

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	201	357

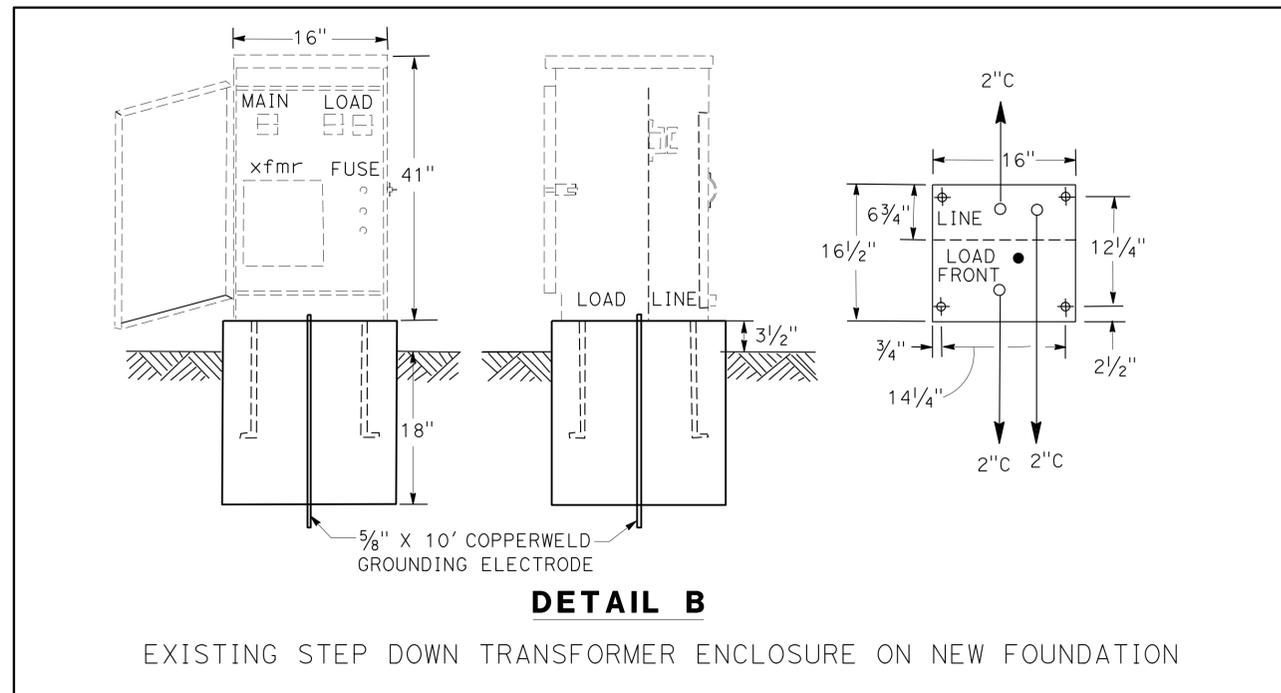
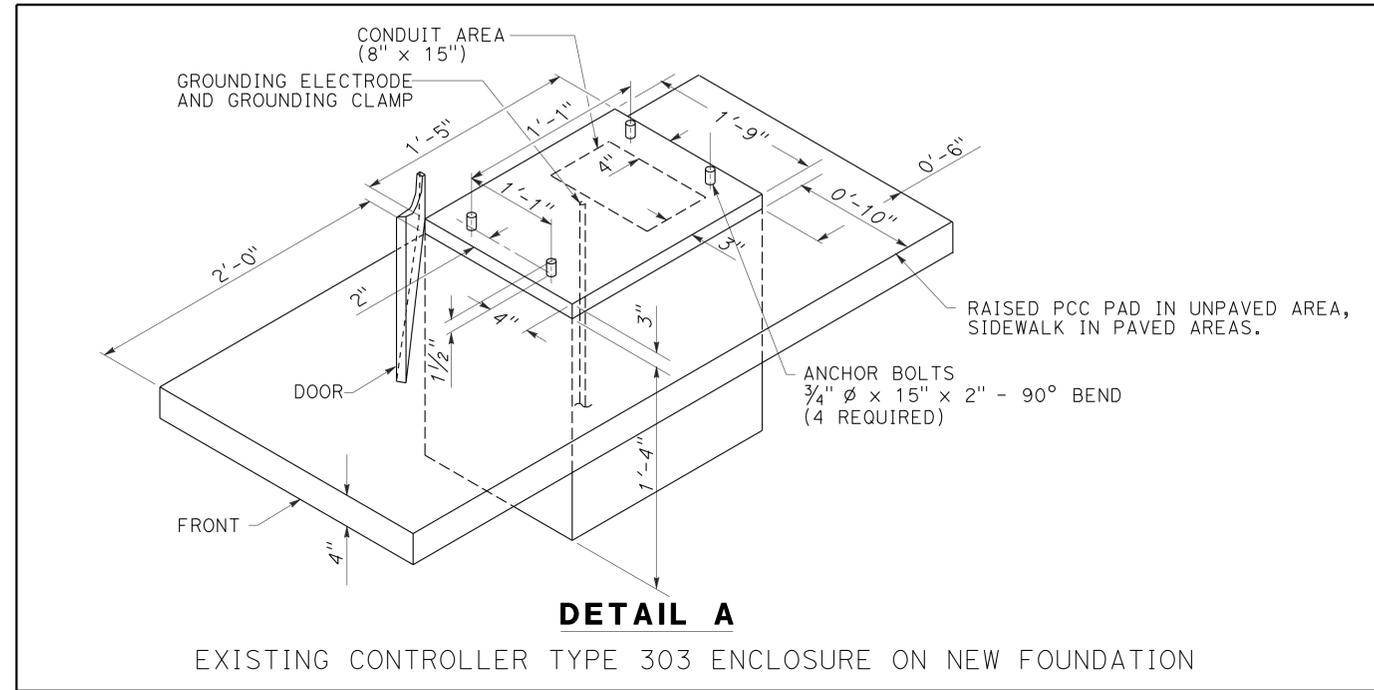
REGISTERED ELECTRICAL ENGINEER DATE 02-04-13
 4-15-13
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
JOANNE VO
 No. E 16748
 Exp 9/30/14
 ELECTRICAL
 STATE OF CALIFORNIA

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

NOTES: (THIS SHEET ONLY)

- FOR GENERAL NOTES, LEGEND AND ABBREVIATIONS, SEE SHEET E-1 AND E-2.
- FOUNDATION OF THE STEP DOWN TRANSFORMER TO BE 18" X 18". ANCHORAGE PER MANUFACTURER TEMPLATE.



FOUNDATION DETAILS

OCTA FACILITY

NO SCALE

E-33

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	202	357

REGISTERED ELECTRICAL ENGINEER	DATE
<i>Joanne Vo</i>	02-04-13
PLANS APPROVAL DATE	
	4-15-13

REGISTERED PROFESSIONAL ENGINEER
JOANNE VO
No. E. 16748
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ELECTRICAL
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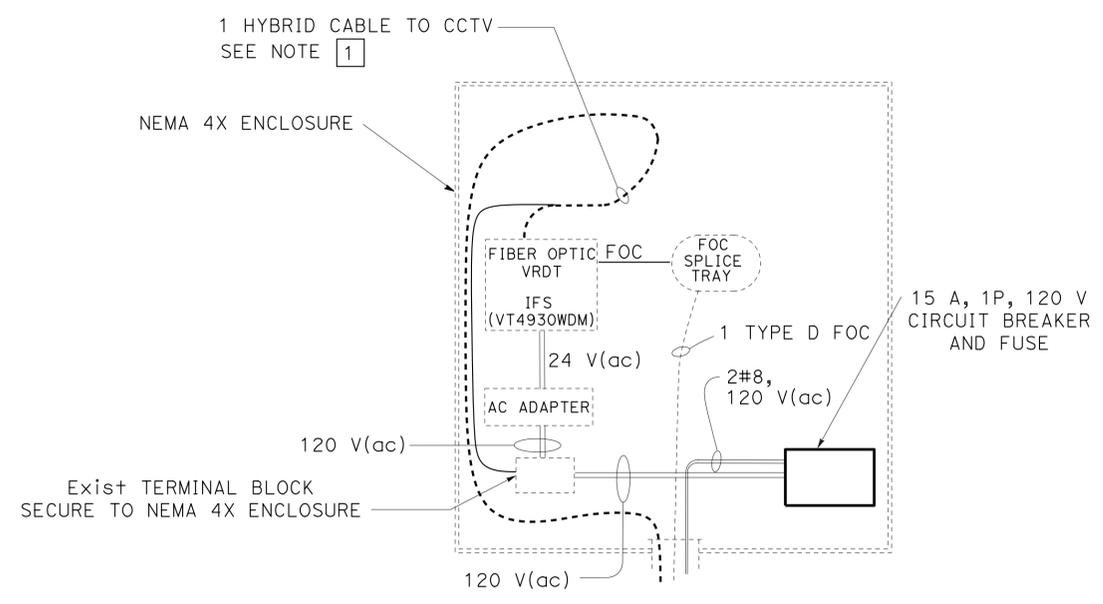
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NOTE: (THIS SHEET ONLY)

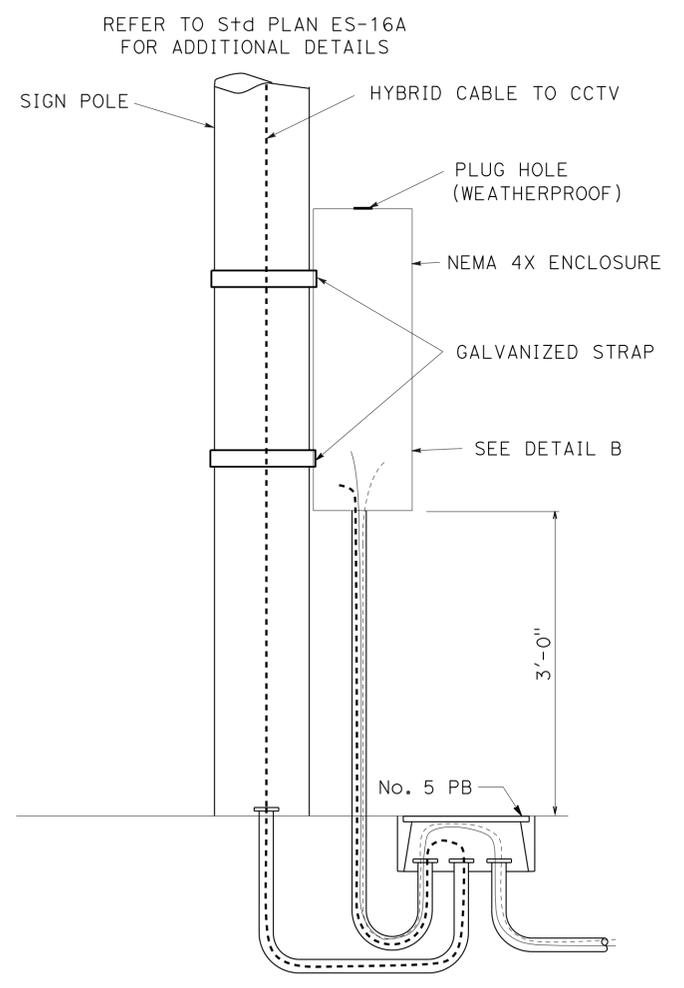
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LEGEND: (THIS SHEET ONLY)

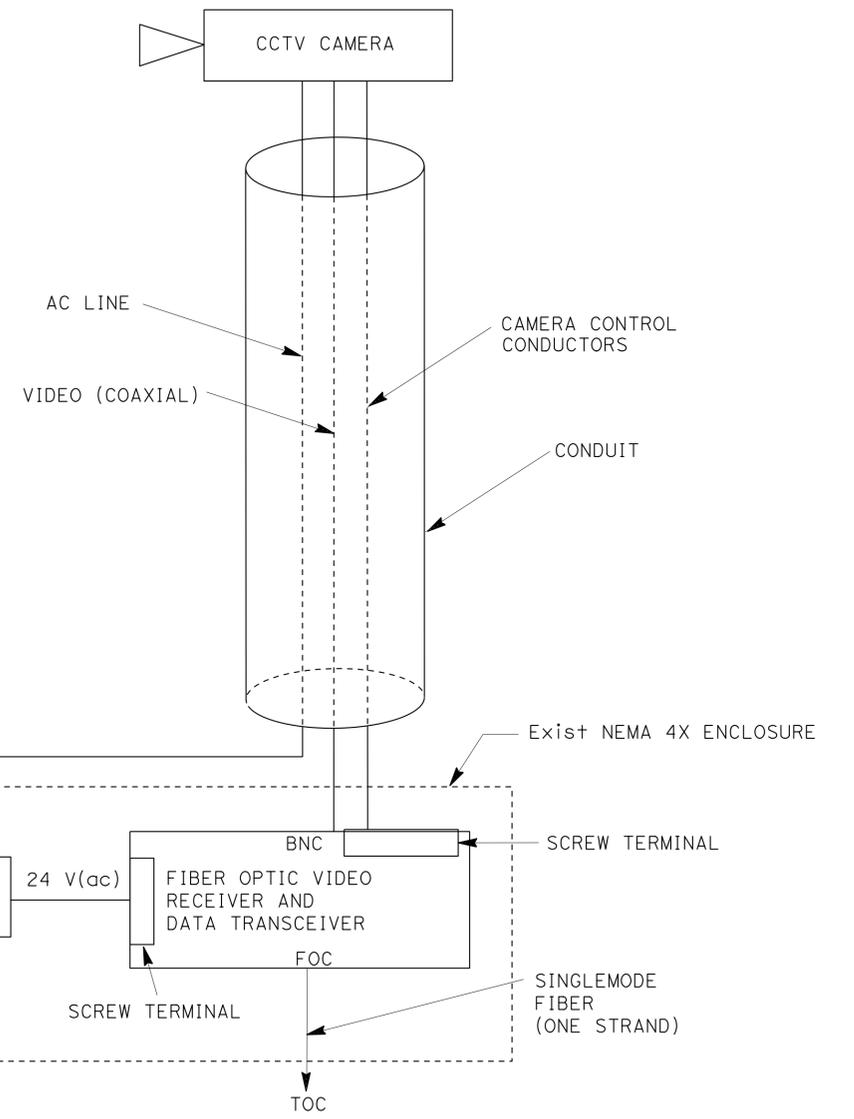
1 HYBRID CABLE CONSISTS OF:
CAMERA CONTROL CONDUCTORS
AC LINE
VIDEO (COAXIAL)



DETAIL B
Exist NEMA 4X ENCLOSURE
(FOR SIZE AND NUMBER OF CONDUCTORS SEE ELECTRICAL PLANS)



DETAIL A
CCTV POLE
(SIDE VIEW)



DETAIL C
CCTV EQUIPMENT

TYPICAL FIBER OPTIC AND CCTV POLE DETAIL

OCTA FACILITY

NO SCALE

E-34

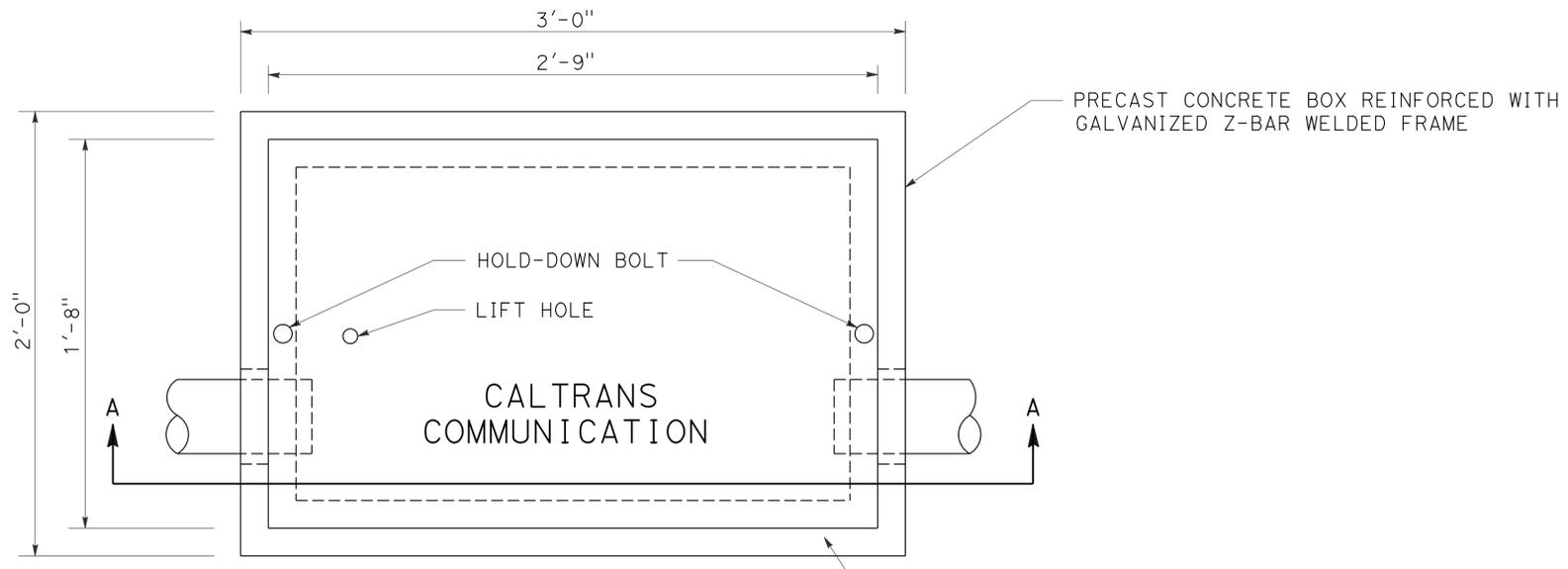
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
DESIGNED BY: JOANNE VO
CHECKED BY: VANESSA TRUONG
REVISIONS: (None listed)

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	203	357

REGISTERED ELECTRICAL ENGINEER	DATE
<i>Joanne Vo</i>	02-04-13
PLANS APPROVAL DATE	
	4-15-13

REGISTERED PROFESSIONAL ENGINEER
JOANNE VO
No. E 16748
Exp 9/30/14
ELECTRICAL
STATE OF CALIFORNIA

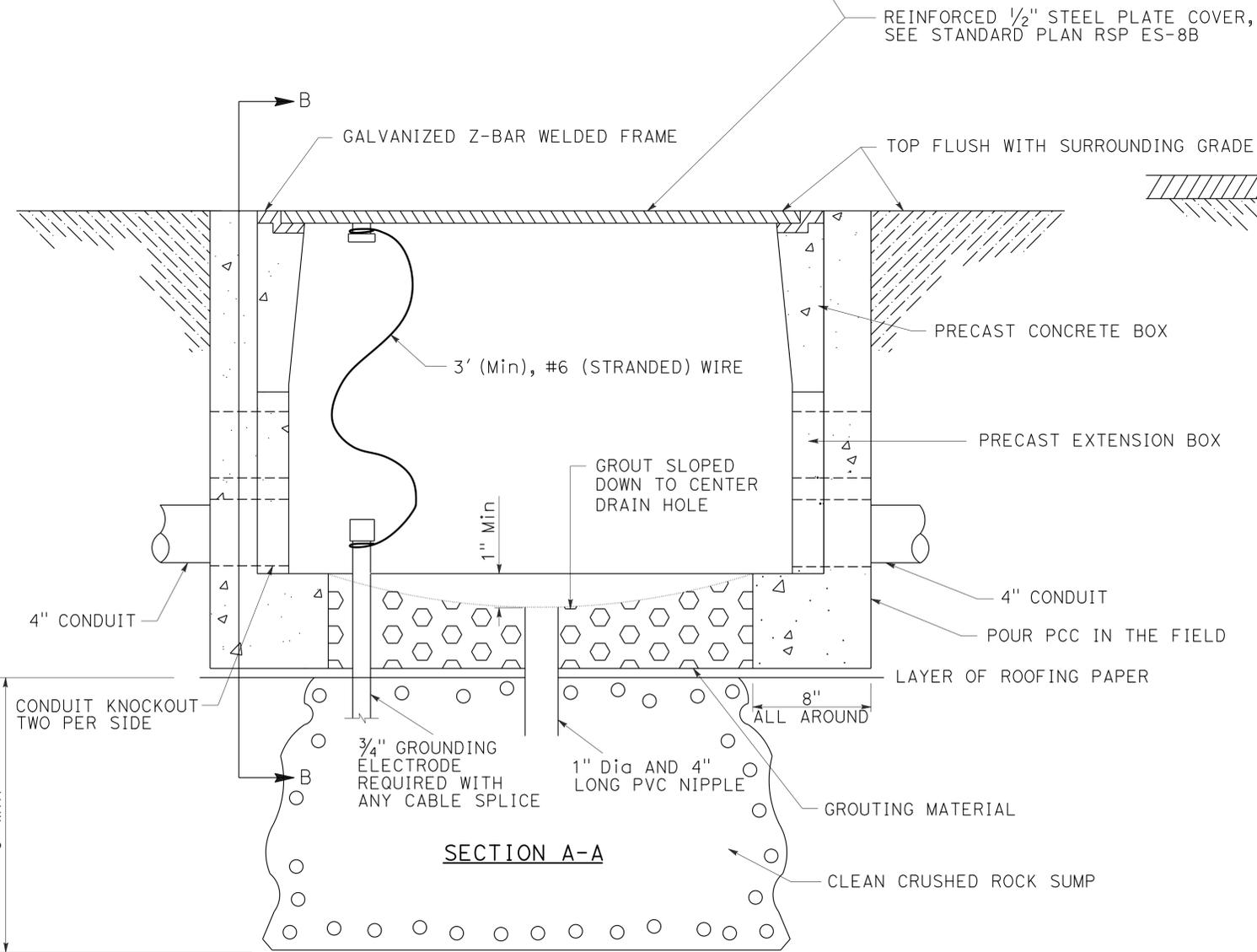
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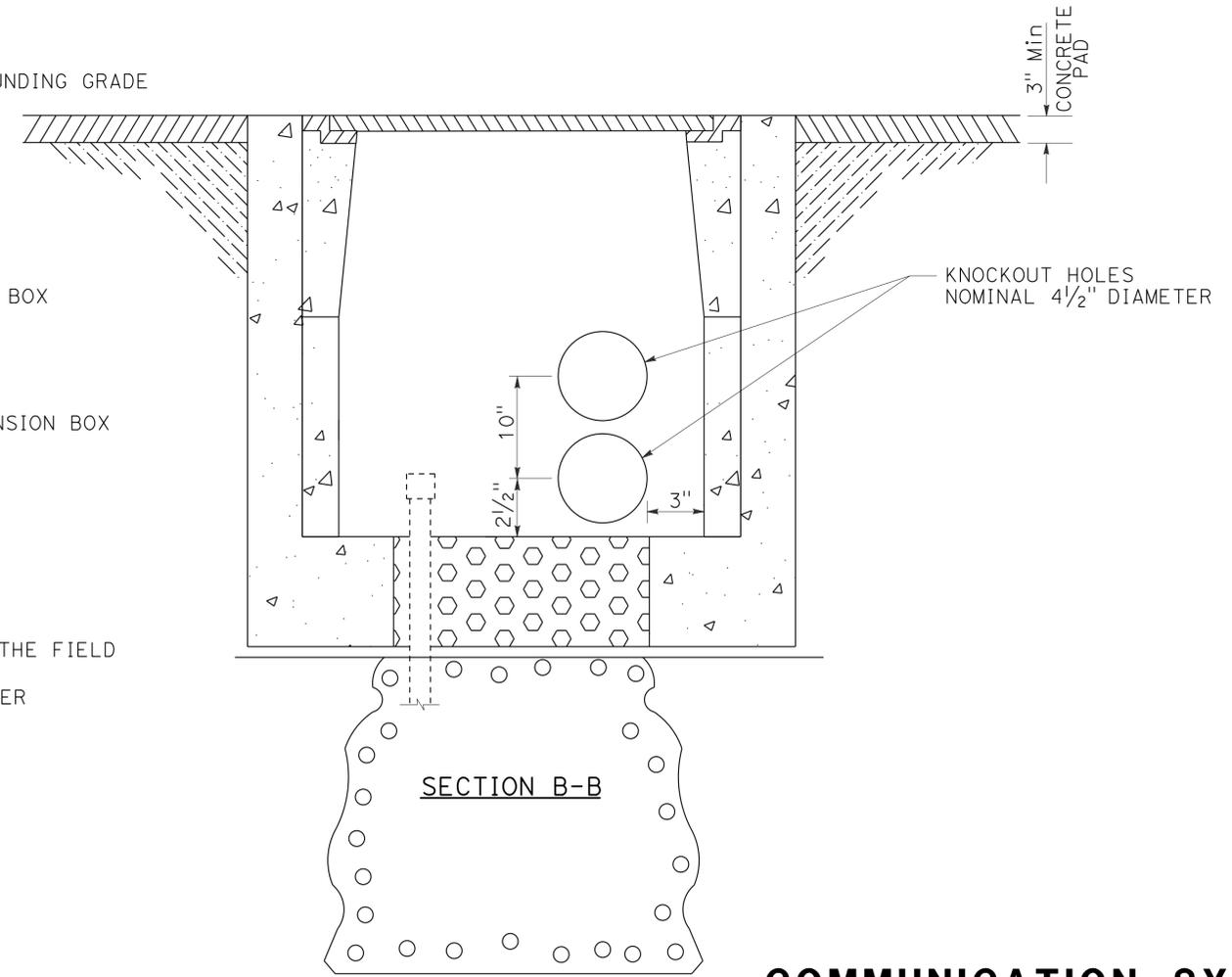
TOP VIEW

NOTES: (THIS SHEET ONLY)

1. ADDITIONAL CONDUIT ENTRANCES AS SHOWN IN THE PLANS.
2. SEE SPECIAL PROVISIONS REGARDING HOLD DOWN BOLTS FOR TRAFFIC COVERS.
3. WHERE FURNISHED, TOP CONDUIT SHALL BE A SPARE.
4. 4'-0" x 5'-0" CONCRETE PAD WITH PULL BOX IN CENTER SHALL BE INSTALLED FLUSH WITH PULL BOX COVER.
5. FOR GENERAL NOTES, LEGEND, AND ABBREVIATIONS, SEE SHEET E-1 AND E-2.



SECTION A-A



SECTION B-B

DETAILS FOR 5 (T) AND 6 (T) AND COMMUNICATION PULL BOX

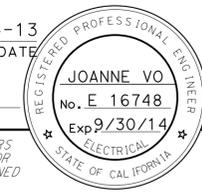
COMMUNICATION SYSTEM

NO SCALE

E-35

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 CALCULATED/DESIGNED BY: SHAHRAM SHAHRIARI
 CHECKED BY: VANESSA TRUONG
 VO
 TRUONG
 REVISOR: JOANNE VO
 DATE: 02-04-13
 REVISION: 02-04-13
 DATE: 02-04-13

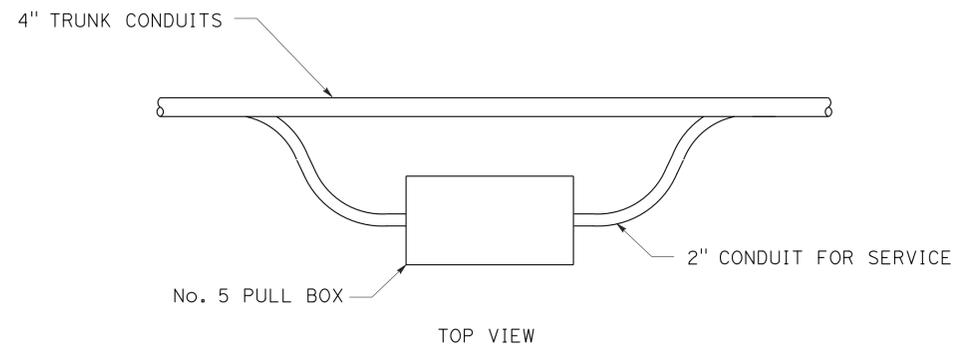
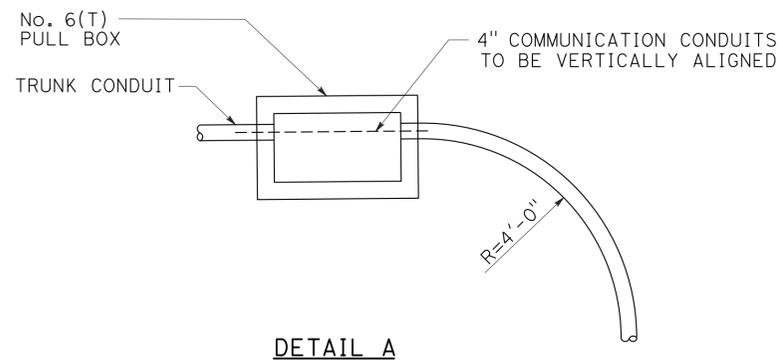
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	204	357

 REGISTERED ELECTRICAL ENGINEER DATE 02-04-13	
PLANS APPROVAL DATE 4-15-13	

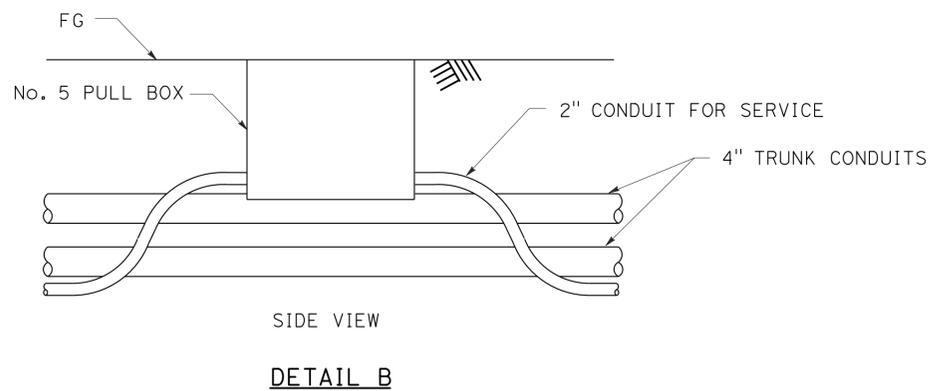
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NOTES: (THIS SHEET ONLY)

- DIMENSIONS VARY ACCORDING TO SIZE OF CONDUIT. BUT THE MINIMUM BEND RADIUS OF 4'-0" MUST BE MAINTAINED ON ALL TRUNK CONDUITS CONTAINING FIBER OPTIC CABLE AND SIX TIMES THE CONDUIT DIAMETER FOR ALL OTHER CONDUITS.
- ALL BENDS MUST BE FACTORY BENDS.
- YOU MUST ADAPT CONDUIT STUBOUTS FOR SPECIFIC PROJECT REQUIREMENTS.
- ADDITIONAL CONDUIT ENTRANCES AS REQUIRED.
- TOP CONDUIT TO BE SPARE.
- FOR GENERAL NOTES, LEGEND, AND ABBREVIATIONS, SEE SHEET E-1 AND E-2.



ROUTE SERVICE CONDUIT UP FROM BENEATH CONDUITS INTO No. 5 PULL BOX LOCATED ALONGSIDE TRUNK. TRUNK CONDUITS REMAIN IN TRENCH.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 CALCULATED/DESIGNED BY: VANESSA TRUONG
 CHECKED BY: JOANNE VO
 REVISOR: VANESSA TRUONG
 DATE: 02-04-13

DETAILS FOR 5 (T) AND 6 (T) AND COMMUNICATION PULL BOX

COMMUNICATION SYSTEM

E-36

NO SCALE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	205	357

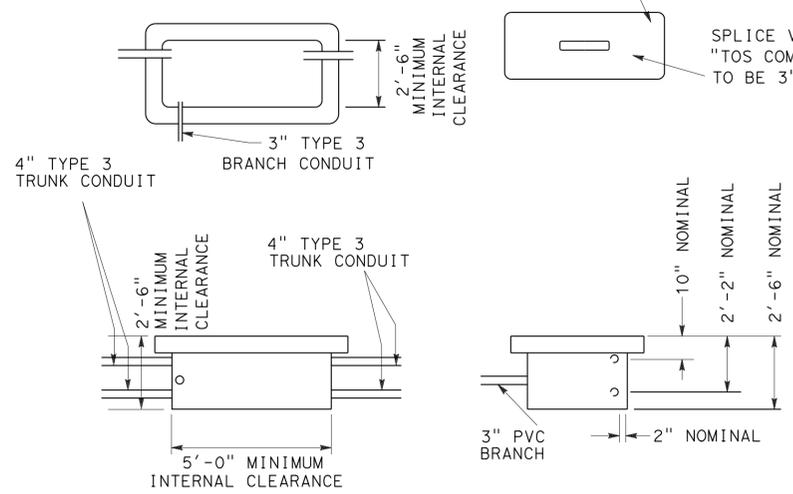
02-04-13
REGISTERED ELECTRICAL ENGINEER DATE

4-15-13
PLANS APPROVAL DATE

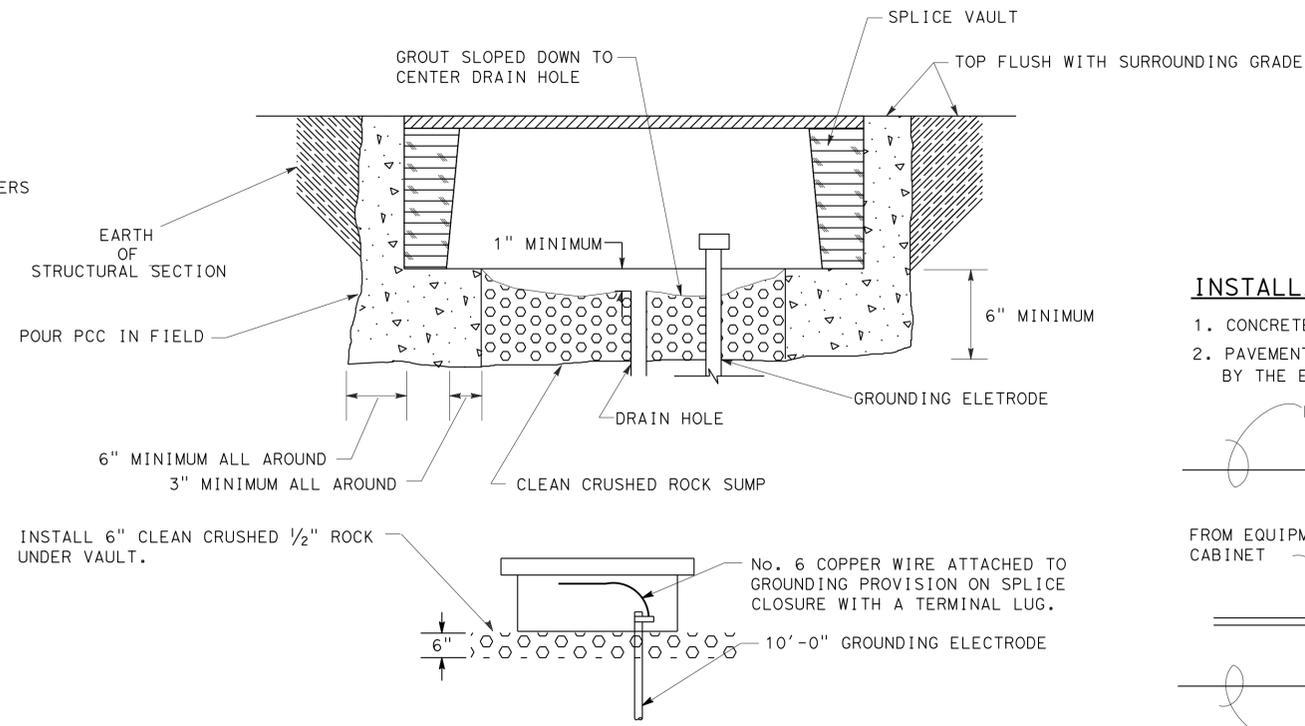
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REGISTERED PROFESSIONAL ENGINEER
JOANNE VO
No. E. 16748
Exp 9/30/14
ELECTRICAL
STATE OF CALIFORNIA

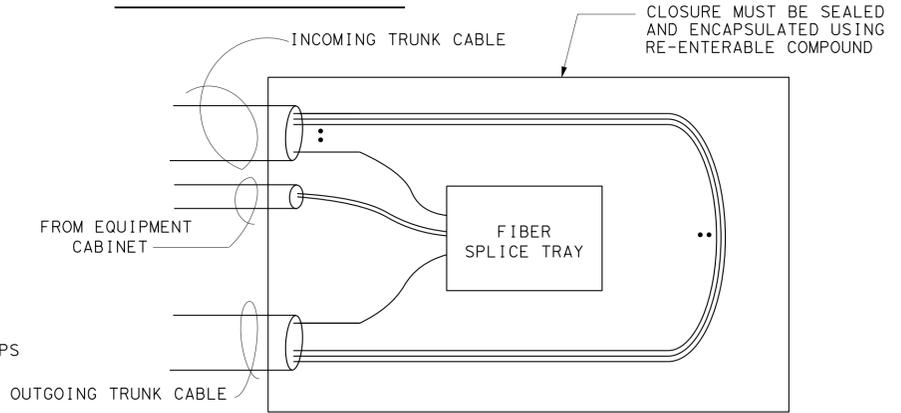
THE FRAME AND LID OF THE VAULT MUST COMPLY WITH THE LOAD RATING APPLICABLE TO THE VAULT LOCATION AS DESCRIBED IN THE SPECIAL PROVISIONS.



SPLICE VAULT



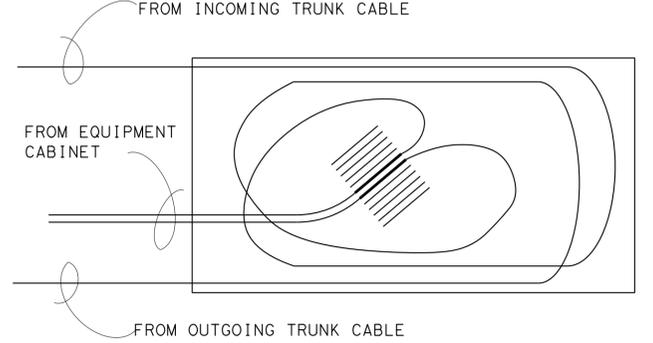
VAULT INSTALLATION



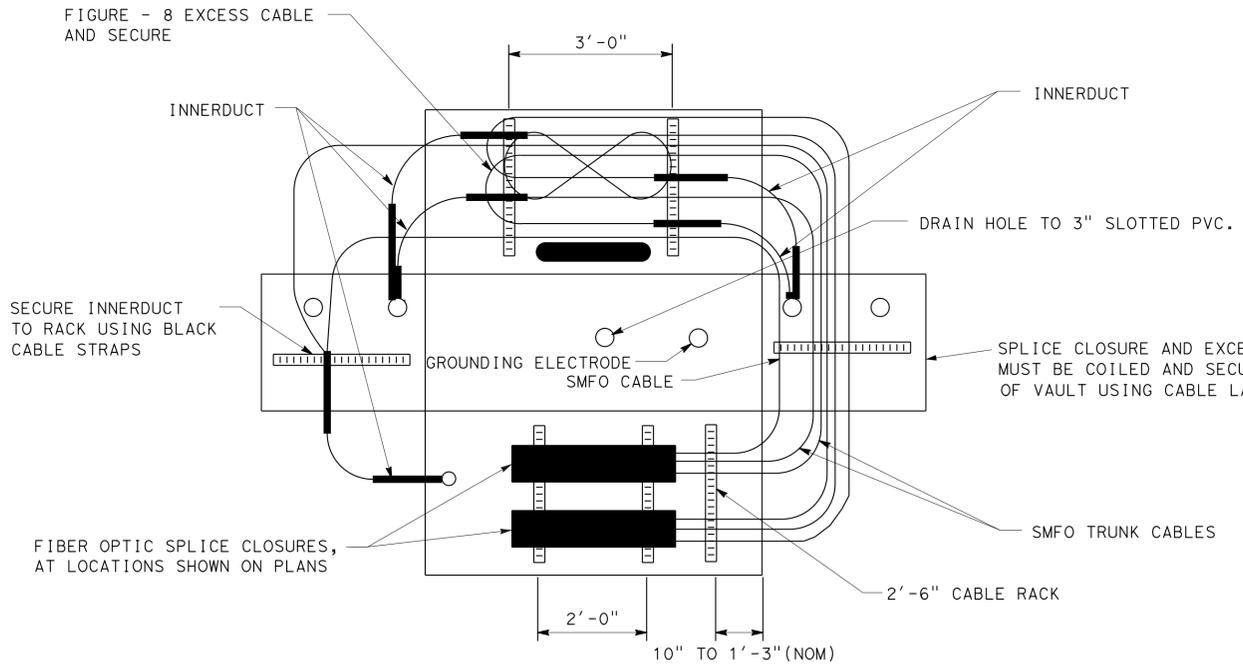
TYPICAL FIBER SPLICE CLOSURE

INSTALLATION NOTES: (THIS SHEET ONLY)

1. CONCRETE RING SHALL BE MINOR CONCRETE.
2. PAVEMENT AND SUBGRADE WILL BE AS DIRECTED BY THE ENGINEER.



TYPICAL FIBER SPLICE TRAY

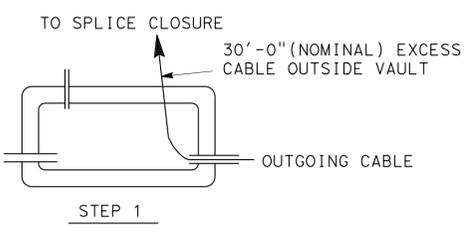


CABLE INSTALLATION

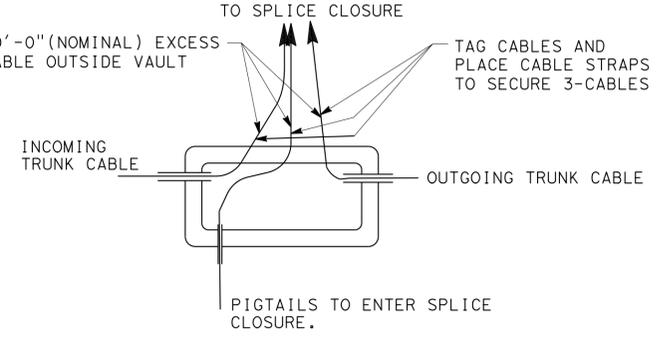
TOP VIEW - WALLS FOLDED DOWN FOR CLARITY

NOTES: (THIS SHEET ONLY)

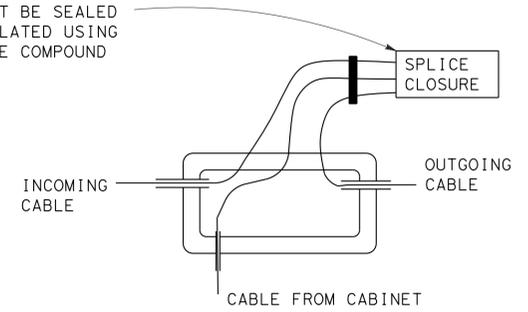
1. UPON ACCEPTANCE OF THE WORK ALL CONDUITS MUST BE SEALED WITH COMPATIBLE SEALANT MATERIAL.
2. ALL GROUND CONNECTIONS MUST BE COATED WITH OXIDATION PROHIBITING COMPOUND.
3. ALL CABLE STRAPS MUST BE DESIGNED TO WITHSTAND ULTRA-VIOLET EXPOSURE.
4. THE VAULT SHALL BE CAULKED AFTER ALL KNOWN ENTRANCES HAVE BEEN MADE.
5. INSTALL ALL CABLES IN LOWER 4" CONDUIT.
6. UPPER 4" CONDUIT IS SPARE ONLY.
7. NOT TO SCALE.
8. VAULT MUST HAVE INTEGRAL BASE OR MUST BE GROUTED PER STANDARD SPECIFICATION OF PULL BOXES.
9. NUMBER OF SPLICE CLOSURES MAY VARY.
10. FOR GENERAL NOTES, LEGEND AND ABBREVIATIONS, SEE SHEET E-1 AND E-2.



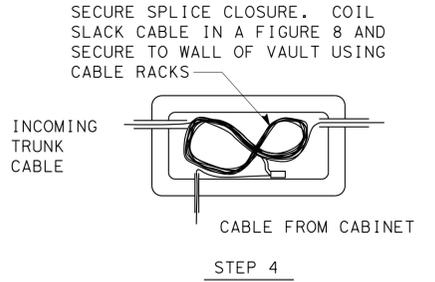
STEP 1



STEP 2



STEP 3



STEP 4

SPLICE VAULT DETAILS

SPLICE PROCEDURE

COMMUNICATION SYSTEM

NO SCALE

E-37

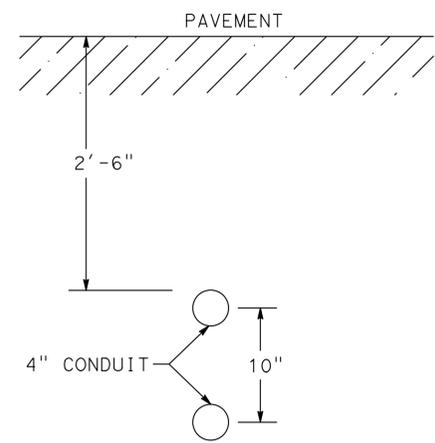
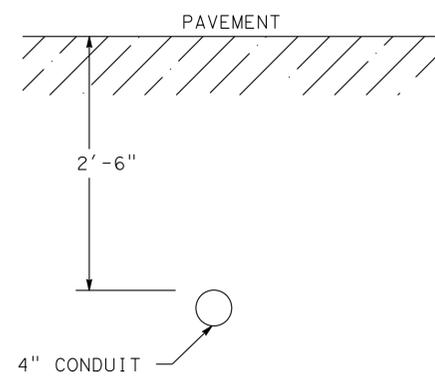
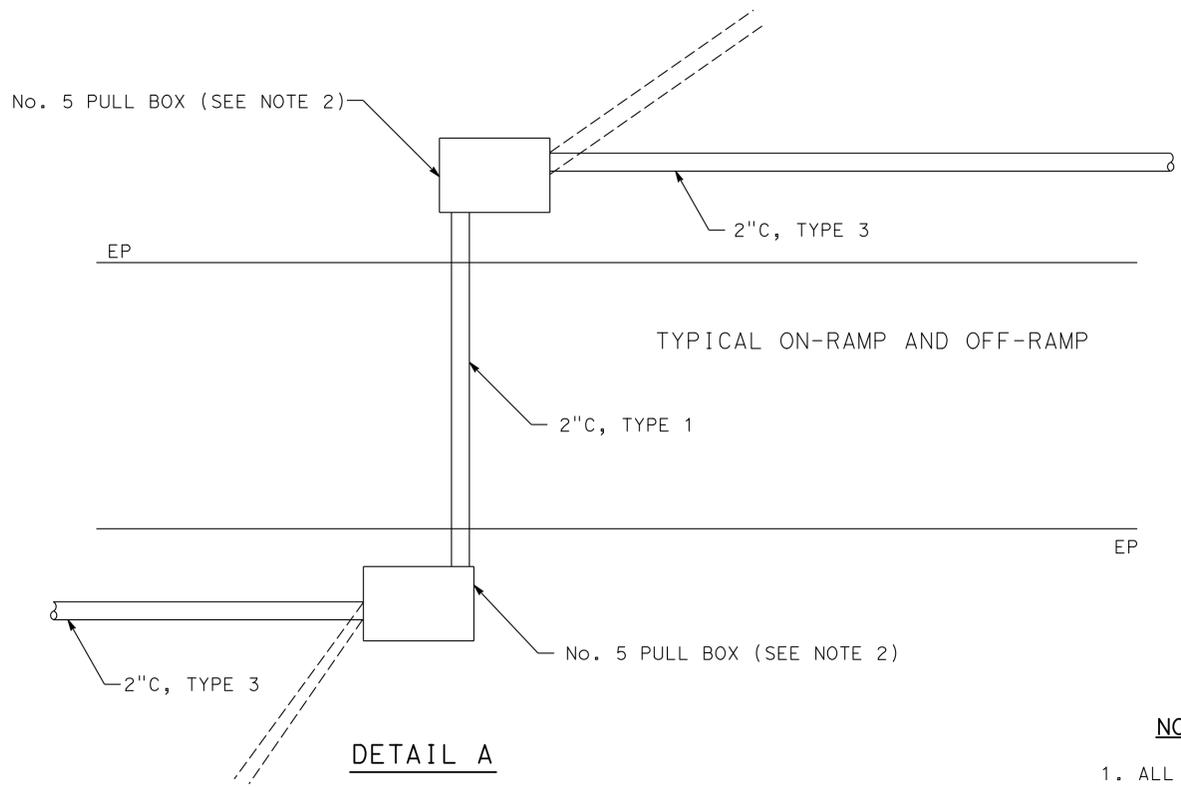
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	206	357

02-04-13
REGISTERED ELECTRICAL ENGINEER DATE

4-15-13
PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER
JOANNE VO
No. E. 16748
Exp. 09/30/14
ELECTRICAL
STATE OF CALIFORNIA

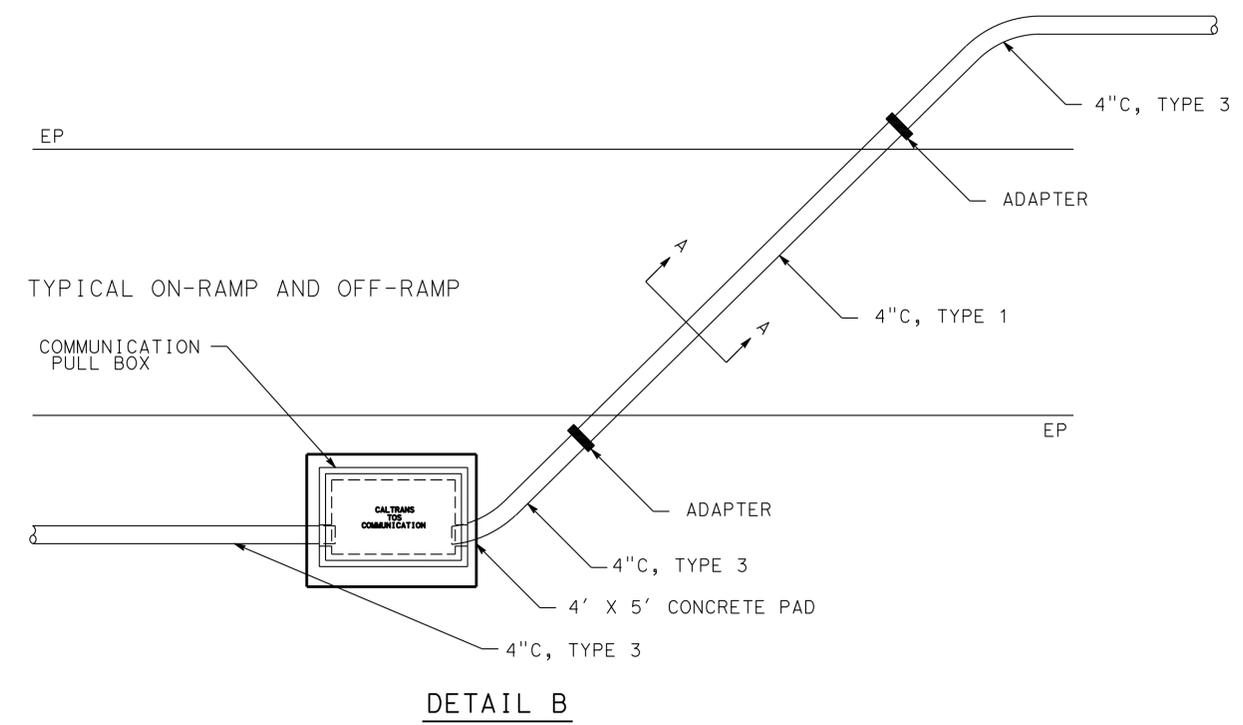


SECTION A-A

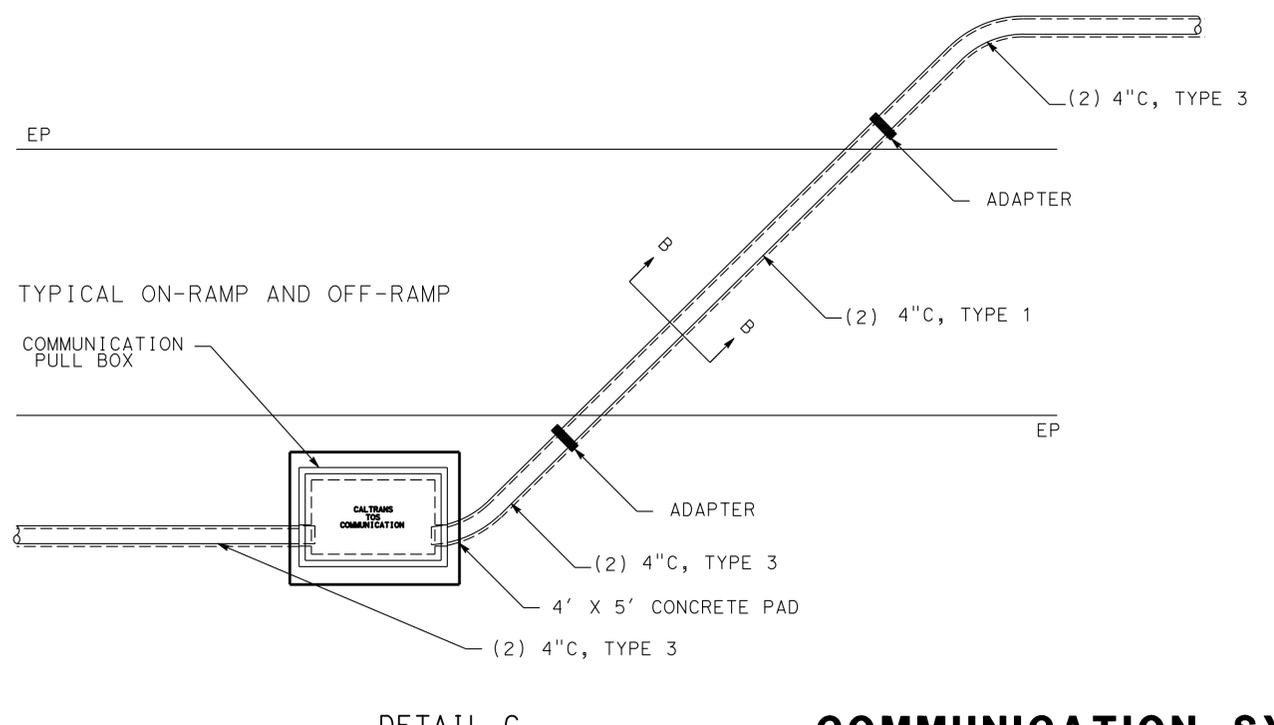
SECTION B-B

NOTES: (THIS SHEET ONLY)

1. ALL CONDUITS MUST BE 2'-6" BELOW FINISHED GRADE.
2. PLACE PULL BOX AS SHOWN ON THE PLANS.
3. ALL BENDS MUST BE FACTORY BENDS.
4. BEND ANGLES AND CONDUIT DIRECTION VARY AS SHOWN IN PLANS.
5. FOR GENERAL NOTES, LEGEND, AND ABBREVIATIONS, SEE SHEET E-1 AND E-2.



DETAIL B



DETAIL C

COMMUNICATION SYSTEM
NO SCALE
E-38

CONDUIT JACKING DETAILS

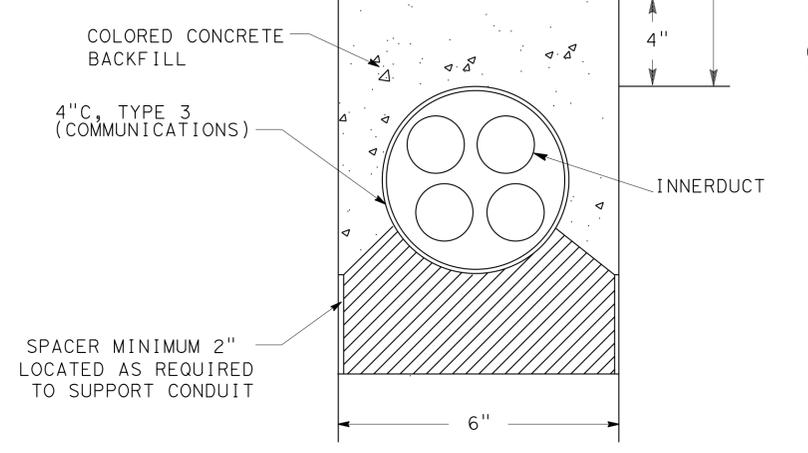
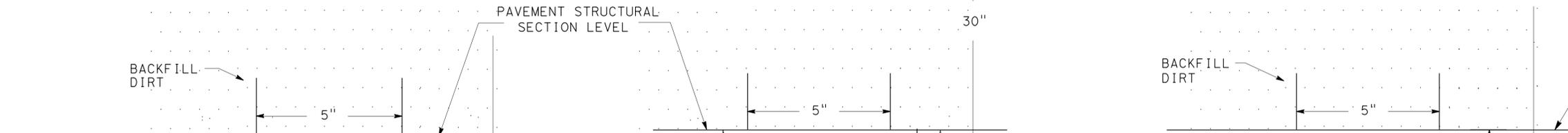
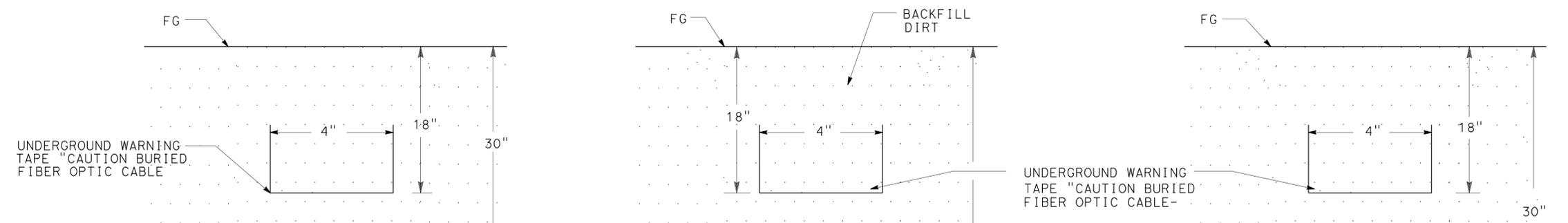
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
DESIGNED BY: JOANNE VO
CHECKED BY: VANESSA TRUONG
REVISOR: JOANNE VO
DATE: 02-04-13

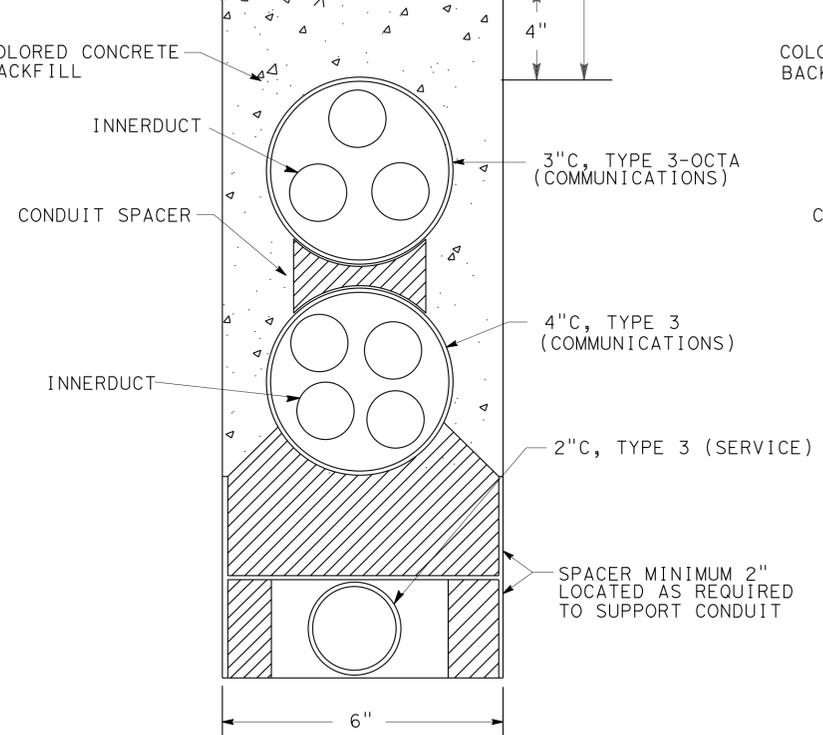
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	207	357

REGISTERED ELECTRICAL ENGINEER	DATE
<i>Joanne Vo</i>	02-04-13
REGISTERED ELECTRICAL ENGINEER	DATE
JOANNE VO	4-15-13
No. E. 16748	PLANS APPROVAL DATE
Exp 09/30/14	

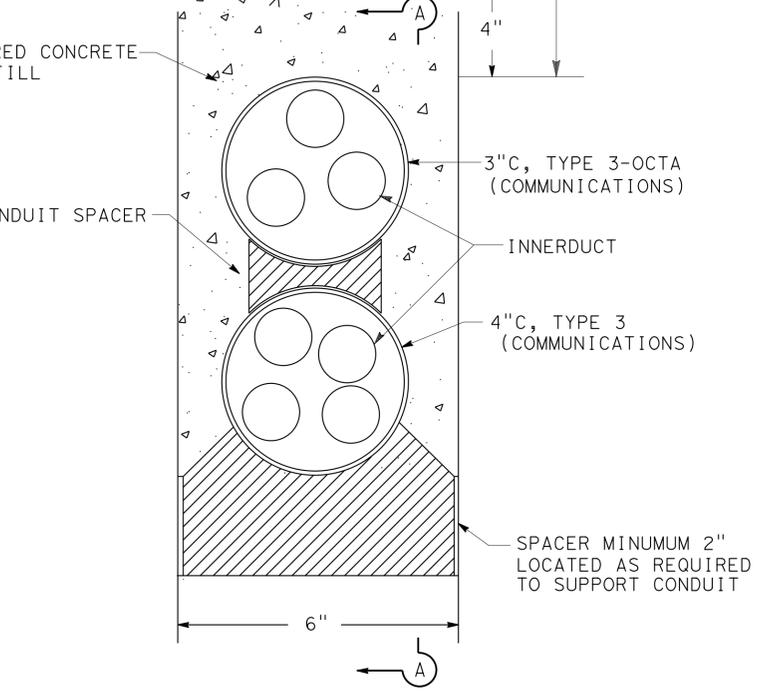
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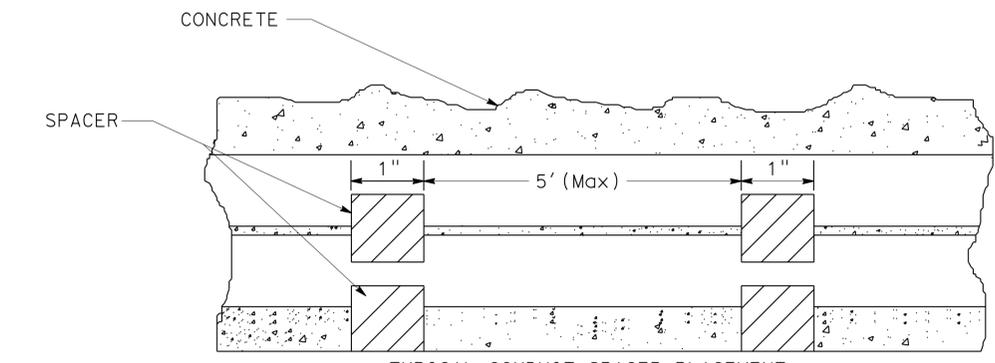
DETAIL A



DETAIL B



DETAIL C



TYPICAL CONDUIT SPACER PLACEMENT

SECTION A-A

TRENCH IN DIRT DETAILS
 FOR NOTES, LEGEND, AND ABBREVIATIONS, SEE SHEET E-1 AND E-2.

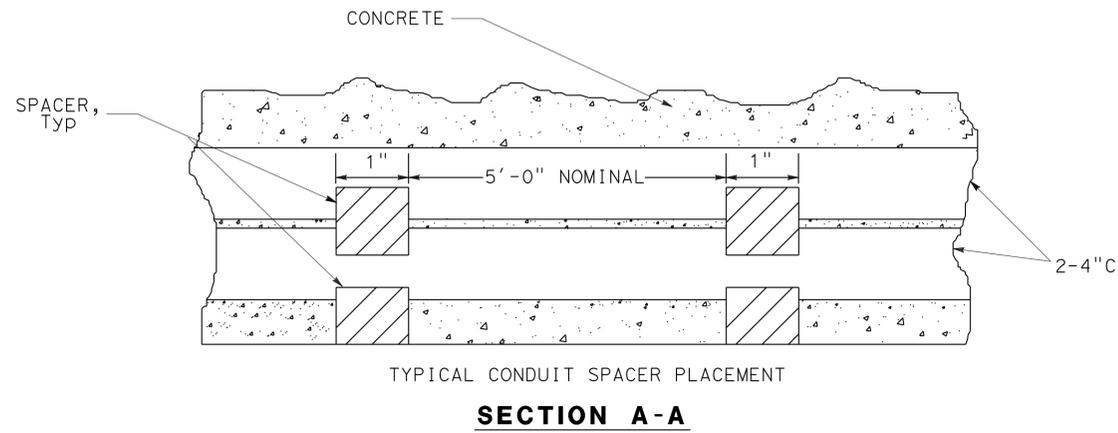
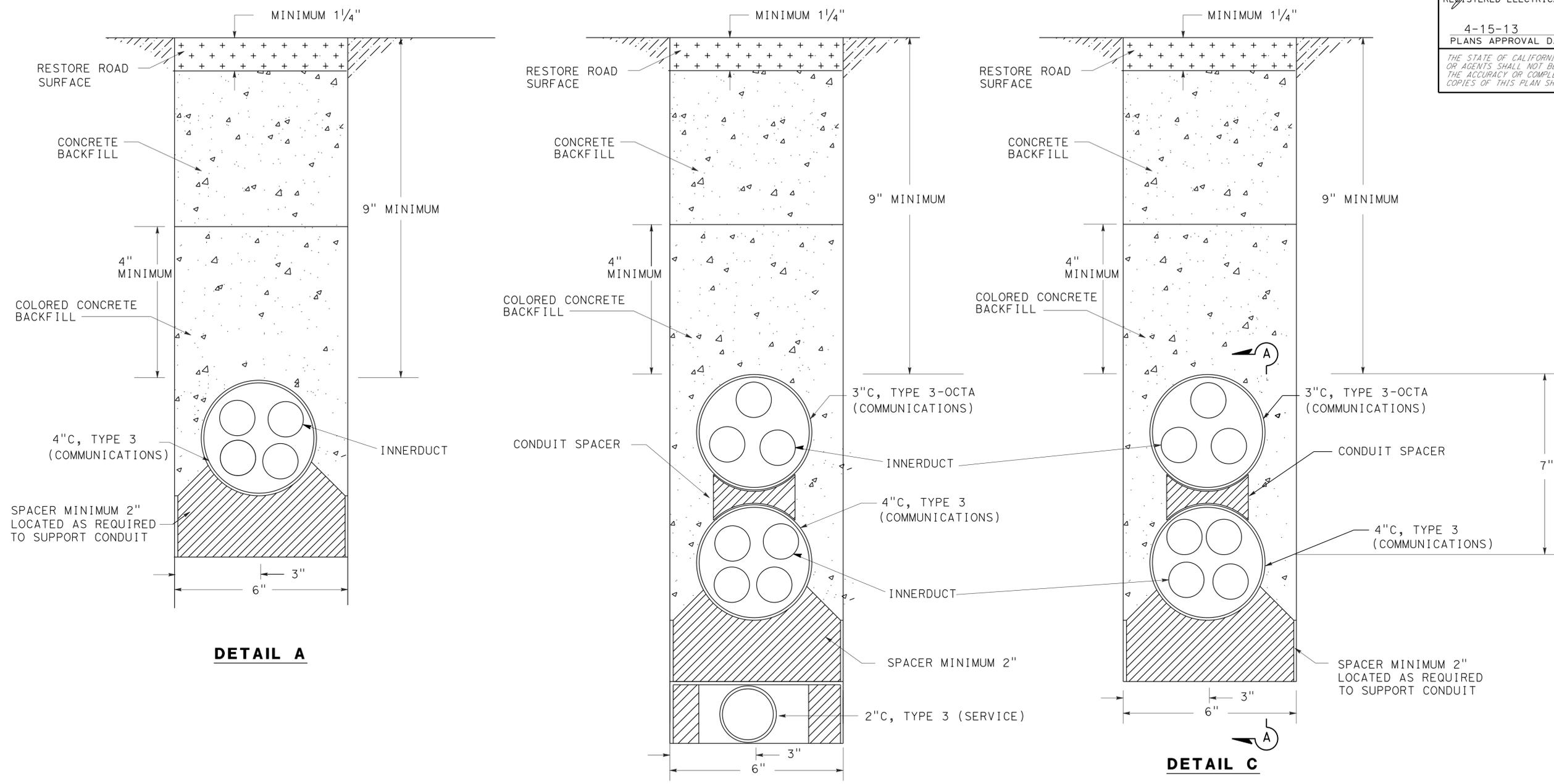
COMMUNICATION SYSTEM
 NO SCALE
E-39

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 CALCULATED/DESIGNED BY: SHAHRAM SHAHRIARI
 CHECKED BY: SHAHRAM SHAHRIARI
 JOANNE VO
 VANESSA TRUONG
 REVISOR: JOANNE VO
 DATE: 02-04-13

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12	Ora	91	8.1/9.3,10.1	208	357

REGISTERED ELECTRICAL ENGINEER DATE 02-04-13
 REGISTERED ELECTRICAL ENGINEER
 JOANNE VO
 No. E 16748
 Exp. 09/30/14
 ELECTRICAL
 STATE OF CALIFORNIA
 4-15-13
 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.



- NOTES: (THIS SHEET ONLY)**
- FOR GENERAL NOTES, LEGEND AND ABBREVIATIONS, SEE SHEET E-1 AND E-2.
 - WHEN TRENCH TRANSITIONS FROM PAVEMENT TO DIRT AREAS, CONDUIT SHALL MEET MINIMUM BEND RADIUS FOR FIBER OPTIC.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 CALCULATED/DESIGNED BY: JOANNE VO
 CHECKED BY: VANESSA TRUONG
 REVISOR: JOANNE VO
 DATE REVISOR: VANESSA TRUONG

TRENCH IN PAVEMENT DETAILS

COMMUNICATION SYSTEM
NO SCALE
E-40

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 CHECKED BY: VANESSA TRUONG
 DESIGNED BY: JOANNE VO
 REVISIONS: (None listed)

CONDUCTOR AND CONDUIT SCHEDULE																		
AWG	CIRCUIT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
DLC	SURVEILLANCE		10	10		10										10		
	DEMAND		2			4										4		
	PASSAGE		1			2										2		
	COUNT	1				1	1				2	2	2	2		3	2	
#14	LOOP WIRE				8													
	METER ON SIGN											2	4		4			
	SPARE					6	6								6			
	RAMP SIGNAL					6	6								6			
#10	SIGNAL COMMON					2	2								2			
#6	SERVICE (RMS)				2E	2	2	4	2	4E/2	6	6	6	6	2	2		
#6	SERVICE (IRRIGATION)				2E				4	4E	4	4	4	4	2			2
12 SINGLEMODE FO (*)															1E			
CONDUIT SIZE		1 1/2"	3"	2"	2"E	4"	2"	2"	2"E	2"E	2"	2"E	3"	3 1/2"	2"E	2-3"	1 1/2"	2"E

NOTE: **RC** Exist CONDUCTORS AND INSTALL ALL NEW CONDUCTORS, UNLESS OTHERWISE NOTED.
 (E): EXISTING (*) : SEE SHEET E-28 FOR FOC REFERENCE.

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12	Ora	91	8.1/9.3,10.1	209	357

04-04-13
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 4-15-13
 PLANS APPROVAL DATE

JOANNE VO
 No. E 16748
 Exp 9/30/14

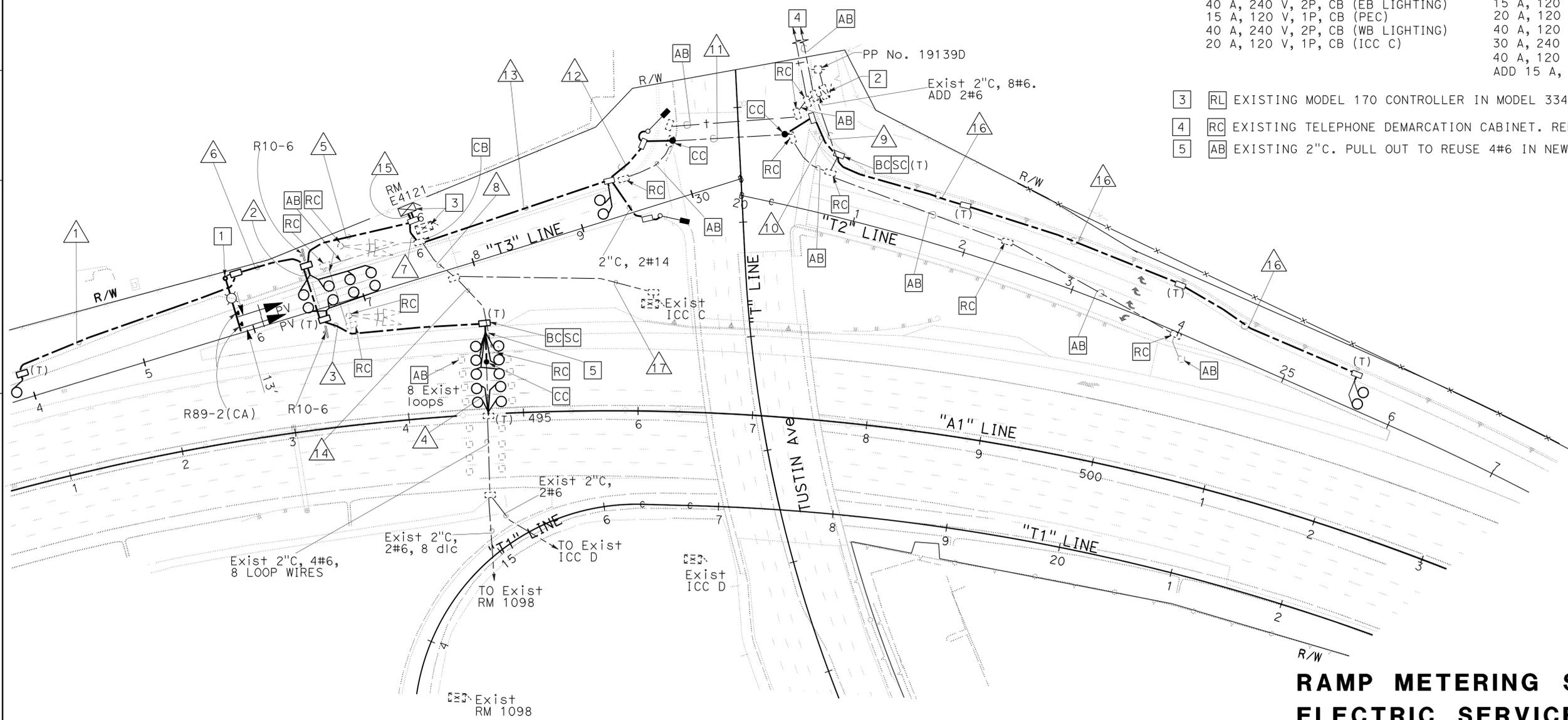
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NOTES: (THIS SHEET ONLY)

- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- FOR GENERAL NOTES, LEGEND AND ABBREVIATIONS, SEE SHEET E-1 AND E-2. SEE SHEET E-21 FOR FIBER ASSIGNMENT TABLE.
- SEE SHEET E-42 FOR RM DETAILS.
- AB** ALL EXISTING LOOPS WHERE NEW LOOPS ARE INSTALLED.

LEGEND: (THIS SHEET ONLY)

- TYPE 29-5-100 STANDARD WITH 48' SIGNAL MAST ARM, 2-MAS, 15' LUMINAIRE MAST ARM AND LED LUMINAIRE ROADWAY 2.
- EXISTING 120/240 V TYPE III-CF METERED SERVICE EQUIPMENT ENCLOSURE. ID No. 07-55-091-0-008.400
 METER No.1:
 40 A, 240 V, 2P, CB (EB LIGHTING)
 15 A, 120 V, 1P, CB (PEC)
 40 A, 240 V, 2P, CB (WB LIGHTING)
 20 A, 120 V, 1P, CB (ICC C)
 METER No.2:
 15 A, 120 V, 1P, CB (TELEPHONE)
 20 A, 120 V, 1P, CB (ICC D)
 40 A, 120 V, 1P, CB (RAMP METER)
 30 A, 240 V, 2P, CB (LIGHT ON MAST ARM)
 40 A, 120 V, 1P, CB (RAMP METER)
 ADD 15 A, 120 V, 1P, CB (PEC)
- RL** EXISTING MODEL 170 CONTROLLER IN MODEL 334 CABINET.
- RC** EXISTING TELEPHONE DEMARCATION CABINET. REMOVE FOUNDATION COMPLETELY.
- AB** EXISTING 2"C. PULL OUT TO REUSE 4#6 IN NEW CONDUIT.



RAMP METERING SYSTEM AND ELECTRIC SERVICE (IRRIGATION)
 SCALE: 1" = 50'
E-41

APPROVED FOR ELECTRICAL WORK ONLY

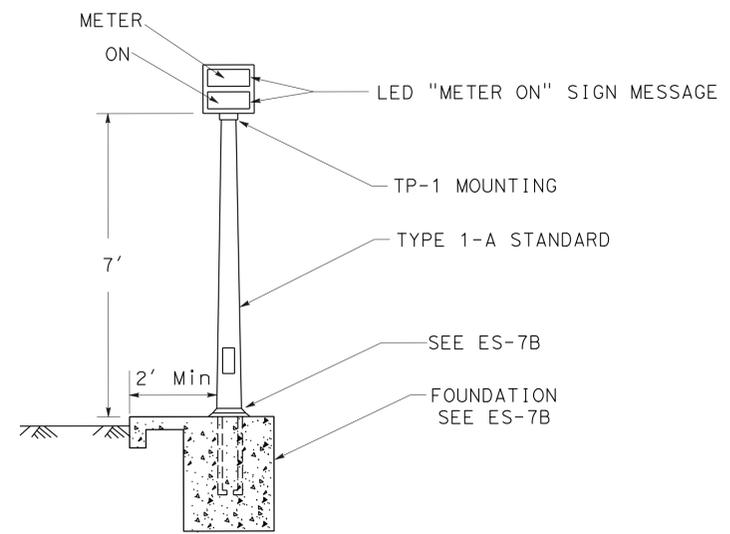
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12	Ora	91	8.1/9.3,10.1	210	357

02-04-13
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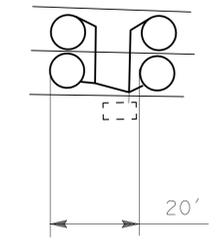
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ELECTRICAL
STATE OF CALIFORNIA

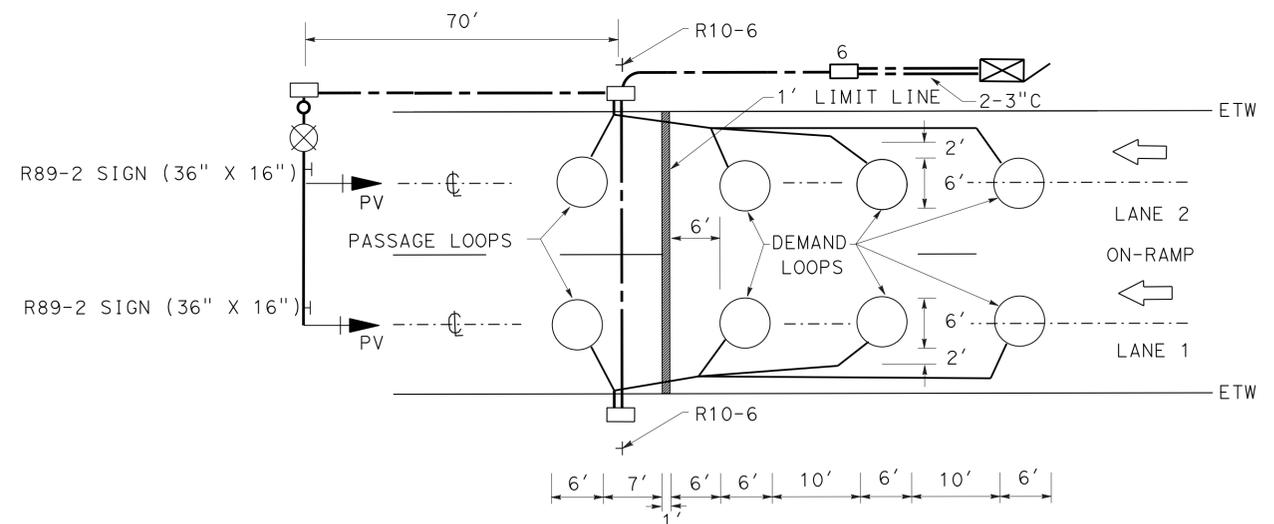
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**LED "METER ON" SIGN
DETAIL A**



**TYPICAL DOUBLE LOOP
AT MAINLINE
DETAIL C**



**TYPICAL 2-LANE RAMP
METERING INSTALLATION
DETAIL B**

NOTES: (LOOP DETECTOR)

1. SPACING FOR MAINLINE DOUBLE LOOP IS 20' LEADING EDGE TO LEADING EDGE.
2. LOOP DETECTORS SHALL BE INSTALLED AFTER THE PLACEMENT OF UPPERMOST LAYER OF NEW PAVEMENT AND AFTER APPLYING TRAFFIC STRIPES AND PAVEMENT MARKINGS.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 BARJESH SHARMA
 VANESSA TRUONG
 BS
 05/2011
 REVISOR: DATE
 CALCULATED/DESIGNED BY: CHECKED BY:

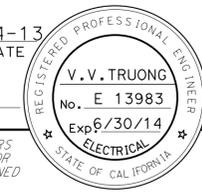
**RAMP METERING SYSTEM
AND ELECTRIC SERVICE (IRRIGATION)**

NO SCALE

E-42

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	211	357

Vanessa Van Truong 02-04-13
 REGISTERED ELECTRICAL ENGINEER DATE
 4-15-13
 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.



NOTES: (THIS SHEET)

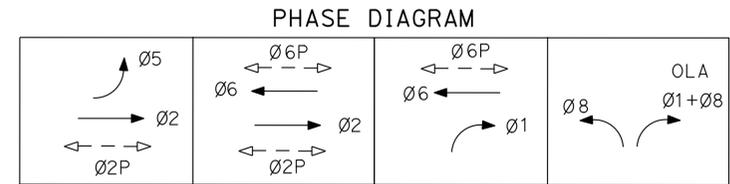
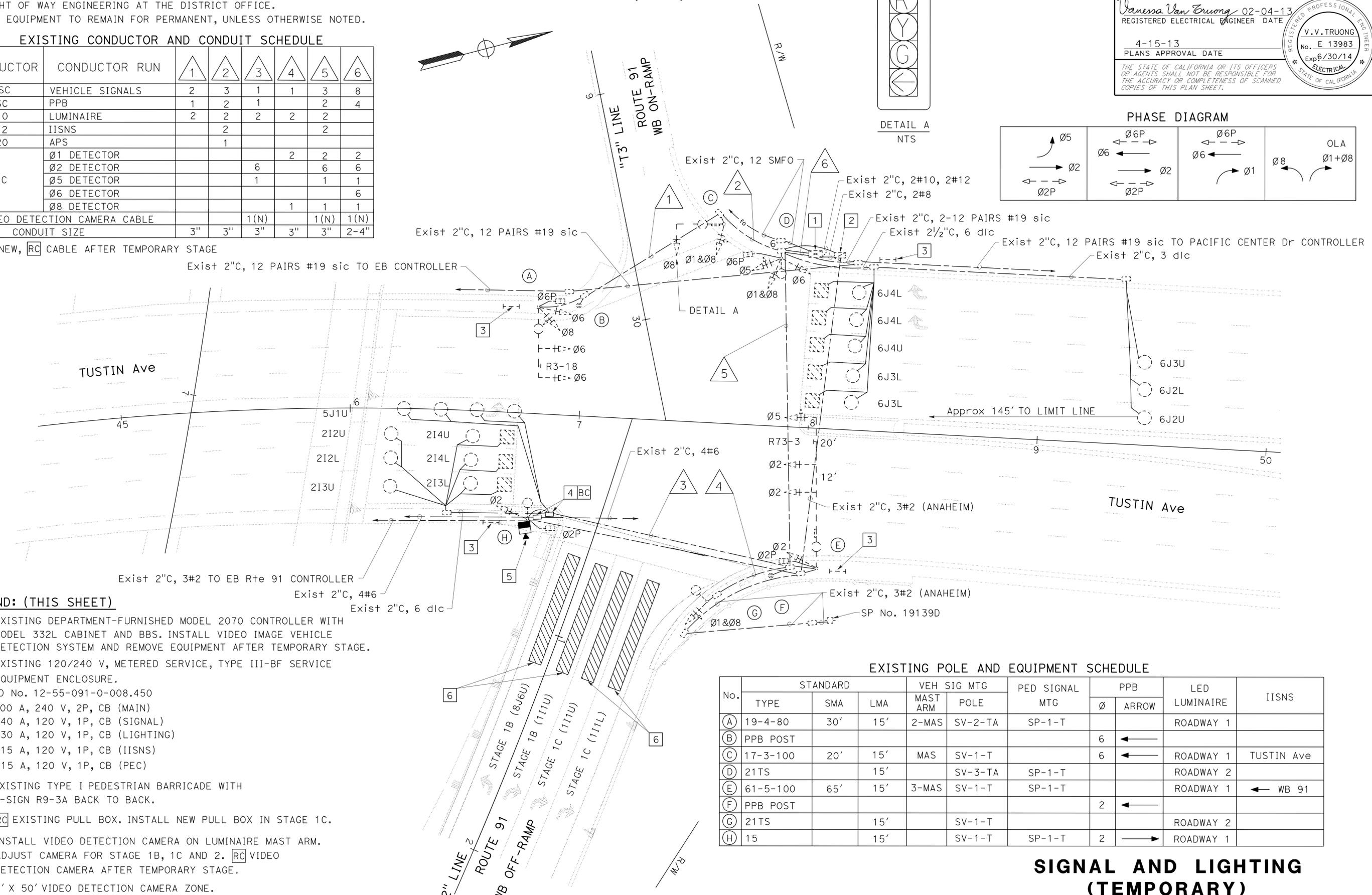
- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- ALL EQUIPMENT TO REMAIN FOR PERMANENT, UNLESS OTHERWISE NOTED.

EXISTING CONDUCTOR AND CONDUIT SCHEDULE

CONDUCTOR	CONDUCTOR RUN	1	2	3	4	5	6
12CSC	VEHICLE SIGNALS	2	3	1	1	3	8
3CSC	PPB	1	2	1		2	4
#10	LUMINAIRE	2	2	2	2	2	
#12	IISNS		2			2	
9#20	APS		1				
DLC	Ø1 DETECTOR				2	2	2
	Ø2 DETECTOR			6		6	6
	Ø5 DETECTOR			1		1	1
	Ø6 DETECTOR						6
	Ø8 DETECTOR				1	1	1
	VIDEO DETECTION CAMERA CABLE			1(N)		1(N)	1(N)
	CONDUIT SIZE	3"	3"	3"	3"	3"	2-4"

(N) - NEW, RC CABLE AFTER TEMPORARY STAGE

STAGE 1B, 1C, 2



LEGEND: (THIS SHEET)

- EXISTING DEPARTMENT-FURNISHED MODEL 2070 CONTROLLER WITH MODEL 332L CABINET AND BBS. INSTALL VIDEO IMAGE VEHICLE DETECTION SYSTEM AND REMOVE EQUIPMENT AFTER TEMPORARY STAGE.
- EXISTING 120/240 V, METERED SERVICE, TYPE III-BF SERVICE EQUIPMENT ENCLOSURE.
ID No. 12-55-091-0-008.450
100 A, 240 V, 2P, CB (MAIN)
40 A, 120 V, 1P, CB (SIGNAL)
30 A, 120 V, 1P, CB (LIGHTING)
15 A, 120 V, 1P, CB (IISNS)
15 A, 120 V, 1P, CB (PEC)
- EXISTING TYPE I PEDESTRIAN BARRICADE WITH 2-SIGN R9-3A BACK TO BACK.
- RC EXISTING PULL BOX. INSTALL NEW PULL BOX IN STAGE 1C.
- INSTALL VIDEO DETECTION CAMERA ON LUMINAIRE MAST ARM. ADJUST CAMERA FOR STAGE 1B, 1C AND 2. RC VIDEO DETECTION CAMERA AFTER TEMPORARY STAGE.
- 6' X 50' VIDEO DETECTION CAMERA ZONE.

EXISTING POLE AND EQUIPMENT SCHEDULE

No.	STANDARD		VEH SIG MTG		PED SIGNAL MTG	PPB		LED LUMINAIRE	IISNS
	TYPE	SMA	LMA	MAST ARM		POLE	Ø		
(A)	19-4-80	30'	15'	2-MAS	SV-2-TA	SP-1-T		ROADWAY 1	
(B)	PPB POST						6	←	
(C)	17-3-100	20'	15'	MAS	SV-1-T		6	←	ROADWAY 1 TUSTIN Ave
(D)	21TS		15'		SV-3-TA	SP-1-T			ROADWAY 2
(E)	61-5-100	65'	15'	3-MAS	SV-1-T	SP-1-T			ROADWAY 1 ← WB 91
(F)	PPB POST						2	←	
(G)	21TS		15'		SV-1-T				ROADWAY 2
(H)	15		15'		SV-1-T	SP-1-T	2	→	ROADWAY 1

SIGNAL AND LIGHTING (TEMPORARY)

SCALE: 1" = 20'

E-43

NOTES: (THIS SHEET)

- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- AB** EXISTING LOOPS WHERE NEW LOOPS ARE CUT.

EXISTING CONDUCTOR AND CONDUIT SCHEDULE

CONDUCTOR	CONDUCTOR RUN	1	2	3	4	5	6
12CSC	VEHICLE SIGNALS	2	3	1	1	3	8
3CSC	PPB	1	2	1		2	4
#10	LUMINAIRE	2	2	2	2	2	
#12	IISNS		2			2	
9#20	APS		1				
DLC	Ø1 DETECTOR				2	2	2
	Ø2 DETECTOR			6		6	6
	Ø5 DETECTOR			1		1	1
	Ø6 DETECTOR						6
	Ø8 DETECTOR				1	1	1
CONDUIT SIZE		3"	3"	3"	3"	3"	2-4"

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	212	357

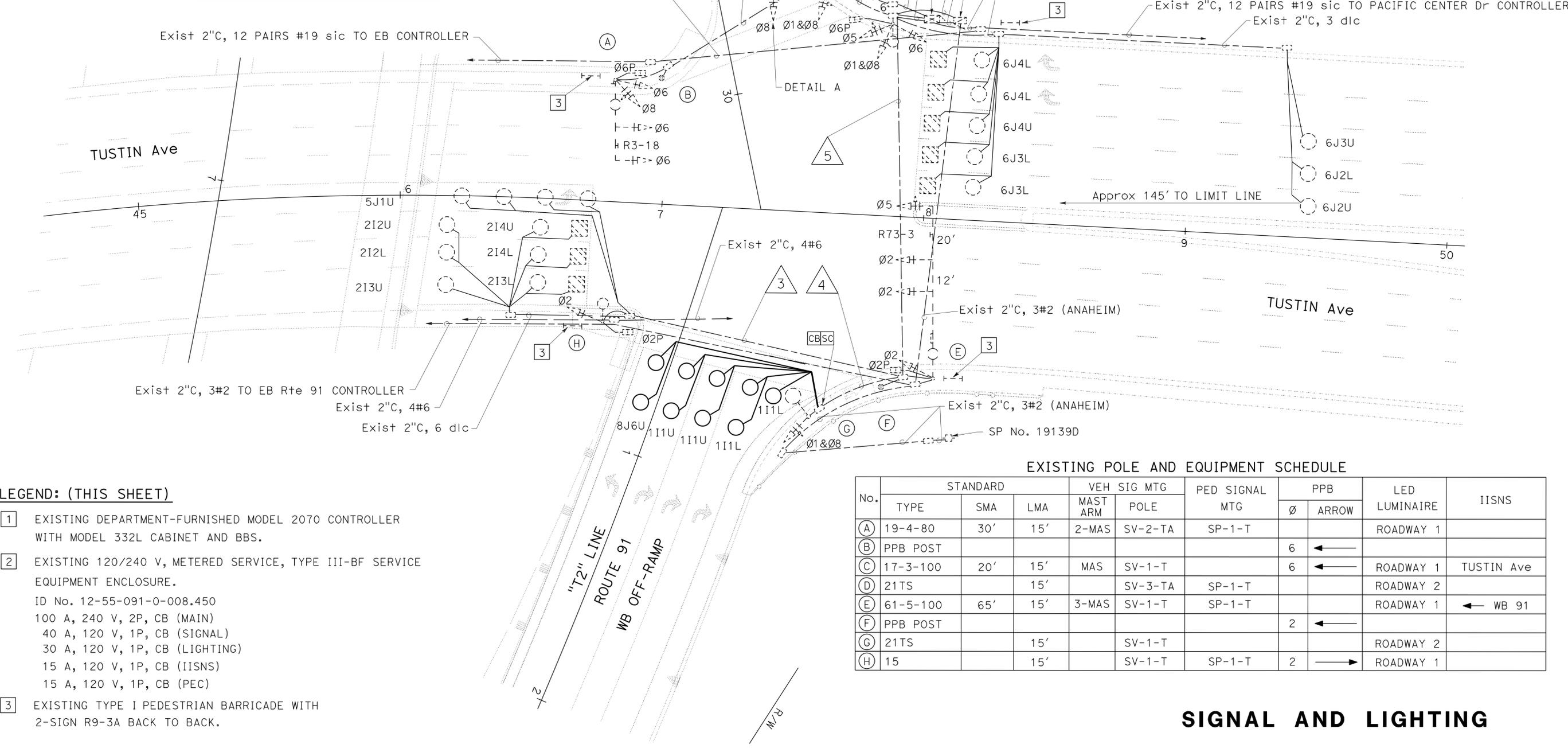
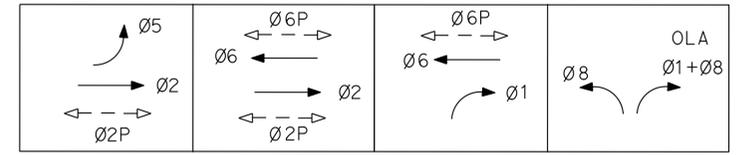
Vanessa Van Truong 02-04-13
 REGISTERED ELECTRICAL ENGINEER DATE

4-15-13
 PLANS APPROVAL DATE

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

REGISTERED PROFESSIONAL ENGINEER
V.V. TRUONG
 No. E 13983
 Exp 6/30/14
 ELECTRICAL
 STATE OF CALIFORNIA

PHASE DIAGRAM



EXISTING POLE AND EQUIPMENT SCHEDULE

No.	STANDARD	VEH SIG MTG		PED SIGNAL MTG	PPB		LED LUMINAIRE	IISNS
		TYPE	SMA		LMA	MAST ARM		
(A)	19-4-80	30'	15'	2-MAS	SV-2-TA	SP-1-T		
(B)	PPB POST						6	←
(C)	17-3-100	20'	15'	MAS	SV-1-T		6	←
(D)	21TS		15'		SV-3-TA	SP-1-T		
(E)	61-5-100	65'	15'	3-MAS	SV-1-T	SP-1-T		← WB 91
(F)	PPB POST						2	←
(G)	21TS		15'		SV-1-T			
(H)	15		15'		SV-1-T	SP-1-T	2	→

LEGEND: (THIS SHEET)

- EXISTING DEPARTMENT-FURNISHED MODEL 2070 CONTROLLER WITH MODEL 332L CABINET AND BBS.
- EXISTING 120/240 V, METERED SERVICE, TYPE III-BF SERVICE EQUIPMENT ENCLOSURE.
 ID No. 12-55-091-0-008.450
 100 A, 240 V, 2P, CB (MAIN)
 40 A, 120 V, 1P, CB (SIGNAL)
 30 A, 120 V, 1P, CB (LIGHTING)
 15 A, 120 V, 1P, CB (IISNS)
 15 A, 120 V, 1P, CB (PEC)
- EXISTING TYPE I PEDESTRIAN BARRICADE WITH 2-SIGN R9-3A BACK TO BACK.

