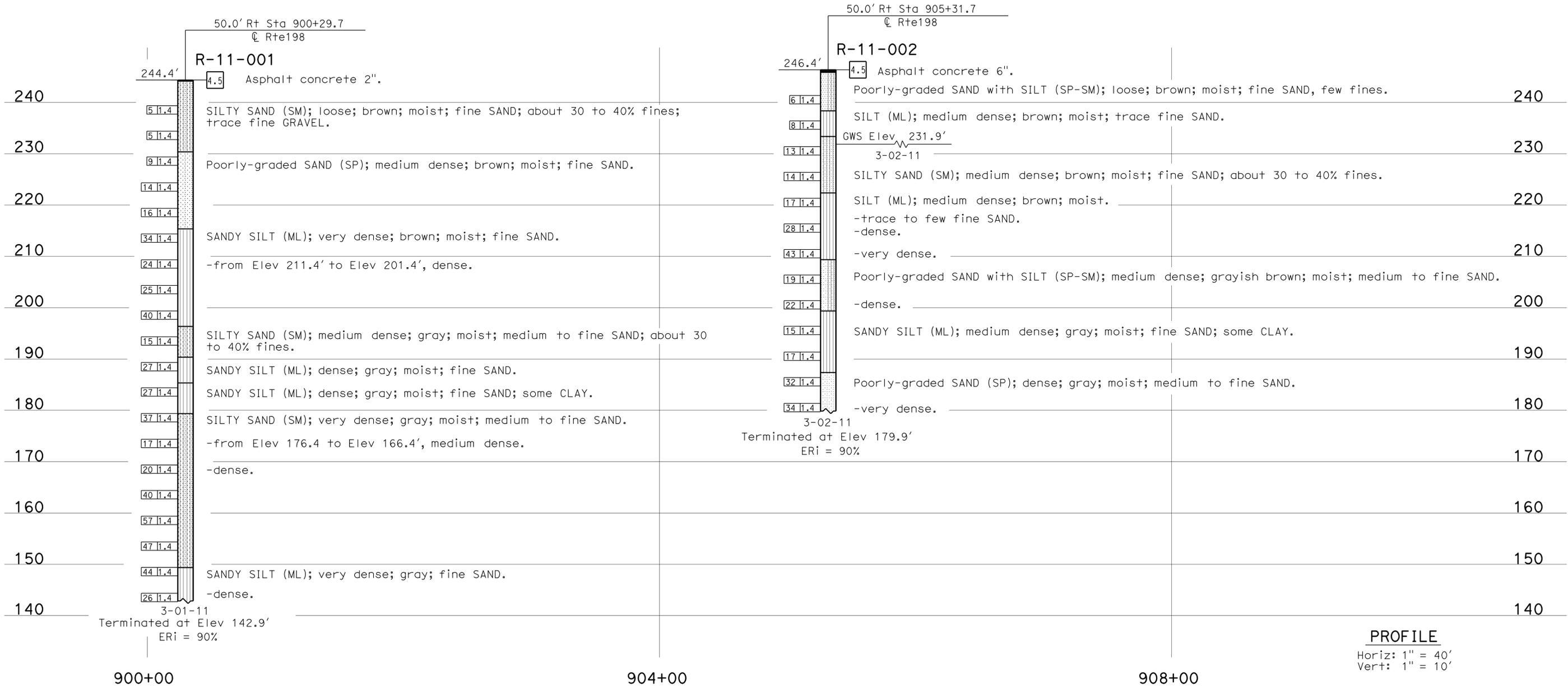
SURVEY CONTROL

PRHV10
 Fnd 1" Iron Pipe w/ CalTrans Red Plug
 305.69 Ft Rt "A1" Line, Rte 198
 Sta 901+75.08
 N 1,999,471.01
 E 6,363,331.44
 Elev= 254.51

PRHV11
 Fnd 1" Iron Pipe w/ CalTrans Red Plug
 112.28 Ft Lt "A1" Line, Rte 198
 Sta 908+41.57
 N 2,000,002.62
 E 6,363,911.35
 Elev= 239.64



Note: No ground water encountered in Boring R-11-001.



PROFILE
 Horiz: 1" = 40'
 Vert: 1" = 10'

ENGINEERING SERVICES		GEOTECHNICAL SERVICES		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10		12TH AVE OC (WIDEN) LOG OF TEST BORINGS 1 OF 4	
FUNCTIONAL SUPERVISOR NAME: J. Huang	DRAWN BY: F. Nguyen 5/11 CHECKED BY: B. Barnes	FIELD INVESTIGATION BY: B. Barnes / J. Huang		BRIDGE NO. 45-0099	POST MILE R16.9	UNIT: 3643 PROJECT NUMBER & PHASE: 06000004881		CONTRACT NO.: 06-487501	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS				0 1 2 3		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES: 06-02-11, 08-12-11, 08-22-11 SHEET 17 OF 20	

FILE => 45-009921o+b17.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kin	198	R16.5/R17.2	232	247

Thomas N. Song 08-22-11
 REGISTERED CIVIL ENGINEER DATE

11-12-13
 PLANS APPROVAL DATE

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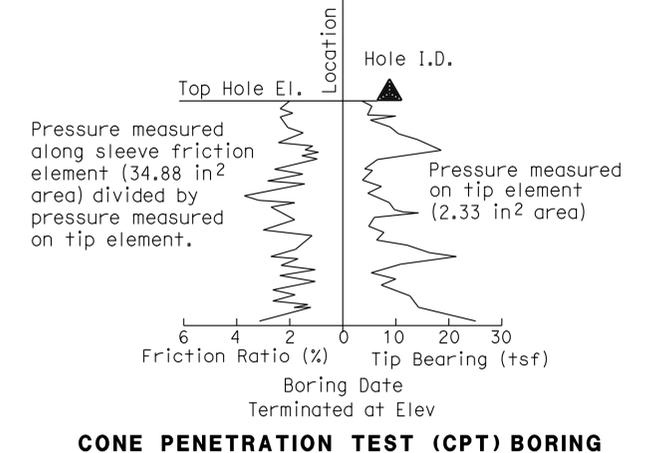
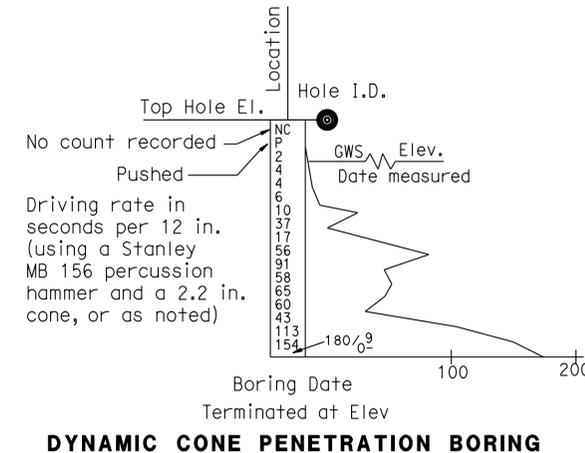
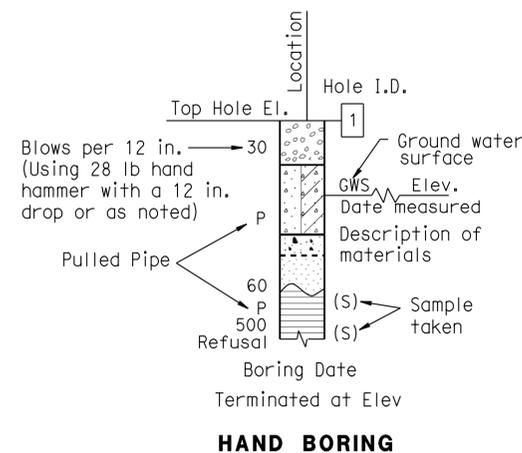
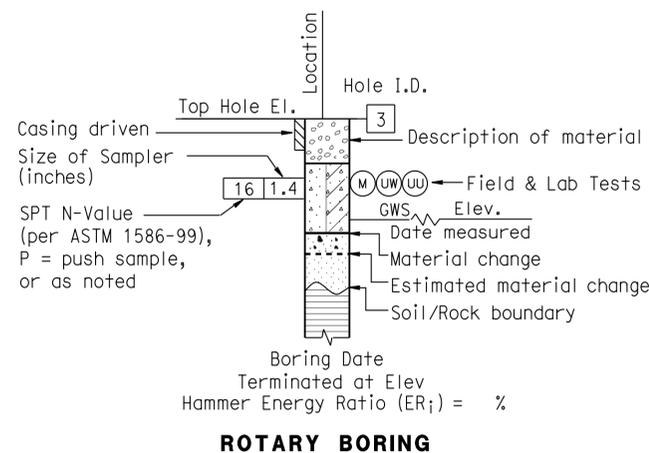
REGISTERED PROFESSIONAL ENGINEER
 Thomas Song
 No. C69325
 Exp. 6-30-12
 CIVIL
 STATE OF CALIFORNIA

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
06	Kin	198	R16.5/R17.2	233	247

Thomas N. Song 08-22-11
 REGISTERED CIVIL ENGINEER DATE

11-12-13
 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 ORGANIC SILT
	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
	Poorly-graded SAND with SILT		OH		GRAVELLY ORGANIC 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
	COBBLES				SANDY ORGANIC elastic SILT
	COBBLES and BOULDERS		OL/OH		GRAVELLY ORGANIC elastic SILT
	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
	Fine	1/64 - 1/16
Silt and Clay	Less than 1/300	

ENGINEERING SERVICES	GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	12TH AVE OC (WIDEN)
				45-0099	
	PREPARED BY: F. Nguyen 5/11			POST MILE	
				R16.9	
GS LOTB SOIL LEGEND	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	UNIT: 3643	PROJECT NUMBER & PHASE: 06000004881	CONTRACT NO.: 06-487501	DISREGARD PRINTS BEARING EARLIER REVISION DATES
					REVISION DATES
					SHEET 19 OF 20

USERNAME => s128843 DATE PLOTTED => 19-NOV-2013 TIME PLOTTED => 12:30

Robert W. Gumbel #65
 REGISTERED PROFESSIONAL ENGINEER
 DATE APPROVED February 6, 1984

DIVISION OF ENGINEERING SERVICES - MATERIALS AND 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 MILE-TOTAL PROJECT	Sheet No.	Total Sheets
06	Kin	198	R16.5/R17.2	234	247

Thomas N. Song 6/6/2011
 REGISTERED CIVIL ENGINEER DATE

12TH AVE OC (WIDEN)
LOG OF TEST BORINGS 4 OF 4

UNIT: 3643 CONTRACT No. 06-487501 BRIDGE No. 45-0099
 PROJECT NUMBER & PHASE: 06000004881

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

Sheet	of
20	20



LEGEND OF BORING OPERATIONS

TEST BPT
 CORE BORING
 PENETRATION BORING
 ROTARY BORING (WET)
 ROTARY BORING (DRY)
 AUGER BORING (DRY)
 2 1/2" CORE PENETROMETER
 SAMPLER BORING (DRY)
 SOIL TUBE

LEGEND OF EARTH MATERIALS

SILTY CLAY or CLAYEY SILT
 PEAT and/or ORGANIC MATTER
 FILL MATERIAL
 IGNEOUS ROCK
 SEDIMENTARY ROCK
 METAMORPHIC ROCK

CONSISTENCY CLASSIFICATION FOR SOILS

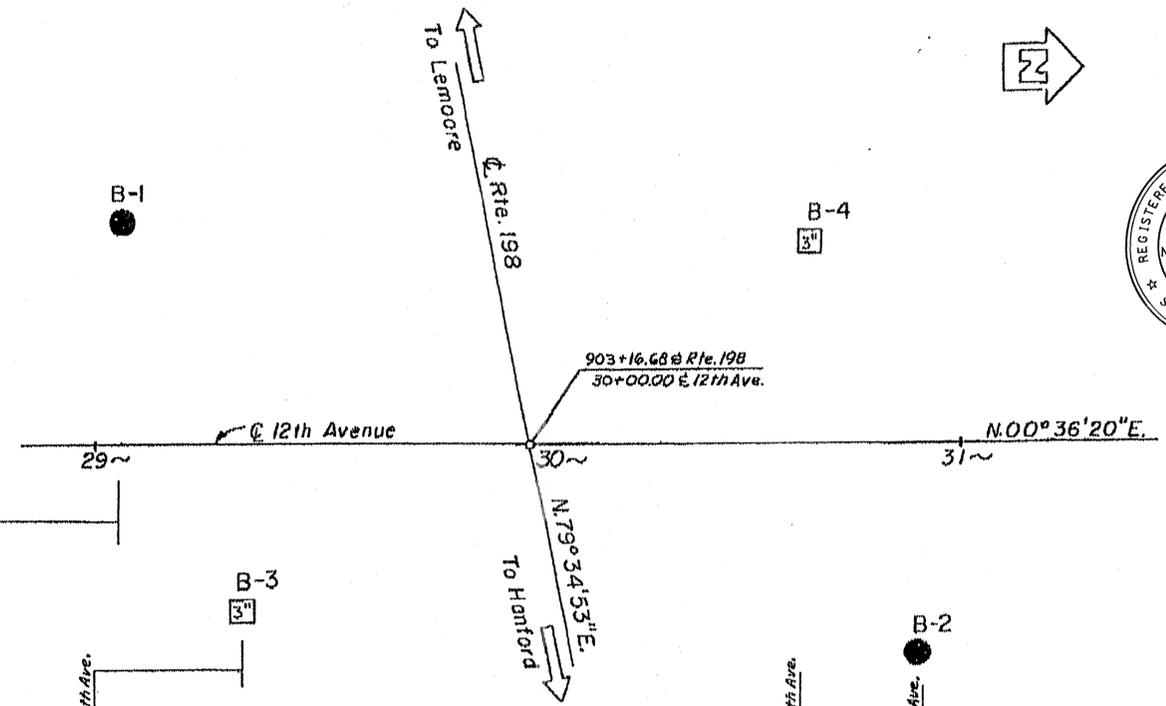
According to the Standard Penetration Test

Penetration (Blows/ft)	Consistency
0-5 <td>Very soft</td>	Very soft
5-10 <td>Soft</td>	Soft
10-20 <td>Slightly compact</td>	Slightly compact
20-35 <td>Compact</td>	Compact
35-70 <td>Very dense</td>	Very dense

