

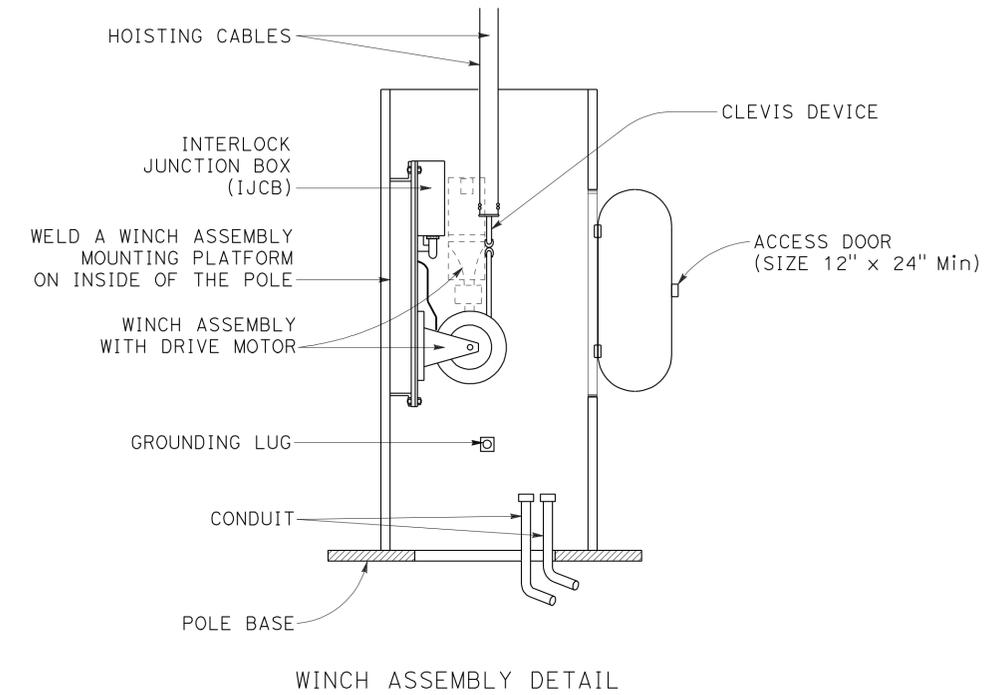
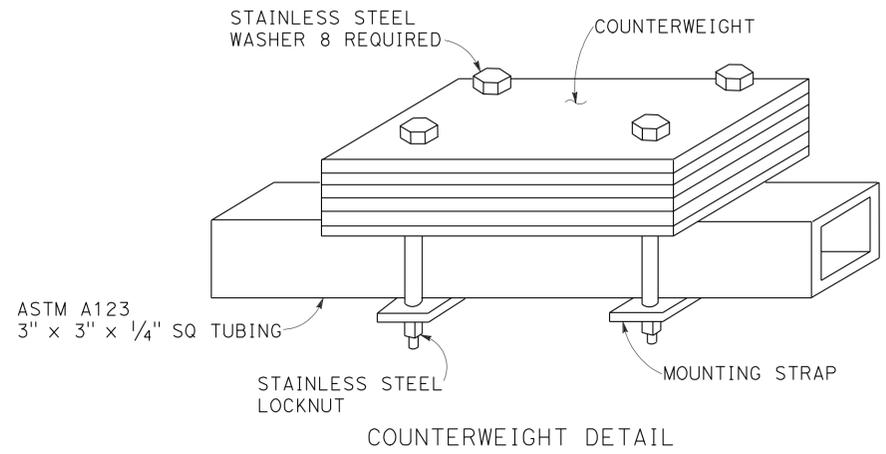
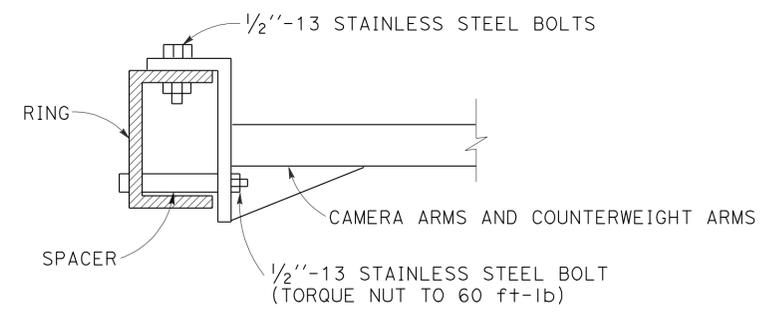
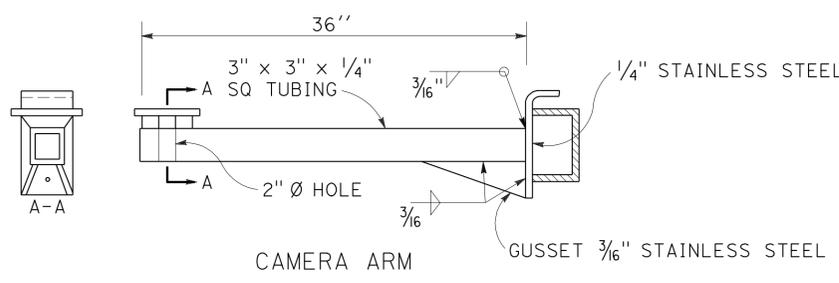
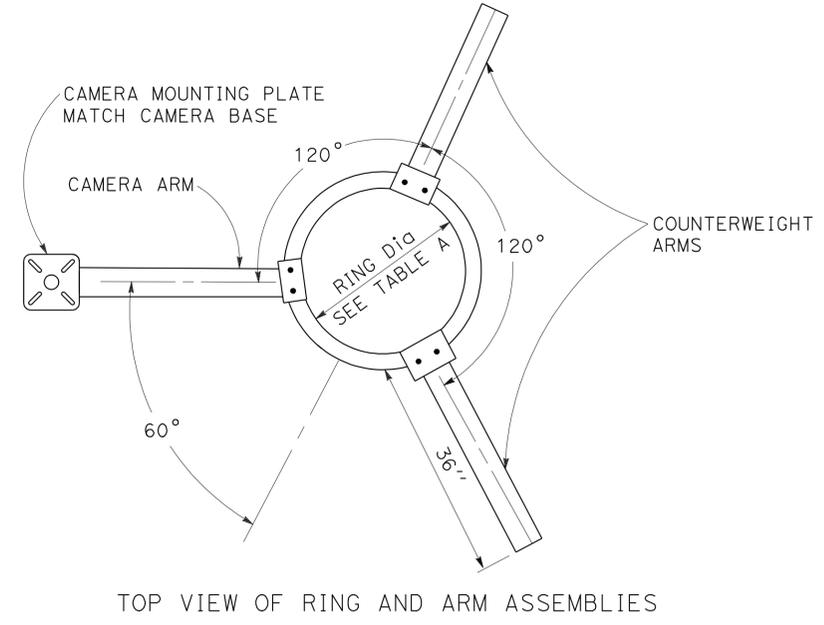
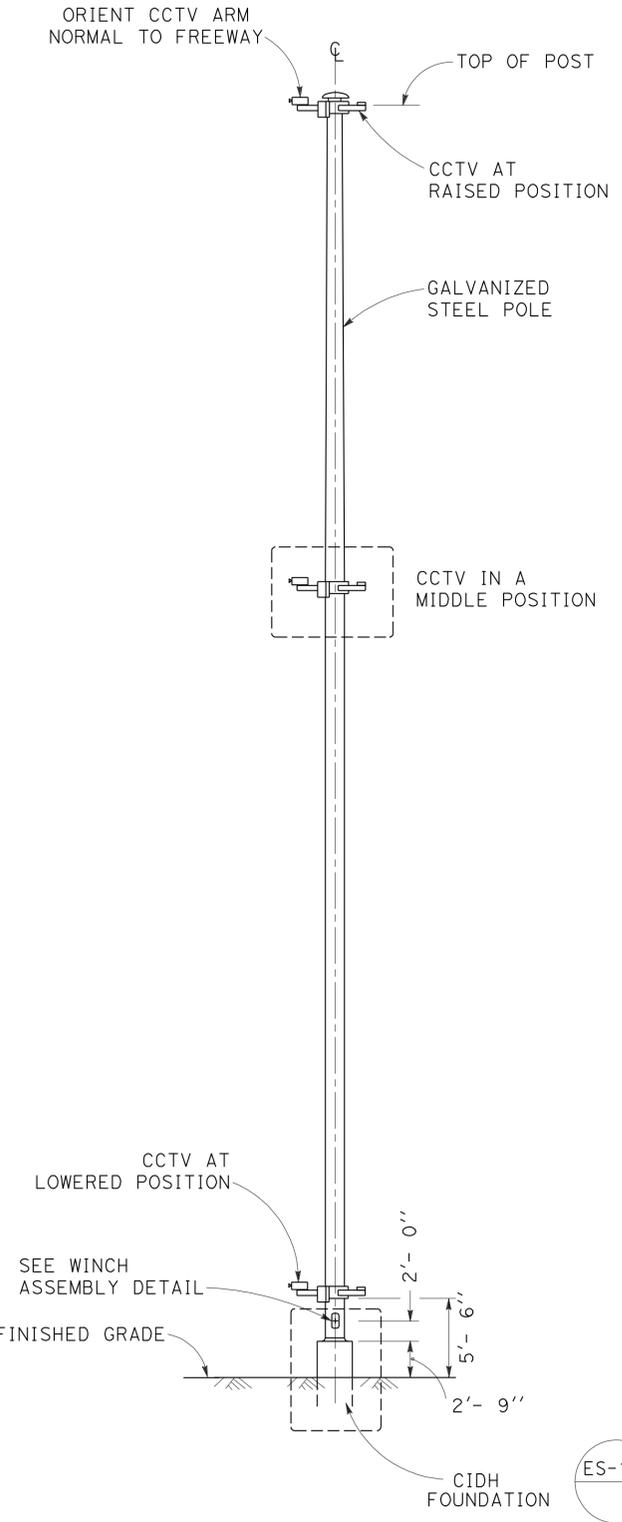
Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	501	681

David Seto 5/7/12
 REGISTERED CIVIL ENGINEER DATE
 5-21-12
 PLANS APPROVAL DATE
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TABLE A

POLE HEIGHT	RING INSIDE DIAMETER (NOMINAL)
60'-70'	30"
80'-90'	36"



- NOTES: (FOR THIS SHEET ONLY)
1. ALL MOUNTING PLATE WELDS AND CONNECTIONS BETWEEN RING AND ARMS, ARE SHOWN FOR EXAMPLE. THE CONTRACTOR SHALL SUBMIT ACTUAL MOUNTING DETAILS TO THE ENGINEER FOR APPROVAL PRIOR TO FABRICATION.
 2. COUNTERWEIGHT AND CAMERA ARMS SHALL HAVE IDENTICAL MOUNTING ATTACHMENT TO RING.
 3. COUNTERWEIGHT DETAIL IS SHOWN FOR EXAMPLE. MODIFY DETAIL TO BALANCE CCTV/RING/ARMS ASSEMBLY ABOUT THE CENTER OF THE RING.
 4. EACH COUNTERWEIGHT SHALL HAVE ITS WEIGHT EQUAL TO THE WEIGHT OF INTEGRATED CAMERA UNIT.
 5. ALL WELDS ARE METAL - ARC WITH E 6011 ROD WITH 72000 PSI TENSILE STRENGTH AS WELDED.
 6. COUNTERWEIGHT AND RELATED HARDWARE SHALL BE GALVANIZED PER ASTM 123.

ELECTRICAL DETAILS
(HIGH MAST CCTV POLE)
 NO SCALE

E-56

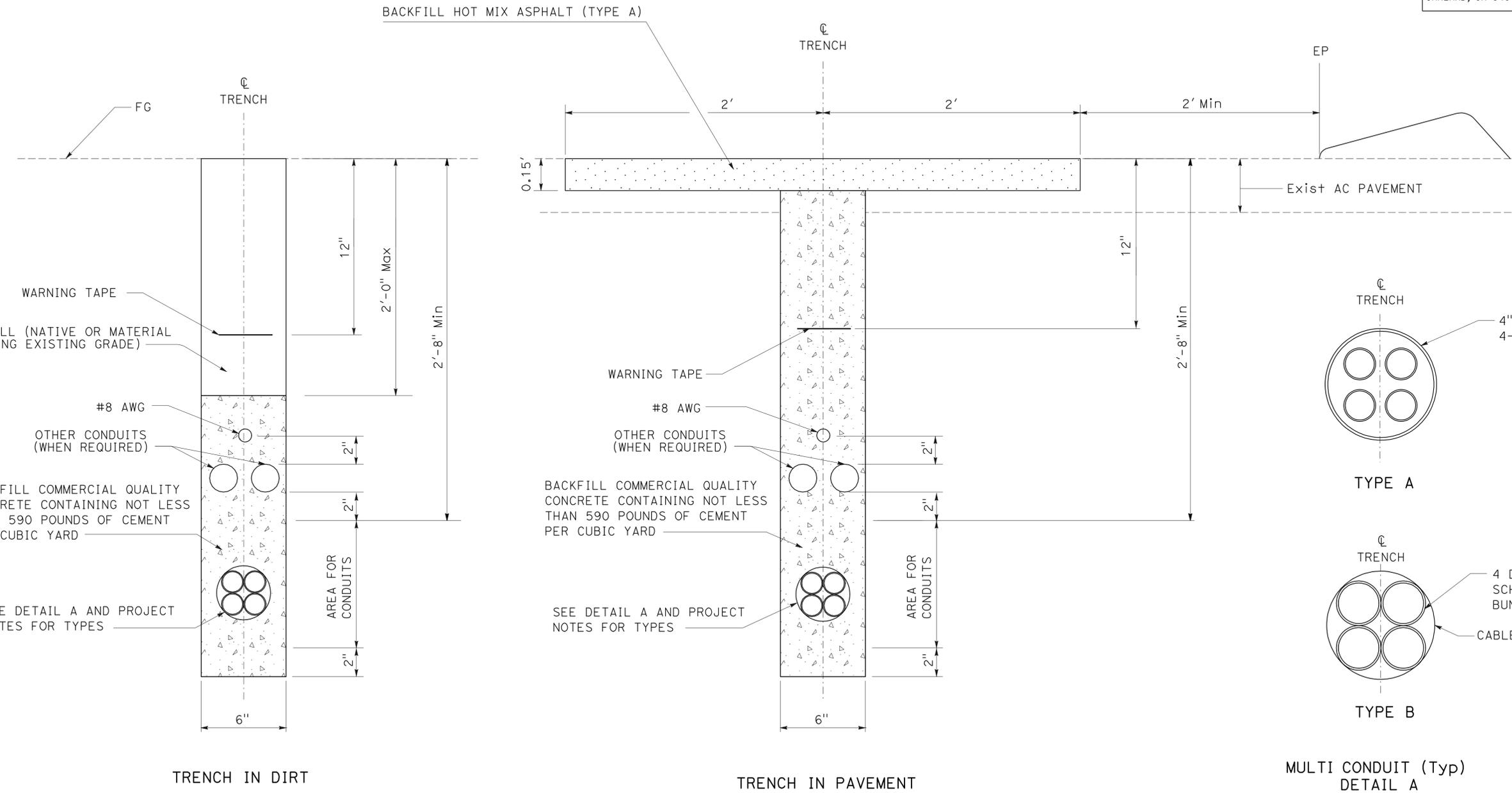
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 Caltrans
 FUNCTIONAL SUPERVISOR: BRIAN KRCELIC
 DESIGNED BY: DAVID SETO
 CHECKED BY: ALLAN MORRIS
 REVISIONS: DS 5/12
 REVISIONS: DATE REVISED

DATE PLOTTED => 21-MAY-2012
 TIME PLOTTED => 1:31:31
 LAST REVISION: 5-7-12

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	502	681
<i>David Seto</i> REGISTERED CIVIL ENGINEER			5/7/12 DATE		
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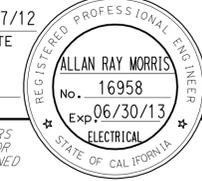
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

DAVID SETO	DAVID SETO	DS
ALLAN MORRIS	REVISOR	5/12
BRIAN KRCELIC	DESIGNED BY	
	CHECKED BY	
	FUNCTIONAL SUPERVISOR	



ELECTRICAL DETAILS
(FIBER OPTIC CONDUIT AND TRENCH DETAILS)
 NO SCALE

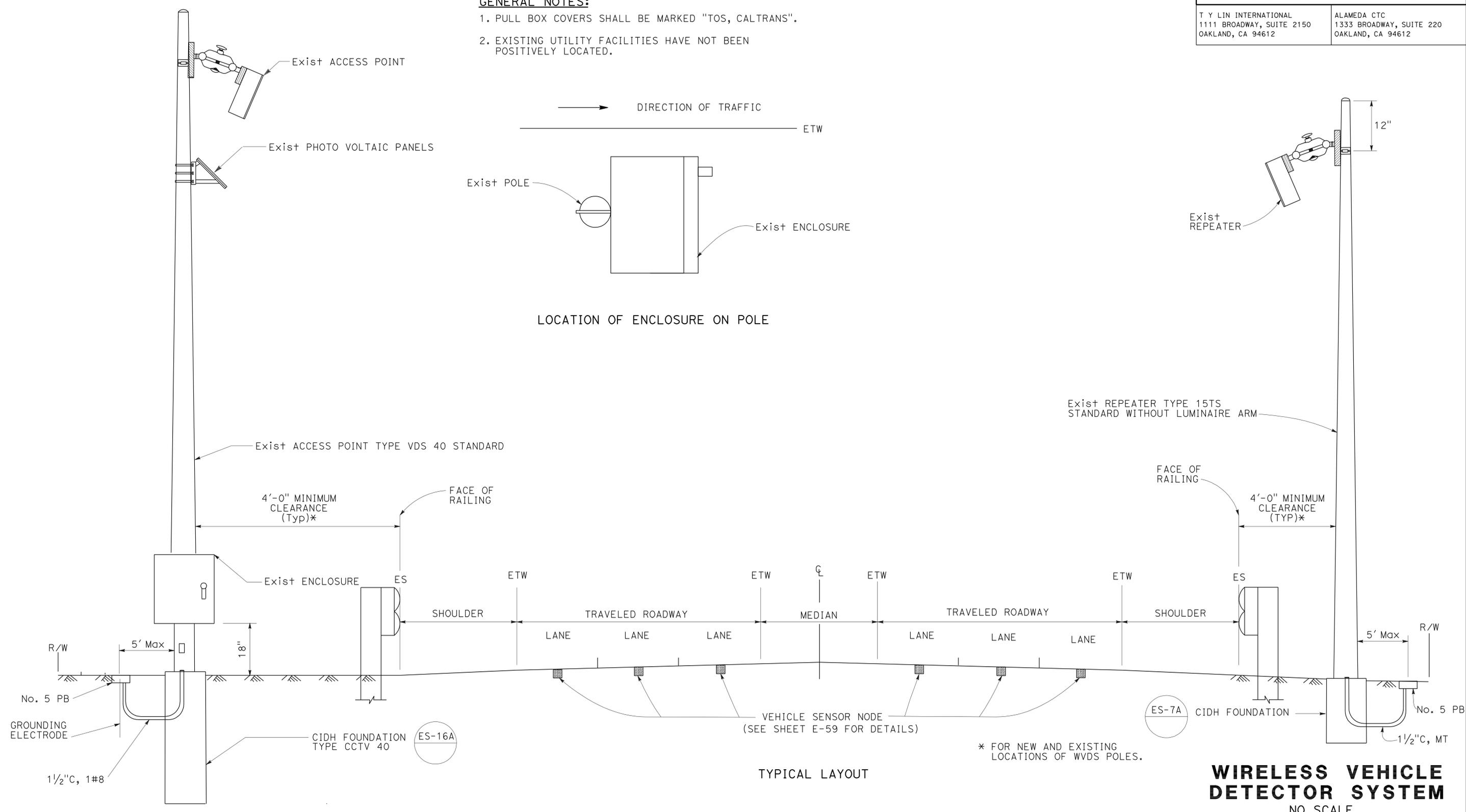
E-57

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	503	681
			5/7/12 REGISTERED ELECTRICAL ENGINEER DATE 5-21-12 PLANS APPROVAL DATE		
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ABBREVIATIONS:
 WVDS = WIRELESS VEHICLE DETECTOR SYSTEM
 AP = ACCESS POINT
 POA = POWER OVER ETHERNET
 PV = PHOTO-VOLTAIC
 VSN = VEHICLE SENSOR NODE

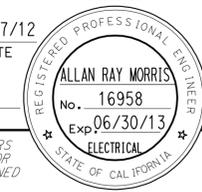
- GENERAL NOTES:**
- PULL BOX COVERS SHALL BE MARKED "TOS, CALTRANS".
 - EXISTING UTILITY FACILITIES HAVE NOT BEEN POSITIVELY LOCATED.

CC	5/12
REVISOR	DATE
DAVID SETO	ALLAN MORRIS
CALCULATED/DESIGNED BY	CHECKED BY
BRIAN KRCELIC	
FUNCTIONAL SUPERVISOR	
DEPARTMENT OF TRANSPORTATION	
STATE OF CALIFORNIA	



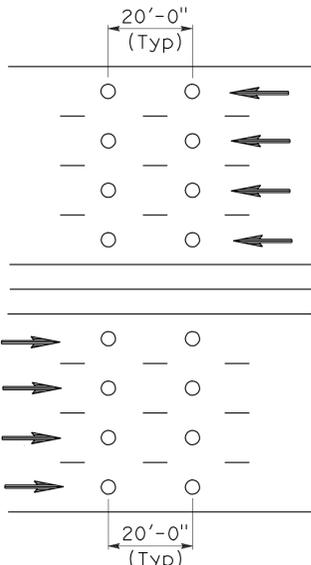
TYPICAL LAYOUT

WIRELESS VEHICLE DETECTOR SYSTEM
 NO SCALE
E-58

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	504	681
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VEHICLE SENSOR NODE INSTALLATION PROCEDURES

1. PRIOR TO INSTALLATION, IDENTIFY VEHICLE SENSOR NODE'S ID, LANE NUMBER, AND LOCATION IN LANE.
2. MAKE SURE THE VEHICLE SENSOR NODE IS INSTALLED FLAT IN THE CORED HOLE AND IS NOT TILTED.
3. USE HEAT-GUN OR HOT COMPRESSED AIR TO DRY THE INSIDE OF THE CORED HOLE. THERE MUST BE ABSOLUTELY NO MOISTURE ON THE APPLIED SURFACE.
4. FILL THE HOLE ABOUT 1/4 FULL OF SEALANT.
5. PLACE VEHICLE SENSOR NODE IN THE HOLE WITH ARROW POINTING IN THE DIRECTION OF TRAFFIC. THE SEALANT SHOULD STILL HAVE WORK TIME, SO THE VEHICLE SENSOR NODE CAN BE ROTATED TO THE CORRECT ORIENTATION. PUSH VEHICLE SENSOR NODE DOWN SO IT LAYS FLAT ON THE BOTTOM OF THE HOLE.
6. FILL THE HOLE WITH THE REMAINING SEALANT TO COVER THE VEHICLE SENSOR NODE. LEVEL SEALANT WITH THE SURFACE OF ROAD.
7. IMMEDIATELY AFTER PROCEDURE #4, COMPLETE PROCEDURES #5 AND #6 WITHIN 30 SECONDS.
8. DEPENDING ON AMBIENT TEMPERATURE AND HUMIDITY, SEALANT DRYING TIME WILL VARY FROM 5 MINUTES TO 15 MINUTES. VERIFY HARDNESS OF SEALANT BEFORE REOPENING THE LANE FOR TRAFFIC.
9. RECORD DISTANCES BETWEEN EACH VEHICLE SENSOR NODE PAIR.



WVDS NOTES

FREEWAY MAINLINE DETECTOR DESIGNATION:

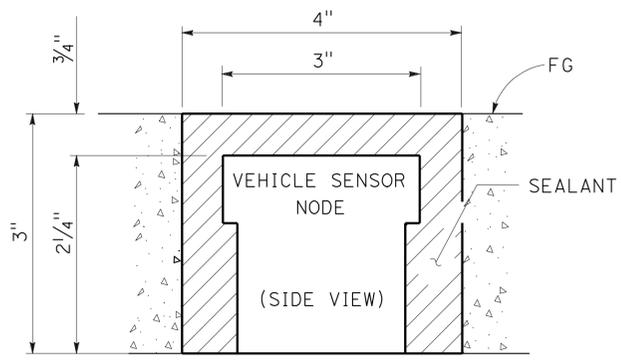
- N=NORTHBOUND LANES (NB)
- S=SOUTHBOUND LANES (SB)
- E=EASTBOUND LANES (EB)
- W=WESTBOUND LANES (WB)

NUMBER OF LANES FROM LEFT WITH RESPECT TO DIRECTION OF TRAFFIC:

- 1=FIRST LANE FROM LEFT
- 2=SECOND LANE FROM LEFT
- 3=THIRD LANE FROM LEFT
- 4=FOURTH LANE FROM LEFT

NUMBER OF VSN IN THE SAME LANE:

- 1=ENTERING DETECTOR
- 2=LEAVING DETECTOR



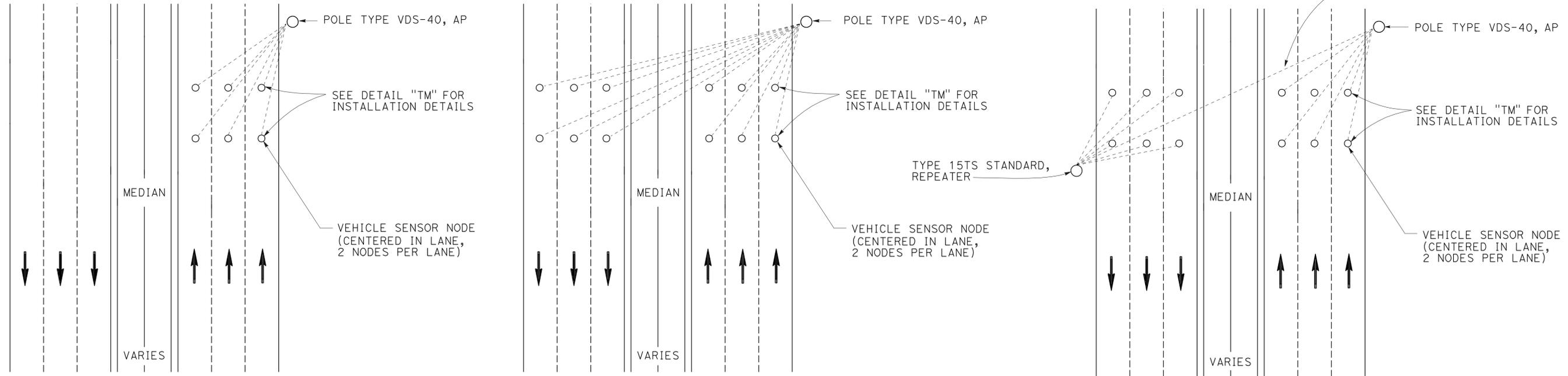
DETAIL B

VEHICLE SENSOR NODE INSTALLED IN ROADWAY

VEHICLE SENSOR NODE REMOVAL AND DISPOSAL PROCEDURES

1. LOCATE AND MARK THE SENSOR TO BE REMOVED.
2. CORE A 5" DIAMETER HOLE INTO THE ROAD AROUND THE SENSOR TO A DEPTH OF APPROXIMATELY 2 1/2".
3. PERMANENTLY MARK THE DIRECTION OF TRAFFIC ONTO THE TOP OF THE SENSOR/EPOXY PLUG.
4. USE THE PRY BAR AS NEEDED TO WORK THE SENSOR/EPOXY PLUG FREE FROM THE BOTTOM OF THE HOLE.
5. PULL THE SENSOR/EPOXY PLUG FREE FROM THE HOLE.
6. REMOVE LOOSE DIRT OR DEBRIS.
7. PATCH HOLE WITH CALTRANS APPROVED MATERIALS.
8. THE SENSORS CONTAIN NO SERVICEABLE PARTS AND SHOULD NOT BE DISASSEMBLED.
9. INSTALLATION AND REMOVAL OF SENSORS FROM PAVEMENT SHOULD ONLY BE DONE BY TRAINED PERSONNEL AND CARE SHOULD BE TAKEN TO INSURE THAT THE SENSOR CASING IS NOT PUNCTURED OR CRUSHED.
10. DISPOSE OF SENSORS CONTAINING BATTERIES IN ACCORDANCE WITH RESIDENT ENGINEER'S INSTRUCTIONS.

DETAIL "TM"



TYPE I

TYPE II

TYPE III

LEGEND

- ➔ DIRECTION OF TRAFFIC
- WIRELESS COMMUNICATION LINK

DETAIL A
VEHICLE SENSOR NODE PLACEMENT DETAIL

WIRELESS VEHICLE DETECTOR SYSTEM
(VEHICLE SENSOR NODE SYSTEM DETAILS)

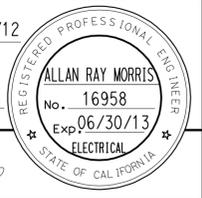
NO SCALE

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 CC 5/12
 REVISOR BY DATE
 DAVID SETO ALLAN MORRIS
 CALCULATED/DESIGNED BY CHECKED BY
 FUNCTIONAL SUPERVISOR BRIAN KRCELIC
 Caltrans

DATE PLOTTED => 21-MAY-2012
 TIME PLOTTED => 1:31:31
 LAST REVISION 5-7-12

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ALAMEDA CTC
 1333 BROADWAY, SUITE 220
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ABBREVIATIONS (FOR THIS SHEET ONLY):

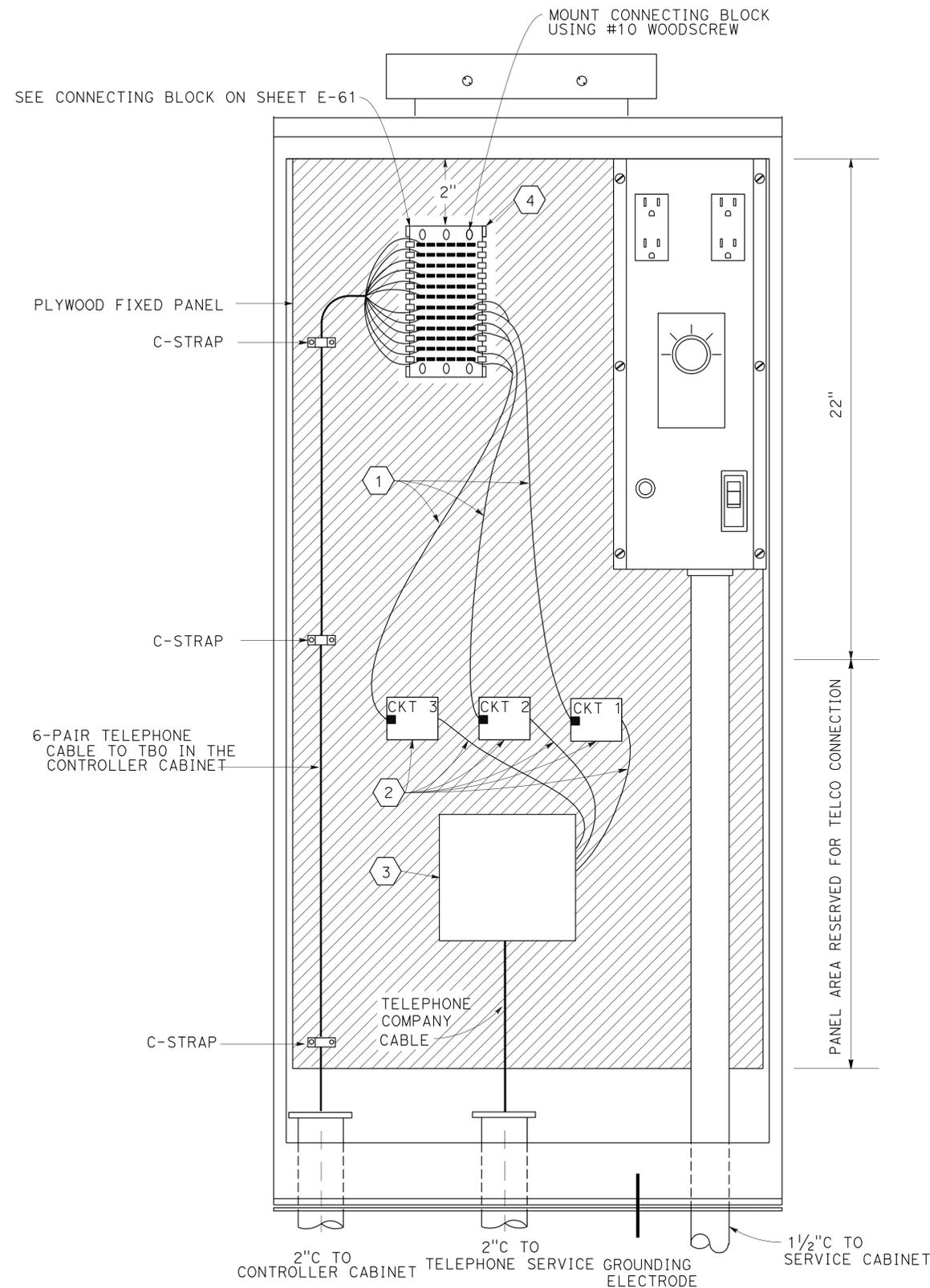
T/R TIP AND RING
 TC TELEPHONE CABLE
 TELCO TELEPHONE COMPANY

CONDUCTOR LIST FOR DEMARCATION CABINET

CABLE TYPE	FUNCTION	PAIR COLORS	12 ROW PUNCH BLOCK
TC	SPARE	WHITE & BLUE	ROW 1, ROW 2
TC	SPARE	WHITE & ORANGE	ROW 3, ROW 4
TC	SPARE	WHITE & GREEN	ROW 5, ROW 6
TC	CIRCUIT 1	WHITE & BROWN	ROW 7, ROW 8
TC	CIRCUIT 2	WHITE & GRAY	ROW 9, ROW 10
TC	CIRCUIT 3 (DIAL-UP: T/R PAIR)	RED & BLUE	ROW 11, ROW 12

NOTES (FOR THIS SHEET ONLY):

- ① 3' SINGLE ENDED 2-PAIR MODULAR CORD WITH RJ11 PLUG CONNECTOR. CONDUCTORS SHALL BE 22 AWG, SOLID.
- ② SERVICE CORD AND CONNECTION BLOCK FURNISHED AND INSTALLED BY TELEPHONE COMPANY
- ③ TELEPHONE COMPANY STANDARD PROTECTOR EQUIPMENT FURNISHED AND INSTALLED BY TELEPHONE COMPANY.
- ④ CONNECTING BLOCK SHALL BE TYPE SIEMON S66B1-6 OR EQUIVALENT.



TELEPHONE DEMARCATION CABINET, TYPE B WIRING DETAIL
 SEE RSP ES-3E

ELECTRICAL DETAILS
(TDC WIRING)
 NO SCALE

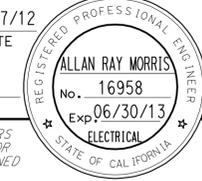
E-60

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

 FUNCTIONAL SUPERVISOR: BRIAN KRCELIC
 CHECKED BY: [Blank]
 DESIGNED BY: [Blank]
 DAVID SETO
 ALLAN MORRIS
 REVISED BY: [Blank] DATE REVISED: [Blank]
 CC: [Blank] DATE: 5/12

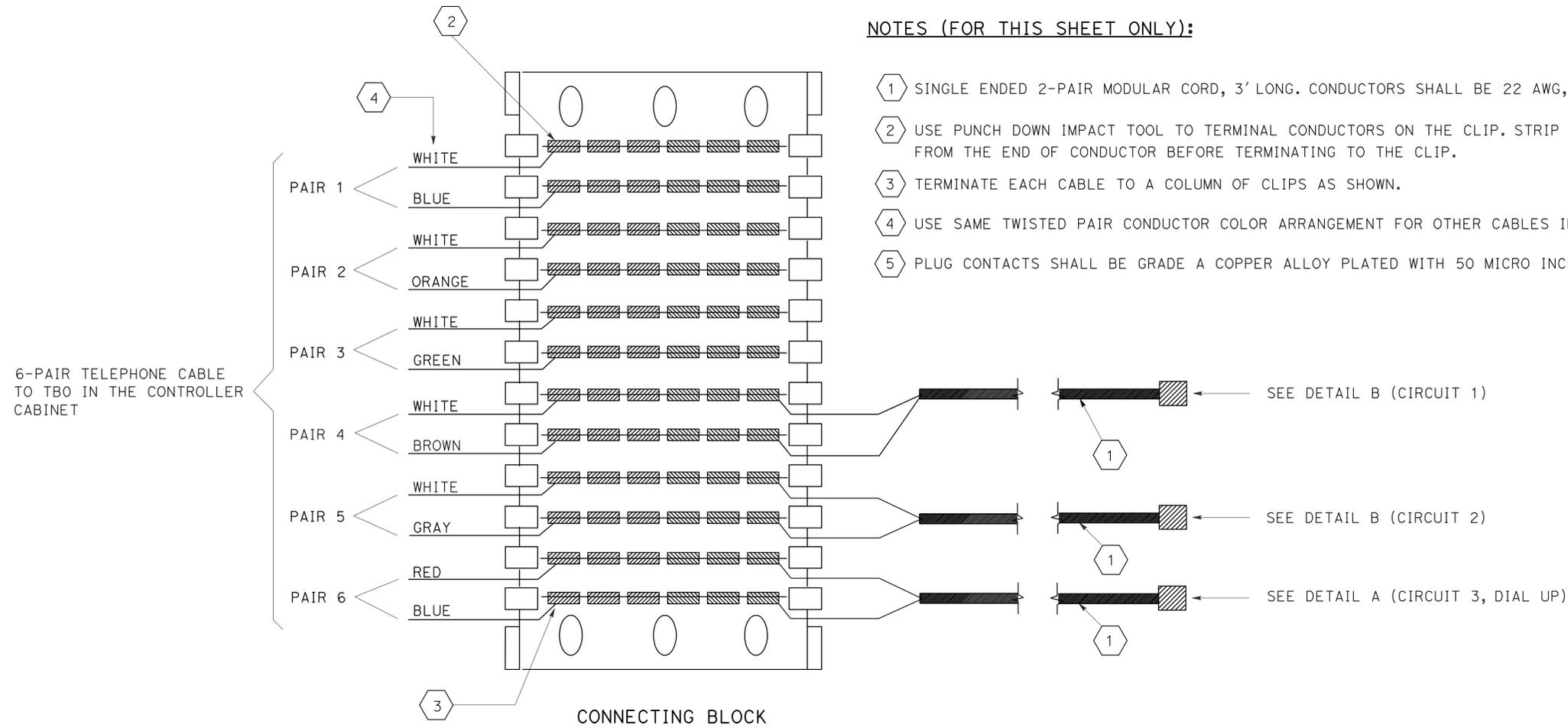


Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda	580	R7.8/19.1	506	681


 5/7/12
 REGISTERED ELECTRICAL ENGINEER DATE
 5-21-12
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 T Y LIN INTERNATIONAL
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 OAKLAND, CA 94612
 ALAMEDA CTC
 1333 BROADWAY, SUITE 220
 OAKLAND, CA 94612

NOTES (FOR THIS SHEET ONLY):

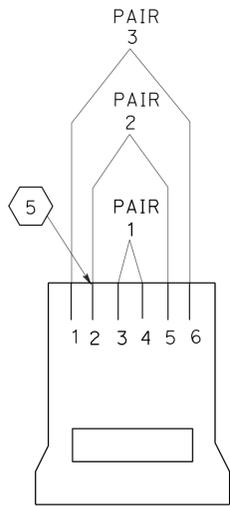
- ① SINGLE ENDED 2-PAIR MODULAR CORD, 3' LONG. CONDUCTORS SHALL BE 22 AWG, SOLID.
- ② USE PUNCH DOWN TOOL TO TERMINAL CONDUCTORS ON THE CLIP. STRIP INSULATION 1/4" FROM THE END OF CONDUCTOR BEFORE TERMINATING TO THE CLIP.
- ③ TERMINATE EACH CABLE TO A COLUMN OF CLIPS AS SHOWN.
- ④ USE SAME TWISTED PAIR CONDUCTOR COLOR ARRANGEMENT FOR OTHER CABLES IF REQUIRED.
- ⑤ PLUG CONTACTS SHALL BE GRADE A COPPER ALLOY PLATED WITH 50 MICRO INCHES GOLD OVER NICKEL.



SEE DETAIL B (CIRCUIT 1)

SEE DETAIL B (CIRCUIT 2)

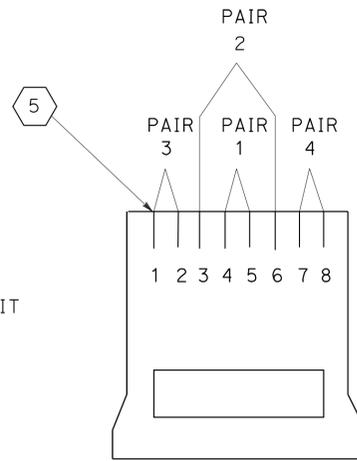
SEE DETAIL A (CIRCUIT 3, DIAL UP)



DETAIL A

RJ11 6P-4C MODULAR PLUG

PAIR ID	PIN #	FUNCTION
T1	4	T/R PAIR FOR DIAL-UP CIRCUIT
R1	3	
T2	2	N/C
R2	5	N/C
T3	6	N/C
R3	1	N/C



DETAIL B

8P8C MODULAR PLUG

PAIR ID	PIN #	FUNCTION
T1	5	TRANSMIT AND RECEIVE PAIR
R1	4	
T2	3	N/C
R2	6	N/C
T3	1	N/C
R3	2	N/C
T4	7	N/C
R4	8	N/C

ABBREVIATIONS (FOR THIS SHEET ONLY):

- T/R TIP AND RING
- N/C NO CONNECTION
- TBO TERMINAL BLOCK 0

TELEPHONE DEMARCATION CABINET, TYPE B WIRING DETAIL

SEE RSP ES-3E

ELECTRICAL DETAILS (TDC WIRING)

NO SCALE

E-61

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

 FUNCTIONAL SUPERVISOR: BRIAN KRCELIC
 CALCULATED/DESIGNED BY: DAVID SETO
 CHECKED BY: ALLAN MORRIS
 REVISED BY: CC
 DATE REVISED: 5/12

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	507	681

<i>David Seto</i>	5/7/12
REGISTERED CIVIL ENGINEER	DATE
5-21-12	
PLANS APPROVAL DATE	

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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans

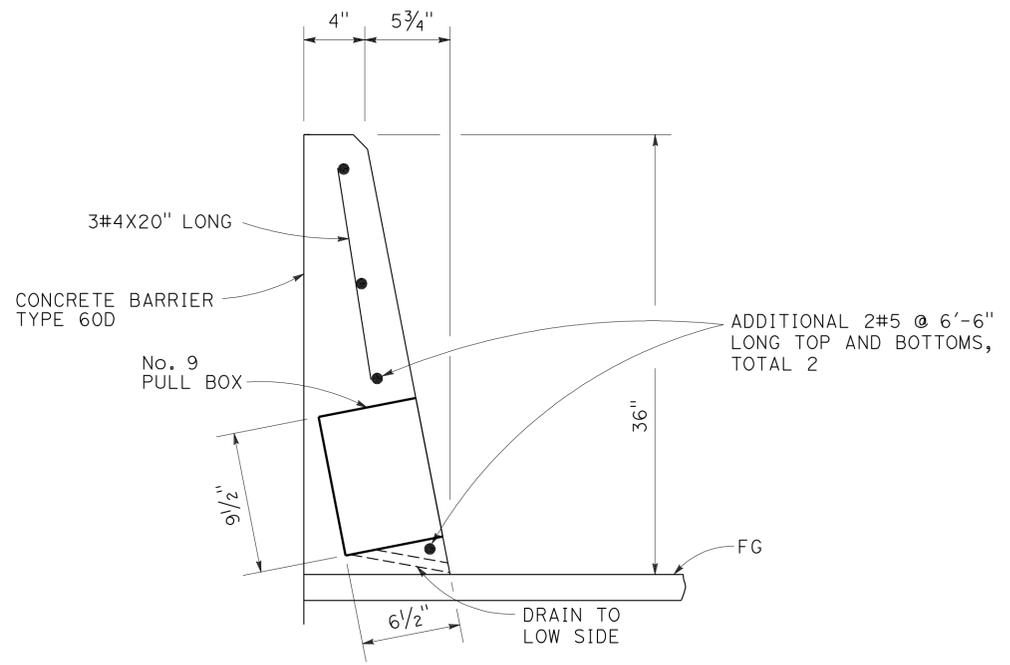
FUNCTIONAL SUPERVISOR
 BRIAN KRCELIC

CALCULATED/DESIGNED BY
 CHECKED BY

DAVID SETO
 ALLAN MORRIS

REVISED BY
 DATE REVISED

DS
 5/12



SEE CALTRANS STD PLANS RSP A76A, RSP ES-9C,
 AND ES-9D FOR DETAILS NOT SHOWN.

No. 9 PULL BOX INTO CONCRETE BARRIER TYPE 60D

ELECTRICAL DETAILS
(PULL BOX INSTALLATION
IN CONCRETE BARRIER)
 NO SCALE

E-62

FUNCTIONAL SUPERVISOR	DAVID SETO	REVISOR	CC
CHECKED BY	ALLAN MORRIS	DATE REVISOR	5/12
DESIGNED BY			

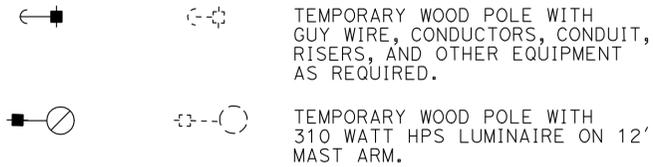
GENERAL NOTES (TEMPORARY):

- EXACT LOCATION OF TEMPORARY ELECTRICAL EQUIPMENT WILL BE DETERMINED BY THE ENGINEER.
- ALL TEMPORARY ELECTRICAL EQUIPMENT NO LONGER REQUIRED AT THE END OF A STAGE SHALL BE REMOVED AND DISPOSED OF OR REUSED IN STAGES THAT FOLLOW EXCEPT CONDUIT NO LONGER USED SHALL BE ABANDONED IN PLACE. PULL BOXES AND FOUNDATIONS SHALL BE REMOVED AND BECOME THE PROPERTY OF THE CONTRACTOR OR ABANDONED AS DIRECTED BY THE ENGINEER.
- PERMANENT ELECTRICAL EQUIPMENT NOT SHOWN ON THE PLANS CAN BE INSTALLED AT ANY STAGE IF NOT INTERFERING WITH CONSTRUCTION AND AS DIRECTED BY THE ENGINEER.
- WOOD POLE FOR TEMPORARY LIGHTING SHALL BE PROTECTED WITH A CONCRETE BARRIER BETWEEN IT AND THE TRAVELED WAY. CONCRETE BARRIER SHALL BE INCLUDED AS TRAFFIC HANDLING ITEM.
- TEMPORARY WOOD POLE SHALL BE INSTALLED 30' MINIMUM FROM THE EDGE OF TRAVELED WAY. IF K-RAIL IS PROVIDED, LOCATE 3' BEHIND RAILING.
- OVERHEAD ENTRANCE CONDUIT FITTING SHALL BE INSTALLED IN SUCH A WAY SO THAT RAINWATER SHALL NOT SEEP INTO THE ELECTRICAL EQUIPMENT THROUGH THE ENTRANCE FITTING. FORM A DRIP LOOP AT THE ENTRANCE FITTING.
- PROVIDE GUY WIRE, GUY GUARDS, AND ANCHOR AS REQUIRED. POLE GUYS SHALL BE INSTALLED AS DIRECTED BY THE ENGINEER.
- ESTABLISH CONTINUOUS GROUND WITH THE SYSTEM GROUND TO ALL METAL PARTS IN THE SYSTEM BY BONDING JUMPERS AND CONDUITS.
- A GROUNDING ELECTRODE SHALL BE INSTALLED IN THE PULL BOX ADJACENT TO WOOD POLES AND BONDED TO RIGID METAL CONDUIT, UNLESS OTHERWISE NOTED.
- ALL TEMPORARY LIGHTING SHOWN ON THE PLANS SHALL BE INSTALLED PRIOR TO THE BEGINNING OF THE STAGE AND MAINTAINED IN EFFECTIVE OPERATION UNTIL PERMANENT LIGHTING IS INSTALLED AND OPERATIONAL.
- OVERHEAD CONDUCTORS SHALL BE TIED ON MESSENGER WIRE AT EVERY 3' MAXIMUM WITH SELF-CLINGING NYLON TIES.
- THE LOWEST SAG POINT OF THE TETHER WIRE SHALL BE 17' MINIMUM CLEARANCE FROM THE FINISHED ROADWAY GRADE.

LEGEND (TEMPORARY):

SEE STANDARD PLANS RSP ES-1A, RSP ES-1B AND RSP ES-1C.

PROPOSED EXISTING



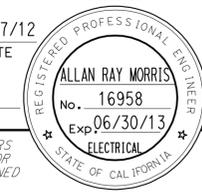
PROJECT NOTES (TEMPORARY):

- PART OF PERMANENT ELECTRICAL EQUIPMENT OR WORK, AS SHOWN ON OTHER PARTS OF THESE CONTRACT PLANS TO BE INSTALLED AND CONNECTED AS PART OF TEMPORARY WORK. PERMANENT EQUIPMENT SHALL NOT INTERFERE WITH LATER CONSTRUCTION STAGES.
- INSTALL WOOD POLE. INSTALL EQUIPMENT AS INDICATED. SEE DETAIL ON SHEET E-72 TO E-79.
- INSTALL TEMPORARY CONNECTION AS SHOWN. CONDUIT SHALL BE 2" C, UNLESS OTHERWISE SHOWN.
- NOT USED.
- THE CONTRACTOR SHALL ARRANGE TO HAVE SERVICE AVAILABLE FOR TEMPORARY WORK PRIOR TO BEGINNING OF CONSTRUCTION STAGING.
- NOT USED.
- INSTALL MESSENGER WIRE WITH CONDUCTORS/ CABLES AS INDICATED. SEE DETAIL ON SHEET E-72 TO E-79.

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**GENERAL NOTES (TEMPORARY)
 LEGEND (TEMPORARY)
 AND PROJECT NOTES (TEMPORARY)**



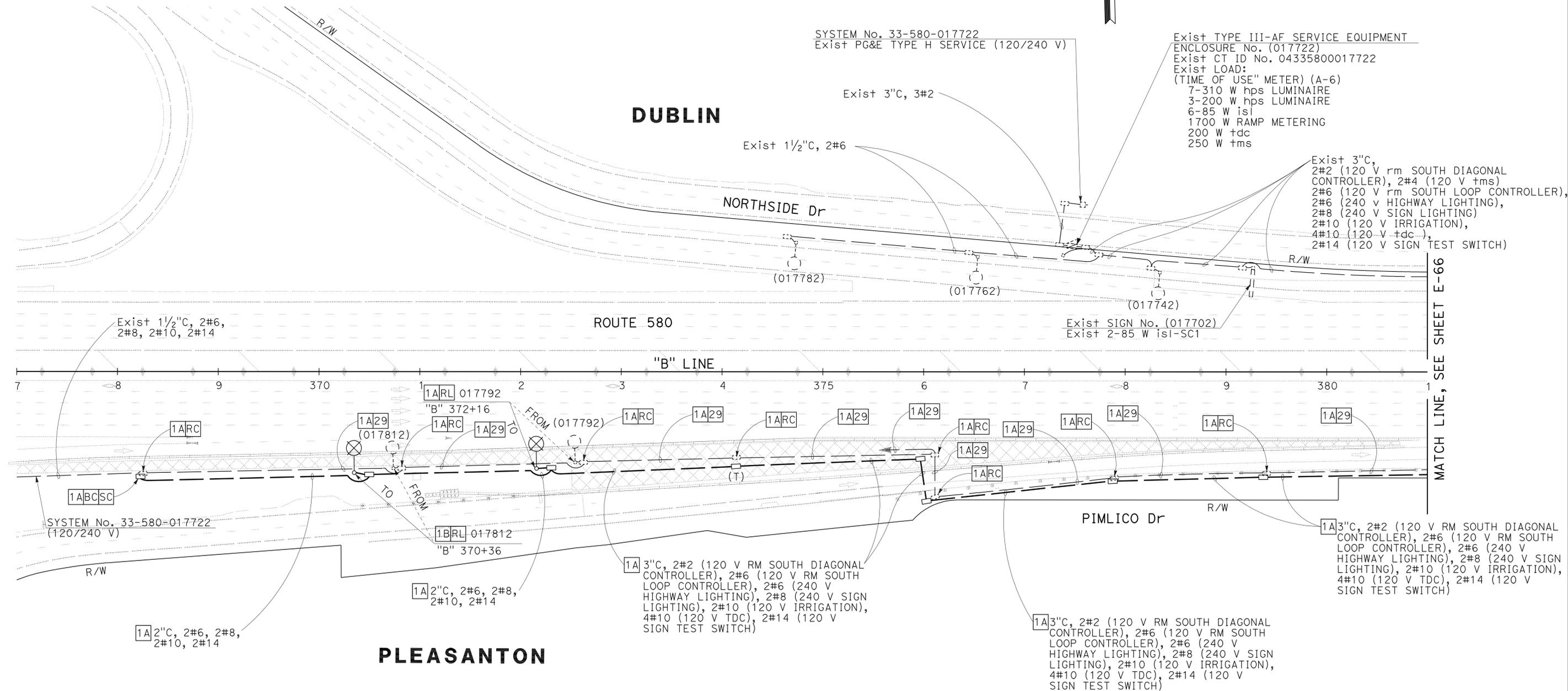
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NOTE:

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



DAVID SETO	REVISOR	CC
ALLAN MORRIS	DATE REVISED	5/12
CALCULATED/DESIGNED BY	CHECKED BY	
BRIAN KRCELIC		
FUNCTIONAL SUPERVISOR		
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION		
		



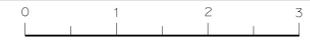
MATCH LINE, SEE SHEET E-66

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEETS E-1 & E-63

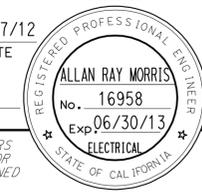
**LIGHTING (TEMPORARY)
(STAGE 1 - PHASE B)
SCALE: 1" = 50'**

E-65

APPROVED FOR ELECTRICAL WORK ONLY



DATE PLOTTED => 21-MAY-2012
TIME PLOTTED => 1:31:31

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	511	681
 REGISTERED ELECTRICAL ENGINEER DATE 5/7/12					
5-21-12 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.		
T Y LIN INTERNATIONAL 1111 BROADWAY, SUITE 2150 OAKLAND, CA 94612			ALAMEDA CTC 1333 BROADWAY, SUITE 220 OAKLAND, CA 94612		

NOTE:

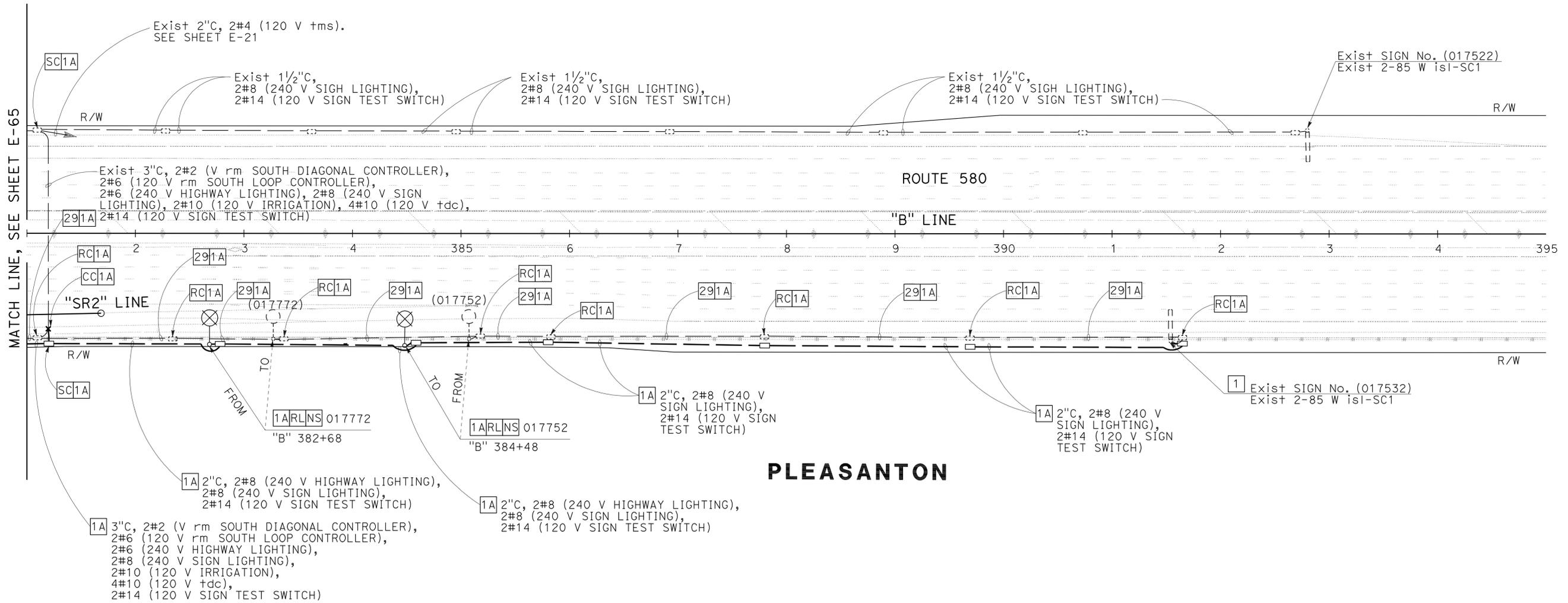
FOR ACCURATE RIGHT OF WAY DATA, CONTACT RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 FUNCTIONAL SUPERVISOR: BRIAN KRCELIC
 CHECKED BY: ALLAN MORRIS
 REVISIONS: CC 5/12
 REVISIONS: DAVID SETO 5/12

DUBLIN

PLEASANTON



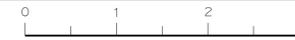
FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEETS E-1 & E-63

LIGHTING (TEMPORARY)

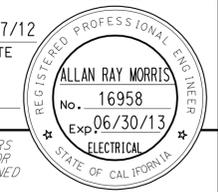
(STAGE 1B)
SCALE: 1" = 50'

E-66

APPROVED FOR ELECTRICAL WORK ONLY



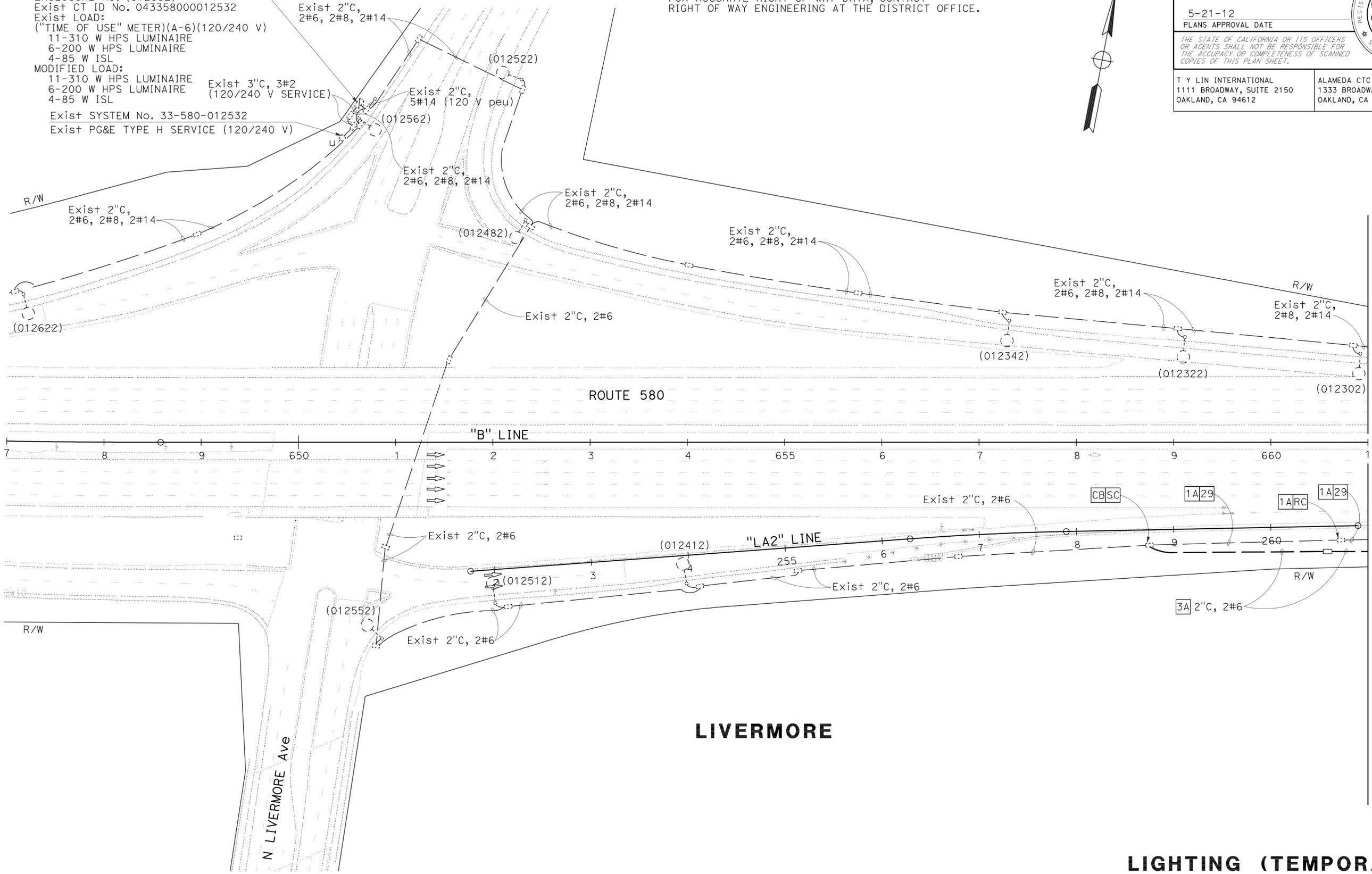
Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	512	681
			5/7/12	REGISTERED ELECTRICAL ENGINEER DATE	
			5-21-12	PLANS APPROVAL DATE	
			THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.		
T Y LIN INTERNATIONAL 1111 BROADWAY, SUITE 2150 OAKLAND, CA 94612			ALAMEDA CTC 1333 BROADWAY, SUITE 220 OAKLAND, CA 94612		



NOTE:

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

Exist TYPE III-AF SERVICE EQUIPMENT ENCLOSURE No. (012532)
 Exist CT ID No. 043358000012532
 Exist LOAD:
 ("TIME OF USE" METER)(A-6)(120/240 V)
 11-310 W HPS LUMINAIRE
 6-200 W HPS LUMINAIRE
 4-85 W ISL
 MODIFIED LOAD:
 11-310 W HPS LUMINAIRE
 6-200 W HPS LUMINAIRE
 4-85 W ISL
 Exist SYSTEM No. 33-580-012532
 Exist PG&E TYPE H SERVICE (120/240 V)



MATCH LINE, SEE SHEET E-69

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEETS E-1 & E-63

LIGHTING (TEMPORARY)

(STAGE 2A)

SCALE: 1" = 50'

E-67

APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	REVISOR	DATE
Caltrans	BRIAN KRCELIC	DAVID SETO	7/2/2010
		ALLAN MORRIS	5/7/12

USERNAME => s119571
 DGN FILE => 0412000405ua067.dgn

RELATIVE BORDER SCALE IS IN INCHES

UNIT 0735

PROJECT NUMBER & PHASE

04120004051

BORDER LAST REVISED 7/2/2010

DATE PLOTTED => 21-MAY-2012
 TIME PLOTTED => 1:31:31

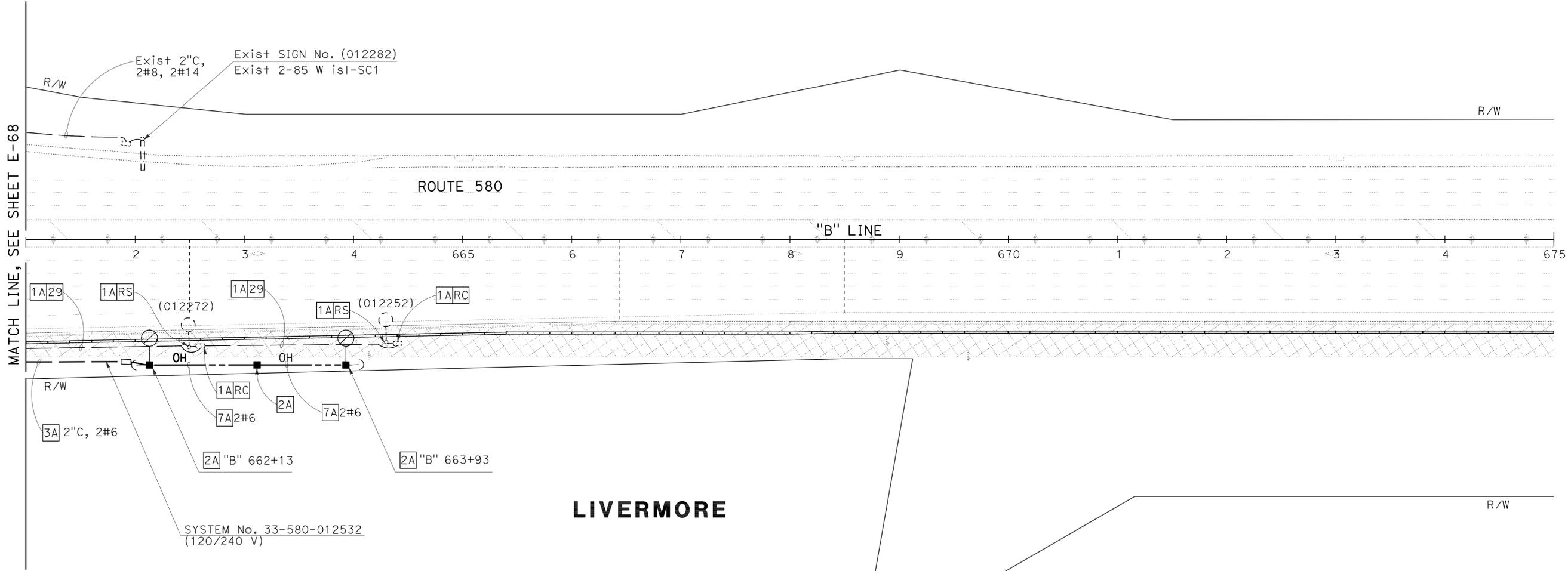
Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda	580	R7.8/19.1	513	681
			5/7/12		
			REGISTERED ELECTRICAL ENGINEER DATE		
			5-21-12		
			PLANS APPROVAL DATE		
T Y LIN INTERNATIONAL 1111 BROADWAY, SUITE 2150 OAKLAND, CA 94612			ALAMEDA CTC 1333 BROADWAY, SUITE 220 OAKLAND, CA 94612		

NOTE:

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



DAVID SETO	REVISOR	XXXX
ALLAN MORRIS	DATE	5/08
BRIAN KRCELIC	CHECKED BY	
DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	
STATE OF CALIFORNIA	DEPARTMENT OF TRANSPORTATION	



FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEETS E-1 & E-63

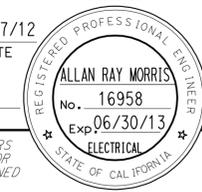
LIGHTING (TEMPORARY)

(STAGE 2A)
SCALE: 1" = 50'

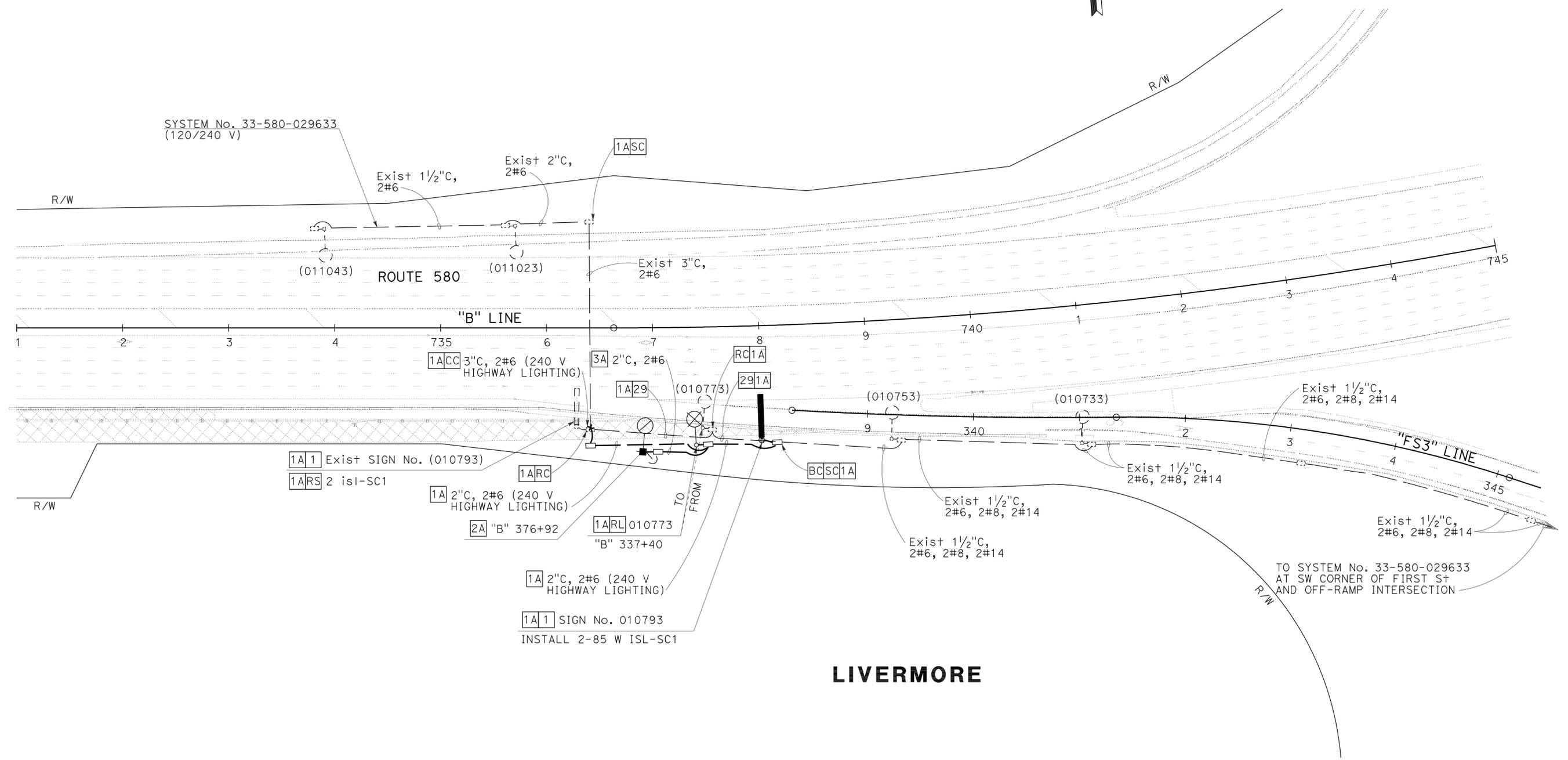
E-68

APPROVED FOR ELECTRICAL WORK ONLY

DATE PLOTTED => 21-MAY-2012 TIME PLOTTED => 13:32

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	514	681
 REGISTERED ELECTRICAL ENGINEER DATE 5/7/12					
5-21-12 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.		
T Y LIN INTERNATIONAL 1111 BROADWAY, SUITE 2150 OAKLAND, CA 94612			ALAMEDA CTC 1333 BROADWAY, SUITE 220 OAKLAND, CA 94612		

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



LIVERMORE

**LIGHTING (TEMPORARY)
(STAGE 2A)
SCALE: 1" = 50'**

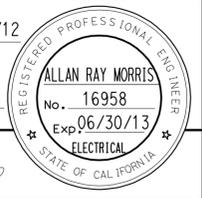
FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEETS E-1 & E-63

APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	DAVID SETO	REVISOR	XXXX
	BRIAN KRCELIC	ALLAN MORRIS	DATE	5/08
	CHECKED BY		DATE	
	DESIGNED BY		DATE	

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	515	681

 5/7/12
 REGISTERED ELECTRICAL ENGINEER DATE
 5-21-12
 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.

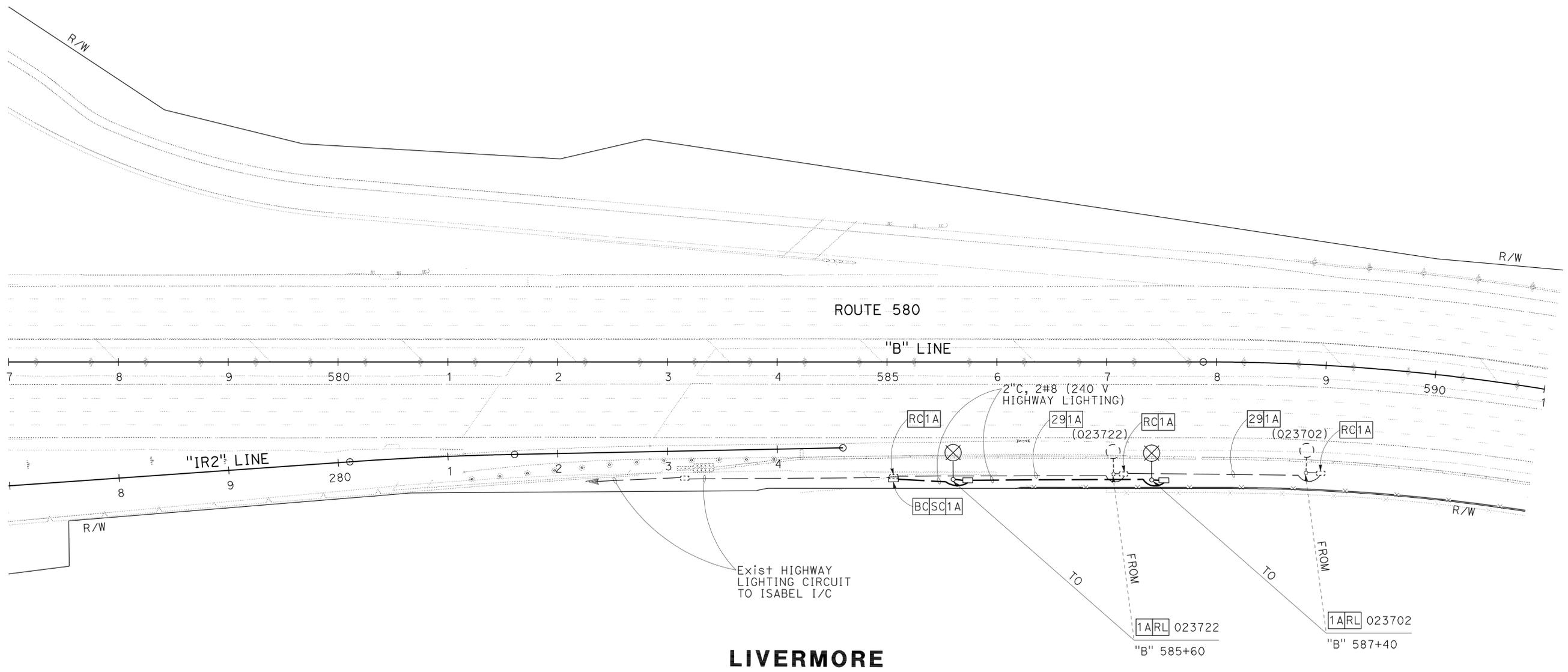


T Y LIN INTERNATIONAL
 1111 BROADWAY, SUITE 2150
 OAKLAND, CA 94612
 ALAMEDA CTC
 1333 BROADWAY, SUITE 220
 OAKLAND, CA 94612

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



STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
 FUNCTIONAL SUPERVISOR: BRIAN KRCELIC
 CALCULATED/DESIGNED BY: DAVID SETO
 CHECKED BY: ALLAN MORRIS
 REVISED BY: CC
 DATE REVISED: 5/12



FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEETS E-1 & E-63

LIGHTING (TEMPORARY)
(STAGE 2B)
SCALE: 1" = 50'

E-70

APPROVED FOR ELECTRICAL WORK ONLY

LAST REVISION: 5-7-12 | DATE PLOTTED => 21-MAY-2012 | TIME PLOTTED => 13:32

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	517	681

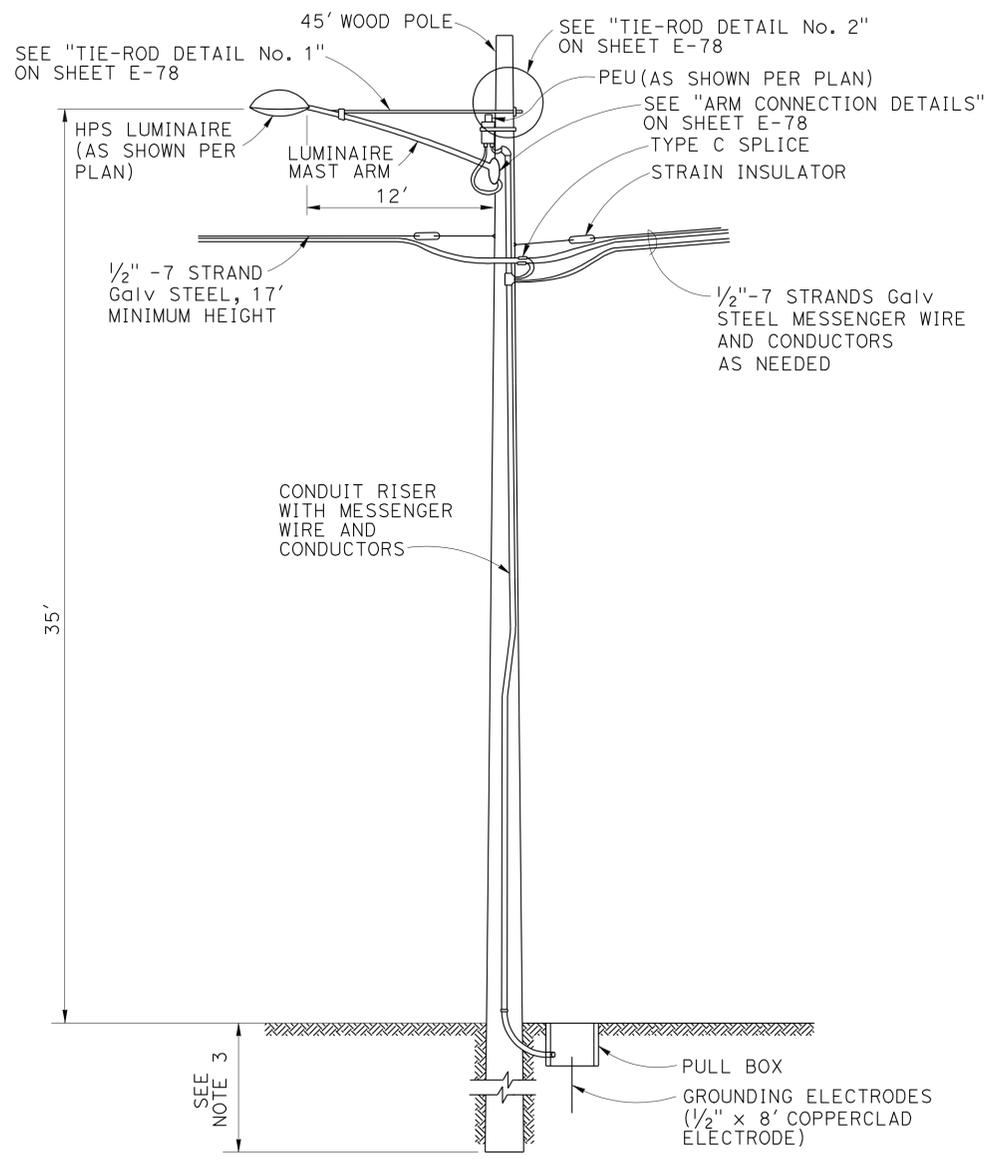
David Seto 5/7/12
 REGISTERED CIVIL ENGINEER DATE
 5-21-12
 PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
 DAVID W. SETO
 No. 78138
 Exp. 09/30/13
 CIVIL
 STATE OF CALIFORNIA

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

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 1111 BROADWAY, SUITE 2150
 OAKLAND, CA 94612

ALAMEDA CTC
 1333 BROADWAY, SUITE 220
 OAKLAND, CA 94612



TYPICAL TRAFFIC SIGNAL AND LUMINAIRE MOUNTINGS ON WOOD POLE

NOTES:

1. THE CONTRACTOR SHALL VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL.
2. THE CONTRACTOR TO VERIFY SOIL CONDITIONS, SLOPE, AND ADJUST ANCHORING TO SATISFY BASIC DESIGN REQUIREMENTS.
3. FOR EMBEDMENT DEPTH, SEE SHEET E-73 AND E-74.

**ELECTRICAL DETAILS (TEMPORARY)
(TEMPORARY WOOD POLE)
NO SCALE**

E-72

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 Caltrans

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda	580	R7.8/19.1	518	681

David Seto 5/7/12
 REGISTERED CIVIL ENGINEER DATE

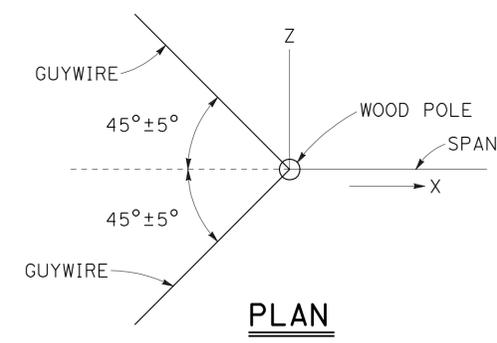
5-21-12
 PLANS APPROVAL DATE

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ALAMEDA CTC
 1333 BROADWAY, SUITE 220
 OAKLAND, CA 94612

T.Y. LIN INTERNATIONAL
 2010 CROW CANYON PLACE, SUITE 350
 SAN RAMON, CA 94583

BUNDLE TYPE	MAXIMUM MESSENGER WIRE SPAN	MINIMUM WOOD POLE CLASS	MINIMUM POLE EMBEDMENT DEPTH "E"	GUYWIRE MINIMUM CABLE SIZE
1	50'	4	7'	5/16"
	100'	4	8'	3/8"
	150'	4	8'	7/16"
2	50'	4	8'	3/8"
	100'	4	8'	7/16"
	150'	3	8'	7/16"



DESIGN NOTES:

Design: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, Fifth Edition (LTS-5).

GROUP LOAD COMBINATIONS:

- I Dead Load
- II Dead Load + Wind Load
- III Dead Load + 0.5 (Wind Load) + Ice Load
- IV Fatigue: Not used

LOADING:

Wind Loading: 100 mph (3-second gust)
 Wind Recurrence Interval: 10 years
 Combined height, exposure, and elevated terrain factor = 1.05
 (Exposure C, structure is not located on or over the top half of a ridge, hill, or escarpment)

Ice Loading: 3.0 psf on surfaces, 0.60 in radial thickness of ice at a unit weight of 60 pcf on bundles

BASIC DESIGN VALUES:

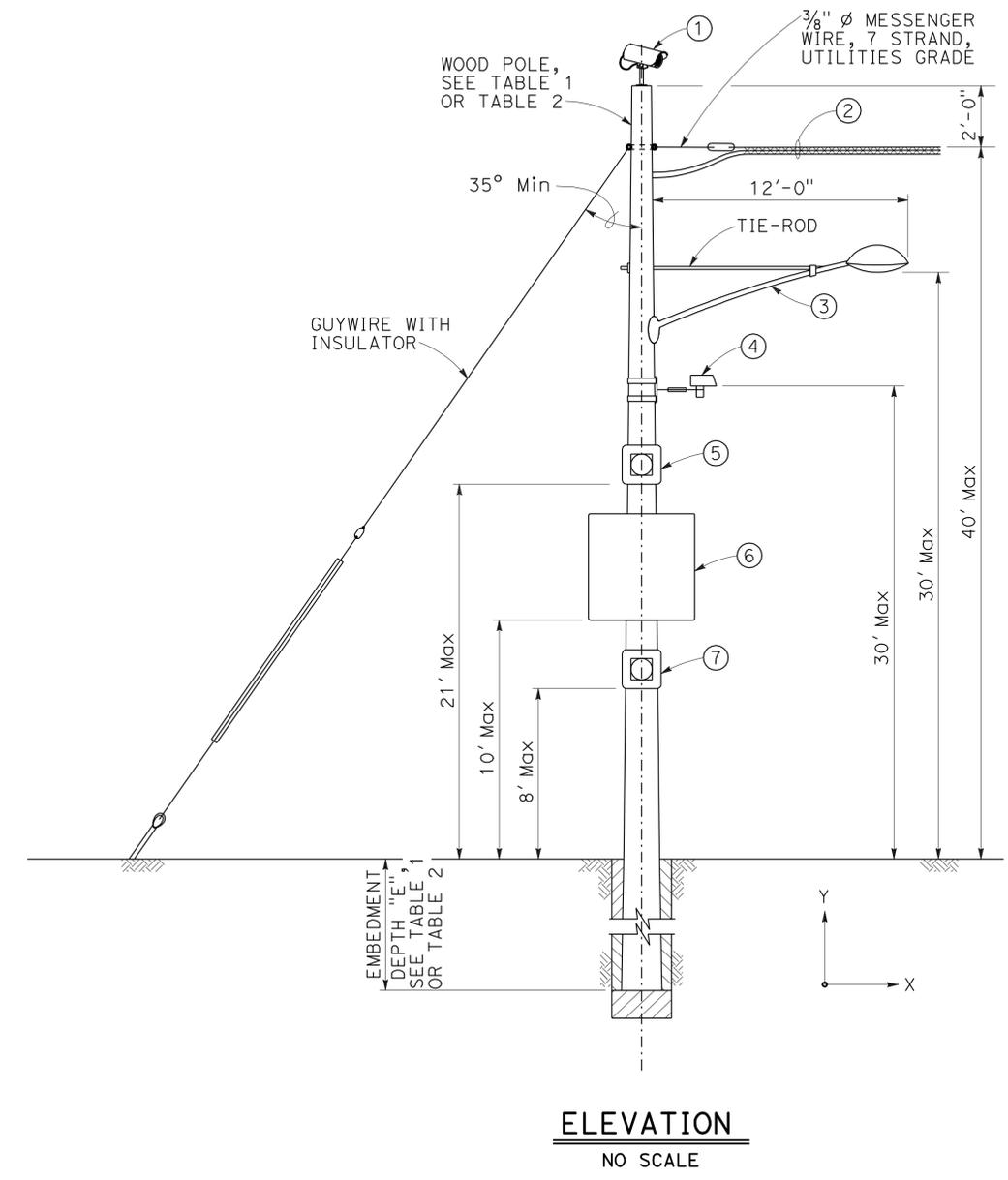
Timber Poles: Fb = 1850 psi
 Fv = 110 psi
 Fcp = 230 psi
 Fc = 950 psi
 E = 1500 x 10³ psi

DESIGN WIRE BREAKING STRENGTHS:

ASTM A475, Utilities Grade, 7 strand modified by termination efficiency factor of 0.8

FOUNDATION DESIGN NOTES:

- Pole embedment depth design is based on Broms' approximate procedure as described in Article 13.6 of AASHTO LTS-5.
- Standard embedment depth is calculated based on level ground assumption (up to slope 1V:4H).
- Embedment depth is calculated based on following soil parameters,
 Cohesive Soil:
 Shear strength of soil c = 1500 psf.
 Cohesionless Soil:
 φ = 30 deg, γ = 120 pcf.
 Soil is assumed to be unsaturated.
- An overload factor of 2.0 and an undercapacity factor of 0.7 were used for safety factor of 2.86.
- If pole is located on or near a steep slope (up to 1H:2V) add 2 feet extra embedment.
- Allowable vertical bearing pressure at the end bearing of poles is 3000 psf at 6 feet or more embedment.