APPROVED FOR ELECTRICAL WORK ONLY

SIGNAL AND LIGHTING

SCALE: 1" = 20'

E-44

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 VANESSA TRUONG
 SHAHRAM SHAHRIARI
 SHAHRAM SHAHRIARI
 SHAHRAM SHAHRIARI

LAST REVISION DATE PLOTTED => 24-APR-2013
 01-18-13 TIME PLOTTED => 11:21

NOTE: (THIS SHEET)

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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	213	357

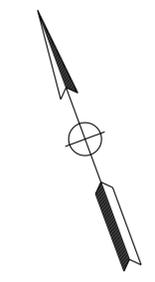
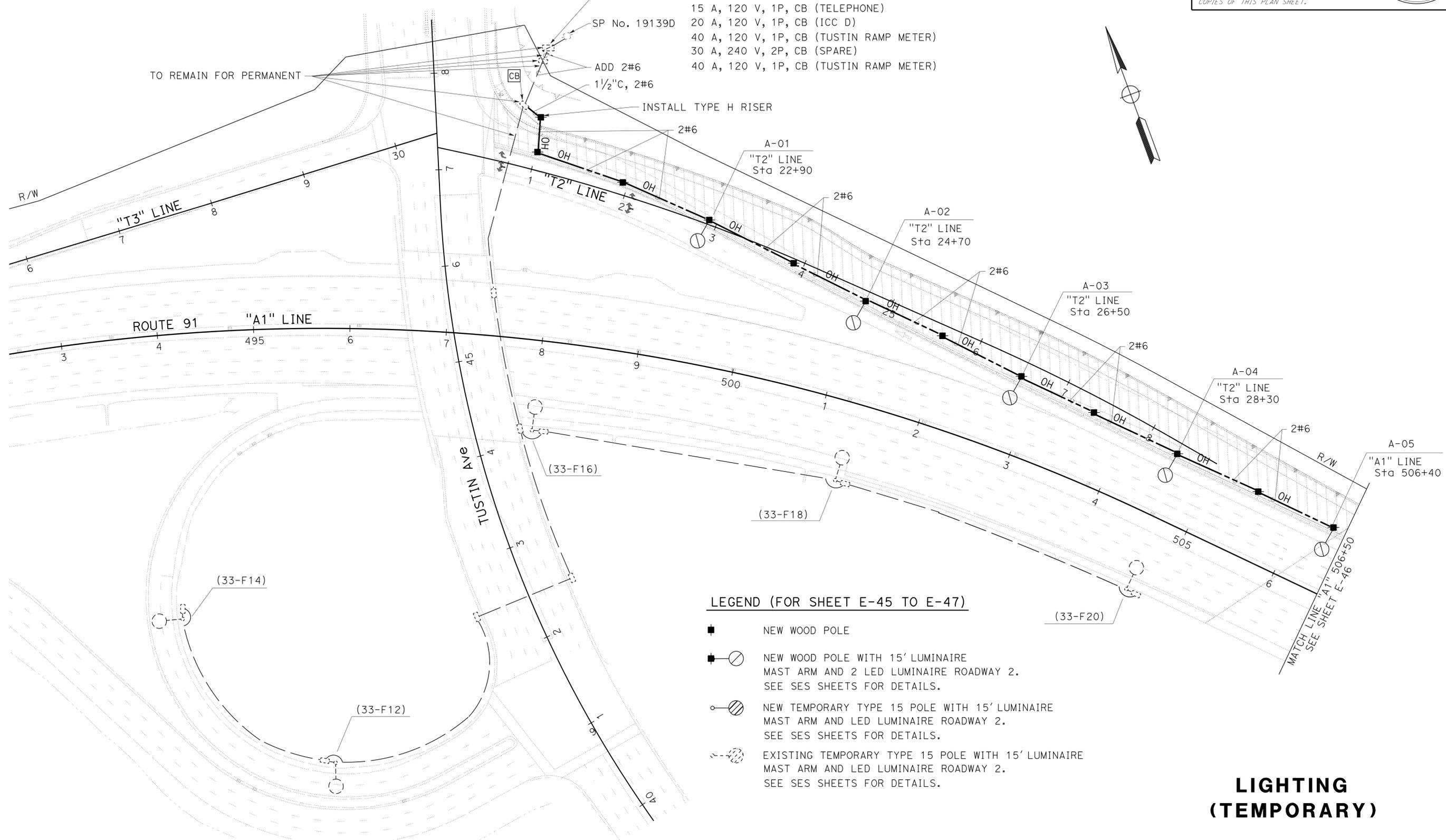
Vanessa Van Truong 02-04-13
 REGISTERED ELECTRICAL ENGINEER DATE
 4-15-13
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 V.V. TRUONG
 No. E 13983
 Exp 6/30/14
 ELECTRICAL
 STATE OF CALIFORNIA

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STAGE 1B

Exist 120/240 V METERED SERVICE IN TYPE III-CF SERVICE EQUIPMENT ENCLOSURE.
 ID No. 07-55-091-0-008.400
 METER No. 1
 40 A, 240 V, 2P, CB (EB ON-RAMP, CIRCUIT 33-F)
 40 A, 240 V, 2P, CB (WB OFF-RAMP, CIRCUIT A)
 20 A, 120 V, 1P, CB (ICC C)
 METER No. 2
 15 A, 120 V, 1P, CB (TELEPHONE)
 20 A, 120 V, 1P, CB (ICC D)
 40 A, 120 V, 1P, CB (TUSTIN RAMP METER)
 30 A, 240 V, 2P, CB (SPARE)
 40 A, 120 V, 1P, CB (TUSTIN RAMP METER)



LEGEND (FOR SHEET E-45 TO E-47)

- NEW WOOD POLE
- ⊙ NEW WOOD POLE WITH 15' LUMINAIRE MAST ARM AND 2 LED LUMINAIRE ROADWAY 2. SEE SES SHEETS FOR DETAILS.
- ⊙ NEW TEMPORARY TYPE 15 POLE WITH 15' LUMINAIRE MAST ARM AND LED LUMINAIRE ROADWAY 2. SEE SES SHEETS FOR DETAILS.
- ⊙ EXISTING TEMPORARY TYPE 15 POLE WITH 15' LUMINAIRE MAST ARM AND LED LUMINAIRE ROADWAY 2. SEE SES SHEETS FOR DETAILS.

LIGHTING (TEMPORARY)

SCALE: 1" = 50'

E-45

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 CALCULATED/DESIGNED BY: SHAHRAM SHAHRIARI
 CHECKED BY: SHAHRAM SHAHRIARI
 VANESSA TRUONG
 SHAHRAM SHAHRIARI
 REVISED BY: VANESSA TRUONG
 DATE REVISED: SHAHRAM SHAHRIARI

APPROVED FOR ELECTRICAL WORK ONLY

NOTE: (THIS SHEET)

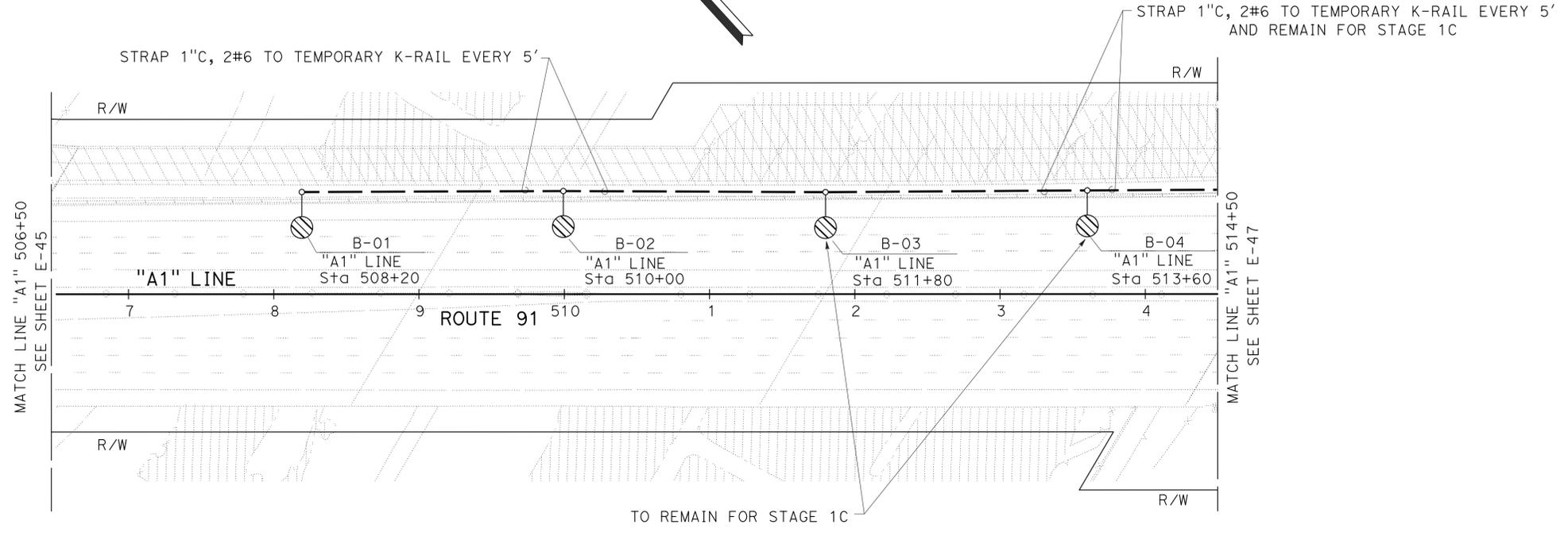
- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	214	357

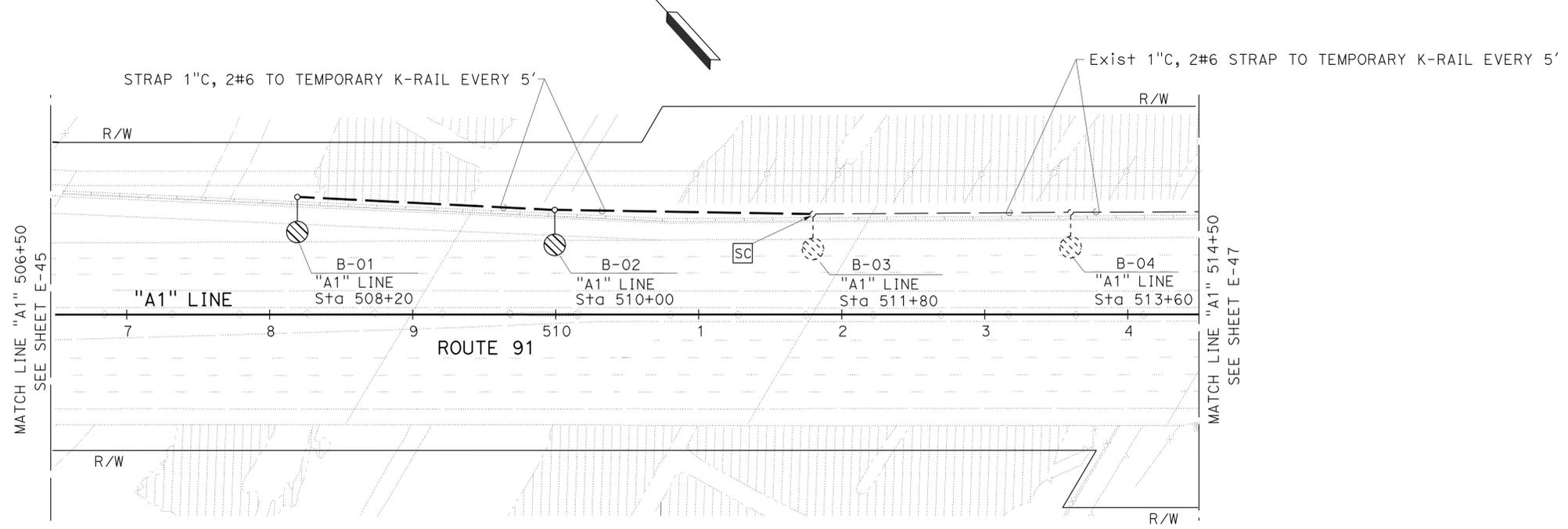
Vanessa Van Truong 02-04-13
 REGISTERED ELECTRICAL ENGINEER DATE
 4-15-13
 PLANS APPROVAL DATE

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STAGE 1B



STAGE 1C



LIGHTING (TEMPORARY)

FOR LEGEND, SEE SHEET E-45

APPROVED FOR ELECTRICAL WORK ONLY

SCALE: 1" = 50'

E-46

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	REVISOR	DATE
Caltrans ELECTRICAL DESIGN	SHAHRAM SHAHRIARI	VANESSA TRUONG	SHAHRAM SHAHRIARI
	CHECKED BY	DESIGNED BY	DATE

NOTE: (THIS SHEET)

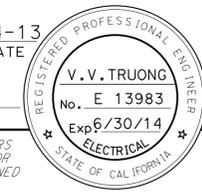
1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	215	357

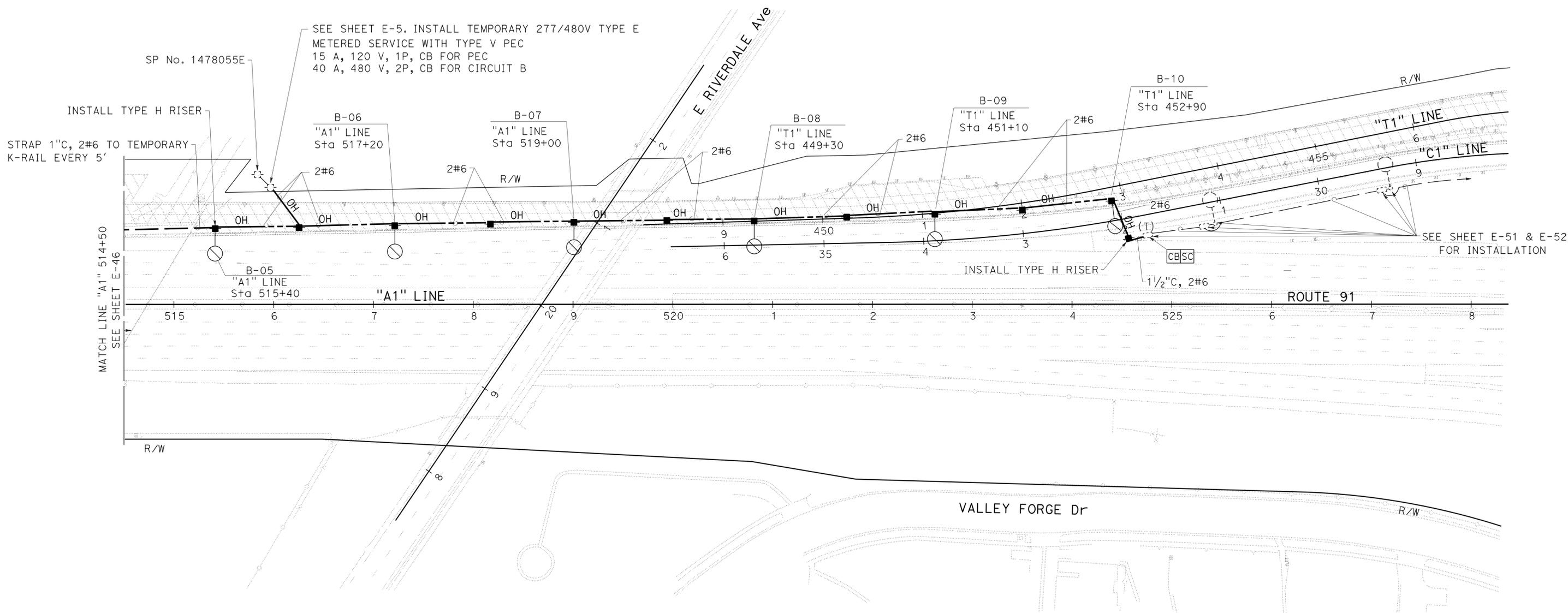
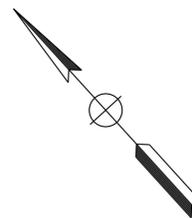
Vanessa Van Truong 02-04-13
 REGISTERED ELECTRICAL ENGINEER DATE

4-15-13
 PLANS APPROVAL DATE

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STAGE 1B AND 1C



FOR LEGEND, SEE SHEET E-45

LIGHTING (TEMPORARY)

SCALE: 1" = 50'

E-47

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	REVISOR	DATE
Caltrans ELECTRICAL DESIGN	VANESSA TRUONG	
FUNCTIONAL SUPERVISOR	SHAHRAM SHAHRIARI	
CHECKED BY	SHAHRAM SHAHRIARI	
DESIGNED BY	SHAHRAM SHAHRIARI	
CALCULATED BY		
REVISOR		
DATE		



NOTES: (THIS SHEET)

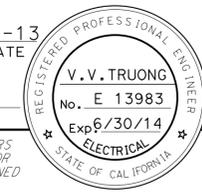
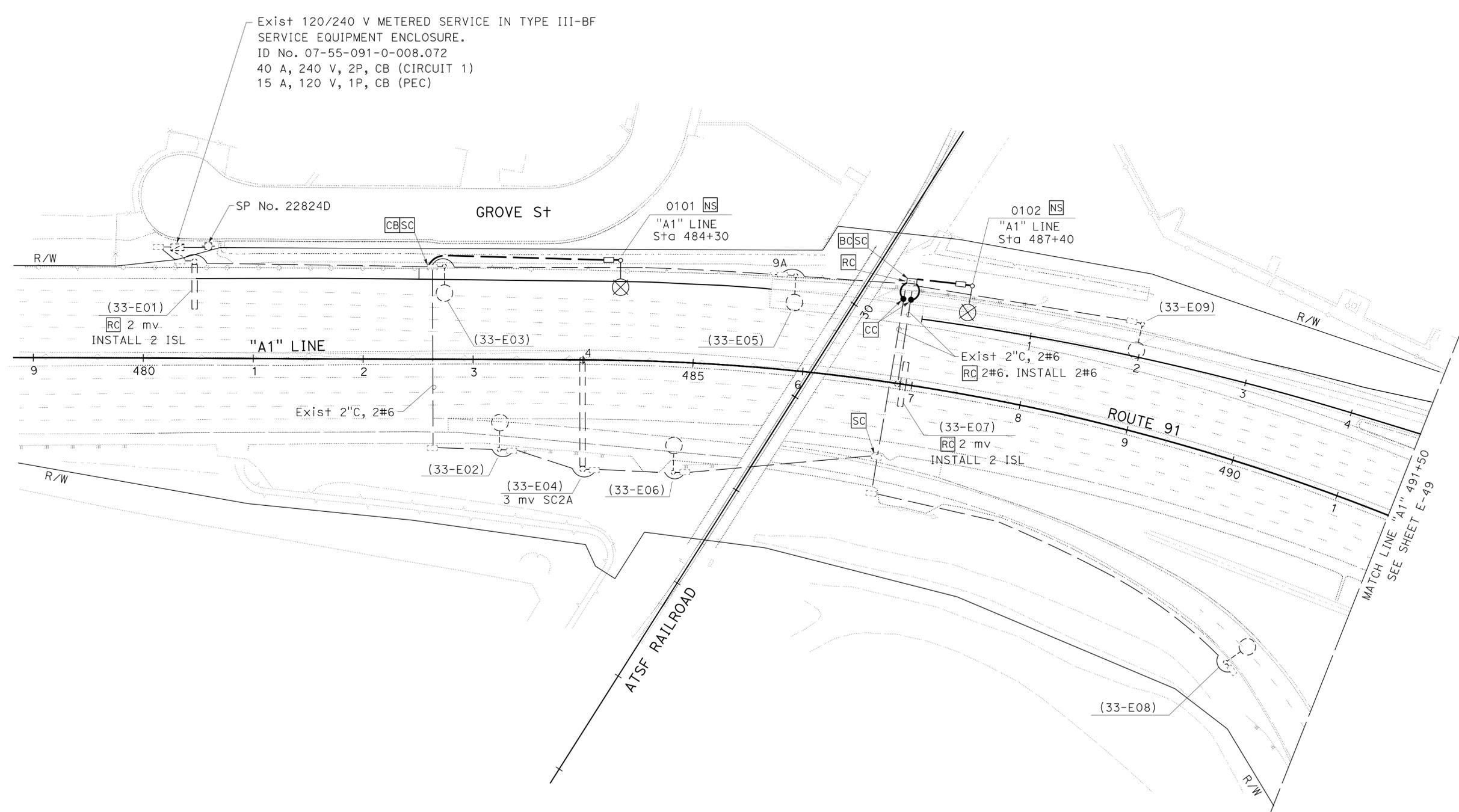
1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. INSTALL 2" C FOR NEW CONDUIT, UNLESS OTHERWISE NOTED.
3. SEE WIRING DIAGRAM SHEET E-55 FOR NUMBER OF CONDUCTORS AND CONDUCTOR SIZES.
4. THE LEFT TWO NUMBERS OF AN ELECTROLIER IS THE CIRCUIT NUMBER.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	216	357

Vanessa Van Truong 02-04-13
 REGISTERED ELECTRICAL ENGINEER DATE

4-15-13
 PLANS APPROVAL DATE

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI

CALCULATED/DESIGNED BY: VANESSA TRUONG

CHECKED BY: SHAHRAM SHAHRIARI

REVISOR: VANESSA TRUONG

DATE: 02-04-13

LIGHTING AND SIGN ILLUMINATION

APPROVED FOR ELECTRICAL WORK ONLY

SCALE: 1" = 50'

E-48

LAST REVISION DATE PLOTTED => 24-APR-2013 01-18-13 TIME PLOTTED => 11:21

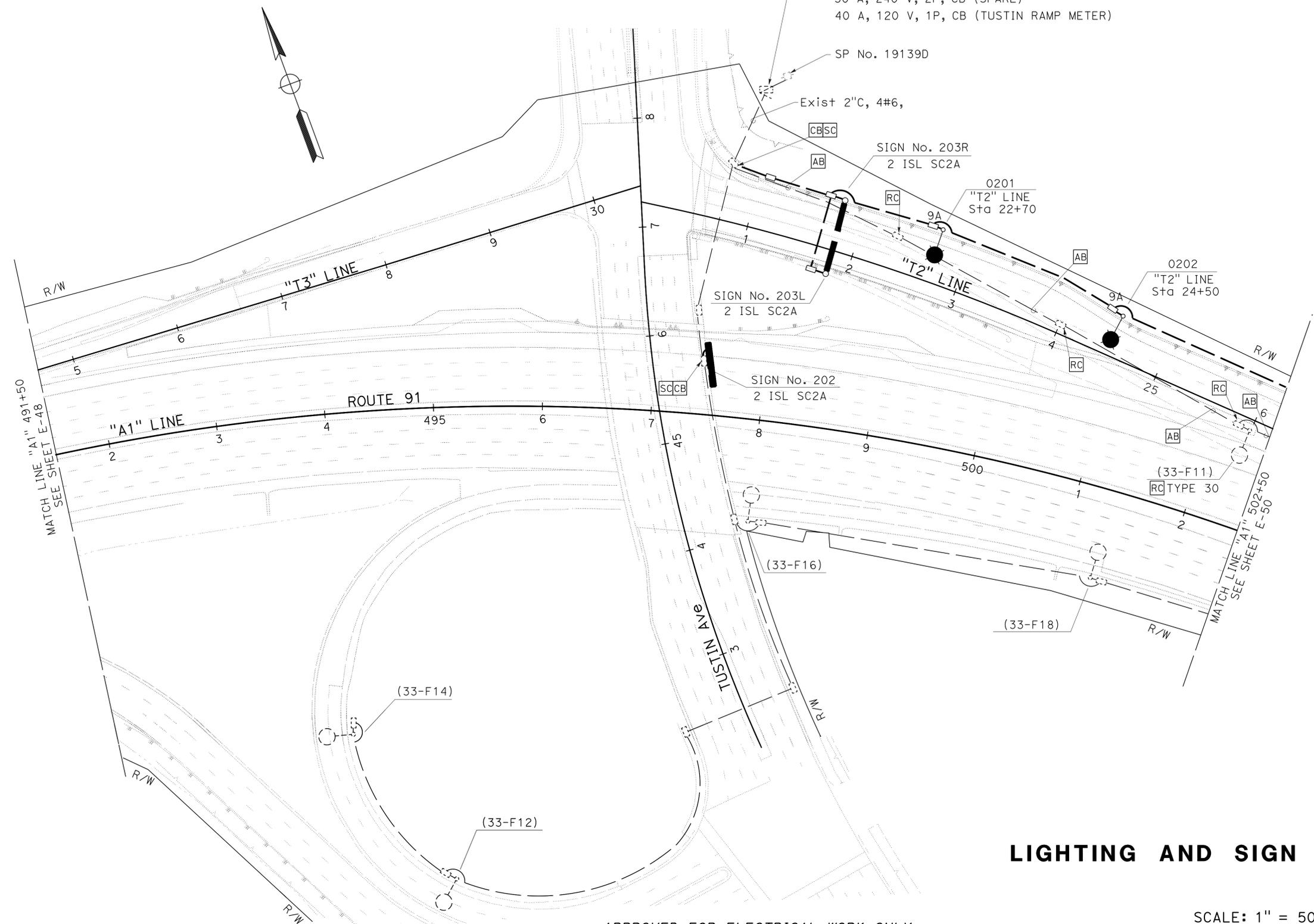
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	217	357

Vanessa Van Truong 02-04-13	
REGISTERED ELECTRICAL ENGINEER	DATE
4-15-13	
PLANS APPROVAL DATE	
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NOTES: (THIS SHEET)

- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- INSTALL 2"C FOR NEW CONDUIT, UNLESS OTHERWISE NOTED.
- SEE WIRING DIAGRAM SHEET E-55 FOR NUMBER OF CONDUCTORS AND CONDUCTOR SIZES.
- THE LEFT TWO NUMBERS OF AN ELECTROLIER IS THE CIRCUIT NUMBER.
- FOR NEW SIGNS, SEE SIGN PLANS FOR DETAILS AND LOCATIONS.

Exist 120/240 V METERED SERVICE IN TYPE III-CF SERVICE EQUIPMENT ENCLOSURE.
 ID No. 07-55-091-0-008.400
 METER No. 1
 40 A, 240 V, 2P, CB (EB ON RAMP, CIRCUIT 33-F)
 40 A, 240 V, 2P, CB (WB OFF RAMP, CIRCUIT 2)
 20 A, 120 V, 1P, CB (ICC C)
 METER No. 2
 15 A, 120 V, 1P, CB (TELEPHONE)
 20 A, 120 V, 1P, CB (ICC D)
 40 A, 120 V, 1P, CB (TUSTIN RAMP METER)
 30 A, 240 V, 2P, CB (SPARE)
 40 A, 120 V, 1P, CB (TUSTIN RAMP METER)



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR
Caltrans ELECTRICAL DESIGN	SHAHRAM SHAHRIARI	CHECKED BY	DATE REVISED
	SHAHRAM SHAHRIARI		

LIGHTING AND SIGN ILLUMINATION

APPROVED FOR ELECTRICAL WORK ONLY

SCALE: 1" = 50'

E-49

NOTES: (THIS SHEET)

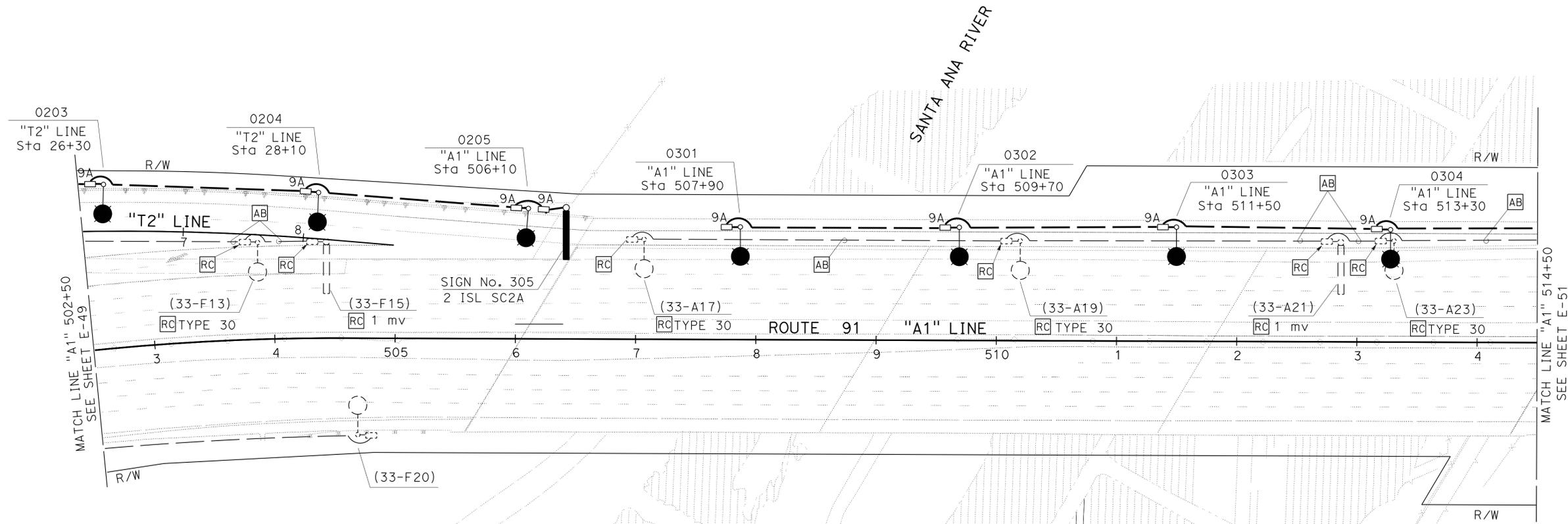
1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. INSTALL 2" C FOR NEW CONDUIT, UNLESS OTHERWISE NOTED.
3. SEE WIRING DIAGRAM SHEET E-55 FOR NUMBER OF CONDUCTORS AND CONDUCTOR SIZES.
4. THE LEFT TWO NUMBERS OF AN ELECTROLIER IS THE CIRCUIT NUMBER.
5. FOR NEW SIGNS, SEE SIGN PLANS FOR DETAILS AND LOCATIONS.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	218	357

Vanessa Van Truong 02-04-13
 REGISTERED ELECTRICAL ENGINEER DATE
 4-15-13
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 V.V. TRUONG
 No. E 13983
 Exp 6/30/14
 ELECTRICAL
 STATE OF CALIFORNIA

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



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 CHECKED BY: SHAHRAM SHAHRIARI
 VANESSA TRUONG
 SHAHRAM SHAHRIARI
 REVISED BY: DATE
 REVISED BY: DATE

LIGHTING AND SIGN ILLUMINATION

APPROVED FOR ELECTRICAL WORK ONLY

SCALE: 1" = 50'

E-50

LAST REVISION: DATE PLOTTED => 24-APR-2013 TIME PLOTTED => 11:21
 01-18-13

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	219	357

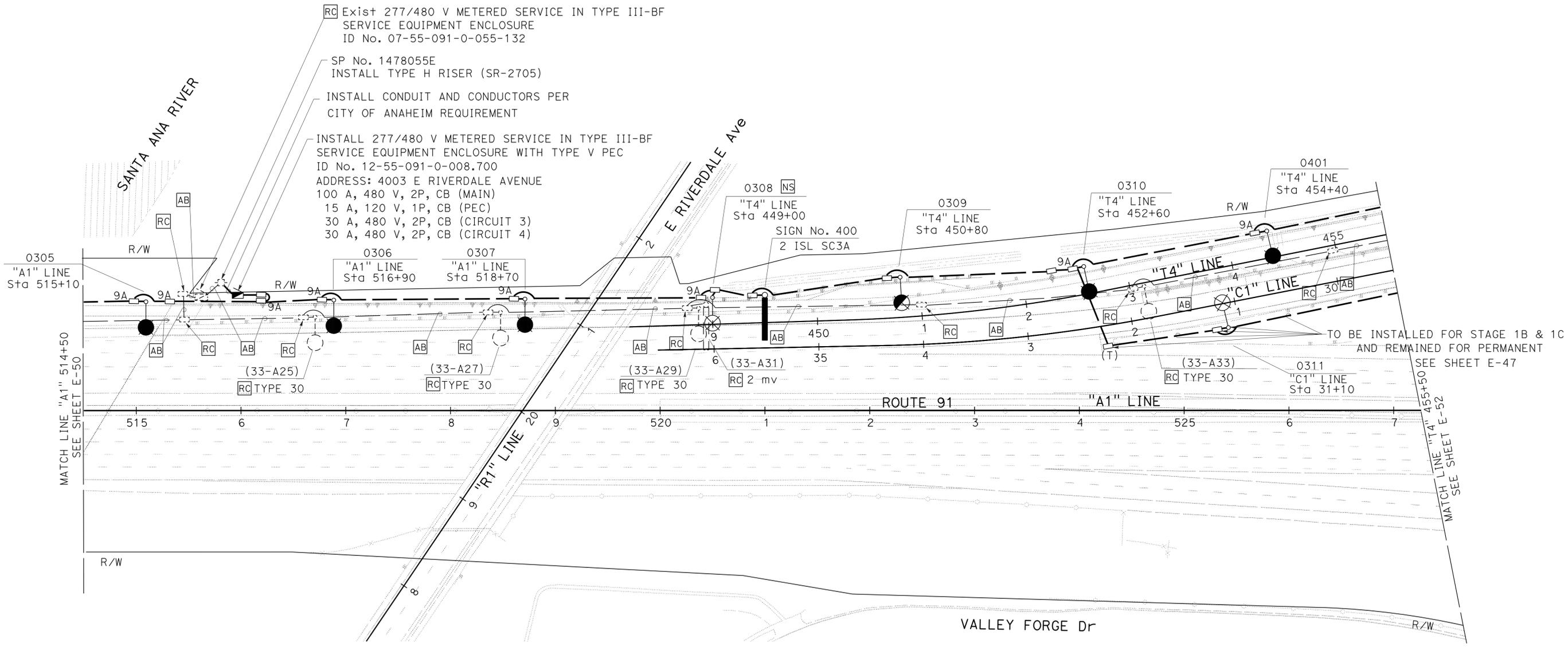
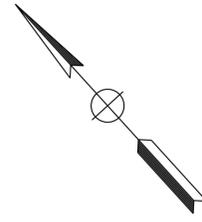
Vanessa Van Truong 02-04-13
 REGISTERED ELECTRICAL ENGINEER DATE
 4-15-13
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 V.V. TRUONG
 No. E 13983
 Exp 6/30/14
 ELECTRICAL
 STATE OF CALIFORNIA

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NOTES: (THIS SHEET)

1. FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
2. INSTALL 2" C FOR NEW CONDUIT, UNLESS OTHERWISE NOTED.
3. SEE WIRING DIAGRAM SHEET E-55 AND E-56 FOR NUMBER OF CONDUCTORS AND CONDUCTOR SIZES.
4. THE LEFT TWO NUMBERS OF AN ELECTROLIER IS THE CIRCUIT NUMBER.
5. FOR NEW SIGNS, SEE SIGN PLANS FOR DETAILS AND LOCATIONS.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 CALCULATED/DESIGNED BY: VANESSA TRUONG
 CHECKED BY: SHAHRAM SHAHRIARI
 REVISED BY: VANESSA TRUONG
 DATE REVISED: SHAHRAM SHAHRIARI

LIGHTING AND SIGN ILLUMINATION

APPROVED FOR ELECTRICAL WORK ONLY

SCALE: 1" = 50'

E-51

LAST REVISION: DATE PLOTTED => 24-APR-2013
 01-18-13 TIME PLOTTED => 11:22

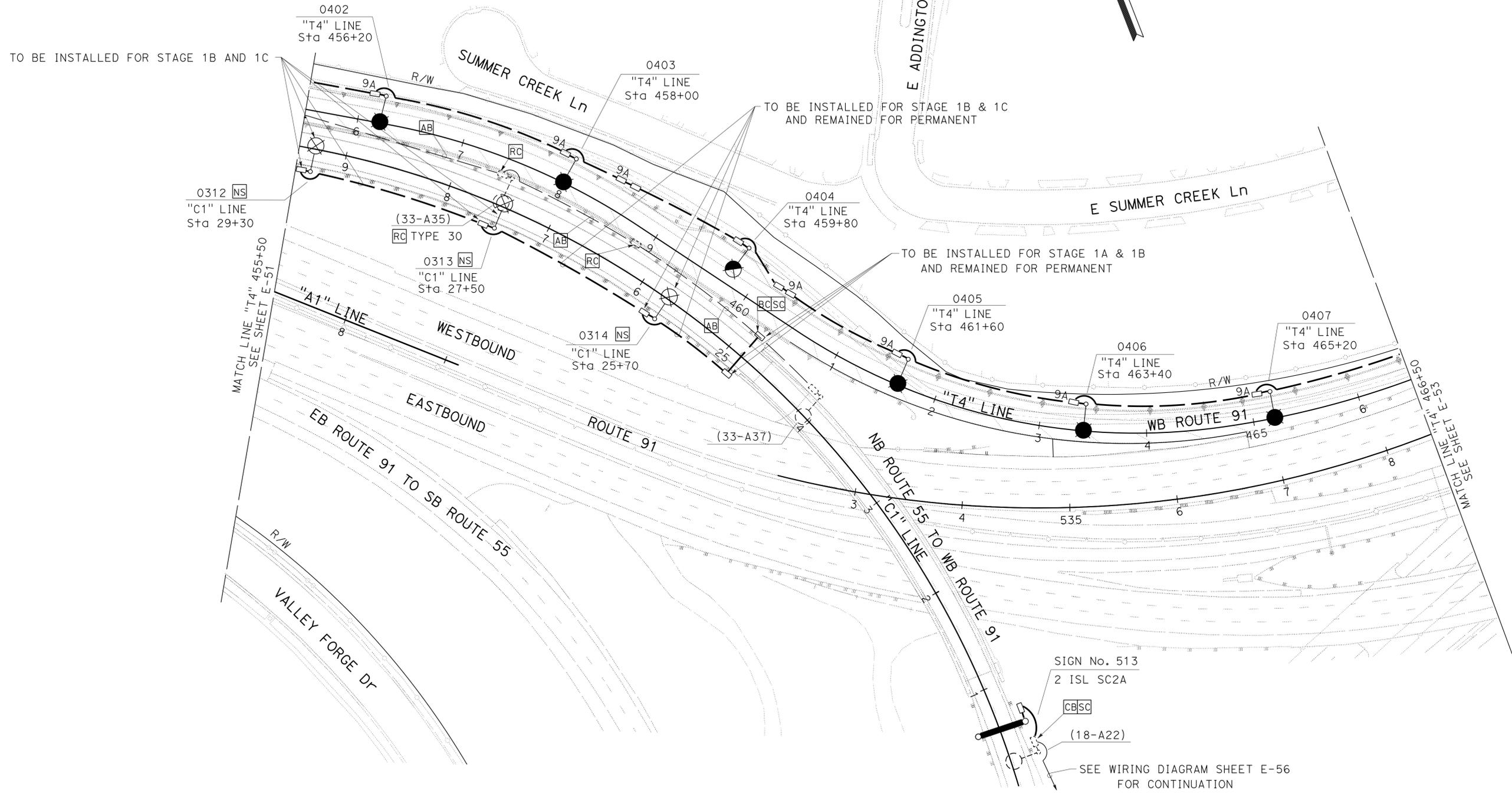
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	220	357

Vanessa Van Truong 02-04-13
 REGISTERED ELECTRICAL ENGINEER DATE
 4-15-13
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NOTES: (THIS SHEET)

- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- INSTALL 2" C FOR NEW CONDUIT, UNLESS OTHERWISE NOTED.
- SEE WIRING DIAGRAM SHEET E-56 FOR NUMBER OF CONDUCTORS AND CONDUCTOR SIZES.
- THE LEFT TWO NUMBERS OF AN ELECTROLIER IS THE CIRCUIT NUMBER.
- FOR NEW SIGNS, SEE SIGN PLANS FOR DETAILS AND LOCATIONS.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 CHECKED BY: SHAHRAM SHAHRIARI
 DESIGNED BY: VANESSA TRUONG
 REVISIONS: (None)
 DATE: 7/2/2010



LIGHTING AND SIGN ILLUMINATION

APPROVED FOR ELECTRICAL WORK ONLY

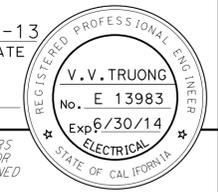
SCALE: 1" = 50'

E-52

LAST REVISION: DATE PLOTTED => 24-APR-2013 | TIME PLOTTED => 11:22

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	221	357

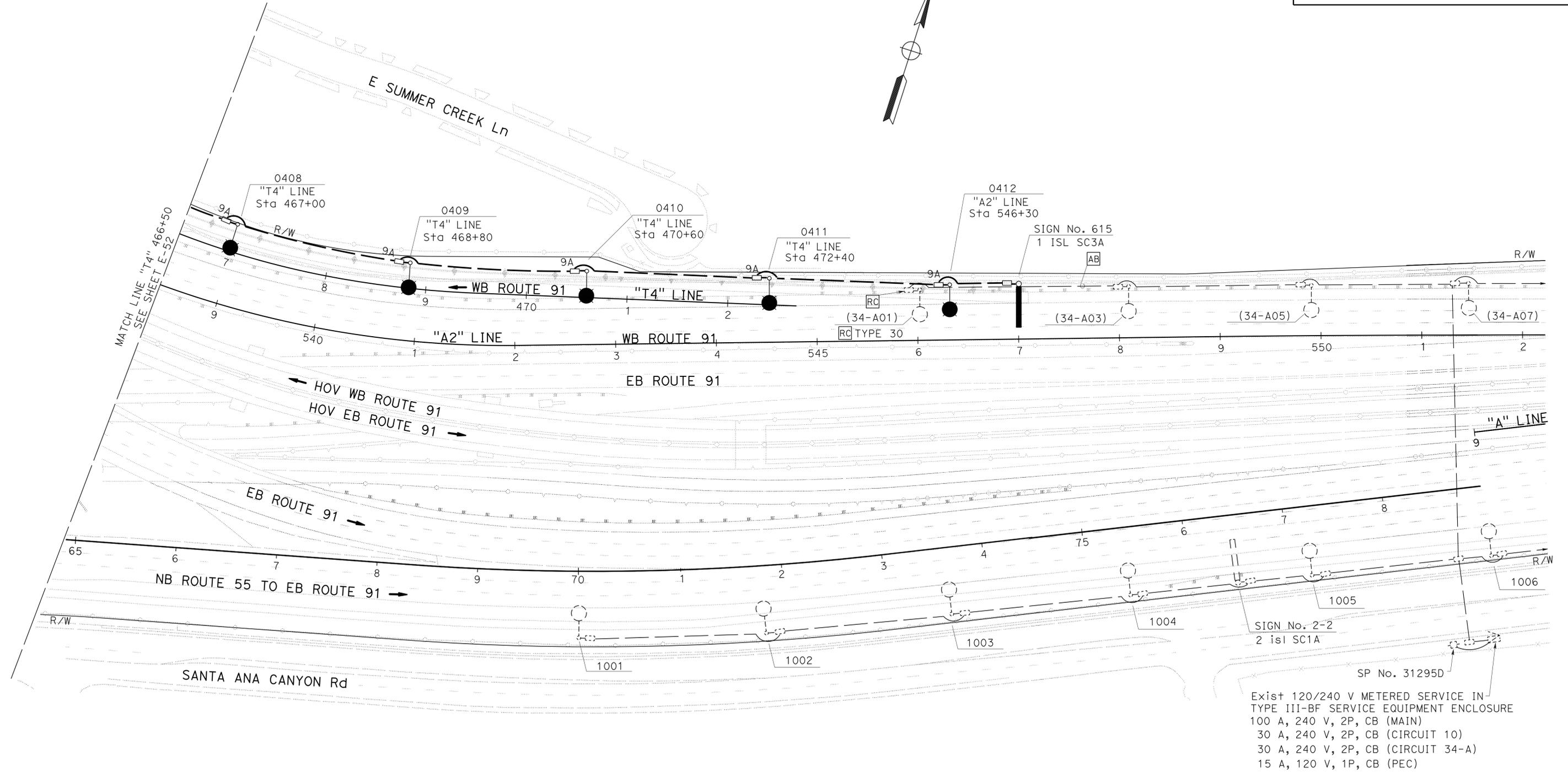
Vanessa Van Truong 02-04-13
 REGISTERED ELECTRICAL ENGINEER DATE
 4-15-13
 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



NOTES: (THIS SHEET)

- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- INSTALL 2"Ø FOR NEW CONDUIT, UNLESS OTHERWISE NOTED.
- SEE WIRING DIAGRAM SHEET E-56 FOR NUMBER OF CONDUCTORS AND CONDUCTOR SIZES.
- THE LEFT TWO NUMBERS OF AN ELECTROLIER IS THE CIRCUIT NUMBER.
- FOR NEW SIGNS, SEE SIGN PLANS FOR DETAILS AND LOCATIONS.

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 CALCULATED/DESIGNED BY: VANESSA TRUONG
 CHECKED BY: SHAHRAM SHAHRIARI
 REVISED BY: VANESSA TRUONG
 DATE REVISED: SHAHRAM SHAHRIARI



Exist 120/240 V METERED SERVICE IN TYPE III-BF SERVICE EQUIPMENT ENCLOSURE
 100 A, 240 V, 2P, CB (MAIN)
 30 A, 240 V, 2P, CB (CIRCUIT 10)
 30 A, 240 V, 2P, CB (CIRCUIT 34-A)
 15 A, 120 V, 1P, CB (PEC)

LIGHTING AND SIGN ILLUMINATION

APPROVED FOR ELECTRICAL WORK ONLY

SCALE: 1" = 50'

E-53

LAST REVISION: DATE PLOTTED => 24-APR-2013 TIME PLOTTED => 11:22
 01-18-13

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN

FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 CALCULATED/DESIGNED BY: SHAHRAM SHAHRIARI
 CHECKED BY: SHAHRAM SHAHRIARI
 VANESSA TRUONG
 SHAHRAM SHAHRIARI
 REVISED BY: DATE REVISION

NOTES: (THIS SHEET)

- FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.
- INSTALL 2" C FOR NEW CONDUIT, UNLESS OTHERWISE NOTED.
- SEE WIRING DIAGRAM SHEET E-57 FOR NUMBER OF CONDUCTORS AND CONDUCTOR SIZES.
- THE LEFT TWO NUMBERS OF AN ELECTROLIER IS THE CIRCUIT NUMBER.
- FOR NEW SIGNS, SEE SIGN PLANS FOR DETAILS AND LOCATIONS.

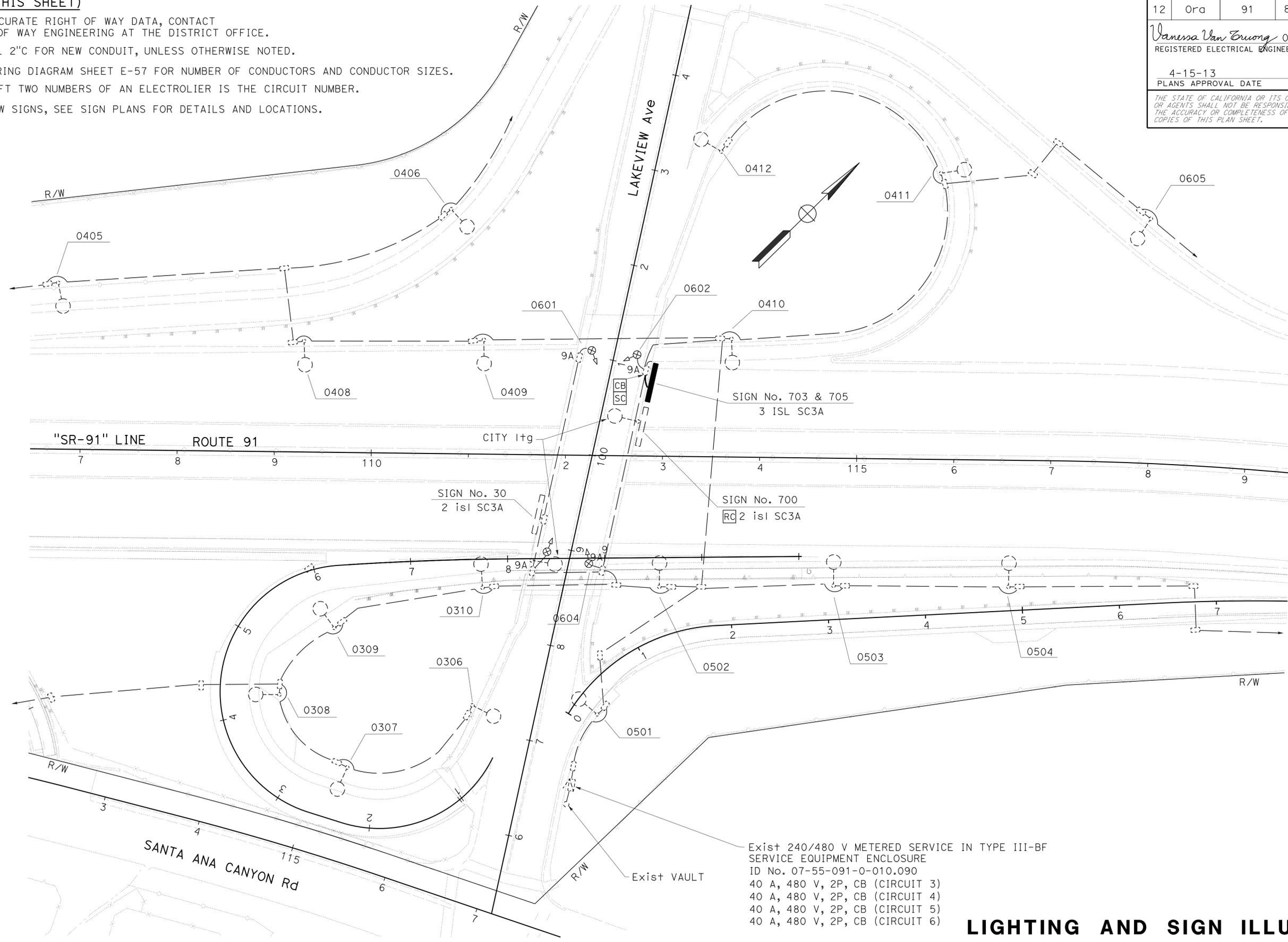
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	222	357

Vanessa Van Truong 02-04-13
 REGISTERED ELECTRICAL ENGINEER DATE

4-15-13
 PLANS APPROVAL DATE

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

REGISTERED PROFESSIONAL ENGINEER
 V.V. TRUONG
 No. E 13983
 Exp 6/30/14
 ELECTRICAL
 STATE OF CALIFORNIA



Exist 240/480 V METERED SERVICE IN TYPE III-BF SERVICE EQUIPMENT ENCLOSURE
 ID No. 07-55-091-0-010.090
 40 A, 480 V, 2P, CB (CIRCUIT 3)
 40 A, 480 V, 2P, CB (CIRCUIT 4)
 40 A, 480 V, 2P, CB (CIRCUIT 5)
 40 A, 480 V, 2P, CB (CIRCUIT 6)

LIGHTING AND SIGN ILLUMINATION

APPROVED FOR ELECTRICAL WORK ONLY

SCALE: 1" = 50'

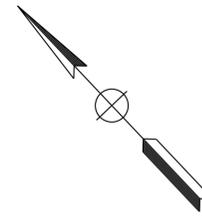
E-54

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	223	357

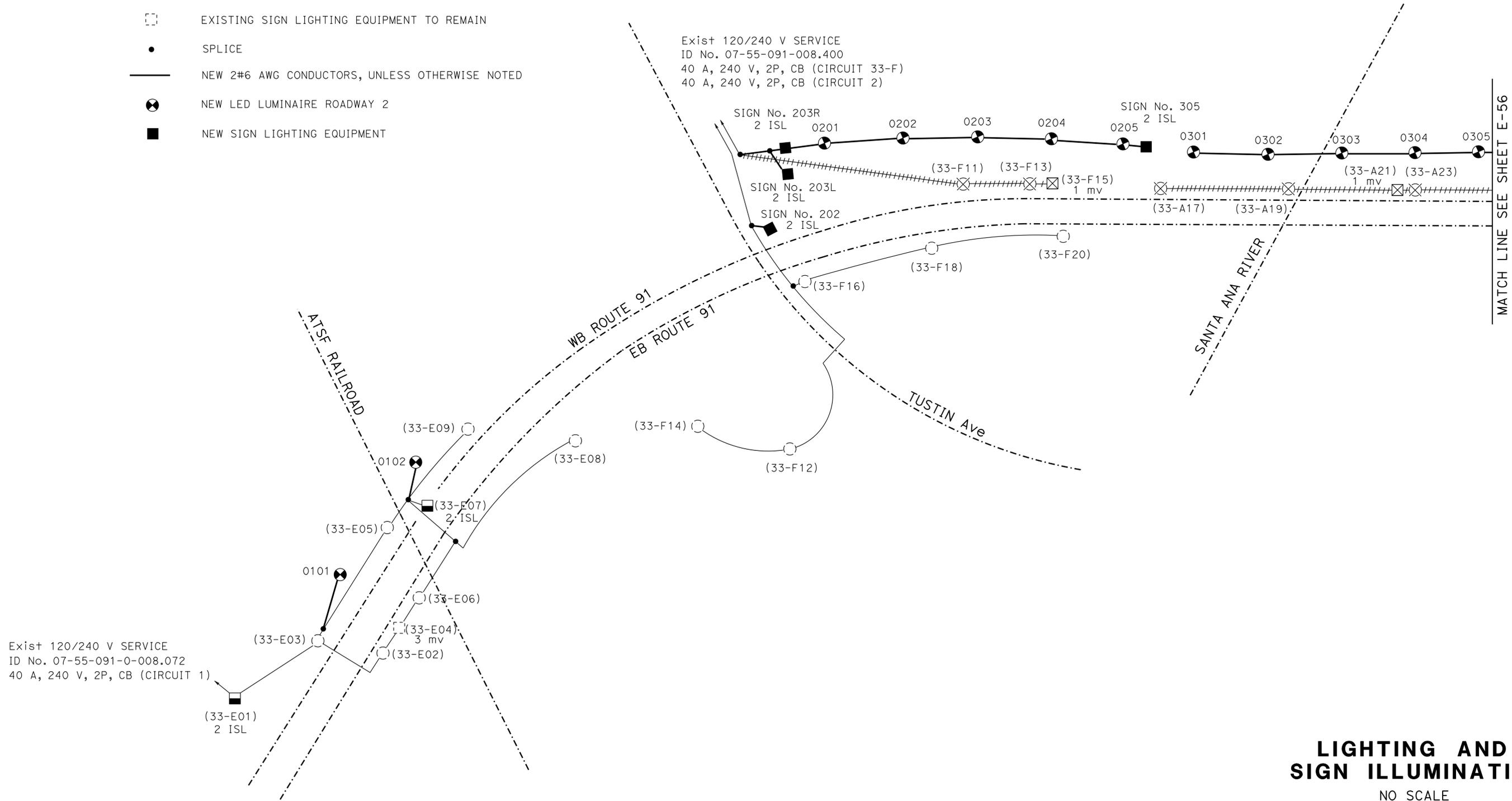
Vanessa Van Truong 04-04-13
 REGISTERED ELECTRICAL ENGINEER DATE
 4-15-13
 PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

WIRING DIAGRAM LEGEND (FOR SHEET E-55 TO E-57)

- //// RC EXISTING CONDUCTORS
- ⊗ RC EXISTING LAMP
- ⊠ RC EXISTING SIGN LIGHTING EQUIPMENT
- RC EXISTING SIGN LIGHTING EQUIPMENT, INSTALL NEW SIGN LIGHTING EQUIPMENT
- EXISTING 2#6 CONDUCTORS TO REMAIN
- EXISTING LAMP TO REMAIN
- EXISTING SIGN LIGHTING EQUIPMENT TO REMAIN
- SPLICE
- NEW 2#6 AWG CONDUCTORS, UNLESS OTHERWISE NOTED
- ⊗ NEW LED LUMINAIRE ROADWAY 2
- NEW SIGN LIGHTING EQUIPMENT



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 CALCULATED/DESIGNED BY: VANESSA TRUONG
 CHECKED BY: SHAHRAM SHAHRIARI
 REVISED BY: VANESSA TRUONG
 DATE REVISED: SHAHRAM SHAHRIARI



(WIRING DIAGRAM)

LIGHTING AND SIGN ILLUMINATION
NO SCALE

E-55



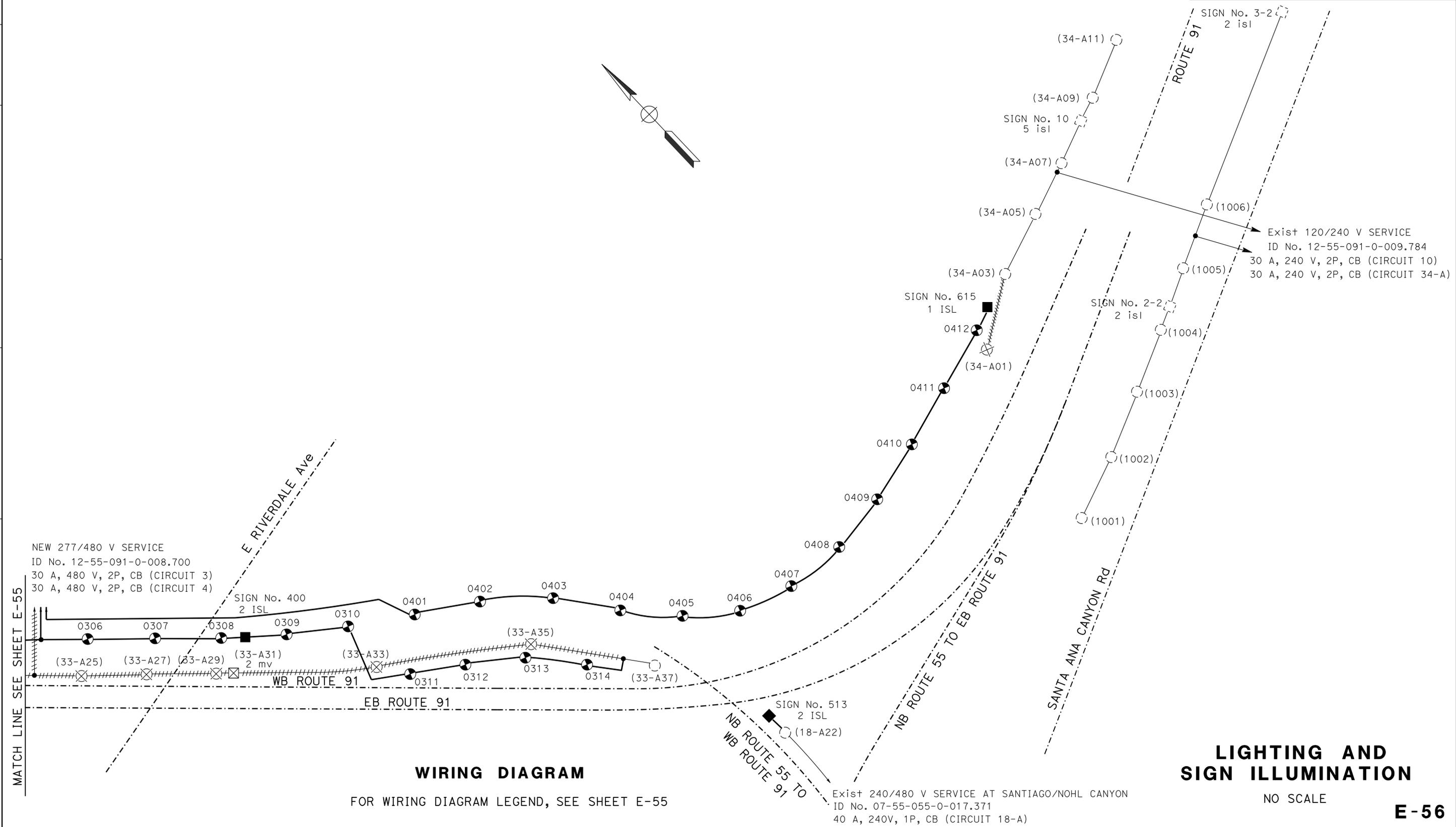
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	224	357

Vanessa Van Truong 02-04-13
 REGISTERED ELECTRICAL ENGINEER DATE
 4-15-13
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 V.V. TRUONG
 No. E 13983
 Exp 6/30/14
 ELECTRICAL
 STATE OF CALIFORNIA

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

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR
Caltrans ELECTRICAL DESIGN	SHAHRAM SHAHRIARI	SHAHRAM SHAHRIARI	VANESSA TRUONG
		CHECKED BY	DATE REVISED
		SHAHRAM SHAHRIARI	SHAHRAM SHAHRIARI



WIRING DIAGRAM
 FOR WIRING DIAGRAM LEGEND, SEE SHEET E-55

LIGHTING AND SIGN ILLUMINATION
 NO SCALE
E-56

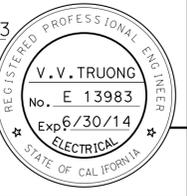
LAST REVISION DATE PLOTTED => 24-APR-2013 01-18-13
 TIME PLOTTED => 11:22

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	225	357

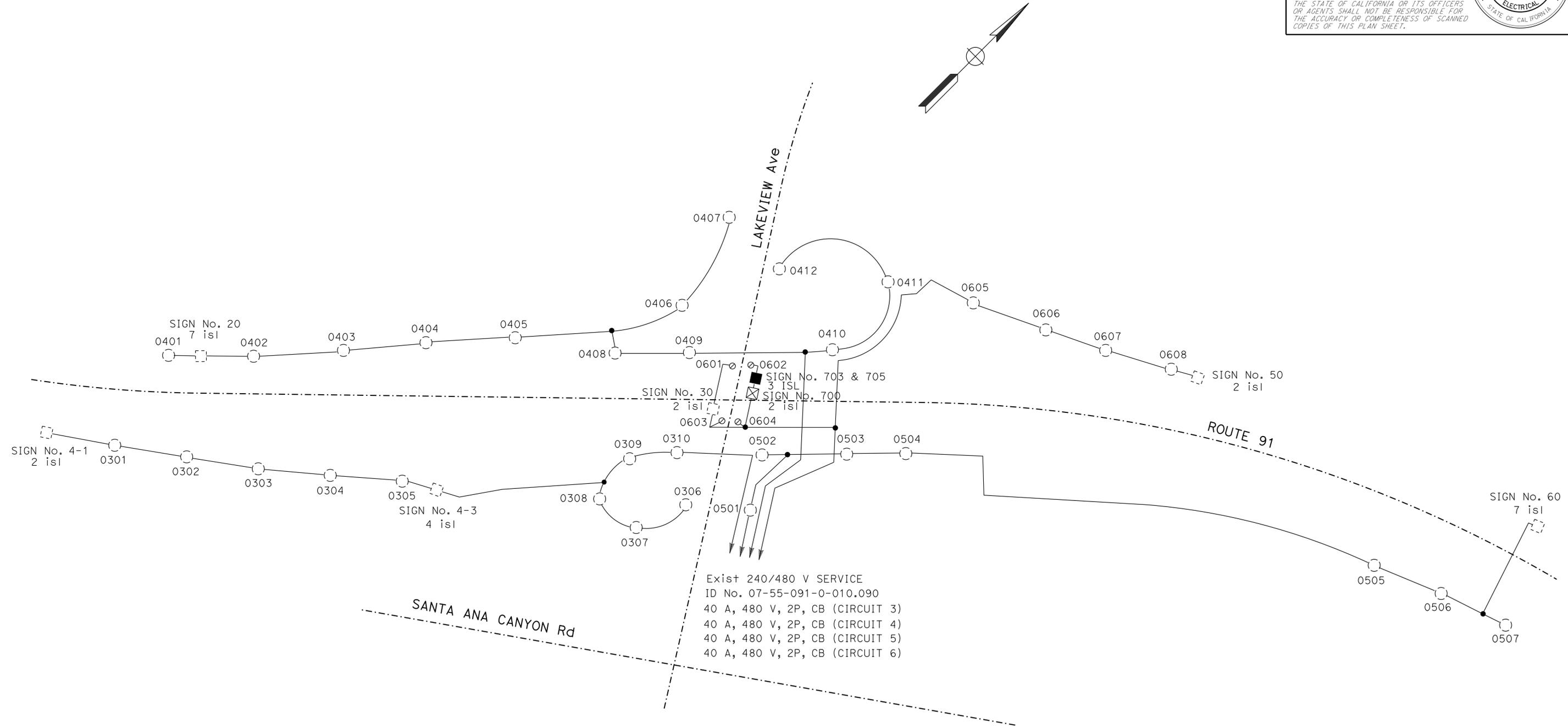
Vanessa Van Truong 02-04-13
REGISTERED ELECTRICAL ENGINEER DATE

4-15-13
PLANS APPROVAL DATE

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



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	REVISOR
Caltrans ELECTRICAL DESIGN	SHAHRAM SHAHRIARI	SHAHRAM SHAHRIARI	SHAHRAM SHAHRIARI
		CHECKED BY	DATE REVISOR



Exist 240/480 V SERVICE
ID No. 07-55-091-0-010.090
40 A, 480 V, 2P, CB (CIRCUIT 3)
40 A, 480 V, 2P, CB (CIRCUIT 4)
40 A, 480 V, 2P, CB (CIRCUIT 5)
40 A, 480 V, 2P, CB (CIRCUIT 6)

WIRING DIAGRAM

FOR WIRING DIAGRAM LEGEND, SEE SHEET E-55

LIGHTING AND SIGN ILLUMINATION

NO SCALE

E-57



Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	226	357

 04-04-13
 REGISTERED ELECTRICAL ENGINEER DATE
 4-15-13
 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.

OCTA FACILITY (TEMPORARY)

SHEET No.	WOOD POLE	RL XFMR	COMMUNICATION CONDUIT IN STRUCTURE	24 SMFO	3#6 OR 4#6 AWG	SPLICE VAULT	SPLICE FO	TYPE 1 CONDUIT JACKING	TYPE D FO	5#8 AWG	RL CCTV	NEMA BOX, TRANSFORMER	TEMPORARY SERVICE	No. 5 PB	No. 5(T) PB	No. 6 PB	No. 6(T) PB	No. 7 PB
	EACH	EACH	FEET	FEET	FEET	EACH	EACH	FEET	FEET	FEET	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH
E-3	6			700	700		1											
E-4	3		900	1600	600		1	150			1	1				2		1
E-5	10		120	1300	1300		1				2	1	1				1	
E-6	10	1		2200	1600	1	1	300	1100	300				1	1	1		
E-7	8		10	1100	1100		1							1				

COMMUNICATION SYSTEM (TEMPORARY)

SHEET No.	WOOD POLE	No. 5 PB	No. 6(T) PB	COMMUNICATION CONDUIT	TYPE 1 CONDUIT	48 SMFO	SPLICE VAULT	COMMUNICATION CONDUIT IN STRUCTURE	SPLICE FO
	EACH	EACH	EACH	FEET	FEET	FEET	EACH	FEET	EACH
E-12	4			50		450	1		1
E-13	3					1300			
E-14		2				1300		900	
E-15			1			1400		120	
E-16				200	120	2000			1
E-17						1100			1

OCTA FACILITY

SHEET No.	RL CCTV	RL CONTROLLER CABINET, XFMR	SERVICE CABINET	SPLICE VAULT	COMMUNICATION CONDUIT	TYPE A FO	3#6 OR 4#6 AWG	PAIR OF 3 INNERDUCTS	RC X-FO CONDUIT	TYPE 1 CONDUIT	3#8 AWG	TYPE D FO	LOOP	SPLICE FO	No. 5 PB	No. 5(T) PB	No. 6 PB	No. 6(T) PB
	EACH	EACH	EACH	EACH	FEET	FEET	FEET	FEET	FEET	FEET	FEET	FEET	EACH	EACH	EACH	EACH	EACH	EACH
E-22					700	700	700	700	1100					1			1	1
E-23	1			1	400	1200	1200	1200	1200					2				
E-24	2	1	1	2	1350	1350	1350	1350	1200				12	3	2	1		1
E-25		1		1	1300	1300	800	800	1300	700	350	350		3			1	1
E-26					750	750			750					1			1	

NOTE:

ELECTRICAL QUANTITIES ARE SHOWN FOR INFORMATION ONLY, NOT A SEPARATE PAY ITEM.

ELECTRICAL QUANTITIES

E-58

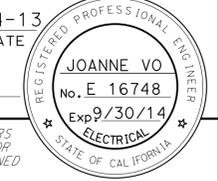
APPROVED FOR ELECTRICAL WORK ONLY



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans **ELECTRICAL DESIGN**
 FUNCTIONAL SUPERVISOR: SHAHRAM SHAHRIARI
 CALCULATED/DESIGNED BY: SHAHRAM SHAHRIARI
 CHECKED BY:
 JOANNE VO
 SHAHRAM SHAHRIARI
 REVISED BY: DATE REVISION
 x
 x
 x
 x
 x

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	227	357

04-04-13
 REGISTERED ELECTRICAL ENGINEER DATE
 4-15-13
 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.

COMMUNICATION SYSTEM

SHEET No.	TYPE A FO	TYPE B FO	TYPE C FO	TYPE D FO	COMMUNICATION CONDUIT	PAIR OF 4 INNERDUCTS	SPLICE VAULT	RC X-FO CONDUIT	SPLICE FO	COMMUNICATION PULL BOX
	FEET	FEET	FEET	FEET	FEET	FEET	EACH	FEET	EACH	EACH
E-27	500	500	500		500	500		450	1	
E-28	1200	1200	1200	800	1200	1200	1		1	2
E-29	1200	1200	1200		400	1200				
E-30	1400	1400	1400		1200	1400				
E-31	700	700	1900		1400	1400			1	
E-32			1200		750	1200			1	

RAMP METERING SYSTEM AND ELECTRIC SERVICE (IRRIGATION)

SHEET No.	RL MODEL 334 CABINET	29-5-100 STANDARD	PV SIGNAL HEAD	METER-ON POLE	LOOP	SIGN WOOD POLE	TYPE 1 CONDUIT	DLC	No. 6 AWG	No. 5 PB	No. 5(T) PB	No. 6 PB
	EACH	EACH	EACH	EACH	EACH	EACH	FEET	FEET	FEET	EACH	EACH	EACH
E-41	1	1	2	2	23	2	1400	4700	600	6	7	1

NOTE:
 ELECTRICAL QUANTITIES ARE SHOWN FOR INFORMATION ONLY, NOT A SEPARATE PAY ITEM.

ELECTRICAL QUANTITIES
E-59

APPROVED FOR ELECTRICAL WORK ONLY

LAST REVISION: DATE PLOTTED => 24-APR-2013 11:29-12 TIME PLOTTED => 11:22

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans ELECTRICAL DESIGN
 FUNCTIONAL SUPERVISOR
 SHAHRAM SHAHRIARI
 CALCULATED/DESIGNED BY
 CHECKED BY
 VANESSA TRUONG
 SHAHRAM SHAHRIARI
 REVISED BY
 DATE REVISED
 x
 x
 x
 x
 x

NOTE:

ELECTRICAL QUANTITIES ARE SHOWN FOR INFORMATION ONLY, NOT A SEPARATE PAY ITEM.

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	228	357

Vanessa Van Truong 02-04-13
 REGISTERED ELECTRICAL ENGINEER DATE
 4-15-13
 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.

SIGNAL AND LIGHTING (TEMPORARY)

SHEET No.	VIDEO IMAGE VEHICLE DETECTION SYSTEM	VIDEO DETECTION CAMERA	VIDEO DETECTION CAMERA CABLE	No. 5 PB	RC pb
	EA	EA	FT	EA	EA
E-43	1	1	300	2	2

SIGNAL AND LIGHTING

SHEET No.	INDUCTIVE LOOP DETECTOR
	EA
E-44	9

LIGHTING (TEMPORARY)

SHEET No.	1"C	1 1/2"C	2#6	TYPE H RISER	WOOD POLE	TYPE 15 POLE	15' LUMINAIRE ARM	LED LUMINAIRE ROADWAY 2
	FT	FT	FT	EA	EA	EA	EA	EA
E-45		10	1000	1	12		5	5
E-46	1000		1000			6	6	6
E-47	100	10	1050	1	12		6	6

LIGHTING AND SIGN ILLUMINATION

SHEET No.	2"C	2#6	277/480 V TYPE III-BF SERVICE EQUIPMENT ENCLOSURE	No. 5(T) PB	No. 5 PB	No. 9A PB	TYPE 21 STANDARD & FOUNDATION	TYPE 30 STANDARD & FOUNDATION	TYPE 32 STANDARD & FOUNDATION	LED LUMINAIRE ROADWAY 2	ISL	SC2A	SC3A	RC pb	RC Exist	ELECTROLIER	RC mv	RC isl	TYPE H RISER	RC Exist SERVICE CABINET
	FT	FT	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
E-48	250	250			3			2		2	4						4			
E-49	550	550			3	2	2			2	6	3		3		1				
E-50	1100	1100				8	7			7	2	1		6		4	2			
E-51	1650	1950	1	1	6	8	5	2	1	8	2		1	8		4	2		1	1
E-52	1700	1700			9	7	5	3	1	9	2	1		2		1				
E-53	850	850			1	5	5			5	1		1	1		1				
E-54	5	5									3		1					2		

ELECTRICAL QUANTITIES
E-60



DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	229	357
			11/21/12		
REGISTERED CIVIL ENGINEER			DATE		
4-15-13			PLANS APPROVAL DATE		
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LUMINAIRE ARM DATA			
Projected Length	N Rise	Min OD At Pole	Thickness
15'-0"	4'-9"	4 1/4"	0.1196"

Refer to ES-6A for Luminaire arm details

GENERAL NOTES:

SPECIFICATIONS

Design: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals dated 2009 and 2010 Interim Revisions.

LOADING

Wind Loadings: 100 MPH

UNIT STRESSES

Timber Poles: Tapered treated round pole ASTM D2899 Standard
 Fb = 1850 psi
 Fv = 110 psi
 E = 1500 x 10³ psi

TREATMENT

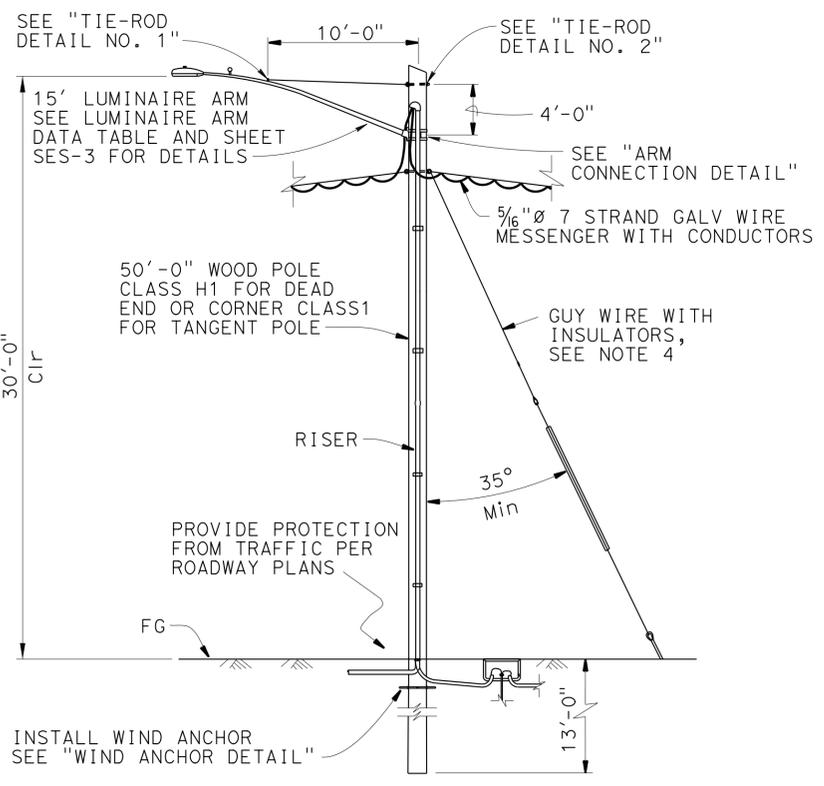
To conform with Section 86 Standard Specifications SPECIFICATIONS

Caltrans Standard Specifications 2010
 ANSI 05 Wood Poles
 ASTM A475 Utility Grade Wires

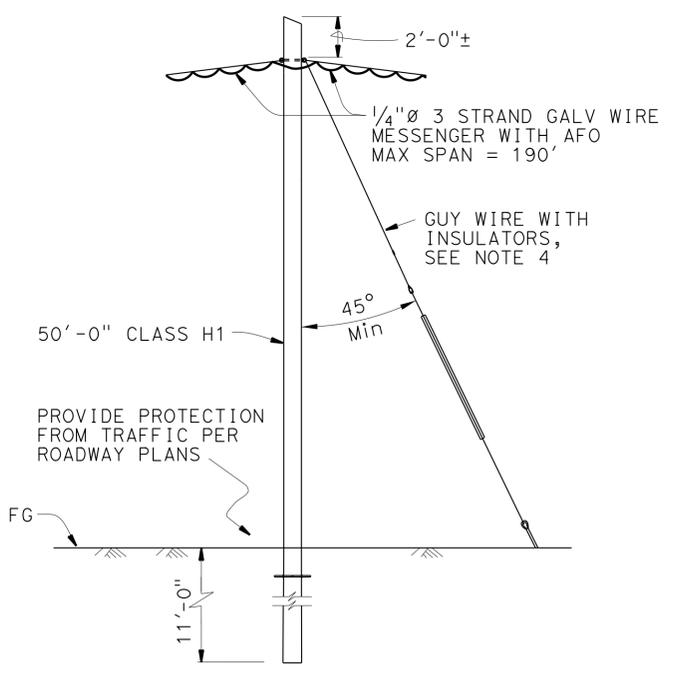
NOTES:

- All overhead AFO cables must be slack spanned with 25'-0" minimum overhead clearance. Power line above AFO must be separated 40" min from AFO.
- Conductors must be suspended from span-wire as follows:
 A) Main run as shown span-wire with 5%± sag.
 No spare conductors allowed except as noted.
- Overhead line construction not specifically covered here must conform with the provisions of General Order No. 95 of Public Utilities Commission.
- Wood poles must be stabilized using guy wires, breast blocks or rakes at each dead end, corner, drop or line deviation more than 15° from straight line. The direction of the guy must counteract the resultant of unbalanced force applied to pole. Where space or conflict prevent guy installation, a diagonal brace must be used. The brace must be connected to the pole by means to satisfy structural and electrical requirements. The direction of the brace must counteract the resultant of unbalanced horizontal force of 2000 pounds Min applied to the pole.
- Guy must be attached to pole as nearly as practical to the center of conductors load, or 3'-0" Max otherwise, See Note 4.
- All attachments must be mounted with stainless steel straps or other manufacturers methods without drilling holes in pole, except as shown. Drilling through pole will require the Engineer's approval.
- Foundation design is based on AASHTO 2001 article 13.6 Broms' approximate procedure assuming a cohesionless material. The angle of Internal friction used is 30° and unit weight of soil used is 120 lb/ft³. The Contractor to verify actual soil condition.
- If pole is located on a steep slope from 4H:1V up to 2H:1V add 2 feet extra for embedment.
- See Sheets SES-2 through SES-5 for details.
- For details not shown, see "2010 STANDARD PLANS".
- Temporary poles support OH Conductors as noted. Attach luminaire arm and/or combination of attachments as specified at locations where indicated on Electrical Sheets.
- For CCTV camera on top of the pole on 2' max bracket see detail, sheet SES-5

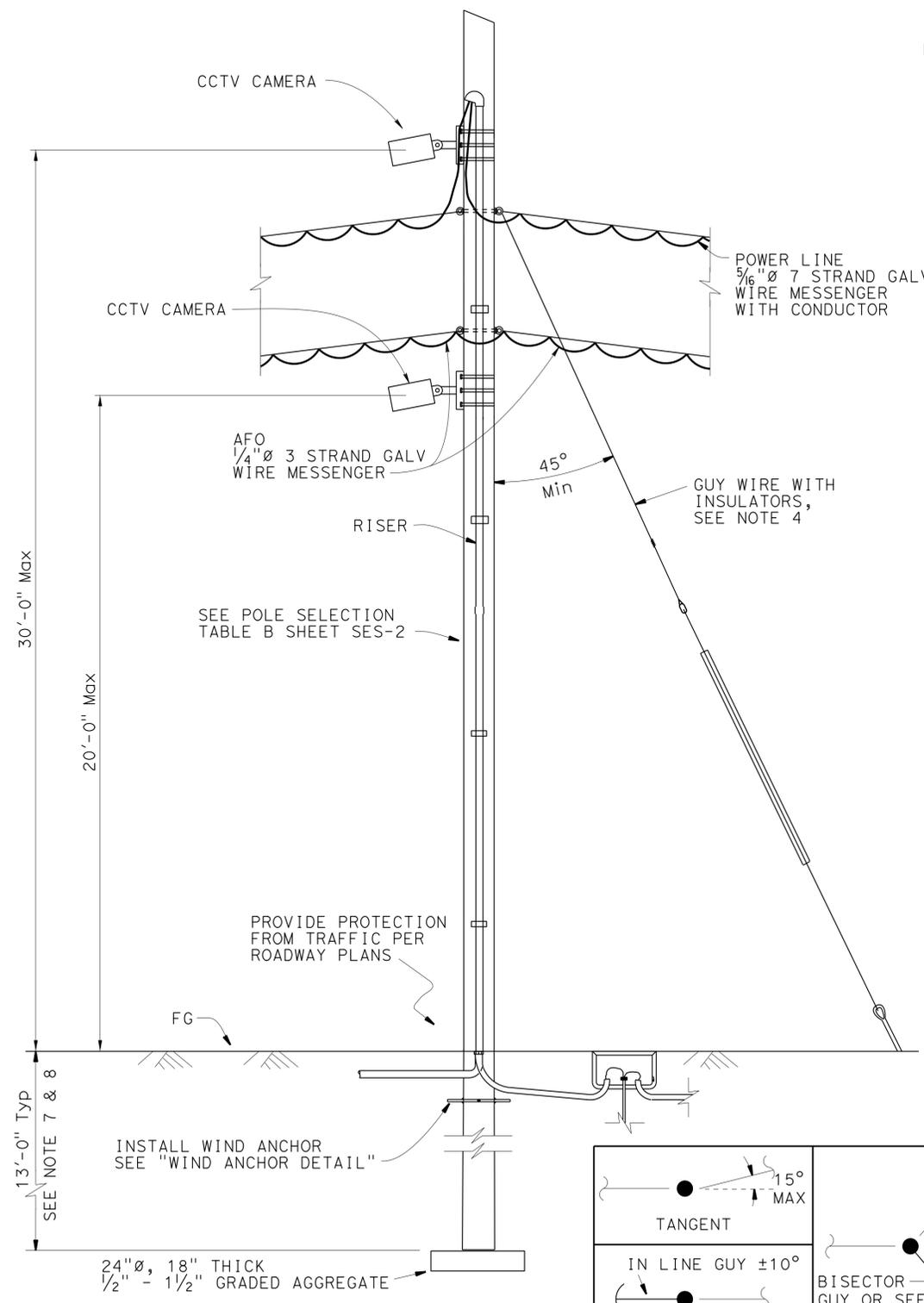
ABBREVIATION: AFO - Aerial Fiber Optic Cable



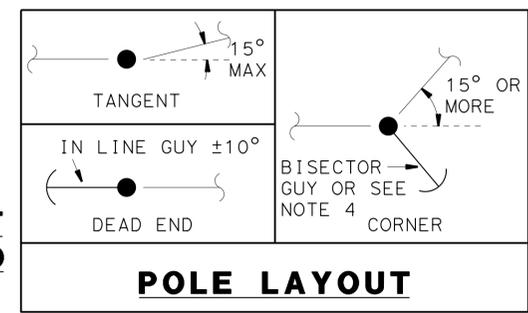
WOOD POLE SUPPORT FOR LIGHTING



WOOD POLE SUPPORT FOR AFO ONLY



WOOD POLE SUPPORT FOR POWER AND AFO



POLE LAYOUT

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

NO SCALE

BRANCH CHIEF JAMES SAGAR	DESIGN	BY T MARCHENKO	CHECKED L WARREN	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN SPECIAL DESIGN BRANCH	BRIDGE NO.	COMMUNICATION & LIGHTING SYSTEM (TEMP) TEMPORARY WOOD POLES	SES-1
	DETAILS	BY H NGUYEN/S JIANG	CHECKED L WARREN			N/A		
	QUANTITIES	BY	CHECKED X			POST MILE 8.1/9.3,10.1		

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	230	357


 11/21/12
 REGISTERED CIVIL ENGINEER DATE
 4-15-13
 PLANS APPROVAL DATE
 No. C76837
 Exp. 12/31/12
 CIVIL
 STATE OF CALIFORNIA
 REGISTERED PROFESSIONAL ENGINEER
 TAMARA S. MARCHENKO
 No. C76837
 Exp. 12/31/12
 CIVIL
 STATE OF CALIFORNIA

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POLE SELECTION TABLE			
Pole Layout	Max span	POLE	
		Class	Length
Tangent	160'	H2	55'
	210'	H4	55'
Corner	160'	H4	55'
Dead end	160'	H3	55'

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

BRANCH CHIEF <u>JAMES SAGAR</u>	DESIGN	BY T MARCHENKO	CHECKED L WARREN	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN SPECIAL DESIGN BRANCH	BRIDGE NO.	SIGNAL AND LIGHTING SYSTEM (TEMPORARY) TEMPORARY WOOD POLE TABLE	SES-2					
	DETAILS	BY H NGUYEN/S. JIANG	CHECKED L WARREN			N/A							
	QUANTITIES	BY	CHECKED X			POST MILE 8.1/9.3,10.1							
STRUCTURES DESIGN SPECIAL DESIGN SHEET (ENGLISH) (REV. 09-01-10)		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		0	1	2	3	UNIT: 3619 PROJECT NUMBER & PHASE: 1200000078 CONTRACT NO.: 12-0c5601	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET	OF	
										4-30-12	4-30-12	2	6

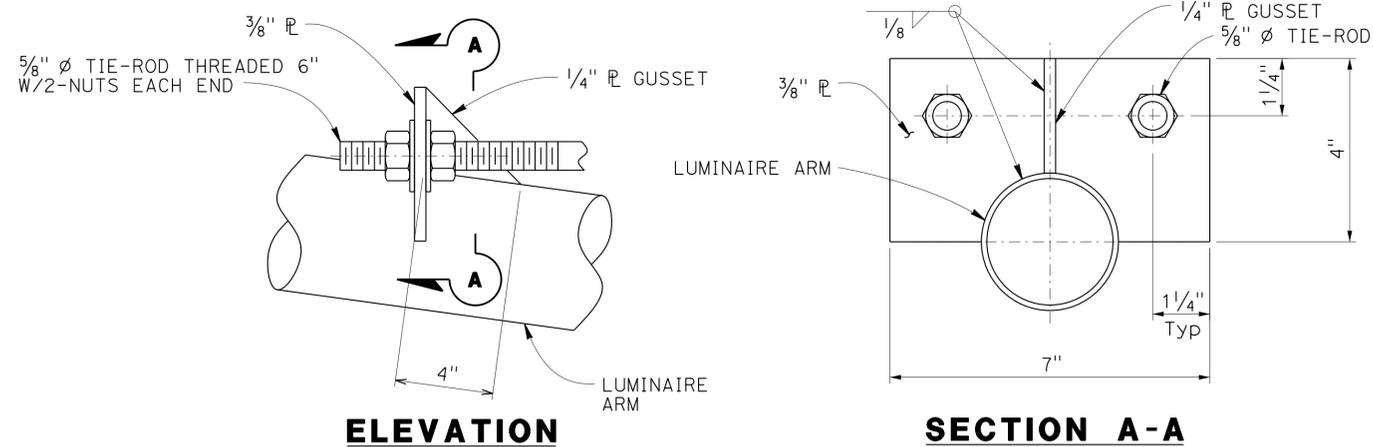
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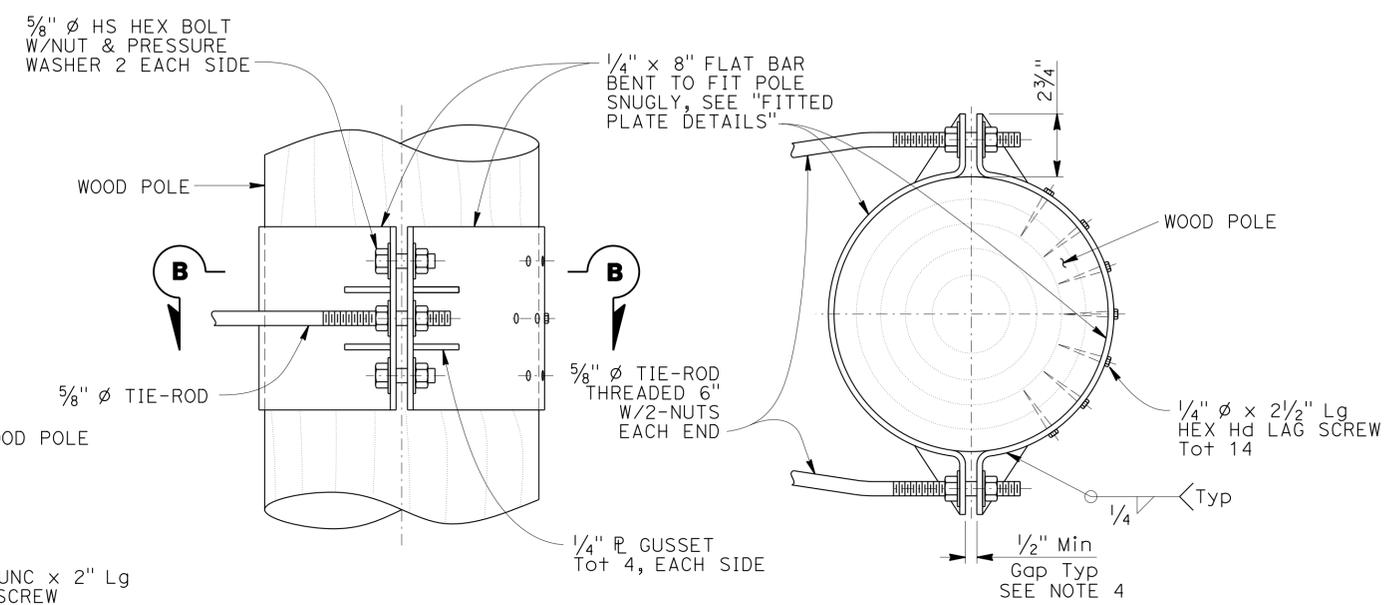
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12	Ora	91	8.1/9.3,10.1	231	357
			11/21/12	REGISTERED CIVIL ENGINEER DATE	
			4-15-13	PLANS APPROVAL DATE	
			REGISTERED PROFESSIONAL ENGINEER TAMARA S. MARCHENKO No. C76837 Exp. 12/31/12 CIVIL STATE OF CALIFORNIA		
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.					

NOTES:

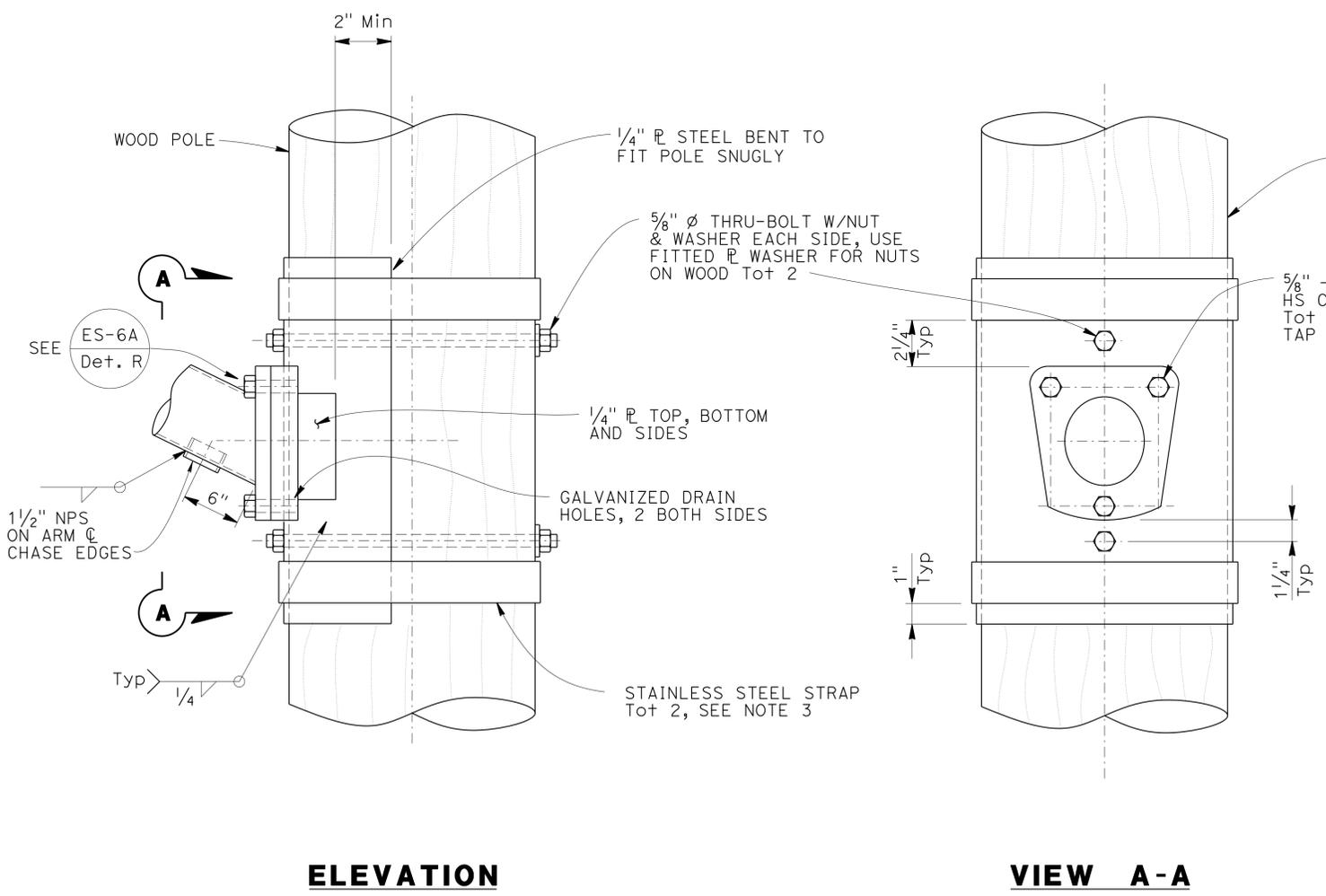
1. All hardware and steel must be galvanized after fabrication.
2. Arm Base connection details must be in compliance with Standard Plans Detail Sheet ES-6A with noted modifications.
3. 3500 lb Min capacity strap system shall be used for top and bottom of plate.
4. Verify pole dimensions at Tie-Rod attachment height. Fabricate 8" flat bar with "L" Dimension to maintain an open gap between encasement in finished installation.



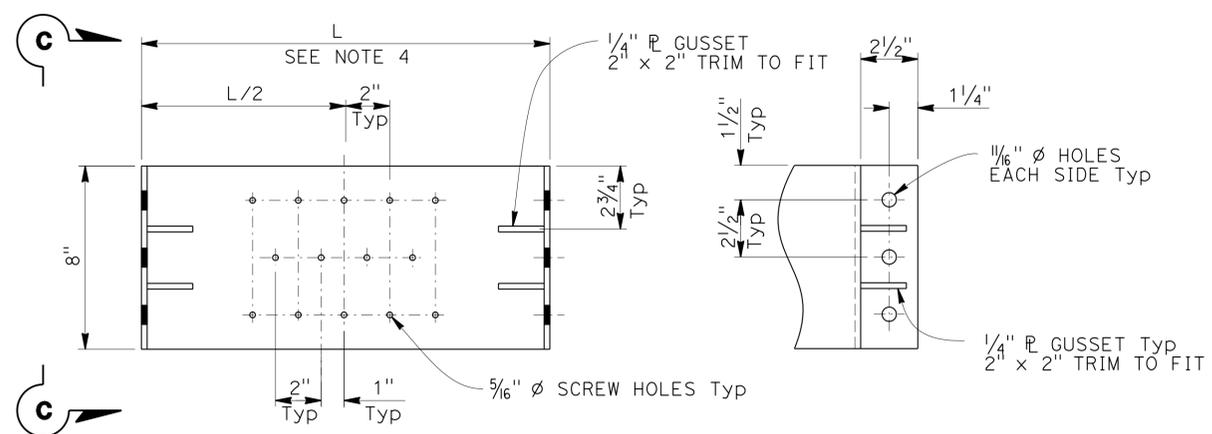
TIE-ROD DETAIL No. 1



TIE-ROD DETAIL No. 2



ARM CONNECTION DETAILS



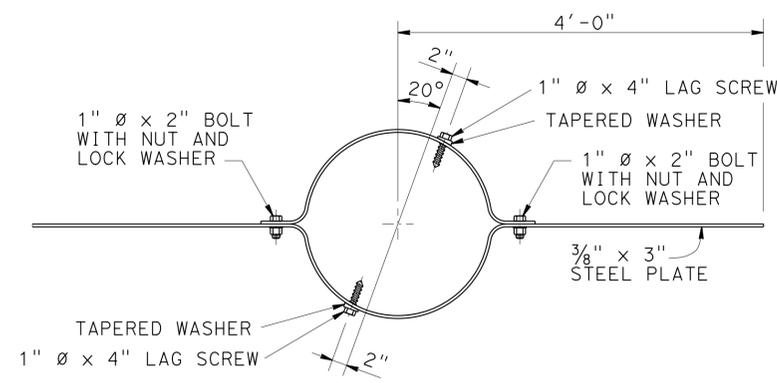
FITTED PLATE DETAILS

Note: 2 Required (1 w/screw holes, 1 without)

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

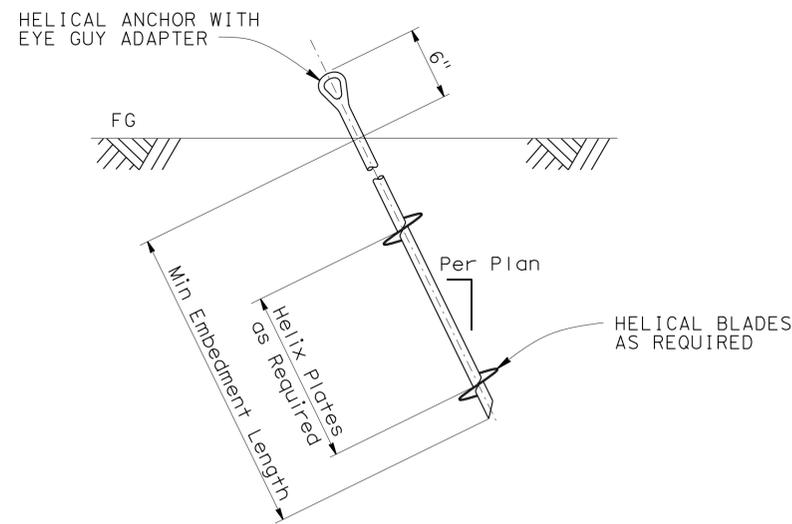
BRANCH CHIEF JAMES SAGAR	DESIGN	BY T MARCHENKO	CHECKED L WARREN	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN SPECIAL DESIGN BRANCH	BRIDGE NO.	TEMPORARY SIGNAL SYSTEM LUMINAIRE ARM MOUNTING DETAILS	SES-3
	DETAILS	BY H NGUYEN/S. JIANG	CHECKED L WARREN			N/A		
	QUANTITIES	BY	CHECKED X			POST MILE		

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	232	357
			11/21/12	REGISTERED CIVIL ENGINEER DATE	
			4-15-13	PLANS APPROVAL DATE	
			REGISTERED PROFESSIONAL ENGINEER TAMARA S. MARCHENKO No. C76837 Exp. 12/31/12 CIVIL STATE OF CALIFORNIA		
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WIND ANCHOR

To be installed perpendicular to mast arms and 2'-0" Min below grade



ALTERNATIVE GUY WIRE INSTALLATION DETAIL

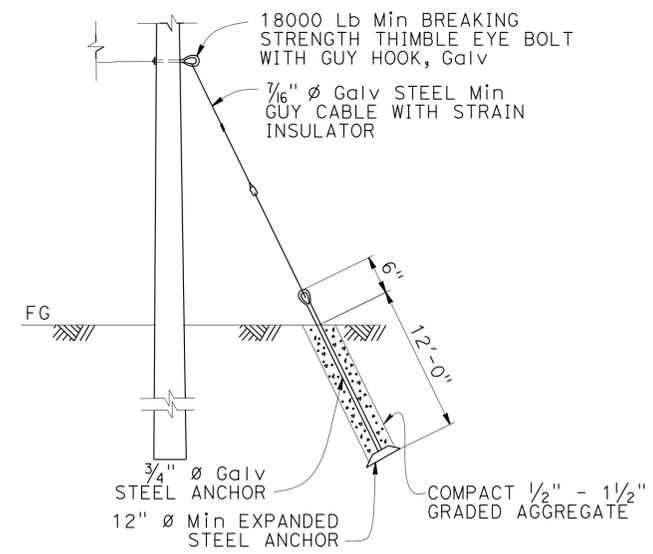
(See Helical Anchor Specifications Table)

HELICAL ANCHOR SPECIFICATIONS					
Anchor Location	Type	Helix Plate Diameter*	Allowable Min Tension Cap., "Q _a "	Embedment Length Min	Installation Torque Min **, "T"
Typical	Tension	12"	6000 lb	12'-0"	1800 Ft-lb

SPECIFICATION NOTES:

- During installation the torque will be continuously monitored and recorded. If a drop in torque is recorded, the anchor must then continue to be inserted past the soft soil layer until Minimum Installation Torque is achieved.
- Anchors and Hardware to be installed per the manufacturers specifications.