UNIFIED SOIL CLASSIFICATION SYSTEM

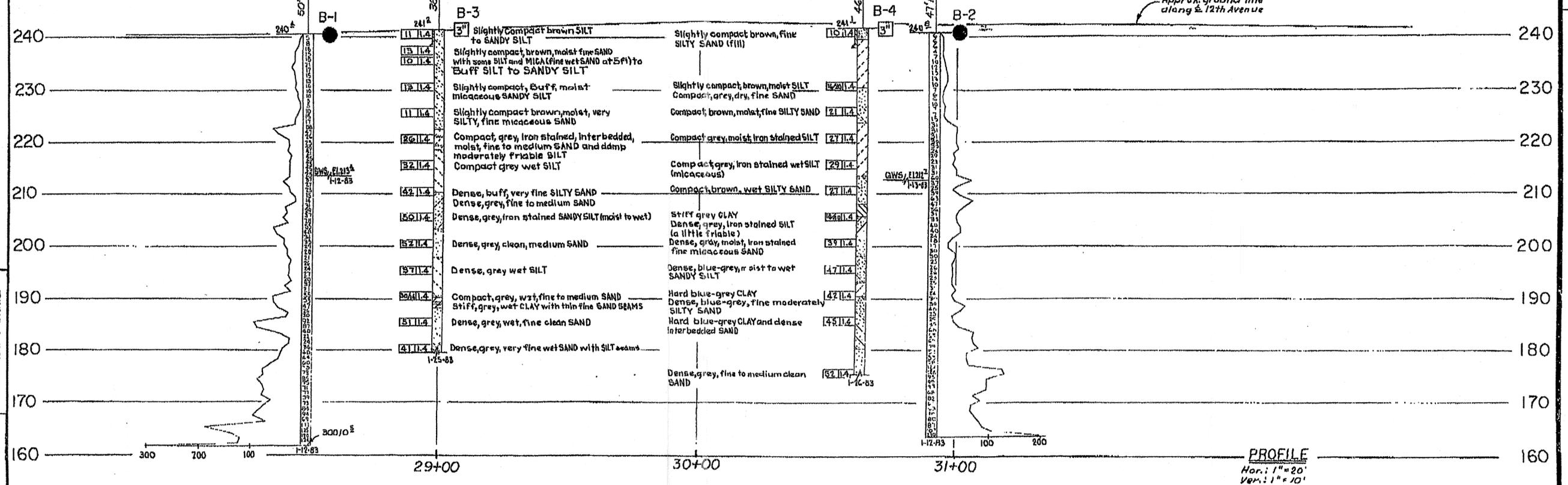
NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

BENCH MARK
 BM #29.1 SE. Bolt on signal base
 40' Lt. Sta. 29+13 @ 12th Ave.
 Elev. 241.66



PLAN
 Scale: 1"=20'

NO AS BUILT CHANGES
AS BUILT TAN 485
 CORRECTIONS BY John Zikoff
 CONTRACT NO. 06-178204
 DATE 3-7-85



PROFILE
 Hor.: 1"=20'
 Ver.: 1"=10'

ENGINEERING GEOLOGY AND TECHNICAL SERVICES BRANCH - TRANSPORTATION LABORATORY

State of CALIFORNIA DEPARTMENT OF TRANSPORTATION

STRUCTURES - DESIGN 4

BRIDGE NO. 45-99
 POST MILE 16.9

12th AVENUE OVERCROSSING
LOG OF TEST BORINGS

DRAWN BY E. WIGGINTON 2/83
 CHECKED BY R. Hager

APPROVED BY R. Hager 778
 PROJECT NO. 06100 178201

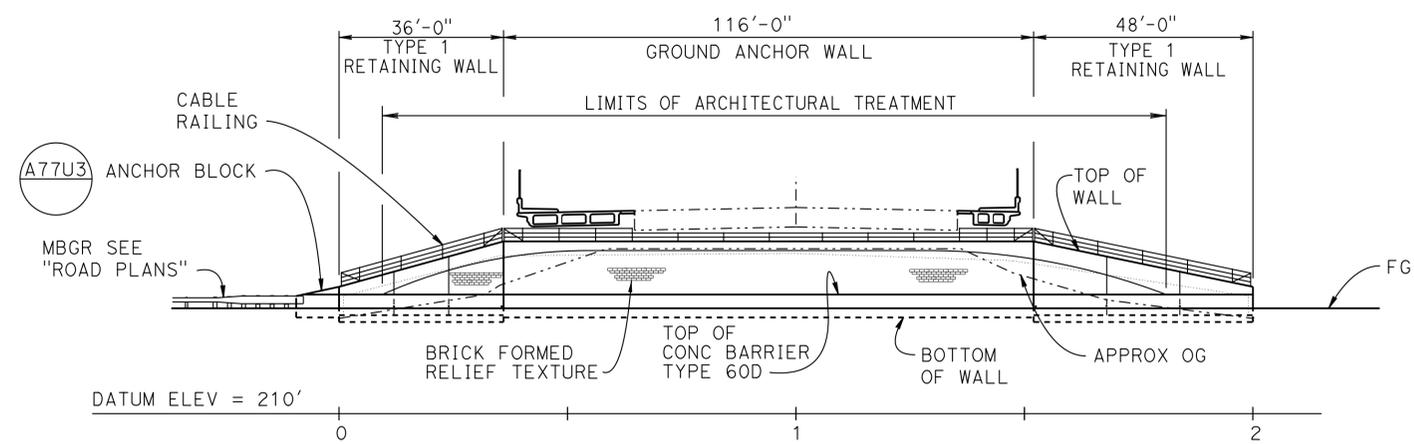
DATE 2/83

79

I HEREBY CERTIFY THAT THIS IS A TRUE AND ACCURATE COPY OF THE ABOVE DOCUMENT TAKEN UNDER MY DIRECTION AND CONTROL ON THIS DATE IN SACRAMENTO, CALIFORNIA

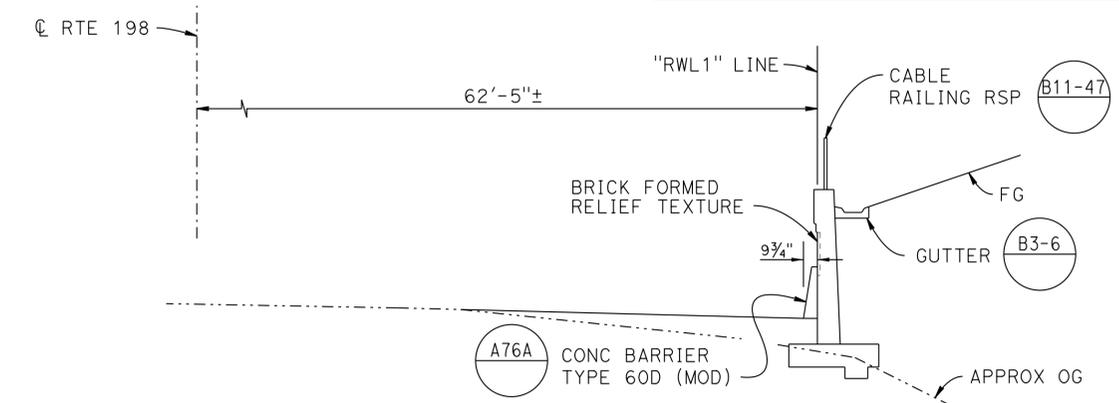
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kin	198	R16.5/R17.2	235	247
<i>Tierney L. Sanderson</i> REGISTERED CIVIL ENGINEER			5/10/12 DATE	Tierney L. Sanderson No. 48605 Exp. 6-30-2012 CIVIL STATE OF CALIFORNIA	
11-12-13 PLANS APPROVAL DATE					
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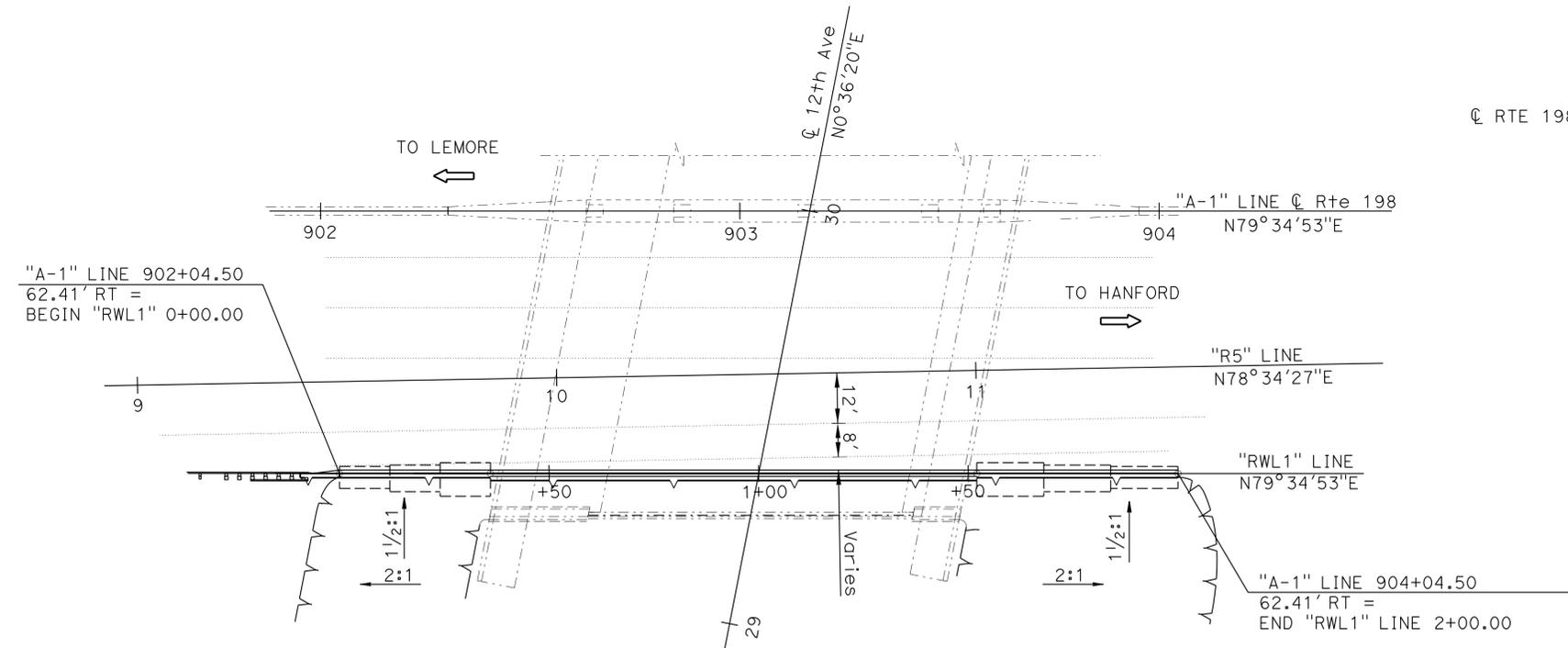
MIRRORED ELEVATION
1" = 20'

QUANTITIES

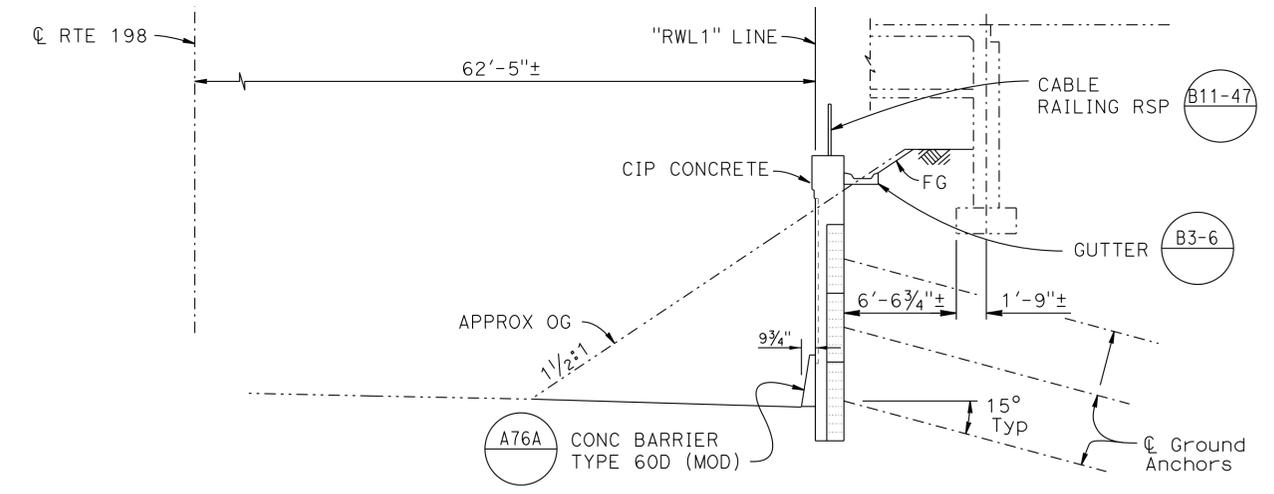


TYPICAL SECTION
3/16" = 1' - 0"

STA 0+00.00 TO STA 0+36.00 AND
STA 1+52.00 TO STA 2+00.00



PLAN
1" = 20' - 0"



TYPICAL SECTION
3/16" = 1' - 0"

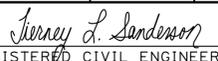
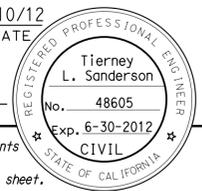
STA 0+36.00 TO STA 1+52.00

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

NOTE:
For General Notes see "INDEX TO PLANS" sheet,

LEGEND:
----- Indicates existing structure
————— Indicates new construction

DESIGN ENGINEER DANIEL T. ADAMS	DESIGN	BY T. SANDERSON	CHECKED H. VU	LOAD FACTOR DESIGN	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	12TH AVENUE OC RETAINING WALL GENERAL PLAN		
	DETAILS	BY G. HALLSTROM	CHECKED H. VU	LAYOUT			BY T. SANDERSON		CHECKED H. VU	45E0001
	QUANTITIES	BY T. SANDERSON	CHECKED D. AZZAM	SPECIFICATIONS	BY J. RAMIREZ	PLANS AND SPECS COMPARED	J. RAMIREZ	POST MILE	16.9	
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS						UNIT: 3589 PROJECT NUMBER & PHASE: 06000004881	CONTRACT NO.: 06-487501	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 12/28/10 4/28/12 5/09/12	SHEET 1 OF 13

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kin	198	R16.5/R17.2	236	247
 REGISTERED CIVIL ENGINEER			5/10/12 DATE		
11-12-13 PLANS APPROVAL DATE					
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INDEX TO PLANS

Sheet No.	Title
1.	GENERAL PLAN
2.	INDEX TO PLANS
3.	FOUNDATION PLAN
4.	WALL LAYOUT NO. 1
5.	WALL LAYOUT NO. 2
6.	WALL DETAILS
7.	SUB HORIZONTAL GROUND ANCHOR DETAILS
8.	DRAINAGE DETAILS
9.	ARCHITECTURAL DETAILS
10.	LOG OF TEST BORINGS 1 OF 4
11.	LOG OF TEST BORINGS 2 OF 4
12.	LOG OF TEST BORINGS 3 OF 4
13.	LOG OF TEST BORINGS 4 OF 4