BUNDLE TYPE	MAXIMUM MESSENGER WIRE SPAN	MINIMUM WOOD POLE CLASS	MINIMUM POLE EMBEDMENT DEPTH "E"
1	50'	H-2	10'
	100'	H-4	11'
2	50'	H-2	10'
	100'	H-6	12'

LEGEND:

- ① CCTV Camera
- ② Conductors and Messenger-Wire
- ③ Luminaire with Mast Arm
- ④ Vehicle Detection System
- ⑤ Flashing Beacon 1
- ⑥ Single Sheet Sign Panel (4' X 4' Max) or Traffic Signal w/ 3 Indicators
- ⑦ Flashing Beacon 2

NOTES:

- Install attachments shown if indicated on the "Project Plans".

E-73

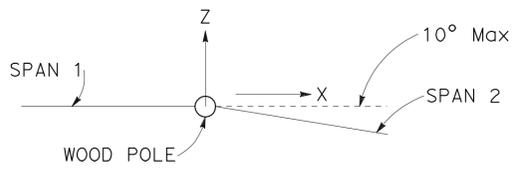
STANDARD DRAWING		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		DIVISION OF ENGINEERING SERVICES		BRIDGE NO. X		TEMPORARY WOOD POLE					
FILE NO. xs18-010	APPROVAL DATE December 2011					POST MILE X		DEAD-END POLE WITH ATTACHMENTS					
DS OSD 2147A (ENGLISH STANDARD DRAWING "XS" BORDER REV. (02-02-11))		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		UNIT: 0735 PROJECT NUMBER & PHASE: 04120004051		CONTRACT NO.: X		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES		SHEET OF	

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda	580	R7.8/19.1	519	681

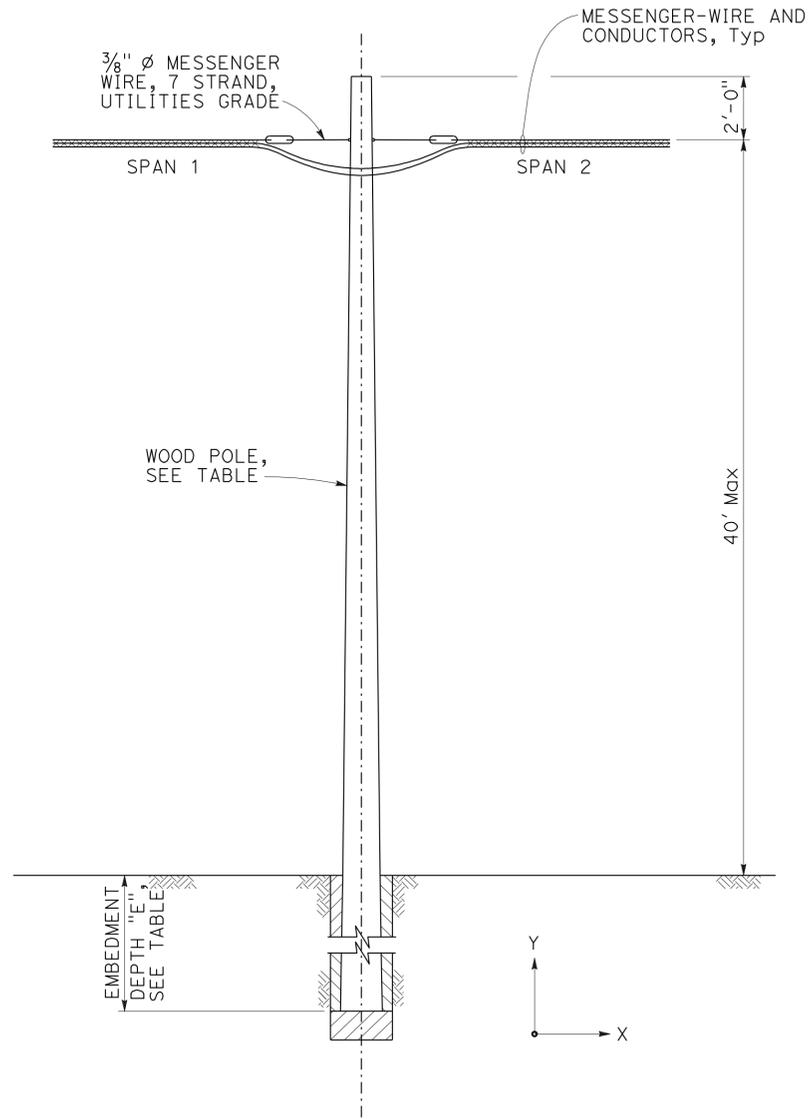
David Seto
 REGISTERED CIVIL ENGINEER DATE 5/7/12
 PLANS APPROVAL DATE 5-21-12
 No. 78138
 Exp. 09/30/13
 CIVIL
 STATE OF CALIFORNIA

ALAMEDA CTC
 1333 BROADWAY, SUITE 220
 OAKLAND, CA 94612
 T.Y. LIN INTERNATIONAL
 2010 CROW CANYON PLACE, SUITE 350
 SAN RAMON, CA 94583

TANGENT POLE WITHOUT ATTACHMENTS			
BUNDLE TYPE	MAXIMUM MESSENGER WIRE SPAN	MINIMUM WOOD POLE CLASS	MINIMUM POLE EMBEDMENT DEPTH "E"
1	50'	2	9'
	100'	H-1	10'
	150'	H-3	10'
2	50'	1	9'
	100'	H-2	10'
	150'	H-4	11'



PLAN



ELEVATION
NO SCALE

NOTES:

1. Attachments not allowed.
2. Shorter span length must be at least 95% of longer span length.
3. Bundle for Span 1 and Span 2 must be the same.

DESIGN NOTES:

Design: AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, Fifth Edition (LTS-5).

GROUP LOAD COMBINATIONS:

- I Dead Load
- II Dead Load + Wind Load
- III Dead Load + 0.5 (Wind Load) + Ice Load
- IV Fatigue: Not used

LOADING:

Wind Loading: 100 mph (3-second gust)
 Wind Recurrence Interval: 10 years
 Combined height, exposure, and elevated terrain factor = 1.05
 (Exposure C, structure is not located on or over the top half of a ridge, hill, or escarpment)

Ice Loading: 3.0 psf on surfaces, 0.60 in radial thickness of ice at a unit weight of 60 pcf on bundles

BASIC DESIGN VALUES:

Timber Poles: $F_b = 1850$ psi
 $F_v = 110$ psi
 $F_{cp} = 230$ psi
 $F_c = 950$ psi
 $E = 1500 \times 10^3$ psi

WIRE BREAKING STRENGTHS:

ASTM A475, Utilities Grade, 7 strand modified by termination efficiency factor of 0.8

DESIGN FOUNDATION DESIGN NOTES:

1. Pole embedment depth design is based on Broms' approximate procedure as described in Article 13.6 of AASHTO LTS-5.
2. Standard embedment depth is calculated based on level ground assumption (up to slope 1V:4H).
3. Embedment depth is calculated based on following soil parameters,
 Cohesive Soil:
 Shear strength of soil $c = 1500$ psf.
 Cohesionless Soil:
 $\phi = 30$ deg, $\gamma = 120$ pcf.
 Soil is assumed to be unsaturated.
4. An overload factor of 2.0 and an undercapacity factor of 0.7 were used for safety factor of 2.86.
5. If pole is located on or near a steep slope (up to 1H:2V) add 2 feet extra embedment.
6. Allowable vertical bearing pressure at the end bearing of poles is 3000 psf at 6 feet or more embedment.

E-74

STANDARD DRAWING		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		DIVISION OF ENGINEERING SERVICES		TEMPORARY WOOD POLE TANGENT POLE WITHOUT ATTACHMENTS	
FILE NO. xs18-020	APPROVAL DATE December 2011	BRIDGE NO. X		POST MILE X		CONTRACT NO.: X	
DS OSD 2147A (ENGLISH STANDARD DRAWING "XS" BORDER REV. (02-02-11))		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		UNIT: 0735 PROJECT NUMBER & PHASE: 04120004051		DISREGARD PRINTS BEARING EARLIER REVISION DATES	
0 1 2 3		REVISION DATES		SHEET		OF	

USERNAME => s124496 DATE PLOTTED => 21-MAY-2012 TIME PLOTTED => 13:34

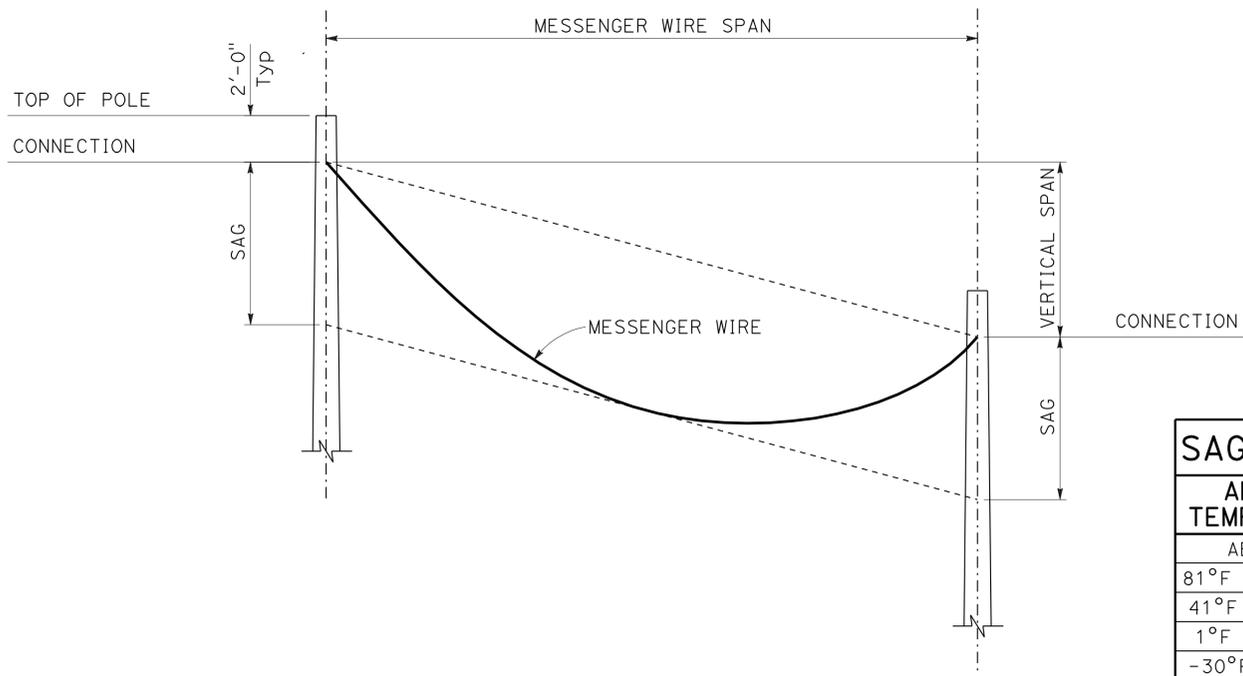
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda	580	R7.8/19.1	520	681

David Seto
 REGISTERED CIVIL ENGINEER DATE 5/7/12
 PLANS APPROVAL DATE 5-21-12
 No. 78138 Exp. 09/30/13
 CIVIL
 STATE OF CALIFORNIA

ALAMEDA CTC
 1333 BROADWAY, SUITE 220
 OAKLAND, CA 94612
 T.Y. LIN INTERNATIONAL
 2010 CROW CANYON PLACE, SUITE 350
 SAN RAMON, CA 94583

TABLE 1
BUNDLE CLASSIFICATION FOR
3/8" MESSENGER WIRE BUNDLED WITH
A SINGLE TYPE OF POWER OR DATA CABLE

POWER OR DATA CABLE TYPE	BUNDLE TYPE 1 (MAXIMUM NUMBER OF POWER OR DATA CABLES)	BUNDLE TYPE 2 (MAXIMUM NUMBER OF POWER OR DATA CABLES)
3 CONDUCTOR SIGNAL CABLE	5	10
5 CONDUCTOR SIGNAL CABLE	3	6
9 CONDUCTOR SIGNAL CABLE	1	3
12 CONDUCTOR SIGNAL CABLE	1	2
28 CONDUCTOR SIGNAL CABLE	0	1
#14	29	57
#12	23	47
#10	19	36
#8	10	21
#6	8	16
#4	6	11
#3	5	10
#2	4	8
#1	3	6
1/0	2	5
2/0	1	4
3/0	1	3
4/0	1	3
SIC (6-Conductor)	6	12
SIC (12-Conductor)	3	5
DLC	8	16
F048	4	8
F072	3	6
F096	1	5
F0144	1	3



REQUIRED SAG
 NO SCALE

SAG REQUIREMENTS

AMBIENT TEMPERATURE	SAG
ABOVE 121°F	5.2% ± 0.2%
81°F THROUGH 120°F	5.1% ± 0.2%
41°F THROUGH 80°F	5.0% ± 0.2%
1°F THROUGH 40°F	4.9% ± 0.2%
-30°F THROUGH 0°F	4.8% ± 0.2%

EXAMPLE 1: SUPPORTED CABLES 8-#8, 2-#10

CABLE	NUMBER	MAXIMUM FOR TYPE 1	PERCENTAGE (TYPE 1)	MAXIMUM FOR TYPE 2	PERCENTAGE (TYPE 2)
#8	8	10	80%	21	38%
#10	2	19	11%	36	6%
Totals (100% Max)			91%		44%

This is Type 1

EXAMPLE 2: SUPPORTED CABLES 6-#8, 2-#10, 3-5 CONDUCTOR SIGNAL CABLE, 2-DLC

CABLE	NUMBER	MAXIMUM FOR TYPE 1	PERCENTAGE (TYPE 1)	MAXIMUM FOR TYPE 2	PERCENTAGE (TYPE 2)
#8	6	10	60%	21	29%
#10	2	19	11%	36	6%
5CSC	3	3	100%	6	50%
DLC	2	8	25%	16	13%
Totals (100% Max)			196%		98%

This is Type 2

EXAMPLE 3: SUPPORTED CABLES 12#6, 4-#8, 1F048

CABLE	NUMBER	MAXIMUM FOR TYPE 1	PERCENTAGE (TYPE 1)	MAXIMUM FOR TYPE 2	PERCENTAGE (TYPE 2)
#6	12	8	150%	16	75%
#8	4	10	40%	21	19%
F048	1	4	25%	8	13%
Totals (100% Max)			215%		107%

This is not covered by Type 1 or Type 2

NOTES:

- Total weight of Bundle Type 1 not to exceed 1.9 lb/ft. Maximum cross section dimension of Bundle not to exceed 1.5"
- Total weight of Bundle Type 2 not to exceed 3.0 lb/ft. Maximum cross section dimension of Bundle not to exceed 2"
- Maximum vertical span is 10% of messenger wire span.

E-75

STANDARD DRAWING
 FILE NO. **xs18-080-1**
 APPROVAL DATE December 2011

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF ENGINEERING SERVICES

BRIDGE NO. X
 POST MILE X
TEMPORARY WOOD POLE
DETAILS NO. 1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	521	681

David Seto 5/7/12
 REGISTERED CIVIL ENGINEER DATE
 5-21-12
 PLANS APPROVAL DATE
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

REGISTERED PROFESSIONAL ENGINEER
 DAVID W. SETO
 No. 78138
 Exp. 09/30/13
 CIVIL
 STATE OF CALIFORNIA

ALAMEDA CTC
 1333 BROADWAY, SUITE 220
 OAKLAND, CA 94612
 T.Y. LIN INTERNATIONAL
 2010 CROW CANYON PLACE, SUITE 350
 SAN RAMON, CA 94583

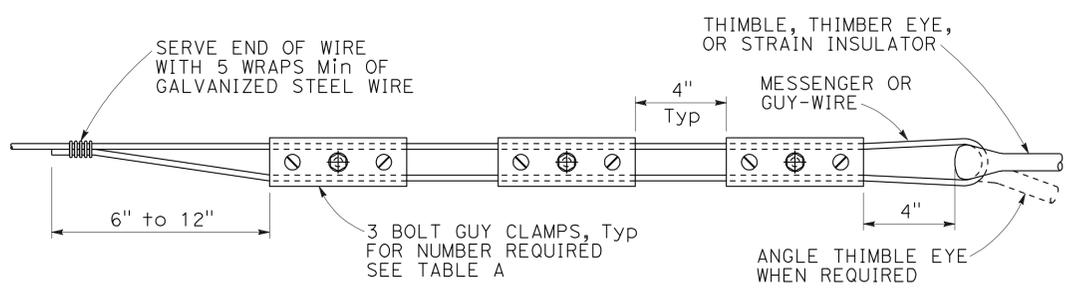
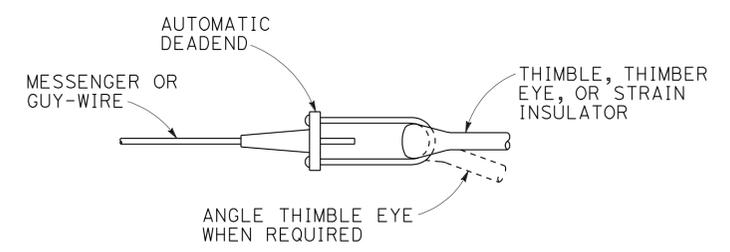


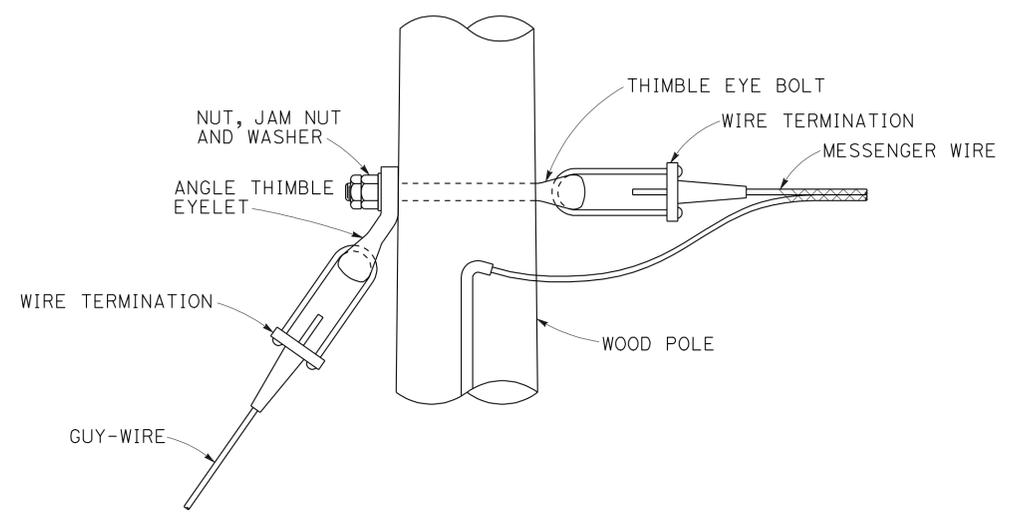
TABLE A

WIRE SIZE	NUMBER OF CLAMPS
5/16"	1
3/8"	1
7/16"	2
1/2"	3

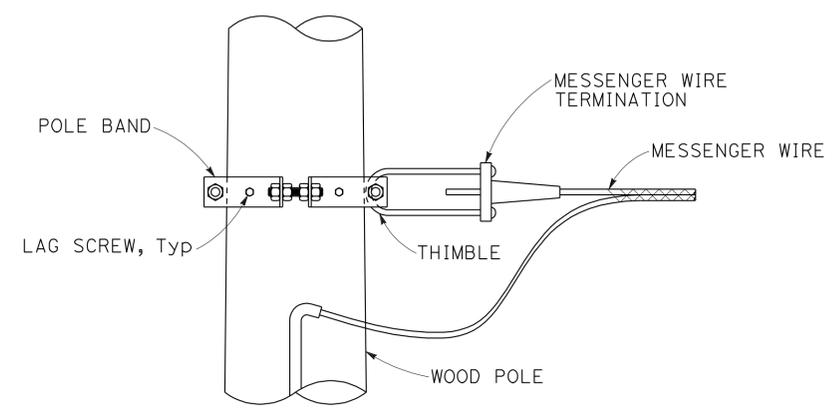


ALTERNATIVE TERMINATION OF WIRES USING GUY CLAMPS

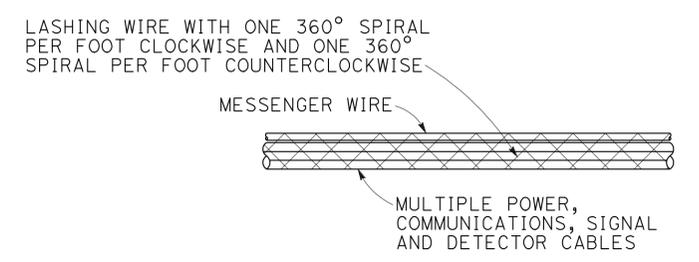
TERMINATION OF WIRES USING AUTOMATIC DEADEND



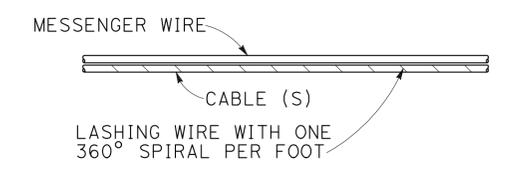
MESSENGER POLE DEADEND WITH GUYWIRE



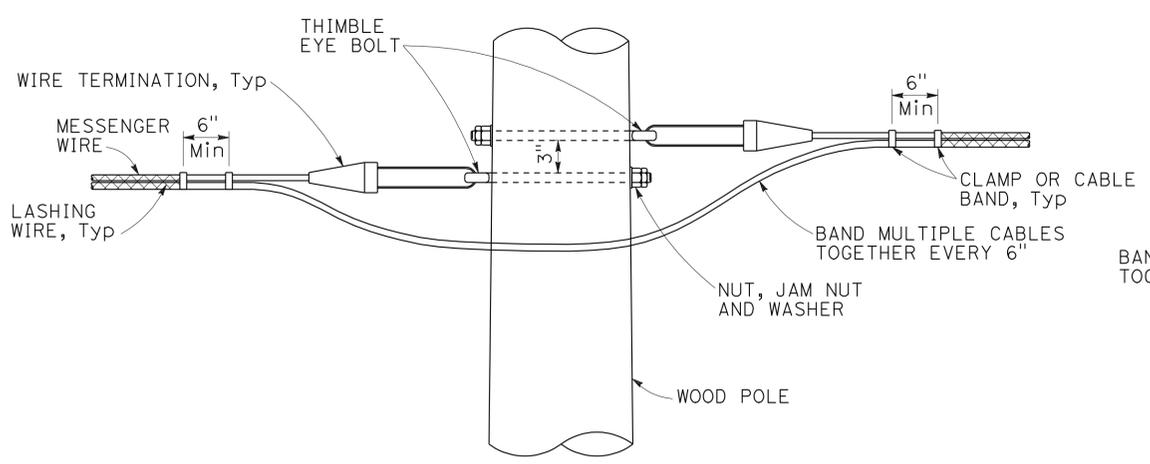
MESSENGER WIRE DEADEND USING POLE BAND



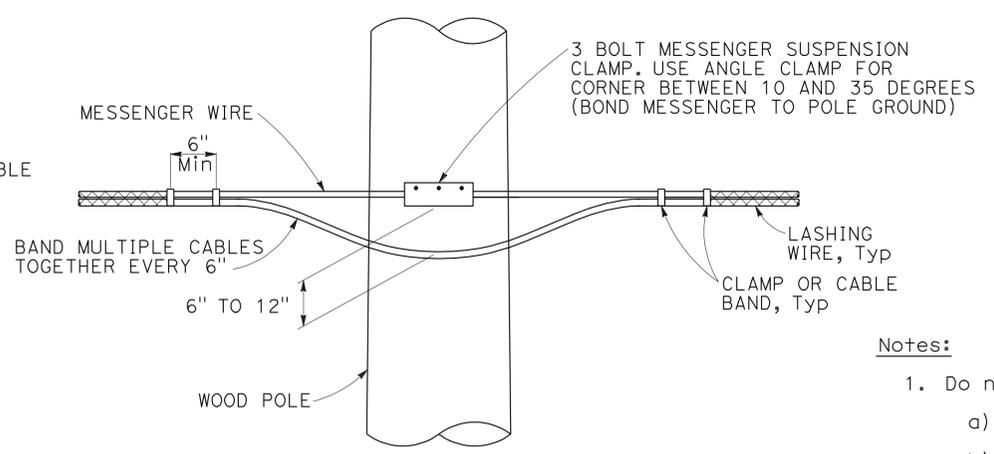
DOUBLE LASHING DETAIL



TYPICAL LASHING DETAIL



MESSENGER WIRE CONNECTION TO TANGENT POLE OR CORNER POLE



ALTERNATIVE MESSENGER WIRE CONNECTION TO TANGENT POLE OR CORNER POLE UP TO 35 DEGREES

SEE NOTE 1

Notes:

1. Do not use where:
 - a) The shorter span is less than 95% of the longer span.
 - b) A portion of the cables do not continue through.
 - c) The elevation change in either or both spans is greater than 10%.
 - d) The sag in one span is more than 5% larger than in the other span.
 - e) The wires support traffic signals.

E-76

STANDARD DRAWING		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		DIVISION OF ENGINEERING SERVICES		BRIDGE NO. X		TEMPORARY WOOD POLE DETAILS NO. 2							
FILE NO. xs18-080-2	APPROVAL DATE December 2011					POST MILE X									
DS OSD 2147A (ENGLISH STANDARD DRAWING "XS" BORDER REV. (02-02-11))		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS		0 1 2 3		UNIT: 0735 PROJECT NUMBER & PHASE: 04120004051		CONTRACT NO.: X		DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES		SHEET OF	
						FILE => 0412000405u076.dgn				11/17/11					

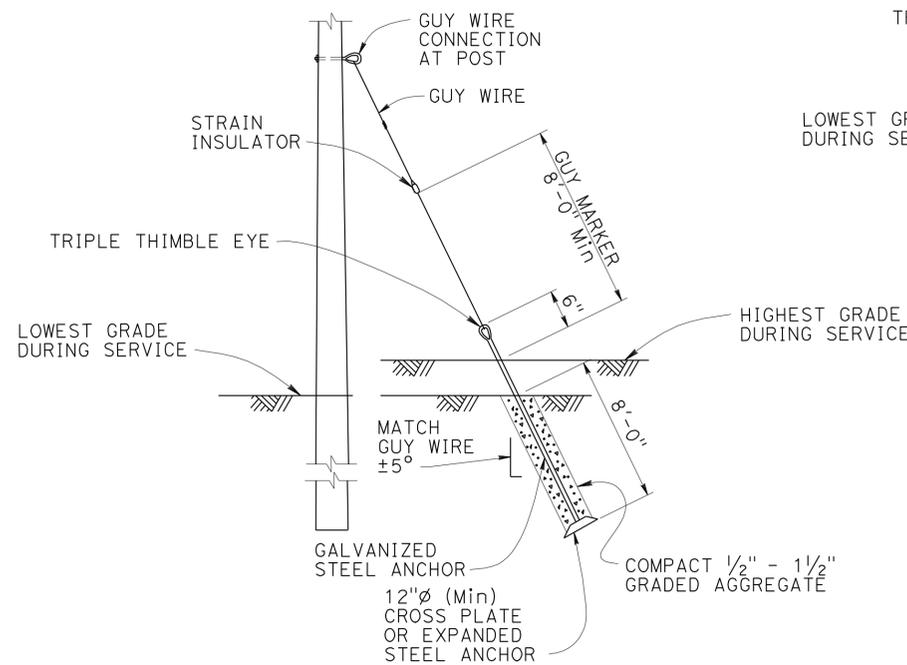
USERNAME => s124496 DATE PLOTTED => 21-MAY-2012 TIME PLOTTED => 1:34:34

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda	580	R7.8/19.1	522	681

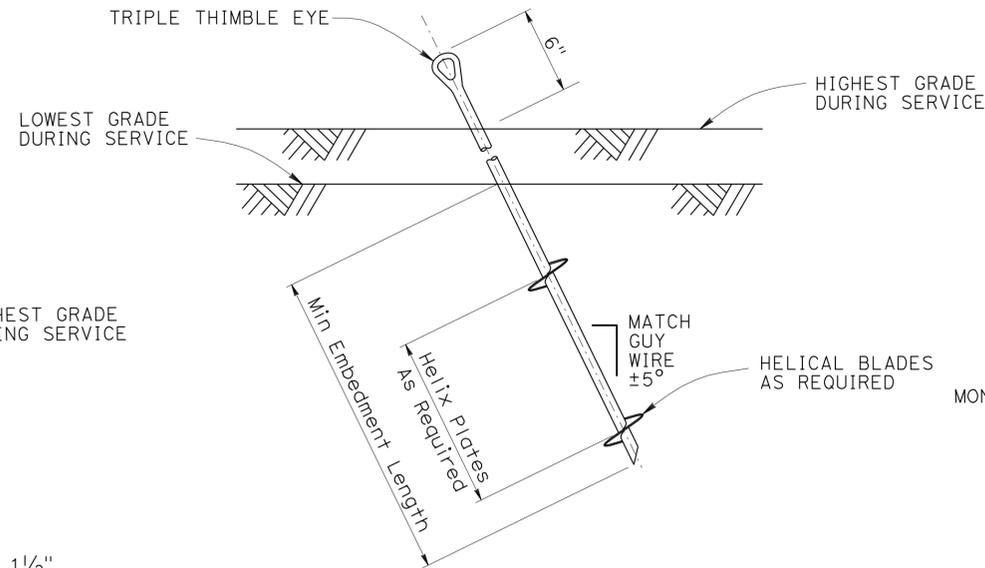
David Seto 5/7/12
 REGISTERED CIVIL ENGINEER DATE
 5-21-12
 PLANS APPROVAL DATE
 The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

REGISTERED PROFESSIONAL ENGINEER
 DAVID W. SETO
 No. 78138
 Exp. 09/30/13
 CIVIL
 STATE OF CALIFORNIA

ALAMEDA CTC
 1333 BROADWAY, SUITE 220
 OAKLAND, CA 94612
 T.Y. LIN INTERNATIONAL
 2010 CROW CANYON PLACE, SUITE 350
 SAN RAMON, CA 94583

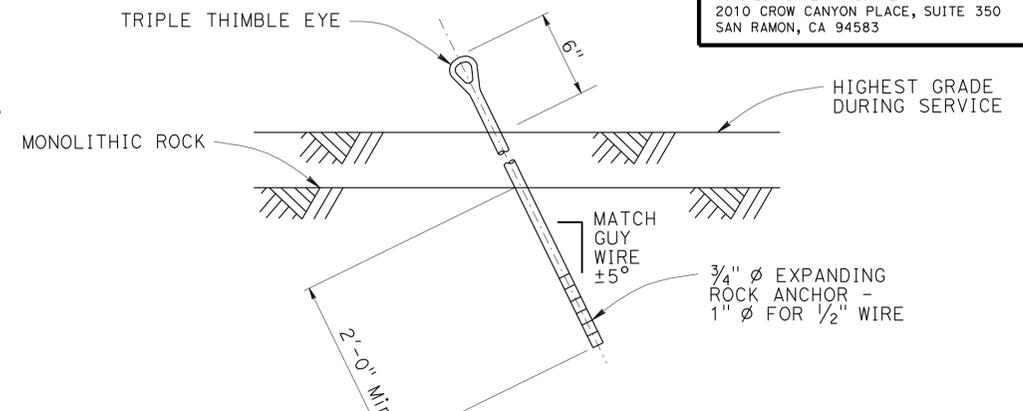


GUY WIRE INSTALLATION DETAIL (A)



ALTERNATIVE GUY WIRE ANCHOR DETAIL (B)

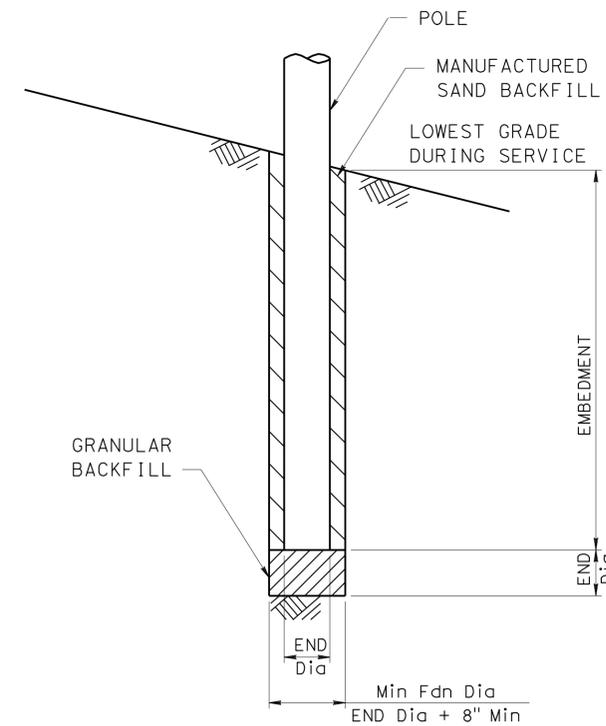
(See Helical Anchor Requirements Table)



GUY WIRE ROCK ANCHOR DETAIL (C)

HELICAL ANCHOR REQUIREMENTS				
GUY WIRE DIAMETER	HELIX PLATE DIAMETER	MINIMUM ALLOWABLE TENSION CAPACITY "Q _d "	MINIMUM EMBEDMENT LENGTH	MINIMUM INSTALLATION TORQUE "T"
5/16"	8"	2,133 lbs	8'-0"	429 ft-lbs
3/8"	12"	4,089 lbs	8'-0"	812 ft-lbs
7/16"	14"	6,400 lbs	8'-0"	1,266 ft-lbs
1/2"	16"	8,889 lbs	8'-0"	1,771 ft-lbs

EXPANDED STEEL ANCHOR REQUIREMENTS	
GUY WIRE DIAMETER	EXPANDED STEEL PLATE DIAMETER
5/16"	8"
3/8"	12"
7/16"	14"
1/2"	16"



POLE FOUNDATION DETAIL

NO SCALE

E-77

STANDARD DRAWING	
FILE NO. xs18-080-3	APPROVAL DATE December 2011

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES	BRIDGE NO. X	TEMPORARY WOOD POLE DETAILS NO.3
		POST MILE X	

USERNAME => s124496 DATE PLOTTED => 21-MAY-2012 TIME PLOTTED => 13:34

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	523	681

David Seto 5/7/12
REGISTERED CIVIL ENGINEER DATE

5-21-12
PLANS APPROVAL DATE

No. 78138
Exp. 09/30/13
CIVIL
STATE OF CALIFORNIA

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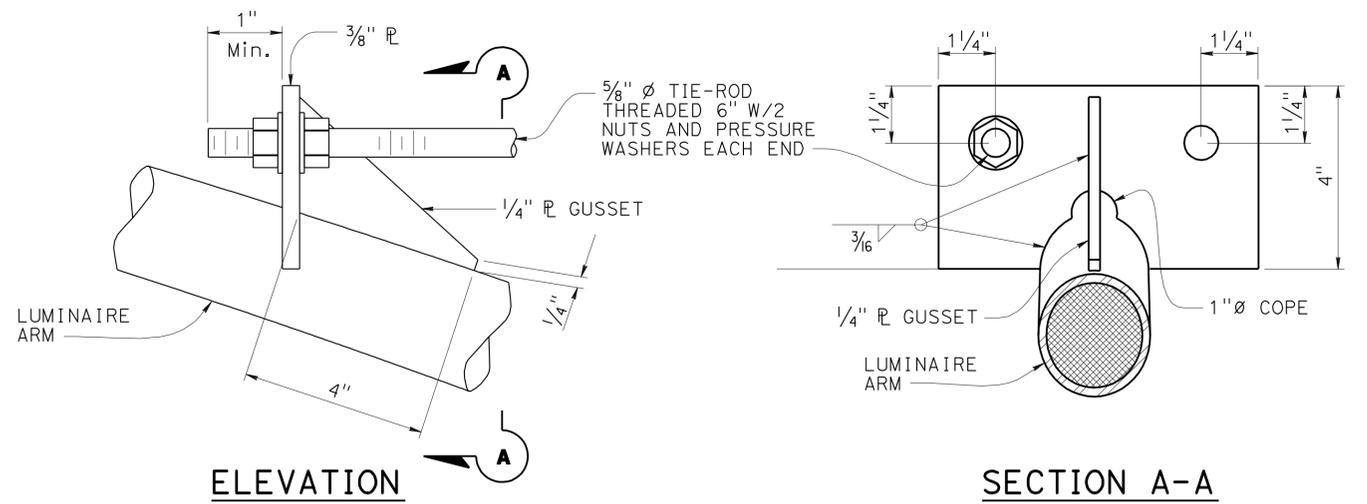
ALAMEDA CTC
1333 BROADWAY, SUITE 220
OAKLAND, CA 94612

T.Y. LIN INTERNATIONAL
2010 CROW CANYON PLACE, SUITE 350
SAN RAMON, CA 94583

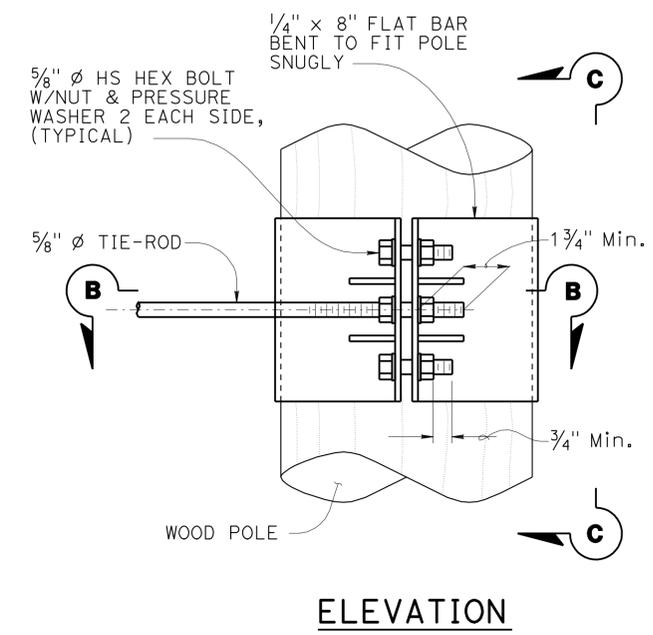
NOTES:

1. Arm Base connection details shall be in compliance with Standard Plans Detail Sheet ES-6D with noted modifications.
2. The Contractor to 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.

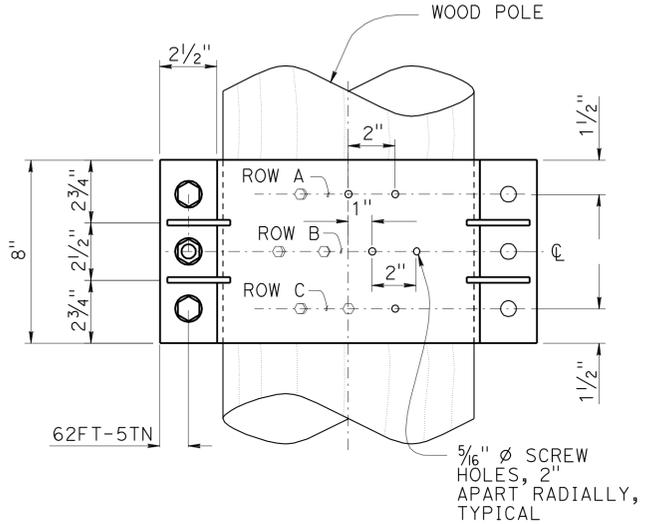
NOTE: Not all screw and bolt heads shown for clarity.



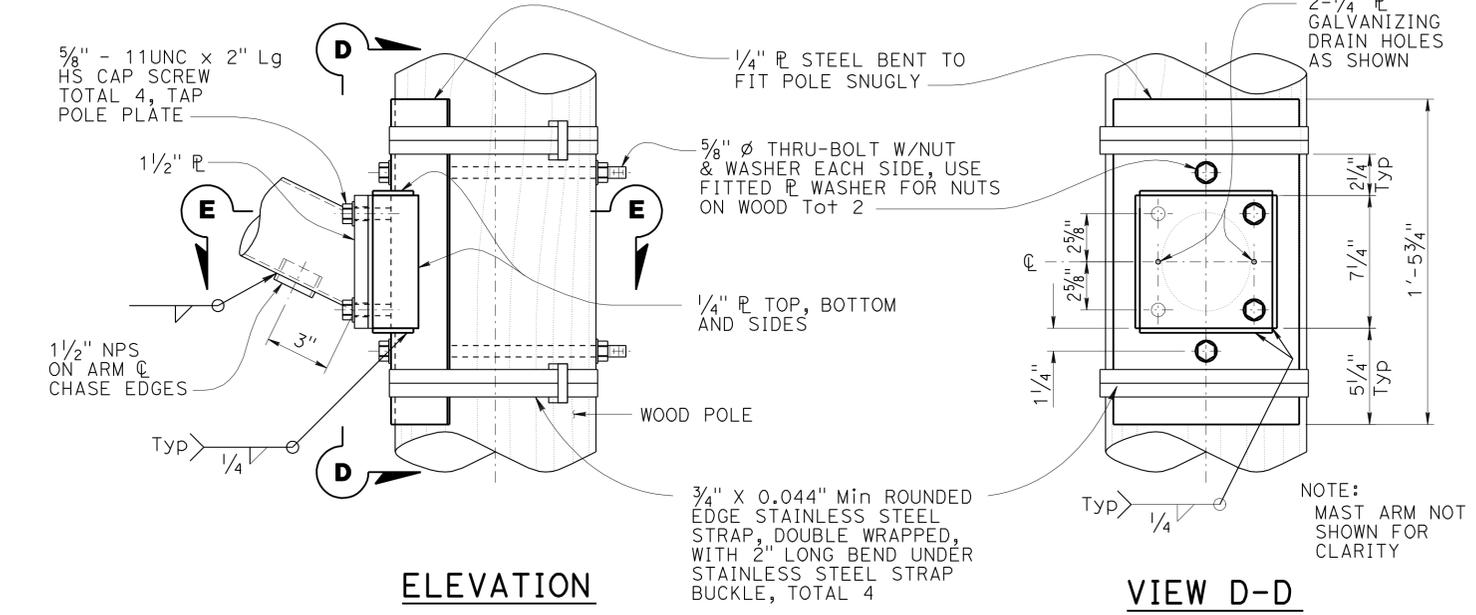
TIE-ROD DETAIL No. 1
NO SCALE



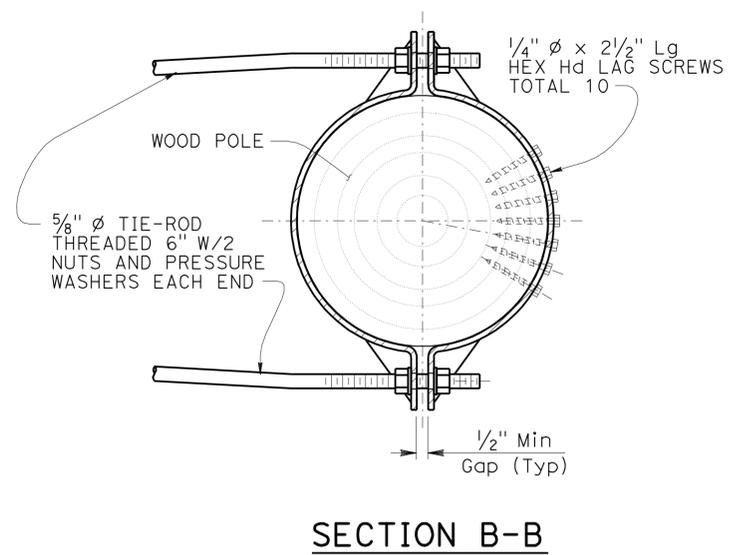
TIE-ROD DETAIL No. 2
NO SCALE



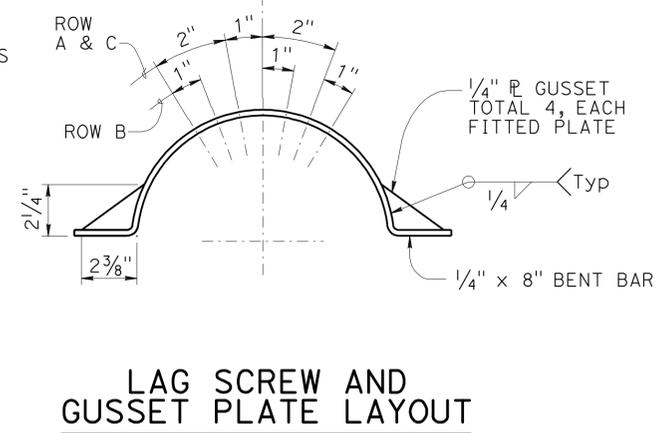
VIEW C-C



ARM CONNECTION DETAILS
NO SCALE



SECTION B-B



LAG SCREW AND GUSSET PLATE LAYOUT

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

STANDARD DRAWING	
FILE NO. xs18-080-4	APPROVAL DATE <u>December 2011</u>

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES
BRIDGE NO. X	POST MILE X

TEMPORARY WOOD POLE DETAILS NO. 4	
UNIT: 0735 PROJECT NUMBER & PHASE: 04120004051	CONTRACT NO.: X

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	524	681

David Seto 5/7/12
 REGISTERED CIVIL ENGINEER DATE

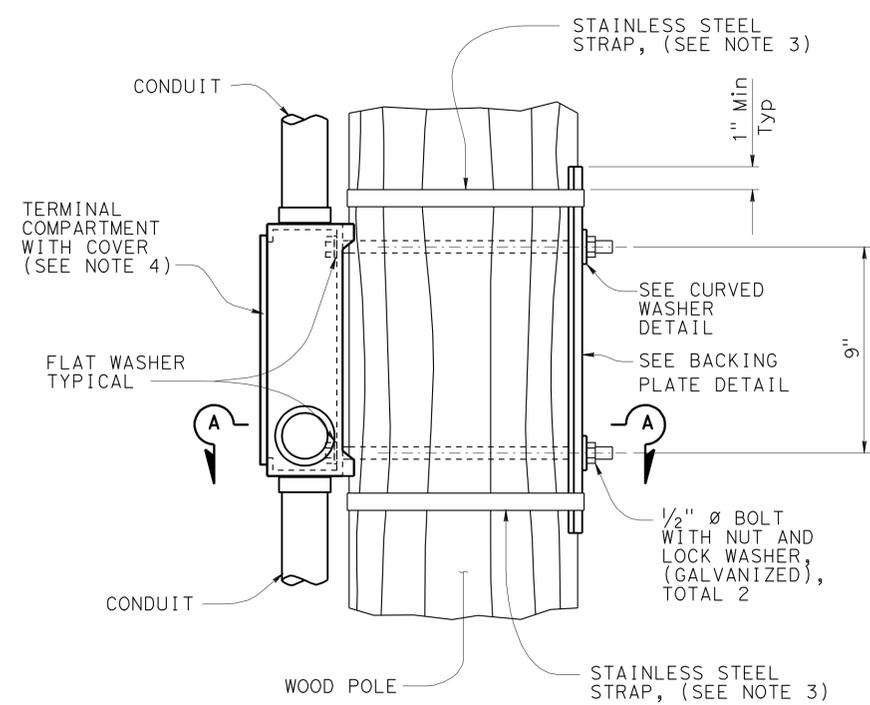
5-21-12
 PLANS APPROVAL DATE

No. 78138
 Exp. 09/30/13
 CIVIL
 STATE OF CALIFORNIA

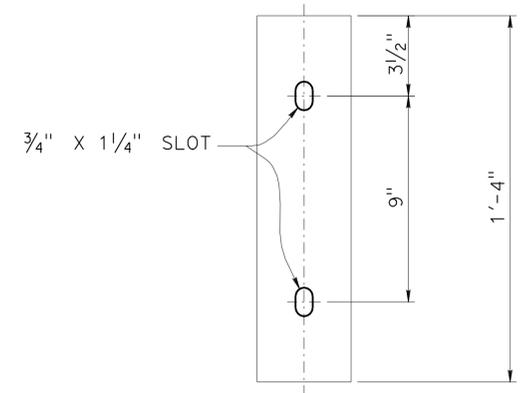
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ALAMEDA CTC
 1333 BROADWAY, SUITE 220
 OAKLAND, CA 94612

T.Y. LIN INTERNATIONAL
 2010 CROW CANYON PLACE, SUITE 350
 SAN RAMON, CA 94583



ELEVATION
 3" = 1'-0"

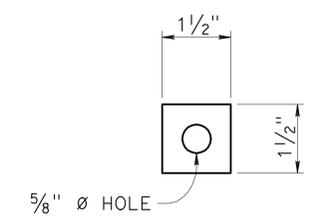


ELEVATION

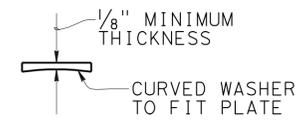


PLAN

**BACKING PLATE
 DETAIL**
 3" = 1'-0"



ELEVATION

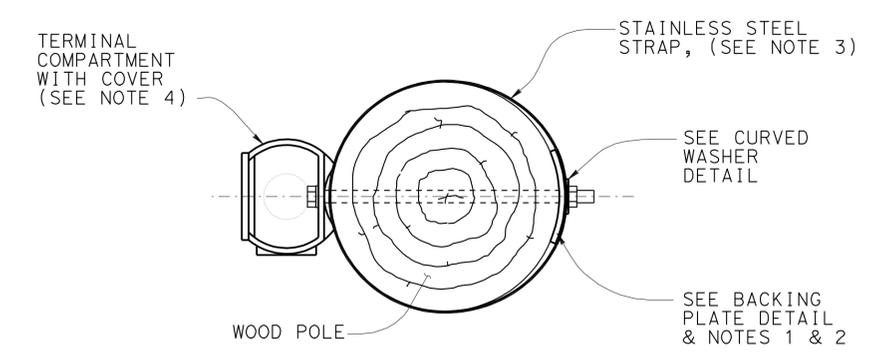


PLAN

**CURVED WASHER
 DETAIL**
 6" = 1'-0"

NOTES:

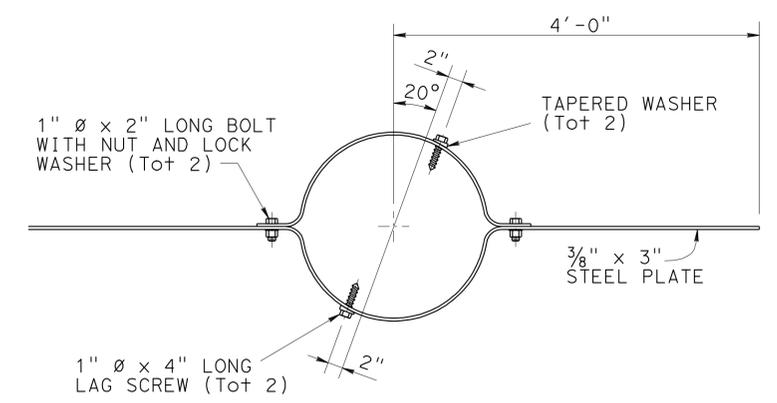
1. The contractor to verify pole dimensions at terminal compartment for fabrication of backing plate and curved washer.
2. Backing plate to be galvanized after fabrication.
3. 3/4" x 0.044" minimum, rounded edge stainless steel straps, double wrapped with 2" long bend under stainless steel strap buckle.
4. For details not shown see STANDARD PLAN ES-4D.



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

**SIDE MOUNTING
 TERMINAL COMPARTMENT**

For Details Not Shown See RSP-ES-4D Sheet



WIND ANCHOR

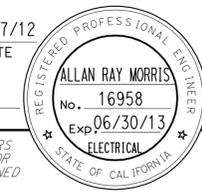
To be installed perpendicular to mast arms and 2'-0" Min below grade

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

E-79

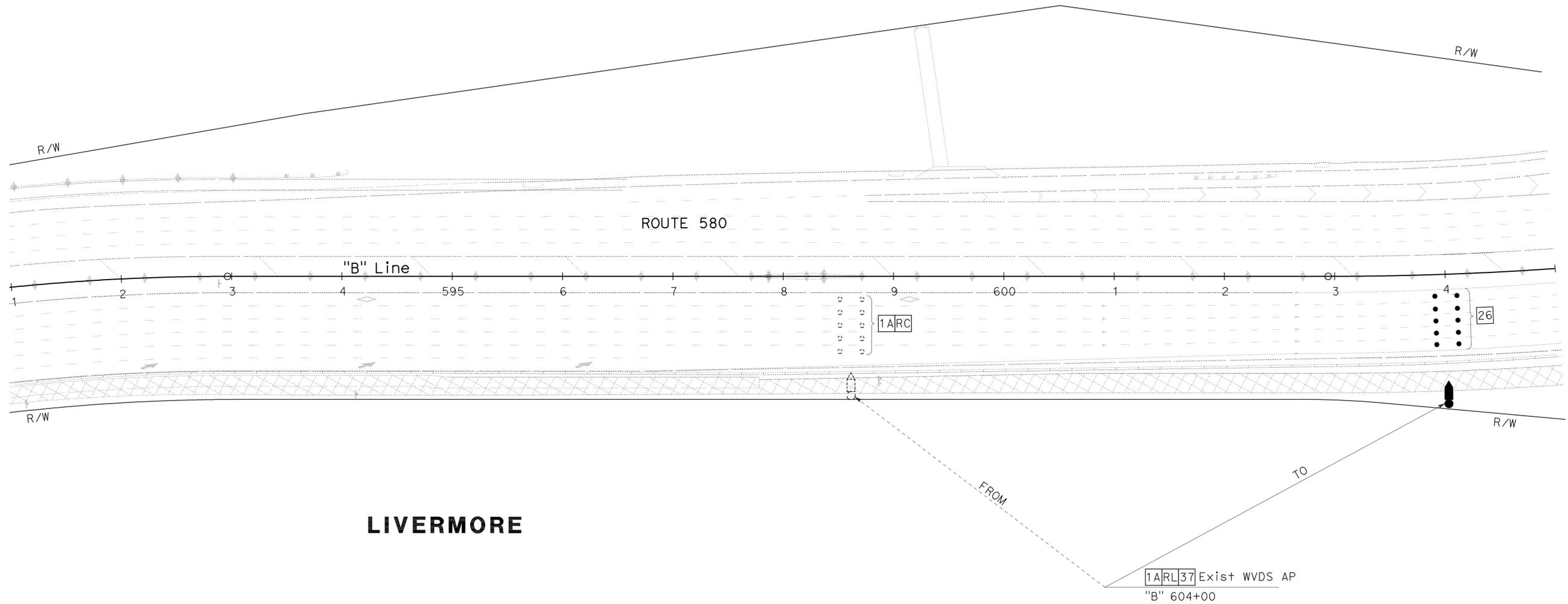
STANDARD DRAWING		STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION	DIVISION OF ENGINEERING SERVICES	BRIDGE NO. X	TEMPORARY WOOD POLE DETAILS NO. 5
FILE NO. xs18-080-5	APPROVAL DATE December 2011			POST MILE X	
DS OSD 2147A (ENGLISH STANDARD DRAWING "XS" BORDER REV. (02-02-11))		ORIGINAL SCALE IN INCHES FOR REDUCED PLANS	0 1 2 3	UNIT: 0735 PROJECT NUMBER & PHASE: 04120004051	CONTRACT NO.: X
			DISREGARD PRINTS BEARING EARLIER REVISION DATES		REVISION DATES 11/17/11

USERNAME => s124496 DATE PLOTTED => 21-MAY-2012 TIME PLOTTED => 13:35

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	525	681
 REGISTERED ELECTRICAL ENGINEER DATE 5/7/12					
5-21-12 PLANS APPROVAL DATE			<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>		
T Y LIN INTERNATIONAL 1111 BROADWAY, SUITE 2150 OAKLAND, CA 94612			ALAMEDA CTC 1333 BROADWAY, SUITE 220 OAKLAND, CA 94612		

NOTE:

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



LIVERMORE

**WIRELESS VEHICLE DETECTOR SYSTEM
(TEMPORARY)**

(STAGE 2B)

SCALE: 1" = 50'

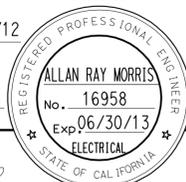
E-80

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEETS E-1 & E-63

APPROVED FOR ELECTRICAL WORK ONLY

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CALCULATED/DESIGNED BY	DAVID SETO	REVISOR	CC
	BRIAN KRCELIC	CHECKED BY	ALLAN MORRIS	DATE	5/12



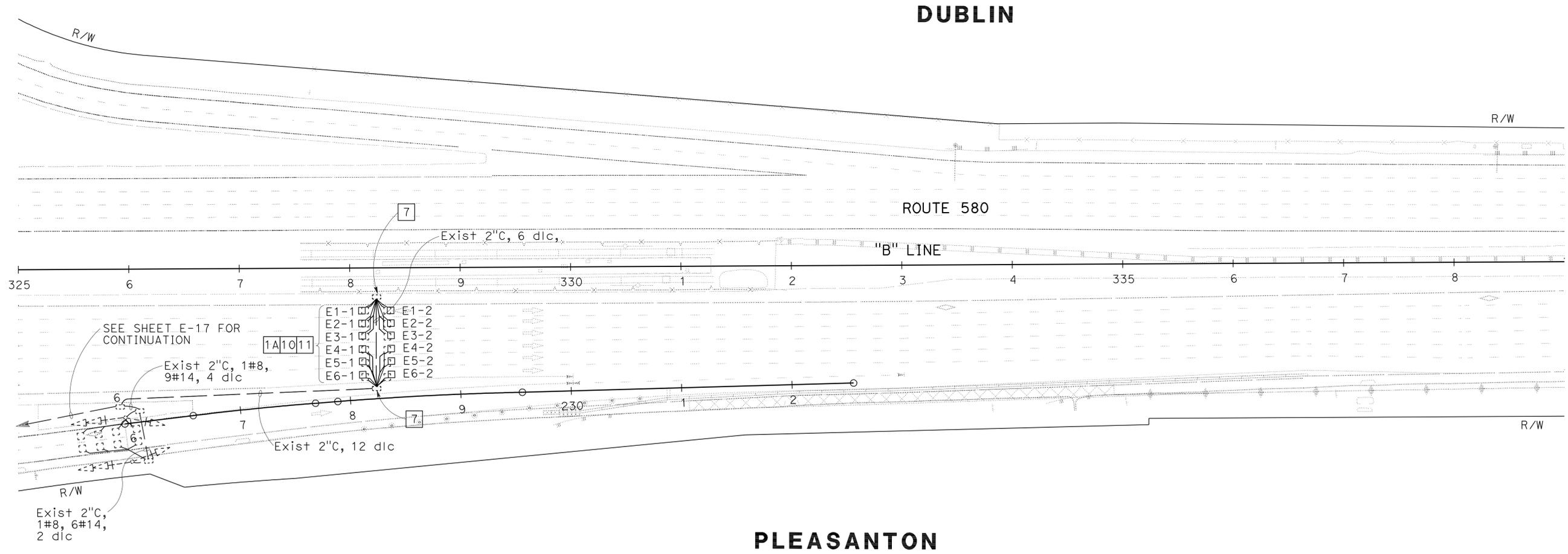
Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda	580	R7.8/19.1	526	681
 REGISTERED ELECTRICAL ENGINEER DATE 5/7/12					
5-21-12 PLANS APPROVAL DATE			<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>		
T Y LIN INTERNATIONAL 1111 BROADWAY, SUITE 2150 OAKLAND, CA 94612			ALAMEDA CTC 1333 BROADWAY, SUITE 220 OAKLAND, CA 94612		

NOTE:

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



DAVID SETO	REVISOR	CC
ALLAN MORRIS	DATE REVISED	5/12
BRIAN KRCELIC	FUNCTIONAL SUPERVISOR	
DEPARTMENT OF TRANSPORTATION	STATE OF CALIFORNIA	Caltrans



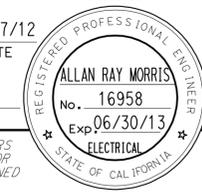
FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEETS E-1 & E-63

**TRAFFIC MONITORING STATION
(TEMPORARY)
STAGE 1 - PHASE A
SCALE: 1" = 50'**

E-81

APPROVED FOR ELECTRICAL WORK ONLY

LAST REVISION: 5-7-12
 DATE PLOTTED => 21-MAY-2012
 TIME PLOTTED => 1:31:35

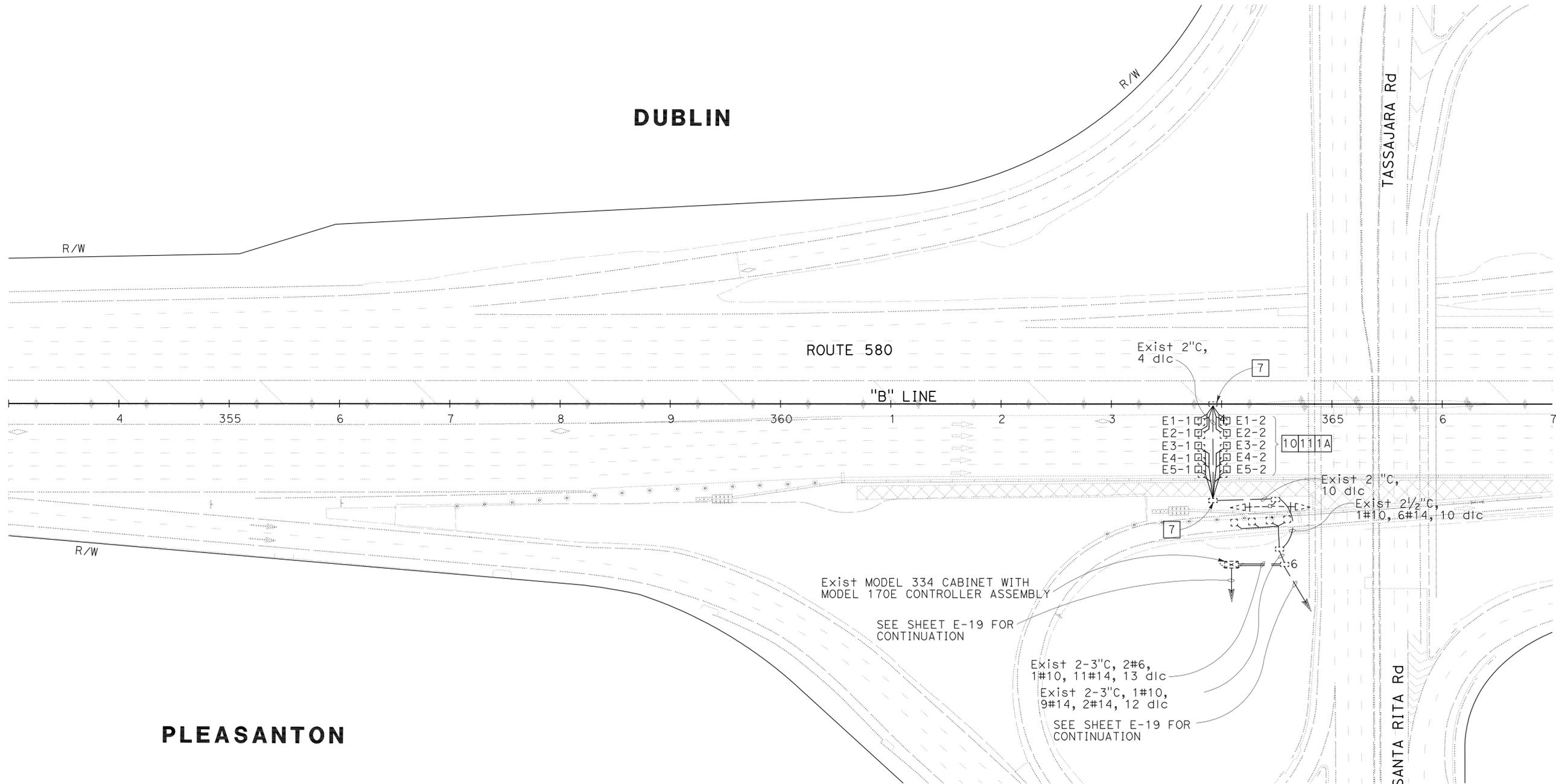
Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	527	681
 REGISTERED ELECTRICAL ENGINEER DATE 5/7/12					
5-21-12 PLANS APPROVAL DATE			THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.		
T Y LIN INTERNATIONAL 1111 BROADWAY, SUITE 2150 OAKLAND, CA 94612			ALAMEDA CTC 1333 BROADWAY, SUITE 220 OAKLAND, CA 94612		

NOTE:

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



DAVID SETO	REVISOR	CC
ALLAN MORRIS	DATE REVISED	5/12
BRIAN KRCELIC	FUNCTIONAL SUPERVISOR	
DEPARTMENT OF TRANSPORTATION		
STATE OF CALIFORNIA		



PLEASANTON

DUBLIN

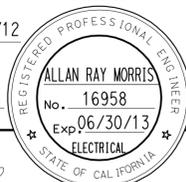
FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEETS E-1 & E-63

TRAFFIC MONITORING STATION (TEMPORARY) STAGE 1 - PHASE A
SCALE: 1" = 50'

E-82

APPROVED FOR ELECTRICAL WORK ONLY

DATE PLOTTED => 21-MAY-2012 TIME PLOTTED => 1:31:35

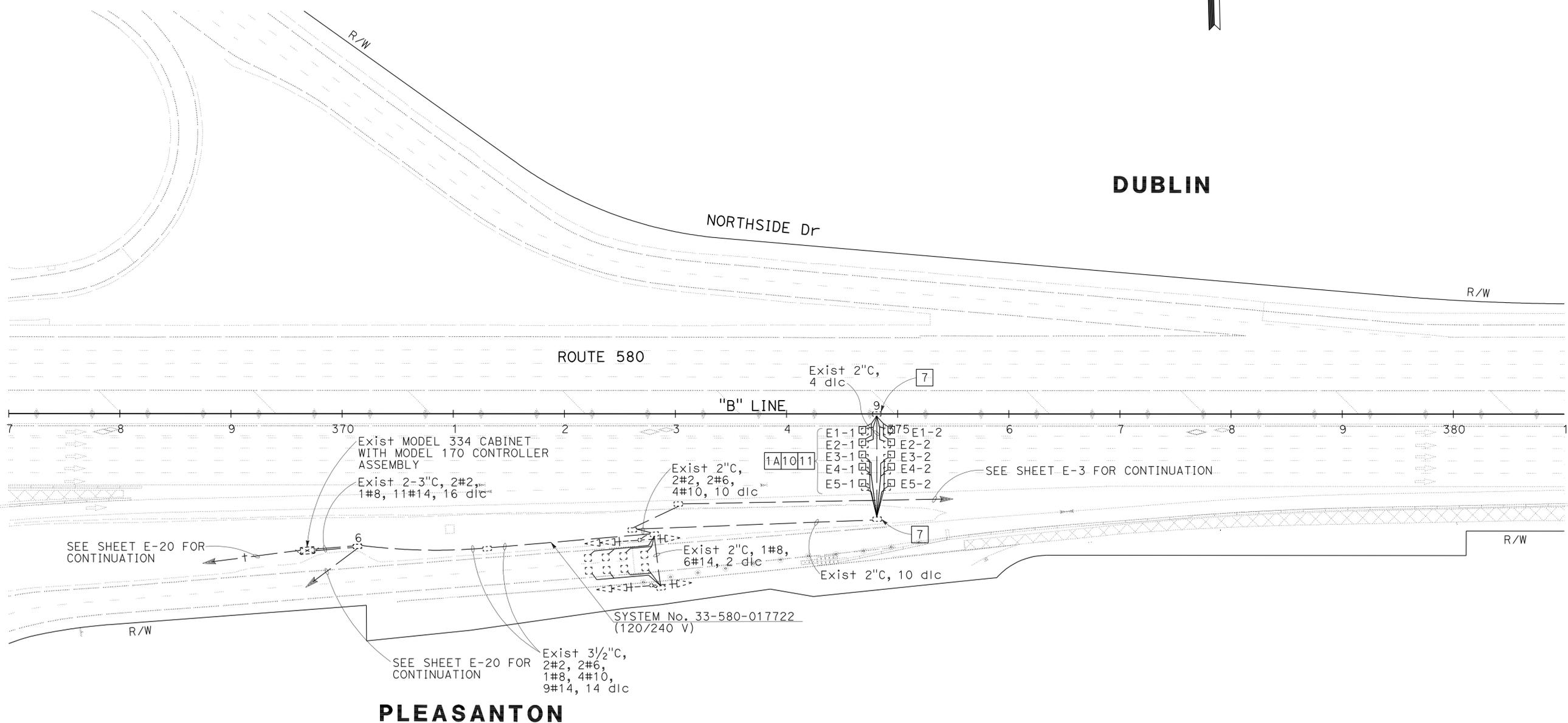
Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	528	681
 REGISTERED ELECTRICAL ENGINEER DATE 5/7/12					
5-21-12 PLANS APPROVAL DATE			THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.		
T Y LIN INTERNATIONAL 1111 BROADWAY, SUITE 2150 OAKLAND, CA 94612			ALAMEDA CTC 1333 BROADWAY, SUITE 220 OAKLAND, CA 94612		

NOTE:

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



DAVID SETO	REVISOR	CC
ALLAN MORRIS	DATE REVISOR	5/12
BRIAN KRCELIC	FUNCTIONAL SUPERVISOR	
	DEPARTMENT OF TRANSPORTATION	
	STATE OF CALIFORNIA	



FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEETS E-1 & E-63

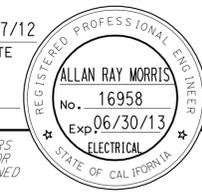
**TRAFFIC MONITORING STATION
(TEMPORARY)
STAGE 1 - PHASE A**

SCALE: 1" = 50'

E-83

APPROVED FOR ELECTRICAL WORK ONLY

DATE PLOTTED => 21-MAY-2012
TIME PLOTTED => 1:31:35
LAST REVISION
5-7-12

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	529	681
 REGISTERED ELECTRICAL ENGINEER DATE 5/7/12					
5-21-12 PLANS APPROVAL DATE			<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>		
T Y LIN INTERNATIONAL 1111 BROADWAY, SUITE 2150 OAKLAND, CA 94612			ALAMEDA CTC 1333 BROADWAY, SUITE 220 OAKLAND, CA 94612		

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

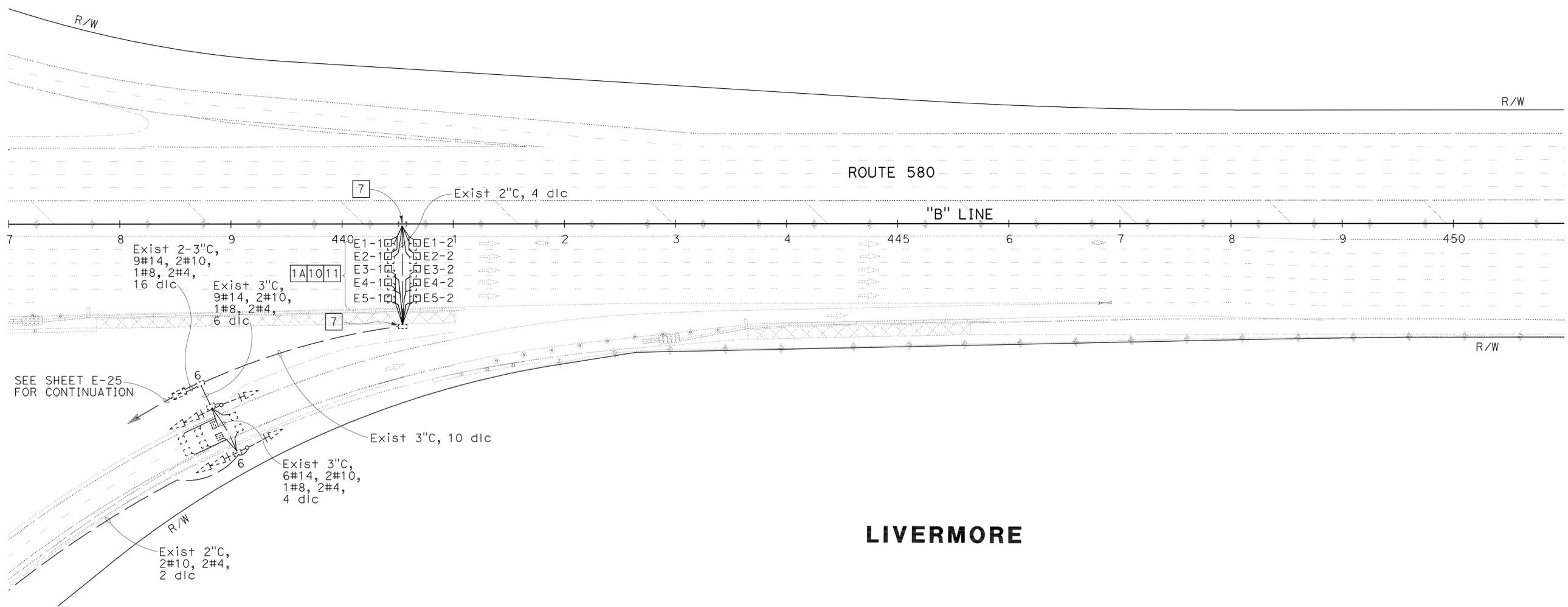


DUBLIN

ROUTE 580

"B" LINE

LIVERMORE



SEE SHEET E-25 FOR CONTINUATION

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEETS E-1 & E-63

**TRAFFIC MONITORING STATION
(TEMPORARY)
STAGE 1 - PHASE A
SCALE: 1" = 50'**

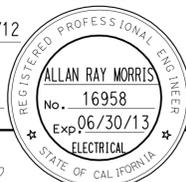
E-84

DAVID SETO	REVISOR	CC
ALLAN MORRIS	DATE	5/12
BRIAN KRCELIC	CHECKED BY	
FUNCTIONAL SUPERVISOR	DESIGNED BY	
DEPARTMENT OF TRANSPORTATION		
STATE OF CALIFORNIA		



APPROVED FOR ELECTRICAL WORK ONLY

DATE PLOTTED => 21-MAY-2012 TIME PLOTTED => 13:35

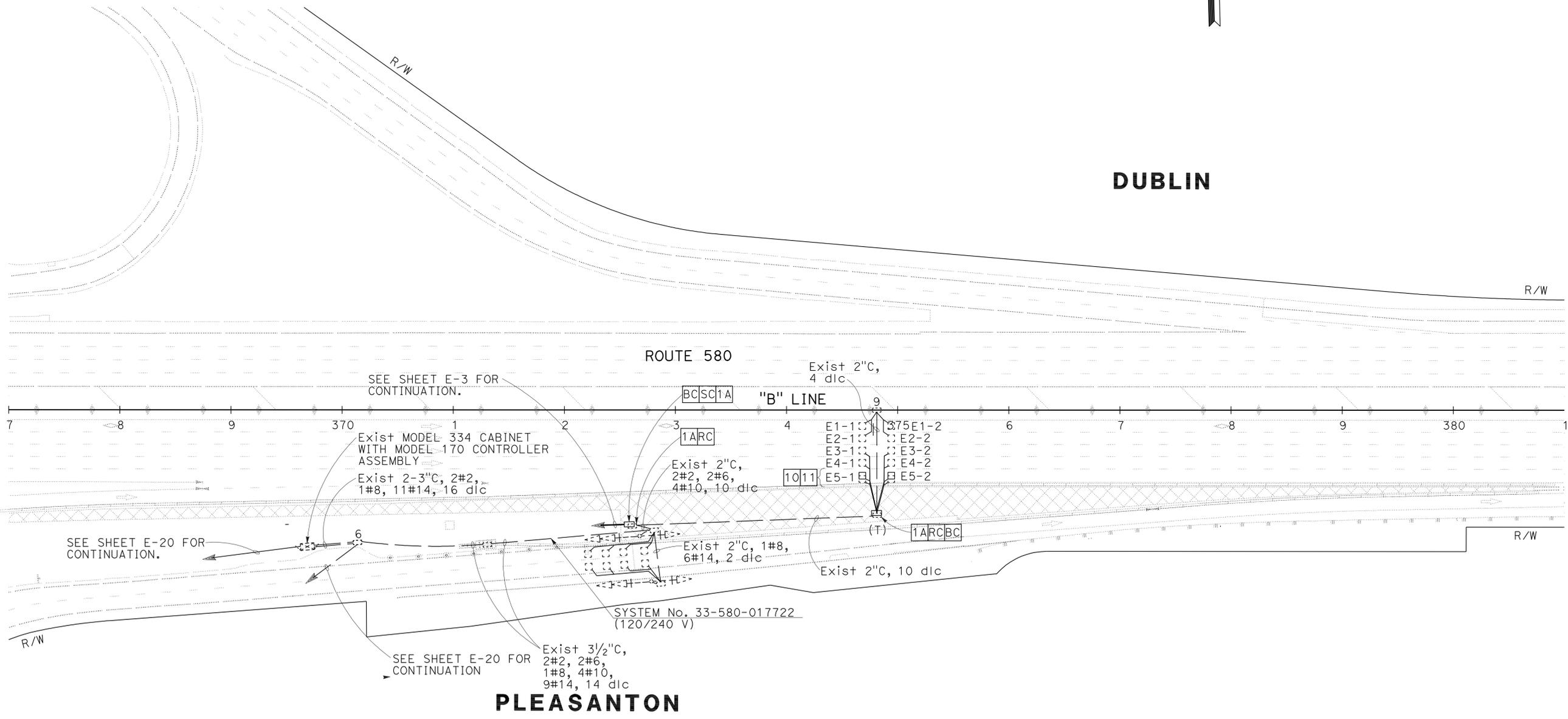
Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda	580	R7.8/19.1	530	681
 REGISTERED ELECTRICAL ENGINEER DATE 5/7/12					
5-21-12 PLANS APPROVAL DATE			<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>		
T Y LIN INTERNATIONAL 1111 BROADWAY, SUITE 2150 OAKLAND, CA 94612			ALAMEDA CTC 1333 BROADWAY, SUITE 220 OAKLAND, CA 94612		

NOTE:

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



DAVID SETO	REVISOR	CC
ALLAN MORRIS	DATE REVISOR	5/12
BRIAN KRCELIC	FUNCTIONAL SUPERVISOR	
DEPARTMENT OF TRANSPORTATION		
STATE OF CALIFORNIA		



FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEETS E-1 & E-63

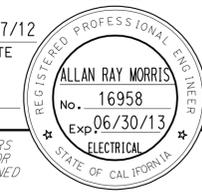
TRAFFIC MONITORING STATION (TEMPORARY) STAGE 1 - PHASE B

SCALE: 1" = 50'

E-85

APPROVED FOR ELECTRICAL WORK ONLY

DATE PLOTTED => 21-MAY-2012 TIME PLOTTED => 13:35

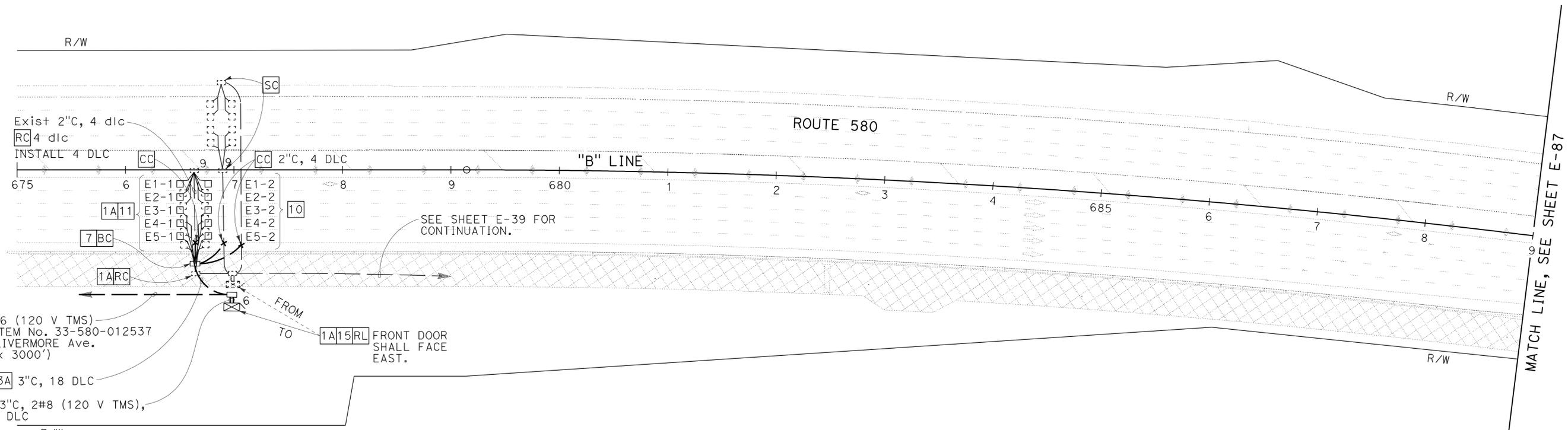
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04	Ala	580	R7.8/19.1	531	681
 REGISTERED ELECTRICAL ENGINEER DATE 5/7/12					
5-21-12 PLANS APPROVAL DATE			<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>		
T Y LIN INTERNATIONAL 1111 BROADWAY, SUITE 2150 OAKLAND, CA 94612			ALAMEDA CTC 1333 BROADWAY, SUITE 220 OAKLAND, CA 94612		

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



REVISIONS	DATE	BY	REASON

DESIGNED BY	DAVAN SETAGI
CHECKED BY	ALLAN MORRIS
FUNCTIONAL SUPERVISOR	BRIAN KRCELIC
DEPARTMENT OF TRANSPORTATION	STATE OF CALIFORNIA
Logo	



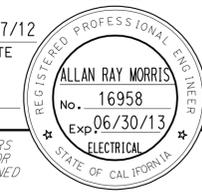
FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEETS E-1 & E-63

**TRAFFIC MONITORING STATION
(TEMPORARY)
STAGE 2 - PHASE A
SCALE: 1" = 50'**

E-86

APPROVED FOR ELECTRICAL WORK ONLY

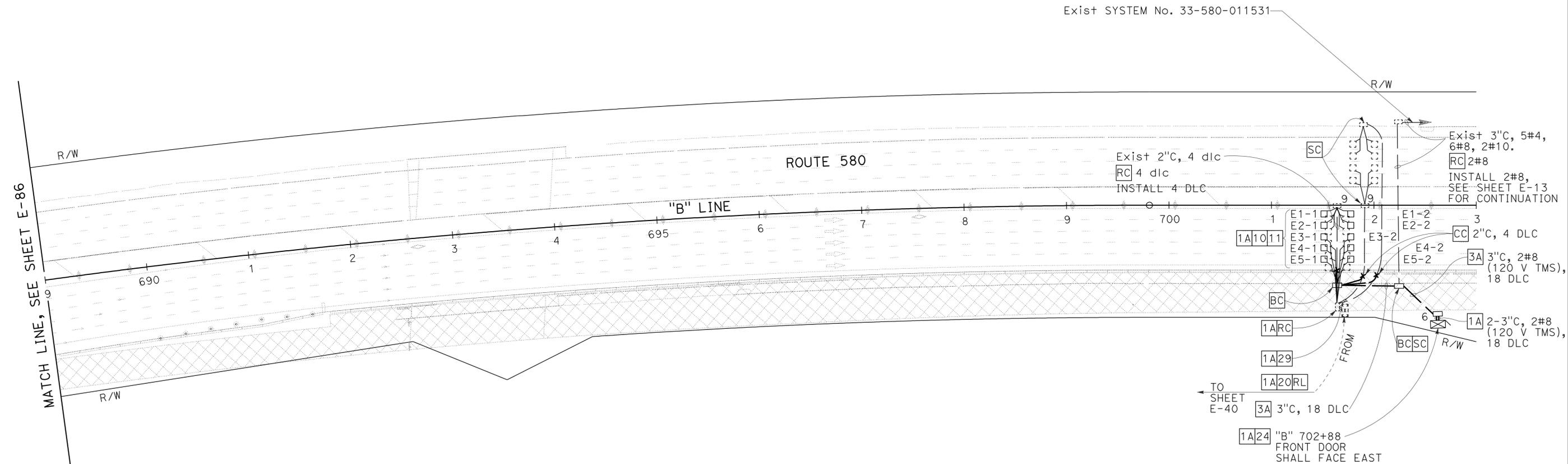
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Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	532	681
 REGISTERED ELECTRICAL ENGINEER DATE 5/7/12					
5-21-12 PLANS APPROVAL DATE			<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>		
T Y LIN INTERNATIONAL 1111 BROADWAY, SUITE 2150 OAKLAND, CA 94612			ALAMEDA CTC 1333 BROADWAY, SUITE 220 OAKLAND, CA 94612		

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



DAVID SETO	REVISOR	CC
ALLAN MORRIS	DATE REVISOR	5/12
BRIAN KRCELIC	DESIGNER	
	CHECKED BY	
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION		
		



FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEETS E-1 & E-63

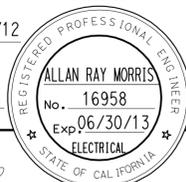
LIVERMORE

**TRAFFIC MONITORING STATION (TEMPORARY)
STAGE 2 - PHASE A
SCALE: 1" = 50'**

E-87

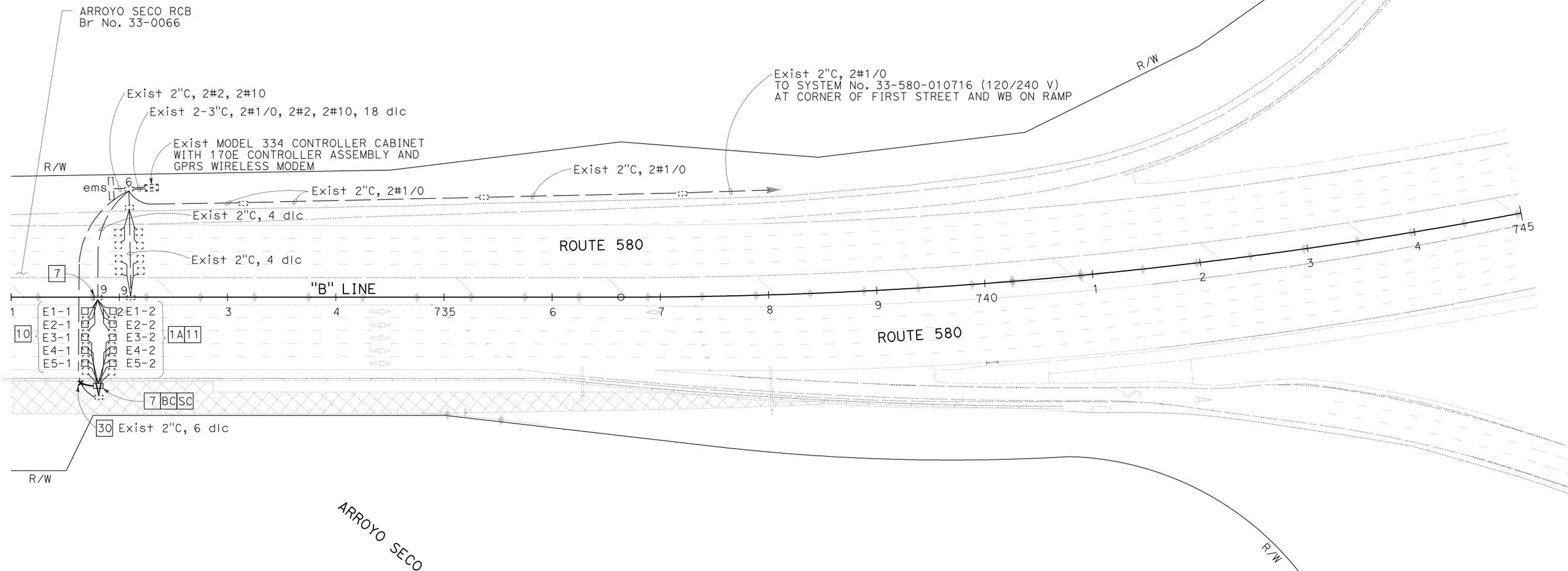
APPROVED FOR ELECTRICAL WORK ONLY

DATE PLOTTED => 21-MAY-2012 TIME PLOTTED => 13:35

Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	533	681
			5/7/12	REGISTERED ELECTRICAL ENGINEER DATE	
5-21-12			PLANS APPROVAL DATE		
			<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>		
T Y LIN INTERNATIONAL 1111 BROADWAY, SUITE 2150 OAKLAND, CA 94612			ALAMEDA CTC 1333 BROADWAY, SUITE 220 OAKLAND, CA 94612		

NOTE:

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



1	E1-1	E1-2	3	4	6	7	8	9	1	2	3	4
10	E2-1	E2-2										
	E3-1	E3-2										
	E4-1	E4-2										
	E5-1	E5-2										

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEETS E-1 & E-63

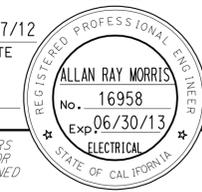
**TRAFFIC MONITORING STATION
(TEMPORARY)
STAGE 2 - PHASE A**
SCALE: 1" = 50'

E-88

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	CHECKED BY	REVISOR BY	DATE
	BRIAN KRCELIC	ALLAN MORRIS	DAVID SETO	5/12
			CC	

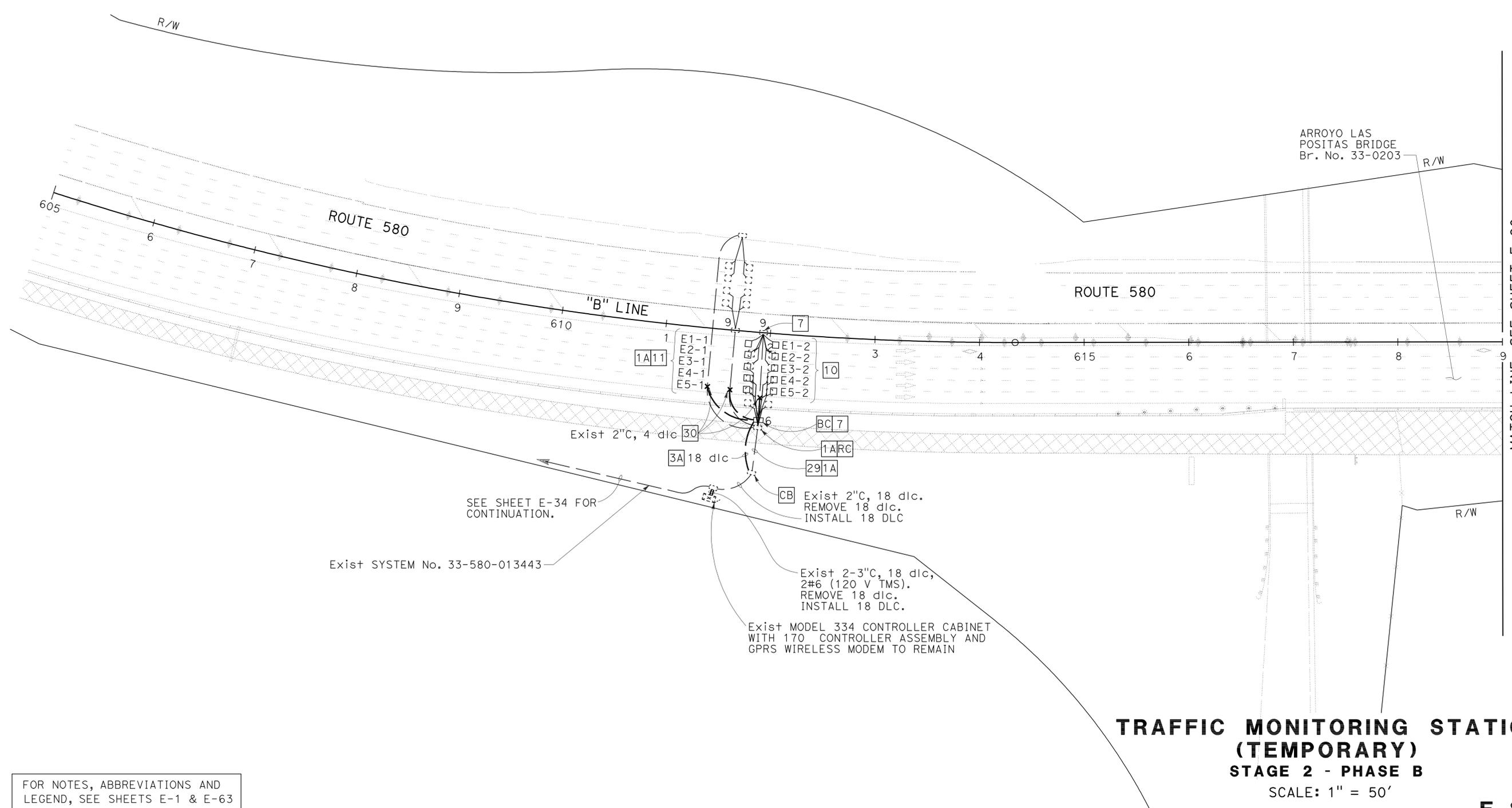
APPROVED FOR ELECTRICAL WORK ONLY

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5-21-12			PLANS APPROVAL DATE		
			<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>		
T Y LIN INTERNATIONAL 1111 BROADWAY, SUITE 2150 OAKLAND, CA 94612			ALAMEDA CTC 1333 BROADWAY, SUITE 220 OAKLAND, CA 94612		

NOTE:

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



FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEETS E-1 & E-63

**TRAFFIC MONITORING STATION
(TEMPORARY)
STAGE 2 - PHASE B
SCALE: 1" = 50'**

E-89

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	FUNCTIONAL SUPERVISOR	DAVID SETO	REVISOR	CC
	BRIAN KRCELIC	ALLAN MORRIS	DATE	5/12
	CALCULATED/DESIGNED BY		DATE	
	CHECKED BY		DATE	

APPROVED FOR ELECTRICAL WORK ONLY

DATE PLOTTED => 21-MAY-2012
TIME PLOTTED => 13:35
LAST REVISION
5-7-12

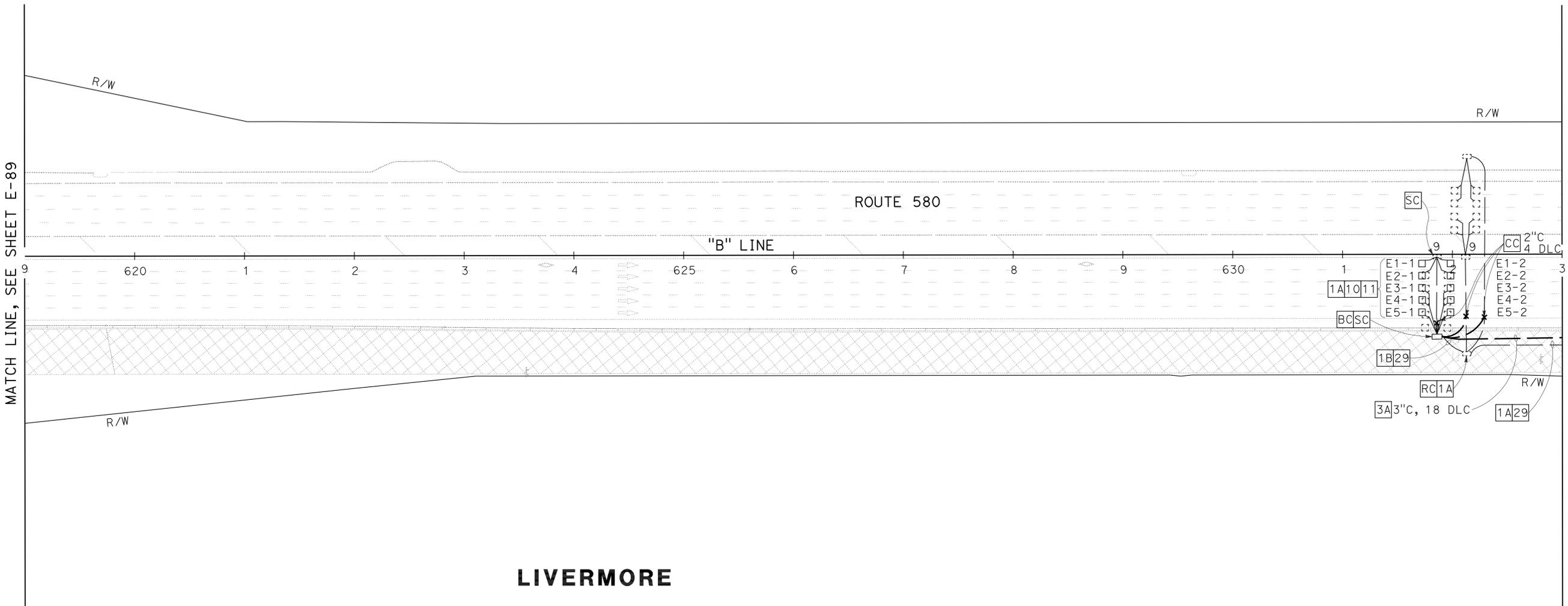
Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
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			5/7/12	REGISTERED ELECTRICAL ENGINEER DATE	
			5-21-12	PLANS APPROVAL DATE	
T Y LIN INTERNATIONAL 1111 BROADWAY, SUITE 2150 OAKLAND, CA 94612			ALAMEDA CTC 1333 BROADWAY, SUITE 220 OAKLAND, CA 94612		

NOTE:

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



DAVID SETO	REVISOR	CC
ALLAN MORRIS	DATE REVISOR	5/12
BRIAN KRCELIC	FUNCTIONAL SUPERVISOR	
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION		



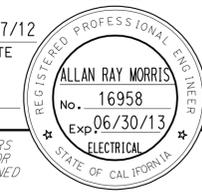
LIVERMORE

**TRAFFIC MONITORING STATION
(TEMPORARY)
STAGE 2 - PHASE B
SCALE: 1" = 50'**

E-90

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEETS E-1 & E-63

APPROVED FOR ELECTRICAL WORK ONLY

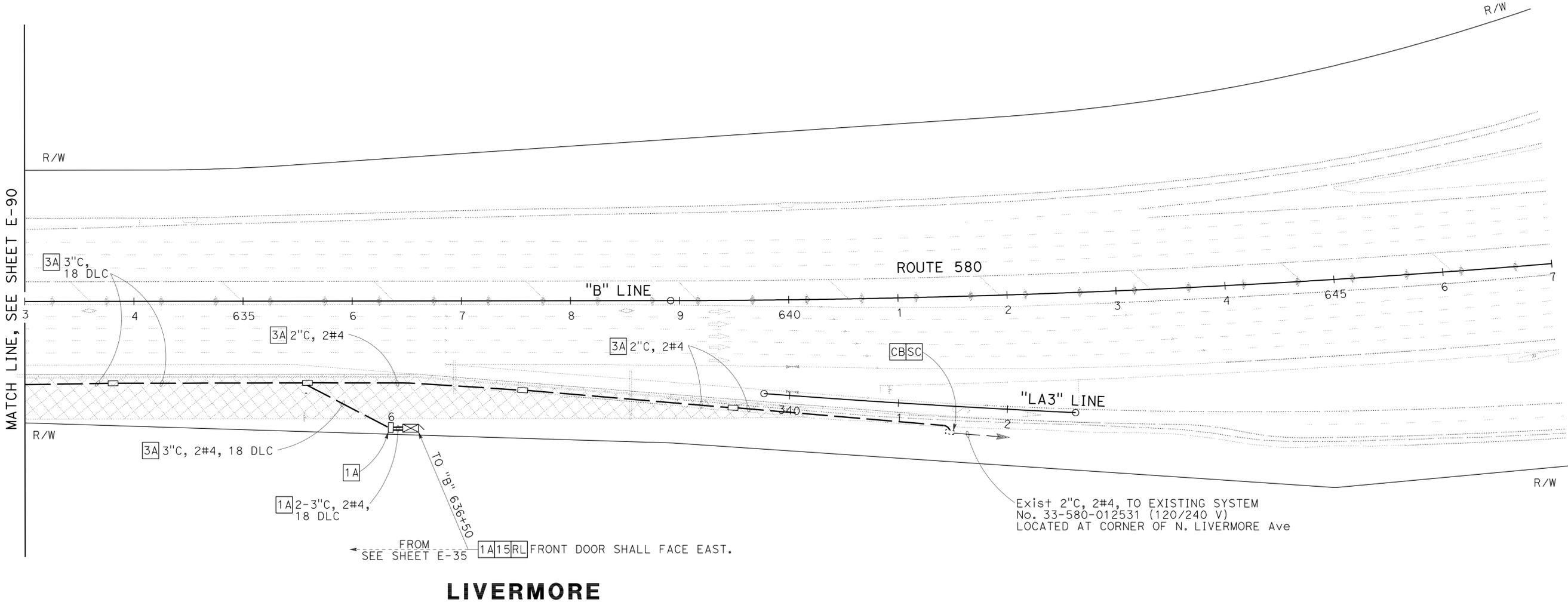
Dist	COUNTY	LOCATION CODE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Alameda	580	R7.8/19.1	536	681
 REGISTERED ELECTRICAL ENGINEER DATE 5/7/12					
5-21-12 PLANS APPROVAL DATE			<small>THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.</small>		
T Y LIN INTERNATIONAL 1111 BROADWAY, SUITE 2150 OAKLAND, CA 94612			ALAMEDA CTC 1333 BROADWAY, SUITE 220 OAKLAND, CA 94612		

NOTE:

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



DAVID SETO	REVISOR	CC
ALLAN MORRIS	DATE REVISED	5/12
BRIAN KRCELIC	CHECKED BY	
	DESIGNED BY	
	FUNCTIONAL SUPERVISOR	
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION		
		



LIVERMORE

TRAFFIC MONITORING STATION (TEMPORARY) STAGE 2 - PHASE B
 SCALE: 1" = 50'

E-91

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEETS E-1 & E-63

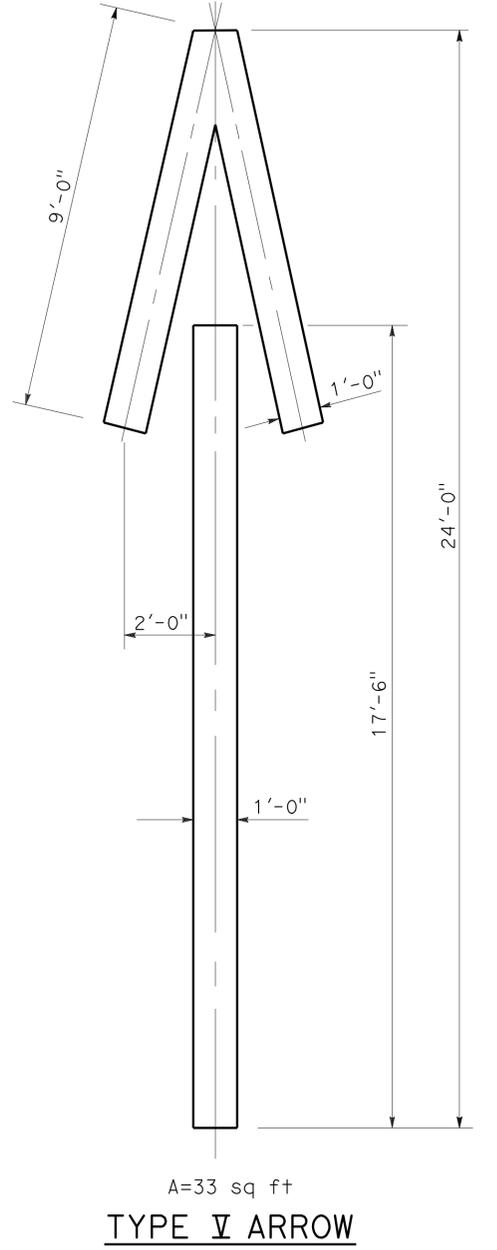
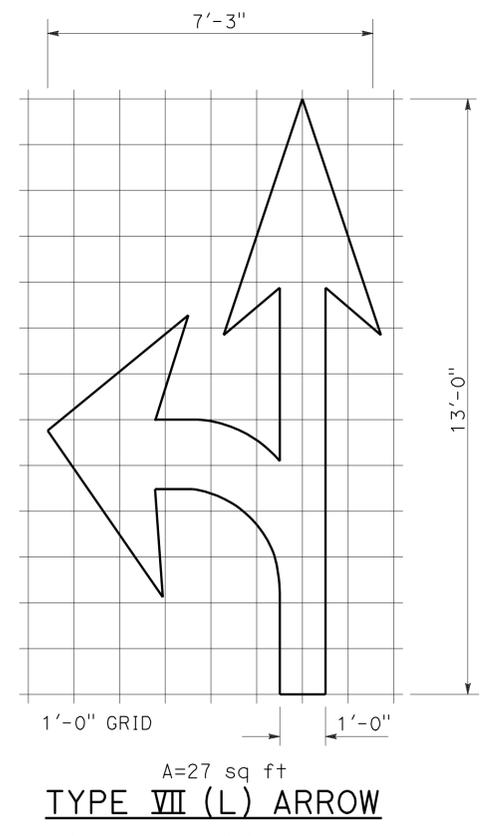
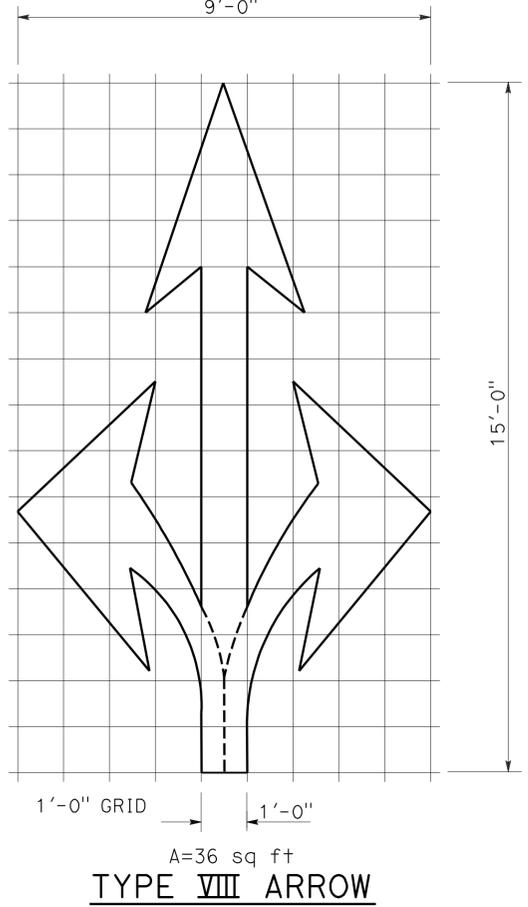
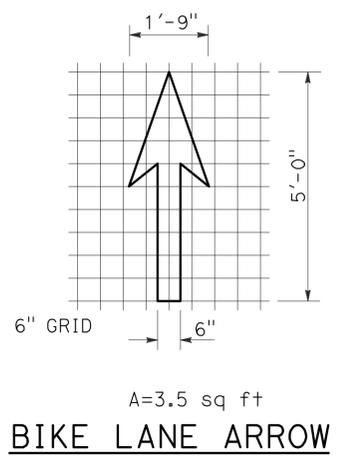
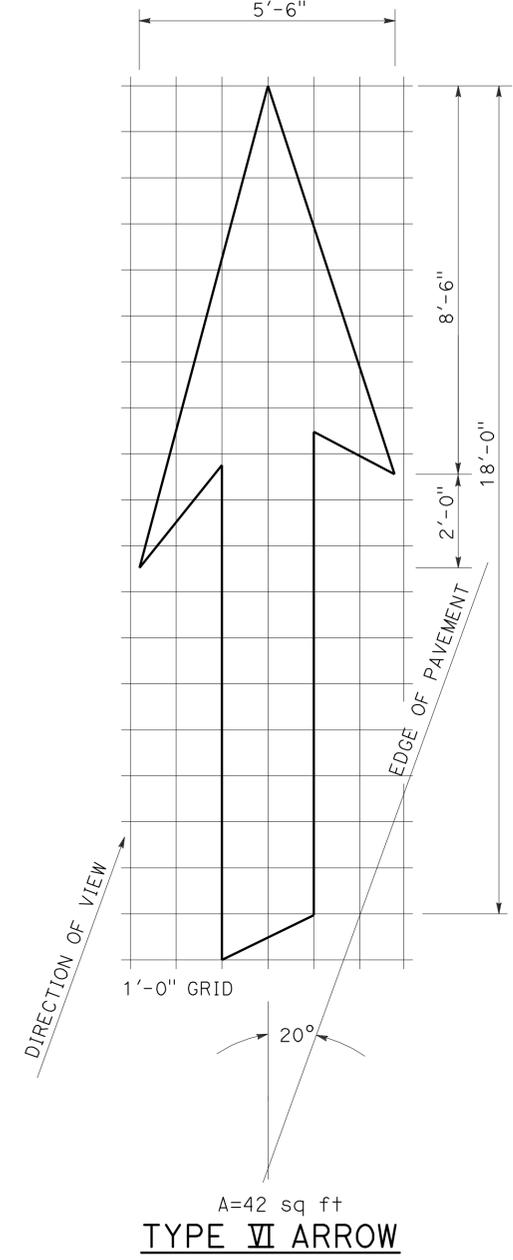
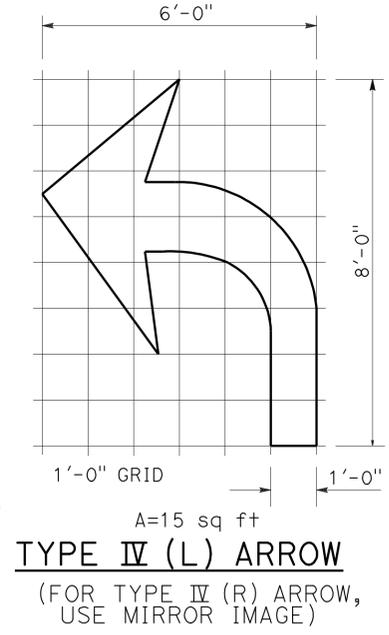
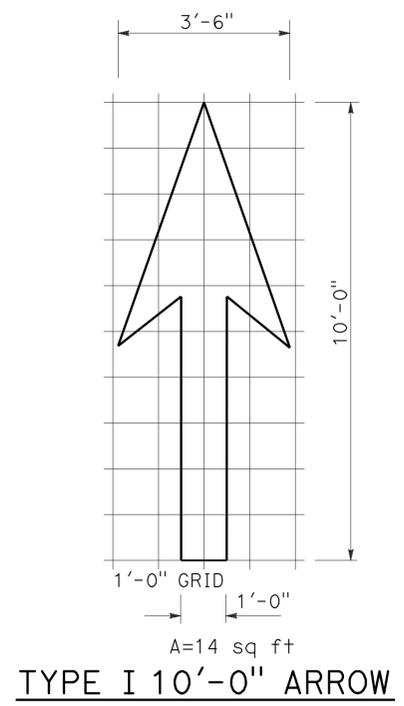
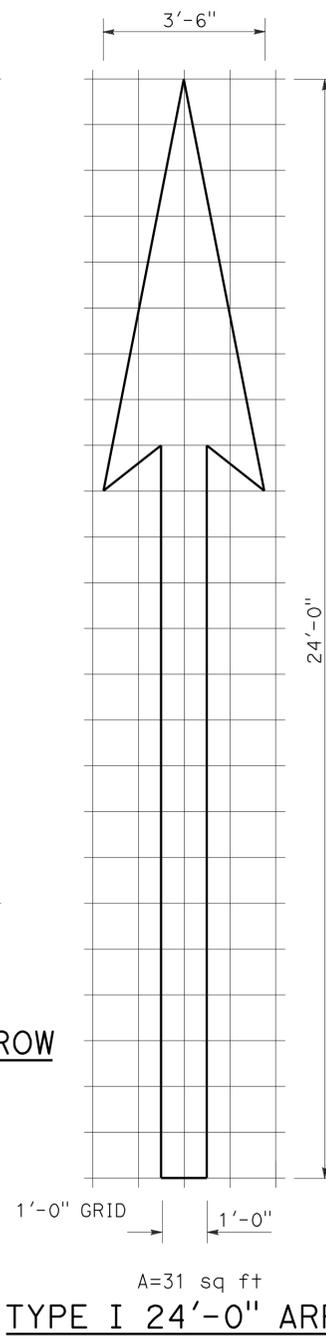
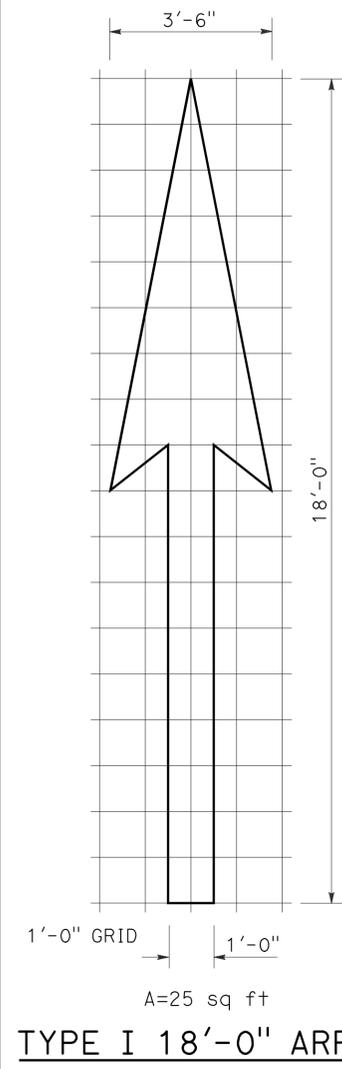
APPROVED FOR ELECTRICAL WORK ONLY

DATE PLOTTED => 21-MAY-2012 TIME PLOTTED => 13:35

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	537	681

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 electronic copies of this plan sheet.

To accompany plans dated 5-21-12



NOTE:
MINOR VARIATIONS IN DIMENSIONS
MAY BE ACCEPTED BY THE ENGINEER.

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

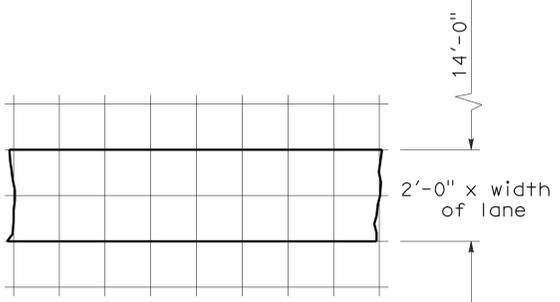
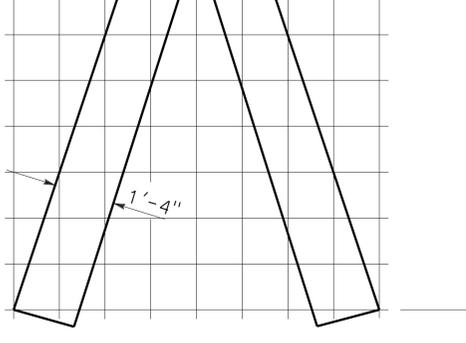
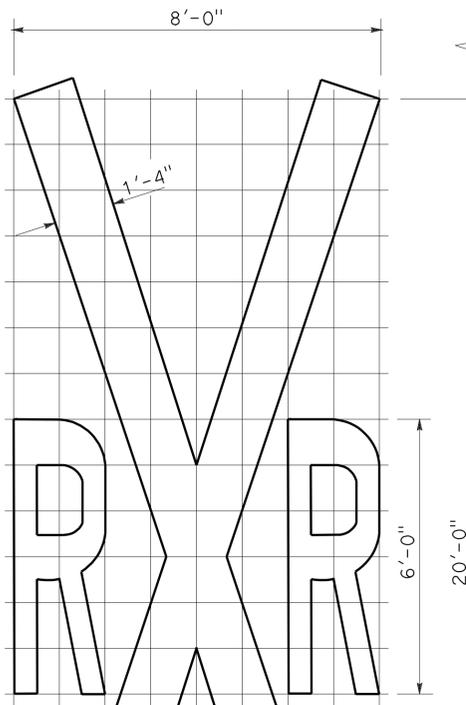
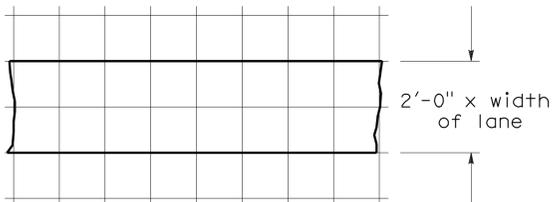
RSP A24A DATED APRIL 20, 2012 SUPERSEDES STANDARD PLAN A24A
DATED MAY 1, 2006 - PAGE 9 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP A24A

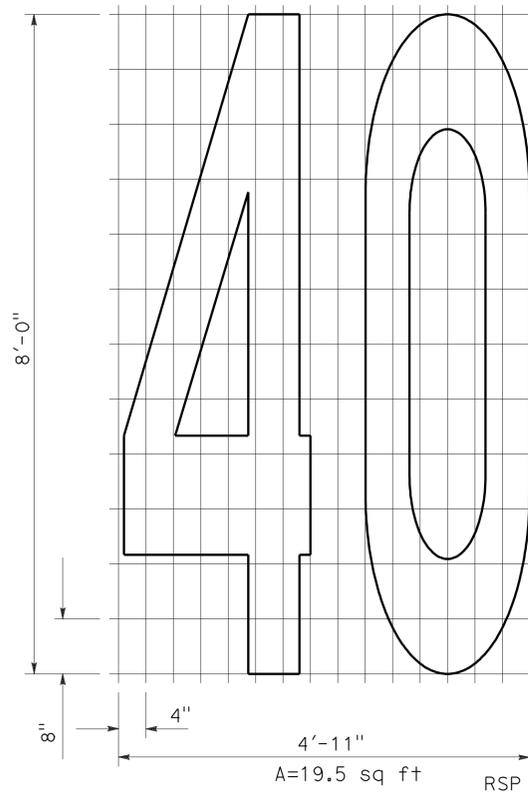
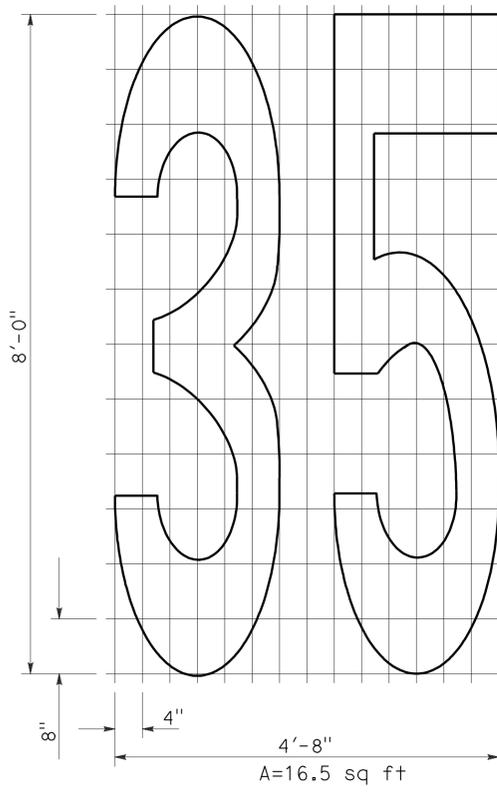
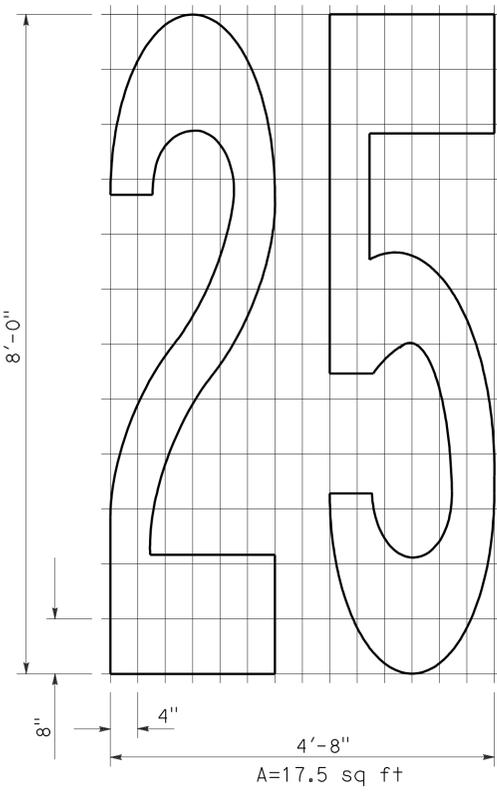
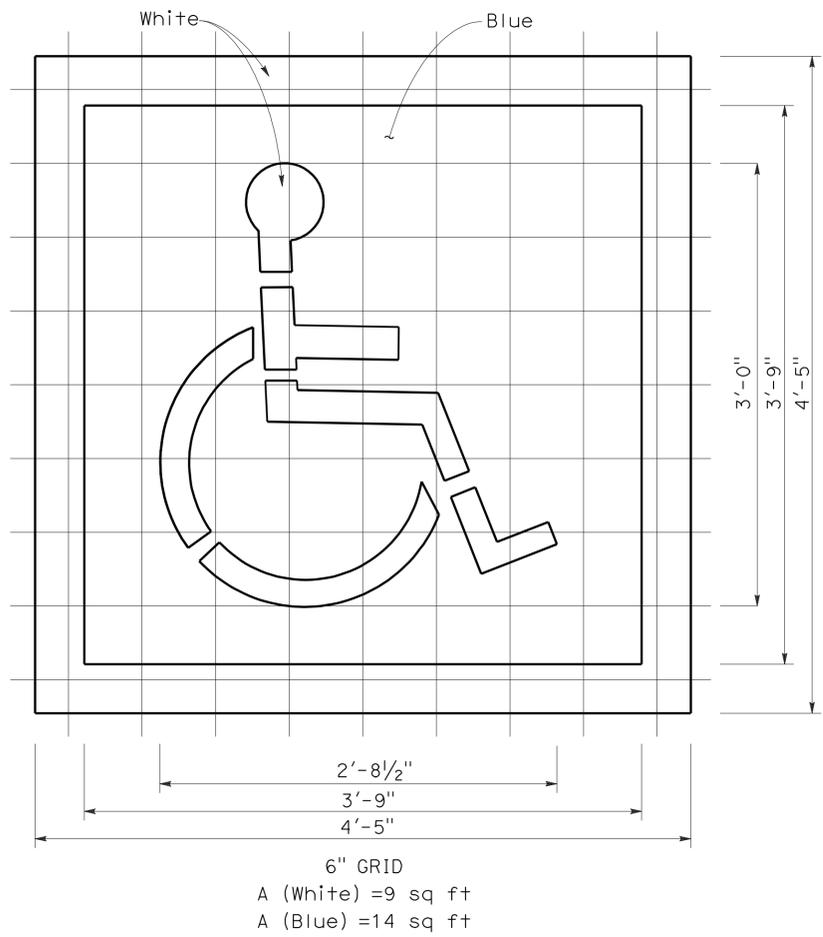
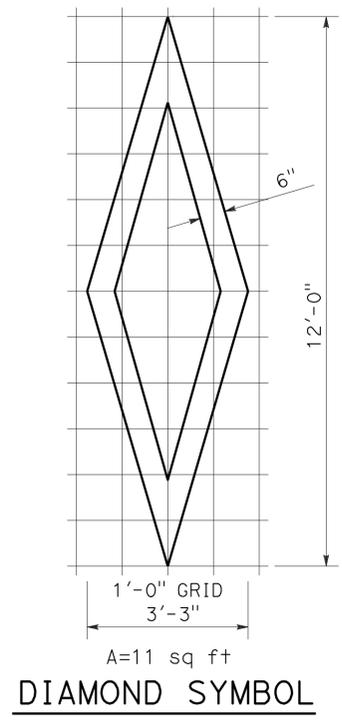
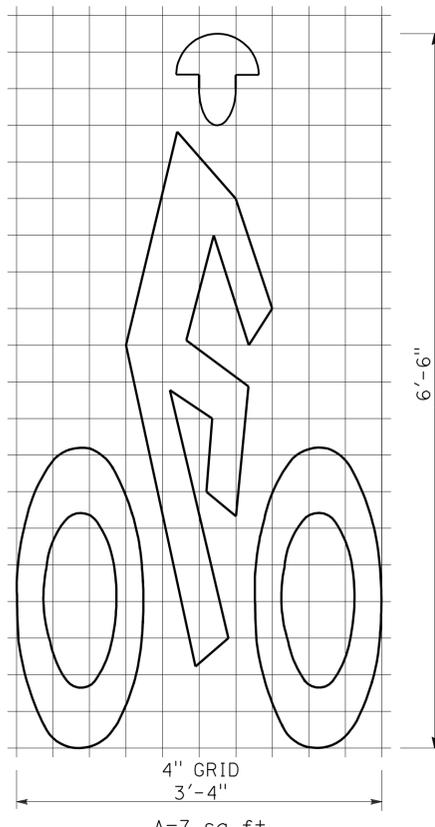
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	538	681

Donald E. Howe
 REGISTERED CIVIL ENGINEER
 June 6, 2008
 PLANS APPROVAL DATE
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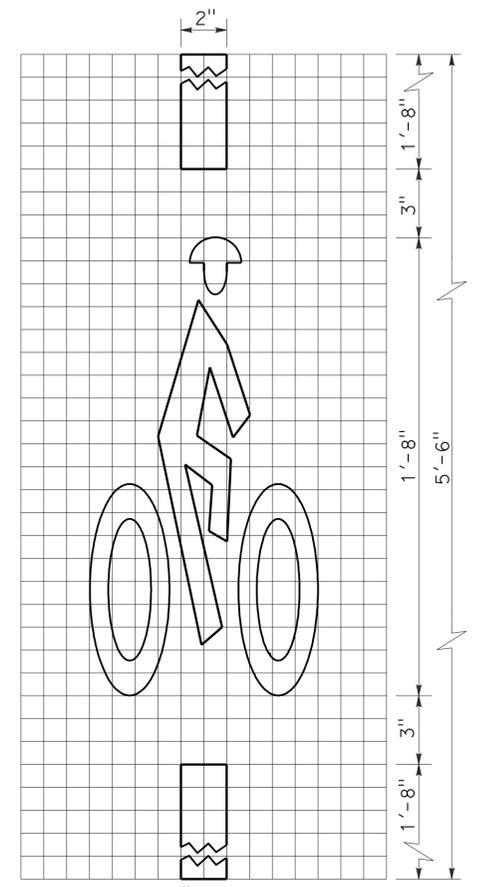
To accompany plans dated 5-21-12



✕70 sq ft DOES NOT INCLUDE THE 2'-0" x VARIABLE WIDTH TRANSVERSE LINES.



NUMERALS



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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**PAVEMENT MARKINGS
SYMBOLS AND NUMERALS**

NO SCALE

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	539	681

Dallas Forester
REGISTERED CIVIL ENGINEER

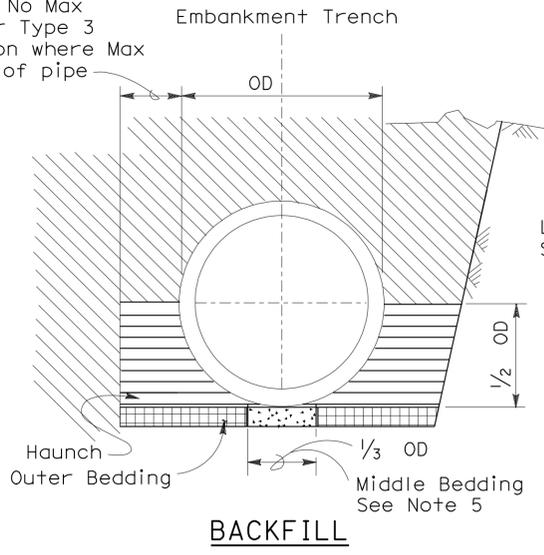
November 17, 2006
PLANS APPROVAL DATE

Dallas Forester
REGISTERED PROFESSIONAL ENGINEER
No. C37765
Exp. 12-31-06
CIVIL
STATE OF CALIFORNIA

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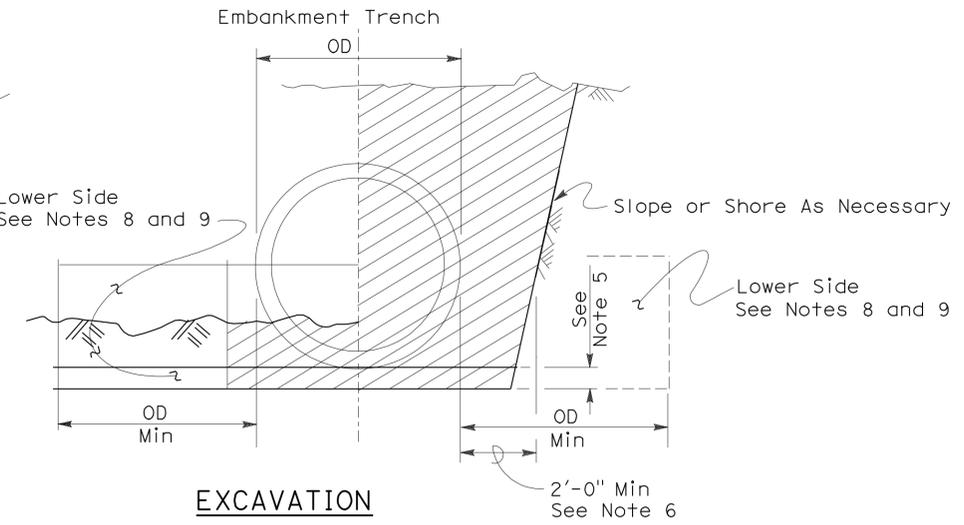
To accompany plans dated 5-21-12

2'-0" Min; No Max except for Type 3 Installation where Max Equals OD of pipe



BACKFILL

- Roadway Embankment
- Structure Backfill (Culvert) See Note 6
- Structure Backfill (Culvert) See Note 6
- Loose Backfill



EXCAVATION

- Excavation Structure (Culvert)

TYPE 1 INSTALLATION:

The haunch and outer bedding shall be compacted to a minimum 90 percent relative compaction. In addition, the minimum sand equivalent in these areas shall be 30 and the maximum percentage passing the 75 μm sieve size shall be 12.

TYPE 2 INSTALLATION:

The haunch and outer bedding shall be compacted to a minimum 90 percent relative compaction. In addition, the minimum sand equivalent in these areas shall be 25.

TYPE 3 INSTALLATION:

The haunch and outer bedding shall be compacted to a minimum 85 percent relative compaction. 90 percent relative compaction will be required where the fill over the pipe is less than 4'-0" or 1/2 OD.

NOTES:

- Unless otherwise shown on the plans or specified in the special provision, the Contractor shall have the option of selecting the class of RCP and the type of installation to be used, provided the height of cover does not exceed the value shown for the RCP selected.
Example: 24" RCP culvert with maximum cover of 19'-0" the options are:
a) Class III or stronger with Installation Type 1.
b) Class III Special or stronger with Installation Type 2.
c) Class IV Special or stronger with Installation Type 3.
Cover is defined as the maximum vertical distance from top of the pipe to finished grade within the length of any given culvert.
- The class of RCP and Installation Type selected shall be the same throughout the length of any given culvert.
- The "length of any culvert" is defined as the culvert between:
a) Successive drainage structure (inlets, junction boxes, headwalls, etc.).
b) A drainage structure and the inlet or outlet end of the culvert.
c) The inlet and outlet end of the culvert when there are no intervening drainage structures.
- Oval and arch shaped RCP shall not be used.
- 1/25 OD Min, not less than 3".
- Slurry cement backfill may be substituted for backfill in the outer bedding and haunch areas. If slurry is used the outer and middle beddings shall be omitted. Prior to installation the soil under the middle 1/3 of the outside diameter of the pipe shall be softened by scarifying or other means to a minimum depth of 1/25 OD, but not less than 3". Where slurry cement backfill is used clear distance to trench wall may be reduced as set forth in Section 19-3.062 of the Standard Specifications.
- Backfill shall be placed full width of excavation except where dimensions are shown for backfill width or thickness. Dimensions shown are minimums.
- Lower side shall be suitable material as determined by the Engineer. Otherwise it shall be considered unsuitable as set forth in Section 19-2.02 of the Standard Specifications. See Note 9.
- Where the pipe is placed in a trench, if the trench walls are sloped at 5 vertical to 1 horizontal or steeper for at least 90 percent of the trench height or up to not less than 12" from the grading plane, the firmness of the soil in the lower side need not be considered.
- Non-reinforced precast concrete pipe sizes 3'-0" or smaller may be placed under installation Types 1, 2 or 3.

INSTALLATION TYPE 1

MINIMUM CLASS AND D-LOAD	COVER	
	108" Dia AND SMALLER	OVER 108" Dia
Class II 1000D	14.9'	12.9'
Class III 1350D	15.0' - 20.9'	13.0' - 18.9'
Class III Special 1700D	21.0' - 26.9'	19.0' - 24.9'
Class IV 2000D	27.0' - 31.9'	25.0' - 29.9'
Class IV Special 2500D	32.0' - 40.9'	30.0' - 38.9'
Class V 3000D	41.0' - 49.9'	39.0' - 46.9'
Class V Special 3600D	50.0' - 59.0'	47.0' - 58.0'

INSTALLATION TYPE 2

MINIMUM CLASS AND D-LOAD	COVER
Class II 1000D	9.9'
Class III 1350D	10.0' - 14.9'
Class III Special 1700D	15.0' - 19.9'
Class IV 2000D	20.0' - 24.9'
Class IV Special 2500D	25.0' - 31.9'
Class V 3000D	32.0' - 38.9'
Class V Special 3600D	39.0' - 47.0'

INSTALLATION TYPE 3

MINIMUM CLASS AND D-LOAD	COVER	
	48" Dia AND SMALLER	OVER 48" Dia
Class II 1000D	7.9'	5.9'
Class III 1350D	8.0' - 10.9'	6.0' - 8.9'
Class III Special 1700D	11.0' - 14.9'	9.0' - 12.9'
Class IV 2000D	15.0' - 17.9'	13.0' - 15.9'
Class IV Special 2500D	18.0' - 21.9'	16.0' - 19.9'
Class V 3000D	22.0' - 26.9'	20.0' - 24.9'
Class V Special 3600D	30.0' - 33.0'	25.0' - 31.0'

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**EXCAVATION AND BACKFILL
CONCRETE PIPE CULVERTS**

NO SCALE

RSP A62DA DATED NOVEMBER 17, 2006 SUPERSEDES STANDARD PLAN A62DA DATED MAY 1, 2006 - PAGE 20 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A62DA

2006 REVISED STANDARD PLAN RSP A62DA

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	540	681

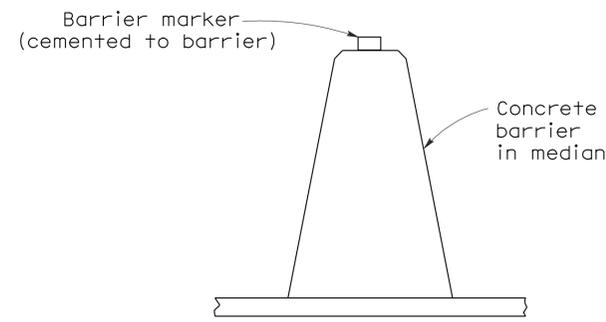
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

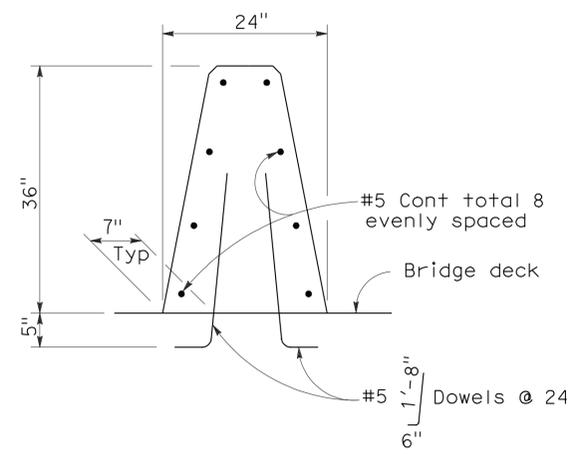
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 5-21-12

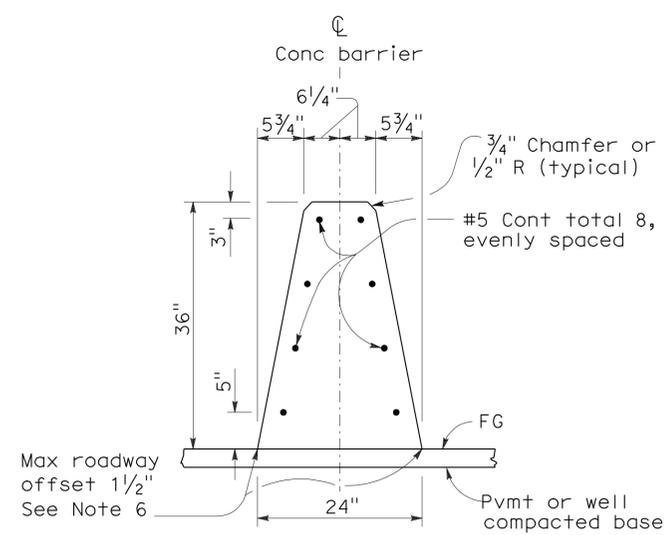
2006 REVISED STANDARD PLAN RSP A76A



CONCRETE BARRIER TYPE 60 DELINEATION
See Notes 7 and 8



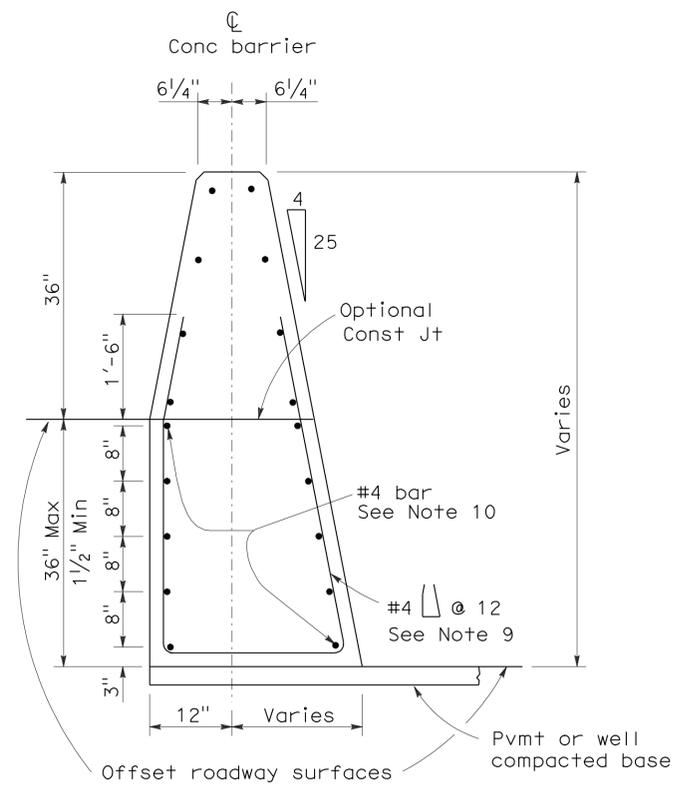
CONCRETE BARRIER TYPE 60A
Details similar to Type 60 except as noted.



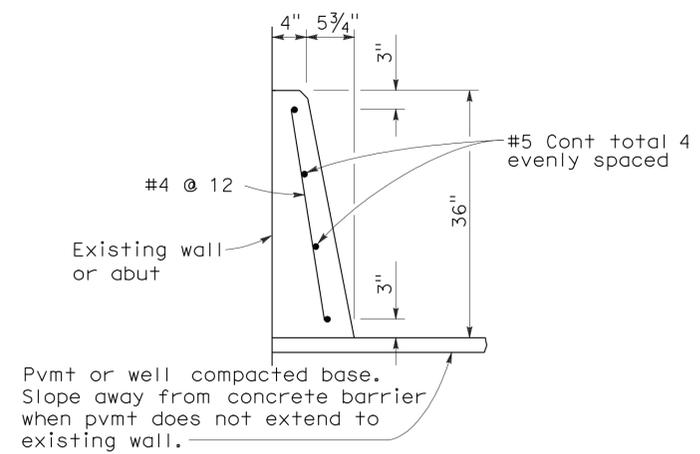
CONCRETE BARRIER TYPE 60

NOTES:

- See Standard Plan A76B for details of Concrete Barrier Type 60 end anchors, connection to structures and transitions to Concrete Barrier Type 50 and Concrete Barrier Type 60S.
- See Standard Plan A76C for Concrete Barrier Type 60 transitions at bridge column and sign pedestals.
- Where glare screen is required on Concrete Barrier Type 60, use Concrete Barrier Type 60G.
- Where the concrete barrier is added to the face of existing concrete structure, match existing weep holes.
- Expansion joints in concrete barrier shall be located at all deck, pavement and principal wall joints. Expansion joint filler material shall be the same size as joint or 1/2" minimum.
- Where roadway offset is greater than 1 1/2", see Concrete Barrier Type 60C.
- Barrier delineation to be used when required by the Special Provisions.
- Spacing of barrier markers to match spacing of raised pavement markers on the adjacent median edgeline pavement delineation.
- Reinforcing stirrup not required for roadway offsets less than 1'-0".
- For roadway surfaces offset greater than 1 1/2" to 3", no rebars required. For roadway surfaces offset greater than 3" to 8" use two #4 rebars at 3" above the lower roadway surface. For roadway surfaces offset greater than 8" to 12", use two #4 rebars at 3" above the lower roadway surface and two #4 rebars at 8" above the lower roadway surface. For roadway surfaces offset greater than 12" to 36", use two #4 rebars at 3" above the lower roadway surface and two #4 rebars at every 8" increment vertical spacing above the first two #4 rebars.



CONCRETE BARRIER TYPE 60C
Details similar to Type 60 except as noted. Concrete barrier end anchor when necessary. 36" roadway surfaces offset shown.



CONCRETE BARRIER TYPE 60D

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
CONCRETE BARRIER TYPE 60
NO SCALE

RSP A76A DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A76A
DATED MAY 1, 2006 - PAGE 29 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A76A

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	541	681

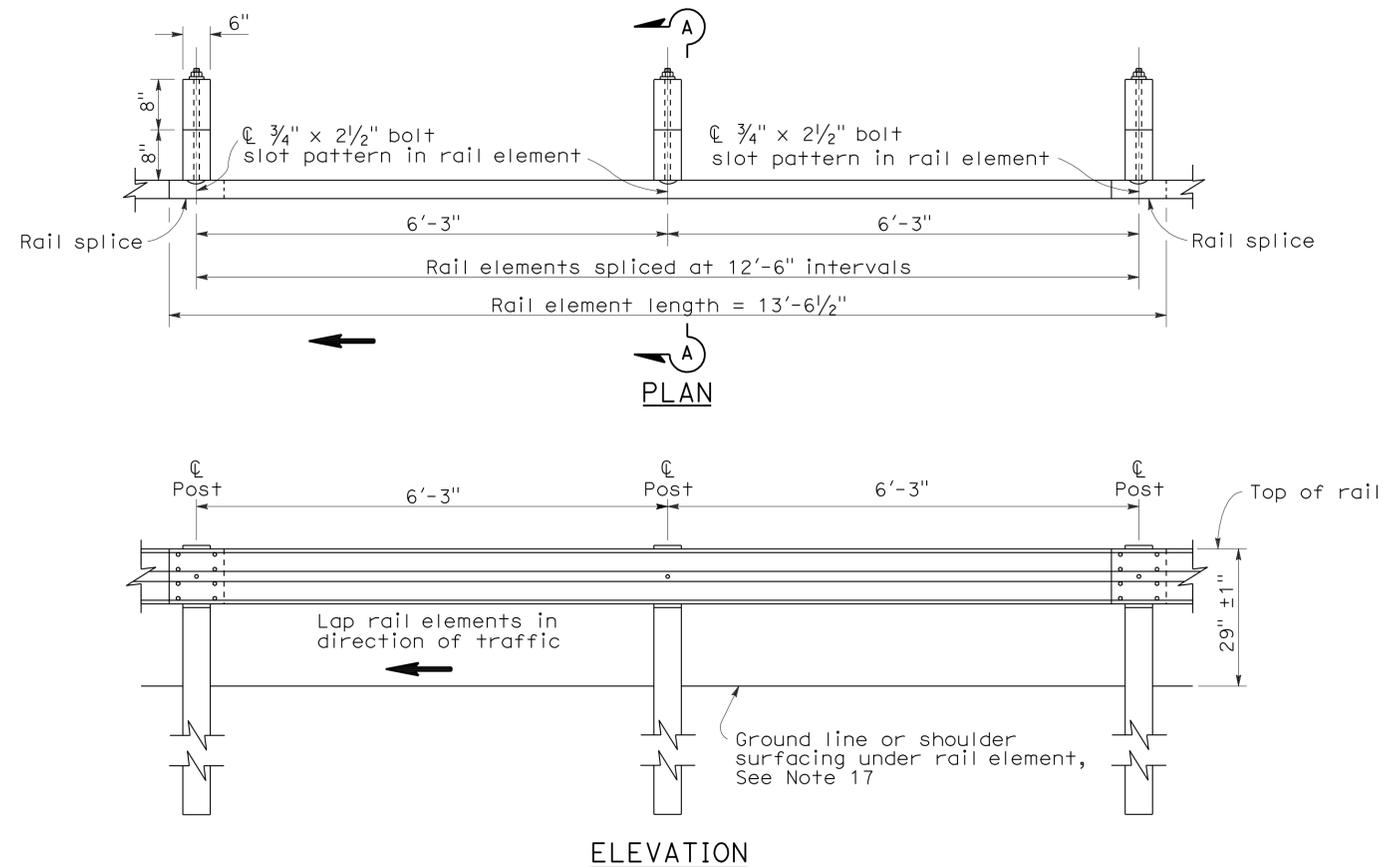
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

May 20, 2011
PLANS APPROVAL DATE

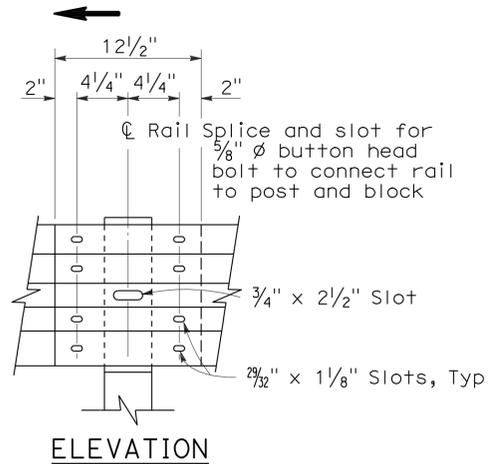
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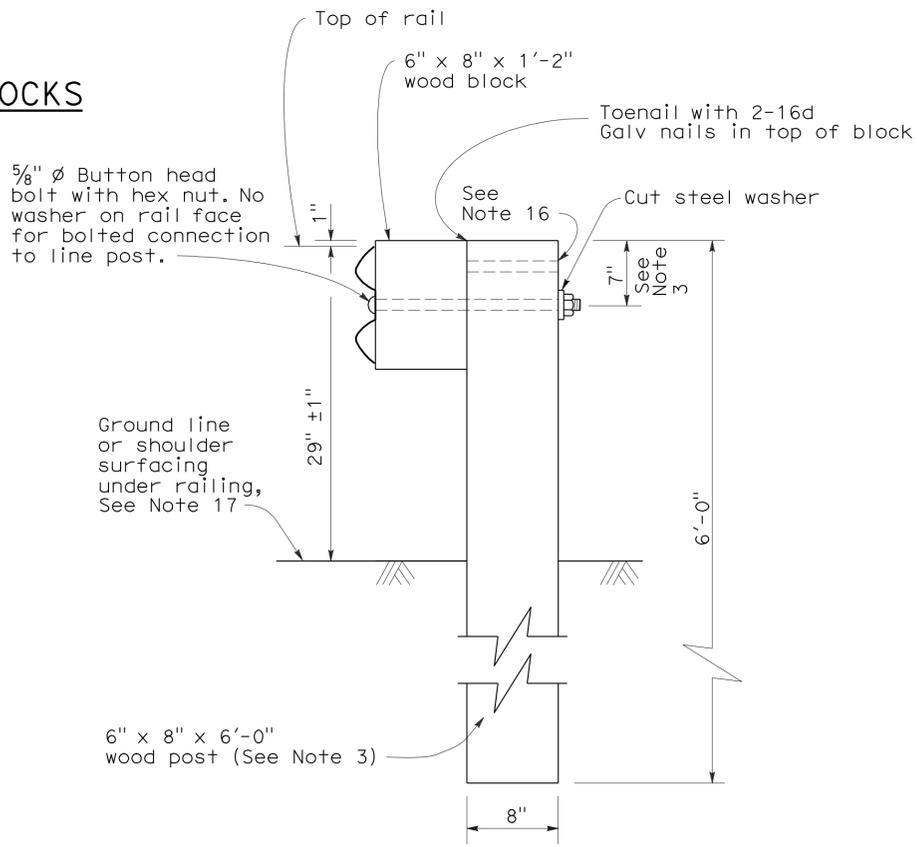
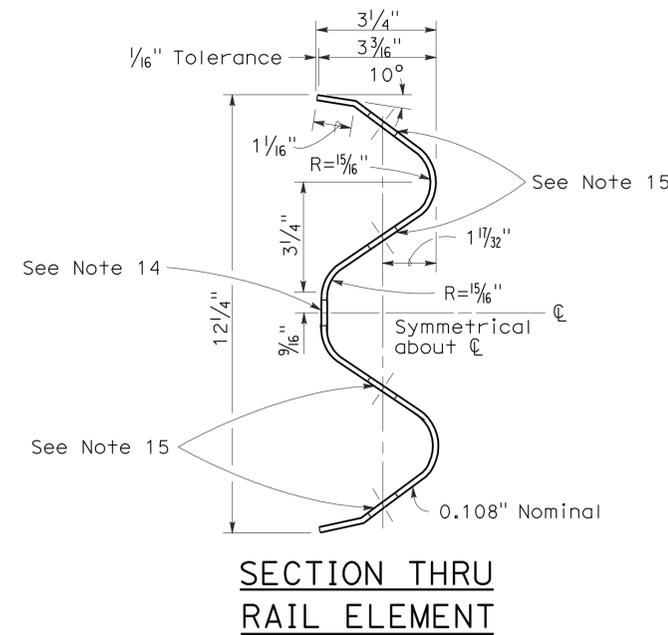


METAL BEAM GUARD RAILING WITH WOOD POST AND BLOCKS



RAIL ELEMENT SPLICE DETAIL

- Connect the over lapped end of the rail elements with 5/8" ϕ x 1 3/8" button head oval shoulder splice bolts inserted into the 2 3/32" x 1 1/8" slots and bolted together with 5/8" ϕ recessed hex nuts. Recess of hex nut points toward rail element. A total of 8 bolts and nuts are to be used at each rail splice connection.
- The ends of the rail elements are to be overlapped in the direction of traffic (see details).
- Where end cap is to be attached to the end of a rail element, a total of 4 of the above described splice bolts and nuts are to be used.



SECTION A-A TYPICAL WOOD LINE POST INSTALLATION

See Note 4

NOTES:

- For details of steel post installations, see Standard Plan A77A2.
- For details of standard hardware used to construct guard railing, see Standard Plan A77B1.
- For details of wood posts and wood blocks used to construct guard railing, see Standard Plan A77C1.
- For additional installation details, see Standard Plan A77C3.
- Guard railing post spacing to be 6'-3" center to center, except as otherwise noted.
- For guard railing typical layouts, see the A77E, A77F and A77G Series of Standard Plans.
- For terminal system end treatment details, see the A77L Series of Standard Plans. To connect railing to terminal system end treatment, transition the top of railing height at a ratio of 120:1 to terminal system end treatment height plus one 12'-6" standard railing section at the transitioned height for a horizontal connection to the end treatment.
- For guard railing end anchor details, see Standard Plans A77H1 and A77I2.
- For details of guard railing transition to bridge railing, see Standard Plan A77J4.
- For additional details of guard railing connection to bridge railings, see Standard Plans A77J1, A77J2 and A77K1.
- For guard railing connection details to abutments and walls, see Standard Plan A77J3.
- Direction of adjacent traffic indicated by \rightarrow .
- For typical guard railing delineation and dike positioning details, see Standard Plan A77C4.
- Slotted hole for bolted connection of rail element to block and post. See "Section Thru Rail Element".
- Slotted holes for splice bolts to overlap ends of rail element. See "Section Thru Rail Element".
- Additional hole in uppermost portion of line post is for potential future adjustments of railing height. See Standard Plan A77C1.
- Install posts in soil.

METAL BEAM GUARD RAILING STANDARD RAILING SECTION (WOOD POST WITH WOOD BLOCK)

NO SCALE

RSP A77A1 DATED MAY 20, 2011 SUPERSEDES STANDARD PLAN A77A1 DATED MAY 1, 2006 - PAGE 41 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77A1

2006 REVISED STANDARD PLAN RSP A77A1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	543	681

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

May 20, 2011
PLANS APPROVAL DATE

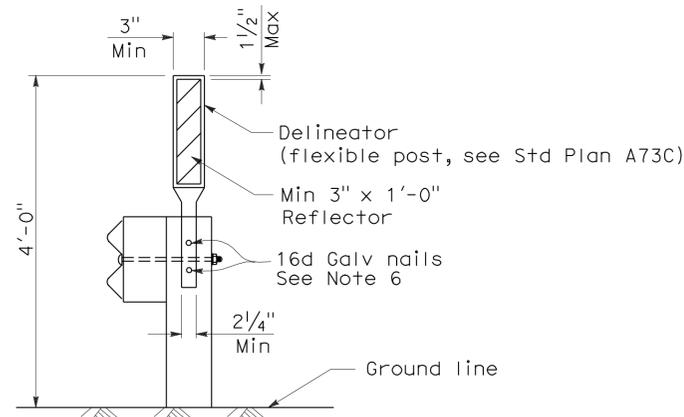
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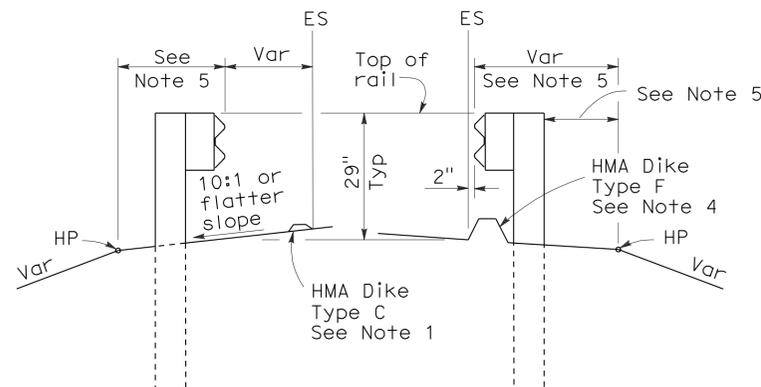
NOTES:

1. When necessary to place dike in front of face of guard railing, only Type C dike may be used. For dike details, see Standard Plan A87B.
2. For standard railing post embedment, see Standard Plans A77C3.
3. Guard railing delineation to be used where shown on the Project Plans.
4. When dike or curb is placed under guard railing, the maximum height of the dike or curb shall be 4". Mountable dike should not be used. For dike and curb details, see Standard Plans A87A and A87B.
5. For details of typical distance between the face of rail and hinge point, see Standard Plan A77C3.
6. For steel line posts, use 1/4" - 20 self-tapping screws in 0.22" diameter holes or 1/4" bolts in 3/32" diameter holes.



GUARD RAILING DELINEATION

See Note 3



DIKE POSITIONING

See Note 1

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TYPICAL RAILING DELINEATION
AND DIKE POSITIONING DETAILS**

NO SCALE

RSP A77C4 DATED MAY 20, 2011 SUPERSEDES RSP A77C4 DATED JUNE 6, 2008 AND STANDARD PLAN A77C4 DATED MAY 1, 2006 - PAGE 47 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77C4

2006 REVISED STANDARD PLAN RSP A77C4

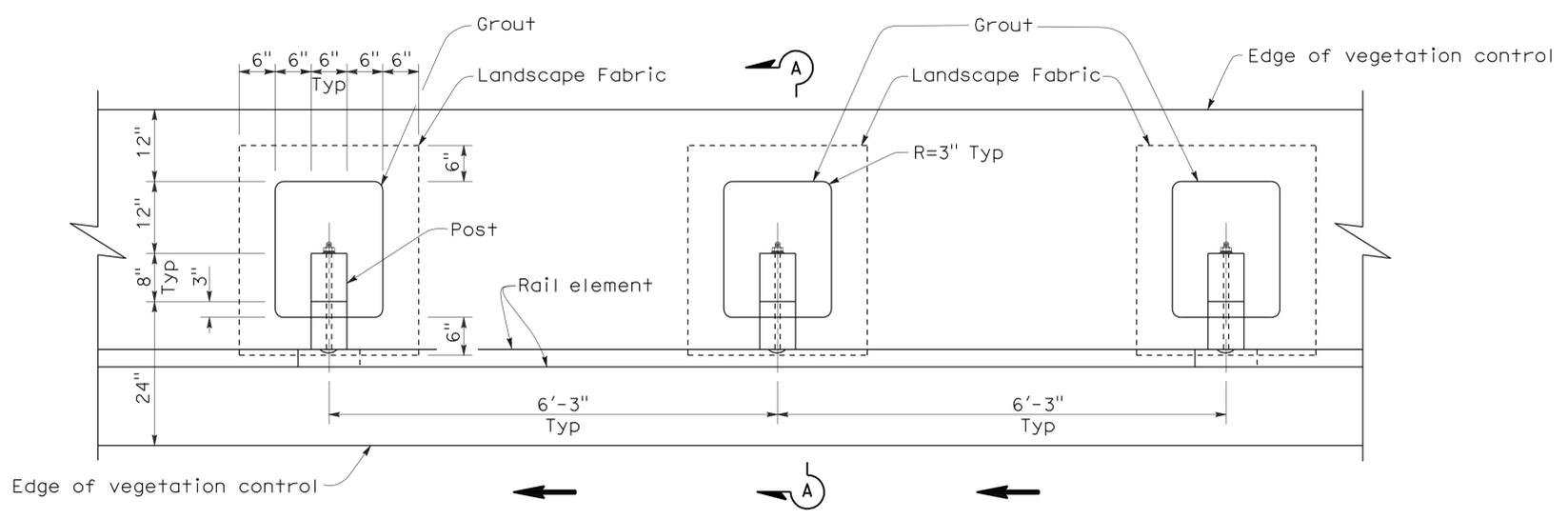
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	544	681

Randell D. Hiatt
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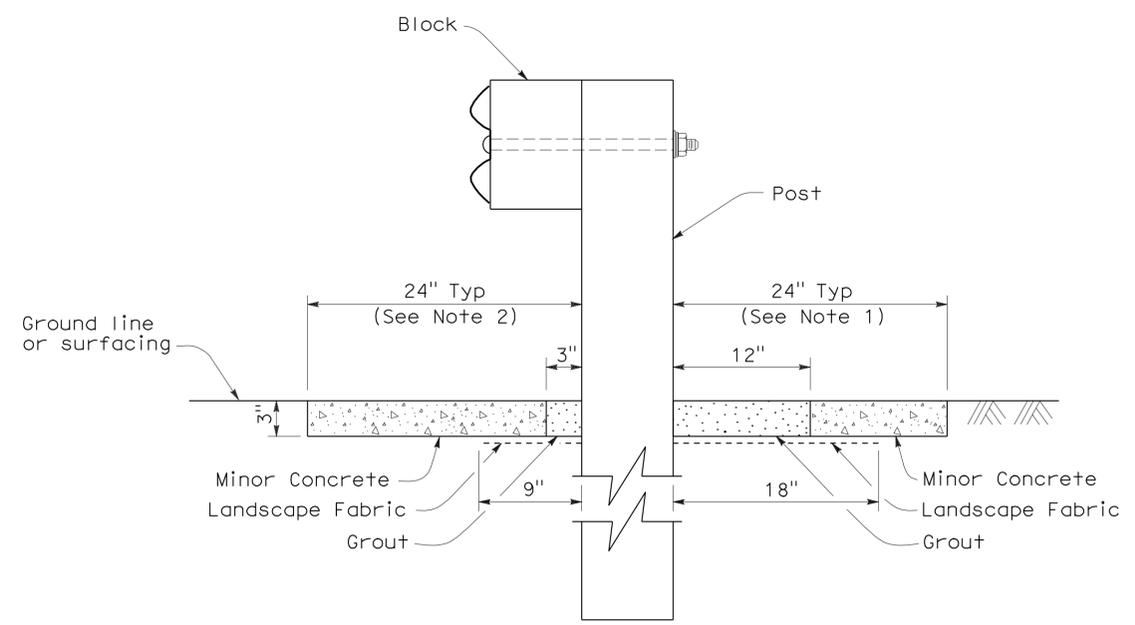
October 20, 2006
PLANS APPROVAL DATE

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To accompany plans dated 5-21-12



PLAN



SECTION A-A

NOTES:

1. Where the distance between back of post and hinge point is less than 24", vegetation control to be constructed flush with the back edge of the post.
2. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 24" in front of the post, construct vegetation control to the edge of paved shoulder.
3. Direction of adjacent traffic indicated by ←.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TYPICAL VEGETATION CONTROL
STANDARD RAILING SECTION**

NO SCALE

NSP A77C5 DATED OCTOBER 20, 2006 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP A77C5

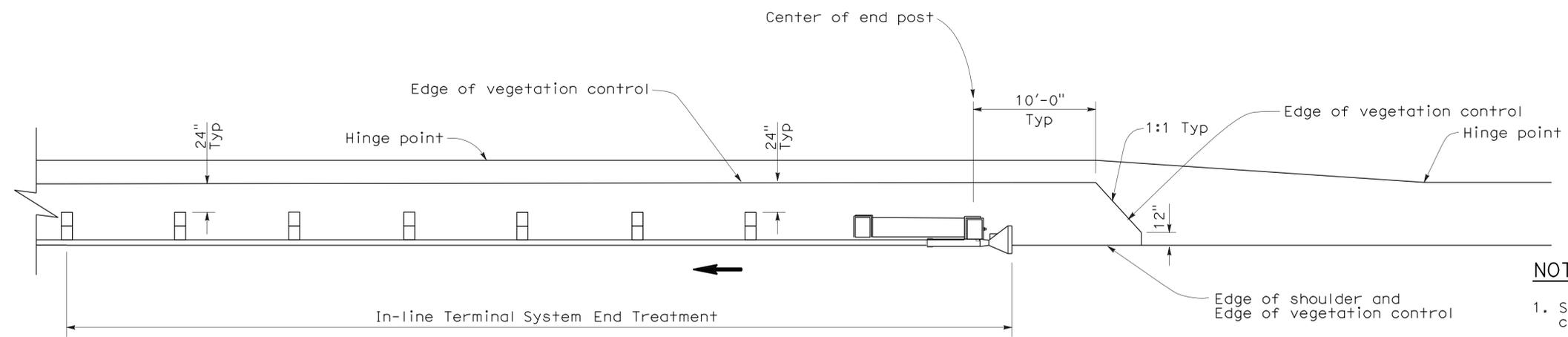
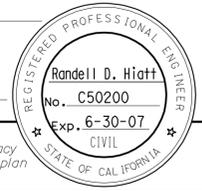
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	545	681

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October 20, 2006
PLANS APPROVAL DATE

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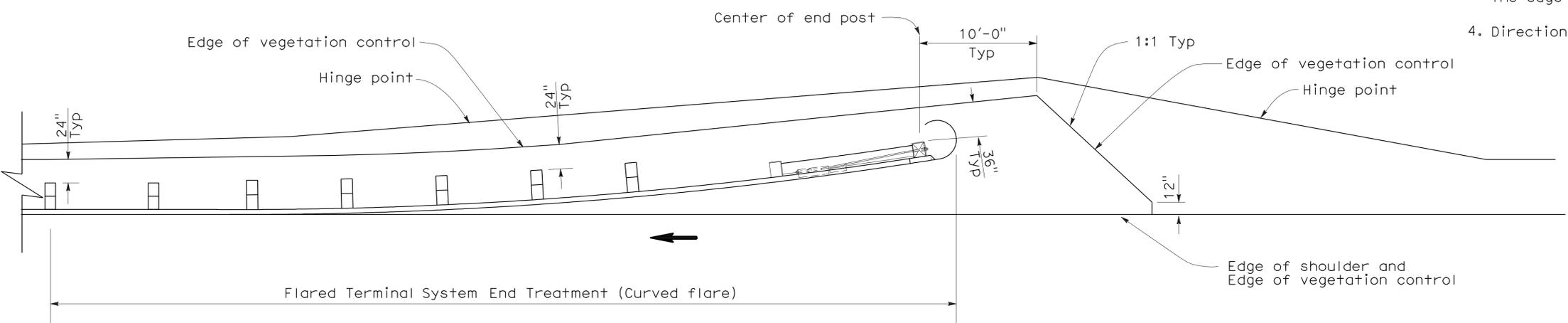
To accompany plans dated 5-21-12



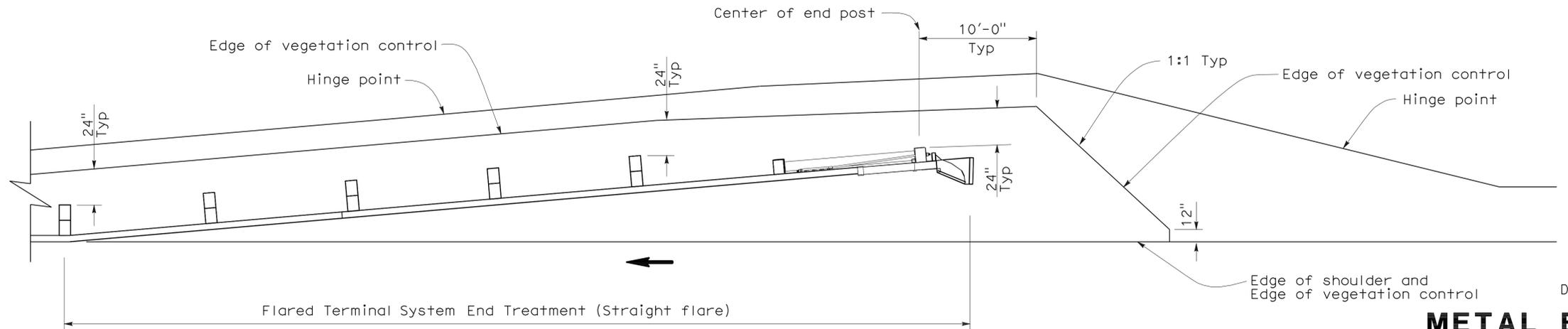
PLAN

NOTES:

1. See New Standard Plan NSP A77C5 for additional vegetation control details.
2. Where the distance between back of post and hinge point is less than 24", vegetation control to be constructed flush with the back edge of the post.
3. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 24" in front of the post, construct vegetation control to the edge of paved shoulder.
4. Direction of adjacent traffic indicated by ←.



PLAN



PLAN

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TYPICAL VEGETATION CONTROL
FOR TERMINAL SYSTEM END TREATMENTS**

NO SCALE
NSP A77C6 DATED OCTOBER 20, 2006 SUPPLEMENTS THE STANDARD
PLANS BOOK DATED MAY 2006.

NEW STANDARD PLAN NSP A77C6

2006 NEW STANDARD PLAN NSP A77C6

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	546	681

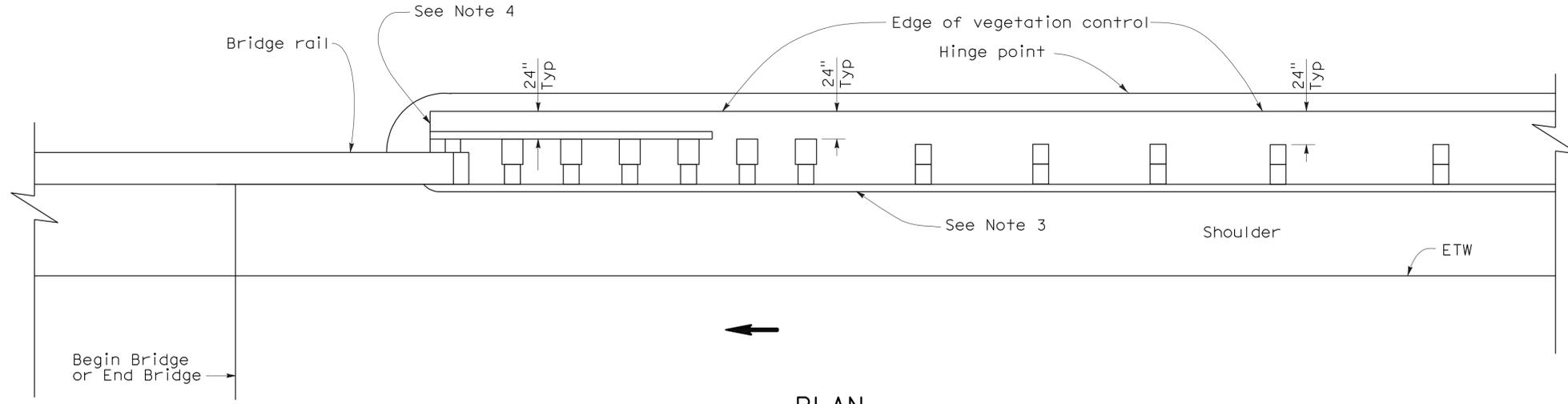
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

October 20, 2006
PLANS APPROVAL DATE

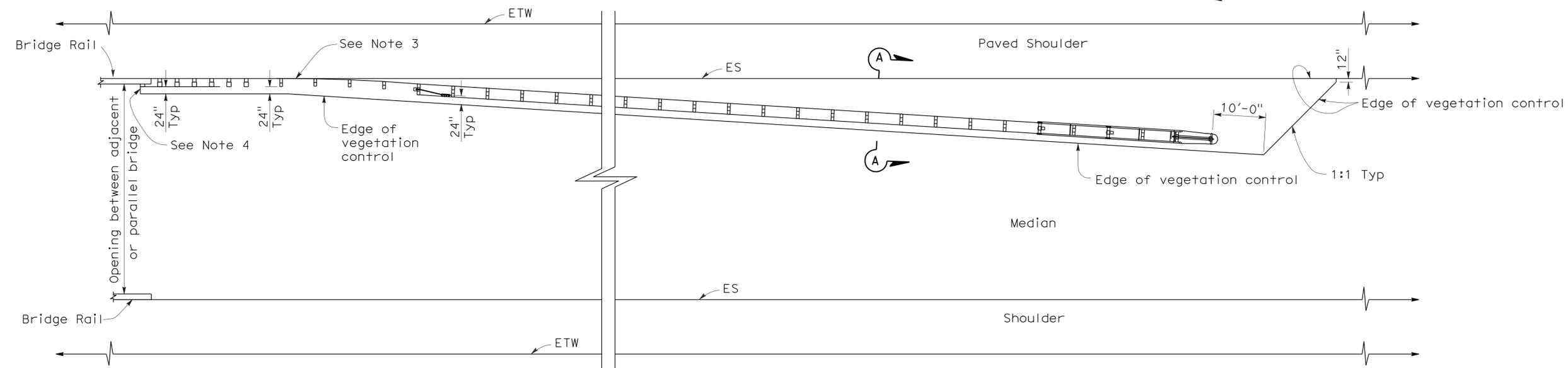
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To accompany plans dated 5-21-12

2006 NEW STANDARD PLAN NSP A77C7



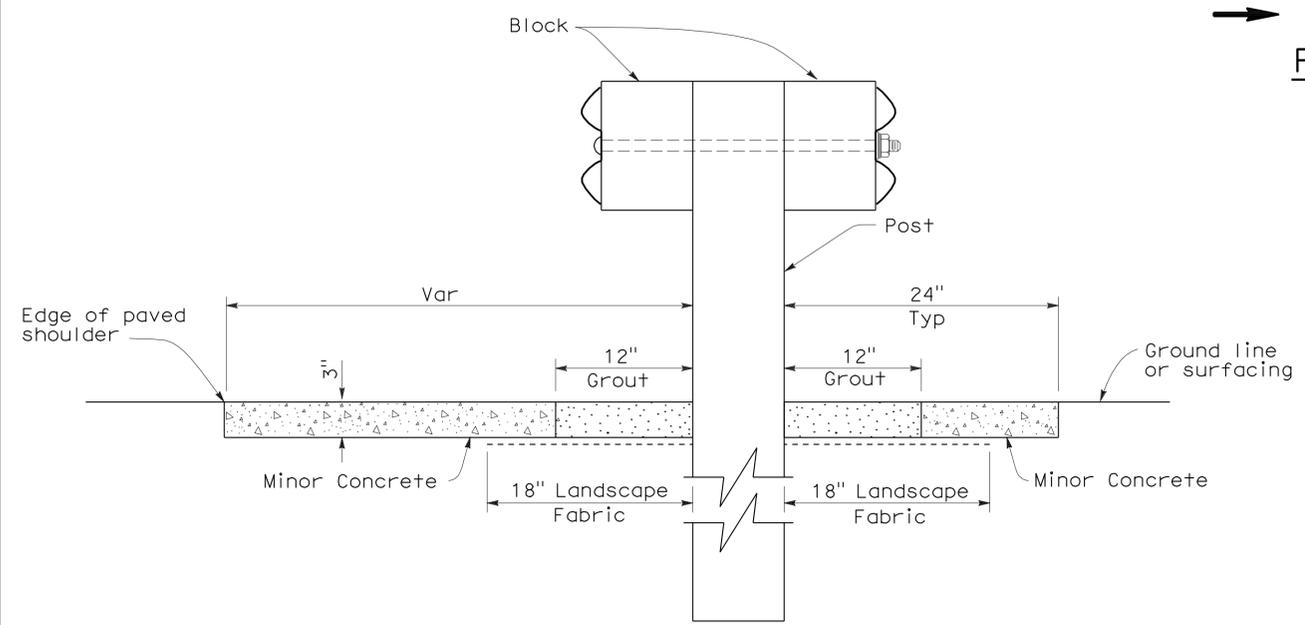
PLAN



PLAN

NOTES:

1. See New Standard Plan NSP A77C5 for additional vegetation control details.
2. Where the distance between back of post and hinge point is less than 24", vegetation control to be constructed flush with the back edge of the post.
3. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 24" in front of the post, construct vegetation control to the edge of paved shoulder.
4. End vegetation control at end of backside rail element.
5. Direction of adjacent traffic indicated by ←.