* Number of helical plates is not specified; Contractors choice.
 ** Adjust accordingly if required, See Note 3.



GUY WIRE INSTALLATION DETAIL

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

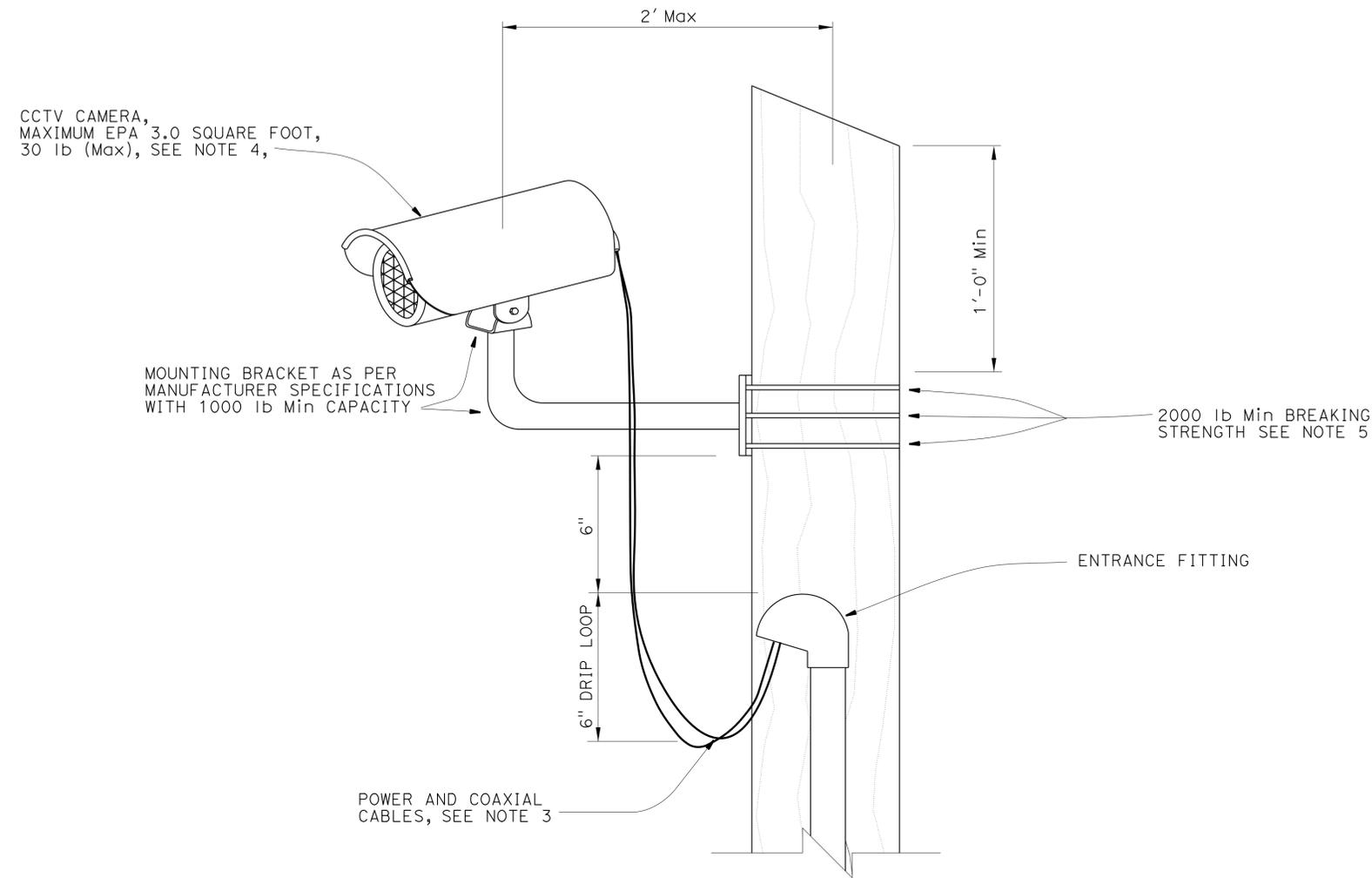
NOTES:

- Verify soil condition, slope, and adjust anchoring to satisfy basic design requirements per Note 7 on SES-1 sheet.
 - Use of alternative Guy Wire Installation Detail requires that the soil bearing capacity be verified by the installation Contractor.
 - Installation Contractor must determine the most appropriate value for k₊ based on soil conditions and must adjust the Min Installation Torque based on the revised k₊. A k₊ value of 10 was assumed for the Min Installation Torque shown in the table.
- The Helical Installation torque Formula is Q_u = k₊*T where,
- Q_u = Q_a*FS = Ultimate Helical Anchor Capacity (LBs)
 FS = Factor of Safety = 3.0
 Q_a = Allowable Helical Anchor Capacity (LBs)
 k₊ = Empirical Torque Factor (ft⁻¹)
 T = Min Installation Torque (Ft-LBs)
- Requests made by Helical Anchor Installation Contractor to reduce the minimum embedment length and/or Helix diameter require Engineer's approval.
 - Locate and mark all of the substructures and utilities. Installation of anchors underneath utilities or subsurface structures is prohibited. Horizontal clearances of anchors shall be determined by Inspector during construction.

NO SCALE

BRANCH CHIEF <u>JAMES SAGAR</u>	DESIGN	BY T MARCHENKO	CHECKED L WARREN	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN SPECIAL DESIGN BRANCH	BRIDGE NO.	TEMPORARY SIGNAL SYSTEM WOOD POLE DETAILS	SES-4
	DETAILS	BY H NGUYEN/S. JIANG	CHECKED L WARREN			N/A		
	QUANTITIES	BY	CHECKED X			POST MILE		

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	233	357
			11/21/12		
REGISTERED CIVIL ENGINEER			DATE		
4-15-13			PLANS APPROVAL DATE		
					
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CAMERA MOUNTING DETAIL

NOTES:

- Exact mounting location of CCTV and bracket must be approved by the Engineer per manufacturer's recommendation.
- Power and coaxial cables must have a drip loop at the entrance into signal pole.
- Power and coaxial cables must run continuous and must not be twisted from the to the controller cabinet. No splices must be allowed.
- Use the manufacturer's Effective Projected Area (EPA) for CCTV attachment. The maximum EPA for each CCTV attachment must be 3.0 square feet.
- CCTV attachment must be mounted using clamping devices per manufacturer's recommendations with 2000 lb Min breaking strength.

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

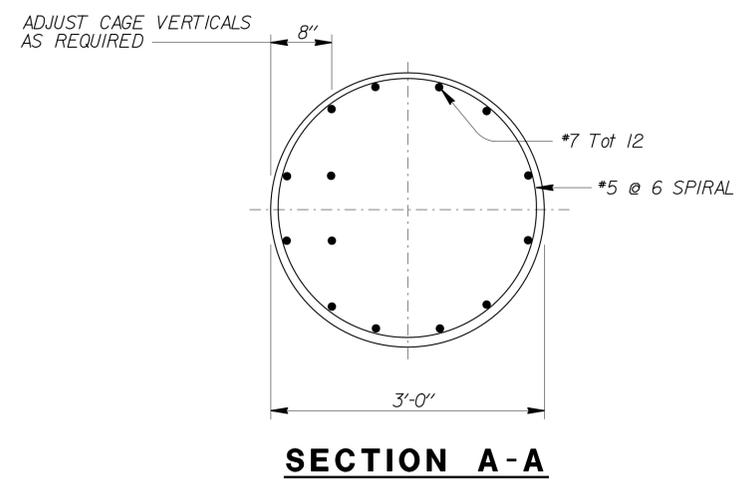
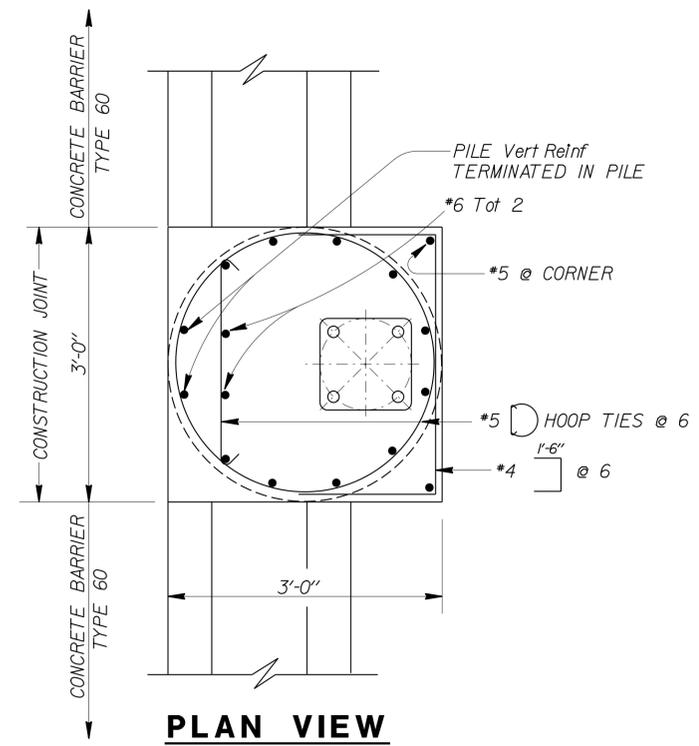
NO SCALE

BRANCH CHIEF <u>JAMES SAGAR</u>	DESIGN	BY T MARCHENKO	CHECKED L WARREN	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN SPECIAL DESIGN BRANCH	BRIDGE NO.	TEMPORARY SIGNAL SYSTEM CAMERA MOUNTING DETAILS-ALTERNATIVE	SES-5		
	DETAILS	BY H NGUYEN/S. JIANG	CHECKED L WARREN			N/A				
	QUANTITIES	BY X	CHECKED X			POST MILE 8.1/9.3,10.1				
STRUCTURES DESIGN SPECIAL DESIGN SHEET (ENGLISH) (REV. 09-01-10)				ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0 1 2 3	UNIT: 3619 PROJECT NUMBER & PHASE: 1200000078	CONTRACT NO.: 12-0c5601	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 5 OF 6

USERNAME => s121614 DATE PLOTTED => 24-APR-2013 TIME PLOTTED => 10:59

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	234	357

Devang K. Vora 11/28/12
 REGISTERED CIVIL ENGINEER DATE
 4-15-13
 PLANS APPROVAL DATE
 No. C76546
 Exp. 12/31/14
 CIVIL
 STATE OF CALIFORNIA
 REGISTERED PROFESSIONAL ENGINEER

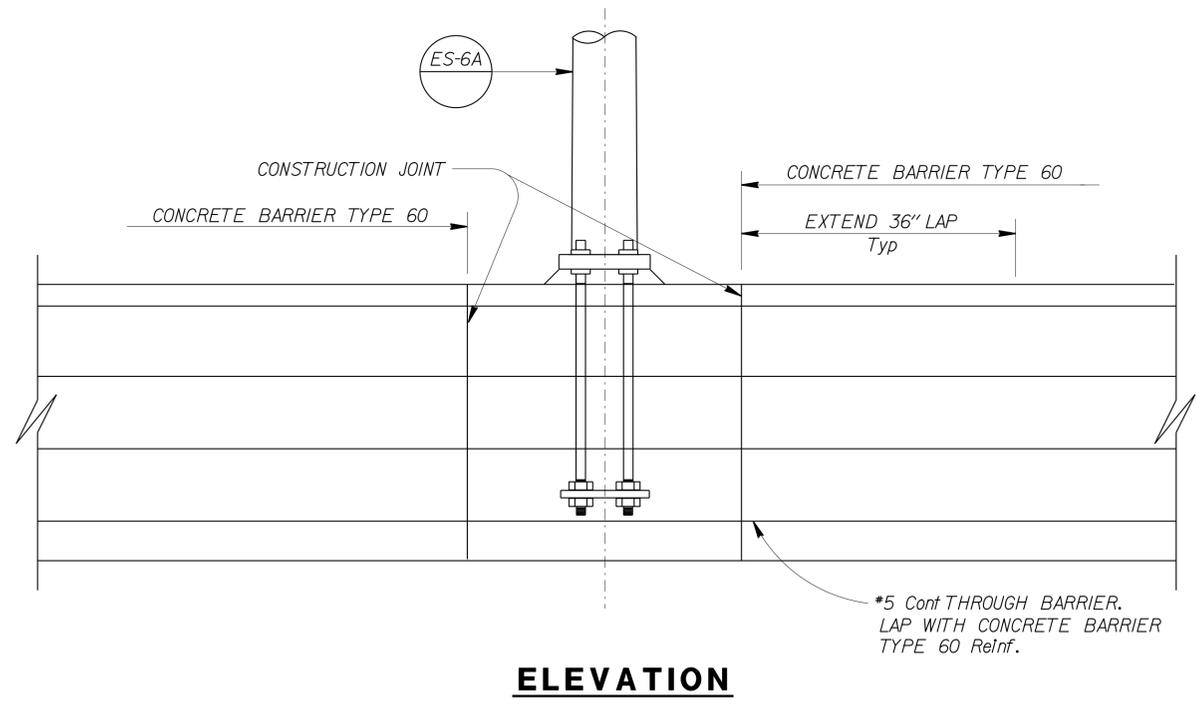
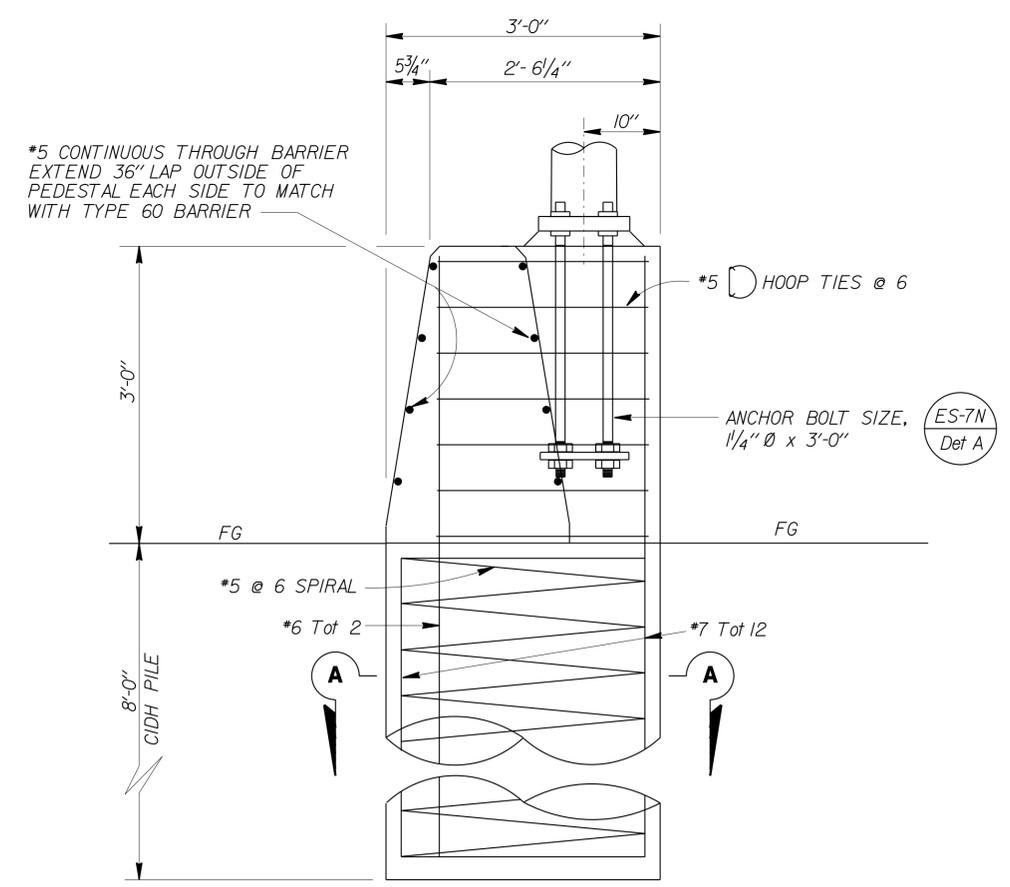


PLAN VIEW

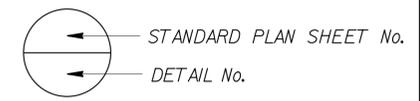
SECTION A-A

DESIGN NOTES:
SPECIFICATIONS
 Design : AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, Fifth Edition.
LOADING
 Wind Loading: 100 mph
UNIT STRESSES
 Structural steel: $f_y = 48,000$ psi tapered steel pole
 $f_y = 36,000$ psi unless otherwise noted.
 Anchor bolts = A307
 Reinforced concrete: $f'_c = 3,600$ psi
 $f_y = 60,000$ psi

NOTE:
 For details not shown, see "STANDARD PLANS 2010".



ELEVATION

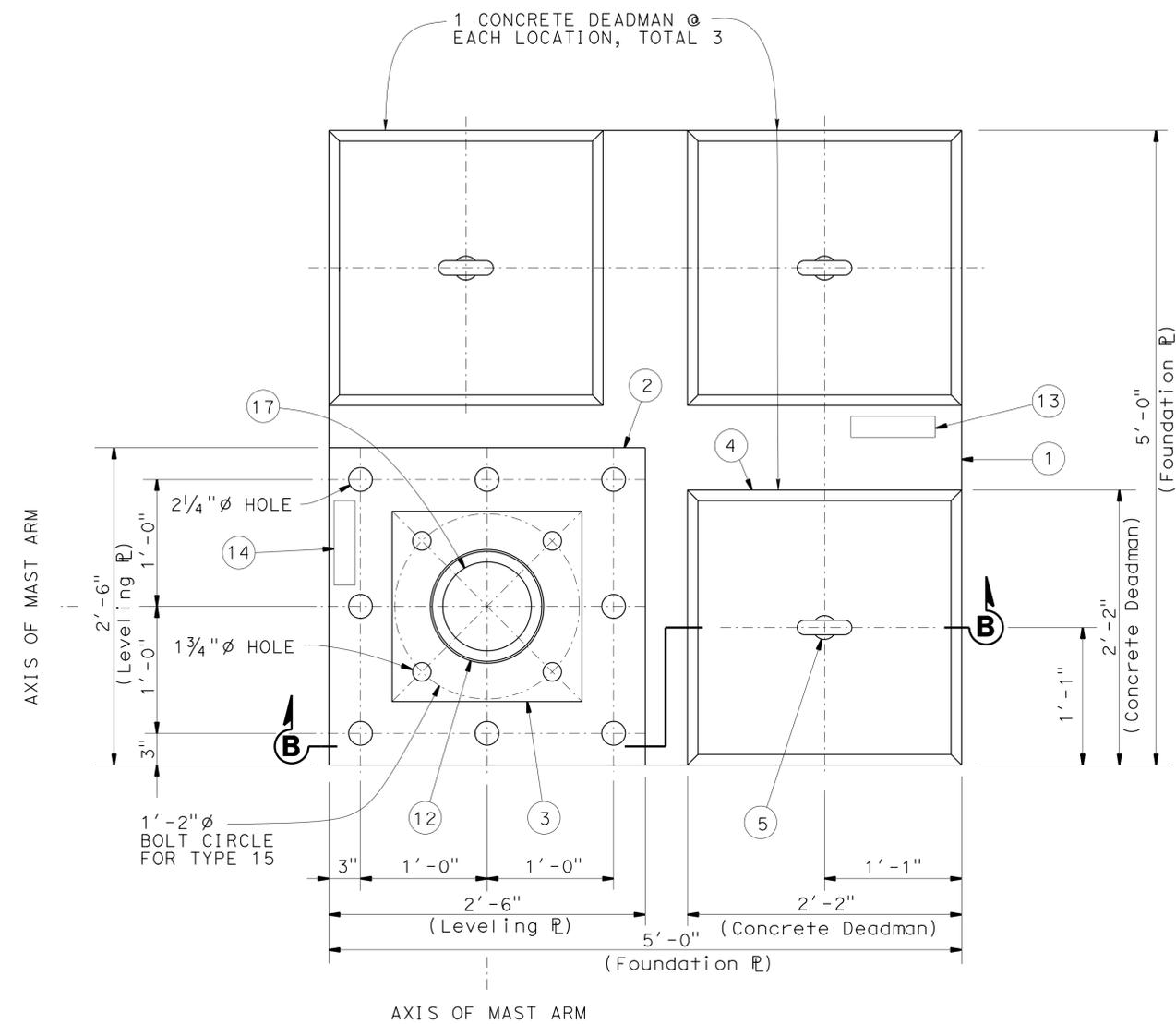


NOTE:
 THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

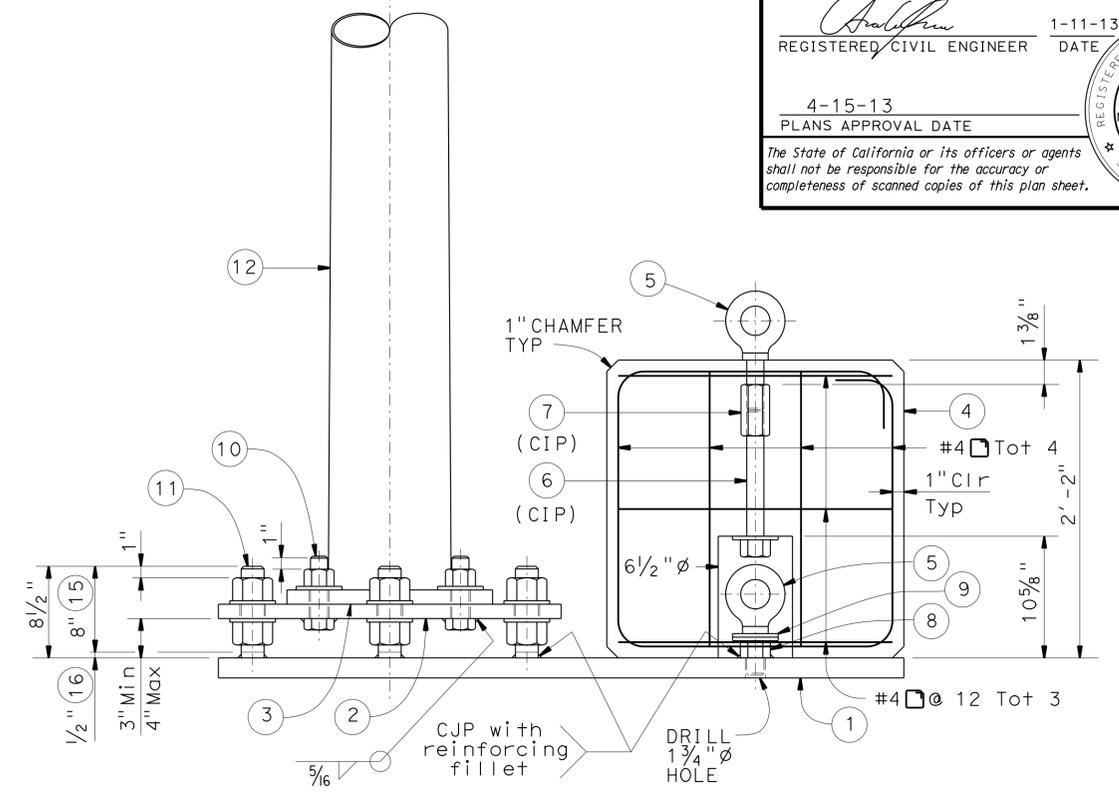
BRANCH CHIEF JEFF WOODY	DESIGN BY JOHN DATILES CHECKED DEVANG VORA	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES DESIGN AND TECHNICAL SERVICES SPECIAL DESIGNS BRANCH	BRIDGE NO.	TYPE 21 LIGHTING STANDARD CIDH PILE / PEDESTAL FOUNDATION	SES-6
	DETAILS BY R. YEE CHECKED DEVANG VORA			POST MILE		
	QUANTITIES BY _____ CHECKED _____			8.1/9.3,10.1		

USERNAME => s121614 DATE PLOTTED => 24-APR-2013 TIME PLOTTED => 10:59

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	235	357
			REGISTERED CIVIL ENGINEER	DATE	
			4-15-13	1-11-13	
			PLANS APPROVAL DATE		
			ANDREW BUI		
			No. C63560		
			Exp. 9/30/14		
			CIVIL		
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PLAN



SECTION B-B

NOTES:

- ① Foundation \mathbb{R} 1 3/4" X 5'-0" X 5'-0"
- ② Leveling \mathbb{R} 1 1/4" X 2'-6" X 2'-6"
- ③ Base \mathbb{R} 1 1/2" X 1'-1 1/2" X 1'-1 1/2" for TYPE 15
- ④ Concrete Deadman 2'-2" X 2'-2" X 2'-2"
- ⑤ 1 1/2" \varnothing Forged eyebolt with 3 5/8" shank
- ⑥ 1 1/2" \varnothing X 12" Heavy hex bolt with 4" \varnothing X 5/16" thick washer (CIP)
- ⑦ 1 1/2" \varnothing Hex coupling nut (CIP)
- ⑧ 1 1/2" \varnothing Heavy hex nut
- ⑨ 1 1/2" \varnothing X 5/16" thick washer total (2) each location
- ⑩ 1 1/2" \varnothing Heavy hex bolt with nut and 4" \varnothing X 5/16" thick washers
- ⑪ 2" \varnothing X 8 1/2" Threaded rod with (2) heavy hex nuts and (2) 4" \varnothing X 5/16" thick washer
- ⑫ TYPE 15 Lighting pole
- ⑬ Stamp Foundation \mathbb{R} with "Lift \mathbb{R} with minimum of (2) forged eyebolts".
- ⑭ Stamp Leveling \mathbb{R} with " \mathbb{R} for TYPE 15 pole".
- ⑮ Threaded rod
- ⑯ Non-Threaded Rod
- ⑰ Hole in Leveling \mathbb{R} to be same size as hole in Base \mathbb{R} .

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

BRANCH CHIEF	DESIGN	BY A BUI	CHECKED K C LIU
	DETAILS	BY D W JUSTICE Jr	CHECKED A BUI
	QUANTITIES	BY	CHECKED

STATE OF CALIFORNIA	
DEPARTMENT OF TRANSPORTATION	

DIVISION OF ENGINEERING SERVICES	BRIDGE NO.
STRUCTURE DESIGN	N/A
SPECIAL DESIGN BRANCH	POST MILE
	X

ELECTRICAL SYSTEMS	
LIGHTING (TEMPORARY)	
SES-7	

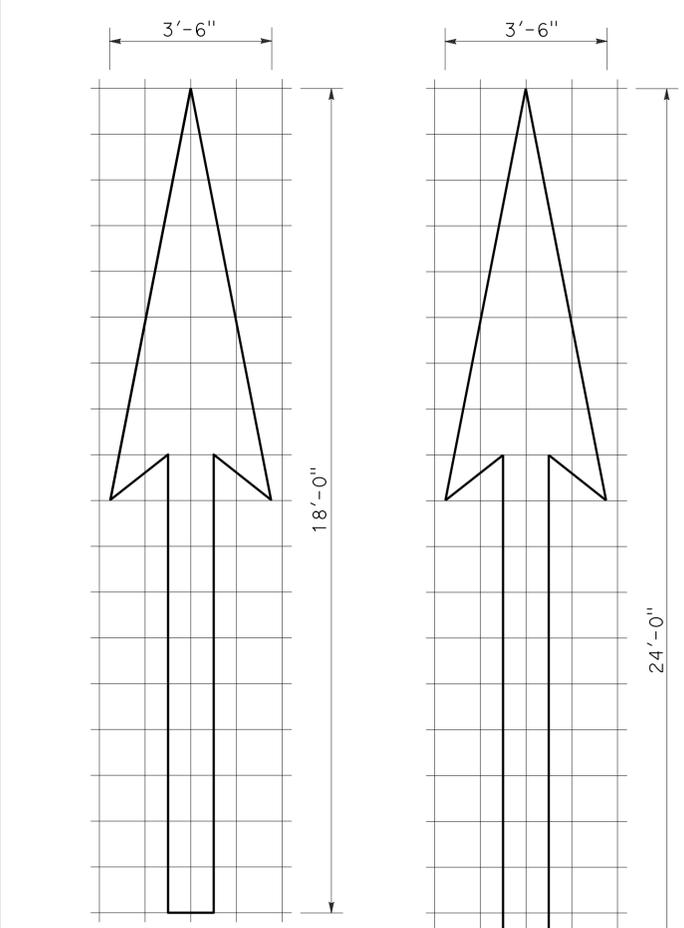
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Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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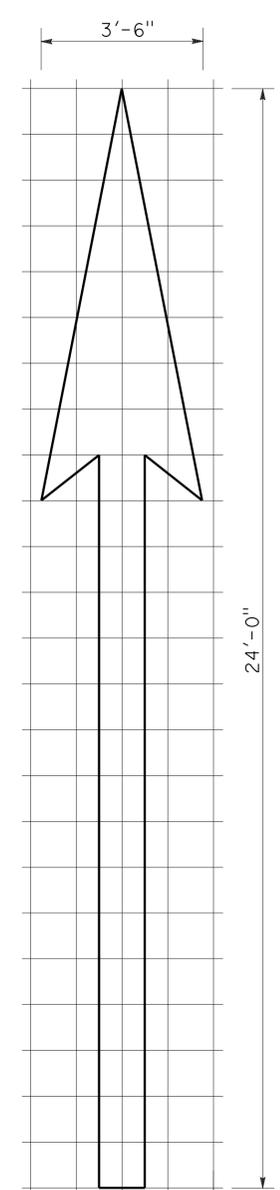
Roberto L. McLaughlin
 REGISTERED CIVIL ENGINEER
 April 20, 2012
 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER
 Roberto L. McLaughlin
 No. C40375
 Exp. 3-31-13
 CIVIL
 STATE OF CALIFORNIA

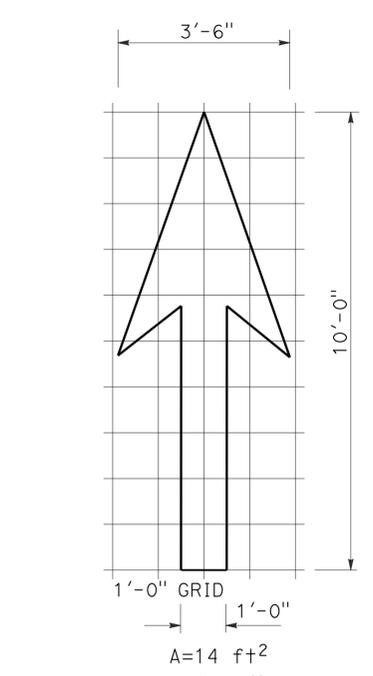
TO ACCOMPANY PLANS DATED 4-15-13



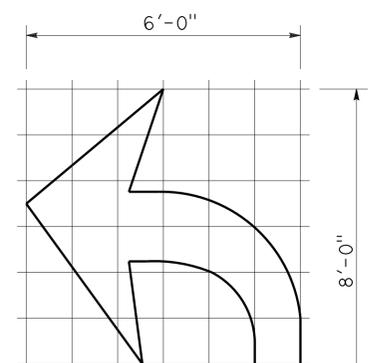
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TYPE I 18'-0" ARROW



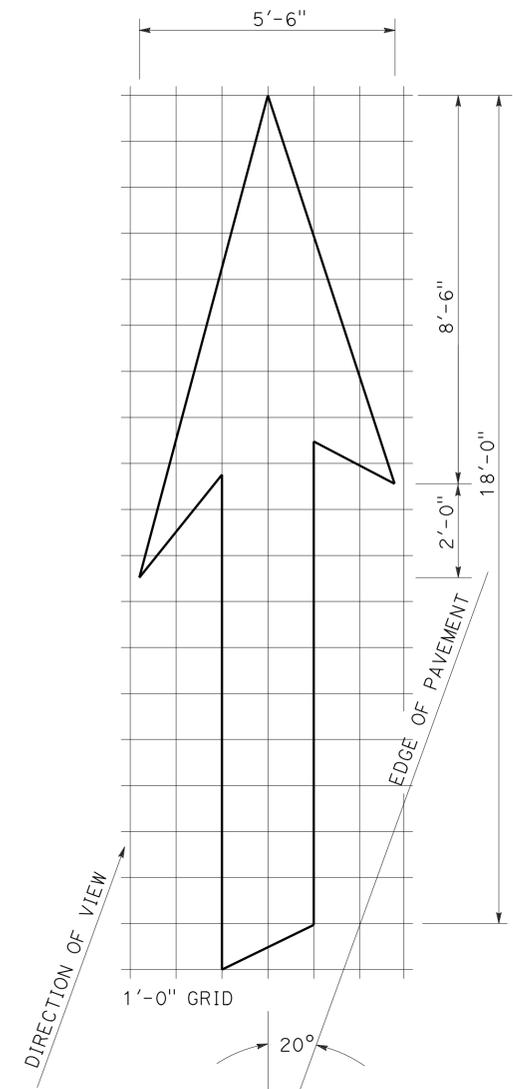
A=31 ft²
TYPE I 24'-0" ARROW



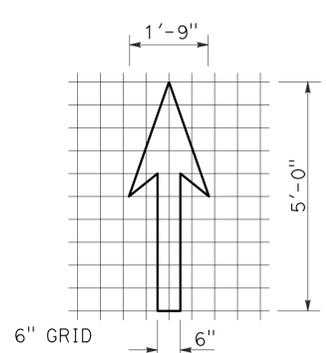
A=14 ft²
TYPE I 10'-0" ARROW



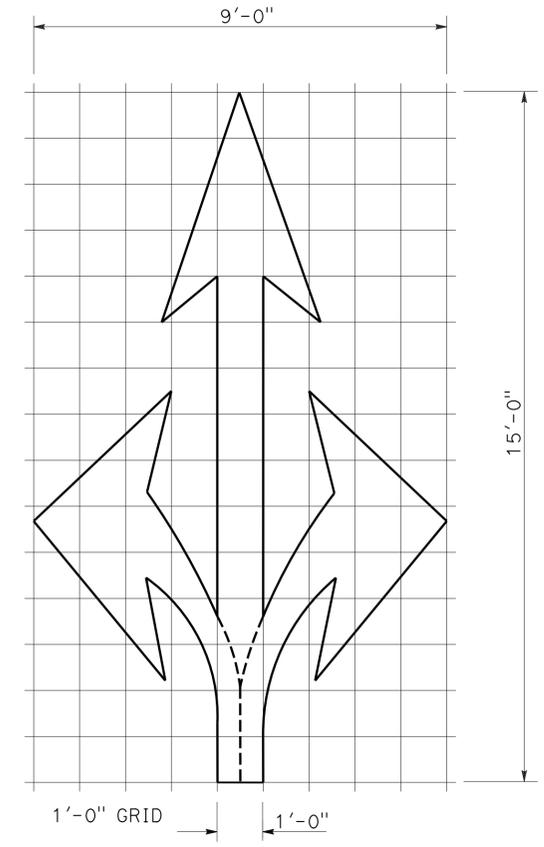
A=15 ft²
TYPE IV (L) ARROW
(For Type IV (R) arrow, use mirror image)



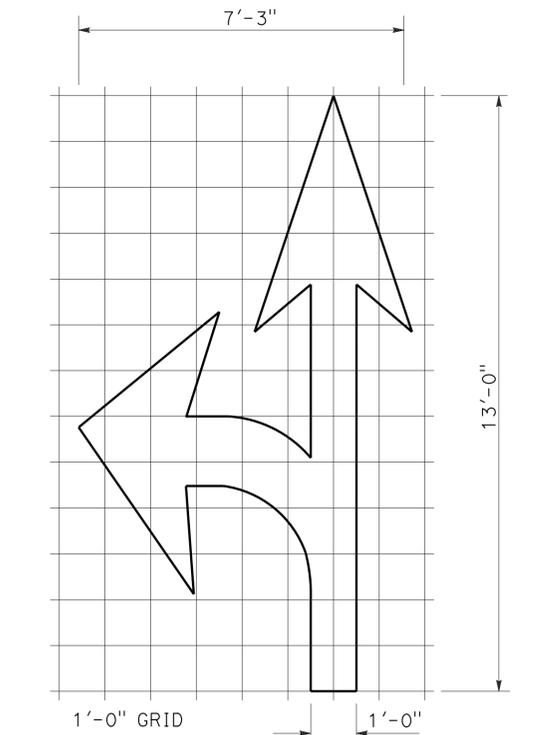
A=42 ft²
TYPE VI ARROW
Right lane drop arrow
(For left lane, use mirror image)



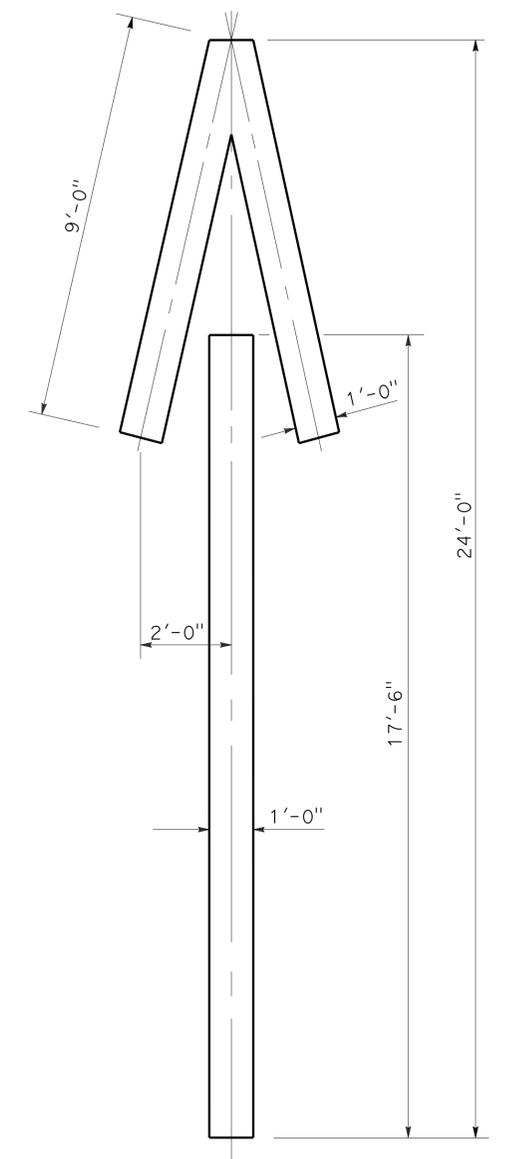
A=3.5 ft²
BIKE LANE ARROW



A=36 ft²
TYPE VIII ARROW



A=27 ft²
TYPE VII (L) ARROW
(For Type VII (R) arrow, use mirror image)



A=33 ft²
TYPE V ARROW

NOTE:
Minor variations in dimensions may be accepted by the Engineer.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**PAVEMENT MARKINGS
ARROWS**
NO SCALE

RSP A24A DATED APRIL 20, 2012 SUPERSEDES STANDARD PLAN A24A DATED MAY 20, 2011 - PAGE 13 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A24A

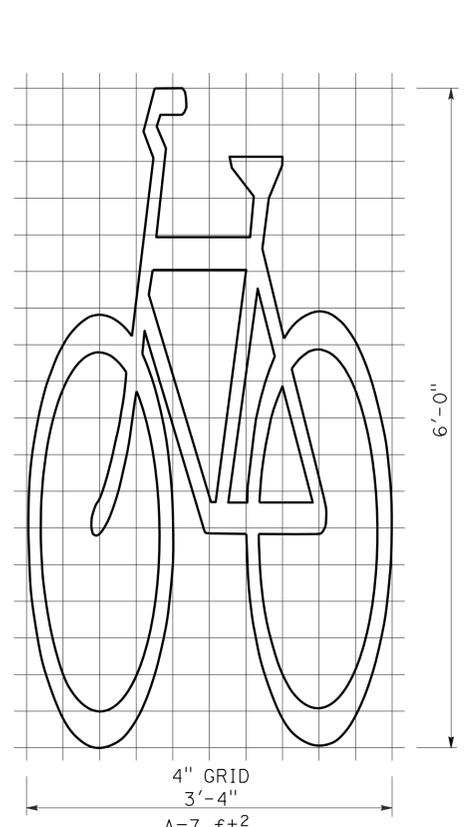
2010 REVISED STANDARD PLAN RSP A24A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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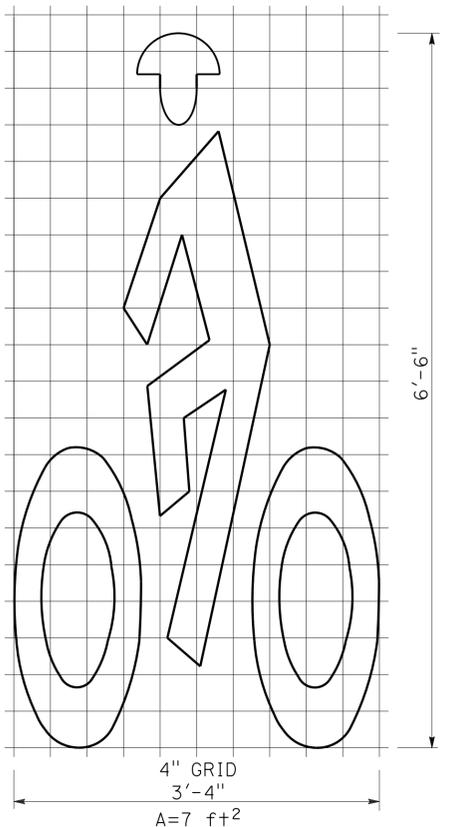
October 19, 2012
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 Roberto L. McLaughlin
 No. C40375
 Exp. 3-31-13
 CIVIL
 STATE OF CALIFORNIA

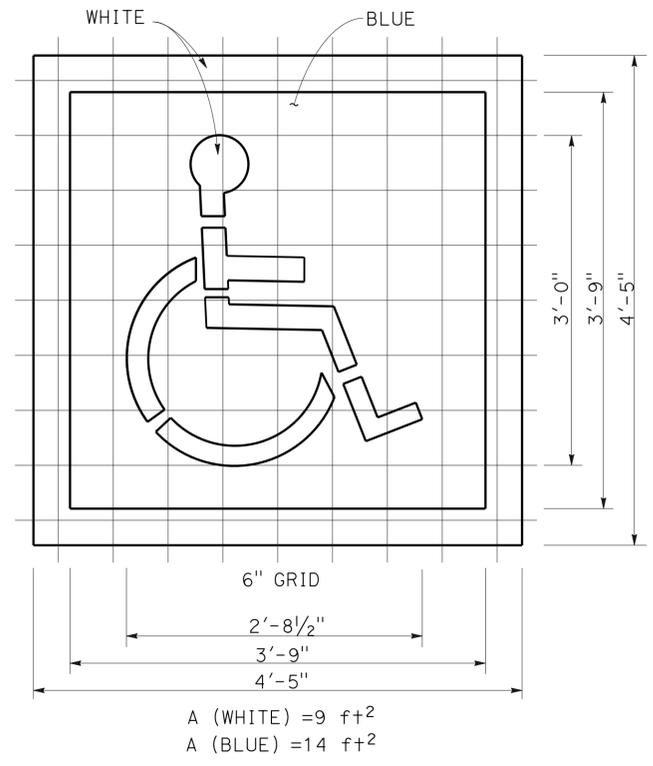
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



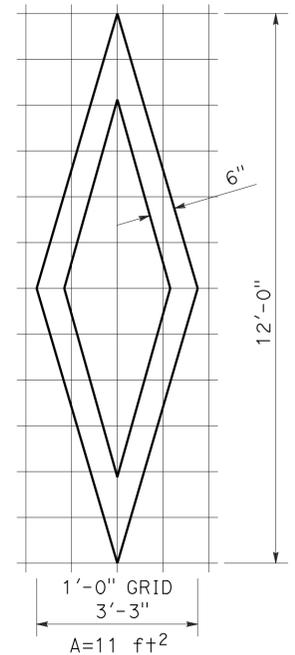
BIKE LANE SYMBOL WITHOUT PERSON



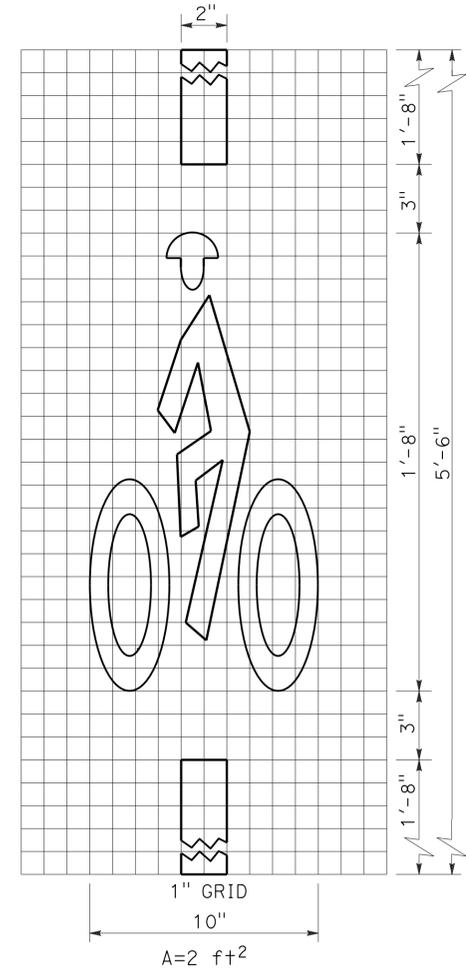
BIKE LANE SYMBOL WITH PERSON



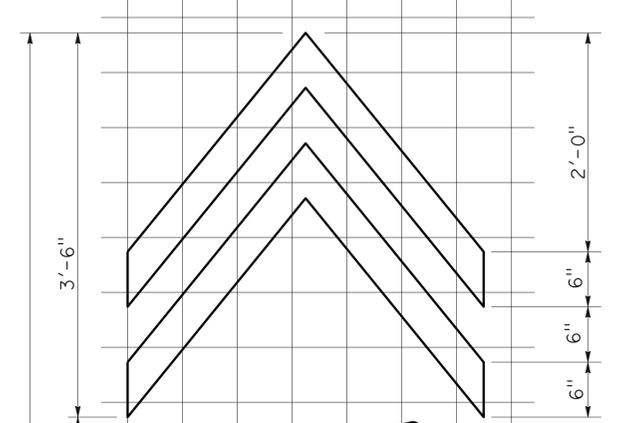
INTERNATIONAL SYMBOL OF ACCESSIBILITY (ISA) MARKING



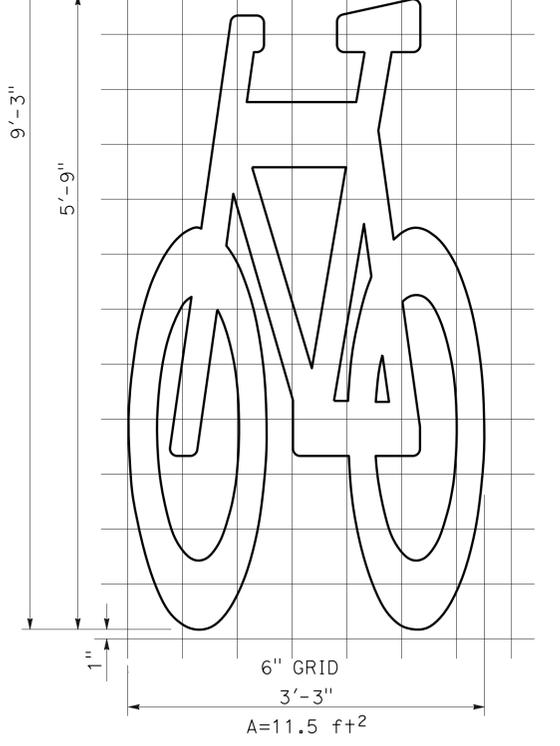
DIAMOND SYMBOL



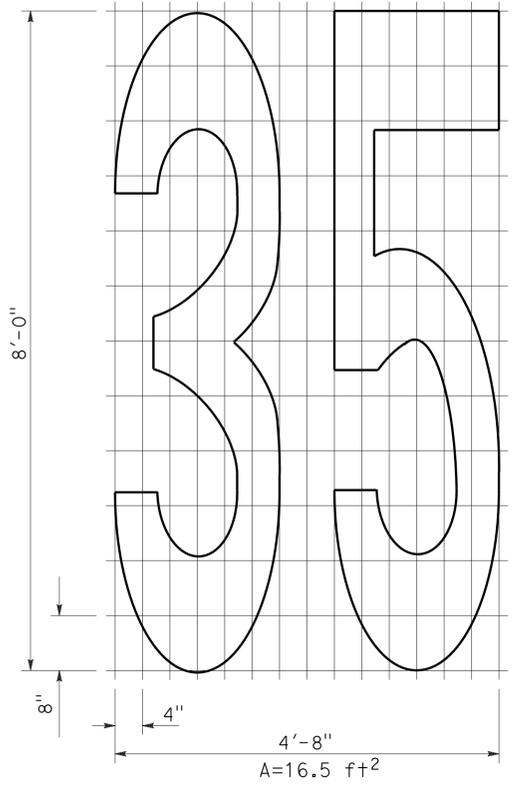
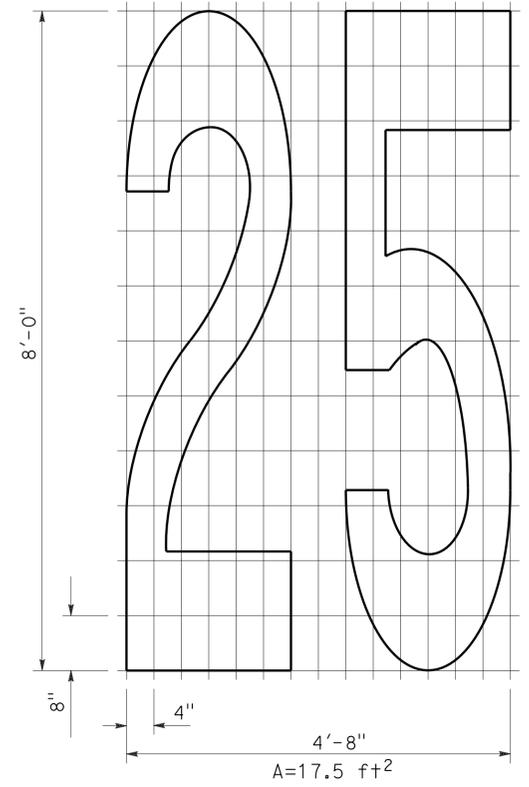
BICYCLE LOOP DETECTOR SYMBOL



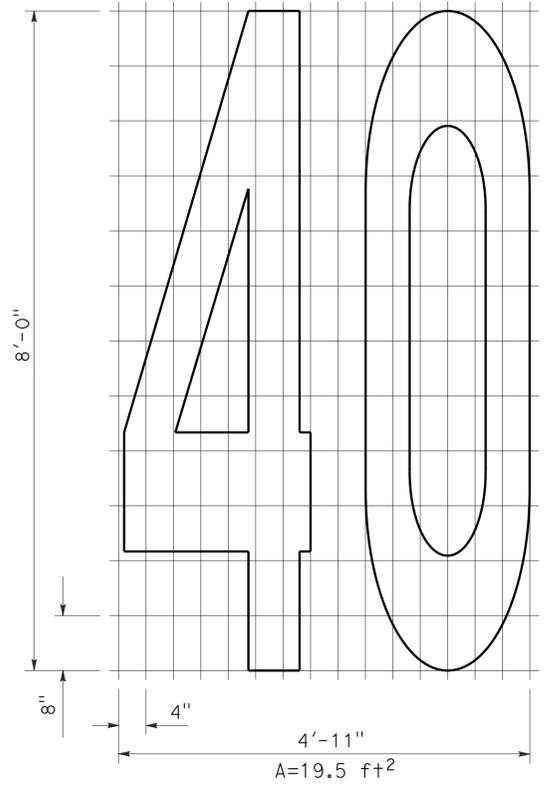
SHARED ROADWAY BICYCLE MARKING



STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
PAVEMENT MARKINGS SYMBOLS AND NUMERALS
 NO SCALE

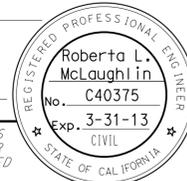


NUMERALS

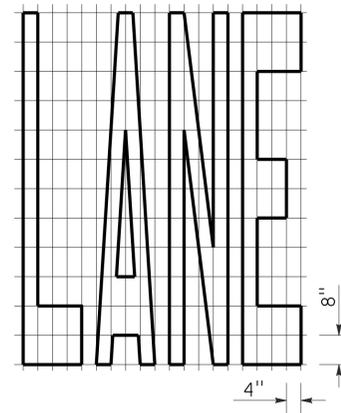


RSP A24C DATED OCTOBER 19, 2012 SUPERSEDES STANDARD PLAN A24C DATED MAY 20, 2011 - PAGE 15 OF THE STANDARD PLANS BOOK DATED 2010.

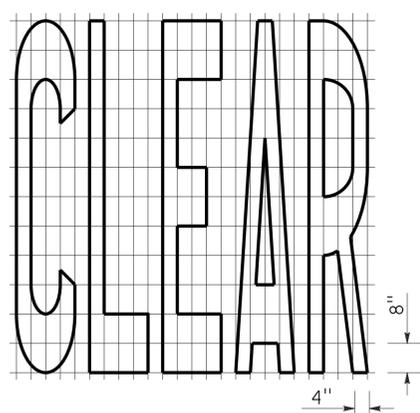
2010 REVISED STANDARD PLAN RSP A24C



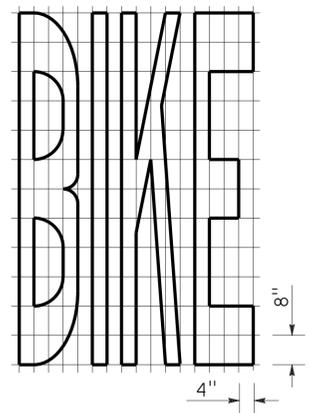
TO ACCOMPANY PLANS DATED 4-15-13



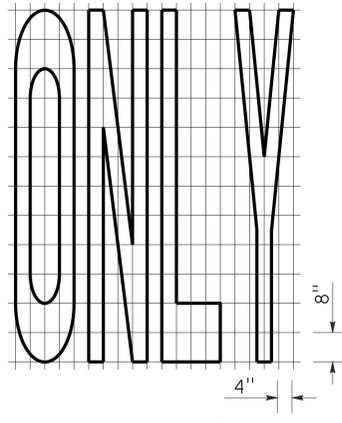
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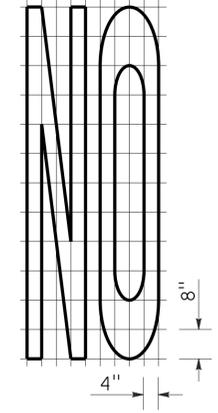
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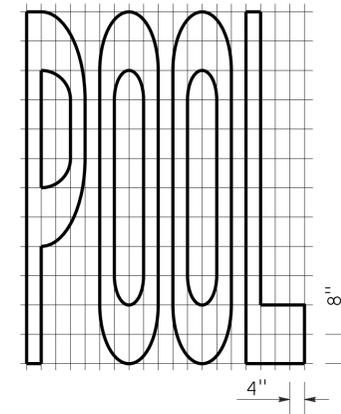
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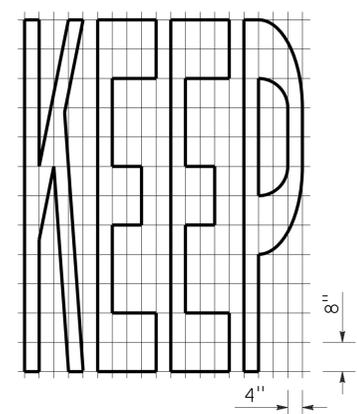
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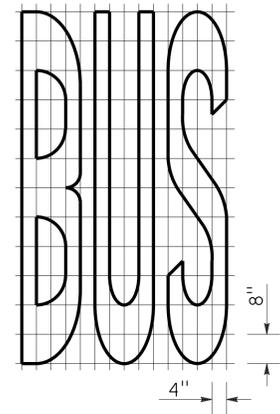
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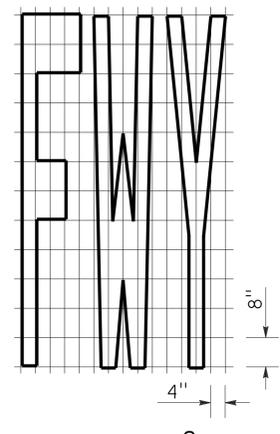
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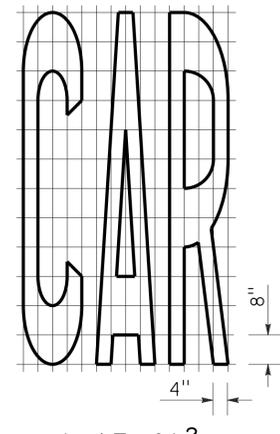
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A=20 ft²

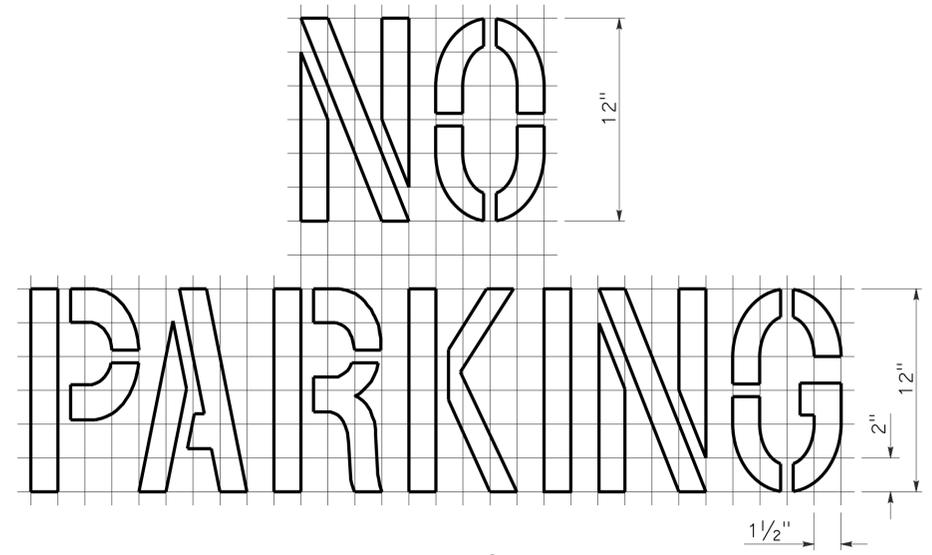


A=16 ft²

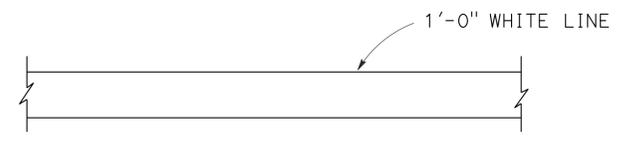


A=17 ft²

WORD MARKINGS			
ITEM	ft ²	ITEM	ft ²
LANE	24	NO	14
POOL	23	BIKE	21
CAR	17	BUS	20
CLEAR	27	ONLY	22
KEEP	24	FWY	16



A=2 ft²
See Notes 6 and 7



LIMIT LINE (STOP LINE)



YIELD LINE

NOTES:

1. If a message consists of more than one word, it should read "UP", i.e., the first word should be nearest the driver.
2. The space between words should be at least four times the height of the characters for low speed roads, but not more than ten times the height of the characters. The space may be reduced appropriately where there is limited space because of local conditions.
3. Minor variations in dimensions may be accepted by the Engineer.
4. Portions of a letter, number or symbol may be separated by connecting segments not to exceed 2" in width.
5. The words "NO PARKING" pavement marking is to be used for parking facilities. For typical locations of markings, see Standard Plans A90A and A90B.
6. The words "NO PARKING", shall be painted in white letters no less than 1'-0" high on a contrasting background and located so that it is visible to traffic enforcement officials.

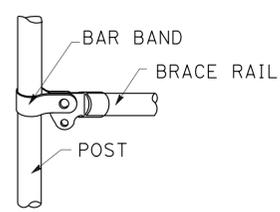
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**PAVEMENT MARKINGS
 WORDS, LIMIT AND YIELD LINES**
 NO SCALE

RSP A24E DATED JULY 20, 2012 SUPERSEDES STANDARD PLAN A24E
 DATED MAY 20, 2011 - PAGE 17 OF THE STANDARD PLANS BOOK DATED 2010.

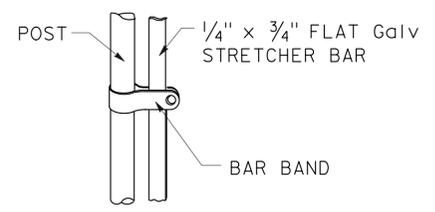
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	239	357

Glenn DeCou
 REGISTERED CIVIL ENGINEER
 October 19, 2012
 PLANS APPROVAL DATE
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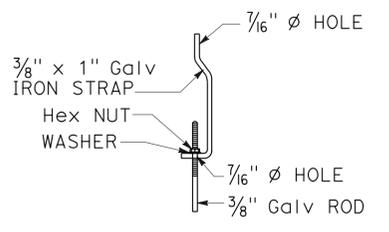
REGISTERED PROFESSIONAL ENGINEER
 Glenn DeCou
 No. C34547
 Exp. 9-30-13
 CIVIL
 STATE OF CALIFORNIA



BRACE RAIL



STRETCHER BAR

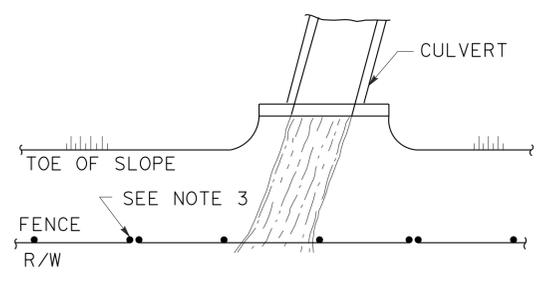


TRUSS TIGHTENER

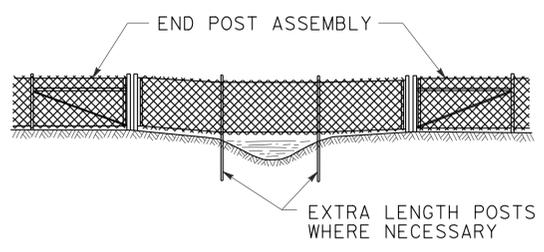
NOTES:

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

TO ACCOMPANY PLANS DATED 4-15-13

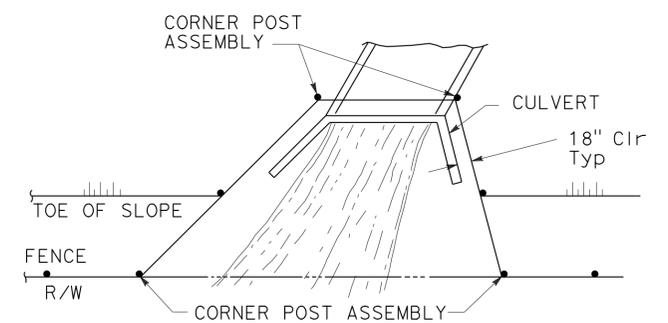


PLAN

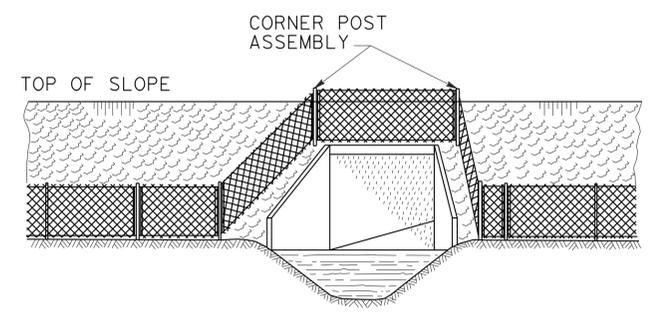


ELEVATION

INSTALLATION OVER STREAM



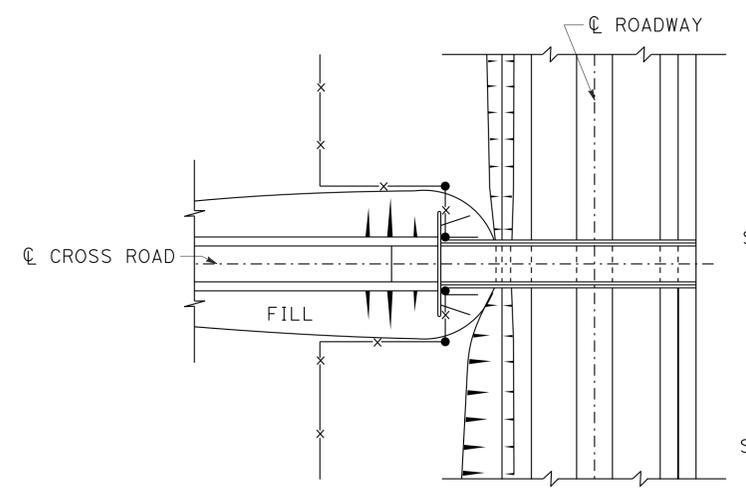
PLAN



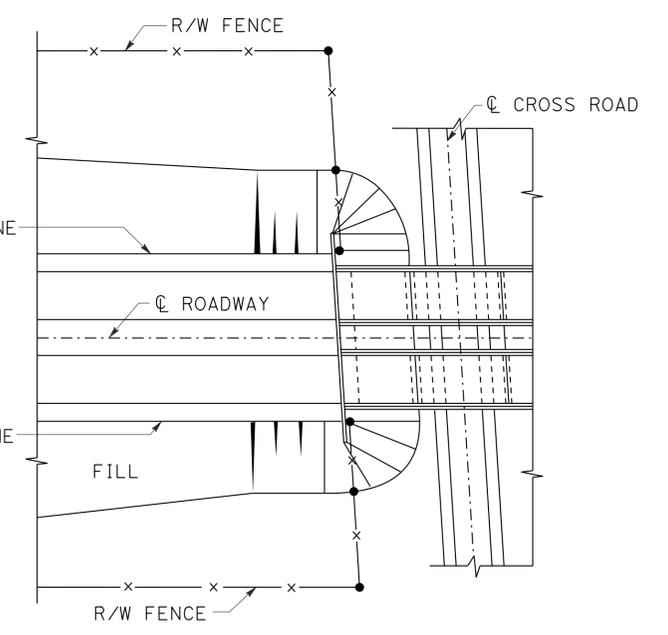
ELEVATION

INSTALLATION AROUND HEADWALL

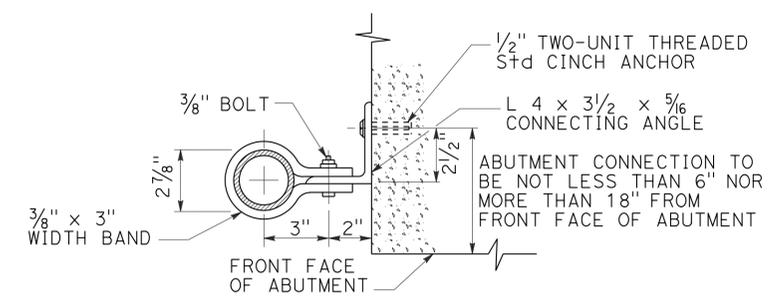
See Note 4



PLAN OF ROADWAY - OVERCROSSING



PLAN OF ROADWAY - UNDERCROSSING



ABUTMENT CONNECTION

TYPICAL INSTALLATION AT BRIDGES

ABUTMENT CONNECTION TO BE NOT LESS THAN 6" NOR MORE THAN 18" FROM FRONT FACE OF ABUTMENT

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CHAIN LINK FENCE DETAILS

NO SCALE

RSP A85B DATED OCTOBER 19, 2012 SUPERSEDES STANDARD PLAN A85B DATED MAY 20, 2011 - PAGE 114 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP A85B

2010 REVISED STANDARD PLAN RSP A85B

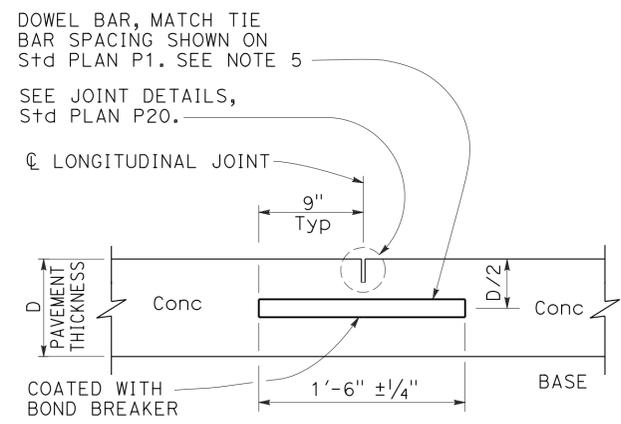
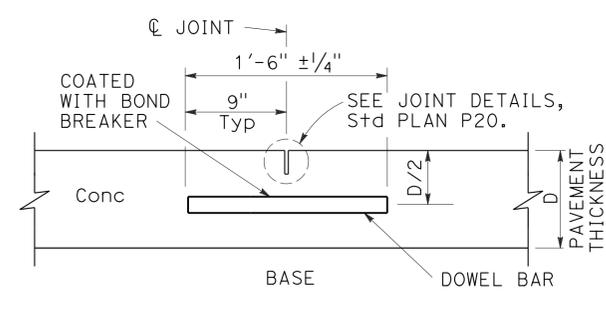
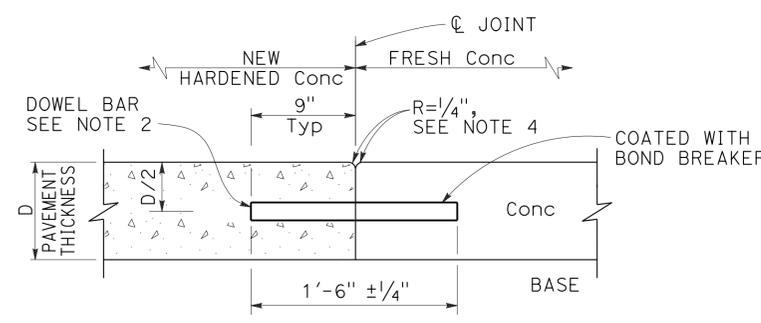
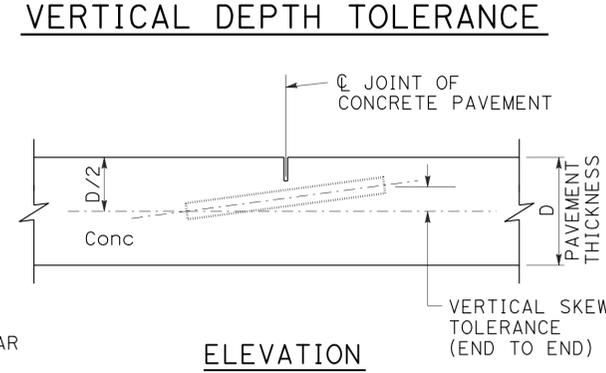
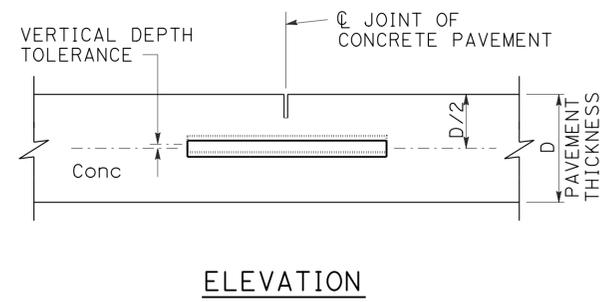
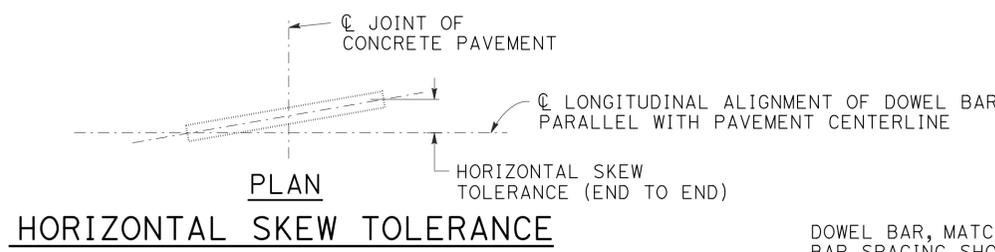
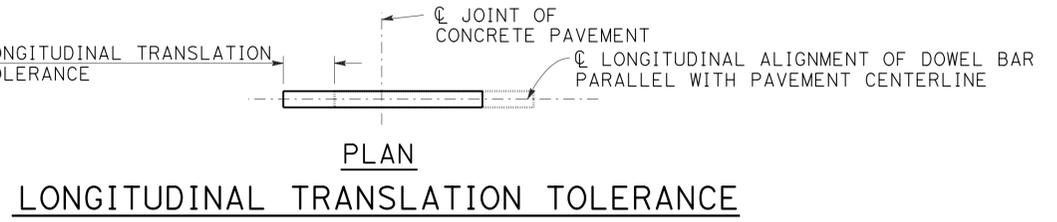
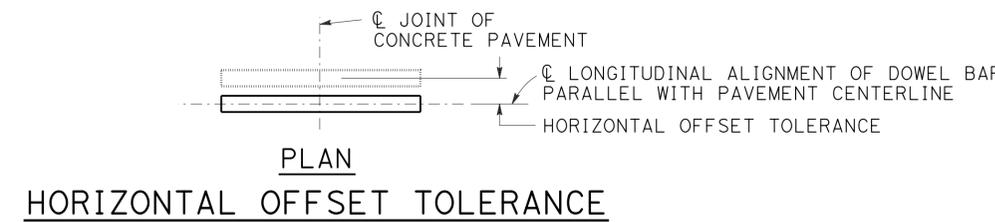
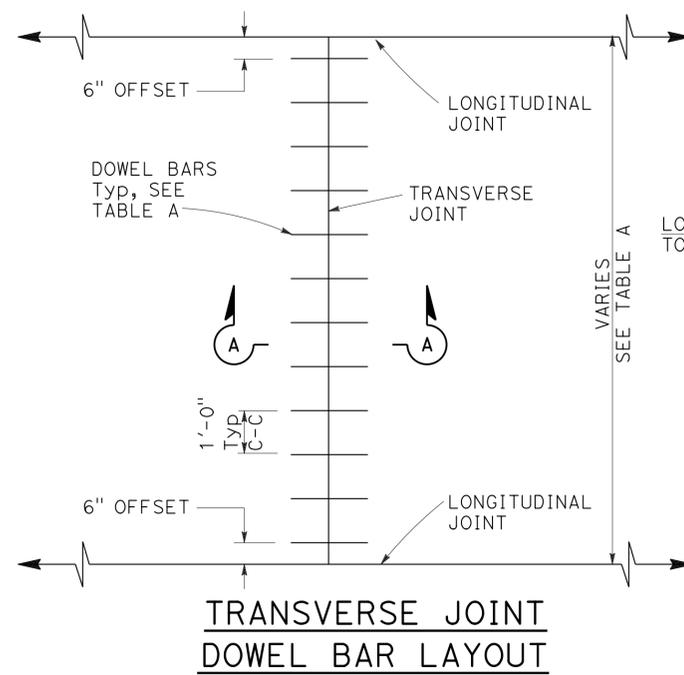
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	240	357

William K. Farnbach
REGISTERED CIVIL ENGINEER

April 20, 2012
PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER
William K. Farnbach
No. C49042
Exp. 9-30-12
CIVIL
STATE OF CALIFORNIA



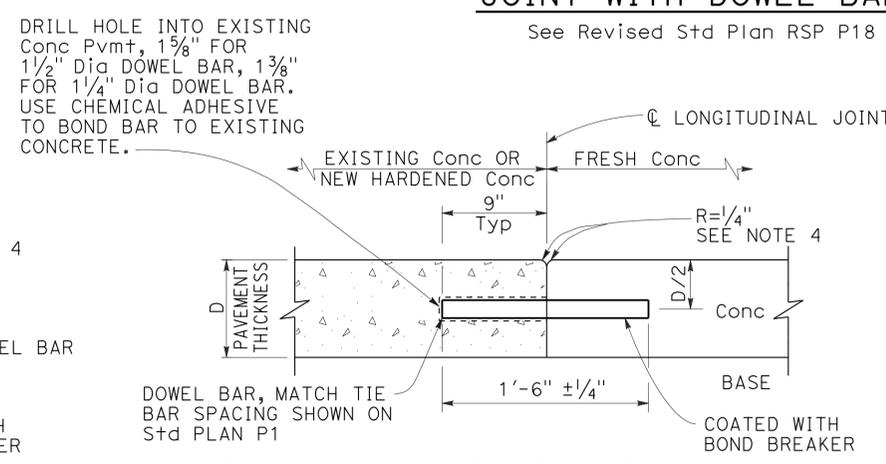
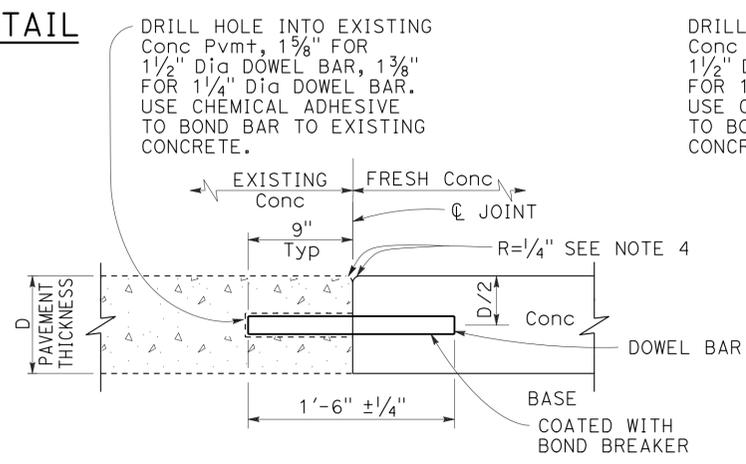
SECTION A-A
TRANSVERSE
CONSTRUCTION JOINT DETAIL

TRANSVERSE CONTRACTION JOINT

LONGITUDINAL CONTRACTION
JOINT WITH DOWEL BARS

TABLE A (See Note 3)

WIDTH BETWEEN LONGITUDINAL JOINTS	NUMBER OF DOWELS BETWEEN LONGITUDINAL JOINTS
14'-0"	14
13'-0"	13
12'-0"	12
11'-0"	11
10'-0"	10
8'-0"	8
5'-0"	5
4'-0"	4



TRANSVERSE CONSTRUCTION JOINT
FOR EXISTING CONCRETE PAVEMENT

LONGITUDINAL CONSTRUCTION JOINT
WITH DOWEL BARS

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**CONCRETE PAVEMENT-
DOWEL BAR
DETAILS**

NO SCALE

RSP P10 DATED APRIL 20, 2012 SUPERSEDES STANDARD PLAN P10
DATED MAY 20, 2011 - PAGE 131 OF THE STANDARD PLANS BOOK DATED 2010.

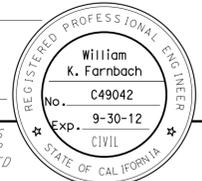
REVISED STANDARD PLAN RSP P10

2010 REVISED STANDARD PLAN RSP P10

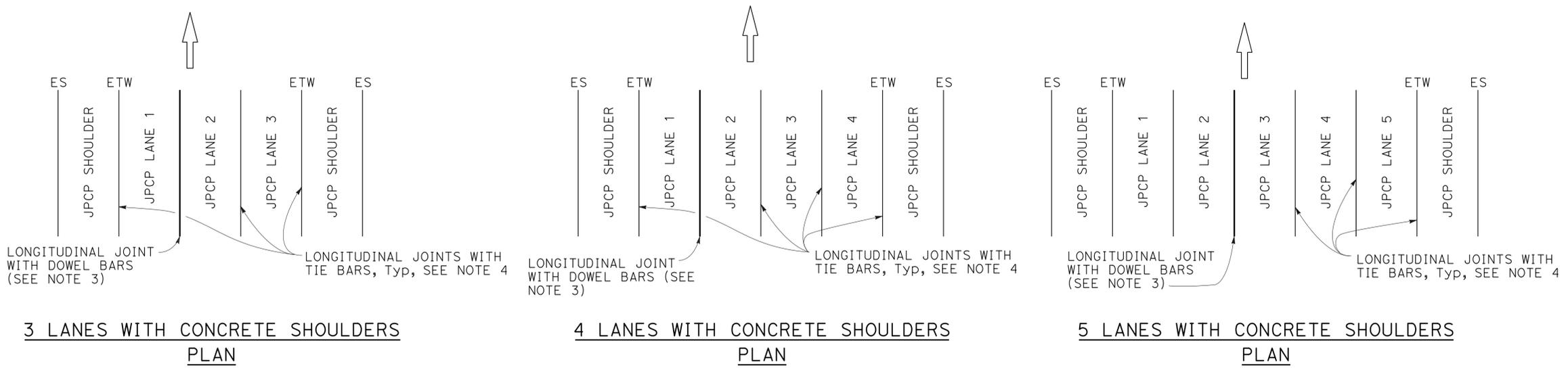
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	241	357

William K. Farnbach
 REGISTERED CIVIL ENGINEER
 April 20, 2012
 PLANS APPROVAL DATE

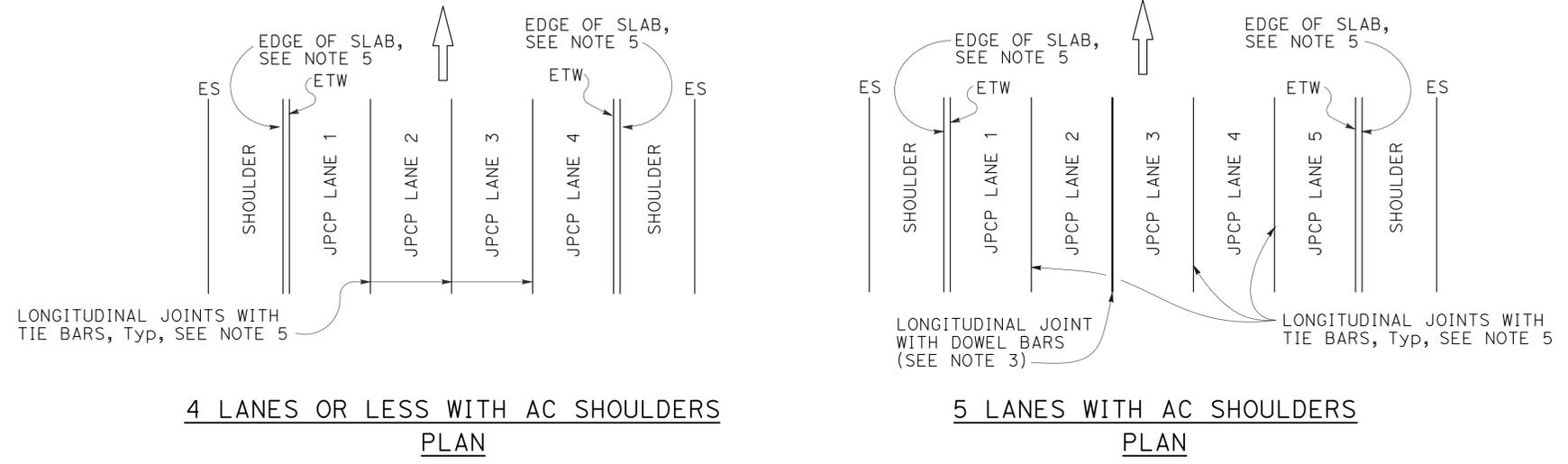
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



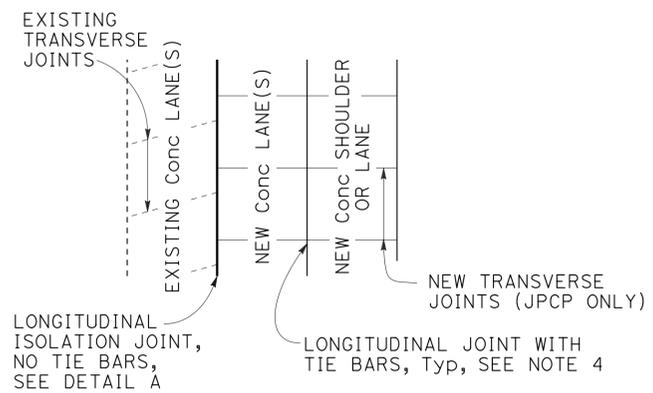
TO ACCOMPANY PLANS DATED 4-15-13



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

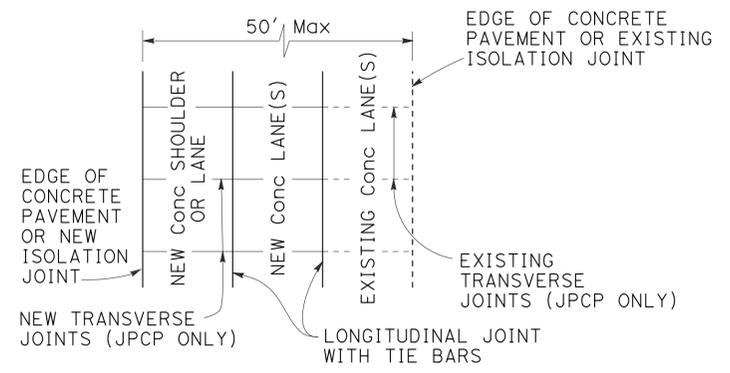


NEW CONSTRUCTION
Location of Longitudinal Joints For JPCP



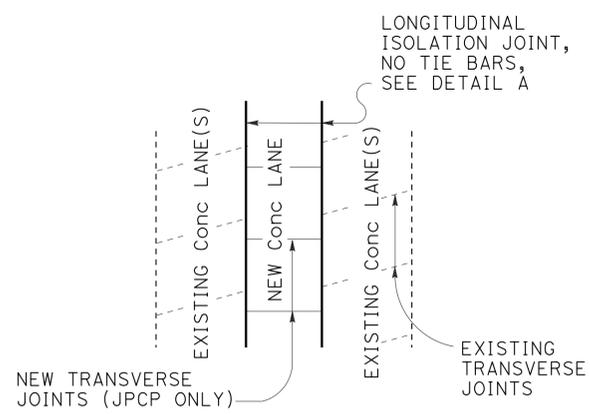
CASE 1 PLAN

Transverse Joints do not align between new and existing.



CASE 2 PLAN

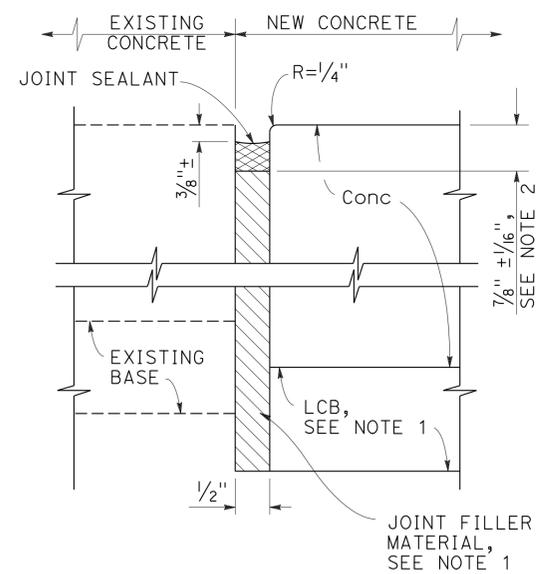
Transverse Joints align between new and existing.



CASE 3 (INTERIOR LANE REPLACEMENT) PLAN

Transverse Joints do not align between new and existing.