QUANTITIES

STRUCTURE EXCAVATION (RETAINING WALL)	148	CY
STRUCTURE EXCAVATION (GROUND ANCHOR WALL)	171	CY
STRUCTURE BACKFILL (RETAINING WALL)	180	CY
STRUCTURE BACKFILL (GROUND ANCHOR WALL)	9	CY
PERVIOUS BACKFILL MATERIAL	30	CY
GROUND ANCHOR (SUBHORIZONTAL)	45	EA
STRUCTURAL CONCRETE, RETAINING WALL	154	CY
ARCHITECTURAL TREATMENT (BRICK FORMED RELIEF TEXTURE)	1,612	SQFT
ANTI-GRAFFITI COATING	2,109	SQFT
BAR REINFORCING STEEL (RETAINING WALL)	46,432	LB
STRUCTURAL SHOTCRETE	68	CY
PREPARE AND PAINT CONCRETE	1,612	SQFT
MINOR CONCRETE (GUTTER) (LF)	202	LF
CONCRETE ANCHOR BLOCK	10	LF
CABLE RAILING	202	LF
CONCRETE BARRIER (TYPE 60D) (MODIFIED)	200	LF

GENERAL NOTES WORKING STRESS DESIGN

DESIGN:

CALTRANS BRIDGE DESIGN SPECIFICATIONS-APRIL 2000 (LFD)
(1996 AASHTO with Interims and Revisions by CALTRANS)

SOIL PARAMETERS:

(For determination of design lateral earth pressures)
 $\phi = 34^\circ$

LIVE LOAD:

Surcharge - 2 ft Level Earth

REINFORCED CONCRETE:

$f_y = 60 \text{ ksi}$ $f'_c = 3600 \text{ psi}$ $n = 8$
 $f_s = 25 \text{ ksi}$ $f_c = 1450 \text{ psi}$

SHOTCRETE

$f'_c = 3600 \text{ psi}$ $f_c = 1450 \text{ psi}$

PRESTRESSING STEEL: (TIEBACKS)

Bars - ASTM designation: A722, Type II

Strands - ASTM designation: A416

T = Design force of Tieback

First Level T = 40 kips

Second Level T = 100 kips

Third Level T = 45 kips

f_{pu} = Minimum Ultimate Tensile Stress of Steel in the Tieback (kips/in²)

A_s (Min.) = Minimum cross sectional area of steel in Tieback. (in²)

A_s (Min.) = $\frac{1.5 T}{0.75 f_{pu}}$ (at Jacking, Test Load)

STRUCTURAL STEEL:

$F_y = 50 \text{ ksi}$ $f_s = 28 \text{ ksi}$

STANDARD PLANS DATED 2010

A10A	ABBREVIATIONS (SHEET 1 OF 2)
RSP A10B	ABBREVIATIONS (SHEET 2 OF 2)
A10C	LINES AND SYMBOLS (SHEET 1 OF 3)
A10D	LINES AND SYMBOLS (SHEET 2 OF 3)
A62B	LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL BRIDGE SURCHARGE AND WALL
A76A	CONCRETE BARRIER TYPE 60
RSP A77U3	MIDWEST GUARDRAIL SYSTEM CONNECTIONS TO ABUTMENTS AND WALLS
A78G	SINGLE THRIE BEAM BARRIER CONNECTIONS TO ABUTMENTS AND WALLS
B0-3	BRIDGE DETAILS
RSP B3-1A	RETAINING WALL TYPE 1 (CASE 1)
RSP B3-5	RETAINING WALL DETAILS NO. 1
B3-6	RETAINING WALL DETAILS NO. 2
RSP B11-47	CABLE RAILING



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

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	DESIGN	BY T. Sanderson	CHECKED H. Vu	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	12TH AVENUE OC RETAINING WALL INDEX TO PLANS				
	DETAILS	BY G. Hallstrom	CHECKED H. Vu			45E0001					
	QUANTITIES	BY T. Sanderson	CHECKED D. AZZAM			POST MILE 16.9					
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS					UNIT: 3589	REVISION DATES					
0 1 2 3					PROJECT NUMBER & PHASE: 06000004881	SHEET OF					
					CONTRACT NO.: 06-487501	2 13					
					DISREGARD PRINTS BEARING EARLIER REVISION DATES	<table border="1"> <tr> <td>11-28-11</td> <td>12-08-11</td> <td>4-28-12</td> <td>5/09/12</td> </tr> </table>		11-28-11	12-08-11	4-28-12	5/09/12
11-28-11	12-08-11	4-28-12	5/09/12								

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
06	Kin	198	R16.5/R17.2	237	247

Tierney L. Sanderson 5/10/12
 REGISTERED CIVIL ENGINEER DATE

11-12-13
 PLANS APPROVAL DATE

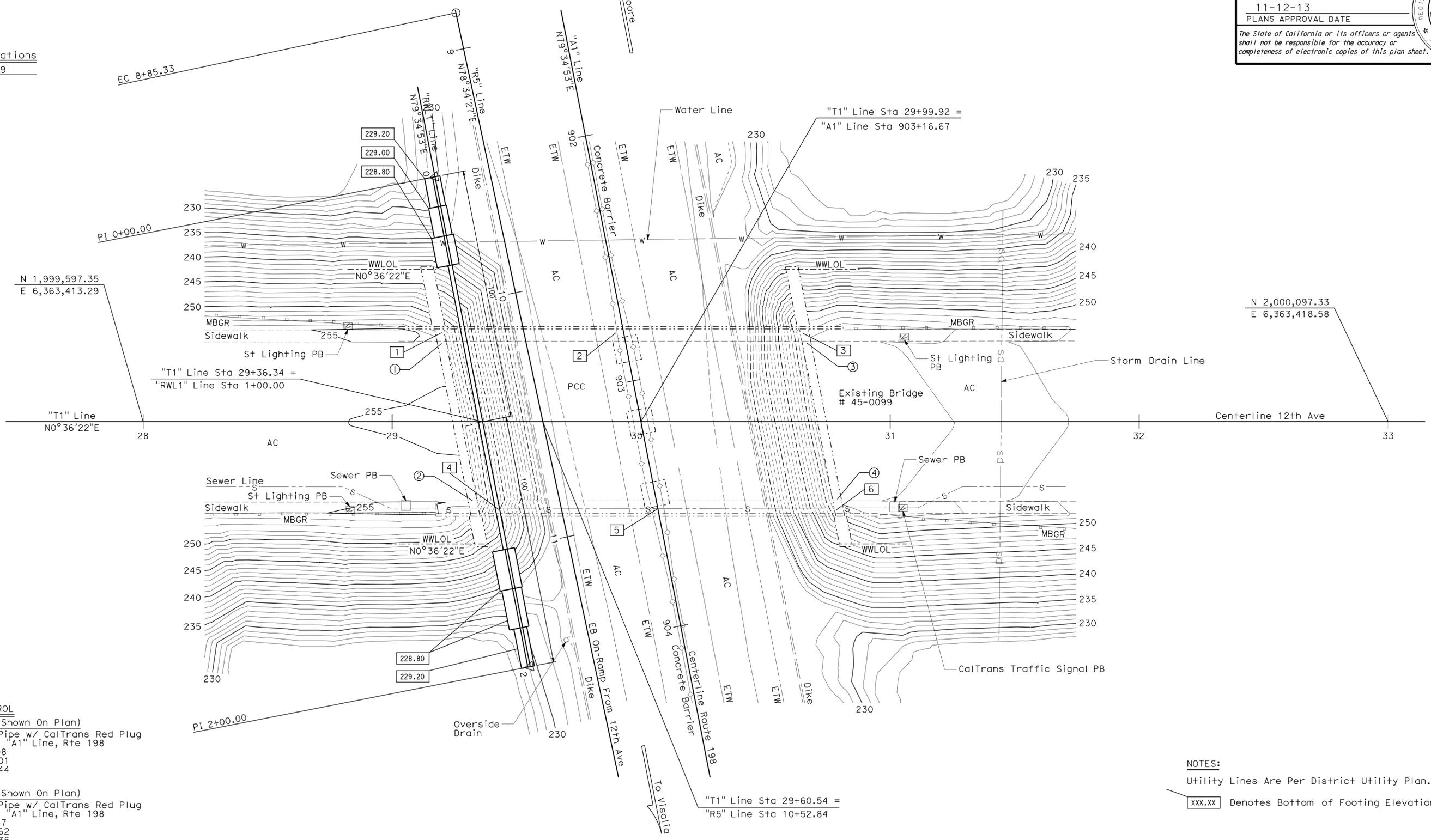
Tierney L. Sanderson
 No. 48605
 Exp. 6-30-2012
 CIVIL
 STATE OF CALIFORNIA

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.



- Bridge Location
- ① - 31.40 Lt "T1" Line, Sta 29+19.92, Elev= 254.60 ±
 - ② - 31.63 Rt "T1" Line, Sta 29+32.25, Elev= 254.54 ±
 - ③ - 31.53 Lt "T1" Line, Sta 30+66.55, Elev= 253.43 ±
 - ④ - 31.08 Rt "T1" Line, Sta 30+78.76, Elev= 253.31 ±

- Soffit Elevations
 Br # 45-0099
- 1 - 250.34
 - 2 - 250.20
 - 3 - 249.26
 - 4 - 250.38
 - 5 - 250.10
 - 6 - 249.02



SURVEY CONTROL
 PRHV10 (Not Shown On Plan)
 Fnd 1" Iron Pipe w/ CalTrans Red Plug
 305.69 Ft Rt "A1" Line, Rte 198
 Sta 901+75.08
 N 1,999,471.01
 E 6,363,331.44
 Elev= 254.51

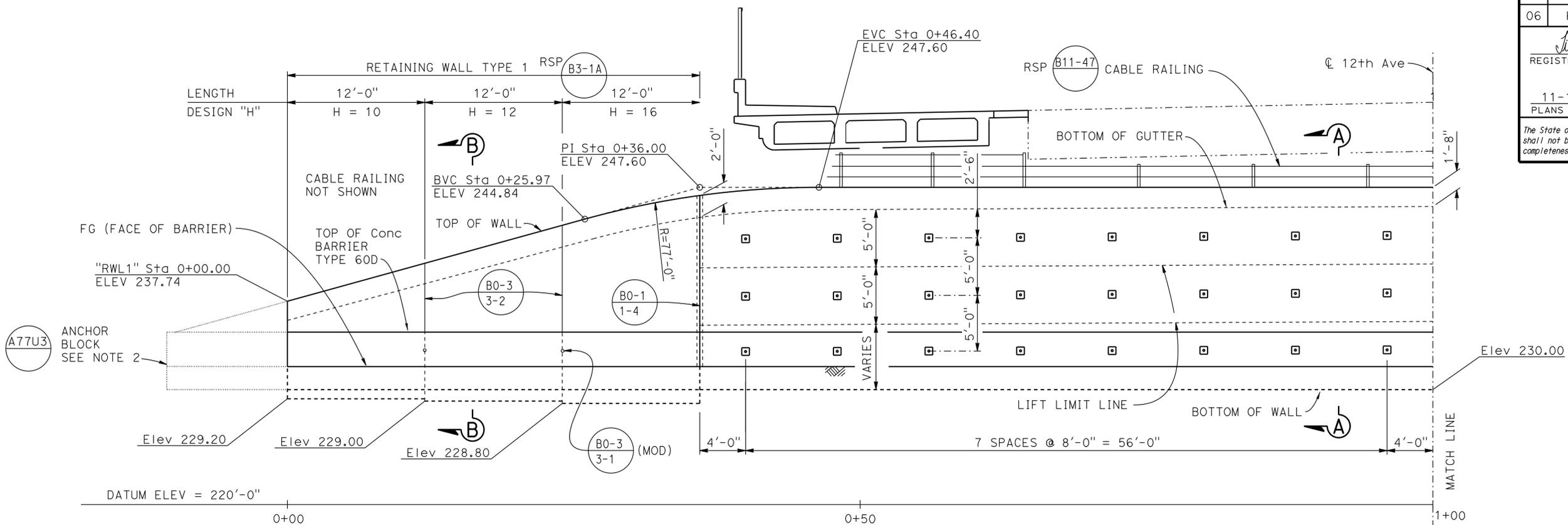
PRHV11 (Not Shown On Plan)
 Fnd 1" Iron Pipe w/ CalTrans Red Plug
 112.28 Ft Lt "A1" Line, Rte 198
 Sta 908+41.57
 N 2,000,002.62
 E 6,363,911.35
 Elev= 239.64

NOTES:
 Utility Lines Are Per District Utility Plan.
 XXX.XX Denotes Bottom of Footing Elevation (ft)

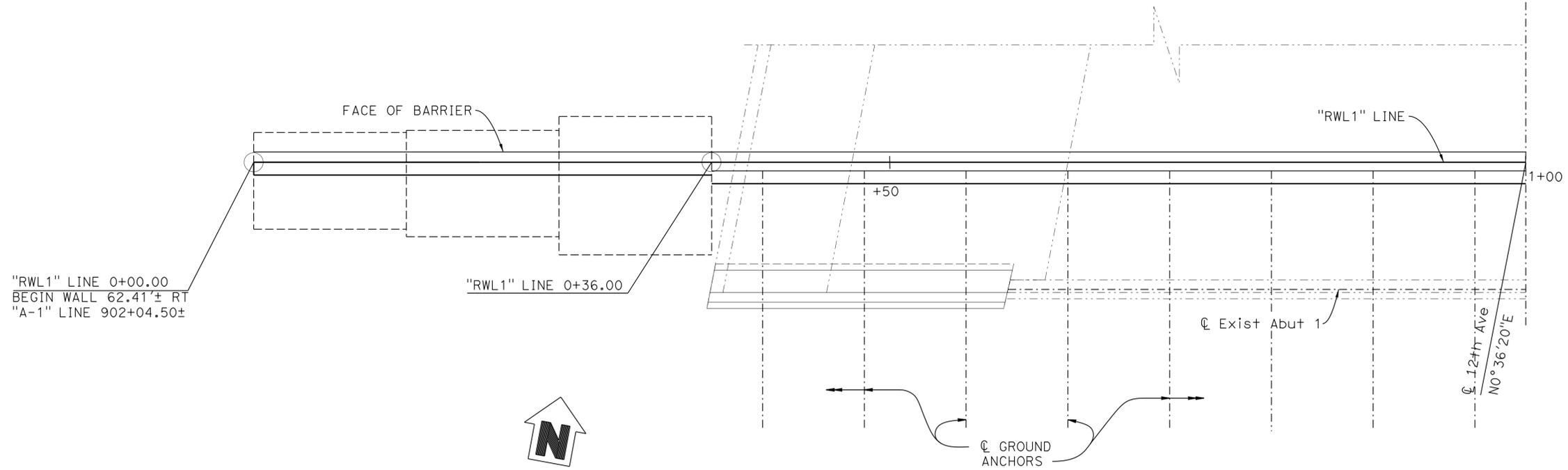
PRELIMINARY INVESTIGATION SECTION				DESIGN BY T. Sanderson	CHECKED H. VU	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO. 45E0001	12TH AVENUE OC RETAINING WALL FOUNDATION PLAN
SCALE 1"=20'	VERT. DATUM NGVD29	PHOTOGRAMMETRY AS OF: X	DETAILS BY G. Hallstrom	CHECKED H. VU	POST MILE 16.91				
ALIGNMENT TIES Dist. Traverse Sheet	SURVEYED BY District 05/1996	CHECKED BY J. Borden 06/2010	QUANTITIES BY T. Sanderson	CHECKED D. Azzam	REVISION DATES				
STRUCTURES FOUNDATION PLAN SHEET (ENGLISH) (REV. 10/25/05)						ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	CU 06 EA 487501	DISREGARD PRINTS BEARING EARLIER REVISION DATES	SHEET 3 OF 13