SECTION A-A

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TYPICAL VEGETATION CONTROL
AT STRUCTURE APPROACH
AND DEPARTURE**

NO SCALE
NSP A77C7 DATED OCTOBER 20, 2006 SUPPLEMENTS THE STANDARD
PLANS BOOK DATED MAY 2006.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	547	681

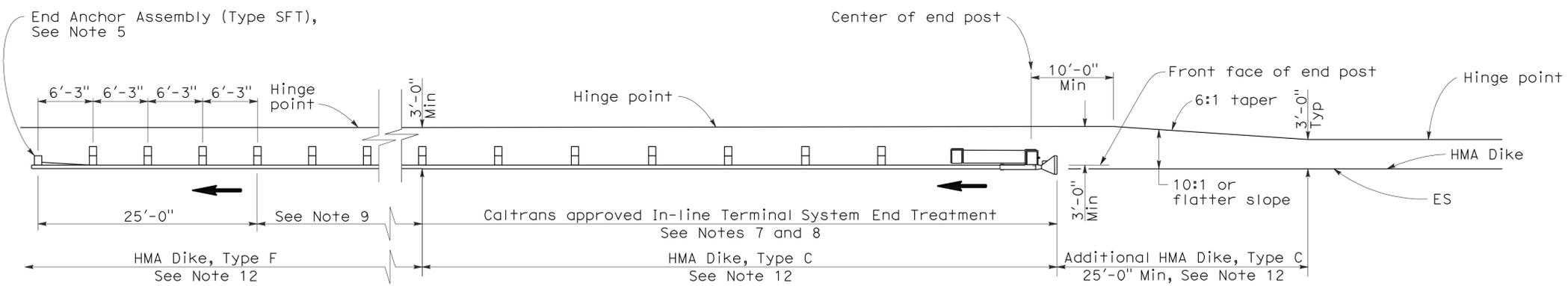
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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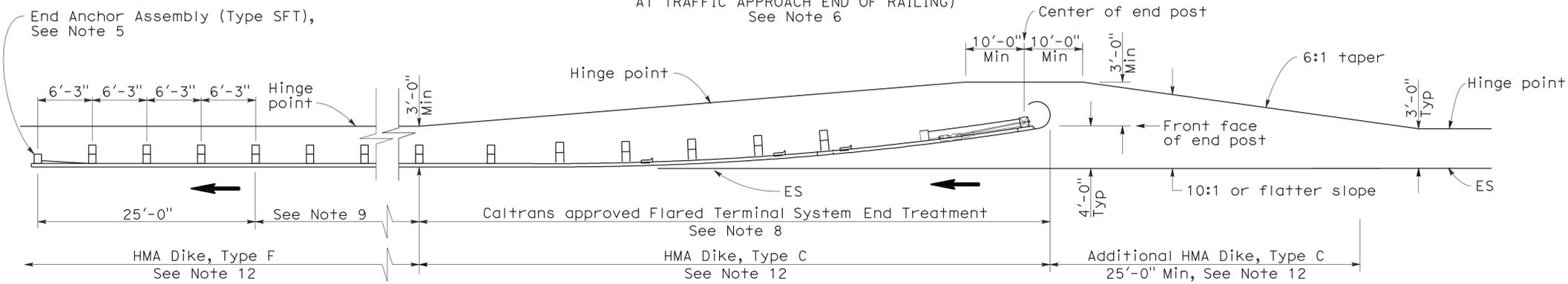
To accompany plans dated 5-21-12

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STATE OF CALIFORNIA



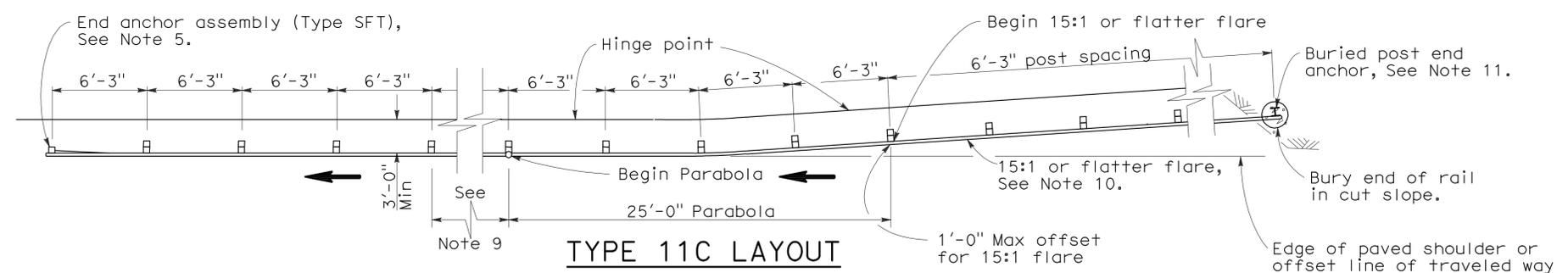
TYPE 11A LAYOUT

(EMBANKMENT GUARD INSTALLATION WITH IN-LINE END TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Note 6



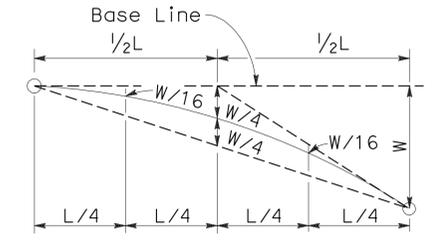
TYPE 11B LAYOUT

(EMBANKMENT GUARD RAILING INSTALLATION WITH FLARED END TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Note 6

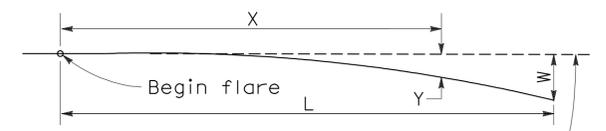


TYPE 11C LAYOUT

(EMBANKMENT GUARD RAILING INSTALLATION WITH BURIED END ANCHOR TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 6 and 12



TYPICAL PARABOLIC LAYOUT

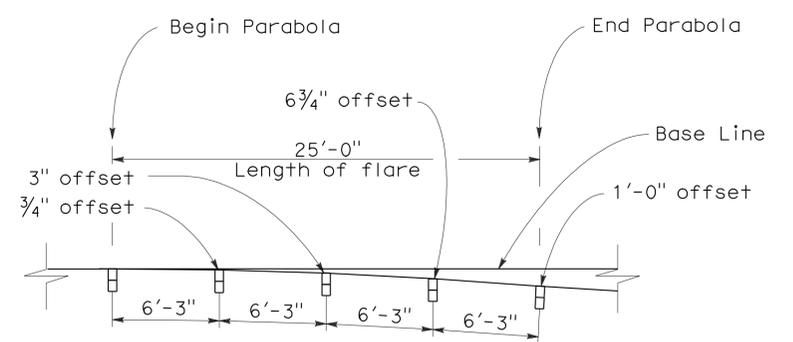


Base Line (Edge of paved shoulder or offset line of edge of traveled way)

$$Y = \frac{WX^2}{L^2}$$

Y = Offset from base line
W = Maximum offset
X = Distance along base line
L = Length of flare

PARABOLIC FLARE OFFSETS



TYPICAL FLARE OFFSETS FOR 1 FOOT MAX END OFFSET

NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1, and A77C2.
- Guard rail post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or recycled plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by \rightarrow .
- For End Anchor Assembly (Type SFT) details, see Standard Plan A77H1.
- Layout Types 11A, 11B or 11C are typically used where guard railing is recommended to shield embankment slopes and a crashworthy end treatment is required for only one direction of traffic.
- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height and side slope), construction of additional guard railing (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
- The 15:1 or flatter flare used with buried end anchors is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the buried post end anchor used with Type 11C Layout, see Standard Plan A77I2.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
METAL BEAM GUARD RAILING
TYPICAL LAYOUTS FOR EMBANKMENTS
NO SCALE

RSP A77E1 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77E1
DATED MAY 1, 2006 - PAGE 48 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77E1

2006 REVISED STANDARD PLAN RSP A77E1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	548	681

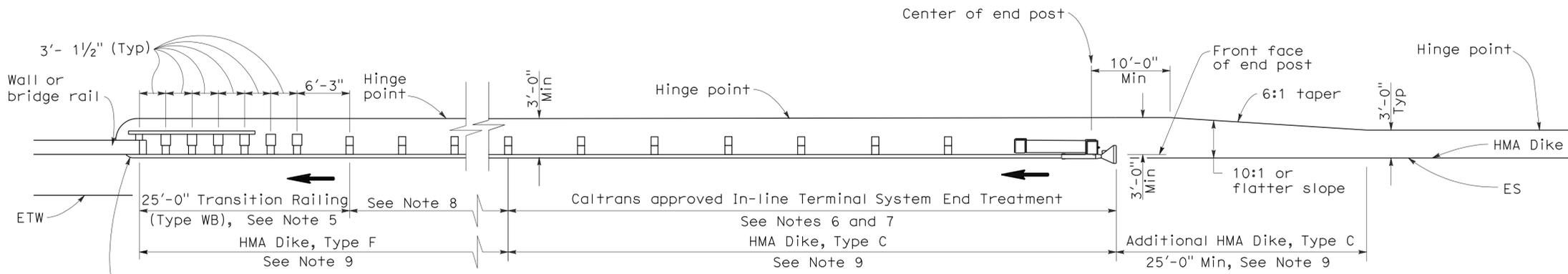
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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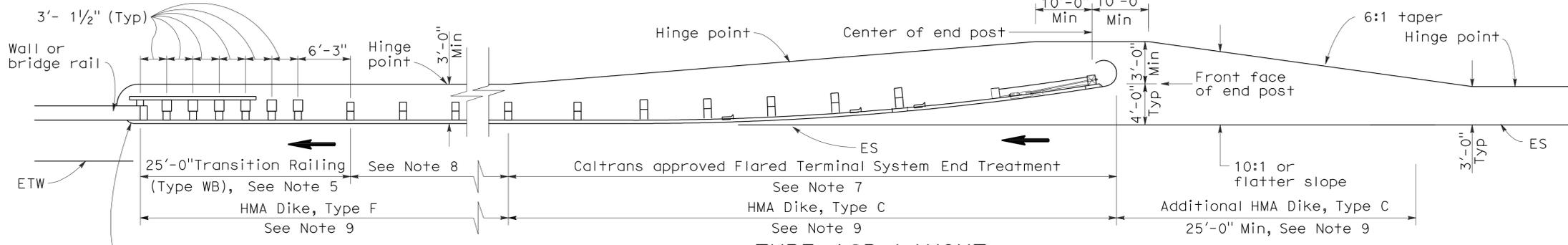
To accompany plans dated 5-21-12

2006 REVISED STANDARD PLAN RSP A77F1



TYPE 12A LAYOUT

(GUARD RAILING INSTALLATION AT STRUCTURE APPROACH WITH AN IN-LINE END TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 10



TYPE 12B LAYOUT

(GUARD RAILING INSTALLATION AT STRUCTURE APPROACH WITH A FLARED END TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 10

NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard rail post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by \rightarrow .
- For Transition Railing (Type WB) details for Types 12A and 12B Layouts, see Standard Plan A77J4.
- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height, side slopes, or other fixed objects), it may be advisable to construct additional guard railing (a length equal to multiples of 12'-6" with 6'-3" post spacing) between the transition railing and end treatment.

- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.
- Type 12A or Type 12B Layouts are typically used:
 - To the right of approaching traffic, at the end of a structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
 - To the left of approaching traffic, at the end of a structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
 - To the right of approaching traffic at the end of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.
 - To the right of approaching traffic at the end of the structure on multilane freeways or expressways with decked median on the bridge.
- See Revised Standard Plan RSP A77F3 for typical layout used left of approaching traffic at the ends of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.

- For additional details of typical connections to bridge rail, see Connection Detail AA on Revised Standard Plans RSP A77J1 and RSP A77J2 and Connection Detail FF on Standard Plans A77K1 and A77K2.
- For additional details of a typical connection to walls or abutments, see Standard Plan A77J3.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TYPICAL LAYOUTS FOR
STRUCTURE APPROACH**

NO SCALE

RSP A77F1 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77F1
DATED MAY 1, 2006 - PAGE 54 OF THE STANDARD PLANS BOOK DATED MAY 2006.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	549	681

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

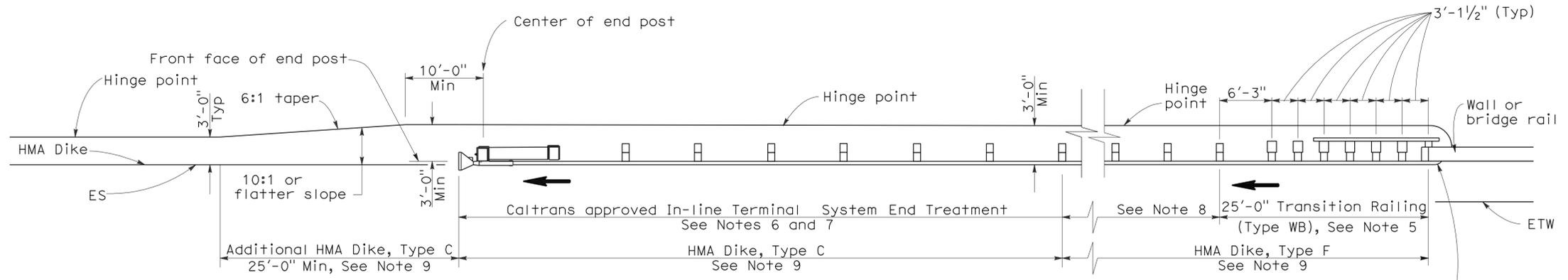
June 6, 2008
PLANS APPROVAL DATE

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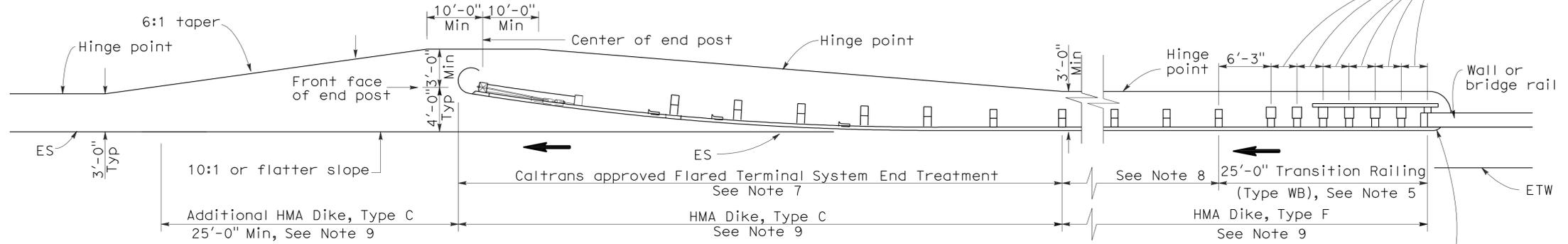
To accompany plans dated 5-21-12

2006 REVISED STANDARD PLAN RSP A77F4



TYPE 12AA LAYOUT

(GUARD RAILING INSTALLATION AT STRUCTURE DEPARTURE WITH AN IN-LINE END TREATMENT AT TRAILING END OF RAILING)
See Notes 9 and 10



TYPE 12BB LAYOUT

(GUARD RAILING INSTALLATION AT STRUCTURE DEPARTURE WITH A FLARED END TREATMENT AT TRAILING END OF RAILING)
See Notes 9 and 10

NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard rail post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by →.
- For Transition Railing (Type WB) details for Types 12AA and 12BB Layouts, see Standard Plan A77J4.
- In-line Terminal System Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height, side slopes, other fixed objects), it may be advisable to construct additional guard railing (a length equal to multiples of 12'-6" with 6'-3" post spacing) between the transition railing and end treatments.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.
- Type 12AA or Type 12BB Layouts are typically used to the right of traffic departing a structure on two-way conventional highways where the roadbed width across the structure is less than 40 feet.
- For additional details of typical connections to bridge rail, see Connection Detail CC on Revised Standard Plan RSP A77J2 and Connection Detail HH on Standard Plans A77k2.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**METAL BEAM GUARD RAILING
TYPICAL LAYOUTS FOR
STRUCTURE DEPARTURE**

NO SCALE

RSP A77F4 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77F4
DATED MAY 1, 2006 - PAGE 57 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77F4

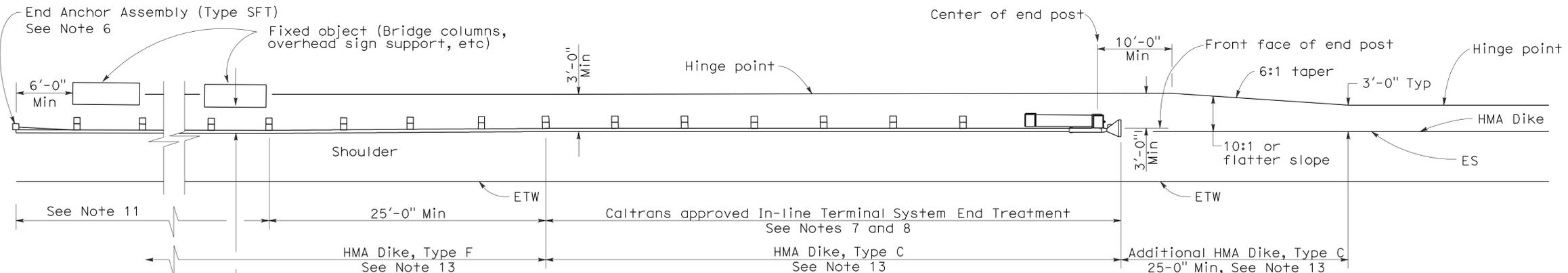
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	550	681

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

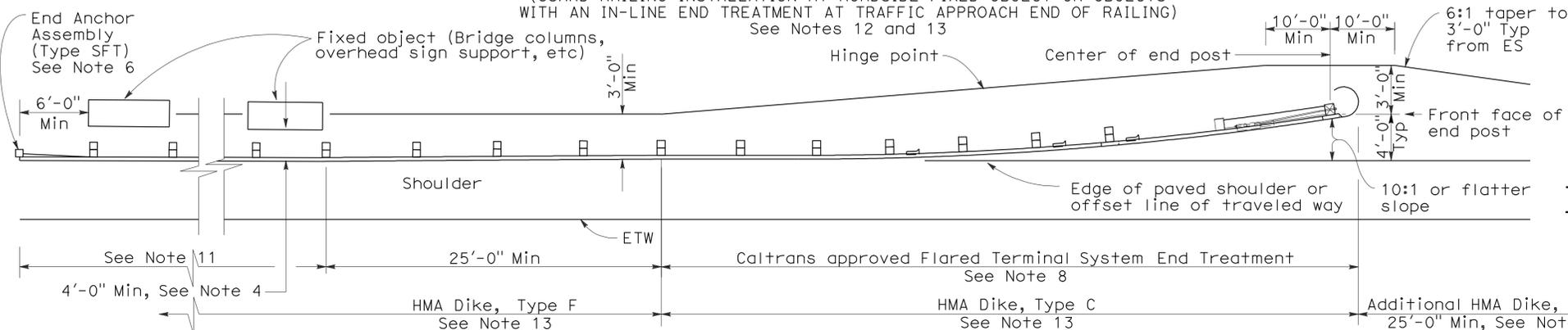
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To accompany plans dated 5-21-12



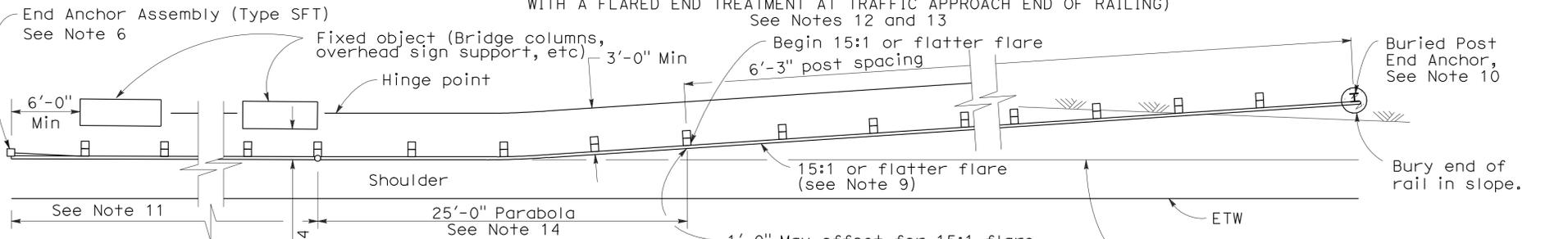
TYPE 16A LAYOUT

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH AN IN-LINE END TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 7 and 8



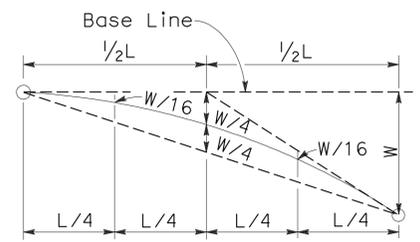
TYPE 16B LAYOUT

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH A FLARED END TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 12 and 13

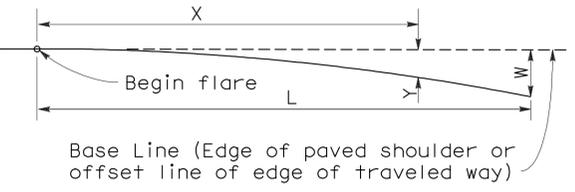


TYPE 16C LAYOUT

(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH A BURIED END ANCHOR TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 12 and 13



TYPICAL PARABOLIC LAYOUT

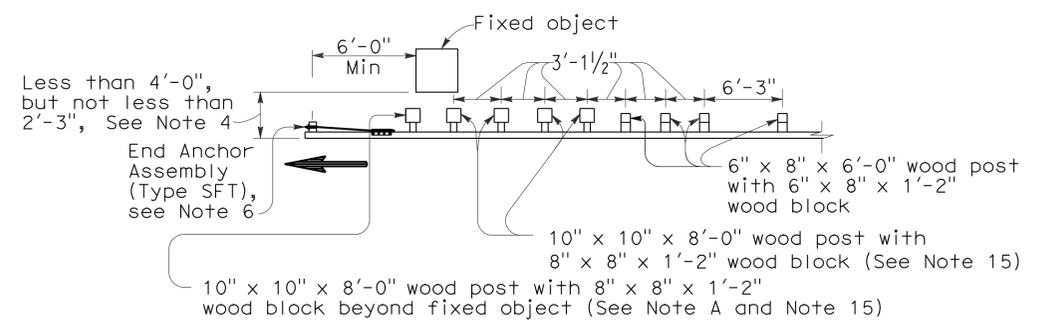


Base Line (Edge of paved shoulder or offset line of edge of traveled way)
Y = Offset from base line
W = Maximum offset
X = Distance along base line
L = Length of flare

PARABOLIC FLARE OFFSETS

NOTES:

- Line post, blocks and hardware to be used are shown on Revised Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard railing post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood line posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object located directly behind standard guard railing sections with post spacing of 6'-3". Construct guard railing as shown in the detail "Strengthened Railing Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 2'-3". Where the clearance is less than 2'-3", a concrete wall or barrier should be constructed to shield the fixed object(s).
- Direction of adjacent traffic indicated by \rightarrow .
- For End Anchor Assembly (Type SFT) details, see Standard Plan A77H1.
- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- The type of terminal system to be used will be shown on the Project Plans.
- The 15:1 or flatter flare used with Type 16C Layout is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the Buried Post End Anchor used with Type 16C Layout, see Standard Plan A77I2.
- As site conditions dictate, construct additional guard railing to shield fixed object(s). Additional guard railing length equal to multiples of 12'-6". Post spacing at 6'-3" except as specified in Note 4.
- Layout Types 16A, 16B or 16C are typically used where guard railing is recommended to shield roadside fixed object(s) and a crashworthy end treatment is required for only one direction of traffic.
- Where placement of dike is required with guard railing, see Revised Standard Plan RSP A77C4 for dike positioning details.
- For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77E1.
- W6 x 15 steel post, 8'-0" in length, with 8" x 8" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood block shown in the "Strengthened Railing Sections Detail".



NOTE A:

For a series of fixed objects (bridge columns, overhead sign supports, etc.) additional 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood blocks at 3'-1/2" center to center spacing are to be used between fixed objects.

STRENGTHENED RAILING SECTIONS FOR FIXED OBJECT

Use strengthened railing sections with Types 16A, 16B or 16C Layouts where minimum clearance between the face of the guard railing and fixed object(s) is less than 4'-0", but not less than 2'-3". See Note 4

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR ROADSIDE FIXED OBJECTS

NO SCALE
RSP A77G3 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77G3
DATED MAY 1, 2006 - PAGE 61 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77G3

2006 REVISED STANDARD PLAN RSP A77G3

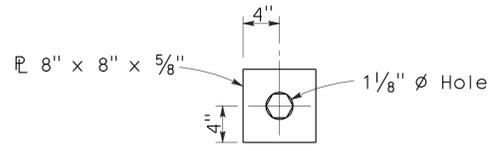
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	551	681

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

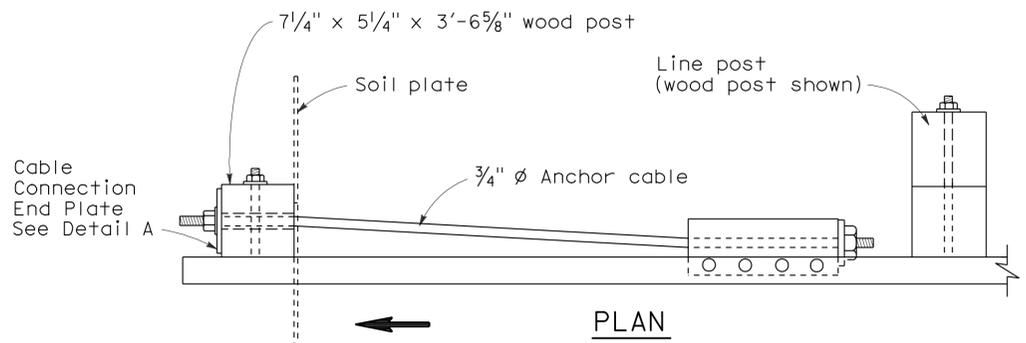
May 20, 2011
PLANS APPROVAL DATE

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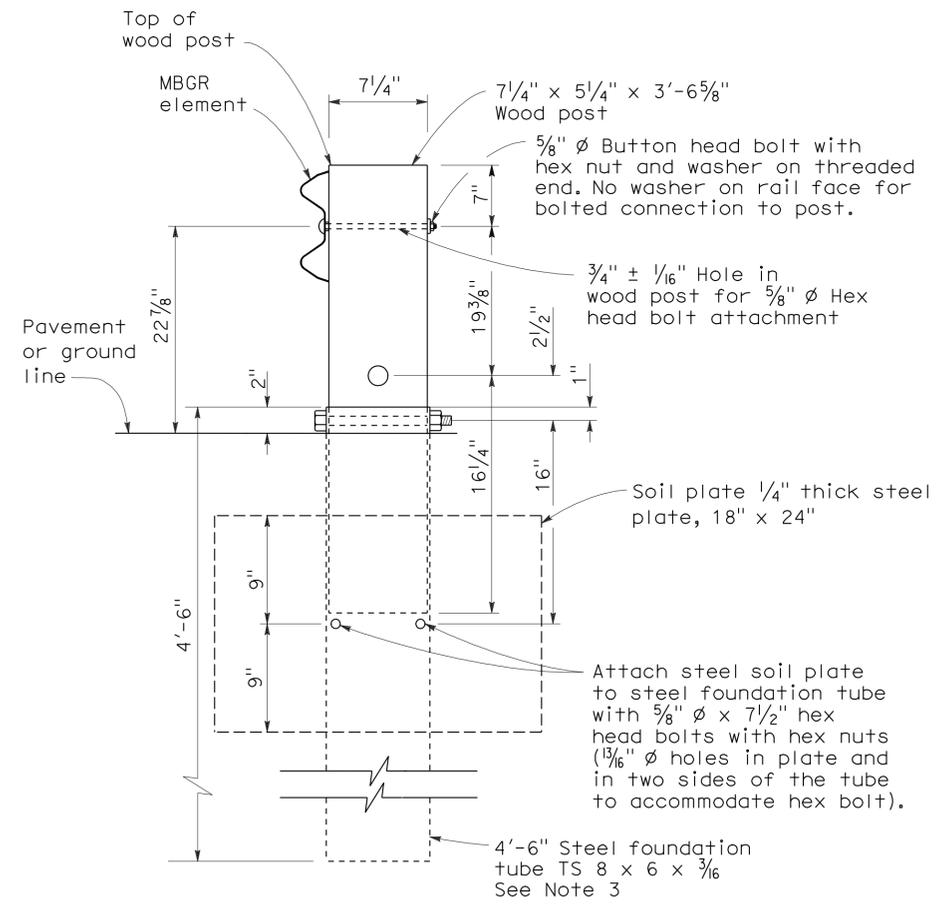
To accompany plans dated 5-21-12



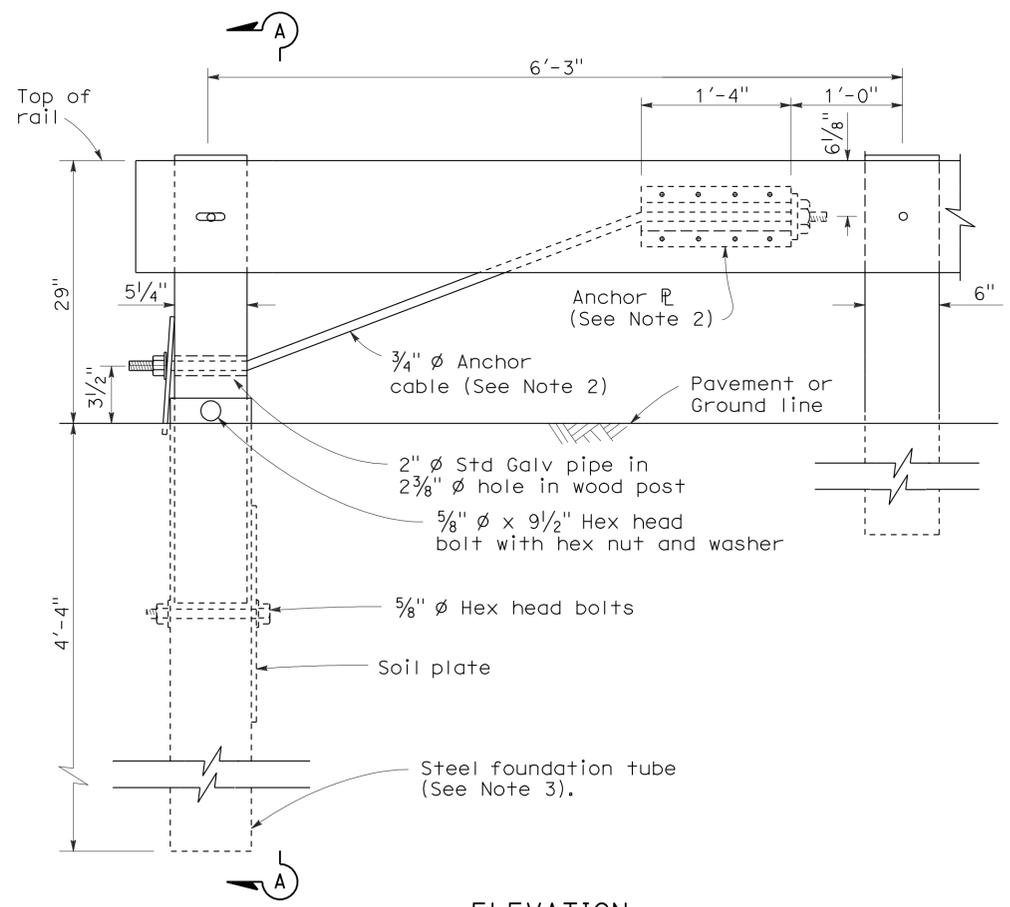
DETAIL A
CABLE CONNECTION
END PLATE



PLAN



SECTION A-A



ELEVATION
END ANCHOR
ASSEMBLY (TYPE SFT)
See Note 1

NOTES:

1. See the A77E, A77F and A77G series of Standard Plans for typical use of End Anchor Assembly (Type SFT).
2. For details of the anchor plate and 3/4" cable, see Standard Plan A77H3.
3. A 6'-0" length steel foundation tube, TS 8 x 6 x 3/16, without a soil plate, may be furnished and installed in place of the 4'-6" length steel foundation tube and soil plate shown. Minimum embedment of the 6'-0" length tube shall be 5'-9". A 5/8" diameter hex head bolt and nut shall be installed in the hole in the 6'-0" length tube to keep the wood post from dropping into the tube.
4. Direction of traffic indicated by \Rightarrow .
5. Install line post, steel foundation tube and soil plate in soil.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

METAL RAILING
END ANCHOR ASSEMBLY
(TYPE SFT)

NO SCALE

RSP A77H1 DATED MAY 20, 2011 SUPERSEDES STANDARD PLAN A77H1
DATED MAY 1, 2006 - PAGE 67 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77H1

2006 REVISED STANDARD PLAN RSP A77H1

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	552	681

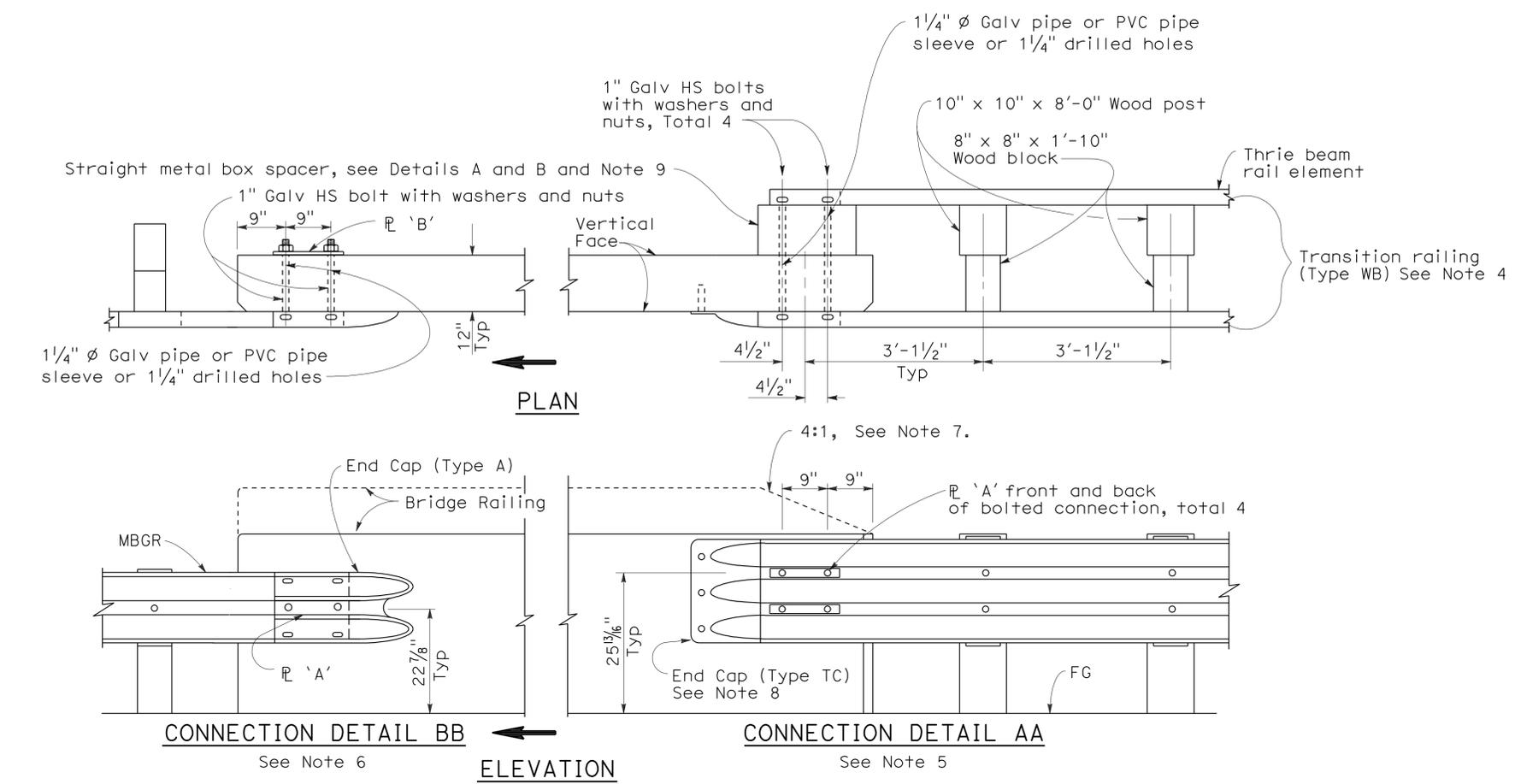
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

May 20, 2011
PLANS APPROVAL DATE

Randell D. Hiatt
REGISTERED PROFESSIONAL ENGINEER
No. C50200
Exp. 6-30-11
CIVIL
STATE OF CALIFORNIA

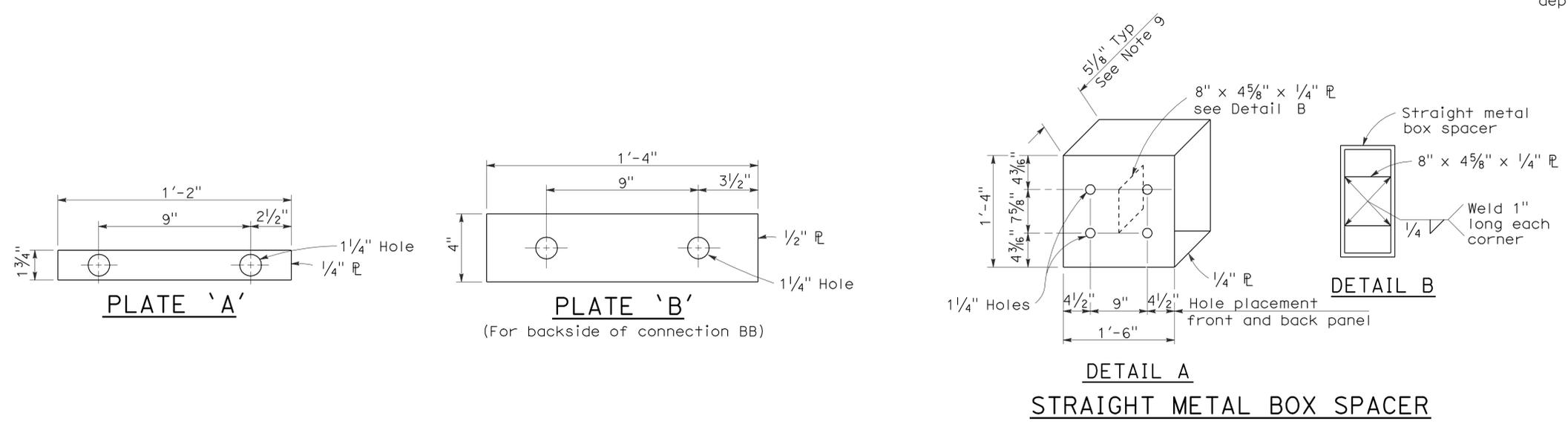
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To accompany plans dated 5-21-12



- NOTES:**
- See Revised Standard Plan RSP A77J2 for additional connection details to bridges without sidewalks.
 - Additional details of posts, blocks and hardware are shown on Standard Plan A77B1, A77C1 and A77C2.
 - Direction of adjacent traffic indicated by \rightarrow .
 - For additional details of Transition Railing (Type WB), see Standard Plan A77J4. Transition Railing (Type WB) transitions the 12 gage w-beam standard railing section of guard railing to a heavier gage nested thrie beam railing section which is connected to the concrete bridge railing.
 - For typical use of Connection Detail AA, see Layout Types 12A and 12B on Revised Standard Plan RSP A77F1, Layout Types 12C and 12D on Standard Plan A77F2, and Layout Type 12E on Revised Standard Plan RSP A77F3.
 - For typical use of Connection Detail BB, see Layout Type 12D (structure departure railing connection) on Standard Plan A77F2 and Layout Type 12DD on Standard Plan A77F5.
 - Where the height of the bridge railing exceeds the height of the thrie beam railing by more than 1" at Connection Detail AA, taper the top of the end of the bridge railing at 4:1 to match the top elevation of the thrie beam rail.
 - For details of End Cap (Type TC), see Standard Plan A77J4.
 - See Standard Plan A77J4 for additional details regarding depth dimension for straight metal box spacer.

GUARD RAILING CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

METAL BEAM GUARD RAILING CONNECTIONS TO BRIDGE RAILINGS WITHOUT SIDEWALKS DETAILS No.1

NO SCALE
RSP A77J1 DATED MAY 20, 2011 SUPERSEDES RSP A77J1 DATED JUNE 6, 2008 AND STANDARD PLAN A77J1 DATED MAY 1, 2006 - PAGE 72 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP A77J1

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	553	681

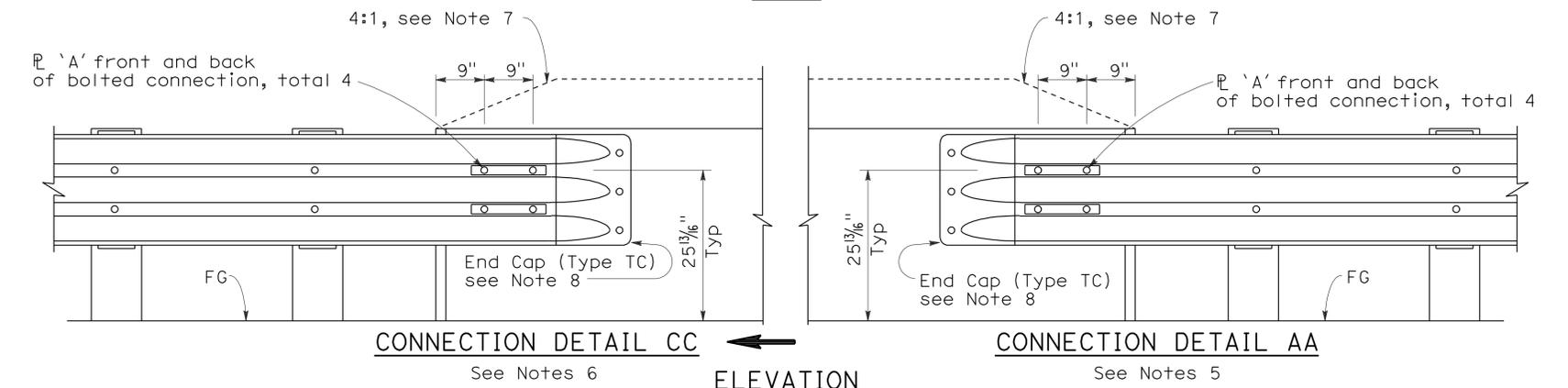
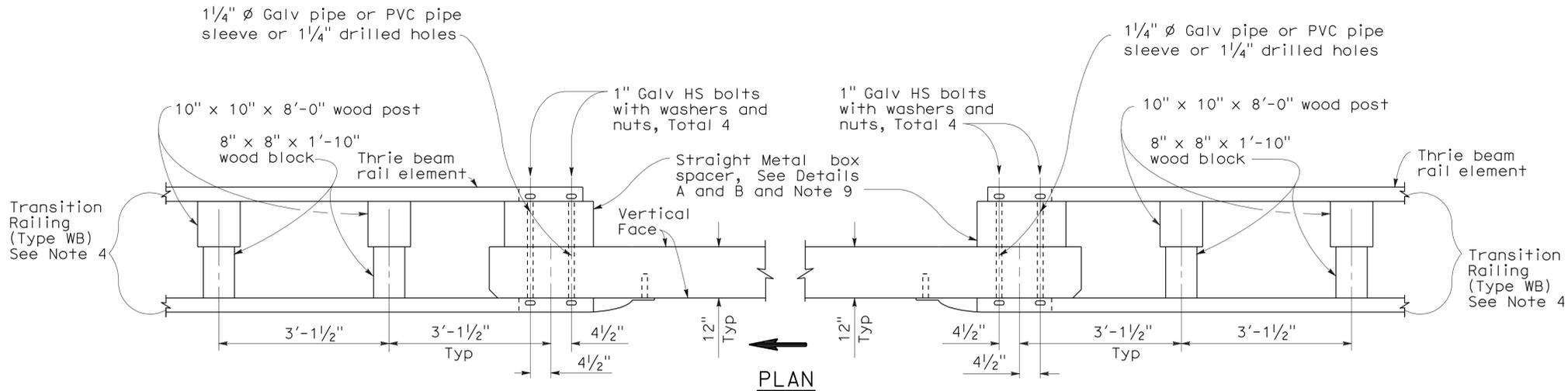
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

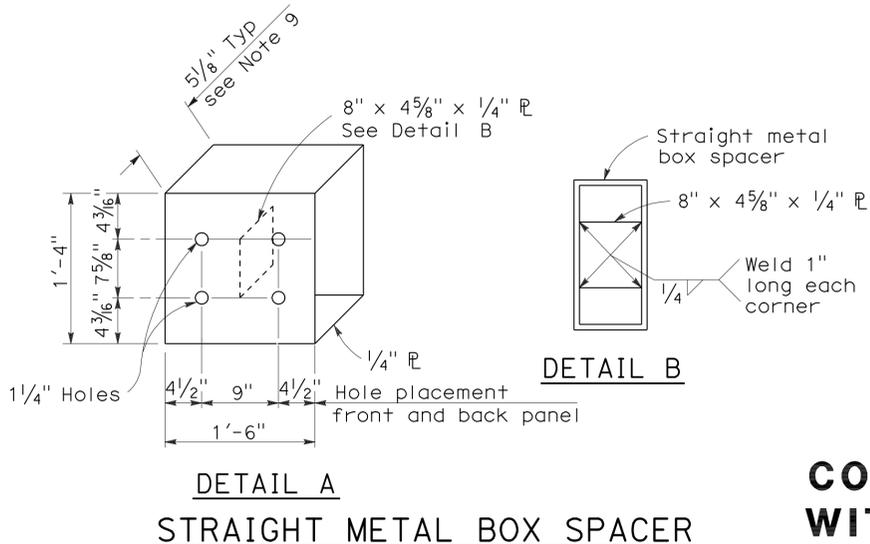
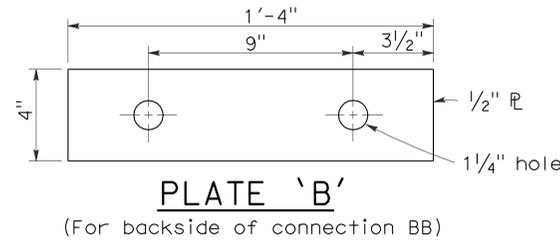
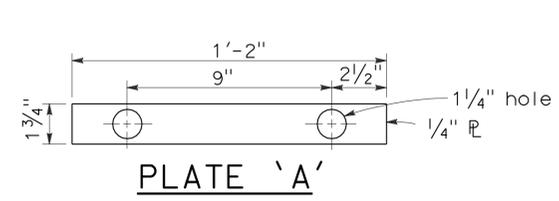
To accompany plans dated 5-21-12



GUARD RAILING CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK

NOTES:

- See Revised Standard Plan RSP A77J1 for additional connection details to bridges without sidewalks.
- Additional details of posts, blocks and hardware are shown on Standard Plan A77B1, A77C1 and A77C2.
- Direction of adjacent traffic indicated by →.
- For additional details of Transition Railing (Type WB), see Standard Plan A77J4. Transition Railing (Type WB) transitions the 12 gage w-beam standard railing section of guard railing to a heavier gage nested thrie beam railing section which is connected to the concrete bridge railing.
- For typical use of Connection Detail AA, see Layout Types 12A and 12B on Revised Standard Plan RSP A77F1, Layout Types 12C and 12D on Standard Plan A77F2, and Layout Type 12E on Revised Standard Plan RSP A77F3.
- For typical use of Connection Detail CC, see Layout Types 12AA and 12BB on Standard Plan A77F4 and Layout Type 12CC on Standard Plan A77F5.
- Where the height of the bridge railing exceeds the height of the thrie beam railing by more than 1" at Connection Detail AA and connection Detail CC, taper the top of the end of the bridge railing at 4:1 to match the top elevation of the thrie beam railing.
- For details of End Cap (Type TC), see Standard Plans A77J4.
- See Standard Plans A77J4 for additional details regarding depth dimension for straight metal box spacer.



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

METAL BEAM GUARD RAILING CONNECTIONS TO BRIDGE RAILINGS WITHOUT SIDEWALKS DETAILS No.2

NO SCALE
RSP A77J2 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77J2
DATED MAY 1, 2006 - PAGE 73 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77J2

2006 REVISED STANDARD PLAN RSP A77J2

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	554	681

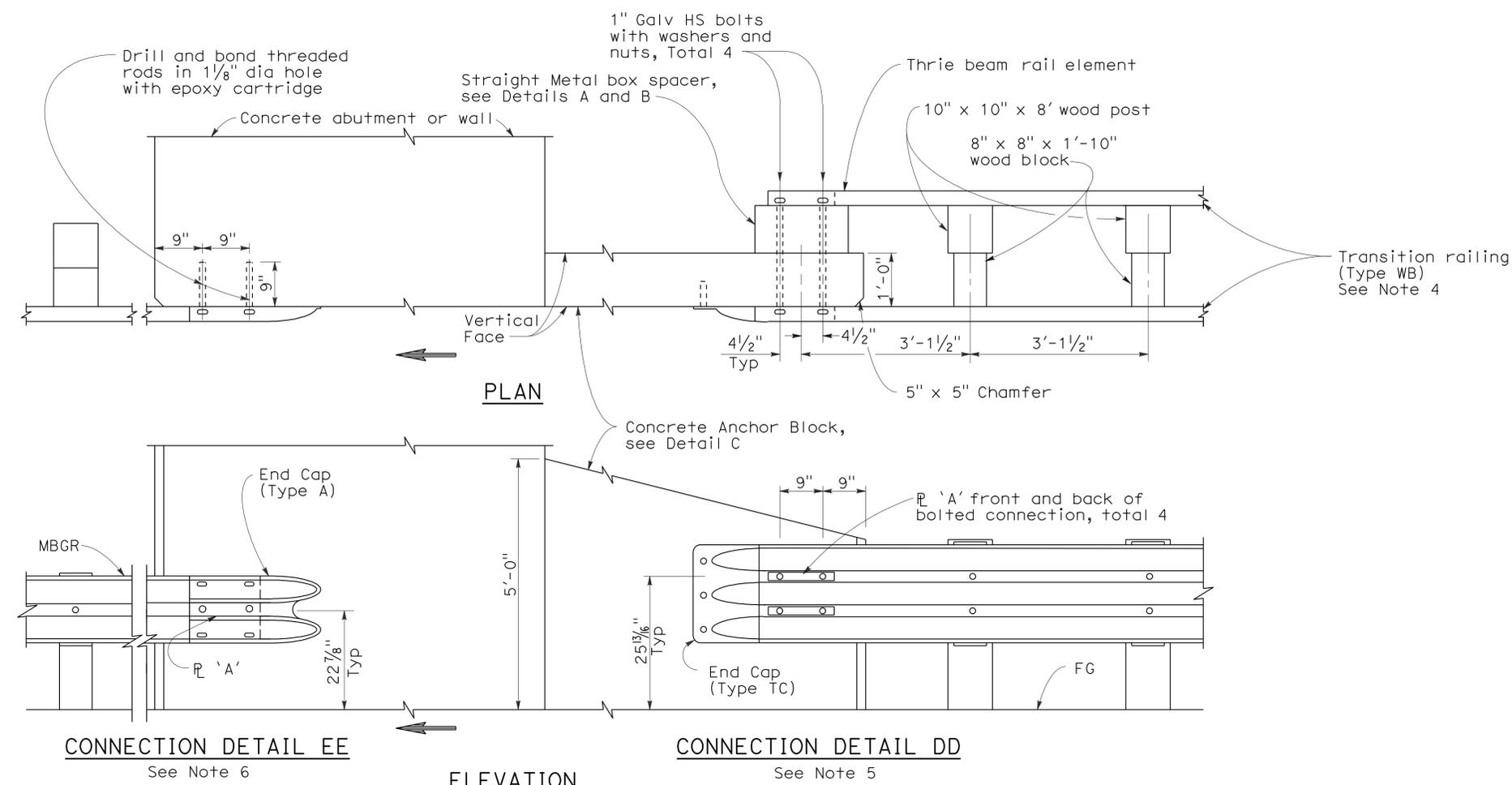
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

May 20, 2011
PLANS APPROVAL DATE

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REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-11
CIVIL
STATE OF CALIFORNIA

To accompany plans dated 5-21-12



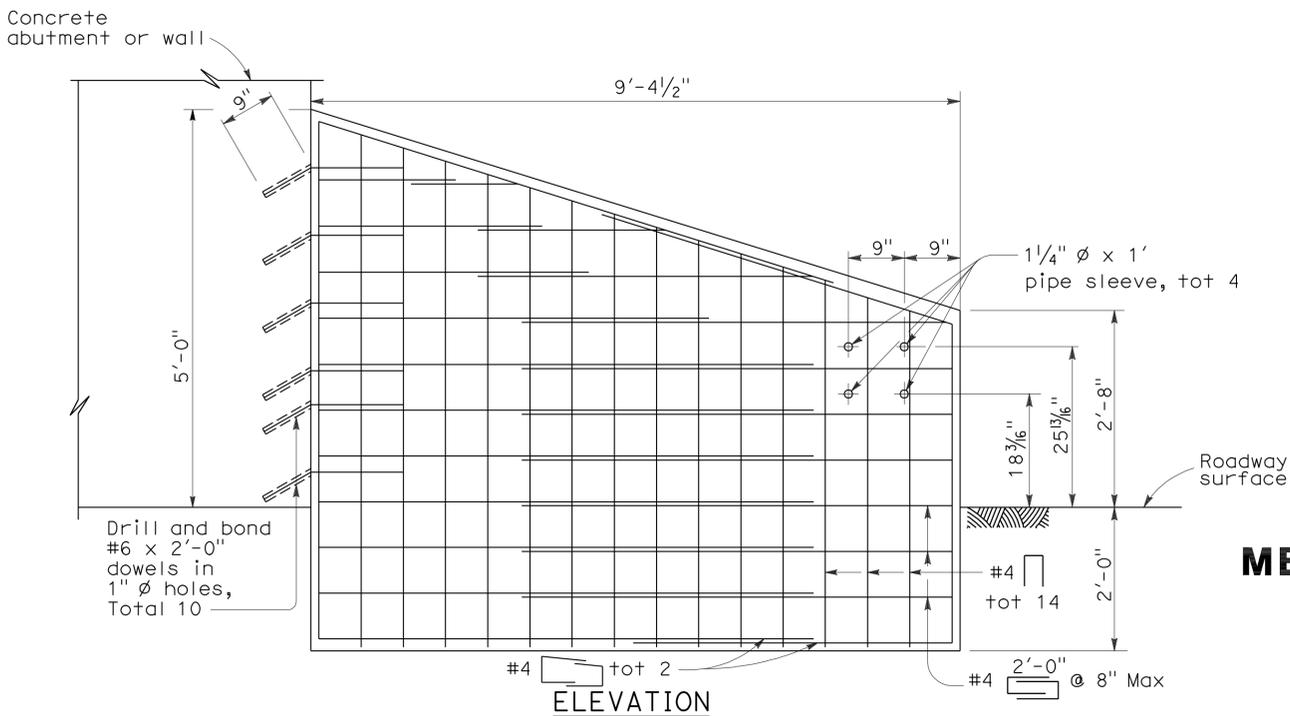
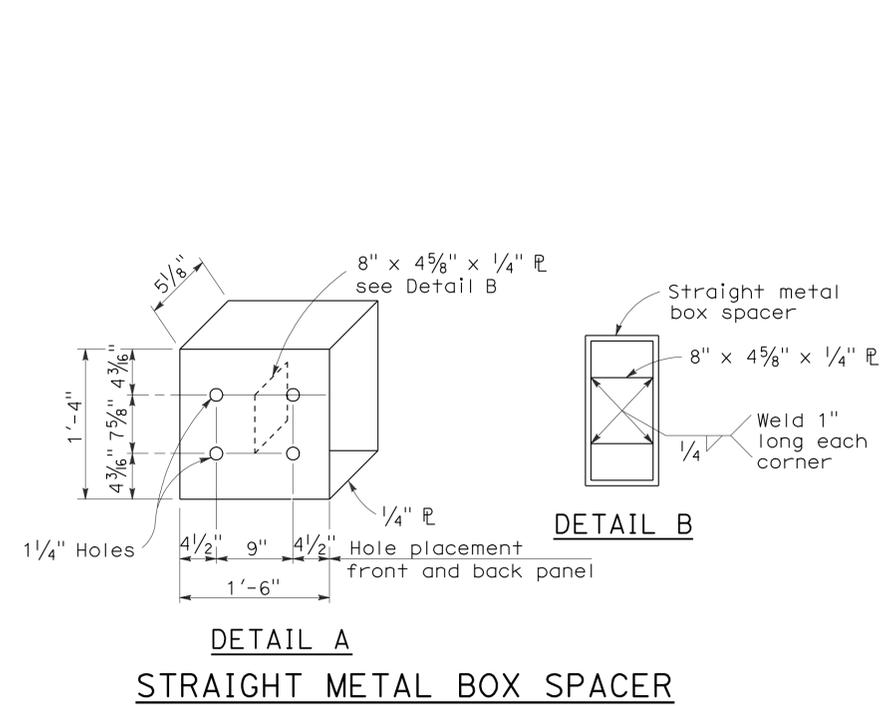
NOTES:

1. These connection details apply to abutments and walls.
2. Additional details of posts, blocks and hardware are shown on Standard Plans A77B1, A77C1 and A77C2.
3. Direction of adjacent traffic indicated by →.
4. For additional details of Transition Railing (Type WB), see Standard Plan A77J4 Transition Railing (Type WB) transitions the 12 gage w-beam standard railing section of guard railing to a heavier gage nested thrie beam railing section which is connected to the concrete anchor block.
5. For typical use of Connection Details DD, See Layout Types 12A and 12B on Standard Plan A77F1 and Layout Types 12C and 12D on Standard Plan A77F2.
6. For typical use of Connection Detail EE, see Layout Type 12D on Standard Plan A77F2 and Layout Type 12DD on Standard Plan A77F5.

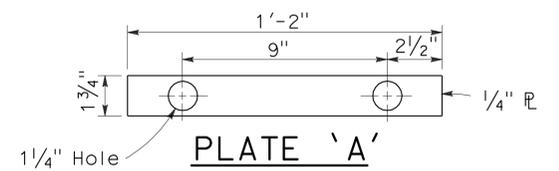
CONNECTION DETAIL EE See Note 6

CONNECTION DETAIL DD See Note 5

GUARD RAILING CONNECTION TO ABUTMENT OR WALL



ANCHOR BLOCK FOR TRANSITION RAILING CONNECTION



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

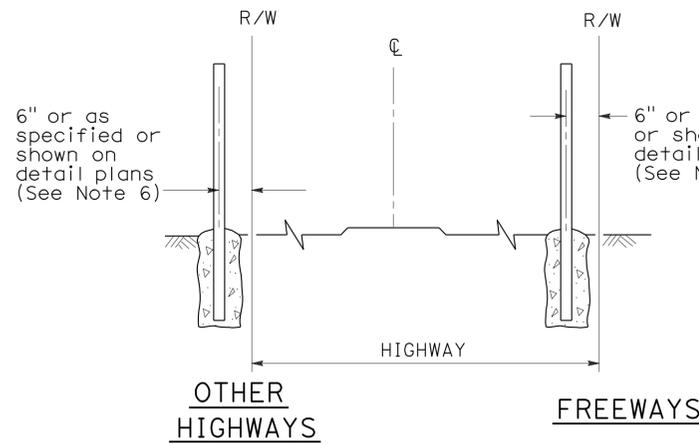
METAL BEAM GUARD RAILING CONNECTIONS TO ABUTMENTS AND WALLS

NO SCALE

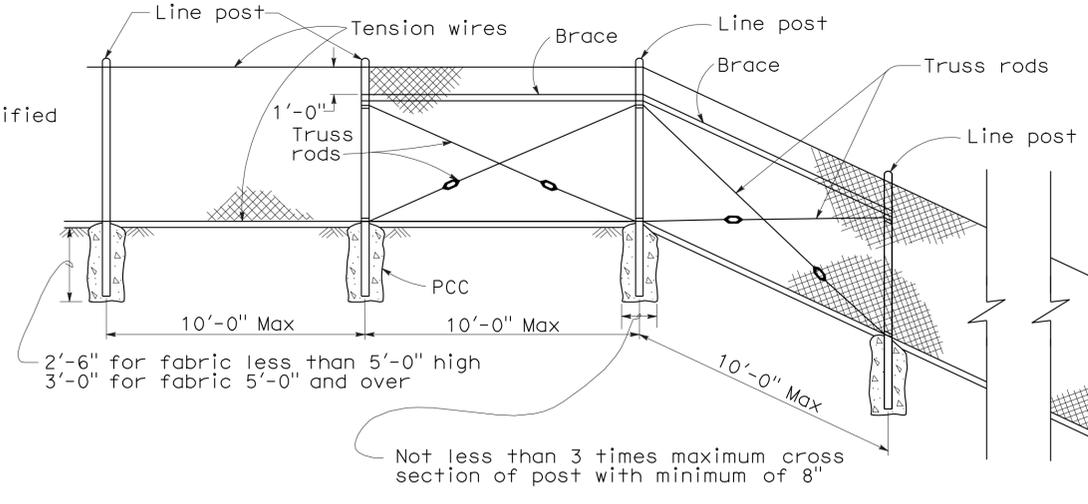
RSP A77J3 DATED MAY 20, 2011 SUPERSEDES STANDARD PLAN A77J3 DATED MAY 1, 2006 - PAGE 74 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77J3

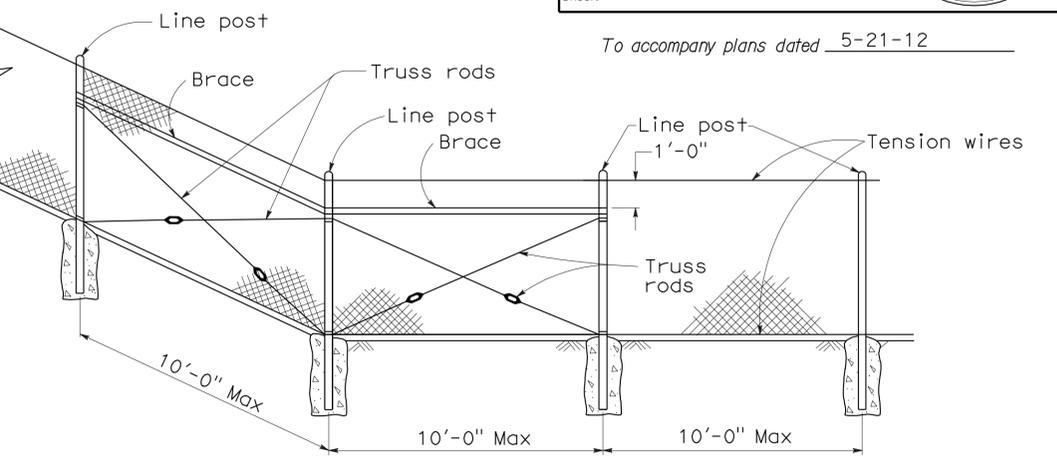
2006 REVISED STANDARD PLAN RSP A77J3



FENCE LOCATION

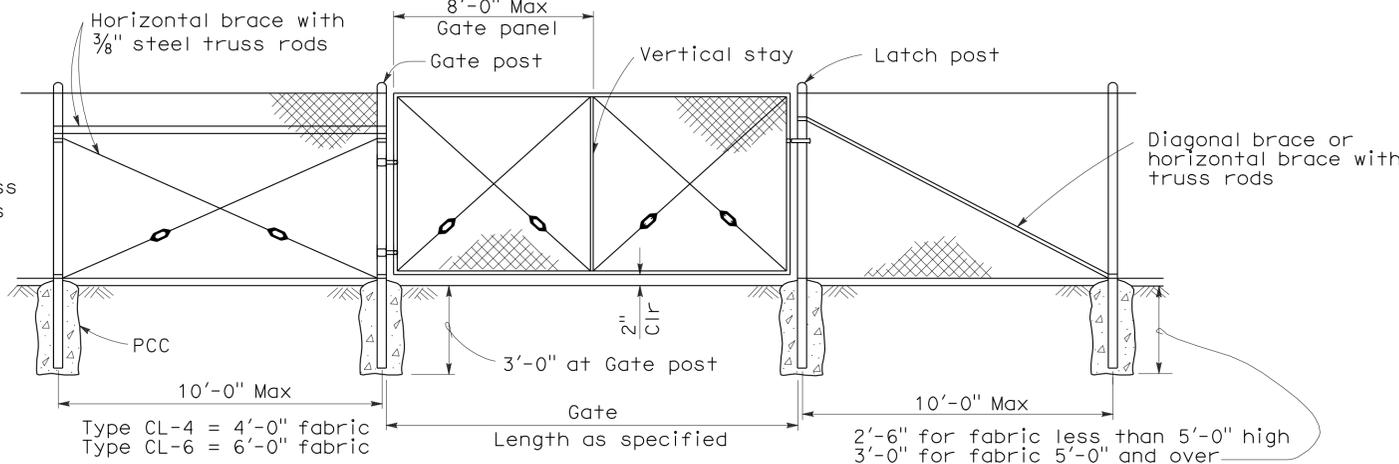
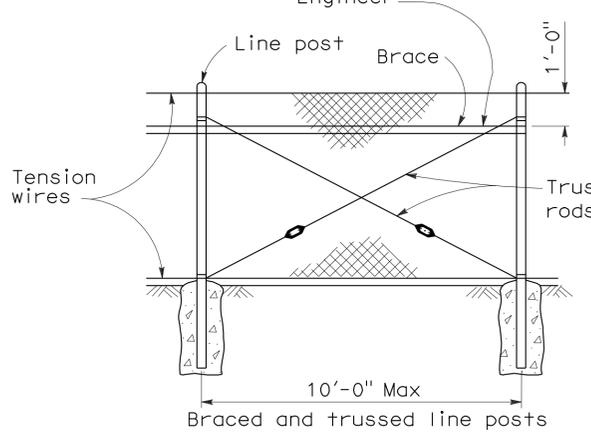


CHAIN LINK FENCE ON SHARP BREAK IN GRADE



To accompany plans dated 5-21-12

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



CHAIN LINK GATE INSTALLATION

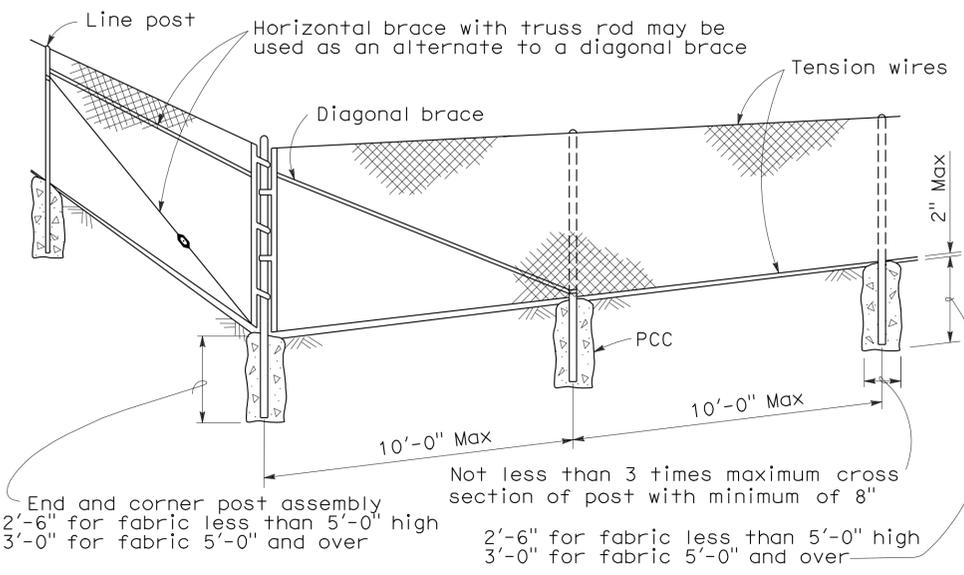
GATE POST			
FENCE HEIGHT	GATE WIDTHS	NOMINAL ID	WEIGHT PER FOOT
6'-0" and Less	Up thru 6'-0"	2 1/2"	4.95 LB
	Over 6'-0" thru 12'-0"	4"	10.79 LB
	Over 12'-0" thru 18'-0"	5"	14.62 LB
	Over 18'-0" to 24'-0" Max	6"	18.97 LB
Over 6'-0"	Up thru 6'-0"	3"	7.58 LB
	Over 6'-0" thru 12'-0"	5"	14.62 LB
	Over 12'-0"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

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

NOTES:

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

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



CORNER POST

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
CHAIN LINK FENCE
 NO SCALE

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

REVISED STANDARD PLAN RSP A85

2006 REVISED STANDARD PLAN RSP A85

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	557	681

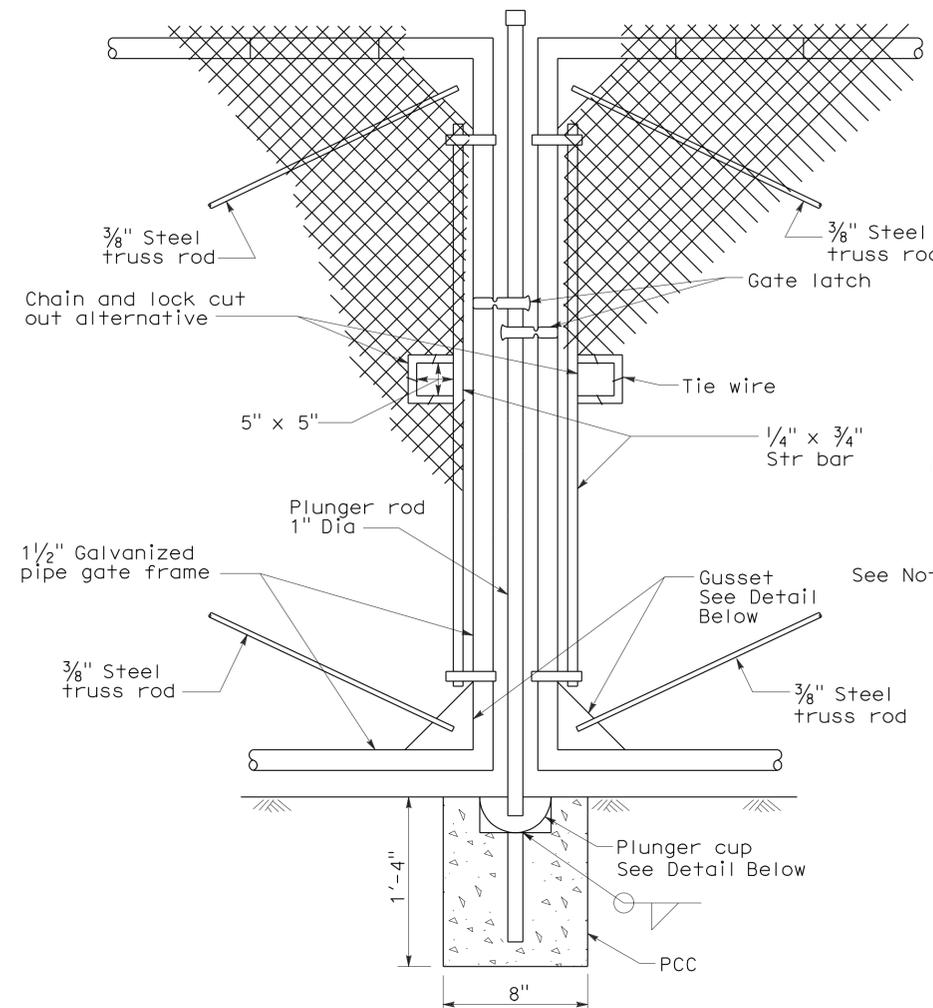
Glenn DeCou
 REGISTERED CIVIL ENGINEER
 June 5, 2009
 PLANS APPROVAL DATE
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REGISTERED PROFESSIONAL ENGINEER
 Glenn DeCou
 No. C34547
 Exp. 9-30-09
 CIVIL
 STATE OF CALIFORNIA

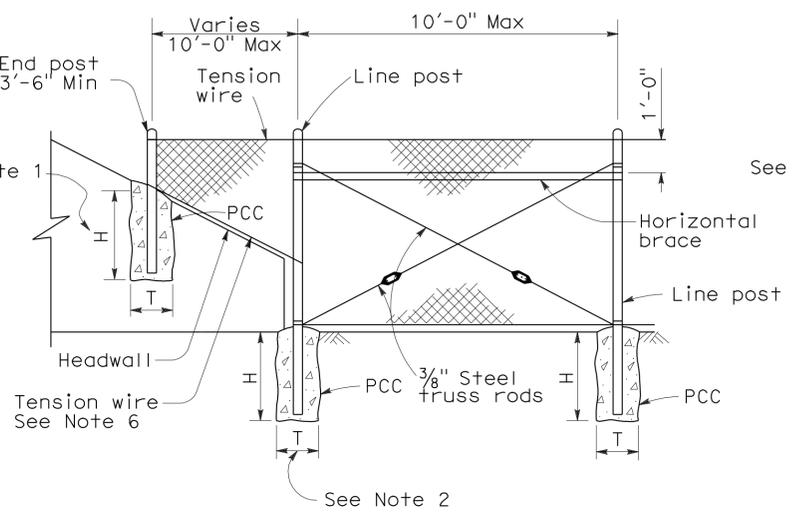
To accompany plans dated 5-21-12

NOTES:

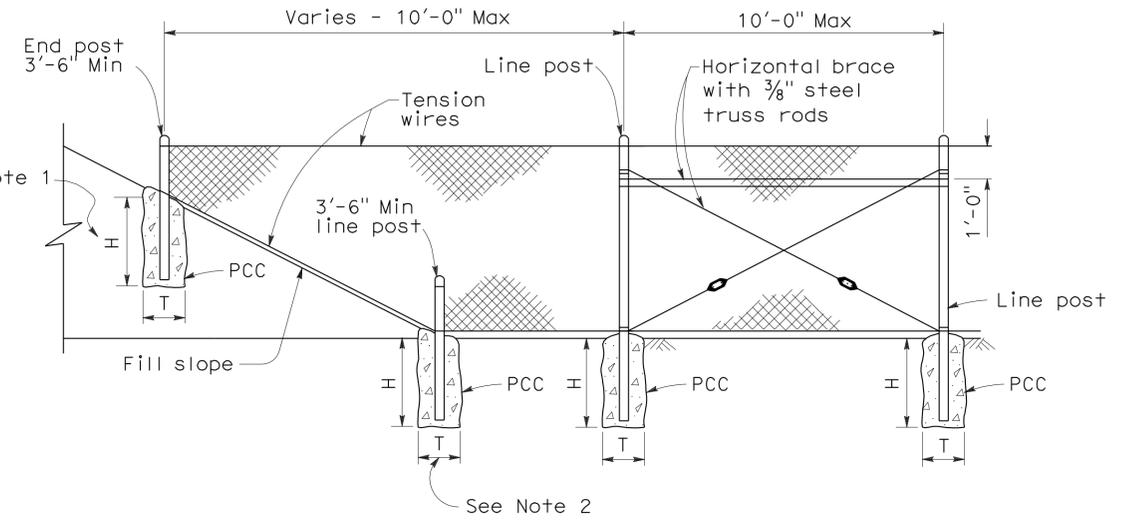
- H is 2'-6" for fabric less than 5'-0" high.
H is 3'-0" for fabric 5'-0" and over.
- T is not less than 3 times maximum cross section of post with minimum of 8".
- Arms with barbed wire to be used where shown on plans.
- See Revised Standard Plan RSP A85 for Chain Link Fencing dimensions.
- Reinforcing must comply with ASTM A 706.
- See Detail A on New Standard Plan NSP A86B for connection at headwall.



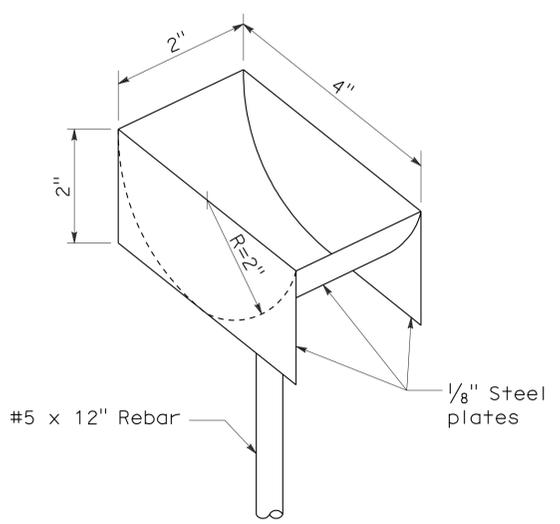
TYPICAL DOUBLE GATE REMOVABLE CENTER POST



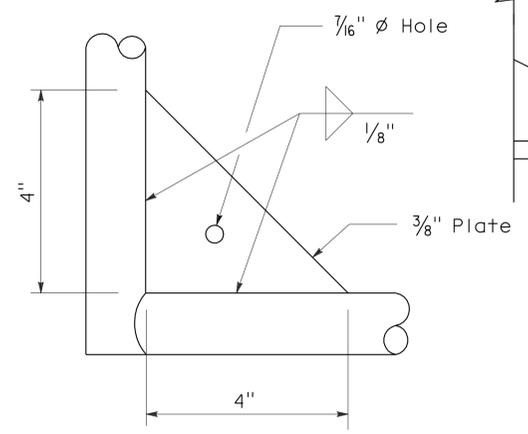
METHOD OF TYING FENCE TO HEADWALL



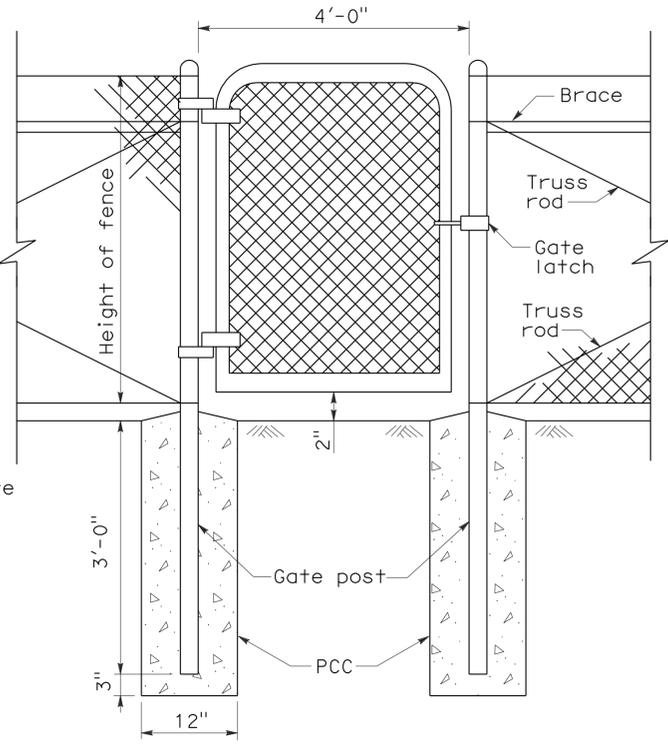
METHOD OF ERECTING FENCE FOR FILL SLOPE



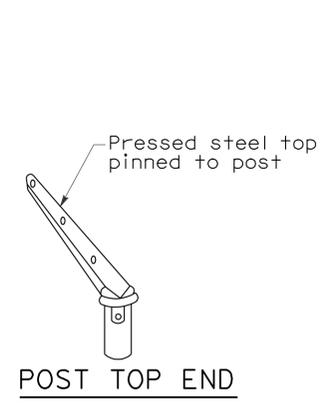
PLUNGER CUP DETAIL



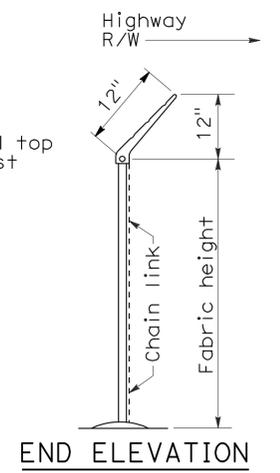
GUSSET DETAIL



WALK GATE



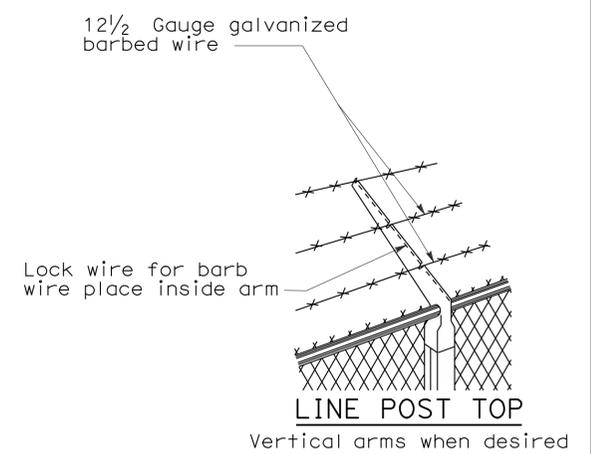
POST TOP END



END ELEVATION

BARBED WIRE POST TOP

See Note 3



LINE POST TOP

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
CHAIN LINK FENCE DETAILS
NO SCALE

NSP A85A DATED JUNE 5, 2009 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

NEW STANDARD PLAN NSP A85A

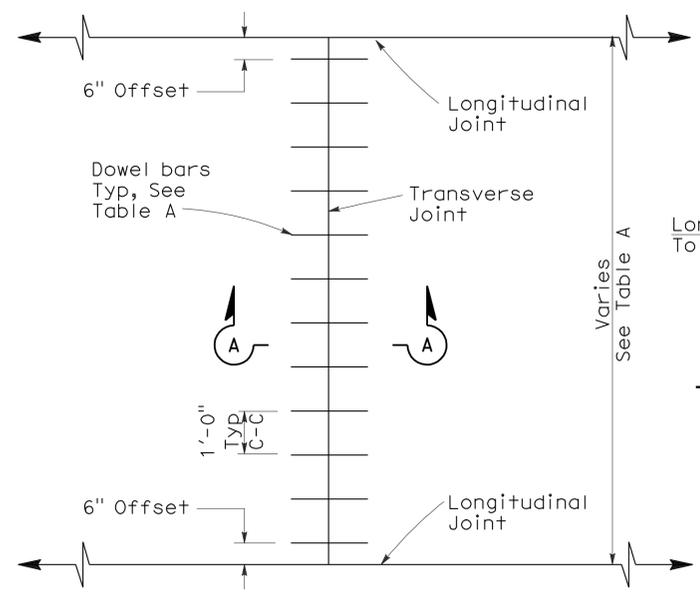
2006 NEW STANDARD PLAN NSP A85A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	558	681

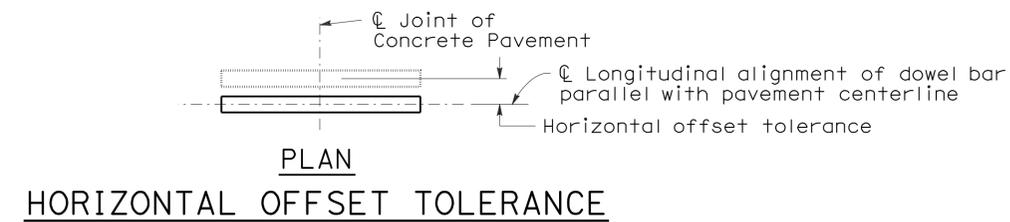
William K. Farnbach
 REGISTERED CIVIL ENGINEER
 April 20, 2012
 PLANS APPROVAL DATE
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To accompany plans dated 5-21-12

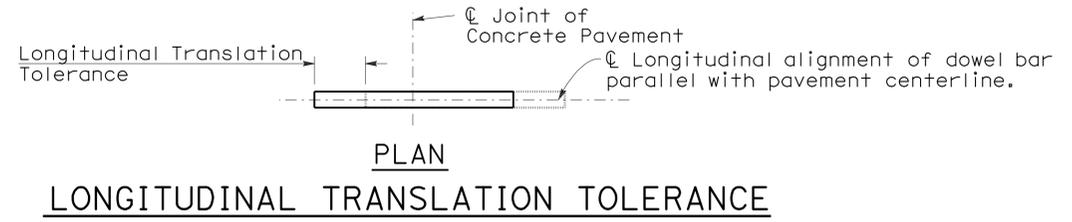
- NOTES:**
- See Revised Standard Plan RSP P1 for typical dowel bar placement and locations.
 - 1/2" Dia dowel bars are to be used with a pavement thickness, D, equal to or greater than 0.70 feet. For pavement thickness, D, less than 0.70 feet, use 1/4" Dia dowel bars.
 - For widths not shown, see Project Plans.
 - If fresh concrete pavement is placed adjacent to existing concrete pavement, the top corner of the existing concrete pavement does not need to be rounded to the 1/4" radius, as shown.
 - May also use 3/4" Dia dowel bars 2'-4" ± 1/4" in length. Center the length of dowel bars at the centerline of longitudinal joint.