LANE/SHOULDER ADDITION OR RECONSTRUCTION
For JPCP and CRCP



DETAIL "A" ISOLATION JOINT

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CONCRETE PAVEMENT-LANE SCHEMATICS AND ISOLATION JOINT DETAIL

NO SCALE

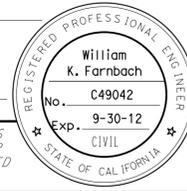
RSP P18 DATED APRIL 20, 2012 SUPERSEDES STANDARD PLAN P18 DATED MAY 20, 2011 - PAGE 135 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP P18

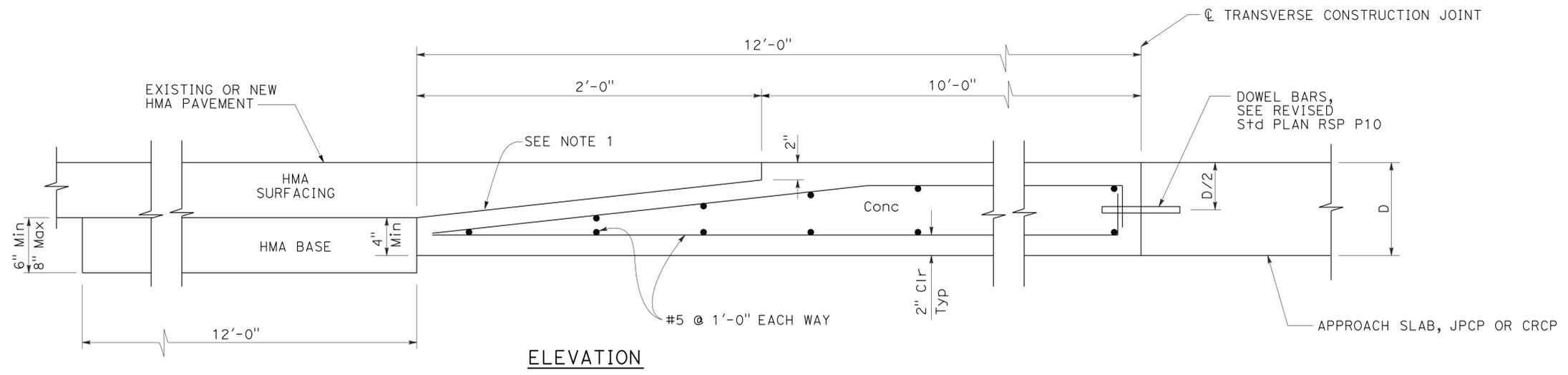
2010 REVISED STANDARD PLAN RSP P18

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Orca	91	8.1/9.3,10.1	242	357

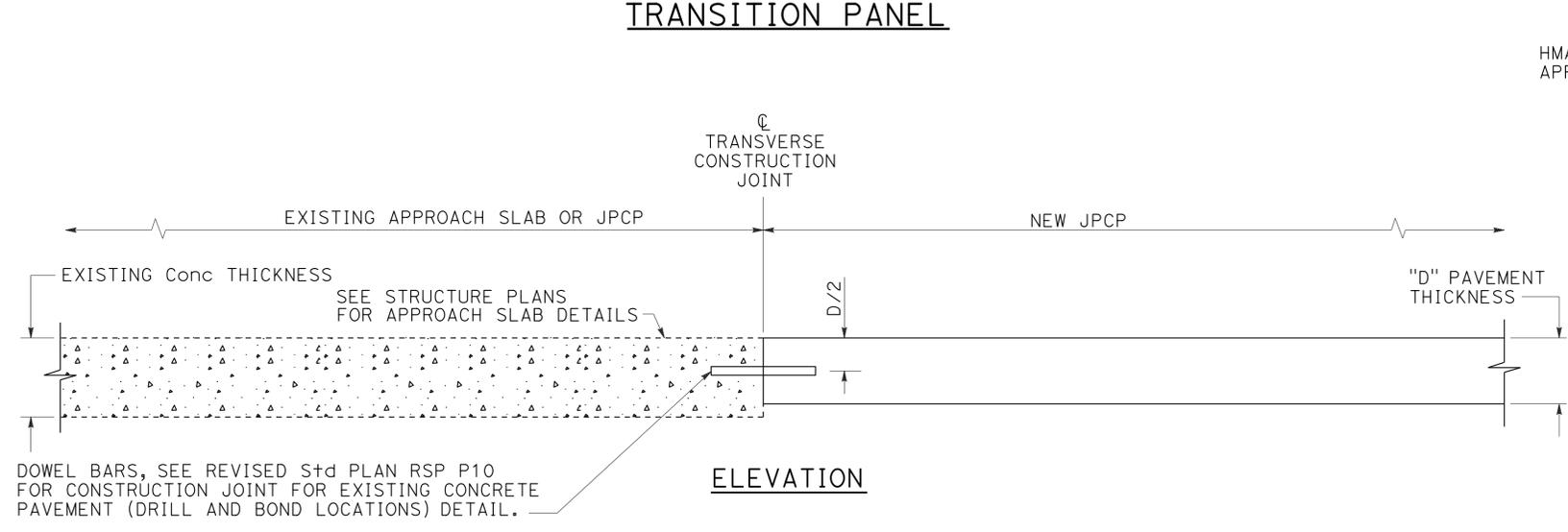
William K. Farnbach
 REGISTERED CIVIL ENGINEER
 April 20, 2012
 PLANS APPROVAL DATE
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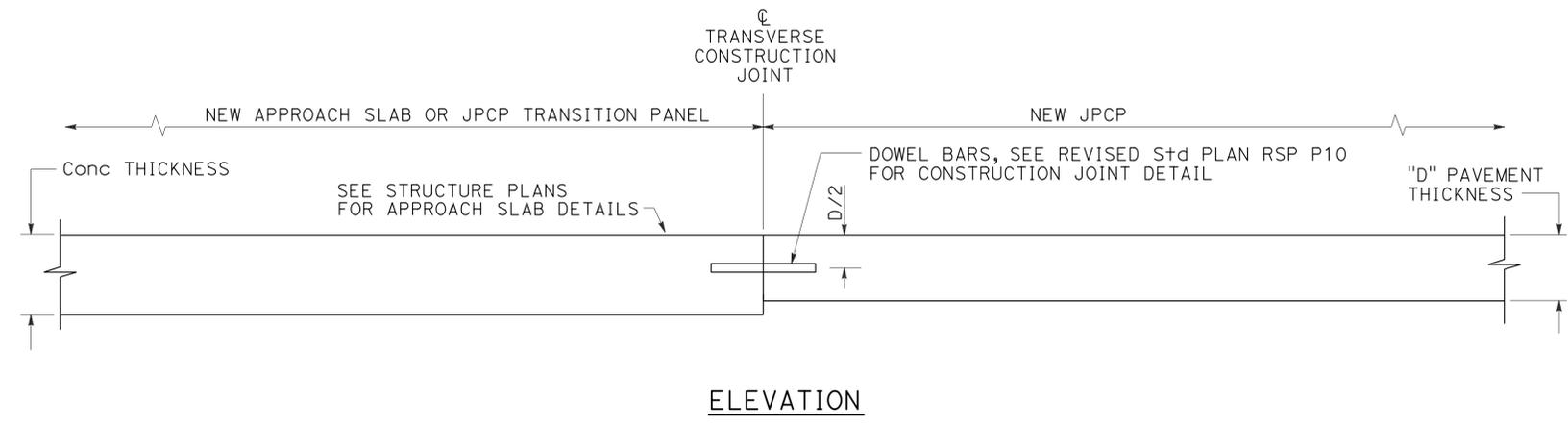
TO ACCOMPANY PLANS DATED 4-15-13



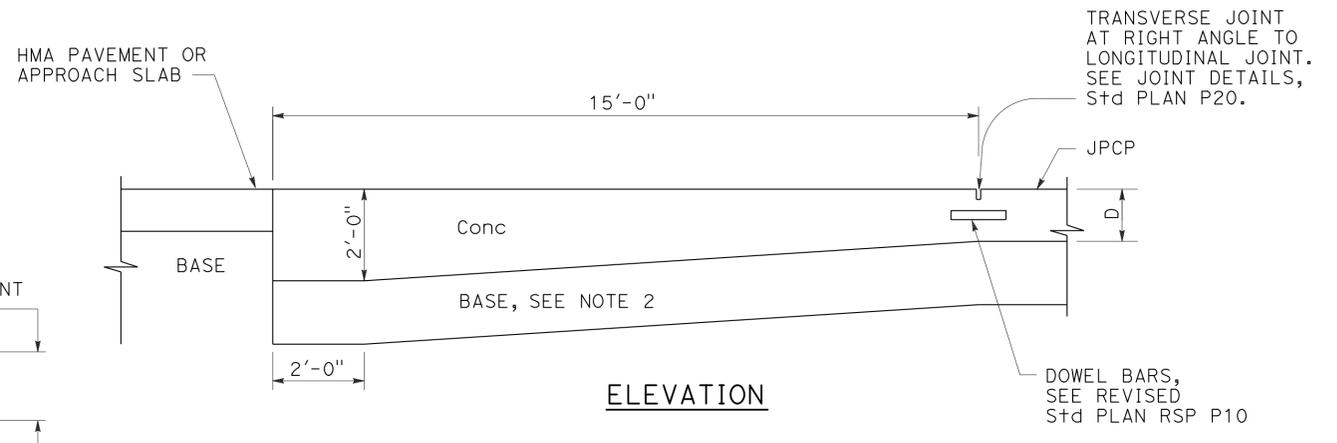
ELEVATION
CONCRETE PAVEMENT
TRANSITION PANEL



ELEVATION
TERMINAL JOINT TYPE 1
For Exist JPCP or Structure Approach Slab



ELEVATION
TERMINAL JOINT TYPE 2
For JPCP Transition Panel or Structure Approach Slab



ELEVATION
PAVEMENT END ANCHOR
For HMA Pvmf or Structure Approach Slab

- NOTES:**
1. Heavy broom finish.
 2. Maintain same base thickness as JPCP.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**CONCRETE PAVEMENT-
END PANEL
PAVEMENT TRANSITIONS**

NO SCALE

RSP P30 DATED APRIL 20, 2012 SUPERSEDES STANDARD PLAN P30
DATED MAY 20, 2011 - PAGE 137 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP P30

2010 REVISED STANDARD PLAN RSP P30

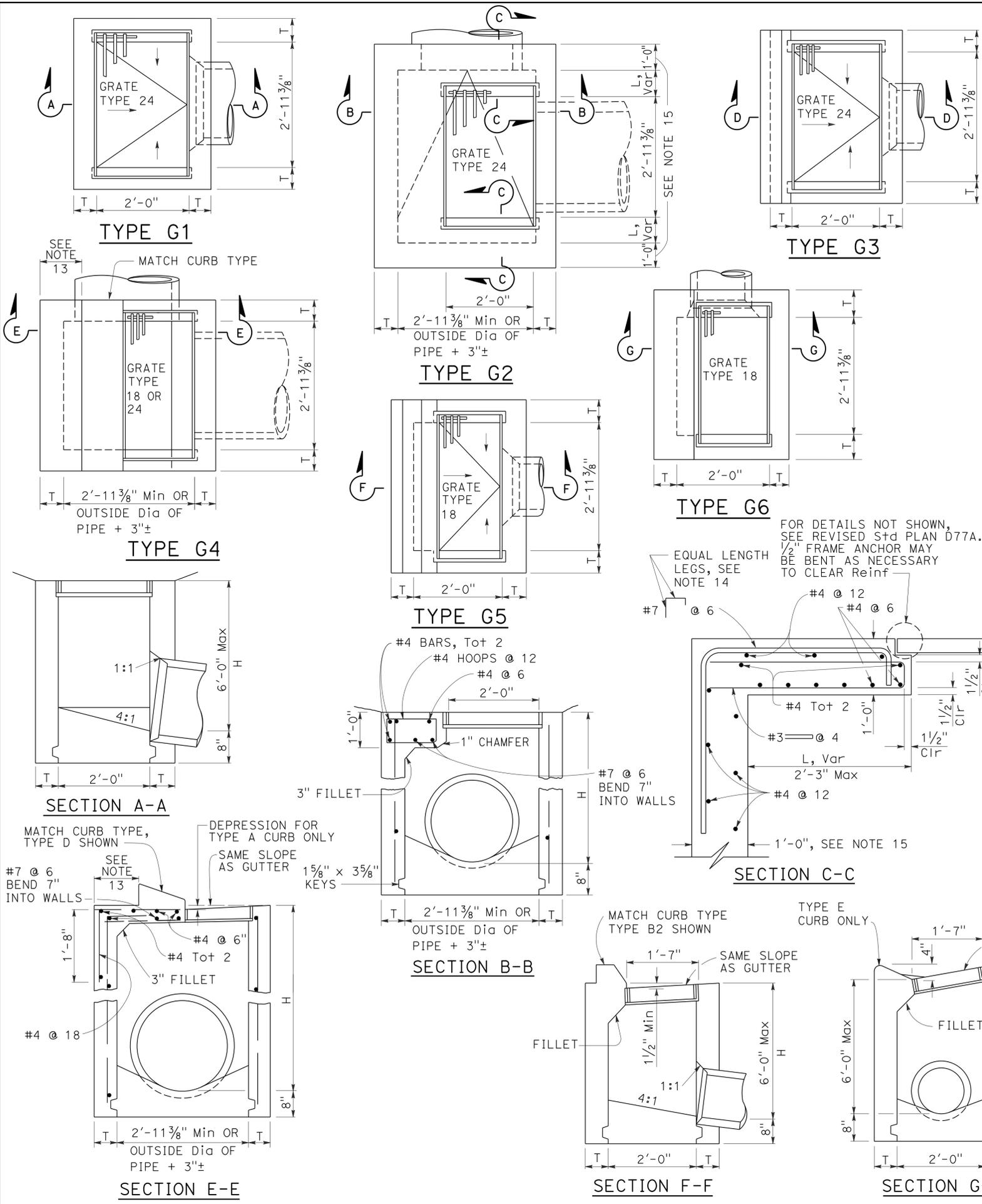
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	243	357

Glenn DeCou
REGISTERED CIVIL ENGINEER

October 19, 2012
PLANS APPROVAL DATE

Glenn DeCou
No. C34547
Exp. 9-30-13
CIVIL
STATE OF CALIFORNIA

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NOTES:

- "H" is the difference in elevation between the outlet pipe flow line and the normal gutter grade line undepressed.
- For "T" wall thickness, see Table A below.
- Wall reinforcing not required when "H" is 8'-0" or less and the unsupported width or length is 7'-0" or less. Walls exceeding these limits shall be reinforced with #4 bars @ 1'-6" ± centers placed 1 1/2" clear to inside of box unless otherwise shown.
- Inlet bottom reinforcing not required. See Standard Plan D74C for alternative reinforced bottom and alternative half round bottom.
- Steps-None required where "H" is less than 2'-6". Where "H" is 2'-6" or more, install steps with lowest rung 1'-0" above the floor and highest rung not more than 6" below top of inlet. The distance between steps shall not exceed 1'-0" and shall be uniform throughout the length of the wall. Place steps in the wall without an opening. Steps inserts may be substituted for the bar steps. Step inserts shall comply with State Industrial Safety requirements. See Standard Plan D74C for step details.
- Details shown apply to both metal and concrete pipe.
- Pipe(s) can be placed in any wall.
- Curb section shall match adjacent curb.
- Basin floors shall have wood trowel finish and a minimum slope of 12:3 from all directions toward outlet pipe.
- Set inlet so that grate bars are parallel to direction of principal surface flow.
- See Revised Standard Plans D77A and D77B for grate and frame details and weights of miscellaneous iron and steel.
- See Standard Plan D78A for gutter depression details.
- This dimension will vary with different grates, curbs types, box width and wall thickness.
- Bar may be rotated as necessary to clear opening. Where "L" is 6" or less, bar may be omitted.
- Where "L" is 6" or less, wall thickness shall be as shown in Table A.
- Cast-in-place inlets to be formed around all pipes/stubs intersecting the inlet, and concrete poured in one continuous operation. Precast inlets shall have mortared connections conforming to details for Type GCP Inlet shown on Standard Plan D75B. See Standard Specifications for mortar composition.

TABLE A

TYPE	CONCRETE QUANTITIES			
	H=3'-0" TO 8'-0" (T=6")	H=8'-1" TO 20'-0" (T=8")	H=8'-1" (CY)	ADDITIONAL PCC PER FOOT (CY)
G-1	0.95	0.220	See Note A	SEE NOTE A
G-2*	1.31	0.255	3.50	0.357
G-3	1.03	0.220	See Note A	SEE NOTE A
G-4* (TYPE 24)	1.27	0.255	3.48	0.357
G-4* (TYPE 18)	1.30	0.255	3.50	0.357
G-5	1.02	0.220	SEE NOTE A	SEE NOTE A
G-6	1.04	0.220	SEE NOTE A	SEE NOTE A

TABLE BASED ON 8" FLOOR SLAB. NO DEDUCTIONS ARE TO BE MADE TO THESE QUANTITIES BECAUSE OF PIPE OPENINGS, DIFFERENT FLOOR ALTERNATIVES OR DIFFERENT CURB TYPES. * QUANTITIES FOR TYPE G-2 AND G-4 INLETS BASED ON THE MINIMUM INTERIOR DIMENSIONS.

NOTE A:

Maximum allowable height 6'-0".

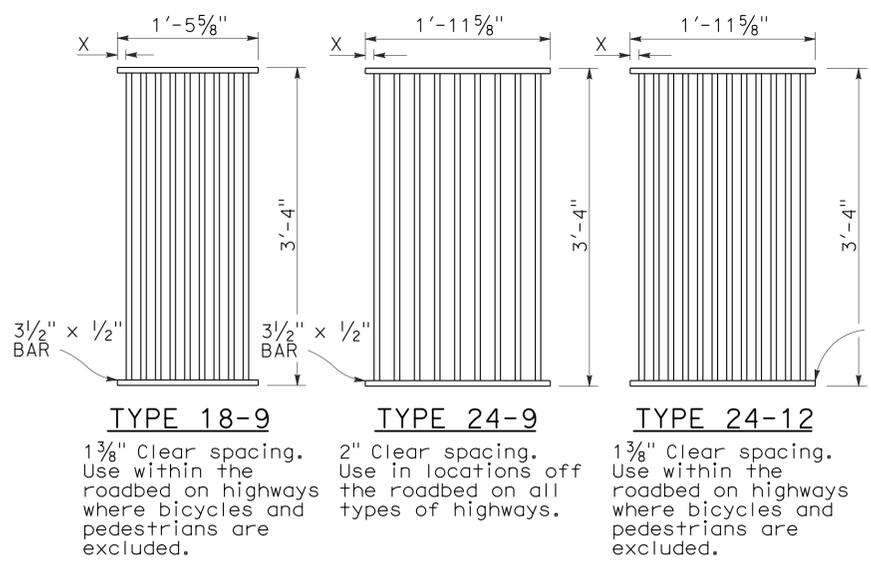
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DRAINAGE INLETS
NO SCALE

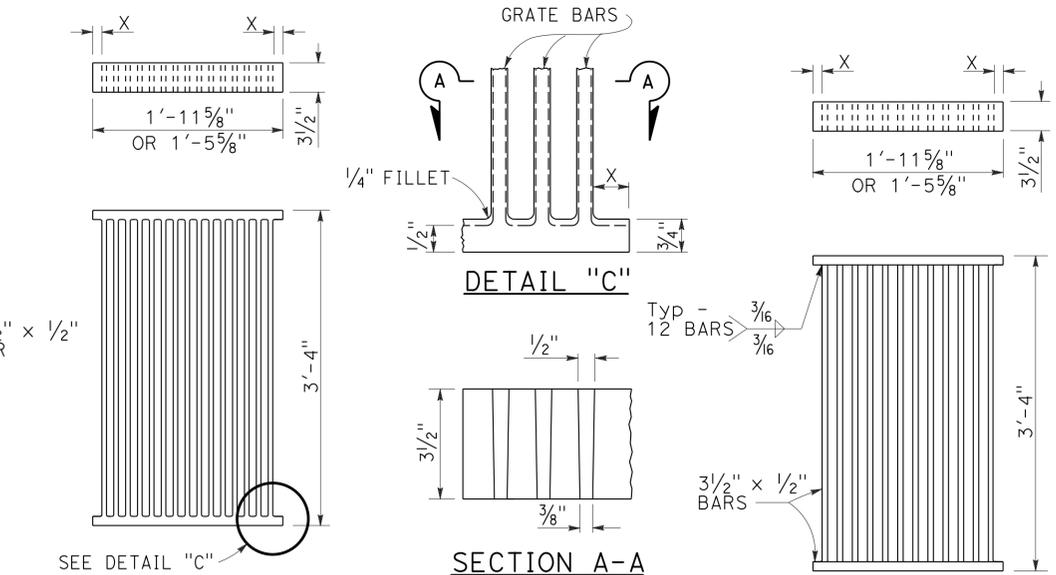
RSP D73 DATED OCTOBER 19, 2012 SUPERSEDES STANDARD PLAN D73 DATED MAY 20, 2011 - PAGE 156 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP D73

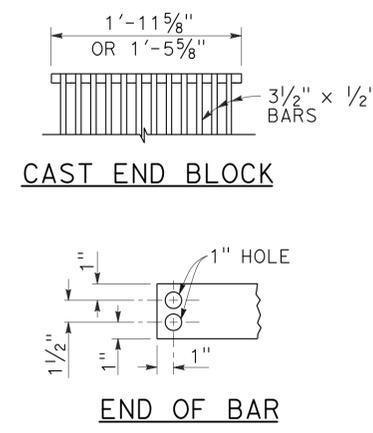
2010 REVISED STANDARD PLAN RSP D73



RECTANGULAR GRATE DETAILS
(See table below)

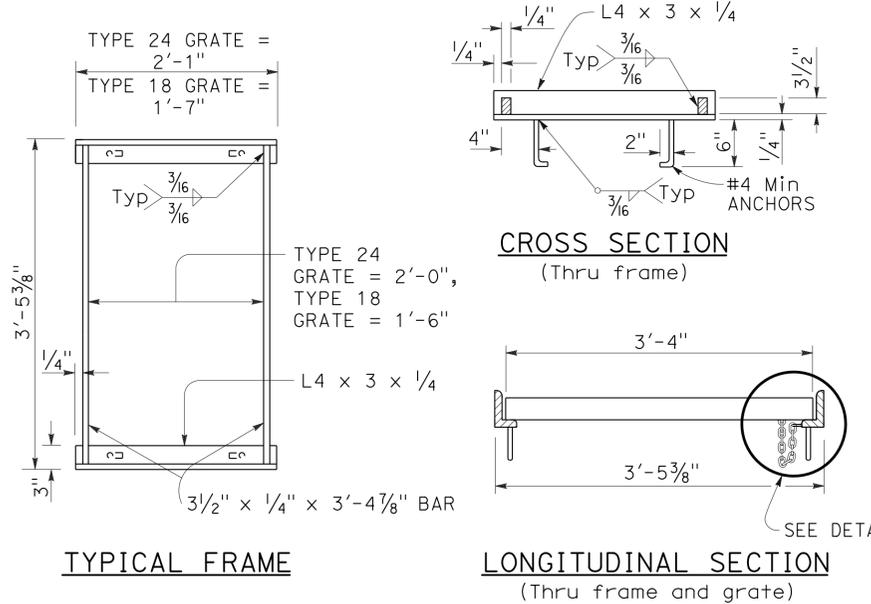


ALTERNATIVE CAST DUCTILE IRON GRATE OR CAST CARBON STEEL GRATE
ALTERNATIVE WELDED GRATE

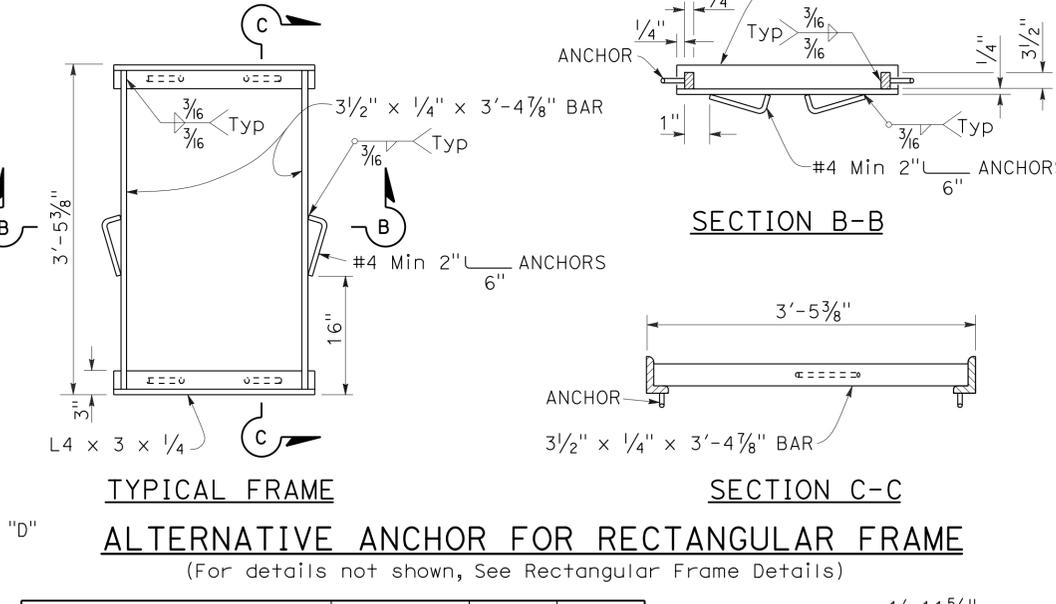


CAST END BLOCK
END OF BAR

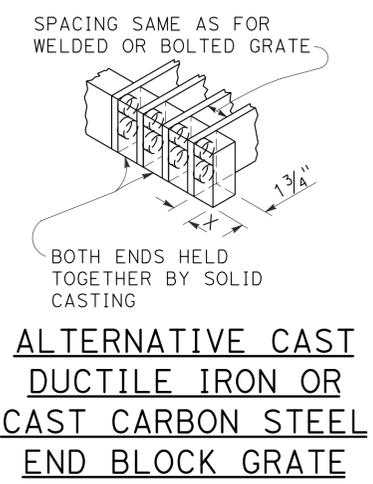
- NOTES:**
- Grate type numbers refer to approximate width of grate in inches and number of bars, respectively.
 - Contractor has the option of using cast ductile iron, cast carbon steel, welded, bolted, or cast end block grate.
 - Rounded top of bars optional on all grates.
 - Pipe inlets with a grate shall be placed so that bars parallel direction of principle surface flow.
 - Complete joint penetration butt welds may be substituted for the fillet welds on all anchors.
 - Standard square, hexagon, round or equivalent headed anchors may be substituted for the right angle hooks on the anchors shown on this plan.
 - Grate and frame weights are based on welded grates (weights of face angles, steps, protection bars, etc. are not included).
 - Connect chain to grate and frame only at locations shown on the plans. When chain is required, do not use cast ductile iron grates.



RECTANGULAR FRAME DETAILS
(For all rectangular grates)



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



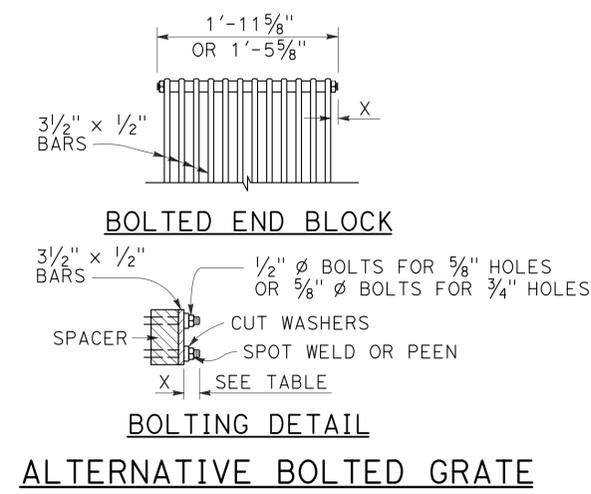
ALTERNATIVE CAST DUCTILE IRON OR CAST CARBON STEEL END BLOCK GRATE

GRATE BAR SPACING TABLE

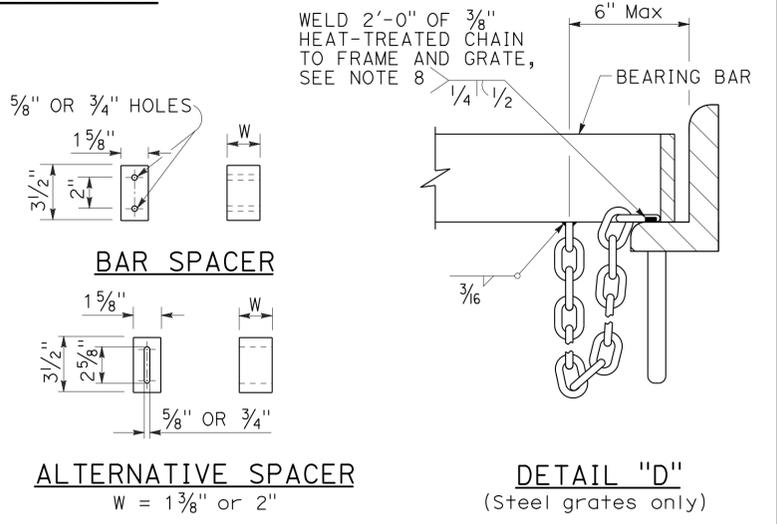
TYPE	NO. OF BARS	CLEAR BAR SPACING	X
18-9	9	1 3/8"	1 1/16"
24-9	9	2"	1 9/16"
24-12	12	1 3/8"	1 1/4"

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

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



BOLTED END BLOCK
BOLTING DETAIL
ALTERNATIVE BOLTED GRATE

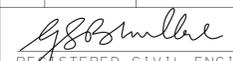


ALTERNATIVE SPACER
DETAIL "D"
(Steel grates only)

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

2010 REVISED STANDARD PLAN RSP D77A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	245	357


 REGISTERED CIVIL ENGINEER
 April 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 4-15-13

TABLE 1

TAPER LENGTH CRITERIA AND CHANNELIZING DEVICE SPACING							
SPEED (S)	MINIMUM TAPER LENGTH * FOR WIDTH OF OFFSET 12 FEET (W)				MAXIMUM CHANNELIZING DEVICE SPACING		
	TANGENT 2L	MERGING L	SHIFTING L/2	SHOULDER L/3	X	Y	Z **
					TAPER	TANGENT	CONFLICT
mph	ft	ft	ft	ft	ft	ft	ft
20	160	80	40	27	20	40	10
25	250	125	63	42	25	50	12
30	360	180	90	60	30	60	15
35	490	245	123	82	35	70	17
40	640	320	160	107	40	80	20
45	1080	540	270	180	45	90	22
50	1200	600	300	200	50	100	25
55	1320	660	330	220	55	110	27
60	1440	720	360	240	60	120	30
65	1560	780	390	260	65	130	32
70	1680	840	420	280	70	140	35

* - For other offsets, use the following merging taper length formula for L:
 For speed of 40 mph or less, $L = WS^2/60$
 For speed of 45 mph or more, $L = WS$

Where: L = Taper length in feet
 W = Width of offset in feet
 S = Posted speed limit, off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph

** - Use for taper and tangent sections where there are no pavement markings or where there is a conflict between existing pavement markings and channelizers (CA).

TABLE 2

LONGITUDINAL BUFFER SPACE AND FLAGGER STATION SPACING				
SPEED *	Min D **	DOWNGRADE Min D ***		
		-3%	-6%	-9%
		ft	ft	ft
mph	ft	ft	ft	ft
20	115	116	120	126
25	155	158	165	173
30	200	205	215	227
35	250	257	271	287
40	305	315	333	354
45	360	378	400	427
50	425	446	474	507
55	495	520	553	593
60	570	598	638	686
65	645	682	728	785
70	730	771	825	891

* - Speed is posted speed limit, off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed in mph

** - Longitudinal buffer space or flagger station spacing

*** - Use on sustained downgrade steeper than -3 percent and longer than 1 mile.

TABLE 3

ADVANCE WARNING SIGN SPACING			
ROAD TYPE	DISTANCE BETWEEN SIGNS *		
	A	B	C
	ft	ft	ft
URBAN - 25 mph OR LESS	100	100	100
URBAN - MORE THAN 25 mph TO 40 mph	250	250	250
URBAN - MORE THAN 40 mph	350	350	350
RURAL	500	500	500
EXPRESSWAY / FREEWAY	1000	1500	2640

* - The distances are approximate, are intended for guidance purposes only, and should be applied with engineering judgment. These distances should be adjusted by the Engineer for field conditions, if necessary, by increasing or decreasing the recommended distances.

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

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

NO SCALE

RSP T9 DATED APRIL 19, 2013 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T9

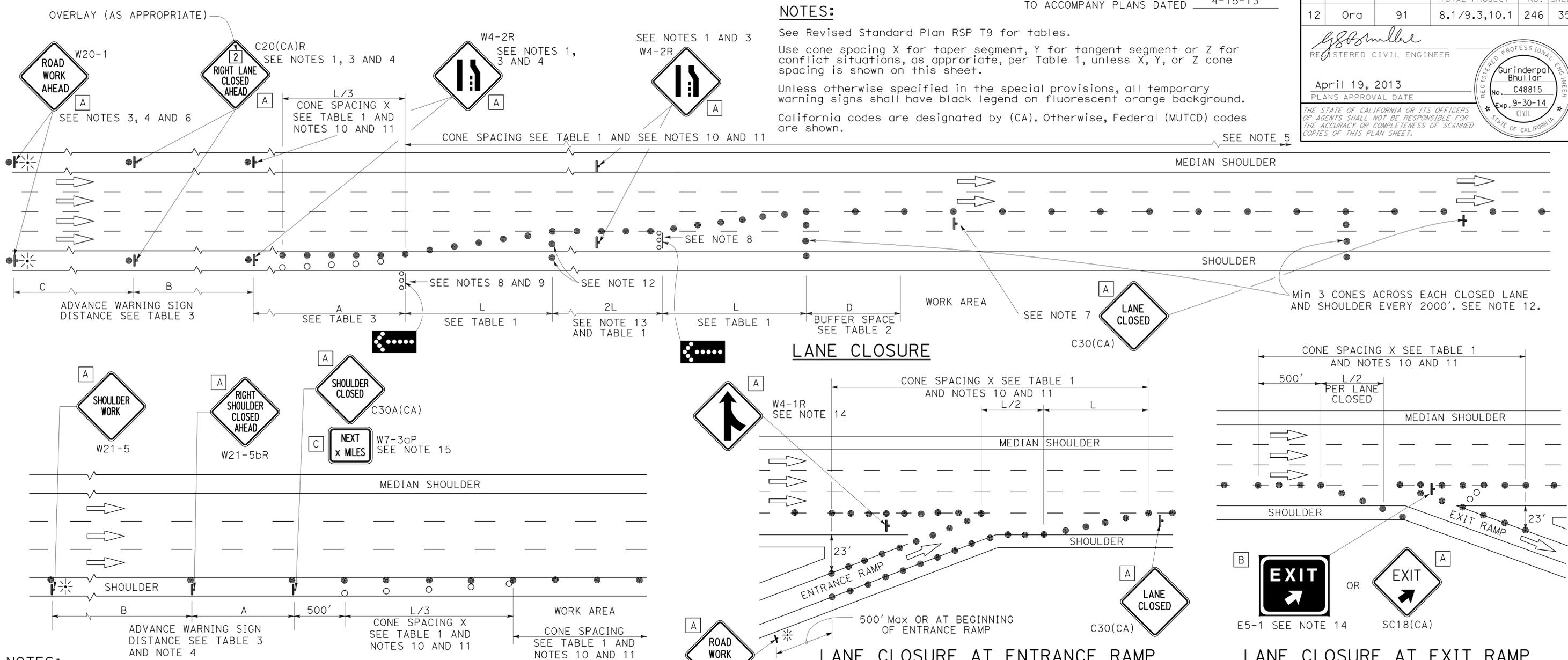
2010 REVISED STANDARD PLAN RSP T9

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	246	357

REGISTERED CIVIL ENGINEER
 April 19, 2013
 PLANS APPROVAL DATE

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

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



- NOTES:**
1. Median lane closures shall conform to the details as shown except that C20(CA)L and W4-2L signs shall be used.
 2. At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closures.
 3. Duplicate sign installations are not required:
 - a) On opposite shoulder if at least one-half of the available lanes remain open to traffic.
 - b) In the median if the width of the median shoulder is less than 8' and the outside lanes are to be closed.
 4. Each advance warning sign on each side of the roadway shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
 5. A G20-2 "END ROAD WORK" sign, with minimum size of 48" x 24" as appropriate, shall be placed at the end of the lane closure unless the end of work area is obvious or ends within a larger project's limits.

- SHOULDER CLOSURE**
6. If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT x MILES", use a C20(CA)L and W4-2L signs shall be used.
 7. Place a C30(CA) sign every 2000' throughout length of lane closure.
 8. One flashing arrow sign for each lane closed. The flashing arrow signs shall be Type I.
 9. A minimum 1500' of sight distance shall be provided where possible for vehicles approaching the first flashing arrow sign. Lane closures shall not begin at top of crest vertical curve or on a horizontal curve.
 10. All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
 11. Portable delineators, placed at one-half the spacing indicated for traffic cones may be used instead of cones for daytime closures only.

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

LEGEND

- TRAFFIC CONE
- TRAFFIC CONE (OPTIONAL TAPER)
- † TEMPORARY TRAFFIC CONTROL SIGN
- FLASHING ARROW SIGN (FAS)
- FAS SUPPORT OR TRAILER
- ⚡ PORTABLE FLASHING BEACON

SIGN PANEL SIZE (Min)

A	48" x 48"
B	72" x 60"
C	36" x 30"

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL SYSTEM FOR LANE CLOSURE ON FREEWAYS AND EXPRESSWAYS

NO SCALE

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

REVISED STANDARD PLAN RSP T10

2010 REVISED STANDARD PLAN RSP T10

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	247	357

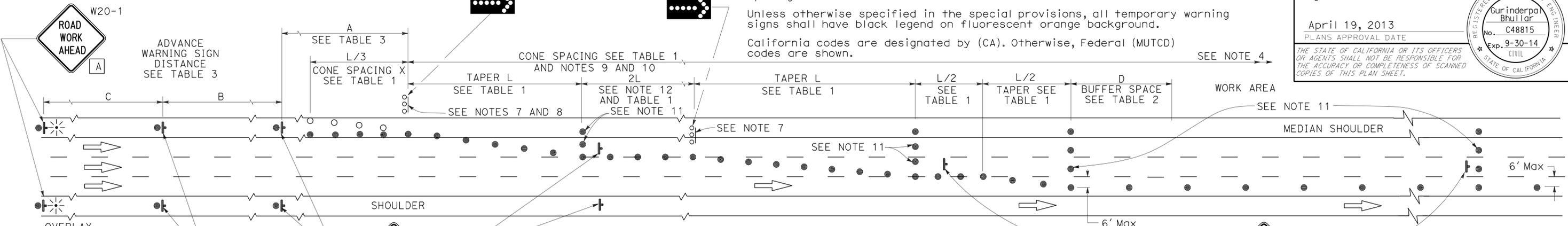
REGISTERED CIVIL ENGINEER
 Gurinderpal Bhullar
 No. C48815
 Exp. 9-30-14
 CIVIL
 STATE OF CALIFORNIA

April 19, 2013
 PLANS APPROVAL DATE

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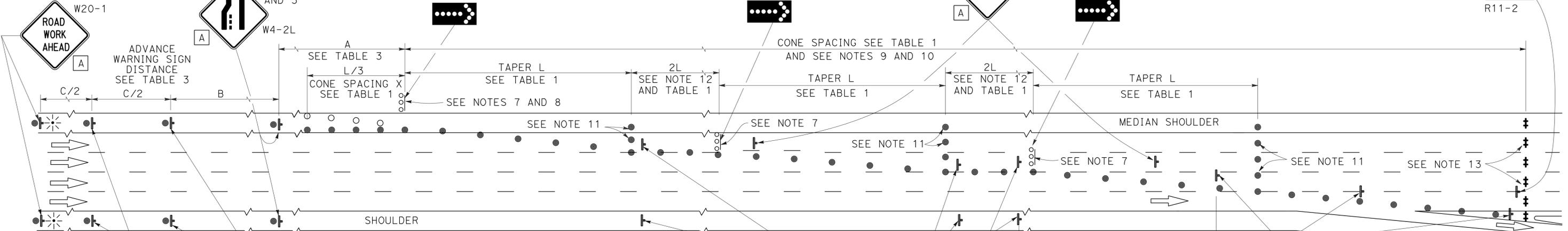
NOTES: See Revised Standard Plan RSP T9 for tables.
 Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as appropriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.
 Unless otherwise specified in the special provisions, all temporary warning signs shall have black legend on fluorescent orange background.
 California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

SEE NOTES 3 AND 5



LANE CLOSURE WITH PARTIAL SHOULDER USE

SEE NOTES 3 AND 5



COMPLETE CLOSURE

NOTES:

- Lane closures on the right side using partial median shoulder as a traffic lane shall conform to the details as shown except that C20(CA)R and W4-2R signs shall be used.
- At least one person shall be assigned to provide full time maintenance of traffic control devices for lane closures.
- Each advance warning sign on each side of the roadway shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. Flashing beacons shall be placed at the locations indicated for lane closure during hours of darkness.
- A G20-2 "END ROAD WORK" sign, with minimum size of 48" x 24" as appropriate, shall be placed at the end of the lane closure unless the end of work area is obvious or ends within a larger project's limits.
- If the W20-1 sign would follow within 2000' of a stationary W20-1 or G20-1 "ROAD WORK NEXT ___ MILES", use a C20(CA) sign for the first advance warning sign.
- Place a C30(CA) sign every 2000' throughout length of lane closure.
- One flashing arrow sign for each lane closed. The flashing arrow signs shall be Type I.
- A minimum 1500' of sight distance shall be provided where possible for vehicles approaching the first flashing arrow sign. Lane closures shall not begin at the top of crest vertical curve or on a horizontal curve.
- All cones used for lane closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
- Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime closures only.
- Unless otherwise specified in the special provisions, a minimum of 3 cones shall be placed transversely across each closed lane and shoulder at each location where a taper across a traffic lane ends and every 2000' as shown on the "Lane Closure With Partial Shoulder Use" detail. Two Type II barricades may be used instead of the 3 cones. The transverse alignment of the cones or barricades on the closed shoulder may be shifted from the transverse alignment to provide access to the work.
- Unless otherwise specified in the special provisions, the 2L tangent shown along lane lines shall be used between the L tapers required for each closed traffic lane.
- A minimum of Two Type II or III barricades shall be placed across each closed lane and shoulder at the location shown and every 2000' within the complete closure area. Within the complete closure area, the transverse alignment of the barricades on the closed shoulder may be shifted from the transverse alignment to provide access to the work.
- When specified in the special provisions, a W20-2 "DETOUR AHEAD" sign is to be used in place of the W20-3 "FREEWAY CLOSED AHEAD" sign.

SIGN PANEL SIZE (Min)

- A 48" x 48"
- B 48" x 18"
- C 48" x 30"

LEGEND

- TRAFFIC CONE
- TRAFFIC CONE (OPTIONAL TAPER)
- † TEMPORARY TRAFFIC CONTROL SIGN
- FLASHING ARROW SIGN (FAS)
- FAS SUPPORT OR TRAILER
- ⚡ PORTABLE FLASHING BEACON

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**TRAFFIC CONTROL SYSTEM
 FOR LANE CLOSURES ON
 FREEWAYS AND EXPRESSWAYS**
 NO SCALE

RSP T10A DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T10A DATED MAY 20, 2011 - PAGE 238 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T10A

2010 REVISED STANDARD PLAN RSP T10A

TYPICAL RAMP CLOSURES

SIGN PANEL SIZE (Min)

- A 48" x 48"
- B 48" x 30"
- C 36" x 36"
- D 48" x 36"

LEGEND

- TRAFFIC CONE
- † TEMPORARY TRAFFIC CONTROL SIGN
- ‡ BARRICADES
- ⚡ PORTABLE FLASHING BEACON

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	248	357

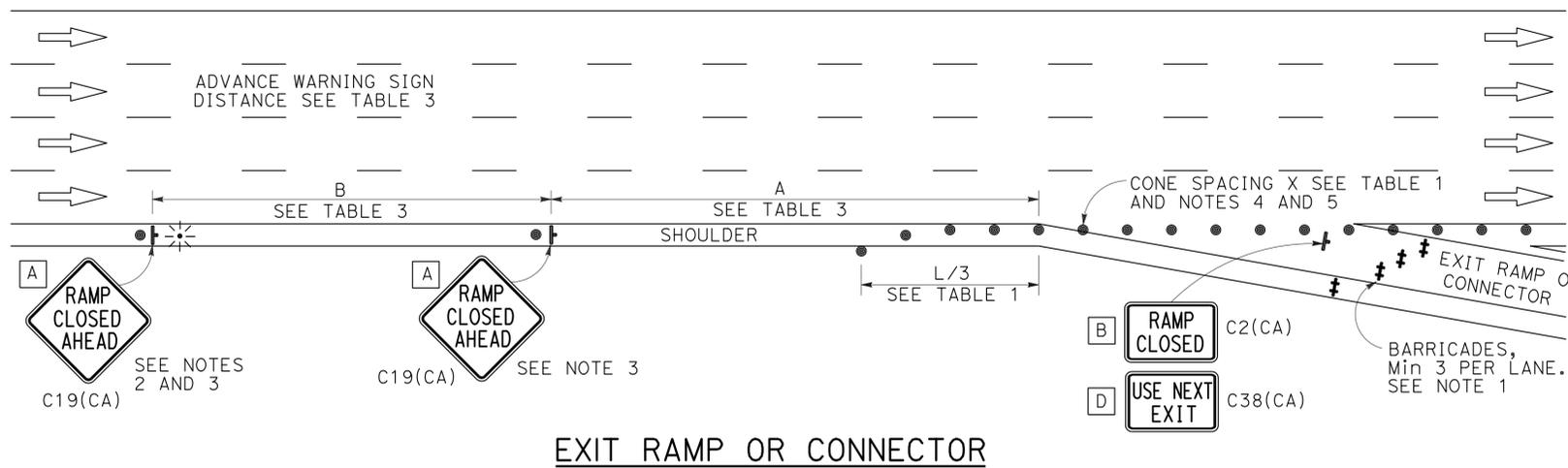
Gurinderpal Bhullar
 REGISTERED CIVIL ENGINEER
 April 19, 2013
 PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

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

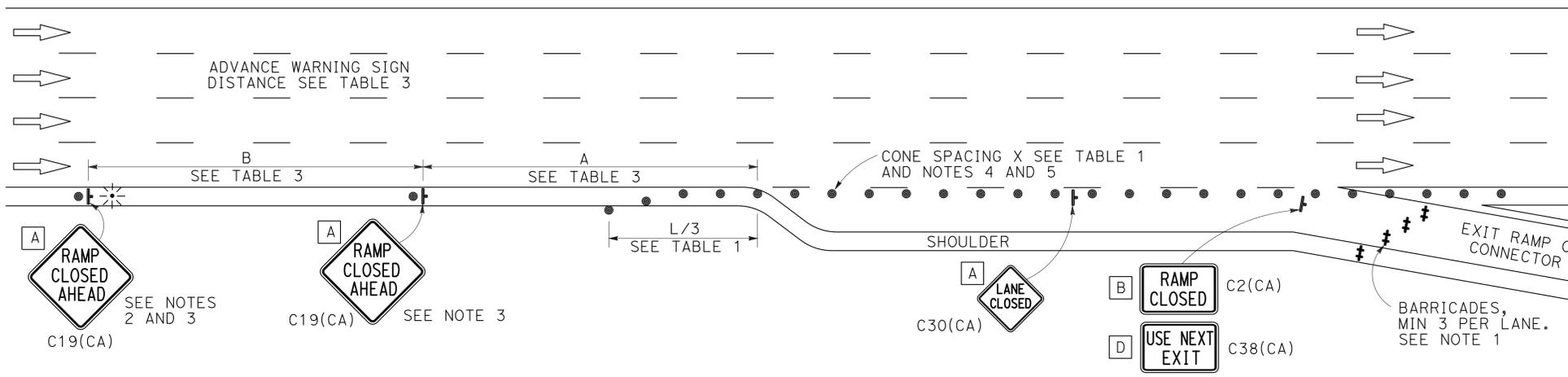
TO ACCOMPANY PLANS DATED 4-15-13

NOTES:

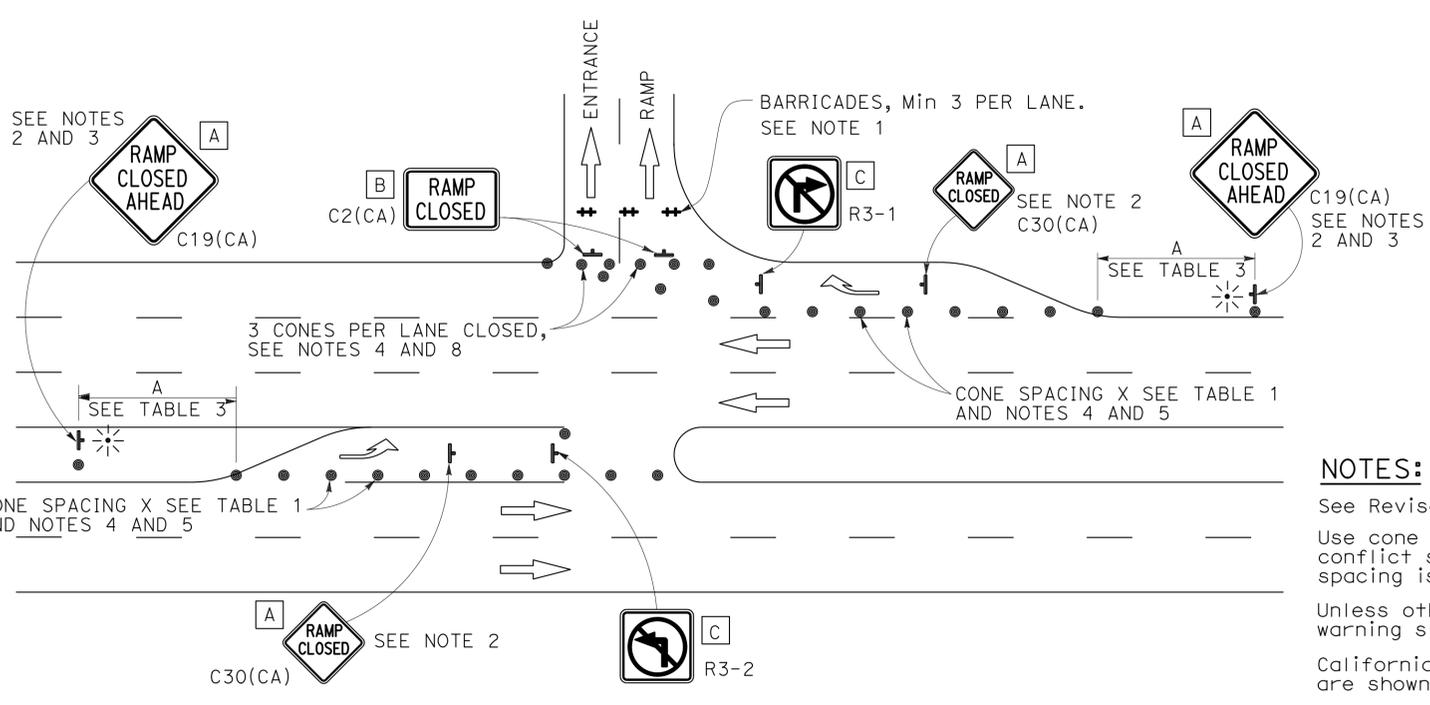
- Barricades shall be Type I, II, or III for closures lasting one week or less and Type III for closures lasting longer than one week.
- In addition to placing the C19(CA) "RAMP CLOSED AHEAD" and C30(CA) "RAMP CLOSED" signs, black on orange overlay plates with the word "CLOSED" may be mounted, as directed by the Engineer, on all guide signs that refer to the closed ramp. The letter size on the overlay shall be the same as the guide sign.
- Each advance C19(CA) "RAMP CLOSED AHEAD" sign shall be equipped with at least two flags for daytime closure. Each flag shall be at least 16" x 16" in size and shall be orange or fluorescent red-orange in color. A flashing beacon shall be placed on top of the first C19(CA) sign during hours of darkness.
- All cones used for ramp closures during the hours of darkness shall be fitted with retroreflective bands (or sleeves) as specified in the specifications.
- Portable delineators, placed at one-half the spacing indicated for traffic cones, may be used instead of cones for daytime ramp closures only.
- At least one person shall be assigned to provide full time maintenance of traffic control devices, unless otherwise directed by the Engineer.
- The existing "EXIT" signs shall be covered during ramp closures.
- A minimum of 3 cones shall be placed transversely across each closed lane and shoulder.



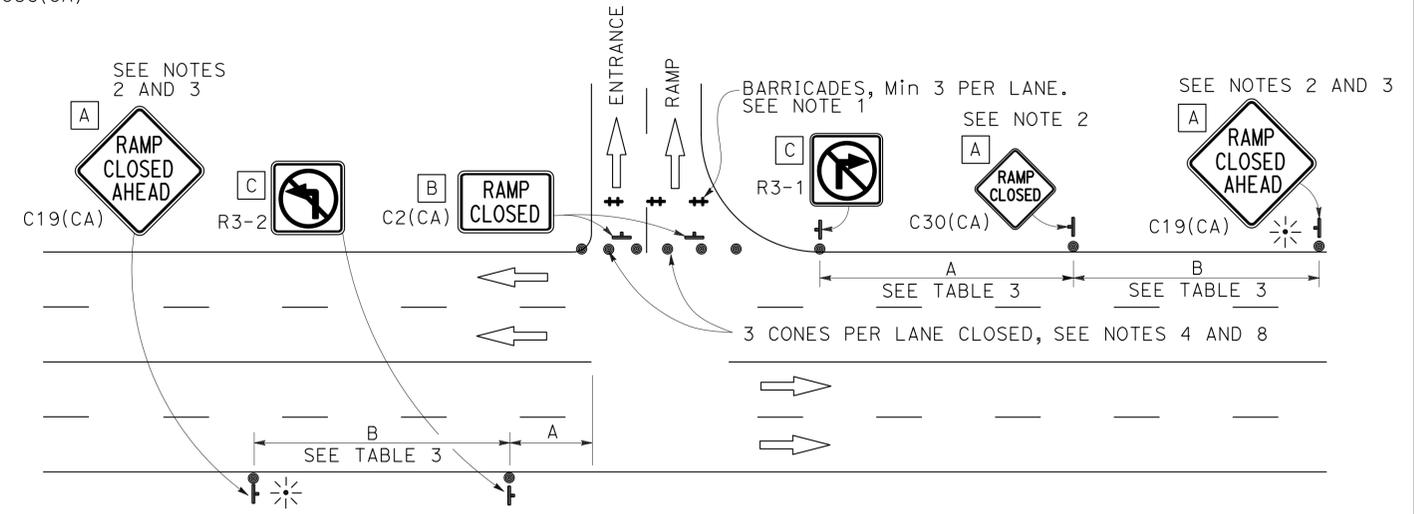
EXIT RAMP OR CONNECTOR



EXIT RAMP OR CONNECTOR WITH ADDITIONAL LANE



ENTRANCE RAMP WITH TURNING POCKETS



ENTRANCE RAMP WITHOUT TURNING POCKETS

NOTES:

- See Revised Standard Plan RSP T9 for tables.
- Use cone spacing X for taper segment, Y for tangent segment or Z for conflict situations, as appropriate, per Table 1, unless X, Y, or Z cone spacing is shown on this sheet.
- Unless otherwise specified in the special provisions, all temporary warning signs shall have black legend on fluorescent orange background.
- California codes are designated by (CA). Otherwise, Federal (MUTCD) codes are shown.

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**TRAFFIC CONTROL SYSTEM
 FOR RAMP CLOSURE**
 NO SCALE

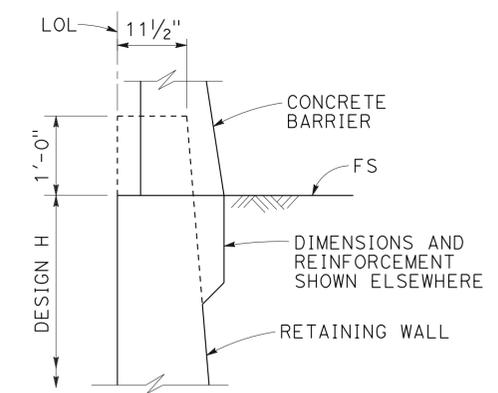
RSP T14 DATED APRIL 19, 2013 SUPERSEDES STANDARD PLAN T14
 DATED MAY 20, 2011 - PAGE 242 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP T14

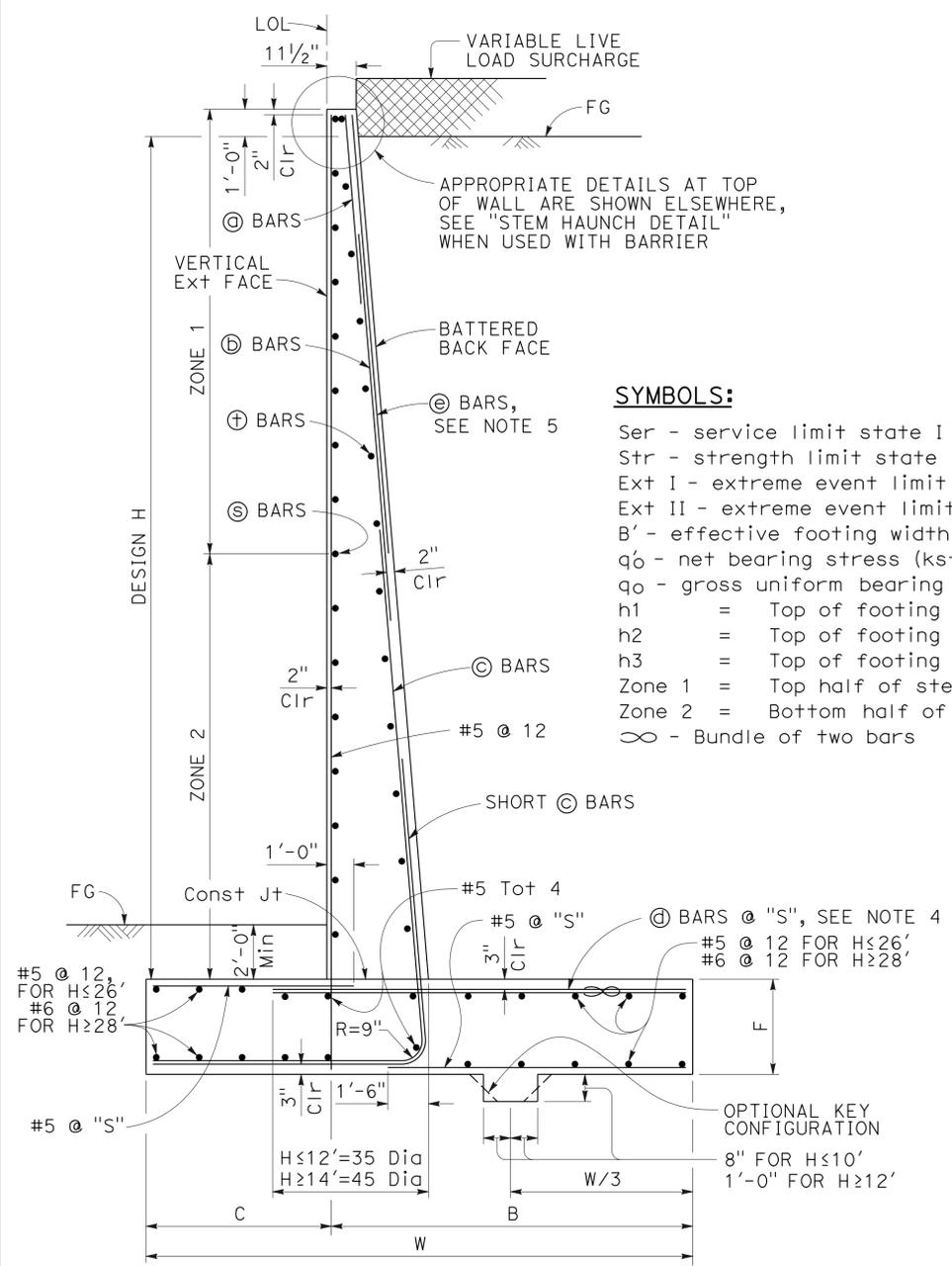
2010 REVISED STANDARD PLAN RSP T14

DESIGN CONDITIONS:

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

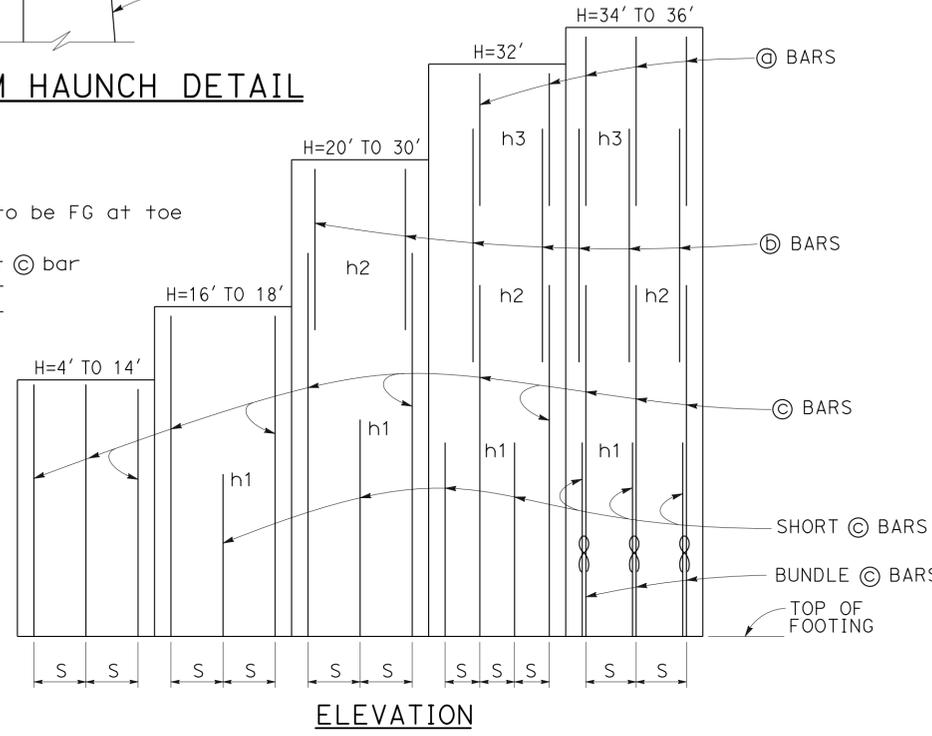


STEM HAUNCH DETAIL



TYPICAL SECTION

- NOTES:**
- For details not shown and drainage notes see RSP B3-5
 - For wall stem joint details see B0-3 3-3 and B0-3 3-4
 - At circled B bars:
 - H ≤ 6', no splices are allowed within 1'-8" above the top of footing.
 - H > 6', no splices are allowed within H/4 above the top of footing.
 - Bundle circled B bars for H = 34' & 36'.
 - Provide #6 @ 10" x 15'-0" circled B bars over a distance of 8'-0" measured from all expansion joints, begin wall and end wall locations. For H ≤ 14', hook circled B bar into footing and reduce bar length as needed to maintain Min CLR cover.



ELEVATION

DESIGN NOTES:

- TO ACCOMPANY PLANS DATED 4-15-13
- DESIGN: AASHTO LRFD Bridge Design Specifications, 4th Edition with California Amendments
- LS: Varied surcharge on level ground surface
- DC: Stem Architectural Treatment of thickness up to 6" of concrete (75 psf) considered
- CT: 54 kip transverse force applied at He = 32", distributed over 10 feet at the top of wall and 1:1 distribution down and outward. Distribution below footing taken no less than 40'.
- SEISMIC: kh = 0.2, kv = 0.0
- SOIL: φ = 34°, γ = 120 pcf
- REINFORCED CONCRETE: f'c = 3,600 psi, fy = 60,000 psi
- LOAD COMBINATIONS AND LIMIT STATES:
- Service I Q = 1.00DC+1.00EV+1.00EH+1.00LS
 - Strength I Q = αDC+βEV+ηEH+1.75LS
 - Extreme I Q = 1.00DC+1.00EV+1.00EH+1.00EQD+1.00EQE
 - Extreme II Q = 1.00DC+1.00EV+1.00EH+1.00CT
- Where:
- Q: Force Effects
 - α: 1.25 or 0.90, Whichever Controls Design
 - β: 1.35 or 1.00, Whichever Controls Design
 - η: 1.50 or 0.90, Whichever Controls Design
 - DC: Dead Load of Structure Components
 - EH: Horizontal Earth Fill Pressure
 - EV: Vertical Earth Pressure from Earth Fill Weight
 - LS: Live Load Surcharge
 - EQE: Seismic Earth Pressure
 - EQD: Soil and Structural and Nonstructural Components Inertia
 - CT: Vehicular Collision Force

DESIGN H	4'	6'	8'	10'	12'	14'	16'	18'	20'	22'	24'	26'	28'	30'	32'	34'	36'
W	6'-10"	7'-0"	7'-3"	7'-7"	8'-4"	9'-7"	10'-9"	12'-0"	13'-3"	14'-6"	15'-9"	17'-1"	18'-5"	19'-10"	21'-2"	22'-7"	24'-0"
C	2'-2"	2'-3"	2'-3"	2'-4"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-5"	6'-0"	6'-6"	7'-2"	7'-8"	8'-2"	9'-0"
B	4'-8"	4'-9"	5'-0"	5'-3"	5'-10"	6'-7"	7'-3"	8'-0"	8'-9"	9'-6"	10'-4"	11'-1"	11'-11"	12'-8"	13'-6"	14'-5"	15'-0"
F	1'-4"	1'-4"	1'-4"	1'-4"	1'-6"	1'-8"	1'-8"	1'-9"	1'-9"	1'-11"	2'-2"	2'-5"	2'-10"	3'-3"	3'-6"	4'-0"	4'-3"
BATTER	1/2: 12	1/2: 12	1/2: 12	1/2: 12	1/2: 12	1/2: 12	1/2: 12	1/2: 12	1/2: 12	1/2: 12	5/8: 12	5/8: 12	3/4: 12	7/8: 12	1: 12	1: 12	1: 12
SPACING "S"	9"	9"	9"	9"	9"	7"	6"	5"	6"	6"	6"	6"	6"	6"	6"	10"	8"
circled B BARS	-	-	-	-	-	-	-	-	#7	#7	#7	#7	#7	#7	#7	#7	#6
circled C BARS	#6	#6	#6	#6	#6	#6	#7	#7	#8	#9	#9	#10	#10	#10	#11	#11	#11
circled D BARS	#5	#5	#6	#6	#6	#6	#9	#8	#8	#9	#9	#10	#10	#10	#11	#11	#11
h1	-	-	-	-	-	-	5'-9"	5'-10"	8'-0"	9'-0"	10'-1"	11'-0"	12'-1"	13'-0"	13'-0"	12'-7"	11'-6"
h2	-	-	-	-	-	-	-	-	10'-5"	13'-0"	14'-7"	17'-6"	19'-0"	20'-5"	19'-0"	18'-0"	20'-2"
h3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21'-2"	21'-10"	24'-0"
ZONE 1 circled S BARS	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12
ZONE 2 circled S BARS	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#6 @ 12	#6 @ 12	#6 @ 12	#7 @ 12	#7 @ 12
ZONE 1 circled T BARS	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12
ZONE 2 circled T BARS	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12	#5 @ 12	#5 @ 12	#5 @ 12
Ser: B', q0	6.8, 0.7	6.5, 1.0	6.2, 1.3	6.0, 1.6	6.3, 2.0	7.5, 2.1	8.6, 2.2	9.8, 2.3	11.0, 2.4	12.1, 2.5	13.2, 2.8	14.4, 2.9	15.5, 3.1	16.8, 3.3	18.0, 3.5	19.2, 3.7	20.6, 3.7
Str: B', q0	6.6, 1.6	5.0, 1.8	3.6, 2.3	3.0, 3.3	3.2, 4.0	4.3, 3.8	5.3, 3.7	6.4, 3.7	7.4, 3.8	8.2, 4.1	9.0, 4.4	9.9, 4.6	10.7, 4.9	11.7, 5.2	12.6, 5.4	13.6, 5.8	14.6, 5.9
Ext I: B', q0	5.2, 1.1	4.7, 1.5	3.9, 2.2	3.1, 3.4	2.8, 4.8	3.2, 5.3	3.6, 5.7	4.1, 6.1	4.6, 6.4	5.0, 6.9	5.3, 7.6	5.8, 8.1	6.1, 8.9	6.7, 9.4	7.1, 10.0	7.5, 10.7	8.2, 10.9
Ext II: B', q0	2.6, 2.2	2.7, 2.6	2.8, 3.1	2.9, 3.6	3.7, 3.6	5.2, 3.3	6.7, 3.1	8.3, 3.0	9.8, 3.0	11.2, 3.1	12.5, 3.2	13.9, 3.4	15.2, 3.6	16.7, 3.8	18.0, 4.0	19.3, 4.2	20.8, 4.3

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

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

2010 REVISED STANDARD PLAN RSP B3-1A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	250	357

Gary Wang
 REGISTERED CIVIL ENGINEER
 April 20, 2012
 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

DESIGN CONDITIONS:

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

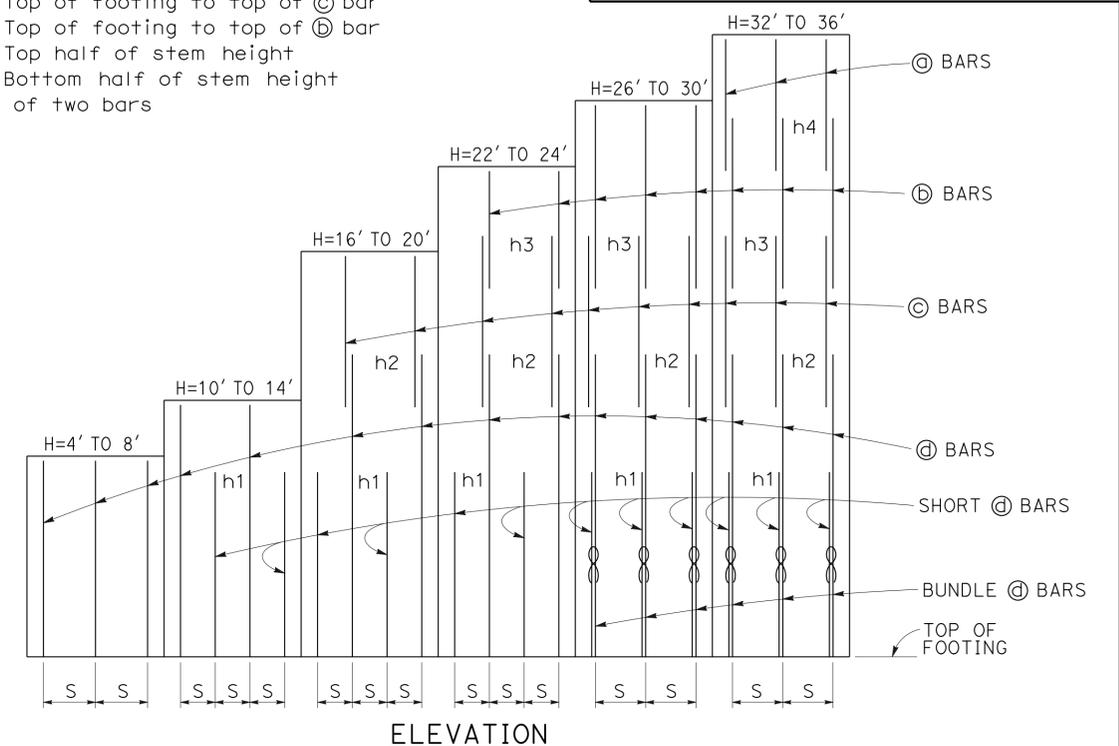
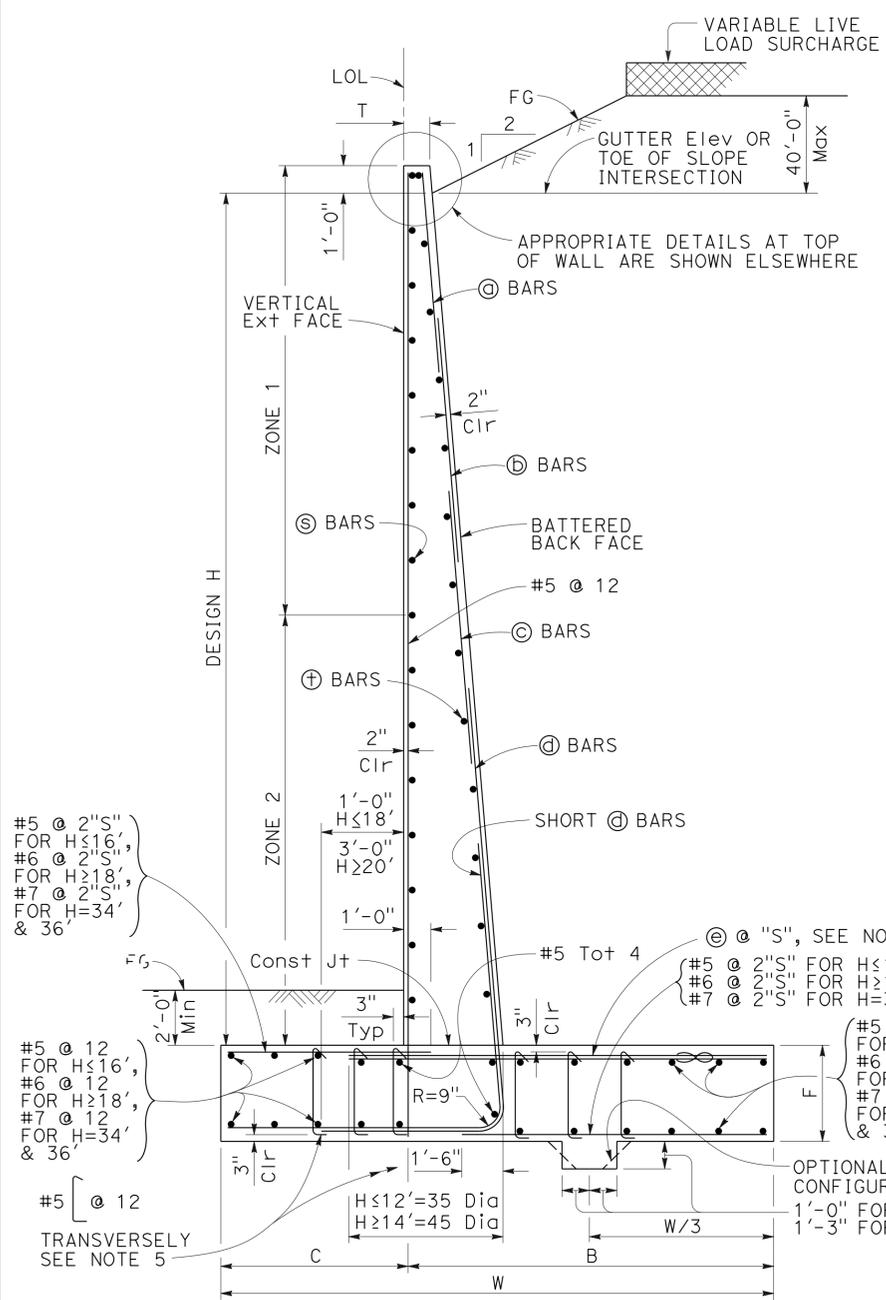
DESIGN NOTES:

- DESIGN: AASHTO LRFD Bridge Design Specifications, 4th Edition with California Amendments
- LS: Varied surcharge on level ground surface
- DC: Stem Architectural Treatment of thickness up to 6" of concrete (75 psf) considered
- SEISMIC: $k_h = 0.2$
 $k_v = 0.0$
- SOIL: $\phi = 34^\circ$
 $\gamma = 120$ pcf
- REINFORCED CONCRETE: $f'_c = 3,600$ psi
 $f_y = 60,000$ psi
- LOAD COMBINATIONS AND LIMIT STATES:
 Service I $Q = 1.00DC + 1.00EV + 1.00EH + 1.00LS$
 Strength I $Q = \alpha DC + \beta EV + \eta EH + 1.75LS$
 Extreme I $Q = 1.00DC + 1.00EV + 1.00EH + 1.00EQD + 1.00EQE$

Where:
 Q: Force Effects
 α : 1.25 or 0.90, Whichever Controls Design
 β : 1.35 or 1.00, Whichever Controls Design
 η : 1.50 or 0.90, Whichever Controls Design
 DC: Dead Load of Structure Components
 EH: Horizontal Earth Fill Pressure
 EV: Vertical Earth Pressure from Earth Fill Weight
 LS: Live Load Surcharge
 EQE: Seismic Earth Pressure
 EQD: Soil and Structural and Nonstructural Components Inertia

SYMBOLS:

- TO ACCOMPANY PLANS DATED 4-15-13
- Ser - service limit state I
 Str - strength limit state I
 Ext - extreme event limit state I
 B' - effective footing width (ft)
 q_0 - net bearing stress (ksf), OG assumed to be FG at toe
 q_0 - gross uniform bearing stress (ksf)
 h1 = Top of footing to top of short @ bar
 h2 = Top of footing to top of @ bar
 h3 = Top of footing to top of @ bar
 h4 = Top of footing to top of @ bar
 Zone 1 = Top half of stem height
 Zone 2 = Bottom half of stem height
 ∞ - Bundle of two bars



DESIGN H	4'	6'	8'	10'	12'	14'	16'	18'	20'	22'	24'	26'	28'	30'	32'	34'	36'
W	6'-0"	7'-6"	9'-6"	11'-0"	12'-6"	15'-6"	17'-3"	19'-6"	21'-9"	23'-6"	26'-0"	28'-1"	30'-3"	31'-6"	33'-0"	34'-8"	35'-11"
C	2'-0"	2'-6"	3'-3"	3'-6"	4'-3"	5'-0"	5'-3"	5'-9"	6'-9"	7'-3"	8'-3"	8'-9"	9'-0"	9'-6"	10'-0"	10'-10"	11'-3"
B	4'-0"	5'-0"	6'-3"	7'-6"	8'-3"	10'-6"	12'-0"	13'-9"	15'-0"	16'-3"	17'-9"	19'-4"	21'-3"	22'-0"	23'-0"	23'-10"	24'-8"
F	1'-6"	1'-6"	2'-0"	2'-3"	2'-6"	2'-8"	2'-10"	3'-0"	3'-4"	3'-6"	3'-6"	3'-7"	3'-7"	3'-9"	3'-9"	4'-0"	4'-4"
T	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1 1/2"	1'-2"	1'-2"	1'-5"	1'-10"	2'-3"	2'-9"
BATTER	1/2: 12	1/2: 12	1/2: 12	1/2: 12	1/2: 12	5/8: 12	5/8: 12	3/4: 12	7/8: 12	1: 12	1 1/8: 12	1 1/8: 12	1 1/8: 12	1 1/8: 12	1 1/8: 12	1 1/8: 12	1 1/8: 12
SPACING "S"	16"	12"	10"	7"	7"	7"	7"	7"	7"	6"	6"	10"	8"	7"	7"	7"	7"
@ BARS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	#5	#5	#5
@ BARS	-	-	-	-	-	-	-	-	-	#5	#5	#5	#5	#5	#7	#7	#7
@ BARS	-	-	-	-	-	#6	#6	#6	#6	#7	#8	#8	#8	#8	#8	#9	#9
@ BARS	#5	#5	#6	#6	#7	#8	#9	#10	#10	#10	#11	#11	#11	#11	#11	#11	#11
@ BARS	#5	#5	#6	#6	#7	#8	#9	#10	#10	#10	#11	#11	#11	#11	#11	#11	#11
h1	-	-	-	5'-3"	6'-4"	7'-6"	8'-9"	9'-9"	11'-0"	11'-3"	11'-6"	10'-3"	11'-9"	12'-3"	12'-6"	13'-3"	13'-8"
h2	-	-	-	-	-	-	12'-8"	15'-6"	17'-0"	16'-6"	17'-3"	18'-0"	17'-6"	17'-4"	14'-10"	15'-9"	16'-4"
h3	-	-	-	-	-	-	-	-	-	18'-9"	21'-3"	21'-3"	22'-4"	22'-8"	18'-0"	18'-6"	19'-6"
h4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26'-3"	27'-4"	28'-6"
No. of Toe Stirrups	0	0	0	0	0	0	0	0	0	0	0	5	5	6	7	8	9
No. of Heel Stirrups	0	0	0	0	0	0	0	0	4	6	7	8	10	10	11	11	11
ZONE 1 @ BARS	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#6 @ 12	#6 @ 10	#6 @ 10
ZONE 2 @ BARS	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 18	#5 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#6 @ 12	#6 @ 12	#7 @ 12	#7 @ 12	#7 @ 12	#7 @ 12	#7 @ 10	#7 @ 10
ZONE 1 @ BARS	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#5 @ 12	#5 @ 12	#5 @ 12
ZONE 2 @ BARS	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 18	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12	#4 @ 12	#5 @ 12	#5 @ 12	#5 @ 12	#6 @ 12	#6 @ 12	#6 @ 12
Ser: B', q ₀	4.0, 0.9	5.5, 1.0	9.3, 1.0	10.9, 1.3	12.3, 1.5	14.8, 1.9	16.6, 2.1	18.7, 2.4	20.6, 2.7	22.3, 3.0	24.2, 3.3	26.1, 3.5	28.2, 3.9	29.6, 4.0	31.1, 4.2	32.7, 4.4	34.1, 4.6
Str: B', q ₀	2.2, 2.2	3.5, 2.2	5.1, 2.3	6.3, 2.6	7.6, 2.7	12.9, 3.1	14.3, 3.6	16.5, 3.9	19.4, 4.5	20.7, 4.8	22.5, 5.2	24.3, 5.6	26.2, 6.0	27.5, 6.3	28.8, 6.6	30.3, 6.9	31.8, 7.2
Ext: B', q ₀	2.3, 3.4	2.7, 4.4	3.6, 5.0	3.8, 6.5	4.5, 7.0	7.0, 6.1	7.6, 6.9	9.3, 7.0	11.0, 7.1	11.8, 7.6	14.1, 7.4	15.6, 7.7	17.1, 8.0	17.2, 8.7	18.1, 9.0	19.0, 9.4	19.4, 10.0

NOTES:

- For details not shown and drainage notes see RSP B3-5
- For wall stem joint details see B0-3/3-3 and B0-3/3-4
- At @ and short @ bars:
 $H \leq 6'$, no splices are allowed within 1'-8" above the top of footing.
 $H > 6'$, no splices are allowed within H/4 above the top of footing.
- Bundle @ bars for $H \geq 26'$.
- Hook stirrups around & space with alternating transverse reinforcement at 2 x "S".

TYPICAL SECTION

2010 REVISED STANDARD PLAN RSP B3-1B

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	251	357

Gary Wang
 REGISTERED CIVIL ENGINEER
 April 20, 2012
 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

TO ACCOMPANY PLANS DATED 4-15-13

DESIGN CONDITIONS:

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

Return wall not required unless shown elsewhere

DESIGN NOTES:

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

LIVE LOAD: Surcharge on level ground surface

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

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

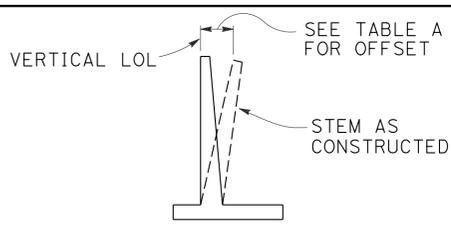
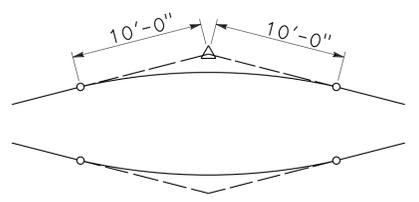


TABLE A

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

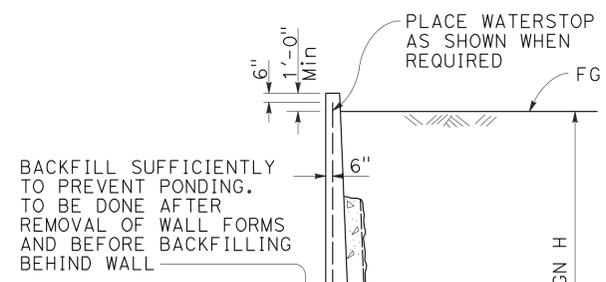
APPROXIMATE WALL OFFSET VALUES

Values for offsetting forms to be determined by the Engineer.



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

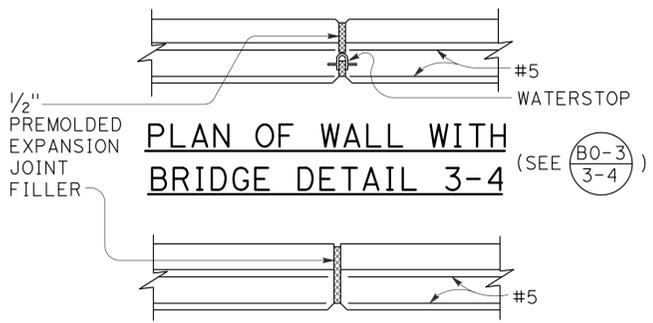
Where shown on the plans



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

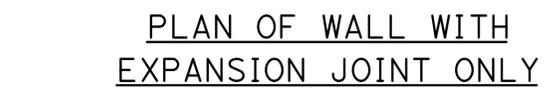
PLACE CONCRETE IN TOE AGAINST UNDISTURBED MATERIAL EXCEPT AS PERMITTED BY THE ENGINEER

DESIGN AND DRAINAGE

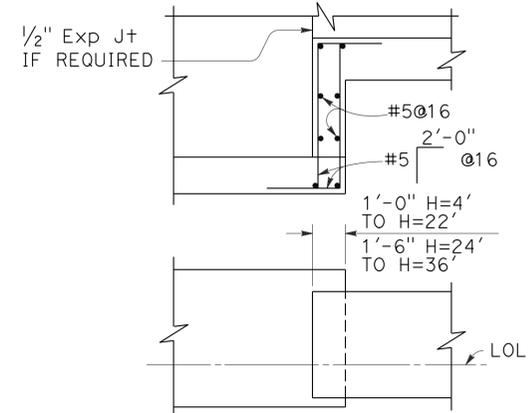


PLAN OF WALL WITH BRIDGE DETAIL 3-4

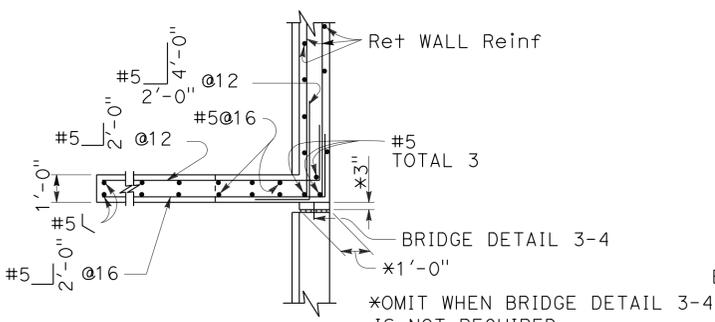
(SEE B0-3/3-4)



PLAN OF WALL WITH EXPANSION JOINT ONLY

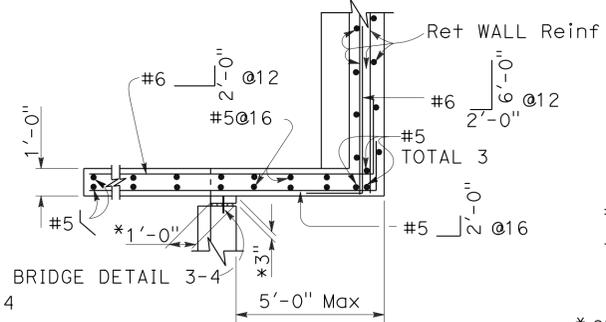


FOOTING STEP



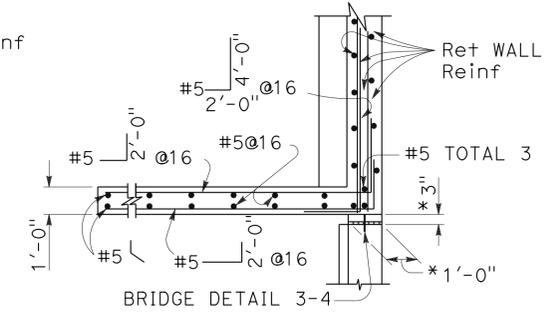
PLAN

(For return wall Type "A")



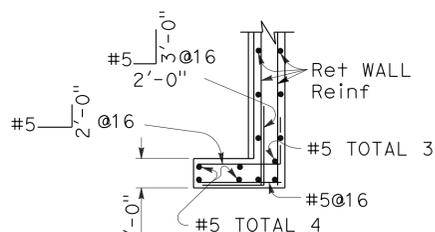
PLAN

(For return wall Type "B")



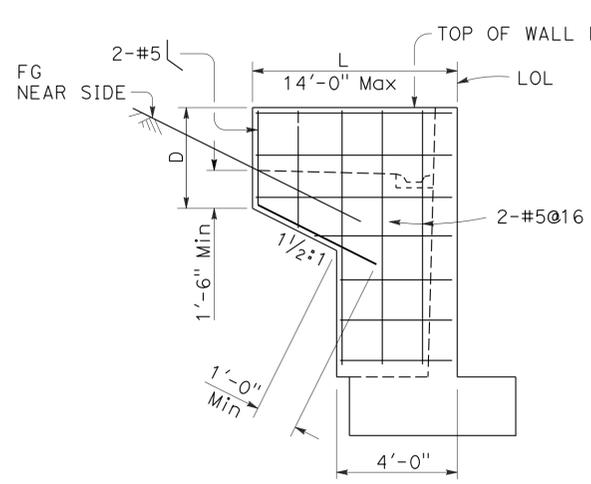
PLAN

(For return wall Type "C")



PLAN

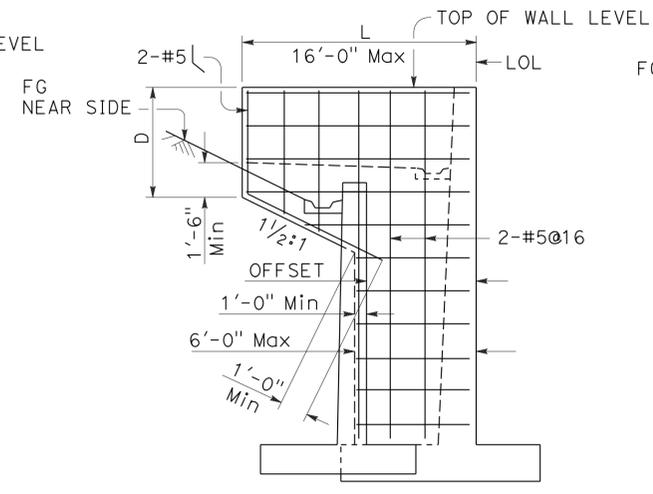
(For return wall Type "D")



ELEVATION

RETURN WALL TYPE "A"

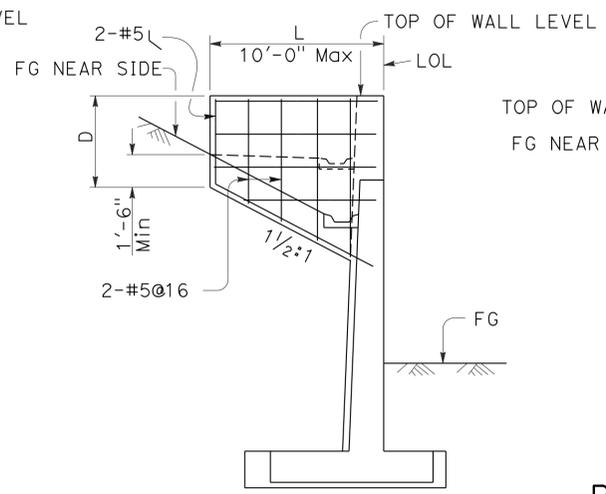
Use where H=8' or less



ELEVATION

RETURN WALL TYPE "B"

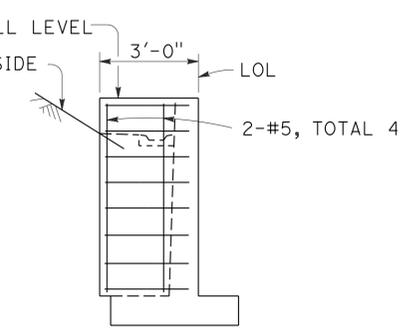
Use where H=10' or more on offset walls



ELEVATION

RETURN WALL TYPE "C"

Use where H=10' or more on straight walls



ELEVATION

RETURN WALL TYPE "D"

Use where H=6' or less

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

RETAINING WALL DETAILS No. 1

NO SCALE

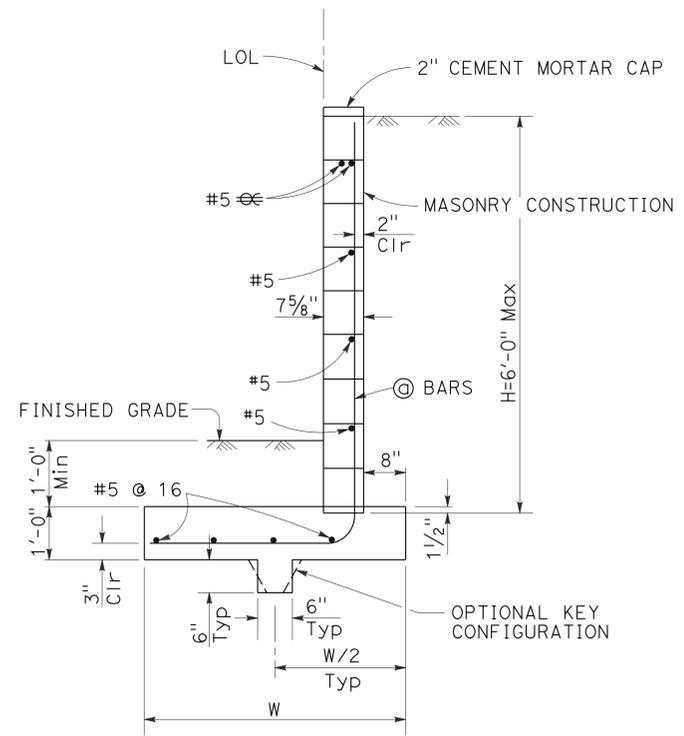
RSP B3-5 DATED APRIL 20, 2012 SUPERSEDES STANDARD PLAN B3-5 DATED MAY 20, 2011 - PAGE 277 OF THE STANDARD PLANS BOOK DATED 2010.

REVISED STANDARD PLAN RSP B3-5

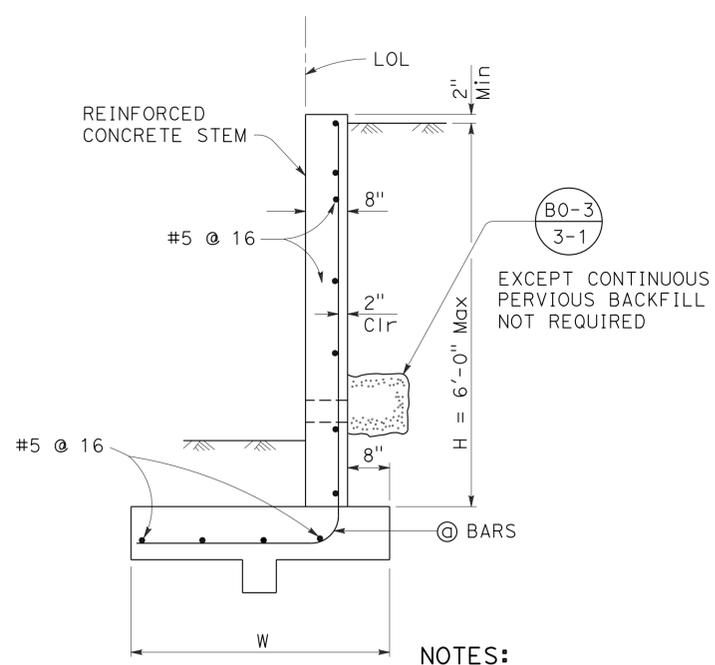
2010 REVISED STANDARD PLAN RSP B3-5

SYMBOLS:

Ser - service limit state I
 Str - strength limit state I
 Ext - extreme event limit state I
 B' - effective footing width (ft)
 q'_0 - net bearing stress (ksf), OG assumed to be FG at toe
 q_0 - gross uniform bearing stress (ksf)



TYPE 6A WALL

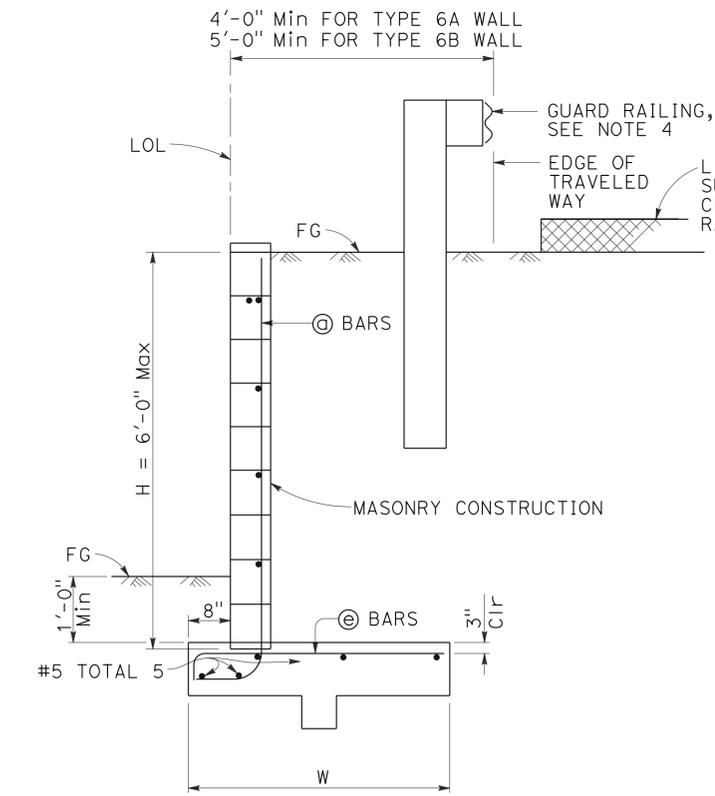


NOTES:

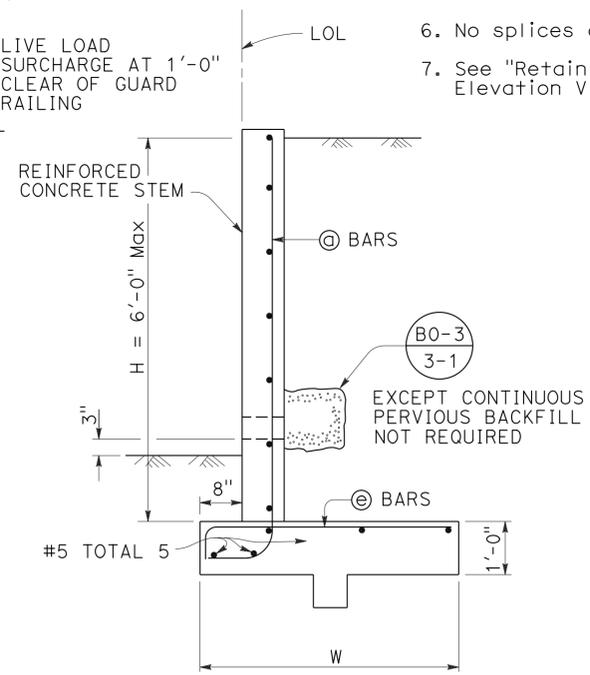
- For details not shown at "6B", see "6A", similarly, for details not shown at "6A", see "6B".
- Design loading for both Type "6A" and "6B" is as shown at "6B".
- Type 6 retaining wall shall be limited to use for walls of Design H of 6'-0" or less.
- Where traffic is adjacent to the top of wall, guard railing should be set back from the top front face of wall at least 4'-0" or 5'-0", dependent on wall type.
- For reinforced concrete wall stem joint details, See (B0-3/3-3) and (B0-3/3-4).
- No splices are allowed on @ bars.
- See "Retaining Wall Type 6 Details" sheet for Elevation View and Footing Step Details.