USERNAME => s128843 DATE PLOTTED => 19-NOV-2013 TIME PLOTTED => 12:30

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kin	198	R16.5/R17.2	238	247
<i>Tierney L. Sanderson</i> REGISTERED CIVIL ENGINEER			5/10/12 DATE		
11-12-13 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>					



MIRRORED ELEVATION
1" = 5'-0"



PLAN
1" = 5'-0"

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

- NOTES:**
- For "SECTION A-A" and "SECTION B-B", see "WALL DETAILS" sheet.
 - For Anchor Block Details see "ARCHITECTURAL DETAILS" sheet.
- LEGEND:**
- ☐ Indicates Ground Anchor locations
 - Indicates existing structure

DESIGN	BY T. Sanderson	CHECKED H. Vu
DETAILS	BY G. Hallstrom	CHECKED H. Vu
QUANTITIES	BY T. Sanderson	CHECKED D. Azzam

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 10

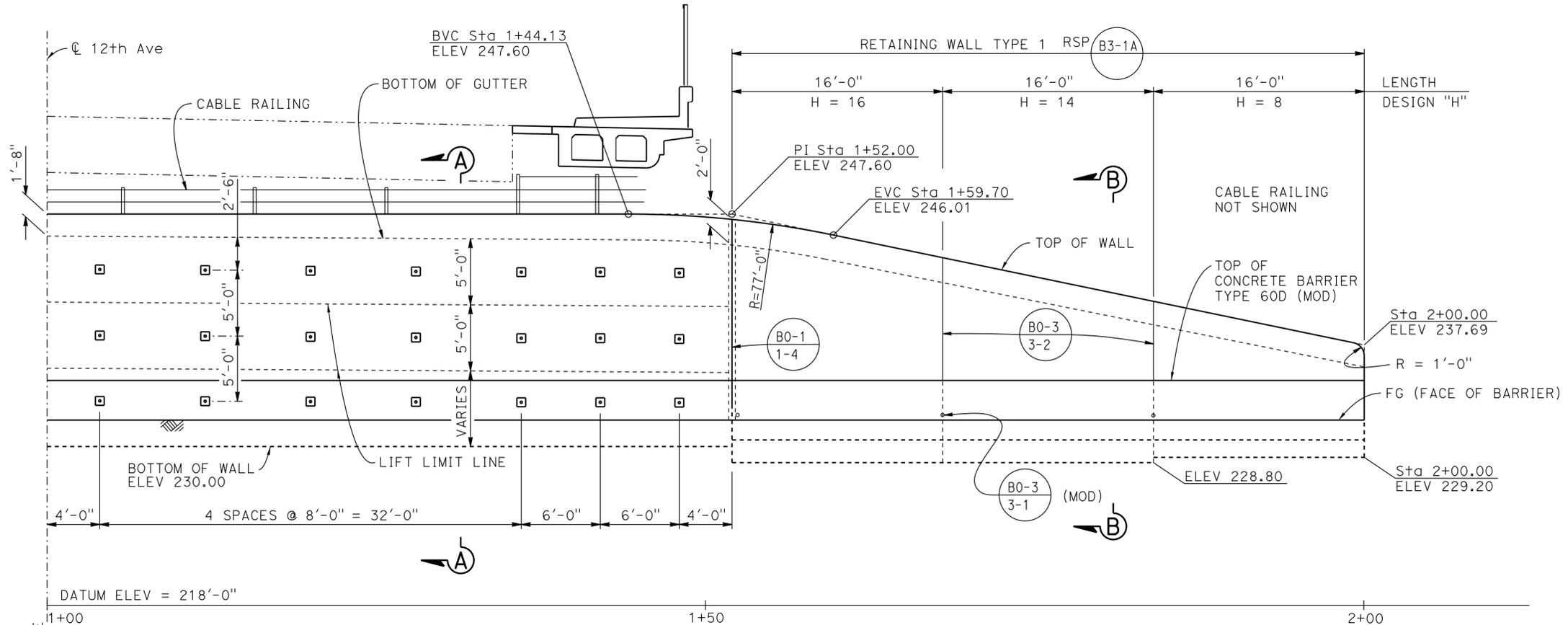
BRIDGE NO.	45E0001
POST MILE	16.9

12TH AVENUE OC RETAINING WALL
WALL LAYOUT NO. 1

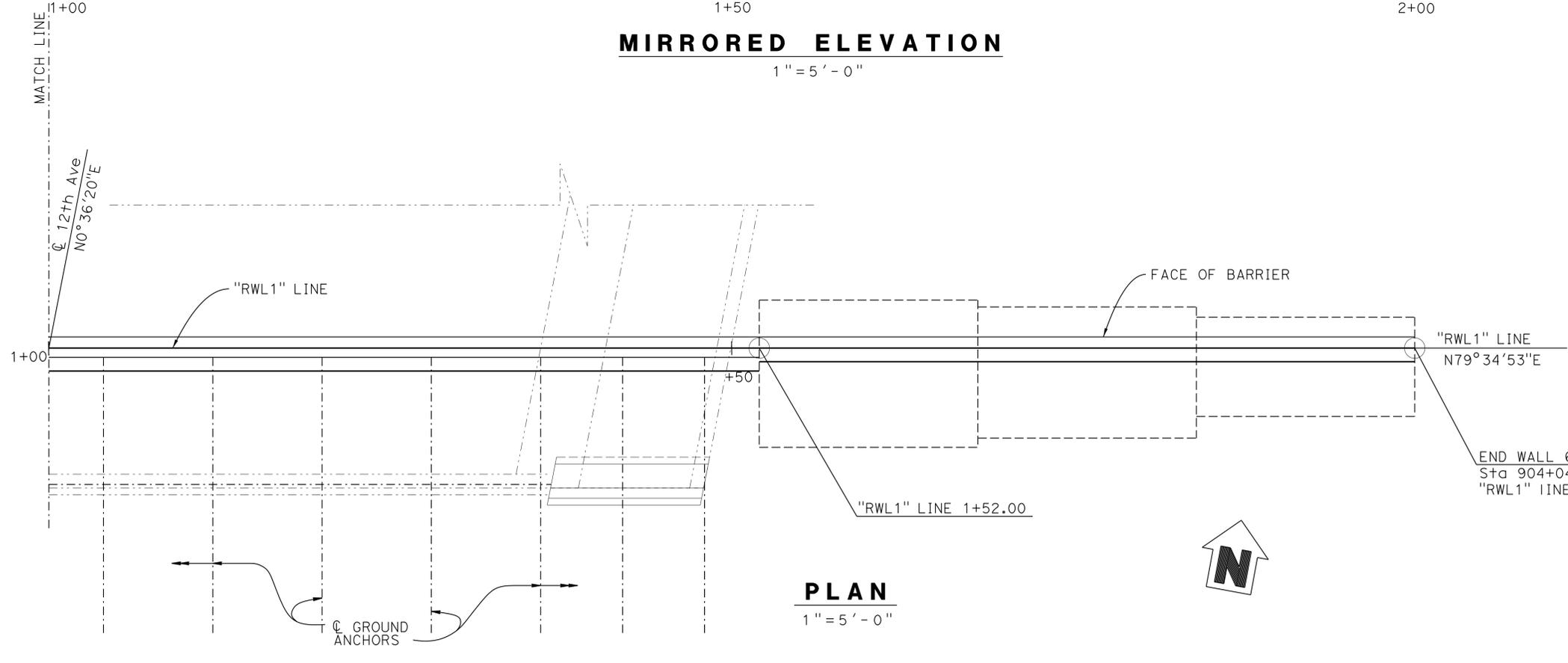
DATE PLOTTED => 14:10 19-NOV-2013 USERNAME => s128843

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kin	198	R16.5/R17.2	239	247
DATE		REGISTERED CIVIL ENGINEER		DATE	
11-12-13		TIERNEY L. SANDERSON		5/10/12	
PLANS APPROVAL DATE		No. 48605		Exp. 6-30-2012	
		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.



MIRRORED ELEVATION
1" = 5'-0"



PLAN
1" = 5'-0"

NOTE:
1. For "SECTION A-A" and "SECTION B-B", see "WALL DETAILS" sheet.

LEGEND:
 □ Indicates Ground Anchor locations
 --- Indicates existing structure

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

DESIGN	BY T. Sanderson	CHECKED H. Vu
DETAILS	BY G. Hallstrom	CHECKED H. Vu
QUANTITIES	BY T. Sanderson	CHECKED D. Azzam

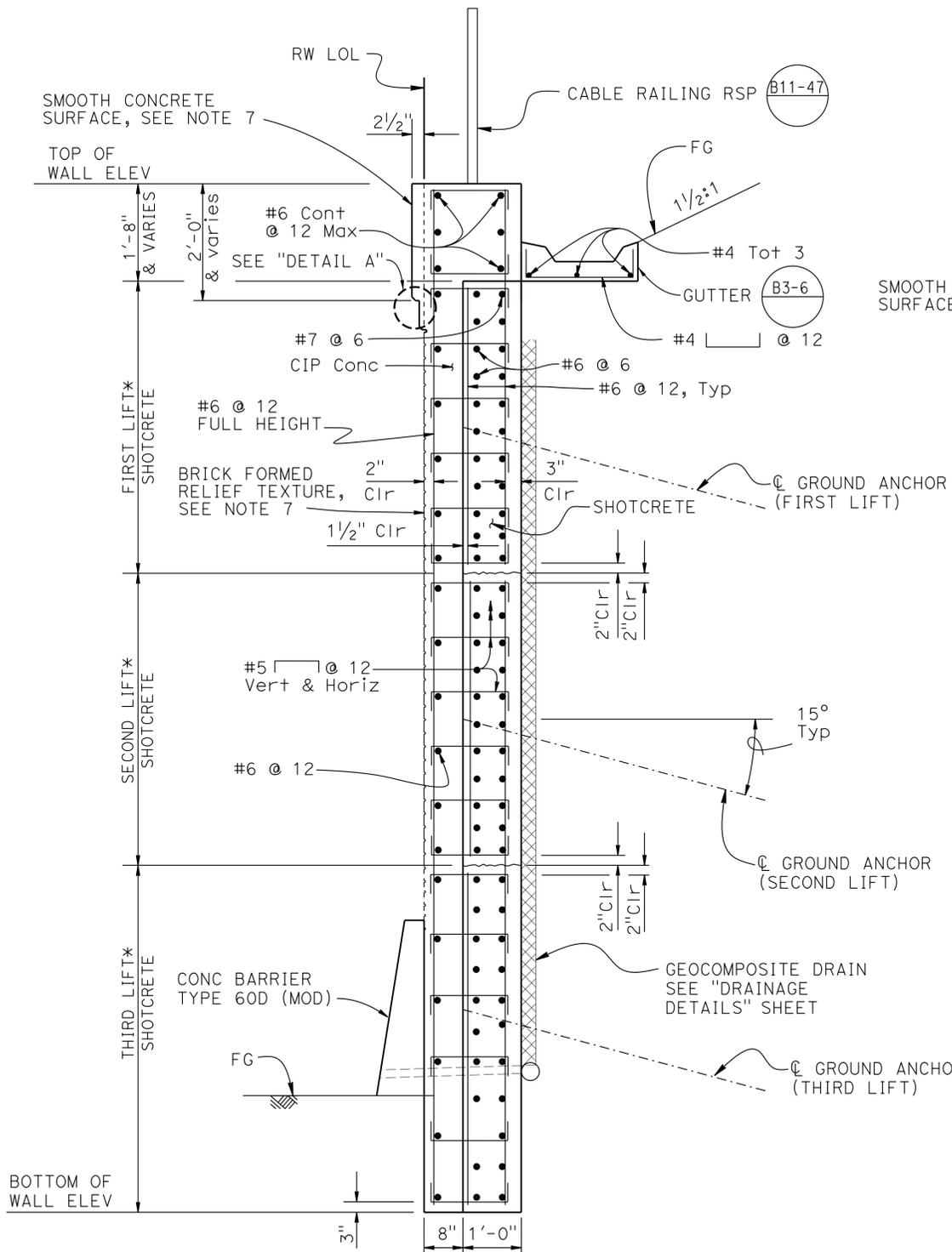
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 10