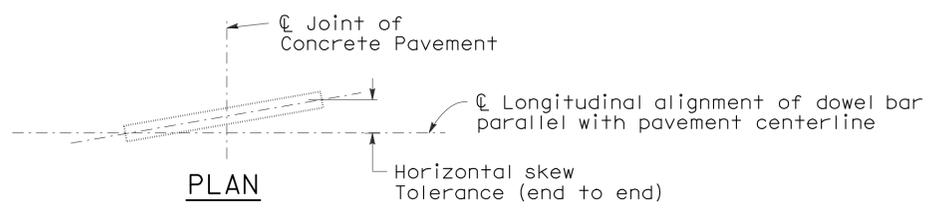
TRANSVERSE JOINT DOWEL BAR LAYOUT



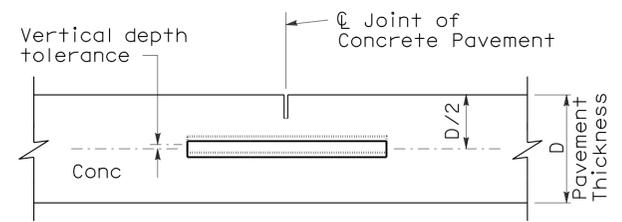
HORIZONTAL OFFSET TOLERANCE



LONGITUDINAL TRANSLATION TOLERANCE

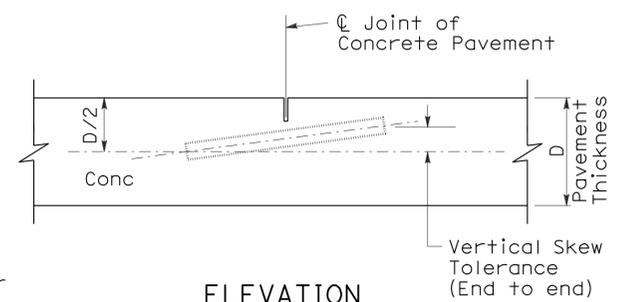


HORIZONTAL SKEW TOLERANCE



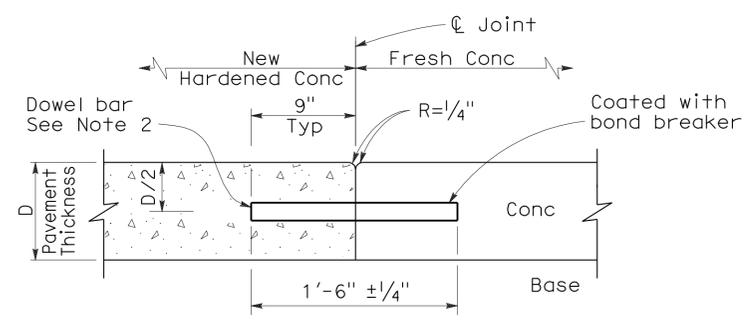
ELEVATION

VERTICAL DEPTH TOLERANCE

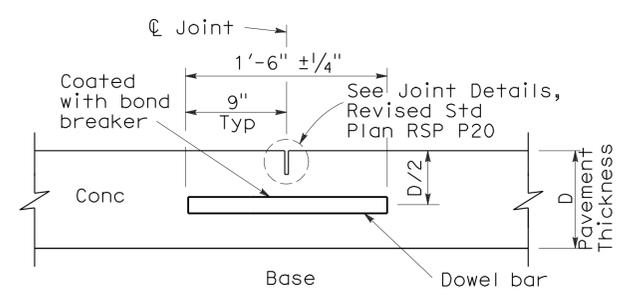


ELEVATION

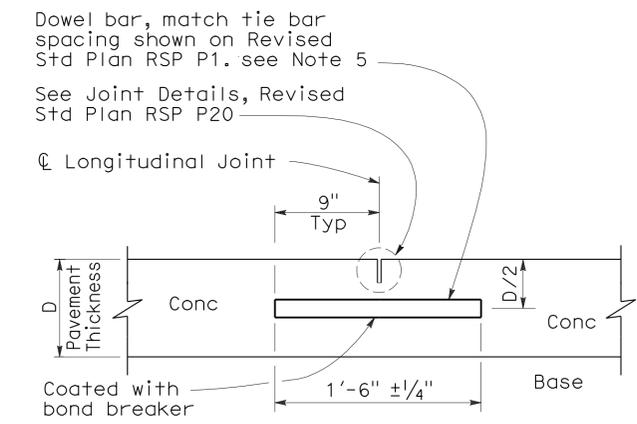
VERTICAL SKEW TOLERANCE



SECTION A-A TRANSVERSE CONSTRUCTION JOINT DETAIL



TRANSVERSE CONTRACTION JOINT

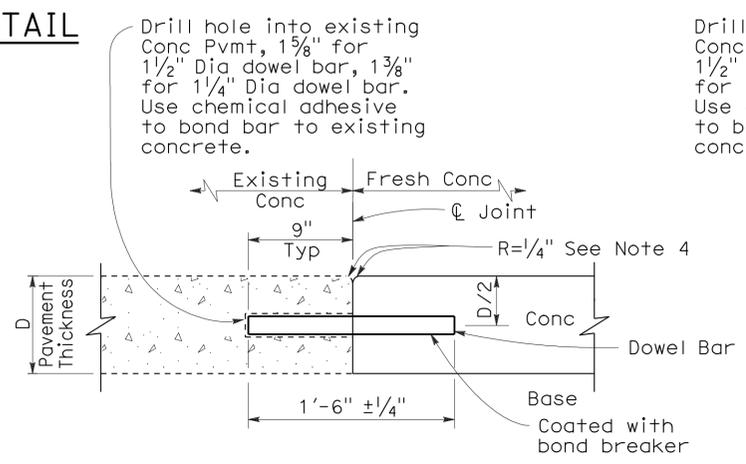


LONGITUDINAL CONTRACTION JOINT WITH DOWEL BARS

See Revised Std Plan RSP P18

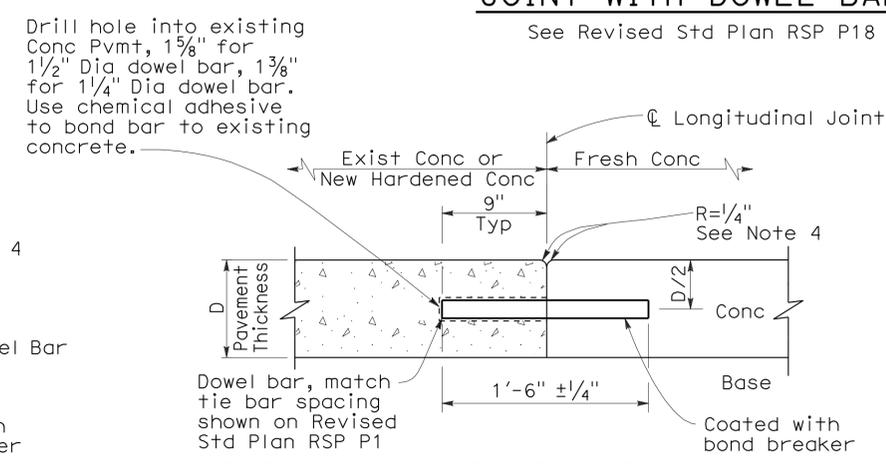
TABLE A (See Note 3)
Dowel Bar Transverse Spacing Table

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



TRANSVERSE CONSTRUCTION JOINT FOR EXISTING CONCRETE PAVEMENT

Drill and bond locations



LONGITUDINAL CONSTRUCTION JOINT WITH DOWEL BARS

See Revised Std Plan RSP P18

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CONCRETE PAVEMENT-DOWEL BAR DETAILS

NO SCALE

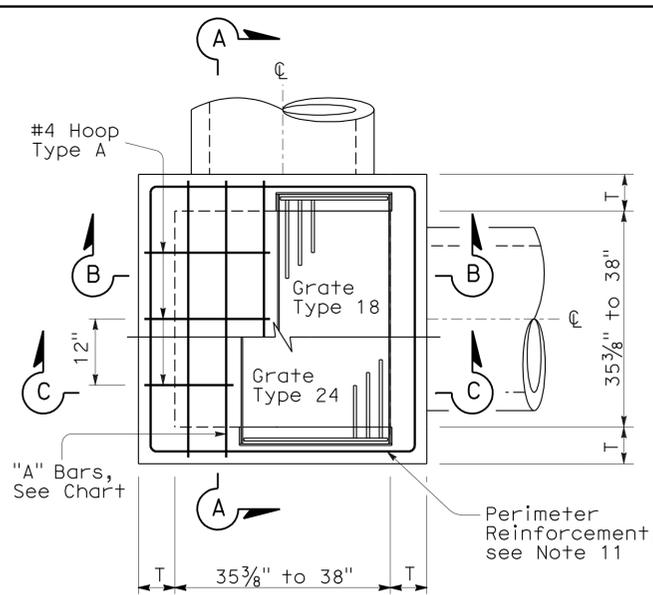
RSP P10 DATED APRIL 20, 2012 SUPERSEDES RSP P10 DATED MAY 15, 2009 AND STANDARD PLAN P10 DATED MAY 1, 2006 - PAGE 124 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP P10

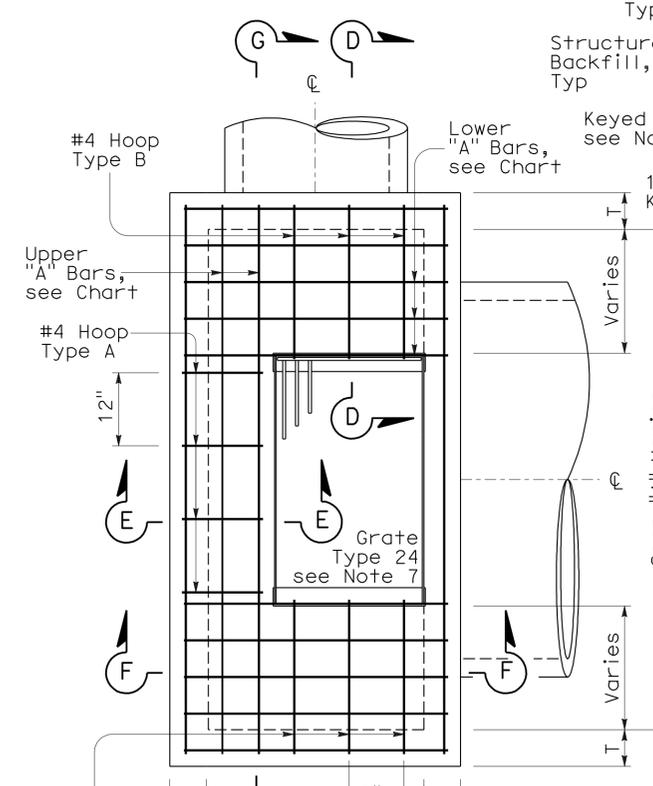
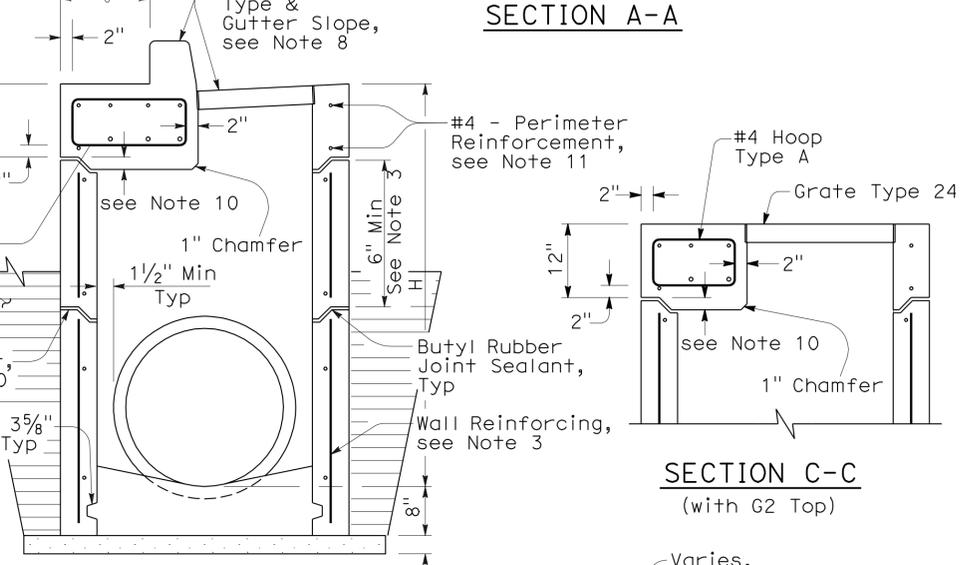
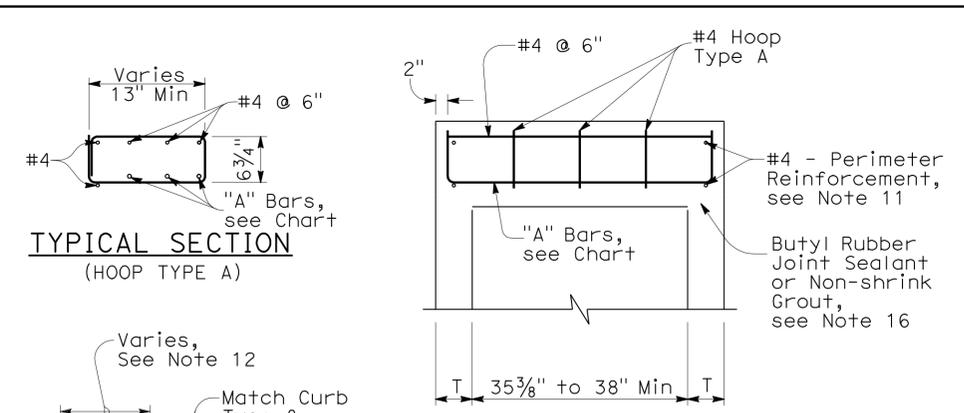
To accompany plans dated 5-21-12

NOTES:

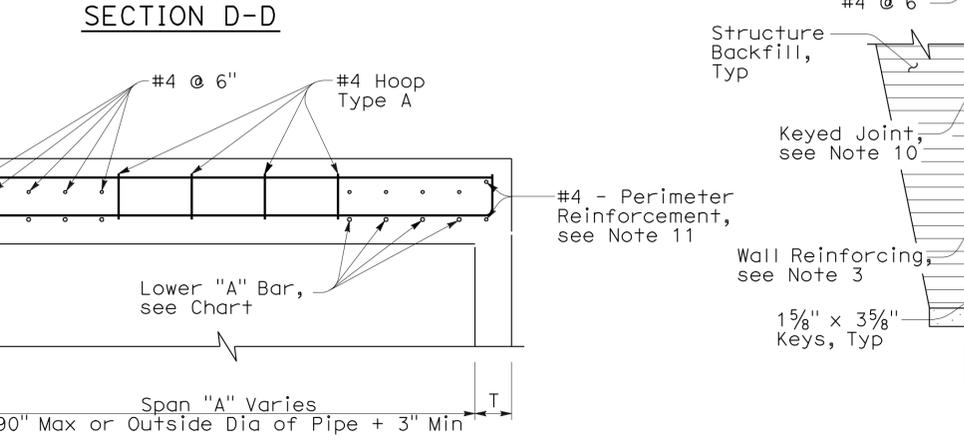
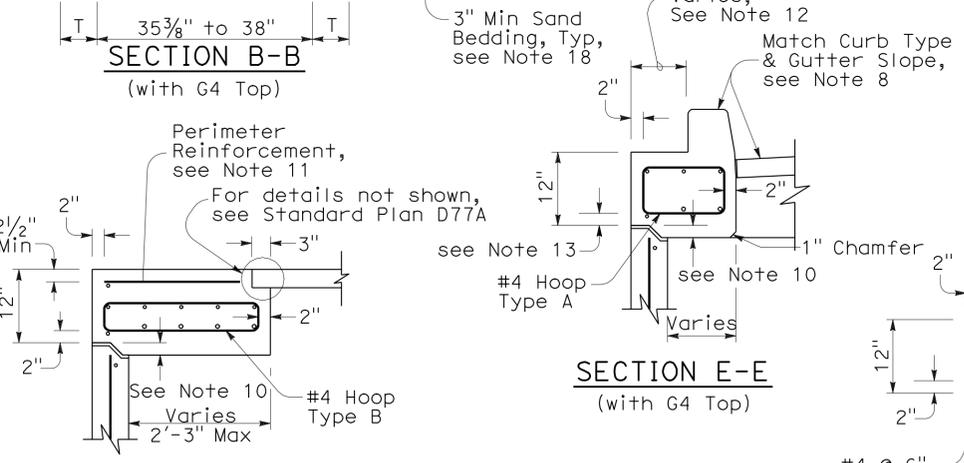
- "H" is the difference in elevation between the outlet pipe flow line and the normal gutter grade line undepressed.
- For "T" wall thickness: T=6" when "H" is 8' or less. T=8" when "H" is over 8'.
- Wall reinforcing not required when "H" is 8' or less, and the unsupported width or length is 6'-0" or less. Reinforce wall exceeding these limits with #4 bars @ 1'-6" ± centers placed 2" clear to the inside of inlet unless otherwise shown. Short independent wall sections or height adjustment rings 6" to 24" high must have a minimum of two #4 horizontal bars.
- Seal pre-cast inlets connection openings between wall and pipe with non-shrink grout or resilient connectors as specified in the Special Provisions.
- 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 bottom of lid. The distance between steps must not exceed 1'-0" and 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 must comply with State Industrial Safety Requirements. See Standard Plan D74C for step details.
- Pipe(s) can be placed in any wall.
- Set inlet so that grate bars are parallel to direction of principal surface flow.
- Type G4 inlet can use Grate Type 18 or 24. Type G2 inlet uses Grate Type 24. See Revised Standard Plan RSP D77A and Standard Plan D77B for grate and frame details and weights of miscellaneous Iron and Steel.
- G4 inlet details are the same as the G2 with the addition of a curb and sloped grate that matches the adjacent curb and gutter depression. See Standard Plans D78A & D78B for gutter and inlet depression details. See Revised Standard Plan RSP A87A & Standard Plan A87B for Curb and Dike Details.
- Provide pre-cast inlets with separate top sections for final grade adjustment under Standard Specification Section 51-1.02. Provide keyed joints between the top and wall and multiple wall sections. Joint design may vary but must be 1" to 3" in depth.
- Perimeter reinforcement serves as a rigid frame to position and attach the required structural reinforcement and may be tack welded at outer corners when using ASTM A706 weldable bars.
- This dimension will vary with different grates, curbs types, box width and wall thickness.
- 2" unless inlet is expanded in the Span "A" direction, then clearance is 2" plus the diameter of the lower "A" bar.
- Place "A" Bars at an angle so hooked ends will maintain 2" clear coverage.
- Refer to Standard Plan D73, Table A for concrete quantities.
- Non-shrink grout can be used for upper most joint to facilitate final top grade adjustment.
- Slope inlet floors 4:1 towards the outlet pipe. Pre-cast inlets may have monolithic sloped floors, flat floors, or no floors in which case a sloped floor must be cast in the field. Inlet floors do not require reinforcing.
- Extend sand bedding under all structure backfill.



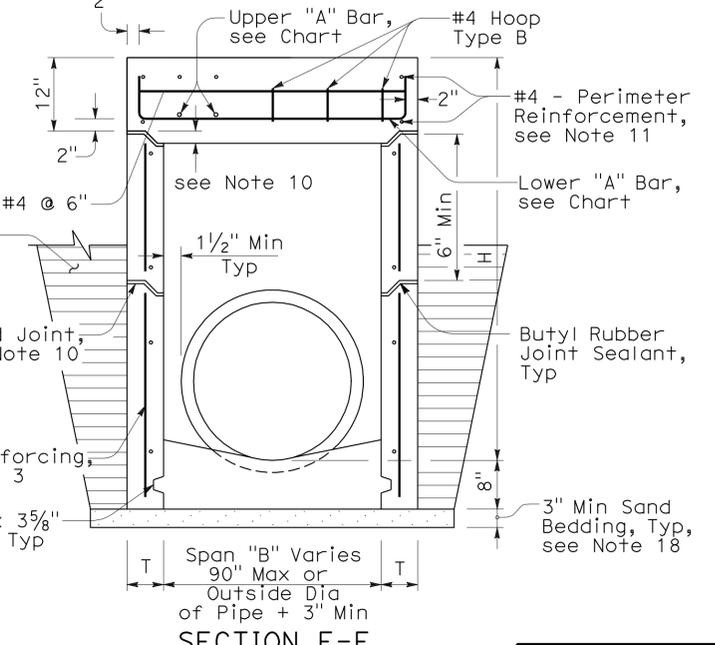
STANDARD TYPE G2 OR G4



EXPANDED TYPE G2 OR G4
(Top Rebar Not Shown)



SECTION G-G



SECTION F-F
(with G2 Top)

Span	"A" Bars	Required steel area per foot (in ² /ft)
Under 38" with Type 24 Grate	#5 @ 7" C-C 2-#5 Min	0.525
Under 38" with Type 18 Grate	#5 @ 7" C-C 3-#5 Min	0.525
38"-60"	#5 @ 6" C-C	0.621
61"-72"	#5 @ 5" C-C	0.744
73"-90"	#6 @ 6" C-C	0.811

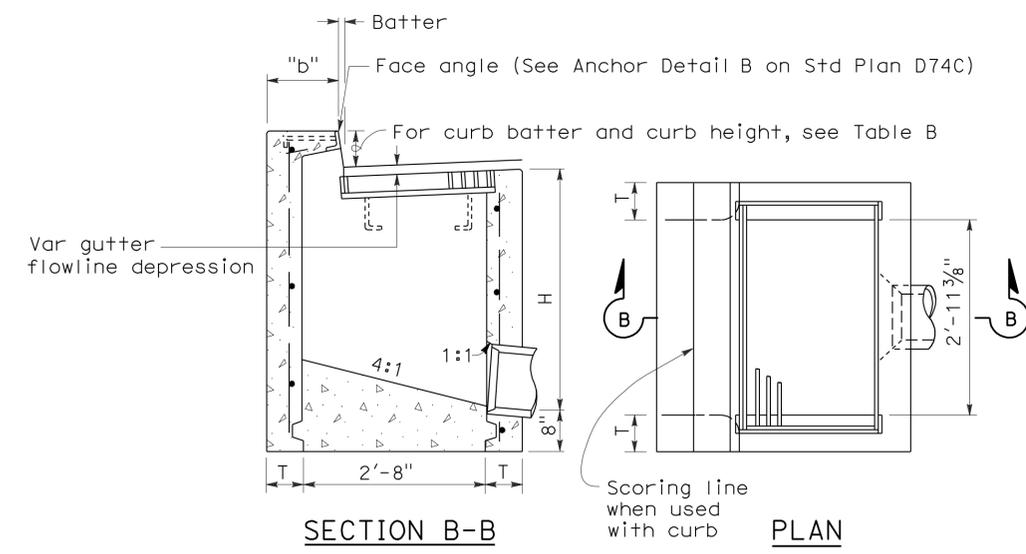
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
DRAINAGE INLETS (PRECAST)

NO SCALE

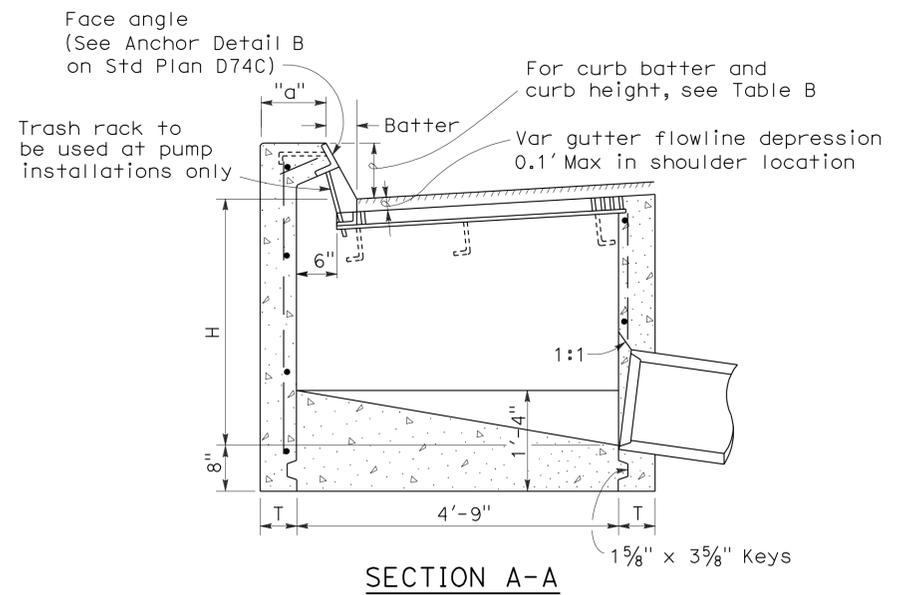
NSP D73A DATED JUNE 5, 2009 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP D73A

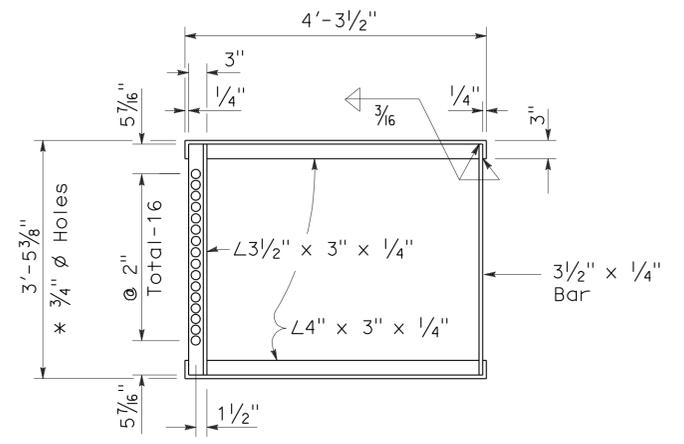
To accompany plans dated 5-21-12



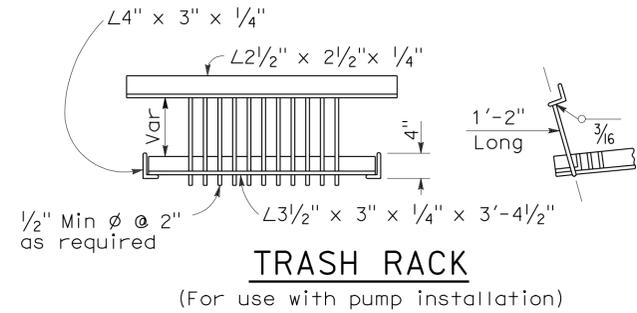
TYPE GO



SECTION A-A



GRATE FRAME FOR TYPE GDO INLET



TRASH RACK
(For use with pump installation)

TABLE A
CONCRETE QUANTITIES

TYPE	H=3'-0" TO 8'-0" (T=6")	H=8'-1" TO 20'-0" (T=8")	
	ADDITIONAL PCC PER FOOT (CY)	H=8'-1" (CY)	ADDITIONAL PCC PER FOOT (CY)
GO	1.24	3.39	0.346
GDO	1.62	4.36	0.446

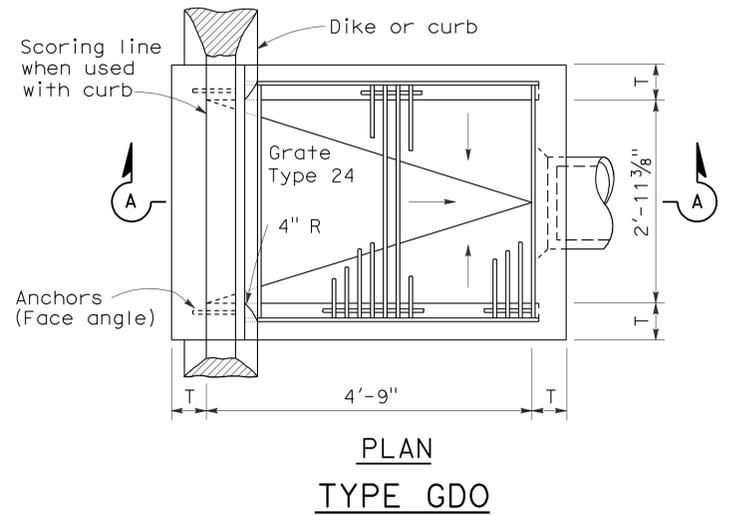
Table based on 8" floor slab, no deduction for pipe openings, and curb type giving highest quantity of concrete. No deductions or adjustments are to be made to these quantities because of pipe openings, different floor alternatives or different curb type.

TABLE B

CURB TYPE	NORMAL CURB HEIGHT	CURB BATTER	"a" DIMENSION	"b" DIMENSION
A1-6	6"	1 1/2"	T+7 1/2"	T+6 1/2"
A1-8	8"	2"	T+7"	T+6"
B1-6	6"	4"	T+5"	T+4"
Type A Dike	6"	3"	T+6"	T+5"

NOTES:

- "H" is the difference in elevation between the outlet pipe flow line and the normal gutter grade line undeepressed.
- 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 @ 18"± centers placed 1/2" clear to inside of box unless otherwise shown.
- Inlet bottom reinforcing not required. See Standard Plan D74C for alternative reinforced 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. Step inserts may be substituted for the bar steps. Step Inserts shall comply with State Industrial Safety requirements. See Standard Plan D74C for step details.
- When shown on the project plans, place a 3/4" plain round protection bar horizontally across the length of the opening and bend back 4" into the inlet wall on each side.
- Pipe(s) can be placed in any wall.
- Curb section shall match adjacent curb.
- Basin floors shall have wood trowel finish and shall slope toward the outlet pipe as shown.
- Galvanizing - See Standard Specifications or Special Provisions.
- See Standard Plan D77A and D77B for grate and frame details and weights of miscellaneous iron and Steel.
- See Standard Plan D78A for gutter depression details.
- Full 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.
- Cast-in-place or precast alternative is optional with contractor. See Standard Specifications.
- 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 pipe connections conforming to details for Type GCP inlets on Standard Plan D75B. See Standard Specifications for mortar composition.



PLAN
TYPE GDO

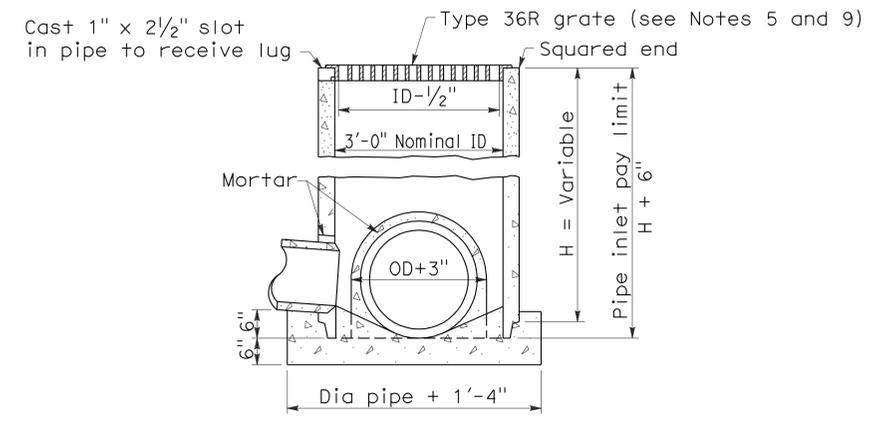
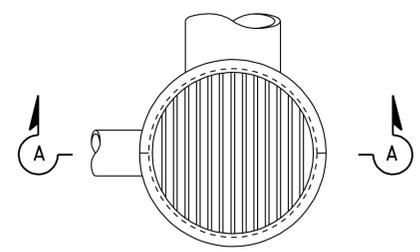
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
DRAINAGE INLETS
NO SCALE

2006 REVISED STANDARD PLAN RSP D74B

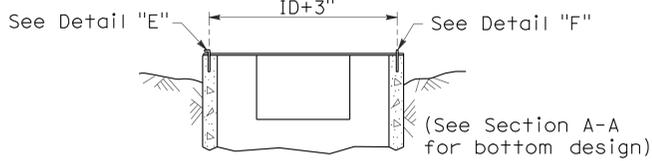
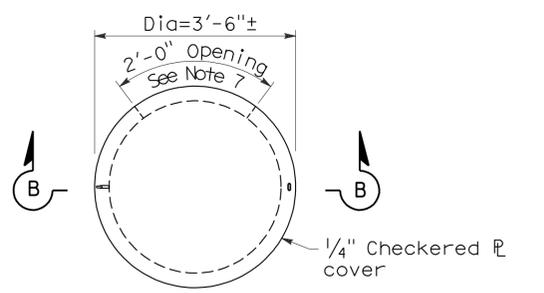
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	561	681

Raymond Don Tsztso
 REGISTERED CIVIL ENGINEER
 June 6, 2008
 PLANS APPROVAL DATE
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 REGISTERED PROFESSIONAL ENGINEER
 Raymond Don Tsztso
 No. C37332
 Exp. 6-30-08
 CIVIL
 STATE OF CALIFORNIA

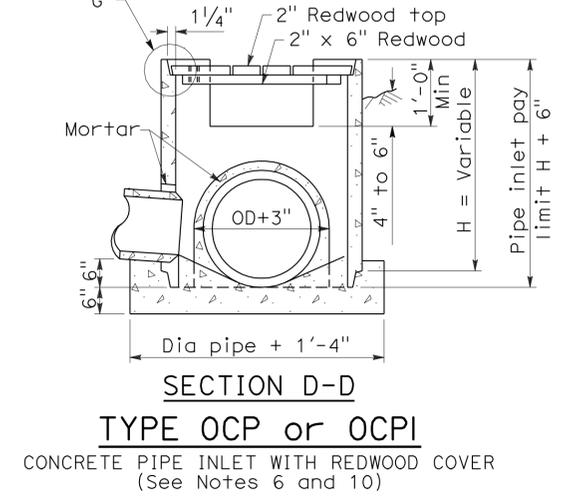
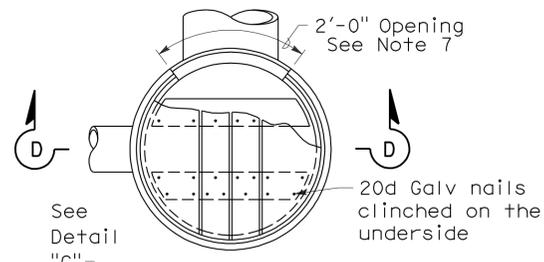
To accompany plans dated 5-21-12



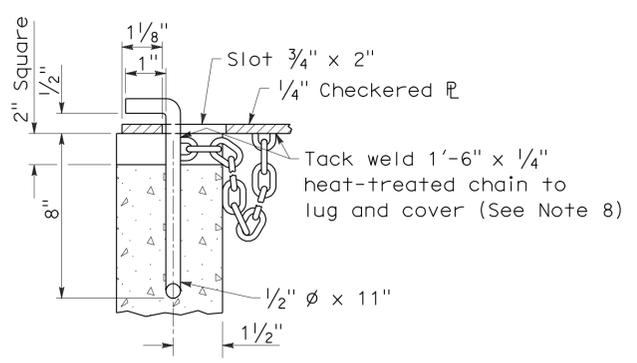
SECTION A-A
TYPE GCP
CONCRETE PIPE INLET WITH GRATE



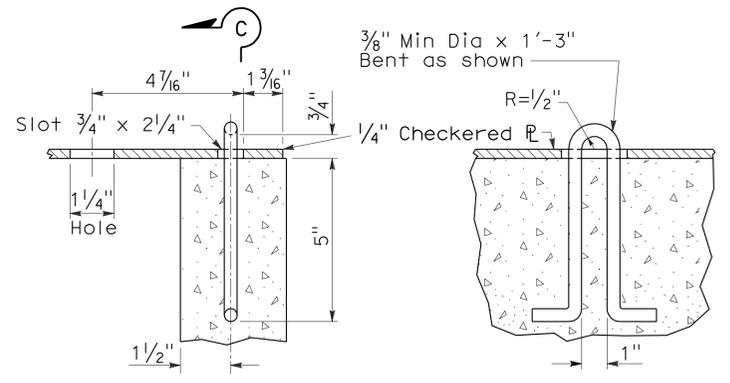
SECTION B-B
TYPE OCP or OCPI
CONCRETE PIPE INLET WITH STEEL COVER
(See Note 6)



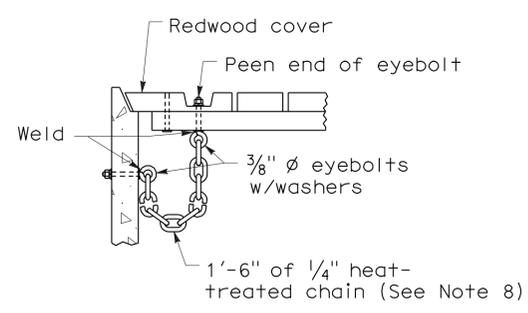
SECTION D-D
TYPE OCP or OCPI
CONCRETE PIPE INLET WITH REDWOOD COVER
(See Notes 6 and 10)



DETAIL "E"



SECTION C-C
DETAIL "F"



DETAIL "G"

NOTES:

- For details of steel pipe inlets, see Standard Plan D75A.
- For details of ladder and steps and when ladder or steps are required, see Standard Plan D75C.
- Inlet pipes shall not protrude into basin.
- Except for inlets used for junction boxes, basin floors shall have minimum slope of 4:1 from all directions toward outlet pipe, and a wood trowel finish.
- See Revised Standard Plan RSP D77A and Standard Plan D77B for Grate and Frame Details and Weights of Miscellaneous Iron and Steel.
- Designation of Type OCPI pipe inlets on plans indicates trash racks are to be furnished and installed on all side openings. See Standard Plan D75C for Trash Rack details.
- More than one side opening may be required. Location and number as ordered by the Engineer. Opening may be cast in pipe.
- Chain to be provided when specified.
- Place pipe so bars of grate will be parallel with main surface flow.
- Redwood covers shall only be placed at locations designated on the plans.

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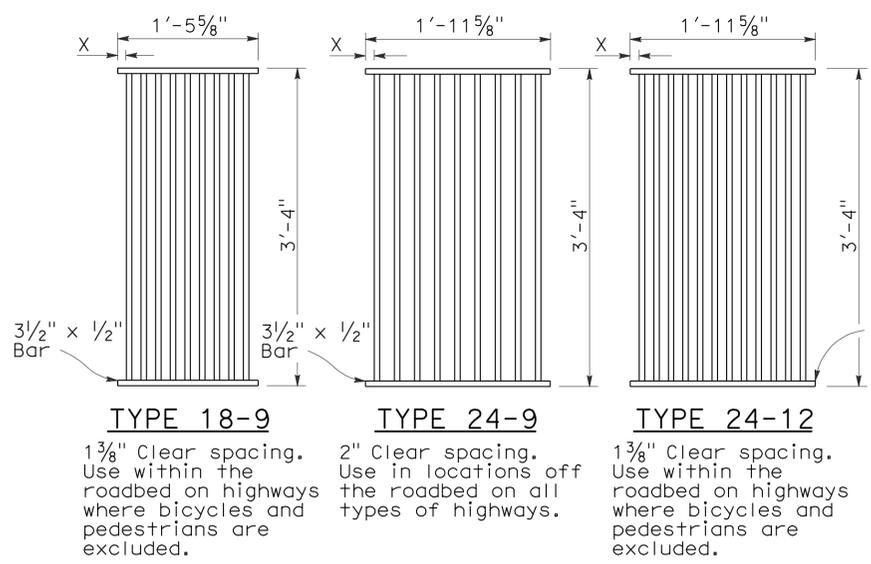
CONCRETE PIPE INLETS

NO SCALE

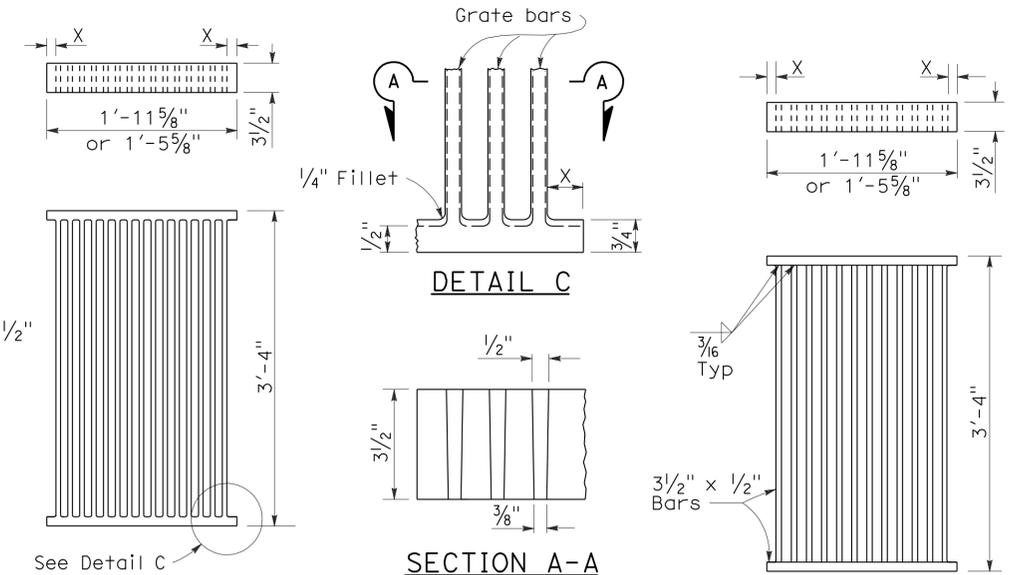
RSP D75B DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN D75B
DATED MAY 1, 2006 - PAGE 153 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP D75B

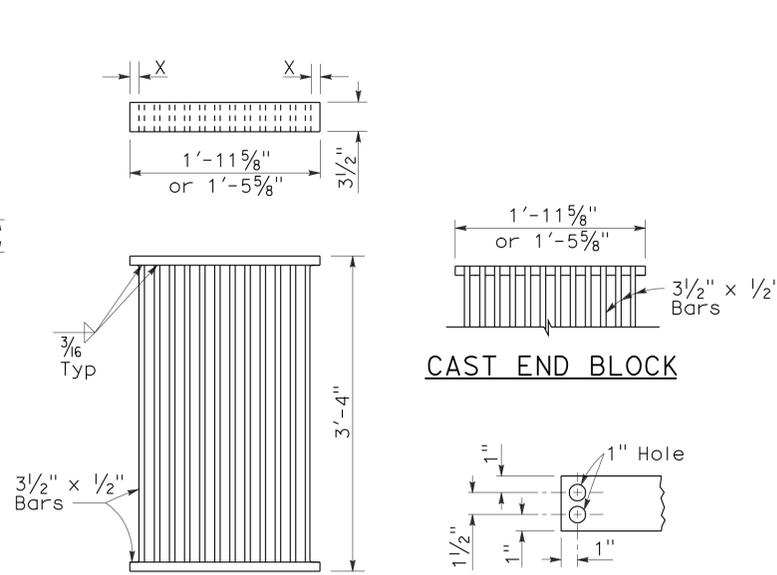
2006 REVISED STANDARD PLAN RSP D75B



RECTANGULAR GRATE DETAILS
(See table below)

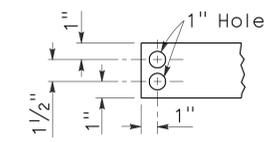


ALTERNATIVE CAST NODULAR IRON GRATE OR CAST STEEL GRATE

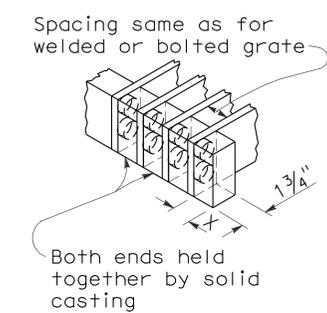


ALTERNATIVE WELDED GRATE

CAST END BLOCK



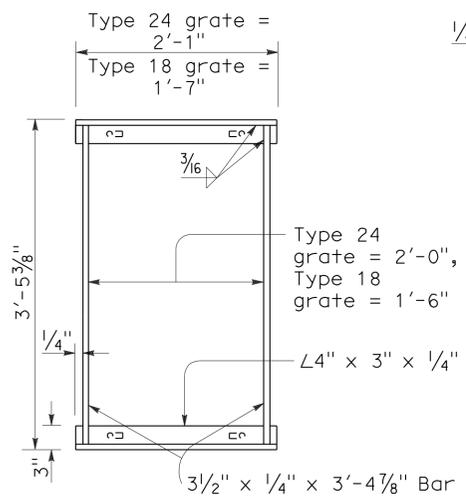
END OF BAR



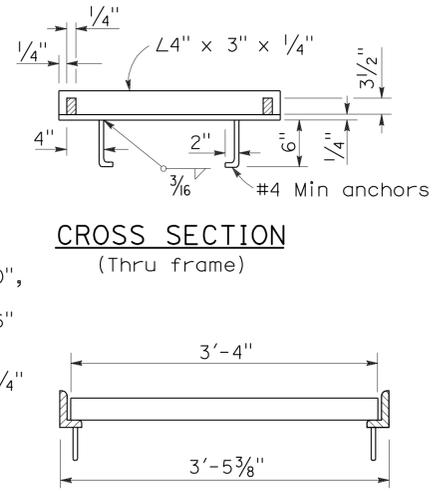
ALTERNATIVE CAST NODULAR IRON OR CAST STEEL END BLOCK GRATE

NOTES:

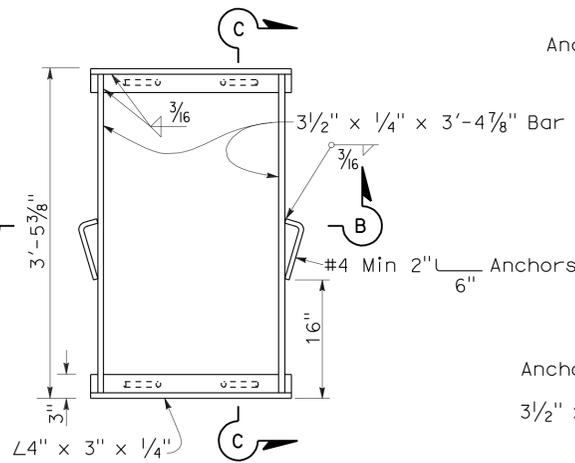
1. Grate type numbers refer to approximate width of grate in inches and number of bars, respectively.
2. Contractor has the option of using cast nodular iron, cast steel, welded, bolted, or cast end block grate.
3. See Special Provisions for requirements pertaining to galvanizing or asphalt dipping of grates and frames.
4. Rounded top of bars optional on all grates.
5. Pipe inlets with a grate shall be placed so that bars parallel direction of principle surface flow.
6. Full penetration butt welds may be substituted for the fillet welds on all anchors.
7. Standard square, hexagon, round or equivalent headed anchors may be substituted for the right angle hooks on the anchors shown on this plan.
8. Grate and frame weights are based on welded grates (weights of face angles, steps, protection bars, etc. are not included).



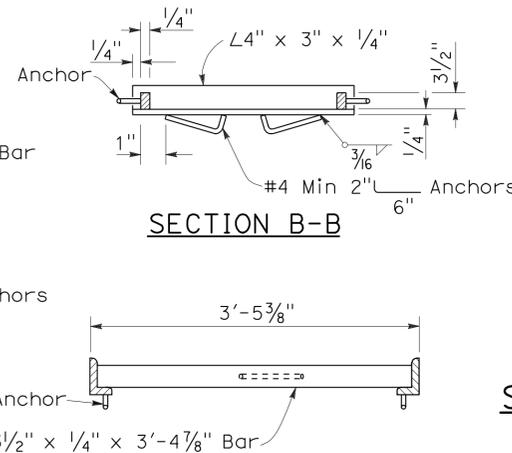
TYPICAL FRAME



LONGITUDINAL SECTION
(Thru frame and grate)



TYPICAL FRAME



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

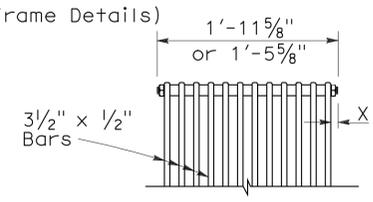
RECTANGULAR FRAME DETAILS
(For all rectangular grates)

GRATE BAR SPACING TABLE

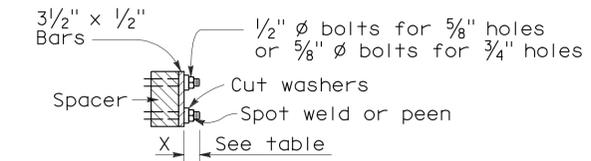
TYPE	NO. OF BARS	CLEAR BAR SPACING	X
18-9	9	1 3/8"	1 1/16"
24-9	9	2"	1 9/16"
24-12	12	1 3/8"	1 1/4"

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

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

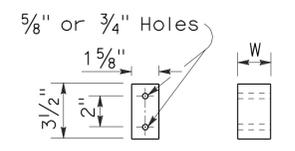


BOLTED END BLOCK

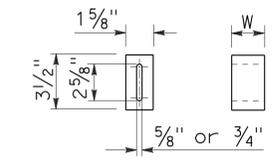


BOLTING DETAIL

ALTERNATIVE BOLTED GRATE



BAR SPACER



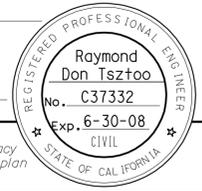
ALTERNATIVE SPACER
W = 1 3/8" or 2"

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

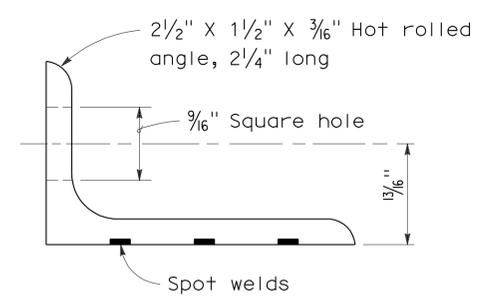
(See General Notes, No 8)

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	563	681

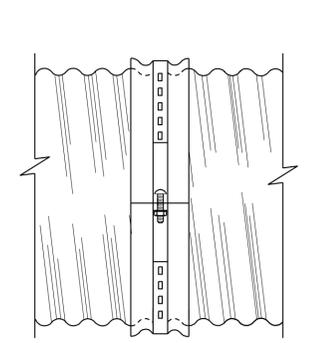
Raymond Don Tsztoo
 REGISTERED CIVIL ENGINEER
 June 6, 2008
 PLANS APPROVAL DATE
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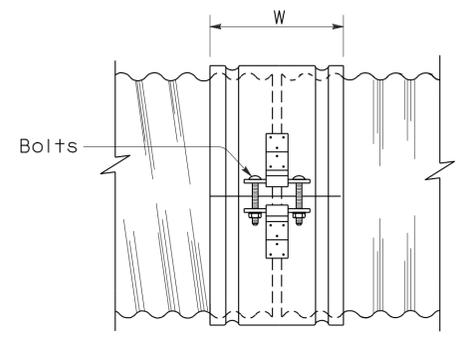
To accompany plans dated 5-21-12



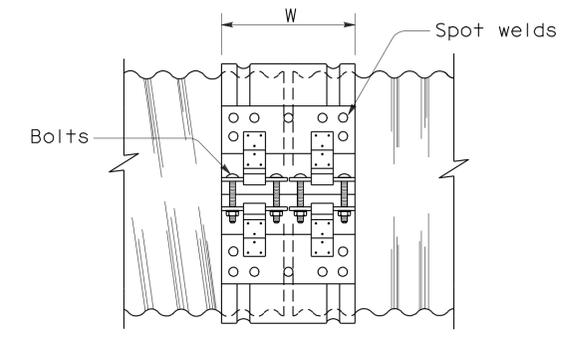
ANGLE



SIDE VIEW
ANGLE



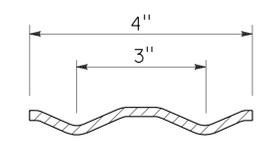
SIDE VIEW
SINGLE BAR AND STRAP



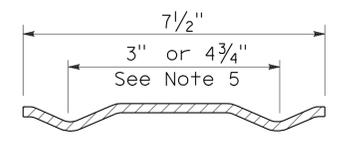
SIDE VIEW
DOUBLE BAR AND STRAP

NOTES:

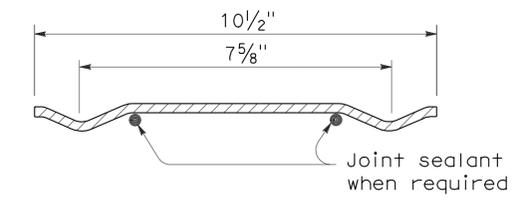
1. All ferrous metal coupling band connection hardware shall be galvanized or electroplated in accordance with the Standard Specifications.
2. Dimensions and thicknesses shown are minimum.
3. Spot welds shall develop minimum required strength of strap.
4. Fillet welds of equivalent strength may be substituted for spot welds or rivets.
5. Dimension depends upon whether end condition is lips up or lips down.



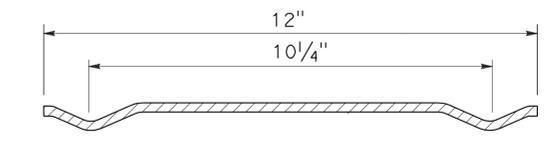
SECTION
H-4 HUGGER BAND



SECTION
H-7 HUGGER BAND



SECTION
H-10 HUGGER BAND



SECTION
H-12 HUGGER BAND

HUGGER COUPLING BANDS

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**CORRUGATED METAL PIPE
COUPLING DETAILS No. 4
HUGGER COUPLING BANDS**

NO SCALE

RSP D97D DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN D97D
DATED MAY 1, 2006 - PAGE 186 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP D97D

2006 REVISED STANDARD PLAN RSP D97D

ANNULAR AND HELICAL PROFILE

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

SPIRAL RIB PROFILE

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

* See Note 14.

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

- NOTES:** To accompany plans dated 5-21-12
- All ferrous metal coupling band connection hardware shall be galvanized or electro-plated in accordance with the Standard Specifications.
 - For helically corrugated coupling bands, the connection angles may be oriented parallel to the pipe axis, provided connecting holes are slotted lengthwise sufficiently to allow adjustment for the helix angle.
 - Tension strap may be connected to band with either spot welds or fillet welds that develop minimum required strength of strap.
 - Use 1/4" gage line dimension on attached angle leg for rivets and spot welds.
 - Band thickness shall not be less than:
 - 3 standard thicknesses lighter than the thickness of the pipe for Corrugated Steel Pipe.
 - 2 standard thicknesses lighter than the thickness of the pipe and in no case lighter than 0.060" for Corrugated Aluminum Pipe.
 - Dimensions, thicknesses and strengths shown are minimum.
 - For pipe arches use same width band as for round pipe of equal periphery.
 - Fillet welds of equivalent strength may be substituted for spot welds or rivets.
 - Spot welds shall develop minimum required strength of strap.
 - Pipe with rerolled ends having at least two 2 2/3" x 1/2" annular corrugations at each end with or without an upturned flange may be connected with any of the annular coupling bands shown for pipe of the same diameter and wall thickness and having 2 2/3" x 1/2" corrugations.
 - In the case of H-12 huggerbands, two piece bands are required for diameters through 96" and three piece bands are required for diameters 102" through 120".
 - Two piece bands are required for pipes greater than 42" diameter.
 - The 2 1/4" x 2" x 0.109" thick galvanized die-formed angle connector may be used in lieu of the 2" x 2" x 3/16" angle connector for standard joints only on pipes through 72" diameter.

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

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

REVISED STANDARD PLAN RSP D97E

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	564	681

Raymond Don Tszto
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

REGISTERED PROFESSIONAL ENGINEER
Raymond Don Tszto
No. C37332
Exp. 6-30-08
CIVIL
STATE OF CALIFORNIA

2006 REVISED STANDARD PLAN RSP D97E

ANNULAR AND HELICAL PROFILE

COUPLING TYPE	PIPE CORRUGATION	PIPE SIZE	W OR A	PIPE WALL THICKNESS				BAR AND STRAP (CSP ONLY)				ANGLE							
				CSP		CAP		STRAP THICKNESS	BOLTS Dia	BAR Dia	BAR YIELD STRENGTH	DIMENSIONS		BOLTS (No. - Dia)		RIVETS ANGLE TO BAND		SPOT WELDS ANGLE TO BAND	
				CSP	CAP	CSP	CAP					CSP	CAP	CSP	CAP	CSP	CAP	CSP	
TWO PIECE INTEGRAL FLANGE	1 1/2" x 1/4"	6"-10"	7"	0.064"-0.079"	0.060"	0.064"	0.060"							2-3/8"	2-3/8"				
UNIVERSAL	2 2/3" x 1/2"	12"-24"	12"		0.060"-0.105"		0.060"								3-1/2"				
ANNULAR	2 2/3" x 1/2"	THROUGH 36"	12"	0.064"-0.138"	0.060"-0.135"	0.064"	0.060"	0.079"	1/2"	7/8"	32 ksi	2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"	
		42"-60"	16 1/4"	0.064"-0.168"	0.060"-0.164"	0.064"	0.060"	DOUBLE 0.079"	1/2"	7/8"	32 ksi	2" x 2" x 1/4"	2" x 2" x 1/4"	4-1/2"	4-1/2"	5-3/8"	5-3/8"		
		42"-60"	12"	0.064"-0.079"		0.064"							2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"
		42"-60"	12"	0.109"-0.168"	0.135"-0.164"	0.064"	0.075"						2" x 2" x 1/4"	2" x 2" x 1/4"	3-1/2"	3-1/2"	5-3/8"	5-3/8"	
		66"-84"	24"	0.109"-0.168"		0.064"	0.105"						2" x 2" x 1/4"	2" x 2" x 1/4"	5-1/2"	5-1/2"	7-3/8"	7-3/8"	
		42"-54"	12"		0.060"-0.105"		0.064"	0.060"					2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	
	3" x 1"	48"-60"	14"	0.064"-0.079"		0.064"							2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"
		48"-60"	14"	0.109"		0.064"							2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	5-3/8"	5-3/8"	
		66"-120"	25"	0.064"-0.109"		0.064"							2" x 2" x 3/16"	2" x 2" x 3/16"	5-1/2"	5-1/2"	9-3/8"	9-3/8"	
		42"-60"	14"		0.060"-0.105"		0.060"						2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	5-3/8"	5-3/8"	
		42"-60"	14"		0.135"		0.075"						2" x 2" x 1/4"	2" x 2" x 1/4"	3-1/2"	3-1/2"	5-3/8"	5-3/8"	
		66"-96"	25"		0.060"-0.135"		0.060"						2" x 2" x 1/4"	2" x 2" x 1/4"	5-1/2"	5-1/2"	7-3/8"	7-3/8"	
	HELICAL	2 2/3" x 1/2"	THROUGH 36"	12"	0.064"-0.138"	0.060"-0.135"	0.064"	0.060"					2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"
			42"-54"	12"		0.060"-0.105"		0.060"					2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	
42"-60"			12"	0.064"-0.079"		0.064"							2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"
42"-60"			12"	0.109"-0.168"	0.135"-0.164"	0.064"	0.075"						2" x 2" x 1/4"	2" x 2" x 1/4"	3-1/2"	3-1/2"	5-3/8"	5-3/8"	
66"-84"			24"	0.109"-0.168"		0.064"	0.105"						2" x 2" x 1/4"	2" x 2" x 1/4"	5-1/2"	5-1/2"	7-3/8"	7-3/8"	
66"-72"			24"		0.164"		0.105"						2" x 2" x 1/4"	2" x 2" x 1/4"	5-1/2"	5-1/2"	7-3/8"	7-3/8"	
3" x 1"		48"-60"	14"	0.064"-0.079"		0.064"							2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"
		48"-60"	14"	0.109"		0.064"							2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	5-3/8"	5-3/8"	
		66"-120"	25"	0.064"-0.109"		0.064"							2" x 2" x 3/16"	2" x 2" x 3/16"	5-1/2"	5-1/2"	9-3/8"	9-3/8"	
		42"-60"	14"		0.060"-0.105"		0.060"						2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	5-3/8"	5-3/8"	
		42"-60"	14"		0.135"		0.075"						2" x 2" x 1/4"	2" x 2" x 1/4"	3-1/2"	3-1/2"	5-3/8"	5-3/8"	
		66"-96"	25"		0.060"-0.135"		0.060"						2" x 2" x 1/4"	2" x 2" x 1/4"	5-1/2"	5-1/2"	7-3/8"	7-3/8"	
		96"-108"	25"		0.135"		0.075"						2" x 2" x 1/4"	2" x 2" x 1/4"	5-1/2"	5-1/2"	7-3/8"	7-3/8"	
		HUGGER	2 2/3" x 1/2" REROLLED END	THROUGH 48"	10 1/2"	0.109"		0.064"		0.079"	1/2"	7/8"	32 ksi						
54"-66"	10 1/2"			0.109"		0.064"		DOUBLE 0.079"	1/2"	7/8"	32 ksi								
THROUGH 54"	10 1/2"			0.064"-0.079"		0.064"		0.079"	1/2"	7/8"	32 ksi								
THROUGH 60"	10 1/2"			0.138"		0.079"		DOUBLE 0.079"	1/2"	7/8"	32 ksi								
66"-72"	10 1/2"			0.138"		0.109"		DOUBLE 0.079"	1/2"	7/8"	32 ksi								
3" x 1" REROLLED END	THROUGH 72"		10 1/2"	0.168"		0.109"		DOUBLE 0.109"	1/2"	7/8"	45 ksi								
	48"-84"		10 1/2"	0.109"		0.079"		DOUBLE 0.079"	1/2"	7/8"	32 ksi								
	48"-90"		10 1/2"	0.064"-0.079"		0.064"		DOUBLE 0.079"	1/2"	7/8"	32 ksi								
	96"-102"		10 1/2"	0.079"		0.079"		DOUBLE 0.079"	1/2"	7/8"	32 ksi								
	90"-120"		10 1/2"	0.109"		0.109"		DOUBLE 0.109"	1/2"	7/8"	45 ksi								

SPIRAL RIB PROFILE

COUPLING TYPE	PIPE CORRUGATION	PIPE SIZE	W	PIPE WALL THICKNESS				BAR AND STRAP (SSRP ONLY)				ANGLE						
				SSRP		ASRP		STRAP THICKNESS	BOLTS Dia	BAR Dia	BAR YIELD STRENGTH	DIMENSIONS		BOLTS (No.- Dia)		RIVETS ANGLE TO BAND		SPOT WELDS ANGLE TO BAND
				SSRP	ASRP	SSRP	ASRP					SSRP	ASRP	SSRP	ASRP	SSRP	ASRP	SSRP
ANNULAR	2 2/3" x 1/2" * REROLLED END	24"-36"	12"	0.064"-0.109"	0.060"-0.105"	0.064"	0.060"	0.079"	1/2"	7/8"	32 ksi	2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"
		42"-60"	12"	0.064"-0.079"	0.075"-0.105"	0.064"	0.075"	0.079"	1/2"	7/8"	32 ksi	2" x 2" x 3/16"	2" x 2" x 3/16"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"
		42"-60"	12"	0.109"		0.064"		0.079"	1/2"	7/8"	32 ksi	2" x 2" x 1/4"		3-1/2"		5-3/8"		
		66"-84"	24"	0.109"		0.064"		0.079"	1/2"	7/8"	32 ksi	2" x 2" x 1/4"		5-1/2"		7-3/8"		
HUGGER	2 2/3" x 1/2" * REROLLED END	24"-54"	10 1/2"	0.064"-0.079"		0.064"		0.079"	1/2"	7/8"	32 ksi							
		24"-48"	10 1/2"	0.109"		0.064"		0.079"	1/2"	7/8"	32 ksi							
		54"-66"	10 1/2"	0.109"		0.064"		Double 0.079"	1/2"	7/8"	32 ksi							

* See Note 13.

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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	565	681

Raymond Don Tsztsoo
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

REGISTERED PROFESSIONAL ENGINEER
Raymond Don Tsztsoo
No. C37332
Exp. 6-30-08
STATE OF CALIFORNIA

To accompany plans dated 5-21-12

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**CORRUGATED METAL PIPE
COUPLING DETAILS No. 6
POSITIVE JOINT**

NO SCALE

RSP D97F DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN D97F
DATED MAY 1, 2006 - PAGE 188 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP D97F

2006 REVISED STANDARD PLAN RSP D97F

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	566	681

Raymond Don Tsztso
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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

ANNULAR AND HELICAL PROFILE

COUPLING TYPE	PIPE CORRUGATION	PIPE SIZE	W OR A	PIPE WALL THICKNESS				BAR AND STRAP (CSP ONLY)			ANGLE							
				CSP		CAP		STRAP THICKNESS	BOLTS Dia	BAR Dia	DIMENSIONS		BOLTS (No.- Dia)		RIVETS ANGLE TO BAND		SPOT WELDS ANGLE TO BAND	
				CSP	CAP	CSP	CAP				CSP	CAP	CSP	CAP	CSP	CAP	CSP	
TWO PIECE INTEGRAL FLANGE	1 1/2' x 1/4"	6"	7"	0.064"-0.168"		0.052"												
	1 1/2' x 1/4"	8"-10"	7"	0.064"-0.168"	0.060"-0.164"	0.064"	0.060"											
ANNULAR	2 2/3" x 1/2"	THROUGH 24"	12"	0.064"-0.168"	0.060"-0.164"	0.064"	0.060"											
HUGGER	2 2/3" x 1/2" REROLLED END	THROUGH 24"	10 1/2"	0.064"-0.168"		0.064"		0.079"	1/2"	7/8"								

NOTES:

- To accompany plans dated 5-21-12
- All ferrous metal coupling band connection hardware shall be galvanized or electroplated in accordance with the Standard Specifications.
 - For helically corrugated coupling bands, the connection angles may be oriented parallel to the pipe axis, provided connecting holes are slotted lengthwise sufficiently to allow adjustment for the helix angle.
 - Tension strap may be connected to band with either spot welds or fillet welds that develop minimum required strength of strap.
 - Use 1 1/4" gage line dimension on attached angle leg for rivets and spot welds.
 - Band thickness shall not be less than:
 - 3 standard thicknesses lighter than the thickness of the pipe for Corrugated Steel Pipe.
 - 2 standard thicknesses lighter than the thickness of the pipe and in no case lighter than 0.060" for Corrugated Aluminum Pipe.
 - Dimensions, thicknesses and strengths shown are minimum.
 - For pipe arches use same width band as for round pipe of equal periphery.
 - Fillet welds of equivalent strenght may be substituted for spot welds or rivets.
 - Spot welds shall develop minimum required strength of strap.
 - Pipe with rerolled ends having at least two 2 2/3" x 1/2" annular corrugations at each end with or without an upturned flange may be connected with any of the annular coupling bands shown for pipe of the same diameter and wall thickness and having 2 2/3" x 1/2" corrugations.
 - For downdrain applications, two piece integral flange couplers shall have factory applied sleeve type rubber gaskets with a minimum length of 7" measured along the length of the pipe.

SPIRAL RIB PROFILE

COUPLING TYPE	PIPE CORRUGATION	PIPE SIZE	W	PIPE WALL THICKNESS				BAR AND STRAP (SSRP ONLY)			ANGLE							
				SSRP		ASRP		STRAP THICKNESS	BOLTS Dia	BAR Dia	DIMENSIONS		BOLTS (No.- Dia)		RIVETS ANGLE TO BAND		SPOT WELDS ANGLE TO BAND	
				SSRP	ASRP	SSRP	ASRP				SSRP	ASRP	SSRP	ASRP	SSRP	ASRP	SSRP	
ANNULAR	2 2/3" x 1/2" * REROLLED END	24"	12"	0.064"-0.168"	0.060"-0.164"	0.064"	0.060"											
HUGGER	2 2/3" x 1/2" * REROLLED END	24"	10 1/2"	0.064"-0.168"		0.064"		0.079"	1/2"	7/8"								

* See Note 12.

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**CORRUGATED METAL PIPE
COUPLING DETAILS No. 7
DOWNDRAIN**

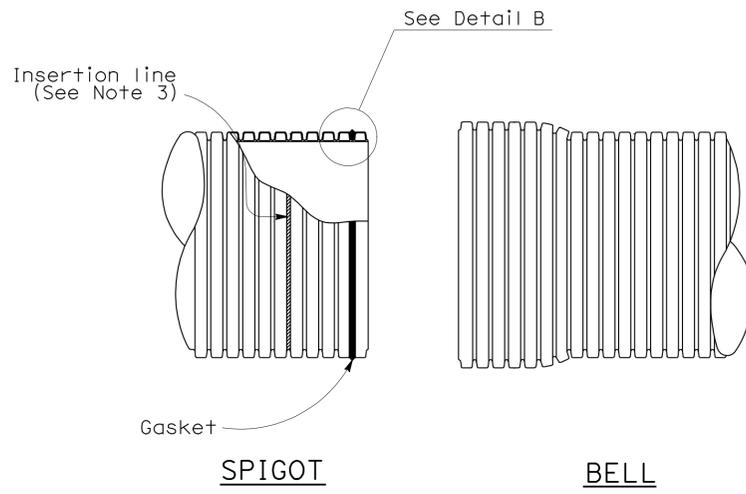
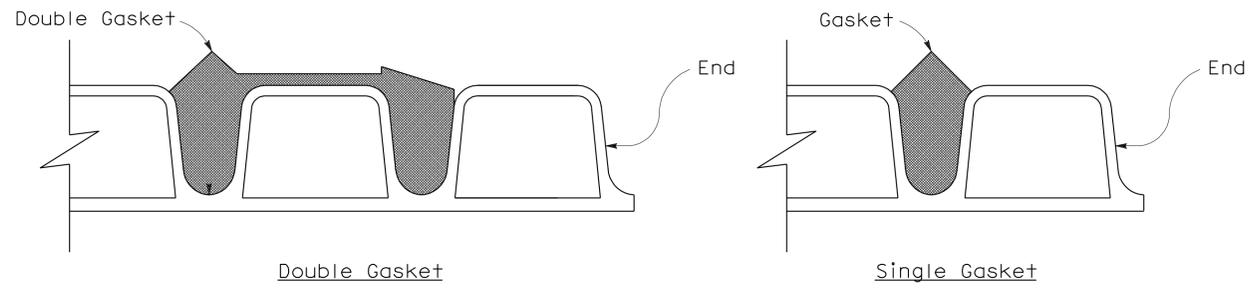
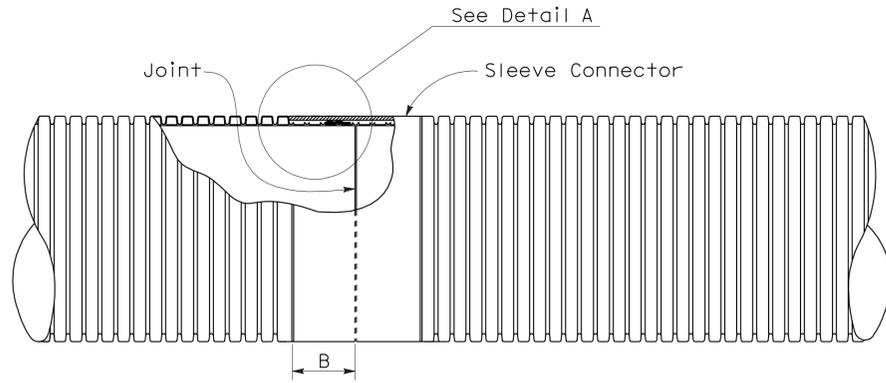
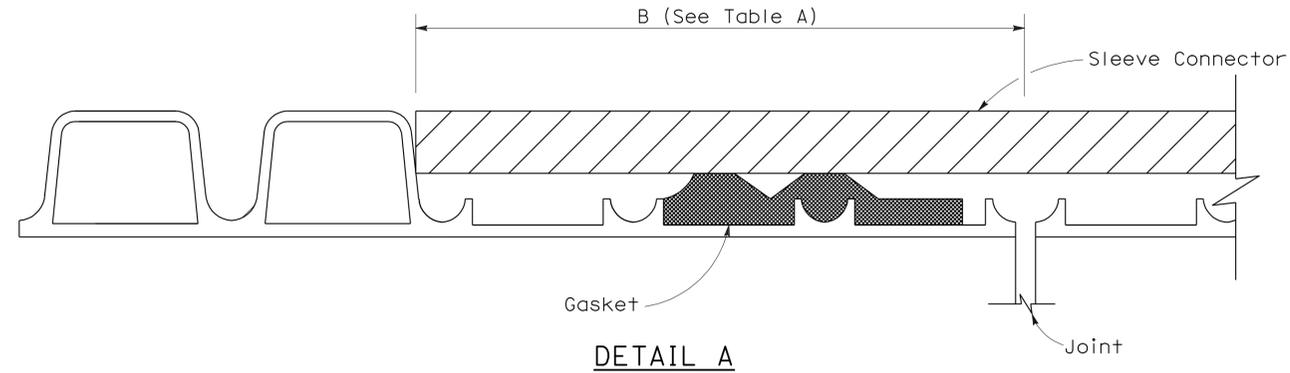
NO SCALE

RSP D97G DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN D97G
DATED MAY 1, 2006 - PAGE 189 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP D97G

2006 REVISED STANDARD PLAN RSP D97G

To accompany plans dated 5-21-12



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

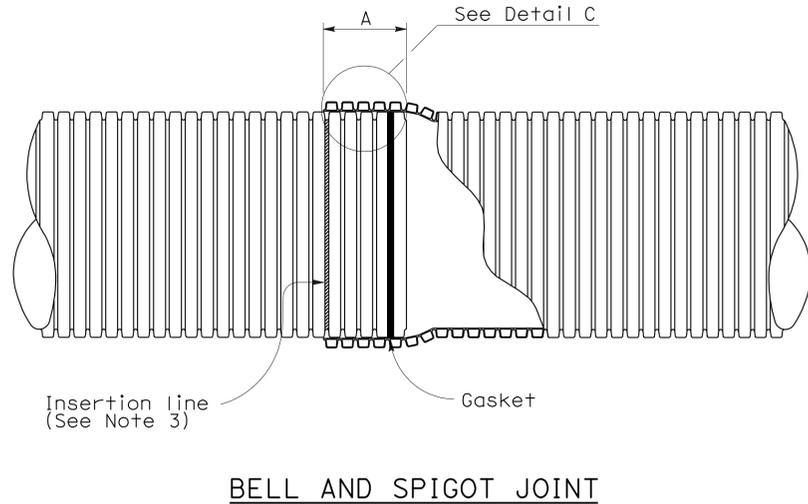
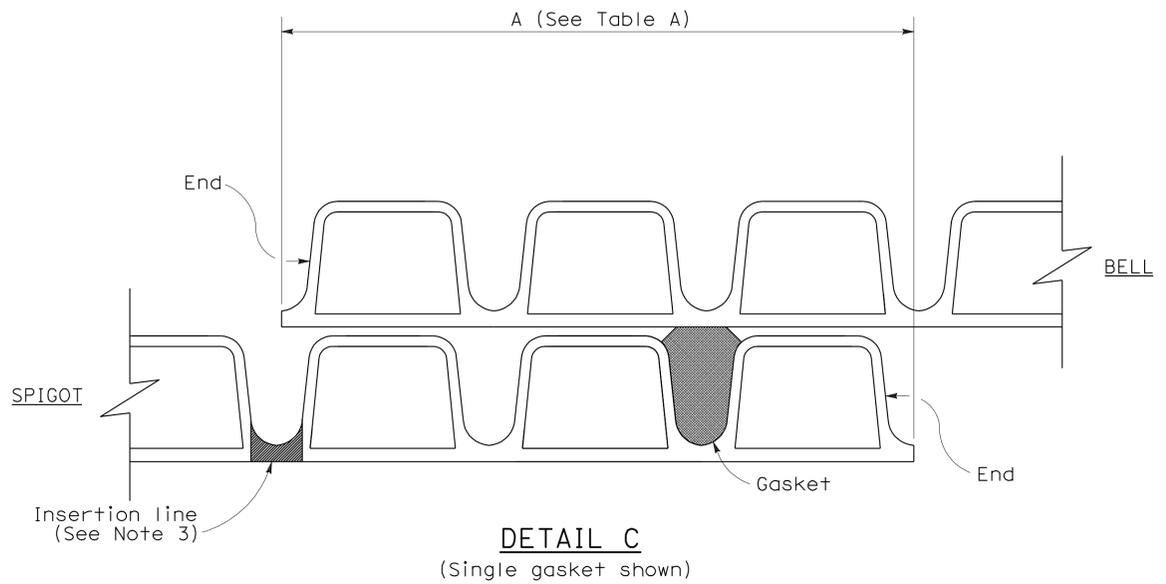


TABLE A

JOINT OVERLAP DIMENSIONS

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**CORRUGATED POLYVINYL CHLORIDE PIPE
WITH SMOOTH INTERIOR
STANDARD AND POSITIVE JOINTS**

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

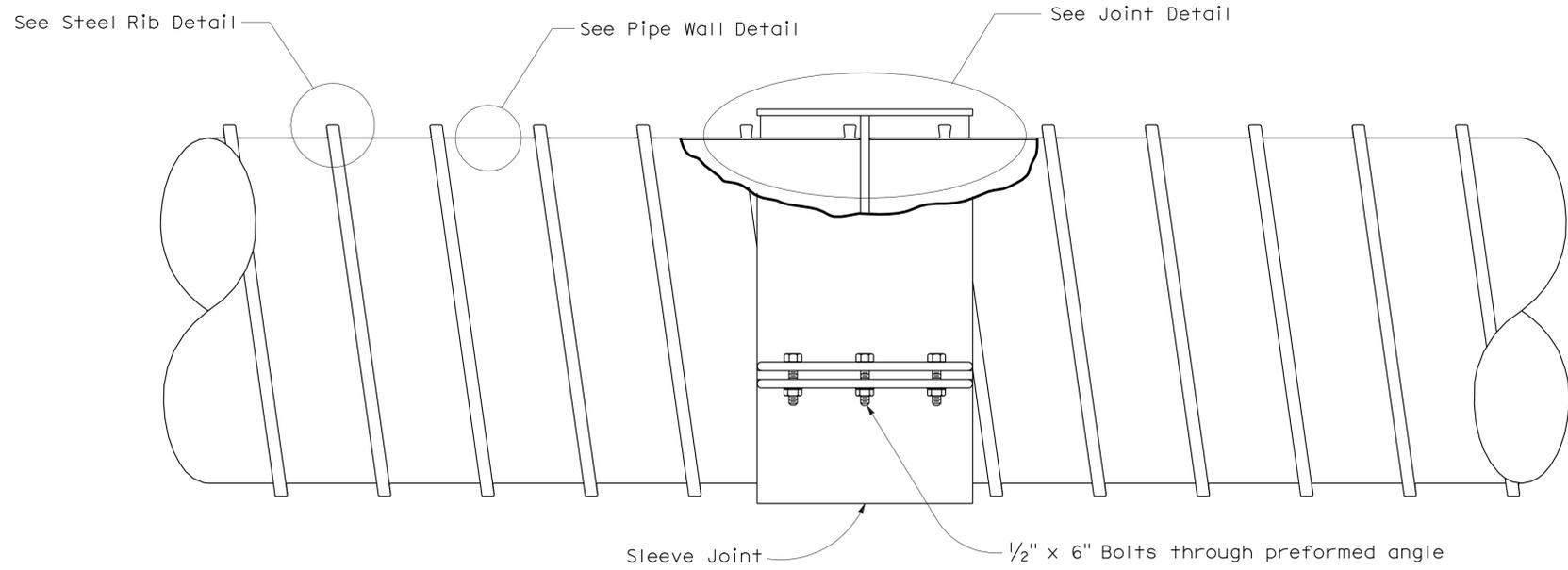
2006 NEW STANDARD PLAN NSP D97I

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	568	681

Raymond Don Tsztou
 REGISTERED CIVIL ENGINEER
 June 6, 2008
 PLANS APPROVAL DATE
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REGISTERED PROFESSIONAL ENGINEER
 Raymond Don Tsztou
 No. C37332
 Exp. 6-30-08
 CIVIL
 STATE OF CALIFORNIA

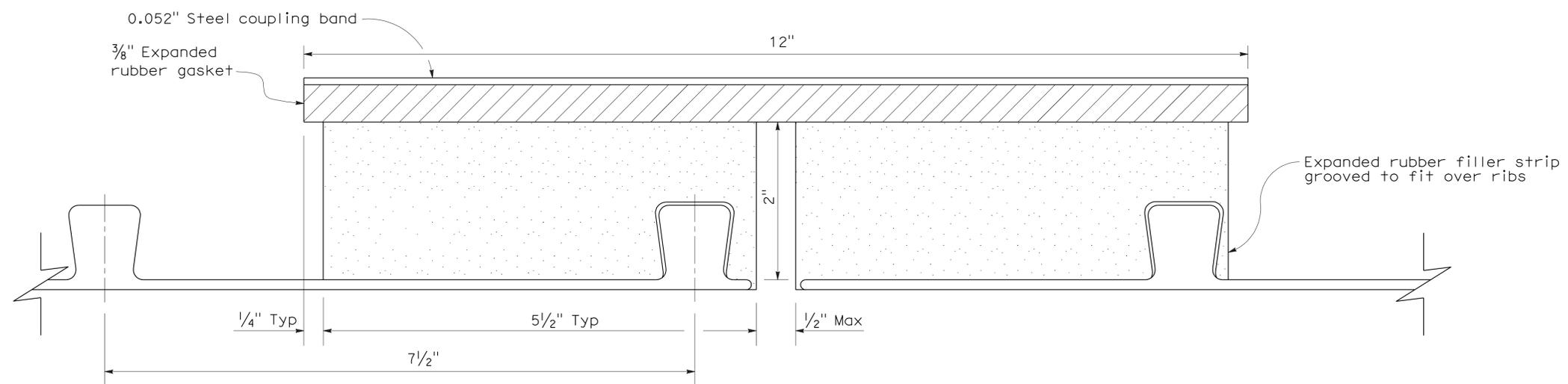
To accompany plans dated 5-21-12



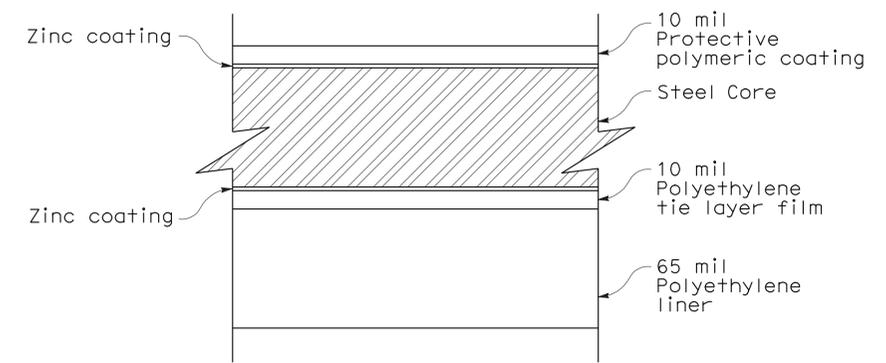
COMPOSITE STEEL SPIRAL RIB PIPE

NOTES:

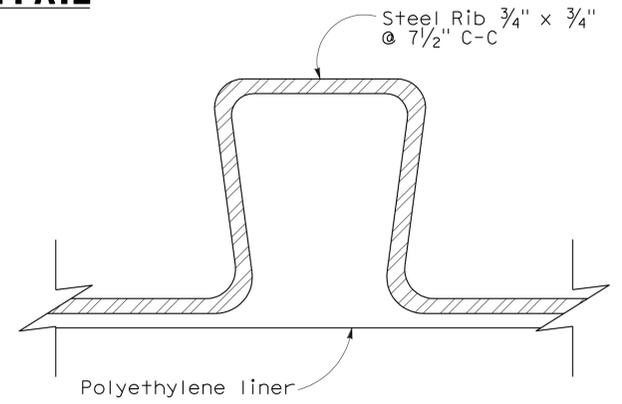
1. Pipe to conform to ASTM A 978.
2. See Standard Plan A62F for backfill details.
3. Protective polymer film to conform to ASTM A 742 and AASHTO M 246.
4. See Standard Plan D97C for Universal Coupling details.
5. Strap joint connection shall consist of 2 separate bolted preformed connectors joined to form one strap when pipe inside diameter is greater than or equal to 60".



JOINT DETAIL



PIPE WALL DETAIL



STEEL RIB DETAIL

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**COMPOSITE STEEL SPIRAL RIB PIPE
 WITH SMOOTH INTERIOR
 STANDARD JOINT**

NO SCALE
 NSP D97J DATED JUNE 6, 2008 SUPPLEMENTS THE
 STANDARD PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP D97J

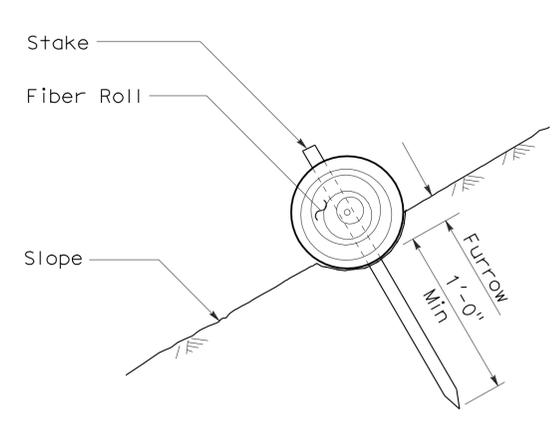
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	569	681

Gregory A. Balzer
 LICENSED LANDSCAPE ARCHITECT
 April 3, 2009
 PLANS APPROVAL DATE
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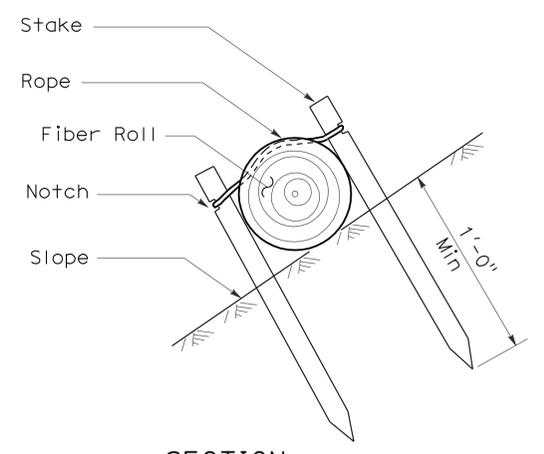
To accompany plans dated 5-21-12

NOTES:

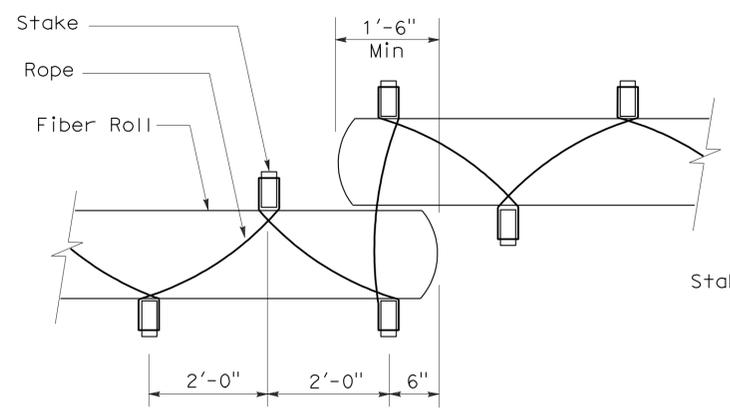
1. Fiber roll spacing varies depending upon slope inclination.
2. Installations shown in the perspectives are for slope inclination of 10:1 and steeper.