DESIGN NOTES:

TO ACCOMPANY PLANS DATED 4-15-13
 DESIGN: AASHTO LRFD Bridge Design Specifications, 4th Edition with California Amendments
 Building Code Requirements for Masonry Structures (TMS 402-08/ACI 530-08/ASCE 5-08)
 LS: 240 psf surcharge on level ground surface as limited by Guard Railing location
 SEISMIC: $k_h = 0.2$
 $k_v = 0.0$
 SOIL: $\phi = 34^\circ$
 $\gamma = 120$ pcf
 REINFORCED CONCRETE: $f'_c = 3,600$ psi
 $f_y = 60,000$ psi
 REINFORCED MASONRY: $f_m' = 1,500$ psi
 $f_y = 60,000$ psi
 LOAD COMBINATIONS AND LIMIT STATES:
 Service I $Q = 1.00DC + 1.00EV + 1.00EH + 1.00LS$
 Strength I $Q = \alpha DC + \beta EV + \eta EH + 1.75LS$
 Extreme I $Q = 1.00DC + 1.00EV + 1.00EH + 1.00EQD + 1.00EQE$
 Where:
 Q: Force Effects
 α : 1.25 or 0.90, Whichever Controls Design
 β : 1.35 or 1.00, Whichever Controls Design
 η : 1.50 or 0.90, Whichever Controls Design
 DC: Dead Load of Structure Components
 EH: Horizontal Earth Fill Pressure
 EV: Vertical Earth Pressure from Earth Fill Weight
 LS: Live Load Surcharge
 EQE: Seismic Earth Pressure
 EQD: Soil and Structural and Nonstructural Components Inertia



TYPE 6B WALL



TYPE 6A WALL - TABLE OF REINFORCING STEEL, DIMENSIONS AND DATA

DESIGN H	3'-4"	4'-0"	4'-8"	5'-4"	6'-0"
W	3'-0"	3'-3"	3'-8"	4'-2"	4'-8"
@ BARS	#5 @ 16	#5 @ 16	#5 @ 16	#5 @ 16	#5 @ 16
Ser: B', q'_0	2.8, 0.2	3.0, 0.3	3.4, 0.3	3.8, 0.3	4.3, 0.3
Str: B', q_0	2.7, 0.6	2.9, 0.7	3.2, 0.7	3.6, 0.7	3.3, 0.6
Ext: B', q_0	1.7, 0.8	1.6, 0.9	1.7, 1.0	2.0, 1.0	2.1, 1.0

TYPE 6B WALL - TABLE OF REINFORCING STEEL, DIMENSIONS AND DATA

DESIGN H	3'-4"	4'-0"	4'-8"	5'-4"	6'-0"
W	3'-0"	3'-9"	4'-0"	4'-6"	4'-9"
@ BARS	#5 @ 16	#5 @ 16	#5 @ 16	#5 @ 16	#5 @ 16
@ BARS	#5 @ 16	#5 @ 16	#5 @ 16	#5 @ 16	#5 @ 16
Ser: B', q'_0	2.6, 0.4	3.4, 0.4	2.7, 0.8	3.1, 0.8	3.2, 1.0
Str: B', q_0	2.6, 0.8	3.3, 0.9	1.7, 1.6	2.1, 1.6	2.0, 1.8
Ext: B', q_0	1.5, 1.1	2.0, 1.1	2.0, 1.4	2.2, 1.5	2.1, 1.9

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
RETAINING WALL TYPE 6 (CASE 1)
 NO SCALE

RSP B3-7A DATED APRIL 20, 2012 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP B3-7A

2010 REVISED STANDARD PLAN RSP B3-7B

SYMBOLS:

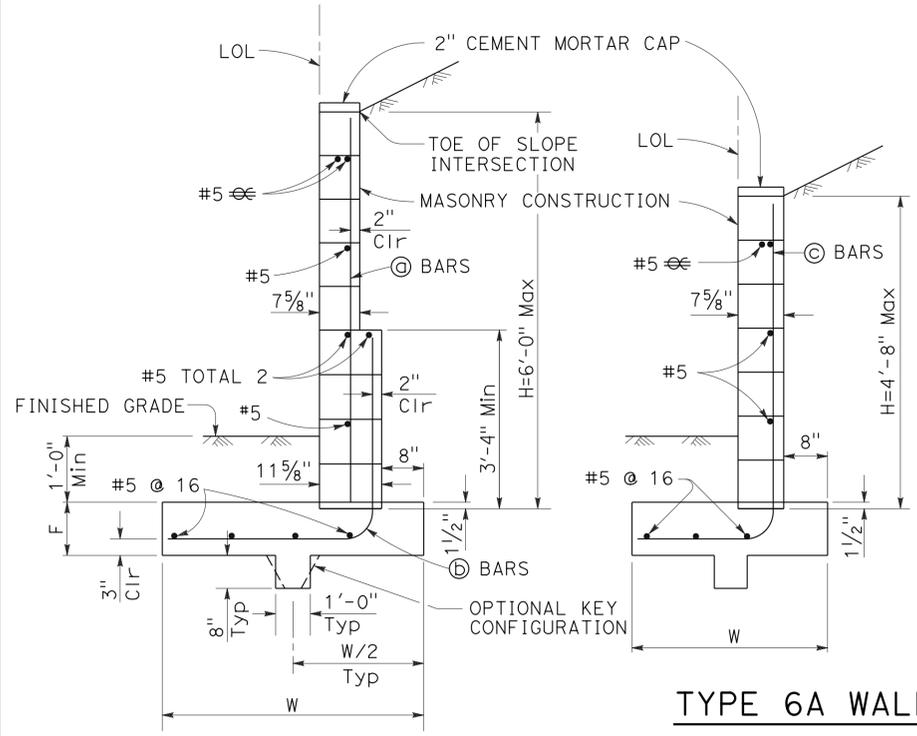
Ser - service limit state 1
 Str - strength limit state 1
 Ext - extreme event limit state I
 B' - effective footing width (ft)
 q_0 - net bearing stress (ksf), OG assumed to be FG at toe
 q_o - gross uniform bearing stress (ksf)

DESIGN NOTES:

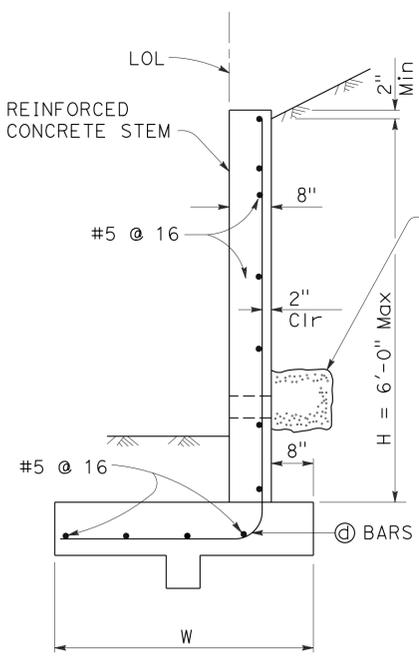
TO ACCOMPANY PLANS DATED 4-15-13
 DESIGN: AASHTO LRFD Bridge Design Specifications, 4th Edition with California Amendments
 Building Code Requirements for Masonry Structures (TMS 402-08/ACI 530-08/ASCE 5-08)
 LS: 240 psf surcharge on level ground surface as limited by Guard Railing location
 SEISMIC: $k_h = 0.2$
 $k_v = 0.0$
 SOIL: $\phi = 34^\circ$
 $\gamma = 120$ pcf
 REINFORCED CONCRETE: $f'_c = 3,600$ psi
 $f_y = 60,000$ psi
 REINFORCED MASONRY: $f_m' = 1,500$ psi
 $f_y = 60,000$ psi
 LOAD COMBINATIONS AND LIMIT STATES:
 Service I $Q = 1.00DC + 1.00EV + 1.00EH + 1.00LS$
 Strength I $Q = aDC + \phi EV + \eta EH + 1.75LS$
 Extreme I $Q = 1.00DC + 1.00EV + 1.00EH + 1.00EQD + 1.00EQE$

Where:

Q: Force Effects
 a: 1.25 or 0.90, Whichever Controls Design
 ϕ : 1.35 or 1.00, Whichever Controls Design
 η : 1.50 or 0.90, Whichever Controls Design
 DC: Dead Load of Structure Components
 EH: Horizontal Earth Fill Pressure
 EV: Vertical Earth Pressure from Earth Fill Weight
 LS: Live Load Surcharge
 EQE: Seismic Earth Pressure
 EQD: Soil and Structural and Nonstructural Components Inertia



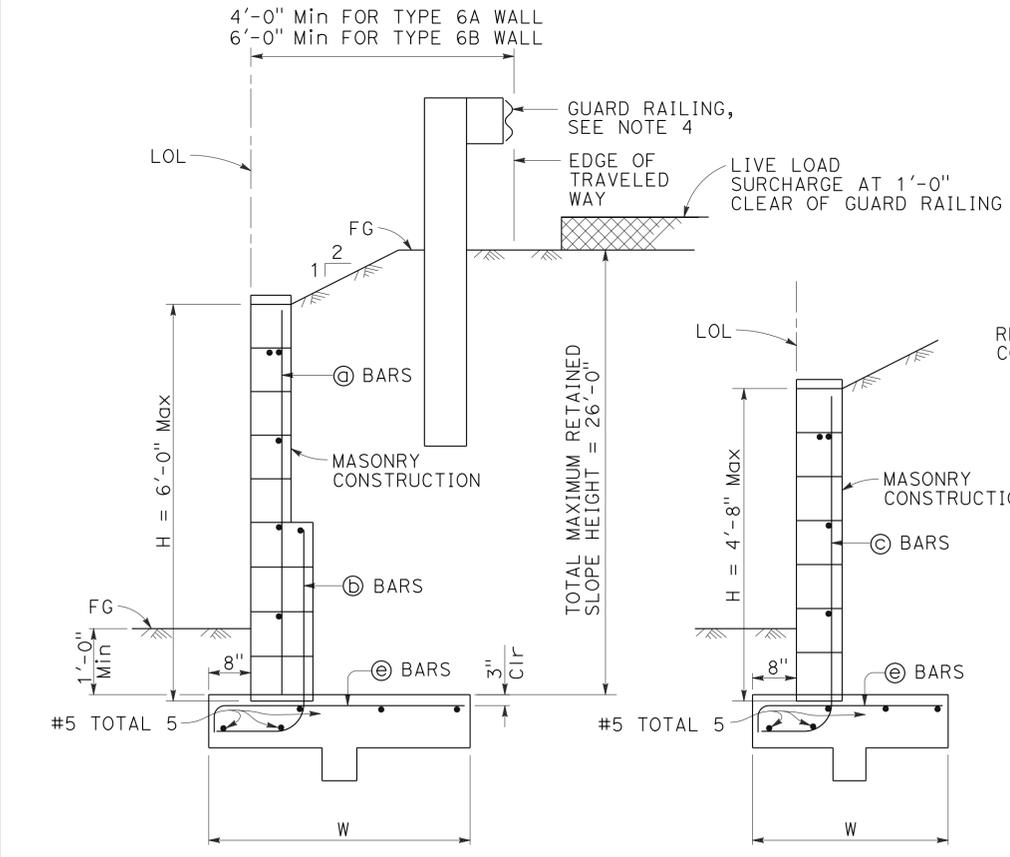
TYPE 6A WALL



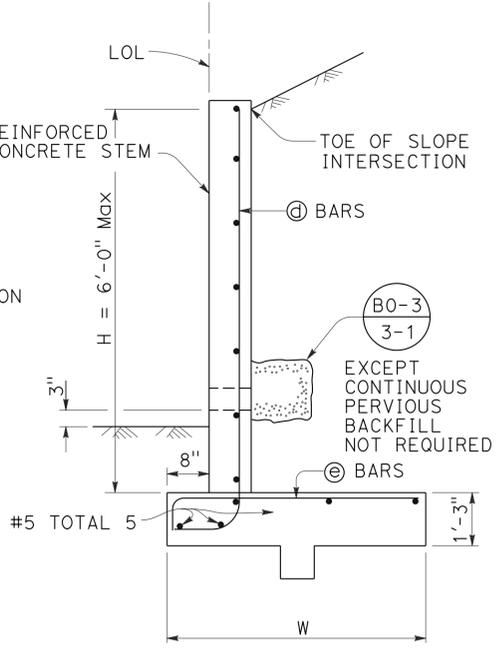
BO-3
 3-1
 EXCEPT CONTINUOUS PERVIOUS BACKFILL NOT REQUIRED

NOTES:

- For details not shown at "6B", see "6A", similarly, for details not shown at "6A", see "6B".
- Design loading for both Type "6A" and "6B" is as shown at "6B".
- Type 6 retaining wall shall be limited to use for walls of Design H of 6'-0" or less.
- Where traffic is adjacent to the top of wall, guard railing should be set back from the top front face of wall at least 4'-0" or 6'-0", dependent on wall type.
- For reinforced concrete wall stem joint details, see BO-3 3-3 and BO-3 3-4.
- No splices are allowed on @, @, @, and @ bars.
- See "Retaining Wall Type 6 Details" sheet for Elevation View and Footing Step Details.



TYPE 6B WALL



BO-3
 3-1
 EXCEPT CONTINUOUS PERVIOUS BACKFILL NOT REQUIRED

TYPE 6A WALL - TABLE OF REINFORCING STEEL, DIMENSIONS AND DATA

DESIGN H	3'-4"	4'-0"	4'-8"	5'-4"	6'-0"
W	3'-8"	4'-1"	4'-8"	5'-3"	6'-9"
F	1'-0"	1'-0"	1'-2"	1'-3"	1'-4"
@ BARS	NONE	NONE	NONE	#5 @ 16"	#5 @ 16"
@ BARS	NONE	NONE	NONE	#5 @ 16"	#5 @ 16"
@ BARS	#5 @ 16	#5 @ 16	#5 @ 16	NONE	NONE
@ BARS	#5 @ 16	#5 @ 16	#5 @ 16	#5 @ 16	#6 @ 16
Ser: B', q ₀	3.4, 0.3	3.8, 0.3	4.3, 0.3	4.9, 0.4	6.0, 0.4
Str: B', q ₀	3.3, 0.7	3.6, 0.7	4.1, 0.8	4.7, 0.8	5.7, 0.9
Ext: B', q ₀	1.3, 1.9	1.4, 2.0	1.7, 2.1	1.9, 2.2	3.9, 1.4

TYPE 6B WALL - TABLE OF REINFORCING STEEL, DIMENSIONS AND DATA

DESIGN H	3'-4"	4'-0"	4'-8"	5'-4"	6'-0"
W	4'-6"	5'-1"	5'-7"	6'-2"	6'-9"
@ BARS	NONE	NONE	NONE	#5 @ 16"	#5 @ 16"
@ BARS	NONE	NONE	NONE	#5 @ 16"	#5 @ 16"
@ BARS	#5 @ 16	#5 @ 16	#5 @ 16	NONE	NONE
@ BARS	#5 @ 16	#5 @ 16	#5 @ 16	#5 @ 16	#6 @ 16
@ BARS	#5 @ 16	#5 @ 16	#6 @ 16	#6 @ 16	#7 @ 16
Ser: B', q ₀	3.3, 0.6	3.7, 0.8	4.0, 0.9	4.5, 1.0	4.1, 1.4
Str: B', q ₀	1.9, 1.4	2.3, 1.6	2.5, 1.8	2.8, 1.9	1.8, 3.6
Ext: B', q ₀	1.5, 2.8	1.8, 3.1	1.9, 3.6	2.1, 3.8	2.4, 3.9

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
RETAINING WALL TYPE 6 (CASE 2)
 NO SCALE

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	254	357

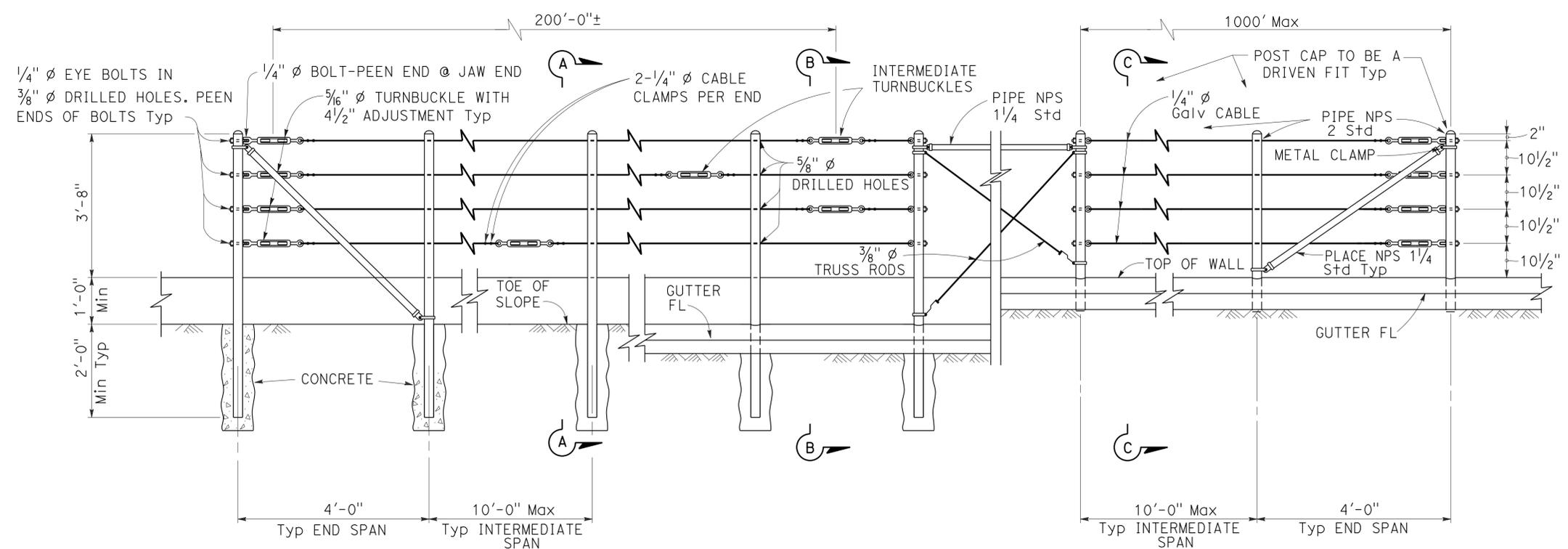
REGISTERED CIVIL ENGINEER

October 21, 2011
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 4-15-13

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

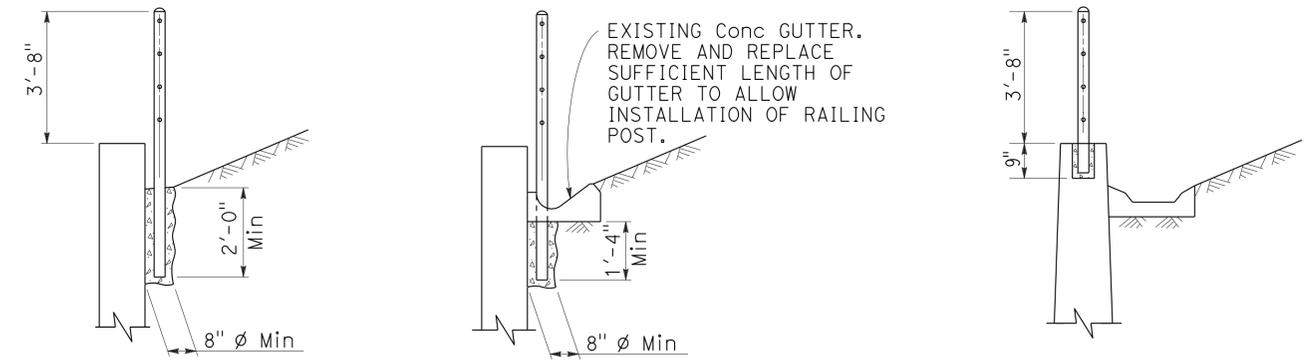


EXISTING WALL (WITHOUT GUTTER) Existing
RETAINING WALL (WITH GUTTER) Existing
RETAINING WALL (WITH GUTTER) New construction

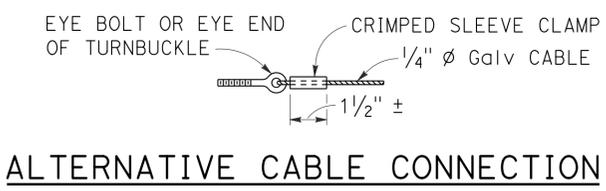
ELEVATION

NOTES:

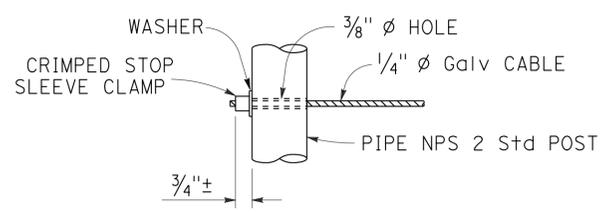
1. Maximum distance between turnbuckles shall be 200'-0"±.
2. Intermediate turnbuckles to be placed in adjacent spans.
3. Cable shall not be spliced between intermediate turnbuckles and end posts.
4. Posts to be vertical.
5. Alignment of holes in posts may vary to conform to slope of top of retaining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



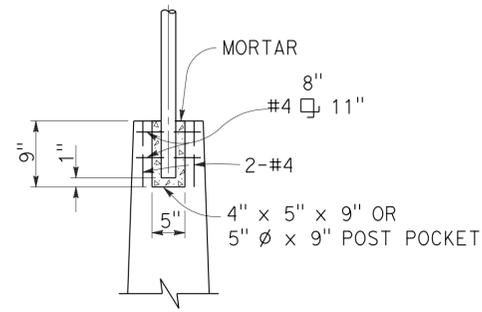
SECTION A-A Existing
SECTION B-B Existing
SECTION C-C New construction



ALTERNATIVE CABLE CONNECTION



ALTERNATIVE DEAD END ANCHORAGE



POST POCKET

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
CABLE RAILING

NO SCALE

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

REVISED STANDARD PLAN RSP B11-47

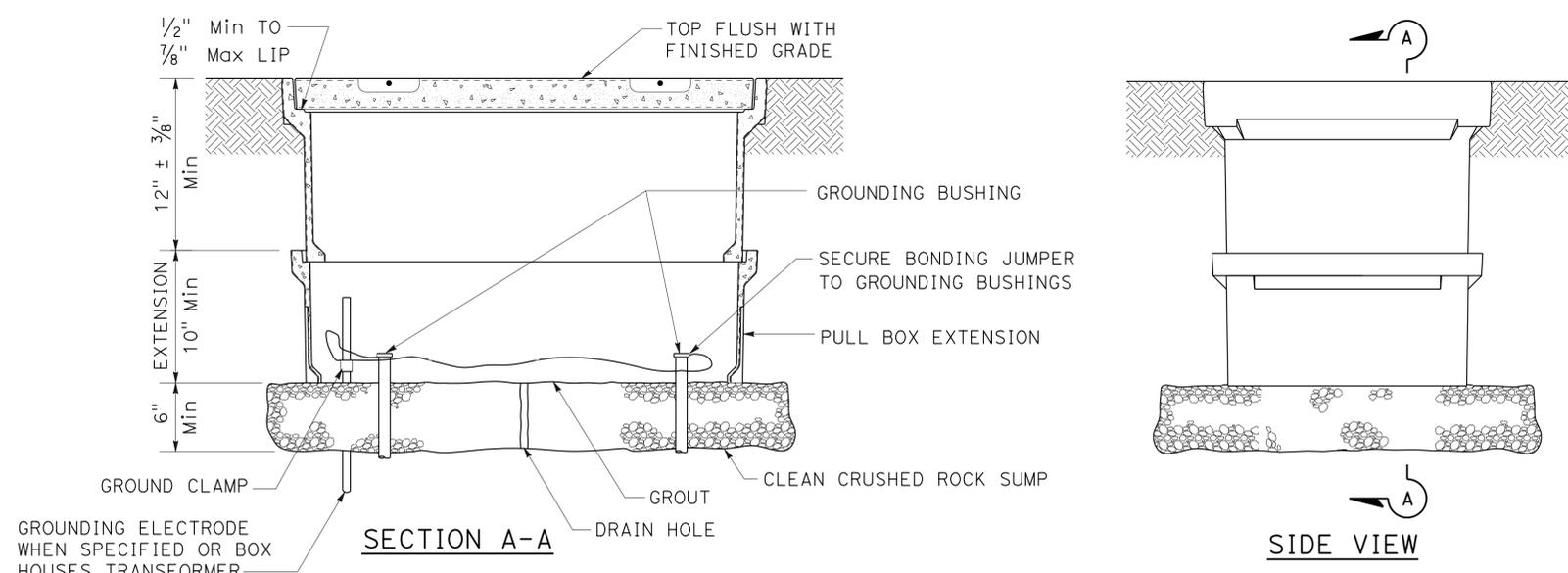
2010 REVISED STANDARD PLAN RSP B11-47

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	255	357

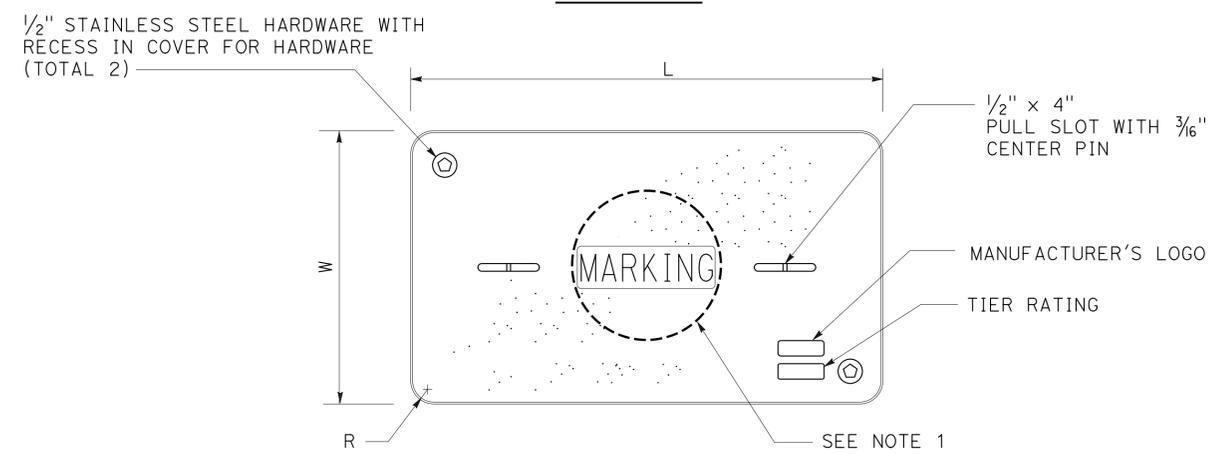
Jeffery G. McRae
 REGISTERED ELECTRICAL ENGINEER
 No. E14512
 Exp. 6-30-12
 ELECTRICAL
 STATE OF CALIFORNIA

January 20, 2012
 PLANS APPROVAL DATE

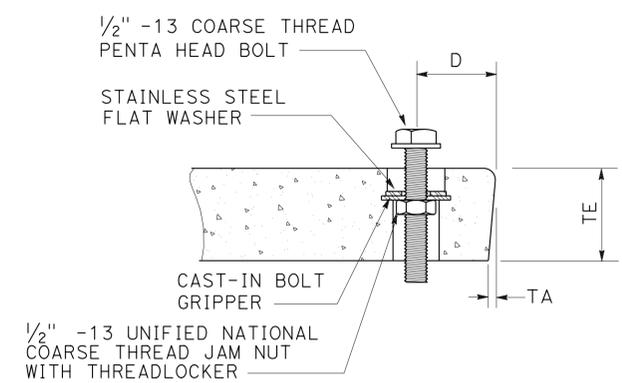
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



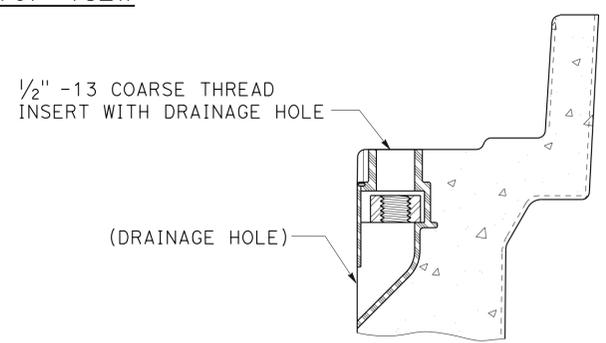
INSTALLATION DETAILS
DETAIL A



COVER TOP VIEW



TYPICAL COVER CAPTIVE BOLT
OR SIMILAR



TYPICAL THREADED INSERT
OR SIMILAR

NOTES ON PULL BOXES:

- TO ACCOMPANY PLANS DATED 4-15-13
- Pull box covers must 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. 3/2 pull box.
 - "SIGNAL" - Traffic signal circuits with or without street or sign lighting circuits.
 - "ST LIGHTING" - Street 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 street or sign lighting circuits.
 - "STREET LIGHTING" - Street or sign lighting circuits where voltage is under 600 V.
 - "STREET LIGHTING-HIGH VOLTAGE" - Street 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.
 - The nominal dimensions of the opening in which the cover sets must be the same as the cover dimensions (L and W) plus 1/8" or greater.
 - Covers and boxes must be interchangeable with California Standard. When interchanged with a standard, the top surfaces must be flush within 1/8". Top outside radius of covers and pull boxes must 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.

DIMENSION TABLE

PULL BOX	PULL BOX			COVER						
	MINIMUM DEPTH BOX	MINIMUM DEPTH EXTENSION	MAXIMUM WEIGHT	L	W	R	TE	TA	D	MAXIMUM WEIGHT
No. 3/2	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
(PULL BOX)
 NO SCALE

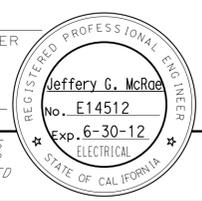
RSP ES-8A DATED JANUARY 20, 2012 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

2010 REVISED STANDARD PLAN RSP ES-8A

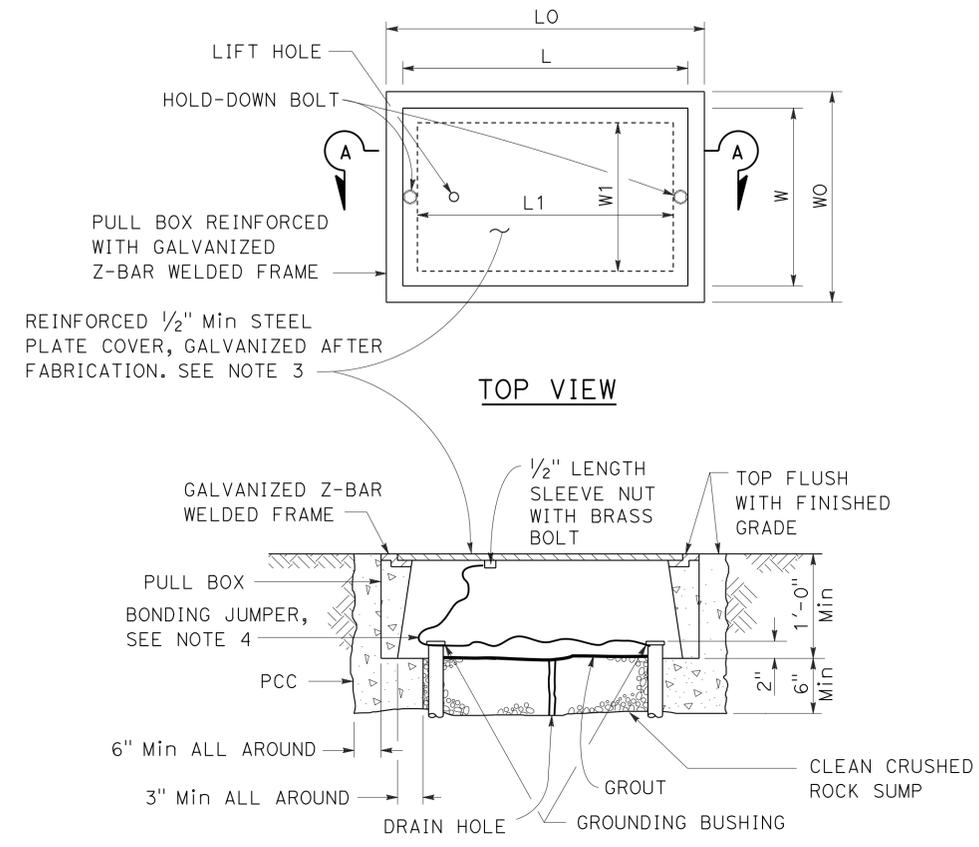
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	256	357

Jeffery G. McRae
 REGISTERED ELECTRICAL ENGINEER
 January 20, 2012
 PLANS APPROVAL DATE

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



TO ACCOMPANY PLANS DATED 4-15-13



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

NOTES ON PULL BOXES:

- 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 must 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 street or sign lighting circuits.
 - "ST LIGHTING" - Street 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 street or sign lighting circuits.
 - "STREET LIGHTING" - Street or sign lighting circuits where voltage is under 600 V.
 - "STREET LIGHTING-HIGH VOLTAGE" - Street 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.
- Bonding jumper for metal covers shall be 3' long, minimum.
- The nominal dimensions of the opening in which the cover sets must be the same as the cover dimensions except the length and width dimensions shall be 1/8" greater.
- Covers and boxes must be interchangeable with California standard male and female gages. When interchanged with a standard male or female gage, the top surfaces must be flush within 1/8".

PULL BOX	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 RATED PULL BOX)**
 NO SCALE

RSP ES-8B DATED JANUARY 20, 2012 SUPPLEMENTS THE STANDARD PLANS BOOK DATED 2010.

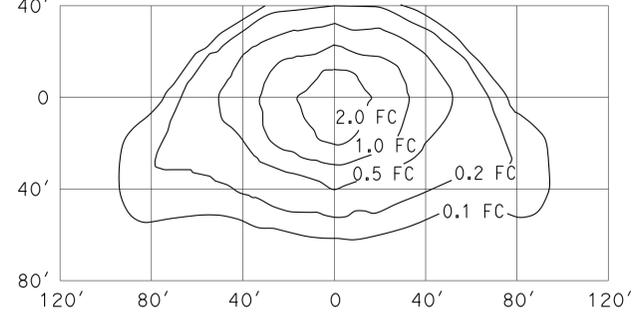
2010 REVISED STANDARD PLAN RSP ES-8B

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	257	357

Jeffrey B. McRae
 REGISTERED ELECTRICAL ENGINEER
 July 20, 2012
 PLANS APPROVAL DATE
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

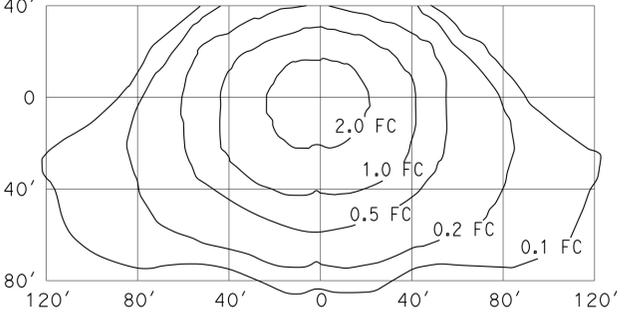
TO ACCOMPANY PLANS DATED 4-15-13

ISOFOOTCANDLE CURVE - MINIMUM



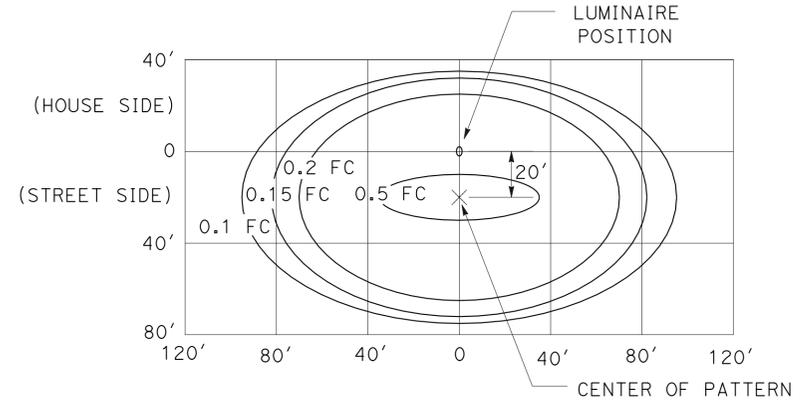
TYPE III MEDIUM CUTOFF
 Cutoff Luminaire
 34' Mounting Height
 Lamp operated at 22,000 lm
 200-W high pressure sodium lamp
 ANSI Designation S66

ISOFOOTCANDLE CURVE - MINIMUM



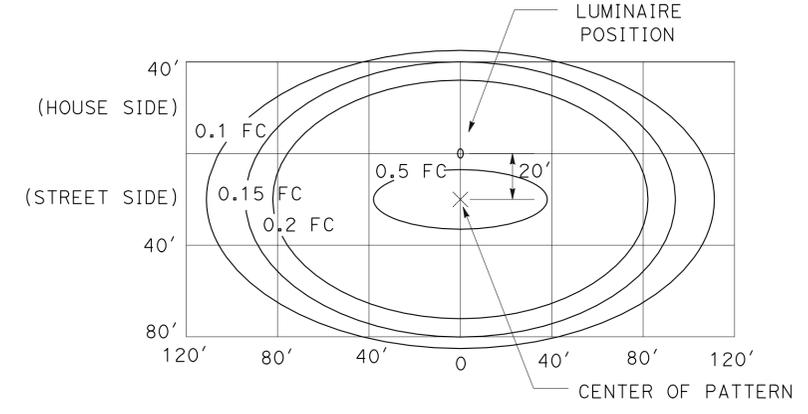
TYPE III MEDIUM CUTOFF
 Cutoff Luminaire
 40' Mounting Height
 Lamp operated at 37,000 lm
 310-W high pressure sodium lamp
 ANSI Designation S67

ISOFOOTCANDLE CURVE - MINIMUM



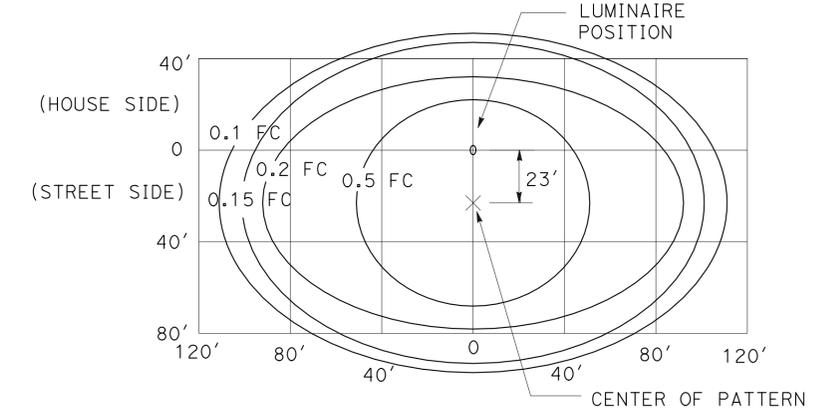
LED LUMINAIRE ROADWAY 1
 200-W HPS Equivalent at 34' Mounting Height

ISOFOOTCANDLE CURVE - MINIMUM



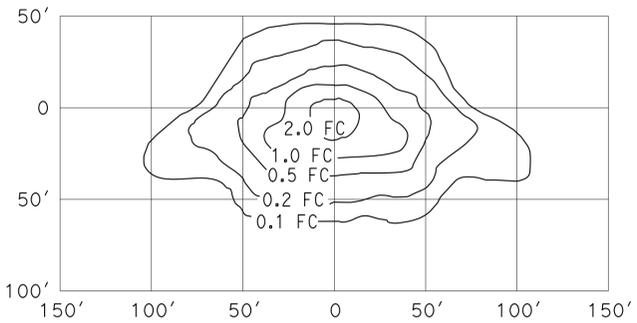
LED LUMINAIRE ROADWAY 2
 310-W HPS Equivalent at 40' Mounting Height

ISOFOOTCANDLE CURVE - MINIMUM



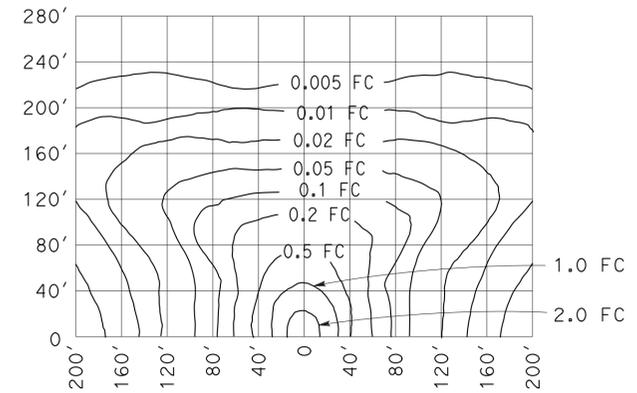
LED LUMINAIRE ROADWAY 4
 400-W HPS Equivalent at 40' Mounting Height

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



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

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS
 (ISOFOOTCANDLE DIAGRAMS)**

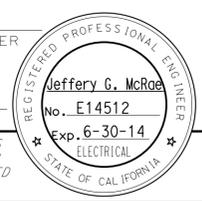
NO SCALE

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

2010 REVISED STANDARD PLAN RSP ES-10A

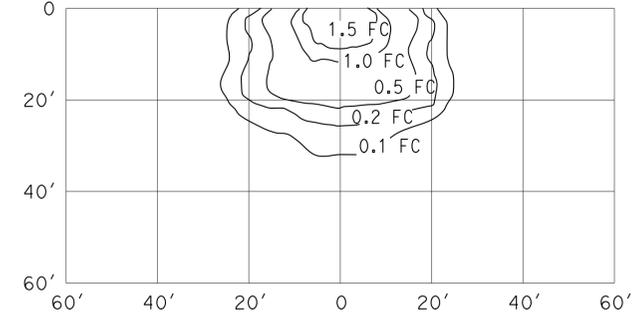
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	258	357

Jeffery G. McRae
 REGISTERED ELECTRICAL ENGINEER
 July 20, 2012
 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



TO ACCOMPANY PLANS DATED 4-15-13

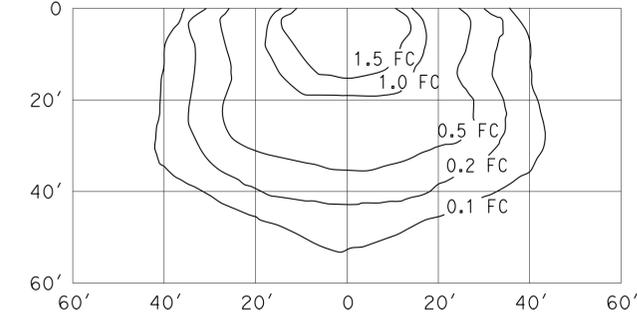
ISOFOOTCANDLE CURVE - MINIMUM



WALL LUMINAIRE

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

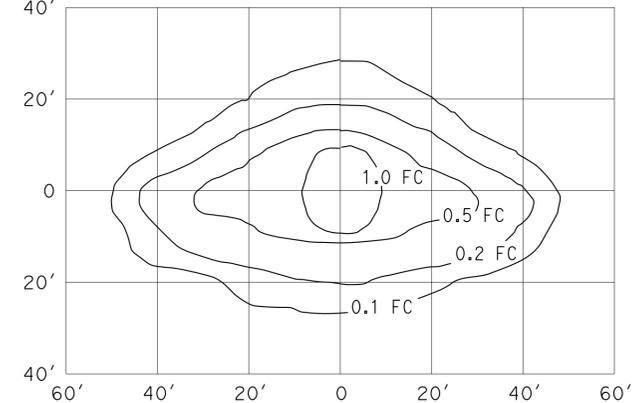
ISOFOOTCANDLE CURVE - MINIMUM



WALL LUMINAIRE

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

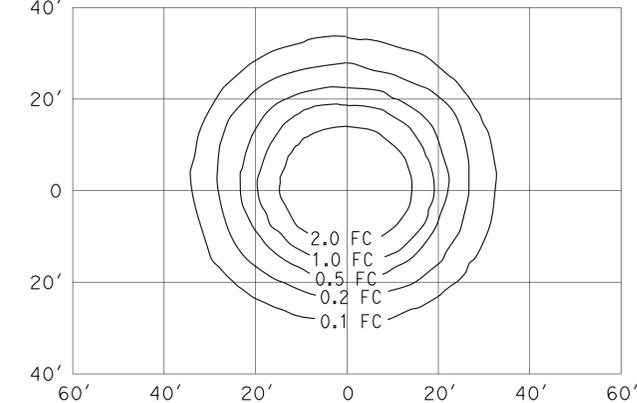
ISOFOOTCANDLE CURVE - MINIMUM



**PENDANT SOFFIT LUMINAIRE
 TYPE III SHORT**

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

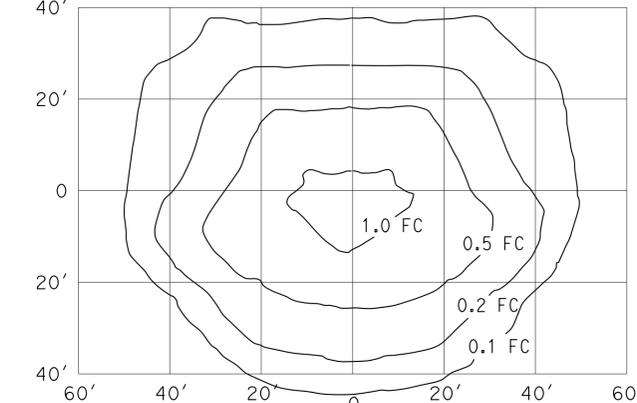
ISOFOOTCANDLE CURVE - MINIMUM



PENDANT SOFFIT LUMINAIRE

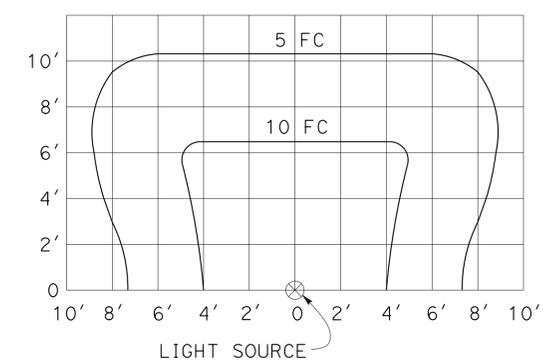
17' Mounting Height
 Lamp operated at 5,800 lm
 70-W high pressure sodium lamp
 ANSI Designation S62

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.

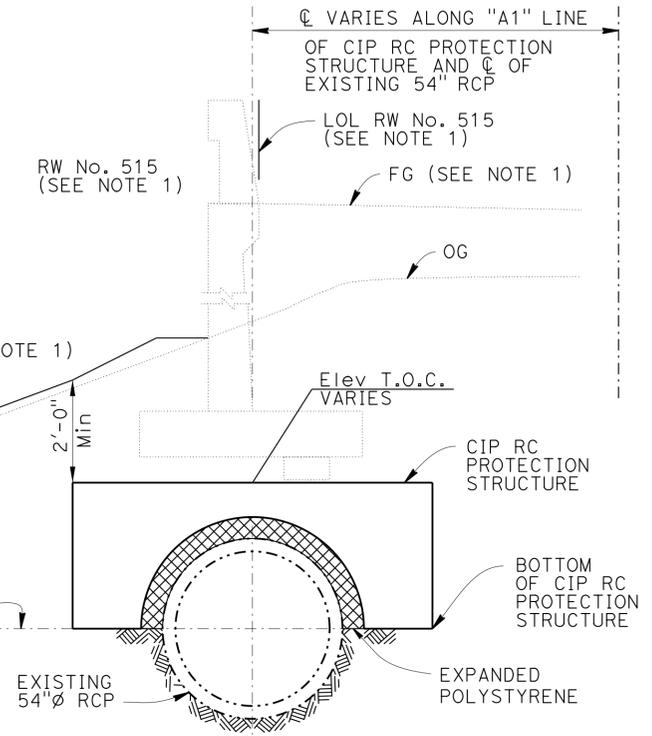
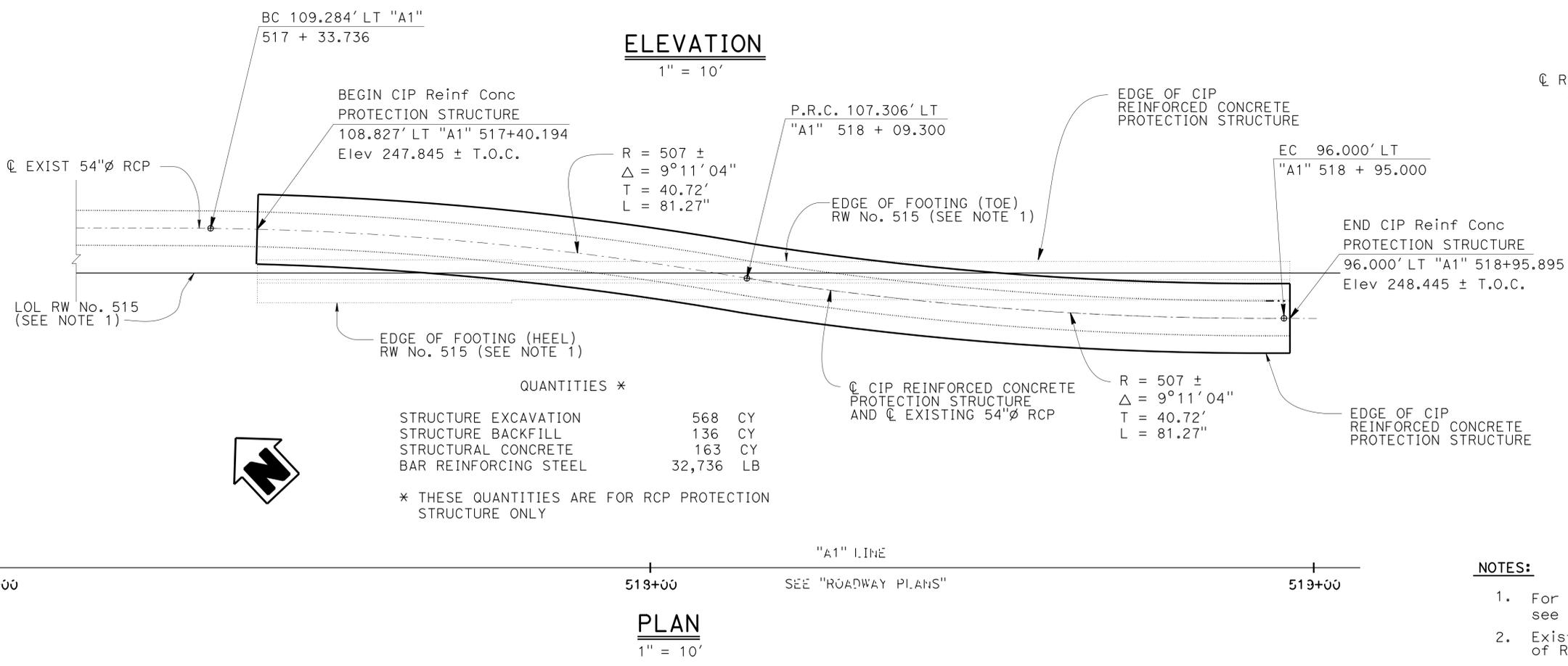
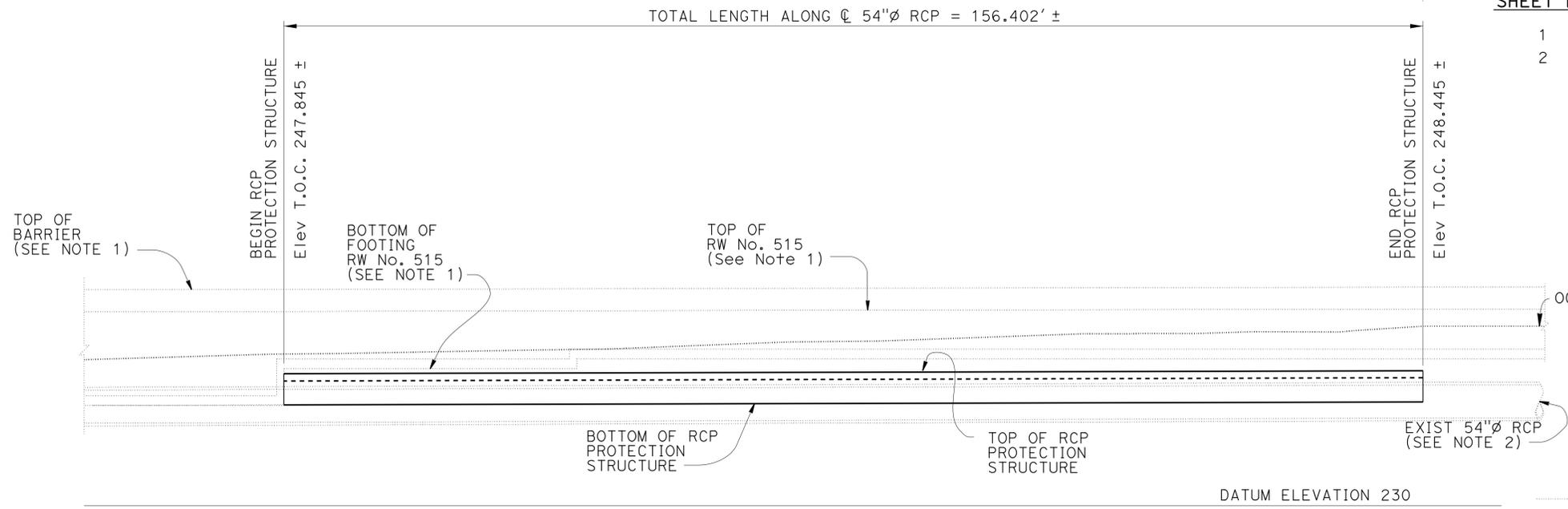
2010 REVISED STANDARD PLAN RSP ES-10B

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	259	357

REGISTERED CIVIL ENGINEER
 DATE 01/03/13
 PLANS APPROVAL DATE 4-15-13
 No. C61373
 Exp. 6-30-2013
 CIVIL
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of scanned copies of this plan sheet.

INDEX TO PLANS

SHEET No.	TITLE
1	GENERAL PLAN
2	EXCAVATION & BACKFILL SECTIONS



TYPICAL SECTION

DESIGN NOTES

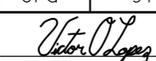
- DESIGN:**
AASHTO LRFD Bridge Design Specifications, 4th edition with California Amendments
- LIVE LOADING:**
HL93 and permit design load.
- SOIL:**
φ = 34°
γ = 120 pcf
- REINFORCED CONCRETE:**
f_y = 60,000 psi
f'_c = 3.6 ksi
n = 8

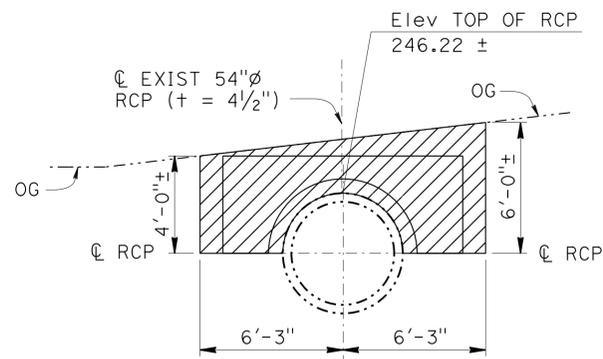
NOTES:

- For retaining wall details and log of test borings, see "ROADWAY PLANS" (RW No. 515).
- Existing 54" RCP requires protection prior to construction of RW515.
- Contractor to verify all field conditions and dimensions.

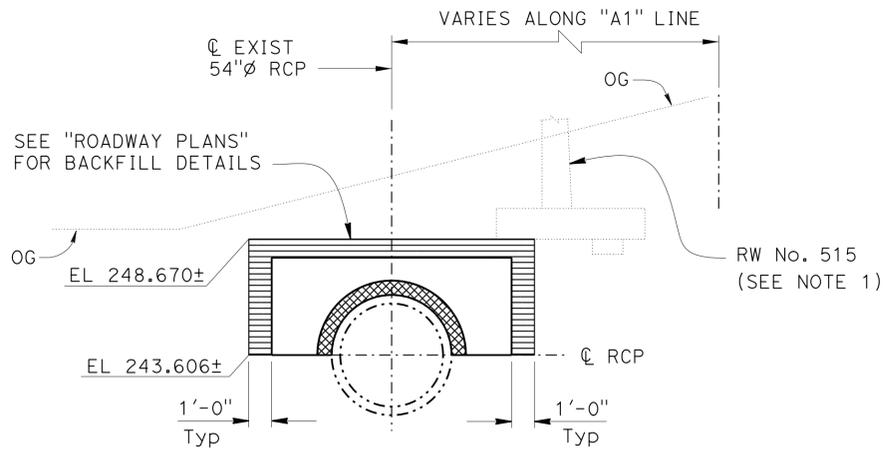
JOEL MAGANA DESIGN ENGINEER	DESIGN	BY V O LOPEZ	CHECKED N KANEPATHIPILLAI	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN SPECIAL DESIGN BRANCH	BRIDGE No.	54" DIAMETER RCP PROTECTION STRUCTURE GENERAL PLAN	
	DETAILS	BY P C WELLS	CHECKED V O LOPEZ	LAYOUT	BY V O LOPEZ			CHECKED N KANEPATHIPILLAI		n/a
	QUANTITIES	BY V O LOPEZ	CHECKED N KANEPATHIPILLAI	SPECIFICATIONS	BY X			CHECKED X		PLANS AND SPECS COMPARED

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS: 0 1 2 3
 UNIT: 3619
 PROJECT NUMBER & PHASE: 1200000078
 CONTRACT NO.: 12-0C5601
 DISREGARD PRINTS BEARING EARLIER REVISION DATES
 REVISION DATES: 1/28/13
 SHEET 1 OF 2

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	260	357
			01/03/13	DATE	
REGISTERED CIVIL ENGINEER			DATE		
4-15-13			PLANS APPROVAL DATE		
No. C61373			Exp. 6-30-2013		
CIVIL			STATE OF CALIFORNIA		
<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>					



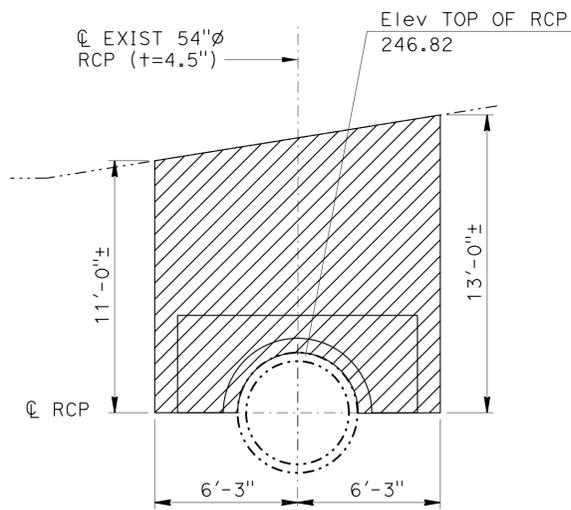
EXCAVATION



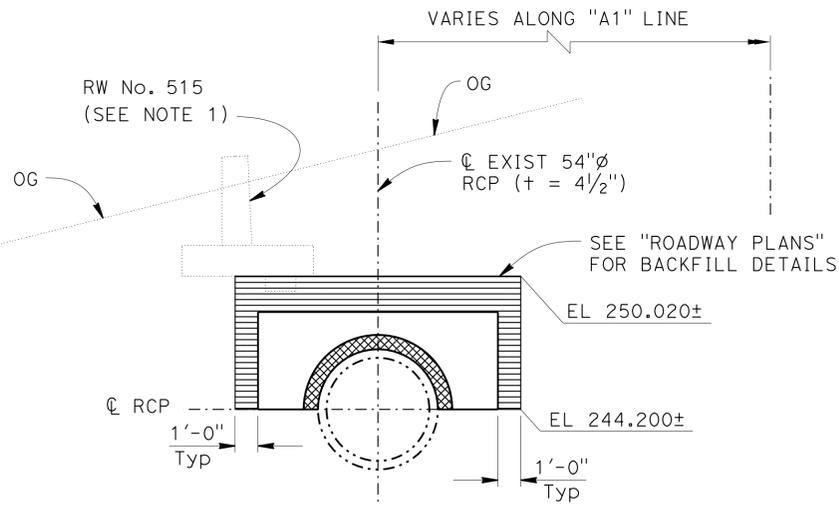
BACKFILL

LIMITS OF STRUCTURE EXCAVATION AND BACKFILL AT BEGINNING OF RCP PROTECTION STRUCTURE

1/4" = 1'-0"



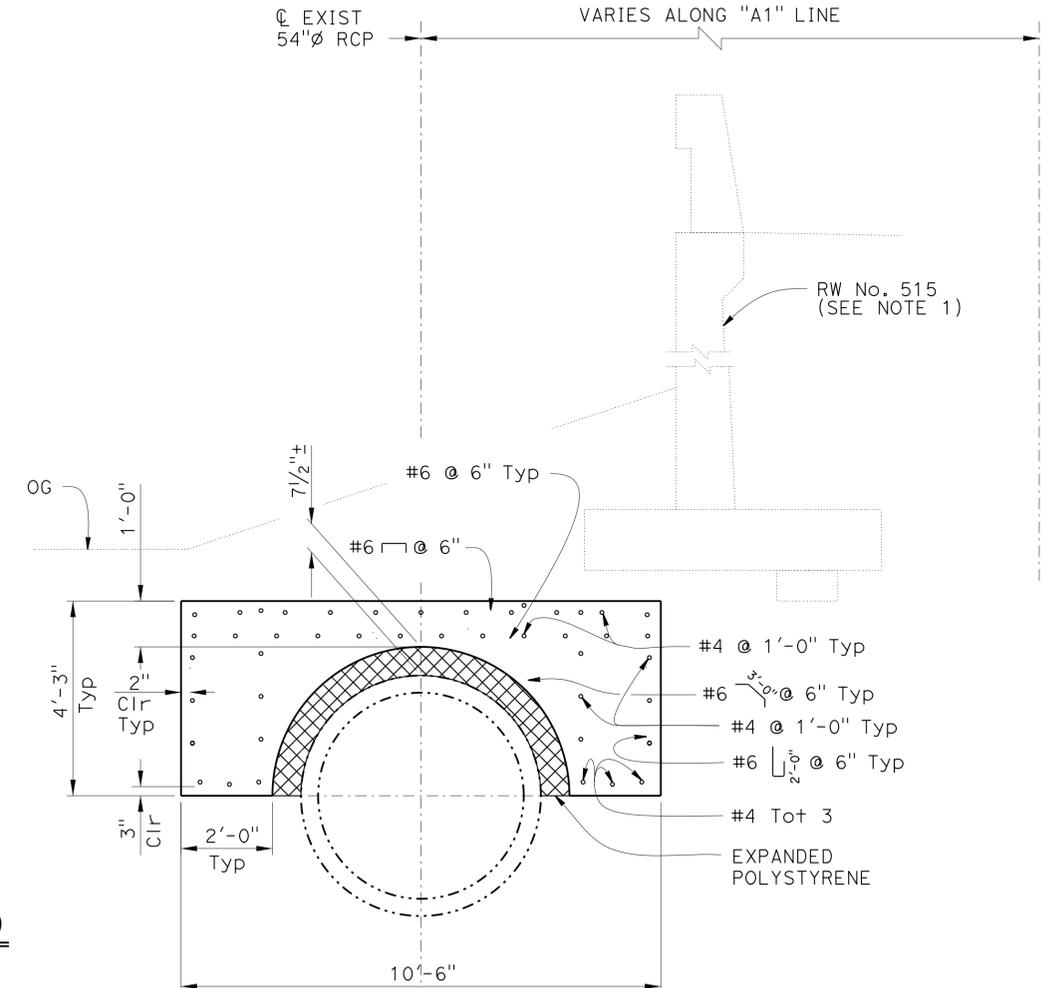
EXCAVATION



BACKFILL

LIMITS OF STRUCTURE EXCAVATION AND BACKFILL AT END OF RCP PROTECTION

1/4" = 1'-0"



STRUCTURAL SECTION

3/8" = 1'-0"

LEGEND

-  STRUCTURE EXCAVATION
-  STRUCTURE BACKFILL
-  EXPANDED POLYSTYRENE

NOTE:
1. For retaining wall details see "ROADWAY PLANS".

DESIGN	BY V O LOPEZ	CHECKED N KANEPATHIPILLAI
DETAILS	BY P C WELLS	CHECKED V O LOPEZ
QUANTITIES	BY V O LOPEZ	CHECKED N KANEPATHIPILLAI

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
SPECIAL DESIGN BRANCH

BRIDGE NO.	N/A
POST MILE	7.96/9.5

**54" DIAMETER RCP PROTECTION STRUCTURE
EXCAVATION & BACKFILL SECTIONS**

REVISION DATES	SHEET	OF
1/28/13	2	2

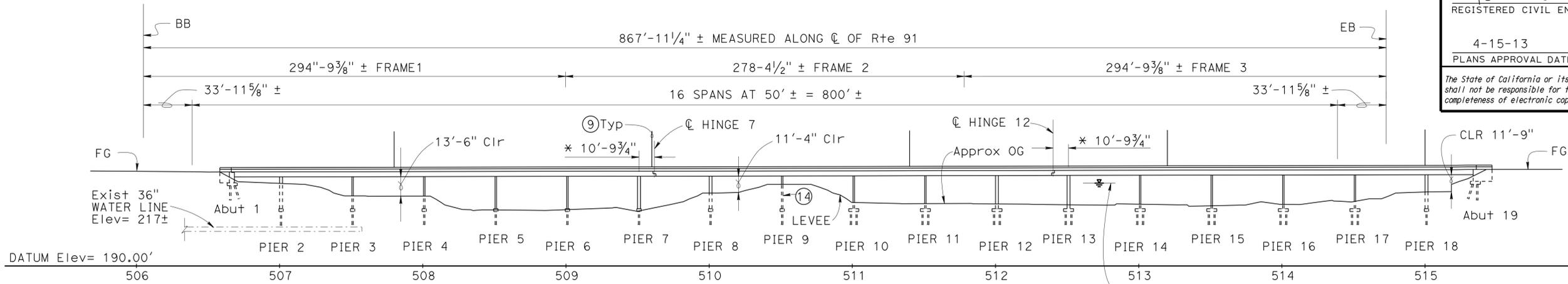
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	261	357

RUI WANG 01-25-13
REGISTERED CIVIL ENGINEER DATE

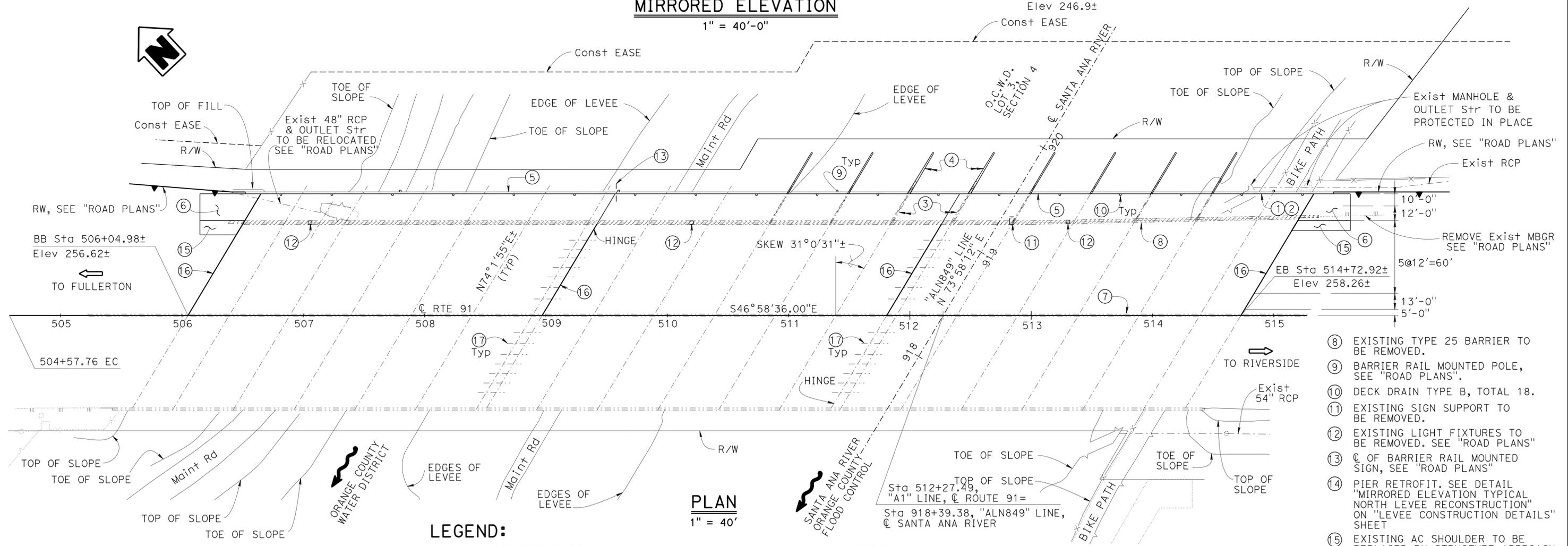
4-15-13
PLANS APPROVAL DATE

RUI WANG
No. C52910
Exp. 12/31/14
CIVIL
STATE OF CALIFORNIA

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MIRRORED ELEVATION
1" = 40'-0"



PLAN
1" = 40'

- LEGEND:**
- NEW STRUCTURE
 - - - EXISTING STRUCTURE
 - ▨ BRIDGE REMOVAL PORTION
 - DIRECTION OF TRAFFIC FLOW
 - * MEASURED PARALLEL TO C OF Rte 91

NOTES:

- ① PAINT "BR. NO. 55-0106".
- ② PAINT "SANTA ANA RIVER BRIDGE".
- ③ EXISTING DEBRIS PIERS TO BE DEMOLISHED.
- ④ NEW DEBRIS PIERS.
- ⑤ TYPE 736 BARRIER.
- ⑥ STRUCTURE APPROACH TYPE N(30S).
- ⑦ EXISTING TYPE 50A BARRIER.
- ⑧ EXISTING TYPE 25 BARRIER TO BE REMOVED.
- ⑨ BARRIER RAIL MOUNTED POLE, SEE "ROAD PLANS".
- ⑩ DECK DRAIN TYPE B, TOTAL 18.
- ⑪ EXISTING SIGN SUPPORT TO BE REMOVED.
- ⑫ EXISTING LIGHT FIXTURES TO BE REMOVED. SEE "ROAD PLANS"
- ⑬ C OF BARRIER RAIL MOUNTED SIGN, SEE "ROAD PLANS"
- ⑭ PIER RETROFIT. SEE DETAIL "MIRRORED ELEVATION TYPICAL NORTH LEVEE RECONSTRUCTION" ON "LEVEE CONSTRUCTION DETAILS" SHEET
- ⑮ EXISTING AC SHOULDER TO BE REPLACED BY STRUCTURE APPROACH TYPE R(30S)
- ⑯ CLEAN EXPANSION JOINT AND REPLACE EXISTING JOINT SEALS
- ⑰ SEISMIC RETROFIT CABLE RESTRAINERS FOR EXIST STRUCTURE

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

BARTT GUNTER DESIGN ENGINEER	DESIGN	BY RUI WANG	CHECKED TRACY SANDERSON	LOAD & RESISTANCE FACTOR DESIGN	LIVE LOADING: HL93 W/"LOW-BOY"; PERMIT DESIGN VEHICLE	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 19	BRIDGE NO.	55-0106R/L	SANTA ANA RIVER BRIDGE (WIDEN)		
	DETAILS	BY A. ONG/H. INIGUEZ	CHECKED TRACY SANDERSON	LAYOUT	BY RUI WANG			CHECKED TRACY SANDERSON	POST MILE		8.57	GENERAL PLAN NO. 1
	QUANTITIES	BY B. VO/D. AZZAM	CHECKED TRACY SANDERSON	SPECIFICATIONS	BY THERESA NEDWICK			CHECKED THERESA NEDWICK	PLANS AND SPECS COMPARED		THERESA NEDWICK	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	262	357

RUI WANG 01-25-13
 REGISTERED CIVIL ENGINEER DATE

4-15-13
 PLANS APPROVAL DATE

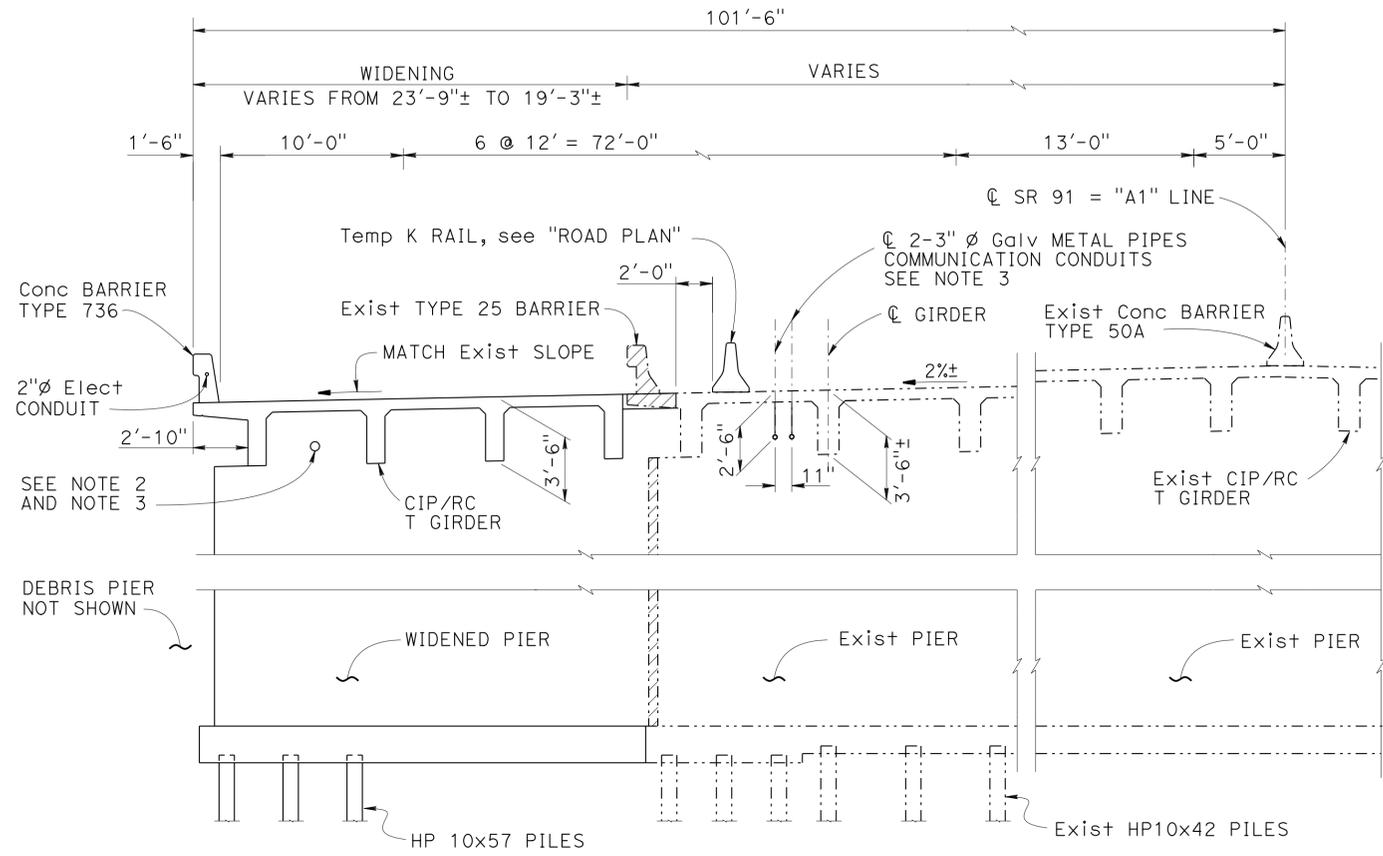
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

GENERAL NOTES LOAD AND RESISTANCE FACTOR DESIGN

DESIGN: AASHTO LRFD BRIDGE SPECIFICATIONS 4TH EDITION AND CALTRANS AMENDMENTS DATED NOVEMBER 2011.
SEISMIC DESIGN: CALTRANS SEISMIC DESIGN CRITERIA (SDC). VERSION 1.6 NOVEMBER 2010
DEAD LOAD: Includes 35 psf for future wearing surface
LIVE LOADING: HL-93 and P15 Permit design load.
SEISMIC LOADING: Soil profile: Shear Wave Velocity $V_{s30} = 1115$ ft/s. Peak Ground Acceleration = 0.6g. (See Acceleration Response Spectrum Curve on "INDEX TO PLANS" sheet).
REINFORCED CONCRETE: $f_y = 60$ ksi
 $f'_c =$ See "Concrete Strength and Type Limits" on "INDEX TO PLANS" sheet.
 $n = 8$

QUANTITIES

RAPID SETTING CONCRETE (PATCH)	2	CF
REMOVE UNSOUND CONCRETE	2	CF
CORE CONCRETE (4 1/2")	90	LF
CORE CONCRETE (6")	147	LF
BRIDGE REMOVAL (PORTION), LOCATION B	LUMP	SUM
REMOVE OBSTRUCTION (ABANDONED WATER PIPE)	50	LF
STRUCTURE EXCAVATION (BRIDGE)	73	CY
STRUCTURE EXCAVATION (TYPE A), LOCATION A	1,858	CY
STRUCTURE EXCAVATION (TYPE A), LOCATION B	251	CY
STRUCTURE EXCAVATION (TYPE A), LOCATION LEEVE	864	CY
STRUCTURE EXCAVATION (TYPE Y-1) (AERIALY DEPOSITED LEAD)	52	CY
STRUCTURE BACKFILL (BRIDGE)	215	CY
STRUCTURE BACKFILL (BRIDGE) LOCATION LEEVE	506	CY
FURNISH STEEL PILING (HP 10 X 57)	10,182	LF
DRIVE STEEL PILE (HP 10 X 57)	222	EA
SEAL COURSE CONCRETE	468	CY
STRUCTURAL CONCRETE, BRIDGE FOOTING	374	CY
STRUCTURAL CONCRETE, BRIDGE	1,107	CY
AGGREGATE BASE (APPROACH SLAB)	3	CY
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE N)	48	CY
STRUCTURAL CONCRETE, APPROACH SLAB (TYPE R)	27	CY
DIAPHRAGM BOLSTER	56	EA
DRILL AND BOND DOWEL	837	LF
CLEAN EXPANSION JOINT	393	LF
JOINT SEAL (MR 2")	468	LF
BAR REINFORCING STEEL (BRIDGE)	831,041	LB
6" WELDED STEEL PIPE CASING (BRIDGE)	77	LF
DERRICK STONE (PIER NOSE)	272	CY
BEDDING STONE (PIER NOSE)	105	CY
RECONSTRUCT FACING STONE	63	CY
GROUTED RIPRAP	16	CY
MISCELLANEOUS METAL (RESTRAINER - BAR TYPE)	896	LB
MISCELLANEOUS METAL (RESTRAINER - CABLE TYPE)	15,425	LB
MISCELLANEOUS METAL (BRIDGE)	1,076	LB
BRIDGE DECK DRAINAGE SYSTEM	161	LF
CONCRETE BARRIER (TYPE 736)	884	LF
COMMUNICATION CONDUIT (BRIDGE) (MODIFIED)	1,736	LF



TYPICAL SECTION
1" = 5'-0"

NOTES:

- NOT ALL PILES SHOWN.
- FUTURE UTILITY OPENING
- For locations, see "TYPICAL SECTION" sheet.

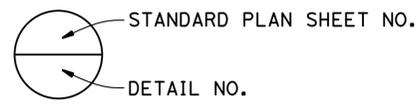
LEGEND:

- NEW STRUCTURE
- EXISTING STRUCTURE
- BRIDGE REMOVAL PORTION

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

STANDARD PLANS DATED 2010

A10A	ABBREVIATIONS (SHEET 1 OF 2)
A10B	ABBREVIATIONS (SHEET 2 OF 2)
A10C	LINES AND SYMBOLS (SHEET 1 OF 3)
A10D	LINES AND SYMBOLS (SHEET 2 OF 3)
A10E	LINES AND SYMBOLS (SHEET 3 OF 3)
A10F	LEGEND-SOIL (SHEET 1 OF 2)
A10G	LEGEND-SOIL (SHEET 2 OF 2)
A10H	LEGEND-ROCK
A62C	LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL-BRIDGE
B0-1	BRIDGE DETAILS
B0-3	BRIDGE DETAILS
B0-5	BRIDGE DETAILS
B0-13	BRIDGE DETAILS
B6-1	T-BEAM DETAILS
B6-10	UTILITY OPENINGS, T-BEAM
B6-21	JOINT SEALS (MAXIMUM MOVEMENT RATING = 2")
B7-5	DECK DRAINS
B11-56	CONCRETE BARRIER TYPE 736
B14-3	COMMUNICATION AND SPRINKLER CONTROL CONDUITS (CONDUIT LESS THAN 4")
ES-6A	ELECTRICAL SYSTEMS (LIGHTING STANDARD TYPES 15 AND 21)
ES-6B	ELECTRICAL SYSTEMS (ELECTROLIER ANCHORAGE AND GROUTING FOR TYPE 15 AND TYPE 21 BARRIER RAIL MOUNTED)
ES-9A	ELECTRICAL SYSTEMS (PULL BOX INSTALLATION)
ES-9B	ELECTRICAL SYSTEMS (CONDUIT RISER AND EXPANSION FITTING, STRUCTURE INSTALLATIONS)
ES-9C	ELECTRICAL SYSTEMS (STRUCTURE PULL BOX)
ES-9D	ELECTRICAL SYSTEMS (STRUCTURE PULL BOX INSTALLATION)
T3A	TEMPORARY RAILING (TYPE K)



<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">DESIGN</td> <td style="width: 20%;">BY RUI WANG</td> <td style="width: 20%;">CHECKED TRACY SANDERSON</td> </tr> <tr> <td>DETAILS</td> <td>BY A. ONG \ H. MAHBOOBI</td> <td>CHECKED TRACY SANDERSON</td> </tr> <tr> <td>QUANTITIES</td> <td>BY B. VO/D. AZZAM</td> <td>CHECKED TRACY SANDERSON</td> </tr> </table>	DESIGN	BY RUI WANG	CHECKED TRACY SANDERSON	DETAILS	BY A. ONG \ H. MAHBOOBI	CHECKED TRACY SANDERSON	QUANTITIES	BY B. VO/D. AZZAM	CHECKED TRACY SANDERSON	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 19	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>BRIDGE NO.</td> <td>55-0106R/L</td> </tr> <tr> <td>POST MILE</td> <td>8.57</td> </tr> </table>	BRIDGE NO.	55-0106R/L	POST MILE	8.57	SANTA ANA RIVER BRIDGE (WIDEN) GENERAL PLAN NO. 2
DESIGN	BY RUI WANG	CHECKED TRACY SANDERSON															
DETAILS	BY A. ONG \ H. MAHBOOBI	CHECKED TRACY SANDERSON															
QUANTITIES	BY B. VO/D. AZZAM	CHECKED TRACY SANDERSON															
BRIDGE NO.	55-0106R/L																
POST MILE	8.57																
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	UNIT: 3621 PROJECT NUMBER & PHASE: 1200000078-1	CONTRACT NO.: 12-0C5601	DISREGARD PRINTS BEARING EARLIER REVISION DATES												
REVISION DATES: 11/09/11, 03/09/13, 04/09/13					SHEET 2 OF 45												

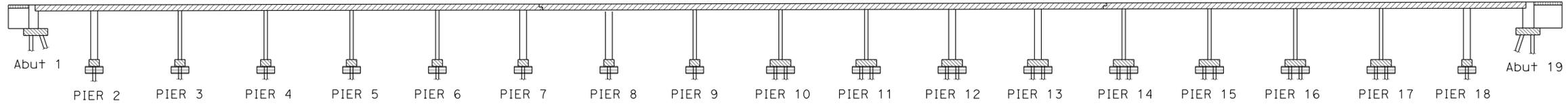
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	263	357

Rui Wang 01-25-13
REGISTERED CIVIL ENGINEER DATE

4-15-13
PLANS APPROVAL DATE

RUI WANG
No. C52910
Exp. 12/31/14
CIVIL
STATE OF CALIFORNIA

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CONCRETE STRENGTH AND TYPE LIMITS

No Scale

- STRUCTURAL CONCRETE, BRIDGE
- STRUCTURAL CONCRETE, BRIDGE ($f'_c = 4000$ psi @ 28 days)
- STRUCTURAL CONCRETE, BRIDGE FOOTING
- STRUCTURAL CONCRETE, APPROACH SLABS
- SEAL COURSE

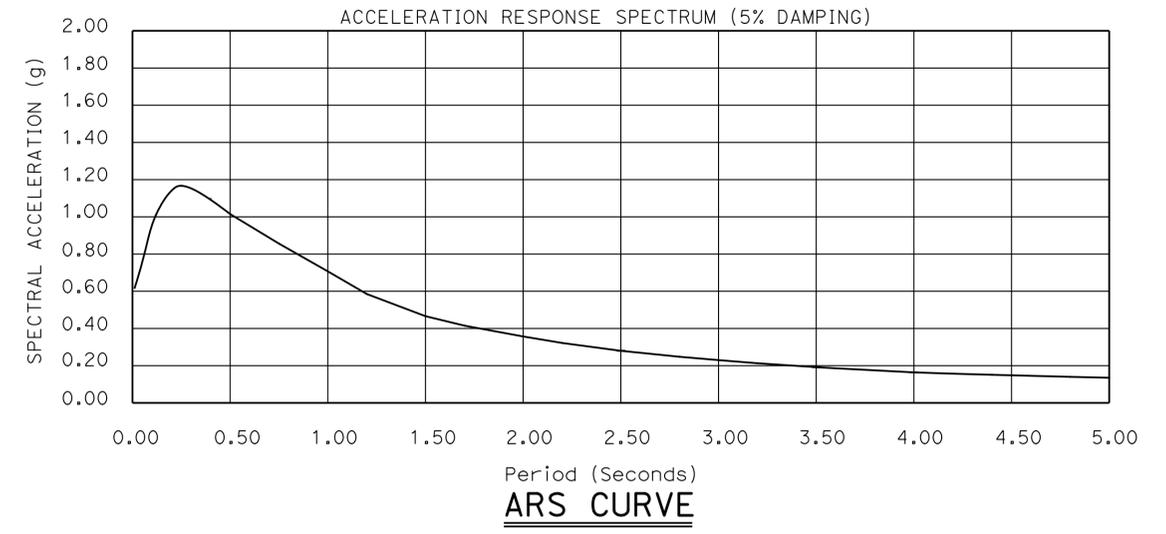
NOTES:

- Design tip elevations are controlled by:
 - Compression (Strength Limit)
 - Tension Strength Limit
 - Compression (Extreme Event)
 - Tension (Extreme Event)
 - Settlement, (d) Lateral Load
- The specified tip elevation shall not be raised above the design tip elevation for tension, lateral, and tolerable settlement.
- The nominal driving resistance required is equal to the nominal resistance needed to support the factored load plus driving resistance from the unsuitable penetrated soil layers (very soft, liquefiable, scourable, etc), if any, which do not contribute to the design resistance.

INDEX TO PLANS

NO.	SHEET NAME	NO.	SHEET NAME
1	GENERAL PLAN NO. 1	22	TYPICAL SECTION
2	GENERAL PLAN NO. 2	23	GIRDER LAYOUT NO.1
3	INDEX TO PLANS	24	GIRDER LAYOUT NO.2
4	FOUNDATION PLAN NO. 1	25	GIRDER LAYOUT NO.3
5	FOUNDATION PLAN NO. 2	26	GIRDER DETAILS
6	REMOVAL DETAILS NO. 1	27	GIRDER TOP REINFORCEMENT
7	REMOVAL DETAILS NO. 2	28	GIRDER BOTTOM REINFORCEMENT
8	ABUTMENT 1 LAYOUT	29	HINGE DETAILS NO. 1
9	ABUTMENT 19 LAYOUT	30	HINGE DETAILS NO. 2
10	ABUTMENT DETAILS NO. 1	31	HINGE DETAILS NO. 3
11	ABUTMENT DETAILS NO. 2	32	MISCELLANEOUS DETAILS
12	ABUTMENT DETAILS NO. 3	33	HINGE RESTRAINER
13	ABUTMENT DETAILS NO. 4	34	HINGE RESTRAINER ADJUSTMENT HARDWARE
14	PIER LAYOUT AT PIERS 2, 4 TO 9 AND 18	35	STRUCTURE APPROACH TYPE N(30S)
15	PIER 3 LAYOUT	36	STRUCTURE APPROACH TYPE R(30S)
16	PIER LAYOUT AT PIERS 10 TO 17	37	STRUCTURE APPROACH DRAINAGE DETAIL
17	PIER DETAILS NO. 1	38	LOG OF TEST BORINGS NO. 1 OF 8
18	PIER DETAILS NO. 2	39	LOG OF TEST BORINGS NO. 2 OF 8
19	PIER DETAILS NO. 3	40	LOG OF TEST BORINGS NO. 3 OF 8
20	DEBRIS PIER DETAILS, PIER NO. 10 TO 17	41	LOG OF TEST BORINGS NO. 4 OF 8
21	LEVEE CONSTRUCTION DETAILS	42	LOG OF TEST BORINGS NO. 5 OF 8
		43	LOG OF TEST BORINGS NO. 6 OF 8
		44	LOG OF TEST BORINGS NO. 7 OF 8
		45	LOG OF TEST BORINGS NO. 8 OF 8

LOCATION	PILE TYPE (625 nK)	DESIGN LOADING	NOMINAL RESISTANCE (kips)		PILE CUT-OFF ELEVATION	DESIGN PILE TIP ELEVATION	SPECIFIED PILE TIP ELEVATION
			COMPRESSION	TENSION			
Abut 1	HP 10X57	125	180	N/A	245.56	198	198
PIER 2	HP 10X57	162	240	N/A	228.31	183	183
PIER 3	HP 10X57	155	230	N/A	227.81	185	185
PIER 4	HP 10X57	133	190	N/A	228.31	189	189
PIER 5	HP 10X57	125	180	N/A	228.31	192	192
PIER 6	HP 10X57	125	180	N/A	228.31	192	192
PIER 7	HP 10X57	141	210	N/A	228.31	188	188
PIER 8	HP 10X57	174	250	N/A	228.31	184	184
PIER 9	HP 10X57	144	210	N/A	228.31	188	188
PIER 10	HP 10X57	100	150	N/A	228.31	192	192
PIER 11	HP 10X57	102	150	N/A	228.31	181	181
PIER 12	HP 10X57	130	190	N/A	228.31	173	173
PIER 13	HP 10X57	117	170	N/A	228.31	183	183
PIER 14	HP 10X57	101	150	N/A	228.31	185	185
PIER 15	HP 10X57	96	140	N/A	228.31	184	184
PIER 16	HP 10X57	119	170	N/A	228.31	174	174
PIER 17	HP 10X57	135	200	N/A	228.31	174	174
PIER 18	HP 10X57	152	220	N/A	228.31	173	173
Abut 19	HP 10X57	125	180	N/A	246.56	191	191



STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	DESIGN	BY RUI WANG	CHECKED TRACY SANDERSON	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 19	BRIDGE NO.	SANTA ANA RIVER BRIDGE (WIDEN)		
	DETAILS	BY H. MAHBOOBI/H. INIGUEZ	CHECKED TRACY SANDERSON			55-0106R/L			
	QUANTITIES	BY B. VO/D. AZZAM	CHECKED TRACY SANDERSON			POST MILE 8.57			
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS					UNIT: 3621	PROJECT NUMBER & PHASE: 1200000078-1	CONTRACT NO.: 12-0C5601	REVISION DATES	SHEET 3 OF 45

DISREGARD PRINTS BEARING EARLIER REVISION DATES

FILE => 55-0106-b-1tp.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Oran	91	8.1/9.3,10.1	264	357

REGISTERED CIVIL ENGINEER		DATE
RUI WANG		01-25-13
PLANS APPROVAL DATE		
4-15-13		

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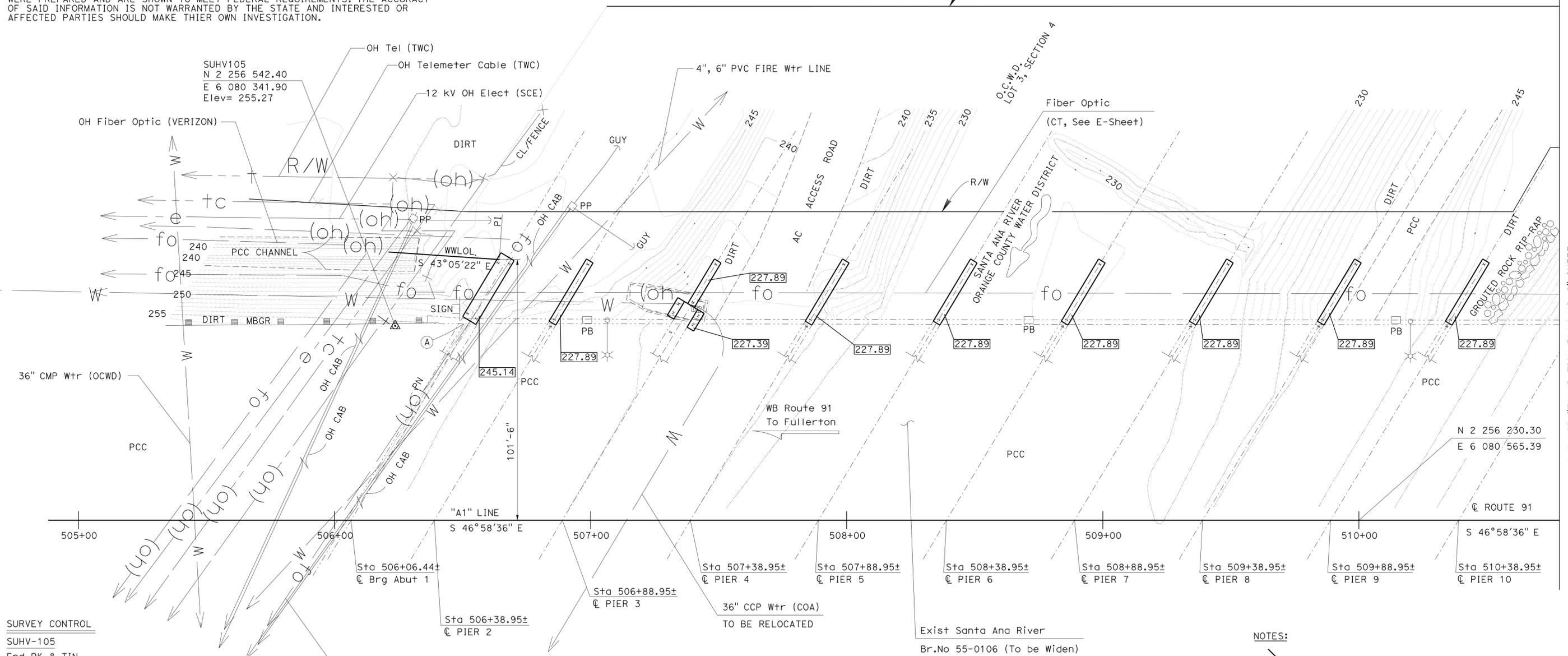
HYDROLOGIC SUMMARY		
DRAINAGE AREA: 2,322 SQUARE MILES		
	DESIGN FLOOD	OVERTOPPING FLOOD
FLOWRATE CONDITION	USACE DESIGN	>> 500-Yr
DISCHARGE	38,000 cfs	-
WATER SURFACE ELEVATION AT BRIDGE	246.9 ft	-

BRIDGE LOCATION (55-0106)

(A) 76.54 Ft Lt @ Rte.91, "A1" Line, Sta 506+50.49, Elev= 255.12±

(B) 80.67 Ft Lt @ Rte.91, "A1" Line, Sta 515+22.13, Elev= 256.84± (See Sheet 2)

FLOOD PLAIN DATA ARE BASED UPON INFORMATION AVAILABLE WHEN THE PLANS WERE PREPARED AND ARE SHOWN TO MEET FEDERAL REQUIREMENTS. THE ACCURACY OF SAID INFORMATION IS NOT WARRANTED BY THE STATE AND INTERESTED OR AFFECTED PARTIES SHOULD MAKE THEIR OWN INVESTIGATION.



SURVEY CONTROL

SUHV-105
 Fnd PK & TIN
 75.68 Lt @ Route 91
 Sta 506+23.66
 N 2 256 542.40
 E 6 080 341.90
 Elev= 255.27

SUHV-104 (Shown On Sheet 2)
 Fnd Scribe X
 175.54 Lt @ Route 91
 Sta 515+42.47
 N 2 255 988.50
 E 6 081 081.75
 Elev= 243.98

- NOTES:**
- INDICATES BOTTOM OF FOOTING ELEVATION.
 - EXISTING CONTOURS SHOWN, FOR FINAL CONTOURS, SEE ROAD PLANS.
 - FOR FOOTING DIMENSIONS AND PILE LAYOUT, SEE "ABUTMENT 1 LAYOUT", "ABUTMENT 19 LAYOUT", "PIER LAYOUT AT PIERS 2, 4 TO 9 AND 18", "PIER LAYOUT AT PIERS 10 TO 17", AND "PIER DETAILS NO. 2" SHEETS.
 - UNDERGROUND UTILITIES AS SHOWN ARE APPROXIMATE, SEE ROAD PLANS FOR DETAILS.
 - SEE "INDEX TO PLANS" SHEET FOR PILE DATA TABLE.
 - RW21 FOOTING NOT SHOWN.