BRIDGE NO.	45E0001
POST MILE	16.9

12TH AVENUE OC RETAINING WALL
WALL LAYOUT NO. 2

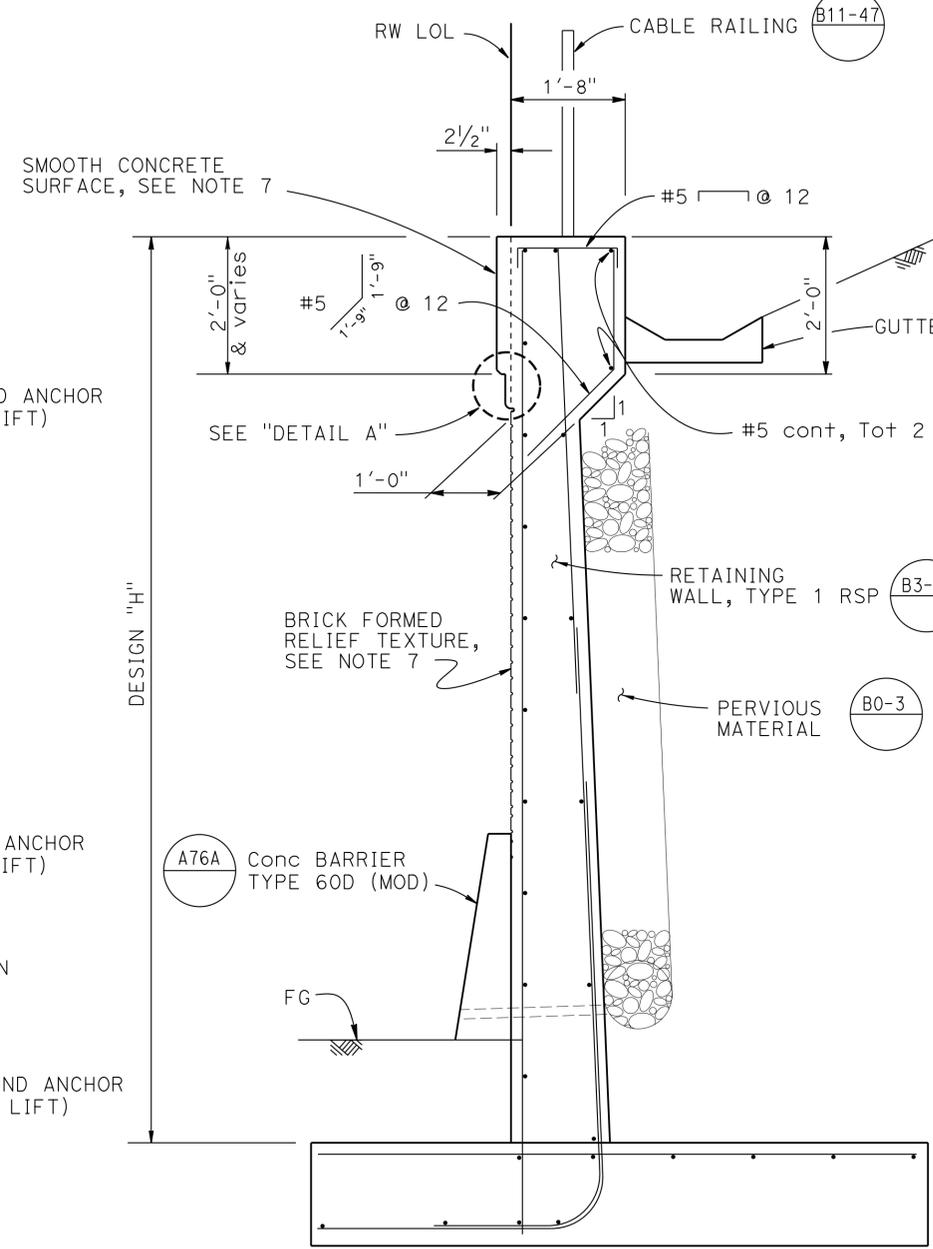
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kin	198	R16.5/R17.2	240	247
<i>Tierney L. Sanderson</i> REGISTERED CIVIL ENGINEER			5/10/12 DATE	Tierney L. Sanderson No. 48605 Exp. 6-30-2012 CIVIL STATE OF CALIFORNIA	
11-12-13 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



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

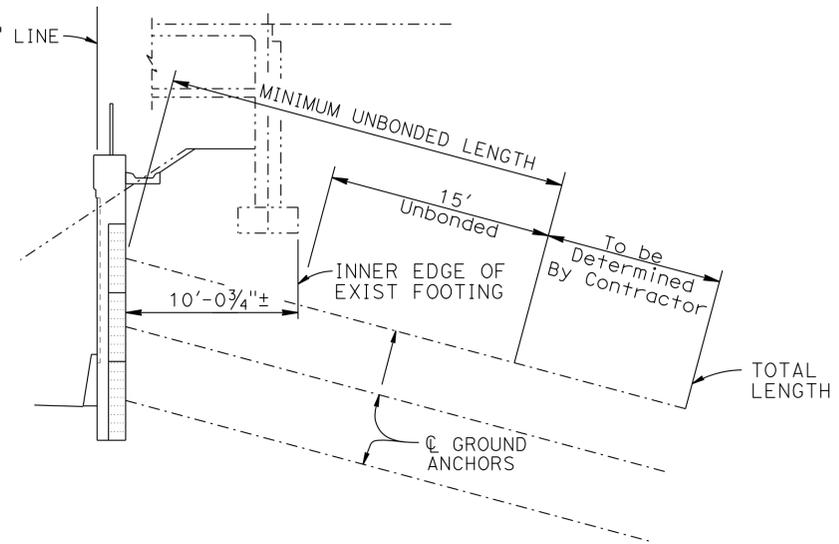
* For dimension see "WALL LAYOUT No. 1 & No. 2" sheets.

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



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

NOTE:
FOR DETAILS NOT SHOWN, SEE RSP B3-1A



UNBONDED LENGTH DETAIL
No Scale

NOTES:

- Maintain 6" min clearance between reinforcement and C of Ground Anchor.
- CIP concrete to be placed after completion of all shotcrete lifts.
- For Stage lift limit line, see "WALL LAYOUT No. 1" and "WALL LAYOUT No. 2" sheets.
- For "Detail A", see "ARCH DETAIL/CONC END BLOCK" sheet.
- For "Detail B", see "DRAINAGE DETAILS" sheet.
- For location of "SECTION A-A" and "SECTION B-B", see "WALL LAYOUT No. 1" and "WALL LAYOUT No. 2" sheets.
- For Details see "ARCHITECTURAL DETAILS" sheet.

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	DESIGN	BY T. Sanderson	CHECKED H. Vu	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO.	45E0001	12TH AVENUE OC RETAINING WALL WALL DETAILS
	DETAILS	BY G. Hallstrom	CHECKED H. Vu			POST MILE	16.9	
	QUANTITIES	BY T. Sanderson	CHECKED D. Azzam			UNIT: 3589	PROJECT NUMBER & PHASE: 06000004881	

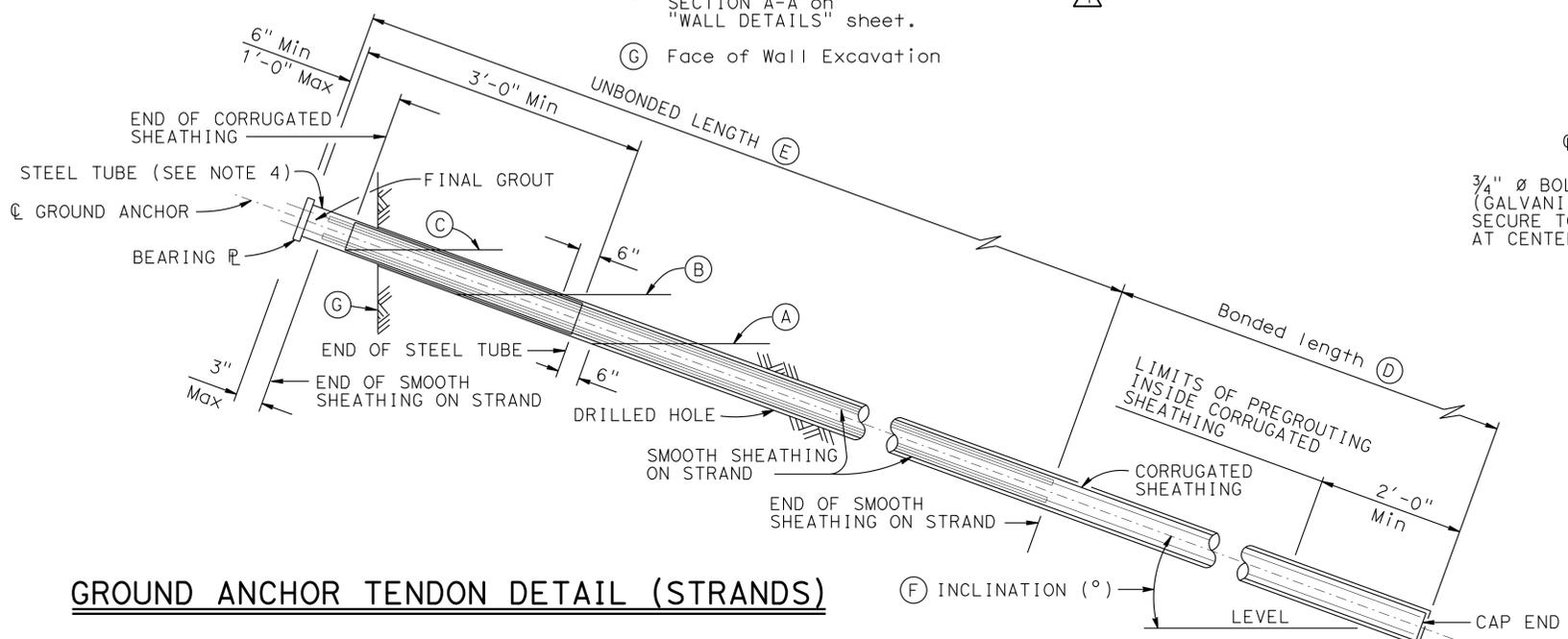
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kin	198	R16.5/R17.2	241	247
<i>Tierney L. Sanderson</i> REGISTERED CIVIL ENGINEER			5/10/12 DATE	No. 48605 Exp. 6-30-2012 CIVIL STATE OF CALIFORNIA	
11-12-13 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					

NOTES:

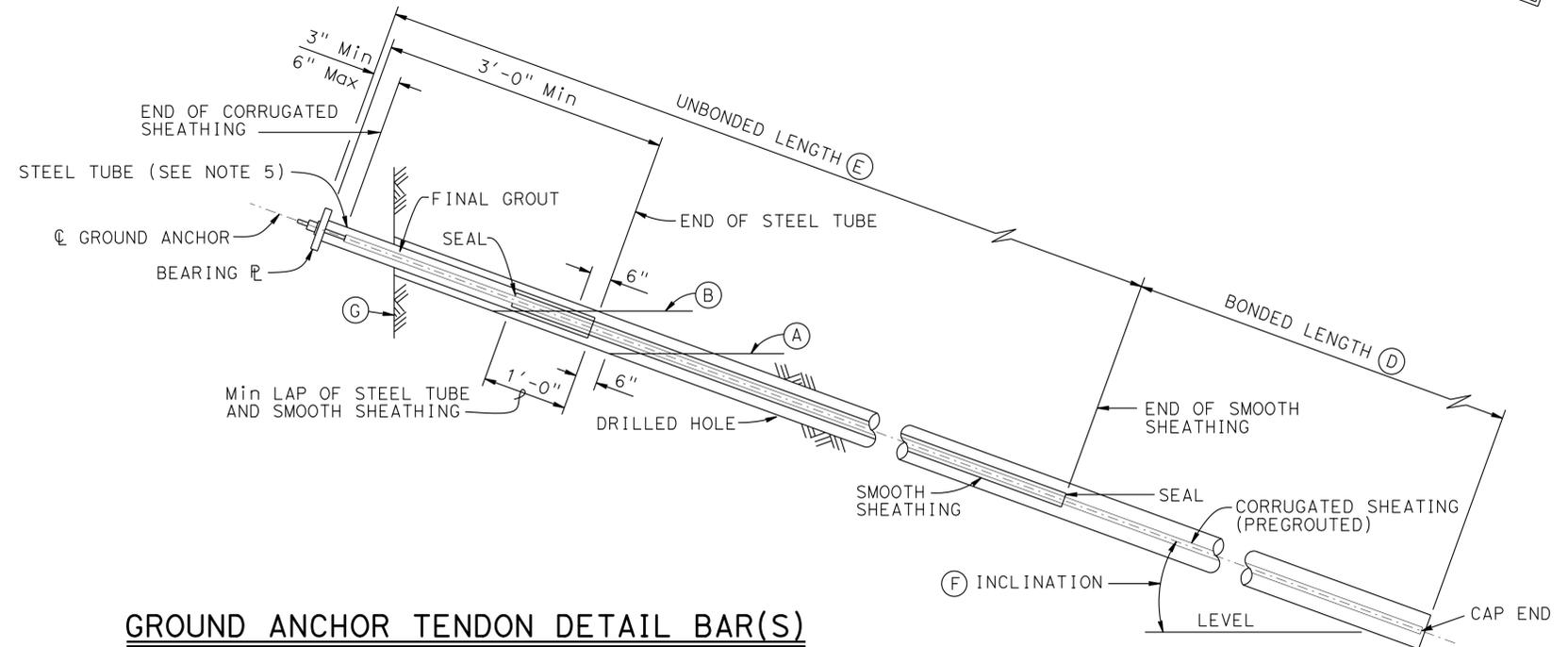
- (A) Level of initial grouting for drill hole 6" in diameter or smaller
- (B) Level of secondary grouting
- (C) Level of initial grouting inside corrugated sheathing
- (D) Bonded length shall be determined by the contractor
- (E) For unbonded length, see UNBONDED LENGTH DETAIL on "WALL DETAILS" sheet.
- (F) For inclination, see SECTION A-A on "WALL DETAILS" sheet.
- (G) Face of Wall Excavation

NOTES:

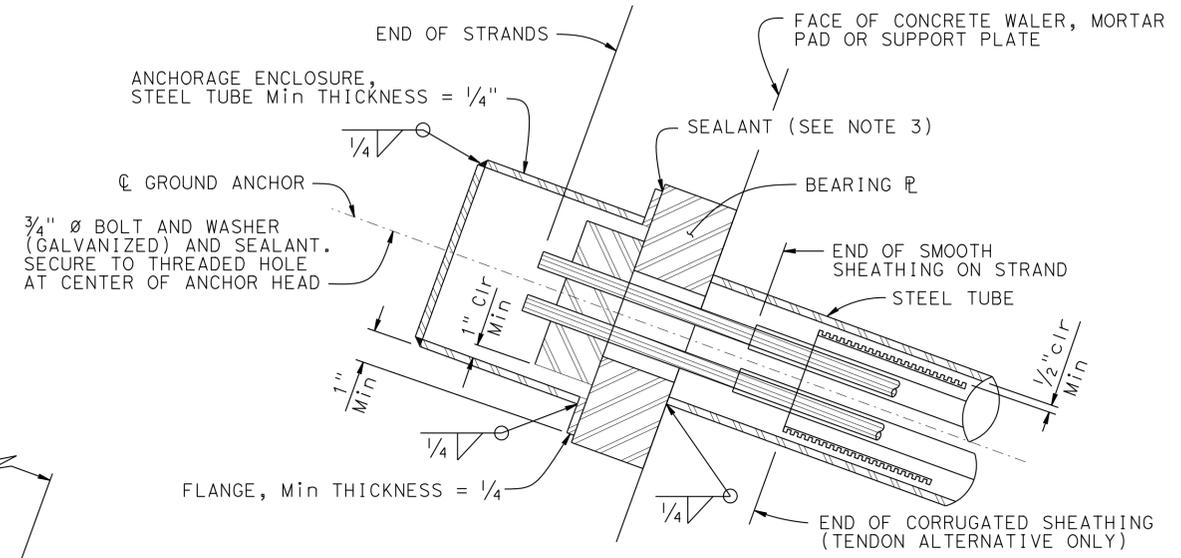
- 1. Anchorage enclosure shall only be used when anchor head assembly is not enclosed in concrete.
- 2. Anchorage enclosure shall have provisions to allow injecting grout at low end and venting at high end. Galvanize after fabrication.
- 3. Silicone sealant to cover full width of flange.
- 4. Steel tube (Min thickness = 1/4") welded to bearing plate. Galvanize assembly after fabrication
- 5. Steel tube welded to bearing plate. Inside diameter of steel tube (Min thickness = 1/4") to be 1" greater than outside diameter of smooth sheathing.
- 6. Galvanize assembly after fabrication.