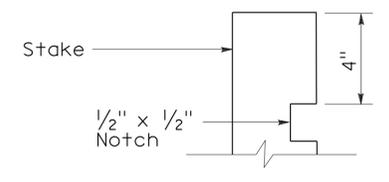
SECTION
FIBER ROLL
(TYPE 1)



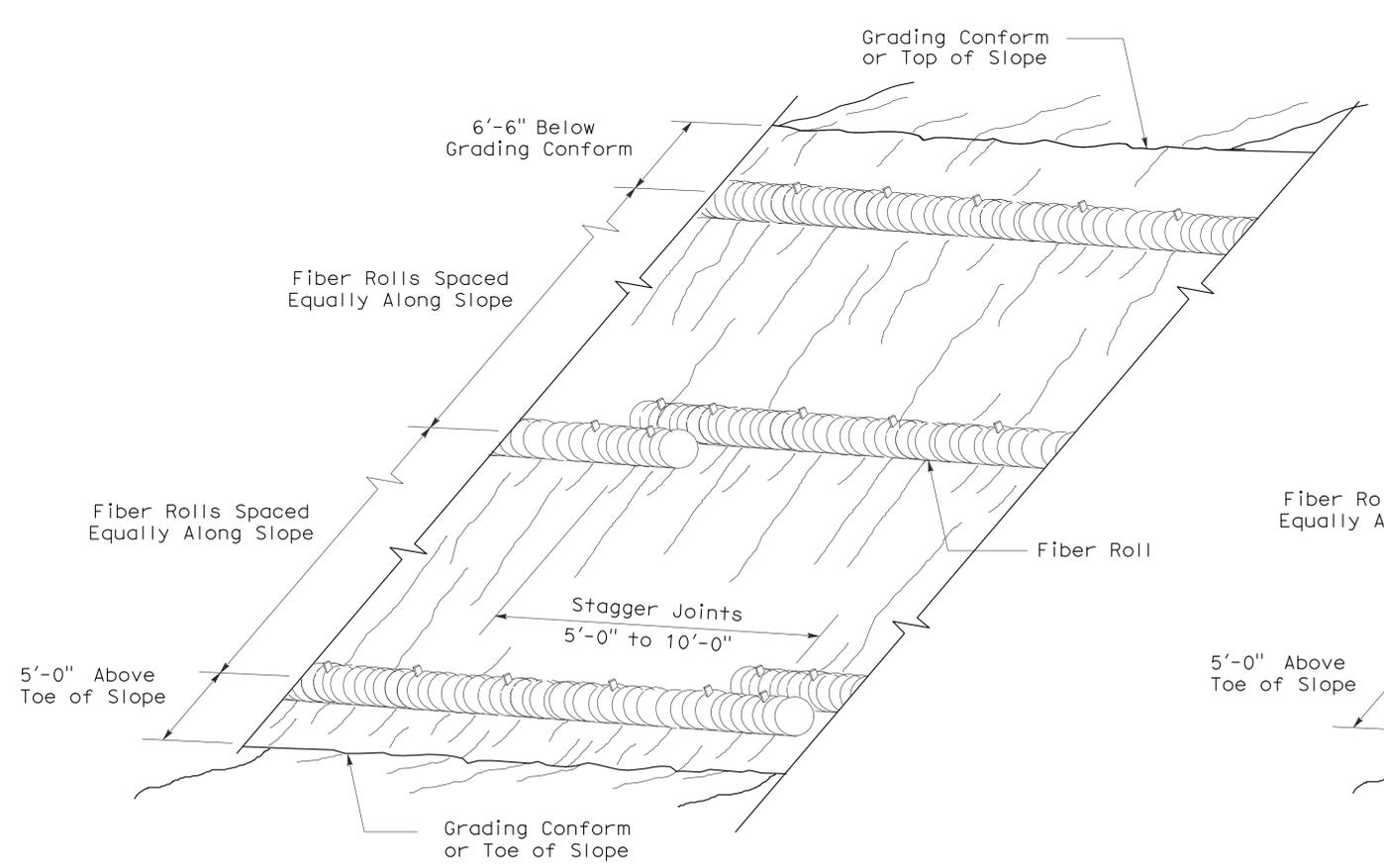
SECTION



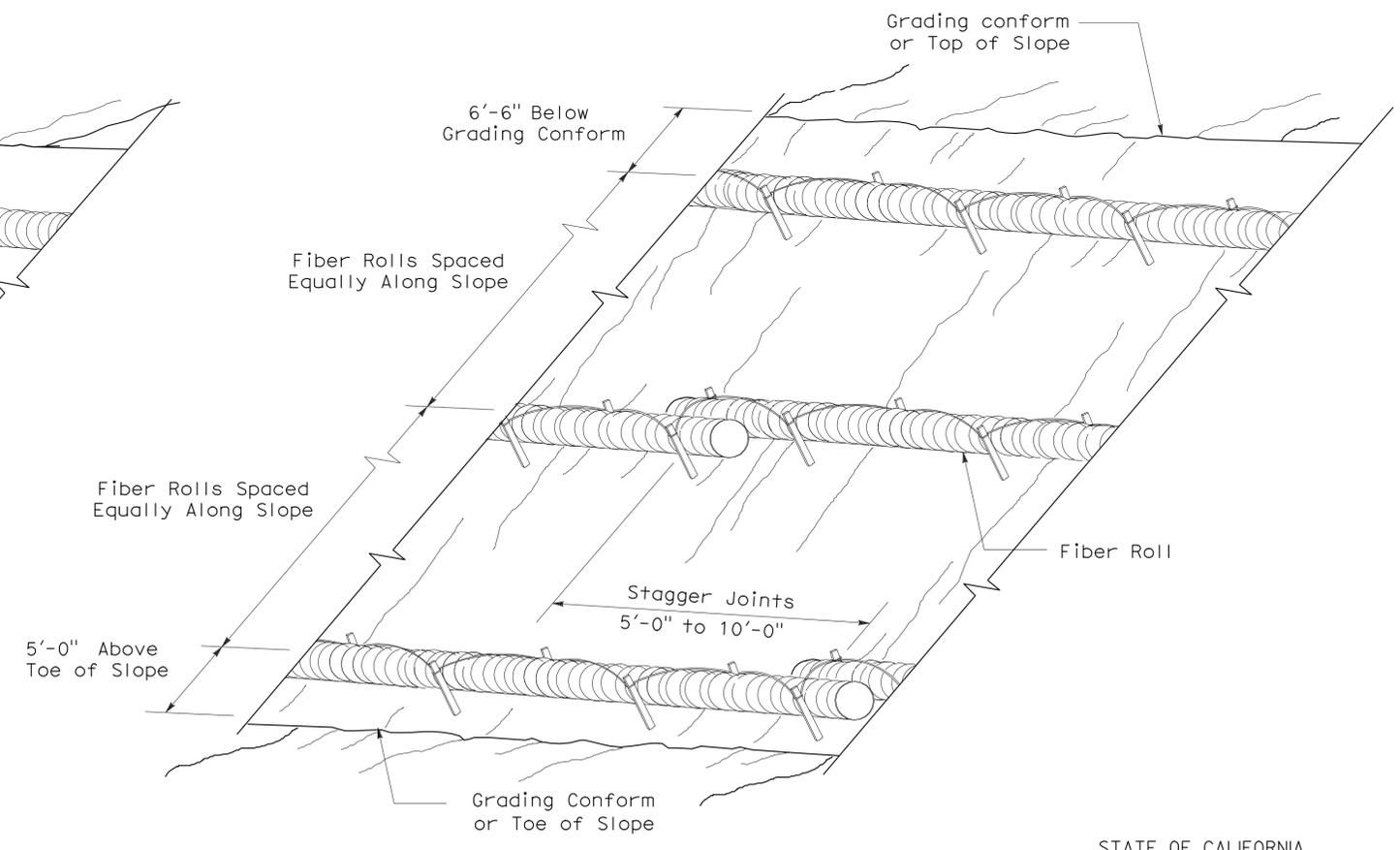
PLAN



ELEVATION
STAKE NOTCH DETAIL



PERSPECTIVE
FIBER ROLL (TYPE 1)



PERSPECTIVE
FIBER ROLL (TYPE 2)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
EROSION CONTROL DETAILS
(FIBER ROLL)

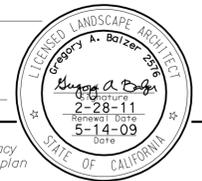
NO SCALE

RNSP H51 DATED APRIL 3, 2009 SUPERSEDES NSP H51 DATED DECEMBER 1, 2006 THAT SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED NEW STANDARD PLAN RNSP H51

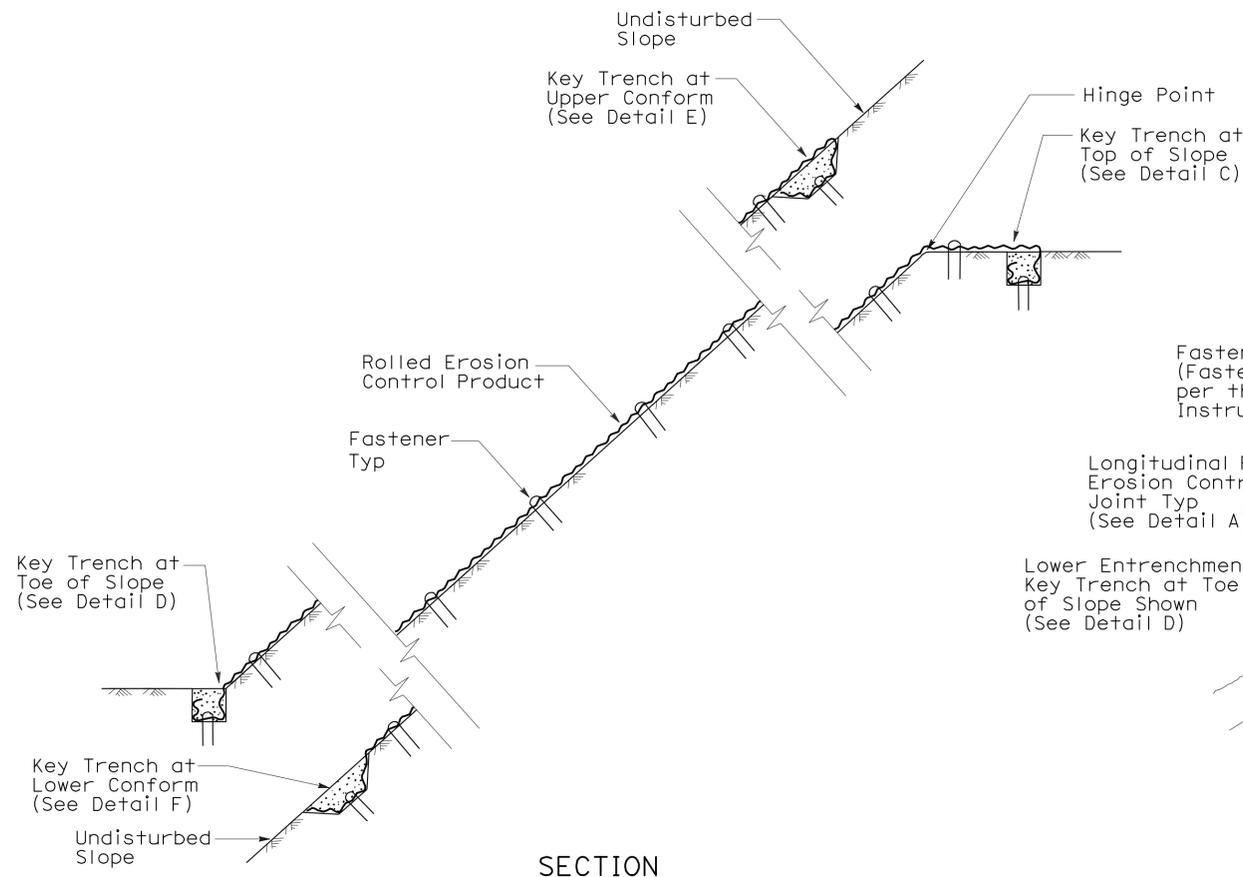
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	570	681

Gregory A. Balzer
 LICENSED LANDSCAPE ARCHITECT
 June 5, 2009
 PLANS APPROVAL DATE
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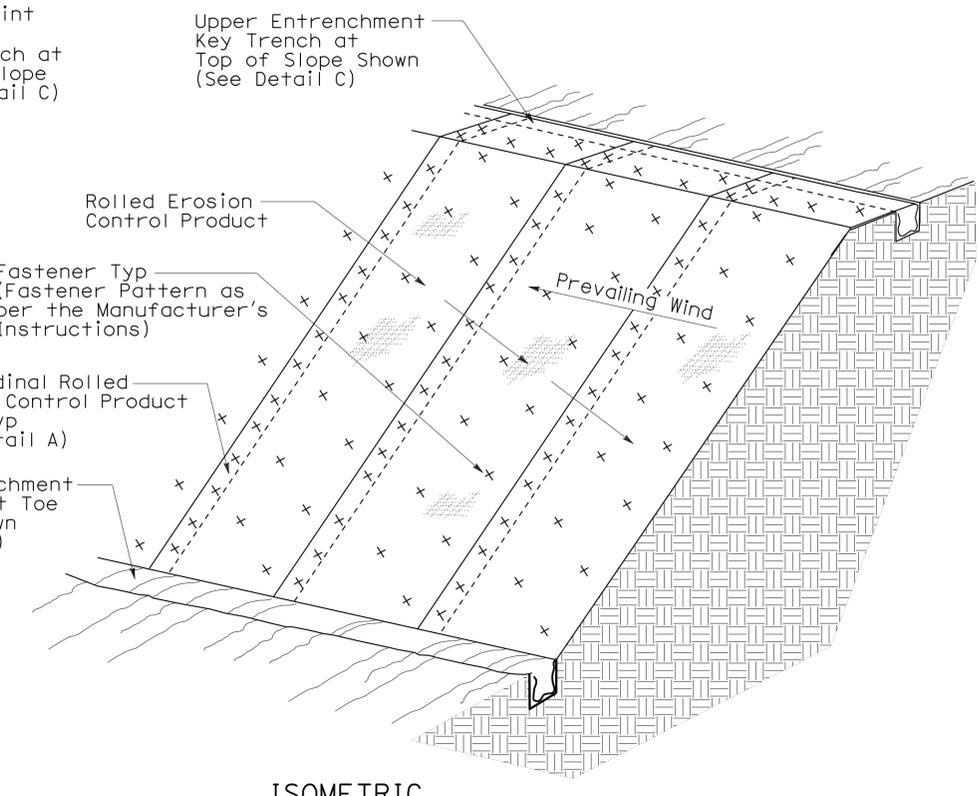


To accompany plans dated 5-21-12

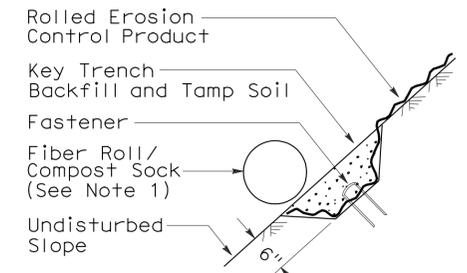
- NOTE:**
1. Fiber Roll/Compost Sock shown for reference purposes only.
 2. If transverse rolled erosion control product joints are required on slopes, see Detail B.



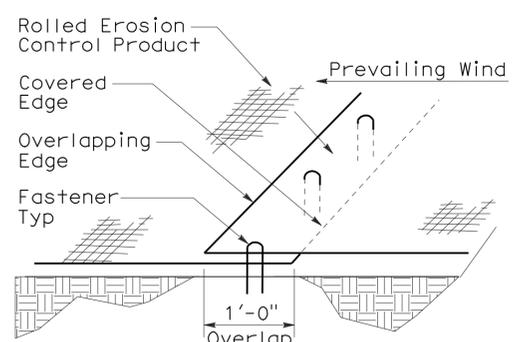
SECTION
ROLLED EROSION CONTROL PRODUCT
ON SLOPE WITH VARIOUS KEY ENTRENCHMENTS



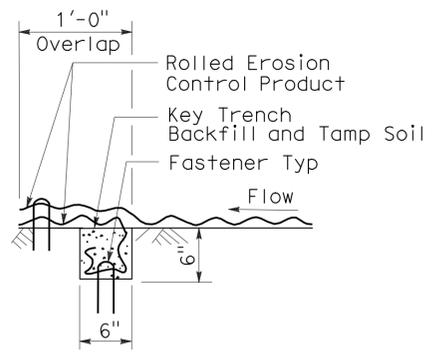
ISOMETRIC
ROLLED EROSION CONTROL PRODUCT
ON SLOPE



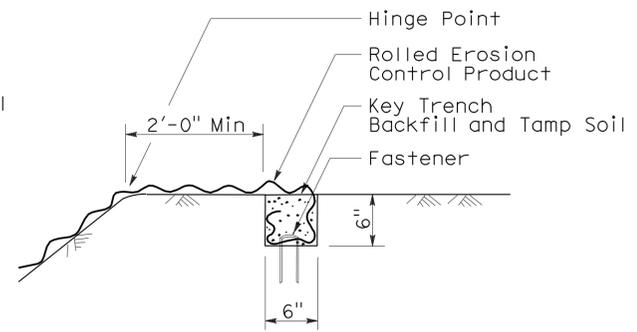
SECTION
DETAIL F
KEY TRENCH AT
LOWER CONFORM



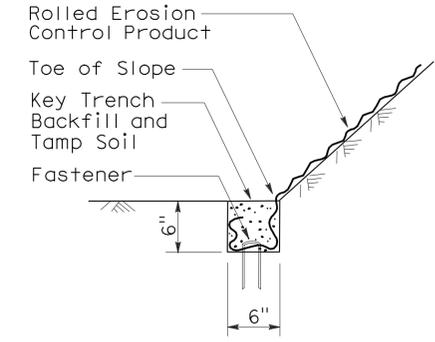
PERSPECTIVE
DETAIL A
LONGITUDINAL ROLLED EROSION
CONTROL PRODUCT JOINT



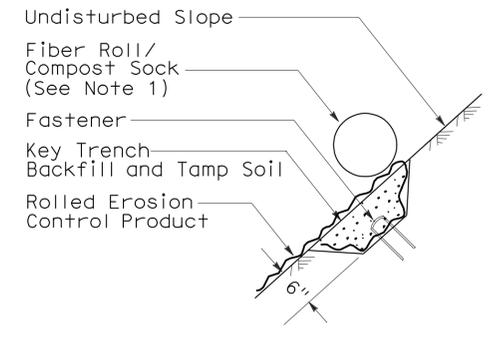
SECTION
DETAIL B
TRANSVERSE ROLLED EROSION
CONTROL PRODUCT JOINT



SECTION
DETAIL C
KEY TRENCH AT
TOP OF SLOPE



SECTION
DETAIL D
KEY TRENCH AT
TOE OF SLOPE



SECTION
DETAIL E
KEY TRENCH AT
UPPER CONFORM

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

ROLLED EROSION CONTROL PRODUCT

NO SCALE

NSP H53 DATED JUNE 5, 2009 SUPPLEMENTS
 THE STANDARD PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP H53

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	571	681

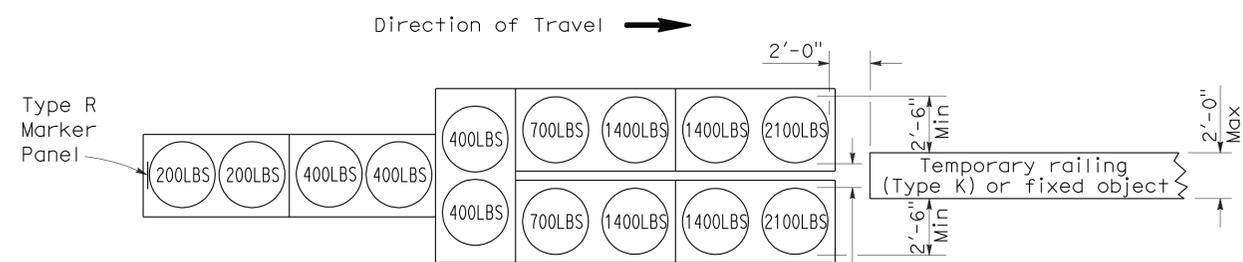
Randell D. Hiatt
REGISTERED CIVIL ENGINEER

June 6, 2008
PLANS APPROVAL DATE

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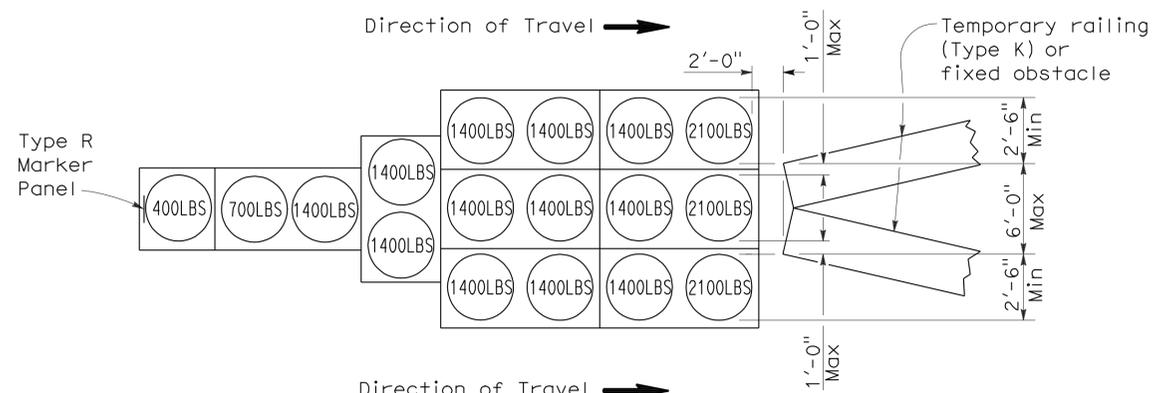
REGISTERED PROFESSIONAL ENGINEER
Randell D. Hiatt
No. C50200
Exp. 6-30-09
CIVIL
STATE OF CALIFORNIA

To accompany plans dated 5-21-12



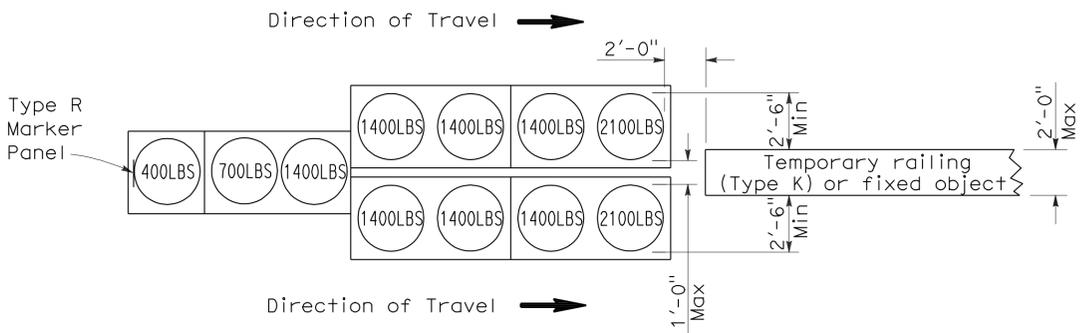
ARRAY 'TU14'

Approach speed 45 mph or more



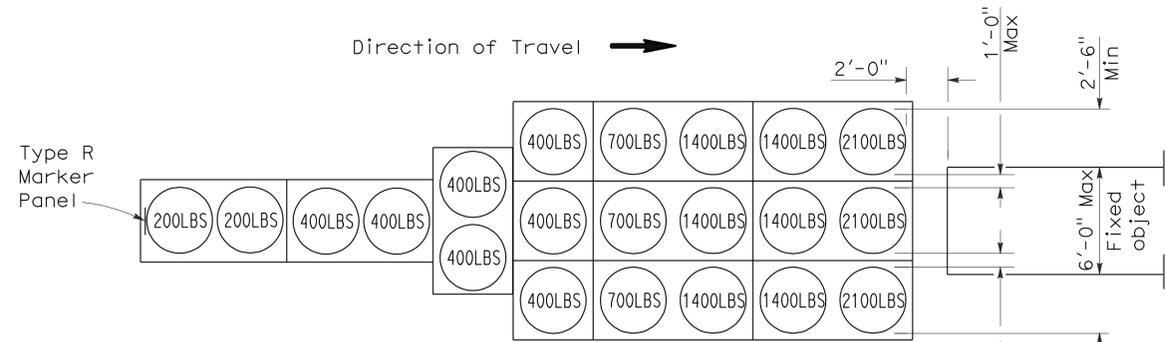
ARRAY 'TU17'

Approach speed less than 45 mph



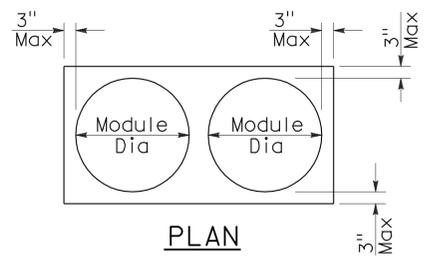
ARRAY 'TU11'

Approach speed less than 45 mph

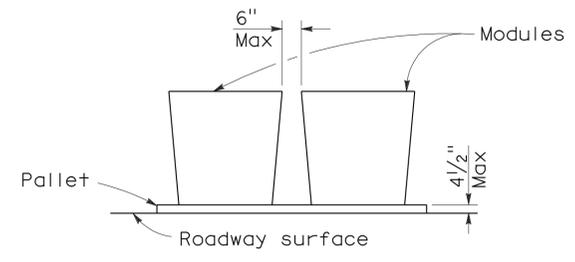


ARRAY 'TU21'

Approach speed 45 mph or more



PLAN



ELEVATION

CRASH CUSHION PALLET DETAIL

See Note 7

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

REVISED STANDARD PLAN RSP T1A

2006 REVISED STANDARD PLAN RSP T1A

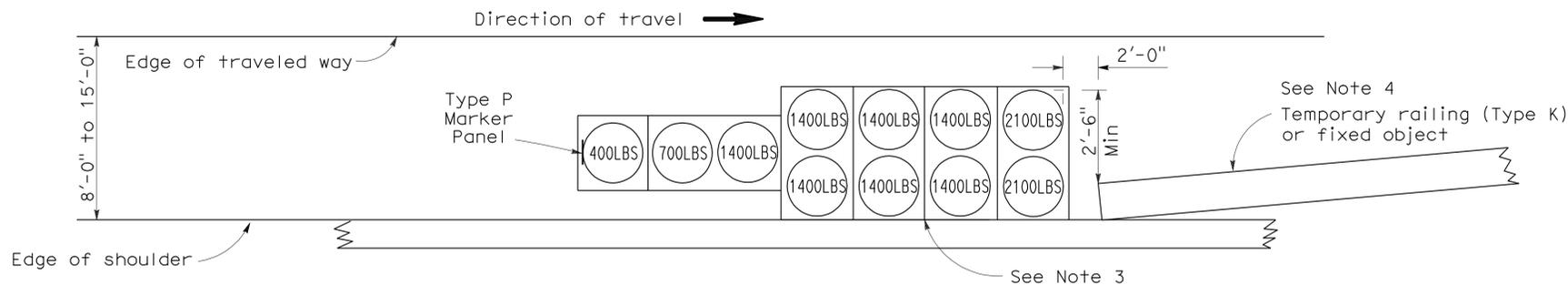
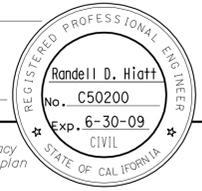
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	572	681

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

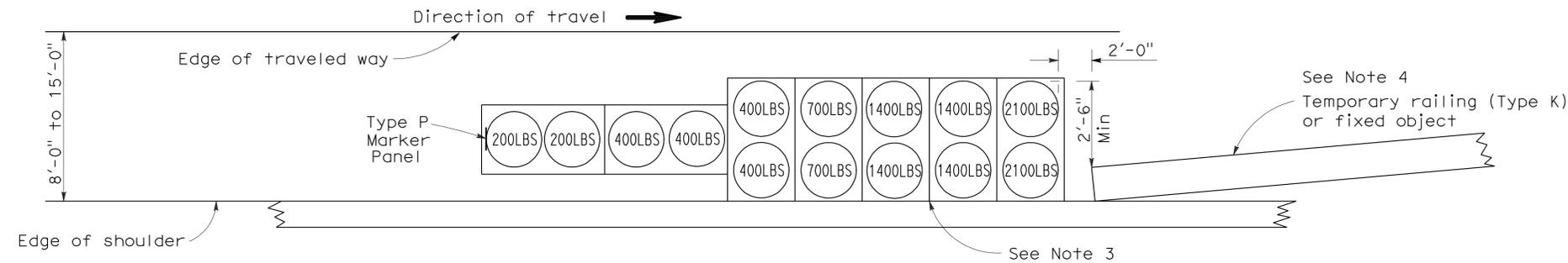
June 6, 2008
PLANS APPROVAL DATE

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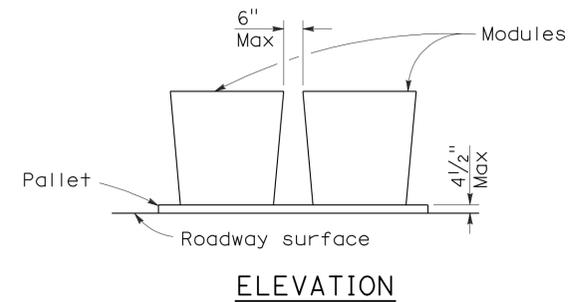
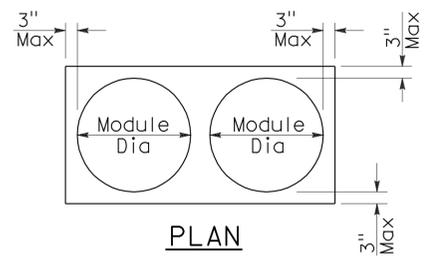
To accompany plans dated 5-21-12



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



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



CRASH CUSHION PALLET DETAIL
See Note 11

NOTES:

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

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
**TEMPORARY CRASH CUSHION,
SAND FILLED
(SHOULDER INSTALLATIONS)**

NO SCALE
RSP T2 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T2
DATED MAY 1, 2006 - PAGE 213 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP T2

2006 REVISED STANDARD PLAN RSP T2

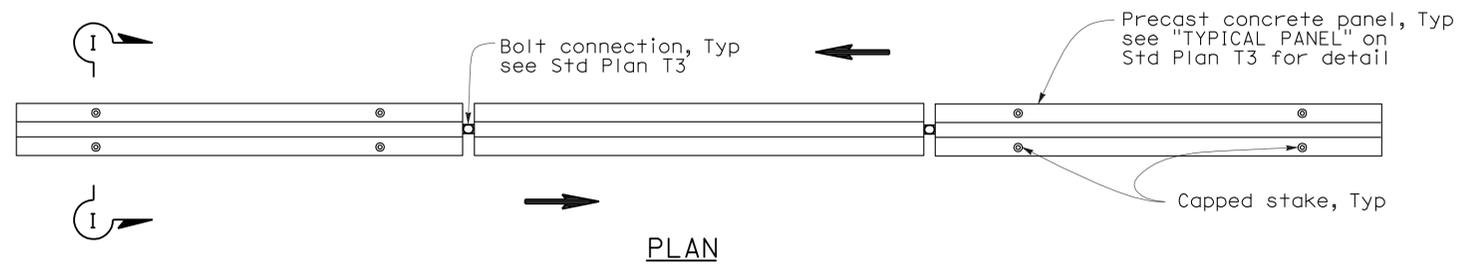
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	573	681

Randell D. Hiatt
REGISTERED CIVIL ENGINEER

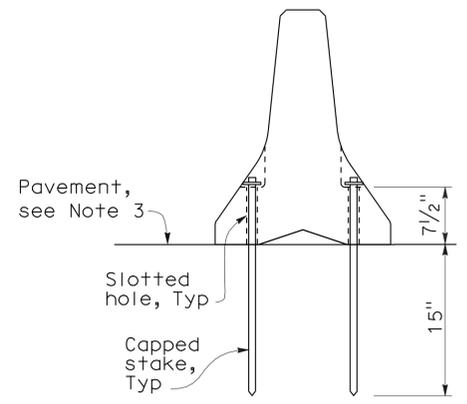
May 20, 2011
PLANS APPROVAL DATE

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

To accompany plans dated 5-21-12



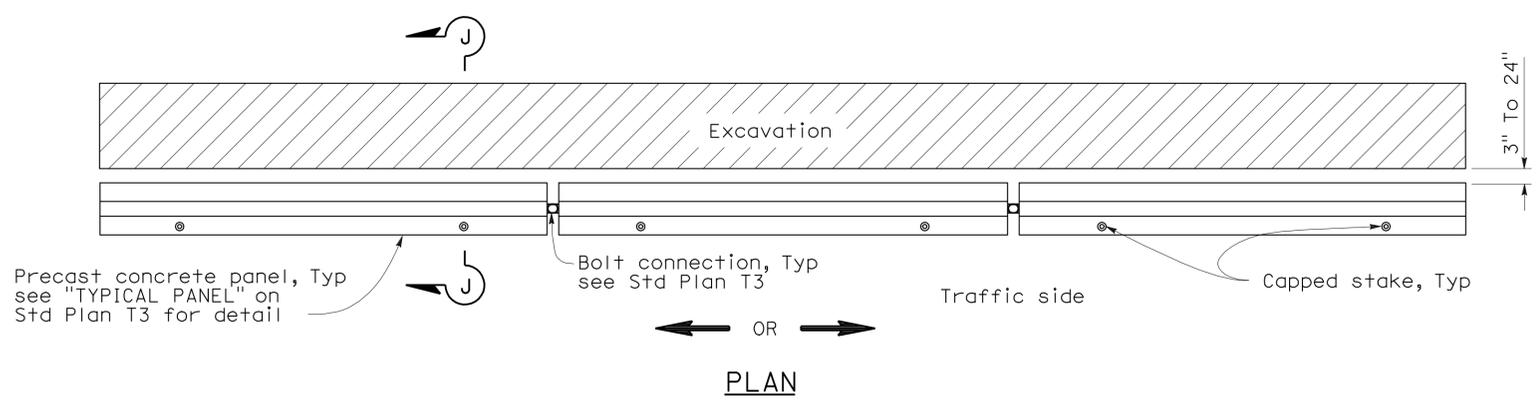
RAILING STAKING CONFIGURATION FOR TWO-WAY TRAFFIC
See Note 1



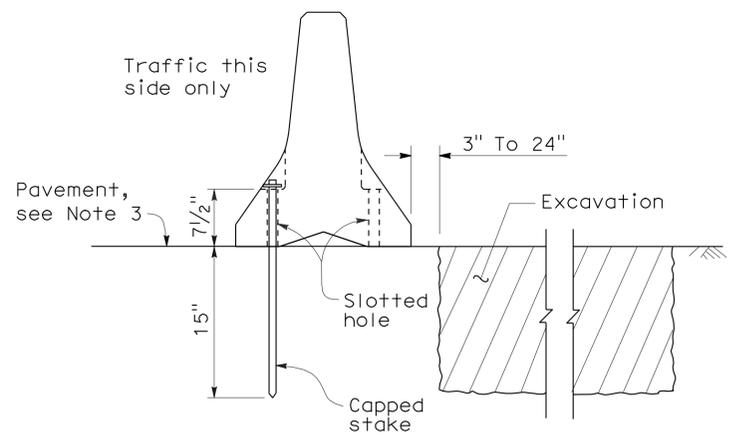
SECTION I-I

NOTES:

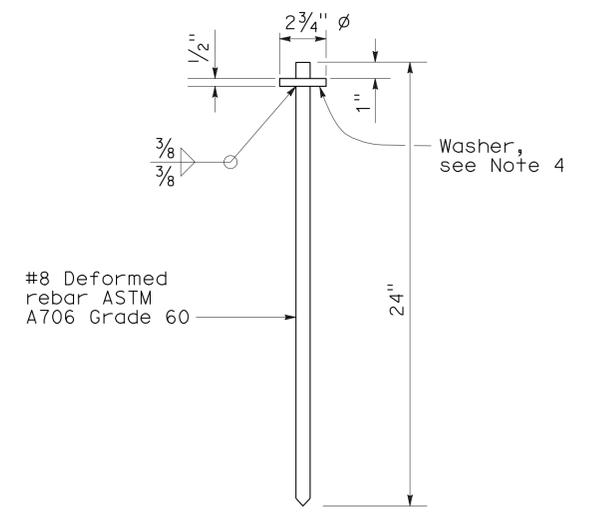
1. Where Type K Temporary Railing is placed as a temporary or long term barrier in two-way traffic on highways with less than 24" from the edge of traveled way, use four capped stakes per every other panel with end panels staked.
2. Where Type K Temporary Railing is placed 3" to 24" from the edge of an excavation on highways, use two capped stakes per panel along the traffic side.
3. Staked Type K Temporary Railing must be supported by at least 4" thick concrete, hot mix asphalt or existing asphalt concrete pavement.
4. The minimum yield strength for the washer must be 60,000 psi.
5. Direction of adjacent traffic indicated by \Rightarrow .



RAILING STAKING CONFIGURATION ADJACENT TO AN EXCAVATION
See Note 2



SECTION J-J



CAPPED STAKE DETAIL

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**TEMPORARY RAILING
(TYPE K)**

NO SCALE

NSP T3A DATED MAY 20, 2011 SUPPLEMENTS
THE STANDARD PLANS BOOK DATED MAY 2006.

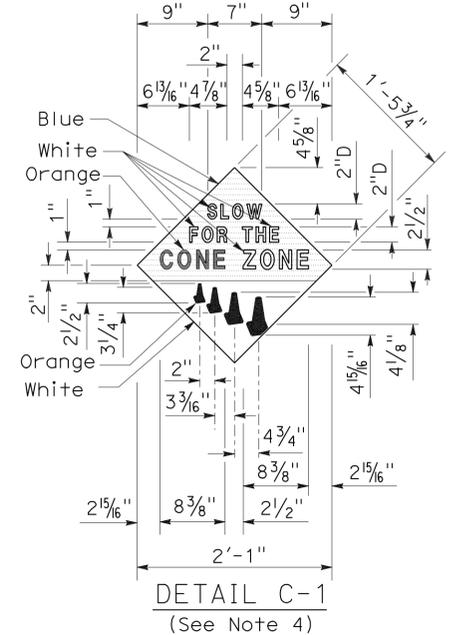
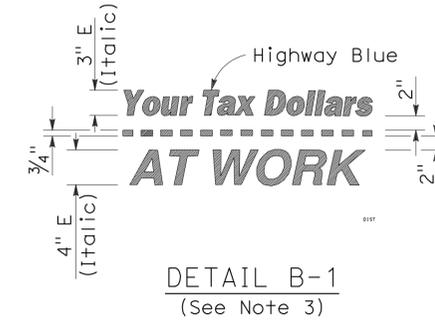
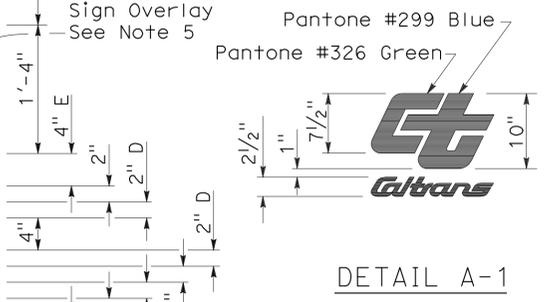
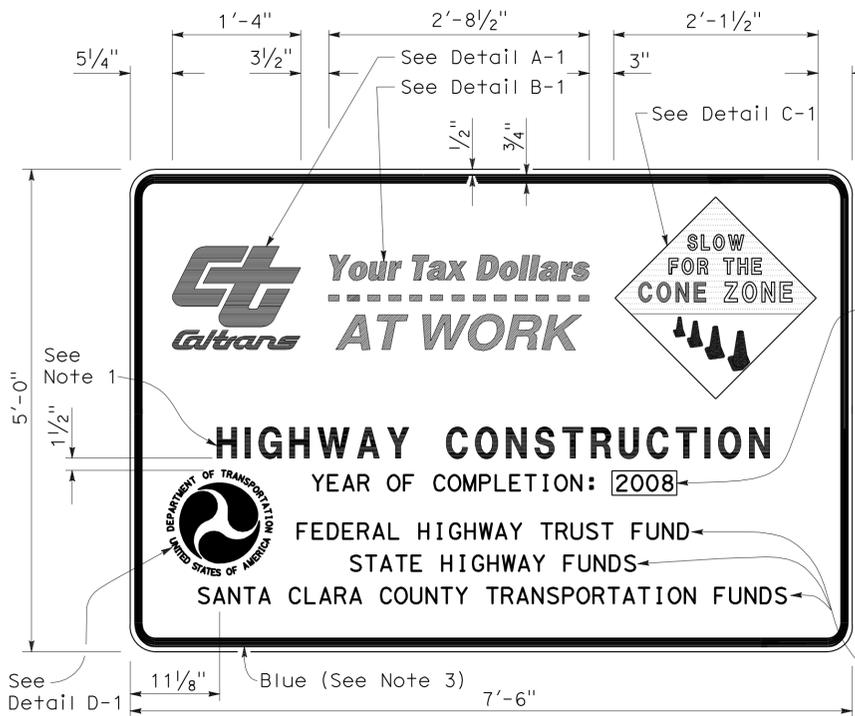
2006 NEW STANDARD PLAN NSP T3A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	574	681

Creg W. Edwards
 REGISTERED CIVIL ENGINEER
 November 17, 2006
 PLANS APPROVAL DATE
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

REGISTERED PROFESSIONAL ENGINEER
 Creg W. Edwards
 No. C36386
 Exp. 6-30-08
 CIVIL
 STATE OF CALIFORNIA

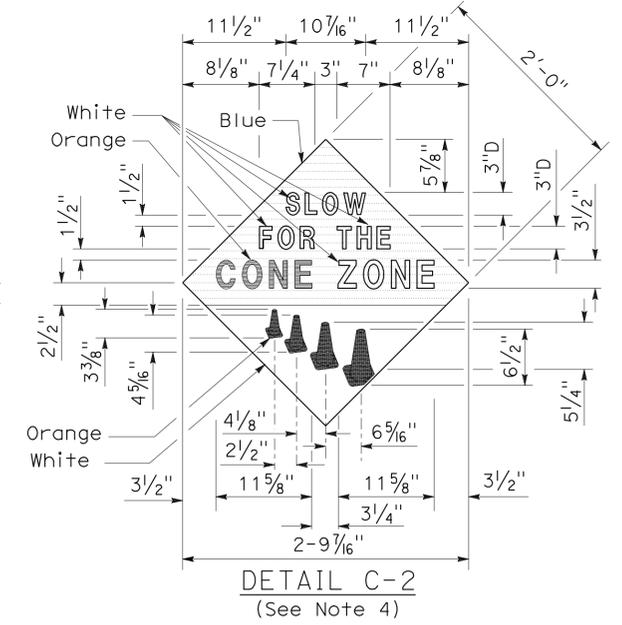
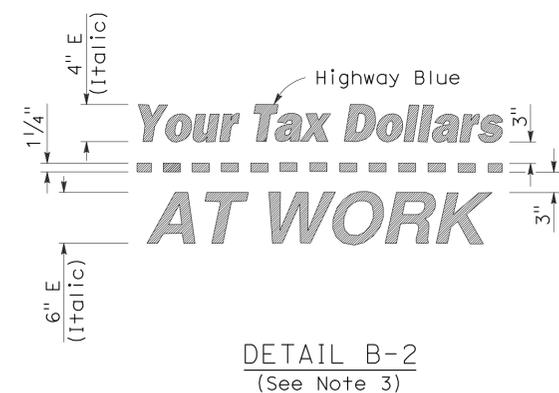
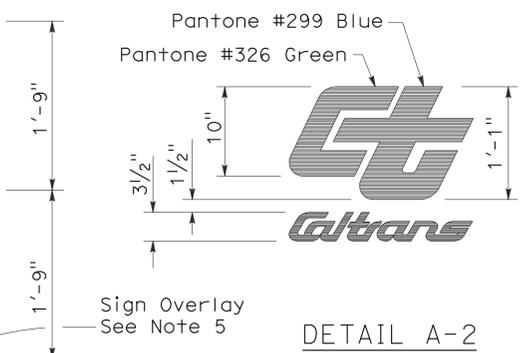
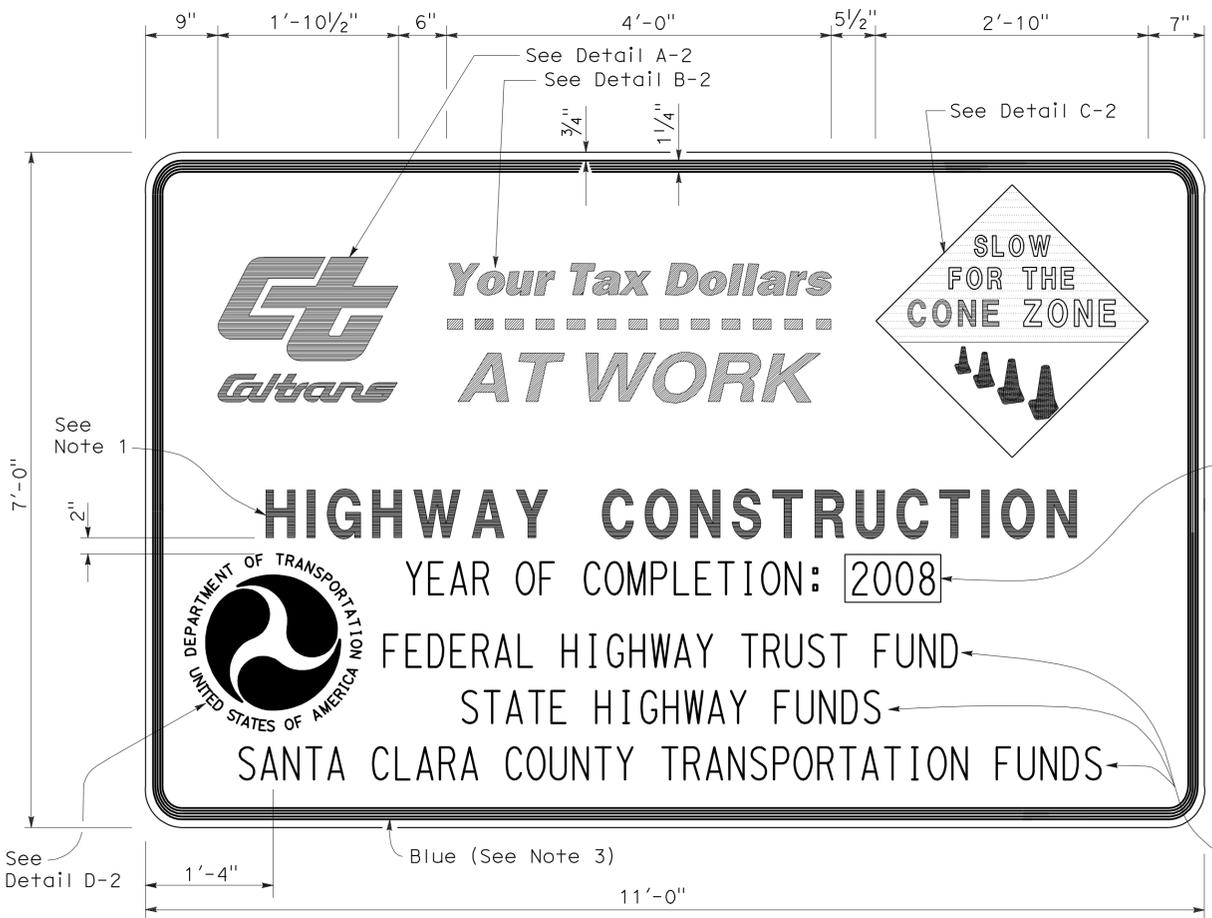
To accompany plans dated 5-21-12



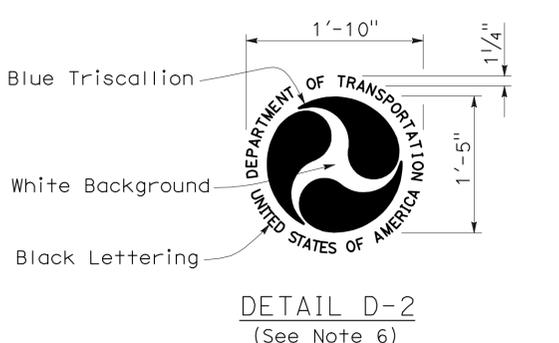
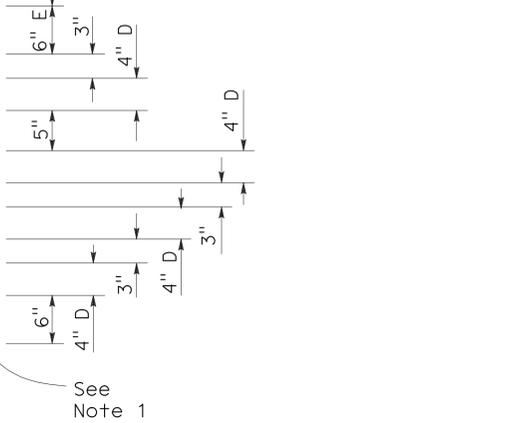
NOTES:

- The sign messages shown for type of project and fund types are examples only. See the Special Provisions for the applicable type of project and fund type messages to be used.
- Except as otherwise shown, the legend of sign shall be black on a white background (non-reflective).
- The border of the signs and details "B-1" and "B-2" shall be blue (non-reflective).
- The diamond in details "C-1" and "C-2" shall be blue for the background of message, "SLOW FOR THE CONE ZONE", and white background for the orange cones. The color and type of font for the "SLOW FOR THE CONE ZONE" message shall be: "SLOW" white D; "FOR THE" white D; "CONE" orange Arial font; "ZONE" white Arial font.
- Year of completion of project construction shown on the overlay is an example only. See the Special Provisions.
- Use when the Project involves Federal Highway Trust Fund.

TYPE 1



TYPE 2



STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
CONSTRUCTION PROJECT FUNDING IDENTIFICATION SIGNS
 NO SCALE

RSP T7 DATED NOVEMBER 17, 2006 SUPERSEDES STANDARD PLAN T7
 DATED MAY 1, 2006 - PAGE 217 OF THE STANDARD PLANS BOOK DATED MAY 2006.

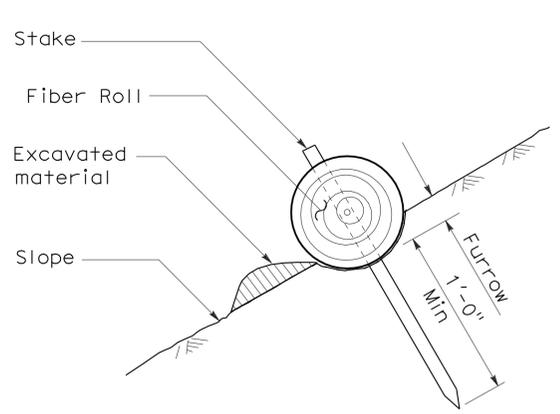
REVISED STANDARD PLAN RSP T7

2006 REVISED STANDARD PLAN RSP T7

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	575	681

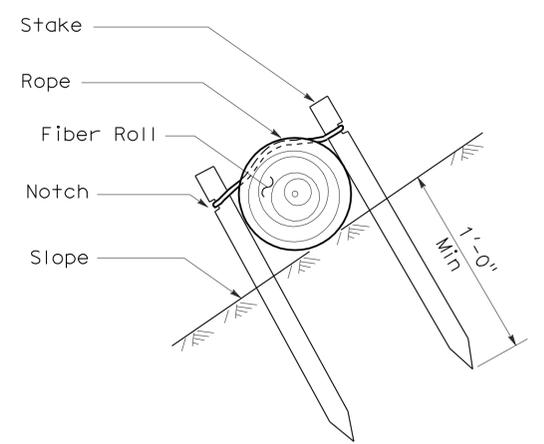
Robert B. Schott
 LICENSED LANDSCAPE ARCHITECT
 April 3, 2009
 PLANS APPROVAL DATE
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

To accompany plans dated 5-21-12



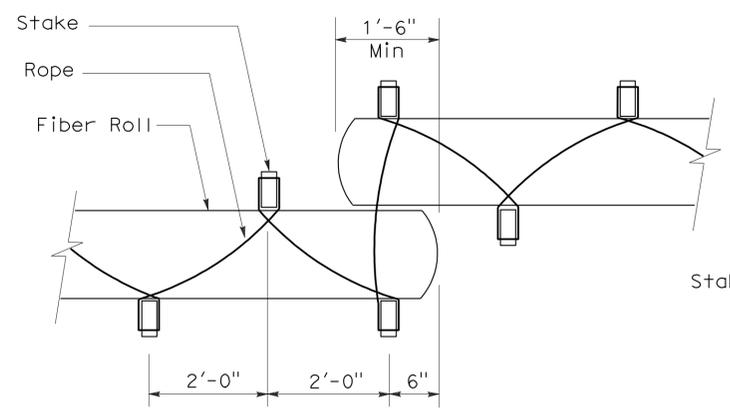
SECTION

TEMPORARY FIBER ROLL (TYPE 1)

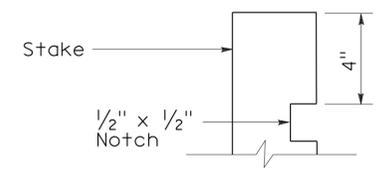


SECTION

TEMPORARY FIBER ROLL (TYPE 2)



PLAN

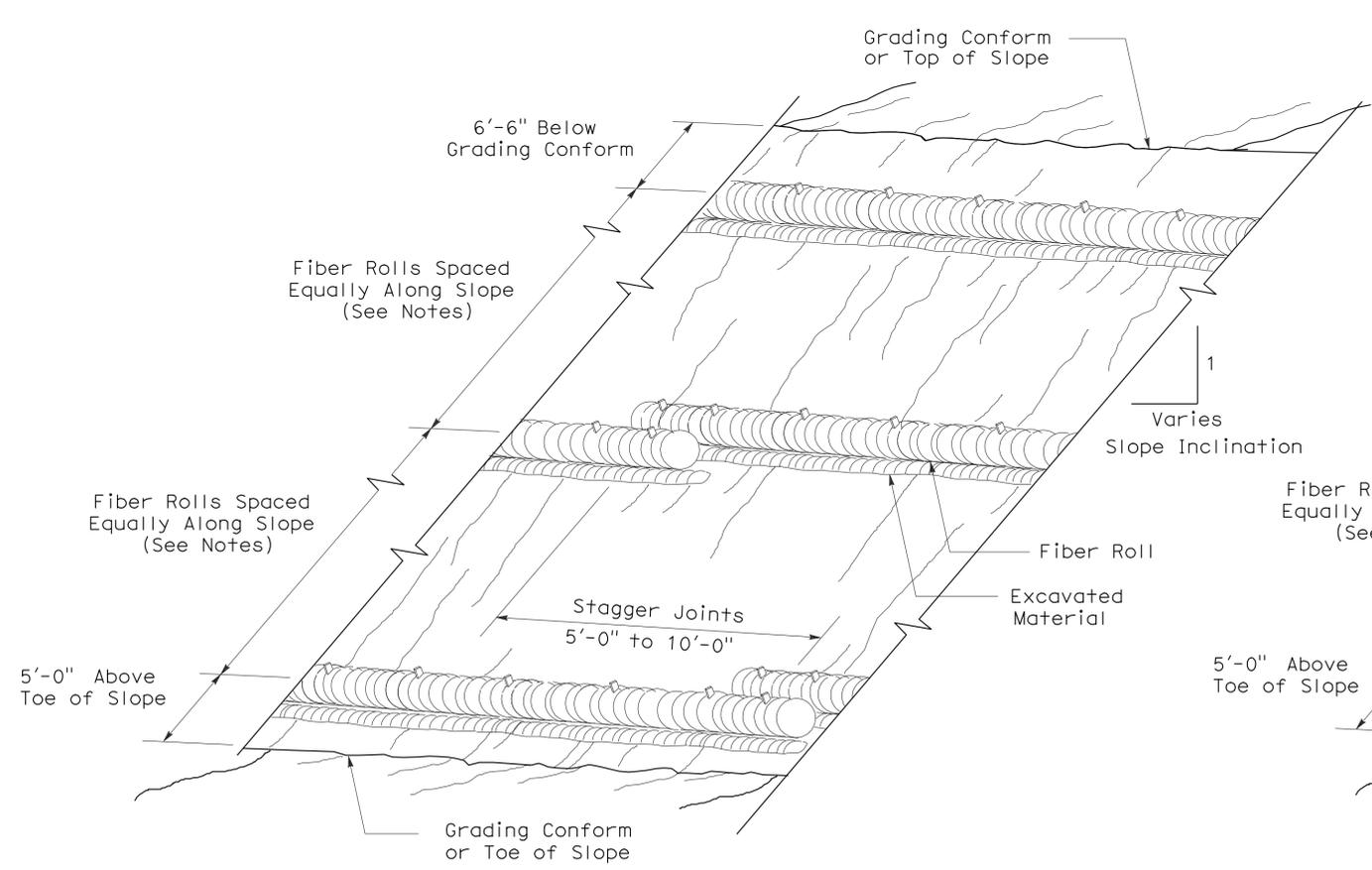


ELEVATION

STAKE NOTCH DETAIL

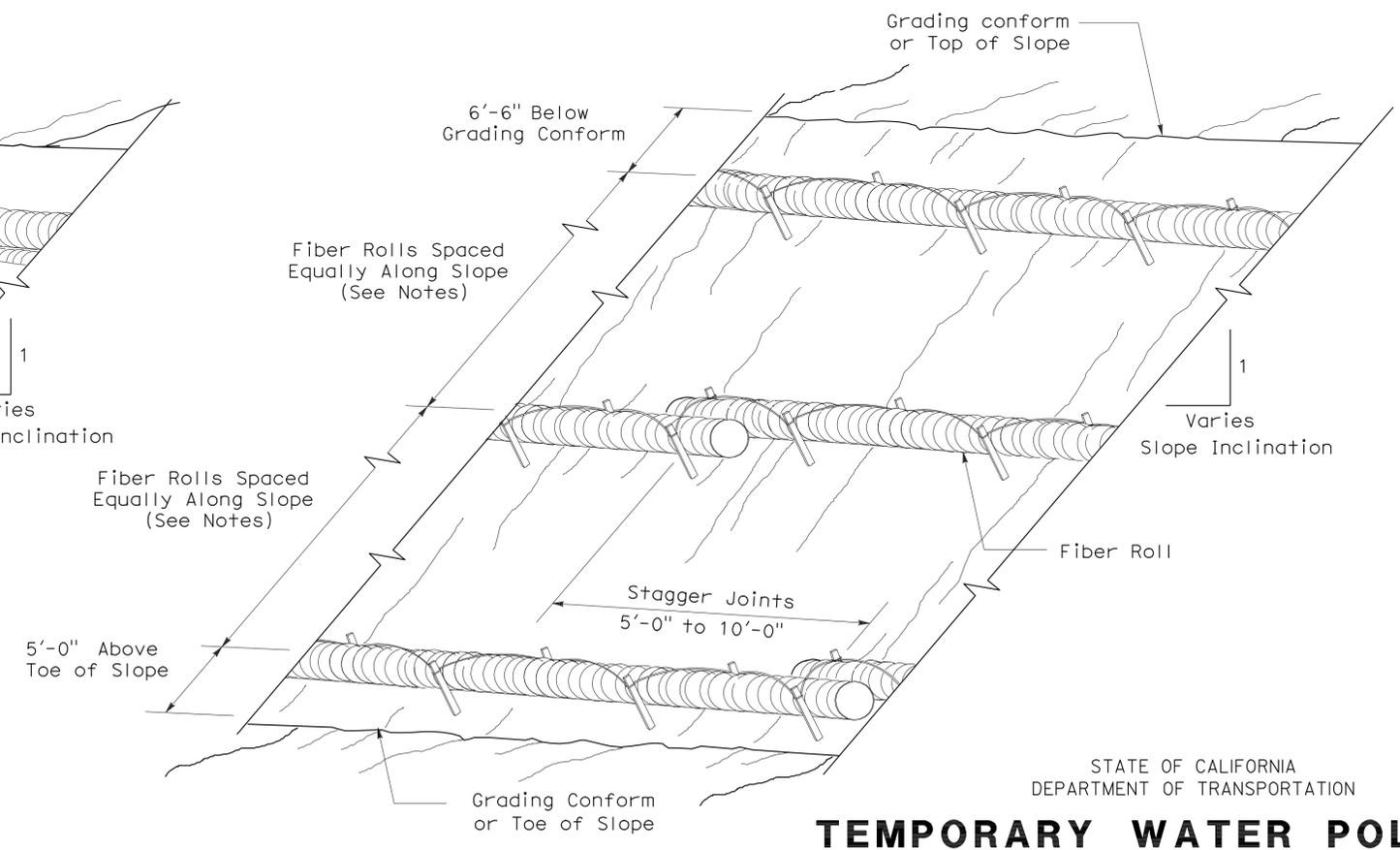
NOTES:

1. Temporary fiber roll spacing varies depending upon slope inclination.
2. Installations shown in the perspectives are for slope inclination of 10:1 and steeper.



PERSPECTIVE

TEMPORARY FIBER ROLL (TYPE 1)



PERSPECTIVE

TEMPORARY FIBER ROLL (TYPE 2)

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY FIBER ROLL)

NO SCALE

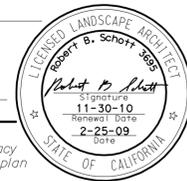
RSP T56 DATED APRIL 3, 2009 SUPERSEDES STANDARD PLAN T56 DATED MAY 1, 2006 - PAGE 232 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP T56

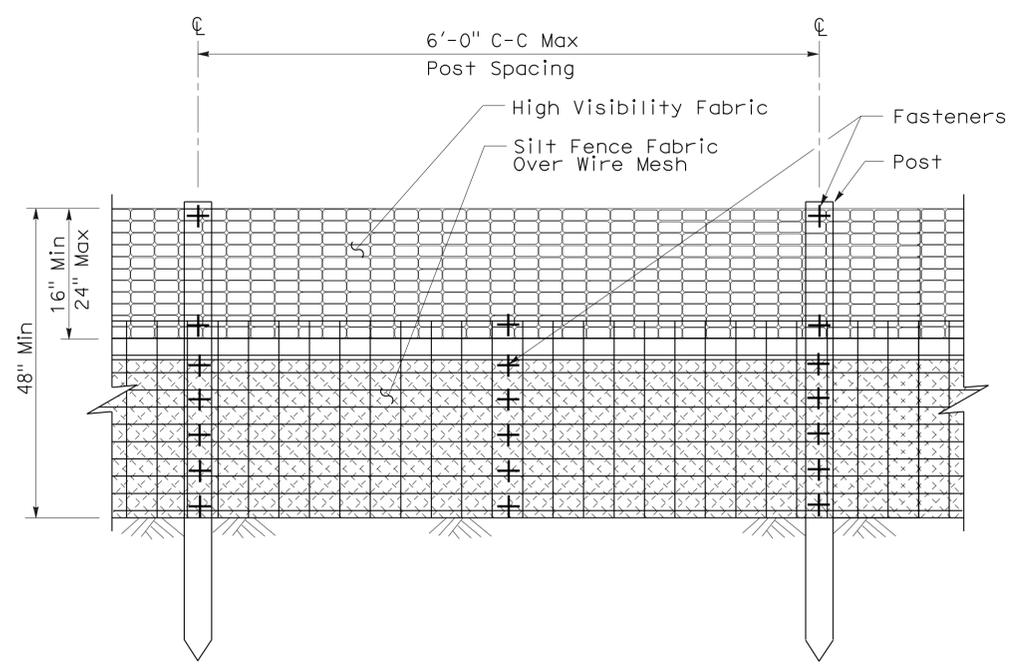
2006 REVISED STANDARD PLAN RSP T56

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	576	681

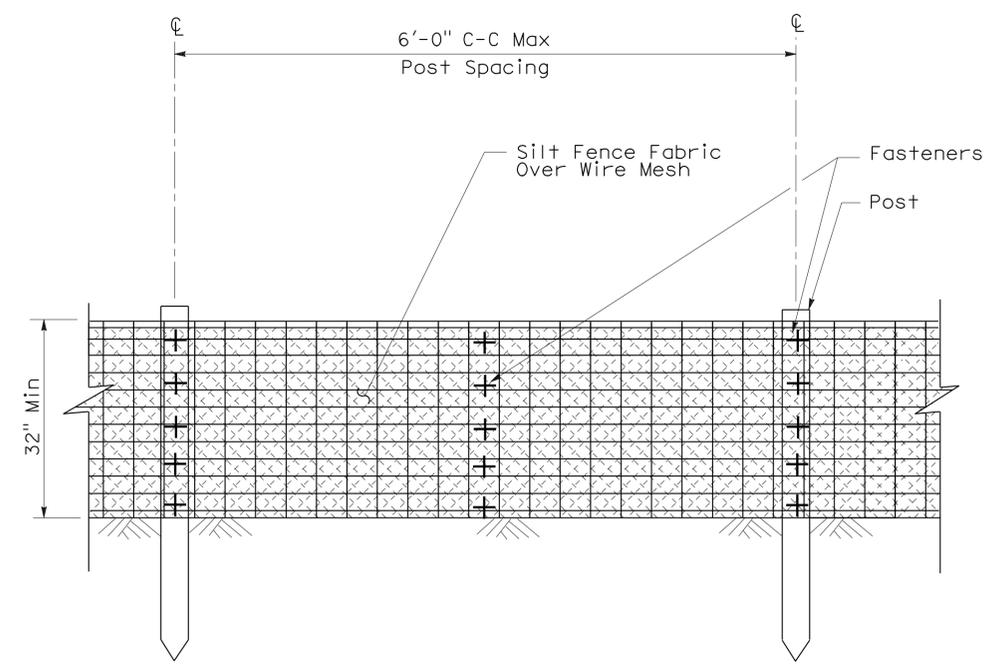
Robert B. Schott
 LICENSED LANDSCAPE ARCHITECT
 April 3, 2009
 PLANS APPROVAL DATE
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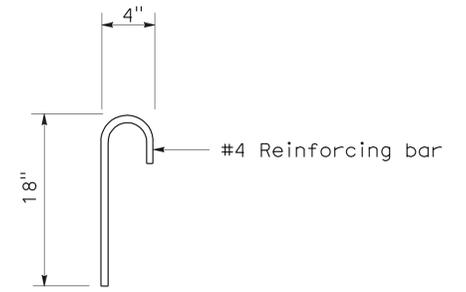
To accompany plans dated 5-21-12



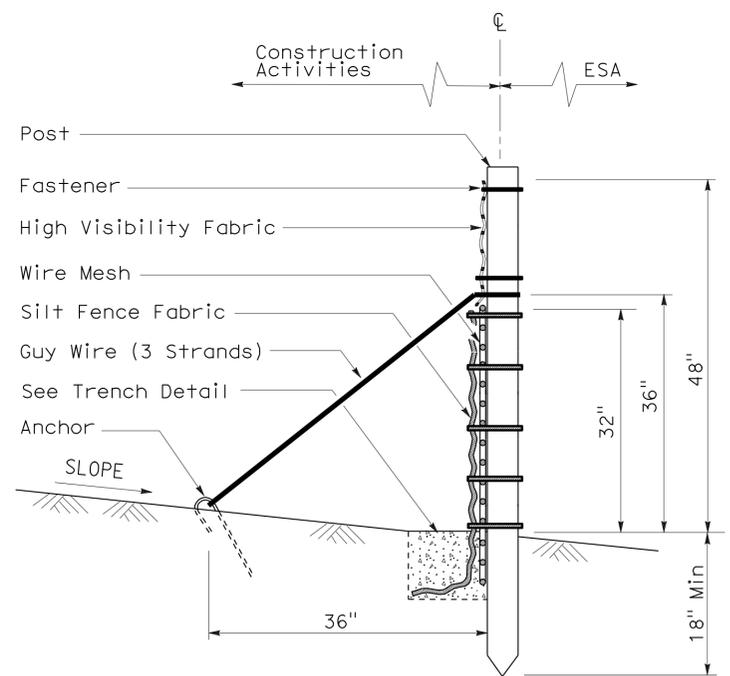
ELEVATION



ELEVATION

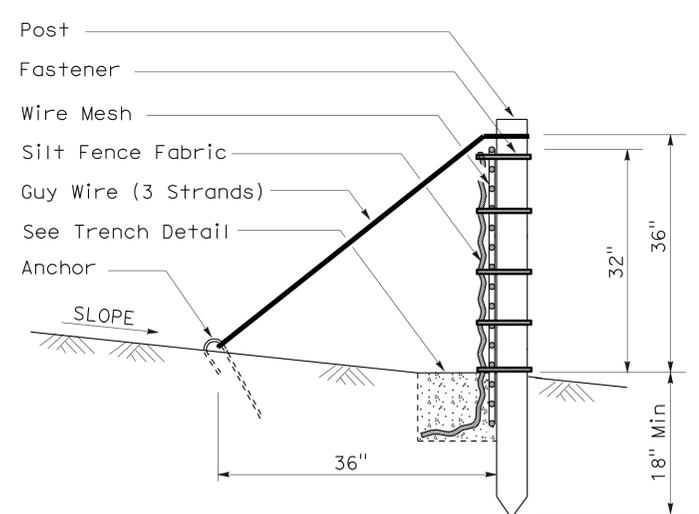


ANCHOR



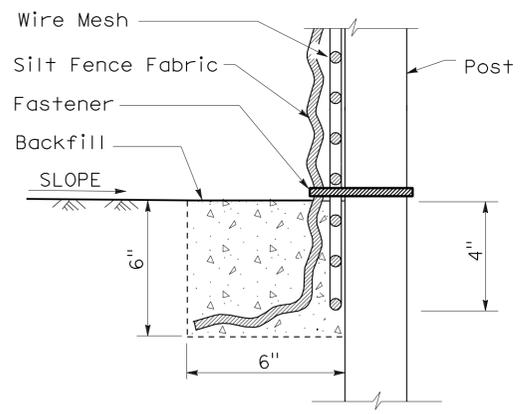
SECTION

TEMPORARY REINFORCED SILT FENCE (TYPE 1)



SECTION

TEMPORARY REINFORCED SILT FENCE (TYPE 2)



SECTION
TRENCH DETAIL

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
TEMPORARY WATER POLLUTION CONTROL DETAILS
(TEMPORARY REINFORCED SILT FENCE)
 NO SCALE
 NSP T60 DATED APRIL 3, 2009 SUPPLEMENTS
 THE STANDARD PLANS BOOK DATED MAY 2006.

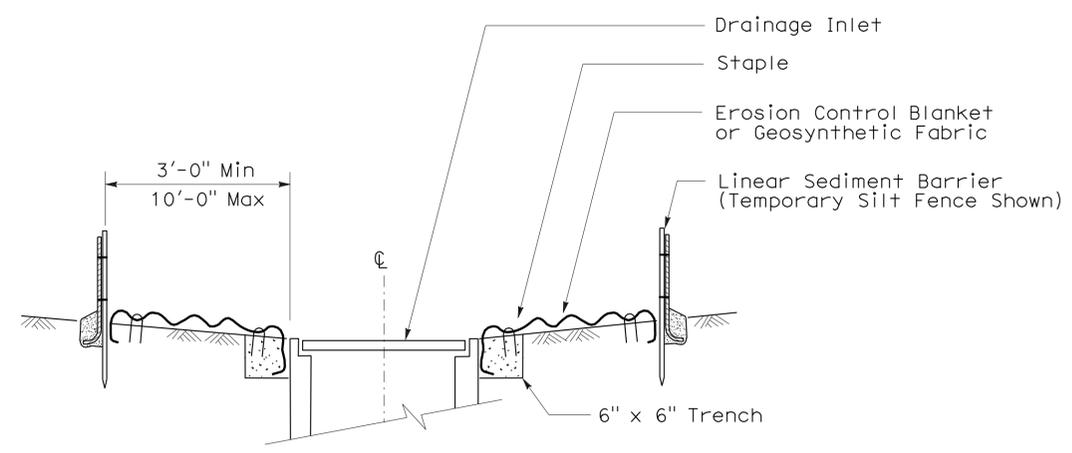
2006 NEW STANDARD PLAN NSP T60

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	577	681

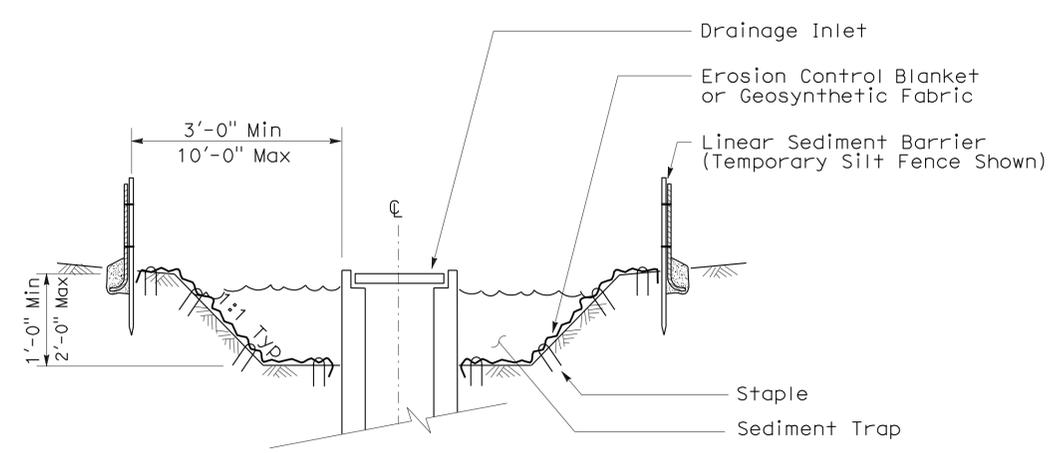
Robert B. Schott
 LICENSED LANDSCAPE ARCHITECT
 August 15, 2008
 PLANS Approval DATE
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To accompany plans dated 5-21-12

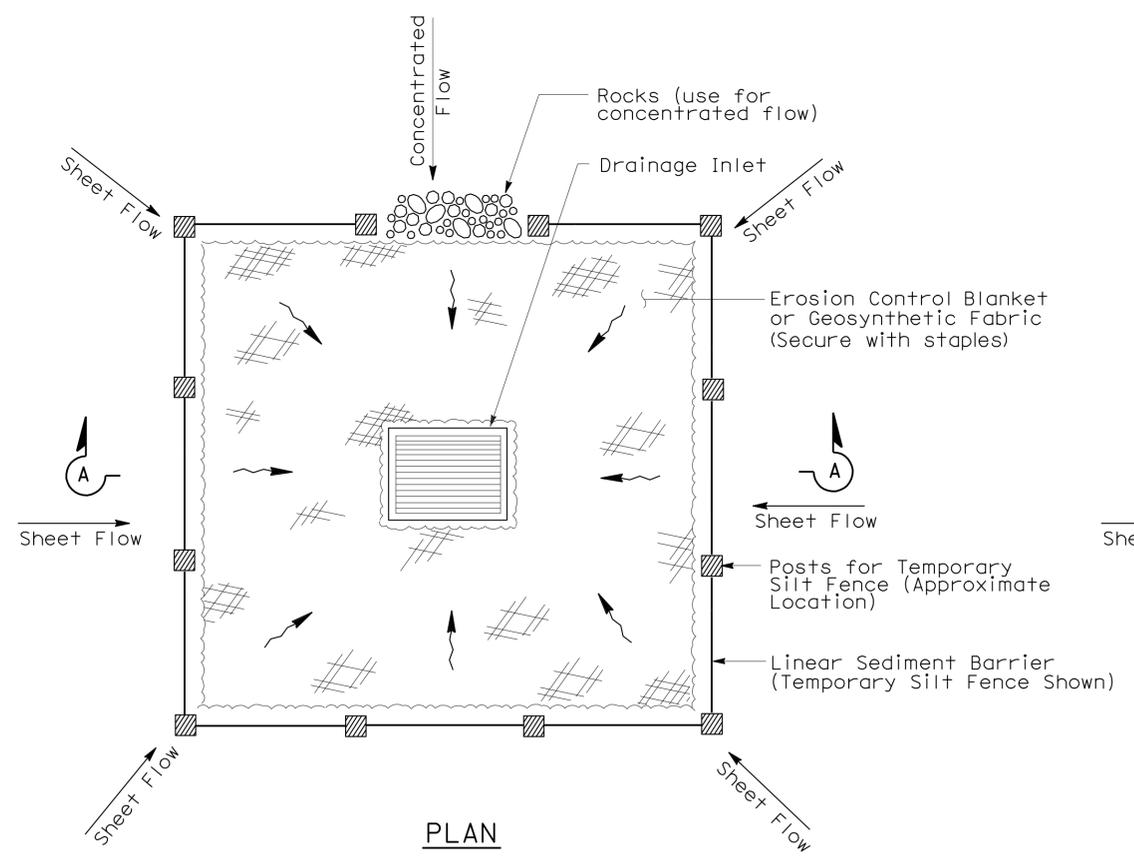
- NOTES:**
- See Standard Plan T51 for Temporary Silt Fence.
 - Dimensions may vary to fit field conditions.