PRELIMINARY INVESTIGATION SECTION				DESIGN BY RUI WANG	CHECKED TRACY SANDERSON	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 19	BRIDGE NO. 55-0106R/L	SANTA ANA RIVER BRIDGE (WIDEN) FOUNDATION PLAN NO. 1
SCALE 1"=20'	VERT.DATUM NAVD88	PHOTOGRAMMETRY AS OF: X	DETAILS BY HENGAMEH MAHBOOBI	CHECKED TRACY SANDERSON	POST MILE 8.57				
ALIGNMENT TIES Dist. Traverse Sheet	DRAFTED BY V.PHAM 12/2011	CHECKED BY S.ALIVIO 12/2011	QUANTITIES BY B. VO / D. AZZAM	CHECKED TRACY SANDERSON					

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

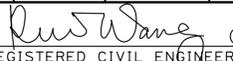
ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

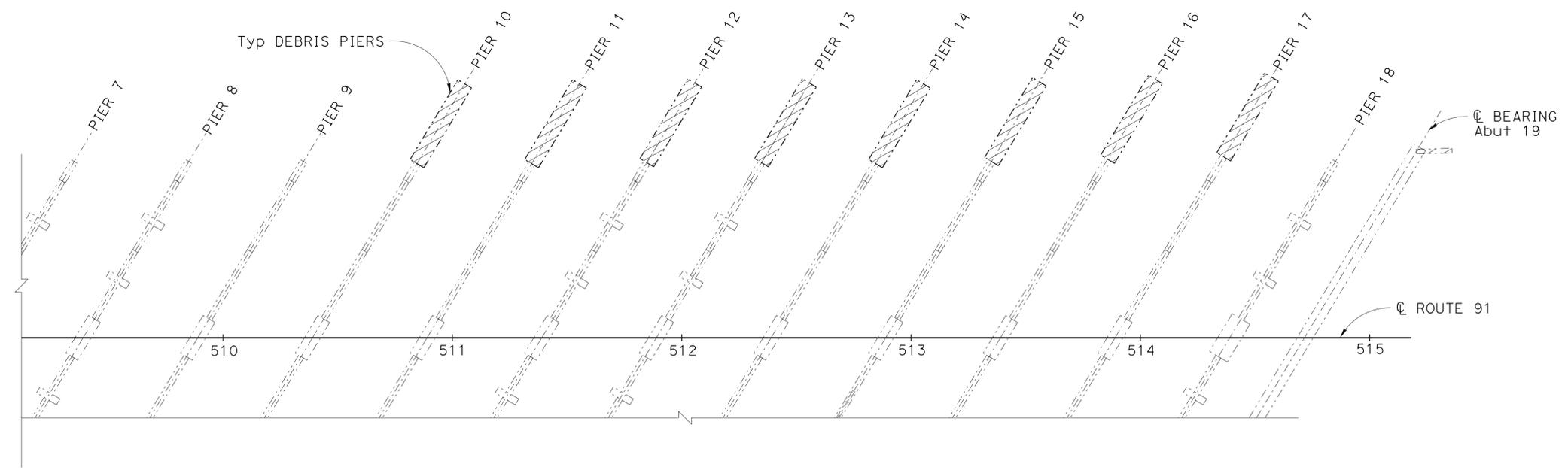
UNIT: 3647 PROJECT NUMBER & PHASE: 1200000078 1 CONTRACT NO.: 12-0C5601

DISREGARD PRINTS BEARING EARLIER REVISION DATES

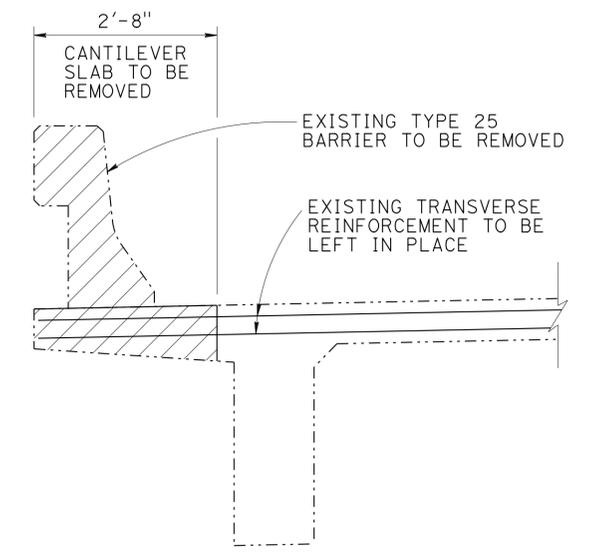
REVISION DATES	SHEET	OF
12/16/11	4	45

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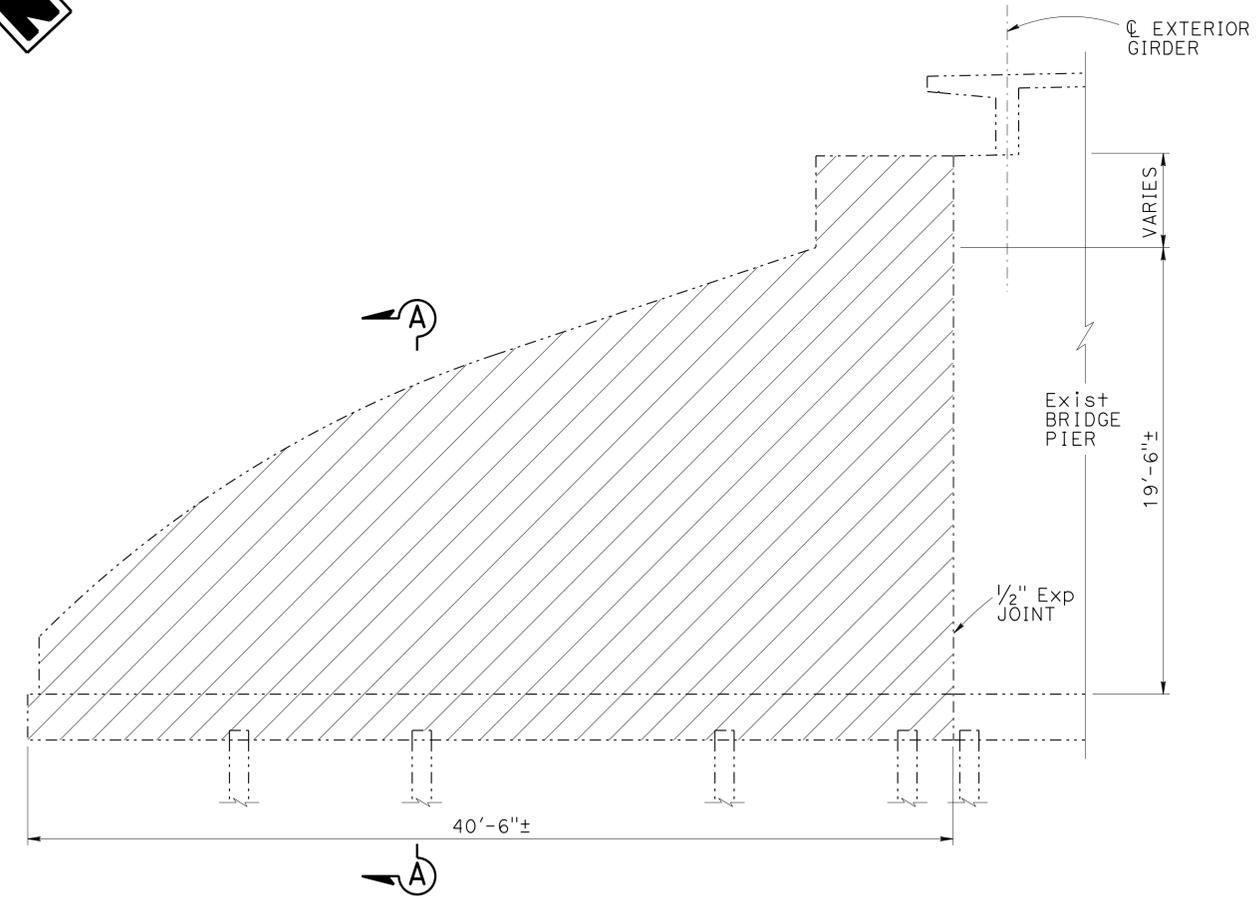
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	266	357
			01-25-13		
REGISTERED CIVIL ENGINEER			DATE		
4-15-13			PLANS APPROVAL DATE		
					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



EXISTING DEBRIS WALL REMOVAL
1" = 30'



CONCRETE BARRIER AND CANTILEVER SLAB REMOVAL
3/4" = 1'-0"

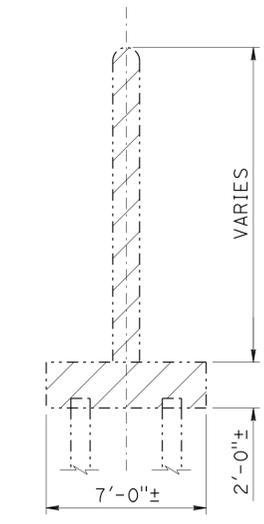


EXISTING DEBRIS WALL ELEVATION
1/4" = 1'-0"

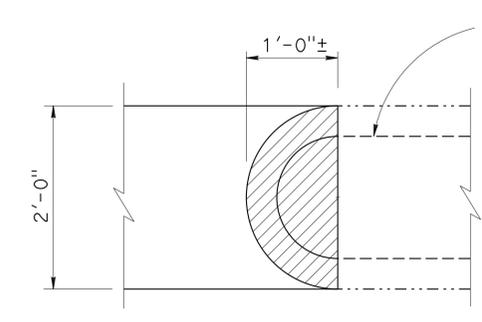
LEGEND

- INDICATES EXISTING STRUCTURE
- ▨ BRIDGE REMOVAL PORTION

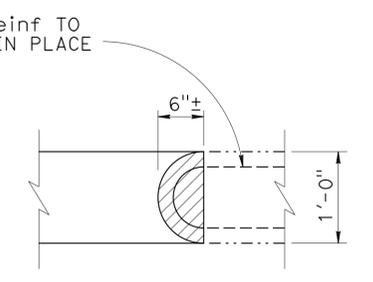
NOTE: ALL EXISTING PILES WILL BE PROTECTED IN PLACE



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



PIER NOSE REMOVAL
1" = 1'-0"
PIERS 2,7,8, 18



PIER NOSE REMOVAL
1" = 1'-0"
PIERS 3 TO 6, 9

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

DESIGN BY RUI WANG CHECKED TRACY SANDERSON DETAILS BY HENGAMEH MAHBOOBI CHECKED TRACY SANDERSON QUANTITIES BY BRIAN VO / DIYA AZZAM CHECKED TRACY SANDERSON	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 19	BRIDGE NO. 55-0106R/L POST MILE 8.57	SANTA ANA RIVER BRIDGE (WIDEN) REMOVAL DETAILS NO. 1
	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	UNIT: 3621 PROJECT NUMBER & PHASE: 1200000078 1 CONTRACT NO.: 12-0C5601	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 04/05/12 01/28/13 01/30/13 SHEET 6 OF 45
	STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	FILE => 55-0106-e-rp101.dgn		

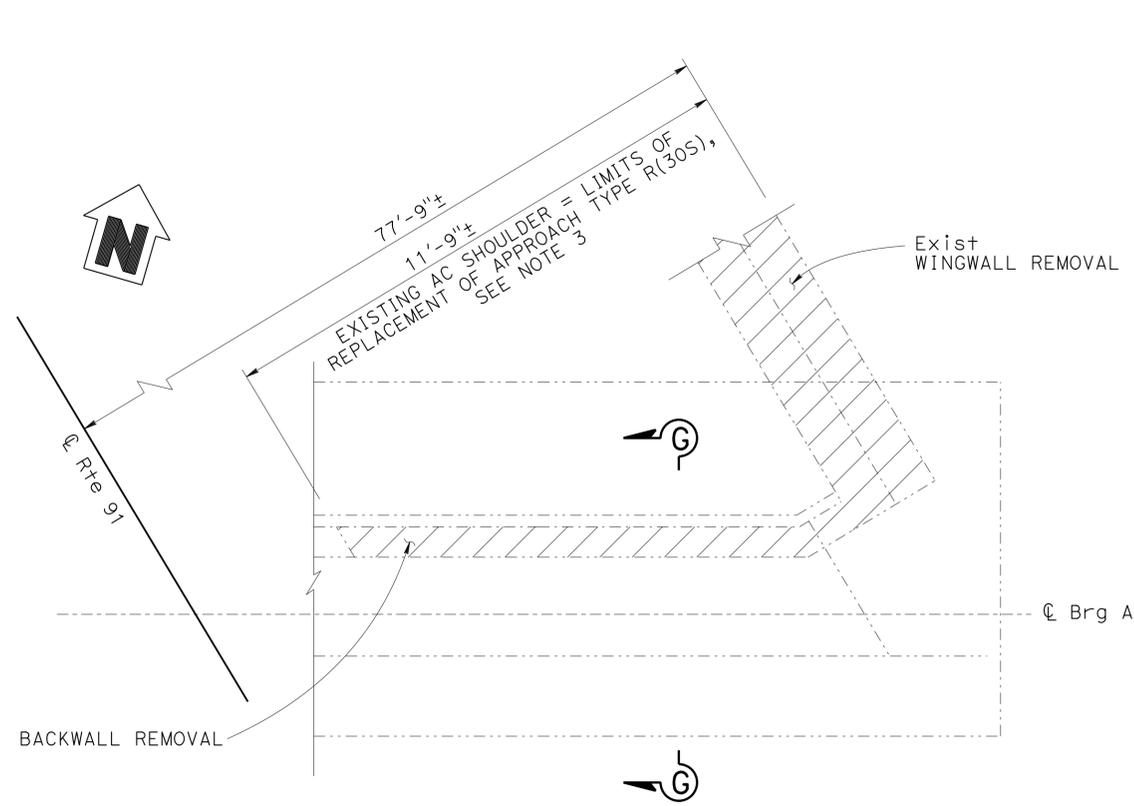
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	267	357

RUI WANG 01-25-13
REGISTERED CIVIL ENGINEER DATE

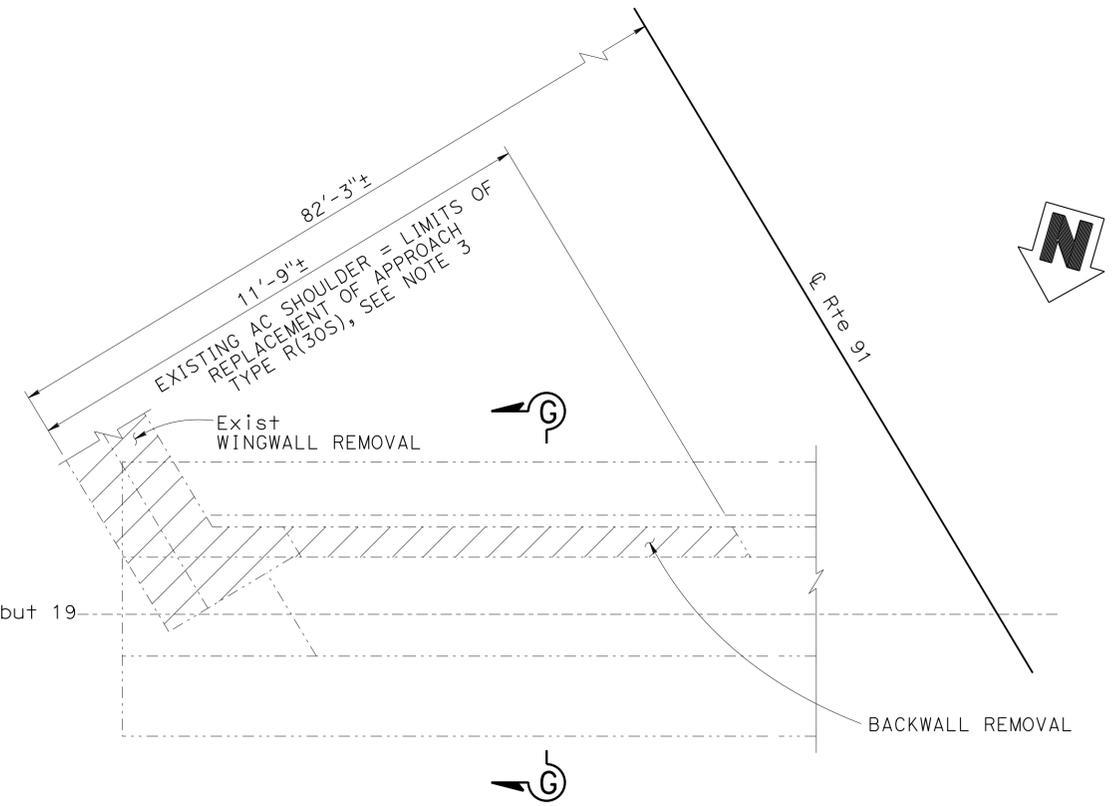
4-15-13
PLANS APPROVAL DATE

RUI WANG
No. C52910
Exp. 12/31/14
CIVIL
STATE OF CALIFORNIA

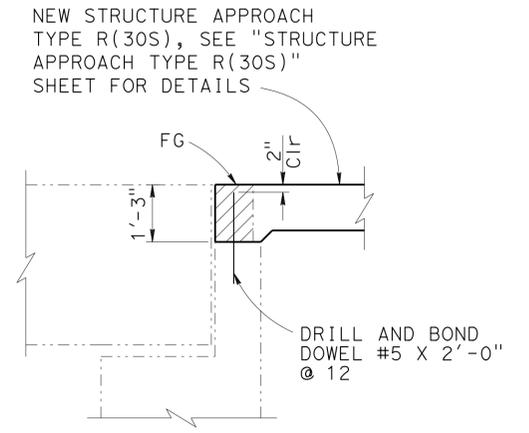
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



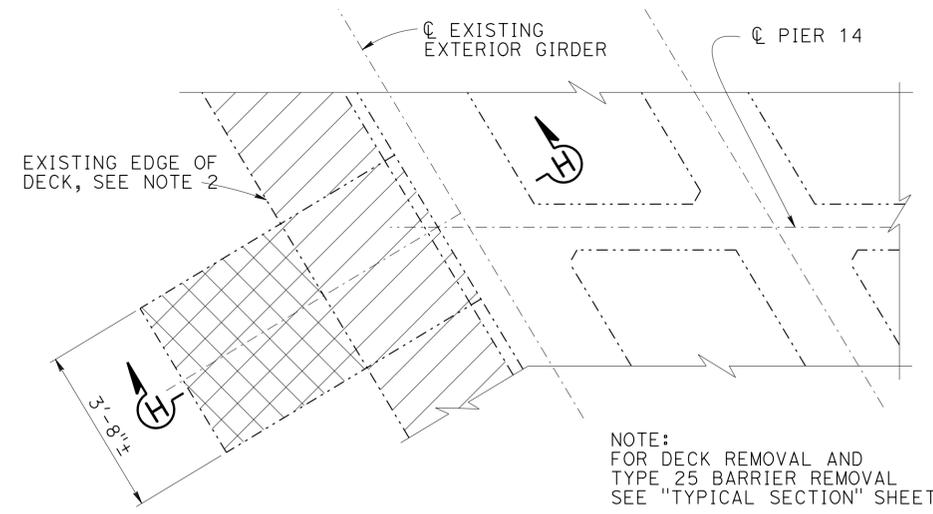
**WINGWALL AND BACKWALL
REMOVAL PLAN AT ABUTMENT 1**
1/2" = 1'-0"



**WINGWALL AND BACKWALL
REMOVAL PLAN AT ABUTMENT 19**
1/2" = 1'-0"

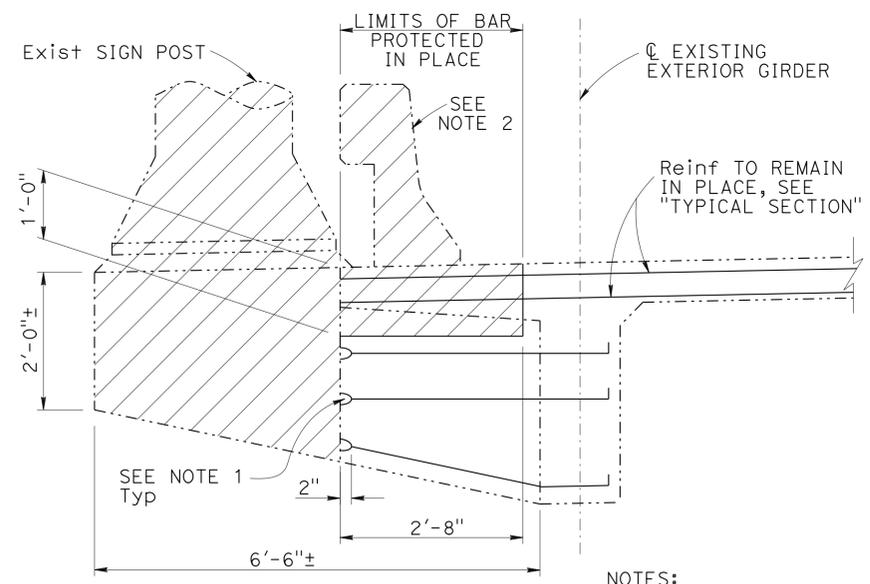


SECTION G-G
1/2" = 1'-0"



**EXISTING SIGN SUPPORT AND
POST REMOVAL @ PIER 14 ONLY**
1/2" = 1'-0"

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

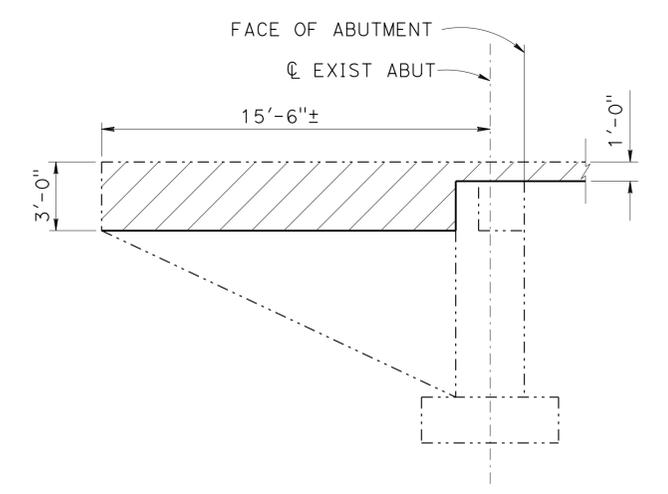


SECTION H-H
3/4" = 1'-0"

- NOTES:
- CUT BAR INTO RECESS. APPLY AN ORDINARY SURFACE FINISH.
 - FOR CONCRETE BARRIER AND OVERHANG REMOVAL, SEE "REMOVAL DETAILS NO. 1" SHEET.
 - POUR APPROACH SLAB N(30S) AND R(30S) MONOLITHICALLY

LEGEND

BRIDGE REMOVAL PORTION



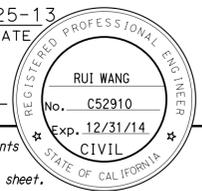
WINGWALL REMOVAL
NO SCALE

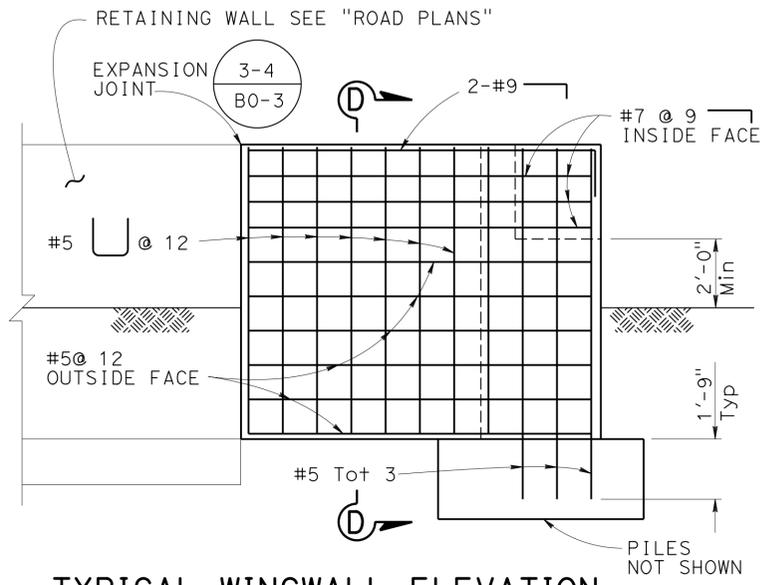
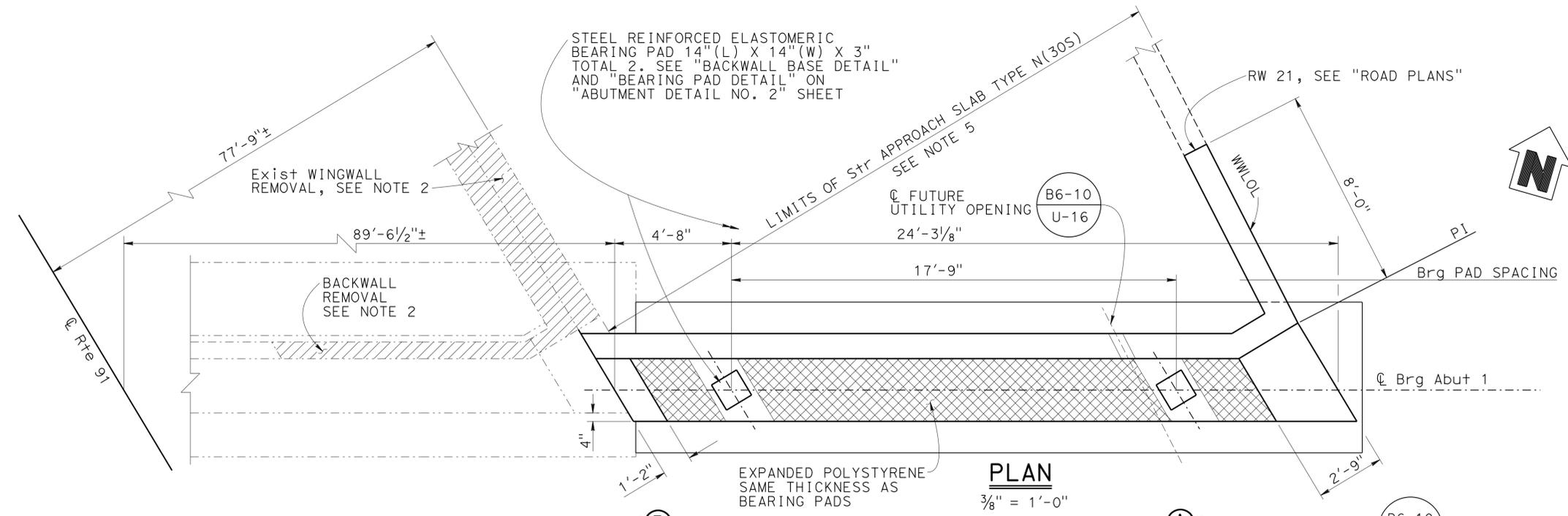
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	DESIGN	BY RUI WANG	CHECKED TRACY SANDERSON	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 19	BRIDGE NO.	55-0106R/L	SANTA ANA RIVER BRIDGE (WIDEN)	
	DETAILS	BY HENGAMEH MAHBOOBI	CHECKED TRACY SANDERSON			POST MILE	8.57		REMOVAL DETAILS NO. 2
	QUANTITIES	BY BRIAN VO / DIYA AZZAM	CHECKED TRACY SANDERSON			UNIT: 3621 PROJECT NUMBER & PHASE: 1200000078 1	CONTRACT NO.: 12-0C5601		

ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

DISREGARD PRINTS BEARING EARLIER REVISION DATES

FILE => 55-0106-e-rpld102.dgn

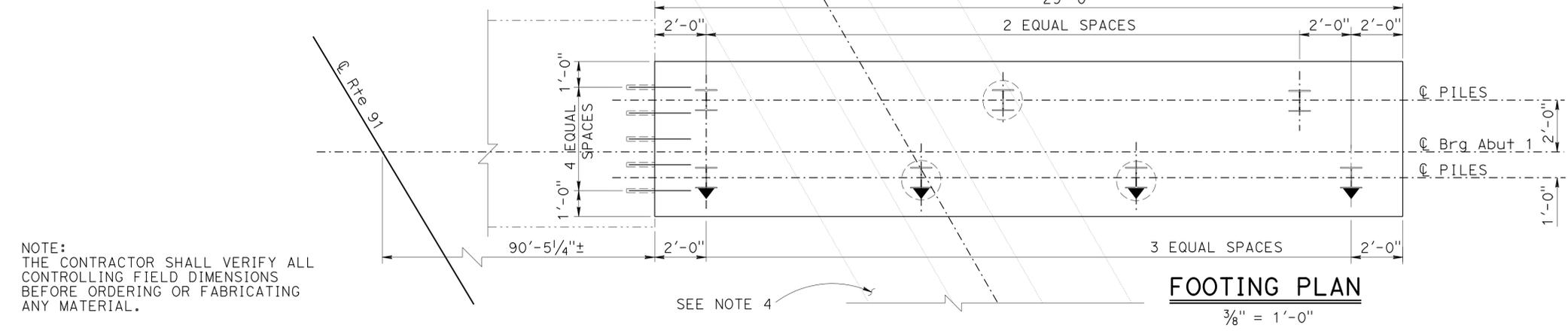
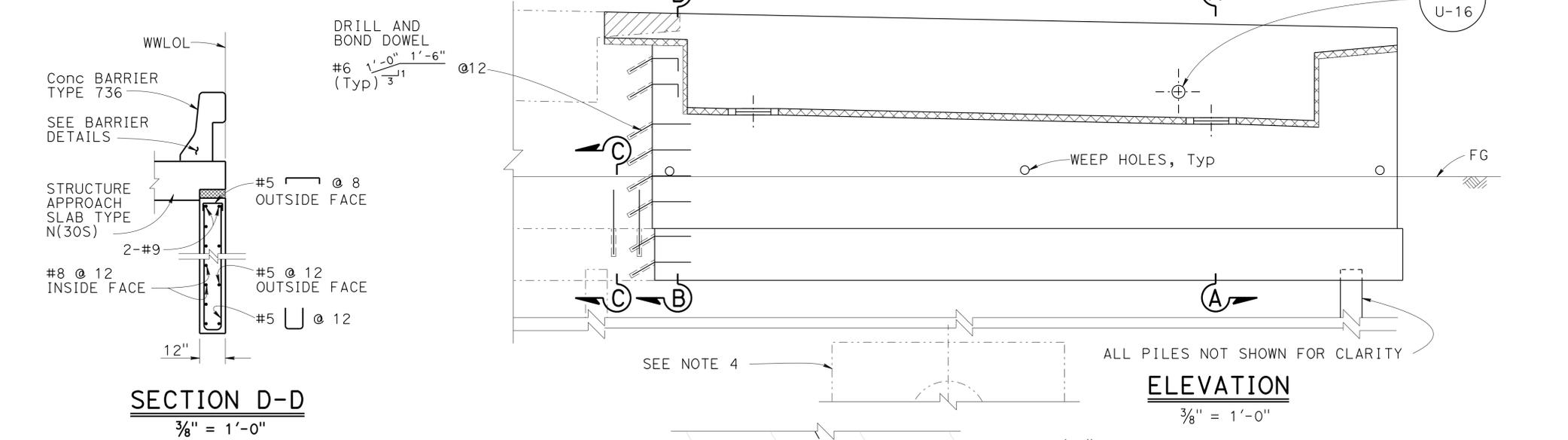
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	268	357
			01-25-13		
REGISTERED CIVIL ENGINEER			DATE		
4-15-13			PLANS APPROVAL DATE		
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.					
					



- NOTES:**
- FOR SECTIONS A-A, B-B, AND C-C, SEE "ABUTMENT DETAILS NO. 1" SHEET.
 - FOR EXISTING WINGWALL REMOVAL AND BACKWALL REMOVAL, SEE "REMOVAL DETAILS NO. 2" SHEET.
 - BARRIER NOT SHOWN.
 - THE ABANDONED 36"Ø WATER LINE IS A STEEL PIPE WITH 2" WALL THICKNESS. IT IS ENCASED IN CONCRETE WITH OUTSIDE DIAMETER APPROXIMATE 5 FEET. THE LOCATION AND SIZE OF CONCRETE CASING AS SHOWN ARE APPROXIMATE. THE PIPE IS TO BE ABANDONED IN PLACE AND IT WILL BE FILLED WITH LEAN CONCRETE BY CITY OF ANAHEIM BEFORE PILE INSTALLATIONS.
 - POUR APPROACH SLAB N(30S) AND R(30S) MONOLITHICALLY

LEGEND

	INDICATES LIMIT OF "REMOVE OBSTRUCTION FROM ABANDONED WATER PIPE"
	INDICATES BATTERED PILES (1:3 BATTER)
	INDICATES VERTICAL PILES
	INDICATES EXISTING STRUCTURE
	BRIDGE REMOVAL PORTION
	EXPANDED POLYSTYRENE



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

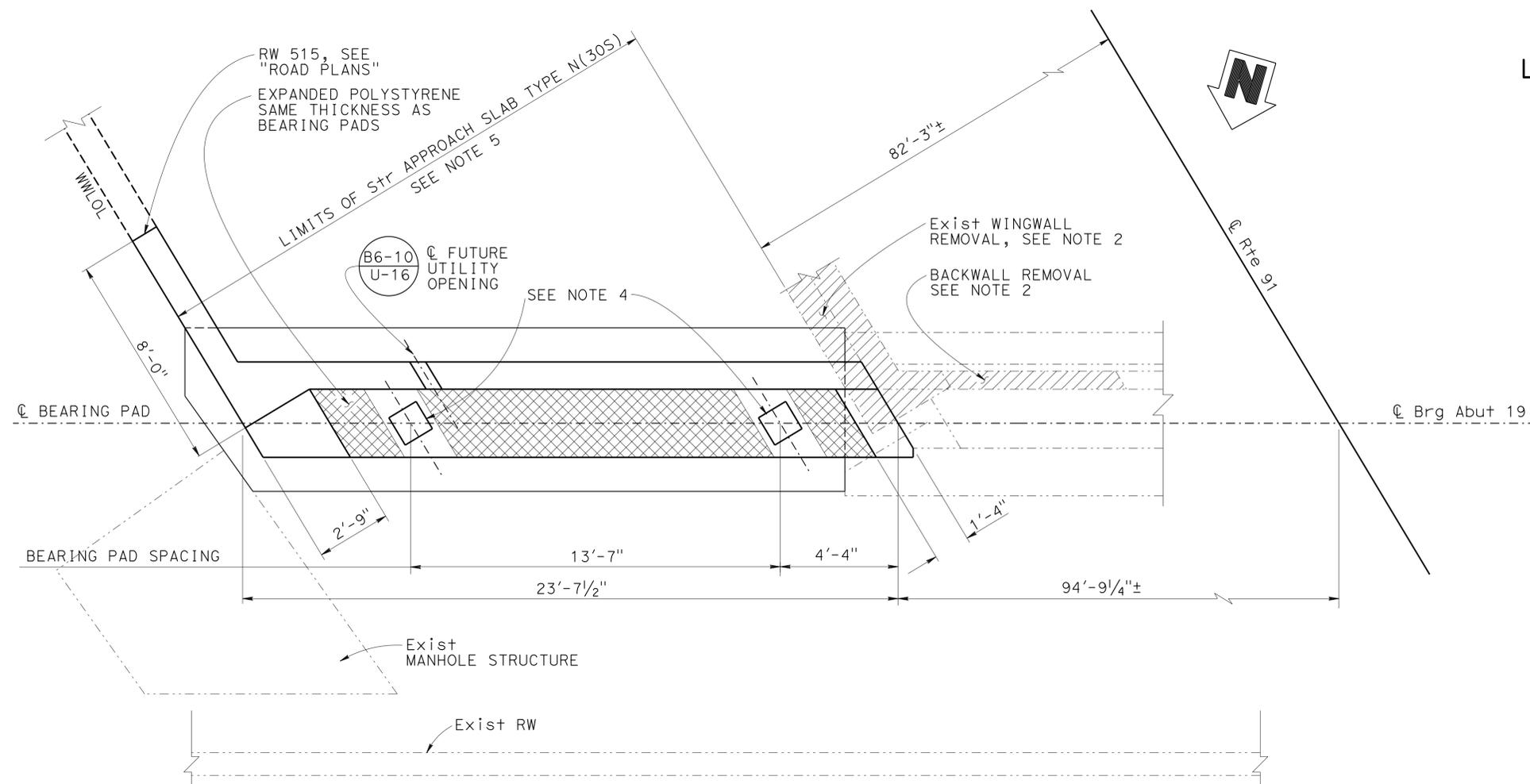
DESIGN	BY RUI WANG	CHECKED TRACY SANDERSON	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 19	BRIDGE NO.	SANTA ANA RIVER BRIDGE (WIDEN) ABUTMENT 1 LAYOUT
DETAILS	BY H. MAHBOOBI / H. INIGUEZ	CHECKED TRACY SANDERSON			55-0106R/L	
QUANTITIES	BY B. VO/D. AZZAM	CHECKED TRACY SANDERSON			POST MILE 8.57	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	269	357

RUI WANG 01-25-13
 REGISTERED CIVIL ENGINEER DATE
 4-15-13
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 RUI WANG
 No. C52910
 Exp. 12/31/14
 CIVIL
 STATE OF CALIFORNIA

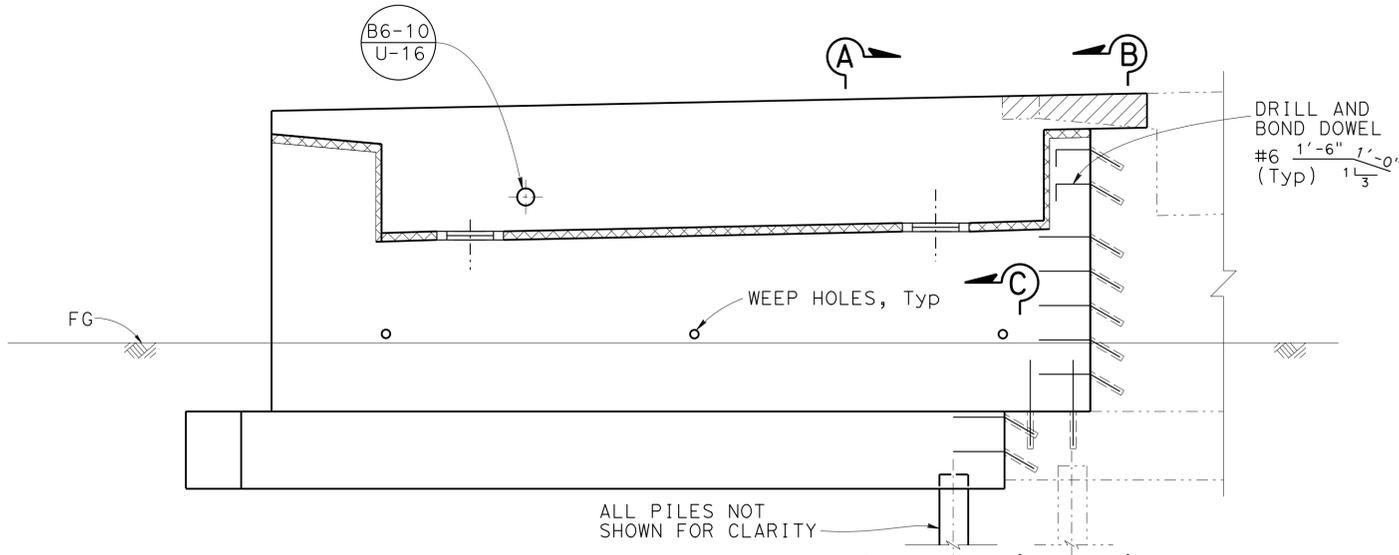
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



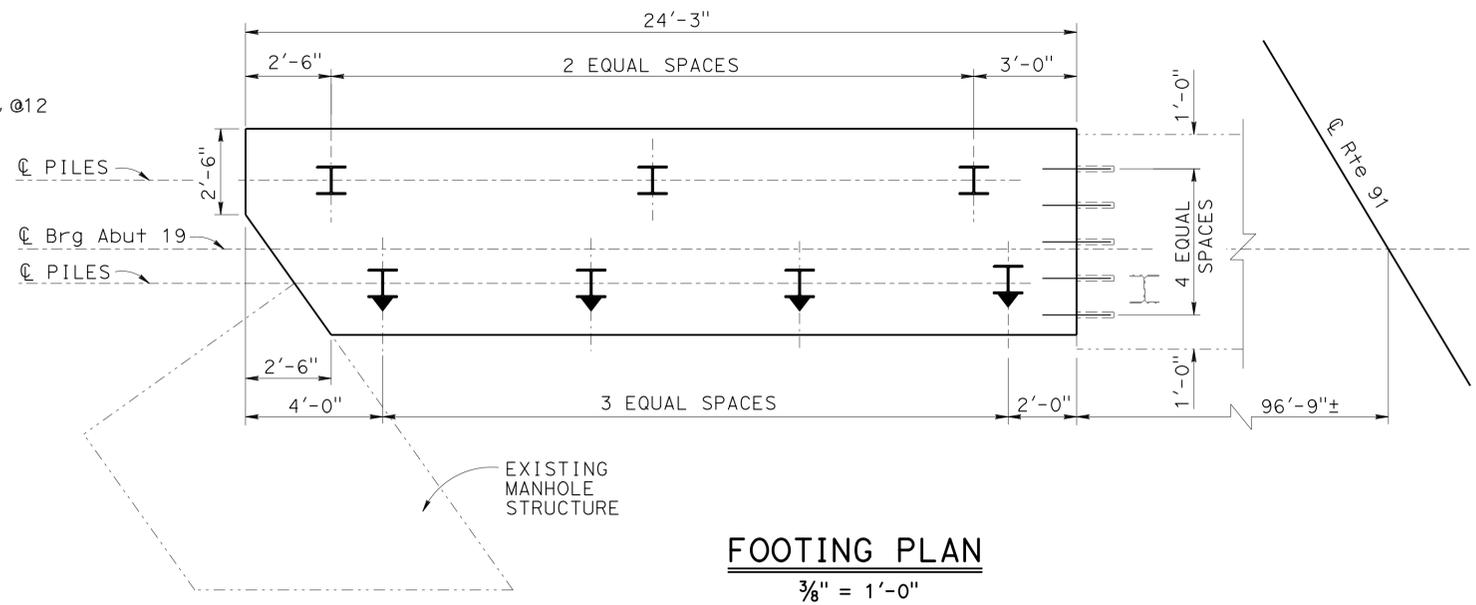
- LEGEND:**
- INDICATES VERTICAL PILES
 - INDICATES BATTERED PILES (1:3 BATTER)
 - INDICATES EXISTING STRUCTURE
 - BRIDGE REMOVAL PORTION
 - EXPANDED POLYSTYRENE

- NOTES:**
- FOR SECTION A-A, SECTION B-B, AND SECTION C-C SEE "ABUTMENT DETAILS NO. 1" SHEET.
 - FOR EXISTING WINGWALL REMOVAL AND BACKWALL REMOVAL, SEE "REMOVAL DETAILS NO. 2" SHEET.
 - BARRIER NOT SHOWN.
 - STEEL REINFORCED ELASTOMERIC BEARING PAD 14"(L) X 14"(W) X 3" TOTAL 2. SEE "BACKWALL BASE DETAIL" AND "BEARING PAD DETAIL" ON "ABUTMENT DETAIL NO. 2" SHEET.
 - POUR APPROACH SLAB N(30S) AND R(30S) MONOLITHICALLY.

PLAN
3/8" = 1'-0"



ELEVATION
3/8" = 1'-0"



FOOTING PLAN
3/8" = 1'-0"

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

DESIGN	BY RUI WANG	CHECKED TRACY SANDERSON
DETAILS	BY H. MAHBOOBI/H. INIGUEZ	CHECKED TRACY SANDERSON
QUANTITIES	BY B. VO/D. AZZAM	CHECKED TRACY SANDERSON

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 19

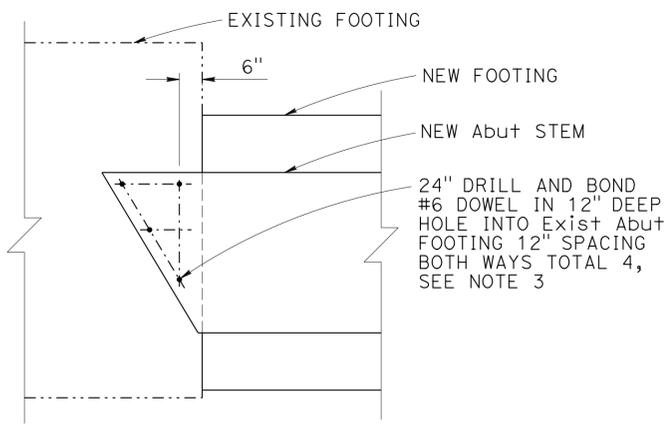
BRIDGE NO.	65-0106R/L
POST MILE	8.57

SANTA ANA RIVER BRIDGE (WIDEN)
ABUTMENT 19 LAYOUT

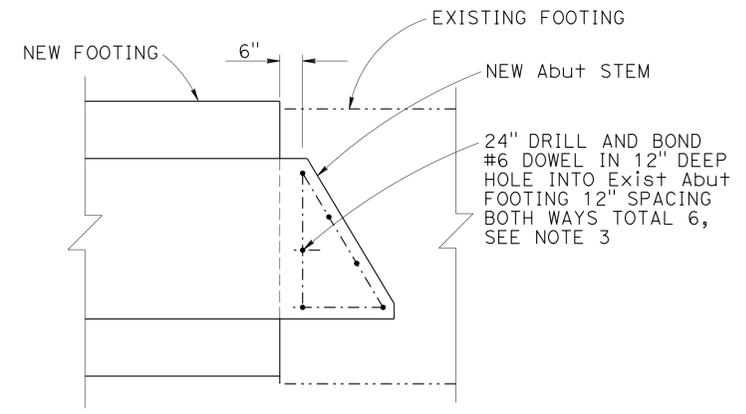
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	270	357
			01-25-13	DATE	
REGISTERED CIVIL ENGINEER			STATE OF CALIFORNIA		
4-15-13			PLANS APPROVAL DATE		
RUI WANG No. C52910 Exp. 12/31/14 CIVIL			REGISTERED PROFESSIONAL ENGINEER STATE OF CALIFORNIA		
<i>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</i>					

NOTES:

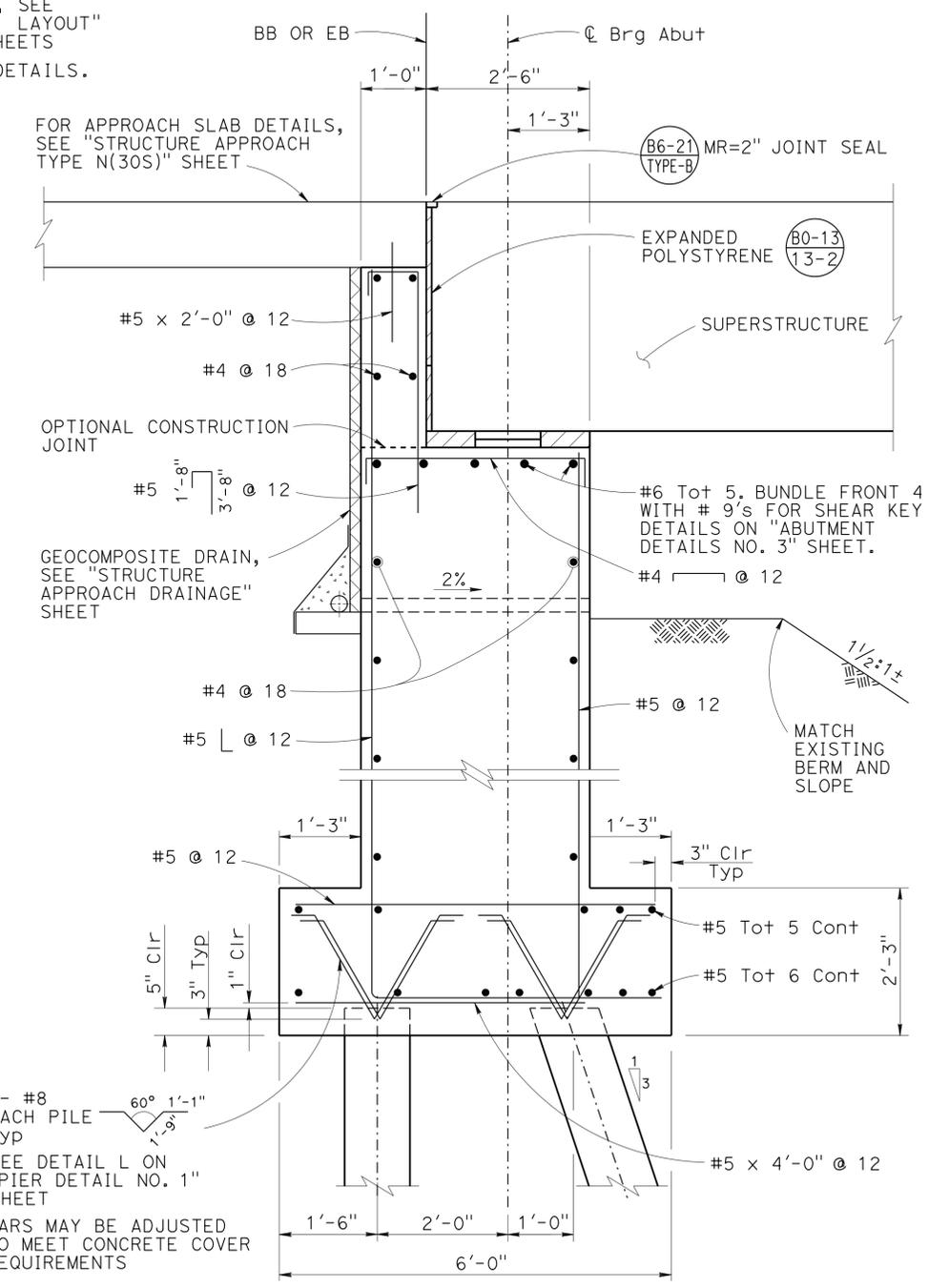
- FOR LOCATIONS OF SECTION A-A, SECTION B-B, AND SECTION C-C, SEE "ABUTMENT 1 LAYOUT" AND "ABUTMENT 19 LAYOUT" SHEETS.
- FOR ADDITIONAL DETAILS, SEE "ABUTMENT 1 LAYOUT AND ABUTMENT 19 LAYOUT" SHEETS.
- VERTICAL DWEL LOCATIONS MAY BE ADJUSTED TO AVOID INTERFERENCE WITH HORIZONTAL DWELS. FOR HORIZONTAL DWEL LOCATIONS, SEE FOOTING PLAN ON "ABUTMENT 1 LAYOUT" AND "ABUTMENT 19 LAYOUT" SHEETS
- SEE SECTION A-A FOR Reinf DETAILS.



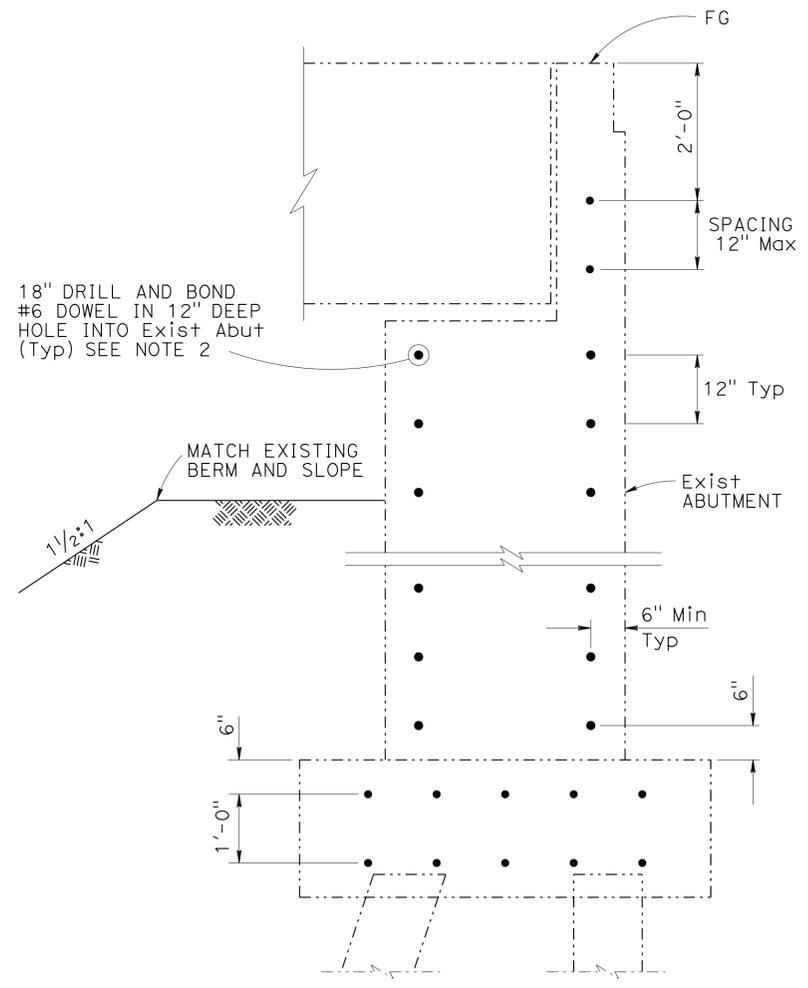
VERTICAL DWEL LOCATIONS AT ABUTMENT 1
 $\frac{1}{2}'' = 1'-0''$



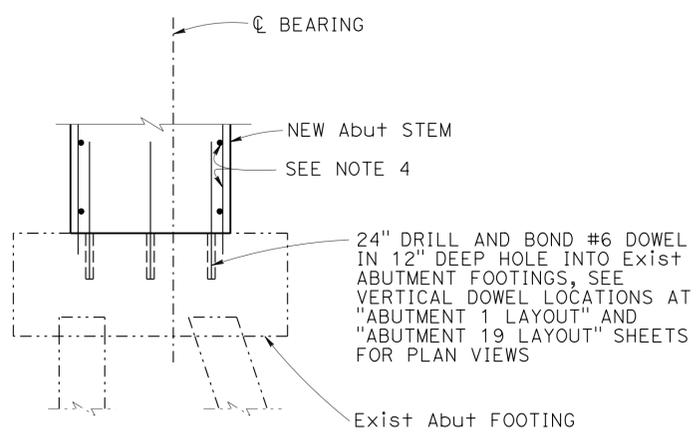
VERTICAL DWEL LOCATIONS AT ABUTMENT 19
 $\frac{1}{2}'' = 1'-0''$



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



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



SECTION C-C
 $\frac{1}{2}'' = 1'-0''$

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

DESIGN	BY RUI WANG	CHECKED TRACY SANDERSON
DETAILS	BY HENGAMEH MAHBOOBI	CHECKED TRACY SANDERSON
QUANTITIES	BY BRIAN VO / DIYA AZZAM	CHECKED TRACY SANDERSON

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

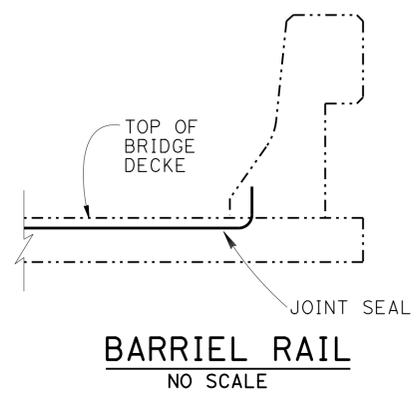
DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
DESIGN BRANCH 19

BRIDGE NO. 55-0106R/L
 POST MILE 8.57
SANTA ANA RIVER BRIDGE (WIDEN)
ABUTMENT DETAILS NO. 1

JOINT SEAL REPLACEMENT TABLE

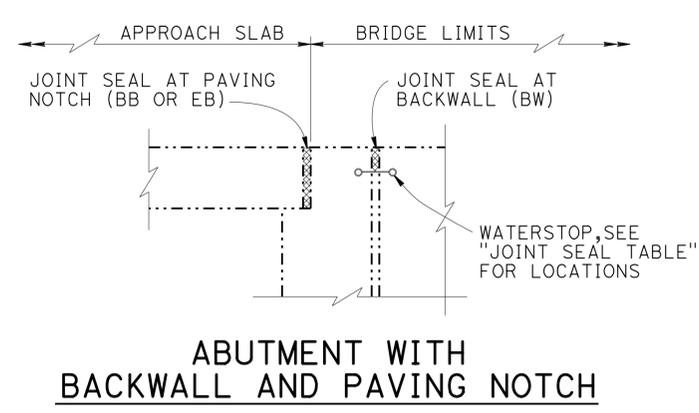
JOINT SEAL LOCATION	MINIMUM "MR" (INCHES)	EXISTING WATERSTOP	APPROXIMATE LENGTH OF JOINT SEAL (FEET)		APPROXIMATE DEPTH TO CLEAN Exp JOINT (INCHES)	APPROXIMATE DEPTH OF JOINT SPALLS (INCHES)	APPROXIMATE WIDTH OF JOINT SPALLS (INCHES)	APPROXIMATE LENGTH OF JOINT SPALLS (FEET)
			EXISTING	TOTAL				
ABUTMENT 1 BW	2	NO	89'-3"±	117	6	3	6	3
HINGE 1	2	YES	89'-3"±	117	3	3	6	3
HINGE 2	2	YES	89'-3"±	117	3	3	6	3
ABUTMENT 19 BW	2	NO	94'-6"±	117	6	3	6	3

- NOTES:
- SEAL MUST SATISFY BOTH MINIMUM MOVEMENT RATING (MR) AND MINIMUM W1 REQUIREMENTS.
 - MINIMUM W1 IS THE CALCULATED MAXIMUM WIDTH OF THE JOINT BASED ON FIELD MEASUREMENTS. AFTER THE JOINTS HAVE BEEN CLEANED, MINIMUM W1 IS TO BE RECALCULATED BY THE ENGINEER.
 - W1 SHALL BE THE SMALLER OF THE VALUES DETERMINED AS FOLLOWS:
 - 0.85 TIMES THE MANUFACTURER'S DESIGNED MINIMUM UNCOMPRESSED WIDTH OF THE SEAL.
 - THE WIDTH OF THE SEAL ON THE THIRD SUCCESSIVE TEST CYCLE OF THE PRESSURE DEFLECTION TEST, WHEN COMPRESSED TO AN AVERAGE PRESSURE OF 0.3 PSI.
 - BEND TYPE B JOINT SEAL 6 INCHES UP INTO CURB OR RAIL ON THE LOW SIDE OF THE DECK WHERE DECK JOINT MATCHES CURB OR RAIL JOINT.
 - FOR DETAILS NOT SHOWN, SEE B6-21.
 - FOR LIMIT OF JOINT SEAL REPLACEMENT, SEE PLAN ON "GENERAL PLAN NO. 1" SHEET.
 - PRIOR TO PLACEMENT OF NEW JOINT SEAL, REPAIR JOINT SPALLS AT EXISTING STRUCTURE.
 - JOINT SEALS OF NEW AND REPLACEMENTS OF EXISTING TO BE PLACED CONTINUOUSLY WITHOUT SPLICE.

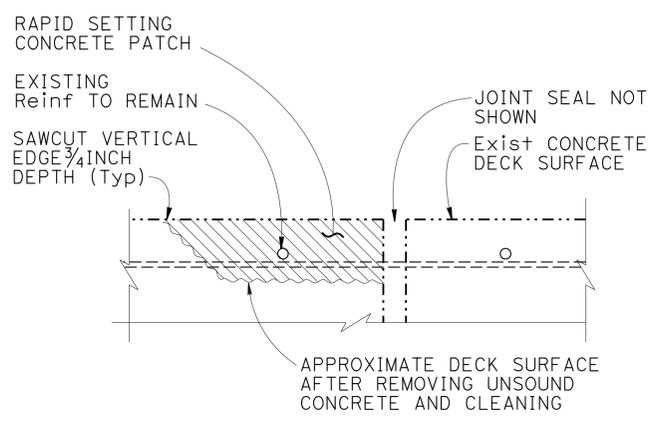


JOINT SEAL AT LOW SIDE OF DECK

NOTE: DETAILS SHOWN FOR ILLUSTRATION PURPOSES ONLY.
FOR USE ONLY WHERE DECK JOINT MATCHES THE SIDEWALK, CURB OR BARRIER RAIL JOINT.

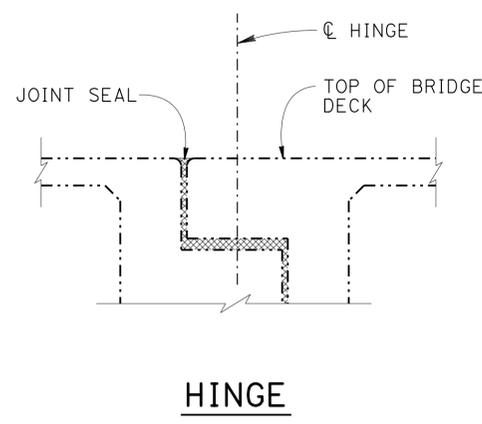


ABUTMENT WITH BACKWALL AND PAVING NOTCH
JOINT SEAL LOCATION
NO SCALE

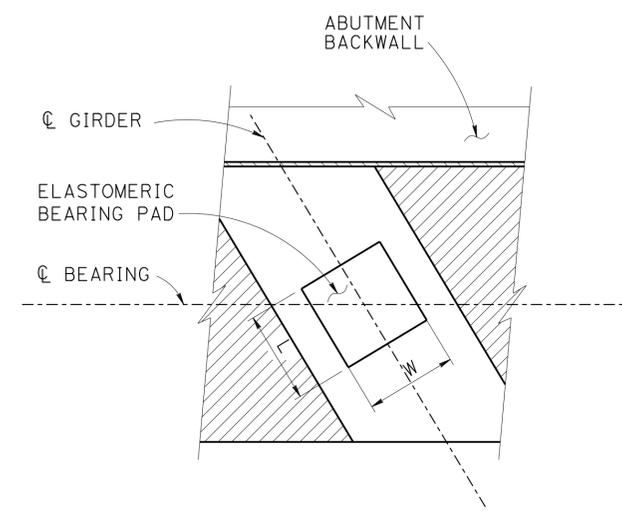


JOINT SEAL REPAIR DETAIL

NOTE: REINFORCEMENT MAY BE ENCOUNTERED DURING DECK CONCRETE REMOVAL AND IS TO REMAIN UNDAMAGED..

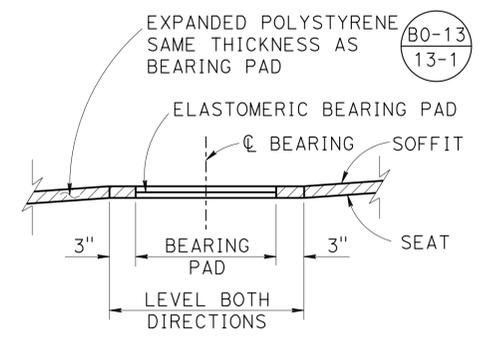


HINGE

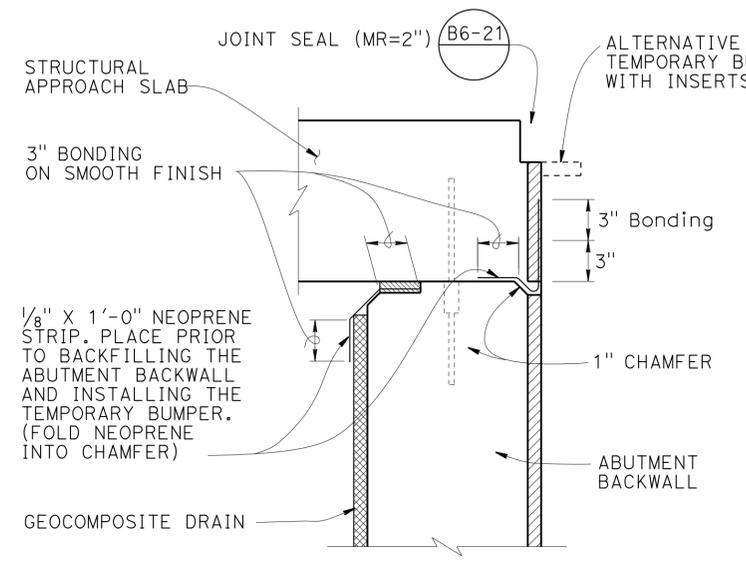


PART PLAN
NO SCALE

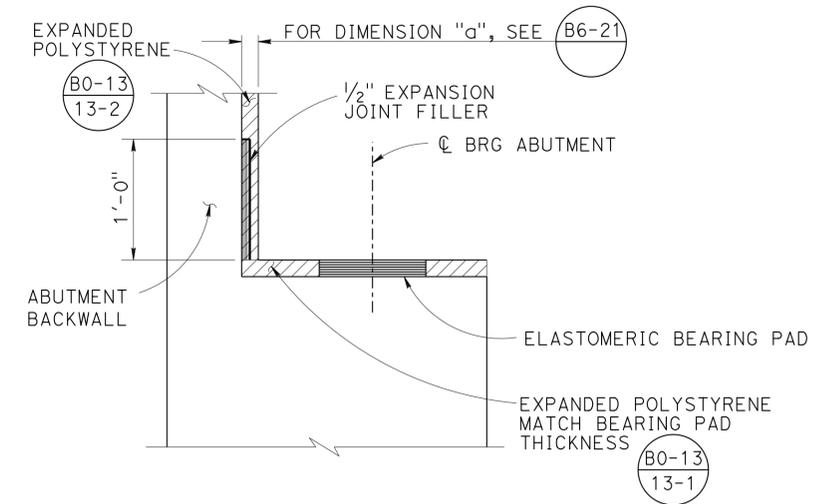
NOTE: For Dimensions L & W, see "ABUTMENT 1 LAYOUT" & "ABUTMENT 19 LAYOUT" sheets



BEARING PAD DETAIL
NO SCALE

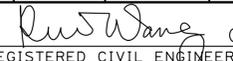
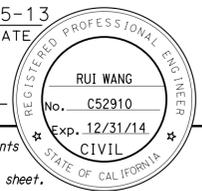


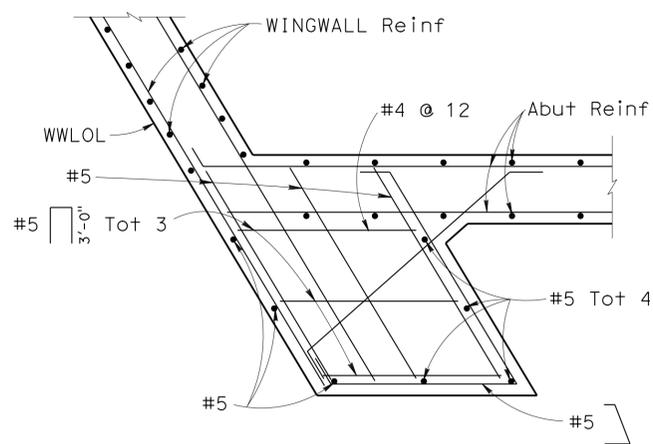
JOINT PROTECTION DETAIL
NO SCALE



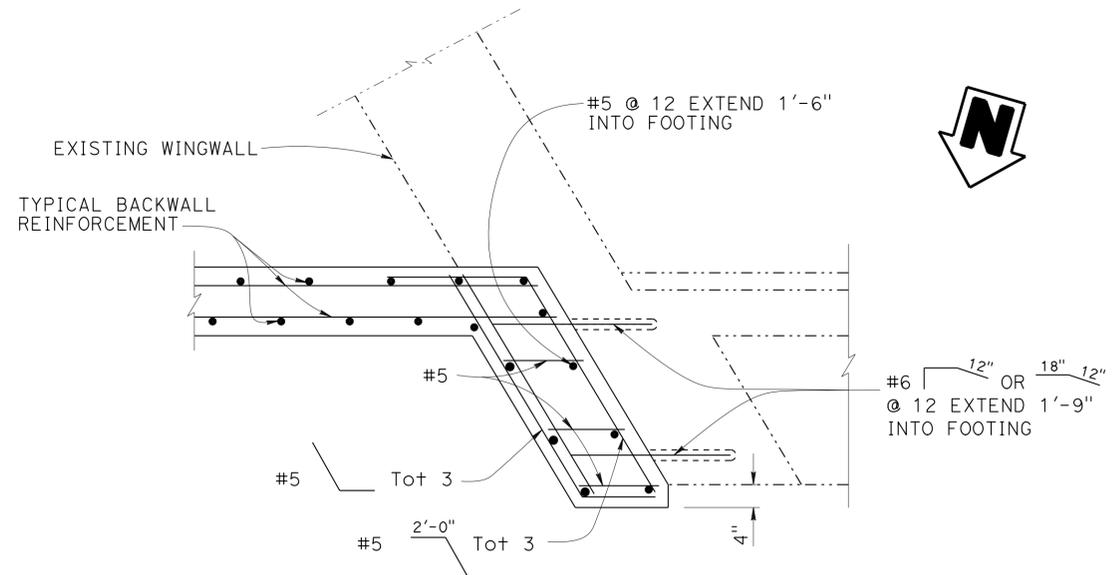
BACKWALL BASE DETAIL
NO SCALE

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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	272	357
			01-25-13	DATE	
REGISTERED CIVIL ENGINEER			DATE		
4-15-13			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>					



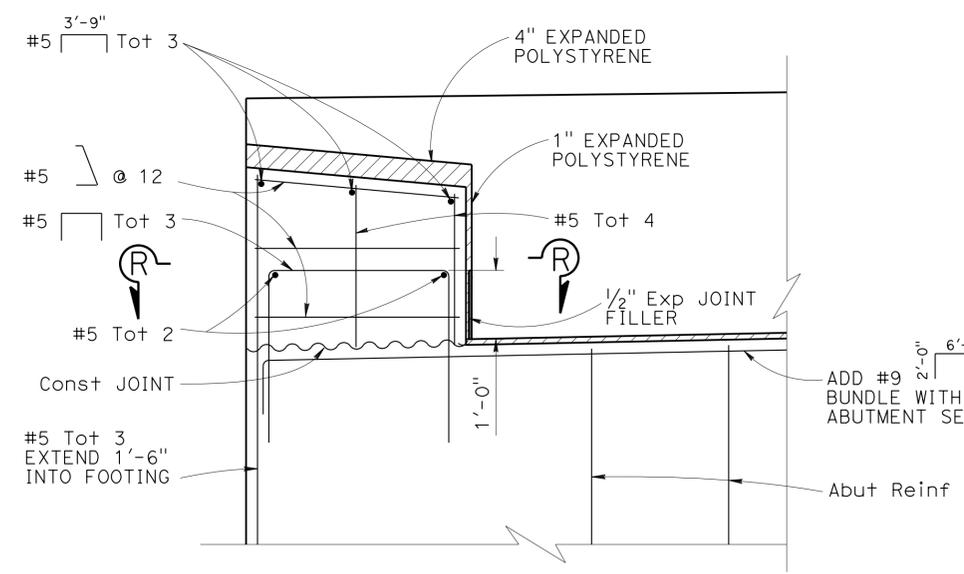
SECTION R-R ✕
3/4" = 1'-0"



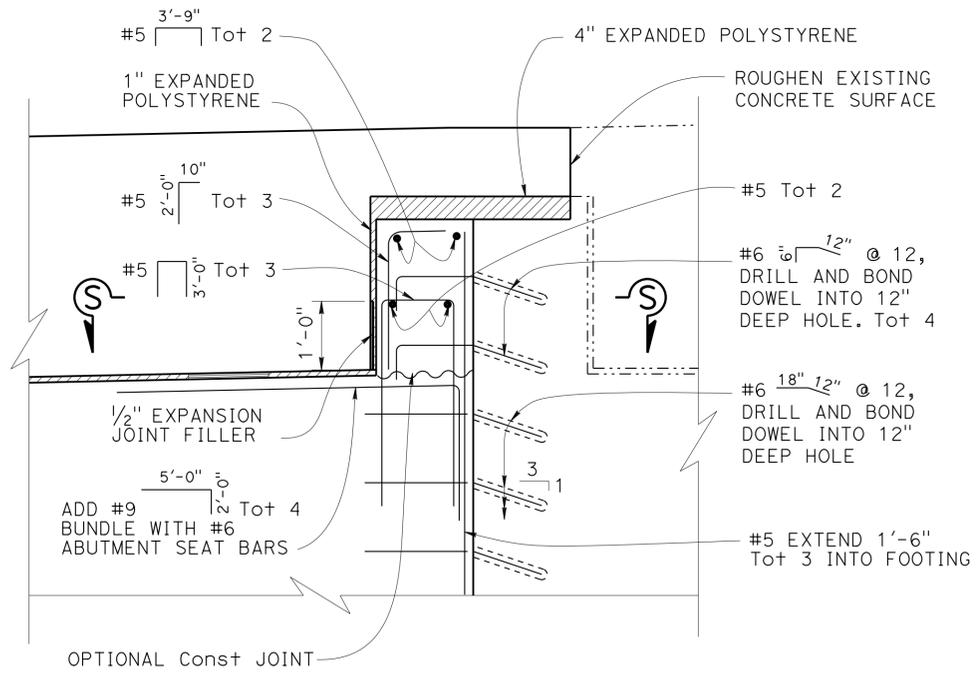
SECTION S-S ✕
3/4" = 1'-0"

LEGEND

- INDICATES EXISTING STRUCTURE
- ✕ ABUTMENT 19 SHOWN, ABUTMENT 1 SIMILAR



EXTERIOR SHEAR KEY DETAIL ✕
3/4" = 1'-0"

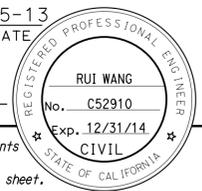


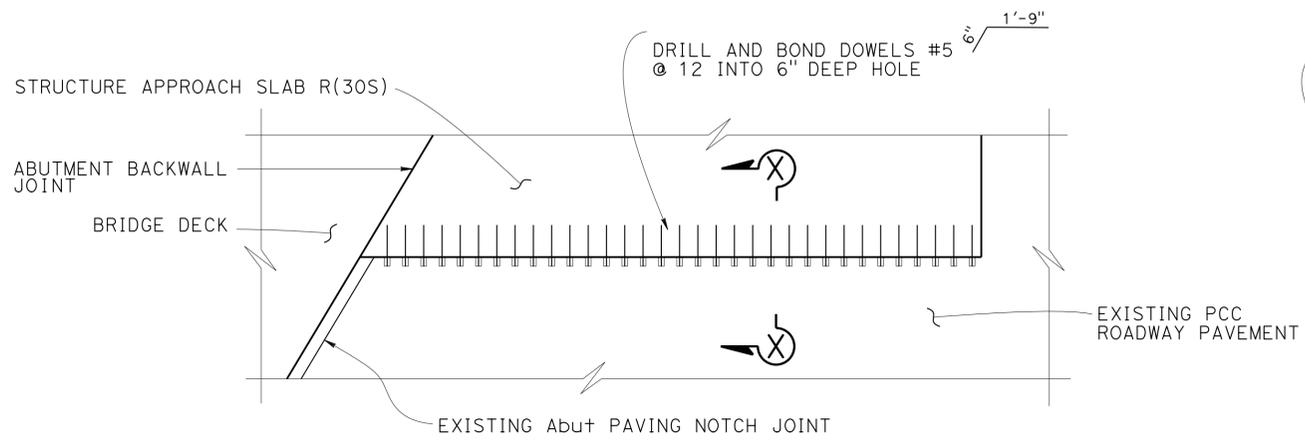
INTERIOR SHEAR KEY DETAIL ✕
3/4" = 1'-0"

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

DESIGN	BY	RUI WANG	CHECKED	TRACY SANDERSON	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 19	BRIDGE NO.	65-0106R/L	SANTA ANA RIVER BRIDGE (WIDEN) ABUTMENT DETAILS NO.3	
	DETAILS	BY	HENGAMEH MAHBOOBI	CHECKED			TRACY SANDERSON	POST MILE		8.57
	QUANTITIES	BY	BRIAN VO / DIYA AZZAM	CHECKED			TRACY SANDERSON	UNIT: 3621		PROJECT NUMBER & PHASE: 1200000078 - 1
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: 03/24/12, 01/30/13, 01/28/15										
SHEET 12 OF 45										

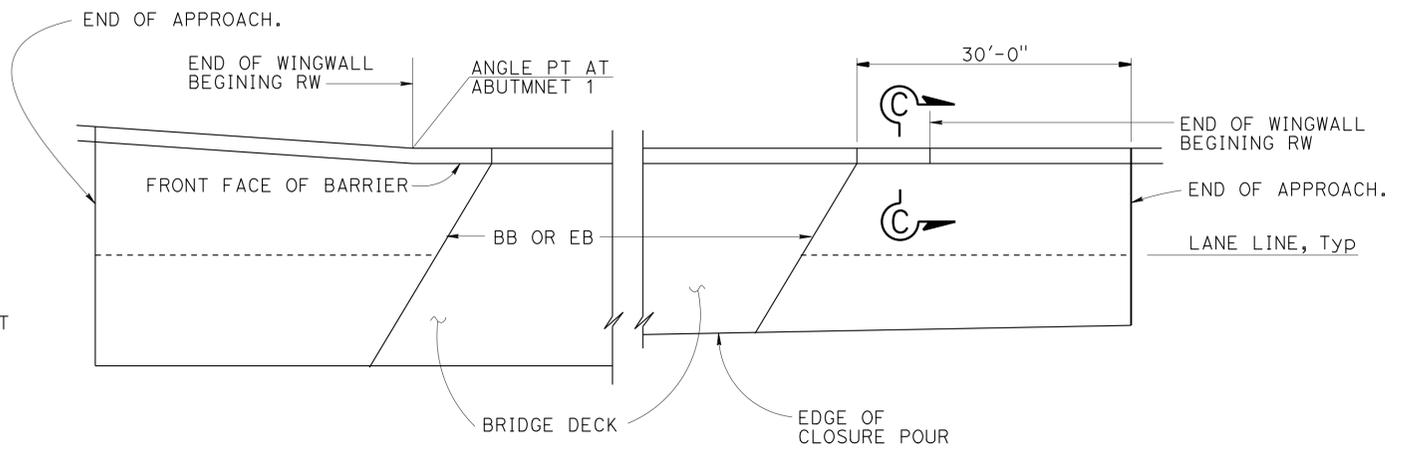
USERNAME => s121614 DATE PLOTTED => 24-APR-2013 TIME PLOTTED => 11:46

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	273	357
			01-25-13	DATE	
REGISTERED CIVIL ENGINEER			DATE		
4-15-13			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>					



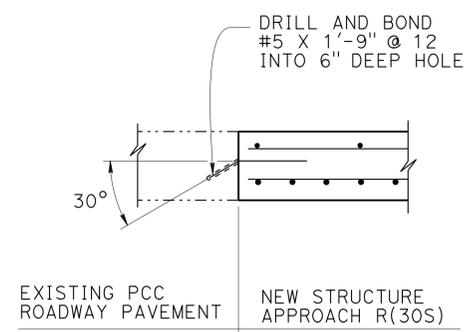
LONGITUDINAL JOINT AT EXISTING PCC PAVEMENT
 1" = 5'-0" ABUTMENT 19 SHOWN, ABUTMENT 1 SIMILAR

- NOTES:
- FOR DETAILS NOT SHOWN, SEE "STRUCTURE APPROACH TYPE R(30S)" SHEET.

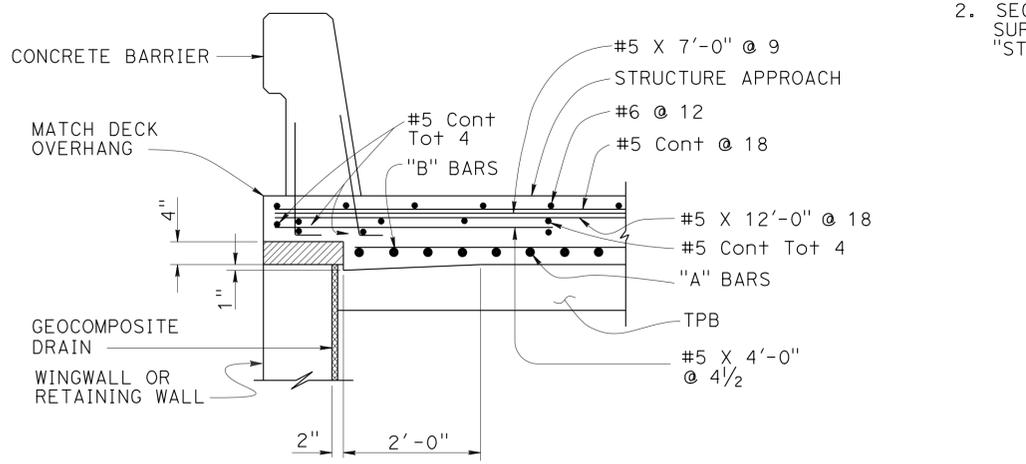


STRUCTURE APPROACH PLAN
 1" = 10'

- NOTES:
- FOR DETAILS NOT SHOWN, SEE "STRUCTURE APPROACH TYPE N(30S)" SHEET.
 - SECTION C-C AND STRUCTURE APPROACH PLAN SUPERSEDES DETAILS ON "STRUCTURE APPROACH TYPE N(30S)" SHEET.



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



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

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

DESIGN	BY	RUI WANG	CHECKED	TRACY SANDERSON	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 19	BRIDGE NO.	55-0106R/L	SANTA ANA RIVER BRIDGE (WIDEN) ABUTMENT DETAILS NO.4						
	DETAILS	BY	HENGAMEH MAHBOOBI	CHECKED			TRACY SANDERSON	POST MILE		8.57					
QUANTITIES	BY	BRIAN VO / DIYA AZZAM	CHECKED	TRACY SANDERSON	UNIT: 3621	PROJECT NUMBER & PHASE: 1200000078 - 1	CONTRACT NO.: 12-0C5601	DISREGARD PRINTS BEARING EARLIER REVISION DATES	<table border="1"> <tr> <th>REVISION DATES</th> <th>SHEET</th> <th>OF</th> </tr> <tr> <td>12/14/12 01/28/13 01/30/13</td> <td>13</td> <td>45</td> </tr> </table>	REVISION DATES	SHEET	OF	12/14/12 01/28/13 01/30/13	13	45
REVISION DATES	SHEET	OF													
12/14/12 01/28/13 01/30/13	13	45													
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)					ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		FILE => 55-0106-F-g01_d104.dgn								

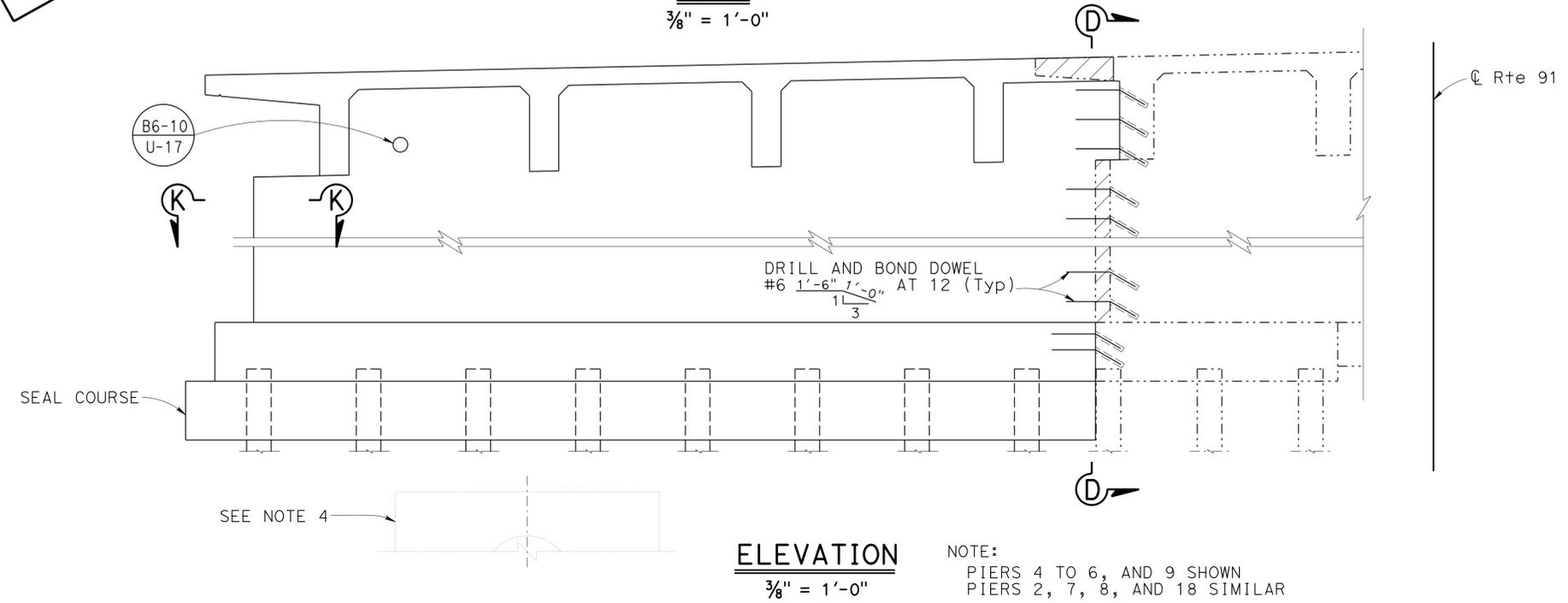
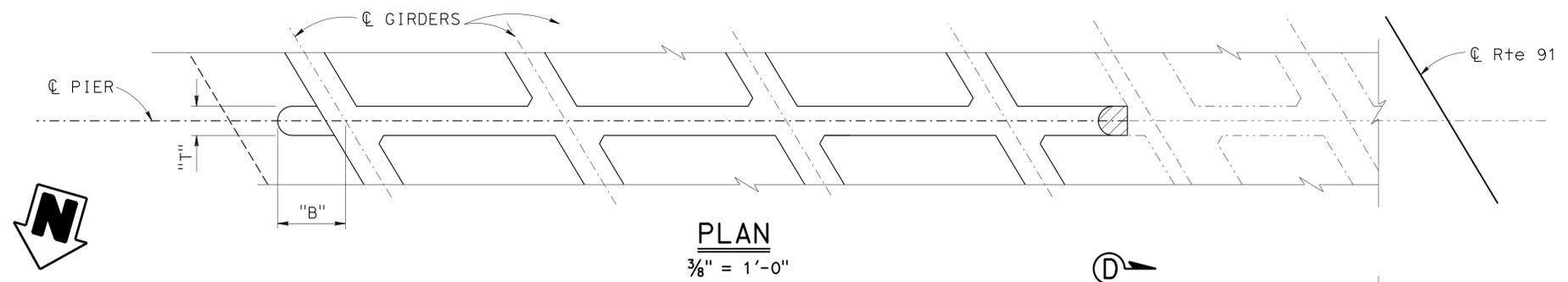
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	274	357

Rui Wang 01-25-13
 REGISTERED CIVIL ENGINEER DATE

4-15-13
 PLANS APPROVAL DATE

RUI WANG
 No. C52910
 Exp. 12/31/14
 CIVIL
 STATE OF CALIFORNIA

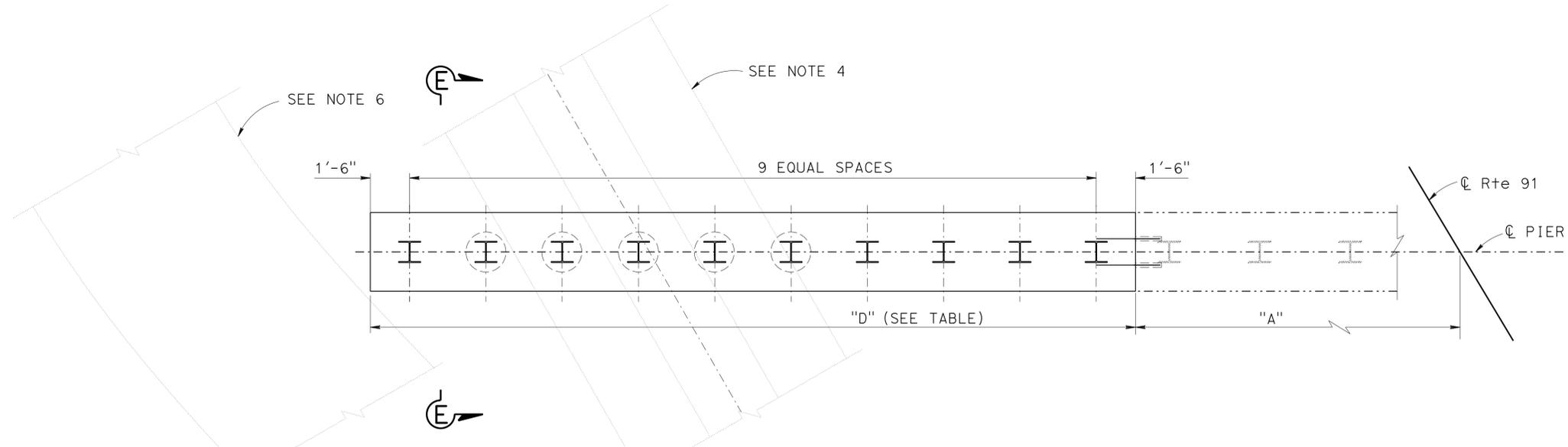
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LEGEND

- EXISTING STRUCTURE
- NEW STRUCTURE
- I EXISTING PILE
- I NEW PILE
- BRIDGE REMOVAL PORTION
- (I) INDICATES LIMIT OF "REMOVE OBSTRUCTION FROM ABANDONED WATER PIPE"

LOCATION	"A"	"B"	"C"	"D"	"T"
PIER 2	89'-6 1/2" ±	2'-4"	N/A	28'-3"	2'-0"
PIER 3	97'-6 1/2" ±	1'-10"		20'-3"	1'-0"
PIER 4	89'-6 1/2" ±	1'-10"		28'-3"	1'-0"
PIER 5	89'-6 1/2" ±	1'-10"		28'-3"	1'-0"
PIER 6	89'-6 1/2" ±	1'-10"		28'-3"	1'-0"
PIER 7	89'-6 1/2" ±	2'-4"		28'-3"	2'-0"
PIER 8	89'-6 1/2" ±	2'-4"		28'-3"	2'-0"
PIER 9	89'-6 1/2" ±	1'-10"		28'-3"	1'-0"
PIER 18	94'-9 1/2" ±	2'-4"		N/A	24'-6"



NOTES:

1. FOR PIER 3 FOOTING, SEE "PIER DETAILS NO. 2" SHEET
2. FOR SECTION K-K, E-E, AND F-F, SEE "PIER DETAILS NO. 1" SHEET.
3. BARRIER NOT SHOWN.
4. AT PIER 2 ONLY, THE ABANDONED 36"Ø WATER LINE IS A STEEL PIPE WITH 2" WALL THICKNESS. IT IS ENCASED IN CONCRETE WITH OUTSIDE DIAMETER APPROXIMATE 5 FEET. THE LOCATION AND SIZE OF CONCRETE CASING AS SHOWN ARE APPROXIMATE. THE PIPE IS TO BE ABANDONED IN PLACE AND IT WILL BE FILLED WITH LEAN CONCRETE BY CITY OF ANAHEIM BEFORE PILE INSTALLATIONS.
5. FOR SECTION D-D, SEE "PIER DETAILS NO. 2" SHEET.
6. EXISTING RCP IS LOCATED AT PIER 18 ONLY. THE RCP IS TO BE PROTECTED IN PLACE.

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

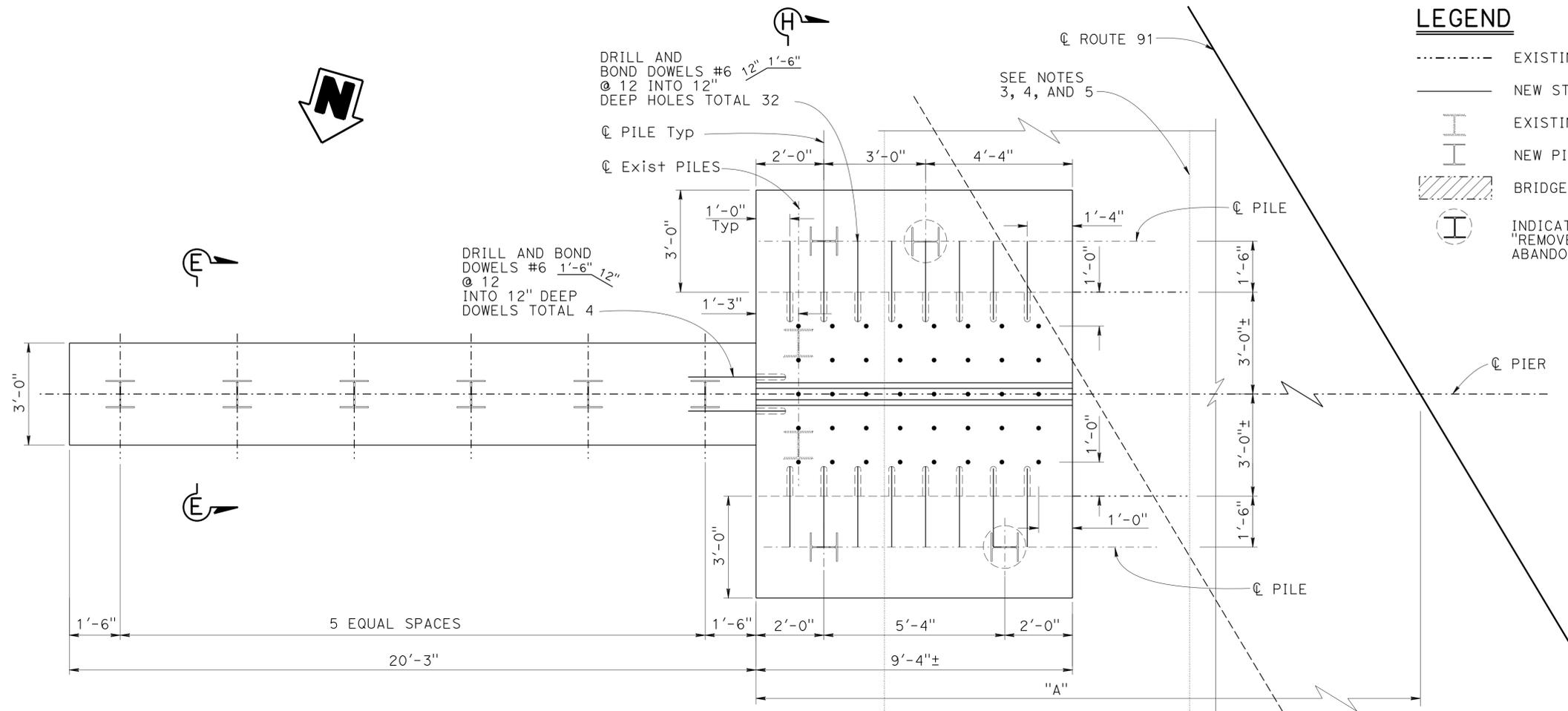
DESIGN BY RUI WANG CHECKED TRACY SANDERSON DETAILS BY HENGAMEH MAHBOOBI CHECKED TRACY SANDERSON QUANTITIES BY BRIAN VO / DIYA AZZAM CHECKED TRACY SANDERSON	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 19	BRIDGE NO. 55-0106R/L POST MILE 8.57	SANTA ANA RIVER BRIDGE (WIDEN) PIER LAYOUT AT PIERS 2, 4 TO 9 AND 18
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)			ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	
UNIT: 3621 PROJECT NUMBER & PHASE: 1200000078 - 1 CONTRACT NO.: 12-0C5601			DISREGARD PRINTS BEARING EARLIER REVISION DATES	
			REVISION DATES SHEET OF 03/15/12 01/28/13 01/30/13 14 45	

FILE => 55-0106-1-p00_1o01.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	275	357
RUI WANG 01-25-13 REGISTERED CIVIL ENGINEER DATE					
4-15-13			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.					

LEGEND

- EXISTING STRUCTURE
- NEW STRUCTURE
- ⊥ EXISTING PILE
- ⊥ NEW PILE
- ▨ BRIDGE REMOVAL PORTION
- ⊕ INDICATES LIMITS OF "REMOVE OBSTRUCTION FROM ABANDONED WATER PIPE"

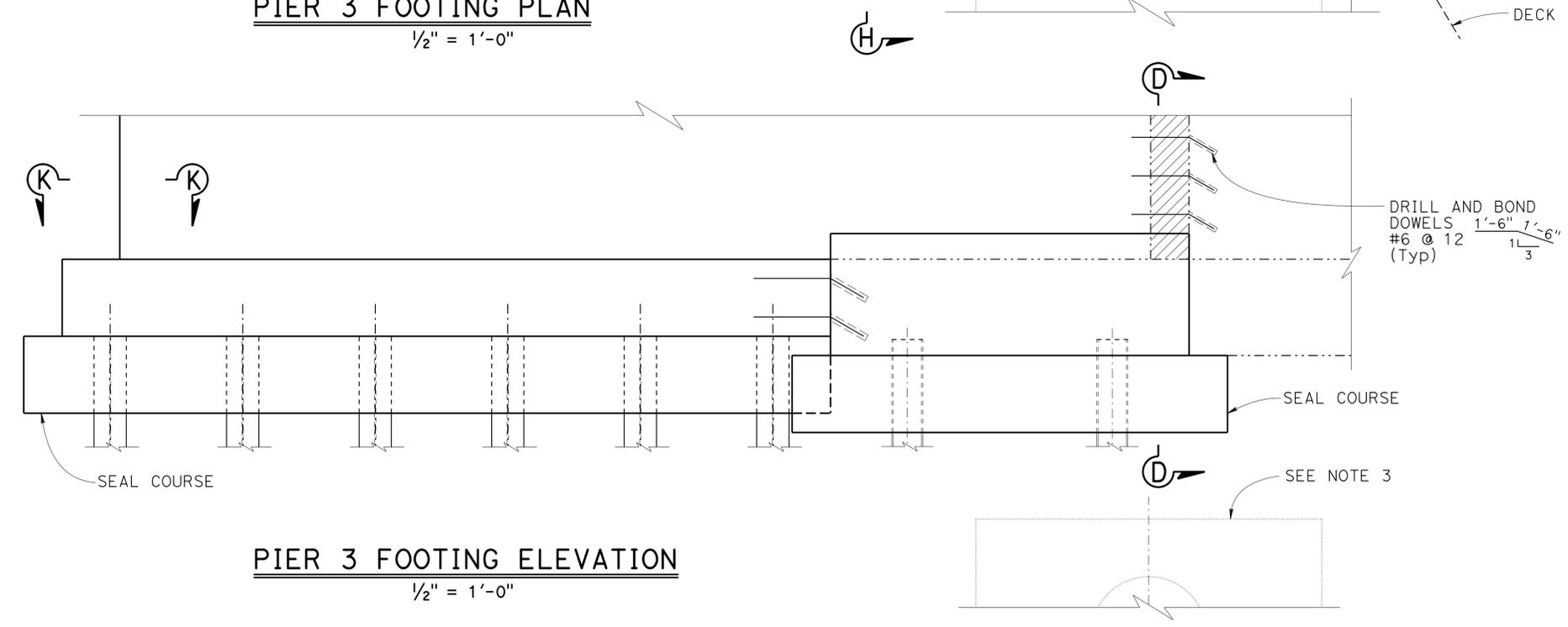


PIER 3 FOOTING PLAN

1/2" = 1'-0"

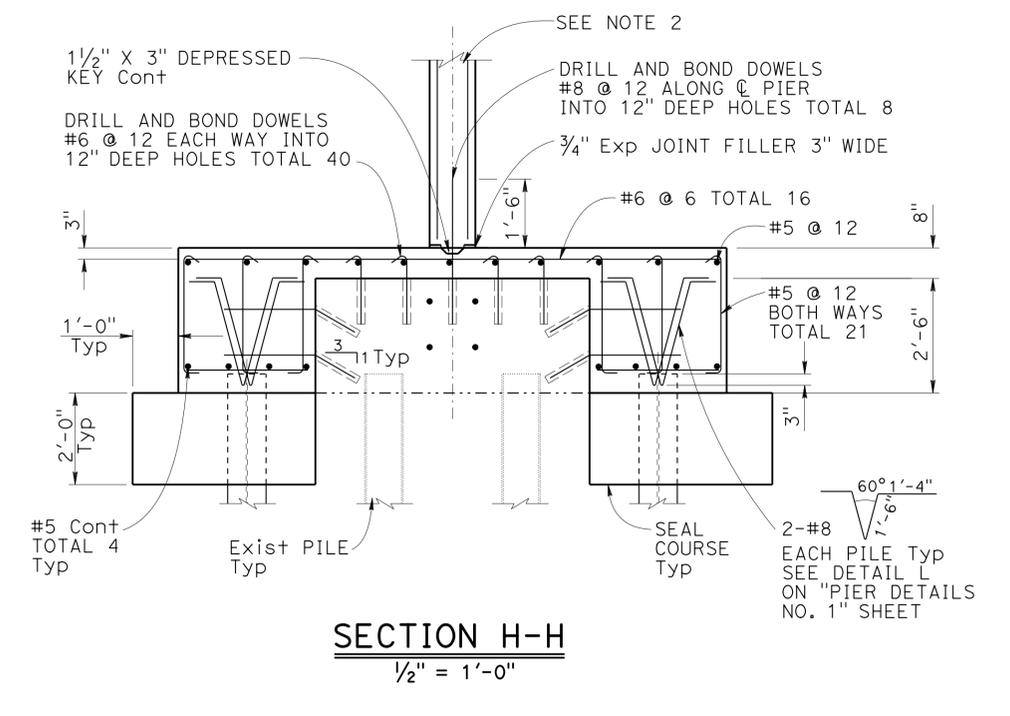
NOTES:

1. FOR SECTION E-E, SEE "PIER DETAILS NO. 1" SHEET.
2. FOR PIER WALL REINFORCEMENT, SEE SECTION E-E ON "PIER DETAILS NO. 1" SHEET.
3. THE ABANDONED 36"Ø WATER LINE IS A STEEL PIPE WITH 2" WALL THICKNESS. IT IS ENCASED IN CONCRETE WITH OUTSIDE DIAMETER APPROXIMATE 5 FEET. THE LOCATION AND SIZE OF CONCRETE CASING AS SHOWN ARE APPROXIMATE. THE PIPE IS TO BE ABANDONED IN PLACE AND IT WILL BE FILLED WITH LEAN CONCRETE BY CITY OF ANAHEIM BEFORE PILE INSTALLATIONS.
4. FOR DIMENSION "A", SEE TABLE ON "PIER LAYOUT AT PIERS 2, 4 TO 9 AND 18" SHEET.
5. FOR SECTION D-D, SEE "PIER DETAILS NO. 2 SHEET."