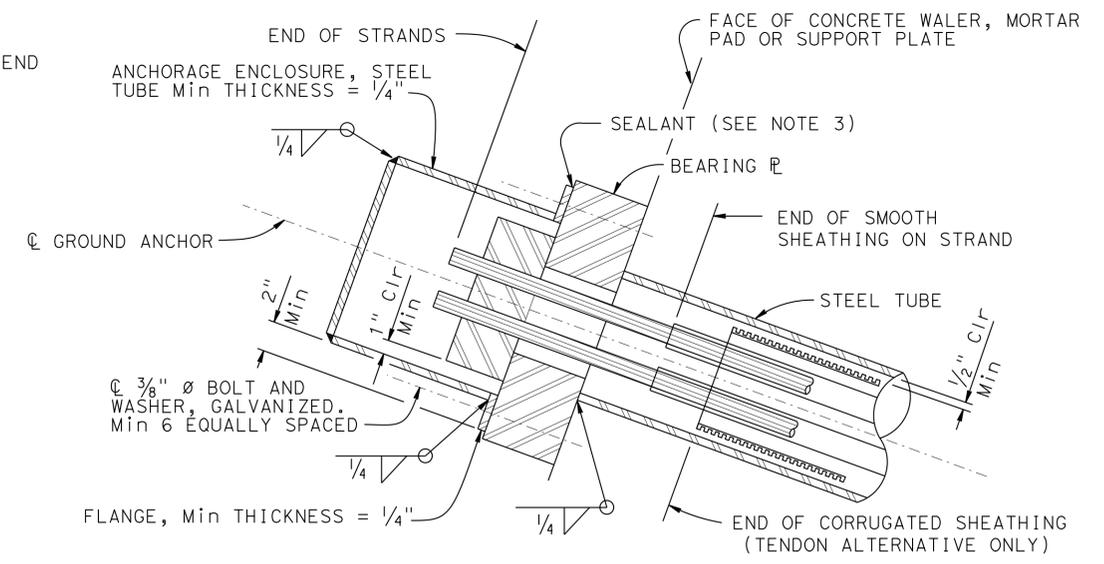
GROUND ANCHOR TENDON DETAIL (STRANDS)



GROUND ANCHOR TENDON DETAIL BAR(S)



ALTERNATIVE X



ALTERNATIVE Y

ANCHORAGE ENCLOSURE DETAILS

NO SCALE

Revised Notes:

REVISED STANDARD DRAWING	
FILE NO. xs12-040	APPROVAL DATE July 2011

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

BRIDGE NO.	45E0001
POST MILE	16.9

12TH AVENUE OC RETAINING WALL
SUB HORIZONTAL GROUND ANCHOR DETAILS

DS OSD 2147A (ENGLISH STANDARD DRAWING "XS" BORDER REV. (02-02-11))

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS



UNIT: 3589
PROJECT NUMBER & PHASE: 06000004881

CONTRACT NO.: 06-487501

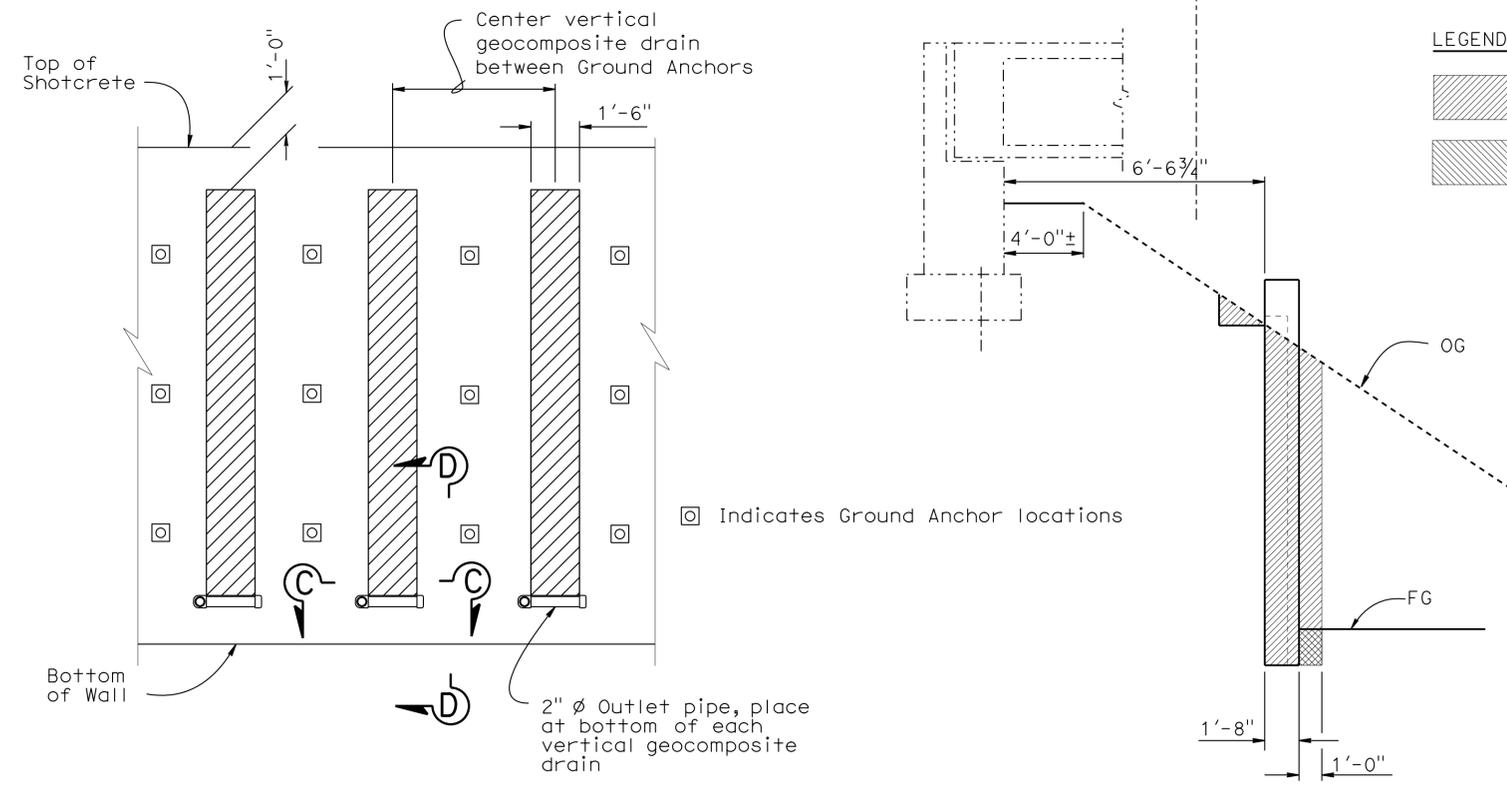
DISREGARD PRINTS BEARING EARLIER REVISION DATES

REVISION DATES	SHEET	OF
8-31-11 12-08-11 4-24-12 5/09/12	7	13

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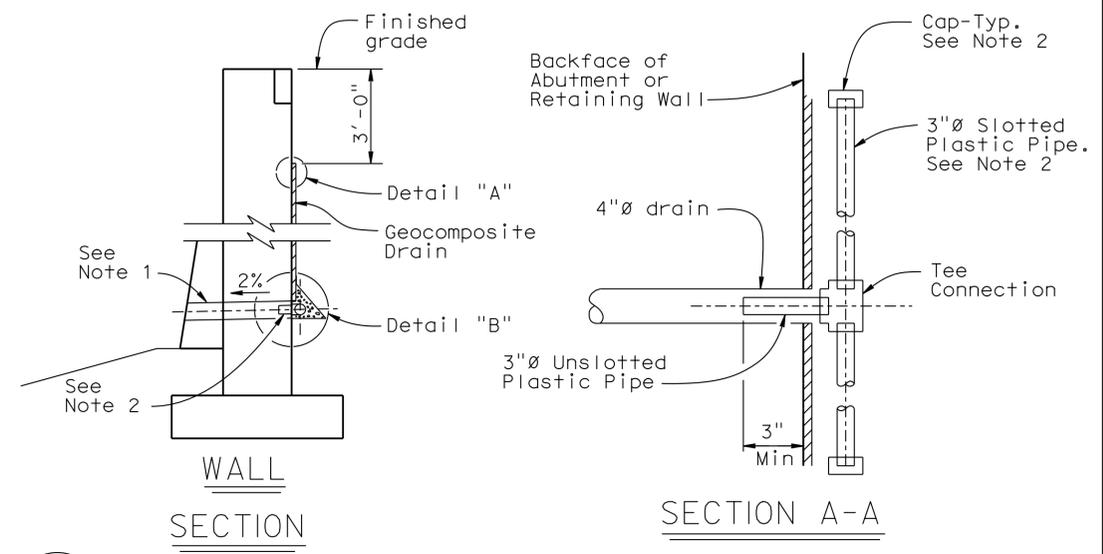
USERNAME => s128843 DATE PLOTTED => 19-NOV-2013 TIME PLOTTED => 12:31

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kin	198	R16.5/R17.2	242	247
<i>Tierney L. Sanderson</i> REGISTERED CIVIL ENGINEER			5/10/12 DATE		
11-12-13 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>					



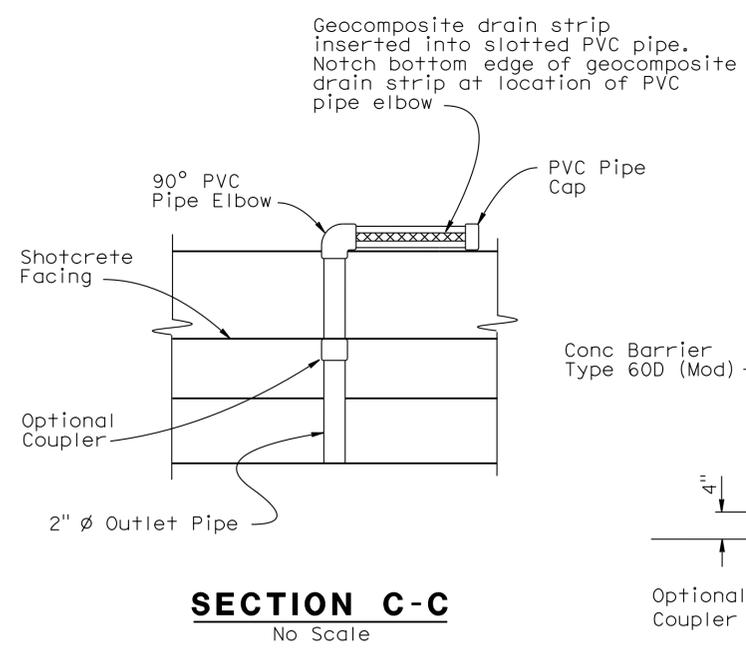
WALL PART ELEVATION
No Scale

LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL (GROUND ANCHOR WALL ONLY)
NO SCALE

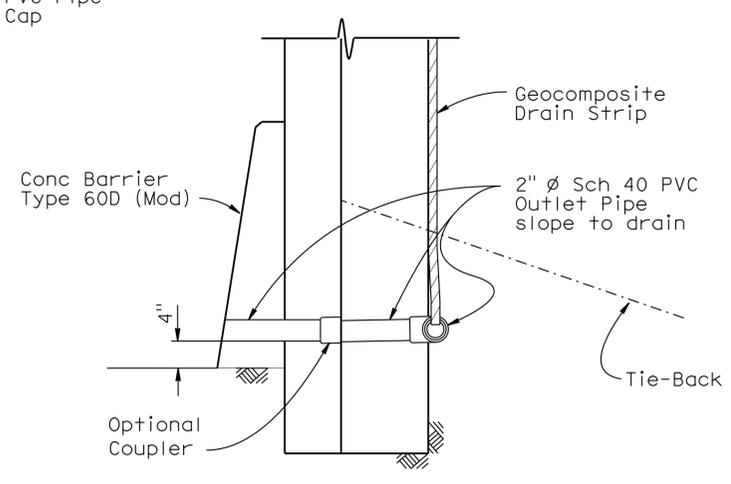


WALL SECTION

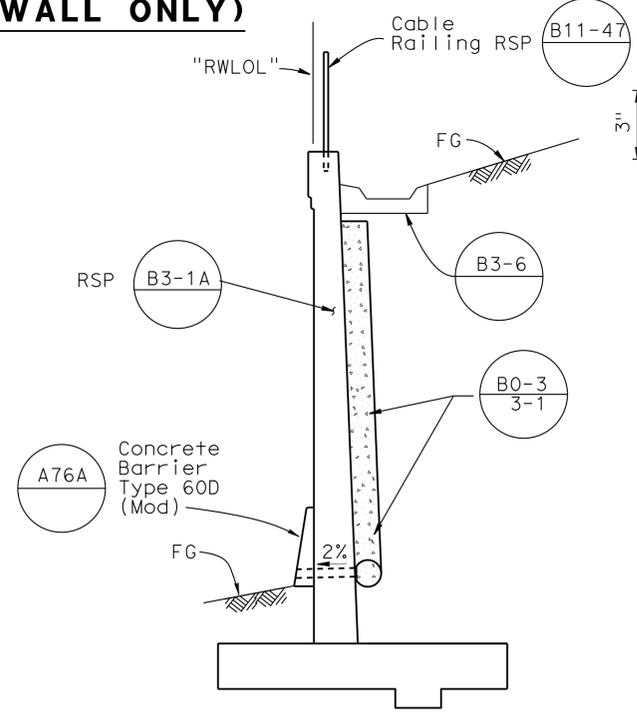
SECTION A-A



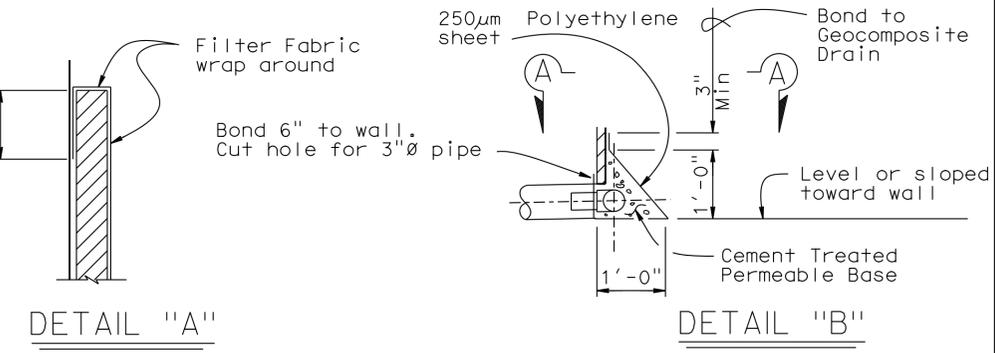
SECTION C-C
No Scale



SECTION D-D
No Scale



TYPICAL SECTION RETAINING WALL DRAINAGE
No Scale



WEEP HOLE AND GEOCOMPOSITE DRAIN

ALTERNATIVE TO BRIDGE DETAIL (B0-3 3-1)

NOTES:

- 4"Ø drains at intermediate sag points and at 25'-0" center to center. For walls adjacent to sidewalks or curbs, provide 4" cast iron or asbestos cement pipe under the sidewalk to discharge through curb face. Exposed wall drains shall be located 3"± above finished grade.
- Geocomposite drain, cement treated permeable base, and 3"Ø slotted plastic pipe continuous behind retaining wall or abutment. Cap ends of pipe. Provide "Tee" connection at each 4"Ø drain.
- Connect the low end of plastic pipe to the main outlet pipe as applicable.