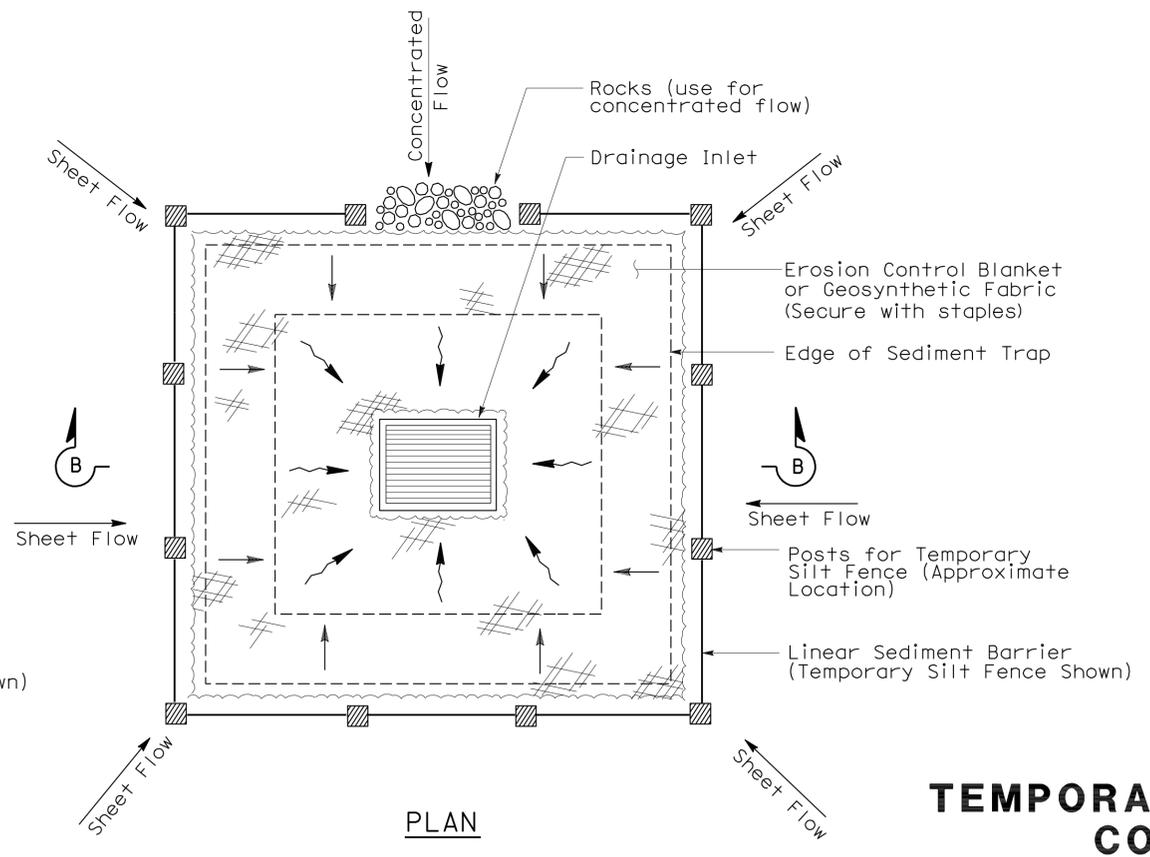
SECTION A-A



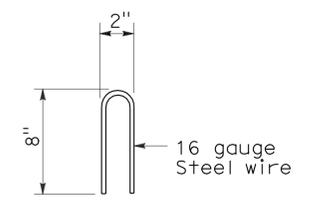
SECTION B-B



TEMPORARY DRAINAGE INLET PROTECTION (TYPE 1)



TEMPORARY DRAINAGE INLET PROTECTION (TYPE 2) (EXCAVATED SEDIMENT TRAP)



STAPLE DETAIL

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY DRAINAGE INLET PROTECTION)

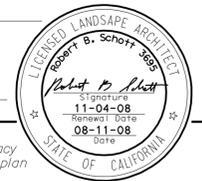
NO SCALE

NSP T61 DATED AUGUST 15, 2008 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP T61

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	578	681

Robert B. Schott
 LICENSED LANDSCAPE ARCHITECT
 August 15, 2008
 PLANS APPROVAL DATE
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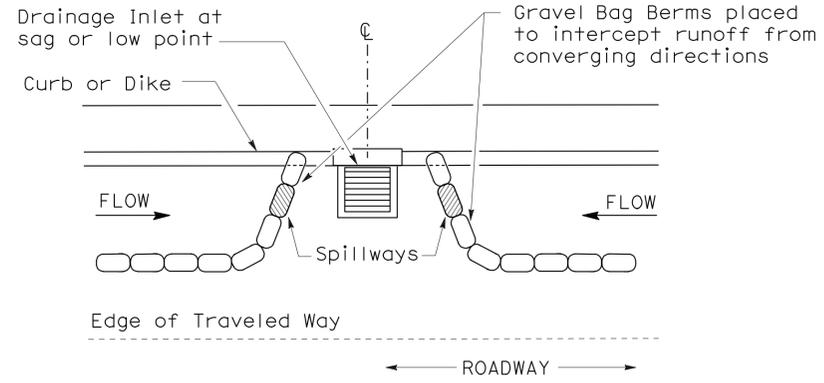


To accompany plans dated 5-21-12

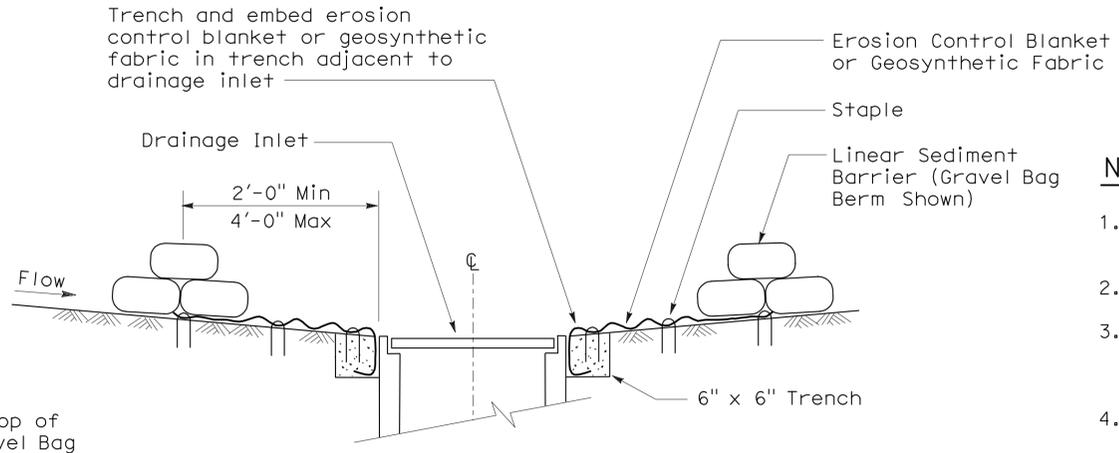
GRAVEL BAG BERM (TYPE 3A) SPACING TABLE

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

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



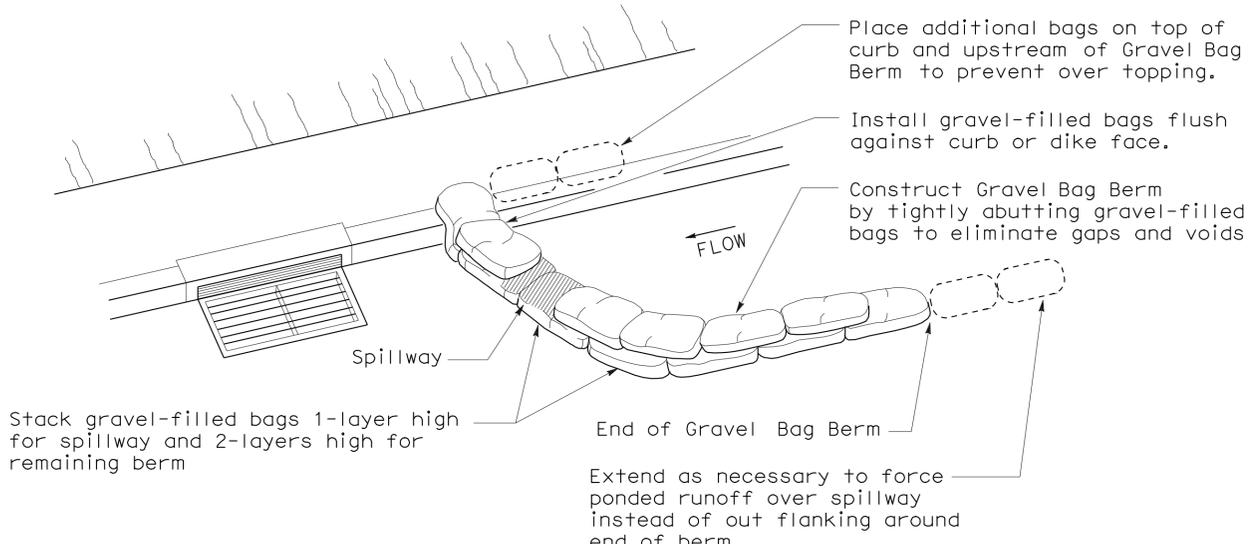
PLAN
CONFIGURATION FOR SAG POINT INLET (GRAVEL BAG BERM)



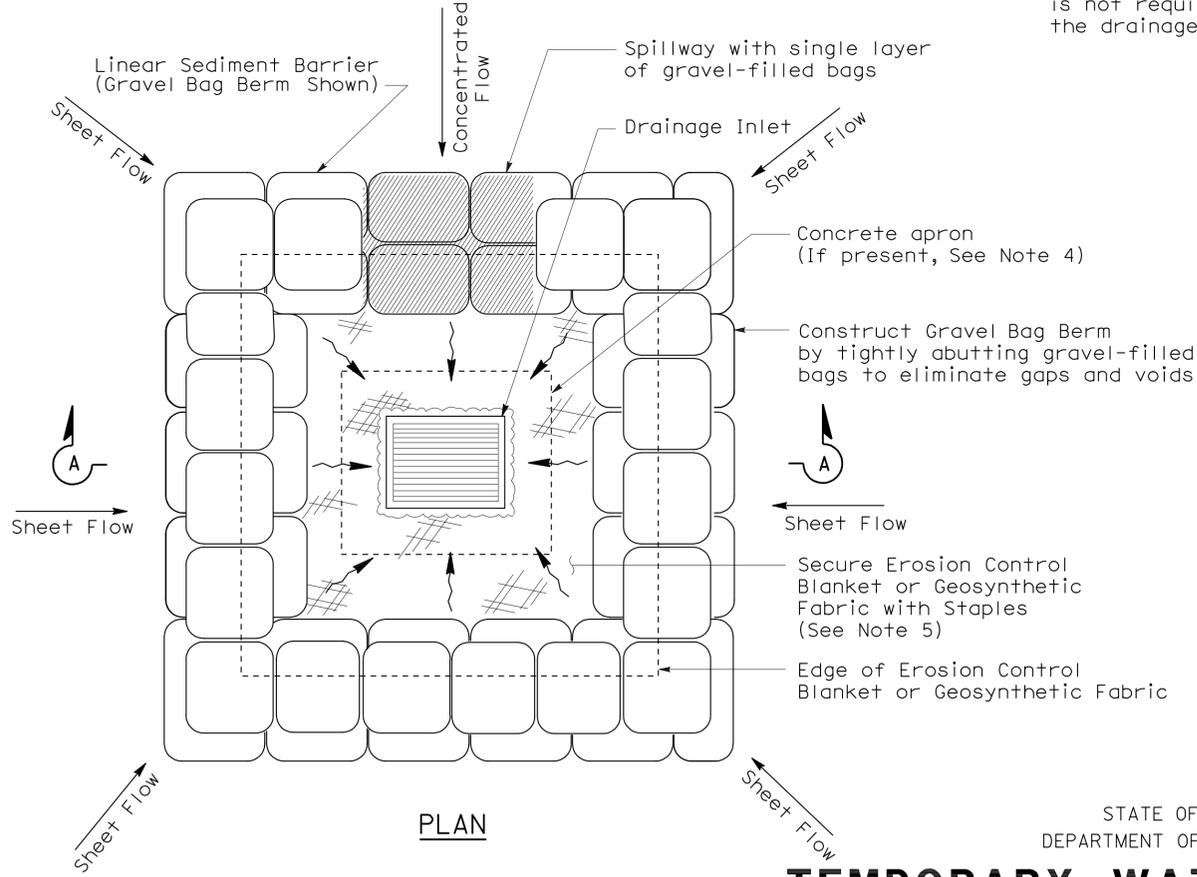
SECTION A-A

NOTES:

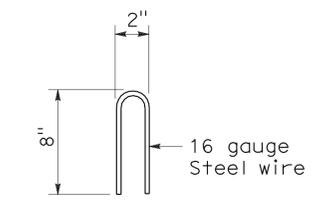
1. Place safety cones adjacent to drainage inlet protection.
2. Dimensions may vary to fit field conditions.
3. Install a minimum of 3 gravel bag berms upstream of each drainage inlet to be protected.
4. Position erosion control blanket or geosynthetic fabric at edge of concrete apron and secure in trench.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



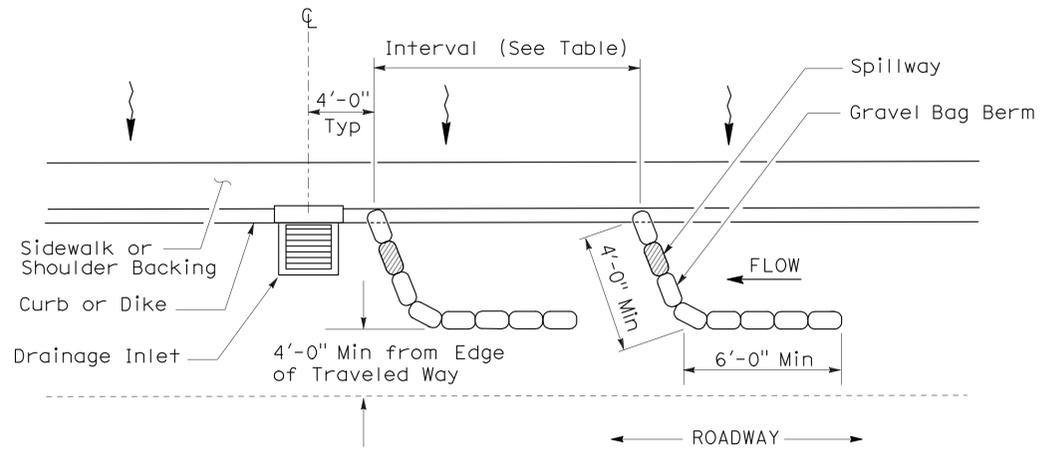
PERSPECTIVE



PLAN
TEMPORARY DRAINAGE INLET PROTECTION (TYPE 3B)



STAPLE DETAIL



PLAN
TEMPORARY DRAINAGE INLET PROTECTION (TYPE 3A) (GRAVEL BAG BERM)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY DRAINAGE INLET PROTECTION)

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

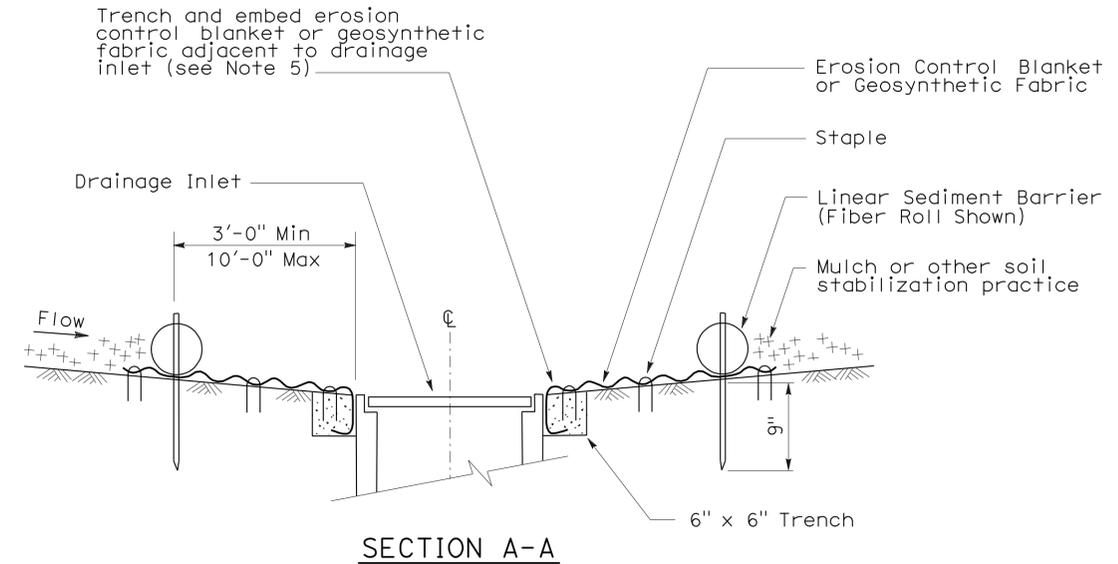
2006 NEW STANDARD PLAN NSP T62

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	579	681

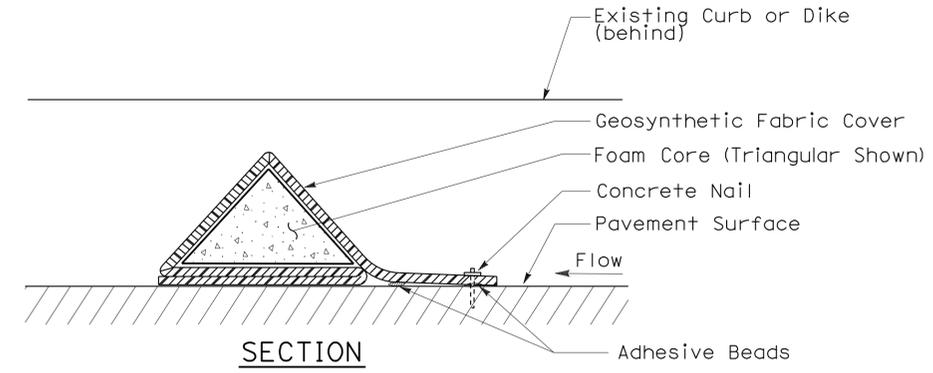
Robert B. Schott
 LICENSED LANDSCAPE ARCHITECT
 August 15, 2008
 PLANS APPROVAL DATE
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

FLEXIBLE SEDIMENT BARRIER SPACING TABLE

SLOPE OF ROADWAY (PERCENT)	0 to 0.9	1 to 1.9	2 to 2.9	3 to 4	5+
INTERVAL BETWEEN BARRIERS	50'	35'	30'	25'	20'
ANGLE FROM FACE OF CURB	70°	70°	70°	45°	45°
SUGGESTED BARRIER LENGTH	6'	6'	6'	6'	6'



SECTION A-A

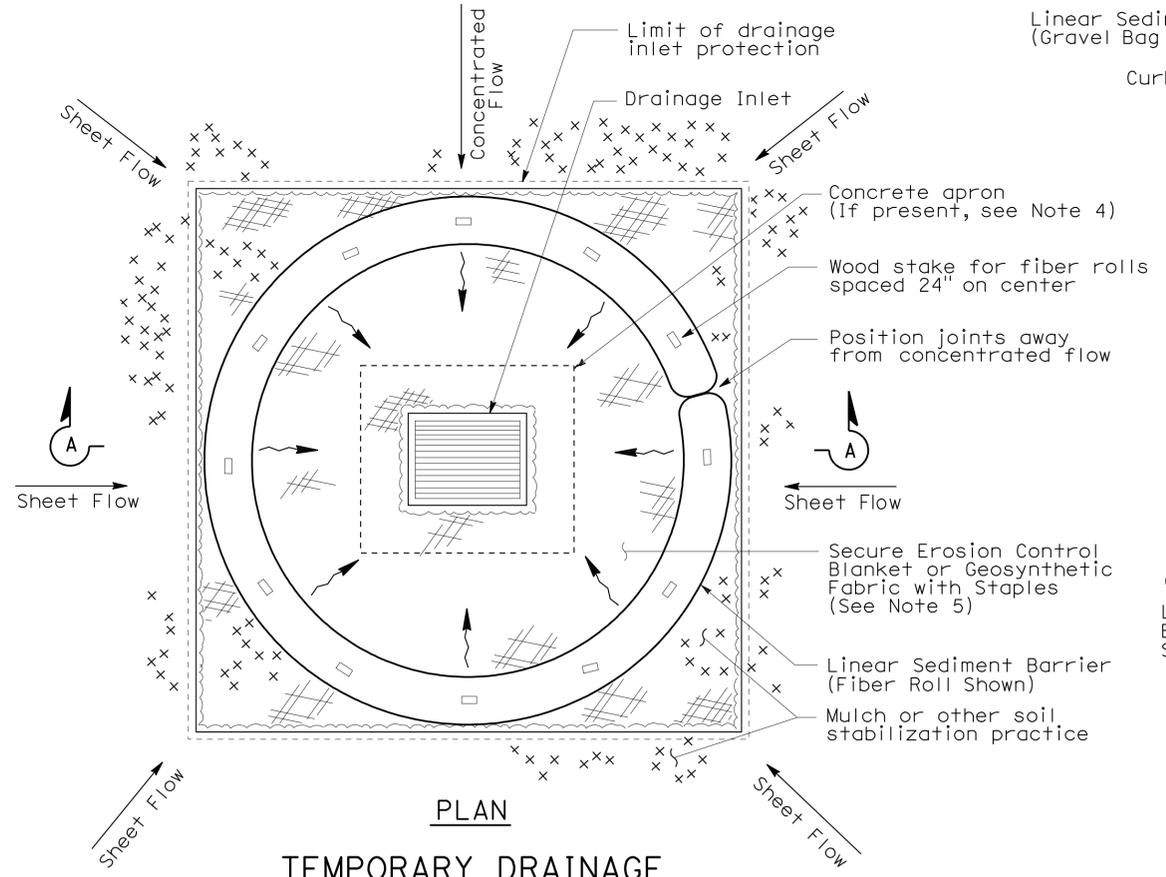


SECTION FLEXIBLE SEDIMENT BARRIER DETAIL (FOAM BARRIER SHOWN)

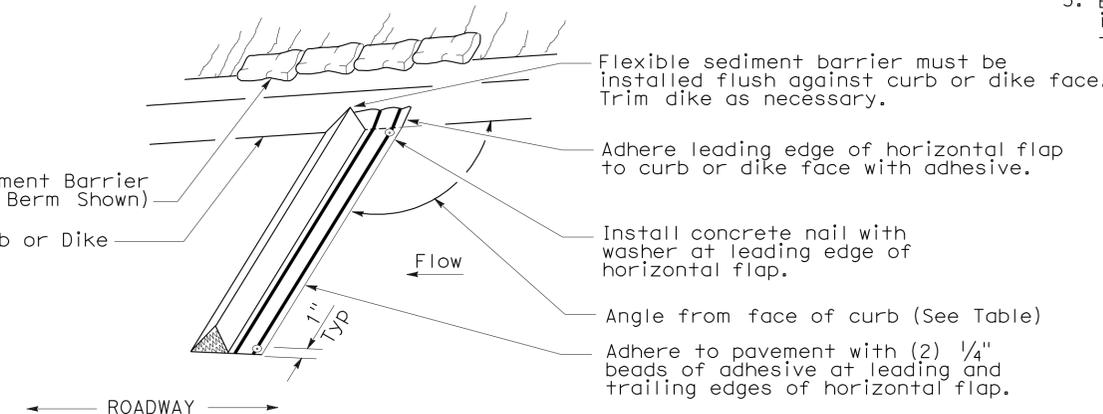
NOTES:

1. See Standard Plan T51 for Temporary Silt Fence.
2. Dimensions may vary to fit field conditions.
3. Install a minimum of 3 flexible sediment barriers upstream of each drainage inlet to be protected.
4. Position erosion control blanket or geosynthetic fabric at edge of concrete apron and secure in trench.
5. Erosion control blanket or geosynthetic fabric is not required if the area adjacent to the drainage inlet is vegetated.

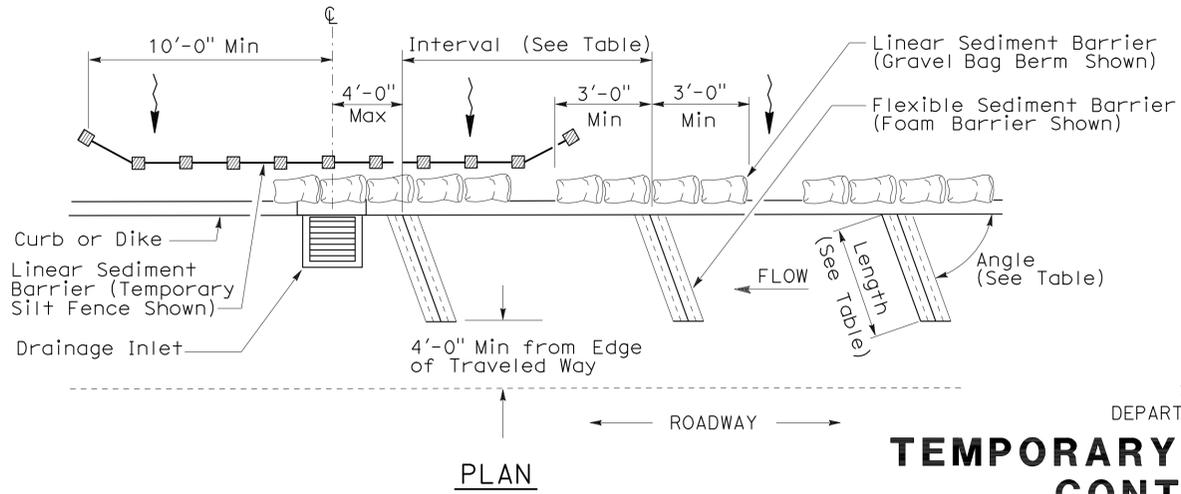
To accompany plans dated 5-21-12



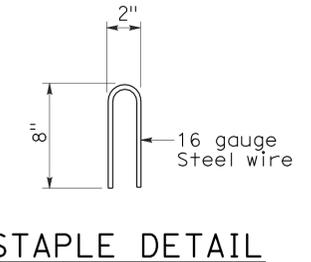
TEMPORARY DRAINAGE INLET PROTECTION (TYPE 4A)



PERSPECTIVE



TEMPORARY DRAINAGE INLET PROTECTION (TYPE 4B) FLEXIBLE SEDIMENT BARRIER



STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
TEMPORARY WATER POLLUTION CONTROL DETAILS (TEMPORARY DRAINAGE INLET PROTECTION)

NO SCALE
 NSP T63 DATED AUGUST 15, 2008 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP T63

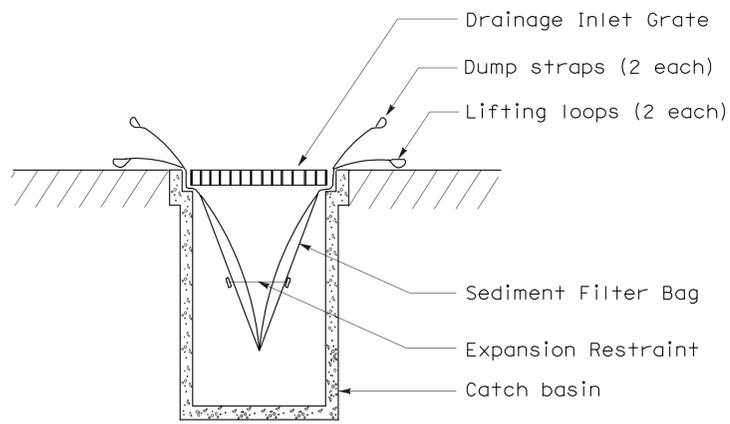
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	580	681

Robert B. Schott
 LICENSED LANDSCAPE ARCHITECT

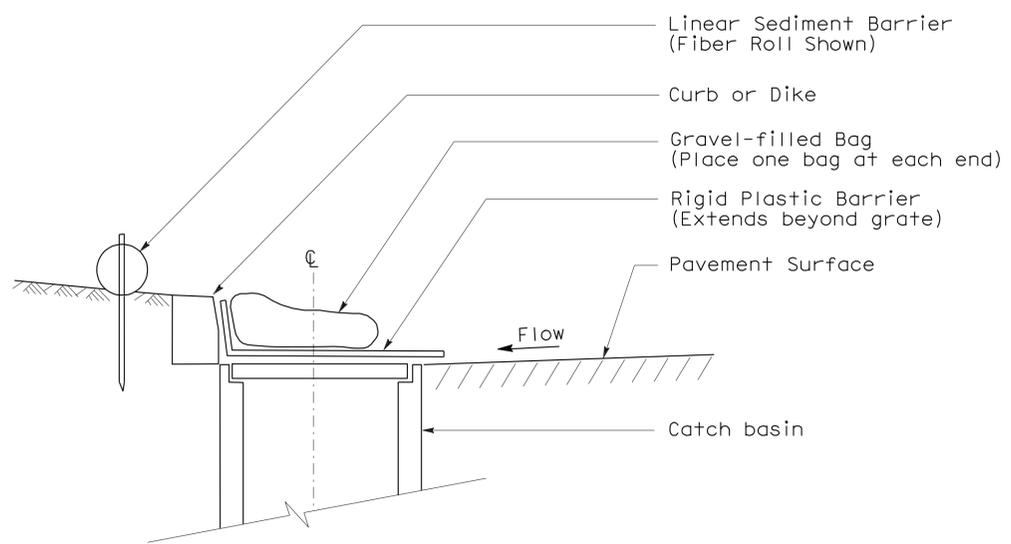
August 15, 2008
 PLANS APPROVAL DATE

Robert B. Schott
 LICENSED LANDSCAPE ARCHITECT
 Signature
 11-04-08
 Renewal Date
 08-11-08
 Date

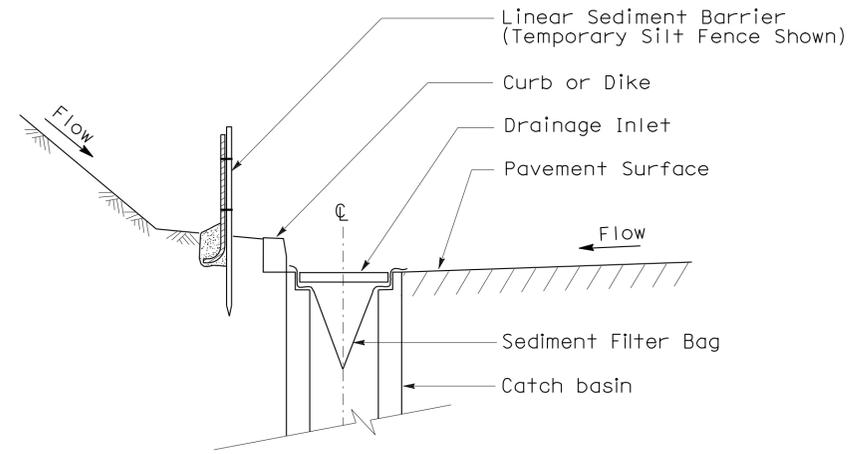
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.



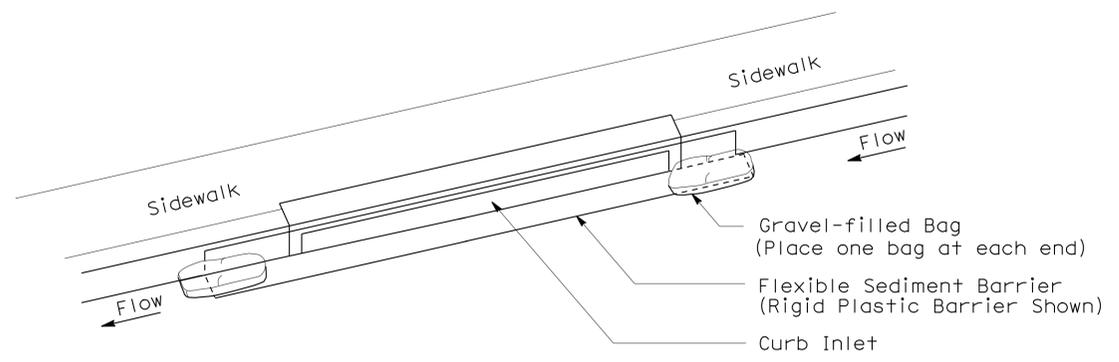
SECTION B-B
SEDIMENT FILTER BAG DETAIL



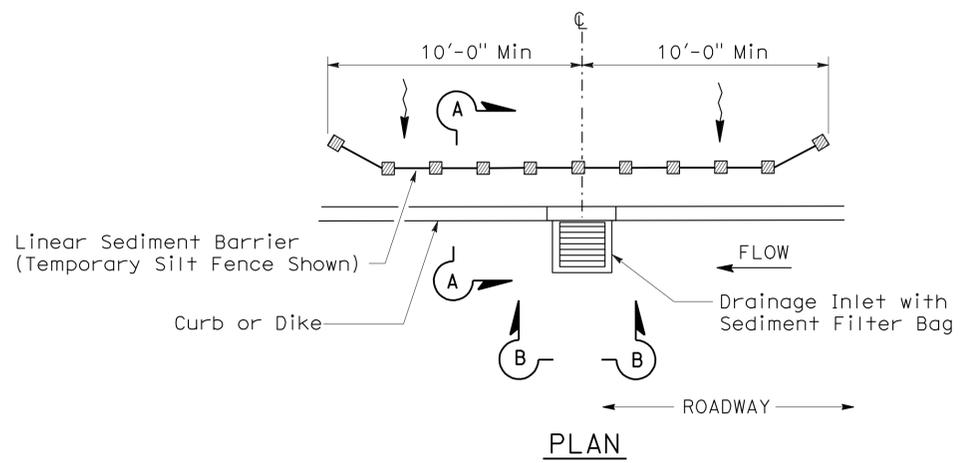
SECTION
TEMPORARY DRAINAGE
INLET PROTECTION (TYPE 6A)
(CATCH BASIN WITH GRATE)



SECTION A-A



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



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

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

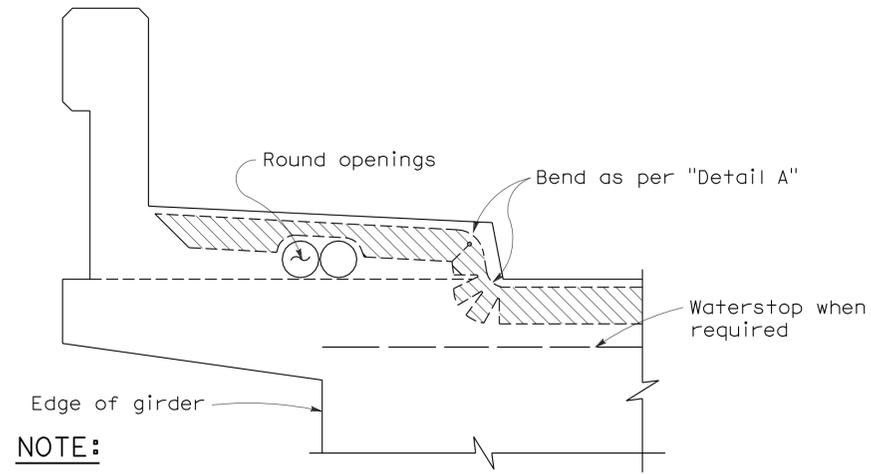
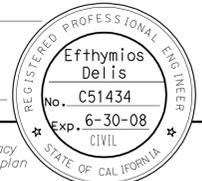
To accompany plans dated 5-21-12

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**TEMPORARY WATER POLLUTION
CONTROL DETAILS
(TEMPORARY DRAINAGE
INLET PROTECTION)**

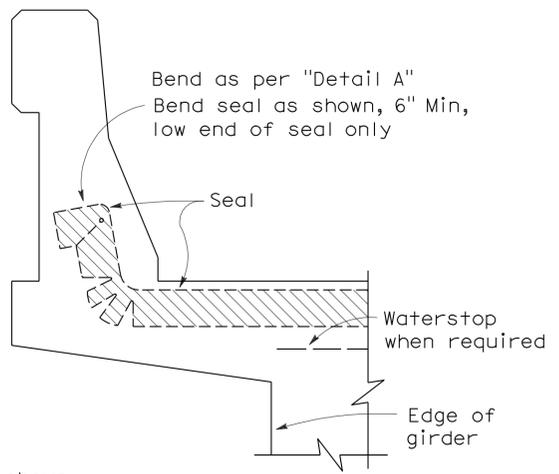
NO SCALE

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

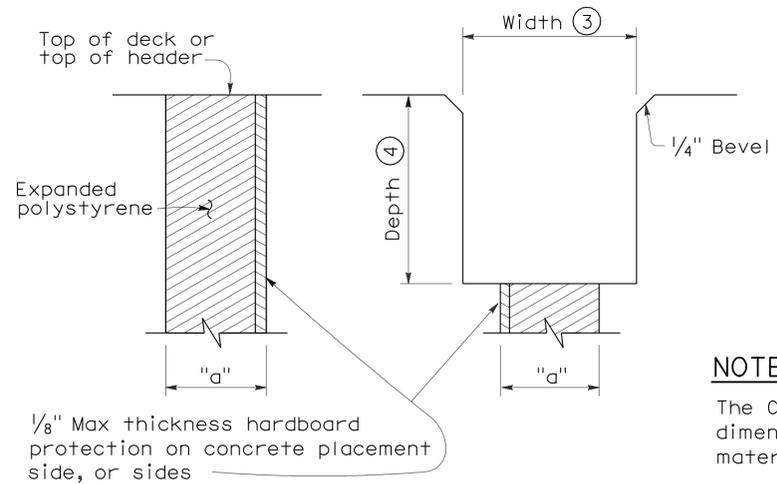


NOTE:
 Type "B" seal shown. Type "A" seals to conform to the general path of seal shown, cuts for bending not required. Bend Type "A" seals 3" up into curb or barrier rail on only the low end of the seal.

CONCRETE BARRIER AND SIDEWALK



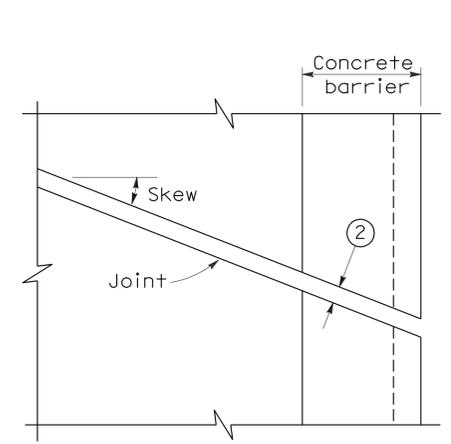
CONCRETE BARRIER



FORMING DETAIL SAWCUT DETAIL

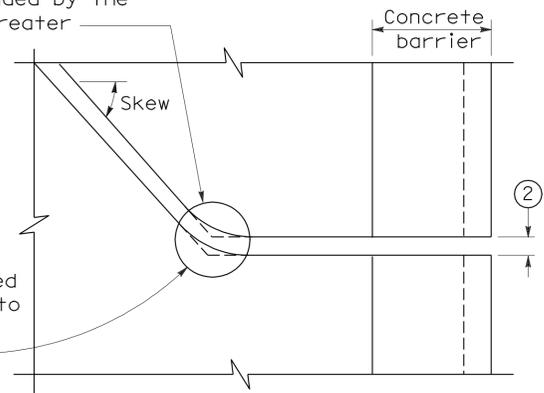
NOTE:
 The Contractor shall verify all controlling field dimensions before ordering or fabricating any material.

JOINT SEALS DETAILS



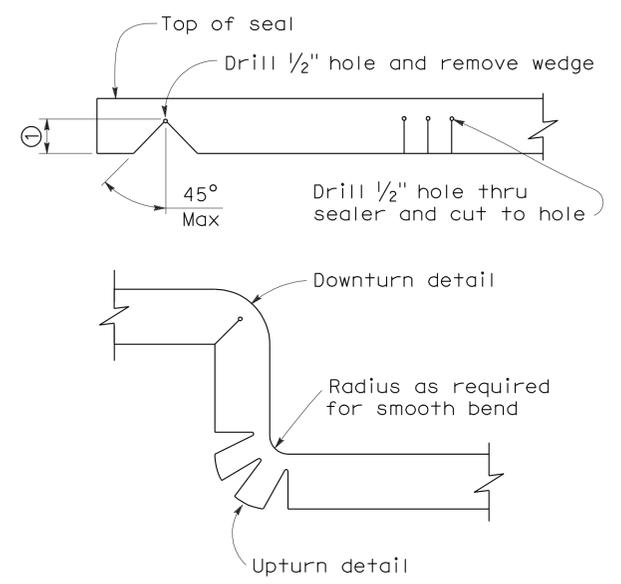
PLAN OF JOINT (SKEW ≤ 20°)

Min ϕ radius to be 4 times uncompressed width of seal or as recommended by the manufacturer, whichever is greater



PLAN OF JOINT (SKEW > 20°)

In lieu of saw cutting, this area may be blocked out and reconstructed to match saw cutting on both sides.



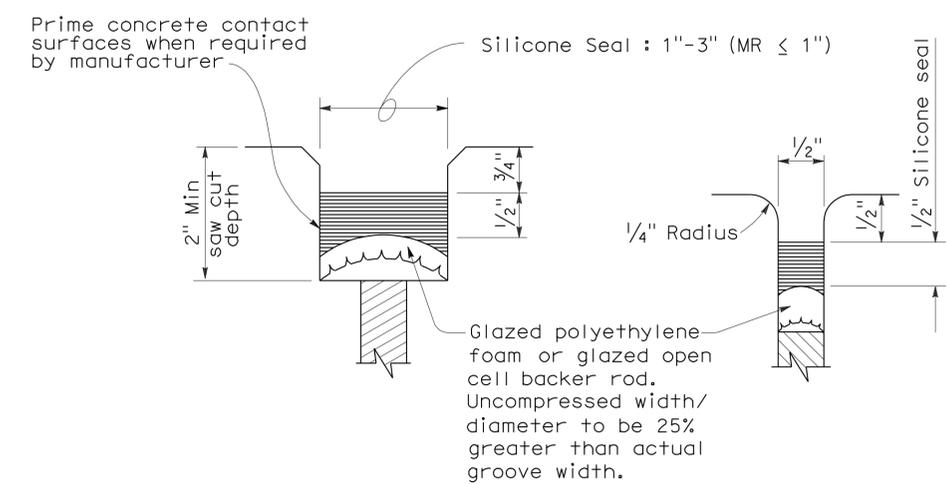
DETAIL A

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

DIMENSIONS "a" OF JOINT REQUIRED

Movement Rating (MR) ⑤	Bridge Type	"a" Dimension		
		Deck Concrete Placed		
		Winter	Fall-Spring	Summer
2"	All except CIP/PS	1 1/2"	1 1/4"	3/4"
	CIP/PS	1 1/4"	1"	1/2"
1 1/2"	All except CIP/PS	1 1/4"	1"	1/2"
	CIP/PS	1"	3/4"	1/2"
1"	All except CIP/PS	1"	3/4"	1/2"
	CIP/PS	3/4"	1/2"	1/2"
1/2"	All except CIP/PS	3/4"	3/4"	1/2"
	CIP/PS	1/2"	1/2"	1/2"

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
JOINT SEALS
(MAXIMUM MOVEMENT RATING = 2")
 NO SCALE

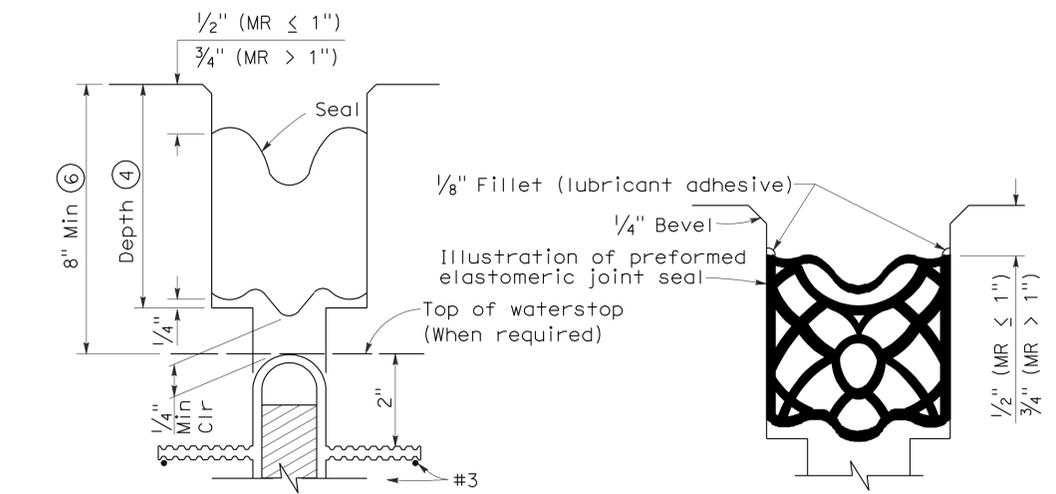


TYPE A SEAL

Movement rating : Silicone = 1" Max

TYPE AL SEAL

Longitudinal joints only



TYPE B JOINT SEAL IN MINIMUM WIDTH POSITION (W₂)

TYPE B SEAL

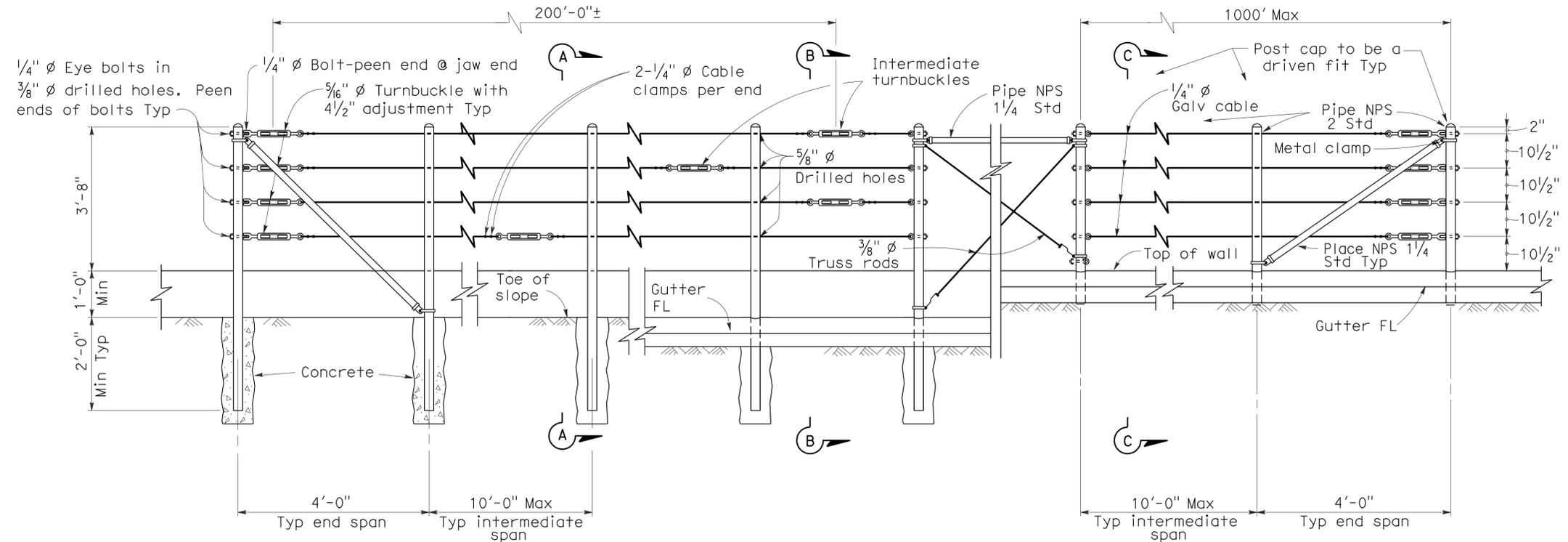
Movement Rating ≤ 2"

RSP B6-21 DATED OCTOBER 5, 2007 SUPERSEDES STANDARD PLAN B6-21 DATED MAY 1, 2006 - PAGE 258 OF THE STANDARD PLANS BOOK DATED MAY 2006.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	582	681

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 electronic copies of this plan sheet.

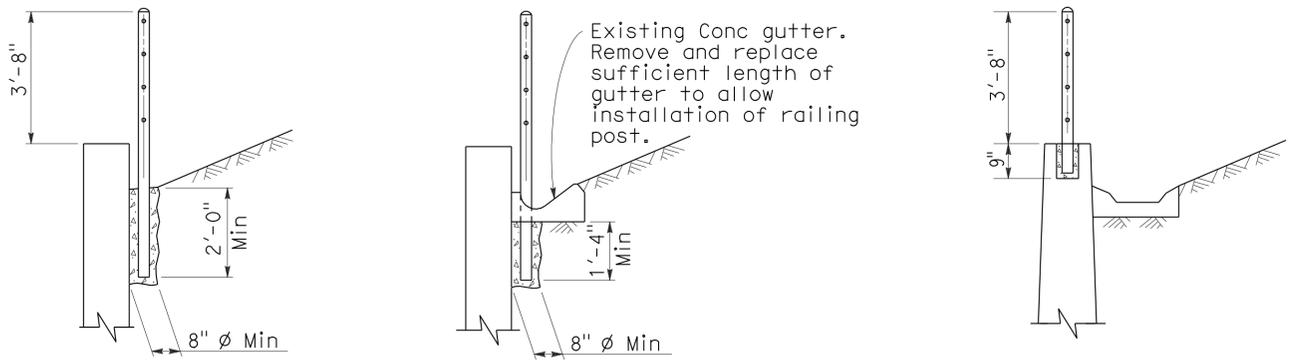


EXISTING WALL (WITHOUT GUTTER) Existing **RETAINING WALL (WITH GUTTER)** Existing **RETAINING WALL (WITH GUTTER)** New construction

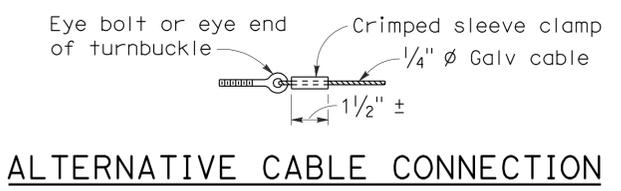
ELEVATION

NOTES:

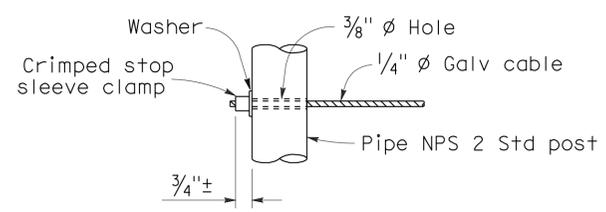
1. Maximum distance between turnbuckles shall be 200'-0"±.
2. Intermediate turnbuckles to be placed in adjacent spans.
3. Cable shall not be spliced between intermediate turnbuckles and end posts.
4. All posts, cable, and hardware to be galvanized.
5. Posts to be vertical.
6. Alignment of holes in posts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



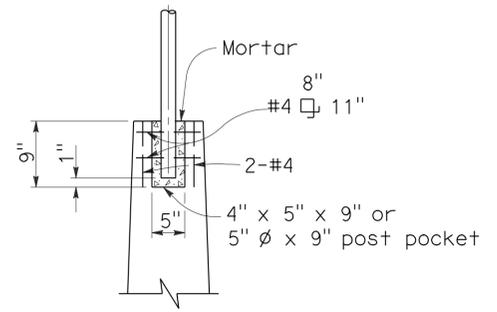
SECTION A-A Existing **SECTION B-B** Existing **SECTION C-C** New construction



ALTERNATIVE CABLE CONNECTION



ALTERNATIVE DEAD END ANCHORAGE



POST POCKET

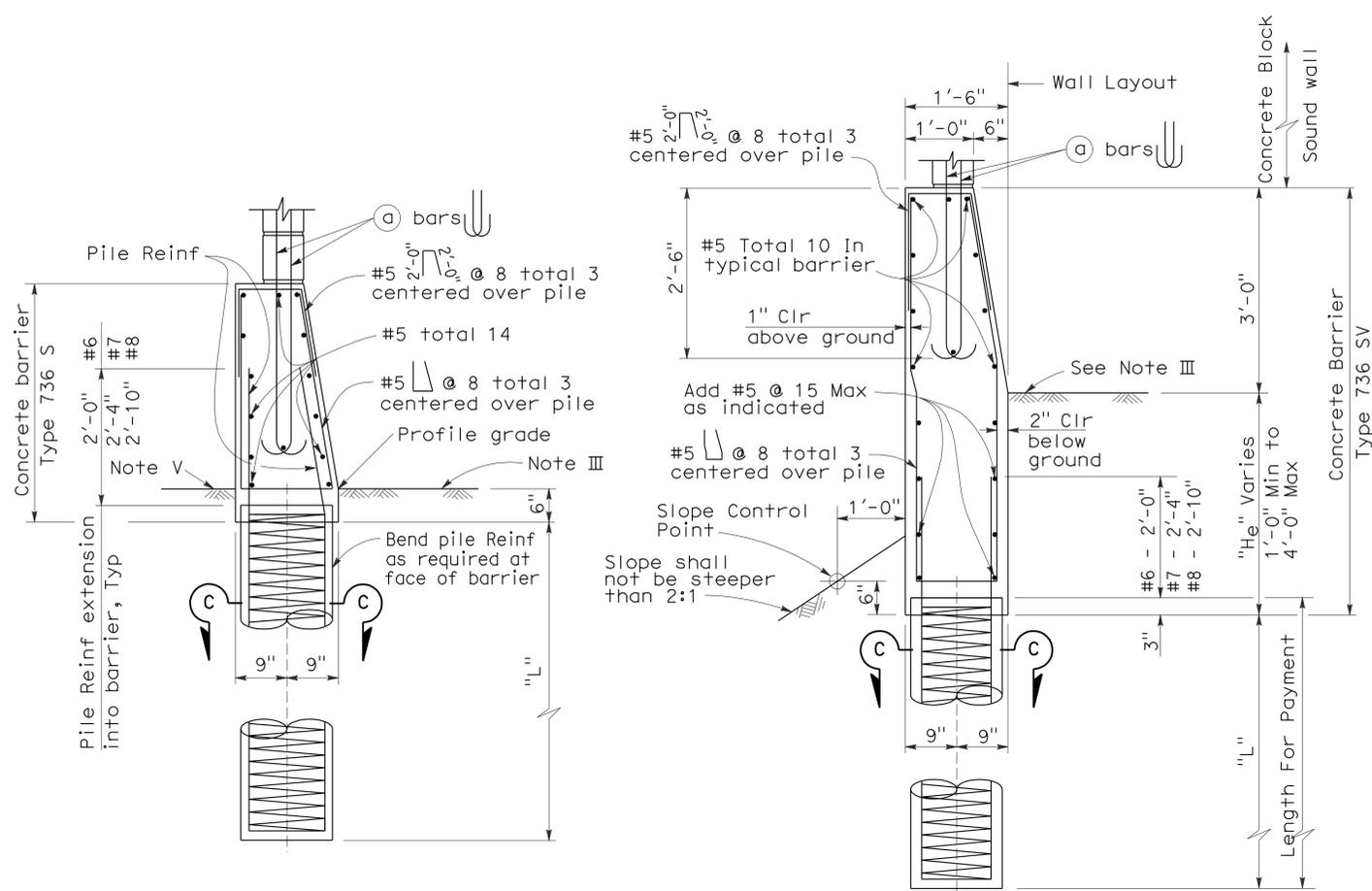
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
CABLE RAILING

NO SCALE

RSP B11-47 DATED OCTOBER 21, 2011 SUPERSEDES STANDARD PLAN B11-47 DATED MAY 1, 2006 - PAGE 268 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP B11-47

2006 REVISED STANDARD PLAN RSP B11-47



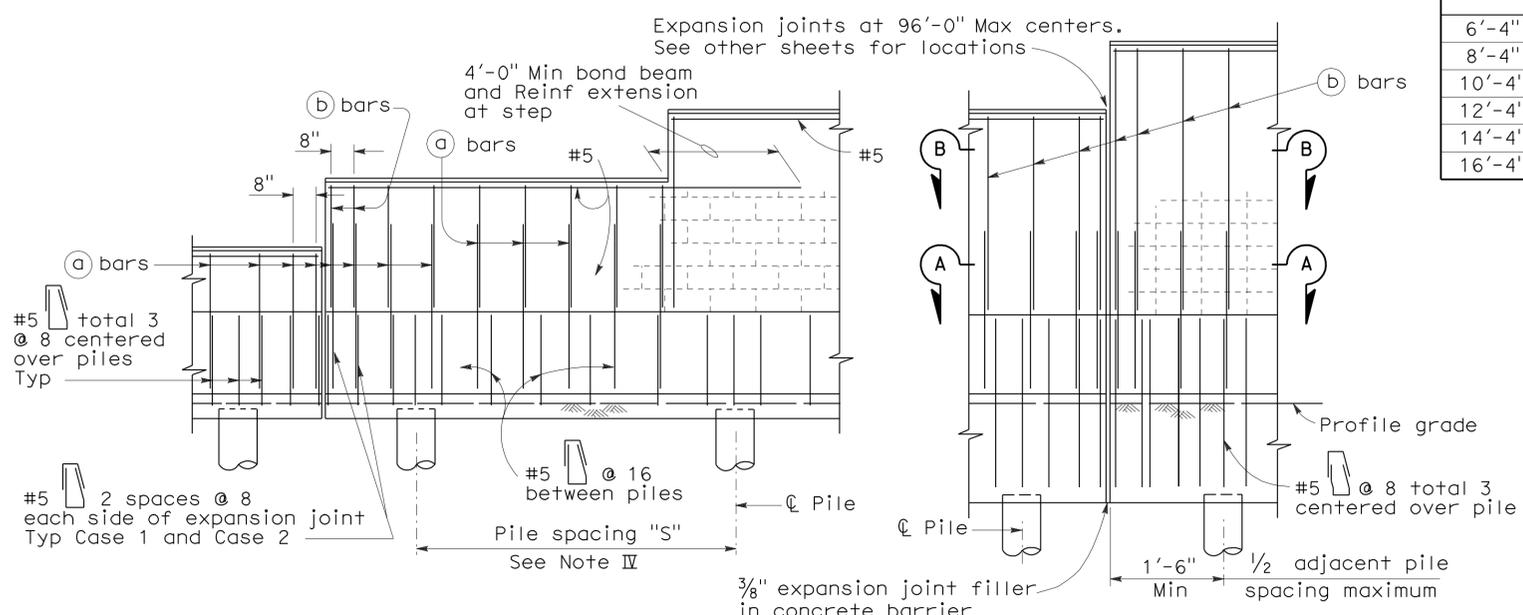
CASE 1

For details not shown, See Case 2.
 Level ground ±10% on both sides of barrier.

CASE 2

For details not shown, See Case 1.
 Level ground ±10% at the traffic side of barrier and sloping ground on the opposite side.

BARRIER SECTIONS



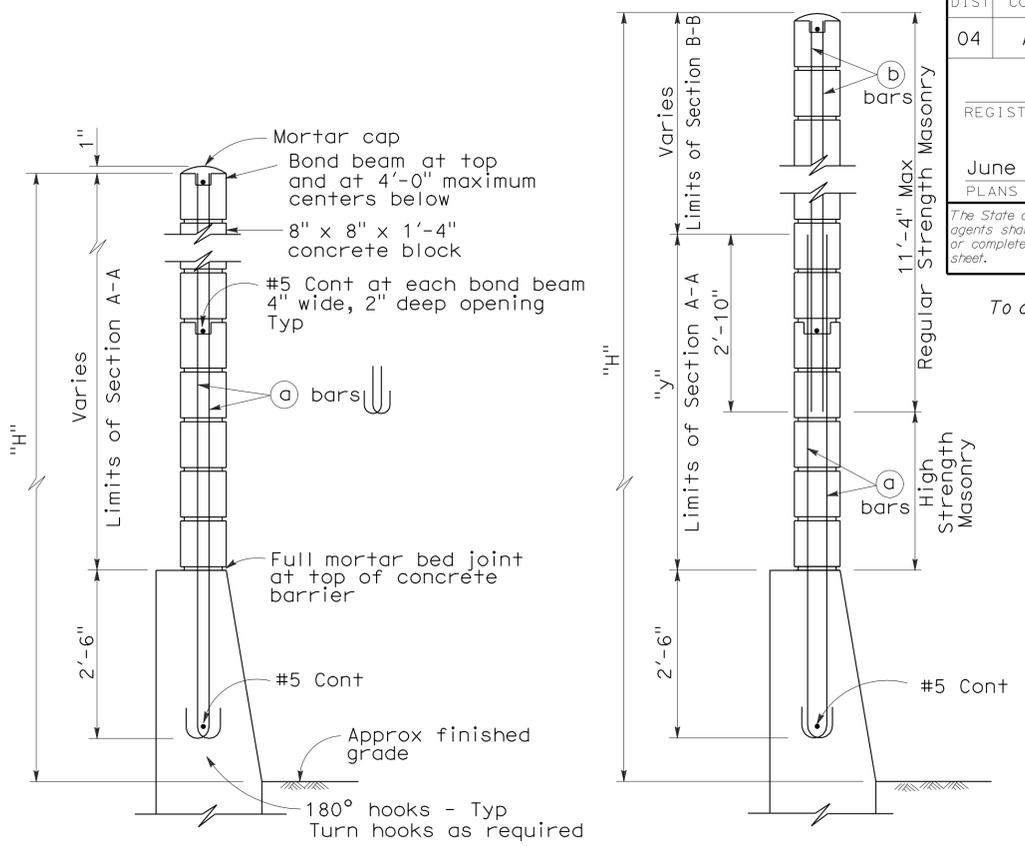
CASE 1

For details not shown, See Case 2.

CASE 2

For details not shown, See Case 1.

PARTIAL ELEVATIONS



H=6'-4" THRU H=10'-4"

H=12'-4" THRU H=16'-4"

For details not shown, see H=6'-4" thru H=10'-4".

TYPICAL SECTIONS

See Revised Standard Plan RSP B15-8 for pile details.

SOUND WALL REINFORCEMENT TABLE

Maximum H	(a) bars @ 1'-4" Max	(b) bars @ 1'-4" Max	"y"	f'm (psi)	Compressive Strength of CMU (psi)	H
6'-4"	#4	---	---	1500	1900	6'-4"
8'-4"	#4	---	---	1500	1900	8'-4"
10'-4"	#4	---	---	1500	1900	10'-4"
12'-4"	#5	#4	5'-0"	1500	1900	12'-4"
14'-4"	#6	#4	7'-0"	1500	1900	14'-4"
16'-4"	#6	#4	9'-0"	2500	3750	16'-4"

NOTES I THROUGH VI:

- I. Details shown are primarily to conform design of sound walls to Type 736S and Type 736 SV Concrete Barriers. For sound wall details conforming with barriers see Standard Plan B15-7 and Revised Standard Plan RSP B15-8.
- II. For details and sections not shown, see Standard Plan B15-7 and Revised Standard Plan RSP B15-8.
- III. Slope ground at traffic side of barrier to drain. Maximum slope ±10%. See Std Plan B11-56, Note D.
- IV. Pile spacing may be varied, but shall not exceed the tabular values. See Revised Standard Plan RSP B15-8.
- V. For Case 1 - ground line to be at the same elevation on both sides of the barrier. Barrier shall not be used to retain earth.
- VI. See Standard Plan B15-9 for other details.

NOTES A THROUGH G:

- A. For type of block, type of block bond, and joint finish, see other sheets.
- B. When blocks are laid in stacked bond, ladder type, galvanized joint reinforcement shall be provided. A minimum of 2-9 gauge wires continuous at 4'-0" maximum to be used. Locate reinforcement in joints that are at the approximate midpoint between bond beams.
- C. Horizontal joints shall be tooled concave or may be weathered. Vertical joints shall be tooled concave or may be raked.
- D. For intermediate wall heights (H), or barrier depths (H_e), that are between the values given, use the tabular information for the next higher (H) or (H_e).
- E. Concrete to be used for the barrier shall contain not less than 590 pounds of cementitious material per cubic yard.
- F. Masonry strengths are listed in the "SOUND WALL REINFORCEMENT TABLE".

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
SOUND WALL MASONRY BLOCK ON TYPE 736S/SV BARRIER DETAILS (1)
 NO SCALE

RSP B15-6 DATED JUNE 5, 2009 SUPERSEDES
 RSP B15-6 DATED OCTOBER 5, 2007 AND STANDARD PLAN B15-6
 DATED MAY 1, 2006 - PAGE 296 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP B15-6

2006 REVISED STANDARD PLAN RSP B15-6

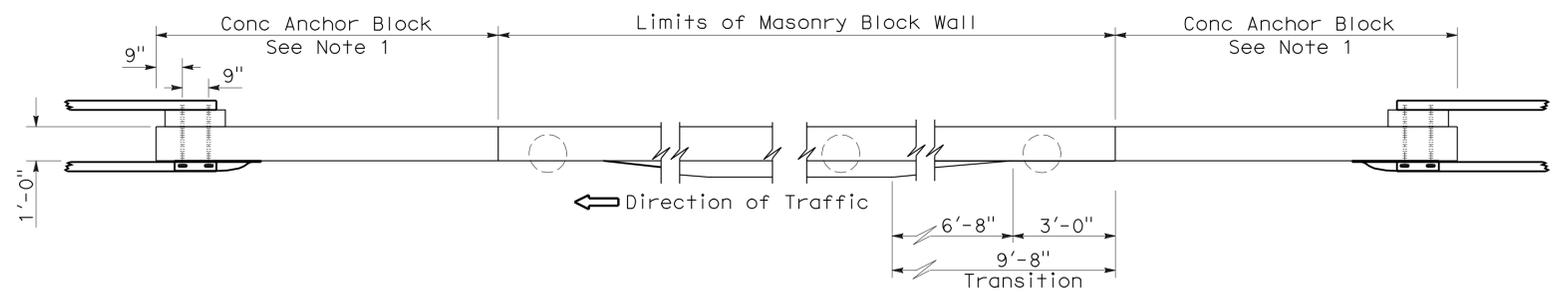
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	584	681

REGISTERED CIVIL ENGINEER
 June 6, 2008
 PLANS APPROVAL DATE

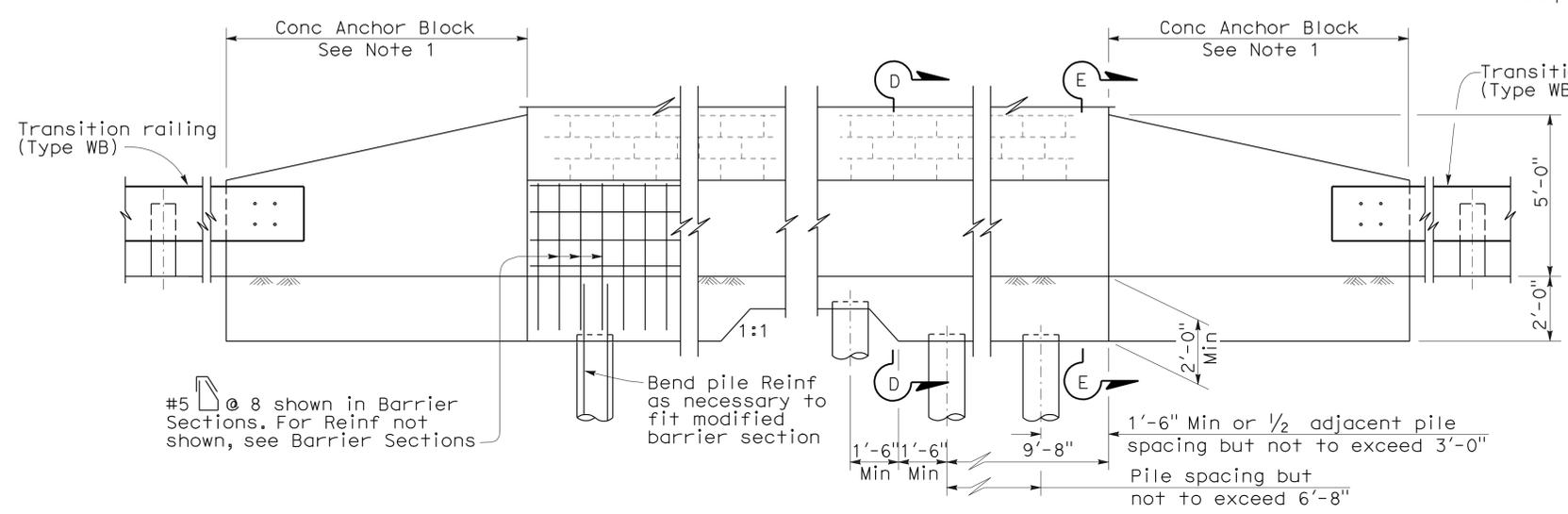
REGISTERED PROFESSIONAL ENGINEER
 Tiliat Satter
 No. C42892
 Exp. 03-31-10
 CIVIL
 STATE OF CALIFORNIA

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

To accompany plans dated 5-21-12



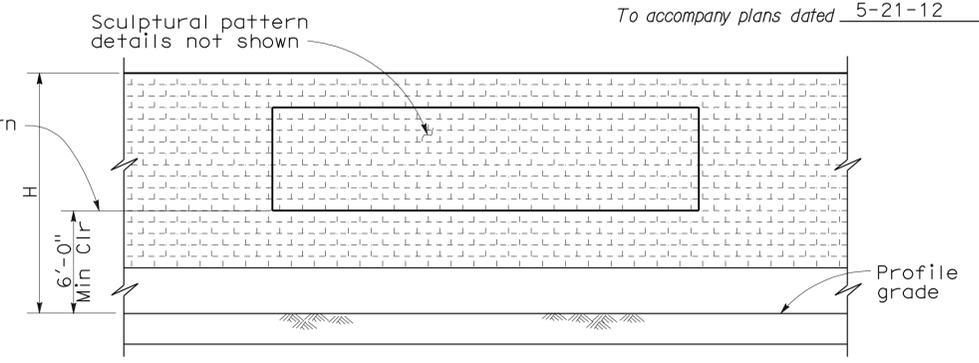
PLAN



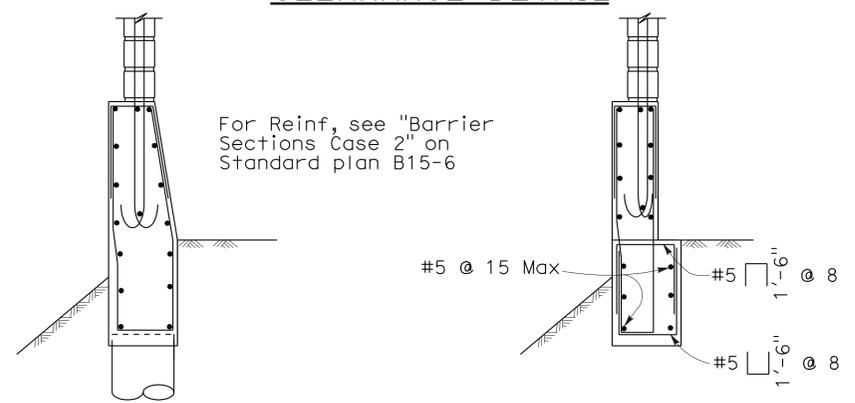
ELEVATION

METAL BEAM GUARDRAIL ANCHORAGE

For details not shown, see Standard Plan B11-56.



CLEARANCE DETAIL



SECTION D-D

SECTION E-E

DESIGN NOTES:

DESIGN

Uniform Building Code, 1997 Edition and the Bridge Design Specifications.

DESIGN WIND LOAD

27 psf

DESIGN SEISMIC LOAD

0.57 Dead load

REINFORCED CONCRETE

$f'_c = 3.6 \text{ ksi}$
 $f_y = 60 \text{ ksi}$

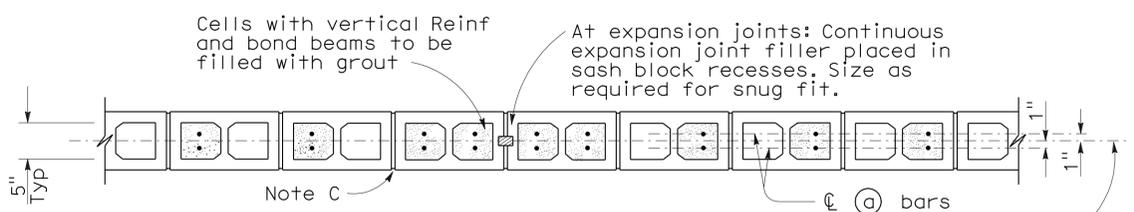
CONCRETE MASONRY

REGULAR STRENGTH

$f'_m = 1500 \text{ psi}$
 $f_b = 495 \text{ psi}$
 $f_s = 24,000 \text{ psi}$
 $n = 25.8$

HIGH STRENGTH

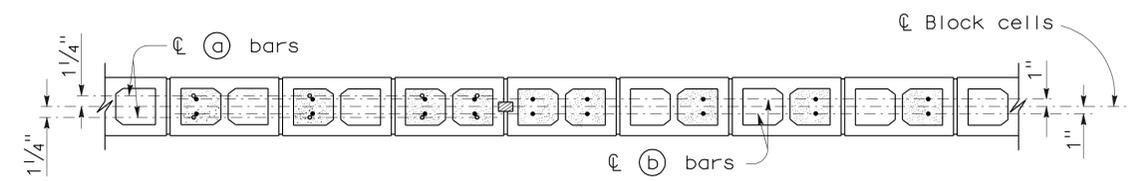
$f'_m = 2000 \text{ psi}$
 $f_b = 660 \text{ psi}$
 $f_s = 24,000 \text{ psi}$
 $n = 19.3$



SECTION A-A

For details not shown, see other details.

H=6'-4" THRU H=10'-4"



SECTION A-A

For details not shown, see other details.

H=12'-4" THRU H=16'-4"

SECTION B-B

NOTE:

1. For Concrete Anchor Block and connection details, see "Connection Detail DD" on Standard Plan A77J3.

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

SOUND WALL MASONRY BLOCK ON TYPE 736S/SV BARRIER DETAILS (2)

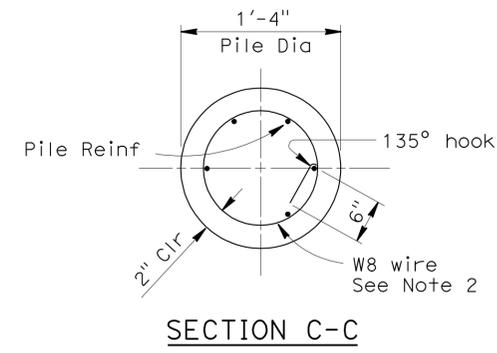
NO SCALE

RSP B15-7 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN B15-7 DATED MAY 1, 2006 - PAGE 297 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP B15-7

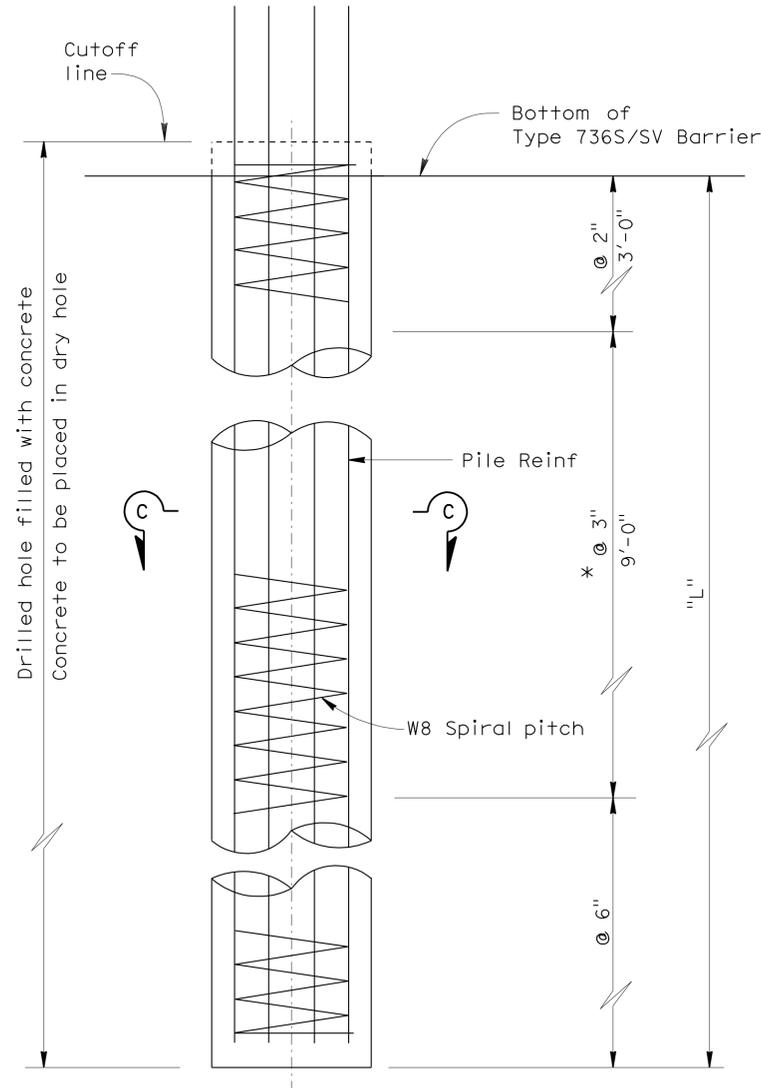
2006 REVISED STANDARD PLAN RSP B15-7

To accompany plans dated 5-21-12



CASE 1: PILE DATA TABLE

Maximum H	ø = 25 Min			ø = 30 Min			ø = 35 Min			Maximum H
	S	L	Pile Reinf	S	L	Pile Reinf	S	L	Pile Reinf	
6'-4"	10'-0"	8'-6"	#6 Tol 6	10'-0"	7'-0"	#6 Tol 6	10'-0"	6'-0"	#6 Tol 6	6'-4"
8'-4"	10'-0"	9'-6"	#6 Tol 6	10'-0"	8'-0"	#6 Tol 6	10'-0"	7'-0"	#6 Tol 6	8'-4"
10'-4"	10'-0"	10'-6"	#6 Tol 6	10'-0"	9'-0"	#6 Tol 6	10'-0"	7'-6"	#6 Tol 6	10'-4"
12'-4"	10'-0"	11'-6"	#7 Tol 6	10'-0"	9'-6"	#7 Tol 6	10'-0"	8'-6"	#6 Tol 6	12'-4"
14'-4"	10'-0"	12'-6"	#7 Tol 7	10'-0"	10'-6"	#7 Tol 7	10'-0"	9'-0"	#7 Tol 7	14'-4"
16'-4"	10'-0"	13'-0"	#8 Tol 7	10'-0"	11'-6"	#8 Tol 7	10'-0"	9'-6"	#7 Tol 7	16'-4"



CASE 2: PILE DATA TABLE

He	Maximum H	ø = 30 Min			ø = 35 Min			Maximum H
		S	L	Pile Reinf	S	L	Pile Reinf	
1'-0"	6'-4"	10'-0"	15'-0"	#7 Tol 6	10'-0"	12'-0"	#6 Tol 6	6'-4"
	8'-4"	9'-9"	16'-0"	#7 Tol 6	10'-0"	13'-0"	#7 Tol 6	8'-4"
	10'-4"	8'-0"	16'-0"	#7 Tol 6	10'-0"	14'-0"	#7 Tol 6	10'-4"
	12'-4"	6'-9"	16'-0"	#7 Tol 6	10'-0"	15'-0"	#8 Tol 7	12'-4"
	14'-4"	5'-9"	16'-0"	#7 Tol 6	9'-6"	15'-6"	#8 Tol 7	14'-4"
2'-0"	6'-4"	8'-3"	16'-0"	#7 Tol 6	10'-0"	13'-6"	#7 Tol 6	6'-4"
	8'-4"	7'-0"	16'-0"	#7 Tol 6	10'-0"	14'-6"	#7 Tol 7	8'-4"
	10'-4"	6'-0"	16'-0"	#7 Tol 6	10'-0"	15'-3"	#8 Tol 7	10'-4"
	12'-4"	5'-3"	16'-0"	#7 Tol 6	9'-9"	16'-0"	#8 Tol 7	12'-4"
	14'-4"	4'-6"	16'-0"	#7 Tol 6	8'-4"	16'-0"	#8 Tol 7	14'-4"
3'-0"	6'-4"	6'-0"	16'-0"	#7 Tol 6	10'-0"	15'-3"	#8 Tol 7	6'-4"
	8'-4"	5'-3"	16'-0"	#7 Tol 6	10'-0"	16'-0"	#8 Tol 7	8'-4"
	10'-4"	4'-6"	16'-0"	#7 Tol 6	8'-10"	16'-0"	#8 Tol 7	10'-4"
	12'-4"	4'-0"	16'-0"	#7 Tol 6	7'-10"	16'-0"	#8 Tol 7	12'-4"
	14'-4"	3'-6"	16'-0"	#7 Tol 6	6'-10"	16'-0"	#8 Tol 7	14'-4"
4'-0"	6'-4"	4'-3"	16'-0"	#7 Tol 6	8'-0"	15'-6"	#8 Tol 7	6'-4"
	8'-4"	3'-10"	16'-0"	#7 Tol 6	7'-4"	15'-9"	#8 Tol 7	8'-4"
	10'-4"	3'-6"	16'-0"	#7 Tol 6	6'-10"	16'-0"	#8 Tol 7	10'-4"
	12'-4"	3'-2"	16'-0"	#7 Tol 6	6'-3"	16'-0"	#8 Tol 7	12'-4"
	14'-4"	3'-0"	16'-3"	#7 Tol 6	5'-8"	16'-0"	#8 Tol 7	14'-4"
16'-4"	2'-10"	16'-6"	#7 Tol 6	5'-0"	16'-0"	#8 Tol 7	16'-4"	

NOTES:

- For details not shown, see Revised Standard Plan RSP B15-6 and Standard Plan B15-7.
- Lapped splices in spiral reinforcement shall be lapped at least 80 wire diameters. Spiral reinforcement at splices and at ends shall be terminated with a 135° hook with a 6" tail hooked around a longitudinal bar.

* @ 2" at option of Contractor.

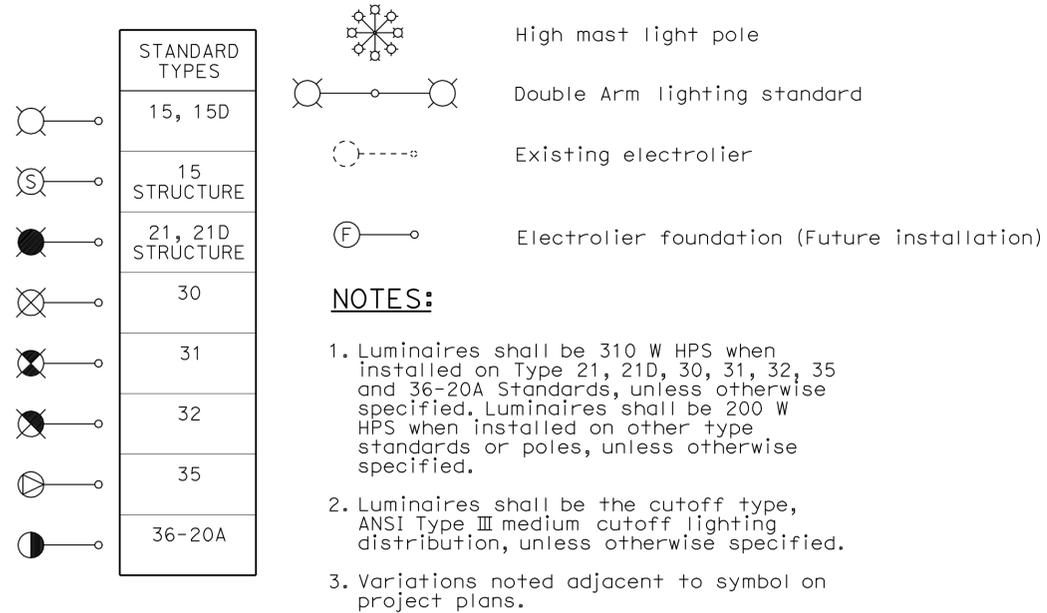
STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**SOUND WALL MASONRY BLOCK
 ON TYPE 736S/SV BARRIER
 DETAILS (3)**

NO SCALE

RSP B15-8 DATED OCTOBER 5, 2007 SUPERSEDES STANDARD PLAN B15-8
 DATED MAY 1, 2006 - PAGE 298 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP B15-8

ELECTROLIERS



STANDARD NOTES:

- AB** Abandon. If applied to conduit, remove conductors.
- BC** Install pull box in existing conduit run.
- BP** Pedestrian barricade, type as indicated on plan.
- CB** Install conduit into existing pull box.
- CC** Connect new and existing conduit. Remove existing conductors and install conductors as indicated.
- CF** Conduit to remain for future use. Remove conductors. Install pull wire or rope.
- DH** Detector handhole.
- FA** Foundation to be abandoned.
- IS** Install sign on signal mast arm.
- NS** No slip base on standard.
- PEC** Photoelectric control.
- PEU** Photoelectric unit.
- RC** Equipment or material to be removed and become the property of the Contractor.
- RE** Remove electrolier, fuses and ballast. Tape ends of conductors.
- RL** Relocate equipment.
- RR** Remove and reuse equipment.
- RS** Remove and salvage equipment.
- SC** Splice new to existing conductors.
- SD** Service disconnect.
- SF** Standard to remain for future use. Remove luminaire, pole conductors, fuses and ballast.
- TSP** Telephone service point.

ABBREVIATIONS AND EQUIPMENT DESIGNATIONS

PROPOSED EXISTING

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

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	586	681

Jeffery G. McRae
REGISTERED ELECTRICAL ENGINEER

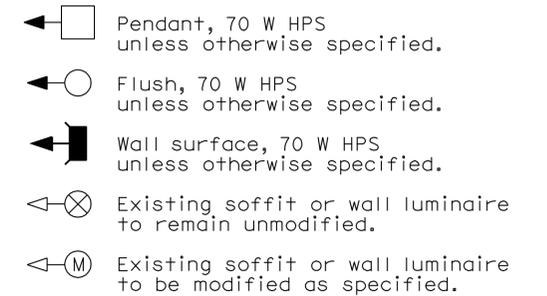
October 5, 2007
PLANS APPROVAL DATE

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

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To accompany plans dated 5-21-12

SOFFIT AND WALL MOUNTED LUMINAIRES



NOTE:

Arrow indicates "street side" of luminaire.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

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

REVISED STANDARD PLAN RSP ES-1A

2006 REVISED STANDARD PLAN RSP ES-1A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	587	681

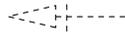
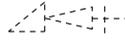
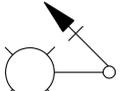
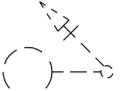
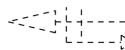
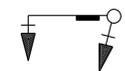
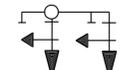
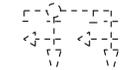
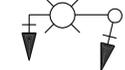
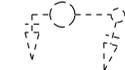
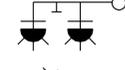
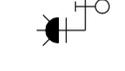
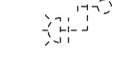
Jeffrey G. McRae
 REGISTERED ELECTRICAL ENGINEER
 October 5, 2007
 PLANS APPROVAL DATE
 Jeffrey G. McRae
 No. E14512
 Exp. 6-30-08
 ELECTRICAL
 STATE OF CALIFORNIA

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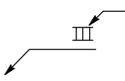
CONDUIT

PROPOSED	EXISTING	
---	---	Lighting Conduit, unless otherwise indicated or noted
---	---	Traffic signal conduit
-C-	-c-	Communication conduit
-T-	-t-	Telephone conduit
-F-	-f-	Fire alarm conduit
-FO-	-fo-	Fiber optic conduit
---	---	Conduit termination 
		Conduit riser in/on structure or service pole

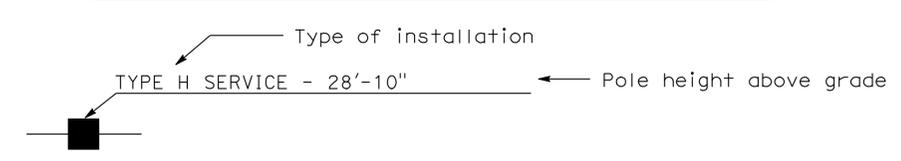
SIGNAL EQUIPMENT

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

SERVICE EQUIPMENT

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

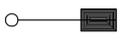
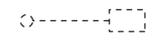
POLE-MOUNTED SERVICE DESIGNATION



ILLUMINATED OVERHEAD SIGN

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

SIGNAL EQUIPMENT Cont

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

NOTES:

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

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

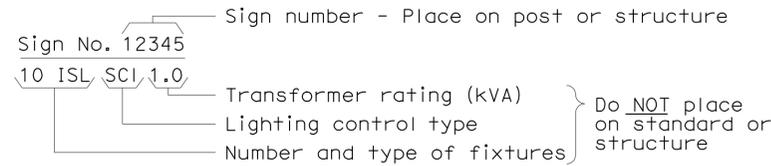
RSP ES-1B DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1B
 DATED MAY 1, 2006 - PAGE 401 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-1B

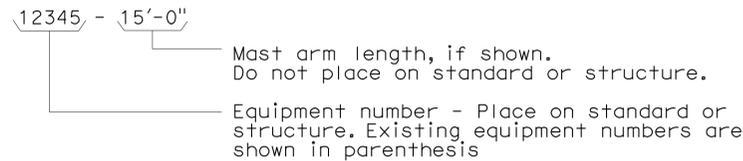
2006 REVISED STANDARD PLAN RSP ES-1B

EQUIPMENT IDENTIFICATION

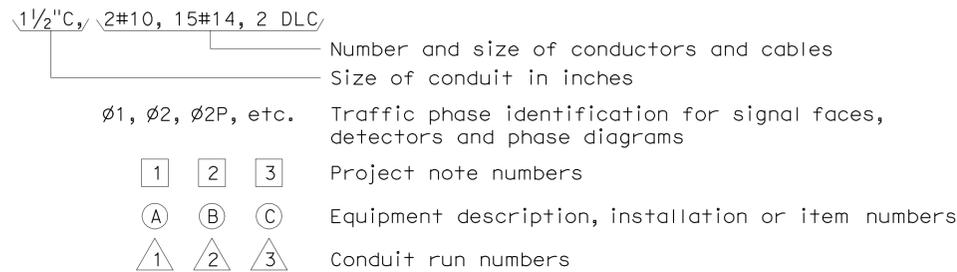
ILLUMINATED SIGN IDENTIFICATION NUMBER:



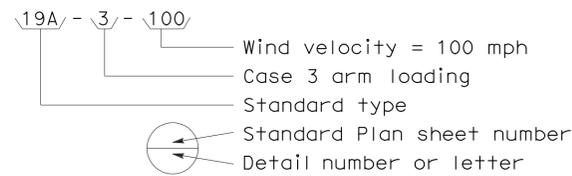
ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER:



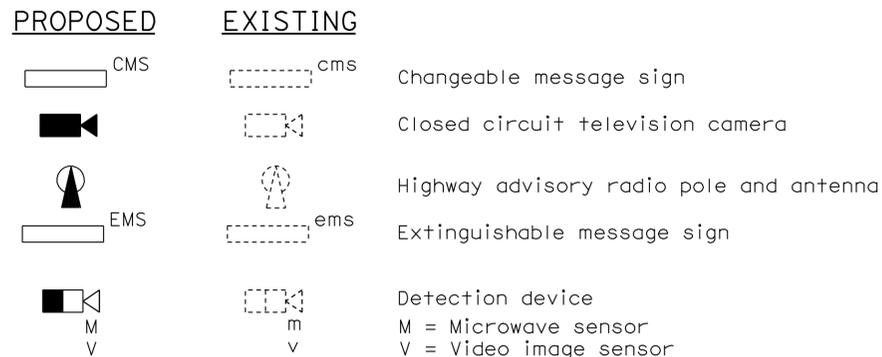
CONDUIT AND CONDUCTOR IDENTIFICATION:



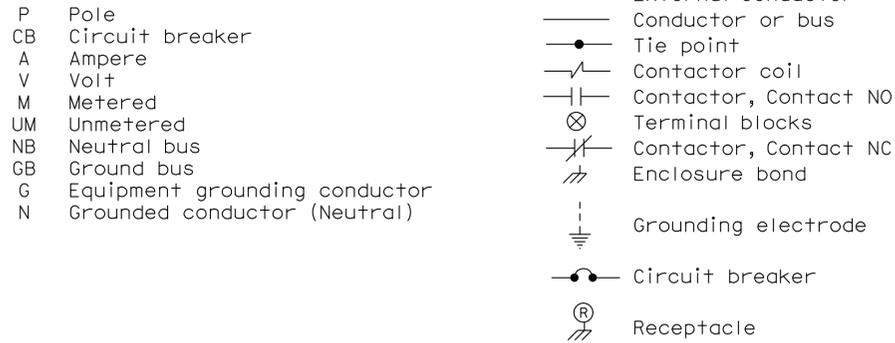
SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION):



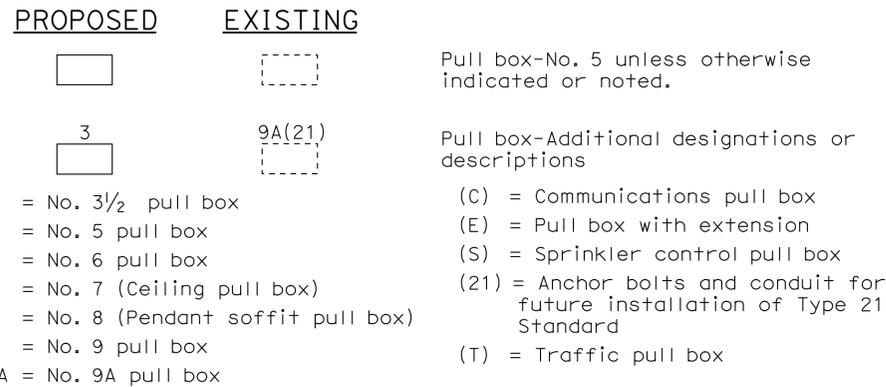
MISCELLANEOUS EQUIPMENT



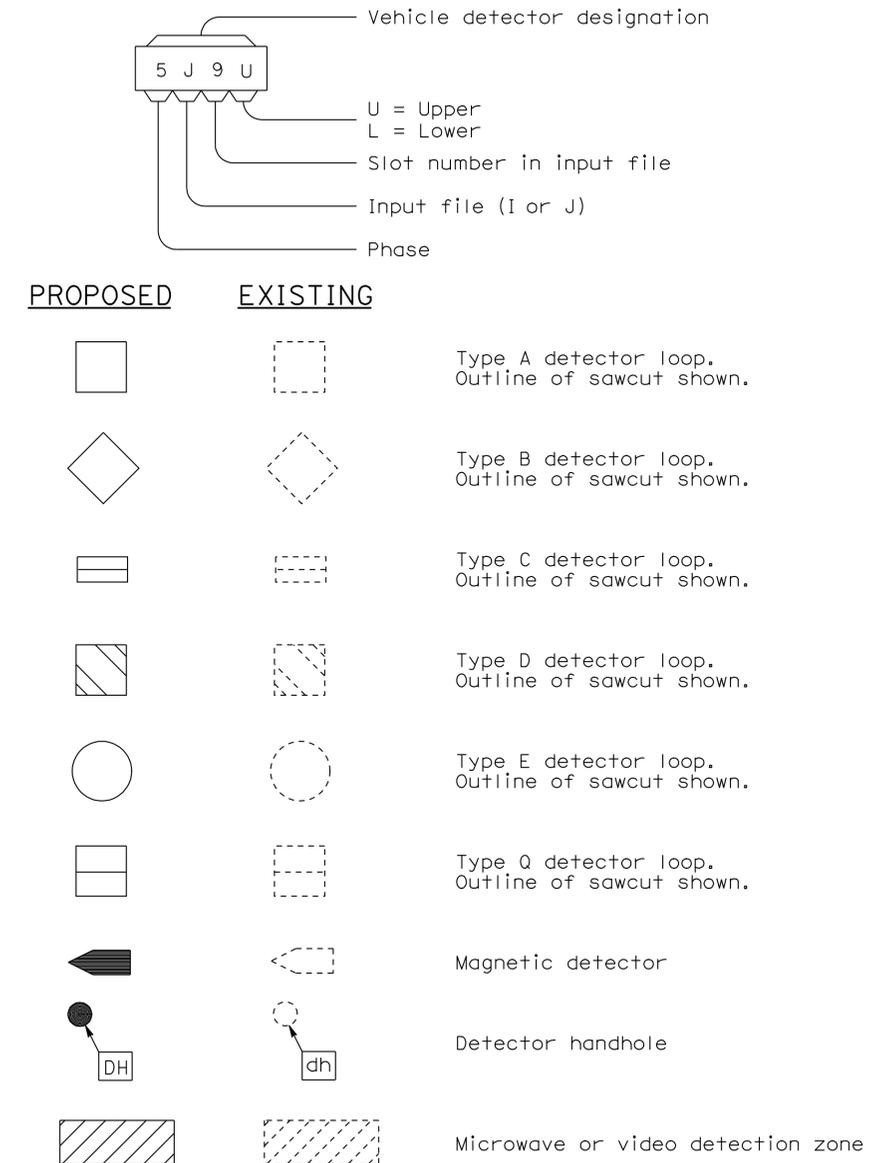
WIRING DIAGRAM LEGEND



PULL BOXES



VEHICLE DETECTORS



STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION
**ELECTRICAL SYSTEMS
 (SYMBOLS AND ABBREVIATIONS)**

NO SCALE

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

REVISED STANDARD PLAN RSP ES-1C

2006 REVISED STANDARD PLAN RSP ES-1C

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	589	681

Jeffery G. McRae
 REGISTERED ELECTRICAL ENGINEER

October 5, 2007
 PLANS APPROVAL DATE

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

To accompany plans dated 5-21-12

NOTES-TYPE III SERVICE EQUIPMENT ENCLOSURES:

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

13. An engraved phenolic nameplate on the dead front panel indicating the function of each circuit or device shall be installed with stainless steel rivets or stainless steel screws:
 - a) Adjacent to the breaker or device with character size a minimum of $\frac{1}{8}$ ".
 - b) At the top of the exterior door panel indicating State system number, voltage level and number of phases with character size a minimum of $\frac{3}{16}$ ".
14. The plan shows the approximate location of devices within the enclosure. Components may be rearranged, however, the "working" clearances within the service equipment enclosure shall be maintained.
15. In unpaved areas a raised portland cement concrete pad 2'-0" x 4" x width of foundation shall be constructed in front of new service equipment enclosure installation. Pad shall be set to elevation of foundation.
16. Foundation shall extend 2" minimum beyond edge of service equipment enclosure.
17. Internal bus, where shown, is typical only. Alternative design of proposed service equipment enclosure shall be submitted to the Engineer for approval.
18. Plug-in circuit breakers may be mounted in the vertical or horizontal position. Cable-in/cable-out circuit breakers shall be mounted in the vertical position.
19. Type III-AF and Type III-BF service equipment enclosures shall have the meter viewing windows located on the front side of the service equipment enclosures.
20. Type III-AR and Type III-BR service equipment enclosures shall be similarly constructed as Type III-AF and Type III-BF respectively, except the meter viewing windows shall be located on the back side of the service equipment enclosures.
21. Minimum clearance shall be required for front and back of service equipment enclosure per National Electrical Code, Article 110.26, "Spaces About Electric Equipment (600 Volts, Nominal, or Less)."