PIER 3 FOOTING ELEVATION

1/2" = 1'-0"



SECTION H-H

1/2" = 1'-0"

STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	DESIGN	BY RUI WANG	CHECKED TRACY SANDERSON	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 19	BRIDGE NO.	55-0106R/L	SANTA ANA RIVER BRIDGE (WIDEN) PIER 3 LAYOUT	
	DETAILS	BY HENGAMEH MAHBOOBI	CHECKED TRACY SANDERSON			POST MILE	8.57		
	QUANTITIES	BY BRIAN VO / DIYA AZZAM	CHECKED TRACY SANDERSON			UNIT: 3621	PROJECT NUMBER & PHASE: 1200000078 - 1		CONTRACT NO.: 12-0C5601
DISREGARD PRINTS BEARING EARLIER REVISION DATES								REVISION DATES 01/24/12 01/28/13 01/30/13	SHEET 15 OF 45

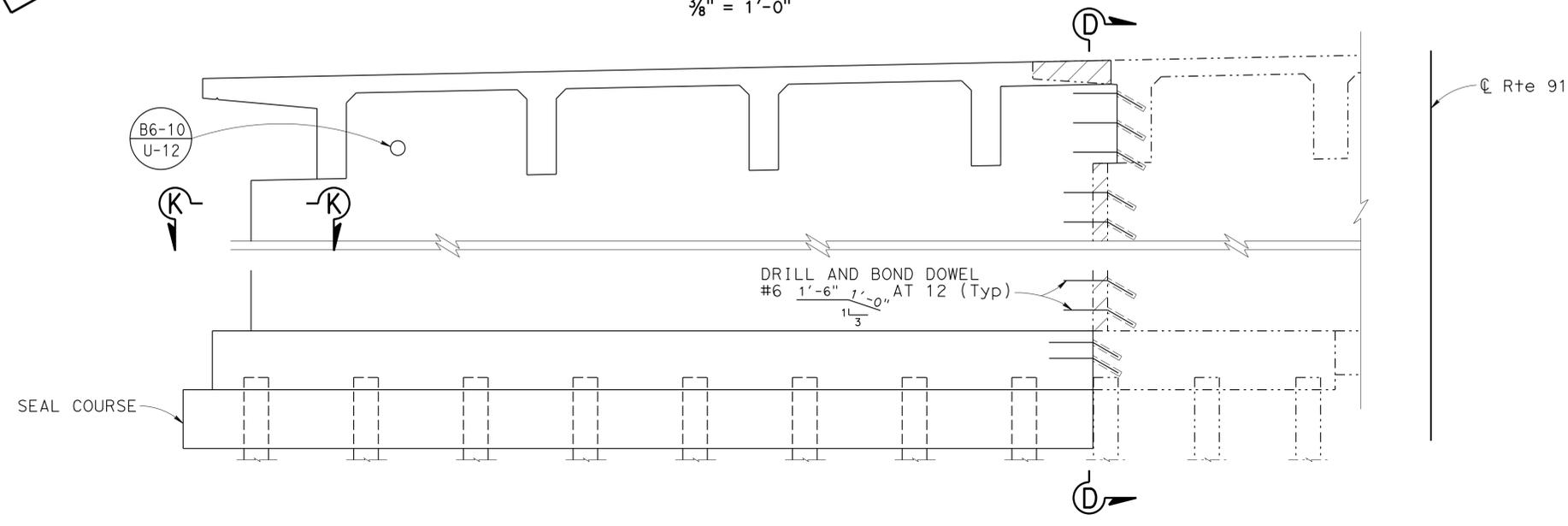
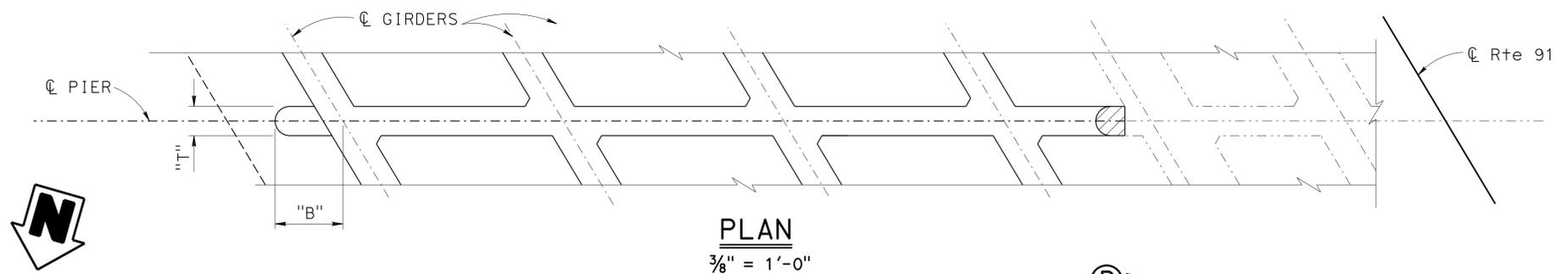
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	276	357

Rui Wang 01-25-13
REGISTERED CIVIL ENGINEER DATE

4-15-13
PLANS APPROVAL DATE

RUI WANG
No. C52910
Exp. 12/31/14
CIVIL
STATE OF CALIFORNIA

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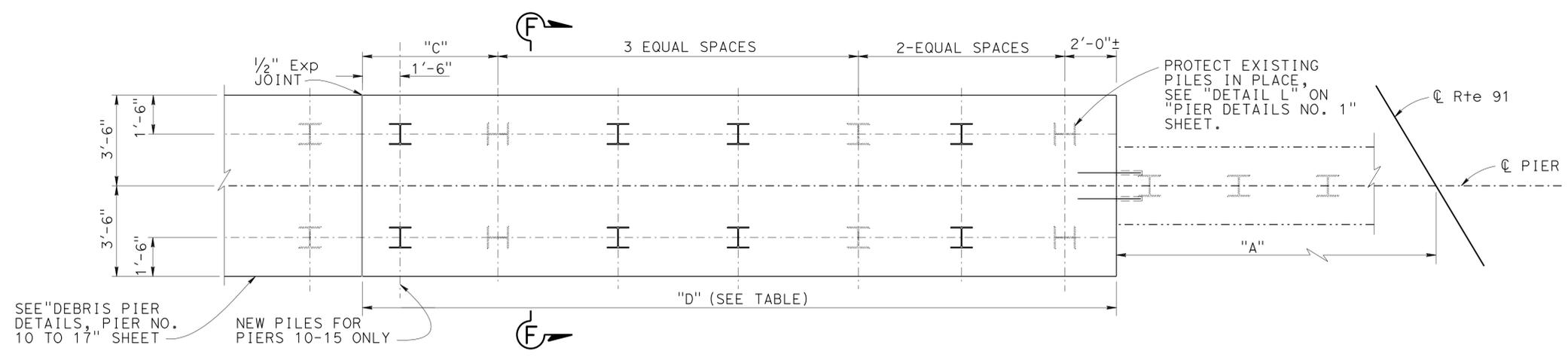


LEGEND

- EXISTING STRUCTURE
- NEW STRUCTURE
- I EXISTING PILE
- I NEW PILE
- ▨ BRIDGE REMOVAL PORTION

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

LOCATION	"A"	"B"	"C"	"D"	"T"
PIER 10	88'-5 $\frac{3}{4}$ "±	1'-10"	5'-0"	29'-4"	1'-0"
PIER 11	88'-5 $\frac{3}{4}$ "±	1'-10"	5'-0"	29'-4"	1'-0"
PIER 12	88'-11 $\frac{1}{2}$ "±	2'-4"	5'-7"	28'-10"	2'-0"
PIER 13	88'-11 $\frac{1}{2}$ "±	2'-4"	5'-7"	28'-10"	2'-0"
PIER 14	88'-5 $\frac{3}{4}$ "±	1'-10"	5'-0"	29'-4"	1'-0"
PIER 15	89'-6 $\frac{5}{8}$ "±	1'-10"	3'-11"	28'-3"	1'-0"
PIER 16	90'-8 $\frac{3}{4}$ "±	1'-10"	2'-8"	27'-0"	1'-0"
PIER 17	91'-11 $\frac{1}{8}$ "±	1'-10"	1'-6"	25'-10"	1'-0"

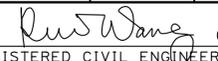


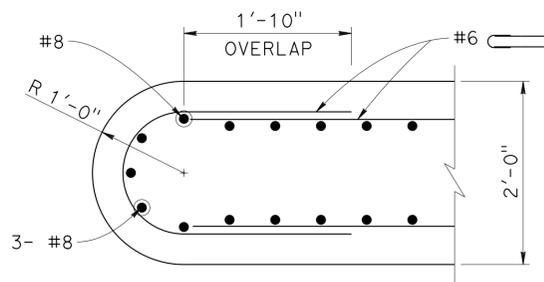
- NOTES:
- FOR SECTION K-K, AND F-F, SEE "PIER DETAILS NO. 1" SHEET.
 - BARRIER NOT SHOWN.
 - FOR SECTION D-D, SEE "PIER DETAILS NO. 2" SHEET.

DESIGN BY RUI WANG CHECKED TRACY SANDERSON	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 19	BRIDGE NO. 65-0106R/L	SANTA ANA RIVER BRIDGE (WIDEN)	
			POST MILE 8.57		PIER LAYOUT AT PIERS 10 TO 17
			UNIT: 3621 PROJECT NUMBER & PHASE: 1200000078 - 1 CONTRACT NO.: 12-0C5601		
DETAILS BY HENGAMEH MAHBOOBI CHECKED TRACY SANDERSON				SHEET 16 OF 45	
QUANTITIES BY BRIAN VO / DIYA AZZAM CHECKED TRACY SANDERSON					

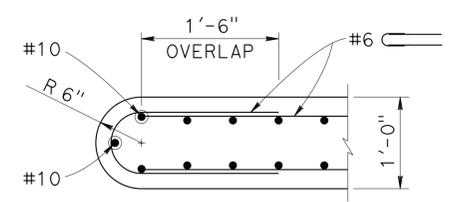
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10) ORIGINAL SCALE IN INCHES FOR REDUCED PLANS

FILE => 55-0106-1-p01_1002.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	277	357
			01-25-13	DATE	
REGISTERED CIVIL ENGINEER			DATE		
4-15-13			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>					



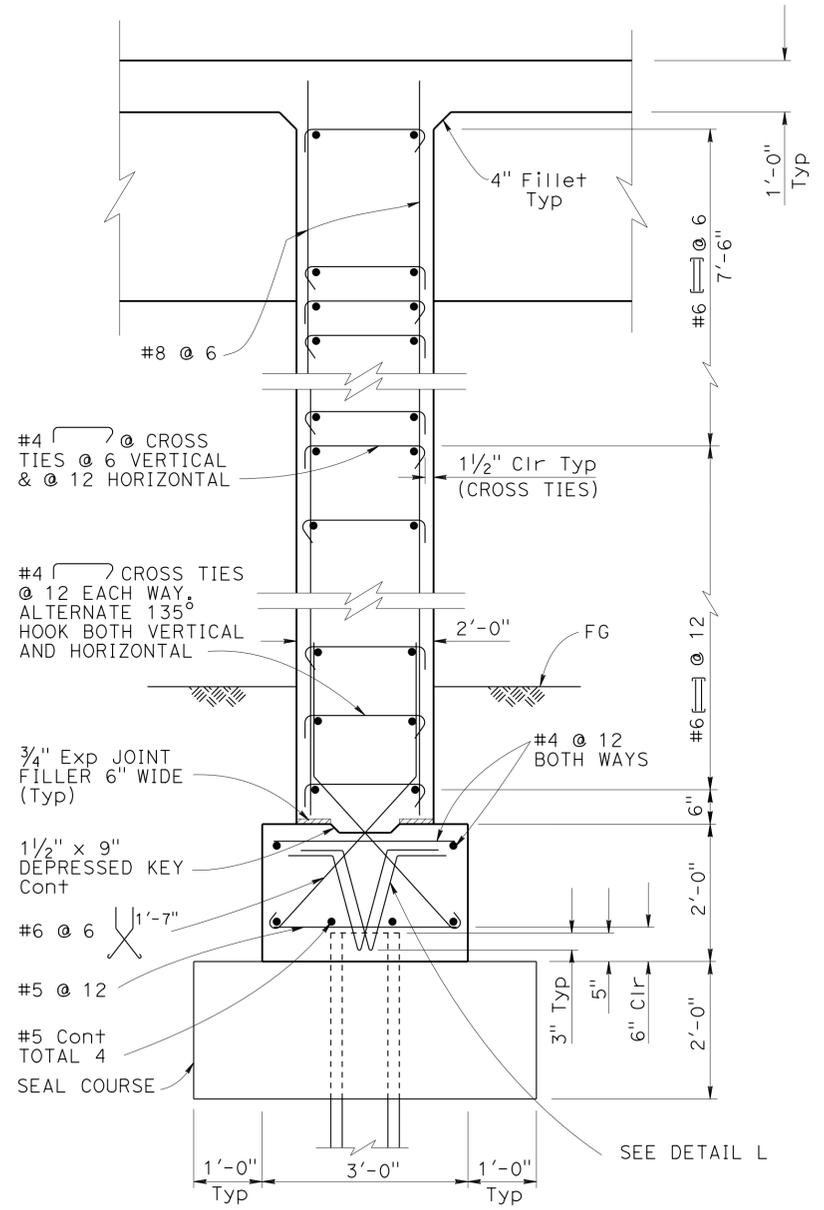
SECTION K-K
 1" = 1'-0"
 PIERS 2,7,8, 18
 NOTE:
 Horiz TIE BARS NOT SHOWN



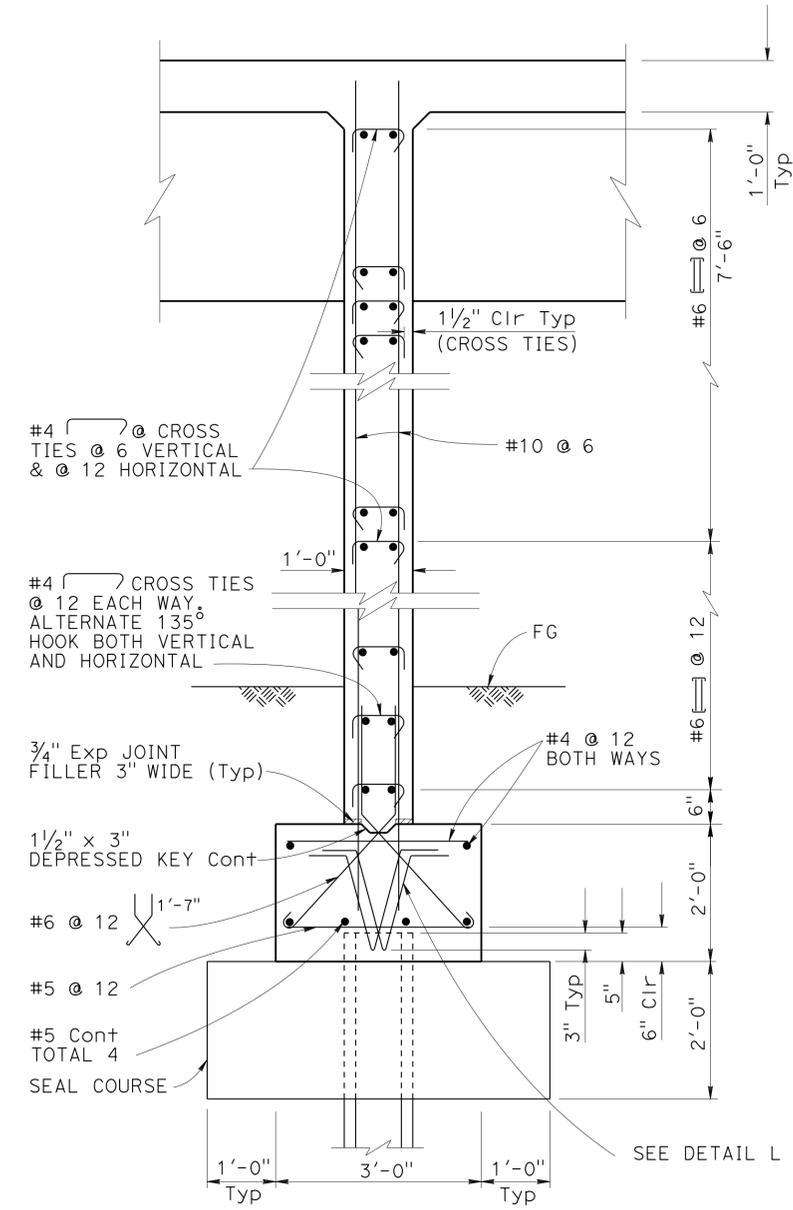
SECTION K-K
 1" = 1'-0"
 PIERS 3 TO 6, 9
 NOTE:
 Horiz TIE BARS NOT SHOWN

- NOTES:
- FOR LOCATIONS OF SECTIONS E-E, F-F, AND K-K, SEE "PIER LAYOUT AT PIERS 2, 4 TO 9 AND 18", "PIER LAYOUT AT PIERS 10 TO 17" AND "PIER DETAILS NO. 2" SHEETS.
 - SEET TABLE ON "PIER LAYOUT AT PIERS 10 TO 17" SHEET FOR "T" DIMENSION.

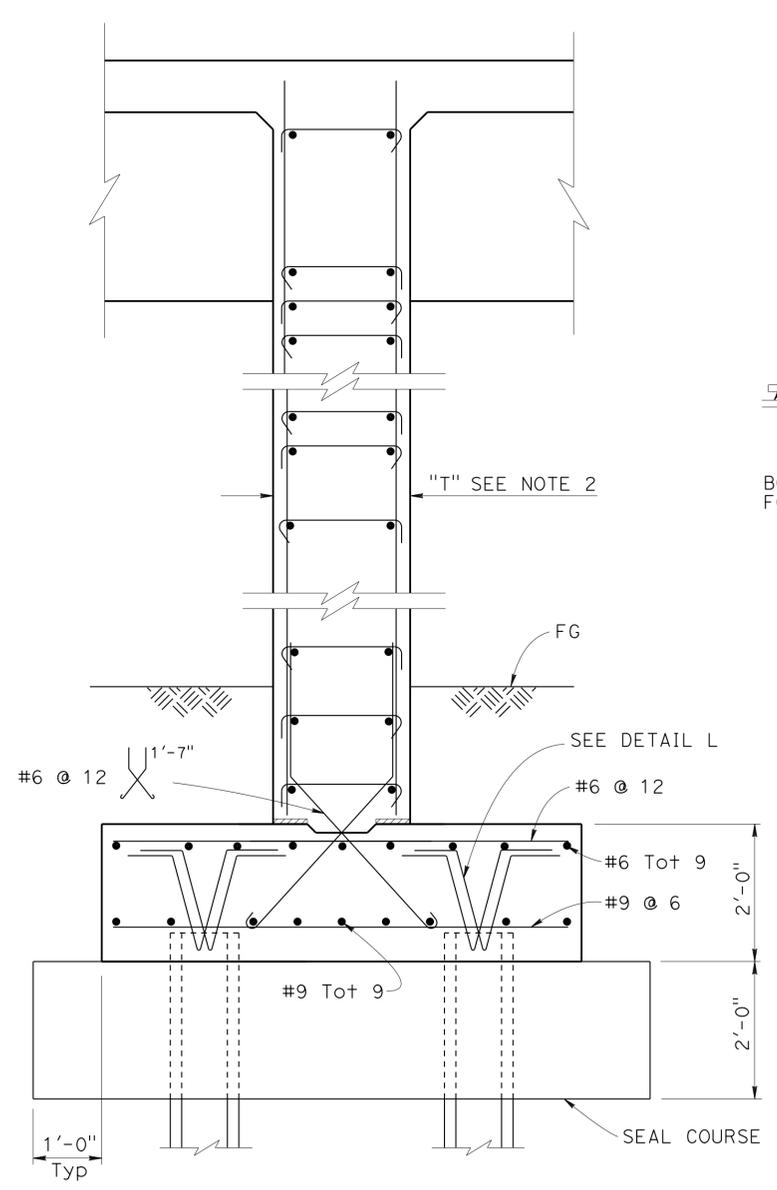
NOTE:
 THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.



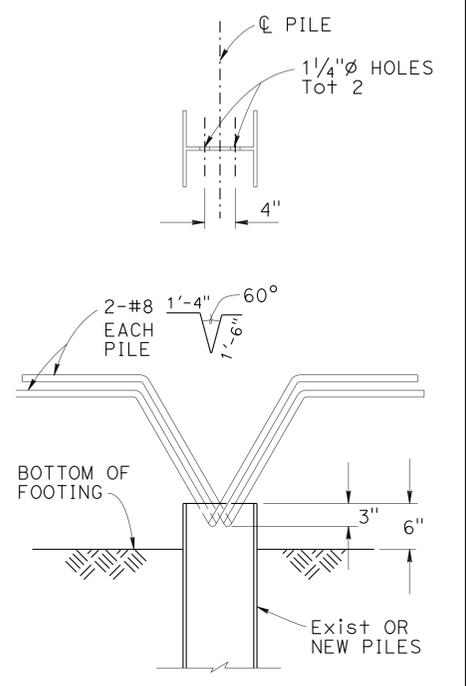
SECTION E-E
 (PIERS 2,7,8, 18)
 3/4" = 1'-0"



SECTION E-E
 (PIERS 3 TO 6, 9)
 3/4" = 1'-0"



SECTION F-F
 (PIERS 10 TO 17)
 3/4" = 1'-0"



DETAIL L
 1" = 1'-0"

NOTE:
 NOT ALL BARS SHOWN FOR BARS NOT SHOWN, SEE SECTION E-E

DESIGN BY RUI WANG CHECKED TRACY SANDERSON DETAILS BY HENGAMEH MAHBOOB I CHECKED TRACY SANDERSON QUANTITIES BY BRIAN VO / DIYA AZZAM CHECKED TRACY SANDERSON	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 19	BRIDGE NO. 55-0106R/L	SANTA ANA RIVER BRIDGE (WIDEN) PIER DETAILS NO. 1
			POST MILE 8.57	
			UNIT: 3621 PROJECT NUMBER & PHASE: 1200000078 - 1 CONTRACT NO.: 12-0C5601	
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 03/07/12 01/30/13 01/28/15 SHEET 17 OF 45

USERNAME => s121614 DATE PLOTTED => 24-APR-2013 TIME PLOTTED => 11:46

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	278	357

 01-25-13
 REGISTERED CIVIL ENGINEER DATE

4-15-13
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER

RUI WANG

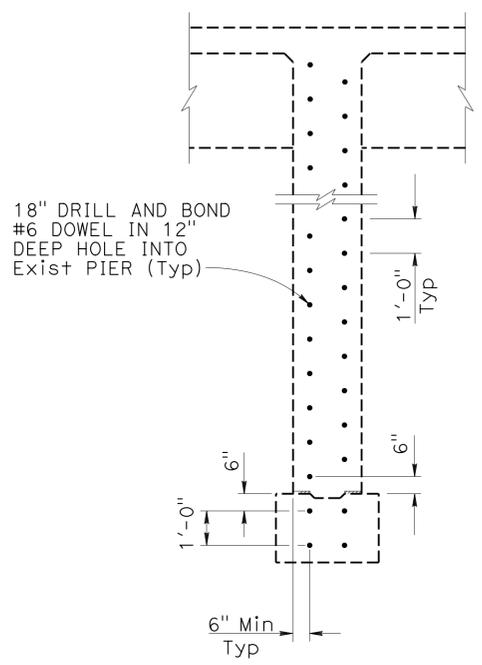
No. C52910

Exp. 12/31/14

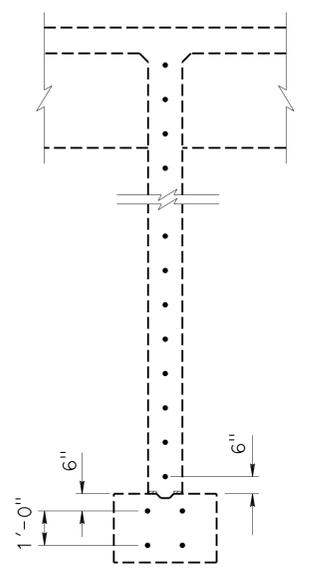
CIVIL

STATE OF CALIFORNIA

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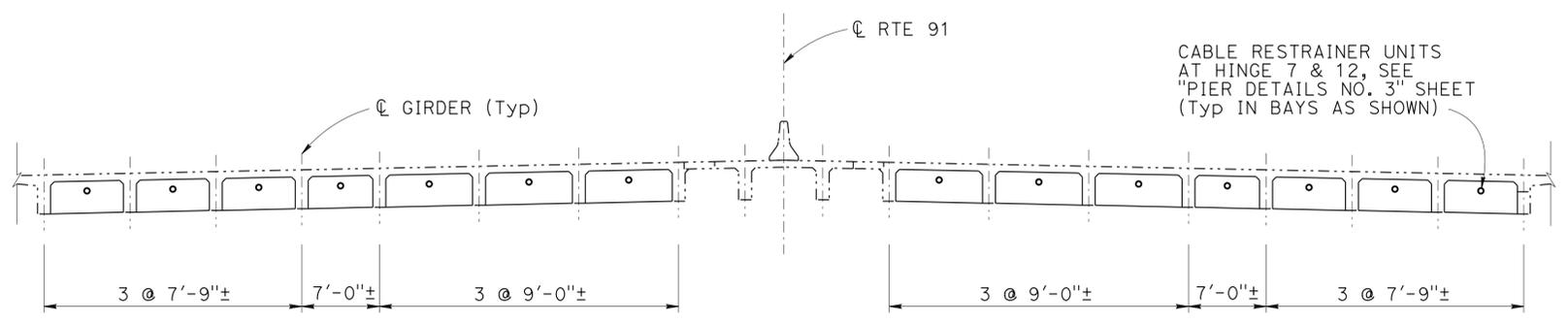


SECTION D-D
(PIERS 2,7,8, 18)
 $\frac{3}{8}'' = 1'-0''$

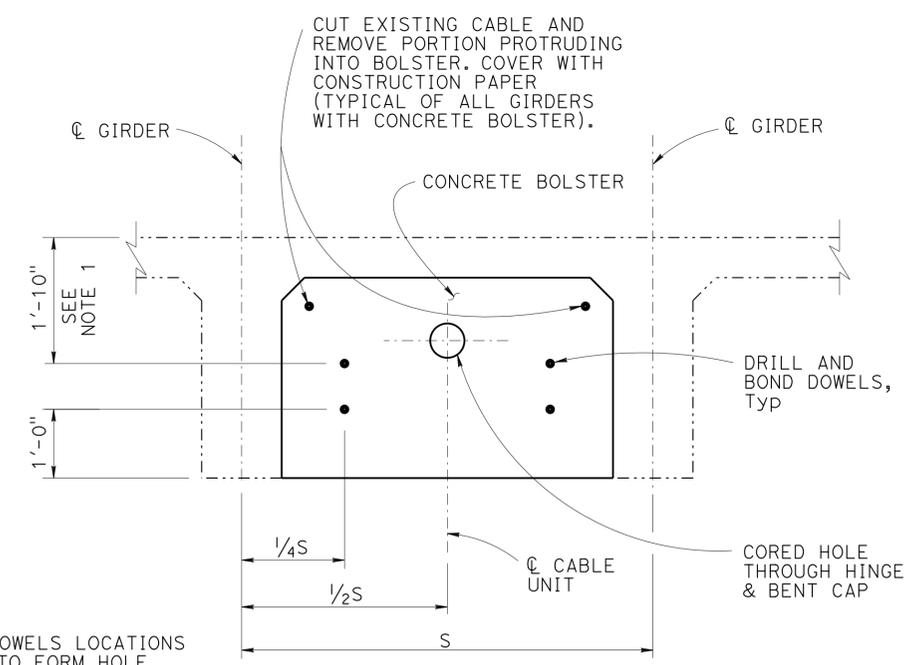


SECTION D-D
(PIERS 4 TO 6, 9 TO 17)
 $\frac{3}{8}'' = 1'-0''$

NOTE:
1. FOR DETAILS NOT SHOWN SEE "PIER LAYOUT AT PIERS 2, 4 TO 9 AND 18" AND "PIER LAYOUT AT PIERS 10 TO 17" SHEETS.



TYPICAL SECTION THRU HINGE
 $\frac{1}{8}'' = 1'-0''$



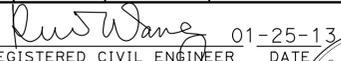
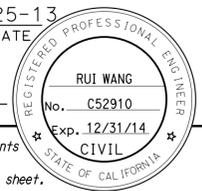
NOTE:
1. DRILL AND BOND DOWELS LOCATIONS TO BE ADJUSTED TO FORM HOLE.

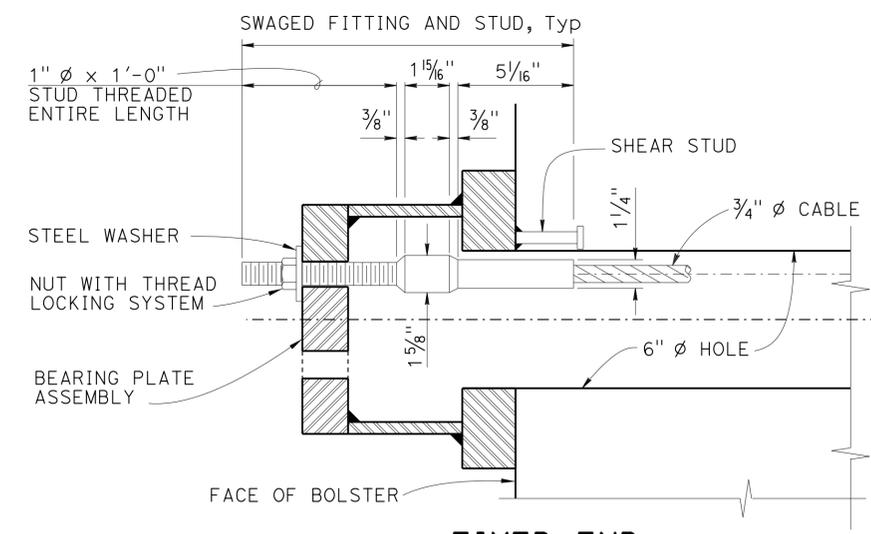
PART TYPICAL SECTION THRU HINGE
 $\frac{3}{4}'' = 1'-0''$

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

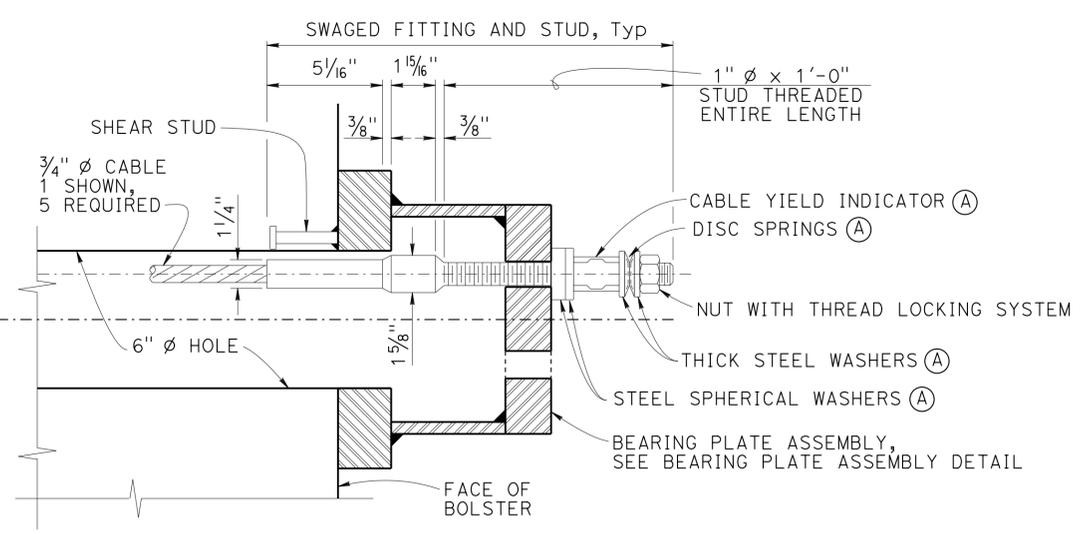
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: x-small;">DESIGN</td> <td style="font-size: x-small;">BY RUI WANG</td> <td style="font-size: x-small;">CHECKED TRACY SANDERSON</td> </tr> <tr> <td style="font-size: x-small;">DETAILS</td> <td style="font-size: x-small;">BY H. MAHBOOBI/H. INIGUEZ</td> <td style="font-size: x-small;">CHECKED TRACY SANDERSON</td> </tr> <tr> <td style="font-size: x-small;">QUANTITIES</td> <td style="font-size: x-small;">BY EDWARD MERCADO</td> <td style="font-size: x-small;">CHECKED HTOON WIN</td> </tr> </table>	DESIGN	BY RUI WANG	CHECKED TRACY SANDERSON	DETAILS	BY H. MAHBOOBI/H. INIGUEZ	CHECKED TRACY SANDERSON	QUANTITIES	BY EDWARD MERCADO	CHECKED HTOON WIN	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 19	BRIDGE NO. 55-0106R/L POST MILE 8.57	SANTA ANA RIVER BRIDGE (WIDEN) PIER DETAILS NO.2
DESIGN	BY RUI WANG	CHECKED TRACY SANDERSON											
DETAILS	BY H. MAHBOOBI/H. INIGUEZ	CHECKED TRACY SANDERSON											
QUANTITIES	BY EDWARD MERCADO	CHECKED HTOON WIN											
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)	ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	UNIT: 3621 PROJECT NUMBER & PHASE: 1200000078 - 1 CONTRACT NO.: 12-0C5601	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES 12/14/12 01/28/13 01/30/13 SHEET 18 OF 45									

USERNAME => s121614 DATE PLOTTED => 24-APR-2013 TIME PLOTTED => 11:46

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	279	357
				01-25-13	
REGISTERED CIVIL ENGINEER				DATE	
4-15-13				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>					



**FIXED END
(TYPICAL BRACKET ANCHORAGE)**
(SINGLE-END ADJUSTMENT RESTRAINER UNITS)

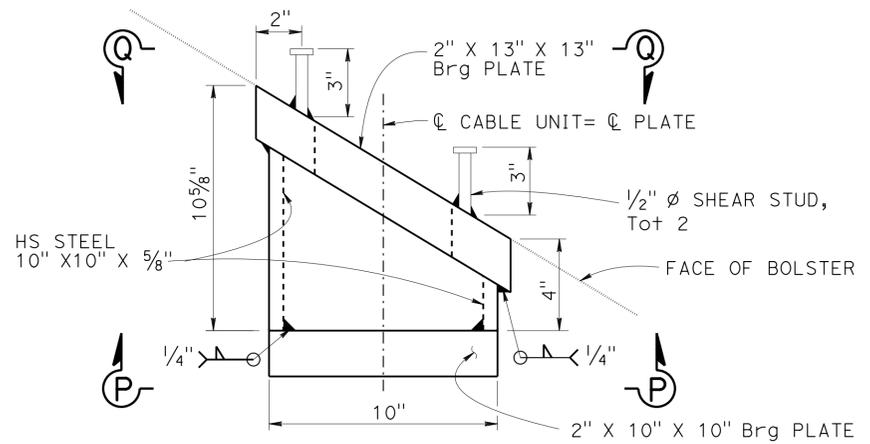


ADJUSTMENT END

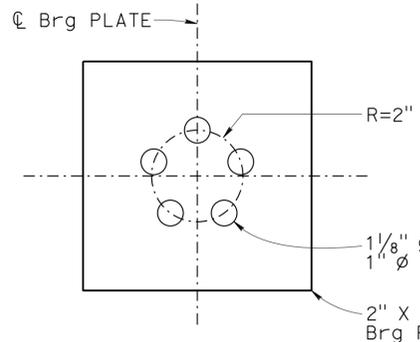
(A) FOR DIMENSIONS AND INSTALLATION PROCEDURE, SEE "CABLE RESTRAINER ADJUSTMENT HARDWARE"

LOCATION	LENGTH "L"
HINGE 7	17'-9 1/2"
HINGE 12	17'-9 1/2"

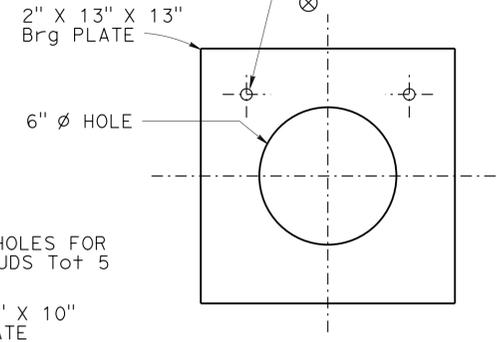
CABLE END ANCHORAGE
3" = 1'-0"



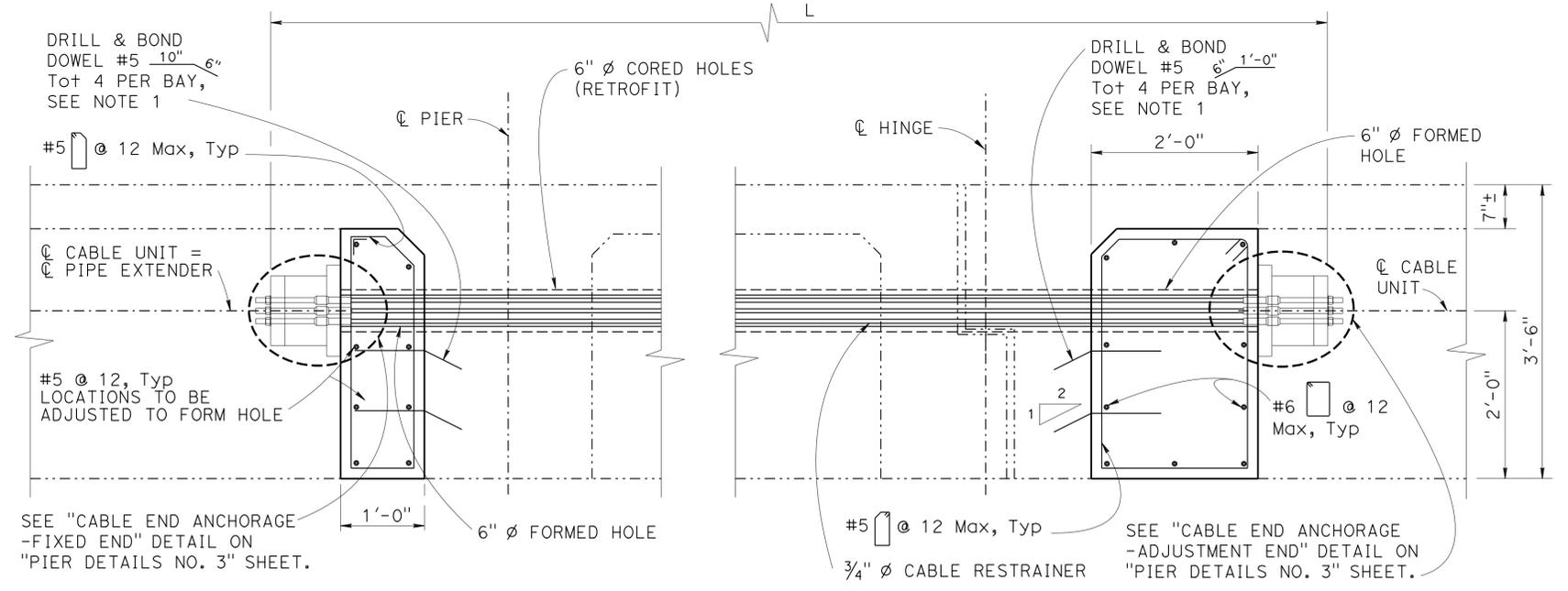
BEARING PLATE ASSEMBLY DETAIL
3" = 1'-0"



VIEW P-P
3" = 1'-0"



VIEW Q-Q
3" = 1'-0"



LONGITUDINAL SECTION
1" = 1'-0"

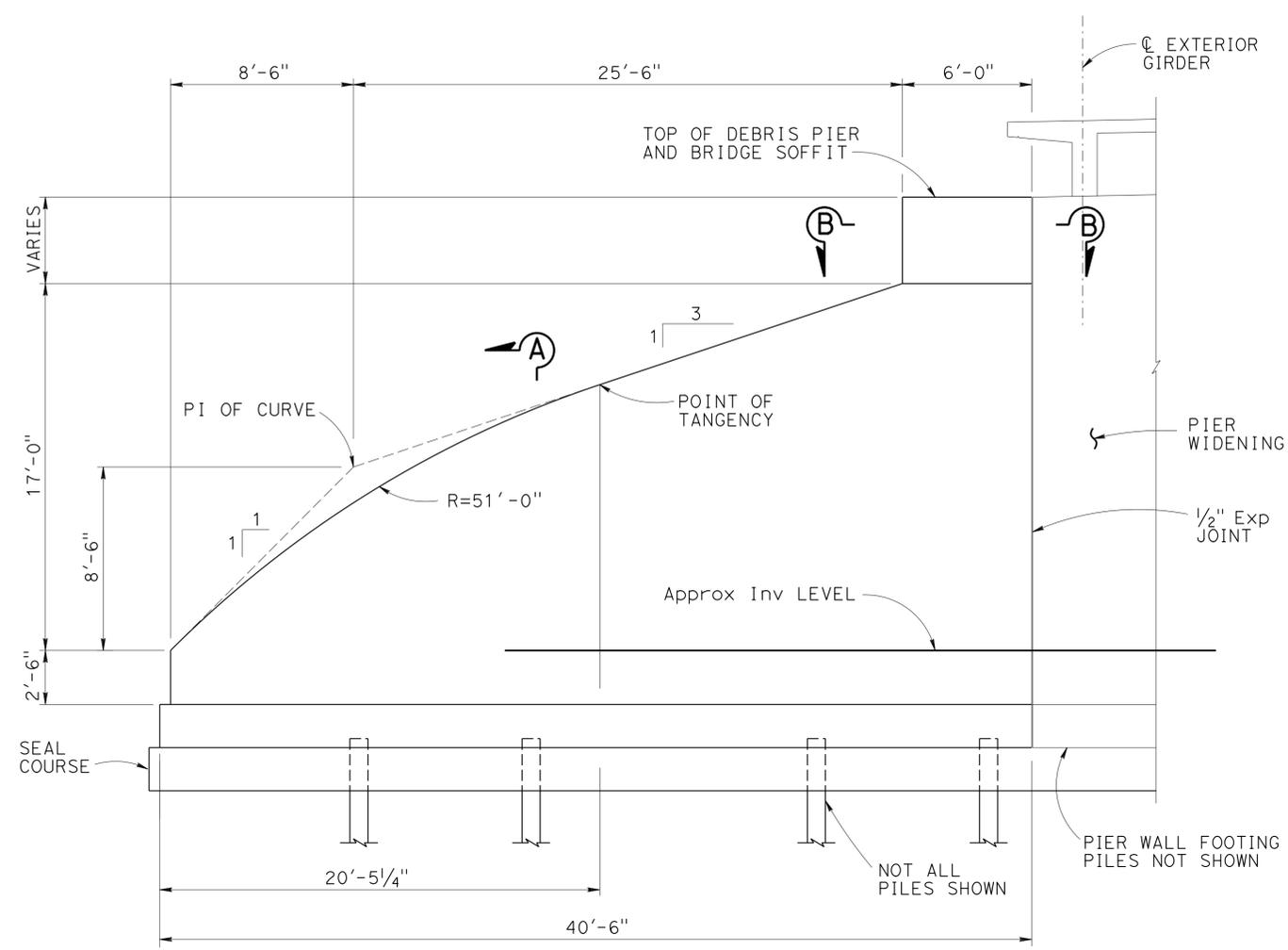
NOTES:

- FOR LOCATIONS OF DOWELS, SEE PART TYPICAL SECTION THRU HINGE ON "PIER DETAILS NO. 2" SHEET.

HINGE 7 SHOWN. HINGE 12 SIMILAR BUT OPPOSITE HAND

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

DESIGN	BY RUI WANG	CHECKED TRACY SANDERSON	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 19	BRIDGE NO.	SANTA ANA RIVER BRIDGE (WIDEN) PIER DETAILS NO.3				
DETAILS	BY HECTOR INIGUEZ	CHECKED TRACY SANDERSON			55-0106R/L					
QUANTITIES	BY EDWARD MERCADO	CHECKED HTOON WIN			POST MILE 8.57					
STRUCTURES DESIGN DETAIL SHEET (ENGLISH) (REV. 09-01-10)			ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	UNIT: 3621	PROJECT NUMBER & PHASE: 1200000078 - 1	CONTRACT NO.: 12-0C5601	DISREGARD PRINTS BEARING EARLIER REVISION DATES	REVISION DATES	SHEET 19	OF 45



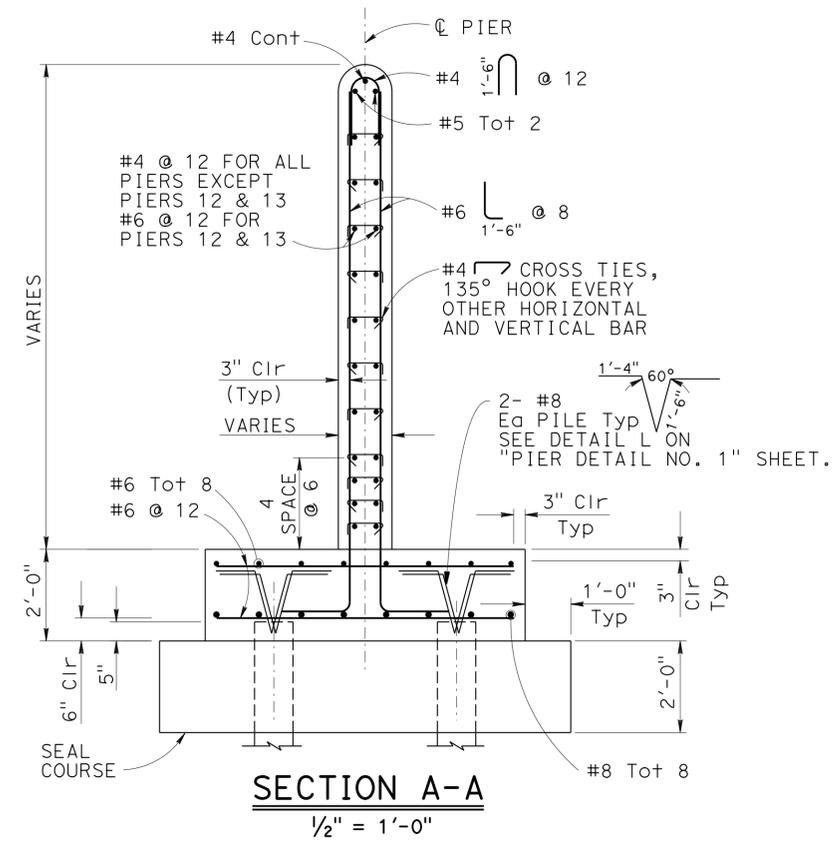
ELEVATION
1/4" = 1'-0"

PIER No.	T	E	F	G
10	1'-0"	3'-0"±	6'-0"	12'-2"
11	1'-0"	3'-0"±	6'-0"	12'-2"
12	2'-0"	2'-5"±	7'-2"	13'-3"
13	2'-0"	2'-5"±	7'-2"	13'-3"
14	1'-0"	3'-0"±	6'-0"	12'-2"
15	1'-0"	4'-1"±	N/A	12'-2"
16	1'-0"	5'-4"±	N/A	12'-2"
17	1'-0"	6'-6"±	N/A	12'-2"

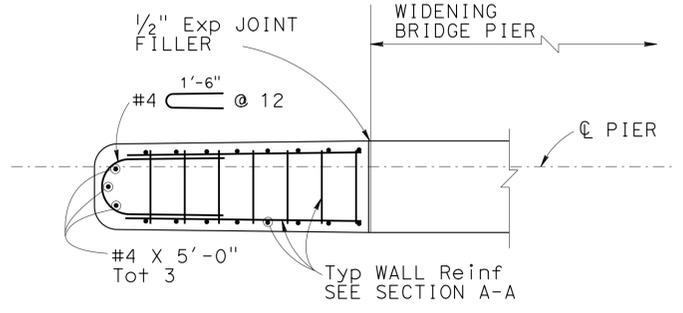
LEGEND

- EXISTING STRUCTURE
- NEW STRUCTURE
- I I EXISTING PILE
- I I NEW PILE

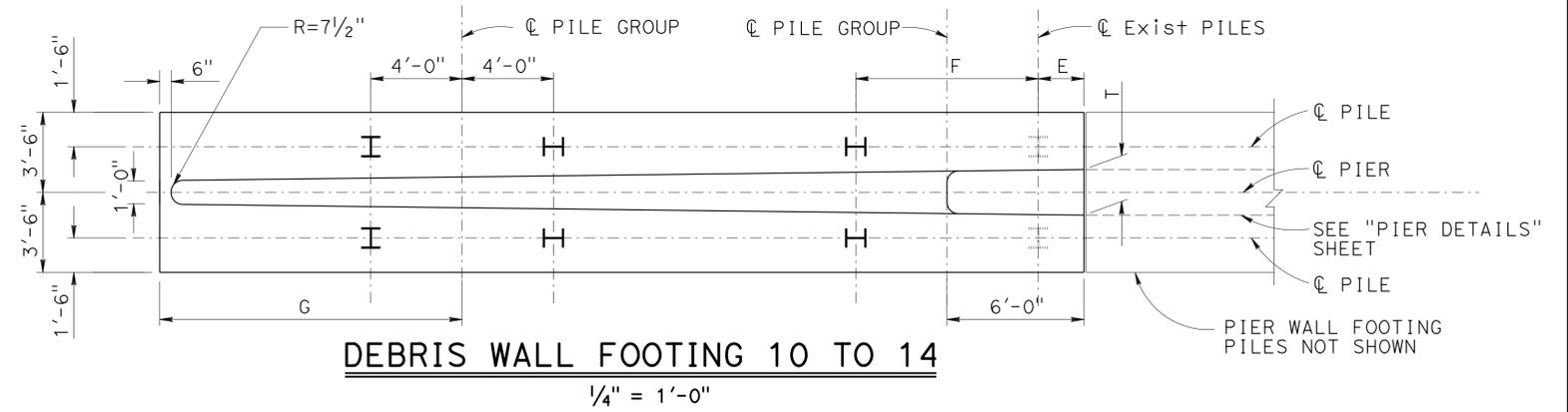
NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.



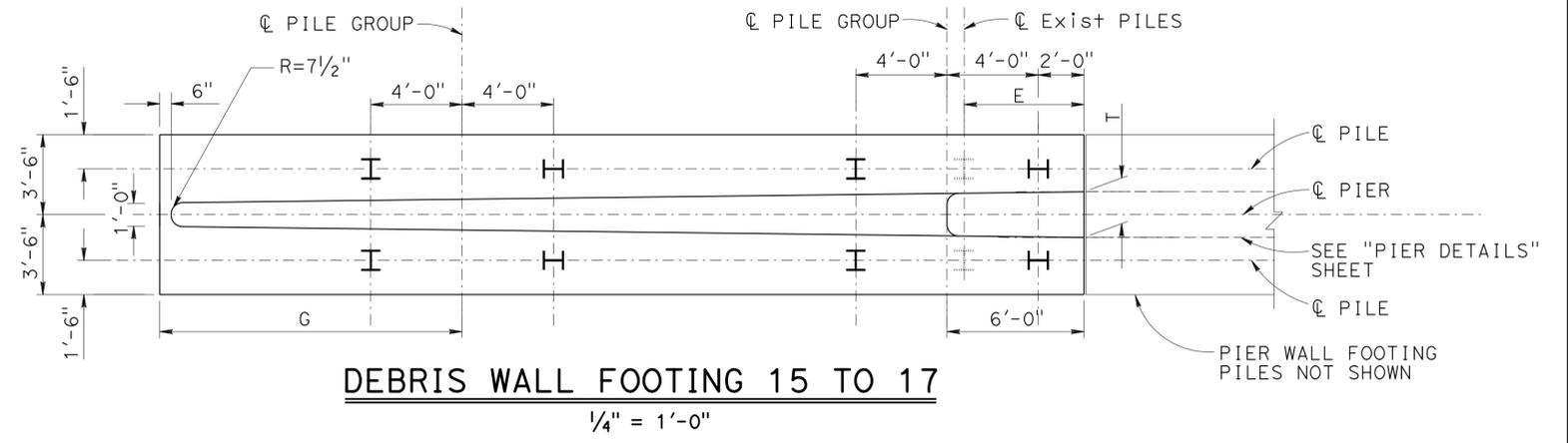
SECTION A-A
1/2" = 1'-0"



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



DEBRIS WALL FOOTING 10 TO 14
1/4" = 1'-0"



DEBRIS WALL FOOTING 15 TO 17
1/4" = 1'-0"

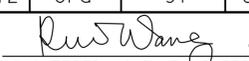
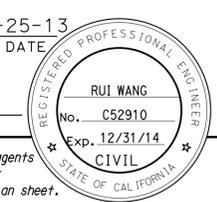
DESIGN	BY RUI WANG	CHECKED TRACY SANDERSON
DETAILS	BY HENGAMEH MAHBOOBI	CHECKED TRACY SANDERSON
QUANTITIES	BY BRIAN VO / DIYA AZZAM	CHECKED TRACY SANDERSON

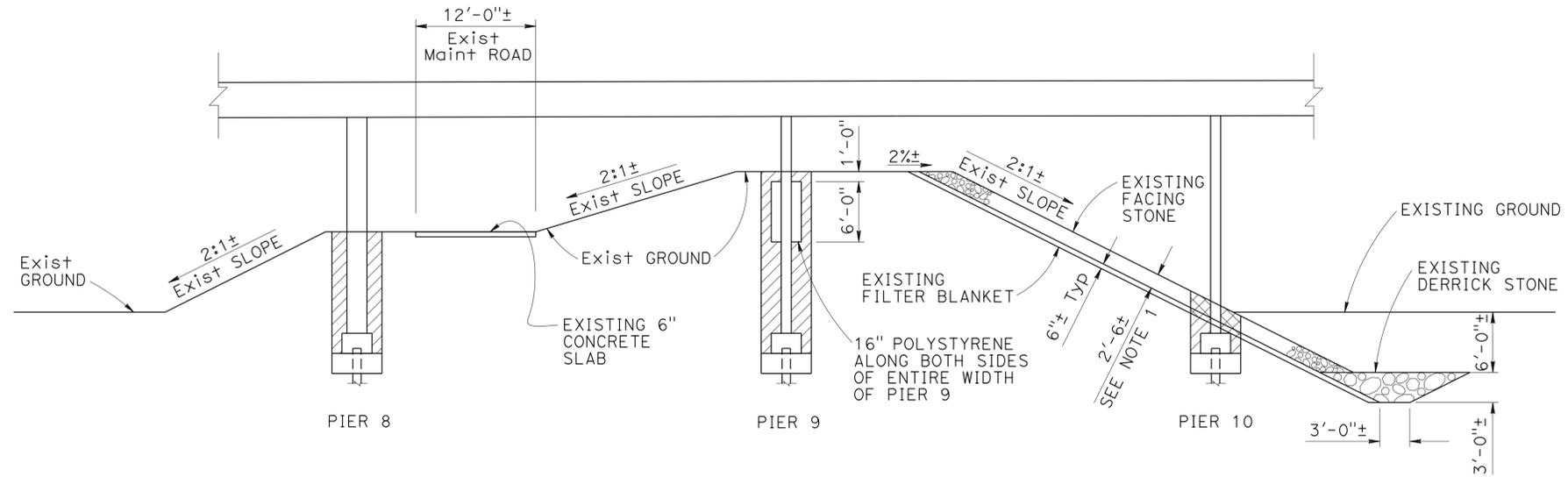
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 19

BRIDGE NO. 55-0106R/L
POST MILE 8.57

SANTA ANA RIVER BRIDGE (WIDEN)
DEBRIS PIER DETAILS, PIERS NO. 10 TO 17

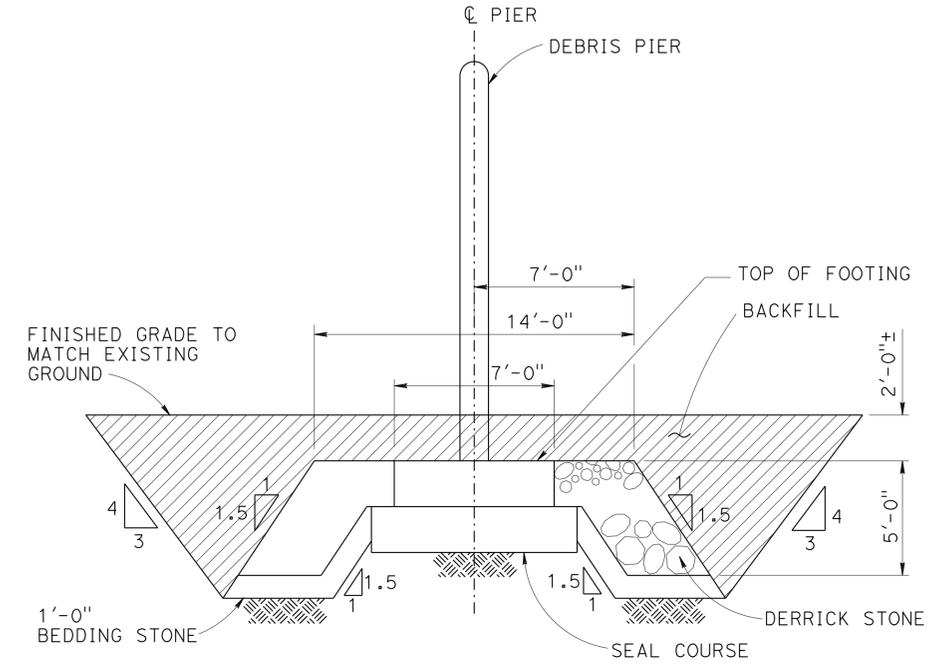
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	281	357
			01-25-13	DATE	
REGISTERED CIVIL ENGINEER			DATE		
4-15-13			PLANS APPROVAL DATE		
					
<small>The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.</small>					



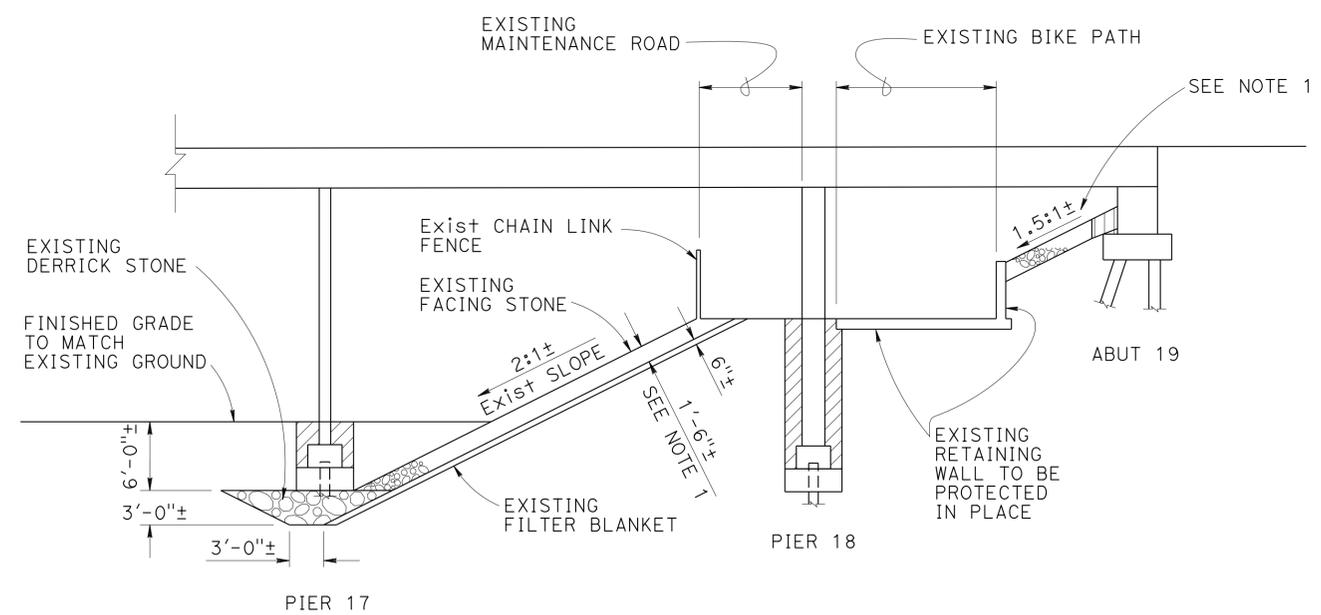
**MIRRORED ELEVATION
TYPICAL NORTH LEVEE RECONSTRUCTION**
1/8" = 1'-0"

LEGEND

-  LIMITS OF EXCAVATION AND BACKFILL, SEE "MISC DETAILS" SHEET
-  LIMITS OF RECONSTRUCT FACING STONE
-  LIMITS OF RECONSTRUCT GROUTED RIPRAP TO MATCH EXISTING.



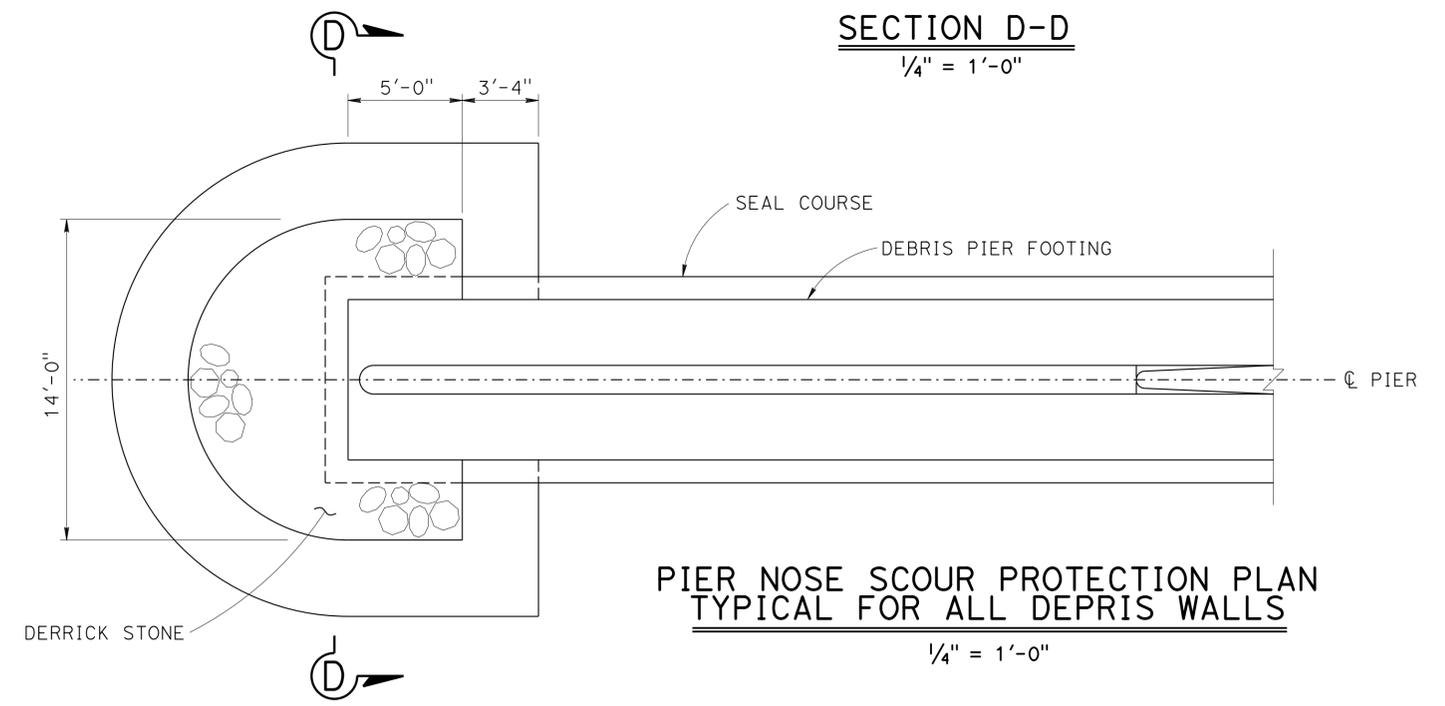
SECTION D-D
1/4" = 1'-0"



**MIRRORED ELEVATION
TYPICAL SOUTH LEVEE RECONSTRUCTION**
1/8" = 1'-0"

- NOTE:**
1. RECONSTRUCT FACING STONE AND FILLER BLANKET AND GROUTED RIPRAP TO MATCH EXISTING.

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



**PIER NOSE SCOUR PROTECTION PLAN
TYPICAL FOR ALL DEPRIS WALLS**
1/4" = 1'-0"

DESIGN	BY RUI WANG	CHECKED TRACY SANDERSON
DETAILS	BY HENGAMEH MAHBOOBI	CHECKED TRACY SANDERSON
QUANTITIES	BY BRIAN VO / DIYA AZZAM	CHECKED TRACY SANDERSON

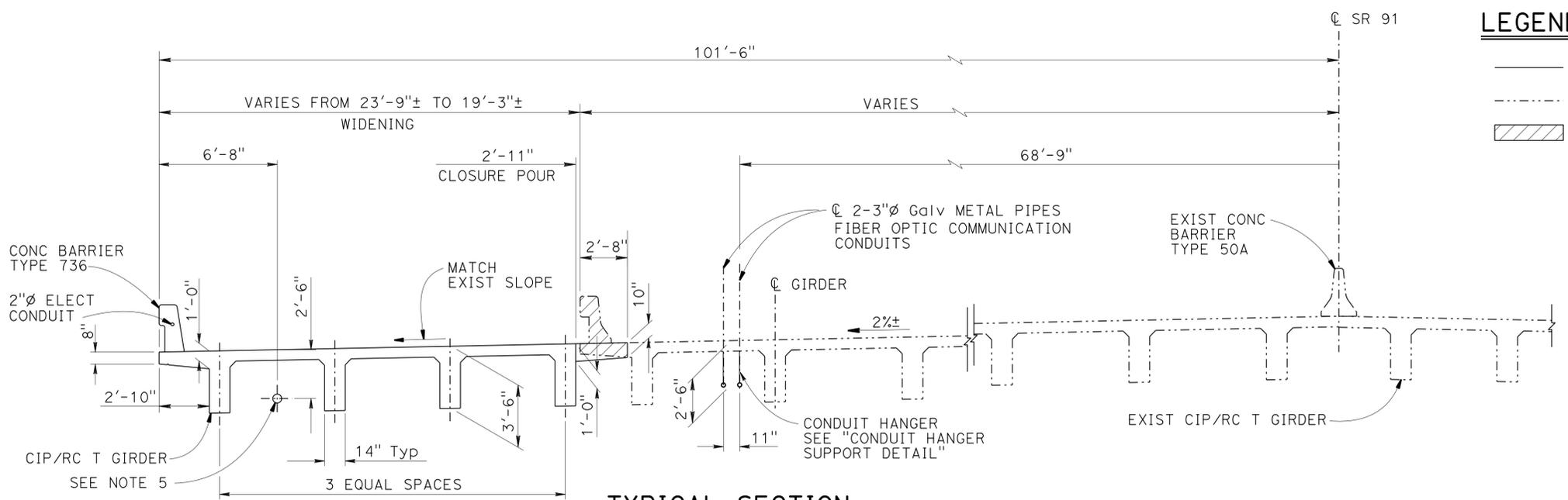
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 19

BRIDGE NO.	55-01060R/L
POST MILE	8.57

SANTA ANA RIVER BRIDGE (WIDEN)
LEVEE CONSTRUCTION DETAILS

USERNAME => s121614 DATE PLOTTED => 24-APR-2013 TIME PLOTTED => 11:46



LEGEND

——— NEW STRUCTURE
 - - - - - EXISTING STRUCTURE
 [Hatched Box] BRIDGE REMOVAL PORTION

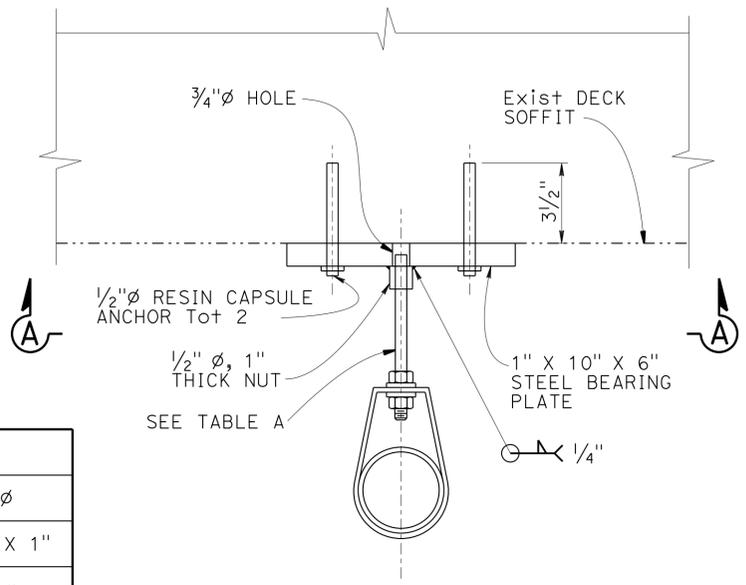
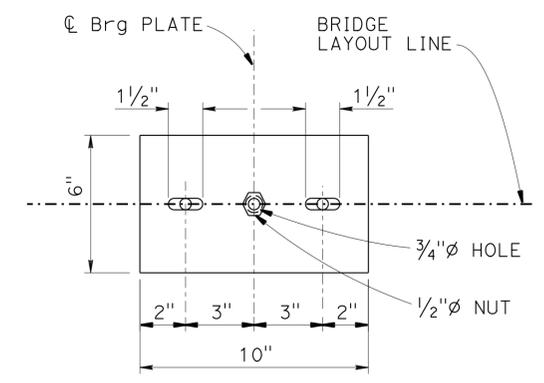
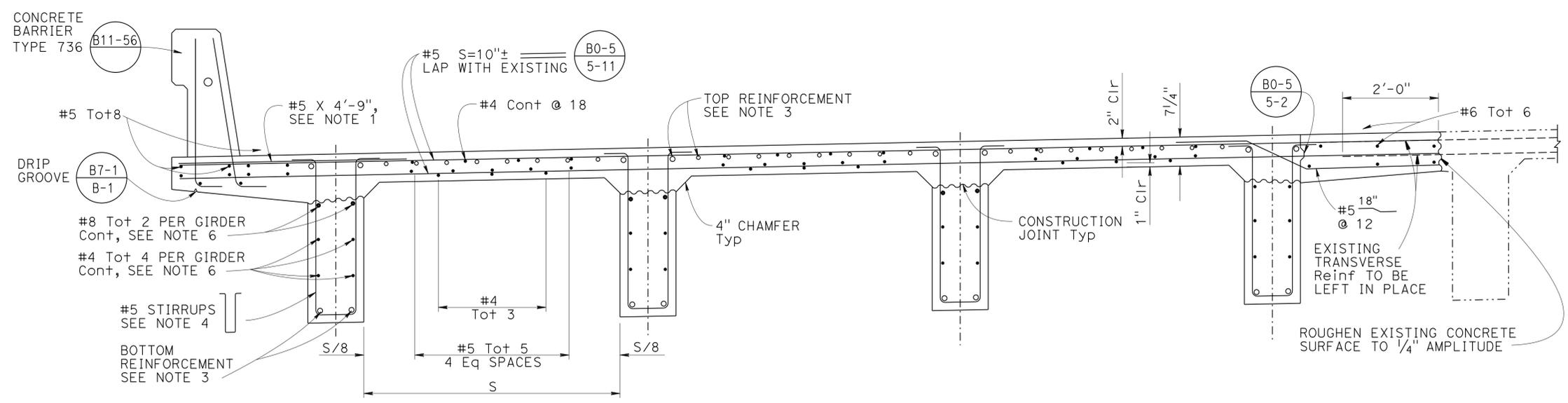


TABLE A

CONDUIT	3"
ROD	1/2" ϕ
STRAP	0.090" X 1"
SUPPORT SPACING	10'-0"

NOTES:

- BARS SHALL BE PLACED IN BRIDGE DECK WITHIN 5'-0" OF BB & EB. BUNDLE WITH ALTERNATE TOP TRANSVERSE BARS. (B0-5 5-11)
- FIELD BEND THE EXISTING DECK REINFORCEMENT AS NECESSARY TO PROVIDE 2" DECK COVER AS REQUIRED.
- FOR "TOP REINFORCEMENT" AND "BOTTOM REINFORCEMENT", SEE "GIRDER TOP REINFORCEMENT" AND "GIRDER BOTTOM REINFORCEMENT" SHEETS.
- FOR STIRRUP SPACING, SEE "GIRDER LAYOUT NO. 1", NO. 2, AND NO. 3" SHEETS.
- FUTURE UTILITY OPENING 6" ϕ SEE (B6-10)
- LAP SPLICE EQUAL TO TWO TIMES STANDARD LAP. NO SPLICE WITHIN 8'-9" FROM FACE OF SUPPORT.



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

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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	283	357

LEGEND

- NEW STRUCTURE
- - - - - EXISTING STRUCTURE
- GIRDER STEM WIDTH IN INCHES

NOTES:

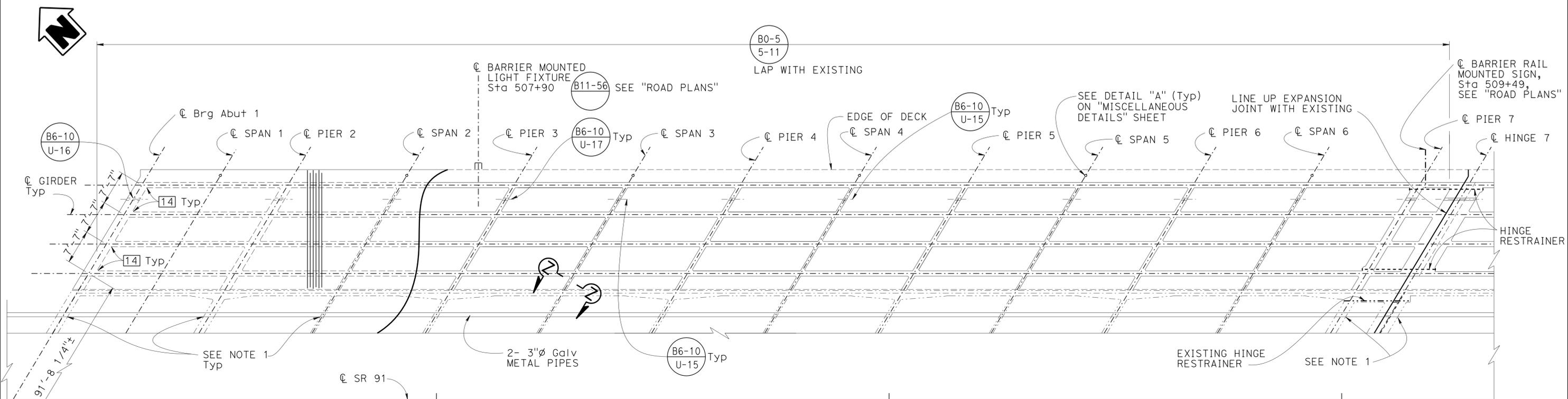
1. CORE 2-4 1/2" Ø HOLES AT BOTH ABUTMENT BACKWALLS, BOTH END DIAPHRAGMS, ALL BENT CAPS, INTERMEDIATE DIAPHRAGMS, AND HINGES AT LOCATION SHOWN ON "GENERAL PLAN NO. 2" SHEET.
2. TOP DECK: EXTEND ALTERNATE TOP TRANSVERSE Reinf 1'-6" Min INTO END DIAPHRAGM. TERMINATE REMAINING TRANSVERSE Reinf 3" FROM FACE OF DIAPHRAGM.
3. FOR SECTION Z-Z, SEE "GIRDER DETAILS" SHEET.

RUI WANG 01-25-13
 REGISTERED CIVIL ENGINEER DATE

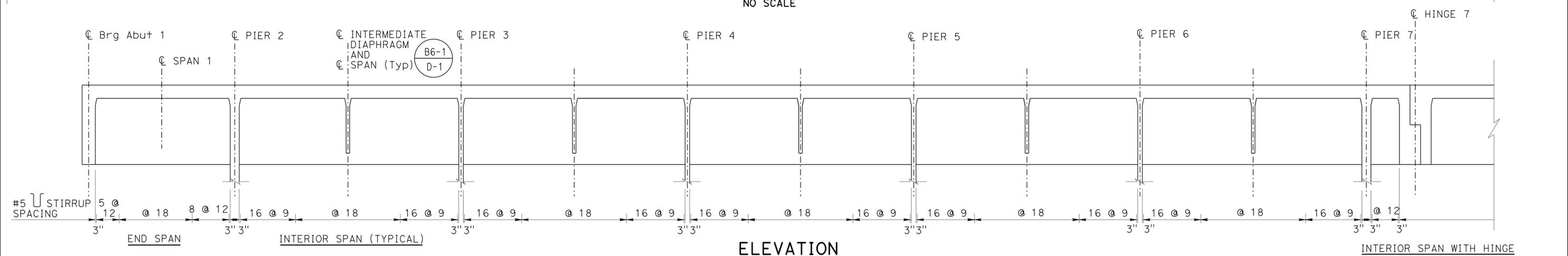
4-15-13
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 RUI WANG
 No. C52910
 Exp. 12/31/14
 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.



PLAN
NO SCALE



ELEVATION
NO SCALE

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

<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">DESIGN</td> <td style="width: 30%;">BY RUI WANG</td> <td style="width: 30%;">CHECKED TRACY SANDERSON</td> </tr> <tr> <td>DETAILS</td> <td>BY HENGAMEH MAHBOOBI</td> <td>CHECKED TRACY SANDERSON</td> </tr> <tr> <td>QUANTITIES</td> <td>BY BRIAN VO / DIYA AZZAM</td> <td>CHECKED TRACY SANDERSON</td> </tr> </table>	DESIGN	BY RUI WANG	CHECKED TRACY SANDERSON	DETAILS	BY HENGAMEH MAHBOOBI	CHECKED TRACY SANDERSON	QUANTITIES	BY BRIAN VO / DIYA AZZAM	CHECKED TRACY SANDERSON	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 19	BRIDGE NO. 55-0106R/L POST MILE 8.57	SANTA ANA RIVER BRIDGE (WIDEN) GIRDER LAYOUT NO. 1
DESIGN	BY RUI WANG	CHECKED TRACY SANDERSON											
DETAILS	BY HENGAMEH MAHBOOBI	CHECKED TRACY SANDERSON											
QUANTITIES	BY BRIAN VO / DIYA AZZAM	CHECKED TRACY SANDERSON											

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	285	357

Rui Wang 01-25-13
 REGISTERED CIVIL ENGINEER DATE

4-15-13
 PLANS APPROVAL DATE

RUI WANG
 No. C52910
 Exp. 12/31/14
 CIVIL
 STATE OF CALIFORNIA

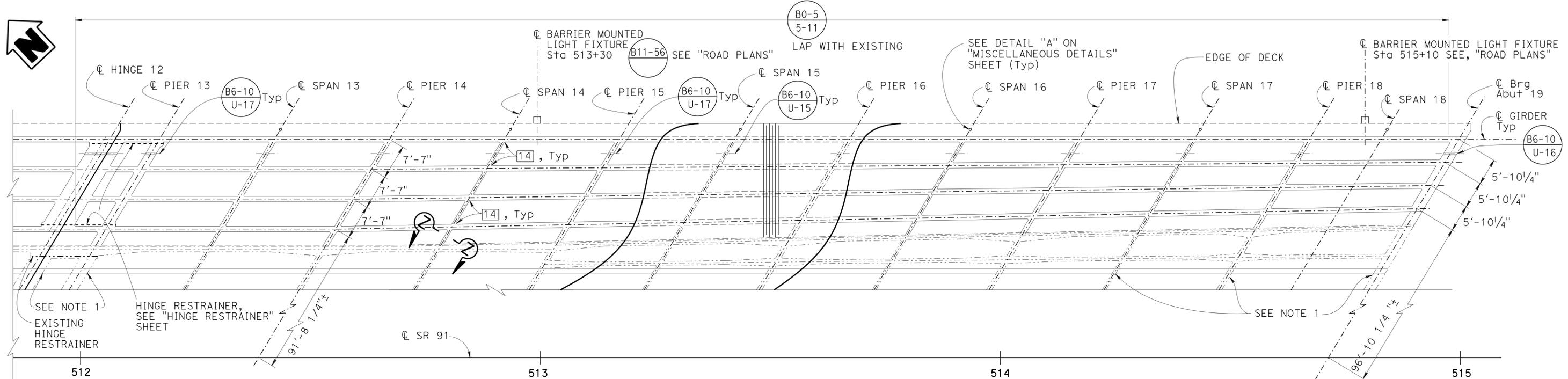
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LEGEND

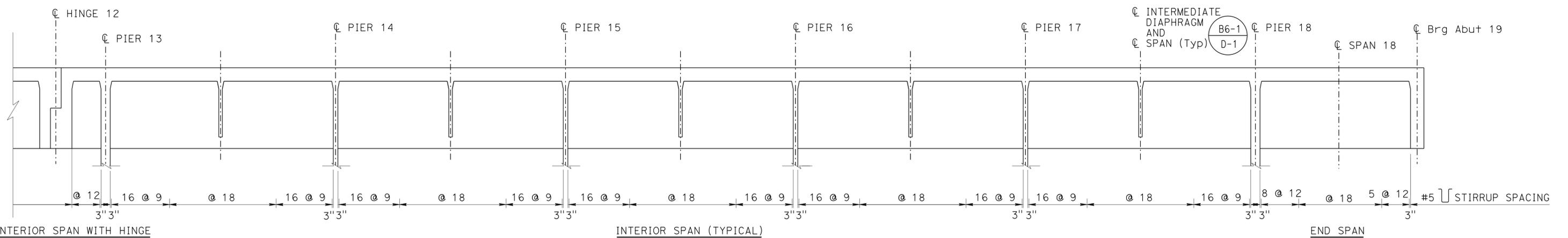
- NEW STRUCTURE
- - - - - EXISTING STRUCTURE
- GIRDER STEM WIDTH IN INCHES
- EXISTING VERTICAL RESTRAINER

NOTES:

- CORE 2-4 1/2" Ø HOLES AT BOTH ABUTMENT BACKWALLS, BOTH END DIAPHRAGMS, ALL BENT CAPS, INTERMEDIATE DIAPHRAGMS, AND HINGES AT LOCATION SHOWN ON "GENERAL PLAN NO. 2" SHEET.
- TOP DECK: EXTEND ALTERNATE TOP TRANSVERSE REINF 1'-6" MIN INTO END DIAPHRAGM. TERMINATE REMAINING TRANSVERSE REINF 3" FROM FACE OF DIAPHRAGM.
- FOR SECTION Z-Z, SEE "GIRDER DETAILS" SHEET.



PLAN
NO SCALE



ELEVATION
NO SCALE

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

DESIGN BY RUI WANG CHECKED TRACY SANDERSON DETAILS BY HENGAMEH MAHBOOBI CHECKED TRACY SANDERSON QUANTITIES BY BRIAN VO / DIYA AZZAM CHECKED TRACY SANDERSON	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 19	BRIDGE NO. 55-0106R/L POST MILE 8.57 SANTA ANA RIVER BRIDGE (WIDEN) GIRDER LAYOUT NO. 3
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DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	286	357
REGISTERED CIVIL ENGINEER			DATE	RUI WANG	
PLANS APPROVAL DATE			01-25-13	No. C52910	
			4-15-13	Exp. 12/31/14	
				CIVIL	
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FALSEWORK RELEASE

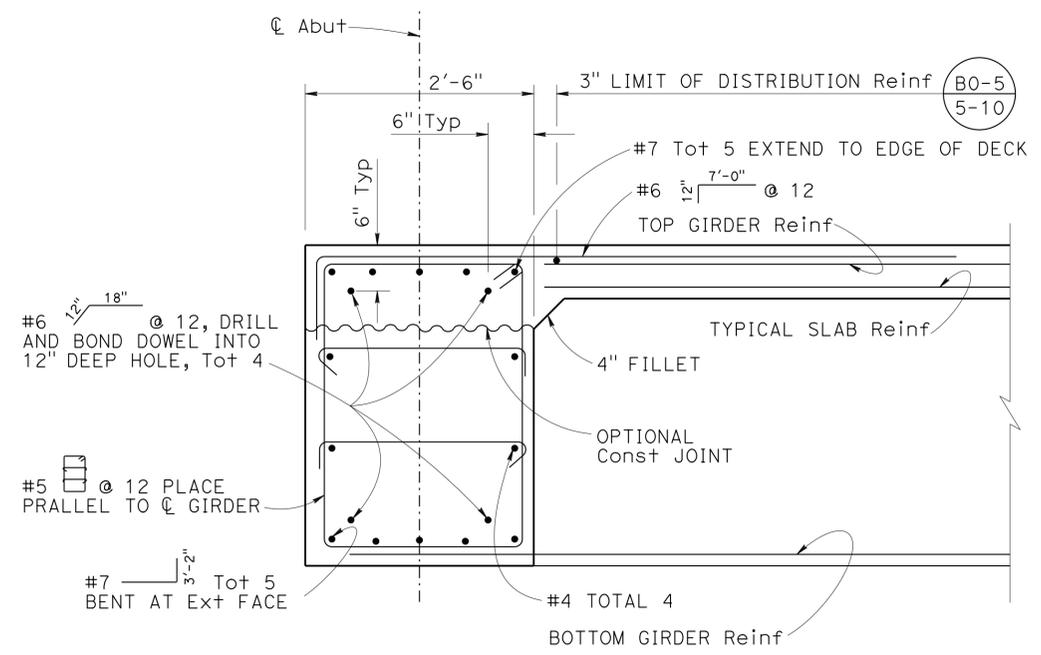
ALTERNATIVE 1:
FALSEWORK SHALL BE RELEASED AS SOON AS PERMITTED BY THE SPECIFICATIONS.

CLOSURE POUR SHALL NOT BE PLACED SOONER THAN 60 DAYS AFTER THE FALSEWORK HAS BEEN RELEASED.

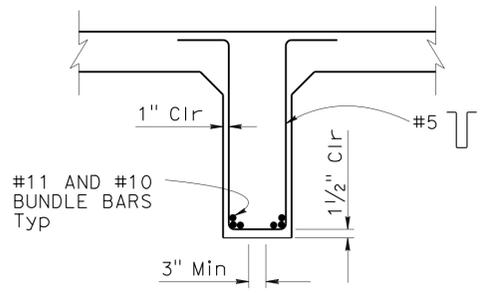
ALTERNATIVE 2:
FALSEWORK SHALL NOT BE RELEASED LESS THAN 28 DAYS AFTER THE LAST CONCRETE HAS BEEN PLACED.

CLOSURE POUR SHALL NOT BE PLACED SOONER THAN 14 DAYS AFTER THE FALSEWORK HAS BEEN RELEASED.

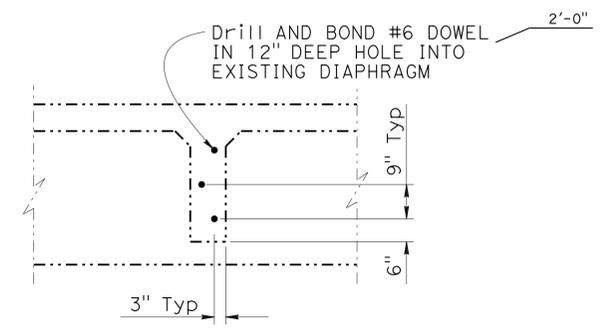
WHEN FALSEWORK RELEASE ALTERNATIVE 2 IS USED, CAMBER VALUES ARE 0.75 TIMES THOSE SHOWN.



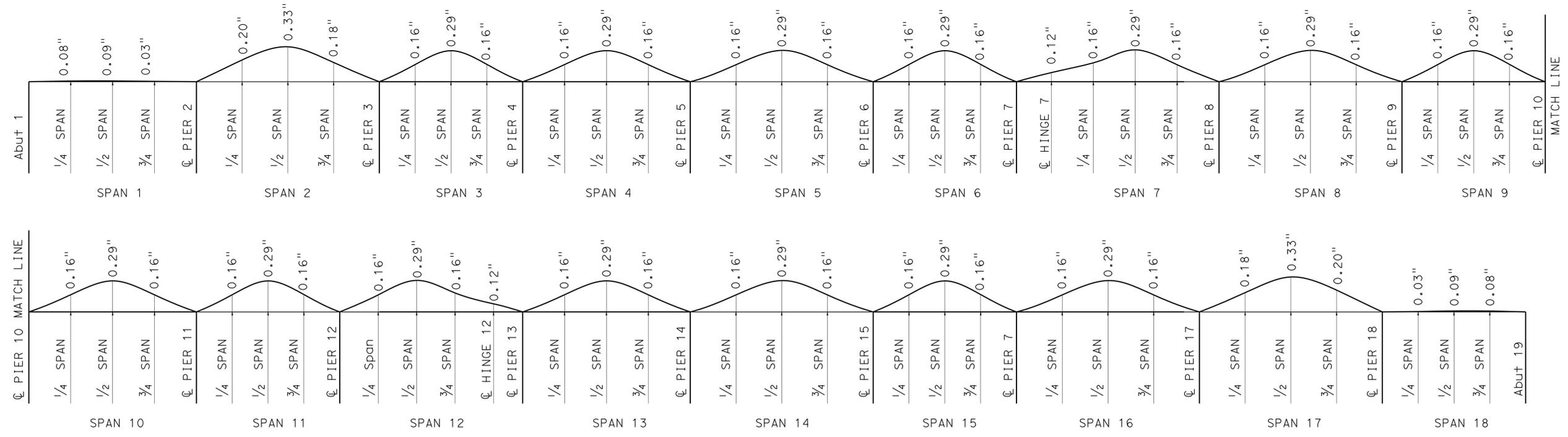
END DIAPHRAGM SECTION
1" = 1'-0"



TYPICAL BOTTOM BAR BUNDLE FOR T-BEAM STEM
NO SCALE



SECTION Z-Z
1/2" = 1'-0"
DOWELS AT EXISTING INTERIOR DIAPHRAGM



CAMBER DIAGRAM

DOES NOT INCLUDE ALLOWANCE FOR FALSEWORK SETTLEMENT

DESIGN	BY RUI WANG	CHECKED TRACY SANDERSON
DETAILS	BY H. MAHBOOBI/H. INIGUEZ	CHECKED TRACY SANDERSON
QUANTITIES	BY RUI WANG	CHECKED TRACY SANDERSON

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 19

BRIDGE NO.	55-0106R/L
POST MILE	8.57

SANTA ANA RIVER BRIDGE (WIDEN)
GIRDER DETAILS

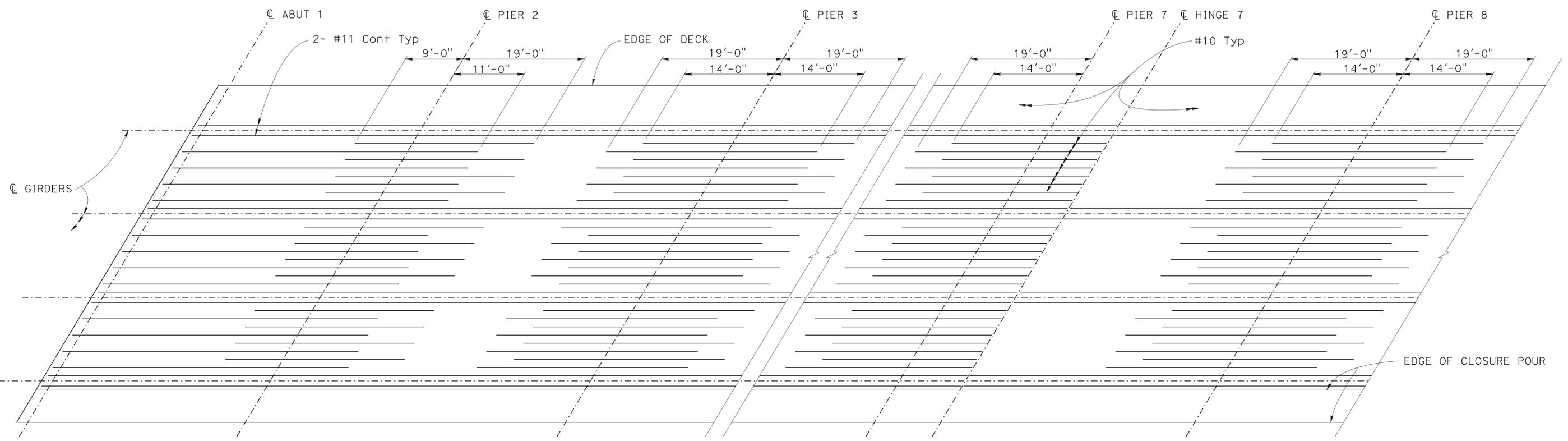
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	287	357

Rui Wang 01-25-13
REGISTERED CIVIL ENGINEER DATE

4-15-13
PLANS APPROVAL DATE

RUI WANG
No. C52910
Exp. 12/31/14
CIVIL
STATE OF CALIFORNIA

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END SPAN
SPAN 1 AND 18

INTERIOR SPAN
SPAN 2 TO 6, 8 TO 11, 13 TO 17

INTERIOR SPAN WITH HINGE
SPAN 7 AND 12

TOP REINFORCEMENT
NO SCALE

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

DESIGN	BY RUI WANG	CHECKED TRACY SANDERSON
DETAILS	BY HENGAMEH MAHBOOBI	CHECKED TRACY SANDERSON
QUANTITIES	BY RUI WANG	CHECKED TRACY SANDERSON

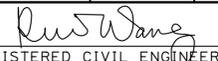
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 19

BRIDGE NO.	55-0106R/L
POST MILE	8.57

SANTA ANA RIVER BRIDGE (WIDEN)
GIRDER TOP REINFORCEMENT

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	288	357

 01-25-13
 REGISTERED CIVIL ENGINEER DATE

4-15-13
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER

RUI WANG

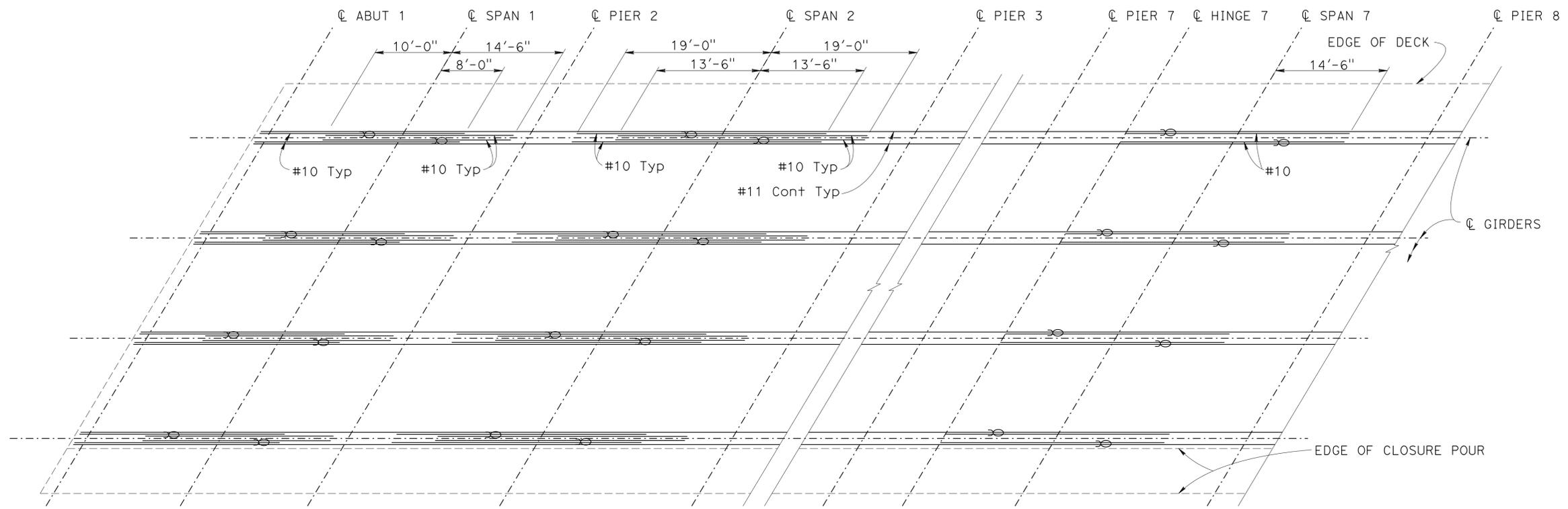
No. C52910

Exp. 12/31/14

CIVIL

STATE OF CALIFORNIA

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END SPAN
 SPAN 1 AND 18

INTERIOR SPAN
 SPAN 2 TO 6, 8 TO 11, 13 TO 17

INTERIOR SPAN WITH HINGE
 SPAN 7 AND 12

BOTTOM REINFORCEMENT
 NO SCALE

LEGEND

∞ 2 OR 3 BARS BUNDLE

NOTE

- FOR BOTTOM BUNDLE BAR LAUOUT, SEE "TYPICAL BOTTOM BAR BUNDLE FOR T-BEAM STEM" ON "GIRDER DETAILS" SHEET

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

DESIGN	BY RUI WANG	CHECKED TRACY SANDERSON
DETAILS	BY HENGAMEH MAHBOOBI	CHECKED TRACY SANDERSON
QUANTITIES	BY RUI WANG	CHECKED TRACY SANDERSON

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
 STRUCTURE DESIGN
DESIGN BRANCH 19

BRIDGE NO.	55-0106R/L
POST MILE	8.57

SANTA ANA RIVER BRIDGE (WIDEN)
GIRDER BOTTOM REINFORCEMENT



REVISION DATES	SHEET	OF
12/14/12 01/28/13 01/30/13	28	45

USERNAME => s121614 DATE PLOTTED => 24-APR-2013 TIME PLOTTED => 11:47

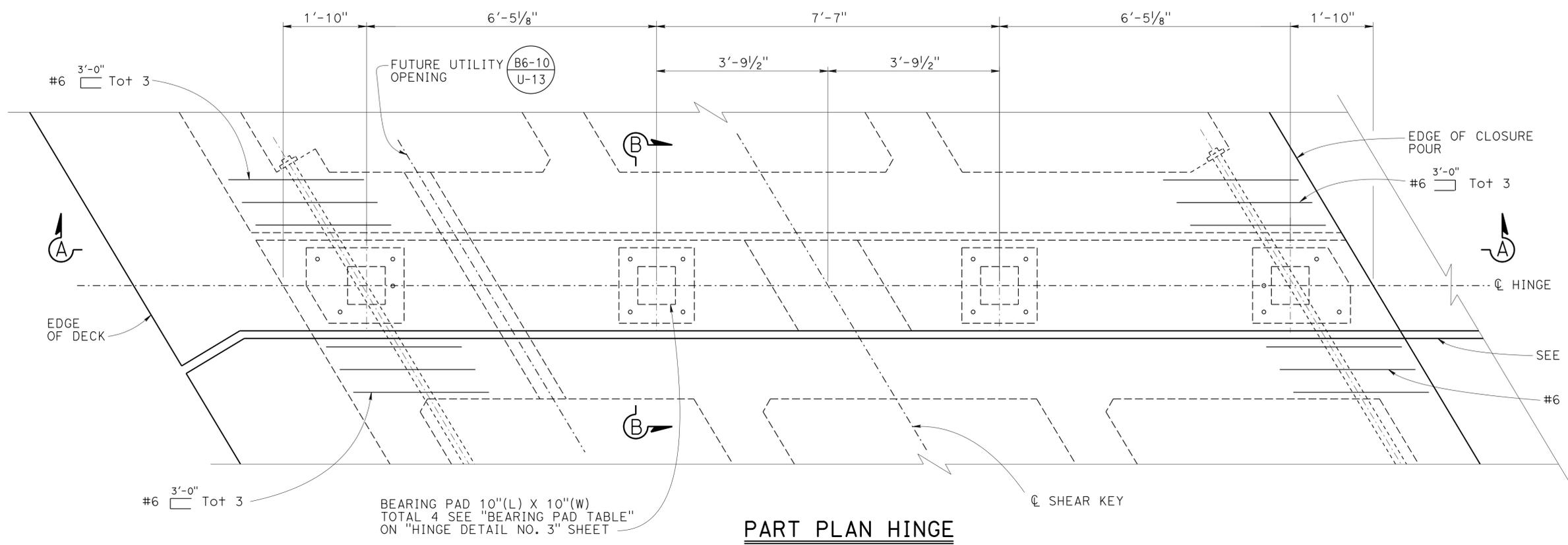
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	289	357

Rui Wang 01-25-13
REGISTERED CIVIL ENGINEER DATE

4-15-13
PLANS APPROVAL DATE

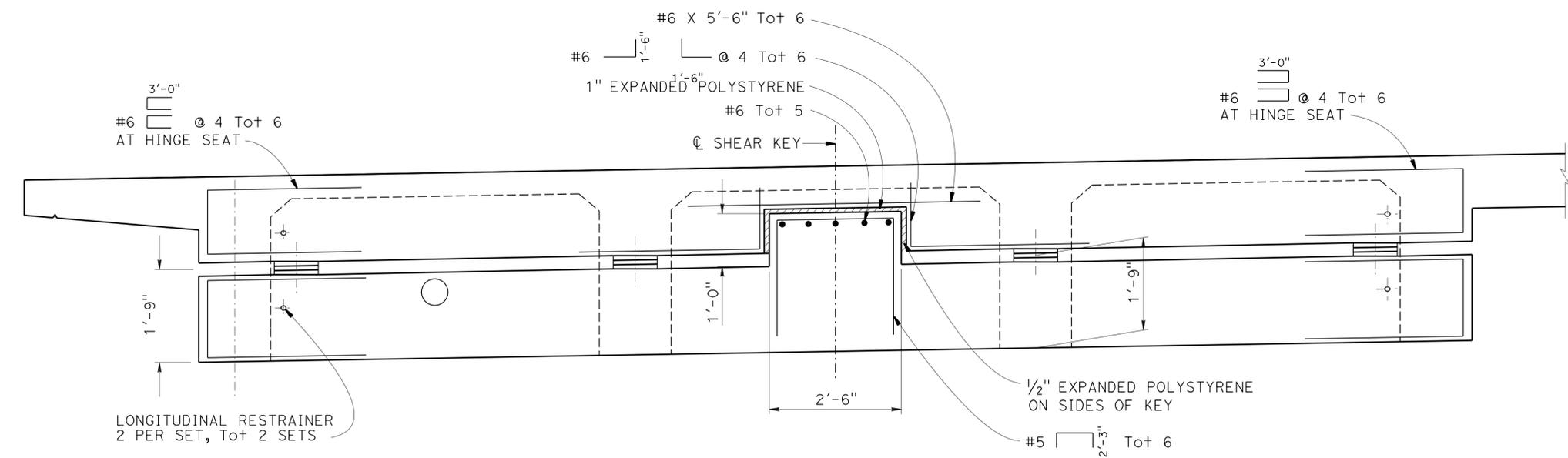
RUI WANG
No. C52910
Exp. 12/31/14
CIVIL
STATE OF CALIFORNIA

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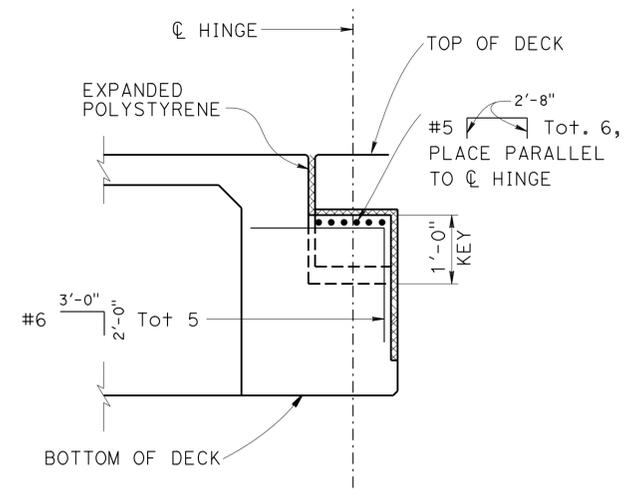


PART PLAN HINGE
 $\frac{3}{4}'' = 1'-0''$

- NOTES:**
1. FOR SECTION B-B, SEE "HINGE DETAIL NO. 2" SHEET.
 2. LINE UP EXPANSION JOINT WITH EXISTING.
 3. FOR PIER LOCATION, SEE "GENERAL PLAN NO. 1" SHEET.
 4. FOR DETAILS, SEE "HINGE RESTRAINER" SHEET.
 5. SEE Part PLAN AT BEARING SEAT AT "HINGE DETAILS NO. 3" SHEET.