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

DESIGN	BY T. Sanderson	CHECKED H. Vu
DETAILS	BY G. Hallstrom	CHECKED H. Vu
QUANTITIES	BY T. Sanderson	CHECKED D. Azzam

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

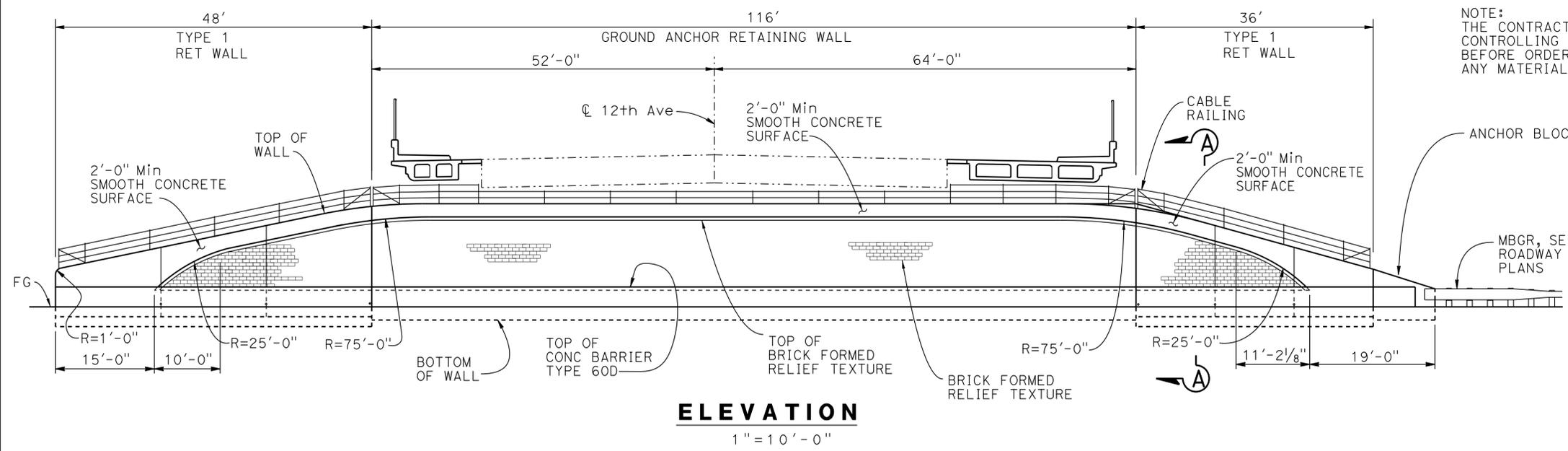
DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 10

BRIDGE NO.	45E0001
POST MILE	16.9

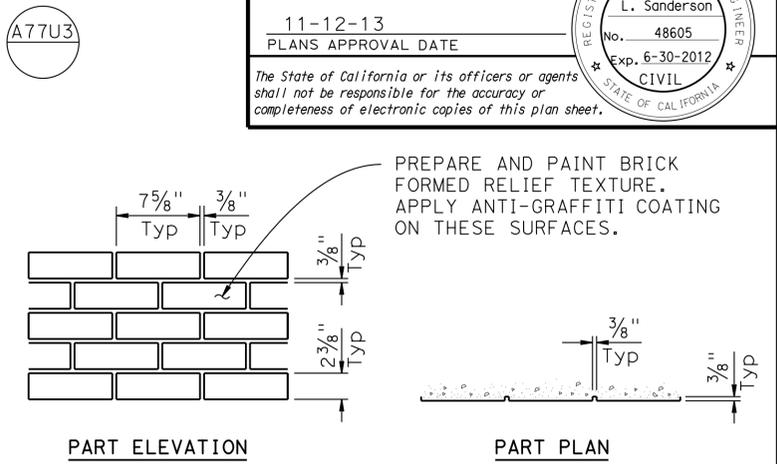
12TH AVENUE OC RETAINING WALL
DRAINAGE DETAILS

12/31 19-NOV-2013 8:12:58 AM DATE PLOTTED => USERNAME =>

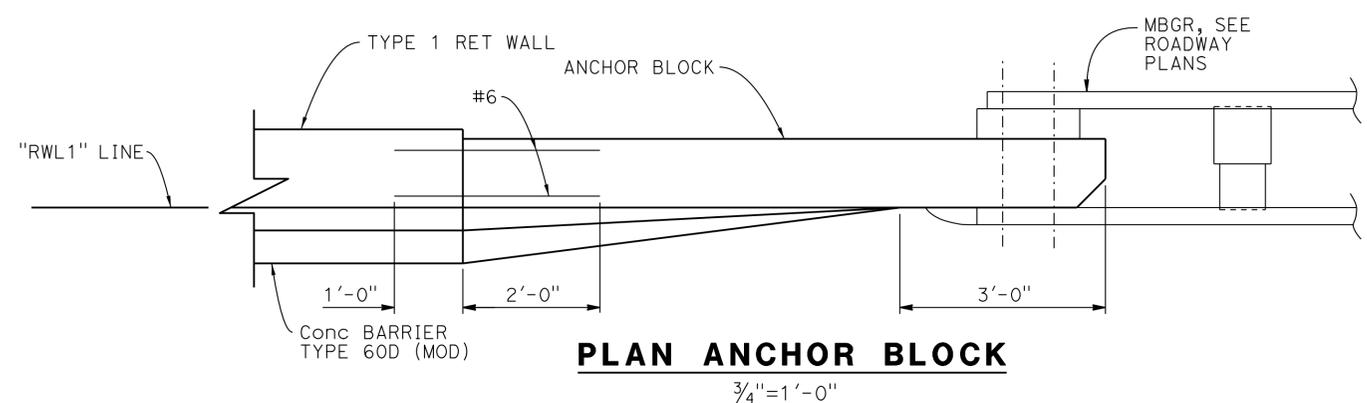
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kin	198	R16.5/R17.2	243	247
<i>Tierney L. Sanderson</i> REGISTERED CIVIL ENGINEER			5/10/12 DATE		
11-12-13 PLANS APPROVAL DATE					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



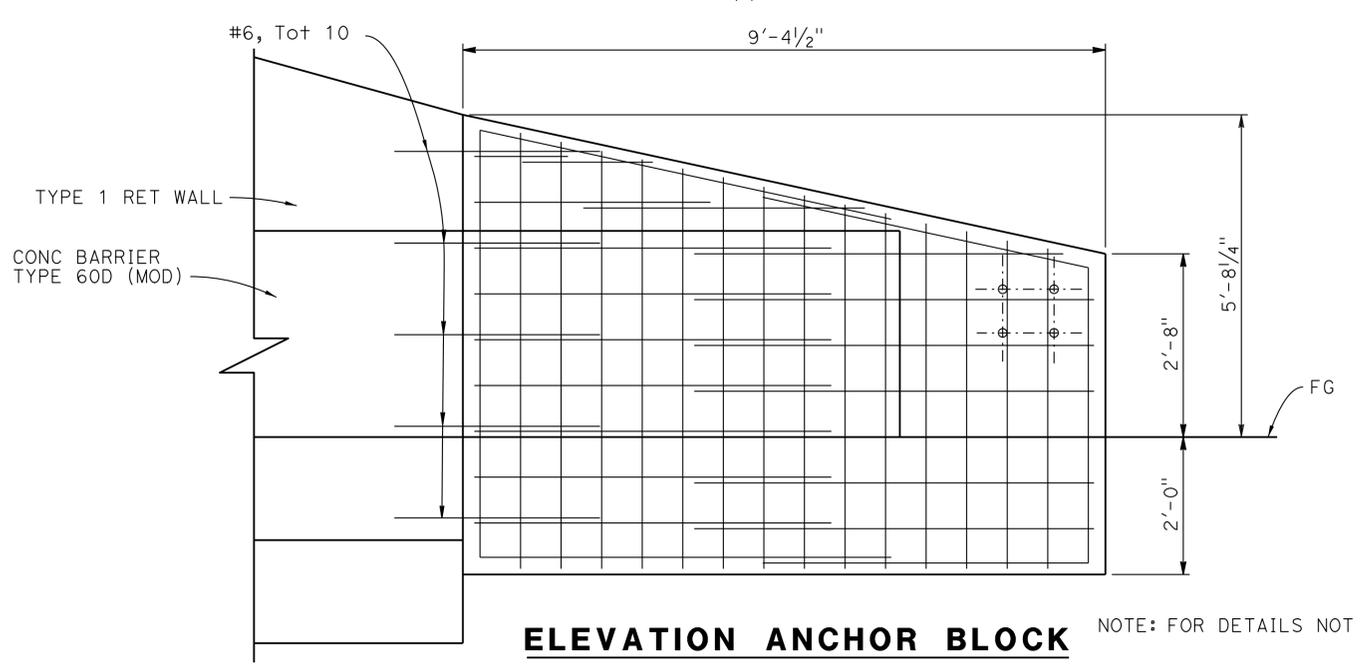
ELEVATION
1" = 10'-0"



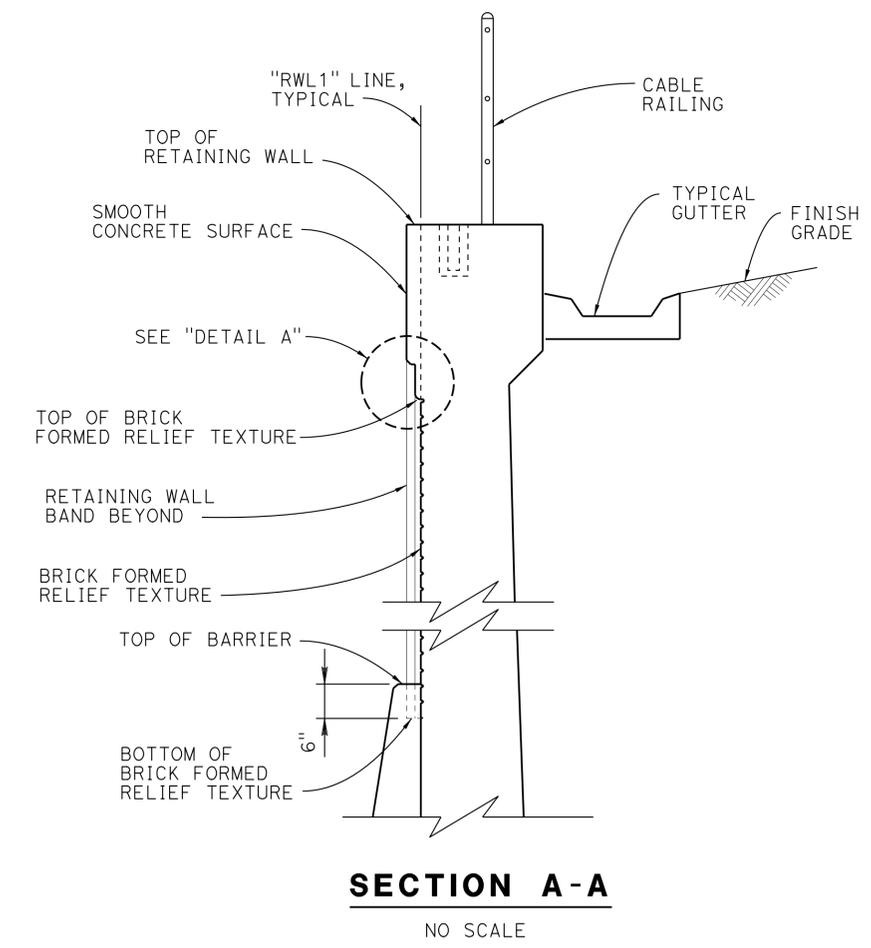
BRICK TEXTURE DETAIL
NO SCALE



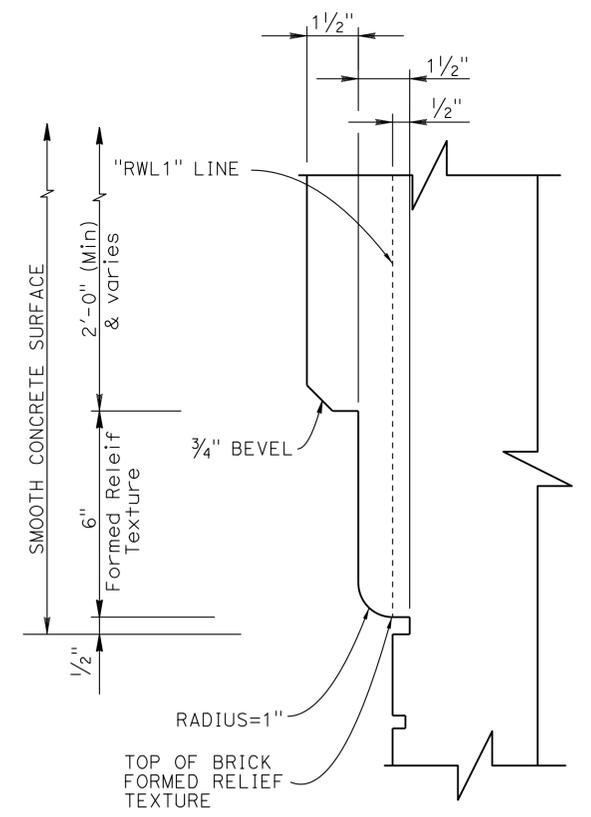
PLAN ANCHOR BLOCK
3/4" = 1'-0"