STATE OF CALIFORNIA
 DEPARTMENT OF TRANSPORTATION

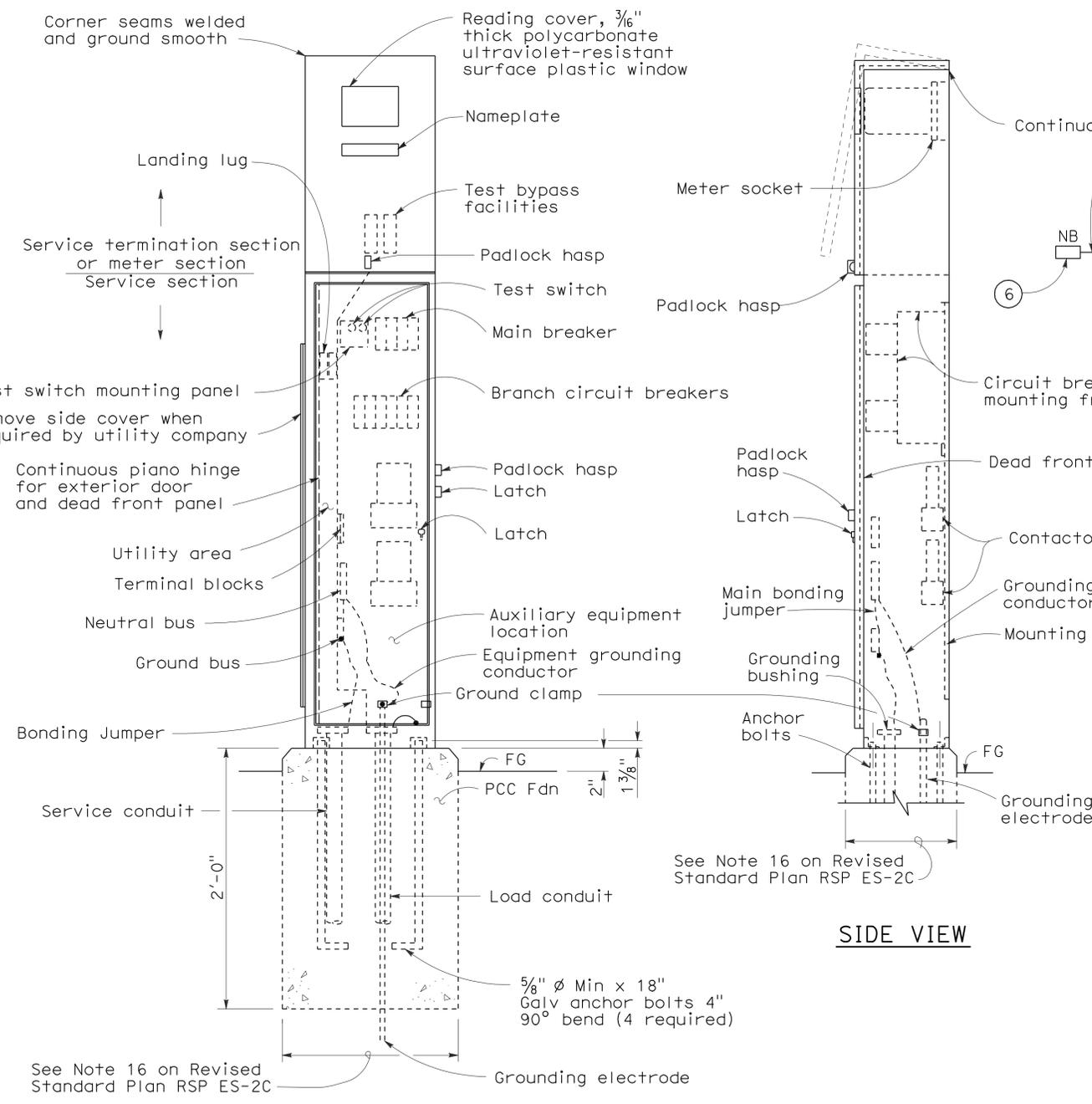
**ELECTRICAL SYSTEMS
 (SERVICE EQUIPMENT NOTES
 TYPE III SERIES)**

NO SCALE

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

REVISED STANDARD PLAN RSP ES-2C

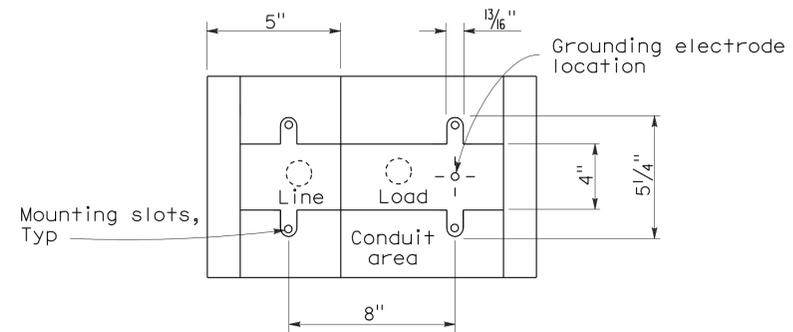
2006 REVISED STANDARD PLAN RSP ES-2C



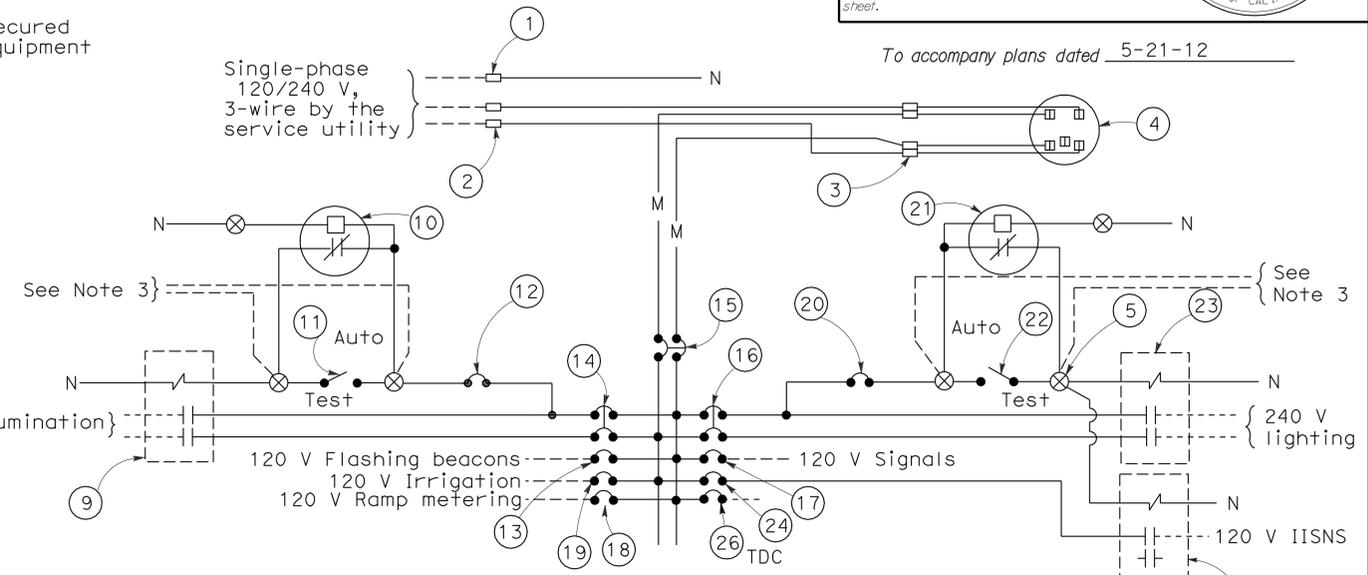
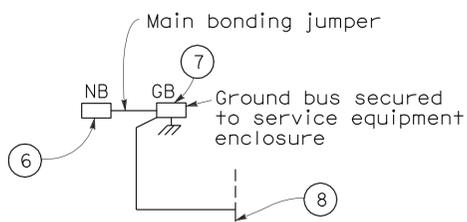
TYPE III-AF SERVICE EQUIPMENT ENCLOSURE (TYPICAL)

FRONT VIEW

SIDE VIEW



BASE FOR TYPE III-A SERVICE EQUIPMENT ENCLOSURE



120/240 V SERVICE WIRING DIAGRAM (TYPICAL)

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

NOTES: (FOR SERVICE EQUIPMENT ENCLOSURE)

- Voltage ratings of service equipment shall conform to the service voltages indicated on the plans.
- Unless otherwise indicated on the plans, service equipment items shall be provided for each service equipment enclosure as shown.
- Connect to remote test switch mounted on lighting standards, sign post or structure when required.
- Items No. 1 and 6 shall be isolated from the service equipment enclosure.
- Meter sockets shall be 5 clip type.
- The landing lug shall be suitable for multiple conductors.
- Type I photoelectric control shall be used unless otherwise indicated on the plans.

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

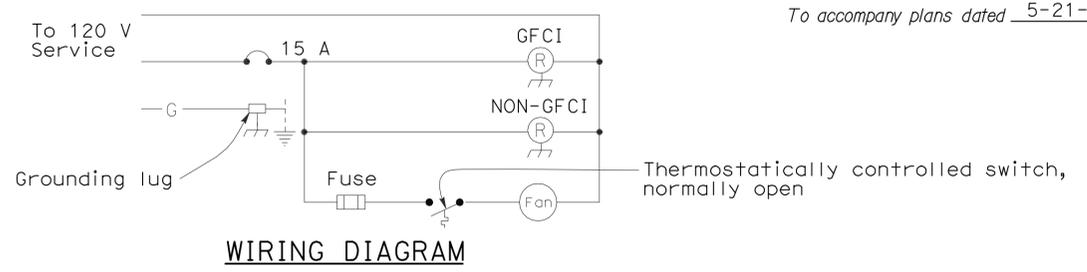
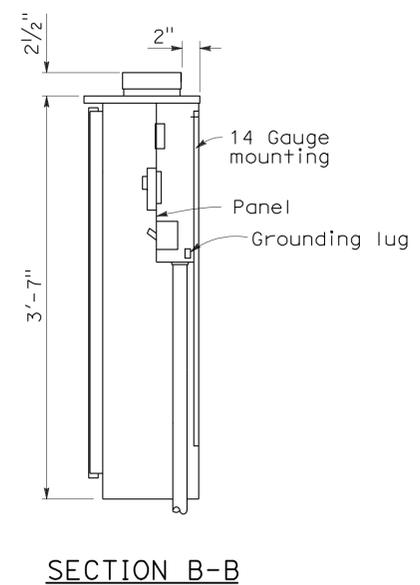
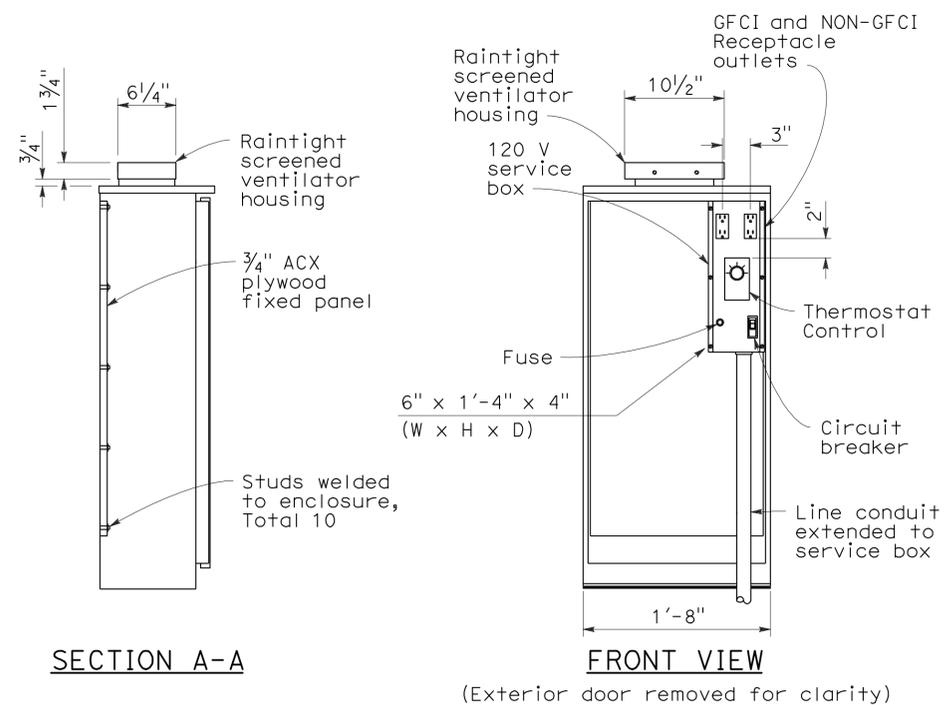
NO SCALE

RSP ES-2D DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-2D DATED MAY 1, 2006 - PAGE 406 OF THE STANDARD PLANS BOOK DATED MAY 2006.

2006 REVISED STANDARD PLAN RSP ES-2D

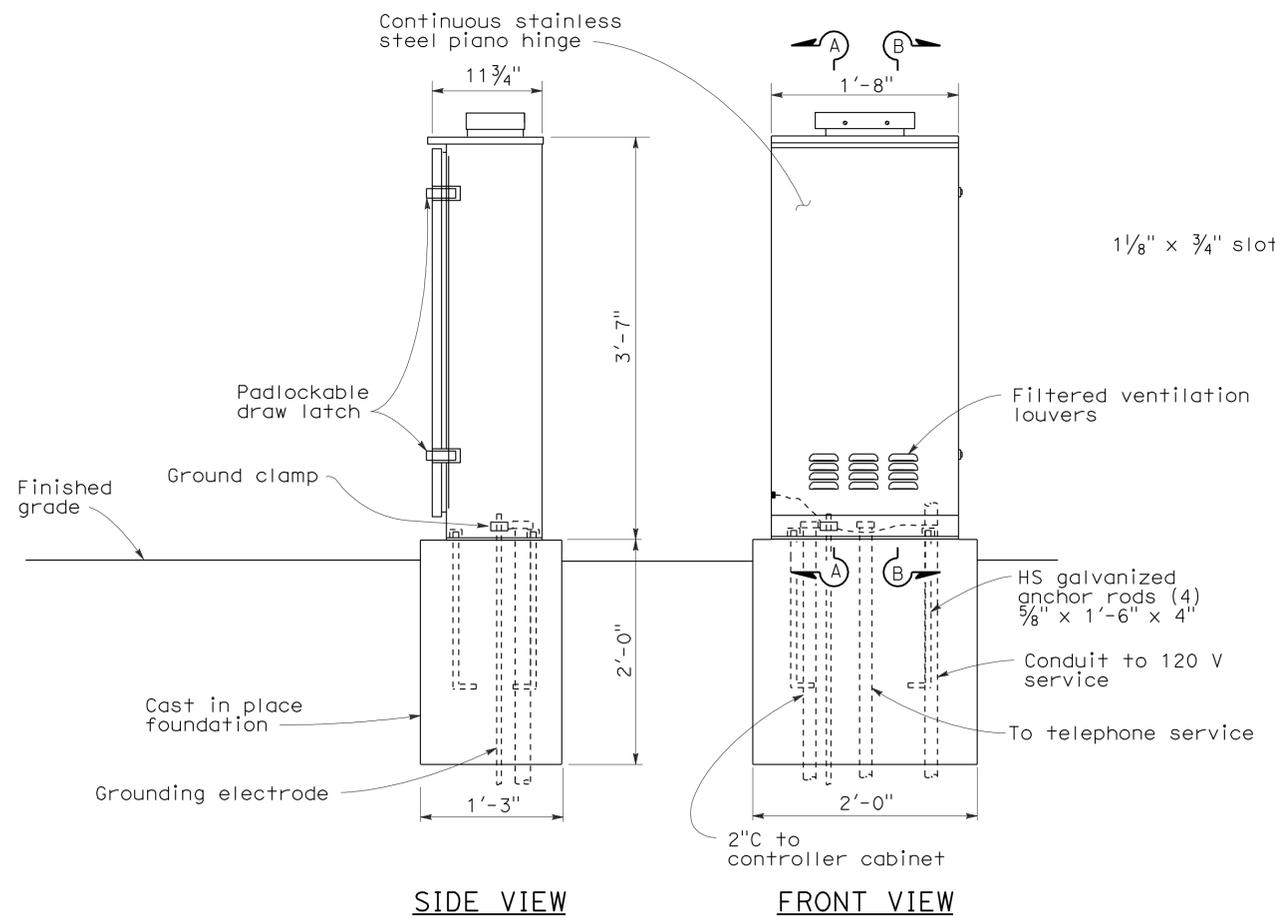
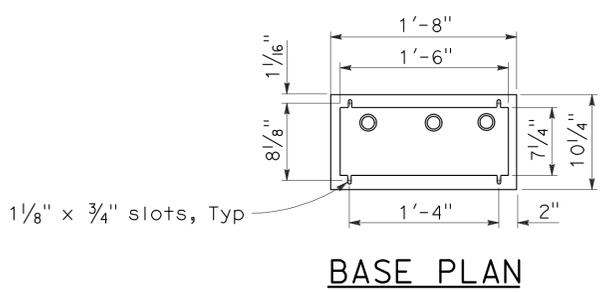
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
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Jeffrey G. McRae
 REGISTERED ELECTRICAL ENGINEER
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NOTES:

- Telephone demarcation cabinet shall be furnished with a mounting panel, outlets, circuit breaker and deadfront plates in place. Dimensions are nominal.
- An approved mastic or caulking compound shall be placed on the foundation prior to placing the cabinet to seal openings between the bottom of the cabinet and the foundation.
- In unpaved areas, a raised PCC pad shall be placed in front of the telephone demarcation cabinet. Pad shall be 2'-0" x 1'-10" x 4" thick, with 2" above the finished grade.
- All conduits shall be bonded to the enclosure.
- Telephone demarcation cabinet:
 - Material shall be anodized aluminum (1/8" thick).
 - Fabrication shall conform to the requirements of the Standard Specifications.
 - The exterior door shall be side hung and secured with a padlockable draw latch, the padlock hole shall be a minimum diameter of 7/16" to receive a padlock.
 - Ventilation louvers shall be located on the door.
 - Fan shall be mounted in a ventilator housing.
 - Fan shall be thermostatically controlled and adjustable to turn on between 80°F and 130°F.
 - Fan circuit shall be fused at 175 percent of the fan motor capacity.
 - Fan capacity shall be at least 25 cubic feet per minute.
 - Fasten fixed mounting panels with nuts, lock and flat washers to 3/16" ø x 1" studs welded to enclosure.



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

**ELECTRICAL SYSTEMS
(TELEPHONE DEMARICATION
CABINET, TYPE B)**

NO SCALE

RSP ES-3E DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-3E
DATED MAY 1, 2006 - PAGE 414 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-3E

2006 REVISED STANDARD PLAN RSP ES-3E

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	592	681

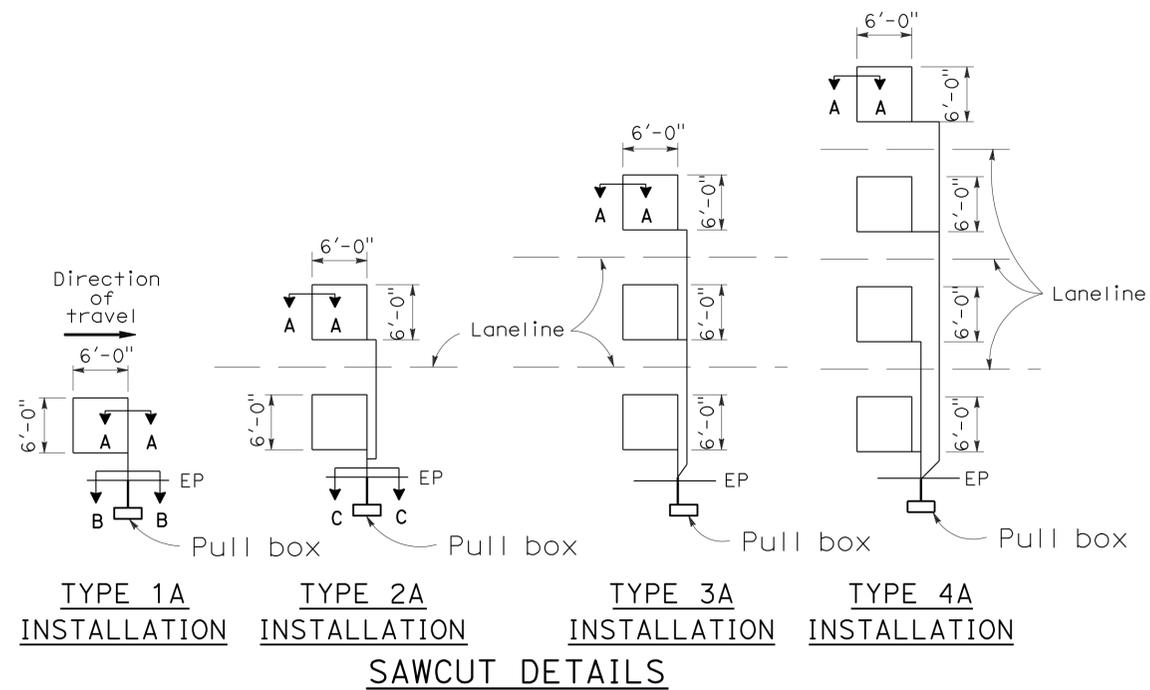
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 STATE OF CALIFORNIA

October 5, 2007
 PLANS APPROVAL DATE

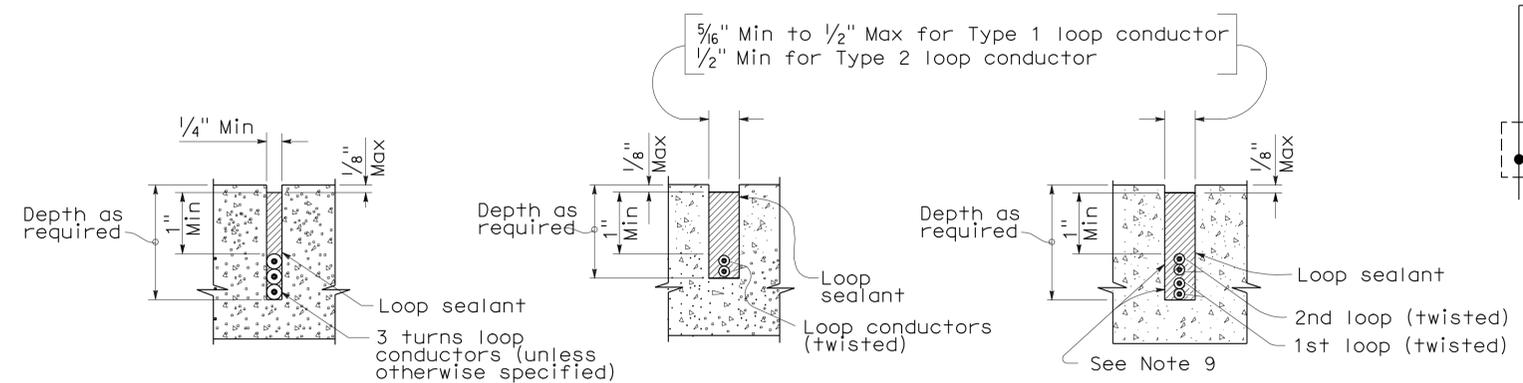
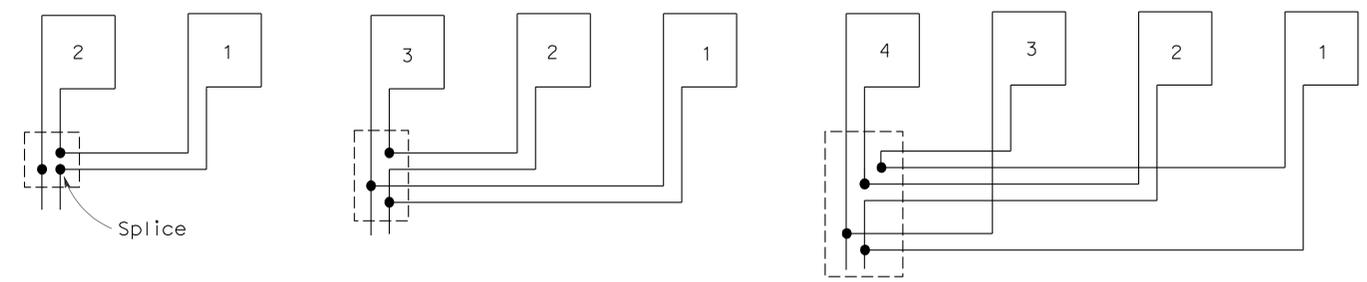
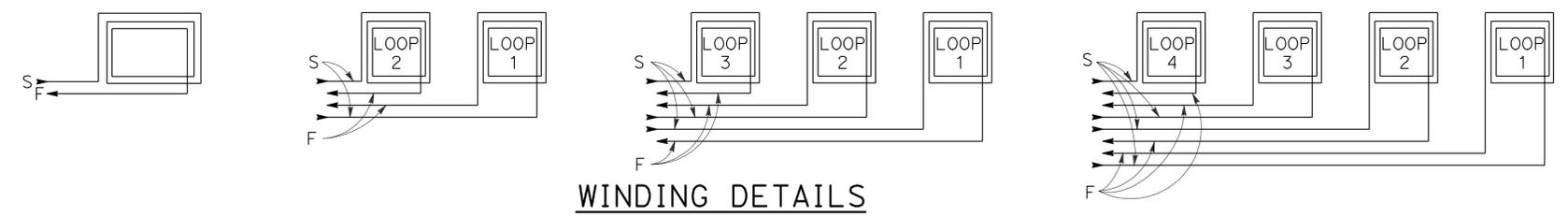
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LOOP INSTALLATION PROCEDURE

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



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



ELECTRICAL SYSTEMS (DETECTORS)

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

NO SCALE

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

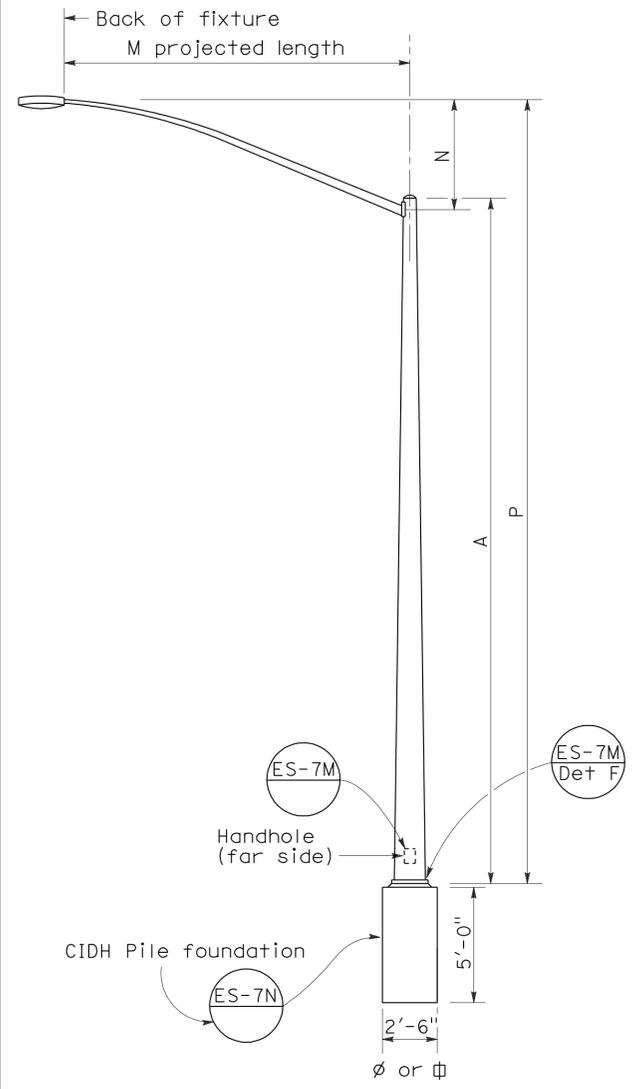
2006 REVISED STANDARD PLAN RSP ES-5A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	593	681

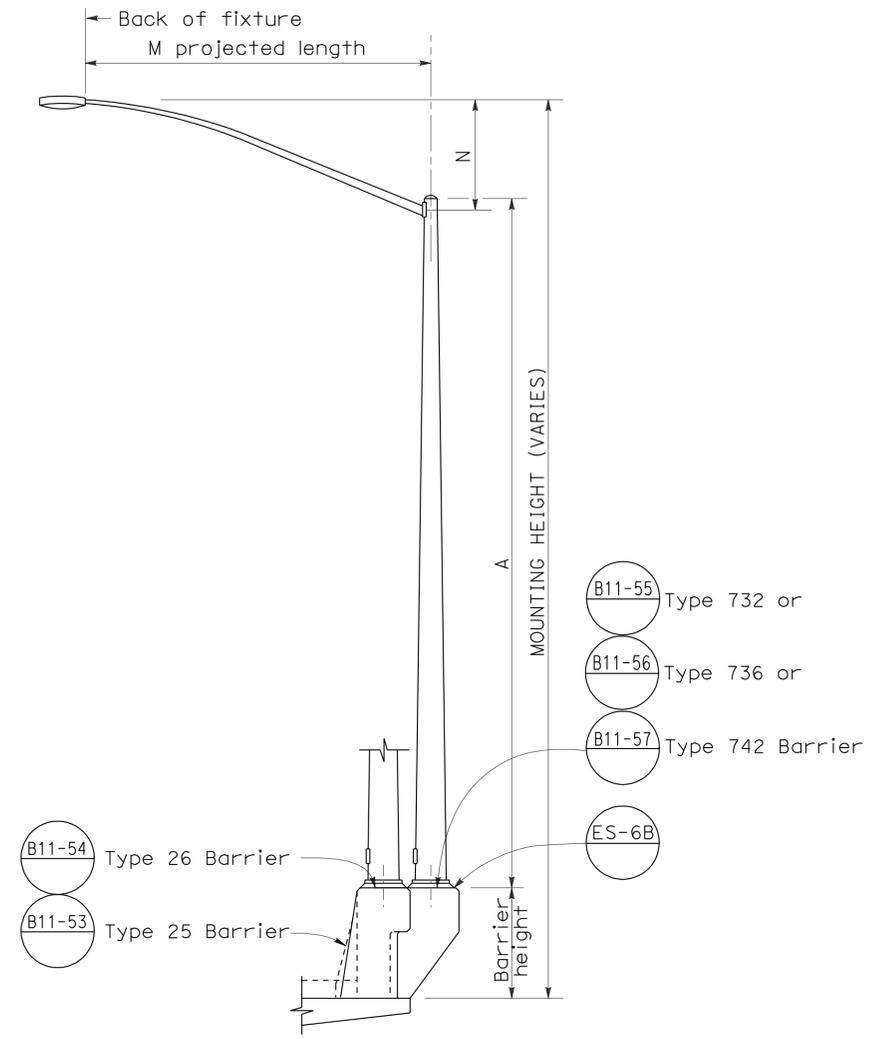
Stanley P. Johnson
 REGISTERED CIVIL ENGINEER
 October 5, 2007
 PLANS APPROVAL DATE
 Stanley P. Johnson
 No. C57793
 Exp. 3-31-08
 CIVIL
 STATE OF CALIFORNIA

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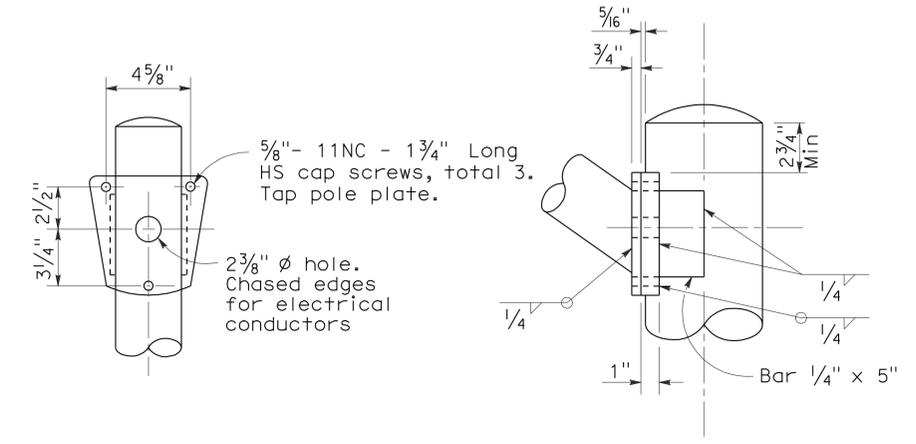
To accompany plans dated 5-21-12



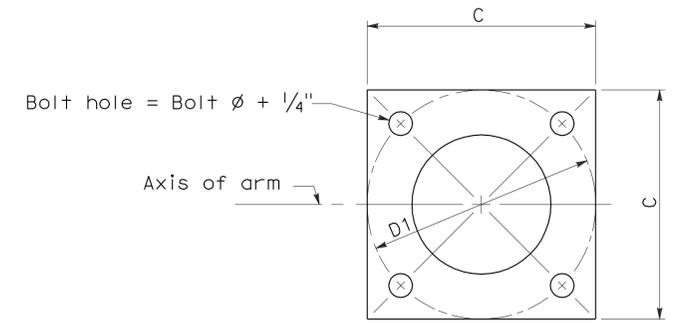
ELEVATION
TYPE 15 AND TYPE 21



ELEVATION
TYPE 15 AND TYPE 21 BARRIER RAIL MOUNTED



DETAIL R
LUMINAIRE ARM CONNECTION



BASE PLATE

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

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

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

NOTES:

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

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

NO SCALE

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

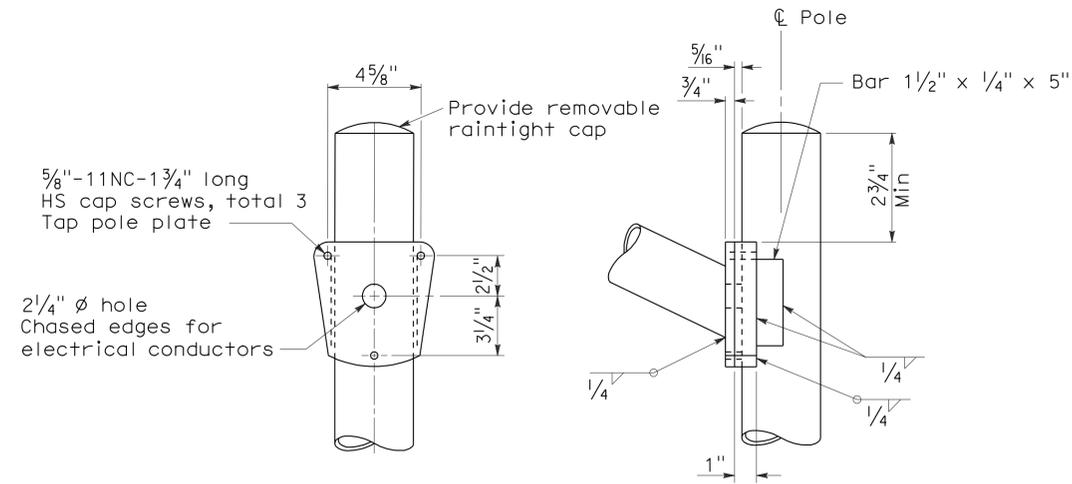
REVISED STANDARD PLAN RSP ES-6A

2006 REVISED STANDARD PLAN RSP ES-6A

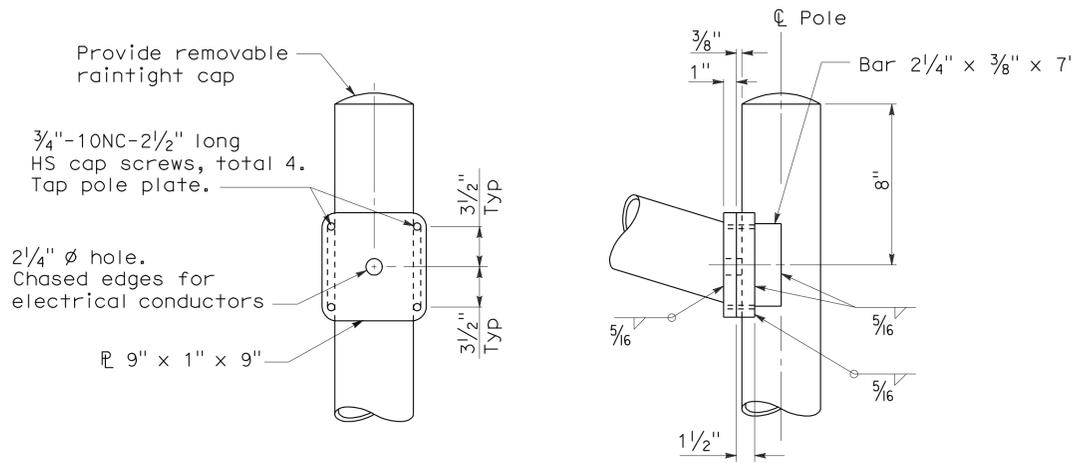
LUMINAIRE ARM DATA

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

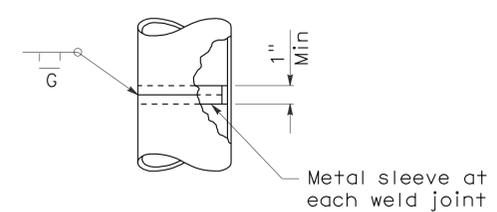
* Type 30 - arm length 6'-0" - 15'-0" maximum
 ** Type 31 - arm lengths 20'-0"



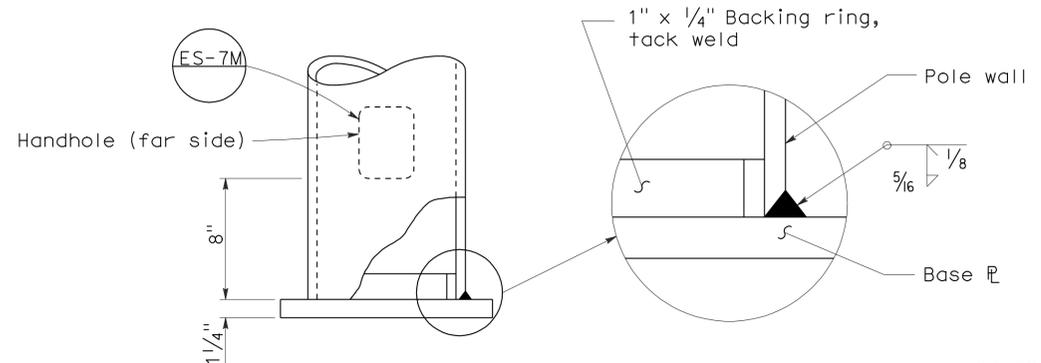
DETAIL A - TYPE 30



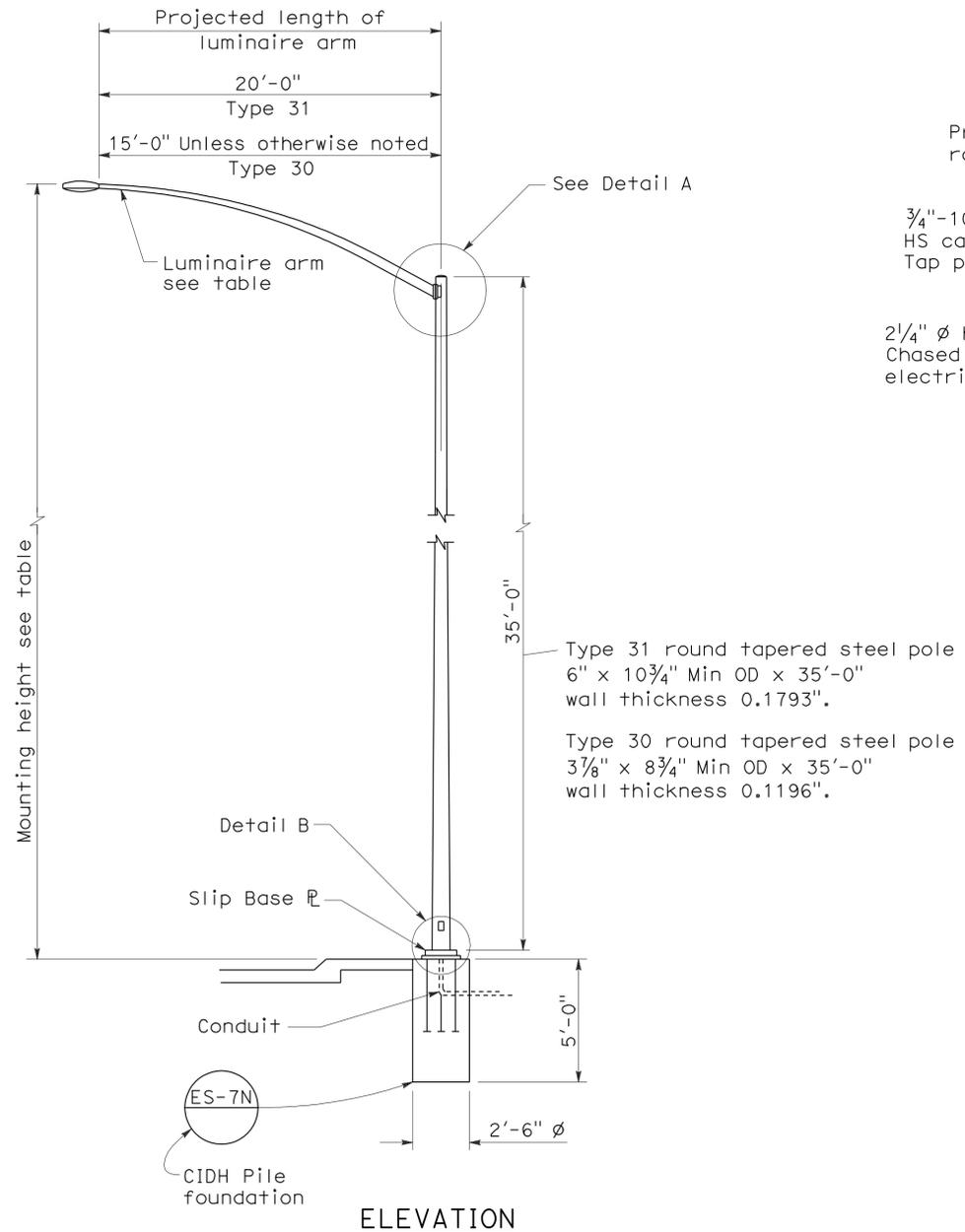
DETAIL A - TYPE 31



POLE SPLICE



DETAIL B



ELEVATION

NOTES:

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

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

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

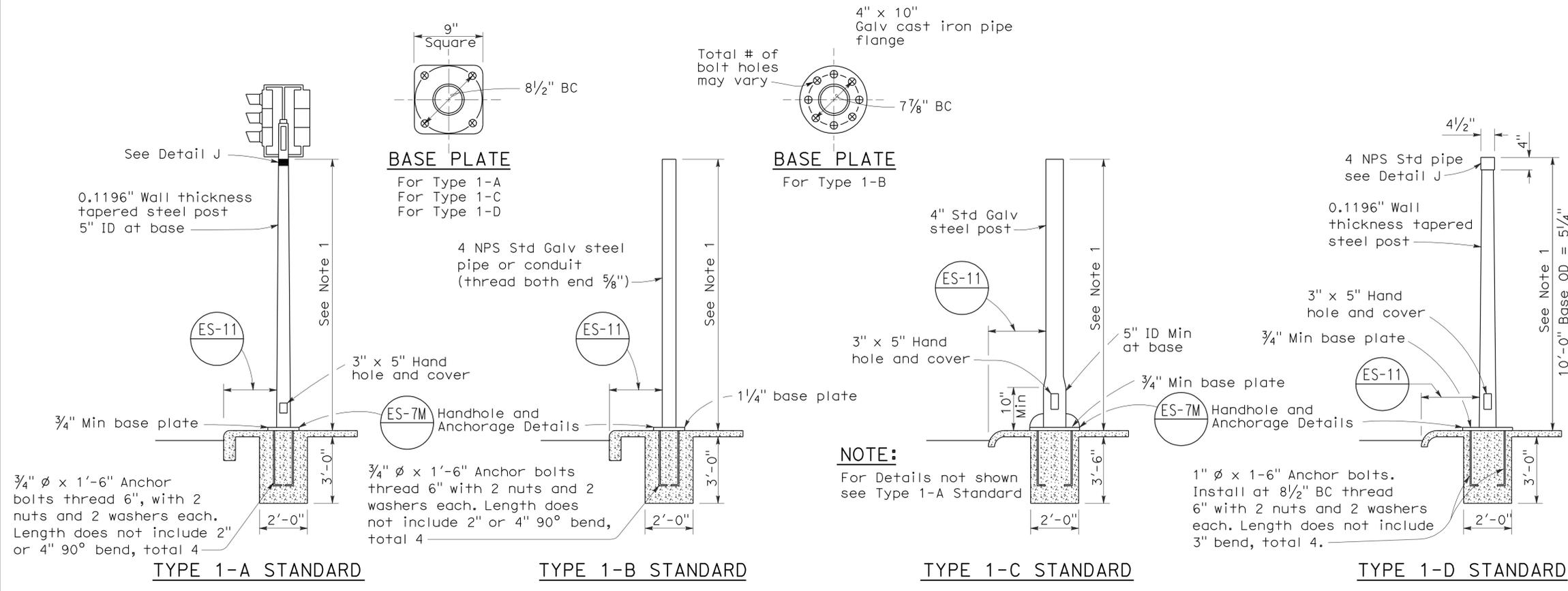
2006 REVISED STANDARD PLAN RSP ES-6E

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	595	681

Stanley P. Johnson
 REGISTERED CIVIL ENGINEER
 October 5, 2007
 PLANS APPROVAL DATE
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 To accompany plans dated 5-21-12

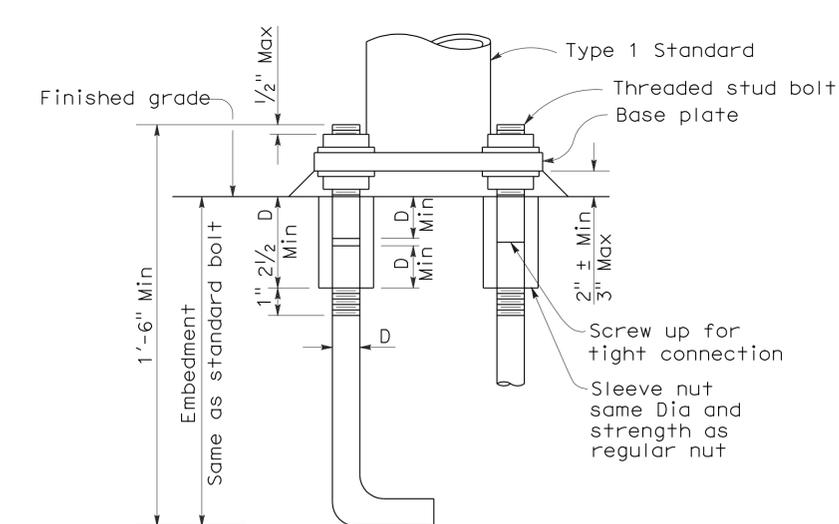
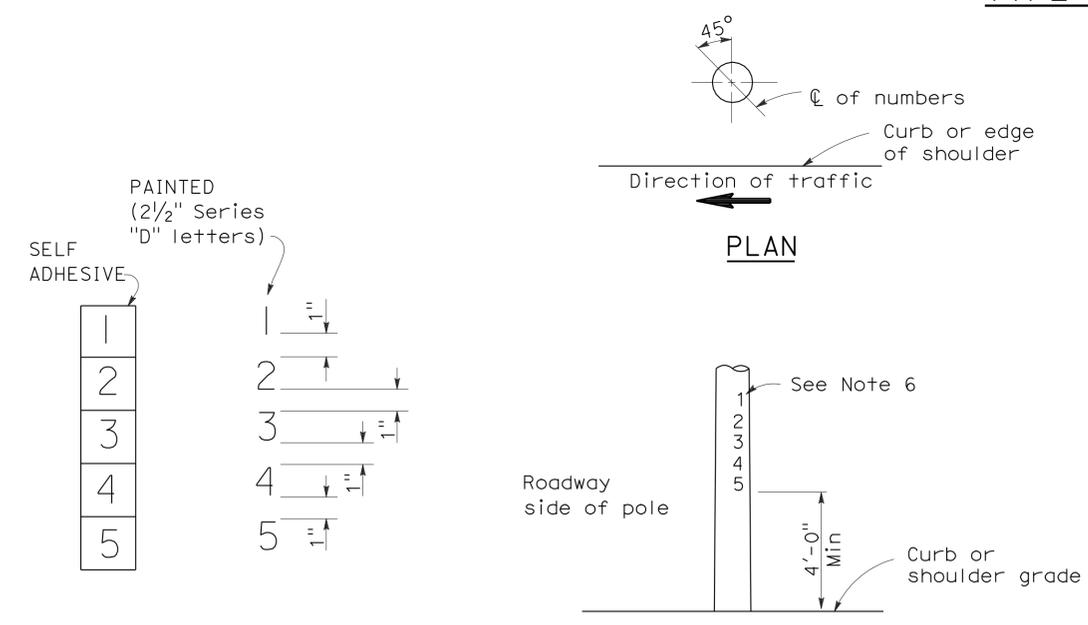
REGISTERED PROFESSIONAL ENGINEER
 Stanley P. Johnson
 No. C57793
 Exp. 3-31-08
 CIVIL
 STATE OF CALIFORNIA

2006 REVISED STANDARD PLAN RSP ES-7B



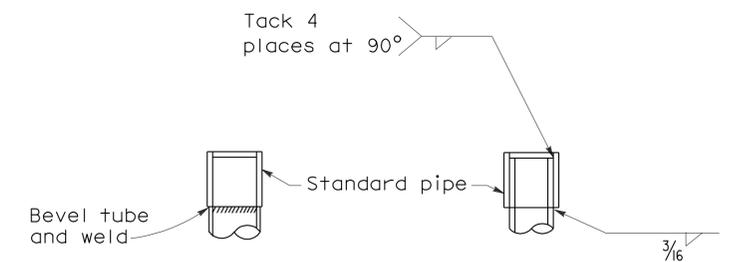
- NOTES:**
- Standards shall be 10'-0" \pm 2" for vehicle signals and 7'-0" \pm 2" for pedestrian signals unless otherwise noted on plans.
 - Top of standards shall be 4 1/2" OD.
 - Conduits shall extend 2" maximum above finished surface of foundation and for Types 1-A, 1-C and 1-D shall be sloped toward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

TYPE 1 SIGNAL STANDARDS



ANCHOR BOLTS WITH SLEEVE NUTS

Sleeve nuts to be used only when shown or specified on Project Plans
D = Diameter of anchor bolt



Tube may be inserted into pipe or butted as required

NUMBER DETAIL **TYPICAL NUMBER FORMAT**

LOCATION OF EQUIPMENT NUMBERS ON STANDARDS AND POSTS

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (SIGNAL AND LIGHTING STANDARD TYPE 1 STANDARD AND EQUIPMENT NUMBERING)

NO SCALE

RSP ES-7B DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-7B DATED MAY 1, 2006 - PAGE 438 OF THE STANDARD PLANS BOOK DATED MAY 2006.

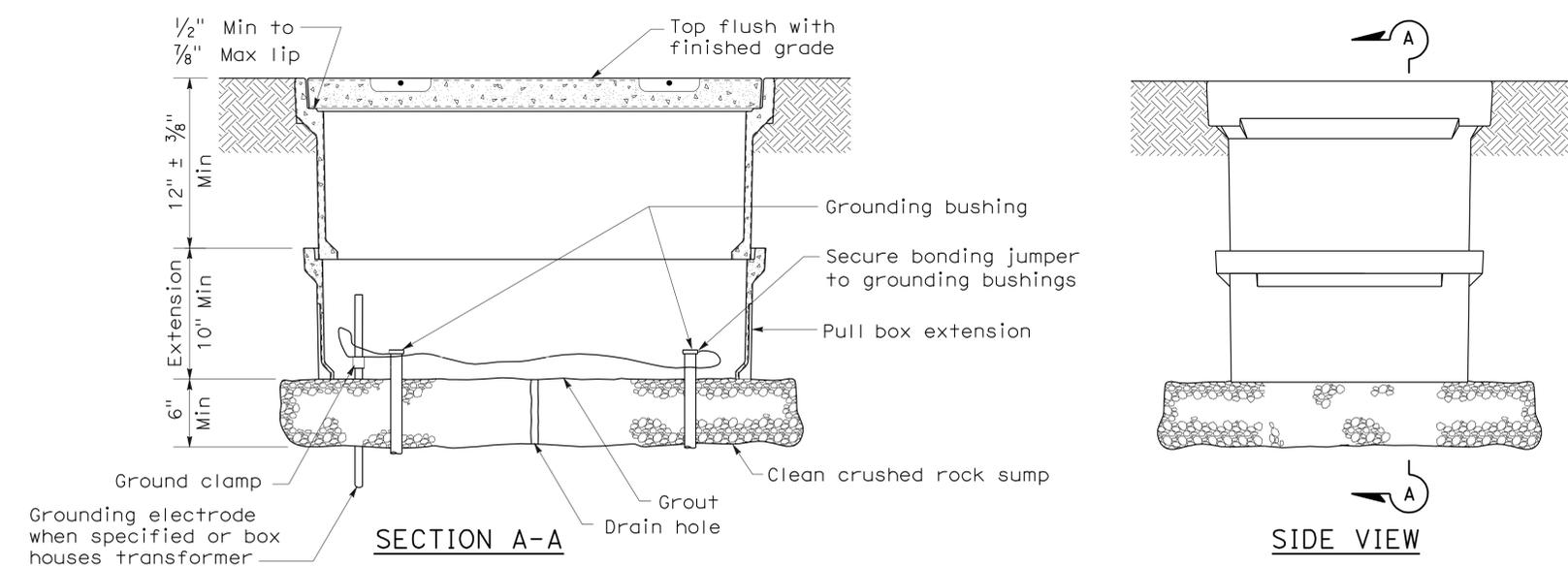
REVISED STANDARD PLAN RSP ES-7B

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	596	681

Jeffrey G. McRae
 REGISTERED ELECTRICAL ENGINEER
 January 20, 2012
 PLANS APPROVAL DATE
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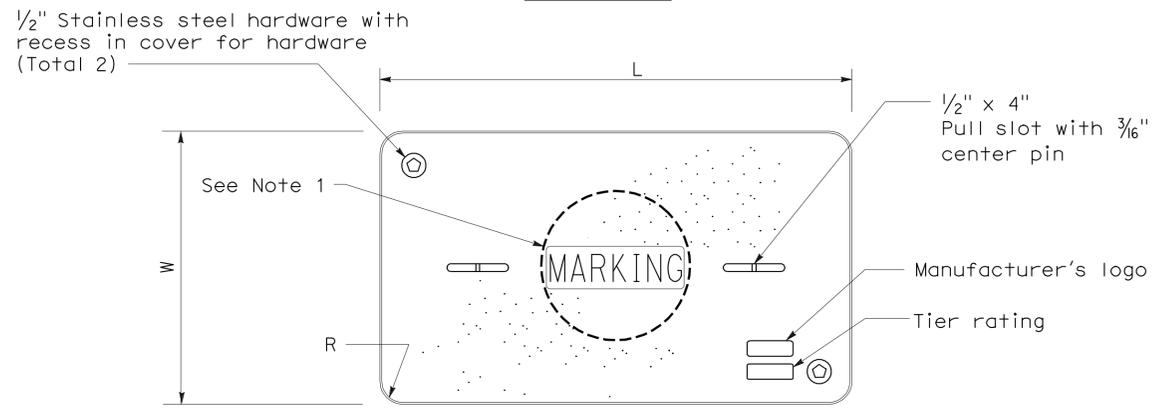
REGISTERED PROFESSIONAL ENGINEER
 Jeffrey G. McRae
 No. E14512
 Exp. 6-30-12
 ELECTRICAL
 STATE OF CALIFORNIA

To accompany plans dated 5-21-12

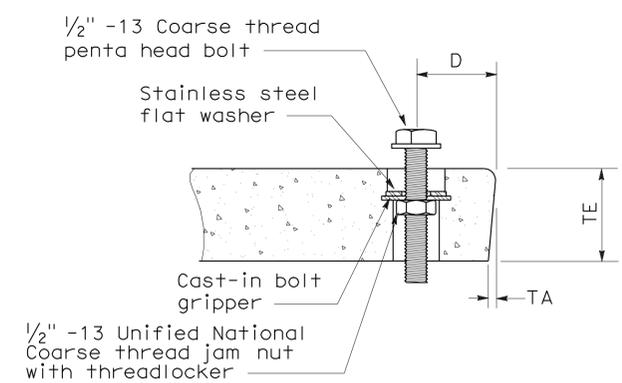


INSTALLATION DETAILS

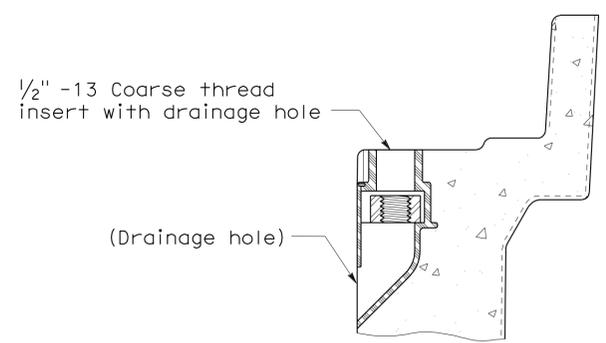
DETAIL A



COVER TOP VIEW



TYPICAL COVER CAPTIVE BOLT
(Or similar)



TYPICAL THREADED INSERT
(Or similar)

NOTES ON PULL BOXES:

- 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.

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

NSP ES-8A DATED JANUARY 20, 2012 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

2006 NEW STANDARD PLAN NSP ES-8A

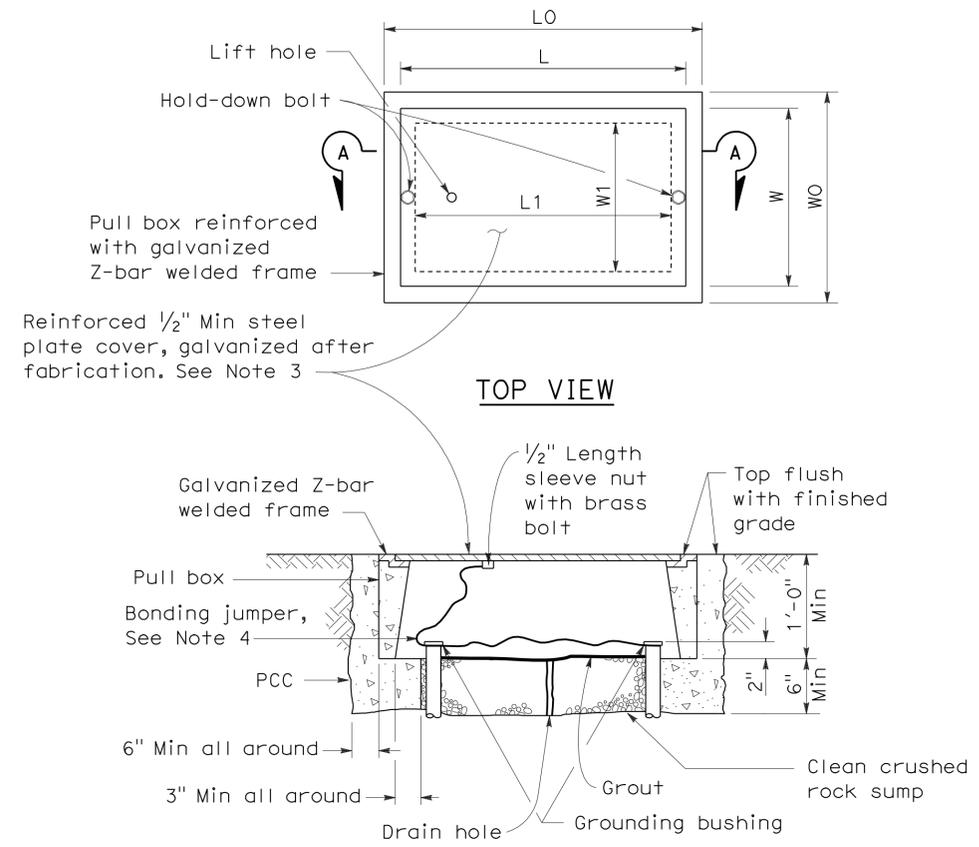
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	597	681

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

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2006 NEW STANDARD PLAN NSP ES-8B

To accompany plans dated 5-21-12



SECTION A-A
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

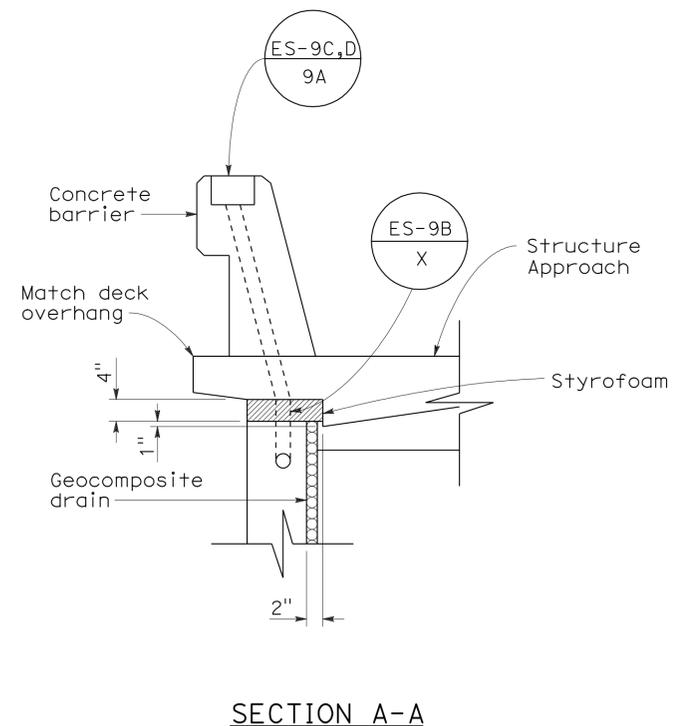
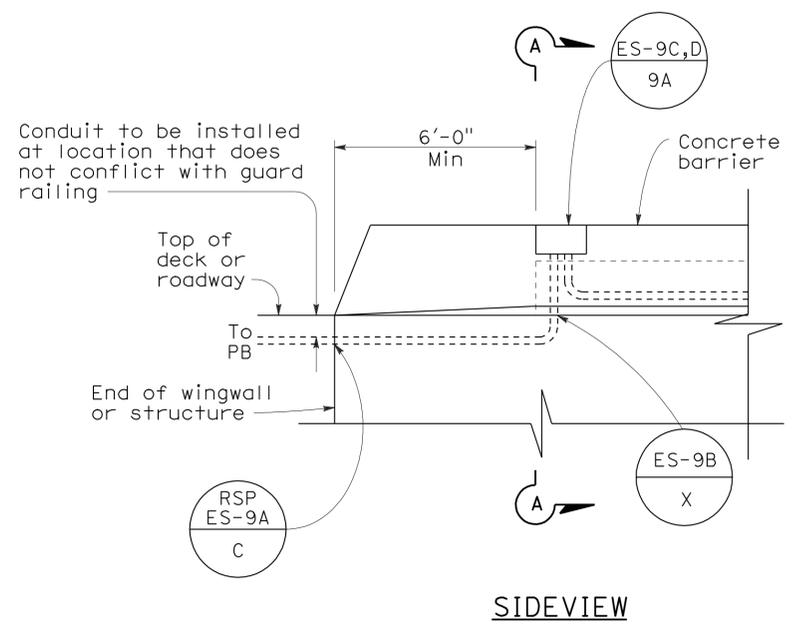
NSP ES-8B DATED JANUARY 20, 2012 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	598	681

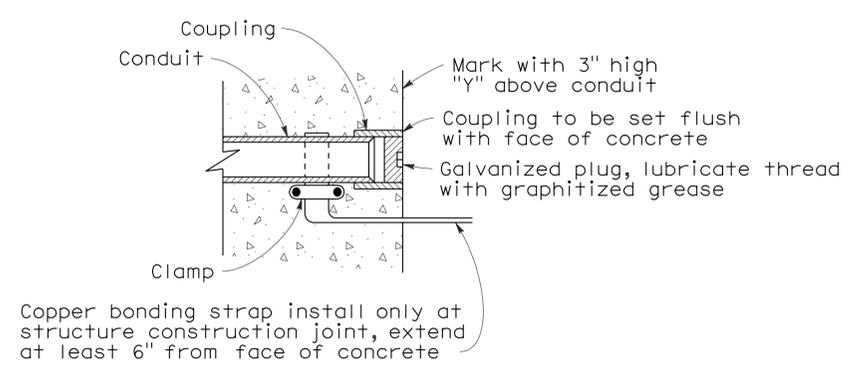
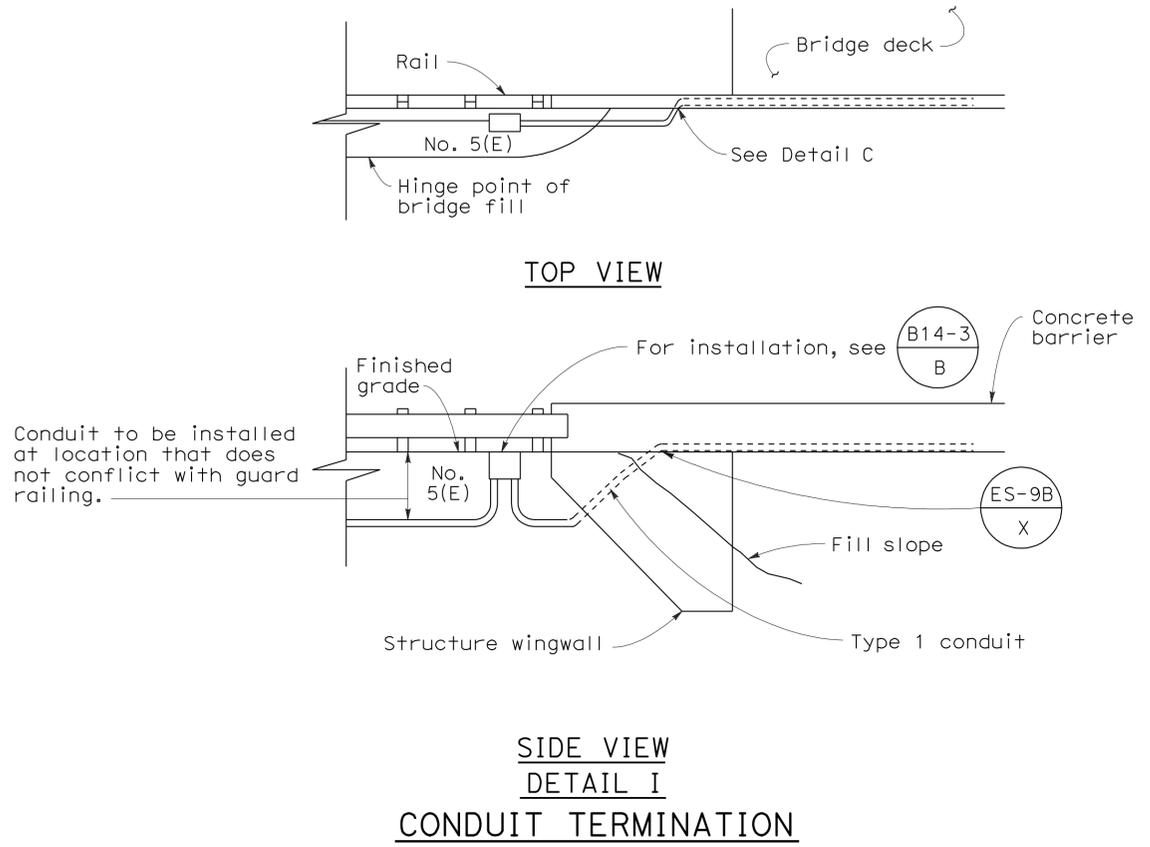
Jeffery G. McRae
 REGISTERED ELECTRICAL ENGINEER
 October 5, 2007
 PLANS APPROVAL DATE
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REGISTERED PROFESSIONAL ENGINEER
 Jeffery G. McRae
 No. E14512
 Exp. 6-30-08
 ELECTRICAL
 STATE OF CALIFORNIA

To accompany plans dated 5-21-12



**DETAIL A
CONDUIT TERMINATION**



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

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

NO SCALE

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

REVISED STANDARD PLAN RSP ES-9A

2006 REVISED STANDARD PLAN RSP ES-9A

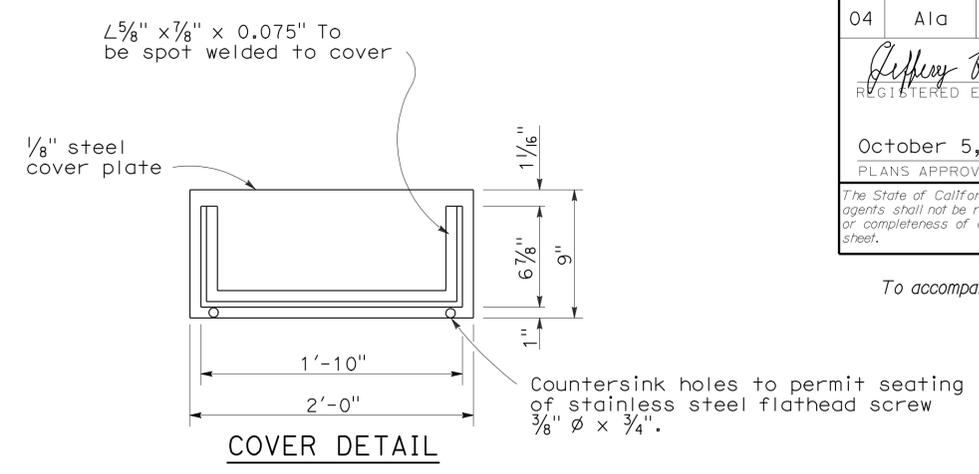
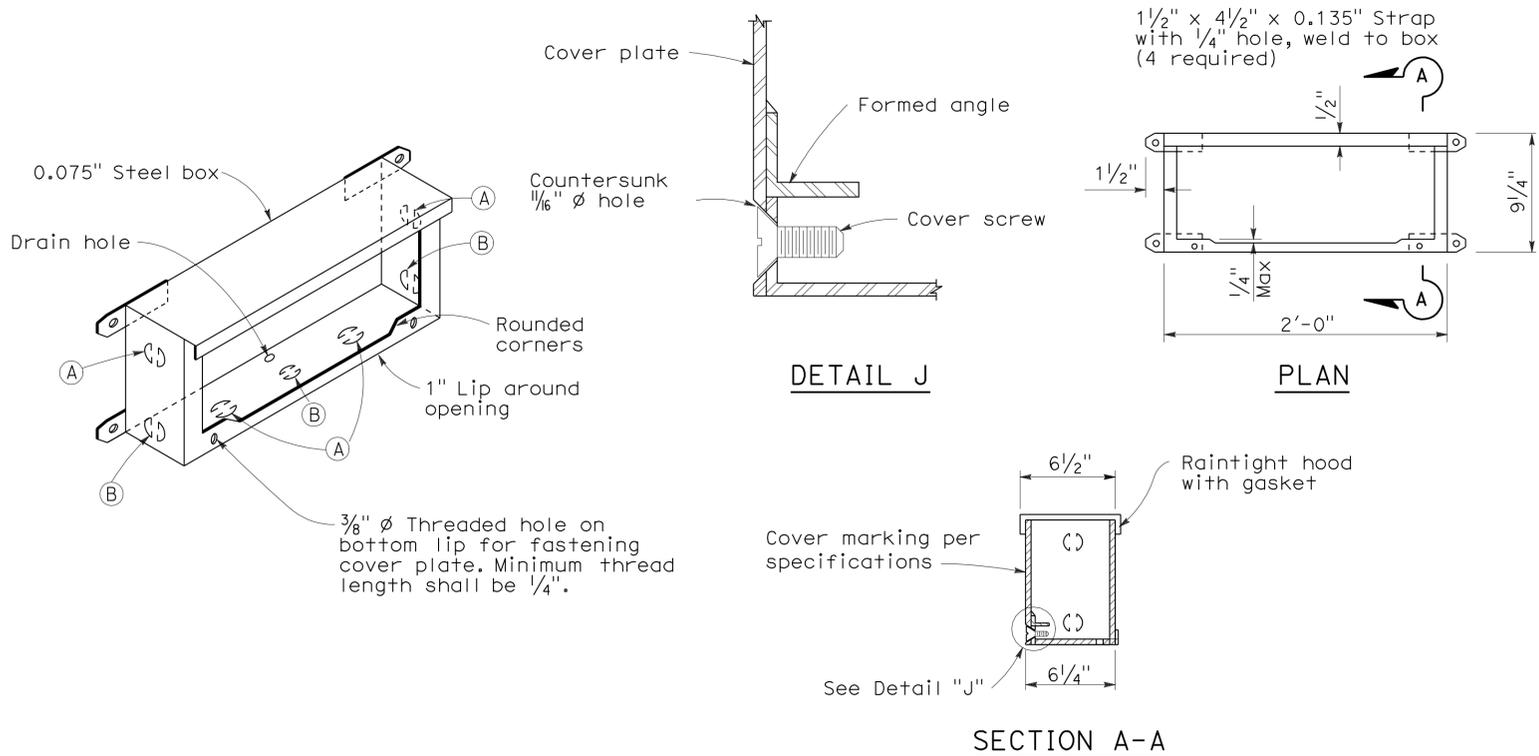
DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	599	681

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

October 5, 2007
 PLANS APPROVAL DATE

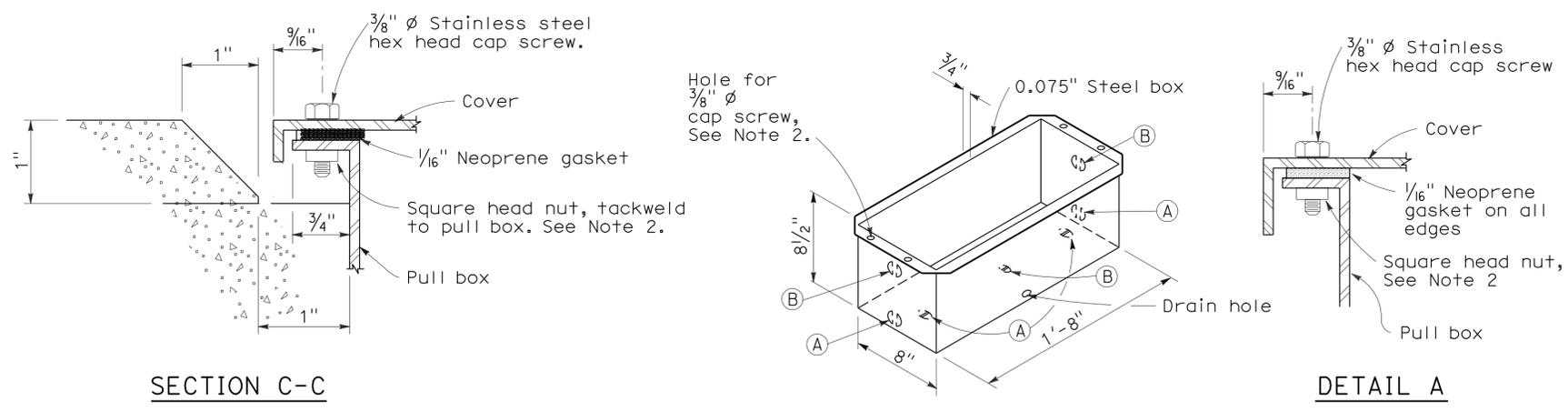
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To accompany plans dated 5-21-12



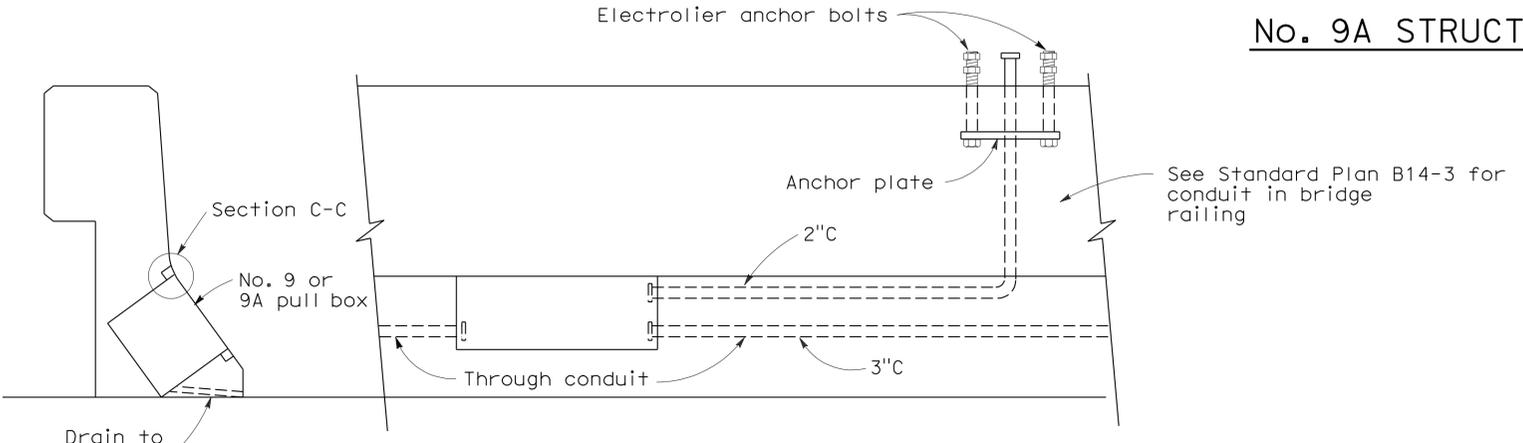
INSTALLATION NOTE:
 Box shall be parallel to top of railing. Close cover box during pouring with 1/4" plywood of sufficient size to provide 1:1 chamfer on 3 sides of cover. Upper edge of plywood shall fit against lower edge of raintight hood.

No. 9 STRUCTURE PULL BOX



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

No. 9A STRUCTURE PULL BOX



INSTALLATION IN SLOPING PARAPETS

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

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

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

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

2006 REVISED STANDARD PLAN RSP ES-9C

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	Ala	580	R7.8/19.1	600	681

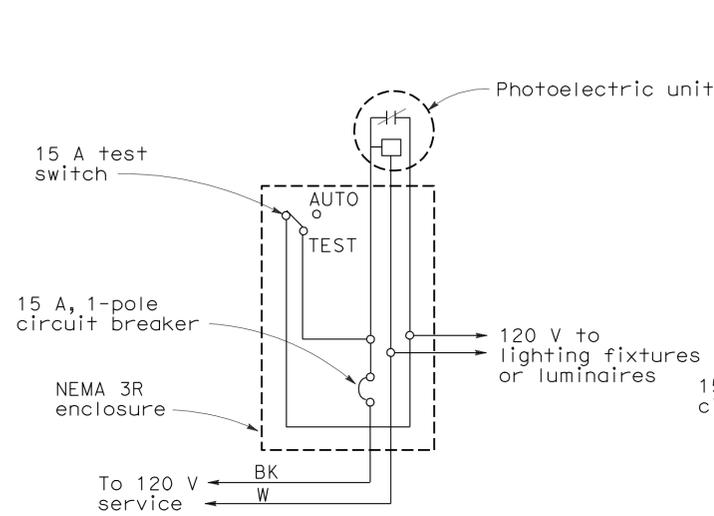
Jeffery G. McRae
 REGISTERED ELECTRICAL ENGINEER
 October 5, 2007
 PLANS APPROVAL DATE
 Jeffery G. McRae
 No. E14512
 Exp. 6-30-08
 ELECTRICAL
 STATE OF CALIFORNIA

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NOTES: (FOR LIGHTING AND SIGN ILLUMINATION CONTROL)

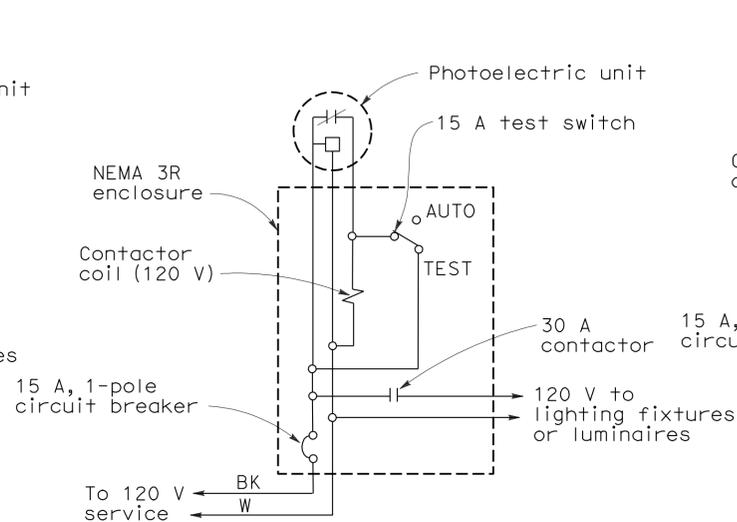
1. The ballast voltages of lighting fixtures and luminaires shall match line service voltages.
2. Voltage rating of photoelectric controls shall conform to the service voltage indicated on the plans.
3. Terminal strip shall be provided for wiring to fixtures.
4. Type SC1A, SC2A, SC3A controls are similar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

To accompany plans dated 5-21-12



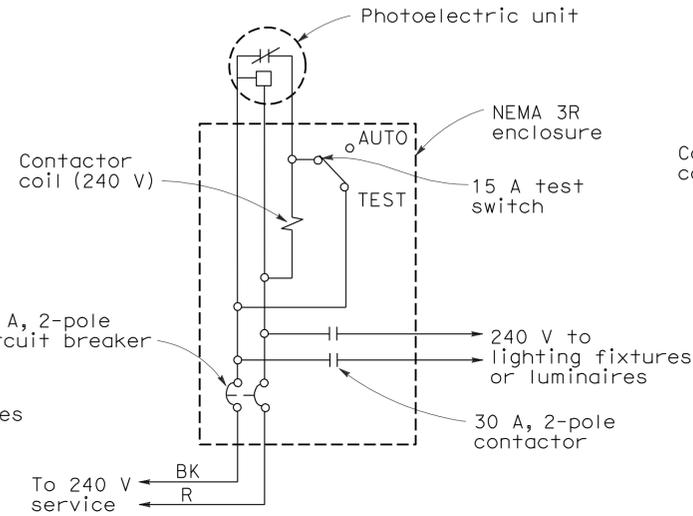
TYPE LC1 CONTROL

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



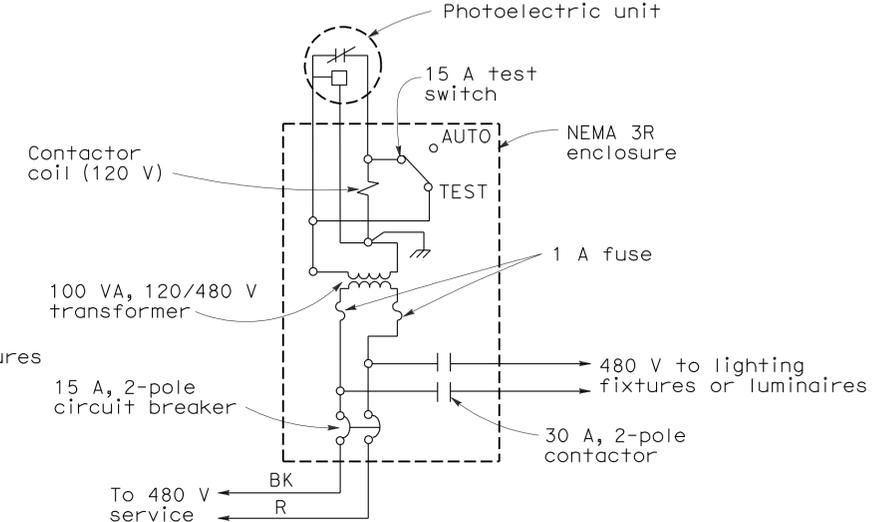
TYPE LC2 CONTROL

For 120 V unswitched circuit



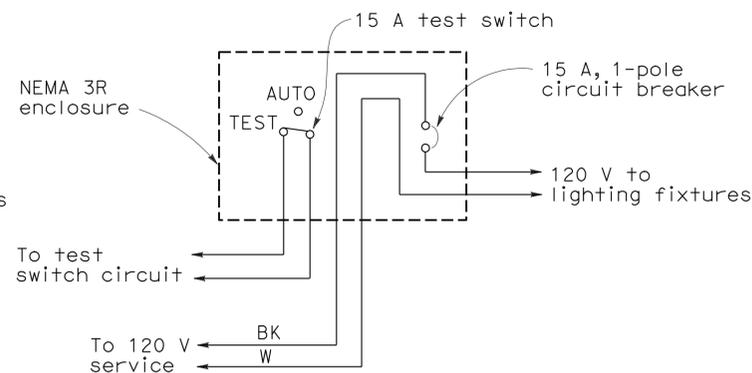
TYPE LC3 CONTROL

For 240 V and 480 V unswitched circuits



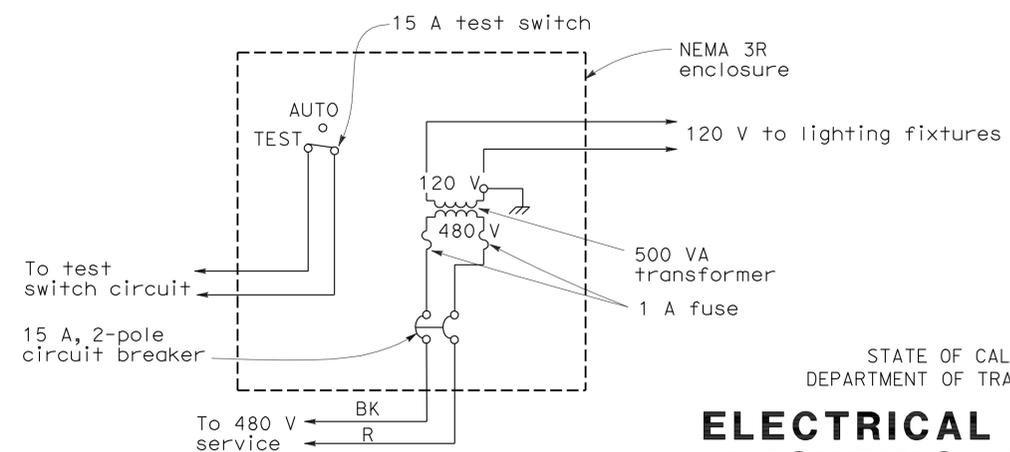
TYPE SC1 CONTROL

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



TYPE SC2 CONTROL

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



TYPE SC3 CONTROL

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

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

NO SCALE

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

REVISED STANDARD PLAN RSP ES-15D

2006 REVISED STANDARD PLAN RSP ES-15D