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



SHEAR KEY DETAIL
 $\frac{3}{4}'' = 1'-0''$

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

DESIGN	BY RUI WANG	CHECKED TRACY SANDERSON
DETAILS	BY HENGAMEH MAHBOOBI	CHECKED TRACY SANDERSON
QUANTITIES	BY BRIAN VO / DIYA AZZAM	CHECKED TRACY SANDERSON

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 19

BRIDGE NO.	55-0106R/L
POST MILE	8.57

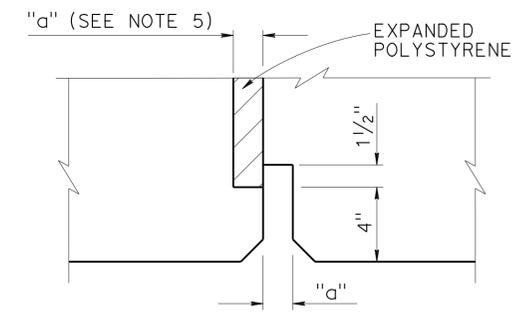
SANTA ANA RIVER BRIDGE (WIDEN)
HINGE DETAILS NO. 1

DATE PLOTTED => 24-APR-2013
TIME PLOTTED => 11:47
USER NAME => s121614

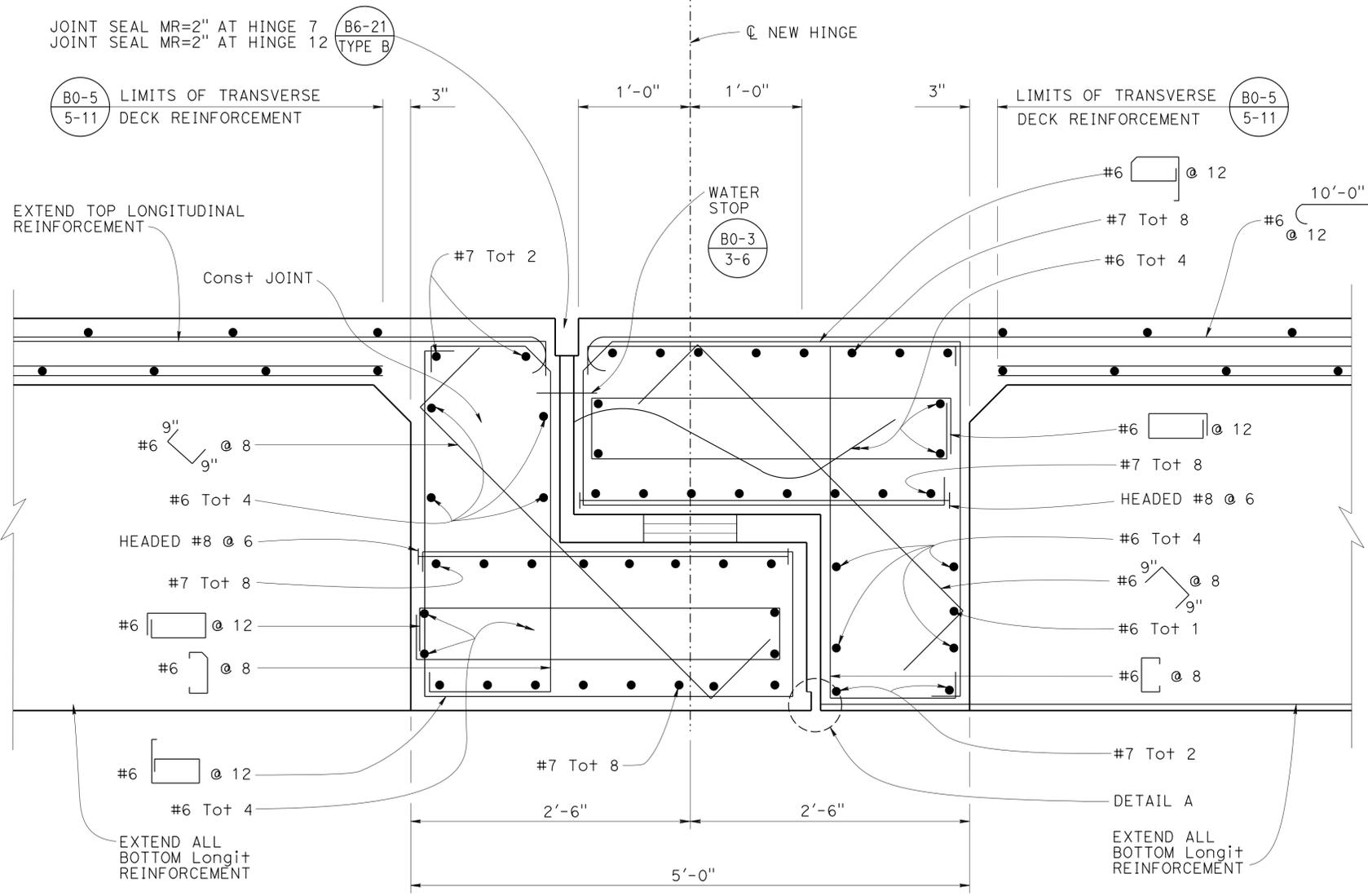
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	290	357
RUI WANG 01-25-13 REGISTERED CIVIL ENGINEER DATE					
4-15-13				PLANS APPROVAL DATE	
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.					

NOTES:

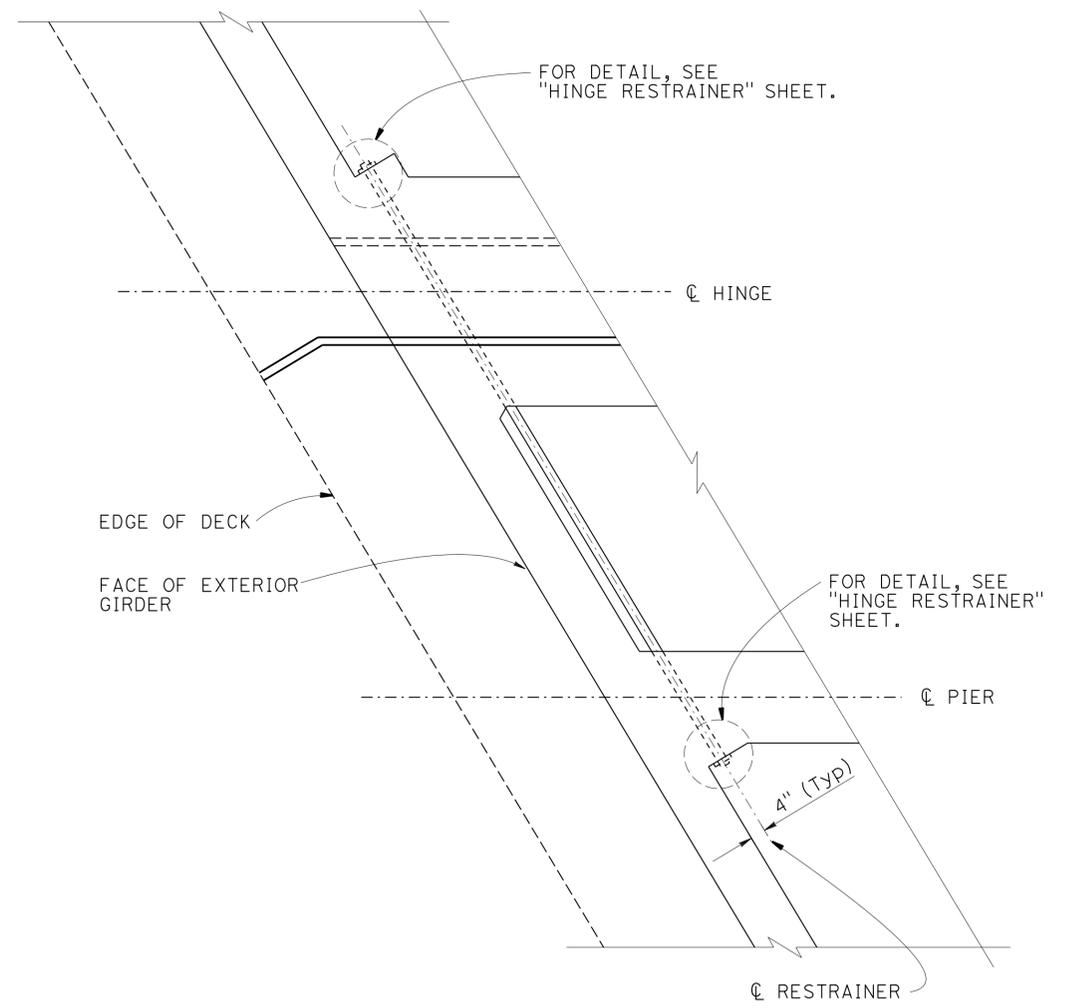
- TO PROVIDE FOR FREE MOVEMENT OF THE COMPLETED HINGE, CONCRETE IS TO BE EXCLUDED FROM THE JOINT BY SEALING ALL OPENINGS.
- BARS MAY BE PLACED WITH HOOKS HORIZONTAL IF REQUIRED FOR CLEARANCE.
- ADJUST ANGLE OF BARS AT KEY TO CLEAR.
- REINFORCEMENT SHALL BE SPACED ALONG ϕ HINGE AND PLACED PARALLEL TO ϕ SR 91.
- FOR DIMENSION "d", SEE (B6-21)
- FOR LOCATION OF SECTION B-B, SEE "HINGE DETAILS NO. 1" SHEET..
- SEE HINGE POURING SEQUENCE ON "HINGE DETAILS NO. 3" SHEET.



DETAIL A
NO SCALE



SECTION B-B THRU HINGE
 $1/2" = 1'-0"$



HINGE RESTRAINER PART PLAN
 $1/2" = 1'-0"$

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

DESIGN	BY RUI WANG	CHECKED TRACY SANDERSON
DETAILS	BY HENGAMEH MAHBOOB I	CHECKED TRACY SANDERSON
QUANTITIES	BY BRIAN VO / DIYA AZZAM	CHECKED TRACY SANDERSON

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 19

BRIDGE NO.	55-0106R/L
POST MILE	8.57

SANTA ANA RIVER BRIDGE (WIDEN)
HINGE DETAILS NO. 2

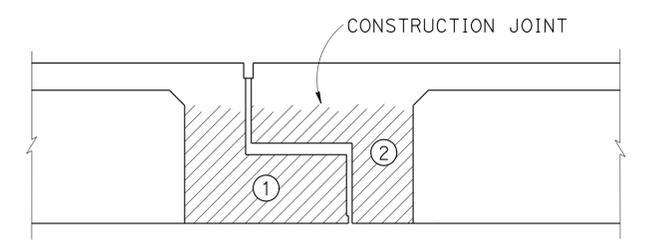
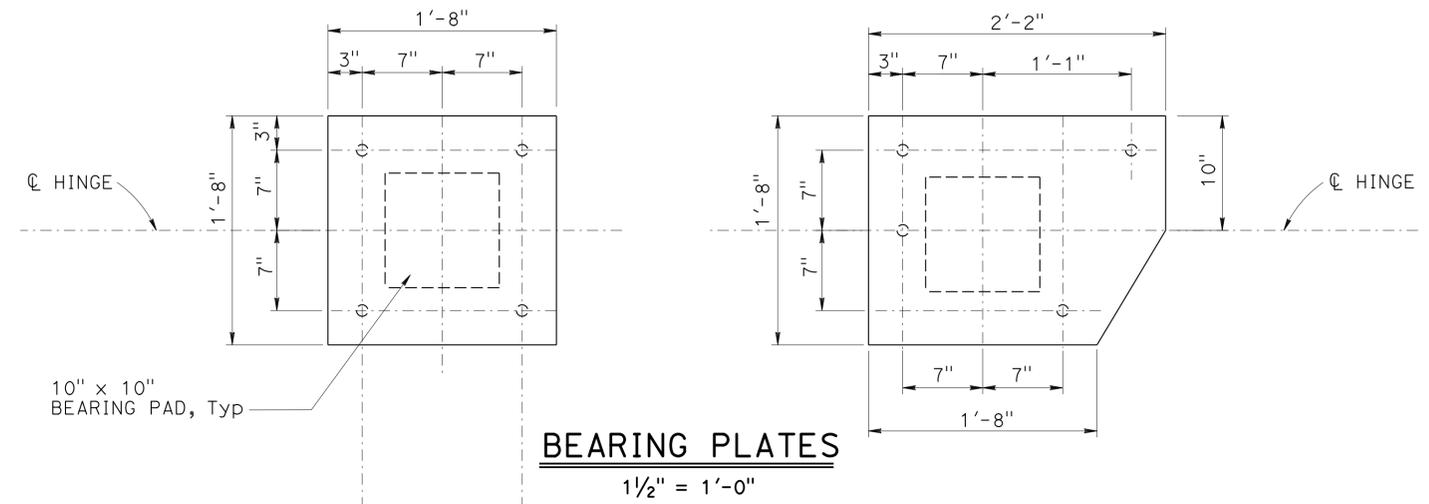
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	291	357

Rui Wang 01-25-13
REGISTERED CIVIL ENGINEER DATE

4-15-13
PLANS APPROVAL DATE

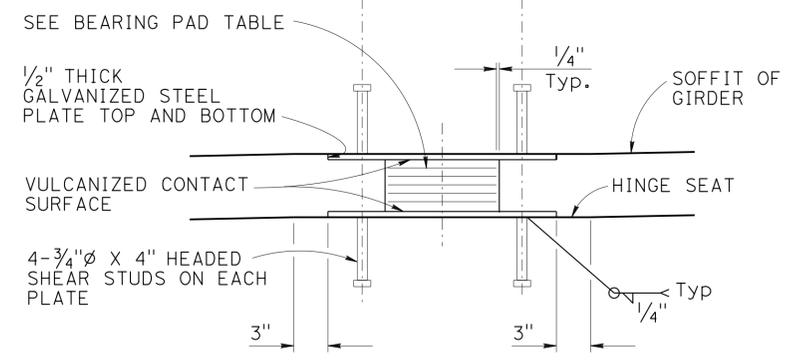
RUI WANG
No. C52910
Exp. 12/31/14
CIVIL
STATE OF CALIFORNIA

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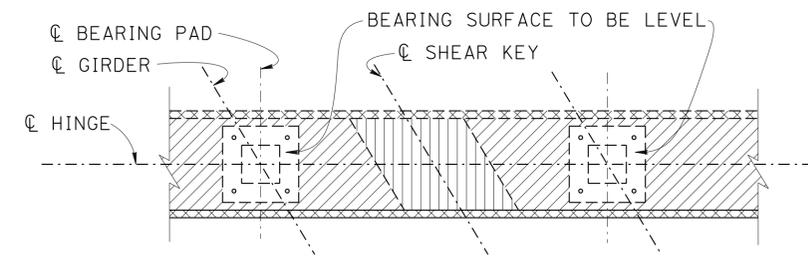


INDICATES CAST-INPLACE CONCRETE $f'c = 4$ ksi

INDICATES ORDER OF CLOSURE POURS. (2) TO BE PLACED NOT SOONER THAN (1) HAS REACHED $f'c$



BEARING PAD TABLE	
LOCATIONS	BEARING PADS
HINGE 7	4 X 14 GAGE STEEL SHIMS 5 X 1/2" RUBBER LAYERS
HINGE 12	5 X 14 GAGE STEEL SHIMS 6 X 1/2" RUBBER LAYERS



LEGEND

- POLYSTYRENE, "a" THICKNESS
- POLYSTYRENE, SAME HEIGHT AS BEARING PLATE
- 1" POLYSTYRENE

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

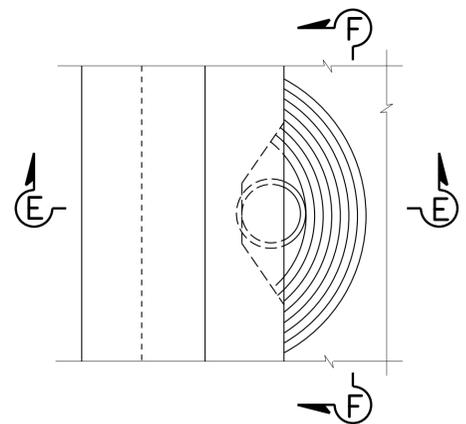
DESIGN	BY RUI WANG	CHECKED TRACY SANDERSON
DETAILS	BY HENGAMEH MAHBOOB	CHECKED TRACY SANDERSON
QUANTITIES	BY BRIAN VO / DIYA AZZAM	CHECKED TRACY SANDERSON

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

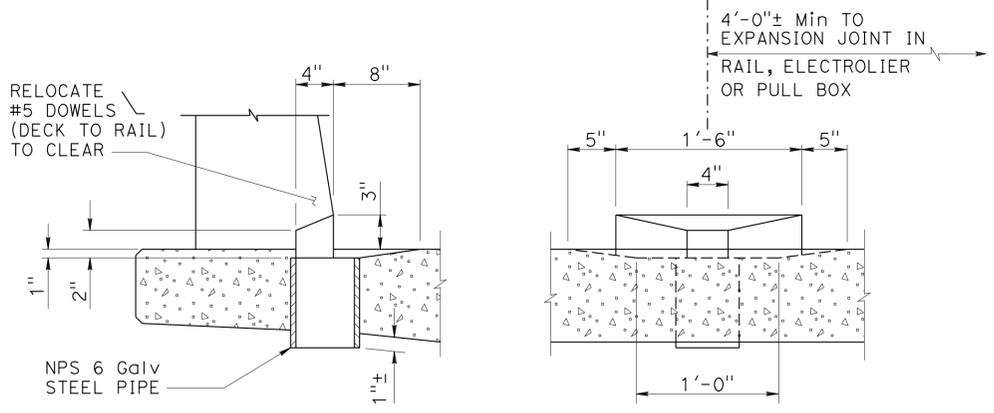
DIVISION OF ENGINEERING SERVICES
STRUCTURE DESIGN
DESIGN BRANCH 19

BRIDGE NO. 55-0106R/L
POST MILE 8.57
SANTA ANA RIVER BRIDGE (WIDEN)
HINGE DETAILS NO. 3

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	292	357
RUI WANG REGISTERED CIVIL ENGINEER No. C52910 Exp. 12/31/14 CIVIL STATE OF CALIFORNIA			01-25-13 DATE 4-15-13 PLANS APPROVAL DATE		
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DETAIL A
TYPE "B" DRAIN
NO SCALE



SECTION E-E
NO SCALE

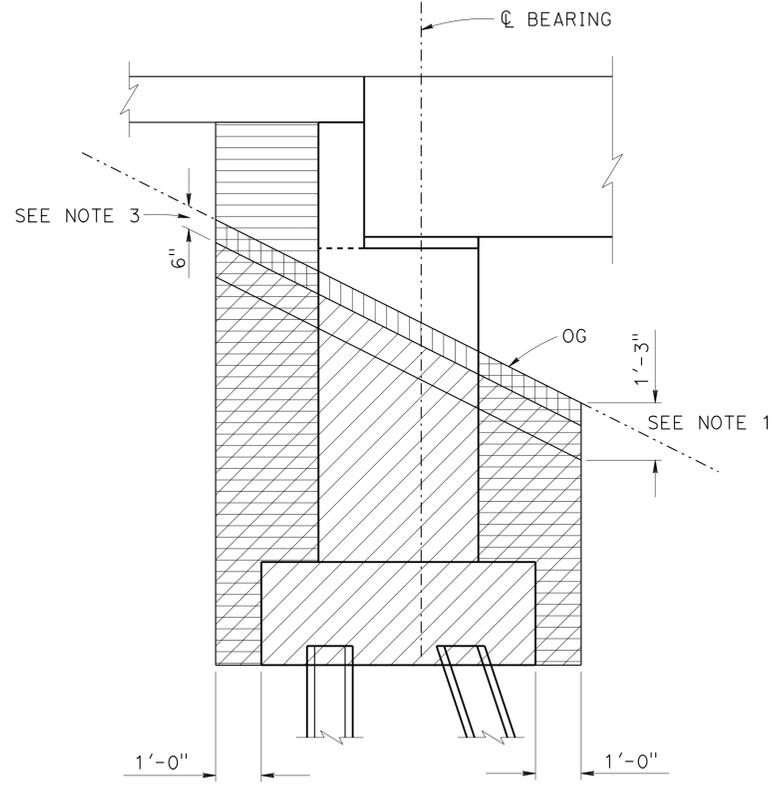
SECTION F-F
NO SCALE

NOTES:

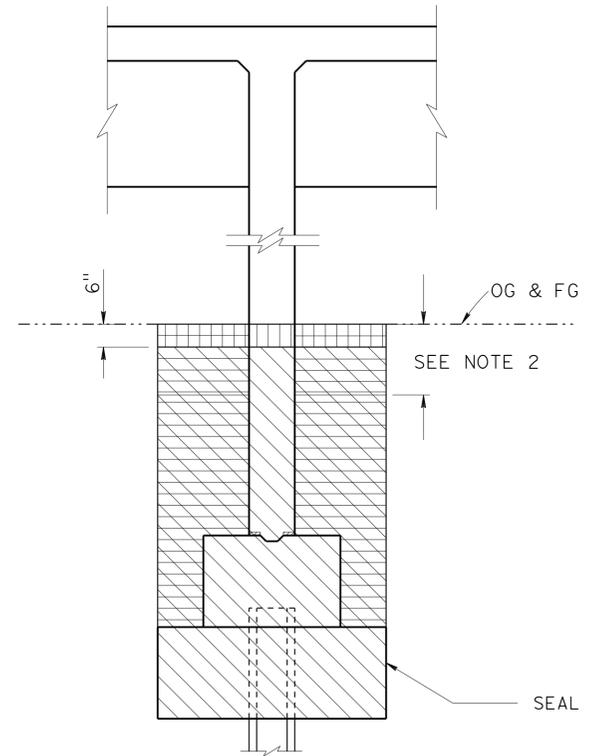
- BRIDGE REMOVAL (PORTION) LOCATION B AT ABUTMENT 19 ONLY AND RECONSTRUCT GROUDED RIPRAP TO MATCH EXISTING.
- RECONSTRUCT FACING STONE AT PIER 10 TO MATCH EXISTING FACING STONE.
- STRUCTURE EXCAVATION (TYPE Y-1) AERIAL DEPOSITED LEAD AT Abut 1 ONLY

LEGEND

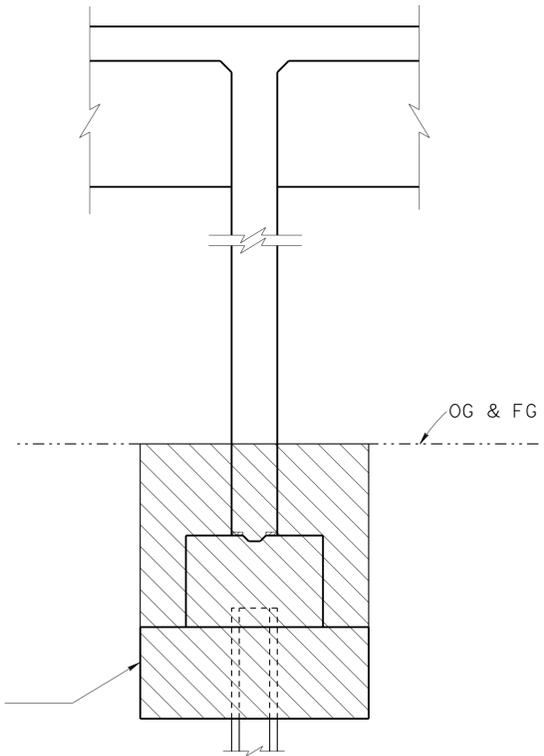
- STRUCTURE EXCAVATION (TYPE Y-1) (AERIAL DEPOSITED LEAD)
- STRUCTURE EXCAVATION (BRIDGE)
- STRUCTURE EXCAVATION (TYPE A)
- STRUCTURE BACKFILL (BRIDGE)



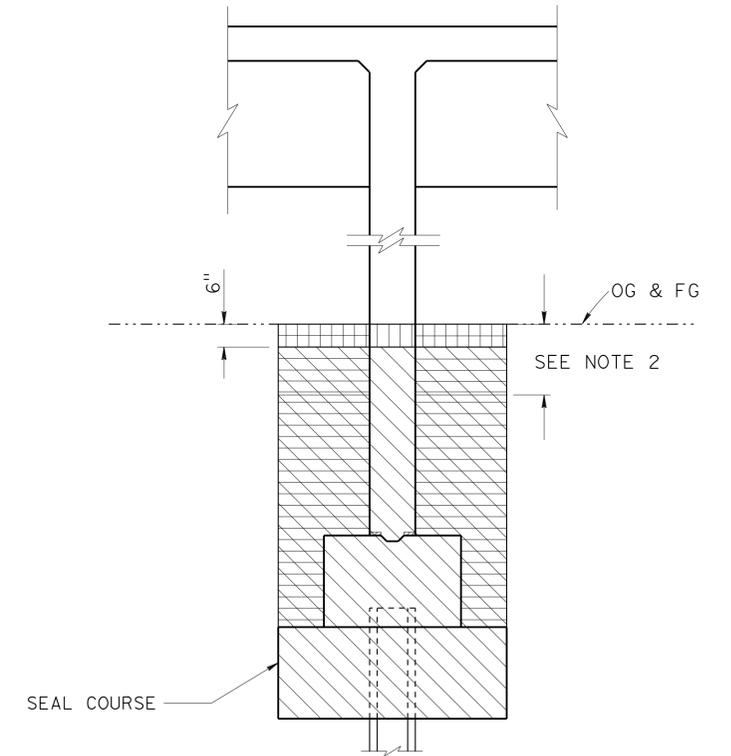
LIMITS OF PAYMENT FOR
STRUCTURE EXCAVATION
AND BACKFILL AT ABUTMENTS
NO SCALE



LOCATION B
LIMITS OF PAYMENT FOR
STRUCTURE EXCAVATION
& BACKFILL AT PIERS 2 TO 4
NO SCALE
PIER WALL SHOWN, DEBRIS WALL SIMILAR



LOCATION A
LIMITS OF PAYMENT FOR
STRUCTURE EXCAVATION AT
PIERS 5 TO 7, AND 11 TO 16
NO SCALE
PIER WALL SHOWN, DEBRIS WALL SIMILAR

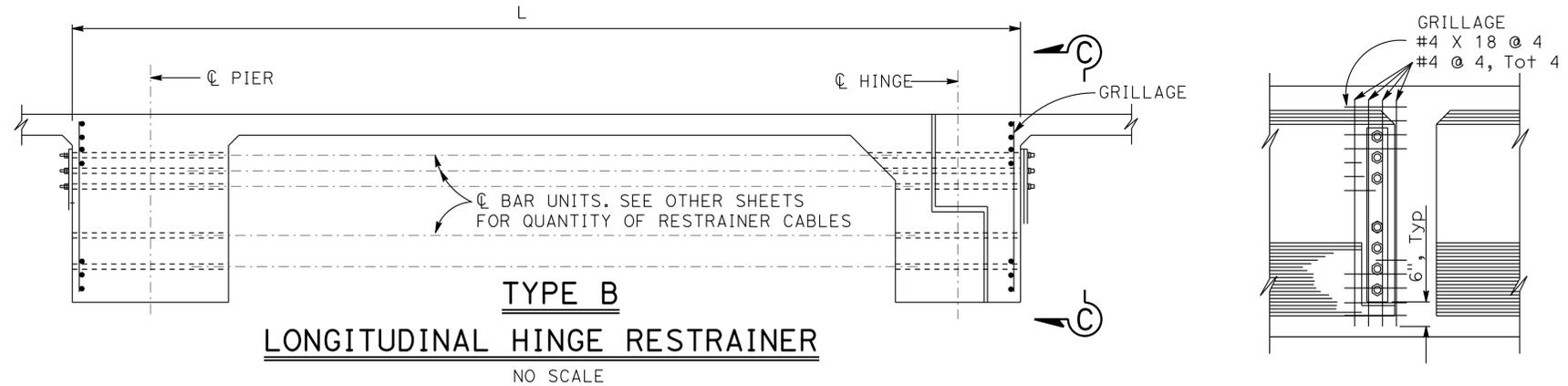


LOCATION LEVEL
LIMITS OF PAYMENT FOR
STRUCTURE EXCAVATION & BACKFILL
AT PIERS 8 TO 10, 17, AND 18
NO SCALE
PIER WALL SHOWN, DEBRIS WALL SIMILAR

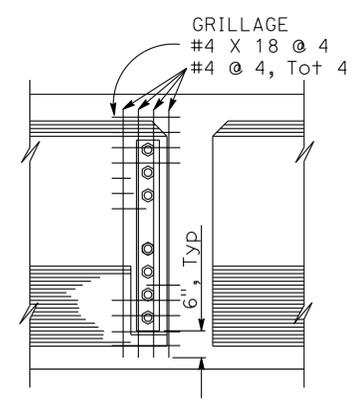
NOTE:
THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.

DESIGN BY RUI WANG CHECKED TRACY SANDERSON DETAILS BY HENGAMEH MAHBOOBI CHECKED TRACY SANDERSON QUANTITIES BY BRIAN VO / DIYA AZZAM CHECKED TRACY SANDERSON	STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES STRUCTURE DESIGN DESIGN BRANCH 19	BRIDGE NO. 55-0106R/L	SANTA ANA RIVER BRIDGE (WIDEN) MISCELLANEOUS DETAILS	
			POST MILE 8.57		
			UNIT: 3621 PROJECT NUMBER & PHASE: 120000078 1 CONTRACT NO.: 12-0C5601		
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: 11-16-12, 04-09-13, 01-30-13 SHEET 32 OF 45

USERNAME => s121614 DATE PLOTTED => 24-APR-2013 TIME PLOTTED => 11:47



TYPE B
LONGITUDINAL HINGE RESTRAINER
NO SCALE



SECTION C-C
NO SCALE
NOTE: SLOPE TO MATCH SLOPING EXTERIOR GIRDERS

BAR RESTRAINER TABLE

	DIA (in) RESTRAINER	L (ft) RESTRAINER	NUMBER OF RESTRAINERS
HINGE 7	1"	15'-6"	4
HINGE 12	1"	15'-6"	4

BAR RESTRAINER SLACK TABLE

	SLACK LENGTH (in)		
	SUMMER	FALL-SPRING	WINTER
HINGE 7	4 3/4	4 1/2	3 3/4
HINGE 12	5	4 1/2	4

DISC SPRINGS AND WASHERS
ALL DIMENSIONS IN INCHES, EXPECT AS NOTED

L (ft)	DISC SPRING					STEEL SPHERICAL WASHER			THICK WASHER		
	ID	OD	+	H	COLOR CODE	ID	OD	Nom THICK	ID	OD	+*
00.0-42.0	1.25	2.5	0.12	0.180	YELLOW	1.31	2.5	0.5	1.16	2.25	0.25

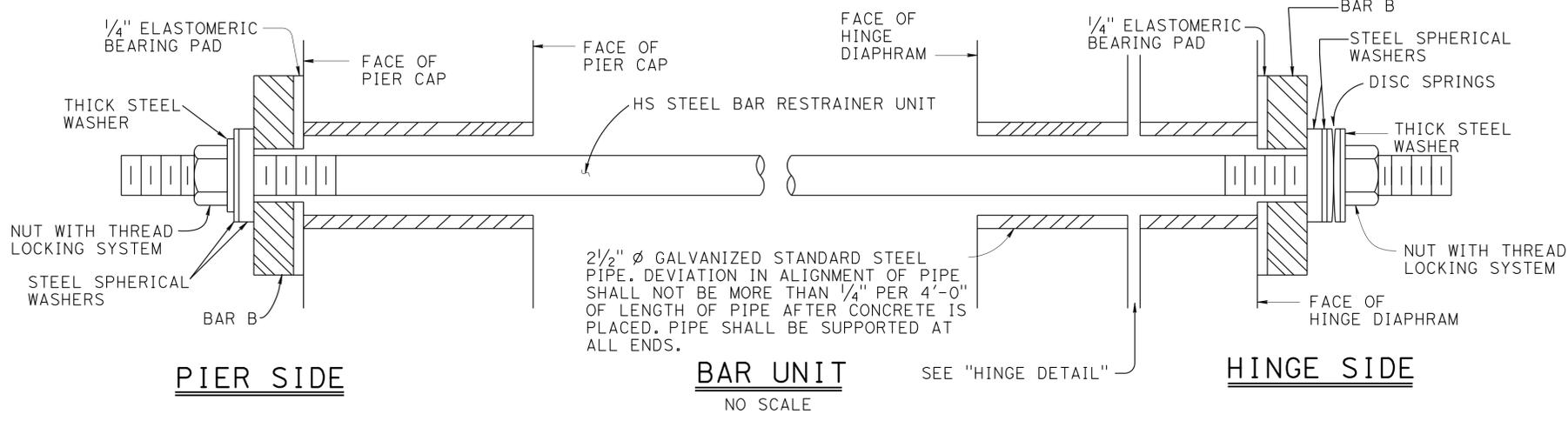
NOTES:
 1. ALL OD AND ID DIMENSIONS FOR WASHERS AND DISC SPRINGS SHALL MEET THE DIMENSIONAL TOLERANCES FOR HARDEN STEEL WASHERS, ASTM F436
 2. THIS TABLE SUPERSEDES THE TABLE "DISC SPRINGS AND WASHERS" ON "CABLE RESTRAINER ADJUSTMENT HARDWARE" SHEET.

RESTRAINER UNIT INSTALLATION PROCEDURE

FOLLOWING PROCEDURE SUPERSEDES THE "RESTRAINER UNIT INSTALLATION PROCEDURE" ON "CABLE RESTRAINER ADJUSTMENT HARDWARE" SHEET.

- INSTALL SPHERICAL WASHERS, DISC SPRINGS, NUT AND WASHERS ON THE SIDE OF RESTRAINERS AS SHOWN IN "HINGE SIDE" DETAIL. DISC SPRINGS SHALL BE INSTALLED FRONT TO FRONT AS SHOWN IN "DISC SPRING" DETAIL.
- PLACE ONLY NUT AND WASHER ON PIER SIDE OF RESTRAINERS. PLACE THREAD LOCKING SYSTEM ON PIER SIDE BAR PRIOR TO INSTALLING NUT AND WASHERS, AND PRIOR TO SETTING THE BAR.
- TIGHTEN NUT ON THE BAR FROM THE HINGE SIDE OF RESTRAINER UNTIL THE DISC SPRINGS COLLAPSE AND THERE IS NO DISC GAP REMAINING BETWEEN THE DISCS. THE BAR SHOULD BE APPROXIMATELY STRAIGHT WITH NO SAG.
- PLACE THREAD LOCKING SYSTEM ON HINGE SIDE BAR AFTER TIGHTENING THE BAR BUT BEFORE BACKING OFF THE NUT. THEN BACK OFF THE NUT AT HINGE SIDE A DISTANCE EQUAL TO MAXIMUM ADDITIONAL AMOUNT THAT THE HINGE JOINT IS EXPECTED TO OPEN, RELATIVE TO EXISTING AMBIENT CONDITIONS, AS SHOWN IN BAR RESTRAINER SLACK TABLE.

NOTE: IF THE BAR NEEDS TO BE SECURED FROM TURNING WHILE TIGHTENING, USE DOUBLE NUT LOCKING TECHNIQUE ON THE BAR TO PROTECT THE THREADS.

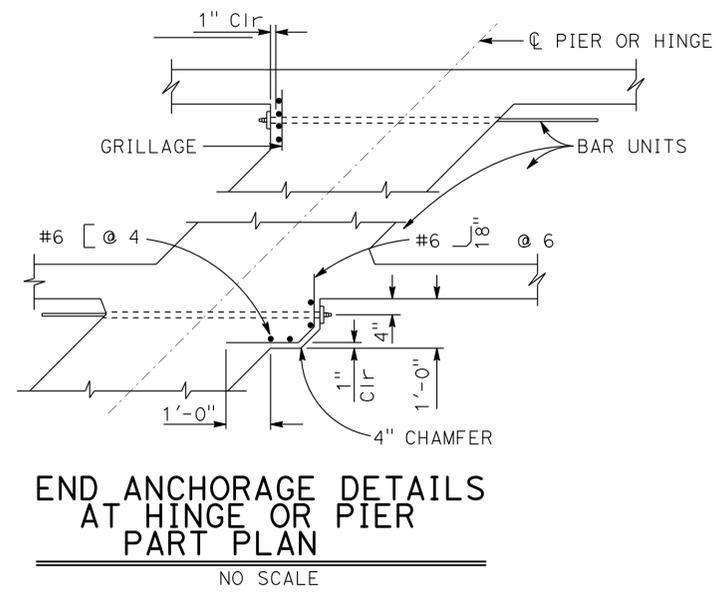


PIER SIDE

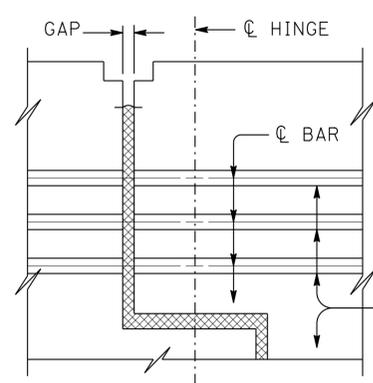
BAR UNIT
NO SCALE

HINGE SIDE

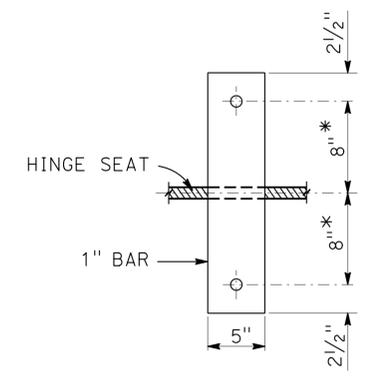
- NOTES:
- RESTRAINER UNITS TO BE ON TANGENT ALIGNMENT.
 - SLOPE TO MATCH SLOPING EXTERIOR GIRDERS.
 - SEE "HINGE DETAILS NO. 2" SHEET FOR JOINT OPENINGS.
 - CONTRACTOR MAY INSTALL RESTRAINERS IN HORIZONTAL ARRANGEMENT WITH APPROVAL OF THE ENGINEER. THE LOCATION SHALL BE IN THE MIDDLE 1/3 DEPTH OF THE STRUCTURE. AN ALTERNATIVE IS TO PLACE RESTRAINERS IN TWO HORIZONTAL LAYERS, EQUALLY LOCATED ABOVE AND BELOW THE MID STRUCTURE DEPTH. THE NUMBER OF RESTRAINERS IN EACH LAYER SHALL NOT DIFFER BY MORE THAN ONE.
 - THE ENDS OF PIPE SHALL BE COVERED OR CAPPED TO PREVENT CONCRETE AND DEBRIS FROM ENTERING THE PIPE UNTIL HINGE CONCRETE IS PLACED.
 - CARE SHOULD BE TAKEN TO ALIGN THE PIPES ON EACH SIDE OF THE HINGE.
 - ALL ENDS OF PIPES MUST BE FLUSH WITH OR SLIGHTLY RECESSED FROM THE CONCRETE. THE INSIDE EDGES OF THE PIPES MUST BE SMOOTH TO PREVENT DAMAGE OF BARS.



END ANCHORAGE DETAILS AT HINGE OR PIER PART PLAN
NO SCALE



HINGE DETAIL
NO SCALE



DETAIL - BAR B
*DIMENSION MAY BE ADJUSTED TO CLEAR REINFORCEMENT
NO SCALE

DISC SPRINGS AND WASHERS

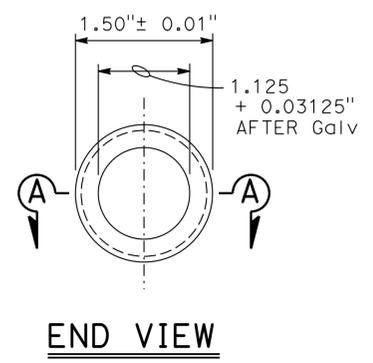
ALL DIMENSIONS IN INCHES, EXCEPT AS NOTED

L*	DISC SPRING					STEEL SPHERICAL WASHER			THICK WASHER		
	ID	OD	t	H	COLOR CODE	ID	OD	NOMINAL THICKNESS	ID	OD	t**
00.0 - 25.0	1.00	2.00	0.065	0.130	WHITE	1.19	2.25	0.50	1.03	2.00	0.25
25.1 - 31.9	1.00	2.00	0.084	0.136	RED	1.19	2.25	0.50	1.03	2.00	0.25
32.0 - 37.9	1.00	2.00	0.097	0.145	BLUE	1.19	2.25	0.50	1.03	2.00	0.25
38.0 - 45.0	1.25	2.50	0.120	0.180	YELLOW	1.31	2.50	0.50	1.16	2.00	0.25

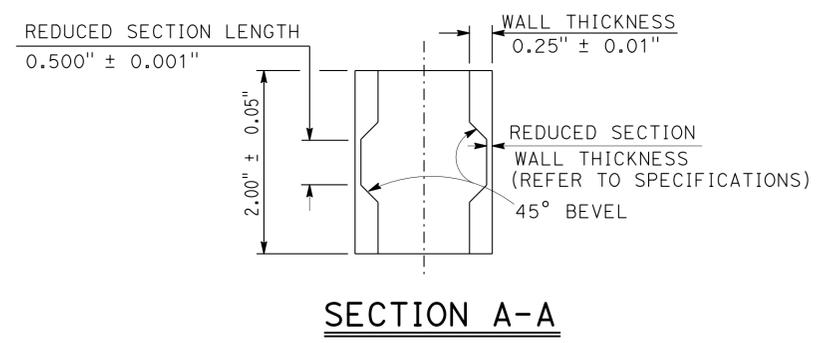
* For limits of length L (ft), use effective length of cable, from face-to-face outer surfaces of anchorage plate or bearing bar. Refer to Bridge detail sheets for approximate length required.

** MINIMUM VALUE

NOTE: All OD and ID dimensions for washers and disc springs shall meet the dimensional tolerances for hardened steel washers, ASTM F436

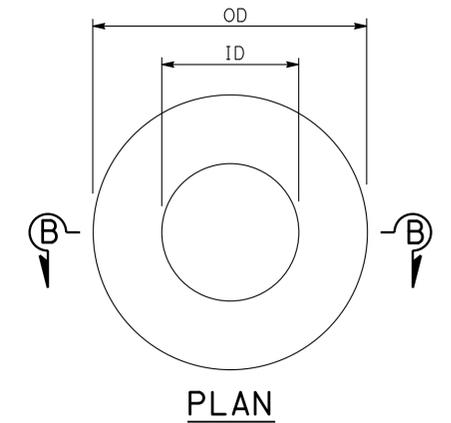


END VIEW

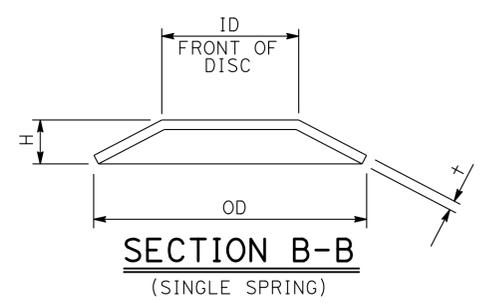


SECTION A-A

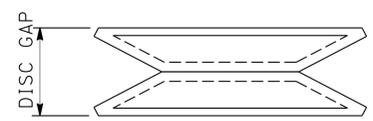
"ALL DIMENSIONS ARE BEFORE GALVANIZING EXCEPT AS NOTED"
CABLE YIELD INDICATOR



PLAN



**SECTION B-B
(SINGLE SPRING)**



AS INSTALLED ON STUD

NOTE: FOR DIMENSIONS NOT SHOWN, SEE TABLE
DISC SPRING

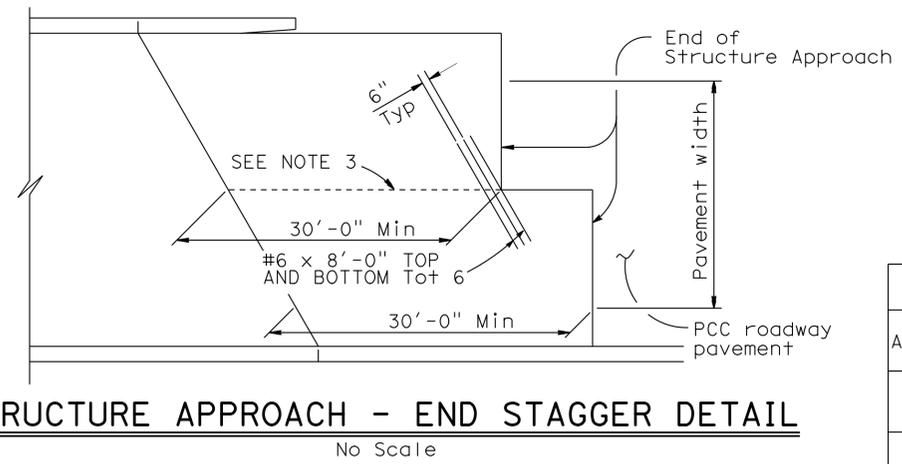
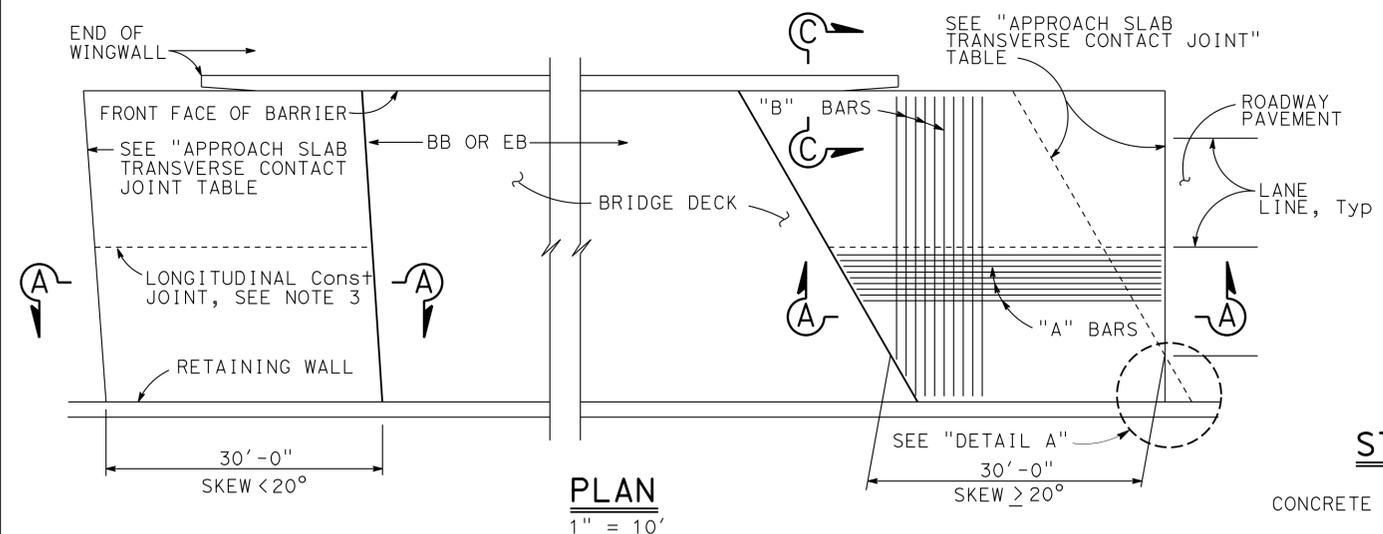
RESTRAINER UNIT INSTALLATION PROCEDURE

- 1a. For typical 'girder to opposite girder' or 'bent cap to girder' restrainers with one adjustment end:
 - Place nut, washer and Thread Locking System on fixed end stud prior to tightening the cable
 - The adjustment end shall be at the same end of the cable for all restrainers at a specific hinge or bent
 - Tighten the nuts on the cable from the Adjustment End of restrainer until the disc springs collapse and there is no disc gap remaining between the discs
- 1b. For typical "U" or "V" shaped restrainers units with two adjustment ends:
 - Install Cable Yield Indicator, spherical washers, disc springs, washers and nuts on both adjustment ends of cable type restrainers
 - The ends of the cable must be adjusted simultaneously.
 - Tighten the nuts on the cable from the adjustment ends of restrainer until the disc springs collapse and there is no disc gap remaining between the discs on either end of the cable
2. Place thread locking system on adjustment end(s) after tightening the cable but before backing off the nut(s)
 - Back off the nut(s) at the adjustable anchorage(s) a distance equal to the maximum additional amount that the hinge is expected to open, relative to existing ambient conditions, as shown on the plans for movement rating

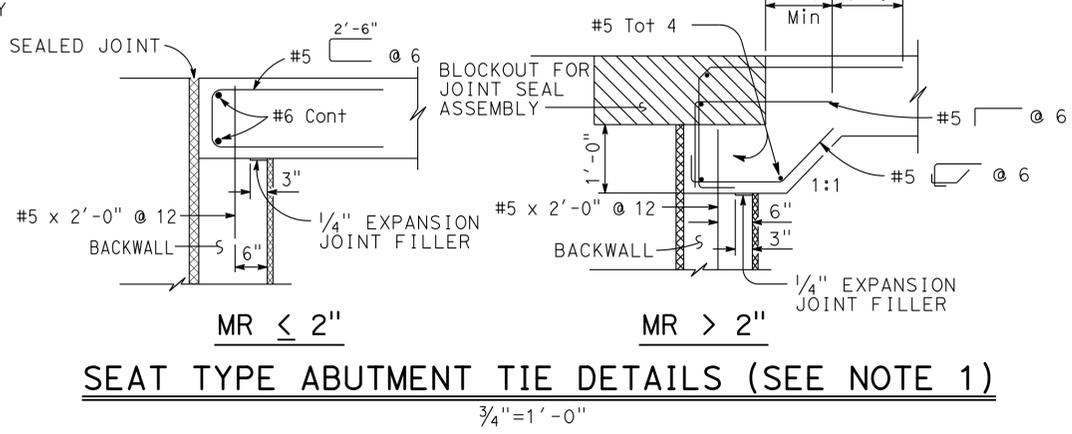
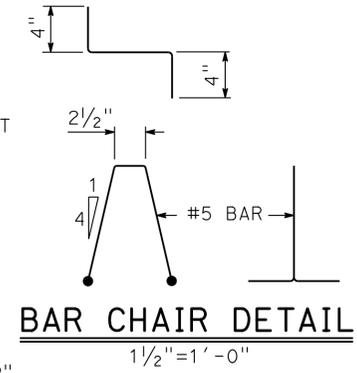
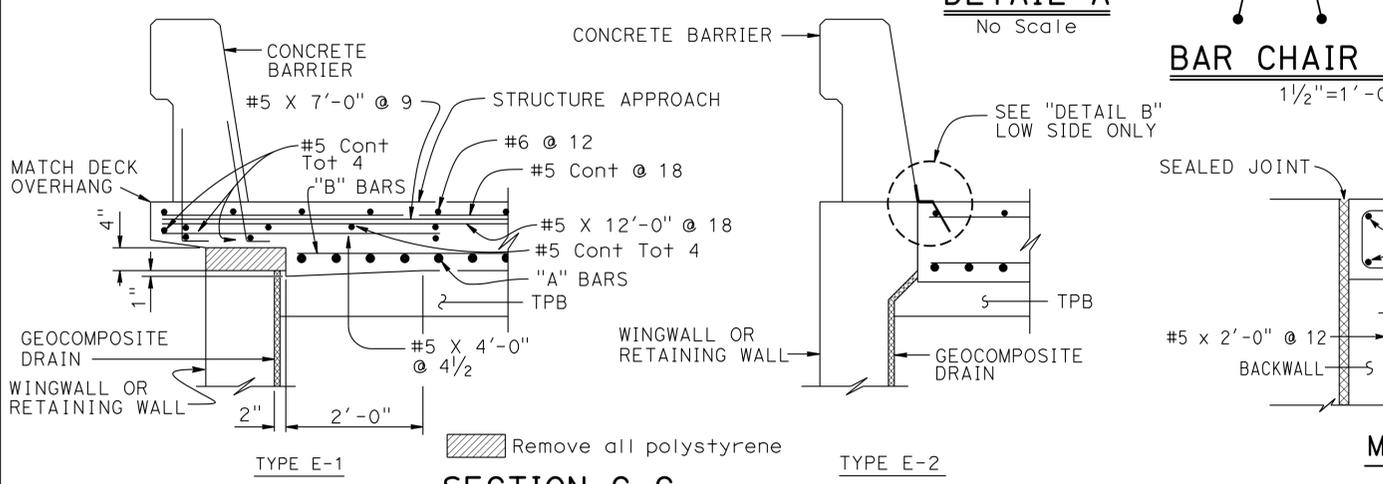
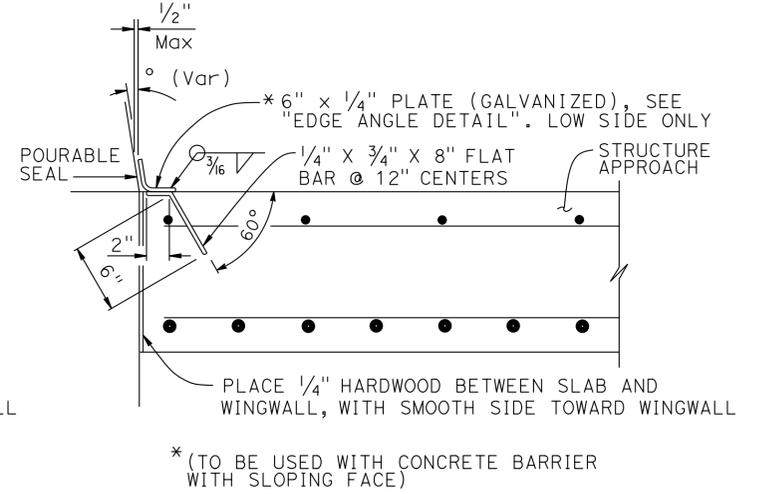
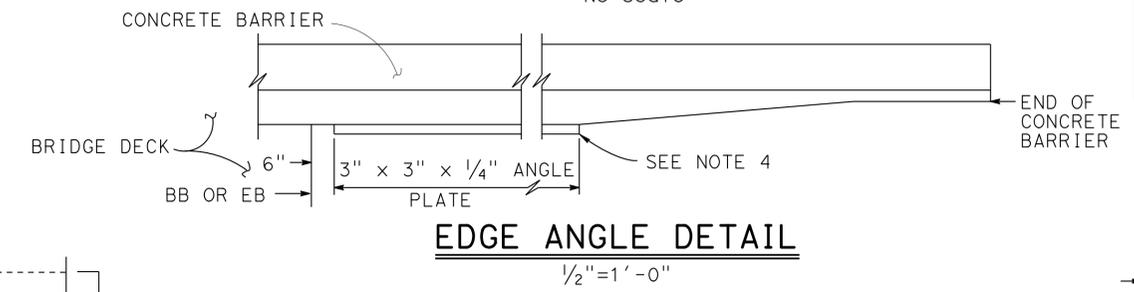
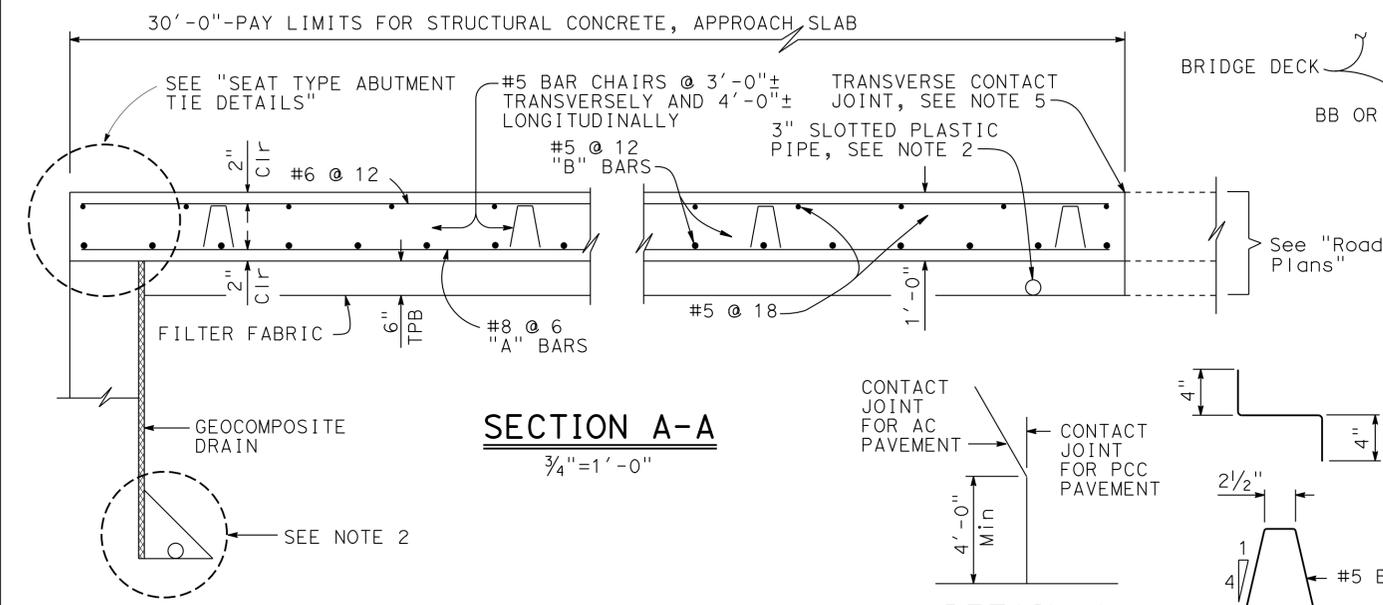
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	295	357

REGISTERED CIVIL ENGINEER DATE 12/20/12
 CHARLES JEFF SIMS
 No. C46471
 Exp. 6/30/13
 CIVIL
 STATE OF CALIFORNIA

PLANS APPROVAL DATE 4-15-13
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APPROACH SLAB TRANSVERSE CONTACT JOINT		
APPROACH SKEW	WITH AC ROADWAY PAVEMENT	WITH PCC ROADWAY PAVEMENT
< 20°	PARALLEL TO FACE OF PN	PARALLEL TO FACE OF PN
20° - 45°	PARALLEL TO FACE OF PN USE "DETAIL A"	STAGGER LINES 24' TO 36' APART
> 45°	PARALLEL TO FACE OF PN USE "DETAIL A"	STAGGER AT EACH LANE LINE



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

STANDARD DRAWING
 FILE NO. **xs3-120**
 APPROVAL DATE July 2011

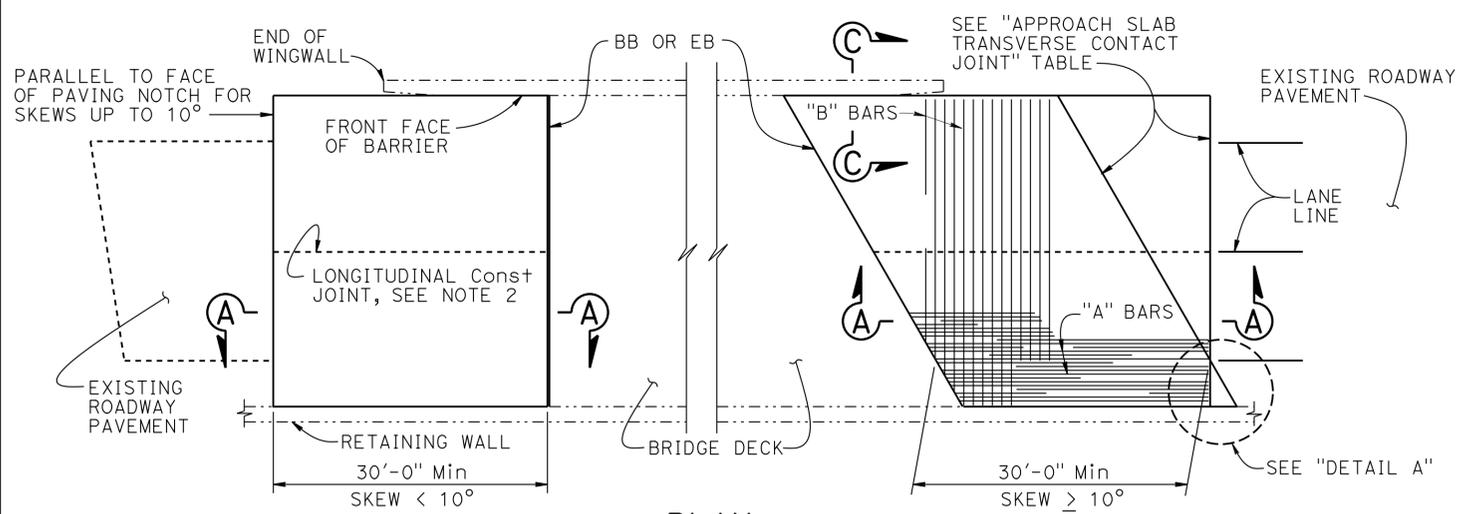
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF ENGINEERING SERVICES

BRIDGE NO. 55-0106R/L
 POST MILE 8.57
SANTA ANA RIVER BRIDGE (WIDEN)
STRUCTURE APPROACH TYPE N(30S)

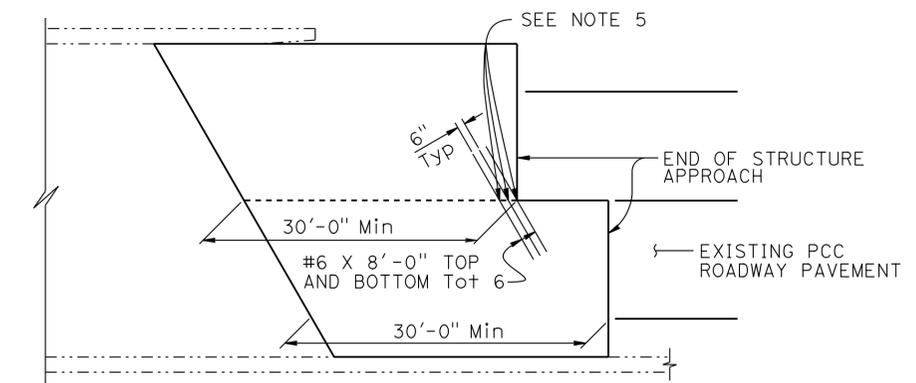
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	296	357

REGISTERED CIVIL ENGINEER DATE 12/20/12
 PLANS APPROVAL DATE 4-15-13
 CHARLES JEFF SIMS No. C46471 Exp. 6/30/13 CIVIL STATE OF CALIFORNIA

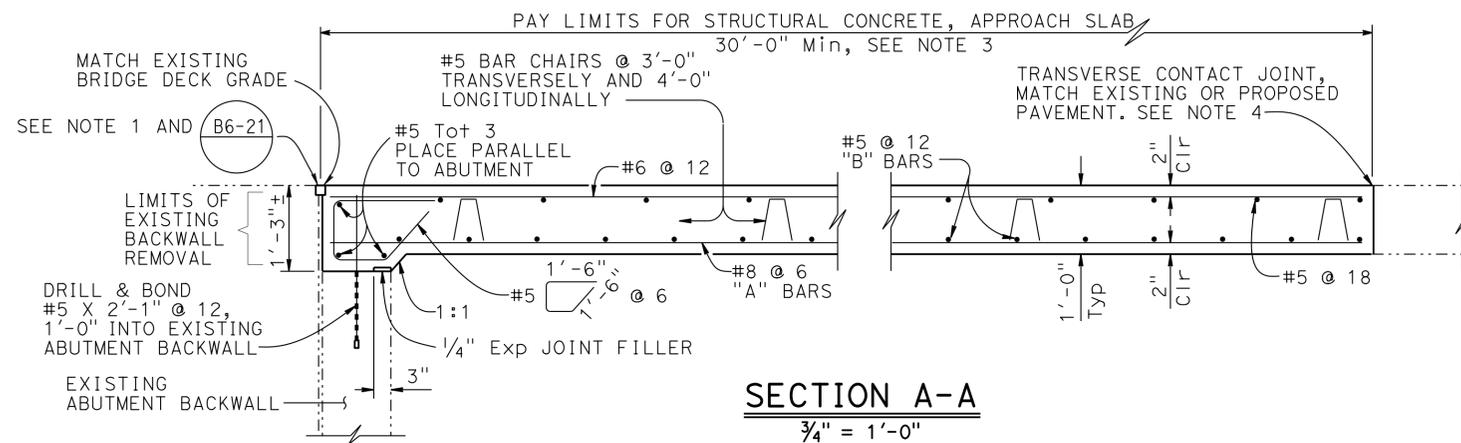
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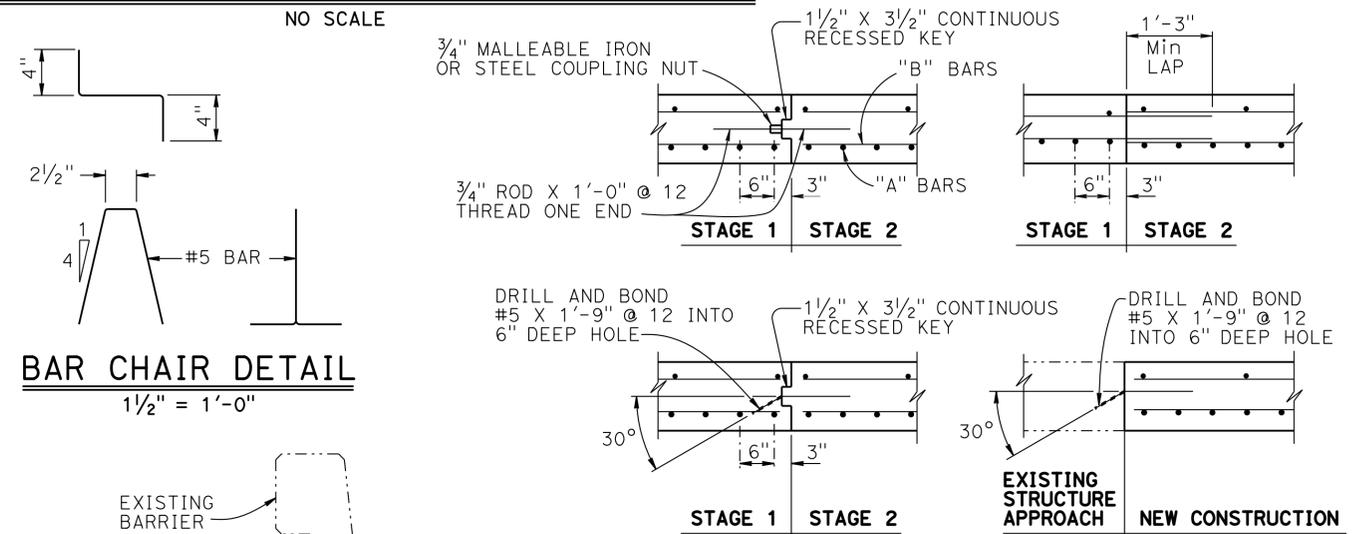
PLAN
1" = 10'



STRUCTURE APPROACH - END STAGGER DETAIL
NO SCALE

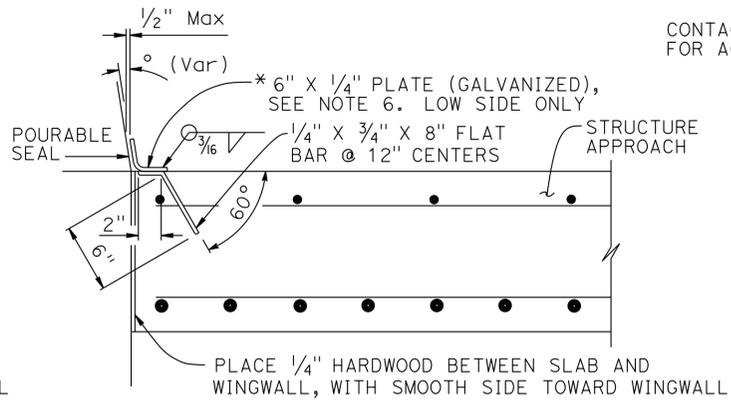
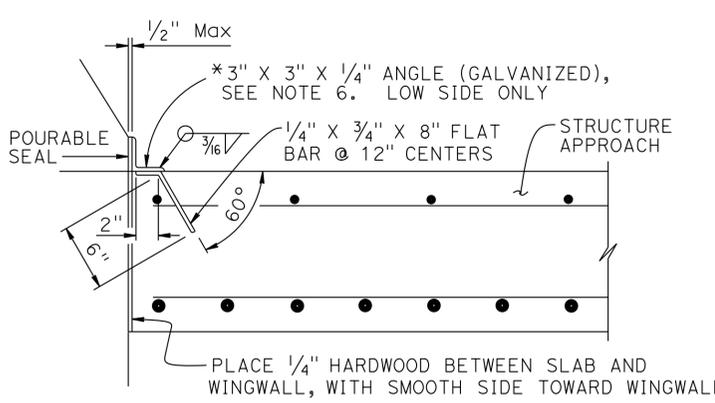


SECTION A-A
3/4" = 1'-0"

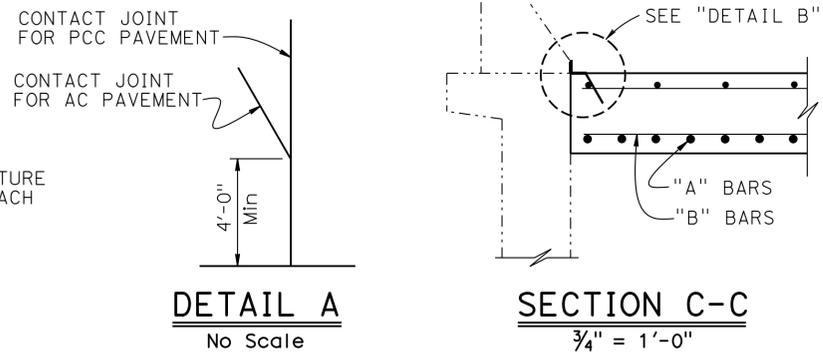


BAR CHAIR DETAIL
1/2" = 1'-0"

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



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



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

- NOTES:
- Sealed joint, for MR see Structure Plans. Adjust bar reinforcement to clear a sawcut for sealed joint, when required
 - Longitudinal construction joints, when permitted by Engineer, shall be located on lane lines
 - Transverse contact joint shall be a minimum of 5'-0" from an existing or constructed weakened plane joint
 - For transverse contact joint with new PCC paving, refer to Standard Plan P10
 - Couplers are required for stage construction
 - End angle or plate at beginning of barrier transition, end of wingwall or end of structure approach as applicable

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

STANDARD DRAWING

FILE NO. **xs3-130**

APPROVAL DATE July 2011

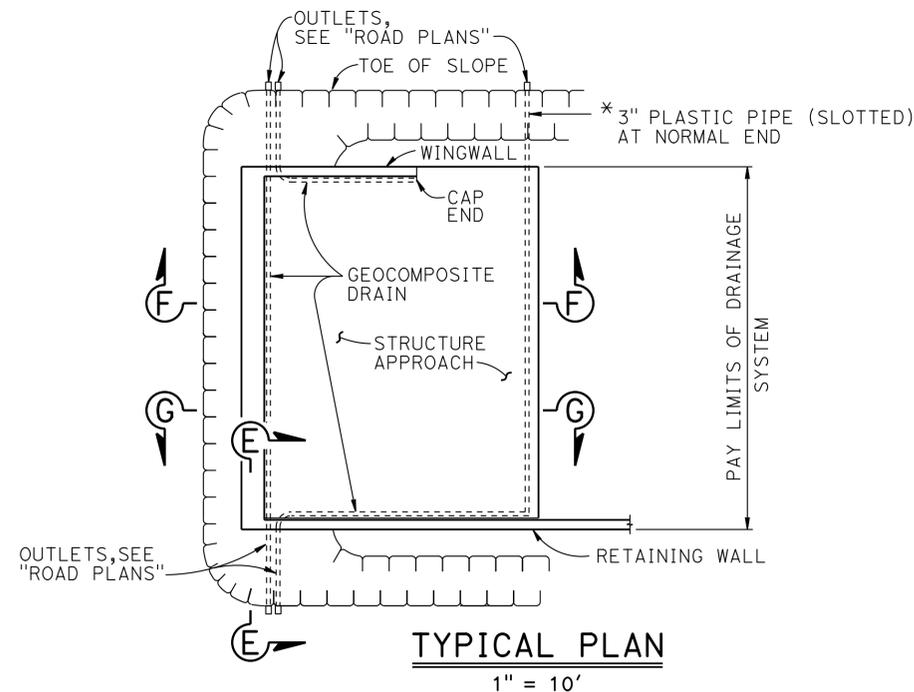
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES

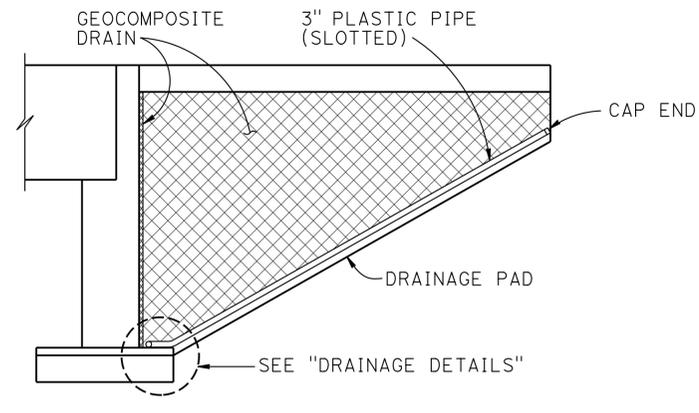
BRIDGE NO. 55-0106R/L
POST MILE 8.57

SANTA ANA RIVER BRIDGE (WIDEN)
STRUCTURE APPROACH TYPE R(30S)

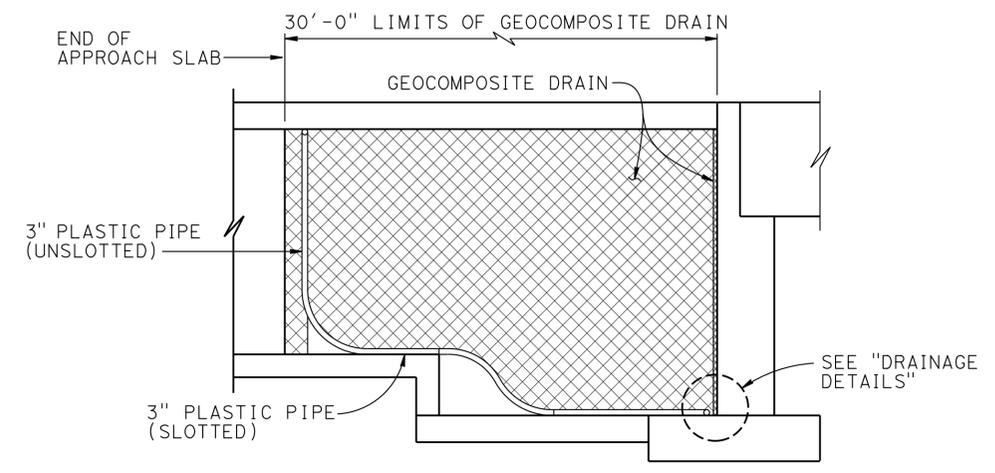
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	297	357
			12/20/12	REGISTERED CIVIL ENGINEER DATE	
			4-15-13	PLANS APPROVAL DATE	
			REGISTERED PROFESSIONAL ENGINEER CHARLES JEFF SIMS No. C46471 Exp. 6/30/13 CIVIL STATE OF CALIFORNIA		
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.					



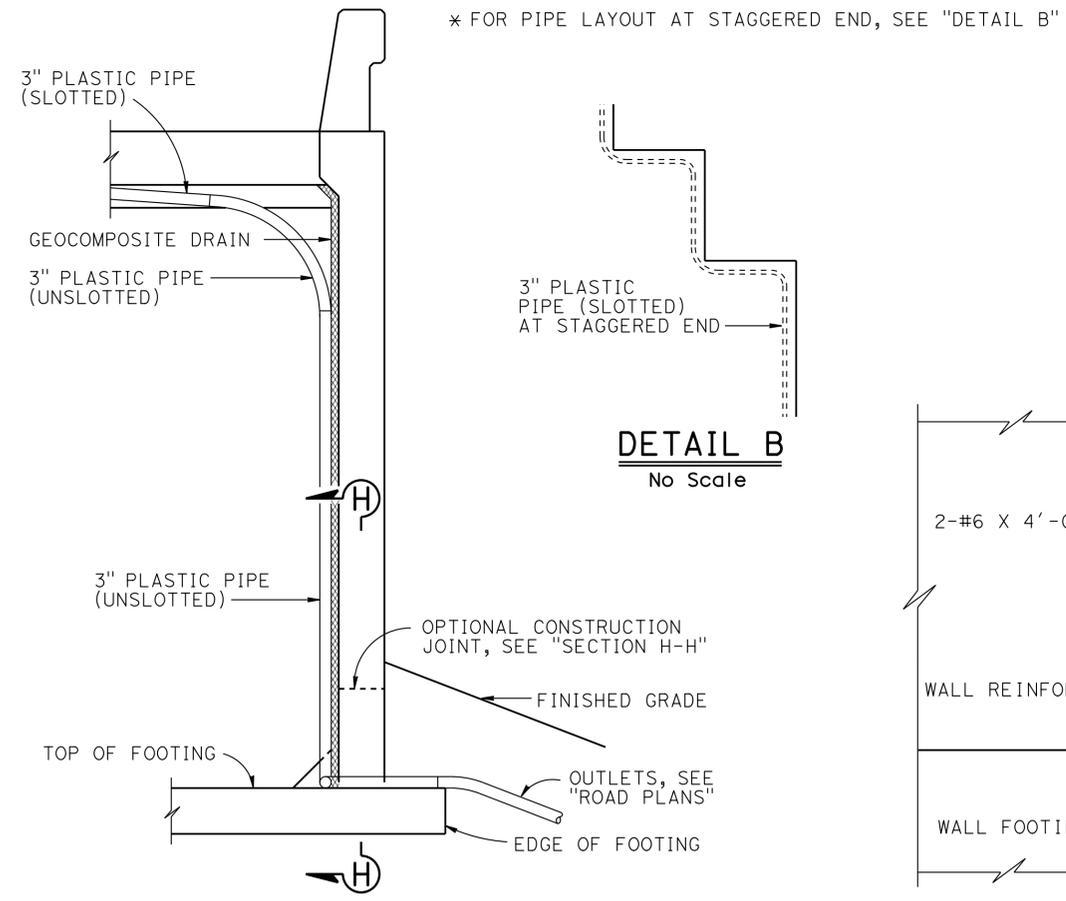
TYPICAL PLAN
1" = 10'



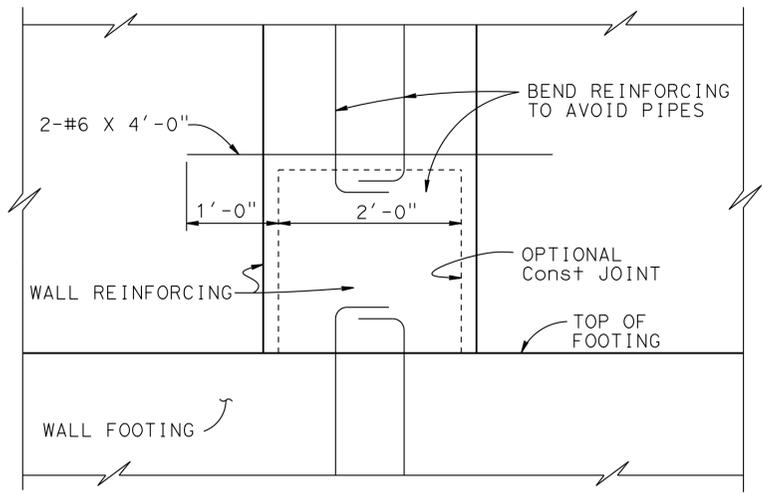
CANTILEVER WINGWALL
SECTION F-F
1/4" = 1'-0"



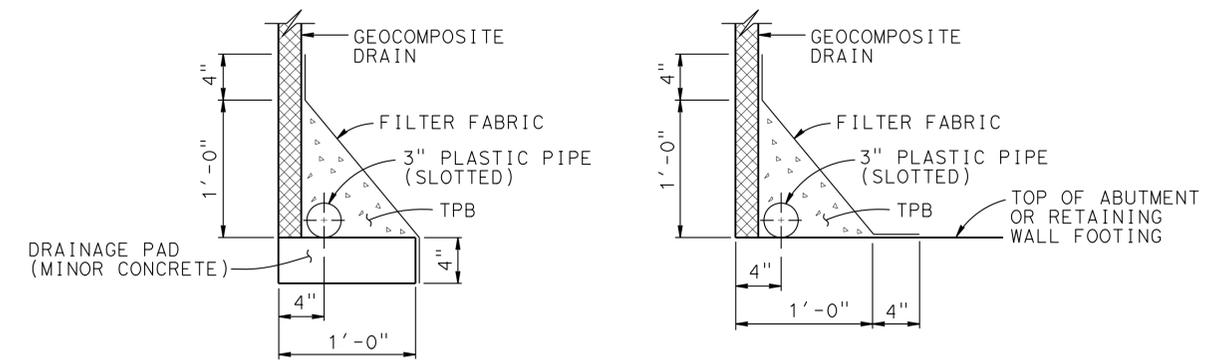
RETAINING WALL WINGWALL DRAINAGE DETAILS
SECTION G-G
1/4" = 1'-0"



DETAIL B
No Scale



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



WITHOUT FOOTING

WITH FOOTING

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

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

STANDARD DRAWING	
FILE NO. xs3-110	APPROVAL DATE <u>July 2011</u>

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES
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BRIDGE NO. 55-0106R/L	SANTA ANA RIVER BRIDGE (WIDEN)
POST MILE 8.57	
STRUCTURE APPROACH DRAINAGE DETAILS	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	299	357

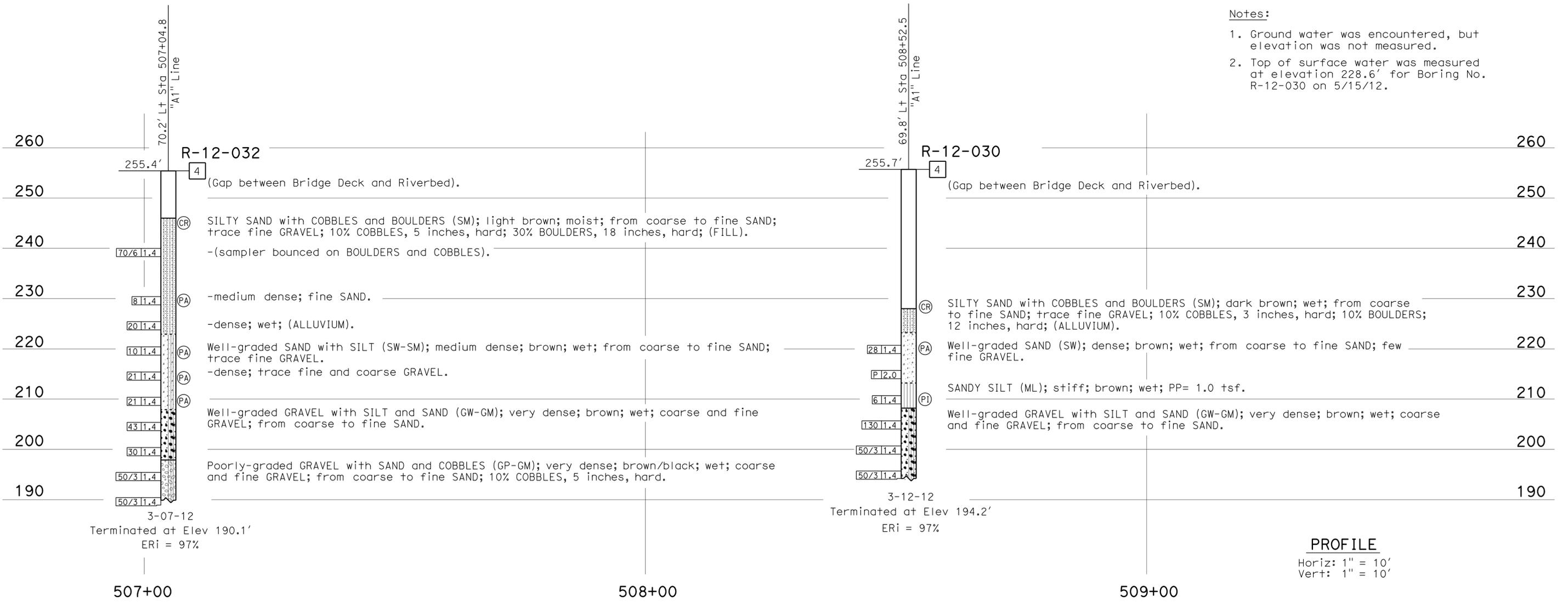
REGISTERED CIVIL ENGINEER *Quanyan Liao* 1-29-13 DATE
 PLANS APPROVAL DATE 4-15-13
 No. C68870
 Exp. 9-30-13
 CIVIL
 STATE OF CALIFORNIA

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FOR PLAN VIEW, SEE
"LOG OF TEST BORINGS 1 OF 8"

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

- Notes:
- Ground water was encountered, but elevation was not measured.
 - Top of surface water was measured at elevation 228.6' for Boring No. R-12-030 on 5/15/12.



ENGINEERING SERVICES		MATERIALS AND GEOTECHNICAL SERVICES		STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES		BRIDGE NO.		SANTA ANA RIVER BRIDGE (WIDEN)	
FUNCTIONAL SUPERVISOR		DRAWN BY: F. Nguyen		DEPARTMENT OF TRANSPORTATION		STRUCTURE DESIGN		55-0106R/L		LOG OF TEST BORINGS 2 OF 8	
NAME: S. Karimi		CHECKED BY: A. Mehrazar		FIELD INVESTIGATION BY: Q. Liao		DESIGN BRANCH 19		POST MILE			
								8.57			
OGS CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		UNIT: 3643		PROJECT NUMBER & PHASE: 12000000781		CONTRACT NO.: 12-0C5601		DISREGARD PRINTS BEARING EARLIER REVISION DATES	
				0 1 2 3						REVISION DATES	
										11-06-12 01-29-13 12-18-12 01-29-13	
										SHEET 39 OF 45	

FILE => 55-0106-Z-1+b02.dgn

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
12	Ora	91	8.1/9.3,10.1	300	357

Quanyan Liao 1-29-13
REGISTERED CIVIL ENGINEER DATE

4-15-13
PLANS APPROVAL DATE

Quanyan Liao
No. C68870
Exp. 9-30-13
CIVIL

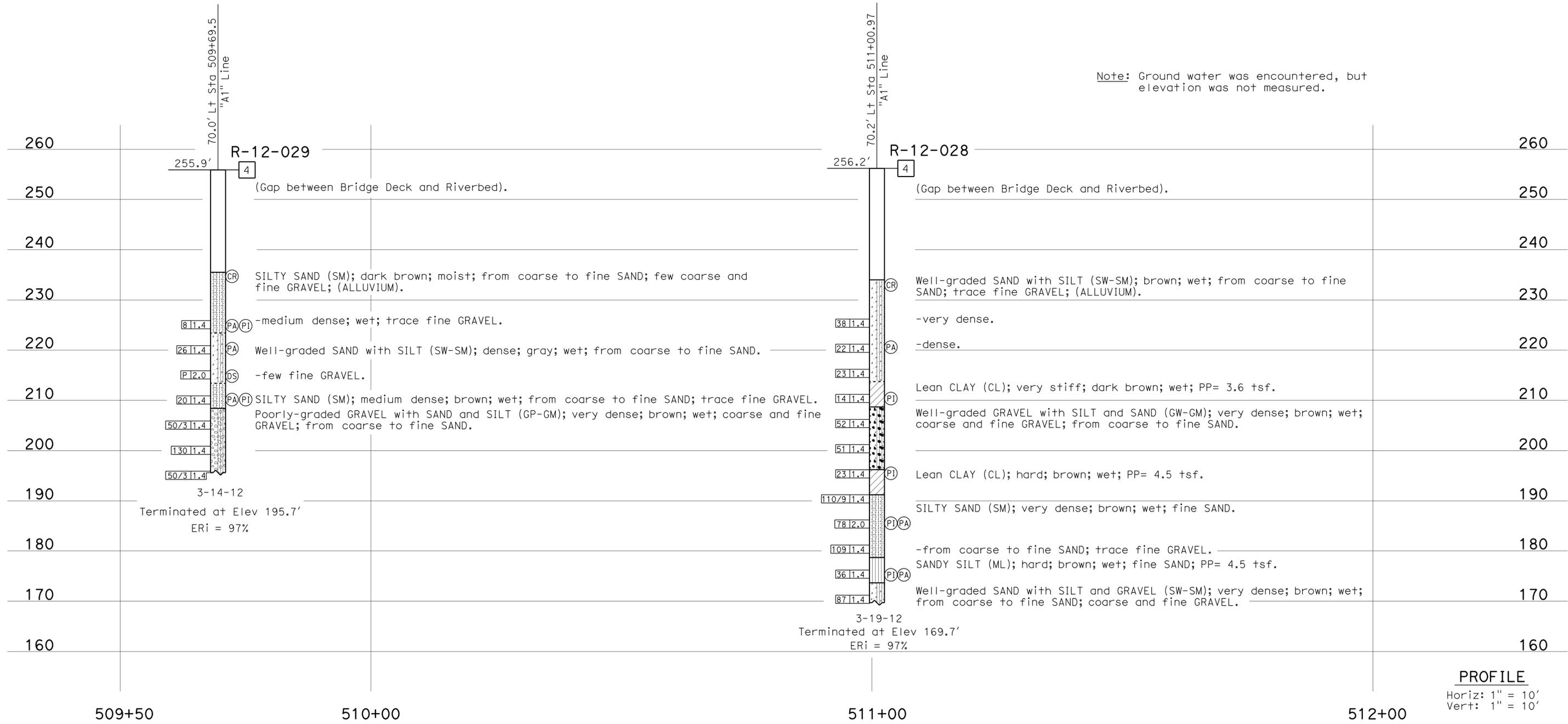
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FOR PLAN VIEW, SEE
"LOG OF TEST BORINGS 1 OF 8"

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

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

Note: Ground water was encountered, but elevation was not measured.



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

ENGINEERING SERVICES		MATERIALS AND GEOTECHNICAL SERVICES		STATE OF CALIFORNIA		DIVISION OF ENGINEERING SERVICES		BRIDGE NO. 55-0106R/L		SANTA ANA RIVER BRIDGE (WIDEN)	
FUNCTIONAL SUPERVISOR		DRAWN BY: F. Nguyen		FIELD INVESTIGATION BY:		STRUCTURE DESIGN		POST MILE		LOG OF TEST BORINGS 3 OF 8	
NAME: S. Karimi		CHECKED BY: A. Mehrazar		Q. Liao		DESIGN BRANCH 19		8.57			
OGS CIVIL LOG OF TEST BORINGS SHEET		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		UNIT: 3643		PROJECT NUMBER & PHASE: 1200000078		CONTRACT NO.: 12-0C5601		DISREGARD PRINTS BEARING EARLIER REVISION DATES	
				0 1 2 3						REVISION DATES	
										11-06-12 01-29-13 12-18-12 01-27-13	
										SHEET 40 OF 45	

FILE => 55-0106-Z-1+D03.dgn
DATE PLOTTED => 24-APR-2013
TIME PLOTTED => 11:48
USERNAME => s121614