ELEVATION ANCHOR BLOCK
No Scale



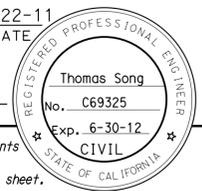
SECTION A-A
NO SCALE



DETAIL A
NO SCALE

NOTE: FOR DETAILS NOT SHOWN SEE

DESIGN BY T. Sanderson CHECKED H. Vu		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO. 45E0001	12TH AVENUE OC RETAINING WALL ARCHITECTURAL DETAILS
DETAILS BY G. Hallstrom CHECKED H. Vu				POST MILE 16.9	
QUANTITIES BY T. Sanderson CHECKED D. Azzam				UNIT: 3589 PROJECT NUMBER & PHASE: 06000004881 CONTRACT NO.: 06-487501	
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS					
			0 1 2 3	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES SHEET 9 OF 13

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kin	198	R16.5/R17.2	244	247
<i>Thomas N. Song</i> REGISTERED CIVIL ENGINEER			08-22-11	DATE	
11-12-13 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>					

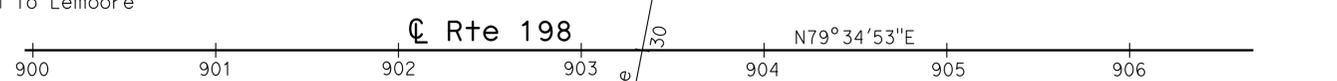
BENCH MARK

SURVEY CONTROL

PRHV10
 Fnd 1" Iron Pipe w/ CalTrans Red Plug
 305.69 Ft Rt "A1" Line, Rte 198
 Sta 901+75.08
 N 1,999,471.01
 E 6,363,331.44
 Elev= 254.51

PRHV11
 Fnd 1" Iron Pipe w/ CalTrans Red Plug
 112.28 Ft Lt "A1" Line, Rte 198
 Sta 908+41.57
 N 2,000,002.62
 E 6,363,911.35
 Elev= 239.64

← To Lemoore

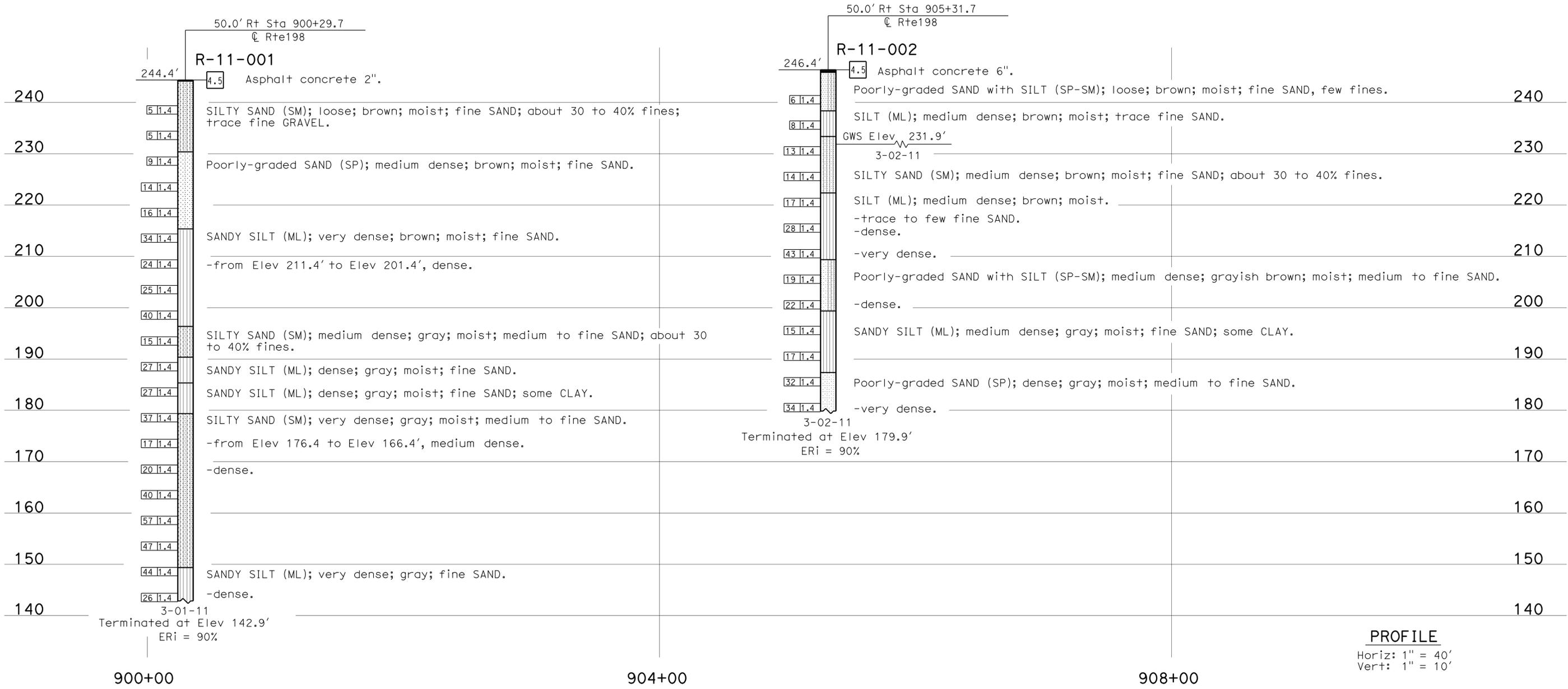


R-11-001
4.5

R-11-002
4.5 → To Hanford

PLAN
 1" = 50'

Note: No ground water encountered in Boring R-11-001.



PROFILE
 Horiz: 1" = 40'
 Vert: 1" = 10'

ENGINEERING SERVICES		GEOTECHNICAL SERVICES		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10		BRIDGE NO. 45-0099 POST MILE R16.9		12TH AVE OC RETAINING WALL LOG OF TEST BORINGS 1 OF 4											
FUNCTIONAL SUPERVISOR NAME: J. Huang		DRAWN BY: F. Nguyen 5/11 CHECKED BY: B. Barnes		FIELD INVESTIGATION BY: B. Barnes / J. Huang		UNIT: 3643 PROJECT NUMBER & PHASE: 06000004881		CONTRACT NO.: 06-487501		DISREGARD PRINTS BEARING EARLIER REVISION DATES		<table border="1" style="font-size: small;"> <tr> <th colspan="2">REVISION DATES</th> <th>SHEET</th> <th>OF</th> </tr> <tr> <td>06-02-11</td> <td>08-12-11</td> <td>08-22-11</td> <td>10</td> </tr> </table>		REVISION DATES		SHEET	OF	06-02-11	08-12-11	08-22-11	10
REVISION DATES		SHEET	OF																		
06-02-11	08-12-11	08-22-11	10																		
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS: 0 1 2 3																					
FILE => w45-0099z1otb10.dgn																					

USERNAME => s128843 DATE PLOTTED => 12:31 19-NOV-2013 TIME PLOTTED => 12:31

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
06	Kin	198	R16.5/R17.2	245	247

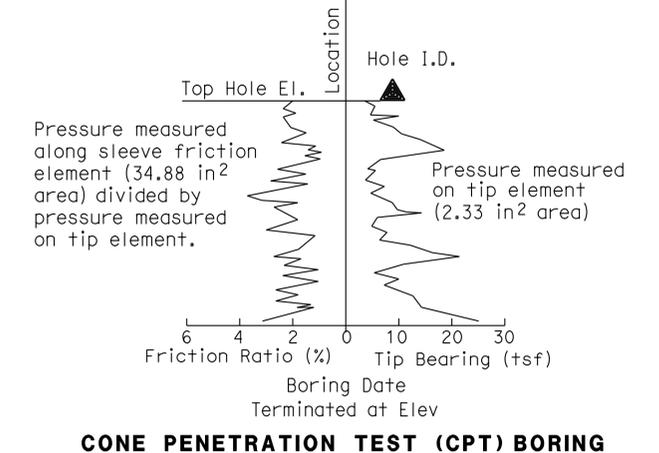
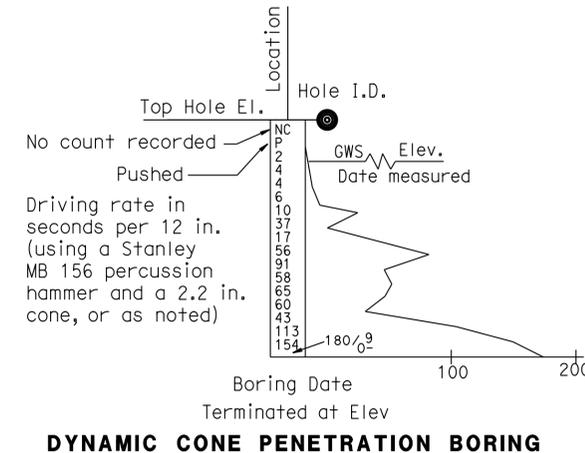
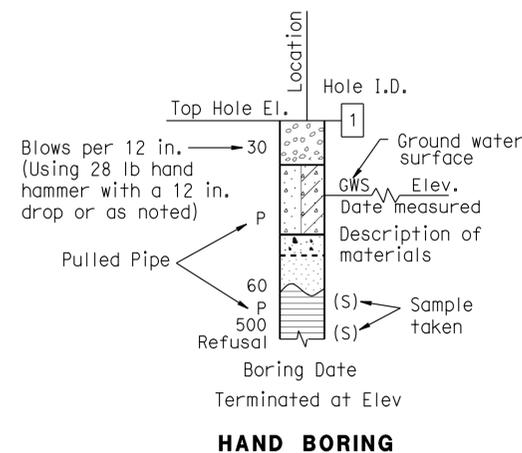
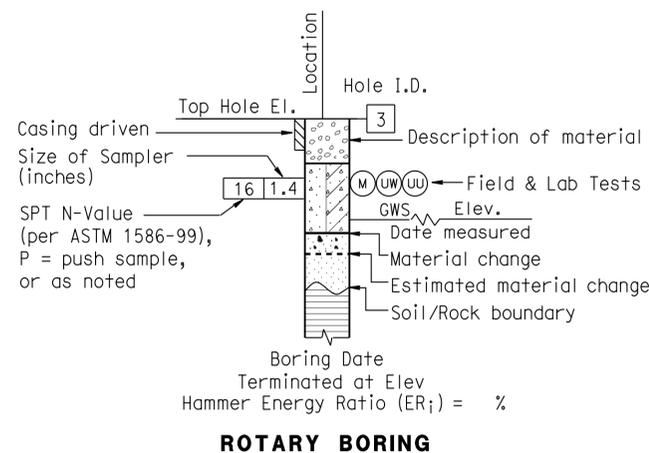
Thomas N. Song 08-22-11
 REGISTERED CIVIL ENGINEER DATE
 11-12-13
 PLANS APPROVAL DATE
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CEMENTATION	
Description	Criteria
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
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
06	Kin	198	R16.5/R17.2	246	247

Thomas N. Song 08-22-11
 REGISTERED CIVIL ENGINEER DATE
 11-12-13
 PLANS APPROVAL DATE
 Thomas Song
 No. C69325
 Exp. 6-30-12
 CIVIL
 STATE OF CALIFORNIA
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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		ORGANIC lean CLAY
	Poorly-graded GRAVEL with SILT and SAND				ORGANIC lean CLAY with SAND
	Poorly-graded GRAVEL with CLAY (or SILTY CLAY)		OL		ORGANIC lean CLAY with GRAVEL
	Poorly-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)				SANDY ORGANIC lean CLAY
	SILTY GRAVEL		OL		SANDY ORGANIC lean CLAY with GRAVEL
	SILTY GRAVEL with SAND				GRAVELLY ORGANIC lean CLAY
	CLAYEY GRAVEL		CH		GRAVELLY ORGANIC lean CLAY with SAND
	CLAYEY GRAVEL with SAND				Fat CLAY
	SILTY, CLAYEY GRAVEL		MH		Fat CLAY with SAND
	SILTY, CLAYEY GRAVEL with SAND				Fat CLAY with GRAVEL
	Well-graded SAND		OH		SANDY fat CLAY
	Well-graded SAND with GRAVEL				SANDY fat CLAY with GRAVEL
	Poorly-graded SAND		OH		GRAVELLY fat CLAY
	Poorly-graded SAND with GRAVEL				GRAVELLY fat CLAY with SAND
	Well-graded SAND with SILT		OH		ORGANIC elastic SILT
	Well-graded SAND with SILT and GRAVEL				ORGANIC elastic SILT with SAND
	Well-graded SAND with CLAY (or SILTY CLAY)		OH		ORGANIC elastic SILT with GRAVEL
	Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)				SANDY ORGANIC elastic SILT
	Poorly-graded SAND with SILT		OH		SANDY ORGANIC elastic SILT with GRAVEL
	Poorly-graded SAND with SILT and GRAVEL				GRAVELLY ORGANIC elastic SILT
	Poorly-graded SAND with CLAY (or SILTY CLAY)		OH/OH		GRAVELLY ORGANIC elastic SILT with SAND
	Poorly-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)				ORGANIC SOIL
	SILTY SAND		OL/OH		ORGANIC SOIL with SAND
	SILTY SAND with GRAVEL				ORGANIC SOIL with GRAVEL
	CLAYEY SAND				SANDY ORGANIC SOIL
	CLAYEY SAND with GRAVEL				SANDY ORGANIC SOIL with GRAVEL
	SILTY, CLAYEY SAND				GRAVELLY ORGANIC SOIL
	SILTY, CLAYEY SAND with GRAVEL				GRAVELLY ORGANIC SOIL with SAND
	PEAT				ORGANIC SOIL
	COBBLES				ORGANIC SOIL with SAND
	COBBLES and BOULDERS				ORGANIC SOIL with GRAVEL
	BOULDERS				SANDY ORGANIC SOIL
					GRAVELLY ORGANIC SOIL
					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
	Medium	1/64 - 1/16
	Fine	1/300 - 1/64
Silt and Clay	Less than 1/300	

ENGINEERING SERVICES	GEOTECHNICAL SERVICES	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 10	BRIDGE NO. 45-0099	12TH AVE OC RETAINING WALL
				POST MILE R16.9	
PREPARED BY: F. Nguyen 5/11		UNIT: 3643	PROJECT NUMBER & PHASE: 06000004881	CONTRACT NO.: 06-487501	DISREGARD PRINTS BEARING EARLIER REVISION DATES
GS LOTB SOIL LEGEND	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0 1 2 3	FILE => w45-009921o+b12.dgn	REVISION DATES	SHEET 12 OF 13

USERNAME => s128843 DATE PLOTTED => 19-NOV-2013 TIME PLOTTED => 12:31

